SUMMARY REPORT 240 FOXGLOVE STREET (FORMERLY 1031 FOXGLOVE STREET) 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 240 Foxglove Street (Formerly 1031 Foxglove Street) 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 240 Foxglove Street (Formerly 1031 Foxglove 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 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 240 Foxglove Street (Formerly 1031 Foxglove Street). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 1031 Foxglove Street* (MCAS Beaufort, 2013). The UST Assessment Report is provided in Appendix B. Details regarding the IGWA sampling activities at this site are provided in the *Initial Groundwater Investigation Report – November and December 2015* (Resolution Consultants, 2016). 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 November 14, 2012, a single 280 gallon heating oil UST was removed from the rear patio area at 240 Foxglove Street (Formerly 1031 Foxglove Street). The former UST location is indicated on Figures 2 and 3 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. The sample was collected from the fill port side of the former UST to represent a worst case scenario.

Following UST removal, a soil sample was collected from the base 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 240 Foxglove Street (Formerly 1031 Foxglove Street) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated July 1, 2015, SCDHEC requested an IGWA for 240 Foxglove Street (Formerly 1031 Foxglove Street) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix D.

#### 2.3 Groundwater Sampling

On November 19, 2015, a temporary monitoring well was installed at 240 Foxglove Street (Formerly 1031 Foxglove 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 in Figures 2 and 3of the UST Assessment Report (Appendix B). Further details are provided in the *Initial Groundwater Investigation Report – November and December 2015* (Resolution Consultants, 2016).



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). Field forms are provided in the *Initial Groundwater Investigation Report – November and December 2015* (Resolution Consultants, 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 240 Foxglove Street (Formerly 1031 Foxglove Street) 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.

#### 3.0 PROPERTY STATUS

Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 240 Foxglove Street (Formerly 1031 Foxglove Street). This NFA determination was obtained in a letter dated June 8, 2016. SCDHEC's NFA letter is provided in Appendix D.

#### 4.0 **REFERENCES**

- Marine Corps Air Station Beaufort, 2013. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 1031 Foxglove Street, Laurel Bay Military Housing Area*, April 2013.
- Resolution Consultants, 2016. *Initial Groundwater Investigation Report November and December 2015 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, April 2016.



- 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 - Soil240 Foxglove Street (Formerly 1031 Foxglove Street)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

Constituent	SCDHEC RBSLs <sup>(1)</sup>	Results Sample Collected 11/14/12			
olatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)					
Benzene	0.003	ND			
Ethylbenzene	1.15	ND			
Naphthalene	0.036	0.133			
Toluene	0.627	ND			
Xylenes, Total	13.01	ND			
Semivolatile Organic Compounds Ana	Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)				
Benzo(a)anthracene	0.66	0.0491			
Benzo(b)fluoranthene	0.66	ND			
Benzo(k)fluoranthene	0.66	ND			
Chrysene	0.66	0.0459			
Dibenz(a,h)anthracene	0.66	ND			

Notes:

<sup>(1)</sup> South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.0 and 3.1 (SCDHEC, May 2015 and SCDHEC, February 2016) 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 240 Foxglove Street (Formerly 1031 Foxglove Street) Laurel Bay Military Housing Area Marine Corps Air Station Beaufort Beaufort, South Carolina

Constituent	SCDHEC RBSLs <sup>(1)</sup> SCDHEC RBSLs <sup>(1)</sup> SCDHEC RBSLs <sup>(1)</sup> Site-Specific Groundwater VISLs (µg/L) <sup>(2)</sup>		Results Sample Collected 11/19/15		
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	0.20		
Toluene	1000	105,445	ND		
Xylenes, Total	10,000	2,133	ND		
Semivolatile Organic Compounds Ana	Semivolatile Organic Compounds Analyzed by EPA Method 8270D (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:

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

<sup>(2)</sup> Site-specific groundwater VISLs were calculated using the EPA JE Model Spreadsheets (Version 3.1, February 2004) and conservative modeling inputs representative of a small single-story house with an 8 foot ceiling. Site-specific groundwater VISLs were developed based on a target risk level of 1x10<sup>-6</sup>, 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

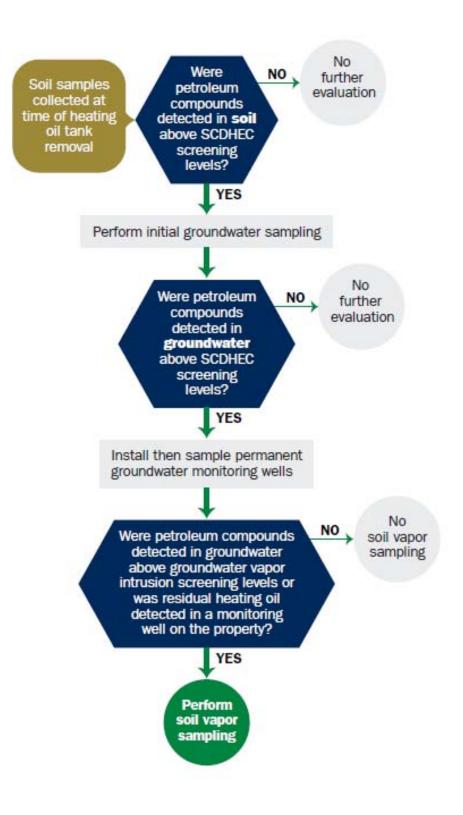
SCDHEC - South Carolina Department Of Health and Environmental Control

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

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

Date Re		
	State Use On	

Submit Completed Form To: UST Program SCDHEC 2600 Bull Street Columbia, South Carolina 29201 Telephone (803) 896-7957

#### I. OWNERSHIP OF UST (S)

	MCAS Beaufort, Commanding Officer Attn: NREAO (Craig Ehde) Owner Name (Corporation, Individual, Public Agency, Other)				
P.O. Box 55001 Mailing Address					
Beaufort,	South Carolina	29904-5001			
City	State	Zip Code			
843	228-7317	Craig Ehde			
Area Code	Telephone Number	Contact Person	-		

# II. SITE IDENTIFICATION AND LOCATION

Permit I.D. #					
Laurel Bay Military	Housing Area,	Marine (	Corps A	<u>Air Station,</u>	Beaufort, SC
Facility Name or Company Site	: Identifier				
1031 Foxglove St., 1		itary Hou	ising A	irea	- 19 C MARCON
Street Address or State Road (a	s applicable)				
Beaufort,	Beaufort				
City	County				

Attachment 2

#### **Insurance Statement**

The petroleum release reported to DHEC on \_\_\_\_\_\_ at Permit ID Number \_\_\_\_\_ 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.

#### IV. REQUEST FOR SUPERB FUNDING

I **DO** / DO **NOT** wish to participate in the SUPERB Program. (Circle one.)

#### V. CERTIFICATION (To be signed by the UST owner)

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

VI.	UST	INFORMATION
V .IL 6		

		1031Foxglove
A.	Product(ex. Gas, Kerosene)	Heating Oil
А.	rioduct(ex. Gas, Keiosene)	
B.	Capacity(ex. 1k, 2k)	280 gal
C.	Age	Late 1950s
D.	Construction Material(ex. Steel, FRP)	Steel
E.	Month/Year of Last Use	Mid 1980s
F.	Depth (ft.) To Base of Tank	5'8"
G.	Spill Prevention Equipment Y/N	No
H.	Overfill Prevention Equipment Y/N	No
I.	Method of Closure Removed/Filled	Removed
J.	Date Tanks Removed/Filled	11/14/2012
K.	Visible Corrosion or Pitting Y/N	Yes
L.	Visible Holes Y/N	Yes

Т

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M. Method of disposal for any USTs removed from the ground (attach disposal manifests) UST 1031Foxglove was removed from the ground and disposed at a Subtitle "D" landfill. See Attachment "A."

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests)
 UST 1031Foxglove had been previously filled with sand by others.

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

#### VII. PIPING INFORMATION

		1031Foxglove
		Steel &
A.	Construction Material(ex. Steel, FRP)	Copper
B.	Distance from UST to Dispenser	N/A
C.	Number of Dispensers	N/A
D.	Type of System Pressure or Suction	Suction
E.	Was Piping Removed from the Ground? Y/N	Yes
F.	Visible Corrosion or Pitting Y/N	Yes
G.	Visible Holes Y/N	No
H.	Age	Late 1950s
I.	If any corrosion, pitting, or holes were observed, dea	scribe the location and extent for each piping run.

Corrosion and pitting were found on the surface of the steel vent pipe. The copper supply and return lines were sound.

#### **VIII. BRIEF SITE DESCRIPTION AND HISTORY**

The USTs at the residences are constructed of single wall steel and formerly contained fuel oil for heating. These USTs were installed in the late 1950s and last used in the mid 1980s.

# IX. SITE CONDITIONS

	Yes	No	Unk
<ul> <li>A. Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells?</li> </ul>		х	
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?		Х	
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?		Х	
If yes, how far below land surface (indicate location and depth)?			
D. Did contaminated soils remain stockpiled on site after closure?		х	
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?		x	
If yes, indicate location and thickness.			

# X. SAMPLE INFORMATION

# A. SCDHEC Lab Certification Number 84009

В.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
1031 Foxglove	Excav at	Soil	Sandy clay	5'8"	11/14/12 1330 hrs	D. Chart	
FOXGLOVE		5011	Sandy Clay	5.8"	1330 nrs	P. Shaw	
							•
				-			
8							
9							
10							
11							
12							
13							
14							
15			-				
16							
17							
18							
19							
20							

\* = Depth Below the Surrounding Land Surface

#### XI. SAMPLING METHODOLOGY

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

Sampling was performed in accordance with SC DHEC R.61-92 Part 280 and SC DHEC Assessment Guidelines. Sample containers were prepared by the testing laboratory. The grab method was utilized to fill the sample containers leaving as little head space as possible and immediately capped. Soil samples were extracted from area below tank. The samples were marked, logged, and immediately placed in a sample cooler packed with ice to maintain an approximate temperature of 4 degrees Centigrade. Tools were thoroughly cleaned and decontaminated with the seven step decon process after each use. The samples remained in custody of SBG-EEG, Inc. until they were transferred to Test America Incorporated for analysis as documented in the Chain of Custody Record.

