SUMMARY REPORT 746 WEST CARDINAL LANE (FORMERLY 1479 WEST CARDINAL LANE) LAUREL BAY MILITARY HOUSING AREA MARINE CORPS AIR STATION BEAUFORT BEAUFORT, SC

Revision: 0 Prepared for:

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

and



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

JUNE 2021

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Prepared by:



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 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort June 2021

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List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
СТО	Contract Task Order
COPC	constituents of potential concern
ft	feet
IDIQ	Indefinite Delivery, Indefinite Quantity
IGWA	Initial Groundwater Assessment
JV	Joint Venture
LBMH	Laurel Bay Military Housing
MCAS	Marine Corps Air Station
NAVFAC Mid-Lant	Naval Facilities Engineering Command Mid-Atlantic
NFA	No Further Action
PAH	polynuclear aromatic hydrocarbon
PPV	Public-Private Venture
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
UFP SAP	Uniform Federal Policy Sampling and Analysis Plan
USEPA	United States Environmental Protection Agency
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 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane). This NFA determination indicates that there are no unacceptable risks to human health or the environment for the petroleum constituents associated with the home heating oil USTs. The following information is included in this report:

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

1.1 Background Information

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



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

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

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

In 2015, the Public-Private Venture (PPV) responsible for the management of the residential area at LBMH initiated a plan to replace outdated homes in the LBMH area. The plan includes the demolition of existing homes and subsequent construction of new homes. In discussions with the PPV it was revealed that construction of the new homes could occur on portions of the property where the USTs were formerly located. In response to this plan, MCAS Beaufort assessed subsurface soil gas concentrations in the area of the former USTs at select properties within the demolition areas. The subject property of this report is one of the properties within the planned demolition area which was selected for a soil gas evaluation. It should be noted that the house at the subject property has since been demolished and this property is an empty lot. There are no current plans for construction in this 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. A multi-media investigation selection process tree, applicable to the LBMH UST investigations, is presented as Appendix A.

In accordance with the multi-media investigation selection process (Appendix A), groundwater analytical results are typically compared to the site specific groundwater vapor intrusion screening levels (VISLs) to evaluate the potential for vapor intrusion into existing homes and the necessity for an investigation associated with this media. However, as previously stated, this property did not have an existing home and instead was among those selected for an evaluation of soil gas because of the planned demolition and construction activities.



2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane). The sampling activities at 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) comprised a soil investigation, IGWA sampling, and a soil gas investigation. Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 1479 West Cardinal Lane* (MCAS Beaufort, 2012) and the *SCDHEC UST Assessment Report – 1479 West Cardinal Lane* (MCAS Beaufort, 2015). The UST Assessment Reports are provided in Appendix B. Details regarding the IGWA sampling activities at this site are provided in the *Initial Groundwater Investigation Report – February 2015* (Resolution Consultants, 2015). The laboratory report that includes the pertinent IGWA analytical results for this site is presented in Appendix C. Details regarding the vapor intrusion investigation at this site are provided in the *Technical Memorandum – Soil Gas Sampling Results – October 2014* (Resolution Consultants, 2015). The laboratory report that includes the pertinent soil gas analytical results for this site is presented in Appendix D.

2.1 UST Removal and Soil Sampling

In May 2012 and November 2014, two 280 gallon heating oil USTs were removed at 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane). Tank 1 was removed on May 14, 2012 from underneath the rear concrete patio. Tank 2 was removed on November 24, 2014 from the front yard. The former UST locations are indicated on the figures of the UST Assessment Reports (Appendix B). The USTs were removed and properly disposed of (i.e., shipped offsite for recycling or transported to a landfill).. There was no visual evidence (i.e., staining or sheen) of petroleum impact at the time of the UST removals. According to the UST Assessment Reports (Appendix B), the depths to the bases of the USTs were 4'4" bgs (Tank 1) and 6'1" bgs (Tank 2) and a single soil sample was collected for each from that depth. The samples were collected from the fill port side of the former USTs to represent a worst case scenario.

Following UST removals, a soil sample was collected from the bases of the excavations 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 reports are included in the UST Assessment Reports presented in Appendix B. The laboratory analytical data reports include 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 locations (Tanks 1 and 2) 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 the former UST location (Tank 1) at 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated April 1, 2014, SCDHEC requested an IGWA for 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix E.

2.3 Groundwater Sampling

On February 4, 2015, a temporary monitoring well was installed at 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane), in accordance with the South Carolina Well Standards and Regulations (R.61-71.H-I, updated June 24, 2016). In order to provide data that can be used to determine whether COPCs are migrating to underlying groundwater, the monitoring well was placed in the same general location as the former heating oil UST (Tank 1). 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 – February 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, May 2016). Field forms are provided in the *Initial Groundwater Investigation Report – February 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 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) were less than the SCDHEC RBSLs and the site specific groundwater VISLs (Table 2), which indicated that the groundwater was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

2.5 Soil Gas Sampling

On October 2, 2014, a temporary subsurface soil gas well was installed at 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) in accordance with the SCDHEC approved *Uniform Federal Policy Sampling and Analysis Plan (UFP SAP) for Vapor Media* (Resolution Consultants, 2015). Soil gas sampling was conducted at this property to assess the potential risk for vapor intrusion associated with the possible construction of a new home on top of former the UST location. The soil gas well was placed in the same general location as the former heating oil UST (Tank 1) and the IGWA sample location. The former UST location is indicated on Figures 2 and 3 of the UST Assessment Report (Appendix B). Further details are provided in the *Technical Memorandum – Soil Gas Sampling Results – October 2014* (Resolution Consultants, 2015).

The sampling strategy for this phase of the investigation required a one-time sampling event of the soil gas well. The subsurface soil gas well 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) was sampled on October 8, 2014. A soil gas sample was collected and shipped to an offsite laboratory for analysis of the petroleum COPCs. Upon completion of soil gas sampling, the temporary well was abandoned in accordance with the *UFP SAP for Vapor Media* (Resolution Consultants, 2015). Field forms are provided in the *Technical Memorandum – Soil Gas Sampling Results – October 2014* (Resolution Consultants, 2015).

2.6 Soil Gas Analytical Results

A summary of the laboratory analytical results and USEPA (United States Environmental Protection Agency) VISLs is presented in Table 3. A copy of the laboratory analytical data report is included in Appendix D.



The soil gas results collected from 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) were below the USEPA VISLs, which indicated that subsurface soil gas was not impacted by COPCs associated with the former USTs at concentrations that present a potential risk to human health and the environment.

3.0 **PROPERTY STATUS**

The house at 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) was demolished and the property is an empty lot. There are no current plans for construction in this area. Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane). The NFA determination for groundwater was obtained in a letter dated May 5, 2015. Based on the analytical results for soil gas, it was determined that there was not a vapor intrusion concern at this property and a recommendation was made for no additional vapor intrusion assessment activities. SCDHEC approved the no further vapor intrusion investigation recommendation for 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) in a letter dated March 10, 2015. SCDHEC's letters are provided in Appendix E.

4.0 **REFERENCES**

- Marine Corps Air Station Beaufort, 2009. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 1479 West Cardinal Lane, Laurel Bay Military Housing Area*, November 2009.
- Resolution Consultants, 2015. Initial Groundwater Investigation Report February 2015 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina, April 2015.
- Resolution Consultants, 2015. *Technical Memorandum Soil Gas Sampling Results October* 2014 for Laurel Bay Military Housing Area, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina, January 2015.
- Resolution Consultants, 2015. Uniform Federal Policy Sampling and Analysis Plan for Vapor Media, for Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina, February 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.
- United States Environmental Protection Agency, 2014. USEPA OSWER Vapor Intrusion Assessment, Vapor Intrusion Screening Level Calculator, Version 3.3.1, May 2014.

Tables



Table 1 Laboratory Analytical Results - Soil 746 West Cardinal Lane (Formerly 1479 West Cardinal Lane) Laurel Bay Military Housing Area Marine Corps Air Station Beaufort Beaufort, South Carolina

		Results Sample Collected 05/14/12 and 11/24/14	
Constituent	SCDHEC RBSLs ⁽¹⁾	1479 Cardinal 05/14/12	1479 Cardinal - 2 11/24/14
Volatile Organic Compounds Analyzed	by EPA Method 8260B (mg/kg)	•	
Benzene	0.007	0.0141	ND
Ethylbenzene	1.15	0.198	ND
Naphthalene	0.036	21.2	ND
Toluene	1.45	ND	ND
Xylenes, Total	14.5	9.68	ND
Semivolatile Organic Compounds Anal	yzed by EPA Method 8270D (mg/kg)	
Benzo(a)anthracene	0.066	ND	ND
Benzo(b)fluoranthene	0.066	ND	ND
Benzo(k)fluoranthene	0.066	ND	ND
Chrysene	0.066	ND	ND
Dibenz(a,h)anthracene	0.066	ND	ND

Notes:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 1.1 (SCDHEC, February 2011).

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 2Laboratory Analytical Results - Groundwater746 West Cardinal Lane (Formerly 1479 West Cardinal Lane)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Site-Specific Groundwater VISLs (µg/L) ⁽²⁾	Results Sample Collected 02/06/15
Volatile Organic Compounds Analyze	d by EPA Method 8260B (µ	ig/L)	
Benzene	5	16.24	0.17
Ethylbenzene	700	45.95	3.0
Naphthalene	25	29.33	12
Toluene	1000	105,445	ND
Xylenes, Total	10,000	2,133	9.5
Semivolatile Organic Compounds An	alyzed by EPA Method 827	0D (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 2.0 (SCDHEC, April 2013).

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

Bold font indicates the analyte was detected.

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

EPA - United States Environmental Protection Agency

JE - Johnson & Ettinger

NA - not applicable

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

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

 $\mu g/L$ - micrograms per liter

VISL - Vapor Intrusion Screening Level

Table 3Laboratory Analytical Results - Vapor746 West Cardinal Lane (Formerly 1479 West Cardinal Lane)

Laurel Bay Military Housing Area Marine Corps Air Station Beaufort

Beaufort, South Carolina

Constituent	USEPA VISL ⁽¹⁾	Results Sample Collected 10/08/14
Volatile Organic Compounds Analyze	d by USEPA Method TO-15	(µg/m³)
Benzene	12	ND
Toluene	17000	0.69
Ethylbenzene	37	ND
m,p-Xylenes	350	ND
o-Xylene	350	ND
Naphthalene	2.8	ND

Notes:

⁽¹⁾ United States Environmental Protection Agency Exterior Soil Gas Vapor Intrusion Screening Level (VISL) from VISL Calculator (Version 3.3.1, May 2014).

VISLs are based on a residual exposure scenario and a target risk level of 1×10^{-6} and a hazard quotient of 0.1. Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the residential VISL.

USEPA - United States Environmental Protection Agency

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

RBSL - Risk-Based Screening Level

 μ g/m³ - micrograms per cubic meter

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 Reports



rec'd 8/15/12

Attachment 1

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

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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, C	commanding Officer Attn: N	REAO (Craig Ehde)	
Owner Name (Corporation	on, 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	
1479 Cardinal La	e, Laurel Bay Military Housing Area
Beaufort,	Beaufort
City	County

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

		Cardinal
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 80s
F.	Depth (ft.) To Base of Tank	4 ' 4 "
G.	Spill Prevention Equipment Y/N	No
H∙	Overfill Prevention Equipment Y/N	No
I.	Method of Closure Removed/Filled	Removed
J _.	Date Tanks Removed/Filled	5/14/2012
K.	Visible Corrosion or Pitting Y/N	Yes
L.	Visible Holes Y/N	Yes

1479

M. Method of disposal for any USTs removed from the ground (attach disposal manifests) UST 1479Cardinal was removed from the ground and disposed

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

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests) UST 1479Cardinal 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 found throughout the tank.

VII. PIPING INFORMATION

		1479 Cardinal
		Steel
A.	Construction Material(ex. Steel, FRP)	& Copper
B.	Distance from UST to Dispenser	N/A
C.	Number of Dispensers	N/A
D	Type of System Pressure or Suction	Suction
D.	Type of System Pressure of Suction	
E.	Was Piping Removed from the Ground? Y/N	No
F.	Visible Corrosion or Pitting Y/N	Yes
G.	Visible Holes Y/N	No
H.	Age	Late 1950s
I.	If any corrosion, pitting, or holes were observed, des	cribe the location and extent for each piping run.

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

VIII. BRIEF SITE DESCRIPTION AND HISTORY

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

IX. SITE CONDITIONS

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

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

B.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collecte Collection by		OVA #
1479 Cardinal	Excav at fill end	Soil	Sandy	4'4"	5/14/12 1345 hrs	P. Shaw	
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

* = Depth Below the Surrounding Land Surface

XI. SAMPLING METHODOLOGY

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

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

XII. RECEPTORS

		Yes	No		
А.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?	*X			
	*Freshwater po	nds			
	If yes, indicate type of receptor, distance, and direction on site map.				
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?		х		
	If yes, indicate type of well, distance, and direction on site map.				
C.	Are there any underground structures (e.g., basements) Located within 100 feet of the UST system?		х		
	If yes, indicate type of structure, distance, and direction on site map.				
D.	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, elec	trici	ty		
	cable & fiber optic If yes, indicate the type of utility, distance, and direction on the site map.				
E.	Has contaminated soil been identified at a depth less than 3 feet below land surface in an area that is not capped by asphalt or concrete?		Х		
	If yes, indicate the area of contaminated soil on the site map.				

XIII. SITE MAP

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

(Attach Site Map Here)









Picture 1: Location of UST 1479Cardinal.



Picture 2: UST 1479Cardinal 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	1479Cardinal				
Benzene	0.0141 mg/kg	Ð			
Toluene	ND				
Ethylbenzene	0.198 mg/kg				
Xylenes	9.68 mg/kg				
Naphthalene	21.2 mg/kg				
Benzo (a) anthracene	ND				
Benzo (b) fluoranthene	ND				
Benzo (k) fluoranthene	ND				
Chrysene	ND				
Dibenz (a, h) anthracene	ND				
TPH (EPA 3550)					
CoC			 		
Benzene					
Toluene					
Ethylbenzene					
Xylenes					
Naphthalene					
Benzo (a) anthracene					
Benzo (b) fluoranthene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
TPH (EPA 3550)					

SUMMARY OF ANALYSIS RESULTS (cont'd) Enter the ground water analytical data for each sample for all CoC in the table below. If free product is present, indicate the measured thickness to the nearest 0.01 feet.

CoC	RBSL (µg/l)	W-1	W-2	W -3	W -4
Free Product Thickness	None				
Benzene	5				
Toluene	1,000				
Ethylbenzene	700				
Xylenes	10,000				
Total BTEX	N/A				
МТВЕ	40				
Naphthalene	25				
Benzo (a) anthracene	10				
Benzo (b) flouranthene	10				
Benzo (k) flouranthene	10				
Chrysene	10				
Dibenz (a, h) anthracene	10				
EDB	.05				
1,2-DCA	5				
Lead	Site specific				

XV. ANALYTICAL RESULTS

You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.

