

JFHQ OH ARNG

Army Cleanup Program

Installation Action Plan

2023

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ACRONYMS

Acronym	Definition
AEDB-R	Army Environmental Database - Restoration
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CPJTC	Camp Perry Joint Training Center
DD	Decision Document
DERP	Defense Environmental Restoration Program
DGM	Digital Geophysical Mapping
EE/CA	Engineering Evaluation/Cost Analysis
ENV	Environmental
ESTCP	Environmental Security Technology Certification Program
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
HQAES	Headquarters Army Environmental System
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
LUC	Land Use Control
LUCIP	Land Use Controls Implementation Plan
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
mm	Millimeter
MPPEH	Material Potentially Presenting an Explosive Hazard
MR	Munitions Response
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
NDNODS	Non-Department of Defense Owned, Non-Operational Defense Site
OHARNG	Ohio Army National Guard
PA	Preliminary Assessment

Acronym	Definition
PP	Proposed Plan
RA	Remedial Action
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
TAPP	Technical Assistance for Public Participation
TRC	Technical Review Committee
UST	Underground Storage Tank
UXO	Unexploded Ordnance
WBS	Work Breakdown Structure

PHASE TRANSLATION TABLE

HQAES Phase ID	CERCLA Phase	RCRA Phase	RCRA UST Phase
.01	Preliminary Assessment (PA)	RCRA Facility Assessment (RFA)	Initial Site Characterization (ISC)
.02	Site Inspection (SI)	Confirmation Sampling (CS)	Investigation (INV)
.03	Remedial Investigation/ Feasibility Study (RI/FS)	RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)	Corrective Action Plan (CAP)
.04	Remedial Design (RD)	Design (DES)	Design (DES)
.05	Interim Remedial Action (IRA)	Interim Measure (IM)	Interim Remedial Action (IRA)
.06	Remedial Action (Construction) (RA(C))	Corrective Measures Implementation (Construction) (CMI(C))	Implementation (Construction) (IMP(C))
.07	Remedial Action (Operation) (RA(O))	Corrective Measures Implementation (Operation) (CMI(O))	Implementation (Operation) (IMP(O))
.08	Long-Term Management (LTM)	Long-Term Management (LTM)	Long-Term Management (LTM)

SITE ALIAS LIST

HQAES ID	AEDB-R Reference	Site Alias
6909A.1001	OHHQ-005-R-01_Lake Erie Shoreline MRS	SHORELINE
6909A.1006	OHHQ-006-R-01_West Sister Island MRS	W. SISTER
6909A.1010	CC_OHHQ-001-R-01_NDNODS ASHTABULA RANGE	- -
6909A.1011	CC_OHHQ-002-R-01_NDNODS BOSTON MILLS TRA	RROH000002
6909A.1012	CC_OHHQ-003-R-01_NDNODS CAMP ZALESKI RAN	RROH000003
6909A.1013	OHHQ-005-R-02_LAKE ERIE SHORELINE MRS RE	SHORELINE

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MILITARY MUNITIONS RESPONSE PROGRAM SITES

OHHQ-005-R-01_Lake Erie Shoreline MRS

HQAES ID: 6909A.1001

Alias: SHORELINE

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 12/1/2021

RC Date: 12/30/2053

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	3/15/2010	3/15/2010
SI	3/15/2010	4/15/2010
R/FS	6/15/2010	6/15/2018
RD	3/15/2016	6/15/2018
IRA	5/15/2011	12/15/2013
RA(C)	7/15/2018	11/30/2021
RA(O)	12/1/2021	9/30/2053
LTM	--	--

Site Narrative

The Lake Erie Shoreline Munitions Response Site (MRS) was established based on Tier III Dispute Resolution. This MRS includes shoreline areas where historic munitions have washed ashore. Historic munitions are from the previous Erie Army Depot operations. The Non-Residential Shoreline MRS extends west from the northwestern border of Camp Perry Joint Training Center (CPJTC), not inclusive of CPJTC property, to just north of the Davis-Besse Nuclear Power Station, including the mouth of the Toussaint River, and to be defined as 10 feet landward from the mean high water mark or the top of any rip-rap, and 400 feet or up to three feet of water depth, whichever occurs first, from the mean low water mark or the toe of any rip-rap towards the lake.

Munitions and Explosives of Concern (MEC) appearing on the shoreline most likely result from migration from all uses of the Army's operational range referred to as the Lake Erie Impact Area. Ordnance types used include the following; small arms, 240 millimeter (mm) artillery, 40mm mortars, 60mm mortars, 155mm artillery, 75mm artillery, and 3.5in bazooka rockets.

A Feasibility Study (FS) was approved in FY16. A Record of Decision (ROD) was completed in FY18. The Remedial Action (RA) to clear any remaining subsurface and surficial MEC and munitions debris (MD) was completed in December 2020. The Remedial Action Report was finalized in November 2021, completing the RA(C) phase.

In Fall 2020, a baseline Digital Geophysical Mapping (DGM) survey was conducted. As part of the remedy documented in the ROD, a surveillance DGM was completed in July 2021. A Land Use Controls Implementation Plan (LUCIP) has been developed (as of late FY22) and implemented.

A contract for Remedial Action (Operation) (RA-O)/Long Term Management (LTM) activities at all three Lake Erie sites (Lake Erie Shoreline MRS/6909A.1001, Lake Erie Shoreline MRS Residential/6909A.1013, and West Sister Island/6909A.1006) was awarded in late FY23.

Cleanup Strategy

Under the RA(O) phase, annual land use control (LUC) monitoring will be completed. Additional MEC and MD clearance will also be performed every five years. Five year reviews will begin in FY23. Costs for 6909A.1013 (OHHQ-005-R-02_Lake Erie Shoreline MRS Residential) are tracked at this site. Costs for five year reviews at 6909A.1006 (OHHQ-006-R-01_West Sister Island MRS) are also tracked at this site.

OHHQ-006-R-01_West Sister Island MRS

HQAES ID: 6909A.1006

Alias: W. SISTER

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 1/15/2017

RC Date: 1/15/2017

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	5/15/2010	1/15/2011
SI	5/15/2010	1/15/2011
RI/FS	11/15/2010	1/15/2017
RD	3/15/2016	1/15/2017
IRA	--	--
RA(C)	1/15/2017	1/15/2017
RA(O)	--	--
LTM	2/15/2017	1/15/2053

Site Narrative

The West Sister Island MRS, located approximately 12 miles off the shore of north-central Ohio in Lake Erie, is associated with the Lake Erie Off-Range Cleanup. The MRS is isolated and uninhabited by humans and is known as the West Sister Island National Refuge. The MRS is considered the shoreline portion of West Sister Island. Munitions originated from migration off the active Camp Perry Range. The island may have been a target area. However, this MRS includes only munitions that have migrated from the active Range. Munitions potentially existing in the island interior, resulting from range firing will be addressed by Formerly Used Defense Sites (FUDS).

An Engineering Evaluation/Cost Analysis (EE/CA) was performed in 2006, resulting in the posting of five MEC warning signs at/near the accessible beach area. An Environmental Security Technology Certification Program (ESTCP) Assessment of Munitions Contamination was performed in 2007, and a Site Inspection (SI) was then recommended. A Remedial Investigation (RI) was prepared in 2015, and finalized in October 2015. A Focused FS was completed in Fiscal Year 2016 (FY16), and was developed to mitigate the potential hazards associated with surface MEC and Material Potentially Presenting an Explosive Hazard (MPPEH) only. A Proposed Plan (PP) and ROD were finalized in January 2017 recommending maintenance of existing signage along the island's shoreline and education for the public about the three R's of Unexploded Ordnance (UXO) Safety. MEC institutional controls were implemented.

Initial signage was installed in January 2017 and the site immediately moved to LTM phase. A contract to perform RA-O/LTM activities at the site is awarding in late FY23.

Cleanup Strategy

MEC institutional controls (in the form of LUCs, implementation of a 3Rs Explosives Safety Program, annual inspections) and five year reviews are planned. Five year review costs are tracked with OHHQ-005-R-01_Lake Erie Shoreline MRS (HQAES: 6909A.1001).

OHHQ-005-R-02_LAKE ERIE SHORELINE MRS RESIDENTIAL

HQAES ID: 6909A.1013

Alias: SHORELINE

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 9/30/2021

RC Date: 9/30/2021

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	3/15/2010	3/15/2010
SI	3/15/2010	4/15/2010
RI/FS	6/15/2010	6/15/2018
RD	3/15/2016	6/15/2018
IRA	--	--
RA(C)	7/15/2018	9/30/2021
RA(O)	--	--
LTM	10/1/2021	9/30/2053

Site Narrative

The Lake Erie Shoreline MRS was established based on Tier III Dispute Resolution. This MRS includes shoreline areas where historic munitions have washed ashore. Historic munitions are from the former Erie Army Depot operations. The 90-acre Residential MRS is located upgradient from the former Erie Army Depot range fan and no MEC was found during the RI. The recommendation was made to split this acreage from the Lake Erie Shoreline MRS Non-Residential (OHHQ-005-R-01) due to different final remedies. The Residential Shoreline MRS extends from just north of the Davis-Besse Nuclear Power Station to the mouth of Turtle Creek, and to be defined as 10 feet landward from the mean high water mark or the top of any rip-rap, and 400 feet or up to three feet of water depth, whichever occurs first, from the mean low water mark or the toe of any rip-rap towards the lake. MEC appearing on the shoreline most likely results from migration from all uses of the Army's operational range referred to as the Lake Erie Impact Area. Ordnance types used include the following; small arms, 240mm artillery, 40mm mortars, 60mm mortars, 155mm artillery, 75mm artillery, and 3.- inch bazooka rockets. No MEC was discovered in the residential portion of the shoreline during the RI (the subject site). However, the possibility still exists for residents of the area to encounter such items due to the dynamic nature of Lake Erie; therefore, some action was deemed necessary in order to protect human health so LUCs were chosen as the final remedy. An FS was approved in FY16. A ROD was completed in FY18.

Cleanup Strategy

LUCs will be implemented to include signage and a training program. Annual inspections and five year review will be completed. Five year reviews will begin in FY23. Cost for these actions are tracked under 6909A.1001 (OHHQ-005-R001_Lake Erie Shoreline MRS).

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COMPLIANCE CLEANUP SITES

CC_OHHQ-001-R-01_NDNODS ASHTABULA RANGE

HQAES ID: 6909A.1010

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 2/1/2036

RC Date: 2/1/2036

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	Start	End
PA	4/15/2007	9/15/2009
SI	7/15/2010	9/15/2012
RI/FS	1/1/2029	12/31/2033
RD	1/1/2034	1/31/2034
IRA	--	--
RA(C)	2/1/2034	2/1/2036
RA(O)	--	--
LTM	--	--

Site Narrative

The 35.3-acre Ashtabula Range is located in northeastern Ohio, in the town of Ashtabula in Ashtabula County. The former range is located on the north side of the Ashtabula River from Lake Shore Park. The Ashtabula Range was initially identified in a 1954 lease agreement between the National Guard and the property owner allowing use of the property as a rifle range (lease of the site began in 1950). Documentation indicates that the range was used by the Ohio Army National Guard (OHARNG) as a 200-yard known distance rifle range, a .45-caliber pistol range, and a 300-yard range in 1968. The rifle range was leased from 1950 until 1977. The site is currently heavily forested with a steep cliff that was used as a natural backstop.

A Final Inventory Report for Ohio was completed in February 2009. The Inventory Report recommended that a SI be completed for the site. A Final Historical Records Review/SI Work Plan was completed in October 2011. This report detailed the history of the site and anticipated sampling activities for the SI phase, including a visual survey and surface soil sampling.

The SI field work was conducted in October 2011. Multiple lead bullets were identified. The Final SI Report was issued in September 2012. Lead was found in exceedance of human health screening criteria near the target area. Antimony, copper, lead and zinc [considered munitions constituents (MC)] were detected at concentrations exceeding the selected ecological screening criteria. The SI Report recommended that a RI/FS for MC be conducted at the site.

Defense Environmental Restoration Program (DERP) funding was used to complete work through the SI at this site. Non-Department of Defense Owned, Non-Operational Defense Sites (NDNODS) sites moving forward with the RI/FS phase are reprogrammed into Compliance-related Cleanup.

Cleanup Strategy

A RI/FS will be completed at this site. Once the RI/FS is completed it is assumed a soil excavation will be required.

