SUMMARY REPORT 121 WEST CARDINAL LANE (FORMERLY 1212 WEST CARDINAL LANE) 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 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane) 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 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane). 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 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 1212 West Cardinal Lane* (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 – February and March 2017* (Resolution Consultants, 2017). 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 April 15, 2013, a single 280 gallon heating oil UST was removed from the concrete porch area at 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane). 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 6'6" 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 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated August 24, 2016, SCDHEC requested an IGWA for 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix D.

2.3 Groundwater Sampling

On March 8, 2017, a temporary monitoring well was installed at 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane), in accordance with the South Carolina Well Standards and Regulations (R.61-71.H-I, updated June 24, 2016). In order to provide data that can be used to determine whether COPCs are migrating to underlying groundwater, the monitoring well was placed in the same general location as the former heating oil UST. The former UST location is indicated in the Figures 2 and 3 of the UST Assessment Report (Appendix B). Further details are provided in the *Initial Groundwater Investigation Report – February and March 2017* (Resolution Consultants, 2017).



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 – February and March 2017* (Resolution Consultants, 2017).

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 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane) 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 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane). This NFA determination was obtained in a letter dated July 27, 2017. 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 1212 West Cardinal Lane, Laurel Bay Military Housing Area*, October 2013.
- Resolution Consultants, 2017. *Initial Groundwater Investigation Report February and March* 2017 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina, June 2017.



- 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 - Soil121 West Cardinal Lane (Formerly 1212 West Cardinal Lane)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

Constituent	ConstituentSCDHEC RBSLs (1)Results Sample Collected 04/15/1					
Volatile Organic Compounds Analyze	d by EPA Method 8260B (mg/kg)					
Benzene	0.003	ND				
Ethylbenzene	1.15	ND				
Naphthalene	0.036	ND				
Toluene	0.627	ND				
Xylenes, Total	13.01	ND				
Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)						
Benzo(a)anthracene	Benzo(a)anthracene 0.66 ND					
Benzo(b)fluoranthene	0.66	ND				
Benzo(k)fluoranthene	0.66	ND				
Chrysene	0.66	0.0644				
Dibenz(a,h)anthracene	0.66	ND				

Notes:

⁽¹⁾ 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 121 West Cardinal Lane (Formerly 1212 West Cardinal Lane) Laurel Bay Military Housing Area Marine Corps Air Station Beaufort Beaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Site-Specific Groundwater VISLs (µg/L) ⁽²⁾	Results Sample Collected 03/08/17		
Volatile Organic Compounds Analyzed	i by EPA Method 8260B (µg	/L)			
Benzene	5	16.24	ND		
Ethylbenzene	700	45.95	ND		
Naphthalene	25	29.33	ND		
Toluene	1000	105,445	ND		
Xylenes, Total	10,000	2,133	ND		
Semivolatile Organic Compounds Ana	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:

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

⁽²⁾ Site-specific groundwater VISLs were calculated using the EPA JE Model Spreadsheets (Version 3.1, February 2004) and conservative modeling inputs representative of a small single-story house with an 8 foot ceiling. Site-specific groundwater VISLs were developed based on a target risk level of 1x10⁻⁶, a target hazard quotient of 1 (per target organ), and a default residential exposure scenario, assuming exposure for 24 hours/day, 350 days/year, for 26 years. Modeling was performed for a range of depths to groundwater for application as appropriate in different areas of the Laurel Bay Military Housing Area. The most conservative levels are presented for comparison. Refer to Appendix H of the Uniform Federal Policy Sampling Analysis and Sampling Plan for Vapor Media, Revision 4 (Resolution Consultants, April 2017) for additional information.

Bold font indicates the analyte was detected.

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

EPA - United States Environmental Protection Agency

JE - Johnson & Ettinger

NA - Not Applicable

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

RBSL - Risk-Based Screening Level

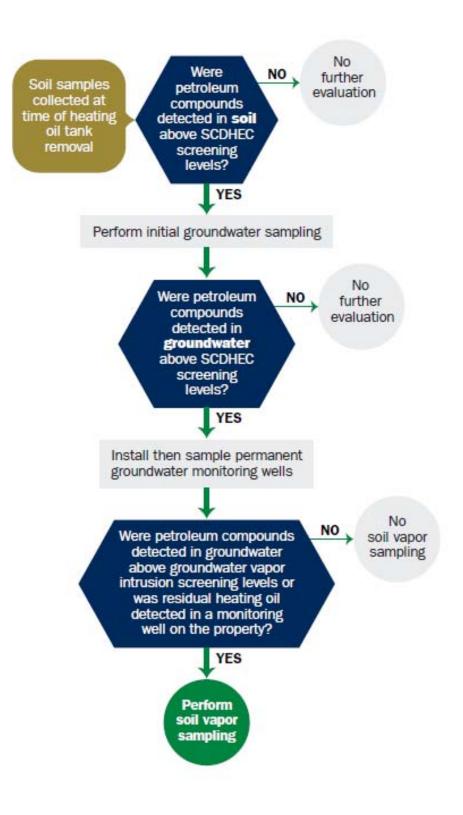
SCDHEC - South Carolina Department Of Health and Environmental Control

µg/L - micrograms per liter

VISL - Vapor Intrusion Screening Level

Appendix A Multi-Media Selection Process for LBMH





Appendix A - Multi-Media Selection Process for LBMH

Appendix B UST Assessment Report



Attachment 1

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

Land & Waste Management 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 Area Code]	DCT 2 3 2013 CDHEC - Bureau of	Submit Completed Form To: UST Program SCDHEC 2600 Bull Street Columbia, South Carolina 29201 Telephone (803) 896-7957
MCAS Beaufort, Commanding Officer Attn: NREAO (Craig Ehde) Owner Name (Corporation, Individual, Public Agency, Other) P.O. Box 55001 Mailing Address Beaufort, South Carolina City State 843 228-7317 Craig Ehde			
Owner Name (Corporation, Individual, Public Agency, Other)P.O. Box 55001Mailing AddressBeaufort,South CarolinaCityState843228-7317Craig Ehde		I. OWNERSHIP	JF USI (5)
Beaufort,South Carolina29904-5001CityStateZip Code843228-7317Craig Ehde	Owner Name (Corporation P.O. Box 55001		EAO (Craig Ehde)
City State Zip Code 843 228-7317 Craig Ehde		201020000	
843 228-7317 Craig Ehde			
	City	State	Zip Code
Area Code Telephone Number Contact Person	843		
	Area Code	Telephone Number	Contact Person

II. SITE IDENTIFICATION AND LOCATION

D	
Permit I.D. #	ary Housing Area, Marine Corps Air Station, Beaufort, SC
Facility Name or Compan	Cite Identifier
Facinity Name of Compan	y Site Identifier
1212 Cardinal La	ne, Laurel Bay Military Housing Area
Street Address or State Ro	ad (as applicable)
Beaufort,	Beaufort
City	County
N 57	

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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	

	VI. UST INFORMATION	1212 Cardinal
А.	Product(ex. Gas, Kerosene)	Heating oil
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 80s
F.	Depth (ft.) To Base of Tank	6'6"
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	4/15/2013
K.	Visible Corrosion or Pitting Y/N	Yes
L.	Visible Holes Y/N	Yes

Method of disposal for any USTs removed from the ground (attach disposal manifests) M. UST 1212Cardinal was removed from the ground and disposed

at a Subtitle "D" landfill. See Attachment "A".

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

UST 1212Cardinal was previously filled with sand by others.

0. 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

		1212 Cardinal
		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	No
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, de	scribe the location and extent for each piping run.

Corrosion and pitting were found on the surface of the steel vent pipe. 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
 A. Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells? If yes, indicate depth and location on the site map. 		Х	
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?		x	
If yes, how far below land surface (indicate location and depth)?			
 D. Did contaminated soils remain stockpiled on site after closure? If yes, indicate the stockpile location on the site map. Name of DHEC representative authorizing soil removal: 		х	
E. Was a petroleum sheen or free product detected on any excavation or boring waters?If yes, indicate location and thickness.		x	

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

В.

Sample #	Location	Sample Type	Soil Type	Depth*	Date/Time of		OVA #
		(Soil/Water)	(Sand/Clay)	<u> </u>	Collection	by	
1212 Cardinal	Excav at fill end	Soil	Sandy	6'6"	4/15/13 1515 hrs	P. Shaw	
					1010 1110		
			en				
8							
9			400 <u> </u>				
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.

