2024 Site Management Plan

Defense Depot Memphis, Tennessee
U.S. EPA I.D. Number TN4210020570

Revision 1 Final
April 2024

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Department of the Army

Prepared for:

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Acronyms and Abbreviations

µg/L	micrograms per liter
AFFF	aqueous film-forming foam
AOC	area of concern
AOPI	area of potential interest
AR	Administrative Record
AS/SVE	air sparging with soil vapor extraction
bgs	below ground surface
BRA	Baseline Risk Assessment
BRAC	Base Realignment and Closure
cDCE	cis-1,2-dichloroethene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CF	chloroform
COC	chemical of concern
CSM	conceptual site model
CT	carbon tetrachloride
CVOC	chlorinated volatile organic compound
CY	cubic yard
DCE	1,1-dichloroethene
DDMT	Defense Depot Memphis, Tennessee
DERP	Defense Environmental Restoration Program
DF	Dunn Field
DFW	Dunn Field West
DoD	Department of Defense
e^2M	engineering-environmental Management, Inc.
EBT	enhanced bioremediation treatment
ECP	Environmental Condition of Property
EDR	Environmental Data Resources, Inc.
EISR	Early Implementation of Selected Remedy
ESD	Explanation of Significant Differences
ET&D	excavation, transportation and disposal
FDAQ	Fluvial Deposits Aquifer
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study

FOST	Finding of Suitability to Transfer
FU	functional unit
HFPO-DA	hexafluoropropylene oxide dimer acid
HHERA	Human Health and Ecological Risk Assessment
HHRA	human health risk assessment
HI	hazard index
HQDA	Headquarters, Department of the Army
HSWA	Hazardous and Solid Waste Amendment
IAQ	intermediate aquifer
IR	Information Repository
IRA	interim remedial action
IRACR	Interim Remedial Action Completion Report
ISTD	in situ thermal desorption
IW	injection well
lb/hr	pound per hour
LOQ	limit of quantitation
LTM	long-term monitoring
LUC	land use control
LUCIP	land use control implementation plan
MAQ	Memphis aquifer
MCL	maximum contaminant level
MI	Main Installation
MIP	membrane interface probe
MLGW	Memphis Light, Gas & Water
MNA	monitored natural attenuation
MW	monitoring well
NPL	National Priorities List
OPS	Operating Properly and Successfully
OSI	Offsite groundwater investigation
OU	Operable Unit
PA	Preliminary Assessment
PAHs	polyaromatic hydrocarbons
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PCP	pentachlorophenol

PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutane sulfonate
PFHxS	perfluorohexane sulfonate
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PID	photoionization detector
ppbV	part per billion by volume
PRB	permeable reactive barrier
PV	passive vapor
QAPP	Quality Assurance Project Plan
RA	remedial action
RACR	Remedial Action Completion Report
RAO	remedial action objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REC	recognized environmental conditions
RFA	RCRA Facility Assessment
RG	remediation goal
RI	remedial investigation
RLSO	redline-strikeout
ROD	Record of Decision
RSL	regional screening level
RW	recovery well
SAP	sampling and analysis plan
SCHD	Shelby County Health Department
SI	Site Investigation
SL	screening level
SLERA	screening level ecological risk assessment
SMP	Site Management Plan
SRI	Supplemental Remedial Investigation
SVE	soil vapor extraction
SVOC	semi-volatile organic compound
SWMU	Solid Waste Management Unit

TC	target concentration
TCA	1,1,2-trichloroethane
TCE	trichloroethene
TCL	Target Compound list
TCR	Target cancer risk
TDEC	Tennessee Department of Environment and Conservation
TeCA	1,1,2,2-tetrachloroethane
THQ	Target hazard quotient
TTA	target treatment area
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VI	vapor intrusion
VMP	vapor monitoring point
VOC	volatile organic compound
WNRC	Washington National Records Center
ZVI	zero valent iron

1 Introduction

This 2024 Site Management Plan (SMP) for the former Defense Depot Memphis, Tennessee (DDMT) was prepared under Contract W91278-20-D-0024, Task Order No. W9127822F0208 to the United States Army Corps of Engineers (USACE), Mobile District. The environmental restoration program at DDMT is directed by Headquarters Department of the Army (HQDA), Deputy Chief of Staff, G-9 (Installations), Environmental Division BRAC Branch.

This SMP has been prepared in accordance with *Department of Defense (DoD) Manual Number 4715.20, Defense Environmental Restoration Program [DERP] Guidance* (DoD, 2012) and fulfills a requirement of the *Federal Facilities Agreement at the Defense Distribution Depot Memphis* (FFA), which was signed by United States Defense Logistics Agency, United States Environmental Protection Agency (USEPA) and Tennessee Department of Environment and Conservation (TDEC) in 1995. DDMT's USEPA Identification Number is TN4210020570.

In accordance with the DERP Guidance, the SMP describes a coordinated approach for environmental restoration activities and includes all required activities by year until the expected completion of environmental restoration at DDMT. The SMP is updated annually, made available for public review in the information repository (IR) and included in the Administrative Record (AR). The 2024 SMP is updated with information available as of 21 March 2024.

An IR is a records storage area at or near a Superfund site that contains all correspondence, reports, and documents pertaining to the site, as well as general Superfund program information. At an IR, people can research the site and the law pertaining to the cleanup, learn how to participate in the cleanup process, and copy any information found at the repository.

Under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), an AR is the complete collection of documents that forms the basis for selecting a response action (i.e., those documents considered or relied upon by the lead agency in selecting a remedy). Thus, the record should include final documents generated by the lead agency and support agency or agencies, as well as technical and site-specific information. Information or comments submitted by the public during a public comment period also should be included in the AR whether or not they support the selected decision.

The Army has developed a website for DDMT AR and IR documents to improve access. The public can search and download documents at https://ww3.sam.usace.army.mil/DDMT/. The first two files on the website are the indexes for the AR and the IR. Documents can be found by using the indexes or a key word search. New documents will be added to the website semiannually.

The AR for DDMT is stored by the National Archives and Records Administration, Washington National Records Center (WNRC). The last transmittal of files to the WNRC was made in July 2023. Additional shipments will be made periodically as AR documents are created. Prior to shipment, the AR documents are stored in a locked room at the DDMT field office. The WNRC address is:

WNRC
4205 Suitland Road
Suitland, MD 20745-8001

Responses to agency comments on the 2024 SMP and correspondence with TDEC and USEPA are included in Appendix A.

2 Summary of Site Conditions

2.1 Site Location and Description

DDMT is located in southeastern Memphis, Shelby County, Tennessee, approximately 5 miles east of the Mississippi River and 0.5 miles northeast of Interstate 240 (Figure 1). DDMT originated as a military facility in the early 1940s to provide stock control, materiel storage, and maintenance services for DoD. In 1995, DDMT was placed on the list of DoD facilities to be closed under BRAC. Storage and distribution activities continued until DDMT closed in September 1997.

DDMT covers approximately 634 acres and consists of the Main Installation (MI) and Dunn Field (Figure 2). The MI contains approximately 567 acres with open storage areas, warehouses, former military family housing, and outdoor recreational areas. Dunn Field, which is located across Dunn Avenue from the north-northwest portion of the MI, contains approximately 67 acres and includes former mineral storage and waste disposal areas.

2.2 Regulatory Status

DDMT was a generator of Resource Conservation and Recovery Act (RCRA) hazardous wastes during its period of operation. The wastes included hazardous substances that reached shelf-life expiration dates and could no longer be used, vehicle maintenance wastes, and waste materials from the cleanup of small hazardous substance spills.

On 28 September 1990, USEPA Region 4 and TDEC issued DDMT a RCRA Part B permit for storage of hazardous waste. The Hazardous and Solid Waste Amendment (HSWA) portion of the permit issued by USEPA included requirements for the identification and, if necessary, corrective action at Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). A RCRA Facility Assessment (RFA), completed in 1990, identified 49 SWMUs and 8 AOCs (A.T. Kearney, 1990). Subsequent to issuing the RCRA permit, USEPA prepared a final Hazard Ranking System Scoring Package for the facility.

On 14 October 1992, USEPA added DDMT to the National Priorities List (NPL) (57 Federal Register 47180 No. 199). On 6 March 1995, USEPA, TDEC, and the Defense Logistics Agency entered into an FFA under CERCLA, Section 120, and RCRA, Sections 3008(h) and 3004(u) and (v). The FFA outlines the process for investigation and cleanup of environmental sites at DDMT under CERCLA. The parties agreed that investigation and cleanup of releases from the sites (including formerly identified SWMUs/AOCs) would satisfy any RCRA corrective action obligation.

The RCRA Part B permit for hazardous waste storage was terminated by TDEC in October 1998 upon request from DDMT, because the storage unit was not constructed. The HSWA portion of the permit for corrective action remained in effect. DDMT submitted a corrective action permit renewal application in March 2004. In January 2005, TDEC issued a Denial to Reissue the Hazardous Waste Corrective Action Permit, which terminated the requirement to

perform corrective action under RCRA and noted that all corrective action shall continue to be performed under CERCLA.

The NPL site status was revised to Construction Complete in May 2010 after construction of the selected remedies for DDMT was completed.

2.3 Site Designations

Site designations at DDMT were developed for overlapping environmental programs and for facility reuse. Four Operable Units (OUs) were established during preparation of the FFA: Dunn Field, OU 1; Southwest Quadrant MI, OU 2; Southeastern Watershed and Golf Course, OU 3; and North Central Area MI, OU 4.

The property was divided into 36 parcels based on planned reuse after DDMT was selected for closure under BRAC. Areas of environmental concern within each parcel were divided into sub-parcels representing buildings, spill locations, burial locations, former pistol ranges, open land areas, and other sites. This system allowed investigation results to be compared directly to BRAC parcels for reuse purposes and facilitated sampling/analysis and decisions regarding environmental condition of property for leasing and transfer.

During the MI Remedial Investigation (MI RI; CH2M HILL, 2000), the parcels were combined in functional units (FUs) to evaluate risk to human health and the environment. Each FU represented an area where human health exposure was generally uniform based on operational history, expected use and location. The MI was divided into six FUs with groundwater under the MI being FU 7. During the Dunn Field RI (CH2M HILL, 2002), the site was divided into three areas for conducting baseline risk assessments based on similar historical use and proposed reuse: Northeast Open Area, Stockpile Area, and Disposal Area. The FUs/Areas are described on Table 1 and the boundaries are shown on Figure 3 for the MI and Figure 4 for Dunn Field.

Environmental restoration sites were first identified during the 1990 RFA, and additional sites were added over time. The 1990 RFA identified 57 SWMUs and AOCs. An appendix to the FFA increased the number of sites to 89 based on additional site investigations; additional information is provided in the *Environmental Baseline Survey Report* (Woodward-Clyde, 1996). Two of the 89 sites consisted of multiple disposal locations that were later separated, bringing the number of sites to 93. The environmental restoration sites within each OU are listed on Table 2 with the current site status; the site locations are shown by OU on Figures 5, 6, 7 and 8. The site designations on the figures (e.g., RI, Screening, and No Further Action) were established when the sites were identified and do not reflect the current status.

2.4 Geology and Hydrogeology

The geologic units of interest at DDMT are (from youngest to oldest): loess, including surface soil; fluvial deposits; Jackson Formation/upper Claiborne Group (Jackson/upper Claiborne); and Memphis Sand.

The loess consists of wind-blown and deposited, brown to reddish-brown, low plasticity clayey silt to silty clay. The loess deposits are about 20 to 30 feet thick and are continuous throughout the DDMT area.

The fluvial (terrace) deposits at DDMT consist of two general layers. The upper layer is silty, sandy clay to clayey sand and ranges from about 0 to 30 feet thick. The lower layer is composed of interlayered sand, sandy gravel, and gravelly sand, and ranges from 30 to 100 feet thick. The uppermost aquifer is the unconfined Fluvial Deposits Aquifer (FDAQ), which consists of saturated sands and gravelly sands in the lower portion of the fluvial deposits. The saturated thickness ranges from 0 feet (dry) to approximately 70 feet. The groundwater level and saturated thickness of the FDAQ are mainly controlled by the surface of the uppermost clay in the upper Claiborne and areas of downward leakage where the clay layer is thin or absent, as noted below. The groundwater level does not reflect the nearly level ground surface at the MI. The groundwater in the FDAQ is not a drinking water source for area residents; however, the current Tennessee groundwater classification at DDMT is General Use (TDEC Chapter 1200-04-03).

The Jackson/upper Claiborne forms the Upper Confining Unit for the Memphis Aquifer (MAQ) on a regional basis and separates the FDAQ from the MAQ at DDMT. The upper Claiborne Group includes the Cockfield and Cook Formations; the individual layers of the Jackson/upper Claiborne consist of clays, silts, and sands deposited in lenses or individual beds. The Jackson Formation is reported to be absent in the area of DDMT. The Cockfield Formation consists of inter-fingering fine sand, silt, clay, and local lenses of lignite. The Cook Mountain Formation consists primarily of clay with varying amounts of fine sand and is reported to be the most persistent clay layer in the Upper Confining Unit. The Intermediate Aquifer (IAQ) is locally developed in sand layers within the upper Claiborne.

The Memphis Sand consists primarily of thick-bedded, white to brown or gray, very fine-grained to coarse, partly argillaceous and micaceous sand. The Memphis Sand ranges from 500 to 890 feet in thickness and begins at a depth of approximately 120 to 300 feet below ground surface (bgs). The MAQ is a regional deep, confined aquifer and is the primary source of water for the City of Memphis. Memphis Light, Gas & Water (MLGW) extracts groundwater from several well fields in the Memphis area, which have created a regional cone of depression in the potentiometric surface, with steeper local cones of depression at each well field. The Allen Well Field is the closest to DDMT; individual extraction wells in the well field are 1 to 2 miles west of DDMT.

At locations where clay layers in the upper Claiborne Group are thin or absent, a ‘window can develop with downward flow of groundwater transporting contaminants to the IAQ, and potentially the MAQ. Studies indicate that downward leakage from the water-table aquifers (alluvial and fluvial deposits) to the MAQ is widespread in the Memphis area (Parks, 1990). Within the northwestern MI, an erosional window between the FDAQ and IAQ has been identified in the area northwest of long-term monitoring (LTM) well MW-286 (Figure 9). The depressed FDAQ water levels near MW-39 and MW-259 in the central MI indicate a separate area of downward leakage of water (‘sink’) and provide additional evidence of the hydraulic connection between the FDAQ and the IAQ.

3 Environmental Program Status

Construction of the selected remedies for DDMT was completed in December 2009, and the *Preliminary Close Out Report* (USEPA, 2010a) was approved in May 2010. Interim remedial action completion reports (IRACRs) have been approved for all remedial actions (RAs). USEPA has concurred with operating properly and successfully (OPS) determinations for the remedies implemented on federal property.

3.1 Main Installation (OU-2, 3 and 4)

The MI contains approximately 567 acres with open storage areas, warehouses, former military family housing, and outdoor recreational areas. All of the MI property has been transferred for reuse through public benefit and economic development conveyances (see Section 3.4).

Site investigations from 1989 to 2001 are described in the *Memphis Depot Main Installation Remedial Investigation Report, Volumes I through IV* (CH2M HILL, 2000). The MI RI identified contamination in surface soil and ground water. Surface soil contaminants requiring response consisted of metals, pentachlorophenol (PCP), polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), and a pesticide, dieldrin. Groundwater contamination requiring response was limited to chlorinated volatile organic compounds (CVOCs) primarily tetrachloroethene (PCE), trichloroethene (TCE), carbon tetrachloride (CT), and chloroform (CF); CVOC concentrations detected in MI RI soil samples did not warrant remedial action.

3.1.1 Prior Removal Actions

The following actions were taken on the MI prior to the Record of Decision (ROD). The locations are shown on Figure 3.

- Approximately 602 cubic yards (CY) of surface and subsurface soil were removed from the PCP dip vat area (Building 737) because of elevated levels of PCP (O. H. Materials, 1986).
- Approximately 60,000 gallons of hazardous and petroleum/oil/lubricants materials from damaged drums were reclaimed and repackaged at Building 873 in 1985. Soil sampling was conducted east of Building 873. Surficial soil contamination indicated numerous spills of limited quantities in outside storage areas. Removal and disposal of contaminated soil was within the scope but was not described in the report (O. H. Materials, 1986).
- Approximately 5,000 tons (3,700 CY) of surface soil in the Housing Area were removed in 1998 because of the presence of dieldrin (OHM Remediation Services, 1999a). The Housing Area is an exception to the overall industrial land use for MI and cleanup levels were based on residential reuse.
- Approximately 530 tons (400 CY) of surface soil surrounding the cafeteria (Building 274) were removed in 1998 because of elevated levels of PCBs (OHM Remediation Services, 1999b).

- Approximately 980 CY of surface and subsurface soil from BRAC Parcels 35 and 28 near Buildings 1084, 1085, 1087, 1088, 1089 and 1090 were removed in 2000 because of elevated levels of metals and PAHs (Jacobs-Sverdrup, 2000).

3.1.2 Record of Decision

The *Memphis Depot Main Installation Record of Decision* (MI ROD) (CH2M HILL, 2001) received final approval in September 2001. The MI ROD specified the remedial action objectives (RAOs) that the selected remedy was expected to meet in order to protect human health and the environment. The RAOs were developed to allow the lease and later transfer of the MI for its intended land uses (industrial and recreational). The RAOs are:

Surface Soil

- Prevent direct contact/ingestion of surface soils contaminated with lead in excess of industrial worker risk-based criteria.
- Prevent direct contact/ingestion of surface soils contaminated with dieldrin and arsenic in excess of human health risk assessment criteria for residents.
- Prevent direct contact/ingestion of surface soils contaminated with lead in excess of risk-based criteria for protection of residential children.

Groundwater

- Prevent human ingestion of water contaminated with volatile organic compounds (VOCs) in excess of maximum contaminant levels (MCLs) from potential future on-site wells.
- Reduce concentrations of chemicals of concern (COCs) to MCLs or lower.
- Prevent horizontal and vertical off-site migration of groundwater contaminants in excess of MCLs.

The selected remedy presented in the MI ROD contained the following components:

- Excavation, transport and off-site disposal (ET&D) of lead contaminated surface soil near the southeast corner of Building 949 in FU4. [Note: ET&D of approximately 300 CY of soil (see Figure 3) was completed (Jacobs Federal Programs, 2002) prior to final execution of the ROD and noted as a significant change in the ROD.]
- Deed restrictions and land use controls (LUCs) to prevent residential land use on the MI, except at the existing housing area; to implement daycare restrictions; to prevent production/consumptive use of groundwater in the FDAQ and drilling into deeper aquifers on the MI; and to eliminate casual access through maintenance of a boundary fence around the golf course.
- Enhanced bioremediation treatment (EBT) of CVOCs in the most contaminated part of the groundwater plume.
- Long-term groundwater monitoring to document changes in plume concentrations and to detect potential plume migration to off-site areas or into deeper aquifers.

- Five-Year Reviews (FYRs) of the selected remedy.

The RAOs for surface soil have been met through removal actions and LUCs. The RAOs for groundwater have been partially met through groundwater treatment and LUCs. Ingestion of water contaminated with VOCs above MCLs has been prevented because there are no current production wells on-site or within 0.5 miles of the MI, and LUCs prevent installation of production wells within that area. COCs have not been reduced to MCLs or lower although concentrations have been reduced by remedial actions. Off-site migration of groundwater contaminants in excess of MCLs does not occur in the FDAQ because groundwater flow is on to the MI from all sides. However, this flow results in vertical contaminant migration from the FDAQ to the IAQ and from the IAQ to the MAQ; concentrations in some wells within the MAQ are slightly above MCLs. Additional information on remedial actions, supplemental investigation, groundwater monitoring and LUCs is presented in following sections of this SMP.

3.1.3 Enhanced Bioremediation Treatment

The selected remedy included EBT in the most contaminated areas with the assumption that "untreated parts of the groundwater plume would degrade under natural attenuation". The *Memphis Depot Main Installation Final Remedial Design, Revision 1* (MI RD) (CH2M HILL, 2004c) was approved by USEPA in August 2004. Groundwater concentrations equal to or greater than 100 micrograms per liter (µg/L) for PCE and TCE were used to delineate the EBT treatment areas. Sodium lactate was chosen for injection in two target treatment areas (TTA-1 and TTA-2). The MI RD also included a LTM plan and a Land Use Control Implementation Plan (LUCIP).

The initial remedy implementation (EBT-1) included sodium lactate injections into the FDAQ within the two treatment areas from September 2006 through February 2009 and performance monitoring from October 2006 through March 2009. CVOC concentrations for parent compounds (PCE, TCE, CT and CF) were reduced over 90 percent in injection wells (IWs) and over 80 percent in monitoring wells at locations with baseline concentrations above 100 µg/L.

The *Main Installation Source Areas Investigation* (e^2M, 2009b) was performed in 2008 to identify potential source areas for CVOCs in groundwater on the MI. The magnitude and extent of CVOCs in soil were characterized by a membrane interface probe (MIP) survey and confirmation soil samples. The MIP survey identified several areas of possible soil contamination, but the CVOC concentrations did not warrant remedial action.

The *Interim Remedial Action Completion Report, Main Installation, Revision 1* (MI IRACR) (HDR|e^2M, 2010), including an OPS determination, was approved by USEPA in March 2010. Although EBT did not achieve the goal of reducing concentrations below MCLs, the additional field investigation, groundwater modeling and trend analysis indicated that additional remedial action was not necessary.

Following rebound in CVOC concentrations in 2010 LTM samples, EBT-2 was conducted in areas where individual CVOC concentrations of parent compounds PCE, TCE and CT in groundwater exceeded 100 µg/L. Quarterly injections were made from November 2012 to August 2014 and performance monitoring was conducted from February 2013 to November

2014. The final report for EBT-2, *Main Installation Year Four Enhanced Bioremediation Treatment Report* (HDR, 2015), was approved by USEPA and TDEC in May 2015. While EBT-2 reduced CVOC concentrations, it was not sufficient to meet the groundwater RAOs for the MI. Supplemental remedial investigation (SRI) was conducted and a feasibility study prepared to identify alternative remedial technologies for the MI (see Section 3.1.5).

3.1.4 Long-Term Monitoring

MI LTM is performed to document changes in plume concentrations, to detect potential plume migration to off-site areas or into deeper aquifers, and to track progress toward meeting RAOs in accordance with the LTM Plan in Appendix B of the MI RD (CH2M HILL, 2004c). LTM sample analyses include most USEPA Target Compound List (TCL) VOCs; analytical summary tables include the primary CVOCs and other VOCs detected above the laboratory limit of quantitation (LOQ) in one or more samples. The primary CVOCs for the MI are the groundwater contaminants detected most frequently: CT, CF, PCE, TCE, cis-1,2-dichloroethene (cDCE) and vinyl chloride (VC).

LTM wells are assigned to the Fluvial, Intermediate or Memphis Aquifers. The uppermost clay layer in the upper Claiborne, which usually forms the base of the FDAQ, is absent in the central section of the MI, and the Fluvial sand and the upper Claiborne sand form a single water table aquifer. Several deeper wells in this area are designated Upper Claiborne and are grouped with the IAQ wells. In addition, the MI LTM wells are grouped in the following area/plumes: TTA-1 North, TTA-1 South, TTA-2, West-Central, Building 835, North-Central, South-Central, Southeast, Window and Background. The Background wells were selected based on criteria in the MI LTM Plan (wells upgradient of or at a distance from groundwater plumes and with no, or low, previous detections of site contaminants).

MI LTM comprises 188 wells. The wells are listed on Table 3 and the locations, color-coded by area, are shown on Figure 10. The number of wells and sample frequencies by aquifer in 2023 are:

- 146 FDAQ - semiannual (71), annual (40) and biennial (35)
- 37 IAQ/UC - semiannual (11), annual (13) and biennial (13)
- 5 MAQ - semiannual (3) and biennial (2)

The April 2023 LTM event consisted of a water level sweep of all MI LTM wells and semiannual groundwater sampling at 85 wells. The most recent analytical results for the primary CVOCs from the sample events in October 2022 and April 2023 were reviewed to evaluate extent of contamination and prepare CVOC concentration maps. The analytical results discussed herein will be presented in the 2023 annual LTM report.

The number of MI LTM wells with primary CVOCs exceeding an MCL and the maximum concentration for CVOCs exceeding MCLs in the most recent samples as of April 2023 are summarized by aquifer and area on Table 4. A total of 93 MI LTM wells had concentrations above the MCL for one or more primary CVOCs. PCE and TCE were the CVOCs most often detected above MCLs and had maximum concentrations of 266 µg/L and 137 µg/L,

respectively. Concentrations of the initial groundwater contaminants (PCE, TCE and CT) were greater than 50 µg/L in eight wells; these wells are screened in the FDAQ and two are located off-site, west of the MI. Concentrations and isopleths for PCE and TCE from the April semiannual LTM event are shown on Figures 11 and 12. PCE and TCE concentrations are shown at wells on a cross-section through the window on Figure 13.

3.1.5 Supplemental Remedial Investigation and Focused Feasibility Study

The *2020 Supplemental Remedial Investigation Report, Revision 1* (HDR, 2021), which describes activities and analytical results for Phase 1 through 4, was submitted with agency comments and responses and TDEC approval in July 2021. USEPA provided a conditional approval letter in August 2021 stating neither approval nor agreement on SRI completion.

A Focused Feasibility Study (FFS) was conducted to identify and screen remedial action alternatives. The *2022 Main Installation Focused Feasibility Study Report, Revision 0* (HDR, 2022c) was submitted to USEPA and TDEC for review on 30 September 2022. The FFS report was approved by TDEC in January 2023. USEPA comments on the FFS report were received in December 2022 and January 2023; resolution of the comments is progressing through discussions and correspondence between Army and USEPA. Following completion of the FFS report, Army will prepare a Revised Proposed Plan and conduct a public meeting and comment period; a ROD Amendment will then be prepared for agency review. Further remedial action (RA) will be implemented after completion of the ROD Amendment and the remedial design.

3.1.6 Risk Assessment

The Baseline Risk Assessment (BRA) conducted during the MI RI (CH2M HILL, 2000) included a human health risk assessment (HHRA) and screening level ecological risk assessment (SLERA). An updated HHRA for potential groundwater exposures and reviews of the HHRA for potential soil exposures and the SLERA for the MI were prepared in 2018. The *Human Health and Ecological Risk Assessment, Revision 1* (HDR, 2020) (HHERA) was submitted in February 2020 following conditional approval by USEPA in April 2019.

The updated Groundwater HHRA confirmed the BRA finding that there is potential for receptors to experience adverse health effects from exposure to contaminated on-site groundwater, and that exposures are currently being prevented by the existing land use restrictions at the MI.

The Soil HHRA review found that most organic and inorganic constituents detected at DDMT are present at levels that do not exceed current Industrial USEPA Regional Screening Levels (RSLs). However, additional risk assessment was recommended in a few areas to assure protectiveness of the remedy: additional soil sampling for lead and chromium speciation analysis; and review of the current status of dioxin and PCP-related land use restrictions.

The SLERA review found that concentrations of certain COCs in environmental media exceed their respective ecological screening levels. The MI is approximately 90% developed with warehouses, paved roads and parking areas, and gravel-covered storage/laydown areas; the landscaped areas are maintained; and the undeveloped areas are regularly mowed. Based on the absence of suitable habitat for ecological receptors, there are no complete ecological

pathways of exposure on the MI. However, the detection of dioxin/furans in on-site soils, as well as in surface water and sediment, was determined to warrant additional study due to potential for human health impacts.

The *Human Health Environmental Risk Assessment Review Sampling and Analysis Plan, Revision 1* (HHERA Review SAP; HDR, 2022a) documented the available information from previous sampling of environmental media at DDMT and described plans for additional sampling and analysis, and the applicable guidance for additional risk assessment. The SAP was approved by TDEC in November 2021 and conditionally approved by USEPA in April 2022.

Soil, sediment and surface water samples were collected in accordance with the SAP in July and August 2022. Soil sampling for chromium speciation and dioxins/furans, and sediment and surface water sampling for dioxins/furans was conducted in July and August 2022. The *Sampling and Risk Screening Report, Revision 0* (HDR, 2023a), which concluded that further action was not necessary, was submitted to USEPA and TDEC for review in February 2023. TDEC approved the report in May 2023. USEPA comments on the report were received in May 2023; resolution of the comments is progressing through discussions and correspondence between Army and USEPA. Based on discussions to date, additional sampling of surface soil in the PCP dip vat area is planned with analysis for dioxins and furans; the analytical results will be evaluated to determine what additional action will be needed to reduce risk to acceptable levels for commercial workers in that area.

3.1.7 Vapor Intrusion

Potential VI issues at the MI are being evaluated through a study performed in accordance with guidance from DoD (TSERAW, 2009), USEPA (USEPA, 2015), and TDEC (TDEC, 2016). Initial vapor samples were collected in August and October 2018; soil vapor samples were collected at a depth of 5.5 feet bgs in five borings and sub-slab vapor samples were collected beneath concrete flooring or asphalt pavement at six locations. Soil samples were collected for geotechnical analysis adjacent to three soil vapor sample locations. The *Soil Vapor Sampling, Main Installation Vapor Intrusion Study Memorandum* (HDR, 2019) was submitted to USEPA and TDEC in January 2019.

The soil samples were classified as lean clayey silt and had low permeability based on test results of 4.6x10-8 to 9x10-8 centimeters per second. Primary CVOCs (PCE, TCE, CT and CF), benzene and ethyl benzene were detected in multiple soil vapor samples. The VOC concentrations were compared to VISLs calculated for commercial exposure (USEPA,2018) with a target cancer risk (TCR) of 1x10-6 and target hazard quotient (THQ) of 1 (TCR of 1E-06, THQ of 1). The results indicated exceedance of TCR at three locations and THQ at two locations.

Based on discussions between the Army and USEPA in December 2019 and February 2020, an updated VI conceptual site model (CSM) and a comprehensive sampling plan were prepared. The information included in the CSM was discussed based on USEPA guidance (OSWER Publication 9200.2-154, 2015). The *Vapor Intrusion Conceptual Site Model, Main Installation, Revision 1* (VI CSM) (HDR, 2022b) was approved by TDEC in April 2021. USEPA

acknowledged completion of the VI CSM in April 2022 but withheld approval pending a comprehensive CSM for DDMT.

The *Vapor Intrusion Sampling and Analysis Plan, Revision 1* (VI SAP; HDR, 2023b) was submitted in May 2023, following approval of the VI SAP by TDEC in February 2023 and concurrence on revisions by USEPA in April 2023. Planned activities include gathering information on buildings within VI inclusion zones through building plan reviews, interviews and visual inspections; and a phased approach for vapor sampling; risk assessment and reporting. Vapor sampling phases are:

- An initial phase of passive soil vapor screening to identify areas on the MI with VOCs in shallow soil vapor above VISLs and to evaluate potential preferential pathways along sewer lines and other underground utility corridors.
- A second phase for installation of vapor monitoring points (VMPs) and sampling to confirm areas of VOC concentrations greater than VISLs identified during the first phase and/or historic groundwater sample results. VMPs screens will be installed in the loess (5 feet bgs); above the base of upper fluvial deposits (25 feet bgs); below the top of the lower fluvial deposits (30 feet bgs); and in the lower fluvial deposits approximately 10 feet above the water table (70 feet bgs).
- The third phase for sub-slab and indoor air samples at buildings selected based on soil vapor analytical results and building construction/use.

Review of building plans and inspections began during the initial passive vapor (PV) screening in May and June 2023. PV samples were installed at approximately 98 locations; 52 site-wide grid samples were spaced approximately 500 feet apart in VI inclusion zones and 1,000 feet apart in areas outside VI inclusion zones and 46 samples were spaced approximately 100-feet apart in TTA-1N, TTA-1S and TTA-2.

Analytical results for VOCs were compared to VISLs calculated using the USEPA VISL Calculator (USEPA, 2022) with TCR of 1E-06, THQ of 0.1. Two grid samples located within and adjacent to the on-site housing area did not have VOCs above the residential VISL. None of the site-wide grid samples had VOCs above the commercial VISL. CVOCs (TCE, PCE and/or CF) were detected above the commercial VISL in six samples from TTA-1N, TTA-1S and TTA-2.

The sample results and site utility maps for the MI were used to select 68 follow-up PV sample locations in soil, sewer lines and utility line backfill. The samples were collected in August 2023. Analytical results were consistent with the initial soil PV samples and indicated that widespread CVOC contamination in shallow soil vapor is not present on the MI. CVOCs greater than commercial VISLs in the site-wide samples (Figure 14) were limited to naphthalene in two soil PV samples and CF or TCE and 1,4-Dioxane in two sewer gas PV samples.

Nineteen initial or follow-up soil PV samples from TTA-1 (Figure 15) had CVOCs above the commercial VISL; most exceedances were for TCE or PCE, but two samples exceeded for naphthalene and one sample each for benzene and CF. Four of the soil PV samples with TCE or PCE above the commercial VISL were collected beneath Building 972. Only two soil PV

samples from TTA-2 (Figure 16) had a CVOC (TCE) above the commercial VISL, including a follow-up sample collected beneath Building 265.

The PV analytical results were used to select locations for Phase 2 sampling: 47 VMPs with screens in the loess, upper fluvial deposits, lower fluvial deposits or above the water table; two additional PV samplers in Building 972 to determine the extent of PV above the commercial VISL; and three sub-slab sample ports for active vapor sampling beneath Buildings 265 and 972. Installation of VMPs, PV samplers and sub-slab sample ports and vapor sampling was conducted in October and November 2023.

Active soil vapor sample results confirmed that the greatest concentrations of CVOCs are present in TTA-1 and TTA-2. Buildings with the greatest potential for a complete VI pathway are Buildings 260, 265 and 972 based on concentrations of CVOCs detected in soil vapor samples, slab foundations measuring less than 1 foot thick, and constructed for human occupancy. Indoor air and sub-slab soil vapor sample locations were identified for each of these buildings. Samples were collected in March and April 2024; samples analyses are in progress.

3.2 Dunn Field (OU-1)

Dunn Field, which is located across Dunn Avenue from the MI, contains approximately 67 acres and includes former mineral storage and waste disposal areas. Approximately 41 acres have been transferred through a public benefit conveyance and a competitive public sale; approximately 26 acres along the western and northern sides of Dunn Field are still held by Army (see Section 3.4).

Site investigations from 1998 to 2001 are described in the *Memphis Depot Dunn Field Remedial Investigation Report* (CH2M HILL, 2002). Site records indicated that chemical warfare material, chlorinated lime, super tropical bleach, and calcium hypochlorite, food stocks, paints/thinners, petroleum/oil/lubricants, acids, herbicides, mixed chemicals, and medical waste were destroyed or buried in pits and trenches at the Dunn Field disposal sites. Subsurface soils, including those from the disposal sites in the Disposal Area were considered to be principal threat wastes, which significantly degraded groundwater quality in the FDAQ. CVOCs were detected at elevated concentrations in subsurface soil samples collected in the Disposal Area.

Groundwater samples collected for the RI were analyzed for explosives, herbicides, metals (total), pesticides, PCBs, semi-volatile organic compounds (SVOCs), and VOCs; samples were also analyzed for chemical warfare materiel breakdown products. Only CVOCs were selected as COCs for groundwater; the CVOCs with the highest groundwater concentrations were 1,1,2,2-tetrachloroethane (TeCA) and TCE.

The RI identified three CVOC plumes in the FDAQ: a northern plume, a central plume, and a southern plume. The plume along the northern boundary of the site was determined to have on-site sources due to previous releases in the northwest section of the Disposal Area on Dunn Field and undetermined off-site sources based on CVOCs detected in off-site monitoring wells (MWs) upgradient of Dunn Field. The central and southern plumes had on-site sources due to

releases in the Disposal Area (Figure 4). The evaluation of remedial alternatives is described in the *Memphis Depot Dunn Field Feasibility Study Report* (CH2M HILL, 2003b).

3.2.1 Prior Remedial and Removal Actions

The following actions were taken on Dunn Field prior to the Dunn Field ROD in 2004. The locations are shown on Figure 4.

3.2.1.1 Interim Remedial Action

The *Record of Decision for Interim Remedial Action of the Groundwater at Dunn Field (OU-1)* (CH2M HILL, 1996) was signed in April 1996, with the objective of hydraulic containment to prevent further contaminant plume migration and to reduce contaminant mass in groundwater. The interim groundwater extraction system began operation in November 1998 with seven recovery wells (RWs); four additional RWs were brought on-line in 2001. Groundwater was discharged without treatment to the city sewer system under Industrial Discharge Agreement S-NN3-097.

Based on reduction of CVOC concentrations in groundwater following implementation of the Dunn Field ROD, all RWs were shut down by January 2009. Approximately 918 pounds of total VOCs were discharged by the interim remedial action (IRA) in just over 10 years of operation. The IRA system was removed and the RWs abandoned in July 2010. The final year of IRA groundwater monitoring and the closure activities were described in *2009 Operations and Closure Report, Dunn Field Groundwater Interim Remedial Action* (HDR, 2010).

