SUMMARY REPORT 188 WEST ALTHEA STREET (FORMERLY 771 WEST ALTHEA STREET) LAUREL BAY MILITARY HOUSING AREA MARINE CORPS AIR STATION BEAUFORT BEAUFORT, SC

Revision: 0 Prepared for:

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

and



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

JUNE 2021

SUMMARY REPORT 188 WEST ALTHEA STREET (FORMERLY 771 WEST ALTHEA STREET) LAUREL BAY MILITARY HOUSING AREA MARINE CORPS AIR STATION BEAUFORT BEAUFORT, SC

Revision: 0 Prepared for:

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

and



Naval Facilities Engineering Command Atlantic

9324 Virginia Avenue Norfolk, Virginia 23511-3095

Prepared by:



CDM - AECOM Multimedia Joint Venture 10560 Arrowhead Drive, Suite 500 Fairfax, Virginia 22030

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



Summary Report 188 West Althea Street (Formerly 771 West Althea Street) Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort June 2021

Table of Contents

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

Tables

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

Appendices

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



List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
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 188 West Althea Street (Formerly 771 West Althea Street). This NFA determination indicates that there are no unacceptable risks to human health or the environment for the petroleum constituents associated with the home heating oil USTs. The following information is included in this report:

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

1.1 Background Information

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



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

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

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

1.2 UST Removal and Assessment Process

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

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

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



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

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

2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 188 West Althea Street (Formerly 771 West Althea Street). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 771 West Althea Street* (MCAS Beaufort, 2012). 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 – May and June 2015* (Resolution Consultants, 2015). The laboratory report that includes the pertinent IGWA analytical results for this site is presented in Appendix C.

2.1 UST Removal and Soil Sampling

On August 8, 2012, a single 280 gallon heating oil UST was removed from underneath the edge of the front concrete porch and the front landscaped bed area at 188 West Althea Street (Formerly 771 West Althea Street). The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). The UST was removed, cleaned, and shipped offsite



for recycling. There was no visual evidence (i.e., staining or sheen) of petroleum impact at the time of the UST removal. According to the UST Assessment Report (Appendix B), the depth to the base of the UST was 6'1" 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 188 West Althea Street (Formerly 771 West Althea Street) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated May 15, 2014, SCDHEC requested an IGWA for 188 West Althea Street (Formerly 771 West Althea Street) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix D.

2.3 Groundwater Sampling

On June 9, 2015, a temporary monitoring well was installed at 188 West Althea Street (Formerly 771 West Althea Street), in accordance with the South Carolina Well Standards and Regulations (R.61-71.H-I, updated June 24, 2016). In order to provide data that can be used to determine whether COPCs are migrating to underlying groundwater, the monitoring well was placed in the same general location as the former heating oil UST. The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). Further



details are provided in the *Initial Groundwater Investigation Report – May and June 2015* (Resolution Consultants, 2015).

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 – May and June 2015* (Resolution Consultants, 2015).

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 188 West Althea Street (Formerly 771 West Althea Street) were less than the SCDHEC RBSLs and the site specific groundwater VISLs (Table 2), which indicated that the groundwater was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

3.0 **PROPERTY STATUS**

Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 188 West Althea Street (Formerly 771 West Althea Street). This NFA determination was obtained in a letter dated February 22, 2016. SCDHEC's NFA letter is provided in Appendix D.

4.0 **REFERENCES**

- Marine Corps Air Station Beaufort, 2012. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 771 West Althea Street, Laurel Bay Military Housing Area*, October 2012.
- Resolution Consultants, 2015. Initial Groundwater Investigation Report May and June 2015 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina, October 2015.



- 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 - Soil188 West Althea Street (Formerly 771 West Althea Street)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Results Sample Collected 08/14/12				
Volatile Organic Compounds Analyzed	d by EPA Method 8260B (mg/kg)					
Benzene	0.003	0.0602				
Ethylbenzene	1.15	0.235				
Naphthalene	0.036	8.43				
Toluene	0.627	0.575				
Xylenes, Total	13.01	1.13				
Semivolatile Organic Compounds Ana	Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)					
Benzo(a)anthracene	0.66	0.221				
Benzo(b)fluoranthene	0.66	0.195				
Benzo(k)fluoranthene	0.66	0.0744				
Chrysene	0.66	0.271				
Dibenz(a,h)anthracene	0.66	0.0432				

Notes:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 2.0 (SCDHEC, April 2013).

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 188 West Althea Street (Formerly 771 West Althea Street) 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 06/09/15
Volatile Organic Compounds Analyzed	l by EPA Method 8260B (µg	/L)	
Benzene	5	16.24	ND
Ethylbenzene	700	45.95	ND
Naphthalene	25	29.33	ND
Toluene	1000	105,445	ND
Xylenes, Total	10,000	2,133	ND
Semivolatile Organic Compounds Ana	lyzed by EPA Method 8270) (µg/L)	
Benzo(a)anthracene	10	NA	ND
Benzo(b)fluoranthene	10	NA	ND
Benzo(k)fluoranthene	10	NA	ND
Chrysene	10	NA	ND
Dibenz(a,h)anthracene	10	NA	ND

Notes:

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

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

Bold font indicates the analyte was detected.

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

EPA - United States Environmental Protection Agency

JE - Johnson & Ettinger

NA - Not Applicable

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

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

µg/L - micrograms per liter

VISL - Vapor Intrusion Screening Level

Appendix A Multi-Media Selection Process for LBMH





Appendix A - Multi-Media Selection Process for LBMH

Appendix B UST Assessment Report



10/10/12

Attachment 1

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

Γ

State Use Only

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

I. OWNERSHIP OF UST (S)

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

II. SITE IDENTIFICATION AND LOCATION

Permit I.D. # Laurel Bay Milita	<u> </u>	ne Corps Air	<u>Station, Beaufort,</u>	<u>SC</u>	
Facility Name or Company	Site Identifier				
771 Althea Street, Laurel Bay Military Housing Area Street Address or State Road (as applicable)					
Beaufort,	Beaufort				
City	County				
		<u> </u>			

Attachment 2

III. INSURANCE INFORMATION

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

		771Althea
A.	Product(ex. Gas, Kerosene)	Heating oil
B.	Capacity(ex. 1k, 2k)	280 gal
C.	Age	Late 1950s
D.	Construction Material(ex. Steel, FRP)	Steel
Е·	Month/Year of Last Use	Mid 1980s
F.	Depth (ft.) To Base of Tank	6'1"
G.	Spill Prevention Equipment Y/N	No
Н∙	Overfill Prevention Equipment Y/N	No
I.	Method of Closure Removed/Filled	Removed
J _.	Date Tanks Removed/Filled	8/8/2012
K.	Visible Corrosion or Pitting Y/N	Yes
L.	Visible Holes Y/N	Yes

M. Method of disposal for any USTs removed from the ground (attach disposal manifests) UST 771Althea was removed from the ground and disposed of at a "Subtitle D" landfill. See Attachment "A".

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests) UST 771Althea was previously filled with sand by others.

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

VII. PIPING INFORMATION

		771Althea
		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 V/N	No
U.		
H.	Age	Late 1950s
I.	If any corrosion, pitting, or holes were observed, des	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.

	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.		x	
Name of DHEC representative authorizing soil removal:			
E. Was a petroleum sheen or free product detected on any excavation or boring waters?		x	
If yes, indicate location and thickness.			

IX. SITE CONDITIONS

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

В.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
771 Althea-a	Excav at fill end	Soil	Sandy	6'1"	8/14/12 1615 hrs	P. Shaw	
Not	e: This (ank was re	sampled due	to the	original s	ample's	
tem	perature	being out	of tolerand	e when	received at	the lab	•
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

* = Depth Below the Surrounding Land Surface

XI. SAMPLING METHODOLOGY

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

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

XII. RECEPTORS

		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?		Х
	If yes, indicate type of receptor, distance, and direction on site map.		
В.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?		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 contamination? *Sewer, water, electric cable & fiber optic	*X tty,	
	If yes, indicate the type of utility, distance, and direction on the site map.		
E.	Has contaminated soil been identified at a depth less than 3 feet below land surface in an area that is not capped by asphalt or concrete?		Х
	If yes, indicate the area of contaminated soil on the site map.		

XIII. SITE MAP

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

(Attach Site Map Here)









Picture 1: Location of UST 771Althea.



Picture 2: UST 771Althea 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.

CoC UST	771Althea				
Benzene	0.0602 mg/kg				
Toluene	0.575 mg/kg				
Ethylbenzene	0.235 mg/kg				
Xylenes	1.13 mg/kg				
Naphthalene	8.43 mg/kg				
Benzo (a) anthracene	0.221 mg/kg				
Benzo (b) fluoranthene	0.195 mg/kg				
Benzo (k) fluoranthene	0.0744 mg/kg				
Chrysene	0.271 mg/kg				1
Dibenz (a, h) anthracene	0.0432 mg/kg				
TPH (EPA 3550)					
		 r	·····	···	
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	<u>, , , , , , , , , , , , , , , , , , , </u>			<u>-</u>
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: 490-4605-1

Client Project/Site: Laurel Bay Housing Project

For:

Environmental Enterprise Group 10179 Highway 78 Ladson, South Carolina 29456

Attn: Mr. Tom McElwee

Kuth Hage

Authorized for release by: 8/31/2012 4:18:11 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.



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Definitions	5
Client Sample Results 6	5
QC Sample Results 1	12
QC Association 1	17
Chronicle	19
Method Summary	21
Certification Summary 2	22
Chain of Custody	23
Receipt Checklists	25

Sample Summary

Client: Environmental Enterprise Group Project/Site: Laurel Bay Housing Project TestAmerica Job ID: 490-4605-1

.