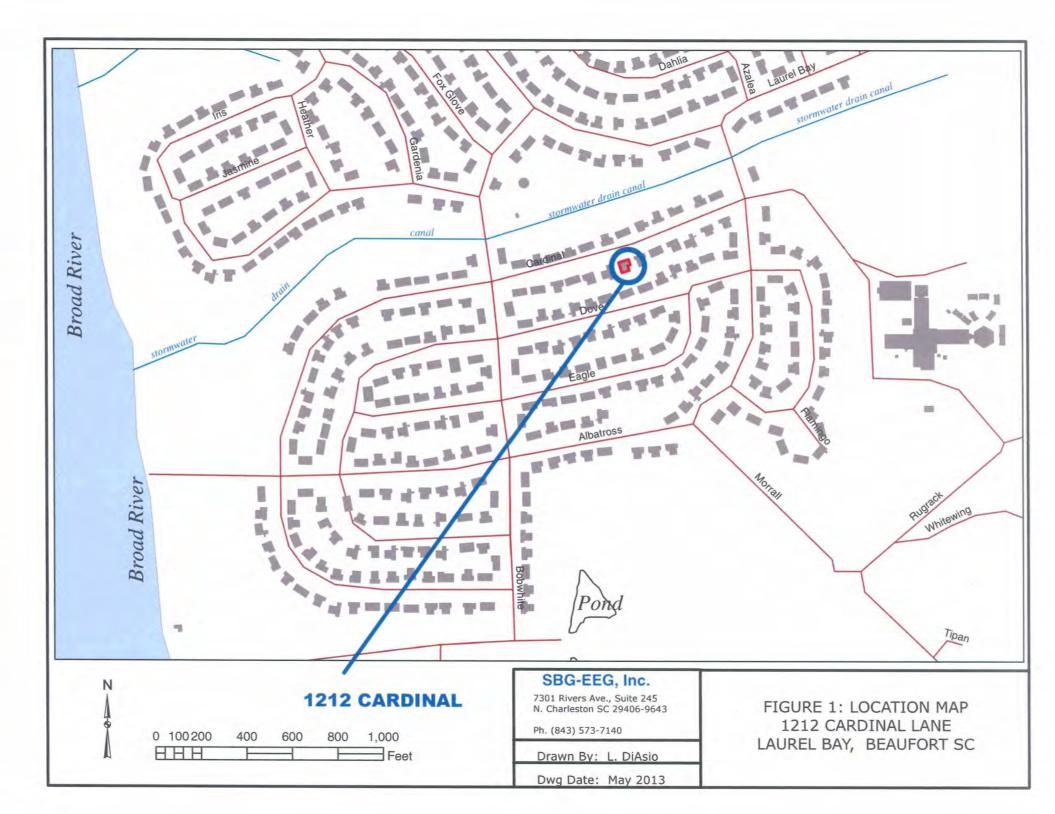
XII. RECEPTORS

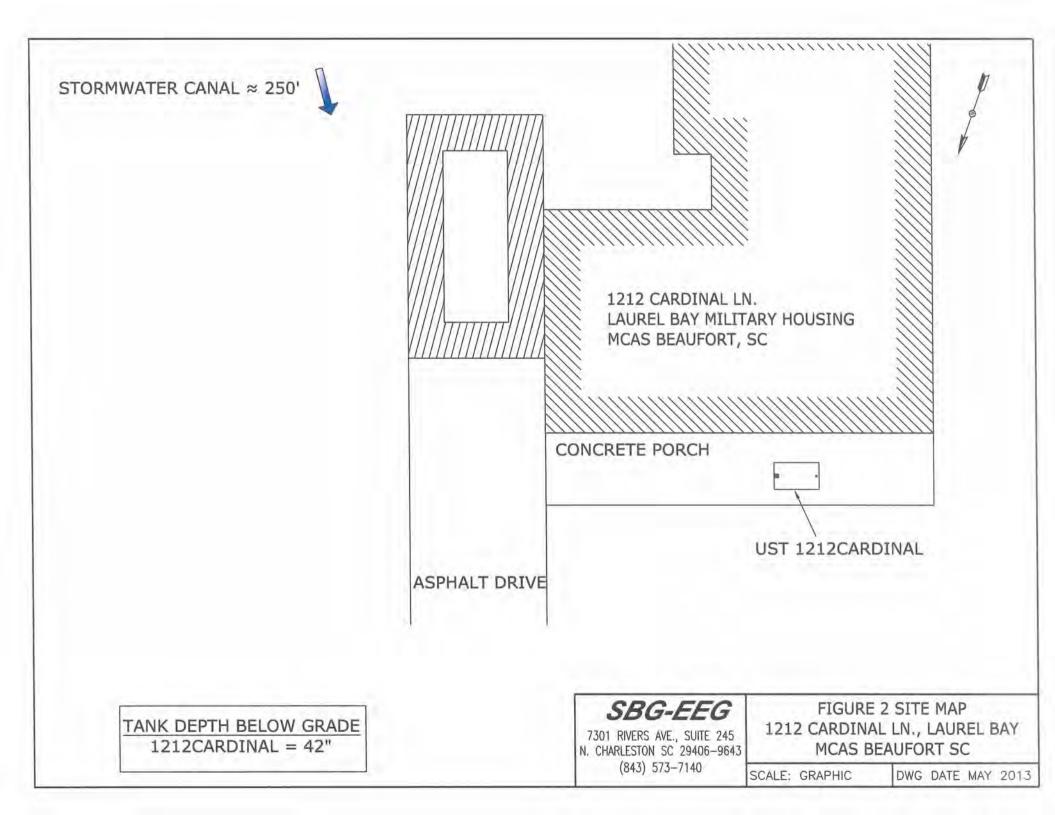
		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?	*Х	
	*Stormwater draina	ige ca	nal
	If yes, indicate type of receptor, distance, and direction on site map.		
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the 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 & g If yes, indicate the type of utility, distance, and direction on the site map.	-	rmal
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.		

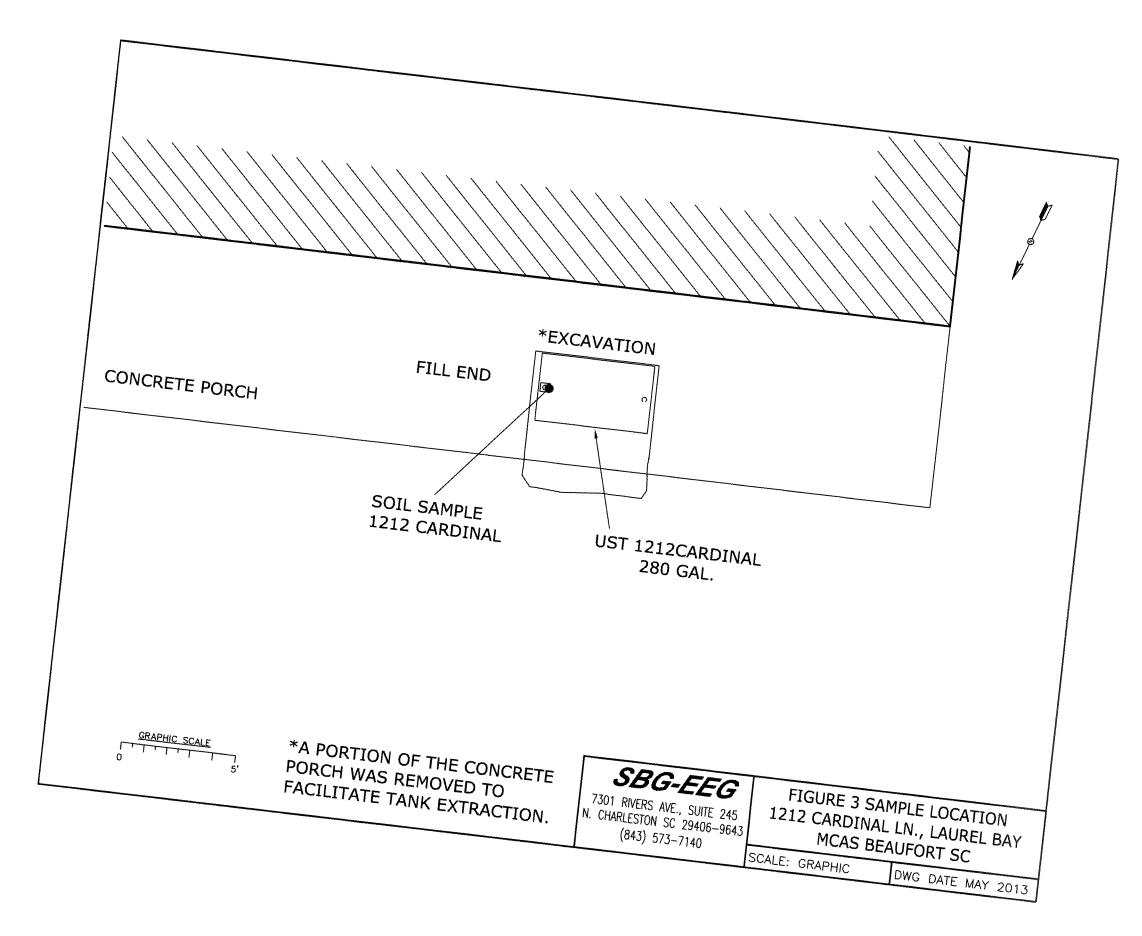
XIII. SITE MAP

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: Location of UST 1212Cardinal.



Picture 2: UST 1212Cardinal excavation.

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.

					<u> </u>	
CoC UST	1212Cardina	1				
Benzene	NI	כ				
Toluene	N	D				
Ethylbenzene	NI	D				
Xylenes	N	D				
Naphthalene	N	D				
Benzo (a) anthracene	NI	D				
Benzo (b) fluoranthene	NI	D				
Benzo (k) fluoranthene	NI	D	-			
Chrysene	0.0644 mg/kg	3				
Dibenz (a, h) anthracene	NI	2				
TPH (EPA 3550)						
				¥		 1
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: 490-25044-1 Client Project/Site: EEG Laurel Bay Site

For:

LINKS

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Have a Question?

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The

www.testamericainc.com

Visit us at:

Expert

Environmental Enterprise Group 10179 Highway 78 Ladson, South Carolina 29456

Attn: Mr. Tom McElwee

Kuth Hay

Authorized for release by: 4/30/2013 4:38:58 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.

EPO c.

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2

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

3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	193532
490-25044-1	1212 Cardinal	Solid	04/15/13 15:15	04/24/13 08:15	
490-25044-2	1266 Dove	Solid	04/16/13 15:15	04/24/13 08:15	
490-25044-3	1424 Albatross	Solid	04/17/13 15:45	04/24/13 08:15	
490-25044-4	1285 Dove	Solid	04/16/13 14:45	04/24/13 08:15	
490-25044-5	1245 Dove	Solid	04/17/13 14:15	04/24/13 08:15	
490-25044-6	1445 Dove	Solid	04/18/13 13:45	04/24/13 08:15	

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

Job ID: 490-25044-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-25044-1

Comments No additional comments.

Receipt

The samples were received on 4/24/2013 8:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

GC/MS VOA

Method(s) 8260B: The method blank for batch 74897 contained naphthalene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following sample(s): 1212 Cardinal (490-25044-1), 1245 Dove (490-25044-5). The sample(s) shows evidence of matrix interference.

Method(s) 8260B: The following sample(s) was diluted due to the nature of the sample matrix: 1212 Cardinal (490-25044-1), 1245 Dove (490-25044-5). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: 1245 Dove (490-25044-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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,

an approximate value.

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

5

Qualifiers

GC/MS 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.
х	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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
D.	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. Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
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: 1212 Cardinal

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

Date Collected: 04/15/13 15:15 Date Received: 04/24/13 08:15 TestAmerica Job ID: 490-25044-1

6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00237	0.000794	mg/Kg	12	04/24/13 18:04	04/26/13 14:01	1
Ethylbenzene	ND		0.00237	0.000794	mg/Kg	10	04/24/13 18:04	04/26/13 14:01	1
Naphthalene	ND		0.374	0.127	mg/Kg	100	04/24/13 17:29	04/26/13 15:02	3
Toluene	ND		0.00237	0.000877	mg/Kg	नां	04/24/13 18:04	04/26/13 14:01	i i
Xylenes, Total	ND		0.00592	0.000794	mg/Kg	đ	04/24/13 18:04	04/26/13 14:01	ť
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		70 - 130				04/24/13 18:04	04/26/13 14:01	1
1,2-Dichloroethane-d4 (Surr)	96		70 - 130				04/24/13 17:29	04/26/13 15:02	1
4-Bromofluorobenzene (Surr)	127		70 - 130				04/24/13 18:04	04/26/13 14:01	1
4-Bromofluorobenzene (Surr)	94		70 - 130				04/24/13 17:29	04/26/13 15:02	1
Dibromofluoromethane (Surr)	111		70 - 130				04/24/13 18:04	04/26/13 14:01	1
Dibromofluoromethane (Surr)	92		70 - 130				04/24/13 17:29	04/26/13 15:02	7
Toluene-d8 (Surr)	107		70 - 130				04/24/13 18:04	04/26/13 14:01	7
Toluene-d8 (Surr)	99		70 - 130				04/24/13 17:29	04/26/13 15:02	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	S)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0846	0.0126	mg/Kg	13	04/25/13 08:27	04/25/13 18:19	1
Acenaphthylene	ND		0.0846	0.0114	mg/Kg	73	04/25/13 08:27	04/25/13 18:19	1
Anthracene	ND		0.0846	0.0114	mg/Kg	12	04/25/13 08:27	04/25/13 18:19	1
Benzo[a]anthracene	ND		0.0846	0.0189	mg/Kg	17	04/25/13 08:27	04/25/13 18:19	1
Benzo[a]pyrene	ND		0.0846	0.0151	mg/Kg	12	04/25/13 08:27	04/25/13 18:19	1
Benzo[b]fluoranthene	ND		0.0846	0.0151	mg/Kg	13	04/25/13 08:27	04/25/13 18:19	1
Benzo[g,h,i]perylene	ND		0.0846	0.0114	mg/Kg		04/25/13 08:27	04/25/13 18:19	1
Benzo[k]fluoranthene	ND		0.0846	0.0177	mg/Kg	- 17	04/25/13 08:27	04/25/13 18:19	1
1-Methylnaphthalene	ND		0.0846	0.0177	mg/Kg	-12	04/25/13 08:27	04/25/13 18:19	1
Pyrene	ND		0.0846	0.0151	mg/Kg	.10	04/25/13 08:27	04/25/13 18:19	1
Phenanthrene	ND		0.0846	0.0114	mg/Kg	.0	04/25/13 08:27	04/25/13 18:19	1
Chrysene	0.0644	J	0.0846	0.0114	mg/Kg	15	04/25/13 08:27	04/25/13 18:19	1
Dibenz(a,h)anthracene	ND		0.0846	0.00884	mg/Kg	12	04/25/13 08:27	04/25/13 18:19	4
Fluoranthene	ND		0.0846	0.0114	mg/Kg	0	04/25/13 08:27	04/25/13 18:19	1
Fluorene	ND		0.0846	0.0151	mg/Kg	m	04/25/13 08:27	04/25/13 18:19	1
Indeno[1,2,3-cd]pyrene	ND		0.0846	0.0126	mg/Kg	(m)	04/25/13 08:27	04/25/13 18:19	1
Naphthalene	ND		0.0846	0.0114	mg/Kg	34	04/25/13 08:27	04/25/13 18:19	1
2-Methylnaphthalene	ND		0.0846	0.0202		- 12	04/25/13 08:27	04/25/13 18:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	51		29 - 120				04/25/13 08:27	04/25/13 18:19	1
Terphenyl-d14 (Surr)	71		13 - 120				04/25/13 08:27	04/25/13 18:19	1
Nitrobenzene-d5 (Surr)	54		27 - 120				04/25/13 08:27	04/25/13 18:19	T
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	79		0.10	0.10	%			04/25/13 08:25	1

