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February 29, 2024

Ms. Ashley T. Mastin, Chief
c/o Mrs. Brandi Little
Governmental Hazardous Waste Branch Land Division
Alabama Department of Environmental Management
P.O. Box 301463
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SUBJECT: Submission of *Corrective Measures Effectiveness Report, Thirteenth Year Long-Term Monitoring, Former Small Weapons Repair Shop, Parcel 66(7)* dated February 2024

Dear Ms. Mastin:

On behalf of the McClellan Development Authority (MDA), Matrix Environmental Services, LLC (MES) is pleased to submit the *Corrective Measures Effectiveness Report, Thirteenth Year Long-Term Monitoring, Former Small Weapons Repair Shop, Parcel 66(7)* dated February 2024 for your review.

Two hard copies and an emailed copy have been provided to Mrs. Brandi Little. Please contact me at (256) 847-0780 should you have any questions or comments.

Sincerely,
MATRIX ENVIRONMENTAL SERVICES, LLC

Richard Satkin, P.G
McClellan Program Manager

Enclosure

CC: Mrs. Brandi Little, ADEM (two paper copies)
Mr. Jason Odom, MDA (transmittal letter only)
Ms. Lisa Holstein, U.S. Army (one paper copy)
MES Files (one paper copy)

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

Prepared for:

McClellan Development Authority
Anniston, Alabama

Prepared by:

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February 2024

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Appendix C: Data Validation Summary and Laboratory Reports

LIST OF ACRONYMS

1,1-DCE	1,1-dichloroethene
ADEM	Alabama Department of Environmental Management
ASTM	American Society for Testing and Materials
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*
GES	Groundwater & Environmental Services, Inc.
ISCO	In-Situ Chemical Oxidation
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*
Second Addendum to CMIP	*Second Addendum to Corrective Measures Implementation Plan, Former Small Weapons Repair Shop, Parcel 66(7)*
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

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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 thirteenth year of Long-Term Monitoring (LTM) in October 2023. This report was prepared by Matrix Environmental Services, LLC (MES) on behalf of the McClellan Development Authority (MDA).

Corrective measures were implemented at the Site in 2010 and 2018 to lower the concentrations of 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). Following twelve years of post-remediation groundwater monitoring, a modified frequency of groundwater sampling to annually was formalized in the *Third Addendum to Corrective Measures Implementation Plan, Former Small Weapons Repair Shop, Parcel 66(7) McClellan, Anniston, Alabama* (MES, 2024). This reporting period covers the 2023 annual sampling event.

Groundwater samples were collected from eight LTM wells (four residuum wells, three transition wells, and one bedrock well) and other select wells during the post-injection sampling event October 2023 and analyzed for one or more of the following: COCs, degradation products and dissolved gases. The groundwater sample results were compared to the groundskeeper risk-based target levels (RBTLs) to assess progress of the corrective measures at the Site.

Only vinyl chloride exceeded the groundskeeper RBTLs during the thirteenth year of LTM, in residuum wells PPMP-66-MW02RR and in transition well PPMP-66-MW23R. Both of these wells are located in the vicinity of the estimated source area, south and southwest 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.

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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 thirteenth year of LTM in October 2023. 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 in October 2023, 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) and the *Second Addendum to Corrective Measures Implementation Plan, Former Small Weapons Repair Shop (Second Addendum to CMIP), Parcel 66(7) McClellan, Anniston, Alabama (MES, 2018)*.

Objectives for this monitoring event and this CMER include:

- Describe the activities performed at the Site during the thirteenth year of LTM.
- Summarize environmental sampling data from previous investigations and monitoring events and present analytical results for the October 2023 monitoring event.
- 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 thirteenth year of LTM.
- Section 4.0 - presents the results of the thirteenth 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 Data Validation Summary and Laboratory Reports.

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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 formerly 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 *Final 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, (formerly Shaw Environmental, Inc. currently APTIM), and MES. The previous investigations included:

- *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 *Final Corrective Measures Implementation Report (CMIR), Former Small Weapons Repair Shop, Parcel 66(7)* (*Final CMIR*) (MES, 2013).

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.

2.5 2018 Corrective Measures Implementation

Based on the data assessment presented in the *Second Addendum to CMIP (MES, 2018)* cis-1,2-DCE, TCE, and vinyl chloride were determined to be human health COCs at the Site. No ecological COCs were identified in media at the Site.

In December 2018. Corrective measures were implemented at the Site as outlined in the *Second Addendum to CMIP* (MES, 2018) to reduce the VOCs further in groundwater at the Site to levels acceptable for industrial use. Details of the corrective measures activities are documented in the *Corrective Measures Implementation Report Addendum* (Groundwater & Environmental Services, Inc., 2019). Corrective measures consisted of in-situ chemical oxidation (ISCO) of strong oxidizing agents – hydrogen peroxide activated sodium persulfate into 13 shallow temporary injection points ranging in depth from 3 ft below ground surface (bgs) to 15 ft bgs and 13 deep temporary injection points ranging in depth from 11 ft bgs to 30 ft bgs.

3.0 SUMMARY OF THIRTEENTH YEAR OF LTM ACTIVITIES

To meet the recommended actions outlined in the *Final CMIP* (MES, 2007) and the *Final CMIP Addendum* (MES, 2009) and Second Addendum (MES, 2018), and provide data to evaluate the long-term performance of the corrective measures, the following activities were performed during the thirteenth year of LTM:

- Collected groundwater samples and groundwater level measurements from eight LTM wells (four residuum wells, three transition wells, and one bedrock well) during the 2023 annual sampling event. Samples were analyzed 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.
- Collected groundwater samples from select wells and analyzed for one of more of the following; COCs, degradation products, dissolved gases, total organic carbon and chloride.

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).

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 thirteenth year of LTM, groundwater samples were collected in October 2023.

3.1.1 Sampling Method

Groundwater samples were collected using low-flow sampling procedures, i.e., using an adjustable rate pump to remove water from the screened interval at a rate that produces minimal drawdown, as well as turbidity in the sample. Tubing leading from the discharge side of the submersible pump was connected to a flow-through cell equipped with a multiparameter meter to measure chemical and physical parameters. These measurements were used to indicate when groundwater quality stabilized and sampling could begin.

Groundwater levels were measured to the nearest hundredth of a foot using a Solinst™ water level indicator and recorded. 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 purged water.

3.3 Data Quality Review

MES reviewed the analytical data for the groundwater samples collected during the October 2023 sampling event. The data quality review was performed in accordance with the *Quality Assurance Plan (QAP)* (MES, 2017) to assess compliance with the Quality Assurance (QA) objectives, and to assess hard copy and electronic deliverable consistency and integrity and is included in Appendix C along with the analytical data packages for the October 2023 monitoring event.

3.4 Deviations from Planned LTM

LTM activities were performed in accordance with the *Final CMIP Addendum* (MES, 2009) and *Second Amendment to Corrective Measures Implementation Plan* (MES, 2018). No deviations occurred during the sampling events.

4.0 RESULTS OF THIRTEENTH YEAR OF LTM ACTIVITIES

The activities conducted at the Site during the thirteenth year of LTM in October 2023 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 October 2023 groundwater sampling events are presented in Table 4-1. Figure 4-1 shows groundwater elevations and potentiometric elevations for the residuum groundwater zone for the October 2023 sampling event. 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 the October monitoring event during the thirteenth year of LTM. During the thirteenth year of LTM, groundwater in the residuum and transition zones appeared to flow radially from the site 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 thirteenth 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. Field parameters are presented in Table 4-4.

4.1.3 Analytical Data and Data Quality Review

The analytical data for the October 2023 monitoring event is included in Appendix C. Samples were analyzed for VOCs by Method SW8260B, dissolved gases by RSK-175, total organic carbon by Method SW9060A, and chloride by SW9056A. MES reviewed the analytical data in accordance with the *QAP* (MES, 2017). 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 thirteenth year of LTM are shown in Tables 4-5a, 4-5b, and 4-5c. The historical analytical results for COCs from previous sampling events are also shown in the Tables.

VOC concentrations detected in the groundwater samples were compared to the groundskeeper RBTLs in Table 4-5a. One COC (vinyl chloride) exceeded the groundskeeper RBTL in two groundwater wells from samples collected during the thirteenth year of LTM.

Samples collected from the 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 4-2 to 4-5 show the trends in concentrations over time for the COCs. As indicated in the trend figures and Table 4-5a, well PPMP-66-MW23R showed small decreasing concentrations of COCs during the thirteenth year of monitoring compared to the prior year. Well PPMP-66-MW02RR showed an increase in vinyl chloride concentration during the thirteenth year of monitoring compared to the prior year.

The COC concentrations in wells PPMP-66-MW06, PPMP-66-MW08, PPMP-66-MW16, PPMP-66-MW17, PPMP-66-MW18, PPMP-66-MW22, and PMP-66-MW24R were less than the groundskeeper RBTLs during this reporting period. Due to instrument problems at the normally utilized laboratory, the October samples were subcontracted to XENCO laboratories. Reporting limits were higher than recent analyses but less than the RBTLs.

4.1.6 Distribution of Corrective Action COCs in Groundwater

Figures 4-6 and 4-7 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 4-8 to 4-9 present the estimated lateral extent of TCE and vinyl chloride concentrations for the residuum and transition groundwater zones at the Site for the thirteenth year of LTM. The concentrations of vinyl chloride exceeding the groundskeeper RBTL in groundwater during this reporting period were located south and southwest of former Building 335.

During the thirteenth 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 is limited to only one residuum well and one transition well located to the south and southwest of former Building 335.

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

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

5.1 Summary of Activities

Activities conducted at the Site included:

- Collected annual groundwater samples and groundwater level measurements from four residuum wells, three transition wells, and one bedrock well in 2023 annual sampling event in October. Analyzed the groundwater samples for the COCs and their degradation products.
- Collected groundwater samples from select wells during the post-injection sampling annual event in October. Analyzed the groundwater samples for one or more of the following: COCs, degradation products, dissolved gases and total organic carbon.

