SUMMARY REPORT
164 ALBATROSS DRIVE (FORMERLY 1313 ALBATROSS 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

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Appendices

List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CTO	Contract Task Order
COPC	constituents of potential concern
ft	feet
GPR	ground penetrating radar
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
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, long-term monitoring (LTM) was approved by the South Carolina Department of Health and Environmental Control (SCDHEC) for 164 Albatross Drive (Formerly 1313 Albatross 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.

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. It should be noted that the house at the subject property has been demolished and this property is an empty lot. There are no current plans for construction in this area.

The results of a historical document review indicated that a UST removal contractor investigated 3 properties for the presence of USTs and found no evidence that any former USTs remained and it was likely that the USTs were removed prior to 2007. The LBMH UST removal and assessment process is described below in Section 1.2. The LBMH multi-media investigation selection process tree, used to evaluate the environmental impact of USTs for most sites at LBMH, is presented in Appendix A. It should be noted that because soil and groundwater were not sampled following the UST removal and analytical results were not available for evaluation, the subject property of this report did not follow the typical multi-media investigation selection process presented in Appendix A.

1.2 UST Assessment Process

As stated above, the assessment process at this property did not follow the typical process presented in Appendix A. Instead the process consisted of combined soil and initial groundwater assessment (IGWA) investigations conducted adjacent to the suspected former UST locations at the 3 properties. Soil and groundwater samples collected were analyzed for a predetermined list of 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:

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

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). 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 IGWA sampling were used to determine the presence or absence of the aforementioned COPCs in groundwater and identify whether former UST locations required additional delineation of COPCs in groundwater. Groundwater analytical results were compared to SCDHEC RBSLs for groundwater. The groundwater analytical results were also compared to the site specific groundwater vapor intrusion screening levels (VISLs) to evaluate the potential for vapor intrusion and the necessity for an investigation associated with this media.

2.0 SAMPLING ACTIVITIES AND RESULTS

The following section presents the sampling activities and associated results for 164 Albatross Drive (Formerly 1313 Albatross Drive). The sampling activities at 164 Albatross Drive (Formerly 1313 Albatross Drive) comprised a soil investigation and IGWA sampling. Details regarding the soil and IGWA sampling activities at this site are provided in the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV,

2018). The laboratory reports that include the pertinent soil and IGWA analytical results for this site are presented in Appendices B and C, respectively.

2.1 Soil Sampling

On September 18, 2017, a single soil boring was advanced near the suspected former UST location at 164 Albatross Drive (Formerly 1313 Albatross Drive). The soil boring location is indicated on Figure 39 of the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018) and was collocated with the temporary monitoring well discussed in Section 2.3. A single soil sample was collected at a depth of approximately 6 feet (ft) below ground surface (bgs). The soil sample was shipped to an offsite laboratory for analysis of the petroleum COPCs. Soil sampling was performed in accordance with the *UFP SAP for Soil and Groundwater Media* (CDM-AECOM Multimedia JV, 2017) and the applicable South Carolina regulation R.61-92, Part 280 (SCDHEC, 2017) and assessment guidelines. Field forms are provided in the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018).

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 as Appendix B.

The soil results collected from 164 Albatross Drive (Formerly 1313 Albatross Drive) were less than the SCDHEC RBSLs (Table 1), which indicated that the soil was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

2.3 Groundwater Sampling

On September 18, 2017, the soil boring was converted into a temporary monitoring well and then sampled at 164 Albatross Drive (Formerly 1313 Albatross Drive), 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 near the suspected location of the former heating oil UST. On September 18 and 19, 2017, three additional temporary monitoring wells were also installed and then sampled at 164 Albatross Drive (Formerly 1313 Albatross Drive). Further

details are provided in the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018).

The sampling strategy for this phase of the investigation required a one-time sampling event of the temporarily installed monitoring wells. 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 wells were abandoned in accordance with the South Carolina Well Standards and Regulations R.61-71 (SCDHEC, 2016). Field forms are provided in the *Soil and Initial Groundwater Investigation Report – September and October 2017, Revision 1* (CDM-AECOM Multimedia JV, 2018).

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 reports are included in Appendix C.

The groundwater results collected from 164 Albatross Drive (Formerly 1313 Albatross Drive) were less than the SCDHEC RBSLs and the site-specific groundwater VISLs (Table 2), which indicated that the groundwater was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

3.0 PROPERTY STATUS

The house at 164 Albatross Drive (Formerly 1313 Albatross Drive) 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 soil and groundwater, SCDHEC made the determination that NFA was required for 164 Albatross Drive (Formerly 1313 Albatross Drive). The NFA determination for soil and groundwater was obtained in a letter dated March 29, 2018. SCDHEC's NFA letter is provided in Appendix D.

