US Army Corps
of Engineers®

FIFTH FIVE-YEAR REVIEW REPORT FOR THE ALABAMA ARMY AMMUNITION PLANT – AREA B SUPERFUND SITE TALLADEGA COUNTY, ALABAMA

FINAL

Prepared for:
U.S. Army Corps of Engineers
Mobile District
Mobile, Alabama 36602

And

Department of the Army
G-9 DAIN-ISE
600 Army Pentagon
Washington, DC 20310-0600

Prepared by:
Leidos
1750 Presidents Street
Reston, Virginia 20190

Contract No. W912DR-13-D-0017
Delivery Order No. CK01
Leidos Project No. 310174.00.01.01.014.00145

August 2023

THIS PAGE WAS INTENTIONALLY LEFT BLANK

Fifth Five-Year Review Report for the Alabama Army Ammunition Plant – Area B Superfund Site Talladega County, Alabama

Final

Prepared for:
U.S. Army Corps of Engineers
Mobile District
Mobile, Alabama 36602

And

Department of the Army
G-9 DAIN-ISE
600 Army Pentagon
Washington, DC 20310-0600

Prepared by:
Leidos
1750 Presidents Street
Reston, Virginia 20190

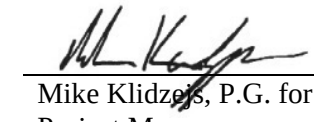
Contract No. W912DR-13-D-0017
Delivery Order No. CK01
Leidos Project No. 310174. 00.01.01.014.00145

August 2023

THIS PAGE WAS INTENTIONALLY LEFT BLANK

LEIDOS STATEMENT OF INDEPENDENT TECHNICAL REVIEW

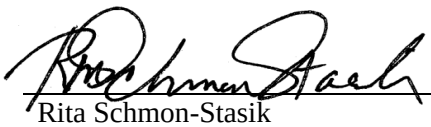
Leidos has completed the Fifth Five-Year Review Report for the Alabama Army Ammunition Plant Superfund Site, Talladega County, Alabama. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project as defined in the Leidos Quality Assurance Plan. During the independent technical review, compliance with established Leidos policy principles and procedures, using justified and valid assumptions, was verified. This included review of assumptions, methods, procedures, and materials used in analyses; the appropriateness of data used and the level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs.



August 24, 2023

Mike Klidzejs, P.G. for Connie D. Samson, PMP
Project Manager

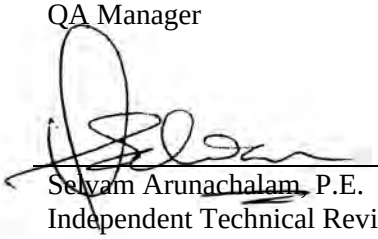
Date



August 24, 2023

Rita Schmon-Stasik
QA Manager

Date



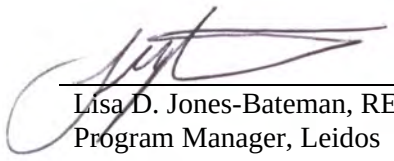
August 24, 2023

Selvam Arunachalam, P.E.
Independent Technical Review

Date

Significant concerns and explanation of the resolutions are documented within the project file.

As noted above, all concerns resulting from independent technical review of the project have been considered.



August 24, 2023

Lisa D. Jones-Bateman, REM, PMP
Program Manager, Leidos

Date

THIS PAGE WAS INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF ATTACHMENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-Containing Material
ADEM	Alabama Department of Environmental Management
ALAAP	Alabama Army Ammunition Plant
ALM	Adult Lead Model
ARAR	Applicable or Relevant and Appropriate Requirement
AUECA	Alabama Uniform Environmental Covenants Act
AWTS	Aqueous Waste Treatment System
BERA	Baseline Ecological Risk Assessment
BLS	Below Land Surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
COC	Chemical of Concern
COPEC	Chemical of Potential Ecological Concern
cPAH	Carcinogenic Polynuclear Aromatic Hydrocarbon
CSF	Cancer Slope Factor
DNB	Dinitrobenzene
DNT	Dinitrotoluene
EBS	Environmental Baseline Survey
ECC	Environmental Chemical Corporation
ecoCOC	Ecological Chemical of Concern
ecoSSL	Ecological Soil Screening Level
EPA	U.S. Environmental Protection Agency
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
ESD	Explanation of Significant Differences
ESE	Environmental Science and Engineering
FS	Feasibility Study
FYR	Five-Year Review
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IDRA	Informal Dispute Resolution Agreement
IROD	Interim Record of Decision
ISS	Industrial Sewer System
IUR	Inhalation Unit Risk
LOAEL	Lowest-Observable-Adverse-Effect Level
LRA	Local Redevelopment Authority
LUC	Land Use Control
LUCIP	Land Use Control Implementation Plan
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	No Further Action
NHWL	Non-Hazardous Waste Landfill
NOAEL	No-Observable-Adverse-Effect Level
OU	Operable Unit
P.E.	Professional Engineer
P.G.	Professional Geologist
PAH	Polynuclear Aromatic Hydrocarbon

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

PCB	Polychlorinated Biphenyl
PMP	Project Management Professional
PRG	Preliminary Remediation Goal
PVC	Polyvinyl Chloride
QA	Quality Assurance
QC	Quality Control
RACR	Remedial Action Completion Report
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
REM	Registered Environmental Manager
RfC	Reference Concentration
RfD	Reference Dose
RGO	Remedial Goal Option
RI	Remedial Investigation
ROD	Record of Decision
RSL	Regional Screening Level
SAIC	Science Applications International Corporation
SERA	Screening-Level Ecological Risk Assessment
SES	SpecPro Environmental Services
SSHP	Site Safety and Health Plan
SVOC	Semivolatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TETC	The Earth Technology Corporation
tetryl	Trinitrophenylmethylnitramine
TIS	Transportable Incineration System
TNB	Trinitrobenzene
TNT	Trinitrotoluene
UCL	Upper Confidence Limit
EUCA	Uniform Environmental Covenants Act
USACE	U.S. Army Corps of Engineers
UU/UE	Unlimited Use/Unrestricted Exposure
VCP	Vitrified Clay Pipe
VOC	Volatile Organic Compound
Weston	Roy F. Weston
WOE	Weight-of-Evidence
WWII	World War II
XRF	X-Ray Fluorescence

THIS PAGE WAS INTENTIONALLY LEFT BLANK

1. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address these issues.

FYRs are required at sites that have completed remediation pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Section 300.430(f)(4)(ii)). Alabama Army Ammunition Plant (ALAAP) is a Federal facility on the National Priorities List and has a signed Federal Facility Agreement pursuant to Section 120 of CERCLA. Under this agreement, the Army, the U.S. Environmental Protection Agency (EPA), and the Alabama Department of Environmental Management (ADEM) are required to work cooperatively to address all known unacceptable risks to human health and the environment in accordance with CERCLA and the NCP.

This is the Fifth FYR for the ALAAP – Area B Superfund Site. The triggering action for this statutory review is the signature date of the Operable Unit (OU)-7 Record of Decision (ROD) and the First FYR from that ROD, as per EPA guidance (EPA 2011). The OU-7 ROD was signed in September 2010, and the First FYR following the signature of the OU-7 ROD was finalized in January 2014 (Third FYR). The Fourth FYR was finalized in September 2018 in order to review several interim remedies for OUs incorporated into the Fourth FYR, within the 5-year statutory requirement. Five years from the last FYR requires this FYR to be finalized by September 5, 2023. The FYR has been prepared because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use/unrestricted exposure (UU/UE) of the property.

Although ALAAP – Area B consists of five OUs, only one (OU-7) is addressed in this Fifth FYR. To clarify which Area B sites are included or excluded from this FYR, Table 1-1 lists the OUs, study areas, and media included in each OU; a summary of the selected remedy; the current CERCLA status; and whether an FYR is required and included in this document. Additional information about the OUs or study areas within an OU is provided below:

- OU-1, Stockpiled Soil, is not included in this FYR. The remedy selected in the December 31, 1991, ROD was onsite thermal treatment of soil, onsite disposal of the treated soil, and offsite disposal of the asbestos-containing material (ACM) (Weston 1991). The remedial design was approved on September 28, 1992. The remedial action started on November 1, 1992, and was completed on March 1, 1995. OU-1 is not addressed in this FYR because this OU consisted of stockpiled soil that was remediated and disposed of, and the remedial action resulted in long-term protection to human health and the environment by leaving no residual risk.
- OU-4 is not included in this FYR because this OU addresses groundwater at the site for which an ROD has not yet been prepared.
- OU-7 includes all of the study areas in OU-2 and OU-6 and additional study areas not part of these OUs; OU-2 and OU-6 were designated as OUs to conduct interim remedial actions under Interim RODs (IRODs). The interim remedial actions have been completed.
- OU-8, Asbestos, is not included in this FYR. In September 2022, EPA, ADEM, and the Army signed an Informal Dispute Resolution Agreement (IDRA), which states that asbestos at ALAAP – Area B will be addressed under a new OU. Therefore, asbestos is not addressed in this FYR, and response actions pertaining to asbestos will be addressed under the new OU. The signed IDRA is included in Attachment A.

- This FYR addresses the study areas and selected remedies in the OU-7 ROD that remain unacceptable for UU/UE. With minor exceptions, the remedy selected in the OU-7 ROD for these study areas is land use controls (LUCs). However, at the request of EPA, this FYR also addresses the Remedial Action Objectives (RAOs) and effectiveness of the OU-2 and OU-6 IROD remedial actions for all study areas except Study Area 6. The latter was excluded from this FYR because the interim remedial actions resulted in UU/UE (as opposed to LUCs).
- Between April and July 2022, EPA, ADEM, and the Army signed the IDRA that resolved the path forward at the Non-Hazardous Waste Landfill (NHWL) (also called the "onsite disposal area," "treated soils – backfill area," and "designated backfill area"). The Army is preparing an Explanation of Significant Differences (ESD) for the OU-7 ROD to outline the addition or refinement of Alabama solid waste landfill applicable or relevant and appropriate requirements (ARARs) to ensure the landfill remains protective during its term of post-closure. The ESD has not yet been finalized.
- For the initial Remedial Investigation (RI), IROD, and IROD remedial actions, Study Area 10 was treated as a single study area. However, because actual remediation (excavation and treatment of soils) was only required in the western part of Study Area 10, the area was divided into 10W and 10E for the Supplemental RI, Feasibility Study (FS), and OU-7 ROD. The OU-7 ROD presented the remedy for Study Area 10W and documented that no further action (NFA) was required for Study Area 10E.

It is noted here that the OU-2 and OU-6 IRODs were prepared and approved in 1994 and 1996, respectively, more than 25 years ago. These IROD documents were issued and approved at the time, according to the EPA guidance and format that were used at the time. It is acknowledged that EPA guidance and policy regarding IRODs have changed in the past 25 years, but the documents were acceptable at the time they were prepared, as they were approved by both EPA and ADEM.

The ALAAP – Area B Superfund Site FYR was led by the U.S. Army Base Realignment and Closure (BRAC) Program (G-9 DAIN ISE) with support from the U.S. Army Corps of Engineers (USACE) and Leidos, as the Army contractor. The review began on April 19, 2022, with a kick-off meeting attended by personnel from the aforementioned agencies. ADEM, as the support agency representing the State of Alabama, has reviewed all supporting documentation and provided input to EPA during the FYR process.

1.1 SITE BACKGROUND

The ALAAP – Area B Superfund Site is located in Talladega County, Alabama, 4 miles north of the nearest town, Childersburg, Alabama (Figure 1-1). The National Superfund database identification number is AL6210020008. The focus of this FYR is on soil, surface water, and sediment within the OU-7 study areas, which occur within an area of 2,235 acres. Groundwater is not addressed in this FYR because the groundwater is a separate OU for which an ROD has not yet been prepared. Figure 1-2 depicts the location of the study areas within the ALAAP – Area B OU-7.

ALAAP was established in 1941 on 13,233 acres of land near the junction of Talladega Creek and the Coosa River. Historically, ALAAP was an industrial complex with the primary function of producing explosives and propellants. The original mission of ALAAP was to manufacture 2,4,6-trinitrotoluene (TNT), dinitrotoluene (DNT), trinitrophenylmethylnitramine (tetryl), and single-base smokeless powder for cannon and small-arms ammunition in support of World War II (WWII) efforts. The plant also produced the necessary supporting chemicals for the manufacturing operations, including nitric and sulfuric acid, aniline, diphenylamine, oleum (40 percent sulfur trioxide and sulfuric acid), sellite (sodium sulfite), and N,N-dimethylaniline. Spent acids were recycled, and unrecoverable wastes resulting from operations were disposed of onsite by discharge to an unlined ditch.

Descriptions of the study areas, pertinent history, investigation histories, and other additional information may be found in the following documents:

- Supplemental RI Report – RI/FS, ALAAP – Area B, Childersburg, Alabama (SAIC 2001)
- FS, ALAAP – Area B, Childersburg, Alabama (SAIC 2008)
- CERCLA ROD, ALAAP – Area B, Soils, Surface Water, and Sediment (SAIC 2010)
- Fourth FYR Report for the ALAAP – Area B Superfund Site, Talladega County, Alabama (Leidos 2018).

A Quitclaim Deed was signed on March 17, 2003, transferring ALAAP to the city of Childersburg. This deed contains land use restrictions, including prohibition against unauthorized groundwater access, unauthorized soil excavation, and any use other than commercial/industrial. The environmental protection provisions of this deed are presented as "Exhibit C" of the Quitclaim Deed for ALAAP.

The city of Childersburg Local Redevelopment Authority (LRA) has implemented plans to advance the ALAAP property as an industrial park. Road improvements have been made throughout the ALAAP property. The city of Childersburg sold parcels to the following private entities (Figure 1-3):

- Nippon Oil Lubricants (ENEOS USA, Inc.) purchased a 20-acre parcel (Parcel 6).
- Eric David McLain purchased a 55-acre parcel (Parcel 7).
- DCI South Properties LLC (formerly Dauber) purchased a 14.5-acre parcel (Parcel 12).
- Blair Block LLC purchased 37.56- and 12.0-acre parcels (Parcel 15).
- Benson 2013 Joint Revocable Trust (Cooper Steel, formerly NuSteel Fabricators; Seven C's, LLC; and Ferrum Properties, LLC) purchased 20.0- and 18.1-acre parcels (Parcel 16).
- Matthew O'Neal (formerly Roy J Gaither and Koldsteel, Inc.) purchased a 2.0-acre parcel (Parcel 17).
- Talladega Economic Development Authority purchased a 115-acre parcel (Parcel 20).
- Childhood Food Solutions purchased a 21-acre parcel (Parcel 21).

According to the interview form filled out by Childhood Food Solutions as a part of this FYR, Childhood Food Solutions returned the 21-acre parcel to the city of Childersburg on August 26, 2022. However, the Talladega County Parcel Viewer does not reflect this change.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

Table 1-1. ALAAP – Area B OUs and Five-Year Review Status
Alabama Army Ammunition Plant, Childersburg, Alabama

EPA Designation	Army Designation	In Current Five-Year Review: Yes or No	Study Areas Included in Each OU	Impacted Media	Further Action Required in the IROD or ROD: Yes or No	Summary of Selected Remedy	CERCLA Status/Phase	Five-Year Review Required: Yes or No
OU-1	OU-2	No	31, 32, TC4A, TC4B – Stockpiled Soils	Soil	Yes	• Incineration and/or stabilization of stockpiled materials until treatment and disposal criteria are met • Disposal of treated material in the designated onsite disposal area	ROD Approved December 1991 ROD Remedial Actions Complete	No FYR required; the remedy resulted in no residual risk to human health and the environment.
OU-2	OU-3	No[b]	Study Areas 6, 7, 10[a], and 21	Soil and sediment	Yes	• Incineration and/or stabilization of metals and explosives-related contaminated soils and sediments, and disposal of treated material in the designated onsite disposal area • Deactivation and grouting of concrete-encased VCP; excavation, onsite incineration, and onsite disposal of VCP	IROD Approved November 1994 IROD Remedial Actions Complete	Separate FYR not required; OU-2 IROD study area remedies (except for Study Area 6) were technically reviewed in the OU-7 FYR. Study Area 6 remedial actions resulted in UU/UE.
OU-4	OU-1	No	Area B (site-wide) groundwater	Groundwater	Not Applicable	• FS ongoing; ROD not yet prepared	FS ongoing	Not Applicable
OU-6	OU-4	No[b]	Study Areas 2, 10[a], 16, 17, 19, and 22	Soil	Yes	• Incineration and/or stabilization of metals and explosives-related contaminated soils • Disposal of treated material in the designated onsite disposal area • Engineered landfill cap for Study Area 22	IROD Finalized October 1996 IROD Approved March 1997 IROD Remedial Actions Complete	Separate FYR not required; OU-6 IROD study area remedies were technically reviewed in the OU-7 FYR.
OU-7	OU-1	No	Study Areas 5, 6, 9, 10E, 20, 25, 27, Gas Station, Transformer Storage Building, Downed Utility Poles with Transformers, Underground Storage Tanks, Fertilizer and Pesticide Storage	Soil, surface water, and sediment	No	• NFA (due to acceptable risk for UU/UE)	ROD Finalized August 2010 ROD Approved March 2012	No, due to acceptable risk for UU/UE.
OU-7	OU-1	Yes	Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 – Coke Oven; and South Georgia Road Dump	Soil, surface water, and sediment	Yes	***All Study Areas*** • Implement LUCs to prevent future residential use of the study areas • Monitor the effectiveness of the LUCs through annual inspections ***Study Areas 21 and 26*** • Post signs warning against consumption of fish tissue at Study Areas 21 and 26 ***Study Area 22*** • Implement LUCs to prevent excavation, digging, drilling, or other activities that may damage the landfill cap within Study Area 22 • Monitor effectiveness of the LUCs and monitor for any damage to the landfill cap through annual inspections	ROD Finalized August 2010 ROD Approved March 2012 OU-2 and OU-6 study areas were included in the OU-7 ROD and are technically reviewed in the OU-7 FYR	Yes
OU designation TBD	OU-8	No	Area B (site-wide) asbestos	TBD	Not Applicable	• IDRA signed September 29, 2022. Scoping sessions currently underway.	Scoping sessions currently underway	Not Applicable

Notes: To avoid confusion, EPA OU designations are used throughout this FYR.

[a]Under the OU-2 IROD, remediation (excavation and treatment of soils) was conducted for the western part of Study Area 10 (i.e., later designated as 10W); under the OU-6 IROD, investigation was conducted for the eastern part of Study Area 10 (i.e., 10E) and NFA was deemed necessary for 10E. The designations 10W and 10E are used in the Supplemental RI, FS, and OU-7 ROD.

[b]RAOs implemented under the IRODs are addressed in the current FYR.

ALAAP = Alabama Army Ammunition Plant
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
EPA = U.S. Environmental Protection Agency
FS = Feasibility Study
FYR = Five-Year Review
IDRA = Informal Dispute Resolution Agreement
IROD = Interim Record of Decision
LUC = Land Use Control
NFA = No Further Action
OU = Operable Unit
RAO = Remedial Action Objective
RI = Remedial Investigation
ROD = Record of Decision
TBD = To Be Determined
UU/UE = Unlimited Use/Unrestricted Exposure
VCP = Vitrified Clay Pipe

THIS PAGE WAS INTENTIONALLY LEFT BLANK

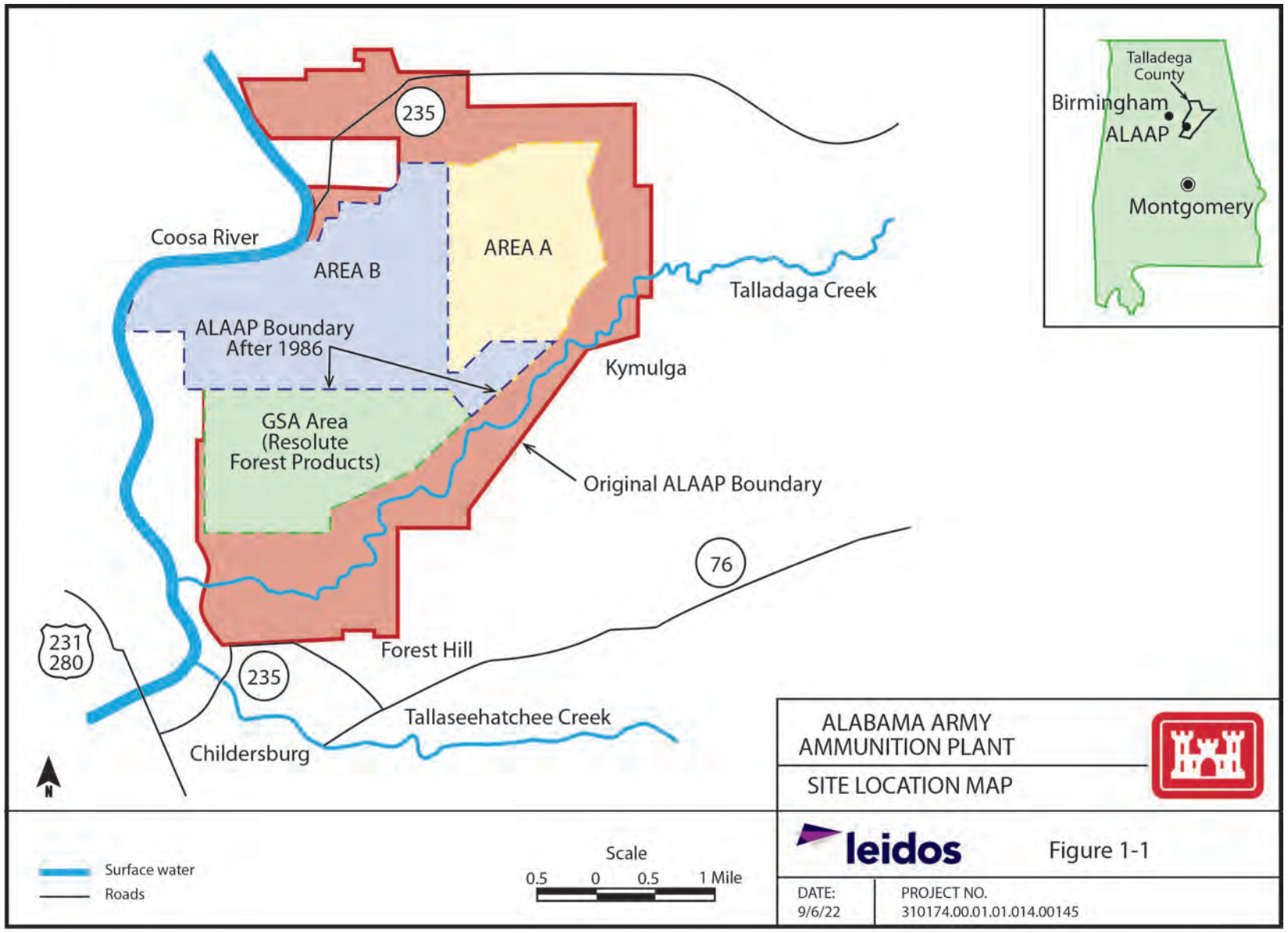


Figure 1-1. ALAAP Site Location Map

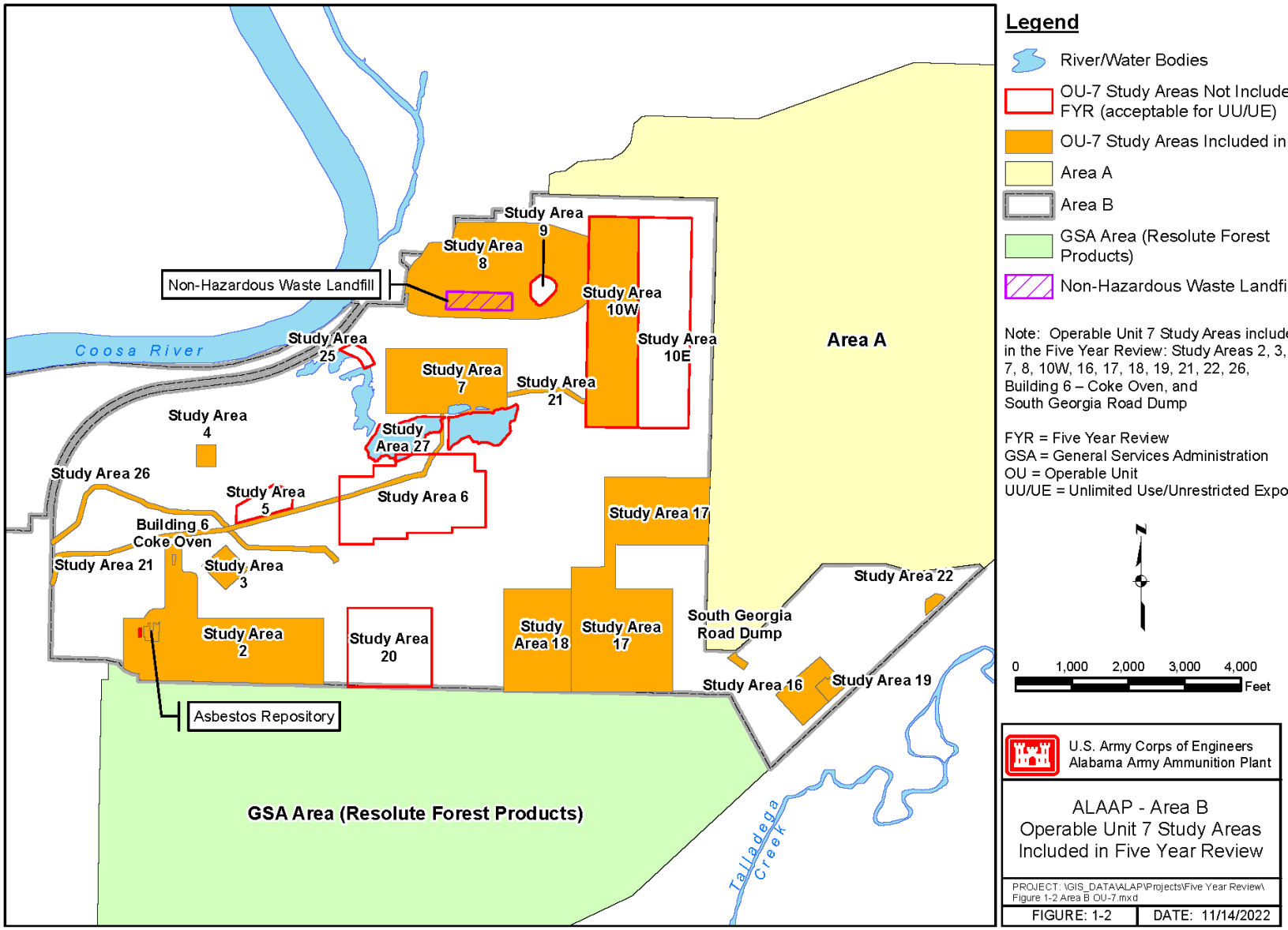
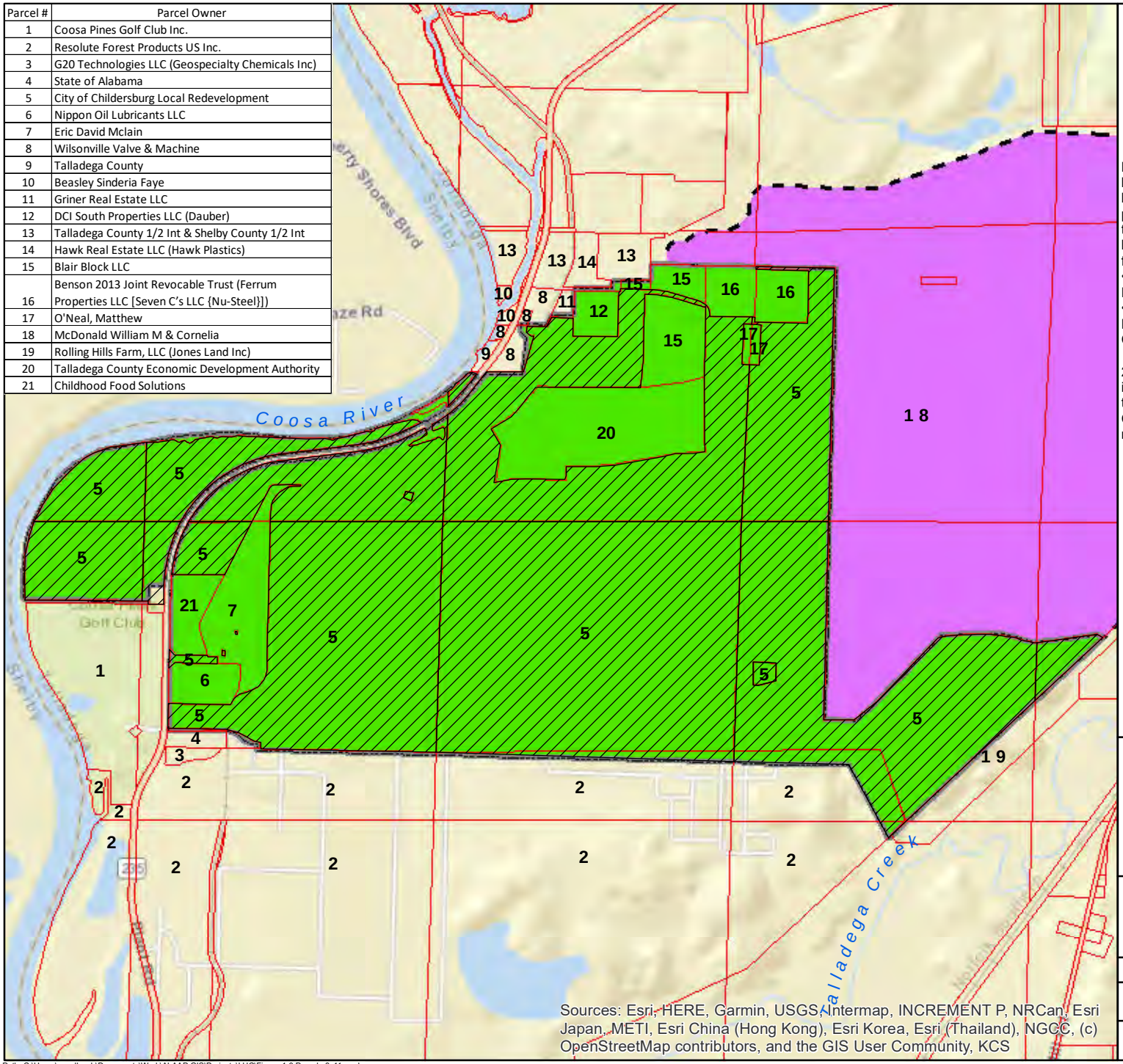


Figure 1-2. ALAAP – Area B Operable Unit 7 Study Areas Included in Five-Year Review

Parcel #	Parcel Owner
1	Coosa Pines Golf Club Inc.
2	Resolute Forest Products US Inc.
3	G20 Technologies LLC (Geospecialty Chemicals Inc)
4	State of Alabama
5	City of Childersburg Local Redevelopment
6	Nippon Oil Lubricants LLC
7	Eric David Mclain
8	Wilsonville Valve & Machine
9	Talladega County
10	Beasley Sinderia Faye
11	Griner Real Estate LLC
12	DCI South Properties LLC (Dauber)
13	Talladega County 1/2 Int & Shelby County 1/2 Int
14	Hawk Real Estate LLC (Hawk Plastics)
15	Blair Block LLC
16	Benson 2013 Joint Revocable Trust (Ferrum Properties LLC [Seven C's LLC {Nu-Steel}])
17	O'Neal, Matthew
18	McDonald William M & Cornelia
19	Rolling Hills Farm, LLC (Jones Land Inc)
20	Talladega County Economic Development Authority
21	Childhood Food Solutions



Legend

- ALAAP – Area B Boundary
- ALAAP – Area A Boundary
- Owned by City of Childersburg
- Parcels

NOTES: 1. Two current landowners appear to have name changes associated with their businesses based on current signage at their property. These changes are not reflected in the Talladega County Parcel Viewer. These businesses and their current signage are as follows:
•Nippon Oil Lubricants LLC (Parcel 6) – ENEOS USA Inc.
•Benson 2013 Joint Revocable Trust (Ferrum Properties LLC [Seven C's LLC {NuSteel}]) – Cooper Steel

2. Childhood Food Solutions indicated in an interview form returned for the 2022 FYR that they have returned the property back to the City of Childersburg. This change is not reflected in the Talladega County Parcel

N W E S

0 850 1,700 3,400 Feet

US Army Corps of Engineers

Alabama Army Ammunition Plant
Childersburg, Alabama

leidos

Scale is1:30,000

ALAAP - Area B and Adjacent Parcel Owners

Figure no.	Project No.	File Name	Date
1-3	310174.00.01.01.014.00145	Figure 1-3 Parcels 8x11	3/8/2023

Path: C:\Users\woodleych\Documents\Work\ALAAP GIS\Projects\LUC\Figure 1-3 Parcels 8x11.mxd

THIS PAGE WAS INTENTIONALLY LEFT BLANK

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Alabama Army Ammunition Plant – Area B		
EPA ID: AL6210020008		
Region: 4	**State:** AL	**City/County:** Childersburg/Talladega

SITE STATUS	
NPL Status: Final	
Multiple OUs? No	**Has the site achieved construction completion?** Yes, construction completion has been achieved for OU-7 soils, sediment, and surface water, which is the subject of this FYR. Groundwater and asbestos are not included in OU-7 and are not part of this FYR. Yes

REVIEW STATUS
Lead agency: Other Federal Agency **If "Other Federal Agency" was selected above, enter Agency name:** U.S. Army
Author name (Federal or State Project Manager): Thomas Lineer (BRAC Program Office)
Author affiliation: G-9 DAIN-ISE
Review period: April 19, 2022 – December 2, 2022
Date of site inspection: June 8 – 9, 2022
Type of review: Statutory
Review number: 5
Triggering action date: September 5, 2018
Due date *(five years after triggering action date)*: September 5, 2023

Note: The OU7 ROD combined into one document previously selected remedies found in the earlier Interim RODs and selected final remedies, such as LUCs. This ROD was signed in September 2010, and since it had no construction component, the original signature date should have determined the First FYR due date, which would have been September 2015. However, FYRs had already started for other sites and as such, the Third FYR was finalized in January 2014. The 2011 EPA guidance for Federal Facility program priorities required that after FY11, the due dates of a Facility's FYR should follow the statutory requirement of

occurring no less than every five years, regardless of a prior report's early or late submission status. Thus, the 2014 date should have become the new triggering action, which would have made the Fourth FYR due in January 2019. However, in that situation, some final remedies would not have been reviewed within the five-year statutory requirement. This meant the Fourth FYR had an earlier completion date of September 2018. The 2011 guidance suggested that it could take a few completion cycles to get all remedies at a comprehensive site into the same cycle and with this submission, ALAAP has achieved that status. The Army is tracking the due date for the Fifth 5YR as September 2023, and this will become the due date for all subsequent FYRs.

2. RESPONSE ACTION SUMMARY

2.1 BASIS FOR TAKING ACTION

As required by the Quitclaim deed, the study areas in OU-7 are located in an area of commercial and industrial use with ancillary commercial, recreational, and natural habitat areas. Residential use is prohibited. Therefore, the people most likely to be exposed to contaminated environmental media are industrial workers. For this reason, the risk assessment (SAIC 2001) evaluated workers as the primary potential receptors. Industrial workers may be exposed to contaminants in environmental media through incidental ingestion, absorption of chemicals through the skin, and inhalation. The risk assessment evaluated the chemicals present at the study areas and their potential to cause cancer or toxic effects to people. The primary chemicals of concern (COCs) at these sites are lead, explosives, and carcinogenic polynuclear aromatic hydrocarbons (PAHs) (Table 2-1). Most of the COCs are potential carcinogens. In addition, some of the COCs may potentially cause noncancerous toxic effects to various parts of the body. For example, studies have shown that exposure to TNT, the DNTs, and tetryl may harm the liver. Exposure to lead may affect the nervous system. At these sites, the primary resources impacted by contamination are soil and sediment. Chemical contamination found in the soil or sediment was responsible for unacceptable worker risk. Remediation was necessary at these sites to allow the sites to be used as planned (i.e., for industrial use).

Table 2-1. Chemicals of Concern Based on Future Residential Land Use
Alabama Army Ammunition Plant, Childersburg, Alabama

Study Area		Potential Risk Receptors	Chemicals of Concern	
			Surface Soil	Subsurface Soil
2	Smokeless Powder Facility	Current/Future Industrial	Arsenic Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene	N/A
		Future Residential	Arsenic Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene	Benzo(a)pyrene Benzo(b)fluoranthene 2,4-Dinitrotoluene
		Future Construction	Arsenic Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene	Benzo(a)pyrene
3	Sanitary Landfill and Lead Facility	Future Residential	Arsenic	N/A
4	Manhattan Project Area	Future Residential	Lead	Lead
7	Northern TNT Manufacturing Area	Future Residential	N/A	2,4,6-Trinitrotoluene

Table 2-1. Chemicals of Concern Based on Future Residential Land Use
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)

Study Area		Potential Risk Receptors	Chemicals of Concern	
			Surface Soil	Subsurface Soil
8	Acid/Organic Manufacturing Area	Future Residential	Arsenic Nickel Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene	Arsenic Antimony Lead
10W	Tetryl Manufacturing Area	Future Residential	Lead	N/A
16	Flashing Ground	Future Residential	Arsenic Lead Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Dibenzo(a,h)anthracene Indeno(1,2,3-cd)pyrene	Lead 2,4,6-Trinitrotoluene
		Ecological	Cadmium Copper	N/A
17	Propellant Shipping Area	Future Residential	Arsenic	Arsenic
18	Blending Tower Area	Future Residential	Arsenic	N/A
19	Lead Facility	Future Residential	N/A	Arsenic
21	Red Water Ditch	Future Residential	Arsenic and Aroclor 1254 (fish tissue)	
22	Demolition Landfill	All	Landfill (capped)	
26	Crossover Ditch	Future Residential	Mercury (fish tissue)	
CERFA Study Area	Building 6 – Coke Oven	Future Residential	N/A	Arsenic
EBS Study Area	South Georgia Road Dump Site	Future Residential	Lead	Lead

Source: SAIC 2010
N/A = Not Applicable

The study areas included in this FYR are listed in Table 1-1 and are described in the sections below. Each of these study areas required further action, as documented in the approved OU-7 ROD (SAIC 2010). Other study areas were included in the OU-7 ROD but are not addressed in this FYR because NFA was required (due to acceptable risk for UU/UE). The NFA study areas also are listed in Table 1-1. Specifics pertaining to the investigation and basis for action at each study area within OU-7 are provided below.

2.1.1 Study Area 2

Study Area 2 (included in OU-6 and OU-7) is the Smokeless Powder Facility (cannon and rifle powder). During a previous environmental survey (ESE 1981), 2,4-DNT was detected in soil samples. Additional sampling and a baseline human health risk assessment (HHRA) conducted during Phase I of the

Supplemental RI identified 2,4-DNT as responsible for unacceptable risk under an industrial land use (SAIC 1996a). An explosives (2,4-DNT) hot spot was detected during Phase I of the Supplemental RI. As a result, Roy F. Weston (Weston) conducted a sampling program in September 1996 to delineate the extent of contamination around the hot spot so that remediation of the area could be conducted. Laboratory samples were analyzed for explosives and total lead. Neither 2,4-DNT nor any other explosives were detected. The excavation criterion for 2,4-DNT was 356 mg/kg. To be conservative, the soil around the hot spot was excavated under the OU-6 IROD. The Final Supplemental RI and remediation confirmatory sampling indicated that no explosives remain in the soil at concentrations greater than the excavation criterion. The maximum detected concentration of 2,4-DNT was 99.3 mg/kg in one soil sample collected northeast of the excavation area.

The Final Supplemental RI also identified PAHs as chemicals responsible for unacceptable risk under the planned industrial land use scenario (SAIC 2001). In 2008 and 2009, additional excavation of soil contaminated with PAHs to industrial land use cleanup goals was conducted (SES 2009b). Due to remediation of soils to industrial cleanup levels and as specified in the OU-7 ROD, LUCs were implemented to prevent residential use of the study area.

2.1.2 Study Area 3

The Sanitary Landfill and Lead Facility (Study Area 3) was located in the west-central portion of the current ALAAP – Area B and covered 7.5 acres. The area was used from the early 1940s until the late 1970s. Most of the fill material was domestic solid waste and building rubble. A Supplemental RI and baseline risk assessment indicated potential concerns for unrestricted use (i.e., residential) and ecological receptors at Study Area 3 but no concerns for the planned future industrial land use (SAIC 2001). An FS was conducted to evaluate elevated concentrations of metals in surface and subsurface soils at Study Area 3. A weight-of-evidence (WOE) screening conducted as part of the FS (SAIC 2008) concluded that metals were not a concern to ecological receptors. However, human health concerns remained for unrestricted use of Study Area 3 due to the presence of arsenic in surface soils (SAIC 2008). Therefore, as specified in the OU-7 ROD, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.3 Study Area 4

The Manhattan Project Area used a portion of ALAAP in the western part of Area B from 1943 to 1945 (DA 1978). The Manhattan Project Area was designed to produce 1,600 pounds (192 gallons) of heavy water per month, but records indicate that it produced less than 600 pounds (72 gallons) per month (QORE 2002). A total of 11,160 pounds (1,338 gallons) of heavy water were produced from January 1944 through July 1945. The heavy water process did not involve any radioactive materials. In 1945 and 1946, all buildings were removed from the Manhattan Project Area except for one small brick building, which was removed in 1995. Large concrete building footers, the basement, and other support structures were left in place. A Supplemental RI and baseline risk assessment conducted in 1995 identified lead as a COC for unrestricted land use (i.e., residential) and industrial land use, and metals as ecological chemicals of concern (ecoCOCs) (SAIC 2001). An FS was conducted to further evaluate the potential concerns for Study Area 4 (SAIC 2008). Lead modeling conducted as part of the FS concluded that lead was not a concern for the future construction worker, and WOE analysis concluded that metals are not a concern to ecological receptors. However, human health concerns remained for the unrestricted land use (i.e., residential) due to lead in soil. Therefore, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.4 Study Area 7

Study Area 7 was the Northern TNT Manufacturing Area containing four TNT production lines and one DNT production line. This area was razed and material was spread over a wide area during the demolition with only foundations and portions of the sewer system remaining. Formerly, wastewater from

this area was discharged to the Red Water Ditch through wooden flumes, which carried the production wastes to the industrial sewers. Explosives-related contamination was identified in soil and groundwater samples from site investigations.

Environmental Science and Engineering (ESE) completed a baseline risk assessment for Study Area 7 in August 1992 as part of the initial RI (ESE 1992). The HHRA concluded that explosives-related contamination in both soil and groundwater was responsible for cancer risks exceeding the upper bound of the target risk range and noncancer hazard indices (HIs) exceeding the target of 1. Lead also was identified as a chemical that could pose potential health risks at the site. The ecological risk assessment (ERA) concluded that hazard quotients (HQs) for terrestrial organisms, particularly rabbits, exceed 1 due to the presence of explosives-related compounds (ESE 1992). ESE completed an RI/FS for the Industrial Sewer System (ISS) in September 1991 (ESE 1991). The RI concluded that the ISS within Study Area 7 was contaminated with high levels of nitroaromatic compounds and that leakage from the manholes had occurred, as evidenced by contaminated soil surrounding them. The area of greatest soil contamination appeared to be in the area where the surface ditch from the bi- and tri-nitrating house entered the ISS. The RI also concluded that the ISS within Study Area 7 was discharging contamination to surface drainages such as the Red Water Ditch (ESE 1991).

Based on these results, Weston conducted interim remedial actions and confirmatory sampling at the site from 1994 to 1996. Contaminated soils were excavated and thermally treated at the onsite incinerator (hereafter referred to as the Transportable Incineration System [TIS]-20). The ash from incineration of soils containing explosives and meeting the disposal criteria was disposed of at the onsite disposal area (later known as the NHWL). Soils and ash contaminated with lead and/or not meeting the disposal criteria were stabilized and then disposed of at the onsite disposal area. Asbestos was removed to a secure staging area prior to offsite disposal. The ISS in the study area was excavated and decontaminated or grouted in place (QORE 2002).

Subsequently, Science Applications International Corporation (SAIC) completed a supplemental risk assessment for Study Area 7 in 2001 after interim remedial actions were conducted (SAIC 2001). This risk assessment was part of the Supplemental RI and incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The risk assessment concluded that human health risks for the planned future industrial land use were acceptable, but risks for the unrestricted residential use were unacceptable due to 2,4,6-TNT and manganese. In the WOE for human health risks, manganese was eliminated as a COC for unrestricted residential use. In the ERA, lead was identified as an ecoCOC in surface soil with an HQ greater than 1 but less than 10 (SAIC 2001). A WOE screening was not conducted as part of the FS for the remaining ecoCOCs at Study Area 7 because the results of the baseline ecological risk assessment (BERA) indicated that no further evaluation of ecological risk was warranted (SAIC 2008). Study Area 7 was included in the FS due to unacceptable risk associated with unrestricted use of the site. Further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.5 Study Area 8

Nitrobenzene, concentrated nitric acid, oleum, and sodium sulfite (sellite) were produced at the Acid/Organic Manufacturing Area (Study Area 8). A former sulfur burning pit is also in this area (DA 1978). The Acid/Organic Manufacturing Area covers 104 acres. Sulfur residues up to 1 inch in diameter were exposed on the ground surface in the sulfur storage area (ESE 1981).

Previous investigations (ESE 1993) identified an area of 27,000 square yards (5.5 acres) that was contaminated with sulfur and acid wastes. A Supplemental RI and baseline risk assessment conducted in 1995 identified nickel and iron as the COCs in soil based on the planned industrial future land use, metals and PAHs as COCs in soil based on unrestricted use (i.e., residential), and metals as ecoCOCs (SAIC 2001). The Technical Memorandum Justification for NFA for Phase I Transfer of ALAAP Study Areas 7, 8, 9, 10, 21, 25, and 26 (SAIC 2000) and the WOE screening conducted as part of the FS concluded that there were

no concerns for human health (based on the planned future land use) and the environment (SAIC 2008). However, concerns remained for the unrestricted land use due to residual metals and PAHs in soil. Therefore, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.6 Study Area 10W

The Tetryl Manufacturing Area (Study Area 10) consisted of 12 manufacturing lines where tetryl was produced. Extensive amounts of lead were used in the piping, floors, and fittings of the nitration houses. The buildings have been razed and all that remains of each line are the concrete foundations of the buildings and piles of concrete debris. The area was divided into eastern and western halves (10E and 10W) during the Supplemental RI, which was completed in 2001. The areas were evaluated separately because remediation had been conducted on the western half (which contains the manufacturing area), and the purpose of the associated risk evaluation was to confirm that the remedial actions were protective. At Study Area 10W, the investigation was conducted to confirm the absence of unacceptable risk.

ESE completed an RI/FS for the ISS in September 1991 (ESE 1991). The RI concluded that the ISS within Study Area 10 was contaminated with tetryl, nitrocellulose, and 1,3,5-trinitrobenzene (TNB), and leakage from the manholes had occurred, as evidenced by contaminated soil surrounding them.

ESE completed a baseline risk assessment for Study Area 10 in August 1992 as part of the initial RI (ESE 1992). The HHRA, which focused primarily on the western half, concluded that noncancer risks to industrial workers reach the target HI of 1 and that cancer risks for residents exceed the target (i.e., greater than 1×10^{-4}) due to tetryl in soil. Lead also was identified as a chemical in soil that could pose potential health risks at the site. The ERA concluded that HQs for lead and tetryl exceed 1. However, considerable uncertainty was associated with the tetryl results because little was known concerning its toxicity to wildlife at the time the risk assessment was conducted (ESE 1992).

Based on the results of the RI/FS and risk assessment, Weston conducted interim remedial actions at Study Area 10W from 1994 to 1996. Contaminated soils were excavated and thermally treated. The ash from incineration of soils containing explosives and meeting the disposal criteria was disposed of at the onsite disposal area (i.e., the NHWL). Soils and ash contaminated only with lead and/or not meeting the disposal criteria were stabilized and then disposed of at the onsite disposal area (i.e., the NHWL). The ISS in the study area was excavated and decontaminated or grouted in place (QORE 2002).

Subsequently, SAIC completed a supplemental risk assessment for Study Area 10 (with 10E and 10W evaluated separately) in 2001 after interim remedial actions were conducted (SAIC 2001). This risk assessment was part of the Supplemental RI and incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. For Study Area 10E, additional WOE arguments pertaining to the risks were presented in the FS (SAIC 2008). As a result, the FS concluded that NFA was recommended for Study Area 10E. For Study Area 10W, the HHRA concluded that risks were acceptable for the planned future industrial land use but unacceptable for unrestricted future use due to the presence of lead in the soil. In the ERA for Study Area 10W, lead was identified as an ecoCOC with an HQ greater than 10. In comparison to the 1992 ERA, additional information was available to address the toxicity of tetryl to wildlife at the time the Supplemental RI was conducted. The latter risk assessment used literature and published or derived toxicity values to evaluate tetryl in plants and mammals and concluded that any residual concentrations did not pose harm to ecological receptors. As a result of these assessments, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.7 Study Area 16

The Flashing Ground covers 16.5 acres and consists of four trenches that were used after WWII to primarily dispose of smokeless/black powder by open burning. Combustible trash also was burned (QORE 2004, SAIC 2001). Flumes were located at the ends of at least two burning trenches to capture solids generated during washout operations (Weston 1996a).

ESE conducted exploratory and confirmatory surveys (ESE 1981), an RI (ESE 1986), and a Supplemental RI (ESE 1993) at Study Area 16. ESE's results showed that no contamination was detected in surface water and sediment samples, but soil was contaminated with nitroaromatic residues along with elevated lead concentrations. In 1995, SAIC conducted a Phase I sampling and analysis program as part of their Supplemental RI. The Draft Final Supplemental RI (SAIC 1996a) concluded that remedial actions were necessary to address explosives-related compounds and lead contamination in the soils at Study Area 16. This resulted in the inclusion of this study area in the OU-6 IROD (Weston 1996a).

An interim removal action was completed in 1996 through 1999 under the OU-6 IROD (Weston 1996a). Weston excavated explosives-contaminated soils and transported them to the TIS-20 for thermal treatment. Ash from the incineration of soils containing explosives that met the disposal criteria was disposed of at the onsite disposal area (i.e., the NHWL). Subsequently, soils containing lead contamination (addressed by Environmental Chemical Corporation [ECC]) were stabilized and then landfilled at the onsite disposal area (i.e., the NHWL) (ECC 1998).

The Final Supplemental RI (SAIC 2001), completed after interim remedial actions had concluded, incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The baseline risk assessment identified metals, 2,4,6-TNT, and PAHs as COCs for unrestricted land use and metals as COCs for ecological receptors. An FS was conducted to further evaluate the potential concerns with metals, 2,4,6-TNT, and PAHs at Study Area 16. The WOE screening conducted as part of the FS concluded that concerns remained to human health based on unrestricted land use (i.e., residential). No concerns remained for the planned future industrial land use at Study Area 16. Therefore, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area. The two metals identified as ecoCOCs were eliminated following the WOE evaluation in the FS as a result of risk management decisions.

2.1.8 Study Area 17

Study Area 17 (included in OU-6) is the Propellant Shipping Area, which included 48 shipping houses. The lower portion of the area was used as a shipping area for smokeless powder while the upper portion was used for shipping high explosives (USATHAMA 1978). Thirty-five buildings were present in Study Area 17. The buildings in Study Area 17 have been removed, and only the building foundations remain.

The 1986 RI (ESE 1986) noted a low incidence of nitroaromatic compounds detected in the soil sampled from this area. During Phase I of the Supplemental RI, explosives hot spots were detected in surface soil screening samples, and 2,4-DNT was identified as the primary contributor to unacceptable risk under an industrial land use (SAIC 1996a).