1

City Colored

Ē

Client Sample ID	Matrix	Collected	Received
1167 Jasmine	Solid	08/14/12 10:45	08/21/12 08:15
1236 Dove - a	Solid	08/14/12 15:15	08/21/12 08:15
630 Dahlia - a	Solid	08/14/12 15:45	08/21/12 08:15
771 Althea - a	Solid	08/14/12 16:15	08/21/12 08:15
1305 Eagle	Solid	08/15/12 15:30	08/21/12 08:15
1417 Albatross	Solid	08/16/12 15:45	08/21/12 08:15
	Client Sample ID 1167 Jasmine 1236 Dove - a 630 Dahlia - a 771 Althea - a 1305 Eagle 1417 Albatross	Client Sample IDMatrix1167 JasmineSolid1236 Dove - aSolid630 Dahlia - aSolid771 Althea - aSolid1305 EagleSolid1417 AlbatrossSolid	Client Sample ID Matrix Collected 1167 Jasmine Solid 08/14/12 10:45 1236 Dove - a Solid 08/14/12 15:15 630 Dahlia - a Solid 08/14/12 15:45 771 Althea - a Solid 08/14/12 16:15 1305 Eagle Solid 08/15/12 15:30 1417 Albatross Solid 08/16/12 15:45

Job ID: 490-4605-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-4605-1

Comments

No additional comments.

Receipt

The samples were received on 8/21/2012 8:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

GC/MS VOA

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 15022. See LCS/LCSD

Method(s) 8260B: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following sample(s): 771 Althea - a (490-4605-4).

Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: 1167 Jasmine (490-4605-1). Evidence of matrix interference is present.

Method(s) 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 15621.

Method(s) 8260B: The method blank for batch 15621 contained Methylene Chloride, Bromodichloromethane, Toluene, and Xylenes 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.

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.

Definitions/Glossary

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

E

Qualifiers

GC/MS VOA

X Surrogate is outside control limits J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	
J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	
B Compound was found in the blank and sample.	

GC/MS Semi VOA

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
\$	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
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
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
RL	Reporting Limit
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: 1167 Jasmine

Date Collected: 08/14/12 10:45 Date Received: 08/21/12 08:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.101	0.0339	mg/Kg	Ģ	08/22/12 15:09	08/24/12 13:21	1
Ethylbenzene	0.873		0.101	0.0339	mg/Kg	ø	08/22/12 15:09	08/24/12 13:21	1
Naphthalene	0.677		0.306	0.104	mg/Kg	0	08/22/12 15:18	08/27/12 15:56	1
Toluene	0.102		0.101	0.0375	mg/Kg	4	08/22/12 15:09	08/24/12 13:21	1
Xylenes, Total	6.20		0.253	0.0339	mg/Kg	\$	08/22/12 15:09	08/24/12 13:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		70 - 130				08/22/12 15:09	08/24/12 13:21	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130				08/22/12 15:18	08/27/12 15:56	1
4-Bromofluorobenzene (Surr)	138	x	70 - 130				08/22/12 15:09	08/24/12 13:21	1
4-Bromofluorobenzene (Surr)	98		70 - 130				08/22/12 15:18	08/27/12 15:56	1
Dibromofluoromethane (Surr)	101		70 - 130				08/22/12 15:09	08/24/12 13:21	1
Dibromofluoromethane (Surr)	92		70 - 130				08/22/12 15:18	08/27/12 15:56	1
Toluene-d8 (Surr)	111		70 - 130				08/22/12 15:09	08/24/12 13:21	1
Toluene-d8 (Surr)	100		70 - 130				08/22/12 15:18	08/27/12 15:56	1
Method: 8270D - Semivolatile	Organic Compou	inds (GC/MS	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0658	0.00982	mg/Kg	¢	08/24/12 09:30	08/25/12 21:47	1
Acapaphthylana	ND		0.0659	0.00004	malka	32	09/24/42 00.20	00/05/10 01.47	4

Acenaphthene	ND		0.0658	0.00982	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Acenaphthylene	ND		0.0658	0.00884	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Anthracene	0.169		0.0658	0.00884	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Benzo[a]anthracene	0.0378	J	0.0658	0.0147	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Benzo[a]pyrene	ND		0.0658	0.0118	mg/Kg	Ċ.	08/24/12 09:30	08/25/12 21:47	1
Benzo[b]fluoranthene	0.0398	J	0.0658	0.0118	mg/Kg	-22	08/24/12 09:30	08/25/12 21:47	1
Benzo[g,h,i]perylene	ND		0.0658	0.00884	mg/Kg	ø	08/24/12 09:30	08/25/12 21:47	1
Benzo[k]fluoranthene	ND		0.0658	0.0137	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Pyrene	0.155		0.0658	0.0118	mg/Kg	4	08/24/12 09:30	08/25/12 21:47	1
Phenanthrene	1.45		0.0658	0.00884	mg/Kg	0	08/24/12 09:30	08/25/12 21:47	1
Chrysene	0.0454	J	0.0658	0.00884	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Dibenz(a,h)anthracene	ND		0.0658	0.00687	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Fluoranthene	0.122		0.0658	0.00884	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Fluorene	0.581		0.0658	0.0118	mg/Kg	¢.	08/24/12 09:30	08/25/12 21:47	1
Indeno[1,2,3-cd]pyrene	ND		0.0658	0.00982	mg/Kg	\$	08/24/12 09:30	08/25/12 21:47	1
Naphthalene	0.738		0.0658	0.00884	mg/Kg	¢	08/24/12 09:30	08/25/12 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	68		29 - 120				08/24/12 09:30	08/25/12 21:47	1
Terphenyl-d14 (Surr)	91		13 - 120				08/24/12 09:30	08/25/12 21:47	1
Nitrobenzene-d5 (Surr)	84		27 - 120				08/24/12 09:30	08/25/12 21:47	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82		0.10	0.10	%			08/21/12 15:03	1

Lab Sample ID: 490-4605-1 Matrix: Solid Percent Solids: 81.6

R

E.F.

Client Sample ID: 1236 Dove - a

Date Collected: 08/14/12 15:15 Date Received: 08/21/12 08:15

Lab Sample ID: 490-4605-2 Matrix: Solid Percent Solids: 93.7

ſ.

Ē

Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.105	0.0352	mg/Kg	¢	08/22/12 15:09	08/24/12 13:50	1
Ethylbenzene	ND		0.105	0.0352	mg/Kg	\$	08/22/12 15:09	08/24/12 13:50	1
Naphthalene	ND		0.263	0.0894	mg/Kg	\$	08/22/12 15:09	08/24/12 13:50	1
Toluene	ND		0.105	0.0389	mg/Kg	\$	08/22/12 15:09	08/24/12 13:50	1
Xylenes, Total	ND		0.263	0.0352	mg/Kg	ø	08/22/12 15:09	08/24/12 13:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 130				08/22/12 15:09	08/24/12 13:50	1
4-Bromofluorobenzene (Surr)	103		70 - 130				08/22/12 15:09	08/24/12 13:50	1
Dibromofluoromethane (Surr)	94		70 - 130				08/22/12 15:09	08/24/12 13:50	1
Toluene-d8 (Surr)	104		70 - 130				08/22/12 15:09	08/24/12 13:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0665	0.00992	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Acenaphthylene	ND		0.0665	0.00893	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Anthracene	ND		0.0665	0.00893	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Benzo[a]anthracene	ND		0.0665	0.0149	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Benzo[a]pyrene	ND		0.0665	0.0119	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Benzo[b]fluoranthene	ND		0.0665	0.0119	mg/Kg	4	08/24/12 09:30	08/25/12 23:05	1
Benzo[g,h,i]perylene	ND		0.0665	0.00893	mg/Kg	¢	08/24/12 09:30	08/25/12 23:05	1
Benzo[k]fluoranthene	ND		0.0665	0.0139	mg/Kg	ø	08/24/12 09:30	08/25/12 23:05	1
Pyrene	ND		0.0665	0.0119	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Phenanthrene	ND		0.0665	0.00893	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Chrysene	ND		0.0665	0.00893	mg/Kg	Q	08/24/12 09:30	08/25/12 23:05	1
Dibenz(a,h)anthracene	ND		0.0665	0.00694	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Fluoranthene	ND		0.0665	0.00893	mg/Kg	\$	08/24/12 09:30	08/25/12 23:05	1
Fluorene	ND		0.0665	0.0119	mg/Kg	12	08/24/12 09:30	08/25/12 23:05	1
Indeno[1,2,3-cd]pyrene	ND		0.0665	0.00992	mg/Kg	0	08/24/12 09:30	08/25/12 23:05	1
Naphthalene	ND		0.0665	0.00893	mg/Kg	¢	08/24/12 09:30	08/25/12 23:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	54		29 - 120				08/24/12 09:30	08/25/12 23:05	1
Terphenyl-d14 (Surr)	80		13 - 120				08/24/12 09:30	08/25/12 23:05	1
Nitrobenzene-d5 (Surr)	55		27 - 120				08/24/12 09:30	08/25/12 23:05	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	94		0.10	0.10	%			08/21/12 15:03	1