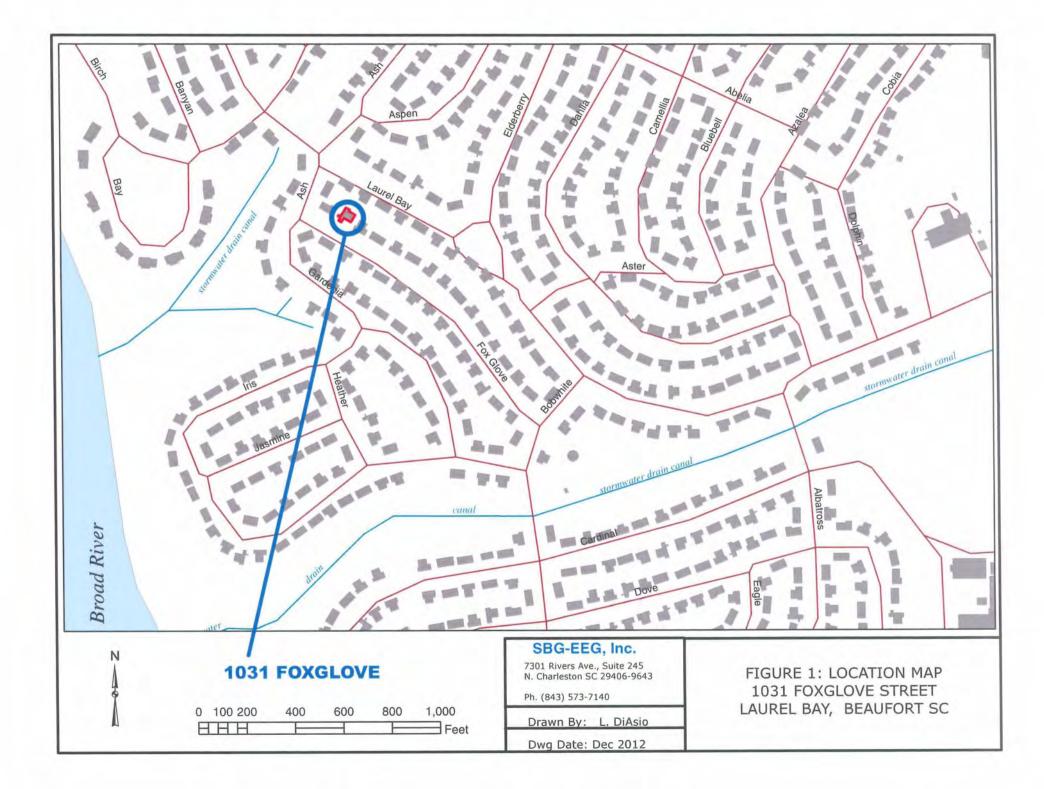
# **XII. RECEPTORS**

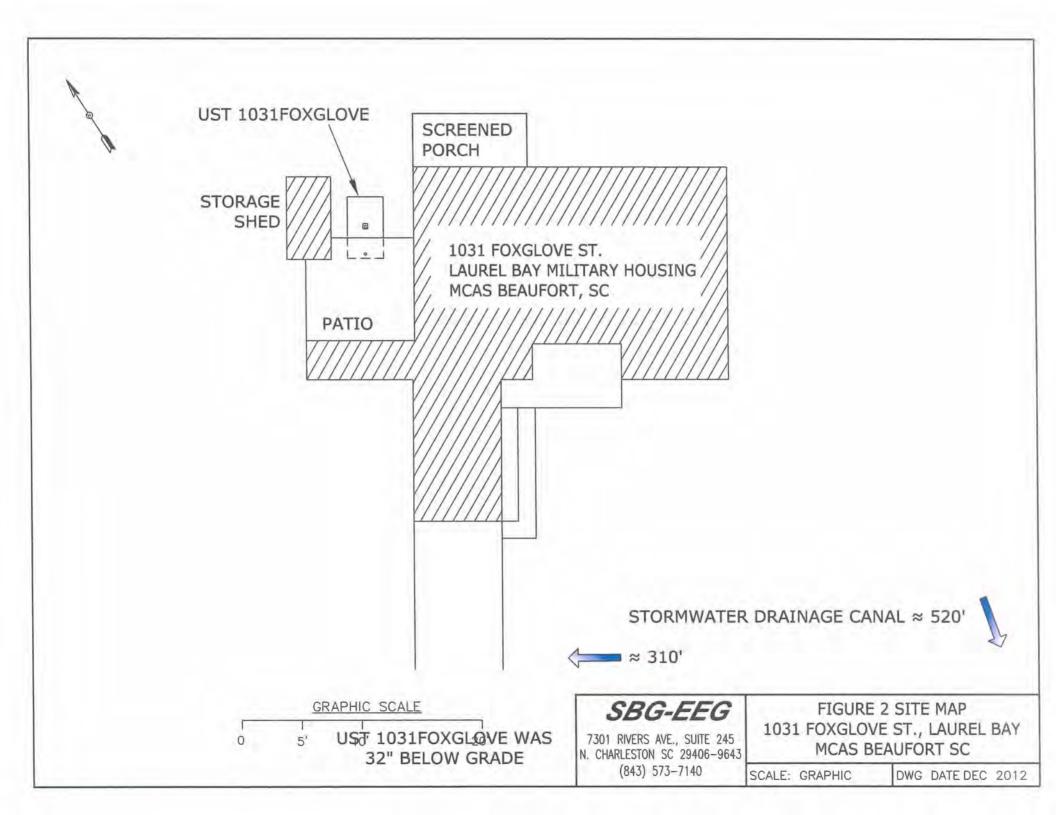
		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?	*X	
	*stormwater	cana	ls
	If yes, indicate type of receptor, distance, and direction on site map.		
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?		Х
	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?		Х
	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	*X	
	contamination? *Sewer, water, electri	city,	
	cable & fiber optic 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?		Х
	If yes, indicate the area of contaminated soil on the site map.		

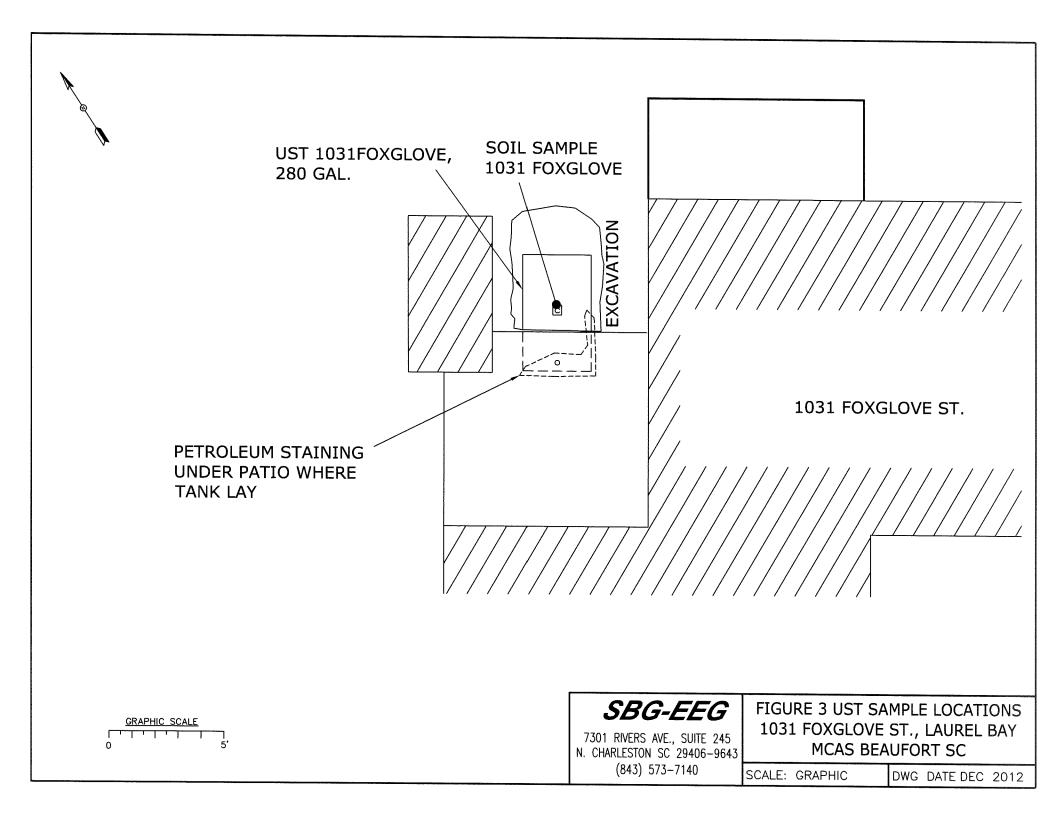
# XIII. SITE MAP

You must supply a <u>scaled</u> site map. It should include all buildings, road names, utilities, tank and dispenser island locations, labeled sample locations, extent of excavation, and any other pertinent information.

(Attach Site Map Here)









Picture 1: UST 1031Foxglove excavation.



Picture 2: UST 1031Foxglove restored.

# XIV. SUMMARY OF ANALYSIS RESULTS

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

CoC UST	1031 Foxglov	e			
Benzene	ND				
Toluene	ND				
Ethylbenzene	ND				
Xylenes	ND				
Naphthalene	0.133 mg/kg				
Benzo (a) anthracene	0.0491 mg/kg				
Benzo (b) fluoranthene	ND				
Benzo (k) fluoranthene	ND				
Chrysene	0.0459 mg/kg				
Dibenz (a, h) anthracene	ND				
ТРН (ЕРА 3550)					

CoC					
Benzene					
Toluene					
Ethylbenzene					
Xylenes					
Naphthalene					
Benzo (a) anthracene					
Benzo (b) fluoranthene					
Benzo (k) fluoranthene				-	
Chrysene					
Dibenz (a, h) anthracene					
TPH (EPA 3550)					

SUMMARY OF ANALYSIS RESULTS (cont'd) 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) anthracene	10				
EDB	.05				
1,2-DCA	5				
Lead	Site specific				

#### XV. 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)



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Nashville 2960 Foster Creighton Drive Nashville, TN 37204 Tel: (615)726-0177

#### TestAmerica Job ID: 490-12211-1

TestAmerica Sample Delivery Group: 1063 Client Project/Site: Laurel Bay Housing Project

#### For:

LINKS

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Have a Question?

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Visit us at:

Ask

he

Expert

Environmental Enterprise Group 10179 Highway 78 Ladson, South Carolina 29456

Attn: Mr. Tom McElwee

Kunth Hay

Authorized for release by: 11/30/2012 12:25:42 PM

Ken Hayes Project Manager I ken.hayes@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### Sample Summary

#### Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project

11/20/12 08:10
11/20/12 08:10
11/20/12 08:10
11/20/12 08:10
11/20/12 08:10
11/20/12 08:10
11/20/12 08:10

**Case Narrative** 

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project

Job ID: 490-12211-1

#### Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-12211-1

Comments No additional comments

#### Receipt

The samples were received on 11/20/2012 8:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

#### GC/MS VOA

Method(s) 8260B. Surrogate recovery for the following sample(s) was outside control limits: 1361 Cardinal (490-12211-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits; 1046 Gardenia (490-12211-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 38791. See LCS/LCSD

Method(s) 8260B: The following sample(s) was diluted due to the nature of the sample matrix: 1031 Foxglove (490-12211-6). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 39051.

No other analytical or quality issues were noted.

GC/MS Semi VOA No analytical or quality issues were noted.

#### Organic Prep

No analytical or quality issues were noted.

#### VOA Prep

No analytical or quality issues were noted.

TestAmerica Job ID: 490-12211-1 SDG: 1063

# Definitions/Glossary

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project

### Qualifiers

G	$\sim$	6.7	0	1.1	2	ж.	
0	5	111	3	v	Q.	м.	

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
x	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J.	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
12	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

#### Client Sample ID: 1015 Foxglove

Date Collected: 11/12/12 14:45 Date Received: 11/20/12 08:10

# Lab Sample ID: 490-12211-1

Matrix: Solid

Percent Solids: 86.0

Method: 8260B - Volatile Orga Analyte		(GC/MS) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	Geranner	2.08	0.696	mg/Kg		11/20/12 16:30	11/26/12 18:25	1
Ethylbenzene	ND		2.08	0.696	mg/Kg		11/20/12 16:30	11/26/12 18:25	1
	2.54		5.19	1.76	mg/Kg		11/20/12 16:30	11/26/12 18:25	1
Naphthalene	ND		2.08	0.768	mg/Kg		11/20/12 16:30	11/26/12 18:25	1
Toluene Xylenes, Total	ND		5.19		mg/Kg		11/20/12 16:30	11/26/12 18:25	1
Ayleties, Total									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1.2-Dichloroethane-d4 (Surr)	108		70 - 130				11/20/12 16:30	11/26/12 18:25	1
4-Bromofluorobenzene (Surr)	109		70 - 130				11/20/12 16:30	11/26/12 18:25	1
Dibromofluoromethane (Surr)	91		70 - 130				11/20/12 16:30	11/26/12 18:25	1
Toluene-d8 (Surr)	115		70 - 130				11/20/12 16:30	11/26/12 18:25	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0,0659	0.00984	mg/Kg		11/23/12 11:00	11/25/12 16:53	1
Acenaphthylene	ND		0.0659	0.00886	mg/Kg	ò	11/23/12 11:00	11/25/12 16:53	1
Anthracene	ND		0.0659	0.00886	mg/Kg	9	11/23/12 11:00	11/25/12 16:53	1
Benzo[a]anthracene	ND		0.0659	0.0148	mg/Kg	12	11/23/12 11:00	11/25/12 16:53	1
Benzo[a]pyrene	ND		0.0659	0.0118	mg/Kg	0	11/23/12 11:00	11/25/12 16:53	1
Benzo[b]fluoranthene	ND		0.0659	0.0118	mg/Kg	12	11/23/12 11:00	11/25/12 16:53	1
Benzo[g,h,i]perylene	ND		0.0659	0.00886	mg/Kg		11/23/12 11:00	11/25/12 16:53	1
Benzo[k]fluoranthene	ND		0.0659	0.0138	mg/Kg		11/23/12 11:00	11/25/12 16:53	1
1-Methylnaphthalene	ND		0.0659	0.0138	mg/Kg	1.0	11/23/12 11:00	11/25/12 16:53	Ť
Pyrene	ND		0.0659	0.0118	mg/Kg		11/23/12 11:00	11/25/12 16:53	1
Phenanthrene	ND		0.0659	0.00886	mg/Kg	10	11/23/12 11:00	11/25/12 16:53	1
Chrysene	ND		0.0659	0,00886	mg/Kg	0	11/23/12 11:00	11/25/12 16:53	t
Dibenz(a,h)anthracene	ND		0.0659	0.00689	mg/Kg	0	11/23/12 11:00	11/25/12 16:53	1
Fluoranthene	ND		0.0659	0.00886	mg/Kg	0	11/23/12 11:00	11/25/12 16:53	1
Fluorene	ND		0.0659	0.0118	mg/Kg		11/23/12 11:00	11/25/12 16:53	1
Indeno[1,2,3-cd]pyrene	ND		0.0659	0.00984	mg/Kg	0	11/23/12 11:00	11/25/12 16:53	1
Naphthalene	ND		0.0659	0.00886	mg/Kg	0	11/23/12 11:00	11/25/12 16:53	1
2-Methylnaphthalene	ND		0.0659	0.0157	mg/Kg	10	11/23/12 11:00	11/25/12 16:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	68		29 - 120				11/23/12 11:00	11/25/12 16:53	1
Terphenyl-d14 (Surr)	80		13 - 120				11/23/12 11:00	11/25/12 16:53	1
Nitrobenzene-d5 (Surr)	60		27 - 120				11/23/12 11:00	11/25/12 16:53	1
General Chemistry								Contraction of the	
Analyte	Result	Qualifier	RL	RL		D	Prepared	Analyzed	Dil Fac
Percent Solids	86		0.10	0.10	%			11/21/12 11:06	1

