FY2009

RAVENNA ARMY AMMUNITION PLANT

Installation Action Plan

Printed 18 September 2009

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), the US Army Corps of Engineers - Louisville District, the Ravenna Army Ammunition Plant, the Ohio Environmental Protection Agency, the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

Acronyms

AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
bgs	below ground surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
COC	Contaminants of Concern
CTC	Cost-to-Complete
CTT	Closed, Transferred, and Transferring
CWM	Chemical Warfare Materiel
CY	calendar year
cy	cubic yard
DD	Decision Document
DFFO	Director's Final Findings & Orders
DQO	Data Quality Objective
EE/CA	Engineering Evaluation/Cost Analysis
EOD	Explosive Ordnance Disposal
ER,A	Environmental Restoration, Army
FFS	Focused Feasibility Study
FS	Feasibility Study
ft	feet
FWGWMP	Facility-wide Groundwater Monitoring Program
FY	Fiscal Year
GO/CO	Government-Owned/Contractor-Operated
GW	groundwater
HMX	Cyclotetramethylenetetranitramine
HRR	Historical Records Review
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
K	thousand
LAP	Load, Assemble and Pack
LL	Load Line
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituent
MEC	Munitions and Explosives of Concern
mm	millimeter
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MRS	Munitions Response Site
MRSPP	Munition Response Site Prioritization Protocol
N/A	Not Applicable
NACA	National Advisory Committee on Aeronautics
NFA	No Further Action

Acronyms

NGB	National Guard Bureau
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OB	Open Burn
OD	Open Detonation
ODA	Open Demolition Area
OE	Ordnance and Explosives
OHARNG	Ohio Army National Guard
Ohio EPA	Ohio Environmental Protection Agency
ORIS	Operational Range Inventory System
OSC	Operations Support Command
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PBA	Performance-Based Acquisition
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyl
PP	Proposed Plan
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Cyclotrimethylenetrinitramine
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RTLS	Ravenna Training and Logistics Site
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Application International Corporation
SI	Site Inspection
SVOC	Semi-Volatile Organic Compound
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TCRA	Time Critical Response Action
TD	Thermal Decomposition
TNT	Trinitrolouene
TOW	Tube-launched, Optically-tracked, Wire-guided
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USATCES	US Army Technical Center for Explosives Safety
USATHAMA	US Army Toxic and Hazardous Materials Agency (now USAEC)

Acronyms

USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compounds

Installation Information

Installation Locale

Installation Size (Acreage): 21,683.28
City: Ravenna
County: Portage and Trumbull
State: Ohio
Other Locale Information

Prior to 2002, the Ravenna Army Ammunition Plant (RVAAP) was a 21,419 acre installation. In 2003 the property boundary was resurveyed by the Ohio Army National Guard (OHARNG) and the actual acreage was found to be 21,683.289. As of February 2006, a total of 20,403 acres has been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio and licensed to the OHARNG as a military training site.

The current RVAAP consists of approximately 1,280 acres in several distinct parcels scattered throughout the OHARNG Ravenna Training and Logistics Site (RTLS). The RVAAP and the RTLS are collocated on contiguous parcels of property. The RTLS is in northeastern Ohio within Portage and Trumbull counties, approximately three miles east-northeast of the city of Ravenna and approximately one mile northwest of the city of Newton Falls. The RVAAP portions of the property are solely located within Portage County. The RTLS (inclusive of the RVAAP) is approximately 11 miles long and 3.5 miles wide and is bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south, Garret, McCormick, and Berry roads on the west, the Norfolk Southern Railroad on the north, and State Route 534 on the east.

The RTLS is surrounded by several communities. Windham is to the north, Garrettsville is six miles to the northwest, Newton Falls is one mile to the southeast, Charlestown is to the immediate southwest, and Wayland is three miles to the south. When the RVAAP was operational the RTLS did not exist and the entire 21,683 acre parcel was a government owned/contractor-operated (GOCO) industrial facility. Because the RVAAP Installation Restoration Program (IRP) encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP, unless otherwise specifically stated, references to the RVAAP in this document are considered to be inclusive of the historical extent of the RVAAP, which is inclusive of the combined acreages of the current RTLS and RVAAP.

Installation Mission

In fiscal year (FY)93, the mission of RVAAP was changed from inactive-maintained to modified caretaker status (limited mission). PIKA International of Stafford, Texas is the current operating contractor.

Lead Organization

Base Realignment and Closure Division

Lead Executing Agencies for Installation

US Army Corps of Engineers, Louisville District

Regulator Participation

Federal	US Environmental Protection Agency
State	Ohio Environmental Protection Agency

National Priorities List (NPL) Status

No NPL Sites have been identified

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

RAB established 1996

Installation Information

Installation Program Summaries

IRP

Primary Contaminants of Concern: Asbestos, Chemical weapon munitions (CWM)/Chemical agent, Explosives, Metals, Nitrate/Nitrite, Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Sediment, Soil, Surface Water

MMRP

Primary Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Affected Media of Concern: Groundwater, Sediment, Soil, Surface Water

Cleanup Program Summary

Installation Historic Activity

RVAAP is a government-owned/contractor-operated (GO/CO) US Army Excess facility. In 1992 RVAAP was declared excess to the Army's needs. Bulk explosives were stored at the facility until 2004. In August 1940 the US Government purchased approximately 25,000 acres in the northeastern part of Ohio in Portage and Trumbull counties and in September 1940 construction of the load, assemble, and pack (LAP) facility started. In August 1941, munitions production started. The primary missions of the facility included loading, assembling and packaging of large caliber ammunition and depot storage. The facility changed names several times during its history before being designated the RVAAP in 1961.

From September 1940 until the end of World War II, when plant operations were turned over to the ordnance department, the Atlas Powder Company operated the facility. From 1946 to 1949, the ammonium nitrate line was operated by the Silas Mason Company for the production of ammonium nitrate fertilizer. In 1950 the facility was placed in standby status and was reactivated during the Korean War for loading and packing major caliber projectiles and components. In August 1957 all production ended. In October 1957, the installation was again placed in a standby condition.

From January 1961 to July 1961, Load Line 12 was used to melt-out and recover explosives from bombs; it was the first operation of this type in the ammunition industry. In May 1968 the RVAAP was once again reactivated to produce munitions on three load lines and two component lines in support of the Vietnam War. These facilities were subsequently deactivated in August 1972. A mission for the demilitarization of various munitions continued on a periodic basis through 1992.

In 1980 RVAAP received a Resource Conservation and Recovery Act (RCRA) Part A permit for the storage and treatment of off-specification munitions and munitions-related waste. In 1992, RVAAP submitted a RCRA Part B permit application for the installation's open burning and open detonation (OB/OD) grounds and a hazardous waste storage building. Open demolition area (ODA) No. 2 (RVAAP-04) is now the only active RCRA unit at the RVAAP. All others have been closed.

In May 1999 the Operations Support Command (OSC) transferred control and operation of 16,164 acres to the National Guard Bureau (NGB). In March 2002 an agreement was signed to transfer an additional 3,774 uncontaminated acres to the NGB with the remaining acreage to be transferred as restoration of the sites is completed. As of February 2006 a total of 20,403 acres of the former RVAAP had been transferred to the NGB for use by the OHARNG.

Completion of the IRP, the Military Munitions Response Program (MMRP), and decontamination and demolition of excess buildings for transfer of all property to NGB, with subsequent transfer of accountability to OHARNG, is expected by 2018.

In June 2004, the Army and the Ohio Environmental Protection Agency (Ohio EPA) signed the Director's Final Findings & Orders (DFFO) to authorize continued use of Open Demolition Area No. 2 to support environmental restoration activities (blow in place and emergency demolition actions are authorized without the need to obtain emergency permits). The orders also authorized the investigation of deactivation furnace soils under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and groundwater monitoring at RVAAP-01 and RVAAP-04. The Ravenna Army Ammunition Plant will close the Demolition Area No. 2 RCRA unit when it is no longer needed to support restoration.

In 2006, a decision was made to abandon plans for the thermal decomposition of the explosive-contaminated buildings and use conventional demolition methods with special precautions.

Continued support of all of the stakeholders at RVAAP (including the public) will be needed if schedules, objectives, and cost estimates identified in this IAP are to be met. Completion of the IRP and MMRP projects at some sites may be delayed due to lack of funding for removal of large concrete structures and investigation of sewer systems.

RVAAP is not on the United States Environmental Protection Agency (USEPA) NPL, although it is in the USEPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database. Management of the IRP sites follows CERCLA requirements. There are a number of other regulatory programs addressing other non-IRP sites.

Installation Program Cleanup Progress

IRP

Prior Year Progress: An RI work plan was completed for site RVAAP-67. Data quality objectives (DQO) and geophysical work plans were completed for sites RVAAP-03, 05, and 25. Records of decisions (ROD) were completed for sites RVAAP-01, -12, and -49. Remedial designs were completed for sites RVAAP-01, RVAAP-12, and RVAAP-16. RAs were completed for sites RVAAP-RVAAP-05 and RVAAP-16.

An IRA was completed at site RVAAP-49. Facility-wide groundwater (GW) quarterly sampling continued and a final report was issued.

Future Plan of Action: RI phase 1 will be completed at sites RVAAP-22, -24, -25, -35, -68, -69, -70, -71, -72, -73, and 74. RIs, FSs and PPs will be completed for sites RVAAP-06, -12, -13, -19, -29, -33, -38, -39, -40, -41, -42, -43, -44, -45, -46 and -50. FS and PPs will be completed for sites -03, -28, -34, -51 and -67. RODs will be completed for site RVAAP-51 and Load Line 12 GW. RA will be completed at sites RVAAP-01 and -12. Facility-wide GW quarterly sampling will continue and a final report produced.