Client Sample ID: 630 Dahlia - a

Date Collected: 08/14/12 15:45 Date Received: 08/21/12 08:15

Lab Sample ID: 490-4605-3 Matrix: Solid Percent Solids: 87.4

R

Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.110	0.0367	mg/Kg	Q.	08/22/12 15:09	08/24/12 14:19	1
Ethylbenzene	ND		0.110	0.0367	mg/Kg	Ð.	08/22/12 15:09	08/24/12 14:19	1
Naphthalene	ND		0.274	0.0931	mg/Kg	0-	08/22/12 15:09	08/24/12 14:19	1
Toluene	ND		0.110	0.0405	mg/Kg	\$	08/22/12 15:09	08/24/12 14:19	1
Xylenes, Total	ND		0.274	0.0367	mg/Kg	¢	08/22/12 15:09	08/24/12 14:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		70 - 130				08/22/12 15:09	08/24/12 14:19	1
4-Bromofluorobenzene (Surr)	126		70 - 130				08/22/12 15:09	08/24/12 14:19	1
Dibromofluoromethane (Surr)	102		70 - 130				08/22/12 15:09	08/24/12 14:19	1
Toluene-d8 (Surr)	97		70 - 130				08/22/12 15:09	08/24/12 14:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0667	0.00995	mg/Kg	\$	08/24/12 09:30	08/25/12 23:31	1
Acenaphthylene	ND		0.0667	0.00896	mg/Kg	\$	08/24/12 09:30	08/25/12 23:31	1
Anthracene	ND		0.0667	0.00896	mg/Kg	\$	08/24/12 09:30	08/25/12 23:31	1
Benzo[a]anthracene	ND		0.0667	0.0149	mg/Kg	ø	08/24/12 09:30	08/25/12 23:31	1
Benzo[a]pyrene	ND		0.0667	0.0119	mg/Kg	*	08/24/12 09:30	08/25/12 23:31	1
Benzo[b]fluoranthene	ND		0.0667	0.0119	mg/Kg	众	08/24/12 09:30	08/25/12 23:31	1
Benzo[g,h,i]perylene	ND		0.0667	0.00896	mg/Kg	\$	08/24/12 09:30	08/25/12 23:31	1
Benzo[k]fluoranthene	ND		0.0667	0.0139	mg/Kg	Q.	08/24/12 09:30	08/25/12 23:31	1
Pyrene	ND		0.0667	0.0119	mg/Kg	¢	08/24/12 09:30	08/25/12 23:31	1
Phenanthrene	ND		0.0667	0.00896	mg/Kg	0	08/24/12 09:30	08/25/12 23:31	1
Chrysene	ND		0.0667	0.00896	mg/Kg	\$\$.	08/24/12 09:30	08/25/12 23:31	1
Dibenz(a,h)anthracene	ND		0.0667	0.00697	mg/Kg	Ø.	08/24/12 09:30	08/25/12 23:31	1
Fluoranthene	ND		0.0667	0.00896	mg/Kg	¢.	08/24/12 09:30	08/25/12 23:31	1
Fluorene	ND		0.0667	0.0119	mg/Kg	\$	08/24/12 09:30	08/25/12 23:31	1
Indeno[1,2,3-cd]pyrene	ND		0.0667	0.00995	mg/Kg	\$	08/24/12 09:30	08/25/12 23:31	1
Naphthalene	ND		0.0667	0.00896	mg/Kg	Ø	08/24/12 09:30	08/25/12 23:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	62		29 - 120				08/24/12 09:30	08/25/12 23:31	1
Terphenyl-d14 (Surr)	86		13 - 120				08/24/12 09:30	08/25/12 23:31	1
Nitrobenzene-d5 (Surr)	62		27 - 120				08/24/12 09:30	08/25/12 23:31	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	87		0.10	0.10	%			08/21/12 15:03	1

Client Sample ID: 771 Althea - a

Date Collected: 08/14/12 16:15 Date Received: 08/21/12 08:15

Lab Sample ID: 490-4605-4 Matrix: Solid Percent Solids: 80.9

ŀ

5

Method: 8260B - Volatile Orga	inic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0602	J	0.105	0.0351	mg/Kg	\$	08/22/12 15:09	08/24/12 14:48	1
Ethylbenzene	0.235		0.127	0.0431	mg/Kg	\$	08/22/12 15:18	08/27/12 16:25	1
Naphthalene	8.43		0.317	0.108	mg/Kg	æ	08/22/12 15:18	08/27/12 16:25	1
Toluene	0.575		0.105	0.0388	mg/Kg	<i>\$</i> 2	08/22/12 15:09	08/24/12 14:48	1
Xylenes, Total	1.13	в	0.317	0.0431	mg/Kg	¢	08/22/12 15:18	08/27/12 16:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		70 - 130				08/22/12 15:09	08/24/12 14:48	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130				08/22/12 15:18	08/27/12 16:25	1
4-Bromofluorobenzene (Surr)	0	x	70 - 130				08/22/12 15:09	08/24/12 14:48	1
4-Bromofluorobenzene (Surr)	103		70 - 130				08/22/12 15:18	08/27/12 16:25	1
Dibromofluoromethane (Surr)	106		70 - 130				08/22/12 15:09	08/24/12 14:48	1
Dibromofluoromethane (Surr)	92		70 - 130				08/22/12 15:18	08/27/12 16:25	1
Toluene-d8 (Surr)	162	x	70 - 130				08/22/12 15:09	08/24/12 14:48	1
Toluene-d8 (Surr)	101		70 - 130				08/22/12 15:18	08/27/12 16:25	1
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.800		0.0657	0.00981	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Acenaphthylene	ND		0.0657	0.00883	mg/Kg	13	08/24/12 09:30	08/25/12 23:57	1
Anthracene	0.341		0.0657	0.00883	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Benzo[a]anthracene	0.221		0.0657	0.0147	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Benzolalpyrene	0.0981		0.0657	0.0118	mg/Kg	¢	08/24/12 09:30	08/25/12 23:57	1
Benzo[b]fluoranthene	0.195		0.0657	0.0118	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Benzolg,h,ilpervlene	0.0552	J	0.0657	0.00883	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Benzo[k]fluoranthene	0.0744		0.0657	0.0137	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Pyrene	0.626		0.0657	0.0118	mg/Kg	*	08/24/12 09:30	08/25/12 23:57	1
Phenanthrene	4.22		0.131	0.0177	mg/Kg	ø	08/24/12 09:30	08/27/12 16:43	2
Chrysene	0.271		0.0657	0.00883	mg/Kg	¢	08/24/12 09:30	08/25/12 23:57	1
Dibenz(a,h)anthracene	0.0432	J	0.0657	0.00687	mg/Kg	¢	08/24/12 09:30	08/25/12 23:57	1
Eluoranthene	0.443		0.0657	0.00883	mg/Kg	¢	08/24/12 09:30	08/25/12 23:57	1
Fluorene	1.34		0.0657	0.0118	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Indepo[1 2.3-cd]pyrene	0.0575	J	0.0657	0.00981	ma/Ka	æ	08/24/12 09:30	08/25/12 23:57	1
Naphthalene	0.917	7	0.0657	0.00883	mg/Kg	\$	08/24/12 09:30	08/25/12 23:57	1
Surrogate	%Recoverv	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	55	Andrew All	29 - 120				08/24/12 09:30	08/25/12 23:57	1
Terphenyl-d14 (Surr)	83		13 - 120				08/24/12 09:30	08/25/12 23:57	1
Nitrobenzene-d5 (Surr)	61		27 - 120				08/24/12 09:30	08/25/12 23:57	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81		0.10	0.10	%			08/21/12 15:03	1

Client Sample ID: 1305 Eagle

Date Collected: 08/15/12 15:30 Date Received: 08/21/12 08:15

Lab Sample ID: 490-4605-5 Matrix: Solid Percent Solids: 97.6

Ē

Method: 8260B - Volatile Orga	anic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.108	0.0362	mg/Kg	¢	08/22/12 15:09	08/24/12 15:17	1
Ethylbenzene	ND		0.108	0.0362	mg/Kg	40	08/22/12 15:09	08/24/12 15:17	1
Naphthalene	0.118	J	0.270	0.0920	mg/Kg	\$	08/22/12 15:09	08/24/12 15:17	1
Toluene	ND		0.108	0.0400	mg/Kg	42	08/22/12 15:09	08/24/12 15:17	1
Xylenes, Total	ND		0.270	0.0362	mg/Kg	¢	08/22/12 15:09	08/24/12 15:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 130				08/22/12 15:09	08/24/12 15:17	1
4-Bromofluorobenzene (Surr)	98		70 - 130				08/22/12 15:09	08/24/12 15:17	1
Dibromofluoromethane (Surr)	95		70 - 130				08/22/12 15:09	08/24/12 15:17	1
Toluene-d8 (Surr)	117		70 - 130				08/22/12 15:09	08/24/12 15:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0665	0.00993	mg/Kg	22	08/24/12 09:30	08/26/12 00:22	1
Acenaphthylene	ND		0.0665	0.00894	mg/Kg	0	08/24/12 09:30	08/26/12 00:22	1
Anthracene	ND		0.0665	0.00894	mg/Kg	127	08/24/12 09:30	08/26/12 00:22	1
Benzo[a]anthracene	ND		0.0665	0.0149	mg/Kg	ø	08/24/12 09:30	08/26/12 00:22	1
Benzo[a]pyrene	ND		0.0665	0.0119	mg/Kg	\$	08/24/12 09:30	08/26/12 00:22	1
Benzo[b]fluoranthene	ND		0.0665	0.0119	mg/Kg	13	08/24/12 09:30	08/26/12 00:22	1
Benzo[g,h,i]perylene	ND		0.0665	0.00894	mg/Kg	¢	08/24/12 09:30	08/26/12 00:22	1
Benzo[k]fluoranthene	ND		0.0665	0.0139	mg/Kg	ø	08/24/12 09:30	08/26/12 00:22	1
Pyrene	ND		0.0665	0.0119	mg/Kg	43	08/24/12 09:30	08/26/12 00:22	1
Phenanthrene	ND		0.0665	0.00894	mg/Kg	\$2°	08/24/12 09:30	08/26/12 00:22	1
Chrysene	ND		0.0665	0.00894	mg/Kg	-	08/24/12 09:30	08/26/12 00:22	1
Dibenz(a,h)anthracene	ND		0.0665	0.00695	mg/Kg	ø	08/24/12 09:30	08/26/12 00:22	1
Fluoranthene	ND		0.0665	0.00894	mg/Kg	52	08/24/12 09:30	08/26/12 00:22	1
Fluorene	ND		0.0665	0.0119	mg/Kg	575	08/24/12 09:30	08/26/12 00:22	1
Indeno[1,2,3-cd]pyrene	ND		0.0665	0.00993	mg/Kg	Ø	08/24/12 09:30	08/26/12 00:22	1
Naphthalene	ND		0.0665	0.00894	mg/Kg	Ø	08/24/12 09:30	08/26/12 00:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	59		29 - 120				08/24/12 09:30	08/26/12 00:22	1
Terphenyl-d14 (Surr)	79		13 - 120				08/24/12 09:30	08/26/12 00:22	1
Nitrobenzene-d5 (Surr)	58		27 - 120				08/24/12 09:30	08/26/12 00:22	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	98		0.10	0.10	%			08/21/12 15:03	1