(Attach Certified Analytical Results and Chain-of-Custody Here) (Please see Form #4)



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville 2960 Foster Creighton Road Nashville, TN 37204 Tel: 800-765-0980

TestAmerica Job ID: NWE2371

Client Project/Site: [none] Client Project Description: Laurel Bay Housing Project

For:

EEG - Small Business Group, Inc. (2449) 10179 Highway 78 Ladson, SC 29456

Attn: Tom McElwee

Roxanne L. Connor

Authorized for release by: 5/31/2012 5:26:03 PM Roxanne Connor Program Manager - Conventional Accounts roxanne.connor@testamericainc.com

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Ken A. Hayes Senior Project Manager ken.hayes@testamericainc.com

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

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

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

Client Sample ID	Matrix	Collected	Received
1479 Cardinal	Soil	05/14/12 13:45	05/19/12 08:20
1202 Cardinal	Soil	05/15/12 14:15	05/19/12 08:20
396 Acorn-2	Soil	05/17/12 12:15	05/19/12 08:20
396 Acorn-1	Soil	05/17/12 09:45	05/19/12 08:20
	Client Sample ID 1479 Cardinal 1202 Cardinal 396 Acorn-2 396 Acorn-1	Client Sample IDMatrix1479 CardinalSoil1202 CardinalSoil396 Acorn-2Soil396 Acorn-1Soil	Client Sample ID Matrix Collected 1479 Cardinal Soil 05/14/12 13:45 1202 Cardinal Soil 05/15/12 14:15 396 Acorn-2 Soil 05/17/12 12:15 396 Acorn-1 Soil 05/17/12 09:45

Definitions/Glossary

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

Qualifiers

G	CM	S V	ol	atil	es

Qualifier	Qualifier Description	
ZX	Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.	
E	Concentration exceeds the calibration range and therefore result is semi-quantitative.	
RL1	Reporting limit raised due to sample matrix effects.	
CF7	Result may be elevated due to carry over from previously analyzed sample.	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	

GCMS Semivolatiles

Qualifier	Qualifier Description
A-01	No spike added to sample. Data accepted on LCS results.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
ZX	Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

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 Results

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

Client Sample ID: 1479 Cardinal Date Collected: 05/14/12 13:45					Lab Sam	ole ID: NWE2	371-01		
						Matrix:			
Date Received: 05/19/12 08:20								Percent Soli	ids: 75.8
Method: SW846 8260B	Volatile Organic Com	ounds by I	EPA Method 82	60B					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0141		0.00206	0.00114	mg/kg dry	ø	05/14/12 13:45	05/24/12 16:00	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	136	ZX	70 - 130				05/14/12 13:45	05/24/12 16:00	1.00
Dibromofluoromethane	136	ZX	70 - 130				05/14/12 13:45	05/24/12 16:00	1.00
Toluene-d8	157	ZX	70 - 130				05/14/12 13:45	05/24/12 16:00	1.00
4-Bromofluorobenzene	326	ZX	70 - 130				05/14/12 13:45	05/24/12 16:00	1.00
Method: SW846 8260B	Volatile Organic Comr	ounds by I	EPA Method 82	60B - RE	i i				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	0.198		0.131	0.0720	mg/kg dry	\$	05/14/12 13:45	05/28/12 21:39	50.0
Naphthalene	21.2	E	0.327	0.164	ma/ka dry	\$	05/14/12 13:45	05/28/12 21:39	50.0
Toluene	ND	RL1	0.131	0.0720	ma/ka drv	\$	05/14/12 13:45	05/28/12 21:39	50.0
Xylenes, total	9.68		0.327	0.164	mg/kg dry	\$	05/14/12 13:45	05/28/12 21:39	50.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1.2-Dichloroethane-d4	107		70 - 130				05/14/12 13:45	05/28/12 21:39	50.0
Dibromofluoromethane	98		70 - 130				05/14/12 13:45	05/28/12 21:39	50.0
Toluene-d8	113		70 - 130				05/14/12 13:45	05/28/12 21:39	50.0
4-Bromofluorobenzene	103		70 - 130				05/14/12 13:45	05/28/12 21:39	50.0
	Constanting to the second								
Method: SW846 8270D - Analyte	- Polyaromatic Hydroca Result	rbons by E Qualifier	PA 8270D - RE RL	1 MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	1.75	and the second s	0.880	0.447	ma/ka drv	0	05/23/12 14:00	05/25/12 14:05	10.0
Acenaphthylene	0.639	J	0.880	0.447	ma/ka dry	ø	05/23/12 14:00	05/25/12 14:05	10.0
Anthracene	0.477	J	0.880	0.447	ma/ka dry	¢	05/23/12 14:00	05/25/12 14:05	10.0
Benzo (a) anthracene	ND	-	0.880	0.447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Benzo (a) pyrene	ND		0.880	0.447	ma/ka dry	¢	05/23/12 14:00	05/25/12 14:05	10.0
Benzo (b) fluoranthene	ND		0.880	0.447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Benzo (g.h.i) pervlene	ND		0.880	0.447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Benzo (k) fluoranthene	ND		0.880	0.447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Chrysene	ND		0.880	0.447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Dibenz (a h) anthracene	ND		0.880	0.447	ma/ka dry	0	05/23/12 14:00	05/25/12 14:05	10.0
Eluoranthene	ND		0.880	0 447	ma/ka dry	群	05/23/12 14:00	05/25/12 14:05	10.0
Fluorene	3.05		0.880	0 447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Indeno (1 2 3-cd) pyrene	ND		0.880	0 447	ma/ka dry	225	05/23/12 14:00	05/25/12 14:05	10.0
Nanhthalene	9.01		0.880	0.447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Phenanthrene	4 56		0.880	0.447	ma/ka dry	-	05/23/12 14:00	05/25/12 14:05	10.0
Pyrana	0.582	4	0.880	0 447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
1-Methylnanhthalene	17.7		0.880	0 447	ma/ka dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
2-Methylnaphthalene	31.9		0.880	0.447	mg/kg dry	\$	05/23/12 14:00	05/25/12 14:05	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	121	ZX	18 - 120				05/23/12 14:00	05/25/12 14:05	10.0
2-Fluorobinhenvl	102		14 - 120				05/23/12 14:00	05/25/12 14:05	10.0
Nitrobenzene-d5	102		17 . 120				05/23/12 14:00	05/25/12 14:05	10.0
	100								10.0
Method: SW-846 - Gene	ral Chemistry Paramete	ers		1000			and the second	and the	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
% Dry Solids	75.8		0.500	0.500	%		05/21/12 09:53	05/22/12 09:05	1.00

Client Sample ID: 1202 C	ardinal						Lab Samp	DIE ID: NWE2	371-02
e Collected: 05/15/12 14:15								Mat	trix: Soil
Date Received: 05/19/12 08:20	0							Percent Soli	ids: 88.3
Method: SW846 8260B - Vol	atile Organic Comp	ounds by E	PA Method 82	260B					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.0398	CF7	0.00635	0.00317	mg/kg dry	Ø	05/15/12 14:15	05/24/12 16:30	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	91		70 - 130				05/15/12 14:15	05/24/12 16:30	1.00
Dibromofluoromethane	89		70 - 130				05/15/12 14:15	05/24/12 16:30	1.00
Toluene-d8	122		70 - 130				05/15/12 14:15	05/24/12 16:30	1.00
4-Bromofluorobenzene	128		70 - 130				05/15/12 14:15	05/24/12 16:30	1.00
Method: SW846 8260B - Vol	atile Organic Comr	ounds by F	PA Method 8	260B - RE	1				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00237	0.00131	mg/kg dry	\$	05/15/12 14:15	05/25/12 12:50	1.00
Ethylbenzene	ND		0.00237	0.00131	mg/kg dry	\$	05/15/12 14:15	05/25/12 12:50	1.00
Toluene	ND		0.00237	0.00131	ma/ka dry	\$	05/15/12 14:15	05/25/12 12:50	1.00
Xylenes, total	ND		0.00593	0.00297	mg/kg dry	\$	05/15/12 14:15	05/25/12 12:50	1.00
Surrogate	%Recoverv	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1.2-Dichloroethane-d4	102		70 - 130				05/15/12 14:15	05/25/12 12:50	1.00
Dibromofluoromethane	104		70 - 130				05/15/12 14:15	05/25/12 12:50	1.00
Toluene-d8	114		70 - 130				05/15/12 14:15	05/25/12 12:50	1.00
4-Bromofluorobenzene	141	ZX	70 - 130				05/15/12 14:15	05/25/12 12:50	1.00
Method: SW846 8270D - Pol	yaromatic Hydroca	rbons by El	PA 8270D						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0754	0.0383	mg/kg ary	24	05/23/12 14:00	05/24/12 19:37	1.00
Acenaphthylene	ND		0.0754	0.0383	mg/kg ary	*	05/23/12 14:00	05/24/12 19:37	1.00
Anthracene	ND		0.0754	0.0383	mg/kg dry	*	05/23/12 14:00	05/24/12 19:37	1.00
Benzo (a) anthracene	ND		0.0754	0.0383	mg/kg dry	**	05/23/12 14:00	05/24/12 19:37	1.00
Benzo (a) pyrene	0.274		0.0754	0.0383	mg/kg dry	*	05/23/12 14:00	05/24/12 19:37	1.00
Benzo (b) fluoranthene	ND		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
Benzo (g,h,i) perylene	0.105		0.0754	0.0383	mg/kg dry	*	05/23/12 14:00	05/24/12 19:37	1.00
Benzo (k) fluoranthene	ND		0.0754	0.0383	mg/kg dry	5.2	05/23/12 14:00	05/24/12 19:37	1.00
Chrysene	ND		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
Dibenz (a,h) anthracene	ND		0.0754	0.0383	mg/kg dry	*	05/23/12 14:00	05/24/12 19:37	1.00
Fluoranthene	ND		0.0754	0.0383	mg/kg dry	545	05/23/12 14:00	05/24/12 19:37	1.00
Fluorene	ND		0.0754	0.0383	mg/kg dry	**	05/23/12 14:00	05/24/12 19:37	1.00
Indeno (1,2,3-cd) pyrene	0.0840		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
Naphthalene	ND		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
Phenanthrene	ND		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
Pyrene	ND		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
1-Methylnaphthalene	ND		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
2-Methylnaphthalene	ND		0.0754	0.0383	mg/kg dry	\$	05/23/12 14:00	05/24/12 19:37	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	56		18 - 120				05/23/12 14:00	05/24/12 19:37	1.00
2-Fluorobiphenyl	47		14 - 120				05/23/12 14:00	05/24/12 19:37	1.00
Nitrobenzene-d5	41		17 - 120				05/23/12 14:00	05/24/12 19:37	1.00
Method: SW-846 - General C	hemistry Paramete	ers							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
% Dry Solide	88.3		0.500	0.500	9/0		05/21/12 09:53	05/22/12 09:05	1.00

Client Sample ID: 396 Acorn-2 Lab Sample ID: NWE2371-03 Date Collected: 05/17/12 12:15 Matrix: Soil Date Received: 05/19/12 08:20 Percent Solids: 77.6 Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B D Analyzed Dil Fac Analyte **Result Qualifier** RL MDL Unit Prepared ò 0.00242 05/17/12 12:15 05/24/12 17:01 Benzene 0.00398 0.00133 mg/kg dry 1.00 ¢ ND 0.00242 05/17/12 12:15 05/24/12 17:01 1.00 Toluene 0.00133 mg/kg dry 0.0126 0.00604 0.00302 mg/kg dry 10 05/17/12 12:15 05/24/12 17:01 1.00 Xylenes, total Qualifier Limits Prepared Analyzed Dil Fac Surrogate %Recovery 91 70 - 130 05/17/12 12:15 05/24/12 17:01 1.00 1.2-Dichloroethane-d4 Dibromofluoromethane 94 70 - 130 05/17/12 12:15 05/24/12 17:01 1.00 Toluene-d8 168 ZX 70 - 130 05/17/12 12:15 05/24/12 17:01 1.00 70 - 130 05/17/12 12:15 05/24/12 17:01 1.00 4-Bromofluorobenzene 112 Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B - RE1 Analyte **Result Qualifier** RI MDL Unit D Prepared Analyzed **Dil Fac** ø 0 114 0.0629 mg/kg dry 05/17/12 12:15 05/28/12 22.10 50.0 Ethylbenzene 0.599 Naphthalene 0.286 0.143 mg/kg dry 0 05/17/12 12:15 05/28/12 22:10 50.0 4.91 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 05/28/12 22:10 1.2-Dichloroethane-d4 94 70 - 130 05/17/12 12:15 50.0 05/28/12 22.10 50.0 Dibromofluoromethane 90 70 - 130 05/17/12 12:15 Toluene-d8 113 70 - 130 05/17/12 12:15 05/28/12 22:10 50.0 70 - 130 05/17/12 12:15 05/28/12 22:10 50.0 4-Bromofluorobenzene 108 Method: SW846 8270D - Polyaromatic Hydrocarbons by EPA 8270D Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed **Dil Fac** 0.526 0.0843 0.0428 ma/ka drv 05/23/12 14:00 05/24/12 20:00 1.00 Acenaphthene Ċ. Acenaphthylene ND 0.0843 0.0428 mg/kg dry 05/23/12 14:00 05/24/12 20:00 1.00 0.154 0.0843 0.0428 mg/kg dry 0 05/23/12 14:00 05/24/12 20:00 1.00 Anthracene 3 0.0843 0.0428 05/23/12 14:00 05/24/12 20:00 Benzo (a) anthracene ND mg/kg dry 1.00 ò 05/23/12 14:00 05/24/12 20:00 Benzo (a) pyrene ND 0.0843 0.0428 mg/kg dry 1.00 ò ND 0.0843 05/23/12 14:00 05/24/12 20:00 1.00 0.0428 Benzo (b) fluoranthene mg/kg dry 3 0.0843 05/23/12 14:00 05/24/12 20:00 Benzo (g,h,i) pervlene ND 0.0428 mg/kg dry 1.00 10 05/24/12 20:00 ND 0.0843 0.0428 mg/kg dry 05/23/12 14:00 1.00 Benzo (k) fluoranthene Chrysene ND 0.0843 0.0428 mg/kg dry 0 05/23/12 14:00 05/24/12 20:00 1.00 ND 0 0843 0.0428 0 05/23/12 14:00 05/24/12 20:00 1 00 Dibenz (a,h) anthracene mg/kg dry ö 0.0843 05/23/12 14:00 05/24/12 20:00 1.00 Fluoranthene 0.0465 J 0.0428 mg/kg dry \$ 0.0843 05/23/12 14:00 05/24/12 20:00 0.0428 1.00 mg/kg dry Fluorene 1.21 mg/kg dry ÷ ND 0.0843 0.0428 05/23/12 14:00 05/24/12 20:00 1.00 Indeno (1,2,3-cd) pyrene 0.0843 mg/kg dry -05/23/12 14:00 05/24/12 20:00 1.00 2.70 0.0428 Naphthalene 4 0.0843 0.0428 mg/kg dry 05/23/12 14:00 05/24/12 20:00 1.00 Phenanthrene 2.28 Pyrene 0.0985 0.0843 0.0428 mg/kg dry 0 05/23/12 14:00 05/24/12 20:00 1.00 Limits Analyzed Dil Fac Surrogate %Recovery Qualifier Prepared 05/23/12 14:00 05/24/12 20:00 1.00 69 18 - 120 Terphenyl-d14 2-Fluorobiphenyl 61 14 - 120 05/23/12 14:00 05/24/12 20:00 1.00 Nitrobenzene-d5 72 17 - 120 05/23/12 14:00 05/24/12 20:00 1.00 Method: SW846 8270D - Polyaromatic Hydrocarbons by EPA 8270D - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DilFad
1-Methylnaphthalene	7.99		0.843	0.428	mg/kg dry	0	05/23/12 14:00	05/25/12 14:28	10.0
2-Methylnaphthalene	16.0		0.843	0.428	mg/kg dry	\$	05/23/12 14:00	05/25/12 14:28	10.0