4.0 REFERENCES

CDM-AECOM Multimedia JV, 2017. *Uniform Federal Policy Sampling and Analysis Plan for Soil and Groundwater Media for Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, July 2017.

CDM-AECOM Multimedia JV, 2018. *Soil and Initial Groundwater Investigation Report – September and October 2017 for Laurel Bay Military Housing Area, Revision 1, Multiple Properties, Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, February 2018.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2013. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division*, Revision 2.0*, April 2013.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2015. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division*, Revision 3.0*, May 2015.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2016. *Quality Assurance Program Plan for the Underground Storage Tank Management* Division*, Revision 3.1*, February 2016.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2017. *R.61-92, Part 280, Underground Storage Tank Control Regulations*, March 2017.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2018. *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service*, March 2018.

South Carolina Department of Health and Environmental Control Bureau of Water, 2016. *R.61-71, Well Standards*, June 2016.

Tables

Table 1
Laboratory Analytical Results - Soil
164 Albatross Drive (Formerly 1313 Albatross Drive)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs [(1)]	Results Sample Collected 09/18/17
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 Analyzed by EPA Method 8270D (mg/kg)		
Benzo(a)anthracene	0.066	ND
Benzo(b)fluoranthene	0.066	**0.0017**
Benzo(k)fluoranthene	0.066	ND
Chrysene	0.066	ND
Dibenz(a,h)anthracene	0.066	ND

Notes:

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

Bold font indicates the analyte was detected.

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

EPA - United States Environmental Protection Agency

mg/kg - milligrams per kilogram

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

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

Table 2
Laboratory Analytical Results - Groundwater
164 Albatross Drive (Formerly 1313 Albatross Drive)
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs [1]	Site-Specific Groundwater VISLs (µg/L)[2]	Results Samples Collected 09/19/17			
			TW01	TW02	TW03	TW04
Volatile Organic Compounds Analyzed by EPA Method 8260B (µg/L)						
Benzene	5	16.24	ND	ND	ND	ND
Ethylbenzene	700	45.95	ND	ND	ND	ND
Naphthalene	25	29.33	ND	ND	ND	ND
Toluene	1000	105,445	ND	ND	ND	ND
Xylenes, Total	10,000	2,133	ND	ND	ND	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270D (µg/L)						
Benzo(a)anthracene	10	NA	ND	ND	ND	ND
Benzo(b)fluoranthene	10	NA	ND	ND	ND	ND
Benzo(k)fluoranthene	10	NA	ND	ND	ND	ND
Chrysene	10	NA	ND	ND	ND	ND
Dibenz(a,h)anthracene	10	NA	ND	ND	ND	ND

Notes:

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

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

Bold font indicates the analyte was detected.
Bold font and shading indicates the concentration exceeds the SCDHEC RBSL and/or the Site-Specific Groundwater VISL.
EPA - United States Environmental Protection Agency
JE - Johnson & Ettinger
NA - not applicable
ND - not detected at the reporting limit (or method detection limit if shown on the laboratory report). The groundwater laboratory report is provided in Appendix C.
RBSL - Risk-Based Screening Level
SCDHEC - South Carolina Department Of Health and Environmental Control
µg/L - micrograms per liter
VISL - Vapor Intrusion Screening Level

