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April 24, 2025

Ms. Melissa Shirley
U.S. Army Corps of Engineers, Mobile District
ATTN: Melissa Shirley, EN-GE
6440 Doubletree Court
Mobile, AL 36695

Subject: *Proposed Plan*
Organizational Maintenance Shop #28
Contract No.: W91278-20-D-0020, Delivery Order No:. W9127820F0288

Dear Ms. Shirley,

AECOM Technical Services, Inc. (AECOM) is pleased to submit the *Proposed Plan* (PP) for Organizational Maintenance Shop #28 (OMS #28). The Adobe PDF of the PP plus the native files (e.g., Microsoft Word, figure PDFs, etc.) will be sent via DODSafe. The PP will be sent to the recipients on the attached distribution list; CD enclosed with the PP will contain the report in Adobe PDF only.

Should you have any questions or comments, please contact me at (864) 561-3414.

Sincerely,

Timothy S. Renn, PE
AECOM Technical Services, Inc,
Project Manager

Enclosures

DISTRIBUTION LIST

Proposed Plan
Organizational Maintenance Shop #28

	Recipients	Copies
1.	U.S. Army Corps of Engineers, Mobile District ATTN: Melissa Shirley, EN-GE 251-422-0129 ATTN: Melissa Montgomery 251-690-3110	DODSafe
2.	Alabama Department of Environmental Management ATTN: Mr. Colin Mitchell 1400 Coliseum Blvd Montgomery, AL 36110 334-271-4226	1 CD
3.	Army National Guard G-9 ATTN: Queenie Mungin-Davis, IEE-D 111 South George Mason Drive Arlington, VA 22204 520-671-6212	1 HC / DODSafe, Sharepoint
4.	Alabama Army National Guard, JFHQ FMO ENV ATTN: Bradley N. Curvin 1720 Congressman W. L. Dickinson Dr. Montgomery, AL 36109 334-523-4027	1 HC / DODSafe
5.	Alabama Army National Guard, JFHQ FMO EN ATTN: Marlon McMillan 1720 Congressman W. L. Dickinson Dr. Montgomery, AL 36109 334-271-8184	1 HC / DODSafe
6.	AECOM Project File – Greenville Office	Electronic File
7.	Administrative Record	1 HC / 1 CD

Proposed Plan for Organizational Maintenance Shop #28 Alabama Army National Guard Mobile, Alabama

1 Army National Guard Announces Proposed Plan

This **Proposed Plan**[1] identifies the **Preferred Alternative** for addressing potential risk at the Organizational Maintenance Shop (OMS) #28, located at the Brookley Aeroplex, formerly the Brookley Air Force Base (AFB), in Mobile, Alabama (**Figure 1**), and summarizes the rationale for this preference.

Preferred Alternative: To address the chemical constituents in groundwater exceeding remedial goals at OMS #28, the U.S. Army National Guard recommends Alternative 2, **Land Use Controls (LUCs) with Periodic Groundwater Monitoring**.

This Proposed Plan is being prepared by the National Guard Bureau Army Guard Directorate (ARNG), the lead agency for site cleanup activities. The Alabama Department of Environmental Management (ADEM) is the state regulatory agency; there is no federal regulatory agency involvement. The ARNG will select the final remedy for this site after reviewing and considering all information submitted during the public comment period and may modify the Preferred Alternative or select another response action based on new information or public comments. Therefore, the public is invited to participate in the decision-making process for this site by reviewing and commenting on the remedial alternatives presented in this Proposed Plan.

This document has been prepared according to *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents* (United States [U.S.] Environmental Protection Agency [USEPA], 1999), and is issued by the ARNG, the lead agency for the site activities, with support from the U.S. Army Corps of Engineers (USACE). The ARNG is issuing this

PUBLIC COMMENT PERIOD:

MONTH XX, 2025 to MONTH XX, 2025

The Army National Guard will hold a public comment period to encourage the public to review and comment on the Proposed Plan (see Section 10 for more information).

The Administrative Record for this site is located at:

Building FMS #28
1622 South Broad Street
Mobile, AL 36605

For additional information, please contact:

Alabama Army National Guard Public Affairs Office
1720 Congressman W.L. Dickinson Dr.
Montgomery, AL 36109
Email: alngpao@army.mil
Phone: (334) 271-7400

[1] Terms in bold are included in the Glossary of Terms at the end of this document.

Vicinity Map

Legend

- County Boundary
- Waterbodies

Note:
OMS - Organizational Maintenance Shop

0 300 600 1,200 Feet

1 inch = 600 feet

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Facility Location Map

Alabama Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60666895	RJS	1/24/2025	**Figure 1**

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Proposed Plan to fulfill part of its public participation responsibilities under Section 117(a) of ***Comprehensive Environmental Response, Compensation, and Liability Act*** **(CERCLA),** as amended by the Superfund Amendments and Reauthorization Act of 1986, and under Section 300.430(f)(2) of the *National Oil and Hazardous Substances Pollution Contingency Plan* (NCP). This Proposed Plan summarizes information presented in detail in the following documents: 2013 Remedial Investigation (RI)/Baseline Risk Assessment (BRA) Report (Scientific Applications International Corporation [SAIC], 2013), 2014 Feasibility Study (FS; Leidos, 2014), Supplemental Data Gap Investigation (SDGI; AECOM Technical Services, Inc. [AECOM], 2019a), Risk Assessment Report, Revision 2 (AECOM, 2023a) and 2024 FS (AECOM, 2024). These documents are a part of the **Administrative Record** for this site. The ARNG and ADEM encourage the public to review these documents and to comment on this plan.

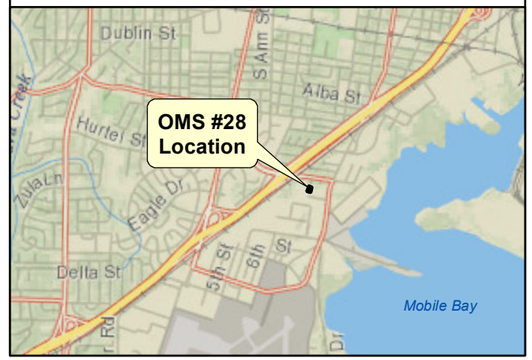
2 Site Background (History)

OMS #28 is located in Mobile County, near downtown Mobile at 1622 South Broad Street, between U.S. Interstate Highway 10 (I-10) and Mobile Bay (**Figure 1**). The site is bordered by undeveloped land and I-10 to the west; commercial and residential property to the north, the Fort Floyd A. McCorkle Alabama Army National Guard (ALARNG) facility building to the east; and commercial and industrial properties to the south (**Figure 2**). The surface features consist of vegetative cover comprised primarily of oak trees, scrub trees, grasses, and brush. The nearest residential structure is approximately 150 feet (ft) northeast of the OMS #28 maintenance building. The ALARNG renamed OMS #28 to Field Maintenance Shop (FMS) #28 several years ago; however, the site is referred to as OMS #28 in all previous ALARNG, ADEM, and USACE investigation reports. As such, in order to avoid confusion, the site is referred to herein as OMS #28. According to ALARNG personnel, site operations have not significantly changed since conversion to FMS #28 (Louis Berger, 2015).

OMS #28 is located in the northwest corner of the former Brookley AFB, which is now called the Brookley Aeroplex. The initial 1,000 acres of the AFB were acquired by the U.S. Department of Defense (DoD) in 1938 with additional land acquisitions through 1955 totaling 3,156 acres. Brookley AFB was operated by the Air Force as a general support and supply base until June 1969 when it was officially closed. The DoD returned Brookley AFB to the City of Mobile, and the City created the Mobile Airport Authority (MAA) in 1972. Facilities at the Brookley Aeroplex include runways and maintenance areas for aircraft, underground and aboveground fuel storage facilities, associated buildings, roads, housing, and landfills. There are no human consumption or agricultural wells located within the boundaries of the Brookley Aeroplex. Currently, the Brookley Aeroplex is utilized as an industrial complex and airport by the MAA (SAIC, 2013).

The Alabama Armory Commission owns the 5.9 acres of property on which OMS #28 is located, and ALARNG operates the FMS, which was formerly known as the OMS. The Alabama Armory Commission has owned this property since 1953 when the City of Mobile conveyed 25.66 acres to the Commission. In 2002, 6.43 acres west of the OMS #28 property reverted to the City, and the City subsequently conveyed the property to the MAA (SAIC, 2013). The MAA property is referred to as Parcel F in this document (**Figure 3**).

Site Location



Legend

- Railroad
- Fenceline
- Parcel Boundary

Notes:

** Concrete pad is the likely remnant foundation of Mollison Hall (recreational hall for soldiers before and after World War II) that was demolished between 1972 and 1974.