Client Sample ID: 1266 Dove

Date Collected: 04/16/13 15:15 Date Received: 04/24/13 08:15

Lab Sample ID: 490-25044-2 Matrix: Solid Percent Solids: 97.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00221	0.000741	mg/Kg	d.	04/24/13 18:04	04/25/13 13:56	1
Ethylbenzene	ND		0.00221	0.000741	mg/Kg	11.	04/24/13 18:04	04/25/13 13:56	1
Naphthalene	ND		0.00553	0.00188	mg/Kg	0	04/24/13 18:04	04/25/13 13:56	1
Toluene	ND		0.00221	0.000819	mg/Kg	19	04/24/13 18:04	04/25/13 13:56	1
Xylenes, Total	ND		0.00553	0.000741	mg/Kg		04/24/13 18:04	04/25/13 13:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 130				04/24/13 18:04	04/25/13 13:56	1
4-Bromofluorobenzene (Surr)	108		70 - 130				04/24/13 18:04	04/25/13 13:56	1
Dibromofluoromethane (Surr)	97		70 - 130				04/24/13 18:04	04/25/13 13:56	1
Toluene-d8 (Surr)	100		70 - 130				04/24/13 18:04	04/25/13 13:56	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cenaphthene	ND		0.0679	0.0101	mg/Kg	0	04/25/13 08:27	04/25/13 19:24	1
cenaphthylene	ND		0.0679	0.00912	mg/Kg	n	04/25/13 08:27	04/25/13 19:24	1
Inthracene	ND		0.0679	0.00912	mg/Kg	10	04/25/13 08:27	04/25/13 19:24	1
Benzo[a]anthracene	0.381		0.0679	0.0152	mg/Kg	11	04/25/13 08:27	04/25/13 19:24	1
Benzo[a]pyrene	0,717		0.0679	0.0122	mg/Kg	(d)	04/25/13 08:27	04/25/13 19:24	1
Senzo[b]fluoranthene	1.19		0.0679	0.0122	mg/Kg	10	04/25/13 08:27	04/25/13 19:24	1
enzo[g,h.i]perylene	0.752		0.0679	0.00912	mg/Kg	11	04/25/13 08:27	04/25/13 19:24	1
enzo[k]fluoranthene	0.415		0.0679	0.0142	mg/Kg	17	04/25/13 08:27	04/25/13 19:24	1
-Methylnaphthalene	ND		0.0679	0.0142	mg/Kg	10	04/25/13 08:27	04/25/13 19:24	1
yrene	0.229		0.0679	0.0122	mg/Kg	·B.	04/25/13 08:27	04/25/13 19:24	1
henanthrene	ND		0.0679	0.00912	mg/Kg	11	04/25/13 08:27	04/25/13 19:24	1
hrysene	0.714		0.0679	0.00912	mg/Kg	17	04/25/13 08:27	04/25/13 19:24	1
libenz(a,h)anthracene	0.0482	J	0.0679	0.00709	mg/Kg		04/25/13 08:27	04/25/13 19:24	1
luoranthene	0.127		0.0679	0.00912	mg/Kg	-	04/25/13 08:27	04/25/13 19:24	1
luorene	ND		0.0679	0.0122	mg/Kg	12	04/25/13 08:27	04/25/13 19:24	1
ideno[1,2,3-cd]pyrene	0.490		0.0679	0.0101	mg/Kg	12	04/25/13 08:27	04/25/13 19:24	7
laphthalene	ND		0.0679	0.00912	mg/Kg	12	04/25/13 08:27	04/25/13 19:24	1
Methylnaphthalene	ND		0.0679	0.0162	mg/Kg	E	04/25/13 08:27	04/25/13 19:24	1
urrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluorobiphenyl (Surr)	64		29 - 120				04/25/13 08:27	04/25/13 19:24	1
erphenyl-d14 (Surr)	86		13 - 120				04/25/13 08:27	04/25/13 19:24	1
litrobenzene-d5 (Surr)	59		27 - 120				04/25/13 08:27	04/25/13 19:24	1
the states in the									

General Chemistry Analyte Result Qualifier RL RL Unit Dil Fac Prepared Analyzed D 0.10 0.10 % Percent Solids 97 04/25/13 08:25 1

Client Sample ID: 1424 Albatross

Date Collected: 04/17/13 15:45 Date Received: 04/24/13 08:15

Lab Sample ID: 490-25044-3 Matrix: Solid

Percent Solids: 83.3

6

1

1

1

1

1

1

1

Dil Fac

Dil Fac

1

Method: 8260B - Volatile Orga	anic Compounds	(GC/MS)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	ND		0.00193	0.000648	mg/Kg	â	04/24/13 18:04	04/25/13 14:27	1	100
Ethylbenzene	ND		0.00193	0.000648	mg/Kg	0.	04/24/13 18:04	04/25/13 14:27	1	
Naphthalene	ND		0.00483	0.00164	mg/Kg	12	04/24/13 18:04	04/25/13 14:27	1	-
Toluene	ND		0.00193	0.000715	mg/Kg	10	04/24/13 18:04	04/25/13 14:27	1	
Xylenes, Total	ND		0.00483	0.000648	mg/Kg	a	04/24/13 18:04	04/25/13 14:27	7	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	103		70 - 130				04/24/13 18:04	04/25/13 14:27	1	
4-Bromofluorobenzene (Surr)	111		70 - 130				04/24/13 18:04	04/25/13 14:27	1	
Dibromofluoromethane (Surr)	99		70 - 130				04/24/13 18:04	04/25/13 14:27	7	
Toluene-d8 (Surr)	99		70 - 130				04/24/13 18:04	04/25/13 14:27	7	
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	3)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Acenaphthene	ND		0.0799	0.0119	mg/Kg	17	04/25/13 08:27	04/25/13 19:46	1	
Acenaphthylene	ND		0.0799	0.0107	mg/Kg	1	04/25/13 08:27	04/25/13 19:46	1	
Anthracene	ND		0.0799	0.0107	mg/Kg	.9	04/25/13 08:27	04/25/13 19:46	1	
Benzo[a]anthracene	ND		0.0799	0.0179	mg/Kg	.D)	04/25/13 08:27	04/25/13 19:46	1	
Benzo[a]pyrene	ND		0.0799	0.0143	mg/Kg	Û,	04/25/13 08:27	04/25/13 19:46	1	
Benzo(b)fluoranthene	ND		0.0799	0.0143	mg/Kg	0.	04/25/13 08:27	04/25/13 19:46	1	
Benzo[g,h,i]perylene	ND		0.0799	0.0107	mg/Kg	п	04/25/13 08:27	04/25/13 19:46	1	
Benzo[k]fluoranthene	ND		0.0799	0.0167	mg/Kg	ia.	04/25/13 08:27	04/25/13 19:46	1	
1-Methylnaphthalene	ND		0.0799	0.0167	mg/Kg		04/25/13 08:27	04/25/13 19:46	1	
Pyrene	ND		0.0799	0.0143	mg/Kg	10	04/25/13 08:27	04/25/13 19:46	1	
Phenanthrene	ND		0.0799	0.0107	mg/Kg		04/25/13 08:27	04/25/13 19:46	1	
Chrysene	ND		0.0799	0.0107	mg/Kg	n	04/25/13 08:27	04/25/13 19:46	1	
Dibenz(a,h)anthracene	ND		0.0799	0.00834	mg/Kg	10.	04/25/13 08:27	04/25/13 19:46	1	
Fluoranthene	ND		0.0799	0.0107	mg/Kg	13	04/25/13 08:27	04/25/13 19:46	1	

0.0799

0.0799

0.0799

0.0799

Limits

29 - 120

13-120

27 - 120

RL

0.10

0.0143 mg/Kg

0.0119 mg/Kg

0.0107 mg/Kg

0.0191 mg/Kg

RL Unit

0.10 %

12

-

57

D

04/25/13 08:27

04/25/13 08:27

Prepared

04/25/13 08:27

04/25/13 08:27

04/25/13 08:27

Prepared

04/25/13 08:27 04/25/13 19:46

04/25/13 08:27 04/25/13 19:46

04/25/13 19:46

04/25/13 19:46

Analyzed

04/25/13 19:46

04/25/13 19:46

04/25/13 19:46

Analyzed

04/25/13 08:25

ND

ND

ND

ND

%Recovery Qualifier

62

82

58

83

Result Qualifier

Analyte		
Percent	Solids	

Fluorene

Naphthalene

Surrogate

Indeno[1,2,3-cd]pyrene

2-Methylnaphthalene

2-Fluorobiphenyl (Surr)

Terphenyl-d14 (Surr)

Nitrobenzene-d5 (Surr)