MMRP

Prior Year Progress: A performance-based acquisition (PBA) will be awarded in April 2009. The base award will be initiated to include RIs at five sites and remedy-in-Place/response complete (RIP/RC) at two sites. An IRA is planned for RVAAP-004-R-01.

Future Plan of Action: RIs will continue for seven sites.

Land Use Control (LUC) Summary

LUC title: Load Lines 1-4

Site(s): RVAAP-08

ROD/DD title: Load Line 1-4

Location of LUC

Load Lines 1-4 (RVAAP-08, RVAAP-09, RVAAP-10, and RVAAP-11). Only RVAAP-08 is selected in AEDB-R because AEDB-R will not allow the selection of other sites since the costs are not carried under the individual sites.

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards

Types of Institutional Controls: None

Date in Place: 200707

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Other Army Entity

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: INORGANICS, METALS, NITROAROMATICS, ORGANICS, PAH, PCBs, PESTICIDES, VOC

Additional Information

N/A

LUC title: Winklepeck Burning Ground

Site(s): RVAAP-05

ROD/DD title: Winklepeck Burning Ground

Location of LUC

Winklepeck Burning Ground

Land Use Restriction: Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

Types of Engineering Controls: Fences, Guards, Markers, Signs

Types of Institutional Controls: Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200808

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Other Army Entity

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, NITROAROMATICS, ORGANICS, PAH, PCBs, Unexploded Ordnance(UXO), VOC

Additional Information

N/A

Parcel Summary

Summary of Parcel Prioritization and Transfer Strategy

Parcel Name: 40MM Test Range/Waterworks Ponds
Parcel Size: 58.00
Associated Sites: RVAAP-16, RVAAP-016-R-01, RVAAP-032-R-01
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Name: Anchor Test Area
Parcel Size: 2.00
Associated Sites: RVAAP-48
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Name: Building 1039
Parcel Size: .40
Associated Sites:
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: NGB requires a letter from Ohio EPA indicating property acceptable for planned reuse.

Parcel Summary

Parcel Name: Buildings 1026, 1034, 1034A, 1037, 1037A, 1038 etc
Parcel Size: 8.60
Associated Sites:
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: NGB requires a letter from Ohio EPA indicating property acceptable for planned reuse.

Parcel Name: Cobbs Ponds
Parcel Size: 9.00
Associated Sites: RVAAP-29
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Name: Landfill North of Winklepeck
Parcel Size: 5.00
Associated Sites: RVAAP-19, RVAAP-019-R-01
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Summary

Parcel Name: Load Line 1
Parcel Size: 160.00
Associated Sites: RVAAP-08
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: NGB declines property until slabs, aboveground walkways and foundations are removed in order to facilitate military training needs.
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 10
Parcel Size: 36.00
Associated Sites: RVAAP-43
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 11
Parcel Size: 47.00
Associated Sites: RVAAP-44
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Summary

Parcel Name: Load Line 12
Parcel Size: 75.00
Associated Sites: RVAAP-12
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: NGB declines property until foundations are removed in order to facilitate military training needs. There is currently no funding for foundation removal.
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 2
Parcel Size: 212.00
Associated Sites: RVAAP-09
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: NGB declines property until aboveground walkways are removed. Ohio EPA will not sign final ROD for this site without environmental investigations conducted post-slab removal. Slabs and foundations were removed in 2008.
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 3
Parcel Size: 174.00
Associated Sites: RVAAP-10
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: NGB declines property until aboveground walkways are removed. Ohio EPA will not sign final ROD for this site without environmental investigations conducted post-slab removal. Slabs and foundations were removed in 2008.
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Summary

Parcel Name: Load Line 4
Parcel Size: 129.00
Associated Sites: RVAAP-11
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: NGB declines property until aboveground walkways are removed. Ohio EPA will not sign final ROD for this site without environmental investigations conducted post-slab removal. Slabs and foundations were removed in 2008.
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 5
Parcel Size: 39.00
Associated Sites: RVAAP-39
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 6
Parcel Size: 43.00
Associated Sites: RVAAP-33, RVAAP-033-R-01
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Summary

Parcel Name: Load Line 7
Parcel Size: 37.00
Associated Sites: RVAAP-40
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 8
Parcel Size: 44.00
Associated Sites: RVAAP-41
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Name: Load Line 9
Parcel Size: 106.00
Associated Sites: RVAAP-42
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: Sewer issues are being addressed as an option in the FY08 PBC.

Parcel Summary

Parcel Name: Open Demolition Area No. 2
Parcel Size: 25.00
Associated Sites: RVAAP-004-R-01
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Name: Pistol Range
Parcel Size: 20.00
Associated Sites:
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: 20060224
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Name: Ramsdell Landfill
Parcel Size: 15.00
Associated Sites: RVAAP-001-R-01, RVAAP-01
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Summary

Parcel Name: Wet Storage
Parcel Size: 36.00
Associated Sites: RVAAP-45
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

Parcel Name: Winklepeck Burning Grounds
Parcel Size: 20.00
Associated Sites: RVAAP-05
Transfer Date: N/A
Current Land Use: Other (BRAC Non-Excess, Army Ammunition Plant)
Future Land Use: Other (Military Training)
Encumbrances: N/A
Leases/Permits/Licenses: N/A
Transfer Strategy: Army Retained
Recipient Organization: National Guard Bureau / Ohio Army National Guard
Other Issues Affecting Transfer: N/A

RAVENNA ARMY AMMUNITION PLANT

Non-BRAC Excess
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Response Complete (RC) Sites: 54/23

Installation Site Types with Future and/or Underway Phases

2 Burn Area
(RVAAP-05, RVAAP-49)
1 Chemical Disposal
(RVAAP-28)
7 Contaminated Buildings
(RVAAP-33, RVAAP-39, RVAAP-40, RVAAP-41, RVAAP-42, RVAAP-43, RVAAP-44)
1 Contaminated Ground Water
(RVAAP-66)
1 Contaminated Soil Piles
(RVAAP-48)
1 Explosive Ordnance Disposal Area
(RVAAP-03)
7 Industrial Discharge
(RVAAP-08, RVAAP-09, RVAAP-10, RVAAP-11, RVAAP-12, RVAAP-13, RVAAP-46)
3 Landfill
(RVAAP-01, RVAAP-19, RVAAP-34)
1 Spill Site Area
(PBC at Ravenna)
2 Storage Area
(RVAAP-45, RVAAP-50)
3 Surface Disposal Area
(RVAAP-06, RVAAP-38, RVAAP-51)
2 Surface Impoundment/Lagoon
(RVAAP-16, RVAAP-29)
1 Waste Lines
(RVAAP-67)

Most Widespread Contaminants of Concern

Asbestos, Chemical weapon munitions (CWM)/Chemical agent, Explosives, Metals, Nitrate/Nitrite, Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Sediment, Soil, Surface Water

Completed Remedial Actions (Interim Remedial Actions / Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY	Cost
RVAAP-23	UNIT TRAINING EQUIPMENT SITE UST	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1989	TBD
RVAAP-47	BUILDING T-5301	FRA	REMOVAL	2000	TBD
RVAAP-03	OPEN DEMOLITION AREA #1	IRA	EX SITU SOIL TREATMENT	2003	TBD
RVAAP-34	SAND CREEK DISPOSAL ROAD LANDFILL	IRA	WASTE REMOVAL - SOLIDS (NON-SOILS)	2004	TBD
RVAAP-51	DUMP ALONG PARIS-WINDHAM ROAD	IRA	WASTE REMOVAL - SOILS	2004	TBD
RVAAP-08	LOAD LINE 1	IRA	WASTE REMOVAL - SOILS	2008	TBD
RVAAP-09	LOAD LINE 2	IRA	REMOVAL	2008	TBD
RVAAP-10	LOAD LINE 3	IRA	REMOVAL	2008	TBD
RVAAP-11	LOAD LINE 4	IRA	REMOVAL	2008	TBD
RVAAP-49	CENTRAL BURN PITS	IRA	WASTE REMOVAL - SOILS	2008	TBD

IRP Summary

Duration of IRP

Year of IRP Inception: 198802

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201409/204409

Date of IRP completion including Long Term Management (LTM): 204409

IRP Contamination Assessment

Contamination Assessment Overview

The contamination at RVAAP originated from past industrial activities associated with the assembly and demilitarization of large caliber projectiles, general-purpose bombs, and parts for these munitions. RVAAP produced munitions during World War II and the Korean and Vietnam Wars. The industrial operations at RVAAP consisted of 12 production areas known as load lines. Load Lines 1 through 4 (melt-pour lines) were the primary sources of secondary explosives contamination such as trinitrolouene (TNT), Cyclotetramethylenetetranitramine (HMX) and Cyclotrimethylenetrinitramine (RDX), which were melted and poured into projectiles and bombs. Load Line 1 and 12 were used for demilitarization of projectiles. Load Line 1 was used to produce and recondition anti-tank mines. Workers would periodically use steam and hot water to hose down equipment, floors and walls of buildings contaminated with explosive dust, spills, and vapors. The explosive-contaminated water from the cleaning, known as pink water, then drained out doorways and through floor drains onto the soils surrounding the buildings or was discharged into open ditches or ponds after being filtered through sawdust to remove suspended explosives. Waste explosives from the melt pour lines were routinely disposed of by OB/OD at other sites on the installation.