Client Sample Results

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

% Dry Solids

Client Sample ID: 396 Acor	n-2						Lab Samp	le ID: NWE2	371-03
Date Collected: 05/17/12 12:15								Mat	rix: Soil
Date Received: 05/19/12 08:20								Percent Soli	ds: 77.6
Method: SW-846 - General Che	mistry Paramete	rs							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
% Dry Solids	77.6		0.500	0.500	%		05/21/12 09:53	05/22/12 09:05	1.00

Client Sample ID: 396 Acorn-1

Date Collected: 05/17/12 09:45

Lab Sample ID: NWE2371-04 Matrix: Soil Percent Solids: 76.4

Date Received: 05/19/12 08:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00197	0.00109	mg/kg dry	\$	05/17/12 09:45	05/24/12 17:32	1.00
Ethylbenzene	0.0460		0.00197	0.00109	mg/kg dry	\$	05/17/12 09:45	05/24/12 17:32	1.00
Toluene	ND		0.00197	0.00109	mg/kg dry	章	05/17/12 09:45	05/24/12 17:32	1.00
Xylenes, total	0.00374	J	0.00494	0.00247	mg/kg dry	¢	05/17/12 09:45	05/24/12 17:32	1.00
Surrogata		0	1.1-14-				Propared	Analized	
Surrogate	%Recovery	Quaimer	Limits				riepareu	Analyzed	DirFac
1,2-Dichloroethane-d4	%Recovery 88	Quaimer	70 - 130				05/17/12 09:45	05/24/12 17:32	1.00
1,2-Dichloroethane-d4 Dibromofluoromethane	%Recovery 88 90	Quaimer	70 - 130 70 - 130				05/17/12 09:45 05/17/12 09:45	05/24/12 17:32 05/24/12 17:32	1.00 1.00
1,2-Dichloroethane-d4 Dibromofluoromethane Toluene-d8	% Recovery 88 90 134	ZX	70 - 130 70 - 130 70 - 130 70 - 130				05/17/12 09:45 05/17/12 09:45 05/17/12 09:45	05/24/12 17:32 05/24/12 17:32 05/24/12 17:32	1.00 1.00 1.00

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.999		0.263	0.132	mg/kg dry	¢	05/17/12 09:45	05/28/12 22:41	50.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	93		70 - 130				05/17/12 09:45	05/28/12 22:41	50.0
Dibromofluoromethane	89		70 - 130				05/17/12 09:45	05/28/12 22:41	50.0
Toluene-d8	112		70 - 130				05/17/12 09:45	05/28/12 22:41	50.0
4-Bromofluorobenzene	113		70 - 130				05/17/12 09:45	05/28/12 22:41	50.0

Method: SW846 8270D - Polyaromatic Hydrocarbons by EPA 8270D

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Acenaphthylene	ND		0.0867	0.0440	mg/kg dry	¢	05/23/12 14:00	05/24/12 20:22	1.00
Anthracene	0.0487	J	0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Benzo (a) anthracene	ND		0.0867	0.0440	mg/kg dry	¢	05/23/12 14:00	05/24/12 20:22	1.00
Benzo (a) pyrene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Benzo (b) fluoranthene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Benzo (g,h,i) perylene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Benzo (k) fluoranthene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Chrysene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Dibenz (a,h) anthracene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Fluoranthene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Fluorene	0.213		0.0867	0.0440	mg/kg dry	\$2	05/23/12 14:00	05/24/12 20:22	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Naphthalene	0.276		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Phenanthrene	0.403		0.0867	0.0440	mg/kg dry	12-	05/23/12 14:00	05/24/12 20:22	1.00
Pyrene	ND		0.0867	0.0440	mg/kg dry	ø	05/23/12 14:00	05/24/12 20:22	1.00
1-Methylnaphthalene	0.792		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
2-Methylnaphthalene	1.44		0.0867	0.0440	mg/kg dry	\$	05/23/12 14:00	05/24/12 20:22	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	75		18 - 120				05/23/12 14:00	05/24/12 20:22	1.00
2-Fluorobiphenyl	59		14 - 120				05/23/12 14:00	05/24/12 20:22	1.00
Nitrobenzene-d5	56		17 - 120				05/23/12 14:00	05/24/12 20:22	1.00
Method: SW-846 - General C	hemistry Paramete	ers							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
% Dry Solids	76.4		0.500	0.500	%		05/21/12 09:53	05/22/12 09:05	1.00

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B

Lab Sample ID: 12E3392-BLK1 Matrix: Soil Analysis Batch: V008753

Client Sample ID: Method Blank Prep Type: Total Prep Batch: 12E3392_P

Client Sample ID: Method Blank

Prep Type: Total Prep Batch: 12E3392_P

	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.00110	mg/kg wet		05/24/12 00:52	05/24/12 11:37	1.00
Ethylbenzene	ND		0.00200	0.00110	mg/kg wet		05/24/12 00:52	05/24/12 11:37	1.00
Naphthalene	ND		0.00500	0.00250	mg/kg wet		05/24/12 00:52	05/24/12 11:37	1.00
Toluene	ND		0.00200	0.00110	mg/kg wet		05/24/12 00:52	05/24/12 11:37	1.00
Xylenes, total	ND		0.00500	0.00250	mg/kg wet		05/24/12 00:52	05/24/12 11:37	1.00
	Blank	Blank							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surroyate	Thecovery Qualities	Linnis	Frepareu	Analyzeu	Dirrac
1,2-Dichloroethane-d4	104	70 - 130	05/24/12 00:52	05/24/12 11:37	1.00
Dibromofluoromethane	101	70 - 130	05/24/12 00:52	05/24/12 11:37	1.00
Toluene-d8	111	70 - 130	05/24/12 00:52	05/24/12 11:37	1.00
4-Bromofluorobenzene	114	70 - 130	05/24/12 00:52	05/24/12 11:37	1.00

Lab Sample ID: 12E3392-BLK2 Matrix: Soil Analysis Batch: V008753

Blank	Blank							
Analyte Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene ND		0.100	0.0550	mg/kg wet		05/24/12 00:52	05/24/12 12:08	50.0
Ethylbenzene ND		0.100	0.0550	mg/kg wet		05/24/12 00:52	05/24/12 12:08	50.0
Naphthalene ND		0.250	0.125	mg/kg wet		05/24/12 00:52	05/24/12 12:08	50.0
Toluene ND		0.100	0.0550	mg/kg wet		05/24/12 00:52	05/24/12 12:08	50.0
Xylenes, total ND		0.250	0.125	mg/kg wet		05/24/12 00:52	05/24/12 12:08	50.0

	Blank	Blank				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	108		70 - 130	05/24/12 00:52	05/24/12 12:08	50.0
Dibromofluoromethane	104		70 - 130	05/24/12 00:52	05/24/12 12:08	50.0
Toluene-d8	109		70 - 130	05/24/12 00:52	05/24/12 12:08	50.0
4-Bromofluorobenzene	114		70 - 130	05/24/12 00:52	05/24/12 12:08	50.0

Lab Sample ID: 12E3392-BS1 Matrix: Soil

Analysis Batch. V000755							Flep Batch. 12E3332_F
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	50.0	47.1		ug/kg		94	75 - 127
Ethylbenzene	50.0	46.9		ug/kg		94	80 - 134
Naphthalene	50.0	43.2		ug/kg		86	69 - 150
Toluene	50.0	48.6		ug/kg		97	80 - 132
Xylenes, total	150	130		ug/kg		87	80 - 137

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4	98		70 - 130
Dibromofluoromethane	100		70 - 130
Toluene-d8	107		70 - 130
4-Bromofluorobenzene	105		70 - 130

Client Sample ID: Lab Control Sample

Prep Type: T	otal
Prep Batch: 12E339	2_P

Unit

mg/kg wet

mg/kg wet

mg/kg wet

mg/kg wet

mg/kg wet

D

%Rec

102

105

26

116

94

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B (Continued)

Lab Sample ID: 12E3392-MS1 Matrix: Soil Analysis Batch: V008753

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 12E3392_P
%Rec.

Limits

31 - 143

23 - 161

10 - 176

30 - 155 25 - 162

	Sample	Sample	Spike	Matrix Spike	Matrix Spike
Analyte	Result	Qualifier	Added	Result	Qualifier
Benzene	0.00228		0.0443	0.0473	
Ethylbenzene	0.00604		0.0443	0.0526	
Naphthalene	0.0563		0.0443	0.0678	
Toluene	0.00130		0.0443	0.0525	
Xylenes, total	0.0176		0.133	0.143	

	Matrix Spike	Matrix Spike	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4	93		70 - 130
Dibromofluoromethane	96		70 - 130
Toluene-d8	114		70 - 130
4-Bromofluorobenzene	108		70 - 130

Lab Sample ID: 12E3392-MSD1 Matrix: Soil Analysis Batch: V008753

Analysis Baton. Toooroo									ricp Buto		
	Sample	Sample	Spike	ıtrix Spike Dup	Matrix Spil	ke Duj			%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.00228		0.0415	0.0470		mg/kg wet		108	31 - 143	0.7	50
Ethylbenzene	0.00604		0.0415	0.0489		mg/kg wet		103	23 - 161	7	50
Naphthalene	0.0563		0.0415	0.0609		mg/kg wet		11	10 - 176	11	50
Toluene	0.00130		0.0415	0.0510		mg/kg wet		120	30 - 155	3	50
Xylenes, total	0.0176		0.124	0.129		mg/kg wet		90	25 - 162	10	50

	Matrix Spike Dup	Matrix Spike Dup		
Surrogate	%Recovery	Qualifier	Limits	
1,2-Dichloroethane-d4	95		70 - 130	
Dibromofluoromethane	97		70 - 130	
Toluene-d8	118		70 - 130	
4-Bromofluorobenzene	109		70 - 130	

Lab Sample ID: 12E4185-BLK1 Matrix: Soil Analysis Batch: V008953

Analysis Batch: V008953								Prep Batch: 12E	4185_P
the second second second	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.00110	mg/kg wet		05/28/12 00:33	05/28/12 15:01	1.00
Ethylbenzene	ND		0.00200	0.00110	mg/kg wet		05/28/12 00:33	05/28/12 15:01	1.00
Naphthalene	ND		0.00500	0.00250	mg/kg wet		05/28/12 00:33	05/28/12 15:01	1.00
Toluene	ND		0.00200	0.00110	mg/kg wet		05/28/12 00:33	05/28/12 15:01	1.00
Xylenes, total	ND		0.00500	0.00250	mg/kg wet		05/28/12 00:33	05/28/12 15:01	1.00
	Blank	Blank							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	105		70 - 130				05/28/12 00:33	05/28/12 15:01	1.00
Dibromofluoromethane	103		70 - 130				05/28/12 00:33	05/28/12 15:01	1.00
Toluene-d8	115		70 - 130				05/28/12 00:33	05/28/12 15:01	1.00
4-Bromofluorobenzene	116		70 - 130				05/28/12 00:33	05/28/12 15:01	1.00

Client Sample ID: Matrix Spike Duplicate Prep Type: Total Prep Batch: 12E3392 P

- 102	10	50

Prep Type: Total

Client Sample ID: Method Blank

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B (Continued)

116

Lab Sample ID: 12E4185-BLK2							Client Sa	mple ID: Metho	d Blank
Matrix: Soil								Prep Typ	e: Total
Analysis Batch: V008953								Prep Batch: 128	E4185_P
	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.100	0.0550	mg/kg wet		05/28/12 00:33	05/28/12 15:31	50.0
Ethylbenzene	ND		0.100	0.0550	mg/kg wet		05/28/12 00:33	05/28/12 15:31	50.0
Naphthalene	ND		0.250	0.125	mg/kg wet		05/28/12 00:33	05/28/12 15:31	50.0
Toluene	ND		0.100	0.0550	mg/kg wet		05/28/12 00:33	05/28/12 15:31	50.0
Xylenes, total	ND		0.250	0.125	mg/kg wet		05/28/12 00:33	05/28/12 15:31	50.0
	Blank	Blank							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	109		70 - 130				05/28/12 00:33	05/28/12 15:31	50.0
Dibromofluoromethane	103		70 - 130				05/28/12 00:33	05/28/12 15:31	50.0
Toluene-d8	129		70 - 130				05/28/12 00:33	05/28/12 15:31	50.0

70 - 130

Lab Sample ID: 12E4185-BS1 Matrix: Soil Analysis Batch: V008953

4-Bromofluorobenzene

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	50.0	44.4		ug/kg		89	75 - 127
Ethylbenzene	50.0	45.5		ug/kg		91	80 - 134
Naphthalene	50.0	38.2		ug/kg		76	69 - 150
Toluene	50.0	49.9		ug/kg		100	80 - 132
Xylenes, total	150	126		ug/kg		84	80 - 137

	LCS	LCS		
Surrogate	%Recovery		Limits	
1,2-Dichloroethane-d4	108		70 - 130	
Dibromofluoromethane	103		70 - 130	
Toluene-d8	121		70 - 130	
4-Bromofluorobenzene	106		70 - 130	

Lab Sample ID: 12E4185-BSD1 Matrix: Soil

Analy	sis	Batch:	V008953
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Analysis Batch: V008953							Ргер Ватс	n: 12E4	100_P
	Spike	LCS Dup	LCS Dup				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	45.3		ug/kg		91	75 - 127	2	50
Ethylbenzene	50.0	47.0		ug/kg		94	80 - 134	3	50
Naphthalene	50.0	40.4		ug/kg		81	69 - 150	6	50
Toluene	50.0	48.3		ug/kg		97	80 - 132	3	50
Xylenes, total	150	131		ug/kg		88	80 - 137	4	50

	LCS Dup	LCS Dup		
Surrogate	%Recovery	Qualifier	Limits	
1,2-Dichloroethane-d4	109		70 - 130	
Dibromofluoromethane	104		70 - 130	
Toluene-d8	115		70 - 130	
4-Bromofluorobenzene	105		70 - 130	

Client Sample ID: Lab Control Sample Prep Type: Total

05/28/12 00:33 05/28/12 15:31

Prep	Batch:	12E41	85 P

50.0

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

			Prep Batc	n: 12E4	185_P	
			%Rec.		RPD	
t	D	%Rec	Limits	RPD	Limit	
kg		91	75 - 127	2	50	
kg		94	80 - 134	3	50	
kg		81	69 - 150	6	50	
kg		97	80 - 132	3	50	

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B (Continued)

Lab Sample ID: 12E4185-MS1 Matrix: Soil Analysis Batch: V008953

Client Sa	mple ID: Matrix Spike
	Prep Type: Tota
Pr	ep Batch: 12E4185_F

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Prep Type: Total

Prep Type: Total

Analysis Daten. Voodss	Sample	Sample	Spike	Matrix Spike	Matrix Spi	ke			%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	ND		2.50	2.16		mg/kg wet		86	31 - 143
Ethylbenzene	0.152		2.50	2.68		mg/kg wet		101	23 - 161
Naphthalene	0.727		2.50	2.93		mg/kg wet		88	10 - 176
Toluene	ND		2.50	2.48		mg/kg wet		99	30 - 155
Xylenes, total	1.15		7.50	8.01		mg/kg wet		91	25 - 162