5.2 Summary of Results

Results from the thirteenth 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.
- Groundwater occurrence and flow direction are consistent with historical patterns.
- One of the three COCs (vinyl chloride) exceeded the groundskeeper RBTL in groundwater collected during the thirteenth year of LTM in October 2023 at only one location (two adjacent wells).
- Vinyl chloride concentrations exceeding the groundskeeper RBTL during the thirteenth year of LTM were found in groundwater from residuum well PPMP-66-MW02RR and the adjacent transition well PPMP-66-MW23R located in the vicinity of the estimated source area.

5.3 Conclusions and Recommendations

MDA has implemented two rounds of groundwater remediation (2010/2011 and 2018) at the Site with some improvement observed after each round. Analytical results indicate the ISCO injection had some impact on reducing the COC concentrations. During the thirteenth year of LTM, COC concentrations in residuum well PMP-66-MW06R did not exhibit any rebound and concentrations continued to stay below RBTLs. Vinyl chloride, a byproduct of the original chlorinated compound contaminants, exceeded RBTLs in both the residuum and transition groundwater zones (PMP-66-MW02RR and PMP-66-MW23R). MDA proposes to continue monitored natural attenuation with groundwater monitoring unless there is a significant increase in contaminant concentrations or MDA desires to attempt additional treatment.

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6.0 REFERENCES

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TABLES

Table 4-1: Groundwater Elevations,
Thirteenth 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)
October 2023 Sampling Event							
PPMP-66-MW01	residuum	780.10	782.12	10/23/2023	26.03	6.59	775.53
PPMP-66-MW02RR	residuum	780.59	780.37	10/23/2023	23.50	4.90	775.47
PPMP-66-MW03	residuum	781.11	780.74	10/23/2023	28.27	6.31	774.43
PPMP-66-MW04	residuum	779.99	781.90	10/23/2023	26.40	7.29	774.61
PPMP-66-MW06R	residuum	781.45	781.41	10/23/2023	27.80	5.63	775.78
PPMP-66-MW07	residuum	782.41	782.17	10/23/2023	28.65	7.05	775.12
PPMP-66-MW08	bedrock	780.89	780.66	10/23/2023	73.90	5.85	774.81
PPMP-66-MW09	bedrock	781.14	780.88	10/23/2023	74.80	6.06	774.82
PPMP-66-MW10	bedrock	779.79	782.01	10/23/2023	77.40	8.66	773.35
PPMP-66-MW11	bedrock	781.10	780.89	10/23/2023	84.35	5.94	774.95
PPMP-66-MW13	bedrock	781.93	781.65	10/23/2023	74.30	6.46	775.19
PPMP-66-MW14	residuum	781.92	781.70	10/23/2023	20.71	6.88	774.82
PPMP-66-MW16	residuum	780.86	780.47	10/23/2023	12.75	5.92	774.55
PPMP-66-MW17	transition	781.63	781.29	10/23/2023	17.71	6.21	775.08
PPMP-66-MW18R	residuum	781.68	781.25	10/23/2023	15.00	5.92	775.33
PPMP-66-MW21	residuum	780.78	780.44	10/23/2023	14.40	4.78	775.66
PPMP-66-MW22	transition	780.79	780.44	10/23/2023	24.71	5.62	774.82
PPMP-66-MW23R	transition	781.12	780.87	10/23/2023	29.25	5.95	774.92
PPMP-66-MW24R	transition	781.57	781.20	10/23/2023	34.15	5.97	775.23

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

Table 4-2: Horizontal Hydraulic Gradients,
Thirteenth 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)
October 2023									
PPMP-66-MW01	residuum	775.53	PPMP-66-MW02RR	residuum	775.47	northeast	88	0.06	0.001
PPMP-66-MW02RR	residuum	775.47	PPMP-66-MW16	residuum	774.55	northwest	32	0.92	0.028
PPMP-66-MW06R	residuum	775.78	PPMP-66-MW18R	residuum	775.33	northeast	26	0.45	0.017
PPMP-66-MW06R	residuum	775.78	PPMP-66-MW14	residuum	774.82	southeast	62	0.96	0.016
PPMP-66-MW06R	residuum	775.78	PPMP-66-MW02RR	residuum	775.47	northwest	87	0.31	0.004
PPMP-66-MW13	bedrock	775.19	PPMP-66-MW11	bedrock	774.95	northwest	71	0.24	0.003
PPMP-66-MW08	bedrock	774.81	PPMP-66-MW10	bedrock	773.35	northeast	272	1.46	0.005
PPMP-66-MW23R	transition	774.92	PPMP-66-MW22	transition	774.82	northwest	45	0.10	0.002
PPMP-66-MW24R	transition	775.23	PPMP-66-MW23R	transition	774.92	northwest	68	0.31	0.005
						Average October 2023 Horizontal Gradient:			**0.009**

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

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

Well Cluster IDs	Well Zone	Midpoint of Screen (Elevation)	GWE	dL	dH	VHG (ft/ft)
			Oct 2023		Oct 2023	Oct 2023
PPMP-66-MW06R	residuum	763.49	775.78	10.27	0.55	0.0536
PPMP-66-MW24R	transition	753.22	775.23			
PPMP-66-MW02RR	residuum	764.49	775.47	6.51	0.55	0.0845
PPMP-66-MW23R	transition	757.98	774.92			
PPMP-66-MW02RR	residuum	764.49	775.47	48.97	0.66	0.0135
PPMP-66-MW08	bedrock	715.52	774.81			
PPMP-66-MW23R	transition	757.98	774.92	42.46	0.11	0.0026
PPMP-66-MW08	bedrock	715.52	774.81			
PPMP-66-MW18R	residuum	772.68	775.33	5.3	0.25	0.0472
PPMP-66-MW17	transition	767.38	775.08			
PPMP-66-MW21	residuum	771.83	775.66	9.86	0.84	0.0852
PPMP-66-MW22	transition	761.97	774.82			
PPMP-66-MW16	residuum	773.79	774.55	1.96	-1.11	-0.5663
PPMP-66-MW21	residuum	771.83	775.66			

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)
GWE = Groundwater Elevation
VHG = Vertical Hydraulic Gradient

Elevations in feet above mean sea level.

Table 4-4: Field Parameters, Thirteenth Year LTM
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Well ID	Well Type	Sample Date	Temperature (^{o}C)	Conductivity (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	TDS (g/L)	Turbidity (NTU)	pH
October 2023									
PPMP-66-MW01	residuum	10/24/2023	19.9	3134	0.8	-34	2.03	4	6.9
PPMP-66-MW02RR	residuum	10/25/2023	22.4	2728	0.3	-46	1.77	26	6.8
PPMP-66-MW04	residuum	10/23/2023	21.4	2297	0.2	-55	1.49	3	6.9
PPMP-66-MW06R	residuum	10/25/2023	22.4	1078	1.1	-19	0.7	13	11.4
PPMP-66-MW07	residuum	10/23/2023	22.9	2951	0.2	-7	1.92	4	6.7
PPMP-66-MW08	bedrock	10/25/2023	19.6	1531	0.7	-6	1	1	6.9
PPMP-66-MW11	bedrock	10/23/2023	21.1	257	0.1	-88	0.17	3	7.3
PPMP-66-MW13	bedrock	10/23/2023	22.9	871	0.4	-78	0.56	2	7.3
PPMP-66-MW14	residuum	10/23/2023	23.8	2013	0.2	-50	1.31	27	6.8
PPMP-66-MW16	residuum	10/24/2023	23.1	629	0.5	-2	0.40	5	6.1
PPMP-66-MW17	transition	10/24/2023	22.8	776	0.3	-41	0.51	20	7.0
PPMP-66-MW18R	residuum	10/24/2023	22.0	606	0.4	10	0.4	19	7.0
PPMP-66-MW22	transition	10/24/2023	20.8	585	0.2	-117	0.38	21	7.1
PPMP-66-MW23R	transition	10/25/2023	24.2	1760	0.2	-97	1	6	11.6
PPMP-66-MW24R	transition	10/24/2023	22.6	856	0.8	-84	0.57	10	7.2

Notes:

^{o}C = Degrees Celsius

mg/L = Milligrams per liter

µs/cm = Microsiemens per centimeter

mV = Millivolts

NM = Not measured

NS = Not sampled

NTU = Nephelometric turbidity units

ORP = Oxidation-reduction potential

TDS = Total Dissolved Solids

Table 4-5a: Groundwater Analytical Results for COCs and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

VOCs (µg/L)	GS RBTL	Residuum PPMP-66-MW01											
		10/30/18	1/15/19	02/26/19	5/21/19	8/6/19	11/04/19	5/6/20	10/26/20	5/17/21	10/25/21	5/9/22	10/25/22**	10/24/23
COCs														
Cis-1,2-Dichloroethene	991	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products														
1,1-Dichloroethene	4800	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1	< 1	0.39 J (UB)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

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
COCs		Historical					Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
Cis-1,2-Dichloroethene	991	7.5	9.5 (nv)	36	210	130	200	41	29	28	220	300	320	310	530	520		7.9	4.2	2.7	2.9	23	25	34	19	40	31
Trichloroethene	205	40	29 (nv)	74	480	27	170	34	52	45	87	130	160	140	530	450	well	3.1	1.0	0.49 J	0.31 J	12	19	35	10	29	27
Vinyl Chloride	3.86	60	67 (nv)	110	100	71	41	10	8.7	17	85	72	65	59	72	73	damaged,	10	9.3	6.3	5.1	12	11	11	9.1	12	9.1
Degradation Products																	could not be										
1,1-Dichloroethene	4800	9.2	11 (nv)	28	97	30	37	5	1.8	1.6	8	9.7	10	10	15	15	sampled	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
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