ALARNG - Alabama Army National Guard
OMS - Organizational Maintenance Shop

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

0 75 150 300 Feet

1 inch = 150 feet

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Site Location Map

Alabama Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60666895	RJS	3/25/2025	**Figure 2**

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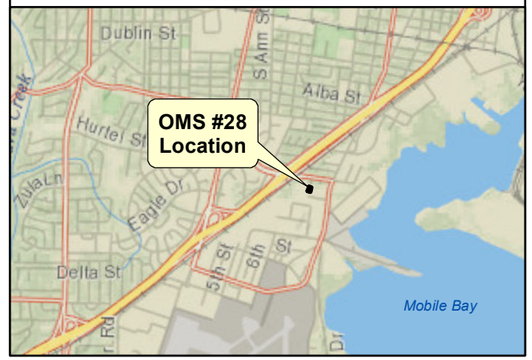
Site Location



Legend

- Upper/Middle Surficial Monitoring Well Location
- Lower Surficial Monitoring Well Location
- Fenceline
- Railroad
- Parcel Boundary
- Parcel Designation (A - H)

ALARNG - Alabama Army National Guard
OMS - Organizational Maintenance Shop

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

0 40 80 160 Feet

1 inch = 80 feet

N W E S

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Parcel Designation Map

Alabama Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60666895	RJS	3/25/2025	**Figure 3**

Document Path: L:\Legacy\Group\earth\OMS 28\60439687\900-CADD-GIS\Brookley_GIS\Maps\FS Letter Report\20220505\Figure 1-3_OMS 28_Parcel Designation and Sample Location Map.mxd

The Site has undergone numerous development, redevelopment, and organizational periods since initial development. The original/former OMS #28 building was constructed in the early 1950s, and another original building, OMS #29, was constructed in the 1960s. The current OMS #28 building was constructed in 1978, and operations were transferred to it from the original building. The original OMS #28 building was used for storage from 1978 until its demolition in 2001. Operations within OMS #29 were also transferred to the new OMS #28 building, and the old OMS #29 building was subsequently used for storage and eventually demolished. The new OMS #28 building was expanded in 1994 to accommodate a greater volume of work. Currently, the OMS #28 building and associated property are used for vehicle staging and maintenance as well as for direct support for military police, medical, signal, communications, and field artillery units (Louis Berger, 2015).

A vehicle wash pad was formerly located in the far northwestern corner of the parking lot (**Figure 2**). During a site reconnaissance conducted by Louis Berger with the OMS #28 supervisor and a former ALARNG employee, the former ALARNG employee indicated that the former wash pad was operational until 1978. The wash pad was constructed as a concrete slab with no drainage system in place. Military vehicles were routinely washed in this area, and the wash water that was generated flowed freely onto the ground. The former ALARNG employee also stated that communication equipment repair and cleaning was conducted as a former on-site operation at OMS #28. While neither the OMS #28 supervisor nor the former ALARNG employee were familiar with the on-site use of any trichloroethene (TCE) and/or tetrachloroethene (PCE), the former ALARNG employee did identify the former use of “Gunk”, a cleaning agent that contains PCE, at the site in the 1960s and 1970s. The former employee further stated that “Gunk” was used during the same time period as when the former wash pad was operational, but he had no knowledge of its use in the vicinity of the wash pad. No official written record of the use of “Gunk” was discovered during the site visit.

Four underground storage tanks (UST) were removed from three separate locations (i.e., Pit 1, Pit 2, and Pit 3) at the site in October 1992. Upon removal of a single 2,000-gallon gas/diesel UST at Pit 2, petroleum-related soil and groundwater contamination was identified; however, a preliminary sampling effort was unable to determine the nature and extent of the contaminants. Additional investigation in December 1994 reportedly completely delineated the extent of petroleum-related soil and groundwater contamination associated with Pit 2.

Quarterly groundwater monitoring for petroleum-related contaminants subsequently began in 1995 and continued through 2004. When analysis of quarterly groundwater sampling results indicated that petroleum contamination had migrated beyond the original site monitoring well network installed during the December 1994 groundwater investigation, further site characterization was determined to be necessary. This additional site characterization work was conducted in 2004 and 2005 by Bechtel-S and consisted of the installation of additional monitoring wells at the site in another attempt to delineate petroleum contamination associated with Pit 2 (Louis Berger, 2015).

As previously described, the original investigations at OMS #28 focused on the contamination associated with the UST located at Pit 2. The UST-related investigations that have been performed at OMS #28 were documented in the following reports:

- UST Closure Site Assessment Report, The Amory Commission of Alabama, OMS #28 and 29 – Pit #1, Pit #2, and Pit #3 (CWA Group, Inc., 1992),

- Preliminary Investigation Report, OMS #28 Pit #2 (P.E. LaMoreaux and Associates, Inc. [PELA], 1993),
- UST Secondary Investigation Report, Alabama National Guard Armory, OMS #28 and 29 – Pit #2 (PELA, 1994), and
- Secondary Investigation Addendum Report (Bechtel-S, 2005).

In March 2005, the chlorinated solvent TCE was detected at a concentration of 480 micrograms per liter (µg/L) in groundwater at the site for the first time in monitoring well (MW)-8. MW-8 is located approximately 40 ft east of the former vehicle wash pad. The presence of TCE in MW-8 was determined to be unrelated to the petroleum tanks that were removed from the site in the fall of 1992; however, the source of the TCE was unknown. In April/May 2006 and March 2007, soil containing TCE was detected in discrete samples collected to east of the former vehicle wash pad. Installation and sampling of additional monitoring wells in November 2008 achieved delineation of the horizontal and vertical extents of TCE and PCE groundwater contamination at the site (Louis Berger, 2015).

Initially, the OMS #28 chlorinated solvents plume was investigated under the Resource Conservation and Recovery Act due to the actions required following the discovery of TCE under UST regulatory requirements. In September 2010, ALARNG submitted a proposal to ADEM to continue the activities at the site under CERCLA and to develop a RI/FS. ADEM concurred with this approach in e-mail correspondence dated September 9, 2010 (ADEM, 2010).

Investigations conducted following the discovery of TCE in MW-8 in March 2005 were documented in the following reports:

- TCE Comprehensive Investigation Report for OMS #28 (Aerostar, 2007),
- Supplemental Comprehensive Investigation Report for OMS #28 (Aerostar, 2008),
- Supplemental Comprehensive Investigation Groundwater Monitoring Reports for OMS #28 (Aerostar, 2009a, 2009b, 2009c, 2010, 2011a),
- Alabama Risk-Based Corrective Action Report for OMS #28 (Aerostar, 2011b),
- RI Report for OMS #28 (SAIC, 2013),
- FS for OMS #28 (Leidos, 2014), and
- Historical Research Study Report (Louis Berger, 2015).

The RI Report (SAIC, 2013) documented a groundwater plume that contained TCE above its USEPA Drinking Water Maximum Contamination Limit (MCL) that was present across the site and adjacent properties within the shallow surficial aquifer. A smaller PCE plume was also reported within the larger TCE plume boundary and was located on the adjacent MAA property. The RI documented that the horizontal extent of the TCE boundary in the area of the undeveloped properties to the north and northwest, as well as the vertical extent of the TCE groundwater plume, had not been fully delineated (SAIC, 2013).

An FS was completed based on the results of the RI Report (Leidos, 2014). The remedial alternative recommended in the FS was Alternative 4, which consisted of biological/chemical treatment of groundwater and the excavation of select soil areas. The FS was concurred with by ADEM in May 2014 (ADEM, 2014).

AECOM was contracted to conduct a SDGI at OMS #28 to refine the site's conceptual site model (CSM). The objectives of the SDGI were to:

- Determine if additional soil sources could be located that were contributing to site groundwater contamination; and
- Improve the delineation of the existing groundwater plume.

The SDGI was conducted between April 2017 and March 2018. Based on the characteristics of the site and patterns of contamination and receptor **exposure**, the site was divided into the eight parcels (Parcels A through H, shown on **Figure 3)** for the SDGI:

- Parcel A - Undeveloped parcel northwest of the site (parcel is currently owned by the City of Mobile Water and Sewer Commission),
- Parcel B - Undeveloped parcel northwest of the site (parcel is currently owned by Armstead Diggs),
- Parcel C - Undeveloped parcel northwest of the site (parcel is currently owned by the Duval @ Broad, LLC,
- Parcel D – Undeveloped parcel northwest of the site (parcel is currently owned by Minda Carol Petty,
- Parcel E – Developed ALARNG property,
- Parcel F – Undeveloped MAA parcel west of the site,
- Parcel G – I-10 Service Road,
- Parcel H - located immediately adjacent to and east of Parcel D and has a residential home located on it. SDGI activities were not conducted on Parcel H because access to this parcel was unable to be obtained.