General Chemistry

Client Sample ID: 1285 Dove

Date Collected: 04/16/13 14:45 Date Received: 04/24/13 08:15

Lab Sample ID: 490-25044-4 Matrix: Solid Percent Solids: 94.8

Method: 8260B - Volatile Orga Analyte	and the stand of the stand	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00228	0.000763	mg/Kg	á	04/24/13 18:04	04/25/13 14:58	1
Ethylbenzene	0.000885	J	0.00228	0.000763	mg/Kg	10	04/24/13 18:04	04/25/13 14:58	1
Naphthalene	0.00261	J	0.00569	0.00194	mg/Kg	10	04/24/13 18:04	04/25/13 14:58	1
Toluene	0.00151	J	0.00228	0.000842	mg/Kg	123	04/24/13 18:04	04/25/13 14:58	1
Xylenes, Total	0.00263	J	0.00569	0.000763	mg/Kg	12	04/24/13 18:04	04/25/13 14:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 130				04/24/13 18:04	04/25/13 14:58	1
4-Bromofluorobenzene (Surr)	105		70 - 130				04/24/13 18:04	04/25/13 14:58	1
Dibromofluoromethane (Surr)	102		70 - 130				04/24/13 18:04	04/25/13 14:58	1
Toluene-d8 (Surr)	101		70 - 130				04/24/13 18:04	04/25/13 14:58	7
Method: 8270D - Semivolatile	Organic Compou	nds (GC/M	S)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0702	0.0105	mg/Kg	E.	04/25/13 08:27	04/25/13 20:07	7
Acenaphthylene	ND		0.0702	0.00943	mg/Kg	.9	04/25/13 08:27	04/25/13 20:07	1
Anthracene	ND		0.0702	0.00943	mg/Kg	0	04/25/13 08:27	04/25/13 20:07	1
Benzo[a]anthracene	ND		0.0702	0.0157	mg/Kg		04/25/13 08:27	04/25/13 20:07	-T
Benzo[a]pyrene	ND		0.0702	0.0126	mg/Kg	31	04/25/13 08:27	04/25/13 20:07	t
Benzo[b]fluoranthene	ND		0.0702	0.0126	mg/Kg	iq	04/25/13 08:27	04/25/13 20:07	1
Benzo[g,h,i]perylene	ND		0.0702	0.00943	mg/Kg		04/25/13 08:27	04/25/13 20:07	1
Benzo[k]fluoranthene	ND		0.0702	0.0147	mg/Kg	10	04/25/13 08:27	04/25/13 20:07	1
I-Methylnaphthalene	0,204		0.0702	0.0147	mg/Kg		04/25/13 08:27	04/25/13 20:07	1
Pyrene	ND		0.0702	0.0126	mg/Kg	12	04/25/13 08:27	04/25/13 20:07	1
Phenanthrene	0.0948		0.0702	0.00943	mg/Kg	13	04/25/13 08:27	04/25/13 20:07	1
Chrysene	ND		0.0702	0.00943	mg/Kg	12	04/25/13 08:27	04/25/13 20:07	1
Dibenz(a,h)anthracene	ND		0.0702	0.00734	mg/Kg	π	04/25/13 08:27	04/25/13 20:07	1
Fluoranthene	ND		0.0702	0.00943	mg/Kg	(i)	04/25/13 08:27	04/25/13 20:07	1
Fluorene	0.0417	1	0.0702	0.0126	mg/Kg	61	04/25/13 08:27	04/25/13 20:07	1
ndeno[1,2,3-cd]pyrene	ND		0.0702	0.0105	mg/Kg	61	04/25/13 08:27	04/25/13 20:07	1
laphthalene	0.0773		0.0702	0.00943	mg/Kg	5	04/25/13 08:27	04/25/13 20:07	1
2-Methylnaphthalene	0.335		0.0702	0.0168	mg/Kg	5	04/25/13 08:27	04/25/13 20:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
P-Fluorobiphenyl (Surr)	54		29 - 120				04/25/13 08:27	04/25/13 20:07	1
erphenyl-d14 (Surr)	85		13 - 120				04/25/13 08:27	04/25/13 20:07	1
litrobenzene-d5 (Surr)	48		27 - 120				04/25/13 08:27	04/25/13 20:07	7
General Chemistry									
nalyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
ercent Solids	95		0.10	0.10	%			04/25/13 08:25	1

RL

Result Qualifier

MDL Unit

D

Prepared

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

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

Client Sample ID: 1245 Dove

Date Collected: 04/17/13 14:15 Date Received: 04/24/13 08:15

Analyte

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00240	0.000803	mg/Kg	pi.	04/24/13 18:04	04/26/13 14:31	1 1
Ethylbenzene	ND		0.00240	0.000803	mg/Kg	D	04/24/13 18:04	04/26/13 14:31	1
Naphthalene	ND		0.344	0.117	mg/Kg		04/24/13 17:29	04/26/13 15:33	1
Toluene	ND		0.00240	0.000887	mg/Kg	. 11	04/24/13 18:04	04/26/13 14:31	1
Xylenes, Total	ND		0.00599	0.000803	mg/Kg	0	04/24/13 18:04	04/26/13 14:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 130				04/24/13 18:04	04/26/13 14:31	1
1.2-Dichloroethane-d4 (Surr)	97		70 - 130				04/24/13 17:29	04/26/13 15:33	1
4-Bromofluorobenzene (Surr)	151	x	70 - 130				04/24/13 18:04	04/26/13 14:31	1
4-Bromofluorobenzene (Surr)	107		70 - 130				04/24/13 17:29	04/26/13 15:33	1
Dibromofluoromethane (Surr)	99		70 - 130				04/24/13 18:04	04/26/13 14:31	1
Dibromofluoromethane (Surr)	94		70 - 130				04/24/13 17:29	04/26/13 15:33	1
Toluene-d8 (Surr)	104		70 - 130				04/24/13 18:04	04/26/13 14:31	1
Toluene-d8 (Surr)	101		70 - 130				04/24/13 17:29	04/26/13 15:33	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/M	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0720	0.0107	mg/Kg	12	04/25/13 08:27	04/25/13 20:28	1
Acenaphthylene	0.0552	J	0.0720	0.00967	mg/Kg	U	04/25/13 08:27	04/25/13 20:28	1
Anthracene	ND		0.0720	0.00967	mg/Kg	Ш	04/25/13 08:27	04/25/13 20:28	1
Benzo[a]anthracene	ND		0.0720	0.0161	mg/Kg	a	04/25/13 08:27	04/25/13 20:28	1
Benzo[a]pyrene	0.382		0.0720	0.0129	mg/Kg	a.	04/25/13 08:27	04/25/13 20:28	1
Benzo[b]fluoranthene	0.0966		0.0720	0.0129	mg/Kg	9	04/25/13 08:27	04/25/13 20:28	1
Benzo[g,h,i]perylene	0.187		0.0720	0.00967	mg/Kg	14	04/25/13 08:27	04/25/13 20:28	1
Benzo[k]fluoranthene	0.0195	J	0.0720	0.0150	mg/Kg	10	04/25/13 08:27	04/25/13 20:28	1
1-Methylnaphthalene	ND		0.0720	0.0150	mg/Kg	10	04/25/13 08:27	04/25/13 20:28	1
Pyrene	ND		0.0720	0.0129	mg/Kg	12	04/25/13 08:27	04/25/13 20:28	1
Phenanthrene	ND		0.0720	0.00967	mg/Kg	10	04/25/13 08:27	04/25/13 20:28	1
Chrysene	0.119		0.0720	0.00967	mg/Kg	17	04/25/13 08:27	04/25/13 20:28	1
Dibenz(a,h)anthracene	ND		0.0720	0.00752	mg/Kg	-D-	04/25/13 08:27	04/25/13 20:28	1
Fluoranthene	ND		0.0720	0.00967	mg/Kg		04/25/13 08:27	04/25/13 20:28	1
Fluorene	ND		0.0720	0.0129	mg/Kg	23	04/25/13 08:27	04/25/13 20:28	1
indeno[1,2,3-cd]pyrene	0.163		0.0720	0.0107	mg/Kg	13	04/25/13 08:27	04/25/13 20:28	1
Naphthalene	ND		0.0720	0.00967	mg/Kg	.0	04/25/13 08:27	04/25/13 20:28	1
2-Methylnaphthalene	ND		0.0720	0.0172	mg/Kg	r	04/25/13 08:27	04/25/13 20:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	63		29 - 120				04/25/13 08:27	04/25/13 20:28	1
Terphenyl-d14 (Surr)	89		13 - 120				04/25/13 08:27	04/25/13 20:28	1
Nitrobenzene-d5 (Surr)	63		27 - 120				04/25/13 08:27	04/25/13 20:28	7
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92		0.10	0.10	%			04/25/13 08:25	1

TestAmerica Job ID: 490-25044-1

Lab Sample ID: 490-25044-5 Matrix: Solid Percent Solids: 91.5

Analyzed

Dil Fac

6

Client Sample ID: 1445 Dove

Date Collected: 04/18/13 13:45 Date Received: 04/24/13 08:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00260	0.000871	mg/Kg	12	04/24/13 18:04	04/25/13 15:59	1
Ethylbenzene	ND		0.00260	0.000871	mg/Kg	12	04/24/13 18:04	04/25/13 15:59	1
Naphthalene	0,00373	J	0.00650	0.00221	mg/Kg	12	04/24/13 18:04	04/25/13 15:59	1
Toluene	ND		0.00260	0.000962	mg/Kg	17	04/24/13 18:04	04/25/13 15:59	1
Xylenes, Total	0.00150	4	0.00650	0.000871	mg/Kg	13	04/24/13 18:04	04/25/13 15:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130				04/24/13 18:04	04/25/13 15:59	1
4-Bromofluorobenzene (Surr)	101		70 - 130				04/24/13 18:04	04/25/13 15:59	1
Dibromofluoromethane (Surr)	99		70 - 130				04/24/13 18:04	04/25/13 15:59	1
Toluene-d8 (Surr)	101		70 - 130				04/24/13 18:04	04/25/13 15:59	1

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

Methou, 02700 - Sennyolau	ne organic compor	THUS LOGINA								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Acenaphthene	ND		0.0897	0.0134	mg/Kg	11	04/25/13 08:27	04/25/13 20:50	1	
Acenaphthylene	ND		0.0897	0.0121	mg/Kg	120	04/25/13 08:27	04/25/13 20:50	1	
Anthracene	ND		0.0897	0.0121	mg/Kg	100	04/25/13 08:27	04/25/13 20:50	1	
Benzo(a)anthracene	ND		0.0897	0.0201	mg/Kg	80	04/25/13 08:27	04/25/13 20:50	1	
Benzo[a]pyrene	ND		0.0897	0.0161	mg/Kg	10	04/25/13 08:27	04/25/13 20:50	4	
Benzo[b]fluoranthene	ND		0.0897	0.0161	mg/Kg	,E.,	04/25/13 08:27	04/25/13 20:50	1	
Benzo[g,h,i]perylene	ND		0.0897	0.0121	mg/Kg	E	04/25/13 08:27	04/25/13 20:50	1	
Benzo[k]fluoranthene	ND		0.0897	0.0188	mg/Kg	.0	04/25/13 08:27	04/25/13 20:50	1	
1-Methylnaphthalene	ND		0,0897	0.0188	mg/Kg	P	04/25/13 08:27	04/25/13 20:50	1	
Pyrene	ND		0.0897	0.0161	mg/Kg	10	04/25/13 08:27	04/25/13 20:50	1	
Phenanthrene	ND		0,0897	0.0121	mg/Kg	3	04/25/13 08:27	04/25/13 20:50	1	
Chrysene	ND		0.0897	0.0121	mg/Kg	π	04/25/13 08:27	04/25/13 20:50	1	
Dibenz(a,h)anthracene	ND		0.0897	0.00938	mg/Kg	B	04/25/13 08:27	04/25/13 20:50	1	
Fluoranthene	ND		0.0897	0.0121	mg/Kg	- 10	04/25/13 08:27	04/25/13 20:50	1	
Fluorene	ND		0.0897	0.0161	mg/Kg	- 10	04/25/13 08:27	04/25/13 20:50	1	
Indeno[1,2,3-cd]pyrene	ND		0.0897	0.0134	mg/Kg	- 9.	04/25/13 08:27	04/25/13 20:50	1	
Naphthalene	ND		0.0897	0.0121	mg/Kg	d.	04/25/13 08:27	04/25/13 20:50	1	
2-Methylnaphthalene	ND		0.0897	0.0214	mg/Kg	11	04/25/13 08:27	04/25/13 20:50	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
2-Fluorobiphenyl (Surr)	62		29 - 120				04/25/13 08:27	04/25/13 20:50	1	
Terphenyl-d14 (Surr)	84		13 - 120				04/25/13 08:27	04/25/13 20:50	1	
Nitrobenzene-d5 (Surr)	62		27 - 120				04/25/13 08:27	04/25/13 20:50	1	
General Chemistry										
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Percent Solids	74		0.10	0.10	%			04/25/13 08:25	1	

