Corrective Measures Effectiveness Report
Sixth Year Long-Term Monitoring
Former Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Prepared for:

McClellan Development Authority
Anniston, Alabama

Prepared by:

283 Rucker St
Anniston, AL 36205

(256) 847-0780
Fax (256) 847-0905

April 2017

This page intentionally left blank

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

1,1-DCE	1,1-dichloroethene
ADEM	Alabama Department of Environmental Management
ASTM	ASTM International
CA	Cleanup Agreement
cis-1,2-DCE	cis-1,2-dichloroethene
CMER	Corrective Measures Effectiveness Report
CMIR	Corrective Measures Implementation Report
COC	Chemical of concern
Draft CMIR	*Draft Corrective Measures Implementation Report, Former Small Weapons Repair Shop, Parcel 66(7)*
EBS	Environmental Baseline Study
ESE	Environmental Science & Engineering, Inc.
Final CMIP	*Final Corrective Measures Implementation Plan, Former Small Weapons Repair Shop, Parcel 66(7)*
Final CMIP Addendum	*Tech Memo Addendum* to the *Final CMIP*
IT	IT Corporation
LTM	Long-term monitoring
LUC	Land use control
LUCER	Land use control effectiveness report
McClellan	Former Fort McClellan
MDA	McClellan Development Authority
MES	Matrix Environmental Services, LLC
PDB	Passive Diffusion Bag
QA	Quality Assurance
QAP	*Quality Assurance Plan*
RBTL	Risk-Based Target Level
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SAP	*Installation-Wide Sampling and Analysis Plan*
Shaw	Shaw Environmental, Inc.
SI	Site Investigation
Site	Former Small Weapons Repair Shop, Parcel 66(7)
TCE	Trichloroethene
trans-1,2-DCE	trans-1,2-dichloroethene
VOC	Volatile organic compound

EXECUTIVE SUMMARY

The purpose of this Corrective Measures Effectiveness Report (CMER) is to document the effectiveness of the remedial action for contaminated groundwater at the Former Small Weapons Repair Shop, Parcel 66(7) (Site), located at the former Fort McClellan (McClellan) in Anniston, Alabama, during the sixth year of Long-Term Monitoring (LTM) from May 2016 to February 2017. This report was prepared by Matrix Environmental Services, LLC (MES) on behalf of the McClellan Development Authority (MDA).

Groundwater samples were collected from four residuum wells, three transition wells, and one bedrock well in May 2016, August 2016, November 2016, and February 2017. Groundwater samples during the sixth year LTM were analyzed for the chemicals of concern (COCs) (cis-1,2-dichloroethene (DCE), trichloroethene (TCE), and vinyl chloride and their degradation products (1,1-DCE and trans-1,2-DCE) by EPA Method SW8260B. The groundwater sample results were compared to the groundskeeper risk-based target levels (RBTLs) to assess progress of the corrective measures at the Site.

Groundwater was encountered at the Site at shallow depths for all four rounds of LTM, with groundwater flowing radially outward from the site.

Only vinyl chloride exceeded the groundskeeper RBTLs during the sixth year of LTM, in residuum wells PPMP-66-MW02RR and PPMP66-MW06R, and in transition well PPMP-66-MW23R. All three of the wells are located in the vicinity of the estimated source area, south and west of the former Building 335. The lateral extent of vinyl chloride remained static in both the residuum and transition groundwater zones, compared to the baseline sampling event.

Groundwater data from the sixth year of LTM indicate that the corrective measures have been effective in reducing the COCs concentrations compared to the baseline sampling event. During the sixth year of LTM, the vinyl chloride plume for both the residuum and transition groundwater zones remained in the vicinity of the estimated source area.

To further assist the reduction in VOCs, the MDA plans to implement an additional insitu chemical oxidation (ISCO) event. The MDA believes the original application of potassium permanganate to bedrock of the treatment area may have reached the limit of effectiveness and additional treatment to reduce VOC concentrations below RBTLs is necessary. The MDA is currently drafting an Underground Injection Control (UIC) permit application. Prior to implementing the additional remedy, and as described in a letter to the Department dated April 11, 2017, the MDA will submit a *Second Addendum to the Final Corrective Measures Implementation Plan* for the Former Small Weapons Repair Shop, Parcel 66(7).

This page intentionally left blank

1.0 INTRODUCTION

The purpose of this CMER is to document the effectiveness of the remedial action for contaminated groundwater at the Former Small Weapons Repair Shop, Parcel 66(7) (Site), located at the former Fort McClellan (McClellan) in Anniston, Alabama, during the sixth year of LTM from May 2016 to February 2017. Figure 1-1 shows a site map of McClellan and Figure 1-2 shows a parcel location map of the Site. This report was prepared by MES on behalf of the MDA.

1.1 Report Purpose and Objectives

This CMER summarizes groundwater monitoring data collected from May 2016 to February 2017, to evaluate the effectiveness of corrective measures as outlined in the *Final Corrective Measures Implementation Plan, Former Small Weapons Repair Shop, Parcel 66(7) (Final CMIP)* (MES, 2007) and the *Tech Memo Addendum* to the *Final CMIP (Final CMIP Addendum)* (MES, 2009). Objectives for these monitoring events and this CMER include:

- Describe the activities performed at the Site during the sixth year of LTM.
- Summarize environmental sampling data from previous investigations and monitoring events and present analytical results for the May 2016 to February 2017 monitoring events.
- Compare the current results of the groundwater samples to historical groundwater results to evaluate the effectiveness of the corrective measures for COCs in groundwater at the Site.
- Compare the results to risk-based target levels (RBTLs) to assess whether continued monitoring of the corrective measures is necessary.

1.2 Report Organization

This CMER is organized as follows:

- Section 1.0 - summarizes the project background, purpose of the CMER, and report organization.
- Section 2.0 - presents a summary of the Site characterization.
- Section 3.0 - describes the activities conducted during the sixth year of LTM.
- Section 4.0 - presents the results of the sixth year of LTM.
- Section 5.0 - presents the summary, conclusions, and recommendations.
- Section 6.0 - provides the references cited in this report.
- Tables that support the CMER.
- Figures that support the CMER.
- Appendix A contains the Groundwater Sampling Documentation.
- Appendix B contains the Chain-of-Custody Forms.
- Appendix C contains the Analytical Data in tabular form and includes the laboratory data sheets.
- Appendix D contains the Data Quality Summary.

This page intentionally left blank

2.0 SITE CHARACTERIZATION

This section summarizes the Site description and physical setting, land use, previous investigations, and corrective measures activities performed at the Site.

2.1 Site Description

The Site consists of 1.15 acres and is located in the central portion of McClellan at the intersection of Waverly Road and Fremont Road (Figure 1-2). Two buildings (Buildings 335 and 336) were located within the parcel boundary of the Site. Building 335 formerly housed the Small Weapons Repair Shop where weapons used for training exercises were stored, disassembled, and cleaned using various solvents. It is reported that the main part of Building 335 was used primarily for Tank Repair (IT Corporation [IT], 2002). Building 336, located just east of Building 335, historically was used as boiler plant and as a paint storage area.

The Small Weapons Repair Shop was built in 1941, although it is not known when operations began at this location. The operation was moved to the Consolidated Maintenance Facility (Building 350) in approximately 1991. From 1991 to circa 2003, Building 335 was used by the Alabama National Guard for boiler plant storage (Environmental Science & Engineering, Inc. [ESE], 1998). The history of the Site is described in more detail in the *Final CMIP* (MES, 2007).

Drainage ditches border the Site along Waverly Road to the north and Fremont Road to the west. Buildings 335 and 336 were removed from the Site in 2007 (MES, 2012).

2.2 Land Use and Land Use Controls

The proposed future land use for the Site is a light industrial and business park. Based on the presence of volatile organic compounds (VOC) in groundwater, MDA has implemented land use controls (LUCs) to limit exposure to groundwater. LUCs include a prohibition on consumptive use or direct contact with groundwater and installation of any well for extraction of groundwater for purposes of consumptive or other uses within the covenant boundary. In accordance with the Cleanup Agreement (CA) and Alabama Uniform Environmental Covenants Act, Code of Alabama 1975, §§ 35-19-1 to 35-19-14 and the Alabama Department of Environmental Management (ADEM) Admin Code r. 335-5, effective May 26, 2009, MDA filed Environmental Covenant No. FY 12-07.00 in Calhoun County Probate on March 7, 2013, which documents the LUCs. A copy of the recorded Environmental Covenant No. FY 12-07.00 was included as a slip page to the Department for incorporation into the Corrective Measures Implementation Report (CMIR) dated January 10, 2013. MDA will administer and enforce the LUCs and certify, after inspection, that the LUCs are in place in an Annual Land Use Controls Effectiveness Report (LUCER).

2.3 Summary of Previous Investigations

Investigative activities at the Site were conducted in multiple phases from 1998 to 2004 by several contractors to the Army and the JPA, including: ESE, IT, now Shaw Environmental, Inc. (Shaw), and MES. The previous investigations include:

- *1998 Environmental Baseline Study (EBS)* (ESE, 1998)
- *1999 Site Investigation (SI)* (IT, 2002)
- *2002 Remedial Investigation (RI)* (IT, 2002)
- *2004 RCRA Facility Investigation (RFI)* (MES, 2006)

These investigations led to the development of a Corrective Measures Implementation Plan in 2007 to address VOCs in the groundwater.

2.4 2010/2011 Corrective Measures Implementation

Based on the data assessment presented in the *Final CMIP* (MES, 2007) and *Final CMIP Addendum* (MES, 2009), cis-1,2-DCE, TCE, and vinyl chloride in groundwater were determined to be human health COCs at the Site. No ecological COCs were identified in media at the Site.

From October 2010 to February 2011, corrective measures were implemented at the Site as outlined in the *Final CMIP* (MES, 2007) and *Final CMIP Addendum* (MES, 2009) to reduce concentrations of VOCs in groundwater at the Site to levels acceptable for industrial use. Details of the corrective measures activities are documented in the *Draft Corrective Measures Implementation Report (CMIR), Former Small Weapons Repair Shop, Parcel 66(7)* (*Draft CMIR*) (MES, 2012).

Corrective measures activities included: 1) the abandonment of groundwater monitoring wells PPMP-66-MW02, PPMP-66-MW06, PPMP-66-MW12, PPMP-66-MW18, PPMP-66-MW23, and PPMP-66-MW24 located in the target treatment area, 2) anhydrous quicklime blending into the soil of the target treatment area to reduce residual COCs concentrations in the soil that may provide a source of contaminants to the groundwater plume, 3) direct application of solid potassium permanganate to the exposed bedrock during quicklime mixing activities to promote the chemical oxidation of the COCs in groundwater, 4) site restoration and re-vegetation, and 5) replacement of the residuum and transition groundwater monitoring wells in the target treatment area, that were previously abandoned, for use in LTM.

3.0 SUMMARY OF SIXTH YEAR OF LTM ACTIVITIES

To meet the recommended actions outlined in the *Final CMIP* (MES, 2007) and the *Final CMIP Addendum* (MES, 2009) and provide data to evaluate the long-term performance of the corrective measures, groundwater at the Site was monitored on a quarterly basis during the sixth year of LTM following the implementation of corrective measures at the Site. The following activities were performed during the sixth year of LTM:

- Collected groundwater samples and groundwater level measurements from four residuum wells, three transition wells, and one bedrock well during four rounds of sampling conducted from May 2016 to February 2017.
- Analyzed the groundwater samples for the COCs (cis-1,2-DCE, TCE, and vinyl chloride) and their degradation products (1,1-DCE and trans-1,2-DCE) by EPA Method SW8260B.

3.1 Groundwater Sampling

Since the completion of the corrective measures performed at the Site in 2010 (see Section 2.4 for details), groundwater samples have been collected from eight LTM wells (listed below) on a quarterly basis.

Residuum Wells	Transition Wells	Bedrock Wells
PPMP-66-MW02RR	PPMP-66-MW17	PPMP-66-MW08
PPMP-66-MW06R	PPMP-66-MW23R	
PPMP-66-MW16	PPMP-66-MW24R	
PPMP-66-MW18R		

During the sixth year of LTM, groundwater samples were collected in May 2016, August 2016, November 2016, and February 2017.

3.1.1 Sampling Method

Passive Diffusion Bags (PDBs) were deployed in the LTM wells at the Site immediately following the previous sampling event. The PDBs are allowed to soak until the next sampling event, then removed from the monitoring well, and sampled. VOC vials are filled with contents of the PDB by piercing the lower end with a disposable, small-diameter discharge tube and allowing water to flow from the PDB into the VOC vials.

Laboratory-supplied sample bottles were filled, labeled, placed in a chilled cooler, and shipped under chain-of-custody procedures to EMAX Laboratories, Torrance, California. The chain-of-custody forms for the groundwater samples collected during the May 2016 to February 2017 sampling events are provided in Appendix B. The groundwater samples were analyzed for the COCs (cis-1,2-DCE, TCE, and vinyl chloride) and 1,1-DCE and trans-1,2-DCE using Method SW8260B (EPA, 1986).

Groundwater levels were measured to the nearest hundredth of a foot using a Solinst™ water level indicator and recorded. New PDBs, filled with ASTM International (ASTM) Type 1

deionized water were deployed following the water level measurements. The PDBs remained suspended in the LTM wells until the next scheduled sampling event. The monitoring well sample collection documentation is provided in Appendix A.

3.2 Management of Investigation Derived Waste

The aqueous investigation derived waste generated during the groundwater sampling was collected in a 55-gallon drum stored on-site, including the left-over water in the PDBs. The used, empty PDBs were placed in trash dumpsters for disposal.

3.3 Data Quality Review

MES reviewed the analytical data for the groundwater samples collected during the May 2016 to February 2017 monitoring events. The data quality review was performed in accordance with the *Quality Assurance Plan (QAP)* (MES, 2004) to assess compliance with the Quality Assurance (QA) objectives, and to assess hard copy and electronic deliverable consistency and integrity. Appendix C presents the analytical data collected during the May 2016 to February 2017 monitoring events.

3.4 Deviations from Planned LTM Activities

LTM activities were performed in accordance with the *Final CMIP Addendum* (MES, 2009). No deviations occurred during the four quarterly monitoring events.

4.0 RESULTS OF SIXTH YEAR OF LTM ACTIVITIES

The activities conducted at the Site during the sixth year of LTM from May 2016 to February 2017 are presented in the following subsections.

4.1 Groundwater Sampling

This section discusses the results of the groundwater sampling events at the Site.

4.1.1 Groundwater Elevations

Groundwater elevations measured during the May 2016 to February 2017 groundwater sampling events are presented in Table 4-1. Figures 4-1 to 4-4 shows groundwater elevations and potentiometric elevations for the residuum groundwater zone for the May 2016 to February 2017 sampling events. Transition groundwater wells are located only in the source area and additionally are co-located with residuum wells, thus not providing any additional potentiometric elevation information. For this reason, no transition potentiometric maps were constructed. Furthermore, potentiometric groundwater maps were not constructed for the bedrock zone due to the limited number of LTM wells.

Groundwater was encountered at the Site at shallow depths for all four rounds during the sixth year of LTM. During the sixth year of LTM, groundwater in the residuum and transition zones appeared to flow radially from the site (Figures 4-1 to 4-4) and is consistent with past data.

To further aid in assessing groundwater flow at the Site, horizontal and vertical hydraulic gradients were calculated using the groundwater measurements during the sixth year of LTM, and are presented in Tables 4-2 and 4-3, respectively. The hydraulic gradients in the residuum, bedrock, and transition zones were low indicating a relatively flat water table, which is consistent with historical horizontal gradients calculated at the Site.

4.1.2 Groundwater Field Parameter Results

Field screening parameters, i.e., pH, conductivity, dissolved oxygen, turbidity, etc., are typically used by field personnel to assess when a well has been adequately purged and a representative groundwater sample can be collected. However, because PDBs were used for groundwater sampling at the Site, field screening parameters were not measured.

4.1.3 Analytical Data and Data Quality Review

The analytical data for the May 2016 to February 2017 monitoring events are provided in Appendix C. Samples were analyzed for VOCs by Method SW8260B. MES reviewed the analytical data in accordance with the *QAP* (MES, 2004). Based on the data quality review, the analytical data generated for these monitoring events are adequate to fulfill program objectives and are suitable for preparation of this report.

4.1.4 Summary of Groundwater Analytical Results

The analytical results for the groundwater samples collected during the sixth year of LTM are shown in Table 4-4. The historical analytical results from previous sampling events are also shown in Table 4-4.

VOC concentrations detected in the groundwater samples were compared to the groundskeeper RBTLs in Table 4-4. One COC (vinyl chloride) exceeded the groundskeeper RBTL in three groundwater wells from samples collected during the sixth year of LTM from May 2016 to February 2017.

Samples collected from the LTM wells were used to 1) evaluate the effectiveness of the corrective measures, and 2) evaluate contaminant concentration changes over time that occurred in response to the corrective measures, and 3) assess the long-term performance of the corrective measures in reducing contaminant concentrations.

4.1.5 Concentration Trends Over Time

Figures 4-4 to 4-8 show the trends in concentrations over time for the COCs. As indicated in the trend figures and Table 4-4, wells PPMP-66-MW02RR, PPMP-66-MW06R, PPMP-66-MW23R, and PPMP-66-MW24R showed small fluctuations in concentrations during the sixth year of monitoring compared to the prior year.

The COC concentrations in wells PPMP-66-MW08, PPMP-66-MW16, PPMP-66-MW17, PPMP-66-MW18R, and PMP-66-MW24R were less than the groundskeeper RBTLs during this reporting period.

4.1.6 Distribution of Corrective Action COCs in Groundwater

Figures 4-9 and 4-10 present the estimated lateral extent of TCE and vinyl chloride concentrations exceeding the groundskeeper RBTLs for the residuum and transition groundwater zones at the Site for the baseline September/October 2010 sampling event. Figures 4-11 to 4-18 present the estimated lateral extent of vinyl chloride concentrations exceeding the groundskeeper RBTLs for the residuum and transition groundwater zones at the Site for the sixth year of LTM. The concentrations of vinyl chloride exceeding the groundskeeper RBTL in groundwater during this reporting period was located southwest of former Building 335.

During the sixth year of LTM, the vinyl chloride plume for both the residuum and transition groundwater zones remained in the vicinity of the estimated source area. The lateral extent of vinyl chloride exceeding groundskeeper RBTLs has reduced to one residuum and one transition well located to the southwest of former Building 335. PPMP-66-MW06R had vinyl chloride concentrations above groundskeeper RBTLs for two monitoring events (August 2016 and November 2016), but the vinyl chloride concentration was below groundskeeper RBTLs during the February 2017 sampling event. Vinyl chloride concentrations were above groundskeeper RBTLs for all four events in monitoring wells PPMP-66-MW02RR and PPMP-66-MW23R.

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This section summarizes the activities performed and the results from groundwater monitoring during the sixth year of LTM at the Site, and presents conclusions and recommendations.

5.1 Summary of Activities

Activities conducted at the Site included:

- Collected quarterly groundwater samples and groundwater level measurements from four residuum wells, three transition wells, and one bedrock well from May 2016 to February 2017.
- Analyzed the groundwater samples for the COCs (cis-1,2-DCE, TCE, and vinyl chloride) and their degradation products (1,1-DCE and trans-1,2-DCE) by EPA Method SW8260B.
- Compared the results to RBTLs to assess progress of the corrective measures at the Site.

5.2 Summary of Results

Results from the sixth year of LTM at the Site indicate the following:

- Groundwater was encountered at the Site at shallow depths and the direction of flow was radially from the site.
- One of the three COCs (vinyl chloride) exceeded the groundskeeper RBTL in groundwater collected during the fifth year of LTM from May 2016 to February 2017.
- Vinyl chloride concentrations exceeding the groundskeeper RBTL during the sixth year of LTM were found in groundwater from two residuum wells and one transition well located in the vicinity of the estimated source area, southwest of the former Building 335.
- The overall trend in Site groundwater COCs showed small fluctuations during the sixth year of LTM compared to the prior year.

5.3 Conclusions and Recommendations

Groundwater data from the sixth year of LTM indicates that the corrective measures have been effective in reducing the COC concentrations as compared to the baseline sampling event. During the sixth year of LTM, the vinyl chloride plumes for both the residuum and transition groundwater zones remained in the vicinity of the estimated source area.

To further assist the reduction in VOCs, the MDA plans to implement an additional insitu chemical oxidation (ISCO) event. Based on the data from the last couple of years, the MDA believes the original application of potassium permanganate to the bedrock of the treatment area may have reached the limit of effectiveness and additional treatment to reduce VOC concentrations below RBTLs is necessary.

The MDA is currently drafting an Underground Injection Control (UIC) permit application. Prior to implementing the additional remedy, and as described in a letter to the Department dated April 11, 2017, the MDA will submit a *Second Addendum to the Final Corrective Measures Implementation Plan* for the Former Small Weapons Repair Shop, Parcel 66(7).

6.0 REFERENCES

Alabama Department of Environmental Management (ADEM). 2005. *Alabama Environmental Investigation and Remediation Guidance.* September.

Environmental Science & Engineering, Inc. (ESE). 1998. *Final Environmental Baseline Survey, Fort McClellan, Alabama*, prepared for the U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland. January.

IT Corporation (IT). 2002. *Draft Remedial Investigation Report Small Weapons Repair Shop, Parcel 66(7).* May.

MES. 2004. *Quality Assurance Plan (Appendix A of the Installation Wide Sampling and Analysis Plan)*. January.

MES. 2006. *Final Resource Conservation and Recovery Act Facility Investigation for Small Weapons Repair Shop, Parcel 66(7)*. February.

MES. 2007. *Final Corrective Measures Implementation Plan, Former Small Weapons Repair Shop, Parcel 66(7).* March.

MES. 2009. *Tech Memo Addendum* to the *Final Corrective Measures Implementation Plan, Former Small Weapons Repair Shop, Parcel 66(7)*. March.

MES. 2012. *Draft Corrective Measures Implementation Report, Former Small Weapons Repair Shop, Parcel 66(7).* August.

United States Environmental Protection Agency (EPA). 1986. *Test Methods for Evaluating Solid Waste-Physical Chemical Methods*. Office of Solid Waste, Washington, D.C., SW-846, 3rd Edition. Update I, 1992, Updates II, IIA, and III 1996, Updates IIIA and IIIB 2002.

This page intentionally left blank

Tables

Table 4-1: Groundwater Elevations, Sixth Year LTM
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

Well Location	Well Type	Ground Elevation (feet msl)	TOC Elevation (feet msl)	Date Measured	Well Depth (feet BTOC)	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)
May 2016 Sampling Event							
PPMP-66-MW01	residuum	780.10	782.12	5/3/16	26.03	5.20	774.90
PPMP-66-MW02RR	residuum	780.59	780.37	5/3/16	23.50	2.91	777.68
PPMP-66-MW03	residuum	781.11	780.74	5/3/16	28.00	4.53	776.58
PPMP-66-MW04	residuum	779.99	781.90	5/3/16	26.50	4.12	775.87
PPMP-66-MW06R	residuum	781.45	781.41	5/3/16	27.80	2.32	779.13
PPMP-66-MW07	residuum	782.41	782.17	5/3/16	28.65	4.96	777.45
PPMP-66-MW08	bedrock	780.89	780.66	5/3/16	73.90	3.56	777.33
PPMP-66-MW09	bedrock	781.14	780.88	5/3/16	74.75	3.73	777.41
PPMP-66-MW10	bedrock	779.79	782.01	5/3/16	77.41	6.32	773.47
PPMP-66-MW11	bedrock	781.10	780.89	5/3/16	84.35	3.22	777.88
PPMP-66-MW13	bedrock	781.93	781.65	5/3/16	74.03	4.28	777.65
PPMP-66-MW14	residuum	781.92	781.70	5/3/16	20.71	4.74	777.18
PPMP-66-MW16	residuum	780.86	780.47	5/3/16	12.75	0.25	780.61
PPMP-66-MW17	transition	781.63	781.29	5/3/16	17.71	3.96	777.67
PPMP-66-MW18R	residuum	781.68	781.25	5/3/16	15.00	2.60	779.08
PPMP-66-MW21	residuum	780.78	780.44	5/3/16	14.40	0.10	780.68
PPMP-66-MW22	transition	780.79	780.44	5/3/16	24.65	3.31	777.48
PPMP-66-MW23R	transition	781.12	780.87	5/3/16	29.25	3.65	777.47
PPMP-66-MW24R	transition	781.57	781.20	5/3/16	34.15	4.10	777.47
August 2016 Sampling Event							
PPMP-66-MW01	residuum	780.10	782.12	8/5/16	26.03	6.90	773.20
PPMP-66-MW02RR	residuum	780.59	780.37	8/5/16	23.50	4.50	776.09
PPMP-66-MW03	residuum	781.11	780.74	8/5/16	28.27	5.66	775.45
PPMP-66-MW04	residuum	779.99	781.90	8/5/16	26.40	5.81	774.18
PPMP-66-MW06R	residuum	781.45	781.41	8/5/16	27.80	5.20	776.25
PPMP-66-MW07	residuum	782.41	782.17	8/5/16	28.65	6.31	776.10
PPMP-66-MW08	bedrock	780.89	780.66	8/5/16	73.90	4.95	775.94
PPMP-66-MW09	bedrock	781.14	780.88	8/5/16	74.80	5.32	775.82
PPMP-66-MW10	bedrock	779.79	782.01	8/5/16	77.40	7.92	771.87
PPMP-66-MW11	bedrock	781.10	780.89	8/5/16	84.35	4.78	776.32
PPMP-66-MW13	bedrock	781.93	781.65	8/5/16	74.30	5.61	776.32
PPMP-66-MW14	residuum	781.92	781.70	8/5/16	20.71	6.11	775.81
PPMP-66-MW16	residuum	780.86	780.47	8/5/16	12.75	4.98	775.88
PPMP-66-MW17	transition	781.63	781.29	8/5/16	17.71	5.49	776.14
PPMP-66-MW18R	residuum	781.68	781.25	8/5/16	15.00	5.25	776.43
PPMP-66-MW21	residuum	780.78	780.44	8/5/16	14.40	3.57	777.21
PPMP-66-MW22	transition	780.79	780.44	8/5/16	24.71	4.75	776.04
PPMP-66-MW23R	transition	781.12	780.87	8/5/16	29.25	5.14	775.98
PPMP-66-MW24R	transition	781.57	781.20	8/5/16	34.15	5.55	776.02
November 2016 Sampling Event							
PPMP-66-MW01	residuum	780.10	782.12	11/01/16	26.03	8.98	773.14
PPMP-66-MW02RR	residuum	780.59	780.37	11/01/16	23.50	5.44	774.93
PPMP-66-MW03	residuum	781.11	780.74	11/01/16	28.27	7.41	773.33
PPMP-66-MW04	residuum	779.99	781.90	11/01/16	26.40	8.40	773.50
PPMP-66-MW06R	residuum	781.45	781.41	11/01/16	27.80	5.41	776.00
PPMP-66-MW07	residuum	782.41	782.17	11/01/16	28.65	8.23	773.94
PPMP-66-MW08	bedrock	780.89	780.66	11/01/16	73.90	6.87	773.79
PPMP-66-MW09	bedrock	781.14	780.88	11/01/16	74.80	7.19	773.69
PPMP-66-MW10	bedrock	779.79	782.01	11/01/16	77.40	10.42	771.59

Table 4-1: Groundwater Elevations, Sixth Year LTM
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

Well Location	Well Type	Ground Elevation (feet msl)	TOC Elevation (feet msl)	Date Measured	Well Depth (feet BTOC)	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)
PPMP-66-MW11	bedrock	781.10	780.89	11/01/16	84.35	7.02	773.87
PPMP-66-MW13	bedrock	781.93	781.65	11/01/16	74.30	7.59	774.06
PPMP-66-MW14	residuum	781.92	781.70	11/01/16	20.71	8.07	773.63
PPMP-66-MW16	residuum	780.86	780.47	11/01/16	12.75	6.83	773.64
PPMP-66-MW17	transition	781.63	781.29	11/01/16	17.71	7.49	773.80
PPMP-66-MW18R	residuum	781.68	781.25	11/01/16	15.00	7.48	773.77
PPMP-66-MW21	residuum	780.78	780.44	11/01/16	14.40	6.74	773.70
PPMP-66-MW22	transition	780.79	780.44	11/01/16	24.71	6.69	773.75
PPMP-66-MW23R	transition	781.12	780.87	11/01/16	29.25	6.69	774.18
PPMP-66-MW24R	transition	781.57	781.20	11/01/16	34.15	6.99	774.21
February 2017 Sampling Event							
PPMP-66-MW01	residuum	780.10	782.12	2/14/17	26.03	6.02	776.10
PPMP-66-MW02RR	residuum	780.59	780.37	2/14/17	23.50	4.59	775.78
PPMP-66-MW03	residuum	781.11	780.74	2/14/17	28.27	5.12	775.62
PPMP-66-MW04	residuum	779.99	781.90	2/14/17	26.40	4.90	777.00
PPMP-66-MW06R	residuum	781.45	781.41	2/14/17	27.80	6.26	775.15
PPMP-66-MW07	residuum	782.41	782.17	2/14/17	28.65	5.84	776.33
PPMP-66-MW08	bedrock	780.89	780.66	2/14/17	73.90	4.35	776.31
PPMP-66-MW09	bedrock	781.14	780.88	2/14/17	74.80	4.74	776.14
PPMP-66-MW10	bedrock	779.79	782.01	2/14/17	77.40	6.46	775.55
PPMP-66-MW11	bedrock	781.10	780.89	2/14/17	84.35	4.36	776.53
PPMP-66-MW13	bedrock	781.93	781.65	2/14/17	74.30	5.18	776.47
PPMP-66-MW14	residuum	781.92	781.70	2/14/17	20.71	6.54	775.16
PPMP-66-MW16	residuum	780.86	780.47	2/14/17	12.75	3.38	777.09
PPMP-66-MW17	transition	781.63	781.29	2/14/17	17.71	4.43	776.86
PPMP-66-MW18R	residuum	781.68	781.25	2/14/17	15.00	1.91	779.34
PPMP-66-MW21	residuum	780.78	780.44	2/14/17	14.40	1.71	778.73
PPMP-66-MW22	transition	780.79	780.44	2/14/17	24.71	4.11	776.33
PPMP-66-MW23R	transition	781.12	780.87	2/14/17	29.25	4.02	776.85
PPMP-66-MW24R	transition	781.57	781.20	2/14/17	34.15	5.46	775.74

Notes:
BTOC = Below top of casing
LTM = Long-term monitoring
msl = Mean sea level
TOC = Top of casing
* Water at top of casing

Table 4-2: Horizontal Hydraulic Gradients,
Sixth Year LTM
Small Weapons Repair Shop, Parcel 66(7),
McClellan, Anniston, Alabama

Upgradient Monitoring Well	Well Type	Groundwater Elevation	Downgradient Monitoring Well	Well Type	Groundwater Elevation	Estimated Groundwater Flow Direction	Horizontal Distance	Groundwater Elevation Difference (feet)	Horizontal Gradient (feet per foot)
May 2016									
PPMP-66-MW02RR	residuum	777.68	PPMP-66-MW01	residuum	774.9	west	96	2.78	0.029
PPMP-66-MW02RR	residuum	777.68	PPMP-66-MW07	residuum	777.45	east	150	0.23	0.002
PPMP-66-MW02RR	residuum	777.68	PPMP-66-MW06R	residuum	779.13	southeast	82	-1.45	-0.018
PPMP-66-MW02RR	residuum	777.68	PPMP-66-MW21	residuum	780.68	northwest	29	-3.00	-0.103
PPMP-66-MW18R	residuum	779.08	PPMP-66-MW14	residuum	777.18	southeast	55	1.90	0.034
PPMP-66-MW13	bedrock	777.65	PPMP-66-MW11	bedrock	777.88	northwest	71	-0.23	-0.003
PPMP-66-MW13	bedrock	777.65	PPMP-66-MW08	bedrock	777.65	west	134	0.00	0.000
PPMP-66-MW22	transition	777.48	PPMP-66-MW23R	transition	777.48	southeast	45	0.00	0.000
PPMP-66-MW17	transition	777.67	PPMP-66-MW24R	transition	777.47	west	47	0.20	0.004
PPMP-66-MW23R	transition	777.47	PPMP-66-MW24R	transition	777.47	southeast	68	0.00	0.000
							Average May 2016 Horizontal Gradient:		**-0.005**
August 2016									
PPMP-66-MW02RR	residuum	776.09	PPMP-66-MW01	residuum	773.2	west	96	2.89	0.030
PPMP-66-MW02RR	residuum	776.09	PPMP-66-MW07	residuum	776.1	east	150	-0.01	0.000
PPMP-66-MW02RR	residuum	776.09	PPMP-66-MW06R	residuum	776.25	southeast	82	-0.16	-0.002
PPMP-66-MW18R	residuum	776.43	PPMP-66-MW07	residuum	776.1	northeast	75	0.33	0.004
PPMP-66-MW14	residuum	775.81	PPMP-66-MW03	residuum	775.45	southwest	79	0.36	0.005
PPMP-66-MW13	bedrock	776.32	PPMP-66-MW11	bedrock	776.32	northwest	71	0.00	0.000
PPMP-66-MW13	bedrock	776.32	PPMP-66-MW08	bedrock	775.94	west	134	0.38	0.003
PPMP-66-MW17	transition	776.14	PPMP-66-MW24R	transition	776.02	west	47	0.12	0.003
PPMP-66-MW24R	transition	776.02	PPMP-66-MW23R	transition	775.98	northwest	68	0.04	0.001
							Average August 2016 Horizontal Gradient:		**0.002**
November 2016									
PPMP-66-MW02RR	residuum	774.93	PPMP-66-MW01	residuum	773.14	southwest	88	1.79	0.020
PPMP-66-MW02RR	residuum	774.93	PPMP-66-MW07	residuum	773.94	east	150	0.99	0.007
PPMP-66-MW02RR	residuum	774.93	PPMP-66-MW06R	residuum	776	southeast	82	-1.07	-0.013
PPMP-66-MW06R	residuum	776	PPMP-66-MW03	residuum	773.33	south	109	2.67	0.024
PPMP-66-MW18R	residuum	773.77	PPMP-66-MW14	residuum	773.63	southeast	55	0.14	0.003
PPMP-66-MW13	bedrock	774.06	PPMP-66-MW11	bedrock	774.06	northwest	71	0.00	0.000
PPMP-66-MW13	bedrock	774.06	PPMP-66-MW08	bedrock	774.06	west	134	0.00	0.000

Table 4-2: Horizontal Hydraulic Gradients,
Sixth Year LTM
Small Weapons Repair Shop, Parcel 66(7),
McClellan, Anniston, Alabama

Upgradient Monitoring Well	Well Type	Groundwater Elevation	Downgradient Monitoring Well	Well Type	Groundwater Elevation	Estimated Groundwater Flow Direction	Horizontal Distance	Groundwater Elevation Difference (feet)	Horizontal Gradient (feet per foot)
PPMP-66-MW08	bedrock	773.79	PPMP-66-MW11	bedrock	773.87	northeast	124	-0.08	-0.001
PPMP-66-MW24R	transition	774.21	PPMP-66-MW17	transition	773.8	east	47	0.41	0.009
PPMP-66-MW24R	transition	774.21	PPMP-66-MW23R	transition	774.18	northwest	68	0.03	0.000
PPMP-66-MW23R	transition	774.18	PPMP-66-MW22	transition	773.75	northwest	45	0.43	0.010
						Average November 2016 Horizontal Gradient:			**0.005**
February 2017									
PPMP-66-MW02RR	residuum	775.78	PPMP-66-MW01	residuum	776.1	southwest	88	-0.32	-0.004
PPMP-66-MW02RR	residuum	775.78	PPMP-66-MW07	residuum	776.33	east	150	-0.55	-0.004
PPMP-66-MW02RR	residuum	775.78	PPMP-66-MW06R	residuum	775.15	southeast	82	0.63	0.008
PPMP-66-MW18R	residuum	779.34	PPMP-66-MW06R	residuum	775.15	southwest	26	4.19	0.159
PPMP-66-MW18R	residuum	779.34	PPMP-66-MW14	residuum	775.16	southeast	55	4.18	0.076
PPMP-66-MW18R	residuum	779.34	PPMP-66-MW07	residuum	776.33	northeast	75	3.01	0.040
PPMP-66-MW18R	residuum	779.34	PPMP-66-MW02RR	residuum	775.78	west	104	3.56	0.034
PPMP-66-MW14	residuum	775.16	PPMP-66-MW03	residuum	775.62	southwest	79	-0.46	-0.006
PPMP-66-MW13	bedrock	776.47	PPMP-66-MW11	bedrock	776.53	northwest	71	-0.06	-0.001
PPMP-66-MW08	bedrock	776.31	PPMP-66-MW11	bedrock	776.53	northeast	124	-0.22	-0.002
PPMP-66-MW08	bedrock	776.31	PPMP-66-MW13	bedrock	776.47	east	134	-0.16	-0.001
PPMP-66-MW17	transition	776.86	PPMP-66-MW24R	transition	775.74	west	47	1.12	0.024
PPMP-66-MW23R	transition	776.85	PPMP-66-MW24R	transition	775.74	southeast	68	1.11	0.016
						Average February 2017 Horizontal Gradient:			**0.034**

Notes:
Elevations in feet above mean sea level.
LTM = Long-term monitoring

Table 4-3: Vertical Hydraulic Gradients, Sixth Year LTM
Small Weapons Repair Shop, Parcel 66(7),
McClellan, Anniston, Alabama

Well Cluster IDs	Well Zone	Midpoint of Screen (Elevation)	Groundwater Elevation				dL	dH				Vertical Hydraulic Gradient (ft per ft)			
			May16	Aug16	Nov16	Feb17		May16	Aug16	Nov16	Feb17	May16	Aug16	Nov16	Feb17
PPMP-66-MW06R	residuum	763.49	779.13	776.25	776	775.15	10.27	1.66	0.23	1.79	-0.59	0.1616	0.0224	0.1743	-0.0574
PPMP-66-MW24R	transition	753.22	777.47	776.02	774.21	775.74									
PPMP-66-MW02RR	residuum	764.49	777.68	776.09	774.93	775.78	6.51	0.21	0.11	0.75	-1.07	0.032258	0.0169	0.1152	-0.1644
PPMP-66-MW23R	transition	757.98	777.47	775.98	774.18	776.85									
PPMP-66-MW02RR	residuum	764.49	777.68	776.09	774.93	775.78	48.97	0.35	0.15	1.14	-0.53	0.01	0.00306	0.0233	-0.0108
PPMP-66-MW08	bedrock	715.52	777.33	775.94	773.79	776.31									
PPMP-66-MW23R	transition	757.98	777.47	775.98	774.18	776.85	42.46	0.14	0.04	0.39	0.54	0.0033	0.0009	0.0092	0.0127
PPMP-66-MW08	bedrock	715.52	777.33	775.94	773.79	776.31									
PPMP-66-MW18R	residuum	772.68	779.08	776.43	773.77	779.34	5.3	1.41	0.29	0.13	2.48	0.2660	0.0547	0.0245	0.4679
PPMP-66-MW17	transition	767.38	777.67	776.14	773.64	776.86									
PPMP-66-MW21	residuum	771.83	780.68	777.21	773.7	778.73	9.86	3.2	1.17	-0.05	2.4	0.3245	0.1187	-0.0051	0.2434
PPMP-66-MW22	transition	761.97	777.48	776.04	773.75	776.33									
PPMP-66-MW16	residuum	773.79	780.61	775.88	773.64	777.09	1.96	-0.07	-1.33	-0.06	-1.64	-0.0357	-0.6786	-0.0306	-0.8367
PPMP-66-MW21	residuum	771.83	780.68	777.21	773.7	778.73									

Notes:
ft/ft = feet per foot (a negative value indicates an upward vertical gradient)
ID = identification
LTM = Long-term monitoring
dH = difference in groundwater elevation (feet)
dL = distance between screened intervals (feet)

Elevations in feet above mean sea level.