#### Client Sample ID: 1361 Cardinal

Date Collected: 11/12/12 14:30 Date Received: 11/20/12 08:10

## Lab Sample ID: 490-12211-2

Matrix: Solid Percent Solids: 77.8

Method: 8260B - Volatile Orga Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	Quaimer	2.23		mg/Kg	2	11/20/12 16:30	11/26/12 18:57	1
	6.17		2.23		mg/Kg	2	11/20/12 16:30	11/26/12 18:57	1
Ethylbenzene	14.7		5.59	1.90	mg/Kg	2	11/20/12 16:30	11/26/12 18:57	1
Naphthalene	1,74	T	2.23	0.827	mg/Kg	2	11/20/12 16:30	11/26/12 18:57	1
Toluene	29.5	*	5.59		mg/Kg	5	11/20/12 16:30	11/26/12 18:57	1
Xylenes, Total	20.0								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 130				11/20/12 16:30	11/26/12 18:57	1
4-Bromofluorobenzene (Surr)	395	X	70 - 130				11/20/12 16:30	11/26/12 18:57	1
Dibromofluoromethane (Surr)	93		70 - 130				11/20/12 16:30	11/26/12 18:57	1
Toluene-d8 (Surr)	123		70 - 130				11/20/12 16:30	11/26/12 18:57	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	S)						
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0659	0.00983	mg/Kg	3	11/23/12 11:00	11/25/12 17:58	1
Acenaphthylene	0.0400	1	0.0659	0.00885	mg/Kg	0	11/23/12 11:00	11/25/12 17:58	1
Anthracene	ND		0.0659	0.00885	mg/Kg	2	11/23/12 11:00	11/25/12 17:58	3
Benzo[a]anthracene	ND		0.0659	0.0148	mg/Kg	4	11/23/12 11:00	11/25/12 17:58	1
Benzo[a]pyrene	ND		0.0659	0.0118	mg/Kg		11/23/12 11:00	11/25/12 17:58	1
Benzo[b]fluoranthene	ND		0.0659	0.0118	mg/Kg	48	11/23/12 11:00	11/25/12 17:58	1
Benzo[g,h,i]perylene	ND		0.0659	0.00885	mg/Kg	10	11/23/12 11:00	11/25/12 17:58	1
Benzo[k]fluoranthene	ND		0.0659	0.0138	mg/Kg	1.5	11/23/12 11:00	11/25/12 17:58	1
1-Methylnaphthalene	ND		0.0659	0.0138	mg/Kg	0	11/23/12 11:00	11/25/12 17:58	1
Pyrene	0.126		0.0659	0.0118	mg/Kg	0	11/23/12 11:00	11/25/12 17:58	1
Phenanthrene	0.0563	1	0.0659	0.00885	mg/Kg	\$	11/23/12 11:00	11/25/12 17:58	1
Chrysene	ND		0.0659	0.00885	mg/Kg	¢.	11/23/12 11:00	11/25/12 17:58	1
Dibenz(a,h)anthracene	ND		0.0659	0.00688	mg/Kg	3	11/23/12 11:00	11/25/12 17:58	1
Fluoranthene	0.0353	J	0.0659	0.00885	mg/Kg		11/23/12 11:00	11/25/12 17:58	1
Fluorene	ND		0.0659	0.0118	mg/Kg	1	11/23/12 11:00	11/25/12 17:58	1
Indeno[1,2,3-cd]pyrene	ND		0.0659	0.00983	mg/Kg	9	11/23/12 11:00	11/25/12 17:58	1
Naphthalene	ND		0.0659	0.00885	mg/Kg		11/23/12 11:00	11/25/12 17:58	1
2-Methylnaphthalene	ND		0.0659	0.0157	mg/Kg	-X	11/23/12 11:00	11/25/12 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	68		29 - 120				11/23/12 11:00	11/25/12 17:58	1
Terphenyl-d14 (Surr)	90		13 - 120				11/23/12 11:00	11/25/12 17:58	1
Nitrobenzene-d5 (Surr)	52		27 - 120				11/23/12 11:00	11/25/12 17:58	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78		0.10	0.10	%			11/21/12 11:06	1

#### Client Sample ID: 1046 Gardenia

Date Collected: 11/13/12 13:45 Date Received: 11/20/12 08:10

## Lab Sample ID: 490-12211-3 Matrix: Solid

Percent Solids: 85.4

K

Method: 8260B - Volatile Orga	anic Compounds	(GC/MS)								
Analyte	and the second se	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		2.34	0.785	mg/Kg		11/20/12 16:30	11/26/12 21:33	1	ì
Ethylbenzene	ND		2.34	0.785	mg/Kg		11/20/12 16:30	11/26/12 21:33	1	
Naphthalene	2.16	J	5.86	1.99	mg/Kg		11/20/12 16:30	11/26/12 21:33	+	ľ
Toluene	ND		2.34	0.867	mg/Kg		11/20/12 16:30	11/26/12 21:33	1	
Xylenes, Total	ND		5.86	0.785	mg/Kg		11/20/12 16:30	11/26/12 21:33	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	108		70 - 130				11/20/12 16:30	11/26/12 21:33	1	
4-Bromofluorobenzene (Surr)	141	X	70 - 130				11/20/12 16:30	11/26/12 21:33	7	
Dibromofluoromethane (Surr)	93		70 - 130				11/20/12 16:30	11/26/12 21:33	1	
Toluene-d8 (Surr)	112		70 - 130				11/20/12 16:30	11/26/12 21:33	1	
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)							
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac	
Acenaphthene	ND		0.0667	0.00996	mg/Kg	¢.	11/23/12 11:00	11/25/12 18:19	1	
Acenaphthylene	ND		0.0667	0.00896	mg/Kg	8	11/23/12 11:00	11/25/12 18:19	1	
Anthracene	ND		0.0667	0.00896	mg/Kg	8	11/23/12 11:00	11/25/12 18:19	1	
Benzo[a]anthracene	ND		0.0667	0.0149	mg/Kg	0	11/23/12 11:00	11/25/12 18:19	T	
Benzo[a]pyrene	ND		0.0667	0.0120	mg/Kg		11/23/12 11:00	11/25/12 18:19	1	
Benzo[b]fluoranthene	ND		0.0667	0.0120	mg/Kg	- 2	11/23/12 11:00	11/25/12 18:19	1	
Benzo[g,h,i]perylene	ND		0.0667	0.00896	mg/Kg	P	11/23/12 11:00	11/25/12 18:19	1	
Benzo[k]fluoranthene	ND		0.0667	0.0139	mg/Kg	9	11/23/12 11:00	11/25/12 18:19	1	
1-Methylnaphthalene	ND		0.0667	0.0139	mg/Kg	6	11/23/12 11:00	11/25/12 18:19	1	
Pyrene	ND		0.0667	0.0120	mg/Kg	12	11/23/12 11:00	11/25/12 18:19	1	
Phenanthrene	ND		0.0667	0.00896	mg/Kg	-	11/23/12 11:00	11/25/12 18:19	1	
Chrysene	ND		0.0667	0.00896	mg/Kg	10	11/23/12 11:00	11/25/12 18:19	1	
Dibenz(a,h)anthracene	ND		0.0667	0.00697	mg/Kg	2	11/23/12 11:00	11/25/12 18:19	1	
Fluoranthene	ND		0.0667	0.00896	mg/Kg	100	11/23/12 11:00	11/25/12 18:19	1	
Fluorene	ND		0.0667	0.0120	mg/Kg	1	11/23/12 11:00	11/25/12 18:19	1	
Indeno[1,2,3-cd]pyrene	ND		0.0667	0.00996	mg/Kg	2	11/23/12 11:00	11/25/12 18:19	1	
Naphthalene	ND		0.0667	0.00896	mg/Kg	1	11/23/12 11:00	11/25/12 18:19	1	
2-Methylnaphthalene	ND		0.0667	0.0159	mg/Kg		11/23/12 11:00	11/25/12 18:19	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
2-Fluorobiphenyl (Surr)	62		29 - 120				11/23/12 11:00	11/25/12 18:19	1	
Terphenyl-d14 (Surr)	79		13 - 120				11/23/12 11:00	11/25/12 18:19	1	
Nitrobenzene-d5 (Surr)	54		27 - 120				11/23/12 11:00	11/25/12 18:19	1	
General Chemistry										
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac	
Percent Solids	85		0.10	0.10	%			11/21/12 11:06	1	