Client Sample ID: 1417 Albatross

Date Collected: 08/16/12 15:45 Date Received: 08/21/12 08:15

Lab Sample ID: 490-4605-6 Matrix: Solid Percent Solids: 81.2

11

Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.102	0.0343	mg/Kg	¢	08/22/12 15:09	08/24/12 15:47	1
Ethylbenzene	ND		0.102	0.0343	mg/Kg	Φ	08/22/12 15:09	08/24/12 15:47	1
Naphthalene	ND		0.256	0.0870	mg/Kg	¢	08/22/12 15:09	08/24/12 15:47	1
Toluene	ND		0.102	0.0379	mg/Kg	\$	08/22/12 15:09	08/24/12 15:47	1
Xylenes, Total	ND		0.256	0.0343	mg/Kg	¢	08/22/12 15:09	08/24/12 15:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 130				08/22/12 15:09	08/24/12 15:47	1
4-Bromofluorobenzene (Surr)	125		70 - 130				08/22/12 15:09	08/24/12 15:47	1
Dibromofluoromethane (Surr)	89		70 - 130				08/22/12 15:09	08/24/12 15:47	1
Toluene-d8 (Surr)	106		70 - 130				08/22/12 15:09	08/24/12 15:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0658	0.00982	mg/Kg	¢	08/24/12 09:30	08/26/12 00:48	1
Acenaphthylene	ND		0.0658	0.00884	mg/Kg	ζ¢.	08/24/12 09:30	08/26/12 00:48	1
Anthracene	ND		0.0658	0.00884	mg/Kg	¢	08/24/12 09:30	08/26/12 00:48	1
Benzo[a]anthracene	ND		0.0658	0.0147	mg/Kg	¢.	08/24/12 09:30	08/26/12 00:48	1
Benzo[a]pyrene	ND		0.0658	0.0118	mg/Kg	\$	08/24/12 09:30	08/26/12 00:48	1
Benzo[b]fluoranthene	ND		0.0658	0.0118	mg/Kg	-\$2	08/24/12 09:30	08/26/12 00:48	1
Benzo[g,h,i]perylene	ND		0.0658	0.00884	mg/Kg	\$	08/24/12 09:30	08/26/12 00:48	1
Benzo[k]fluoranthene	ND		0.0658	0.0137	mg/Kg	¢	08/24/12 09:30	08/26/12 00:48	1
Pyrene	ND		0.0658	0.0118	mg/Kg	袋	08/24/12 09:30	08/26/12 00:48	.1
Phenanthrene	ND		0.0658	0.00884	mg/Kg	¢	08/24/12 09:30	08/26/12 00:48	1
Chrysene	ND		0.0658	0.00884	mg/Kg	¢	08/24/12 09:30	08/26/12 00:48	1
Dibenz(a,h)anthracene	ND		0.0658	0.00687	mg/Kg	¢	08/24/12 09:30	08/26/12 00:48	1
Fluoranthene	ND		0.0658	0.00884	mg/Kg	\$	08/24/12 09:30	08/26/12 00:48	1
Fluorene	ND		0.0658	0.0118	mg/Kg	¢.	08/24/12 09:30	08/26/12 00:48	1
Indeno[1,2,3-cd]pyrene	ND		0.0658	0.00982	mg/Kg	\$	08/24/12 09:30	08/26/12 00:48	1
Naphthalene	ND		0.0658	0.00884	mg/Kg	\$	08/24/12 09:30	08/26/12 00:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	65		29 - 120				08/24/12 09:30	08/26/12 00:48	1
Terphenyl-d14 (Surr)	85		13 - 120				08/24/12 09:30	08/26/12 00:48	1
Nitrobenzene-d5 (Surr)	61		27 - 120				08/24/12 09:30	08/26/12 00:48	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	81		0.10	0.10	%			08/21/12 15:03	1

Client Sample ID: Method Blank

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

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

Lab Sample ID: MB 490-15022/6 Matrix: Solid Analysis Batch: 15022

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.000670	mg/Kg			08/24/12 11:53	1
Ethylbenzene	ND		0.00200	0.000670	mg/Kg			08/24/12 11:53	1
Naphthalene	ND		0.00500	0.00170	mg/Kg			08/24/12 11:53	1
Toluene	ND		0.00200	0.000740	mg/Kg			08/24/12 11:53	1
Xylenes, Total	ND		0.00500	0.000670	mg/Kg			08/24/12 11:53	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 130					08/24/12 11:53	1
4-Bromofluorobenzene (Surr)	100		70 - 130					08/24/12 11:53	1
Dibromofluoromethane (Surr)	98		70 - 130					08/24/12 11:53	1
Toluene-d8 (Surr)	102		70 - 130					08/24/12 11:53	1

Lab Sample ID: MB 490-15022/7 Matrix: Solid Analysis Batch: 15022

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.100	0.0335	mg/Kg			08/24/12 12:22	1
Ethylbenzene	ND		0.100	0.0335	mg/Kg			08/24/12 12:22	1
Naphthalene	ND		0.250	0.0850	mg/Kg			08/24/12 12:22	1
Toluene	ND		0.100	0.0370	mg/Kg			08/24/12 12:22	1
Xylenes, Total	ND		0.250	0.0335	mg/Kg			08/24/12 12:22	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
	100		70 100					00/04/40 40.00	

108	70 - 130	08/24/12 12:22	1
104	70 - 130	08/24/12 12:22	1
101	70 - 130	08/24/12 12:22	1
99	70 - 130	08/24/12 12:22	1
	108 104 101 99	108 70 - 130 104 70 - 130 101 70 - 130 99 70 - 130	108 70 - 130 08/24/12 12:22 104 70 - 130 08/24/12 12:22 101 70 - 130 08/24/12 12:22 99 70 - 130 08/24/12 12:22

Lab Sample ID: LCS 490-15022/3 Matrix: Solid

Analysis Batch: 15022

a de la service de			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene			0.0500	0.04735		mg/Kg		95	75 - 127	
Ethylbenzene			0.0500	0.05154		mg/Kg		103	80 - 134	
Naphthalene			0.0500	0.05063		mg/Kg		101	69 - 150	
Toluene			0.0500	0.05479		mg/Kg		110	80 - 132	
Xylenes, Total			0.150	0.1512		mg/Kg		101	80 - 137	
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							

1,2-Dichloroethane-d4 (Surr)	101	70 - 130
4-Bromofluorobenzene (Surr)	97	70 - 130
Dibromofluoromethane (Surr)	96	70 - 130
Toluene-d8 (Surr)	108	70 - 130

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

TestAmerica Nashville 8/31/2012

Client Sample ID: Method Blank

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

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

Lab Sample ID: LCSD 490-15022/4 Matrix: Solid Analysis Batch: 15022

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

Analysis Baten. Toole			Calles	1000	LCED				9/ Dec		000
			эріке	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.0500	0.04753		mg/Kg		95	75 - 127	0	50
Ethylbenzene			0.0500	0.04869		mg/Kg		97	80 - 134	6	50
Naphthalene			0.0500	0.05278		mg/Kg		106	69 - 150	4	50
Toluene			0.0500	0.04803		mg/Kg		96	80 - 132	13	50
Xylenes, Total			0.150	0.1444		mg/Kg		96	80 - 137	5	50
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		70 - 130
4-Bromofluorobenzene (Surr)	125		70 - 130
Dibromofluoromethane (Surr)	98		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: MB 490-15621/6 Matrix: Solid Analysis Batch: 15621

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.000680	mg/Kg			08/27/12 12:30	1
Ethylbenzene	ND		0.00200	0.000680	mg/Kg			08/27/12 12:30	1
Naphthalene	ND		0.00500	0.00170	mg/Kg			08/27/12 12:30	1
Toluene	0.001202	J	0.00200	0.000740	mg/Kg			08/27/12 12:30	1
Xylenes, Total	0.001207	J	0.00500	0.000680	mg/Kg			08/27/12 12:30	1
	МВ	МВ							

Surrogate	% Pacovany Qualifier	Limits	Prepared	Analyzed	Dil Fac
1.2. Dichloroothone_dd (Surr)	an and an	70 130	Tepared	08/27/12 12:30	1
4-Bromofluorobenzene (Surr)	104	70 - 130		08/27/12 12:30	1
Dibromofluoromethane (Surr)	94	70 - 130		08/27/12 12:30	1
Toluene-d8 (Surr)	99	70 - 130		08/27/12 12:30	1

Lab Sample ID: MB 490-15621/7 Matrix: Solid

Analysis Batch: 15621

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.100	0.0340	mg/Kg			08/27/12 12:59	1
Ethylbenzene	ND		0.100	0.0340	mg/Kg			08/27/12 12:59	1
Naphthalene	ND		0.250	0.0850	mg/Kg			08/27/12 12:59	1
Toluene	0.05284	J	0.100	0.0370	mg/Kg			08/27/12 12:59	1
Xylenes, Total	0.05238	J	0.250	0.0340	mg/Kg			08/27/12 12:59	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 130					08/27/12 12:59	1
4-Bromofluorobenzene (Surr)	105		70 - 130					08/27/12 12:59	1
Dibromofluoromethane (Surr)	94		70 - 130					08/27/12 12:59	1
Toluene-d8 (Surr)	101		70 - 130					08/27/12 12:59	1

