SUMMARY REPORT 76 CAMELLIA DRIVE (FORMERLY 659 CAMELLIA DRIVE) LAUREL BAY MILITARY HOUSING AREA MARINE CORPS AIR STATION BEAUFORT BEAUFORT, SC

> Revision: 0 Prepared for:

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

and



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

JUNE 2021

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Prepared by:



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

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



Table of Contents

| 1.0 | INTRODUCTION | . 1 |
|------------|--|-----|
| 1.1 1.2 | Background Information UST Removal and Assessment Process | |
| 2.0 | SAMPLING ACTIVITIES AND RESULTS | . 3 |
| 2.1 2.2 | UST REMOVAL AND SOIL SAMPLING Soil Analytical Results | |
| 3.0 | PROPERTY STATUS | . 4 |
| 4.0 | REFERENCES | . 4 |

Table

| Table 1 | Laboratory | Analytical | Results - Soil |
|---------|------------|-------------|----------------|
| | Laboratory | ranaryticar | Results Soll |

Appendices

- Appendix A Multi-Media Selection Process for LBMH
- Appendix B UST Assesment Report
- Appendix C Regulatory Correspondence



List of Acronyms

| bgs | below ground surface |
|-----------------|---|
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| СТО | Contract Task Order |
| COPC | constituents of potential concern |
| IDIQ | Indefinite Delivery, Indefinite Quantity |
| IGWA | Initial Groundwater Assessment |
| JV | Joint Venture |
| LBMH | Laurel Bay Military Housing |
| MCAS | Marine Corps Air Station |
| NAVFAC Mid-Lant | Naval Facilities Engineering Command Mid-Atlantic |
| NFA | No Further Action |
| PAH | polynuclear aromatic hydrocarbon |
| QAPP | Quality Assurance Program Plan |
| RBSL | risk-based screening level |
| SCDHEC | South Carolina Department of Health and Environmental Control |
| Site | LBMH area at MCAS Beaufort, South Carolina |
| UST | underground storage tank |
| VISL | vapor intrusion screening level |



1.0 INTRODUCTION

The CDM - AECOM Multimedia Joint Venture (JV) was contracted by the Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC Mid-Lant) to provide reporting services for the heating oil underground storage tanks (USTs) located in Laurel Bay Military Housing (LBMH) area at the Marine Corps Air Station (MCAS) Beaufort, South Carolina (Site). This work has been awarded under Contract Task Order (CTO) WE52 of the Indefinite Delivery, Indefinite Quantity (IDIQ) Multimedia Environmental Compliance Contract (Contract No. N62470-14-D-9016).

As of January 2014, the LBMH addresses were re-numbered to comply with the E-911 emergency response addressing system; however, in order to remain consistent with historical sampling and reporting for LBMH area, the residences will continue to be referenced with their original address numbers in sample nomenclature and reporting documents.

This report summarizes the results the environmental investigation activities associated with the storage of home heating oil and the potential release of petroleum constituents at the referenced property. Based on the results of the investigation, a No Further Action (NFA) determination has been made by the South Carolina Department of Health and Environmental Control (SCDHEC) for 76 Camellia Drive (Formerly 659 Camellia Drive). This NFA determination indicates that there are no unacceptable risks to human health or the environment for the petroleum constituents associated with the home heating oil USTs. The following information is included in this report:

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

The LBMH area is located approximately 3.5 miles west of MCAS Beaufort. The area is approximately 970 acres in size and serves as an enlisted and officer family housing area. The area is configured with single family and duplex residential structures, and includes recreation, open space, and community facilities. The community includes approximately 1,300 housing units, including legacy Capehart style homes and newer duplex style homes. The housing area is bordered on the west by salt marshes and the Broad River, and to the north, east and south by uplands. Forested areas lie along the northern and northeastern borders.



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

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

1.2 UST Removal and Assessment Process

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

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

Soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form. In accordance with SCDHEC's *QAPP for the UST Management Division* (SCDHEC, 2016), the soil screening levels consists of SCDHEC risk-based screening levels (RBSLs). It should be noted that the RBSLs for select PAHs were revised in Revision 2.0 of the QAPP (SCDHEC, 2013) and were revised again in Revision 3.0 (SCDHEC, 2015). The screening levels



used for evaluation at each site were those levels that were in effect at the time of reporting and review by SCDHEC.

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

2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 76 Camellia Drive (Formerly 659 Camellia Drive). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 659 Camellia Drive* (MCAS Beaufort, 2015). The UST Assessment Report is provided in Appendix B.

2.1 UST Removal and Soil Sampling

On February 11, 2015, a single 280 gallon heating oil UST was removed from the landscaped area adjacent to the driveway at 76 Camellia Drive (Formerly 659 Camellia Drive). The former UST location is indicated on Figures 1 and 2 of the UST Assessment Report (Appendix B). The UST was 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 removal. According to the UST Assessment Report (Appendix B), the depth to the base of the UST was 6'0" bgs and a single soil sample was collected from that depth. The sample was collected from the fill port side of the former UST to represent a worst case scenario.

Following UST removal, a soil sample was collected from the base of the excavation and shipped to an offsite laboratory for analysis of the petroleum COPCs. Sampling was performed in



accordance with applicable South Carolina regulation R.61-92, Part 280 (SCDHEC, 2017) and assessment guidelines.

2.2 Soil Analytical Results

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 1. A copy of the laboratory analytical data report is included in the UST Assessment Report presented in Appendix B. The laboratory analytical data report includes the soil results for the additional PAHs that were analyzed, but do not have associated RBSLs.

The soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form (Appendix B). The results of the soil sampling at the former UST location were used by MCAS Beaufort, in consultation with SCDHEC, to determine a path forward (i.e., additional sampling or NFA) for the property. The soil results collected from 76 Camellia Drive (Formerly 659 Camellia Drive) were less than the SCDHEC RBSLs, which indicated the subsurface was not impacted by COPCs associated with the former UST at concentrations that presented a potential risk to human health and the environment.

3.0 PROPERTY STATUS

Based on the analytical results for soil, SCDHEC made the determination that NFA was required for 76 Camellia Drive (Formerly 659 Camellia Drive). This NFA determination was obtained in a letter dated August 3, 2016. SCDHEC's NFA letter is provided in Appendix C.

4.0 REFERENCES

- Marine Corps Air Station Beaufort, 2015. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 659 Camellia Drive, Laurel Bay Military Housing Area*, July 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.

Table



Table 1Laboratory Analytical Results - Soil76 Camellia Drive (Formerly 659 Camellia Drive)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

| Constituent | SCDHEC RBSLs ⁽¹⁾ | Results Sample Collected 02/11/15 |
|-------------------------------------|----------------------------------|--------------------------------------|
| Volatile Organic Compounds Analyzed | by EPA Method 8260B (mg/kg) | |
| Benzene | 0.003 | ND |
| Ethylbenzene | 1.15 | ND |
| Naphthalene | 0.036 | ND |
| Toluene | 0.627 | ND |
| Xylenes, Total | 13.01 | ND |
| Semivolatile Organic Compounds Anal | yzed by EPA Method 8270D (mg/kg) | |
| Benzo(a)anthracene | 0.66 | ND |
| Benzo(b)fluoranthene | 0.66 | ND |
| Benzo(k)fluoranthene | 0.66 | ND |
| Chrysene | 0.66 | ND |
| Dibenz(a,h)anthracene | 0.66 | ND |

Notes:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.0 and 3.1 (SCDHEC, May 2015 and SCDHEC, February 2016) and the Underground Storage Tank Assessment Guidelines (SCDHEC, February 2006).

Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the SCDHEC RBSL.

EPA - United States Environmental Protection Agency

mg/kg - milligram per kilogram

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

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

Appendix A Multi-Media Selection Process for LBMH





Appendix A - Multi-Media Selection Process for LBMH

Appendix B UST Assessment Report



Attachment 1

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

Date Received

State Use Only

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

I. OWNERSHIP OF UST (S)

| MCAS Beaufort, Commanding | | AO (Craig Ehde) |
|------------------------------------|---------------------------|-----------------|
| Owner Name (Corporation, Individua | al, 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 Mili Facility Name or Comp | tary Housing Area, Marine Corps Air Station, Beaufort, SC any Site Identifier |
|---|--|
| 659 Camellia D: | rive, Laurel Bay Military Housing Area |
| Street Address or State | Road (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)

VI. UST INFORMATION

| | | 659Camellia |
|----|---------------------------------------|-------------|
| A. | Product(ex. Gas, Kerosene) | Heating oil |
| B. | Capacity(ex. lk, 2k) | 280 gal |
| C. | Age | Late 1950s |
| D. | Construction Material(ex. Steel, FRP) | Steel |
| E· | Month/Year of Last Use | Mid 1980s |
| F. | Depth (ft.) To Base of Tank | 6' |
| G. | Spill Prevention Equipment Y/N | No |
| H∙ | Overfill Prevention Equipment Y/N | No |
| I. | Method of Closure Removed/Filled | Removed |
| J | Date Tanks Removed/Filled | 2/11/2015 |
| K. | Visible Corrosion or Pitting Y/N | Yes |
| L. | Visible Holes Y/N | Yes |
| | | |

M. Method of disposal for any USTs removed from the ground (attach disposal manifests) UST 659Camellia 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 659Camellia had been previously filled with sand by others.