Load Lines 5 through 11 (fuze and booster) were used to assemble fuzes, primers, and boosters while Load Line 12 housed the ammonium nitrate plant. Potential contaminants in Lines 5 through 11 include lead azide, mercury fulminate, lead styphnate, black powder, heavy metals, TNT, and Composition B. The amount of explosives used at the fuze and booster lines was much less than that used at the melt-pour lines because of the types of small munitions components made there. Also, the operations did not create as much waste and were cleaner due to the special handling procedures needed when working with the shock and heat sensitive primary explosives. Load Line 12 recrystallized ammonium nitrate for explosives, fertilizers and aluminum chloride. It also was periodically used for demilitarization projects involving the melt-out of TNT and other secondary explosives from the bombs and projectiles. As in the other melt pour lines, these activities resulted in pink water being released to the soils, ditches, and ponds in and around the line. Other types of contaminated sites associated with past industrial activities at RVAAP include landfills, testing facilities, dumps, munitions burial sites, a pistol range, storage facilities, a scrap yard, and decontamination buildings. Although not present at every one of these sites, the contaminants of potential concerns include primary and secondary explosives, propellants, heavy metals, volatile and semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and pesticides. Industrial activities ceased in 1992 when RVAAP was declared excess.

In 1989, RVAAP started the IRP. At present there are a large number of active sites, of which 26 are under performance-based contracts (PBCs). The sites were given a relative risk site evaluation (RRSE) rating of high, medium, or low based on the results of limited sampling in 1996 and 1998. Sampling of the soil, sediment, surface water, and groundwater at many of the high relative risk sites and some of the medium risk sites has been performed as part of the remedial investigation process.

Well sampling conducted by the Ohio EPA in 1997 and 1998 showed no off-post explosives contamination of residential wells.

A Phase I RI examined 11 high priority sites identified as RVAAP-04, RVAAP- RVAAP-RVAAP-09, RVAAP-10, RVAAP-11, RVAAP-12, RVAAP-13, RVAAP-18, RVAAP-19, and RVAAP-29. A final RI report was issued in 1997. The study concluded that Load Lines 1 through 4 and 12 appeared to be the most contaminated, and contaminants were probably not migrating far from the sources in significant concentrations. The report recommended further study.

For the most part, results from more recent studies have confirmed that explosives and heavy metals are the most common contaminants and are generally located immediately around buildings in the load lines and in the ditches and ponds draining the sites. Less common contaminants include PCBs, SVOCs and propellants. These same contaminants have been detected in the water and sediment within the storm and sanitary sewers. Installation monitoring wells located to the southeast of Load Line 2 near the perimeter have shown trace amounts of explosives. Surface water and sediment samples do not indicate that significant levels of contaminants are migrating from the installation.

RI data are also available for some of the other sites used to support the main production activities. Limited data available from earlier efforts again show explosives and heavy metals to be the principal contaminants of potential concern at sites used to burn, dump, or bury explosive waste from the Load Lines. These contaminants are found in the soils at Winklepeck Burning Grounds, Open Demolition Area 2 and Erie Burning Grounds, and areas used to detonate and burn waste explosives. Erie Burning Grounds is a high quality wetland. Explosives, metals and some organics have been detected in the surface water and sediment at the site and downstream of the site.

Cleanup Exit Strategy

The Army will complete restoration of the sites at RVAAP under the PBCs. In March 2005 all high relative risk sites were placed under contract. The PBC awarded in FY08 is intended to achieve RIP/RC at the remaining medium relative risk and low relative risk sites. LTM will be performed on both a facility-wide and a site-by-site basis. No further action (NFA) at all the sites will be

achieved by ensuring there will not be any unacceptable risk for the proposed future use by the OHARNG.

See individual sites for specific strategies.

	Title	Author	Date
1978			
	Installation Assessment of Ravenna Army Ammunition Plant. Report No. 132	United States Army Toxic and Hazardous Materials Agency	NOV-1978
1989			
	Hazardous Waste Management Study No. 37-26-0442-84: Phase 2 of AMC Open Burning/Open Detonation Groundwater Evaluation	United States Army Environmental Hygiene Agency	OCT-1989
	Ravenna Army Ammunition Plant RCRA Facility Assessment Draft RR/VSI Report	Jacobs Engineering Group, Inc	OCT-1989
1995			
	Installation Action Plan RVAAP- FY 1995	Mason and Hanger Corp.	JAN-1995
1996			
	Preliminary Assessment for the Ravenna Army Ammunition Plant	SAIC	FEB-1996
	Facility-Wide Safety and Health Plan	SAIC	FEB-1996
	Preliminary Assessment for the Characterization of Areas of Contamination	SAIC	FEB-1996
	Installation Action Plan RVAAP- FY 1996	Mason and Hanger Corp.	MAR-1996
	Action Plan for the Ravenna Army Ammunition Plant	SAIC	MAR-1996
	Facility-Wide Sampling and Analysis Plan for the Ravenna Army Ammunition Plant	SAIC	APR-1996
	Phase 1 Remedial Investigation Site Safety and Health Plan Addendum for High Priority Areas of Concern for RVAAP	SAIC	JUL-1996
	Phase 1 Remedial Investigation Sampling and Analysis Plan Addendum for High Priority Areas of Concern for RVAAP	SAIC	JUL-1996
	Final Facility-Wide Sampling and Analysis Plan Amendment No., SAIC, 8-Jul	SAIC	AUG-1996
	Interim Measures Plan for the Open Detonation (OD) Grounds Hazardous Waste Treatment Unit	SAIC	AUG-1996
	Installation Restoration Program Management Plan	USAEC	DEC-1996
1997			
	Public Meeting Briefing - Phase I RI of High Priority sites at the RVAAP	USACE	SEP-1997
1998			
	Quality Control Plan for the phase II RI for Winklepeck Burning Grounds at RVAAP	USACE	JAN-1998
	Installation Action Plan RVAAP- FY 1998	Mason and Hanger Corp.	FEB-1998
	Sampling and Analysis Plan Addendum for the Phase II Remedial Investigation of the Winklepeck Burning Grounds (AOC-05) and Determination of Facility-Wide Background at RVAAP	SAIC	APR-1998
	Sampling and Analysis Plan Addendum for the Phase II Remedial Investigation of the Winklepeck Burning Grounds (AOC-05) and Determination of Facility-Wide Background at RVAAP	SAIC	APR-1998
	Site Safety and Health Plan Addendum for the Phase II Remedial Investigation of the Winklepeck Burning Grounds (AOC-05) and Determination of Facility -Wide	SAIC	APR-1998

	Title	Author	Date
1998			
	Background at RVAAP		
	Sampling and Analysis Plan Addendum for the Groundwater Investigation of the Former Ramsdell Quarry Landfill (AOC-01)	SAIC	JUN-1998
	Site Safety and Health Plan Addendum for the Groundwater Investigation of the Former Ramsdell Quarry Landfill (AOC-01) at RVAAP	SAIC	JUN-1998
1999			
	Installation Action Plan RVAAP- FY 1999	Mark Patterson	MAR-1999
	Sampling and Analysis Plan Addendum No. 1 for the Phase I Remedial Investigation of the Erie Burning Grounds (AOC-02) at RVAAP	SAIC	JUL-1999
	Sampling and Analysis Plan Addendum No. 1 for the Phase II Remedial Investigation of Load Line 1 (AOC-08) at the Ravenna Army Ammunition Plant	SAIC	AUG-1999
	Site Safety and Health Plan Addendum No. 1 for the Phase II Remedial Investigation of Load Line 1 (AOC-08) at the Ravenna Army Ammunition Plant	SAIC	AUG-1999
	Environmental Information Management Needs Assessment at RVAAP	SAIC	SEP-1999
	Sampling and Analysis Plan Addendum No. 1 for the Phase I Remedial Investigation of Demolition Area 1 (RVAAP-03)	SAIC	OCT-1999
	Site Safety and Health Plan Addendum No. 1 for the Phase I Remedial Investigation of Demolition Area #1 (AOC-03) at RVAAP	SAIC	OCT-1999
	Sampling and Analysis Plan Addendum No. 1 for the Phase 1 Remedial Investigation of the NACA Test Area (AOC-38) at the Ravenna Army Ammunition Plant	SAIC	OCT-1999
	Site Safety and Health Plan Addendum No. 1 for the Phase I Remedial Investigation of the NACA Test Area (AOC-38) at the Ravenna Army Ammunition Plant	SAIC	OCT-1999
	Scope of Work for the Interim Removal Action and Decontamination & Demolition of Building T-5301 (RVAAP-47)	MKM Engineers, Inc.	DEC-1999
2000			
	Installation Action Plan RVAAP- FY 2000	USACE	MAR-2000
	Installation Action Plan RVAAP- FY 2001	USACE	MAR-2000
	Final Report on the Groundwater Investigation of the Ramsdell Quarry Landfill (AOC-01) at RVAAP	SAIC	AUG-2000
	Site Safety and Health Plan Addendum No. 1 for the Phase II Remedial Investigation of Load Line 1 (AOC-08) at the Ravenna Army Ammunition Plant	SAIC	AUG-2000
	Installation Action Plan RVAAP- FY 2001	USACE	AUG-2000
	Sampling and Analysis Plan Addendum No. 2 for the Phase II Remedial Investigation of Load Line 1 (AOC-08) at the Ravenna Army Ammunition Plant	SAIC	SEP-2000
	Sampling and Analysis Plan Addendum No. 1 for the Winklepeck Burning Grounds (AOC-05) Feasibility Study at RVAAP	SAIC	OCT-2000
	Site Safety and Health Plan Addendum No. 1 for the	SAIC	OCT-2000