3.2.1.2 Removal Actions

The following non-time critical removal actions were performed:

- Approximately 914 CY of soil contaminated with mustard degradation by-products, 19 CY of mustard-contaminated soil and 29 bomb casings were removed by ET&D at two separate locations on Dunn Field. The action was completed in March 2001 and documented in the *Final Chemical Warfare Materiel Investigation/Removal Action Report* (UXB International, Inc., 2001).
- Approximately 930 CY of lead-contaminated surface soil from the former pistol range were removed by ET&D. The action was completed in March 2003 and documented in *Removal Action at Former Pistol Range, Site* 60 (Jacobs Federal Programs, 2003a).

3.2.2 Record of Decision and ROD Amendment

The Dunn Field ROD (CH2M HILL, 2004a) was approved in April 2004 and the *Dunn Field Record of Decision Amendment* (ROD Amendment) (e^2M, 2009a) was approved in March 2009. The RAOs are:

<u>Surface Soil</u>

- Limit use of the surface soil in the Disposal Area to activities consistent with light industrial land use and prevent residential use through land controls.

Disposal Sites

- Prevent groundwater impacts from a release of buried containerized hazardous liquids and the leaching of contaminants from buried hazardous solids.
- Prevent unacceptable risk of direct contact with buried hazardous liquids and/or solids due to intrusive activities during future land use or site development.

Subsurface Soil Impacted with VOCs

- Prevent direct inhalation of indoor air vapors from subsurface soils in excess of industrial worker criteria.
- Reduce or eliminate further impacts to the shallow FDAQ from VOCs in the subsurface soil.

Groundwater

- Prevent human exposure to contaminated groundwater (i.e., exceeding protective target concentrations [TCs]).
- Prevent further off-site migration of VOCs in excess of protective target levels.
- Remediate FDAQ groundwater to drinking water quality to be protective of the deeper MAQ.

Remedial goal objectives for soil, vapor and groundwater included in the Dunn Field ROD are shown on Table 5. The soil screening levels for loess and fluvial deposits were used as RGs to be met by the RAs.

Since multiple CVOCs were detected in groundwater on Dunn Field and downgradient, targeting to meet the MCLs was not considered adequately protective of a potentially exposed receptor due to the possibility of cumulative toxicity exceeding the upper-bound limit of the acceptable risk or hazard index (HI). The individual concentration of each CVOC in plumes originating on Dunn Field are to be below MCLs and combined concentration levels are to be below a cumulative upper-bound target risk of 1 in 10,000 ($1x10^{-4}$) and a HI of 1.0 at each LTM well. Preliminary TCs for groundwater, which assume all primary CVOCs are present, are shown on Table 5.

The components of the selected remedy from the Dunn Field ROD are:

- ET&D of soil and material contained within disposal sites based upon results from a pre-design investigation.
- SVE to reduce VOC concentrations in subsurface soils to levels that are protective of the intended land use and groundwater.
- Injection of zero valent iron (ZVI) within Dunn Field to treat CVOCs in the most contaminated part of the groundwater plume, and installation of a permeable reactive barrier (PRB) to remediate CVOCs within the off-site areas of the groundwater plume.

- Monitored natural attenuation (MNA) and LTM of groundwater to document changes in plume concentrations, detect potential plume migration to off-site areas or into deeper aquifers, and track progress toward TCs.
- Implementation of LUCs, which consist of deed and/or lease restrictions; Notice of Land Use Restrictions; City of Memphis/Shelby County zoning restrictions and the Shelby County Health Department (SCHD) groundwater well restrictions.

The Dunn Field ROD identified the eastern portion of Dunn Field, including most of the Northeast Open Area and the Stockpile Area, as suitable for unrestricted use and unlimited exposure (Figure 4).

The fundamental change documented in the ROD Amendment was the use of air sparging with soil vapor extraction (AS/SVE) instead of a PRB for the Off Depot groundwater plume. The criteria used to determine the extent of the AS/SVE system, and the treatment objective were also included in the ROD Amendment. The AS/SVE system was selected to cross the core of the plume near the downgradient end and to reduce the individual CVOC concentrations in groundwater to 50 µg/L or less. The RGs and TCs for the COCs shown on Table 5 were not changed in the ROD Amendment.

Three RAs were performed to implement the selected remedies for OU 1, Dunn Field: Disposal Sites RA (ET&D); Source Areas RA (SVE, ZVI injections and LUCs); and Off Depot Groundwater RA (AS/SVE, MNA, and LTM). Locations of the Disposal Sites, Source Areas and Off Depot Groundwater RAs are shown on Figure 17.

The RAOs for surface soil, disposal sites and subsurface soil impacted with VOCs have generally been met through the RAs and LUCs. An area of soil contamination located outside the RA areas has been identified along the central, western boundary of Dunn Field; investigation and risk assessment have been performed and the need for additional action is being reviewed by the Army (see Section 3.2.7.2). The RAOs for groundwater have been partially met through the RAs and LUCs. Exposure to contaminated groundwater has been prevented because there are no current production wells on-site or within 0.5 miles of Dunn Field or the plume west of Dunn Field, and LUCs prevent installation of production wells within that area. Further off-site migration of VOCs has generally been prevented through the RAs.

Groundwater contaminants were reduced below MCLs and TCs by the RAs except in the Offsite plume along the northern boundary of Dunn Field. An investigation of the Offsite plume has provided multiple lines of evidence for an upgradient, offsite contaminant source for the plume (see Section 3.2.7.1). In addition, rebound in groundwater concentrations in two wells along the central, western boundary of Dunn Field led to the investigation noted above (see Section 3.2.7.2).

Groundwater has been remediated to groundwater quality (below MCLs and TCs) in most areas although several wells have concentrations above MCLs or TCs (Section 3.2.6). The active remediation goal of 50 µg/L for individual CVOCs has recently been achieved in the Off Depot wells. Additional information on remedial actions, groundwater monitoring, and land use controls is presented in following sections of this SMP.

3.2.3 Disposal Sites Remedial Action

Soil and debris including potential principal threat wastes (primarily drums and glass bottles) from five disposal sites were excavated and transported for off-site disposal in accordance with the *Memphis Depot Dunn Field Disposal Sites Final Remedial Design, Revision 1* (CH2M HILL, 2004b). The *Dunn Field Disposal Sites Remedial Action Completion Report, Revision 1* (MACTEC, 2006), was approved by USEPA in August 2006.

The Disposal Sites RA was performed during separate mobilizations in 2005 and 2006. Approximately 2,700 CY of non-hazardous materials were transported off-site and disposed at the BFI South Shelby County Landfill. Approximately 234 CY of hazardous materials from Disposal Site 3 was disposed at the Clean Harbors Lambton Secure Landfill in Canada. The confirmation samples met the RGs at each site.

3.2.4 Source Areas Remedial Action

The Source Areas RA included conventional SVE in the coarse-grained fluvial soils; ET&D for two shallow areas containing waste materials (TA-1F) and buried drums with residual petroleum hydrocarbons (TA-3); in situ thermal desorption (ISTD) in the fine-grained loess; and ZVI injection in the FDAQ. The RA was performed in accordance with the *Memphis Depot Dunn Field Source Areas Final Remedial Design* (Dunn Field RD) (CH2M HILL, 2007).

The *Source Areas Interim Remedial Action Completion Report, Dunn Field, Revision 1* (HDR|e^{2}M, 2009) was approved by USEPA and TDEC in November 2009. The *Dunn Field Operating Properly and Successfully Demonstration, Source Areas Remedial Action* (e^{2}M, 2009c) was approved by USEPA in October 2009.

The Fluvial SVE system was installed to remove CVOCs from the fluvial sands at Dunn Field with screened intervals for the SVE wells at approximately 30 to 70 feet bgs. The system was operated from July 2007 through July 2012 under SCHD Permit #01030-01P; permit conditions included an emission limit of 5.71 pounds per hour (lb/hr) for VOCs and annual reporting of emissions. The system was shut down in July 2012 based on confirmation soil sample results demonstrating that RAOs had been met; approximately 4,000 pounds of VOCs were removed during the five years of operation. The final year of operations and monitoring was described in *Dunn Field Source Areas Fluvial Soil Vapor Extraction System Annual Operations Report, Year Five, Revision 0* (HDR, 2012a), which was approved by USEPA and TDEC in December 2012.

The Fluvial SVE system has been left in place since shutdown in 2012. No further operation of the existing SVE system is planned. The SVE wells and VMPs will be abandoned in 2024, with the possible exception of SVE-F-W and VP-07A/B (Figure 18).

The initial excavations at TA-1F and TA-3 were performed October 2007 to January 2008. Further excavation was delayed in order to proceed with construction and operation of the ISTD system. The excavations were completed February to June 2009. Approximately 7,400 CY of waste material were disposed at a non-hazardous waste landfill approved for receipt of CERCLA waste. Soil confirmation samples met RGs in both areas.

ISTD treatment was performed in four areas with a total area of about 1.25 acres and a treatment interval of approximately 5 to 30 feet bgs. The thermal conduction wells operated from May to November 2008, and the vapor extraction system from May to December 2008. Approximately 12,500 pounds of VOCs were removed during treatment. Confirmation soil samples demonstrated that clean-up standards were met.

ZVI injections were not required because groundwater objectives for the Source Areas remedy were achieved through the subsurface soil remedies.

3.2.5 Off Depot Groundwater Remedial Action

3.2.5.1 Early Implementation

An Early Implementation of Selected Remedy (EISR) using ZVI was performed to reduce contaminant mass downgradient of the planned PRB in order that the portion of the plume slated for MNA in the ROD was not unduly extensive or high in concentration. ZVI injections were made November 2004 to January 2005. The *EISR Interim Remedial Action Completion Report, Revision 1* (MACTEC, 2005) noted that the injections did not achieve the goal of 90 percent or greater reduction of TCE and TeCA and the report included recommendations for decreased spacing between injection locations to achieve increased reduction in CVOCs. The report was approved by USEPA in September 2005.

3.2.5.2 AS/SVE

The Off Depot Groundwater RA included installation of an AS/SVE system across the core of the plume near the downgradient end; MNA and long-term groundwater monitoring to document remedy performance and/or changes in the lateral or vertical extent of the CVOC plume; and LUCs to prevent access to contaminated groundwater. The AS/SVE system was constructed in accordance with the *Memphis Depot Dunn Field Off Depot Groundwater Final Remedial Design, Revision* 1 (Off Depot RD) (CH2M HILL, 2008). Remedial action construction and initial operations are described in *Off Depot Groundwater Interim Remedial Action Completion Report, Revision 1* (Off Depot IRACR) (HDR, 2011), which was approved by USEPA in August 2011.

The AS/SVE system has 95 AS points, 12 SVE wells, 10 pairs of VMPs and control buildings for the AS compressor, SVE blowers and system controls. The AS/SVE system layout and nearby monitoring wells are shown on Figure 19.

The latest annual report, *Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 11 (August 2021 through July 2022), Defense Depot Memphis Tennessee, Revision 1* (Trinity, 2023), was submitted 21 July 2023. TDEC stated they had no comments on the report in a letter dated 9 March 2023, and USEPA approved the report in a letter dated 10 October 2023. The Year 12 annual operations report is in preparation.

The AS/SVE system was limited to full operations in alternate months to maintain northerly groundwater flow in the treatment area. The system uptime in Year 11 was approximately 90 percent during periods of full operation. The SVE system extracted over three times the AS injection rate, and vacuum measurements indicated vapor capture throughout the treatment area during Year 11. Total CVOC concentrations, based on the primary CVOCs in effluent

vapor samples, ranged from 50.1 to 61.8 parts per billion by volume (ppbV). Total VOC concentrations, which includes other VOCs, ranged from 58.1 to 67.5 ppbV.

The estimated VOC emission rate in the effluent during Year 11 was 0.0007 lb/hr, below the SCHD de minimus standard of 0.1 lb/hr. Approximately 92.9 pounds of VOCs have been removed since startup in 2009.

The Dunn Field ROD Amendment (e2M, 2009a) states the AS-SVE system is expected to reduce individual CVOC concentrations below 50 µg/L and will continue to operate until the influent (upgradient) concentrations from the Dunn Field plume do not exceed 50 µg/L for individual CVOCs. The Off Depot RD (CH2M HILL, 2008) states system shutdown should be considered when groundwater samples collected upgradient and downgradient of the AS barrier show individual COC concentrations at or below 50 µg/L for 12 months, and that isolated upgradient outliers may be excluded from consideration if surrounding wells show statistically significant decreasing trends.

Site conditions met these criteria and the AS/SVE system was shut down following completion of Year 12 operations on 31 July 2023. MW-159, which is located immediately upgradient of the AS/SVE system, has been the only Off Depot well to exceed 50 µg/L for an individual CVOC (TCE) since 2012. The TCE concentration at MW-159 has been below 50 µg/L in eight consecutive samples collected since 13 December 2021; the concentration in the most recent sample, collected 8 June 2023, was 30.8 µg/L. The only other Dunn Field wells with individual CVOC concentrations above 50 µg/L in the April 2023 LTM event were MW-322 with TCE at 73.8 µg/L and MW-328 with CF at 117 µg/L. MW-322 is located across Hayes Road near the northeast corner of Dunn Field, and MW-328 is located along the western boundary of Dunn Field near MW-06. The off-site wells located closest to MW-328, MW-71 and MW-184, had CF concentrations of 17.9 µg/L and 14.9 µg/L, respectively.

3.2.6 Long-Term Monitoring

From 1999 to 2010, groundwater monitoring on Dunn Field was conducted to evaluate IRA effectiveness in restricting plume migration. Since 2010, groundwater monitoring has been conducted to evaluate progress in preventing further off-site plume migration and restoring FDAQ groundwater to drinking water quality for protection of the deeper MAQ in accordance with the LTM Plan in Appendix C of the Off Depot RD (CH2M HILL, 2008). LTM sample analyses include most USEPA TCL VOCs; analytical summary tables include the primary CVOCs and other VOCs detected above the laboratory LOQ in one or more samples. The primary CVOCs for Dunn Field are the groundwater contaminants detected most frequently: CT, CF, 1,1-dichloroethene (DCE), trans-1,2-dichloroethene, cDCE, TeCA, PCE, 1,1,2-trichloroethane (TCA), TCE, and VC.

As noted in Section 3.1.4, LTM wells are assigned to the FDAQ, IAQ or MAQ. In addition, the Dunn Field (DF) LTM wells are grouped in the following area/plumes: Offsite, DF West, Off Depot and Background.

In 2023, Dunn Field LTM comprises 90 wells. The LTM wells are listed on Table 6 and the well locations, color-coded by area, are shown on Figure 20. The number of wells and sample frequencies by aquifer are:

- 85 FDAQ – semiannual (8), annual (21) and biennial (56);
- 4 IAQ/UC – annual (2) and biennial (2); and
- 1 MAQ – biennial (1).

Selected monitoring wells (MW-322, MW-323, MW-324, MW-328 and MW-329) installed in 2020 and 2021 for additional investigations (see Section 3.2.7 below) have been incorporated in LTM.

The April 2023 LTM event consisted of a water level sweep and biennial groundwater sampling at all Dunn Field LTM wells. The analytical results for the primary CVOCs from the April 2023 event were reviewed to evaluate extent of contamination and prepare CVOC concentration maps. The analytical results discussed herein will be presented in the 2023 annual LTM report.

The number of Dunn Field LTM wells with primary CVOCs exceeding an MCL or TC in the April 2023 samples, and the maximum concentration for those CVOCs, are summarized by aquifer and area on Table 7. A total of 22 Dunn Field LTM wells had concentrations above an MCL or TC for one or more primary CVOCs; all 22 wells are screened in the FDAQ and 11 of the wells are located along the northern boundary of Dunn Field or off-site near that area. TCE was most often detected above MCLs and had a maximum concentration of 73.8 µg/L (MW-322). Concentrations and isopleths for total CVOCs and TCE from the April 2023 LTM event are shown on Figures 21 and 22.

3.2.7 Additional Investigations

3.2.7.1 Offsite Plume Investigation

The offsite groundwater investigation (OSI) was conducted to evaluate the potential for offsite source(s) of groundwater contamination upgradient of Dunn Field. Nine OSI wells (MW-319 to MW-327) were installed and sampled in June 2020; the OSI wells and 10 existing wells installed by TDEC were then sampled quarterly for one year (Figure 23). Three of the OSI wells (MW-322 to MW-324) have been incorporated in LTM for Dunn Field; the other six wells will be abandoned in 2024.

The investigation found that groundwater analytical results provide sufficient evidence of an unidentified contaminant source contributing to contaminant concentrations in groundwater on Dunn Field. DCE concentrations above the MCL are currently limited to wells north of Dunn Field. TCE concentrations above the MCL are present at least 300 feet northeast of Dunn Field, and TCE and PCE concentrations above the LOQ are present at least 500 feet northeast of Dunn Field. The *Offsite Groundwater Investigation Report, Revision 1* (HDR, 2022e) was submitted to USEPA and TDEC in October 2022; responses to comments and correspondence from TDEC, USEPA and Army are appended to the report.

3.2.7.2 Dunn Field West Investigation

CVOC concentrations in LTM wells south of the offsite plume and immediately west of the boundary were reduced below MCLs or TCs between April 2007 and April 2012 and have generally remained below those limits; MW-06 and MW-87 are the only wells to exceed the limits for extended periods since 2012. CVOC concentrations at MW-87 began to rebound in 2013; concentrations increased above the MCL for TCE in April 2016 and for CF in April 2017. In May 2020, CVOC concentrations at MW-06 increased above MCLs for TCA and TCE and above TCs for TeCA and CF. Supplemental investigation at Dunn Field West (DFW) was conducted to evaluate the source of increasing CVOC concentrations in groundwater in preparation for the planned transfer of the remaining government-owned property on Dunn Field.

Soil, soil vapor and groundwater samples were collected from May 2020 to August 2021 and analyzed for VOCs; these and previous analytical results were evaluated through a human health risk assessment. The investigation concluded that residual contamination in Treatment Area 3, located southeast of MW-87 is the most likely source of increased concentrations observed at MW-87 (Figure 17). The investigation also identified an area of residual soil contamination with CVOC and petroleum-related VOC concentrations above screening levels and groundwater contamination, with TeCA, TCA, CF and TCE above MCLs and/or TCs for TeCA, TCA, CF and TCE (Figure 24).

The *Dunn Field West Post-ROD Supplemental Investigation Report, Revision 1* (HDR, 2023c) was submitted to USEPA and TDEC in April 2023. The report noted the potential for unacceptable hazards from exposure to chemicals of potential concern in soil, groundwater and soil vapor for future onsite workers and current and future offsite residents. However, there are no complete pathways of exposure at this time; Dunn Field is not developed, and potable groundwater is provided by MLGW. Exposure pathways for current off-site residents are not believed to be complete; soil contamination is limited to Dunn Field, potable groundwater is provided by MLGW; only CF and TCE have been detected in wells located west of Dunn Field, slightly above the groundwater VISL (TCR of 1E-06, THQ of 0.1). The report referenced a 2009 VI study (HDR, 2011) in the Off Depot area that indicated the loess and upper fluvial deposits provide a good barrier to vertical migration of soil vapor from groundwater contaminants.

Additional study is planned to evaluate the potential for unacceptable risks to current off-site residents from COCs in soil vapor via the VI pathway. Additional vapor sampling will be performed from the western boundary of Dunn Field along the core of the plume west of Dunn Field (MW-06 to MW-184) to determine if elevated COC concentrations in soil vapor present a potential unacceptable VI risk to current off-site residents on Rozelle Street. Vapor samples will also be collected from existing VMPs on Dunn Field near MW-06 (Figure 25). The *Dunn Field West Vapor Intrusion Sampling and Analysis Plan, Revision 1* (DFW VI SAP; HDR, 2024) was submitted to USEPA and TDEC in January 2024; responses to comments and correspondence from TDEC and USEPA are appended to the report.

The need for additional remedial action for the identified soil and groundwater contamination in DFW prior to property transfer is being reviewed.

3.3 Additional Site-wide Investigation

USEPA has identified per- and polyfluoroalkyl substances (PFAS) as emerging constituents of concern (USEPA, 2022a). A Preliminary Assessment (PA) for PFAS-containing materials has been conducted in accordance with Army guidance (U.S. Army 2018) to identify areas of potential interest (AOPIs) based on use, storage, or disposal of potential PFAS-containing materials, including aqueous film-forming foam (AFFF). The PA for DDMT was performed to assess potential PFAS release areas and exposure pathways; the PA report (Leidos, 2023a) was completed in August 2023.

The PA included the following tasks:

- Review of available records (e.g., aerial photography, historical maps, technical reports, previous studies, investigations) from online sources, environmental investigations and/or regulatory programs, and internal Army documents from the Administrative Record. In addition, an Environmental Data Resources, Inc. (EDR) Report for DDMT and any listed sites within and up to a 2-mile search distance was conducted.
- A 1-day site visit on August 24, 2021, to identify potential sources of PFAS and gather information for developing CSMs at AOPIs.
- Interview of individuals with historical and present-day knowledge of operations on the BRAC property.

The entire DDMT installation was assessed, and 28 preliminary areas were identified and evaluated for potential use, storage and/or disposal of PFAS-containing materials. These areas were further refined during the PA and either identified as an area not retained for further investigation or as an AOPI. Six of the preliminary areas were identified as AOPIs:

- Five AFFF storage and/or release areas (Buildings 529, 560, 865, and 873, and Building 308/DRMO concrete hardstand [Figure 3]).
- One crash site with potential AFFF use (Building 550) and the associated remnant burial site (Dunn Field Site 18 [Figure 5]).

A site-specific CSM was developed for each AOPI based on an assessment of existing records, personnel interviews, and site reconnaissance trips. The CSMs developed for this PA did not identify any of the AOPIs as currently impacting on-post drinking water receptors. However, the exposure pathway for off-post drinking water receptors is considered potentially complete.

A Site Investigation (SI) was conducted in accordance with USEPA guidance and DoD policy and guidance for perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), perfluorobutane sulfonate (PFBS), perfluorononanoic acid (PFNA), perfluorohexane sulfonate (PFHxS), and hexafluoropropylene oxide dimer acid (HFPO-DA) (also known as GenX). The samples collected during this SI were compared to risk screening levels (SLs) established as the residential scenario SLs calculated using the USEPA RSL calculator for soil and the tap water criteria for groundwater (DoD, 2022). The SI Report was completed in November 2023 (Leidos, 2023b).

SI field activities at DDMT were conducted in March 2023. Samples were collected for surface and subsurface soil from soil borings, groundwater from existing monitoring wells, and sediment and surface water where these media were present at the AOPIs. Samples were analyzed for 26 PFAS by liquid chromatography with tandem mass spectrometry (LC/MS/MS) procedure to determine the presence or absence of Target PFAS. A total of 79 samples were collected among the 6 AOPIs: 24 existing monitoring well groundwater samples, 14 surface soil samples, 36 subsurface soil samples, 4 surface water samples, and 1 sediment sample. In addition, 8 samples were collected from existing perimeter monitoring wells. Groundwater and soil (surface and subsurface) samples were collected in all six AOPIs; surface water samples were collected in three AOPIs (Building 560, Building 308 and Site 18) and sediment samples were only collected at one AOPI (Building 560).

Detected concentrations of Target PFAS in samples collected during this SI were compared to residential scenario SLs calculated using the USEPA RSL calculator for soil and the tap water criteria for groundwater and a target hazard quotient (HQ) of 0.1. Residential tap water SLs are used to evaluate groundwater and surface water data. Residential soil SLs are used to evaluate soil and sediment data. The surface water and sediment data are qualitatively evaluated against the SLs. The screening levels are listed below.

Chemical	Residential Tap Water HQ = 0.1 (ng/L or ppt)	Residential Soil HQ = 0.1 (µg/kg or ppb)
HFPO-DA	6	23
PFBS	601	1,900
PFHxS	39	130
PFNA	6	19
PFOA	6	19
PFOS	4	13

Groundwater samples exceeded SLs at each AOPI, and surface water samples exceeded SLs at one AOPI (Building 560). Soil and sediment samples did not exceed SLs. All six AOPIs were recommended for further study.

The PFAS PA and SI reports for DDMT were provided to USEPA and TDEC. Agency comments will be reviewed and used in scoping the PFAS RI for DDMT, and the RI sampling and analysis plan will be provided to USEPA and TDEC for review. Contracting for PFAS RIs is in progress at all BRAC sites where an RI is needed, including DDMT. A task order for the PFAS RI at DDMT is expected to be awarded in September 2024. Further information on the scope and schedule for the RI will be provided as it becomes available.

3.4 Property Transfer and Land Use Controls

All DDMT property has been made available for transfer through six Findings of Suitability to Transfer (FOSTs). The FOSTs summarize how applicable requirements and notifications for hazardous substances on the property were satisfied in order for DoD to provide the applicable CERCLA 120(h)(3) or CERCLA 120(h)(4) covenants. Each FOST states the property is

environmentally suitable for transfer and contains a description of any long-term remedies (including land-use controls) and responsibilities for their maintenance and reporting. For NPL sites, such as DDMT, the FOST is forwarded to the State and to USEPA for review and comment, but approval is not required. A notice of the intent to sign a FOST is published and the FOST, the environmental baseline study and other supporting documentation are made available for a 30-day comment period (DoD, 2006).

The area covered by each FOST is shown on Figure 26. Following approval of FOST 6, USEPA issued the *Superfund Property Reuse Evaluation Checklist for Reporting the Site Wide Ready for Anticipated Use Measure* (USEPA, 2010b) documenting that all cleanup goals affecting current and reasonably anticipated future land uses have been achieved, and all institutional or other controls required in the RODs have been put in place. This was based on USEPA concurrence with interim remedial action completion reports for DDMT and findings that remedies were 'operating properly and successfully', and on implementation of requirements of the approved LUCIP.

Property transfers through deed or letter of assignment have been completed for all FOSTs, except for 26 acres in the western and northern area on Dunn Field, shown as DF West on Figure 26. The acreage, type of conveyance, type of transfer, receiving party and date of transfer are listed on Table 8. DF West was approved for transfer through FOST #5 in June 2010. However, the property has not been transferred as of October 2023.

The Army plans to transfer DF West through a competitive public sale. Additional remedial action, if necessary, will be performed prior to transfer. In accordance with the FFA, an amendment to FOST #5 will be prepared to describe the provisions made for the continued operation and maintenance of any response and/or corrective action(s) installed or implemented on the property for concurrence by USEPA and TDEC. The Amendment will also document material changes that have occurred since FOST 5 was completed. Deeds transferring real property from DoD will contain, to the extent required by law, the notices, descriptions, and covenants specified in Section 120(h) of CERCLA and be submitted to USEPA for concurrence.

An Environmental Condition of Property (ECP) Update for DF West will be prepared to identify any environmental conditions that may have changed materially since completion of the 2014 ECP Update and to identify any recognized environmental conditions (REC) on Dunn Field prior to disposal.

DDMT is currently zoned for light industrial use. The MI is used for commercial warehousing and light manufacturing, except in the southeast quadrant of the MI where the Airways police station, a homeless shelter for veterans and a golf course are located; Dunn Field is undeveloped (Figure 2). The current property owners, acreage and land use are listed on Table 9.

LUCs have been established for the MI and Dunn Field and will remain in place until concentrations of COCs have been reduced to levels that allow for unlimited use and unrestricted exposure. Annual inspections are conducted to determine whether the required LUCs remain effective and that land use restrictions are being achieved.

The *2023 Annual Site Inspection Report, Revision 0* for land use controls was submitted to USEPA and TDEC for review in August 2023. TDEC approved the report in September 2023. USEPA comments on the report were received in September 2023; resolution of the comments is progressing through discussions and correspondence between Army and USEPA. The LUCs and the results of the 2023 site inspection are presented in the following sub-sections.

3.4.1 Main Installation

LUCs for the MI are described in the LUCIP in Appendix C of the MI RD (CH2M HILL, 2004c). The LUCs prevent residential use for the majority of the MI and production or consumptive use of groundwater or drilling of groundwater supply wells throughout the MI; the areas covered by the LUCs are shown on Figure 27.

The MI LUCIP was implemented in 2005. The Notice of Land Use Restrictions for the MI was recorded at the City of Memphis/Shelby County Register of Deeds in January 2005. Deed restrictions were included in property transfers from Army. Annual inspections have been performed since 2005 and reports have been distributed in accordance with the LUCIP. The 2023 site inspection did not identify any deficiencies.

3.4.2 Dunn Field

LUCs for Dunn Field are described in the LUCIP in Appendix A of the Off Depot RD (CH2M HILL, 2008). The LUCs are to limit use of the Disposal Area to light industrial land uses, to prevent residential use of Dunn Field, and to prevent exposure to contaminated groundwater. The majority of the eastern section of Dunn Field was approved for unrestricted use in the Dunn Field ROD (CH2M HILL, 2004a). The areas covered by the LUCs are shown on Figure 28.

The Dunn Field LUCIP was implemented in 2009. The Notice of Land Use Restrictions for Dunn Field was recorded at the City of Memphis/Shelby County Register of Deeds in June 2009. Annual inspections have been performed since 2009 and reports have been distributed in accordance with the LUCIP. The 2023 site inspection report did not identify any deficiencies.

4 Activities Required for Site Completion

Selected remedies for DDMT have been implemented in accordance with the MI ROD and the Dunn Field ROD Amendment, and the IRACRs have been approved by USEPA and TDEC. The Preliminary Closeout Report (USEPA, 2010a) has been issued, and the NPL site status is Construction Complete.

The selected remedies met soil cleanup standards. The remaining requirement for completion of remedial action is that groundwater concentrations for CVOCs, which are the contaminants of concern, are below MCLs.

Ongoing and planned activities are summarized below. The timeline for site activities is discussed in Section 4.3.

- The 2022 MI FFS Report Revision 0 (HDR, 2022c) was submitted to USEPA and TDEC for review on 30 September 2022 (Section 3.1.5). USEPA comments were received in December 2022 and January 2023; resolution of the comments is progressing through discussions and correspondence between Army and USEPA. TDEC approved the FFS in January 2023. Following completion of the FFS, Army will prepare a Revised Proposed Plan and conduct a public meeting and comment period; a ROD Amendment will then be prepared as necessary to document changes to the selected remedy. Further RA will be implemented after completion of the ROD Amendment and the remedial design.
- The HHERA Review SAP Revision 1 (HDR, 2022a) was submitted to USEPA and TDEC in May 2022. Soil, sediment and surface water samples were collected in accordance with the SAP in July and August 2022. The Sampling and Risk Screening Report, Revision 0 (HDR, 2023a) was submitted to USEPA and TDEC for review on 17 February 2023 (Section 3.1.6). TDEC approved the report in May 2023. USEPA comments on the report were received in May 2023; resolution of the comments is progressing through discussions and correspondence between Army and USEPA.
- The MI VI SAP Revision 1 (HDR, 2023b) for determination of VI impacts on the MI was submitted in May 2023 (Section 3.1.7). The initial phase of building inspections and passive vapor sampling was completed in August 2023. Installation of VMPs and active vapor sampling began in October 2023 and will be followed by sub-slab vapor and indoor sampling in accordance with the SAP.
- The AS/SVE system has met the criteria for shutdown in accordance with the Dunn Field ROD Amendment (e^2M, 2009a) and the Off Deport RD (CH2M HILL, 2008). System operations ended upon completion of Year 12 operations on 31 July 2023 (Section 3.2.5.2). Groundwater monitoring will be conducted through LTM for two years to observe whether individual CVOC concentrations rebound above 50 µg/L. Caretaker visits to the AS/SVE building are being conducted to exercise the equipment and check on security and climate control..

- The DFW VI SAP will be revised to incorporate final responses to USEPA comments and will be implemented following approval (Section 3.2.7.2). Vapor sampling will be conducted to determine whether soil vapor concentrations present an unacceptable VI risk to current residents and if further action is needed.
- Additional PFAS study is required to determine whether potential exposure pathways are complete. The need for additional study has been recently identified; the study activities and schedule are not yet identified.
- The need for additional remedial action for soil and groundwater contamination identified by the DFW investigation (HDR, 2023c) is being reviewed. Although the review is not complete, potential activities for site completion have been added to the schedule (Section 4.3): Dunn Field Explanation of Significant Differences (ESD), DFW Remedial Action Work Plan (RAWP), remedial action and DFW Remedial Action Completion Report (RACR).
- An Environmental Condition of Property Update and a FOST 5 Amendment (Section 3.4) will be prepared for the planned transfer of Dunn Field West.
- LTM at the MI (Section 3.1.4) and Dunn Field (Section 3.2.6) will continue until CVOC concentrations are at or below MCLs for the MI, and at or below MCLs and TCs for Dunn Field.

4.1 Land Use Controls

The LUCs applicable to the MI and Dunn Field are described in the LUCIPs in the MI RD (CH2M HILL, 2004c) and the Off Depot RD (CH2M HILL, 2008). The areas covered by the LUCs are shown on Figures 27 and 28. LUCs will remain in place until concentrations of contaminants of concern have been reduced to levels that allow for unlimited exposure and unrestricted use (UE/UU). The cleanup levels in the MI and Dunn Field ROD will not reduce contaminants sufficiently for UE/UU and the LUCs will remain in place for an indefinite period. As described in Section 3.4, annual inspections are conducted to determine whether the required LUCs remain effective and that land use restrictions are being achieved. No deficiencies were identified in 2023.

4.2 Five-Year Reviews

The continued effectiveness of the selected remedies at the MI and Dunn Field are evaluated in CERCLA FYRs because hazardous substances remain at the site above levels that allow for unrestricted use and unlimited exposure. Because the final remedies for both the MI and Dunn Field include LUCs in perpetuity, the period over which FYRs will be required is indefinite.

The initial statutory review, *Memphis Depot, Dunn Field Five Year Review* (CH2M HILL, 2003a), was triggered by initiation of the IRA groundwater recovery system at Dunn Field on DDMT in 1998. The *Second Five-Year Review, Revision 1* (e^2M, 2007) was approved in January 2008, and the *Third Five-Year Review, Revision 1* (HDR, 2012b) was approved in January 2013. The

Fourth Five-Year Review, Revision 2 (HDR, 2018) was approved and signed by USEPA in April 2018.

The Fifth FYR was conducted from March to June 2022 in accordance with *Comprehensive Five-Year Review* Guidance (USEPA, 2001). The findings for the MI were generally the same as in the Fourth FYR; issues and recommendations regarding the selected remedy and the VI Study were identified. The status of the SRI and the FFS were discussed in Section 3.1.5 and the VI study in Section 3.1.7. The Fifth FYR identified a new issue resulting from the DFW supplemental investigation (Section 3.2.7.2), which identified residual soil contamination and potential vapor intrusion hazard to future onsite workers and offsite residents. This issue is considered by Army to affect future protectiveness but not current protectiveness. A second new issue, which is not considered to affect protectiveness, is the potential presence of PFAS discussed in Section 3.3. The issues, recommended actions and target completion dates are shown on Table 10.

The *Fifth Five-Year Review, Revision 0* (FYR; HDR, 2022d) was submitted to USEPA and TDEC for review on 9 September 2022. USEPA submitted comments on 10 November 2022. TDEC approved the FYR without comment on 22 November 2022. Army and USEPA corresponded regarding the comments and Army responses. USEPA submitted a letter dated 24 January 2023 with revised Issues/Recommendations and Protectiveness Determinations. The primary revision was a Protectiveness Deferred determination for OU 1, Dunn Field due to the potential risk from VI exposure for offsite residents west of Dunn Field. Army, USEPA and TDEC participated in a conference call on 21 February 2023 to discuss the site conditions and extent of contamination in soil, soil vapor and groundwater on Dunn Field and in the residential area to the west. USEPA and TDEC concurred with a general plan presented by Army for additional VI investigation in the area (Section 3.2.7.2).

The *Fifth Five-Year Review, Revision 1* (HDR, 2023d) was added to the DDMT AR on 5 June 2023 and a public notice was included in *The Commercial Appeal* on 14 June 2023. Army and USEPA will submit a final determination of protectiveness upon completion of activities conducted to evaluate the potential VI risk for Dunn Field and the residential area to the west. Army is providing semiannual status letters for the DDMT FYR Addendum activities to USEPA and TDEC.

4.3 Timeline for Site Completion

The master schedule, shown on Figure 29, lists activities and documents for the MI, Dunn Field and site-wide through planned site completion in November 2043. The schedule notes the status of each document as ’P’ for primary and ‘S’ for secondary as defined in the FFA, Section XV (USEPA, 1995) as defined and identified in the FFA, Section XV (USEPA, 1995). Primary Documents include those reports, plans and studies that are major, discrete portions of the response action process and the specified dates are deadlines. Secondary Documents include those reports, plans and studies that are discrete portions of the Primary Documents and the specified dates are targets.