TestAmerica Job ID: 490-25044-1

Lab Sample ID: 490-25044-6 Matrix: Solid Percent Solids: 73.8

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

Lab Sample ID: 490-24870-B-	6-D MS							Client	Sample ID: Matrix Spike
Matrix: Solid									Prep Type: Total/NA
Analysis Batch: 74897									Prep Batch: 74420
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.00646		0.0743	0.05936		mg/Kg	1	71	31 - 143
Ethylbenzene	0.00854		0.0743	0.05727		mg/Kg	10	66	23 - 161
Naphthalene	0.00257	1	0.0743	0.04694		mg/Kg	10	60	10 - 176
Toluene	0.0230		0.0743	0.07316		mg/Kg	30	68	30 - 155
Xylenes, Total	0.0208		0.223	0.1677		mg/Kg	10	66	25 - 162
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	105		70 - 130						
4-Bromofluorobenzene (Surr)	101		70 - 130						
Dibromofluoromethane (Surr)	106		70 - 130						
Toluene-d8 (Surr)	105		70 - 130						

Lab Sample ID: 490-24870-B-6-E MSD Matrix: Solid

Analysis Batch: 74897

Analysis Batch: 74897									Prep	Batch:	74420
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.00646		0.0470	0.04173		mg/Kg	10	75	31 - 143	35	50
Ethylbenzene	0.00854		0.0470	0.04077		mg/Kg	10	69	23 - 161	34	50
Naphthalene	0.00257	J	0.0470	0.03342		mg/Kg	10	66	10 - 176	34	50
Toluene	0.0230		0.0470	0.05052		mg/Kg	10	59	30 - 155	37	50
Xylenes, Total	0.0208		0.141	0.1199		mg/Kg	13	70	25 - 162	33	50
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	108		70 - 130								
4-Bromofluorobenzene (Surr)	102		70 - 130								
Dibromofluoromethane (Surr)	107		70 - 130								

70 - 130

Lab Sample ID: MB 490-74897/6 Matrix: Solid

103

Analysis Batch: 74897

Toluene-d8 (Surr)

Analysis Datch. 14031									
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.000670	mg/Kg			04/25/13 12:24	1
Ethylbenzene	ND		0.00200	0.000670	mg/Kg			04/25/13 12:24	1
Naphthalene	0.001870	J	0.00500	0.00170	mg/Kg			04/25/13 12:24	1
Toluene	ND		0.00200	0.000740	mg/Kg			04/25/13 12:24	1
Xylenes, Total	ND		0.00500	0.000670	mg/Kg			04/25/13 12:24	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 130					04/25/13 12:24	1
4-Bromofluorobenzene (Surr)	105		70 - 130					04/25/13 12:24	1
Dibromofluoromethane (Surr)	104		70 - 130					04/25/13 12:24	1
Toluene-d8 (Surr)	100		70 - 130					04/25/13 12:24	7

TestAmerica Job ID: 490-25044-1

Client Sample ID: Matrix Spike Duplicate

Client Sample ID; Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

7

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

7

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

Lab Sample ID: LCS 490-74897/3 Matrix: Solid

Analysis Batch: 74897										
			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene			0.0500	0.05017		mg/Kg		100	75 - 127	
Ethylbenzene			0.0500	0.05219		mg/Kg		104	80 - 134	
Naphthalene			0.0500	0.04807		mg/Kg		96	69 - 150	
Toluene			0.0500	0.05082		mg/Kg		102	80 - 132	
Xylenes, Total			0.150	0.1599		mg/Kg		107	80 - 137	
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	106		70 - 130
Toluene-d8 (Surr)	102		70 - 130

Lab Sample ID: LCSD 490-74897/4

Matrix: Solid

Analysis Batch: 74897

	Client Sample ID: Lab Control Sa	mple Dup
	Prep Type:	Total/NA
COD	N/ Pag	PPD

			Spike	LCSD L	LCSD				%Rec.		RPD
Analyte			Added	Result C	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.0500	0.05957		mg/Kg		119	75 - 127	17	50
Ethylbenzene			0.0500	0.06259		mg/Kg		125	80 - 134	18	50
Naphthalene			0.0500	0.05698		mg/Kg		114	69.150	17	50
Toluene			0.0500	0.06004		mg/Kg		120	80 - 132	17	50
Xylenes, Total			0.150	0.1907		mg/Kg		127	80 - 137	18	50
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								

Surrogate	%Recovery Qu	alifier Limits
1,2-Dichloroethane-d4 (Surr)	107	70 - 130
4-Bromofluorobenzene (Surr)	98	70 - 130
Dibromofluoromethane (Surr)	104	70 - 130
Toluene-d8 (Surr)	103	70 - 130

Lab Sample ID: MB 490-75266/6 Matrix: Solid

Analysis Batch: 75266

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.000670	mg/Kg			04/26/13 13:00	1
Ethylbenzene	ND		0.00200	0.000670	mg/Kg			04/26/13 13:00	1
Naphthalene	ND		0.00500	0.00170	mg/Kg			04/26/13 13:00	1
Toluene	ND		0.00200	0.000740	mg/Kg			04/26/13 13:00	1
Xylenes, Total	ND		0.00500	0.000670	mg/Kg			04/26/13 13:00	1
	MB	MB							
Surrogate %	Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130					04/26/13 13:00	1
4-Bromofluorobenzene (Surr)	107		70 - 130					04/26/13 13:00	1
Dibromofluoromethane (Surr)	104		70 - 130					04/26/13 13:00	1
Toluene-d8 (Surr)	101		70 - 130					04/26/13 13:00	1

TestAmerica Nashville

Client Sample ID: Method Blank

Prep Type: Total/NA

Sample ID: Method Blank Prep Type: Total/NA

Analyzed 04/26/13 13:30

04/26/13 13:30

04/26/13 13:30

04/26/13 13:30

04/26/13 13:30

Analyzed

Dil Fac

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Dil Fac

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

Lab Sample ID: MB 490-75266/7							Client :
Matrix: Solid							
Analysis Batch: 75266							
	MB	MB					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared
Benzene	ND		0.100	0.0335	mg/Kg		
Ethylbenzene	ND		0.100	0.0335	mg/Kg		
Naphthalene	ND		0.250	0.0850	mg/Kg		
Toluene	ND		0.100	0.0370	mg/Kg		
Xylenes, Total	ND		0.250	0.0335	mg/Kg		
	MB	MB					
Surrogate	%Recovery	Qualifier	Limits				Prepared
1,2-Dichloroethane-d4 (Surr)	107		70 - 130				
4-Bromofluorobenzene (Surr)	105		70 - 130				

1,2-Dichloroelhane-d4 (Surr)	107	70 - 130	04/26/13 13:30	1
4-Bromofluorobenzene (Surr)	105	70 - 130	04/26/13 13:30	1
Dibromofluoromethane (Surr)	106	70 - 130	04/26/13 13:30	1
Toluene-d8 (Surr)	101	70 - 130	04/26/13 13:30	1

Lab Sample ID: LCS 490-75266/3 Matrix: Solid Analysis Batch: 75266

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

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

		Spike	LCS	LCS				%Rec.
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene		0.0500	0.05080		mg/Kg		102	75 - 127
Ethylbenzene		0.0500	0.05095		mg/Kg		102	80 - 134
Naphthalene		0.0500	0.04657		mg/Kg		93	69 - 150
Toluene		0.0500	0.04965		mg/Kg		99	80 - 132
Xylenes, Total		0.150	0.1559		mg/Kg		104	80 - 137
	LCS LCS							

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	106		70 - 130
Toluene-d8 (Surr)	102		70 - 130

Lab Sample ID: LCSD 490-75266/4 Matrix: Solid

Analysis Batch: 75266

Analysis batch, 75200											
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.0500	0.05110		mg/Kg		102	75 - 127	1	50
Ethylbenzene			0.0500	0.05242		mg/Kg		105	80 - 134	3	50
Naphthalene			0.0500	0.04727		mg/Kg		95	69 - 150	1	50
Toluene			0.0500	0.05145		mg/Kg		103	80 - 132	4	50
Xylenes, Total			0.150	0,1604		mg/Kg		107	80 - 137	3	50
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	107		70 - 130								
4-Bromofluorobenzene (Surr)	98		70 - 130								
Dibromofluoromethane (Surr)	105		70 - 130								
Toluene-d8 (Surr)	102		70 - 130								

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

Lab Sample ID: MB 490-74873/1-A Matrix: Solid Analysis Batch: 74973

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 74873

	MB	MB								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Acenaphthene	ND		0.0670	0.0100	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Acenaphthylene	ND		0.0670	0.00900	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Anthracene	ND		0.0670	0.00900	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	7
Benzo[a]anthracene	ND		0.0670	0.0150	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Benzo[a]pyrene	ND		0.0670	0.0120	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Benzo[b]fluoranthene	ND		0.0670	0.0120	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Benzo[g,h,i]perylene	ND		0.0670	0.00900	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Benzo[k]fluoranthene	ND		0.0670	0.0140	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
1-Methylnaphthalene	ND		0.0670	0.0140	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Pyrene	ND		0.0670	0.0120	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Phenanthrene	ND		0.0670	0.00900	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Chrysene	ND		0.0670	0.00900	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Dibenz(a,h)anthracene	ND		0.0670	0.00700	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Fluoranthene	ND		0.0670	0.00900	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Fluorene	ND		0.0670	0.0120	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Indeno[1,2,3-cd]pyrene	ND		0.0670	0.0100	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
Naphthalene	ND		0.0670	0.00900	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
2-Methylnaphthalene	ND		0.0670	0.0160	mg/Kg		04/25/13 08:27	04/25/13 17:36	1	
	МВ	MB								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
2-Fluorobiphenyl (Surr)	61		29 - 120				04/25/13 08:27	04/25/13 17:36	1	
Terphenyl-d14 (Surr)	78		13 - 120				04/25/13 08:27	04/25/13 17:36	1	

Lab Sample ID: LCS 490-74873/2-A Matrix: Solid

Analysis Batch: 74973

Nitrobenzene-d5 (Surr)