CC_OHHQ-002-R-01_NDNODS BOSTON MILLS TRAINING SITE

HQAES ID: 6909A.1011

Alias: RROH000002

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 2/1/2036

RC Date: 2/1/2036

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	Start	End
PA	4/15/2007	9/15/2009
SI	7/15/2010	9/15/2012
RI/FS	1/1/2029	12/31/2033
RD	1/1/2034	1/31/2034
IRA	--	--
RA(C)	2/1/2034	2/1/2036
RA(O)	--	--
LTM	--	--

Site Narrative

The 0.9-acre Boston Mills Training Site is located in Boston Township, Summit County, Ohio. The former maneuver area and target range was historically part of the former Boston Mills Reservation, and the property was owned by the OHARNG until the mid-2000s. The site was identified as a training area used by the 112th 506 Engineer Battalion. The site contained a rifle range and a maneuver area. Munitions were not used in the maneuver area. The area comprising the former range consists of forested land within the Cuyahoga Valley National Park.

A Final Inventory Report for Ohio was completed in February 2009. The Inventory Report recommended that a SI be completed for the site. A Final Historical Records Review/SI Work Plan was completed in October 2011. This report detailed the history of the site and anticipated sampling activities and visual survey for the SI phase. The Final SI Report was issued in September 2012. Four MC metals (antimony, copper, lead, and zinc) were detected in the surface soil samples collected at concentrations exceeding the concentrations detected in the ambient surface soil sample. The maximum detected concentrations of antimony, copper, lead, and zinc did not exceed the respective human health screening criteria but were found to exceed the selected ecological screening criteria. The SI Report recommended that a RI/FS for MC be conducted at the site.

DERP funding was used to complete work through the SI at this site. NDNODS sites moving forward with the RI/FS phase are reprogrammed into Compliance-related Cleanup.

Cleanup Strategy

A RI/FS will be completed at this site. Once the RI/FS is completed it is assumed a soil excavation will be required.

CC_OHHQ-003-R-01_NDNODS CAMP ZALESKI RANGE

HQAES ID: 6909A.1012

Alias: RROH000003

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 2/1/2036

RC Date: 2/1/2036

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	Start	End
PA	4/15/2007	9/15/2009
SI	7/15/2010	9/15/2012
RI/FS	1/1/2029	12/31/2033
RD	1/1/2034	1/31/2034
IRA	--	--
RA(C)	2/1/2034	2/1/2036
RA(O)	--	--
LTM	--	--

Site Narrative

The 23-acre Camp Zaleski Range is located in Zaleski State Forest, off of Webb Hollow Road, in Vinton County, Ohio near the town of Zaleski. The site is a former 3C rifle range that was utilized by the OHARNG from the 1942 through 1970. The firing line was located along Webb Hollow Road and extended north approximately 200 yards into a berm feature. The site is currently heavily forested.

A Final Inventory Report for Ohio was completed in February 2009. The Inventory Report recommended that a SI be completed for the site. A Final Historical Records Review/SI Work Plan was completed in October 2011. This report detailed the history of the site and anticipated sampling activities for the SI phase. The Final SI Report was issued in September 2012, after a visual survey was performed and surface soil, sediment and one surface water sample were collected and analyzed for MC. The maximum detected concentrations of copper, lead, and zinc (considered MC) in surface soils did not exceed the respective human health screening criteria but lead and zinc were detected at concentrations exceeding the selected ecological screening criteria. Based on these results and observation of remaining range features, the SI Report recommended that a RI/FS for MC be conducted at the site.

DERP funding was used to complete work through the SI at this site. NDNODS sites moving forward with the RI/FS phase are reprogrammed into Compliance-related Cleanup.

Cleanup Strategy

A RI/FS will be completed at this site. Once the RI/FS is completed it is assumed a soil excavation will be required.

SITE CLOSEOUT SUMMARY

HQAES ID	Site Name	Site Closeout Date	Program Code
6909A.1002	OHHQ-001-R-01_NDNODS Ashtabula Range	9/30/2012	ENV Restoration, Army
6909A.1003	OHHQ-002-R-01_NDNODS Boston Mills Traini	9/30/2012	ENV Restoration, Army
6909A.1004	OHHQ-003-R-01_NDNODS Camp Zaleski Range	9/30/2012	ENV Restoration, Army
6909A.1005	OHHQ-004-R-01_NDNODS SHREVE RANGE	9/15/2012	ENV Restoration, Army
6909A.1007	OHHQ-003-R-02_NDNODS CAMP ZALESKI RANGE	9/15/2012	ENV Restoration, Army
6909A.1008	OHHQ-004-R-02_NDNODS SHREVE RANGE	9/15/2012	ENV Restoration, Army

COMMUNITY INVOLVEMENT

Technical Review Committee (TRC) Establishment Date:	N/A
Community Involvement Plan (Date Published):	201205
Restoration Advisory Board (RAB) Establishment Date:	N/A
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Additional Community Involvement:	<p>Once sites CC OHHQ-001-R-01 through CC OHHQ-003-R-01 make it to the RI phase a RAB solicitation will be posted in local newspapers if required.</p> <p>Town Hall meetings were held August 10, 2011 and September 13, 2011 for sites OHHQ-005-R-01 and OHHQ-006-R-01.</p> <p>A RAB solicitation was posted for sites OHHQ-005-R-01 and OHHQ-006-R-01 in August 2018.</p>
Administrative Record is located at:	<p>CC OHHQ-001-R-01 – CC OHHQ-003-R-01 Will be established at a later date.</p> <p>OHHQ-005-R-01, OHHQ-005-R-02 & OHHQ-006-R-01 111 South George Mason Drive Arlington, VA 22204</p>
Information Repository is located at:	<p>CC OHHQ-001-R-01 -CC OHHQ-003-R-01 Will be established at a later date.</p> <p>OHHQ-005-R-01, 005-R-02 & 006-R-01 Ida Rupp Public Library 310 Madison Street Port Clinton, OH 43452 419-732-3212</p>
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Review Summary Table

Status	Start Date	End Date	End FY
UNDERWAY	1/01/2023	9/30/2023	FY23

ROD/DDs associated with the last Five-Year/Periodic Review

Associated ROD/DD Name	HQAES ID
Former Lake Erie MRSs ROD	6909A.1001
	6909A.1013
WEST SISTER ISLAND ROD	6909a.1006

Results, Actions & Plans

Results	Actions	Plans
TBD	TBD	TBD

LAND USE CONTROLS (LUC) SUMMARY

ROD/DD	LUC Title	HQAES ID
Former Lake Erie MRSs ROD	Final LUCIP, MMRP Shoreline MRSs, Former Lake Erie Depot	6909A.1001 6909A.1013
WEST SISTER ISLAND ROD	LUC WEST SISTER ISLAND	6909A.1006

RAVENNA ARMY AMMUNITION PLANT

Army Cleanup Program

Installation Action Plan

2023

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RVAAP-08_LOAD LINE 1	12
RVAAP-09_LOAD LINE 2	14
RVAAP-10_LOAD LINE 3	15
RVAAP-11_LOAD LINE 4	16
RVAAP-12_LOAD LINE 12	17
RVAAP-34_SAND CREEK DISPOSAL ROAD LANDFILL	19
RVAAP-38_NACA TEST AREA.....	20
RVAAP-42_LOAD LINE 9	22
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ACRONYMS

Acronym	Definition
ACM	Asbestos-Containing Materials
AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
AST	Aboveground Storage Tank
bgs	Below Ground Surface
CC	Compliance-Related Cleanup
COC	Contaminant of Concern
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
cy	Cubic Yard
DD	Decision Document
DFFO	Director's Final Findings and Order
DLA	Defense Logistics Agency
DQO	Data Quality Objective
EE/CA	Engineering Evaluation/Cost Analysis
ENV	Environmental
EPA	Environmental Protection Agency
ESD	Explanation of Significant Differences
FS	Feasibility Study
FWGWMP	Facility-Wide Groundwater Monitoring Program
GSA	General Services Administration
HQAES	Headquarters Army Environmental System
HMX	High Melting Explosive
HRR	Historical Records Review
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
lb	Pound
LTM	Long-Term Management
LUC	Land Use Control

Acronym	Definition
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
mm	Millimeter
MNA	Monitored Natural Attenuation
MPPEH	Material Potentially Presenting an Explosive Hazard
MR	Munitions Response
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
NACA	National Advisory Committee on Aeronautics
NFA	No Further Action
NTCRA	Non-Time Critical Removal Action
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PP	Proposed Plan
RA	Remedial Action
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Royal Demolition Explosive
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RQL	Ramsdell Quarry Landfill
RRSE	Relative Risk Site Evaluation
RVAAP	Ravenna Army Ammunition Plant

Acronym	Definition
SI	Site Inspection
TAPP	Technical Assistance for Public Participation
TCRA	Time-Critical Removal Action
TNT	Trinitrotoluene
TRC	Technical Review Committee
UST	Underground Storage Tank
USACE	US Army Corps of Engineers
UU	Unrestricted Use
UU/UE	Unlimited Use/Unrestricted Exposure
WBS	Work Breakdown Structure
WS	Wet Storage
WWII	World War II

PHASE TRANSLATION TABLE

HQAES Phase ID	CERCLA Phase	RCRA Phase	RCRA UST Phase
.01	Preliminary Assessment (PA)	RCRA Facility Assessment (RFA)	Initial Site Characterization (ISC)
.02	Site Inspection (SI)	Confirmation Sampling (CS)	Investigation (INV)
.03	Remedial Investigation/ Feasibility Study (RI/FS)	RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)	Corrective Action Plan (CAP)
.04	Remedial Design (RD)	Design (DES)	Design (DES)
.05	Interim Remedial Action (IRA)	Interim Measure (IM)	Interim Remedial Action (IRA)
.06	Remedial Action (Construction) (RA(C))	Corrective Measures Implementation (Construction) (CMI(C))	Implementation (Construction) (IMP(C))
.07	Remedial Action (Operation) (RA(O))	Corrective Measures Implementation (Operation) (CMI(O))	Implementation (Operation) (IMP(O))
.08	Long-Term Management (LTM)	Long-Term Management (LTM)	Long-Term Management (LTM)

SITE ALIAS LIST

HQAES ID	AEDB-R Reference	Site Alias
39747.1001	RVAAP-01_RAMSDSELL QUARRY LANDFILL	RVAAP-01
39747.1005	RVAAP-05_WINKLEPECK BURNING GROUNDS	RVAAP-05
39747.1006	RVAAP-06_C BLOCK QUARRY	RVAAP-06
39747.1008	RVAAP-08_LOAD LINE 1	RVAAP-08
39747.1009	RVAAP-09_LOAD LINE 2	RVAAP-09
39747.1010	RVAAP-10_LOAD LINE 3	RVAAP-10
39747.1011	RVAAP-11_LOAD LINE 4	RVAAP-11
39747.1012	RVAAP-12_LOAD LINE 12	RVAAP-12
39747.1019	RVAAP-19_LANDFILL NORTH OF WINKLEPECK BU	RVAAP-19
39747.1034	RVAAP-34_SAND CREEK DISPOSAL ROAD LANDFI	RVAAP-34
39747.1038	RVAAP-38_NACA TEST AREA	RVAAP-38
39747.1042	RVAAP-42_LOAD LINE 9	RVAAP-42
39747.1045	RVAAP-45_WET STORAGE AREA	RVAAP-45
39747.1050	RVAAP-50_ATLAS SCRAP YARD	RVAAP-50
39747.1051	RVAAP-51_DUMP ALONG PARIS-WINDHAM ROAD	RVAAP-51
39747.1057	RVAAP-063-R-01_GROUP 8 MRS	--
39747.1061	RVAAP-004-R-01_OPEN DEMOLITION AREA #2	--
39747.1062	RVAAP-060-R-01_BLOCK D IGLOO	--
39747.1072	RVAAP-66_FACILITY-WIDE GROUNDWATER	--
39747.1073	RVAAP-67_FACILITY-WIDE SEWERS	--
39747.1077	CC RVAAP-69_BUILDING 1048 - FIRE STATION	RVAAP-69
39747.1078	CC RVAAP-70_EAST CLASSIFICATION YARD	RVAAP-70
39747.1083	CC RVAAP-76_DEPOT AREA	RVAAP-76
39747.1086	CC RVAAP-78_QUARRY POND SURFACE DUMP	RVAAP 78
39747.1087	CC RVAAP-79_DLA ORE STORAGE SITES	RVAAP 79