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	Title	Author	Date
2000			
	Winklepeck Burning Grounds (AOC-05) Feasibility Study at RVAAP		
	Installation Action Plan RVAAP- FY 2001	USACE	DEC-2000
2001			
	Sampling and Analysis Plan Addendum for the Remedial Investigation of Load Line 11 (RVAAP-44)	MKM Engineers, Inc.	JAN-2001
	Facility-Wide Sampling and Analysis Plan for Environmental Investigations	SAIC	MAR-2001
	Technical Memorandum Human Health and Ecological Risk Assessment Approach for the Load Line 1 (AOC-08) and Load Line 12 (AOC-12) Phase II Remedial Investigations at RVAAP	SAIC	MAR-2001
	Summary and Technical Assumptions for Area, Volume, and Cost Estimations for the Winklepeck Burning Grounds (AOC-05) Strategic Plan Ravenna Army Ammunition Plant	SAIC	MAR-2001
	Phase II Remedial Investigation Report for the Winklepeck Burning Ground (AOC-05) at RVAAP	SAIC	APR-2001
	Final Sampling & Analysis Plan Addendum for the Remedial Landfill Design/Removal Action at the Sand Creek Disposal Road Landfill (AOC-34)	MKM Engineers, Inc.	APR-2001
	Final Site-specific Safety and Health Plan for the Remedial Design/Removal Action at the Sand Creek Disposal Road Landfill (AOC-34)	MKM Engineers, Inc.	APR-2001
	Final Workplan for the Remedial Design/Removal Action at Sand Creek Disposal Road Landfill (AOC-34)	MKM Engineers, Inc.	APR-2001
	Final Sampling & Analysis Plan Addendum for the Remedial Design/Removal Action at the Paris-Windham Road Dump (AOC-51)	MKM Engineers, Inc.	APR-2001
	Final Site-Specific Safety and Health Plan for the Remedial Design/Removal Action at the Paris Windham Road Dump (AOC-51)	MKM Engineers, Inc.	APR-2001
	Final Work Plan for the Remedial Design/Removal Action at the Paris-Windham Road Dump (AOC-51)	MKM Engineers, Inc.	APR-2001
	Final Work Plan for the Phase II Remedial Investigation at the Upper and Lower Cobbs Pond (AOC 29)	MKM Engineers, Inc.	JUN-2001
	Final Sampling and Analysis Plan Addendum for the Phase II Remedial Investigation at the Upper and Lower Cobbs Pond (AOC-29)	MKM Engineers, Inc.	JUL-2001
	Final Site-Specific Safety and Health Plan for the Phase II Remedial Investigation at the Upper and Lower Cobbs Pond (AOC-29)	MKM Engineers, Inc.	JUL-2001
	Final Site-Specific Safety and Health Plan for the Remedial Investigation at Central Burn Pits (AOC-49) at the Ravenna	MKM Engineers, Inc.	AUG-2001
	Final Work Plan for the Remedial Investigation at Central Burn Pits (AOC-49) at the Ravenna Army Ammunition Plant	MKM Engineers, Inc.	AUG-2001
	Groundwater Assessment Plan for the Ramsdell Quarry Landfill (AOC-01)	MKM Engineers, Inc.	SEP-2001
	Geophysical Survey Results Suspected Mustard Agent Burial Site RVAAP	SAIC	OCT-2001
	Phase I Remedial Investigation Report for the Erie	SAIC	DEC-2001

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	Title	Author	Date
2001			
	Burning Grounds (AOC-02) at RVAAP		
	Phase I Remedial Investigation Report for the Demolition Area #1 (AOC-03) at RVAAP	SAIC	DEC-2001
	Final Work Plan for the Remedial Design/Removal Action at the Sand Creek Disposal Road Landfill (AOC-34)	SAIC	DEC-2001
	Phase 1 Remedial Investigation Report for NACA Test Area (AOC-38) at the Ravenna Army Ammunition Plant	SAIC	DEC-2001
2002			
	Installation Action Plan RVAAP- FY 2002	Mark Patterson	FEB-2002
	Sampling and Analysis Plan Addendum No. 3 for the Biological Measurements at Winklepeck Burning Grounds (AOC-05) at the Ravenna Army Ammunition Plant	SAIC	MAY-2002
	Work Plan and Sampling and Analysis Plan Addenda for the Phase II Remedial Investigation of Demolition Area 2	SpecPro	JUN-2002
	Work Plan and Sampling and Analysis Plan Addenda for the Phase II Remedial Investigation of Demolition Area 2	SpecPro	JUN-2002
	Investigation-Derived Waste Characterization and Disposal Plan	SpecPro	NOV-2002
	Installation Action Plan RVAAP- FY 2003	Mark Patterson	DEC-2002
	Phase II Remedial Investigation Report for the Load Line 1 (RVAAP-08) at RVAAP	SAIC	DEC-2002
	Groundwater Monitoring Well Installation and Groundwater Sampling at the Suspected Mustard Agent Burial Site (RVAAP-28)	SpecPro	DEC-2002
2003			
	Final Compliance Monitoring Program for the Open Demolition Area #2 (RVAAP-04)	MKM Engineers, Inc.	JAN-2003
	Report on the Biological Field-Truthing Effort at Winklepeck Burning Grounds (AOC-05)	SAIC	MAR-2003
	RVAAP Applied Dried Paints at Load Lines 6 (AOC-33) and 9 (AOC-42) GCMS PCB Results	MKM Engineers, Inc.	APR-2003
	RVAAP Facility Wide Ecological Risk Work Plan	USACE	APR-2003
	Phase II Remedial Investigation Report for the Load Line 1(RVAAP-08) at RVAAP	SAIC	APR-2003
	Installation Action Plan RVAAP- FY 2004	Mark Patterson	JUN-2003
	Phase II Remedial Investigation Report for the Load Line 1 (RVAAP-08) at RVAAP	SAIC	JUN-2003
	Phase II Remedial Investigation Report for the Load Line 1 (RVAAP-08) at RVAAP	SAIC	JUN-2003
	Safety and Health Plan for the Remedial Investigation of Load Lines 6 (RVAAP-33) and 9 (RVAAP-42)	MKM Engineers, Inc.	JUL-2003
	Community Relations Plan	USACE	SEP-2003
	Safety and Health Plan for the Remedial Investigation of Load Lines 6 (RVAAP-33) and 9 (RVAAP-42)	MKM Engineers, Inc.	SEP-2003
	Sampling and Analysis Plan Addendum for the Remedial Investigation of Load Line #6 (RVAAP-33)	MKM Engineers, Inc.	SEP-2003
	Sampling and Analysis Plan Addendum for the Remedial Investigation of Load Line #9 (RVAAP-42)	MKM Engineers, Inc.	SEP-2003
	Sampling and Analysis Plan Addendum No. 1 for the Phase I Remedial Investigation of Ramsdell Quarry	SAIC	OCT-2003

	Title	Author	Date
2003			
	Landfill (AOC-01) at RVAAP		
	Site Safety and Health Plan Addendum No. 1 for the Phase I Remedial Investigation of Ramsdell Quarry Landfill	SAIC	OCT-2003
	Sampling and Analysis Plan Addendum No 1 for the Phase II Remedial Investigation of the Erie Burning Grounds (RVAAP-02)	SAIC	OCT-2003
	Sampling and Analysis Plan Addendum No. 1 for the Phase II Remedial Investigation of the Erie Burning Grounds (AOC-02) at RVAAP	SAIC	OCT-2003
	Final Work Plan and Sampling and Analysis Plan Addenda for the Phase I/Phase II Remedial Investigation of the Fuze and Booster Quarry Landfill/Ponds at RVAAP	SpecPro	OCT-2003
	Sand Creek Dump (AOC-34) Cleanup Project Weekly Reports August - October 2003	MKM Engineers, Inc.	OCT-2003
	Paris-Windham Dump (AOC-51) Clean Up Project Weekly Reports, Photos, Misc Data April-October 2003	MKM Engineers, Inc.	OCT-2003
	Decon-Demo Load Lines 6 (AOC-33) and 9 (AOC-42) Misc Corres, Reports, Photos at RVAAP	Unknown	DEC-2003
2004			
	OE/UXO Removal & Interim Removal Action Report For The Open Demolition Area #1 (RVAAP-03)	MKM Engineers, Inc.	MAR-2004
	Remedial Design/Removal Action Plan for Sand Creek Dump (AOC-34)	MKM Engineers, Inc.	MAR-2004
	Final Report Interim Removal Action at Load Line 11 (AOC-44)	MKM Engineers, Inc.	MAR-2004
	Interim Removal Action Report for Load Line #11 (AOC-44) Vol 1 Main Text - Appendices A-G	MKM Engineers, Inc.	MAR-2004
	Interim Removal Action Report for Load Line #11 (AOC-44) Vol 2 Appendices H-I	MKM Engineers, Inc.	MAR-2004
	Final Report for Remedial Design/Removal Action at Paris-Windham Road Dump (AOC-51) at Ravenna Army Ammunition Plant	MKM Engineers, Inc.	MAR-2004
	Installation Action Plan RVAAP- FY 2005	Mark Patterson	MAY-2004
	Facility-Wide Biological and Water Quality Study 2003	USACE	JUN-2004
	Supplemental Baseline Human Health Risk Assessment	Shaw/SAIC	JUL-2004
	Phase II Remedial Investigation Report for the Load Line 2 (AOC-09) at the Ravenna Army Ammunition Plant, Volume 1 - Main Text	Shaw/SAIC	JUL-2004
	Phase II Remedial Investigation Report for Load Line 3 (AOC-10) at the Ravenna Army Ammunition Plant Volume 1 - Main Text	Shaw/SAIC	JUL-2004
	Phase II Remedial Investigation Report for Load Line 3 (AOC-10) at the Ravenna Army Ammunition Plant Volume 2 - Appendices A-S	Shaw/SAIC	JUL-2004
	Work Plan for the Phase I MEC Density Survey of Winklepeck Burning Grounds (AOC-05)	USATCES/MK	AUG-2004
	Phase II Remedial Investigation Report for Load Line 4 (AOC-11) at the Ravenna Army Ammunition Plant Volume 1 - Main Text	Shaw/SAIC	SEP-2004
	Phase II Remedial Investigation Report for Load Line 4 (AOC-11) at the Ravenna Army Ammunition Plant	Shaw/SAIC	SEP-2004