The planned completion date is approximately one year later than the date in the 2023 SMP. The estimated timeline for site completion includes the following:

- Main Installation Update
  - FFS to be completed in May 2024.
  - MI Sampling and Risk Screening Report to be completed in May 2024.
  - MI VI study to be completed in July 2025.
  - ROD Amendment to be final in September 2025.
  - Preliminary Design Investigation to be completed in April 2026.
  - New MI RD to be completed in June 2026.
  - MI RAWP to be completed in December 2026.
  - Additional RA from January 2028 through January 2033.
  - MI LTM and LUC monitoring through 2041 with final LTM quarterly compliance monitoring in 2042.
  - MI Remedial Action Completion Report to be completed in November 2043.
- Dunn Field Update
  - Dunn Field ESD for Dunn Field West to be completed in January 2025.
  - Dunn Field West VI Investigation to be completed in July 2025.
  - Dunn Field West property transfer to be completed in March 2026.
  - Dunn Field West Remedial Action to be completed in June 2029.
  - Dunn Field LTM and LUC Monitoring through 2030 with final quarterly compliance monitoring in 2031.
  - Dunn Field Remedial Action Completion Report to be completed in November 2032.
- Final Closeout Report to be completed in November 2043.

The timeline described above is considered a reasonable estimate given current information. Significant variables include the time required for additional RA to achieve RAOs on the MI and Dunn Field West, the extent of further action near the PCP Dip Vat to reduce risks from dioxins-furans in surface soils to acceptable levels, and whether additional RA is necessary on the MI following completion of the MI VI study.

The schedule assumes five years of additional active remediation followed by ten years of LTM at the MI. The schedule also assumes additional remedial action for Off Depot Groundwater will not be required following two years of monitoring LTM results for rebound.

5 Schedule and Fiscal Year Requirements

5.1 Response Schedules

The environmental restoration activities currently planned for the next three fiscal years are summarized below. Table 11 lists primary and secondary documents for the DDMT environmental restoration program through FY26.

5.1.1 FY24

- MI RA
  - Complete the FFS report.
  - Begin the Revised Proposed Plan.
- MI Risk Assessment
  - Complete the Sampling and Risk Screening Report for soil, sediment and surface water.
  - Begin dioxin/furan delineation sampling in the Dip Vat Area
- MI VI Study
  - Complete soil vapor, sub-slab and indoor air sampling and analyses
- MI LTM
  - Perform groundwater monitoring in accordance with LTM plan.
- Off Depot/ Dunn Field West RA
  - Complete Year 12 AS/SVE Operations report.
  - Evaluate LTM results in Off Depot wells for rebound of CVOCs in groundwater.
  - Begin Dunn Field ROD modification for DFW RA.
  - Begin DFW RAWP.
- Dunn Field West VI Study
  - Obtain access agreements for offsite vapor sampling. Install VMPs and collect vapor samples.
- Dunn Field LTM
  - Perform groundwater monitoring in accordance with LTM plan.
- Site-wide Continuing Activities
  - Complete 2024 SMP
  - Complete Annual LTM Report-2023.
  - Conduct annual LUC inspections and complete report.
  - Maintain phoneline for community comments and questions.
  - Distribute annual newsletter to community and civic officials.
  - Maintain administrative record and information repository.
  - Award task order for PFAS RI.

5.1.2 FY25

- MI RA
  - Conduct the public meeting and complete the Revised Proposed Plan.
  - Complete the ROD Amendment.
  - Begin the Preliminary Design Investigation.

- MI Risk Assessment
  - Complete dioxin/furan delineation sampling, risk screening and reporting in the Dip Vat Area

- MI VI Study
  - Complete MI VI analytical data review and risk screening.
  - Complete the MI VI Study report with recommendations for additional action, if necessary.

- MI LTM
  - Perform groundwater monitoring in accordance with LTM plan.

- Off Depot/ Dunn Field West RA
  - Complete monitoring for rebound of CVOCs in groundwater, statistical analysis and compliance monitoring report, with recommendation for AS/SVE system abandonment or additional remedial action.
  - Complete Dunn Field ROD modification for DFW RA.
  - Complete DFW RAWP.
  - Begin DFW RA.

- Dunn Field West VI Study
  - Complete DFW VI data validation, risk screening and reporting.

- Dunn Field West Property Transfer
  - Begin FOST 5 Amendment 2.

- Dunn Field LTM
  - Perform groundwater monitoring in accordance with LTM plan.

- Site-wide Continuing Activities
  - Complete 2025 SMP.
  - Complete Annual LTM Report-2024.
  - Conduct annual LUC inspections and complete report.
  - Maintain phoneline for community comments and questions.
  - Distribute annual newsletter to community and civic officials.
  - Maintain administrative record and information repository.
  - Begin PFAS RI.

5.1.3 FY26

- MI RA
  - Complete the Preliminary Design Investigation
  - Begin the new MI Remedial Design.
- MI LTM
  - Perform groundwater monitoring in accordance with LTM plan.
- Dunn Field West RA
  - Continue DFW remedial action.
- Dunn Field West Property Transfer
  - Complete DFW public sale and transfer.
- Dunn Field LTM
  - Perform groundwater monitoring in accordance with LTM plan.
- Site-wide Continuing Activities
  - Complete 2026 SMP.
  - Complete Annual LTM Report-2025.
  - Conduct annual LUC inspections and complete report.
  - Maintain phoneline for community comments and questions.
  - Distribute annual newsletter to community and civic officials.
  - Maintain administrative record and information repository.
  - Continue PFAS RI.

5.2 Requirements by Fiscal Year

The financial requirements by fiscal year for the environmental program at DDMT are summarized in Table 12, which lists estimated annual costs on a site-wide basis. These requirements are revised annually in accordance with updates to the cost-to-complete database (Headquarters Army Environmental System) maintained by Army.

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Tables

TABLE 1
FUNCTIONAL UNIT AND AREA DESCRIPTIONS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Main Installation

Functional Unit	Name	Size[1] (Acres)	Common Past Land Use	Description
1	Twenty Typical Warehouses	89	Transportation to and storage in closed warehouses	Located in the northeastern area of the MI, consisting of about 20 large warehouses, with interspersed roadways and railroad tracks.
2	Southeast Golf Course/ Recreational Area	53	Golf, other recreation	Located in the southeastern corner of the MI, consisting of golf course (Parcel 3). This FU also includes a baseball field and a small playground in the southeastern corner. This FU includes two constructed ponds and two concrete-lined drainage ditches from the ponds leading to the off-site area.
3	Southwest Open Area	92	Transportation to and storage in open-sided warehouses, painting and sandblasting, open storage	Located in the southwestern corner of the MI, consisting of varied type of parcels and sites.
4	Northern and Open Areas	193	Open storage, and transportation to and storage in closed warehouses	Located in the north-central to northwest area of the MI, covering a large area.
5	Newer Warehouses	109	Transportation to and storage in closed warehouses	Located in the south-central area of the MI and includes 10 large warehouse buildings.
6	Administrative and Residential Areas	33	Offices, equipment storage and maintenance, on-base housing	Located along the property boundary of the Depot along the Airways Boulevard. This FU includes the old Residential Unit Area, parking lots, and other asphalt-paved areas.
7	Groundwater at the Main Installatiion	-	No past use of groundwater	Includes all groundwater beneath the Main Installation.

Dunn Field

Area	Size[1] (Acres)	Description
Northeast Open Area	20	Land in the northeast quadrant of Dunn Field, mostly grass covered with some lightly wooded areas.
Disposal Area	14	Open land in the northwest quadrant of Dunn Field, where the majority of disposal sites are located.
Stockpile Area	30	Open land in the southern half of Dunn Field. Area of former bauxite and fluorspar stockpiles (removed in 1999) and burial areas in the eastern and southwestern portions of Dunn Field.

Notes:
1) Acreage is approximate
FU: Functional Unit
MI: Main Installation

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
Operable Unit 1: Dunn Field			
1	36.16	Mustard and Lewisite Training Sets (9 sets) Burial Site (1955)	A CERCLA Removal Action took place for this area in 2000-2001. No further action is required for this site.
2	36.1	Ammonia Hydroxide (7 pounds) and Acetic Acid (1 gallon) Burial (1955)	No further action is required for this site.
3	36.2	Mixed Chemical Burial Site (orthotoluidine dihydrochloride) (1955)	The selected CERCLA remedy included excavation of contaminated soils/waste materials and off-site disposal. Excavation of this site began in March 2005 and was completed in 2006. USEPA approved the RACR in August 2006. No further action is required for this site.
4	36.3	POL Burial Site (thirteen 55-gallon drums of oil, grease, and paint)	This site is associated with Dunn Field remedial action and land use restrictions for administrative purposes. Remedial actions included excavation and off-site disposal in March and April 2005, SVE in coarse-grained lower fluvial deposits from July 2007 to July 2012 and in situ thermal desorption in fine-grained loess and upper fluvial deposits from May until December 2008. USEPA approved the Source Areas OPS determination in October 2009 and the Source Areas IRACR in November 2009. The Off Depot groundwater air sparging (AS)/SVE system began operating in December 2009. USEPA approved the Off Depot IRACR in August 2011. Due to contamination levels in one monitoring well at the AS/SVE system, additional AS wells were installed and began operation in 2020. Contamination levels have decreased in that one well. AS/SVE system operations will continue through July 2023. Offsite Groundwater Investigation monitoring wells were installed in June 2020 near the northeast corner of Dunn Field for additional investigation of offsite sources of the plume along the northern boundary of Dunn Field. Sampling of the new wells and existing TDEC wells was conducted quarterly through July 2021. The Offsite Groundwater Investigation report was completed in 2022 and supported the presence of an offsite source. Soil, soil vapor, and groundwater samples were collected from May 2020 to July 2021 for Dunn Field West investigation of increased groundwater contamination. An area of residual soil contamination with CVOCs and other VOCs (petroleum constituents) was identified and contaminant concentrations in soil, soil vapor, and groundwater exceeded screening levels. Human health risk assessment found potential exposure to constituents of potential concern but no complete exposure pathways. The Dunn Field West Post-ROD Supplemntal Investigation report was submitted in 2022. Vapor sampling is planned to characterize the potential VI risk and hazard to off-site residents west of Dunn Field. Army intends to transfer Dunn Field West through competitive public sale. An environmental condition of property update will be prepared to determine if the area meets requirements for property transfer. A FOST amendment will also be prepared.
5	36.4	Methyl Bromide Burial Site A (3 cubic feet) (1955)	No further action is required for this site.
6	36.20	40,037 units ointment (eye) Burial Site (1955)	No further action is required for this site.

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
7	36.5	Nitric Acid Burial Site (1,700 quart bottles) (1954)	No further action is required for this site.
8	36.6	Methyl Bromide Burial Site B (3,768 1-gallon cans) (1954)	No further action is required for this site.
9	36.17	Ashes and Metal Burial Site (burning pit refuse) (1955)	No further action is required for this site.
10	36.21	Solid Waste Burial Site (near MW-10) (metal, glass, trash, etc.)	The selected CERCLA remedy included excavation of contaminated soils/waste materials and off-site disposal. Excavation of this site was conducted in March and April 2005. USEPA approved the RACR in August 2006. No further action is required for this site.
11	36.7	Trichloroacetic Acid Burial (1,433 1-ounce bottles) (1965)	No further action is required for this site.
12	36.8	Sulfuric and Hydrochloric Acid Burial (1965)	No further action is required for this site.
13	36.9	Mixed Chemical Burial (Acid, 900 pounds; unnamed solids, 8,100 pounds)	The selected CERCLA remedy included excavation of contaminated soils/waste materials and off-site disposal. Excavation of this site was conducted in April 2005. USEPA approved the RACR in August 2006. No further action is required for this site.
14	36.22	Municipal Waste Burial Site B (near MW-12) (food, paper products)	No further action is required for this site.
15	36.23	Sodium Burial Sites (1968)	No further action is required for this site.
16	36.10	Unknown Acid Burial Site (1969)	No further action is required for this site.
17	36.11	Mixed Chemical Burial Site C (1969)	No further action is required for this site.
18	36.15	Plane Crash Residue (Dunn Field)	No further action is required for this site.
19	36.24	Former Tear Gas Canister Burn Site (Dunn Field)	No further action is required for this site.
20	36.25	Probable Asphalt Burial Site (Dunn Field)	No further action is required for this site.
21	36.26	XXCC-3 Burial Site (Dunn Field)	No further action is required for this site.
22	36.15	Hardware Burial Site (nuts and bolts) (Dunn Field)	No further action is required for this site.
23	36.29	Construction Debris and Food Burial Site (Dunn Field)	No further action is required for this site.
24	36.29	Former Burial/Burn Site and Neutralization Pit	Beginning in August 2000 all 29 bomb casings were recovered from the burial site and 900 cubic yards of soil contaminated with mustard degradation by-products were excavated and disposed offsite. Beginning in November 2000, 33 cubic yards of soil contaminated with mustard and degradation by-products were excavated from the neutralization pit and disposed offsite. In March 2001, the CERCLA Removal Action was complete. No further action is required for this site.
50	36.27	Dunn Field Northeastern Quadrant Drainage Ditch	No further action is required at this site.
60	36.14	Pistol Range Impact Area/Bullet Stop	A CERCLA Removal Action for lead in surface soil was conducted in 2003. No further action is required for this site.

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
61	36.28	Buried Drain Pipe (Northwestern Quadrant of Dunn Field)	No further action is required for this site.
62	36.12/36.13	Bauxite Storage (Northeastern Quadrant of Dunn Field)	No further action is required for this site.
63	36.29/36.30	Fluorspar Storage (10 mounds in Southeastern Quadrant of Dunn Field, 1 mound in Southwestern Quadrant of Dunn Field) All mounds removed by 1999	No further action is required for this site.
64	36.29	Bauxite Storage (Southwestern Quadrant of Dunn Field Removed in 1972), CC-2 Burial Site, IA Site 31 (smoke pot burn/disposal area)	The selected CERCLA remedy for IA Site 31 included excavation of contaminated soils/waste materials and off-site disposal. For the remaining portions of the site no further action is required. Excavation of this site was completed in March 2005. USEPA approved the RACR in August 2006. No further action is required for this site.
71	Multiple	Herbicide (All railroad tracks) (used to clear tracks)	No further action is required for this site.
73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	No further action is required for this site.
85	36.14	Old Pistol Range Building 1184/Temporary Pesticide Storage	A CERCLA Removal Action for lead in surface soil was conducted in 2003. No further action is required for this site.
86	36.18/36.19	Food Supplies (Dunn Field)	No further action is required for this site.
90	36.3	POL Burial Site (thirty-two 55-gallon drums of oil, grease, and thinner; previously listed as Site No. 4.1) (1955)	The selected CERCLA remedy includes excavation of contaminated soils/waste materials and off-site disposal. Excavation and off-site disposal of this site was completed in March 2005. USEPA approved the RACR in August 2006. No further action is required for this site.
91	36.23	Sodium Phosphate Burial previously listed as Site No. 15.1 (1968)	No further action is required for this site.
92	36.23	14 Burial Pits: Na_2PO_4, sodium, acid, medical supplies, and chlorinated lime previously listed as Site No. 15.2 (1969)	No further action is required for this site.
93	36.10	Acid Burial Site previously listed as Site No. 16.1	No further action is required for this site.

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
Operable Unit 2: Southwestern Quadrant, MI			
27	24.1	Former Recoupment Area (Building 873)	Contaminated soil removed in 1985 as part of pre-Remedial Investigation activities. No further action is required for this site.
29	35.2	Former Underground Waste Oil Storage Tank	The tank was located and removed during a CERCLA Removal Action in 2000; the contaminated soils were disposed as special waste and the tank contents were disposed as RCRA hazardous waste. This site is associated with MI groundwater remediation for administrative purposes. The MI ROD selected EBT as the groundwater remedy. EBT was initially performed from May 2006 until February 2009. USEPA approved the MI IRACR and the OPS determination in March 2010. Additional EBT was conducted from November 2012 to August 2014. Further MI groundwater remedial action has been halted until the selected remedy has been confirmed or revised. The Supplemental Remedial Investigation (SRI) report was completed in July 2021. Resolution of USEPA comments for the Focused Feasibility Study (FFS) is being discussed. A revised proposed plan is being prepared with a public meeting and comment period to be conduced and a ROD Amendment to follow. A sampling and analysis plan for soil, sediment and surface water was completed in May 2022. Samples were collected in July and August 2022; resolution of USEPA comments is being discussed. A VI Sampling and Analysis Plan was completed in May 2023. Implementation of the plan began in May 2023 and the report is to be completed in March 2025.
30	24.3/35.3	Paint Spray Booths (2 of 3 total; Buildings 770 and 1086)	No further action is required for this site.
31	35.4	Former Paint Spray Booth (Building 1087)	Building 1087 was decontaminated by vacuuming to remove free dust and pressure washing. The surface soil outside the building was excavated to a depth of one foot and replaced with clean backfill. The excavated soil was disposed off-site as special waste. This CERCLA Removal Action was completed in 2000. No further action is required for this site.
32	35.5	Sandblasting Waste Accumulation Area	Building 1088 was decontaminated by vacuuming to remove free dust and pressure washing. The surface soil outside the building was excavated to a depth of one foot and replaced with clean backfill. The excavated soil was disposed off-site as special waste. This CERCLA Removal Action was completed in 2000. No further action is required for this site.
33	35.4	Sandblasting Waste Drum Storage Area (metal shed south of Building 1088)	The surface soil in this area was excavated to a depth of one foot and replaced with clean backfill. The excavated soil was disposed off-site as special waste. This CERCLA Removal Action was completed in 2000. No further action is required for this site.
34	24.3	Building 770 Underground Oil Storage Tanks	The underground storage tanks were removed in 1989. No further action is required for this site.
40	24.3	Safety Kleen Units - 5 of 9 total (all located in Building 770)	No further action is required for this site.

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
41	24.3	Satellite Drum Accumulation Areas - 1 of 4 total (vicinity Building 770)	No further action is required for this site.
71	Multiple	Herbicide (All railroad tracks) (used to clear tracks)	No further action is required for this site.
73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	No further action is required for this site.
82	23.7/23.8	Flammables (Buildings 783 and 793)	No further action is required for this site.
84	27.2	Flammables, Solvents, Waste Oil, etc. (Building 972)	No further action is required for this site.
87	35.2	DDT, banned pesticides (Building 1084)	Building 1084 was demolished and the debris was disposed off-site at a solid waste landfill. A concrete sump beneath the building was excavated; the contaminated soil was disposed off-site as special waste. This CERCLA Removal Action was completed in 2000. No further action is required for this site.
88	35.2	POL (Building 1085)	The concrete slab and hydraulic lift were removed during a CERCLA Removal Action in 2000; the contaminated soils were disposed offsite as special waste and the lift and cylinders were cleaned and disposed as scrap metal. The concrete debris was disposed offsite as construction debris. No further action is required for this site.
89	28.2	Acids (Building 1089)	Building 1089 was decontaminated by vacuuming to remove free dust and pressure washing. The surface soil in areas outside the southern end of the building were excavated to a depth of one foot and replaced with clean backfill. The excavated soil was disposed off-site as special waste. This CERCLA Removal Action was completed in 2000. No further action is required for this site.

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
Operable Unit 3: Southeastern Watershed And Golf Course, MI			
25	3.8	Golf Course Pond	No further action is required for this site.
26	3.6	Lake Danielson	No further action is required for this site.
30	4.4	Paint Spray Booths (1 of 3 total - Building 260)	No further action is required for this site.
40	4, 19, and 21	Safety Kleen Units - 4 of 9 total units (Buildings 253, 469, 490, and 689)	No further action is required for these sites.
41	4 and 19	Satellite Drum Accumulation Areas - 2 of 4 total areas (Buildings 260 and 469)	No further action is required for this site.
48	5.2	Former PCB Transformer Storage Area	Site remediation by removal of surface soil was completed in 1998. No further action is required for this site.
49	17.3	Medical Waste Storage Area	No further action is required for this site.
51	3.7	Lake Danielson Outlet Ditch	No further action is required for this site.
52	3.9	Golf Course Pond Outlet Ditch	No further action is required for this site.
58	4.9	Pesticides, Herbicides (Pad 267)	No further action is required for this site.
59	4.10	Pesticides, Cleaners (Building 273)	No further action is required for this site.
65	7.2	XXCC-3 (Building 249)	No further action is required for this site.
66	4.11	POL (Building 253)	No further action is required for this site.
67	4.7	MOGAS (Building 257	No further action is required for this site.
68	4.8	POL (Building 263) (20 by 40 feet)	No further action is required for this site.
69	3.11	2,4-D, M2A1, and M4 Flamethrower Liquid Fuels (surface application)	No further action is required for this site.
73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	No further action is required for this site.
75	21.5	Unknown Wastes near Building 689	No further action is required for this site.
76	21.5	Unknown Wastes near Building 690	No further action is required for this site.
77	22.2	Unknown Wastes near Buildings 689 and 690	No further action is required for this site.
78	21.3	Alcohol, Acetone, Toluene, Naphtha; Hydrofluoric Acid Spill	No further action is required for this site.

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
Operable Unit 4: North-Central Area, MI			
28	32.3	Recoupment Area (Building 865)	No further action is required for this site.
35	15.2	DRMO Building S308 - Hazardous Waste Storage	This site was decontaminated and certified clean November 2001 in accordance with the RCRA Closure Plan (Permit TNHW-053). No further action is required for this site.
36	15.5	DRMO Hazardous Waste Concrete Storage Pad	No further action is required for this site.
37	15.5	DRMO Hazardous Waste Gravel Storage Pad	No further action is required for this site.
38	15.5	DRMO Damaged/Empty Hazardous Materials Drum Storage Area	No further action is required for this site.
39	15.5	DRMO Damaged/Empty Lubricant Container Area	No further action is required for this site.
41	13.4	Satellite Drum Accumulation Area (1 of 4 total - Building 210)	No further action is required for this site.
42	33.9	Former PCP Dip Vat Area	In 1986, the dip vat was removed and the soil was excavated to a depth of 10 feet. Soil with PCP concentrations greater than 200 ppb remained beneath the excavated area. The excavation was backfilled with clean soil and with gravel or concrete placed on top of the fill. The LUCIP included a 'No Dig' restriction in this area. No further action is required for this site.
43	33.9	Former Underground PCP Tank Area	The tank was brought above ground in 1986 and drained into drums. The soil around the site was excavated to a depth of 10 to 15 feet, 20 feet wide and 22 feet long. The pumps and lines were also removed. The excavation was backfilled with clean soil and with gravel or concrete placed on top of the clean fill. The LUCIP included a 'No Dig' restriction in this area. No further action is required for this site.
44	33.6	Former Wastewater Treatment Unit Area	No further action is required for this site.
45	33.9	Former Contaminated Soil Staging Area	No further action is required for this site.
46	33.9	Former PCP Pallet Drying Area	No further action is required for this site.
47	33.9	Former Contaminated Soil Drum Storage Area (removed 1988)	No further action is required for this site.
53	30.2	X-25 Flammable Solvents Storage Area (near Building 925)	No further action is required for this site.
54	15.6	MI - DRMO East Stormwater Runoff Canal	No further action is required for this site.
55	15.6	MI - DRMO North Stormwater Runoff Canal	No further action is required for this site.
56	29.3	MI - West Stormwater Drainage Canal	No further action is required for this site.
57	12.1	Building 629 Spill Area	No further action is required for this site.
70	Multiple	POL, Various Chemical Leaks (railroad tracks 1, 2, 3, 4, 5, and 6)	No further action is required for this site.

TABLE 2
ENVIRONMENTAL RESTORATION SITES
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Site No.	Parcel No.	Description	Site Status
71	Multiple	Herbicide (all railroad tracks) (used to clear tracks)	No further action is required for this site.
72	15.5/15.6	Waste Oil (DRMO yard) (surface application for dust control)	No further action is required for this site.
73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	No further action is required for this site.
74	15.3	Flammables, Toxics (West End - Building 319)	No further action is required for this site.
79	15.6	Fuels, Miscellaneous Liquids, Wood, and Paper (Vicinity S702)	No further action is required for this site.
80	33.13	Fuel and Cleaners Dispensing (Building 720)	No further action is required for this site.
81	33.7	Fuel Oil AST (Building 765 – removed in 1994)	No further action is required for this site.
83	30.5	Disposal of Dried Paint Residues - South of Building 949	Lead contaminated soil was removed from an area of approximately 7,200 square feet. The CERCLA Removal Action was completed in 2001. No further action is required for this site.

Notes:
AS: Air Sparging
AST: aboveground storage tank
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
DDT: 4,4′-dichlorodiphenyltrichloroethane
DRMO: Defense and Reutilization Marketing Office
IRACR: Interim Remedial Action Completion Report
MI: Main Installation
MOGAS: motor gasoline
Na: sodium
OPS: Operating Properly and Successfully
PCB: polychlorinated biphenyl
PCP: pentachlorophenol
PO4: phosphate
POL: petroleum, oil, and lubricants
RACR: Remedial Action Completion Report
SRI: Supplemental Remedial Investigation
SVE: soil vapor extraction
USEPA: United States Environmental Protection Agency

a. Source: DLA correspondence dated September 24, 2004, RE: Corrective Action Permit Application and Attachment 1 Summary of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) Defense Depot Memphis, Tennessee

TABLE 3
MAIN INSTALLATION LTM WELLS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Well	Aquifer	Area	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, NAVD)	Ground Elevation (ft, NAVD)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
DR1-1	Fluvial	TTA-1S	276300	800856	293.14	293.42	121.7	20	141.7
DR1-1A	Fluvial	TTA-1S	276307	800863	293.00	293.37	89.2	20	109.2
DR1-2	Fluvial	TTA-1N	276537	801153	290.00	291.39	97.7	20	117.7
DR1-3	Fluvial	TTA-1S	276527	801416	290.93	291.11	109.7	20	129.7
DR1-4	Fluvial	TTA-1S	276231	801400	292.78	293.00	106.3	20	126.3
DR1-5	Fluvial	TTA-1S	276080	800828	294.46	294.86	124.7	20	144.7
DR1-5A	Fluvial	TTA-1S	276087	800835	294.51	294.87	90.0	20	110.0
DR1-6	Fluvial	TTA-1S	276044	801103	293.17	293.50	114.4	20	134.4
DR1-6A	Fluvial	TTA-1S	276035	801104	293.28	293.58	90.9	20	110.9
DR1-7	Fluvial	TTA-1N	276791	801441	289.15	289.46	108.3	20	128.3
DR1-8	Fluvial	TTA-1N	276752	800875	290.09	290.47	92.7	20	112.7
DR2-1	Fluvial	TTA-2	276772	806498	304.90	305.08	73.9	20	93.9
DR2-2	Fluvial	TTA-2	276771	806659	304.30	304.67	78.4	15	93.4
DR2-3	Fluvial	TTA-2	276539	806203	303.44	303.66	93.0	20	113.0
DR2-4	Fluvial	TTA-2	276456	806633	303.55	303.96	88.1	20	108.1
DR2-5	Fluvial	TTA-2	276831	806180	305.41	305.72	84.5	15	99.5
DR2-6	Fluvial	TTA-2	276644	805861	304.70	304.92	94.6	20	114.6
MW-16	Fluvial	Background	278838	807100	299.86	300.19	57.6	15	72.6
MW-19	Fluvial	Background	278946	800782	290.57	290.86	83.1	10	93.1
MW-21	Fluvial	TTA-1N	276473	800602	295.00	295.30	92.1	15	107.1
MW-22	Fluvial	TTA-1S	275912	800702	298.04	298.49	95.4	10	105.4
MW-23	Fluvial	Background	275791	801817	298.99	299.24	101.2	10	111.2
MW-24	Fluvial	Background	275616	803539	299.51	299.81	97.3	15	112.3
MW-25A	Fluvial	TTA-2	275975	805521	269.88	270.13	73.0	10	83.0
MW-26	Fluvial	TTA-2	276509	805963	303.38	303.80	97.6	10	107.6
MW-34	Intermediate	Window	279411	801918	299.97	300.80	136.6	20	156.6
MW-38	Intermediate	Window	279141	802450	307.45	308.45	139.9	15	154.9
MW-39	Fluvial	W-C	277281	802598	296.28	296.58	95.5	20	115.5
MW-39A	Upper Claiborne	W-C	277278	802608	298.61	298.70	148.1	20	168.1
MW-50	Fluvial	TTA-2	276456	807065	298.82	299.32	115.0	10	125.0
MW-52	Fluvial	SE	275372	805897	279.26	279.71	94.0	10	104.0
MW-53	Fluvial	Background	279177	805136	306.38	305.58	72.5	10	82.5
MW-55	Fluvial	Background	279301	801205	292.08	292.48	64.0	10	74.0
MW-62	Fluvial	B-835	278290	801858	293.71	293.90	86.1	10	96.1
MW-63A	Fluvial	N-C	278200	803573	305.96	306.33	130.0	10	140.0
MW-63B	Fluvial	N-C	278201	803558	305.78	306.22	115.0	10	125.0
MW-64	Fluvial	TTA-2	276952	805006	304.21	304.46	102.0	10	112.0
MW-66A	Fluvial	TTA-1N	276626	799793	284.22	284.34	74.6	20	94.6
MW-85	Fluvial	TTA-2	276704	806065	304.13	304.50	95.9	15	110.9
MW-88	Fluvial	TTA-2	276879	806513	305.15	305.47	82.0	15	97.0
MW-89	Intermediate	Window	278287	802555	303.98	304.38	147.0	30	177.0
MW-90	Intermediate	Window	278284	802540	304.19	304.64	115.0	30	145.0
MW-92	Fluvial	TTA-2	276614	806490	304.41	304.78	93.0	15	108.0
MW-93	Fluvial	Background	275542	804440	294.08	294.31	92.0	15	107.0
MW-94A	Fluvial	W-C	276806	803086	303.00	303.23	109.6	10	119.6
MW-96	Fluvial	TTA-2	276310	806320	289.02	289.67	75.5	20	95.5
MW-98	Fluvial	W-C	276891	802573	294.43	294.93	137.0	10	147.0
MW-99	Fluvial	Background	277443	801115	285.33	285.69	91.5	20	111.5
MW-100B	Fluvial	TTA-1N	276601	800854	290.92	291.47	107.4	20	127.4
MW-101[1]	Fluvial	TTA-1S	276204	801110	291.74	291.98	89.0	15	104.0
MW-102B	Fluvial	Background	275761	800708	311.40	312.07	120.5	20	140.5
MW-103	Fluvial	N-C	278691	805160	301.37	301.89	70.0	20	90.0
MW-104	Fluvial	N-C	278676	805417	291.98	292.18	70.5	20	90.5
MW-107[2]	Upper Claiborne	Window	278419	803010	304.92	305.18	128.0	15	143.0

TABLE 3
MAIN INSTALLATION LTM WELLS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Well	Aquifer	Area	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, NAVD)	Ground Elevation (ft, NAVD)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-108	Upper Claiborne	W-C	277658	802986	303.07	303.25	160.0	10	170.0
MW-113	Fluvial	TTA-2	276685	806279	304.81	304.92	96.0	10	106.0
MW-140	Memphis	Window	279061	801716	298.12	298.16	224.6	20	244.6
MW-141	Intermediate	Window	278019	802571	303.71	303.70	148.7	20	168.7
MW-142	Fluvial	B-835	278056	801629	291.18	291.49	85.0	20	105.0
MW-143	Fluvial	B-835	278301	801201	290.66	290.90	78.6	20	98.6
MW-197A	Upper Claiborne	W-C	276975	802042	291.64	291.54	161.7	15	176.7
MW-197B	Fluvial	W-C	276973	802037	291.43	291.43	93.8	15	108.8
MW-198	Fluvial	B-835	277776	802142	291.78	292.20	90.3	15	105.3
MW-199A	Intermediate	B-835	277756	802574	301.90	301.84	146.1	15	161.1
MW-199B	Fluvial	B-835	277752	802576	302.06	302.07	104.6	15	119.6
MW-200	Fluvial	W-C	277006	802859	300.18	300.51	102.9	15	117.9
MW-202A	Intermediate	Window	278686	802111	299.67	299.69	176.2	15	191.2
MW-202B	Intermediate	Window	278693	802112	299.92	299.74	118.8	15	133.8
MW-203A	Upper Claiborne	W-C	276842	801740	290.70	290.80	142.9	20	162.9
MW-203B	Fluvial	W-C	276821	801742	290.87	291.10	93.0	20	113.0
MW-204A	Fluvial	W-C	276725	802168	292.59	292.49	133.3	15	148.3
MW-204B	Fluvial	W-C	276708	802167	292.71	293.00	94.9	15	109.9
MW-205A	Upper Claiborne	W-C	277157	802277	292.30	292.40	141.3	15	156.3
MW-205B	Fluvial	W-C	277173	802278	292.16	292.30	97.3	15	112.3
MW-206A	Fluvial	W-C	277219	802792	300.32	300.35	127.3	15	142.4
MW-206B	Fluvial	W-C	277201	802795	300.30	300.12	96.7	15	111.7
MW-207A	Upper Claiborne	N-C	277653	803192	304.05	304.45	149.9	15	164.9
MW-207B	Fluvial	N-C	277665	803193	304.06	304.42	108.5	15	123.5
MW-208A	Upper Claiborne	W-C	277382	802799	302.21	302.40	183.5	15	198.5
MW-208B	Fluvial	W-C	277397	802815	302.13	302.08	106.7	15	121.7
MW-209A	Intermediate	B-835	277574	802507	298.45	298.36	189.0	15	204.0
MW-209B	Fluvial	B-835	277582	802520	298.89	298.72	102.3	15	117.3
MW-210A	Intermediate	W-C	277239	801958	289.61	289.70	177.0	15	192.0
MW-210B	Fluvial	W-C	277228	801952	289.54	289.53	97.0	15	112.0
MW-211	Intermediate	Window	278001	802974	304.14	304.09	166.3	15	181.3
MW-212	Fluvial	B-835	278028	802225	295.74	295.68	85.3	15	100.3
MW-213	Fluvial	B-835	278427	801669	294.22	294.20	77.3	15	92.3
MW-214A	Upper Claiborne	N-C	277878	803907	304.01	303.96	119.1	15	134.1
MW-214B	Upper Claiborne	N-C	277876	803922	304.10	303.96	101.6	15	116.6
MW-215A	Upper Claiborne	N-C	277298	804164	304.97	304.86	128.8	15	143.8
MW-215B	Fluvial	N-C	277298	804177	305.03	304.98	105.4	15	120.4
MW-216	Fluvial	S-C	276025	801996	297.72	297.63	99.9	15	115.0
MW-217	Fluvial	TTA-2	276671	805214	304.65	304.51	101.8	15	116.8
MW-218	Fluvial	TTA-2	276937	805628	306.07	306.00	98.9	15	114.0
MW-219	Fluvial	TTA-1N	276429	800461	295.13	295.00	98.0	15	113.0
MW-229	Memphis	Window	279294	802837	311.78	312.09	188.4	20	208.4
MW-252	Intermediate	Window	278789	801365	294.16	294.40	126.1	20	146.1
MW-253	Intermediate	Window	278287	801191	290.47	290.80	118.3	20	138.3
MW-254	Memphis	Window	279334	800858	292.84	293.28	285.8	20	305.8
MW-255	Memphis	Window	279305	801227	291.84	292.38	284.7	20	304.7
MW-256	Intermediate	Window	279302	801244	292.68	293.40	127.1	20	147.1
MW-258	Fluvial	N-C	278126	804427	304.37	304.83	79.3	20	99.3
MW-259	Fluvial	TTA-2	276279	804451	290.77	291.44	98.6	20	118.6
MW-260	Fluvial	N-C	278398	804376	304.16	304.45	68.0	20	88.3
MW-261	Fluvial	S-C	276391	802592	293.52	293.79	90.0	20	110.3
MW-262	Intermediate	Window	279334	800833	293.22	293.50	154.4	10	164.6
MW-263	Fluvial	N-C	278945	805817	291.40	291.78	69.1	10	79.3
MW-264	Upper Claiborne	N-C	278411	804590	303.72	304.00	104.8	10	115.0