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

VII. PIPING INFORMATION

| | | 659Camellia |
|----------|---|-------------|
| | | Steel |
| A. | Construction Material(ex. Steel, FRP) | & Copper |
| B. | Distance from UST to Dispenser | N/A |
| C. | Number of Dispensers | N/A |
| D. | Type of System Pressure or Suction | Suction |
| E. | Was Piping Removed from the Ground? Y/N | No |
| F. | Visible Corrosion or Pitting Y/N | Yes |
| G. | Visible Holes Y/N | No |
| H. | Age | Late 1950s |
| . | | |

I. If any corrosion, pitting, or holes were observed, describe 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? | | х | |
| If yes, indicate depth and location on the site map. | | _ | _ |
| B. Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells? | | x | |
| If yes, indicate location on site map and describe the odor (strong, mild, etc.) | | | |
| C. Was water present in the UST excavation, soil borings, or trenches? | | х | |
| If yes, how far below land surface (indicate location and depth)? | | | |
| D. Did contaminated soils remain stockpiled on site after closure? | | х | |
| If yes, indicate the stockpile location on the site map. | | | |
| Name of DHEC representative authorizing soil removal: | | | |
| E. Was a petroleum sheen or free product detected on any excavation or boring waters? | | х | |
| If yes, indicate location and thickness. | | | |

X. SAMPLE INFORMATION

A. SCDHEC Lab Certification Number 84009

Β.

| Sample # | Location | Sample Type (Soil/Water) | Soil Type (Sand/Clay) | Depth* | Date/Time of Collection | Collected by | OVA # |
|-----------------|----------------------|-----------------------------|--------------------------|--------|----------------------------|-----------------|-------|
| 659 Camellia | Excav at fill end | Soil | Sandy | 6' | 2/11/15 1215 hrs | P. Shaw | 100 |
| - | | - | _ | | | | 11-1 |
| _ | | - | | | | _ | _ |
| | - | - | | | | | - |
| | | - | - | - | | | - |
| | | - | | - | - | - | - |
| 8 | | | | | | | |
| 9 | 1 | | | | | | |
| 10 | 0.01 | | | | | | - |
| 11 | | 1 | | | 1. L. | | - |
| 12 | | 1.000 | | | | 0 | |
| 13 | | | | | 1.000 | | |
| 14 | | | | | 1 | 1 | |
| 15 | - | | 1 | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | - | | | 1 | 1 | | |

* = Depth Below the Surrounding Land Surface

XI. SAMPLING METHODOLOGY

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

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

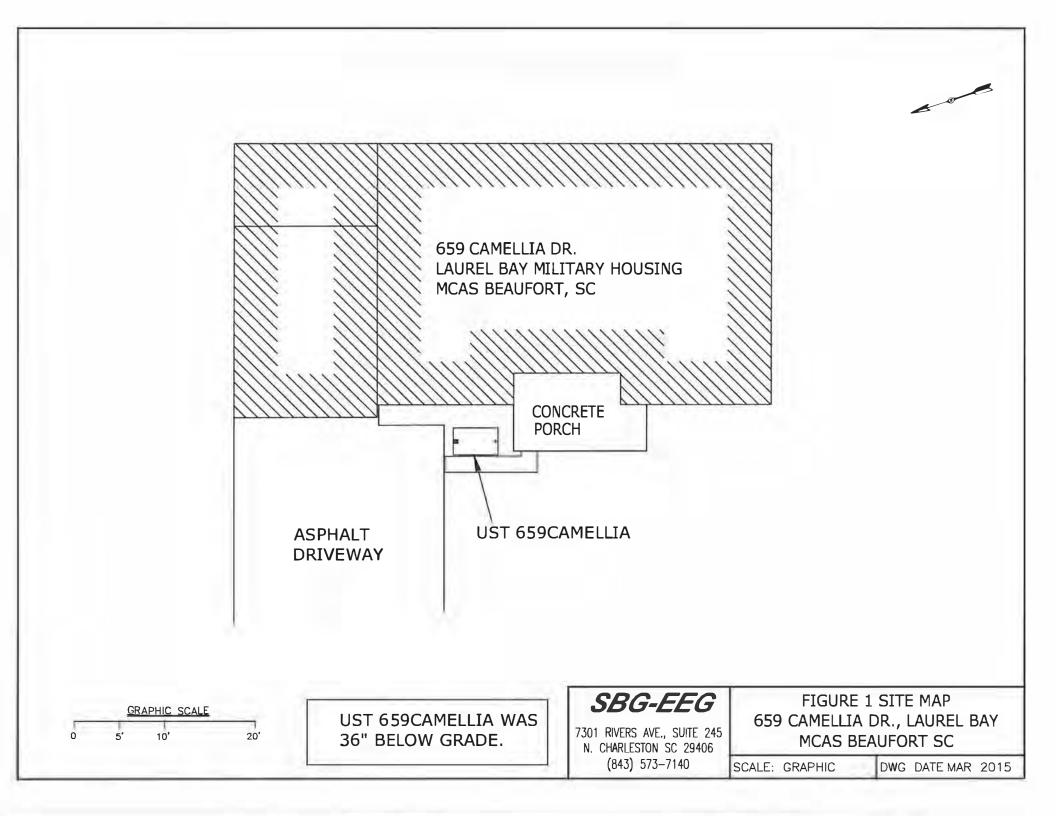
XII. RECEPTORS

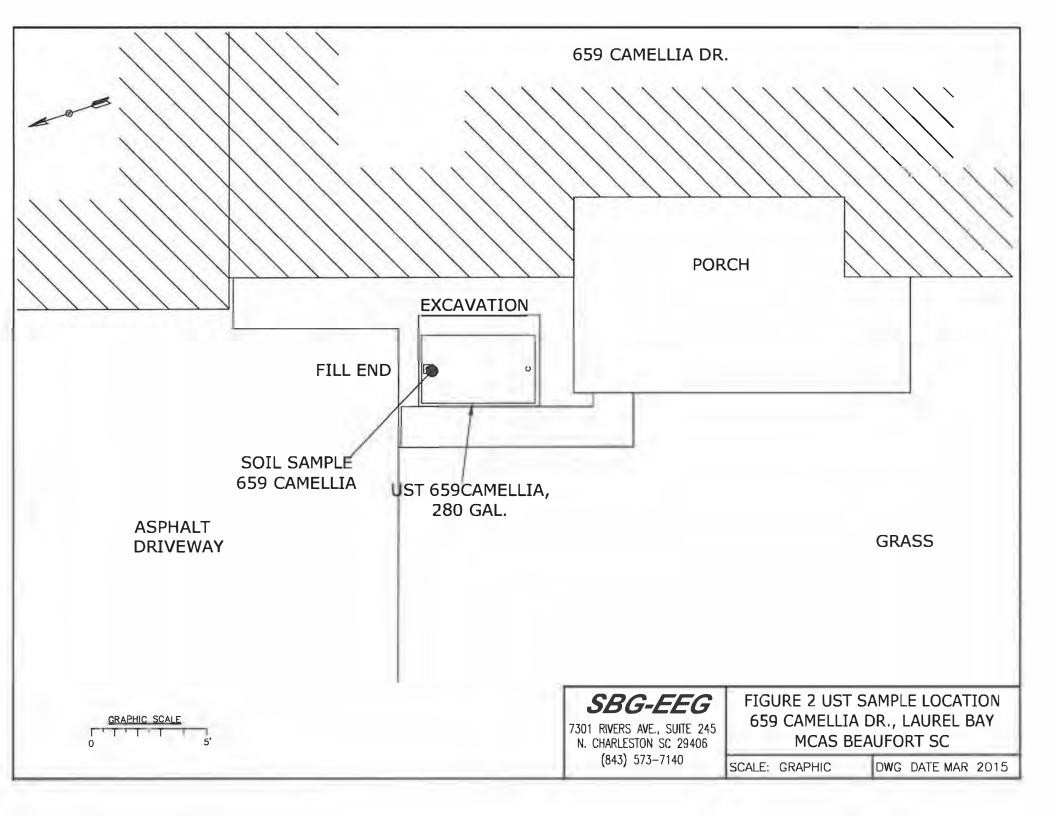
| | | Yes | No |
|----|--|-----------|-----|
| A. | Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system? | | х |
| | If yes, indicate type of receptor, distance, and direction on site map. | 1 | |
| B. | Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system? | | X |
| | If yes, indicate type of well, distance, and direction on site map. | | |
| C. | Are there any underground structures (e.g., basements) Located within 100 feet of the UST system? | | х |
| | If yes, indicate type of structure, distance, and direction on site map. | | |
| D. | Are there any underground utilities (e.g., telephone, electricity, gas, water, sewer, storm drain) located within 100 feet of the UST system that could potentially come in contact with the contamination? *Sewer, water, electrici | *X ty, | |
| | cable, fiber optic & geo If yes, indicate the type of utility, distance, and direction on the site map. | thern | nal |
| 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? | | X |
| | 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)



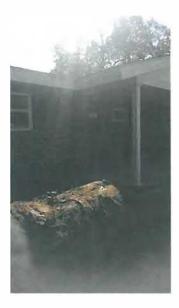




Picture 1: Location of UST 659Camellia.



Picture 2: Tank excavation.



Picture 3: UST 659Camellia.



Picture 4: Site after tank removal is completed.

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 | 659Camellia | | | | |
|--------------------------|-------------|-----|---|-------|-------|
| Benzene | ND | | | | |
| Toluene | ND | | | | |
| Ethylbenzene | ND | | | | |
| Xylenes | ND | | | | X STO |
| Naphthalene | ND | | | | |
| Benzo (a) anthracene | ND | | | | |
| Benzo (b) fluoranthene | ND | | | | |
| Benzo (k) fluoranthene | ND | | | | |
| Chrysene | ND | | | | |
| Dibenz (a, h) anthracene | ND | 1.1 | 1 | | - |
| ТРН (ЕРА 3550) | | | | | |
| CoC | | | T | | 1 |
| Benzene | 1.224 | | | 1.1 | |
| Toluene | 1000 | | | | |
| Ethylbenzene | | | | | |
| Xylenes | | | | | |
| Naphthalene | 5.01 | | | | |
| Benzo (a) anthracene | | | - | 1 | |
| Benzo (b) fluoranthene | | | | - | |
| Benzo (k) fluoranthene | | | | | |
| Chrysene | | | | 1.1.1 | |
| Dibenz (a, h) anthracene | | | | 1200 | |
| 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/I) | W -1 | W-2 | W -3 | W -4 |
|-----------------------------|------------------|-------------|------|------|------|
| Free Product Thickness | None | | | | |
| Benzene | 5 | - | 1-25 | 1.00 | |
| Toluene | 1,000 | | 1 | 1 | |
| Ethylbenzene | 700 | | | | |
| Xylenes | 10,000 | | | | |
| Total BTEX | N/A | | 12. | | |
| МТВЕ | 40 | | | 1 | |
| Naphthalene | 25 | | | | |
| Benzo (a) anthracene | 10 | | | | |
| Benzo (b) flouranthene | 10 | | 1 | | |
| 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)



<u>TestAmerica</u>

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: 490-72561-1 Client Project/Site: Laurel Bay Housing Project

For:

Small Business Group Inc. 10179 Highway **7**8 Ladson, South Carolina 29456

Attn: Tom McElwee

Kuth Hay

Authorized for release by: 2/27/2015 11:41:53 AM

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





2

Table of Contents

| Cover Page | 1 |
|-----------------------|----|
| Table of Contents | 2 |
| Sample Summary | 3 |
| Case Narrative | 4 |
| Definitions | 5 |
| Client Sample Results | 6 |
| QC Sample Results | 8 |
| QC Association | 14 |
| Chronicle | 16 |
| Method Summary | 17 |
| Certification Summary | 18 |
| Chain of Custody | 19 |
| Receipt Checklists | 21 |
| | |

| Project/Site: Laurel | Bay Housing Project | | | |
|----------------------|---------------------|--------|-------------------------------|---|
| Lab Sample ID | Client Sample ID | Matrix | Collected Received | 3 |
| 490-72561-1 | 563 Dahlia | Soil | 02/10/15 14:15 02/14/15 08:30 | |
| 490-72561-2 | 659 Camellia | Soil | 02/11/15 12:15 02/14/15 08:30 | |
| | | | | 5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Job ID: 490-72561-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-72561-1

Comments

No additional comments.