Table 4-4: Groundwater Analytical Data for Constituents of Concern and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

VOCs (µg/L)	GS RBTL	Residuum Well PPMP-66-MW02/PPMP-66-MW02R/PPMP-66-MW02RR *																													
		3/6/01	4/24/02	5/13/04	11/7/07	5/21/08	10/1/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	1/2/14	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		Historical					Baseline & First Year O&M					2nd Year O&M				3rd Year O&M				4th Year O&M				5th Year O&M				6th Year O&M			
Cis-1,2-Dichloroethene	991	7.5	9.5 (nv)	36	210	130	200	41	29	28	220	300	320	310	530	520	well damaged, could not be sampled	7.9	4.2	2.7	2.9	23	25	34	19	40	31	28	23	18	31
Trichloroethene	205	40	29 (nv)	74	480	27	170	34	52	45	87	130	160	140	530	450		3.1	1.0	0.49 J	0.31 J	12	19	35	10	29	27	28	11	6.9	24
Vinyl Chloride	3.86	60	67 (nv)	110	100	71	41	10	8.7	17	85	72	65	59	72	73		10	9.3	6.3	5.1	12	11	11	9.1	12	9.1	6.4	9.6	8.0	7.2
Degradation Products																															
1,1-Dichloroethene	4800	9.2	11 (nv)	28	97	30	37	5	1.8	1.6	8	9.7	10	10	15	15		0.3 J	< 1.0	< 1.0	< 1.0	0.45 J	0.58 J	0.72 J	0.39 J	0.78 J	0.58 J	0.49 J	0.43 J	0.29 J	0.57 J
Trans-1,2-Dichloroethene	1950	6.4	6.7 nv)	10	13	7.2	7.6	12	8.7	15	72	97	110	100	280	220		2.1	1.0	0.57 J	0.71 J	7.1	9.7	15	6.9	18	15	13	8.5	5.1	16

VOCs (µg/L)	GS RBTL	Residuum Well PPMP-66-MW06/PPMP-66-MW06R *																													
		3/14/01	4/25/02	5/17/04	11/5/07	5/19/08	9/28/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	11/19/13	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		Historical					Baseline & First Year O&M					2nd Year O&M				3rd Year O&M				4th Year O&M				5th Year O&M				6th Year O&M			
Cis-1,2-Dichloroethene	991	500	720 (nv)	1600	810	700	580	47	71	46	34	38	56	48	30	25	31	41	29	21	32	33	15	14	17	14	12	11	24	25	11
Trichloroethene	205	9200	14000 (nv)	13000	2900	3900	2100	180	260	380	240	230	310	270	180	150	190	200	150	120	140	180	88	82	69	75	56	48	78	79	37 J
Vinyl Chloride	3.86	< 5	3.5 (nv)	10	26	26	27	2.2	4.8	8.5	5.8	6.1	10	9.9	5.4	4.0	7.9	14	6.9	4.6	7.0	10	3.4	3.1	3.6	1.8	2.0	2.4	7.1	6.5	3.0
Degradation Products																															
1,1-Dichloroethene	4800	310	360 (nv)	300	46	52	44	4.5	7.6	2.8	1.6	1.6	2	1.8	1	0.91 J	1.1	1.3	0.65 J	0.49 J	0.86 J	0.76 J	0.39 J	0.33 J	0.47 J	0.34 J	0.32 J	0.29 J	0.64 J	0.59 J	0.34 J
Trans-1,2-Dichloroethene	1950	17	31 (nv)	130	34	33	30	2.1	4.9	12	7.6	7.9	13	13	8	6.3	8.8	12	7.2	5.9	7.9	9.8	4.9	4.3	4.5	3.8	3.2	2.8	6.0	5.9	2.9

VOCs (µg/L)	GS RBTL	Bedrock Well PPMP-66-MW08																													
		3/6/01	5/12/04	5/20/08	10/1/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	11/19/13	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		Historical			Baseline & First Year O&M					2nd Year O&M				3rd Year O&M				4th Year O&M				5th Year O&M				6th Year O&M			
Cis-1,2-Dichloroethene	991	< 5	< 1.0	< 1.0	0.29 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	205	< 5	< 1.0	0.28 J	0.98 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	3.86	< 5	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Degradation Products																															
1,1-Dichloroethene	4800	< 5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-Dichloroethene	1950	< 5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

VOCs (µg/L)	GS RBTL	Residuum Well PPMP-66-MW16																													
		10/17/01	5/13/04	11/7/07	5/20/08	10/1/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	11/19/13	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		Historical				Baseline & First Year O&M					2nd Year O&M				3rd Year O&M				4th Year O&M				5th Year O&M				6th Year O&M			
Cis-1,2-Dichloroethene	991	< 1.0	< 1.0	0.5 J	< 1.0	0.28 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.30 J	< 1.0
Trichloroethene	205	< 1.0	< 1.0	0.77 J	0.6 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	3.86	< 1.0	0.26 J	0.57 J	< 1.0	0.21 J	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Degradation Products																															
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

VOCs (µg/L)	GS RBTL	Transition Well PPMP-66-MW17																													
		5/20/04	5/20/08	9/29/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	11/19/13	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		Historical		Baseline & First Year O&M					2nd Year O&M				3rd Year O&M				4th Year O&M				5th Year O&M				6th Year O&M			
Cis-1,2-Dichloroethene	991	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	205	< 1.0	0.84 J	0.88 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	3.86	< 1.0	< 1.0	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Degradation Products																															
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

VOCs (µg/L)	GS RBTL	Residuum Well PPMP-66-MW18/PPMP-66-MW18R *																													
		5/12/04	5/20/08	9/28/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	11/19/13	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		Historical		Baseline & First Year O&M					2nd Year O&M				3rd Year O&M				4th Year O&M				5th Year O&M				6th Year O&M			
Cis-1,2-Dichloroethene	991	< 1.0	< 1.0	< 1.0	7.5	14	3.6	1.3	3	7.6	5.2	2.2	2.2	5.2	4.9	1.5	2.1	1.0	2.3	0.26 J	0.67 J	2.3	< 1.0	< 1.0	0.72 J	2.8	1.7	< 1.0
Trichloroethene	205	< 1.0	4.6	< 1.0	21	42	10	3.4	4.5	2.2	0.58 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1 J	1.2	0.68 J	0.6 J	0.31 J	0.48 J	0.44 J	0.57 J	0.76 J
Vinyl Chloride	3.86	< 1.0	< 1.0	< 0.8	0.66 J	6.2	2.4	1	0.96	1.5	1.3	0.64 J	0.76 J	1.8	1.4	0.45 J	0.47 J	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	<0.8	< 0.8	< 0.8	< 0.8
Degradation Products																															
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	0.25 J	0.32 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	0.47 J	2.5	0.36 J	< 1.0	< 1.0	0.38 J	0.29 J	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

r-(06/06/17)

Table 4-4: Groundwater Analytical Data for Constituents of Concern and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

VOCs (µg/L)	GS RBTL	Transition Well PPMP-66-MW23/PPMP-66-MW23R *																									
		5/13/04	11/7/07	5/21/08	10/1/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	11/19/13	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		**Historical**			**Baseline & First Year O&M**					**2nd Year O&M**				**3rd Year O&M**				**4th Year O&M**				**5th Year O&M**				**6th Year O&M**			
Cis-1,2-Dichloroethene	991	1.6	110	75	58	92	550	180	130	93	180	170	150	130	210	270	170	170	210	220	180	140	91	160	160	80	110	110	170
Trichloroethene	205	1.4	89	290	39	77	940	550	370	200	210	180	130	75	120	170	120	110	140	210	120	100	62	110	120	66	76	67	120
Vinyl Chloride	3.86	9.2	16	20	6.6	4.5	15	14	20	19	39	33	31	32	48	59	31	41	39	54	33	26	20	28	23	12	19	16	30
Degradation Products																													
1,1-Dichloroethene	4800	2.2	34	57	18	31	96	45	29	16	19	16	11	8.2	11	14	10	5.4	7.1	6.2	10	7.5	4.1	9.6	9.2	4.0	6.0	5.1	11
Trans-1,2-Dichloroethene	1950	< 1.0	0.77 J	2.7	0.47 J	1.2	7.9	5.9	7.2	6.2	22	27	23	24	43	68	22	52	67	84	39	33	27	35	37	23	31	23	45

VOCs (µg/L)	GS RBTL	Transition Well PPMP-66-MW24/PPMP-66-MW24R *																									
		5/17/04	11/5/07	5/20/08	9/29/10	5/11/11	8/11/11	11/2/11	2/6/12	5/7/12	8/6/12	11/12/12	2/4/13	5/8/13	8/26/13	11/19/13	2/5/14	5/7/14	8/11/14	11/3/14	2/3/15	5/18/15	8/3/15	11/12/15	2/9/16	5/3/16	8/4/16	11/1/16	2/14/17
COCs		**Historical**			**Baseline & First Year O&M**					**2nd Year O&M**				**3rd Year O&M**				**4th Year O&M**				**5th Year O&M**				**6th Year O&M**			
Cis-1,2-Dichloroethene	991	130	290	260	80	0.47 J	0.47 J	0.39 J	0.46 J	0.39 J	0.64 J	0.55 J	0.32 J	0.4 J	0.55 J	0.54 J	0.36 J	0.46 J	0.57 J	0.55 J	0.42 J	0.64 J	0.84 J	0.51 J	0.46 J	0.80 J	1.1	0.95 J	0.74 J
Trichloroethene	205	5000	2500	4000	5.5	2.4	1.1	0.78 J	0.66 J	0.54 J	0.48 J	0.58 J	0.53 J	0.44 J	0.38 J	0.4 J	0.45 J	0.46 J	0.37 J	0.4 J	0.44 J	0.45 J	0.25 J	0.37 J	0.39 J	0.24 J	0.29 J	0.30 J	0.48 J
Vinyl Chloride	3.86	1.2	16	11	20	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Degradation Products																													
1,1-Dichloroethene	4800	180	100	98	4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-Dichloroethene	1950	8.2	7.6	8.5	1.2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
< = Indicates the analyte was not detected at the reported quantitation limit shown.
µg/L = micrograms per liter
COCs = Constituents of concern
GS = Groundskeeper
(nv) = Not validated
LTM = Long-term monitoring
RBTL = Risk-Based Target Level (10^{-5} Risk)
VOCs = Volatile Organic Compounds

* Groundwater samples were collected from the original wells during the historical and baseline rounds (i.e., from March 2001 through October 2010).
Groundwater samples were collected from the replacement wells (noted with a "R" suffix) during the LTM rounds from May 2011 to the present, with the exception of well PPMP-66-MW02R.
Groundwater samples were collected from replacement well PPMP-66-MW02R from May 2011 through May 2013 and from the second replacement well PPMP-66-MW02RR from January 2014 to the present.

Lab Flag:
J = Estimated detection. The analyte is positively identified and the concentration is less than the reporting limit (RL) but greater than the method detection limit (MDL).

Result exceeds GS RBTL

Table 4-5: Trend in Total VOCs Concentrations
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Monitoring Well	Well Type	Sep/Oct 2010 (Baseline) Total VOCs	May 2016 (6th Year LTM, 1st Qtr) Total VOCs	Change in Total VOCs Compared to Baseline
PPMP-66-MW02R	residuum	456	76	-380
PPMP-66-MW06R	residuum	2,781	65	-2,716
PPMP-66-MW08	bedrock	1.27	ND	-1
PPMP-66-MW16	residuum	0.49	ND	0
PPMP-66-MW17	transition	0.88	ND	-1
PPMP-66-MW18R	residuum	ND	1	1
PPMP-66-MW23R	transition	122	185	63
PPMP-66-MW24R	transition	111	1	-110

Monitoring Well	Well Type	Sep/Oct 2010 (Baseline) Total VOCs	August 2016 (6th Year LTM, 2nd Qtr) Total VOCs	Change in Total VOCs Compared to Baseline
PPMP-66-MW02R	residuum	456	53	-403
PPMP-66-MW06R	residuum	2,781	116	-2665
PPMP-66-MW08	bedrock	1.27	ND	-1.27
PPMP-66-MW16	residuum	0.49	ND	-0.49
PPMP-66-MW17	transition	0.88	ND	-0.88
PPMP-66-MW18R	residuum	ND	3	1
PPMP-66-MW23R	transition	122	242	120
PPMP-66-MW24R	transition	111	1	-110

Monitoring Well	Well Type	Sep/Oct 2010 (Baseline) Total VOCs	November 2016 (6th Year LTM, 3rd Qtr) Total VOCs	Change in Total VOCs Compared to Baseline
PPMP-66-MW02RR	residuum	456	38	-418
PPMP-66-MW06R	residuum	2,781	117	-2,664
PPMP-66-MW08	bedrock	1.27	ND	-1.27
PPMP-66-MW16	residuum	0.49	0	-0.49
PPMP-66-MW17	transition	0.88	ND	-0.88
PPMP-66-MW18R	residuum	ND	2	2
PPMP-66-MW23R	transition	122	221	99
PPMP-66-MW24R	transition	111	1	-110

Monitoring Well	Well Type	Sep/Oct 2010 (Baseline) Total VOCs	February 2017 (6th Year LTM, 4th Qtr) Total VOCs	Change in Total VOCs Compared to Baseline
PPMP-66-MW02RR	residuum	456	79	-377
PPMP-66-MW06R	residuum	2,781	54	-2,727
PPMP-66-MW08	bedrock	1.27	ND	-1.27

Table 4-5: Trend in Total VOCs Concentrations
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

PPMP-66-MW16	residuum	0.49	ND	-0.49
PPMP-66-MW17	transition	0.88	ND	-0.88
PPMP-66-MW18R	residuum	ND	1	0.76
PPMP-66-MW23R	transition	122	376	254
PPMP-66-MW24R	transition	111	1	-110

Notes:
ND = Not detected
NS = Not sampled
VOCs = Volatile Organic Compounds
-- = Not calculated because VOCs were not detected or sample not collected

Figures

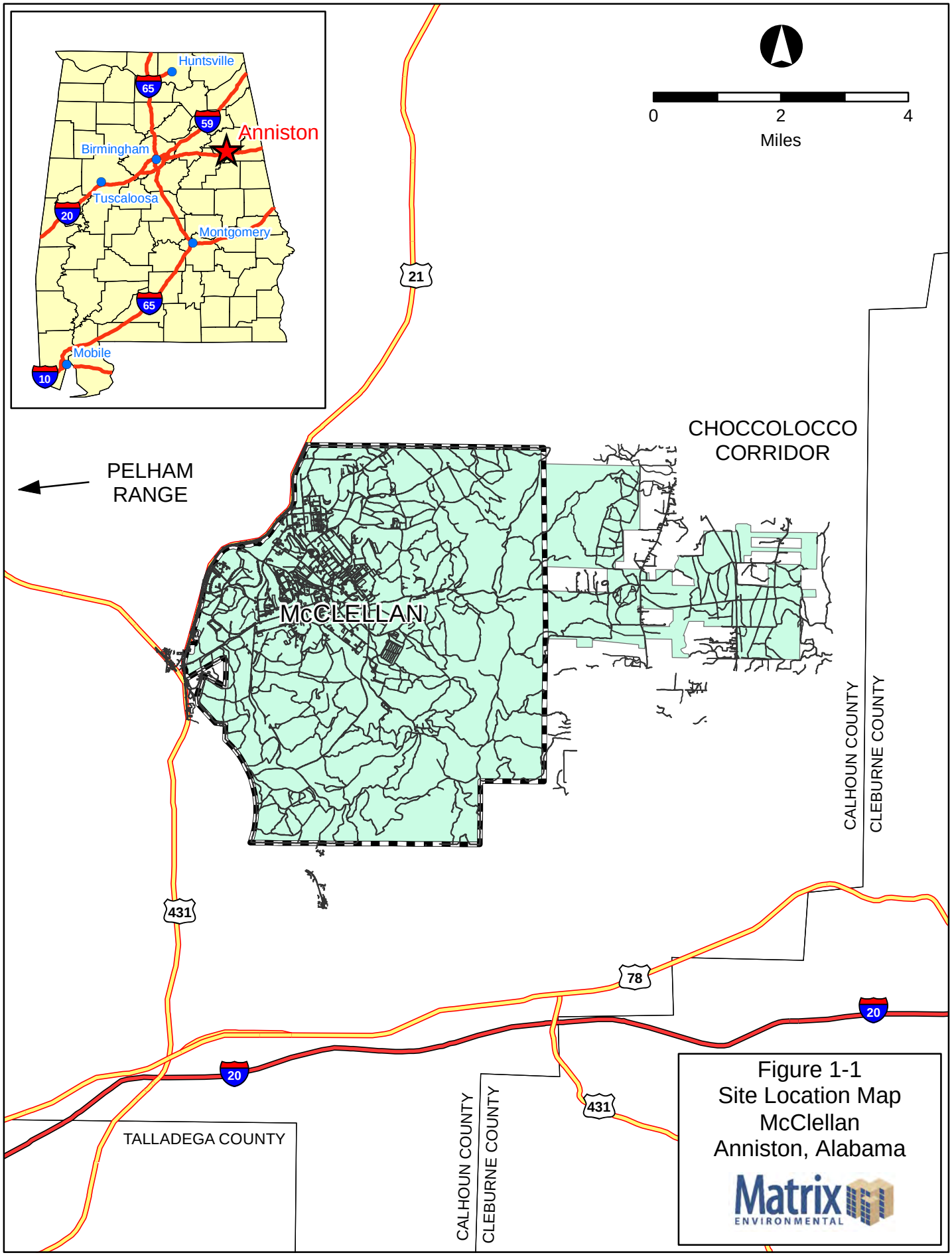


Figure 1-1
Site Location Map
McClellan
Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: \\Tartarus\GIS\gis_projects\Fort_McClellan\03.094.007active\apps\Archive\Location_Map.mxd, 4/1/2010, jeff_clonts

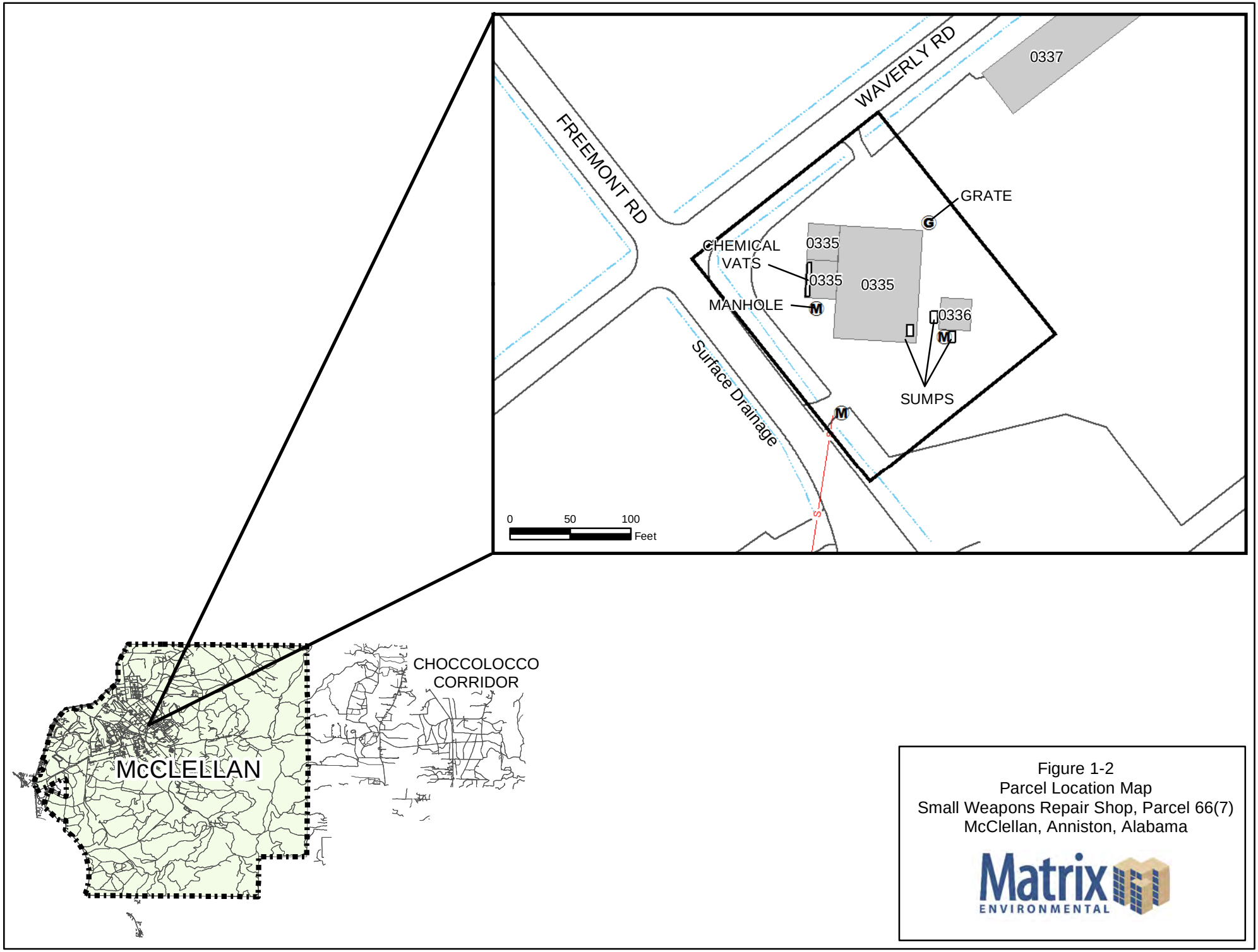


Figure 1-2
Parcel Location Map
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\apps\Small_Weapons-66(7)\CMIR\Figure1-2_Parcel_Location_Map.mxd, 5/7/2012, jeff_clents

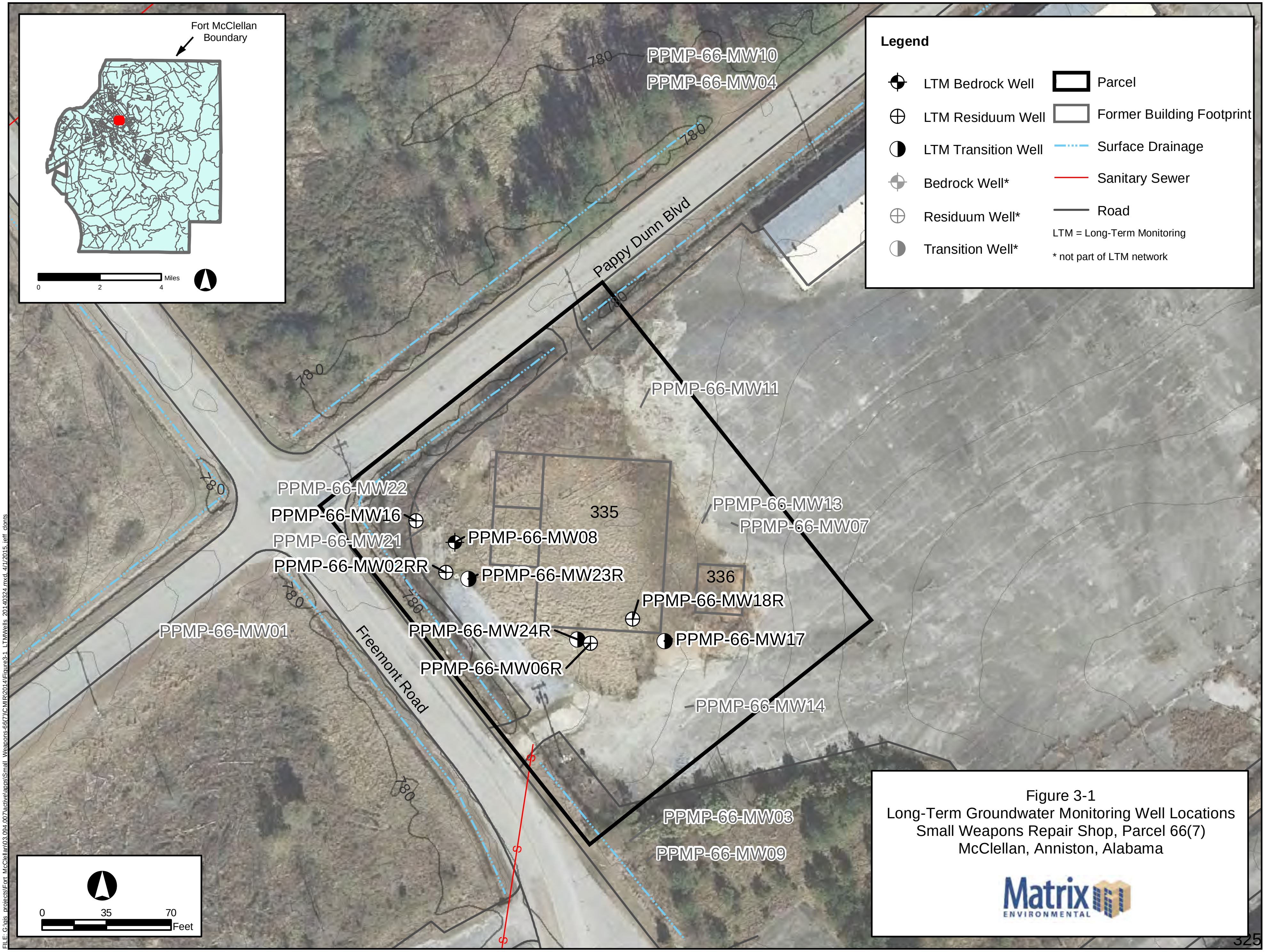


Figure 3-1
Long-Term Groundwater Monitoring Well Locations
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

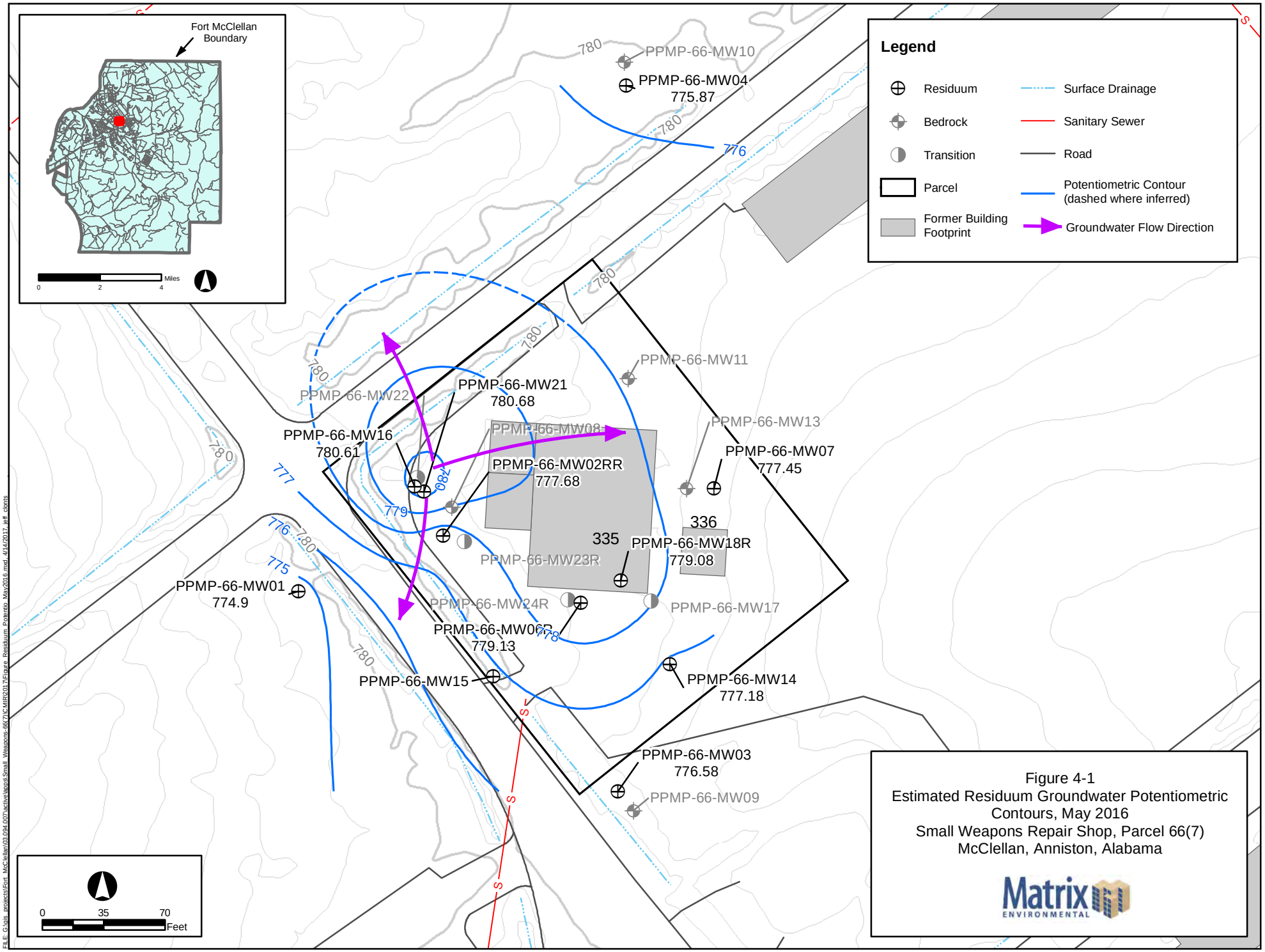
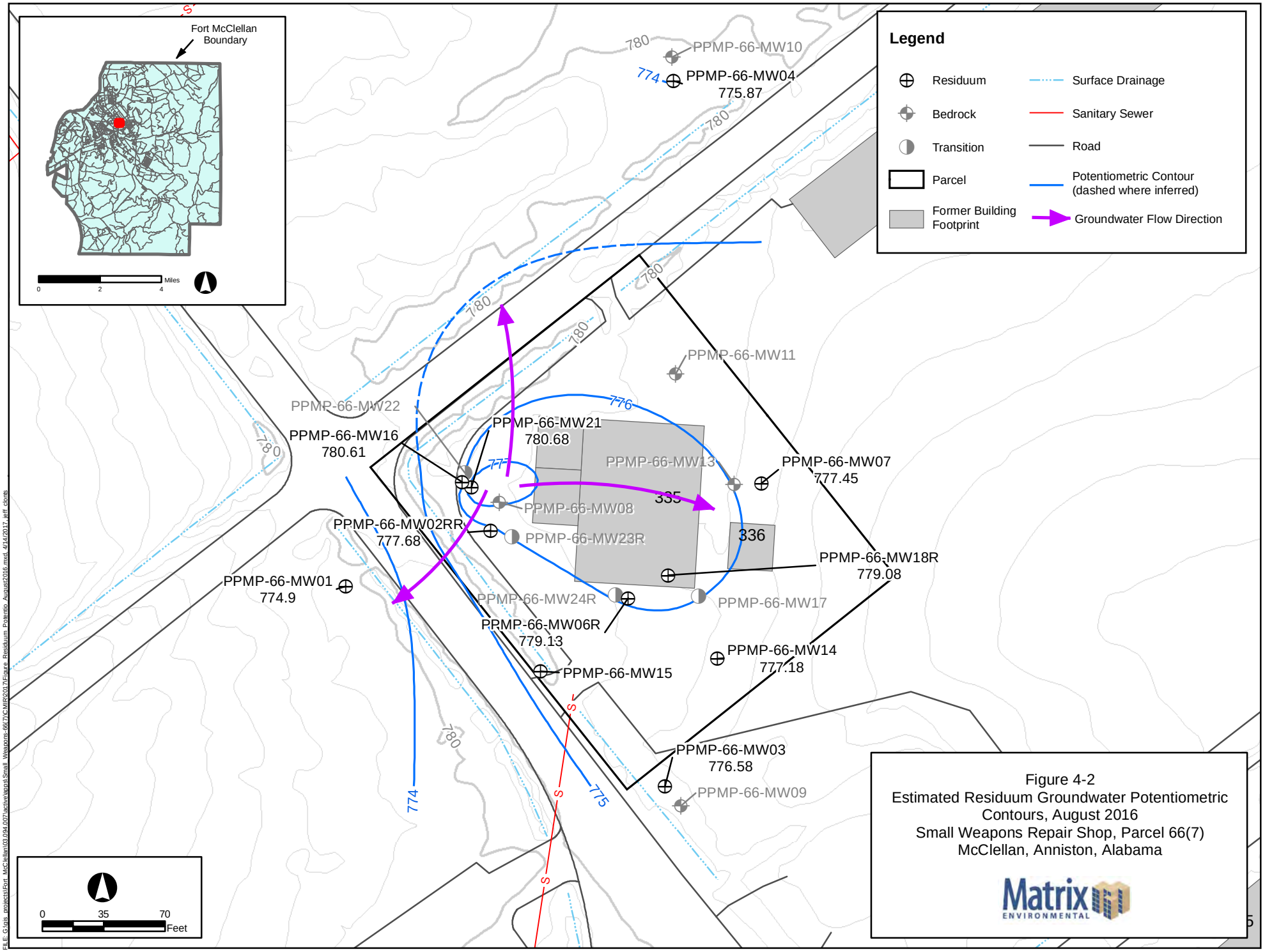
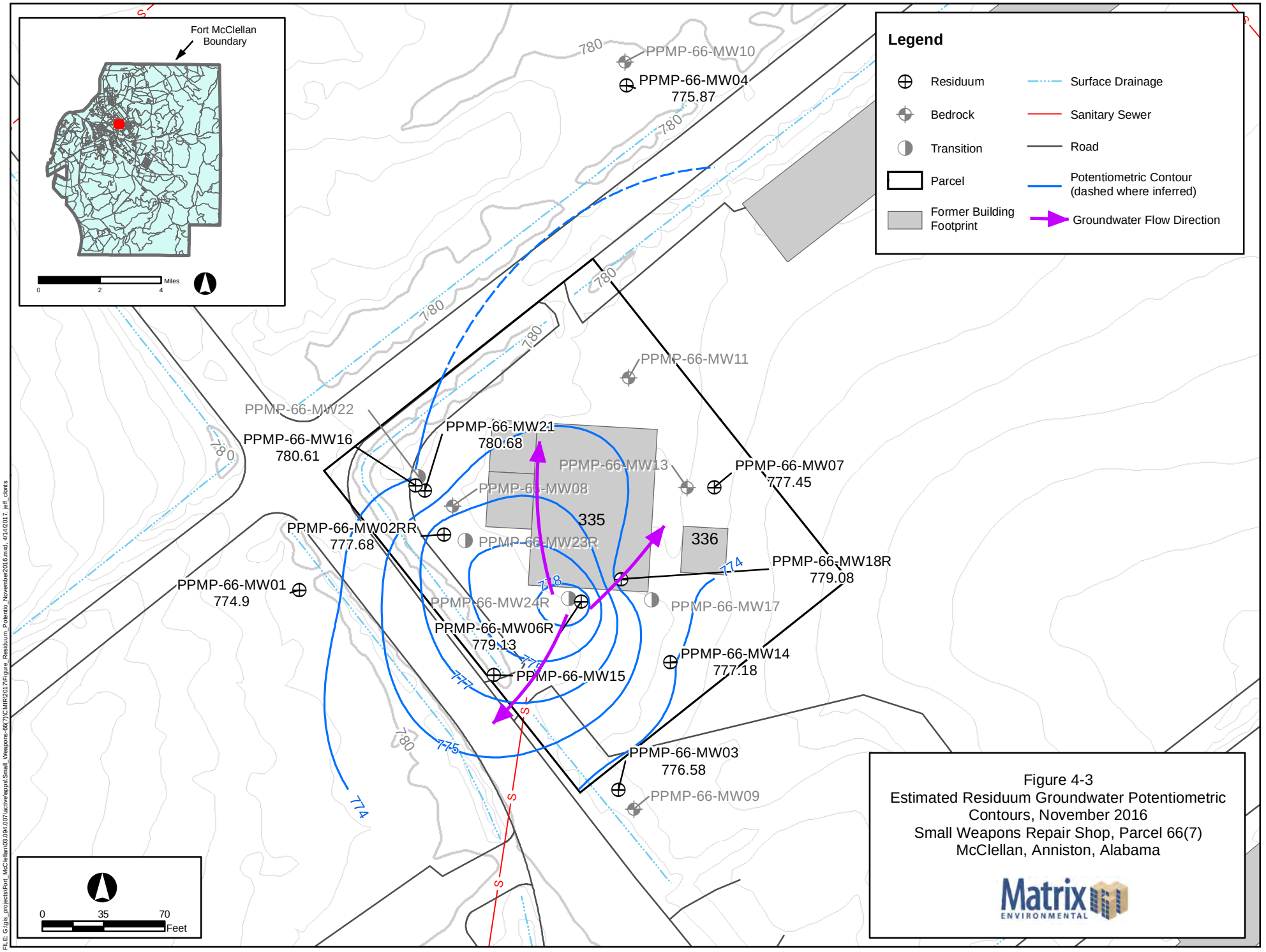