TABLE 3
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2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Well	Aquifer	Area	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, NAVD)	Ground Elevation (ft, NAVD)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-265	Fluvial	N-C	278112	804710	305.15	305.61	85.8	10	96.0
MW-266	Fluvial	TTA-2	277092	806686	304.68	305.10	77.1	10	87.3
MW-267	Fluvial	TTA-2	277161	806001	303.84	304.30	71.9	10	82.1
MW-268	Upper Claiborne	TTA-2	277204	805284	304.59	304.92	109.5	10	119.7
MW-269	Fluvial	TTA-1N	276369	800127	290.05	290.50	92.2	10	102.4
MW-270	Fluvial	SE	275483	805042	281.74	282.20	78.4	10	88.6
MW-271	Fluvial	S-C	276315	803774	294.91	295.50	134.7	10	144.9
MW-272	Fluvial	Background	275880	804037	293.27	293.70	112.8	10	123.0
MW-273	Intermediate	Window	279713	800122	284.73	285.00	128.1	10	138.3
MW-274	Fluvial	Background	275726	806543	294.30	294.60	89.3	10	99.5
MW-275	Fluvial	Background	275232	805306	272.31	272.59	80.5	10	90.7
MW-276	Fluvial	Background	275564	804697	288.68	288.91	87.5	10	97.7
MW-277	Fluvial	Background	275532	803998	301.67	301.96	102.3	10	112.5
MW-278	Fluvial	TTA-1N	276294	799814	292.18	292.46	91.0	10	101.2
MW-279	Fluvial	TTA-1S	275982	800579	299.89	300.17	113.0	10	123.2
MW-280	Fluvial	TTA-2	277390	806313	306.36	306.57	76.0	10	86.2
MW-281	Fluvial	N-C	278155	804123	304.56	305.03	81.7	10	91.9
MW-282	Fluvial	Background	278710	804033	307.81	308.14	76.0	10	86.2
MW-283	Fluvial	Background	278176	806074	304.34	304.87	77.0	10	87.2
MW-284	Fluvial	N-C	277049	803765	303.99	304.35	109.0	10	119.0
MW-285	Fluvial	Window	278102	803184	304.61	304.98	99.5	10	110.5
MW-286	Fluvial	Window	278427	803027	305.04	305.41	102.0	10	112.0
MW-287	Fluvial	N-C	278236	803971	304.67	305.01	84.0	10	94.0
MW-288	Fluvial	N-C	277932	803895	304.69	305.07	90.0	10	100.0
MW-289	Fluvial	N-C	277865	804526	305.41	305.85	78.0	10	88.0
MW-290	Memphis	Background	277046	803795	304.22	304.49	214.0	10	224.0
MW-291	Fluvial	N-C	278371	804963	303.59	303.97	74.0	10	84.0
MW-292	Fluvial	TTA-2	276981	806334	304.83	305.28	73.0	10	83.0
MW-293	Upper Claiborne	Window	278143	803188	304.34	304.77	152.5	10	162.5
MW-294	Fluvial	TTA-2	277351	805966	304.38	304.84	70.0	10	80.0
MW-295	Fluvial	TTA-2	277222	805292	304.35	304.72	73.0	10	83.5
MW-296	Fluvial	S-C	276362	803345	296.32	296.74	100.0	10	110.0
MW-297	Fluvial	S-C	276351	802850	297.91	298.46	100.0	10	110.0
MW-298	Fluvial	S-C	276100	802436	296.50	297.04	100.0	10	110.0
MW-299	Fluvial	B-835	278329	801532	292.71	293.04	86.0	10	96.0
MW-300	Fluvial	B-835	278451	801082	290.26	290.64	85.0	10	95.0
MW-301	Fluvial	SE	275494	805309	271.03	271.33	74.0	10	84.0
MW-302	Intermediate	TTA-2	276266	804423	291.60	291.92	160.0	10	170.0
MW-303	Fluvial	TTA-2	277667	806230	305.33	305.43	76.6	10	86.9
MW-304	Fluvial	N-C	277866	803514	304.83	305.00	96.0	10	106.2
MW-305	Fluvial	Window	278490	802793	305.07	305.16	108.2	10	118.4
MW-306	Fluvial	N-C	278351	805279	304.30	304.40	73.0	10	83.2
MW-307	Fluvial	N-C	276724	803761	302.88	303.20	99.7	10	110.0
MW-308	Fluvial	Window	278614	803419	304.68	304.82	93.0	10	103.3
MW-309	Intermediate	Window	279457	801203	290.31	290.38	130.1	10	140.4
MW-310	Fluvial	N-C	279434	806304	289.81	290.07	52.7	10	62.9
MW-311	Upper Claiborne	N-C	277065	803600	303.99	304.26	173.1	10	183.3
MW-312	Fluvial	Background	275294	804746	285.49	285.78	80.4	10	90.7
MW-313	Fluvial	SE	275537	805666	282.48	282.64	84.7	10	95.0
MW-314	Fluvial	TTA-1S	275873	800241	304.68	305.13	100.0	10	110.2
MW-315	Fluvial	TTA-1N	276486	800059	289.89	290.09	86.5	10	96.7
MW-316	Fluvial	TTA-1N	276232	800124	291.53	292.04	89.7	10	100.0

TABLE 3
MAIN INSTALLATION LTM WELLS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Well	Aquifer	Area	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, NAVD)	Ground Elevation (ft, NAVD)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-317A	Fluvial	Window	278370	803123	305.00	305.30	100.6	2.5	103.3
MW-317B	Fluvial	Window			305.03		112.4	2.5	115.1
MW-317C	Upper Claiborne	Window			305.04		136.2	2.5	138.9
MW-317D	Upper Claiborne	Window			305.00		152.0	2.5	154.7
MW-318A	Fluvial	N-C	277363	803309	304.46	304.59	116.6	2.5	119.3
MW-318B	Fluvial	N-C			304.45		139.7	2.5	142.4
MW-318C	Upper Claiborne	N-C			304.53		163.3	2.5	166.0
MW-318D	Upper Claiborne	N-C			304.49		178.2	2.5	180.9
MW-330	Fluvial	S-C	276076	802123	300.59	297.48	92.3	10	102.3
PMW21-01	Fluvial	TTA-1N	276533	800600	294.76	295.00	88.4	20	108.4
PMW21-02	Fluvial	TTA-1N	276575	800701	292.98	293.19	91.3	20	111.3
PMW21-03	Fluvial	TTA-1N	276573	800743	292.11	292.72	90.3	20	110.3
PMW21-04	Fluvial	TTA-1N	276602	800772	291.87	292.20	89.0	20	109.0
PMW21-05	Fluvial	TTA-1N	276628	801130	288.53	288.92	94.3	20	114.3
PMW85-01	Fluvial	TTA-2	276802	806146	305.08	305.39	93.2	10	103.2
PMW85-05	Fluvial	TTA-2	276752	806222	305.12	305.32	93.2	10	103.2
PMW92-02	Fluvial	TTA-2	276667	806476	304.17	304.35	94.8	10	104.8
PMW92-03	Fluvial	TTA-2	276679	806439	303.91	304.17	92.5	10	102.5
PMW101-02A	Fluvial	TTA-1S	276282	801145	292.00	292.29	117.7	20	137.7
PMW101-02B	Fluvial	TTA-1S	276286	801145	291.98	292.24	97.8	20	117.8
PMW101-03A	Fluvial	TTA-1S	276348	801198	291.61	291.99	119.2	20	139.2
PMW101-03B	Fluvial	TTA-1S	276353	801194	291.55	291.82	99.3	20	119.3
PMW101-04A	Fluvial	TTA-1S	276299	801182	291.07	291.43	117.9	20	137.9
PMW101-04B	Fluvial	TTA-1S	276296	801187	291.47	291.75	98.6	20	118.6
PMW101-06A	Fluvial	TTA-1S	276192	801187	292.13	292.72	120.0	20	140.0
PMW101-06B	Fluvial	TTA-1S	276195	801184	292.17	292.40	99.3	20	119.3
PMW101-07A	Fluvial	TTA-1S	276143	801172	292.20	292.52	117.9	20	137.9
PMW101-07B	Fluvial	TTA-1S	276142	801177	292.36	292.70	98.0	20	118.0

Notes:
1: MW-101 has three screened sections at the following depths (ft, btoc): 89-104, 109-119 and 124-134.
2: MW-107 has two screened sections at the following depths (ft, btoc): 128-143 and 148-158.
btoc: below top of casing
ft: feet
NAVD: North American Vertical Datum of 1988

TABLE 4
MAIN INSTALLATION MCL EXCEEDANCE SUMMARY, APRIL 2023
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

			PCE		TCE		cDCE		VC		CT	
Area	No. of Wells	No. of Wells >MCL	No. of Wells >MCL	Maximum Concentration (µg/L)	No. of Wells >MCL	Maximum Concentration (µg/L)	No. of Wells >MCL	Maximum Concentration (µg/L)	No. of Wells >MCL	Maximum Concentration (µg/L)	No. of Wells >MCL	Maximum Concentration (µg/L)
Fluvial												
TTA-1N	16	8	7	*266*	5	*57.6*	0	-	1	*20.2*	0	-
TTA-1S	22	6	6	*19*	2	*38.8*	0	-	0	-	0	-
TTA-2	29	19	13	*58.2*	10	*34.5*	0	-	5	*33*	2	*42.9*
West-Central	13	10	9	*11.9*	9	*31.3*	0	-	1	*7.45*	0	-
Building 835	10	6	0	-	6	*65.3*	0	-	0	-	0	-
North-Central	22	13	8	*36*	11	*44*	0	-	0	-	0	-
South-Central	7	5	2	*13.8*	5	*137*	0	-	0	-	0	-
Southeastern MI	4	4	3	*9.21*	1	*35.3*	0	-	0	-	0	-
Window	6	3	3	*57.4*	1	*5.55*	0	-	0	-	0	-
Background	17	0	0	-	0	-	0	-	0	-	0	-
Fluvial Summary	**146**	**74**	**51**	***266***	**50**	***137***	**0**	***0***	**7**	***33***	**2**	***42.9***
IAQ/UC												
TTA-2	2	1	1	*9.56*	1	*6.17*	0	-	0	-	1	*10.2*
West-Central	7	6	4	*9.06*	2	*13.6*	0	-	1	*9.58*	0	-
Building 835	2	2	0	-	2	*12.3*	0	-	0	-	0	-
North-Central	8	3	2	*15.9*	3	*24.7*	0	-	0	-	0	-
Window	18	6	5	*17.5*	1	*5.96*	0	-	0	-	0	-
IAQ/UC Summary	**37**	**18**	**12**	***17.5***	**9**	***24.7***	**0**	**-**	**1**	***9.58***	**1**	**-**
MAQ												
Window	4	1	1	*6.53*	1	*9.72*	0	-	0	-	0	-
Background	1	0	0	-	0	-	0	-	0	-	0	-
MAQ Summary	**5**	**1**	**1**	***6.53***	**1**	***9.72***	**0**	**-**	**0**	**-**	**0**	**-**
MI Summary	**188**	**93**	**64**	**266**	**60**	**137**	**0**	**0**	**8**	**33**	**3**	**42.9**

Notes:
MCL: maximum contaminant level
µg/L: micrograms per liter

TABLE 5
REMEDIAL GOAL OBJECTIVES FROM DUNN FIELD RECORD OF DECISION
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

	Remedial Goal Objectives				
	Site-Specific Soil Screening Levels to be Protective of Groundwater		Protective Soil Vapor Concentration		Groundwater Target Concentrations at 10-4 Target Risk Levels and Target HI=1.0 (µg/L)
Parameter	Loess Specific Values (mg/kg)	Fluvial Deposit Specific Values (mg/kg)	Loess Specific Values (ppbv)	Fluvial Deposit Specific Values (ppbv)	
Carbon Tetrachloride	0.2150	0.1086	28.14	14.22	3.0
Chloroform	0.9170	0.4860	61.57	32.63	12.0
Dichloroethane, 1,2-	0.0329	0.0189	1.12	0.64	—
Dichloroethene, 1,1-	0.1500	0.0764	57.00	29.03	7.0
Dichloroethene, cis-1,2-	0.7550	0.4040	73.86	39.52	35.0
Dichloroethene, trans-1,2-	1.5200	0.7910	256.53	133.50	50.0
Methylene Chloride	0.0305	0.0169	5.14	2.85	—
Tetrachloroethane, 1,1,2,2-	0.0112	0.0066	0.03	0.55	2.2
Tetrachloroethene	0.1806	0.0920	15.18	0.99	2.5
Trichloroethane, 1,1,2	0.0627	0.0355	0.84	2.03	1.9
Trichloroethene	0.1820	0.0932	10.56	2.06	5.0
Vinyl Chloride	0.0294	0.0150	28.94	14.77	—

Notes:
HI: hazard index
mg/kg: milligrams per kilogram
ppbv: parts per billion by volume
µg/L: micrograms per liter
—: Not available for groundwater cleanup goals because of low number of detections or detected values consistently less than maximum contaminant levels.
Source: Table 2-21G, *Memphis Depot Dunn Field Record of Decision* (CH2M HILL, 2004a)

TABLE 6
DUNN FIELD LTM WELLS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Well	Aquifer	Area	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, NAVD)	Ground Elevation (ft, NAVD)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-03	Fluvial	Offsite	281596	802101	292.35	290.40	65.5	10	75.5
MW-04	Fluvial	Background	281279	802369	301.61	300.00	60.0	20	80.0
MW-06	Fluvial	DF West	280605	802069	288.66	288.78	51.0	20	71.0
MW-07	Fluvial	Offsite	281840	802482	295.10	293.10	67.0	10	77.0
MW-08	Fluvial	Offsite	282001	802728	292.59	292.74	56.5	10	66.5
MW-13	Fluvial	Background	281034	802369	300.01	300.10	66.0	15	81.0
MW-15	Fluvial	DF West	280349	801985	295.12	295.23	63.4	15	78.4
MW-28	Fluvial	Background	281569	803154	294.79	294.89	54.3	15	69.3
MW-31	Fluvial	Offsite	281652	801784	290.37	287.50	64.1	15	79.1
MW-44	Fluvial	Off Depot	281074	800601	269.07	269.40	64.0	10	74.0
MW-54	Fluvial	Off Depot	281159	801184	295.39	295.57	84.5	10	94.5
MW-57	Fluvial	DF West	280184	802006	290.77	291.10	60.0	10	70.0
MW-58	Fluvial	Background	279845	802066	290.51	290.70	57.0	10	67.0
MW-67	Memphis	Background	280473	800934	278.21	275.53	260.0	15	275.0
MW-68	Fluvial	Offsite	281501	802040	291.69	291.60	72.5	10	82.5
MW-69	Fluvial	DF West	281203	802011	307.02	304.90	82.1	10	92.1
MW-70	Fluvial	DF West	281030	801988	304.99	302.80	80.8	10	90.8
MW-71	Fluvial	DF West	280585	801805	294.40	291.90	65.5	10	75.5
MW-76	Fluvial	Off Depot	281312	801643	302.71	303.30	73.0	20	93.0
MW-77	Fluvial	Off Depot	281143	801815	304.42	304.70	68.0	20	88.0
MW-78	Fluvial	Offsite	282052	802065	275.01	275.20	44.5	20	64.5
MW-79	Fluvial	Offsite	281794	800899	285.03	285.40	82.5	20	102.5
MW-80	Fluvial	Background	281418	800199	273.81	274.00	53.0	20	73.0
MW-87	Fluvial	DF West	280696	802039	294.93	292.80	63.0	15	78.0
MW-91	Fluvial	DF West	280475	802014	291.99	289.30	55.0	15	70.0
MW-126	Fluvial	Background	282390	800492	252.22	252.49	16.0	10	26.0
MW-129	Fluvial	Offsite	282271	803129	293.01	293.33	65.0	15	80.0
MW-130	Fluvial	Offsite	282117	803241	293.17	293.77	59.5	20	79.5
MW-134	Fluvial	DF West	281013	802103	300.81	301.05	75.0	15	90.0
MW-144	Fluvial	Off Depot	281139	801529	291.60	291.89	55.9	20	76.3
MW-145	Fluvial	Off Depot	280968	800823	284.72	284.86	76.6	20	97.0
MW-147	Fluvial	Offsite	281502	801674	289.76	289.93	57.8	20	78.1
MW-148	Fluvial	Off Depot	281378	801462	294.71	294.87	67.8	20	88.1
MW-149	Fluvial	Off Depot	281130	800983	287.18	287.44	81.6	20	101.9
MW-150	Fluvial	Off Depot	281240	801284	296.86	297.00	71.2	20	91.4
MW-151	Fluvial	Off Depot	281290	800875	284.27	284.42	76.5	20	96.8
MW-152	Fluvial	Off Depot	281516	800893	289.59	289.82	90.9	20	111.1
MW-153	Fluvial	Offsite	282119	800952	279.17	279.26	76.1	20	96.3
MW-154	Fluvial	Background	280502	800919	273.81	274.07	52.5	15	67.7
MW-155	Fluvial	Off Depot	281325	801169	291.54	291.83	76.6	20	96.8
MW-157	Fluvial	Off Depot	281051	801348	286.47	286.55	57.0	20	77.3
MW-158	Fluvial	Off Depot	281434	801005	294.07	294.38	91.1	15	106.6
MW-158A	Fluvial	Off Depot	281444	801006	293.95	294.22	78.4	15	93.6
MW-159	Fluvial	Off Depot	281304	801007	286.36	286.68	79.3	20	99.5
MW-160	Fluvial	Off Depot	281367	801304	293.84	294.13	65.8	20	86.0
MW-163	Fluvial	Off Depot	281153	801487	290.63	290.81	56.5	20	76.7
MW-164	Fluvial	Off Depot	280998	801497	287.48	287.71	55.3	20	75.5
MW-165	Fluvial	Off Depot	281385	800855	287.06	287.35	88.1	15	103.3
MW-165A	Fluvial	Off Depot	281384	800866	287.26	287.53	71.3	15	86.5
MW-166	Fluvial	Off Depot	281225	800928	282.72	283.29	84.2	15	99.4
MW-166A	Fluvial	Off Depot	281213	800927	282.90	283.36	67.6	15	82.8
MW-167	Fluvial	Background	281394	800619	284.82	285.21	67.7	15	82.9
MW-169	Upper Claiborne	Background	282491	800957	261.90	262.17	68.0	20	88.2
MW-170	Fluvial	Background	282443	801260	273.75	273.98	59.7	20	79.9

TABLE 6
DUNN FIELD LTM WELLS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Well	Aquifer	Area	Northing (ft)	Easting (ft)	Top of Casing Elevation (ft, NAVD)	Ground Elevation (ft, NAVD)	Riser Length (ft)	Screen Length (ft)	Total Well Depth (ft, btoc)
MW-171	Fluvial	Offsite	282315	801058	270.69	271.02	53.2	15	68.4
MW-174	Fluvial	DF West	280352	802092	296.56	296.83	67.0	10	77.0
MW-176	Fluvial	DF West	280824	802032	299.68	299.92	76.0	10	86.0
MW-180	Fluvial	Offsite	281476	802132	296.14	296.39	72.0	10	82.0
MW-182	Fluvial	Background	280524	800623	272.63	272.90	59.2	10	69.2
MW-184	Fluvial	Off Depot	280903	801442	283.12	283.34	58.0	10	68.0
MW-187	Fluvial	Background	280563	802348	302.74	303.21	76.0	10	86.0
MW-190	Fluvial	Off Depot	281139	801596	297.32	297.58	78.0	10	88.0
MW-220	Fluvial	Offsite	281617	802167	293.29	290.31	64.9	15	79.9
MW-221	Fluvial	DF West	281400	802100	301.52	298.37	73.1	15	88.1
MW-222	Fluvial	DF West	280986	802146	303.82	301.06	74.2	15	89.2
MW-223	Fluvial	DF West	280914	802104	303.00	300.41	73.9	15	88.9
MW-224	Fluvial	DF West	281018	802182	304.13	301.18	73.7	15	88.7
MW-225	Fluvial	DF West	280947	802071	304.52	301.30	75.0	15	90.0
MW-226	Fluvial	DF West	280932	802147	303.19	300.56	74.2	15	89.2
MW-227	Fluvial	DF West	280258	802081	299.70	296.64	63.6	15	78.6
MW-228	Fluvial	DF West	280252	802157	301.65	298.59	64.1	15	79.1
MW-230	Fluvial	Offsite	281843	802800	286.57	286.66	59.2	15	74.2
MW-235	Fluvial	Background	280728	800448	264.00	264.21	50.6	10	60.8
MW-237	Intermediate	Off Depot	281356	800964	289.18	289.53	166.5	10	176.7
MW-241	Fluvial	Off Depot	281390	801397	292.97	293.16	73.4	15	88.4
MW-242	Fluvial	Off Depot	281297	801229	295.40	295.94	73.2	16	88.7
MW-243	Fluvial	Off Depot	281363	801115	292.29	292.56	80.7	20	100.7
MW-244	Fluvial	Off Depot	281333	801101	288.72	289.45	76.3	20	96.3
MW-245	Fluvial	Off Depot	281379	801035	290.48	290.62	85.1	20	105.1
MW-246	Fluvial	Off Depot	281387	800952	288.17	288.49	85.2	20	105.2
MW-247	Fluvial	Off Depot	281319	800900	286.17	286.63	80.5	20	100.5
MW-248	Fluvial	Off Depot	281254	800720	275.45	275.93	67.5	20	87.5
MW-249	Fluvial	Off Depot	281030	800790	285.53	285.89	78.0	20	98.0
MW-250	Intermediate	Off Depot	281046	800900	289.66	290.19	168.7	15	183.7
MW-251	Intermediate	Off Depot	281212	801022	285.83	286.16	160.2	15	175.2
MW-322	Fluvial	Offsite	281914	803177	286.63	286.87	57.3	10	67.5
MW-323	Fluvial	Offsite	282143	802968	275.33	275.82	48.5	10	58.7
MW-324	Fluvial	Offsite	282371	802892	278.70	279.14	58.1	10	68.3
MW-328	Fluvial	DF West	280591	802012	288.58	288.92	58.4	10	68.6
MW-329	Fluvial	Background	280662	802255	298.80	299.17	66.6	10	76.8

Notes:
ft: feet
btoc: below top of casing
NAVD: North American Vertical Datum of 1988
OSI: Offsite Groundwater Investigation

TABLE 7
DUNN FIELD MCL EXCEEDANCE SUMMARY, APRIL 2023
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

			TeCA		TCA		PCE		TCE		DCE	
Area	No. of Wells	No. of Wells >TC or MCL	No. of Wells >TC	Maximum Concentration (µg/L)	No. of Wells >TC or MCL	Maximum Concentration (µg/L)	No. of Wells >TC or MCL	Maximum Concentration (µg/L)	No. of Wells >TC or MCL	Maximum Concentration (µg/L)	No. of Wells >TC or MCL	Maximum Concentration (µg/L)
Fluvial												
Offsite	18	11	0	-	0	-	9	*11.9*	10	*73.8*	*3*	*13.4*
DF West	20	4	3	*7.94*	2	*8.17*	0	-	1	*7.34*	0	-
Off Depot	34	7	2	*7.63*	0	-	0	-	3	*42.8*	0	-
Background	13	0	0	-	0	-	0	-	0	-	0	-
Fluvial Summary	**85**	**22**	**5**	***7.94***	**2**	***8.17***	**9**	***11.9***	**14**	***73.8***	**3**	***13.4***
IAQ/UC												
Off Depot	3	0	0	-	0	-	0	-	0	-	0	-
Background	1	0	0	-	0	-	0	-	0	-	0	-
IAQ/UC Summary	**4**	**0**	**0**	**-**	**0**	**-**	**0**	**-**	**0**	**-**	**0**	**-**
MAQ												
Background	1	0	0	-	0	-	0	-	0	-	0	-
MAQ Summary	**1**	**0**	**0**	**-**	**0**	**-**	**0**	**-**	**0**	**-**	**0**	**-**
DF Summary	**90**	**22**	**5**	**7.94**	**2**	**8.17**	**9**	**11.9**	**14**	**73.8**	**3**	**13.4**

Notes:
µg/L: micrograms per liter
MCL: maximum contaminant level
TC: target concentration

TABLE 7
DUNN FIELD MCL EXCEEDANCE SUMMARY, APRIL 2023
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

			VC		CF	
Area	No. of Wells	No. of Wells >TC or MCL	No. of Wells >MCL	Maximum Concentration (µg/L)	No. of Wells >TC or MCL	Maximum Concentration (µg/L)
Fluvial						
Offsite	18	11	0	-	0	-
DF West	20	4	0	-	4	*117*
Off Depot	34	7	0	-	4	*27.8*
Background	13	0	0	-	0	-
Fluvial Summary	**85**	**22**	**0**	**-**	**8**	***117***
IAQ/UC						
Off Depot	3	0	0	-	0	-
Background	1	0	0	-	0	-
IAQ/UC Summary	**4**	**0**	**0**	**-**	**0**	**-**
MAQ						
Background	1	0	0	-	0	-
MAQ Summary	**1**	**0**	**0**	**-**	**0**	**-**
DF Summary	**90**	**22**	**0**	**0**	**8**	**117**

Notes:
µg/L: micrograms per liter
MCL: maximum contaminant level
TC: target concentration

TABLE 8
PROPERTY TRANSFER STATUS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

FOST No.	Area	Date FOST signed	Acres[1]	Type of Conveyance	Type of Transfer (Transferee)	Date of Transfer[2]
1	MI	23-Feb-01	6.5	PBC	Deed (Alpha Omega Veterans)	26-Sep-01
2	MI	27-Sep-01	4.7	PBC	Deed (Memphis Police Department)	6-Feb-02
			13.4	EDC	Deed (DRC)	6-May-02
3	MI	1-Jul-04	302.5	EDC	Deed (DRC)	4-Apr-06
			46.7	PBC	Deed (Memphis)	18-Aug-06
4	DF	4-Mar-05	1.6	PBC	Deed (Memphis)	2-Sep-05
			39.4	CPS	Deed (Dunn Field Business Park, LLC)	17-Oct-07
5	DF	12-Jul-10	26.0			
6	MI	2-Aug-10	193.0	EDC	Deed (DRC)	30-Mar-11

Notes:
1): Listed acres are approximate.
2): Date Federal Agency signed Quitclaim Deed.
CPS: Competitive Public Sale
DF: Dunn Field
DOI/NPS: Department of Interior/National Parks Service
DRC: Depot Redevelopment Corporation
EDC: Economic Development Conveyance
MI: Main Installation
PBC: Public Benefit Conveyance

TABLE 9
PROPERTY OWNERSHIP AND USE
2024 SITE MANAGMENT PLAN
Defense Depot Memphis, Tennessee

Property Owner	Acreage[1]	Use
Main Installation		
Memphis Depot TIC LLC and DP 107 LLC	250.6	Warehousing/logistics – Memphis Depot Industrial Park managed by Colliers International. Buildings are leased to multiple tenants.
Barnhart Crane & Rigging	143.8	Engineering, construction and maintenance of complex lifting and transportation equipment for heavy industry.
Memphis Depot Land LLC	69.9	Primarily undeveloped property for future warehousing/logistics or light industrial development.
City of Memphis	46.7	Recreation - Golf Course operated by Vietnam Veterans of America Chapter 1113.
Depot Owners Association, LLC	35.6	Memphis Depot Parkway and stormwater basins.
Supply Chain Solutions, LLC	8.2	Warehousing/logistics.
Alpha Omega Veterans Services	6.5	Homeless shelter, approved for unrestricted use.
Memphis Police Department	4.7	Airways Police Station.
Dunn Field		
Dunn Field Business Park, LLC	39.4	Undeveloped property for future warehousing/ logistics or light industrial development; approved for unrestricted use.
Army	26.2	Undeveloped.
City of Memphis	1.6	Realignment of Hayes Road.

Note:
1) Acreage is approximate

TABLE 10
FOLLOW-UP ACTIONS FROM FIFTH FIVE-YEAR REVIEW
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

OU #	Issue	Recommendation	Current Status	Current Implementation Status Description	Completion Date[1]
1	Investigation of increased COC concentrations in groundwater confirmed residual soil contamination and potential vapor intrusion hazard to future onsite workers and offsite residents.	Develop plan for additional sampling, through coordination with USEPA and TDEC, to evaluate potential exposure to offsite residents; conduct sampling, analysis and risk assessment; identify necessary changes to land use controls and other actions necessary to ensure future protectiveness; and issue report.	In progress	The *Dunn Field West Vapor Intrusion Sampling and Analysis Plan, Revision 0* was submitted to EPA and TDEC for review on 15 August 2023.	Target Date: 2/28/25
2, 3 & 4	Selected remedy component, EBT, has not shown expected progress toward the RAOs.	Complete the MI FFS and ROD Amendment for alternative remedial action to ensure protectiveness.	In progress	The FFS report was approved by TDEC in January 2023. USEPA comments on the FFS report were received in December 2022 and January 2023; resolution of the comments is in progress.	Target Date: 4/4/25
2, 3 & 4	Additional lines of evidence are needed for an assessment of Vapor Intrusion (VI) risk.	Complete and implement the MI VI SAP to evaluate the VI pathway and issue the VI Study Report.	In progress	The *Vapor Intrusion Sampling and Analysis Plan, Revision 1* was submitted in May 2023, following approval of the VI SAP by TDEC in February 2023 and concurrence on revisions by USEPA in April 2023. Phase 1 passive vapor screening sampling was completed in September 2023. Phase 2 VMP installation and vapor sampling was completed in November 2023; Phase 2 data report is in preparation.	Target Date: 3/15/25
1, 2, 3 & 4	Potential presence of Per- and Polyfluoroalkyl Substances (PFAS).	Complete preliminary assessment and site inspection (PA/SI) to evaluate presence of PFAS and issue report.	Completed	The PA report was issued in August 2023 and the SI report was issued in November 2023. The reports were provided to USEPA and TDEC; agency comments will be addressed in scoping the DDMT PFAS RI.	Target Date: 11/2/23

Notes:

1) The target completion dates are for completion of the Dunn Field West VI Study Report in Recomendation 1, the MI ROD Amendment in Recommendation 2, the MI VI Sampling Report in Recommendation 3 and the DDMT PFAS PA/SI Report in Recommendation 4, as listed in Figure 29 Master Schedule of this SMP.

CSM: Conceptual Site Model
DoD: Department of Defense
EBT: enhanced bioremediation treatment
FFS: Focused Feasibility Study
LTM: long-term monitoring
RAOs: Remedial Action Objectives
SRI: Supplemental Remedial Investigation
VI: vapor intrusion
TDEC: Tennessee Department of Environment and Conservation
USEPA: United States Environmental Protection Agency

TABLE 11
PRIMARY AND SECONDARY DOCUMENTS, FY24 THROUGH FY26
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis Tennessee

Activity	2024 SMP Date	Date Type
Fiscal Year 2024	***10/1/2023***	
Off Depot AS/SVE Operations Report, Year 12 Rev. 0	14-Nov-2023	Target
2024 Site Management Plan, Rev. 0	29-Nov-2023	Deadline
Dunn Field West VI Sampling and Analysis Plan, Rev. 1	23-Jan-2024	Target
2023 LTM Report, Rev. 0	15-Feb-2024	Target
MI Focused Feasibility Study Report, Rev. 1	3-May-2024	Deadline
MI Sampling and Risk Screening Report, Rev. 1	5-May-2024	Target
Off Depot AS/SVE Operations Report, Year 12 Rev. 1	21-May-2024	Target
2024 Site Management Plan, Rev. 1	11-Jun-2024	Deadline
MI Revised Proposed Plan, Rev. 0	11-Jun-2024	Deadline
Dunn Field Explanation of Significant Differences, Rev.0	28-Jun-2024	Deadline
2024 Annual Site Inspection Report	29-Aug-2024	Target
Fiscal Year 2025	***10/1/2024***	
2023 LTM Report, Rev. 1	12-Oct-2024	Target
MI Revised Proposed Plan, Rev. 1	8-Nov-2024	Deadline
Public Notice of Revised Proposed Plan Public Meeting	13-Nov-2024	Target
Dunn Field West Remedial Action Work Plan, Rev.0	25-Nov-2024	Deadline
2025 Site Management Plan, Rev. 0	29-Nov-2024	Deadline
MI VI Study Report, Rev. 0	8-Dec-2024	Target
Dunn Field West VI Study Report, Rev. 0	25-Dec-2024	Target
Dunn Field Explanation of Significant Differences, Rev.1	14-Jan-2025	Deadline
MI ROD Amendment Rev.0	22-Jan-2025	Deadline
2024 LTM Report, Rev. 0	27-Feb-2025	Target
Finding of Suitablity to Transfer 5, Amendment 2 Rev.0	14-May-2025	Target
Dunn Field West Remedial Action Work Plan, Rev.1	15-May-2025	Deadline
2025 Site Management Plan, Rev. 1	7-Jun-2025	Deadline
New MI RD, Rev. 0	16-Jun-2025	Deadline
Dunn Field West VI Study Report, Rev. 1	3-Jul-2025	Target
MI VI Study Report, Rev. 1	21-Jul-2025	Target
MI ROD Amendment Rev.1	25-Aug-2025	Deadline
2025 Annual Site Inspection Report	29-Aug-2025	Target
Fifth FYR Addendum, Rev. 0	1-Sep-2025	Target
Final MI ROD Amendment	24-Sep-2025	Deadline
2024 LTM Report, Rev. 1	25-Sep-2025	Target
Public Notice of MI ROD Amendment	1-Oct-2025	Target
Fiscal Year 2026	***10/1/2025***	
Finding of Suitablity to Transfer 5, Amendment 2 Rev.1	11-Oct-2025	Target
2025 LTM Report, Rev. 0	27-Feb-2026	Target
Final Fifth FYR Addendum	5-Mar-2026	Target
2026 Site Management Plan, Rev. 1	6-Jun-2026	Deadline
2026 Annual Site Inspection Report	29-Aug-2026	Target
2025 LTM Report, Rev. 1	25-Sep-2026	Target
2026 Site Management Plan, Rev. 0	28-Nov-2026	Deadline

TABLE 11
PRIMARY AND SECONDARY DOCUMENTS, FY24 THROUGH FY26
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis Tennessee

Notes:

1. Section XV. of the DDMT Federal Facilities Agreement (FFA) states DoD is responsible for issuing Primary and Secondary Documents to EPA and TDEC in accordance with the schedule provided in the latest approved SMP.

a. Deadlines are the scheduled submittal dates for Primary Documents; DoD may be assessed stipulated penalties for failure to meet a Deadline (FFA, Section XXIV).

b. Targets are the scheduled submittal dates for Secondary Documents; stipulated penalties do not apply to Targets.

c. Primary Documents are those reports, plans and studies that are major, discrete portions of the response action process.

d. Secondary Documents are those reports, plans and studies that are discrete portions of the Primary Documents and are typically input or feeder documents.

TABLE 12
FISCAL YEAR REQUIREMENTS
2024 SITE MANAGEMENT PLAN
Defense Depot Memphis, Tennessee

Description	2024	2025	2026	2027	2028	2029	Out Years	Total
Remedial Action Sites	$ -	$ 622,189	$ 2,964,649	$ 1,277,260	$ 1,340,538	$ 1,277,260	$ 9,691,019	$ 17,172,913

Note: Planned funding is from the BRAC Fiscal Year 2023 Cost to Complete Estimates. Funding for 2024 has been awarded for ongoing task orders.