Receipt

The samples were received on 2/14/2015 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

GC/MS VOA

Method(s) 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 228630 were outside control limits. Poor purge is suspected because the associated laboratory control sample (LCS) and matrix spike (MS) recovery was within acceptance limits. See lcs/lcsd for batch precision.

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

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described 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.

Qualifiers

GC/MS VOA

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

Glossary

| 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 |
| Percent Recovery |
| Contains Free Liquid |
| Contains no Free Liquid |
| Duplicate error ratio (normalized absolute difference) |
| Dilution Factor |
| Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| Decision level concentration |
| Minimum detectable activity |
| Estimated Detection Limit |
| Minimum detectable concentration |
| Method Detection Limit |
| Minimum Level (Doxin) |
| Not Caculated |
| Not detected at the reporting limit (or MDL or EDL if shown) |
| Practical Quantitation Limit |
| Quality Control |
| Relative error ratio |
| Reporting Limit or Requested Limit (Radiochemistry) |
| Relative Percent Difference, a measure of the relative difference between two points |
| Toxicity Equivalent Factor (Dioxin) |
| Toxicity Equivalent Quotient (Dioxin) |
| |

TestAmerica Job ID: 490-72561-1

TestAmerica Nashville

Client Sample ID: 563 Dahlia

Date Collected: 02/10/15 14:15 Date Received: 02/14/15 08:30

| Lab Sample I | D: 490-72561-1 |
|--------------|----------------|
|--------------|----------------|

Matrix: Soil Percent Solids: 92.8

| Method: 8260B - Volatile Orga | nic Compounds | (GC/MS) | | | | | | | | |
|-------------------------------|----------------|------------|----------|----------|-------|----|----------------|----------------|---------|---|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac | |
| Benzene | ND | | 0.00217 | 0.000729 | mg/Kg | 22 | 02/10/15 14:15 | 02/20/15 17:10 | 1 | |
| Ethylbenzene | ND | | 0.00217 | 0.000729 | mg/Kg | 13 | 02/10/15 14:15 | 02/20/15 17:10 | | 6 |
| Naphthalene | 0.00313 | J | 0.00544 | 0.00185 | mg/Kg | 11 | 02/10/15 14:15 | 02/20/15 17:10 | . 1 | |
| Toluene | 0.000926 | J | 0.00217 | 0.000805 | mg/Kg | 20 | 02/10/15 14:15 | 02/20/15 17:10 | 1 | |
| Xylenes, Total | 0.000765 | J | 0.00326 | 0.000729 | mg/Kg | ¤ | 02/10/15 14:15 | 02/20/15 17:10 | 1 | |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | DilFac | |
| 1,2-Dichloroethane-d4 (Surr) | 96 | | 70-130 | | | | 02/10/15 14:15 | 02/20/15 17:10 | ÷1 | |
| 4 Bromofluorobenzene (Surr) | 101 | | 70 - 130 | | | | 02/10/15 14:15 | 02/20/15 17:10 | 1 | |
| Dibromofluoromethane (Surr) | 103 | | 70_ 130 | | | | 02/10/15 14:15 | 02/20/15 17:10 | 1 | |
| Toluene-d8 (Surr) | 91 | | 70-130 | | | | 02/10/15 14:15 | 02/20/15 17:10 | 1 | |
| Method: 8270D - Semivolatile | Organic Compou | nds (GC/MS |) | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac | |
| Acenaphthene | ND | | 0.0702 | 0.0105 | mg/Kg | ñe | 02/19/15 09:50 | 02/20/15 21:44 | . 1 | |
| Acenaphthylene | ND | | 0 0702 | 0.00943 | mg/Kg | 1~ | 02/19/15 09:50 | 02/20/15 21:44 | 1 | |
| Anthracene | ND | | 0.0702 | 0.00943 | mg/Kg | il | 02/19/15 09:50 | 02/20/15 21:44 | 1 | |
| Despelatestheases | | | 0.0700 | 0.0457 | | 14 | 004045 00 50 | 00100115 01 11 | 1.5 | |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------|-----------|-----------|----------|---------|-------|-----|----------------|----------------|---------|
| Acenaphthene | ND | | 0.0702 | 0.0105 | mg/Kg | ne. | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Acenaphthylene | ND | | 0 0702 | 0.00943 | mg/Kg | 1~ | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Anthracene | ND | | 0.0702 | 0.00943 | mg/Kg | 11 | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Benzo[a]anthracene | ND | | 0.0702 | 0.0157 | mg/Kg | 11 | 02/19/15 09:50 | 02/20/15 21:44 | 24 |
| Benzo[a]pyrene | ND | | 0 0702 | 0.0126 | mg/Kg | п | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Benzo[b]fiuoranthene | ND | | 0.0702 | 0.0126 | mg/Kg | r | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.0702 | 0.00943 | mg/Kg | a | 02/19/15 09:50 | 02/20/15 21:44 | 3.9 |
| Benzo[k]f.uoranthene | ND | | 0.0702 | 0.0147 | mg/Kg | п | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| 1-Methylnaphthalene | ND | | 0.0702 | 0.0147 | mg/Kg | a | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Pyrene | ND | | 0.0702 | 0.0126 | mg/Kg | ü | 02/19/15 09:50 | 02/20/15 21:44 | 11 |
| Phenanthrene | ND | | 0.0702 | 0.00943 | mg/Kg | I | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Chrysene | ND | | 0.0702 | 0.00943 | mg/Kg | Ħ | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.0702 | 0.00733 | mg/Kg | | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Fluoranthene | ND | | 0.0702 | 0.00943 | mg/Kg | | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Fluorene | ND | | 0.0702 | 0.0126 | mg/Kg | 10 | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Indeno[1,2,3-cd]pyrene | ND | | 0.0702 | 0.0105 | mg/Kg | | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Naphthalene | ND | | 0.0702 | 0.00943 | mg/Kg | Ħ | 02/19/15 09:50 | 02/20/15 21:44 | . 1 |
| 2-Methylnaphthalene | ND | | 0.0702 | 0.0168 | mg/Kg | 12 | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | DilFac |
| 2-Fluorobiphenyl (Surr) | 66 | | 29-120 | | | | 02/19/15 09:50 | 02/20/15 21:44 | + |
| Terphenyl d 14 (Surr) | 69 | | 13 - 120 | | | | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| Nitrobenzene-d5 (Surr) | 55 | | 27 - 120 | | | | 02/19/15 09:50 | 02/20/15 21:44 | 1 |
| General Chemistry | | | | | | | | | |
| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
| Percent Solids | 93 | | 0.10 | 0.10 | % | | | 02/19/15 13:03 | 1 |