The SDGI concluded that the objectives of the investigation were achieved, and that soil source areas and groundwater contaminant plumes were sufficiently delineated to proceed to the design phase of the remedial alternatives. An offsite soil source of PCE was discovered during the SDGI on Parcel A approximately 20 ft north of the northwest MAA parcel boundary. This offsite PCE source was determined to be unrelated to historical ALARNG activities conducted on Parcel E. A comprehensive summary of SDGI field activities, the associated results, and conclusions are presented in the SDGI and Groundwater Monitoring Report (AECOM, 2019a).

A Risk Assessment Report (AECOM, 2019b) was also prepared as part of the site SDGI activities using the soil and groundwater results from samples collected during the SDGI. The Risk Assessment Report Revision 1 (AECOM 2022) was subsequently submitted in May 2022 to address ADEM comments received in February 2021 (ADEM, 2021a) and additional ADEM comments received in November 2021 (ADEM, 2021b). ADEM provided comments on the Risk Assessment Report Revision 1 in October 2022 (ADEM, 2022) and additional comments provided in January 2023. Based on these comments, Risk Assessment Report, Revision 2 (AECOM, 2023a) was issued to ADEM in March 2023. A summary of the Risk Assessment Report, Revision 2 (AECOM, 2023a) is provided in **Section 5 - Summary of Site Risks**.

The OMS#28 FS was submitted to ADEM in October 2023 (AECOM, 2023b). The FS was prepared to identify remedial action objectives (RAOs) and identify and screen remedial alternatives that address the risks and hazards caused by historical activities conducted on ALARNG property at OMS #28. The FS also provided justification for the exclusion of responsibility and remediation for offsite PCE soil and groundwater contamination. ADEM provided comments on the OMS#28 FS in July 2024; the FS Revision 1 was submitted to ADEM in October 2024 (AECOM, 2024).

The ARNG published Public Notices in the Lagniappe Weekly and the Mobile Press Register in October 2021 and in the Lagniappe Weekly and the Call News in October 2023 requesting public feedback regarding interest in establishing a Restoration Advisory Board for OMS#28 to facilitate public participation in the environmental restoration program. No comments or calls were received, and no public interest was expressed as a result of the Public Notifications.

3 Site Characteristics

The current land use for OMS #28 (ALARNG property, Parcel E) is industrial/commercial. Land use for parcels A, B, C, D, and F is currently undeveloped.

The majority of the OMS #28 site is developed with concrete-paved driveways and vehicle storage areas, including the new OMS #28 building and several other smaller storage buildings. The OMS #28 building consists primarily of five vehicle bays (10 total workspaces) where routine maintenance on military vehicles is performed; the remainder of the building consists of office space and a break room. The other smaller storage buildings located on Parcel E are slab-on-grade construction and are used to store items such as miscellaneous wood items, fans, vehicle ramps, fire extinguishers, and miscellaneous metal. No operations other than storage are performed in these buildings.

According to the RI Report for OMS #28, there are no water supply wells within a 1,000-foot radius of OMS #28, (SAIC, 2013). Potable water is supplied to the OMS #28 building by the City of Mobile municipal water supply. Two vehicle wash racks are present at the site and are connected to a single oil/water separator. One wash rack is located north of the OMS #28 building and the other is located west of the building. There are no surface water bodies located on or near the site.

Based on groundwater elevations collected in May 2017 during the Supplemental Data Gap Investigation, flow patterns at the site are dominated by a local trough feature in the subsurface orientated north/south with groundwater on each side of the trough converging and flowing northward.

Site-related **chemicals of concern** (COCs) for OMS#28 include PCE, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC). A full discussion of the nature and extent of the contamination is provided in Section 1.3.7 of the FS (AECOM, 2024). Based on the SDGI results, PCE was not detected in groundwater on ALARNG property (Parcel E). PCE only exceeded the MCL on Parcel A and along the adjacent northwest boundary of Parcel F. Also based on the results of the SDGI, two distinct TCE plumes exist in the Upper/Middle Surficial aquifer. One distinct TCE plume exists in the Upper/Middle Surficial aquifer on Parcel E and appears to be the result of a TCE release in the gravel-covered vehicle parking area used by the ALARNG (AECOM, 2019a). A review of older investigation results and the newer SDGI data indicates that PCE has never been detected in groundwater on Parcel E. During the SDGI, PCE in groundwater exceeded the MCL only on Parcel A and along the adjacent northwest boundary of Parcel F (offsite). The second distinct TCE plume is co-located with the PCE plume offsite on Parcel A and adjacent Parcel F. The two Upper/Middle Surficial TCE plumes merge into one plume in the Middle Surficial aquifer as TCE migrates vertically and in the direction of groundwater flow in the northwest portion of Parcel F. TCE was also detected in the Lower Surficial aquifer in isolated locations, outside of the footprint of the TCE plumes in the Upper and Middle Surficial aquifers. A low concentration of TCE (10 µg/L) was detected in groundwater in the central portion of Parcel B, it was not detected in groundwater on Parcel C above the MCL, and it was detected in low concentrations 9.02 µg/L and 27.1 in groundwater in the central portion of Parcel D.

As discussed in Section 2.1 of the FS (AECOM, 2024), the only media of concern identified for OMS #28 is groundwater impacted with TCE and its associated degradation products (AECOM, 2024).Onsite TCE in soil (Parcel E) is less than the USEPA regional screening level for residential exposure to soil and is therefore not considered to be a chemical of potential concern for Parcel E. Offsite PCE in soil near MW-09 (Parcel F) and offsite PCE in soil and groundwater that is located on Parcels A and F are not attributable to historical ALARNG operations that were conducted on Parcel E and are therefore not considered to be media of concern for OMS#28. In addition, the low concentration of TCE (10 µg/L) detected in lower surficial aquifer sample GW43 located on Parcel B is not considered to be site-related because TCE is a breakdown product of PCE, and this detection is located downgradient of the PCE source area on Parcel A. Furthermore, there were no groundwater COC detections above the MCLs on Parcel C.

4 Scope and Role of the Action

This Proposed Plan addresses only TCE and its degradation breakdown products (cis-1,2-DCE and VC; i.e., site-related COCs) in groundwater that are attributable to historical ALARNG operations that were conducted on OMS #28 (Parcel E), and the proposed action of land use controls (LUCs) with Periodic Groundwater Monitoring (the preferred alternative) is intended to be the final action for this site. The overall strategy of the ARNG is to reduce or eliminate the potential for human or ecological exposure to any site-related chemical constituents potentially present at concentrations that could result in unacceptable risk at OMS #28.

5 Summary of Site Risks

The 2013 RI/BRA (SAIC, 2013) was refined and updated as part of the site SDGI activities. The Risk Assessment Report (AECOM, 2023a) included a human health risk assessment (HHRA) and an ecological risk assessment (ERA) using the soil and groundwater results from samples collected during the SDGI. The HHRA and ERA were used to determine if site-related chemical constituents pose an unacceptable risk to human health or the environment. A summary of the HHRA and ERA findings is provided in the following subsections.

Human Health Risk Assessment

The HHRA was conducted for the eight lettered parcels shown on **Figure 3** (Parcels A through H) in order to evaluate potential risk to **human receptors** at the site. Potential receptors and exposure pathways were evaluated based on current and future land-use scenarios.

Current Exposure Scenario

Under current conditions, potential surface-soil exposure routes are complete for trespassers at Parcels A through G and for an industrial worker at Parcel E, where an existing maintenance/office building is located. Potential exposure pathways at Parcels A through G for a trespasser and at Parcel E for an industrial worker include exposure to **chemicals of potential concern (COPCs)** in surface soil through incidental ingestion, dermal absorption, and inhalation of airborne vapors.

At the three parcels from which soil samples were collected (Parcels A, E, and F), only Parcel A had a COPC (PCE) identified based on exposure to both surface soil and subsurface soil. Risk and hazard were calculated for a current trespasser at Parcel A but were below target risk and hazard levels. Risk and hazard were not calculated for a current industrial worker at Parcel E since no COPCs were identified in soil at this parcel, and no groundwater plume is within 100 ft of the building currently used by industrial workers.

Inhalation of volatile organic compounds (VOCs) in groundwater via vapors migrating from groundwater to indoor air is a potentially complete exposure route identified only for a current resident living on Parcel H and exposed to VOCs from groundwater beneath Parcel D. Although there are no residential structures located on Parcel D, there is a residential home on Parcel H adjacent to Parcel D and within 100 ft of the TCE plume beneath Parcel D. According to USEPA guidance, a VOC plume within 100 ft of an occupied structure provides a potential exposure pathway via vapor intrusion (VI) and indoor air inhalation. Risk and hazard were calculated for a current adult and child resident on Parcel H but were below target risk and hazard levels. Therefore, under the current exposure scenario, there is no risk or hazard identified from exposure to surface or subsurface soil or from groundwater via VI at any of the parcels in the area of investigation.