RAVENNA ARMY AMMUNITION PLANT

INSTALLATION RESTORATION PROGRAM SITES

RVAAP-01_RAMSDSELL QUARRY LANDFILL

HQAES ID: 39747.1001

Alias: RVAAP-01

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 3/15/2015

RC Date: 3/15/2015

RC Reason: All Required Cleanup(s) Completed

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	6/30/2003	10/31/2009
RD	6/30/2007	9/30/2012
IRA	--	--
RA(C)	6/30/2010	3/15/2015
RA(O)	--	--
LTM	3/15/2015	2/15/2053

Site Narrative

Ramsdell Quarry Landfill (RQL) was identified as an Area of Concern (AOC) at Ravenna Army Ammunition Plant (RVAAP) in the Preliminary Assessment for the Characterization of Areas of Contamination. RQL, designated as RVAAP-01, is situated in the northeastern portion of the facility and is 14 acres. The quarry at RQL occupies approximately 10 acres of the AOC. A seasonally flooded wetland exists in the bottom of the quarry that is sometimes dry for extended periods. Quarrying activities were conducted at RQL until 1941. During that time, the quarry was excavated 30-40 feet below existing grade. The excavated sandstone and quartzite pebble conglomerate was used for road and construction ballast. From 1946 to the 1950s, the bottom of the quarry was used to burn waste explosives from Load Line 1. Reportedly, 18,000 500-pound (lb) incendiary or napalm bombs were burned, and liquid residues from annealing operations were disposed in the quarry. Between 1941 and 1989, the western and southern sections of the abandoned quarry were used for landfill operations. No information is available regarding landfill disposal activities from 1941 to 1976, and no information is available on other activities at the quarry from the 1950s to 1976. Solid waste was disposed in RQL from 1976 until it was closed in 1989. In 1978, a portion of the abandoned quarry was permitted as a sanitary landfill by the State of Ohio. The sanitary landfill was closed in 1990 under State of Ohio solid waste regulations and capped with a clay cover. Thirty years of post-closure care was required and was completed. The landfill achieved post-closure care in August 2021. The cap on the former permitted landfill covers approximately 4 acres along the western and southern portions of the quarry.

A Remedial Investigation (RI) was completed in September 2005. A Feasibility Study (FS) was completed in October 2006. A Proposed Plan (PP) was completed in March 2007. A Record of Decision (ROD) was signed and completed in October 2009. A Remedial Design (RD) was completed in June 2010. Implementation of soil removal per Alternative 3 in the ROD was initiated in July 2010. The excavation activities began with removing soil at the eastern edge of area RQL-043M. During soil removal activities, a large amount of construction and miscellaneous debris was encountered. Some of the debris (e.g., transite and roofing materials) was suspected to contain asbestos; therefore, the materials were sampled and analyzed for asbestos. Results revealed that transite and roofing materials within the excavation

were asbestos-containing materials (ACM). Approximately 1,100 tons of soil and construction debris (all considered friable asbestos) were removed from RQL and properly disposed. The soil removal area was extended into areas not contaminated by the contaminant of concern to specifically remove ACM identified on the excavation sidewall. Due to identified asbestos, soil removal per Alternative 3 was discontinued and an Engineering Evaluation was completed in September 2011. The Engineering Evaluation re-evaluated the originally selected remedial alternative and additional alternatives to determine if the remedy for at RQL required a change, given the change of site conditions.

A ROD Amendment was signed and completed in August 2013. A RD was completed in April 2014. A Remedial Action consisting of surficial removal of asbestos, access restrictions, a perimeter fence, asbestos signage, and Land Use Controls (LUCs) was completed in January 2015.

Cleanup Strategy

LUCs consisting of personnel briefing, inspections, asbestos signage, and access and digging restrictions will continue. Installation-wide five year review requirements are carried at this site. Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-06 (39747.1006), RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001). [RVAAP-06 and RVAAP-50 haven't reached Long-Term Management (LTM) phase yet, but are anticipated to do so in FY25]. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072). Installation-wide support costs are tracked at this site.

RVAAP-05_WINKLEPECK BURNING GROUNDS

HQAES ID: 39747.1005

Alias: RVAAP-05

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 3/27/2018

RC Date: 3/27/2018

RC Reason: All Required Cleanup(s) Completed

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	10/31/1994	9/15/2015
RD	9/15/2014	9/15/2015
IRA	8/31/2006	12/15/2009
RA(C)	2/15/2015	3/27/2018
RA(O)	--	--
LTM	4/15/2018	3/15/2053

Site Narrative

The Winklepeck Burning Grounds (RVAAP-05), consisted of approximately 216 acres and operated from 1948 to 1998. Prior to 1980, there were open-burning activities performed in unlined pits, pads, and sometimes on the roads within the 216-acre area. Materials that were burned included: Royal Demolition Explosive (RDX), antimony sulfide, Composition B, lead azide, trinitrotoluene (TNT), propellants, black powder, waste oils, sludge from the load lines, domestic wastes, explosively contaminated wastes (e.g. rags, papers, cardboard) and small amounts of laboratory chemicals. The pre-1980 burning was conducted on bare ground and resulting ash was abandoned in-place. Munitions, munitions debris (MD) (primarily scrap metal) and explosive constituents are present at the site. From 1980-1998, burning of scrap explosives, propellants, and explosively contaminated materials was conducted within raised refractory-lined trays located within a 1.5-acre area. In 1994, the Army notified Ohio Environmental Protection Agency (EPA) of their intent to withdraw the Part B permit application. The burn trays along with the 90-day storage unit, Building 1601, were closed in accordance with Ohio EPA guidance in 1998. The deactivation furnace soils were transferred from the Resource Conservation and Recovery Act (RCRA) to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) program under the Director's Final Findings and Order (DFFO) in June 2004. The management of groundwater monitoring is under the Facility-Wide Groundwater Monitoring Program (FWGWMP). A limited munitions and explosives of concern (MEC) clean-up took place within various portions of the site during 2004, 2005, 2008, and 2009. A PP was finalized in 2006. A September 2008 contract was awarded to conduct a Data Quality Objectives (DQO) study for MEC and chemical contaminants remaining within the AOC. The DQO report was completed in 2010. A Work Plan for additional sampling was finalized in 2012. Additional sampling was conducted in Fall 2012 in support of the upcoming multi-purpose machine gun range. Additional sampling results and analysis of the previously selected remedy with additional soil excavation was documented in the RI/FS Supplement. An Explanation of Significant Differences (ESD) and RD work was completed in 2015. The removal action was completed in 2018.

Cleanup Strategy

LUCs include no residential use and a potable groundwater use restriction. Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747. 1005), RVAAP-06 (39747.1006) RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001). Installation-wide five year review costs are carried at RVAAP-01 (39747.1001).

RVAAP-06_C BLOCK QUARRY

HQAES ID: 39747.1006

Alias: RVAAP-06

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 8/04/2025

RC Date: 8/04/2025

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	8/31/2004	6/27/2022
RD	10/15/2022	5/31/2024
IRA	--	--
RA(C)	11/04/2022	8/04/2025
RA(O)	--	--
LTM	8/04/2025	8/15/2055

Site Narrative

RVAAP-06 (C Block Quarry) is an abandoned quarry, approximately 0.3 acres. It was used as a disposal area for annealing process wastes (chromic acid) for a short time during the 1950s. Liquid wastes were reported to have been dumped in the pit bottom. The site is now heavily forested. The COCs are chromium and asbestos. The RI/FS was completed in April 2019 and the PP was finalized in May 2020. The ROD was completed in June 2022.

Cleanup Strategy

The anticipated exit strategy for this site includes removal of surficial asbestos and implementation of LUCs. Anticipated LUCs will include access restrictions and personnel briefings on potential hazards and safety precautions (related to asbestos). LTM will include Five-year reviews.

Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater. Five-year review requirements are tracked at RVAAP-01. Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-06 (39747.1006), RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-08_LOAD LINE 1

HQAES ID: 39747.1008

Alias: RVAAP-08

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 12/9/2021

RC Date: 12/9/2021

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	10/31/1994	3/4/2020
RD	9/30/2019	10/2/2020
IRA	9/30/2003	7/31/2008
RA(C)	9/30/2019	12/9/2021
RA(O)	--	--
LTM	12/15/2021	12/15/2053

Site Narrative

From 1941 through 1945, Load Line 1 was used to melt and load 2,4 ,6-TNT and Composition B into large-caliber shells and bombs. From 1947 to 1949, demilitarization projects occurred at Load Line 1. In 1949, the TNT washout plant and debanding equipment were moved from Load Line 1 to Load Line 12. From 1950 to 1952, Load Line 1 reclaimed cartridge bases for reuse. Sulfuric acid, sodium orthosilicate, chromic acid, and alkali were used in the annealing process. From 1961 to 1967, Load Line 1 was the site of munitions rehabilitation activities and the demilitarization of 90-millimeter (mm) projectiles; activities included dismantling, replacing components, and repainting mines. In 1965 and 1966, Load Line 1 was used for demilitarizing propellant charges and cartridges. In 1973 and 1974, demilitarization operations on 90mm cartridges occurred at the load line. Load Line 1 was rehabilitated in 1951 to remove and replace soil contaminated with accumulated explosives and to remove and replace wastewater lines. All buildings and structures at Load Line 1 have been demolished. In 2007, in accordance with the Load Lines 1-4 Interim ROD (to attain mounted training, no digging use), a total of 539 tons of polychlorinated biphenyl (PCB)-contaminated soil and 3,126 tons of non-hazardous soil were removed from 51 areas within Load Line 1. In May 2009, building slabs at Load Line 1 were removed. Excavation of 359 cubic yards (cy) of contaminated soils that were located beneath building slabs was conducted in September 2010. In order to attain Commercial/Industrial use, which would allow more flexibility for military training, additional sampling was conducted and the AOC was re-evaluated in a FS Addendum in June 2017. A PP was completed in October 2018. A ROD amendment was completed in March 2020. The RD was completed in September 2020. The removal action was completed in February 2021 and Removal Action Completion Report was finalized in December 2021.

Cleanup Strategy

LTM will include no residential use, inspections and annual reporting. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater. Installation-wide five year review requirements are carried at RVAAP-01 (39747.1001). Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-06 (39747.1006), RVAAP-08 (39747.1008), RVAAP-09

(39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-09_LOAD LINE 2

HQAES ID: 39747.1009

Alias: RVAAP-09

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 12/9/2021

RC Date: 12/9/2021

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	10/31/1994	5/6/2020
RD	9/30/2019	10/2/2020
IRA	9/30/2003	7/31/2008
RA(C)	9/30/2019	12/9/2021
RA(O)	--	--
LTM	12/15/2021	12/15/2053

Site Narrative

From 1941 through 1945, Load Line 2 was used to melt and load TNT and Composition B into large-caliber shells and bombs. Demilitarization projects also occurred at Load Line 2 from 1947 through 1949 when a washout plant was installed. From 1950 to 1952, Load Line 2 reclaimed cartridge bases using an annealing process for reuse. During the entirety of its operational history, Load Line 2 produced about 10 million munitions, and approximately 4 million pounds of TNT were salvaged during demilitarization activities. In 1951, Load Line 2 was rehabilitated, including the removal of explosive accumulations. All buildings and structures at Load Line 2 have been demolished. In 2007, in accordance with the Load Lines 1-4 Interim ROD (to attain mounted training, no digging use), a total of 320 tons of PCB-contaminated soil and 2,617 tons of non-hazardous soil were removed from a total of 24 locations within Load Line 2. In 2008, building slabs at Load Line 2 were removed. Excavation of 885 cy of contaminated soils located beneath building slabs was conducted in June 2010. In order to attain Commercial/Industrial use, which would allow more flexibility for military training, additional sampling was conducted and the AOC was re-evaluated in a FS Addendum in June 2017. A PP was completed in October 2018. A ROD amendment was completed in March 2020. The RD was completed in September 2020. The removal action was completed in February 2021. The Remedial Action Completion Report was finalized in December 2021.