Client Sample ID: 659 Camellia

Date Collected: 02/11/15 12:15 Date Received: 02/14/15 08:30

Lab Sample ID: 490-72561-2

TestAmerica Job ID: 490-72561-1

Matrix: Soil Percent Solids: 73.2

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--|----------------|------------|-----------|----------|-------|-----|----------------|----------------|---------|
| Benzene | ND | | 0.00284 | 0.000952 | mg/Kg | ŭ | 02/11/15 12:15 | 02/23/15 14:23 | 1 |
| Ethylbenzene | ND | | 0.00284 | 0.000952 | mg/Kg | ц | 02/11/15 12:15 | 02/23/15 14:23 | 1 |
| Naphthalene | ND | | 0.00710 | 0.00242 | mg/Kg | ¥: | 02/11/15 12:15 | 02/23/15 14:23 | |
| Toluene | ND | | 0 00284 | 0.00105 | mg/Kg | 51. | 02/11/15 12:15 | 02/23/15 14:23 | 1 |
| Xylenes, Total | ND | | 0.00426 | 0.000952 | mg/Kg | 形) | 02/11/15 12:15 | 02/23/15 14:23 | 3 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | DilFac |
| 1,2-Dichloroethane-d4 (Surr) | 94 | | 70-130 | | | | 02/11/15 12:15 | 02/23/15 14:23 | 1 |
| 4-Bromofluorobenzene (Sun ⁻) | 96 | | 70 - 130 | | | | 02/11/15 12:15 | 02/23/15 14:23 | |
| Dibromofluoromethane (Surr) | 106 | | 70-130 | | | | 02/11/15 12:15 | 02/23/15 14.23 | |
| Toluene-d8 (Sun ⁻) | 84 | | 70-130 | | | | 02/11/15 12:15 | 02/23/15 14:23 | 1 |
| Method: 8270D - Semivolatile | Organic Compou | nds (GC/MS | 5) | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Acenaphthene | ND | | 0 0 9 0 2 | 0.0135 | mg/Kg | ŭ | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Acenaphthylene | ND | | 0.0902 | 0.0121 | mg/Kg | а | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Anthracene | ND | | 0.0902 | 0.0121 | mg/Kg | | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| | | | | | | | | | |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|-------------------------|-----------|-----------|----------|---------|-------|-------|----------------|----------------|----------|
| Acenaphthene | ND | | 00902 | 0.0135 | mg/Kg | ŭ | 02/19/15 09:50 | 02/20/15 22:06 | 3 |
| Acenaphthylene | ND | | 0.0902 | 0.0121 | mg/Kg | а | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Anthracene | ND | | 0.0902 | 0.0121 | mg/Kg | | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Benzo[a]anthracene | ND | | 0.0902 | 0.0202 | mg/Kg | z | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Benzo[a]pyrene | ND | | 0.0902 | 0.0162 | mg/Kg | 12 | 02/19/15 09:50 | 02/20/15 22:06 | 4 |
| Benzo[b]fluoranthene | ND | | 0.0902 | 0.0162 | mg/Kg | E | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Benzo[g,h,i]perylene | ND | | 0.0902 | 0.0121 | mg/Kg | L. | 02/19/15 09:50 | 02/20/15 22:06 | 2.1 |
| Benzo[k]fluoranthene | ND | | 0.0902 | 0.0188 | mg/Kg | Li | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| 1-Methylnaphthalene | ND | | 0.0902 | 0.0188 | mg/Kg | · E : | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Pyrene | ND | | 0.0902 | 0.0162 | mg/Kg | | 02/19/15 09:50 | 02/20/15 22:06 | .1 |
| Phenanthrene | ND | | 0.0902 | 0.0121 | mg/Kg | 13 | 02/19/15 09:50 | 02/20/15 22:06 | -1 |
| Chrysene | ND | | 0.0902 | 0.0121 | mg/Kg | n | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.0902 | 0.00942 | mg/Kg | n | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Fluoranthene | ND | | 0.0902 | 0.0121 | mg/Kg | - R | 02/19/15 09:50 | 02/20/15 22:06 | |
| Fluorene | ND | | 0.0902 | 0.0162 | mg/Kg | | 02/19/15 09:50 | 02/20/15 22:06 | -1 |
| Indeno[1,2,3 cd]pyrene | ND | | 0.0902 | 0.0135 | mg/Kg | ŭ | 02/19/15 09:50 | 02/20/15 22:06 | 31 |
| Naphthalene | ND | | 0.0902 | 0.0121 | mg/Kg | | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| 2-Methylnaphthalene | ND | | 0.0902 | 0.0215 | mg/Kg | 5.2 | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | D il Fac |
| 2-Fluorobiphenyl (Surr) | 58 | | 29-120 | | | | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Terphenyl-d14 (Surr) | 62 | | 13 _ 120 | | | | 02/19/15 09:50 | 02/20/15 22:06 | 1 |
| Nitrobenzene-d5 (Surr) | 50 | | 27 - 120 | | | | 02/19/15 09:50 | 02/20/15 22:06 | t |
| General Chemistry | | | | | | | | | |
| Analyte | Result | Qualifier | RL | RL | Unit | D | Prepared | Analyzed | Dil Fac |
| Percent Solids | 73 | | 0.10 | 0.10 | % | | | 02/17/15 14:55 | 1 |

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

| Lab Sample ID: MB 490-228630/9 | | | | | | | Client Sa | ample ID: Metho | d Blank |
|--------------------------------|-----------|-----------|---------|----------|-------|---|-----------|-----------------|---------|
| Matrix: Solid | | | | | | | | Prep Type: T | otal/NA |
| Analysis Batch: 228630 | | | | | | | | | |
| | MB | MB | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Benzene | ND | | 0.00200 | 0.000670 | mg/Kg | | | 02/20/15 13:49 | 1 |
| Ethylbenzene | ND | | 0.00200 | 0.000670 | mg/Kg | | | 02/20/15 13:49 | 1 |
| Naphthalene | ND | | 0.00500 | 0.00170 | mg/Kg | | | 02/20/15 13:49 | 1 |
| Toluene | ND | | 0.00200 | 0.000740 | mg/Kg | | | 02/20/15 13:49 | 1 |
| Xylenes, Total | ND | | 0.00300 | 0.000670 | mg/Kg | | | 02/20/15 13:49 | 1 |
| | MB | МВ | | | | | | | |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | DilFac |

| 1.2-Dichloroethane-d4 (Surr) | 96 | 70 - 130 | 02/20/15 13:49 |
|------------------------------|-----|----------|-----------------|
| 4-Bromofluorobenzene (Surr) | 101 | 70 - 130 | 02/20/15 13:49 |
| Dibromofluoromethane (Surr) | 107 | 70 - 130 | 02//20/15 13:49 |
| Toluene-d8 (Surr) | 91 | 70 - 130 | 02/20/15 13:49 |

Lab Sample ID: LCS 490-228630/4 Matrix: Solid Analysis Batch: 228630

| | Spike | LCS | LCS | | | | %Rec. |
|----------------|--------|---------|-----------|-------|---|------|----------|
| Analyte | Added | Result | Qualifier | Unit | D | %Rec | Limits |
| Benzene | 0.0500 | 0.05033 | | mg/Kg | | 101 | 75 - 127 |
| Ethylbenzene | 0.0500 | 0.04877 | | mg/Kg | | 98 | 80 - 134 |
| Naphthalene | 0.0500 | 0.05704 | | mg/Kg | | 114 | 69.150 |
| Toluene | 0.0500 | 0 04666 | | mg/Kg | | 93 | 80 - 132 |
| Xylenes, Total | 0.100 | 0.1009 | | mg/Kg | | 101 | 80 - 137 |
| 1 | CS LCS | | | | | | |

| Surrogate | %Recovery | Qualifier | Limits |
|--|-----------|-----------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 85 | | 70-130 |
| 4 Bromofluorobenzene (Sur [*]) | 102 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 101 | | 70 - 130 |
| Toluene-d8 (Surr) | 90 | | 70_ 130 |

Lab Sample ID: LCSD 490-228630/10 Matrix: Solid

Analysis Batch: 228630

| Analysis Batch: 228630 | | | 0.1 | | | | | | | | |
|------------------------------|-----------|-----------|----------|---------|-----------|-------|---|------|----------|-----|-------|
| | | | Spike | LCSD | LCSD | | | | %Rec. | | RPD |
| Analyte | | | Added | Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit |
| Benzene | | | 0.0500 | 0.04498 | | mg/Kg | | 90 | 75 - 127 | 11 | 50 |
| Ethylbenzene | | | 0.0500 | 0.04561 | | mg/Kg | | 91 | 80 - 134 | 7 | 50 |
| Naphthalene | | | 0.0500 | 0.05482 | | mg/Kg | | 110 | 69-150 | 4 | 50 |
| Toluene | | | 0.0500 | 0.04272 | | mg/Kg | | 85 | 80 - 132 | 9 | 50 |
| Xy enes, Total | | | 0.100 | 0.09800 | | mg/Kg | | 98 | 80 - 137 | 3 | 50 |
| | LCSD | LCSD | | | | | | | | | |
| Surrogate | %Recovery | Qualifier | Limits | | | | | | | | |
| 1,2 Dichloroethane-d4 (Surr) | 95 | | 70 - 130 | | | | | | | | |
| Surrogate | %Recovery | | Limits | 0.09800 | | mg/Kg | | 98 | 80 - 137 | 3 | 50 |

| 4 Bromofluorobenzene (Surr) | 96 | 70 - 130 |
|-----------------------------|-----|----------|
| Dibromofluoromethane (Surr) | 105 | 70 - 130 |
| Toluene-d8 (Surr) | 91 | 70 - 130 |

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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| Client Sample ID: La | ab Control Sample Dup |
|----------------------|-----------------------|
| | Prep Type: Total/NA |

Client Sample ID: Matrix Spike

Prep Type: Total/NA

7

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

Lab Sample ID: 490-72829-A-4-E MS Matrix: Solid 000447 .

| Analysis Batch: 229147 | | | | | | | | | Prep Batch: 228919 |
|------------------------|--------|-----------|--------|---------|-----------|-------|-----|------|--------------------|
| | Sample | Sample | Spike | MS | MS | | | | %Rec. |
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits |
| Benzene | ND | | 0.0586 | 0.04526 | | mg/Kg | 20. | 77 | 31 - 143 |
| Ethylbenzene | ND | | 0 0586 | 0.04241 | | mg/Kg | - 8 | 72 | 23 - 161 |
| Naphthalene | ND | | 0.0586 | 0.01573 | | mg/Kg | п | 27 | 10 - 176 |
| Toluene | ND | | 0.0586 | 0.03621 | | mg/Kg | ц | 62 | 30 - 155 |
| Xylenes, Total | ND | | 0.117 | 0.07842 | | mg/Kg | ц | 67 | 25 - 162 |
| | ME | MC | | | | | | | |

| | 11/3 | 11/13 | |
|------------------------------|-----------|-----------|---------|
| Surrogate | %Recovery | Qualifier | Limits |
| 1,2 Dichloroethane-d4 (Surr) | 89 | | 70-130 |
| 4 Bromofluorobenzene (Surr) | 106 | | 70_ 130 |
| Dibromofluoromethane (Surr) | 89 | | 70-130 |
| Toluene-d8 (Surr) | 86 | | 70.130 |

Lab Sample ID: 490-72829-A-4-F MSD Matrix: Solid Analysis Batch: 229147

Lab Sample ID: MB 490-229147/9

Analysis Batch: 229147

Matrix: Solid

| | Sample | Sample | Spike |
|------------------------------|-----------|-----------|----------|
| Analyte | Result | Qualifier | Added |
| Benzene | ND | | 0.0597 |
| Ethylbenzene | ND | | 0.0597 |
| Naphtha ene | ND | | 0.0597 |
| Toluene | ND | | 0.0597 |
| Xylenes, Total | ND | | 0.119 |
| | MSD | MSD | |
| Surrogate | %Recovery | Qualifier | Limits |
| 1,2-Dichloroethane-d4 (Surr) | 82 | | 70.130 |
| 4-Bromofluorobenzene (Surr) | 110 | | 70-130 |
| Dibromofluoromethane (Surr) | 94 | | 70-130 |
| Toluened 8 (Surr) | 89 | | 70 - 130 |

Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

| | | | | | Prep Batch: 22891 | | | | | |
|---------|-----------|-------|----|------|-------------------|-----|-------|--|--|--|
| MSD | MSD | | | | %Rec. | | RPD | | | |
| Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit | | | |
| 0.06299 | | mg/Kg | 12 | 106 | 31 - 143 | 33 | 50 | | | |
| 0.06171 | | mg/Kg | 12 | 103 | 23 - 161 | 37 | 50 | | | |
| 0.02004 | | mg/Kg | n | 34 | 10 - 176 | 24 | 50 | | | |
| 0.05348 | | mg/Kg | 12 | 90 | 30 - 155 | 39 | 50 | | | |
| 0.1177 | | mg/Kg | X | 99 | 25 - 162 | 40 | 50 | | | |

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

| - | MB | МВ | | | | | | | |
|------------------------------|-----------|-----------|---------|----------|-------|---|----------|-----------------|---------|
| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
| Benzene | ND | | 0.00200 | 0.000670 | mg/Kg | | | 02/23/15 13:24 | 81 |
| Ethylbenzene | ND | | 0.00200 | 0.000670 | mg/Kg | | | 02/23/15 13:24 | 1 |
| Naphthalene | ND | | 0.00500 | 0.00170 | mg/Kg | | | 02/23/15 13:24 | 1 |
| Toluene | ND | | 0.00200 | 0.000740 | mg/Kg | | | 02/23/15 13:24 | 1 |
| Xyenes, Total | ND | | 0.00300 | 0.000670 | mg/Kg | | | 02/23/15 13:24 | . 1 |
| | MB | МВ | | | | | | | |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 96 | | 70_130 | | | | | 02/23/15 13:24 | 1 |
| 4-Bromofluorobenzene (Surr) | 98 | | 70-130 | | | | | 02/231/15 13:24 | |
| Dibromofluoromethane (Surr) | 106 | | 70_ 130 | | | | | 02/23/15 13:24 | 1 |
| Toluene-d8 (Surr) | 85 | | 70-130 | | | | | 02/23/15 13.24 | 1 |

Client Sample ID: Lab Control Sample

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

Lab Sample ID: LCS 490-229147/3 Matrix: Solid Analysis Batch: 229147

| Analysis Baton. 220147 | | Spike | LCS | LCS | | | | %Rec. |
|------------------------|--------------------|--------|---------|-----------|-------|---|------|----------|
| Analyte | | Added | Result | Qualifier | Unit | D | %Rec | Limits |
| Benzene | | 0.0500 | 0.05242 | | mg/Kg | | 105 | 75 - 127 |
| Ethylbenzene | | 0.0500 | 0.05423 | | mg/Kg | | 108 | 80 - 134 |
| Naphthalene | | 0.0500 | 0.05292 | | mg/Kg | | 106 | 69 - 150 |
| Toluene | | 0.0500 | 0.04554 | | mg/Kg | | 91 | 80 - 132 |
| Xylenes, Total | | 0.100 | 0.1081 | | mg/Kg | | 108 | 80 - 137 |
| | LCS LCS | | | | | | | |
| Currente | Propuest Qualifier | Limito | | | | | | |

| Surrogate | %Recovery Qualifier | Limits |
|------------------------------|---------------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 87 | 70-130 |
| 4-Bromofluorobenzene (Suir) | 97 | 70-130 |
| Dibromofluoromethane (Surr) | 100 | 70_ 130 |
| Toluene-d8 (Surr) | 86 | 70-130 |

Lab Sample ID: LCS 490-229147/6 Matrix: Solid

| Analysis | Batch: | 229147 |
|----------|--------|--------|
|----------|--------|--------|

| | Spike | LCS | LCS | | | | %Rec. |
|----------------|-------|--------|-----------|-------|---|------|----------|
| Analyte | Added | Result | Qualifier | Unit | D | %Rec | Limits |
| Benzene | 2.50 | 2.803 | | mg/Kg | | 112 | 75-127 |
| Ethylbenzene | 2.50 | 2.777 | | mg/Kg | | 111 | 80 - 134 |
| Naphthalene | 2.50 | 2.708 | | mg/Kg | | 108 | 69-150 |
| Totuene | 2.50 | 2.279 | | mg/Kg | | 91 | 80.132 |
| Xylenes, Total | 5.00 | 5.579 | | mg/Kg | | 112 | 80-137 |

| | LCS LCS | |
|------------------------------|---------------------|----------|
| Surrogate | %Recovery Qualifier | Limits |
| 1,2-Dichloroethane-d4 (Surr) | 90 | 70 - 130 |
| 4-Bromofluorobenzene (Surr) | 97 | 70-130 |
| Dibromofluoromethane (Surr) | 101 | 70.130 |
| Toluene-d8 (Surr) | 85 | 70-130 |

Lab Sample ID: LCSD 490-229147/4 Matrix: Solid

Analysis Batch: 229147

| | | | Spike | LCSD | LCSD | | | | %Rec. | | RPD |
|------------------------------|-----------|-----------|--------|---------|-----------|-------|---|------|----------|-----|-------|
| Analyte | | | Added | Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit |
| Benzene | | | 0.0500 | 0.05473 | | mg/Kg | | 109 | 75-127 | 4 | 50 |
| Ethylbenzene | | | 0.0500 | 0.05396 | | mg/Kg | | 108 | 80 - 134 | 0 | 50 |
| Naphthalene | | | 0.0500 | 0.05309 | | mg/Kg | | 106 | 69-150 | 0 | 50 |
| Toluene | | | 0.0500 | 0.04407 | | mg/Kg | | 88 | 80-132 | 3 | 50 |
| Xyenes, Total | | | 0.100 | 0.1054 | | mg/Kg | | 105 | 80-137 | 3 | 50 |
| | LCSD | LCSD | | | | | | | | | |
| Surrogate | %Recovery | Qualifier | Limits | | | | | | | | |
| 1,2-Dichloroethane-d4 (Surr) | 87 | | 70-130 | | | | | | | | |
| 4-Bromofluorobenzene (Surr) | 98 | | 70-130 | | | | | | | | |
| Dibromofluoromethane (Surr) | 100 | | 70-130 | | | | | | | | |
| Toluene-d8 (Surr) | 85 | | 70-130 | | | | | | | | |

Prep Type: Total/NA

5

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

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

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

| Lab Sample ID: MB 490-228293/1-A | | | | | | | Client Sa | mple ID: Metho | d Blank |
|----------------------------------|----------|-----------|----------|---------|-------|---|----------------|----------------|---------|
| Matrix: Solid | | | | | | | | Prep Type: T | otal/NA |
| Analysis Batch: 228595 | | | | | | | | Prep Batch: | 228293 |
| | | MB | | | | | | | |
| Analyte | Result | Qualifier | RL | MDL | | D | Prepared | Analyzed | Dil Fac |
| Acenaphthene | ND | | 0.0670 | 0.0100 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Acenaphthylene | ND | | 0.0670 | 0.00900 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Anthracene | ND | | 0.0670 | 0.00900 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Benzo[a]anthracene | ND | | 0.0670 | 0.0150 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Benzo[a]pyrene | ND | | 0.0670 | 0.0120 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 4 |
| Benzo[b]fluoranthene | ND | | 0.0670 | 0.0120 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Benzo[g,h,]perylene | ND | | 0 0670 | 0.00900 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 3 |
| Benzo[k]fluoranthene | ND | | 0.0670 | 0.0140 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| 1-Methylnaphthalene | ND | | 0.0670 | 0.0140 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Pyrene | ND | | 0.0670 | 0.0120 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Phenanthrene | ND | | 0.0670 | 0.00900 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Chrysene | ND | | 0.0670 | 0.00900 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Dibenz(a,h)anthracene | ND | | 0.0670 | 0.00700 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | . 1 |
| Fluoranthene | ND | | 0.0670 | 0.00900 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Fluorene | ND | | 0.0670 | 0.0120 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| indeno[1,2,3-cd]pyrene | ND | | 0.0670 | 0.0100 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Naphthalene | ND | | 0.0670 | 0.00900 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| 2-Methylnaphthalene | ND | | 0.0670 | 0.0160 | mg/Kg | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| | MB | MB | | | | | | | |
| Surrogate | Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 2-Fluorobiphenyl (Surr) | 74 | | 29-120 | | | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Terphenyl-d14 (Surr) | 73 | | 13 - 120 | | | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |
| Nitrobenzene-d5 (Surr) | 75 | | 27 - 120 | | | | 02/19/15 09:50 | 02/20/15 13:46 | 1 |

Lab Sample ID: LCS 490-228293/2-A Matrix: Solid

Analysis Batch: 228595

| | Spike | LCS | LCS | | | %Rec. |
|-----------------------|-------|--------|-------------|--------|------|----------|
| Analyte | Added | Result | Qualifier L | Jnit D | %Rec | Limits |
| Acenaphthylene | 1.67 | 1.289 | n | mg/Kg | 77 | 38 - 120 |
| Anthracene | 1.67 | 1.277 | n | mg/Kg | 77 | 46 - 124 |
| Benzo[a]anthracene | 1.67 | 1.338 | n | ng/Kg | 80 | 45 - 120 |
| Benzo[a]pyrene | 1.67 | 1.285 | п | ng/Kg | 77 | 45 _ 120 |
| Benzo[b]fluoranthene | 1.67 | 1.289 | п | mg/Kg | 77 | 42 - 120 |
| Benzo[g,h,i]perylene | 1.67 | 1.516 | n | mg/Kg | 91 | 38 - 120 |
| Benzo[k]fluoranthene | 1.67 | 1.264 | п | mg/Kg | 76 | 42 - 120 |
| 1-Methylnaphthalene | 1.67 | 1.227 | п | ng/Kg | 74 | 32 _ 120 |
| Pyrene | 1.67 | 1.252 | п | ng/Kg | 75 | 43 - 120 |
| Phenanthrene | 1.67 | 1.269 | n | ng/Kg | 76 | 45 - 120 |
| Chrysene | 1.67 | 1.320 | n | ng/Kg | 79 | 43 - 120 |
| Dibenz(a,h)anthracene | 1.67 | 1.495 | п | ng/Kg | 90 | 32 - 128 |
| Fluoranthene | 1.67 | 1.177 | r | ng/Kg | 71 | 46 - 120 |
| Fluorene | 1.67 | 1.320 | г | mg/Kg | 79 | 42 - 120 |
| Indeno[1,2,3cd]pyrene | 1.67 | 1.453 | г | ng/Kg | 87 | 41 - 121 |
| Naphthalene | 1.67 | 1.239 | r | ng/Kg | 74 | 32 - 120 |
| 2-Methylnaphthaiene | 1.67 | 1.167 | r | mg/Kg | 70 | 28 - 120 |