Future Exposure Scenario

Under future conditions, the receptors with a potential for exposure to site-related chemical constituents are trespassers, industrial workers, construction workers, and hypothetical on-site residents. Potential exposures to surface soil at Parcels A through G for a trespasser in the future would remain the same as under current conditions. Potential exposure pathways for future industrial workers at Parcels A through G include exposure to COPCs in surface soil through incidental ingestion, dermal absorption, and inhalation

of airborne vapors and subsurface soil through incidental ingestion and dermal absorption. Industrial workers are assumed to be exposed to subsurface soil that has been excavated during construction of an industrial building and spread on the surface. Future industrial workers also are assumed to be exposed to groundwater via direct contact (ingestion and dermal) and the inhalation of VOCs in groundwater via vapors migrating from groundwater to indoor air (VI). Potential exposure pathways for future construction workers at Parcels A through G include exposure to COPCs in soil and groundwater through incidental ingestion, dermal absorption, and inhalation of vapors from groundwater while working in excavations that extend below the water table.

For future adult and child residents, potential exposure pathways at Parcels A through G include exposure to COPCs in surface soil through incidental ingestion, dermal absorption, and inhalation of airborne vapors and subsurface soil through incidental ingestion and dermal absorption. Residents were assumed to be exposed to subsurface soil that has been excavated during construction of a residence and spread on the surface. It was conservatively assumed that exposures to site groundwater could occur using an on-site well as a potable water source, with exposure occurring through direct ingestion, dermal contact, inhalation of vapors during showering and other household uses of water from an on-site well, and inhalation of groundwater VOCs in indoor air via the VI pathway.

Based on the risk assessment, there is some level of carcinogenic risk and/or non-carcinogenic hazard for future receptors (construction workers, industrial workers, and/or residents) on Parcels A through F. There is no future risk for construction workers, industrial workers, and/or residents on Parcel G, and there is no future risk for residents on Parcel H.

Chemicals of Concern

No COCs were identified for the current exposure scenarios presented above. The following COCs were identified in the HHRA for the future exposure scenarios described above.

Parcel A

Future Construction Worker - PCE in surface soil, PCE in subsurface soil, PCE and TCE in groundwater

Future Industrial Worker - PCE in surface soil, PCE and TCE in groundwater

Future Resident Adult - PCE in surface soil, PCE and TCE in groundwater

Future Resident Child - PCE in surface soil, PCE and TCE in groundwater

Parcel B

Future Construction Worker - TCE in groundwater

Future Resident Adult – TCE in groundwater

Parcel C

Future Construction Worker - TCE in groundwater

Parcel D

Future Construction Worker - TCE in groundwater

Future Resident Adult - TCE in groundwater

Future Resident Child - TCE in groundwater

Parcel E

Future Construction Worker - TCE in groundwater

Future Industrial Worker - TCE in groundwater

Future Resident Adult – TCE and vinyl chloride (VC) in groundwater

Future Resident Child - TCE in groundwater

Parcel F

Future Construction Worker – PCE and TCE in groundwater

Future Industrial Worker – PCE and TCE in groundwater

Future Resident Adult – cis-1,2-dichloroethene (cis-1,2-DCE), PCE, TCE, and VC in groundwater

Future Resident Child – cis-1,2-DCE, PCE, and TCE in groundwater

Ecological Risk Assessment

The ERA consisted of a screening level ecological risk assessment (SLERA). The results of the SLERA determined that further evaluation of ecological risk was not warranted (AECOM, 2019b). Based on comments received from ADEM, the ERA was continued beyond the original SLERA in order to further evaluate potential risk to small mammals caused by the PCE hotspot in soil at Parcel A. The results of the additional ecological evaluation indicated that the potential for exposure and risk to **ecological receptors** is minimal. PCE in surface soil, the only **chemical of potential ecological concern** (COPEC) identified and located on Parcel A, warrants identification as a final COPEC due to its high concentrations within a small area of surface soil. However, the potential for significant exposures of multiple individual receptors is very small, and even if an individual receptor was affected, the population in this area would not be noticeably affected. Given the predicted lack of observable effects on populations, the risk would not be ecologically significant. The ERA therefore concluded that the OMS #28-related constituents in site media did not pose a risk to ecological receptors.

It is the lead agency's current judgment that the Preferred Alternative identified in this Proposed Plan, or the other active remedial alternative considered in the Proposed Plan, is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

6 Remedial Action Objectives (RAOs)

RAOs are site-specific initial cleanup objectives established based on the nature and extent of contamination, the resources that are currently and potentially threatened, and the potential for human and environmental exposure.

Accordingly, the RAOs for OMS #28 are as follows:

- Achieve, to the extent practical, the remedial goals (RGs; i.e., cleanup levels) for groundwater. The RGs are the following Safe Drinking Water Act MCLs:
    - TCE – 5 µg/L,
    - Cis-1,2-DCE – 70 µg/L, and
    - VC – 2 µg/L.
- Prevent potential exposure via ingestion, dermal contact, and inhalation of the future construction worker, future industrial worker, future resident adult, and future resident child to groundwater that exceeds the RGs. Mitigate potential future VI risks to the future industrial worker, future resident adult, and future resident child caused by the TCE plume that emanates from ALARNG property (Parcel E) through notification of potential future risk to affected landowners.

These RAOs apply only to Parcels D through F. PCE-impacted soil at Parcel A was determined not to be associated with historical ALARNG activities previously conducted at Parcel E (justification for the exclusion of the offsite source of PCE from the FS is presented in Appendix C of the FS (AECOM, 2024). Therefore, Parcels A and B are not addressed by these RAOs because the identified risks are associated with the PCE source area identified on Parcel A, and the identified risks on Parcel B are associated with the breakdown of PCE from Parcel A to TCE While Parcel C has an identified future risk to a construction worker, no chlorinated VOCs were identified in Parcel C groundwater above the MCLs. There is no future risk for construction workers, industrial workers, and/or residents on Parcel G, and there is no future risk for residents on Parcel H. Therefore, Parcels C, G, and H are also not addressed by these RAOs.

7 Summary of Remedial Alternatives

Remedial Alternatives which achieve the RAOs were developed in the FS (AECOM, 2024). A screening was performed to evaluate a number of remedial technologies and process options preliminarily considered for use at OMS #28. Based on the results of the screening, the following three remedial alternatives were chosen for evaluation for OMS #28:

- Alternative 1 – No Action
- Alternative 2 – LUCs with Periodic Groundwater Monitoring
- Alternative 3 – Enhanced Reductive Dechlorination (ERD), In-situ Chemical Reduction (ISCR), and Enhanced Monitored Natural Attenuation (MNA)

Alternative 2 (LUCs with Periodic Groundwater Monitoring) is the Preferred Alternative. Alternative 2 is a combined remedial approach for impacted groundwater which includes the following components:

1) installation, development, and sampling of additional groundwater monitoring wells to refine the delineation of the TCE plume emanating from Parcel E, 2) LUCs to minimize or prevent exposure of potential human residential receptors to chlorinated VOCs in groundwater, 3) periodic sampling of 17 groundwater monitoring wells and analysis of the groundwater samples for VOCs. Brief descriptions of the three alternatives studied in the detailed analysis phase of the FS are provided below.

Alternative 1: No Action

Alternative 1 is an approach where No Action is conducted. As recommended by the NCP, the No Action alternative is intended to serve as a baseline for comparison with the other groundwater remedial alternatives evaluated in this section. This alternative would leave contaminated groundwater in place with no controls to prevent human or ecological exposure. No remedial actions would be undertaken as part of this alternative to contain, remove, monitor, or treat the impacted groundwater associated with OMS #28.

The total net present worth cost of Alternative 1 is $0 since there would be no remedial action conducted.

Alternative 2: LUCs with Periodic Groundwater Monitoring

Alternative 2 is comprised of the following components: Refined Delineation, LUCs, Periodic Groundwater Monitoring, and Potential VI Risk. While each component is described separately below, this alternative is evaluated as a combined remedial alternative approach for impacted groundwater. **Figure 4** shows the proposed groundwater LUCs boundary to be applied as well as proposed additional monitoring well locations for the periodic groundwater monitoring program.