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	Title	Author	Date
2004			
	Volume 2 - Appendices A-S		
	Facility-Wide Groundwater Monitoring Program Plan, Portage	Shaw	SEP-2004
	Proposed Remedial Goal Options for Soil at Load Lines 1 (AOC-08), 2 (AOC-09), 3 (AOC-10), and 4 (AOC-11) at RVAAP	Shaw	SEP-2004
	Sampling and Analysis Plan for the Data Gap Analysis and Additional Sampling and Security, Emergency Response and Contingency Plan and Safety, Health and Emergency Response Plan for the Remediation of Soils at Load Lines 1 (AOC-08), 2 (AOC-09), 3 (AOC-10), and 4 (AOC-11) at RVAAP	Shaw	OCT-2004
	Final Sampling and Analysis Plan Addendum for the Characterization of 14 RVAAP AOCs at RVAAP	MKM Engineers, Inc.	OCT-2004
	Sampling and Analysis Plan for the Data Gap Analysis and Additional Sampling in Support of the Remediation of Soils at Load Lines 1 (AOC-08), 2 (AOC-09), 3 (AOC-10), and 4 (AOC-11) at RVAAP	Shaw	OCT-2004
	Final Site Safety and Health Plan Addendum for the Characterization of 14 RVAAP AOCs	MKM Engineers, Inc.	OCT-2004
2005			
	Final November 2004 Sampling Completion Report for Load Lines 1 - 4	Shaw	FEB-2005
	Focused Feasibility Study for the Winklepeck Burning Grounds (AOC-05) at RVAAP	SAIC	FEB-2005
	Phase I MEC Density Survey After Action Report At Winklepeck Burning Grounds (AOC-05)	MKM Engineers, Inc.	MAR-2005
	Phase III Remedial Investigation Report for the Winklepeck Burning Grounds (AOC-05) at RVAAP	SAIC	MAR-2005
	Phase III Remedial Investigation Report for the Winklepeck Burning Grounds (AOC-05) at RVAAP	USACE	MAR-2005
	Final Work Plan for Phase II MEC Clearance and Munitions Response at Winklepeck Burning Grounds (AOC-05)	MKM Engineers, Inc.	MAR-2005
	Final Site Safety and Health Plan for the Phase II MEC Clearance and Munitions Response at Winklepeck Burning Grounds (AOC-05)	MKM Engineers, Inc.	MAR-2005
	Winklepeck Burning Grounds AutoCAD Figures for Phase I After Action Report	MKM Engineers, Inc.	MAR-2005
	Focused Feasibility Study for the Remediation of Soils at Load Lines 1 through 4 (AOC-08) (AOC-09) (AOC-10) (AOC-11) at the RVAAP	Shaw	MAY-2005
	Final Focused Feasibility Study for the Remediation of Soils at LLs 1-4, RVAAP	Shaw	MAY-2005
	Focused Feasibility Study for the Remediation of Soils at Load Lines 1 through 4 (AOC-08) (AOC-09) (AOC-10) (AOC-11) at the RVAAP	Shaw	MAY-2005
	Phase I Remedial Investigation December 2004 Follow-On Groundwater Sampling at the Ramsdell Quarry Landfill (AOC-01)	SAIC	JUN-2005
	Final Report on the Groundwater Monitoring Well Installation and Groundwater Sampling at the Suspected Mustard Agent Burial Site (RVAAP AOC-28) - Main	SpecPro	JUL-2005

2005

Title	Author	Date
Report and Appendices A-H		
Installation Action Plan RVAAP- FY 2006-Non Public Version	Mark Patterson	JUL-2005
Final Report on the Groundwater Monitoring Well Installation and Groundwater Sampling at the Suspected Mustard Agent Burial Site (RVAAP AOC-28)	SpecPro	JUL-2005
Report on the Groundwater Monitoring Well Installation and Groundwater Sampling at the Suspected Mustard Agent Burial Site (RVAAP AOC-28)	SpecPro	JUL-2005
Final Proposed Plan for the Remediation of Soils at LL1-4 (RVAAP-08, RVAAP-09, RVAAP-10, RVAAP-11)	Shaw	JUL-2005
Proposed Plan for the Remediation of Soils at LL1-4 (RVAAP-08, RVAAP-09, RVAAP-10, RVAAP-11)	Shaw	JUL-2005
Final Report on the Groundwater Monitoring Well Installation and Groundwater Sampling at the Suspected Mustard Agent Burial Site (RVAAP AOC-28)	SpecPro	JUL-2005
Final Report Facility Wide Groundwater Monitoring Program April 2005 Sampling Event Report - Main Report and Appendices A-D	SpecPro	AUG-2005
Final Report Facility Wide Groundwater Monitoring Program Sampling Event Report - Main Report and Appendices A-D	SpecPro	AUG-2005
Site Safety and Health Plan for the Phase I MEC Density Survey of Winklepeck Burning Grounds (AOC-05)	MKM Engineers, Inc.	AUG-2005
Final Facility Wide Groundwater Monitoring Program Report on the July 2005 Sampling Event -Vol 1- Main Report	SpecPro Inc.	AUG-2005
Final Facility Wide Groundwater Monitoring Program Report on the July 2005 Sampling Event-Vol 2- Appendices A-C	SpecPro Inc.	AUG-2005
RVAAP/Ohio EPA Cooperative Agreement (CA) Work Plans	Various	AUG-2005
Installation Action Plan RVAAP- FY 2006	Mark Patterson	SEP-2005
Final Work Plan Containing Addendums(SAP,QAPP,SSHP,UXO) for Groundwater Monitoring Well Installation and Groundwater Sampling at the Suspected Mustard Agent Burial Site (AOC-28)	SpecPro, Inc.	SEP-2005
Final Remedial Investigation Report Central Burn Pits (RVAAP-49)	SAIC/MKM	SEP-2005
Final for the Remedial Investigation at Load Line 11 (AOC-44)	MKM Engineers, Inc.	SEP-2005
Final for the Remedial Investigation at Load Line 11 (AOC-44) VOL 2	MKM Engineers, Inc.	SEP-2005
Final for the Remedial Investigation at Load Line 11 (AOC-44) VOL 3	MKM Engineers, Inc.	SEP-2005
Final for the Remedial Investigation at Load Line 11 (AOC-44) VOL 4	MKM Engineers, Inc.	SEP-2005
Final for the Remedial Investigation at Load Line 11 (AOC-44) VOL 5	MKM Engineers, Inc.	SEP-2005
Final for the Remedial Investigation at Load Line 11 (AOC-44) VOL 1	MKM Engineers, Inc.	SEP-2005
Final for the Remedial Investigation at Load Line 11 (AOC-44) VOL 2	MKM Engineers, Inc.	SEP-2005

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	Title	Author	Date
2005			
	Phase I Remedial Investigation Report for the Ramsdell Quarry Landfill at RVAAP	SAIC	SEP-2005
	Phase I Remedial Investigation Report for the Ramsdell Quarry Landfill (AOC-01) at RVAAP	SAIC	SEP-2005
	Final for the Phase II Remedial Investigation at the Upper and Lower Cobbs Pond (AOC 29) Vol 1	MKM Engineers, Inc.	SEP-2005
	Final for the Phase II Remedial Investigation at the Upper and Lower Cobbs Pond (AOC 29) Vol 2	MKM Engineers, Inc.	SEP-2005
	Final for the Phase II Remedial Investigation at the Upper and Lower Cobbs Pond (AOC 29) Vol 3	MKM Engineers, Inc.	SEP-2005
	Final Phase II Remedial Investigation Report for the Erie Burning Grounds (AOC-02) at RVAAP	SAIC	SEP-2005
	Final Phase II Remedial Investigation Report for the Open Demolition Area #2 (AOC-4) Vol 2	SpecPro/SAIC	SEP-2005
	Final Proposed Plan for the Winklepeck Burning Grounds	SAIC	OCT-2005
	Facility-Wide Biological and Water Quality Study 2003, Part 1-Streams, Part 2-Ponds	USACE	NOV-2005
	Final Phase II Remedial Investigation Supplemental Report for Load Line 12 (AOC-12)	SAIC	NOV-2005
	Final Phase II Remedial Investigation Supplemental Report for Load Line 12 at RVAAP	SAIC	NOV-2005
	Final Sampling and Analysis Plan Addendum No. 1 Supplemental Phase II Remedial Investigations (RVAAP-04) ODA#2, (RVAAP-16) F&BQL/P, and (RVAAP-49) CBPs	SAIC	NOV-2005
	Final Report Phase I/II Remedial Investigation of the Fuze & Booster Quarry Landfill/Ponds (RVAAP-16) Volume One - Main Report	SpecPro/SAIC	NOV-2005
	Final Report Phase I/II Remedial Investigation of the Fuze & Booster Quarry Landfill/Ponds (RVAAP-16) Volume Two - Appendices A-K	SpecPro/SAIC	NOV-2005
	Final Facility Wide Groundwater Monitoring Program Report on the July 2005 Sampling Event-Main Report and Appendices A-C	SpecPro	NOV-2005
	Final Proposed Plan for the Winklepeck Burning Grounds	SAIC	DEC-2005
	Phase II MEC Clearance and Munitions Response at Winklepeck Burning Grounds (AOC-05)	MKM Engineers, Inc.	DEC-2005
	Phase II MEC Clearance and Munitions Response at Winklepeck Burning Grounds (AOC-05)	MKM Engineers, Inc.	DEC-2005
2006			
	Sampling and Analysis Plan Addendum No. 2 for the Winklepeck Burning Grounds Feasibility Study at RVAAP	SAIC	FEB-2006
	Final FS for Ramsdell Quarry Landfill	SAIC	JUL-2006
	Final FS for Load Line 12	SAIC	JUL-2006
	Final FS for Fuze-Booster Quarry Pond Landfill	SAIC	JUL-2006
	Facility-Wide Ground Water Sampling Event #1	SpecPro	AUG-2006
	Revised ECO Field Truthing Report	SAIC	SEP-2006
	Final RI Addendum for ODA#2	SAIC	SEP-2006
	Final RI Addendum for Erie Burning Grounds	SAIC	SEP-2006
	Final P&A After Action Report for Ramsdell Quarry	SAIC	SEP-2006