Cleanup Strategy

The anticipated exit strategy for this site includes LTM. LTM will include no residential use, inspections and annual reporting. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater. Installation-wide five year review requirements are carried at RVAAP-01 (39747.1001). Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-10_LOAD LINE 3

HQAES ID: 39747.1010

Alias: RVAAP-10

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 12/9/2021

RC Date: 12/9/2021

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	10/31/1994	3/4/2020
RD	9/30/2019	10/2/2020
IRA	9/30/2003	7/31/2008
RA(C)	9/30/2019	12/9/2021
RA(O)	--	--
LTM	12/15/2021	12/15/2053

Site Narrative

Load Line 3 was primarily used to melt bulk explosives and load Composition B into large-caliber shells and bombs. During its operational history from 1941 to 1945, Load Line 3 produced approximately 6.5 million munitions. Demilitarization activities were conducted between 1951 and 1957, during which time approximately 228,000 munitions were processed at the load line. During the operation of Load Line 3, bulk TNT and high melting explosive (HMX) were offloaded at Buildings EA-6 and EA-6A for screening and preparation before being transported to melt pour Buildings EA-4 and EA-4A for processing and loading into shells. Bulk explosive carrier washout activities were conducted at Building EB-25. All buildings and structures at Load Line 3 have been demolished. In 2007, in accordance with the Load Lines 1-4 Interim ROD (to attain mounted training, no digging), a total of 893 tons of PCB-contaminated soil and 2,538 tons of non-hazardous soil were removed from 35 locations within Load Line 3. In 2008, building slabs at Load Line 3 were removed. Excavation of 1,602 cy of contaminated soils located beneath building slabs was conducted in June 2010. In order to attain Commercial/Industrial use which would allow more flexibility for military training, additional sampling was conducted and the AOC was re-evaluated in a FS Addendum in June 2017. A PP was completed in October 2018. A ROD amendment was completed in March 2020. The RD was completed in September 2020. The removal action was completed in February 2021.

Cleanup Strategy

The anticipated exit strategy for this site includes completion of the Remedial Action Completion Report followed by LTM. LTM will include no residential use, inspections and annual reporting. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater. Installation-wide five year review requirements are carried at RVAAP-01 (39747.1001). Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-11_LOAD LINE 4

HQAES ID: 39747.1011

Alias: RVAAP-11

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 12/9/2021

RC Date: 12/9/2021

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	10/31/1994	3/4/2020
RD	9/30/2019	10/2/2020
IRA	9/30/2003	7/31/2008
RA(C)	9/30/2019	12/9/2021
RA(O)	--	--
LTM	12/15/2021	12/15/2053

Site Narrative

Load Line 4 operated from 1941 to 1945 to produce 91,970 projectiles and bombs and again from 1951 to 1957 to produce 1,269,262 mines. Load Line 4 was used to melt and load TNT into large-caliber shells, bombs, and antitank mines. During its operational history, Load Line 4 produced about 1.2 million munitions. All buildings and structures at Load Line 4 have been demolished. In 2007, in accordance with the Load Lines 1-4 Interim ROD, a total of 1,208 tons of non-hazardous soil were removed from nine locations within Load Line 4. In 2008, building slabs at Load Line 4 were removed. No additional soil beneath slabs required removal. In order to attain Commercial/Industrial use which would allow more flexibility for military training, additional sampling was conducted and the AOC was re-evaluated in a FS Addendum in June 2017. A PP was completed in October 2018. A ROD amendment was completed in March 2020. The RD was completed in September 2020. The removal action was completed in February 2021.

Cleanup Strategy

The anticipated exit strategy for this site includes completion of the Remedial Action Completion Report followed by LTM. LTM will include no residential use, inspections and annual reporting. Groundwater monitoring requirements are carried in RVAAP-66, Facility-wide Groundwater. Installation-wide five year review requirements are carried at RVAAP-01. Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-12_LOAD LINE 12

HQAES ID: 39747.1012

Alias: RVAAP-12

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 12/9/2021

RC Date: 12/9/2021

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	6/30/1989	6/30/1989
RI/FS	10/31/1999	3/4/2020
RD	9/30/2019	10/2/2020
IRA	9/15/2003	7/15/2008
RA(C)	9/30/2019	12/9/2021
RA(O)	--	--
LTM	12/15/2021	12/15/2053

Site Narrative

Load Line 12 is a former ammonium nitrate manufacturing facility that was operational from 1941 to 1946. From 1941 to 1943, explosive grade ammonium nitrate was manufactured. Munitions renovation and demilitarization operations were performed after 1943. Load Line 12 was leased by the Silas Mason Company from 1946 to 1950 to manufacture fertilizer-grade ammonium nitrate. To improve the quality of TNT recovered from demilitarization operations, washout operations were converted to a steam melt-out process in the late 1950s. A pinkwater treatment plant located near Building 904 was operational from 1981 to 2000. From 1965 to 1967, Building FF-19 was leased to produce aluminum chloride. From 1969 to 1971, Load Line 12 produced M54 primers in support of the Southeast Asian conflict. Demolition of buildings occurred between 1973 and 2000. In 1999, approximately 1,500 cubic feet of soil were removed as part of an explosives composting pilot study. In 2010, in accordance with the ROD for Soil and Dry Sediment for the RVAAP-12 Load Line 12, 1181 tons of contaminated sediment were removed from the Main Ditch. To address surface water and wet sediment, a Phase III RI was completed in February 2017. A No Further Action (NFA) PP for Surface Water and Wet Sediment was completed in November 2017. A NFA ROD for Surface Water and Wet Sediment was finalized in June 2019. In order to attain Commercial/Industrial use which would allow more flexibility for military training, additional sampling was conducted and the AOC was re-evaluated in a FS Addendum in June 2017. A PP was completed in October 2018. A ROD amendment was completed in March 2020. The RD was completed in September 2020. The removal action was completed in February 2021.

Cleanup Strategy

The anticipated exit strategy for this site includes completion of the Remedial Action Completion Report followed by LTM. LTM will include no residential use, inspections and annual reporting. Groundwater monitoring requirements are carried in RVAAP-66, Facility-wide Groundwater. Installation-wide five year review requirements are carried at RVAAP-01. Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11

(39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-34_SAND CREEK DISPOSAL ROAD LANDFILL

HQAES ID: 39747.1034

Alias: RVAAP-34

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2027

RC Date: 10/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	7/31/1994	2/29/1996
SI	7/31/1994	6/30/1999
RI/FS	9/30/2004	10/15/2027
RD	--	--
IRA	9/15/2002	9/30/2022
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

RVAAP-34 was reported by former workers at RVAAP to have been an open dump for materials including, but not limited to, concrete, wood, asbestos debris, lab bottles, 55-gallon drums and fluorescent light tubes. Debris was disposed at the surface, but became covered by vegetation. The site is approximately one (1) acre and located adjacent to Sand Creek. The dates of operation of this site are unknown, but believed to be between 1950 and 1960. A surface soil and debris removal [Interim Remedial Action (IRA)] was completed in 2003. A DQO study, geophysical magnetometer study and soil sampling were completed in 2009. An RI was completed in 2017. An Engineering Evaluation/Cost Analysis (EE/CA) was completed in 2019. An Action Memorandum was completed in July 2020. A non-time critical removal action was started in 2021 and continued into 2022 but additional contamination beyond the scope of the contract was identified and the RA was not completed.

Cleanup Strategy

Once the RI/FS is complete (additional delineation underway), need for a remedial action will be determined. Groundwater monitoring requirements are carried in RVAAP-66, Facility-wide Groundwater (HQAES ID: 39747.1072).

RVAAP-38_NACA TEST AREA

HQAES ID: 39747.1038

Alias: RVAAP-38

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2027

RC Date: 10/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	8/31/1995	2/29/1996
SI	8/31/1995	12/31/1998
RI/FS	9/30/1999	3/4/2020
RD	9/15/2017	3/29/2021
IRA	--	--
RA(C)	9/15/2017	10/15/2027
RA(O)	--	--
LTM	--	--

Site Narrative

National Advisory Committee on Aeronautics (NACA) Test Area is located west of Greenleaf Road at the southern end of Demolition Road in the southwestern portion of the facility. The AOC is approximately 47 acres. This AOC was designed and used by NACA from 1947–1953. The site was used to conduct experimental crash tests of excess military aircraft in order to develop explosion-proof fuel tanks and fuel for aircraft. Excess airplanes were flown to the former RVAAP under their own power, taxied along installation roads, and staged at NACA Test Area. Seventeen excess aircraft were used during NACA Test Area operations. The planes were fueled and then propelled under their own power on a guide monorail. The planes were crashed into a concrete barrier at speeds from 80–105 miles per hour. During the tests, high-speed films were made to study fuel spillage, generation of ignition sources, flame front progression, and toxic gas generation, among other parameters. Combustible liquids involved in testing activities included 100/130 octane aviation fuels, low-volatility fuel, flame retardants, lubricating oil, coolant compounds, hydraulic fluids, alcohol, and brake fluid. Estimates of aviation fuel consumed are approximately 17,850 gallons. However, the amounts of other liquids potentially released are not known. Fluids from the burning airplanes were generally found in a fan-shaped area beginning at the crash barrier and extending out in front of the airplane up to 400 ft. Some aircraft were completely consumed by fire. Aircraft that were significantly damaged during testing were stripped of instrumentation and salvageable parts, and all of the aircraft were removed from the site.

Site features associated with NACA Test Area include an east-west trending runway or crash strip approximately 1,625 ft long. The crash area was located at the east end of the strip. The total crash area is approximately 12 acres. The former plane storage area was located east and south of the crash area. Many of the AOC features, including the crash barrier, utilities, and buildings (i.e., observation towers, fuel shack, storage sheds) have been removed. Remaining features include the concrete crash strip and pad, and a small man-made reservoir southeast of the former crash barrier. Currently, the AOC is forested around the perimeter. The interior of the AOC, which includes the crash strip, is relatively open and occasionally mowed. Hinkley Creek is located south/southwest of the AOC.

The RI/FS was completed in 2018. The PP was completed in April 2019. The ROD was completed in March 2020. A RD was completed in March 2021. Remedial action (RA) field activities started in 2021 and continued into 2022. Additional contaminated soils beyond the scope of the RD/RA contract were identified during the RA and additional delineation and removal activities are required.

Cleanup Strategy

The anticipated exit strategy for this site includes additional delineation and a RD Addendum and ESD, being captured under the Remedial Action (Construction) [RA(C)] phase. Once complete, costs for the additional soil removal under the RA(C) phase to achieve unrestricted use (UU) will be determined. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

RVAAP-42_LOAD LINE 9

HQAES ID: 39747.1042

Alias: RVAAP-42

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2027

RC Date: 10/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/28/1998	6/30/1998
SI	7/31/1998	7/31/1998
RI/FS	8/31/2002	6/7/2019
RD	9/15/2017	5/4/2021
IRA	--	--
RA(C)	9/15/2017	10/15/2027
RA(O)	--	--
LTM	--	--

Site Narrative

Load Line 9 (RVAAP-42) was used to produce fuze components for artillery projectiles from 1941 to 1945. The buildings and foundations were demolished in 2003. Basements for several buildings were demolished in place to three feet below grade. Contaminants of concern (COCs) include polycyclic aromatic hydrocarbons (PAHs) and mercury. The RI/FS was completed in 2017. The PP was completed in 2018. The ROD was completed in 2019. The RD was completed in 2021. The RA started in 2021 and continued into 2022. During the RA it was determined that additional delineation and excavation beyond the scope of the current contract would be required to finish the RA.

Cleanup Strategy

The anticipated exit strategy for this site includes additional delineation and a RD Addendum and ESD, being captured under the RA(C) phase. Once complete, costs for the additional soil removal under the RA(C) phase to achieve UU will be determined. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

RVAAP-45_WET STORAGE AREA

HQAES ID: 39747.1045

Alias: RVAAP-45

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2027

RC Date: 10/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/28/1998	6/30/1998
SI	7/31/1998	7/31/1998
RI/FS	9/30/2004	6/5/2019
RD	9/15/2017	4/16/2021
IRA	--	--
RA(C)	9/15/2017	10/15/2027
RA(O)	--	--
LTM	--	--

Site Narrative

Wet Storage Area is a 36-acre fenced AOC located directly northwest of the intersection of George Road and Newton Falls Road. From 1941 through 1945, Wet Storage Area was used to store highly explosive primary explosives, including lead azide, mercury fulminate, and tetryl. During storage activities, explosive material was containerized, covered with water within drums, and stored separately in six igloos at the AOC. WS-1 and WS-1A were used to store lead azide, WS-2 and WS-2A were used to store mercury fulminate, and WS-3 and WS-3A were used to store tetryl. Four igloos (WS-1, WS-1A, WS-2, and WS-2A) were demolished in July 2004. All above-grade concrete structures and floor slabs were removed from the four igloos, and any foundations were removed to 1 foot below ground surface (bgs). All concrete from the demolition of the four igloos was transported to the clean hard-fill area in Load Line 1. The two remaining igloos (WS-3 and WS-3A) within the eastern portion of the AOC were refurbished. The earthen mounds that backed the four demolished igloos are still visible. Other areas of Wet Storage Area are forested.