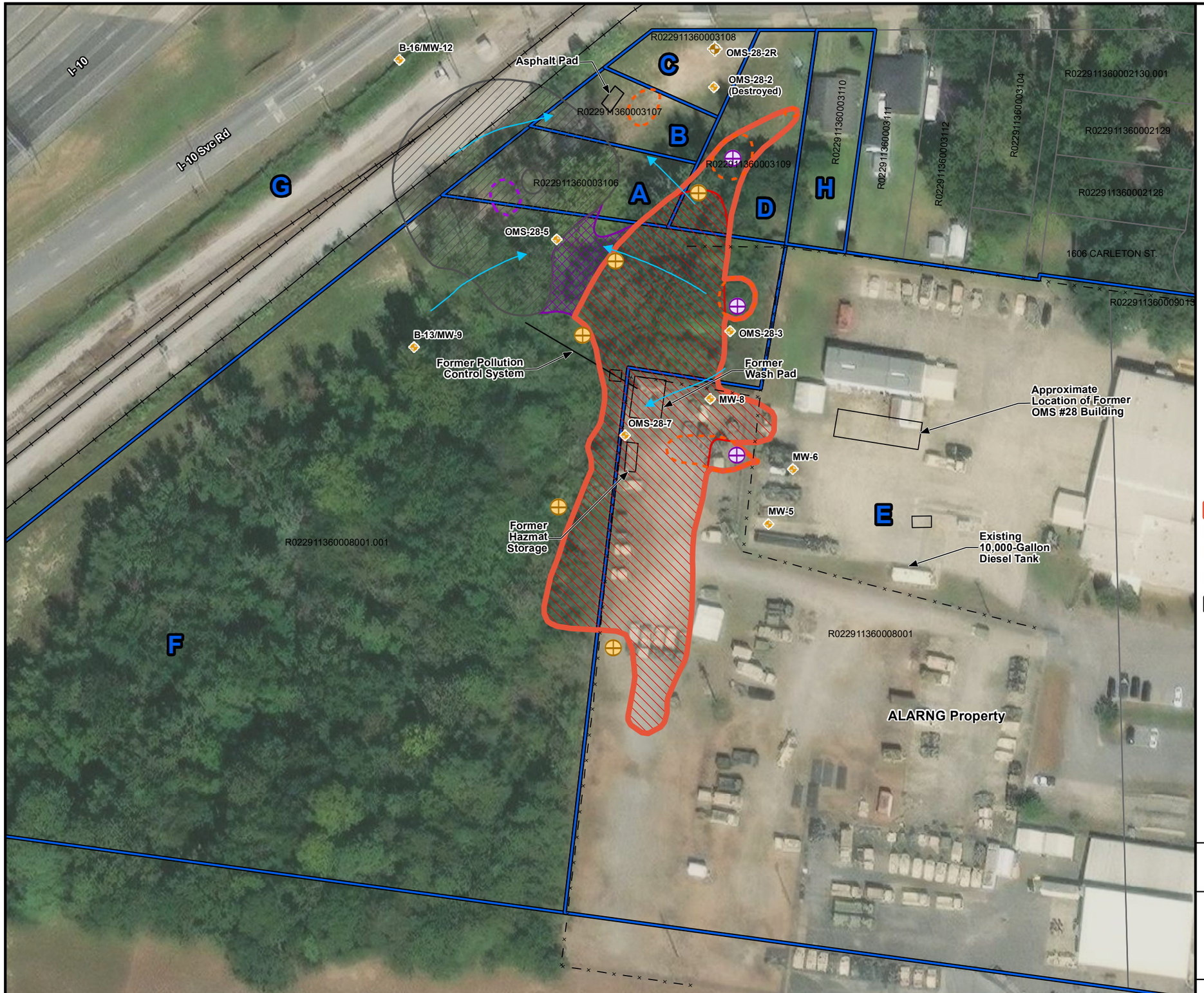
Description of Refined Delineation

Additional Upper/Middle Surficial and Lower Surficial aquifer monitoring wells are recommended to be installed, developed, and sampled. These proposed monitoring wells are intended to augment the existing site monitoring well network and allow for more accurate delineation of the extent of the TCE plume emanating from Parcel E. The locations of the eight proposed monitoring wells are shown on **Figure 4**.

Description of LUCs

LUCs implemented for the TCE plume associated with historical ALARNG activities would minimize or prevent exposure of potential human residential receptors to chlorinated VOCs in groundwater. The use restrictions instituted would encompass groundwater use restrictions including, at a minimum, no water well installation and no pumping of groundwater for irrigation purposes. A CERCLA **Decision Document** would document the land use restrictions.

To ensure effective implementation of institutional controls, a LUC remedial design or Land Use Control Implementation Plan (LUCIP) would be prepared and would describe the LUCs, specify the duration of the LUCs, detail how the LUCs would be established and documented, and define responsibility to maintain and manage them. The LUCIP would also explain procedures for modification or termination of the LUCs when/if the groundwater RGs are achieved and the land use becomes unrestricted.



Site Location

Legend

- Proposed Replacement Well
- Proposed Upper/Middle Surficial Aquifer Monitoring Well Location
- Proposed Lower Surficial Aquifer Monitoring Well Location
- Existing Upper/Middle Surficial Aquifer Monitoring Well Locations
- Approximate Extent of PCE Exceedance Above the MCL (5 µg/L) in the Lower Surficial Aquifer
- Approximate Extent of TCE Exceedance Above the MCL (5 µg/L) in the Lower Surficial Aquifer
- Apparent Groundwater Flow Direction - May 2017
- Fenceline
- Railroad
- Proposed LUC Boundary
- PCE Plume Related to Offsite PCE Spill on Parcel
- TCE Plume Related to TCE Spill on Parcel E
- Area of Co-Mingled PCE from Parcel A and TCE from Parcel E
- Parcel Designation (A - H)
- Parcel Boundary

ALARNG - Alabama Army National Guard
OMS - Organizational Maintenance Shop
PCE - Tetrachloroethene
TCE - Trichloroethene
MCL - Maximum Contaminant Level
LUCs - Land Use Controls
µg/L - micrograms per liter

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

0 75 150 Feet

1 inch = 80 feet

N W E S

AECOM
10 Patewood Drive, Building 6, Suite 500
Greenville, SC 29615
T: (864) 234-3000 F: (864)234-3069

Alternative 2: LUCs with Periodic Monitoring

Alabama Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60666895	RJS	3/25/2025	**Figure 4**

Document Path: L:\Legacy\Group\earth\OMS 28\60439687\900-CADD-GIS\Brookley_GIS\Maps\FS Letter Report\20220505\Figure 4-1_OMS 28_Proposed Alternative 2 LUCs w Periodic Monitoring.mxd

With regard to the affected offsite undeveloped parcels, the ALARNG can only recommend to the affected landowners that LUCs similar to those proposed for Parcel E be implemented. The ALARNG does not have the authority to implement, enforce, or maintain LUCs on the currently affected offsite undeveloped parcels. A notification would be provided by ALARNG to the affected landowners and would include the recommendation that landowners place an environmental covenant per the Alabama Uniform Environmental Covenants Act on their property until RAOs are met.

Description of Periodic Groundwater Monitoring

In order to verify that the TCE plume that emanates from Parcel E is stable or decreasing in size, groundwater monitoring would be conducted at eight existing monitoring wells (OMS-28-3, OMS28-5, OMS-28-7, MW-5, MW-6, MW-8, MW-9, and MW-12), replacement well OMS-28-2R, and the eight proposed new monitoring well locations. Baseline groundwater samples would be collected from the 17 wells and analyzed for VOCs. After the initial baseline (Year 1) monitoring event, groundwater monitoring would be conducted in Year 2, Year 4, and Year 6, and every five years thereafter (Year 11, 16, etc.) until groundwater RGs are met.

Description of Potential VI Risk

There currently are no existing structures that are impacted by the TCE plume on Parcel E. In the event that any future structures are planned to be built on Parcel E in an area with VI risk, the potential for VI would be addressed during the design phase of any planned building construction and any necessary mitigation measures would be included to eliminate the VI risk.

Per the Defense Environmental Restoration Program Manual (DoD, 2018), for the offsite parcels with potential future VI risk (Parcels D and F), a notice of potential VI risk would be given to the offsite parcel owners in writing. Furthermore, offsite owners would be required to address the potential for VI in future structures at their own expense by adding appropriate mitigating measures during construction or demonstrating that there is no unacceptable risk under applicable law.

The expected duration of Alternative 2 is 18 years and the total net present worth cost (including 20% contingency) of Alternative 2 is $484,300.