Figures

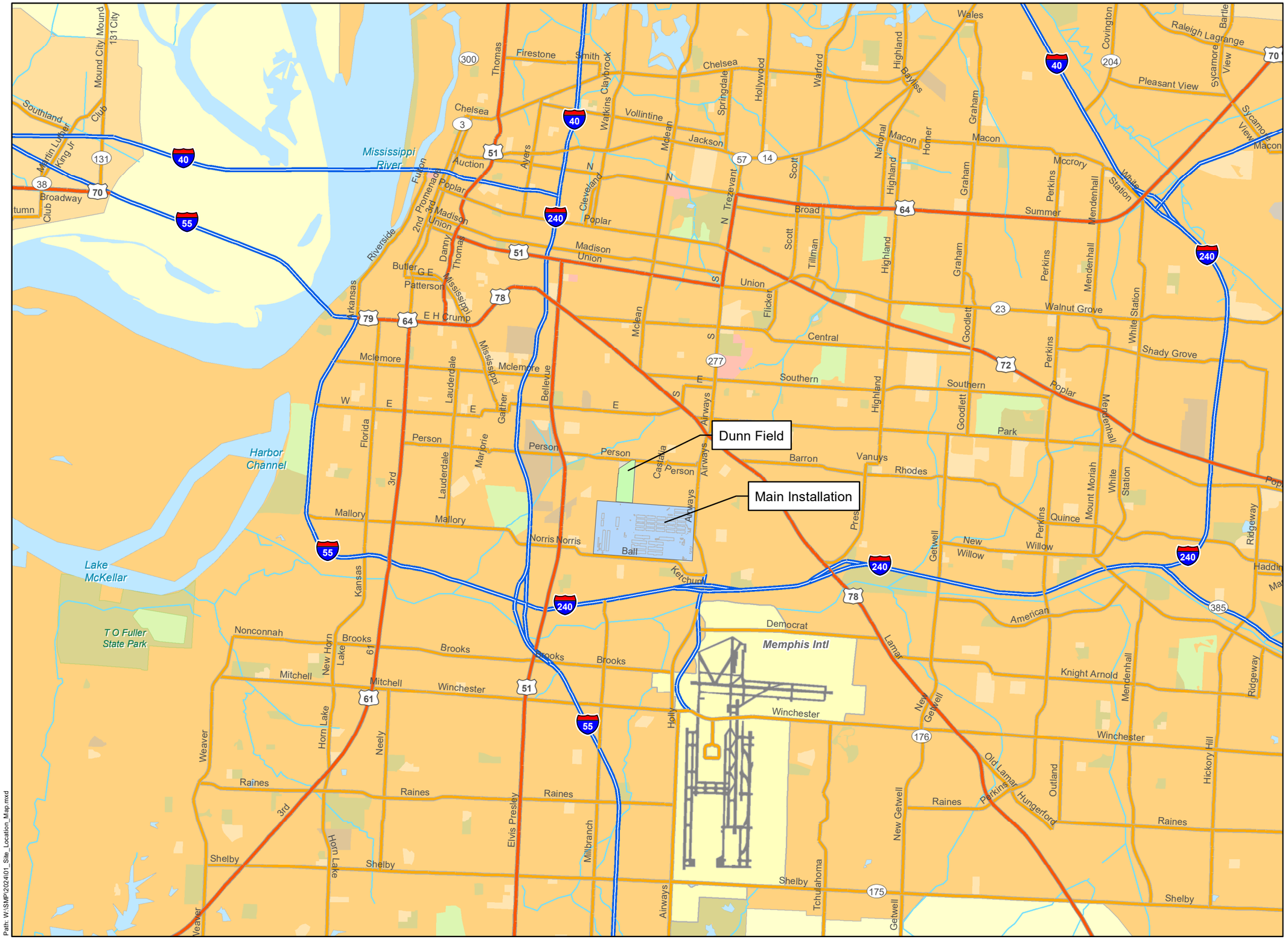


Figure 1

Site Location Map

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

N
W E
S

0 1 2
Miles

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 8/30/2023
Edition: Rev 0

Path: W:\SMP\2024\01_Site_Location_Map.mxd

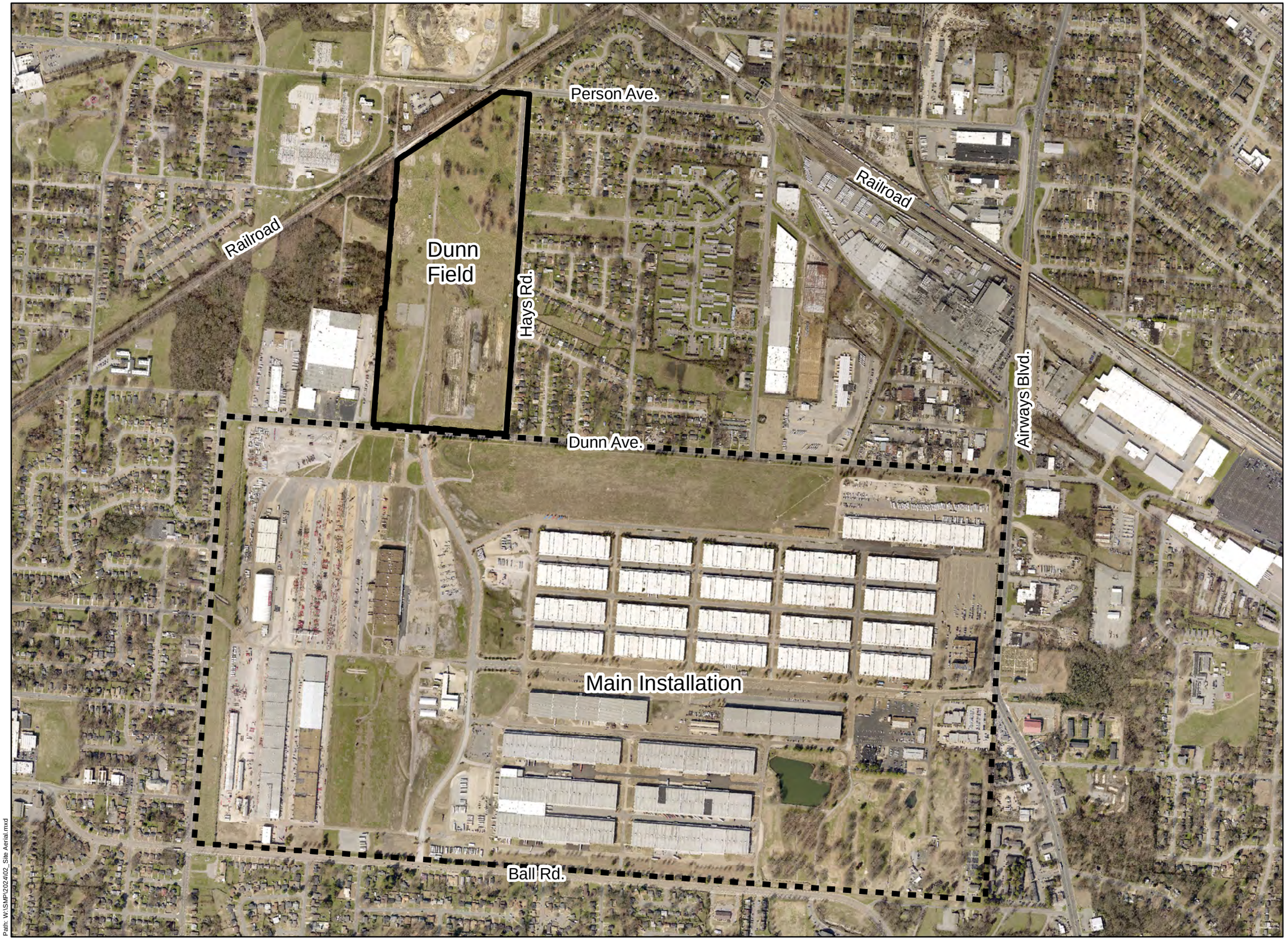


Figure 2

Site Aerial Photograph

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

- Main Installation Perimeter
- Dunn Field Perimeter

Notes:
1. Aerial date: 2019.
2. Source: Shelby County TN Regional GIS Department.

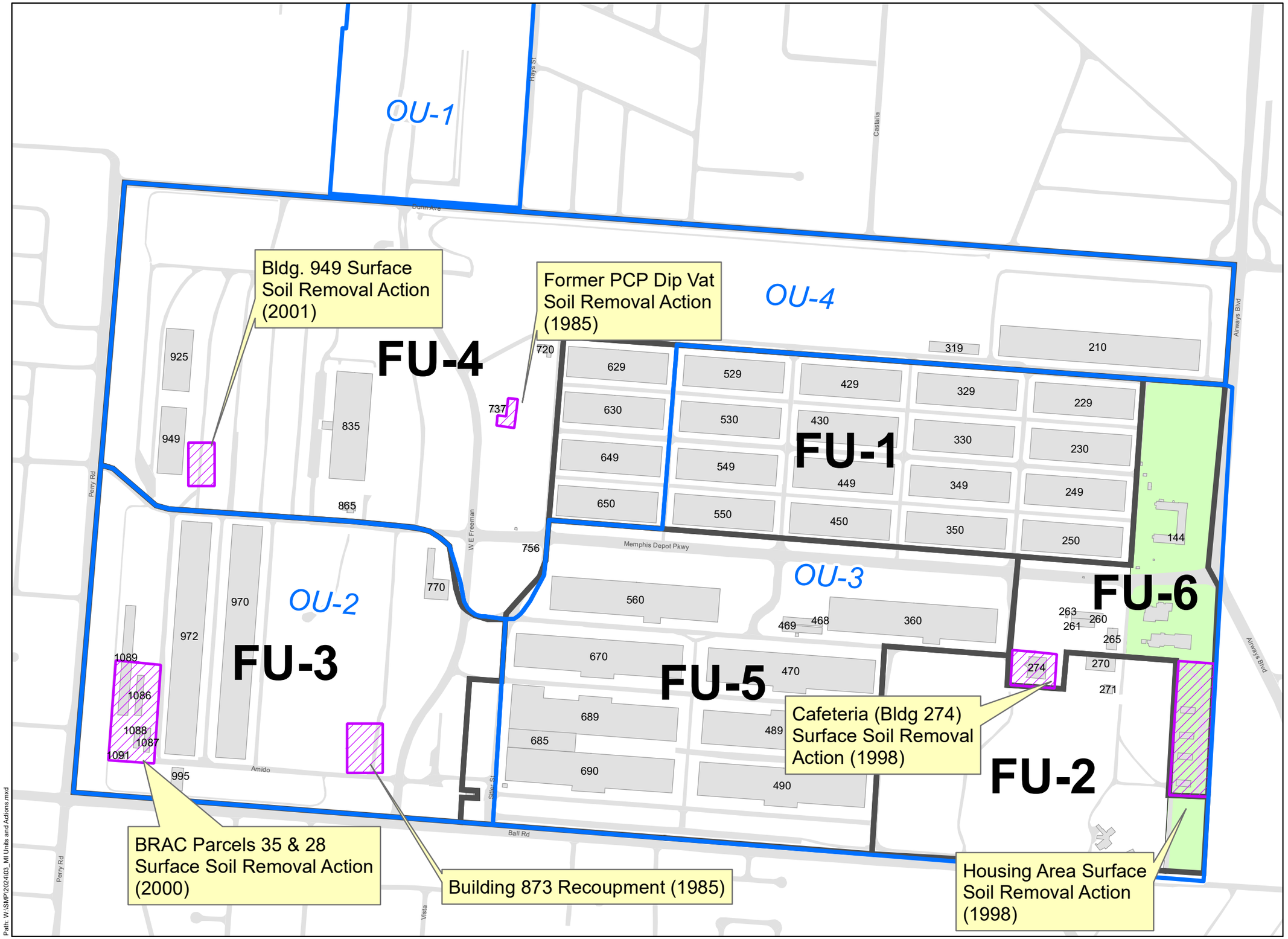
N
W E
S

0 500 1,000
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 8/30/2023
Edition: Rev 0

Path: W:\SMP\2024\02_Site Aerial.mxd



Path: W:\SMP\202403_MI Units and Actions.mxd

Figure 3

Main Installation Unit Boundaries and Response Actions

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

- Operable Units (OU-#)
- Past Response Actions
- Functional Unit Boundary (FU-#)
- Area Available for Unrestricted Use
- Buildings *490 - DDMT Assigned Number*
- Roads

N
W E
S

0 500 1,000
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 8/30/2023
Edition: Rev 0

Path: W:\SMP\2024\04_DF Areas and Actions.mxd

Figure 4

Dunn Field
Area Designations, Removal Actions and Interim Remedial Action

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

- Original Dunn Field Boundary
- IRA Recovery Well
- IRA Discharge Conveyance Line
- Area Designations
- Removal Actions
- Unrestricted Use Area
- Paved Area
- Roads
- Railroad

N
W E
S

0 250 500
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 8/30/2023
Edition: Rev 0

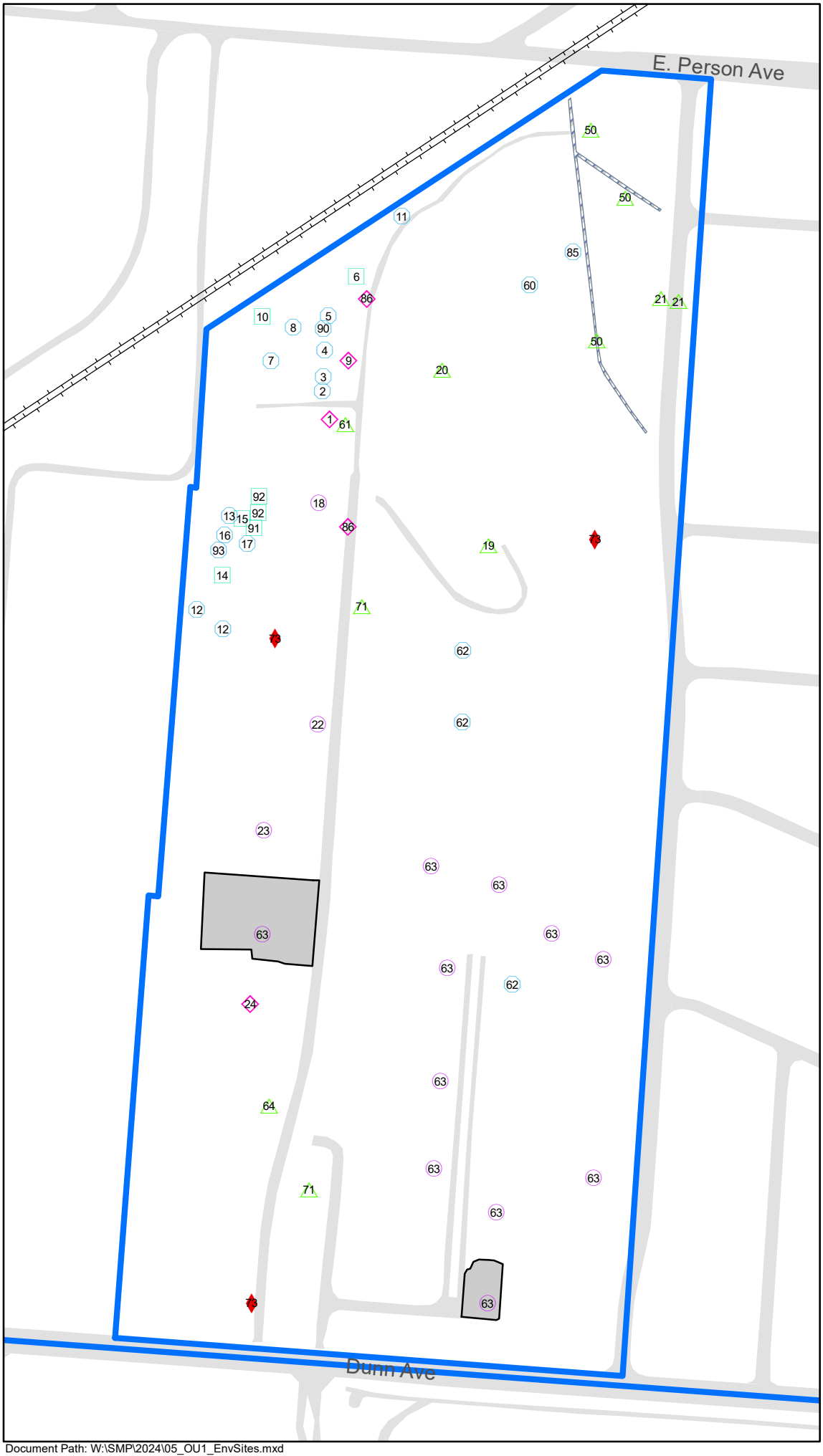


Figure 5

OU-1 Site Locations
Dunn Field

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

Environmental Sites

- Chemical Warfare Manag. Plan Site
- Proposed Early Removal Site
- Feasibility Study Site
- No Further Action Site
- Remedial Investigation Site
- Screening Site
- Operable Units
- Paved Area
- Concrete Ditches
- Railroad
- Roads

N
W E
S

0 250 500
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 9/5/2023
Edition: Rev 0

Document Path: W:\SMP\2024\05_OU1_EnvSites.mxd

Figure 6

OU-2 Site Locations
Main Installation
Southwest Quadrant

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

- Proposed Early Removal Site
- Feasibility Study Site
- No Further Action Site
- Remedial Investigation Site
- Screening Site
- Operable Units
- Holding Pond
- Paved
- Gravel Storage
- Roads
- Buildings *490 - DDMT Assigned Number*

N
W E
S

0 200 400
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 9/5/2023
Edition: Rev 0

Path: W:\SMP\2024\06_OU2 Sites.mxd

Path: W:\SMP\2024\07_OU3 Sites.mxd

Figure 7

OU-3 Site Locations Main Installation Southeastern Watershed and Golf Course

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

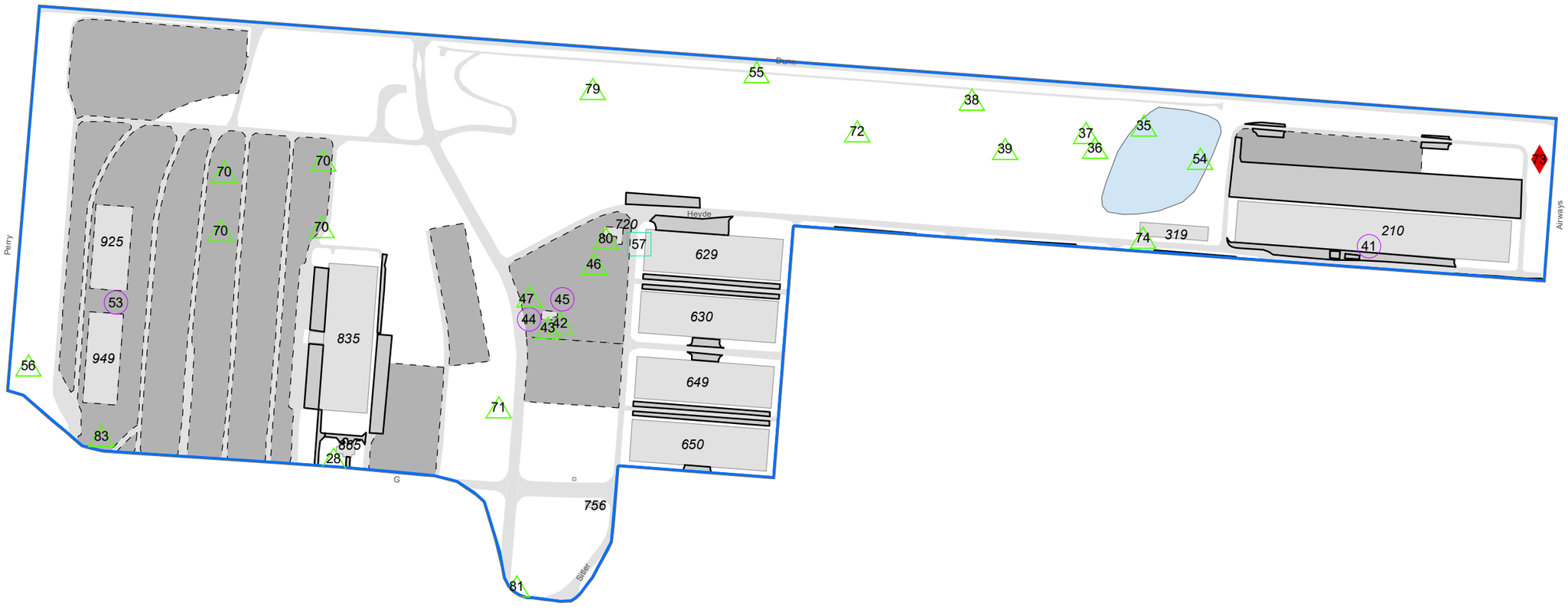
- Feasibility Study Site
- No Further Action Site
- Remedial Investigation Site
- Screening Site
- Operable Units
- Surface Water
- Paved Area
- Gravel Storage Area
- Roads
- Buildings *490 - DDMT Assigned Number*

N
W E
S

0 300 600
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 10/2/2023
Edition: Rev 0



Path: W:\SMP\2024\08_OU4 Sites.mxd

Figure 8

OU-4 Site Locations
Main Installation
North Central Area

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

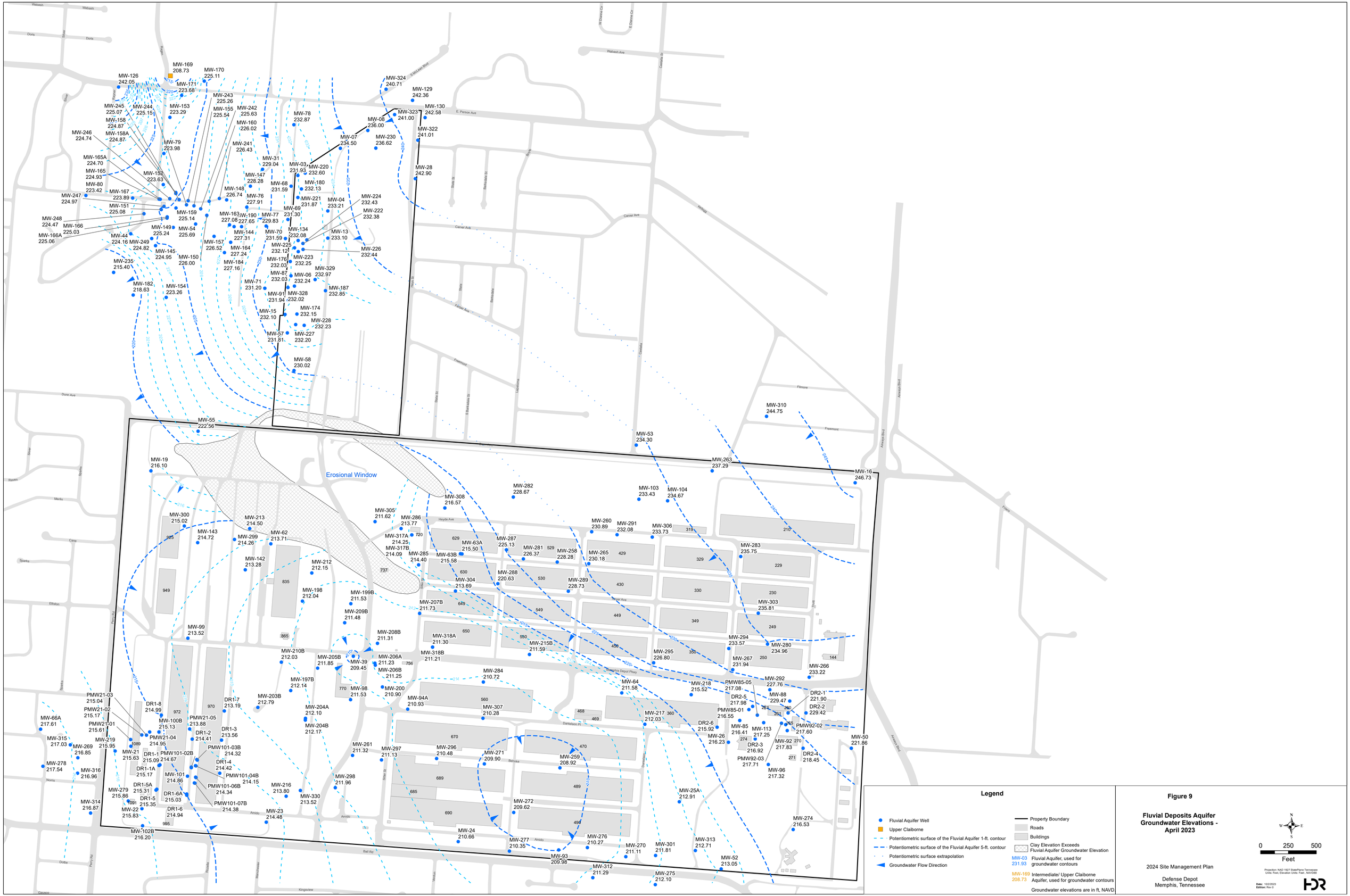
- Feasibility Study Site
- No Further Action Site
- Remedial Investigation Site
- Screening Site
- Operable Units
- Holding Pond
- Paved Area
- Gravel Storage Area
- Roads
- Buildings *490 - DDMT Assigned Number*

N
W E
S

0 500 1,000
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 9/5/2023
Edition: Rev 0



Legend

- ● Fluvial Aquifer Well
- 🟧 Upper Claiborne
- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface extrapolation
- Groundwater Flow Direction
- Property Boundary
- Roads
- Buildings
- ▨ Clay Elevation Exceeds Fluvial Aquifer Groundwater Elevation
- MW-03 231.93 Fluvial Aquifer, used for groundwater contours
- MW-169 208.73 Intermediate/ Upper Claiborne Aquifer, used for groundwater contours

Groundwater elevations are in ft, NAVD.

Figure 9

Fluvial Deposits Aquifer Groundwater Elevations - April 2023

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

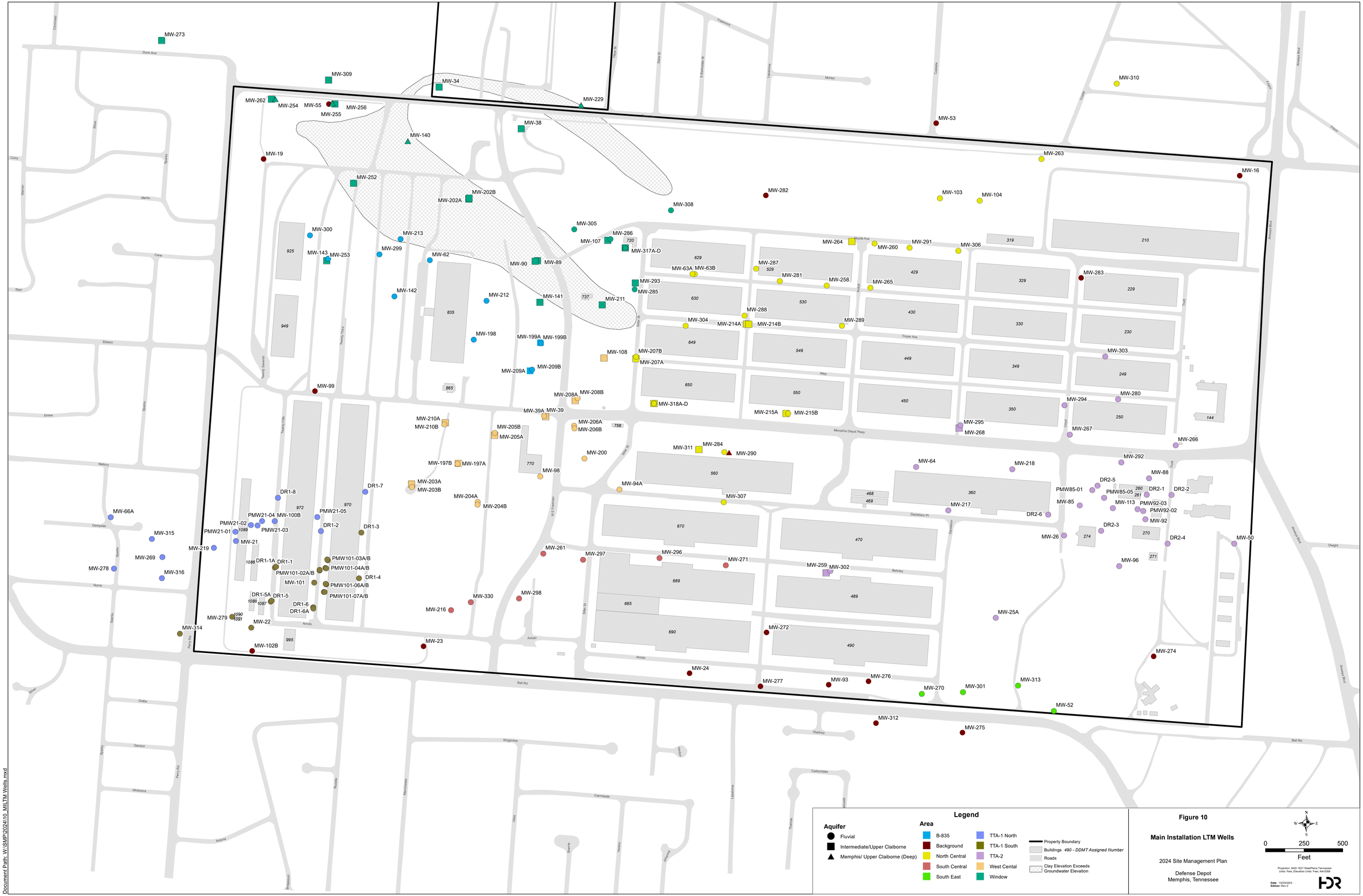
N S E W

0 250 500
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet , NAVD88

Date: 10/2/2023
Edition: Rev 0

FDR


MW-273
MW-309
MW-34
MW-262
MW-254
MW-55
MW-256
MW-255
MW-229
MW-38
MW-140
MW-19
MW-252
MW-202B
MW-202A
MW-53
MW-310
MW-263
MW-16
MW-282
MW-103
MW-104
MW-308
MW-305
MW-300
MW-213
MW-286
MW-107
MW-317A-D
MW-143
MW-253
MW-299
MW-62
MW-90
MW-89
MW-264
MW-260
MW-291
MW-306
MW-63A
MW-63B
MW-287
MW-281
MW-258
MW-265
MW-283
MW-293
MW-285
MW-142
MW-212
MW-141
MW-211
MW-288
MW-214A
MW-214B
MW-289
MW-304
MW-198
MW-199A
MW-199B
MW-108
MW-207B
MW-207A
MW-303
MW-209A
MW-209B
MW-99
MW-208A
MW-208B
MW-318A-D
MW-215A
MW-215B
MW-294
MW-280
MW-295
MW-268
MW-267
MW-266
MW-210A
MW-210B
MW-39A
MW-39
MW-206A
MW-206B
MW-205B
MW-205A
MW-200
MW-311
MW-284
MW-290
MW-292
MW-64
MW-218
MW-88
MW-197B
MW-197A
MW-98
MW-203A
MW-203B
MW-204A
MW-204B
MW-94A
MW-307
DR2-5
DR2-1
DR2-2
PMW85-01
PMW85-05
MW-85
MW-113
PMW92-03
PMW92-02
MW-92
DR2-6
MW-217
DR2-3
DR2-4
MW-26
MW-50
MW-96
MW-66A
MW-315
MW-269
MW-278
MW-316
MW-219
MW-21
DR1-8
DR1-7
DR1-2
DR1-3
PMW21-04
MW-100B
PMW21-05
PMW21-02
PMW21-01
PMW21-03
DR1-1A
DR1-1
PMW101-03A/B
PMW101-04A/B
PMW101-02A/B
DR1-4
MW-101
PMW101-06A/B
PMW101-07A/B
DR1-5A
DR1-5
DR1-6
DR1-6A
MW-279
MW-22
MW-314
MW-102B
MW-23
MW-330
MW-216
MW-298
MW-261
MW-297
MW-296
MW-271
MW-259
MW-302
MW-25A
MW-272
MW-24
MW-277
MW-93
MW-276
MW-270
MW-301
MW-313
MW-52
MW-312
MW-275
MW-274
Freemont
Murley
Cedars
Cooper
Poplar
Always Blvd
Flicker
Dunn Ave
Chromwell
Shaw
Corry
Warren
Sparks
Merlin
Ciane
Starr
Elliston
Eloise
Mallory
Dempster
Norris
Perry Rd
Dottie
Gausco
Whitmore
Arthona
Bridgeport
Rozelle
Manchester
Kingsview
Vinton
Vista
Fairmeade
Sloane
Vernon
Arizona
Thomas
Lagalowa
Carbondale
Gradney
Ball Rd
Amido
Behnke
Troyer Ave
Alley
Memphis Depot Pkwy
Danielson Pl
Dwight
Hyde Ave
Hollis
Tuttle
Lloyd
Stier St
Twenty Third
Twenty Seventh
Twenty Fifth
W E Freeman
Danielson
Arkansas Blvd
925
949
835
865
995
737
756
770
629
529
630
649
650
720
729
730
560
468
469
670
689
685
690
360
470
489
490
319
210
429
329
229
530
430
330
230
549
449
349
249
550
450
350
250
144
260
261
274
270
271
Legend
Aquifer
Fluvial
Intermediate/Upper Claiborne
Memphis/ Upper Claiborne (Deep)
Area
B-835
Background
North Central
South Central
South East
TTA-1 North
TTA-1 South
TTA-2
West Cental
Window
Property Boundary
Buildings 490 - DDMT Assigned Number
Roads
Clay Elevation Exceeds Groundwater Elevation
Figure 10
Main Installation LTM Wells
2024 Site Management Plan
Defense Depot
Memphis, Tennessee
N
W
E
S
0
250
500
Feet
Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88
Date: 10/20/2023
Edition: Rev 0
HDR
Document Path: W:\SMP\2024\10_MI\LTM Wells.mxd

Notes:
1. Color-coded well symbols are based on the most recent analytical results at each well. Results are from the October 2022 and April 2023 LTM events. Only concentrations from the April 2023 LTM event are shown below the well ID.
2. Groundwater contours are from the April 2023 LTM event.

Legend

Aquifer
- Fluvial
- Intermediate/Upper Claiborne
- Memphis/ Upper Claiborne (Deep)

Well Symbol (µg/L)
- 0-5
- 5-10
- 10-50
- 50-100
- >100

Contour Shading IUC (µg/L)
- 5-10
- >10

Contour Shading (µg/L)
- 5-10
- 10-50
- 50-100
- >100

- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface extrapolation
- Intermediate Aquifer Contours
- Groundwater Flow Direction
- Groundwater Flow Direction (Intermediate)
- Property Boundary
- Buildings
- Roads
- Clay Elevation Exceeds Fluvial Aquifer Groundwater Elevation

Figure 11

Main Installation PCE Concentrations, April 2023

2024 Site Management Plan

Defense Depot Memphis, Tennessee

0 250 500 Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 9/5/2023
Edition: Rev 0

Document Path: W:\SMP2024\11_PCE_FAD_Apr2023.mxd

Notes:
1. Color-coded well symbols are based on the most recent analytical results at each well. Results are from the October 2022 and April 2023 LTM events. Only concentrations from the April 2023 LTM event are shown below the well ID.
2. Groundwater contours are from the April 2023 LTM event.

Document Path: W:\SMP\2024\12_TCE_FAQ_Apr2023.mxd

Aquifer

●	Fluvial
■	Intermediate/Upper Claiborne
▲	Memphis/ Upper Claiborne (Deep)

Well Symbol (µg/L)

●	0-5
●	5-10
●	10-50
●	50-100
●	>100

Contour Shading IUC (µg/L)

▨	5-10
▨	>10

Contour Shading (µg/L)

🟩	5-10
🟨	10-50
🟧	50-100
🟥	>100

Legend

- - -	Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- - -	Potentiometric surface of the Fluvial Aquifer 5-ft. contour
· ·	Potentiometric surface extrapolation
- - -	Intermediate Aquifer Contours
◄	Groundwater Flow Direction
◄	Groundwater Flow Direction (Intermediate)
—	Property Boundary
▭	Buildings
▭	Roads
▨	Clay Elevation Exceeds Fluvial Aquifer Groundwater Elevation

Figure 12

Main Installation
TCE Concentrations,
April 2023

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

0 250 500
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 9/5/2023
Edition: Rev 0

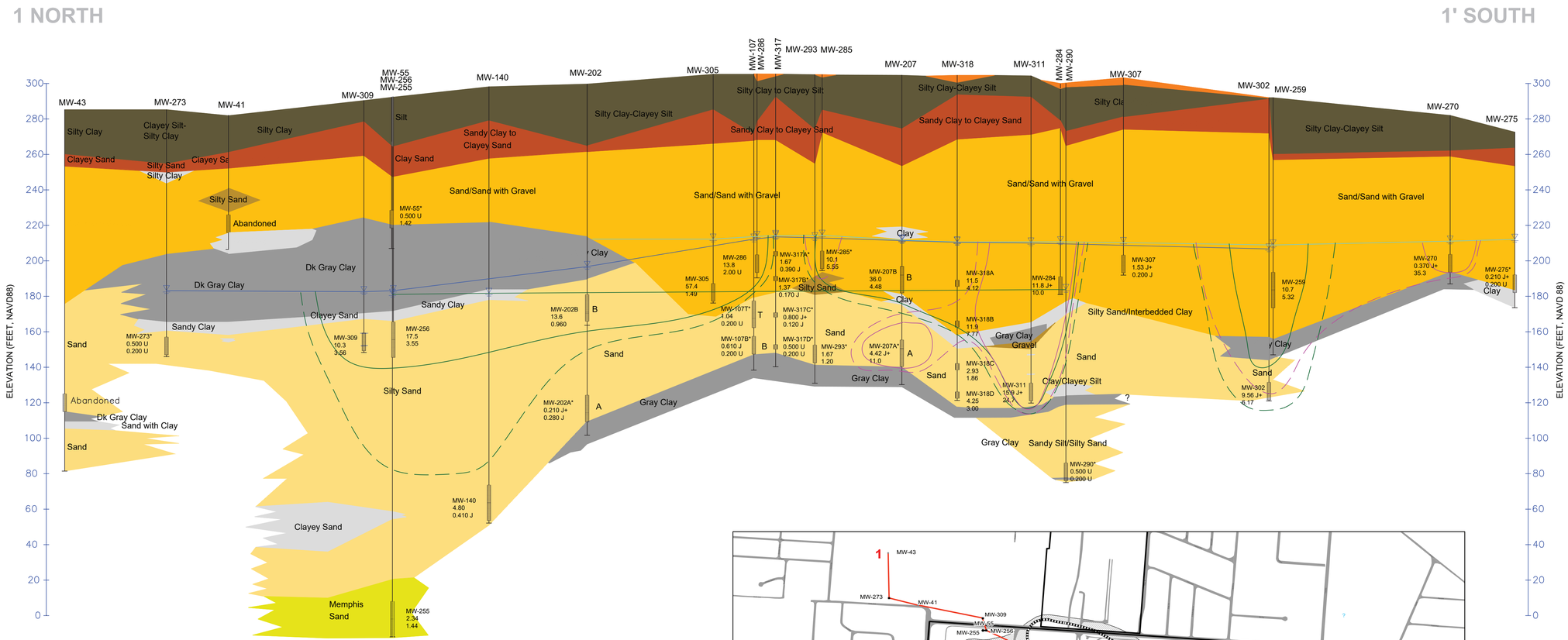
HDR

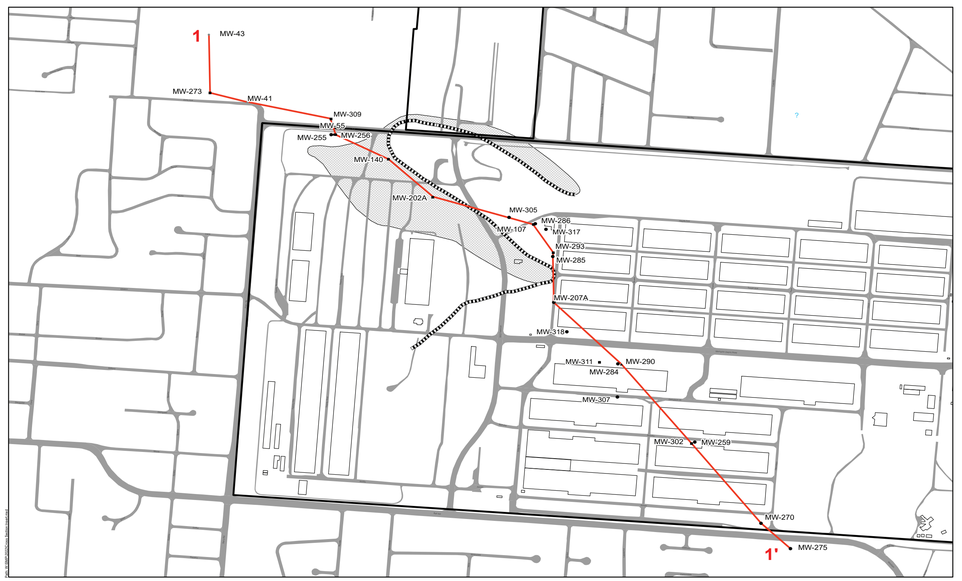
Figure 13

Cross Section 1, MW-43 to MW-275

2024 Site Management Plan

Defense Depot Memphis, Tennessee





Cross-Section Location

Fill

Silty Clay to Clayey Silt

Sandy Clay to Clayey Sand

Fluvial Sand or Sand with Gravel

Clayey Sand to Silty Clay

Silty Sand-Sandy Silt

Intermediate Sand

Clay

Memphis Sand

Groundwater Elevation

Fluvial Aquifer Groundwater Elevation

Intermediate Aquifer Groundwater Elevation

Memphis Aquifer Groundwater Elevation

Well Screen Interval

PCE 5 ug/L

PCE 10 ug/L

TCE 5 ug/L

TCE 10 ug/L

Well ID
PCE Result ug/L
TCE Result ug/L

Results from April 2023
*** Results from October 2022**

Note: Water levels measured during LTM in April 2023.