An interim remedial action was completed in 1996 under the OU-6 IROD (Weston 1996a) as 2,4-DNT contaminated soils were excavated and transported to the TIS-20 for thermal treatment (Weston 1996a, 1996b, 1996c). Ash from incineration of soils and meeting the disposal criteria was landfilled at the onsite disposal area (i.e., the NHWL). Confirmatory samples were collected to demonstrate that the contamination had been removed.

The Supplemental RI and baseline risk assessment of Study Area 17, completed after interim remedial actions had concluded, incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The baseline risk assessment identified metals, including aluminum, arsenic, barium, iron, and manganese, as COCs for either human or ecological receptors (SAIC 2001). An FS was conducted to further evaluate the potential concerns with metals at Study Area 17. The WOE screening conducted as part of the FS concluded that concerns to human health remained for arsenic in the soils based on unrestricted land use (i.e., residential) (SAIC 2008). There were no concerns for the planned future industrial land use and ecological receptors at Study Area 17. Further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.9 Study Area 18

The Blending Tower Area (Study Area 18) was an area of approximately 50 acres where smokeless powder was mixed to make it more homogeneous. During the blending operation, the powder was pneumatically moved to an upper bin and then dropped over an umbrella into a lower bin. This procedure was repeated twice (DA 1978).

During the Supplemental RI, the baseline HHRA identified no unacceptable risks in soil for the planned industrial land use. Unacceptable risks in soil were identified for ecological receptors and humans under unrestricted (i.e., residential) land use, and metals were the responsible COCs (SAIC 2001). These metals were therefore carried into the FS, and a WOE evaluation was conducted that examined issues such as confidence in the exposure and toxicity values used to calculate risks. The evaluation concluded that only arsenic in surface soil remained a human health COC for unrestricted use (i.e., residential), and no concerns remained for the ecological receptors at Study Area 18 (SAIC 2008).Therefore, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.10 Study Area 19

The Lead Remelt Facility (Study Area 19) is a 350- by 550-foot area originally used for flashing explosives (SAIC 2001). The area contained a thick concrete flashing rack barricade and a concrete slab for flashing activities (ECC 1998). Later, the site was used for remelting and recovering lead from piping and equipment by pouring hot liquid lead into lead ingots as part of the demolition activities conducted in the former TNT and tetryl production areas (QORE 2004, Weston 1996d).

ESE conducted exploratory and confirmatory surveys (ESE 1981), an RI (ESE 1986), and a Supplemental RI (ESE 1993) at Study Area 19. Soil and groundwater samples were collected. Numerous large pieces of lead, some weighing several pounds, were identified on the soil surface in this area. ESE's results showed no detectable contamination in groundwater but high levels of lead in the soil. Tests also confirmed the leachability of the lead (ESE 1991, 1992).

Lead ingots at Study Area 19 were sampled during a site visit that USACE conducted on February 22, 1995. Results of the sampling indicated that the lead ingots were representative of waste material (as slag or dross on molten metal) produced by lead recovery or remelting operations. The surface of these lead ingots was friable, and the surrounding soils adjacent to the lead ingots were discolored and showed signs of stressed vegetation within a radius of approximately 100 feet (Weston 1995a). Boulders containing lead cobbles were observed on the ground surface during the field reconnaissance of the RI (SAIC 2001). Sparse and stressed vegetation was again observed.

In 1995, SAIC conducted a Phase I sampling and analysis program as part of their Supplemental RI. The Draft Final Supplemental RI (SAIC 1996a) concluded that remedial actions were necessary to address lead contamination in the soils at Study Area 19. An interim removal action was completed in 1998 under the OU-6 IROD (Weston 1996a) in which lead-contaminated soils and lead ingots from Study Area 19 were excavated and stabilized using an onsite pug mill (ECC 1998). Treated soils were landfilled at the onsite disposal area (i.e., the NHWL). Confirmatory samples were collected to demonstrate that the lead contamination had been removed.

The Final Supplemental RI (SAIC 2001), completed after interim remedial actions had concluded, incorporated confirmation data collected during the interim remedial action and data that were unaffected by the response action. The baseline risk assessment identified arsenic as a human health COC for unrestricted use (i.e., residential use) and concluded that there were no concerns for the planned future industrial use and ecological receptors. An FS was conducted to further evaluate the potential concerns with arsenic at Study Area 19 (SAIC 2008). The WOE screening conducted as part of the FS concluded that concerns to human health remained for arsenic in the soils based on unrestricted land use (i.e., residential). Therefore, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.11 Study Area 21

The Red Water Ditch collected and carried surface runoff and industrial process wastewaters from the Acid/Organic Manufacturing Area (Study Area 8) and the Tetryl Manufacturing Area (Study Area 10) (DA 1978). The areas that drained to the Red Water Ditch were involved in the production of acids (sulfuric and nitric), organic compounds (diphenylamine, aniline, and N,N-dimethylaniline), and explosives and their process byproducts (TNT, DNT, and tetryl). Other organic compounds (benzene and toluene) and inorganic compounds (sodium, sulfite, sodium carbonate, and elemental sulfur) also were stored in these areas that fed the Red Water Ditch.

An interim removal action was completed in 1996 under the OU-2 IROD (Weston 1994a) as TNT sediments from the Red Water Ditch and tetryl-contaminated sediments from the lower portions of the northern tributary of the Red Water Ditch (Tributary No. 2) were excavated and then thermally treated at the TIS-20 (Weston 1995b). The ash from incineration of sediments containing explosives and meeting the disposal criteria was disposed of at the onsite disposal area (i.e., the NHWL). Sediments and ash contaminated only with lead and/or not meeting the disposal criteria were stabilized and then disposed of at the onsite disposal area (i.e., the NHWL).

Subsequently, a Supplemental RI and baseline risk assessment of Study Area 21 (SAIC 2001) did not identify any threats to human health based on exposures to soil, surface water, or sediment, but there were potential concerns regarding ingestion of fish from the Red Water Ditch by hypothetical residents and recreational receptors. In addition, the RI identified potential concerns with ecological species exposed to surface water and sediment at the Red Water Ditch. An FS was conducted to further evaluate the potential concerns at Study Area 21 (SAIC 2008). Although the Technical Memorandum Justification for NFA for Phase I Transfer of ALAAP Study Areas 7, 8, 9, 10, 21, 25, and 26 (SAIC 2000) concluded that NFA was recommended based on the planned industrial reuse, concerns remained about ingestion of fish from the Red Water Ditch by hypothetical residents and recreational receptors. Therefore, further protective measures (i.e., LUCs) were implemented to address this concern at Study Area 21.

2.1.12 Study Area 22

Study Area 22 is the Demolition Landfill, which consists of a semicircular landfill in a swale extending approximately 500 feet along a perimeter road at the far eastern corner of Area B. Large amounts of lead, cast iron, stainless steel fittings, aluminum, transite, and other rubble were partially buried by concrete and earth. Previous soil sampling identified lead residues at concentrations above background in two samples and low concentrations of tetryl (ESE 1981). The Supplemental RI HHRA for industrial land use identified arsenic, lead, and PAHs as chemicals responsible for unacceptable worker risks (SAIC 2001). Based on this risk assessment, an engineered landfill cap was constructed for the site, thus isolating the contaminated soil. ECC placed a synthetic membrane liner overlain by clay and seeded topsoil layers over the landfill in October 1998 (ECC 1999). Further protective measures (i.e., LUCs), including restrictions on intrusive activities, and periodic maintenance were implemented to maintain the integrity of the engineered cap at Study Area 22.

2.1.13 Study Area 26

The Crossover Ditch (Study Area 26) drains surface waters from the Leaseback Area, the Rifle Powder Finishing Area, part of the northern and all of the southern portions of the Propellant Shipping Area, the southern portion of the Southern TNT Manufacturing Area, and the Sanitary Landfill and Lead Facility. Two beaver dams had been constructed on the Crossover Ditch. More recent lack of beaver activity in the former Beaver Ponds area has caused the ponds to be intermittently dry at periods throughout the year. Although the Crossover Ditch drains areas that produced nitrocellulose and smokeless powder, the ditch also passes adjacent to other study areas on ALAAP and contaminants from other sources may enter the drainage. Other identified potential sources of contaminants included the coal pile at the Bowater, Inc. power plant; the Sanitary Landfill and Lead Facility; the pipe flashing area immediately east of the Sanitary

Landfill and Lead Facility (Study Area 3); and the large industrial waste reservoir on Bowater, Inc. land directly south of the Rifle Powder Finishing Area. The Crossover Ditch collects and discharges surface waters generated on or adjacent to ALAAP property into the Coosa River (ESE 1981).

A Supplemental RI and baseline risk assessment conducted in 1996 did not identify any potential threats to human health based on exposures to surface water or sediment, but there were potential concerns with ingestion of fish from the Crossover Ditch by hypothetical residents. In addition, the RI identified potential concerns with ecological species exposed to surface water and sediment at the Crossover Ditch (SAIC 2001). Although the Technical Memorandum Justification for NFA for Phase I Transfer of ALAAP Study Areas 7, 8, 9, 10, 21, 25, and 26 (SAIC 2000) concluded that NFA is recommended based on the planned industrial reuse, concerns remained about ingestion of fish from the Crossover Ditch by hypothetical residents. The WOE screening conducted as part of the FS concluded that human health concerns remained related to ingestion of fish tissue (SAIC 2008). Therefore, further protective measures (i.e., LUCs) were implemented to address the human health concerns at Study Area 26. The WOE screening conducted as part of the FS concluded that no concerns to ecological receptors remained at Study Area 26 (SAIC 2008).

2.1.14 Building 6 – Coke Oven

The Coke Oven in Building 6 was partially constructed during the 1950s-era plant update but was never finished. The structure included a concrete-covered pit of unknown dimensions beneath a concrete slab next to Building 6. The Earth Technology Corporation (TETC) Community Environmental Response Facilitation Act (CERFA) Report (TETC 1994) identified the pit as a former burning pad where transformer oil was poured onto copper wire to burn off the insulation covering the wire. It is unknown if the transformer oil contained polychlorinated biphenyls (PCBs). The concrete pad is still present; however, the pit is not visible.

A Supplemental RI and baseline risk assessment conducted in 1996 identified arsenic, iron, and manganese in soils as COCs based on unrestricted human use (i.e., assumed residential) and aluminum, arsenic, lead, and zinc based on protection of ecological receptors. However, risks associated with the planned future industrial land use were not a concern (SAIC 2001). An FS was conducted to evaluate elevated concentrations of metals in surface and subsurface soils at Building 6 – Coke Oven. The WOE screening conducted as part of the FS concluded that concerns to human health remained based on unrestricted land use (i.e., residential), but no concerns remained for the ecological receptors (SAIC 2008). Therefore, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area.

2.1.15 South Georgia Road Dump

The Environmental Baseline Survey (EBS) identified a former dump area south of Old Georgia Road on the southeastern corner of Area B between Study Areas 16 and 17 (SAIC 2000). Debris observed in this area included roofing shingles, powder can rings, randomly scattered slag from a nearby study area, and exposed and partially exposed rusted drums. In addition to the visible presence of surface and shallow subsurface debris, stressed vegetation was evident in the area. Significant concentrations of explosives or lead were not detected in groundwater samples from this area compared to other ALAAP wells (SAIC 2001).

Field investigations were conducted in 2001, 2002, and 2004 over a broad area of surface disturbance and debris observed at the site. The field investigations included intrusive sampling through shallow trenching combined with screening-level soil surveys for lead using X-ray fluorescence (XRF) analyses and confirmatory laboratory analyses. The results indicated that the observed debris was predominantly surficial. The debris was not observed at significant depth at the trenched locations, which were excavated to bedrock that ranged in depth from 2 to 5.5 feet below land surface (BLS). The XRF screening and laboratory confirmation analyses indicated that the horizontal and vertical extent of lead contamination was

fully delineated. Lead modeling was conducted to assess the potential for adverse health effects to human health. Blood lead levels for industrial and construction workers at the 95 percentile were below the target criteria (10 µg/dL) for surface and subsurface soil, were determined to be acceptable, and did not indicate the need for site remediation.

Additional soil sampling was conducted in 2007 to verify that volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) were not a concern at the South Georgia Road Dump. Trace concentrations of VOCs and SVOCs were detected in the shallow soil. However, the concentrations were below preliminary remediation goals (PRGs) established for residential soil (SAIC 2007). Although this site was not evaluated in the FS, LUCs were required because lead remained in soil at concentrations exceeding residential criteria (i.e., unrestricted land use). Therefore, LUCs were implemented to prevent residential land use and were documented and approved as part of the OU-7 ROD (SAIC 2010).

2.2 RESPONSE ACTIONS

The initial response actions for a subset of the OU-7 study areas were interim remedial actions conducted in the 1990s under two separate IRODs (see Table 1-1): 1) Study Areas 7, 10, and 21 were addressed in an IROD for OU-2; and 2) Study Areas 2, 10, 16, 17, 19, and 22 were addressed in an IROD for OU-6. The IRODs for OU-2 and OU-6 were incorporated into the OU-7 ROD as a component of the Final Selected Remedy (see Table 1-1). No removal actions or other responses were conducted for these study areas prior to the IRODs. Note the following clarifications:

- The NHWL, "onsite disposal area," "treated soils – backfill area," and "designated backfill area" are all different names for the same area/feature. The early documents used the term "backfill area(s)" with construction of Backfill Areas 1 and 2; the IRODs also used the term "onsite disposal area"; the term "NHWL" was adopted after the landfill was closed and is the current name of the landfill.
- Study Area 10 was included as a single study area during interim remedial actions. Therefore, the OU-2 and OU-6 IRODs reference Study Area 10. Since actual remediation (excavation and treatment of soils) was only required in the western part of Study Area 10, the area was divided into 10W and 10E for the Supplemental RI, FS, and OU-7 ROD. The OU-7 ROD documented that NFA was required for Study Area 10E.
- TIS-20 refers to the TIS brought onsite to treat explosives-contaminated soil and sediment by incineration.

OU-7 response actions were conducted for Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 – Coke Oven; and South Georgia Road Dump. No response actions were necessary for OU-7 Study Areas 5, 6, 9, 10E, 20, 25, 27, Gas Station, Transformer Storage Building, Downed Utility Poles with Transformers, Underground Storage Tanks, and Fertilizer and Pesticide Storage because risks for these sites are acceptable for UU/UE. Therefore, these latter sites are not included in this FYR (see Table 1-1).

2.2.1 Study Areas 7, 10, and 21 (OU-2) IROD RAOs and Remedy Components

The interim remedy for OU-2 was selected in an IROD dated November 15, 1994. The RAO for this interim remedy was to protect human health and the environment from unacceptable risks caused by contaminated soils and sediments and the industrial sewer system. The remedial design was approved on November 17, 1994. The remedy, as detailed in the IROD, consisted of the following:

Incineration/Stabilization of Metals- and Explosives-Contaminated Soil and Sediment

- Clear, survey, and grid areas; perform soil and sediment sampling and analysis to delineate contamination by explosives (2,4,6-TNT, 1,3-dinitrobenzene [DNB], and tetryl) and lead.

- For contaminated areas, excavate soil and sediment until excavation criteria are satisfied, screen materials, transport materials to the TIS-20, and treat materials by incineration and/or stabilization until treatment and disposal criteria are satisfied.
- Decontaminate oversized materials by crushing or shredding and treatment in the TIS-20 or by high-pressure water washing and disposal in the onsite disposal area.
- Expand the existing onsite disposal area for final placement of treated materials.
- Backfill excavated areas with clean soil in Study Areas 7 and 10 and rough-grade to pre-excavated contours; backfill excavated areas with clean soil in Study Area 21 to the elevation of the surrounding banks of the Red Water Ditch.
- Close the onsite disposal area NHWL in accordance with the existing approved permit application for treated soil (*Treated Soil – Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit*, March 1994 [Weston 1994b]) (note that "Backfill Area" in this title refers to the onsite disposal area).
- Treat contaminated process, sampling, and decontamination wastewaters in the TIS-20 aqueous waste treatment system (AWTS) and reuse water for site dust control and process makeup.
- Conduct confirmatory soil and sediment sampling and analysis to ensure that excavation criteria have been satisfied.
- Separate excavated materials that contain asbestos (e.g., tiles, fragments) during feed preparation activities at the TIS-20.

Deactivation and Grouting of Concrete-Encased Vitrified Clay Pipe (VCP); Excavation, Onsite Incineration, and Onsite Disposal of VCP at Study Areas 7 and 10 Industrial Sewer System

- Locate and survey the existing VCP sewer lines and manholes.
- Sample overlying soils to determine compliance with excavation criteria, excavate to the depth of the sewer, visually inspect the interior and exterior of the sewer, remove gross contamination, and treat materials in the TIS-20 or by other approved methods and procedures.
- Remove non-encased sewer lines and manholes, transport materials to the TIS-20 for decontamination by high-pressure water washing or other approved methods, and dispose of decontaminated materials in the onsite disposal area.
- Sample and analyze soil around sewer lines and manholes for contamination and excavate as necessary to achieve excavation criteria.
- Screen and transport contaminated soil and sediment to the TIS-20 for treatment by incineration and/or stabilization.
- Where sewer lines are encased in concrete, visually inspect the interior, remove gross contamination, treat materials at the TIS-20 or by other approved methods and procedures, water wash, and grout/cement in place after decontamination.
- Where lines are crushed or broken, visually inspect and remove gross contamination, excavate oversized (>2-inch) materials, transport oversized materials to the TIS-20 and decontaminate for disposal in the onsite disposal area, blend undersized materials with surrounding soil using approved methods, and transport materials to the TIS-20 for treatment by incineration and/or stabilization.
- Test portions (10 percent) of the decontaminated VCP to ensure adequate decontamination. Although not expected, if adequate decontamination cannot be demonstrated using Webster's Reagent (due to the porosity of the pipe), crush a portion of the decontaminated pipe and analyze for parameters outlined in the excavation criteria. If Webster's Reagent is used, there is no

numerical quantifiable decontamination criterion. A change of color will indicate that 2,4,6-TNT is present at concentrations above 15 µg/cm^2.

- Where decontamination criteria are exceeded, decontaminate the piping again, test, and dispose of in the onsite disposal area if criteria are satisfied. Where decontaminated piping fails to meet the decontamination criteria after two water-washings, crush, blend with contaminated soils, treat in the TIS-20, and dispose of in the onsite disposal area.
- Conduct confirmatory soil sampling around and below the removed pipe to ensure that excavation criteria are satisfied.

The performance standards for OU-2 are listed in Tables 2-2 and 2-3.

Table 2-2. Excavation Criteria for OU-2 and OU-6
Alabama Army Ammunition Plant, Childersburg, Alabama

Compound/ Analyte Class	Compound/Analyte	Excavation Criteria (mg/kg)	
		Area B Soil/Sediment, OU-2	Area B Soil, OU-6
Explosives	1,3-DNB	>1	>1
	2,4-DNT	----	>356
	2,6-DNT	----	>356
	Tetryl	>5,000	>5,000
	1,3,5-TNB	----	>36.7
	2,4,6-TNT	>647	>348
Metals (total)	Lead	>500	>400

Source: OU-2 IROD (ECC 1996, Weston 1998) and OU-6 IROD (Weston 1996a).

DNB = Dinitrobenzene
DNT = Dinitrotoluene
IROD = Interim Record of Decision
OU = Operable Unit
Tetryl = Trinitrophenylmethylnitramine
TNB = Trinitrobenzene
TNT = Trinitrotoluene

Table 2-3. Disposal Criteria for OU-2 and OU-6 Incinerated Material
Alabama Army Ammunition Plant, Childersburg, Alabama

COC	Concentration	Units
Explosives		
2,4,6-TNT	<1	mg/kg
Metals[a]		
Arsenic	<5	mg/L
Barium	<100	mg/L
Cadmium	<1	mg/L
Chromium	<5	mg/L
Lead	<5	mg/L
Mercury	<0.2	mg/L[b]
Silver	<5	mg/L
Selenium	<1	mg/L

Source: OU-2 IROD (Weston 1998, ECC 1996) and OU-6 IROD (Weston 1996a).

[a]Concentrations for metals are for the TCLP extract.
[b]4 mg/kg using the total metals analytical method.

COC = Chemical of Concern
IROD = Interim Record of Decision
OU = Operable Unit
TCLP = Toxicity Characteristic Leaching Procedure
TNT = Trinitrotoluene

2.2.2 Study Areas 2, 10, 16, 17, 19, and 22 (OU-6) IROD RAOs and Remedy Components

The interim remedy for OU-6 was selected in an IROD dated October 20, 1996. The RAO was to protect human health and the environment from unacceptable risks caused by contaminated soils. EPA approved the interim remedy on March 27, 1997, which consisted of the following:

- Clear, survey, and grid areas; perform soil and sediment sampling and chemical analysis to delineate explosives and metals contamination.
- Use ground-penetrating radar or test pits to locate suspected burning trenches in Study Areas 16 and 19.
- For contaminated areas (except Study Area 22), excavate soil until excavation criteria are satisfied, transport materials to the TIS-20 in Area B, treat materials by incineration and/or stabilization until treatment and disposal criteria are satisfied, and dispose of treated material in the onsite disposal area. Study Area 22 will be addressed using an engineered landfill cap in accordance with the remedial option identified in the Draft Final FS (SAIC 1996b).
- If necessary, expand the existing onsite disposal area for final placement of treated materials.
- Decontaminate oversized materials by crushing or shredding and treatment at the TIS-20 or by high-pressure water washing; dispose of in the onsite disposal area.
- Treat contaminated process, sampling, and decontamination wastewaters in the TIS-20 aqueous waste treatment system; reuse water for site dust control and process makeup.
- Conduct confirmatory soil and sediment sampling and chemical analysis of excavation area to ensure that excavation criteria have been satisfied.
- Backfill excavated areas with clean soil and rough-grade to pre-excavated contours.
- Close the onsite disposal area in accordance with the existing approved permit application for treated soil (*Treated Soils – Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit* [Weston 1994b] and *Treated Soils – Backfill Area No. 2 Permit Application for the Alabama Army Ammunition Plant Stockpile Area Operable Unit* [Weston 1994c]) (note that "Backfill Area" in these titles refers to the onsite disposal area).
- Test portions of the decontaminated concrete slabs or structures to ensure adequate decontamination. If Webster's Reagent is used, there is no numerical quantifiable decontamination criterion. A change of color will indicate that 2,4,6-TNT is present at concentrations above 15 µg/cm^2.

The selected remedy for the Study Area 22 Demolition Debris Landfill, an OU-6 study area, was an engineered cap. The cap was constructed in accordance with the remedial option identified in the Draft Final FS (SAIC 1996b).

The performance standards for OU-6 are listed in Tables 2-2 and 2-3.

2.2.3 OU-7 RAOs and Remedy Components

The RAOs for OU-7 are as follows:

- Cost effectively reduce the toxicity, mobility, and/or volume of study area chemicals in a timely manner to levels that are protective of human health and the environment.
- Minimize exposure risks (i.e., ingestion, inhalation, and dermal pathways) posed to human health and the environment through treatment of contaminated media or by providing an adequate physical barrier between the contaminated media and the receptor.
- Restore each study area to a condition that is consistent with future land use requirements.

As stated above, the IRODs for OU-2 and OU-6 were incorporated into the OU-7 ROD as a component of the Final Selected Remedy for OU-7. The remedy components for Study Area 2 in OU-7 include the review of previous Study Area 2 analytical results to delineate the extent of PAHs contamination in soil; excavation of soil containing PAHs above the industrial/commercial RGOs; offsite disposal of the soil in a secure Resource Conservation and Recovery Act (RCRA) Subtitle D landfill; collection of confirmation and waste characterization samples; restoration of the study area using clean soil with grass seed mix spread over the disturbed area; and LUCs to prohibit the residential use of the property (see Table 2-4 provided at the end of this section). Study Area 2 was the only area requiring cleanup actions in OU-7. Study Area 2 cleanup levels are provided in Table 2-5.

Table 2-5. Cleanup Levels for OU-7 Study Area 2
Alabama Army Ammunition Plant, Childersburg, Alabama

PAH	Human Health Industrial Soil RGO
Acenaphthene	29,219 mg/kg
Anthracene	100,000 mg/kg
Benzo(a)anthracene	55 mg/kg
Benzo(a)pyrene	5.5 mg/kg
Benzo(b)fluoranthene	55 mg/kg
Benzo(k)fluoranthene	548 mg/kg
Benzo(g,h,i)perylene	29,126 mg/kg
Chrysene	2,110 mg/kg
Dibenzo(a,h)anthracene	5.5 mg/kg
Fluoranthene	22,000 mg/kg
Fluorene	26,281 mg/kg
Indeno(1,2,3-cd)pyrene	55 mg/kg
Naphthalene	55.92 mg/kg
Phenanthrene	29,126 mg/kg
Pyrene	29,126 mg/kg

OU = Operable Unit
PAH = Polynuclear Aromatic Hydrocarbon
RGO = Remedial Goal Option

The remedy components for the OU-7 study areas in this FYR include the use of LUCs, which are both proprietary/governmental and administrative in nature. The proprietary and governmental LUCs prevent future residential use of the study area (including residential housing, elementary and secondary schools, and childcare facilities). The administrative LUCs require annual inspections to monitor the effectiveness of the controls. Further details are provided in Table 2-4 and the Land Use Control Implementation Plan (LUCIP) (Leidos 2013).

The LUCIP also provides information concerning restrictions (not associated with CERCLA or the OU-7 ROD) that can be found in the Environmental Protection Provisions attached to the 2003 Quitclaim Deed, the Alabama Uniform Environmental Covenants Act (UECA) Environmental Covenant, and the city of Childersburg Ordinance No, 1078.

2.3 STATUS OF IMPLEMENTATION

Study areas included in this FYR have been addressed under IRODs or RODs for OU-2, OU-6, and OU-7. The following sections describe the actions completed for each OU.

2.3.1 Study Areas 7, 10, and 21 (OU-2) Remedy Implementation

The remedy for Study Areas 7, 10, and 21 within OU-2 was implemented in accordance with the November 1994 OU-2 IROD. The remedy components outlined in Section 2.2.1 were implemented. The remedial design was approved on November 17, 1994. The remedial action started on December 19, 1994,

and was completed on July 1, 1998. Weston submitted the Draft Project Closeout Report for Area B in July 1998.

At Study Area 7, Weston conducted delineation by sampling on 50- by 50-foot grids and at process ditches, concrete pads, blowcases, and manholes located within the manufacturing area. As a result of this delineation, Weston excavated soils containing concentrations exceeding the excavation criteria. Note that Weston used a more stringent concentration of 2,4,6-TNT in the field for identifying soils needing remediation (i.e., 100 mg/kg) (QORE 2004, Weston 1995c) than the excavation criteria identified in the OU-2 IROD (i.e., 647 mg/kg). The excavated soil was treated in the TIS-20 and the ash was placed in the onsite disposal area (later referred to as the NHWL). Soil samples were collected after excavation for confirmatory analysis to demonstrate that contaminated soil had been removed. Lead-contaminated soil and ash were stabilized and placed in the onsite disposal area.

At Study Area 10, Weston conducted delineation of soil contamination between April and May 1995. As a result of this delineation, Weston excavated soils with concentrations exceeding the excavation criteria at nitrating houses and connected open ditches, refinery houses and connected open ditches, and lag storage house on the former tetryl manufacturing lines. As with Study Area 7, Weston used the more stringent concentration of 2,4,6-TNT in the field for identifying soils needing remediation. Approximately 13,034 cubic yards of soil were removed from around the tetryl lines. Excavation was conducted only in the western part of Study Area 10. Explosives-contaminated soil was treated in the TIS-20 and the ash was landfilled at the onsite disposal area (later known as the NHWL). Lead-contaminated soil and ash were stabilized and landfilled at the onsite disposal area. Confirmatory samples were collected to demonstrate that contaminated soils had been removed and cleanup objectives were met.

At Study Area 21, Weston conducted delineation by collecting sediment samples on transects along the Red Water Ditch throughout the manufacturing area (Weston 1995c). The sediment samples were field screened and a portion was analyzed in the laboratory for explosives and lead. Portions of the Red Water Ditch with explosives concentrations exceeding the excavation criteria were excavated. Note that Weston used more stringent concentrations in the field for identifying sediments needing remediation (i.e., 100 mg/kg for 2,4,6-TNT and tetryl) (QORE 2004, Weston 1995c) than the excavation criteria identified in the OU-2 IROD. The excavated sediment then was treated in the TIS-20 and the ash was placed in the onsite disposal area (later referred to as the NHWL). Sediment samples were collected after excavation for confirmatory analysis to demonstrate that contaminated sediment had been removed.

Remediation for the ISS was conducted by deactivation and grouting of concrete-encased VCP and excavation, onsite treatment in the TIS-20, and disposal of non-encased VCP in the onsite disposal area. Confirmation sampling was conducted to verify that remaining concentrations were below the excavation criteria. Clean backfill was used to complete the remediation of the ISS.

2.3.2 Study Areas 2, 10, 16, 17, 19, and 22 (OU-6) Remedy Implementation

The remedy for Study Areas 2, 10, 16, 17, 19, and 22 within OU-6 was selected in an IROD dated October 20, 1996. The remedy components outlined in Section 2.2.2 were implemented. Remedial actions commenced on or about November 4, 1996, based on field screening data records that were available for samples collected from the areas identified for excavation within OU-6 (QORE 2004). Remediation of explosives-contaminated material was completed on January 18, 1997. In addition, any ash or soil that failed the toxicity characteristic leaching procedure (TCLP) for lead was stabilized in a pug mill and placed in the onsite disposal area. Following completion of remedial actions, the onsite disposal area was referred to as the NHWL.

At Study Area 2, approximately 185 cubic yards of 2,4-DNT contaminated soils were excavated and transported to the TIS-20 for thermal treatment. Treated soils were landfilled at the onsite disposal area.

Confirmatory samples were collected to demonstrate that the contamination had been removed (QORE 2004).

Although Study Area 10 was also included in the OU-6 IROD, additional analysis conducted in a WOE evaluation determined that NFA was needed in the eastern part of Study Area 10. Therefore, no remediation was conducted in the eastern portion of this study area even though it was initially included in the OU-6 IROD. Remedial actions had previously been conducted in the western portion of Study Area 10 as part of the OU-2 IROD.

Weston conducted a sampling program at Study Area 16 to delineate the extent of explosives and lead contamination identified during Phase I of the Supplemental RI (SAIC 1996a). Study Area 16 soil in the general areas of Burning Pits 2 and 3 was identified for remediation. Soil with explosives and lead above applicable criteria was excavated and treated in the TIS-20. Incinerator ash with high lead concentrations was stockpiled for future solidification and stabilization. Soil in grid areas with lead contamination only was temporarily left in place. Subsequent to Weston's remediation, ECC conducted additional remediation for lead-contaminated soil at Study Area 16. All lead-contaminated soil with concentrations exceeding the excavation criterion was excavated and stabilized using an onsite pug mill. Note that ECC used a more stringent concentration of lead in the field for identifying soils needing remediation (i.e., 300 mg/kg) than the excavation criteria identified in the OU-6 IROD. Confirmatory samples were collected from the excavation to confirm that contaminated soil had been removed. The remaining stockpiled incinerator ash with high lead concentrations also was stabilized (ECC 1998). Incinerated ash and stabilized materials were placed in the onsite disposal area.

Weston conducted a sampling program at Study Area 17 in September 1996 to delineate the extent of contamination around hot spots identified during Phase I of the Supplemental RI (SAIC 1996a). Based on the delineation results, remediation of soils containing 2,4-DNT was conducted. Approximately 741 cubic yards of soils exceeding excavation criteria were excavated and treated at the TIS before being landfilled in the onsite disposal area. Post-excavation data confirmed sampling results were below the excavation criterion.

In 1996, Weston conducted a sampling program at Study Area 19 to delineate the extent of explosives and lead contamination. Sampling the Study Area 19 soil was contaminated with lead only. Therefore, the soils were left in place for future remediation. Subsequent to Weston's investigation, ECC conducted remediation for lead-contaminated soil at Study Area 19. All lead-contaminated soil with concentrations exceeding 300 mg/kg was excavated and stabilized using an onsite pug mill (ECC 1998) (as with Study Area 16, this concentration is less than the OU-6 IROD excavation criterion). Stabilized soils were placed in the onsite disposal area. Excavation confirmatory samples were collected after completion of excavation activities to confirm that contaminated soil had been removed.

The existing surface of the Study Area 22 Landfill was cleared and graded prior to the installation of a 30-mil polyvinyl chloride (PVC) membrane liner. The liner was covered with a protective soil and grass layer that was sloped to drain. The boundaries of the completed landfill cover were surveyed and marked. Complete details of the Study Area 22 Landfill closure are contained in the Final Report for Area 22, Landfill Cap (ECC 1999). Since closure, the landfill has been fenced to prevent unauthorized access.

Weston submitted the Draft Project Closeout Reports for both OU-2 and OU-6 in July 1998.

2.3.3 OU-7 Remedy Implementation

Implementation of the remedy selected for Study Area 2 in the OU-7 ROD required excavation and offsite disposal of PAH-contaminated soil at an offsite landfill and implementation of LUCs (SAIC 2010). The selected active remedy for Study Area 2 was implemented in accordance with the Project Plans prepared by SpecPro Environmental Services LLC (SES) (SES 2009a) that included a site safety and health plan (SSHP), waste management plan, and quality control (QC) plan. SES excavated approximately

168 cubic yards of PAH-contaminated soil and disposed of the soil offsite to the Three Corners Landfill, a RCRA Subtitle D landfill, in Piedmont, Alabama. Sixteen confirmation samples were collected at least 1 foot below the existing grade at the excavated area to confirm that the contamination was removed. Backfill material was obtained from an onsite borrow pit approximately 1,100 feet north of the excavation area and placed into the excavated area. Further detail, including the excavated soil depth, volume, and confirmation sample locations and results, is provided in the *Project Report for Landfill Maintenance and PAH Contaminated Soil Removal at the Former Alabama Army Ammunition Plant* (SES 2009b).

A LUC Implementation Plan (LUCIP) (Leidos 2013) was prepared and implemented to meet the objectives of the LUC remedy described in the OU-7 ROD. In addition to the OU-7 ROD, three additional instruments impose restrictions on the ALAAP – Area B property. These instruments are the Quitclaim Deed, which transferred ALAAP – Area B to the city of Childersburg; the subsequent Environmental Covenant developed by the LRA pursuant to the Alabama Uniform Environmental Covenants Act (AUECA) and the regulations promulgated thereunder; and Childersburg LRA Ordinance No. 1078. Annual inspections are performed at ALAAP – Area B as required by the LUCIP. The LUCs and additional restrictions placed on ALAAP – Area B that pertain to the subject of this FYR (i.e., OU-7 ROD study areas) are summarized in Table 2-4.

A Remedial Action Completion Report (RACR) was prepared to document remedial actions that were conducted at OU-7 (including OU-1, OU-2, and OU-6) study areas to protect public health, welfare, and/or the environment. The RACR, dated February 2021, was approved by ADEM on June 14, 2021, and EPA on July 25, 2022.

Table 2-4. Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama

Instrument	Applicable Section of Instrument	Description of LUC or Restriction	Media and Area Impacted
ALAAP – Area B OU-7 ROD	Exhibit 1-2, Sections 2.9 and 2.12.4	LUCs shall be implemented to prevent future residential use of the study areas. Residential purposes include residential housing, elementary and secondary schools, and child care facilities.	Soil/Sediment – Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, 26, Building 6 – Coke Oven, South Georgia Road Dump
	Exhibit 1-2, Sections 2.9 and 2.12.4	Signs shall be posted to warn against consumption of fish tissue from Study Areas 21 and 26.	Tissue in fish found in surface water – Study Areas 21 and 26
	Exhibit 1-2, Sections 2.9 and 2.12.4	The effectiveness of LUCs shall be monitored through performance of annual inspections.	Soil/Sediment – Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 26, Building 6 – Coke Oven, South Georgia Road Dump
	Exhibit 1-2, Sections 2.9 and 2.12.4	LUCs shall be implemented to prevent excavation, digging, drilling, or other activities that may damage the landfill cap within Study Area 22 (Demolition Landfill).	Soil – Study Area 22
	Exhibit 1-2, Sections 2.9 and 2.12.4	Effectiveness of the LUCs at Study Area 22 (Demolition Landfill) shall be monitored through annual inspections.	Soil – Study Area 22
	Exhibit 1-2, Section 2.9, and 2.12.4	Damage to the landfill cap at Study Area 22 (Demolition Landfill) shall be monitored through annual inspections. Maintenance of the cap shall be conducted.	Soil – Study Area 22
2003 Quitclaim Deed	Exhibit C, II.B.1.a	The property is intended to be used as an industrial park with ancillary commercial, recreational, and natural habitat areas.	Soil/Sediment – All of Area B
	Exhibit C, III.A	The property shall be used solely for commercial and industrial purposes that include, but are not limited to, administrative/office space, manufacturing, warehousing, restaurants, hotels/motels, and retail activities.	Soil/Sediment – All of Area B
	Exhibit C, III.A	The property shall not be used for residential purposes that include, but are not limited to, housing, day care facilities, schools (excluding education and training programs for persons over 18 years of age), and assisted living facilities.	Soil/Sediment – All of Area B
	Exhibit C, III.B	Access or use of groundwater underlying ALAAP – Area B is prohibited without the prior written approval of the Army, ADEM, and EPA.	Groundwater – All of Area B

Table 2-4. Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)

Instrument	Applicable Section of Instrument	Description of LUC or Restriction	Media and Area Impacted
	Exhibit C, III.C	Excavation, digging, drilling, or other disturbance of the soil is prohibited without an approved excavation plan that includes contingencies that define the actions to be taken if groundwater or contaminated soil is encountered. The excavation plan must be approved by the Army and EPA (in consultation with ADEM).	Soil/Sediment – All of Area B
	Exhibit C. III.D.1	Excavation, digging, drilling, or other activities that would damage the soil cover and liner of the NHWL are prohibited.	Soil – NHWL
	Exhibit C. III.D.1	Maintenance of the fence and signs is required at the NHWL.	NHWL
	Exhibit C. III.D.1	The owner shall promptly notify the Army of any breaches in the landfill soil cover.	Soil – NHWL
	Exhibit C. III.D.2	Excavation, digging, drilling, or other activities that would damage the cap on the Asbestos Repository are prohibited.	Soil – Asbestos Repository
	Exhibit C. III.D.2	The owner shall promptly notify the Army of any breaches in the cap of the Asbestos Repository.	Soil – Asbestos Repository
	Exhibit C. III.D.3	Excavation, digging, drilling, or other activities that would damage the cap on Study Area 22 (Demolition Landfill) are prohibited.	Soil – Study Area 22 – Demolition Landfill
	Exhibit C. III.D.3	The owner shall promptly notify the Army of any breaches in the cap on Study Area 22 (Demolition Landfill).	Soil – Study Area 22 – Demolition Landfill
	Exhibit C. III.D.4	Excavation, digging, drilling, or other activities that may interfere with the Army's remediation of the South Georgia Road Dump are prohibited until the time that the remediation activities are complete and the Remedial Action Report is approved by the regulatory Agency.	Soil – South Georgia Road Dump
AUECA Environmental Covenant	Paragraph 2.	Property is restricted to commercial and industrial purposes only. Commercial and industrial uses include, but are not limited to, administrative/office space, manufacturing, warehousing, restaurants, hotels/motels, and retail activities.	Soil/Sediment – All of Area B

Table 2-4. Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)

Instrument	Applicable Section of Instrument	Description of LUC or Restriction	Media and Area Impacted
	Paragraph 2.	The property shall not be used for residential purposes that include, but are not limited to, housing, day care facilities, schools (excluding education and training programs for persons over 18 years of age), and assisted living facilities. Playgrounds associated with commercial or industrial uses will not be permitted.	Soil/Sediment – All of Area B
	Paragraph 2.	Access or use of groundwater underlying the property for any purpose is prohibited without the prior written approval of the city of Childersburg, Army, ADEM, and EPA.	Groundwater – All of Area B.
	Paragraph 3.B	The owner shall send written notification to the city of Childersburg, ADEM, Army, and EPA following transfer of a specified interest in, or concerning proposed changes in use of, applications for building permits for, or proposals for any site work affecting the contamination on the Property.	Soil/Sediment – All of Area B
	Paragraph 3.D	On the anniversary of the date the AUECA Environmental Covenant was signed by the city of Childersburg, the owner shall submit an annual report to EPA and ADEM detailing the compliance, and any lack of compliance with the terms of the Covenant.	Soil/Sediment – All of Area B
City of Childersburg Ordinance No. 1078	Not Applicable	A city ordinance is in place that prohibits the development of playgrounds associated with commercial or industrial use.	Soil/Sediment – All of Area B

ADEM = Alabama Department of Environmental Management
ALAAP = Alabama Army Ammunition Plant
EPA = U.S. Environmental Protection Agency
LUC = Land Use Control
NHWL = Non-hazardous Waste Landfill
OU = Operable Unit
ROD = Record of Decision

3. PROGRESS SINCE THE LAST REVIEW

This section includes information regarding the unresolved issue from the Third FYR (Leidos 2014), as well as the protectiveness determinations/statements, recommendations, and the current status of those recommendations from the Fourth FYR (Table 3-1).

3.1 THIRD FYR

As part of the regulatory review of the Third FYR, EPA and the Army were not in agreement regarding the Protectiveness Statements nor in the recommendation related to the NHWL presented in the document. EPA prepared a letter, dated September 5, 2013, that included changes they requested to be made to the Protectiveness Statements and recommendations. This letter is included in Attachment A. Additional correspondence between EPA and the Army on the Protectiveness Statements and recommendations included an additional letter prepared by EPA, dated April 2, 2014, and a follow-up letter from the Army to EPA, dated May 20, 2014. The additional correspondence is included in Attachment A.

EPA issued 'Short-term Protective' protectiveness statements for OU-1, OU-2, and OU-6 and noted the following requirements for the remedy to be protective in the long term: "*revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.*" The final version of the Third FYR contained the Protectiveness Statements and recommendations prepared by the Army. ADEM provided concurrence on the Third FYR in a letter dated June 17, 2013.

Because EPA and the Army did not resolve the Protectiveness Statements and recommendation for the NHWL, EPA initiated a dispute in July 2013. The dispute had not been resolved at the time of the Fourth FYR (Leidos 2018). Between April and July 2022, EPA, ADEM, and the Army signed the IDRA that resolved the path forward at the NHWL. The Army will prepare an ESD to outline the addition or refinement of Alabama solid waste landfill ARARs to ensure the landfill remains protective during its term of post-closure. The ESD has not yet been finalized. The signed IDRA is included in Attachment A.

3.2 FOURTH FYR

As a part of the regulatory review of the Fourth FYR (Leidos 2018), EPA and the Army were not in agreement regarding the Protectiveness Statements nor in the recommendations presented in the document. EPA prepared a letter, dated September 13, 2018, that included changes they requested to be made to the Protectiveness Statements and recommendations. The letter is included in Attachment A. Table 3-1 provides the protectiveness determination/statements as well as the issues, recommendations, and status from EPA and the Army. ADEM provided concurrence on the Fourth FYR in a letter dated November 8, 2018. The letter is included in Attachment A.

3.3 FIFTH FYR

Regulatory review correspondence for the current Fifth FYR is included in Attachment E.

.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

Table 3-1. Protectiveness Determinations/Statements from the Fourth FYR
Alabama Army Ammunition Plant, Childersburg, Alabama

OU#	Army		EPA		Army Issue	Army Recommendation	EPA Issue	EPA Recommendation	Current Status	Current Implementation Status	Completion Date
	Protectiveness Determination	Protectiveness Statement	Protectiveness Determination	Protectiveness Statement							
Fourth FYR											
7	Protectiveness Deferred	A protectiveness determination cannot be made at this time. Additional time is needed to determine if the current and likely future activity at ALAAP – Area B could result in human exposure to ACM above a level of concern for commercial/industrial receptors. It is expected that these actions will take approximately 24 months to complete. At that time, a protectiveness determination will be made.	Not Protective	The remedy at OU-7 is not protective because asbestos was found widely distributed throughout the site from historical building demolition activities. The Army has completed an initial assessment and pick-up of visual asbestos; however, EPA or ADEM did not oversee these activities. In addition, previous FYRs determined that the NHWL was not properly selected in the OU-1, OU-2, and OU-6 decision documents, resulting in a lack of clarity regarding O&M of the landfill. The remedies need to be modified to be consistent with the TBD ARAR, including monitoring requirements to determine whether the material is leaching from the landfill. EPA, ADEM, and Army representatives continue to dispute the best actions to resolve this issue. This Protectiveness Determination makes recommendations to remedy these concerns, and until implemented, this OU cannot be considered protective.	Although abatement was conducted to remove ACM from the ground surface at ALAAP – Area B, it is possible that there are pieces of ACM remaining under soil, sediment, and organic matter deposited over the decades since structures were demolished. The degree of human exposure is unknown.	Evaluate whether the current and likely future activity at ALAAP – Area B could result in human exposure to ACM above a level of concern for commercial/industrial receptors.	Asbestos was released during building demolition activities in the 1970s. The Army has taken action to clean up visible asbestos; however, overall risk has not been evaluated.	Complete characterization activities for asbestos contamination and determine whether additional remedial actions are required.	IDRA signed on September 29, 2022, to investigate asbestos at ALAAP – Area B under a separate OU (OU-8).	One of several scoping meetings held on November 14, 2022, to begin to determine path forward for OU-8 asbestos. The scoping meeting was used to discuss the contents of the IDRA, strategies for investigation at ALAAP – Area B, and the path forward for asbestos sampling and investigation at Cooper Steel.	TBD

ACM = Asbestos-Containing Material
ADEM = Alabama Department of Environmental Management
ALAAP = Alabama Army Ammunition Plant
ARAR = Applicable or Relevant and Appropriate Requirement
EPA = U.S. Environmental Protection Agency
FYR = Five-Year Review
IDRA = Informal Dispute Resolution Agreement
NHWL = Non-Hazardous Waste Landfill
O&M = Operation and Maintenance
OU = Operable Unit
TBD = To Be Determined

THIS PAGE WAS INTENTIONALLY LEFT BLANK

4. FIVE-YEAR REVIEW PROCESS

4.1 COMMUNITY NOTIFICATION, INVOLVEMENT, AND SITE INTERVIEWS

On June 15 and June 22, 2022, a public notice was published in the *Daily Home* (Talladega, Alabama) announcing the commencement of the FYR process for the ALAAP site, providing contact information for USACE, and inviting community participation. The public notice is available in Attachment B. In addition, questionnaires were mailed to all landowners and all local officials who represent the pubic. No responses to the published public notice were received during the public comment period (June 15 through July 14, 2022).

This Fifth FYR Report will be made available to the public once it has been finalized. Copies of this document will be placed in the designated public repository: Earle A. Rainwater Memorial Library, 124 Ninth Avenue SW, Childersburg, Alabama, 35044. Upon completion of this Fifth FYR, a public notice will be placed in the *Daily Home* to announce the availability of the final Fifth FYR Report in the site document repository.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The results of these interviews are summarized below.

The city of Childersburg Clerk, the Mayor, and the Talladega County Economic Development Authority Executive Director were interviewed on Wednesday, June 8, 2022, and afforded an opportunity to respond to the questions posed on the interview record contained in Attachment C. In general, the responses from each of these interviewees focused on the frustration associated with the slow forward progress in selling property to prospective entities due to asbestos concerns and no clear plan to address the concerns. Each interviewee indicated that while there has been substantial interest from prospective buyers, the asbestos issues and signage ultimately drove buyers elsewhere. Following the site visit, the aforementioned city officials and representatives were mailed letters containing an interview form for completion in case of further comments. No interview forms were returned during the public comment period.

Letters containing an interview form for completion were mailed to two additional city of Childersburg council members and two regulatory agency representatives. The EPA Region 4 Senior Remedial Project Manager and the ADEM Project Manager for ALAAP provided responses via email, as contained in Attachment C. In general, the responses indicate that the regulatory agencies want to facilitate the cleanup and redevelopment process given that protectiveness of human health and the environment continue to be maintained.

The ADEM Project Manager for ALAAP returned the completed questionnaire provided in Attachment C. In general, the responses indicate that the project aims to be protective of human health and the environment and should continue toward that goal.

On Wednesday, June 8, 2022, the Army held a meeting at the R.S. Limbaugh Community Center in Childersburg, Alabama, to discuss the ALAAP site and current issues. City officials and local representatives, Army representatives, a USACE representative, an EPA representative, ADEM representatives, and a Leidos representative were invited. Topics of discussion included the FYR, city and county plans for development at ALAAP, the annual LUC inspection, the LUCIP, groundwater monitoring, and asbestos. The agenda for the meeting is included in Attachment C.

At the meeting Ken Wesson, Mayor of Childersburg, and Calvin Miller, Director of the Talladega County Economic Development Authority, described a number of organizations that are potentially interested in property at ALAAP – Area B. The group discussed ways in which the LUC signs might be

made less intimidating to potential purchasers of property within Area B. The group also toured the site to evaluate property with potential asbestos concerns.

4.2 LANDOWNER INTERVIEWS

Letters were mailed to landowners who have purchased property within the ALAAP property boundaries from the city of Childersburg since the property was transferred from the Army to the city. The letters, along with an interview form for completion, were mailed to nine property owners. The business entities and property owners included ENEOS USA, Inc. (listed as Nippon Oil Lubricants), Eric David McLain, DCI South Properties LLC, Blair Block LLC, Benson 2013 Joint Revocable Trust, Roy J. Gaither, Talladega Economic Development Authority, and Childhood Food Solutions.

A response was received from Matt Blair, owner and Vice President of Blair Block. Mr. Blair said that his overall impression of ALAAP was that he likes being "off the beaten path" and that he has always had good communication from the Army. He answered that he is aware of the use restrictions on the property, specifically noting the groundwater use restriction. He did not have any plans to purchase additional ALAAP property nor to sell or lease any of his property to another entity He was not aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities. He did not provide any comments, suggestions, or recommendations regarding management or operation of the ALAAP site.

A response was received from Sonya Reynolds, Chief Production Officer and Plant Manager at ENEOS USA, Inc. (listed as Nippon Oil Lubricants). Ms. Reynolds said that her overall impression of ALAAP was good, stating that the area offers a great environment for industrial use, such as the use of the site by ENEOS USA, Inc. She did not state if the site has any effects on the ENEOS property or the surrounding community. She answered that she is aware of the use restrictions on the property. Ms. Reynolds said that ENEOS may have plans to purchase additional ALAAP property in the future. ENEOS does not have any plans to drill wells on the property, but they may expand in the future. Ms. Reynolds indicated that she was not aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities. She did not have any comments, suggestions, or recommendations regarding management or operation of the site.

A response was received from Eric Dauber, President of Dauber Company (listed as DCI Properties). Mr. Dauber said that his overall impression of ALAAP was good. He responded that the site did not have any effects on the Dauber property or the surrounding community. He answered that he is aware of the use restrictions on the property. He said that Dauber is not planning to purchase additional ALAAP property, to sell or lease any of the existing Dauber property to another entity, or to build new structures or drill wells on the property. Mr. Dauber is not aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities. He did not have any comments, suggestions, or recommendations regarding management or operation of the site.

A response was received from James Jones, Board Chairman of Alabama Childhood Food Solutions, Inc. (listed as Childhood Food Solutions). Mr. Jones indicated that he had no opinion of ALAAP. He responded that a site evaluation prevents planned use of the property, and the property was returned to the city of Childersburg on August 26, 2022. He stated that nitrate and other chemical contaminants prevent use of the property by Alabama Childhood Food Solutions as a food distribution center. Mr. Jones indicated that Alabama Childhood Food Solutions does not have plans to purchase any additional ALAAP property. He was not aware of any events, incidents, or activities at the site, such as vandalism, trespassing, or emergency responses from local authorities.

The letter from the Army and the completed interview forms received from Blair Block; ENEOS USA, Inc. (Nippon Oil Lubricants); Dauber Company (DCI Properties); and Alabama Childhood Food Solutions, Inc. (Childhood Food Solutions) are provided in Attachment C.

4.3 DATA REVIEW

No soil, sediment, or surface water analytical data have been collected since the previous FYR.