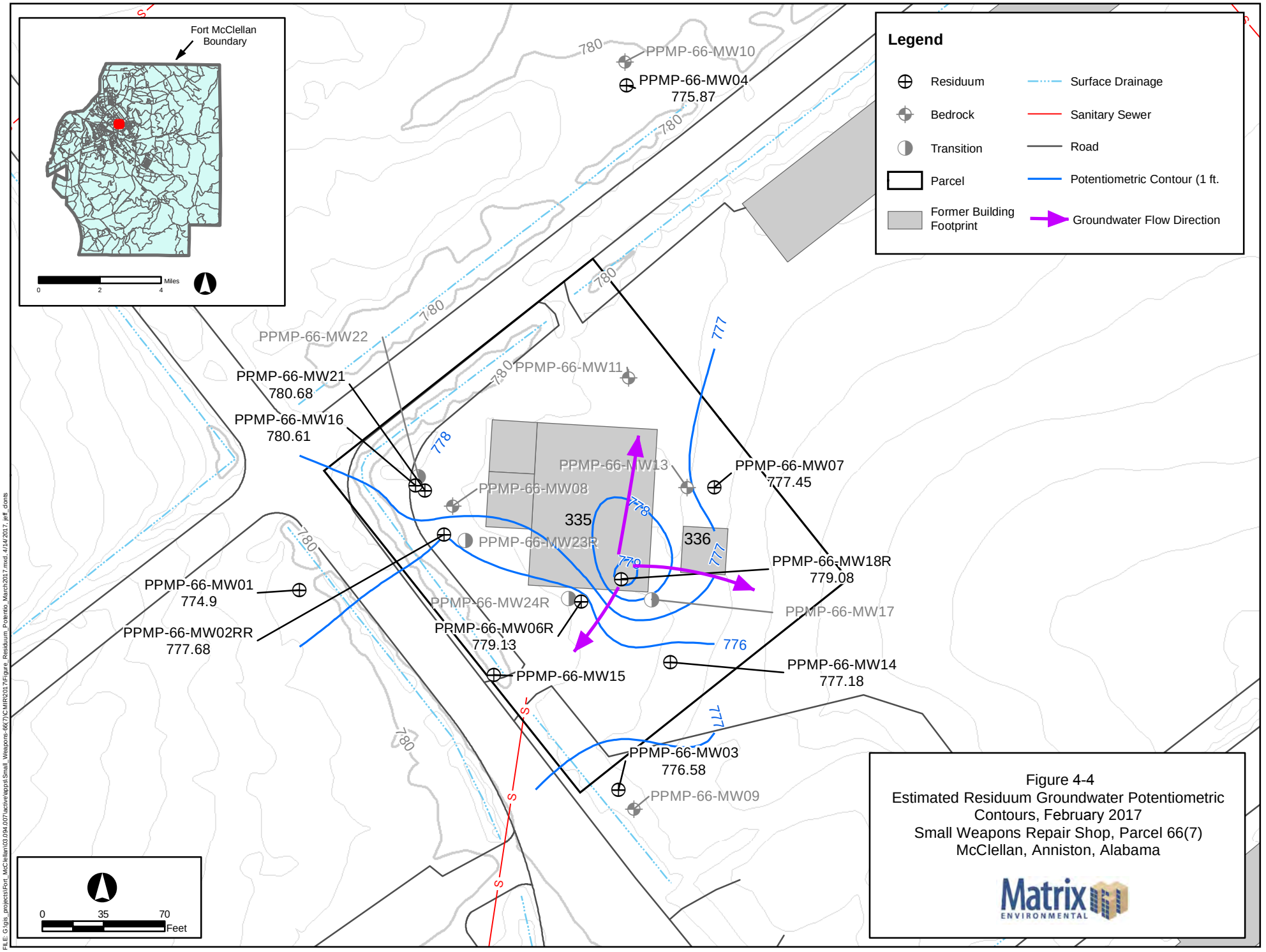
Figure 4-1
Estimated Residuum Groundwater Potentiometric Contours, May 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\09.094.007\active\gis\Small_Weapons-66(7)\CMR2016\Figure_Residuum_Potentio_May2016.mxd, 4/14/2017, jeff_davis


Fort McClellan Boundary
Miles
0
2
4
Legend
Residuum
Bedrock
Transition
Parcel
Former Building Footprint
Surface Drainage
Sanitary Sewer
Road
Potentiometric Contour (dashed where inferred)
Groundwater Flow Direction
PPMP-66-MW10
PPMP-66-MW04
775.87
PPMP-66-MW11
PPMP-66-MW22
PPMP-66-MW16
780.61
PPMP-66-MW21
780.68
PPMP-66-MW13
PPMP-66-MW07
777.45
PPMP-66-MW08
PPMP-66-MW02RR
777.68
PPMP-66-MW23R
335
336
PPMP-66-MW18R
779.08
PPMP-66-MW01
774.9
PPMP-66-MW24R
PPMP-66-MW17
PPMP-66-MW06R
779.13
PPMP-66-MW14
777.18
PPMP-66-MW15
PPMP-66-MW03
776.58
PPMP-66-MW09
780
774
776
777
775
S
0
35
70
Feet
Figure 4-2
Estimated Residuum Groundwater Potentiometric Contours, August 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama
Matrix ENVIRONMENTAL


Fort McClellan Boundary
Miles
0
2
4
Legend
Residuum
Bedrock
Transition
Parcel
Former Building Footprint
Surface Drainage
Sanitary Sewer
Road
Potentiometric Contour (dashed where inferred)
Groundwater Flow Direction
PPMP-66-MW10
PPMP-66-MW04
775.87
PPMP-66-MW11
PPMP-66-MW22
PPMP-66-MW16
780.61
PPMP-66-MW21
780.68
PPMP-66-MW13
PPMP-66-MW08
PPMP-66-MW07
777.45
335
336
PPMP-66-MW02RR
777.68
PPMP-66-MW23R
PPMP-66-MW18R
779.08
PPMP-66-MW01
774.9
PPMP-66-MW24R
PPMP-66-MW17
PRMP-66-MW06R
779.13
PPMP-66-MW14
777.18
PPMP-66-MW15
PPMP-66-MW03
776.58
PPMP-66-MW09
780
778
776
774
772
770
0
35
70
Feet
Figure 4-3
Estimated Residuum Groundwater Potentiometric Contours, November 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama
Matrix ENVIRONMENTAL


Fort McClellan Boundary
Miles
0
2
4
Legend
Residuum
Bedrock
Transition
Parcel
Former Building Footprint
Surface Drainage
Sanitary Sewer
Road
Potentiometric Contour (1 ft.
Groundwater Flow Direction
PPMP-66-MW10
PPMP-66-MW04
775.87
PPMP-66-MW22
PPMP-66-MW21
780.68
PPMP-66-MW16
780.61
PPMP-66-MW11
PPMP-66-MW13
PPMP-66-MW08
PPMP-66-MW07
777.45
335
336
PPMP-66-MW23R
PPMP-66-MW18R
779.08
PPMP-66-MW01
774.9
PPMP-66-MW02RR
777.68
PPMP-66-MW24R
PRMP-66-MW06R
779.13
PPMP-66-MW17
PPMP-66-MW15
PPMP-66-MW14
777.18
PPMP-66-MW03
776.58
PPMP-66-MW09
780
778
777
776
0
35
70
Feet
Figure 4-4
Estimated Residuum Groundwater Potentiometric Contours, February 2017
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama
Matrix ENVIRONMENTAL

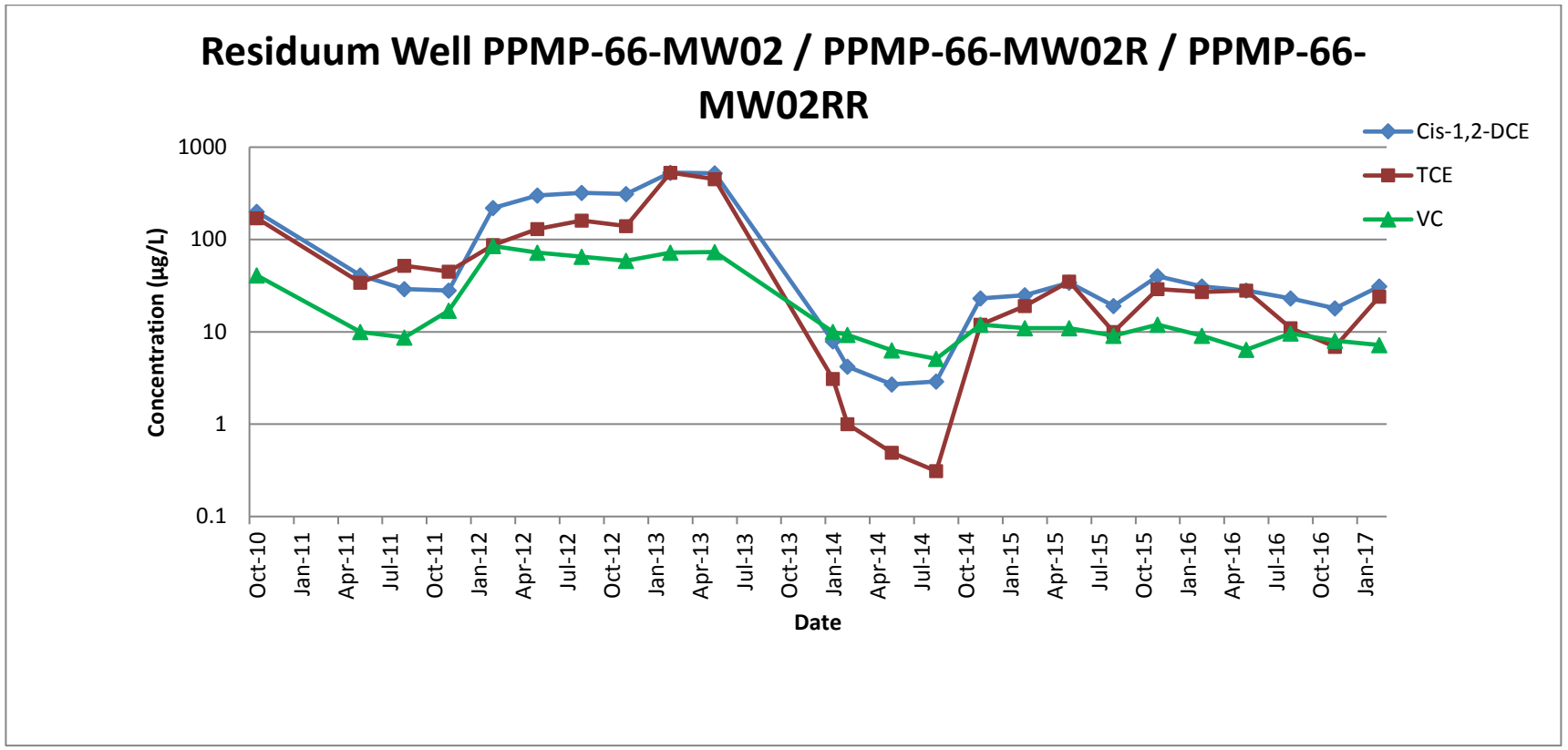


Figure 4-5: Volatile Concentrations in Residuum Well
PPMP-66-MW02 / PPMP-66-MW02R
Small Weapons, Parcel 66(7)
McClellan, Anniston, Alabama

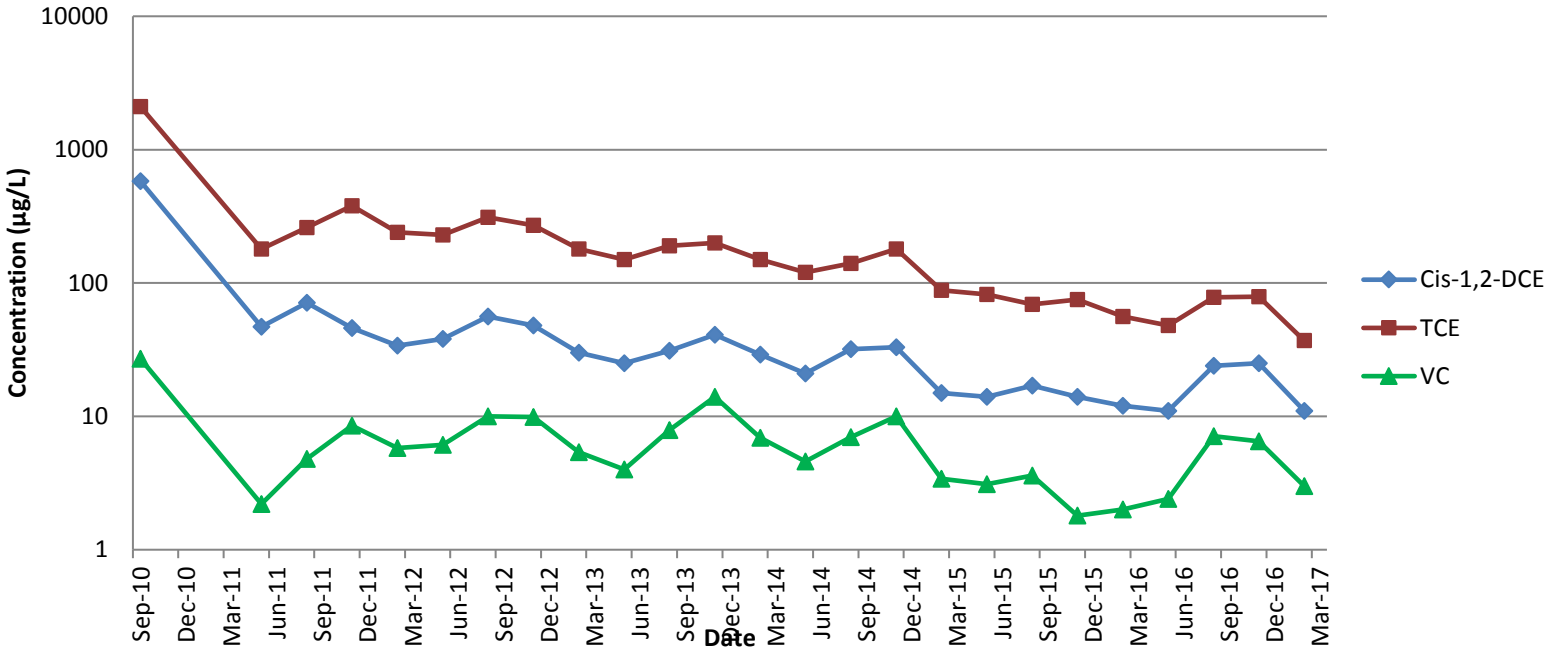


Figure 4-6: Volatile Concentrations in Residuum Well
PPMP-66-MW06 / PPMP-66-MW06R
Small Weapons, Parcel 66(7)
McClellan, Anniston, Alabama

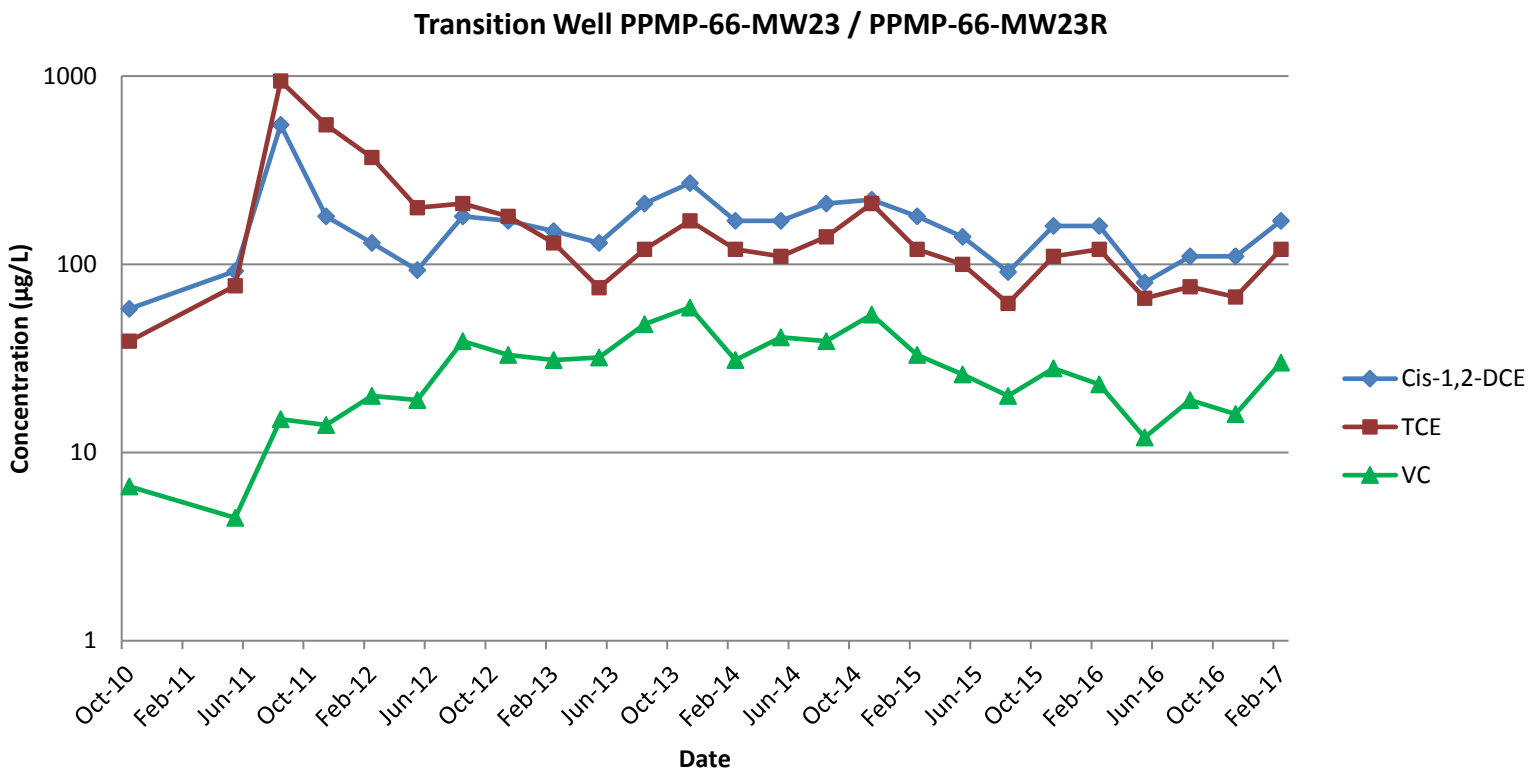


Figure 4-7: Volatile Concentrations in Transition Well
PPMP-66-MW23 / PPMP-66-MW23R
Small Weapons, Parcel 66(7)
McClellan, Anniston, Alabama

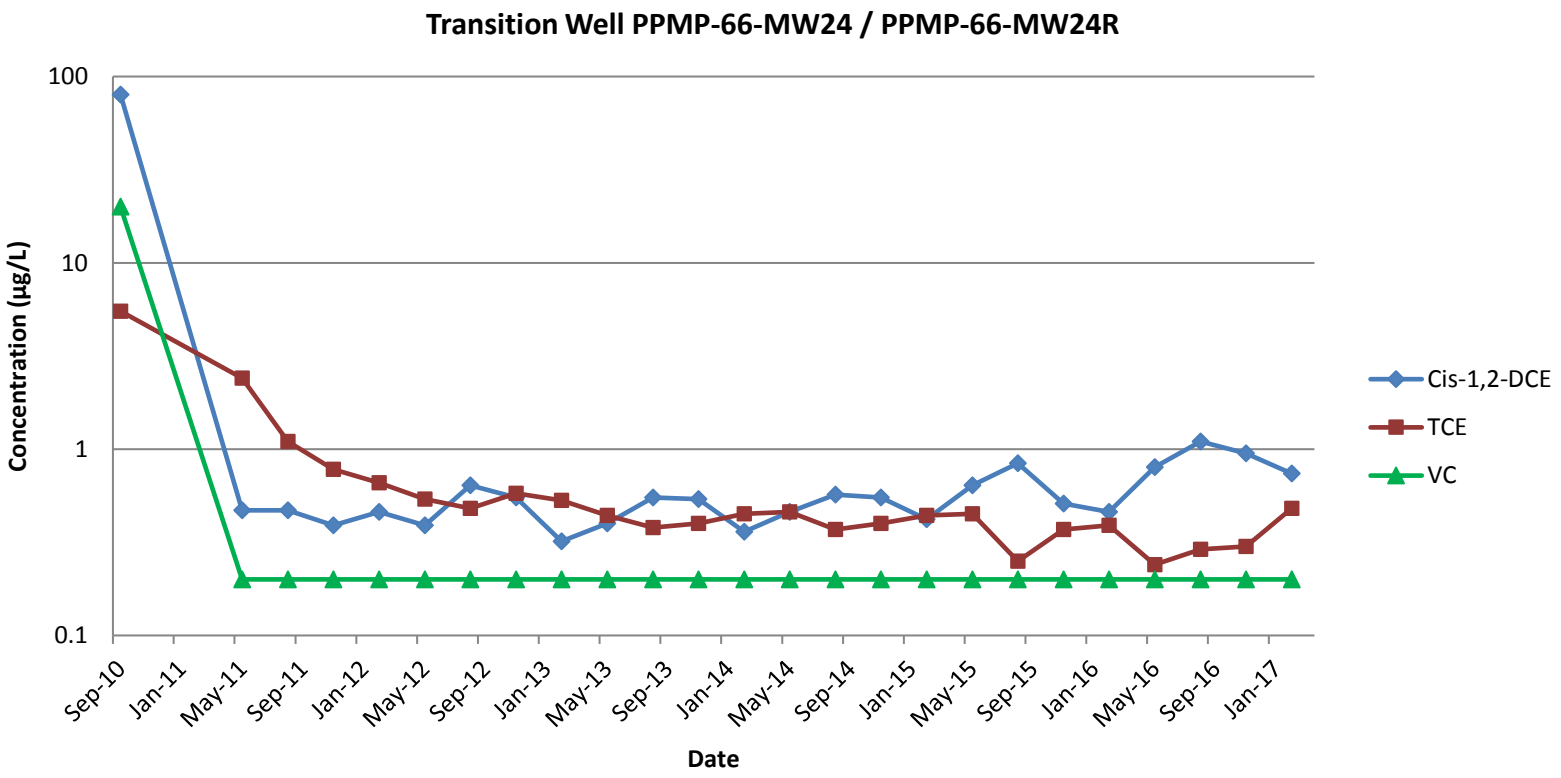
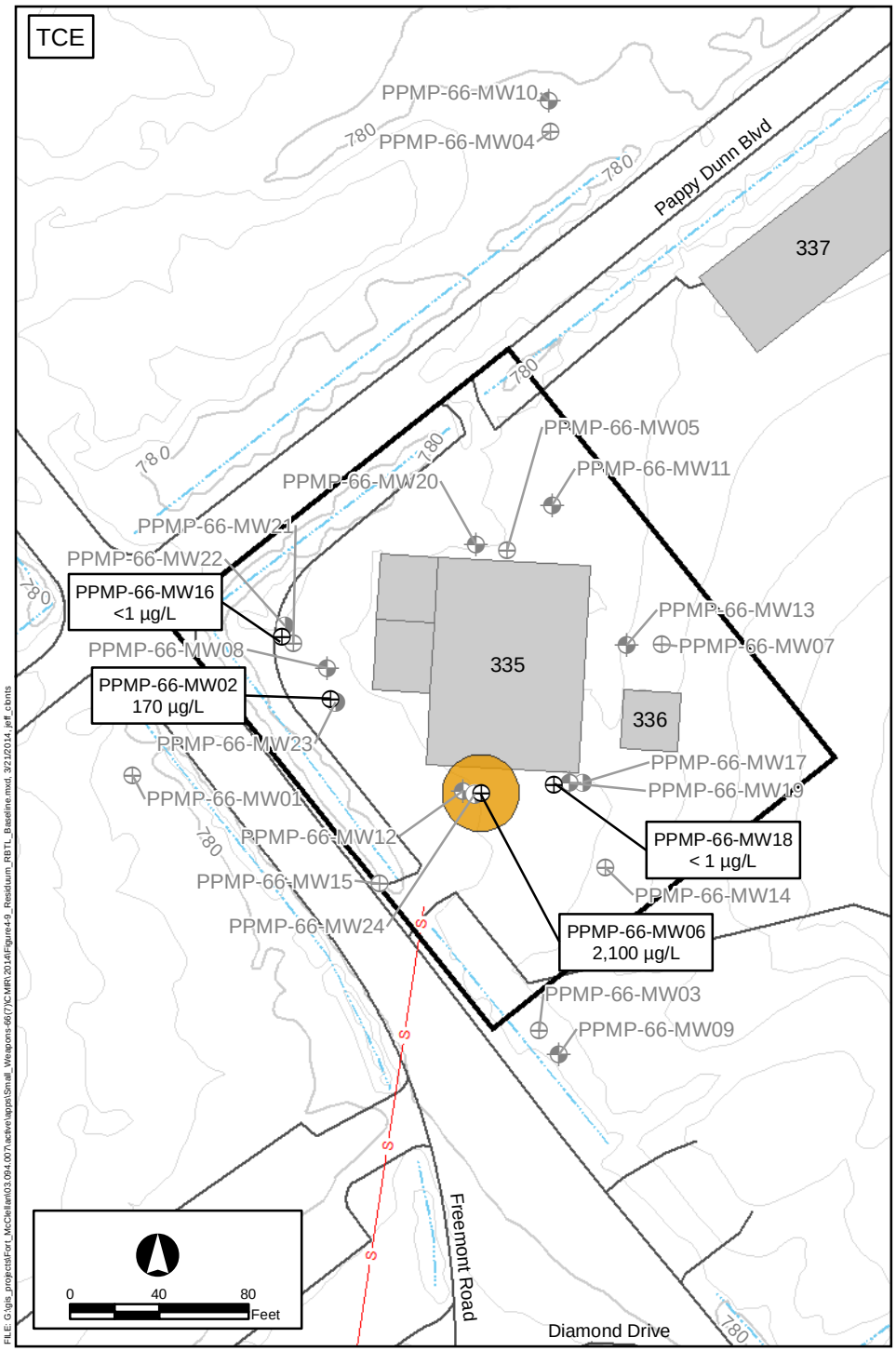


Figure 4-8: Volatile Concentrations in Transition Well
PPMP-66-MW24 / PPMP-66-MW24R
Small Weapons, Parcel 66(7)
McClellan, Anniston, Alabama



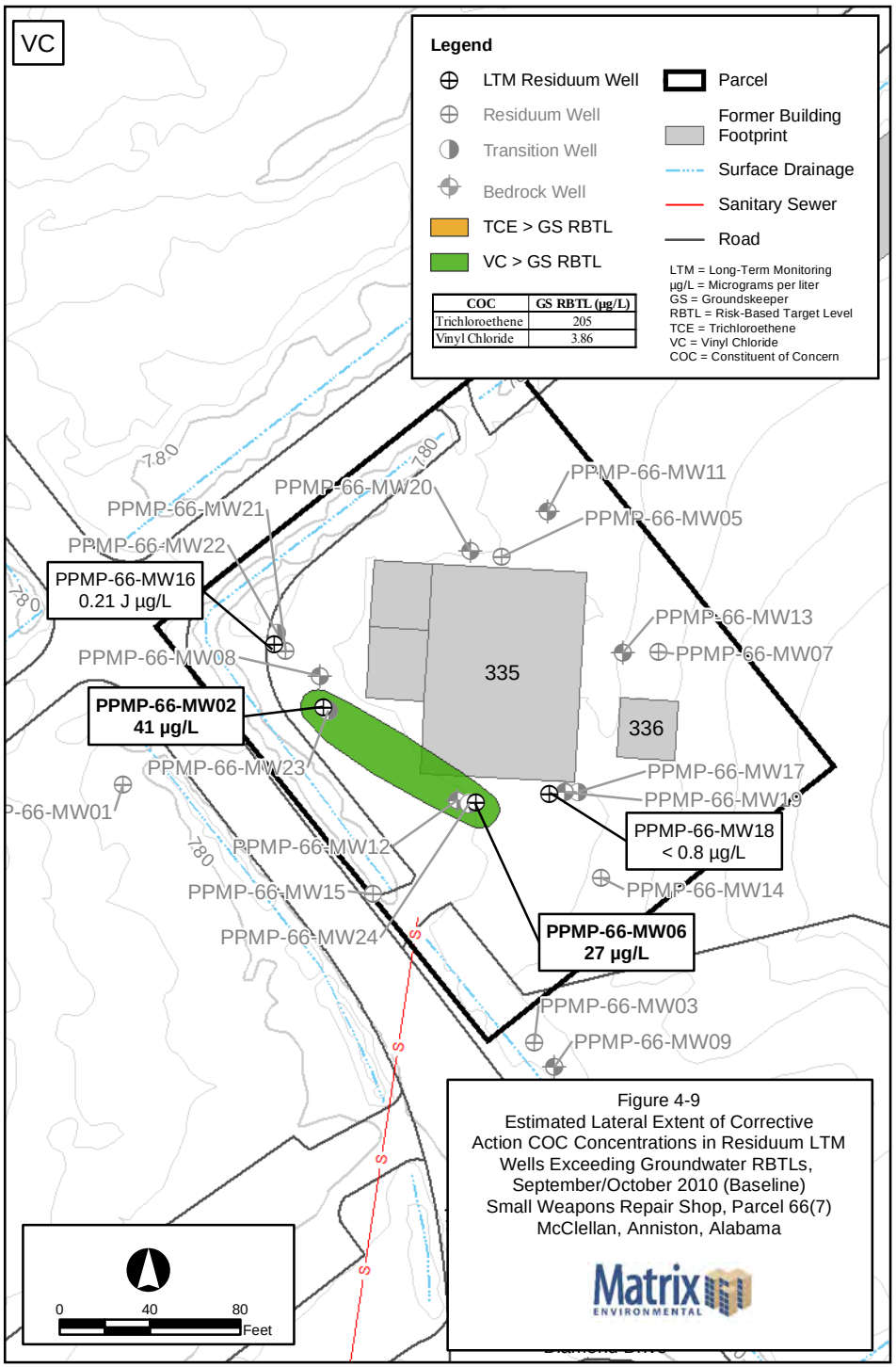


Figure 4-9
Estimated Lateral Extent of Corrective Action COC Concentrations in Residuum LTM Wells Exceeding Groundwater RBTLs, September/October 2010 (Baseline)
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\appt\Small_Weapons-66(7)\CMR\2014\Figure4-9_Residuum_RBTL_Baseline.mxd, 3/21/2014, jeff_cbnts

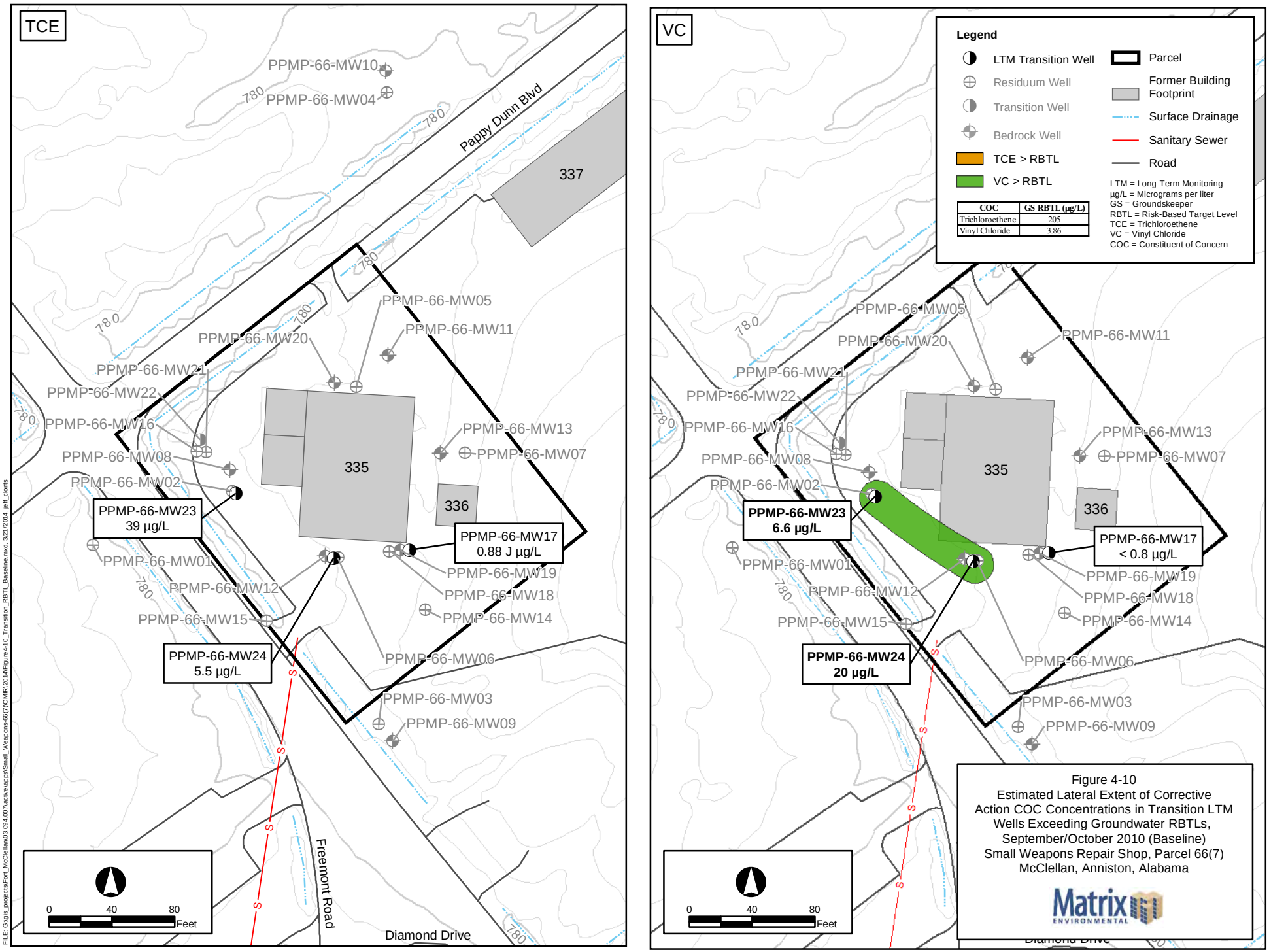
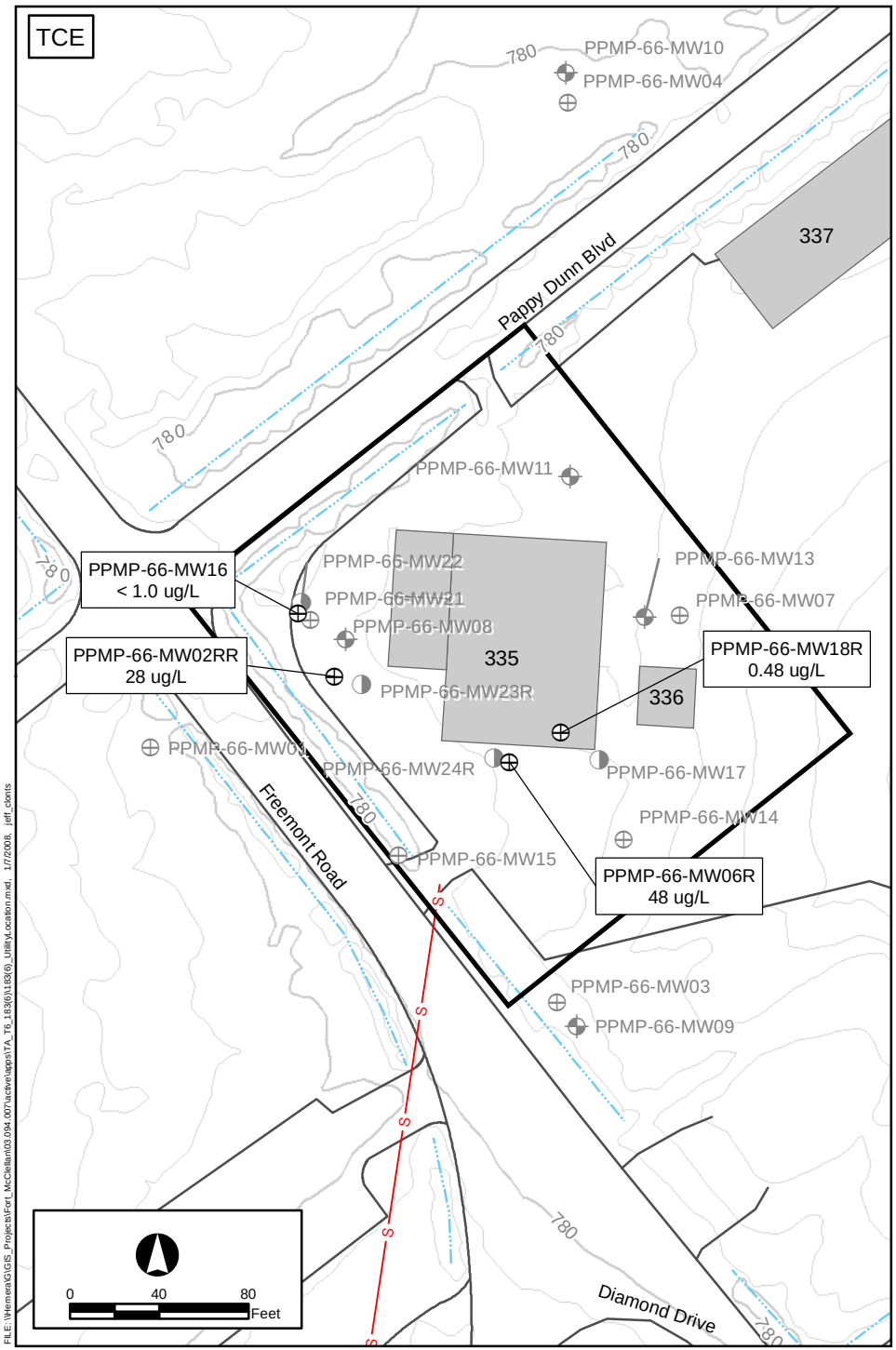