Appendix A
Multi-Media Selection Process for LBMH

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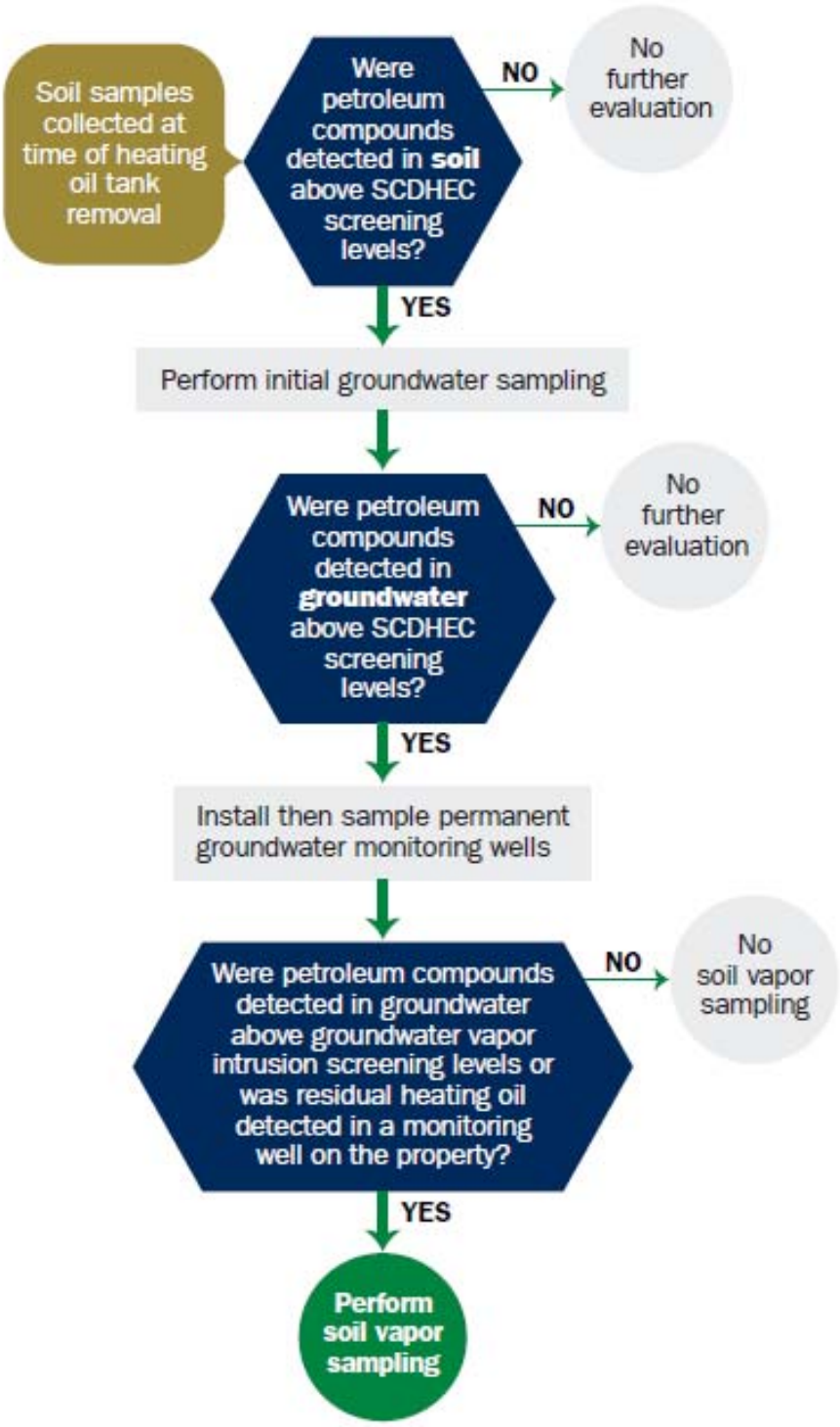

Appendix A - Multi-Media Selection Process for LBMH

Appendix B
Laboratory Analytical Report - Soil

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Volatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI21025-003**
Description: **BEALB1313SB0106SO20170918**
Matrix: **Solid**
Date Sampled: **09/18/2017 0155**
% Solids: **86.4** **09/21/2017 2237**
Date Received: **09/21/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5035	8260B	1	09/27/2017 1632	TML		52617

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260B	4.7	U	5.9	4.7	2.3	ug/kg	1
Ethylbenzene	100-41-4	8260B	4.7	U	5.9	4.7	2.3	ug/kg	1
Naphthalene	91-20-3	8260B	4.7	U	5.9	4.7	2.3	ug/kg	1
Toluene	108-88-3	8260B	4.7	U	5.9	4.7	2.3	ug/kg	1
Xylenes (total)	1330-20-7	8260B	9.6	U	12	9.6	4.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	79-119
Dibromofluoromethane		101	78-119
1,2-Dichloroethane-d4		95	71-136
Toluene-d8		101	85-116

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI21025-003**
Description: **BEALB1313SB0106SO20170918**
Matrix: **Solid**
Date Sampled: **09/18/2017 0155**
% Solids: **86.4** **09/21/2017 2237**
Date Received: **09/21/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D (SIM)	1	10/02/2017 1415	JCG	09/21/2017 2154	52123

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D (SIM)	2.3	U	3.8	2.3	0.68	ug/kg	1
Benzo(b)fluoranthene	**205-99-2**	**8270D (SIM)**	**1.7**	**J**	**3.8**	1.2	**0.57**	**ug/kg**	**1**
Benzo(k)fluoranthene	207-08-9	8270D (SIM)	1.2	U	3.8	1.2	0.55	ug/kg	1
Chrysene	218-01-9	8270D (SIM)	1.2	U	3.8	1.2	0.52	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D (SIM)	2.3	U	3.8	2.3	0.59	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Fluoranthene-d10		75	37-135
2-Methylnaphthalene-d10		67	17-119

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Appendix C
Laboratory Analytical Reports - Groundwater

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Volatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-008**
Description: **BEALB1313TW01WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1010**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	09/22/2017 1207	BWS		52190

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	85-114
Dibromofluoromethane		86	80-119
1,2-Dichloroethane-d4		92	81-118
Toluene-d8		89	89-112

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-008**
Description: **BEALB1313TW01WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1010**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2017 1332	CMP2	09/24/2017 1331	52281