4.4 SITE INSPECTION

The Site Inspection for this FYR was conducted between Wednesday, June 8 and Thursday, June 9, 2022. Mike Klidzejs (Leidos), Linda Meredith (Leidos), and Sarah Carter (Leidos) were in attendance. Representatives from EPA, ADEM, USACE, and the Army were informed of the inspection date 2 weeks prior to the inspection and offered an opportunity to participate. The purpose of the inspection was to assess the protectiveness of the remedy. The Study Area 22 landfill was assessed during the inspection. Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 26, Building 6 – Coke Oven, and the South Georgia Road Dump also were observed. However, vegetation has almost completely reclaimed these areas from prior clearcutting. Both the NHWL and Study Area 22 landfill inspection was performed to check the integrity of the cover and to ensure that the fences and gate provided security. The study areas were observed during the site inspection to detect any violation of LUCs (e.g., signs of excavation, trespassing, unauthorized use).

The completed site inspection checklist and photographs from the site inspection are provided in Attachment D. During the inspections of the NHWL and Study Area 22 landfill, it was noted that the fences around both landfills showed minor damage, but the damage does not threaten the integrity of either cover or the security of ether of the landfills. Woody growth was also observed in the fences of both landfills. No evidence of significant erosion, slumping, rilling, or other conditions that would question the integrity of the cap was observed. One small bare spot on the cover to the NHWL near the gate on the southern side was observed. Fencing and gates around the landfill were intact and locked. LUC signs remaining onsite were observed. Some LUC signs have been removed, and EPA/ADEM have commented that signs need to be replaced. The LUCIP prohibits residential use and stipulates industrial and commercial use of the property with ancillary commercial, recreational, and natural habitat areas. During the inspection, no indication of persons fishing was observed.

A private party purchased a parcel (Parcel 7) in the southwestern corner of the site near Study Area 21, and this parcel has been developed as a food plot to grow crops that attract game species for hunting. During the October 2022 LUC inspection, the food plot appeared to have been recently worked and seeded. The ground was generally bare and seeded with mostly rye and possibly wheat. Several structures were present nearby. This area is not within the boundaries of a study area that requires LUCs. Therefore, this action does not violate LUC requirements.

A new gate and cleared area were observed between Nippon and the parcel with the food plot near Study Area 21. Soil disturbance does not appear to have occurred in the cleared area, and the gate and cleared area are not within the boundary of a study area that requires LUCs. Therefore, an excavation permit would not have been required. This activity does not violate LUC requirements.

An additional observation during the October 2022 LUC inspection confirmed the presence of a second food plot located in the northwestern portion of Study Area 10W on Parcel 17. This parcel is owned by a different entity than Parcel 7. The area that was observed on Parcel 17 is within the boundaries of Study Area 10W, which requires LUCs, including preparation and approval of an excavation permit, if soil disturbance is anticipated. The property is private and is not public hunting land. The COC identified within Study Area 10W soils is lead. Because no excavation permit was submitted for the activity within Parcel 17, this ground disturbance is likely a violation of LUC requirements.

All landowners were reminded of the LUCs and deed restrictions in a letter dated June 13, 2022 as part of the Army's effort to solicit input on remedy effectiveness at ALAAP Area B.

It was noted that dirt bike trails on the southeastern portion of ALAAP – Area B property had been built. The dirt bike trails are not within the boundaries of any study areas with LUCs and an excavation

plan was not required for clearing vegetation for the dirt bike trails. This activity does not violate LUC requirements.

An additional observation noted during the October 2022 LUC inspection was the application of gravel by the city of Childersburg to an existing dirt road leading to the dirt bike trails. Gravel was applied to the exis4-4ting dirt road. An excavation plan was not required for this activity because excavation was not required to apply gravel to the existing road. This activity does not violate LUC requirements.

Annual inspections of ALAAP – Area B are also performed as required in the LUCIP. The results of the 2018, 2019, 2020, and 2021 LUC inspections are presented in the Land Use Control Inspection Report – 2018 (Leidos 2019), the Land Use Control Inspection Report – 2019 (Leidos 2020a), the Land Use Control Inspection Report – 2020 (Leidos 2021), and the Land Use Control Inspection Report – 2021 (Leidos 2022). During the annual inspections, a records review, interviews with regulatory agency and Army representatives, and a site inspection of relevant study areas within ALAAP – Area B showed that the site was generally in compliance with LUC requirements. However, an informal dispute on the LUCIP revision has been ongoing since 2019 and remains unresolved. The informal dispute is summarized below:

- July 3, 2018 – The Army issued the Draft LUCIP, Alabama Army Ammunition Plant – Area B, Revision 01 (Leidos 2020b), a revision to the November 2013 LUCIP, in response to public comments received on the Fourth FYR (Leidos 2018) that the warning signs were overly restrictive and unwarranted. The document was sent to the city of Childersburg, EPA, and ADEM.
- February 27, 2019 – EPA provided comments on the Draft LUCIP.
- 2019 – As a result of the revision to the LUCIP, the city of Childersburg removed many of the warning signs. This was noted in the 2019 LUC Inspection Report (Leidos 2020a). The missing signs were noticed by the Army during a site visit in October 2019. The Army emailed EPA and ADEM to notify them of the missing signs, as required in the LUCIP. The LUCIP requires notification of any action that may interfere with the effectiveness of the LUCs. An IDRA has been signed by the Army, EPA, and ADEM to resolve how signs will be replaced.
- January 28, 2020 – The Army issued the Draft Final LUCIP Revision 01 with Responses to Comments to EPA and ADEM (Leidos 2020b).
- March 24, 2020 – EPA issued a letter rejecting the draft final submission and invoked an informal dispute.
- April 16, 2020 – ADEM issued a letter approving the Draft Final LUCIP Revision 01 (Leidos 2020b).
- April 2021 – A site visit was conducted with the goal of determining the number and location of signs with an EPA contractor in attendance. During this site visit, the EPA contractor was shown all remaining LUC signs. An ADEM representative did not participate in this site visit. No resolution regarding the signs resulted from this site visit.

The revised LUCIP remains in informal dispute with EPA, and subsequent LUC inspections have been conducted per the last approved LUCIP (Leidos 2013).

5. TECHNICAL ASSESSMENT

5.1 QUESTION A: IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENTS?

5.1.1 Question A Summary

Yes, the remedies are functioning as intended by the decision documents. Remedies for the site included active remediation, capping of a landfill, and LUCs. Remedies requiring active remediation (e.g., excavation) were completed as planned for in the decision documents (OU-2 and OU-6 IRODs and OU-7 ROD). Sampling was conducted and confirmed that remedial goals were met. Excavated soil and other materials were appropriately treated and disposed of. Landfilled materials in Study Area 22 have been appropriately capped, eliminating a route of exposure. Some study areas were remediated only to allow for continued industrial use; therefore, UU/UE is not appropriate for these areas. Because of this, the OU-7 ROD also selected LUCs as a remedy component. A LUCIP was prepared to document the LUCs (Leidos 2013). The LUCIP incorporated institutional controls that were previously placed on the property as components of the environmental provisions of the Quitclaim Deed that transferred ALAAP – Area B from the Army to the city of Childersburg, a subsequent Alabama Uniform Environmental Covenant, and a city of Childersburg ordinance. Inspections of the LUCs and additional restrictions are performed annually.

5.1.2 Remedial Action Performance

The remedy for Study Areas 2, 7, 10, and 21, as selected in the IROD for OU-2, is functioning as intended. The soil and sediment excavated from Study Areas 2, 7, 10, and 21 were incinerated. Ash that passed TCLP analysis was placed in the NHWL. The NHWL was referred to in the historical documents as the onsite disposal area or backfill area and was selected as a component of the final remedies of the OU-2 and OU-6 IRODs. Any ash or soil that failed TCLP analysis was stabilized and then placed in the NHWL after passing TCLP analysis. Excavated clay pipes from the study areas were handled in an identical manner. The contaminated media have been made nonhazardous, as verified through TCLP testing, and further isolated by placement in the landfill to eliminate threats to human health or the environment.

The remedy for Study Areas 2, 10, 16, 17, and 19, as selected in the IROD for OU-6, is functioning as intended. The soil excavated from Study Areas 2, 10, 16, 17, and 19 was incinerated. Ash that passed TCLP analysis was placed in the NHWL. Any ash or soil that failed TCLP analysis was stabilized and then placed in the NHWL after passing TCLP analysis. The contaminated media have been made nonhazardous, as verified through TCLP testing, and further isolated by placement in the landfill to eliminate threats to human health or the environment.

The remedy for Study Area 22, the Demolition/Debris Landfill (OU-6), as selected in the IROD for OU-6, is functioning as intended. The landfill has been capped with a PVC geomembrane liner and a protective clay cap. The contamination source has been isolated from the environment and no longer presents a threat to human health and the environment. In addition, the landfill is encircled by fencing equipped with a locked gate, thus prohibiting unauthorized access. Inspection of the site revealed the landfill cap has been well maintained. An adequate vegetative cover exists. Mowing has precluded advancement of roots to the depth of the membrane. No evidence exists of any type of breach of the cap by erosion or slumping.

The remedy for Study Area 2, selected in the OU-7 ROD, is functioning as intended. Approximately 168 cubic yards of PAH-contaminated soil were excavated and disposed of offsite to the Three Corners Landfill, a RCRA Subtitle D landfill, in Piedmont, Alabama. Sixteen confirmation samples were collected at least 1 foot below the existing grade at the excavated area to confirm that the contamination was removed. Backfill material was obtained from an onsite borrow pit and placed into the excavated area.

The LUC remedy selected for the OU-7 study areas (Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, 26, Building 6 – Coke Oven, and the South Georgia Road Dump) is functioning as intended, as described in Section 5.1.4.

5.1.3 System Operations/Operation and Maintenance

The Study Area 22 Landfill is part of a remedy and requires inspection as part of the FYR process. During the site inspection, the NHWL was also inspected as part of the FYR process. The city of Childersburg is responsible for maintenance of the property and the landfills. Periodic inspections of the landfills ensure that maintenance is performed as required. During the inspection of the landfills conducted for this FYR, some minor issues were noted that included minor damage to the fences and woody growth in the fences of both landfills. No evidence of significant erosion, slumping, rilling, or other conditions that would question the integrity of either of the landfill caps was observed. One small bare spot on the cover to the NHWL near the gate on the southern side was observed. None of the observations threaten the integrity of the covers or the security to the landfills. Since the inspection of the landfills, woody growth was removed from the fences and the small bare spot on the cover to the NHWL was repaired.

5.1.4 Implementation of Institutional Control and Other Measures

The Office of Solid Waste and Emergency Response Directive 9355.7-18, titled "Recommended Evaluation of Institutional Controls: Supplement to the Comprehensive Five-Year Review Guidance,'" provides recommendations for conducting FYRs for the institutional control component of the remedy. In general, the guidance requires that the institutional controls be reviewed to determine if they are being implemented and control risks as intended.

Institutional controls were selected in the OU-7 ROD. These institutional controls were selected based on restrictions and requirements placed on the ALAAP – Area B property. Additional restrictions on the property are outlined in the Quitclaim Deed, which transferred ALAAP – Area B to the city of Childersburg. Likewise, the Environmental Covenant also outlines restrictions placed on the ALAAP – Area B property, and a city of Childersburg LRA Ordinance contains a restriction that pertains to the study areas included in the OU-7 ROD. A LUCIP (Leidos 2013) has been prepared to document the controls required for study areas included in the OU-7 ROD. The mechanisms for the implementation, monitoring, and enforcement of LUCs are described in the LUCIP. The land use assumptions made as part of the remedy decision continue to remain accurate. The physical areas that require LUCs and additional restrictions are identified and clearly shown in the LUCIP. In addition, the ROD that details the selection of LUCs and the LUCIP are readily available to the public and to property owners.

Inspections have been conducted and the inspection checklist is provided in Attachment D. The results of these inspections and the results of interviews and site inspections (conducted for this FYR) indicate that LUCs are in place and are functioning as intended.

5.2 QUESTION B: ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS, AND RAOs USED AT THE TIME OF REMEDY SELECTION STILL VALID?

5.2.1 Question B Summary

In evaluating human health risk, changes to toxicity values, exposure pathways and assumptions, and risk methods were examined. Changes have been made based on EPA guidance (the majority are changes to toxicity values). The effect of these changes was assessed in two ways:

- By comparing the study area cleanup goals to current industrial regional screening levels (RSLs) (reflecting a target cancer risk of 1 × 10-5 and a target HQ of 1)
- By comparing the study area exposure point concentrations (EPCs) to the current industrial RSLs.

The comparisons show that although some of the current industrial RSLs are less than the ROD cleanup goals, most of the site COC EPCs meet the current industrial RSLs; therefore, they are protective

of human health. The exceptions are: 1) arsenic in soils at Study Areas 3, 8, 17, 18, 19, and Building 6 – Coke Oven; 2) lead in soil at South Georgia Road Dump; and 2) 2,4-DNT in subsurface soil at Study Area 2. However, arsenic is naturally occurring in soil and the exceedances are modest, with concentrations exceeding the RSL up to two times and exceeding the background comparison values up to three times. It is believed that the arsenic concentrations in soil are more indicative of natural variability rather than site-related contamination. For lead at South Georgia Road Dump, although the site surface soil EPC exceeded the industrial RSL, it did not exceed the cleanup goal calculated using EPA's Adult Lead Model (ALM).

For 2,4-DNT at Study Area 2, a remedial action was conducted as part of the OU-6 IROD. A small area of soil containing 2,4-DNT was excavated to meet the cleanup criteria of 356 mg/kg. A maximum concentration of 2,4-DNT (99.3 mg/kg) was detected in the subsurface soil at a location northeast of the excavated area. This concentration exceeds the current industrial RSL for 2,4-DNT (74 mg/kg) by less than two times. However, in residual soil samples (i.e., soils remaining after the removal action), 2,4-DNT was detected only once in six subsurface soil samples and once in seven surface soil samples (at a maximum concentration of 0.48 mg/kg). Concentrations at the surface do not exceed the current industrial RSL, and a realistic subsurface soil EPC (i.e., the concentration used to calculate risk) would likely be significantly lower than 99 mg/kg. This is because the 99 mg/kg represents one sample location, and workers are more likely to average their exposure across an area (i.e., the exposure unit) (where other concentrations are nondetect or significantly lower) rather than remain in one place. In addition, exposure to subsurface soil would likely involve mixing of the subsurface soil with the surface soil, which would result in reducing the EPC. For these reasons, it is believed that this one concentration exceeding the industrial RSL would not result in unacceptable risk.

In evaluating ecological risk, it was determined that no concerns were related to ecological receptors. Through the completion of a screening-level ecological risk assessment (SERA) and BERA, a WOE evaluation, and scientific risk management decision making, no ecoCOCs were determined to warrant consideration in evaluating additional remedial actions for the site. Additional field studies in 2013 and observations from that time until the present have been performed for the site and continue to show that the remedies are protective regarding ecological risk. The site continues to maintain terrestrial and aquatic habitats with functioning food webs and food chains, but changes to advance the site as an industrial park render these ecological conditions less meaningful. In short, the site is not being managed for ecological purposes but rather for industrial use and economic development. The same risk assessment including WOE methods remains currently applicable, and no changes to the outcome would be expected.

5.2.2 Human Health Risk

This section addresses the information related to human health risk for Question B.

5.2.2.1 Changes in Toxicity and Other Contaminant Characteristics

Current FYR – For the current FYR, the toxicity values used in the RI were compared to the 2022 toxicity values (EPA 2022). The changes discussed during the Fourth FYR are still valid and are discussed below. One additional change was noted during the current FYR: the addition of an inhalation reference concentration (RfC) for antimony. Inhalation is a minor exposure route for antimony (i.e., the risks are dominated by the ingestion and dermal contact pathways) such that the addition of the RfC would have little effect on the overall antimony risk. Table 5-1 includes the changes identified during both the Fourth and the current FYRs.

Fourth FYR (Leidos 2018) – The changes to toxicity values identified during the Fourth FYR are discussed below:

- Changes or addition of inhalation toxicity values (i.e., inhalation unit risks [IURs] and RfCs) were noted for arsenic (gained an RfC), nickel (gained both an IUR and an RfC), 2,4-DNT

Table 5-1. Comparison of Historical and Current Toxicity Values for Human Health COCs
ALAAP OU-7 Five-Year Review
Alabama Army Ammunition Plant, Childersburg, Alabama

Residential and Industrial COCs[a]	Study Areas	Cancer Effects				Noncancer Effects			
		Oral CSF		Inhalation IUR		Oral RfD		Inhalation RfC	
		OU-7 CSF $(mg/kg\text{-}day)^{-1}$	Current CSF[b] $(mg/kg\text{-}day)^{-1}$	OU-7 IUR $(\mu g/m^3)^{-1}$	Current IUR[b] $(\mu g/m^3)^{-1}$	OU-7 RfD (mg/kg-day)	Current RfD[b] (mg/kg-day)	OU-7 RfC (mg/m^3)	Current RfC[b] (mg/m^3)
Antimony	8	-	-	-	-	4.00E-04	4.00E-04	-	**3.00E-04**
Arsenic	2, 3, 8, 16, 17, 18, 19, B6	1.5	1.5	4.30E-03	4.30E-03	3.00E-04	3.00E-04	-	**1.50E-05**
Lead[c]	OU-2, OU-6, 4, 8, 10W, 16, SGRD	-	-	-	-	-	-	-	-
Nickel	8	-	-	-	**2.60E-04**	2.00E-02	2.00E-02	-	**9.00E-05**
1,3-Dinitrobenzene	OU-2, OU-6					1.00E-04	1.00E-04		
2,4-Dinitrotoluene	2, OU-6	0.68[d]	0.68[d]/**0.31**	-	**8.90E-05**	2.00E-03	2.00E-03	-	-
2,6-Dinitrotoluene	OU-6	0.68[d]	0.68[d]/**1.5**	-	-	1.00E-03	**3.00E-04**		
Tetryl	OU-2, OU-6					1.00E-02	**2.00E-03**		
1,3,5-Trinitrobenzene	OU-6					3.00E-02	3.00E-02		
2,4,6-Trinitrotoluene	7, 16, OU-2, OU-6	3.00E-02	3.00E-02	-	-	5.00E-04	5.00E-04	-	-
Benzo(a)anthracene	2, 8, 16	[e]	[e]	[e]	[e]	3.00E-02	[e]	-	[e]
Benzo(a)pyrene	2, 8, 16	7.30E+00	**1.00E+00**	8.86E-4[f]	**6.00E-04**	3.00E-02	**3.00E-04**	-	**2.00E-06**
Benzo(b)fluoranthene	2, 8, 16	[e]	[e]	[e]	[e]	3.00E-02	[e]	-	[e]
Benzo(k)fluoranthene	2	[e]	[e]	[e]	[e]	3.00E-02	[e]	-	[e]
Dibenzo(a,h)anthracene	2, 8, 16	[e]	[e]	[e]	[e]	3.00E-02	[e]	-	[e]
Indeno(1,2,3-cd)pyrene	2, 8, 16	[e]	[e]	[e]	[e]	3.00E-02	[e]	-	[e]

Bolded values indicate a change from those used to support the OU- 7 ROD.

ALAAP = Alabama Army Ammunition Plant
COC = Chemical of Concern
CSF = Cancer Slope Factor
DNT = Dinitrotoluene
EPA = U.S. Environmental Protection Agency
IROD = Interim Record of Decision
IUR = Inhalation Unit Risk
OU = Operable Unit
RfC = Reference Concentration
RfD = Reference Dose
ROD = Record of Decision

[a]The source for the chemicals of concern is the 2010 ALAAP Area B ROD (Table 2-19) and the OU-2 and OU-6 IRODs; residential COCs are included to ensure that changes to toxicity do not cause residential COCs to become industrial COCs.
[b]The source for the current toxicity values is the EPA RSL tables (May 2022) (EPA 2022).
[c]Models were used to assess risk from exposure to lead.
[d]The CSF for the mixture of 2,4-DNT and 2,6-DNT is used.
[e]Concentrations are converted to benzo(a)pyrene equivalents and the toxicity values for benzo(a)pyrene are applied.
[f]The IUR was converted from the inhalation CSF of 3.1 $(mg/kg\text{-}day)^{-1}$.

(gained an IUR), and benzo(a)pyrene (change to the IUR and gained an RfC). However, inhalation is a minor exposure route for these chemicals (i.e., the risks are dominated by the ingestion and dermal contact pathways) such that the addition or change to the inhalation toxicity values would have little effect on the overall risks.

- For benzo(a)pyrene, the cancer slope factor (CSF) decreased from 7.3 to 1 $(mg/kg\text{-}day)^{-1}$, which would result in lowering the cancer risks associated with benzo(a)pyrene and other carcinogenic PAHs (cPAHs) (because cancer risks for other cPAHs are calculated using the benzo[a]pyrene cancer toxicity values). The noncancer oral reference dose (RfD) for benzo(a)pyrene decreased, which would result in an increase to the noncancer HI.
- For 2,4-DNT and 2,6-DNT, although the combined CSF of 0.68 $(mg/kg\text{-}day)^{-1}$ remained the same, individual CSFs have been developed for each chemical. For 2,4-DNT, the individual CSF is 0.31 $(mg/kg\text{-}day)^{-1}$, which would result in decreasing the cancer risks relative to the use of the combined CSF. For 2,6-DNT, the individual CSF is 1.5 $(mg/kg\text{-}day)^{-1}$, which would result in increasing the cancer risks relative to the use of the combined CSF. In addition, the 2,6-DNT RfD decreased from 1×10^{-3} to 3×10^{-4} mg/kg-day, which would result in increasing the noncancer HI. It should be noted that the current 2,6-DNT toxicity values are Tier 3 provisional toxicity values and thus are associated with a lower level of confidence and certainty than Tier 1 or Tier 2 toxicity values.
- For tetryl, the RfD decreased from 1×10^{-2} to 2×10^{-3} mg/kg-day, which would result in increasing the noncancer HI. As with the newer 2,6-DNT toxicity values, the revised RfD for tetryl is a Tier 3 provisional toxicity value associated with lower confidence and certainty.

5.2.2.2 Changes in Risk Assessment Methods and Exposure Assumptions

Changes to HHRA methods have occurred since the OU-2 and OU-6 IRODs and OU-7 ROD were signed. For example, relative bioavailability is currently considered when calculating arsenic risks from soil ingestion. In addition, changes to exposure assumptions used in the HHRA have been made. For example, the body weight for the industrial worker has increased while the body surface area exposed to soil has decreased. The potential effect of these changes is discussed in Section 5.2.2.4.

5.2.2.3 Changes in Land Use and Exposure Pathways

As required by the environmental provisions of the Quitclaim Deed, the current and future land use for the site has remained and will continue to be commercial and industrial with ancillary commercial, recreational, and natural habitat areas. Residential use is prohibited. Currently, ALAAP – Area B is either occupied by industrial owners or remains unused, with the exception of the parcel owned by Eric David Mclain, which is used for hunting. In addition, no change to the zoning of Area B has occurred.

Human health and ecological receptors and routes of exposure (e.g., ingestion, dermal contact) have not changed since the time of the OU-2 and OU-6 IRODs and OU-7 ROD. The CSM, as it relates to soil contamination and its transport, has not changed since the remedy was completed. As a result, no changes to land use or exposure pathways have occurred that would affect the protectiveness of the remedy.

Evidence of food plots growing crops that attract game species for hunting were found in two areas within ALAAP – Area B. One is located in the southwestern corner of the site near but not within Study Area 21 (i.e., the Red Water Ditch), and the second is located in the northwestern portion of Study Area 10W on Parcel 17. Preparing a food plot would involve exposure to chemicals in soil for the person(s) preparing and seeding the food plot. Animals, such as deer, may eat the crops planted on the food plots, and hunters may kill the deer and eat the venison. However, from a human health risk perspective, it is assumed there is little risk for the person(s) preparing/seeding the plot, for the person(s) hunting, and for those eating the venison or other game meats. Visits to the food plot would likely be infrequent. It is important to note that soils within the study areas were cleaned up to industrial cleanup levels (assuming exposure 250 days per year for 25 years) and that soils outside the study areas have no evidence of contamination from former Area B activities. In addition, studies have shown little bioaccumulation of explosives (the primary COCs

at Area B) into venison (USAEHA 1993 and 1994, CHPPM 1995). Although ACM was found in Area 10W, concerns about exposure to asbestos will be addressed as part of a separate OU.

5.2.2.4 Changes in Cleanup Goals

The effects of changes to toxicity values, risk assessment methods, and exposure assumptions can be assessed by comparing the cleanup goals used to conduct the remedial actions to current risk-based concentrations that are protective of human health. The latter are EPA RSLs for industrial land use (adjusted to reflect a target cancer risk of 1×10^{-5} and a target HQ of 1) (EPA 2022). Because industrial land use is the planned future land use at the OUs and is the basis for the ROD health-based cleanup goals, the industrial RSLs were used for comparison. They incorporate up-to-date toxicity values, exposure assumptions, and risk assessment methods. A target HQ of 1 was used (as opposed to 0.1) because the noncancer COCs at a given study area (both industrial and residential COCs) did not have the same toxic effects. Therefore, the HQs are not considered additive and a more stringent target HQ of 0.1 is not needed to account for additive effects. This comparison is presented in Table 5-2, which shows that the current industrial RSLs for 2,4-DNT, 2,6-DNT, tetryl, and 2,4,6-TNT are lower than the cleanup goals used to conduct the remediation.

Remediation goals represent an upper limit of acceptable concentrations but do not necessarily represent actual concentrations to which receptors may be exposed. Therefore, EPCs present at the study areas following remediation were compared to the current EPA industrial RSLs in Table 5-3. These EPCs were identified in the Final ALAAP – Area B Supplemental RI (SAIC 2001), Project Report for Landfill Maintenance and PAH Contaminated Soil Removal (for Study Area 2) (SES 2009b), and Results of Investigations for the South Georgia Road Dump Site (SAIC 2004).

For OU-7, Table 5-3 shows EPCs in soil exceeding the current adjusted industrial RSL for arsenic, lead, and 2,4-DNT. These exceedances are discussed below:

- Arsenic EPCs exceed the adjusted industrial RSL of 30 at Study Areas 3, 8 (subsurface soil), 17, 18, 19, and Building 6 – Coke Oven soils, ranging from 41 to 54 mg/kg (i.e., up to approximately two times the RSL). For these study areas, the arsenic data sets were small, such that the 95 percent upper confidence limit (UCL) exceeded the maximum detected value or was not calculated. However, it is important to evaluate these exceedances in the context of background. The Area B background comparison values for arsenic (i.e., two times the background mean concentration) are 15 mg/kg in surface soil and 42 mg/kg in subsurface soil, which shows that these maximum detected concentrations only exceed the background values by one to three times (SAIC 2001).
- The lead EPC exceeds the industrial RSL of 800 mg/kg at the South Georgia Road Dump where the mean concentration is 964 mg/kg in surface soil and 399 mg/kg in subsurface soil. Although the surface soil mean concentration exceeds the industrial RSL of 800 mg/kg, it is below the industrial worker cleanup goal calculated using EPA's ALM (1,050 mg/kg) (EPA 2017). This model is applicable to the FYR evaluation process because it was used in the past to calculate blood lead levels and cleanup goals for the South Georgia Road Dump (SAIC 2004) and is currently used to calculate blood lead levels and cleanup levels for workers in an industrial setting.
- The 2,4-DNT maximum detected subsurface soil concentration of 99 mg/kg at Study Area 2 exceeds the industrial soil RSL of 74 mg/kg by less than two times and is associated with a cancer risk that falls within EPA's range of acceptable risk. In residual soil samples (i.e., soils remaining after the removal action), 2,4-DNT was detected in only one of six subsurface soil samples at a depth of 1 foot BLS. Although a 95 percent UCL was calculated, the value exceeded the maximum concentration (and thus the maximum was used as the EPC for risk assessment). 2,4-DNT was not identified as a surface soil COC for any land use in the OU-7 ROD. Note that it was detected in one of seven surface soil samples at a maximum detected concentration of 0.48 mg/kg.

Table 5-2. Comparison of Industrial Cleanup Goals to Current Industrial RSLs
ALAAP OU-7 Five-Year Review
Alabama Army Ammunition Plant, Childersburg, Alabama

Industrial COCs[b]	Study Areas	Industrial Cleanup Goal OU-2 (mg/kg)	Industrial Cleanup Goal OU-6 (mg/kg)	Industrial Cleanup Goal OU-7 (mg/kg)	Current Industrial RSL[a]		
					Cancer TCR = 1E-5 (mg/kg)	Noncancer THQ = 1 (mg/kg)	Selected RSL[c] (mg/kg)
Lead	OU-2, OU-6	500	400	-	-	800	800
1,3-Dinitrobenzene	OU-2, OU-6	1	1	-	-	82	82
2,4-Dinitrotoluene	OU-6	-	356	-	**74[d]**	1,600	**74[d]**
2,6-Dinitrotoluene	OU-6	-	356	-	**15**	**250**	**15**
Tetryl	OU-2, OU-6	5000	5000	-	-	**2,300**	**2,300**
1,3,5-Trinitrobenzene	OU-6	-	36.7	-		32,000	32,000
2,4,6-Trinitrotoluene	OU-2, OU-6	647	348	-	960	**510**	**510**
Benzo(a)anthracene	2	-	-	55	210		210
Benzo(a)pyrene	2	-	-	5.5	21	220	21
Benzo(b)fluoranthene	2	-	-	55	210		210
Benzo(k) fluoranthene	2	-	-	548	2100		2,100
Dibenzo(a,h)anthracene	2	-	-	5.5	21		21
Indeno(1,2,3-cd)pyrene	2	-	-	55	210		210

Bolded values indicate the current industrial RSL is lower than the industrial cleanup goal(s).

ALAAP = Alabama Army Ammunition Plant
COC = Chemical of Concern
DNT = Dinitrotoluene
HQ = Hazard Quotient
OU = Operable Unit
RSL = Regional Screening Level (May 2022) (EPA 2022)
TCR = Target Cancer Risk
THQ = Target Hazard Quotient

[a]The current industrial RSL reflects a target cancer risk of 1×10^{-5} and an HQ of 1.
[b]Only industrial COCs are included because the current and future land use is industrial, and cleanup levels were derived only for this land use.
[c]The selected RSL is the lower of the cancer and noncancer RSL.
[d]The RSL is for the DNT mixture because it is lower than the 2,4-DNT RSL.

For the OU-2 comparison, Table 5-3 shows no exceedances. For the OU-6 comparison, Table 5-3 shows the 2,4-DNT EPC in Study Area 2 subsurface soil (i.e., 99 mg/kg) exceeding the current adjusted industrial RSL of 34 mg/kg. This exceedance was discussed previously as part of OU-7.

5.2.3 Ecological Risk

This section addresses the information related to ecological risk for Question B. A summary of the SERA and BERA for the OU-7 study areas is provided below. An ERA defines the likelihood of harmful effects on plants and animals and their habitats as a result of exposure from chemicals. An ERA for the ALAAP – Area B study areas was conducted as part of the Supplemental RI (SAIC 2001) in accordance with EPA guidance (EPA 1997). Steps 1 and 2 of the Superfund ERA process (EPA 1997) involve a SERA, which uses conservative exposure and affects assumptions to identify chemicals of potential ecological concern (COPECs). A SERA for the study areas at ALAAP was conducted and identified a variety of metals, organics, and explosive-related compounds as COPECs (i.e., HQs >1) in the surface soil, sediment, and surface water.

Following completion of the SERA (Steps 1 and 2), a BERA (Steps 3 through 7 of an ERA) was conducted for study areas where the SERA identified a potential concern. These steps included scientific management decision points during the work. A BERA uses less conservative (more realistic, site-specific data) exposure and effects assumptions to further evaluate identified COPECs. In addition to surface soil, surface water, and sediment data, the BERA performed for ALAAP used site-specific biological data, including bioassays, tissue concentrations, and field-observed effects. For bioassays, soil samples were used for earthworm growth and mortality and plant germination, sediment samples were used for sediment-dweller growth and mortality, and surface water samples were used for water-flea growth and mortality. Bioassay results were used directly to help confirm ecological risk and especially to establish ecological remedial goal options (RGOs) for soil- and sediment-dwelling receptors. Tissue concentrations and field-observed effects support or provide context and site-specific inputs for the BERA (Steps 3 through 7 of an ERA).

The BERA identified metals and organics as ecoCOCs (i.e., HQs >1 with the refined BERA assumptions) for the surface soil, sediment, and surface water media for the OU-7 study areas. The ecoCOCs identified in the BERA are shown in Table 5-4.

As a result of the BERA, no further evaluation of ecological risk was recommended for soil at Study Areas 6, 7, 19, and 22 and sediment at Study Area 16. These sites did not require any further evaluation based on ecological risks as the sites had already been remediated, no COCs were present with HQs above 10, and bioassay data supported the absence of adverse ecological effects.

Based on the results of the BERA, further evaluation of ecological risk was conducted and presented in the FS for ALAAP – Area B (SAIC 2008) for the following OU-7 study areas and media where HQs were calculated greater than or equal to 10 (for ecoCOCs identified in the BERA):

- Soil at Study Areas 2, 10W, 16, and 17
- Surface water at Study Areas 16 and 21
- Sediment at Study Area 21.

A WOE evaluation was used to help risk managers determine the appropriate ecoCOCs for further evaluation in the Area B FS. This work entails Steps 3 through 7, and especially Steps 6 and 7, of the eight-step ERA process (EPA 1997). The WOE evaluation used the results of the BERA, as well as relevant nature and extent information, to select the COCs that were evaluated further in the FS. Media included in the WOE evaluation for ecoCOCs were soil, surface water, and sediment. Each ecoCOC identified in soil, surface water, and sediment was evaluated in the WOE screening using the following eight criteria: 1) known history of use, 2) frequency of detection, 3) comparisons with background, 4) confidence in toxicity data, 5) confidence in ecological exposure data, 6) significance of magnitude of risk, 7) ground-truthing evidence of adverse impacts, and 8) habitat availability with likely future use.

Table 5-3. Comparison of Exposure Point Concentrations in Soils to Current Industrial RSLs
ALAAP OU-7 Five-Year Review
Alabama Army Ammunition Plant, Childersburg, Alabama

Operable Unit 7														
Residential and Industrial COCs[a]	**Study Area**	**Current Industrial Soil RSL[b] (mg/kg)**	**SA 2 Soil EPC (mg/kg)**	**SA 3 Soil EPC (mg/kg)**	**SA 4 Soil EPC (mg/kg)**	**SA 7 Soil EPC (mg/kg)**	**SA 8 Soil EPC (mg/kg)**	**SA 10W Soil EPC (mg/kg)**	**SA 16 Soil EPC (mg/kg)**	**SA 17 Soil EPC (mg/kg)**	**SA 18 Soil EPC (mg/kg)**	**SA 19 Soil EPC (mg/kg)**	**B6 Soil EPC (mg/kg)**	**SGRD Soil EPC (mg/kg)**
Antimony	8	470	-	-	-	-	70 (sb)	-	-	-	-	-	-	-
Arsenic	2, 3, 8, 16, 17, 18, 19, B6	30	21	**43**	-	-	25, **51 (sb)**	-	27	**47/54 (sb)**	**41**	**50 (sb)**	**46 (sb)**	-
Lead	4, 8, 10W, 16, SGRD	800/1,050[d]	-	-	477/274 (sb)	-	221 (sb)	259	470/253 (sb)	-	-	-	-	**964/**399 (sb)
Nickel	8	22,000	-	-	-	-	11000	-	-	-	-	-	-	-
2,4-Dinitrotoluene	2	74	**99 (sb)**	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trinitrotoluene	7, 16	510	-	-	-	62 (sb)	-	-	95 (sb)	-	-	-	-	-
Benzo(a)anthracene	2, 8, 16	210	2.2	-	-	-	16	-	2.6	-	-	-	-	-
Benzo(a)pyrene	2, 8, 16	21	2	-	-	-	8.9	-	2.8	-	-	-	-	-
Benzo(b)fluoranthene	2, 8, 16	210	2.7	-	-	-	7.7	-	4.4	-	-	-	-	-
Benzo(k)fluoranthene	2	2100	0.9	-	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	2, 8, 16	21	0.5	-	-	-	0.74	-	0.38	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2, 8, 16	210	1.2	-	-	-	4.2	-	1.4	-	-	-	-	-

Operable Unit 2					
Industrial COC	**Study Area**	**Current Industrial Soil RSL[b] (mg/kg)**	**SA 7 Soil EPC (mg/kg)**	**SA 10W Soil EPC (mg/kg)**	**SA 21 Sed EPC (mg/kg)**
1,3-Dinitrobenzene	6, 7, 10W, 21	82	ND/ND	ND/ND	ND/ND
Tetryl	6, 7, 10W, 21	2,300	0.27/ND (sb)	0.86/187 (sb)	0.63/180 (sb)
2,4,6-Trinitrotoluene	6, 7, 10W, 21	510	0.33/62 (sb)	ND/0.25 (sb)	0.35/15 (sb)
Lead	6, 7, 10W, 21	800/1,050[d]	21/37 (sb)	259/62 (sb)	34/30 (sb)

Operable Unit 6[d]						
Industrial COC	**Study Area**	**Current Industrial Soil RSL[b] (mg/kg)**	**SA 2 Soil EPC (mg/kg)**	**SA 16 Soil EPC (mg/kg)**	**SA 17 Soil EPC (mg/kg)**	**SA 19 Soil EPC (mg/kg)**
1,3-Dinitrobenzene	2, 16, 17, 19	82	0.055/ND	ND/ND	ND/ND	ND/ND
2,4-Dinitrotoluene	2, 16, 17, 19	74	0.45/**99 (sb)**	ND/15	0.084/ND	ND/ND
2,6-Dinitrotoluene	2, 16, 17, 19	15	ND/0.15	ND/0.3	ND/ND	ND/ND
Tetryl	2, 16, 17, 19	2,300	ND/ND	ND/0.58	ND/ND	ND/ND
1,3,5-Trinitrobenzene	2, 16, 17, 19	32,000	ND/ND	ND/0.22	ND/ND	ND/ND
2,4,6-Trinitrotoluene	2, 16, 17, 19	510	ND/ND	ND/95	ND/ND	ND/ND
Lead	2, 16, 17, 19	800/1,050[c]	71/23	470/253 (sb)	18/16	62/26 (sb)

ALAAP = Alabama Army Ammunition Plant
ALM = Adult Lead Model
COC = Chemical of Concern
EPA = U.S. Environmental Protection Agency
EPC = Exposure Point Concentration
HQ = Hazard Quotient
PAH = Polynuclear Aromatic Hydrocarbon
PRG = Preliminary Remediation Goal
RI = Remedial Investigation
ROD = Record of Decision
RSL = Regional Screening Level
SA = Study Area
UCL = Upper Confidence Limit

Note: The EPC is the lower of the 95% UCL or the maximum detected concentration; EPCs were taken from ALAAP Final Area B RI, Appendix J (SAIC 2001), ALAAP Project Report for Landfill Maintenance and PAH Contaminated Soil Removal (SES 2009b) (for PAHs at SA 2), and Results of Investigations for the South Georgia Road Dump Site (SAIC 2004).

sb = Indicates subsurface soil; all other concentrations (i.e., those with no indication) are surface soil.

[a]The source for the chemicals of concern is the 2010 ALAAP Area B ROD (Table 2-19); residential COCs are included to ensure that changes to toxicity do not cause residential COCs to become industrial COCs.
[b]Based on a target cancer risk of 1×10^{-5} and a target HQ of 1.
[c]The EPA RSL is 800 mg/kg; however, the PRG calculated using the ALM (EPA 2017) is 1,050 mg/kg.
[d]Study Area 22 was not included in this comparison because the capping of the landfill rendered human health exposures to the landfill soil incomplete.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

Complete descriptions of the WOE criteria and the WOE evaluations are summarized in Table 5-4. The WOE evaluation resulted in the elimination of all ecoCOCs or a determination that no further evaluation was needed for specific ecoCOCs.

An assessment of the considerations posed by Question B is presented below.

5.2.3.1 Changes in Toxicity and Other Contaminant Characteristics

No known toxicity values have changed since the time of the ROD, which was finalized in 2010. While EPA has compiled more toxicity numbers since the RI was prepared in 2001 and published or updated them as ecological soil screening levels (ecoSSLs) in 2005, the final eco-SSL values have not changed significantly from earlier toxicity compilations according to the introductions of ecoSSLs that EPA published in 2005. The conservative nature of the SERA and BERA presented in the ALAAP – Area B RI, such as the application of no-observable-adverse-effect levels (NOAELs) and lowest-observable-adverse-effect levels (LOAELs) and the process for determining an ecoCOC at each of the study areas investigated in OU-7 remains, and what was determined to be a COC at the time of the RI would still be considered a COC. Note that after the COCs were identified, additional WOE and scientific risk management decisions related to the COCs was applied and documented in the ALAAP – Area B FS, which was finalized in 2008. The results of the analysis showed that none of the earlier COCs remained at any of the study areas.

Table 5-4. Summary of EcoCOCs from the RI and FS for OU-7 Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama

Study Area	Medium	EcoCOCs from RI BERA	EcoCOCs Following FS WOE
2 – Smokeless Powder Facility	Soil	Aluminum	None
		Arsenic	
		Barium	
		Chromium	
		Lead	
		Manganese	
		Vanadium	
		Zinc	
3 – Sanitary Landfill and Lead Facility	Soil	Arsenic	None
		Cobalt	
		Lead	
		Vanadium	
4 – Manhattan Project Area	Soil	Aluminum	None
		Lead	
		Zinc	
7 – Northern TNT Manufacturing Area	Soil	Lead	No further evaluation needed in the WOE because the site was remediated
8 – Acid/Organic Manufacturing Area	Soil	Aluminum	None
		Arsenic	
		Barium	
		Lead	
		Manganese	
		Molybdenum	
		Nickel	
		Vanadium	
		Zinc	

Table 5-4. Summary of EcoCOCs from the RI and FS for OU-7 Study Areas
Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)

Study Area	Medium	EcoCOCs from RI BERA	EcoCOCs Following FS WOE
10W – Tetryl Manufacturing Area	Soil	Lead	None
16 – Flashing Ground	Soil	Aluminum	None
		Arsenic	
		Barium	
		Cadmium	Cadmium was eliminated as an ecoCOC following the WOE as a risk management decision
		Copper	Copper was eliminated as an ecoCOC following the WOE as a risk management decision
		Lead	None
		Mercury	
		Nickel	
		Vanadium	
		Zinc	
	Sediment	None	No further evaluation needed in the WOE because no ecoCOCs were identified in the BERA
	Surface Water	Cobalt	None
		Iron	
		Manganese	
17 – Propellant Shipping Area	Soil	Aluminum	None
		Arsenic	
		Barium	
		Manganese	
18 – Blending Tower Area	Soil	Arsenic	None
		Chromium	
		Manganese	
		Vanadium	
19 – Lead Facility	--	None	No further evaluation needed in the WOE because no ecoCOCs were identified in the BERA
21 – Red Water Ditch	Sediment	Acetone	None
		Arsenic	
		Chromium	
		Copper	
		Lead	
		Manganese	
		Pyrene	
	Surface Water	Aluminum	None
		Barium	
		Carbon disulfide	
		Iron	
		Manganese	
22 – Demolition Landfill	Soil	Lead	No further evaluation needed in the WOE because the landfill had been capped
		Mercury	
		Nickel	
		Zinc	

Table 5-4. Summary of EcoCOCs from the RI and FS for OU-7 Study Areas Alabama Army Ammunition Plant, Childersburg, Alabama (Continued)

Study Area	Medium	EcoCOCs from RI BERA	EcoCOCs Following FS WOE
26 – Crossover Ditch	Sediment	Acetone	None
		Arsenic	
		Chromium	
		Manganese	
	Surface Water	Aluminum	None
		Barium	
		Iron	
		Manganese	
CERFA Study Area – Building 6 – Coke Oven	Soil	Aluminum	None
		Arsenic	
		Lead	
		Zinc	
South Georgia Road Dump	Soil	Relatively small (0.6 acres), disturbed vegetation exhibiting poor habitat at time of RI, ecoCOCs not established, and HHRA showed lead levels too low for any remediation	

Note:
Ecological COCs from the RI are for an HQ >1.

BERA = Baseline Ecological Risk Assessment
CERFA = Community Environmental Response Facilitation Act
ecoCOC = Ecological Chemical of Concern
FS = Feasibility Study
HHRA = Human Health Risk Assessment
HQ = Hazard Quotient
OU = Operable Unit
RI = Remedial Investigation
Tetryl = Trinitrophenylmethylnitramine
TNT = Trinitrotoluene
WOE = Weight-of-Evidence
-- = Not Logically Applicable

5.2.3.2 Changes in Risk Assessment Methods

Risk assessment methods are the same as those used to conduct the SERA and BERA in the ALAAP – Area B RI (EPA 1997) and FS. EPA uses an eight-step procedure, consisting of exposure and risk assessments (first two steps) followed by additional scientific and risk management decision steps (next six steps). First, a conservative SERA was performed followed by a less conservative BERA. These mathematical predictions were later followed by a WOE analysis that helped risk managers determine the appropriate COCs for further evaluation in the FS. The WOE used the results of the risk assessment along with other factors, including history of use, chemical concentration data, exposure, possible effects, and land use for the evaluation. Together, an overall conclusion was reached whether the COC was retained and evaluated in the FS.

5.2.3.3 Changes in Exposure Pathways

The exposure assumptions and exposure pathways are the same as those used for the BERA and RI and documented in the ALAAP – Area B ROD, which was finalized in 2010. The exposure assumptions and exposure pathways are also the same as those discussed in both the Third FYR (Leidos 2014) and the Fourth FYR (Leidos 2018). Exposure concentrations were and have continued to be the maximum concentration for initial screening and the 95th percentile for later screening. In cases where a 95th percentile is not available, mean concentrations were (and would be) used in the BERA. The exposure pathways and other exposure mechanisms were and have continued to be ingestion of food and water and contact. Exposure for both terrestrial food chains and aquatic exposure were determined to be part of the ALAAP – Area B BERA. This also included the use of bioaccumulation factors. The current and future land use is industrial, which has not changed since the BERA and RI have been prepared. Ecological receptors and routes of exposure have not changed nor needed to be changed since the BERA and RI have been prepared.

5.2.3.4 Expected Progress Toward Meeting RAOs

It was shown in the Third FYR (Leidos 2014) and confirmed in the Fourth FYR (Leidos 2018) that all COCs from the SERA and BERA were not applicable. It was concluded after conducting the WOE evaluation (steps 3 through 7 of the eight-step ERA process) and risk management (step 8) considerations that there is no unacceptable risk. This means there is no need for RAOs for protection of ecological resources.

5.2.3.5 Industrial Land Use

As stated, future land use at ALAAP – Area B is industrial or commercial. In concert with this land use, the Childersburg LRA has performed clear-cutting across almost all of ALAAP – Area B and parcels have been developed for industry. Even if portions of a forest at a given study area have not been removed, the remaining habitat is still subject to the definitions and implications of commercial and industrial land use. Thus, the paramount concern for the land at OU-7 is operation of businesses and enterprises with lower attention to the protection and propagation of wildlife at ALAAP – Area B or at any of the OU-7 study areas. The standard of protection of ecological resources (assuming wildlife management was paramount) on which the ERA was based no longer applies to the study areas. The conservative exposure and other assumptions are no longer applicable at OU-7 and the study areas are not logically considered places to protect solely for the use of ecological receptors. The land is not being managed for ecological resources but rather for industrial use and economic development.

5.3 QUESTION C: HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

Historical documents addressing ALAAP – Area B indicate that asbestos was used extensively in the form of transite siding and roofing materials and in insulating wrappings for tanks, steam lines, and hot water lines in both the process and support facilities. Demolition of site facilities resulted in the spreading of this ACM across some study areas (DA 1978, ESE 1981 and 1986). Available documentation also indicates that the Army took efforts to remediate asbestos.

In the winter/spring of 2017, the Army undertook an effort to determine if ACM was present on the ground surface at ALAAP – Area B, and if present, to document its location and horizontal extent. During the inspection, areas of ACM were identified and mapped (Leidos 2017). The report for this investigation documented that ACM was present in varying amounts across ALAAP – Area B. The Army conducted abatement measures from January through April 2018 to remove all ACM from the ground surface (SCMC 2018a and 2018b). Although the exposed ACM was removed from the site, pieces of ACM likely remain under soil, sediment, and organic matter deposited over the decades since structures were demolished. Some of this ACM may become exposed in the future. It is unknown if the remaining ACM poses a human health risk because a risk assessment has not been conducted.

In September 2022, EPA, ADEM, and the Army signed an IDRA, which states that asbestos at ALAAP – Area B will be addressed under a new OU. Therefore, asbestos is not addressed in this FYR, and future response actions pertaining to asbestos will be addressed under the new OU.

As noted in Section 3, EPA and the Army were not in agreement regarding the Protectiveness Statements nor in the recommendation related to the NHWL presented in the Final Third FYR document. EPA initiated a dispute in July 2013 that had not been resolved at the time of the Fourth FYR. In April 2022, EPA, ADEM, and the Army signed the IDRA that resolved the path forward at the NHWL. The Army will prepare an ESD to outline the addition or refinement of Alabama solid waste landfill ARARs to ensure that the landfill remains protective during its term of post-closure. The signed IDRA is included in Attachment A. The remedy will be implemented at the NHWL upon preparation of a signed ESD and will be considered protective by EPA, ADEM, and the Army.

A RACR was prepared to document remedial actions that were conducted at OU-7 (including OU-1, OU-2, and OU-6) study areas to protect public health, welfare, and/or the environment. The RACR, dated February 2021, was approved by ADEM on June 14, 2021, and by EPA on July 25, 2022.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

6. ISSUES/RECOMMENDATIONS

Issues and Recommendations Identified in the Five-Year Review:				
OU-7	**Issue Category:** Institutional Controls			
	Issue: Food plots (growing crops that attract game species for hunting) were discovered at two places within ALAAP – Area B. One of the food plots was contained within the boundaries of a study area that requires LUCs. This is a possible violation of the LUCs that require an excavation plan before ground disturbance. However, there is little risk from chemical exposures associated with preparing and seeding the soil, hunting, and eating game. Any concerns about exposure to asbestos will be evaluated as part of a separate OU.			
	Recommendation: Army has reminded landowners of the excavation plan requirement in the deed via a letter. It is recommended that another letter be sent with the LUC Report.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	No	Army	EPA/ADEM	12/15/2023

THIS PAGE WAS INTENTIONALLY LEFT BLANK

7. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)

Operable Unit:	*Protectiveness Determination:*	*Addendum Due Date (if applicable): TBD*
OU-7	Short-Term Protective	

The remedy at OU-7 is protective of human health and the environment in the short-term.

The two issues raised by EPA that potentially affect overall protectiveness (i.e., the NHWL and asbestos) have been addressed in separate IDRAs. The NHWL will be incorporated into the OU-7 ROD via an ESD, and potential asbestos contamination will be addressed as a separate OU. Taking into account these actions, construction activities for the study areas in OU-7 are complete, RAOs have been achieved, and operation and maintenance activities in the form of LUCs and annual inspections are occurring. The remedy is functioning as intended, and all human and ecological risks related to this ROD are under control.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

8. NEXT REVIEW

The next FYR report for the ALAAP – Area B Superfund Site is required 5 years from the date of concurrence on the First FYR following signature of the OU-7 ROD, according to the requirements provided in the memorandum prepared by EPA titled "Program Priorities for Federal Facility Five-Year Review" (EPA 2011). The Fourth FYR was finalized in September 2018, in order to review several interim remedies for OUs incorporated into the Fourth FYR, within the five-year statutory requirement. This FYR will be completed by September 5, 2023.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

9. REFERENCES

CHPPM (U.S. Army Center for Health Promotion and Preventive Medicine). 1995. Final Health Risk Assessment of Consuming Deer from Aberdeen Proving Ground, Maryland. Prepared for the Aberdeen Proving Ground Directorate of Safety, Health, and the Environment. May.

DA (Department of the Army). 1978. Installation Assessment of Alabama Army Ammunition Plant, Records Evaluation Report Number 130.