VOCs (µg/L)	GS RBTL	Residuum PPMP-66-MW02RR																						
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/31/18	1/28/19	2/26/19	5/21/19	8/7/19	11/4/19	5/6/20	10/27/20	5/19/21	10/25/21	5/10/22	10/26/22**	10/25/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Year LTM
Cis-1,2-Dichloroethene	991	28	23	18	31	25	39	32	57	45	41	42 (J)	18	19	20	12 (J)	14	14	9.5 B	12	14	11	10	8.8
Trichloroethene	205	28	11	6.9	24	21	23	19	31	32	27	27 (J)	6.5	8.1	5.1	3.4 (J)	3.2	2.8	2.8	3.5	4.2	2.1	1.1 J	1.1
Vinyl Chloride	3.86	6.4	9.6	8.0	7.2	5.4	13	7.6	15	22	17	20	10	8.1	11	5.5 (J)	7.5	5.2	3.9	7.7	6.5	4.3	4.5	14 (J)
Degradation Products																								
1,1-Dichloroethene	4800	0.49 J	0.43 J	0.29 J	0.57 J	0.34 J	0.68 J	0.55 J	0.77 J	0.90 J	0.69 J	0.67 J	0.38 J	0.39 J	0.39 J	< 1 (J)	< 1	< 1.0	< 1.0	0.36 J	0.44 J	< 1	< 1	< 1 (UJ)
Trans-1,2-Dichloroethene	1950	13	8.5	5.1	16	11	19	15	27	26	26	26	7.1	10 B	6.9	3.7 (J)	4.7	3.8	3.3	4.4	5.7	2.4	2.6	1.1

VOCs (µg/L)	GS RBTL	Residuum PPMP-66-MW04												
		10/29/18	1/14/19	2/25/19	5/20/19	8/5/19	11/1/19	5/5/20	10/26/20	5/17/21	10/25/21	5/9/22	10/25/22**	10/23/23
COCs														
Cis-1,2-Dichloroethene	991	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products														
1,1-Dichloroethene	4800	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1	< 1	0.49 J (UB)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

Table 4-5a: Groundwater Analytical Results for COCs and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

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
COCs		Historical					Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
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
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
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
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
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

VOCs (µg/L)	GS RBTL	Residuum Well PPMP-66-MW06R																						
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/31/18	1/16/19	02/26/19	05/22/19	08/07/19	11/05/19	5/7/20	10/27/20	5/18/21	10/26/21	5/10/22	10/26/22**	10/25/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Year LTM
Cis-1,2-Dichloroethene	991	11	24	25	11	13	19	14	16	8.1	8.8	33	6	5.9	7.8	8.8	6.5	4.1	4.1	3.2	4.7	3.3	3	4.6
Trichloroethene	205	48	78	79	37 J	55	64	45	49	30	40	71	21	26	30	31	32	28	28	21	34	23	13	25
Vinyl Chloride	3.86	2.4	7.1	6.5	3.0	3.8	5.7	3.5	6.1	2.4	< 1	1.8	1.4	1.2	1.4	1.2 (J)	0.93 J	0.53 J	< 1.0	< 1	0.59 J	< 1	< 2	0.55 J
Degradation Products																								
1,1-Dichloroethene	4800	0.29 J	0.64 J	0.59 J	0.34 J	0.29 J	0.66 J	0.45 J	0.49 J	0.44 J	< 1	1.5	< 1	< 1	< 1	< 1	< 1	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	2.8	6.0	5.9	2.9	3.3	5.2	3.3	3.8	2.1	2.2	2.4	2.3	2.8	3.2	2.7	3.4	2.3	2.3	1.9	3.5	1.9	1.7	2

VOCs (µg/L)	GS RBTL	Residuum PPMP-66-MW07											
		10/29/18	01/14/19	2/25/19	5/20/19	8/6/19	11/4/19	5/5/20	10/26/20	5/17/21	10/23/21	5/9/22	10/25/22**	10/23/23
COCs														
Cis-1,2-Dichloroethene	991	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products														
1,1-Dichloroethene	4800	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1	< 1	0.45 J (UB)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

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
COCs		Historical			Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
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
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
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
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
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

Table 4-5a: Groundwater Analytical Results for COCs and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

VOCs (µg/L)	GS RBTL	Bedrock Well PPMP-66-MW08																						
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/30/18	1/15/19	2/26/19	5/21/19	8/7/19	11/4/19	5/6/20	10/27/20	5/17/21	10/23/21	5/10/22	10/26/22**	10/25/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Yr LTM
Cis-1,2-Dichloroethene	991	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	3.86	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 1 F2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products																								
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

VOCs (µg/L)	GS RBTL	Bedrock PPMP-66-MW11											
		10/29/18	01/14/19	02/25/19	05/20/19	08/05/19	11/01/19	5/5/20	10/26/20	5/17/21	10/25/21	5/9/22	10/25/22**	10/23/23
COCs														
Cis-1,2-Dichloroethene	991	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products														
1,1-Dichloroethene	4800	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1	< 1	0.4 J (UB)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

VOCs (µg/L)	GS RBTL	Bedrock PPMP-66-MW13											
		10/29/18	1/15/19	02/25/19	05/20/19	08/05/19	11/04/19	5/5/20	10/26/20	5/17/21	10/23/21	5/9/22	10/25/22**	10/23/23
COCs														
Cis-1,2-Dichloroethene	991	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products														
1,1-Dichloroethene	4800	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1	< 1	0.42 J (UB)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

VOCs (µg/L)	GS RBTL	Residuum PPMP-66-MW14											
		10/29/18	01/14/19	02/25/19	05/20/19	08/05/19	11/04/19	5/5/20	10/26/20	5/17/21	10/23/21	5/9/22	10/25/22**	10/23/23
COCs														
Cis-1,2-Dichloroethene	991	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products														
1,1-Dichloroethene	4800	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1	< 1	0.44 J (UB)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

Table 4-5a: Groundwater Analytical Results for COCs and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

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
COCs		Historical				Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
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
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
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
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
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

VOCs (µg/L)	GS RBTL	Residuum Well PPMP-66-MW16																						
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/30/18	1/15/19	2/26/19	5/21/19	8/7/19	11/4/19	5/6/20	10/26/20	5/18/21	10/25/21	5/10/22	10/26/22**	10/24/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Year LTM
Cis-1,2-Dichloroethene	991	< 1.0	< 1.0	0.30 J	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products																								
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

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
COCs		Historical		Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
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
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
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
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
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

VOCs (µg/L)	GS RBTL	Transition Well PPMP-66-MW17																							
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/30/18	1/15/19	2/25/19	5/21/19	8/5/19	11/1/19	5/5/20	10/27/20	5/17/21	10/23/21	5/9/22	10/25/22**	10/24/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Year LTM
Cis-1,2-Dichloroethene	991	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	0.55 J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	0.98 J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products																									
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

Table 4-5a: Groundwater Analytical Results for COCs and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

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
COCs		Historical		Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
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
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
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
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
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

VOCs (µg/L)	GS RBTL	Residuum Well PPMP-66-MW18R																					
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/30/18	1/15/19	2/25/19	5/21/19	8/6/19	11/4/19	5/5/20	10/27/20	5/17/21	10/23/21	5/9/22	10/25/22**	10/24/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Year LTM
Cis-1,2-Dichloroethene	991	0.72 J	2.8	1.7	< 1.0	0.28 J	1.1	0.73 J	0.37 J	< 1	< 1	1.1	< 1	< 1	1.0	0.79 J (B)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.25 J
Trichloroethene	205	0.48 J	0.44 J	0.57 J	0.76 J	0.74 J	0.76 J	0.34 J	0.28 J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	<0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products																								
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.39 J (UB)	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

VOCs (µg/L)	GS RBTL	Transition PPMP-66-MW22											
		10/30/18	1/15/19	2/26/19	5/21/19	8/6/19	11/04/19	5/6/20	10/26/20	5/18/21	10/25/21	5/10/22	10/26/22**	10/24/23
COCs														
Cis-1,2-Dichloroethene	991	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	205	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1
Vinyl Chloride	3.86	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products														
1,1-Dichloroethene	4800	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

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
COCs		Historical			Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
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
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
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
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
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

Table 4-5a: Groundwater Analytical Results for COCs and Degradation Products
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

VOCs (µg/L)	GS RBTL	Transition Well PPMP-66-MW23R																					
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/30/18	1/15/19	2/26/19	5/21/19	8/6/19	11/5/19	5/6/20	10/27/20	5/18/21	10/25/21	5/10/22	10/26/22**	10/25/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Year LTM
Cis-1,2-Dichloroethene	991	80	110	110	170	110	90	130	140	71	43	86	91	88	90	92	76	62	50 B	41	49	48	52	44
Trichloroethene	205	66	76	67	120	89	78	120	130	69	47	80	200	150	120	130	140	180	140	120	140	140	150	120
Vinyl Chloride	3.86	12	19	16	30	16	24	21	24	22	9.8	29	15	14	13	13	13	6.1	5.7	5.1	5.5	8.5	10	6.1 (J)
Degradation Products																								
1,1-Dichloroethene	4800	4.0	6.0	5.1	11	4.9	5.6	7.5	11	4.3	2.7	5.1	4.3	3	3.4	3.4	2.7	2	1.4	1.6	1.4	1.7	2.4	1.6 (J)
Trans-1,2-Dichloroethene	1950	23	31	23	45	29	37	41	57	31	17	40	73	71 B	63	62	73	62	46	41	46	41	47	42

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
COCs		Historical			Baseline & First Year LTM					2nd Year LTM				3rd Year LTM				4th Year LTM				5th Year LTM			
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
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
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
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
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

VOCs (µg/L)	GS RBTL	Transition Well PPMP-66-MW24R																						
		5/3/16	8/4/16	11/1/16	2/14/17	5/18/17	8/7/17	11/20/17	2/8/18	5/3/18	8/8/18	10/31/18	1/16/19	2/26/19	5/22/19	8/7/19	11/4/19	5/7/20	10/27/20	5/18/21	10/26/21	5/10/22	10/26/22**	10/24/23
COCs		6th Year LTM				7th Year LTM				8th Year LTM				9th Year LTM				10th Year LTM		11th Year LTM		12th Year LTM		13th Year LTM
Cis-1,2-Dichloroethene	991	0.80 J	1.1	0.95 J	0.74 J	0.59 J	0.93 J	0.65 J	0.73 J	< 1	0.5 J	0.47 J	0.77 J	0.69 J	0.68 J	0.76 J (B)	0.63 J	0.72 J	0.60 J	1	0.62 J	0.6 J	< 1	0.66 J
Trichloroethene	205	0.24 J	0.29 J	0.30 J	0.48 J	0.32 J	0.38 J	0.46 J	0.49 J	< 1	< 1	< 1	1.2	0.91 J	< 1	0.5 J (B)	0.53 J	0.60 J	0.55 J	< 1	0.3 J	0.21 J	< 5	0.31 J
Vinyl Chloride	3.86	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 2	< 1
Degradation Products																								
1,1-Dichloroethene	4800	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-Dichloroethene	1950	< 1.0	< 1.0	< 1.0	< 1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

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
Result exceeds GS RBTL

* Groundwater samples were collected from the original wells during the historical and baseline rounds (i.e., from March 2001 through October 2010).
**Groundwater samples collected during the October 2022 were subbed to an alternate lab due to instrument problems. Reporting limits are below RBTLs.
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 but greater than the method detection limit.
F2 = MS/MSD RPD exceeds control limits.

