

Main Installation

The Army continues studies for possible human health risks from contact with contaminants in soil and from possible vapor intrusion of contaminants in soil and groundwater into buildings at the former Memphis Depot.



Studies continue at the former Memphis Depot Main Installation and Dunn Field West Investigation Area to decide if more cleanup actions are needed to protect human health.

Former Dip Vat Area Sampling

The former Dip Vat Area was used from 1952 until 1985 to treat wood pallets with a chemical preservative containing pentachlorophenol. A soil removal action was completed in 1986 that lowered concentrations below Environmental Protection Agency (EPA) human health risk assessment screening levels for pentachlorophenol and for dioxins and furans that were in the pentachlorophenol solution. Since the removal action, EPA has lowered the human health risk assessment screening levels. Army determined that additional soil sampling for dioxins and furans was necessary to determine if concentrations are below the new screening levels.

Soil samples were collected in July 2022 at 10 locations in the former Dip Vat Area and at other locations on the Main Installation. Only four samples from the DIP Vat Area were above the current screening levels. Army prepared the *Sampling and Risk Assessment Screening Report* that recommended additional sampling to determine the area with dioxins and furans above screening levels to determine if more cleanup is needed.

The additional samples were collected in September 2024. Army will prepare a report to present the results and discuss the need for additional action to

protect human health. The report will be provided to Tennessee Department of Environment and Conservation (TDEC) and EPA for review, and the final report will be available for public review.

Vapor Intrusion Study

TDEC and EPA approved the *Vapor Intrusion Sampling and Analysis Plan* for the Main Installation in early 2023. Vapor intrusion may come from soil contamination from previous spills or releases, from contaminated groundwater, or from both sources. The plan recommended sampling in phases: shallow soil vapor screening, active vapor sampling at depths from 5 feet to about 70 feet below ground surface, and indoor air sampling in buildings on the Main Installation.

The shallow screening samples and the active vapor samples at different depths were collected in 2023. The sample results showed that areas with soil vapor concentrations above EPA screening levels were limited to the southeast and southwest areas of the Main Installation over areas with higher groundwater contamination levels. In 2024, Army collected indoor air samples from Buildings 260, 265, and 972 in these two areas. Indoor air sample results were compared to soil vapor results and EPA screening levels to decide if contaminants from soil vapor are present in indoor air and at levels above the screening levels.

The sample results demonstrated that contaminants from soil vapor and groundwater are not detected or are less than EPA screening levels in indoor air. In late 2024, samples will be collected from all active vapor and indoor air locations to confirm the previous sampling results.

Army will prepare a report to review all sample results with recommendations for additional action if needed. The report will be provided to TDEC and EPA for review, and the final report will be available in the Information Repository.



Main Installation passive sample locations with red color indicating higher levels of soil vapor contaminants.

Dunn Field West Investigation

The *Dunn Field West Post-ROD Supplemental Investigation Report* identified contaminants in soil, soil vapor, and groundwater with the potential for unacceptable risk to future onsite workers and to current and future offsite residents from vapor intrusion due to contaminants in groundwater moving up through the soil into buildings.

The *Dunn Field West Vapor Intrusion Sampling and Analysis Plan* was completed in January 2024 with approval from EPA and TDEC. Vapor sampling was conducted in September 2024 to characterize the potential vapor intrusion risk and hazard to the off-site residents west of Dunn Field. Contaminant levels in shallow soil vapor were less than EPA vapor intrusion screening levels in the area west of Dunn Field. A second round of samples will be collected in January.

The *Dunn Field West Data Collection Work Plan* was completed in August 2024. A geophysical survey was performed to see if buried metallic debris was present and to help select soil sample locations, and soil samples were collected in October 2024 to better define the area and levels of soil contamination. Laboratory analysis of the soil and vapor samples is in progress. Army will prepare a report to present the results and provide recommendations for additional action.



Dunn Field West vapor intrusion and soil investigation areas sampled in 2024.

Army intends to transfer Dunn Field West through a public sale. An environmental condition of property update will be prepared to determine if the area meets requirements for property transfer. A Finding of Suitable Transfer amendment will also be prepared. The Army will continue to perform necessary cleanup actions and long-term groundwater monitoring following the transfer.

Off Depot Groundwater Cleanup System Update

In July 2023, Army shut off the Off Depot groundwater cleanup system because contamination levels remained at or below the cleanup objective of 50 micrograms per liter for the past year. Groundwater samples collected in 2024 show that levels remain below the cleanup objective. The Army will continue to collect groundwater samples as part of Dunn Field groundwater long term monitoring.

The cleanup system will be maintained through the end of 2025 in case groundwater contaminant levels increase and Army determines the system must be restarted. The system is inspected monthly and operated every other month to keep the equipment in operating condition.

Remedial Investigation of Potential PFAS Contamination

The Army completed a preliminary assessment and a site investigation of both the Main Installation and Dunn Field in 2023. The *Site Investigation Report for Per- and Polyfluoroalkyl Substances (PFAS)* submitted to EPA and TDEC in 2023 provides sampling results of six areas identified as areas of potential interest. The investigation included collecting samples from

existing groundwater monitoring wells, soil, surface water, and drainage ditch sediment. Results found PFAS at levels above EPA screening levels in groundwater in the six areas and surface water above the screening levels in one area. PFAS was not found above the screening levels in soil or sediment samples. A remedial investigation for PFAS contamination will begin in 2025.