The RI/FS was completed in March 2017. The PP was completed in February 2018. The ROD was completed in June 2019. The RD was completed in 2021. The RA started in 2021 and continued into 2022. Additional contaminated soil beyond the scope of the current contract was identified.

Cleanup Strategy

The anticipated exit strategy for this site includes additional delineation and a RD Addendum and ESD, being captured under the RA(C) phase. Once complete, costs for the additional soil removal under the RA(C) phase to achieve UU will be determined. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

RVAAP-50_ATLAS SCRAP YARD

HQAES ID: 39747.1050

Alias: RVAAP-50

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 8/04/2025

RC Date: 8/04/2025

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/28/1998	6/30/1998
SI	7/31/1998	7/31/1998
RI/FS	8/31/2004	8/23/2022
RD	6/1/2022	5/31/2024
IRA	--	--
RA(C)	11/04/2022	8/04/2025
RA(O)	--	--
LTM	8/04/2025	8/15/2055

Site Narrative

In the 1940s, RVAAP-50 (Atlas Scrap Yard) contained a complex of buildings, including barracks type housing that supported the principal construction and engineering company staff and included barracks type housing. After World War II (WWII), a majority of the Atlas building complex was demolished leaving the remaining portion of structures to support the installation roads and grounds maintenance staff and equipment, as well as, a large contingent of railroad maintenance personnel. The post-WWII structures stood until after the Vietnam War at which point all remaining buildings were demolished. The site became a storage/stockpile yard for various types of bulk materials used in the day-to-day installation operations such as gravel, railroad ballast, sand, culvert pipe, railroad ties, and telephone poles. In the mid to late-1980s, the southeastern portion of the old Atlas area became a staging area for salvaged ammunition boxes from the demilitarization of defunct Vietnam War era munitions.

The RI was completed in August 2017. The FS was completed in October 2019. The PP was completed in August 2020. The ROD was completed on 23 August 2022.

Cleanup Strategy

The anticipated exit strategy for this site includes a removal action involving soil treatment/excavation with LUCs, and wetlands restoration. A portion of the AOC will achieve UU and will not require LUCs. Another portion will achieve commercial/industrial use and will require LUCs. Annual inspections and reporting, no residential use and five year reviews will be completed. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater. Five-year review requirements are tracked at RVAAP-01. Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-06 (39747.1006) RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-51_DUMP ALONG PARIS-WINDHAM ROAD

HQAES ID: 39747.1051

Alias: RVAAP-51

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 11/26/2019

RC Date: 11/26/2019

RC Reason: All Required Cleanup(s) Completed

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/28/1998	6/30/1998
SI	7/31/1998	7/31/1998
RI/FS	9/30/2001	5/24/2018
RD	5/24/2018	4/15/2019
IRA	9/30/2002	9/30/2004
RA(C)	4/15/2019	11/26/2019
RA(O)	--	--
LTM	11/26/2019	11/25/2053

Site Narrative

RVAAP-51 (Dump Along Paris-Windham Road) is adjacent to the Sand Creek flood plain and was used as an open dump for miscellaneous materials, including transite siding. The dates of operation for the dump are unknown. Debris removal was completed in January 2004. Confirmation sampling detected PAHs and asbestos close to the road within the embankment. No attempt was made to remove remaining debris within the roadbed embankment as it would have compromised the stability of Paris-Windham Road. The Final Site Characterization Focused FS was approved in December 2015. The PP was finalized in October 2016. The ROD was finalized in May 2018. Signs were installed in 2019.

Cleanup Strategy

Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater. LUC inspections, sign and Siebert stake maintenance, restricted access, and reporting will continue. Installation-wide five year review requirements are carried at RVAAP-01 (39747.1001). LUC requirements are carried at RVAAP-01 (39747.1001). Costs for LUCs at RVAAP-01 (39747.1001), RVAAP-05 (39747.1005), RVAAP-08 (39747.1008), RVAAP-09 (39747.1009), RVAAP-10 (39747.1010), RVAAP-11 (39747.1011), RVAAP-12 (39747.1012), RVAAP-50 (39747.1050) and RVAAP-51 (39747.1051) are tracked at RVAAP-01 (39747.1001).

RVAAP-66_FACILITY-WIDE GROUNDWATER

HQAES ID: 39747.1072

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 6/01/2027

RC Date: 5/31/2057

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	5/31/1988	6/30/1989
RI/FS	10/31/1999	5/31/2025
RD	6/1/2025	5/31/2026
IRA	10/31/2011	3/15/2016
RA(C)	6/1/2026	5/31/2027
RA(O)	6/1/2027	5/31/2057
LTM	--	--

Site Narrative

Groundwater is managed through a facility-wide approach called FWGWMP under RVAAP-66. The FWGWMP is a component of the DFFO dated June 2004. There are 312 wells facility-wide. Both shallow aquifers and deeper regional aquifers are being monitored.. Some of the source areas are known and contamination has been identified but nature and extent is still being determined. Site-related constituents have been identified at low concentration and are still being evaluated in the deeper aquifers. Three wells were installed in 2013 along the facility boundary. Fifteen wells were installed in 2016. The RI work plan was finalized in March 2017. The Final RI was completed in April 2022.

Site specific groundwater contamination is being tracked at RVAAP-004-R-01 (39747.1061) ODA#2, Fire Station Building 1048 CC RVAAP-69 (39747.1077) and Motor Pool Hydraulic Lift Building 1034 CC RVAAP-74 (39747.1081) and is not currently part of the FWGWMP. Additional wells were installed in March 2023 to finalize the FS.

Cleanup Strategy

The anticipated exit strategy for this site includes completion of the RI/FS (already funded). Facility-wide groundwater monitoring will continue until the RI/FS is completed, and monitoring is required for a minimum of three years following the completion of all environmental investigations and remediation at the site, or until a minimum of three consecutive years of groundwater monitoring data indicate that the concentration limits for each COC have not been exceeded, whichever is longer (per the Findings and Orders). Monitored Natural Attenuation (MNA), which will encompass the semi-annual groundwater monitoring, is the assumed remedial action.

RVAAP-67_FACILITY-WIDE SEWERS

HQAES ID: 39747.1073

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 6/30/2028

RC Date: 6/30/2028

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	2/29/1988	4/30/1988
SI	5/31/1988	6/30/1989
RI/FS	10/31/1999	6/30/2028
RD	--	--
IRA	5/15/2016	5/30/2021
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

The RVAAP started operations in 1941 and continued intermittently until the late-1970s, either loading or demilitarizing ammunition. Plant operations required processing large quantities of secondary explosives and lesser quantities of primary explosives. Periodic cleaning of the process areas resulted in explosive residues in the sanitary and storm sewers and settling ponds. Facility-wide sewers are addressed by RVAAP-67.

Sewers thought to have transported explosive residues during plant operations are believed to be limited to the 12 process areas and Buildings 1037 (laundry) and 1039 (laboratory) in the administrative area of the plant. The sanitary sewers (approximately 28,500 feet) are assembled from either vitreous clay tile that has been lined with resin or cast iron. Storm sewers (estimated at 30,000 feet) are fabricated from either vitreous clay or corrugated galvanized steel.

Sewers were installed in trenches lined with washed gravel then covered by about six inches of gravel and backfilled with the removed soil, generally heavy clay. If the sewers leaked contaminants they should be in the gravel fill, trapped by the clay backfill. The main sources of explosives in sanitary sewers are change houses within the various load lines where coveralls were removed and people showered prior to leaving the facility. In addition, the laundry where the clothes were washed and the laboratory where small quantities of explosives were tested.

Storm sewers within the load lines were subject to contamination by virtue of wash-down procedures where explosive residue and dusts were scrubbed from the floors and washed through doorways onto the surrounding grounds and which could then migrate to the storm water drain system. Explosives could also enter the storm system from explosive filter effluent traveling to settling ponds.

A contract was awarded to determine if there were explosive residues in sewers and to make recommendations as recorded in the report, Explosive Evaluation of Sewers, dated November 2007. The study was done under safety qualification parameters; not to quantify the presence of any explosive deposits. The Corps of Engineers Research Laboratory performed a similar investigation of explosive

contamination in the sewer system in a letter report dated 15 June 2007, which was included in the contractor report as an appendix.

Following an Ohio EPA approved work plan, Tier I (sediment and liquids) surveys/investigation were completed in the second quarter of FY10 with Tier II video analyses completed in 2011. A Draft RI/FS report was submitted to Ohio EPA in 2012.

An EE/CA was completed in March 2017. An Action Memorandum was completed in February 2018. A soil removal was completed in November 2020.

Cleanup Strategy

The RI/FS is underway and will be completed. Future actions are unknown at this time and will be determined in the future. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

CC RVAAP-69_BUILDING 1048 - FIRE STATION

HQAES ID: 39747.1077

Alias: RVAAP-69

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 11/15/2027

RC Date: 11/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	9/30/2008	4/30/2009
SI	5/31/2009	2/28/2010
RI/FS	3/31/2010	11/15/2027
RD	--	--
IRA	--	--
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

The Building 1048 Fire Station (CC RVAAP-69) AOC was located in the former plant administration area in the northwest quadrant of the intersection of George Road and South Service Road. In 1968, the fire station was referred to as the Fire and Guard Building, and consisted of 12,130 square feet. The fire station building was demolished in late 2008, and the site currently remains undeveloped. The AOC consists of the ground area located west/northwest of the former building as well as a portion of the former building footprint. The area is currently marked with Siebert stakes. Carbon tetrachloride was used at this site. A Historical Records Review (HRR) was completed in December 2011. This site is currently undergoing an RI. Groundwater monitoring wells were installed as part of the RI.

Cleanup Strategy

Groundwater is included in this RI separate from the groundwater actions at RVAAP-66. The anticipated exit strategy for the site includes completion of the RI/FS. Once the RI/FS is completed, future actions will be evaluated.

CC RVAAP-70_EAST CLASSIFICATION YARD

HQAES ID: 39747.1078

Alias: RVAAP-70

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2027

RC Date: 10/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	9/30/2008	4/30/2009
SI	5/31/2009	10/31/2018
RI/FS	10/15/2017	10/15/2027
RD	--	--
IRA	3/15/2020	8/04/2025
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

The RVAAP was originally equipped with east and west classification yards during its early operational years. The classification yards were used for the switching and maintenance of railroad cars. The East Classification Yard (CC RVAAP-70) is located east of Load Line 1 in close proximity to the intersection of Ramsdell Road and Irons Road. The rail-yard reportedly consisted of 18 tracks with a 750 car capacity, and 3 Hi-X tracks with a 120 car capacity, which also included the washrack south of the main track area.

This yard was equipped with a locomotive repair building (Round House), an herbicide storage shed, several outbuildings, a washrack area, and a storage tank area. The herbicide shed contained a mobile herbicide tank. The AOC area consists of the following areas within the East Classification Yard: storage tank area, herbicide shed, Round House building, and former washrack area.

A HRR was completed in December 2011. According to the HRR, a heating oil fuel spill occurred in 1986 within the vicinity of the storage tank area. The area was reportedly cleaned up; however, no final cleanup report was found. This area is now overgrown with vegetation. Staining from past operations was found within the Round House building. No visible evidence of impacts (stained soil, stressed vegetation) was noted in the vicinity of the herbicide shed or washrack. The HRR recommended further investigation for all four areas within the East Classification Yard.

The Site Inspection (SI), which identified PAH contamination in the surface soil around the round house, was completed in November 2018. The EE/CA was completed in February 2021. The Action Memorandum was completed in July 2021.

Cleanup Strategy

The anticipated exit strategy for the site includes completion of a soil removal action. It is assumed a RI will be completed followed by a NFA PP and NFA ROD. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

CC RVAAP-76_DEPOT AREA

HQAES ID: 39747.1083

Alias: RVAAP-76

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 10/15/2024

RC Date: 10/15/2024

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	9/30/2008	4/30/2009
SI	5/31/2009	2/28/2010
RI/FS	3/31/2010	4/24/2019
RD	9/15/2017	3/26/2021
IRA	--	--
RA(C)	9/15/2017	10/15/2024
RA(O)	--	--
LTM	--	--

Site Narrative

The Depot Area (CC RVAAP-76) AOC consists of multiple historical support buildings used for former operations including: fueling stations, locomotive repair shop, motor repair shop, petroleum storage building, solid waste incinerator, demilitarization activities at Building U-10, service station and an aboveground storage tank (AST) associated with Building U-5.

