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**Block E Underground Storage Tank  
Closure Report  
Lockheed Martin Middle River Complex  
2323 Eastern Boulevard  
Middle River, Maryland**

Facility ID – 14810

Case # 14-0076BA

Prepared for:

Lockheed Martin Corporation

Prepared by:

Tetra Tech, Inc.

January 2014

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Regional Manager

Christopher Pike  
Project Manager

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Section

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# ACRONYMS

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# Section 1 Narrative

On behalf of Lockheed Martin Corporation (Lockheed Martin), Tetra Tech Inc. (Tetra Tech) has

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contents were then disposed of off-site. All product was removed from both USTs and placed in drums; some water was added to the tanks to help remove solids from the tank bottoms. The contents were then sampled for appropriate disposal parameters. Based on these data, the contents of UST 1 were appropriately disposed of as non-hazardous waste and the contents of UST 2 were disposed of as hazardous waste.

On July 31, 2013, Elite Environme





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## Section 2

# Soil and Groundwater Sampling

This section describes soil and groundwater samples collected for chemical analysis during underground storage tank (UST) removal. Appendix

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Additional soil and groundwater delineation samples were collected around both tanks on October 1–10, 2013. The sampling activities, including sample locations, analytical parameters, and results are presented in Appendix F.

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## Section 3

# Analytical Results

The analytical results for the water and soil samples are in Appendix E. Table 3-1 presents positive detections in the two soil samples (UST-1-OH-1 and UST-2-OH-2) collected after the USTs had been removed and before additional soil removal on August 26. The two soil samples were compared to Maryland Department of the Environment (MDE) soil standards (MDE, 2008). No exceedances of residential or non-residential screening criteria were detected in the soil sample collected beneath UST 1. Toxicity characteristic leaching procedure (TCLP) trichloroethene (TCE), detected at 1,400 micrograms per liter ( $\mu\text{g/L}$ ), was the only analyte detected above its screening criterion (500  $\mu\text{g/L}$ ) at UST 2.

Table 3-2 presents positive detections for the two water samples (UST-MB-1 and UST-MW-1) collected from the bottom of each UST excavation area. Analytical results from these two water samples were compared to MDE groundwater standards (MDE, 2008). Naphthalene (29  $\mu\text{g/L}$ ) and total petroleum hydrocarbon (TPH)-diesel range organics (DRO) [9,800  $\mu\text{g/L}$ ] exceeded MDE groundwater standards (10  $\mu\text{g/L}$  and 470  $\mu\text{g/L}$ , respectively) in the groundwater sample collected at UST 1. TCE (32,000  $\mu\text{g/L}$ ) and Aroclor 1260 (3  $\mu\text{g/L}$ ) were the only compounds to exceed MDE groundwater standards (5  $\mu\text{g/L}$  and 0.5  $\mu\text{g/L}$ , respectively) in the water sample collected at UST 2.

Additional soil and groundwater delineation samples were collected around both tanks on October 1–10, 2013. The delineation sampling report and results are in Appendix

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Soil delineation sampling around UST 2 detected two VOCs (TCE and vinyl chloride [VC]) above the residential-soil cleanup criteria. TCE was the only VOC around UST 2 detected above its non-residential-soil cleanup criterion. Five SVOCs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene) were detected around UST 2 above their respective MDE residential-soil cleanup criteria, but only benzo(a)pyrene was detected above its non-residential-soil cleanup criterion.

The following six compounds were detected above MDE groundwater cleanup criteria around UST 2 during groundwater delineation sampling (see Appendix F): TCE, acetone, cis-1,2-dichloroethene, carbon tetrachloride, methyl tert-butyl ether, and VC. Groundwater samples were not collected around UST 1 during soil delineation sampling. No exceedances of compounds associated with the Oil Control Program were detected during site sampling.

**Table 3-1**  
**Underground Storage Tank Soil Sampling Results,**  
**Block E Underground Storage Tank Closure Report,**  
**Lockheed Martin, Middle River Complex, Middle River, Maryland**

Sample ID	MDE residential-soil cleanup standard	MDE non-residential-soil cleanup standard	UST-1-OH-1	UST-2-OH-1	re f386.76 658
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**Table 3-2**  
**Underground Storage Tank Groundwater-Sampling Results,**  
**Block E Underground Storage Tank Closure Report,**  
**Lockheed Martin, Middle River Complex, Middle River, Maryland**  
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Sample ID	MDE groundwater cleanup standard	UST-MB-1	UST-2-PW-1
Sampling date		8/1/2013	8/2/2013
<i>Semivolatile organic compounds (µg/L)</i>			

**Table 3-2**  
**Underground Storage Tank Groundwater-Sampling Results,**  
**Block E Underground Storage Tank Closure Report,**  
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Sample ID	MDE groundwater cleanup standard	UST-MB-1	UST-2-PW-1
Sampling date		8/1/2013	8/2/2013
<i>Volatile organic compounds (µg/L) (continued)</i>			
Tetrachloroethene	5	2.3	ND
Toluene	1000	1.6J	ND
Trichloroethene	5	1.5J	32,000
Xylenes (total)	10000	43	ND
<i>Polychlorinated biphenyls (µg/L)</i>			
Aroclor 1260	0.5	ND	3
<i>Total petroleumoleur</i>			



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## Section 4

# Conclusions and Recommendations

The Middle River Complex (MRC) is an industrial site at 2323 Eastern Boulevard in Middle River, Maryland. On July 18–19, 2013, Tetra Tech Inc. (Tetra Tech) discovered two underground storage tanks (USTs) near Block E in the MRC. The USTs were removed and analytical samples were collected. Soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and toxicity characteristic leaching procedure (TCLP) volatiles and semivolatiles.