### Client Sample ID: 1024 Foxglove

Date Collected: 11/13/12 13:55 Date Received: 11/20/12 08:10

#### Lab Sample ID: 490-12211-4 Matrix: Solid

Percent Solids: 96.6

Method: 8260B - Volatile Orga				MOL	11-lt	D	Prepared	Analyzed	Dil Fac
Analyte		Qualifier	RL	MDL	Unit	0	11/20/12 16:30	11/27/12 19:18	Dirac
Benzene	ND		0.00230	0.000769	mg/Kg				1
Ethylbenzene	ND		0.00230	0.000769	mg/Kg	1	11/20/12 16:30	11/27/12 19:18	
Naphthalene	ND		0.00574	0.00195	mg/Kg	2	11/20/12 16:30	11/27/12 19:18	1
Toluene	ND		0.00230	0.000849	mg/Kg		11/20/12 16:30	11/27/12 19:18	1
Xylenes, Total	ND		0.00574	0.000769	mg/Kg		11/20/12 16:30	11/27/12 19:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1.2-Dichloroethane-d4 (Surr)	95		70 - 130				11/20/12 16:30	11/27/12 19:18	1
4-Bromofluorobenzene (Surr)	105		70 - 130				11/20/12 16:30	11/27/12 19:18	1
Dibromofluoromethane (Surr)	97		70 - 130				11/20/12 16:30	11/27/12 19:18	1
Toluene-d8 (Surr)	94		70 - 130				11/20/12 16:30	11/27/12 19:18	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0658	0.00982	mg/Kg		11/23/12 11:00	11/25/12 18:41	1
Acenaphthylene	ND		0.0658	0.00884	mg/Kg		11/23/12 11:00	11/25/12 18:41	1
Anthracene	ND		0,0658	0.00884	mg/Kg	10	11/23/12 11:00	11/25/12 18:41	1
Benzo[a]anthracene	ND		0.0658	0.0147	mg/Kg		11/23/12 11:00	11/25/12 18:41	1
Benzo[a]pyrene	ND		0.0658	0.0118	mg/Kg	2	11/23/12 11:00	11/25/12 18:41	1
Benzo[b]fluoranthene	ND		0.0658	0.0118	mg/Kg		11/23/12 11:00	11/25/12 18:41	1
Benzo[g,h,i]perylene	ND		0.0658	0.00884	mg/Kg	×.	11/23/12 11:00	11/25/12 18:41	1
Benzo[k]fluoranthene	ND		0.0658	0.0137	mg/Kg	1.1	11/23/12 11:00	11/25/12 18:41	1
1-Methylnaphthalene	ND		0.0658	0.0137	mg/Kg	1.0	11/23/12 11:00	11/25/12 18:41	1
Pyrene	ND		0.0658	0.0118	mg/Kg	4	11/23/12 11:00	11/25/12 18:41	1
Phenanthrene	ND		0.0658	0.00884	mg/Kg	5	11/23/12 11:00	11/25/12 18:41	ì
Chrysene	ND		0.0658	0.00884	mg/Kg	10	11/23/12 11:00	11/25/12 18:41	1
Dibenz(a,h)anthracene	ND		0.0658	0.00687	mg/Kg	4	11/23/12 11:00	11/25/12 18:41	1
Fluoranthene	ND		0.0658	0.00884	mg/Kg	1	11/23/12 11:00	11/25/12 18:41	
Fluorene	ND		0.0658	0.0118	mg/Kg	ŏ.	11/23/12 11:00	11/25/12 18:41	4
Indeno[1,2,3-cd]pyrene	ND		0.0658	0.00982	mg/Kg	2	11/23/12 11:00	11/25/12 18:41	1
Naphthalene	ND		0.0658	0.00884	mg/Kg		11/23/12 11:00	11/25/12 18:41	1
2-Methylnaphthalene	ND		0.0658	0.0157	mg/Kg		11/23/12 11:00	11/25/12 18:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluoroblphenyl (Surr)	62		29 - 120				11/23/12 11:00	11/25/12 18:41	1
Terphenyl-d14 (Surr)	75		13 - 120				11/23/12 11:00	11/25/12 18:41	1
Nitrobenzene-d5 (Surr)	60		27 - 120				11/23/12 11:00	11/25/12 18:41	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	97		0.10	0.10	%			11/21/12 11:06	1

#### Client Sample ID: 1038 Iris Date Collected: 11/14/12 12:45 Date Received: 11/20/12 08:10

#### Lab Sample ID: 490-12211-5 Matrix: Solid

Percent Solids: 85.0

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Method: 8260B - Volatile Orga		A							
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00243	0.000813	C		11/20/12 16:30	11/27/12 19:45	1
Ethylbenzene	ND		0.00243	0.000813			11/20/12 16:30	11/27/12 19:45	1
Naphthalene	ND		0.00607	0.00206	mg/Kg		11/20/12 16:30	11/27/12 19:45	1
Toluene	ND		0.00243	0.000898	mg/Kg		11/20/12 16:30	11/27/12 19:45	1
Xylenes, Total	ND		0.00607	0.000813	mg/Kg		11/20/12 16:30	11/27/12 19:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 130				11/20/12 16:30	11/27/12 19:45	1
4-Bromofluorobenzene (Surr)	104		70 - 130				11/20/12 16:30	11/27/12 19:45	1
Dibromofluoromethane (Surr)	98		70 - 130				11/20/12 16:30	11/27/12 19:45	1
Toluene-d8 (Surr)	95		70 - 130				11/20/12 16:30	11/27/12 19:45	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/Ms	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0662	0.00989	mg/Kg	1.0	11/23/12 11:00	11/25/12 19:03	1
Acenaphthylene	ND		0.0662	0.00890	mg/Kg		11/23/12 11:00	11/25/12 19:03	1
Anthracene	ND		0.0662	0.00890	mg/Kg	~	11/23/12 11:00	11/25/12 19:03	1
Benzo[a]anthracene	ND		0.0662	0.0148	mg/Kg	0	11/23/12 11:00	11/25/12 19:03	1
Benzo[a]pyrene	ND		0.0662	0.0119	mg/Kg	×.	11/23/12 11:00	11/25/12 19:03	1
Benzo[b]fluoranthene	ND		0.0662	0.0119	mg/Kg		11/23/12 11:00	11/25/12 19:03	1
Benzo[g,h,i]perylene	ND		0.0662	0.00890	mg/Kg	0	11/23/12 11:00	11/25/12 19:03	1
Benzo[k]fluoranthene	ND		0.0662	0.0138	mg/Kg	0	11/23/12 11:00	11/25/12 19:03	1
1-Methylnaphthalene	ND		0.0662	0.0138	mg/Kg	- D	11/23/12 11:00	11/25/12 19:03	1
Pyrene	ND		0.0662	0.0119	mg/Kg		11/23/12 11:00	11/25/12 19:03	1
Phenanthrene	ND		0.0662	0.00890	mg/Kg		11/23/12 11:00	11/25/12 19:03	1
Chrysene	ND		0.0662	0.00890	mg/Kg	2	11/23/12 11:00	11/25/12 19:03	1
Dibenz(a,h)anthracene	ND		0.0662	0.00692	mg/Kg	-	11/23/12 11:00	11/25/12 19:03	1
Fluoranthene	ND		0.0662	0.00890	mg/Kg		11/23/12 11:00	11/25/12 19:03	1
Fluorene	ND		0.0662	0.0119	mg/Kg	1.0	11/23/12 11:00	11/25/12 19:03	1
Indeno[1,2,3-cd]pyrene	ND		0.0662	0.00989	mg/Kg	1.00	11/23/12 11:00	11/25/12 19:03	1
Naphthalene	ND		0.0662	0.00890	mg/Kg	.0	11/23/12 11:00	11/25/12 19:03	1
2-Methylnaphthalene	ND		0.0662	0,0158	mg/Kg		11/23/12 11:00	11/25/12 19:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	72		29 - 120				11/23/12 11:00	11/25/12 19:03	1
Terphenyl-d14 (Surr)	84		13 - 120				11/23/12 11:00	11/25/12 19:03	1
Nitrobenzene-d5 (Surr)	67		27 - 120				11/23/12 11:00	11/25/12 19:03	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	85		0.10	0.10	%			11/21/12 11:06	1

#### Client Sample ID: 1031 Foxglove

Date Collected: 11/14/12 13:30 Date Received: 11/20/12 08:10

### Lab Sample ID: 490-12211-6 Matrix: Solid

Percent Solids: 79.9

Method: 8260B - Volatile Orga		and the second second							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.130	0.0443	mg/Kg	~	11/20/12 16:28	11/27/12 20:39	1
Ethylbenzene	ND		0.130	0.0443	mg/Kg	- 9	11/20/12 16:28	11/27/12 20:39	1
Naphthalene	0.133	J	0.326	0.111	mg/Kg	4	11/20/12 16:28	11/27/12 20:39	1
Toluene	ND		0.130	0.0482	mg/Kg		11/20/12 16:28	11/27/12 20:39	1
Xylenes, Total	ND		0.326	0.0443	mg/Kg	*	11/20/12 16:28	11/27/12 20:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 130				11/20/12 16:28	11/27/12 20:39	1
4-Bromofluorobenzene (Surr)	113		70 - 130				11/20/12 16:28	11/27/12 20:39	1
Dibromofluoromethane (Surr)	92		70 - 130				11/20/12 16:28	11/27/12 20:39	1
Toluene-d8 (Surr)	97		70 - 130				11/20/12 16:28	11/27/12 20:39	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Díl Fac
Acenaphthene	0.0775		0.0666	0.00994	mg/Kg	100	11/23/12 11:00	11/25/12 19:24	1
Acenaphthylene	0.0389	J	0.0666	0.00895	mg/Kg	5	11/23/12 11:00	11/25/12 19:24	1
Anthracene	0.144		0.0666	0.00895	mg/Kg	1	11/23/12 11:00	11/25/12 19:24	1
Benzo[a]anthracene	0.0491	1	0.0666	0.0149	mg/Kg	1	11/23/12 11:00	11/25/12 19:24	1
Benzo[a]pyrene	ND		0.0666	0.0119	mg/Kg		11/23/12 11:00	11/25/12 19:24	1
Benzo[b]fluoranthene	ND		0.0666	0.0119	mg/Kg		11/23/12 11:00	11/25/12 19:24	1
Benzo[g,h,i]perylene	ND		0.0666	0.00895	mg/Kg	10	11/23/12 11:00	11/25/12 19:24	1
Benzo[k]fluoranthene	ND		0.0666	0.0139	mg/Kg	2	11/23/12 11:00	11/25/12 19:24	1
1-Methylnaphthalene	0.381		0.0666	0.0139	mg/Kg		11/23/12 11:00	11/25/12 19:24	1
Pyrene	0.318		0.0666	0.0119	mg/Kg	0	11/23/12 11:00	11/25/12 19:24	1
Phenanthrene	0.933		0.0666	0.00895	mg/Kg	-0	11/23/12 11:00	11/25/12 19:24	1
Chrysene	0.0459	5	0.0666	0.00895	mg/Kg		11/23/12 11:00	11/25/12 19:24	1
Dibenz(a,h)anthracene	ND		0.0666	0.00696	mg/Kg	1.8	11/23/12 11:00	11/25/12 19:24	1
Fluoranthene	0,496		0.0666	0.00895	mg/Kg	÷.	11/23/12 11:00	11/25/12 19:24	1
Fluorene	0,176		0.0666	0.0119	mg/Kg		11/23/12 11:00	11/25/12 19:24	1
Indeno[1,2,3-cd]pyrene	ND		0.0666	0.00994	mg/Kg		11/23/12 11:00	11/25/12 19:24	1
Naphthalene	ND		0.0666	0.00895	mg/Kg	2	11/23/12 11:00	11/25/12 19:24	1
2-Methylnaphthalene	0.659		0.0666	0.0159	mg/Kg	~	11/23/12 11:00	11/25/12 19:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	58		29 - 120				11/23/12 11:00	11/25/12 19:24	7
Terphenyl-d14 (Surr)	68		13 - 120				11/23/12 11:00	11/25/12 19:24	1
Nitrobenzene-d5 (Surr)	56		27 - 120				11/23/12 11:00	11/25/12 19:24	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80		0.10	0.10	%			11/21/12 11:06	1