Figure 4-10
Estimated Lateral Extent of Corrective Action COC Concentrations in Transition LTM Wells Exceeding Groundwater RBTLs, September/October 2010 (Baseline)
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\appl\Small_Weapons-66(7)\CMR\2014\Figure4-10_Transition_RBTL_Baseline.mxd, 3/21/2014, jeff_coons



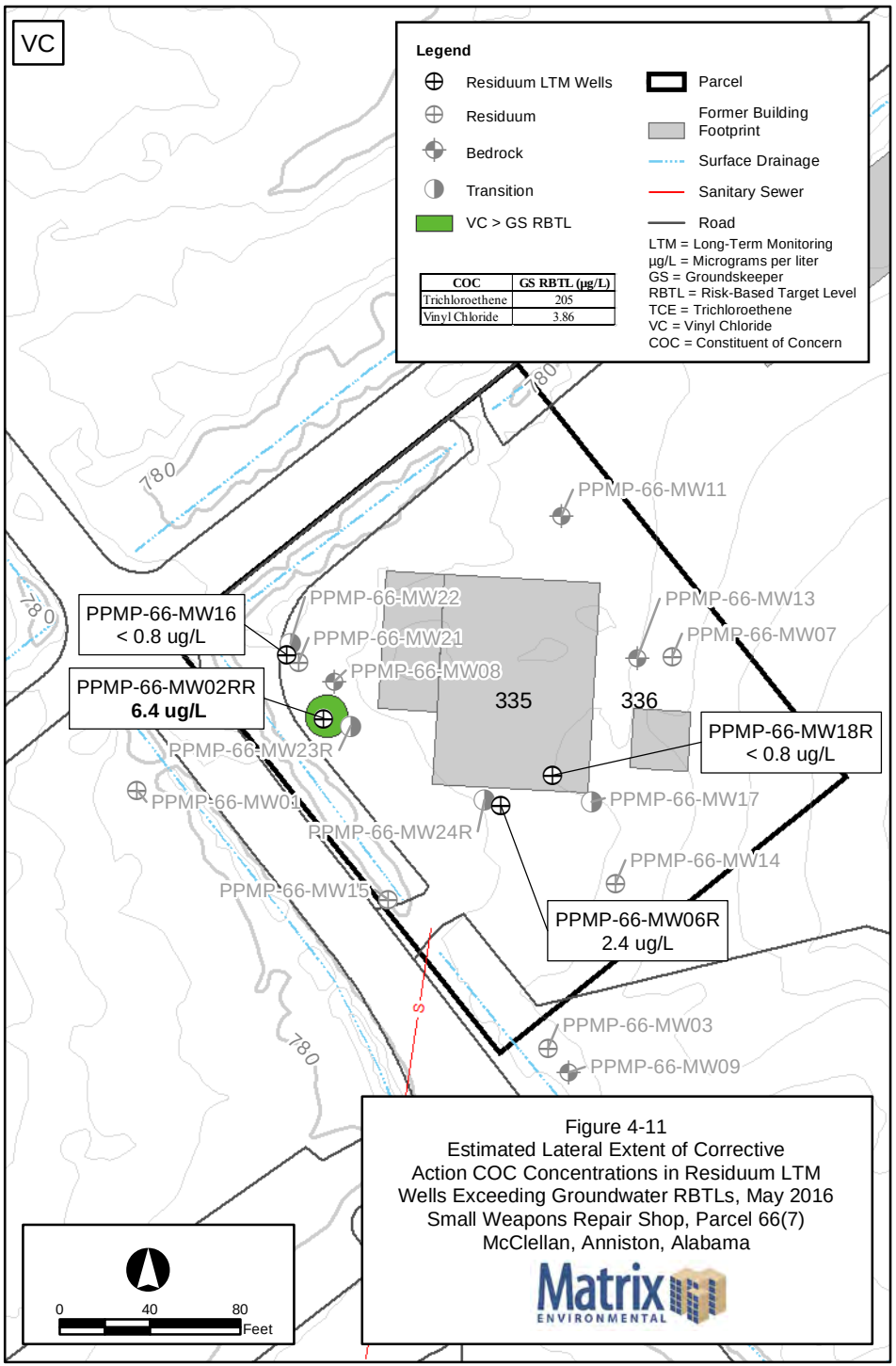
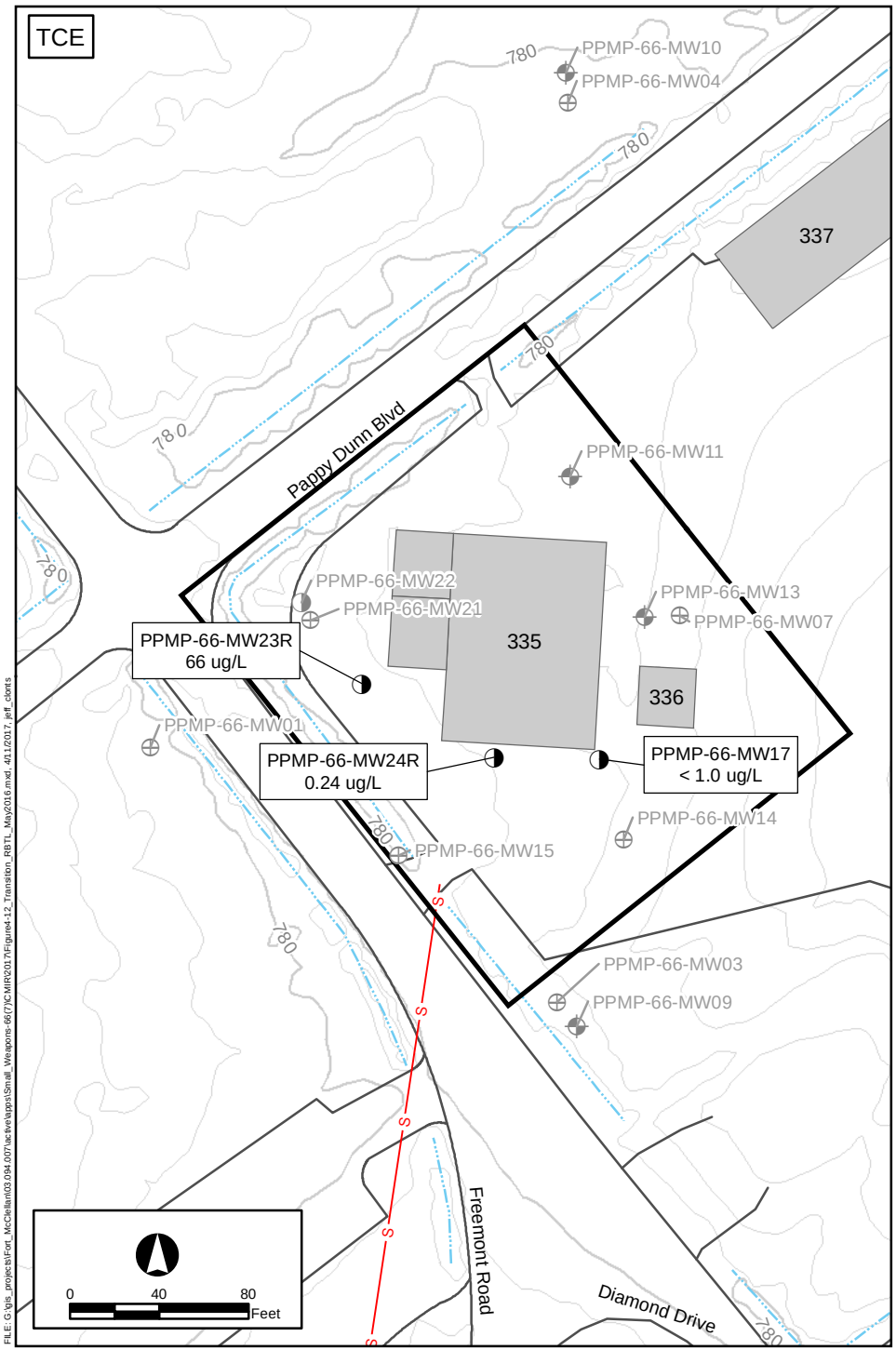


Figure 4-11
Estimated Lateral Extent of Corrective Action COC Concentrations in Residuum LTM Wells Exceeding Groundwater RBTLs, May 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: \\Hemera\GIS\GIS_Projects\Fort_McClellan\03.094.007\active\apps\TA_T6_1836\1836_UtilityLocation.mxd 1/7/2008, jeff_cloris



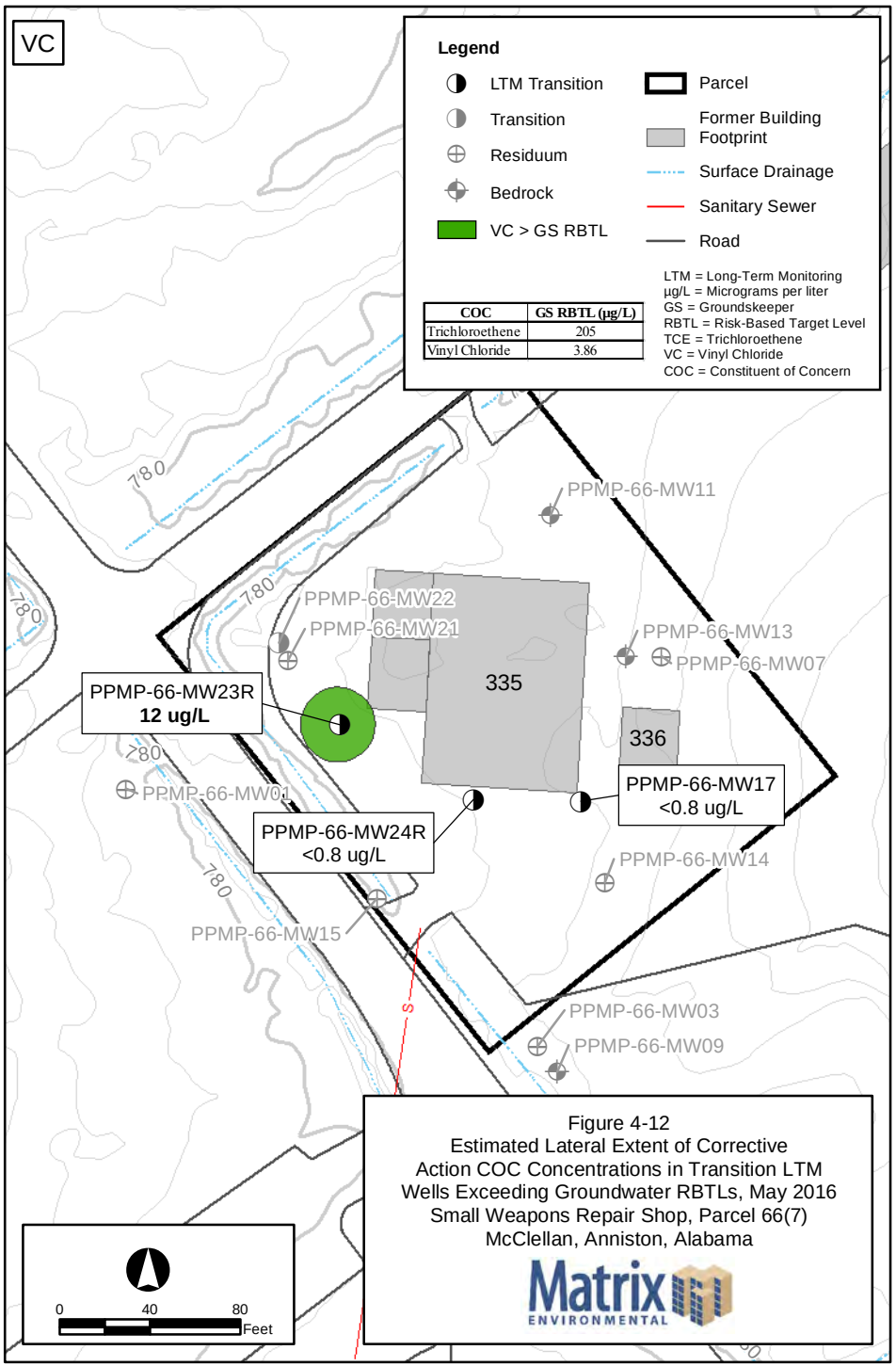
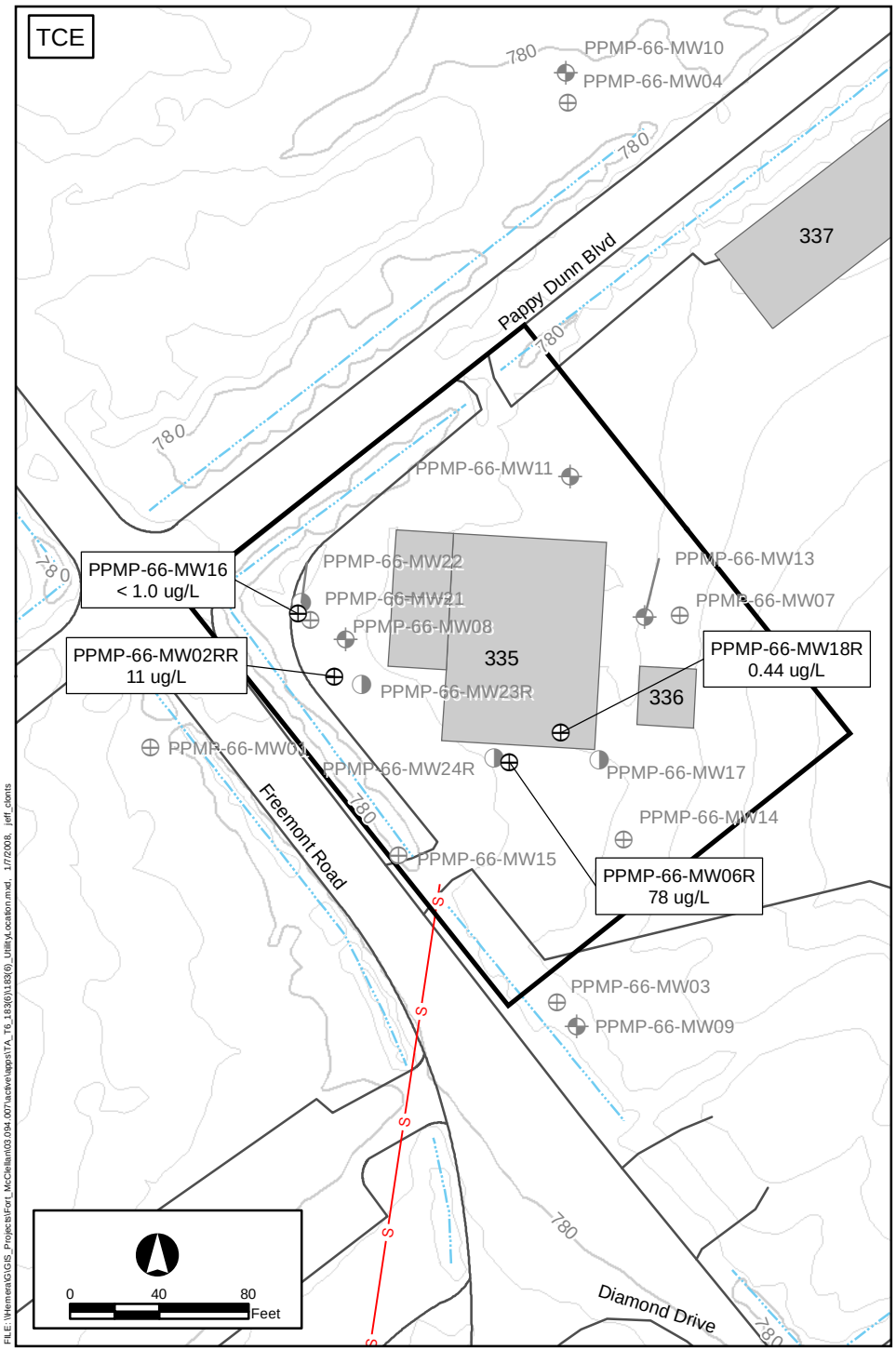


Figure 4-12
Estimated Lateral Extent of Corrective Action COC Concentrations in Transition LTM Wells Exceeding Groundwater RBTLs, May 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\apps\Small_Weapons-66(7)\CMR2017\Figure4-12_Transition_RBTL_May2016.mxd, 4/11/2017, jeff_coons



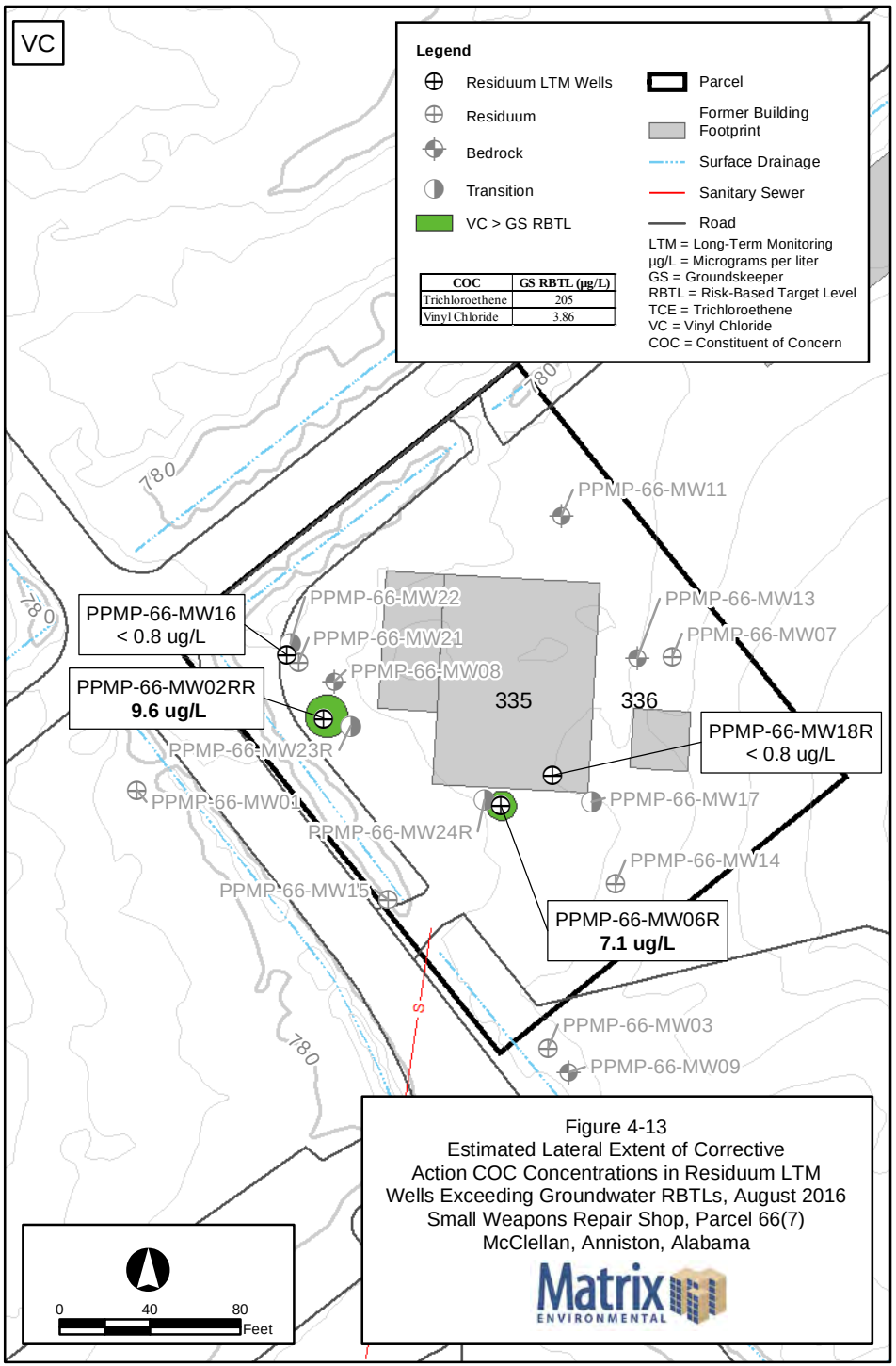
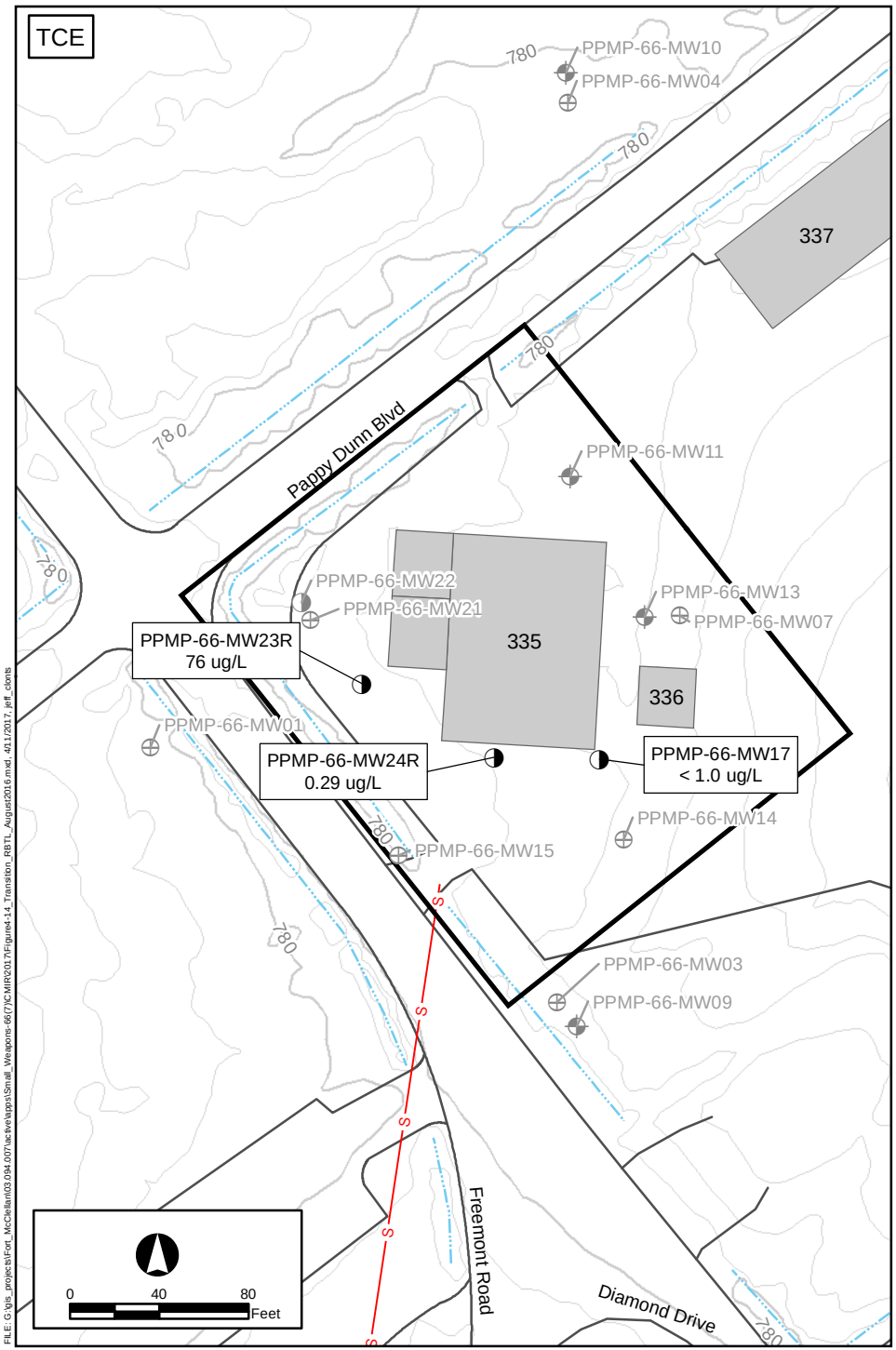


Figure 4-13
Estimated Lateral Extent of Corrective Action COC Concentrations in Residuum LTM Wells Exceeding Groundwater RBTLs, August 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: \\Hermes\GIS\GIS_Projects\Fort_McClellan\03.094.007\active\apps\TA_T6_1836\1836_UtilityLocation.mxd 1/7/2008 jeff_cloris



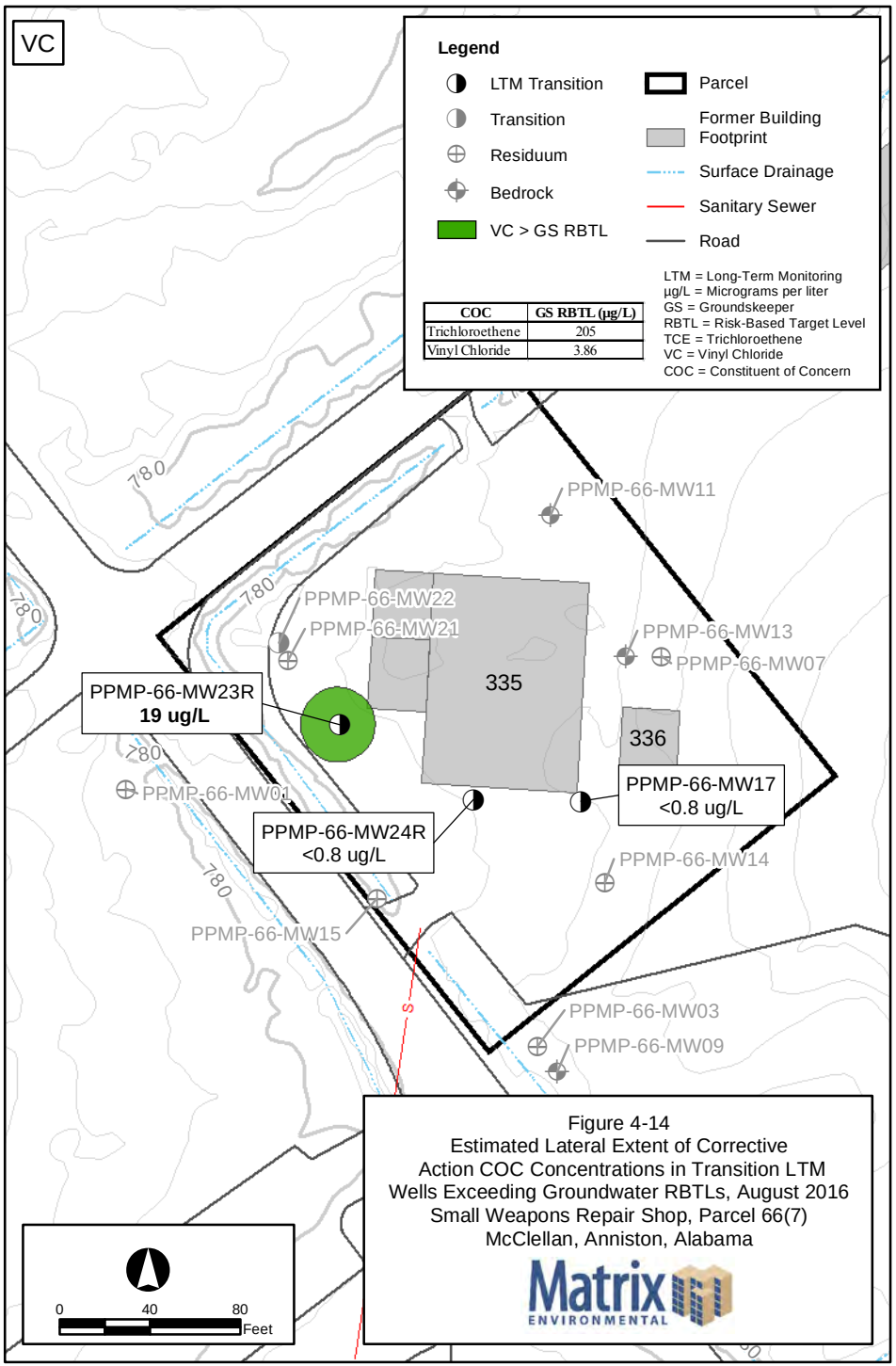
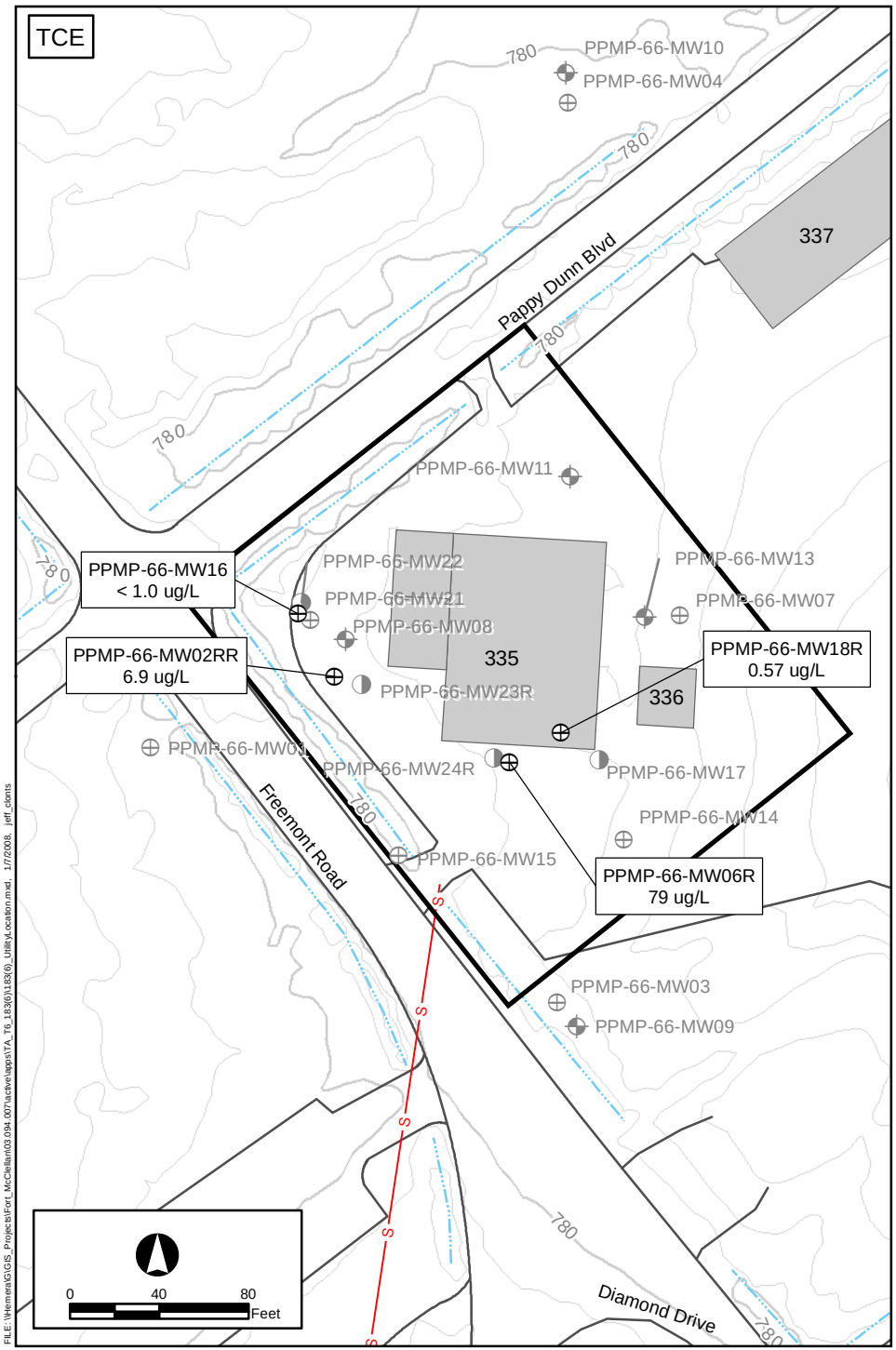


Figure 4-14
Estimated Lateral Extent of Corrective Action COC Concentrations in Transition LTM Wells Exceeding Groundwater RBTLs, August 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\apps\Small_Weapons-66(7)\CMR\2017\Figure4-14_Transition_RBTL_August2016.mxd, 4/11/2017, jeff_cloris



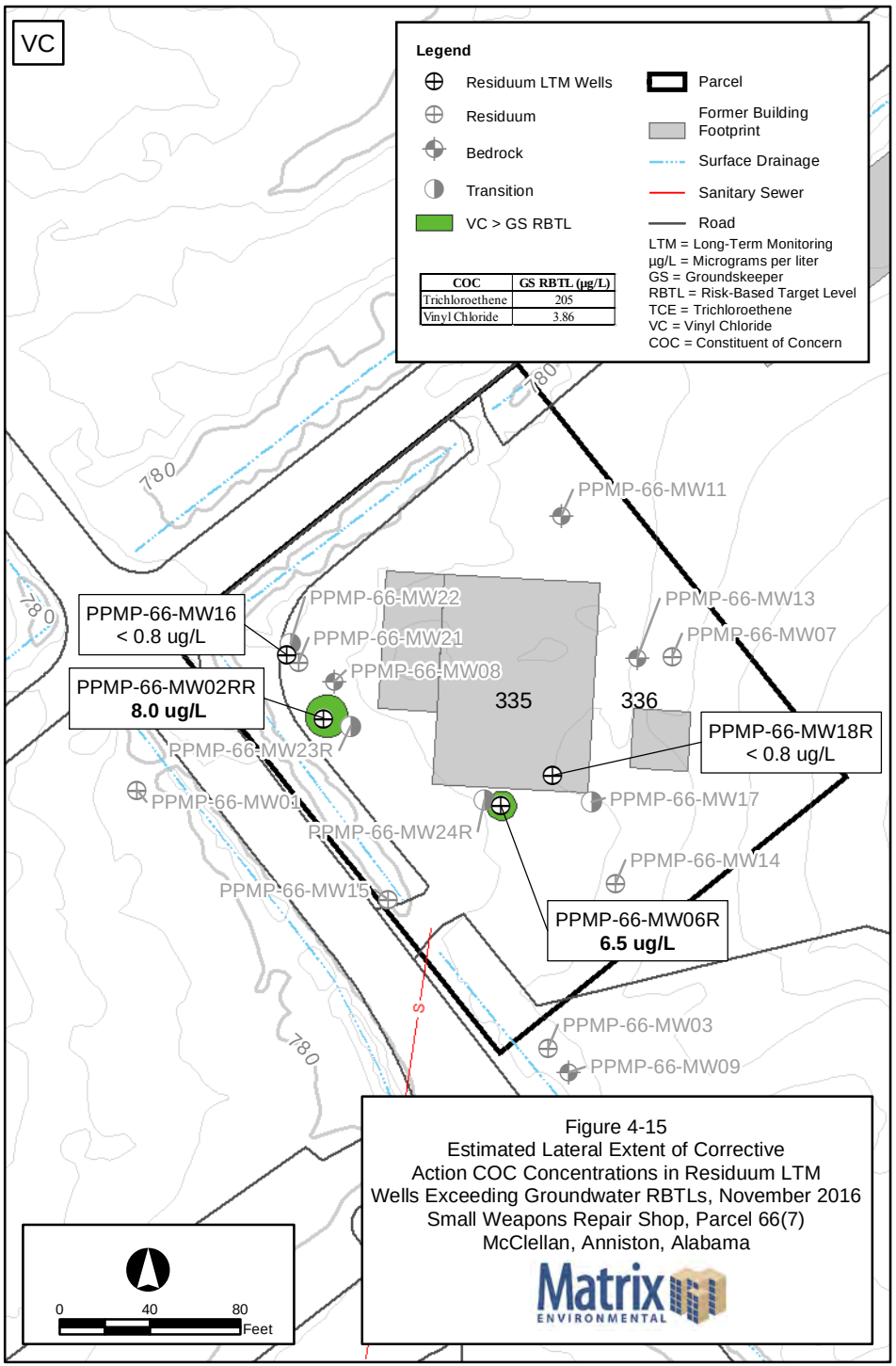


Figure 4-15
Estimated Lateral Extent of Corrective Action COC Concentrations in Residuum LTM Wells Exceeding Groundwater RBTLs, November 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: \\Hemera\GIS\GIS_Projects\Fort_McClellan\03.094.007\active\apps\TA_T6_1836\1836_UtilityLocation.mxd 1/7/2008 jeff_cloris