No regulatory exceedances were detected in the soil sample collected from beneath UST 1. The soil sample collected from beneath UST 2 had one exceedance: TCLP trichloroethene (TCE). Groundwater samples were analyzed for VOCs, SVOCs, PCBs, and TCLP metals. Naphthalene and total petroleum hydrocarbon-diesel-range organics exceeded MDE groundwater standards in the water sample collected at UST 1. Trichloroethene and Aroclor 1260 (a PCB) were the only compounds to exceed MDE groundwater standards in the water sample collected at UST 2.

An additional investigation was conducted on the soils and groundwater surrounding the USTs to delineate the extent of contamination. A copy of that report is in Appendix F. Because the USTs were removed and analytical resultT5(u)-3.98y

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## APPENDIX A—UST LOCATION MAP

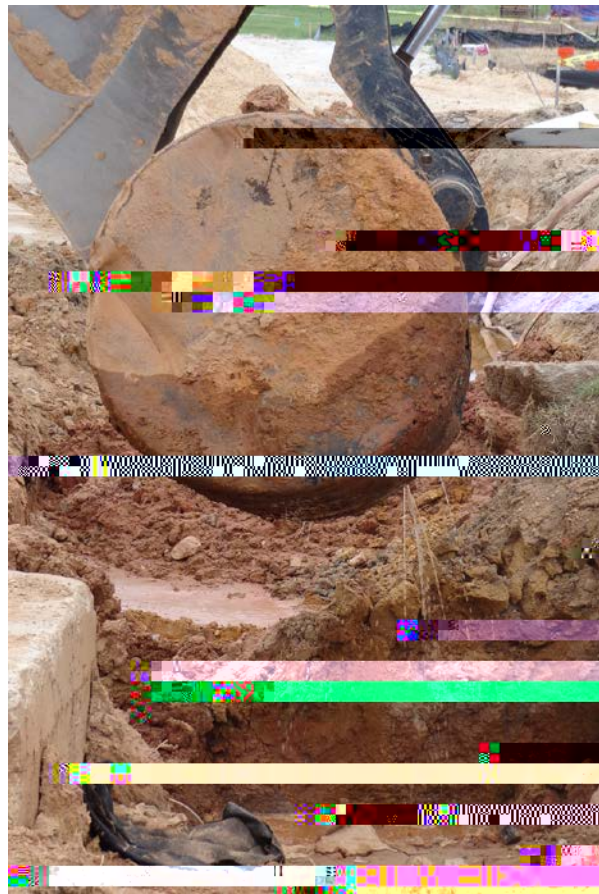


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## **APPENDIX B—PHOTOGRAPHIC DOCUMENTATION**



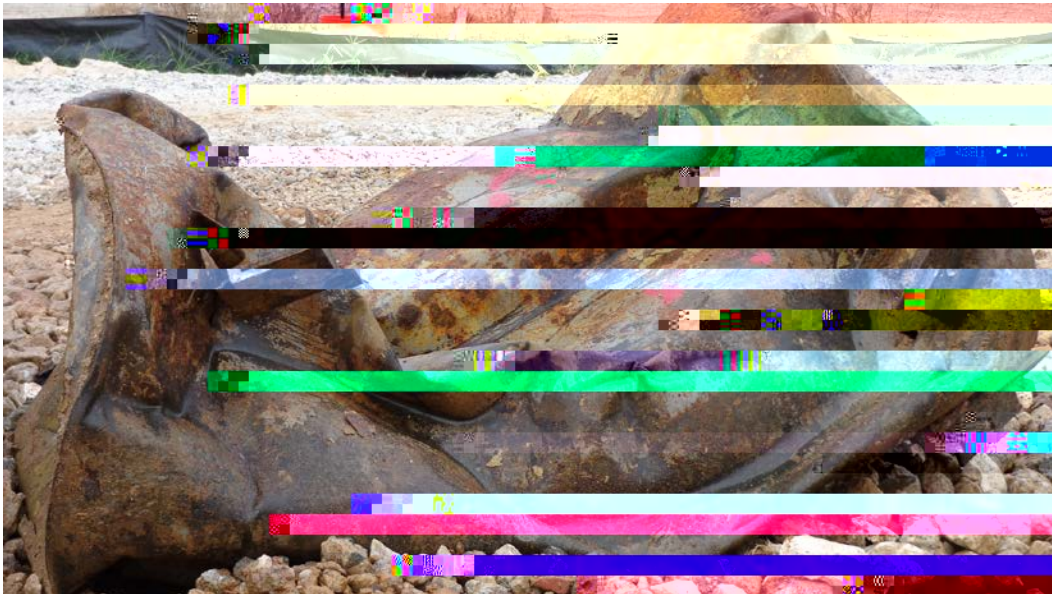




UST #1 extraction



UST # 1 perforations



Close-up of UST #2 following extraction and washing

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## APPENDIX C—RECEIPTS



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## APPENDIX D—SAMPLING LOCATION DIAGRAM



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## APPENDIX E—ANALYTICAL LABORATORY REPORT





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## **APPENDIX F—UST 1 AND UST 2 DELINEATION REPORT**



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**APPENDIX G—30-DAY NOTIFICATION FORM,  
REGISTRATION FORMS, AND MDE TANK REMOVAL REPORT**