	Matrix Spike	Matrix Spike	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4	92		70 - 130
Dibromofluoromethane	94		70 - 130
Toluene-d8	113		70 - 130
4-Bromofluorobenzene	116		70 - 130

Lab Sample ID: 12E4185-MSD1 Matrix: Soil Analysis Batch: V008953

Analysis Batch: V008953									Prep Batc	h: 12E4	185 P	
	Sample	Sample	Spike r	ıtrix Spike Dup	Matrix Spike Du				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	ND		2.50	2.38		mg/kg wet		95	31 - 143	10	50	
Ethylbenzene	0.152		2.50	3.06		mg/kg wet		116	23 - 161	13	50	
Naphthalene	0.727		2.50	2.17		mg/kg wet		58	10 - 176	30	50	
Toluene	ND		2.50	2.80		mg/kg wet		112	30 - 155	12	50	
Xylenes, total	1.15		7.50	8.96		mg/kg wet		104	25 - 162	11	50	

	Matrix Spike Dup	Matrix Spike Dup			
Surrogate	%Recovery	Qualifier	Limits		
1,2-Dichloroethane-d4	72		70 - 130		
Dibromofluoromethane	87		70 - 130		
Toluene-d8	116		70 - 130		
4-Bromofluorobenzene	117		70 - 130		

Lab Sample ID: 12E5635-BLK1 Matrix: Soil Analysis Batch: V008819

Analysis Batch: V008819								Prep Batch: 12E	5635_P
	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00200	0.00110	mg/kg wet		05/25/12 09:16	05/25/12 11:49	1.00
Ethylbenzene	ND		0.00200	0.00110	mg/kg wet		05/25/12 09:16	05/25/12 11:49	1.00
Naphthalene	ND		0.00500	0.00250	mg/kg wet		05/25/12 09:16	05/25/12 11:49	1.00
Toluene	ND		0.00200	0.00110	mg/kg wet		05/25/12 09:16	05/25/12 11:49	1.00
Xylenes, total	ND		0.00500	0.00250	mg/kg wet		05/25/12 09:16	05/25/12 11:49	1.00
	Blank	Blank							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	100		70 - 130				05/25/12 09:16	05/25/12 11:49	1.00
Dibromofluoromethane	100		70 - 130				05/25/12 09:16	05/25/12 11:49	1.00
Toluene-d8	106		70 - 130				05/25/12 09:16	05/25/12 11:49	1.00
4-Bromofluorobenzene	109		70 - 130				05/25/12 09:16	05/25/12 11:49	1.00

Method: SW846 8260B - Volatile Organic Compounds by EPA Method 8260B (Continued)

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Lab Sample ID: 12E5635-BLK2							Client Sa	ample ID: Metho	d Blank
Matrix: Soil								Prep Typ	e: Total
Analysis Batch: V008819								Prep Batch: 12E	5635_P
and an an an an an an an an	Blank	Blank						1.	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.100	0.0550	mg/kg wet		05/25/12 09:16	05/25/12 12:20	50.0
Ethylbenzene	ND		0.100	0.0550	mg/kg wet		05/25/12 09:16	05/25/12 12:20	50.0
Naphthalene	ND		0.250	0.125	mg/kg wet		05/25/12 09:16	05/25/12 12:20	50.0
Toluene	ND		0.100	0.0550	mg/kg wet		05/25/12 09:16	05/25/12 12:20	50.0
Xylenes, total	ND		0.250	0.125	mg/kg wet		05/25/12 09:16	05/25/12 12:20	50.0
	Blank	Blank							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4	99		70 - 130				05/25/12 09:16	05/25/12 12:20	50.0
Dibromofluoromethane	102		70 - 130				05/25/12 09:16	05/25/12 12:20	50.0
Toluene-d8	106		70 - 130				05/25/12 09:16	05/25/12 12:20	50.0

Lab Sample ID: 12E5635-BS1 Matrix: Soil Analysis Batch: V008819

4-Bromofluorobenzene

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	50.0	50.8		ug/kg		102	75 - 127
Ethylbenzene	50.0	51.6		ug/kg		103	80 - 134
Naphthalene	50.0	47.4		ug/kg		95	69 - 150
Toluene	50.0	53.4		ug/kg		107	80 - 132
Xylenes, total	150	143		ug/kg		96	80 - 137

70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4	98		70 - 130
Dibromofluoromethane	99		70 - 130
Toluene-d8	108		70 - 130
4-Bromofluorobenzene	106		70 - 130

Lab Sample ID: 12E5635-BSD1 Matrix: Soil

Analysis Batch: V008819

	Spike	LCS Dup	LCS Dup				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	53.0		ug/kg		106	75 - 127	4	50
Ethylbenzene	50.0	51.4		ug/kg		103	80 - 134	0.4	50
Naphthalene	50.0	47.6		ug/kg		95	69 - 150	0.4	50
Toluene	50.0	51.9		ug/kg		104	80 - 132	3	50
Xylenes, total	150	141		ug/kg		94	80 - 137	1	50

	LCS Dup	LCS Dup	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4	97		70 - 130
Dibromofluoromethane	100		70 - 130
Toluene-d8	105		70 - 130
4-Bromofluorobenzene	103		70 - 130

Client Sample ID: Lab Control Sample Prep Type: Total Prep Batch: 12E5635_P

50.0

05/25/12 09:16 05/25/12 12:20

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Prep Batch: 12E5635 P

Method: SW846 8270D - Polyaromatic Hydrocarbons by EPA 8270D

Lab Sample ID: 12E3780-BLK1 Matrix: Soil Analysis Batch: 12E3780

Client Sample ID: Method Blank Prep Type: Total Prep Batch: 12E3780_P

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12E3780_P

State State of

E	lank	Blank							
Analyte R	sult	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Acenaphthylene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Anthracene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Benzo (a) anthracene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Benzo (a) pyrene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Benzo (b) fluoranthene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Benzo (g,h,i) perylene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Benzo (k) fluoranthene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Chrysene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Dibenz (a,h) anthracene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Fluoranthene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Fluorene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Naphthalene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Phenanthrene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
Pyrene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
1-Methylnaphthalene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00
2-Methylnaphthalene	ND		0.0670	0.0340	mg/kg wet		05/23/12 14:00	05/24/12 13:11	1.00

	Diality Di	ann			
Surrogate	%Recovery Q	ualifier Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	81	18 - 120	05/23/12 14:00	05/24/12 13:11	1.00
2-Fluorobiphenyl	60	14 - 120	05/23/12 14:00	05/24/12 13:11	1.00
Nitrobenzene-d5	58	17 - 120	05/23/12 14:00	05/24/12 13:11	1.00

Lab Sample ID: 12E3780-BS1 Matrix: Soil

Analysis Batch: 12E3780

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	1.67	1.28		mg/kg wet		77	36 - 120	
Acenaphthylene	1.67	1.29		mg/kg wet		78	38 - 120	
Anthracene	1.67	1.39		mg/kg wet		84	46 - 124	
Benzo (a) anthracene	1.67	1.50		mg/kg wet		90	45 - 120	
Benzo (a) pyrene	1.67	1.52		mg/kg wet		91	45 - 120	
Benzo (b) fluoranthene	1.67	1.48		mg/kg wet		89	42 - 120	
Benzo (g,h,i) perylene	1.67	1.34		mg/kg wet		80	38 - 120	
Benzo (k) fluoranthene	1.67	1.34		mg/kg wet		80	42 - 120	
Chrysene	1.67	1.40		mg/kg wet		84	43 - 120	
Dibenz (a,h) anthracene	1.67	1.42		mg/kg wet		85	32 - 128	
Fluoranthene	1.67	1.41		mg/kg wet		84	46 - 120	
Fluorene	1.67	1.37		mg/kg wet		82	42 - 120	
Indeno (1,2,3-cd) pyrene	1.67	1.37		mg/kg wet		82	41 - 121	
Naphthalene	1.67	1.31		mg/kg wet		79	32 - 120	
Phenanthrene	1.67	1.36		mg/kg wet		81	45 - 120	
Pyrene	1.67	1.43		mg/kg wet		86	43 - 120	
1-Methylnaphthalene	1.67	0.960		mg/kg wet		58	32 - 120	
2-Methylnaphthalene	1.67	1.26		mg/kg wet		76	28 - 120	

Method: SW846 8270D - Polyaromatic Hydrocarbons by EPA 8270D (Continued)

Lab Sample ID: 12E3780-BS1 Matrix: Soil Analysis Batch: 12E3780

Client Sample ID: Lab Control Sample Prep Type: Total Prep Batch: 12E3780_P

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14	78		18 - 120
2-Fluorobiphenyl	58		14 - 120
Nitrobenzene-d5	54		17 - 120

Lab Sample ID: 12E3780-BSD1 Matrix: Soil

Analysis Batch: 12E3780

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 12E3780 P

	Spike	LCS Dup	LCS Dup				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthene	1.67	1.26		mg/kg wet		75	36 - 120	2	50
Acenaphthylene	1.67	1.29		mg/kg wet		78	38 - 120	0.03	50
Anthracene	1.67	1.37		mg/kg wet		82	46 - 124	1	49
Benzo (a) anthracene	1.67	1.47		mg/kg wet		88	45 - 120	2	50
Benzo (a) pyrene	1.67	1.49		mg/kg wet		89	45 - 120	2	50
Benzo (b) fluoranthene	1.67	1.46		mg/kg wet		88	42 - 120	1	50
Benzo (g,h,i) perylene	1.67	1.27		mg/kg wet		76	38 - 120	5	50
Benzo (k) fluoranthene	1.67	1.29		mg/kg wet		77	42 - 120	4	45
Chrysene	1.67	1.37		mg/kg wet		82	43 - 120	2	49
Dibenz (a,h) anthracene	1.67	1.35		mg/kg wet		81	32 - 128	5	50
Fluoranthene	1.67	1.37		mg/kg wet		82	46 - 120	3	50
Fluorene	1.67	1.36		mg/kg wet		82	42 - 120	0.3	50
Indeno (1,2,3-cd) pyrene	1.67	1.33		mg/kg wet		80	41 - 121	3	50
Naphthalene	1.67	1.29		mg/kg wet		77	32 - 120	2	50
Phenanthrene	1.67	1.35		mg/kg wet		81	45 - 120	0.5	50
Pyrene	1.67	1.44		mg/kg wet		86	43 - 120	1	50
1-Methylnaphthalene	1.67	0.945		mg/kg wet		57	32 - 120	2	50
2-Methylnaphthalene	1.67	1.26		mg/kg wet		76	28 - 120	0.4	50

	LCS Dup	LCS Dup	
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14	82		18 - 120
2-Fluorobiphenyl	59		14 - 120
Nitrobenzene-d5	55		17 - 120

Lab Sample ID: 12E3780-MS1 Matrix: Soil Analysis Batch: 12E3780

Analysis Batch: 12E3780									Prep Batch: 12E378	0_P
	Sample	Sample	Spike	Matrix Spike	Matrix Spi	ke			%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	0.0820		1.96	ND	A-01	mg/kg dry	\$	-4	19 - 120	
Acenaphthylene	0.183		1.96	0.0427	A-01 J	mg/kg dry	\$	-7	25 - 120	
Anthracene	0.302		1.96	0.0845	A-01	mg/kg dry	¢	-11	28 - 125	
Benzo (a) anthracene	1.32		1.96	0.378	A-01	mg/kg dry	\$	-48	23 - 120	
Benzo (a) pyrene	1.28		1.96	0.353	A-01	mg/kg dry	\$	-47	15 - 128	
Benzo (b) fluoranthene	1.57		1.96	0.443	A-01	mg/kg dry	\Diamond	-58	12 - 133	
Benzo (g,h,i) perylene	0.752		1.96	0.209	A-01	mg/kg dry	\$	-28	22 - 120	
Benzo (k) fluoranthene	0.575		1.96	0.145	A-01	mg/kg dry	\$	-22	28 - 120	
Chrysene	1.33		1.96	0.388	A-01	mg/kg dry	\$	-48	20 - 120	
Dibenz (a,h) anthracene	0.166		1.96	0.0481	A-01 J	mg/kg dry	\$	-6	12 - 128	
Fluoranthene	2.64		1.96	0.783	A-01	mg/kg dry	\$	-95	10 - 143	

Client Sample ID: Matrix Spike

Prep Type: Total

Method: SW846 8270D - Polyaromatic Hydrocarbons by EPA 8270D (Continued)

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Lab Sample ID: 12E3780-MS1 Matrix: Soil Analysis Batch: 12E3780								Client	Sample ID: M Prep Prep Batch:	latrix Spike Type: Total 12E3780_P
	Sample	Sample	Spike	Matrix Spike	Matrix Spi	ke			%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Fluorene	0.145		1.96	ND	A-01	mg/kg dry	\$	-7	20 - 120	
Indeno (1,2,3-cd) pyrene	0.650		1.96	0.170	A-01	mg/kg dry	¢	-25	22 - 121	
Naphthalene	ND		1.96	ND	A-01	mg/kg dry	\$		10 - 120	
Phenanthrene	1.67		1.96	0.481	A-01	mg/kg dry	¢	-61	21 - 122	
Pyrene	2.59		1.96	0.765	A-01	mg/kg dry	¢	-93	20 - 123	
1-Methylnaphthalene	ND		1.96	ND	A-01	mg/kg dry	¢		10 - 120	
2-Methylnaphthalene	ND		1.96	ND	A-01	mg/kg dry	\$		13 - 120	
	Matrix Spike	Matrix Spike								
Surrogate	%Recovery	Qualifier	Limits							
Terphenyl-d14	77		18 - 120							

14 - 120

17 - 120

Lab Sample II	D: 12E3780-MSD1
Matrix: Soil	

2-Fluorobiphenyl

Nitrobenzene-d5

Client Sample ID: Matrix Spike Duplicate Prep Type: Total

Prep Batch: 12E3780 P Analysis Batch: 12E3780 RPD Sample Sample Spike Itrix Spike Dup Matrix Spike Dup %Rec. Analyte **Result Qualifier** Added **Result Qualifier** Unit D %Rec Limits RPD Limit \$ 19 - 120 0.0820 1.97 1.10 51 50 Acenaphthene mg/kg dry \$ Acenaphthylene 0.183 1.97 1.17 mg/kg dry 50 25 - 120 186 50 ¢ 47 28 - 125 Anthracene 0.302 1.97 1.22 174 49 mg/kg dry ø Benzo (a) anthracene 1.32 1.97 1.37 mg/kg dry 3 23 - 120 113 50 Benzo (a) pyrene 1.28 1.97 1.37 mg/kg dry ¢ 5 15 - 128 118 50 ¢ 1.57 1.37 -10 12 - 133 102 50 Benzo (b) fluoranthene 1.97 mg/kg dry $\dot{\phi}$ 0.752 1.97 20 22 - 120 139 50 Benzo (g,h,i) perylene 1.15 mg/kg dry $\hat{\Omega}$ 27 Benzo (k) fluoranthene 0.575 1.97 1.10 mg/kg dry 28 - 120 153 45 -1.33 1.97 1.26 mg/kg dry -4 20 - 120 106 49 Chrysene ŵ 50 12 - 128 184 0.166 1.97 1.15 50 Dibenz (a,h) anthracene mg/kg dry ø Fluoranthene 2.64 1.97 1.39 mg/kg dry -63 10 - 143 56 50 -0.145 1.97 1.18 53 20 - 120 50 Fluorene mg/kg dry ġ. 26 Indeno (1,2,3-cd) pyrene 0.650 1.97 1.17 mg/kg dry 22 - 121 149 50 $\hat{\varphi}$ ND 1.97 1.14 58 10 - 120 50 Naphthalene mg/kg dry 4 Phenanthrene 1.67 1.97 1.32 mg/kg dry -18 21 - 122 93 50 50 2.59 1.97 1.48 -56 20 - 123 64 Pyrene mg/kg dry \$ ND 0.854 43 10 - 120 50 1-Methylnaphthalene 1.97 mg/kg dry ND ö 57 13 - 120 50 2-Methylnaphthalene 1.97 1.13 mg/kg dry