Client Sample ID: Lab Control Sample

04/25/13 08:27 04/25/13 17:36

Prep Type: Total/NA Prep Batch: 74873

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acenaphthylene	1.67	1.283		mg/Kg		77	38 - 120
Anthracene	1.67	1.373		mg/Kg		82	46 - 124
Benzo[a]anthracene	1.67	1.331		mg/Kg		80	45 - 120
Benzo[a]pyrene	1.67	1.350		mg/Kg		81	45 - 120
Benzo[b]fluoranthene	1.67	1.361		mg/Kg		82	42 - 120
Benzo[g,h,i]perylene	1.67	1.374		mg/Kg		82	38 - 120
Benzo[k]fluoranthene	1.67	1.337		mg/Kg		80	42 - 120
1-Methylnaphthalene	1.67	1.215		mg/Kg		73	32 - 120
Pyrene	1.67	1,438		mg/Kg		86	43 - 120
Phenanthrene	1.67	1.341		mg/Kg		80	45 - 120
Chrysene	1.67	1.267		mg/Kg		76	43 - 120
Dibenz(a,h)anthracene	1.67	1.447		mg/Kg		87	32 - 128
Fluoranthene	1.67	1.332		mg/Kg		80	46 - 120
Fluorene	1.67	1.300		mg/Kg		78	42 - 120
Indeno[1,2,3-cd]pyrene	1.67	1.387		mg/Kg		83	41 - 121
Naphthalene	1.67	1.107		mg/Kg		66	32 - 120
2-Methylnaphthalene	1.67	1.253		mg/Kg		75	28 - 120

27 - 120

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

68

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Lab Sample ID: LCS 490-74873/2-A Matrix: Solid Analysis Batch: 74973

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	68		29 - 120
Terphenyl-d14 (Surr)	98		13 - 120
Nitrobenzene-d5 (Surr)	64		27 - 120

Lab Sample ID: 490-25044-1 MS Matrix: Solid

Induction, cooling									I top I por I oraller
Analysis Batch: 74973									Prep Batch: 74873
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acenaphthylene	ND		2.09	1.353		mg/Kg	-	65	25 - 120
Anthracene	ND		2.09	1.301		mg/Kg	17	62	28 - 125
Benzo[a]anthracene	ND		2.09	1.241		mg/Kg	11	59	23 - 120
Benzo[a]pyrene	ND		2.09	1.249		mg/Kg	9	60	15 - 128
Benzo[b]fluoranthene	ND		2.09	1.298		mg/Kg	17	62	12 - 133
Benzo[g,h,i]perylene	ND		2.09	1.243		mg/Kg	a.	59	22 - 120
Benzo[k]fluoranthene	ND		2.09	1.253		mg/Kg	E.	60	28 - 120
1-Methylnaphthalene	ND		2.09	1.330		mg/Kg	В	64	10 - 120
Pyrene	ND		2.09	1.340		mg/Kg	÷.	64	20 - 123
Phenanthrene	ND		2.09	1.304		mg/Kg	- E	62	21 - 122
Chrysene	0.0644	J	2.09	1.245		mg/Kg	e.	56	20 - 120
Dibenz(a,h)anthracene	ND		2.09	1.306		mg/Kg	Π.	62	12 - 128
Fluoranthene	ND		2.09	1.250		mg/Kg	0	60	10 - 143
Fluorene	ND		2.09	1.262		mg/Kg	0	60	20 - 120
Indeno[1,2,3-cd]pyrene	ND		2.09	1.274		mg/Kg	Π	61	22 - 121
Naphthalene	ND		2.09	1.231		mg/Kg	10	59	10 - 120
2-Methylnaphthalene	ND		2.09	1.337		mg/Kg	10	64	13 - 120
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
2-Fluorobiphenyl (Surr)	52		29 - 120						

13 - 120

27 - 120

Lab Sample ID: 490-25044-1 MSD Matrix: Solid

Terphenyl-d14 (Surr)

Nitrobenzene-d5 (Surr)

Analysis Batch: 74973									Prep	Batch:	74873
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthylene	ND		2.10	1.532		mg/Kg	17	73	25 - 120	12	50
Anthracene	ND		2.10	1.525		mg/Kg		73	28 - 125	16	49
Benzo[a]anthracene	ND		2.10	1.446		mg/Kg	ы	69	23 - 120	15	50
Benzo[a]pyrene	ND		2.10	1.456		mg/Kg	10	69	15 - 128	15	50
Benzo[b]fluoranthene	ND		2.10	1.666		mg/Kg	D	79	12 - 133	25	50
Benzo[g,h,i]perylene	ND		2.10	1.422		mg/Kg	Ð	68	22 - 120	13	50
Benzo[k]fluoranthene	ND		2.10	1.303		mg/Kg	D	62	28 - 120	4	45
1-Methylnaphthalene	ND		2.10	1.503		mg/Kg	п	72	10 - 120	12	50
Pyrene	ND		2.10	1.568		mg/Kg	a	75	20 - 123	16	50
Phenanthrene	ND		2.10	1.548		mg/Kg	10	74	21 - 122	17	50
Chrysene	0.0644	J	2.10	1.478		mg/Kg	11	67	20 - 120	17	49
		J									

TestAmerica Nashville

Prep Batch: 74873

Client Sample ID: 1212 Cardinal

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: 1212 Cardinal Prep Type: Total/NA

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

Lab Sample ID: 490-25044-1 MS	D							Client S	Sample ID:	1212 Ca	rdinal
Matrix: Solid									Prep T	ype: To	tal/NA
Analysis Batch: 74973									Prep	Batch:	74873
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dibenz(a,h)anthracene	ND		2.10	1.490		mg/Kg	10	71	12 - 128	13	50
Fluoranthene	ND		2.10	1.532		mg/Kg	13	73	10 - 143	20	50
Fluorene	ND		2.10	1.492		mg/Kg	П	71	20 - 120	17	50
Indeno[1,2,3-cd]pyrene	ND		2.10	1.446		mg/Kg	п.	69	22 - 121	13	50
Naphthalene	ND		2.10	1.355		mg/Kg	п	65	10 - 120	10	50
2-Methylnaphthalene	ND		2.10	1.527		mg/Kg	п	73	13 - 120	13	50
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
2-Fluorobiphenyl (Surr)	53		29 - 120								
Terphenyl-d14 (Surr)	75		13 - 120								
Nitrobenzene-d5 (Surr)	60		27 - 120								

Method: Moisture - Percent Moisture

Lab Sample (D: 490-25050	-A-1 DU						Client Sample ID: Dup	olicate
Matrix: Solid							Prep Type: To	tal/NA
Analysis Batch: 74872								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	83		82		%		0.7	20

QC Association Summary

Client: Environmental Enterprise Group Project/Site: EEG Laurel Bay Site TestAmerica Job ID: 490-25044-1

GC/MS VOA

Prep Batch: 74420

Prep Batch: 74420					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-24870-B-6-D MS	Matrix Spike	Total/NA	Solid	5035	
490-24870-B-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	
Prep Batch: 74812					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-25044-1	1212 Cardinal	Total/NA	Solid	5035	
490-25044-5	1245 Dove	Total/NA	Solid	5035	
Prep Batch: 74817					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-25044-1	1212 Cardinal	Total/NA	Solid	5035	
490-25044-2	1266 Dove	Total/NA	Solid	5035	
490-25044-3	1424 Albatross	Total/NA	Solid	5035	
490-25044-4	1285 Dove	Total/NA	Solid	5035	
490-25044-5	1245 Dove	Total/NA	Solid	5035	
490-25044-6	1445 Dove	Total/NA	Solid	5035	
Analysis Batch: 74897					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-24870-B-6-D MS	Matrix Spike	Total/NA	Solid	8260B	74420
490-24870-B-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	74420
490-25044-2	1266 Dove	Total/NA	Solid	8260B	74817
490-25044-3	1424 Albatross	Total/NA	Solid	8260B	74817
490-25044-4	1285 Dove	Total/NA	Solid	8260B	74817
490-25044-6	1445 Dove	Total/NA	Solid	8260B	74817
LCS 490-74897/3	Lab Control Sample	Total/NA	Solid	8260B	14011
LCSD 490-74897/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-74897/6	Method Blank	Total/NA	Solid	8260B	
Analysis Batch: 75266			520	S DATE	
Analysis Daten. 1 5200					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-25044-1	1212 Cardinal	Total/NA	Solid	8260B	74812
490-25044-1	1212 Cardinal	Total/NA	Solid	8260B	74817
490-25044-5	1245 Dove	Total/NA	Solid	8260B	74812
490-25044-5	1245 Dove	Total/NA	Solid	8260B	74817
LCS 490-75266/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-75266/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-75266/6	Method Blank	Total/NA	Solid	8260B	
MB 490-75266/7	Method Blank	Total/NA	Solid	8260B	
GC/MS Semi VOA					
rep Batch: 74873					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-25044-1	1212 Cardinal	Total/NA	Solid	3550C	
490-25044-1 MS	1212 Cardinal	Total/NA	Solid	3550C	
490-25044-1 MSD	1212 Cardinal	Total/NA	Solid	3550C	
490-25044-2	1266 Dove	Total/NA	Solid	3550C	
490-25044-3	1424 Albatross	Total/NA	Solid	3550C	

QC Association Summary

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

GC/MS Semi VOA (Continued)

Prep Batch: 74873 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-25044-5	1245 Dove	Total/NA	Solid	3550C	
490-25044-6	1445 Dove	Total/NA	Solid	3550C	
LCS 490-74873/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-74873/1-A	Method Blank	Total/NA	Solid	3550C	
Analysis Batch: 74973					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-25044-1	1212 Cardinal	Total/NA	Solid	8270D	74873
490-25044-1 MS	1212 Cardinal	Total/NA	Solid	8270D	74873
490-25044-1 MSD	1212 Cardinal	Total/NA	Solid	8270D	74873
490-25044-2	1266 Dove	Total/NA	Solid	8270D	74873
490-25044-3	1424 Albatross	Total/NA	Solid	8270D	74873
490-25044-4	1285 Dove	Total/NA	Solid	8270D	74873
490-25044-5	1245 Dove	Total/NA	Solid	8270D	74873
490-25044-6	1445 Dove	Total/NA	Solid	8270D	74873
LCS 490-74873/2-A	Lab Control Sample	Total/NA	Solid	8270D	74873
MB 490-74873/1-A	Method Blank	Total/NA	Solid	8270D	74873
General Chemistry					
Analysis Batch: 74872					

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-25044-1	1212 Cardinal	Total/NA	Solid	Moisture	
490-25044-2	1266 Dove	Total/NA	Solid	Moisture	
490-25044-3	1424 Albatross	Total/NA	Solid	Moisture	
490-25044-4	1285 Dove	Total/NA	Solid	Moisture	
490-25044-5	1245 Dove	Total/NA	Solid	Moisture	
490-25044-6	1445 Dove	Total/NA	Solid	Moisture	
490-25050-A-1 DU	Duplicate	Total/NA	Solid	Moisture	

Client Sample ID: 1212 Cardinal

Date Collected: 04/15/13 15:15 Date Received: 04/24/13 08:15

Lab Sample ID: 490-25044-1 Matrix: Solid Percent Solids: 79.0

Lab Sample ID: 490-25044-2

Matrix: Solid

Percent Solids: 97.1

	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	5035			74812	04/24/13 17:29	ML	TAL NSH	
Total/NA	Analysis	8260B		1	75266	04/26/13 15:02	AF	TAL NSH	
Total/NA	Prep	5035			74817	04/24/13 18:04	ML	TAL NSH	
Total/NA	Analysis	8260B		1	75266	04/26/13 14:01	AF	TAL NSH	
Total/NA	Prep	3550C			74873	04/25/13 08:27	AK	TAL NSH	
Total/NA	Analysis	8270D		1	74973	04/25/13 18:19	BS	TAL NSH	
Total/NA	Analysis	Moisture		1	74872	04/25/13 08:25	RS	TAL NSH	
Total/NA Total/NA Total/NA Total/NA	Prep Analysis Prep Analysis	5035 8260B 3550C 8270D		1 1 1	74817 75266 74873 74973	04/24/13 18:04 04/26/13 14:01 04/25/13 08:27 04/25/13 18:19	ML AF AK BS	TAL NSH TAL NSH TAL NSH TAL NSH	