20
0
200

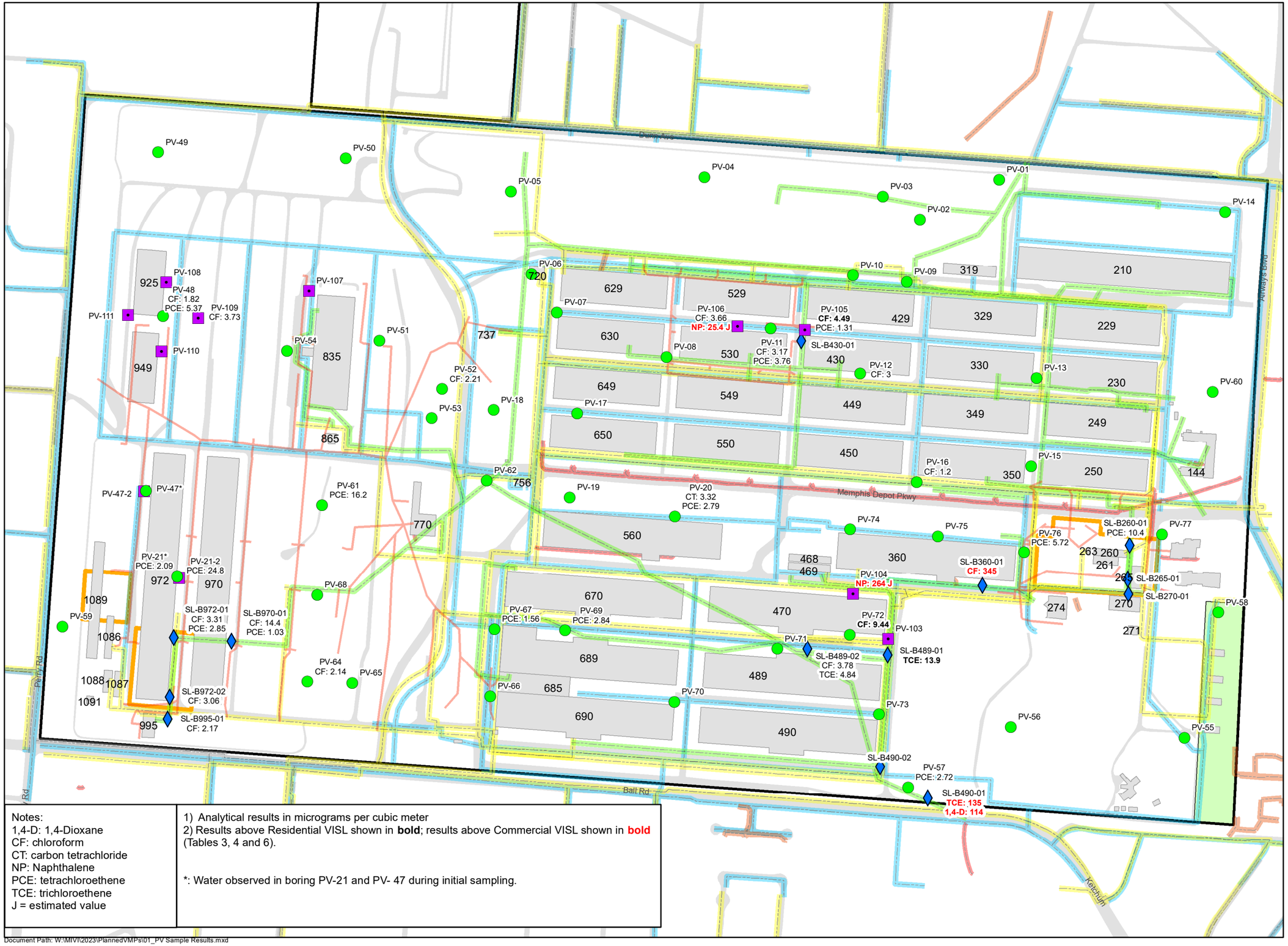
Date: September 2023
Edition: Rev 0

Figure 14

Site-Wide PV Sample Locations, CVOC Results

2024 Site Management Plan

Main Installation
Defense Depot
Memphis, Tennessee



Legend

- PV-98: Passive Soil Vapor Sample Location
- PV-21-2: Follow Up Passive Soil Vapor Sample Location
- SL-B430-01: Sewer Line Sample
- Storm Drain Line
- Buildings *490 - DDMT Assigned Number*
- Sewer
- Abandoned Gas Line
- Underground Power Line
- Underground Power in Duct
- Gas Main
- Water Line
- Property Boundary
- Area Available for Residential Use
- TTA-1 and TTA-2 Initial Grid Boundaries
- Roads

N
W E
S

0 500 1,000
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 9/26/2023
Edition: Rev 0

Notes:
1,4-D: 1,4-Dioxane
CF: chloroform
CT: carbon tetrachloride
NP: Naphthalene
PCE: tetrachloroethene
TCE: trichloroethene
J = estimated value

1) Analytical results in micrograms per cubic meter
2) Results above Residential VISL shown in **bold**; results above Commercial VISL shown in **bold** (Tables 3, 4 and 6).

*: Water observed in boring PV-21 and PV- 47 during initial sampling.

Document Path: W:\MIVI\2023\PlannedVMPs\01_PV Sample Results.mxd

Legend

- PV-25: Passive Soil Vapor Sample Location
- PV-28-2: Follow Up Passive Soil Vapor Sample Location
- Utility Backfill Samples
- SL-B430-01: Sewer Line Sample
- Storm Drain Line
- Sanitary Sewer Line
- Gas Main
- Water Line
- Initial Grid Boundary

Notes:
BZ: Benzene
CF: chloroform
CT: carbon tetrachloride
NP: naphthalene
PCE: tetrachloroethene
TCE: trichloroethene

1) Analytical results in micrograms per cubic meter
2) Results above Residential VISL shown in **bold**; results above Commercial VISL shown in **bold** (Tables 3, 4, 5 and 6).

*: Water observed in borings PV-21, 28, 31, 34, 37,

PV-140
PV-141 CF: 5.73 PCE: 5.64
PV-112 PCE: 1.67
PV-113 PCE: 23.4 TCE: 6.79
PV-46 CF: 1.92 PCE: 14.5 TCE: 1,320
PV-37-2
PV-37* PCE: 8.63 TCE: 4.07
PV-40* PCE: 1.83
PV-40-2 PCE: 6.15 TCE: 1.95
PV-45 PCE: 3.84 TCE: 14.1
PV-114 CF: 1.36 PCE: 373 TCE: 37.7
PV-115 PCE: 963 TCE: 72.8
PV-21* PCE: 2.09
PV-21-2 PCE: 24.8
TTA-1N
PV-39
PV-41 PCE: 1.96
PV-142 CF: 9.57 PCE: 4.78 TCE: 8,470
PV-116 PCE: 189 TCE: 169
PV-117 PCE: 9.25 TCE: 2.26 NP: 24.2 J
1089
PV-44 CF: 4.11 PCE: 3.27 TCE: 3,480
PV-38 PCE: 2.27
PV-42 PCE: 2.74
PV-43-2
PV-43* PCE: 21 TCE: 3.76
PV-118 PCE: 290 TCE: 60.4
PV-119 PCE: 38,500 TCE: 555
PV-120 PCE: 31.6
PV-59
PV-121 PCE: 6.05
PV-122 PCE: 1,430 TCE: 265
970
PV-24 PCE: 5.21
PV-22 PCE: 4.53
SL-B972-01 CF: 3.31 PCE: 2.85
PV-139 PCE: 12.1 TCE: 1.4
PV-124 PCE: 39.5 TCE: 8.7
PV-125 PCE: 337 TCE: 39.7
PV-123 PCE: 21.4 TCE: 2.11
PV-23 PCE: 168
PV-25
PV-26 PCE: 3.15
TTA-1S
PV-126 PCE: 4.34
PV-127 PCE: 114 TCE: 3.56 NP: 13
PV-36 CT: 4.57 CF: 23.4 PCE: 4,350 TCE: 6,180
PV-128 PCE: 30.3 TCE: 18.2
PV-27 PCE: 1.23
PV-28* PCE: 39.4 TCE: 1.71
PV-129 PCE: 8.39 TCE: 2.14
PV-28-2 PCE: 54.8 TCE: 3.48
PV-130
PV-35 CF: 3.58 PCE: 4,040 TCE: 801
PV-131 CF: 3.94 PCE: 104 TCE: 969
PV-29 TCE: 4.58
PV-30
PV-132 PCE: 2.24
PV-133 PCE: 441 TCE: 804
PV-134 PCE: 4.65 BZ: 70.9
SL-B972-02 CF: 3.06
PV-32 PCE: 7.55 TCE: 5.19
PV-34* PCE: 283 TCE: 99.5
PV-33 PCE: 5.85 TCE: 5.81
PV-34-2 CF: 3.15 PCE: 11,100 TCE: 8,020
PV-31-2
PV-31*
PV-135
PV-136
SL-B995-01 CF: 2.17
PV-137
995
PV-138

Document Path: W:\MIVI\2023\PlannedVMPs\02_TTA1NS PV Sample Results.mxd

0 100 200
Feet

N W E S

Aerial Photo Data: 2019
Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

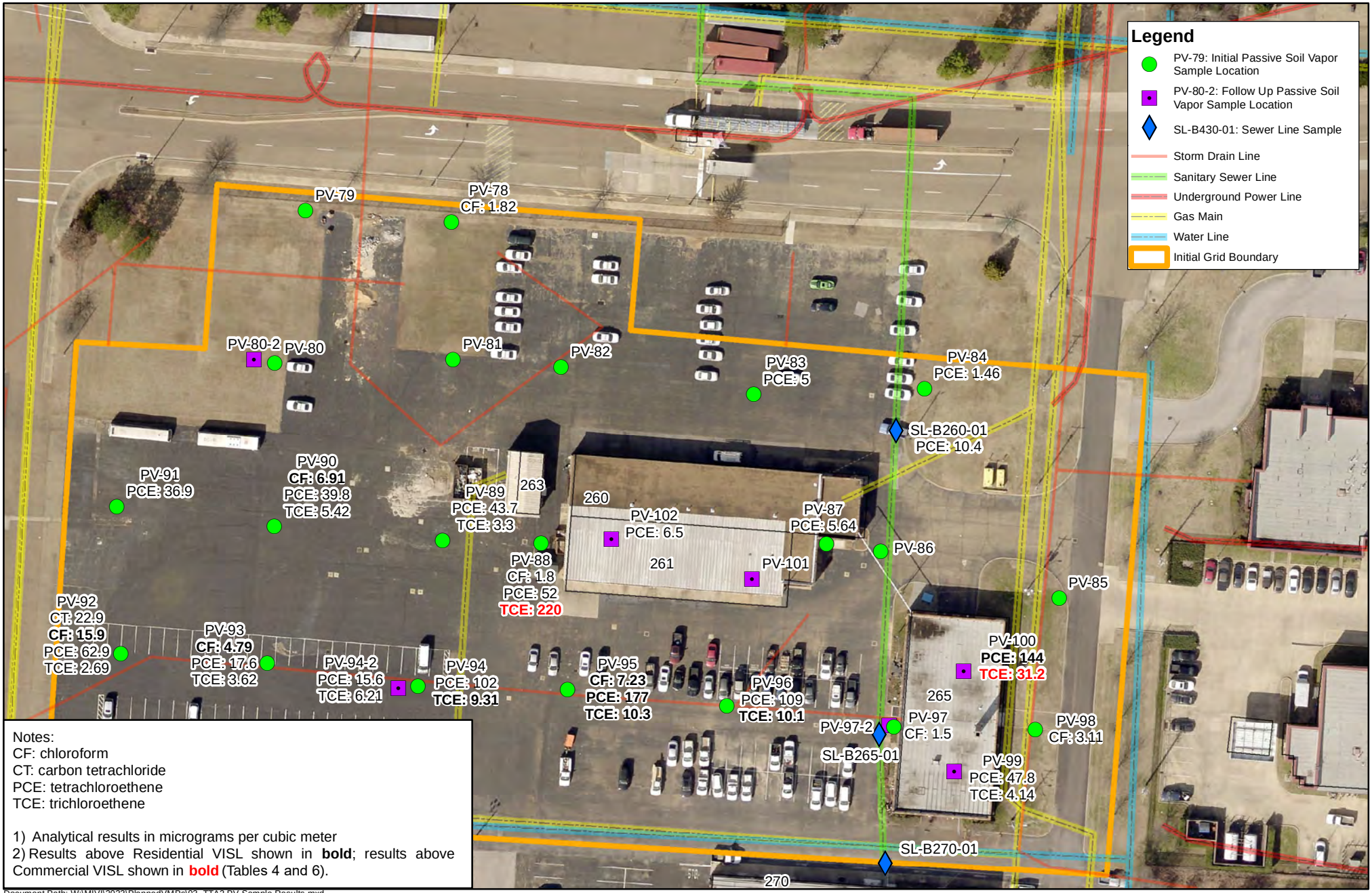
Date: 9/26/2023
Edition: Rev 0

Figure 15

TTA-1 PV Sample Locations, CVOC Results

2024 Site Management Plan

Main Installation
Defense Depot
Memphis, Tennessee



Notes:
CF: chloroform
CT: carbon tetrachloride
PCE: tetrachloroethene
TCE: trichloroethene

1) Analytical results in micrograms per cubic meter
2) Results above Residential VISL shown in **bold**; results above Commercial VISL shown in **bold** (Tables 4 and 6).

Document Path: W:\MIVI\2023\PlannedVMPs\03_TTA2 PV Sample Results.mxd

Aerial Photo Data: 2019
Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 9/22/2023
Edition: Rev 0

Figure 16

TTA-2 PV Sample Locations, CVOC Results

2024 Site Management Plan

Main Installation
Defense Depot
Memphis, Tennessee

Figure 17

Dunn Field Disposal Sites, Source Areas and Off-Depot Groundwater Remedial Actions

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

DS10 (2005)
DS 4/90 (2005)
DS 3 (2006)
EISR Treatment Area
Off Depot Groundwater Remedial Action
DS 13 (2005)
Treatment Area 2
MW-87
Treatment Area 3
Excavation TA-3
DS 64 (IA Site 31) (2005)

E. Person Ave
Rozelle
S McLean Blvd
Silver
Rayner
Ragan
Menager Rd
Westmore
Carver Ave
State St
Barksdale St
Hays St
Hearst Ave
State
Barksdale
Ferber Ave
Freemont
S Barksdale St
Dunn Ave

Legend

- Original Dunn Field Boundary
- Fluvial SVE Conveyance Line
- Disposal Sites Excavation Area
- Off Site Treatment Areas
- Off Depot Air Sparge Area
- EISR Treatment Area
- *Loess Excavation Areas*
- *Loess Thermal-Enhanced SVE Treatment Areas*
- Fluvial SVE Well 60-foot radius of influence
- Unrestricted Use Area from ROD
- Buildings
- Paved Area
- Roads
- Railroad

TA: Treatment Area
DS: Disposal Site
EISR: Early Implementation-Selected Remedy

N
W E
S

0 250 500
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

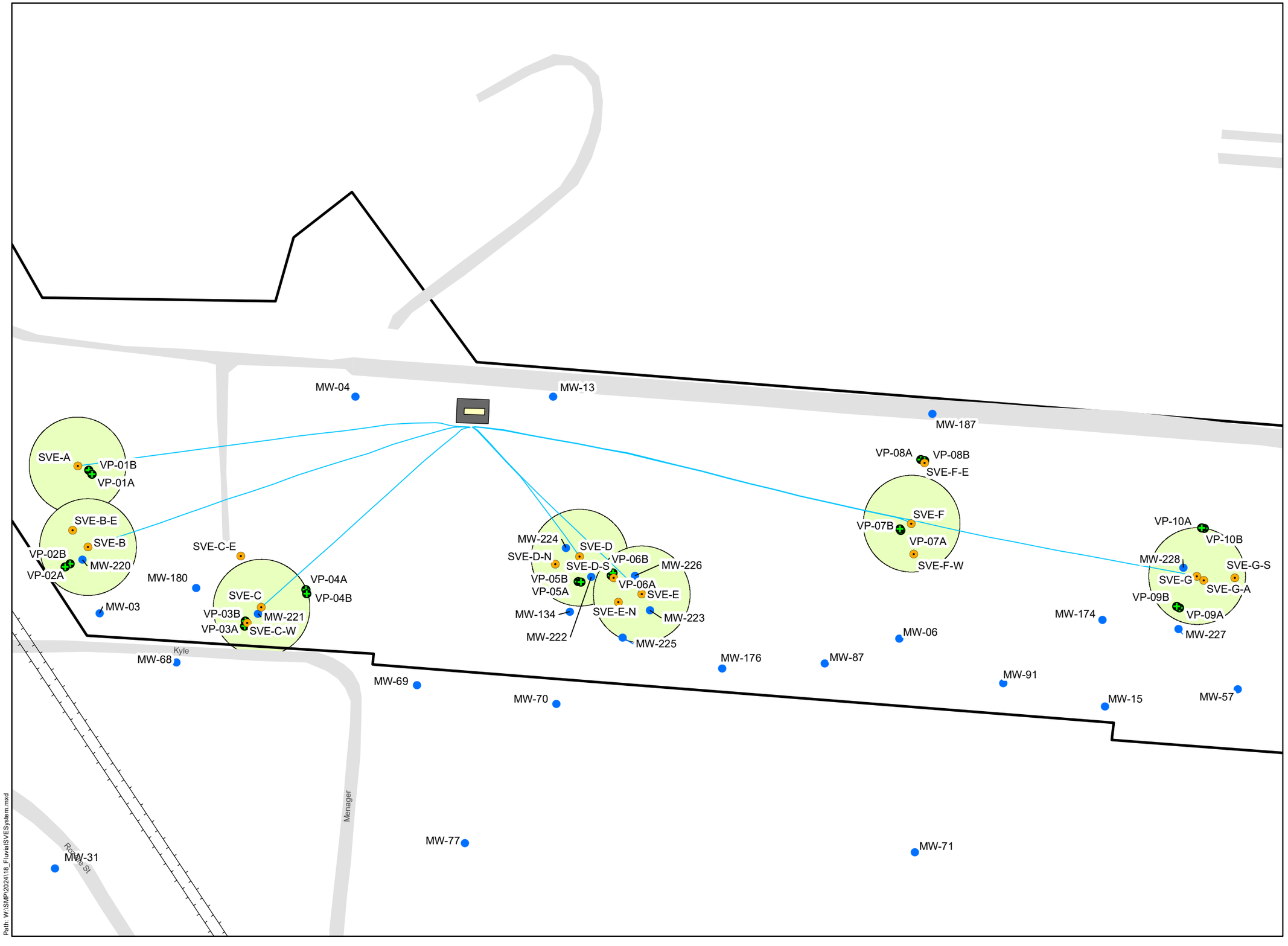
Path: W:\SMP\2024\17_DF Remedial Actions.mxd

Figure 18

Dunn Field
Fluvial SVE System

2024 Site Management Plan

Defense Depot
Memphis, Tennessee



Path: W:\SMP\2024\18_FluvialSVESystem.mxd

Legend

- Current Federal Property Boundary
- SVE Well *(Soil Vapor Extraction)*
- VMP *(Vapor Monitoring Point)*
- Monitoring Well Screened in the Fluvial Aquifer
- Monitor Well Screened in the Intermediate Aquifer
- Conveyance Line
- Control Building
- Concrete Pad
- 60-foot Radius of Influence

N E S W

0 100 200

Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

Figure 19

Off Depot Groundwater Remedial Action AS/SVE System

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

MW-152
Ragan
MW-158A
VMP-06A/B
MW-158
MW-165
MW-165A
MW-246
MW-245
MW-243
VMP-07A/B
Menager Rd
SVE-03
SVE-04
SVE-05
SVE-06
SVE-07
SVE-10
SVE-11
SVE-12
VMP-05A/B
VMP-02A/B
MW-160
MW-241
MW-148
VMP-01A/B
Rozelle St
MW-237
MW-244
MW-155
SVE-09
MW-247
ODSVE-02
VMP-09A/B
VMP-04A/B
MW-159
MW-151
SVE-01
SVE-08
MW-242
VMP-03A/B
VMP-08A/B
VMP-10A/B
MW-150
MW-166
MW-166A
MW-251
MW-54
MW-149

Path: W:\SMP\2024\19_AS-SVE System.mxd

Legend

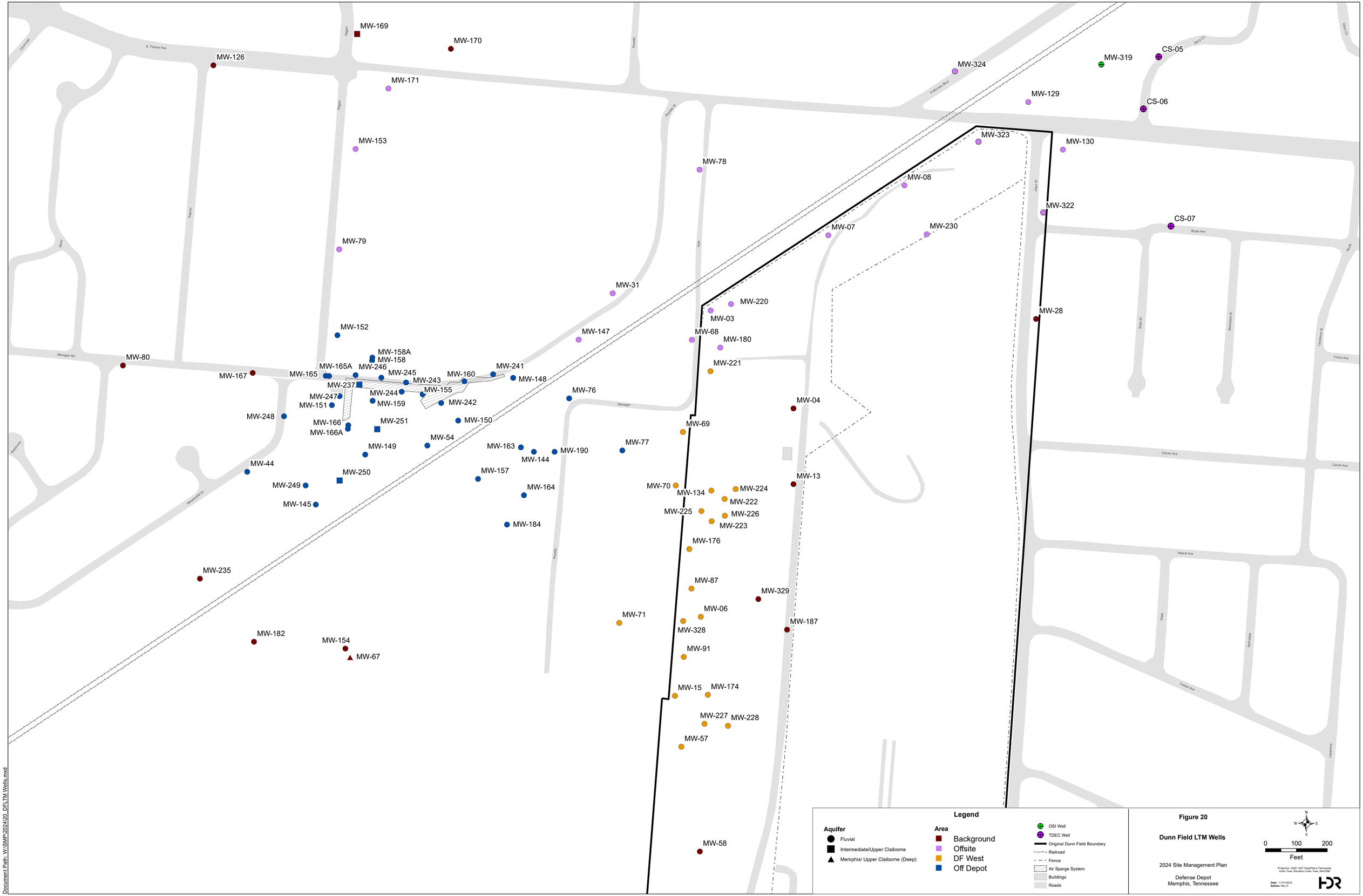
- Monitoring Well Screened in the Fluvial Aquifer
- Monitoring Well Screened in the Intermediate Aquifer
- AS Location (1/2 time)
- AS Location (full time)
- AS Location (closed)
- New AS Location (full time)
- VMP Location
- SVE Location
- Conveyance Lines
- New Conveyance Line
- SVE Compound
- Roads
- Railroad
- Parcel Boundary

N
W E
S

0 25 50
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet , mean sea level

Date: 11/21/2023
Edition: Rev 0



Legend

Aquifer
- Fluvial
- Intermediate/Upper Claiborne
- Memphis/ Upper Claiborne (Deep)

Area
- Background
- Offsite
- DF West
- Off Depot

- OSI Well
- TDEC Well
- Original Dunn Field Boundary
- Railroad
- Fence
- Air Sparge System
- Buildings
- Roads

Figure 20

Dunn Field LTM Wells

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

N
W E
S

0 100 200
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

HDR

Document Path: W:\SMP\2024\20_DFLTM Wells.mxd

MW-126 ND
MW-170 4.48
MW-171 8.95
MW-153 0.20
MW-324 17.4
MW-129 19.2
MW-323 8.22
MW-130 41.6
MW-130-RE 38.3
MW-78 ND
MW-08 4.34
MW-322 92.0
MW-07 16.9
MW-230 25.7
MW-79 17.0
MW-31 51.6
MW-03 59.1
MW-220 35.1
MW-28 ND
MW-152 0.12
MW-147 0.70
MW-68 1.90
MW-180 0.35
MW-80 ND
MW-158A ND
MW-158 0.87
MW-167 2.80
MW-165 0.63
MW-246 4.74
MW-245 0.20
MW-243 3.16
MW-241 0.21
MW-148 0.10
MW-160 0.26
MW-221 ND
MW-165A ND
MW-244 0.27
MW-155 0.75
MW-247 0.16
MW-159 28.4
MW-242 0.21
MW-76 0.31
MW-04 0.39
MW-248 ND
MW-151 31.0
MW-150 4.44
MW-166 5.15
MW-59 0.93
MW-166A 38.7
MW-54 3.08
MW-149 21.4
MW-163 71.97
MW-144 52.5
MW-190 8.05
MW-77 2.05
MW-44 10.1
MW-157 0.30
MW-70 1.71
MW-13 0.23
MW-249 4.75
MW-134 ND
MW-224 0.66
MW-222 ND
MW-145 6.98
MW-164 1.46
MW-225 1.46
MW-223 0.44
MW-226 0.42
MW-184 23.3
MW-176 0.18
MW-235 ND
MW-87 4.96
MW-329 0.37
MW-328 151
MW-71 30.9
MW-06 29.4
MW-187 0.18
MW-182 ND
MW-154 ND
MW-91 1.17
MW-15 0.51
MW-174 0.18
MW-227 0.54
MW-228 0.51
MW-57 18.0
MW-58 0.61

Notes:
1. Color-coded well symbols are based on themost recent analytical results at each well. Results are from April 2023 LTM event.
2. Groundwater contours are from the April 2023 LTM event.
3. The Total Primary CVOC value is not a reported laboratory value and may include estimated concentrations of individual CVOCs. The values are used to indicate areas that may warrant further review.

Legend

Total CVOC Range (μg/L)

Well Symbol	Contour Shading
0-10	10-50
10-50	50-100
50-100	>100
>100	

- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface extrapolation
- Groundwater Flow Direction
- Original Dunn Field Boundary
- Railroad
- Fence
- Air Sparge System
- Roads
- Buildings

Figure 21

Dunn Field Fluvial Deposits Aquifer
Total CVOC Concentrations, April 2023

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

N W E S

0 100 200
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

Document Path: W:\SMP\2024\21_DF_FAQ_TotalCVOCApr23.mxd


MW-126
<0.5
MW-170
1.6
MW-171
2.06
MW-153
0.08
MW-324
3.57
MW-129
11
MW-323
5
MW-130
29.9
MW-130-RE
26
MW-78
<0.5
MW-08
2.58
MW-322
73.8
MW-07
10.4
MW-230
16.4
MW-79
9.15
MW-31
27.4
MW-03
43.2
MW-220
19
MW-28
<0.5
MW-152
<0.5
MW-147
0.18
MW-68
1.11
MW-180
0.17
MW-80
<0.5
MW-167
0.58
MW-165
0.41
MW-246
3.49
MW-158
0.67
MW-158A
<0.5
MW-245
0.2
MW-243
2.34
MW-160
<0.5
MW-241
0.21
MW-148
0.1
MW-221
<0.5
MW-155
0.16
MW-242
<0.5
MW-244
0.11
MW-159
23.9
MW-247
<0.5
MW-76
0.31
MW-04
<0.5
MW-248
<0.5
MW-166
0.63
MW-166A
2.49
MW-150
2.81
MW-69
0.27
MW-54
2.5
MW-163
1.82
MW-144
42.8
MW-190
6.08
MW-77
1.57
MW-149
1.66
MW-44
1.28
MW-157
0.13
MW-70
1.3
MW-134
<0.5
MW-224
<0.5
MW-13
<0.5
MW-249
1.2
MW-164
0.66
MW-222
<0.5
MW-145
2.09
MW-225
0.6
MW-223
<0.5
MW-226
<0.5
MW-184
2.22
MW-176
<0.5
MW-235
<0.5
MW-87
0.2
MW-329
<0.5
MW-71
3.6
MW-328
7.34
MW-06
2.77
MW-187
<0.5
MW-182
<0.5
MW-154
<0.5
MW-91
0.22
MW-15
0.11
MW-174
<0.5
MW-227
0.08
MW-228
<0.5
MW-57
1.71
MW-58
0.26
E. Person Ave
Menager Rd
Menager
Boyle Ave
Carver Ave
Hearst Ave
Fisher Ave
Rozelle
Rayner
Ragan
State St
Barksdale St
Lapaloma St
Friscoe Ave

Notes:
1. Color-coded well symbols based on the most recent analytical results at each well. Results are from the April 2023 LTM event.
2. Groundwater contours are from the April 2023 LTM event.
3. The target concentration and the MCL for TCE are both 5 µg/L.