IRP Previous Studies

	Title	Author	Date
2006			
	Landfill		
	Facility-Wide Ground Water Sampling Event #2	SpecPro	OCT-2006
2007			
	Final EE/CA for Central Burn Pits	SAIC	JAN-2007
	Final Structural Analysis report for Load Lines 1 through 4	Shaw	JAN-2007
	Final Proposed Plan for Soil and Dry Sediment at RVAAP--2 Erie Burning Grounds	SAIC	FEB-2007
	Facility-Wide Ground Water Sampling Event #3	SpecPro	MAR-2007
	Final Proposed Plan for Soil and Dry Sediment at RVAAP-12 Load Line 12	SAIC	MAR-2007
	Final Proposed Plan for Soil and Dry Sediment at RVAAP-16 Fuze and Booster Quarry Landfill/Ponds	SAIC	MAR-2007
	Final Proposed Plan for Soil and Dry Sediment at RVAAP-01 Ramsdell Quarry Landfill	SAIC	MAR-2007
	Final Facility Wide Groundwater Monitoring Program Report on the October 2006 Sample Event	SpecPro, Inc.	MAR-2007
	Final Report of the Characterization of 14 Areasof Concern	MKM Engineers, Inc.	MAR-2007
	Final Facility Wide Groundwater Monitoring Program Report on the July 2006 Sampling Event No. 3	SpecPro, Inc.	MAR-2007
	Final Remedial Action Work Plan Remediation of Soils at RVAAP- 08, 09, 10, and 11 Load Lines 1- 4	Shaw Environmental	APR-2007
	Final Work Plan for the DLA Storage Area Reclamation-Route 80 Tank Farm and East Ore Yard Culvert Replacement	SpecPro, Inc.	APR-2007
	Final Facility Wide Groundwater Monitoring Program Annual Report for 2006	SpecPro, Inc.	MAY-2007
	Final Record of Decision issued for signatures	Shaw	JUN-2007
	Final Action Memorandum for RVAAP-49 Central Burn Pits	SAIC	JUN-2007
	Final Facility-Wide Groundwater Monitoring Program Report on the January 2007 Sampling Event (#1)	SpecPro, Inc.	JUL-2007
	Final Stormwater Pollution Prevention Plan for the Remediation of Soils at RVAAP- 08, 09, 10, and 11 Load Lines 1- 4	Shaw Environmental	JUL-2007
	Final Sampling and Analysis Plan and the Site Safety and Health Plan for the Exposed Soil Sampling and Characterization After Slab and Foundation Removals at RVAAP-39 Load Line 5, RVAAP-40 Load Line 7, RVAAP-41 Load Line 8, and RVAAP-43 Load Line 10	United States Army Corps of Engineers	AUG-2007
	Final Construction Completion Report on the Munitions Response for the Demolition of RVAAP-41 and RVAAP-43, Load Lines 8 and 10	PIKA International, Inc.	AUG-2007
	Final Report for the Phase I Remedial Investigation of RVAAP-33 Load Line 6	MKM Engineers, Inc.	AUG-2007
	Final Removal Action Work Plan for RVAAP-49 Central Burn Pits	SAIC	AUG-2007
	Final Record of Decision for Soil and Dry Sediment at the RVAAP-16 Fuze and Booster Quarry Landfill/Ponds	SAIC	SEP-2007
	Final Record of Decision for Soil and Dry Sediment at the RVAAP-02 Erie Burning Grounds	SAIC	SEP-2007

IRP Previous Studies

	Title	Author	Date
2007			
	Final Record of Decision for Soil and Dry Sediment at the RVAAP-02 Open Demolition Area #2	SAIC	SEP-2007
	Final Report for the Phase I Remedial Investigation at RVAAP-42 Load Line 9, Volume 1	MKM Engineers, Inc.	OCT-2007
	Draft Proposal to Update the Facility-Wide Groundwater Monitoring Program	United States Army Corp of Engineers	OCT-2007
	Draft Project Completion Report for the DLA Storage Reclamation-Route 80 Tank Farm and East Ore Yard Culvert Replacement	SpecPro Inc.	NOV-2007
	Final Report on the Disposal of Munitions and Explosives of Concern (MEC), Discarded Military Munitions (DMM) and Munitions Constituents (MC)	PIKA International, Inc.	NOV-2007
	Final Work Plan for the Geophysical Investigation of the suspected RVAAP-28 Mustard Agent Burial Site	Environmental Quality Management/John M. Miller, John Vanderlaan	NOV-2007
	Preliminary Draft Remedial Investigation Addunedum No. 1 for the RVAAP-49 Central Burn Pits	SAIC	NOV-2007
	Final Facility-Wide Groundwater Monitoring Program April 2007 Sampling Event	Environmental Quality Management, Inc.	NOV-2007
	Draft Facility-Wide Groundwater Monitoring Program Annual Report for 2007	Environmental Quality Management, Inc.	DEC-2007
	Final Project completion Report for the Munitions Response for Demolition of Load Lines 5, 7, Building 1039, and Transite Removal at Building T-1604	Lakeshore Engineering Services, Inc.	DEC-2007
2008			
	Installation Action Plan RVAAP - FY2007	Mark Patterson	JAN-2008
	Final Propellant Removal Summary Report for MEC Support for RVAAP- 08 Load Line 1	Shaw Environmental, Inc.	JAN-2008
	Final Remedial Investigation Report Addendum No. 1 for the RVAAP-49 Central Burn Pits	SAIC	JUN-2008
	Final ROD for Soil and Dry Sediment at RVAAP-05, Winklepeck Burning Grounds	SAIC	AUG-2008
	Final Proposed Plan for Soil and Dry Sediment at the RVAAP-49 Central Burn Pits	SAIC	OCT-2008
2009			
	Draft Remedial Design for RVAAP-16, Fuze and Booster Quarry Landfill Ponds	SAIC	FEB-2009
	Final ROD for Soil and Dry Sediment at RVAAP-49, Central Burn Pits	SAIC	FEB-2009
	Final ROD for Soil and Dry Sediment at RVAAP-01, Ramsdell Quarry Landfill	SAIC	MAR-2009
	Final ROD for Soil and Dry Sediment at RVAAP-12, Load Line 12	SAIC	MAR-2009
	Preliminary Draft Remedial Design for RVAAP-12, Load Line 12	SAIC	MAR-2009

RAVENNA ARMY AMMUNITION PLANT

Non-BRAC Excess

Installation Restoration Program
Site Descriptions

Site ID: PBC at Ravenna
Site Name: PBC 2005 and PBA 2008

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Sediment, Soil

Phases	Start	End
PA	200308	200308
RI/FS	200807	201309
RA(C)	200910	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site carries funding requirements for US Army Corps of Engineers (USACE) oversight of the 2005 performance-based contract (PBC). PBC 2005 was awarded to Science Applications International Corporation (SAIC) will expire in September 2010. The involved sites include RVAAP-01, 02, 04, 12, 16 and 49.

PBC 2003 was awarded to Shaw Environmental and expired in September 2008. The involved sites include RVAAP-08, 09, 10, and 11 (Load Lines 1, 2, 3, and 4). No costs are carried for this PBC.

A new PBA 2008 was awarded in July 2008 (Projected expiration September 2013). This PBA will include portions or all of RVAAP-06, RVAAP-12, RVAAP-13, RVAAP-19, RVAAP-29, RVAAP-33, RVAAP-38 through RVAAP-46, RVAAP-48, RVAAP-50, and RVAAP-67. Tasks one through four have been awarded. USACE oversight costs for PBA 2008 are also carried in this site.

CLEANUP/EXIT STRATEGY

Cost-to-complete (CTC) assumptions include the following items in the RA(C) phase:
- USACE oversight of the PBC 2005 contract in FY10.
- USACE oversight of the PBA 2008 contract in FY10 through FY13.
- PBA 2008 Task Five (Achieve Soil RIP/RC, award in FY10).

Site ID: RVAAP-01
Site Name: RAMSDELL QUARRY LANDFILL

STATUS

Parcel: Ramsdell Landfill (15 acres)

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200306	200704
RD	200707	201001
RA(C)	200909	201009

RIP Date: N/A

RC Date: 201009

SITE DESCRIPTION

RVAAP-01 (Ramsdell Quarry Landfill) is located in the eastern section of the RVAAP facility and is a four hectare (10 acre) unlined landfill, with a five-and-a-half to 6.1 meters (18 to 20 foot) depth, in part of an abandoned quarry. The quarry is excavated to the underlying Sharon Sandstone/Conglomerate. The depth of the soil in the remaining portion of the quarry varies from zero to several feet. A pool of water is intermittently present at the bottom of the quarry at approximately 10.7 meters (35 feet) below ground surface (bgs).