Client Sample ID: 1266 Dove

Client Sample ID: 1424 Albatross

Date Collected: 04/17/13 15:45

Date Received: 04/24/13 08:15

Date Collected: 04/16/13 15:15

Date Received: 04/24/13 08:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			74817	04/24/13 18:04	ML	TAL NSH
Total/NA	Analysis	8260B		1	74897	04/25/13 13:56	кк	TAL NSH
Total/NA	Prep	3550C			74873	04/25/13 08:27	AK	TAL NSH
Total/NA	Analysis	8270D		1	74973	04/25/13 19:24	BS	TAL NSH
Total/NA	Analysis	Moisture		1	74872	04/25/13 08:25	RS	TAL NSH

Lab Sample ID: 490-25044-3

Lab Sample ID: 490-25044-4

Matrix: Solid Percent Solids: 83.3

Matrix: Solid

Percent Solids: 94.8

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	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			74817	04/24/13 18:04	ML	TAL NSH
Total/NA	Analysis	8260B		1	74897	04/25/13 14:27	KK	TAL NSH
Total/NA	Prep	3550C			74873	04/25/13 08:27	AK	TAL NSH
Total/NA	Analysis	8270D		1	74973	04/25/13 19:46	BS	TAL NSH
Total/NA	Analysis	Moisture		1	74872	04/25/13 08:25	RS	TAL NSH

Client Sample ID: 1285 Dove Date Collected: 04/16/13 14:45 Date Received: 04/24/13 08:15

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			74817	04/24/13 18:04	ML	TAL NSH
Total/NA	Analysis	8260B		1	74897	04/25/13 14:58	KK	TAL NSH
Total/NA	Prep	3550C			74873	04/25/13 08:27	AK	TAL NSH
Total/NA	Analysis	8270D		1	74973	04/25/13 20:07	BS	TAL NSH
Total/NA	Analysis	Moisture		1	74872	04/25/13 08:25	RS	TAL NSH

Client Sample ID: 1245 Dove

Date Collected: 04/17/13 14:15 Date Received: 04/24/13 08:15

Lab Sample ID: 490-25044-5

Matrix: Solid Percent Solids: 91.5

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			74812	04/24/13 17:29	ML	TAL NSH
Total/NA	Analysis	8260B		1	75266	04/26/13 15:33	AF	TAL NSH
Total/NA	Prep	5035			74817	04/24/13 18:04	ML	TAL NSH
Total/NA	Analysis	8260B		. †	75266	04/26/13 14:31	AF	TAL NSH
Total/NA	Prep	3550C			74873	04/25/13 08:27	AK	TAL NSH
Total/NA	Analysis	8270D		4	74973	04/25/13 20:28	BS	TAL NSH
Total/NA	Analysis	Moisture		1	74872	04/25/13 08:25	RS	TAL NSH

Client Sample ID: 1445 Dove Date Collected: 04/18/13 13:45 Date Received: 04/24/13 08:15

Lab Sample ID: 490-25044-6 Matrix: Solid

Percent Solids: 73.8

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	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			74817	04/24/13 18:04	ML	TAL NSH
Total/NA	Analysis	8260B		1	74897	04/25/13 15:59	KK	TAL NSH
Total/NA	Prep	3550C			74873	04/25/13 08:27	AK	TAL NSH
Total/NA	Analysis	8270D		1	74973	04/25/13 20:50	BS	TAL NSH
Total/NA	Analysis	Moisture		1	74872	04/25/13 08:25	RS	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

TestAmerica Job ID: 490-25044-1

G.

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

ACLA SOLE 393 10-30-13 ALA ISOLE 17025 455.07 12-31-13 Alabami State Program 10 UST-037 0.72-113 Arzona State Program 10 UST-037 0.72-113 Arkansas DEQ State Program 6 86-0737 0.425-13* Caliomia NELAP 9 1185CA 10-31-13 Connecifcut State Program 1 PH-0220 12-31-13 Fortia NELAP 4 E67358 0.63-013 Illinois NELAP 7 E-10229 10-31-13 Kentucky (UST) State Program 7 E-10229 10-31-13 Kentucky (UST) State Program 3 316 0.50-13 Massachusetts State Program 4 NA 0.50-13 Massachusetts State Program 4 NA 0.50-13 Massachusetts State Program 4 NA 0.50-13 Mensada State Program 4 </th <th>Authority</th> <th>Program</th> <th>EPA Region</th> <th>Certification ID</th> <th>Expiration Date</th>	Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama State Program 4 41150 05-31-3 Alaska (UST) State Program 10 UST-087 07-24-13 Arazona State Program 9 A20473 05-06-13- Arkanasa DEQ State Program 6 88-0737 04-25-137 California NELAP 9 1186CA 0-31-13 Connecticud NELAP 4 E87358 06-30-13 Illinois NELAP 5 20010 12-08-13 Kanasa NELAP 7 E-10229 10-31-13 Kanasa NELAP 7 E-10229 10-31-13 Kanasa NELAP 7 E-10229 10-31-13 Kanasa NELAP 6 30613 06-30-13 Maryland State Program 4 19 0-31-14 Massachusetts State Program 1 M-TMO32 06-30-13 Minesota State Program 6 N/A 06-30-13 Minesota State Program		ACIL		393	10-30-13
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Mississipi State Program 4 N/A 06-30-13 Montana (UST) State Program 8 NA 01-01-15 Nevada State Program 9 TN00032 07-31-13 New Hampshire NELAP 1 2963 10-10-13 New Jersey NELAP 2 TN965 06-30-13 New York NELAP 2 11342 04-01-44 North Carolina DENR State Program 4 387 12-31-13 North Dakota State Program 4 387 12-31-13 Onlio VAP State Program 5 CL0033 01-19-14 Oregon NELAP 10 TN200011 04-30-13* Pennsylvania NELAP 3 68-00585 06-30-13 South Carolina State Program 4 84009 (001) 05-31-14* South Carolina State Program 4 84009 (002) 02-23-14 Tennessee State Program 4 84009 (002) 02-23-14 <	Massachusetts	State Program	1	M-TN032	06-30-13
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West Virginia DEP State Program 3 219 02-28-14 Wisconsin State Program 5 998020430 08-31-13	Virginia	NELAP	3	460152	06-14-13
Wisconsin State Program 5 998020430 08-31-13	Washington	State Program	10	C789	07-19-13
	West Virginia DEP	State Program	3	219	02-28-14
Wyoming (UST) A2LA 8 453.07 12-31-13	Wisconsin	State Program	5	998020430	08-31-13
	Wyoming (UST)	A2LA	В	453.07	12-31-13

* Expired certification is currently pending renewal and is considered valid.

TestAmerica		Charleston
THE LEADER IN ENVIRONMENTAL TESTING COOLER R	ECEIPT FORM	
Cooler Received/Opened On: 4/24/2013 @0815		
1. Tracking # <u>9593</u> (last 4 digits, Fed	Ex) 490-2	25044 Chain of Custody
Courler: Fed-Ex IR Gun ID: <u>14740456</u>	0.0	
2. Temperature of rep. sample or temp blank when opened	d: <u>d</u> d Degrees Celsius	
3. If Item #2 temperature is 0° C or less, was the representa	tive sample or temp blank frozen	YES NONA
4. Were custody seals on outside of cooler?	JE L	YES NO NA
If yes, how many and where:	2 Front/BRIK	
5. Were the seals intact, signed, and dated correctly?		YESNONA
6. Were custody papers inside cooler?		YES. NONA
I certify that I opened the cooler and answered questions 1	-6 (intial)	0
7. Were custody seals on containers: YI	ES NO and Intact	YESNOI
Were these signed and dated correctly?	U U	YESNONA
8. Packing mat'l used? Bubblewrap Plastic bag Peanuts	Vermiculite Foam Insert Pap	er Other None
9. Cooling process:	ack Ice (direct contact) Dry ic	ce Other None
10. Did all containers arrive in good condition (unbroken)?	,	FES NO NA
11. Were all container labels complete (#, date, signed, pre	s., etc)?	ESNONA
12. Did all container labels and tags agree with custody pa	pers?	ESNONA
13a. Were VOA vials received?		YES NO NA
b. Was there any observable headspace present in any V	/OA vial?	YES NO. (NA) SOL
14. Was there a Trip Blank in this cooler? YESNO(NA If multiple coolers, seque	1 . A
I certify that I unloaded the cooler and answered questions	7-14 (intial)	15
15a. On pres'd bottles, did pH test strips suggest preserva	tion reached the correct pH level	? YESNO.
b. Did the bottle labels indicate that the correct preserva	atives were used	YES NO NA
16. Was residual chlorine present?		YESNONA
I certify that I checked for chlorine and pH as per SOP and a	answered questions 15-16 (intial)	
17. Were custody papers properly filled out (ink, signed, et	c)?	FESNONA
18. Did you sign the custody papers in the appropriate place	e?	FESNONA
19. Were correct containers used for the analysis requester	d?	YESNONA
20. Was sufficient amount of sample sent in each contained	?	ESNONA
I certify that I entered this project into LIMS and answered c	uestions 17-20 (intial)	UY
I certify that I attached a label with the unique LIMS number	to each container (intial)	
21. Were there Non-Conformance issues at login? YES	Was a NCM generated? YES	

12

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	Address:	10179 Highway 78																		•	ment A	-		Yes		No		
	City/State/Zip:	Ladson, SC 29456													Site S	tate: S	SC								-			
	Project Manager:	Tom McElwee email	l: mcelwee@e	eginc.ne												°O#:	1	03	<u>چ</u>	~								
	Telephone Number:	843.412.2097		<i>j</i>		ax No.	8	43	-8	79	7-1	240	21		TA Quo	te#:		-	्र १									
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	Project Manager:	Tom McElwee	email: mcelv	vee@eegii	nc.net								-		0.0	PO#		10.	35										
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4:24	1285 Dove 1245 Dove 1245 Dove 1445 Dove	21/17/19 21/19 21/19	144/5 144/5 134/5 134/5	V V V No. of Containers Shipped		Field Filtered	HNOS (Red Label) (NON NON (Red Label) (NON NON NON NON NON NON NON NON NON NO			Nore (Black Label)	Groundwater	Vastewater Drinkina Water		X X Soil												RUSH TAT (Pre-Schedule	Standard TAT	Fax Results	Page 26 Sept Oc with report
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Client: Environmental Enterprise Group

Login Number: 25044

List Number: 1 Creator: Buckingham, Paul

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 13
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").	N/A
Multiphasic samples are not present.	True
Samples do not require splitting or compositing.	True
Residual Chlorine Checked.	N/A