#### Client Sample ID: 1029 Foxglove

Date Collected: 11/15/12 14:45 Date Received: 11/20/12 08:10

### Lab Sample ID: 490-12211-7 Matrix: Solid

Percent Solids: 92,9

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Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00223	0.000748	mg/Kg	0	11/20/12 16:30	11/27/12 20:12	1
Ethylbenzene	ND		0.00223	0.000748	mg/Kg	0	11/20/12 16:30	11/27/12 20:12	1
Naphthalene	ND		0.00558	0.00190	mg/Kg	10	11/20/12 16:30	11/27/12 20:12	1
Toluene	ND		0.00223	0.000826	mg/Kg		11/20/12 16:30	11/27/12 20:12	1
Xylenes, Total	ND		0.00558	0.000748	mg/Kg		11/20/12 16:30	11/27/12 20:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 130				11/20/12 16:30	11/27/12 20:12	1
4-Bromofluorobenzene (Surr)	106		70 - 130				11/20/12 16:30	11/27/12 20:12	7
Dibromofluoromethane (Surr)	98		70 - 130				11/20/12 16:30	11/27/12 20:12	1
Toluene-d8 (Surr)	95		70 - 130				11/20/12 16:30	11/27/12 20:12	1
Method: 8270D - Semivolatile (	Organic Compou	nds (GC/MS	5)						
Analyte	-	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0658	0.00981	mg/Kg	.0	11/23/12 11:00	11/25/12 19:46	1
Acenaphthylene	ND		0.0658	0.00883	mg/Kg	0	11/23/12 11:00	11/25/12 19:46	1
Anthracene	ND		0.0658	0.00883	mg/Kg	(>	11/23/12 11:00	11/25/12 19:46	1
Benzo[a]anthracene	ND		0.0658	0.0147	mg/Kg	9	11/23/12 11:00	11/25/12 19:46	1
Benzo[a]pyrene	ND		0.0658	0.0118	mg/Kg	0	11/23/12 11:00	11/25/12 19:46	1
Benzo[b]fluoranthene	ND		0.0658	0.0118	mg/Kg	0	11/23/12 11:00	11/25/12 19:46	1
Benzo[g,h,i]perylene	ND		0.0658	0.00883	mg/Kg	0	11/23/12 11:00	11/25/12 19:46	1
Benzo[k]fluoranthene	ND		0.0658	0.0137	mg/Kg	10	11/23/12 11:00	11/25/12 19:46	1
-Methylnaphthalene	ND		0.0658	0.0137	mg/Kg		11/23/12 11:00	11/25/12 19:46	1
Pyrene	ND		0.0658	0.0118	mg/Kg	0	11/23/12 11:00	11/25/12 19:46	1
Phenanthrene	ND		0.0658	0.00883	mg/Kg	30.	11/23/12 11:00	11/25/12 19:46	1
Chrysene	ND		0.0658	0.00883	mg/Kg		11/23/12 11:00	11/25/12 19:46	1
Dibenz(a,h)anthracene	ND		0.0658	0.00687	mg/Kg	1	11/23/12 11:00	11/25/12 19:46	1
luoranthene	ND		0.0658	0.00883	mg/Kg	10	11/23/12 11:00	11/25/12 19:46	1
luorene	ND		0.0658	0.0118	mg/Kg	4	11/23/12 11:00	11/25/12 19:46	1
ndeno[1,2,3-cd]pyrene	ND		0.0658	0.00981	mg/Kg		11/23/12 11:00	11/25/12 19:46	1
laphthalene	ND		0.0658	0.00883	mg/Kg	101	11/23/12 11:00	11/25/12 19:46	1
2-Methylnaphthalene	ND		0.0658	0.0157	mg/Kg	3	11/23/12 11:00	11/25/12 19:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
P-Fluorobiphenyl (Surr)	64		29 - 120				11/23/12 11:00	11/25/12 19:46	1
erphenyl-d14 (Surr)	76		13 - 120				11/23/12 11:00	11/25/12 19:46	1
litrobenzene-d5 (Surr)	58		27 - 120				11/23/12 11:00	11/25/12 19:46	1
Seneral Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93		0.10	0.10	%			11/21/12 11:06	1

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-38791/8		
Matrix: Solid		
Analysis Batch: 38791		
	MB MB	

#### Client Sample ID: Method Blank Prep Type: Total/NA

	IIID	11112							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.00	0,670	mg/Kg			11/26/12 14:15	1
Ethylbenzene	ND		2.00	0.670	mg/Kg			11/26/12 14:15	1
Naphthalene	ND		5.00	1.70	mg/Kg			11/26/12 14:15	1
Toluene	ND		2.00	0.740	mg/Kg			11/26/12 14:15	1
Xylenes. Total	ND		5.00		mg/Kg			11/26/12 14:15	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 130					11/26/12 14:15	T
4-Bromofluorobenzene (Surr)	107		70 - 130					11/26/12 14:15	1
Dibromofluoromethane (Surr)	92		70 - 130					11/26/12 14:15	1
Toluene-d8 (Surr)	112		70 - 130					11/26/12 14:15	1

#### Lab Sample ID: LCS 490-38791/5

Matrix: Solid Analysis Batch: 38791

Client	Sample	ID:	Lab	Contro	I Sample
			Prep	Type:	Total/NA

Result 0.04096	Qualifier	Unit	D	%Rec	Limits
0.04096		and and a second second			- mining
		mg/Kg		82	75 - 127
0.05411		mg/Kg		108	80 - 134
0.05253		mg/Kg		105	69 - 150
0.04974		mg/Kg		99	80 - 132
0.1608		mg/Kg		107	80 - 137
	0.05411 0.05253 0.04974	0.05411 0.05253 0.04974	0.05411 mg/Kg 0.05253 mg/Kg 0.04974 mg/Kg 0.1608 mg/Kg	0.05411 mg/Kg 0.05253 mg/Kg 0.04974 mg/Kg 0.1608 mg/Kg	0.04096         mg/Kg         82           0.05411         mg/Kg         108           0.05253         mg/Kg         105           0.04974         mg/Kg         99           0.1608         mg/Kg         107

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130
Dibromofluoromethane (Surr)	92		70 - 130
Toluene-d8 (Surr)	114		70 - 130

#### Lab Sample ID: LCSD 490-38791/6 Matrix: Solid

Analysis Batch: 38791

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.0500	0.04133		mg/Kg		83	75 - 127	1	50
Ethylbenzene			0.0500	0.05162		mg/Kg		103	80 - 134	5	50
Naphthalene			0.0500	0.05170		mg/Kg		103	69 - 150	2	50
Toluene			0.0500	0.04708		mg/Kg		94	80 - 132	5	50
Xylenes, Total			0.150	0.1532		mg/Kg		102	80 - 137	5	50
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	103		70 - 130								
4-Bromofluorobenzene (Surr)	106		70 - 130								
Dibromofluoromethane (Surr)	92		70 - 130								
Toluene-d8 (Surr)	106		70 - 130								

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## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 490-39051	1/6							Client	Sample ID: Metho	od Blank
Matrix: Solid									Prep Type:	Total/NA
Analysis Batch: 39051										
	MB	MB								
Analyte	Result	Qualifier	RI		IDL (		D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.100	0.0	335 r	ng/Kg			11/27/12 12:05	1
Ethylbenzene	ND		0.100	0.0	335 r	ng/Kg			11/27/12 12:05	1
Naphthalene	ND		0.250	0.0	850 r	ng/Kg			11/27/12 12:05	1
Toluene	ND		0.100	0.03	370 n	ng/Kg			11/27/12 12:05	1
Xylenes, Total	ND		0.250	0.03	335 n	ng/Kg			11/27/12 12:05	1
	MB	MB								
Surrogate	%Recovery		Limits					Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 130						11/27/12 12:05	1
4-Bromofluorobenzene (Surr)	104		70 - 130						11/27/12 12:05	1
Dibromofluoromethane (Surr)	94		70 - 130						11/27/12 12:05	1
Toluene-d8 (Surr)	96		70 - 130						11/27/12 12:05	1
(shall be feely)									1112/112 12:00	-
Lab Sample ID: MB 490-39051	17							Client S	Sample ID: Metho	d Blank
Matrix: Solid									Prep Type: 1	
Analysis Batch: 39051										
	MB	MB								
Analyte	Result	Qualifier	RL	. M	DL U	Init	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.0006	670 m	ng/Kg			11/27/12 12:32	1
Ethylbenzene	ND		0.00200	0.0006	570 m	ng/Kg			11/27/12 12:32	1
Naphthalene	ND		0.00500	0.001	170 m	ng/Kg			11/27/12 12:32	1
Toluene	ND		0.00200	0.0007	740 m	ng/Kg			11/27/12 12:32	1
Xylenes, Total	ND		0.00500	0.0006	670 m	ng/Kg			11/27/12 12:32	1
	MD	MB								
Surrogato	MB %Recovery		Limits					Prepared	Analyzed	Dil Fac
Surrogate 1,2-Dichloroethane-d4 (Surr)	%Recovery 91	Quanner	70 - 130					Frepareo	11/27/12 12:32	Direc
4-Bromofluorobenzene (Surr)	107		70 - 130						11/27/12 12:32	1
Dibromofluoromethane (Surr)	98		70 - 130							1
	98		70 - 130						11/27/12 12:32 11/27/12 12:32	4
Toluene-d8 (Surr)	97		70 - 130						11/21/12 12:32	1
Lab Sample ID: LCS 490-39051	1/3						Clier	t Sample	ID: Lab Control	Sample
Matrix: Solid							oner	it oumpie	Prep Type: 1	
Analysis Batch: 39051									Tich Typer I	orantin
stady sto batom oboot			Spike	LCS L	CS				%Rec.	
Analyte			Added	Result C		er Unit	D	%Rec	Limits	
Benzene			0.0500	0.05012		mg/Kg		100	75 - 127	
Ethylbenzene			0.0500	0.04909		mg/Kg		98	80 - 134	
Naphthalene			0.0500	0.05516		mg/Kg		110	69 - 150	
Toluene			0.0500	0.04878		mg/Kg		98	80 - 132	
Xylenes, Total			0.150	0.1431		mg/Kg		95	80 - 137	
	LCS LCS	ifier	Limite							
L'Umonoto.	V Deceveral Dual	TIOF	Limite							

	LOG	200	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 130
4-Bromofluorobenzene (Surr)	106		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
Toluene-d8 (Surr)	95		70 - 130

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#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 490-3 Matrix: Solid	9051/4					Clie	nt San	ple ID:	Lab Contro		
Analysis Batch: 39051									Prep 1	ype: To	tal/NA
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.0500	0.05035		mg/Kg		101	75 - 127	0	50
Ethylbenzene			0.0500	0.04961		mg/Kg		99	80 - 134	1	50
Naphthalene			0.0500	0.05590		mg/Kg		112	69 - 150	1	50
Toluene			0.0500	0.04917		mg/Kg		98	80 - 132	1	50
Xylenes, Total			0.150	0.1440		mg/Kg		96	80 - 137	1	50
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		70 - 130								
4-Bromofluorobenzene (Surr)	108		70 - 130								
Dibromofluoromethane (Surr)	97		70 - 130								
Toluene-d8 (Surr)	96		70 - 130								

### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

#### Lab Sample ID: MB 490-38418/1-A Matrix: Solid Analysis Batch: 38717

#### Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 38418

rinary sis buton out in								i icp bato	
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670	0.0100	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Acenaphthylene	ND		0.0670	0.00900	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Anthracene	ND		0.0670	0.00900	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Benzo[a]anthracene	ND		0.0670	0.0150	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Benzo[a]pyrene	ND		0.0670	0.0120	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Benzo[b]fluoranthene	ND		0.0670	0.0120	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Benzo[g,h,i]perylene	ND		0.0670	0.00900	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Benzo[k]fluoranthene	ND		0.0670	0.0140	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
1-Methylnaphthalene	ND		0.0670	0.0140	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Pyrene	ND		0.0670	0.0120	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Phenanthrene	ND		0.0670	0.00900	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Chrysene	ND		0.0670	0.00900	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Dibenz(a,h)anthracene	ND		0.0670	0.00700	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Fluoranthene	ND		0.0670	0.00900	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Fluorene	ND		0.0670	0.0120	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Indeno[1,2,3-cd]pyrene	ND		0.0670	0.0100	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
Naphthalene	ND		0.0670	0.00900	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
2-Methylnaphthalene	ND		0.0670	0.0160	mg/Kg		11/23/12 11:00	11/25/12 16:31	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorabiphenyl (Surr)	66		29 - 120				11/23/12 11:00	11/25/12 16:31	1
Terphenyl-d14 (Surr)	80		13 - 120				11/23/12 11:00	11/25/12 16:31	7
Nitrobenzene-d5 (Surr)	64		27 - 120				11/23/12 11:00	11/25/12 16:31	1

Client Sample ID: 1015 Foxglove

Prep Type: Total/NA

# Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 490-38418/2-A				Client	Sample	ID: Lab Control Sample
Matrix: Solid						Prep Type: Total/NA
Analysis Batch: 38717						Prep Batch: 38418
	Spike	LCS LCS				%Rec.
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits
Acenaphthylene	1.67	1.351	mg/Kg		81	38 - 120
Anthracene	1.67	1.340	mg/Kg		80	46 - 124
Benzo[a]anthracene	1,67	1.154	mg/Kg		69	45 - 120
Benzo[a]pyrene	1.67	1.245	mg/Kg		75	45 - 120
Benzo[b]fluoranthene	1.67	1.161	mg/Kg		70	42 - 120
Benzo[g,h,i]perylene	1.67	1.397	mg/Kg		84	38 - 120
Benzo[k]fluoranthene	1.67	1.178	mg/Kg		71	42 - 120
1-Methylnaphthalene	1.67	1.171	mg/Kg		70	32 - 120
Pyrene	1.67	1.138	mg/Kg		68	43 - 120
Phenanthrene	1.67	1.325	mg/Kg		80	45 - 120
Chrysene	1.67	1,204	mg/Kg		72	43 - 120
Dibenz(a,h)anthracene	1.67	1.334	mg/Kg		80	32 - 128
Fluoranthene	1.67	1.354	mg/Kg		81	46 - 120
Fluorene	1.67	1.226	mg/Kg		74	42 - 120
Indeno[1,2,3-cd]pyrene	1.67	1.339	mg/Kg		80	41 - 121
Naphthalene	1.67	1.312	mg/Kg		79	32 - 120
2-Methylnaphthalene	1.67	1.211	mg/Kg		73	28 - 120
LCS LCS						