Validation Flag: (in Parentheses)
B = Analyte detected in an associated blank.
J = Result is estimated based on quality control outlier.
nv = not validated
UB = Analyte considered not detected based on detection in an associated blank.
UJ = Reporting limit estimated due to quality control outlier.

Table 4-5b: Groundwater Analytical Results for Dissolved Gases
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

	PPMP-66-MW02RR	PPMP-66-MW02RR	PPMP-66-MW02RR	PPMP-66-MW02RR	PPMP-66-MW02RR	PPMP-66-MW02RR
	10/27/20	**5/19/21**	**10/25/21**	**5/10/22**	**10/26/22**	**10/25/23**
Gases RSK-175 (µg/L)	Post-ISO	Post-ISO	Post-ISO	Post-ISO	Post-ISO	Post-ISO
Ethane	< 1.1	< 1.1	< 1.1	0.34 J	< 1.1	0.45 J
Ethene	0.55 J	0.56 J	0.47 J	0.62 J	0.58 J	0.95 J
Methane	18	8.6	2.7	13	13	27

	PPMP-66-MW06R	PPMP-66-MW06R	PPMP-66-MW06R	PPMP-66-MW06R	PPMP-66-MW06R	PPMP-66-MW06R
	10/27/20	**5/18/21**	**10/26/21**	**5/10/22**	**10/26/22**	**10/25/23**
Gases RSK-175 (µg/L)	Post-ISO	Post-ISO	Post-ISO	Post-ISO	Post-ISO	Post-ISO
Ethane	< 1.1	< 1.1	0.58 J	0.38 J	0.4 J	0.45 J
Ethene	< 1	< 1	< 1	< 1	0.4 J	0.32 J
Methane	77	100	190	130	120	84

	PPMP-66-MW23R	PPMP-66-MW23R	PPMP-66-MW23R	PPMP-66-MW23R	PPMP-66-MW23R
	5/18/21	**10/25/21**	**5/10/22**	**10/26/22**	**10/25/23**
Gases RSK-175 (µg/L)	Post-ISO	Post-ISO	Post-ISO	Post-ISO	Post-ISO
Ethane	0.7 J	0.75 J	0.83 J	0.9 J	0.76 J
Ethene	1.2	1.3	1.4	1.8	1.3
Methane	40	40	56	64	36

Notes:
ISO - In-Situ Chemical Oxidation

Lab Qualifier:
J = Estimated detection. The analyte is positively identified and the concentration is less than the reporting limit but > MDL

Table 4-5c: Groundwater Analytical Results for Total Organic Carbon and Chloride
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

	PPMP-66-MW02RR	PPMP-66-MW06R	PPMP-66-MW23R
	10/25/23	**10/25/23**	**10/25/23**
Parameters (mg/L)	Post-ISO	Post-ISO	Post-ISO
Chloride (as Cl)	--	--	--
Total Organic Carbon	3.5	2.3	5.7