Superfund Environmental Cleanup Process

Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA) Environmental Cleanup Process

Preliminary Investigation/ Site Assessment	National Priorities List	Remedial Investigation/ Feasibility Study	Record of Decision
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Former Memphis Depot's Progress in the CERCLA Process

The former Memphis Depot is currently at the Post Construction stage. The environmental cleanup systems required by the Records of Decision have been constructed. Some cleanup actions are complete, and some areas on the Main Installation and Dunn Field need changes to the selected cleanup actions. Post construction activities include long-term monitoring which will continue until the cleanup objectives are met.

Main Installation Alternative Remedy Groundwater Update

The Army conducted a Focused Feasibility Study to review information gained from site investigations, groundwater monitoring, and results of cleanup actions for the Main Installation and Dunn Field. This study was performed to select a replacement for the enhanced bioremediation remedy selected in the 2001 *Main Installation Record of Decision*. The Army submitted the *Final Main Installation Focused Feasibility Study Report* in July 2024 with approval from TDEC and EPA.

The selected cleanup methods are air sparge and soil vapor extraction, like the cleanup action for Dunn Field and Off Depot Groundwater that successfully reduced contamination levels to cleanup goals. The methods will be used at several locations on the Main Installation to cleanup soil vapor and groundwater contamination. See the EPA "Fact Sheet: A Citizen's Guide to Soil

Vapor Extraction and Air Sparging" for more information about this groundwater cleanup method at <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=10002SZK.txt>.

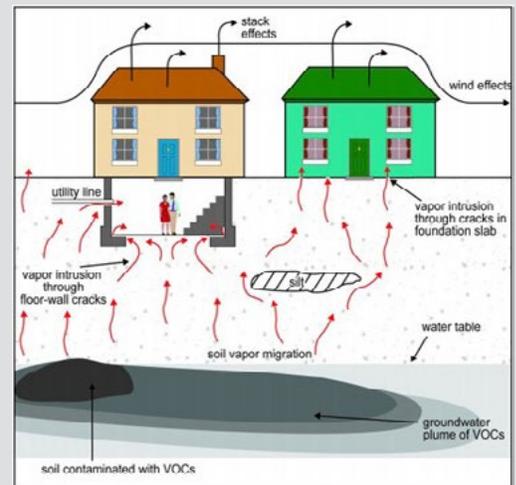
The *Draft Revised Proposed Plan* was submitted for TDEC and EPA review in July 2024. EPA submitted comments for the *Draft Revised Proposed Plan* in September and stated that an EPA management review had additional comments on the *Final Main Installation Focused Feasibility Study Report*. Once the comments are resolved, Army will place all final study documents and the *Revised Proposed Plan* in the Information Repository website for public review and conduct a public meeting. Advertisements for the public comment period and meeting will be published in the Commercial Appeal.

Definitions

Feasibility Study: The study of possible cleanup actions that explores advantages and disadvantages of each action. A Feasibility Study documents the analysis of potential treatment alternatives, also called cleanup methods, and explores the advantages and disadvantages of each to select the appropriate method.

PFAS: Per- and polyfluoroalkyl substances; PFAS are manufactured chemicals that have been used in industry and consumer products since the 1940s. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world. There are thousands of different PFAS, some of which have been more widely used and studied than others. See EPA's website for more information about PFAS at <https://www.epa.gov/pfas/pfas-explained>.

Vapor Intrusion: The result of vapors from a contaminant source below ground moving up into a building. Graphic on right from the EPA "What is Vapor Intrusion" fact sheet found at www.epa.gov/vaporintrusion/what-vapor-intrusion.



Upcoming Activities 2025

- Complete Main Installation Focused Feasibility Study and continue preparing the Revised Proposed Plan.
- Complete soil sampling and risk screening evaluation at Main Installation former PCP Dip Vat area and submit draft report.
- Complete Main Installation Vapor Intrusion study and submit draft report.
- Complete Dunn Field West vapor and soil investigations and submit draft reports; and submit Draft Final Dunn Field Memorandum for Record.
- Begin Dunn Field Remedial Design/Remedial Action Work Plan.
- Complete evaluation of long-term groundwater monitoring results in Off Depot wells to check that contaminant levels remain below the cleanup objective since Off Depot Groundwater cleanup system turned off.
- Begin PFAS remedial investigation.
- Complete 2024 Long Term Monitoring Report, 2025 Site Management Plan, and conduct the annual land use controls inspection and complete the report.
- Continue long term groundwater monitoring.

Remedial Design/
Remedial Action

Construction
Complete

Post Construction
Complete

Site
Deletion

The master schedule for Main Installation, Dunn Field, and site-wide activities through planned site completion in 2043 is provided in the 2025 Site Management Plan. The date is based on time to reach cleanup objectives and may be impacted by the need for additional Main Installation cleanup action at the former Dip Vat Area, after completing the Main Installation Vapor Intrusion Study, and/or whether additional cleanup is needed at Dunn Field West.



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Former Memphis Depot Information Repository

Final sampling plans and reports documenting sampling, results, and recommendations are available in the online former Memphis Depot Information Repository at <https://ww3.sam.usace.army.mil/DDMT>.

- Site Investigation Report for Per- and Polyfluoroalkyl Substances
- Final 2023 Annual Long-Term Monitoring, Revision 1
- Dunn Field West Vapor Intrusion Sampling and Analysis Plan, Revision 1
- Main Installation Sampling and Risk Screening Report, Revision 1
- Main Installation Focused Feasibility Study Report, Final
- 2024 Site Management Plan, Revision 1
- Off Depot AS/SVE Year 12 Annual Report, Revision 1

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