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

Lab Sample ID: LCS 490-15621/3 Matrix: Solid Analysis Batch: 15621

Client Sample ID: Lab Control 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	0.04607		mg/Kg		92	75 - 127	
Ethylbenzene			0.0500	0.04670		mg/Kg		93	80 - 134	
Naphthalene			0.0500	0.05064		mg/Kg		101	69 - 150	
Toluene			0.0500	0.05422		mg/Kg		108	80 - 132	
Xylenes, Total			0.150	0.1466		mg/Kg		98	80 - 137	
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							
1.2-Dichloroethane-d4 (Surr)	107		70 - 130							

1,2-Dichloroethane-d4 (Surr)	107	70 - 130
4-Bromofluorobenzene (Surr)	100	70 - 130
Dibromofluoromethane (Surr)	100	70 - 130
Toluene-d8 (Surr)	115	70 - 130

Lab Sample ID: LCSD 490-15621/4 Matrix: Solid Analysis Batch: 15621

	Spike	LCSD I	LCSD				%Rec.		RPD
Analyte	Added	Result (Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.0500	0.04323		mg/Kg		86	75 - 127	6	50
Ethylbenzene	0.0500	0.04667		mg/Kg		93	80 - 134	0	50
Naphthalene	0.0500	0.05099		mg/Kg		102	69 - 150	1	50
Toluene	0.0500	0.04755		mg/Kg		95	80 - 132	13	50
Xylenes, Total	0.150	0.1451		mg/Kg		97	80 - 137	1	50

	LUSD	LUSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	98		70 - 130
Toluene-d8 (Surr)	106		70 - 130

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

Lab Sample ID: MB 490-15031/1-A Matrix: Solid Analysis Batch: 15380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 15031

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670	0.0100	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Acenaphthylene	ND		0.0670	0.00900	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Anthracene	ND		0.0670	0.00900	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Benzo[a]anthracene	ND		0.0670	0.0150	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Benzo[a]pyrene	ND		0.0670	0.0120	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Benzo[b]fluoranthene	ND		0.0670	0.0120	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Benzo[g,h,i]perylene	ND		0.0670	0.00900	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Benzo[k]fluoranthene	ND		0.0670	0.0140	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Pyrene	ND		0.0670	0.0120	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Phenanthrene	ND		0.0670	0.00900	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Chrysene	ND		0.0670	0.00900	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Dibenz(a,h)anthracene	ND		0.0670	0.00700	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Fluoranthene	ND		0.0670	0.00900	mg/Kg		08/24/12 09:30	08/25/12 20:55	1

TestAmerica Nashville 8/31/2012

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA Prep Batch: 15031

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

Lab Sample ID: MB 490-15031/1-A Matrix: Solid

Analysis Batch: 15380							Prep Batch	n: 15031
MB	MB						1.	
Analyte Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene ND		0.0670	0.0120	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Indeno[1,2,3-cd]pyrene ND		0.0670	0.0100	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
Naphthalene ND		0.0670	0.00900	mg/Kg		08/24/12 09:30	08/25/12 20:55	1
МВ	МВ							
Surrogate %Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr) 78		29 - 120				08/24/12 09:30	08/25/12 20:55	1
Terphenyl-d14 (Surr) 102		13 - 120				08/24/12 09:30	08/25/12 20:55	1
Nitrobenzene-d5 (Surr) 70		27 - 120				08/24/12 09:30	08/25/12 20:55	1

Lab Sample ID: LCS 490-15031/2-A

Matrix: Solid

Analysis Batch: 15380

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthylene	1.67	1.504		mg/Kg		90	38 - 120	
Anthracene	1.67	1.458		mg/Kg		87	46 - 124	
Benzo[a]anthracene	1.67	1.500		mg/Kg		90	45 - 120	
Benzo[a]pyrene	1.67	1.613		mg/Kg		97	45 - 120	
Benzo[b]fluoranthene	1.67	1.500		mg/Kg		90	42 - 120	
Benzo[g,h,i]perylene	1.67	1.415		mg/Kg		85	38 - 120	
Benzo[k]fluoranthene	1.67	1.407		mg/Kg		84	42 - 120	
Pyrene	1.67	1.576		mg/Kg		95	43 - 120	
Phenanthrene	1.67	1.457		mg/Kg		87	45 - 120	
Chrysene	1.67	1.461		mg/Kg		88	43 - 120	
Dibenz(a,h)anthracene	1.67	1.466		mg/Kg		88	32 - 128	
Fluoranthene	1.67	1.438		mg/Kg		86	46 - 120	
Fluorene	1.67	1.511		mg/Kg		91	42 - 120	
Indeno[1,2,3-cd]pyrene	1.67	1.461		mg/Kg		88	41 - 121	
Naphthalene	1.67	1.298		mg/Kg		78	32 - 120	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	66		29 - 120
Terphenyl-d14 (Surr)	82		13 - 120
Nitrobenzene-d5 (Surr)	60		27 - 120

Lab Sample ID: 490-4605-1 MS Matrix: Solid

Analysis Batch: 15380									Prep	Batch: 15031
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthylene	ND		1.67	1.312		mg/Kg	\$	79	25 - 120	
Anthracene	0.169		1.67	1.701		mg/Kg	\$	92	28 - 125	
Benzo[a]anthracene	0.0378	J	1.67	1.466		mg/Kg	Φ	86	23 - 120	
Benzo[a]pyrene	ND		1.67	1.568		mg/Kg	¢	94	15 - 128	
Benzo[b]fluoranthene	0.0398	J	1.67	1.538		mg/Kg	亞	90	12 - 133	
Benzo[g,h,i]perylene	ND		1.67	1.507		mg/Kg	÷	90	22 - 120	
Benzo[k]fluoranthene	ND		1.67	1.434		mg/Kg	\$	86	28 - 120	
Pyrene	0.155		1.67	1.490		mg/Kg	\$	80	20 - 123	
Phenanthrene	1.45		1.67	2.904		mg/Kg	¢	87	21 - 122	

Client Sample ID: 1167 Jasmine

Prep Type: Total/NA

Client Sample ID: 1167 Jasmine

Client Sample ID: 1167 Jasmine

Prep Type: Total/NA

Prep Type: Total/NA

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

68

Lab Sample ID: 490-4605-1 MS
Matrix: Solid

Analysis Batch: 15380									Prep Batc	h: 15031
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chrysene	0.0454	J	1.67	1.591		mg/Kg	\$	93	20 - 120	
Dibenz(a,h)anthracene	ND		1.67	1.539		mg/Kg	章	92	12 - 128	
Fluoranthene	0.122		1.67	1.570		mg/Kg	¢	87	10 - 143	
Fluorene	0.581		1.67	1.931		mg/Kg	¢	81	20 - 120	
Indeno[1,2,3-cd]pyrene	ND		1.67	1.505		mg/Kg	<i>\$</i> 2	90	22 - 121	
Naphthalene	0.738		1.67	1.636		mg/Kg	¢	54	10 - 120	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
2-Fluorobiphenyl (Surr)	60		29 - 120							
Terphenyl-d14 (Surr)	77		13 - 120							

27 - 120

Lab Sample ID: 490-4605-1 MSD Matrix: Solid Analysis Batch: 15380

Nitrobenzene-d5 (Surr)

Analysis Batch: 15380									Prep	Batch:	15031
2 Contraction of the	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthylene	ND		1.66	1.609		mg/Kg	Q	97	25 - 120	20	50
Anthracene	0.169		1.66	1.869		mg/Kg	¢	102	28 - 125	9	49
Benzo[a]anthracene	0.0378	J	1.66	1.593		mg/Kg	\$2	94	23 - 120	8	50
Benzo[a]pyrene	ND		1.66	1.890		mg/Kg	¢	114	15 - 128	19	50
Benzo[b]fluoranthene	0.0398	J	1.66	1.608		mg/Kg	\$	94	12 - 133	4	50
Benzo[g,h,i]perylene	ND		1.66	1.572		mg/Kg	42	95	22 - 120	4	50
Benzo[k]fluoranthene	ND		1.66	1.580		mg/Kg	322	95	28 - 120	10	45
Pyrene	0.155		1.66	1.715		mg/Kg	¢	94	20 - 123	14	50
Phenanthrene	1.45		1.66	3.068		mg/Kg	¢	98	21 - 122	6	50
Chrysene	0.0454	J	1.66	1.596		mg/Kg	ø	93	20 - 120	0	49
Dibenz(a,h)anthracene	ND		1.66	1.660		mg/Kg	\$	100	12 - 128	8	50
Fluoranthene	0.122		1.66	1.690		mg/Kg	4	94	10 - 143	7	50
Fluorene	0.581		1.66	2.096		mg/Kg	ø	91	20 - 120	8	50
Indeno[1,2,3-cd]pyrene	ND		1.66	1.596		mg/Kg	\$	96	22 - 121	6	50
Naphthalene	0.738		1.66	1.789		mg/Kg	疫	63	10 - 120	9	50
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								

2-Fluorobiphenyl (Surr)	64	29 - 120
Terphenyl-d14 (Surr)	78	13 - 120
Nitrobenzene-d5 (Surr)	63	27 - 120

Method: Moisture - Percent Moisture

Lab Sample ID: 490-4605-1 DU Matrix: Solid						Clie	nt Sample ID: 1167 Jas Prep Type: Tot	smine al/NA
Analysis Batch: 14093								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Solids	82		82		%		0.08	20