TestAmerica Nashville

TestAmerica Job ID: 490-72561-1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 228293

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

Lab Sample ID: LCS 490-228293/2-A Matrix: Solid Analysis Batch: 228595

| | LCS | LCS | |
|-------------------------|-----------|-----------|----------|
| Surrogate | %Recovery | Qualifier | Limits |
| 2-Fluorobiphenyl (Surr) | 76 | | 29 - 120 |
| Terphenyl-d14 (Surr) | 79 | | 13 - 120 |
| Nitrobenzene-d5 (Surr) | 73 | | 27 _ 120 |

Lab Sample ID: 490-72554-A-3-B MS Matrix: Solid

| | | | | | | | | | the second se |
|-------------------------|-----------|-----------|--------|--------|-----------|-------|-----|------|---|
| Analysis Batch: 228595 | | | | | | | | | Prep Batch: 228293 |
| | Sample | Sample | Spike | MS | MS | | | | %Rec. |
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits |
| Acenaphthylene | ND | | 1.98 | 1.250 | | mg/Kg | 10 | 63 | 25 - 120 |
| Anthracene | ND | | 1.98 | 1.249 | | mg/Kg | n | 63 | 28 - 125 |
| Benzo[a]anthracene | ND | | 1.98 | 1.310 | | mg/Kg | п | 66 | 23.120 |
| Benzo[a]pyrene | ND | | 1.98 | 1.202 | | mg/Kg | α. | 61 | 15 - 128 |
| Benzo[b]fluoranthene | ND | | 1.98 | 1.280 | | mg/Kg | ü | 65 | 12 - 133 |
| Benzo[g,h,i]perylene | ND | | 1.98 | 1.355 | | mg/Kg | E | 68 | 22 - 120 |
| Benzo[k]fluoranthene | ND | | 1.98 | 1.227 | | mg/Kg | Ħ | 62 | 28 _ 120 |
| 1-Methylnaphthalene | ND | | 1.98 | 1.226 | | mg/Kg | n | 62 | 10 - 120 |
| Pyrene | ND | | 1.98 | 1.257 | | mg/Kg | n | 63 | 20 - 123 |
| Phenanthrene | ND | | 1.98 | 1.270 | | mg/Kg | 5 | 64 | 21 - 122 |
| Chrysene | ND | | 1.98 | 1.287 | | mg/Kg | u | 65 | 20 - 120 |
| Dibenz(a,h)anthracene | ND | | 1.98 | 1.327 | | mg/Kg | u | 67 | 12_128 |
| Fluoranthene | ND | | 1.98 | 1.262 | | mg/Kg | ŭ | 64 | 10_143 |
| Fluorene | ND | | 1.98 | 1.252 | | mg/Kg | 100 | 63 | 20 - 120 |
| Indeno[1,2,3-cd]pyrene | ND | | 1.98 | 1.306 | | mg/Kg | n | 66 | 22 - 121 |
| Naphthalene | ND | | 1.98 | 1.252 | | mg/Kg | | 63 | 10 _ 120 |
| 2-Methylnaphthalene | ND | | 1.98 | 1.219 | | mg/Kg | n | 61 | 13 - 120 |
| | MS | MS | | | | | | | |
| Surrogate | %Recovery | Qualifier | Limits | | | | | | |
| 2-Fluorobiphenyl (Surr) | 57 | | 29-120 | | | | | | |
| | | | | | | | | | |

13.120

27 - 120

Lab Sample ID: 490-72554-A-3-C MSD

Matrix: Solid

Terphenyl-d14 (Surr)

Nitrobenzene-d5 (Surr)

| | | | | | | | | Prep I | Batch: 2 | 28293 |
|--------|--|--|--|---|--|--|--|---|--|---|
| Sample | Sample | Spike | MSD | MSD | | | | %Rec. | | RPD |
| Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit |
| ND | | 1.97 | 1 053 | | mg/Kg | 11 | 53 | 25 - 120 | 17 | 50 |
| ND | | 1.97 | 1.014 | | mg/Kg | 4 | 51 | 28_125 | 21 | 49 |
| ND | | 1.97 | 1.108 | | mg/Kg | ц | 56 | 23 - 120 | 17 | 50 |
| ND | | 1.97 | 1.091 | | mg/Kg | 13 | 55 | 15 - 128 | 10 | 50 |
| ND | | 1.97 | 1.102 | | mg/Kg | 1.4 | 56 | 12 - 133 | 15 | 50 |
| ND | | 1.97 | 1.197 | | mg/Kg | 21 | 61 | 22-120 | 12 | 50 |
| ND | | 1.97 | 1.020 | | mg/Kg | 11 | 52 | 28 - 120 | 18 | 45 |
| ND | | 1.97 | 1.030 | | mg/Kg | 18 | 52 | 10 - 120 | 17 | 50 |
| ND | | 1.97 | 1.059 | | mg/Kg | 澎 | 54 | 20 - 123 | 17 | 50 |
| ND | | 1.97 | 1.030 | | mg/Kg | ** | 52 | 21 - 122 | 21 | 50 |
| ND | | 1.97 | 1.085 | | mg/Kg | ~4 | 55 | 20 - 120 | 17 | 49 |
| | Result ND ND ND ND ND ND ND ND | ND ND ND ND ND ND ND ND | Result Qualifier Added ND 1.97 ND 1.97 | Result Qualifier Added Result ND 1.97 1.053 ND 1.97 1.014 ND 1.97 1.018 ND 1.97 1.091 ND 1.97 1.012 ND 1.97 1.020 ND 1.97 1.020 ND 1.97 1.020 ND 1.97 1.030 ND 1.97 1.030 ND 1.97 1.030 ND 1.97 1.030 ND 1.97 1.030 | Result Qualifier Added Result Qualifier ND 1.97 1.053 ND 1.97 1.014 ND 1.97 1.014 ND 1.97 1.018 ND 1.97 1.091 ND 1.97 1.02 ND 1.97 1.102 ND 1.97 1.020 ND 1.97 1.020 ND 1.97 1.030 ND 1.97 1.030 ND 1.97 1.030 | Result Qualifier Added Result Qualifier Unit ND 1.97 1.053 mg/Kg ND 1.97 1.014 mg/Kg ND 1.97 1.014 mg/Kg ND 1.97 1.014 mg/Kg ND 1.97 1.091 mg/Kg ND 1.97 1.091 mg/Kg ND 1.97 1.102 mg/Kg ND 1.97 1.102 mg/Kg ND 1.97 1.020 mg/Kg ND 1.97 1.020 mg/Kg ND 1.97 1.030 mg/Kg | Result Qualifier Added Result Qualifier Unit D ND 1.97 1.053 mg/Kg I ND 1.97 1.014 mg/Kg I ND 1.97 1.014 mg/Kg I ND 1.97 1.018 mg/Kg I ND 1.97 1.091 mg/Kg I ND 1.97 1.012 mg/Kg I ND 1.97 1.102 mg/Kg I ND 1.97 1.102 mg/Kg I ND 1.97 1.020 mg/Kg I ND 1.97 1.030 mg/Kg I | Result Qualifier Added Result Qualifier Unit D %Rec ND 1.97 1.053 mg/Kg 3 53 ND 1.97 1.014 mg/Kg 53 ND 1.97 1.014 mg/Kg 53 ND 1.97 1.014 mg/Kg 55 ND 1.97 1.091 mg/Kg 55 ND 1.97 1.020 mg/Kg 56 ND 1.97 1.102 mg/Kg 56 ND 1.97 1.102 mg/Kg 56 ND 1.97 1.102 mg/Kg 55 ND 1.97 1.020 mg/Kg 52 ND 1.97 1.030 mg/Kg 52 ND 1.97 1.059 mg/Kg 54 ND 1.97 1.030 mg/Kg 54 ND 1.97 1.030 mg/Kg 54 | Sample Sample Spike MSD MSD D %Rec. Result Qualifier Added Result Qualifier Unit D %Rec. Limits ND 1.97 1.053 mg/Kg 105 25.120 ND 1.97 1.014 mg/Kg 53 25.120 ND 1.97 1.014 mg/Kg 54 28.125 ND 1.97 1.018 mg/Kg 55 23.120 ND 1.97 1.012 mg/Kg 55 15.128 ND 1.97 1.02 mg/Kg 56 12.133 ND 1.97 1.102 mg/Kg 56 12.133 ND 1.97 1.020 mg/Kg 52 28.120 ND 1.97 1.020 mg/Kg 52 28.120 ND 1.97 1.030 mg/Kg 52 10.120 ND 1.97 1.059 mg/Kg 52 <td< td=""><td>Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD ND 1.97 1.053 mg/Kg 1 53 25 - 120 17 ND 1.97 1.014 mg/Kg 1 53 25 - 120 17 ND 1.97 1.014 mg/Kg 1 56 23 - 120 17 ND 1.97 1.018 mg/Kg 1 56 23 - 120 17 ND 1.97 1.091 mg/Kg 15 15 - 128 10 ND 1.97 1.091 mg/Kg 16 12 - 133 15 ND 1.97 1.102 mg/Kg 16 22 - 120 12 ND 1.97 1.020 mg/Kg 15 28 - 120 18 ND 1.97 1.030 mg/Kg 52 10 - 120 17 ND 1.97 1.030 mg/Kg 54 20 - 123 17<!--</td--></td></td<> | Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD ND 1.97 1.053 mg/Kg 1 53 25 - 120 17 ND 1.97 1.014 mg/Kg 1 53 25 - 120 17 ND 1.97 1.014 mg/Kg 1 56 23 - 120 17 ND 1.97 1.018 mg/Kg 1 56 23 - 120 17 ND 1.97 1.091 mg/Kg 15 15 - 128 10 ND 1.97 1.091 mg/Kg 16 12 - 133 15 ND 1.97 1.102 mg/Kg 16 22 - 120 12 ND 1.97 1.020 mg/Kg 15 28 - 120 18 ND 1.97 1.030 mg/Kg 52 10 - 120 17 ND 1.97 1.030 mg/Kg 54 20 - 123 17 </td |