ECC (Environmental Chemical Corporation). 1996. Closure Report, Soil Remediation Industrial Sewer Lines, Alabama Army Ammunition Plant, Childersburg, Alabama. Prepared for the U.S. Army Engineer District, Mobile, Alabama. July.

ECC. 1998. Closure Report, Excavated Lead Contaminated Soil Areas 16 & 19 at Alabama Army Ammunition Plant. June.

ECC. 1999. Final Report Area 22 Landfill Cap ALAAP Childersburg, Alabama – February.

EPA (U.S. Environmental Protection Agency). 1997. Ecological Risk Assessment Guidance for Superfund. Process for Designing and Conducting Ecological Risk Assessments. Interim Final. U.S. Environmental Protection Agency Environmental Response Team. Edison, New Jersey. June.

EPA. 2011. Program Priorities for Federal Facility Five-Year Review. Federal Facilities Restoration and Reuse Office, Office of Solid Waste and Emergency Response. Washington, DC. August 1.

EPA. 2017. Adult Lead Model. Calculations of Preliminary Remediation Goals (PRGs) for Soil in Nonresidential Areas, Technical Review Workgroup for Lead, Adult Lead Committee, Version date June 14, 2017.

EPA. 2022. Regional Screening Levels for Chemical Contaminants at Superfund Sites, Generic Tables and User's Guide. https://www.epa.gov/risk/regional-screening-levels-rsls. May.

ESE (Environmental Science and Engineering). 1981. Environmental Survey of Alabama Army Ammunition Plant. Final. Prepared for the U.S. Army Toxic and Hazardous Materials Agency. June.

ESE. 1986. Alabama Army Ammunition Plant Remedial Investigation. Final. Prepared for the U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland. Contact number DAAK11-83-D-007, Task Order 0008. July.

ESE. 1991. Remedial Investigation and Feasibility Study of the Industrial Sewer System, Alabama Army Ammunition Plan, Childersburg, Alabama. Prepared for U.S. Army Corps of Engineers, Huntsville, Alabama. September.

ESE. 1992. Supplemental Remedial Investigation/Feasibility Study for Area B, Alabama Army Ammunition Plant, Final Baseline Risk Assessment. Prepared for the U.S. Army Toxic and Hazardous Materials Agency. August.

ESE. 1993. Supplemental Remedial Investigation/Feasibility Study (RI/FS) for Area B, Alabama Army Ammunition Plan, Final Remedial Investigation. Volumes I and II. Prepared for the U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland. June.

Leidos. 2013. Land Use Control Implementation Plan. Alabama Army Ammunition Plant – Area B. Prepared for the U.S. Army Corps of Engineers, Mobile District. November.

Leidos. 2014. Third Five-Year Review Report for the Alabama Army Ammunition Plant – Area B Superfund Site, Talladega County, Alabama. Final. Prepared for the U.S. Army Corps of Engineers, Mobile District. January.

Leidos. 2017. Asbestos Inspection Report. Alabama Army Ammunition Plant – Area B. Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District. August.

Leidos. 2018. Fourth Five-Year Review Report for the Alabama Army Ammunition Plant – Area B Superfund Site, Talladega County, Alabama. Final. Prepared for the U.S. Army Corps of Engineers, Mobile District. September.

Leidos. 2019. Land Use Control Inspection Report – 2018. Alabama Army Ammunition Plant – Area B. Prepared for the U.S. Army Corps of Engineers, Mobile District. January.

Leidos. 2020a. Land Use Control Inspection Report – 2019. Alabama Army Ammunition Plant – Area B. Prepared for the U.S. Army Corps of Engineers, Mobile District. January.

Leidos. 2020b. Land Use Control Implementation Plan. Draft Final Revision 01. Alabama Army Ammunition Plant – Area B. Prepared for the U.S. Army Corps of Engineers, Mobile District. January.

Leidos. 2021. Land Use Control Inspection Report – 2020. Alabama Army Ammunition Plant – Area B. Prepared for the U.S. Army Corps of Engineers, Mobile District. February.

Leidos. 2022. Land Use Control Inspection Report – 2021. Alabama Army Ammunition Plant – Area B. Prepared for the U.S. Army Corps of Engineers, Mobile District. February.

QORE (QORE Property Sciences). 2002. Final Site Management Plan, Alabama Army Ammunition Plant, Talladega County, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District. Prepared by QORE™ Property Sciences under subcontract number 440003225 to Science Applications International Corporation. August.

QORE. 2004. Summary Report for the Remediation of TNT and Lead Contaminated Soil OU4 Area B SA 2, 10, 16, 17, 19, & 22. Alabama Army Ammunition Plant. January.

SAIC (Science Applications International Corporation). 1996a. Alabama Army Ammunition Plant – Area B Supplemental Remedial Investigation Report. Draft Final. Prepared for the U.S. Army Environmental Center, Aberdeen Proving Ground. February.

SAIC. 1996b. Feasibility Study Report. Alabama Army Ammunition Plant – Area B. Supplemental Remedial Investigation/Feasibility Study. Draft Final. Prepared for the U.S. Army Environmental Center, Aberdeen Proving Ground. March.

SAIC. 2000. Technical Memorandum Justification for NFA for Phase I Transfer of ALAAP Study Areas 7, 8, 9, 10, 21, 25, and 26. Prepared for the U.S. Army Corps of Engineers, Mobile District under Contract DAAA15-91-D-0017, Delivery Order Number DA12. August.

SAIC. 2001. Supplemental RI Report, Remedial Investigation/Feasibility Study, Alabama Army Ammunition Plant – Area B, Childersburg, Alabama. Final. Prepared for the U.S. Army Corps of Engineers, Mobile District. August.

SAIC. 2004. Data Report – Results of Investigations for the South Georgia Road Dump Site, Alabama Army Ammunition Plant – Area B, Childersburg, Alabama. Draft Final (Revision 2). Prepared for the U.S. Army Corps of Engineers, Mobile District. November.

SAIC. 2007. Data Report – Results of Supplemental Investigations for the South Georgia Road Dump, Alabama Army Ammunition Plant – Area B, Childersburg, Alabama. Draft. Prepared for the U.S. Army Corps of Engineers, Mobile District under contact DAAA21-02-D-0004, Delivery Order No. CK04. December.

SAIC. 2008. Feasibility Study, Alabama Army Ammunition Plant – Area B, Childersburg, Alabama. Revised Final. Prepared for the U.S. Army Corps of Engineers, Mobile District. September.

SAIC. 2010. CERCLA Record of Decision. Alabama Army Ammunition Plant – Area B Soils, Surface Water, and Sediment. Final Record of Decision. Prepared for the U.S. Army Corps of Engineers. August.

SCMC, LLC. 2018a. Accident Prevention Plan (APP). Asbestos Abatement. Alabama Army Ammunition Plant, Childersburg, Alabama. Final. Prepared for the U.S. Army Corps of Engineers, Mobile District. January.

SCMC, LLC. 2018b. Abatement Report. Asbestos Abatement. Alabama Army Ammunition Plant, Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District. June.

SES (SpecPro Environmental Services LLC). 2009a. Project Plans for Landfill Maintenance and PAH Contaminated Soil Removal at the Former Alabama Army Ammunition Plant, Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District. January.

SES. 2009b. Project Report for Landfill Maintenance and PAH Contaminated Soil Removal at the Former Alabama Army Ammunition Plant, Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District. August.

TETC (The Earth Technology Corporation). 1994. Community Environmental Response Facilitation Act (CERFA) Report. Alabama Army Ammunition Plant, Talladega County, Alabama. Prepared for the U.S. Army Environmental Center. April.

USAEHA (U.S. Army Environmental Hygiene Agency). March. Final Ecological Risk Assessment for Joliet Army Ammunition Plant. Prepared for the U.S. Army Environmental Center. March.

USAEHA. 1994. Final Health Risk Assessment for the Consumption of Deer from Joliet Army Ammunition Plant. Prepared for the U.S. Army Environmental Center.

USATHAMA (U.S. Army Toxic and Hazardous Material Agency). 1978. Installation Assessment of Alabama Army Ammunition Plant, Report No. 130. Aberdeen Proving Ground, Maryland.

Weston (Roy F. Weston). 1991. Record of Decision (ROD) for Stockpile Soils Operable Unit I. December.

Weston. 1994a. Interim Record of Decision (IROD) for Area B Soils Operable Unit II (Study Areas 6, 7, 10, and 21). November.

Weston. 1994b. Treated Soils – Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit. Submitted to U.S. Army Corps of Engineers, Fort McClellan Area Office. March.

Weston. 1994c. Treated Soils – Backfill Area No. 2 Permit Application for the Alabama Army Ammunition Plant (ALAAP) Stockpile Area Operable Unit. Submitted to the U.S. Army Corps of Engineers, Fort McClellan Area Office. November.

Weston. 1995a. Interim Record of Decision. Alabama Army Ammunition Plant, Childersburg, Alabama. Area B Soils Operable Unit II (Study Areas 5, 10, 16, and 19). Draft. May.

Weston. 1995b. Excavation Plan for Study Area 21, Alabama Army Ammunition Plant, Childersburg, Alabama. April.

Weston. 1996a. Interim Record of Decision. Alabama Army Ammunition Plant, Childersburg, Alabama. Area B Soils Operable Unit IV (Study Areas 2, 10, 16, 17, 19, and 22). Final. October.

Weston. 1996b. Excavation Status Report for Study Area 10 and Updated Excavation Volumes for Study Areas 6, 7, and 21. February.

Weston. 1996c. Sampling Report: Study Areas 2 and 17. November.

Weston. 1996d. Addendum to the Chemical Data Acquisition Plan for a Transportable Incineration System – Remediation of Contaminated Soils from Area B Operable Unit IV, Study Areas 2, 16, 17, and 19 at the Alabama Army Ammunition Plant. Revision 1. October.

Weston. 1998. Project Closeout Report Alabama Army Ammunition Plant (ALAAP) Childersburg, Alabama. Draft. Submitted to the U.S. Army Corps of Engineers, Fort McClellan Area Office. July.

ATTACHMENT A

EPA, ADEM, AND ARMY CORRESPONDENCE RELATED TO FOURTH FIVE-YEAR REVIEW (2018) AND CURRENT FIVE-YEAR REVIEW

THIS PAGE WAS INTENTIONALLY LEFT BLANK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

SEP 05 2013

Mr. Andrew Van Dyke
Army Program Manager, Operations
Army Medical Branch
Department of the Army
Assistant Chief of Staff for Installation
Management
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, Virginia 22202

Dear Mr. Van Dyke:

The United States Environmental Protection Agency has completed the review of the Alabama Army Ammunition Plant Draft Final Five-Year Review (FYR) Report dated May 2013 (Draft Final FYR). It is an EPA Federal Facility program priority that the Agency's review of the FYR is completed to ensure remedies are or will be protective of human health and the environment. The purpose of this letter is for EPA to either concur with the report findings, or provide EPA's own independent findings and protectiveness determinations. Many of EPA's comments have been addressed in the revised document; however, EPA does not agree with the protectiveness determinations and has prepared its own determination, as noted below.

EPA has made changes to the Protectiveness Statements for OU-1, OU-2, and OU-6. These changes are captured through the enclosed edited FYR Summary Form from the Draft Final FYR Report. The EPA protectiveness determinations will be reported to Congress and entered into CERCLIS.

EPA anticipated that our agencies could work through any remaining issues with regard to EPA's comments and the protectiveness determinations prior to finalizing the Report and suggested that the agencies use an informal dispute resolution process to finalize the Report. The Army's response indicated that dispute was not available to the parties due to the fact that the FYR is not a primary document. Though not a primary document, Section XX of the Federal Facility Agreement states that the dispute resolution language (Section XXVIII) would be utilized to resolve any dispute over EPA's protectiveness statement. EPA looks forward to meeting with the Army to resolve the issues of the Draft Final FYR.

Thank you for your continued efforts to complete this FYR and your commitment in working with EPA to make the necessary changes to the Draft Final FYR Report. Our goal is to ensure this document accurately reflects the status of the selected remedies and that they are protective of human health and the environment in the long term.

Please coordinate with the ALAAP Remedial Project Manager, Tim Woolheater, to finalize the document by addressing the comments previously transmitted to the Army.

Sincerely,

Franklin E. Hill
Director
Superfund Division

Enclosure

FIVE-YEAR REVIEW PROTECTIVENESS DETERMINATIONS FOR ALABAMA ARMY AMMUNITION PLANT SUPERFUND SITE TALLADEGA, ALABAMA

Prepared by

U.S. Environmental Protection Agency
Region 4
Atlanta, GA

Franklin E Hill, Director
Superfund Division

9/5/13

Date

PURPOSE

In May 2013, the U.S. Army submitted the Draft Final Third Five-Year Review Report for the Alabama Army Ammunition Plant – Area B Superfund Site, in Talladega County, Alabama. Though many of the EPA comments generated from review of the draft document were addressed appropriately, EPA could not concur with the protectiveness statements made in the Draft Final document. This document revises the protectiveness determination from the Draft Final Five-Year Review in order to better characterize the current situation at the former ammunition plant.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Alabama Army Ammunition Plant		
EPA ID: AL6210020008		
Region: 4	**State:** AL	**City/County:** Childersburg/Taladega
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: Other Federal Agency **If "Other Federal Agency" was selected above, enter Agency name:** U. S. Army		
Author name (Federal or State Project Manager): Timothy R. Woolheater		
Author affiliation: USEPA		
Review period: May 2012 – August 2013		
Date of site inspection: July 12, 2012		
Type of review: Statutory		
Review number: 3		
Triggering action date: June 19, 2008		
Due date *(five years after triggering action date)*: June 13, 2013		

Issues/Recommendations

OU(s) without Issues/Recommendations Identified in the Five-Year Review:
NA

Issues and Recommendations Identified in the Five-Year Review:

OU(s): 1, 2, 6, and NHWL	Issue Category: Monitoring			
	Issue: Non-Hazardous Waste Landfill (NHWL) does not include monitoring			
	Recommendation: Establish a periodic monitoring program to determine whether contaminants are leaching from landfill.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	Federal Facility	EPA/State	12/15/2017

OU(s): 1, 2, 6, NHWL and Asbestos landfills	Issue Category: Institutional Controls			
	Issue: Institutional controls have been put in place but were not called for in decision documents.			
	Recommendation: Appropriately document the need for ICs in a decision document			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	Federal Facility	EPA/State	12/15/2016

OU(s): 2, 6, NHWL and Asbestos landfills	Issue Category: Operations and Maintenance			
	Issue: Maintenance requirements presented in transfer agreements have not been developed in a maintenance planning document for use by the City in ensuring requirements are met.			
	Recommendation: Develop a formal maintenance plan with the City of Childersburg			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	Federal Facility	EPA/State	12/15/2015

OU(s): 1, 2, 6, NHWL and Asbestos landfills	Issue Category: Changed Site Conditions			
	Issue: The NHWL and the Asbestos landfills were not appropriately selected in the remedy decision documents for OU's 1, 2, and 6.			
	Recommendation: Revised the decision documents			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	Federal Facility	EPA/State	12/15/2017

Protectiveness Statement		
Operable Unit: 1	*Protectiveness Determination:* Short-term Protective	*Addendum Due Date (if applicable):* Click here to enter date.
Protectiveness Statement: The remedy at OU1 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils have been disposed in the NHWL which is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quit claim deed transferring the site to the City of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.		

Protectiveness Statement		
Operable Unit: 2	*Protectiveness Determination:* Short-term Protective	*Addendum Due Date (if applicable):* Click here to enter date.
Protectiveness Statement: The remedy at OU2 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils, sediment, and sewer system components were excavated, incinerated, and stabilized (if necessary) and the incineration wastes isolated in the NHWL. The NHWL is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quit claim deed transferring the site to the City of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.		

Protectiveness Statement		
Operable Unit: 6	*Protectiveness Determination:* Short-term Protective	*Addendum Due Date (if applicable):* Click here to enter date.

Protectiveness Statement:

The remedy at OU6 currently protects human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. All soils, sediment, and sewer system components were excavated, incinerated, and stabilized (if necessary) and the incineration wastes isolated in the NHWL. The NHWL is capped, fenced, and observed to be maintained, and institutional controls are implemented as called for in a LUCIP, FOSET, and Quit claim deed transferring the site to the City of Childersburg. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: revise the decision document to select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303-8960

FFB

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

Hasler

016H26523178
$00.46⁰
09/10/2013
Mailed From 30303
US POSTAGE

Mr. Andrew Van Dyke
Army Program Manager, Operations Army Medical Branch
Assistant Chief of Staff for Installation Management
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, VA 22202

2202393499

UNITED STATES ENVIRONMENTAL PROTECTION A GENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

April 2, 2014

4SF-FFB

Electronic Mail Delivery

Mr. Andrew Van Dyke
Army Program Manager - OAMB
Department of the Army - ACSIM
Taylor Building, Room 5000
2530 Crystal Drive
Arlington, Virginia 22202

Dear Mr. Van Dyke:

The Environmental Protection Agency has recently reviewed and commented upon the Five Year Review (5YR) and the Area B Land Use Control Implementation Plan (LUCIP) documents for the Alabama Army Ammunition Plant Site in Childersburg, Alabama. EPA issued a determination on the 5YR that differed from the Army largely due to a lack of clarity regarding the remedy selection of an onsite disposal area currently known as the Non-Hazardous Waste Landfill (NHWL). EPA sought clarification of NHWL issues in comments on the LUCIP; however, the Army responses only removed the text from the revised LUCIP without including clarification regarding the issues. EPA's 5YR determination concurred with the Army regarding short-term protectiveness; however, the long-term protectiveness could not be agreed upon due to the inappropriate remedy selection, land use control selection, and monitoring of the NHWL. In addition, clarification of specific actions taken during the cleanups is requested such that EPA can conclude that the site is protective in the long-term. With this letter, EPA requests that the Army respond to these issues such that closure can be reached regarding the overall protectiveness of the actions in Area B.

The selection and closure of the NHWL is of concern to EPA. EPA review of the Records of Decision (RODs) for Operable Units (OU) 1, 2, and 6 reveals an increasing reliance on the disposal activities to this area. The OU 1 ROD reflects disposal of soils onsite after treatment; however, the descriptions of the specifics regarding the disposal methods are not clear. For instance, the treatment standards appeared to be drawn from the characterization requirements and not the Universal Treatment Standards. Of particular concern is lead which was given a treatment standard in the ROD of 5 mg/L TCLP and the Universal Treatment Standard is 0.75 mg/L TCLP. It is unclear whether other contaminants met the appropriate standards prior to being disposed in the NHWL. It is also unclear whether the soils were sampled post treatment and what the specific construction standards were used to build the landfill. The ARARs section of the ROD states that the remedy will meet the RCRA standards but is unclear as to which standards would be required.

The OU 2 ROD also relies upon on-site disposal making assumptions that it was already appropriately selected. Of note, the ROD also relies on the State's issuance of a draft permit entitled, *"Treated Soils - Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit", March 1993."* In discussions with the Army regarding the permit, the Army stated that this permit was only in draft form and never finalized but the actions were approved by the State. The permit was to be used to expand the landfill area and, subsequently, close the area. The ARARs included in this ROD were 40 CFR 261 (ID hazardous wastes), 262 (Standards applicable to HW generators), 264 (Standards for Owner/Operators of HW treatment, storage, and disposal fac.), AAC (AL Admin Code) Ch 13-1 to 13-7 (Solid Waste Management Regulations), Code of AL, Title 22, Ch 27 (AL Solid Waste Management. Act- safe management of non-hazardous waste), and ADEM's Ch 14-1. The universal treatment standards are not mentioned and it is not clear which portions of these ARARs were followed or met/

The OU 6 ROD continues the reliance on the NHWL in a similar manner as OU 2. Standards are set for treatment though it is not clear how they would meet the Universal Treatment Standards. The ARARs are similar to OU 2 with a clarification for including concrete slabs and other construction material as required in State requirements.

EPA awaits a copy of the NHWL construction report requested from the Army. The Army is reproducing this document electronically and stated that it would take some time to have it completed by its contractor. It is hoped that the Army's records would give some clarity to EPA regarding the specifics on the constructions details of the NHWL. The following comments were sent to the Army while reviewing the Land Use Control (LUC) Remedial Design (RD) which later became the LUCIP. The Army responded by removing the text from the LUCIP; however, whether these issues were appropriately address with regard to protectiveness remains in question thereby placing doubt on the long-term protectiveness of Area B.

The section and page numbers for each of the comments listed below relate to the draft LUC RD. Those portions of the comments that remain unclear have been underlined. The comments were:

1. **Section 1.1, pg 2, NHWL:** It is mentioned that this landfill was the result of remedial actions taken place around the facility. At the same time, it is mentioned that it is not the result of CERCLA operations. Please explain. Typically, the necessity for LUCs (which is a remedy component) for a particular area or site is provided in a CERCLA decision document such as a ROD. Was this landfill regulated outside of CERCLA and issued a permit from ADEM? If not, then a ROD should be issued for this unit that describes the selected response action which presumably would include containment with engineered cap, LUCs, groundwater monitoring and maintenance of the cap. In the absence of a ROD, the LUCs that are necessary to ensure protectiveness can be specified in the LUC RD which is subject to EPA approval. However, a ROD should be issued for this unit that describes the response action which likely will include containment with engineered cap, LUCs, and maintenance of the cap.

EPA would add that, though not ideal, prior to selecting a remedy for this site, LUCs can be used to secure the site and prevent any unacceptable exposures that may exist. Inclusion of those LUCs in the LUCIP can afford the necessary protections until the remedy is selected.

2. **Section 1.3.1, pg 6. Table 3:** If the table remains in this document, please note that any soil that exhibited the toxicity characteristic (i.e. failed TCLP) at 40 CFR 261.24 are considered RCRA hazardous waste and once excavated are subject to the Land Disposal Restrictions. Consequently, soils that are considered RCRA hazardous waste must meet the LDR treatment standards at 40 CFR 268.40 or 268.49 prior to disposal in an on-site or off-site landfill. The soil disposal criteria listed on the Table are actually the TCLP levels. Please explain how the disposal criteria were applied and the disposition of soils that exceeded the criteria. Soil that was treated to meet TCLP levels must still meet LDR treatment standards before disposal in the NHWL.

3. **Section 1.3.1, pg 7. Table 4:** The sentence preceding the table indicates soils were stabilized. Please clarify if treatment was performed in-situ or ex-situ and what treatment method was employed and whether TCLP was used to verify the criteria since for the metals listed the criteria correspond to the toxicity characteristic levels at 40 CFR 261.24. As noted above, soils that are excavated and exceed TCLP are considered RCRA hazardous waste. Such soils must meet RCRA LDR treatment standards in addition to being rendered non-hazardous through treatment before being disposed in a landfill (on-site or off-site). Add footnote to table to clarify if TCLP is used to measure criteria.

4. **Section 1.3.1, pg 11**, Bulleted items "*Nonhazardous waste landfill*": Please indicate whether ADEM regulated the landfill under its RCRA Subtitle D program and whether a permit was issued. Also, please describe whether the landfill was constructed with a bottom liner and whether groundwater monitoring wells have been installed at the boundary of the unit to detect releases from buried wastes. As stated above, EPA believes a ROD should be issued to address the NWHL and describe a selected remedy.

There were additional concerns not related to the NHWL that the Army didn't fully address in the response to the LUC RD, as well. The following comments were also raised on the LUC RD:

1. **Section 1.3.1, pg 11**, Bulleted items "*Asbestos Repository*": The Asbestos Repository was constructed in 1974 with the destruction of the building located in that area. Asbestos was placed in the basement of the building and then covered with two feet of soil. Please indicate whether signs are posted that indicate it is used asbestos disposal as required by asbestos NESHAP regulations. EPA believes a ROD should be issued to address the Asbestos Repository and describe the selected remedy such that it can be included in the 5YR as requested by the State.

2. **Section 1.3.1, pg 10-11**, Bulleted items "*Aniline Sludge Basin, (Study Area 9) EPA OU7*": Please specify if remedial actions in 1999 were conducted under CERCLA and date of ROD or IROD. Also, specify level of residual contamination and/or whether confirmatory sampling performed. Indicate whether contamination exceeds residential use or industrial use levels.

3. **Section 1.3.1, pg 10-11**, Bulleted items "*Storage Battery and Debris Dump (Study Area 25), EPA OU7*": Please specify if remedial actions were conducted under CERCLA and date of ROD or IROD. Indicate whether the lead debris and contaminated soils were managed as RCRA hazardous waste and whether the Opelika landfill is a RCRA Subtitle C hazardous waste landfill. Also, specify level of residual contamination and/or whether

confirmatory sampling performed. Indicate whether contamination exceeds residential use or industrial use levels.

4. **Section 1.3.1, pg 10-11**, Bulleted items "*TC4-A and B, EPA OU 1*": Please indicate the cleanup values for the soils in these areas. Also, specify if remedial actions conducted under CERCLA and what are the residual contamination levels. Specify if remaining contamination exceeds industrial or residential use levels.

5. **Section 1.3.1, pg 11**, Bulleted items "*Utility Poles and PCB Transformers*": Please indicate what authority, CERCLA etc. was used to remove the fallen poles with transformers and the PCB contaminated soil. Indicate whether the PCB contaminated soil exceeded 50ppm and had to be disposed of as TSCA PCB waste in a TSCA chemical waste landfill. Also, specify level of residual contamination since confirmatory sampling was performed. Indicate whether contamination exceeds residential use or industrial use levels.

Finally, EPA continues to be concerned about the implementation aspects of the LUCIP. In response to EPA comments on the draft final LUCIP, the Army gave two responses that are not acceptable to EPA. EPA clarifies the concerns below each of the comments below. The comment numbers relate to the LUCIP comments issued by EPA. The response comments and responses are:

1. **Army's Response to Comment 26, 26A**
   The LUCIP clearly designates the locations on the "No Fishing" signs at Study Areas 21 and 26. The "No Fishing" signs are placed along the entire length of the Study Areas. The referenced RTC states that the discussion regarding the home range of the fish was inappropriate for a LUCIP and that discussion is not included.

   EPA Response: Locations of a LUC are based on where a potential for exposure exists and are not limited by site boundaries. Without evaluating the ecological receptors home range along with their location on the site, the Army does not know whether the site boundary, as marked in the LUCIP, controls the risk. It is not clear whether the potential for a receptor to migrate beyond the site boundary has been evaluated, nor whether the potential for predators of the receptor to feed on the site. EPA cannot agree to placement of signage at the site boundary without adequate justification.

2. **Army's Response to Comment 33**
   Section III.C of the Environmental Protection Provisions attached to the Quitclaim Deed as "Exhibit C" requires that a soil excavation plan be provided to EPA and Army for their approval prior to conduct of any excavation. If disposition of the soil is not satisfactory to EPA, then EPA may require satisfactory revisions to the plan prior to EPA's approval. The same is true with respect to Army's requirements.

   EPA's Response: Any and all requirements, to the extent possible, need to be placed in the LUCIP document such that all parties and those not versed in the detail of the site or the agreement have a clear indication of the requirements for site use. A prospective purchaser of the property may base a purchase price on their ability to move soil to any location and find later that that is not possible. In addition, future implementers of the

LUCIP may not be as familiar with the site and may inadvertently approve soil movement to uncontaminated portions of the property without clear indication in the LUCIP. To the extent possible, the LUCIP needs to be written to prevent potential exposures and do so with as much transparency, as possible.

This letter attempts to raise the remaining EPA concerns with regard to the protectiveness issues that require resolution prior to finalizing the Area B soils remedy. It is expected that once resolved that the 5YR determinations can be modified and the LUCIP would be acceptable. EPA awaits the new schedule for the Remedial Action Completion Report (RACR) for the soils actions taken at the site. It is EPA's desire to complete the RACR in by September 1, 2014. In order to achieve this milestone, the parties will need to come to agreement on how best to resolve the issues in this letter.

In order to expedite this resolution, EPA requests a meeting with the Army by April 25, 2014. At your earliest convenience, please email me with dates that would be acceptable for a conference call. EPA looks forward to resolving these issues in a manner acceptable to all parties. Should you have any questions or concerns regarding this letter, please call me at 404-562-8510 or contact me at woolheater.tim@epa.gov.

Sincerely,

Timothy R. Woolheater, PE, MS
Senior Remedial Project Manager
Federal Facilities Branch
Superfund Division

CC: Adam Warnke, ADEM
Mr. Bill Millar, CALIBRE
Melissa Shirley, USACOE

DEPARTMENT OF THE ARMY
ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

20 May 2014

Timothy R. Woolheater
Senior Remedial Project Manager
Federal Facilities Branch, Superfund Division
US Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960

SUBJECT: Response to letter from EPA Region 4 dated 2 April 2014 and conference call on 24 April 2014 Concerning Alabama Army Ammunition Plant and issues pertaining to the Third Five Year Review for Area B and the Land Use Control Implementation Plan for the Soil Sediment and Surface Water at Area B.

Dear Mr. Woolheater:

This letter is in response to the subject letter received by the Army dated April 2, 2014 and conference call held between the Army, ADEM, and your office on April 24, 2014. The initial sections of this letter presents Army's responses to some of the general issues raised in the EPA's letter and discussed during the following conference call.

Finality of the Third Five-Year Review

Following the conference call the Army and Region 4 are in agreement that the third Five Year Review for ALAAP Area B is complete and the Army version is final and the EPA's Five Year Review Protectiveness Determination is final. The parties will work to resolve outstanding issues so the agreement can be reached on the Next Five Year review scheduled for 2017.

Land Use Control Implementation Plan (LUCIP)

The parties also agreed that the LUCIP for the Alabama Army Ammunition Plant (ALAAP) Area B is final and will be used going forward. However, Army agreed that a short addendum be added to the Final LUCIP to formalize procedures for onsite movement or off-site disposal or reuse of soil that may be contaminated with explosives-related compounds and/or lead. This addition is minor and will be added to the existing copies of the document as a LUCIP implementation activity without the need to reissue the document.

Non-Hazardous Waste Landfill (NHWL)

Both EPA and Army agree that the NHWL is protective in the short-term. Army believes the NHWL is also protective in the long-term. EPA cannot make a similar finding and has issued a long-term non-protectiveness finding dated September 5, 2013. EPA's finding stated that three actions are required in order to insure long-term effectiveness:

> Revise the decision document to appropriately select the NHWL as the final disposal location, add requirements for monitoring to determine whether the material is leaching from the landfill, and select institutional controls as part of the remedy for the NHWL.

During the April 24, 2014 conference call, EPA appears to have added the new requirement that Army demonstrate that all waste disposed in the landfill achieved the 0.75 mg/l TCLP Universal Treatment Standard (UTS) for lead.

Revise the decision document to appropriately select the NHWL as the final disposal location

The NHWL was developed as a non-hazardous solid waste landfill for disposal of soil and ash following treatment in the onsite incinerator used for remediation of explosives in soil. Army, EPA Region 4, and the Alabama Department of Environmental Management (ADEM) were involved in the decision to use the NHWL for disposal and agreed to its use as a disposal site for treated soil and ash. A permitting process for the landfill was started and a permit application was submitted. According to an EPA discussion with an ADEM employee, groundwater monitoring was suggested, but ADEM determined that it was not necessary. Following submission and ADEM approval of the permit application, ADEM determined that a permit was not needed.

The non-hazardous waste landfill is specifically selected in Interim Record of Decision (IROD) for OU-1, OU-2, and OU-6. This selection is demonstrated in excerpts from each of these IRODS provided in Attachment A. While it is admitted that a more complete description of the non-hazardous waste landfill could have been provided in the IROD for OU-1, a complete detailed description is not necessary to indicate its selection. The next two IRODs fully describe the NHWL by referencing the permit application submitted to and approved by ADEM. If anyone wanted information regarding the criteria for the landfill, it would have been included in the permit application that was presumably available for review by those involved in the remedy selection process. (If not, it could have been obtained by asking.) Each IROD required that soil be treated in compliance with Land Disposal Restrictions. Taken together as a whole, there can be no doubt about what the parties selected in each of the three IRODs and the clarity and appropriateness of their selection. These remedies are also appropriately selected in §§ 2.12.1 through 2.12.3 of the ALAAP Area B Final ROD, which incorporates in turn each of the interim remedies as the final remedies for OUs 1, 2, and 6. Each of these interim remedies specifically includes the NHWL as a remedy component.

Over the past quarter of a century, EPA and ADEM have participated in every step of the selection process. EPA and ADEM have reviewed and commented upon each and every

document, often significantly and with much iteration. If either EPA or ADEM had concerns with the selection process that has been occurring over the past 25 years, then both have had more than ample opportunity to express its concern. It is Army's position that all past decisions must be afforded a presumption of regularity. "The presumption of regularity supports the official acts of public officers, and, in the absence of clear evidence to the contrary, courts presume that they have properly discharged their official duties." United States v. Chemical Foundation, Inc., 272 U.S. 1, 14-15 (1926). It is simply improper at this point, after all is said and done, to lay down the assertion that the remedies achieved by our predecessors were inappropriately selected.

It is Army's position that the selection of the NHWL in the interim and final records of decision is both appropriate and clear and that no further exposition is required. Army considers this matter closed but for the following remaining activities that are intended to make the Administrative Record more complete.

ADEM will perform a records search for documentation of this permit application process. As stated in EPA's letter, the OU2 ROD identified the permit application as "*Treated Soils – Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpiles Soils Area Operable Unit, March 1993*."

Regarding the construction of the NHWL and testing of the ash and soil disposed in the landfill, Army records show that the landfill includes eight cells. There does not appear to be a single NHWL construction report since the cells appear to have been treated as separate construction projects. There are three volumes pertaining to construction of NHWL Cell 8 at the BRAC Office. More documentation may have been prepared at the time. The *Final Report Construction of Cell 8 Alabama Army Ammunition Plant, Childersburg, Alabama* prepared by Environmental Chemical Corp (ECC) and dated June 1998 and the *Final Report Stabilization of Incinerator Treated Soil and Fly Ash and Excavated Soil from Study Areas 14, 16, & 19 Final Cap, Cell #8 ALAAP* (volumes 1 and 2) prepared by Environmental Chemical Corp (ECC) and dated January 1999 were reviewed. These records show that Cell 8 of the NHWL has a liner and cover that are made of heavy (30 mil), polyvinyl chloride geomembrane. All of the seams of the liner and cover were sealed in the field providing a 360 degree water tight seal around the contents. ECC placed 18,000 cubic yards of material in the cell. Once the geomembrane was completed a geotextile was installed over the geomembrane and was covered with a minimum of 8 inches of cover material. The landfill cap is currently covered with grass that is maintained by the Local Redevelopment Authority (LRA). The area is fenced and warning signs are being prepared to surround the landfill.

Army has not found documents pertaining to the construction of cells 1 through 7, but is continuing its search. The permit application for the NHWL and other requested documents will be added to the Administrative Record if and when found. However, if the permit application and/or other supporting documents cannot be found, it is Army's position that prior decisions must be afforded the presumption of regularity.

Monitoring to determine whether the material is leaching from the landfill

Pending the evaluation of any documents that may be discovered through the document search discussed later in this response, Army management has tentatively approved the installation of a detection monitoring system and its operation for a defined period of time. However, and as pointed out by EPA during the April 24, 2014 conference call, ADEM determined during the permitting process that wells would not be required. If documents located by the document search indicate a rationally supported decision that groundwater monitoring would not be applicable due to the absence of groundwater at the NHWL site, then Army would see no point in installing the system.

Select institutional controls as part of the remedy for the NHWL

Army agrees that a written inspection and maintenance plan will be prepared for the NHWL. This addition is minor and will be added to the existing copies of the document as a LUCIP implementation activity without the need to reissue the document. As demonstrated in prior sections of this letter, the NHWL is a component of the final remedy selected in the Area B soils ROD. The NHWL is also a prominent component of the Environmental Covenant signed by the Childersburg Local Reuse Authority (LRA). The Environmental Covenant is a land use control that is referenced in the administrative amendment to the final ROD. Also, the deed requires that the Childersburg LRA maintain the NHWL.

Demonstrate that all waste disposed in the landfill achieved the 0.75 mg/l TCLP Universal Treatment Standard (UTS) for lead

Even though EPA's comment on Section 1.3.1, pg 6. Table 3 recognizes that an alternate UTS for characteristic soil is promulgated at 40 CFR 268.49, during the conference call EPA incorrectly cited 0.75 mg/l lead as the UTS for the treated soil placed into the NHWL. EPA guidance explains the alternative UTS as follows:

> Under the soil treatment standards in 40 CFR 268.49, a contaminated soil has two treatment requirement alternatives:
>
> - hazardous constituents must be reduced by at least 90% through treatment so that no more than 10% of their initial concentration remains or comparable reductions in mobility for metals; **OR**
> - hazardous constituents must not exceed 10 times the universal treatment standards (UTS) at 40 CFR 268.48.
>
> Constituents in contaminated soils are not required to be reduced to levels lower than 10 times UTS, unless specified under a site-specific cleanup requirement (e.g., permit or order).

EPA, "Land Disposal Restrictions: *Summary of Requirements*," at 4-9 (EPA530 –R-01-007, Revised August 2001).

EPA created the alternative treatment standards for soils at 40 CFR 268.49(c)(1) to encourage more feasible cleanups of hazardous contaminated soil that is subject to the LDRs. *Id.* at 4-10. Therefore, in accordance with the alternative standard for soil, the alternative UTS for lead is **7.5 mg/l**. EPA has also determined that the alternative standard continues to be protective of human health and the environment. *Id*. The requirement to comply with the LDR treatment standards is specifically included in the OU-1, OU-2, and OU-6 RODS.

The purpose of the incineration of the soil was to treat the soil to remove explosives. After treatment, samples of the soil were collected from the incinerator out-feed and tested for lead by the Toxicity Characteristic Leachate Procedure (TCLP). The first seven NHWL cells contain soil that passed TCLP for lead. The soil that failed TCLP were stockpiled for treatment to reduce lead in the TCLP leachate. The stockpiled soil was stabilized in a pug mill with lime, tested, and added to NHWL Cell 8.

Each lift of soil added to Cell 8 was sampled on a grid pattern. Roughly 100 samples of Cell 8 soil were collected. All of the samples were analyzed following the TCLP and none of the samples exceeded the 7.5 mg/L UTS standard for treated soil or the 5 mg/l standard for untreated soil. In fact, only seven samples exceeded 0.75 mg/l lead and only four of those exceeded 1 mg/l lead. Sample results are tabulated in Attachment B. Therefore, there are no short-term or long-term protectiveness issues resulting from lead content in the disposal of treated soil because the soil significantly achieves the UTS treatment standard determined to be protective by EPA and because both the treated and untreated soil achieve the 5.0 mg/l lead TCLP level of protectiveness required for soil disposed as a non-hazardous solid waste.

Explanation of Significant Difference

After further consideration and review of presently available documents and based on Army's above responses to the long-term protectiveness issues raised by EPA, it is Army's position that the NHWL is a properly selected component of the interim and final remedies and that an ESD is not required to describe the selection, construction, operation, or closure of the NHWL. An ESD may be necessary if a groundwater monitoring system is determined by BRACO management to be an appropriate requirement.

Army understands that EPA desires resubmission of available information on the NHWL. The Army is reviewing all documentation available at the BRAC Office and at US Army Corps of Engineers (USACE) contractor Leidos' office in Reston, Virginia. There is a file cabinet full of documents at the BRAC office and 50 to 60 Banker boxes at Leidos to look through. Once a comprehensive list of documents is prepared, the Army team will look for records pertaining to construction of the NHWL and review those documents for more information. A list of NHWL documents will be shared with the EPA and ADEM. It is possible that some of the records pertaining to the NHWL have been lost over the years and the documentation may no longer be complete. All of the pertinent documents were provided in submittals to EPA and ADEM at the time they were prepared, so copies of the documents sought may be available in agency archives at EPA and ADEM.

The Army has a contract in place to digitize documents pertaining to environmental work completed at ALAAP that are stored at the BRAC Office and Leidos. The Army is planning on making these digitized records available to EPA Region 4 and ADEM. The contractor is estimating that the digitized records will be available in August. These searchable digitized records should make finding information on historical environmental work done at ALAAP easier.

Once the digitizing process is completed, the Army will evaluate the appropriateness of submitting an Explanation of Significant Difference (ESD). If an ESD is prepared, it is the Army's intent to limit the scope of the ESD to address only groundwater monitoring around the NHWL. The Applicable or Relevant and Appropriate Requirements (ARARs) in the ESD would be limited to those directly relevant to the groundwater monitoring system installation, maintenance, sampling, and analyses at the NHWL.

Comments Related to the NHWL

Your letter listed several comments that required additional response. You listed the sections and page numbers related to the draft LUC RD and underlined the portions of the comments that remain unclear to you. Following are the comments and Army responses:

1. **Section 1.1, pg 2, NHWL:** It is mentioned that this landfill was the result of remedial actions taken place around the facility. At the same time, it is mentioned that it is not the result of CERCLA operations. Please explain. Typically, the necessity for LUCs (which is a remedy component) for a particular area or site is provided in a CERCLA decision document such as a ROD. Was this landfill regulated outside of CERCLA and issued a permit from ADEM? If not, then a ROD should be issued for this unit that describes the selected response action which presumably would include containment with engineered cap, LUCs, groundwater monitoring and maintenance of the cap. In the absence of a ROD, the LUCs that are necessary to ensure protectiveness can be specified in the LUC RD which is subject to EPA approval. However, a ROD should be issued for this unit that describes the response action which likely will include containment with engineered cap, LUCs, and maintenance of the cap.

EPA would add that, though not ideal, prior to selecting a remedy for this site, LUCs can be used to secure the site and prevent any unacceptable exposures that may exist. Inclusion of those LUCs in the LUCIP can afford the necessary protections until the remedy is selected.

Army Response: It is agreed between the parties that a plan will be prepared for the inspection and maintenance of the NHWL. This plan will be attached to the LUCIP as a LUC implementation activity. There is no additional requirement for a separate ROD for the NHWL as it is included as a component of the remedies in three IRODs and the Final ROD.

2. **Section 1.3.1, pg 6. Table 3:** If the table remains in this document, please note that any soil that exhibited the toxicity characteristic (i.e., failed TCLP) at 40 CFR 261.24 are considered RCRA hazardous waste and once excavated are subject to the Land Disposal Restrictions. Consequently, soils that are considered RCRA hazardous waste must meet the LDR

treatment standards at 40 CFR 268.40 or 268.49 prior to disposal in an on-site or off-site landfill. The soil disposal criteria listed on the Table are actually the TCLP levels. Please explain how the disposal criteria were applied and the disposition of soils that exceeded the criteria. Soil that was treated to meet TCLP levels must still meet LDR treatment standards before disposal in the NHWL.

Army Response: As explained in the discussion on the UTS for lead, the soil disposed in the NHWL met either the 5.0 mg/l lead TCLP standard for untreated soil or the alternate UTS of 7.5 mg/l for treated soil in accordance with the requirements of 40 CFR 268.49.

3. **Section 1.3.1, pg 7. Table 4:** The sentence preceding the table indicates soils were stabilized. Please clarify if treatment was performed in-situ or ex-situ and what treatment method was employed and whether TCLP was used to verify the criteria since for the metals listed the criteria correspond to the toxicity characteristic levels at 40 CFR 261.24. As noted above, soils that are excavated and exceed TCLP are considered RCRA hazardous waste. Such soils must meet RCRA LDR treatment standards in addition to being rendered non-hazardous through treatment before being disposed in a landfill (on-site or off-site). Add footnote to table to clarify if TCLP is used to measure criteria.

Army Response: Incinerated soil that exceeded 5.0 mg/l for lead by TCLP were stockpiled under plastic until all the explosive contaminated soil was incinerated and landfilled in the NHWL cells 1 through 7. The stockpiled soil was then treated in a pug mill. Ten percent by weight cement kiln dust was added to the soil as it was fed into the pug mill. Water was added when necessary to yield a mix product with a moisture content range of 12 to 15% wet basis. Disposed soil met the RCRA LDR alternate treatment standards and the TCLP lead standard for non-hazardous waste. The soil was transferred to NHWL Cell 8 for disposal.

4. **Section 1.3.1, pg 11**, Bulleted items "*Nonhazardous waste landfill*": Please indicate whether ADEM regulated the landfill under its RCRA Subtitle D program and whether a permit was issued. Also, please describe whether the landfill was constructed with a bottom liner and whether groundwater monitoring wells have been installed at the boundary of the unit to detect releases from buried wastes. As stated above, EPA believes a ROD should be issued to address the NWHL and describe a selected remedy.

Army Response: ADEM did not regulate the NHWL under its RCRA Subtitle D program. A permit application was prepared but after approval it was determined that a permit was not required pursuant to 42 U.S.C. § 9621(e)(1). The NHWL was nonetheless closed in accordance with the requirements of the approved permit application. Army has details on the construction of NHWL Cell 8 that shows that there is a bottom liner in that cell. Army is reviewing its documents for construction details for cells 1 through 7. It is Army's view that, regardless of whether such documents can be located, Army is entitled to the presumption of regularity. A separate ROD is not necessary as the NHWL is included as a remedy component in the three IRODs and the final ROD for Area B soils.

Other Comments not related to the NHWL

The comments addressing your additional concerns not related to the NHWL are presented below with responses.

1. **Section 1.3.1, pg 11**, Bulleted items "*Asbestos Repository*": The Asbestos Repository was constructed in 1974 with the destruction of the building located in that area. Asbestos was placed in the basement of the building and then covered with two feet of soil. Please indicate whether signs are posted that indicate it is used asbestos disposal as required by asbestos NESHAP regulations. EPA believes a ROD should be issued to address the Asbestos Repository and describe the selected remedy such that it can be included in the 5YR as requested by the State.

Army Response: Signs to be installed around the Asbestos Repository are in production.

2. **Section 1.3.1, pg 10-11**, Bulleted items "*Aniline Sludge Basin, (Study Area 9) EPA OU7*": Please specify if remedial actions in 1999 were conducted under CERCLA and date of ROD or IROD. Also, specify level of residual contamination and/or whether confirmatory sampling was performed. Indicate whether contamination exceeds residential use or industrial use levels.

Army Response: A copy of the report titled *Final Report Clean-Up of Coal Tar; Aniline Sludge Basin at ALAAP* dated October 6, 1999 prepared by ECC is at the BRAC Office. According to the report, the object of the cleanup was to remove the coal tar from the bottom of the basin and haul it to an offsite RCRA subtitle D landfill, provide the necessary confirmation testing to demonstrate that the contaminated soils were removed, and restore the site to appropriate original condition. In addition, ECC transported and disposed of lead ingots that were stockpiled in building TC-4 in the approved RCRA Subtitle D landfill.

As part of the 1995 Supplemental Remedial Investigation, samples were collected from the sediment in the basin. The samples were analyzed for metals, explosives-related compounds, VOCs and SVOCs. Two metals, arsenic and molybdenum, were detected at concentrations that exceeded background concentrations. Neither of these metals was identified as a human health contaminant of concern. Both of the metals were identified as eco-COCs.

Of the samples that were collected directly from the coal tar, there were only some minor concentrations of iron, aluminum, and barium. All of these were below ADEM's TCLP regulatory levels.

Following excavation, samples were collected following a grid pattern in which a pattern of seventeen, 50 x 50 foot grid squares were laid out over the excavation area. Nineteen samples were collected and analyzed for TCLP metals, total metals, and SVOCs. The confirmation samples did not exceed ADEM's TCLP regulatory limit. In total 3,063 cubic yards of material were removed and taken to the Cedar Hills Landfill.

A hard copy of the report is available and a copy can be provided if required. Based on the analytical data, a contaminant cleanup was not required under CERCLA, but rather some housekeeping to remove the coal tar from the basin. The tar removal was a housekeeping activity and was not in response to the risk assessments. Because the top of the basin was sticky during the summer months, the stakeholders were concerned that birds and animals would stray onto the area and might get stuck to the tar.

3. **Section 1.3.1, pg 10-11**, Bulleted items "*Storage Battery and Debris Dump (Study Area 25), EPA OU7*": Please specify if remedial actions were conducted under CERCLA and date of ROD or IROD. Indicate whether the lead debris and contaminated soils were managed as RCRA hazardous waste and whether the Opelika landfill is a RCRA Subtitle C hazardous waste landfill. Also, specify level of residual contamination and/or whether confirmatory sampling performed. Indicate whether contamination exceeds residential use or industrial use levels.

Language from Draft LUC-RD dated August 2012: Remediation of the Storage Battery and Debris Dump was performed by Bhate Environmental Associates, Inc. (Bhate). Remediation at Study Area 25 was achieved by the excavation and offsite disposal of approximately 156 tons of soils and the disposal of 4,638 pounds of battery casings and debris. Detected soil concentrations were compared against EPA Region 3 risk-based industrial screening levels (ISLs) for industrial sites. The ISLs for detected metals in soil samples prior to excavation and disposal are:

- Arsenic concentrations greater than 3.8 mg/kg
- Lead concentrations greater than 42 mg/kg (ISL from Alabama risk based corrective action[RBCA] for underground and storage tanks [USTs] in April 1998)

Signed manifests documented the transfer of 156.61 tons of soil from Study Area 25 to the Opelika Landfill in Opelika, Alabama. Battery demolition debris consisting of lead panel remnants were loaded into 55-gallon steel drums and transferred to an offsite recycling facility. Documentation showed 4,638 pounds of battery remnants were accepted by Beckman Metals Recycling of Cullman, Alabama. Details of the Study Area 25 remediation are provided in Area 25 Battery/Demolition Debris, Red Water Basin and Sinkhole Repair (Bhate 2000).

Bhate (Bhate Environmental Associates, Inc.). 2000. Area 25 Battery/Demolition Debris, Red Water Basin, and Sinkhole Repair – Former Alabama Army Ammunition Plant, Childersburg, Alabama. Prepared for U.S. Army Corps of Engineers, Mobile District Office, Mobile, Alabama. August.

Army Response: The OU7 ROD did not discuss the work done by Bhate. A FS was conducted in 2008 for Soil Sediment and Surface Water in Area B. Site 25 is discussed in the 2008 FS, the Human Health Risk Assessment and Eco-Risk Assessment were reviewed and no further action (NFA) was required for the site. The Army has found no documentation concerning whether the remedial work at Site 25 was conducted under CERCLA. The best recollection of the few remaining personnel that were involved in the project in 2000 is that the cleanup of the battery parts and the switches were conducted as a house keeping function and not part of the CERCLA work. No IROD or ROD has been found that was developed specifically for Site 25. The OU7

ROD indicated that no further action is required at the site and unrestricted land use for the site. Based on OU7 ROD, the CERCLA decision for the site is NFA.

A copy of the Bhate Report from 2000 should be available in the archive documents that are scheduled for scanning. Once this document is located more information on the storage battery site cleanup may be available.

4. **Section 1.3.1, pg 10-11**, Bulleted items "*TC4-A and B, EPA OU 1*": Please indicate the cleanup values for the soils in these areas. Also, specify if remedial actions conducted under CERCLA and what are the residual contamination levels. Specify if remaining contamination exceeds industrial or residential use levels.

Army Response: TC4-A and -B were prefabricated structures with slab on grade foundations that were used to store soil from Area A prior to it being treated in the onsite incinerator. There were no cleanup values for the soils in these areas. There were no remedial actions conducted in the area. There was no remaining contamination.

5. **Section 1.3.1, pg 11**, Bulleted items "*Utility Poles and PCB Transformers*": Please indicate what authority, CERCLA etc. was used to remove the fallen poles with transformers and the PCB contaminated soil. Indicate whether the PCB contaminated soil exceeded 50ppm and had to be disposed of as TSCA PCB waste in a TSCA chemical waste landfill. Also, specify level of residual contamination since confirmatory sampling was performed. Indicate whether contamination exceeds residential use or industrial use levels.

The Downed Utility Pole with Transformers and Transformer Storage Buildings were classified as requiring no further action (NFA) in the OU7 ROD.