QC Association Summary

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

E E

GC/MS VOA

Prep Batch: 14487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1	1167 Jasmine	Total/NA	Solid	5035	
490-4605-2	1236 Dove - a	Total/NA	Solid	5035	
490-4605-3	630 Dahlia - a	Total/NA	Solid	5035	
490-4605-4	771 Althea - a	Total/NA	Solid	5035	
490-4605-5	1305 Eagle	Total/NA	Solid	5035	
490-4605-6	1417 Albatross	Total/NA	Solid	5035	
Prep Batch: 14489					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1	1167 Jasmine	Total/NA	Solid	5035	
490-4605-4	771 Althea - a	Total/NA	Solid	5035	
Analysis Batch: 1502	2				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1	1167 Jasmine	Total/NA	Solid	8260B	14487
490-4605-2	1236 Dove - a	Total/NA	Solid	8260B	14487
490-4605-3	630 Dahlia - a	Total/NA	Solid	8260B	14487
490-4605-4	771 Althea - a	Total/NA	Solid	8260B	14487
490-4605-5	1305 Eagle	Total/NA	Solid	8260B	14487
490-4605-6	1417 Albatross	Total/NA	Solid	8260B	14487
LCS 490-15022/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-15022/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-15022/6	Method Blank	Total/NA	Solid	8260B	
MB 490-15022/7	Method Blank	Total/NA	Solid	8260B	
Analysis Batch: 1562	1				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1	1167 Jasmine	Total/NA	Solid	8260B	14489
490-4605-4	771 Althea - a	Total/NA	Solid	8260B	14489
LCS 490-15621/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 490-15621/4	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 490-15621/6	Method Blank	Total/NA	Solid	8260B	
MB 490-15621/7	Method Blank	Total/NA	Solid	8260B	
GC/MS Semi VOA					

Prep Batch: 15031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1	1167 Jasmine	Total/NA	Solid	3550C	
490-4605-1 MS	1167 Jasmine	Total/NA	Solid	3550C	
490-4605-1 MSD	1167 Jasmine	Total/NA	Solid	3550C	
490-4605-2	1236 Dove - a	Total/NA	Solid	3550C	
490-4605-3	630 Dahlia - a	Total/NA	Solid	3550C	
490-4605-4	771 Althea - a	Total/NA	Solid	3550C	
490-4605-5	1305 Eagle	Total/NA	Solid	3550C	
490-4605-6	1417 Albatross	Total/NA	Solid	3550C	
LCS 490-15031/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-15031/1-A	Method Blank	Total/NA	Solid	3550C	
Analysis Batch: 15380)				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1	1167 Jasmine	Total/NA	Solid	8270D	15031

QC Association Summary

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

TestAmerica Job ID: 490-4605-1

ŀ

37

GC/MS Semi VOA (Continued)

Analysis Batch: 15380 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1 MS	1167 Jasmine	Total/NA	Solid	8270D	15031
490-4605-1 MSD	1167 Jasmine	Total/NA	Solid	8270D	15031
490-4605-2	1236 Dove - a	Total/NA	Solid	8270D	15031
490-4605-3	630 Dahlia - a	Total/NA	Solid	8270D	15031
490-4605-4	771 Althea - a	Total/NA	Solid	8270D	15031
490-4605-5	1305 Eagle	Total/NA	Solid	8270D	15031
490-4605-6	1417 Albatross	Total/NA	Solid	8270D	15031
LCS 490-15031/2-A	Lab Control Sample	Total/NA	Solid	8270D	15031
MB 490-15031/1-A	Method Blank	Total/NA	Solid	8270D	15031
Analysis Batch: 15732	2				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-4	771 Althea - a	Total/NA	Solid	8270D	15031

General Chemistry

Analysis Batch: 14093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-4605-1	1167 Jasmine	Total/NA	Solid	Moisture	
490-4605-1 DU	1167 Jasmine	Total/NA	Solid	Moisture	
490-4605-2	1236 Dove - a	Total/NA	Solid	Moisture	
490-4605-3	630 Dahlia - a	Total/NA	Solid	Moisture	
490-4605-4	771 Althea - a	Total/NA	Solid	Moisture	
490-4605-5	1305 Eagle	Total/NA	Solid	Moisture	
490-4605-6	1417 Albatross	Total/NA	Solid	Moisture	

Lab Sample ID: 490-4605-1 Matrix: Solid

Percent Solids: 81.6

Date Received: 0	8/21/12 08:	15
	Batch	Batch

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			14487	08/22/12 15:09	KK	TAL NSH
Total/NA	Analysis	8260B		1	15022	08/24/12 13:21	КК	TAL NSH
Total/NA	Prep	5035			14489	08/22/12 15:18	КК	TAL NSH
Total/NA	Analysis	8260B		1	15621	08/27/12 15:56	КК	TAL NSH
Total/NA	Prep	3550C			15031	08/24/12 09:30	AK	TAL NSH
Total/NA	Analysis	8270D		1	15380	08/25/12 21:47	JS	TAL NSH
Total/NA	Analysis	Moisture		1	14093	08/21/12 15:03	ML	TAL NSH

Client Sample ID: 1236 Dove - a

Date Collected: 08/14/12 15:15 Date Received: 08/21/12 08:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			14487	08/22/12 15:09	КК	TAL NSH
Total/NA	Analysis	8260B		1	15022	08/24/12 13:50	КК	TAL NSH
Total/NA	Prep	3550C			15031	08/24/12 09:30	AK	TAL NSH
Total/NA	Analysis	8270D		1	15380	08/25/12 23:05	JS	TAL NSH
Total/NA	Analysis	Moisture		1	14093	08/21/12 15:03	ML	TAL NSH

Client Sample ID: 630 Dahlia - a

Date Collected: 08/14/12 15:45 Date Received: 08/21/12 08:15

Lab Sample ID: 490-4605-3

Lab Sample ID: 490-4605-4

Lab Sample ID: 490-4605-2

Matrix: Solid

Percent Solids: 93.7

Matrix: Solid Percent Solids: 87.4

Matrix: Solid

Percent Solids: 80.9

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			14487	08/22/12 15:09	КК	TAL NSH
Total/NA	Analysis	8260B		1	15022	08/24/12 14:19	кк	TAL NSH
Total/NA	Prep	3550C			15031	08/24/12 09:30	AK	TAL NSH
Total/NA	Analysis	8270D		1	15380	08/25/12 23:31	JS	TAL NSH
Total/NA	Analysis	Moisture		1	14093	08/21/12 15:03	ML	TAL NSH

Client Sample ID: 771 Althea - a

Date Collected: 08/14/12 16:15 Date Received: 08/21/12 08:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			14487	08/22/12 15:09	KK	TAL NSH
Total/NA	Analysis	8260B		1	15022	08/24/12 14:48	кк	TAL NSH
Total/NA	Prep	5035			14489	08/22/12 15:18	КК	TAL NSH
Total/NA	Analysis	8260B		1	15621	08/27/12 16:25	КК	TAL NSH
Total/NA	Prep	3550C			15031	08/24/12 09:30	AK	TAL NSH
Total/NA	Analysis	8270D		1	15380	08/25/12 23:57	JS	TAL NSH
Total/NA	Analysis	8270D		2	15732	08/27/12 16:43	BS	TAL NSH
Total/NA	Analysis	Moisture		1	14093	08/21/12 15:03	ML	TAL NSH

Lab Sample ID: 490-4605-5

Lab Sample ID: 490-4605-6

Matrix: Solid

Percent Solids: 97.6

Matrix: Solid

Percent Solids: 81.2

ľ

1

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			14487	08/22/12 15:09	КК	TAL NSH
Total/NA	Analysis	8260B		1	15022	08/24/12 15:17	КК	TAL NSH
Total/NA	Prep	3550C			15031	08/24/12 09:30	AK	TAL NSH
Total/NA	Analysis	8270D		1	15380	08/26/12 00:22	JS	TAL NSH
Total/NA	Analysis	Moisture		1	14093	08/21/12 15:03	ML	TAL NSH

Client Sample ID: 1417 Albatross Date Collected: 08/16/12 15:45 Date Received: 08/21/12 08:15

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			14487	08/22/12 15:09	КК	TAL NSH
Total/NA	Analysis	8260B		1	15022	08/24/12 15:47	КК	TAL NSH
Total/NA	Prep	3550C			15031	08/24/12 09:30	AK	TAL NSH
Total/NA	Analysis	8270D		1	15380	08/26/12 00:48	JS	TAL NSH
Total/NA	Analysis	Moisture		1	14093	08/21/12 15:03	ML	TAL NSH

Laboratory References:

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

1

jP.

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

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
	ACIL		393	10-30-12
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alabama	State Program	4	41150	05-31-13
Alaska (UST)	State Program	10	UST-087	07-24-13
Arizona	State Program	9	AZ0473	05-05-13
Arkansas DEQ	State Program	6	88-0737	04-25-13
California	NELAC	9	1168CA	10-31-12
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Colorado	State Program	8	N/A	02-28-13
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAC	4	E87358	06-30-13
Illinois	NELAC	5	200010	12-09-12
Iowa	State Program	7	131	05-01-14
Kansas	NELAC	7	E-10229	10-31-12
Kentucky	State Program	4	90038	12-31-12
Kentucky (UST)	State Program	4	19	09-15-13
Louisiana	NELAC	6	LA110014	12-31-12
Louisiana	NELAC	6	30613	06-30-13
Maryland	State Program	3	316	03-31-13
Massachusetts	State Program	1	M-TN032	06-30-13
Minnesota	NELAC	5	047-999-345	12-31-12
Mississippi	State Program	4	N/A	06-30-13
Montana (UST)	State Program	8	NA	01-01-15
Nevada	State Program	9	TN00032	09-30-12
New Hampshire	NELAC	1	2963	10-09-12
New Jersey	NELAC	2	TN965	06-30-13
New York	NELAC	2	11342	04-01-13
North Carolina DENR	State Program	4	387	12-31-12
North Dakota	State Program	8	R-146	06-30-13
Ohio VAP	State Program	5	CL0033	01-19-14
Oklahoma	State Program	6	9412	08-31-12
Oregon	NELAC	10	TN200001	04-30-13
Pennsylvania	NELAC	3	68-00585	06-30-13
Rhode Island	State Program	1	LAO00268	12-30-12
South Carolina	State Program	4	84009 (001)	02-28-13
South Carolina	State Program	4	84009 (002)	02-23-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAC	6	T104704077-09-TX	08-31-13
USDA	Federal		S-48469	11-02-13
Utah	NELAC	8	TAN	06-30-13
Viroinia	NELAC	3	460152	06-14-13
Washington	State Program	10	C789	07-19-13
West Virginia DEP	State Program	3	219	02-28-13
Wisconsin	State Program	5	998020430	08-31-13
Wyoming (UST)	A2LA	8	453.07	12-31-13