A HRR was completed in December 2011. The report indicated that demilitarization activities occurred at Building U-10. It also indicated that the AST had been removed but its concrete supports still remain. No visual evidence of impacts (stained soil, stressed vegetation) was observed at the former AST site. Interviewees noted a historical spill from a Buffalo Tank containing waste oil which was cleaned up within a day. No documentation related to this spill was identified. A spill report was found documenting the discovery of 12 paint cans during an underground storage tank (UST) investigation. The cans were removed in 1991. Various maintenance activities occurred throughout the Depot Area. No documentation regarding spills related to maintenance activities was found. Eleven USTs were formerly operated at the Depot Area. These were evaluated as part of CC-RVAAP-72. The following sites within the Depot Area were recommended for further investigation: Building U-4 POL Area, Building U-5 Locomotive Repair Shop, Building U-20 Incinerator, Building U-10 (demilitarization activities), Building A-3 Service Garage, Building U-3 Service Station (Kerosene UST), Building A-2 Motor Repair Facility, Bolton Barn (Tank Maintenance) Paint Can Burial Area, and ditch lines within the operational areas.

The RI/FS was finalized in January 2017. The PP was completed in March 2018. The ROD was finalized in April 2019. The RD was completed in 2021. The RA started in 2021 and continued into 2022. Additional contaminated soil beyond the scope of the current RA contract was identified.

Cleanup Strategy

The anticipated exit strategy for this site includes additional delineation and a RD Addendum and ESD, being captured under the RA(C) phase. Once complete, costs for the additional soil removal under the RA(C) phase to achieve UU will be determined. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

CC RVAAP-78_QUARRY POND SURFACE DUMP

HQAES ID: 39747.1086

Alias: RVAAP 78

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2027

RC Date: 10/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	4/30/2009	6/30/2009
SI	7/31/2009	11/14/2018
RI/FS	4/30/2010	10/15/2027
RD	--	--
IRA	12/27/2018	5/17/2021
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

The Quarry Pond Surface Dump (CC RVAAP-78) consists of an area of former dumping along a small topographic ridge located north and northeast of the northern quarry pond within the Fuze and Booster Quarry. The potentially impacted area consists of approximately 8,750 (250 feet by 35 feet) square feet. The debris pile appears to have an average thickness of about five feet (where present). Contents of the debris pile appear to consist of potential ACM, construction debris, scrap metal, and other unknown materials. The Quarry Pond Surface Dump appears to be a possible northern extension of the existing Fuze and Booster Quarry AOC (RVAAP-16), which operated from 1945 through 1993. Asbestos is the only COC.

The SI was completed in August 2016. The RI is currently underway. The EE/CA was completed in September 2019. The Action Memorandum was completed in June 2020. A Non-Time Critical Removal Action (NTCRA) work plan was completed in June 2020. A NTCRA was completed in August 2020.

Cleanup Strategy

The anticipated exit strategy for the site includes completion of a RI/FS. Once the RI/FS is completed future actions will be evaluated. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

CC RVAAP-79_DLA ORE STORAGE SITES

HQAES ID: 39747.1087

Alias: RVAAP 79

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 10/15/2027

RC Date: 10/15/2027

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	4/30/2009	6/30/2009
SI	7/31/2009	9/30/2009
RI/FS	10/31/2010	10/15/2027
RD	--	--
IRA	--	--
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

Various ores were historically stored (stock-piled) at this facility for the General Services Administration (GSA). The Defense Logistics Agency (DLA), Defense National Stockpile Center leased space at RVAAP for the storage of the ore materials on the ground and in ASTs, which are addressed by CC RVAAP-79. The ASTs were referred to as strategic material tanks. Many of the ASTs were constructed without floors; therefore, the ores were allowed to make direct contact with the underlying soils.

The following GSA materials were stock-piled on the ground surface: brass ingots, chemical chrome ore, copper ingots, ferrochrome ore, ferro manganese ore, and metallurgical manganese ore.

The following GSA materials were stored in Strategic Material Tanks: magnesium, kyanite, antimony sulfide, asbestos (raw), cobalt rutile sand, cobalt zircon sand, monazite sand, nickel cathodes, rutile sand, silicon carbide, talc, and zircon sand ore. The monazite sand contained radioactive element Thorium 232.

Ore storage occurred at the following primary locations at RVAAP: DLA Load Line 3 Tank Storage and Building 803, DLA Route 80 Tank Farm, DLA Main Ore Pile Storage Area, DLA Area 8 Inert Storage, Building 841, and DLA Area 2 Ammunition Storage Area. The total AOC consists of approximately 68.92 acres.

This site also includes the former Ore Pile Retention Pond (RVAAP-31) constructed in the mid-1950s. The pond was constructed to control potentially contaminated surface water runoff from the adjacent manganese and chrome stockpiles from entering a receiving stream. There remains the potential for releases of contaminants from this unit to the surrounding soils, groundwater, surface water and sediment.

Available aerial photographs and site observations indicate that ores still remain on the ground surface at several locations. As such, the surface soils may be impacted by these materials.

The RI was completed in December 2020. An RI addendum is currently underway.

Cleanup Strategy

The anticipated exit strategy for the site includes completion of a RI/FS. Once the RI/FS is completed future actions will be evaluated. Groundwater monitoring requirements are carried in RVAAP-66 (39747.1072), Facility-wide Groundwater.

RAVENNA ARMY AMMUNITION PLANT

MILITARY MUNITIONS RESPONSE PROGRAM SITES

RVAAP-063-R-01_GROUP 8 MRS

HQAES ID: 39747.1057

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 9/30/2026

RC Date: 9/30/2026

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	9/18/2002	12/21/2003
SI	9/30/2005	5/31/2008
RI/FS	4/30/2010	1/14/2021
RD	9/30/2021	4/30/2023
IRA	--	--
RA(C)	9/30/2021	9/30/2026
RA(O)	--	--
LTM	--	--

Site Narrative

The Group 8 (RVAAP-063-R-01) Munitions Response Site (MRS) consists of most of the area between Buildings 846 and 849 and may have been used for debris and rubbish burning. An SI was completed for the site in 2008. The SI recommended 2.65 acres be evaluated for MEC and munitions constituents (MC).

In July 2009, a contract was awarded to characterize the nature and extent of MEC and MC at the Group 8 (RVAAP-063-R-01) MRS. The option for this site was exercised in Fiscal Year (FY)10. The RI was completed in 2015.

The RI Report concluded that a release of MEC had not occurred at the site. However, MC was detected at the site at concentrations that posed an unacceptable risk to potential receptors. In addition, significant amounts of material potentially presenting an explosive hazard (MPPEH) were observed during the RI. The FS was completed in August 2019. The PP was completed in 2020. A NFA Explosive Safety Submittal (NoFA ESS) was completed in 2020. The ROD was completed in January 2021 and the selected remedy was a soil removal action. A performance-based contract was awarded in September 2021 to perform RD/RA(C). Period of performance ends 29 September 2026.

Cleanup Strategy

A soil removal action for MC is underway (funded) to achieve UU/unrestricted exposure (UE) at this site. Costs for RVAAP-060-R-01 (39747.1062) are tracked at this site.

RVAAP-004-R-01_OPEN DEMOLITION AREA #2

HQAES ID: 39747.1061

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 5/31/2030

RC Date: 5/31/2030

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	9/18/2002	12/21/2003
SI	9/30/2005	5/31/2008
RI/FS	10/31/2008	5/31/2030
RD	--	--
IRA	3/15/2015	5/31/2030
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

The Open Demolition Area #2 (RVAAP-004-R-01) MRS is a former open burn / open detonation area that was used between 1948 and 1991 for munitions and explosives disposal. The MRS is co-located with an Installation Restoration Program (IRP) AOC (RVAAP-04). A SI was completed in 2008. The Final SI Report identified the MRS as being 35.4 acres and recommended the site for further evaluation for MEC and MC. Two Time-Critical Removal Actions (TCRAs) have been conducted at ODA #2. In 2008, a TCRA was conducted to address the potential for migration of munitions offsite in Sand Creek. In 2009-2011, a second TCRA was conducted at Rocket Ridge to address MEC and MPPEH contamination along the leading slope of the creek. In July 2009, a RI contract was awarded to characterize the nature and extent of MEC and MC contamination at the ODA #2 (RVAAP- 004-R-01) MRS. A partial RI was completed in 2015. The RI Report concluded that the MRS was much larger due to the presence of a significant kickout area. Some MC was detected, but not at levels that presented an unacceptable risk to potential receptors. MEC and MPPEH were confirmed at the site. The MRS was increased to 317.4 acres. A Final Memorandum of Record and an Action Memorandum recommending a TCRA was completed in 2015. A Probability Assessment investigating the munitions risk at the site was completed in May 2015. A TCRA was conducted from May 2015 through January 2020 to reduce explosive safety hazards and better assess MEC and potential MC contamination at the site. A contract for a supplemental RI was awarded in September 2020; period of performance is through 30 September 2025. US Army Corps of Engineers (USACE)-Baltimore District is currently conducting semi-annual creek walks as part of an ongoing TCRA to prevent/monitor migration of MEC and MPPEH within the MRS.

Cleanup Strategy

The exit strategy for this site includes completion of a supplemental RI (already funded) to determine nature and extent of contamination. Groundwater is included in this RI separate from the groundwater actions at RVAAP-66. A FS to evaluate remedial alternatives will be required, followed by a PP and ROD. Semi-annual creek walks will continue until the ROD is finalized. At this time there is insufficient documentation to plan for further actions.

RVAAP-060-R-01_BLOCK D IGLOO

HQAES ID: 39747.1062

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 9/30/2026

RC Date: 9/30/2026

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

<i>Phases</i>	<i>Start</i>	<i>End</i>
PA	9/18/2002	12/21/2003
SI	9/30/2005	5/31/2008
RI/FS	10/15/2008	11/12/2019
RD	9/30/2021	4/30/2023
IRA	--	--
RA(C)	9/30/2021	9/30/2026
RA(O)	--	--
LTM	--	--

Site Narrative

The Block D Igloo MRS (RVAAP-060-R-01) was the result of an explosion that occurred at Igloo 7-D-15 ("D" Block) on March 24, 1943. A munitions response was conducted by Explosives Ordnance Disposal team and a follow-on site assessment was later conducted by Huntsville District to assess the type of munitions stored in the bunker, as well as the size of the debris field created by the explosion. The site assessment identified a 3,000-foot blast radius around the former storage bunker. A SI was completed for the Block D Igloo site in 2008. The SI recommended 340.20 acres be evaluated for MEC and MC. In July 2009, a contract was awarded to characterize the nature and extent of MEC and MC contamination at the Block D Igloo MRS (RVAAP-060-R-01). The RI was completed in 2015. The RI Report concluded that a release of MEC had occurred, but the extent of the release was much less than suspected in the SI. Some MC was detected, but not at levels that presented an unacceptable risk to potential receptors. The MRS acreage was reduced to 101.6 acres. The RI Report recommended evaluation of remedial alternatives for MEC in a FS. MPPEH was confirmed at the site. The FS was completed in June 2018. The PP was completed in January 2019. The ROD was completed in November 2019. A surface clearance was completed in January 2021 and the Final After Action Report was completed in June 2021. The surface clearance was completed to support installation timber harvest of this area to prepare it for the remedial action. A performance-based contract was awarded in September 2021 to perform RD/RA(C). Period of performance ends 29 September 2026.

Cleanup Strategy

The exit strategy for this site includes a MEC removal action to achieve UU/UE at this site. Following the completion of the removal action, a NFA Explosives Safety Submittal will be completed. Costs for this site are tracked at RVAAP-063-R-01 (39747.1057).