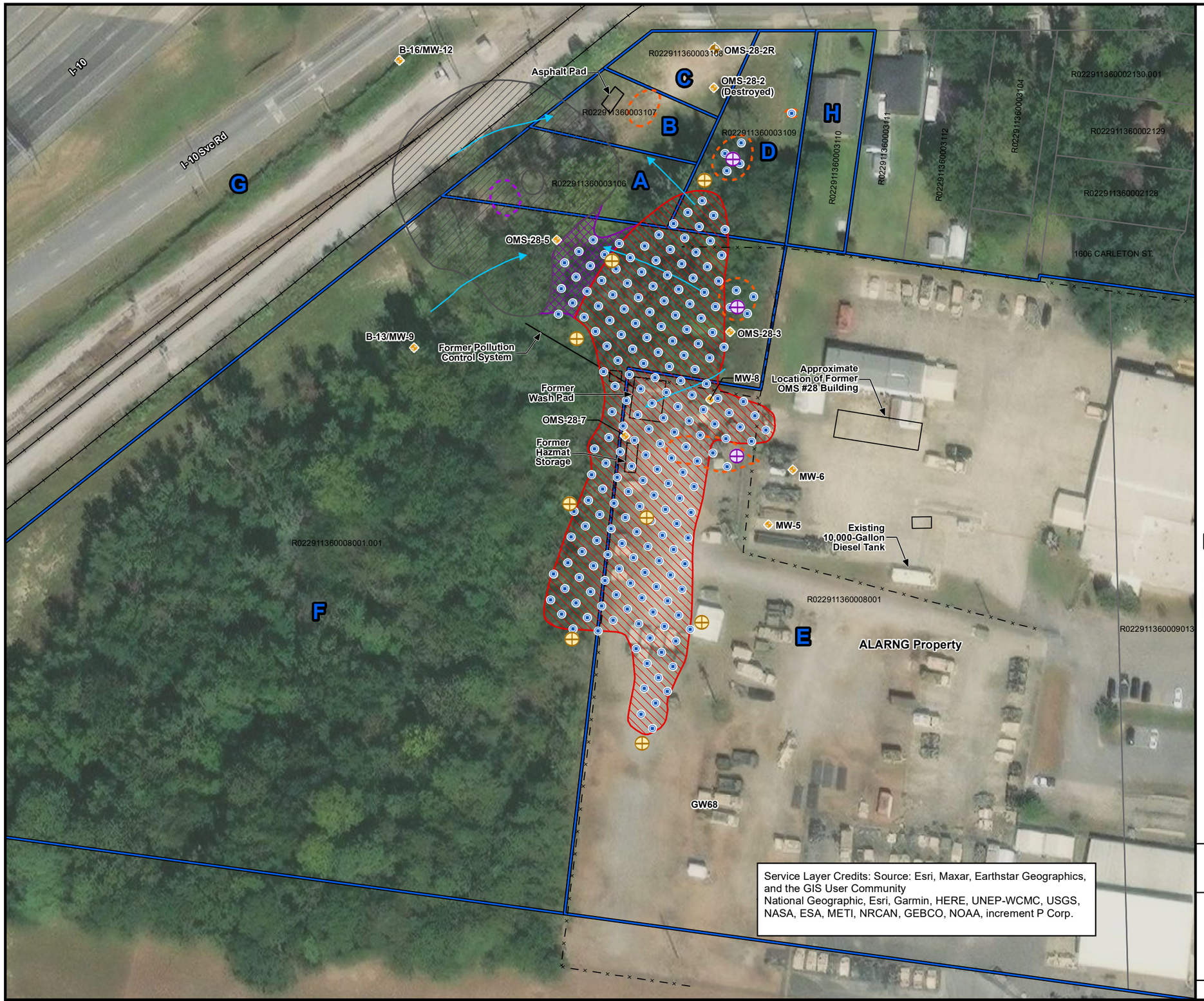
Alternative 3: ERD, ISCR, and Enhanced MNA

LUCs are not included as part of this alternative because there is no current risk associated with the TCE plume and land use is not anticipated to change during the completion of Alternative 3. **Figure 5** provides a conceptual site layout for Alternative 3.

Description of Refined Delineation

Eleven groundwater monitoring wells (eight in the Upper/Middle Surficial aquifer unit and three in the Lower Surficial aquifer unit) are recommended to be installed for the following reasons:

- To better define the areal extent of the TCE plume emanating from Parcel E, and
- To provide a means of monitoring the effectiveness of the remedial action (i.e. injections).



Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Site Location

Legend

- Temporary Injection Points (15 ft on center)
- Proposed Upper/Middle Surficial Aquifer Monitoring Well Location
- Proposed Lower Surficial Aquifer Monitoring Well Location
- Proposed Replacement Well
- Existing Upper/Middle Surficial Aquifer Monitoring Well Locations
- Approximate Extent of PCE Exceedance Above the MCL (5 µg/L) in the Lower Surficial Aquifer
- Approximate Extent of TCE Exceedance Above the MCL (5 µg/L) in the Lower Surficial Aquifer
- Apparent Groundwater Flow Direction - May 2017
- Fenceline
- Railroad
- Parcel Designation (A - H)
- Parcel Boundary
- PCE Plume Related to Offsite PCE Spill on Parcel A
- TCE Plume Related to TCE Spill on Parcel E
- Area of Co-Mingled PCE from Parcel A and TCE from Parcel E

ALARNG - Alabama Army National Guard
OMS - Organizational Maintenance Shop
PCE - Tetrachloroethene
TCE - Trichloroethene
MCL - Maximum Contaminant Level
ERD - Enhanced Reductive Dechlorination
ISCR - In Situ Chemical Reduction
MNA - Monitored Natural Attenuation
µg/L - micrograms per liter
ft - feet

0 40 80 160 Feet

1 inch = 80 feet

N W E S

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10 Patewood Drive, Building 6, Suite 500
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Alternative 3: ERD, ISCR, and Enhanced MNA

Alabama Army National Guard OMS #28
Mobile, Alabama

PROJECT NO.	DRAWN BY:	DATE:	
60666895	RJS	3/25/2025	**Figure 5**

Document Path: L:\Legacy\Group\earth\OMS 28\60439687\900-CADD-GIS\Brookley_GIS\Maps\FS Letter Report\20220505\Figure 4-2_OMS 28_Alternative 3 ERD_ISCR and Enhanced MNA.mxd

After installation and development of the proposed additional monitoring wells and replacement well, a total of 20 monitoring wells (the eight existing Upper/Middle Surficial aquifer monitoring wells, one replacement monitoring well, and 11 newly installed monitoring wells) would be sampled and analyzed for VOCs to establish baseline COC concentrations. A subset of the monitoring wells would also be analyzed for various water quality and biological parameters to establish baseline groundwater conditions prior to the completion of the proposed injection activities.

The results of the baseline sampling event would be used to finalize the size of the TCE plume targeted for in situ treatment. Monitoring well installation details, development, and subsequent remedy performance monitoring events would subsequently be presented in a Remedial Action Report.

Description of In Situ Treatment

Alternative 3 proposes in situ ERD/ISCR treatment to target TCE and its associated degradation products on Parcels D, E, and F. An estimated 201 temporary injection points, based on 15-ft spacing between points, would be installed using direct push technology (DPT) for treatment of the TCE plume. The treatment depths for the DPT points would range from 6 ft below ground surface (bgs) to approximately 31 ft bgs. **Figure 5** provides a conceptual site layout for the DPT injection points.

The injection substrate chosen for the DPT injections is ABC®+Olé, which is an ERD/ISCR product developed and patented by Redox Tech, LLC. ABC®+Olé is a combination of ABC®-Olé and zero valent iron (ZVI), magnesium oxide, guar, RTB-1, and sodium sulfite. The ABC®+Olé treats impacted groundwater that it comes into contact with and reduces the targeted TCE to harmless end products. The estimated time to reduce TCE to below its MCL is estimated to be a little over 2.5 years (AECOM, 2024). A description of each of the amendments that make up ABC®+Olé is provided below:

- ABC®-Olé is a carbon substrate that undergoes fermentation by microorganisms in the subsurface, creating by-products that anaerobic bacteria (e.g., RTB-1) will use to reduce TCE to its degradation products and ultimately harmless ethene.

- ZVI is a strong reducing agent that donates electrons to the contaminants, thus aiding in the reduction of TCE to its degradation products.

- Magnesium Oxide raises and sustains the pH in the immediate vicinity of the DPT injection locations.

- Guar is used as a stabilizing, thickening, and suspending agent for injection substrates.

- RTB-1 is a biological amendment that increases the effectiveness of the injections. RTB-1 contains *dehalococcoides*, a microorganism that is capable of completely dechlorinating TCE and its degradation products to harmless ethene.

- Sodium Sulfite is used deoxygenate the targeted groundwater to prepare it for the addition of RTB-1, which requires anaerobic conditions to thrive. The successful degradation of the targeted COCs to below the MCLs is highly dependent upon achieving adequate contact between the ABC®+Olé substrate and the impacted groundwater. To be conservative, two injection events are proposed

under Alternative 3. The second injection event would occur three years after the first injection event and assumes that 50% treatment of the plume to RGs was achieved by the first injection event. The second ABC®+Olé injection event would target 100 temporary injection points.

Description of Enhanced MNA

An Enhanced MNA program would be implemented to assess the effectiveness of the ERD/ISCR injections. The same 20 monitoring wells that would be sampled during the baseline monitoring event would be sampled periodically after completion of the initial proposed injection event. Three quarterly sampling events would be conducted for the same analytical parameters as the baseline event beginning three months after the injection event. Following the first year of monitoring, the sampling frequency would be reduced to semi-annual monitoring during the second year following injection and then annually during the third year following injection.