Language from the LUC-RD: "***Utility Poles with PCB Transformers—***A Community Environmental Response Facilitation Act (CERFA) investigation was conducted at ALAAP in April 1994 under the BRAC Environmental Restoration Program (ERP), as required by Public Laws 100-526 and 101-510 (TETC 1994). The associated report identified real property in Area B that could be immediately reused and redeveloped. The study also identified six additional areas with environmental concerns that were not considered during previous investigations. …At various locations around Area B, downed power poles with stained earth were observed. Sampling of the stained earth was conducted as part of the Supplemental RI for ALAAP – Area B and revealed the presence of polychlorinated biphenyl (PCB)-contaminated soils (SAIC 2001a). The transformers had been removed during demolition operations. The contaminated soil was excavated and disposed of offsite. Confirmatory samples verified the results of the soil removal. No documentation about cleanup goals of utility poles with PCB transformers is available."

SAIC. 2001a. Supplemental RI Report – Remedial Investigation/Feasibility Study, Alabama Army Ammunition Plant – Area B, Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District under Contact DAAA15-91-D-0017, Delivery Order No. DA12. Prepared by Science Applications International Corporation, Reston, Virginia. Final. August.

TETC (The Earth Technology Corporation). 1994. Community Environmental Response Facilitation Act (CERFA) Report, Alabama Army Ammunition Plant, Talladega County, Alabama. Prepared for the U.S. Army Environmental Center. April.

Information from the Supplemental RI Report by SAIC dated August 2001: ninety-five soil samples were collected and analyzed for PCBs and Metals. Three of the samples exceeded 50ppm PCBs. Sample SS-PO-047 was collected at the east side of the Bldg. 2240 South Transformer Storage Area, Aroclor 1260 was detected at 102 ppm. Samples SS-PO-094 and SS-PO-095 were collected south of Bldg. 717A, total Aroclors were 67.8 ppm and 106 ppm respectively in the Smokless Powder Manufacturing Area.

Language from OU7 ROD: The visual survey conducted under CERFA identified 27 locations under and around utility poles with transformers where the soil was blackened and bare of vegetation (TECT 1994). None of the transformers had been tested for PCB contamination. With the exception of a utility pole near Building 227D in the Smokeless Powder Manufacturing Area (Study Area 2), all locations are in the GSA Area. Each location was assigned a site number corresponding to the closest building, as follows:

- 708A – Three utility poles on the north side
- 703E – Two utility poles on the northwest portion
- 703A – Two utility poles on the southwest and one on the southeast portion
- 2240 – Eight utility poles on the south side
- 2170 – One utility pole on the southeast and two on the south side
- 704Y – Three utility poles on the north side
- 717A – Two utility poles on the northeast and one on the southwest portion
- 715A – One utility pole on the southeast portion
- 227D – One utility pole on the north side (in the Smokeless Powder Manufacturing Area)

A Supplemental RI and baseline risk assessment conducted in 1996 identified PCBs in soils as COCs based on protection of human health and the environment. During the Supplemental RI, surface soil samples were collected from each of the 27 utility pole areas. Risks for the residential land use scenario exceeded one or more risk targets (SAIC 2001). The soils surrounding the utility poles were excavated and disposed of in September and October 1999 (USACE 1999), but available documents do not provide the volume of soil that was remediated. Since soil remediation has been completed, no threats to human health or the environment exist for unrestricted land use. Therefore, NFA is required for this study area.

SAIC. 2001. Supplemental RI Report – Remedial Investigation/Feasibility Study, Alabama Army Ammunition Plant – Area B, Childersburg, Alabama. Prepared for the U.S. Army Corps of Engineers, Mobile District under contact DAAA15-91-D-0017, delivery order number DA12. Prepared by Science Applications International Corporation, Reston, Virginia. Final. August.

USACE (U.S. Army Corps of Engineers). 1999. Alabama Army Ammunition Plant Remedial Actions. Partnering Conference Presentation by Ken Gray. February 16.

Army Response: The OU7 ROD indicates that the CERCLA decision for the Utility Poles with PCB Transformer site is NFA required. The best recollection of the few personnel remaining on the project that were working at the site at the time is that the cleanup of the contaminated soil would not have been a CERCLA effort, but more of a house keeping activity. A 1999 document entitled *Final Report – PCB Clean-Up at ALAAP* dated November 1999 prepared by EEC should be available in the archive documents that are scheduled for scanning. Once this document is located more information on the PCB cleanup may be available. The Army assumes that the contaminated soil from the site was handled appropriately; additional information may come to light as historical documents become more easily accessible after scanning.

Implementation of the LUCIP

Below are Army Reponses to EPA LUCIP comments, EPA responses to Army responses and Army latest responses to EPA responses.

1. Army's Response to Comment 26, 26A

The LUCIP clearly designates the locations on the "No Fishing" signs at Study Areas 21 and 26. The "No Fishing" signs are placed along the entire length of the Study Areas. The referenced RTC states that the discussion regarding the home range of the fish was inappropriate for a LUCIP and that discussion is not included.

EPA Response: Locations of a LUC are based on where a potential for exposure exists and are not limited by site boundaries. Without evaluating the ecological receptors home range along with their location on the site, the Army does not know whether the site boundary, as marked in the LUCIP, controls the risk. It is not clear whether the potential for a receptor to migrate beyond the site boundary has been evaluated, nor whether the potential for predators of the receptor to feed on the site. EPA cannot agree to placement of signage at the site boundary without adequate justification.

Army Response: Clarification. The LUC of postings to discourage fish consumption is a highly conservative approach to a human health risk that is already highly overestimated. The contaminated sediments from both ditches have been remediated. In the present setting, fishing in the water bodies that are proposed for posting would be undesirable because: 1) the ditches/creeks are frequently dry and therefore provide poor or no habitat for fish; 2) the banks and surrounding terrain is thickly vegetated, making fishing difficult; and 3) water moccasins are ubiquitous along the ditches/creeks, especially near portions that contain water, diminishing the chance that a person would attempt to fish. Furthermore, ample opportunity for better fishing exists within a couple of miles of ALAAP. The postings were recommended for a future hypothetical setting in which clearing of vegetation provided better access to any water-filled stretches of ALAAP water bodies and less desirable habitat for moccasins. Postings would be located along all stretches that could potentially be fished.

With regard to home range and as described above, water levels within ALAAP water bodies are highly variable and dependent upon precipitation. During dry periods, the ditches/creeks may be dry or flow only intermittently. This condition strongly limits both the size of fish that may exist

and the range over which they may travel. Small golden shiners, blue gill, and various species of sunfish, (e.g., green sunfish); have been found in the Red Water Ditch and Crossover Ditch (SAIC Supplemental .RI Report 2001). Gerking (1953) has published that the majority of green sunfish have small home ranges from 100 to 200 feet. There are other studies that confirm this rather sedentary habit of small stream fish. Thus, the fish at ALAAP are not expected to move very much up and down the ditches. It is thought unlikely that fish large enough to be caught and kept for consumption following legal fishing limits in Alabama navigate off ALAAP to present a risk to human health by being caught in adjacent water bodies for consumption. Leidos' ecologist returned to the site in 2013 to confirm previous assessments and found conditions track with previous conclusions: fishing conditions are still poor on the site; the fish in the ditch are too small to be caught for food by angling. It is thought unlikely that fish leave the site in search of food or that predators would come on the site in search of prey species. Predatory fish would not exclusively hunt in the ditches and therefore their diet would be blended with prey outside the ditches which would dilute any contaminant build up in their tissues. No study of fish movement out of or into the ditches has been conducted.

Fish tissue samples, which gave rise to concern, were collected from water bodies' interior to ALAAP. It should be noted that fillet samples could not be collected from the Red Water Ditch due to an absence of fish large enough to provide such a sample. Samples generally were prepared as composites of small species or small individuals. In the human health risk assessment, resident and recreational children and adults were assumed to eat 0.03 kg of ALAAP fish per day for 120 days per year. This is approximately equal to 1 meal (8 oz. meals) per week for approximately four months of the year. This is unrealistic for the Red Water Ditch and the Crossover Ditch based on the size and quantity of fish present and is part of the reason why the risks are considered overestimates. The warnings proposed for this LUC would be monitored by inspections of posted signs.

2. Army's Response to Comment 33

Section III.C of the Environmental Protection Provisions attached to the Quitclaim Deed as "Exhibit C" requires that a soil excavation plan be provided to EPA and Army for their approval prior to conduct of any excavation. If disposition of the soil is not satisfactory to EPA, then EPA may require satisfactory revisions to the plan prior to EPA's approval. The same is true with respect to Army's requirements.

EPA's Response: Any and all requirements, to the extent possible, need to be placed in the LUCIP document such that all parties and those not versed in the detail of the site or the agreement have a clear indication of the requirements for site use. A prospective purchaser of the property may base a purchase price on their ability to move soil to any location and find later that that is not possible. In addition, future implementers of the LUCIP may not be as familiar with the site and may inadvertently approve soil movement to uncontaminated portions of the property without clear indication in the LUCIP. To the extent possible, the LUCIP needs to be written to prevent potential exposures and do so with as much transparency, as possible.

Army Response: As a LUC implementation activity, an addendum will be added to the existing Final LUCIP for ALAAP Area B and reviewed by stakeholders to formalize procedures for onsite movement or off-site disposal or reuse of soil that may be contaminated with explosives-

related compounds and/or lead. This addendum will be added to the existing copies of the document without the need to reissue the document.

Please contact the undersigned if you have any question on these matters.

Sincerely,

VAN DYKE.ANDREW.L.1200786714

Digitally signed by VAN DYKE.ANDREW.L.1200786714
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=VAN DYKE.ANDREW.L.1200786714
Date: 2014.05.20 10:40:31 -04'00'

Andrew Van Dyke
Program Manager
Army BRAC Office

cc: Adam Warnke, ADEM
Martha Brock, EPA Region 4
David Minvielle, Army ELD
Ann Wright, Army OGC
Melissa Shirley, USACE
Bill Millar, CALIBRE
file

ATTACHMENT A

Excerpts from: "EPA Superfund Record of Decision, Alabama Army Ammunition Plant, EPA ID: AL6210020008, OU 01, Childersburg, AL," (12/31/1991) (emphasis added)

DECLARATION OF THE RECORD OF DECISION

…

DESCRIPTION OF THE SELECTED REMEDY

The Stockpile Soils Area Operable Unit addresses the principal threats from explosives, lead, and asbestos containing material posed by the Stockpile Soils at the Alabama Army Ammunition Plant. The Stockpile Soils Area Operable Unit consists of soil stockpiled in a covered building and on a concrete slab covered with an impermeable membrane. The scope of the ROD is limited to the Stockpile Soils Area Operable Unit.

The selected Remedy for the Stockpile Soils Area Operable Unit consists of the following:

- On-Facility Thermal Treatment of Stockpile Soils
- On-Facility Disposal of Treated Soil
- On- or Off-Facility Disposal of Asbestos-Containing Material

…

7.2 Alternative 2 - On-Facility Thermal Treatment and On-Facility Disposal of Treated Soil / On or Off-Facility Disposal of Asbestos-Containing Material

In Alternative 2, soil will be separated from the asbestos containing material. Soil will be transported to the on-facility thermal treatment unit for incineration. Treated material will be analyzed for explosives and lead to verify compliance with the treatment criteria as described in "Remediation Goals", in Section 9.1. The explosives will be destroyed during the incineration process**. If lead concentrations in the treated soil or fly ash exceed the allowable regulatory standards, that material will be stabilized in compliance with Land Disposal Restrictions. Treated soil and stabilized material will be placed at the on-facility designated backfill area at AAAP.** The on-facility incinerator will be removed upon completion of the project.

Asbestos-containing material will be containerized and transported to an on-or off-facility disposal facility that meets the technical standards for asbestos disposal. The quantity of material to be disposed of and the availability of disposal facilities will determine whether on- or off-facility disposal of the asbestos-containing material will be used.

Excerpt from: "EPA Superfund Record of Decision: Alabama Army Ammunition Plant, EPA ID: AL6210020008, OU 02, Childersburg, AL" (11/15/1994) (emphasis added)

DECLARATION OF THE FINAL INTERIM RECORD OF DECISION

…

DESCRIPTION OF THE SELECTED REMEDY

…

The selected remedy for the Area B Soils Operable Unit consists of the following:

(A) Soils and Sediments (Study Areas 6, 7, and 21)

- Clear, survey, and grid areas; perform soil and sediment sampling and analysis to delineate contamination by explosives (TNT, 1,3-dinitrobenzene, and tetryl) and lead.

- For contaminated areas: excavate soils and sediments until excavation criteria are satisfied; screen materials; transport materials to the transportable incineration system (TIS-20) site in Area B; **treat materials by incineration and/or stabilization until treatment and disposal criteria are satisfied**.

- Decontaminate oversize materials by crushing or shredding and treatment in the TIS-20, or by high-pressure water washing and disposal in the backfill area.

- Expand the existing on-site disposal area for final placement of treated materials.

- Backfill excavated areas in Study Areas 6 and 7 and rough grade to pre-excavated contours; backfill Study Area 21 to the elevation of surrounding banks of the Red Water Ditch.

- **Close the disposal area in accordance with the existing approved permit application for treated soils ("Treated Soils - Backfill Area Permit Application for the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit", March 1993).**

Excerpt from: "EPA Superfund Record of Decision: Alabama Army Ammunition Plant, EPA ID: AL6210020008, OU 06, Childersburg, AL" (03/27/1997) (emphasis added)

DECLARATION OF THE INTERIM RECORD OF DECISION

…

DESCRIPTION OF THE SELECTED REMEDY

…

The selected remedy for the Area B Soils Operable Unit IV consists of the following:

- Clear, survey, and grid areas; perform soil and sediment sampling and chemical analysis to delineate explosives and metals contamination.
- Use Ground Penetrating Radar (GPR) or test pits to locate suspected burning trenches in Study Areas 16 and 19.
- For contaminated areas (except Study Area 22): excavate soils until excavation criteria are satisfied; transport materials to the TIS-20 site in Area B; **treat materials by incineration and/or stabilization until treatment and disposal criteria are satisfied**; dispose treated material in the on-site backfill area. Study Area 22 will be addressed using an engineered landfill in accordance with the remedial option identified in the Draft Final Feasibility Study Report dated March 1996, prepared by Science Applications International Corporation.
- If necessary, expand the existing on-site disposal area for final placement of treated materials.
- Decontaminate oversize materials by crushing or shredding and treatment in the TIS-20 or by high-pressure water washing; dispose in the backfill area.
- Treat contaminated process, sampling, and decontamination wastewaters in the TIS-20 aqueous waste treatment system; reuse water for site dust control and process makeup.
- Conduct confirmatory soil and sediment sampling and chemical analysis to ensure that excavation criteria have been satisfied.
- Backfill excavated areas in with uncontaminated borrow soils and rough grade to pre-excavated contours.
- **Close the on-site disposal area in accordance with the existing approved permit applications for treated soils ("Treated Soils - Backfill Area Permit Application for the Alabama Army Ammunition Plant", March 1994 and November 1994).**

ATTACHMENT B

ALAAP NHWL Cell 8 Data

Taken from Environmental Chemical Corporation – Final Report – Stabilization of Incinerator Treated Soil and Fly Ash and Excavated Soil from Study Area 14, 16, & 19 January 1999

Attachment B - ALAAP

NHWL Cell 8 Data

Taken from Environmental Chemical Corporation -- Final Report -- Stabilization of Incinerator Treated Soil and Fly Ash and Excavated Soil from Study Area 14, 16, & 19 ALAAP

Jan-99

Taken from Appendix F -- Analytical Results

Total Lead EPA 6010B Stockpiled Soil Results

Lab ID	Customer Sample No.	Matrix	Location	Reporting Limit mg/kg	Value mg/kg	Percent Solids	Comments	Date Received	Date Analyzed
26848-003	0820-Cell8-STKPL	Soil	N/A	3.8	23	100		8/21/1998	8/26/1998
26895-005	0827-TC4-BLDG	Soil	N/A	3.9	46	100		8/28/1998	8/29/1998
26895-006	0827-CON-PAD	Soil	N/A	3.8	30	100		8/28/1998	8/29/1998
26978-005	0909-NW-COMP	Soil	N/A	4.0	87	100		9/10/1998	9/12/1998
26978-006	0909-SW-COMP	Soil	N/A	3.8	90	100		9/10/1998	9/12/1998
26978-007	0909-NE-COMP	Soil	N/A	4.0	**641**	100		9/10/1998	9/12/1998
26978-008	0909-SE-COMP	Soil	N/A	3.8	64	100		9/10/1998	9/12/1998
26978-007	0909-NE-Comp	Soil	N/A	4.0	105	100	Re-analyzed?	9/10/1998	9/16/1998

TCLP Metals EPA 6010A After Treatment in Pugmill

		Arsenic			Lead					
Lab ID	Customer Sample No.	Reporting Limit mg/L	Value mg/L	Flag	Reporting Limit mg/L	Value mg/L	Flag	Date Sampled	Date Received	Date Analyzed
26626-001	0722-L2-T17	0.050	---	U	0.040	---	U	7/22/1998	7/23/1998	7/28/1998
26626-002	0722-L2-CE	0.050	---	U	0.040	0.09		7/22/1998	7/23/1998	7/28/1998
26626-003	0722-L1-CA	0.050	---	U	0.040	---	U	7/22/1998	7/23/1998	7/28/1998
26626-004	0722-L1-19	0.050	---	U	0.040	---	U	7/22/1998	7/23/1998	7/28/1998
26642-001	0723-L3-T17	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/26/1998
26642-002	0723-L3-CB	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/26/1998
26642-003	0723-L4-T19	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/26/1998
26642-004	0723-L4-CE	0.050	---	U	0.040	---	U	7/23/1998	7/24/1998	7/26/1998
26658-001	0727-L5-T19	0.050	---	U	0.040	0.043		7/27/1998	7/28/1998	7/30/1998
26658-002	0727-L5-CF	0.050	---	U	0.040	0.066		7/27/1998	7/28/1998	7/30/1998
26667-001	0728-L6-T17	0.050	---	U	0.040	0.11		7/28/1998	7/29/1998	8/1/1998
26667-002	0728-L6-CF	0.050	---	U	0.040	---	U	7/28/1998	7/29/1998	8/1/1998
26667-003	0728-L7-T19	0.050	---	U	0.040	0.16		7/28/1998	7/29/1998	8/1/1998
26667-004	0728-L7-CC	0.050	---	U	0.040	0.059		7/28/1998	7/29/1998	8/1/1998
26667-005	0728-L8-T19	0.050	---	U	0.040	0.43		7/28/1998	7/29/1998	8/1/1998
26667-006	0728-L8-CD	0.050	---	U	0.040	0.13		7/28/1998	7/29/1998	8/1/1998
26678-001	0729-L9-T19	0.050	---	U	0.040	0.11		7/29/1998	7/30/1998	8/3/1998
26678-002	0729-L9-CG	0.050	---	U	0.040	0.49		7/29/1998	7/30/1998	8/3/1998
26690-001	0730-L10-T19	0.050	---	U	0.040	0.065		7/30/1998	7/31/1998	8/4/1998
26690-002	0730-L10-CG	0.050	---	U	0.040	0.12		7/30/1998	7/31/1998	8/4/1998
26690-003	0730-L11-T17	0.050	---	U	0.040	0.078		7/30/1998	7/31/1998	8/4/1998
26690-004	0730-L11-CH	0.050	---	U	0.040	---	U	7/30/1998	7/31/1998	8/4/1998
26690-005	0730-L12-T17	0.050	---	U	0.040	---	U	7/30/1998	7/31/1998	8/4/1998
26690-006	0730-L12-CK	0.050	---	U	0.040	0.10	U	7/30/1998	7/31/1998	8/4/1998

TCLP Metals EPA 6010A

Lab ID	Customer Sample No.	Arsenic Reporting Limit mg/L	Arsenic Value mg/L	Arsenic Flag	Lead Reporting Limit mg/L	Lead Value mg/L	Lead Flag	Date Sampled	Date Received	Date Analyzed
26710-001	0803-L13-T8	0.050	0.11		0.040	---	U	8/3/1998	8/4/1998	8/8/1998
26710-002	0803-L13-CK	0.050	---	U	0.040	0.064		8/3/1998	8/4/1998	8/8/1998
26710-003	0803-L14-T17	0.050	---	U	0.040	0.10		8/3/1998	8/4/1998	8/8/1998
26710-004	0803-L14-CL	0.050	0.092		0.040	0.14		8/3/1998	8/4/1998	8/8/1998
26710-005	0803-L15-T19	0.050	0.11		0.040	0.47		8/3/1998	8/4/1998	8/8/1998
26710-006	0803-L15-CJ	0.050	0.99		0.040	0.32		8/3/1998	8/4/1998	8/8/1998
26724-001	0804-L16-T19	0.050	---	U	0.040	0.24		8/4/1998	8/5/1998	8/8/1998
26724-002	0804-L16-CJ	0.050	0.11		0.040	0.60		8/4/1998	8/5/1998	8/8/1998
26724-003	0804-L17-T19	0.050	0.13		0.040	0.39		8/4/1998	8/5/1998	8/8/1998
26724-004	0804-L17-CI	0.050	0.054		0.040	0.53		8/4/1998	8/5/1998	8/8/1998
26732-001	0804-L18-T19	0.050	---	U	0.040	4.60		8/5/1998	8/6/1998	8/14/1998
26732-002	0804-L18-CI	0.050	---	U	0.040	---	U	8/5/1998	8/6/1998	8/7/1998
26732-003	0804-L19-T19	0.050	---	U	0.040	0.41		8/5/1998	8/6/1998	8/7/1998
26732-004	0804-L19-CL	0.050	---	U	0.040	---	U	8/5/1998	8/6/1998	8/7/1998
26739-001	0806-L20-T14	0.050	0.074		0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26739-002	0806-L20-CH	0.050	---	U	0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26739-003	0806-L20-T17	0.050	0.089		0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26739-004	0806-L20-CK	0.050	---	U	0.040	---	U	8/6/1998	8/7/1998	8/8/1998
26762-001	0810-L22-T19	0.050	---	U	0.040	0.29		8/10/1998	8/11/1998	8/12/1998
26762-002	0810-L22-CG	0.050	---	U	0.040	---	U	8/10/1998	8/11/1998	8/12/1998
26762-003	0810-L23-T19	0.050	---	U	0.040	---	U	8/10/1998	8/11/1998	8/12/1998
26762-004	0810-L23-CJ	0.050	---	U	0.040	0.047		8/10/1998	8/11/1998	8/12/1998
26771-001	0811-L24-T17	0.050	---	U	0.040	0.28		8/11/1998	8/12/1998	8/13/1998
26771-002	0811-L24-CJ	0.050	---	U	0.040	0.30		8/11/1998	8/12/1998	8/13/1998
26771-003	0811-L25-T19	0.050	---	U	0.040	0.79		8/11/1998	8/12/1998	8/13/1998
26771-004	0811-L25-CF	0.050	---	U	0.040	2.5		8/11/1998	8/12/1998	8/13/1998
26796-001	0813-L26-CF	0.050	---	U	0.040	0.59		8/13/1998	8/14/1998	8/16/1998
26796-002	0813-L26-TK10	0.050	---	U	0.040	1.3		8/13/1998	8/14/1998	8/18/1998
26836-001	0818-L27-CD	0.050	---	U	0.040	0.11		8/18/1998	8/20/1998	8/21/1998
26836-002	0818-L27-TK8	0.050	---	U	0.040	0.13		8/18/1998	8/20/1998	8/21/1998
26836-003	0818-L28-CC	0.050	---	U	0.040	0.068		8/19/1998	8/20/1998	8/21/1998
26836-004	0818-L28-TK13	0.050	---	U	0.040	0.069		8/19/1998	8/20/1998	8/21/1998
26848-001	0820-L29CB	0.050	---	U	0.040	0.072		8/18/1998	8/21/1998	8/22/1998
26848-002	0820-L28-TK26	0.050	---	U	0.040	---	U	8/18/1998	8/21/1998	8/22/1998
26866-001	0824-L30-CJ	0.050	---	U	0.040	0.081		8/24/1998	8/25/1998	8/26/1998
26866-002	0824-L30-TK19	0.050	---	U	0.040	---	U	8/24/1998	8/25/1998	8/26/1998
26866-003	0824-L31-CI	0.050	---	U	0.040	0.11		8/24/1998	8/25/1998	8/26/1998
26866-004	0824-L31-TK17	0.050	---	U	0.040	0.11		8/24/1998	8/25/1998	8/26/1998
26866-005	0824-L32-CE	0.050	---	U	0.040	0.060		8/24/1998	8/25/1998	8/26/1998
26866-006	0824-L32-TK19	0.050	---	U	0.040	0.25		8/24/1998	8/25/1998	8/26/1998

TCLP Metals EPA 6010A

Lab ID	Customer Sample No.	Arsenic Reporting Limit mg/L	Arsenic Value mg/L	Flag	Lead Reporting Limit mg/L	Lead Value mg/L	Flag	Date Sampled	Date Received	Date Analyzed
26887-001	0825-L33-CC	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-002	0825-L33-CCQA	0.050	---	U	0.040	0.17		8/25/1998	8/27/1998	8/29/1998
26887-003	0825-L33-TK5	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-004	0825-L33-TK5QA	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-005	0825-L34-CB	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-006	0825-L34-CBQA	0.050	---	U	0.040	0.24		8/25/1998	8/27/1998	8/29/1998
26887-007	0825-L34-TK17	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-008	0825-L34-TK17QA	0.050	0.059		0.040	0.18		8/25/1998	8/27/1998	8/29/1998
26887-009	0825-L35-CF	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-010	0825-L35-CFQA	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-011	0825-L35-TK10	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-012	0825-L35-TK10QA	0.050	---	U	0.040	---	U	8/25/1998	8/27/1998	8/29/1998
26887-013	0825-L36-CA	0.050	---	U	0.040	0.14		8/26/1998	8/27/1998	8/29/1998
26887-014	0825-L36-CAQA	0.050	---	U	0.040	---	U	8/26/1998	8/27/1998	8/29/1998
26887-015	0825-L36-TK3	0.050	---	U	0.040	0.18		8/26/1998	8/27/1998	8/29/1998
26887-016	0825-L36-TK3QA	0.050	---	U	0.040	0.090		8/26/1998	8/27/1998	8/29/1998
26895-001	0827-L37-CE	0.050	---	U	0.040	0.18		8/27/1998	8/28/1998	8/30/1998
26895-002	0827-L37-CEQA	0.050	---	U	0.040	0.78		8/27/1998	8/28/1998	8/30/1998
26895-003	0827-L37-TK6	0.050	---	U	0.040	0.042		8/27/1998	8/28/1998	8/30/1998
26895-004	0827-L37-TK6QA	0.050	---	U	0.040	1.5		8/27/1998	8/28/1998	8/30/1998
26895-007	0827-L38-CL	0.050	---	U	0.040	0.047		8/27/1998	8/28/1998	8/30/1998
26895-008	0827-L38-TK15	0.050	---	U	0.040	0.23		8/27/1998	8/28/1998	8/30/1998
26907-001	0828-L39-COMP	0.050	---	U	0.040	0.082		8/28/1998	8/31/1998	9/2/1998
26907-002	0828-L39-COMPQA	0.050	---	U	0.040	---	U	8/28/1998	8/31/1998	9/2/1998
26907-003	0828-L39-TK5	0.050	---	U	0.040	---	U	8/28/1998	8/31/1998	9/2/1998
26907-004	0828-L39-TK5QA	0.050	---	U	0.040	---	U	8/28/1998	8/31/1998	9/2/1998
26913-001	0831-L40-C40	0.050	---	U	0.040	0.047		8/31/1998	9/1/1998	9/3/1998
26913-002	0831-L40-C40QA	0.050	---	U	0.040	0.11		8/31/1998	9/1/1998	9/3/1998
26913-003	0831-L40-TK13	0.050	---	U	0.040	1.1		8/31/1998	9/1/1998	9/3/1998
26913-004	0831-L40-TK13QA	0.050	---	U	0.040	0.062		8/31/1998	9/1/1998	9/3/1998
26913-005	0831-L41-C41	0.050	---	U	0.040	0.26		8/31/1998	9/1/1998	9/3/1998
26913-006	0831-L41-C41QA	0.050	---	U	0.040	0.080		8/31/1998	9/1/1998	9/3/1998
26913-007	0831-L41-TK14	0.050	0.13		0.040	0.17		8/31/1998	9/1/1998	9/3/1998
26913-008	0831-L41-TK14QA	0.050	---	U	0.040	0.25		8/31/1998	9/1/1998	9/3/1998
26918-001	0901-L42-C42	0.050	---	U	0.040	0.042		9/1/1998	9/2/1998	9/3/1998
26918-002	0901-L42-C42QA	0.050	---	U	0.040	0.34		9/1/1998	9/2/1998	9/3/1998
26918-003	0901-L42-TK20	0.050	---	U	0.040	0.046		9/1/1998	9/2/1998	9/3/1998
26918-004	0901-L42-TK20QA	0.050	---	U	0.040	0.041		9/1/1998	9/2/1998	9/3/1998
26918-005	0901-L43-L43	0.050	---	U	0.040	0.054		9/1/1998	9/2/1998	9/3/1998
26918-006	0901-L43-L43QA	0.050	---	U	0.040	0.11		9/1/1998	9/2/1998	9/3/1998
26918-007	0901-L43-TK7	0.050	---	U	0.040	0.056		9/1/1998	9/2/1998	9/3/1998
26918-008	0901-L43-TK7QA	0.050	0.052		0.040	0.077		9/1/1998	9/2/1998	9/3/1998
26932-001	0902 L 44 COMP	0.050	---	U	0.040	0.068		9/2/1998	9/3/1998	9/4/1998
26932-002	0902 L 44 COMP QA	0.050	---	U	0.040	---	U	9/2/1998	9/3/1998	9/4/1998
26932-003	0902 L 44 TK5	0.050	---	U	0.040	---	U	9/2/1998	9/3/1998	9/4/1998
26932-004	0902 L 44 TK5 QA	0.050	---	U	0.040	---	U	9/2/1998	9/3/1998	9/4/1998
26946-001	0903-L45-COMP	0.050	---	U	0.040	---	U	9/3/1998	9/4/1998	9/6/1998
26946-002	0903-L45-COMP-QA	0.050	---	U	0.040	0.30		9/3/1998	9/4/1998	9/6/1998
26946-003	0903-L45-TK	0.050	---	U	0.040	0.28		9/3/1998	9/4/1998	9/6/1998
26946-004	0903-L45-TK-QA	0.050	---	U	0.040	0.045		9/3/1998	9/4/1998	9/6/1998
26946-005	0903-L46-COMP	0.050	---	U	0.040	0.078		9/3/1998	9/4/1998	9/6/1998
26946-006	0903-L46-COMP-QA	0.050	---	U	0.040	0.063		9/3/1998	9/4/1998	9/6/1998
26946-007	0903-L46-TK	0.050	---	U	0.040	---	U	9/3/1998	9/4/1998	9/6/1998
26946-008	0903-L46-TK-QA	0.050	---	U	0.040	0.050		9/3/1998	9/4/1998	9/6/1998

TCLP Metals EPA 6010A

		Arsenic			Lead					
Lab ID	Customer Sample No.	Reporting Limit mg/L	Value mg/L	Flag	Reporting Limit mg/L	Value mg/L	Flag	Date Sampled	Date Received	Date Analyzed
26973-001	0908-L47-COMP	0.050	---	U	0.040	0.055		9/8/1998	9/9/1998	9/10/1998
26973-002	0908-L47-COMPQA	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-003	0908-L47-TK23	0.050	---	U	0.040	0.17		9/8/1998	9/9/1998	9/10/1998
26973-004	0908-L47-TK23QA	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-005	0908-L48-COMP	0.050	---	U	0.040	0.16		9/8/1998	9/9/1998	9/10/1998
26973-006	0908-L48-COMPQA	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-007	0908-L48-TK10	0.050	---	U	0.040	---	U	9/8/1998	9/9/1998	9/10/1998
26973-008	0908-L48-TK10QA	0.050	---	U	0.040	0.041		9/8/1998	9/9/1998	9/10/1998
26978-001	0909-L49-COMP	0.050	---	U	0.040	---	U	9/9/1998	9/10/1998	9/11/1998
26978-002	0909-L49-COMPQA	0.050	---	U	0.040	---	U	9/9/1998	9/10/1998	9/11/1998
26978-003	0909-L49-TK8	0.050	0.11		0.040	---	U	9/9/1998	9/10/1998	9/11/1998
26978-004	0909-L49-TK8QA	0.050	---	U	0.040	---	U	9/9/1998	9/10/1998	9/11/1998

THIS PAGE WAS INTENTIONALLY LEFT BLANK

LANCE R. LEFLEUR
DIRECTOR

ROBERT J. BENTLEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ▪ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

June 17, 2013

Mr. Bill Woodall
Chief, Environmental and HTRW Section
US Army Corps of Engineers, Mobile District
Post Office Box 2288
Mobile, Alabama 36628-0001

RE: ADEM Review and Concurrence
Draft Final Third Five-Year Review Report
Alabama Army Ammunition Plant, Childersburg, Alabama
DSMOA Fund Code: 1535-223-0449

Dear Mr. Woodall:

The Alabama Department of Environmental Management (ADEM or the Department) has reviewed the *Draft Final Third Five-Year Review Report* for the Alabama Army Ammunition Plant (ALAAP) dated May 24, 2013. The Department concurs with this draft final report.

If you have any questions or concerns regarding this matter, please call Adam Warnke at (334) 271-7782 of ADEM's Remediation Engineering Section.

Sincerely,

Stephen A. Cobb, Chief
Governmental Hazardous Waste Branch
Land Division

SAC/TPS/ALW/LAC

cc: Tom Fultz, USACE
Melissa L. Shirley, USACE
Tracy Strickland, ADEM
Ben Bentkowski, EPA
Bill Millar, Calibre Systems
Jason T. Wilson, ADEM
Tim Woolheater, EPA

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S. W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (FAX)

THIS PAGE WAS INTENTIONALLY LEFT BLANK

Dispute Resolution Agreement
for
Informal Dispute
Concerning
Alabama Army Ammunition Plant
Nonhazardous Waste Landfill

THIS AGREEMENT resolves the informal dispute between the U.S. Army (Army), the United States Environmental Protection Agency Region 4 (EPA),and the Alabama Department of Environmental Management (ADEM), collectively the Parties. The dispute, initiated by EPA on July 12, 2013, concerns the description of the selected remedies at the Alabama Army Ammunition Plant (ALAAP), which included the Nonhazardous Waste Landfill (NHWL) (also called the "onsite disposal area", "treated soils – back fill area" and "designated backfill area"[1]).

Agreement

In order to resolve the dispute, the Parties acknowledge and agree:

- While the remedy is protective in the short term, the Army will prepare for review an Explanation of Significant Differences that outlines the addition or refinement of Alabama solid waste landfill Applicable or Relevant and Appropriate Requirements (ARARs) to ensure that the landfill remains protective during its term of post-closure.

- The remedial action objectives of the NHWL will be described as:
  - To prevent unacceptable human exposure to treated soils/waste from CERCLA remedial actions (or contaminants released from the treated soils/waste into the environment) through meeting the action-specific ARARs identified in this ESD, and by preventing exposure that exceeds a human health risk of 10-4 to 10-6 ELCR or HI of 1
    - This RAO will be met through the selection, implementation, and monitoring of Alabama landfill closure and post-closure requirements
  - To prevent adverse impacts to water resources (surface water and groundwater) from unacceptable exposures or releases through meeting the action-specific ARARs identified in this ESD, and by preventing exposure that exceeds a human health risk of 10-4 to 10-6 ECLR or HI of 1
    - This RAO will be met through the implementation of groundwater monitoring wells installed specifically to areas around the NHWL
  - To prevent unacceptable exposure to ecological receptors from to treated soils/waste from CERCLA remedial actions through meeting the action-specific ARARs identified in this ESD

- The specific ARARs that will be included in the ESD are attached to this Agreement (Exhibit 1).

[1] OU1, 2, 6 RODs, Section 7.0 (OU7 ROD is the final ROD for ALAAP soils and references all of the prior interim RODs and their remedies).

- After regulatory approval of the ESD, the Army shall issue the ESD by (A) making the ESD and supporting information available to the public in the Administrative Record established under § 300.815 and the information repository; and (B) publishing a notice that briefly summarizes the ESD, including the reasons for such differences, consistent with this IDRA, in a major local newspaper of general circulation. No additional public comment is necessary per 40 CFR 300.435(c)(2), where it is determined that the modifications to the final RODs significantly change but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, or cost.

- Within 45 days of signature of this Agreement, the Army shall submit a schedule for the completion of all activities associated with this Agreement, from submittal of the Draft ESD through submittal of the Draft RA completion report.

Summary of Non-Hazardous Waste) Landfill/ARARs Dispute

On September 5, 2013, EPA notified the Army, while issuing EPA's Independent Protectiveness Determination on the Five-Year Review for ALAAP, that the Records of Decision (RODs) for operable units (OUs) 1, 2, and 6 did not identify (1) clear remedial action objectives to address a component of the remedial action (i.e. the NHWL) or (2) applicable or relevant and appropriate requirements (ARARs), in sufficient specificity, to address ongoing monitoring at the NHWL to ensure of remedy protectiveness. As a result, EPA noted that it could not determine whether the component of the remedial action for the construction and operation of a landfill to dispose of remediation solid waste met its objectives and was protective. A specific example of one of the ARARs pertinent to the evaluation of whether the NHWL component of the remedy was meeting its objective and is protective were those requirements related to the installation of wells and monitoring of groundwater quality.

As part of informal dispute resolution, EPA provided a proposed list of potential State landfill requirements (both applicable and relevant and appropriate) that should be included in an Explanation of Significant Differences (ESD) to ensure that the ongoing operation of the NHWL is protective. The Army and ADEM have reviewed those proposed requirements.

The Parties understand and agree that this agreement resolves all NHWL-related matters under the dispute initiated by EPA on July 12, 2013.

AGREED, this 27th day of April 2022.

Timothy R Woolheater 4/27/2022

Tim Woolheater DATE
Remedial Project Manager
U.S. Environmental Protection Agency, Region 4
61 Forsyth St. S.W.
Atlanta, GA

See ADEM letter dated July 6, 2022 7/6/2022

Mr. Jason Wilson DATE
Chief, Governmental Hazardous Waste Branch
Land Division
Alabama Department of Environmental Management

LINEER.THOMAS.A.1172258375 Digitally signed by LINEER.THOMAS.A.1172258375 Date: 2022.06.23 08:40:51 -04'00'

Dr. Thomas Lineer DATE
BRAC Program Manager
HQDA/ODCS G-9
US Army BRAC Office

EXHIBIT 1:
Alabama Army Ammunition Plant
Non-hazardous Waste Landfill (NHWL) ARARs

Action	Requirement	Prerequisite	Citation
Stormwater Control for Closed Landfill	Owners or operators of all facilities must design, construct, and maintain: • A run-on control system to prevent flow onto the active and/or closed portions of the landfill during the peak discharge from a 25-year storm • A run-off control system from the act and/or closed portions of the landfill to collect and control at the water volume resulting from a 24-hour, 25-year storm. • On-site drainage structures to carry incident precipitation from the disposal site so as to minimize the generation of leachate, erosion and sedimentation. • Run-off from the active and/or closed portions of the landfill unit must be handled in accordance with 335-13-4-.01(2)(a) and (b) and shall be routed to a settling basin or other sedimentation control structure to remove sediment prior to release onto adjacent properties or waters.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.17 Drainage
Access Control	The owner or operator of the facility must control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by suing artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.19 Access
Final Cover for Landfill	A final cover system must be installed which is designed to minimize infiltration and erosion. The final cover system must be comprised of an erosion layer(s) underlain by an infiltration layer(s) as follows: • The infiltration layer for MSWLF and ILF must be comprised of a minimum of 18 inches of earthen material and/or a synthetic layer that has a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1 x 10-5cm/sec, whichever is less. The infiltration layer for C/DLF must be comprised of a minimum of 18 inches of compacted earthen material excluding sands, and	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.20(2)(b)(1)&(2)

Action	Requirement	Prerequisite	Citation
	• The erosion layer must consist of a minimum 6 inches of earthen material that is capable of sustaining native plant growth, as specified in 335-13-4-.20(2)(d).		
	Final soil cover shall be graded so that • Surface water does not pond over the landfill unit • The maximum final grade of the final cover system shall not exceed 25 percent or as specified by the Department to minimize erosion. • Slopes longer than 25 feet shall require horizontal terraces, of sufficient width for equipment operation, for every 20 feet rise in elevation or utilize other erosion measures approved by the Department. • The minimum final grade of the final cover system shall not be less than 5 percent or as specified by the Department to minimize ponding. NOTE: Any variance from the ARAR that requires a decision "specified by the Department" will be made by EPA in consultation with ADEM and documented as part of the remedy decision or in post ROD document(s) approved by EPA and ADEM.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.20(2)(c)(1)-(4)
	A vegetative or some other appropriate cover must be established to minimize erosion and, when applicable, maximize evapotranspiration. Deep rooted vegetation (roots that may grow below the 6-inch erosion layer) shall be prohibited as vegetative cover. Preparation of vegetative cover shall include the following: • Placement of appropriate species of grass seed, fertilizer and mulch; and • Watering and maintenance necessary such that germination of grass will occur.		ADEM 335-13-4-.20(2)(d)
Post-closure care Deed Notice requirement	Within 90 days after final closure requirements in 335-13-4-.20 are achieved, the permittee or owner of a facility shall record a notation onto the land deed containing the property utilized for disposal, and/or some other legal instrument that is normally examined during a title	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.20(2)(i)

Action	Requirement	Prerequisite	Citation
	search, that will in perpetuity, notify any potential purchaser of the property that • The land has been used as a solid waste disposal facility landfill unit • Its use is restricted by the items contained in 335-13-4-.20(3)(c) and 335-13-4-.20(3)(d) • The locations and dimensions of the landfill unit with respect to permanently surveyed benchmarks and section corners shall be on a plat prepared and sealed by a land surveyor • Contain a note, prominently displayed, which states the name of the Permittee or operating agency, the type of landfill unit and the beginning and closure dates of the disposal activity • Certification by an Engineer or Land Surveyor that all closure requirements have been completed as determined necessary by the Department. NOTE: A decision "specified by the Department or as determined necessary by the Department" will be made by EPA in consultation with ADEM and documented as part of the remedy decision or in post ROD document(s) approved by EPA and ADEM.		
Post-closure care of landfill	Post closure care must be conducted for a minimum of 30 years or a minimum of 5 years if closed prior to October 9, 1993, and consist of at least the following:30 year • Eroded areas shall be filled with suitable soil cover, compacted, graded and appropriate cover established as described in 335-13-4-.20(2)(d) • Areas which provide for ponding of surface water shall be filled, graded and an appropriate cover established as described in 335-13-4-.20(2)(d) • Landfill areas with extensive surface cracks in soil cover, shall be corrected as necessary, to prevent infiltration of surface water.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.20(3)(a)

Action	Requirement	Prerequisite	Citation
	• An appropriate cover shall be maintained on the facility at all times as described in 335-13-4-.20(2)(d) • Access control structures shall be maintained or erected and signs shall be posted stating that the facility is closed and giving the location of the nearest permitted landfill unit • Any waste dumped at the landfill unit following closure shall be removed to an approved landfill unit by the permittee, operating agency, or owner. • Monitoring devices and pollution control equipment such as groundwater monitoring wells, explosive gas monitoring systems, erosion, and surface water control structures, and leachate facilities shall be maintained. Monitoring requirements shall continue in effect throughout the active life and post-closure care period as determined by the Department unless all solid waste is removed and no unpermitted discharge to waters has occurred.		
Post-closure care of landfill	Post-closure use of the property used for the disposal operation must never be allowed to disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems necessary to comply with the requirements of these Rules.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.20(3)(d)
Groundwater Monitoring Well Placement	A minimum of one hydraulically upgradient monitoring well for background data and two hydraulically downgradient monitoring wells shall be required.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.14(1)(b)(1)
	The upgradient well shall be located so as not to be affected by the landfill unit.		ADEM 335-13-4-.14(1)(b)(2)
	Groundwater monitoring wells shall be designed and constructed as described in 335-13-4-.27		ADEM 335-13-4-.14(1)(b)(5)
	Groundwater sampling and analysis plan shall be prepared in accordance with 335-13-4-.27 NOTE: Groundwater monitoring requirements including any ARAR variance will be specified in a post-ROD CERCLA Primary Document approved by EPA and ADEM.		ADEM 335-13-4-.14(1)(c)

Action	Requirement	Prerequisite	Citation
Groundwater Monitoring and Corrective Action	All Landfill units must be compliance with the groundwater monitoring requirements specified in paragraph (2) through (4) of this Rule.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.27(1)(c)(1).
	Once established at a Landfill unit, groundwater monitoring shall be conducted throughout the active life and post-closure care period of that Landfill unit as specified in 335-13-4-.20.		ADEM 335-13-4-.27(1)(d)
	A groundwater monitoring system must be installed that consists of a sufficient number of wells, installed at appropriate locations and depth, to yield groundwater samples from the first saturated zone (as defined in 335-13-1-.03(126) that: • Represent the quality of background groundwater that has not been affected by leakage from a unit. • Represent the quality of groundwater passing the relevant point of compliance specified by the Department. ○ The downgradient monitoring system must be installed at the relevant point of compliance specified by the Department that ensure detection of groundwater contamination in the first saturated zone. ○ When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance at existing units, the down-gradient monitoring system may be installed at the closest practicable distance hydraulically down-gradient from that ensure detection of groundwater contamination in the uppermost aquifer. • The relevant point of compliance shall be no more than 150 meters (492 feet) from the waste management unit boundary and shall be located on land owned by the owner of the landfill unit. In determining the relevant point of compliance, the following factors shall be considered, at a minimum: ○ The hydrogeologic characteristics of the facility and surrounding land		ADEM 335-13-4-.27(2)(a)(1), (2), (3)

Action	Requirement	Prerequisite	Citation
	○ The volume and physical and chemical characteristics of the leachate ○ The quantity, quality, and direction of groundwater flow ○ The proximity and withdrawal rate of the groundwater users ○ The available of alternative drinking water supplies ○ The existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater and whether groundwater is currently used or reasonably expected to be used for drinking water ○ Public health, safety, and welfare effects, and ○ Practicable captivity of the owner or operator. NOTE: Groundwater monitoring requirements including any variance to an ARAR will be specified in a post-ROD CERCLA Primary Document approved by EPA and ADEM.		
Groundwater Monitoring Wells Construction and Operation	Groundwater monitoring wells shall be designed and constructed in accordance with the following reference: *Design and Installation of Groundwater Monitoring Wells in Aquifers*, ASTM Subcommittee D18.21 on Groundwater Monitoring, or as otherwise approved by the Department. NOTE: Groundwater monitoring requirements including any variance to an ARAR will be specified in a post-ROD CERCLA Primary Document approved by EPA and ADEM.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.27(2)(c)(1)
	The monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole • This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.27(2)(c)(3)

Action	Requirement	Prerequisite	Citation
	• The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the groundwater.		
	Monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.		ADEM 335-13-4-.27(2)(d)
Abandonment of Groundwater Monitoring Wells	Abandoned wells and bore holes shall be abandoned in accordance with the following procedures in order to prevent contamination of groundwater resources. • A well shall be measured for depth prior to sealing to ensure that it is free from any obstructions that may interfere with sealing operations. • Where feasible, wells shall be completely filled with neat cement. If the well cannot be completely filled, the sealing materials for the top 20 feet must be neat cement and no material that could impart taste, odor, or toxic components to water may be used in the sealing process. • Liner pipe shall be removed from each well in order to ensure placement of an effective seal. If the line pipe cannot be readily removed, it shall be perforated to ensure that proper sealing is obtained. • Concrete, cement grout, or neat cement shall be used a primary sealing materials and shall be placed from the bottom upwards using methods that will avoid segregation or dilution of material.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.27(2)(e)
Groundwater Monitoring Well System	The number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information that must include thorough characterization of • aquifer thickness, groundwater flow rate, groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow and	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.27(2)(f)(1)(i) and (ii)

Action	Requirement	Prerequisite	Citation
	• saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including but not limited to: thickness, stratigraphy, lithology, hydraulic conductivity, porosity and effective porosity. NOTE: Groundwater monitoring requirements including any variance to an ARAR will be specified in a post-ROD CERCLA Primary Document approved by EPA and ADEM.		
Groundwater Monitoring	The groundwater monitoring program must include consistent sampling and analytical methods that are: 1. Designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells which have been installed in compliance with subparagraph (a) of this paragraph. 2. Appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. NOTE: Groundwater monitoring requirements including any variance to an ARAR will be specified in a post-ROD CERCLA Primary Document approved by EPA and ADEM.	Disposal of solid waste onsite in a landfill - **applicable**	ADEM 335-13-4-.27(2)(g)(1) and (2)
	Groundwater samples shall not be field-filtered prior to laboratory analysis.		ADEM 335-13-4-.27(2)(h)
	The sampling procedures and frequency must be protective human health and the environment: • Groundwater elevations (MSL) must be measured in each well immediately prior to purging, each time groundwater is sampled. • Groundwater elevations in wells which monitor the same waste management area must be measured with a 48-hour period to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.		ADEM 335-13-4-.27(2)(i)

Action	Requirement	Prerequisite	Citation
	• The owner or operator must determine the rate and direction of groundwater flow each time groundwater is sampled.		
Groundwater Monitoring	The owner or operator must establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular groundwater monitoring program that applies to the LF unit, as determined under subparagraphs (3)(a) or (4)(a) of this Rule. Background groundwater quality may be established at wells that are not location hydraulically upgradient from the LF unit if it meets the requirements of subparagraph (a)1. of this paragraph.		ADEM 335-13-4-.27(2)(j)

Action	Requirement	Prerequisite	Citation
Detection Monitoring Requirements	Detection monitoring is required at Landfill units for all groundwater monitoring wells defined under subparagraphs (2)(a)(1).(i) and (ii) of this Rule. At a minimum, a detection monitoring program for MSWLF units must include the monitoring the constituents listed in Appendix I of this Chapter. The Department may delete any of the detection monitoring parameters for a LF unit if it can be shown that the removed constituents are not reasonably expect to be contained in or derived from the waste contained in the unit. The Department may establish an alternative list of inorganic indicator parameters of a MSWLF unit, in lieu of some or all of the heavy metals (constituents 1 through 16 in Appendix I), if the alternative parameters provide a reliable indication of inorganic releases from the MSWLF unit to the groundwater. The Department shall consider the following factors: • The types, quantities, and concentrations of constituents in waste managed at the MSWLF unit • The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the MSWLF unit • The detectability of indicator parameters, waste constituents, and reaction products in the groundwater, and • The concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background. NOTE: Groundwater monitoring requirements including any variance to an ARAR will be specified in a post-ROD CERCLA Primary Document approved by EPA and ADEM.	Post-closure of onsite solid waste landfill – **relevant and appropriate**	ADEM 335-13-4-.27(3)(a)(1), (3) and (4)
Groundwater Monitoring Frequency	The monitoring frequency for all constituents listed in Appendix I shall be at least semiannual during the active life of the facility (including closure) and the post-closure period.	Post-closure of onsite solid waste landfill – **relevant and appropriate**	ADEM 335-13-4-.27(3)(b)(1)

Action	Requirement	Prerequisite	Citation
	• A minimum of four independent samples from each well (background and downgradient) must be collected and analyzed for the Appendix I constituents (or the alternative list approved in accordance with subparagraph (a) of this paragraph) during the first semiannual sampling event. • At least one sample from each well (background and downgradient) must be collected and analyzed during subsequent semiannual sampling events.		
	The Department may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix I constituents, or the alternative list approved in accordance with subparagraph (a) of this paragraph, during the active life (including closure) and the post-closure care period. NOTE: Groundwater monitoring requirements including any variance to an ARAR will be specified in a post-ROD CERCLA Primary Document approved by EPA and ADEM.		ADEM 335-13-4-.27(3)(b)(2)
Transition from Detection Monitoring to Assessment Monitoring	If the owner or operator determines, pursuant to subparagraph (2)(1) of this Rule, that there is an SSI over background for one or more of the constituents listed in Appendix I, or in the alternative list approved in accordance with subparagraph (a) of this paragraph, at any monitoring well at the boundary specified under subparagraph (2)(a)1.(ii) of this Rule, the owner or operator: • Must establish an assessment monitoring program meeting the requirements of subparagraphs (4)(a) through (j) of this Rule within 90 days except as provided for under subparagraph (2)(c)3. of this Rule. NOTE: A decision to transition from Detection Monitoring to Assessment Monitoring will be documented in an Explanation of Significant Differences that includes appropriate ARARs and is approved by EPA and ADEM.	Post-closure of onsite solid waste landfill – **relevant and appropriate**	ADEM 335-13-4-.27(3)(c)(2)

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 • Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 • FAX (334) 271-7950

July 6, 2022

ELECTRONICALLY TRANSMITTED

Dr. Thomas Lineer
Chief, BRAC Field Branch
G-9 DAIN-ISE
1508 Hood Avenue
Building 714, Room A103
Forest Park, GA 30279

RE: **ADEM Review:** *Dispute Resolution Agreement for Informal Dispute Concerning Alabama Army Ammunition Plant Nonhazardous Waste Landfill*, received June 15, 2022
U.S. EPA I.D. No. AL 6 210 020 008

Dear Dr. Lineer:

The Alabama Department of Environmental Management (ADEM or the Department) has completed the review of the *Dispute Resolution Agreement for Informal Dispute Concerning Alabama Army Ammunition Plant Nonhazardous Waste Landfill*, received via electronic mail on June 15, 2022. Based on this review, the Department concurs with the proposed path forward described in the agreement. However, it should be noted that the Department does not agree with the level of specificity of the ARARs included in Exhibit 1 of this Agreement or that the list of ARARs are sufficient for the site. ADEM expects the Army to comply with all applicable state regulations, regardless of whether these regulations are included in the ARARs table. Furthermore, although a human health risk range (10^{-4} to 10^{-6}) is included as part of the Agreement, the Department will consider any exposure that exceeds a human health risk of 10^{-5} or an HI of 1 to not meet unrestricted reuse standards and subject to the requirements of ADEM Admin. Code r. 335-5 pertaining to environmental covenants.