TestAmerica Nashville

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 228293

Client Sample ID: Matrix Spike

Prep Type: Total/NA

7

Client Sample ID: Matrix Spike Duplicate

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

| ab Sample ID: 490-72554 | -A-3-C MSD | | | | | CI | ient Sa | mple ID |): Matrix Sp | oike Dup | licate | |
|-------------------------|---------------|-----------|----------|--------|-----------|-------|---------|---------|--------------|----------|--------|---|
| Matrix: Solid | | | | | | | | | Prep T | ype: Tot | tal/NA | |
| Analysis Batch: 228595 | | | | | | | | | Prep E | Batch: 2 | 28293 | |
| | Sample | Sample | Spike | MSD | MSD | | | | %Rec. | | RPD | |
| Analyte | Result | Qualifier | Added | Result | Qualifier | Unit | D | %Rec | Limits | RPD | Limit | |
| Dibenz(a,h)anthracene | ND | | 1.97 | 1.192 | | mg/Kg | 2. | 60 | 12 - 128 | 11 | 50 | |
| luoranthene | ND | | 1.97 | 1.055 | | mg/Kg | | 54 | 10_143 | 18 | 50 | |
| luorene | ND | | 1.97 | 0.9818 | | mg/Kg | | 50 | 20.120 | 24 | 50 | |
| ndeno[1,2,3-cd]pyrene | ND | | 1.97 | 1.199 | | mg/Kg | | 61 | 22 - 121 | 8 | 50 | 5 |
| Naphthalene | ND | | 1.97 | 1.033 | | mg/Kg | n | 52 | 10.120 | 19 | 50 | |
| 2-Methylnaphthalene | ND | | 1.97 | 1.013 | | mg/Kg | 22 | 51 | 13.120 | 18 | 50 | |
| | MSD | MSD | | | | | | | | | | |
| Surrogate | %Recovery | Qualifier | Limits | | | | | | | | | |
| 2-Fluorobiphenyl (Surr) | 47 | | 29 - 120 | | | | | | | | | |
| Terphenyl-d14 (Surr) | 48 | | 13 - 120 | | | | | | | | | |
| Nitrobenzene-#5 (Surr) | 52 | | 27 _ 120 | | | | | | | | | |
| ethod: Moisture - Per | cent Moisture | | | | | | | | | | | |

Method: Moisture - Percent Moisture

| Lab Sample ID: 490-72524 | B-1 D U | | | | | | Client Sample ID: Dup | |
|--------------------------|----------------|-----------|--------|-----------|------|---|-------------------------|--------|
| Matrix: Solid | | | | | | | Prep Type: Tot | tal/NA |
| Analysis Batch: 228012 | | | | | | | | |
| | Sample | Sample | DU | DU | | | | RPD |
| Analyte | Result | Qualifier | Result | Qualifier | Unit | D | RPD | Limit |
| Percent Solids | 79 | | 82 | | % | | 4 | 20 |
| Lab Sample ID: 490-72561 | 1 DU | | | | | | Client Sample ID: 563 [| Dahlia |
| Matrix: Soil | | | | | | | Prep Type: Tot | tal/NA |
| Analysis Batch: 228349 | | | | | | | | |
| | Sample | Sample | DU | DU | | | | RPD |
| Analyte | Result | Qualifier | Result | Qualifier | Unit | D | RPD | Limit |
| Percent Solids | 93 | | 93 | | % | | 0.2 | 20 |

QC Association Summary

Client: Small Business Group Inc. Project/Site: Laurel Bay Housing Project TestAmerica Job ID: 490-72561-1

GC/MS VOA

Prep Batch: 227860

| GC/MS VOA | | | | | |
|------------------------|------------------------|-----------|--------|--------|------------|
| Prep Batch: 227860 | | | | | |
| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
| 490-72561-1 | 563 Dahlia | Total/NA | Soil | 5035 | |
| 49072561-2 | 659 Camellia | Total/NA | Soil | 5035 | |
| Analysis Batch: 228630 |) | | | | |
| Lab Sample ID | ClientSample ID | Prep Type | Matrix | Method | Prep Batch |
| 490-72561-1 | 563 Dahlia | Total/NA | Soil | 8260B | 227860 |
| LCS 490-228630/4 | Lab Control Sample | Total/NA | Solid | 8260B | |
| LCSD 490-228630/10 | Lab Control Sample Dup | Total/NA | Solid | 8260B | |
| MB 490-228630/9 | Method Blank | Total/NA | Solid | 8260B | |
| Prep Batch: 228919 | | | | | |
| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
| 490-72829 A-4-E MS | Matrix Spike | Total/NA | Solid | 5030B | |
| 490-72829-A-4-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 5030B | |
| Analysis Batch: 22914 | 7 | | | | |
| LabSampleID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
| 490-72561-2 | 659 Camellia | Total/NA | Soil | 8260B | 227860 |
| 490-72829-A-4-E MS | Matrix Spike | Total/NA | Solid | 8260B | 228919 |
| 49072829A-4-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8260B | 228919 |
| LCS 490-229147/3 | Lab Control Sample | Total/NA | Solid | 8260B | |
| LCS 490-229147/6 | Lab Control Sample | Total/NA | Solid | 8260B | |
| LCSD 490-229147/4 | Lab Control Sample Dup | Total/NA | Solid | 8260B | |
| MB 490-229147/9 | Method Blank | Total/NA | Solid | 8260B | |
| GC/MS Semi VOA | | | | | |
| Prep Batch: 228293 | | | | | |
| Lab Sample ID | Client Sample ID | Ргер Туре | Matrix | Method | Prep Batch |
| 49072554A-3-B MS | Matrix Spike | Tota/NA | Solid | 3550C | |
| 490-72554-A-3-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 3550C | |
| 490-72561-1 | 563 Dahlia | Total/NA | Soil | 3550C | |
| 490-72561-2 | 659 Camellia | Total/NA | Soil | 3550C | |
| LCS 490-228293/2-A | Lab Control Sample | Total/NA | Solid | 3550C | |
| MB 490-228293/1-A | Method Blank | Total/NA | Solid | 3550C | |
| Analysis Batch: 22859 | 2 | | | | |
| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
| 490-72561-1 | 563 Dahlia | Total/NA | Soil | 8270D | 228293 |
| 490-72561-2 | 659 Camellia | Total/NA | Soil | 8270D | 228293 |
| Analysis Batch: 22859 | 5 | | | | |
| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
| 490-72554-A-3-B MS | Matrix Spike | Total/NA | Solid | 8270D | 228293 |
| 49072554 A 3-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8270D | 228293 |
| LCS 490-228293/2 A | Lab Control Sample | Total/NA | Solid | 8270D | 228293 |
| MB 490-228293/1-A | Method Blank | Tota!/NA | Solid | 8270D | 228293 |

QC Association Summary

Client: Small Business Group Inc. Project/Site: Laurel Bay Housing Project TestAmerica Job ID: 490-72561-1

General Chemistry

Analysis Batch: 228012

| ab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|----------|------------|
| 90-72524-B-1 DU | Duplicate | Total/NA | Solid | Moisture | |
| 190-72526-A 1 MS | Matrix Spike | Total/NA | Solid | Moisture | |
| 490-72526-A-1 MSD | Matrix Spike Duplicate | Total/NA | Solid | Moisture | |
| 190-72561-2 | 659 Camellia | Total/NA | Soil | Moisture | |
| nalysis Batch: 22834 | 9 | | | | |
| Lab Sample ID | Client Sample ID | Ргер Туре | Matrix | Method | Prep Batch |
| 490-72561-1 | 563 Dahlia | Total/NA | Soil | Moisture | |
| 490-72561-1 DU | 563 Dahlia | Tota/NA | Soil | Moisture | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

TestAmerica Job ID: 490-72561-1

Lab Sample ID: 490-72561-2

Matrix: Soil

Percent Solids: 73.2

Client Sample ID: 563 Dahlia

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

Date Collected: 02/10/15 14:15 Date Received: 02/14/15 08:30

| Date Received | 02/14/15 08:3 | 0 | | | | | | | Percent | Solids: 92.8 |
|---------------|---------------|----------|-----|--------|---------|---------|--------|----------------|---------|--------------|
| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
| Prep Type | Туре | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Prep | 5035 | | | 4.954 g | 5.0 mL | 227860 | 02/10/15 14:15 | JLP | TAL NSH |
| Total/NA | Analysis | 8260B | | . * | 4.954 g | 5.0 mL | 228630 | 02/20/15 17:10 | NC | TAL NSH |
| Total/NA | Prep | 3550C | | | 30.86 g | 1.00mL | 228293 | 02/19/15 09:50 | LDC | TALNSH |
| Tota /NA | Analysis | 8270D | | 1 | 30.86 g | 1.00 mL | 228592 | 02/20/15 21:44 | ккн | TALNSH |
| Tota /NA | Analysis | Moisture | | 1 | | | 228349 | 02/19/15 13:03 | AJK | TAL NSH |

Client Sample ID: 659 Camellia

Date Collected: 02/11/15 12:15 Date Received: 02/14/15 08:30

| | Batch | Batch | | Dil | Initial | Final | Batch | Prepared | | |
|-----------|----------|----------|-----|--------|---------|---------|--------|----------------|---------|---------|
| Prep Type | Туре | Method | Run | Factor | Amount | Amount | Number | or Analyzed | Analyst | Lab |
| Total/NA | Prep | 5035 | | | 4.805 g | 5.0 mL | 227860 | 02/11/15 12:15 | JLP | TALNSH |
| Total/NA | Analysis | 8260B | | | 4.805 g | 5.0 mL | 229147 | 02/23/15 14:23 | ККК | TAL NSH |
| Total/NA | Prep | 3550C | | | 30.43 g | 1.00 mL | 228293 | 02/19/15 09:50 | LDC | TALNSH |
| Total/NA | Analysis | 8270D | | 1 | 30.43 g | 1.00mL | 228592 | 02/20/15 22:06 | ккн | TAL NSH |
| Total/NA | Analysis | Moisture | | S4 | | | 228012 | 02/17/15 14:55 | BGD | TAL NSH |