The results from the post-injection monitoring events would be evaluated for reductions in COC concentrations, increases in contaminant breakdown products, reductions in competing electron acceptors, and detection of residual organic carbon concentrations. A site-specific degradation rate could subsequently be calculated to update the estimated time to achieve the RGs. The Enhanced MNA program to be conducted following the second proposed injection event would be similar in scope and time frame (three years) as the Enhanced MNA program proposed to be conducted following the initial proposed injection event; however, only 12 monitoring wells would be sampled instead of 20 monitoring wells.

Description of Potential VI Risk

The potential future VI risk caused by the Parcel E TCE plume is the same as previously described for Alternative 2 above; therefore, the potential risk would be addressed in the same manner as described for Alternative 2.

The expected duration of Alternative 3 is 7 years and the total net present worth cost (including 20% contingency) of Alternative 3 is $2,187,700.

8 Evaluation of Remedial Alternatives

Nine criteria are used to evaluate the different remedial alternatives individually and against each other in order to select a remedy. This section compares the relative performance of each alternative against the nine criteria listed in the NCP (40 *Code of Federal Regulations* 300 as derived from the statutory requirements of CERCLA Section 121), noting how each alternative compares to the other alternatives under consideration. The “Detailed Analysis of Remedial Alternatives” is presented in the FS Report (AECOM, 2024). The alternative selected for OMS #28 must satisfy the threshold criteria. Primary balancing criteria weigh the major tradeoffs among alternatives, and modifying criteria are considered after the public comment period on the Proposed Plan.

NINE CRITERIA USED TO EVALUATE REMEDIAL ALTERNATIVES

Threshold Criteria:

Overall Protectiveness of Human Health and the Environment determines whether an alternative eliminates, reduces, or controls threats to human health and the environment through institutional controls, engineering controls, or treatment.

Compliance with ARARs evaluates whether the alternative meets applicable or relevant and appropriate Federal and State environmental statutes, regulations, and other requirements that pertain to the site. ARARs may be waived under certain circumstances. ARARs are divided into chemical-specific, location-specific, and action-specific criteria.

Primary Balancing Criteria:

Short-Term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.

Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

Long-Term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time. It evaluates magnitude of residual risk and adequacy of reliability of controls.

Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

Modifying Criteria:

State Support/Agency Acceptance considers whether ADEM agrees with the analyses and recommendations by the Army, as described in the RI/FS and Proposed Plan.

Community Acceptance considers whether the local community agrees with the Preferred Alternative. Comments received on the Proposed Plan during the public comment period are an important indicator of community acceptance.

Overall Protection of Human Health and the Environment

The overall protection of human health and the environment is a threshold criterion that must be achieved for an alternative to be considered as per the NCP. Therefore, except for Alternative 1 (No Action), which is retained as a baseline alternative, all other remedial alternatives are expected to achieve the overall protection of human health and the environment over time. Because residential use is not a current use or foreseeable future use for Parcel E, Alternative 2 (LUCs with Periodic Monitoring) and Alternative 3 (ERD, ISCR, and Enhanced MNA) are equally protective because there is no current risk associated with the site. Alternative 3 is more protective than Alternative 2 only under a future residential use scenario because it

actually treats rather than just monitors impacted groundwater that may pose a risk under this hypothetical exposure scenario.

Although there were no significant ecological risks identified for Parcel A (AECOM, 2023a), Alternative 3 would provide a level of additional protectiveness over Alternative 2 through the treatment of impacted groundwater associated with the site. However, environmental impact would be more widespread for Alternative 3 than for Alternative 2. Approximately 0.43 acres of existing dense vegetation, including mature trees, brush, and grasses would have to cleared for Alternative 3 to accommodate proposed additional monitoring well and DPT injection point installation. A much smaller footprint would need to be cleared to accommodate proposed monitoring well installation for Alternative 2.

Compliance with ARARs

Substantive promulgated regulatory requirements and standards are referred to as **applicable or relevant and appropriate requirements (ARARs)**. ARARs can apply to the detected contaminants, specific site characteristics, or particular remedial actions proposed for the site. Per the NCP, compliance with the ARARs is also a threshold criterion that must be met for an alternative to be considered.

Alternative 1 (No Action), which is retained as a baseline alternative, would not comply with ARARs. Alternative 2 (LUCs with Periodic Monitoring) would require over 18 years to comply with the RGs for TCE and its associated degradation products. Alternative 3 (ERD, ISCR, and Enhanced MNA) would comply with all ARARs within approximately 7 years if adequate contact is achieved between the proposed injectate and the targeted groundwater COCs.

Short-Term Effectiveness

Alternative 1 (No Action) would have no short-term impacts to workers, community, or the environment because no remedial action occurs. Alternative 2 (LUCs with Periodic Monitoring) would have limited impact to the community and the environment due to the clearing of trees/brush to accommodate the installation of eight new monitoring wells and also due to the completion of LUC surveys at the site every five years. Alternative 3 (ERD, ISCR, and Enhanced MNA) would have the most impact to the community and environment due to large area impacted by clearing operations, monitoring well installations, and chemical injection activities.

Alternatives 2 and 3 would have the similar short-term impact to the remediation workers that would be conducting sampling due to the potential for exposure to impacted groundwater; however, the applicable RGs for TCE and its degradation products would be achieved within an estimated 7-Year time period for Alternative 3 as compared to over 18 years for Alternative 2. Sampling would be conducted more frequently for Alternative 3 when compared to Alternative 2.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives 1 (No Action) and 2 (LUCs with periodic monitoring) would not reduce the toxicity, mobility, or volume of contaminated groundwater; however, Alternative 2 does provide additional delineation of the extent of the plume and monitoring to determine if natural attenuation processes are occurring in the site groundwater. Alternative 3 (ERD, ISCR, and Enhanced MNA) would permanently reduce the toxicity, mobility, and volume of the targeted COCs in site groundwater via active remediation processed

combined with enhanced MNA. As such, this alternative satisfies the statutory preference for remedial actions that permanently reduce the toxicity, mobility, and volume of site COCs and also incorporates treatment as a principal element.

Long-Term Effectiveness and Permanence

QuantArray®-Chlor analysis was conducted on three groundwater monitoring wells in 2022 to quantify the microorganisms able to biodegrade site COCs in three existing monitoring wells. Based on the QuantArray®-Chlor results, Alternative 1 (No Action) and Alternative 2 (LUCs with Periodic Monitoring) may be effective in reducing groundwater COC concentrations over the long term via natural attenuation; however, there is limited evidence of the necessary bacteria and the associated reductase genes to promote the biodegradation of TCE and its degradation products. Alternative 2 (LUCs with Periodic Monitoring) would employ periodic monitoring to understand any ongoing natural attenuation of the plume and would also document the stability of the plume over time. Alternative 3 (ERD, ISCR, and Enhanced MNA) would be expected to reduce site-related groundwater COC concentrations to the respective RGs in approximately 7 years. Groundwater COCs are irreversibly degraded under Alternative 3, thereby ensuring long-term effectiveness and permanence.

However, the presence of the offsite PCE soil and groundwater source that is not related to historical operations and activities conducted by the ALARNG on Parcel E may potentially impact the long-term effectiveness and permanence of both Alternative 2 and Alternative 3, particularly in the area of in situ treatment for the co-mingled PCE plume from Parcel A and the TCE plume from Parcel E. Monitoring wells to be installed along the western edge of the TCE plume where it intermingles with the offsite PCE plume associated with Parcel A would provide additional information to further understand the long-term effectiveness and permanence of Alternatives 2 and 3.

Implementability

Alternative 1 (No Action) would be easy to implement as no remedial action would occur. Alternative 2 (LUCs with Periodic Monitoring) would be somewhat easy to implement; however, the DoD cannot execute an environmental covenant for Parcel E because the DoD has no authority to grant a real property interest for an environmental LUC (e.g., an environmental covenant) on federal property. In lieu of an environmental covenant, a Notice of Environmental Use Restriction (NEUR) for Parcel E could be prepared and submitted to ADEM; however, the DoD NEUR template and the ADEM NEUR template differ significantly, an issue that remains unresolved at this time. The ALARNG does not have the authority to implement, enforce, or maintain LUCs on the currently affected offsite undeveloped parcels. A notification would be provided to the landowners by ALARNG that would include recommending that landowners place an environmental covenant on the affected parcel per the Alabama Uniform Environmental Covenants Act until RAOs and RGs are met.

Alternative 3 would be implementable, but it would require the use of specialty technologies to emplace the proposed injectate within the targeted plume area. New monitoring wells would be installed as part of the activities conducted for both Alternatives 2 and 3. Permission would need to be obtained to clear trees and brush on Parcel F and to conduct the proposed injections on offsite Parcels D and F.

Cost

The cost estimate (18-year total present worth cost for Alternative 2 and 7-year total present worth cost for Alternative 3) for each alternative is summarized in the table below. Costs to replant trees removed during clearing activities are not included with the Alternative 2 and Alternative 3 cost estimates.