If you have any questions on this matter, please contact Richard Jannett of the Facilities Engineering Section at 334-270-5610 or via e-mail at richard.jannett@adem.alabama.gov.

Sincerely,

Jason Wilson, Chief
Governmental Hazardous Waste Branch
Land Division

JW/RDA/RBJ/ap

cc (via email): Daniel Arthur, ADEM
Tim Woolheater, EPA
Ben Bentkowski, EP
Melissa L. Shirley, USACE
Bob Beacham, USACE

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (Fax)

Decatur Branch
2715 Sandlin Road, S. W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (Fax)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (Fax)

Mobile - Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (Fax)

THIS PAGE WAS INTENTIONALLY LEFT BLANK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

SEP 13 2018

4SD-RSB

Mr. James E. Briggs
Chief, Operations Branch
Department of the Army
Office of the Assistant Chief
of Staff for Installation Management
600 Army Pentagon
Washington, DC 20310-0600

Dear Mr. Briggs:

The United States Environmental Protection Agency has completed the review of the Alabama Army Ammunition Plant (ALAAP) Draft Fourth Five Year Review (FYR) Report dated November 2017. It is an EPA Federal Facility program priority that Agency review of the FYR is completed to ensure remedies are or will be protective of human health and the environment. The purpose of this letter is for the EPA to either concur with the report findings or provide the EPA's own independent findings and protectiveness determinations. The EPA is awaiting the Army response to the comments on this document. However, to ensure the FYR timeframe, the EPA is writing its own Issues, Recommendations, and Protectiveness Determination. The EPA has made changes to the Protectiveness Statements for OU-7 which are captured in the enclosed edited FYR Summary Form from the Draft FYR Report. The EPA protectiveness determinations will be reported to Congress and entered in Superfund Enterprise Management System.

Thank you for your continued efforts to complete this FYR and your commitment in working with the EPA to make the necessary changes to the Draft FYR Report. Our goal is to ensure this document accurately reflects the status of the selected remedies and that they are protective of human health and the environment in the long-term. Please coordinate with the EPA Remedial Project Manager, Tim Woolheater, to address the comments, finalize the document, and take the recommended actions.

Sincerely,

Franklin E. Hill, Director
Superfund Division

Enclosure

FIVE-YEAR REVIEW PROTECTIVENESS DETERMINATIONS FOR ALABAMA ARMY AMMUNITION PLANT SUPERFUND SITE TALLADEGA, ALABAMA

Prepared by

U.S. Environmental Protection Agency
Region 4
Atlanta, GA

Franklin E Hill, Director
Superfund Division

9/13/18

Date

PURPOSE

In November 2017, the U.S. Army submitted the draft Fourth Five Year Review Report for the Alabama Army Ammunition Plant, Superfund Site, in Talladega County, Alabama. Many of the EPA comments generated from review of the draft document have yet to be addressed; hence, the EPA could not concur with portions of the review. This document revises the issues, recommendations, and protectiveness determination from the Draft Five Year Review to better characterize the current situation at the former ammunition plant.

Five Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Alabama Army Ammunition Plant		
EPA ID: AL6210020008		
Region: 4	**State:** AL	**City/County:** Childersburg/Talladega
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: Other Federal Agency **If "Other Federal Agency" was selected above, enter Agency name:** U. S. Army		
Author name (Federal or State Project Manager): Timothy R. Woolheater		
Author affiliation: USEPA		
Review period: January 2017 – August 2018		
Date of site inspection: May 27, 2017		
Type of review: Statutory		
Review number: 4		
Triggering action date: September 5, 2013		
Due date *(five years after triggering action date)*: September 4, 2018		

Issues/Recommendations from 3rd Five Year Review

OU(s) without Issues/Recommendations Identified in the Five-Year Review:
NA

Issues and Recommendations Identified in the Third Five-Year Review:

OU(s): 1, 2, 6, NHWL landfill	Issue Category: Monitoring			
	Issue: Non-Hazardous Waste Landfill (NHWL) does not include monitoring			
	Recommendation: Establish a periodic monitoring program to determine whether contaminants are leaching from landfill.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	Federal Facility	EPA/State	By the next 5YR

OU(s): 1, 2, 6, NHWL and Asbestos landfills	Issue Category: Monitoring			
	Issue: The NHWL landfill was not appropriately selected in the remedy decision processes for OU's 1, 2, and 6.			
	Recommendation: Modify the decision documents			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	Federal Facility	EPA/State	By the next 5YR

Issues/Recommendations from 4th Five Year Review

It should be noted OU1 is a final remedy though final disposal of materials in the NHWL cloud the protectiveness of that remedy. Also, OU 2 and OU 6 were interim remedies that were finalized in an over-arching operable unit, OU 7. The actions taken in OU1, OU 2 and 6 will continue to be evaluated as part of OU 7. Issues and Recommendations from previous 5 Year Reviews that have yet to be completed are integrated into the OU 7 protectiveness determination. The protectiveness statement for OU 7 will address these issues as well as any that arise from the current 5YR evaluation. The 3rd FYR recommendations are updated by adding, "consistent with ARARs to-be-determined" at the end of the recommendations.

Issues and Recommendations Identified in the Fourth Five-Year Review:				
OU(s): 7, NHWL and Asbestos landfills	**Issue Category: Changed Site Conditions**			
	Issue: Asbestos was released during building demolition activities during the 1970's. Army has taken some action to clean-up visible asbestos; however, overall risk has not been evaluated.			
	Recommendation: Complete characterization activities for asbestos contamination and determine whether additional remedial actions are required.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
Yes	Yes	Federal Facility	EPA/State	Sept 2021

Protectiveness Statement		
Operable Unit: 7	*Protectiveness Determination:* Not Protective	*Addendum Due Date (if applicable):* Click here to enter date.

Protectiveness Statement:

The remedy is not protective because asbestos was found widely distributed throughout the site from historical building demolition activities. The Army has completed an initial assessment and pick-up of visible asbestos; however, these activities were not overseen by the EPA or ADEM. In addition, previous 5YRs determined that the NHWL was not properly selected in the OU1, OU2, and OU6 decision documents resulting in a lack of clarity regarding operation and maintenance of the landfill. The remedies need to be modified to be consistent with (to-be-determined) ARARs; including monitoring requirements to determine whether the material is leaching from the landfill. The EPA, ADEM and Army representatives continue to dispute the best actions to resolve this issue. This Protectiveness Determination makes recommendations to remedy these concerns and, until implemented, this OU cannot be considered protective.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ▪ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

November 8, 2018

CERTIFIED MAIL # 91 7199 9991 7038 0640 6174

Mr. Andy Van Dyke
Reserve, Industrial, and Medical Branch
Department of the Army
Assistant Chief of Staff for Installation Management (DAIM-ODB)
2530 Crystal Drive, Rm 5050
Arlington, Virginia 22202

RE: **ADEM Review and Concurrence:**
Final Fourth Five-Year Review Report, dated September 19, 2018
Alabama Army Ammunition Plant (ALAAP) – Area B, Childersburg, AL
DSMOA Fund Code: 1535-223-0449

Dear Mr. Van Dyke:

The Alabama Department of Environmental Management (ADEM or the Department) has reviewed the *Final Fourth Five-Year Review Report* for operable unit (OU)-7 at the Alabama Army Ammunition Plant (ALAAP) dated September 2018. Based upon this review, the Department concurs with the overall content of the report. However, it should be noted that the status of the five year review is in an ongoing dispute pursuant to the Federal Facilities Agreement (FFA).

If any questions or concerns should arise regarding this matter, please contact Alex Recker of the Facilities Engineering Section, Governmental Hazardous Waste Branch at (334) 270-5636 or by email at alex.recker@adem.alabama.gov.

Sincerely,

Jason Wilson, Chief
Governmental Hazardous Waste Branch
Land Division

JW/RDA/AR/tlp

Cc (via email) Melissa L. Shirley, USACE
Tim Woolheater, EPA
Ben Bentkowski, EPA
Bob Beacham, USACE
Ashley Mastin, ADEM
Daniel Arthur, ADEM

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608
(251) 304-1176
(251) 304-1189 (FAX)

THIS PAGE WAS INTENTIONALLY LEFT BLANK

INFORMAL DISPUTE RESOLUTION AGREEMENT ON ASBESTOS AT ALABAMA ARMY AMMUNITION PLANT (ALAAP) AREA B AMONG THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. ARMY AND THE ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

September 2022

Summary of Issues raised by the U.S. Environmental Protection Agency (EPA) for dispute resolution:

In September 2015, EPA issued a letter responding to the Blair Block, Inc., excavation request documenting that asbestos, though mentioned in the record, had not been addressed through appropriate Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) actions. On October 21, 2015, EPA issued a letter to the Army requesting that the Army develop a remedial investigation/feasibility study (RI/FS) work plan to address the potential asbestos contamination. The scope of the RI/FS work plan was to address all areas where disposal sites and potential ACM sources may have been managed, including those areas already transferred to other entities. EPA identified in its review of the December 2015 Remedial Action Completion Report (RACR) that it could not concur that the remedial actions taken for Soils, Sediment, and Surface Water in OU-1, OU-2, OU-6 and OU-7 (OU-7 supplemented and finalized the decisions taken in OU-1, OU-2, and OU-6) were "complete" because asbestos was released over a broad and as yet unknown area at Alabama Army Ammunition Plant (ALAAP). Asbestos from the removal of buildings and pipelines in the late 1970s and early 1980s remain on the ground which presents a release that must be addressed consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). While the Army has acknowledged historic demolition of buildings that contained ACM has released ACM to the environment, ACM was not specifically addressed in the prior RODs. Additionally, the Army performed a historical document review, site survey, and conducted an abatement of visible ACM material at former steam lines and building locations in Area B though without EPA and ADEM oversight or concurrence.

The Army actions[1] to address visible Asbestos Containing Material (ACM) in Area B will need to be assessed under a CERCLA risk assessment process guided by EPA's *Framework for Investigating Asbestos-Contaminated CERCLA Sites*, OLEM Directive No, 9200.0-90 to determine the need for any additional response/remedial actions.

While the NPL site is larger than Area B, this agreement only pertains to Area B. In an effort to support and encourage continued industrial re-use of the former ALAAP Area B, the Parties agree to the following resolution which will help promote responsible re-use as a result of assessing the risk and, if unacceptable risk is found to be present, addressing the unacceptable risk from the residual ACM that may be present on Area B.

[1] This Dispute Resolution Agreement and terms herein only apply to Army actions and do not alter agreements and requirements for property owners.

AGREEMENT:

The Parties agree that the following actions will, once effected, consistent with this Agreement, resolve the above issues.

1) Areas of concern (that may be subject to change) in Area B to address will be prioritized based on current property owner re-uses and city marketing plans for the development of the former ALAAP. Current priorities include:
    a. Current owners that want to expand the footprint of their plant. (i.e., Cooper Steel)
    b. City/County prospects
        i. Advantage Property (Area 7, etc…)
        ii. Solar Farm (Southeastern and Central – Areas 4, 5, 6, 17, 18, and 20)
        iii. Shooting Range
    c. Northern Properties –Areas 8 and 10
    d. Southwestern Properties – Areas 2 and 3
    e. Other areas not conducive to redevelopment if not already addressed in the above priorities.

2) Asbestos
    a. The asbestos will be addressed under a new Operable Unit. This will allow the RODs for existing OUs to be considered final even if further action on asbestos is necessary.
    b. Army, ADEM and the EPA will hold a scoping meeting to discuss the optimal set and sequence of actions as described in 40 CFR 300.415 (Removal Actions) and 40 CFR 300.430 (Remedial Actions) necessary to address any remaining unacceptable asbestos risks at the site. A scoping meeting among the FFA Parties will be held to identify the path forward for additional response/remedial action for the priority concerns listed in Agreement 1. The scoping meeting will be held within 60 days of the final signature of this agreement.
    c. On a timeframe agreed to in the scoping meeting, but not later than 60 days following the scoping meeting, the Army will submit for regulator review and approval a schedule for submittal of work plan(s) that addresses the priorities identified above to address the residual asbestos response actions. The workplan(s) will include a report of the actions taken for asbestos at the site in the past, the scope of the additional investigations, a schedule of activities (leading up to and including a decision document) and will propose changes to the Table of Deadlines. If multiple workplans will be developed, the first workplan will have a deadline no later than 90 days from or as established in the scoping meeting.
    d. If proposed to be conducted as a removal action, prior to initiating action and consistent with the work plan and the Table of Deadlines (Attachment 1), the Army will submit to the regulators for their review and comment an Action Memorandum (AM) to memorialize the scope of the removal action, the nature and extent of contamination, and a description of the specific actions to be taken.
    e. Post-removal action confirmation sampling will be used for purposes of ensuring no further unacceptable risk or removal action is necessary and/or for developing

a remedial investigation (RI), which will satisfy the purposes in 40 CFR 300.430(d).

i. If all parties concur that the post-removal action confirmation sampling indicates that there is no further unacceptable risk at the site and that all sites of potential concern have been addressed, the Army will submit a Removal Action Completion Report.

ii. If the post removal action confirmation sampling, , indicates that there continues to be an unacceptable risk, the Army will submit an RI/FS work plan for regulatory concurrence which will develop a path forward for additional characterization (if needed) of the presence of asbestos that pose an unacceptable risk to human health or the environment. The RI/FS work plan will also include schedules for an RI, a Feasibility Study, a Proposed Plan, and a ROD, which will be developed and submitted for review consistent with FFA Section XII.

3) The Parties understand and agree that this agreement resolves only the particular disputed matters as related to Area B.

AGREED:

Timothy R Woolheater — 9/28/22

Tim Woolheater
Senior Remedial Project Manager
U.S. EPA Region 4

LINEER.THOMAS.A.1172258375 Digitally signed by LINEER.THOMAS.A.1172258375 Date: 2022.09.29 03:47:21 -04'00'

Dr. Thomas Lineer — Date
Remedial Project Manager
U.S. Army

See ADEM letter dated September 29, 2022 — 9/29/2022

Jason Wilson — Date
Alabama Department of Environmental Management

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 • Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 • FAX (334) 271-7950

September 29, 2022

ELECTRONICALLY TRANSMITTED

Dr. Thomas Lineer
Chief, BRAC Field Branch
G-9 DAIN-ISE
1508 Hood Avenue
Building 714, Room A103
Forest Park, GA 30279

RE: **ADEM Review:** *Informal Dispute Resolution Agreement on Asbestos at Alabama Army Ammunition Plant (ALAAP) Area B,* received September 29, 2022
U.S. EPA I.D. No. AL 6 210 020 008

Dear Dr. Lineer:

The Alabama Department of Environmental Management (ADEM or the Department) has completed the review of the *Informal Dispute Resolution Agreement on Asbestos at Alabama Army Ammunition Plant (ALAAP) Area B,* received via electronic mail on September 29, 2022. Based on this review, the Department concurs with the proposed path forward described in the agreement.

If you have any questions on this matter, please contact Richard Jannett of the Facilities Engineering Section at 334-270-5610 or via e-mail at richard.jannett@adem.alabama.gov.

Sincerely,

Jason Wilson, Chief
Governmental Hazardous Waste Branch
Land Division

JW/RDA/RBJ/jm

cc (via email): Daniel Arthur, ADEM
Tim Woolheater, EPA
Ben Bentkowski, EPA
Melissa L. Shirley, USACE
Bob Beacham, USACE

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (Fax)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (Fax)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (Fax)

Mobile - Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (Fax)

ATTACHMENT B

FIFTH FIVE-YEAR REVIEW PUBLIC NOTICE

THIS PAGE WAS INTENTIONALLY LEFT BLANK

800 LEGALS

of 20.67 feet; thence proceed South 89°18'59" East for a distance of 231.54 feet; thence proceed North 01°03'25" East for a distance of 23.32 feet; thence proceed South 88°59'17" East for a distance of 35.71 feet; thence proceed South 86°36'53" East for a distance of 88.84 feet; thence proceed North 73°49'18" West for a distance of 153.98 feet; thence proceed North 00°57'27" East for a distance of 9.09 feet; thence proceed North 88°59'26" West for a distance of 224.12 feet; thence proceed South 29°41'55" West for a distance of 50.14 feet to the point of beginning.
The above described land is located in the Southwest 1/4 of the Southwest 1/4 of Section 20, Township 21 South, Range 4 East, Talladega County, Alabama.
PARCEL 5B:
Commence at a 1" crimped top pipe in place accepted as the Northeast corner of the Northeast 1/4 of the Northwest 1/4 of Section 29, Township 21 South, Range 4 East, Talladega County, Alabama; thence proceed North 89°07'06" West along the North boundary of said 1/4 - 1/4 section for a distance of 513.48 feet to the point of beginning, said point being located on the Westerly right of way of Norton Avenue; from this beginning point proceed North 67°02'38" West for a distance of 208.65 feet (set 1/2" rebar); thence proceed North 70°32'47" West for a distance of 295.28 feet (set 1/2" rebar); thence proceed South 05°11'49" West for a distance of 152.31 feet (set 1/2" rebar); thence proceed North 88°37'28" West for a distance of 161.24 feet (set 1/2" rebar); thence proceed South 00°05'47" East for a distance of 88.35 feet to a scribe in concrete and the point of beginning; from this beginning point proceed South 01°07'09" West along the centerline of a ditch for a distance of 173.85 feet; thence proceed South 89°35'50" East for a distance of 12 feet (set 1/2" rebar); thence proceed South 00°24'10" West for a distance of 246.40 feet to a point on the Northerly right of way of 10th Street (set railroad spike); thence proceed North 89°17'37" West along the Northerly right of way of said street for a distance of 9.84 feet; thence proceed North 04°32'29" West for a distance of 155.95 feet; thence proceed North 89°17'39" West for a distance of 157.51 feet; thence proceed South 02°29'12" West for a distance of 39.96 feet; thence proceed North 89°18'08" West for a distance of 199.86 feet; thence proceed North 00°04'45" West for a distance of 11.48 feet; thence proceed North 89°15'47" West for a distance of 117.55 feet; thence proceed North 00°42'23" East for a distance of 365.92 feet; thence proceed South 75°13'48" East for a distance of 218.45 feet; thence proceed South 85°15'01" East for a distance of 277.15 feet to the point of beginning.
The above described land is located in the Northeast 1/4 of the Northwest 1/4 and the Northwest 1/4 of the Northwest 1/4 of Section 29, Township 21 South, Range 4 East, Talladega County, Alabama.
All of the above property being further described by boundary survey dated March 13, 2017, prepared by Ray & Gilliland, P.C., as follows:
Commence at the Southwest corner of Section 20, Township 21 South, Range 4 East, Talladega County, Alabama; thence proceed South 89°07'06" East along the South boundary of said section for a distance of 112.96 feet to a point on the Easterly boundary of Seminole Street, said point being the point of beginning. From this beginning point proceed North 43°30'49" West along the Easterly boundary of said street for a distance of 79.60 feet to a 1/2" rebar in place; thence proceed South 76°53'49" East for a distance of 75.30 feet to a 1/2" rebar in place; thence proceed South 87°04'22" East for a distance 133.21 feet to a 1/2" rebar in place; thence proceed North 09°42'23" East for a distance of 29.70 feet to a 1/2" rebar in place; thence proceed North 89°37'43" East for a distance of 62.29 feet to a 1/2" rebar in place; thence proceed North 29°41'55" East for a distance of 50.14 feet to a 1/2" rebar in place; thence proceed South 88°59'26" East for a distance of 224.12 feet to a nail in concrete; thence proceed South 00°57'27" West for a distance of 9.09 feet to a 1/2" rebar in place; thence proceed South 73°49'18" East for a distance of 153.98 feet to a PK nail; thence proceed South 87°35'07" East for a distance of 222.88 feet to a PK nail; thence proceed South 00°40'25" East for a distance of 33.32 feet to a PK nail; thence proceed South 75°13'48" East for a distance of 287.49 feet to a 1/2" rebar in place; thence proceed South 85°15'01" East for a distance of 277.15 feet to a scribe in concrete; thence proceed South 01°07'09" West along the centerline of a ditch for a distance of 173.85 feet; thence proceed South 89°35'50" East for a distance of 12 feet (set 1/2" rebar); thence proceed South 00°24' 10" West for a distance of 246. 40 feet to a point on the Northerly right-of-way of 10th Street (set railroad spike); thence proceed North 89°17'37" West along the Northerly right-of-way of said street for a distance of 9.84 feet; thence continue North 89°17'37" West along the Northerly right-of-way of said street for a distance of 186.44 feet to a 1/2" rebar in place; thence proceed North 02°29'12" East for a distance of 115.41 feet; thence proceed North 89°18'08" West for a distance of 199.86 feet; thence proceed North 00°04'45" West for a distance of 11.48 feet; thence proceed North 8915'47" West for a distance of 202.0 feet to a 1/2" rebar in place; thence proceed South 00°42'23" West for a distance of 24.06 feet; thence proceed North 89°17'37" West for a distance of 151.04 feet to a PK nail in place; thence proceed South 00°51'14" West for a distance of 101.55 feet to a point on the Northerly right-of-way of said 10th Street; thence proceed North 89°17' 37" West along the North right-of-way of said Church Street-Mignon for a distance of 225.85 feet to its point of intersection with the Easterly right-of-way of Seminole Street; thence proceed North 41°24 '54" West along the Easterly right-of-way of said Seminole Street for a distance of 661.68 feet to a point on the North boundary of said Section 29 and the point of beginning.
The above described land is located in the Northeast one-fourth of the Northwest one-fourth and the Northwest one-fourth of the Northwest one-fourth of Section 29 and the Southwest one-fourth of the Southwest one-fourth of Section 20 Township 21 South, Range 4 East, Talladega County, Alabama.
Together with the hereditaments and appurtenances thereunto belonging. Said property will be sold on an "AS IS, WHERE IS" basis subject to the right of way easements and restrictions of record in the Probate Office of Talladega County, Alabama, and will be subject to existing special assessments, if any, which might adversely affect the title to the subject property. This sale is made for the purpose of paying the indebtedness secured by said mortgage, as well as the expenses of foreclosure.
This Mortgage Foreclosure sale has been continued. It will be held on June 29, 2022, at the Talladega County Courthouse in Talladega, Alabama. The sale was originally set May 26, 2022.
Renasant Bank
Mortgagee or Transferee
This Instrument Prepared By:
Burt W. Newsome
P.O. Box 382753
Birmingham, AL 35238
Attorney for Mortgagee or Transferee

The Daily Home
Talladega Co., AL
June 15, 2022

NOTICE OF MORTGAGE FORECLOSURE SALE

STATE OF Alabama
COUNTY OF TALLADEGA
Default having been made of the terms of the loan documents secured by that certain mortgage executed by Steven Max Weathers An Unmarried Man to Mortgage Electronic Registration Systems, Inc., as mortgagee, as nominee for Metro Bank, its successors and assigns dated March 31, 2008; said mortgage being recorded on April 1, 2008, in Book 1270, Page 722 in the Office of the Judge of Probate of Talladega County, Alabama. Said Mortgage was last sold, assigned and transferred to LEGACY MORTGAGE ASSET TRUST 2020-GS2 by assignment recorded in Deed Book 1174, Page 790 in the Office of the Judge of Probate of Talladega County, Alabama.
The undersigned, LEGACY MORTGAGE ASSET TRUST 2020-GS2, under and by virtue of the power of sale contained in said mortgage, will sell at public outcry to the highest bidder for cash before the main entrance of the Court House in Talladega County, Alabama during the legal hours of sale (between 11am and 4pm), on the 6th day of July, 2022 the following property, situated in Talladega County, Alabama, to-wit:
Lot #14, Choccolocco Estates Subdivision, Sector 2, as recorded in Plat Book 6, Page 33, in the Office of the Judge of Probate of Talladega County, Alabama.
Said property is commonly known as 370 Wyatt Blvd, Lincoln, AL 35096.
Should a conflict arise between the property address and the legal description the legal description will control.
Said property will be sold subject to any outstanding ad valorem taxes (including taxes which are a lien, but not yet due and payable), the right of redemption of any taxing authority, all outstanding liens for public utilities which constitute liens upon the property, any matters which might be disclosed by an accurate survey and inspection of the property, any assessments, liens, encumbrances, easements, rights-of-way, zoning ordinances, restrictions, special assessments, covenants, the statutory right of redemption pursuant to Alabama law, and any matters of record including, but not limited to, those superior to said Mortgage first set out above. Said property will be sold on an "as-is" basis without any representation, warranty or recourse against the above-named or the undersigned. The successful bidder must present certified funds in the amount of the winning bid at the time and place of sale.
Alabama law gives some persons who have an interest in property the right to redeem the property under certain circumstances. Programs may also exist that help persons avoid or delay the foreclosure process. An attorney should be consulted to help you understand these rights and programs as a part of the foreclosure process.
The sale will be conducted subject (1) to confirmation that the sale is not prohibited under the U.S. Bankruptcy Code and (2) to final confirmation and audit of the status of the loan with the holder of the Mortgage.
RUSHMORE LOAN MANAGEMENT SERVICES LLC
as holder of said mortgage
McCalla Raymer Leibert Pierce, LLC
Two North Twentieth
2 20th Street North, Suite 1000
Birmingham, AL 35203
(800) 275-7171
FT21@mccalla.com
File No. 22-02808AL
www.foreclosurehotline.net

The Daily Home
Talladega Co., AL
June 15, 22, 29, 2022

NOTICE TO CONTRACTORS

Federal Aid Project No.
IM-HSIP-I020(367)
CALHOUN AND TALLADEGA COUNTIES, ALABAMA
Sealed bids will be received by the Director of Transportation at the office of the Alabama Department of Transportation, Montgomery, Alabama until 10:00 AM on June 24, 2022 and at that time publicly opened for constructing the Micro- Milling, OGFC Safety Treatment, and Traffic Stripe on I-20 from the H. J. Bentley Jr. Parkway Overpass (MP 181.747) to the SR-21 Interchange (MP 185.904) in Oxford. Length 4.157 mi.
The total amount of uncompleted work under contract to a contractor must not exceed the amount of his or her qualification certificate.
The Entire Project Shall Be Completed In Forty (40) Working Days. A 1.00% DBE Contract Obligation Is Required.
A Bidding Proposal may be purchased for $5.00. Plans may be purchased for $4.00 per set. Plans and Proposals are available at the Alabama Department of Transportation, 1409 Coliseum Boulevard, Room E-108, Montgomery, AL 36110. Checks should be made payable to the Alabama Department of Transportation. Plans and Proposals will be mailed only upon receipt of remittance. No refunds will be made.
Minimum wage rates for this project have been pre-determined by the Secretary of Labor and are set forth in the advertised specifications. This project is subject to the contract work hours and Safety Standards Act and its implementing regulations.
Cashier's check or bid bond for 5% of bid (maximum - $50,000.00) made payable to the Alabama Department of Transportation must accompany each bid as evidence of good faith.
The bracket range is shown only to provide general financial information to contractors and bonding companies concerning the project's complexity and size. This Bracket should not be used in preparing a bid, nor will this bracket have any bearing on the decision to award this contract.
The Bracket Estimate On This Project Is From $2,902,046 To $3,546,945 .
The proposed work shall be performed in conformity with the rules and regulations for carrying out the Federal Highway Act.
Plans and Specifications are on file in Room E-108 of the Alabama Department of Transportation at Montgomery, Alabama 36110.
In accordance with the rules and regulations of The Alabama Department of Transportation, proposals will be issued only to prequalified contractors or their authorized representatives, upon requests that are received before 10 AM., on the day previous to the day of opening of bids.
The bidder's proposal must be submitted on the complete original proposal furnished him or her by the Alabama Department of Transportation.
The Alabama Department of Transportation, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000D TO 2000D-4 and Title 49 code of Federal Regulations, Department of Transportation, Subtitle A, Office of The Secretary, Part 21, nondiscrimination in federally-assisted programs of the Department of Transportation issued pursuant to such act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, sex, or national origin in consideration for an award.
The right to reject any or all bids is reserved.
JOHN R. COOPER
Transportation Director

The Daily Home
Talladega Co., AL
June 8, 15, 22, 2022

STATE OF ALABAMA
COUNTY OF TALLADEGA

NOTICE OF MORTGAGE FORECLOSURE SALE

Default having been made in the payment of the indebtedness secured by that certain mortgage and security agreement executed by ARSULA HOLLIDAY CURRY, a single woman, and BARBARA DENEE CURRY, a single woman, on the 11th day of September 2012, to VANDERBILT MORTGAGE AND FINANCE, INC., as recorded in Mortgage Book 1391, Page 569, and re-recorded in Mortgage Book 1395 at Page 246, in the office of the Probate Judge of Talladega County, Alabama; VANDERBILT MORTGAGE AND FINANCE, INC., as Mortgagee, by reason of such default having declared all of the indebtedness secured by said mortgage and security agreement due and payable and such default continuing, notice is hereby given that, acting under the power of sale contained in said mortgage and security agreement, and as authorized by Section 7-9A-604(a)(2) of the Code of Alabama of 1975 as amended, VANDERBILT MORTGAGE AND FINANCE, INC., as Mortgagee, will sell at public outcry, for cash to the highest bidder, in front of the Courthouse door, in the City of Talladega, Talladega County, Alabama, during the legal hours of sale on June 30, 2022, the following described real and personal property situated in Talladega County, Alabama, to-wit:
Part of the NE 1/4 of the SE 1/4 of Section 9, Township 17 South, Range 7 East, Talladega County, Alabama, being more particularly described as Commencing at an existing railroad spike at the Southeast corner of said Section 9 and also being on the centerline of Silver Run Rd; thence Northerly along said centerline a distance of 1659.81 feet; thence South 88°54'36" West a distance of 30.00 feet to the Westerly right of way of said road and the North line of a dirt drive and being the Point of Beginning of herein described parcel of land; thence North 85°00'43" West along said drive a distance of 137.48 feet; thence North 31°24'32" West along said drive a distance of 96.88 feet; thence North 08°12'38" East along said drive a distance of 140.00 feet; thence North 72°08'05" West a distance of 144.91 feet to the Southerly right of way of the Southern Railway; thence North 54°32'09" East along said Southern Railway a distance of 250.64 feet to the Westerly right of way of Silver Run Rd; thence South 43°22'07" East along said road a distance of 118.07 feet; thence along said road a curve to the right with a chord bearing South 19°04'10" East a chord distance of 79.04 feet; thence South 01°14'13" West along said road a distance of 262.61 feet back to the beginning point.
INCLUDING a security interest in one (1) 2011 Southern manufactured home, Serial No. SA4057138ALAB;
together with the hereditaments and appurtenances thereunto belonging and all fixtures now attached to and used in connection with the premises herein described.
This property will be sold on an "as is, where is" basis, subject to any easements, encumbrances, and exceptions reflected in the mortgage and those contained in the records of the office of the Judge of Probate of the county where the above-described property is situated. This property will be sold without warranty or recourse, expressed or implied as to title, use and/or enjoyment and will be sold subject to the right of redemption of all parties entitled thereto.
Alabama law gives some persons who have an interest in property the right to redeem the property under certain circumstances. Programs may also exist that help persons avoid or delay the foreclosure process. An attorney should be consulted to help you understand these rights and programs as a part of the foreclosure process.
Said sale will be made subject to any existing Federal Tax Lien, if any, and/or Special Assessments, if any, which might adversely affect the title to the subject property.
Said sale will be made for the purpose of paying the indebtedness secured by the above-described mortgage, and the proceeds thereof will be applied as provided by the terms of the said mortgage. This sale is subject to postponement or cancellation; contact Margery Oglesby at the phone number shown below prior to attending the sale.
Robin E. Pate
Attorney for Vanderbilt Mortgage and Finance, Inc.
ROSEN HARWOOD, P.A.
2200 Jack Warner Pkwy Ste 200
P.O. Box 2727
Tuscaloosa, AL 35403
(205) 344-5000

The Daily Home
Talladega Co., AL
June 8, 15, 22, 2022

PUBLIC NOTICE

The U.S. ARMY BASE REALIGNMENT AND CLOSURE (BRAC) BRANCH, U.S. ARMY CORPS OF ENGINEERS (USACE), and U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA) announce the former Alabama Army Ammunition Plant (ALAAP) Site Five-Year Review (FYR).

PUBLIC COMMENT PERIOD: JUNE 15 to JULY 14, 2022.

The U.S. Army BRAC Branch is conducting the fifth FYR for the former ALAAP site (i.e., the site). The objective of the review is to ensure the selected remedy for the site continues to protect human health and the environment.

The ALAAP facility was operated during World War II to produce nitrocellulose, single-base smokeless powder, and nitroaromatic explosives such as trinitrotoluene (TNT), dinitrotoluene (DNT), and tetryl. The site, located approximately 4 miles north of Childersburg, Alabama, on Alabama Highway 235, consists of approximately 2,235 acres of primarily undeveloped land. The site was listed on the National Priorities List (NPL) in July 1987 and has undergone numerous environmental investigations and site cleanups. The Army transferred site ownership to the city of Childersburg in April 2003.

This FYR is for Operable Unit (OU) 7, which encompasses all selected remedies at areas within ALAAP. OU 7 consists of soils, surface water, and sediment from areas across ALAAP. A remedy was selected for the site to ensure the protection of human health and the environment. The selected remedy includes land use controls to minimize direct human contact (for current and future users) with potential contaminants of concern associated with the former production of explosives. The sitewide land use controls are no residential use, no unauthorized groundwater access or use, and the requirement to provide a plan before excavation. In addition, this FYR evaluates the implementation and performance of remedial actions, including excavation, treatment, and disposal of contaminated soils and sediments, at a number of areas within ALAAP.

The FYR process includes review of data and new information, inspection of the sites, and community interviews. The FYR is scheduled to be finalized in September 2023.

The U.S. Army BRAC Branch is seeking information from individuals familiar with ALAAP. As someone living in the vicinity, you may have information that can help the review team determine if the selected remedies are still protective. Some examples of the type of information that USACE is interested in receiving are:

- Ways the selected remedy at the site is not protective of human health or the environment
- Ways the selected remedy at the site has affected the area.

If you have information that might be helpful, please send it to:

U.S. Army Corps of Engineers
Mobile District
ATTN: CESAM-EN-GE (Shirley)
PO Box 2288
Mobile, Alabama 36628

Or contact Melissa Shirley at (251) 690-2616 or melissa.l.shirley@usace.army.mil

For additional information, historical documents may be reviewed at:

Local Document Repository
Earle A. Rainwater Memorial Library
124 Ninth Ave SW
Childersburg, Alabama 35044

000293437r1

800 LEGALS

Trust, Pass-Through Certificates, Series 2000-3 by instrument recorded in Book 1175, Page 361, in the Office of the Judge of Probate of Talladega County, Alabama. Said default continues and notice is hereby given that the undersigned, The Bank of New York Mellon Trust Company N.A. as successor in interest to all permitted successors and assigns of Bank One, National Association as Trustee, of the GreenPoint Manufactured Housing Contract Trust, Pass-Through Certificates, Series 2000-3, under and by virtue of the power of sale contained in said mortgage, will sell at public outcry to the highest bidder for cash at the main entrance to the County Courthouse, Talladega County, Alabama on 07/26/2022, during the legal hours of sale, the following described real estate situated in Talladega County, Alabama, to-wit:
All the following described real estate lying and being situated in the County of Talladega, State of Alabama, to-wit:
PARCEL 3: A parcel of land located in the Northwest Quarter of Section 36, Township 17 South, Range 6 East, Talladega County, Alabama, being more particularly described as follows:
Commence at the Northeast corner of the Northwest Quarter of said Section 36; thence run South 02 degrees 50 minutes 15 seconds West along the East line of said Quarter for 413.90 feet to the point of beginning of the parcel herein described; thence continue South 02 degrees 50 minutes 15 seconds West along the same line for 204.60 feet; thence run North 88 degrees 57 minutes 12 seconds West for 638.71 feet; thence run North 02 degrees 50 minutes 15 seconds East for 204.60 feet; thence run South 88 degrees 57 minutes 12 seconds East for 638.71 feet to the point of beginning.
AND HAVING ACCESS TO: EASEMENT "A": A strip of land for ingress and egress located in the Southwest Quarter of the Southeast Quarter of Section 25 and the Northwest Quarter of the Northeast Quarter of Section 36, all in Township 17 South, Range 6 East, Talladega County, Alabama, and being more particularly described as follows: Beginning at the Northwest Corner of the Northeast Quarter of said Section 36; thence run North 02 degrees 44 minutes 35 seconds East for 19.82 feet; thence run South 88 degrees 44 minutes 23 seconds East for 548.66 feet; thence run North 66 degrees 48 minutes 00 seconds East for 204.66 feet; thence run South 87 degrees 40 minutes 39 seconds East for 102.27 feet; thence run South 66 degrees 26 minutes 12 seconds East for 236.53 feet; thence run South 87 degrees 35 minutes 28 seconds East for 173.80 feet to the point of intersection with the monumented West right of way of McElderry Road (R. O. W. 80'); thence run South 09 degrees 52 minutes 11 seconds East along said West right of way for 20.29 feet; thence run North 87 degrees 35 minutes 28 seconds West for 182.29 feet; thence run North 66 degrees 26 minutes 12 seconds West for 236.04 feet; thence run North 87 degrees 38 minutes 46 seconds West for 96.08 feet; thence run South 64 degrees 09 minutes 51 seconds West for 229.95 feet; thence run North 88 degrees 43 minutes 16 seconds West for 532.37 feet to the point of intersection with the West line of the Northeast Quarter of said Section 36; thence run North 02 degrees 50 minutes 15 seconds East for 20.00 feet to the point of beginning.
EASEMENT B: A strip of land for ingress and egress located in the Northwest Quarter of Section 36, Township 17 South, Range 6 East, Talladega County, Alabama, being more particularly described as follows: Commence at the Northeast corner of the Northwest Quarter of said Section 36; thence run South 02 degrees 50 minutes 15 seconds West for 30.00 feet; thence run North 89 degrees 33 minutes 59 seconds West for 519.31 feet to the beginning of a curve to the left with a central angle of 87 degrees 35 minutes 46 seconds and a radius of 100.00 feet; thence run along said curve to the left South 46 degrees 38 minutes 08 seconds West for a chord distance of 138.42 feet; thence run South 02 degrees 50 minutes 15 seconds West for 1,943.23 feet; thence run North 88 degrees 57 minutes 12 seconds West for 51.59 feet; thence run North 02 degrees 50 minutes 15 seconds East for 2,068.61 feet to the point of intersection with the North line of said Section 36; thence run South 89 degrees 33 minutes 59 seconds East along said North line for 663.98 feet to the point of beginning.
TRACK #3 IS SUBJECT TO ANY PORTION OF THE ABOVE DESCRIBED EASEMENT WHICH CROSSES SAID PARCEL. The improvements thereon being know as 105 Deerwood Drive, Munford, Alabama - 36268.
For informational purposes only, the property address is: 105 Deerwood Drive, Munford, AL 36268. Any property address provided is not part of the legal description of the property sold herein and in the event of any discrepancy, the legal description referenced herein shall control.
THIS PROPERTY WILL BE SOLD ON AN "AS-IS, WHERE-IS" BASIS, SUBJECT TO ANY EASEMENTS, ENCUMBRANCES, AND EXCEPTIONS REFLECTED IN THE MORTGAGE AND THOSE CONTAINED IN THE RECORDS OF THE OFFICE OF THE JUDGE OF PROBATE OF THE COUNTY WHERE THE ABOVE-DESCRIBED PROPERTY IS SITUATED. THIS PROPERTY WILL BE SOLD WITHOUT WARRANTY OR RECOURSE, EXPRESS OR IMPLIED AS TO TITLE, USE AND/OR ENJOYMENT AND WILL BE SOLD SUBJECT TO THE RIGHT OF REDEMPTION OF ALL PARTIES ENTITLED THERETO.
Alabama law gives some persons who have an interest in property the right to redeem the property under certain circumstances. Programs may also exist that help persons avoid or delay the foreclosure process. An attorney should be consulted to help you understand these rights and programs as a part of the foreclosure process.
This sale is made for the purpose of paying the indebtedness secured by mortgage as well as the expenses of foreclosure, including a reasonable attorney's fees and other purposes set out in said mortgage.
The Bank of New York Mellon Trust Company N.A. as successor in interest to all permitted successors and assigns of Bank One, National Association as Trustee, of the GreenPoint Manufactured Housing Contract Trust, Pass-Through Certificates, Series 2000-3
Paul K. Lavelle, Esq.
Attorney for Mortgagee
Spina, & Lavelle, P.C.
One Perimeter Park South-Suite 400N
Birmingham, Alabama 35243
(205) 298-1800
30-FC-22-01171

The Daily Home
Talladega Co., AL
June 22, 29, July 6, 2022

MORTGAGE FORECLOSURE SALE

Default having been made in the payment of the indebtedness secured by that certain mortgage executed by Anthony Clifton Smith (An Unmarried Man), originally in favor of Mortgage Electronic Registration Systems, Inc. solely as nominee for R M K Financial Corp. D/B/A Majestic Home Loan, on March 27, 2017, said mortgage recorded in the Office of the Judge of Probate of Talladega County, Alabama, in Mortgage Book 1502 Page 702; the undersigned The Money Source Inc., as Mortgagee/Transferee, under and by virtue of the power of sale contained in said mortgage, will sell at public outcry to the highest bidder for cash, in front of the main entrance of the Courthouse at Talladega, Talladega County, Alabama, on July 20, 2022, during the legal hours of sale, all of its rights, title, and interest in and to the following described real estate, situated in Talladega County, Alabama, to-wit: Lot 35 according to 2nd Addition to Center Point Acres, a map of which is recorded in the Office of the Judge of Probate of Talladega, AL, in Map Book 5, Page 34. Property street address for informational purposes: 394 Rocky Road , Sylacauga, AL 35151. THIS PROPERTY WILL BE SOLD ON AN "AS IS, WHERE IS" BASIS, WITHOUT WARRANTY OR RECOURSE, EXPRESSED OR IMPLIED AS TO TITLE, USE AND/OR ENJOYMENT AND WILL BE SOLD SUBJECT TO THE RIGHT OF REDEMPTION OF ALL PARTIES ENTITLED THERETO. Alabama law gives some persons who have an interest in property the right to redeem the property under certain circumstances. Programs may also exist that help persons avoid or delay the foreclosure process. An attorney should be consulted to help you understand these rights and programs as a part of the foreclosure process. This sale is made for the purpose of paying the indebtedness secured by said mortgage, as well as the expenses of foreclosure. The successful bidder must tender a non-refundable deposit of Five Thousand Dollars ($5,000.00) in certified funds made payable to Tiffany & Bosco, P.A. at the time and place of the sale. The balance of the purchase price plus any deed recording costs and transfer taxes must be paid in certified funds by noon the next business day at the Law Office of Tiffany & Bosco, P.A. at the address indicated below. Tiffany & Bosco, P.A. reserves the right to award the bid to the next highest bidder should the highest bidder fail to timely tender the total amount due. The Mortgagee/Transferee reserves the right to bid for and purchase the real estate and to credit its purchase price against the expenses of sale and the indebtedness secured by the real estate. This sale is subject to postponement or cancellation. The Money Source Inc., ("Transferee") Tiffany & Bosco, P.A., 2311 Highland Avenue South, Suite 330, Birmingham, AL 35205 www.tblaw.com TB File Number: 22-03235

The Daily Home
Talladega Co., AL
June 22, 29, July 6, 2022

NOTICE OF FORECLOSURE SALE

TALLADEGA COUNTY
Default having been made in the payment of the indebtedness secured by that certain mortgage executed by Jessica K. Smith, an unmarried woman, originally in favor of Mortgage Electronic Registration Systems, Inc., as grantee, as nominee for PHH Mortgage Corporation d/b/a ERA Mortgage, its successors and assigns on December 9, 2011, said mortgage recorded in the Office of the Judge of Probate of Talladega County, Alabama, at Mort Book 1373, Page 789; the undersigned Lakeview Loan Servicing, LLC, as Mortgagee/Transferee, under and by virtue of the power of sale contained in said mortgage, will sell at public outcry to the highest bidder for cash or certified funds, in front of the main entrance of the Courthouse at Talladega County, Alabama, on October 4, 2021, during the legal hours of sale, all of its right, title, and interest in and to the following described real estate, situated in Talladega County, Alabama, to-wit:
A certain parcel of land situated in the County of Talladega, State of Alabama being more particularly described as follows:
A parcel of land described as follows: Beginning at the Northeast corner of the East half of the Northwest Quarter of the Southeast Quarter of said Section 19, Township 16 South, Range 6 East, and running thence southerly along the east line of said twenty 105 feet to a point; thence running Westerly parallel to the North line of said twenty 210 feet to a point; thence running Northerly parallel to the East line of said twenty 105 feet to a point on the North line of said twenty; thence continuing North parallel with the East line to the South Right of Way of a County Road; thence Easterly along the South line of said County Road to the Intersection of the Quarter-Quarter line; thence Southerly along said Quarter-Quarter line 234 feet to the Point of Beginning. This being a portion of the property previously deeded to Leo Frayer and wife, Elizabeth Frayer in Deed Book 488 Page 322 of the Office of the Probate Judge of Talladega County, Alabama, Less and Except that part previously deeded in Deed Book 583, Page 104 as recorded in the Office of the Judge of Probate of Talladega County, Alabama.
Being the same property as conveyed from Aaron Warner, Auctioneer to Federal Home Loan Mortgage Corporation, as described in Book 966 Page 317, Dated 06/23/2011 Recorded 06/29/2011 in Talladega County Records
Tax ID: 04-04-19-0-000-009.000
Property street address for informational purposes: 1193 Plum Springs Road, Lincoln, AL 35096
THIS PROPERTY WILL BE SOLD ON AN "AS IS, WHERE IS" BASIS, SUBJECT TO ANY EASEMENTS, ENCUMBRANCES, AND EXCEPTIONS REFLECTED IN THE MORTGAGE AND THOSE CONTAINED IN THE RECORDS OF THE OFFICE OF THE JUDGE OF PROBATE OF THE COUNTY WHERE THE ABOVE-DESCRIBED PROPERTY IS SITUATED. THIS PROPERTY WILL BE SOLD WITHOUT WARRANTY OR RECOURSE, EXPRESSED OR IMPLIED AS TO TITLE, USE AND/OR ENJOYMENT AND WILL BE SOLD SUBJECT TO THE RIGHT OF REDEMPTION OF ALL PARTIES ENTITLED THERETO.
Alabama law gives some persons who have an interest in property the right to redeem the property under certain circumstances. Programs may also exist that help persons avoid or delay the foreclosure process. An attorney should be consulted to help you understand these rights and programs as a part of the foreclosure process. This sale is made for the purpose of paying the indebtedness secured by said mortgage, as well as the expenses of foreclosure. The successful bidder must tender cash or certified funds made payable to Aldridge Pite, LLP at the time and place of the sale. Aldridge Pite, LLP reserves the right to award the bid to the next highest bidder should the highest bidder fail to timely tender the total amount due. The Mortgagee/Transferee reserves the right to bid for and purchase the real estate and to credit its purchase price against the expenses of sale and the indebtedness secured by the real estate. This sale is subject to postponement or cancellation. Lakeview Loan Servicing, LLC, Mortgagee/Transferee ALDRIDGE PITE, LLP Fifteen Piedmont Center 3575 Piedmont Rd. NE Suite 500 Atlanta, GA 30305. Attorney for Mortgagee/Transferee.
Newspaper: Daily Home
Publication Dates: 8/14/21, 8/21/21, 8/28/21, 9/4/21
AMENDMENT TO NOTICE OF MORTGAGE FORECLOSURE SALE
The sale date under the above mentioned Notice of Mortgage Foreclosure Sale has been postponed until January 11, 2022, and public notice thereof having been given, the above notice is hereby republished with this amendment.
Newspaper: Daily Home
Publication Dates: 10/6/21
AMENDMENT TO NOTICE OF MORTGAGE FORECLOSURE SALE
The sale date under the above mentioned Notice of Mortgage Foreclosure Sale has been postponed until March 22, 2022, and public notice thereof having been given, the above notice is hereby republished with this amendment.
Newspaper: Daily Home
Publication Dates: 3/2/22
AMENDMENT TO NOTICE OF MORTGAGE FORECLOSURE SALE
The sale date under the above mentioned Notice of Mortgage Foreclosure Sale has been postponed until June 28, 2022, and public notice thereof having been given, the above notice is hereby republished with this amendment.
Newspaper: Daily Home
Publication Dates: 4/9/22
AMENDMENT TO NOTICE OF MORTGAGE FORECLOSURE SALE
The sale date under the above mentioned Notice of Mortgage Foreclosure Sale has been postponed until October 3, 2022, and public notice thereof having been given, the above notice is hereby republished with this amendment.