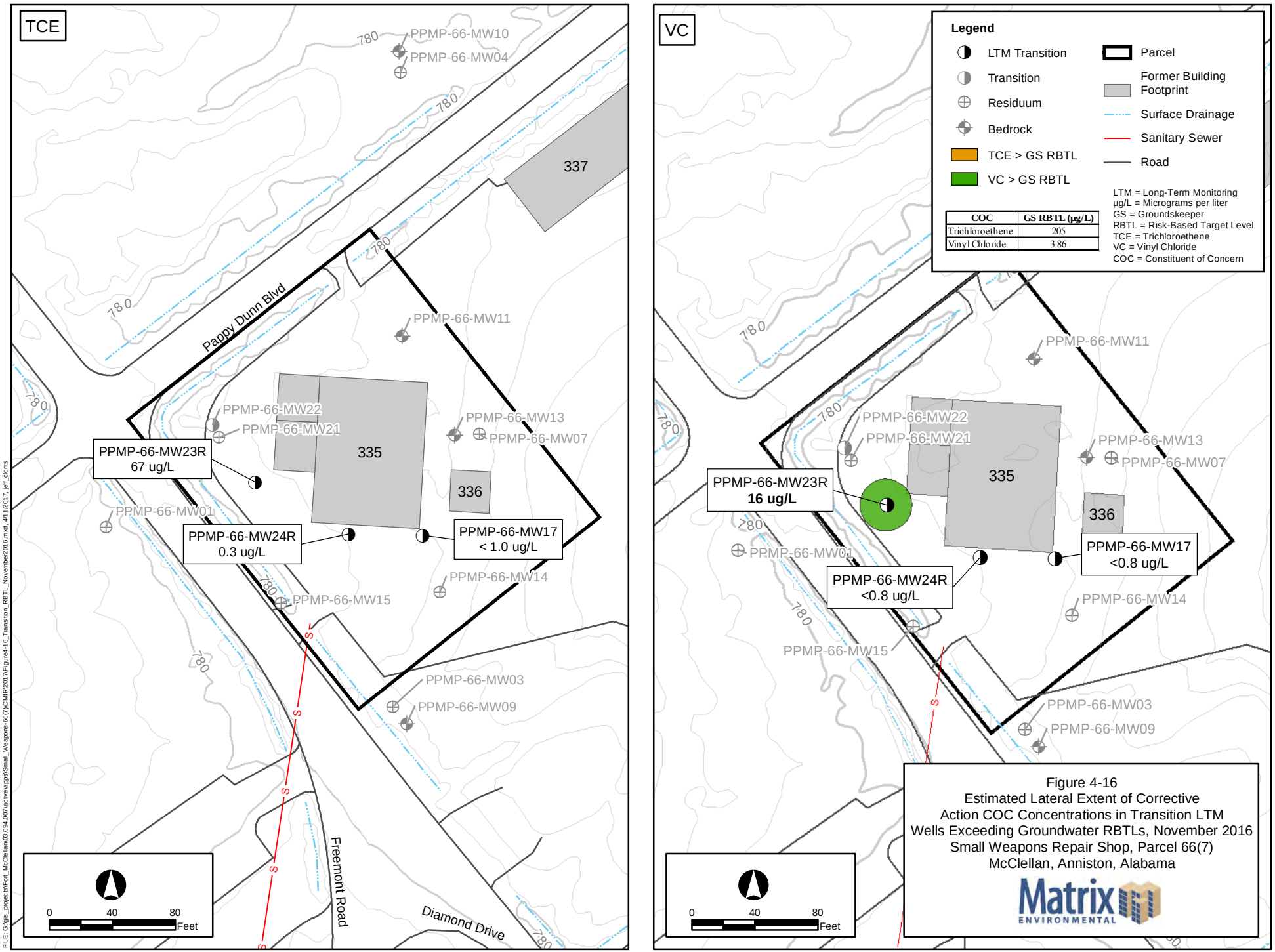
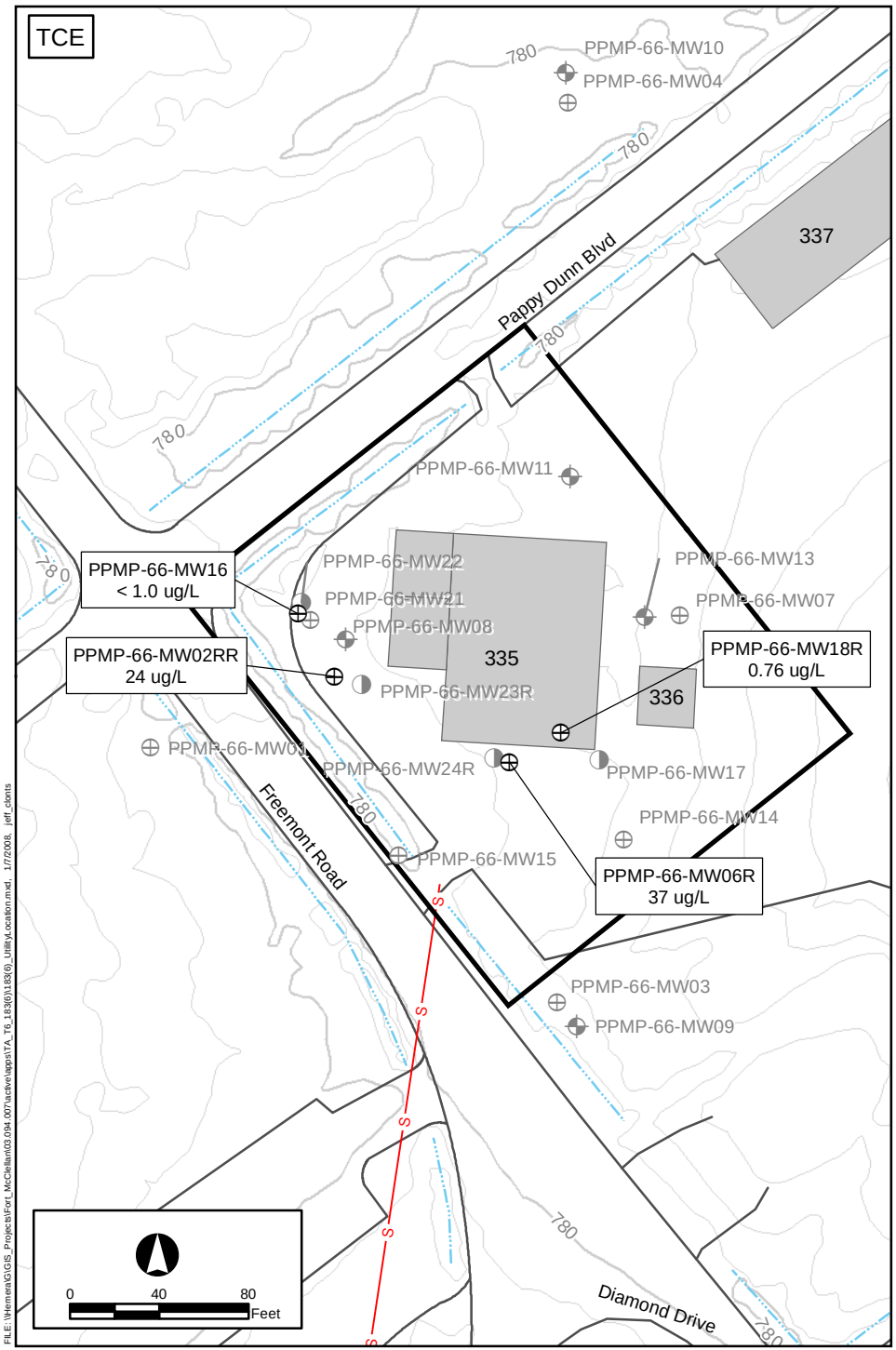


Figure 4-16
Estimated Lateral Extent of Corrective Action COC Concentrations in Transition LTM Wells Exceeding Groundwater RBTLs, November 2016
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\apps\Small_Weapons-66(7)\CMR2017\Figure4-16_Transition_RBTL_November2016.mxd, 4/11/2017, jeff_cloms



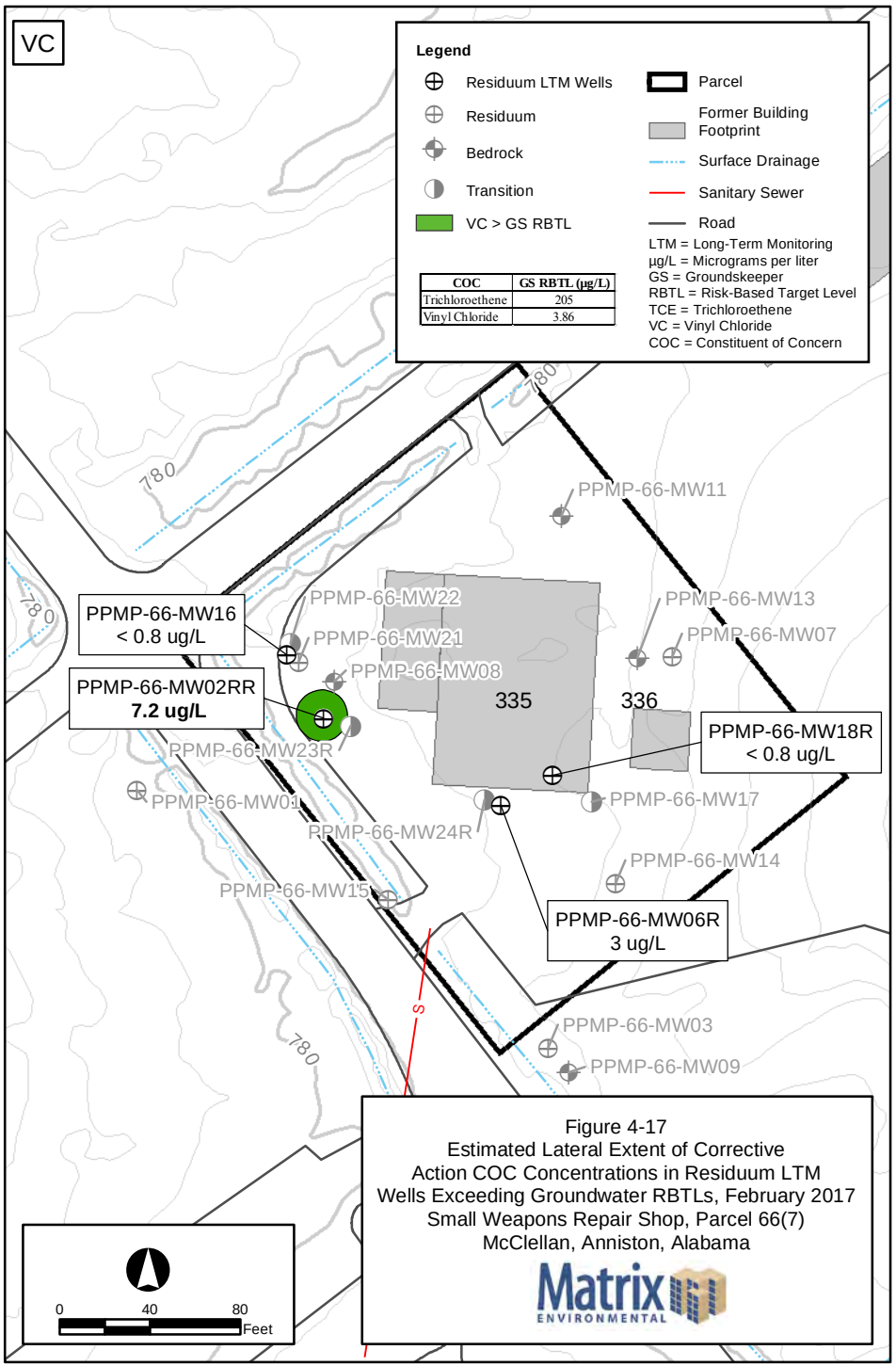
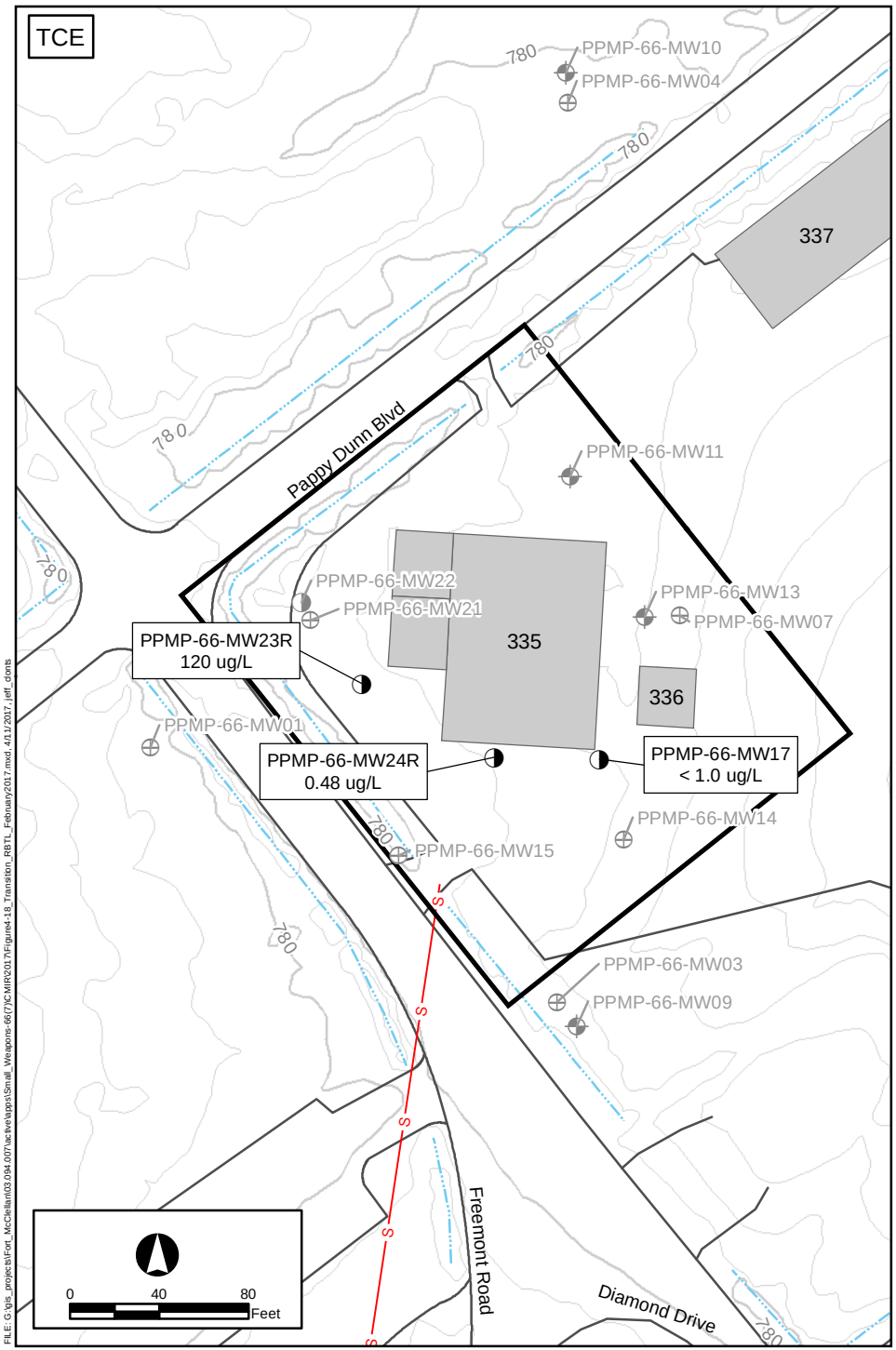


Figure 4-17
Estimated Lateral Extent of Corrective Action COC Concentrations in Residuum LTM Wells Exceeding Groundwater RBTLs, February 2017
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: \\Wemera\GIGIS_Projects\Fort_McClellan\03.094.007\active\apps\TA_T6_1836\1836_UtilityLocation.mxd, 1/7/2008, jeff_cloris



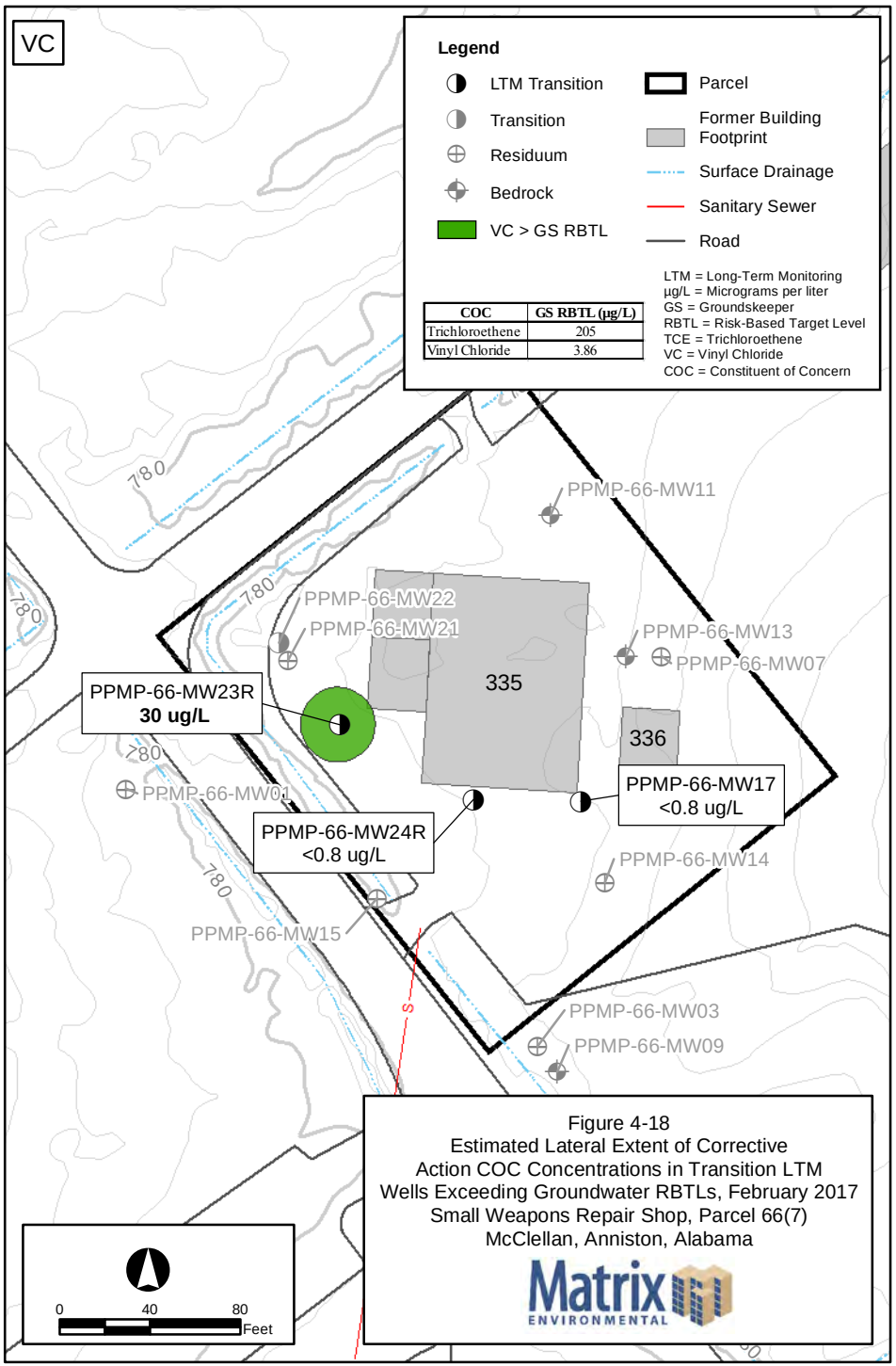


Figure 4-18
Estimated Lateral Extent of Corrective Action COC Concentrations in Transition LTM Wells Exceeding Groundwater RBTLs, February 2017
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\apps\Small_Weapons-66(7)\CMR\2017\Figure4-18_Transition_RBTL_February2017.mxd, 4/11/2017, jeff_doris

APPENDIX A

Groundwater Sampling Documentation

5/8/16 Small Weapons
Overcast 68° JTulley S Meadows

06:00 In office to pack truck
06:45 On site to open wells and collect water levels
07:50 All wells are open and casings baled dry
08:00 Collecting water levels S. Meadows on site

Time	Well ID	Water level
8:02	PPMP-66-MW23R	3.65
8:05	PPMP-66-MW02R	2.91
8:07	PPMP-66-MW21	0.10
8:10	PPMP-66-MW16	0.25
8:15	PPMP-66-MW22	3.31
8:17	PPMP-66-MW08	3.56
8:20	PPMP-66-MW24R	4.10
8:22	PPMP-66-MW06R	2.32
8:24	PPMP-66-MW18R	2.60
8:29	PPMP-66-MW14	4.74
8:31	PPMP-66-MW13	4.28
8:33	PPMP-66-MW07	4.96
8:35	PPMP-66-MW11	3.22
8:40	PPMP-66-MW04	4.12
8:42	PPMP-66-MW10	6.32
8:45	PPMP-66-MW01	5.20

→ Continued

5/8/16 Continued

Time	Well ID	Water level
8:47	PPMP-66-MW03	4.53
8:48	PPMP-66-MW09	3.73
8:50	PPMP-66-MW17	3.96

Solinst cleaned after each well and at the end of the day.
Steve has already started collecting sample from PPMP-66-MW02R so times will overlap a little

Collection Time	Well ID
8:46	PPMP-66-MW02R
8:46	PPMP-66-MW02R MS/MSD
9:20	PPMP-66-MW23R
9:20	PPMP-66-MW23R FD
9:30	PPMP-66-MW08
9:40	PPMP-66-MW16
9:50	PPMP-66-MW24R
10:00	PPMP-66-MW06R
10:05	PPMP-66-MW18R
10:10	PPMP-66-MW17

Headed back to office to pack cooler TB 425 Samples will be dropped at Fedex in Jacksonville, AL by JTulley

5/3/16

S. meadows Deploy PDB's

5/4/16 Small weapons Sunny 70°s

0908 PPMP-66-MW02R
0914 PPMP-66-MW23R
0932 PPMP-66-MW08R
0942 PPMP-66-MW16R
0955 PPMP-66-MW24R
1005 PPMP-66-MW06R
1010 PPMP-66-MW18R
1020 PPMP-66-MW17R

End of Deployment of PDB's

Back to office

5/4/16

8/4/16 Small weapons Sunny High 94°

JTulley, S Meadows

08:15 On site to collect samples from PDB's
08:40 Collected PPMP-66-MW06R
08:45 Collected PPMP-66-MW24R
08:55 Collected PPMP-66-MW16R
09:05 Collected PPMP-66-MW17
09:15 Collected PPMP-66-MW23R Dup 243
09:25 Collected PPMP-66-MW02RR
PPMP-66-MW02RR is MS/MSD
09:40 PPMP-66-MW08
10:00 PPMP-66-MW16
Done collecting Samples. Headed back to office to prep samples for shipping
10:25 TB 436 COC #4770
10:15 Material 071 COC# 4769

8/4/16

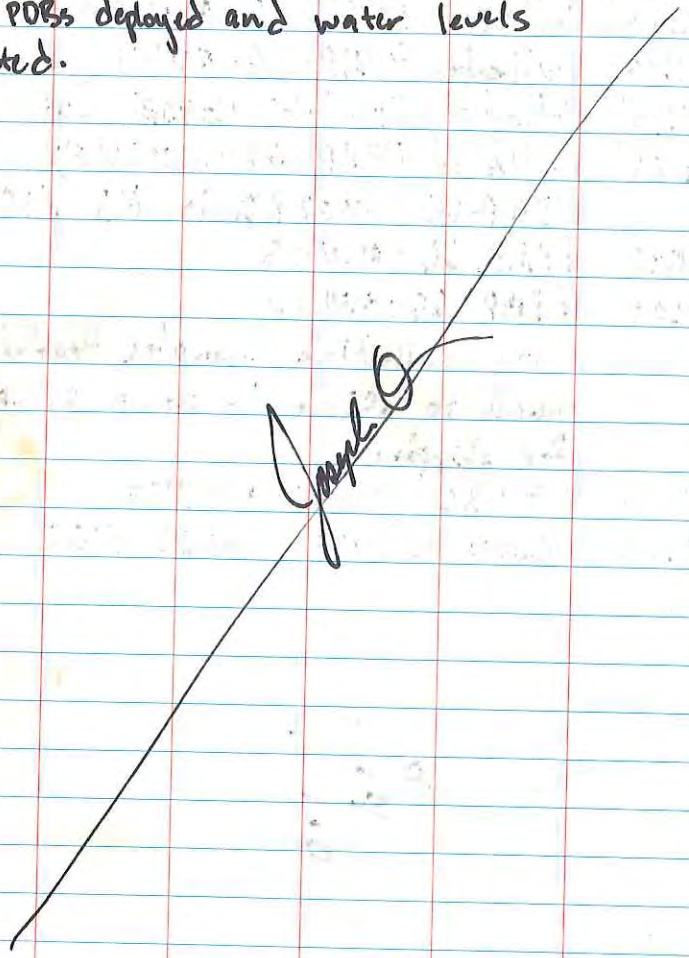
8/5/2016 SWR

Weather: Sunny, light breeze, 80's.

Joseph Owens, Stephen Meadows - MES onsite

- 0900 onsite to collect water levels and deploy PDBs.

1100 - PDBs deployed and water levels collected.



11/1/16 Small Weapons High 88° Sunny

J Tulley S Meadows

09:00	On site to open wells and collect Samples		
09:15	Collecting water levels		
09:20	PPMP - 66 - MW24R	-	6.99
09:25	PPMP - 66 - MW06R	-	5.41
09:30	PPMP - 66 - MW18R	-	7.48
09:35	PPMP - 66 - MW 17	-	7.49
09:38	PPMP - 66 - MW 07	-	8.23
09:40	PPMP - 66 - MW 13	-	7.59
09:42	PPMP - 66 - MW 03	-	7.41
09:45	PPMP - 66 - MW 09	-	7.19
09:48	PPMP - 66 - MW 01	-	8.98
S. Meadows			
09.19	PPMP-66-MW 23		6.69
09:24	PPMP-66-MW 02		5.44
09:26	PPMP-66-MW 08		6.87
09:28	PPMP-66-MW 21		6.74
09:30	PPMP-66-MW 16		6.83
09:31	PPMP-66-MW 22		6.69
09:34	PPMP-66-MW 11		7.02
09:38	PPMP-66-MW 04		8.40
09:41	PPMP-66-MW 10		10.42
09:45	PPMP-66-MW 14		8.07

Continued →

Continued 11/1/16

Collecting PDB Samples

10:00 PPMP - GG - MW 24R

10:15 PPMP - GG - MW 06R

10:25 PPMP - GG - MW 18R

10:25 Dup # 247 for MW 18R

10:40 PPMP - GG - MW 23R

10:50 PPMP - GG - MW02RR

MW02RR is MS/MSD

11:10 PPMP - GG - MW08

11:15 PPMP - GG - MW16

11:30 PPMP - GG - MW17

11:45 Headed back to the office to pack samples to be shipped.

17:00 shipped via Fedex / Jacksonville

11/1/16

11/2/16 Sunny High 82°

JTulley, S Meadows

9:00 On site to deploy PDB's

10:00 PDB's deployed

11/2/16

2.14.17 Sunny High 62°

JTulley SMeadows

08:00 On site to open wells

08:25 Collecting water levels

	Well ID	water level
0827	ppmp-66-mw22	4.11
0831	ppmp-66-mw16	3.38
0835	ppmp-66-mw21	1.71
0838	ppmp-66-mw08	4.35
0840	ppmp-66-mw02	4.59
0842	ppmp-66-mw23	4.02
0845	ppmp-66-mw24R	5.46
0847	ppmp-66-mw06R	6.26
0849	ppmp-66-mw18R	1.91
0851	ppmp-66-mw17	4.43
0853	ppmp-66-mw14	6.54
0855	ppmp-66-mw03	5.12
0857	ppmp-66-mw09	4.74
0900	ppmp-66-mw07	5.84
0902	ppmp-66-mw13	5.18
0904	ppmp-66-mw11	4.36
0907	ppmp-66-mw04	4.90
0910	ppmp-66-mw10	6.46
0912	ppmp-66-mw01	6.02

Continued →

← Continued 2.14.17

09:25 Collecting PDB Samples

09:45 PPMP-66-MW17 - Dup

10:05 PPMP-66-MW06 - MS/MSD

10:20 ppmp-66-mw18

10:45 PPMP-66-MW24

10:55 PPMP-66-MW23

11:05 PPMP-66-MW02

11:10 PPMP-66-MW08

11:20 PPMP-66-MW16

Deployed new PDB as samples were collected

11:30 Headed back to office to pack samples for shipping

16:00 Shipped via Fedex Jacksonville

2/15/17

APPENDIX B

Chain-of-Custody Forms

Chain of Custody

McClellan Lab: EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4633 **Station:** PPMP-66-MW02RR **StationType:** MW **QCCode:** NS
Sample Date: 5/3/16	**SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z) **Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**
Contractor: MES **Sampler Signature(s):**	**TBLot:** TB428 **EBLot:** **ABLot:**	**SampleTop:** N/A **SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
8:46	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time: 5/3/16 16:00	Received by (Signature): Fed ex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4634

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW02RR **StationType:** MW **QCCode:** MS/MSD
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
8:46	1	6 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4635

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab(G)~~, Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW06R **StationType:** MW **QCCode:** NS
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~FDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:00	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

McClellan Lab: EMAX	Site: Parcel 66(7), Fmr Small Weapons Repair Shop SMCode (circle): ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	COC#: 4636 Station: PPMP-66-MW08 StationType: MW QCCode: NS
Sample Date: 5/3/16	Sampling Technique (circle): Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless ~~Bucket(SS)~~, Peristaltic Pump(PP), Grab(G), ~~PDB~~	Matrix: Ground Water Task#: 15.094.16-22.1 CoolerID:

Contractor: MES Sampler Signature(s):	TBLot: TB425 EBLot: ABLot:	SampleTop: N/A	SampleBottom (Units): N/A

Time:	Label#:	Bottle, Preservative:	Method:
9:30	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 16:00	Fed-ex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4637

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW16 **StationType:** MW **QCCode:** NS
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
9:40	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4638

McClellan Lab: EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**Station:** PPMP-66-MW17
	SMCode (circle): ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**StationType:** MW **QCCode:** NS
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:10	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 16:00	Fed ex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4639

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW18R **StationType:** MW **QCCode:** NS
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:05	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 1600	FedEx
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4640

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW23R **StationType:** MW **QCCode:** NS
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
09:20	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 1610	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4641

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** DUP235 **StationType:** MW **QCCode:** FD
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~RDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
09:20	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4642

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW24R **StationType:** MW **QCCode:** NS
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
09:50	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	5/3/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4643

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** MATERIAL070 **StationType:** WQ **QCCode:** WS
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:50	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature) :
	5/3/16 16:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4644

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** TB425 **StationType:** WQ **QCCode:** TB
Sample Date: 5/3/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB425 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
1045	1	2 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time: 5/3/16 1600 5/3/16 1045	Received by (Signature): Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4759

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW02RR **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
9:25	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	8/4/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4760 **Station:** PPMP-66-MW02RR **StationType:** MW **QCCode:** MS/MSD
	SMCode (circle): Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
925	1	6 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	8/4/16 16:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4761

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW06R **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
8:40	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	8/4/16 16:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4762

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW08 **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
9:40	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	8/4/16 16:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4763

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW16 **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:00	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	8/4/16 16:00	FedEx
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4764

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW17 **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
9:05	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature) :
	8/4/16 16:00	Fed-ex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4765

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z) JT 8/4/16	**Station:** PPMP-66-MW18R **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
8:55	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	8/4/16 16:00	Fed-ex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan Lab: EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4766 **Station:** PPMP-66-MW23R **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z) **Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**
Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A **SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
915	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	8/4/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4767

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** DUP243 **StationType:** MW **QCCode:** FD
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB4136 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
9:15	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Dup for PPMP-66-MW23R

Relinquished by (Signature):	Date/Time: 8/4/16 16:00	Received by (Signature): Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4768

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab(G)~~, Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW24R **StationType:** MW **QCCode:** NS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** T13436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
8:45	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	8/4/16 16:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4769

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** MATERIAL071 **StationType:** WQ **QCCode:** WS
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:15	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	8/4/16 16:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4770

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** TB436 **StationType:** WQ **QCCode:** TB
Sample Date: 8/4/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Water **Task#:** 15.094.16-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB436 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:25	1	3 x 40 mL VOA vial, HCl 2	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature):	Date/Time:	Received by (Signature):
	8/4/16 16:00	Fedex
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Relinquished by (Signature):	Date/Time:	Received by (Signature):
Airbill Number:		

Chain of Custody

COC#: 4812

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab(G)~~, Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW02RR **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB4472 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:50	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4813
Lab: EMAX	**SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW02RR **StationType:** MW **QCCode:** MS/MSD
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:50	1	6 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4814

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW06R **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** T134142 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:15	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan Lab: EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4815 **Station:** PPMP-66-MW08 **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z) **Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**
Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** N/A **SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
11:16	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time: 11/1/16 17:00	Received by (Signature) : Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan Lab: EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**COC#:** 4816 **Station:** PPMP-66-MW16 **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** ~~13442~~ **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
11:15	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4817

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW17 **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** n/A	**SampleBottom (Units):** n/A

Time:	Label#:	Bottle, Preservative:	Method:
11:30	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time: 11/1/16 17:01	Received by (Signature) : Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan Lab: EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4818
	SMCode (circle): Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW18R **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB4472 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:25	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4819

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** ~~Grab~~(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW23R **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), ~~PDB~~	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** n/a	**SampleBottom (Units):** n/a	

Time:	Label#:	Bottle, Preservative:	Method:
10:40	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time: 11/1/16 17:00	Received by (Signature) : Fed ex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4820
Lab: EMAX	**SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** DUP247 **StationType:** MW **QCCode:** FD
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
10:25	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fed-ex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

COC#: 4821

McClellan **Lab:** EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop **SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** PPMP-66-MW24R **StationType:** MW **QCCode:** NS
Sample Date: 11/1/16	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Ground Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** n/A	**SampleBottom (Units):** n/A

Time:	Label#:	Bottle, Preservative:	Method:
10:00	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fed-ex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4822
Lab: EMAX	**SMCode (circle):** Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	**Station:** MATERIAL073 **StationType:** WQ **QCCode:** WS
Sample Date:	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
12:20	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/16 17:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

Chain of Custody

McClellan Lab: EMAX	**Site:** Parcel 66(7), Fmr Small Weapons Repair Shop	**COC#:** 4823 **Station:** TB442 **StationType:** WQ **QCCode:** TB
	SMCode (circle): Grab(G), Composite (C), Discrete(D), Disturbed(S), Undiscrete (U), Unknown(z)	
Sample Date: 11/1/14	**Sampling Technique (circle):** Bailer(B), Bladder Pump(BP), Core(C) Submersible Pump (SU), Encore(EN), Hydropunch(HP), Spoon(SN), Hand Auger(HA), Stainless Bucket(SS), Peristaltic Pump(PP), Grab(G), PDB	**Matrix:** Water **Task#:** 15.094.17-22.1 **CoolerID:**

Contractor: MES **Sampler Signature(s):**	**TBLot:** TB442 **EBLot:** **ABLot:**	**SampleTop:** N/A	**SampleBottom (Units):** N/A

Time:	Label#:	Bottle, Preservative:	Method:
12:15	1	3 x 40 mL VOA vial, HCl	8260 VOCs (no TICs)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

QCCode: NS = Investigative Sample, FD = Field Duplicate, MS = Matrix Spike, MSD = Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water, SP = Seep
StationType: MW = Monitoring Well, BH = Bore Hole, DS = IDW Soil, SD = Sediment Point, SW = Surface Water, SE = Seep, SS = Surface Soil

White Original COC (Lab Copy) - Yellow COC (Field Office) - Pink COC (Data Managment)

Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
	11/1/14 17:00	Fedex
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Relinquished by (Signature) :	Date/Time:	Received by (Signature) :
Airbill Number:		

MATRIX ENVIRONMENTAL SERVICES CHAIN OF CUSTODY RECORD

4843-
COC Number 4854 (highest # on bottles)
Cooler ID 1 of 1
Page 1 of

Laboratory EMAX
Lab Contact Ye Myint
MES Contact Betty Van Pelt
MES Phone 801-699-1246
Project Small Weapons
Task # 16.094.17-07.2
Lab contract: TO 093

Samplers Signature

SWMU	Station ID	QC Code	Station Code	Matrix	Sample Method	Date Collected	Sample Time	Analysis: SW8260 - VOC				
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW02RR	NS	MW	WG	G	2·14·17	11:05	X				
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW06R	NS	MW	WG	G		10:05	X				
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW06R	MS/MSD	MW	WG	G		10:05	X				
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW08	FD	MW	WG	G		11:10	X				
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW16	NS	MW	WG	G		11:20	X				
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW17	NS	MW	WG	G		09:45	X	Dup-			
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW18R	NS	MW	WG	G		10:20	X				
Parcel 66(7), Fmr Small Weapons Repair Shop	PPMP-66-MW23R	NS	MW	WG	G		10:55	X				
McClellan Field QC	PPMP-66-MW24R	EB	WQ	W	G		10:45	X				
McClellan Field QC	MATERIAL073	WS	WQ	W	G		12:30	X				
McClellan Field QC	DUP247	TB	WQ	W	G		09:45	X				
McClellan Field QC	TB442	TB	WQ	W	G		12:40	X				

NOTES:

QC Code: NS = Investigative Sample, FD = Field Duplicate, MS/MSD = Matrix Spike/Matrix Spike Duplicate, EB = Equipment Blank, TB = Trip Blank, WQ = Water Quality, WS = Source Water

Station Type = MW = Monitoring Well, BH = Bore Hole, SD = Sediment, SW = Surface Water, SS = Surface Soil, SU = Sump, WS = Waste Solid/Soil, WW = Waste Water

White Copy = Lab COC, Yellow COC = Field Copy, Pink COC = Data Mgmt

BOTTLES: (method - quantity, size and type, preservative)

Double the number of bottles for MS/MSD

SW8260 VOC - 3-40 mL vials with HCL (TB only 2)

VOC Analytes List: 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, VC

COMMENTS: See Task Order 093 for required list of VOCs and metals.