This landfill was used from 1941 to 1989. During the period of 1946 to 1950 the site was used as a land-surface burning site to thermally destroy waste explosives from Load Line 1 and napalm bombs. From 1976 to 1989, a portion of the site was used strictly as a nonhazardous solid waste landfill. No historical information has been located for 1950 to 1976. The landfill ceased operation in September 1989. Closure of the landfill was completed in May 1990 under State of Ohio solid waste regulations. Because this unit is unlined, there is potential for releases from the landfill to surrounding soils and groundwater.

Landfilled material consists of variable domestic, commercial, industrial, and solid wastes including but not limited to explosives (TNT, Composition B), napalm, gasoline, acid dip liquor, annealing residue (sulfuric acid, shell casings, sodium ortho silicate, chromic acid and alkali), aluminum chloride, and inert material. The volume of landfilled material is unknown (Jacobs Engineering 1989).

Five groundwater monitoring wells were installed around the landfill perimeter in 1988. These wells were regulatory decommissioned in 2006. New wells were installed in 1998 to further investigate the nature and extent of groundwater contamination at the landfill. A report of findings was published in October 1998.

Installation of additional wells and the acquisition of soil, sediment and surface water samples taken in fall 2003 further determined the nature and extent of the contamination of the CERCLA portion of the quarry. The new wells are monitored on a regular basis as part of the facility-wide groundwater monitoring program. Low levels of explosives and metals have been detected in groundwater. The groundwater unit transferred from the RCRA solid waste program to CERCLA in February 2005.

A final remedial investigation/feasibility study (RI/FS) was completed and approved April 2007. The final ROD has been submitted. Remedial design will contain appropriate land use control (LUC) language and will be implemented 2009.

Access will be restricted at the site. A PBC was awarded in 2005 to complete the investigation and any required remediation in accordance with the Defense Planning Guidance. MEC is present at the site and will be addressed under the MMRP site RVAAP-001-R-01.

Site ID: RVAAP-01
Site Name: RAMSDELL QUARRY LANDFILL

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066. No other funding requirements are anticipated.

Site ID: RVAAP-03
Site Name: OPEN DEMOLITION AREA #1

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Soil

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	199910	201309
IRA	199910	200309

RIP Date: N/A

RC Date: 201309

SITE DESCRIPTION

RVAAP-03 (Open Demolition Area 1), consisting of approximately six acres, was used to thermally treat munitions by OB/OD. The site now consists of a circular one foot berm surrounding a grassed area of approximately one-and-a-half (1.5) acres. The entire AOC is within the National Advisory Committee on Aeronautics (NACA) Test Area. Contaminants of Concern (COCs) include explosive compounds and metals. The 1989 report from Jacobs Engineering indicates that munition fragments including scrap metal, small arms primers, and fuzes were found outside the bermed area and that the area was operational from 1941 through 1949.

In December 2001 a final Phase I RI report was completed. In July 2001 a base realignment and closure (BRAC) funded IRA involving removal of approximately five acres of surface hot spots containing high levels of metals and explosives was completed. Site closeout documentation was initiated in FY03. Concern later developed over potential MEC kick-outs from 1950s era OD/OB activities beyond the IRA area. The site location within the operational range inventory system (ORIS) makes the area an active range and therefore ineligible for MMRP.

A geophysical investigation is planned in FY09 to investigate the potential MEC kick-outs outside the IRA AOC. Site closeout documentation will not be finalized until the geophysical investigation report is published and a proposed action is determined by the stakeholders.

The AOC, including the surrounding adjacent grounds, was a training area under a tenant lease contract to the OHARNG since the mid to late 1960s. In May 1999 this site was officially assigned to the NGB and transferred to the OHARNG. Groundwater monitoring is being conducted under the NACA Test Area (RVAAP-38).

CLEANUP/EXIT STRATEGY

No funding is required.

Site ID: RVAAP-05
Site Name: WINKLEPECK BURNING GROUNDS

STATUS

Parcel: Winklepeck Burning Grounds (20 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	199410	201309
IRA	200608	201009

RIP Date: N/A

RC Date: 201309

SITE DESCRIPTION

The Winklepeck Burning Grounds consists of approximately 200 acres, operating from 1948 to 1998. Prior to 1980, there were OB activities performed in unlined pits, pads, and sometimes on the roads within the 200 acre area. The pre-1980 burning conducted on bare ground resulted in-place abandonment of ash. Prior to 1980, RDX, antimony sulfide, composition B, lead azide, TNT, propellants, black powder, waste oils, sludge from the load lines, domestic wastes, explosive contaminated wastes (e.g. rags, papers, cardboard) and small amounts of laboratory chemicals were burned. Munitions and explosive constituents (primarily scrap metal) are present at the site. From 1980-98, activities environmentally improved burning of scrap explosives, propellants and explosive-contaminated materials within raised refractory-lined trays confined to a 1.5 acre area.

The Army notified the Ohio EPA of the intent to withdraw the Part B permit application in 1994. The burn trays along with the 90-day storage unit, Building 1601, closed in accordance with Ohio EPA guidance in 1998.

The deactivation furnace soils transferred to this AOC under the DFFO, June 2004. The management of groundwater monitoring is under the Facility-wide Groundwater Monitoring Program (FWGWMP).

The Army transferred approximately 180 acres to the NGB in 2006 for the construction of a Mark 19 grenade machine gun range. The remaining 20 acres containing four burn-pad locations are under contract for remediation based on formal concurrence of a ROD dated August 2008 and signed by the Army and Ohio EPA. This remediation was completed in the spring of 2009 and a completion report is in preparation. The 20 acres will then be transferred and combined with the current NGB 180 acre parcel.

A limited MEC clean-up took place within various portions of the site during 2004 and 2005. The proposed plan was finalized in 2006. A September 2008 contract was awarded to conduct a Data Quality Objectives study for MEC and chemical contaminants within the Winklepeck Burning Grounds 200 acres to address proposed OHARNG on-site training mission requirements. This work is scheduled in the RI/FS phase in AEDB-R. This work is anticipated to result in additional cleanup to support expansion of the existing Mark 19 Range to a multi-purpose machine gun range.

CLEANUP/EXIT STRATEGY

CTC assumptions include USACE prior year S&AR (382 hours over four years) in the RI/FS phase. Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-06
Site Name: C BLOCK QUARRY

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200408	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site is an abandoned quarry of 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 on the ground in the pit bottom. The site is now heavily forested with trees of one-foot diameter or larger. IRP constituents of concern include metals, SVOCs, volatile organic compounds (VOCs) and propellants.

In May 1999 the Army executed reassignment of this site to the NGB.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

The CTC assumptions in the RI/FS phase include surface water investigations and 1,914 hours over five years (carried in administrative LUCs) for USACE oversight of the 2008 PBC.

Assumptions in the RA(C) phase include:
- One acre will be cleared and grubbed
- 1,500 linear feet of access road will be established
- 5,500 cubic yards (cy) of soil will be excavated
- A nonhazardous off-site disposal of 6,188cy will be carried out
- 18 confirmation samples and 14 disposal samples will be taken
- Hazardous off-site disposal of 688cy will be carried out
- A decontamination pad will be constructed and operated for 11 weeks.
- 1,149 hours over three years (carried in administrative LUCs) will be devoted to USACE oversight of the 2008 PBC.
- The site will reach closeout.

Site ID: RVAAP-08
Site Name: LOAD LINE 1

STATUS

Parcel: Load Line 1 (160 acres)

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	199410	200707
RD	200510	201009
IRA	200309	200807
RA(C)	200309	201209

RIP Date: N/A

RC Date: 201209

SITE DESCRIPTION

Load Line 1 use was between 1941 and 1971 to melt and load TNT and Composition B into large-caliber projectiles. The Load Line also was used for the demilitarization of projectiles and the production and recondition of anti-tank mines. Workers would periodically use steam and hot water to hose down equipment and the floors and walls of buildings contaminated with explosive dust, spills, and vapors. Wash down water and wastewater from the load line operations collected in concrete sumps, pumped through sawdust filtration units and then discharged to a settling pond. Building wash down water from the melt-pour buildings would exit in some instances out through doorways onto the ground surrounding the buildings when using high-pressure steam assist water hoses. The off-site settling pond was an unlined earthen impoundment approximately one acre in size. Water from the impoundment discharged to a surface stream that exited the installation.

The COCs at this site are explosive compounds, SVOCs and heavy metals. The media of concern include soils, surface water, sediment, and groundwater. Nearly all above ground structures underwent demolition during calendar year (CY) 2000. Under the BRAC contract the remaining 2 buildings (CB-13 & 801) and all building slabs are to be removed by the end of FY09 or early FY10. Under separate IRP contract Environmental survey and controls implemented during all or any demolition activities are to prevent migration of contaminants (e.g. effected soils) to the environment.

In September 2003 a PBC was awarded to complete an interim soil and sediment removal action at Load Lines 1, 2, 3 and 4 paralleling a BRACD building demolition completed FY07, leaving the structure platforms and slabs in place. The 2003 PBC ended September 2008. The RI/FS and PP were completed. The final Interim ROD addressing only soil and dry sediment was signed July 2007. At the end of first quarter FY08, contaminated soils were removed and transported off-site for final deposition at a USEPA approved/permitted landfill before the buildings were demolished. Surface water and wet sediments are being evaluated for further action.

In January 2008 an Army change memorandum to the Interim ROD was filed with the Ohio EPA announcing the mentioned Phase II removal.