THE LEADER IN ENVIRONMENTAL TESTING Nashville, TN	COOLER RECEIPT FORM	
Cooler Received/Opened On <u>8/21/201</u>	2 @ 8:15	490-4605 Chain of
1. Tracking # 3729	(last 4 digits, FedEx)	530502
Courier: Fed-ex IR Gun ID 1208014	29	
2. Temperature of rep. sample or ten	np blank when opened: <u>)1 [</u> Degrees Celsius	a
3. If Item #2 temperature is 0°C or les	s, was the representative sample or temp blank fro	ozen? YES NO. NA
4. Were custody seals on outside of o	cooler?	YES NO NA
If yes, how many and where:	2 trout JDQC/L	
5. Were the seals intact, signed, and	dated correctly?	VES.NONA
6. Were custody papers inside cooler	?	YES NO NA
I certify that I opened the cooler and a	inswered questions 1-6 (intial)	
7. Were custody seals on containers:	YES and Intact	YESNO
Were these signed and dated corre	ectly?	YESNO.
8. Packing mat'l used? Bubblewrap	Plastic bag Peanuts Vermiculite Foam Insert	Paper Other None
9. Cooling process:	Ce Ice-pack Ice (direct contact) D	ry ice Other None
10. Did all containers arrive in good c	ondition (unbroken)?	SESNONA
11. Were all container labels complete	e (#, date, signed, pres., etc)?	ESNONA
12. Did all container labels and tags a	gree with custody papers?	TES NO NA
13a. Were VOA vials received?		TESNONA
b. Was there any observable heads	pace present in any VOA vial?	YES NA ~ Sal
14. Was there a Trip Blank in this coo	ler? YESNONA If multiple coolers, se	quence # MO
I certify that I unloaded the cooler and	answered questions 7-14 (intial)	Ð
15a. On pres'd bottles, did pH test str	ips suggest preservation reached the correct pH le	evel? YESNONA
b. Did the bottle labels indicate that	t the correct preservatives were used	YES NONA
16. Was residual chlorine present?		YESNO.
I certify that I checked for chlorine and	pH as per SOP and answered questions 15-16 (in	tial)
17. Were custody papers properly fille	ed out (ink, signed, etc)?	FER NO. NA
18. Did you sign the custody papers in	n the appropriate place?	WES NO NA
19. Were correct containers used for t	the analysis requested?	SES NO NA
20. Was sufficient amount of sample s	sent in each container?	YES NO NA
I certify that I entered this project into	LIMS and answered questions 17-20 (intial)	F
I certify that I attached a label with the	unique LIMS number to each container (initial)	t

1



8/31/2012

1

Client: Environmental Enterprise Group

Login Number: 4605 List Number: 1

Creator: Ford, Easton

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 490-4605-1

1

l

1

List Source: TestAmerica Nashville

ATTACHMENT A

1. Generator's	US EPA ID No. Ma	anifest Doc	No.	2. Page 1	of			
NON-HAZARDOUS MANIFEST				1				
3. Generator's Mailing Address:	Generator's Site Address (If d	different than m	ailing):	A. Manife	est Number	i sur	and the	
MCAS, BEAUFORT	- we we share the state			W	MNA	0031	6835	205
BEAUFORT SC 29907	The state of the state				B. State	Generator'	s ID	d" /
4. Generator's Phone 843-228-6461								
5. Transporter 1 Company Name	6. US EPA II	D Number	1.3. 2.1		instate a	and the last	Ser Series	
EEG, INC.	The second			C. State T	ransporter's I	D 042	070 041	1
7. Transporter 2 Company Name	8. US EPA II	D Number		D. Transp	orter's Phone	843-	879-041	.1
				E. State T	ransporter's II	D		10201
		A CARA	22-31-12	F. Transp	orter's Phone	2.75.8	- ANTERNA	JE 19
Designated Facility Name and Site Address	10. US EPA	ID Number		C State F	acility ID	11 61 12		
2621 LOW COUNTRY ROAD	See State of the second			H State F	acility Phone	843-	987-464	3
RIDGELAND, SC 29936				in state P	centry ritone	045-		-
11 Description of Waste Materials		12. Co	ntainers	13. Total	14. Unit		Mire Co	
		No.	Туре	Quantity	Wt./Vol.	I. I	msc. comme	HLS
THEATING OLE TAINS FILLED WITH SAND		14			A and	1		
WM Profile # 102655	SC				And set		1997	
			1.1.1	Sta City		22-2-14	1.4	3
		1	1	12.5	1.1.1.1	1 Martin		
WM Profile #		0	Children II	19 and 1	1	1. 200	55 012	
		ALC: NO	S- WARS		the gran			
WM Profile #	A Distance of the second				A. CARLON	1.200		
d.		a share	1. 1. 1. 1.	The second	the second	Print Sp		
			12.5.5	Carl Strates		1997	41- 15- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1-	
WM Profile # . Additional Descriptions for Materials Listed Abov	e	K. Dispos	al Location					
sandaningen Genarate van de			144	A PLAN	TER ET	Star L		100
		Cell		the local sector		Level		
5. Special Handling Instructions and Additional Infor	mation	Tond	4-	771A	THEN	6)1	67	
ust's from . 2)	1276 AI DATR	05 5	3	201	D.II.		Tos	ni.
1) 1262 DOUE 3)	1236 DOUR		20	030	DANLIN	7	UHJI	
urchase Order #	EMERGENCY CO	NTACT / PHO	ONE NO.:	14-114	A COLORADO			
hereby certify that the above-described materials are	e not hazardous wastes as defin	ed by CFR P	art 261 or a	any applicable	e state law, ha	ve been fu	Illy and	
ccurately described, classified and packaged and are	in proper condition for transpor	rtation acco	rding to ap	plicable regu	lations.	Constanting to	-	-
Time the work with	G P Signature "On behal	Jeno	they h	Shall	le	Month	Day	Ye
7. Transporter 1 Acknowledgement of Receipt of Ma	iterials	111	di		F			
Printed Name Part Shac	Signature	Re	4	- · · · C	/	Month	Day	Ye
8. Transporter 2 Acknowledgement of Receipt of Ma	iterials	- 11				0	22	11-
Printed Name	Signature	V		al la		Month	Day	Ye
JAMES Boldwind	Hamer	Bald	u-			8	22	1.
9. Certificate of Final Treatment/Disposal	I VE GEN (1.15				1-0	
sentific on hobelf of the observe listed to start the till	y, that to the best of my knowle	edge, the ab	ove-describ	bed waste w	as managed in	complian	ce with all	
certify, on behalf of the above listed treatment facility	ovode botoc listod abovo			1. S.	Salk Column	Jan Star		
pplicable laws, regulations, permits and licenses on t	t of non-hazardous materials or	overed by th	is manifort					
pplicable laws, regulations, permits and licenses on t 0. Facility Owner or Operator: Certification of receip Printed Name	t of non-hazardous materials co	overed by th	is manifest	1		Month	Day	Ye

Appendix C Laboratory Analytical Report - Groundwater



Volatile Organic Compounds by GC/MS

Description: BEALB771TW01WG20150609

Laboratory ID: QF10006-008 Matrix: Aqueous

Date Sampled:06/09/2015 1145

Date Received: 06/10/2015											
RunPrep Method15030B	Analytical Method 8260B	Dilution 1	Analysi 06/12/20	s Date Analyst 15 1548 EH1	Prep	Date	Batch 77165				
Parameter		Nu	CAS Imber	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene		71	-43-2	8260B	0.45	U	5.0	0.45	0.21	ug/L	1
Ethylbenzene		100)-41-4	8260B	0.51	U	5.0	0.51	0.21	ug/L	1
Naphthalene		91	-20-3	8260B	0.96	U	5.0	0.96	0.14	ug/L	1
Toluene		108	8-88-3	8260B	0.48	U	5.0	0.48	0.24	ug/L	1
Xylenes (total)		1330)-20-7	8260B	0.57	U	5.0	0.57	0.19	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptan / Limits	ice							
Bromofluorobenzene		101	75-120)							
1,2-Dichloroethane-d4		105	70-120)							
Toluene-d8		105	85-120)							
Dibromofluoromethane		106	85-115	5							

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 DriveWest Columbia, SC 29172(803) 791-9700Fax (803) 791-9111www.shealylab.com

Level 1 Report v2.1

Semivolatile Organic Compounds by GC/MS (SIM)

Client: AECOM - Resolution Consultants

Description: BEALB771TW01WG20150609

Laboratory ID: QF10006-008

Date Sampled:06/09/2015 1145

Matrix: Aqueous

Date Received: 06/10/2015

RunPrep Method13520C	Analytical Method Dilution 8270D (SIM) 1	Analy 06/19/	/sis Date Analys 2015 1251 RBH	t Prep 06/11/2	Date 015 16	Batch 57 77073				
Parameter	Nu	CAS	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56	6-55-3	8270D (SIM)	0.040	U	0.20	0.040	0.019	ug/L	1
Benzo(b)fluoranthene	205	-99-2	8270D (SIM)	0.040	U	0.20	0.040	0.019	ug/L	1
Benzo(k)fluoranthene	207	-08-9	8270D (SIM)	0.040	U	0.20	0.040	0.024	ug/L	1
Chrysene	218	-01-9	8270D (SIM)	0.040	U	0.20	0.040	0.021	ug/L	1
Dibenzo(a,h)anthracene	53	8-70-3	8270D (SIM)	0.080	U	0.20	0.080	0.040	ug/L	1
Surrogate	Run 1 Q % Recovery	Accept Lim	tance hits							
2-Methylnaphthalene-d10	77	15-1	139							
Fluoranthene-d10	75	23-1	154							