	Matrix Spike Dup	Matrix Spike	Dup
Surrogate	%Recovery	Qualifier	Limits
Terphenyl-d14	57		18 - 120
2-Fluorobiphenyl	39		14 - 120
Nitrobenzene-d5	35		17 - 120

Method: SW-846 - General Chemistry Parameters

Lab Sample ID: 12E4519-DUP1							Client Sample ID: D	uplicate
Matrix: Soil							Prep Typ	e: Total
Analysis Batch: 12E4519							Prep Batch: 12	4519_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPI) Limit
% Dry Solids	79.1		78.7		%		0.	5 20

QC Association Summary

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

GCMS Volatiles

Analysis Batch: V00875	3				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E3392-BLK1	Method Blank	Total	Soil	SW846 8260B	12E3392_P
12E3392-BLK2	Method Blank	Total	Soil	SW846 8260B	12E3392_P
12E3392-BS1	Lab Control Sample	Total	Soil	SW846 8260B	12E3392_P
12E3392-MS1	Matrix Spike	Total	Soil	SW846 8260B	12E3392_P
12E3392-MSD1	Matrix Spike Duplicate	Total	Soil	SW846 8260B	12E3392 P
NWE2371-01	1479 Cardinal	Total	Soil	SW846 8260B	12E3392 P
NWE2371-02	1202 Cardinal	Total	Soil	SW846 8260B	12E3392 P
NWE2371-03	396 Acorn-2	Total	Soil	SW846 8260B	12E3392 P
NWE2371-04	396 Acorn-1	Total	Soil	SW846 8260B	12E3392_P
Analysis Batch: V00881	9				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E5635-BLK1	Method Blank	Total	Soil	SW846 8260B	12E5635_P
12E5635-BLK2	Method Blank	Total	Soil	SW846 8260B	12E5635_P
12E5635-BS1	Lab Control Sample	Total	Soil	SW846 8260B	12E5635 P
12E5635-BSD1	Lab Control Sample Dup	Total	Soil	SW846 8260B	12E5635 P
NWE2371-02 - RE1	1202 Cardinal	Total	Soil	SW846 8260B	12E5635_P
Analysis Batch: V00895	3				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E4185-BLK1	Method Blank	Total	Soil	SW846 8260B	12E4185_P
12E4185-BLK2	Method Blank	Total	Soil	SW846 8260B	12E4185_P
12E4185-BS1	Lab Control Sample	Total	Soil	SW846 8260B	12E4185_P
12E4185-BSD1	Lab Control Sample Dup	Total	Soil	SW846 8260B	12E4185 P
12E4185-MS1	Matrix Spike	Total	Soil	SW846 8260B	12E4185 P
12E4185-MSD1	Matrix Spike Duplicate	Total	Soil	SW846 8260B	12E4185_P
NWE2371-01 - RE1	1479 Cardinal	Total	Soil	SW846 8260B	12E4185 P
NWE2371-03 - RE1	396 Acorn-2	Total	Soil	SW846 8260B	12E4185 P
NWE2371-04 - RE1	396 Acorn-1	Total	Soil	SW846 8260B	12E4185_P
Prep Batch: 12E3392_P					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E3392-BLK1	Method Blank	Total	Soil	EPA 5035	
12E3392-BLK2	Method Blank	Total	Soil	EPA 5035	
12E3392-BS1	Lab Control Sample	Total	Soil	EPA 5035	
12E3392-MS1	Matrix Spike	Total	Soil	EPA 5035	
12E3392-MSD1	Matrix Spike Duplicate	Total	Soil	EPA 5035	
NWE2371-01	1479 Cardinal	Total	Soil	EPA 5035	
NWE2371-02	1202 Cardinal	Total	Soil	EPA 5035	
NWE2371-03	396 Acorn-2	Total	Soil	EPA 5035	
NWE2371-04	396 Acorn-1	Total	Soil	EPA 5035	
Prep Batch: 12E4185_P					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E4185-BLK1	Method Blank	Total	Soil	EPA 5035	
12E4185-BLK2	Method Blank	Total	Soil	EPA 5035	
12E4185-BS1	Lab Control Sample	Total	Soil	EPA 5035	
12E4185-BSD1	Lab Control Sample Dup	Total	Soil	EPA 5035	
12E4185-MS1	Matrix Spike	Total	Soil	EPA 5035	
12E4185-MSD1	Matrix Spike Duplicate	Total	Soil	EPA 5035	
NWE2371-01 - RE1	1479 Cardinal	Total	Soil	EPA 5035	
NWE2371-03 - RE1	396 Acorn-2	Total	Soil	EPA 5035	

QC Association Summary

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

ľ.

GCMS Volatiles (Continued)

Prep Batch: 12E4185_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
NWE2371-04 - RE1	396 Acorn-1	Total	Soil	EPA 5035	

Prep Batch: 12E5635_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E5635-BLK1	Method Blank	Total	Soil	EPA 5035	
12E5635-BLK2	Method Blank	Total	Soil	EPA 5035	
12E5635-BS1	Lab Control Sample	Total	Soil	EPA 5035	
12E5635-BSD1	Lab Control Sample Dup	Total	Soil	EPA 5035	
NWE2371-02 - RE1	1202 Cardinal	Total	Soil	EPA 5035	

GCMS Semivolatiles

Analysis Batch: 12E3780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E3780-BLK1	Method Blank	Total	Soil	SW846 8270D	12E3780_P
12E3780-BS1	Lab Control Sample	Total	Soil	SW846 8270D	12E3780_P
12E3780-BSD1	Lab Control Sample Dup	Total	Soil	SW846 8270D	12E3780_P
12E3780-MS1	Matrix Spike	Total	Soil	SW846 8270D	12E3780_P
12E3780-MSD1	Matrix Spike Duplicate	Total	Soil	SW846 8270D	12E3780_P
NWE2371-01 - RE1	1479 Cardinal	Total	Soil	SW846 8270D	12E3780_P
NWE2371-02	1202 Cardinal	Total	Soil	SW846 8270D	12E3780_P
NWE2371-03	396 Acorn-2	Total	Soil	SW846 8270D	12E3780_P
NWE2371-03 - RE1	396 Acorn-2	Total	Soil	SW846 8270D	12E3780_P
NWE2371-04	396 Acorn-1	Total	Soil	SW846 8270D	12E3780_P

Prep Batch: 12E3780_P

Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Method Blank	Total	Soil	EPA 3550C	
Lab Control Sample	Total	Soil	EPA 3550C	
Lab Control Sample Dup	Total	Soil	EPA 3550C	
Matrix Spike	Total	Soil	EPA 3550C	
Matrix Spike Duplicate	Total	Soil	EPA 3550C	
1479 Cardinal	Total	Soil	EPA 3550C	
1202 Cardinal	Total	Soil	EPA 3550C	
396 Acorn-2	Total	Soil	EPA 3550C	
396 Acorn-2	Total	Soil	EPA 3550C	
396 Acorn-1	Total	Soil	EPA 3550C	
	Client Sample ID Method Blank Lab Control Sample Lab Control Sample Dup Matrix Spike Matrix Spike Duplicate 1479 Cardinal 1202 Cardinal 396 Acorn-2 396 Acorn-2 396 Acorn-1	Client Sample IDPrep TypeMethod BlankTotalLab Control SampleTotalLab Control Sample DupTotalMatrix SpikeTotalMatrix Spike DuplicateTotal1479 CardinalTotal1202 CardinalTotal396 Acorn-2Total396 Acorn-1Total	Client Sample IDPrep TypeMatrixMethod BlankTotalSoilLab Control SampleTotalSoilLab Control Sample DupTotalSoilMatrix SpikeTotalSoilMatrix Spike DuplicateTotalSoil1479 CardinalTotalSoil1202 CardinalTotalSoil396 Acorn-2TotalSoil396 Acorn-1TotalSoil	Client Sample IDPrep TypeMatrixMethodMethod BlankTotalSoilEPA 3550CLab Control SampleTotalSoilEPA 3550CLab Control Sample DupTotalSoilEPA 3550CMatrix SpikeTotalSoilEPA 3550CMatrix Spike DuplicateTotalSoilEPA 3550C1479 CardinalTotalSoilEPA 3550C1202 CardinalTotalSoilEPA 3550C396 Acorn-2TotalSoilEPA 3550C396 Acorn-1TotalSoilEPA 3550C396 Acorn-1TotalSoilEPA 3550C396 Acorn-1TotalSoilEPA 3550C396 Acorn-1TotalSoilEPA 3550C

Extractions

NWE2371-01

1479 Cardinal

Analysis Batch: 12E4519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E4519-DUP1	Duplicate	Total	Soil	SW-846	12E4519_P
NWE2371-01	1479 Cardinal	Total	Soil	SW-846	12E4519_P
NWE2371-02	1202 Cardinal	Total	Soil	SW-846	12E4519_P
NWE2371-03	396 Acorn-2	Total	Soil	SW-846	12E4519_P
NWE2371-04	396 Acorn-1	Total	Soil	SW-846	12E4519_P
Prep Batch: 12E451	9_P				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12E4519-DUP1	Duplicate	Total	Soil	% Solids	

% Solids

Total

Soil

QC Association Summary

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

Extractions (Continued)

Prep Batch: 12E4519_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
NWE2371-02	1202 Cardinal	Total	Soil	% Solids	
NWE2371-03	396 Acorn-2	Total	Soil	% Solids	
NWE2371-04	396 Acorn-1	Total	Soil	% Solids	

Lab Sample ID: NWE2371-01

Lab Sample ID: NWE2371-02

Lab Sample ID: NWE2371-03

Matrix: Soil

Matrix: Soil

Percent Solids: 77.6

Percent Solids: 88.3

Matrix: Soil Percent Solids: 75.8

Client Sample ID: 1479 Cardinal Date Collected: 05/14/12 13:45 Date Received: 05/19/12 08:20

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total	Prep	EPA 5035		0.782	12E3392_P	05/14/12 13:45	AAN	TAL NSH
Total	Analysis	SW846 8260B		1.00	V008753	05/24/12 16:00	ККК	TAL NSH
Total	Prep	EPA 5035	RE1	0.992	12E4185_P	05/14/12 13:45	AAN	TAL NSH
Total	Analysis	SW846 8260B	RE1	50.0	V008953	05/28/12 21:39	ККК	TAL NSH
Total	Prep	EPA 3550C	RE1	0.995	12E3780_P	05/23/12 14:00	TRF	TAL NSH
Total	Analysis	SW846 8270D	RE1	10.0	12E3780	05/25/12 14:05	BES	TAL NSH
Total	Prep	% Solids		1.00	12E4519_P	05/21/12 09:53	KDJ	TAL NSH
Total	Analysis	SW-846		1.00	12E4519	05/22/12 09:05	KDJ	TAL NSH

Client Sample ID: 1202 Cardinal Date Collected: 05/15/12 14:15

Date Received: 05/19/12 08:20

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total	Prep	EPA 5035		1.12	12E3392_P	05/15/12 14:15	AAN	TAL NSH
Total	Analysis	SW846 8260B		1.00	V008753	05/24/12 16:30	ккк	TAL NSH
Total	Prep	EPA 5035	RE1	1.05	12E5635_P	05/15/12 14:15	AAN	TAL NSH
Total	Analysis	SW846 8260B	RE1	1.00	V008819	05/25/12 12:50	ккк	TAL NSH
Total	Prep	EPA 3550C		0.994	12E3780_P	05/23/12 14:00	TRF	TAL NSH
Total	Analysis	SW846 8270D		1.00	12E3780	05/24/12 19:37	BES	TAL NSH
Total	Prep	% Solids		1.00	12E4519_P	05/21/12 09:53	KDJ	TAL NSH
Total	Analysis	SW-846		1.00	12E4519	05/22/12 09:05	KDJ	TAL NSH

Client Sample ID: 396 Acorn-2

Date Collected: 05/17/12 12:15 Date Received: 05/19/12 08:20

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total	Prep	EPA 5035		0.938	12E3392_P	05/17/12 12:15	AAN	TAL NSH
Total	Analysis	SW846 8260B		1.00	V008753	05/24/12 17:01	KKK	TAL NSH
Total	Prep	EPA 5035	RE1	0.888	12E4185_P	05/17/12 12:15	AAN	TAL NSH
Total	Analysis	SW846 8260B	RE1	50.0	V008953	05/28/12 22:10	ККК	TAL NSH
Total	Prep	EPA 3550C		0.976	12E3780_P	05/23/12 14:00	TRF	TAL NSH
Total	Analysis	SW846 8270D		1.00	12E3780	05/24/12 20:00	BES	TAL NSH
Total	Prep	EPA 3550C	RE1	0.976	12E3780_P	05/23/12 14:00	TRF	TAL NSH
Total	Analysis	SW846 8270D	RE1	10.0	12E3780	05/25/12 14:28	BES	TAL NSH
Total	Prep	% Solids		1.00	12E4519_P	05/21/12 09:53	KDJ	TAL NSH
Total	Analysis	SW-846		1.00	12E4519	05/22/12 09:05	KDJ	TAL NSH

Lab Sample ID: NWE2371-04

Matrix: Soil Percent Solids: 76.4

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Client Sample ID: 396 Acorn-1 Date Collected: 05/17/12 09:45 Date Received: 05/19/12 08:20

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total	Prep	EPA 5035		0.754	12E3392_P	05/17/12 09:45	AAN	TAL NSH
Total	Analysis	SW846 8260B		1.00	V008753	05/24/12 17:32	ККК	TAL NSH
Total	Prep	EPA 5035	RE1	0.804	12E4185_P	05/17/12 09:45	AAN	TAL NSH
Total	Analysis	SW846 8260B	RE1	50.0	V008953	05/28/12 22:41	ККК	TAL NSH
Total	Prep	EPA 3550C		0.988	12E3780_P	05/23/12 14:00	TRF	TAL NSH
Total	Analysis	SW846 8270D		1.00	12E3780	05/24/12 20:22	BES	TAL NSH
Total	Prep	% Solids		1.00	12E4519_P	05/21/12 09:53	KDJ	TAL NSH
Total	Analysis	SW-846		1.00	12E4519	05/22/12 09:05	KDJ	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Road, Nashville, TN 37204, TEL 800-765-0980

NAME AND

Method	Method Description	Protocol	Laboratory
SW-846	General Chemistry Parameters	E. C. Miller	TAL NSH
SW846 8260B	Volatile Organic Compounds by EPA Method 8260B		TAL NSH
SW846 8270D	Polyaromatic Hydrocarbons by EPA 8270D		TAL NSH

Protocol References:

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Road, Nashville, TN 37204, TEL 800-765-0980