Relinquished by (Signature):

Date/Time: 2·14·17 16:00

Received by (Signature): Fed-ex

Relinquished by (Signature):

Date/Time:

Received by (Signature):

APPENDIX C

Analytical Data Table

Appendix C: Analytical Data for Sixth Year of Long-Term Monitoring (May 2016 to February 2017)
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

Delivery Group	Lab Sample ID	Station Name	Sample Date	Sample Matrix	QC	Method	Parameter Name	Value	Flag Code	Validation Code	Units
16E019	E019-01	PPMP-66-MW02RR	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	0.49	J		µg/L
16E019	E019-01	PPMP-66-MW02RR	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	28			µg/L
16E019	E019-01	PPMP-66-MW02RR	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	13			µg/L
16E019	E019-01	PPMP-66-MW02RR	03-May-16	WG	NS	SW8260B	Trichloroethene	28			µg/L
16E019	E019-01	PPMP-66-MW02RR	03-May-16	WG	NS	SW8260B	Vinyl Chloride	6.4			µg/L
16E019	E019-02	PPMP-66-MW06R	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	0.29	J		µg/L
16E019	E019-02	PPMP-66-MW06R	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	11			µg/L
16E019	E019-02	PPMP-66-MW06R	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	2.8			µg/L
16E019	E019-02	PPMP-66-MW06R	03-May-16	WG	NS	SW8260B	Trichloroethene	48			µg/L
16E019	E019-02	PPMP-66-MW06R	03-May-16	WG	NS	SW8260B	Vinyl Chloride	2.4			µg/L
16E019	E019-03	PPMP-66-MW08	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16E019	E019-03	PPMP-66-MW08	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16E019	E019-03	PPMP-66-MW08	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16E019	E019-03	PPMP-66-MW08	03-May-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16E019	E019-03	PPMP-66-MW08	03-May-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16E019	E019-04	PPMP-66-MW16	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16E019	E019-04	PPMP-66-MW16	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16E019	E019-04	PPMP-66-MW16	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16E019	E019-04	PPMP-66-MW16	03-May-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16E019	E019-04	PPMP-66-MW16	03-May-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16E019	E019-05	PPMP-66-MW17	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16E019	E019-05	PPMP-66-MW17	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16E019	E019-05	PPMP-66-MW17	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16E019	E019-05	PPMP-66-MW17	03-May-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16E019	E019-05	PPMP-66-MW17	03-May-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16E019	E019-06	PPMP-66-MW18R	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16E019	E019-06	PPMP-66-MW18R	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	0.72	J		µg/L
16E019	E019-06	PPMP-66-MW18R	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16E019	E019-06	PPMP-66-MW18R	03-May-16	WG	NS	SW8260B	Trichloroethene	0.48	J		µg/L

Appendix C: Analytical Data for Sixth Year of Long-Term Monitoring (May 2016 to February 2017)
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

16E019	E019-06	PPMP-66-MW18R	03-May-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16E019	E019-07	PPMP-66-MW23R	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	4			µg/L
16E019	E019-07	PPMP-66-MW23R	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	80			µg/L
16E019	E019-07	PPMP-66-MW23R	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	23			µg/L
16E019	E019-07	PPMP-66-MW23R	03-May-16	WG	NS	SW8260B	Trichloroethene	66			µg/L
16E019	E019-07	PPMP-66-MW23R	03-May-16	WG	NS	SW8260B	Vinyl Chloride	12			µg/L
16E019	E019-08	PPMP-66-MW23R	03-May-16	WG	FD	SW8260B	1,1-Dichloroethene	4.2			µg/L
16E019	E019-08	PPMP-66-MW23R	03-May-16	WG	FD	SW8260B	Cis-1,2-Dichloroethene	81			µg/L
16E019	E019-08	PPMP-66-MW23R	03-May-16	WG	FD	SW8260B	Trans-1,2-Dichloroethene	24			µg/L
16E019	E019-08	PPMP-66-MW23R	03-May-16	WG	FD	SW8260B	Trichloroethene	67			µg/L
16E019	E019-08	PPMP-66-MW23R	03-May-16	WG	FD	SW8260B	Vinyl Chloride	13			µg/L
16E019	E019-09	PPMP-66-MW24R	03-May-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16E019	E019-09	PPMP-66-MW24R	03-May-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	0.8	J		µg/L
16E019	E019-09	PPMP-66-MW24R	03-May-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16E019	E019-09	PPMP-66-MW24R	03-May-16	WG	NS	SW8260B	Trichloroethene	0.24	J		µg/L
16E019	E019-09	PPMP-66-MW24R	03-May-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16E019	E019-10	MATERIAL070	03-May-16	W	WS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16E019	E019-10	MATERIAL070	03-May-16	W	WS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16E019	E019-10	MATERIAL070	03-May-16	W	WS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16E019	E019-10	MATERIAL070	03-May-16	W	WS	SW8260B	Trichloroethene	1	U		µg/L
16E019	E019-10	MATERIAL070	03-May-16	W	WS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16E019	E019-11	TB425	03-May-16	W	TB	SW8260B	1,1-Dichloroethene	1	U		µg/L
16E019	E019-11	TB425	03-May-16	W	TB	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16E019	E019-11	TB425	03-May-16	W	TB	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16E019	E019-11	TB425	03-May-16	W	TB	SW8260B	Trichloroethene	1	U		µg/L
16E019	E019-11	TB425	03-May-16	W	TB	SW8260B	Vinyl Chloride	0.8	U		µg/L
16H087	H087-01	PPMP-66-MW02RR	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	0.43	J		µg/L
16H087	H087-01	PPMP-66-MW02RR	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	23			µg/L
16H087	H087-01	PPMP-66-MW02RR	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	8.5			µg/L
16H087	H087-01	PPMP-66-MW02RR	04-Aug-16	WG	NS	SW8260B	Trichloroethene	11			µg/L
16H087	H087-01	PPMP-66-MW02RR	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	9.6			µg/L
16H087	H087-02	PPMP-66-MW06R	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	0.64	J		µg/L

Appendix C: Analytical Data for Sixth Year of Long-Term Monitoring (May 2016 to February 2017)
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

16H087	H087-02	PPMP-66-MW06R	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	24			µg/L
16H087	H087-02	PPMP-66-MW06R	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	6			µg/L
16H087	H087-02	PPMP-66-MW06R	04-Aug-16	WG	NS	SW8260B	Trichloroethene	78			µg/L
16H087	H087-02	PPMP-66-MW06R	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	7.1			µg/L
16H087	H087-03	PPMP-66-MW08	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16H087	H087-03	PPMP-66-MW08	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16H087	H087-03	PPMP-66-MW08	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16H087	H087-03	PPMP-66-MW08	04-Aug-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16H087	H087-03	PPMP-66-MW08	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16H087	H087-04	PPMP-66-MW16	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16H087	H087-04	PPMP-66-MW16	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16H087	H087-04	PPMP-66-MW16	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16H087	H087-04	PPMP-66-MW16	04-Aug-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16H087	H087-04	PPMP-66-MW16	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16H087	H087-05	PPMP-66-MW17	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16H087	H087-05	PPMP-66-MW17	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16H087	H087-05	PPMP-66-MW17	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16H087	H087-05	PPMP-66-MW17	04-Aug-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16H087	H087-05	PPMP-66-MW17	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16H087	H087-06	PPMP-66-MW18R	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16H087	H087-06	PPMP-66-MW18R	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	2.8			µg/L
16H087	H087-06	PPMP-66-MW18R	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16H087	H087-06	PPMP-66-MW18R	04-Aug-16	WG	NS	SW8260B	Trichloroethene	0.44	J		µg/L
16H087	H087-06	PPMP-66-MW18R	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16H087	H087-07	PPMP-66-MW23R	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	6			µg/L
16H087	H087-07	PPMP-66-MW23R	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	31			µg/L
16H087	H087-07	PPMP-66-MW23R	04-Aug-16	WG	NS	SW8260B	Trichloroethene	76			µg/L
16H087	H087-07	PPMP-66-MW23R	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	19			µg/L
16H087	H087-07I	PPMP-66-MW23R	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	110			µg/L
16H087	H087-08	PPMP-66-MW23R	04-Aug-16	WG	FD	SW8260B	1,1-Dichloroethene	5.8			µg/L
16H087	H087-08	PPMP-66-MW23R	04-Aug-16	WG	FD	SW8260B	Trans-1,2-Dichloroethene	30			µg/L
16H087	H087-08	PPMP-66-MW23R	04-Aug-16	WG	FD	SW8260B	Trichloroethene	74			µg/L

Appendix C: Analytical Data for Sixth Year of Long-Term Monitoring (May 2016 to February 2017)
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

16H087	H087-08	PPMP-66-MW23R	04-Aug-16	WG	FD	SW8260B	Vinyl Chloride	18			µg/L
16H087	H087-08I	PPMP-66-MW23R	04-Aug-16	WG	FD	SW8260B	Cis-1,2-Dichloroethene	100			µg/L
16H087	H087-09N	PPMP-66-MW24R	04-Aug-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16H087	H087-09N	PPMP-66-MW24R	04-Aug-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1.1			µg/L
16H087	H087-09N	PPMP-66-MW24R	04-Aug-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16H087	H087-09N	PPMP-66-MW24R	04-Aug-16	WG	NS	SW8260B	Trichloroethene	0.29	J		µg/L
16H087	H087-09N	PPMP-66-MW24R	04-Aug-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16H087	H087-10	MATERIAL071	04-Aug-16	W	WS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16H087	H087-10	MATERIAL071	04-Aug-16	W	WS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16H087	H087-10	MATERIAL071	04-Aug-16	W	WS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16H087	H087-10	MATERIAL071	04-Aug-16	W	WS	SW8260B	Trichloroethene	1	U		µg/L
16H087	H087-10	MATERIAL071	04-Aug-16	W	WS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16H087	H087-11	TB436	04-Aug-16	W	TB	SW8260B	1,1-Dichloroethene	1	U		µg/L
16H087	H087-11	TB436	04-Aug-16	W	TB	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16H087	H087-11	TB436	04-Aug-16	W	TB	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16H087	H087-11	TB436	04-Aug-16	W	TB	SW8260B	Trichloroethene	1	U		µg/L
16H087	H087-11	TB436	04-Aug-16	W	TB	SW8260B	Vinyl Chloride	0.8	U		µg/L
16K014	K014-01	PPMP-66-MW02RR	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	0.29	J		µg/L
16K014	K014-01	PPMP-66-MW02RR	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	18			µg/L
16K014	K014-01	PPMP-66-MW02RR	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	5.1			µg/L
16K014	K014-01	PPMP-66-MW02RR	01-Nov-16	WG	NS	SW8260B	Trichloroethene	6.9			µg/L
16K014	K014-01	PPMP-66-MW02RR	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	8			µg/L
16K014	K014-02	PPMP-66-MW06R	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	0.59	J		µg/L
16K014	K014-02	PPMP-66-MW06R	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	25			µg/L
16K014	K014-02	PPMP-66-MW06R	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	5.9			µg/L
16K014	K014-02	PPMP-66-MW06R	01-Nov-16	WG	NS	SW8260B	Trichloroethene	79			µg/L
16K014	K014-02	PPMP-66-MW06R	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	6.5			µg/L
16K014	K014-03	PPMP-66-MW08	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-03	PPMP-66-MW08	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16K014	K014-03	PPMP-66-MW08	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-03	PPMP-66-MW08	01-Nov-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16K014	K014-03	PPMP-66-MW08	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L

Appendix C: Analytical Data for Sixth Year of Long-Term Monitoring (May 2016 to February 2017)
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

16K014	K014-04	PPMP-66-MW16	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-04	PPMP-66-MW16	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	0.3	J		µg/L
16K014	K014-04	PPMP-66-MW16	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-04	PPMP-66-MW16	01-Nov-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16K014	K014-04	PPMP-66-MW16	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16K014	K014-05	PPMP-66-MW17	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-05	PPMP-66-MW17	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16K014	K014-05	PPMP-66-MW17	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-05	PPMP-66-MW17	01-Nov-16	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
16K014	K014-05	PPMP-66-MW17	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16K014	K014-06	PPMP-66-MW18R	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-06	PPMP-66-MW18R	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1.7			µg/L
16K014	K014-06	PPMP-66-MW18R	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-06	PPMP-66-MW18R	01-Nov-16	WG	NS	SW8260B	Trichloroethene	0.57	J		µg/L
16K014	K014-06	PPMP-66-MW18R	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16K014	K014-07	PPMP-66-MW23R	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	5.1			µg/L
16K014	K014-07	PPMP-66-MW23R	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	23			µg/L
16K014	K014-07	PPMP-66-MW23R	01-Nov-16	WG	NS	SW8260B	Trichloroethene	67			µg/L
16K014	K014-07	PPMP-66-MW23R	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	16			µg/L
16K014	K014-07I	PPMP-66-MW23R	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	110			µg/L
16K014	K014-08	PPMP-66-MW18R	01-Nov-16	WG	FD	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-08	PPMP-66-MW18R	01-Nov-16	WG	FD	SW8260B	Cis-1,2-Dichloroethene	1.6			µg/L
16K014	K014-08	PPMP-66-MW18R	01-Nov-16	WG	FD	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-08	PPMP-66-MW18R	01-Nov-16	WG	FD	SW8260B	Trichloroethene	0.53	J		µg/L
16K014	K014-08	PPMP-66-MW18R	01-Nov-16	WG	FD	SW8260B	Vinyl Chloride	0.8	U		µg/L
16K014	K014-09	PPMP-66-MW24R	01-Nov-16	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-09	PPMP-66-MW24R	01-Nov-16	WG	NS	SW8260B	Cis-1,2-Dichloroethene	0.95	J		µg/L
16K014	K014-09	PPMP-66-MW24R	01-Nov-16	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-09	PPMP-66-MW24R	01-Nov-16	WG	NS	SW8260B	Trichloroethene	0.3	J		µg/L
16K014	K014-09	PPMP-66-MW24R	01-Nov-16	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16K014	K014-10	MATERIAL073	01-Nov-16	W	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-10	MATERIAL073	01-Nov-16	W	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L

Appendix C: Analytical Data for Sixth Year of Long-Term Monitoring (May 2016 to February 2017)
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

16K014	K014-10	MATERIAL073	01-Nov-16	W	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-10	MATERIAL073	01-Nov-16	W	NS	SW8260B	Trichloroethene	1	U		µg/L
16K014	K014-10	MATERIAL073	01-Nov-16	W	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
16K014	K014-11	TB442	01-Nov-16	W	TB	SW8260B	1,1-Dichloroethene	1	U		µg/L
16K014	K014-11	TB442	01-Nov-16	W	TB	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
16K014	K014-11	TB442	01-Nov-16	W	TB	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
16K014	K014-11	TB442	01-Nov-16	W	TB	SW8260B	Trichloroethene	1	U		µg/L
16K014	K014-11	TB442	01-Nov-16	W	TB	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-01	PPMP-66-MW02RR	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	0.57	J		µg/L
17B143	B143-01	PPMP-66-MW02RR	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	31			µg/L
17B143	B143-01	PPMP-66-MW02RR	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	16			µg/L
17B143	B143-01	PPMP-66-MW02RR	14-Feb-17	WG	NS	SW8260B	Trichloroethene	24			µg/L
17B143	B143-01	PPMP-66-MW02RR	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	7.2			µg/L
17B143	B143-02	PPMP-66-MW06R	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	0.34	J		µg/L
17B143	B143-02	PPMP-66-MW06R	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	11			µg/L
17B143	B143-02	PPMP-66-MW06R	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	2.9			µg/L
17B143	B143-02	PPMP-66-MW06R	14-Feb-17	WG	NS	SW8260B	Trichloroethene	37		J	µg/L
17B143	B143-02	PPMP-66-MW06R	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	3			µg/L
17B143	B143-03	PPMP-66-MW08	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-03	PPMP-66-MW08	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
17B143	B143-03	PPMP-66-MW08	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-03	PPMP-66-MW08	14-Feb-17	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
17B143	B143-03	PPMP-66-MW08	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-04	PPMP-66-MW16	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-04	PPMP-66-MW16	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
17B143	B143-04	PPMP-66-MW16	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-04	PPMP-66-MW16	14-Feb-17	WG	NS	SW8260B	Trichloroethene	1	U		µg/L
17B143	B143-04	PPMP-66-MW16	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-05	PPMP-66-MW17	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-05	PPMP-66-MW17	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
17B143	B143-05	PPMP-66-MW17	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-05	PPMP-66-MW17	14-Feb-17	WG	NS	SW8260B	Trichloroethene	1	U		µg/L

Appendix C: Analytical Data for Sixth Year of Long-Term Monitoring (May 2016 to February 2017)
Small Weapons Repair Shop, Parcel 66(7), McClellan, Anniston, Alabama

17B143	B143-05	PPMP-66-MW17	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-06	PPMP-66-MW18R	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-06	PPMP-66-MW18R	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
17B143	B143-06	PPMP-66-MW18R	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-06	PPMP-66-MW18R	14-Feb-17	WG	NS	SW8260B	Trichloroethene	0.76	J		µg/L
17B143	B143-06	PPMP-66-MW18R	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-07	PPMP-66-MW23R	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	11			µg/L
17B143	B143-07	PPMP-66-MW23R	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	45			µg/L
17B143	B143-07	PPMP-66-MW23R	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	30			µg/L
17B143	B143-07I	PPMP-66-MW23R	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	170			µg/L
17B143	B143-07I	PPMP-66-MW23R	14-Feb-17	WG	NS	SW8260B	Trichloroethene	120			µg/L
17B143	B143-08	PPMP-66-MW24R	14-Feb-17	WG	NS	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-08	PPMP-66-MW24R	14-Feb-17	WG	NS	SW8260B	Cis-1,2-Dichloroethene	0.74	J		µg/L
17B143	B143-08	PPMP-66-MW24R	14-Feb-17	WG	NS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-08	PPMP-66-MW24R	14-Feb-17	WG	NS	SW8260B	Trichloroethene	0.48	J		µg/L
17B143	B143-08	PPMP-66-MW24R	14-Feb-17	WG	NS	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-09	MATERIAL075	14-Feb-17	W	WS	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-09	MATERIAL075	14-Feb-17	W	WS	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
17B143	B143-09	MATERIAL075	14-Feb-17	W	WS	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-09	MATERIAL075	14-Feb-17	W	WS	SW8260B	Trichloroethene	1	U		µg/L
17B143	B143-09	MATERIAL075	14-Feb-17	W	WS	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-10	PPMP-66-MW17	14-Feb-17	WG	FD	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-10	PPMP-66-MW17	14-Feb-17	WG	FD	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
17B143	B143-10	PPMP-66-MW17	14-Feb-17	WG	FD	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-10	PPMP-66-MW17	14-Feb-17	WG	FD	SW8260B	Trichloroethene	1	U		µg/L
17B143	B143-10	PPMP-66-MW17	14-Feb-17	WG	FD	SW8260B	Vinyl Chloride	0.8	U		µg/L
17B143	B143-11	TB445	14-Feb-17	W	TB	SW8260B	1,1-Dichloroethene	1	U		µg/L
17B143	B143-11	TB445	14-Feb-17	W	TB	SW8260B	Cis-1,2-Dichloroethene	1	U		µg/L
17B143	B143-11	TB445	14-Feb-17	W	TB	SW8260B	Trans-1,2-Dichloroethene	1	U		µg/L
17B143	B143-11	TB445	14-Feb-17	W	TB	SW8260B	Trichloroethene	1	U		µg/L
17B143	B143-11	TB445	14-Feb-17	W	TB	SW8260B	Vinyl Chloride	0.8	U		µg/L

APPENDIX D

Data Quality Summary

Appendix D

Data Quality Summary:

Former Small Weapons Repair Shop, Parcel 66(7)

McClellan, Anniston, Alabama

Sixth Year Long-Term Monitoring

(May 2016 to February 2017)

Prepared for:

MCCLELLAN
DEVELOPMENT AUTHORITY

Prepared by:

Matrix ENVIRONMENTAL

283 Rucker Street, Bldg. 3165
Anniston, Alabama 36205
(256) 847-0780
Fax (256) 847-0905

April 2017

TABLE OF CONTENTS

LIST OF TABLES

ATTACHMENTS

LIST OF ABBREVIATIONS AND ACRONYMS

ADEM	Alabama Department of Environmental Management
ARBCA	*Alabama Risk-Based Corrective Action Guidance Manual*
CCAL	Continuing calibration
COC	Chain-of-custody
DQO	Data Quality Objective
DQS	Data Quality Summary
EMAX	EMAX Laboratories, Torrance, California
EPA	United States Environmental Protection Agency
ESV	Ecological Screening Value
FD	Field duplicate
GC/MS	Gas chromatography/mass spectrometry
ICAL	Initial calibration
IDL	Instrument detection limit
IS	Internal standard
IT	IT Corporation
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
LTM	Long-term monitoring
MDA	McClellan Development Authority
MDL	Method detection limit
MES	Matrix Environmental Services, LLC
MS	Matrix spike
MSD	Matrix spike duplicate
PARCCS	Precision, accuracy, representativeness, completeness, comparability, and sensitivity
QA	Quality assurance
QAP	*Quality Assurance Plan*
QC	Quality control
%R	Percent recovery
RBTL	Risk-Based Target Level
RL	Reporting limit
RPD	Relative percent difference
RSD	Relative standard deviation
Site	Former Small Weapons Repair Shop, Parcel 66(7)
TB	Trip blank
VOC	Volatile Organic Compound

1.0 INTRODUCTION

Matrix Environmental Services, LLC (MES) has prepared this Data Quality Summary (DQS) on behalf of the McClellan Development Authority (MDA) in support of sampling events conducted during the sixth year of long-term monitoring (LTM) from May 2016 to February 2017 at the Former Small Weapons Repair Shop, Parcel 66(7) (the Site) within McClellan, Anniston, Alabama, formerly known as Fort McClellan. The purpose of these sampling events was to collect data to support the evaluation of the effectiveness of the remedial action for contaminated groundwater at the Site.

This DQS addresses the data quality review for groundwater samples collected during the May 2016 to February 2017 sampling events. The approved methods used to conduct the investigations are discussed in the *Quality Assurance Plan* (*QAP*) in *Appendix A* of the *Final Installation-Wide Sampling and Analysis Plan* (MES, 2013) which details the specifics of quality assurance (QA) and quality control (QC) with respect to sampling and data evaluation.

2.0 PROJECT DESCRIPTION

Project objectives and QA objectives in terms of precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) are described in this section.

2.1 PROJECT OBJECTIVES

The objective of the environmental sampling at the Site was to evaluate the effectiveness of the selected remedy for groundwater at the Site. To support this objective groundwater samples were collected from four residuum wells, three transition wells, and one bedrock well during four rounds of sampling conducted from May 2016 to February 2017. The groundwater samples were analyzed for VOCs.

2.2 DATA QUALITY LEVELS

During the field program, groundwater samples were collected and analyzed with screening level methods for field parameters and definitive level methods for specific chemical analytes. Screening and definitive level data are defined as follows (United States Environmental Protection Agency [EPA], 1994):

- Screening Level Data – Screening level data are subject to minimal QC requirements. Results are often not compound-specific and not quantitative, but results are available in real time. Obtaining screening level data is less costly than obtaining definitive level data, but the results are less defensible because of the greater potential for error and the inherent precision and accuracy limitations. This level is normally used for field investigation health and safety screening, but can also be used to identify media or samples for consideration for further analyses. Field pH, conductivity, temperature, turbidity, total dissolved solids, dissolved oxygen, and oxidation/reduction potential measurements collected during this investigation are considered screening level data.

- Definitive Level Data - Analyses performed using established analytical procedures and strict QC procedures produce definitive level data. Applicable EPA test methods (EPA, 1986) were used to collect definitive level data for the Site. Analytical results produced were analyte-specific with confirmation of analyte identity and concentration. Definitive level data meeting quality criteria are suitable for site assessments, risk assessments, remedial design, and remediation efforts.

2.3 DATA QUALITY OBJECTIVES

QA objectives in terms of PARCCS are outlined below.

Precision is a measure of the reproducibility of a set of duplicate analytical results, usually under prescribed similar conditions. Precision, as discussed in Section A3.3.1 in the *QAP*, is expressed in terms of the relative percent difference (RPD) between duplicate determinations, or in terms of the relative standard deviation (RSD) when three or more determinations are made. Various measures of precision exist depending on the prescribed similar conditions.

Overall sampling and analysis precision was assessed using RPDs for duplicate environmental samples and matrix spike/matrix spike duplicates (MS/MSDs). The RPDs for laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results were used to assess laboratory precision. RPD is defined as the difference between two measurements divided by their mean and expressed as a percent as shown in the following equation:

$$RPD = \frac{|X - Y|}{(X + Y) / 2} \times 100\%$$

where:

X = Primary sample concentration (primary field investigative sample, MS, or LCS)

Y = Duplicate sample concentration (laboratory duplicate, field duplicate [FD], MSD, or LCSD)

To evaluate precision, the RPDs for MS/MSDs, laboratory duplicates, and LCS/LCSDs were compared to laboratory historical limits. The RPDs for FDs were compared to the project precision goal of 50 percent for aqueous samples.

The RSD is the standard deviation of a set of values divided by the average value expressed as a percent as shown in the following equation:

$$RSD = S/\overline{X} \times 100$$

where:

S = The standard deviation of the sample data

$\overline{X}$ = The arithmetic mean of the sample data

RSDs can be used to evaluate the linearity of the initial calibration (EPA, 1986).

Accuracy is a measure of the agreement of an analytical result with the true value. Accuracy, as discussed in Section A3.3.2 in the *QAP*, is typically expressed as a percent recovery (%R) calculated by the ratio of the measurement and accepted true value as shown in the following equation:

$$\%R = ((Xs - Xu) / K) \times 100\%$$

where:

Xs = Measured value of the spiked sample

Xu = Measured value of the unspiked sample

K = Known amount of the spike in the sample

Analytical accuracy is assessed through the analysis of spikes such as surrogates, MS/MSDs and LCS/LCSDs, performance evaluation samples, standard reference materials and calibration check samples. Surrogates and MS/MSDs are spiked into the actual sample matrix and are accuracy indicators that take into account the nature of the matrix in question and the native concentration of the analyte spiked. Matrix variability or interferences from high concentrations of native compounds may adversely affect spike recovery and yield less than

conclusive data. Accuracy checks that focus on analytical method and consist of compounds spiked in a blank or non-interfering matrix (e.g., LCSs or calibration check samples) address the accuracy of the method or instrumentation at detecting the target analyte(s) at a certain quantification level and are not considered to be subject to matrix effects. The accuracy of sample results can also be affected by holding time violations.

Representativeness, as described in Section A3.3.3 in the *QAP*, is a qualitative parameter that expresses the degree to which sample data actually represent the matrix conditions. For example, in conducting groundwater monitoring, representativeness requires proper location of wells and the collection of samples under consistent, documented procedures. Wells are located based upon the results of the hydrogeologic study in progress and are designed to provide maximum coverage of the flow conditions. Requirements and procedures for sample collection and handling are designed to maximize sample representativeness. Representativeness can also be monitored by reviewing field documentation and by performing field QA audits.

Completeness, as discussed in Section A3.3.4 in the *QAP*, represents the percentage of valid data collected from a sampling/analytical program or measurement system compared to the amount achieved under optimal conditions. The completeness goal for investigative samples is 95 percent. Completeness is calculated using the following formula:

$$\text{Percent Complete} = \frac{\text{Valid Data}}{\text{Total Data}} \times 100\%$$

Valid data are identified during the data review process as being acceptable for use or usable as qualified. Invalid data are identified as rejected.

Comparability, as discussed in Section A3.3.5 of the *QAP*, is a qualitative parameter expressing the confidence with which one data set can be compared with another. Comparability for sampling and analysis tasks is achieved by:

- Specifying well-recognized techniques and accepted standard methods for sampling and analysis, and using well-trained sampling and analysis technicians to execute the prescribed methods consistently.
- Requiring that sampling and analysis personnel produce adequate documentation to record how the prescribed methods were actually executed.
- Noting non-conformances and corrective measures taken.

Specifying standardized laboratory methods helps to ensure that the data generated for a sampling event are comparable to past and future sampling events.

Sensitivity is used broadly here to describe the method detection limits (MDLs) or reporting limits (RLs) established to meet project-specific data quality objectives (DQOs). In addition, sensitivity can be used to describe the capability of a method or instrument to discriminate between measurement responses. Several limits have been established to describe sensitivity requirements as specified in Section A3.3.6 of the *QAP*. Reported instrument detection limits

(IDLs) and MDLs are typically based upon a reagent water matrix or purified solid, and ignore sample matrix interferences and the resulting effects on the limits. For this reason, published MDLs or IDLs may not be achievable for environmental samples. The *QAP* RLs were generated by the laboratory and may exceed Risk-Based Target Levels (RBTLs) due to instrument limitations. Section 6.2 discusses the comparisons between the RBTLs and the laboratory RLs and MDLs for the sampling events.

2.4 ANALYTICAL SERVICES

EMAX Laboratories, Inc (EMAX), Torrance, California, provided analytical services for the sampling conducted by MES.

2.4.1 Analytical Program

The *QAP* lists the EPA analytical methods used to meet definitive data requirements. Method SW8260B volatile organic compounds (VOCs) by Gas Chromatography/Mass Spectrometry (GC/MS) was used to analyze constituents of concern in groundwater samples collected at the Site during the May 2016, August 2016, November 2016, and February 2017 sampling events.

2.4.2 Quality Control

The *QAP* describes the analytical QC requirements. The results of the analytical QC data review for this sampling event are presented in Section 5.0.

3.0 DEVIATIONS FROM PLANNED FIELD ACTIVITIES

No deviations from the planned field activities were noted during the preparation of this DQS.

4.0 ASSESSMENT OF DATA QUALITY

Data quality is assessed through two review processes. The contracted analytical laboratory performs the first data review to assess compliance with *QAP*-approved analytical methods (MES, 2004) and with laboratory standard operating procedures. MES performs the second data review to assess compliance with the QA objectives, and to assess hard copy and electronic deliverable consistency and integrity.

4.1 LABORATORY DATA QUALITY ASSESSMENT

The laboratory data quality assessment includes an analytical data review to ensure accurate and complete data reporting and compliance with the analytical method specifications.

4.1.1 Laboratory Qualification of Data

The laboratory will flag analytical results, when necessary, to indicate potential impacts to data usability and to alert the user to special analytical conditions. More than one qualifier may be used to indicate multiple conditions or situations that apply to an individual result. The following laboratory qualifiers were used during this investigation:

FLAG	DESCRIPTION
E	Result exceeds the calibration range of the instrument.
J	Estimated value. The analyte is positively identified and the concentration is less than the RL but greater than the MDL.
U	Analyte is not detected above the RL.
V	Detected value.

4.2 MES DATA QUALITY AND USABILITY ASSESSMENT

The following sections describe the procedures that MES followed to assess the quality and usability of both field measurement and definitive data. Data assessment is complete when 100 percent of the information have been collected and reviewed. Based on the results of the review process, data are categorized as fully usable, usable as qualified, or rejected.

4.2.1 Data Review and Validation

MES reviewed the analytical data in accordance with the *QAP* (MES, 2013), analytical methods (EPA, 1986), and *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (EPA, 2014). The data review process included reviewing and evaluating 100 percent of the hard copy data for (1) extraction and analysis holding times, (2) surrogate recoveries, (3) blank detections, (4) LCS/LCSD recoveries and RPDs, (5) MS/MSD recoveries and RPDs, (6) FD RPDs, (7) laboratory duplicate RPDs, if applicable, (8) initial calibrations (ICALs) and continuing calibrations (CCALs), (9) instrument tuning and performance, (10) reporting limits, and (11) completeness of the chain-of-custody (COC) forms.

Hard copy data packages were checked to verify that the following items were included:

- Case narrative
- Data summary sheets
- ICALs and CCALs
- Method or preparation blanks (at least one per QC batch)
- MS/MSD (5 percent of client samples)
- LCS/LCSD (one per QC batch)
- Duplicate analyses (laboratory duplicate sample, LCS/LCSD, MS/MSD, as applicable)
- Holding times
- Retention time window calculation (if applicable)
- Standard preparation sheets
- Linear range calculations (correlation coefficients)

The results of the review of the chemical data obtained during this investigation are included in Section 5.0. The laboratory data forms showing the validated results are included in Attachment D1.

4.2.2 MES Qualification of Data

Based on the data review, MES may assign final qualifiers to analytical results on both the hard copy results and in the database. The following final qualifiers may be assigned to the results to describe data quality and usability:

FLAG	DESCRIPTION
J	Estimated detection. The associated numerical value is the approximate concentration of the analyte in the sample.
UJ	Analyte was analyzed for, but was not detected. The reported quantitation limit is estimated.
U	Result was qualified as not detected above the RL or reported sample quantitation limit.

In addition to the qualifier, a sub-qualifier is applied to describe the specific multiple conditions or situations that apply to an individual result. These qualifiers and sub-qualifiers are collectively referred to as validation codes.

Whenever duplicate sets of results were reported by the laboratory due to dilutions, re-analyses, re-extractions, or dual column analytical methods, the MES reviewer chose the "most-preferred" results based on the data review. In Section 5.0, only the reportable data (flagged "Y") are shown in Tables D5-2 to D5-6.

5.0 RESULTS OF QUALITY CONTROL ANALYSES

Table D5-1 lists samples and analytical methods included in the May 2016 to February 2017 sampling events for the Site. To evaluate the data quality, the results were compared to method requirements and laboratory historical control limits. Based on the data review performed on the samples collected from May 2016 to February 2017, none of the reportable analytical data were qualified and none of the analytical data were rejected. The results of the data review process are discussed further in the following sections.

5.1 QUALITY CONTROL PROCEDURES AND RESULTS OF QUALITY CONTROL ANALYSES

Two types of QC results were used to evaluate data quality: field QC samples were collected and analyzed to evaluate field sampling activities, and laboratory QC samples were analyzed to evaluate laboratory analytical procedures and maintain control of the analytical methods.

5.1.1 Field Quality Control Procedures and Analyses

Field QC samples included MS/MSD samples, FDs, material blanks, and trip blanks (TBs). The *QAP* was used as the guidance document to identify the appropriate number of field QC samples, procedures for their collection and analysis, and evaluation of results required for this sampling event. The evaluation procedures for the field QC sample analyses are summarized below.

5.1.1.1 Matrix Spike/Matrix Spike Duplicate Samples

MS and MSD samples are investigative samples spiked by the laboratory with known concentrations of target analytes. MS and MSD sample results are used to evaluate possible matrix interferences. The formulas used to calculate the %Rs and RPDs are presented in Section 2.3.