Notes:
ISO - In-Situ Chemical Oxidation
-- = Not requested

FIGURES

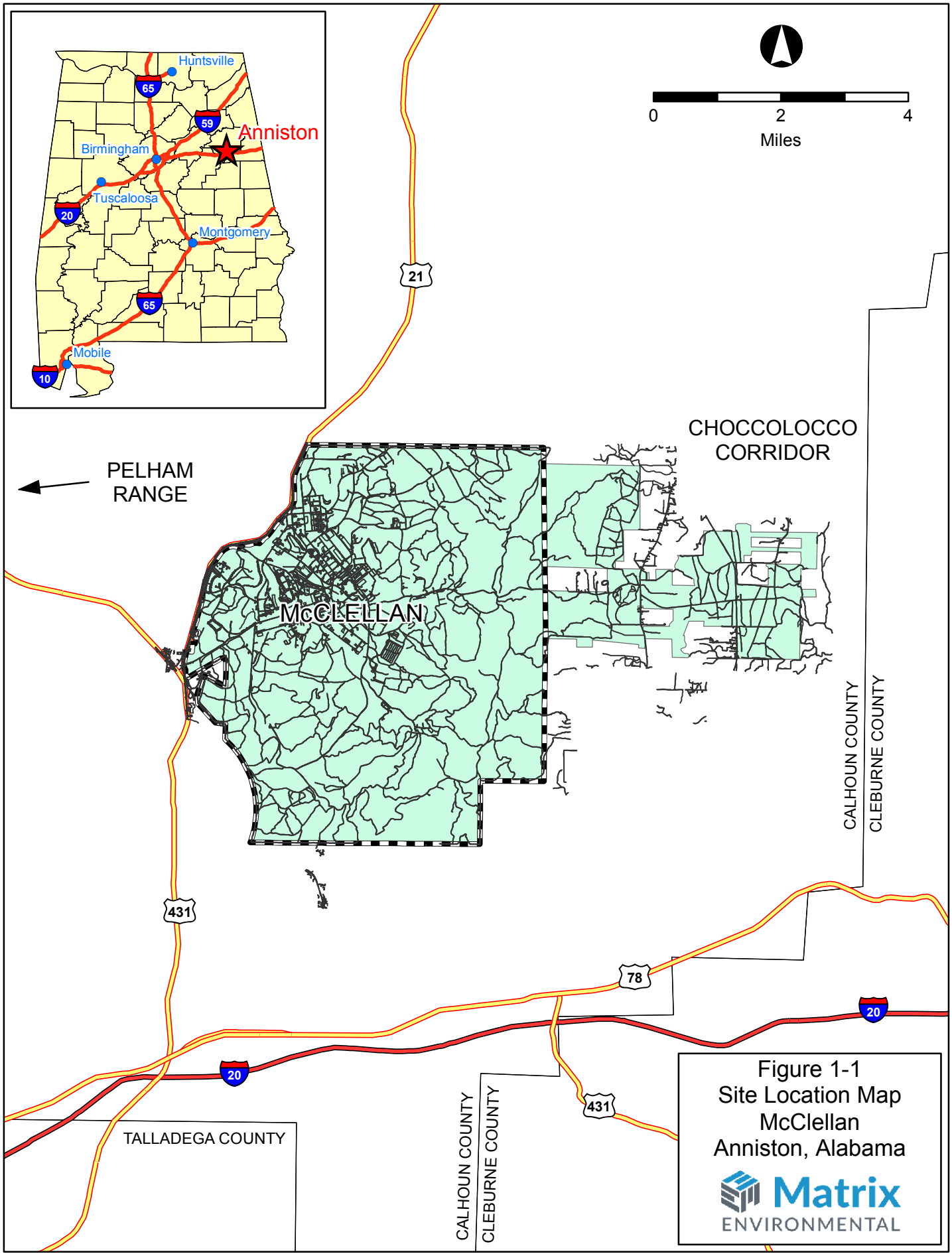


Figure 1-1
Site Location Map
McClellan
Anniston, Alabama

Matrix ENVIRONMENTAL

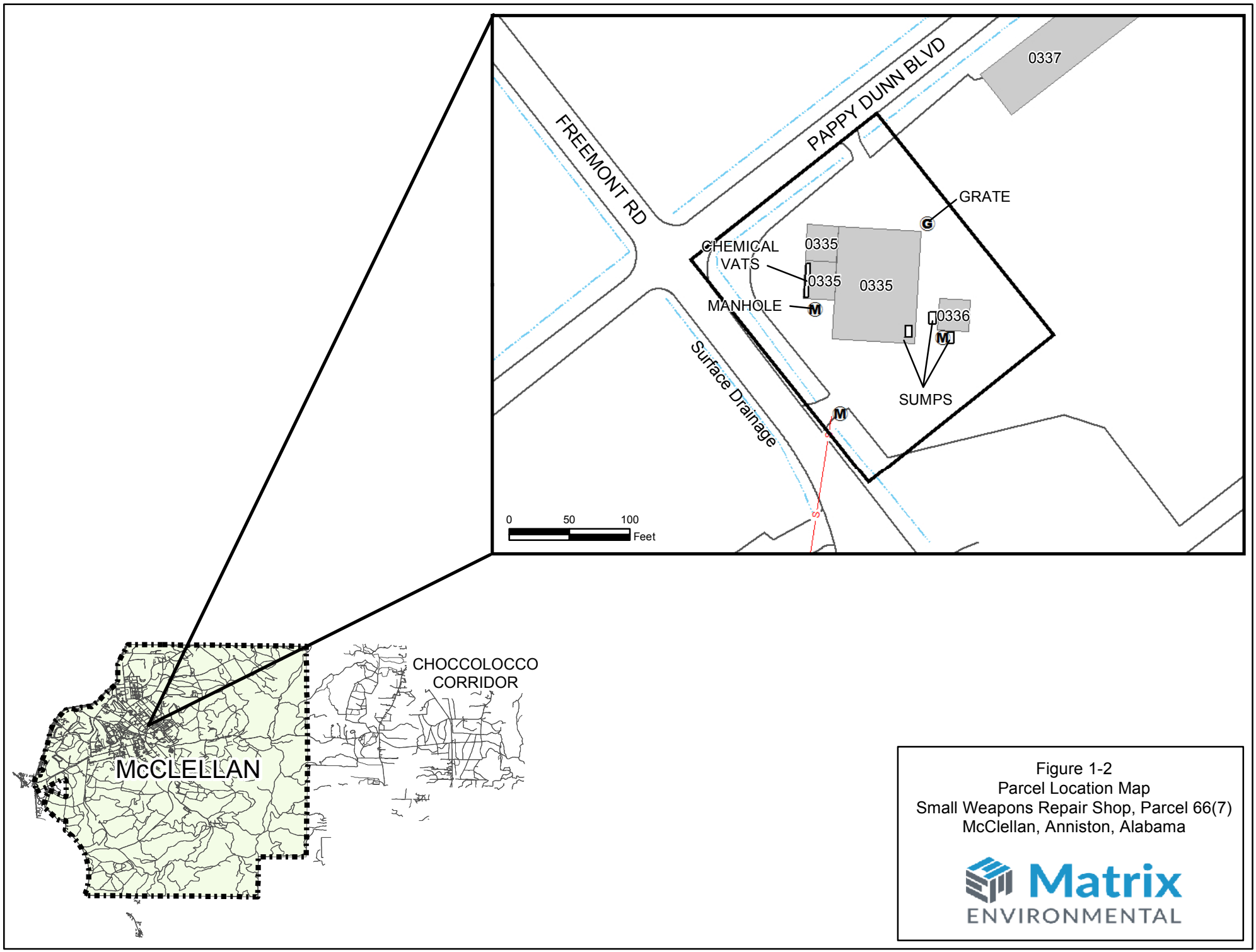
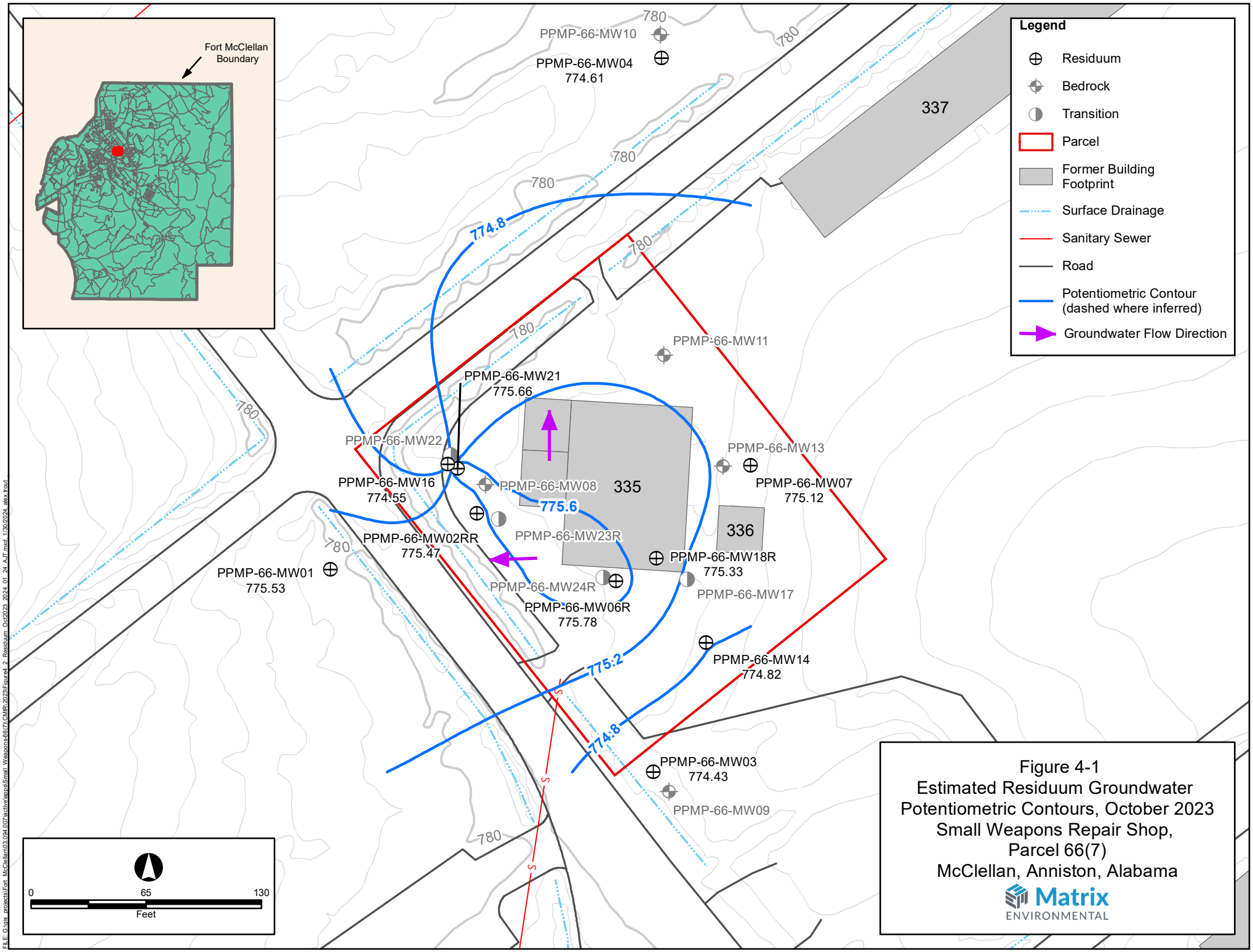
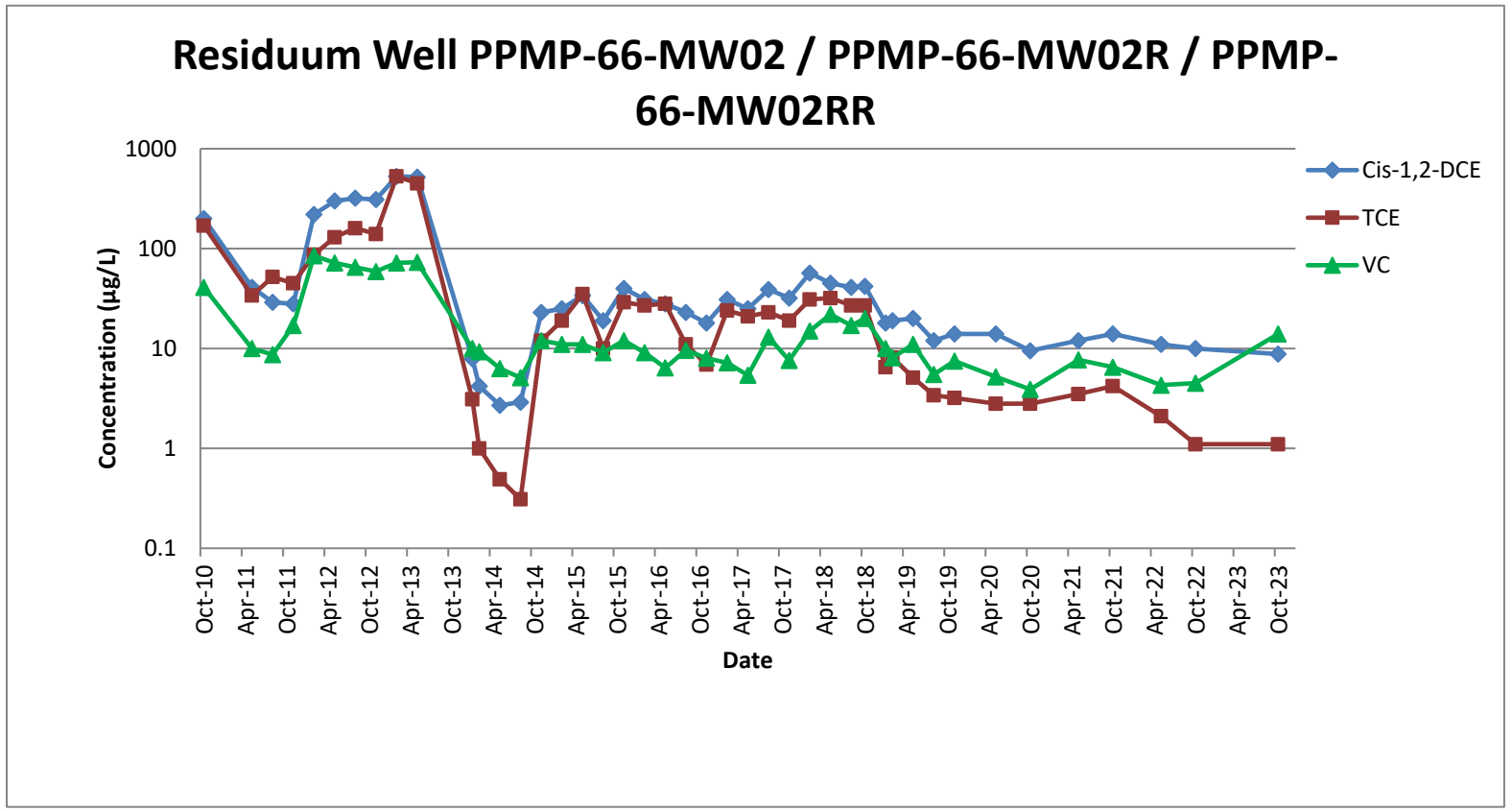


Figure 1-2
Parcel Location Map
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