Certification Summary

Client: EEG - Small Business Group, Inc. (2449) Project/Site: [none]

1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Nashville		ACIL		393
TestAmerica Nashville	A2LA	ISO/IEC 17025		0453.07
TestAmerica Nashville	Alabama	State Program	4	41150
TestAmerica Nashville	Alaska (UST)	State Program	10	UST-087
TestAmerica Nashville	Arizona	State Program	9	AZ0473
TestAmerica Nashville	Arkansas DEQ	State Program	6	88-0737
TestAmerica Nashville	California	NELAC	9	1168CA
TestAmerica Nashville	Canadian Assoc Lab Accred (CALA)	Canada		3744
TestAmerica Nashville	Colorado	State Program	8	N/A
TestAmerica Nashville	Connecticut	State Program	1	PH-0220
TestAmerica Nashville	Florida	NELAC	4	E87358
TestAmerica Nashville	Illinois	NELAC	5	200010
TestAmerica Nashville	lowa	State Program	7	131
TestAmerica Nashville	Kansas	NELAC	7	E-10229
TestAmerica Nashville	Kentucky	State Program	4	90038
TestAmerica Nashville	Kentucky (UST)	State Program	4	19
TestAmerica Nashville	Louisiana	NELAC	6	30613
TestAmerica Nashville	Louisiana	NELAC	6	LA110014
TestAmerica Nashville	Maryland	State Program	3	316
TestAmerica Nashville	Massachusetts	State Program	1	M-TN032
TestAmerica Nashville	Minnesota	NELAC	5	047-999-345
TestAmerica Nashville	Mississippi	State Program	4	N/A
TestAmerica Nashville	Montana (UST)	State Program	8	NA
TestAmerica Nashville	New Hampshire	NELAC	1	2963
TestAmerica Nashville	New Jersey	NELAC	2	TN965
TestAmerica Nashville	New York	NELAC	2	11342
TestAmerica Nashville	North Carolina DENR	State Program	4	387
TestAmerica Nashville	North Dakota	State Program	8	R-146
TestAmerica Nashville	Ohio VAP	State Program	5	CL0033
TestAmerica Nashville	Oklahoma	State Program	6	9412
TestAmerica Nashville	Oregon	NELAC	10	TN200001
TestAmerica Nashville	Pennsylvania	NELAC	3	68-00585
TestAmerica Nashville	Rhode Island	State Program	1	LAO00268
TestAmerica Nashville	South Carolina	State Program	4	84009
TestAmerica Nashville	South Carolina	State Program	4	84009
TestAmerica Nashville	Tennessee	State Program	4	2008
TestAmerica Nashville	Texas	NELAC	6	T104704077-09-TX
TestAmerica Nashville	USDA	Federal		S-48469
TestAmerica Nashville	Utah	NELAC	8	TAN
TestAmerica Nashville	Virginia	NELAC	3	460152
TestAmerica Nashville	Virginia	State Program	3	00323
TestAmerica Nashville	Washington	State Program	10	C789
TestAmerica Nashville	West Virginia DEP	State Program	3	219
TestAmerica Nashville	Wisconsin	State Program	5	998020430
TestAmerica Nashville	Wyoming (UST)	A2LA	8	453.07

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.



ATTACHMENT A

1. Gener	ator's US EPA II	D No.	Manifest Doc	No.	2. Page 1	of		
NON-HAZARDOUS MANIFEST	a desta de la composition	No. States	in the	1. 11	1			
3. Generator's Mailing Address:	Genera	ator's Site Address	If different than m	ailing):	A. Manife	est Number	The Carlos and the	
					W	MNA	00316836	
BEAUFORT, SC 29907	Grass					B. State	Generator's ID	
4. Generator's Phone 843-228-6461		and the second	State 1			ALL STOR		
5. Transporter 1 Company Name	15 Martin	6. US EPA	ID Number					
EEG, INC.	Hele the				C. State I	ransporter's l	843-879-0411	
7. Transporter 2 Company Name		8. US EPA ID Number 84					043 073 0411	
					E. State T	ransporter's I	D istale fisherione 10	
9 Designated Eacility Name and Site Address		10 US FE	A ID Number	-	F. Transp	orter's Phone		
HICKORY HILL LANDFILL			. US EPA ID Number			acility ID	L. Mars Capitly In	
2621 LOW COUNTRY ROAD					H. State Facility Phone 843-987-4643			
RIDGELAND, SC 29936		10 E				夏清美 19 41		
11 Description of Waste Materials	1-		12. Co	ntainers	13. Total	14. Unit	I Miss Comments	
HEATING OIL TANKS FILLED WITH SA	ND		No.	Туре	Quantity	Wt./Vol.	. Mist. confinents	
a. HEATING OF TANKS FILLED WITH SA				15.2	1.08	and the	The souther with	
WM Profile # 102	2655SC	ale de la company		1.1.1.1		Sec. 19		
b.				1				
				1.57	Contraction of the second			
WM Profile #	C No. 1 (No. 1991			1.1.1.2.4		and the second		
			The West					
WM Profile #	Alle Vonten		1 States	Section 1		M. No	165 - 2 C - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	
d.			A Section	1.775	and the cost	1.	Conterro	
			a line for					
J. Additional Descriptions for Materials Listed	Above	K. Disposal Location						
state out at the first state of the			States					
			Cell	ell Level				
15. Special Handling Instructions and Additional	Information	2011	1.4)411	EldER	bERE	(6)12021	
UST'S TROM	22119	2 Bobwh	ite j	IND	00	1. 1	CARDINA	
1) ISON ARDINAL	3)85	1 Dolphi	v' 3)	1777	TLAR	ed NAL	-	
Purchase Order #		EMERGENCY	ONTACT / PHO	ONE NO.:				
I hereby certify that the above-described materia	als are not haza	ardous wastes as de	fined by CFR P	art 261 or	any applicabl	e state law, ha	ave been fully and	
accurately described, classified and packaged an	d are in proper	condition for trans	portation acco	rding to ap	plicable regu	lations.		
Printed Name	I.o.	Signature "On be	half of"	The	~~		Month Day Year	
17. Transporter 1 Acknowledgement of Receipt	of Materials	No. Co. S. S.	100	1				
Printed Name Preat Sha	41	Signature	X //S	1	1		Month Day Year	
18. Transporter 2 Acknowledgement of Receipt	of Materials		1				1/1/1/2	
Printed Name		Signature		1			Month Day Year	
James BALdulal		James	Ral	A	1		7 +6 13	
19. Certificate of Final Treatment/Disposal	NEXT ST	1	- CA		As and			
I certify, on behalf of the above listed treatment	facility, that to	the best of my know	wledge, the ab	ove-descri	bed waste w	as managed in	n compliance with all	
20. Facility Owner or Operator: Certification of a	receipt of non-l	hazardous materials	covered by th	is manifes	t.			
					1		Month Day Year	
Printed Name	1 -	Signature					wonth buy rear	
Printed Name Cofiero	$\downarrow \subset$	Signature	6	Del	d		7 16 (2	

Attachment 1

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



MAR 1 7 2015

SC DHEC - Bureau of Land & Waste Management Submit Completed Form To: UST Program SCDHEC 2600 Bull Street Columbia, South Carolina 29201 Telephone (803) 896-7957

I. OWNERSHIP OF UST (S)

g Officer Attn: NR	EAO (Craig Ehde)	
al, Public Agency, Other)		
South Carolina	29904-5001	
State	Zip Code	
228-7317	Craig Ehde	_
Telephone Number	Contact Person	
	g Officer Attn: NR al, Public Agency, Other) South Carolina State 228-7317 Telephone Number	g Officer Attn: NREAO (Craig Ehde) al, Public Agency, Other) South Carolina 29904-5001 State Zip Code 228-7317 Craig Ehde Telephone Number Contact Person

II. SITE IDENTIFICATION AND LOCATION

Permit I D #	_				
Laurel Bay Militan	v Housing Area, 1	Marine Corps	Air Station,	Beaufort, S	SC
Facility Name or Company	Site Identifier				
1479 Cardinal Lan	e, Laurel Bay Mil	litary Housin	g Area		
Street Address or State Roa	d (as applicable)				
Beaufort,	Beaufort				
City	County				

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

		Cardinal-2
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
F.	Month/Year of Last Use	Mid 80s
F.	Depth (ft.) To Base of Tank	6'1"
G.	Spill Prevention Equipment Y/N	No
ц.	Overfill Prevention Equipment Y/N	No
	Method of Closure Removed/Filled	Removed
l' J	Date Tanks Removed/Filled	11/24/2014
· K.	Visible Corrosion or Pitting Y/N	Yes
L.	Visible Holes Y/N	Yes

1479

M. Method of disposal for any USTs removed from the ground (attach disposal manifests) UST 1479Cardinal-2 was removed from the ground and disposed

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

- N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests)
 UST 1479Cardinal-2 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 found throughout the tank.

VII. PIPING INFORMATION

		1479 Cardinal-2
		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
C	Visible Uslas, V/N	No
G.	Visible Holes Y/IN	Lato 1050g
H.	Age	
I.	If any corrosion, pitting, or holes were observed, des	cribe 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.

This is the second tank removed from 1479 Cardinal. The house has been demolished since the first tank removal.

IX. SITE CONDITIONS

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

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

B.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
1479 Card'-2	Excav at fill end	Soil	Sandy	6'1"	11/24/14 1245 hrs	P. Shaw	
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

* = Depth Below the Surrounding Land Surface

XI. SAMPLING METHODOLOGY

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

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

XII. RECEPTORS

		Yes	No
A.	Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?	*X	
	*Freshwater po	nds	
	If yes, indicate type of receptor, distance, and direction on site map.		
B.	Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?		Х
	If yes, indicate type of well, distance, and direction on site map.		
C.	Are there any underground structures (e.g., basements) Located within 100 feet of the UST system?		х
	If yes, indicate type of structure, distance, and direction on site map.		
D.	Are there any underground utilities (e.g., telephone, electricity, gas, water, sewer, storm drain) located within 100 feet of the UST system that could potentially come in contact with the	*X	
	contamination? *Sewer, water, elec	trici	ty
	cable & fiber optic If yes, indicate the type of utility, distance, and direction on the site map.		
E.	Has contaminated soil been identified at a depth less than 3 feet below land surface in an area that is not capped by asphalt or concrete?		Х
	If yes, indicate the area of contaminated soil on the site map.		

XIII. SITE MAP

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

(Attach Site Map Here)






Picture 1: UST 1479Cardinal-2.



Picture 2: UST 1479Cardinal-2 excavation.



Picture 3: Site after completion of work.

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	1479Cardinal				
Benzene	ND				
Toluene	ND				
Ethylbenzene	ND				
Xylenes	ND				
Naphthalene	ND				
Benzo (a) anthracene	ND				
Benzo (b) fluoranthene	ND				
Benzo (k) fluoranthene	ND				
Chrysene	ND				
Dibenz (a, h) anthracene	ND				
ТРН (ЕРА 3550)					
		······	 	 	
CoC					
Benzene					
Toluene					
Ethylbenzene					
Xylenes					
Naphthalene					
Benzo (a) anthracene					
Benzo (b) fluoranthene					
Benzo (k) fluoranthene					
Chrysene					
Dibenz (a, h) anthracene					
ТРН (ЕРА 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	W-1	W-2	W -3	W -4
	(µg/I)				
Free Product Thickness	None				
Benzene	5				
Toluene	1,000				
Ethylbenzene	700				
Xylenes	10,000				
Total BTEX	N/A				
МТВЕ	40				
Naphthalene	25				
Benzo (a) anthracene	10				
Benzo (b) flouranthene	10				
Benzo (k) flouranthene	10				
Chrysene	10				
Dibenz (a, h) anthracene	10				
EDB	.05				
1,2-DCA	5				
Lead	Site specific				

XV. ANALYTICAL RESULTS

You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.

(Attach Certified Analytical Results and Chain-of-Custody Here) (Please see Form #4)



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 490-67261-1 Client Project/Site: Laurel Bay Housing Project

For:

Small Business Group Inc. 10179 Highway 78 Ladson, South Carolina 29456

Attn: Tom McElwee

Kuth Hay

Authorized for release by: 12/5/2014 4:18:34 PM

Ken Hayes, Project Manager II (615)301-5035 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.

..... LINKS **Review your project** results through Total Access **Have a Question?** Ask The Expert

> Visit us at: www.testamericainc.com

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Sample Summary

Client: Small Business Group Inc. Project/Site: Laurel Bay Housing Project

TestAmerica Job ID: 490-67261-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-67261-1	1479 Cardinal - 2	Soil	11/24/14 12:45	11/25/14 08:30

TestAmerica Nashville

Job ID: 490-67261-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-67261-1

Comments

No additional comments.

Receipt

The sample was received on 11/25/2014 8:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

Method(s) 8270D: The method blank for preparation batch 209746 contained Benzo(a)pyrene above the method detection limit (MDL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Small Business Group Inc. Project/Site: Laurel Bay Housing Project

Qualifiers

GC/MS Semi VOA

Qualifier Description 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
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica Nashville

Client Sample ID: 1479 Cardinal - 2

Date Collected: 11/24/14 12:45 Date Received: 11/25/14 08:30

Lab Sample ID: 490-67261-1 Matrix: Soil

Percent Solids: 77.0

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.00213	0.000713	mg/Kg	π	11/26/14 10:19	12/05/14 05:32	1
Ethylbenzene	ND		0.00213	0.000713	mg/Kg	π	11/26/14 10:19	12/05/14 05:32	1
Naphthalene	ND		0.00532	0.00181	mg/Kg	Ω	11/26/14 10:19	12/05/14 05:32	1
Toluene	ND		0.00213	0.000787	mg/Kg	a	11/26/14 10:19	12/05/14 05:32	1
Xylenes, Total	ND		0.00319	0.000713	mg/Kg	0	11/26/14 10:19	12/05/14 05:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130				11/26/14 10:19	12/05/14 05:32	1
4-Bromofluorobenzene (Surr)	101		70 - 130				11/26/14 10:19	12/05/14 05:32	1
Dibromofluoromethane (Surr)	109		70 - 130				11/26/14 10:19	12/05/14 05:32	1
Toluene-d8 (Surr)	99		70 - 130				11/26/14 10:19	12/05/14 05:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0853	0.0127	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Acenaphthylene	ND		0.0853	0.0115	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Anthracene	ND		0.0853	0.0115	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Benzo[a]anthracene	ND		0.0853	0.0191	mg/Kg	п	11/28/14 13:28	11/29/14 20:48	1
Benzo[a]pyrene	ND		0.0853	0.0153	mg/Kg	13	11/28/14 13:28	11/29/14 20:48	1
Benzo[b]fluoranthene	ND		0.0853	0.0153	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Benzo[g,h,i]perylene	ND		0.0853	0.0115	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Benzo[k]fluoranthene	ND		0.0853	0.0178	mg/Kg	a.	11/28/14 13:28	11/29/14 20:48	1
1-Methylnaphthalene	ND		0.0853	0.0178	mg/Kg	13	11/28/14 13:28	11/29/14 20:48	1
Pyrene	ND		0.0853	0.0153	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Phenanthrene	ND		0.0853	0.0115	mg/Kg	13	11/28/14 13:28	11/29/14 20:48	1
Chrysene	ND		0.0853	0.0115	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Dibenz(a,h)anthracene	ND		0.0853	0.00891	mg/Kg	-02	11/28/14 13:28	11/29/14 20:48	1
Fluoranthene	ND		0.0853	0.0115	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Fluorene	ND		0.0853	0.0153	mg/Kg	Ω	11/28/14 13:28	11/29/14 20:48	1
Indeno[1,2,3-cd]pyrene	ND		0.0853	0.0127	mg/Kg	Ω.	11/28/14 13:28	11/29/14 20:48	1
Naphthalene	ND		0.0853	0.0115	mg/Kg	\$2	11/28/14 13:28	11/29/14 20:48	1
2-Methylnaphthalene	ND		0.0853	0.0204	mg/Kg	0	11/28/14 13:28	11/29/14 20:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	67		29 - 120				11/28/14 13:28	11/29/14 20:48	1
Terphenyl-d14 (Surr)	81		13 - 120				11/28/14 13:28	11/29/14 20:48	1
Nitrobenzene-d5 (Surr)	72		27 - 120				11/28/14 13:28	11/29/14 20:48	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77		0.10	0.10	%			11/28/14 12:21	1