The Daily Home
Talladega Co., AL
June 22, 2022

NOTICE OF MORTGAGE FORECLOSURE SALE

STATE OF Alabama
COUNTY OF TALLADEGA
Default having been made of the terms of the loan documents secured by that certain mortgage executed by Steven Max Weathers An Unmarried Man to Mortgage Electronic Registration Systems, Inc., as mortgagee, as nominee for Metro Bank, its successors and assigns dated March 31, 2008; said mortgage being recorded on April 1, 2008, in Book 1270, Page 722 in the Office of the Judge of Probate of Talladega County, Alabama. Said Mortgage was last sold, assigned and transferred to LEGACY MORTGAGE ASSET TRUST 2020-GS2 by assignment recorded in Deed Book 1174, Page 790 in the Office of the Judge of Probate of Talladega County, Alabama.
The undersigned, LEGACY MORTGAGE ASSET TRUST 2020-GS2, under and by virtue of the power of sale contained in said mortgage, will sell at public outcry to the highest bidder for cash before the main entrance of the Court House in Talladega County, Alabama during the legal hours of sale (between 11am and 4pm), on the 6th day of July, 2022 the following property, situated in Talladega County, Alabama, to-wit:
Lot #14, Choccolocco Estates Subdivision, Sector 2, as recorded in Plat Book 6, Page 33, in the Office of the Judge of Probate of Talladega County, Alabama.
Said property is commonly known as 370 Wyatt Blvd, Lincoln, AL 35096.
Should a conflict arise between the property address and the legal description the legal description will control.
Said property will be sold subject to any outstanding ad valorem taxes (including taxes which are a lien, but not yet due and payable), the right of redemption of any taxing authority, all outstanding liens for public utilities which constitute liens upon the property, any matters which might be disclosed by an accurate survey and inspection of the property, any assessments, liens, encumbrances, easements, rights-of-way, zoning ordinances, restrictions, special assessments, covenants, the statutory right of redemption pursuant to Alabama law, and any matters of record including, but not limited to, those superior to said Mortgage first set out above.
Said property will be sold on an "as-is" basis without any representation, warranty or recourse against the above-named or the undersigned. The successful bidder must present certified funds in the amount of the winning bid at the time and place of sale.
Alabama law gives some persons who have an interest in property the right to redeem the property under certain circumstances. Programs may also exist that help persons avoid or delay the foreclosure process. An attorney should be consulted to help you understand these rights and programs as a part of the foreclosure process.
The sale will be conducted subject (1) to confirmation that the sale is not prohibited under the U.S. Bankruptcy Code and (2) to final confirmation and audit of the status of the loan with the holder of the Mortgage.
LEGACY MORTGAGE ASSET TRUST 2020-GS2
as holder of said mortgage
McCalla Raymer Leibert Pierce, LLC
Two North Twentieth
2 20th Street North, Suite 1000
Birmingham, AL 35203
(800) 275-7171
FT21@mccalla.com
File No. 21-01962AL
www.foreclosurehotline.net

The Daily Home
Talladega Co., AL
June 8, 15, 22, 2022

NOTICE OF MORTGAGE FORECLOSURE SALE

STATE OF Alabama
COUNTY OF TALLADEGA
Default having been made of the terms of the loan documents secured by that certain mortgage executed by Anne H Manns to Mortgage Electronic Registration Systems, Inc., as mortgagee, as nominee for Embrace Home Loans, Inc., its successors and assigns dated November 19, 2016; said mortgage being recorded on December 14, 2016, in Book 1492, Page 594 in the Office of the Judge of Probate of Talladega County, Alabama. Said Mortgage was last sold, assigned and transferred to Rushmore Loan Management Services LLC by assignment recorded in Deed Book 1173, Page 522 in the Office of the Judge of Probate of Talladega County, Alabama.
The undersigned, Rushmore Loan Management Services LLC, under and by virtue of the power of sale contained in said mortgage, will sell at public outcry to the highest bidder for cash before the main entrance of the Court House in Talladega County, Alabama during the legal hours of sale (between 11am and 4pm), on the 19th day of July, 2022 the following property, situated in Talladega County, Alabama, to-wit:
Lot 7, Block 1, Camelot Acres Subdivision, as shown by plat recorded in Plat Book 5 at page 36 in the Office of the Judge of Probate of Talladega County, Alabama.
Said property is commonly known as 105 Renee Dr, Talladega, AL 35160.
Should a conflict arise between the property address and the legal description the legal description will control.
Said property will be sold subject to any outstanding ad valorem taxes (including taxes which are a lien, but not yet due and payable), the right of redemption of any taxing authority, all outstanding liens for public utilities which constitute liens upon the property, any matters which might be disclosed by an accurate survey and inspection of the property, any assessments, liens, encumbrances, easements, rights-of-way, zoning ordinances, restrictions, special assessments, covenants, the statutory right of redemption pursuant to Alabama law, and any matters of record including, but not limited to, those superior to said Mortgage first set out above.
Said property will be sold on an "as-is" basis without any representation, warranty or recourse against the above-named or the undersigned. The successful bidder must present certified funds in the amount of the winning bid at the time and place of sale.
Alabama law gives some persons who have an interest in property the right to redeem the property under certain circumstances. Programs may also exist that help persons avoid or delay the foreclosure process. An attorney should be consulted to help you understand these rights and programs as a part of the foreclosure process.
The sale will be conducted subject (1) to confirmation that the sale is not prohibited under the U.S. Bankruptcy Code and (2) to final confirmation and audit of the status of the loan with the holder of the Mortgage.
RUSHMORE LOAN MANAGEMENT SERVICES LLC
as holder of said mortgage
McCalla Raymer Leibert Pierce, LLC
Two North Twentieth
2 20th Street North, Suite 1000
Birmingham, AL 35203
(800) 275-7171
FT21@mccalla.com
File No. 22-02808AL
www.foreclosurehotline.net

PUBLIC NOTICE

The U.S. ARMY BASE REALIGNMENT AND CLOSURE (BRAC) BRANCH, U.S. ARMY CORPS OF ENGINEERS (USACE), and U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA) announce the former Alabama Army Ammunition Plant (ALAAP) Site Five-Year Review (FYR).

PUBLIC COMMENT PERIOD: JUNE 15 to JULY 14, 2022.

The U.S. Army BRAC Branch is conducting the fifth FYR for the former ALAAP site (i.e., the site). The objective of the review is to ensure the selected remedy for the site continues to protect human health and the environment.

The ALAAP facility was operated during World War II to produce nitrocellulose, single-base smokeless powder, and nitroaromatic explosives such as trinitrotoluene (TNT), dinitrotoluene (DNT), and tetryl. The site, located approximately 4 miles north of Childersburg, Alabama, on Alabama Highway 235, consists of approximately 2,235 acres of primarily undeveloped land. The site was listed on the National Priorities List (NPL) in July 1987 and has undergone numerous environmental investigations and site cleanups. The Army transferred site ownership to the city of Childersburg in April 2003.

This FYR is for Operable Unit (OU) 7, which encompasses all selected remedies at areas within ALAAP. OU 7 consists of soils, surface water, and sediment from areas across ALAAP. A remedy was selected for the site to ensure the protection of human health and the environment. The selected remedy includes land use controls to minimize direct human contact (for current and future users) with potential contaminants of concern associated with the former production of explosives. The sitewide land use controls are no residential use, no unauthorized groundwater access or use, and the requirement to provide a plan before excavation. In addition, this FYR evaluates the implementation and performance of remedial actions, including excavation, treatment, and disposal of contaminated soils and sediments, at a number of areas within ALAAP.

The FYR process includes review of data and new information, inspection of the sites, and community interviews. The FYR is scheduled to be finalized in September 2023.

The U.S. Army BRAC Branch is seeking information from individuals familiar with ALAAP. As someone living in the vicinity, you may have information that can help the review team determine if the selected remedies are still protective. Some examples of the type of information that USACE is interested in receiving are:

- Ways the selected remedy at the site is not protective of human health or the environment
- Ways the selected remedy at the site has affected the area.

If you have information that might be helpful, please send it to:

U.S. Army Corps of Engineers
Mobile District
ATTN: CESAM-EN-GE (Shirley)
PO Box 2288
Mobile, Alabama 36628

Or contact Melissa Shirley at
(251) 690-2616 or
melissa.l.shirley@usace.army.mil

For additional information, historical documents may be reviewed at:

Local Document Repository
Earle A. Rainwater Memorial Library
124 Ninth Ave SW
Childersburg, Alabama 35044

0002934371

ATTACHMENT C

INTERVIEW RECORDS AND LETTER TO PROPERTY OWNERS

THIS PAGE WAS INTENTIONALLY LEFT BLANK

ALAAP – Five Year Review Questionnaire/Interview Form for City Officials and Regulatory Agencies

Site Name: Alabama Army Ammunition Plant – Area B		**EPA ID No.: AL6210020008**
Subject: Operable Unit 7 Five-Year Review (2022)	**Time:** 2:00-2:45PM CST	**Date:** June 8, 2022
Type: □ Telephone **X** Visit □ Other **Location of Visit:** Talladega County Economic Development Authority 225 N. Norton Avenue, Sylacauga, AL 35150	□ Incoming □ Outgoing	

Contact Made By:

Name: Linda Meredith; Sarah Carter	**Title:** Senior Risk Assessor; Junior Environmental Scientist	**Organization:** Leidos

Individual Contacted:

Name: Mr. Calvin Miller	**Title:** Executive Director	**Organization:** Talladega County Economic Development Authority
Telephone No: 256-245-8332 **Fax No:** 256-245-8336 **E-Mail Address:** millercalv@tceda.com	**Street Address:** 225 N. Norton Avenue, P.O. Box 867 **City, State, Zip:** Sylacauga, AL 35150	

Information Requested

1. What is your overall impression of the project? (general sentiment)

Response: Mr. Miller feels that with the asbestos concerns coming to light, the project progress has gone backwards. He does not see a defined problem, nor a plan to address it. He is concerned that if the asbestos problem is not addressed the property will not be able to be sold. He noted that in 2003 he saw the ALAAP property as a good opportunity, but the lack of "real" progress since and the addition of more barriers to industrial reuse is frustrating.

2. What effects have site operations had on the surrounding community?

Response: Mr. Miller stated that the only problem site operations is having on the surrounding community is the loss of potential business from industrial buyers due to the lack of progress being made on the site.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

Response: No.

Information Requested (cont.)

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

Response: Mr. Miller mentioned that at the meeting earlier in the day there was discussion of some issues where there was some illegal hunting/poaching occurring at the site. Otherwise, he was unaware of any other occurrences, noting that he was not out at the site much.

5. Do you feel well informed about the site's activities and progress?

Response: Mr. Miller stated that he felt well-informed of the site's activities and progress.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Response: Mr. Miller reiterated his frustration with the asbestos issue and how he feels that a path forward has not been defined. He described the desirability of the location of the approximately 115-acre site that the Talladega County Economic Development Authority wants to sell to an industrial user, and how it has been a subject of great interest to potential buyers until asbestos is mentioned. He said that groundwater restrictions and excavation plan requirements are not a significant barrier to industrial reuse, but asbestos is. He does not know how to identify or how to address asbestos contamination. He indicated that prospective buyers have a condensed timeline to purchase and develop the land, and that they will buy land elsewhere rather than wait for information on the potential requirement for environmental remediation. He noted that the "unknown" aspect of asbestos contamination is a barrier to selling the land, as buyers would rather know about what contamination exists and if remediation needs done.

Mr. Miller also noted that he mentions to potential buyers that the land will always be coded for industrial use only, and that the government has indemnification for ALAAP-associated contamination. Mr. Miller said that clients see the above statement as a positive selling point.

Mr. Miller provided input on the signage at the ALAAP site, noting that he found many of the signs to be irrelevant, e.g., no fish consumption signs in a seasonally wet drainage ditch; no playground signs in an area that is meant for industrial use. He did not see any issues with signs prohibiting digging without a permit but did indicate that the original signage (prior to the 2018 removal of many of the signs) was a deterrent to potential buyers. He did not have strong positive or negative feelings towards the return of the missing signs.

Mr. Miller concluded the interview by restating his frustration with the possible asbestos contamination on the property and noted that he wants his parcel of land to be a top priority for asbestos surveys and remediation, to make the property usable for industrial buyers as soon as possible.

ALAAP – Five Year Review Questionnaire/Interview Form for City Officials and Regulatory Agencies

Site Name: Alabama Army Ammunition Plant – Area B		**EPA ID No.: AL6210020008**
Subject: Operable Unit 7 Five-Year Review (2022)	**Time:** 4:00-4:15PM CST	**Date:** June 8, 2022
Type: □ Telephone **X** Visit □ Other **Location of Visit:** Childersburg City Hall	□ Incoming □ Outgoing	

Contact Made By:

Name: Linda Meredith; Sarah Carter	**Title:** Senior Risk Assessor; Junior Environmental Scientist	**Organization:** Leidos

Individual Contacted:

Name: Ms. Aimee Burnette	**Title:** City Clerk	**Organization:** City of Childersburg
Telephone No: 256-378-5521 **Fax No:** **E-Mail Address:** aburnette@childersburg.org	**Street Address:** 201 8th Avenue SW **City, State, Zip:** Childersburg, AL 35044	

Information Requested

1. What is your overall impression of the project? (general sentiment)

Response: Ms. Burnette noted that ALAAP property has great potential but feels that there are excessive regulations on the use of the property which keep potential buyers away.

2. What effects have site operations had on the surrounding community?

Response: Ms. Burnette has not observed any effects from site operations on the surrounding community.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

Response: Ms. Burnette indicated that individuals within the community have inquired as to why the property has not been sold yet.

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

Response: Ms. Burnette noted that the game warden has caught individuals hunting on ALAAP property.

Information Requested (cont.)
5. Do you feel well informed about the site's activities and progress? **Response:** Ms. Burnette does not feel well-informed about the site's activities and progress. 6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation? **Response:** Ms. Burnette indicated that the City would like to have the site delisted as a Superfund Site, because the Superfund designation makes the land hard to sell. She also noted that the signs hinder resale, and that Cooper Steel had to "jump through hoops" to move forward with excavation on their property within Area B.

ALAAP – Five Year Review Questionnaire/Interview Form for City Officials and Regulatory Agencies

Site Name: Alabama Army Ammunition Plant – Area B		**EPA ID No.: AL6210020008**
Subject: Operable Unit 7 Five-Year Review (2022)	**Time:** 4:15-4:45PM CST	**Date:** June 8, 2022
Type: □ Telephone **X** Visit □ Other **Location of Visit:** Childersburg City Hall		□ Incoming □ Outgoing

Contact Made By:

Name: Linda Meredith; Sarah Carter	**Title:** Senior Risk Assessor; Junior Environmental Scientist	**Organization:** Leidos

Individual Contacted:

Name: Mr. Ken Wesson	**Title:** Mayor	**Organization:** City of Childersburg
Telephone No: **Fax No:** **E-Mail Address:**	**Street Address:** 201 8th Avenue SW **City, State, Zip:** Childersburg, AL 35044	

Information Requested

1. What is your overall impression of the project? (general sentiment)

Response: Mr. Wesson expressed frustration about the status of the project, stating that while the ALAAP property belongs to the City of Childersburg, the difficulty in resale and redevelopment makes it seem like the property does not belong to the City. He stated that the Army should take the land back if redevelopment is going to continue to be a challenge, and that he feels that the City is in the middle of two government entities having a disagreement on how to move forward with development of the land.

Mr. Wesson also indicated that the City is advocating to obtain money from the government to "make the site whole again" and to delist the site.

2. What effects have site operations had on the surrounding community?

Response: N/A

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

Response: Mr. Wesson stated that individuals from the community inquire about why the land has not yet been developed, and that he explains the complex reasoning behind the lack of progress to inquiring individuals.

Information Requested (cont.)

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

Response: N/A

5. Do you feel well informed about the site's activities and progress?

Response: Mr. Wesson indicated that he feels well informed about the site's activities and progress but noted his frustration in the lack of a clear path forward in regard to identifying and addressing site contamination.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Response: Mr. Wesson indicated that there has been much interest in the property, but it won't sell; a battery plant company was interested in purchasing former ALAAP property, but ultimately took their business elsewhere. He also indicated that an all-terrain vehicle (ATV) assembly plant and several solar energy groups have also expressed interest in purchasing property, but Mr. Wesson expressed concern that they would ultimately take their business elsewhere due to the difficulties in addressing potential asbestos contamination.

Mr. Wesson indicated that the goal is to have a marketable site that can be developed and wants to see real progress in obtaining said goal. He stated that he wants the government entities to agree on testing methods, and that he wants to prioritize Cooper Steel's request for redevelopment and then focus on preparing land for use by the solar energy groups. He wants to see small pieces of land be assessed for asbestos and cleared for resale so that the City can move forward with selling and redevelopment of the land.

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF, G-9
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

June 13, 2022

Memorandum For: City of Childersburg and Talladega County Elected Officials

Subject: Notification of Five-Year Review (FYR), Former Alabama Army Ammunition Plant (ALAAP), Childersburg, Alabama

The Department of Army is pleased to notify you that a Five-Year Review (FYR) will be conducted under the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA) for the selected remedies at:

Former Alabama Army Ammunition Plant (ALAAP)
16559 Plant Road
Childersburg, Talladega County, Alabama

The National Contingency Plan requires sites be reviewed every five years if any hazardous substances or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. The purpose of this FYR is to determine whether the remedies at the Former ALAAP remain protective of human health and the environment. The methods, findings, and conclusions of the review will be documented in an FYR report, and, if any issues are identified, recommendations will be provided to address them.

The selected remedies for ALAAP were described in the CERCLA Record of Decision, ALAAP – Area B Soils, Surface Water, and Sediment. The contaminants of concern are explosives-related compounds and semivolatile organic compounds (SVOCs) in soils, surface water, and sediment. The selected remedy for ALAAP study areas was implementation of land use controls to prevent residential use, prevent unapproved groundwater access or use, and the requirement to submit a plan prior to excavation. In addition, soil excavation and offsite disposal, along with land use controls, was selected for one of the study areas.

During the next few months, the Department of the Army will do the following:

- Publish a notice in the local newspaper on June 15, 2022 and June 22, 2022. The public notice will ask for input from any citizens with concerns about effectiveness of the land use controls.
- Send a letter to the current property owners. We will ask for their input on the effectiveness of the land use controls.
- Conduct a site visit on June 8, 2022 to observe the land use controls and determine if any violations have occurred.
- Meet with you during the site visit on June 8, 2022. The purpose will be to gain your input on the effectiveness of the land use controls.

Some examples of the type of information the Department of the Army is interested in receiving are:

- Ways the selected remedy at the site is not protective of human health or the environment
- Ways the selected remedy at the site has affected the area.

The Department of the Army invites community participation in the FYR process and looks forward to meeting with you. All information related to the previous investigations and remedial actions conducted at ALAAP – Area B, as well as the decisions that were made regarding remedial actions, can be reviewed at the Local Document Repository, Earle A. Rainwater Memorial Library, 124 Ninth Ave SW, Childersburg, AL. The Land Use Control Implementation Plan (LUCIP) is available at the Local Document Repository and explains the specific requirements of the selected remedy.

For additional information on the FYR or other ongoing environmental investigations of groundwater and asbestos, please contact: Melissa Shirley, U.S. Army Corps of Engineers, Mobile District, at (251) 690-2616 or melissa.l.shirley@usace.army.mil.

Thank you again for your cooperation.

Sincerely,

ELLIOTT.HEATHER.BLACK.1260348597

Digitally signed by ELLIOTT.HEATHER.BLACK.1260348597
Date: 2022.06.13 15:11:31 -05'00'

for

Thomas A. Lineer
Program Manager
Army BRAC Office

Cc:

Elected Officials and City Representatives

Mr. Ken Wesson, Mayor, City of Childersburg
Ms. Aimee Burnett, City Clerk, City of Childersburg
Mr. Tommy Ivey, Council Member, City of Childersburg
Mr. Bill Moody, Council Member, City of Childersburg
Mr. Calvin Miller, Executive Director, Talladega County Economic Development Authority

Regulatory Agency Representatives

Mr. Tim Woolheater, U.S. Environmental Protection Agency, Region 4
Mr. Richard Jannett, Alabama Department of Environmental Management

ALAAP – Five Year Review Questionnaire/Interview Form for City Officials and Regulatory Agencies

Site Name: Alabama Army Ammunition Plant – Area B		**EPA ID No.: AL6210020008**	
Subject: Operable Unit 7 Five-Year Review (2022)		**Time:**	**Date:**
Type: □ Telephone □ Visit □ Other **Location of Visit:**		□ Incoming □ Outgoing	
Contact Made By:			
Name:	**Title:**	**Organization: Leidos**	
Individual Contacted:			
Name:	**Title:**	**Organization:**	
Telephone No: **Fax No:** **E-Mail Address:**		**Street Address:** **City, State, Zip:**	

Information Requested

1. What is your overall impression of the project? (general sentiment)

2. What effects have site operations had on the surrounding community?

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

5. Do you feel well informed about the site's activities and progress?

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

ALAAP – Five Year Review Questionnaire/Interview Form for City Officials and Regulatory Agencies

Site Name: Alabama Army Ammunition Plant – Area B		**EPA ID No.: AL6210020008**
Subject: Operable Unit 7 Five-Year Review (2022)		**Time:** 11:00am CST **Date:** July 8, 2022
Type: □ Telephone □ Visit x Other (email) **Location of Visit:**		x Incoming □ Outgoing
Contact Made By:		
Name: Melissa Shirley	**Title:** Engineer	**Organization:** USACE, Mobile District
Individual Contacted:		
Name: Richard Jannett	**Title:** Environmental Engineer	**Organization:** ADEM
Telephone No: 334-270-5610 **Fax No:** **E-Mail Address:** richard.jannett@adem.alabama.gov		**Street Address:** 1400 Coliseum Blvd. **City, State, Zip:** Montgomery, AL 36110

Information Requested

1. What is your overall impression of the project? (general sentiment)

The project aims to be protective of human health and the environment and should continue towards that goal.

2. What effects have site operations had on the surrounding community?

Site operations have allowed portions of the land to be returned to the community for industrial use.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

The Department is unaware of any community concerns.

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

The Department is unaware of any aforementioned events, incidents, or activities.

5. Do you feel well informed about the site's activities and progress?

Yes, the Department is well informed about site activities and progress at ALAAP through meetings and teleconferences.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

ALAAP site activities should continue towards the goal of being protective of human health and the environment.

ALAAP – Five Year Review Questionnaire/Interview Form for City Officials and Regulatory Agencies

Site Name: Alabama Army Ammunition Plant – Area B		**EPA ID No.: AL6210020008**
Subject: Operable Unit 7 Five-Year Review (2022)	**Time:** 3:30pm CST	**Date:** July 11, 2022
Type: □ Telephone □ Visit x Other (email) **Location of Visit:**	x Incoming □ Outgoing	

Contact Made By:

Name: Melissa Shirley	**Title:** Engineer	**Organization:** USACE, Mobile District

Individual Contacted:

Name: Tim Woolheater	**Title:** Senior Remedial Project Manager	**Organization:** U.S. EPA, Region 4
Telephone No: **Fax No:** **E-Mail Address:** Woolheater.Tim@epa.gov	**Street Address:** **City, State, Zip:**	

Information Requested

1. What is your overall impression of the project? (general sentiment)

The project has been slow moving over the past 5 years; however, recent progress has been encouraging due to the dispute progress. Resolution of the Schedule, NHWL disputes, and the technical discussions on asbestos have been productive and should result in meaningful progress over the next five years. Addressing the groundwater and LUC changes can only further the potential for progress.

2. What effects have site operations had on the surrounding community?

The delays in resolving the asbestos dispute are beginning to influence the ability to redevelop the site. Developers will need property cleared using the CERCLA process such that they will not be encumbered by the asbestos issues if/when any developer is prepared to use the site.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

The community (City and County leaders) is concerned about the pace of final cleanup and what it means for redevelopment, as well.

Information Requested (Cont.)

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

EPA is concerned that signs at the site have been removed and not replaced. These signs were part of the Remedial Action for OU7 and, until another option is agreed upon, they should be restored to their location.

5. Do you feel well informed about the site's activities and progress?

Yes

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

The Army should further the discussion on groundwater regarding the potential to split the site into different phases in order to make progress on the groundwater operable unit. There would appear to be portions of the site which may meet the EPA's guidelines for natural attention. At the same time, there are portions of the site which require additional information. Those areas that could qualify for an MNA remedy should be pushed forward while other areas are investigated on a longer-term schedule. This could be accomplished through splitting the existing OU into phases or designating another OU for areas that require added information.

From: [redacted]
Subject: FW: ALAAP Five Year Review letters to landowners and local officials and regulators and Questionnaires
Date: Monday, July 11, 2022 8:01:28 PM

From: Woolheater, Tim <Woolheater.Tim@epa.gov>
Sent: Monday, July 11, 2022 3:38 PM
To: Shirley, Melissa L CIV USARMY CESAM (USA) <Melissa.L.Shirley@usace.army.mil>; [redacted]
Subject: EXTERNAL: RE: ALAAP Five Year Review letters to landowners and local officials and regulators and Questionnaires

Melissa,

The Word file wasn't behaving so I've copied the questions from it and added my responses:

1. What is your overall impression of the project? (general sentiment)

The project has been slow moving over the past 5 years; however, recent progress has been encouraging due to the dispute progress. Resolution of the Schedule, NHWL disputes, and the technical discussions on asbestos have been productive and should result in meaningful progress over the next five years. Addressing the groundwater and LUC changes can only further the potential for progress.

2. What effects have site operations had on the surrounding community?

The delays in resolving the asbestos dispute are beginning to influence the ability to redevelop the site. Developers will need property cleared using the CERCLA process such that they will not be encumbered by the asbestos issues if/when any developer is prepared to use the site.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

The community (City and County leaders) is concerned about the pace of final cleanup and what it means for redevelopment, as well.

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

EPA is concerned that signs at the site have been removed and not replaced. These signs were part of the Remedial Action for OU7 and, until another option is agreed upon, they should be restored to their location.

5. Do you feel well informed about the site's activities and progress?

Yes

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

   The Army should further the discussion on groundwater regarding the potential to split the site into different phases in order to make progress on the groundwater operable unit. There would appear to be portions of the site which may meet the EPA's guidelines for natural attention. At the same time, there are portions of the site which require additional information. Those areas that could qualify for an MNA remedy should be pushed forward while other areas are investigated on a longer-term schedule. This could be accomplished through splitting the existing OU into phases or designating another OU for areas that require added information.

Thanks for the opportunity to comment.

Tim

Timothy R. Woolheater, PE, MMS
Senior Remedial Project Manager
Restoration and Sustainability Branch
EPA Region 4, Superfund Division

From: Shirley, Melissa L CIV USARMY CESAM (USA) <Melissa.L.Shirley@usace.army.mil>
Sent: Wednesday, July 6, 2022 9:19 PM
To: Woolheater, Tim <Woolheater.Tim@epa.gov>; Jannett, Richard <richard.jannett@adem.alabama.gov>; [redacted]
Subject: RE: ALAAP Five Year Review letters to landowners and local officials and regulators and Questionnaires

Tim and ADEM,
You received the attached in the mail. The public comment period will end July 14. If you would like to provide input for this FYR, if it is easier for you, please complete the questionnaire in MSWord and email back to us. Or if you want to complete the interview form on the hard copy, please complete and mail back as requested in the letter. Please do so by July 14th.

Sincerely,
Melissa
251-591-8275

AGENDA

ALABAMA ARMY AMMUNITION PLANT CERCLA PROJECT
Army Meeting with City of Childersburg

Meeting Date: Wednesday, 06/08/2022 at 9:00 am central
Location: R S Limbaugh Community Center at 300 1st Street SE, Childersburg, AL 35044

Invited:

- Ken Wesson, Mayor, City of Childersburg
- Aimee Burnett, City Clerk, City of Childersburg
- Calvin Miller, Executive Director, Talladega County Economic Development Authority
- Other local representatives at Mayor's request
- Dick Ramsdell, Chief, BRAC, Environmental Branch, DCS G-9
- Tom Lineer, BRAC Program Manager, Environment Branch, DCS, G-9
- Heather Elliott, BRAC Environmental Coordinator, contract support
- Melissa Shirley, Environmental Engineer, U.S. Army Corps of Engineers
- Mike Klidzejs, Geologist, Leidos
- Tim Woolheater, Remedial Project Manager, Environmental Protection Agency, Region 4
- Daniel Arthur, Facilities Engineering Section Supervisor, Alabama Department of Environmental Management (ADEM)
- Richard Jannett, ADEM (invited; cannot attend)
- Will Montgomery, ADEM

Agenda

- Introductions
- Five Year Review
    - Note: Army is starting the Five-Year Review. Leidos would like to meet with City and local officials this afternoon or tomorrow morning to ask questions related to the remedies in place at the former ALAAP.
- City/County plans for development
- Annual Land Use Control Inspection
- Land Use Control Implementation Plan (LUCIP)
- Groundwater Monitoring
- Asbestos

ALAAP site visit for interested parties following the meeting. At 1:00, Army will be meeting representatives of Cooper Steel at Cooper Steel South, 809 Coosa Industrial Park, 1st Road, Childersburg, AL 35044. Others are welcome to join.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF, G-9
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

June 13, 2022

Dear Sir/Madam,

The U.S. Army Base Realignment and Closure (BRAC) Branch is conducting a Five-Year Review (FYR) for the former Alabama Army Ammunition Plant (ALAAP) site. You may see the notice that will be published in the *Daily Home* newspaper on June 15, 2022 and June 22, 2022 related to the FYR efforts. The National Contingency Plan requires sites be reviewed every five years if any hazardous substances or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. The objective of the review is to ensure that the selected remedy of land use controls continues to protect human health and the environment at ALAAP.

As you may know, ALAAP was operated during World War II to produce materials in support of the war efforts. Since ALAAP closed, it has undergone numerous environmental investigations and cleanups to address contamination that was contributed by the manufacturing processes. After the Army completed the cleanup efforts at ALAAP, land use controls were selected as the remedy for areas of ALAAP including, the property you purchased from the city of Childersburg. The land use controls are no residential use, no groundwater use or access without approval, and the requirement to submit a plan before excavating the soil. As part of ensuring that the land use controls are still effective, the U.S. Army Base Realignment and Closure Branch is interested in your thoughts and plans as a property owner.

Enclosed is a brief questionnaire to help us determine whether the land use controls are working. Please complete the questionnaire and return it in the pre-addressed envelope by July 14, 2022. If you would like to scan or take a photograph of the questionnaire, you may email the scan/photograph to melissa.l.shirley@usace.army.mil.

If you are interested in knowing more about the environmental investigations and cleanups conducted at ALAAP, the Local Document Repository maintains the records associated with the work conducted. The Document Repository can be found at the Earle A. Rainwater Memorial Library, 124 Ninth Ave SW, Childersburg, AL.

If you have any questions or would like a copy of the ALAAP Land Use Control Implementation Plan please contact us at (251) 690-2616 or melissa.l.shirley@usace.army.mil. Our Army Representative (Melissa Shirley) would be happy to speak with you.

Thank you again for your cooperation.

Sincerely,

ELLIOTT.HEATHER.BLACK.1260348597

Digitally signed by ELLIOTT.HEATHER.BLACK.1260348597
Date: 2022.06.13 15:12:37 -05'00'

for

Thomas A. Lineer
Program Manager
Army BRAC Office

Enclosure: Questionnaire for Current Property Owner at ALAAP

ALAAP – Five Year Review Questionnaire for Property Owners

Site Name: Alabama Army Ammunition Plant – Area B	**EPA ID No.: AL6210020008**	
Subject: Operable Unit 7 Five-Year Review (2022)	**Time:**	**Date:**
Type: Form Provided via U.S. Postal Service to Property Owner		

Property Owner Information:

Name:	**Title:**	**Organization:**
Telephone No: **Fax No:** **E-Mail Address:**	**Street Address:** **City, State, Zip:**	

Information Requested:

1. What is your overall impression of ALAAP?

2. Has the site had any impact on your property or the surrounding community?

3. Are you aware of use restrictions on your property?

4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of your existing property to another entity?

5. Do you have any plans to build new structures or drill wells on your property?

6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities?

7. Do you have any comments, suggestions, or recommendations regarding management or operation of the site?

Please use the back of the page if more space is needed **Page 1 of ___**

ALAAP – Five Year Review Questionnaire for Property Owners

Site Name: Alabama Army Ammunition Plant – Area B	**EPA ID No.: AL6210020008**	
Subject: Operable Unit 7 Five-Year Review (2022)	**Time:**	**Date:**
Type: Form Provided via U.S. Postal Service to Property Owner		

Property Owner Information:

Name: Matt Blair	**Title:** Owner	**Organization:** Blair Block
Telephone No: 256-378-3345 **Fax No:** " " -3347 **E-Mail Address:** matt@blairblock.com	**Street Address:** 165 First Rd. **City, State, Zip:** Childersburg, AL 35044	

Information Requested:

1. What is your overall impression of ALAAP? We like being "off the beaten path." We've always had good communication with Melissa Shirley.
2. Has the site had any impact on your property or the surrounding community? No
3. Are you aware of use restrictions on your property? Yes, no ground water drilling.
4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of your existing property to another entity? No
5. Do you have any plans to build new structures or drill wells on your property? No
6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? No
7. Do you have any comments, suggestions, or recommendations regarding management or operation of the site? No

Please use the back of the page if more space is needed **Page 1 of ___**

ALAAP – Five Year Review Questionnaire for Property Owners

Site Name: Alabama Army Ammunition Plant – Area B		**EPA ID No.: AL6210020008**
Subject: Operable Unit 7 Five-Year Review (2022)		**Time:** 0730 **Date:** 07/07/2022
Type: Form Provided via U.S. Postal Service to Property Owner		

Property Owner Information:

Name: Sonya D. Reynolds	**Title:** Chief Production Officer	**Organization:** ENEOS USA Inc
Telephone No: 256-378-0131 ext 309 **Fax No:** 256-378-0169 **E-Mail Address:** s.reynolds@eneosusa.com	**Street Address:** 100 Nippon Drive **City, State, Zip:** Childersburg AL 35044	

Information Requested:

1. What is your overall impression of ALAAP?
   Area offers a great environment for industrial use.

2. Has the site had any impact on your property or the surrounding community?
   yes we located a facility on the property

3. Are you aware of use restrictions on your property? YES

4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of your existing property to another entity?
   potential to purchase more in the future

5. Do you have any plans to build new structures or drill wells on your property?
   No wells
   New build is possible

6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities?
   No

7. Do you have any comments, suggestions, or recommendations regarding management or operation of the site? NO

Please use the back of the page if more space is needed

Page 1 of 1

ALAAP – Five Year Review Questionnaire for Property Owners

Site Name: Alabama Army Ammunition Plant – Area B	EPA ID No.: AL6210020008	
Subject: Operable Unit 7 Five-Year Review (2022)	Time:	Date:
Type: Form Provided via U.S. Postal Service to Property Owner		

Property Owner Information:

Name: Eric Dauber	Title: President	Organization: Dauber Company
Telephone No: 815 442 3569 Fax No: 815 442 3669 E-Mail Address: edauber@dauberco mpany.com	Street Address: 577 N 18th rd City, State, Zip: Tonica, IL 61370	

Information Requested:

1. What is your overall impression of ALAAP?

   Good

2. Has the site had any impact on your property or the surrounding community?

   NO

3. Are you aware of use restrictions on your property?

   Yes

4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of your existing property to another entity?

   NO

5. Do you have any plans to build new structures or drill wells on your property?

   NO

6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities?

   No

7. Do you have any comments, suggestions, or recommendations regarding management or operation of the site?

Please use the back of the page if more space is needed **Page 1 of ___**

ALAAP – Five Year Review Questionnaire for Property Owners

Site Name: Alabama Army Ammunition Plant – Area B	**EPA ID No.: AL6210020008**	
Subject: Operable Unit 7 Five-Year Review (2022)	**Time:**	**Date:** 8/26/2022
Type: Form Provided via U.S. Postal Service to Property Owner		

Property Owner Information: Alabama Childhood Food Solutions Inc

Name: James Jones	**Title:** Board Chairman	**Organization:** Solutions Inc
Telephone No: 256-2086463 **Fax No:** — **E-Mail Address:** childhoodfood@gmail.com	**Street Address:** 205 Old Home Place **City, State, Zip:** Alpine, AL 35014	

Information Requested:

1. What is your overall impression of ALAAP?
   No Opinion

2. Has the site had any impact on your property or the surrounding community?
   Property returned to City of Childersburg 8/26/2022

3. Are you aware of use restrictions on your property?
   Nitrate & other chemical contaminates prevent ACFS uses a food distribution center.

4. Do you have any plans to purchase any additional ALAAP property, or to sell or lease any of your existing property to another entity?
   No

5. Do you have any plans to build new structures or drill wells on your property?
   No

6. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities?
   None

7. Do you have any comments, suggestions, or recommendations regarding management or operation of the site?
   site evaluation prevents planned use.

Please use the back of the page if more space is needed **Page 1 of 1**

THIS PAGE WAS INTENTIONALLY LEFT BLANK

ATTACHMENT D

SITE INSPECTION CHECKLIST AND PHOTOGRAPHS

THIS PAGE WAS INTENTIONALLY LEFT BLANK

I. SITE INFORMATION	
Site Name: ALAAP – Area B	**Date of Inspection:** June 8-9, 2022
Location and Region: Childersburg, AL	**EPA ID:** AL6210020008
Agency, Office, or Company Leading the Five-Year Review:	**Weather/Temperature:** Partly cloudy, temperatures in the 80s

Remedy Includes: (Check all that apply)

☒ Landfill cover/containment
☒ Access controls
☒ Institutional controls
☐ Groundwater pump and treatment
☐ Surface water collection and treatment
☐ Other_____
_____

☐ Monitored natural attenuation
☐ Groundwater containment
☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M Site Manager** __Ken Wesson___Mayor, City of Childersburg, AL____6/8/2022_____
Name Title Date
Interviewed ☐ at site ☒ at office ☐ by phone no. _____
Problems, suggestions; ☐ Report attached. See FYR Community Notification, Involvement & Site Interviews section of this inspection checklist.

2. **O&M Staff** _None_____ _____ _____
Name Title Date
Interviewed ☐ at site ☐ at office ☐ by phone no. _____
Problems, suggestions; ☐ Report attached. _____
_____

3. **Local Regulatory Authorities and Response Agencies** (e.g., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply.

Agency Alabama Department of Environmental Management
Contact Richard Jannett Project Manager 7/8/2022 (334) 270-5610
Name Title Date Phone no.
Problems; suggestions; ☒ Report attached. Refer to Attachment C that includes the interview records.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached. _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached. _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached. _____

4. **Other interviews** (optional) ☒ Report attached.

Refer to Attachment C that includes all the interview records.

III. ONSITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
   - ☐ O&M manual — ☐ Readily available — ☐ Up to date — ☒ N/A
   - ☐ As-built drawings — ☐ Readily available — ☐ Up to date — ☐ N/A
   - ☐ Maintenance logs — ☐ Readily available — ☐ Up to date — ☐ N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** — ☐ Readily available — ☐ Up to date — ☒ N/A
   - ☐ Contingency plan/emergency response plan — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

3. **O&M and OSHA Training Records** — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — ☒ N/A
   - ☐ Effluent discharge — ☐ Readily available — ☐ Up to date — ☒ N/A
   - ☐ Waste disposal, POTW — ☐ Readily available — ☐ Up to date — ☐ N/A
   - ☐ Other permits_____ — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

7. **Groundwater Monitoring Records** — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

8. **Leachate Extraction Records** — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

9. **Discharge Compliance Records**
   - ☐ Air — ☐ Readily available — ☐ Up to date — ☒ N/A
   - ☐ Water (effluent) — ☐ Readily available — ☐ Up to date — ☒ N/A

   Remarks_____

10. **Daily Access/Security Logs** — ☐ Readily available — ☐ Up to date — ☒ N/A

    Remarks_____

IV. O&M COSTS

1. **O&M Organization**
   - ☐ State in-house
   - ☐ Contractor for State
   - ☐ PRP in-house
   - ☐ Contractor for PRP
   - ☐ Federal Facility in-house
   - ☐ Contractor for Federal Facility
   - ☒ Other Site O&M is the responsibility of the city of Childersburg, Alabama, as required by the transfer documents.

2. **O&M Cost Records**
   - ☐ Readily available
   - ☐ Up to date
   - ☐ Funding mechanism/agreement in place
   - Original O&M cost estimate N/A ☐ Breakdown attached

   Total annual cost by year for review period if available

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ ☐ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: N/A

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A
   Remarks: Fencing at the NHWL and Study Area 22 Landfill showed minor damage but none that affects the security imposed by the fencing at either landfill.

B. Other Access Restrictions

1. **Signs and Other Security Measures** ☐ Location shown on site map ☐ N/A
   Remarks: Gates at ALAAP entrances are typically locked.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☒ Yes ☐ No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (e.g., self-reporting, drive by) LUC inspections
Frequency Annual
Responsible party/agency. The city of Childersburg is responsible for the LUC inspections, but the Army has been conducting the inspections since the LUCs have been implemented.
Contact Mayor Ken Wesson (Name) Mayor of Childersburg (Title) June 8-9, 2022 (Date) (256) 378-5521 (Phone no.)

Reporting is up-to-date ☒ Yes ☐ No ☐ N/A
Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes ☐ No ☒ N/A
Other problems or suggestions: ☐ Report attached

Remarks: Some LUC signs have been removed. EPA and ADEM have commented that signs need to be in place. The number of signs needed at ALAAP – Area B has not been resolved.

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks: Some LUC signs have been removed. EPA and ADEM have commented that signs need to be in place. The number of signs needed at ALAAP has not been resolved.

D. General

1. **Vandalism/Trespassing** ☐ Location shown on site map ☐ No vandalism evident

Remarks: In the interview, Mayor Wesson indicated that trespassing with the intent to hunt/poach deer has occurred but has decreased in frequency this year due to increased patrols by Alabama game wardens.

2. **Land Use Changes Onsite** ☐ N/A

Remarks: A parcel in the southwestern corner of ALAAP has been purchased (Eric David McLain) and has been advanced to include a wildlife food plot. A parcel in former Study Area 10 (Roy J. Gaither) also appears to include a wildlife food plot.

3. **Land Use Changes Offsite** ☒ N/A

Remarks:

VI. GENERAL SITE CONDITIONS

A. Roads ☒ Applicable ☐ N/A

1. **Roads Damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A

Remarks:

B. Other Site Conditions

Remarks: None

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident
   Areal extent_____ Depth_____
   Remarks:_____

2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks:_____

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
   Areal extent_____ Depth_____
   Remarks:_____

4. **Holes** ☐ Location shown on site map ☒ Holes not evident
   Areal extent_____ Depth_____
   Remarks:_____

5. **Vegetative Cover** ☒ Grass ☒ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks: Small bare spot evident near gate of NHWL. Some woody vegetation growing in the fences of both the NHWL and the Study Area 22 Landfill.

6. **Alternative Cover (e.g., armored rock, concrete)** ☒ N/A
   Remarks:_____

7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
   Areal extent_____ Height_____
   Remarks:_____

8. **Wet Areas/Water Damage** ☒ Wet areas/water damage not evident
   ☐ Wet areas ☐ Location shown on site map Areal extent_____
   ☐ Ponding ☐ Location shown on site map Areal extent_____
   ☐ Seeps ☐ Location shown on site map Areal extent_____
   ☐ Soft subgrade ☐ Location shown on site map Areal extent_____
   Remarks:_____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☒ No evidence of slope instability
Areal extent_____
Remarks:_____
_____

B. Benches ☐ Applicable ☒ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay
Remarks:_____
_____

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
Remarks:_____
_____

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
Remarks:_____
_____

C. Letdown Channels ☐ Applicable ☒ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend the steep side slope of the cover and will allow the runoff water collected by the benches to move off the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent_____ Depth_____
Remarks:_____
_____

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type_____ Areal extent_____
Remarks:_____
_____

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent_____ Depth_____
Remarks:_____
_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks:_____
_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks:_____
_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks:_____
_____

D. Cover Penetrations ☐ Applicable ☒ N/A

1. **Gas Vents** ☐ Active ☐ Passive
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ Evidence of leakage at penetration ☐ Needs Maintenance
   ☐ N/A
   Remarks:_____

2. **Gas Monitoring Probes**
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
   Remarks:_____

3. **Monitoring Wells** (within surface area of landfill)
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
   Remarks:_____

4. **Leachate Extraction Wells**
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
   Remarks:_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
   Remarks:_____

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks:_____

2. **Gas Collection Wells, Manifolds, and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks:_____

3. **Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks:_____

F. Cover Drainage Layer ☐ Applicable ☒ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
   Remarks:_____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
   Remarks:_____

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1. **Siltation** Areal extent_____ Depth_____ ☐ N/A
   ☐ Siltation not evident
   Remarks:_____
   _____

2. **Erosion** Areal extent_____ Depth_____
   ☐ Erosion not evident
   Remarks:_____
   _____

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks:_____
   _____

4. **Dam** ☐ Functioning ☐ N/A
   Remarks:_____
   _____

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks:_____
   _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks:_____
   _____

I. Perimeter Ditches/Offsite Discharge ☐ Applicable ☒ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks:_____
   _____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☐ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks:_____
   _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks:_____
   _____

4. **Discharge Structure** ☐ Functioning ☐ N/A
   Remarks:_____
   _____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks:_____
   _____

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored
   Frequency_____☐ Evidence of breaching
   Head differential_____
   Remarks:_____
   _____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
   Remarks:_____
   _____
   _____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   Remarks:_____
   _____

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks:_____
   _____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. **Collection Structures, Pumps, and Electrical**
   ☐ Good condition ☐ Needs Maintenance
   Remarks:_____
   _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs Maintenance
   Remarks:_____
   _____

3. **Spare Parts and Equipment**
   ☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks:_____
   _____

C. Treatment System ☐ Applicable ☒ N/A

1. **Treatment Train** (Check components that apply)
   ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping ☐ Carbon adsorbers
   ☐ Filters_____
   ☐ Additive (e.g., chelation agent, flocculent)_____
   ☐ Others_____
   ☐ Good condition ☐ Needs Maintenance
   ☐ Sampling ports properly marked and functional
   ☐ Sampling/maintenance log displayed and up to date
   ☐ Equipment properly identified
   ☐ Quantity of groundwater treated annually_____
   ☐ Quantity of surface water treated annually_____
   Remarks:_____
   _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ☐ N/A ☐ Good condition ☐ Needs Maintenance
   Remarks:_____
   _____

3. **Tanks, Vaults, and Storage Vessels**
   ☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
   Remarks:_____
   _____

4. **Discharge Structure and Appurtenances**
   ☐ N/A ☐ Good condition ☐ Needs Maintenance
   Remarks:_____
   _____

5. **Treatment Building(s)**
   ☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
   ☐ Chemicals and equipment properly stored
   Remarks:_____
   _____

6. **Monitoring Wells** (pump and treatment remedy)
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ All required wells located ☐ Needs Maintenance ☐ N/A
   Remarks:_____
   _____

D. Monitoring Data ☐ Applicable ☒ N/A

1. Monitoring Data
   ☐ Are routinely submitted on time ☐ Are of acceptable quality

2. Monitoring data suggest:
   ☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation ☐ Applicable ☒ N/A

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks:_____
_____

X. OTHER REMEDIES

If there are remedies applied at the site that are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emission).

The purpose of this inspection was to assess the condition of the NHWL and the Study Area 22 Landfill and to obtain an indication if institutional controls, contained within the LUCIP, are being followed.

At the time of the inspection, the landfills were found to be in generally good condition with well-established covers and no indication of erosion, rilling, or slumping. One small bare spot was noted on the cover to the NHWL, near the gate on the southern side of the landfill. Fences surrounding both landfills showed minor damage and contained some woody growth. However, the condition of the fences did not negatively affect the security they impose. The gates to both landfills are locked. Both landfills are posted with no trespassing and other warning signs.

In July 2022, the bare spot on the NHWL (noted above) was repaired and all woody vegetation intwined in the fences of both the NHWL and the Study Area 22 Landfill was cut to prohibit additional growth and damage that could be caused by additional growth.

The LUCIP stipulates industrial use of the property. With one exception, parcels of property that have been sold by the city are in industrial use. A parcel in the far southwestern corner of ALAAP sold to a private party has potentially been used as a food plot.

Some of the LUC warning signs have been removed. EPA and ADEM have commented that signs are generally required.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.
See Section A (above).

C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations, such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. No early indicators of potential remedy problems were identified.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. No opportunities for optimization were identified.

Photograph D-1. Condition of the NHWL during the Five-Year Review Site Inspection

Photograph D-2. Condition of the NHWL during the Five-Year Review Site Inspection

Photograph D-3. Condition of the NHWL Cover during the Five-Year Review Site Inspection

Photograph D-4. Condition of the Study Area 22 Landfill during the Five-Year Review Site Inspection

Photograph D-5. Condition of the Study Area 22 Landfill during the Five-Year Review Site Inspection

Photograph D-6. Sign at Study Area 10W, Typical of Study Area LUC Signs without Fish Consumption Warnings

Photograph D-7. Sign at Study Area 21, Typical of Study Areas 21 and 26 LUC Signs with Fish Consumption Warnings

THIS PAGE WAS INTENTIONALLY LEFT BLANK

ATTACHMENT E

EPA AND ADEM COMMENTS ON DRAFT FIFTH FIVE-YEAR REVIEW AND ARMY RESPONSE

THIS PAGE WAS INTENTIONALLY LEFT BLANK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4 ATLANTA
FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

Feb 2, 2023

Official Correspondence – This electronic message is being sent in lieu of regular mail

Dr. Thomas Lineer
Chief, BRAC Field Branch
Department of the Army (HQDA/ODCS G-9)
Office of the Assistant Chief of Staff for Installation Management
600 Army Pentagon
Washington, DC 20310-0600

Dear Dr. Lineer,

The U.S. Environmental Protection Agency (EPA) has reviewed the Army's Fifth Five Year Review (5YR) submitted in December 2022 for the Alabama Army Ammunition Plant (ALAAP). EPA reviewed the report and issues this letter including EPA's comments and recommended changes to the Fifth Five Year Review Report. Comments are provided below. Please provide response to EPA's comments.

EPA looks forward to addressing the remaining site issues in a comprehensive manner at the Army's earliest convenience. Please contact me at (404) 562-8510 to expedite the planning for cleanup of these contaminated areas that will address EPA concerns.

Should there be any questions, please feel free to contact me through email at englert.brian@epa.gov or by phone, either 404-263-8775 (cell).

Sincerely,

Brian Englert 2/2/2023

Brian Englert, PhD
Remedial Project Manager
Restoration and Sustainability Branch
Superfund Division

CC: Richard Jannett, ADEM

EPA COMMENTS ON 5TH FIVE YEAR REVIEW FOR ALABAMA ARMY AMMUNITION DEPOT

General Comments:

1. EPA has not agreed with the long-term protectiveness determination for the last two FYRs because there were no long-term measures in place for the nonhazardous waste landfill which received wastes from various places at ALAAP. EPA invoked an informal dispute which has since been resolved. The outcome of that will be an ESD which has not been prepared at this time.

   NHWL is tied to the OU7 ROD through OU2 and OU6 because it is the onsite disposal area for multiple study areas in OU2 and OU6. Until the controls are put in place and the NHWL and be assessed for impact on groundwater (both parts of the ESD) then the current remedies are only protective in the short term. While EPA believes protectiveness will be achieved in the future following preparation and implementation of the ESD, at the present time, EPA does not agree with the long-term protectiveness determination. Additionally, while asbestos is being added to another OU, it still has a direct effect on the protectiveness of the soils at the site which are addressed in OU7.

   At this time, EPA believes that the protectiveness determination of "Protectiveness Deferred" is more applicable according to September 2012 memo, "Clarifying the Use of Protectiveness Determinations for Comprehensive Environmental Response, Compensation, and Liability Act Five-Year Reviews." EPA recommends revising the protectiveness determination to "Protectiveness Deferred."

2. The Draft Five Year Review concludes that the selected remedy is protective of human health and the environment, which appears appropriate for the short term except for the potential for arsenic exposure in soil at Study Areas 3, 8 (subsurface soil), 17, 18, 19 and Building 6 – Coke Oven Soils, which is discussed as part of General Comment 2, and asbestos that has been identified in several areas. However, long term protectiveness has not been met since a long-term monitoring program for groundwater associated with the Non-Hazardous Waste Landfill (NHWL) that was addressed under Operable Unit 2 (OU-2) and Operable Unit (OU-6) decision document has not been established. The protectiveness statement acknowledges that a revised remedy for the NHWL will be incorporated into the OU-7 Record of Decision (ROD), and it is acknowledged that an Explanation of Significant Differences (ESD) is being prepared. Because the OU-7 ROD is not in place, and the ESD has not been finalized, long term protectiveness is not appropriate for the current remedy. Please revise the protectiveness statement to reflect that the remedy is not protective for long term.

3. Exposure Point Concentrations (EPCs) for arsenic in Study Areas 3, 8 (subsurface soil), 17, 18, 19 and Building 6 – Coke Oven Soils range from 41 to 54 milligram per kilogram (mg/kg) and exceed the updated adjusted Industrial Regional Screening Level (RSL) of 30 mg/kg. However, the text states that based on the small data sets and natural background of arsenic (15 mg/kg) at the site, arsenic exceedances are not a concern. It is unclear if a revised risk assessment was conducted to confirm arsenic in soil does not present an unacceptable risk to receptors at Study Areas 3, 8, 17, 18, 19 and Building 6 – Coke Oven Soils, based on the lower RSL. Please provide the results of an updated

risk assessment to confirm arsenic concentrations do not pose an unacceptable risk at Study Areas 3, 8 (subsurface soil), 17, 18, 19 and Building 6 – Coke Oven Soil.