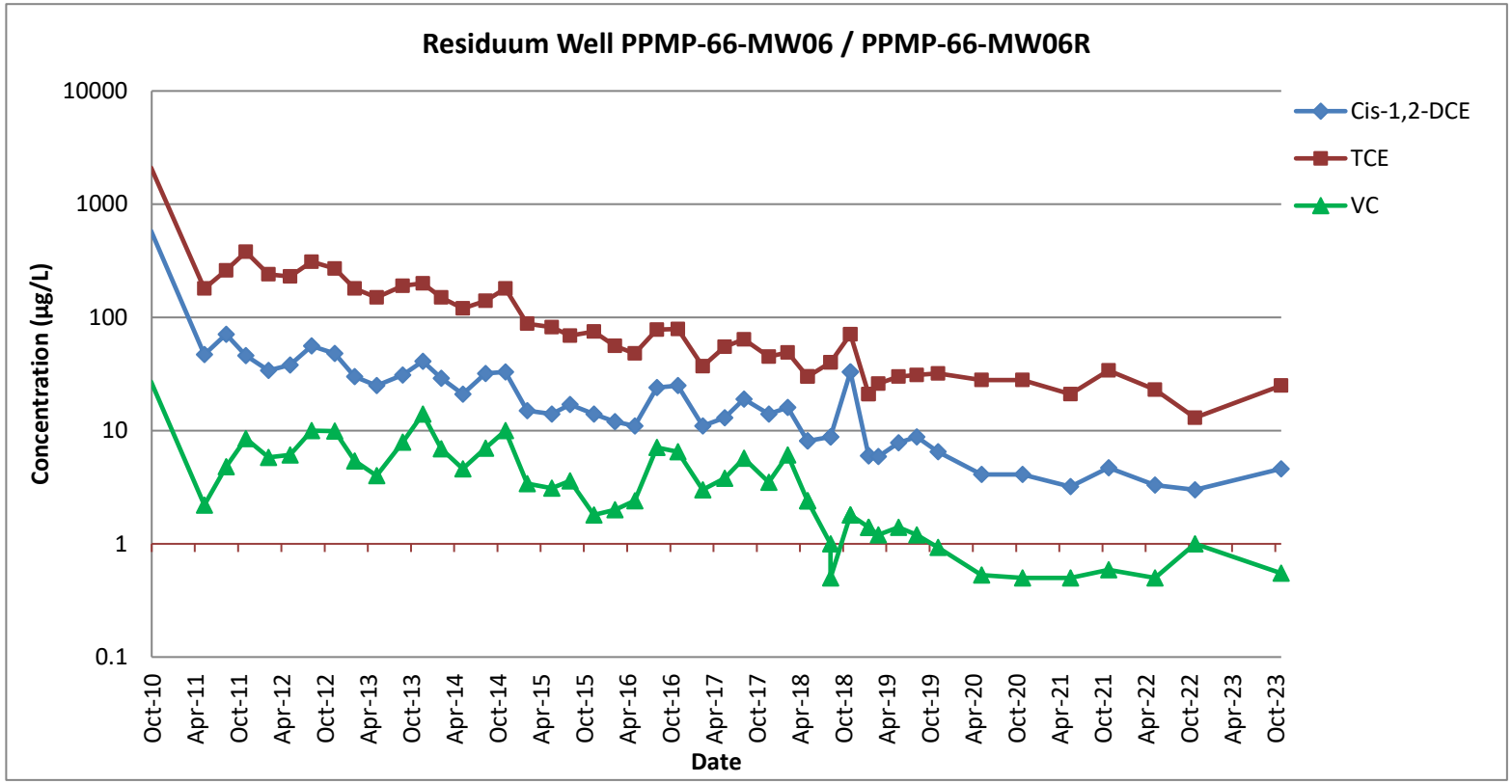
FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\apps\Small_Weapons-66(7)\CMIR\Figure1-2_Parcel_Location_Map.mxd, 5/7/2012, jeff_clonts


Fort McClellan Boundary
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
774.61
PPMP-66-MW11
PPMP-66-MW21
775.66
PPMP-66-MW22
PPMP-66-MW16
774.55
PPMP-66-MW08
PPMP-66-MW13
PPMP-66-MW07
775.12
PPMP-66-MW02RR
775.47
PPMP-66-MW23R
PPMP-66-MW18R
775.33
PPMP-66-MW01
775.53
PPMP-66-MW24R
PPMP-66-MW17
PPMP-66-MW06R
775.78
PPMP-66-MW14
774.82
PPMP-66-MW03
774.43
PPMP-66-MW09
337
335
336
780
774.8
775.6
775.2
0
65
130
Feet
Figure 4-1
Estimated Residuum Groundwater Potentiometric Contours, October 2023
Small Weapons Repair Shop,
Parcel 66(7)
McClellan, Anniston, Alabama
Matrix ENVIRONMENTAL



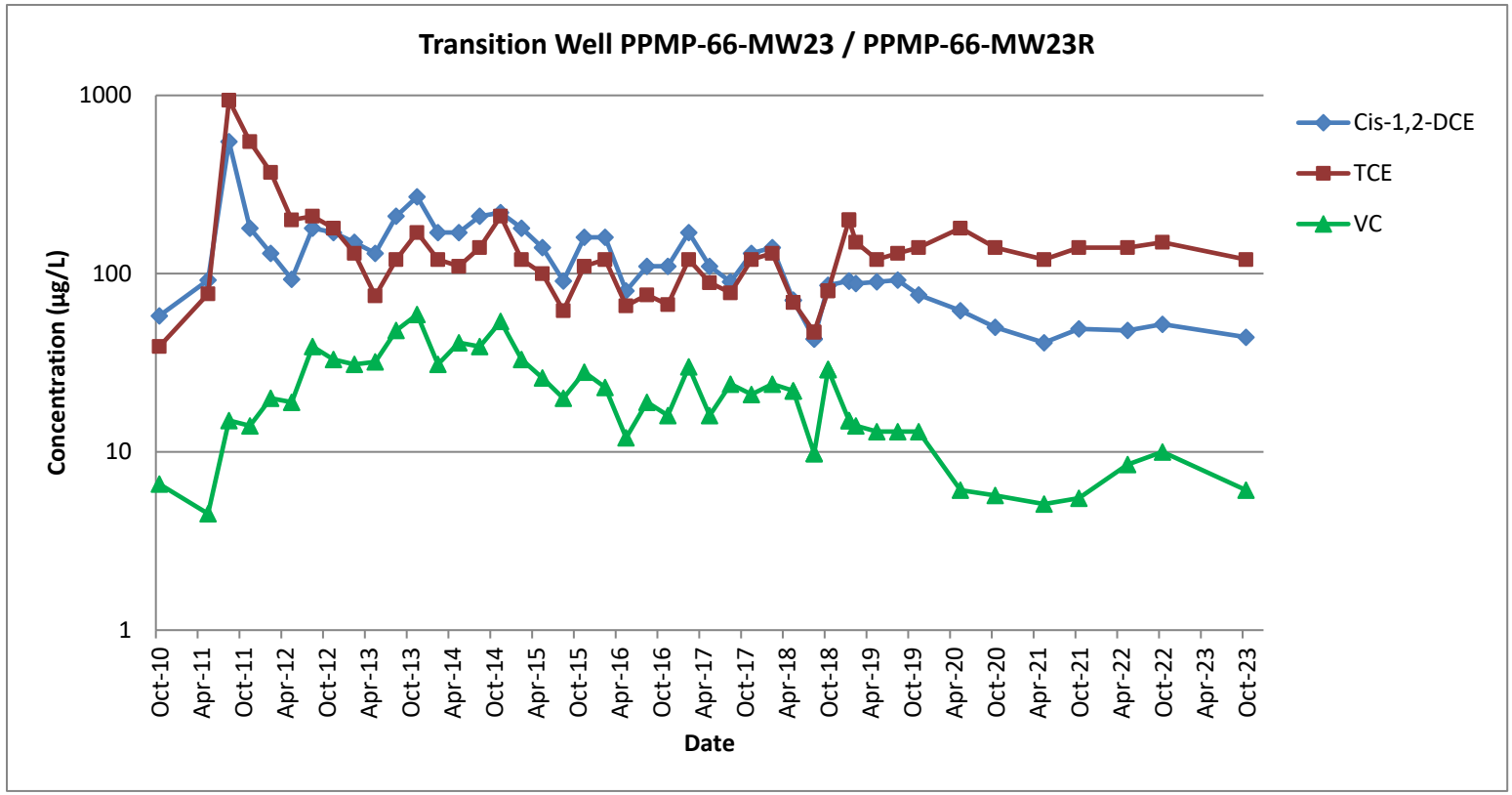
Matrix ENVIRONMENTAL

Figure 4-2: Volatile Concentrations in Residuum Well
PPMP-66-MW02 / PPMP-66-MW02R/ PPMP-66-MW02RR
Small Weapons, Parcel 66(7)
McClellan, Anniston, Alabama