Laboratory References:

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

Lab Sample ID: 490-72561-1 Matrix: Soil

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

Protocol References:

EPA= US Environmental Protection Agency

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)7260177

Certification Summary

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

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

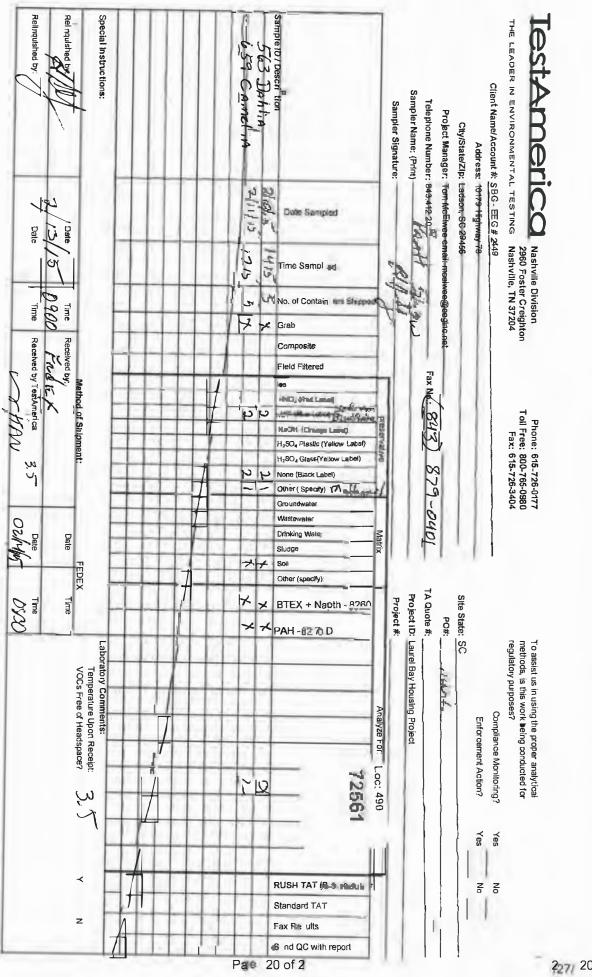
| Authority | Program | | EPA Region | Certification ID | Expiration Date |
|-----------------|---------------------------------|--------|------------|------------------|-----------------|
| South Carolina | State Prog | gram | 4 | 84009 (001) | 02-28-15 * |
| | | | | | |
| 0, | are included in this report, bu | | , , , | | |
| Analysis Method | Prep Method | Matrix | Analyt | e | |
| 5 , | , . | | Analyt | | |

TestAmerica Job ID: 490-72561-1

* Certification renewal pending - certification considered valid.

| TestAmerica THE LEADER IN ENVIRONMENTAL TESTING Nashville, TN COOLER RECEIPT FORM 490-72561 Chain of | |
|--|----------|
| Cooler Received/Opened On 2/14/2015 @ 0830 | outrody |
| 1. Tracking # 0006 (last 4 digits, FedEx) | |
| Courier: Fed-ex IR Gun ID 97310166 | |
| 2. Temperature of rep. sample or temp blank when opened: 35 Degrees Celsius | |
| 3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES | NO. NA |
| | NONA |
| If yes, how many and where: | |
| 5. Were the seals intact, signed, and dated correctly? | NONA |
| 6. Were custody papers inside cooler? | NONA |
| I certing that I opened the cooler and answered questions 1-6 Initial | (a) |
| 7. Were custody seals on containers: YES NO and Intact YES | NO.NA |
| Were these signed and dated correctly? YES | .NO.(.NA |
| 8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Othe | r None |
| 9. Cooling process: Ice lice lice-pack lice (direct contact) Dry ice Other | er None |
| 10. Did all containers arrive in good condition (unbroken)? | .NONA |
| 11. Were all container labels complete (#, date, signed, pres., etc)? | NONA |
| 12. Did all container labels and tags agree with custody papers? | NONA |
| 13a. Were VOA vials received? | NONA |
| b. Was there any observable headspace present in any VOA vial? YES | .NO(NA |
| 14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # | |
| I certify that I unloaded the cooler and answered guestions 7-14 (intial) | \sim |
| 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES. I | NQ.NA |
| b. Did the bottle labels indicate that the correct preservatives were used YES. | NONA |
| 16. Was residual chlorine present? YES | .NpNA |
| I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) | A |
| 17. Were custody papers properly filled out (ink, signed, etc)? | NONA |
| 18. Did you sign the custody papers in the appropriate place? | .)NONA |
| 19. Were correct containers used for the analysis requested? | .)NONA |
| 20. Was sufficient amount of sample sent In each container? | .)NONA |
| I certify that I entered this project into LIMS and answered guestions 17-20 (intial) | \sim |
| I certify that I attached a label with the unique LIMS number to each container (intial) | Δ |
| 21. Were there Non-Conformance issues at login? YESNO Was a NCM generated? YESNO# | |

5



Client: Small Business Group Inc.

Login Number: 72561 List Number: 1

Creator: Gambill, Shane

| Question | Answer | Comment |
|--|--------|---------|
| Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td> | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 3.5 |
| 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: 490-72561-1

List Source: TestAmerica Nashville

ATTACHMENT A

| NON-HAZARDOUS MANIFEST | 1. Generator's | US EPA ID No. | Manifest Doc | No. | 2. Page 1 d | | | | |
|---|----------------------|---------------------|--|---------------|---|---|----------------------|----------------|-------|
| Generator's Mailing Address: MCAS BEAUFORT AUREL BAY HOUSING BEAUFORT, SC 29904 | 1 | Generator's Site A | ddress (If different than r | mailing): | | t Number MNA | 01519 Generator's | | |
| | 879-0411 | | | | - | | | | _ |
| Transporter 1 Company Name | ×2 1 | 6. 8. | US EPA ID Number | | C. State Transporter's ID D. Transporter's Phone | | | | |
| | | | | | | |) | | |
| . Designated Facility Name and Si HCKORY HILL LANDFILL 621 LOW COUNTRY DRIVE RIDGELAND, SC 29936 | te A d dress | 10. | 0. US EPA ID Number | | | F. Transporter's Phone G. State Facility ID H. State Facility Phone 843-9 | | | |
| 1. Description of Waste Materials | | | | Containers | 13. Total | 14. Unit | 1. Mi | sc. Comment | ts |
| . HEATING OIL TANK FILLED | | | No. | Туре | Quantity | Wt./Vol. | F7~~~ | ~ . | _ |
| 1 | | | | di. | 5.49 | 1.11 | 155 | | _ |
| WM Pr | ofile # 102655 | 50 | 1000 | | | | | _ | _ |
| WM Profile # | | _ | - | 1. | | | _ | | |
| . wivi Profile # | | | | - | - | | | | |
| WM Profile # | | | 1.2 | | | | - | _ | _ |
| | | | | | | 12. | | | |
| WM Profile | | | 1 | | | N | | - | |
| Additional Descriptions for Ma | terials Listed Abov | e | K. Dispo | osal Location | | | | | |
| | | | Cell | Į | | | Level | | _ |
| 5. Special Handling Instructions a CIST'S FREM | 1 | mation | Grid dinal | 2) (| 563 D | ALIA 3) | 659 (|) _ 1403-)c | 11: |
| Purchase Order # | | EMER | GENCY CONTACT / P | HONE NO .: | | 1 | 0.0 | | - |
| .6. GENERATOR'S CERTIFICATE: hereby certify that the above-des | cribed materials ar | e not hazardous was | tes as defined by 40 | CFR Part 261 | or any applic | able state lav | v, have beer | n fully and | d |
| ccurately described, classified and Printed Name | l packaged and are | | for transportation acc e "On behalf of" | cording to ap | plicable regu | lations. | Month | Day | T - Y |
| in it is to | to the N. | ` <u> </u> | | · | 1.414 5 1.46 | | -, | | 1. |
| 7. Transporter 1 Acknowledgeme | nt of Receipt of Ma | | | | | _ | | | |
| Printed Name PRAH. | ShAN) | Signature | e \$1/1 | 1 | | | Month | Day | Ye |
| 18. Transporter 2 Acknowledgeme | ent of Receipt of Ma | aterials | 1.1 | | | | | | - |
| Printed Name | | Signatur | e t | | | | Month | Day | Y |
| 19. Certificate of Final Treatment/ | ed treatment facili | | | above-descr | ibed waste w | vas managed i | n complianc | e with all | 1 |
| certify, on behalf of the above list applicable laws, regulations, permi | | | | | | | | | |
| | | | materials covered by | this manife | st. | | Month | Day | TY |

Appendix C Regulatory Correspondence





August 3, 2016

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

RE: No Further Action Laurel Bay Underground Storage Tank Assessment Reports Dated July 2015, November 2015

Dear Mr. Drawdy:

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

The Department has reviewed the referenced assessment reports and agrees there is no indication of soil or groundwater contamination on these properties and therefore no further investigation is required at this time.

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

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

Sincerely,

XIRS

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

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

Attachment to: Petrus to Drawdy Subject: No Further Action Dated August 3, 2016

Laurel Bay Underground Assessment Reports for (28 addresses/29 tanks)

| 309 Ash | 1001 Bobwhite |
|--------------------|----------------------|
| 477 Dogwood Tank 2 | 1020 Foxglove |
| 563 Dahlia | 1063 Gardenia |
| 659 Camellia | 1065 Gardenia Tank 2 |
| 1213 Cardinal | 1100 Iris Tank 3* |
| 114 Banyan | 1139 Iris |
| 158 Cypress | 1141 Iris Tank 2 |
| 459 Elderberry | 1174 Bobwhite |
| 611 Dahlia | 1184 Bobwhite Tank 1 |
| 656 Camellia | 1184 Bobwhite Tank 2 |
| 671 Camellia | 1220 Cardinal |
| 678 Camellia | 1253 Dove |
| 724 Bluebell | 1332 Albatross |
| 732 Bluebell | 1387 Dove |
| 934 Albacore | |