Accuracy was assessed by calculating the MS and MSD %Rs of the concentrations of the target analytes added to the investigative sample. The %Rs were then compared to laboratory historical control limits. When both the MS and MSD %Rs were outside laboratory historical control limits, MS/MSD qualifiers were applied only to the results for the investigative sample used for the MS/MSD. When only an MS was analyzed, qualifiers were applied when the MS %R was outside laboratory historical control limits. Low recoveries in an MS/MSD may indicate the matrix has negatively influenced the results. Constituent concentrations could be potentially higher in samples with low MS/MSD recoveries. High MS/MSD recoveries may indicate the matrix has positively influenced the results. Constituent concentrations may be potentially lower in samples with high MS/MSD recoveries.

Precision was assessed by calculating the RPDs for the MS/MSD sample pairs. The MS/MSD RPD values were reviewed to assess the precision of the analytical results based on the magnitude of the RPD values. In cases where a target analyte was not detected in at least one of the MS/MSD sample pair, an RPD would not be valid, and therefore, was not calculated. Qualifiers were not applied based on the MS/MSD RPD values, however, the MS/MSD RPD

values were compared to laboratory historical control limits to assess if further evaluation of the data was warranted.

Groundwater samples from well PPMP-66-MW02RR were collected and analyzed for the MS and MSD for the May 2016, August 2016, and November 2016 sampling events. Groundwater sample from well PPMP-66-MW06R was collected and analyzed for the MS and MSD for the February 2017 sampling event. The MS/MSD %Rs met criteria, with the following exceptions:

- For the February 217 sampling event, the MS/MSD %Rs for trichloroethene (61%/57%) were below the 67% lower control limit. Sample PPMP-66-MW06R has trichloroethene J flagged to indicate the result it estimated, with a potential low bias.

A summary of the MS/MSD %R data is shown in Table D5-2. The overall accuracy of the analytical results is considered to be acceptable.

5.1.1.2 Field Duplicate Samples

FD samples were collected and analyzed as specified in the *QAP* (Section A6.3.5). FD samples are independent samples collected simultaneously or in immediate succession with the original investigative samples such that they are expected to be equally representative of the medium at the time of sampling. These samples provide precision information for the entire measurement system, including sample collection, handling, shipping, storage, preparation, and analysis. The precision of FD pairs was assessed by calculating the RPDs using the equation in Section 2.3. In cases where a target analyte was not detected in either sample or was detected in only one of the samples, an RPD would not be valid, and therefore, was not calculated.

Four groundwater FD samples were collected for the sampling events included in this DQS. Table D5-3 lists the original station name from the COC forms (i.e. COC IDs used to disguise the sample's identity when the sample was sent to the laboratory), the parent station name, and the methods analyzed. The results for the FD and associated investigative sample analyses were reviewed to assess the precision of the analytical results based on the magnitude of the RPD values.

Table D5-4 shows the RPDs calculated for the investigative and FD sample pair. The criterion of 50 percent for aqueous samples was used to assess if further evaluation of the data was warranted. None of the aqueous RPD values exceeded 50 percent. Therefore, the overall variability of the precision measurements is considered acceptable.

5.1.1.3 Material Blank and Trip Blank Analyses

A material blank sample is defined as a sample of a "clean" reagent source such as deionized water, a chemical reagent source, or a sampling medium such as air filter or sorbent cartridge considered "analyte-free" or "background-free" of contamination. If these blanks show elevated concentrations of target analytes, the corresponding data set may be considered biased (MES, 2013). Material blanks were collected on a weekly basis to monitor the final rinse water used by the sampler for potential contaminants. One material blank each was collected for the May 2016, August 2016, November 2016, and February 2017 sampling events. No target

analytes were detected in the material blanks collected during the May 2016 to February 2017 sampling events.

TBs are used to assess the potential introduction of contaminants from sample containers or during the sampling, transportation, and storage procedures (MES, 2013). A TB sample consists of VOC sample vials filled in the laboratory with American Society of Testing and Materials Type II reagent grade water, transported to the sampling site, handled like an environmental sample and returned to the laboratory for analysis. TBs are not opened in the field and are only prepared when aqueous VOC samples are scheduled to be collected and analyzed by the laboratory. Sample results are considered affected by TB contamination when the sample concentration is less than five times the blank concentration (ten times for common laboratory contaminants acetone, methylene chloride, and 2-butanone). Affected sample results less than the reporting limit and less than five times the associated blank concentration are considered non-detects at the reporting limit. Affected sample results greater than the reporting limit and less than five times the blank concentration are considered non-detects at the concentration observed in the sample. One TB each was collected for the May 2016, August 2016, November 2016, and February 2017 sampling events. No target analytes were detected in the TBs, therefore, no qualifiers were required based on TB results.

5.1.2 Laboratory Quality Control Procedures and Analyses

Laboratory QC checks include internal system checks and QC samples used to monitor the possible effect of laboratory activities on sample results. The analytical method and method-specific SOPs developed by the laboratory define the types of laboratory QC checks required. QC procedures followed by the laboratory include sample container inspection, COC documentation review, sample holding time review, LCS/LCSD analyses, method blank analyses, and surrogate spike percent recovery evaluation. The laboratories are also responsible for analytical instrument calibration, which includes method-specific criteria for initial and continuing calibrations for external and internal standard calibration procedures.

5.1.2.1 Initial Sample Inspection and Chain-of-Custody Documentation

The laboratory inspected the shipping containers upon receipt and compared the contents with the COC form associated with each cooler. Information from the sample check-in procedure was recorded on the Sample Receipt Form, including sample receipt anomalies. These forms were used by the laboratory to document that sample identifications listed on the COC forms agreed with the samples contained in the coolers. The laboratory verified that COC forms were filled out properly, sample containers were not broken, custody seals were intact, the pH met method-specific criteria for water samples (if applicable), and cooler temperatures were maintained at ≤6 degrees Celsius. The completed forms are included in the laboratory analytical packages and were reviewed during the data review process. The samples arrived at the laboratory at the proper temperature, and no sample containers were damaged during transit.

MES compared the data on the COC forms with the laboratory reports and documented any differences. If minor discrepancies were found and verified by the laboratory, the laboratory reports and MES electronic databases were corrected. In addition to the COC checks, MES

reviewers verified approximately 10 percent of the laboratory hard copy reports against the laboratory electronic data deliverables.

5.1.2.2 Holding Times

Samples were shipped regularly in coordination with the analytical laboratory to ensure analyses were conducted within the required holding times. The time elapsed between sample collection and sample extraction/analysis was calculated as part of the review process to evaluate if holding times were met. Holding time criteria were met for the sampling events included in this DQS, therefore, accuracy of the analytical results is acceptable with regards to holding time.

5.1.2.3 Laboratory Control Sample/Laboratory Control Sample Duplicate

The laboratory analyzed LCS/LCSD pairs with each analytical batch of field samples to assess internal precision and accuracy. LCS/LCSD pairs consisted of analyte-free water spiked with selected target constituents of known concentration. The LCS/LCSD %Rs and RPDs are used to determine laboratory accuracy and precision, respectively. The formulas used to calculate the %Rs and RPDs are presented in Section 2.3. The %Rs and RPDs were then compared to laboratory historical control limits. When the LCS and LCSD %Rs were outside laboratory historical control limits, the LCS/LCSD qualifications were applied to investigative samples within the same analytical batch. Qualifiers were applied only when both the LCS and LCSD %Rs were outside laboratory historical control limits. In cases where only an LCS was analyzed, qualifiers were applied when the LCS %R was outside laboratory historical control limits. Qualifiers were not applied based on LCS/LCSD RPD values, however, the LCS/LCSD RPD values were compared to laboratory historical control limits to assess if further evaluation of the data was warranted. For the sampling events included in this DQS, MES reviewed the LCS/LCSD %Rs and RPDs for Method SW8260B.

Table D5-5 shows the LCS/LCSD %R and RPD data. The LCS/LCSD %Rs and RPDs met criteria. Because no qualifiers were required based on the LCS/LCSD %Rs, and because 100 percent of the RPD results were within the laboratory control limits, the overall accuracy and precision measurements are considered to be acceptable.

5.1.2.4 Method Blank Samples

Method blanks are prepared and analyzed by the laboratory to assess the level of background interferences and possible contamination in the analytical system. The method blank must be carried through the complete procedure and contain analyte-free reagents in the same volumes as used in processing the samples. The goal is to conduct investigative sample analysis in such a manner that sample contamination is not introduced by the analytical methods, equipment, or reagents. If such contamination occurs, it is usually identified by the detection of target analytes at trace or low concentrations in the method blanks. When these detections are found, the laboratory investigates the source, qualifies the affected data as appropriate according to the magnitude of the detections, and implements corrective measures as appropriate. For the sampling events included in this DQS, method blanks were prepared and analyzed with each analytical batch for Method SW8260B.

No target analytes were detected in the method blanks associated with the sampling events included in this DQS.

5.1.2.5 Surrogate Recovery

Surrogate spike compounds were added to investigative samples during organic analyses to assess the individual matrix effect of investigative samples and to monitor overall analytical system performance. Surrogate recoveries that are outside the laboratory historical control limits may indicate performance problems with the analytical system and extraction procedures, or significant matrix effects when evaluated in conjunction with the MS/MSD results. MES reviewers used laboratory historical control limits to assess percent recoveries for surrogate spike constituents. For sample results affected by surrogate percent recoveries less than the lower control limit, detects were qualified as estimated (JS) and may be biased low, and non-detects were qualified as estimated (UJS) and may be potential false negatives. For sample results affected by surrogate percent recoveries greater than the upper control limit, detects were qualified as estimated (JS) and may be biased high. No qualifiers are required for non-detect results based on high surrogate recoveries.

A summary of the surrogate percent recovery data is provided in Table D5-6. No qualifiers were required for sample results based on surrogate recoveries.

5.1.2.6 Internal Standards

Adherence to method-specific internal standards (ISs) criteria ensures that GC/MS sensitivity and response are stable during each analysis. *SW-846* (EPA, 1986) recommended ISs are often brominated, fluorinated, or stable isotopically labeled analogs of specific target compounds, or are closely related compounds whose presence in environmental samples is unlikely. The IS spike solution is added after the preparation or extraction of a sample. ISs are used in internal calibration methods to correct sample results affected by column injection loss, purging loss, or viscosity effects. ISs are added to environmental samples, control standards, and blanks, in accordance with method requirements and laboratory standard operating procedures (MES, 2004). No qualifiers were required for sample results based on the IS data.

5.1.2.7 Initial and Continuing Calibration

The calibration of an analytical instrument involves the delineation of the relationship between the response of the instrument and the concentration of an analyte introduced into the instrument. An ICAL is performed on an analytical instrument prior to the analysis of samples to ensure that the equipment is capable of producing acceptable qualitative and quantitative data. The CCAL is the verification of the ICAL at periodic intervals. The CCAL demonstrates that the instrument is capable of acceptable performance during the course of the analytical analysis. Review of the ICAL data included the evaluation of the correlation coefficients and relative standard deviations. Review of the CCAL data included the evaluation of the percent difference between the concentration of the CCAL standard and the expected concentration. For sample results associated with CCAL data that did not meet method-specific criteria, detects and non-detects

were qualified as estimated (JC and UJC, respectively). No qualifiers were required for sample results based on the ICAL or CCAL data.

5.1.2.8 Miscellaneous Qualifiers

Cis-1,2-dichloroethene and trichloroethene were detected at concentrations above the calibration range of the instrument in some of the investigative samples. These results were flagged with an "E" by the laboratory and qualified "JX" by the MES reviewer. However, the laboratory re-analyzed these samples at dilutions and the results from the diluted analyses were used for this investigation. Therefore, the "E-flagged" results for the undiluted analyses for these samples are considered to be the "least-preferred" results and are not shown in the tables in Section 5.0.

5.2 SUMMARY OF DATA QUALITY INDICATORS

A summary of the data quality indicators in terms of the PARCCS are described in this section.

5.2.1 Precision

As discussed in Section 2.3, the precision evaluation included field precision (FDs), laboratory precision (LCS/LCSDs), and combined field/laboratory precision (MS/MSDs). The MS/MSD, FD, and LCS/LCSD RPDs are discussed in Sections 5.1.1.1, 5.1.1.2, and 5.1.2.3 of this report, respectively. Based on this evaluation, the precision of the data is acceptable for its intended use.

5.2.2 Accuracy

As discussed in Section 2.3, the accuracy evaluation included a comparison of spike recoveries from field samples (surrogate and MS/MSD spikes) and laboratory QC samples (LCS and LCSD), and assessing holding time. The MS/MSD, LCS/LCSD, and surrogate spike recoveries are discussed in Sections 5.1.1.1, 5.1.2.3, and 5.1.2.5, respectively, and holding time is discussed in Section 5.1.2.2. Recoveries from MS/MSDs, LCS/LCSD and surrogate percent recoveries were compared to laboratory historical control limits to determine a laboratory's ability to accurately determine both qualitative and quantitative results. The investigative sample results were within the required percent recovery limits. The investigative sample results were within the required holding time limits. Based on this evaluation, the accuracy of the data is acceptable for its intended use.

5.2.3 Representativeness

Representativeness is the degree to which the data accurately and precisely portray the environmental conditions being studied. For this investigation, sampling procedures and locations were selected to accurately represent overall Site conditions and were biased toward areas that were likely to exhibit evidence of past releases. Sampling was conducted using known, approved field procedures to minimize variability introduced during field sampling. The investigative and FD analyses indicate that the overall combined variability introduced by the sampling procedures, sample matrix, and laboratory analysis is acceptable, and the FD samples are representative of the data associated with the investigative sample.

5.2.4 Completeness

Completeness refers to the amount of valid data obtainable from a measurement system compared to the expected amount of data. Data that have not been qualified as rejected during the data validation process are considered to be valid. As presented in the *QAP* (MES, 2013), a completeness goal of 95 percent was established for investigations. Of the 180 investigative and field duplicate sample records from the four sampling events, no records were qualified as rejected based on MES' review of the data. Therefore a completeness of 100 percent was calculated for the sampling event, which exceeds project goals. One hundred percent of the results are usable and are acceptable for their intended use.

5.2.5 Comparability

Comparability expresses the confidence with which one data set can be compared to another. Comparability objectives were met by minimizing the number of contract laboratories used, using EPA methods for analyses, and reporting results in standardized units. The comparability objective for the project was fulfilled.

6.0 REPORTING LIMITS AND DATA USES

This section discusses the laboratory reporting limits and how they compare to RBTLs. Chemical-specific RBTLs were established for use as goals to achieve the Corrective Action Objectives at the Site using the *Alabama Risk-Based Corrective Action Guidance Manual (ARBCA)* (ADEM, 2008). As per the *ARBCA*, RBTLs were developed based on a 10^{-5} risk. Based on the proposed future land use of the Site (adult educational campus and passive recreation) exposure to the groundskeeper was considered appropriate for the Site.

6.1 LABORATORY REPORTING LIMITS

EMAX confirms reporting limits on an annual or quarterly basis by performing MDL studies. The MDL is defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is generated from the analysis of a sample in a given matrix containing the analyte (40 Code of Federal Regulations, Chapter 1, Part 136, Appendix B). The reporting limit is defined as the lowest concentration of the target analyte required to be reported. This value is based on project-specific criteria.

The laboratory reports detections that are below the reporting limit as estimated values by assigning a flag to the analytical result. This flag is assigned because the laboratory cannot accurately quantify analyte concentrations at levels below the reporting limit. For detections in the concentration range between the MDL and the reporting limit, the laboratory is confident of the analyte identification and detection but can only estimate the analyte concentration.

6.2 COMPARISON OF LABORATORY REPORTING LIMITS TO RBTLS

For this assessment, the laboratory RLs and MDLs were compared to the groundskeeper RBTLs, shown in Table D6-1. The laboratory RLs and MDLs for the investigative samples were less than the groundskeeper RBTLs.

7.0 CONCLUSIONS

This DQS presents in specific terms the QA and QC practices used to achieve the project objectives for the Site during the May 2016, August 2016, November 2016, and February 2017 sampling events. Samples were collected and analyzed in accordance with EPA methods and using laboratory-specific QA/QC procedures. These procedures were followed to generate legally and technically defensible data.

Sample PPMP-66-MW06R has trichloroethene J flagged due to low MS/MSD recoveries. Several sample results were qualified "JX" because they were detected at concentrations above the calibration range of the instrument (Section 5.1.2.8). However, the laboratory re-analyzed these samples at dilutions and the results from the diluted analyses, which met criteria, were used for this investigation. Based on this review, the analytical data generated for this investigation are acceptable and adequate to fulfill program objectives and may be used to evaluate the effectiveness of the selected remedy for the Site.

8.0 REFERENCES

Alabama Department of Environmental Management (ADEM). 2008. *Alabama Risk-Based Corrective Action Guidance Manual (ARBCA)*, *Revision 2*. April.

Matrix Environmental Services, LLC (MES). 2013. *Final Installation Wide Sampling and Analysis Plan)*. December.

U.S. Environmental Protection Agency (EPA). 1986. *Test Methods for Evaluating Solid Waste-Physical Chemical Methods*. Office of Solid Waste, Washington, D.C., SW-846, 3rd Edition, and Updates.

EPA. 1994. *Guidance for the Data Quality Objectives Process,* EPA/600/R-96/055. September.

EPA. 2014. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. August.

TABLES

Table D5-1: Sample Index
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Site Name	Delivery Group	Station Name	QC Code	Matrix	Sample Date	Lab	Laboratory Sample ID	Method
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW02RR	NS	WG	5/3/2016	EMXT	E019-01	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW02RR	MSD	WG	5/3/2016	EMXT	E019-01S	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW02RR	MS	WG	5/3/2016	EMXT	E019-01M	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW06R	NS	WG	5/3/2016	EMXT	E019-02	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW08	NS	WG	5/3/2016	EMXT	E019-03	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW16	NS	WG	5/3/2016	EMXT	E019-04	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW17	NS	WG	5/3/2016	EMXT	E019-05	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW18R	NS	WG	5/3/2016	EMXT	E019-06	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW23R	NS	WG	5/3/2016	EMXT	E019-07	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW23R	FD	WG	5/3/2016	EMXT	E019-08	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16E019	PPMP-66-MW24R	NS	WG	5/3/2016	EMXT	E019-09	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW02RR	NS	WG	8/4/2016	EMXT	H087-01	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW02RR	MSD	WG	8/4/2016	EMXT	H087-01S	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW02RR	MS	WG	8/4/2016	EMXT	H087-01M	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW06R	NS	WG	8/4/2016	EMXT	H087-02	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW08	NS	WG	8/4/2016	EMXT	H087-03	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW16	NS	WG	8/4/2016	EMXT	H087-04	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW17	NS	WG	8/4/2016	EMXT	H087-05	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW18R	NS	WG	8/4/2016	EMXT	H087-06	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW23R	NS	WG	8/4/2016	EMXT	H087-07	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW23R	NS	WG	8/4/2016	EMXT	H087-07I	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW23R	FD	WG	8/4/2016	EMXT	H087-08	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW23R	FD	WG	8/4/2016	EMXT	H087-08I	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16H087	PPMP-66-MW24R	NS	WG	8/4/2016	EMXT	H087-09N	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW02RR	NS	WG	11/1/2016	EMXT	K014-01	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW02RR	MSD	WG	11/1/2016	EMXT	K014-01S	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW02RR	MS	WG	11/1/2016	EMXT	K014-01M	SW8260B

Table D5-1: Sample Index
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Site Name	Delivery Group	Station Name	QC Code	Matrix	Sample Date	Lab	Laboratory Sample ID	Method
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW06R	NS	WG	11/1/2016	EMXT	K014-02	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW08	NS	WG	11/1/2016	EMXT	K014-03	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW16	NS	WG	11/1/2016	EMXT	K014-04	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW17	NS	WG	11/1/2016	EMXT	K014-05	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW18R	NS	WG	11/1/2016	EMXT	K014-06	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW18R	FD	WG	11/1/2016	EMXT	K014-08	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW23R	NS	WG	11/1/2016	EMXT	K014-07	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW23R	NS	WG	11/1/2016	EMXT	K014-07I	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	16K014	PPMP-66-MW24R	NS	WG	11/1/2016	EMXT	K014-09	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW02RR	NS	WG	2/14/2017	EMXT	B143-01	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW06R	NS	WG	2/14/2017	EMXT	B143-02	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW06R	MSD	WG	2/14/2017	EMXT	B143-02S	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW06R	MS	WG	2/14/2017	EMXT	B143-02M	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW08	NS	WG	2/14/2017	EMXT	B143-03	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW16	NS	WG	2/14/2017	EMXT	B143-04	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW17	NS	WG	2/14/2017	EMXT	B143-05	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW17	FD	WG	2/14/2017	EMXT	B143-10	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW18R	NS	WG	2/14/2017	EMXT	B143-06	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW23R	NS	WG	2/14/2017	EMXT	B143-07	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW23R	NS	WG	2/14/2017	EMXT	B143-07I	SW8260B
PARCEL 66(7), FMR SMALL WEAPONS REPAIR SH	17B143	PPMP-66-MW24R	NS	WG	2/14/2017	EMXT	B143-08	SW8260B
MCCLELLAN FIELD QC	16E019	Material Blank (Material070)	WS	W	5/3/2016	EMXT	E019-10	SW8260B
MCCLELLAN FIELD QC	16E019	Trip Blank (TB425)	TB	W	5/3/2016	EMXT	E019-11	SW8260B
MCCLELLAN FIELD QC	16H087	Material Blank (Material071)	WS	W	8/4/2016	EMXT	H087-10	SW8260B
MCCLELLAN FIELD QC	16H087	Trip Blank (TB4365)	TB	W	8/4/2016	EMXT	H087-11	SW8260B
MCCLELLAN FIELD QC	16K014	Material Blank (Material073)	WS	W	11/1/2016	EMXT	K014-10	SW8260B
MCCLELLAN FIELD QC	16K014	Trip Blank (TZB442)	TB	W	11/1/2016	EMXT	K014-11	SW8260B

Table D5-1: Sample Index
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Site Name	Delivery Group	Station Name	QC Code	Matrix	Sample Date	Lab	Laboratory Sample ID	Method
MCCLELLAN FIELD QC	17B143	Material Blank (Material075)	WS	W	2/14/2017	EMXT	B143-09	SW8260B
MCCLELLAN FIELD QC	17B143	Trip Blank (ZTB445)	TB	W	2/14/2017	EMXT	B143-11	SW8260B

Notes:
EMXT = EMAX Laboratories, Torrance, CA
FD = Field duplicate
ID = Identification
MS = Matrix spike
MSD = Matrix spike duplicate
NS = Normal sample
QC = Quality Control
TB = Trip blank
W = Water
WG = Groundwater
WS = Source water

Table D5-2: Summary of MS/MSD Recoveries and RPDs
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Station Name	Matrix	Sample Date	Delivery Group	Method	Parameter Name	MS %R	MSD %R	%R LCL	%R UCL	RPD	RPD Limit
PPMP-66-MW02RR	WG	5/3/16	16E019	SW8260B	1,1-Dichloroethene	97	96	75	125		20
PPMP-66-MW02RR	WG	5/3/16	16E019	SW8260B	Cis-1,2-Dichloroethene	115	108	73	133		20
PPMP-66-MW02RR	WG	5/3/16	16E019	SW8260B	Trans-1,2-Dichloroethene	101	95	78	134		20
PPMP-66-MW02RR	WG	5/3/16	16E019	SW8260B	Trichloroethene	114	101	67	128		20
PPMP-66-MW02RR	WG	5/3/16	16E019	SW8260B	Vinyl Chloride	90	89	73	134		20
PPMP-66-MW02RR	WG	8/4/16	16H087	SW8260B	1,1-Dichloroethene	109	97	75	125		20
PPMP-66-MW02RR	WG	8/4/16	16H087	SW8260B	Cis-1,2-Dichloroethene	108	101	73	133		20
PPMP-66-MW02RR	WG	8/4/16	16H087	SW8260B	Trans-1,2-Dichloroethene	107	96	78	134		20
PPMP-66-MW02RR	WG	8/4/16	16H087	SW8260B	Trichloroethene	101	92	67	128		20
PPMP-66-MW02RR	WG	8/4/16	16H087	SW8260B	Vinyl Chloride	105	105	73	134		20
PPMP-66-MW02RR	WG	11/1/16	16K014	SW8260B	1,1-Dichloroethene	90	90	75	125		20
PPMP-66-MW02RR	WG	11/1/16	16K014	SW8260B	Cis-1,2-Dichloroethene	101	95	73	133		20
PPMP-66-MW02RR	WG	11/1/16	16K014	SW8260B	Trans-1,2-Dichloroethene	89	86	78	134		20
PPMP-66-MW02RR	WG	11/1/16	16K014	SW8260B	Trichloroethene	99	97	67	128		20
PPMP-66-MW02RR	WG	11/1/16	16K014	SW8260B	Vinyl Chloride	83	80	73	134		20
PPMP-66-MW06R	WG	2/14/17	17B143	SW8260B	1,1-Dichloroethene	89	88	75	125		20
PPMP-66-MW06R	WG	2/14/17	17B143	SW8260B	Cis-1,2-Dichloroethene	94	91	73	133		20
PPMP-66-MW06R	WG	2/14/17	17B143	SW8260B	Trans-1,2-Dichloroethene	87	86	78	134		20
PPMP-66-MW06R	WG	2/14/17	17B143	SW8260B	Trichloroethene	**61**	**57**	67	128		20
PPMP-66-MW06R	WG	2/14/17	17B143	SW8260B	Vinyl Chloride	102	99	73	134		20

Notes:

%R = Percent recovery
LCL = Lower control limit
UCL = Upper control limit
MS = Matrix spike
MSD = Matrix spike duplicate
RPD = Relative percent difference
WG = Groundwater

Indicates the %R is less than the LCL.

Indicates the %R is greater than the UCL or the RPD is greater than the RPD Limit.

Table D5-3: Field Duplicate Cross Reference
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Matrix	COC ID	Parent Station Name	COC Number	Sample Date	Delivery Group	Method
WG	DUP235	PPMP-66-MW23R	4641	5/3/16	16E019	SW8260B
WG	DUP243	PPMP-66-MW23R	4767	8/4/16	16H087	SW8260B
WG	DUP247	PPMP-66-MW18R	4820	11/1/16	16K014	SW8260B
WG	DUP249	PPMP-66-MW17	4854	2/14/17	17B143	SW8260B

Notes:
COC = Chain-of-Custody
ID = Identification
WG = Groundwater

Table D5-4: Comparison of Investigative and Field Duplicate Sample Detections
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Station Name	Matrix	Sample Date	Delivery Group	Method	Parameter Name	FD Value	FD Lab Flag	NS Value	NS Lab Flag	Units	RPD	MDL	RL
PPMP-66-MW23R	WG	5/3/16	1.60E+20	SW8260B	1,1-Dichloroethene	4.2	V	4	V	µg/L	4.9	0.2	1
PPMP-66-MW23R	WG	5/3/16	1.6E+20	SW8260B	Cis-1,2-Dichloroethene	81	V	80	V	µg/L	1.2	0.2	1
PPMP-66-MW23R	WG	5/3/16	1.6E+20	SW8260B	Trans-1,2-Dichloroethene	24	V	23	V	µg/L	4.3	0.2	1
PPMP-66-MW23R	WG	5/3/16	1.6E+20	SW8260B	Trichloroethene	67	V	66	V	µg/L	1.5	0.2	1
PPMP-66-MW23R	WG	5/3/16	1.6E+20	SW8260B	Vinyl Chloride	13	V	12	V	µg/L	8.0	0.2	1
PPMP-66-MW23R	WG	8/4/16	16H087	SW8260B	1,1-Dichloroethene	5.8	V	6	V	µg/L	3.4	0.2	1
PPMP-66-MW23R	WG	8/4/16	16H087	SW8260B	Cis-1,2-Dichloroethene	100	V	110	V	µg/L	9.5	1	5
PPMP-66-MW23R	WG	8/4/16	16H087	SW8260B	Trans-1,2-Dichloroethene	30	V	31	V	µg/L	3.3	0	1
PPMP-66-MW23R	WG	8/4/16	16H087	SW8260B	Trichloroethene	74	V	76	V	µg/L	2.7	0	1
PPMP-66-MW23R	WG	8/4/16	16H087	SW8260B	Vinyl Chloride	18	V	19	V	µg/L	5.4	0	1
PPMP-66-MW18R	WG	11/1/16	16K014	SW8260B	Cis-1,2-Dichloroethene	1.6	V	1.7	V	µg/L	6.1	0.2	1
PPMP-66-MW18R	WG	11/1/16	16K014	SW8260B	Trichloroethene	0.53	J	0.57	J	µg/L	7.3	0.2	1

Notes:
FD = Field duplicate
MDL = Method detection limit
µg/L = micrograms per liter
NS = Normal sample
RL = Reporting limit
RPD = Relative percent difference
WG = Groundwater

Lab Flag:
J = Estimated value. The analyte is positively identified and the concentration is less than the reporting limit, but greater than the method detection limit.
V = Detected value

Table D5-5: Summary of LCS/LCSD Recoveries and RPDs
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Method	Delivery Group	Analysis Date	Analytical Batch	Matrix	Parameter Name	LCS %R	LCSD %R	LCL	UCL	RPD	RPD Limit
SW8260B	16E019	5/5/16	VO67E04	W	1,1-Dichloroethene	95	105	75	125	10.0	20
SW8260B	16E019	5/5/16	VO67E04	W	Cis-1,2-Dichloroethene	102	109	73	133	6.6	20
SW8260B	16E019	5/5/16	VO67E04	W	Trans-1,2-Dichloroethene	96	104	78	134	8.0	20
SW8260B	16E019	5/5/16	VO67E04	W	Trichloroethene	102	111	67	128	8.5	20
SW8260B	16E019	5/5/16	VO67E04	W	Vinyl Chloride	89	99	73	134	10.6	20
SW8260B	16H087	8/9/16	VO01H07	W	1,1-Dichloroethene	99	104	75	125	4.9	20
SW8260B	16H087	8/9/16	VO01H07	W	Cis-1,2-Dichloroethene	104	108	73	133	3.8	20
SW8260B	16H087	8/9/16	VO01H07	W	Trans-1,2-Dichloroethene	103	110	78	134	6.6	20
SW8260B	16H087	8/9/16	VO01H07	W	Trichloroethene	97	104	67	128	7.0	20
SW8260B	16H087	8/9/16	VO01H07	W	Vinyl Chloride	115	119	73	134	3.4	20
SW8260B	16H087	8/10/16	VO01H08	W	1,1-Dichloroethene	97	97	75	125	0.0	20
SW8260B	16H087	8/10/16	VO01H08	W	Cis-1,2-Dichloroethene	106	108	73	133	1.9	20
SW8260B	16H087	8/10/16	VO01H08	W	Trans-1,2-Dichloroethene	105	105	78	134	0.0	20
SW8260B	16H087	8/10/16	VO01H08	W	Trichloroethene	96	99	67	128	3.1	20
SW8260B	16H087	8/10/16	VO01H08	W	Vinyl Chloride	112	112	73	134	0.0	20
SW8260B	16K014	11/3/16	VO67K03	W	1,1-Dichloroethene	90	91	75	125	1.1	20
SW8260B	16K014	11/3/16	VO67K03	W	Cis-1,2-Dichloroethene	102	103	73	133	1.0	20
SW8260B	16K014	11/3/16	VO67K03	W	Trans-1,2-Dichloroethene	88	89	78	134	1.1	20
SW8260B	16K014	11/3/16	VO67K03	W	Trichloroethene	100	100	67	128	0.0	20
SW8260B	16K014	11/3/16	VO67K03	W	Vinyl Chloride	83	85	73	134	2.4	20
SW8260B	16K014	11/4/16	VO67K04	W	1,1-Dichloroethene	90	87	75	125	3.4	20
SW8260B	16K014	11/4/16	VO67K04	W	Cis-1,2-Dichloroethene	103	101	73	133	2.0	20
SW8260B	16K014	11/4/16	VO67K04	W	Trans-1,2-Dichloroethene	88	85	78	134	3.5	20
SW8260B	16K014	11/4/16	VO67K04	W	Trichloroethene	99	97	67	128	2.0	20
SW8260B	16K014	11/4/16	VO67K04	W	Vinyl Chloride	90	91	73	134	1.1	20
SW8260B	17B143	2/16/17	VO67B15	W	1,1-Dichloroethene	90	88	75	125	2.2	20
SW8260B	17B143	2/16/17	VO67B15	W	Cis-1,2-Dichloroethene	104	102	73	133	1.9	20
SW8260B	17B143	2/16/17	VO67B15	W	Trans-1,2-Dichloroethene	91	90	78	134	1.1	20
SW8260B	17B143	2/16/17	VO67B15	W	Trichloroethene	97	95	67	128	2.1	20
SW8260B	17B143	2/16/17	VO67B15	W	Vinyl Chloride	101	99	73	134	2.0	20
SW8260B	17B143	2/17/17	VO67B16	W	1,1-Dichloroethene	89	86	75	125	3.4	20
SW8260B	17B143	2/17/17	VO67B16	W	Cis-1,2-Dichloroethene	101	100	73	133	1.0	20

Table D5-5: Summary of LCS/LCSD Recoveries and RPDs
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Method	Delivery Group	Analysis Date	Analytical Batch	Matrix	Parameter Name	LCS %R	LCSD %R	LCL	UCL	RPD	RPD Limit
SW8260B	17B143	2/17/17	VO67B16	W	Trans-1,2-Dichloroethene	90	88	78	134	2.2	20
SW8260B	17B143	2/17/17	VO67B16	W	Trichloroethene	93	91	67	128	2.2	20
SW8260B	17B143	2/17/17	VO67B16	W	Vinyl Chloride	101	99	73	134	2.0	20

Notes:
%R = Percent recovery
LCL = Lower control limit
UCL = Upper control limit
LCS = Laboratory control sample
LCSD = Laboratory control sample duplicate
RPD = Relative percent difference
W = Water

Table D5-6: Summary of Surrogate Recoveries
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Delivery Group	Station Name	Sample Date	Matrix	QC Code	Method	Parameter Name	%R	LCL	UCL
16E019	PPMP-66-MW02RR	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	87.7	63	132
16E019	PPMP-66-MW02RR	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	92.7	73	129
16E019	PPMP-66-MW02RR	5/3/16	WG	NS	SW8260B	Toluene-D8	99.7	75	122
16H087	PPMP-66-MW02RR	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	113	63	132
16H087	PPMP-66-MW02RR	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
16H087	PPMP-66-MW02RR	8/4/16	WG	NS	SW8260B	Toluene-D8	97.7	75	122
16K014	PPMP-66-MW02RR	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	97.9	63	132
16K014	PPMP-66-MW02RR	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	106	73	129
16K014	PPMP-66-MW02RR	11/1/16	WG	NS	SW8260B	Toluene-D8	99	75	122
17B143	PPMP-66-MW02RR	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	102	63	132
17B143	PPMP-66-MW02RR	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	103	73	129
17B143	PPMP-66-MW02RR	2/14/17	WG	NS	SW8260B	Toluene-D8	101	75	122
16E019	PPMP-66-MW06R	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	92.6	63	132
16E019	PPMP-66-MW06R	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	92	73	129
16E019	PPMP-66-MW06R	5/3/16	WG	NS	SW8260B	Toluene-D8	96.2	75	122
16H087	PPMP-66-MW06R	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	106	63	132
16H087	PPMP-66-MW06R	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	104	73	129
16H087	PPMP-66-MW06R	8/4/16	WG	NS	SW8260B	Toluene-D8	98.7	75	122
16K014	PPMP-66-MW06R	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	97.4	63	132
16K014	PPMP-66-MW06R	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
16K014	PPMP-66-MW06R	11/1/16	WG	NS	SW8260B	Toluene-D8	98.5	75	122
17B143	PPMP-66-MW06R	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	99	63	132
17B143	PPMP-66-MW06R	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
17B143	PPMP-66-MW06R	2/14/17	WG	NS	SW8260B	Toluene-D8	101	75	122
16E019	PPMP-66-MW08	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	92.3	63	132
16E019	PPMP-66-MW08	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	91.6	73	129
16E019	PPMP-66-MW08	5/3/16	WG	NS	SW8260B	Toluene-D8	94.3	75	122
16H087	PPMP-66-MW08	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	106	63	132
16H087	PPMP-66-MW08	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	102	73	129
16H087	PPMP-66-MW08	8/4/16	WG	NS	SW8260B	Toluene-D8	99.3	75	122
16K014	PPMP-66-MW08	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	98.7	63	132
16K014	PPMP-66-MW08	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
16K014	PPMP-66-MW08	11/1/16	WG	NS	SW8260B	Toluene-D8	98.4	75	122
17B143	PPMP-66-MW08	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	101	63	132