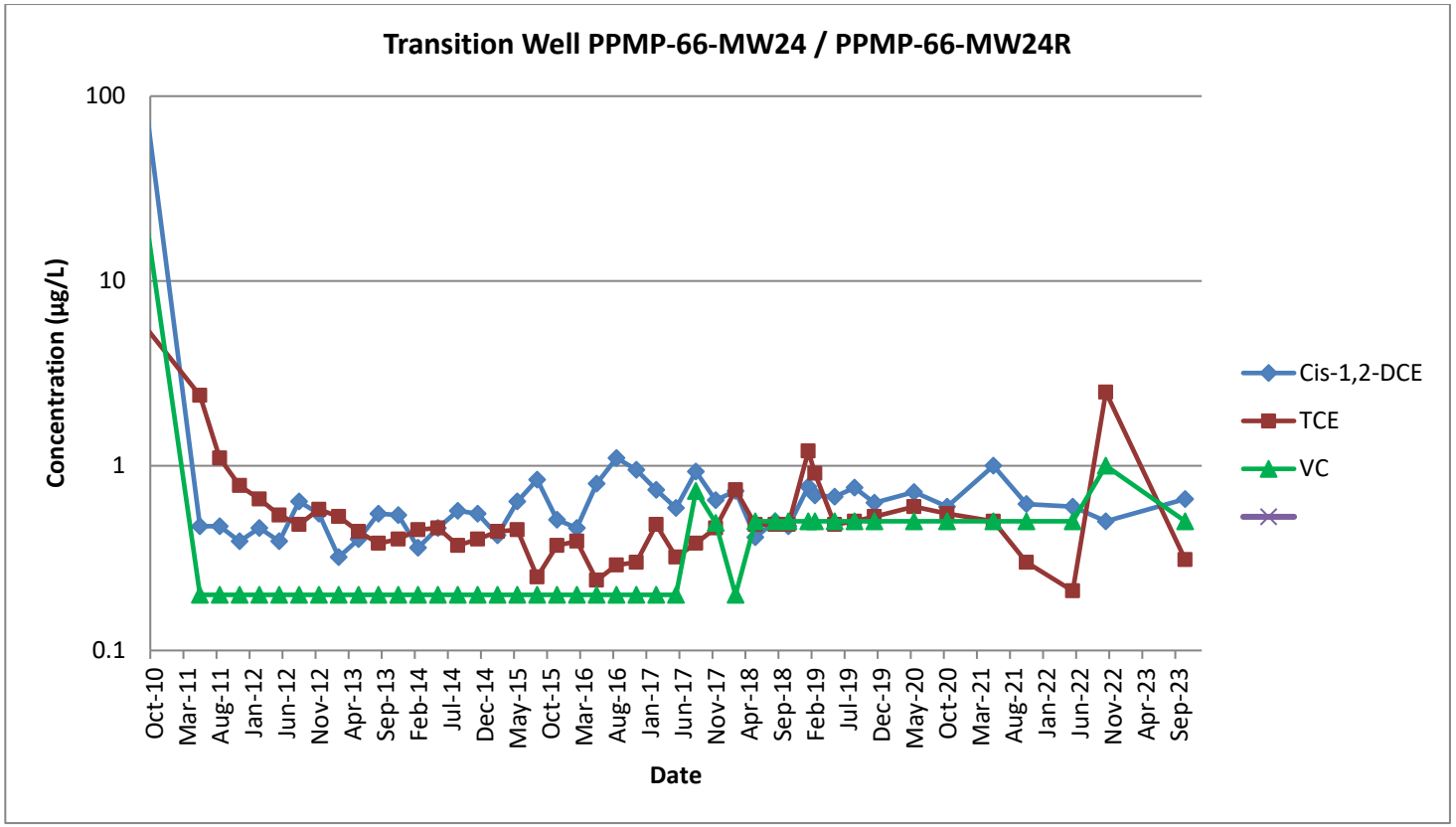
Matrix ENVIRONMENTAL

Figure 4-3: Volatile Concentrations in Residuum Well
PPMP-66-MW06 / PPMP-66-MW06R
Small Weapons, Parcel 66(7)
McClellan, Anniston, Alabama



Matrix ENVIRONMENTAL

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



Matrix ENVIRONMENTAL

Figure 4-5: Volatile Concentrations in Transition Well
PPMP-66-MW24 / PPMP-66-MW24R
Small Weapons, Parcel 66(7)
McClellan, Anniston, Alabama

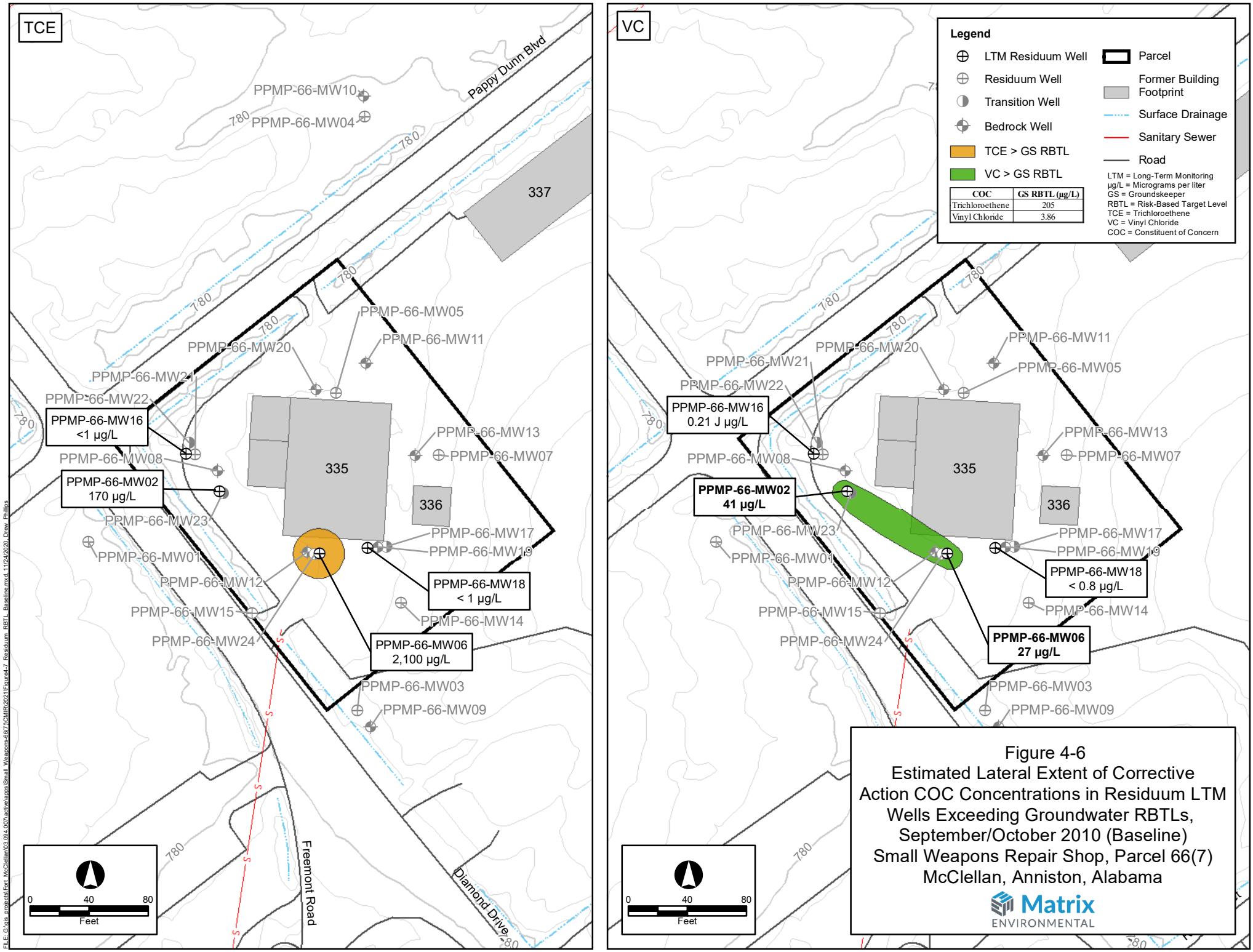


Figure 4-6
Estimated Lateral Extent of Corrective Action COC Concentrations in Residuum LTM Wells Exceeding Groundwater RBTLs, September/October 2010 (Baseline)
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

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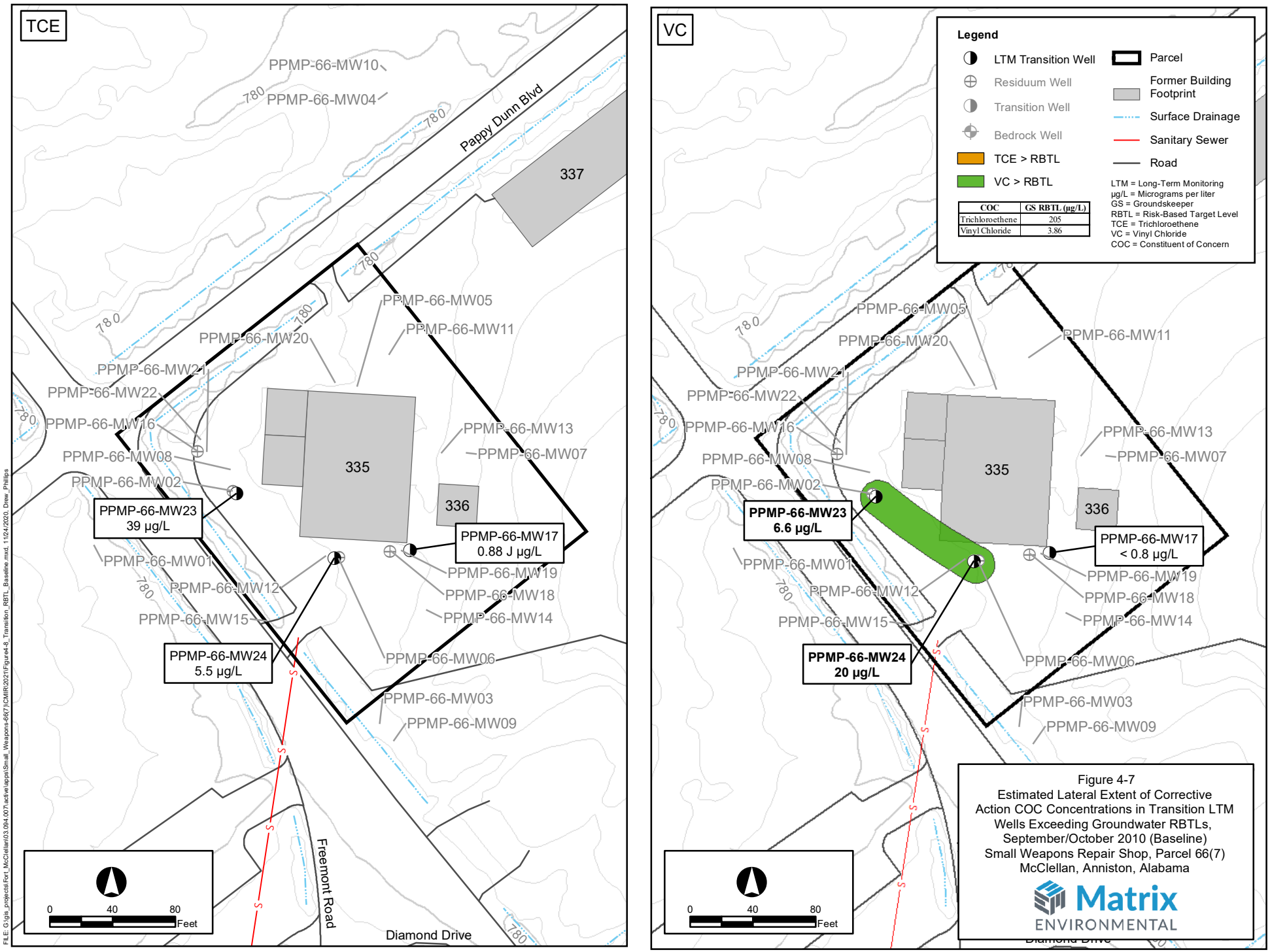