Legend

TCE Range (µg/L)

Well Symbol (µg/L)	Contour Shading
0-5	5-10
5-10	10-50
10-50	50-100
50-100	
>100	

- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface extrapolation
- Groundwater Flow Direction
- Original Dunn Field Boundary
- Railroad
- Fence
- Air Sparge System
- Roads
- Buildings

Figure 22

Dunn Field Fluvial Deposits Aquifer TCE Concentrations, April 2023

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

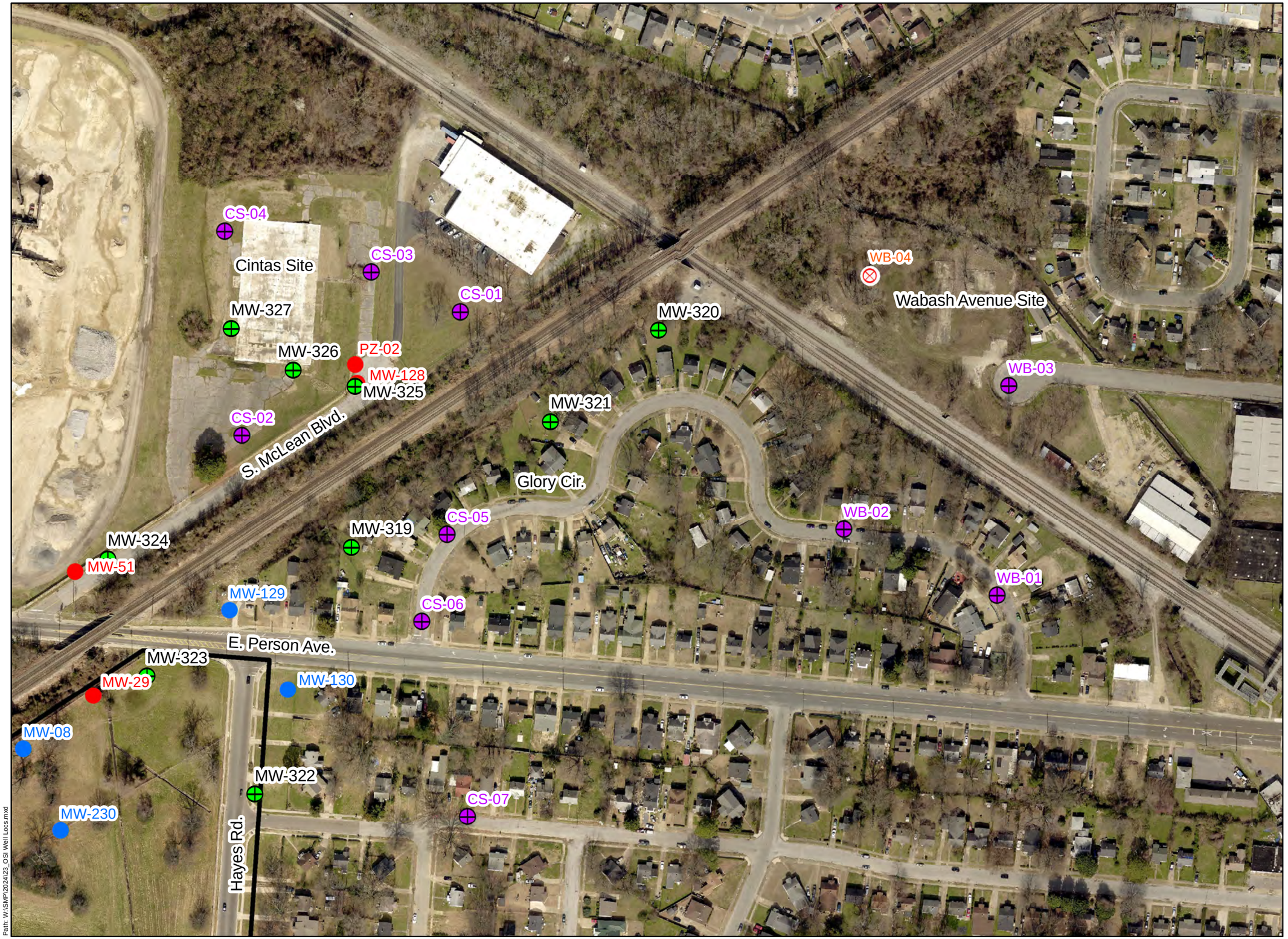
0 100 200
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

HDR

Document Path: W:\SMP\2024\22_DF_FAQ_TCE_Apr23.mxd



Path: W:\SMP\2024\23_OSI Well Locs.mxd

Figure 23

Offsite Groundwater Investigation Well Locations

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

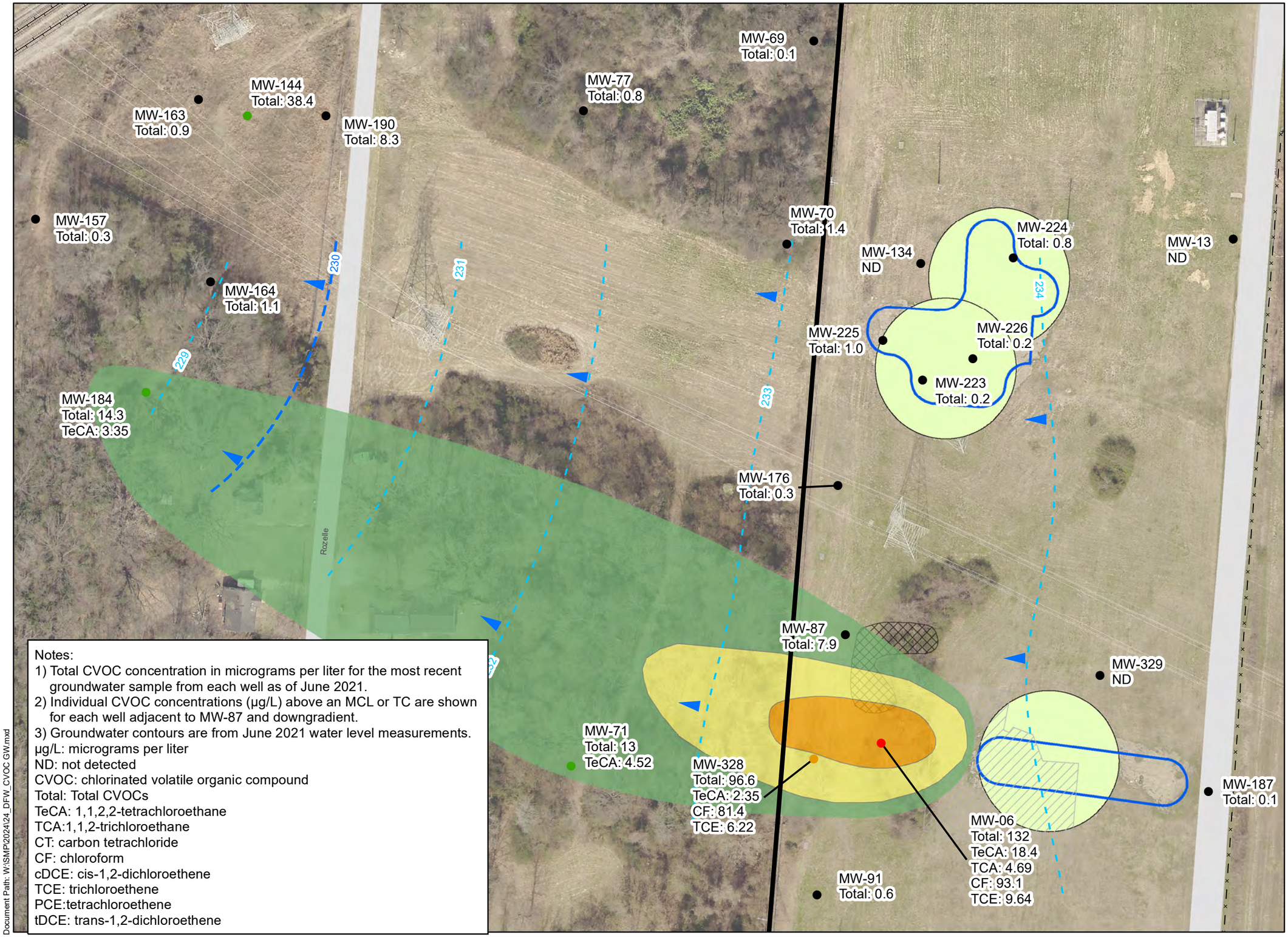
- OSI Well
- LTM Well
- TDEC Well
- Abandoned Well
- Unusable Well
- Original Dunn Field Boundary

N
W E
S

0 100 200
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0



Notes:
1) Total CVOC concentration in micrograms per liter for the most recent groundwater sample from each well as of June 2021.
2) Individual CVOC concentrations (µg/L) above an MCL or TC are shown for each well adjacent to MW-87 and downgradient.
3) Groundwater contours are from June 2021 water level measurements.
µg/L: micrograms per liter
ND: not detected
CVOC: chlorinated volatile organic compound
Total: Total CVOCs
TeCA: 1,1,2,2-tetrachloroethane
TCA:1,1,2-trichloroethane
CT: carbon tetrachloride
CF: chloroform
cDCE: cis-1,2-dichloroethene
TCE: trichloroethene
PCE:tetrachloroethene
tDCE: trans-1,2-dichloroethene

Document Path: W:\SMP2024\24_DFW_CVOC GW.mxd

Figure 24

CVOC Concentrations in Groundwater, Dunn Field West

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

Aquifer
- FDAQ LTM Well
- Groundwater Flow Direction
- Fluvial Aquifer 1-ft. contour
- Fluvial Aquifer 5-ft. contour
- Original Dunn Field Boundary
- Railroad
- Fence
- Soil Contamination Area
- Roads
- Loess Excavation Areas
- In Situ Thermal Desorption Treatment Areas
- Fluvial SVE Well - 60-foot radius of influence

Total CVOC Range (µg/L)

Well Symbol
- 0-10
- 10-50
- 50-100
- >100

Contour Shading
- 10-50
- 50-100
- >100

N
W E
S

0 50 100
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

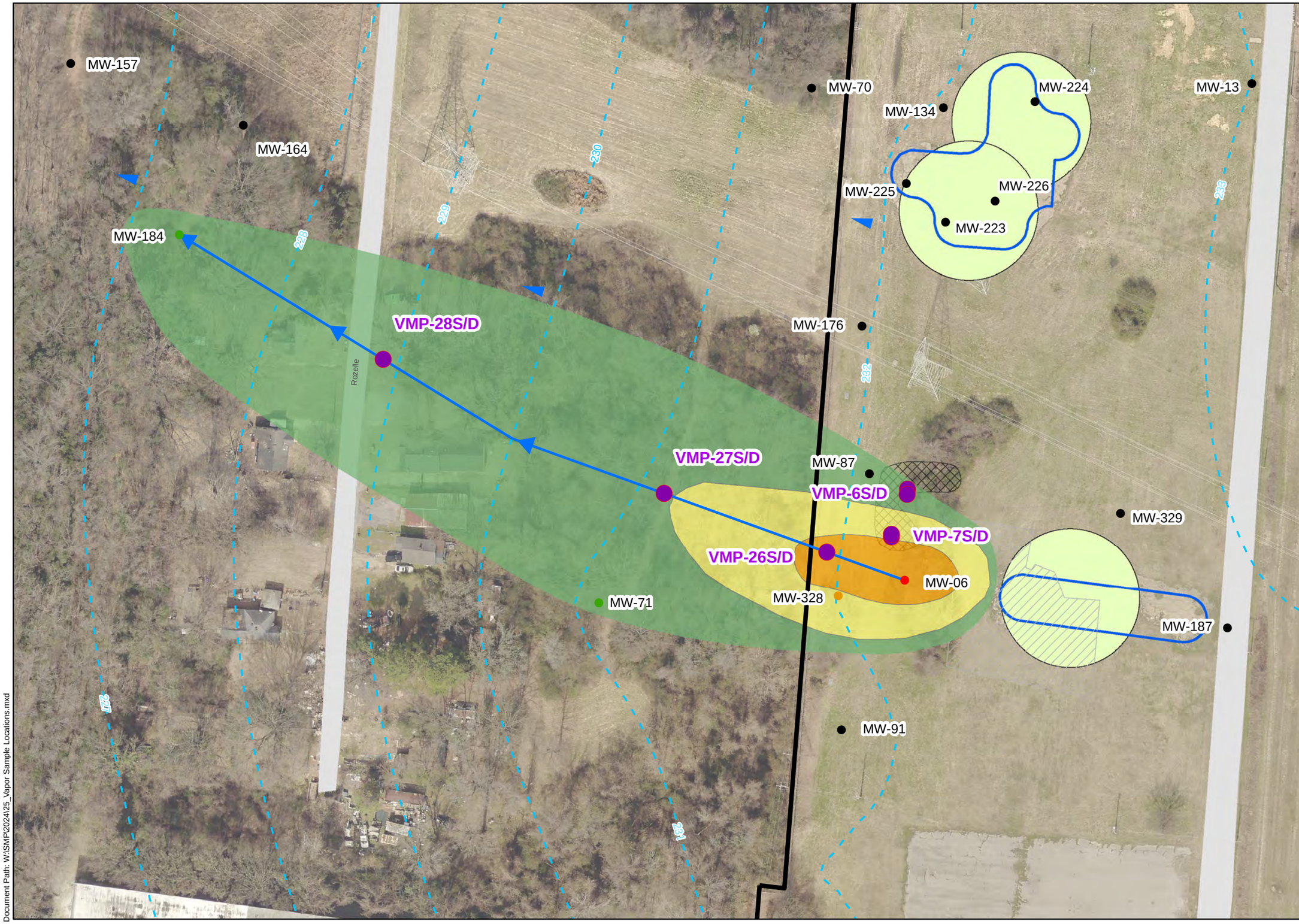


Figure 25

Planned Vapor Sample Locations, Dunn Field West

2024 Site Management PLan

Defense Depot
Memphis, Tennessee

Legend

Aquifer

- FDAQ LTM Well
- Vapor Sample Location
- Groundwater Flow Direction
- Approximate Groundwater Flow, MW-06 to MW-184
- Fluvial Aquifer 1-ft. contour
- Original Dunn Field Boundary
- Roads
- Soil Contamination Area
- Loess Excavation Areas
- In Situ Thermal Desorption Treatment Areas
- Fluvial SVE Well - 60-foot radius of influence

Total CVOC Range (µg/L)

Well Symbol

- 0-10
- 10-50
- 50-100
- >100

Contour Shading

- 10-50
- 50-100
- >100

N
W E
S

0 75 150

Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

Document Path: W:\SMP\2024\25_Vapor Sample Locations.mxd

Path: W:\SMP\2024\26_FOST Map.mxd

Figure 26

Finding of Suitability to Transfer Map

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Legend

- Property Boundary
- *Date of Quitclaim Deed(s)* [1]
  - *9/26/01*
  - *2/6/02 and 5/6/02*
  - *4/4/06 and 8/18/06*
  - *9/2/05 and 10/17/07*
  - *Not transferred as of 9/30/21*
  - *3/30/11*

Note:
1) Date of signature by Army or other agency on deed.

- Buildings *490 - DDMT Assigned Number*
- Roads

N
W E
S

0 500 1,000
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

Figure 27

Main Installation Land and Groundwater Use Restrictions

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

Dunn Field

Golf Course

Memphis Depot Pkwy

Ball Rd

Perry Rd

Airways Blvd

925 949 835 865 720 737 756 770 629 630 649 650 529 530 549 550 429 430 449 450 319 329 330 349 350 210 229 230 249 250 144 560 468 469 360 263 260 261 265 270 271 274 670 689 685 690 470 489 490 1089 1086 1088 1087 1091 995 972 970

Legend

- Property Boundary
- Buildings — *490 - DDMT Assigned Number*
- Roads
- Bldg. 737 No Dig Areas
- Golf Course Boundary, (Functional Unit 2)
- No productive/consumptive use of groundwater or drilling of groundwater wells.
- Area Available for Unrestricted Use (Parcels 1 & 2, Functional Unit 6)
- No Residential Development or Child Daycare Uses
- No placement of groundwater wells within a half mile of the Main Installation land use controls boundary, per Shelby County Rules and Regulations .

N W E S

0 500 1,000
Feet

Source: Figures 1 and 2 Land Use Restrictions Map from Defense Distribution Center (Memphis) Main Installation Land Use Control Implementation Plan (LUCIP), Revision 1 (CH2MHILL, 2004)

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

Document Path: W:\SMP\2024\27_MI Use Restrictions.mxd

Figure 28

Dunn Field Land and Groundwater Use Restrictions

2024 Site Management Plan

Defense Depot
Memphis, Tennessee

NORTHEAST OPEN AREA

DISPOSAL AREA

STOCKPILE AREA

Main Installation

Source: Figures 1 and 2 Dunn Field Land Use Restrictions from Defense Distribution Center (Memphis)Dunn Field Land Use Control Implementation Plan (LUCIP), Revision 2 (CH2MHILL, 2008)

Legend

- Original Property Boundary
- Railroad
- Fence
- *Extent of plume based on April 2023 LTM groundwater concentrations exceeding maximum contaminant levels or target concentrations from the Dunn Field Record of Decision.*
- Area Designations
- Roads

Land Use Restrictions:

- No residential development or child daycare uses.
- Unrestricted Use Area

Groundwater Use Restrictions:

- No productive/consumptive use of groundwater or drilling of groundwater wells.
- *No placement of groundwater wells within a half mile of plume boundaries, per Shelby County Rules and Regulations.*

N
W E
S

0 250 500
Feet

Projection: NAD 1927 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAVD88

Date: 11/21/2023
Edition: Rev 0

Document Path: W:\SMP\2024\28_DF Use Restrictions.mxd

Figure 29
Master Schedule

ID	Status	Document Type	Task Name	Duration	Start	Finish	Predecessors
1			**MAIN INSTALLATION (MI)**	**8231 d**	**Thu 7/29/21**	**Tue 2/9/44**	
2	**o**	**S**	**MI Sampling and Risk Screening Report**	**518 d**	**Mon 12/5/22**	**Sun 5/5/24**	
3	x		Prepare and Submit MI Sampling and Risk Screening Report Rev. 0	73 d	Mon 12/5/22	Wed 2/15/23	
4	x		Agency Review and Submit Comments on Report	83 d	Thu 2/16/23	Tue 5/9/23	3
5	x		Submit Responses to Agency Comments	24 d	Wed 5/10/23	Fri 6/2/23	4
6	x		Agency Review of Responses to Comments	35 d	Sat 6/3/23	Fri 7/7/23	5
7	o		Resolve Comments	283 d	Sat 7/8/23	Mon 4/15/24	6
8			Prepare and Submit MI Sampling and Risk Screening Report, Rev. 1	20 d	Tue 4/16/24	Sun 5/5/24	7
9			Dip Vat Area Contracting	91 d	Mon 6/3/24	Sun 9/1/24	8FS+28 d
10			**Dip Vat Delineation Sampling and Risk Screening (SRS) Update**	**301 d**	**Thu 9/12/24**	**Wed 7/9/25**	
11			Initial Dip Vat Sampling	14 d	Thu 9/12/24	Wed 9/25/24	9FS+10 d
12			Dip Vat Sampling Data Report	14 d	Thu 10/17/24	Wed 10/30/24	11FS+21 d
13			Follow-up Dip Vat Sampling	14 d	Thu 11/7/24	Wed 11/20/24	12FS+7 d
14			Analytical Data Review and Risk Screening	21 d	Thu 12/12/24	Wed 1/1/25	13FS+21 d
15			**Dip Vat Sampling and Risk Screening (SRS) Report**	**210 d**	**Thu 12/12/24**	**Wed 7/9/25**	
16			Dip Vat SRS Update Report Rev.0	45 d	Thu 12/12/24	Sat 1/25/25	14SS
17			Agency Review and Submit Comments on Dip Vat SRS Update Report	60 d	Sun 1/26/25	Wed 3/26/25	16
18			Submit Responses to Agency Comments	45 d	Thu 3/27/25	Sat 5/10/25	17
19			Resolve Comments	30 d	Sun 5/11/25	Mon 6/9/25	18
20			Prepare and Submit Dip Vat SRS Report Rev. 1	30 d	Tue 6/10/25	Wed 7/9/25	19
21			**MI Vapor Intrusion (VI) Study**	**812 d**	**Tue 5/2/23**	**Mon 7/21/25**	
22	**o**		**MI VI Sampling Program**	**567 d**	**Tue 5/2/23**	**Mon 11/18/24**	
23	x	**S**	MI VI SAP Rev. 1	0 d	Tue 5/2/23	Tue 5/2/23	
24	x		Initial Passive Vapor Screening Samples and Data Report	50 d	Tue 5/23/23	Tue 7/11/23	23FS+21 d
25	x		Follow-Up PassiveVapor Screening Samples and Data Report	55 d	Thu 8/3/23	Tue 9/26/23	24FS+22 d
26	x		VMP Installation, Initial Soil Vapor Samples and Data Report	110 d	Tue 10/31/23	Sat 2/17/24	25FS+34 d
27	o		Initial Sub-Slab Vapor and Indoor Air Samples and Data Report	70 d	Mon 3/4/24	Sun 5/12/24	26FS+15 d
28			Follow-up Soil and Sub-Slab Vapor and Indoor Air Samples	44 d	Fri 8/2/24	Sat 9/14/24	27SS+151 d
29			Analytical Data Review and Risk Screening	60 d	Fri 9/20/24	Mon 11/18/24	28FS+5 d
30		**S**	**MI VI Study Report**	**290 d**	**Sat 10/5/24**	**Mon 7/21/25**	
31			Prepare and Submit MI VI Report Rev. 0	65 d	Sat 10/5/24	Sun 12/8/24	29SS+15 d
32			Agency Review and Submit Comments on MI VI Report Rev. 0	60 d	Mon 12/9/24	Thu 2/6/25	31
33			Submit Responses to Agency Comments	45 d	Fri 2/7/25	Sun 3/23/25	32
34			Resolve Comments	90 d	Mon 3/24/25	Sat 6/21/25	33
35			Prepare and Submit MI VI Report Rev. 1	30 d	Sun 6/22/25	Mon 7/21/25	34
36			**Pre-Construction MI Groundwater and Institutional Controls Monitoring (2023-2025)**	1096 d	Sun 1/1/23	Wed 12/31/25	
37			**Alternative Remedy Selection**	**1526 d**	**Thu 7/29/21**	**Wed 10/1/25**	
38	x		2020 SRI Report Rev.1	0 d	Thu 7/29/21	Thu 7/29/21	
39	**o**		**Focused Feasibility Study (FFS)**	**1010 d**	**Thu 7/29/21**	**Fri 5/3/24**	
40	x		Develop-Screen Alternatives/Selected Preferred Alternatives	120 d	Thu 7/29/21	Thu 11/25/21	38
41	**o**	**P**	**FFS Report**	**890 d**	**Fri 11/26/21**	**Fri 5/3/24**	
42	x		Prepare and Submit FFS Report, Rev. 0	309 d	Fri 11/26/21	Fri 9/30/22	40

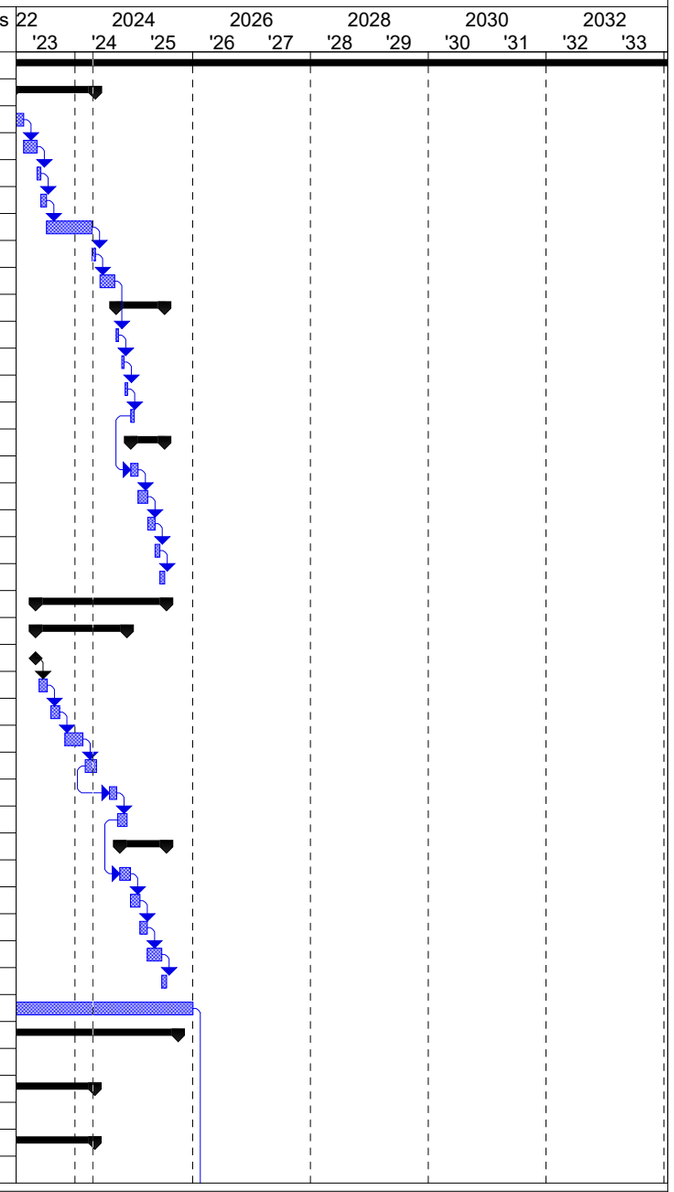


Figure 29
Master Schedule

ID	Status	Document Type	Task Name	Duration	Start	Finish	Predecessors
43	x		Agency Review and Submit Comments on FFS Report	110 d	Sat 10/1/22	Wed 1/18/23	42
44	x		Submit Responses to Agency Comments on Report	155 d	Thu 1/19/23	Thu 6/22/23	43
45	x		Agency Review of Responses to Comments	50 d	Fri 6/23/23	Fri 8/11/23	44
46	o		Resolve Comments	245 d	Sat 8/12/23	Fri 4/12/24	45
47			Prepare and Submit FFS Report, Rev. 1	21 d	Sat 4/13/24	Fri 5/3/24	46
48			**Record of Decision (ROD) Amendment**	**537 d**	**Sat 4/13/24**	**Wed 10/1/25**	
49	**o**	**P**	**Revised Proposed Plan (RPP)**	**210 d**	**Sat 4/13/24**	**Fri 11/8/24**	
50	o		Prepare and Submit RPP, Rev. 0	60 d	Sat 4/13/24	Tue 6/11/24	47SS
51			Agency Review and Submit Comments on RPP, Rev. 0	60 d	Wed 6/12/24	Sat 8/10/24	50
52			Prepare and Submit RPP, Rev. 1	90 d	Sun 8/11/24	Fri 11/8/24	51
53			**Public Comment Period**	**36 d**	**Sat 11/9/24**	**Sat 12/14/24**	
54			Public Notice of RPP Comment Period and Public Meeting	5 d	Sat 11/9/24	Wed 11/13/24	52
55			RPP Public Comment Period	31 d	Thu 11/14/24	Sat 12/14/24	54
56			Public Meeting	7 d	Sun 11/24/24	Sat 11/30/24	55SS+10 d
57		**P**	**ROD Amendment**	**372 d**	**Wed 9/25/24**	**Wed 10/1/25**	
58			Prepare and Submit ROD Amendment, Rev. 0	120 d	Wed 9/25/24	Wed 1/22/25	52SS+45 d
59			Agency Review and Submit Comments on ROD Amendment, Rev. 0	80 d	Thu 1/23/25	Sat 4/12/25	58
60			Resolve Comments	90 d	Sun 4/13/25	Fri 7/11/25	59
61			Prepare and Submit ROD Amendment, Rev. 1	45 d	Sat 7/12/25	Mon 8/25/25	60
62			Process MI ROD Amendment through Army, TDEC, EPA	30 d	Tue 8/26/25	Wed 9/24/25	61
63			Final MI ROD Amendment	0 d	Wed 9/24/25	Wed 9/24/25	62
64			Public Notice of MI ROD Amendment	7 d	Thu 9/25/25	Wed 10/1/25	63
65			**Additional Remedial Action**	**2754 d**	**Sat 7/12/25**	**Mon 1/24/33**	
66		**S**	**Preliminary Design Investigation (PDI)**	**280 d**	**Sat 7/12/25**	**Fri 4/17/26**	
67			Prepare and Submit PDI Workplan	90 d	Sat 7/12/25	Thu 10/9/25	61SS
68			Field Investigation	60 d	Thu 10/30/25	Sun 12/28/25	67FS+20 d
69			Prepare and Submit Final PDI Report	90 d	Sun 1/18/26	Fri 4/17/26	68FS+20 d
70		**P**	**New MI Remedial Design (RD)**	**285 d**	**Thu 3/19/26**	**Mon 12/28/26**	
71			Prepare and Submit New MI RD, Rev. 0	90 d	Thu 3/19/26	Tue 6/16/26	69FS-30 d
72			Agency Review and Submit Comments on New MI RD, Rev. 0	60 d	Wed 6/17/26	Sat 8/15/26	71
73			Resolve Comments	90 d	Sun 8/16/26	Fri 11/13/26	72
74			Prepare and Submit New MI RD, Rev. 1	45 d	Sat 11/14/26	Mon 12/28/26	73
75		**P**	**New MI Remedial Action Work Plan (RAWP)**	**265 d**	**Tue 12/29/26**	**Sun 9/19/27**	
76			Prepare and Submit New MI RAWP, Rev.0	70 d	Tue 12/29/26	Mon 3/8/27	74
77			Agency Review and Submit Comments on New MI RAWP, Rev. 0	60 d	Tue 3/9/27	Fri 5/7/27	76
78			Resolve Comments	90 d	Sat 5/8/27	Thu 8/5/27	77
79			Prepare and Submit New MI RAWP, Rev. 1	45 d	Fri 8/6/27	Sun 9/19/27	78
80			**MI RA Groundwater and Institutional Controls Monitoring (2026-2031)**	2191 d	Thu 1/1/26	Wed 12/31/31	36
81			**New MI RA Construction**	90 d	Wed 10/20/27	Mon 1/17/28	79FS+30 d
82			**Additional Remedial Action Years 1-5**	1826 d	Wed 1/26/28	Mon 1/24/33	81FS+8 d
83		**S**	**New MI RA Annual Report Year 1**	**285 d**	**Thu 1/25/29**	**Mon 11/5/29**	
84			Prepare & Submit Y1 MI RA Report, Rev. 0	90 d	Thu 1/25/29	Tue 4/24/29	82SS+365 d

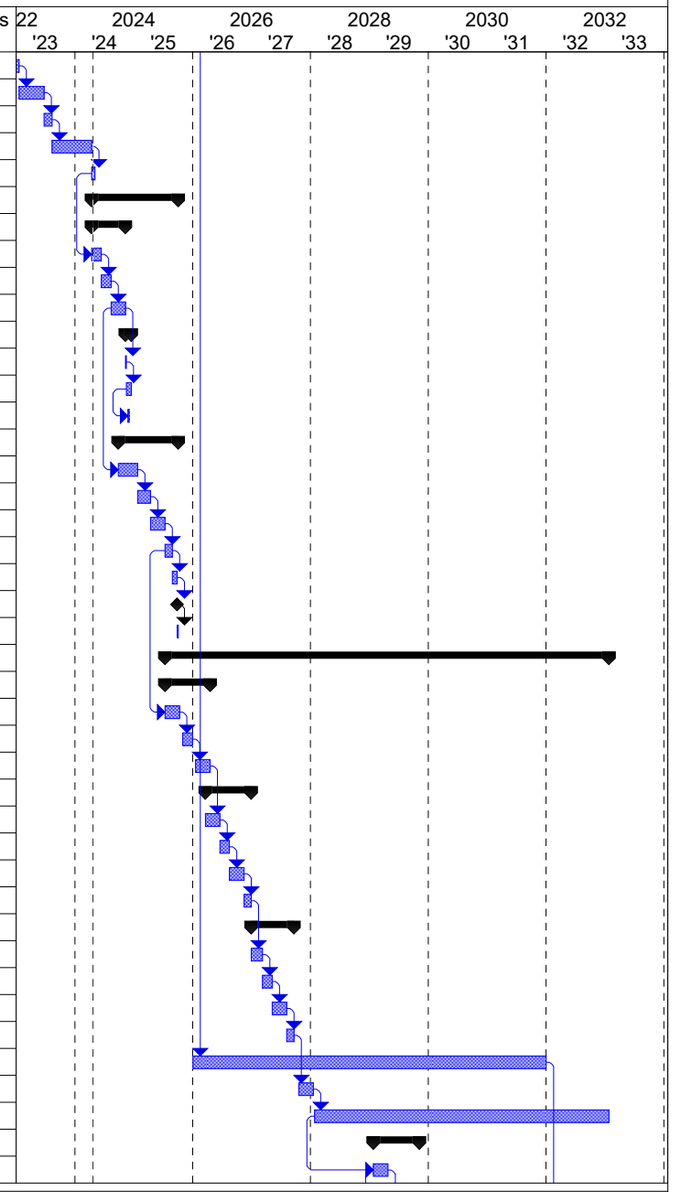


Figure 29
Master Schedule

ID	Status	Document Type	Task Name	Duration	Start	Finish	Predecessors
85			Agency Review & Submit Comments on Y1 MI RA Report, Rev. 0	60 d	Wed 4/25/29	Sat 6/23/29	84
86			Resolve Comments	90 d	Sun 6/24/29	Fri 9/21/29	85
87			Prepare & Submit Y1 MI RA Report, Rev. 1	45 d	Sat 9/22/29	Mon 11/5/29	86
88		S	**New MI RA Annual Report Year 2**	**285 d**	**Fri 1/25/30**	**Tue 11/5/30**	
89			Prepare & Submit Y2 MI RA Report, Rev. 0	90 d	Fri 1/25/30	Wed 4/24/30	84SS+365 d
90			Agency Review & Submit Comments on Y2 MI RA Report, Rev. 0	60 d	Thu 4/25/30	Sun 6/23/30	89
91			Resolve Comments	90 d	Mon 6/24/30	Sat 9/21/30	90
92			Prepare & Submit Y2 MI RA Report, Rev. 1	45 d	Sun 9/22/30	Tue 11/5/30	91
93		S	**New MI RA Annual Report Year 3**	**285 d**	**Sat 1/25/31**	**Wed 11/5/31**	
94			Prepare & Submit Y3 MI RA Report, Rev. 0	90 d	Sat 1/25/31	Thu 4/24/31	89SS+365 d
95			Agency Review & Submit Comments on Y3 MI RA Report, Rev. 0	60 d	Fri 4/25/31	Mon 6/23/31	94
96			Resolve Comments	90 d	Tue 6/24/31	Sun 9/21/31	95
97			Prepare & Submit Y3 MI RA Report, Rev. 1	45 d	Mon 9/22/31	Wed 11/5/31	96
98			**MI Post-RA Groundwater and Institutional Controls Monitoring (2032-2041)**	3653 d	Thu 1/1/32	Tue 12/31/41	80
99			**Main Installation Compliance Monitoring**	365 d	Wed 1/1/42	Wed 12/31/42	98
100		P	**Main Installation RA Completion Report**	**315 d**	**Thu 1/1/43**	**Wed 11/11/43**	
101			Prepare & Submit MI RACR, Rev. 0	90 d	Thu 1/1/43	Tue 3/31/43	99
102			Agency Review & Submit Comments on MI RACR, Rev.0	60 d	Wed 4/1/43	Sat 5/30/43	101
103			Resolve Comments	90 d	Sun 5/31/43	Fri 8/28/43	102
104			Prepare & Submit MI RACR, Rev. 1	45 d	Sat 8/29/43	Mon 10/12/43	103
105			Agency Concurrence	30 d	Tue 10/13/43	Wed 11/11/43	104
106			**Main Installation Well Abandonment**	90 d	Thu 11/12/43	Tue 2/9/44	105
107							
108			**DUNN FIELD**	**3613 d**	**Thu 4/20/23**	**Thu 3/10/33**	
109			**Dunn Field Off Depot GW Remedial Action**	**822 d**	**Mon 7/31/23**	**Wed 10/29/25**	
110			**Dunn Field Off Depot AS/SVE Shutdown**	1 d	Mon 7/31/23	Mon 7/31/23	
111	o	S	**Year 12 AS/SVE Report**	**295 d**	**Tue 8/1/23**	**Tue 5/21/24**	
112	x		Prepare & Submit Y12 AS/SVE Report, Rev. 0	106 d	Tue 8/1/23	Tue 11/14/23	110
113	x		Agency Review & Submit Comments on Y12 AS/SVE Report, Rev. 0	34 d	Wed 11/15/23	Mon 12/18/23	112
114	x		Submit Responses to Agency Comments on Report	50 d	Tue 12/19/23	Tue 2/6/24	113
115	o		Resolve Comments	75 d	Wed 2/7/24	Sun 4/21/24	114
116			Prepare & Submit Y12 AS/SVE Report, Rev.1	30 d	Mon 4/22/24	Tue 5/21/24	115
117	o		**AS/SVE Shutdown Maintenance**	731 d	Tue 8/1/23	Thu 7/31/25	110
118			**Abandon Fluvial SVE & Off Depot AS/SVE System**	90 d	Fri 8/1/25	Wed 10/29/25	117
119			**Dunn Field RA Groundwater and Institutional Controls Monitoring (2024-2025)**	884 d	Tue 8/1/23	Wed 12/31/25	110
120	o		**Dunn Field Supplemental Investigation and Remedial Action**	**2254 d**	**Thu 4/20/23**	**Wed 6/20/29**	
121	x		Dunn Field West Post-ROD Supplemental Investigation Report Rev1	0 d	Thu 4/20/23	Thu 4/20/23	
122	o		**Dunn Field West Vapor Investigation Study**	**776 d**	**Sat 5/20/23**	**Thu 7/3/25**	
123	x	S	**DFW VI SAP**	**249 d**	**Sat 5/20/23**	**Tue 1/23/24**	
124	x		Prepare & Submit DFW VI SAP, Rev. 0	88 d	Sat 5/20/23	Tue 8/15/23	121FS+30 d
125	x		Agency Review & Submit Comments on DFW VI SAP	44 d	Wed 8/16/23	Thu 9/28/23	124
126	x		Submit Responses to Agency Comments on Report	47 d	Fri 9/29/23	Tue 11/14/23	125