Alternative	Alternative Description	Net Present Worth Cost
1	No Action	$0
2	LUCs with Periodic Groundwater Monitoring	$484,300
3	ERD, ISCR and Enhanced MNA	$2,187,700

State Acceptance

Any major comments provided by ADEM on this Proposed Plan will be presented and responded to in the **Responsiveness Summary** in the Decision Document for OMS #28.

Community Acceptance

Community acceptance of the Preferred Alternative will be evaluated after the public comment period ends and will be addressed in the Responsiveness Summary prepared for the Decision Document for OMS #28.

9 Summary of the Preferred Alternative

Based on the detailed analysis of remedial alternatives, the ARNG selects Alternative 2 (LUCs with Periodic Groundwater Monitoring) as the Preferred Alternative for OMS #28. Alternative 2 is a combined remedial approach for impacted groundwater which includes the following components: 1) installation, development, and sampling of additional groundwater monitoring wells to refine the delineation of the TCE plume emanating from Parcel E, 2) LUCs to minimize or prevent exposure of potential human residential receptors to chlorinated VOCs in groundwater, 3) periodic sampling of 17 groundwater monitoring wells and analysis of the groundwater samples for VOCs.

The ARNG and ADEM expect the Preferred Alternative to satisfy Section 121 of CERCLA which requires, to the extent practicable, that remedial actions comply with the NCP and also to satisfy the CERCLA requirement that remedial actions: (1) protect human health and the environment; (2) comply with federal and state ARARs unless exempted by a waiver; (3) utilize permanent solutions and alternative treatment technologies to the maximum extent practicable; (4) be cost-effective; and (5) satisfy the preference for treatment as a principle element (or justify not meeting the preference).

10 Community Participation

The ARNG provides information to the public regarding the remedial actions at OMS #28 through public meetings, the availability of the Administrative Record, and announcements published in the local newspapers, the *Lagniappe Daily.* The ARNG encourages the public to gain a more comprehensive understanding of OMS #28 and the activities that have been conducted at the site. The location of the

Administrative Record is provided on the first page of this Proposed Plan. To obtain further information about this document or other primary documents, please contact:

Alabama Army National Guard Public Affairs Office
1720 Congressman W.L. Dickinson Dr.
Montgomery, AL 36109
Email: alngpao@army.mil
Phone: (334) 271-7400

Alternatively, the public may contact Mr. Colin Mitchell with ADEM:

Mr. Colin Mitchell
Remedial Project Manager
Alabama Department of Environmental Management
Governmental Hazardous Waste Branch, Land Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059
Phone: (334) 271-7967
E-mail: cjmitchell@adem.alabama.gov

The final remedial decision for OMS #28 will be made only after the public comment period has ended and all of the comments received have been reviewed and considered. Because any of the alternatives in this Proposed Plan may be selected, comments are requested on all of the alternatives. Comments received regarding potential options not considered in this Proposed Plan will also be given consideration. ARNG responses to comments received during the public comment period on the Proposed Plan will be presented in the Responsiveness Summary of the Decision Document. It is important to note that the final remedial action for the site may be different from the preferred alternative presented in this Proposed Plan depending upon any new information or public comments received.

DATES TO REMEMBER:

MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:

MONTH XX to MONTH XX, 2025

The ARNG will hold a 30-day public comment period to encourage the public to review and comment on this Proposed Plan.

The public will be notified of the public comment period through a notice published in the *Lagniappe Daily*.

PUBLIC MEETING:

The ARNG will schedule a meeting during the public comment period if sufficient interest is expressed from the public. The public will be notified of the date, time, and location of the meeting through a notice in *Lagniappe Daily*.

To request that a public meeting be held to discuss the Preferred Alternative with the ARNG and the regulators, please contact the Alabama Army National Guard Public Affairs Office at:

Alabama Army National Guard Public Affairs Office
1720 Congressman W.L. Dickinson Dr.
Montgomery, AL 36109
Email: alngpao@army.mil
Phone: (334) 271-7400

In addition, contact the Alabama Army National Guard Public Affairs Office to request an extension to the 30-day comment period or to obtain further information about this document or other primary reference documents for OMS #28.

ACRONYMS

ADEM	Alabama Department of Environmental Management
AECOM	AECOM Technical Services, Inc.
AFB	Air Force Base
ALARNG	Alabama Army National Guard
ARAR	applicable or relevant and appropriate requirements
ARNG	National Guard Bureau Army Guard Directorate
bgs	below ground surface
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
Cis-1,2-DCE	cis-1,2-dichloroethene
COC	chemical of concern
COPC	chemical of potential concern
COPEC	chemical of potential ecological concern
CSM	conceptual site model
DoD	Department of Defense
DPT	direct push technology
ERA	ecological risk assessment
ERD	enhanced reductive dechlorination
FMS	field maintenance shop
FS	feasibility study
ft	feet
HHRA	human health risk assessment
I-10	Interstate Highway 10
ISCR	in-situ chemical reduction
LUC	land use control
LUCIP	Land Use Control Implementation Plan
MAA	Mobile Airport Authority
MCL	maximum contamination limit
MNA	monitored natural attenuation
MW	monitoring well
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NEUR	Notice of Environmental Use Restriction
OMS	Organizational Maintenance Shop
PELA	P.E. LaMoreaux and Associates, Inc.
PCE	tetrachloroethene
RAO	remedial action objective
RG	remedial goal
RI	Remedial Investigation
SAIC	Scientific Applications International Corporation
SDGI	Supplemental Data Gap Investigation
SLERA	Screening Level Environmental Risk Assessment
TCE	trichloroethene
µg/L	micrograms per liter
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VC	vinyl chloride
VI	vapor intrusion
VOC	volatile organic compound
ZVI	zero valent iron

GLOSSARY OF TERMS

Administrative Record: A collection of reports, official correspondence, and other documents that establish the official record of analysis, cleanup, and final closure of a CERCLA site. It is available for public review.

Applicable or Relevant and Appropriate Requirements (ARARs): Applicable requirements mean those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Relevant and appropriate requirements mean those cleanup standards that address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be deemed ARARs. (40 Code of Federal Regulations 300.5)

Chemicals of Concern – Those chemicals that significantly contribute to an unacceptable risk to human receptors at the site**.**

Chemicals of Potential Concern – Those chemicals that may contribute to an unacceptable risk to human receptors at the site.

Chemicals of Potential Ecological Concern – Those chemicals that may contribute to unacceptable risk to ecological receptors at the site.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): Also known as Superfund, CERCLA is the federal law that regulates the environmental investigation and cleanup of sites that could endanger public health, welfare, or the environment.

Decision Document: The documentation of remedial response decisions at Formerly Used Defense Sites. Concurrence on the Decision Document by the USEPA or the state regulatory agency (i.e., ADEM) is sought, and the Army approves the document. It provides the response action selected for a site (including No Action), the basis for selecting the response action, public comments, responses to comments, and estimated cost for the response action.

Ecological Receptor: A plant, animal, or ecosystem exposed to an adverse condition.

Exposure: Contact of an organism with a chemical or physical agent. Exposure is quantified as the amount of agent available at the exchange boundaries of the organism (e.g., skin, lungs) and available for absorption.

Human Receptor: A hypothetical person, based on current or potential future land use, that may be exposed to an adverse condition.

Land Use Controls (LUCs): Any type of physical, legal, or administrative mechanism that restricts the use of or limits access to real property to prevent or reduce risks to human health and the environment.

GLOSSARY OF TERMS (Continued)

Preferred Alternative: The alternative that, when compared to other potential alternatives, was determined to best meet the CERCLA evaluation criteria and is proposed for implementation at a site.

Proposed Plan: The Proposed Plan is a document used to facilitate public involvement in the remedy selection process. The Proposed Plan summarizes the remedial alternatives that were evaluated in detail in the RI/BRA and FS and presents the lead agency's preferred remedial action to address contamination at a site, and explains the reasons the lead agency recommends the preferred alternative.

Responsiveness Summary: A summary of oral and/or written comments received during the proposed plan comment period and responses to those comments. The Responsiveness Summary will be included in the Decision Document.

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PUBLIC COMMENT FORM

Your input to this Proposed Plan for OMS #28 is important to the ARNG. Comments provided by the public are valuable in helping the ARNG select the final remedy for the site.

Comments may be submitted by any of the following methods provided they are dated or postmarked by **MONTH XX, 2025**.

- You may use the space below to hand write your comments, then fold and mail to the Alabama Army National Guard Public Affairs Office.
- You may send your comments by email to alngpao@army.mil
  Please note in your e-mail communication that your comments are for OMS #28.

If you have questions about the comment period or would like to discuss the alternatives for the site, please contact the Alabama Army National Guard Public Affairs Office at:

Alabama Army National Guard Public Affairs Office
1720 Congressman W.L. Dickinson Dr.
Montgomery, AL 36109
Email: alngpao@army.mil
Phone: (334) 271-7400

YOU MAY USE THIS SPACE TO WRITE YOUR COMMENTS