4. The Draft Five Year Review includes one inspection form for all study areas including the NHWL and Study Area 22; however, land-use control (LUC) information for all study areas are not included in the form. Please include an inspection form for each study area to document appropriate LUCs are being maintained. The inspection form covers all of the sites, including the NHWL and Study Area 22 landfills, so important information about LUC compliance at each site is missing. A separate inspection form should be filled out for each site and study area. Please ensure that a separate inspection form is provided for each site and study area for future Five Year Reviews.

5. The Draft Five Year Review incudes photographs of the NHWL and Study Area 22; however, there are no photographs that document the status of LUCs (e.g. signs, fences) at the remaining study areas. If available, please include photographs of all remaining study area LUCs. If not available, please ensure the next five year review contains photographs of all study area LUCs. There should be at least one photograph of each site and study area. If there are multiple LUCs (e.g., fences, signs), photographs should be included of each LUC element for each site or study area. Please provide photographs to document the status of all LUCs.

Section Specific Comments:

1. In section 5.2.2.4, the document discusses the maximum detected concentration of 2,4-DNT (99 mg/kg) as less than two times the stated industrial soil RSL of 74 mg/kg. While this is true, it would be clearer to say and show that this maximum concentration still lies within EPA's range of acceptable risk. Please revise this section for clarity.
    a. In addition, explanation is requested regarding why the industrial soil RSLs for a target risk of 1E-05 are used in the document to determine whether risks may remain acceptable rather than the full EPA risk range (up to 1E-04).

2. In Section 6, while discussing the food plots growing in Area B, the document states that "there is little risk from chemical exposures associated with preparing and seeding the soil, hunting, and eating game." This risk evaluation is not discussed or presented in the Five Year Review. Additional detail explaining and demonstrating this statement is needed in the main body of the document.

3. In Section 7, the Protectiveness Statement reads that "all human and ecological risks are under control." Considering the issues currently still being addressed at other parts of the site, this statement should be revised to clearly indicate that human health and ecological risks related to this ROD are under control.
4. Page 1-1, Third Paragrah states the this FYR needs to be finalized by September 2023. SEMS shows the due date as 9/5/2023. Suggest you list the specific date to avoid confusion. (I realize this is stated in the Summary Form, but it would be good to have clear here as well).
5. Page 1-11, The FYR Summary Form states the review period was from April 19, 2022 to August 31, 2022. Typically review periods are 12-18 months long. Please check if these dates reflect the entire review period.

6. Page 4-1, Section 4.1 Was a public notice the only form of advertising/announcment made for this FYR report? If so, consider using additional methods for the next FYR such as social media postings, website postings, email list, mailing list, or whichever methods of communication are effective in the community. This will allow the community to participate in the FYR if they choose.
7. Page 4-1, Section 4.1 Are site documents available electronically online for the public to view? If not, consider making the documents in the repository available online for this and future site documents. This will help ensure the public has to opportunity to be informed on site cleanup and FYRs.
8. Page 4-1, Section 4.1 states a public meeting was held on June 8, 2022. If there is an estimate of the number of community members who attended, please include that information.
9. Page 6-1, Any milestone dates for an issue/recommendation should have an actual date (MM/DD/YYYY). TBD should not be used for milestones. If the milestone has been completed, note it is completed and list the completion date.
10. Figure 1-3, ALAAP Area B and Adjacent Parcel Owners, Industrial Land Use, Page 1-9: According to Figure 1-3, Parcel 2, which is located within Area B, is owned by Resolute Forest Products US Inc.; however, Section 1.1 [Site Background] does not discuss that a portion of Parcel 2 is located within Area B. Please include text in Section 1.1 that discusses a portion of Parcel 2 is located within Area B and if there are any study areas located within the portion of Parcel 2 that is located within Area B.

11. Section 2.1.1, Study Area 2, Page 2-3: The text states that polycyclic aromatic hydrocarbon (PAH) contamination in soil at Study Area 2 was remediated to industrial cleanup standards; however, the text does not discuss what specific PAHs remain above residential cleanup standards and the maximum concentrations of PAHs that remain in soil are not noted. Please revise the text to discuss the specific PAHs that remain above residential standards and provide a maximum concentration for each PAH.

12. Section 2.1.1, Study Area 2, Page 2-3: According to Table 2-1 (Chemicals of Concern Based on Future Residential Land Use), concentrations of arsenic, several PAHs, and 2,4-dinitrotoluene (DNT) are present in soil at Study Area 2 that present an unacceptable risk; however, the text in Section 2.1.1 does not discuss arsenic. Please revise the text to discuss the extent and magnitude of arsenic contamination in Study Area 2.

13. Section 2.1.5, Study Area 8, Pages 2-4 and 2-5: According to Table 2-1 (Chemicals of Concern Based on Future Residential Land Use), concentrations of arsenic, antimony, lead, nickel, and several PAHs in soil present an unacceptable risk at Study Area 8; however, the text in Section 2.1.1 does not discuss the specific metals and PAHs. Please include a discussion of specific metals and PAHs that pose an unacceptable risk at Study Area 8.

14. Section 2.1.7, Study Area 16, Pages 2-5 and 2-6: According to Table 2-1 (Chemicals of Concern Based on Future Residential Land Use), concentrations of arsenic and several PAHs in soil present an unacceptable risk at Area 16; however, the text in Section 2.1.1 does not discuss the specific metals and PAHs. Please include a discussion of specific metals and PAHs that pose an unacceptable risk at Study Area 16.

15. Section 2.1.9, Study Area 18, Page 2-7: The text states that several metals have been identified as chemical of concern (COCs) in surface and subsurface soils; however, Table 2-1 (Chemicals of Concern Based on Future Residential Land Use) indicates that only arsenic is a COC. Please explain why Table 2-1 only lists arsenic as a COC and remove the discussion of subsurface soil or revise Table 2-1 to include all COCs in surface and subsurface soil.

16. Section 2.1.10, Study Area 19, Page 2-7: The text states that a removal action was conducted at Study Area 19 to remove lead–impacted soil; however, it is unclear if lead ingots were also removed or if they still remain in place, as their potential presence may be a continuing source of contamination. Please discuss if lead ingots were removed during the removal action.

17. Section 2.2, Response Actions, Page 2-10: The text in the final paragraph of Section 2.2 states that response actions were conducted at Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 Coke Oven; and South Georgia Dump Road; however, according to previous text in Section 2.2 of the Five Year Review, no remediation was conducted at Study Areas 3, 4, 8, 18, 26 and Building 6 Coke Oven and South Georgia Dump Road. Please revise the text to accurately reflect where response actions were conducted.

18. Table 2-4, Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas, Pages 2-18 to 2-20: Table 2-4 describes LUC restrictions for Area B and describes activities that are not acceptable or need prior approval; however, there is no mention of tree removal and grubbing, and up-rooted fallen trees, which can result in uncovering of contaminated soil. Please describe preventative measures that should be taken to reduce the potential for exposure during tree removal and grubbing operations.

19. Section 3-2, Fourth FYR, Page 3-1: Section 3-2 states that concurrence on the fourth five year review has not been granted by EPA and the text refers to Table 3-1 [Protectiveness Determinations/Statements from the Fourth FYR] which indicates that a scoping meeting was held with EPA in November 2022 to determine a path forward to evaluate if asbestos in soil presents an unacceptable risk; however, the details of the meeting are not discussed. Please revise Section 3.1 to include a brief discussion of the November 2022 scoping meeting.

20. Section 4.2, Landowner Interviews, Page 4-2: The interview with Mr. James Jones of Alabama Childhood Food Solutions (AFCS) states that the presence of nitrate and other chemical contaminants prevents the use of the property as a food distribution center, and the property was returned to the City of Childersburg; however, it is unclear what kind of evaluation was conducted for the property. Please revise the text to provide more details regarding the evaluation that was conducted by AFCS.

21. Section 4.4, Site Inspection, Page 4-3: The text states that a site inspection was conducted at Study Areas 2, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 Coke Oven; and South Georgia Dump Road; however it is unclear if a site inspection of

Study Area 3 was conducted. Please revise the text to clarify if Study Area 3 was inspected and, if not, provide rationale that explains why it was not inspected.

22. Section 4.4, Site Inspection, Page 4-3: According to Table 1-1 [ALAAP – Area B OUs and Five-Year Review Status], warning signs were posted at Study Areas 21 and 26 to warn against consumption of fish tissue; however, there is no discussion if these warning signs were observed during the Five Year Review site inspection or if there were any indications that fishing was occurring. Please revise the text to indicate if these signs were observed and discuss whether there was any evidence that fishing was occurring.

23. Section 4.4, Site Inspection, Page 4-4: Warning signs have been missing since 2019; however, there is no discussion whether any of the missing signs have been replaced. Please discuss if warning signs have been replaced or if there are plans to replace the signs in the near future.

24. Section 5.2.1, Question B Summary, Page 5-3: The text discusses exceedances of industrial RSLs for arsenic, lead and 2-4-DNT; however, several other metals (e.g., antimony and nickel) and PAHs have also been detected above industrial RSLs, but are not discussed. Please include a discussion of industrial RSL exceedances for all metals, including antimony and nickel, and PAHs.

25. Section 5.2.2.4, Changes in Cleanup Goals, Page 5-6: The text references an arsenic background value; however, the source of this value is not cited. Please include a citation for the arsenic background value.

26. Section 5.2.2.4, Changes in Cleanup Goals, Page 5-6: The EPC for lead in surface soil at the South Georgia Dump is 964 mg/kg, which exceeds the industrial RSL of 800 mg/kg, but below the industrial worker cleanup goal of 1,050 mg/kg that was calculated using the 2017 EPA Adult Lead Methodology (ALM) guidance; however, it appears that the default values for variables (i.e., target blood lead levels [PbB] in fetus, soil ingestion rate, exposure frequency and averaging time) were used and no justification was provided. Please provide a justification why default variables, and not site-specific variables, were used to calculate the cleanup goal.

27. Section 5.2.3.5, Industrial Land Use, Page 5-14: The text states that clear-cutting has been conducted through the entire Alabama Army Ammunition Plant (ALAAP) and presumably in study areas covered by this Five Year Review; however, the text does not discuss how contaminated soil was managed during clear cutting operations, as the removal of root balls and presence of heavy logging equipment likely resulted in the disturbance of soil. Please revise the text to provide a detailed description of soil management during previous clear cutting operations or provide justification that explains why soil management was not conducted.

28. Section 6, Issues/Recommendations, Page 6-1: The text states that the presence of food plots may be a possible violation of the LUCs and recommends reminding land owners that an excavation plan is required prior to any land disturbance; however, providing the LUC plan may not be sufficient. For example, there is no recommendation for a detailed explanation for landowners/renters so that they understand why ground

cannot be disturbed. Please revise the text to propose a more robust solution so that property owners and users understand why ground disturbance is prohibited without an excavation plan.

Considering three Five Year Review questions from the September 2012 EPA memo, "Clarifying the Use of Protectiveness Determinations for Comprehensive Environmental Response, Compensation, and Liability Act Five-Year Reviews"

- Question A - Is the remedy functioning as intended by the decision documents?
- Question B - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RA Os) used at the time of the remedy selection still valid?
- Question C - Has any other information come to light that could call into question the protectiveness of the remedy?

OU-2, and OU-6

1. Question A: This evaluation is based primarily on the parts of the remedies that utilized the Nonhazardous Waste Landfill (NHWL) for disposal. The answer to this is unclear, since the ARARs for the NHWL were not identified at a level specific enough to identify individual requirements that would be helpful to determine whether the remedy was functioning as intended.
2. Question B: No. The FYR recites certain cancer slope factors and toxicity values for purposes of evaluating human health risk that have changed, and so the answer appears to be no. This may result in a less favorable conclusion than "protectiveness deferred" but that is a technical call.
3. Question C: Yes. For remedies that utilized the NHWL for disposal, it remains a question whether the NHWL part of the remedy is protective. Because groundwater monitoring wells that should have been installed as required by ADEM state RCRA ARAR have not been installed, it is, as a factual matter, impossible to determine whether the remedy is protective, that is, whether there have been any releases to the groundwater from NHWL. In addition, it is not known whether the other missing ARARs which the Army has agreed will be included in an Explanation of Significant Differences impact protectiveness (e.g., requirements for the cap and for routing surface water around the landfill). As a factual matter, the Army may be meeting these requirements, but it is not known at present.

Conclusion: Protectiveness Deferred. The Army has agreed to submit an ESD with the revised ARARs, and once the ESD is implemented, this should remedy the current status.

OU-7:

4. Question A: No. Signs that were part of the OU7 selected remedy were removed. It is factual question whether this impacts protectiveness, but it appears to be factual that the removal of the signs indicates that the LUC remedy is not operating as designed/intended.
5. Question B: No(?). It is not clear whether this impacts OU-7, or just OU-2 and -6. See my comment above for OU-2 and -6.
6. Question C: Yes. Same answer as A.

Conclusion: Protectiveness Deferred. The signature and implementation of an informal dispute resolution agreement should resolve this issue.

7. **Section 5.2.3.5**. EPA recommends that an ecological risk assessor evaluate the reasoning and conclusions in this section.

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 • Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 • FAX (334) 271-7950

February 16, 2023

ELECTRONICALLY TRANSMITTED

Dr. Thomas Lineer
Chief, BRAC Field Branch
Department of the Army (HQDA/ODCS G-9)
Office of the Assistant Chief of Staff for Installation Management
600 Army Pentagon
Washington, DC 20310-0600

RE: **ADEM Concurrence:** *Draft Fifth Five-Year Review Report for The Alabama Army Ammunition Plant - Area B Superfund Site, Talladega County, Alabama,* received December 2, 2022
U.S. EPA I.D. No. AL 6 210 020 008

Dear Dr. Lineer:

The Alabama Department of Environmental Management (ADEM or the Department) has completed the review of the *Draft Fifth Five-Year Review Report for The Alabama Army Ammunition Plant - Area B Superfund Site, Talladega County, Alabama,* received December 2, 2022. Based on this review, the Department concurs with the overall content of this report. Please submit a final version of this report by the September 5, 2023 due date.

If you have any questions on this matter, please contact Richard Jannett of the Facilities Engineering Section at 334-270-5610 or via e-mail at richard.jannett@adem.alabama.gov.

Sincerely,

Ashley T. Mastin, Chief
Governmental Hazardous Waste Branch
Land Division

ATM/RDA/RBJ/jm

cc (via email): Daniel Arthur, ADEM
Tim Woolheater, EPA
Ben Bentkowski, EPA
Melissa L. Shirley, USACE
Bob Beacham, USACE

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (Fax)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (Fax)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (Fax)

Mobile - Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (Fax)

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF, G-9
600 ARMY PENTAGON
WASHINGTON, DC 20310-0600

August 7, 2023

SUBJECT: OU-7 Draft Final Fifth Five-Year Review Report, Alabama Army Ammunition Plant – Area B Superfund Site, Talladega County, Alabama

Brian Englert, Ph.D.
Remedial Project Manager
Restoration and Sustainability Branch
EPA Region 4, Superfund Division
61 Forsyth Street, SW
Atlanta, Georgia 30303-3104

Dear Dr. Englert:

Enclosed for your review is the draft final OU-7 Fifth Five-Year Review Report for the Alabama Army Ammunition Plant – Area B Superfund Site, in Talladega County, Alabama. The electronic package includes (1) a table with Army responses to EPA comments provided February 2, 2023, (2) a redline strikeout version that shows the incorporation of the EPA comments and Army responses into the draft report, and (3) the draft final report. Request your review of the draft final Five-Year Review Report by August 22nd so we can meet the finalization deadline of September 5, 2023.

Thank you,

LINEER.THOMAS.ALDEN.1172258375 Digitally signed by LINEER.THOMAS.ALDEN.1172258375 Date: 2023.08.03 15:26:56 -04'00'

Thomas A. Lineer
BRAC Program Manager
Army Environmental Division
Installation Services Directorate

Enclosures

Copies Furnished:
Richard Jannett, ADEM
Mayor Ken Wesson, City of Childersburg

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303

August 15, 2023

Official Correspondence – This electronic message is being sent in lieu of regular mail

Dr. Thomas Lineer
Chief, BRAC Field Branch
Department of the Army (HQDA/ODCS G-9)
Office of the Assistant Chief of Staff for Installation Management
600 Army Pentagon
Washington, DC 20310-0600

Dear Dr. Lineer,

The United States Environmental Protection Agency has received and reviewed the draft final Fifth Five Year Review for Alabama Army Ammunition Depot and associated Response to Comments for Draft Fifth Five Year Review dated August 2022.

While EPA disagrees with the Army's response to General Comments 1 through 4, and specific comments 1, 2 and 28; disagreement with the responses themselves does not impact the five-year review status as there is a regulatory deadline for its submittal.

EPA would like to provide the below responses to Army responses to EPA comments. EPA approves the Army's response's and edits but also wishes to note these differences of opinions and has no additional comments. EPA will be issuing a separate letter regarding its own recommendations for issues noted in the draft Fifth Five Year Review for ALAAP and will provided the Army of a copy of that letter as soon as it is signed. That letter will be reported to Congress and entered in the Superfund Enterprise Management Systems. Issuance of this letter by the EPA does not relieve the U.S. Army of the requirement to complete the FYR Report.

Please contact me with any questions or concerns at 404-263-8775 or englert.brian@epa.gov.

Sincerely,

Brian Englert 8/15/2023

Brian Englert
Remedial Project Manager
Restoration and Sustainability Branch

CC: Mr. Brian S. Taylor, FDEP

Specific Response to Comment 1: Please reference and in future cases reference the specific document in which the Army considered the full risk range and selected the target risk of 10e-5. While 10e-5 is within the risk range in the NCP, the preamble to the NCP states that preliminary remediation goals for carcinogens are set at 10e-6 and gives reasons for points of deviation. Specifically, it explains, "Preliminary remediation goals for carcinogens are set at a 10-6 excess cancer risk as a point of departure, but may be revised to a different risk level within the acceptable risk range based on the consideration of appropriate factors including. but not limited to: exposure factors, uncertainty factors, and technical factors. Included under exposure factors are: the cumulative effect of multiple contaminants. the potential for human exposure from other pathways at the site. population sensitivities, potential impacts on environmental receptors. and cross- media impacts of alternatives. Factors related to uncertainty may include: the reliability of alternatives, the weight of scientific evidence concerning exposures and individual and cumulative health effects, and the reliability of exposure data. Technical factors may include: detection/ quantification limits for contaminants, technical limitations to remediation. the ability to monitor and, control movement of contaminants, and background levels of contaminants. The final selection of the appropriate risk level is made when the remedy is selected based on the balancing of criteria."

Specific Response to Comment 28: As requested for clarification, EPA views disturbance of the ground for planting of food plots. In many cases seeding soils is fairly intensive with direct exposure with soils and generation of dust in some cases. The assumption that soil contact is infrequent could be reasonable, however this should be determined by a risk assessor. EPA believes approval should be requested for this disturbance and evaluated on a case-by-case basis to be in compliance with the soil management plan. EPA would agree to include its own risk assessors in this determination.

THIS PAGE WAS INTENTIONALLY LEFT BLANK

Army Responses to Comments
U.S. Environmental Protection Agency Comments
Fifth Five-Year Review Report, Dated December 2022

ID	EPA Comment – February 2, 2023	Army Response – August 3, 2023
	GENERAL COMMENTS	
1.	EPA has not agreed with the long-term protectiveness determination for the last two FYRs because there were no long-term measures in place for the nonhazardous waste landfill which received wastes from various places at ALAAP. EPA invoked an informal dispute which has since been resolved. The outcome of that will be an ESD which has not been prepared at this time. NHWL is tied to the OU7 ROD through OU2 and OU6 because it is the onsite disposal area for multiple study areas in OU2 and OU6. Until the controls are put in place and the NHWL can be assessed for impact on groundwater (both parts of the ESD) then the current remedies are only protective in the short term. While EPA believes protectiveness will be achieved in the future following preparation and implementation of the ESD, at the present time, EPA does not agree with the long-term protectiveness determination. Additionally, while asbestos is being added to another OU, it still has a direct effect on the protectiveness of the soils at the site which are addressed in OU7. At this time, EPA believes that the protectiveness determination of "Protectiveness Deferred" is more applicable according to September 2012 memo, "Clarifying the Use of Protectiveness Determinations for Comprehensive Environmental Response, Compensation, and Liability Act Five-Year Reviews." EPA recommends revising the protectiveness determination to "Protectiveness Deferred."	The IDRA signed for the NHWL indicates the remedy is "protective in the short term," which would lead to a "short-term protective" determination, as defined in the September 2012 EPA memorandum cited in the comment. The Army agrees to change its protectiveness statement to "short-term protective" to match the language in the IDRA. This is the FYR for OU-7 Soils, Surface Water, and Sediment ROD. The Army believes this determination for OU-7 is appropriate, since asbestos will be addressed as a new OU (i.e., OU-8), as indicated in the signed IDRA for asbestos. The remedy for OU-8 has yet to be determined. As defined in the September 2012 EPA memorandum cited in the comment, Short-Term Protective is appropriate because human and ecological exposures are under control and no unacceptable risks are occurring due to the OU-7 media (soil, surface water, and sediment). The ESD for selecting the NHWL to the remedy for the OU-7 ROD does not call into question the protectiveness of the entire OU-7.
2.	The Draft Five Year Review concludes that the selected remedy is protective of human health and the environment, which appears appropriate for the short term except for the potential for arsenic exposure in soil at Study Areas 3, 8 (subsurface soil), 17, 18, 19 and Building 6 – Coke Oven Soils, which is discussed as part of General Comment 2, and asbestos that has been identified in several areas. However, long term protectiveness has not been met since a long-term monitoring program for groundwater associated with the Non-Hazardous Waste Landfill (NHWL) that was addressed under Operable Unit 2 (OU-2) and Operable Unit (OU-6) decision document has not been established. The protectiveness statement acknowledges that a revised remedy for the NHWL will be incorporated into the OU-7 Record of Decision (ROD), and it is acknowledged that an Explanation of Significant Differences (ESD) is being prepared. Because the OU-7 ROD is not in place, and the ESD has not been finalized, long term protectiveness is not appropriate for the current remedy. Please revise the protectiveness statement to reflect that the remedy is not protective for long term.	Clarification. There is no unacceptable risk due to arsenic in soil for the planned future land use (i.e., arsenic cancer risks for the planned future land use fall within EPA's acceptable risk range in the Study Areas referenced). Refer to the OU-7 ROD and the 2013 LUCIP for a discussion of risk and the land use controls that ensure the protectiveness of the OU-7 remedy. This is the FYR for OU-7. The Army will change the protectiveness statement to "short-term protective" (see response to Comment #1). The Army believes this determination for OU-7 is appropriate, since asbestos will be addressed as a new OU (i.e., OU-8), as indicated in the signed IDRA for asbestos. The remedy for OU-8 has yet to be determined. The OU-7 ROD was in place and signed by all parties in 2012. The ESD for selecting the NHWL to the remedy for the OU-7 ROD does not call into question the protectiveness of the entire OU-7
3.	Exposure Point Concentrations (EPCs) for arsenic in Study Areas 3, 8 (subsurface soil), 17, 18, 19 and Building 6 – Coke Oven Soils range from 41 to 54 milligram per kilogram (mg/kg) and exceed the updated adjusted Industrial Regional Screening Level (RSL) of 30 mg/kg. However, the text states that based on the small data sets and natural background of arsenic (15 mg/kg) at the site, arsenic exceedances are not a concern.	Do not concur. A revised risk assessment was not conducted because a risk assessment was conducted previously as part of the 2001 Supplemental RI and toxicity values have remained mostly unchanged since that time (see Table 5-1). The only change was the addition of a noncancer inhalation reference concentration (for inhalation of dust), which would have little overall effect because the inhalation route is a very small contributor to overall arsenic soil risk (risks are dominated by the ingestion and dermal contact routes).

ID	EPA Comment – February 2, 2023	Army Response – August 3, 2023
	It is unclear if a revised risk assessment was conducted to confirm arsenic in soil does not present an unacceptable risk to receptors at Study Areas 3, 8, 17, 18, 19 and Building 6 – Coke Oven Soils, based on the lower RSL. Please provide the results of an updated risk assessment to confirm arsenic concentrations do not pose an unacceptable risk at Study Areas 3, 8 (subsurface soil), 17, 18, 19 and Building 6 – Coke Oven Soil.	In the 2001 Supplemental RI, arsenic was identified as a COC for the planned future land use. Remediation was not conducted for arsenic because site concentrations fell below the cleanup level identified in the ROD, which was based on noncancer effects at the direction of EPA. The current industrial RSL is cancer-based and ranges from 3 mg/kg (target cancer risk [TCR] of 1E-6) to 300 mg/kg (TCR of 1E-4). Arsenic exposure point concentrations (EPCs) at these study areas (ranging from 21 to 54 mg/kg) are therefore associated with cancer risks within the acceptable risk range for the planned future land use. LUCs prevent use of the study areas for unrestricted land use.
4.	The Draft Five Year Review includes one inspection form for all study areas including the NHWL and Study Area 22; however, land-use control (LUC) information for all study areas are not included in the form. Please include an inspection form for each study area to document appropriate LUCs are being maintained. The inspection form covers all of the sites, including the NHWL and Study Area 22 landfills, so important information about LUC compliance at each site is missing. A separate inspection form should be filled out for each site and study area. Please ensure that a separate inspection form is provided for each site and study area for future Five Year Reviews.	Do not concur. Section 4.4, Paragraphs 9 and 10 reference the annual LUC Inspection Reports conducted since the Fourth FYR, which provide the requested details. These reports are contained in the Administrative Record at both Earle A. Rainwater Memorial Library in Childersburg, Alabama, and the ADEM efile located on the efile website at http://app.adem.alabama.gov/eFile/ and at the ADEM office in Montgomery, Alabama.
5.	The Draft Five Year Review includes photographs of the NHWL and Study Area 22; however, there are no photographs that document the status of LUCs (e.g. signs, fences) at the remaining study areas. If available, please include photographs of all remaining study area LUCs. If not available, please ensure the next five year review contains photographs of all study area LUCs. There should be at least one photograph of each site and study area. If there are multiple LUCs (e.g., fences, signs), photographs should be included of each LUC element for each site or study area. Please provide photographs to document the status of all LUCs.	Clarification. Only the NHWL and the Study Area 22 Landfill have LUCs other than signs. The NHWL and Study Area 22 Landfill also have fences. Photographs of signs remaining in place at each study area are taken during each annual LUC Inspection. The Annual LUC Inspection Reports include representative photographs of the two types of signs posted at ALAAP: those with fish consumption warnings and those without. These photographs have been added to this FYR Report in Attachment D. The Army believes little value would result in providing additional photographs of the same sign in different study areas.
SECTION-SPECIFIC COMMENTS		
1.	In section 5.2.2.4, the document discusses the maximum detected concentration of 2,4- DNT (99 mg/kg) as less than two times the stated industrial soil RSL of 74 mg/kg. While this is true, it would be clearer to say and show that this maximum concentration still lies within EPA's range of acceptable risk. Please revise this section for clarity. a. In addition, explanation is requested regarding why the industrial soil RSLs for a target risk of 1E-05 are used in the document to determine whether risks may remain acceptable rather than the full EPA risk range (up to 1E-04).	Agree. The text in the first sentence has been revised to read "The 2,4-DNT maximum detected subsurface soil concentration of 99 mg/kg at Study Area 2 exceeds the industrial soil RSL of 74 mg/kg by less than two times *and is associated with a cancer risk that falls within EPA's range of acceptable risk.* Clarification. The full EPA risk range was considered. The target cancer risk of 1E-05 falls within EPA's acceptable risk range and allows for additive effects from multiple chemicals. In addition, this target has been used in other documents for ALAAP – Area B.
2.	In Section 6, while discussing the food plots growing in Area B, the document states that "there is little risk from chemical exposures associated with preparing and seeding the soil, hunting, and eating game." This risk evaluation is not discussed or presented in the Five Year Review. Additional detail explaining and demonstrating this statement is needed in the main body of the document.	Clarification. The rationale for little risk associated with the food plots is discussed in Section 5.2.2.3, third paragraph. This paragraph states: "However, from a human health risk perspective, it is assumed there is little risk for the person(s) preparing/seeding the plot, for the person(s) hunting, and for those eating the venison or other game meats. Visits to the food plot would likely be infrequent. It is important to note that soils within the study areas were cleaned up to industrial cleanup levels (assuming exposure 250 days per year for 25 years) and that soils outside the study areas have no evidence of contamination from former Area B activities. In addition, studies have shown little bioaccumulation of explosives (the primary COCs at Area B) into venison (USAEHA 1993 and 1994, CHPPM 1995)."

ID	EPA Comment – February 2, 2023	Army Response – August 3, 2023
3.	In Section 7, the Protectiveness Statement reads that "all human and ecological risks are under control." Considering the issues currently still being addressed at other parts of the site, this statement should be revised to clearly indicate that human health and ecological risks related to this ROD are under control.	Concur. The text has been revised as recommended.
4.	Page 1-1, Third Paragraph states this FYR needs to be finalized by September 2023. SEMS shows the due date as 9/5/2023. Suggest you list the specific date to avoid confusion. (I realize this is stated in the Summary Form, but it would be good to have clear here as well).	Concur. The text has been revised as recommended.
5.	Page 1-11, The FYR Summary Form states the review period was from April 19, 2022 to August 31, 2022. Typically review periods are 12-18 months long. Please check if these dates reflect the entire review period.	Clarification. The kickoff meeting was held on April 19, 2022. The FYR inspection was conducted between June 8 and June 9, 2022. Interviews and records reviews were performed between March and August 2022. Army reviews of the draft FYR were completed between September 8 and November 29, 2022, and the document was submitted to EPA on December 2, 2022.
6.	Page 4-1, Section 4.1 Was a public notice the only form of advertising/announcement made for this FYR report? If so, consider using additional methods for the next FYR such as social media postings, website postings, email list, mailing list, or whichever methods of communication are effective in the community. This will allow the community to participate in the FYR if they choose.	Clarification. A public notice in the newspaper was not the only form of announcement made for the Fifth FYR. Questionnaires were mailed to all landowners and all local officials who represent the pubic.
7.	Page 4-1, Section 4.1 Are site documents available electronically online for the public to view? If not, consider making the documents in the repository available online for this and future site documents. This will help ensure the public has to opportunity to be informed on site cleanup and FYRs.	Clarification. The Administrative Record concerning the property is publicly available and located at the Earle A. Rainwater Memorial Library in Childersburg, Alabama. The ADEM efile located on the website, http://app.adem.alabama.gov/eFile/ and at the ADEM office in Montgomery, Alabama.
8.	Page 4-1, Section 4.1 states a public meeting was held on June 8, 2022. If there is an estimate of the number of community members who attended, please include that information.	Not applicable. The text does not indicate a public meeting was held. The meeting included Army representatives, representatives from regulatory agencies, and city of Childersburg officials.
9.	Page 6-1, Any milestone dates for an issue/recommendation should have an actual date (MM/DD/YYYY). TBD should not be used for milestones. If the milestone has been completed, note it is completed and list the completion date.	Concur. TBD has been replaced with a milestone date of December 15, 2023, for this recommendation.
10.	Figure 1-3, ALAAP Area B and Adjacent Parcel Owners, Industrial Land Use, Page 1-9: According to Figure 1-3, Parcel 2, which is located within Area B, is owned by Resolute Forest Products US Inc.; however, Section 1.1 [Site Background] does not discuss that a portion of Parcel 2 is located within Area B. Please include text in Section 1.1 that discusses a portion of Parcel 2 is located within Area B and if there are any study areas located within the portion of Parcel 2 that is located within Area B.	Clarification. The figure has been revised to depict parcel ownership more accurately in the southeastern portion of ALAAP – Area B. It is believed that the Talladega County parcel ownership incorrectly shows the location of the boundary. The boundary shown on the revised figure is that generated through surveying of the ALAAP – Area B boundary.
11.	Section 2.1.1, Study Area 2, Page 2-3: The text states that polycyclic aromatic hydrocarbon (PAH) contamination in soil at Study Area 2 was remediated to industrial cleanup standards; however, the text does not discuss what specific PAHs remain above residential cleanup standards and the maximum concentrations of PAHs that remain in soil are not noted. Please revise the text to discuss the specific PAHs that remain above residential standards and provide a maximum concentration for each PAH.	Clarification. The Study Area 2 PAH remediation is detailed in the SES (2009) report titled "Project Report for Landfill Maintenance and PAH Contaminated Soil Removal, Former Alabama Army Ammunition Plant, Childersburg, Alabama." This document provides information about the remediation conducted and includes the analytical results for the confirmation samples. This reference has been added to the text. Residential use (i.e., representing unrestricted use) is not a current or planned future land use. The site soils were cleaned up to industrial standards, and LUCs were established to prevent unrestricted/residential use.

ID	EPA Comment – February 2, 2023	Army Response – August 3, 2023
12.	Section 2.1.1, Study Area 2, Page 2-3: According to Table 2-1 (Chemicals of Concern Based on Future Residential Land Use), concentrations of arsenic, several PAHs, and 2,4-dinitrotoluene (DNT) are present in soil at Study Area 2 that present an unacceptable risk; however, the text in Section 2.1.1 does not discuss arsenic. Please revise the text to discuss the extent and magnitude of arsenic contamination in Study Area 2.	Clarification. A separate table is provided at the end of this comment table that details where pertinent information for the COCs can be found (i.e., report, section, figure and table numbers). Note that Table 5-3 provides a comparison of the EPCs used to calculate risk in the RI to current industrial RSLs. The risk is acceptable for the planned future land use.
13.	Section 2.1.5, Study Area 8, Pages 2-4 and 2-5: According to Table 2-1 (Chemicals of Concern Based on Future Residential Land Use), concentrations of arsenic, antimony, lead, nickel, and several PAHs in soil present an unacceptable risk at Study Area 8; however, the text in Section 2.1.1 does not discuss the specific metals and PAHs. Please include a discussion of specific metals and PAHs that pose an unacceptable risk at Study Area 8.	Clarification. A separate table is provided at the end of this comment table that details where pertinent information for the COCs can be found (i.e., report, section, figure and table numbers). Note that Table 5-3 provides a comparison of the EPCs used to calculate risk in the RI to current industrial RSLs.
14.	Section 2.1.7, Study Area 16, Pages 2-5 and 2-6: According to Table 2-1 (Chemicals of Concern Based on Future Residential Land Use), concentrations of arsenic and several PAHs in soil present an unacceptable risk at Area 16; however, the text in Section 2.1.1 does not discuss the specific metals and PAHs. Please include a discussion of specific metals and PAHs that pose an unacceptable risk at Study Area 16.	Clarification. A separate table is provided at the end of this comment table that details where pertinent information for the COCs can be found (i.e., report, section, figure and table numbers). Note that Table 5-3 provides a comparison of the EPCs used to calculate risk in the RI to current industrial RSLs.
15.	Section 2.1.9, Study Area 18, Page 2-7: The text states that several metals have been identified as chemical of concern (COCs) in surface and subsurface soils; however, Table 2-1 (Chemicals of Concern Based on Future Residential Land Use) indicates that only arsenic is a COC. Please explain why Table 2-1 only lists arsenic as a COC and remove the discussion of subsurface soil or revise Table 2-1 to include all COCs in surface and subsurface soil.	Clarification. The text has been revised to read: "*During the Supplemental RI, the baseline HHRA identified no unacceptable risks in soil for the planned industrial land use. Unacceptable risks in soil were identified for ecological receptors and humans under unrestricted (i.e., residential) land use, and metals were the responsible COCs (SAIC 2001). These metals were therefore carried into the FS, and a WOE evaluation was conducted that examined issues such as confidence in the exposure and toxicity values used to calculate risks. The evaluation concluded that only arsenic in surface soil remained a human health COC for unrestricted use (i.e., residential), and no concerns remained for the ecological receptors at Study Area 18 (SAIC 2008)."* Therefore, further protective measures (i.e., LUCs) were implemented to prevent residential use of the study area. Table 2-1 includes the COCs after the WOE evaluation in the FS.
16.	Section 2.1.10, Study Area 19, Page 2-7: The text states that a removal action was conducted at Study Area 19 to remove lead–impacted soil; however, it is unclear if lead ingots were also removed or if they still remain in place, as their potential presence may be a continuing source of contamination. Please discuss if lead ingots were removed during the removal action.	Clarification. The lead ingots were removed from the site. ECC's 1998 "Closure Report, Excavate Lead-Contaminated Soil Areas 16 & 19 at Alabama Army Ammunition Plant" (Document 10029-002), p. 5, states the following: "Soil and lead ingots were loaded to a …dump truck. The lead contaminated soil and ingots from Areas 16 and 19 were transported…to Building TC-4A where the soil was stockpiled…" In addition, during the 2017 asbestos inspection, no lead ingots were observed at Study Area 19. Reference to removal of the lead ingots has been added to the text.
17.	Section 2.2, Response Actions, Page 2-10: The text in the final paragraph of Section 2.2 states that response actions were conducted at Study Areas 2, 3, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 Coke Oven; and South Georgia Dump Road; however, according to previous text in Section 2.2 of the Five Year Review, no remediation was conducted at Study Areas 3, 4, 8, 18, 26 and Building 6 Coke Oven and South Georgia Dump Road. Please revise the text to accurately reflect where response actions were conducted.	Clarification. In the referenced text in Section 2.2, "response actions" refer to the protective measures (i.e., LUCs) that were implemented to prevent residential use.

ID	EPA Comment – February 2, 2023	Army Response – August 3, 2023
18.	Table 2-4, Summary Table of LUCs and Restrictions for OU-7 ROD Study Areas, Pages 2-18 to 2-20: Table 2-4 describes LUC restrictions for Area B and describes activities that are not acceptable or need prior approval; however, there is no mention of tree removal and grubbing, and up-rooted fallen trees, which can result in uncovering of contaminated soil. Please describe preventative measures that should be taken to reduce the potential for exposure during tree removal and grubbing operations.	Clarification. There is no unacceptable risk from exposure to soil for the planned future land use because concentrations were cleaned up to industrial land use cleanup levels. Therefore, there is no unacceptable risk for tree removal or grubbing operations. At study areas with LUCs, the only unacceptable risk is for residential receptors. The deed and LUCIP require excavation plans for "excavation, digging, drilling and other soil disturbances." It is believed that the wording "other soil disturbances" would equate to other disturbances of similar magnitude as excavation, digging, and drilling, and not necessarily activities such as tree removal and grubbing. It is also noted that at study areas with LUCs, the only unacceptable risk is for residential receptors (i.e., no risk for commercial/industrial workers, construction workers, trespassers, or recreational users). The purpose of the excavation plan requirement in the deed was NOT to inhibit the development or use of the site since there is no risk to non-residential receptors (i.e., no risk to trespassers, construction workers, industrial workers, commercial workers, hunters, or landscapers). The soil is only a risk to residents and only in the study areas identified in the ROD.
19.	Section 3-2, Fourth FYR, Page 3-1: Section 3-2 states that concurrence on the fourth five year review has not been granted by EPA and the text refers to Table 3-1 [Protectiveness Determinations/Statements from the Fourth FYR] which indicates that a scoping meeting was held with EPA in November 2022 to determine a path forward to evaluate if asbestos in soil presents an unacceptable risk; however, the details of the meeting are not discussed. Please revise Section 3.1 to include a brief discussion of the November 2022 scoping meeting.	Concur. In Table 3-1, line item for OU-7, second to last column, the text has been revised to read "One of several scoping meetings held on November 14, 2022, to begin to determine the path forward for OU-8 asbestos. *The scoping meeting was used to discuss the contents of the IDRA, strategies for investigation at ALAAP – Area B, and the path forward for asbestos sampling and investigation at Cooper Steel*."
20.	Section 4.2, Landowner Interviews, Page 4-2: The interview with Mr. James Jones of Alabama Childhood Food Solutions (AFCS) states that the presence of nitrate and other chemical contaminants prevents the use of the property as a food distribution center, and the property was returned to the City of Childersburg; however, it is unclear what kind of evaluation was conducted for the property. Please revise the text to provide more details regarding the evaluation that was conducted by AFCS.	Clarification. No additional information is available from AFCS to determine how their evaluation led to their conclusion that they could not use the property as intended. However, Army correspondence with the city of Childersburg indicated that the property was returned to the city in exchange for another parcel outside ALAAP – Area B boundaries.
21.	Section 4.4, Site Inspection, Page 4-3: The text states that a site inspection was conducted at Study Areas 2, 4, 7, 8, 10W, 16, 17, 18, 19, 21, 22, and 26; Building 6 Coke Oven; and South Georgia Dump Road; however it is unclear if a site inspection of Study Area 3 was conducted. Please revise the text to clarify if Study Area 3 was inspected and, if not, provide rationale that explains why it was not inspected.	Clarification. Study Area 3 was inspected but inadvertently omitted in the text. Study Area 3 has been added to the text.
22.	Section 4.4, Site Inspection, Page 4-3: According to Table 1-1 [ALAAP – Area B OUs and Five-Year Review Status], warning signs were posted at Study Areas 21 and 26 to warn against consumption of fish tissue; however, there is no discussion if these warning signs were observed during the Five Year Review site inspection or if there were any indications that fishing was occurring. Please revise the text to indicate if these signs were observed and discuss whether there was any evidence that fishing was occurring.	Concur. Text has been added to the report indicating that LUC signs remaining onsite were observed. Text has also been added stating that no indication of persons fishing was observed.
23.	Section 4.4, Site Inspection, Page 4-4: Warning signs have been missing since 2019; however, there is no discussion whether any of the missing signs have been replaced. Please discuss if warning signs have been replaced or if there are plans to replace the signs in the near future.	Concur. Text will be added to the report to indicate that an IDRA has been signed by the Army, EPA, and ADEM to resolve how signs will be replaced. Signs required in the OU-7 ROD and the 2003 early transfer quitclaim deed are in place as described in the FYR. The other signs that are not a requirement in the ROD or deed but were added in the 2013 LUCIP have not all been replaced.

ID	EPA Comment – February 2, 2023	Army Response – August 3, 2023
24.	Section 5.2.1, Question B Summary, Page 5-3: The text discusses exceedances of industrial RSLs for arsenic, lead and 2-4-DNT; however, several other metals (e.g., antimony and nickel) and PAHs have also been detected above industrial RSLs, but are not discussed. Please include a discussion of industrial RSL exceedances for all metals, including antimony and nickel, and PAHs.	Clarification. Arsenic, lead, and 2,4-DNT were the only chemicals discussed because Table 5-3 shows that the EPCs of these three chemicals exceed the current industrial RSLs (note the EPCs were used in the comparison because they are the values used to calculate risk).
25.	Section 5.2.2.4, Changes in Cleanup Goals, Page 5-6: The text references an arsenic background value; however, the source of this value is not cited. Please include a citation for the arsenic background value.	Concur. The citation for the arsenic background value (i.e., SAIC 2001, the Supplemental RI) has been added to the text.
26.	Section 5.2.2.4, Changes in Cleanup Goals, Page 5-6: The EPC for lead in surface soil at the South Georgia Dump is 964 mg/kg, which exceeds the industrial RSL of 800 mg/kg, but below the industrial worker cleanup goal of 1,050 mg/kg that was calculated using the 2017 EPA Adult Lead Methodology (ALM) guidance; however, it appears that the default values for variables (i.e., target blood lead levels [PbB] in fetus, soil ingestion rate, exposure frequency and averaging time) were used and no justification was provided. Please provide a justification why default variables, and not site-specific variables, were used to calculate the cleanup goal.	Clarification. The default values are EPA-recommended values for an industrial land use scenario. These are applicable at the South Georgia Road Dump site because no additional information exists to justify using site-specific variables. For example, the soil ingestion rate is a default value and was the value used in the Area B Supplemental RI.
27.	Section 5.2.3.5, Industrial Land Use, Page 5-14: The text states that clear-cutting has been conducted through the entire Alabama Army Ammunition Plant (ALAAP) and presumably in study areas covered by this Five Year Review; however, the text does not discuss how contaminated soil was managed during clear cutting operations, as the removal of root balls and presence of heavy logging equipment likely resulted in the disturbance of soil. Please revise the text to provide a detailed description of soil management during previous clear-cutting operations or provide justification that explains why soil management was not conducted.	Clarification. See Response to Comment 18. There is no unacceptable risk from exposure to soil for the planned future land use because concentrations were cleaned up to industrial land use cleanup levels. Therefore, there is no unacceptable risk for clear cutting operations. Clear-cutting was performed by contractors to the city of Childersburg. The Army does not have information related to soil management practices that the city may have required of the contractors. The Army subcontractors performing other work at the time noted that some best management practices, such as maintaining streamside management zones, were being observed. It is also noted that there is no direct requirement in the deed or LUCIP for management of soil, rather, that soil not be moved from a study area.
28.	Section 6, Issues/Recommendations, Page 6-1: The text states that the presence of food plots may be a possible violation of the LUCs and recommends reminding landowners that an excavation plan is required prior to any land disturbance; however, providing the LUC plan may not be sufficient. For example, there is no recommendation for a detailed explanation for landowners/renters so that they understand why ground cannot be disturbed. Please revise the text to propose a more robust solution so that property owners and users understand why ground disturbance is prohibited without an excavation plan. Considering three Five Year Review questions from the September 2012 EPA memo, “Clarifying the Use of Protectiveness Determinations for Comprehensive Environmental Response, Compensation, and Liability Act Five-Year Reviews” • Question A - Is the remedy functioning as intended by the decision documents? • Question B - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RA Os) used at the time of the remedy selection still valid? • Question C - Has any other information come to light that could call into question the protectiveness of the remedy?	There is no unacceptable risk – see response to Comments 2 and 18. The ground may be disturbed, with prior written approval and in accordance with a soil management plan. EPA, ADEM, and Army should clarify what is considered soil disturbance. There is some ambiguity as to whether the wildlife food plot being considered is a LUC violation, since the main purpose of the LUC is to only restrict residential use.

ID	EPA Comment – February 2, 2023	Army Response – August 3, 2023
	OU-2, and OU-6 1. Question A: This evaluation is based primarily on the parts of the remedies that utilized the Nonhazardous Waste Landfill (NHWL) for disposal. The answer to this is unclear, since the ARARs for the NHWL were not identified at a level specific enough to identify individual requirements that would be helpful to determine whether the remedy was functioning as intended. 2. Question B: No. The FYR recites certain cancer slope factors and toxicity values for purposes of evaluating human health risk that have changed, and so the answer appears to be no. This may result in a less favorable conclusion than "protectiveness deferred" but that is a technical call. 3. Question C: Yes. For remedies that utilized the NHWL for disposal, it remains a question whether the NHWL part of the remedy is protective. Because groundwater monitoring wells that should have been installed as required by ADEM state RCRA ARAR have not been installed, it is, as a factual matter, impossible to determine whether the remedy is protective, that is, whether there have been any releases to the groundwater from NHWL. In addition, it is not known whether the other missing ARARs which the Army has agreed will be included in an Explanation of Significant Differences impact protectiveness (e.g., requirements for the cap and for routing surface water around the landfill). As a factual matter, the Army may be meeting these requirements, but it is not known at present. **Conclusion**: Protectiveness Deferred. The Army has agreed to submit an ESD with the revised ARARs, and once the ESD is implemented, this should remedy the current status.	A separate protectiveness determination was not made for OU-2 and OU-6 because the sites in these two OUs are included in and evaluated as part of OU-7. As stated in Section 1.0, "…only one (OU-7) is addressed in this Fifth FYR" and "OU-7 includes all of the study areas in OU-2 and OU-6 and additional study areas not part of these OUs." 1. Please see response to General Comment 1. The ESD will ensure future protectiveness. Therefore, the protectiveness statement has been revised to short-term protective. 2. The Army agrees that some toxicity values have changed. However, despite these changes, Section 5.2.2.4 discusses why the risk assessment results are still valid and no new COCs were identified. 3. Concur. Once ESD is implemented, the status will be Protective. **Conclusion:** The Army has agreed to revise the protectiveness determination to short-term protective. As part of the NHWL dispute resolution, the Parties have agreed to revise the decisions made at the time the remedies were selected and implemented, and this includes adding ARARs such as groundwater monitoring wells that were considered and dismissed as unnecessary. Adding these ARARs via the ESD now does not undermine the protectiveness statement, since there are still more than 100 groundwater monitoring wells at the site and there is no indication that a landfill that only accepted non-hazardous and treated wastes is posing a continuing, unmitigated source of contamination to the groundwater.
	OU-7 1. Question A: No. Signs that were part of the OU7 selected remedy were removed. It is factual question whether this impacts protectiveness, but it appears to be factual that the removal of the signs indicates that the LUC remedy is not operating as designed/intended. 2. Question B: No(?). It is not clear whether this impacts OU-7, or just OU-2 and -6. See my comment above for OU-2 and -6. 3. Question C: Yes. Same answer as A. **Conclusion**: Protectiveness Deferred. The signature and implementation of an informal dispute resolution agreement should resolve this issue.	1. The LUC remedy required signage but did not specify the number, frequency, or distance between the signs. In an attempt to address property owner concerns about the overuse of such signs, some were removed. The removal of the signs has not impacted LUC objectives identified in the 2013 LUCIP. There has been no unauthorized groundwater access/use, no residential use, and no playgrounds. An IDRA has been signed to address the sign requirement in the 2013 LUCIP. 2. See response above for OU-2 and OU-6. 3. See response above for OU-2 and OU-6. **Conclusion:** The Army has agreed to revise the protectiveness determination to short-term protective.
	7 Section 5.2.3.5. EPA recommends that an ecological risk assessor evaluate the reasoning and conclusions in this section.	The reasoning and conclusions in Section 5.2.3.5 Industrial Land Use are consistent with that presented in the past two FYRs. Leidos' Senior Ecological Risk Assessor finds that the logic still holds; protection to a more stringent standard (e.g., ecological) is not reasonable when the property either has or will be redeveloped for industrial or commercial purposes.

Supplemental information to address EPA-Specific Comments 12-14:

Chemical	Study Area	EPC*	Supplemental RI Section	Supplemental RI Table	Supplemental RI Figure
Arsenic	2	21 mg/kg	4.5.3	4-16	4-17
Arsenic	3	43 mg/kg	4.5.4	4-19	4-18
Arsenic	8	25 mg/kg, 51 mg/kg (sb)	4.5.8.1, 4.5.8.2	4-31, 4-34	4-23, 4-24
Antimony	8	70 mg/kg (sb)	4.5.8.2	4-34	4-24
Lead	8	1,000 mg/kg (sb)	4.5.8.1	4-31	4-23
Nickel	8	11,000 mg/kg	4.5.8.1	4-31	4-23
Benzo(a)anthracene	8	16	4.5.8.1	4-31	4-23
Benzo(a)pyrene	8	8.9	4.5.8.1	4-31	4-23
Benzo(b)fluoranthene	8	7.7	4.5.8.1	4-31	4-23
Dibenz(a.h)anthracene	8	0.74	4.5.8.1	4-31	4-23
Indeno(1,2,3-cd)pyrene	8	4.2	4.5.8.1	4-31	4-23
Arsenic	16	27 mg/kg	4.5.10	4-41	4-27
Lead	16	470 mg/kg, 253 mg/kg (sb)	4.5.10	4-41	4-27
Benzo(a)anthracene	16	2.6 mg/kg	4.5.10	4-41	4-27
Benzo(a)pyrene	16	2.8 mg/kg	4.5.10	4-41	4-27
Benzo(b)fluoranthene	16	4.4 mg/kg	4.5.10	4-41	4-27
Dibenz(a,h)anthracene	16	0.38 mg/kg	4.5.10	4-41	4-27
Indeno(1,2,3-cd)pyrene	16	1.4 mg/kg	4.5.10	4-41	4-27
Arsenic	17	47 mg/kg, 54 mg/kg (sb)	4.5.11	4-44, 4-45	4-28
Arsenic	18	41 mg/kg	4.5.12	4-47	4-29
Arsenic	19	50 mg/kg	4.5.13	4-51	4-31
Arsenic	B6-Coke Oven	46 mg/kg	4.5.17	4-63	4-35

*(sb) = Subsurface Soil