SITE CLOSEOUT SUMMARY

HQAES ID	Site Name	Site Closeout Date	Program Code
39747.1002	RVAAP-02_ERIE BURNING GROUNDS	1/31/2008	ENV Restoration, Army
39747.1003	RVAAP-03_OPEN DEMOLITION AREA #1	10/6/2021	ENV Restoration, Army
39747.1004	RVAAP-04_OPEN DEMOLITION AREA #2	1/31/2008	ENV Restoration, Army
39747.1007	RVAAP-07_BLD 1601 HAZ WST STG	6/30/1989	ENV Restoration, Army
39747.1013	RVAAP-13_BLDG 1200-DILUTION\SETTLING PON	5/15/2015	ENV Restoration, Army
39747.1014	RVAAP-14_LOAD LINE 6 EVAPORATION UNIT	6/30/1989	ENV Restoration, Army
39747.1015	RVAAP-15_LOAD LINE 6 TREATMENT PLANT	1/31/2000	ENV Restoration, Army
39747.1016	RVAAP-16_FUZE&BOOSTER QUARRY LANDFILL/PO	9/30/2010	ENV Restoration, Army
39747.1017	RVAAP-17_DEACTIVATION FURNACE	6/30/1989	ENV Restoration, Army
39747.1018	RVAAP-18_LOAD LINE 12 WWT PLANT	3/31/1997	ENV Restoration, Army
39747.1019	RVAAP-19_LANDFILL NORTH OF WINKLEPECK BU	7/20/20	ENV Restoration, Army
39747.1020	RVAAP-20_SAND CREEK STP	6/30/1989	ENV Restoration, Army
39747.1021	RVAAP-21_DEPOT STP	6/30/1989	ENV Restoration, Army
39747.1022	RVAAP-22_GEORGE RD STP	6/30/1989	ENV Restoration, Army
39747.1023	RVAAP-23_UNIT TRAINING EQUIPMENT SITE US	11/30/1989	ENV Restoration, Army
39747.1024	RVAAP-24_DEPOT AREA	6/30/1989	ENV Restoration, Army
39747.1025	RVAAP-25_BLD 1034 MOTOR POOL AST	6/30/1989	ENV Restoration, Army
39747.1026	RVAAP-26_FUZE BOOSTER AREA SETTLING TANK	1/31/2000	ENV Restoration, Army

HQAES ID	Site Name	Site Closeout Date	Program Code
39747.1027	RVAAP-27_BUILDING 854 PCB STORAGE	6/30/1989	ENV Restoration, Army
39747.1028	RVAAP-28_MUSTARD AGENT BURIAL SITE	7/27/2017	ENV Restoration, Army
39747.1029	RVAAP-29_UPPER AND LOWER COBBS PONDS	6/7/2019	ENV Restoration, Army
39747.1030	RVAAP-30_LL 7 TREATMENT PLANT	1/31/2000	ENV Restoration, Army
39747.1031	RVAAP-31_ ORE PILE RETENTION POND	1/31/2000	ENV Restoration, Army
39747.1032	RVAAP-32_40 MM FIRING RANGE	9/30/2007	ENV Restoration, Army
39747.1033	RVAAP-33_LOAD LINE 6	5/12/2018	ENV Restoration, Army
39747.1035	RVAAP-35_1037 BUILDING-LAUNDRY WASTEWATE	9/30/1998	ENV Restoration, Army
39747.1036	RVAAP-36_PISTOL RANGE	9/30/2005	ENV Restoration, Army
39747.1037	RVAAP-37_PESTICIDE BUILDING S-4452	2/29/1996	ENV Restoration, Army
39747.1039	RVAAP-39_LOAD LINE 5	3/16/2018	ENV Restoration, Army
39747.1040	RVAAP-40_LOAD LINE 7	6/30/2019	ENV Restoration, Army
39747.1041	RVAAP-41_LOAD LINE 8	6/16/2018	ENV Restoration, Army
39747.1043	RVAAP-43_LOAD LINE 10	5/11/2017	ENV Restoration, Army
39747.1044	RVAAP-44_LOAD LINE 11	5/12/2018	ENV Restoration, Army
39747.1046	RVAAP-46_BUILDING F-15 AND F-16	7/20/2020	ENV Restoration, Army
39747.1047	RVAAP-47_BUILDING T-5301	12/31/2000	ENV Restoration, Army
39747.1048	RVAAP-48_ANCHOR TEST AREA	4/15/2015	ENV Restoration, Army
39747.1049	RVAAP-49_CENTRAL BURN PITS	7/31/2009	ENV Restoration, Army
39747.1052	PBC at Ravenna_PBA 2008	7/15/2015	ENV Restoration, Army
39747.1053	RVAAP-034-R-01_SAND CREEK DUMP	3/15/2016	ENV Restoration, Army

HQAES ID	Site Name	Site Closeout Date	Program Code
39747.1054	RVAAP-012-R-01_LOAD LINE #12	5/31/2008	ENV Restoration, Army
39747.1055	RVAAP-064-R-01_Old Hay Field MRS	5/31/2008	ENV Restoration, Army
39747.1056	RVAAP-046-R-01_BUILDING #F-15 AND F-16	5/31/2008	ENV Restoration, Army
39747.1058	RVAAP-061-R-01_BLOCK D INGLOO-TD	6/18/2020	ENV Restoration, Army
39747.1059	RVAAP-016-R-01_FUZE AND BOOSTER QUARRY	6/18/2020	ENV Restoration, Army
39747.1060	RVAAP-002-R-01_ERIE BURNING GROUNDS	6/18/2020	ENV Restoration, Army
39747.1063	RVAAP-050-R-01_ATLAS SCRAP YARD	6/18/2020	ENV Restoration, Army
39747.1064	RVAAP-048-R-01_ANCHOR TEST AREA	5/31/2008	ENV Restoration, Army
39747.1065	RVAAP-032-R-01_40MM FIRING RANGE	6/18/2020	ENV Restoration, Army
39747.1066	RVAAP-008-R-01_LOAD LINE #1	3/15/2016	ENV Restoration, Army
39747.1067	RVAAP-019-R-01_LANDFILL NORTH OF WINKLEPECK	6/18/2020	ENV Restoration, Army
39747.1068	RVAAP-005-R-01_WINKLEPECK BURNING GROUND	3/31/2006	ENV Restoration, Army
39747.1069	RVAAP-062-R-01_WATER WORKS #4 DUMP	3/15/2016	ENV Restoration, Army
39747.1070	RVAAP-001-R-01_RAMSDALL QUARRY AREA 2	6/18/2020	ENV Restoration, Army
39747.1071	RVAAP-033-R-01_FIRESTONE TEST FACILITY	3/15/2016	ENV Restoration, Army
39747.1074	RVAAP-001-R-02_RAMSDALL QUARRY AREA 1	6/18/2020	ENV Restoration, Army
39747.1076	CC RVAAP-68_ELECTRIC SUBSTATIONS (E&W NO	5/31/2017	ENV Restoration, Army

HQAES ID	Site Name	Site Closeout Date	Program Code
39747.1079	CC RVAAP-72_FACILITY-WIDE USTs	7/15/2015	ENV Restoration, Army
39747.1080	CC RVAAP-73_FACILITY-WIDE COAL STORAGE	4/24/2019	ENV Restoration, Army
39747.1081	CC RVAAP-74_BLDG 1034 MOTOR POOL HYDRAUL	10/5/2021	ENV Restoration, Army
39747.1082	CC RVAAP-75_GEORGE ROAD STP MERCURY SPIL	3/15/2016	ENV Restoration, Army
39747.1084	CC RVAAP-77_BLDG 1037 LAUNDRY WASTEWATER	2/15/2015	ENV Restoration, Army
39747.1088	CC RVAAP-80_GROUP 2 PROPELLANT CAN TOPS	5/31/2017	ENV Restoration, Army
39747.1091	CC RVAAP-83_FORMER BUILDINGS 1031 AND 10	8/15/2015	ENV Restoration, Army
39747.1092	CC RVAAP-71_BARN NO. 5 PETROLEUM RELEASE	2/15/2015	ENV Restoration, Army

COMMUNITY INVOLVEMENT

Technical Review Committee (TRC) Establishment Date:	N/A
Community Involvement Plan (Date Published):	March 2021
Restoration Advisory Board (RAB) Establishment Date:	10/31/1996
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Additional Community Involvement:	<p>The RVAAP RAB was established in 1996 and has 25 members consisting of 21 community members and two noncommunity members. The community members include an appointee from each of the surrounding six townships, one representative appointed by the Trumbull County Commissioners, a representative appointed by the Portage County Commissioners, and 15 members chosen from the general public. One of the community members is elected as a community co-chair by majority vote. The two non-community members include a representative of the Ohio EPA and an Army installation co-chair appointed by the installation. A RAB operating procedure was adopted by all members on Feb. 19, 1997. A copy can be found on the RVAAP web site www.RVAAP.org. The RVAAP RAB generally meets twice a year. All meetings are open to the public and are rotated among public places within the townships around the installation. Current topics are addressed at the meetings and a speaker is generally featured. The minutes of all RAB meetings are recorded. Meetings are announced in the local media. All restoration program records are made available to the RAB members and any other interested parties through the two public repositories. Documents are also available at www.RVAAP.org. The Community Relations Plan is updated regularly. The plan outlines the many ways that RVAAP involves the community in the restoration activities, including through the RAB, site tours, and the website.</p>
Administrative Record is located at:	CJAG Environmental Office 1438 State Route 534 SW, Newton Falls, OH 44444
Information Repository is located at:	Reed Memorial Library 167 E Main St., Ravenna, OH 44266; Newton Falls Public Library, 204 S Canal St, Newton Falls, OH 44444

Current Technical Assistance for Public Participation (TAPP):	None
TAPP Title:	N/A
Potential TAPP:	N/A

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Review Summary Table

Status	Start Date	End Date	End FY
COMPLETE	7/1/2011	8/1/2012	2012
COMPLETE	7/1/2016	8/1/2017	2017
COMPLETE	6/06/2021	9/04/2022	2022
FUTURE	5/15/2026	8/15/2027	2027

ROD/DDs associated with the last Five-Year/Periodic Review

Associated ROD/DD Name	HQAES ID
ROD FOR LOAD LINE 1 -4	39747.1008, 39747.1009, 39747.1010, 39747.1011
ROD LOAD LINE 12	39747.1012
RAMSDELL QUARRY LANDFILL ROD	39747.1001
WINKLEPECK BURNING GROUNDS ESD	39747.1005
ROD DUMP ALONG PARIS-WINDHAM ROAD	39747.1051

Results, Actions & Plans

Results	Actions	Plans
The remedies are protective of health and the environment. Risk from chemicals of concern in surface/subsurface soil and sediments at Load Lines 1-4 and 12 have been reduced to meet remedial goal options for Commercial/Industrial land use.	Continue General Land Use Control Awareness Training annually for facility personnel, staff and tenants of Camp James A. Garfield Joint Military Training Center.	Land use controls to continue to deter unauthorized access and limit exposure. Next five year review scheduled for FY27.

LAND USE CONTROLS (LUC) SUMMARY

ROD/DD	LUC Title	HQAES ID
RAMSDELL QUARRY LAND	LUC RAMSDELL QUARRY LF	39747.1001
WINKLEPECK BURNING G	FINAL REVISED PROPERTY MANAGEMENT PLAN 2018	39747.1005
ROD FOR LOAD LINE 1 -4	LOAD LINE 1	39747.1008
ROD FOR LOAD LINE 1 -4	LOAD LINE 2	39747.1009
ROD FOR LOAD LINE 1 -4	LOAD LINE 3	39747.1010
ROD FOR LOAD LINE 1 -4	LOAD LINE 4	39747.1011
ROD LOAD LINE 12	LOAD LINE 12	39747.1012
ROD DUMP ALONG PARIS WINDHAM ROAD	DUMP ALONG PARIS WINDHAM ROAD	39747.1051

RICKENBACKER/COLUMB US

Army Cleanup Program

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ACRONYMS

Acronym	Definition
AEDB-R	Army Environmental Database - Restoration
AFFF	Aqueous Film Forming Foam
AOI	Area of Interest
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
DD	Decision Document
ENV	Environmental
FS	Feasibility Study
HQAES	Headquarters Army Environmental System
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
LUC	Land Use Control
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
ng/L	Nanogram/Liter
PA	Preliminary Assessment
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RAE	Rickenbacker Army Enclave
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place

Acronym	Definition
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SL	Screening Level
TAPP	Technical Assistance for Public Participation
TRC	Technical Review Committee
UST	Underground Storage Tank
WBS	Work Breakdown Structure

PHASE TRANSLATION TABLE

HQAES Phase ID	CERCLA Phase	RCRA Phase	RCRA UST Phase
.01	Preliminary Assessment (PA)	RCRA Facility Assessment (RFA)	Initial Site Characterization (ISC)
.02	Site Inspection (SI)	Confirmation Sampling (CS)	Investigation (INV)
.03	Remedial Investigation/ Feasibility Study (RI/FS)	RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)	Corrective Action Plan (CAP)
.04	Remedial Design (RD)	Design (DES)	Design (DES)
.05	Interim Remedial Action (IRA)	Interim Measure (IM)	Interim Remedial Action (IRA)
.06	Remedial Action (Construction) (RA(C))	Corrective Measures Implementation (Construction) (CMI(C))	Implementation (Construction) (IMP(C))
.07	Remedial Action (Operation) (RA(O))	Corrective Measures Implementation (Operation) (CMI(O))	Implementation (Operation) (IMP(O))
.08	Long-Term Management (LTM)	Long-Term Management (LTM)	Long-Term Management (LTM)