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

Lab Sample ID: 490-67219-A	-7-D MS							Client	Sample ID: M	atrix Spike
Matrix: Solid									Prep Type	: Total/NA
Analysis Batch: 211437									Prep Bat	ch: 209380
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		0.0459	0.04115		mg/Kg		90	31 - 143	
Ethylbenzene	ND		0.0459	0.03885		mg/Kg		85	23 - 161	
Naphthalene	ND		0.0459	0.02171		mg/Kg		47	10 - 176	
Toluene	ND		0.0459	0.03806		mg/Kg		83	30 - 155	
Xylenes, Total	ND		0.0917	0.07353		mg/Kg		80	25 - 162	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	109		70 - 130							
4-Bromofluorobenzene (Surr)	98		70 - 130							
Dibromofluoromethane (Surr)	109		70 - 130							
Toluene-d8 (Surr)	97		70 - 130							

Lab Sample ID: 490-67219-A-7-E MSD Matrix: Solid Analysis Batch: 211437

Analysis Batch: 211437									Prep	Batch: 2	09380
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		0.0462	0.04172		mg/Kg		90	31 - 143	1	50
Ethylbenzene	ND		0.0462	0.03999		mg/Kg		87	23 - 161	3	50
Naphthalene	ND		0.0462	0.02653		mg/Kg		57	10 - 176	20	50
Toluene	ND		0.0462	0.03997		mg/Kg		87	30 - 155	5	50
Xylenes, Total	ND		0.0924	0.07807		mg/Kg		84	25 - 162	6	50
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	109		70 - 130								
4-Bromofluorobenzene (Surr)	96		70 - 130								
Dibromofluoromethane (Surr)	107		70 - 130								

70 - 130

Lab Sample ID: MB 490-211437/6 Matrix: Solid

101

Toluene-d8 (Surr)

Analysis Batch: 211437 MB MB Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac Benzene ND 0.00200 0.000670 mg/Kg 12/05/14 00:35 1 Ethylbenzene ND 0.00200 0.000670 mg/Kg 12/05/14 00:35 1 Naphthalene ND 0.00500 0.00170 mg/Kg 12/05/14 00:35 1 Toluene ND 0.00200 0.000740 mg/Kg 12/05/14 00:35 1 Xylenes, Total ND 0.00300 0.000670 mg/Kg 12/05/14 00:35 1 MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 70 - 130 1.2-Dichloroethane-d4 (Surr) 114 12/05/14 00:35 1 100 70 - 130 4-Bromofluorobenzene (Surr) 12/05/14 00:35 1 70 - 130 Dibromofluoromethane (Surr) 111 12/05/14 00:35 1 Toluene-d8 (Surr) 105 70 - 130 12/05/14 00:35 1

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

7 8

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

Lab Sample ID: LCS 490-211437/26 Matrix: Solid

Analysis Batch: 211437									
			Spike	LCS	LCS				%Rec.
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene			0.0500	0.05406		mg/Kg		108	75 - 127
Ethylbenzene			0.0500	0.05389		mg/Kg		108	80 - 134
Naphthalene			0.0500	0.05937		mg/Kg		119	69 - 150
Toluene			0.0500	0.05286		mg/Kg		106	80 - 132
Xylenes, Total			0.100	0.1075		mg/Kg		107	80 - 137
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	104		70 - 130						
4-Bromofluorobenzene (Surr)	96		70 - 130						
Dibromofluoromethane (Surr)	102		70 - 130						
Toluene-d8 (Surr)	98		70 - 130						

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

Lab Sample ID: MB 490-209746/1-A Matrix: Solid Analysis Batch: 210029

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.0670	0.0100	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Acenaphthylene	ND		0.0670	0.00900	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Anthracene	ND		0.0670	0.00900	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Benzo[a]anthracene	ND		0.0670	0.0150	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Benzo[a]pyrene	0.03529	J	0.0670	0.0120	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Benzo[b]fluoranthene	ND		0.0670	0.0120	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Benzo[g,h,i]perylene	ND		0.0670	0.00900	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Benzo[k]fluoranthene	ND		0.0670	0.0140	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
1-Methylnaphthalene	ND		0.0670	0.0140	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Pyrene	ND		0.0670	0.0120	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Phenanthrene	ND		0.0670	0.00900	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Chrysene	ND		0.0670	0.00900	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Dibenz(a,h)anthracene	ND		0.0670	0.00700	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Fluoranthene	ND		0.0670	0.00900	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Fluorene	ND		0.0670	0.0120	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Indeno[1,2,3-cd]pyrene	ND		0.0670	0.0100	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
Naphthalene	ND		0.0670	0.00900	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
2-Methylnaphthalene	ND		0.0670	0.0160	mg/Kg		11/28/14 11:28	11/29/14 17:43	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	65		29 - 120				11/28/14 11:28	11/29/14 17:43	1
Terphenyl-d14 (Surr)	79		13 - 120				11/28/14 11:28	11/29/14 17:43	1
Nitrobenzene-d5 (Surr)	68		27 - 120				11/28/14 11:28	11/29/14 17:43	1

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

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209746

0 7 8

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

Lab Sample ID: LCS 490-209746/2-A Matrix: Solid

Analysis Batch: 210029								Prep Batch: 20	9746
		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthylene		1.67	1.226		mg/Kg		74	38 - 120	
Anthracene		1.67	1.225		mg/Kg		74	46 - 124	
Benzo[a]anthracene		1.67	1.278		mg/Kg		77	45 - 120	
Benzo[a]pyrene		1.67	1.185		mg/Kg		71	45 - 120	
Benzo[b]fluoranthene		1.67	1.239		mg/Kg		74	42 - 120	
Benzo[g,h,i]perylene		1.67	1.219		mg/Kg		73	38 - 120	
Benzo[k]fluoranthene		1.67	1.189		mg/Kg		71	42 - 120	
1-Methylnaphthalene		1.67	1.221		mg/Kg		73	32 - 120	
Pyrene		1.67	1.134		mg/Kg		68	43 - 120	
Phenanthrene		1.67	1.167		mg/Kg		70	45 - 120	
Chrysene		1.67	1.203		mg/Kg		72	43 - 120	
Dibenz(a,h)anthracene		1.67	1.225		mg/Kg		74	32 - 128	
Fluoranthene		1.67	1.336		mg/Kg		80	46 - 120	
Fluorene		1.67	1.280		mg/Kg		77	42 - 120	
Indeno[1,2,3-cd]pyrene		1.67	1.192		mg/Kg		72	41 - 121	
Naphthalene		1.67	1.191		mg/Kg		71	32 - 120	
2-Methylnaphthalene		1.67	1.218		mg/Kg		73	28 - 120	
	LCS LCS								

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	66		29 - 120
Terphenyl-d14 (Surr)	70		13 - 120
Nitrobenzene-d5 (Surr)	71		27 - 120

Lab Sample ID: 490-67338-G-1-B MS Matrix: Solid

alveis Batch: 210029

Analysis Batch: 210029								Prep Batch: 209746
Sam	le Sample	Spike	MS	MS				%Rec.
Analyte Res	It Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Acenaphthylene	D	1.97	1.559		mg/Kg	101	79	25 - 120
Anthracene	D	1.97	1.564		mg/Kg	0	79	28 - 125
Benzo[a]anthracene	D	1.97	1.618		mg/Kg	ä	82	23 - 120
Benzo[a]pyrene	D	1.97	1.508		mg/Kg	^O	76	15 - 128
Benzo[b]fluoranthene	D	1.97	1.619		mg/Kg	0	82	12 - 133
Benzo[g,h,i]perylene	D	1.97	1.529		mg/Kg	a.	78	22 - 120
Benzo[k]fluoranthene	D	1.97	1.468		mg/Kg	n	74	28 - 120
1-Methylnaphthalene	D	1.97	1,507		mg/Kg	Π.	76	10 - 120
Pyrene	D	1.97	1.437		mg/Kg	ø	73	20 - 123
Phenanthrene	ID	1.97	1.514		mg/Kg	11	77	21 - 122
Chrysene	ID	1.97	1.517		mg/Kg	17	77	20 - 120
Dibenz(a,h)anthracene	D	1.97	1.563		mg/Kg	α	79	12 - 128
Fluoranthene	ID	1.97	1.741		mg/Kg	0	88	10 - 143
Fluorene	ID	1.97	1.675		mg/Kg	р	85	20 - 120
Indeno[1,2,3-cd]pyrene	ID	1.97	1.530		mg/Kg	П	78	22 - 121
Naphthalene	ID	1.97	1.479		mg/Kg	C.	75	10 - 120
2-Methylnaphthalene	ID	1.97	1.504		mg/Kg	ġ.	76	13 - 120

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

TestAmerica Nashville

Client Sample ID: Matrix Spike

Prep Type: Total/NA

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

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Lab Sample ID: 490-67338-G-1-B MS Matrix: Solid Analysis Batch: 210029

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl (Surr)	70		29 - 120
Terphenyl-d14 (Surr)	72		13 - 120
Nitrobenzene-d5 (Surr)	78		27 - 120

Lab Sample ID: 490-67338-G-1-C MSD Matrix: Solid

Terphenyl-d14 (Surr) Nitrobenzene-d5 (Surr)

Analysis Batch: 210029									Prep	Batch: 2	09746
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Acenaphthylene	ND		1.93	1.439		mg/Kg	32	75	25 - 120	8	50
Anthracene	ND		1.93	1.430		mg/Kg	22	74	28 - 125	9	49
Benzo[a]anthracene	ND		1.93	1.511		mg/Kg	13	78	23 - 120	7	50
Benzo[a]pyrene	ND		1.93	1.383		mg/Kg	53	72	15 - 128	9	50
Benzo[b]fluoranthene	ND		1.93	1.438		mg/Kg	32	75	12 - 133	12	50
Benzo[g,h,i]perylene	ND		1.93	1.364		mg/Kg	3,5	71	22 - 120	11	50
Benzo[k]fluoranthene	ND		1.93	1.377		mg/Kg	ø	71	28 - 120	6	45
1-Methylnaphthalene	ND		1.93	1.337		mg/Kg	13	69	10 - 120	12	50
Pyrene	ND		1.93	1.358		mg/Kg	£	70	20 - 123	6	50
Phenanthrene	ND		1.93	1.367		mg/Kg	33	71	21 - 122	10	50
Chrysene	ND		1.93	1.407		mg/Kg	a	73	20 - 120	7	49
Dibenz(a,h)anthracene	ND		1.93	1.415		mg/Kg	12	73	12 - 128	10	50
Fluoranthene	ND		1.93	1.579		mg/Kg	10	82	10 - 143	10	50
Fluorene	ND		1.93	1.522		mg/Kg	30	79	20 - 120	10	50
Indeno[1,2,3-cd]pyrene	ND		1.93	1.367		mg/Kg	Ø	71	22 - 121	11	50
Naphthalene	ND		1.93	1.255		mg/Kg	ø	65	10 - 120	16	50
2-Methylnaphthalene	ND		1.93	1.344		mg/Kg	ø	70	13 - 120	11	50
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
2-Fluorobiphenyl (Surr)	63		29 - 120								

13 - 120

27 - 120

Client Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 209746

Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

TestAmerica Job ID: 490-67261-1

TestAmerica Nashville

QC Association Summary

Client: Small Business Group Inc. Project/Site: Laurel Bay Housing Project

G	C	MS	i V	0	A
-				-	

Prep Batch: 209333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67261-1	1479 Cardinal - 2	Total/NA	Soil	5035	
Prep Batch: 209380					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67219-A-7-D MS	Matrix Spike	Total/NA	Solid	5030B	
490-67219-A-7-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5030B	
Analysis Batch: 211437					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67219-A-7-D MS	Matrix Spike	Total/NA	Solid	8260B	209380
490-67219-A-7-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	209380
490-67261-1	1479 Cardinal - 2	Total/NA	Soil	8260B	209333
LCS 490-211437/26	Lab Control Sample	Total/NA	Solid	8260B	
MB 490-211437/6	Method Blank	Total/NA	Solid	8260B	
GC/MS Semi VOA					
Prep Batch: 209746					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67261-1	1479 Cardinal - 2	Total/NA	Soil	3550C	
490-67338-G-1-B MS	Matrix Spike	Total/NA	Solid	3550C	
490-67338-G-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	3550C	
LCS 490-209746/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 490-209746/1-A	Method Blank	Total/NA	Solid	3550C	
Analysis Batch: 210029)				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67261-1	1479 Cardinal - 2	Total/NA	Soil	8270D	209746
490-67338-G-1-B MS	Matrix Spike	Total/NA	Solid	8270D	209746
490-67338-G-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8270D	209746
LCS 490-209746/2-A	Lab Control Sample	Total/NA	Solid	8270D	209746
MB 490-209746/1-A	Method Blank	Total/NA	Solid	8270D	209746

Analysis Batch: 209744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-67261-1	1479 Cardinal - 2	Total/NA	Soil	Moisture	
490-67293-B-1 MS	Matrix Spike	Total/NA	Solid	Moisture	
490-67293-B-1 MSD	Matrix Spike Duplicate	Total/NA	Solid	Moisture	

Client Sample ID: 1479 Cardinal - 2

Date Collected: 11/24/14 12:45 Date Received: 11/25/14 08:30

Lab Sample ID: 490-67261-1

Matrix: Soil Percent Solids: 77.0

5/14 08:3	30							Percent	Solids: 77.0
Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Prep	5035			6.106 g	5.0 mL	209333	11/26/14 10:19	JLP	TAL NSH
Analysis	8260B		1	6.106 g	5.0 mL	211437	12/05/14 05:32	JMG	TAL NSH
Prep	3550C			30.61 g	1.00 mL	209746	11/28/14 13:28	LDC .	TAL NSH
Analysis	8270D		1	30.61 g	1.00 mL	210029	11/29/14 20:48	ККН	TAL NSH
Analysis	Moisture		1			209744	11/28/14 12:21	AJK	TAL NSH

Laboratory References:

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

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

TestAmerica Nashville

TestAmerica Job ID: 490-67261-1

Method Description	Protocol	Laboratory
Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
Semivolatile Organic Compounds (GC/MS)	SW846	TAL NSH
Percent Moisture	EPA	TAL NSH
	Method Description Volatile Organic Compounds (GC/MS) Semivolatile Organic Compounds (GC/MS) Percent Moisture	Method DescriptionProtocolVolatile Organic Compounds (GC/MS)SW846Semivolatile Organic Compounds (GC/MS)SW846Percent MoistureEPA

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

TestAmerica Nashville

TestAmerica Job ID: 490-67261-1

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	Program		Certification ID	Expiration Date
North Carolina (WW/SW)	arolina (WW/SW) State Program		4	387	12-31-14 *
South Carolina	State Proc	gram	4	84009 (001)	02-28-15
The following analytes a	are included in this report, bu	ut certification is not offer	red by the governing a	authority:	
The following analytes a Analysis Method	are included in this report, bu Prep Method	ut certification is not offer Matrix	red by the governing a Analy	authority: te	
The following analytes a Analysis Method 8270D	are included in this report, bu Prep Method 3550C	ut certification is not offer Matrix Soil	red by the governing a Analy 1-Met	authority: te hylnaphthalene	

* Certification renewal pending - certification considered valid.