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	62		29 - 120
Terphenyl-d14 (Surr)	67		13 - 120
Nitrobenzene-d5 (Surr)	54		27 - 120

#### Lab Sample ID: 490-12211-1 MS Matrix: Solid

### Jucie Botch: 29747

Matrix: Solid									Lich ilbor i areautit
Analysis Batch: 38717									Prep Batch: 38418
inalysis parent earth	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acenaphthylene	ND		1,65	1.496		mg/Kg		91	25 - 120
Anthracene	ND		1.65	1.533		mg/Kg		93	28 - 125
Benzo[a]anthracene	ND		1.65	1.332		mg/Kg		81	23 - 120
Benzo[a]pyrene	ND		1,65	1,440		mg/Kg		87	15 - 128
Benzo[b]fluoranthene	ND		1.65	1.327		mg/Kg	0	80	12 - 133
Benzo[g,h,i]perylene	ND		1.65	1.546		mg/Kg	.0	94	22 - 120
Benzo[k]fluoranthene	ND		1.65	1.357		mg/Kg		82	28 - 120
1-Methylnaphthalene	ND		1.65	1.310		mg/Kg	1.1	79	10 - 120
Pyrene	ND		1.65	1.308		mg/Kg	4	79	20 - 123
Phenanthrene	ND		1,65	1.519		mg/Kg		92	21 - 122
Chrysene	ND		1.65	1.365		mg/Kg	- 8	83	20 - 120
Dibenz(a,h)anthracene	ND		1.65	1.489		mg/Kg		90	12 - 128
Fluoranthene	ND		1.65	1.523		mg/Kg	10	92	10 - 143
Fluorene	ND		1.65	1.362		mg/Kg	10	83	20 - 120
Indeno[1,2,3-cd]pyrene	ND		1.65	1.516		mg/Kg		92	22 - 121
Naphthalene	ND		1.65	1.471		mg/Kg	8	89	10 - 120
2-Methylnaphthalene	ND		1.65	1.379		mg/Kg	- ×	84	13 - 120
and the second									

120 120 120

TestAmerica Nashville

TestAmerica Job ID: 490-12211-1 SDG: 1063

Client Sample ID: 1015 Foxglove

Client Sample ID: 1015 Foxglove

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 38418

### Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-12211-1 MS Matrix: Solid Analysis Batch: 38717

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	65		29 - 120
Terphenyl-d14 (Surr)	74		13 - 120
Nitrobenzene-d5 (Surr)	59		27 - 120

#### Lab Sample ID: 490-12211-1 MSD Matrix: Solid

Analysis Batch: 38717									Prep	Batch:	38418
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthylene	ND		1.66	1.420		mg/Kg	p	86	25 - 120	5	50
Anthracene	ND		1.66	1.425		mg/Kg	<i>p</i> -	86	28 - 125	7	49
Benzo[a]anthracene	ND		1.66	1.245		mg/Kg	3P-	75	23 - 120	7	50
Benzo[a]pyrene	ND		1.66	1.366		mg/Kg	17	82	15 - 128	5	50
Benzo[b]fluoranthene	ND		1.66	1.241		mg/Kg	17	75	12 - 133	7	50
Benzo[g,h,i]perylene	ND		1.66	1.486		mg/Kg	D	90	22 - 120	4	50
Benzo[k]fluoranthene	ND		1.66	1.271		mg/Kg	- 60	77	28 - 120	7	45
1-Methylnaphthalene	ND		1.66	1.237		mg/Kg	- 0	75	10 - 120	6	50
Pyrene	ND		1.66	1.230		mg/Kg	÷	74	20 - 123	6	50
Phenanthrene	ND		1.66	1.408		mg/Kg	- 0.	85	21 - 122	8	50
Chrysene	ND		1.66	1.280		mg/Kg	1	77	20 - 120	6	49
Dibenz(a,h)anthracene	ND		1.66	1.429		mg/Kg	10	86	12 - 128	4	50
Fluoranthene	ND		1.66	1.442		mg/Kg	0	87	10 - 143	5	50
Fluorene	ND		1.66	1.277		mg/Kg	9	77	20 - 120	6	50
Indeno[1,2,3-cd]pyrene	ND		1.66	1.433		mg/Kg	9	86	22 - 121	6	50
Naphthalene	ND		1.66	1.406		mg/Kg	9	85	10 - 120	5	50
2-Methylnaphthalene	ND		1.66	1,290		mg/Kg	0	78	13 - 120	7	50
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								

Surroyate	Tokecovery	Guanner Linnis
2-Fluorobiphenyl (Surr)	59	29 - 120
Terphenyl-d14 (Surr)	67	13 - 120
Nitrobenzene-d5 (Surr)	57	27 - 120

### Method: Moisture - Percent Moisture

Lab Sample ID: 490-1218	5-C-8 DU						Client Sample ID: Dup	licate
Matrix: Solid							Prep Type: To	tal/NA
Analysis Batch: 38035								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	75		74		%		2	20

# QC Association Summary

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project

### GC/MS VOA

#### Prep Batch: 37825

1 . als manual					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12211-6	1031 Foxglove	Total/NA	Solid	5035	
Prep Batch: 37827					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12211-1	1015 Foxglove	Total/NA	Solid	5035	
490-12211-2	1361 Cardinal	Total/NA	Solid	5035	
490-12211-3	1046 Gardenia	Total/NA	Solid	5035	
490-12211-4	1024 Foxglove	Total/NA	Solid	5035	
490-12211-5	1038 Iris	Total/NA	Solid	5035	
490-12211-7	1029 Foxglove	Total/NA	Solid	5035	
Analysis Batch: 38791					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12211-1	1015 Foxglove	Total/NA	Solid	8260B	37827
490-12211-2	1361 Cardinal	Total/NA	Solid	8260B	37827
490-12211-3	1046 Gardenia	Total/NA	Solid	8260B	37827
LCS 490-38791/5	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-38791/6	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-38791/8	Method Blank	Total/NA	Solid	8260B	
Analysis Batch: 39051					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12211-4	1024 Foxglove	Total/NA	Solid	8260B	37827
490-12211-5	1038 Iris	Total/NA	Solid	8260B	37827
490-12211-6	1031 Foxglove	Total/NA	Solid	8260B	37825
490-12211-7	1029 Foxglove	Total/NA	Solid	8260B	37827
LCS 490-39051/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-39051/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-39051/6	Method Blank	Total/NA	Solid	8260B	
MB 490-39051/7	Method Blank	Total/NA	Solid	8260B	
GC/MS Semi VOA					
Prep Batch: 38418					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12211-1	1015 Foxglove	Total/NA	Solid	3550C	
490-12211-1 MS	1015 Foxglove	Total/NA	Solid	3550C	
490-12211-1 MSD	1015 Foxglove	Total/NA	Solid	3550C	
490-12211-2	1361 Cardinal	Total/NA	Solid	3550C	
490-12211-3	1046 Gardenia	Total/NA	Solid	3550C	
490-12211-4	1024 Foxglove	Total/NA	Solid	3550C	
490-12211-5	1038 Iris	Total/NA	Solid	3550C	
490-12211-6	1031 Foxglove	Total/NA	Solid	3550C	
490-12211-7	1029 Foxglove	Total/NA	Solid	3550C	
LCS 490-38418/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-38418/1-A	Method Blank	Total/NA	Solid	3550C	
Analysis Batch: 38717					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12211-1	1015 Foxglove	Total/NA	Solid	8270D	38418

TestAmerica Nashville

## **QC** Association Summary

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project

### GC/MS Semi VOA (Continued)

#### Analysis Batch: 38717 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12211-1 MS	1015 Foxglove	Total/NA	Solid	8270D	38418
490-12211-1 MSD	1015 Foxglove	Total/NA	Solid	8270D	38418
490-12211-2	1361 Cardinal	Total/NA	Solid	8270D	38418
490-12211-3	1046 Gardenia	Total/NA	Solid	8270D	38418
490-12211-4	1024 Foxglove	Total/NA	Solid	8270D	38418
490-12211-5	1038 Iris	Total/NA	Solid	8270D	38418
490-12211-6	1031 Foxglove	Total/NA	Solid	8270D	38418
490-12211-7	1029 Foxglove	Total/NA	Solid	8270D	38418
LCS 490-38418/2-A	Lab Control Sample	Total/NA	Solid	8270D	38418
MB 490-38418/1-A	Method Blank	Total/NA	Solid	8270D	38418

### General Chemistry

#### Analysis Batch: 38035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-12185-C-8 DU	Duplicate	Total/NA	Solid	Moisture	
490-12211-1	1015 Foxglove	Total/NA	Solid	Moisture	
490-12211-2	1361 Cardinal	Total/NA	Solid	Moisture	
490-12211-3	1046 Gardenia	Total/NA	Solid	Moisture	
490-12211-4	1024 Foxglove	Total/NA	Solid	Moisture	
490-12211-5	1038 Iris	Total/NA	Solid	Moisture	
490-12211-6	1031 Foxglove	Total/NA	Solid	Moisture	
490-12211-7	1029 Foxglove	Total/NA	Solid	Moisture	

## Lab Chronicle

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project

# Client Sample ID: 1015 Foxglove

Date Collected: 11/12/12 14:45 Date Received: 11/20/12 08:10

### Lab Sample ID: 490-12211-1

Lab Sample ID: 490-12211-2

Lab Sample ID: 490-12211-3

Lab Sample ID: 490-12211-4

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid Percent Solids: 96.6

Percent Solids: 85.4

Percent Solids: 77.8

Percent Solids: 86.0

	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	5035			37827	11/20/12 16:30	ML	TAL NSH	
Total/NA	Analysis	8260B		1	38791	11/26/12 18:25	KK	TAL NSH	
Total/NA	Prep	3550C			38418	11/23/12 11:00	AK	TAL NSH	
Total/NA	Analysis	8270D		1	38717	11/25/12 16:53	KP	TAL NSH	
Total/NA	Analysis	Moisture		1	38035	11/21/12 11:06	DF	TAL NSH	

## Client Sample ID: 1361 Cardinal

Date Collected: 11/12/12 14:30 Date Received: 11/20/12 08:10

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			37827	11/20/12 16:30	ML	TAL NSH
Total/NA	Analysis	8260B		1	38791	11/26/12 18:57	KK	TAL NSH
Total/NA	Prep	3550C			38418	11/23/12 11:00	AK	TAL NSH
Total/NA	Analysis	8270D		1	38717	11/25/12 17:58	KP	TAL NSH
Total/NA	Analysis	Moisture		1	38035	11/21/12 11:06	DF	TAL NSH

### Client Sample ID: 1046 Gardenia

# Date Collected: 11/13/12 13:45

Date Received: 11/20/12 08:10

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			37827	11/20/12 16:30	ML	TAL NSH
Total/NA	Analysis	8260B		1	38791	11/26/12 21:33	KK	TAL NSH
Total/NA	Prep	3550C			38418	11/23/12 11:00	AK	TAL NSH
Total/NA	Analysis	8270D		1	38717	11/25/12 18:19	KP	TAL NSH
Total/NA	Analysis	Moisture		1	38035	11/21/12 11:06	DF	TAL NSH

### Client Sample ID: 1024 Foxglove

# Date Collected: 11/13/12 13:55

Date Received:	11/20/12 08:10
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	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			37827	11/20/12 16:30	ML	TAL NSH
Total/NA	Analysis	8260B		1	39051	11/27/12 19:18	MH	TAL NSH
Total/NA	Prep	3550C			38418	11/23/12 11:00	AK	TAL NSH
Total/NA	Analysis	8270D		1	38717	11/25/12 18:41	KP	TAL NSH
Total/NA	Analysis	Moisture		1	38035	11/21/12 11:06	DF	TAL NSH