Figure 4-7
Estimated Lateral Extent of Corrective Action COC Concentrations in Transition LTM Wells Exceeding Groundwater RBTLs, September/October 2010 (Baseline)
Small Weapons Repair Shop, Parcel 66(7)
McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

FILE: G:\gis_projects\Fort_McClellan\03.094.007\active\appx\Small_Weapons-66(7)\CMR\2021\Figure4-8_Transition_RBTL_Baseline.mxd, 11/24/2020, Drew_Phillips

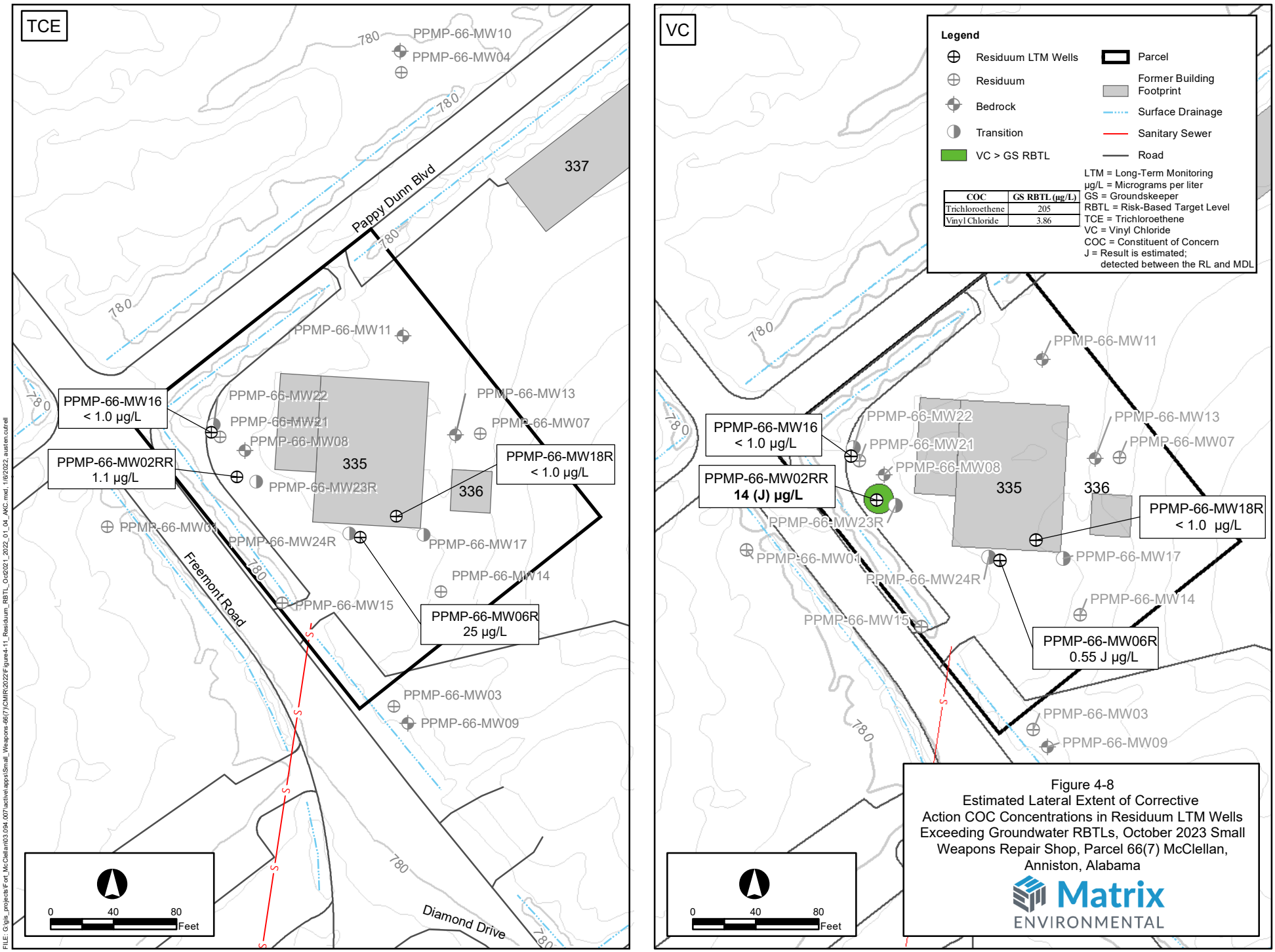

Figure 4-8
Estimated Lateral Extent of Corrective Action COC Concentrations in Residuum LTM Wells Exceeding Groundwater RBTLs, October 2023 Small Weapons Repair Shop, Parcel 66(7) McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

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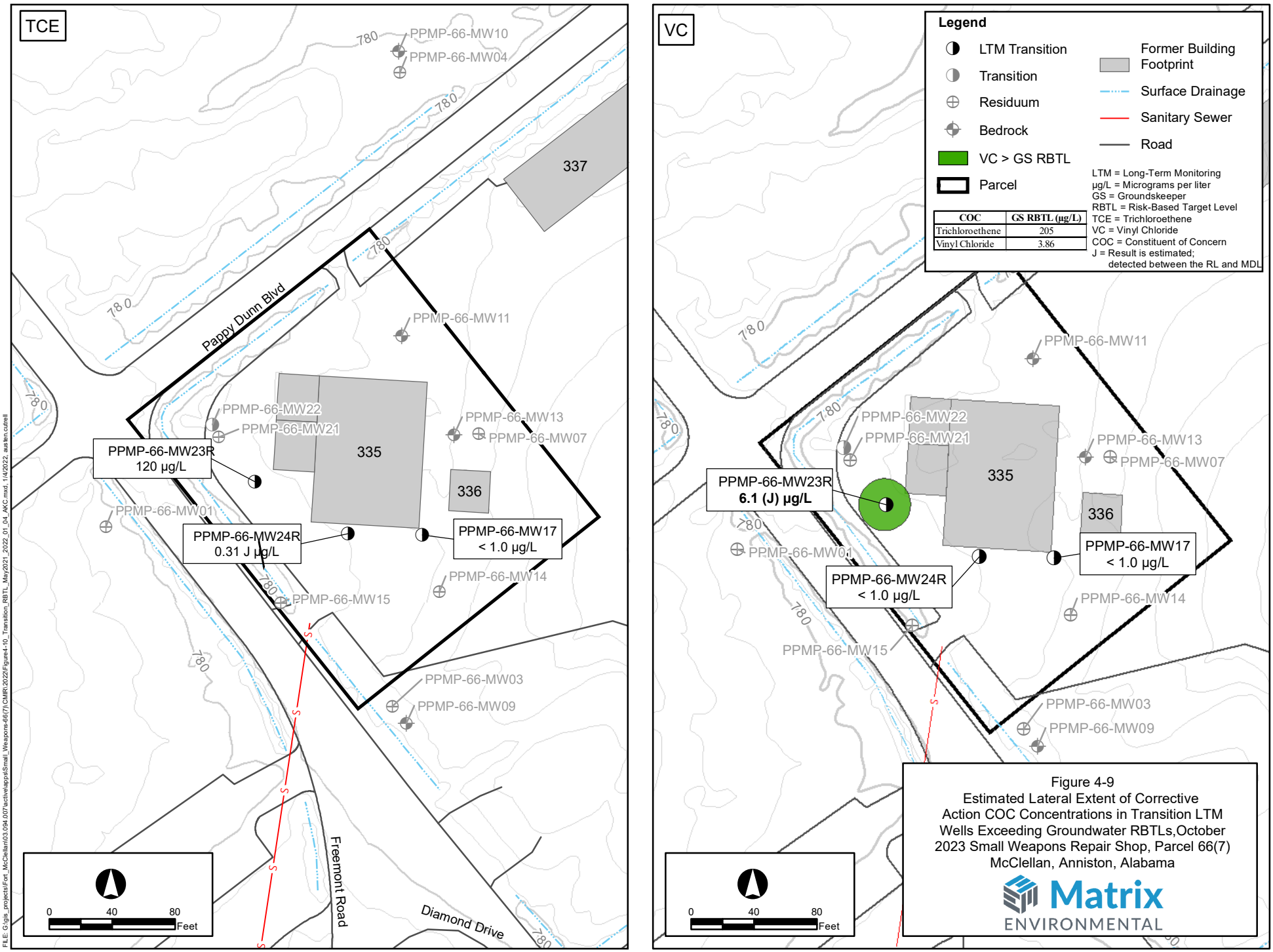

Figure 4-9
Estimated Lateral Extent of Corrective Action COC Concentrations in Transition LTM Wells Exceeding Groundwater RBTLs,October 2023 Small Weapons Repair Shop, Parcel 66(7) McClellan, Anniston, Alabama

Matrix ENVIRONMENTAL

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