Job Number: 490-25044-1

List Source: TestAmerica Nashville

ATTACHMENT A

		ION-	HAZAF	RDO	US	MA	NIF	EŞ		
	NON-HAZARDOÙS MANIFEST	1. Generator's US		Manifest Doc	No.	2. Page 1	l of 1			
	3. Generator's Mailing Address: MCAS BEAUFORT		Generator's Site Address	(If different than n	nailing):		est Number /MNA B. State	01519 Generator's		
	BEAUFORT, SC 29904 4. Generator's Phone 843-87 5. Transporter 1 Company Name									
	Include having and are	(A ID Number			Transporter's I porter's Phone			
	7. Transporter 2 Company Name			A ID Number			ransporter's I orter's Phone		The state of the s	
	9. Designated Facility Name and Site A HICKORY HILL LANDFILL 2621 LOW COUNTRY DRIVE	ddress		A ID Number		G. State F	acility ID acility Phone		987-4643	
	RIDGELAND, SC 29936									
G				12. Co No.	ntainers Type	13. Total Quantity	14. Unit Wt./Vol.	I. M	lisc. Comments	
E N E R		ITH SAND				221	750	706	715161+ 	
A T O	b									
R	WM Profile #	· · · · · · · · · · · · · · · · · · ·		:						
	WM Profile # d.									
	WM Profile # J. Additional Descriptions for Materia	s Listed Above		K. Dispos	al Location					
	15 Special Handling Instructions and A	ditional Informati	ion /	Cell Grid				Level		
	15. Special Handling Instructions and Additional Information UST'S FREAM' 3,590 ASTUR 40642 Duli lin D591 ASTUR' 3,434 Eldue burner 5)1212 Chudinal									
	Purchase Order # 16. GENERATOR'S CERTIFICATE:		EMERGENCY C						, 	
	I hereby certify that the above-describe accurately described, classified and pac Printed Name			ortation acco				Month	Day Year	
T R A N S P	17. Transporter 1 Acknowledgement of Printed Name Part H	Shai.	Signature (Q /	Ð			Month	Day Year	
O R T E R	18. Transporter 2 Acknowledgement of Printed Name Harmes Balde	jogen generget tiller	als Signature		ala	L. have maderned	······································	Month	Day Year	
F A C I	 Certificate of Final Treatment/Dispo l certify, on behalf of the above listed tru applicable laws, regulations, permits and 	eatment facility, th d licenses on the d	ates listed above.	······			as managed ir	o complianc	e with all	
L I T Y	20. Facility Owner or Operator: Certific	ation of receipt of	non-hazardous materials	covered by th	is manifest.			Month	Day Year	
L	White- TREATMENT, STORAGE, DISPOSA	AL FACILITY COPY	Blue- GENERATO	R #2 COPY	<u> ~~~~</u>	Ye	llow- GENERA	TOR #1 COP	Υ Υ	

Dink	FACILITY	HCC	ONILV	
⊢ 111K ⁺	FACILITY	USE	UNLI	

Gold- TRANSPORTER #1 COPY

Appendix C Laboratory Analytical Report - Groundwater



Volatile Organic Compounds by GC/MS

Client: AECOM - Resolution Consultants

Description: BEALB1212TW01WG20170308

Laboratory ID: SC09025-006 Matrix: Aqueous

Date Sampled:03/08/2017 1445

Date Received: 03/09/2017 **Run Prep Method** Analytical Method Dilution Analysis Date Analyst **Prep Date** Batch 2 5030B 8260B 03/13/2017 1535 ALL 36933 1 CAS Analytical Parameter Result Q LOQ LOD DL Units Run Number Method 0.40 Benzene 71-43-2 8260B 0.80 U 1.0 0.80 ug/L 2 Ethylbenzene 100-41-4 8260B 0.80 U 1.0 0.80 0.40 ug/L 2 Naphthalene 91-20-3 8260B 0.80 U 1.0 0.80 0.40 ug/L 2 ug/L U 2 Toluene 108-88-3 8260B 0.80 1.0 0.80 0.40 Xylenes (total) 1330-20-7 8260B 0.80 U 1.0 0.80 0.40 ug/L 2 Run 2 Acceptance Surrogate Q % Recovery Limits Bromofluorobenzene 88 85-114 106 Dibromofluoromethane 80-119 1,2-Dichloroethane-d4 88 81-118 Toluene-d8 94 89-112

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 \geq MDLP = The RPD between two GC columns exceeds 40%N = Recovery is out of criteriaL = LCS/LCSD failureWhere applicable, all soil sample analysis ar reported on a dry weight basis unless flagged with a "W"S = MS/MSD failure

Shealy Environmental Services, Inc. 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com Page: 16 of 35

Client: AECOM - Resolution Consultants

Description: BEALB1212TW01WG20170308

Date Sampled:03/08/2017 1445

Date Received: 03/09/2017

Laboratory ID: SC09025-006 Matrix: Aqueous

Run Prep Method Analytical Method Dilution Analysis Date Analyst **Prep Date** Batch 1 3520C 8270D 1 03/17/2017 2005 RBH 03/15/2017 1020 37108 2 3520C 8270D 1 03/22/2017 1757 RBH 03/21/2017 1114 37636

Parameter			CAS nber	Analytic Metho		Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene		56-	55-3	827	0D	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene		205-	99-2	827	0D	0.10	UQ	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene		207-	08-9	827	0D	0.10	UQ	0.20	0.10	0.040	ug/L	1
Chrysene		218-	01-9	827	0D	0.10	UQ	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene		53-	70-3	827	0D	0.10	UQ	0.20	0.10	0.040	ug/L	1
Surrogate	Q	Run 1 % Recovery	Acceptand Limits		Run % Reco		ceptance Limits	•				
Nitrobenzene-d5	N	42	44-120	Н	5	8	44-120					
2-Fluorobiphenyl	N	40	44-119	н	5	В	44-119					
Terphenyl-d14		74	50-134	н	73	3	50-134					

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 ar reported on a dry weight basis unless flagged with a "W"S = MS/MSD failure

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

Description: BEALB1212TW01WG20170308

Date Sampled:03/08/2017 1445

3520C

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Laboratory ID: SC09025-006 Matrix: Aqueous

Batch

 Date Received: 03/09/2017
 Analytical Method
 Dilution
 Analysis Date
 Analyst

 1
 3520C
 8270D
 1
 03/17/2017 2005
 RBH

 8270D
 1
 03/17/2017 2005
 RBH
 03/15/2017 1020 37108

 8270D
 1
 03/22/2017 1757
 RBH
 03/21/2017 1114 37636

Prep Date

Parameter		(Num		Analytic Metho	D -	sult Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene		56-5	55-3	827	0D 0.	.10 UH	0.20	0.10	0.040	ug/L	2
Benzo(b)fluoranthene		205-9	99-2	827	0D 0.	.10 UH	0.20	0.10	0.040	ug/L	2
Benzo(k)fluoranthene		207-0	08-9	827	0D 0.	.10 UH	0.20	0.10	0.040	ug/L	2
Chrysene		218-0	01-9	827	0D 0.	.10 UH	0.20	0.10	0.040	ug/L	2
Dibenzo(a,h)anthracene		53-7	70-3	827	0D 0.	.10 UH	0.20	0.10	0.040	ug/L	2
Surrogate	Q	Run 1 % Recovery	Acceptand Limits		Run 2 % Recover	Accept y Lim					
Nitrobenzene-d5	Ν	42	44-120	Н	58	44-1	120				
2-Fluorobiphenyl	Ν	40	44-119	н	58	44-1	119				
Terphenyl-d14		74	50-134	н	73	50-1	134				

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 \geq MDLP = 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 failure

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





August 24, 2016

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 Tank Assessment Reports

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (the Department) received the Underground Storage Tanks (USTs) Assessment Reports for the addresses listed in the attachment. 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 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 these sites.

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,

LIPT

Laurel Petrus, Environmental Engineer Associate RCRA Federal Facilities Section

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, August 24, 2016 Subject: IGWA, Laurel Bay Underground Tank Assessment Reports

Draft Final Initial Groundwater Investigation Report for (41 addresses)

122 Banyan	905 Barracuda	
159 Cypress Tank 2	921 Barracuda	
221 Cypress	935 Albacore	
283 Birch Tank 2	946 Albacore	
328 Ash Tank 2	1037 Iris	
346 Ash	1039 Iris	
359 Aspen	1110 Iris	
370 Aspen	1134 Iris	
377 Aspen	1143 Iris	
409 Elderberry	1202 Cardinal	
486 Laurel Bay	1212 Cardinal	
515 Laurel Bay	1222 Cardinal	10
542 Laurel Bay	1224 Cardinal	
593 Aster	1226 Dove	
630 Dahlia	1236 Dove	
693 Camellia	1245 Dove	
723 Blue Bell	1247 Dove	
774 Althea	1274 Albatross	1995.
860 Dolphin	1319 Albatross	
873 Cobia	1337 Albatross	
883 Cobia		



July 27, 2017

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

RE: Draft Final Initial Groundwater Investigation Report, February and March 2017

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (DHEC) received groundwater data from temporary monitoring well installations in the Draft Final Groundwater Investigation Report, Laurel Bay Military Housing Area for the fifty two (52) addresses shown in the attachment. 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 DHEC's request, groundwater samples were collected from the attached referenced addresses. DHEC 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 groundwater monitoring wells should be installed at the three (3) stated addresses. For the remaining forty nine (49) addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time.

Please note that DHEC'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, DHEC 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,

Lalpt

Laurel Petrus, Environmental Engineer Associate Bureau of Land and Waste Management

Cc: Russell Berry, EQC Region 8 Shawn Dolan, Resolution Consultants Bryan Beck, NAVFAC MIDLANT Attachment to: Petrus to Drawdy

Draft Final Initial Groundwater Investigation Report for (52 addresses)

Permanent Well Installation recommedation (3 Addresses):

- 254 Beech Street (110 ug/L)
- o 268 Beech Street (28 ug/L)
- o 774 Althea Street (35 ug/L)

No Further Action recommendation (49 addresses):

113 Birch Drive 0 121 Banyan Drive 0 122 Banyan Drive 0 **159 Cypress Street** 0 221 Cypress Street 0 274 Birch Drive 0 279 Birch Drive 0 283 Birch Drive 0 328 Ash Street 0 346 Ash Street 0 359 Aspen Street 0 370 Aspen Street 0 377 Aspen Street 0 409 Elderberry Drive 0 465 Dogwood Drive 0 480 Laurel Bay Boulevard 0 486 Laurel Bay Boulevard 0 515 Laurel Bay Boulevard Q 542 Laurel Bay Boulevard 0 593 Aster Street 0 630 Dahlia Drive 0 641 Dahlia Drive 0 693 Camelia Drive 0 723 Bluebell Lane 0 860 Dolphin Street 0 873 Cobia Drive 0 883 Cobia Drive 0 905 Barracuda Drive 0 921 Barracuda Drive 0 935 Albacore Street 0 946 Albacore Street 0 1037 Iris Lane 0 1039 Iris Lane 0 1110 Iris Lane 0 1134 Iris Lane 0 1143 Iris Lane 0 1177 Bobwhite Drive 0 1202 Cardinal Lane 0 0 1212 Cardinal Lane 0 1222 Cardinal Lane 1224 Cardinal Lane 0 1226 Dove Lane 0 1236 Dove Lane 0 1245 Dove Lane 0 1247 Dove Lane 0 0 1274 Albatross Drive 1319 Albatross Drive 0 1337 Albatross Drive 0 1346 Cardinal Lane 0