TestAmerica Nashville

### Client Sample ID: 1038 Iris Date Collected: 11/14/12 12:45 Date Received: 11/20/12 08:10

#### Lab Sample ID: 490-12211-5 Matrix: Solid

Lab Sample ID: 490-12211-6

Lab Sample ID: 490-12211-7

Matrix: Solid

Matrix: Solid

Percent Solids: 92.9

Percent Solids: 79.9

Percent Solids: 85.0

	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	5035			37827	11/20/12 16:30	ML	TAL NSH	
Total/NA	Analysis	8260B		1	39051	11/27/12 19:45	MH	TAL NSH	
Total/NA	Prep	3550C			38418	11/23/12 11:00	AK	TAL NSH	
Total/NA	Analysis	8270D		1	38717	11/25/12 19:03	KP	TAL NSH	
Total/NA	Analysis	Moisture		1	38035	11/21/12 11:06	DF	TAL NSH	

Lab Chronicle

#### Client Sample ID: 1031 Foxglove Date Collected: 11/14/12 13:30 Date Received: 11/20/12 08:10

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			37825	11/20/12 16:28	ML	TAL NSH
Total/NA	Analysis	8260B		1	39051	11/27/12 20:39	MH	TAL NSH
Total/NA	Prep	3550C			38418	11/23/12 11:00	AK	TAL NSH
Total/NA	Analysis	8270D		1	38717	11/25/12 19:24	KP	TAL NSH
Total/NA	Analysis	Moisture		1	38035	11/21/12 11:06	DF	TAL NSH

### Client Sample ID: 1029 Foxglove

## Date Collected: 11/15/12 14:45

Date Received: 11/20/12 08:10

	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	5035			37827	11/20/12 16:30	ML	TAL NSH	
Total/NA	Analysis	8260B		1	39051	11/27/12 20:12	MH	TAL NSH	
Total/NA	Prep	3550C			38418	11/23/12 11:00	AK	TAL NSH	
Total/NA	Analysis	8270D		1	38717	11/25/12 19:46	KP	TAL NSH	
Total/NA	Analysis	Moisture		1	38035	11/21/12 11:06	DF	TAL NSH	

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL NSH
Moisture	Percent Moisture	EPA	TAL NSH

#### Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

## **Certification Summary**

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project

#### Laboratory: TestAmerica Nashville

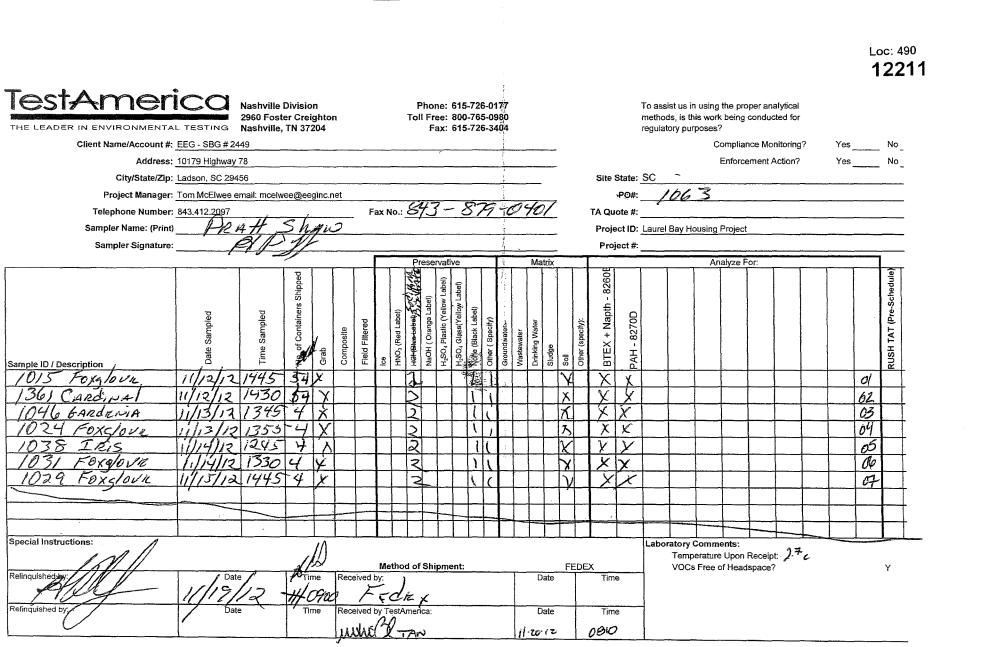
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Authority	Program	EPA Region	Certification ID 393	Expiration Date 10-30-13
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alabama	State Program	4	41150	05-31-13
Alaska (UST)	State Program	10	UST-087	07-24-13
Arizona	State Program	9	AZ0473	05-05-13
Arkansas DEQ	State Program	6	88-0737	04-25-13
California	NELAC	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Colorado	State Program	8	N/A	02-28-13
	State Program	1	PH-0220	12-31-13
Connecticut	NELAC	4	E87358	06-30-13
Florida	NELAC	5	200010	12-09-12
Illinois		7	131	05-01-14
lowa	State Program	7	E-10229	10-31-13
Kansas	NELAC	4	90038	12-31-12
Kentucky	State Program		19	09-15-13
Kentucky (UST)	State Program	4	LA120025	12-31-12
Louisiana	NELAC	6		06-30-13
Louisiana	NELAC	6	30613	
Maryland	State Program	3	316	03-31-13
Massachusetts	State Program	1	M-TN032	06-30-13
Minnesota	NELAC	5	047-999-345	12-31-12
Mississippi	State Program	4	N/A	06-30-13
Montana (UST)	State Program	8	NA	D1-01-15
Nevada	State Program	9	TN00032	07-31-13
New Hampshire	NELAC	1	2963	10-09-13
New Jersey	NELAC	2	TN965	06-30-13
New York	NELAC	2	11342	04-01-13
North Carolina DENR	State Program	4	387	12-31-12
North Dakota	State Program	8	R-146	06-30-13
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-13
Oregon	NELAC	10	TN200001	04-30-13
Pennsylvania	NELAC	3	68-00585	06-30-13
Rhode Island	State Program	1	LA000268	12-30-12
South Carolina	State Program	4	84009 (001)	02-28-13
South Carolina	State Program	4	84009 (002)	02-23-14
Tennessee	State Program	- 4	2008	02-23-14
Texas	NELAC	6	T104704077-09-TX	08-31-13
JSDA	Federal		S-48469	11-02-13
	NELAC	8	TAN	06-30-13
Utah	NELAC	3	460152	06-14-13
Virginia	State Program	10	C789	07-19-13
Washington	State Program	3	219	02-28-13
West Virginia DEP	State Program	5	998020430	08-31-13
Wisconsin		8	453.07	12-31-13
Wyoming (UST)	A2LA	0	400.01	12 01 10

TestAmerica		Charleston
the leader in environmental testing Nashville, TN	COOLER RECEIPT FORM	
Cooler Received/Opened On 11/20/2012	0.0810	490-12211 Chain of Custody
1. Tracking # (023)	_(last 4 digits, FedEx)	,
Courier: FedEx IR Gun ID 14740456		
2. Temperature of rep. sample or temp	blank when opened: 📈 🕇 Degrees Celsius	
3. If Item #2 temperature is 0°C or less,	was the representative sample or temp blank frozen	? YES NO NA
<ol> <li>Were custody seals on outside of con If yes, how many and where:</li> </ol>	oler? 2 Front/Back	YES. NONA
5. Were the seals intact, signed, and da	ted correctly?	YES.NONA
6. Were custody papers inside cooler?	-	YES.NONA
I certify that I opened the cooler and ans	swered questions 1-6 (intial)	- F
7. Were custody seals on containers:	YES (NO) and Intact	YESNO. (NA)
Were these signed and dated correct	ly?	YESNO.
8. Packing mat'l used? Bubblewrap Pl	lastic bag Peanuts Vermiculite Foam Insert Pap	er Other None
9. Cooling process:	/ (CP) Ice-pack Ice (direct contact) Dry ic	ce Other None
10. Did all containers arrive in good con	ndition (unbroken)?	ENONA
11. Were all container labels complete (	#, date, signed, pres., etc)?	YES NO NA
12. Did all container labels and tags agr	ee with custody papers?	ESNONA
13a. Were VOA vials received?		ESNONA
b. Was there any observable headspa	ce present in any VOA vial?	YES NO NA
14. Was there a Trip Blank in this cooler	? YES	nce #
I certify that I unloaded the cooler and ar	nswered guestions 7-14 (intial)	
15a. On pres'd bottles, did pH test strips	s suggest preservation reached the correct pH level	? YESNO
b. Did the bottle labels indicate that t	he correct preservatives were used	ESNONA
16. Was residual chlorine present?		YESNO
I certify that I checked for chlorine and p	H as per SOP and answered guestions 15-16 (intial)	Ŵ
17. Were custody papers properly filled	out (ink, signed, etc)?	ESNONA
18. Did you sign the custody papers in t	he appropriate place?	ES)NA
19. Were correct containers used for the	analysis requested?	TESNONA
20. Was sufficient amount of sample ser	nt in each container?	ESNONA
I certify that I entered this project into LI	MS and answered questions 17-20 (intial)	
I certify that I attached a label with the un	ique LIMS number to each container (intial)	æ
21. Were there Non-Conformance issues	at login? YES. NO Was a PIPE generated? YES	.NO#

i.

,



S. and

11/30/2012

Client: Environmental Enterprise Group

#### Login Number: 12211

List Number: 1 Creator: McBride, Mike

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a<br survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

#### Job Number: 490-12211-1 SDG Number: 1063

6

List Source: TestAmerica Nashville

## ATTACHMENT A

4

NON-HAZARDOUS MANIFEST         1. Generator's US EPA ID No.         Manifest Doc No.				: No.	2. Page 1						
3. Generator's Mailing Address: MCAS, BEAUFORT		Generator's Site Address (If different than mailing			A. Manife	l est Number <b>/MNA</b>	0031	6842			
LAUREL BAY HOUSING BEAUFORT, SC 29907 4. Generator's Phone 843-2	28-6461					B. State	Generator				
5. Transporter 1 Company Name EEG, INC.		6. US	EPA ID Number		C. State T	ransporter's I	D				
7. Transporter 2 Company Name		8. US	EPA ID Number		E. State T	orter's Phone		-879-04:	11		
9. Designated Facility Name and Site Address HICKORY HILL LANDFILL 2621 LOW COUNTRY ROAD		10. US	10. US EPA ID Number				F. Transporter's Phone G. State Facility ID H. State Facility Phone 843-987-4643				
RIDGELAND, SC 29936		12. C	ontainers	13. Total	14. Unit						
11. Description of Waste Materials a. HEATING OIL TANKS FILLED		No.	Туре	Quantity	Wt./Vol.	l.	Misc. Comme	ents			
WM Prof	le # 102655S(	2									
b.											
WM Profile #											
WM Profile #	<u></u>	<u></u>			-						
						· · ·					
	WM Profile # Additional Descriptions for Materials Listed Above			K. Disposal Location							
			Cell Grid				Level	1			
15. Special Handling Instructions and Additional Information 437's from: 2) 1046 GARDENIA 4) 1038 IRIS 6) 1029 Foxylou 1) 1361 CARDINAL 3) 1024 Foxyloup 5) 1031 Foxylour											
Purchase Order #		EMERGENC	Y CONTACT / PH	ONE NO.:				····			
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.											
Printed Name		Signature "On	behalf of"				Month	Day	Yea		
17. Transporter 1 Acknowledgement of Receipt of Materials       Printed Name       Signature       Signature       ArroES			<u>. A. S. C.</u>	() J.	р. — — — — — — — — — — — — — — — — — — —		Month	Day 10	Yea		
8. Transporter 2 Acknowledgement o Printed Name	r Keceipt of Mater	Signature					Month	Day	Yea		
<ol> <li>Certificate of Final Treatment/Disp certify, on behalf of the above listed to oplicable laws, regulations, permits ar</li> </ol>	eatment facility, t		owledge, the ab	ove-describe	ed waste wa	s managed in	compliant	ce with all	I		
0. Facility Owner or Operator: Certifi		f non-hazardous materi	ils covered by th	is manifest.	~ ~ ~						
Printed-Name		Signature	and a strange state of the second strange	man figure			Month	Day	Year		