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Chrysene	218-01-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Nitrobenzene-d5		54	44-120
2-Fluorobiphenyl		56	44-119
Terphenyl-d14		74	50-134

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-010**
Description: **BEALB1313TW02WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1215**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	09/22/2017 1253	BWS		52190

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	85-114
Dibromofluoromethane		86	80-119
1,2-Dichloroethane-d4		94	81-118
Toluene-d8		90	89-112

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-010**
Description: **BEALB1313TW02WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1215**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2017 1421	CMP2	09/24/2017 1331	52281

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Chrysene	218-01-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Nitrobenzene-d5		52	44-120
2-Fluorobiphenyl		56	44-119
Terphenyl-d14		67	50-134

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-005**
Description: **BEALB1313TW03WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1000**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	09/22/2017 0641	ECP		52152

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	85-114
Dibromofluoromethane		89	80-119
1,2-Dichloroethane-d4		96	81-118
Toluene-d8		93	89-112

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-005**
Description: **BEALB1313TW03WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1000**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2017 1242	CMP2	09/24/2017 1331	52281

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Chrysene	218-01-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Nitrobenzene-d5		58	44-120
2-Fluorobiphenyl		61	44-119
Terphenyl-d14		82	50-134

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-007**
Description: **BEALB1313TW04WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1005**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	09/22/2017 0704	ECP		52152

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzene	71-43-2	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Toluene	108-88-3	8260B	0.80	U	1.0	0.80	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.80	U	1.0	0.80	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	85-114
Dibromofluoromethane		85	80-119
1,2-Dichloroethane-d4		94	81-118
Toluene-d8		90	89-112

LOQ = Limit of Quantitation
U = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
LOD = Limit of Detection
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: **AECOM - Resolution Consultants**
Laboratory ID: **SI20018-007**
Description: **BEALB1313TW04WG20170919**
Matrix: **Aqueous**
Date Sampled: **09/19/2017 1005**
Date Received: **09/20/2017**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2017 1307	CMP2	09/24/2017 1331	52281

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	LOD	DL	Units	Run
Benzo(a)anthracene	56-55-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Chrysene	218-01-9	8270D	0.10	U	0.20	0.10	0.040	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	0.10	U	0.20	0.10	0.040	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Nitrobenzene-d5		62	44-120
2-Fluorobiphenyl		65	44-119
Terphenyl-d14		71	50-134

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
U = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis	LOD = Limit of Detection		S = MS/MSD failure

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Appendix D
Regulatory Correspondence

CDM - AECOM
Multimedia Joint Venture

dhec
Healthy People. Healthy Communities.

March 29, 2018

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

RE: Approved Response to Comments
Draft Final Revision 1 Soil and Initial Groundwater Investigation Report
September and October 2017
Laurel Bay Military Housing Area

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (DHEC) received the above referenced Response to Comments and change pages on February 27, 2018. 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).

DHEC has reviewed the responses and change pages. Based on this review, DHEC has not generated any additional comments. The Department agrees there is no indication of soil or groundwater contamination on 36 of the 37 properties and therefore no further investigation is required at this time on the 36 properties. (See attached list). Please note that DHEC's decision is based on information provided by the Marine Corps Air Station (MCAS) to date. Any information found to be contradictory to this decision may require additional action. Furthermore, DHEC retains the right to request further investigation if deemed necessary. If you have any questions, please contact me at petruslb@dhec.sc.gov or 803-898-0294.

Sincerely,

Laurel Petrus
Department of Defense Corrective Action Section

Cc: EQC Region 8
Shawn Dolan, Resolution Consultants
Bryan Beck, NAVFAC MIDLANT

Attachment

March 22, 2018

Draft Final Revision 1 Soil and Initial Groundwater Investigation Report
September and October 2017
Laurel Bay Military Housing Area

Properties recommended for NFA:

117 Banyan Drive	215 Balsam Street	521 Laurel Bay Blvd
138 Laurel Bay Blvd	217 Balsam Street	606 Dahlia Drive
146 Laurel Bay Blvd	266 Beech Street	620 Dahlia Drive
147 Laurel Bay Blvd	272 Birch Drive	680 Camelia Drive
149 Laurel Bay Blvd	307 Ash Street	685 Camelia Drive
157 Cypress Street	327 Ash Street	753 Althea Street
204 Balsam Street	365 Aspen Street	918 Barracuda Drive
205 Balsam Street	374 Aspen Street	932 Albacore Street
206 Balsam Street	393 Acorn Drive	942 Albacore Street
207 Balsam Street	406 Elderberry Drive	1203 Cardinal Lane
209 Balsam Street	438 Elderberry Drive	1229 Dove Lane
213 Balsam Street	461 Elderberry Drive	1313 Albatross Drive