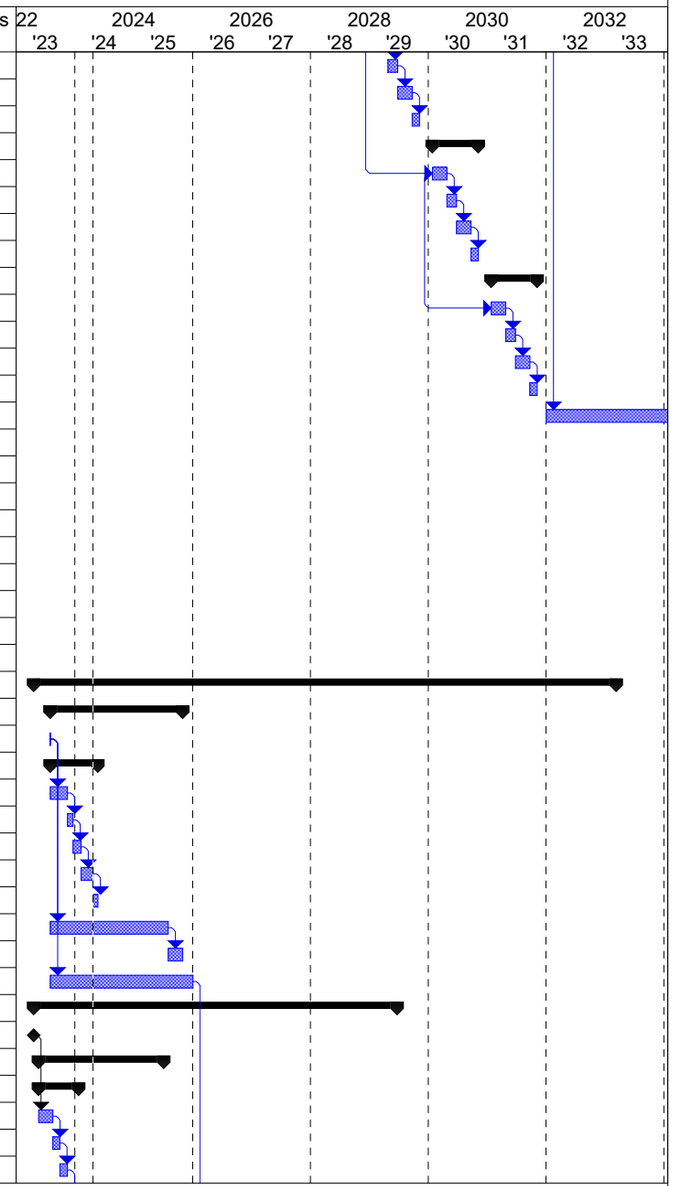


Figure 29
Master Schedule

ID	Status	Document Type	Task Name	Duration	Start	Finish	Predecessors
127	x		Agency Review of Responses to Comments	55 d	Wed 11/15/23	Mon 1/8/24	126
128	x		Prepare & Submit DFW VI SAP Rev.1	15 d	Tue 1/9/24	Tue 1/23/24	127
129			DFW VI Study Contracting	154 d	Fri 3/1/24	Thu 8/1/24	128FS+37 d
130			VMP Installation and Sampling	21 d	Sun 8/25/24	Sat 9/14/24	129FS+23 d
131			Data Validation and Risk Screening	28 d	Sun 9/29/24	Sat 10/26/24	130FS+14 d
132		S	**DFW VI Report**	**250 d**	**Sun 10/27/24**	**Thu 7/3/25**	
133			Prepare & Submit DFW VI Report, Rev. 0	60 d	Sun 10/27/24	Wed 12/25/24	131
134			Agency Review & Submit Comments on DFW VI Report	60 d	Thu 12/26/24	Sun 2/23/25	133
135			Submit Responses to Agency Comments on Report	20 d	Mon 2/24/25	Sat 3/15/25	134
136			Resolve Comments	90 d	Sun 3/16/25	Fri 6/13/25	135
137			Prepare & Submit DFW VI Report Rev.1	20 d	Sat 6/14/25	Thu 7/3/25	136
138		P	**Dunn Field ESD**	**260 d**	**Tue 4/30/24**	**Tue 1/14/25**	
139			Prepare and Submit Dunn Field ESD, Rev. 0	60 d	Tue 4/30/24	Fri 6/28/24	129SS+60 d
140			Agency Review & Submit Comments on DF ESD	60 d	Sat 6/29/24	Tue 8/27/24	139
141			Submit Responses to Agency Comments on ESD	30 d	Wed 8/28/24	Thu 9/26/24	140
142			Resolve Comments	90 d	Fri 9/27/24	Wed 12/25/24	141
143			Prepare & Submit Dunn Field ESD Rev.1	20 d	Thu 12/26/24	Tue 1/14/25	142
144			**DFW Remedial Action**	**1728 d**	**Fri 9/27/24**	**Wed 6/20/29**	
145		P	**DFW Remedial Action Work Plan**	**231 d**	**Fri 9/27/24**	**Thu 5/15/25**	
146			Prepare and Submit DFW RAWP, Rev. 0	60 d	Fri 9/27/24	Mon 11/25/24	141
147			Agency Review & Submit Comments on DFW RAWP	60 d	Tue 11/26/24	Fri 1/24/25	146
148			Submit Responses to Agency Comments on DFW RAWP	30 d	Sat 1/25/25	Sun 2/23/25	147
149			Resolve Comments	60 d	Mon 2/24/25	Thu 4/24/25	148
150			Prepare & Submit DFW RAWP, Rev.1	21 d	Fri 4/25/25	Thu 5/15/25	149
151			**DFW Remedial Action**	**1246 d**	**Fri 6/6/25**	**Thu 11/2/28**	**150FS+21 d**
152			Soil Excavation and Confirmation Sampling	90 d	Fri 6/6/25	Wed 9/3/25	150FS+21 d
153			SVE Installation and Start-Up	60 d	Thu 9/4/25	Sun 11/2/25	152
154			SVE Operation and Monitoring	1096 d	Mon 11/3/25	Thu 11/2/28	153
155		P	**DFW Remedial Action Completion Report**	**230 d**	**Fri 11/3/28**	**Wed 6/20/29**	
156			Prepare and Submit DFW RACR, Rev. 0	60 d	Fri 11/3/28	Mon 1/1/29	151
157			Agency Review & Submit Comments on DFW RACR	60 d	Tue 1/2/29	Fri 3/2/29	156
158			Submit Responses to Agency Comments on DFW RACR	30 d	Sat 3/3/29	Sun 4/1/29	157
159			Resolve Comments	60 d	Mon 4/2/29	Thu 5/31/29	158
160			Prepare & Submit DFW RACR, Rev.1	20 d	Fri 6/1/29	Wed 6/20/29	159
161			**Dunn Field West Property Transfer**	**360 d**	**Sun 3/16/25**	**Tue 3/10/26**	
162		S	Prepare & Submit DFW ECP Update and FOST 5 Amendment Rev. 0	60 d	Sun 3/16/25	Wed 5/14/25	135
163			Agency Review & Submit Comments on ECP and FOST 5 Amend.	60 d	Thu 5/15/25	Sun 7/13/25	162
164		S	Prepare and Submit DFW ECP and FOST 5 Amendment Rev. 1	90 d	Mon 7/14/25	Sat 10/11/25	163
165			Notification of Intent to Sign FOST 5 Amendment	30 d	Sun 10/12/25	Mon 11/10/25	164
166			DFW Competitive Public Sale	90 d	Tue 11/11/25	Sun 2/8/26	165
167			DFW Sale Closing and Transfer Deed	30 d	Mon 2/9/26	Tue 3/10/26	166
168			**Dunn Field Post-RA Groundwater and Institutional Controls Monitoring (2026-2030)**	1826 d	Thu 1/1/26	Tue 12/31/30	119

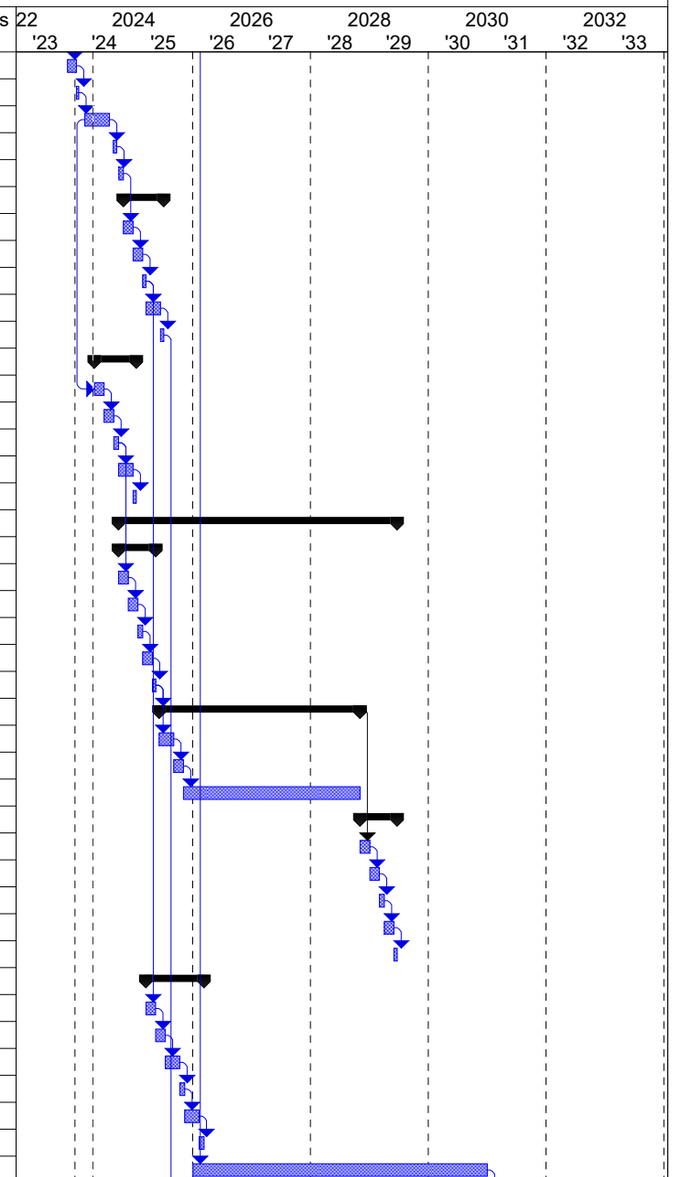


Figure 29
Master Schedule

ID	Status	Document Type	Task Name	Duration	Start	Finish	Predecessors
169			**Dunn Field Compliance Monitoring**	365 d	Wed 1/1/31	Wed 12/31/31	168
170		**P**	**Dunn Field RA Completion Report**	**345 d**	**Thu 1/1/32**	**Fri 12/10/32**	
171			Prepare & Submit Rev. 0 Dunn Field RACR	90 d	Thu 1/1/32	Tue 3/30/32	169
172			Agency Review & Submit Comments on Rev. 0 Dunn Field RACR	60 d	Wed 3/31/32	Sat 5/29/32	171
173			Submit Responses to Agency Comments on Dunn Field RACR	45 d	Sun 5/30/32	Tue 7/13/32	172
174			Resolve Comments	30 d	Wed 7/14/32	Thu 8/12/32	173
175			Prepare & Submit Rev. 1 Dunn Field RACR	90 d	Fri 8/13/32	Wed 11/10/32	174
176			Agency Concurrence	30 d	Thu 11/11/32	Fri 12/10/32	175
177			**Dunn Field Well Abandonment**	90 d	Sat 12/11/32	Thu 3/10/33	176
178							
179			**MEMPHIS DEPOT NPL SITE-WIDE ACTIVITIES**	**7571 d**	**Mon 3/6/23**	**Thu 11/26/43**	
180			**Site-Wide LTM Reports**	**1425 d**	**Fri 12/1/23**	**Mon 10/25/27**	
181	**o**	**S**	**2023 LTM Report**	**317 d**	**Fri 12/1/23**	**Sat 10/12/24**	
182	x		Prepare & Submit 2023 LTM Report, Rev. 0	77 d	Fri 12/1/23	Thu 2/15/24	
183	o		Agency Review & Submit Comments on 2023 LTM Report, Rev. 0	60 d	Fri 2/16/24	Mon 4/15/24	182
184			Submit Responses to Agency Comments on LTM Report	60 d	Tue 4/16/24	Fri 6/14/24	183
185			Resolve Comments	90 d	Sat 6/15/24	Thu 9/12/24	184
186			Prepare & Submit 2023 LTM Report, Rev. 1	30 d	Fri 9/13/24	Sat 10/12/24	185
187		**S**	**2024 LTM Report**	**300 d**	**Sat 11/30/24**	**Thu 9/25/25**	
188			Prepare & Submit 2024 LTM Report, Rev. 0	90 d	Sat 11/30/24	Thu 2/27/25	182SS+365 d
189			Agency Review & Submit Comments on 2024 LTM Report, Rev. 0	60 d	Fri 2/28/25	Mon 4/28/25	188
190			Submit Responses to Agency Comments on LTM Report	60 d	Tue 4/29/25	Fri 6/27/25	189
191			Resolve Comments	60 d	Sat 6/28/25	Tue 8/26/25	190
192			Prepare & Submit 2024 LTM Report, Rev. 1	30 d	Wed 8/27/25	Thu 9/25/25	191
193		**S**	**2025 LTM Report**	**300 d**	**Sun 11/30/25**	**Fri 9/25/26**	
194			Prepare & Submit 2025 LTM Report, Rev. 0	90 d	Sun 11/30/25	Fri 2/27/26	188SS+365 d
195			Agency Review & Submit Comments on 2025 LTM Report, Rev. 0	60 d	Sat 2/28/26	Tue 4/28/26	194
196			Submit Responses to Agency Comments on LTM Report	60 d	Wed 4/29/26	Sat 6/27/26	195
197			Resolve Comments	60 d	Sun 6/28/26	Wed 8/26/26	196
198			Prepare & Submit 2025 LTM Report, Rev. 1	30 d	Thu 8/27/26	Fri 9/25/26	197
199		**S**	**2026 LTM Report**	**330 d**	**Mon 11/30/26**	**Mon 10/25/27**	
200			Prepare & Submit 2025 LTM Report, Rev. 0	90 d	Mon 11/30/26	Sat 2/27/27	194SS+365 d
201			Agency Review & Submit Comments on 2025 LTM Report, Rev. 0	60 d	Sun 2/28/27	Wed 4/28/27	200
202			Submit Responses to Agency Comments on LTM Report	60 d	Thu 4/29/27	Sun 6/27/27	201
203			Resolve Comments	90 d	Mon 6/28/27	Sat 9/25/27	202
204			Prepare & Submit 2025 LTM Report, Rev. 1	30 d	Sun 9/26/27	Mon 10/25/27	203
205	x		**Per- and Polyfluoroalkyl Substances (PFAS) Site Inspection-Report**	242 d	Mon 3/6/23	Thu 11/2/23	
206			**Annual Site Inspection Reports**	**1186 d**	**Thu 6/1/23**	**Sat 8/29/26**	
207	o	**S**	Annual Site Inspection Report - 2023	90 d	Thu 6/1/23	Tue 8/29/23	
208		**S**	Annual Site Inspection Report - 2024	90 d	Sat 6/1/24	Thu 8/29/24	207SS+365 d
209		**S**	Annual Site Inspection Report - 2025	90 d	Sun 6/1/25	Fri 8/29/25	208SS+365 d,
210		**S**	Annual Site Inspection Report - 2026	90 d	Mon 6/1/26	Sat 8/29/26	209SS+365 d

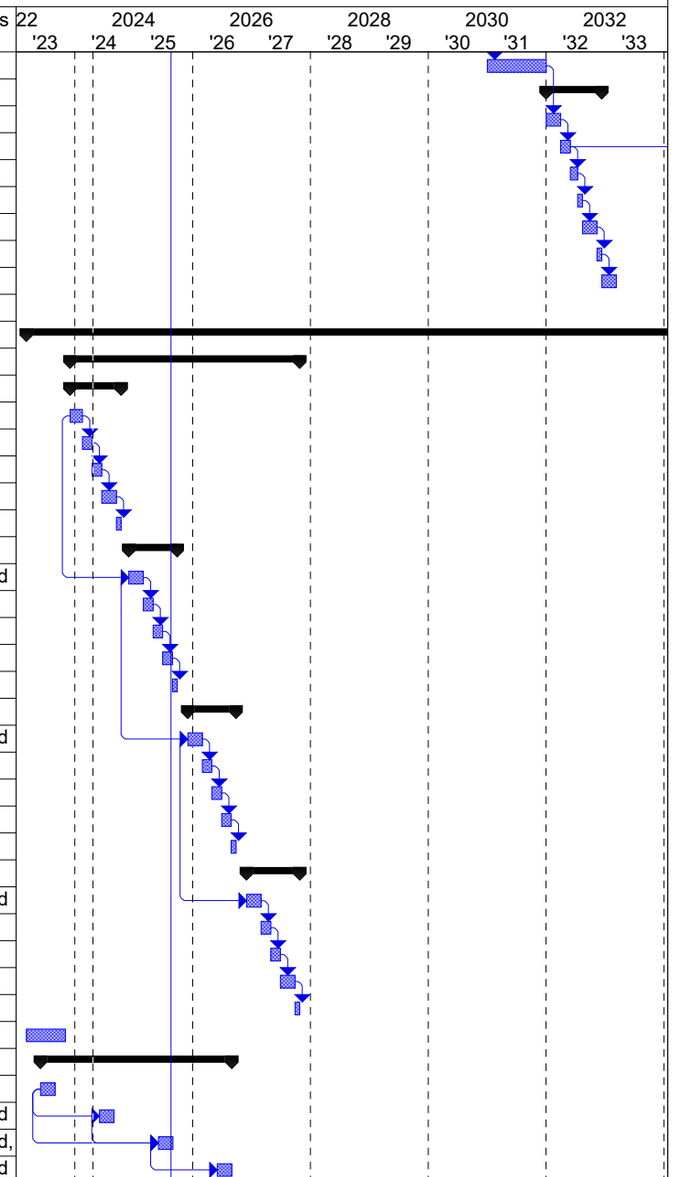
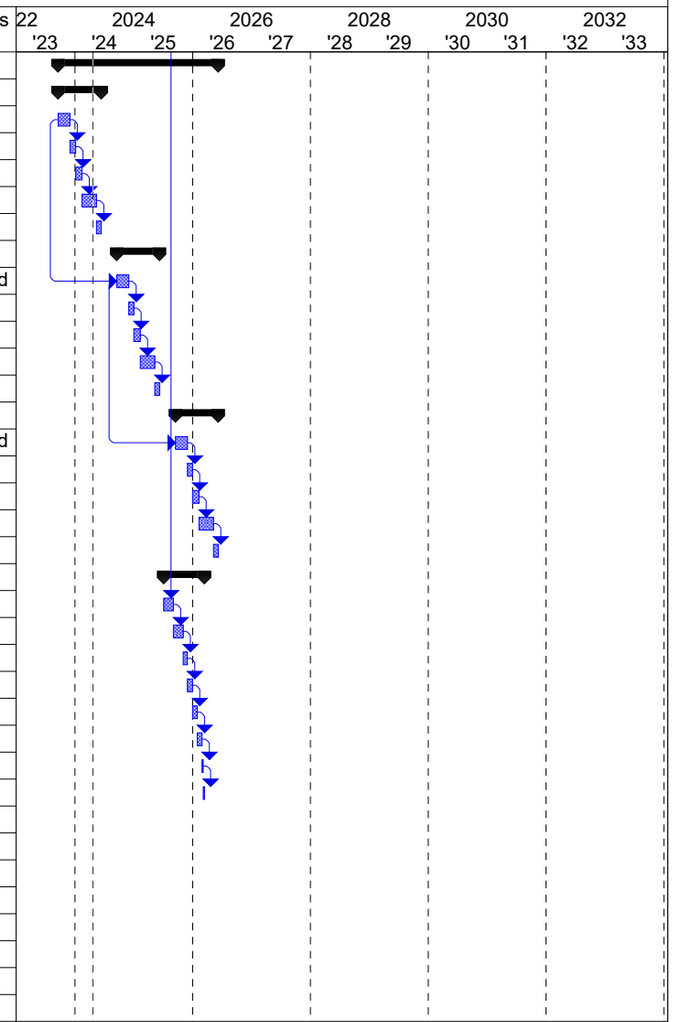


Figure 29
Master Schedule

ID	Status	Document Type	Task Name	Duration	Start	Finish	Predecessors
211			**Site Management Plan (SMP) Updates**	**993 d**	**Mon 9/18/23**	**Sat 6/6/26**	
212	**o**	**P**	**2024 Site Management Plan**	**268 d**	**Mon 9/18/23**	**Tue 6/11/24**	
213	x		Prepare & Submit 2024 SMP, Rev. 0	73 d	Mon 9/18/23	Wed 11/29/23	
214	x		Agency Review & Submit Comments on 2024 SMP, Rev. 0	36 d	Thu 11/30/23	Thu 1/4/24	213
215	x		Submit Responses to Agency Comments on SMP	39 d	Fri 1/5/24	Mon 2/12/24	214
216	o		Resolve Comments	90 d	Tue 2/13/24	Sun 5/12/24	215
217			Prepare & Submit 2024 SMP, Rev.1	30 d	Mon 5/13/24	Tue 6/11/24	216
218		**P**	**2025 Site Management Plan**	**265 d**	**Mon 9/16/24**	**Sat 6/7/25**	
219			Prepare & Submit 2025 SMP, Rev. 0	75 d	Mon 9/16/24	Fri 11/29/24	213SS+364 d
220			Agency Review & Submit Comments on 2025 SMP, Rev. 0	30 d	Sat 11/30/24	Sun 12/29/24	219
221			Submit Responses to Agency Comments on SMP	40 d	Mon 12/30/24	Fri 2/7/25	220
222			Resolve Comments	90 d	Sat 2/8/25	Thu 5/8/25	221
223			Prepare & Submit 2025 SMP, Rev.1	30 d	Fri 5/9/25	Sat 6/7/25	222
224		**P**	**2026 Site Management Plan**	**265 d**	**Mon 9/15/25**	**Sat 6/6/26**	
225			Prepare & Submit 2026 SMP, Rev. 0	75 d	Mon 9/15/25	Fri 11/28/25	219SS+364 d
226			Agency Review & Submit Comments on 2026 SMP, Rev. 0	30 d	Sat 11/29/25	Sun 12/28/25	225
227			Submit Responses to Agency Comments on SMP	40 d	Mon 12/29/25	Fri 2/6/26	226
228			Resolve Comments	90 d	Sat 2/7/26	Thu 5/7/26	227
229			Prepare & Submit 2026 SMP, Rev.1	30 d	Fri 5/8/26	Sat 6/6/26	228
230			**CERCLA Fifth 5-Year Review Addendum**	**252 d**	**Fri 7/4/25**	**Thu 3/12/26**	
231			Prepare & Submit Rev. 0 5th 5-Year Review Addendum	60 d	Fri 7/4/25	Mon 9/1/25	137
232			Agency Review & Submit Comments on Rev. 0 5th 5-Year Review Addendum	60 d	Tue 9/2/25	Fri 10/31/25	231
233			Respond to Agency Comments on Rev. 0 5th 5-Year Review Addendum	27 d	Sat 11/1/25	Thu 11/27/25	232
234			Agency Review of Comment-Responses	31 d	Fri 11/28/25	Sun 12/28/25	233
235			Resolution of Agency Comments-Responses	30 d	Mon 12/29/25	Tue 1/27/26	234
236			Prepare & Submit Final 5th 5-Year Review Addendum	30 d	Wed 1/28/26	Thu 2/26/26	235
237			Final 5th 5-Year Review Addendum Signed	7 d	Fri 2/27/26	Thu 3/5/26	236
238			Notification of 5th 5-Year Review Completion Addendum	7 d	Fri 3/6/26	Thu 3/12/26	237
239		**P**	**Final Closeout Report (FCOR)**	**180 d**	**Sun 5/31/43**	**Thu 11/26/43**	
240			Prepare & Submit Rev. 0 FCOR	60 d	Sun 5/31/43	Wed 7/29/43	172,102
241			Agency Review & Submit Comments on Rev. 0 FCOR	60 d	Thu 7/30/43	Sun 9/27/43	240
242			Respond to Agency Comments on Rev. 0 FCOR	20 d	Mon 9/28/43	Sat 10/17/43	241
243			Prepare & Submit Rev. 1 FCOR	30 d	Mon 9/28/43	Tue 10/27/43	241
244			Agency Review of Rev. 1 FCOR w/ Concurrence	30 d	Wed 10/28/43	Thu 11/26/43	243
245			Final FCOR	0 d	Thu 11/26/43	Thu 11/26/43	244
246			**Site Completion**	0 d	Thu 11/26/43	Thu 11/26/43	245



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Appendix A.

Responses to USEPA and TDEC Comments

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Remediation
Memphis Environmental Field Office
8383 Wolf Lake Drive
Bartlett, TN 38133-4119

January 17, 2024

James C. Foster
BRAC Program Manager
Headquarters Department of the Army,
Assistant Chief of Staff for
Installation Management (DAIM-ODB)
Army Pentagon,
2530 Crystal Drive,
Arlington, VA 22202-3934

Subject: **2024 Site Management Plan (Rev 0)**
Defense Depot Memphis, Tennessee
TDoR ID # 79-736
TN4210020570

Mr. Foster,

TDEC-DoR has reviewed the **2024 Site Management Plan (Rev 0)** and has no comments regarding the document's contents. If there are questions regarding the approval, please contact me at (901) 686-2802 or at jamie.woods@tn.gov .

Regards,

Jamie A. Woods, P.G.
Project Manager
Division of Remediation
Memphis Environmental Field Office

cc: Bill Millar (CALIBRE)
T. Holmes (HDR Inc)
F. Martinez-Torres (EPA-PM)

TDEC DOR: file # 79-736

REGION 4
ATLANTA, GA 30303

January 4, 2024

Mr. James Foster
Base Realignment and Closure Division (ACSIM-ODB)
2530 Crystal Drive (Taylor Building), Room 5000
Arlington, VA 22202-3940

Dear Mr. Foster,

The United States Environmental Protection Agency (USEPA) has completed its regulatory review of the 2024 Site Management Plan, Revision 0, submitted by the United States Army (USARMY) in November 2023 (the 2024 SMP), for the Defense Depot Memphis, Tennessee (DDMT). For completeness and to improve the timeliness of future work at DDMT, the following comments were created based on the 2024 SMP.

SPECIFIC COMMENTS

1. **Section 3.1.5, Supplemental Remedial Investigation and Focused Feasibility Study, Page 3-5 and Figure 29, Master Schedule, PDF Page 103:** It is unclear whether the Focused Feasibility Study (FFS) is on target with the Master Schedule. The Master Schedule indicates Revision 1 of the FFS will be completed by 12/20/2023; however, the text in Section 3.1.5 indicates resolution of the comments is ongoing. Please clarify whether the dates for the FFS in the Master Schedule are accurate and revise accordingly.

2. **Section 4.1, Land Use Controls, Page 4-2 and Section 4.2, Five-Year Reviews, Page 4-2:** It is unclear whether remedial actions are expected to meet unlimited exposure and unrestricted use at Main Installation (MI) and Dunn Field. The text in Section 4.1 states, "LUCs [land use controls] will remain in place until concentrations of contaminants of concern have been reduced to levels that allow for unlimited exposure and unrestricted use;" however, the text in Section 4.2 indicates that the final remedies for both MI and Dunn Field include LUCs in perpetuity. Please revise the text to address the discrepancy.

3. **Table 5, Remedial Goal Objectives from Dunn Field Record of Decision, PDF Page 63:** The groundwater target concentration of 7/340 micrograms per liter (µg/L) listed for

1,1-dichloroethene (1,1-DCE) is unclear as the table notes do not include a description of this value. Please clarify the 1,1-DCE groundwater target concentration value of 7/340 in Table 5.

4. **Table 10, Follow-Up Actions from the Fifth Five-Year Review, PDF Page 70:** The table indicates a per- and polyfluoroalkyl substances (PFAS) preliminary assessment (PA) and site investigation (SI) were issued in August 2023 and November 2023, respectively; however, it is not clear whether these were approved by regulatory agencies and whether additional documentation is expected. Please revise the table to include this information.

5. **Figure 29, Master Schedule, PDF Page 103 to 108:** The letters used under the "Status" column are not defined in the figure. For example, both "S" and "P" are used, but neither term is identified. Additionally, the Master Schedule does not clarify the current progress stage of each task. Please revise the Master Schedule to clarify the current progress stage of each task and define the designation letters used in the Status Column.

The USEPA commends the USARMY for its efforts on further investigating the DDMT environmental conditions. If you have any questions about this letter, please contact me via email at martinez-torres.fernando@epa.gov or at 404-695- 4991.

Sincerely,

Fernando Martinez Torres

Digitally signed by Fernando Martinez Torres
Date: 2024.01.04 10:58:41 -05'00'

Fernando Martinez Torres
Remedial Project Manager
Department of Defense Section
Superfund & Emergency Management Division
United States Environmental Protection Agency

cc: Jamie A. Woods, TDEC
William Millar, CALIBRE
Ben Bentkowski, USEPA, R4
Kevin Koporec, USEPA, R4

Responses to Comments from
U.S. Environmental Protection Agency (EPA) Region 4 on:
2024 Site Management Plan, Revision 0, November 2023
Defense Depot Memphis, Tennessee
Comments Received: 4 January 2024

Specific Comments:

1. **Section 3.1.5, Supplemental Remedial Investigation and Focused Feasibility Study, Page 3-5 and Figure 29, Master Schedule, PDF Page 103:** It is unclear whether the Focused Feasibility Study (FFS) is on target with the Master Schedule. The Master Schedule indicates Revision 1 of the FFS will be completed by 12/20/2023; however, the text in Section 3.1.5 indicates resolution of the comments is ongoing. Please clarify whether the dates for the FFS in the Master Schedule are accurate and revise accordingly.

Response S1: Resolution of EPA comments for the FFS is ongoing. The most recent comments from EPA were received in a letter dated 12/14/23; a draft reply from Army is being reviewed with submittal expected by 2/15/24. EPA comments were generally accepted and completion of the FFS is expected by 3/29/24. The Master Schedule will be revised to show the new completion for the FFS and will change dates for following activities accordingly.

2. **Section 4.1, Land Use Controls, Page 4-2 and Section 4.2, Five-Year Reviews, Page 4-2:** It is unclear whether remedial actions are expected to meet unlimited exposure and unrestricted use at Main Installation (MI) and Dunn Field. The text in Section 4.1 states, "LUCs [land use controls] will remain in place until concentrations of contaminants of concern have been reduced to levels that allow for unlimited exposure and unrestricted use;" however, the text in Section 4.2 indicates that the final remedies for both MI and Dunn Field include LUCs in perpetuity. Please revise the text to address the discrepancy.

Response S2: The referenced statements are correct. LUCs will remain in place until contaminants of concern have been reduced to levels that allow for unlimited exposure and unrestricted use, and the current remedies will leave contaminants above levels that allow for unrestricted use and unlimited exposure, making the period over which LUCs and FYRs will be required indefinite.

Section 4.1 will be revised to include "Cleanup levels in the MI and Dunn Field ROD will not reduce contaminants sufficiently for UE/UU, and LUCs will remain in place for an indefinite period."

3. **Table 5, Remedial Goal Objectives from Dunn Field Record of Decision, PDF Page 63:** The groundwater target concentration of 7/340 micrograms per liter (µg/L) listed for 1,1-dichloroethene (1,1-DCE) is unclear as the table notes do not include a description of this value. Please clarify the 1,1-DCE groundwater target concentration value of 7/340 in Table 5.

Response S3: Table 5 lists the cleanup levels for chlorinated volatile organic contaminants in soil, soil vapor and groundwater as listed on Table 2-21G, *Summary of Remediation Goals* in the Dunn Field ROD. The footnote on Table 2-21G for 1,1-DCE groundwater criteria (7/340) was omitted from Table 5: "1,1-dichloroethene has recently been reclassified by EPA as a non-carcinogen; however, existing MCL is based on previous assumption that it is a carcinogen." The groundwater criteria were taken from Table 2-21E in the Dunn Field ROD, which lists 7 µg/L as the MCL and 340 µg/L as the USEPA Region 9 PRGs-Tap Water (10/1/2002, non-carcinogenic hazard of 1.0). The EPA PRGs are now the RSLs and the current value would be 280 ug/L. The MCL is still 7 ug/L. The Dunn Field ROD page 2-29 states individual concentrations of COCs will not exceed MCLs and combined concentration levels will not exceed a cumulative upper-bound target risk of 1 in 10,000 (1 X10-4) and HI of 1.0. As the 1,1-DCE MCL has not been revised, the entry for 1,1-DCE on Table 5 will be revised to "7" to avoid confusion.

4. **Table 10, Follow-Up Actions from the Fifth Five-Year Review, PDF Page 70:** The table indicates a per- and polyfluoroalkyl substances (PFAS) preliminary assessment (PA) and site investigation (SI) were issued in August 2023 and November 2023, respectively; however, it is not clear whether these were approved by regulatory agencies and whether additional documentation is expected. Please revise the table to include this information.

Response S4: The recommendation regarding the potential presence of PFAS on Table 10 was that the PA/SI be completed; the PA report was provided to EPA and TDEC in November 2023 and the SI report in December 2023. Submittal of the reports completes the recommended action. As stated in Army correspondence with EPA, comments on the PFAS PA and SI will be reviewed and used in scoping the PFAS RI for DDMT.

The following sentence will be added to Table 10 Implementation Status for PFAS: “The reports were provided to USEPA and TDEC; agency comments will be addressed in scoping the DDMT PFAS RI.”

The following will be added at the end of Section 3.3: “The PFAS PA and SI reports for DDMT were provided to USEPA and TDEC. Agency comments will be reviewed and used in scoping the PFAS RI for DDMT, and the RI sampling and analysis plan will be provided to USEPA and TDEC for review.”

5. **Figure 29, Master Schedule, PDF Page 103 to 108:** The letters used under the “Status” column are not defined in the figure. For example, both “S” and “P” are used, but neither term is identified. Additionally, the Master Schedule does not clarify the current progress stage of each task. Please revise the Master Schedule to clarify the current progress stage of each task and define the designation letters used in the Status Column.

Response S5: The following will be added to the first paragraph in Section 4.3: “The schedule notes the status of each document as ’P’ for primary and ‘S’ for secondary as defined and identified in the FFA, Section XV (USEPA, 1995). Primary Documents include those reports, plans and studies that are major, discrete portions of the response action process and the specified dates are deadlines. Secondary Documents include those reports, plans and studies that are discrete portions of the Primary Documents and the specified dates are targets.”

A new column will be added for “Document Type” and the “Status” column will be used to indicate status of each activity. The following notes will be added on the last page of the schedule.

Notes:
1. Status
x: Task completed
o: Task in progress

2. Document Type per DDMT FFA
P: Primary Document
S: Secondary Document

REGION 4
ATLANTA, GA 30303

March 12, 2024

Mr. James Foster
Base Realignment and Closure Division (ACSIM-ODB)
2530 Crystal Drive (Taylor Building), Room 5000
Arlington, VA 22202-3940

Dear Mr. Foster,

The United States Environmental Protection Agency (USEPA) has completed its regulatory review of the 2024 Site Management Plan, Revision 1, and the Responses to Comments submitted by the United States Army (USARMY/the Lead Agency) in February 2024 (the 2024 SMP), for the Defense Depot Memphis, Tennessee (DDMT).

To improve the 2024 SMP at DDMT, schedules must be updated to align with current deliverables, budget allocations, and potential delays identified by the Lead Agency or Regulators. Updating the schedules for all Fiscal Years to accurately align with post-regulatory approval processes in place are required to be consistent with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to ensure that cleanup operations are carried out efficiently and in accordance with regulatory timeliness.

Moreover, the changes in CERCLA remedial actions involving PFAS (Per- and Polyfluoroalkyl Substances) substances demonstrates the importance of keeping up with regulatory changes and adjusting schedules accordingly to achieve effective environmental management.

Consequently, the Lead Agency should review the schedules for all Fiscal Years within the Final 2024 SMP once again to ensure they accurately incorporate the most recent schedule adjustments and submit the final version for regulatory approval.

The USEPA commends the USARMY for its efforts on further investigating the DDMT environmental conditions. If you have any questions about this letter, please contact me via email at martinez-torres.fernando@epa.gov or at 404-695- 4991.

Sincerely,

Fernando Martinez Torres

Digitally signed by Fernando Martinez Torres
Date: 2024.03.12 10:41:28 -04'00'

Fernando Martinez Torres
Remedial Project Manager
Department of Defense Section
Superfund & Emergency Management Division
United States Environmental Protection Agency

cc: Jamie A. Woods, TDEC
William Millar, CALIBRE
Ben Bentkowski, USEPA, R4
Kevin Koporec, USEPA, R4

Holmes, Thomas C

From: Martinez-Torres, Fernando <martinez-torres.fernando@epa.gov>
Sent: Tuesday, April 23, 2024 10:44 AM
To: Millar, William W Sr CTR USARMY HQDA DCS G-9 (USA); Jamie Woods (Jamie.Woods@tn.gov); Bentkowski, Ben; Koporec, Kevin; McRae, Mac
Cc: Foster, James C CIV USARMY HQDA DCS G-9 (USA); Shirley, Melissa L CIV USARMY CESAM (USA); Carter, Chase E CIV (USA); Holmes, Thomas C; Mokri, Clayton R
Subject: RE: DDMT Latest RLSO of the 2024 SMP RE: EPA letter dated 12 March 2024

Good morning,

Acknowledged. Since this version is intended to be final, please submit it to the regulators as a PDF version to include the Appendices, Figures, Tables, Comment implementation, RTCs, etc. Thank you very much.

Sincerely,

Fernando Martinez Torres
U.S. Environmental Protection Agency/R4
Department of Defense Section
404-695-4991

"Courage is fear holding on a minute longer." **General George Smith Patton Jr.**

From: Millar, William W Sr CTR USARMY HQDA DCS G-9 (USA) <william.w.millar.ctr@army.mil>
Sent: Thursday, April 18, 2024 2:12 PM
To: Martinez-Torres, Fernando <martinez-torres.fernando@epa.gov>; Jamie Woods (Jamie.Woods@tn.gov) <Jamie.Woods@tn.gov>; Bentkowski, Ben <Bentkowski.Ben@epa.gov>; Koporec, Kevin <Koporec.Kevin@epa.gov>; McRae, Mac <mac.mcrae@techlawinc.com>
Cc: Foster, James C CIV USARMY HQDA DCS G-9 (USA) <james.c.foster10.civ@army.mil>; Shirley, Melissa L CIV USARMY CESAM (USA) <Melissa.L.Shirley@usace.army.mil>; Carter, Chase E CIV (USA) <chase.e.carter@usace.army.mil>; Holmes, Thomas C <Thomas.Holmes@hdrinc.com>; Mokri, Clayton R <clayton.mokri@hdrinc.com>
Subject: DDMT Latest RLSO of the 2024 SMP RE: EPA letter dated 12 March 2024

Fernando and Jamie,

Attached is a RLSO of the 2024 SMP Revision 1 – Final. Text was added to section 3.3 concerning the PFAS work to be done at DDMT. The Army is currently working on contracting a PFAS Remedial Investigation for DDMT. We do not currently have any schedule information for the RI effort. When a schedule for the PFAS RI becomes available it will be shared with the EPA and TDEC. The PFAS schedule will be added to next year's SMP.

The Army is ready to finalize the 2024 SMP.

Thank you.

Bill Millar