Appendix C Laboratory Analytical Report - Groundwater



## Volatile Organic Compounds by GC/MS

8260B

8260B

0.48 U

0.57 U 5.0

5.0

0.48

0.57

0.24

0.32

Client: AECOM - Re	Client: AECOM - Resolution Consultants						Laboratory ID: QK20097-006					
Description: BEALB1031	Matrix: Aqueous											
Date Sampled:11/19/2015 1	335											
Date Received: 11/20/2015												
RunPrep Method15030B	Analytical Method 8260B	Dilution 1		sis Date Analyst 2015 1943 ALL	Prep	Date	<b>Batch</b> 91002					
Parameter		( Num	CAS nber	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Ru	
Benzene		71-4	43-2	8260B	0.45	U	5.0	0.45	0.21	ug/L	1	
Ethylbenzene		100-4	41-4	8260B	0.51	U	5.0	0.51	0.21	ug/L	1	
Naphthalene		91-2	20-3	8260B	0.20	BJ	5.0	0.96	0.14	ug/L	1	

108-88-3

1330-20-7

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		100	75-120
1,2-Dichloroethane-d4		107	70-120
Toluene-d8		106	85-120
Dibromofluoromethane		105	85-115

Toluene

Xylenes (total)

PQL = Practical quantitation limit B = Detected in the method blank E = Quantitation of compound exceeded the calibration range H = Out of holding time Q = Surrogate failure ND = Not detected at or above the MDL  $J = Estimated result < PQL and \ge MDL$  $\mathsf{P}=\mathsf{The}\;\mathsf{RPD}\;\mathsf{between}\;\mathsf{two}\;\mathsf{GC}\;\mathsf{columns}\;\mathsf{exceeds}\;40\%$ N = Recovery is out of criteria L = LCS/LCSD failure S = MS/MSD failure Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Shealy Environmental Services, Inc. 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com 1

1

ug/L

ug/L

#### Client: AECOM - Resolution Consultants

Description: BEALB1031TW01WG20151119

Laboratory ID: QK20097-006

Date Sampled:11/19/2015 1335

Matrix: Aqueous

#### Date Received: 11/20/2015

RunPrep Method13520C	Analytical Method D 8270D (SIM)		<b>ysis Date Analyst</b> /2015 2352 RBH	•	<b>Date B</b> 015 1615 90	<b>atch</b> 0443				
Parameter		CAS Number	Analytical Method	Result	QI	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene		56-55-3	8270D (SIM)	0.040	U	0.20	0.040	0.019	ug/L	1
Benzo(b)fluoranthene		205-99-2	8270D (SIM)	0.040	U	0.20	0.040	0.019	ug/L	1
Benzo(k)fluoranthene		207-08-9	8270D (SIM)	0.040	U	0.20	0.040	0.024	ug/L	1
Chrysene		218-01-9	8270D (SIM)	0.040	U	0.20	0.040	0.021	ug/L	1
Dibenzo(a,h)anthracene		53-70-3	8270D (SIM)	0.080	U	0.20	0.080	0.040	ug/L	1
Surrogate		un 1 Accept covery Lir	ance nits							
2-Methylnaphthalene-d10		55 15-1	139							
Fluoranthene-d10		67 23-1	154							

PQL = Practical quantitation limitB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeH = Out of holding timeQ = Surrogate failureND = Not detected at or above the MDLJ = Estimated result < PQL and ≥ MDL</td>P = The RPD between two GC columns exceeds 40%N = Recovery is out of criteriaL = LCS/LCSD failureWhere applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"S = MS/MSD failureS = MS/MSD failure

Shealy Environmental Services, Inc.106 Vantage Point DriveWest Columbia, SC 29172(803) 791-9700Fax (803) 791-9111www.shealylab.com

Appendix D Regulatory Correspondence





Catherine E. Heigel, Director Promoting and protecting the health of the public and the environment

July 1, 2015

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

RE: IGWA Laurel Bay Underground Storage Tank Assessment Reports for: See attached sheet

Dear Mr. Drawdy,

The South Carolina Department of Health and Environmental Control (the Department) received the referenced Underground Storage Tank Assessment Reports for the addresses listed above. The regulatory authority for the investigation and cleanup of releases from these tank systems is the South Carolina Pollution Control Act (S.C. Code Ann. §48-1-10 <u>et seq.</u>, as amended).

The Department has reviewed the referenced assessment reports. The submitted analytical results indicate that petroleum constituents are above established Risk-Based Screening Levels and additional investigation is warranted. Specifically, the Department requests that a groundwater sampling proposal be generated to determine if there has been an impact to groundwater at this site.

Please note that the Department's decision is based on information provided by the Marine Corps Air Station (MCAS) to date. Any information found to be contradictory to this decision may require additional action. Furthermore, the Department retains the right to request further investigation if deemed necessary.

If you have any questions, please contact me at kriegkm@dhec.sc.gov or 803-898-0255.

Sincerely,

that M. They

Kent Krieg Department of Defense Corrective Action Section Bureau of Land and Waste Management South Carolina Department of Health and Environmental Control

Cc: Russell Berry (via email) Craig Ehde (via email) Bryan Beck (via email)



Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

Attachment to:

Krieg to Drawdy Subject: IGWA Dated 7/1/2015

### Laurel Bay Underground Storage Tank Assessment Reports for: (97 addresses/110 tanks)

118 Banyan	343 Ash Tank 2
126 Banyan	344 Ash Tank 2
127 Banyan	347 Ash Tank 2
130 Banyan Tank 1	378 Aspen Tank 2
141 Laurel Bay	379 Aspen
151 Laurel Bay	382 Aspen Tank 1
224 Cypress	382 Aspen Tank 2
227 Cypress	394 Acorn Tank 2
256 Beech Tank 2	400 Elderberry
257 Beech Tank 1	432 Elderberry
257 Beech Tank 2	436 Elderberry
264 Beech	473 Dogwood Tank 2
265 Beech Tank 2	482 Laurel Bay
265 Beech Tank 3	517 Laurel Bay
275 Birch	586 Aster
277 Birch Tank 1	632 Dahlia
285 Birch	639 Dahlia Tank 2
292 Birch Tank 3	643 Dahlia Tank 1
297 Birch	644 Dahlia Tank 1
301 Ash	644 Dahlia Tank 2
306 Ash	646 Dahlia Tank 1
310 Ash Tank 1	646 Dahlia Tank 2
313 Ash	665 Camellia
315 Ash Tank 2	699 Abelia
316 Ash	744 Blue Bell
319 Ash	745 Blue Bell Tank 1
320 Ash	747 Blue Bell Tank 1
321 Ash	747 Blue Bell Tank 2
329 Ash	747 Blue Bell Tank 3
330 Ash Tank 2	749 Blue Bell Tank 1
331 Ash	749 Blue Bell Tank 2
332 Ash	751 Blue Bell
333 Ash	762 Althea
335 Ash Tank 1	765 Althea Tank 2
335 Ash Tank 2	766 Althea Tank 4
341 Ash	767 Althea Tank 1
342 Ash Tank 1	768 Althea Tank 2
342 Ash Tank 2	768 Althea Tank 3

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL 2600 Bull Street • Columbia, SC 29201 • Phone: (803) 898-3432 • www.scdhec.gov Laurel Bay Underground Storage Tank Assessment Reports for: (98 addresses/110 tanks) cont.

768 Althea Tank 4	1067 Gardenia
769 Althea Tank 1	1077 Heather
769 Althea Tank 2	1081 Heather
775 Althea	1101 Iris Tank 2
819 Azalea	1104 Iris
840 Azalea	1105 Iris Tank 2
878 Cobia	1124 Iris Tank 2
891 Cobia	1142 Iris Tank 2
913 Barracuda	1146 Iris Tank 2
916 Barracuda	1218 Cardinal
923 Albacore	1240 Dove
1004 Bobwhite	1266 Dove
1022 Foxglove	1292 Eagle
1031 Foxglove	1299 Eagle Tank 1
1034 Foxglove Tank 2	1302 Eagle
1061 Gardenia Tank 3	1336 Albatross
1064 Gardenia	1351 Cardinal



Catherine E. Heigel, Director Promoting and protecting the health of the public and the environment

> Division of Waste Management Bureau of Land and Waste Management

June 8, 2016

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

RE: Approval and Concurrence with Draft Final Initial Groundwater Investigation Report-November and December 2015 Laurel Bay Military Housing Area Multiple Properties Dated April 2015

Dear Mr. Drawdy,

The South Carolina Department of Health and Environmental Control (the Department) received groundwater data in the above referenced Groundwater Investigation Report for the attached addresses on May 2, 2016. The regulatory authority for the investigation and cleanup of releases from these tank systems is the South Carolina Pollution Control Act (S.C. Code Ann. §48-1-10 et seq., as amended).

Per the Department's request, groundwater samples were collected from the attached referenced addresses. The Department reviewed the groundwater data and previous investigations and it agrees with the conclusions and recommendations included in the document. To further assess the impact to groundwater, permanent wells should be installed at the 15 stated addresses. For the remaining 80 addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time.

Please note that the Department's decision is based on information provided by the Marine Corps Air Station (MCAS) to date. Any information found to be contradictory to this decision may require additional action. Furthermore, the Department retains the right to request further investigation if deemed necessary.

If you have any questions, please contact me at petruslb@dhec.sc.gov or 803-898-0294.

Sincerely,

LISTS

Laurel Petrus RCRA Federal Facilities Section

Attachment: Specific Property Recommendations

Cc: Russell Berry, EQC Region 8 (via email) Shawn Dolan, Resolution Consultants (via email) Bryan Beck, NAVFAC MIDATLANTIC (via email) Craig Ehde (via email) Attachment to: Petrus to Drawdy

Subject: Draft Final Initial Groundwater Investigation Report-November and December 2015 Specific Property Recommendations Dated June 8, 2016

## Draft Final Initial Groundwater Investigation Report for (95 addresses)

Permanent Monitoring Well Investigation recommendation (15 addresses)		
130 Banyan Drive	473 Dogwood Drive	
256 Beech Street	747 Blue Bell Lane	
285 Birch Drive	749 Blue Bell Lane	
292 Birch Drive	775 Althea Street	
330 Ash Street	1034 Foxglove Street	
331 Ash Street	1104 Iris Lane	
335 Ash Street	1124 Iris Lane	
342 Ash Street		
2 - 10-1		

118 Banyan Drive	644 Dahlia Drive	
126 Banyan Drive	646 Dahlia Drive	
127 Banyan Drive	665 Camellia Drive	
141 Laurel Bay Blvd	699 Abelia Street	
151 Laurel Bay Blvd	744 Blue Bell Lane	10
224 Cypress Street	745 Blue Bell Lane	
227 Cypress Street	751 Blue Bell Lane	
257 Beech Street	762 Althea Street	
264 Beech Street	765 Althea Street	
265 Beech Street	766 Althea Street	
275 Birch Drive	767 Althea Street	
277 Birch Drive	768 Althea Street	
297 Birch Drive	769 Althea Street	
301 Ash Street	819 Azalea Drive	
306 Ash Street	840 Azalea Drive	
310 Ash Street	878 Cobia Drive	
313 Ash Street	891 Cobia Drive	
315 Ash Street	913 Barracuda Drive	
316 Ash Street	916 Barracuda Drive	
319 Ash Street	923 Wren Lane	
320 Ash Street	1004 Bobwhite Drive	
321 Ash Street	1022 Foxglove Street	
329 Ash Street	1031 Foxglove Street	
332 Ash Street	1061 Gardenia Drive	
333 Ash Street	1064 Gardenia Drive	
341 Ash Street	1067 Gardenia Drive	
347 Ash Street	1077 Heather Street	
378 Aspen Street	1081 Heather Street	
379 Aspen Street	1101 Iris Lane	
382 Aspen Street	1105 Iris Lane	
394 Acorn Street	1142 Iris Lane	
400 Elderberry Drive	1146 Iris Lane	
432 Elderberry Drive	1218 Cardinal Lane	
436 Elderberry Drive	1240 Dove Lane	
482 Laurel Bay Blvd	1266 Dove Lane	
517 Laurel Bay Blvd	1292 Eagle Lane	
586 Aster Street	1299 Eagle Lane	
632 Dahlia Drive	1302 Eagle Lane	
639 Dahlia Drive	1336 Albatross Drive	
643 Dahlia Drive	1351 Cardinal Lane	

Attachment to: Petrus to Drawdy Subject: Draft Final Initial Groundwater Investigation Report-November and December 2015 Specific Property Recommendations Dated June 8, 2016, Page 2