THE LEADER IN ENVIRONMENTAL TESTING Nashville, TN COOLER RECEIPT FORM	
Cooler Received/Opened On <u>11/25/2014 @ 0830</u>	-67261 Chain of Custody
I. Tracking #(last 4 digits, FedEx)	
Courier: FedEx IR Gun ID 94660220	
2. Temperature of rep. sample or temp blank when opened: <u>3.2</u> Degrees Celsius	
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank from	zen? YES NO.
4. Were custody seals on outside of cooler?	ES.NONA
If yes, how many and where: (2) Front / Back	
5. Were the seals intact, signed, and dated correctly?	ESNONA
5. Were custody papers inside cooler?	E.NONA
certify that I opened the cooler and answered questions 1-6 (intial)	mg m
7. Were custody seals on containers: YES (NO) and Intact	YES NO
Were these signed and dated correctly?	YES NO NA
3. Packing mat'l used? (Bubblewrap) Plastic bag Peanuts Vermiculite Foam Insert F	Paper Other None
9. Cooling process:	yice Other None
0. Did all containers arrive in good condition (unbroken)?	SES NONA
1. Were all container labels complete (#, date, signed, pres., etc)?	VES NONA
2. Did all container labels and tags agree with custody papers?	YESNONA
3a. Were VOA vials received?	YES NONA
b. Was there any observable headspace present in any VOA vial?	YESNO
14. Was there a Trip Blank in this cooler? YES(NO).NA If multiple coolers, see	uence #
certify that I unloaded the cooler and answered guestions 7-14 (intial)	
5a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH le	vel? YES NO NA
b. Did the bottle labels indicate that the correct preservatives were used	YES NO (NA)
6. Was residual chlorine present?	YES. NO (NA)
certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (int	ial) DA
7. Were custody papers properly filled out (ink, signed, etc)?	VES NO NA
8. Did you sign the custody papers in the appropriate place?	TES NO NA
9. Were correct containers used for the analysis requested?	(TES)NONA
20. Was sufficient amount of sample sent in each container?	YES NO NA
	A
certify that I entered this project into LIMS and answered questions 17-20 (initial)	



Login Sample Receipt Checklist

Client: Small Business Group Inc.

Login Number: 67261

List Number: 1 Creator: Armstrong, Daniel

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a<br survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.2C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 490-67261-1

List Source: TestAmerica Nashville

ATTACHMENT A



NON-HAZARDOUS MANIFEST

1. Generator's US EPA ID No. Manifest Doc No.		No.	2. Page 1	of								
NUN-HAZAKDOUS MANIFEST								1				
3. Generator's Mailing Address:		Genera	tor's Si	te Address	S (If dif	ferent than ma	ailing):	A. Manife	st Number			
MCAS BEAUFORT								w	MNA	01519	117	
LAUREL BAY HOUSING									B. Stat	e Generator's	ID	
BEAUFORT, SC 29904												
4. Generator's Phone 843-8	79-0411										-	
5. Transporter 1 Company Name	843.520-15	00 (6.	US EI	PA ID	Number						
P.o. 808 19 35 0 20						u na sa saran		C. State I	ransporter's			1942 (J.)
7. Transporter 2 Company Name			R.	US EI		Number		D. Transp	orter's Phor			100
								E. State T	ransporter's	s ID	<u></u>	
								F. Transpo	orter's Phon	ie	1. 1. ¹ .	e je
9. Designated Facility Name and Site	Address	1	10.	USI	EPA II	D Number					2	
HICKORY HILL LANDFILL								G. State F	acility ID	i da de		
2621 LOW COUNTRY DRIVE				. *		· ·		H. State F	acility Phon	e 843-9	87-464	3
RIDGELAND, SC 29936												
11. Description of Waste Materials						12. Co	ntainers	13. Total	14. Unit	LN	lisc. Commer	its
			·			NO.	туре	Quantity	VVI./VOI.			
N						- 1. / -	281	6.58	Tai	174	914	9
E WM Prof	ile # 1026555	SC							100		<u> </u>	
A b.												
r						1.0	"} (18×1					
WM Profile #												
C. Elle -							i		1			
						5-Q.	1 V (22).	a *				
WM Profile #	<u> </u>											
d						i i i i i i i i i i i i i i i i i i i		:4,1,5	arta e con			
WM Profile #	10 - 100 18-	et dagen				K 0:			L			
J. Additional Descriptions for Mater	lais Listed Above					K. Dispos	al Location	•				
						Cell				Level		
						Grid						
15. Special Handling Instructions and UST'S FROM	Additional Inform	nation 473	3 D	cawo	200	$l \vee$	4)	1479	CAI	edin.	4	2
1)477 Daywood	2/3)	145	-9 (CAR	d'i	NALI						
Purchase Order #			E	MERGENCY	(CON	ITACT / PHO	ONE NO.:		4 1 C			
16. GENERATOR'S CERTIFICATE:	*											
I hereby certify that the above-describ	bed materials are	not haza	rdous v	wastes as o	define	ed by 40 CF	R Part 261	or any applic	able state i	aw, have bee	n fully and	ł
accurately described, classified and pa	ackaged and are i	in proper	Signa	ion for tran	apor	tation acco	rding to ap	plicable regu	lations.	Month	Day	Vear
1.201	Ner S	. .	515110		Jenan					T.L.		UT
17. Transporter 1 Acknowledgement	of Receipt of Ma	terials	•			111		and the second s				
Printed Name	1		Signa	iture 📯	2/5	ILA				Month	Day	Year
PRATI Shaw	, , , , , , , , , , , , , , , , , , , ,			/	J.	1				1)2		14
18. Transporter 2 Acknowledgement	of Receipt of Ma	terials	C '	1	- 4		/				<u> </u>	
M 11.1 B As	1		Signa		Ato	il.	A			Month	Day	rear
, MICHAEL DILOTA			22	V With	/ *\A/	Wo	/			/?	\square	
19. Certificate of Final Treatment/Dis	posal			_								
A I certify, on behalf of the above listed	treatment facility	y, that to be dates li	the bes	st of my kr hove	owle	dge, the ab	ove-descri	bed waste w	as manageo	d in complian	e with all	
20. Facility Owner or Operator: Certi	fication of receipt	t of non-h	hazarde	ous materi:	als co	vered by th	nis manifes				·	
Printed Name			Signa	ature						Month	Day	Year
15.2.13	The sectors			- - 	S.e.	Vin	3*. s	a see the		1.2	2	14
White- TREATMENT, STORAGE, DISPO	SAL FACILITY CO	PY	Blue	- GENERA	TOR #	2 COPY	<u> </u>	Ye	llow- GENE	RATOR #1 CO	PY	•
Pink- FACILITY USE O	NLY		Gold-	TRANSPO	RTER	#1 COPY	ς.					

Appendix C Laboratory Analytical Report - Groundwater



Client: AECOM - Resolution	on Consultants						Laboratory ID:	QB07013-0	006		
Description: BEALB1479TW01V	VG20150206						Matrix:	Aqueous			
Date Sampled:02/06/2015 0945											
Date Received: 02/07/2015											
RunPrep Method15030B	Analytical Methoo 8260B	Dilution	Analysis [02/16/2015	Date Analyst 1105 EH1	Prep I	Date	Batch 67904				
Parameter		Nun	CAS Anber	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene		71-	43-2	8260B	0.17	J	1.0	0.40	0.13	ug/L	1
Ethylbenzene		100-	41-4	8260B	3.0		1.0	0.50	0.33	ug/L	1
Naphthalene		91-	20-3	8260B	12		1.0	0.20	0.40	ug/L	1
Toluene		108-	88-3	8260B	0.50	U	1.0	0.50	0.33	ug/L	1
Xylenes (total)		1330-	20-7	8260B	9.5		1.0	0.40	0.33	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptanc Limits	е							
1,2-Dichloroethane-d4		89	70-120								
Bromofluorobenzene		102	75-120								
Toluene-d8		97	85-120								
Dibromofluoromethane		90	85-115								

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

Description: BEALB1479TW01WG20150206

Laboratory ID: QB07013-006

Date Sampled:02/06/2015 0945

Matrix: Aqueous

Date Received: 02/07/2015

Run 1

Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
3520C	8270D (SIM)	1	02/19/2015 2201	RBH	02/10/2015 1621	67396

								_
Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL Units Ru	n
Benzo(a)anthracene	56-55-3	8270D (SIM)	0.040	U	0.20	0.040	0.019 ug/L 1	
Benzo(b)fluoranthene	205-99-2	8270D (SIM)	0.040	U	0.20	0.040	0.019 ug/L 1	
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	0.040	U	0.20	0.040	0.024 ug/L 1	
Chrysene	218-01-9	8270D (SIM)	0.040	U	0.20	0.040	0.021 ug/L 1	
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	0.080	U	0.20	0.080	0.040 ug/L 1	
Surrogate	Run 1 Acce Q % Recovery Lir	ptance nits						
2-Methylnaphthalene-d10	61 15	-139						_
Fluoranthene-d10	76 23	-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	$J = Estimated\ result < PQL\ and \geq MDL$	P = The RPD between two GC columns exceeds 40%	N = Recovery is out of criteria	L = LCS/LCSD failure
Where applicable, all soil sample analysis are r	eported on a dry weight basis unless flagge	d with a "W"		S = MS/MSD failure

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

Level 1 Report v2.1

Appendix D Laboratory Analytical Report - Vapor



ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client:	AECOM	ALS Project ID: P1404131
Client Sample ID:	BEALB1479SG01GS20141008	ALS Sample ID: P1404131-008
Client Project ID:	JM30- Laurel Bay Military Housing Area, MCAS Beauf /	60272162.FI.WS
Test Code:	EPA TO-15	Date Collected: 10/8/14

Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received: 10)/9/14
Analyst:	Simon Cao	Date Analyzed: 10)/11/14
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			
Container ID:	SC02006		

Final Pressure (psig): 3.68 Initial Pressure (psig): -1.77

CAS #	Compound	Result µg/m³	LOQ µg/m³	LOD µg/m³	MDL µg/m³	Data Qualifier
71-43-2	Benzene	0.62	0.71	0.62	0.23	U
108-88-3	Toluene	0.69	0.71	0.60	0.24	J
100-41-4	Ethylbenzene	0.61	0.71	0.61	0.23	U
179601-23-1	m,p-Xylenes	1.2	1.4	1.2	0.43	U
95-47-6	o-Xylene	0.58	0.71	0.58	0.21	U
91-20-3	Naphthalene	0.58	0.71	0.58	0.26	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis. LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method. J = The result is an estimated concentration that is less than the LOQ but greater than or equal to the MDL.

Canister Dilution Factor: 1.42

Appendix E Regulatory Correspondence



PROMOTE PROTECT PROSPER Catherine B. Templeton, Director

April 1, 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@gmail.com 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)

2600 Bull Street • Columbia, SC 29201 • Phone (SG3898-3132 • www.sodiare.gos



Catherine B. Templeton, Director

Attachment to: Krieg to Drawdy Subject: IGWA Dated 4/1/2014

Laurel Bay Underground Storage Tank Assessment Reports for: (25 addresses/26 tanks)

1187 Bobwhite	1456 Cardinal
1431 Dove	1457 Cardinal
1433 Dove	1461 Cardinal
1435 Dove Tank #1	1465 Cardinal
1435 Dove Tank #2	1467 Cardinal
1437 Dove	1469 Cardinal
1439 Dove	1470 Cardinal
1441 Dove	1471 Cardinal
1447 Dove	1473 Cardinal
1449 Dove	1477 Cardinal
1451 Dove	1478 Cardinal
1452 Cardinal	1479 Cardinal
1454 Cardinal	1485 Cardinal

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May 5, 2015

W. Marshall Taylor Jr., Acting Director Promoting and protecting the health of the public and the environment

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

RE: Correction - Recommendation Concurrence Draft Final Initial Groundwater Investigation Report Dated April 2015

Dear Mr. Drawdy,

The South Carolina Department of Health and Environmental Control (the Department) received groundwater data in the above referenced Groundwater Investigation Report for the 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 <u>et seq</u>., 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 3 stated addresses. For the remaining 23 addresses, there is no indication of contamination on the property and therefore no further investigation is required at this time. *Note the correction to the attachment, properly referencing 1431 Dove and 1435 Dove Tank 1 and Tank 2 in the Permanent Monitoring Well Investigation recommendations.*

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

Attachment: Specific Property Recommendations

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



W. Marshall Taylor Jr., Acting Director Promoting and protecting the health of the public and the environment

Attachment to:Krieg to DrawdySubject: Draft Final Initial Groundwater Investigation Report - April 2015Specific Property RecommendationsDated 5/5/2015

Draft Final Initial Groundwater Investigation Report for: (26 addresses/28 tanks)

Permanent Monitoring Well Investigation recommendation (3 addresses/4 tanks):	
1431 Dove	1435 Dove Tank 2
1435 Dove Tank 1	1452 Cardinal
No Further Action recommendation (23 addresses/24 tanks):	
1187 Bobwhite	1463 Cardinal
1433 Dove	1465 Cardinal
1437 Dove	1467 Cardinal
1439 Dove	1469 Cardinal
1441 Dove	1470 Cardinal
1447 Dove	1473 Cardinal
1449 Dove	1471 Cardinal
1451 Dove	1477 Cardinal
1454 Cardinal	1478 Cardinal
1456 Cardinal	1479 Cardinal Tank 1
1457 Cardinal	1479 Cardinal Tank 2
1461 Cardinal	1485 Cardinal


W. Marshall Taylor Jr., Acting Director Promoting and protecting the health of the public and the environment

Bureau of Land and Waste Management South Carolina Department of Health and Environmental Control

March 10, 2015

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

RE: Approval

Draft Final Technical Memorandum-Soil Gas Sampling Results October 2014 Laurel Bay Military Housing Area

Dear Mr. Drawdy,

The South Carolina Department of Health and Environmental Control (the Department) received the above referenced soil gas sampling results for multiple former heating oil tank sites on February 2, 2015. During tank removal, contaminated soil had been observed at the former tank sites selected for this study. The purpose of this study was to evaluate whether the constituents observed in soil have potential for exposure and risk to residents through impacted vapor intrusion pathways. Sampling was performed at fourteen (14) former heating oil tank sites with a range of VOCs present in the soil at the time of tank removal. 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 soil gas sampling results. The Department has generated no comments on this report. 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 <u>petruslb@dhec.sc.gov</u> or 803-898-0294.

Sincerely,

LIPT

Laurel Petrus Department of Defense Corrective Action Section

Cc: Russell Berry, EQC Region 8 Shawn Dolan, Resolution Consultants