Table D5-6: Summary of Surrogate Recoveries
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Delivery Group	Station Name	Sample Date	Matrix	QC Code	Method	Parameter Name	%R	LCL	UCL
17B143	PPMP-66-MW08	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
17B143	PPMP-66-MW08	2/14/17	WG	NS	SW8260B	Toluene-D8	102	75	122
16E019	PPMP-66-MW16	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	93.2	63	132
16E019	PPMP-66-MW16	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	91.3	73	129
16E019	PPMP-66-MW16	5/3/16	WG	NS	SW8260B	Toluene-D8	95.2	75	122
16H087	PPMP-66-MW16	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	106	63	132
16H087	PPMP-66-MW16	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	101	73	129
16H087	PPMP-66-MW16	8/4/16	WG	NS	SW8260B	Toluene-D8	99.7	75	122
16K014	PPMP-66-MW16	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	98.1	63	132
16K014	PPMP-66-MW16	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
16K014	PPMP-66-MW16	11/1/16	WG	NS	SW8260B	Toluene-D8	98	75	122
17B143	PPMP-66-MW16	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	103	63	132
17B143	PPMP-66-MW16	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	104	73	129
17B143	PPMP-66-MW16	2/14/17	WG	NS	SW8260B	Toluene-D8	101	75	122
16E019	PPMP-66-MW17	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	94	63	132
16E019	PPMP-66-MW17	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	90.2	73	129
16E019	PPMP-66-MW17	5/3/16	WG	NS	SW8260B	Toluene-D8	94.6	75	122
16H087	PPMP-66-MW17	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	106	63	132
16H087	PPMP-66-MW17	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	102	73	129
16H087	PPMP-66-MW17	8/4/16	WG	NS	SW8260B	Toluene-D8	97.2	75	122
16K014	PPMP-66-MW17	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	97.6	63	132
16K014	PPMP-66-MW17	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
16K014	PPMP-66-MW17	11/1/16	WG	NS	SW8260B	Toluene-D8	99.8	75	122
17B143	PPMP-66-MW17	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	102	63	132
17B143	PPMP-66-MW17	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	103	73	129
17B143	PPMP-66-MW17	2/14/17	WG	NS	SW8260B	Toluene-D8	102	75	122
17B143	PPMP-66-MW17	2/14/17	WG	FD	SW8260B	1,2-Dichloroethane-D4	104	63	132
17B143	PPMP-66-MW17	2/14/17	WG	FD	SW8260B	4-Bromofluorobenzene	103	73	129
17B143	PPMP-66-MW17	2/14/17	WG	FD	SW8260B	Toluene-D8	102	75	122
16E019	PPMP-66-MW18R	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	94.1	63	132
16E019	PPMP-66-MW18R	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	92.2	73	129
16E019	PPMP-66-MW18R	5/3/16	WG	NS	SW8260B	Toluene-D8	95.2	75	122
16H087	PPMP-66-MW18R	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	106	63	132
16H087	PPMP-66-MW18R	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	106	73	129

Table D5-6: Summary of Surrogate Recoveries
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Delivery Group	Station Name	Sample Date	Matrix	QC Code	Method	Parameter Name	%R	LCL	UCL
16H087	PPMP-66-MW18R	8/4/16	WG	NS	SW8260B	Toluene-D8	98.2	75	122
16K014	PPMP-66-MW18R	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	96.3	63	132
16K014	PPMP-66-MW18R	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	104	73	129
16K014	PPMP-66-MW18R	11/1/16	WG	NS	SW8260B	Toluene-D8	98.5	75	122
16K014	PPMP-66-MW18R	11/1/16	WG	FD	SW8260B	1,2-Dichloroethane-D4	97.7	63	132
16K014	PPMP-66-MW18R	11/1/16	WG	FD	SW8260B	4-Bromofluorobenzene	104	73	129
16K014	PPMP-66-MW18R	11/1/16	WG	FD	SW8260B	Toluene-D8	99.2	75	122
17B143	PPMP-66-MW18R	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	103	63	132
17B143	PPMP-66-MW18R	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	104	73	129
17B143	PPMP-66-MW18R	2/14/17	WG	NS	SW8260B	Toluene-D8	102	75	122
16E019	PPMP-66-MW23R	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	93	63	132
16E019	PPMP-66-MW23R	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	91.9	73	129
16E019	PPMP-66-MW23R	5/3/16	WG	NS	SW8260B	Toluene-D8	95	75	122
16E019	PPMP-66-MW23R	5/3/16	WG	FD	SW8260B	1,2-Dichloroethane-D4	91.9	63	132
16E019	PPMP-66-MW23R	5/3/16	WG	FD	SW8260B	4-Bromofluorobenzene	90.8	73	129
16E019	PPMP-66-MW23R	5/3/16	WG	FD	SW8260B	Toluene-D8	94.6	75	122
16H087	PPMP-66-MW23R	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	111	63	132
16H087	PPMP-66-MW23R	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	102	73	129
16H087	PPMP-66-MW23R	8/4/16	WG	NS	SW8260B	Toluene-D8	98.7	75	122
16H087	PPMP-66-MW23R	8/4/16	WG	FD	SW8260B	1,2-Dichloroethane-D4	115	63	132
16H087	PPMP-66-MW23R	8/4/16	WG	FD	SW8260B	4-Bromofluorobenzene	99.8	73	129
16H087	PPMP-66-MW23R	8/4/16	WG	FD	SW8260B	Toluene-D8	97.9	75	122
16K014	PPMP-66-MW23R	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	98.6	63	132
16K014	PPMP-66-MW23R	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
16K014	PPMP-66-MW23R	11/1/16	WG	NS	SW8260B	Toluene-D8	98.5	75	122
17B143	PPMP-66-MW23R	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	103	63	132
17B143	PPMP-66-MW23R	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	105	73	129
17B143	PPMP-66-MW23R	2/14/17	WG	NS	SW8260B	Toluene-D8	102	75	122
16E019	PPMP-66-MW24R	5/3/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	94.7	63	132
16E019	PPMP-66-MW24R	5/3/16	WG	NS	SW8260B	4-Bromofluorobenzene	92	73	129
16E019	PPMP-66-MW24R	5/3/16	WG	NS	SW8260B	Toluene-D8	96	75	122
16H087	PPMP-66-MW24R	8/4/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	104	63	132
16H087	PPMP-66-MW24R	8/4/16	WG	NS	SW8260B	4-Bromofluorobenzene	103	73	129
16H087	PPMP-66-MW24R	8/4/16	WG	NS	SW8260B	Toluene-D8	95	75	122

Table D5-6: Summary of Surrogate Recoveries
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Delivery Group	Station Name	Sample Date	Matrix	QC Code	Method	Parameter Name	%R	LCL	UCL
16K014	PPMP-66-MW24R	11/1/16	WG	NS	SW8260B	1,2-Dichloroethane-D4	102	63	132
16K014	PPMP-66-MW24R	11/1/16	WG	NS	SW8260B	4-Bromofluorobenzene	104	73	129
16K014	PPMP-66-MW24R	11/1/16	WG	NS	SW8260B	Toluene-D8	98.2	75	122
17B143	PPMP-66-MW24R	2/14/17	WG	NS	SW8260B	1,2-Dichloroethane-D4	102	63	132
17B143	PPMP-66-MW24R	2/14/17	WG	NS	SW8260B	4-Bromofluorobenzene	104	73	129
17B143	PPMP-66-MW24R	2/14/17	WG	NS	SW8260B	Toluene-D8	103	75	122

Notes:
FD = Field duplicate
LCL = Lower control limit
NS = Normal sample
QC = Quality control
%R = Percent recovery
TB = Trip blank
UCL = Upper control limit
W = Water
WG = Groundwater
WS = Source water

Table D6-1: Reporting Limits and Method Detection Limits Compared to RBTLs
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Annison, Alabama

Matrix	Method	Parameter Name	MDL	RL	Units	GS RBTL
WG	SW8260B	1,1-Dichloroethene	0.2	1	µg/L	4800
WG	SW8260B	Cis-1,2-Dichloroethene	0.2	1	µg/L	991
WG	SW8260B	Trans-1,2-Dichloroethene	0.2	1	µg/L	1950
WG	SW8260B	Trichloroethene	0.2	1	µg/L	205
WG	SW8260B	Vinyl Chloride	0.2	0.8	µg/L	3.86

Notes:
-- = Not applicable
GS = Groundskeeper
MDL = Method detection limit
µg/L = micrograms per liter
RL = Reporting limit
RBTL = Risk-Based Target Level
WG = Groundwater

ATTACHMENT D1

Laboratory Data Forms

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 12:54
Sample ID: PPMP-66-MW02RR	Date Analyzed: 05/05/16 12:54
Lab Samp ID: E019-01	Dilution Factor: 1
Lab File ID: REC099	Matrix : WATER
Ext Btch ID: VO67E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.49J	1.0	0.20
CIS-1,2-DICHLOROETHENE	28	1.0	0.20
TRANS-1,2-DICHLOROETHENE	13	1.0	0.20
TRICHLOROETHENE	28	1.0	0.20
VINYL CHLORIDE	6.4	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.77	10.00	87.7	63-132
TOLUENE-D8	9.97	10.00	99.7	75-122
4-BROMOFLUOROBENZENE	9.27	10.00	92.7	73-129

RL: Reporting Limit

reportable

CO/1/16 BWP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 15:02
Sample ID: PPMP-66-MW06R	Date Analyzed: 05/05/16 15:02
Lab Samp ID: E019-02	Dilution Factor: 1
Lab File ID: REC104	Matrix : WATER
Ext Btch ID: V067E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.29J	1.0	0.20
CIS-1,2-DICHLOROETHENE	11	1.0	0.20
TRANS-1,2-DICHLOROETHENE	2.8	1.0	0.20
TRICHLOROETHENE	48	1.0	0.20
VINYL CHLORIDE	2.4	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.26	10.00	92.6	63-132
TOLUENE-D8	9.62	10.00	96.2	75-122
4-BROMOFLUOROBENZENE	9.20	10.00	92.0	73-129

RL: Reporting Limit

6/1/16 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 15:27
Sample ID: PPMP-66-MW08	Date Analyzed: 05/05/16 15:27
Lab Samp ID: E019-03	Dilution Factor: 1
Lab File ID: REC105	Matrix : WATER
Ext Btch ID: VO67E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.23	10.00	92.3	63-132
TOLUENE-D8	9.43	10.00	94.3	75-122
4-BROMOFLUOROBENZENE	9.16	10.00	91.6	73-129

RL: Reporting Limit

6/1/16 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 15:53
Sample ID: PPMP-66-MW16	Date Analyzed: 05/05/16 15:53
Lab Samp ID: E019-04	Dilution Factor: 1
Lab File ID: REC106	Matrix : WATER
Ext Btch ID: V067E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.32	10.00	93.2	63-132
TOLUENE-D8	9.52	10.00	95.2	75-122
4-BROMOFLUOROBENZENE	9.13	10.00	91.3	73-129

RL: Reporting Limit

6/1/16 BVP

2007

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 16:18
Sample ID: PPMP-66-MW17	Date Analyzed: 05/05/16 16:18
Lab Samp ID: E019-05	Dilution Factor: 1
Lab File ID: REC107	Matrix : WATER
Ext Btch ID: V067E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.40	10.00	94.0	63-132
TOLUENE-D8	9.46	10.00	94.6	75-122
4-BROMOFLUOROBENZENE	9.02	10.00	90.2	73-129

RL: Reporting Limit

vf

6/1/16 BVP

2008

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 16:44
Sample ID: PPMP-66-MW18R	Date Analyzed: 05/05/16 16:44
Lab Samp ID: E019-06	Dilution Factor: 1
Lab File ID: REC108	Matrix : WATER
Ext Btch ID: V067E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.72J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.48J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.41	10.00	94.1	63-132
TOLUENE-D8	9.52	10.00	95.2	75-122
4-BROMOFLUOROBENZENE	9.22	10.00	92.2	73-129

RL: Reporting Limit

J

6/1/16 BCP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 17:10
Sample ID: PPMP-66-MW23R	Date Analyzed: 05/05/16 17:10
Lab Samp ID: E019-07	Dilution Factor: 1
Lab File ID: REC109	Matrix : WATER
Ext Btch ID: V067E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	4.0	1.0	0.20
CIS-1,2-DICHLOROETHENE	80	1.0	0.20
TRANS-1,2-DICHLOROETHENE	23	1.0	0.20
TRICHLOROETHENE	66	1.0	0.20
VINYL CHLORIDE	12	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.30	10.00	93.0	63-132
TOLUENE-D8	9.50	10.00	95.0	75-122
4-BROMOFLUOROBENZENE	9.19	10.00	91.9	73-129

RL: Reporting Limit

6/1/16 BCP

2010

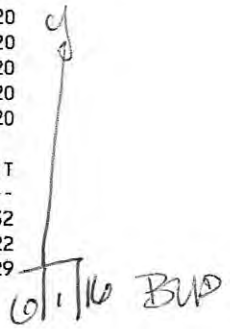
SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 17:35
Sample ID: DUP235	Date Analyzed: 05/05/16 17:35
Lab Samp ID: E019-08	Dilution Factor: 1
Lab File ID: REC110	Matrix : WATER
Ext Btch ID: VO67E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	4.2	1.0	0.20
CIS-1,2-DICHLOROETHENE	81	1.0	0.20
TRANS-1,2-DICHLOROETHENE	24	1.0	0.20
TRICHLOROETHENE	67	1.0	0.20
VINYL CHLORIDE	13	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.19	10.00	91.9	63-132
TOLUENE-D8	9.46	10.00	94.6	75-122
4-BROMOFLUOROBENZENE	9.08	10.00	90.8	73-129

RL: Reporting Limit



SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 18:01
Sample ID: PPMP-66-MW24R	Date Analyzed: 05/05/16 18:01
Lab Samp ID: E019-09	Dilution Factor: 1
Lab File ID: REC111	Matrix : WATER
Ext Btch ID: VO67E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.80J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.24J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.47	10.00	94.7	63-132
TOLUENE-D8	9.60	10.00	96.0	75-122
4-BROMOFLUOROBENZENE	9.20	10.00	92.0	73-129

RL: Reporting Limit

6/1/16 BZP

2012

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 18:26
Sample ID: MATERIAL070	Date Analyzed: 05/05/16 18:26
Lab Samp ID: E019-10	Dilution Factor: 1
Lab File ID: REC112	Matrix : WATER
Ext Btch ID: V067E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.22	10.00	92.2	63-132
TOLUENE-D8	9.58	10.00	95.8	75-122
4-BROMOFLUOROBENZENE	9.07	10.00	90.7	73-129

RL: Reporting Limit

VJ

6/1/16 BVP

2013

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 05/03/16
Project : MCCLELLAN, PARCEL 66	Date Received: 05/04/16
Batch No. : 16E019	Date Extracted: 05/05/16 14:36
Sample ID: TB425	Date Analyzed: 05/05/16 14:36
Lab Samp ID: E019-11	Dilution Factor: 1
Lab File ID: REC103	Matrix : WATER
Ext Btch ID: V067E04	% Moisture : NA
Calib. Ref.: RBC337	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	8.89	10.00	88.9	63-132
TOLUENE-D8	9.88	10.00	98.8	75-122
4-BROMOFLUOROBENZENE	9.15	10.00	91.5	73-129

RL: Reporting Limit

y

6/1/16 BMP

2014

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/09/16 19:46
Sample ID:	PPMP-66-MW02RR	Date Analyzed:	08/09/16 19:46
Lab Samp ID:	H087-01	Dilution Factor:	1
Lab File ID:	RHV184	Matrix	: WATER
Ext Btch ID:	V001H07	% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.43J	1.0	0.20
CIS-1,2-DICHLOROETHENE	23	1.0	0.20
TRANS-1,2-DICHLOROETHENE	8.5	1.0	0.20
TRICHLOROETHENE	11	1.0	0.20
VINYL CHLORIDE	9.6	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	63-132
TOLUENE-D8	9.77	10.00	97.7	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

RL: Reporting Limit

8/31/16
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected	: 08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received	: 08/05/16
Batch No.	: 16H087	Date Extracted	: 08/09/16 15:02
Sample ID	: PPMP-66-MW06R	Date Analyzed	: 08/09/16 15:02
Lab Samp ID	: H087-02	Dilution Factor	: 1
Lab File ID	: RHV173	Matrix	: WATER
Ext Btch ID	: V001H07	% Moisture	: NA
Calib. Ref.	: RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.64J	1.0	0.20
CIS-1,2-DICHLOROETHENE	24	1.0	0.20
TRANS-1,2-DICHLOROETHENE	6.0	1.0	0.20
TRICHLOROETHENE	78	1.0	0.20
VINYL CHLORIDE	7.1	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	63-132
TOLUENE-D8	9.87	10.00	98.7	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

8/31/16
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/09/16 15:29
Sample ID:	PPMP-66-MW08	Date Analyzed:	08/09/16 15:29
Lab Samp ID:	H087-03	Dilution Factor:	1
Lab File ID:	RHV174	Matrix	: WATER
Ext Btch ID:	VO01H07	% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	63-132
TOLUENE-D8	9.93	10.00	99.3	75-122
4-BROMOFLUOROBENZENE	10.2	10.00	102	73-129

RL: Reporting Limit

8/31/16
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/09/16 15:55
Sample ID:	PPMP-66-MW16	Date Analyzed:	08/09/16 15:55
Lab Samp ID:	H087-04	Dilution Factor:	1
Lab File ID:	RHV175	Matrix	: WATER
Ext Btch ID:	VO01H07	% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	63-132
TOLUENE-D8	9.97	10.00	99.7	75-122
4-BROMOFLUOROBENZENE	10.1	10.00	101	73-129

RL: Reporting Limit

8/31/16

2007

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/09/16 16:21
Sample ID:	PPMP-66-MW17	Date Analyzed:	08/09/16 16:21
Lab Samp ID:	H087-05	Dilution Factor:	1
Lab File ID:	RHV176	Matrix	: WATER
Ext Btch ID:	VO01H07	% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	63-132
TOLUENE-D8	9.72	10.00	97.2	75-122
4-BROMOFLUOROBENZENE	10.2	10.00	102	73-129

RL: Reporting Limit

8/31/16
BLP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/09/16 16:46
Sample ID:	PPMP-66-MW18R	Date Analyzed:	08/09/16 16:46
Lab Samp ID:	H087-06	Dilution Factor:	1
Lab File ID:	RHV177	Matrix	: WATER
Ext Btch ID:		% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	2.8	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.44J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	63-132
TOLUENE-D8	9.82	10.00	98.2	75-122
4-BROMOFLUOROBENZENE	10.6	10.00	106	73-129

RL: Reporting Limit

8/31/16
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected	: 08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received	: 08/05/16
Batch No.	: 16H087	Date Extracted	: 08/09/16 17:11
Sample ID	: PPMP-66-MW23R	Date Analyzed	: 08/09/16 17:11
Lab Samp ID	: H087-07	Dilution Factor	: 1
Lab File ID	: RHV178	Matrix	: WATER
Ext.Btch ID	: VO01H07	% Moisture	: NA
Calib. Ref.	: RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	6.0	1.0	0.20
CIS-1,2-DICHLOROETHENE	100E	1.0	0.20
TRANS-1,2-DICHLOROETHENE	31	1.0	0.20
TRICHLOROETHENE	76	1.0	0.20
VINYL CHLORIDE	19	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	63-132
TOLUENE-D8	9.87	10.00	98.7	75-122
4-BROMOFLUOROBENZENE	10.2	10.00	102	73-129

RL: Reporting Limit

8/31/16

2011

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/10/16 13:32
Sample ID:	PPMP-66-MW23RDL	Date Analyzed:	08/10/16 13:32
Lab Samp ID:	H087-07I	Dilution Factor:	5
Lab File ID:	RHV199	Matrix	: WATER
Ext Btch ID:	VOO1H08	% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,1-DICHLOROETHENE	5.3	5.0	1.0	N
CIS-1,2-DICHLOROETHENE	110	5.0	1.0	
TRANS-1,2-DICHLOROETHENE	30	5.0	1.0	
TRICHLOROETHENE	74	5.0	1.0	N
VINYL CHLORIDE	18	4.0	1.0	

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	54.4	50.00	109	63-132
TOLUENE-D8	48.4	50.00	96.7	75-122
4-BROMOFLUOROBENZENE	51.4	50.00	103	73-129

RL: Reporting Limit

8/31/16 BMP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 08/04/16
Project : MCCLELLAN, PARCEL 66	Date Received: 08/05/16
Batch No. : 16H087	Date Extracted: 08/09/16 17:37
Sample ID: DUP243	Date Analyzed: 08/09/16 17:37
Lab Samp ID: H087-08	Dilution Factor: 1
Lab File ID: RHV179	Matrix : WATER
Ext.Btch ID: VO01H07	% Moisture : NA
Calib. Ref.: RHV221	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	5.8	1.0	0.20
CIS-1,2-DICHLOROETHENE	100E J X	1.0	0.20
TRANS-1,2-DICHLOROETHENE	30	1.0	0.20
TRICHLOROETHENE	74	1.0	0.20
VINYL CHLORIDE	18	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.5	10.00	115	63-132
TOLUENE-D8	9.79	10.00	97.9	75-122
4-BROMOFLUOROBENZENE	9.98	10.00	99.8	73-129

RL: Reporting Limit

8/31/16 BLP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/10/16 13:58
Sample ID:	DUP243DL	Date Analyzed:	08/10/16 13:58
Lab Samp ID:	H087-08I	Dilution Factor:	5
Lab File ID:	RHV200	Matrix	: WATER
Ext Btch ID:	V001H08	% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	5.1	5.0	1.0
CIS-1,2-DICHLOROETHENE	100	5.0	1.0
TRANS-1,2-DICHLOROETHENE	28	5.0	1.0
TRICHLOROETHENE	68	5.0	1.0
VINYL CHLORIDE	17	4.0	1.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	53.4	50.00	107	63-132
TOLUENE-D8	48.9	50.00	97.8	75-122
4-BROMOFLUOROBENZENE	52.5	50.00	105	73-129

RL: Reporting Limit

8/31/16 BVP

2015

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected	: 08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received	: 08/05/16
Batch No.	: 16H087	Date Extracted	: 08/10/16 13:07
Sample ID	: PPMP-66-MW24R	Date Analyzed	: 08/10/16 13:07
Lab Samp ID	: H087-09N	Dilution Factor	: 1
Lab File ID	: RHV198	Matrix	: WATER
Ext Btch ID	: VO01H08	% Moisture	: NA
Calib. Ref.	: RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	1.1	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.29J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	63-132
TOLUENE-D8	9.50	10.00	95.0	75-122
4-BROMOFLUOROBENZENE	10.3	10.00	103	73-129

RL: Reporting Limit

8/31/16 BVP

2016

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected	: 08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received	: 08/05/16
Batch No.	: 16H087	Date Extracted	: 08/09/16 18:29
Sample ID	: MATERIAL071	Date Analyzed	: 08/09/16 18:29
Lab Samp ID	: H087-10	Dilution Factor	: 1
Lab File ID	: RHV181	Matrix	: WATER
Ext Btch ID	: V001H07	% Moisture	: NA
Calib. Ref.	: RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	63-132
TOLUENE-D8	9.89	10.00	98.9	75-122
4-BROMOFLUOROBENZENE	10.3	10.00	103	73-129

RL: Reporting Limit

VS
8/31/16
BLP

2017

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	08/04/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	08/05/16
Batch No.	: 16H087	Date Extracted:	08/09/16 14:36
Sample ID:	TB436	Date Analyzed:	08/09/16 14:36
Lab Samp ID:	H087-11	Dilution Factor:	1
Lab File ID:	RHV172	Matrix	: WATER
Ext Btch ID:	VO01H07	% Moisture	: NA
Calib. Ref.:	RHV221	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.83	10.00	98.3	63-132
TOLUENE-D8	10.0	10.00	100	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

8/31/16
BVP

2018

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 15:37
Sample ID: PPMP-66-MW02RR	Date Analyzed: 11/03/16 15:37
Lab Samp ID: K014-01	Dilution Factor: 1
Lab File ID: RKC078	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.29J	1.0	0.20
CIS-1,2-DICHLOROETHENE	18	1.0	0.20
TRANS-1,2-DICHLOROETHENE	5.1	1.0	0.20
TRICHLOROETHENE	6.9	1.0	0.20
VINYL CHLORIDE	8.0	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.79	10.00	97.9	63-132
TOLUENE-D8	9.90	10.00	99.0	75-122
4-BROMOFLUOROBENZENE	10.6	10.00	106	73-129

3/8/17 BVP

RL: Reporting Limit

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 16:29
Sample ID: PPMP-66-MW06R	Date Analyzed: 11/03/16 16:29
Lab Samp ID: K014-02	Dilution Factor: 1
Lab File ID: RKC080	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.59J	1.0	0.20
CIS-1,2-DICHLOROETHENE	25	1.0	0.20
TRANS-1,2-DICHLOROETHENE	5.9	1.0	0.20
TRICHLOROETHENE	79	1.0	0.20
VINYL CHLORIDE	6.5	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.74	10.00	97.4	63-132
TOLUENE-D8	9.85	10.00	98.5	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

3/8/17
BVP

RL: Reporting Limit

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 16:54
Sample ID: PPMP-66-MW08	Date Analyzed: 11/03/16 16:54
Lab Samp ID: K014-03	Dilution Factor: 1
Lab File ID: RKC081	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.87	10.00	98.7	63-132
TOLUENE-D8	9.84	10.00	98.4	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

3/8/17 BVP

RL: Reporting Limit

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 17:20
Sample ID: PPMP-66-MW16	Date Analyzed: 11/03/16 17:20
Lab Samp ID: K014-04	Dilution Factor: 1
Lab File ID: RKC082	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.30J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.81	10.00	98.1	63-132
TOLUENE-D8	9.80	10.00	98.0	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

3/8/17
BVP

RL: Reporting Limit

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 17:45
Sample ID: PPMP-66-MW17	Date Analyzed: 11/03/16 17:45
Lab Samp ID: K014-05	Dilution Factor: 1
Lab File ID: RKC083	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.76	10.00	97.6	63-132
TOLUENE-D8	9.98	10.00	99.8	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

RL: Reporting Limit

3/8/17
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 18:10
Sample ID: PPMP-66-MW18R	Date Analyzed: 11/03/16 18:10
Lab Samp ID: K014-06	Dilution Factor: 1
Lab File ID: RKC084	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	1.7	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.57J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.63	10.00	96.3	63-132
TOLUENE-D8	9.85	10.00	98.5	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

3/8/17 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 18:36 # 11/04/16 15:32
Sample ID: PPMP-66-MW23R	Date Analyzed: 11/03/16 18:36 # 11/04/16 15:32
Lab Samp ID: K014-07 #K014-07I	Dilution Factor: 1 # 10
Lab File ID: RKC085 #RKC107	Matrix : WATER
Ext Btch ID: V067K03 #V067K04	% Moisture : NA
Calib. Ref.: RJC196 #RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	5.1	1.0	0.20
# CIS-1,2-DICHLOROETHENE	110	10	2.0
TRANS-1,2-DICHLOROETHENE	23	1.0	0.20
TRICHLOROETHENE	67	1.0	0.20
VINYL CHLORIDE	16	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.86	10.00	98.6	63-132
TOLUENE-D8	9.85	10.00	98.5	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129
# 1,2-DICHLOROETHANE-D4	97.4	100.0	97.4	63-132
# TOLUENE-D8	98.2	100.0	98.2	75-122
# 4-BROMOFLUOROBENZENE	101	100.0	101	73-129

3/8/17 BVP

Members of the Associated File
RL: Reporting Limit

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 18:36
Sample ID: PPMP-66-MW23R	Date Analyzed: 11/03/16 18:36
Lab Samp ID: K014-07	Dilution Factor: 1
Lab File ID: RKC085	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	5.1	1.0	0.20
~~CIS-1,2-DICHLOROETHENE~~	~~97E~~	~~1.0~~	~~0.20~~
TRANS-1,2-DICHLOROETHENE	23	1.0	0.20
TRICHLOROETHENE	67	1.0	0.20
VINYL CHLORIDE	16	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.86	10.00	98.6	63-132
TOLUENE-D8	9.85	10.00	98.5	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

RL: Reporting Limit

3/8/17
BMP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: MATRIX ENVIRONMENTAL SERVICES	Date Collected:	11/01/16
Project	: MCCLELLAN, PARCEL 66	Date Received:	11/02/16
Batch No.	: 16K014	Date Extracted:	11/04/16 15:32
Sample ID:	PPMP-66-MW23RDL	Date Analyzed:	11/04/16 15:32
Lab Samp ID:	K014-07I	Dilution Factor:	10
Lab File ID:	RKC107	Matrix	: WATER
Ext Btch ID:	VO67K04	% Moisture	: NA
Calib. Ref.:	RJC196	Instrument ID	: 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	5.0J	10	2.0
CIS-1,2-DICHLOROETHENE	110	10	2.0
TRANS-1,2-DICHLOROETHENE	25	10	2.0
TRICHLOROETHENE	69	10	2.0
VINYL CHLORIDE	15	8.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	97.4	100.0	97.4	63-132
TOLUENE-D8	98.2	100.0	98.2	75-122
4-BROMOFLUOROBENZENE	101	100.0	101	73-129

RL: Reporting Limit

3/8/17 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 19:01
Sample ID: DUP247	Date Analyzed: 11/03/16 19:01
Lab Samp ID: K014-08	Dilution Factor: 1
Lab File ID: RKC086	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	1.6	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.53J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.77	10.00	97.7	63-132
TOLUENE-D8	9.92	10.00	99.2	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

3/8/17
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 19:27
Sample ID: PPMP-66-MW24R	Date Analyzed: 11/03/16 19:27
Lab Samp ID: K014-09	Dilution Factor: 1
Lab File ID: RKC087	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.95J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.30J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	63-132
TOLUENE-D8	9.82	10.00	98.2	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

3/8/17
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 19:53
Sample ID: MATERIAL073	Date Analyzed: 11/03/16 19:53
Lab Samp ID: K014-10	Dilution Factor: 1
Lab File ID: RKC088	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.88	10.00	98.8	63-132
TOLUENE-D8	9.85	10.00	98.5	75-122
4-BROMOFLUOROBENZENE	10.0	10.00	100	73-129

RL: Reporting Limit

3/8/17
BMP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 11/01/16
Project : MCCLELLAN, PARCEL 66	Date Received: 11/02/16
Batch No. : 16K014	Date Extracted: 11/03/16 16:03
Sample ID: TB442	Date Analyzed: 11/03/16 16:03
Lab Samp ID: K014-11	Dilution Factor: 1
Lab File ID: RKC079	Matrix : WATER
Ext Btch ID: V067K03	% Moisture : NA
Calib. Ref.: RJC196	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.77	10.00	97.7	63-132
TOLUENE-D8	9.86	10.00	98.6	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

RL: Reporting Limit

3/8/17
BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 17:38
Sample ID: PPMP-66-MW02RR	Date Analyzed: 02/16/17 17:38
Lab Samp ID: B143-01	Dilution Factor: 1
Lab File ID: RBC333	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.57J	1.0	0.20
CIS-1,2-DICHLOROETHENE	31	1.0	0.20
TRANS-1,2-DICHLOROETHENE	16	1.0	0.20
TRICHLOROETHENE	24	1.0	0.20
VINYL CHLORIDE	7.2	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	63-132
TOLUENE-D8	10.1	10.00	101	75-122
4-BROMOFLUOROBENZENE	10.3	10.00	103	73-129

RL: Reporting Limit

3/15/17
BLP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 12:57
Sample ID: PPMP-66-MW06R	Date Analyzed: 02/16/17 12:57
Lab Samp ID: B143-02	Dilution Factor: 1
Lab File ID: RBC322	Matrix : WATER
Ext Btch ID: VO67B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	0.34J	1.0	0.20
CIS-1,2-DICHLOROETHENE	11	1.0	0.20
TRANS-1,2-DICHLOROETHENE	2.9	1.0	0.20
TRICHLOROETHENE	37 J	1.0	0.20
VINYL CHLORIDE	3.0	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.90	10.00	99.0	63-132
TOLUENE-D8	10.1	10.00	101	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

RL: Reporting Limit

3/15/17 BMP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 18:04
Sample ID: PPMP-66-MW08	Date Analyzed: 02/16/17 18:04
Lab Samp ID: B143-03	Dilution Factor: 1
Lab File ID: RBC334	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	63-132
TOLUENE-D8	10.2	10.00	102	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

RL: Reporting Limit

2/15/17 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 18:30
Sample ID: PPMP-66-MW16	Date Analyzed: 02/16/17 18:30
Lab Samp ID: B143-04	Dilution Factor: 1
Lab File ID: RBC335	Matrix : WATER
Ext Btch ID: VO67B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	63-132
TOLUENE-D8	10.1	10.00	101	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

3/15/17 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 18:56
Sample ID: PPMP-66-MW17	Date Analyzed: 02/16/17 18:56
Lab Samp ID: B143-05	Dilution Factor: 1
Lab File ID: RBC336	Matrix : WATER
Ext Btch ID: VO67B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	63-132
TOLUENE-D8	10.2	10.00	102	75-122
4-BROMOFLUOROBENZENE	10.3	10.00	103	73-129

RL: Reporting Limit

3/15/17 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 19:21
Sample ID: PPMP-66-MW18R	Date Analyzed: 02/16/17 19:21
Lab Samp ID: B143-06	Dilution Factor: 1
Lab File ID: RBC337	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.76J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	63-132
TOLUENE-D8	10.2	10.00	102	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

3/15/17 TOP

RL: Reporting Limit

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 19:47 # 02/17/17 12:46
Sample ID: PPMP-66-MW23R	Date Analyzed: 02/16/17 19:47 # 02/17/17 12:46
Lab Samp ID: B143-07 #B143-07I	Dilution Factor: 1 # 10
Lab File ID: RBC338 #RBC352	Matrix : WATER
Ext Btch ID: V067B15 #V067B16	% Moisture : NA
Calib. Ref.: RAC329 #RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	11	1.0	0.20
# CIS-1,2-DICHLOROETHENE	170	10	2.0
TRANS-1,2-DICHLOROETHENE	45	1.0	0.20
# TRICHLOROETHENE	120	10	2.0
VINYL CHLORIDE	30	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	63-132
TOLUENE-D8	10.2	10.00	102	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129
# 1,2-DICHLOROETHANE-D4	94.3	100.0	94.3	63-132
# TOLUENE-D8	102	100.0	102	75-122
# 4-BROMOFLUOROBENZENE	105	100.0	105	73-129

Members of the Associated File
RL: Reporting Limit

2/15/17 BVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 19:47
Sample ID: PPMP-66-MW23R	Date Analyzed: 02/16/17 19:47
Lab Samp ID: B143-07	Dilution Factor: 1
Lab File ID: RBC338	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	11	1.0	0.20
~~CIS-1,2-DICHLOROETHENE~~	~~150E~~ JX	~~1.0~~	~~0.20~~
TRANS-1,2-DICHLOROETHENE	45	1.0	0.20
~~TRICHLOROETHENE~~	~~110E~~ JX	~~1.0~~	~~0.20~~
VINYL CHLORIDE	30	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	63-132
TOLUENE-D8	10.2	10.00	102	75-122
4-BROMOFLUOROBENZENE	10.5	10.00	105	73-129

RL: Reporting Limit

3/15/17 PMP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/17/17 12:46
Sample ID: PPMP-66-MW23RDL	Date Analyzed: 02/17/17 12:46
Lab Samp ID: B143-07I	Dilution Factor: 10
Lab File ID: RBC352	Matrix : WATER
Ext Btch ID: VO67B16	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	10	10	2.0
CIS-1,2-DICHLOROETHENE	170	10	2.0
TRANS-1,2-DICHLOROETHENE	47	10	2.0
TRICHLOROETHENE	120	10	2.0
VINYL CHLORIDE	28	8.0	2.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	94.3	100.0	94.3	63-132
TOLUENE-D8	102	100.0	102	75-122
4-BROMOFLUOROBENZENE	105	100.0	105	73-129

RL: Reporting Limit

8/15/17
BTP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 20:12
Sample ID: PPMP-66-MW24R	Date Analyzed: 02/16/17 20:12
Lab Samp ID: B143-08	Dilution Factor: 1
Lab File ID: RBC339	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	0.74J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	0.48J	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	63-132
TOLUENE-D8	10.3	10.00	103	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

3/6/17 PJVP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 20:38
Sample ID: MATERIAL075	Date Analyzed: 02/16/17 20:38
Lab Samp ID: B143-09	Dilution Factor: 1
Lab File ID: RBC340	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	63-132
TOLUENE-D8	10.2	10.00	102	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

3/15/17 Bur

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 21:03
Sample ID: DUP249	Date Analyzed: 02/16/17 21:03
Lab Samp ID: B143-10	Dilution Factor: 1
Lab File ID: RBC341	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	63-132
TOLUENE-D8	10.2	10.00	102	75-122
4-BROMOFLUOROBENZENE	10.3	10.00	103	73-129

RL: Reporting Limit

2/16/17 BMP

SW5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client : MATRIX ENVIRONMENTAL SERVICES	Date Collected: 02/14/17
Project : MCCLELLAN, PARCEL 66	Date Received: 02/15/17
Batch No. : 17B143	Date Extracted: 02/16/17 15:31
Sample ID: TB445	Date Analyzed: 02/16/17 15:31
Lab Samp ID: B143-11	Dilution Factor: 1
Lab File ID: RBC328	Matrix : WATER
Ext Btch ID: V067B15	% Moisture : NA
Calib. Ref.: RAC329	Instrument ID : 67

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1-DICHLOROETHENE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	0.80	0.20

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.88	10.00	98.8	63-132
TOLUENE-D8	10.1	10.00	101	75-122
4-BROMOFLUOROBENZENE	10.4	10.00	104	73-129

RL: Reporting Limit

3/15/17 BVP