SITE ALIAS LIST

HQAES ID	AEDB-R Reference	Site Alias
4418A.1001	CCOH2020-02-P_RICKENBACKER/COLUMBUS PFAS	--

RICKENBACKER/COLUMB US

COMPLIANCE CLEANUP SITES

CCOH2020-02-P_RICKENBACKER/COLUMBUS PFAS

HQAES ID: 4418A.1001

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 08/15/2032

RC Date: 08/15/2032

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	Start	End
PA	6/18/2018	5/30/2019
SI	12/6/2019	08/16/2024
RI/FS	8/15/2025	8/15/2032
RD	--	--
IRA	--	--
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

A Preliminary Assessment (PA) site visit was completed at Rickenbacker Army Enclave (RAE) in July 2018 to assess potential poly-fluoroalkyl substances (PFAS) release areas and exposure pathways to receptors. Three areas of interest (AOIs) related to a potential PFAS release were identified at the facility during the PA, C26 Hangar (AOI 1), Drainage Ditch (AOI 2), Helicopter Ramp Area (AOI 3). AOI 1 was identified due to the initial testing of an Aqueous Film-Forming Foam (AFFF) fire suppression system as well as historic outside storage of a TriMax tank from 2002-2013. AOI 2 was identified due to known or suspected releases from the Ohio Air National Guard property which drains into the drainage ditches throughout RAE. AOI 3 was identified due to the historical storage of ten TriMax 30 tanks outside around the helicopter ramp. Potential to impact likely receptors via groundwater, soil and/or sediment was identified.

A Site Inspection (SI) which was inconclusive was completed in December 2022. A Supplemental SI was contracted and is underway. Field work was completed in June 2023. Preliminary Supplemental SI analytical results indicate groundwater samples at AOI 2 and AOI 3 had an exceedance of perfluorooctanesulfonic acid (PFOS) above the 4 nanograms per liter (ng/L) groundwater screening level (SL) screening level and a groundwater sample at AOI 3 had an exceedance of perfluorooctanoic acid (PFOA) above its groundwater screening level of 6 ng/L. Based on these preliminary Supplemental SI results, a Remedial Investigation (RI) for AOIs 2 and 3 is warranted.

Cleanup Strategy

A supplemental SI is underway at the site. A RI/Feasibility Study (FS) will be required in the future. Further actions will be evaluated upon completion of the RI/FS.

SITE CLOSEOUT SUMMARY

None

COMMUNITY INVOLVEMENT

Technical Review Committee (TRC) Establishment Date:	N/A
Community Involvement Plan (Date Published):	TBD
Restoration Advisory Board (RAB) Establishment Date:	N/A
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Additional Community Involvement:	Community Involvement Plan, Administrative Record and Information Repository will all be developed as the project progresses.
Administrative Record is located at:	TBD
Information Repository is located at:	TBD
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Review Summary Table

None

ROD/DDs associated with the last Five-Year/Periodic Review

None

Results, Actions & Plans

None

LAND USE CONTROLS (LUC) SUMMARY

None

CANTON/ORGANIZATION- AL MAINTENANCE SHOP (OMS) #5

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ACRONYMS

Acronym	Definition
AASF	Army Aviation Support Facility
AEDB-R	Army Environmental Database - Restoration
AFFF	Aqueous Film-Forming Foam
AOI	Area of Interest
AST	Aboveground Storage Tank
BUSTR	Bureau of Underground Storage Tank Regulations
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
DD	Decision Document
DERP	Defense Environmental Restoration Program
ENV	Environmental
EPA	Environmental Protection Agency
FS	Feasibility Study
GENX	Hexafluoropropylene Oxide Dimer Acid and its Ammonium Salt
HQAES	Headquarters Army Environmental System
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
LUC	Land Use Control
MR	Munitions Response
MRSP	Munitions Response Site Prioritization Protocol
NFA	No Further Action
OHARNG	Ohio Army National Guard
OMS	Organizational Maintenance Shop
OSD	Office of the Secretary of Defense
PA	Preliminary Assessment
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	Perfluorobutanesulfonic Acid
PFNA	Perfluorononanoic Acid

Acronym	Definition
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
ppm	Parts Per Million
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSL	Regional Screening Level
SI	Site Inspection
SL	Screening Level
TAPP	Technical Assistance for Public Participation
TRC	Technical Review Committee
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
WBS	Work Breakdown Structure

PHASE TRANSLATION TABLE

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.03	Remedial Investigation/ Feasibility Study (RI/FS)	RCRA Facility Investigation/Corrective Measures Study (RFI/CMS)	Corrective Action Plan (CAP)
.04	Remedial Design (RD)	Design (DES)	Design (DES)
.05	Interim Remedial Action (IRA)	Interim Measure (IM)	Interim Remedial Action (IRA)
.06	Remedial Action (Construction) (RA(C))	Corrective Measures Implementation (Construction) (CMI(C))	Implementation (Construction) (IMP(C))
.07	Remedial Action (Operation) (RA(O))	Corrective Measures Implementation (Operation) (CMI(O))	Implementation (Operation) (IMP(O))
.08	Long-Term Management (LTM)	Long-Term Management (LTM)	Long-Term Management (LTM)

SITE ALIAS LIST

HQAES ID	AEDB-R Reference	Site Alias
4410A.1003	OH2020-01-P_GREEN AASF1 PFAS CONTAMINATION	--
4410A.1002	CCOH2021-01_AASF1 FORMER JET FUEL USTS	--

CANTON/OMS#5

COMPLIANCE CLEANUP SITES

CCOH2021-01_AASF-1 FORMER JET FUEL USTS

HQAES ID: 4410A.1002

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSP: Not assigned

RIP Date: 12/31/2024

RC Date: 12/31/2024

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	Start	End
RFA	12/1/2020	12/31/2020
CS	4/30/2021	10/30/2022
RFI/CMS	3/15/2022	12/31/2024
DES	--	--
IRA	--	--
CMI(C)	--	--
CMI(O)	--	--
LTM	--	--

Site Narrative

Two (2) 20,000-gallon fiberglass aviation fuel underground storage tanks (USTs) and one (1) 550-gallon fiberglass used oil UST were removed from the Army Aviation Support Facility (AASF) 1 fueling compound in December 2020. The USTs were replaced by two aviation fuel aboveground storage tanks (ASTs). Water collected in the cavities which was assumed to be groundwater and was pumped and disposed. Soil samples were collected from cavity sidewalls and groundwater samples were collected from both cavities in lieu of bottom soil samples. Pea gravel fill present around the USTs in both cavities was stockpiled and sampled and eventually reused as backfill. The USTs were crushed in roll-off dumpsters and disposed off-site as nonhazardous waste. Approximately 975 gallons of groundwater from both cavities was pumped into frac tanks, sampled, and disposed off-site as nonhazardous waste. All soil sample results were below the Bureau of Underground Storage Tank Regulations (BUSTR) Action Levels. Groundwater sample results (collected from the bottom of the excavation cavities when groundwater recharged) for Naphthalene (0.0162 parts per million (ppm)) and 1,2,4 Trimethylbenzene (0.0387 ppm) in the aviation fuel UST cavity and Naphthalene (0.00227 ppm) and 1,2,4 Trimethylbenzene (0.031 ppm) in the used oil UST cavity were above the BUSTR Action Levels (Naphthalene (0.0014 ppm) and 1,2,4 Trimethylbenzene (0.015 ppm)). The Closure Report was submitted to BUSTR in March 2021. Due to groundwater sample results above Action Levels, a Tier 1 Source Investigation was recommended.

A Tier 1 Evaluation was completed in March 2022. Ten soil borings were advanced. Soil results were below BUSTR action levels. Seven groundwater wells were installed (one remained from a prior investigation). Groundwater results confirmed the presence of Naphthalene (0.0344 ppm) and 1,2,4 Trimethylbenzene (0.0415 ppm) above the BUSTR Action Levels and a Tier 2 Evaluation was recommended.

The Tier 2 Evaluation was submitted to BUSTR in March 2023. Four soil borings which were completed as monitoring wells were advanced during the Tier 2 Evaluation. Soil sample results were below regulatory limits. Naphthalene in MW-01 (0.0229 ppm) was above the BUSTR regulatory limit. 1,2,4

CANTON/OMS#5 Installation Action Plan

Trimethylbenzene (0.00212 ppm) was below the BUSTR regulatory limit. BUSTR submitted a response on March 22, 2023 requesting additional maps, land use verification, an additional monitoring well, and model validation. Upon discussion with BUSTR on April 27, 2023, quarterly groundwater monitoring was requested instead of additional well installation. A revised Tier 2 Evaluation will be submitted to BUSTR in September 2023.

Cleanup Strategy

A year of quarterly groundwater monitoring to assess groundwater contamination at the site (for Napthalene and 1,2,4 Trimethylbenzene) will be required. Additional activities beyond the quarterly groundwater monitoring will be evaluated once monitoring is completed.

CANTON/OMS#5

INSTALLATION RESTORATION PROGRAM SITES

OH2020-01-P_GREEN AASF1 PFAS CONTAMINATION

HQAES ID: 4410A.1003

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 9/15/2033

RC Date: 9/15/2033

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: IR

Phases	Start	End
PA	6/18/2018	6/15/2020
SI	12/6/2019	12/31/2022
RI/FS	9/15/2026	9/15/2033
RD	--	--
IRA	--	--
RA(C)	--	--
RA(O)	--	--
LTM	--	--

Site Narrative

Green AASF 1 is located at 6000 W Airport Dr, North Canton, Ohio. The facility is home to the 238th Aviation Regiment and is located in Green Township, Summit County, Ohio, on the north portion of the Akron-Canton Regional Airport. The property is leased by the State of Ohio, Adjutant General's Department from the Akron-Canton Airport. The facility currently has an AASF building, an aviation support area, helicopter parking area, vehicle maintenance area, and an armory. Hover operations and other flight training activities occur on and near the helicopter pad.

A Preliminary Assessment (PA) site visit for per- and polyfluoroalkyl substances (PFAS) was performed in July 2018 at the Ohio Army National Guard (OHARNG) Green AASF #1 in Green Township, Summit County, Ohio, to assess potential PFAS release areas and exposure pathways to receptors. Based on potential aqueous film-forming foam (AFFF) releases at the three areas of interest (AOIs) identified, there is potential for exposure to PFAS contamination in soil, groundwater, surface water, and sediment for Green AASF #1 staff and other workers.

A Site Inspection (SI) was completed at the site and a final report released in December 2022. The original SI report indicated the site would be No Further Action (NFA). However, after comparing these results to new Office of Secretary of Defense (OSD) screening levels (SLs) released in FY23, the original December 2022 SI report conclusions have been retracted. Comparison to new SLs has identified exceedances of PFAS constituents perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) in groundwater. The comment response letter provided to the regulators indicated that the 'facility' (it is assumed this includes all three AOIs at the site) would move to a Remedial Investigation (RI). The Ohio Environmental Protection Agency (EPA) has concurred with this statement.

The subject site was tracked as 4410A.1001 under the Compliance-related Cleanup (CC) program. In March 2023, the site became Defense Environmental Restoration Program (DERP)-eligible.

Cleanup Strategy

A RI/Feasibility Study (FS) is anticipated at this site and will be funded in the future. Future actions cannot be determined until the RI/FS is complete.

SITE CLOSEOUT SUMMARY

HQAES ID	Site Name	Site Closeout Date	Program Code
4410A.1001	CCOH2020-01-P_GREEN AASF1 PFAS CONTAMINATION	12/31/2022	Compliance Cleanup

COMMUNITY INVOLVEMENT

Technical Review Committee (TRC) Establishment Date:	N/A
Community Involvement Plan (Date Published):	TBD
Restoration Advisory Board (RAB) Establishment Date:	N/A
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Additional Community Involvement:	Community Involvement Plan, Administrative Record and Information Repository will all be developed as the project progresses.
Administrative Record is located at:	TBD
Information Repository is located at:	TBD
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Review Summary Table

None

ROD/DDs associated with the last Five-Year/Periodic Review

None

Results, Actions & Plans

None

LAND USE CONTROLS (LUC) SUMMARY

None