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

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

Level 1 Report v2.1

Appendix D Regulatory Correspondence



DHEC

PROMOTE PROTECT PROSPER Catherine B. Templeton, Director

May 15, 2014

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

RE: IGWA

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

Dear Mr. Drawdy,

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

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

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

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

Sincerely,

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

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

DHEC

PROMOLE PROTECT PROSPER

Catherine B. Templeton, Director

Attachment to: Krieg to Drawdy Subject: IGWA Dated 5/15/2014

Laurel Bay Underground Storage Tank Assessment Reports for: (121 addresses/139 tanks)

137 Laurel Bay Tank 2	387 Acorn
139 Laurel Bay	392 Acorn Tank 2
229 Cypress Tank 2	396 Acorn Tank 1
261 Beech Tank 1 •	396 Acorn Tank 2
261 Beech Tank 3	430 Elderberry
273 Birch Tank 1	433 Elderberry
273 Birch Tank 2	439 Elderberry
273 Birch Tank 3	440 Elderberry
276 Birch Tank 2	442 Elderberry
278 Birch Tank 2	443 Elderberry
291 Birch Tank 2	444 Elderberry Tank 1
300 Ash •	445 Elderberry
304 Ash •	446 Elderberry
314 Ash Tank 1	448 Elderberry
314 Ash Tank 2	449 Elderberry
322 Ash Tank 2 *	451 Elderberry
323 Ash *	453 Elderberry
324 Ash *	456 Elderberry Tank 1
325 Ash Tank 1 -	456 Elderberry Tank 2
325 Ash Tank 2	458 Elderberry Tank 1
326 Ash •	458 Elderberry Tank 3
336 Ash •	464 Dogwood
339 Ash •	466 Dogwood
343 Ash Tank 1 *	467 Dogwood
344 Ash Tank 1 *	468 Dogwood
348 Ash *	469 Dogwood
349 Ash Tank 1 *	471 Dogwood Tank 2
353 Ash Tank 1 *	471 Dogwood Tank 3
362 Aspen *	475 Dogwood Tank 1
376 Aspen *	475 Dogwood Tank 2
380 Aspen	516 Laurel Bay Tank 1 (UST#03747)
383 Aspen Tank 2 *	518 Laurel Bay

2600 Bull Street * Columbia, SC23201 * Phone; (803) 808/3452 * www.scdhee.gow

Laurel Bay Underground Storage Tank Assessment Reports for: (121 addresses/139 tanks) cont.

531 Laurel Bay	1219 Cardinal	
532 Laurel Bay	1272 Albatross	-
635 Dahlia Tank 2	1305 Eagle	
638 Dahlia	1353 Cardinal	
640 Dahlia Tank 1	1356 Cardinal	
640 Dahlia Tank 2	1357 Cardinal	
645 Dahlia	1359 Cardinal	
647 Dahlia	1360 Cardinal	
648 Dahlia Tank 2	1361 Cardinal	
650 Dahlia Tank 1	1368 Cardinal	
650 Dahlia Tank 2	1370 Cardinal Tank 1	
652 Dahlia Tank 1	1377 Dove	
652 Dahlia Tank 2	1381 Dove	
760 Althea	1382 Dove	
763 Althea	1384 Dove	
771 Althea	1385 Dove	
927 Albacore	1389 Dove	
1015 Foxglove	1391 Dove	
1046 Gardenia	1392 Dove	
1062 Gardenia Tank 2	1393 Dove Tank 1	
1070 Heather	1393 Dove Tank 2	
1072 Heather	1406 Eagle	
1102 Iris Tank 1	1407 Eagle Tank 1	
1107 Iris	1411 Eagle Tank 1	
1126 Iris	1411 Eagle Tank 2	
1129 Iris	1412 Eagle	
1132 Iris	1413 Albatross	
1133 Iris Tank 1	1414 Albatross	
1138 Iris	1422 Albatross	
1144 Iris Tank 1	1425 Albatross	
1144 Iris Tank 2	1426 Albatross	1000
1148 Iris Tank 1	1432 Dove	
1148 Iris Tank 2	1434 Dove	
1161 Jasmine	1436 Dove	
1167 Jasmine	1438 Dove Tank 1	
1170 Jasmine	1440 Dove	
1190 Bobwhite	1442 Dove Tank 1	
1192 Bobwhite		



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

> Division of Waste Management Bureau of Land and Waste Management

February 22, 2016

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

RE: Approval and Concurrence with Draft Final Initial Groundwater Investigation Report-May and June 2015 Laurel Bay Military Housing Area Multiple Properties Dated October 2015

Dear Mr. Drawdy,

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

Per the Department's request, groundwater samples were collected from the attached referenced addresses. The Department reviewed the groundwater data and previous investigations and it agrees with the conclusions and recommendations included in the document. To further assess the impact to groundwater, permanent wells should be installed at the 52 stated addresses. For the remaining 91 addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time.

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

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

Sincerely,

LICA

Laurel Petrus RCRA Federal Facilities Section

Attachment: Specific Property Recommendations

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

Attachment to: Petrus to Drawdy Subject: Draft Final Initial Groundwater Investigation Report-May and June 2015 Specific Property Recommendations Dated February 22, 2016

Draft Final Initial Groundwater Investigation Report for (143 addresses)

Permanent Monitoring Well Investigation recommendation (52 addresses)					
273 Birch Drive	1192 Bobwhite Drive				
325 Ash Street	1194 Bobwhite Drive				
326 Ash Street	1272 Albatross Drive				
336 Ash Street 1352 Cardinal Lane					
343 Ash Street	1356 Cardinal Lane				
353 Ash Street	1359 Cardinal Lane				
430 Elderberry Drive	1360 Cardinal Lane				
440 Elderberry Drive	1362 Cardinal Lane				
456 Elderberry Drive	1370 Cardinal Lane				
458 Elderberry Drive	1382 Dove Lane				
468 Dogwood Drive	1384 Dove lane				
518 Laurel Bay Blvd	1385 Dove Lane				
635 Dahlia Drive	1389 Dove Lane				
638 Dahlia Drive	1392 Dove Lane				
640 Dahlia Drive	1393 Dove Lane				
647 Dahlia Drive	1407 Eagle Lane				
648 Dahlia Drive	1411 Eagle Lane				
650 Dahlia Drive	1418 Albatross Drive				
652 Dahlia Drive	1420 Albatross Drive				
760 Althea Street	1426 Albatross Drive				
1102 Iris Lane	1429 Albatross Drive				
1132 Iris Lane	1434 Dove Lane				
1133 Iris Lane	1436 Dove Lane				
1144 Iris Lane	1440 Dove Lane				
1148 Iris Lane	1442 Dove Lane				
1186 Bobwhite Drive	1444 Dove Lane				
No Further Action recommendation (91 addresses):					
137 Laurel Bay Blvd 771 Althea Street					
139 Laurel Bay Blvd 927 Albacore Street					
229 Cypress Street	1015 Foxglove Street				
261 Beech Street 1046 Gardenia Drive					
276 Birch Drive 1062 Gardenia Drive					
278 Birch Drive 1070 Heather Street					
291 Birch Drive	1072 Heather Street				

300 Ash Street	1107 Iris Lane
304 Ash Street	1126 Iris Lane
314 Ash Street	1129 Iris Lane
322 Ash Street	1138 Iris Lane
323 Ash Street	1161 Jasmine Street
324 Ash Street	1167 Jasmine Street
339 Ash Street	1170 Jasmine Street
344 Ash Street	1190 Bobwhite Drive
348 Ash Street	1219 Cardinal Lane
349 Ash Street	1305 Eagle Lane
362 Aspen Street	1353 Cardinal Lane
376 Aspen Street	1354 Cardinal Lane
380 Aspen Street	1357 Cardinal Lane
383 Aspen Street	1361 Cardinal Lane
387 Acom Drive	1364 Cardinal Lane
392 Acom Drive	1368 Cardinal Lane
396 Acom Drive	1377 Dove Lane
433 Elderberry Drive	1381 Dove Lane
439 Elderberry Drive	1391 Dove Lane
442 Elderberry Drive	1403 Eagle Lane
443 Elderberry Drive	1404 Eagle Lane
444 Elderberry Drive	1405 Eagle Lane
445 Elderberry Drive	1406 Eagle Lane
446 Elderberry Drive	1408 Eagle Lane
448 Elderberry Drive	1410 Eagle Lane
449 Elderberry Drive	1412 Eagle Lane
451 Elderberry Drive	1413 Albatross Drive
453 Elderberry Drive	1414 Albatross Drive
464 Dogwood Drive	1417 Albatross Drive
466 Dogwood Drive	1421 Albatross Drive
467 Dogwood Drive	1422 Albatross Drive
469 Dogwood Drive	1425 Albatross Drive
471 Dogwood Drive	1427 Albatross Drive
475 Dogwood Drive	1430 Dove Lane
516 Laurel Bay Blvd	1432 Dove Lane
531 Laurel Bay Blvd	1438 Dove Lane
532 Laurel Bay Blvd	1453 Cardinal Lane
645 Dablia Drive	1455 Cardinal Lane
763 Althea Street	

Attachment to: Petrus to Drawdy Subject: Draft Final Initial Groundwater Investigation Report-May and June 2015 Specific Property Recommendations Dated February 22, 2016, Page 2