Removal of concrete slabs and foundations is scheduled to begin in FY09 followed by confirmatory sampling within the demolished building footprint and removal action. This includes confirmatory surface soil sampling outside of building foot prints to confirm contamination was not spread during demolition activities. This also includes confirmatory subsurface sampling at the AOCs. Contaminated soil will be removed and transported off-site for final deposition at a USEPA approved/permitted landfill with the RA complete September 2012. This work will affect RVAAP-08, RVAAP-09, RVAAP-10, and RVAAP-11. The cost will be carried under RVAAP-08. A final ROD will be developed to address LUCs, surface water, and wet sediment.

Site ID: RVAAP-08
Site Name: LOAD LINE 1

CLEANUP/EXIT STRATEGY

CTC assumptions include excavation and off-site disposal of 556cy of soil and extensive surface and subsurface confirmatory sampling. These will be executed in the RA(C) phase.

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-09
Site Name: LOAD LINE 2

STATUS

Parcel: Load Line 2 (212 acres)

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200010	200707
RD	200510	200707
IRA	200309	200807
RA(C)	200309	201009

RIP Date: N/A

RC Date: 201009

SITE DESCRIPTION

Load Line 2 operated between 1941 and 1971 to melt and load TNT and Composition B into large-caliber projectiles. Wash down water and wastewater from the load line operations collected in concrete sumps, pumped through sawdust filtration units and then discharged to a settling pond. Workers, on a weekly basis during operations, would periodically use steam and hot water to hose down equipment and the floors and walls of buildings contaminated with explosive dust, spills, and vapors. Wash down water and wastewater from the load line operations collected in concrete sumps, pumped through sawdust filtration units and then discharged to a settling pond. Building wash-down water from the melt-pour buildings would exit in some instances out through doorways onto the ground surrounding the buildings when using high-pressure steam assist water hoses. The settling pond was an unlined triangular-shaped pond of approximately two acres and six to eight feet (ft) deep. Water from the impoundment discharged to a surface stream that exited south from the installation.

The COCs at this site are explosive compounds, SVOCs and heavy metals. The media of concern include soils, surface water, sediment and groundwater. Nearly all above ground structures underwent demolition during FY07. Environmental controls implemented during the demolition activities were to prevent migration of contaminants to the environment.

A PBC was awarded in September 2003 to complete an interim soil and sediment removal action at Load Lines 1, 2, 3 and 4 paralleling a BRACD building demolition completed FY07, leaving the structure platforms and slabs in place. The 2003 PBC concluded September 2008. The RI/FS and PP were completed. The final Interim ROD and RD addressing soil and dry sediment were signed July 2007. At the end of first quarter FY08, designated buildings were demolished with all outer-periphery contaminated soils removed and transported off-site for final deposition at a USEPA approved/permitted landfill with the RA completed June 2008. At the beginning of second quarter FY08, a second phase was initiated via the Army removing all building foundations and slabs. Subsequent to Phase II removal is a parallel effort to remove and dispose of any contaminated soils found within the confinements underneath the foundations and slabs. A January 2008 Army change memorandum to the Interim ROD was filed with the Ohio EPA announcing the mentioned Phase II removal. The Phase II removal was completed for the designated underslabs at the end of FY08. Scheduled for FY09, soils under the removed foundations and slabs will be characterized and remediated as necessary. Surface water and wet sediments are being evaluated for further action. A final ROD will be developed to address LUCs, surface water, and wet sediment.

CLEANUP/EXIT STRATEGY

Confirmatory soil sampling and soil remediation will occur and will be funded under RVAAP-08.

Site ID: RVAAP-09
Site Name: LOAD LINE 2

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-10
Site Name: LOAD LINE 3

STATUS

Parcel: Load Line 3 (174 acres)

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200010	200707
RD	200510	200707
IRA	200309	200807
RA(C)	200309	201009

RIP Date: N/A

RC Date: 201009

SITE DESCRIPTION

Load Line 3 use was between 1941 and 1971 to melt and load TNT and Composition B into large-caliber projectiles. Building wash down water and wastewater from the load line operations were collected in concrete sumps, pumped through sawdust filtration units and then discharged to a drainage ditch leading to a settling pond. Workers would periodically use steam and hot water to hose down equipment and the floors and walls of buildings contaminated with explosive dust, spills, and vapors. Wash down water and wastewater from the load line operations were collected in concrete sumps, pumped through sawdust filtration units and then discharged to an off-site settling pond. Building wash-down water from the melt-pour buildings would exit in some instances out through doorways onto the ground surrounding the buildings when using high-pressure steam assist water hoses. Water from the impoundment discharged to a surface stream that flows northerly.

The COCs at this site are explosive compounds, VOCs, SVOCs and metals. Media of concern include soils, surface water, sediment and groundwater.

In September 2003 a PBC was awarded to complete an interim soil and sediment removal action at Load Lines 1, 2, 3 and 4 paralleling a BRACD building demolition completed FY07, leaving the structure platforms and slabs in place. The 2003 PBC concluded September 2008. The RI/FS and PP were completed. The final Interim ROD and RD addressing soil and dry sediment were signed July 2007. At the end of first quarter FY08, designated buildings were demolished with all outer-periphery contaminated soils removed and transported off-site for final deposition at a USEPA approved/permitted landfill with the RA completed June 2008. At the beginning of second quarter FY08, a second phase was initiated via the Army removing all building foundations and slabs. Subsequent to Phase II removal is a parallel effort to remove and dispose of any contaminated soils found within the confinements underneath the foundations and slabs. A January 2008 Army change memorandum to the interim ROD was filed with the Ohio EPA announcing the mentioned Phase II removal. The Phase II removal was completed for the designated underslabs at the end of FY08. Scheduled for FY09, soils under the removed foundations and slabs will be characterized and remediated as necessary. Surface water and wet sediments are being evaluated for further action. A final ROD will be developed to address LUCs, surface water, and wet sediment.

CLEANUP/EXIT STRATEGY

Confirmatory soil sampling and soil remediation will occur and will be funded under RVAAP-08.

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-11
Site Name: LOAD LINE 4

STATUS

Parcel: Load Line 4 (129 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200010	200707
RD	200510	200707
IRA	200309	200807
RA(C)	200309	201009

RIP Date: N/A

RC Date: 201009

SITE DESCRIPTION

Load Line 4 operated between 1941 and 1971 to melt and load TNT and Composition B into large-caliber projectiles. Wash down water and wastewater from the load line operations collected in concrete sumps, pumped through sawdust filtration units and then discharged to a settling pond. Workers, on a weekly basis during operations, would periodically use steam and hot water to hose down equipment and the floors and walls of buildings contaminated with explosive dust, spills, and vapors. Wash down water and wastewater from the load line operations collected in concrete sumps, pumped through sawdust filtration units and then discharged to a settling pond. Building wash-down water from the melt-pour buildings would exit in some instances out through doorways onto the ground surrounding the buildings when using high-pressure steam assist water hoses. The on-site settling pond located within the confines of LL No.4 was an unlined pond approximately two acres and six to eight feet deep. Water from the impoundment discharged to an adjacent surface stream that exits through the installation's southern boundary.

The COCs at this site are explosive compounds, VOCs, SVOCs and heavy metals.

A PBC was awarded in September 2003 to complete an interim soil and sediment removal action at Load Lines 1, 2, 3 and 4 paralleling a BRACD building demolition completed FY07, leaving the structure platforms and slabs in place. The 2003 PBC concluded September 2008. The RI/FS and PP were completed. The final Interim ROD and RD addressing soil and dry sediment were signed July 2007. At the end of first quarter FY08, designated buildings were demolished with all outer-periphery contaminated soils removed and transported off-site for final deposition at a USEPA approved/permitted landfill with the RA completed June 2008. At the beginning of second quarter FY08, a second phase was initiated via the Army removing remaining Bldgs G1; G1A; and G3; building foundations and slabs. Subsequent to Phase II removal is a parallel effort to remove and dispose of any contaminated soils found within the confinements underneath the foundations and slabs. In January 2008 an Army Change Memorandum to the Interim ROD was filed with the Ohio EPA announcing the mentioned Phase II removal. The Phase II removal was completed for the designated underslabs at the end of FY08. Scheduled for FY09, soils under the removed foundations and slabs will be characterized and remediated as necessary. Surface water and wet sediments are being evaluated for further action. A final ROD will be developed to address LUCs, surface water, and wet sediment.

CLEANUP/EXIT STRATEGY

Confirmatory soil sampling and soil remediation will occur and will be funded under RVAAP-08.

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-12
Site Name: LOAD LINE 12

STATUS

Parcel: Load Line 12 (75 acres)

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Explosives, Metals, Nitrate/Nitrite

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	199910	201009
RD	200707	201009
IRA	200807	201009
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

From 1941-1943 and 1946-1950, ammonium nitrate was produced at this site. From 1949 to 1993, munitions were periodically demilitarized. Building wash down water and waste water from the bomb melt out facility operations was collected in a house gutter system, and flowed through a piping system to two stainless steel tanks. The first tank was used for settling, and the second tank was used for filtration. Prior to the 1980s, the water leaked under the building and ponded there. Building wash down water from Building F-904 was also swept out through doorways onto the ground surrounding the building. After 1981, the water was treated in the Load Line 12 wastewater treatment system, which discharged to an on-site pond discharging to a receiving stream that ultimately entered into RVAAP-29 Cobbs Ponds.

The COCs at this site include explosive compounds, nitrates and heavy metals. Media of concern include soil, surface water, sediment and groundwater. The National Pollutant Discharge Elimination System (NPDES) permit for the original pink water treatment plant servicing Building F-904 was terminated May 1, 2000. Therefore the treatment plant is considered formally closed based under NPDES permit parameters.

In 2000, a composting pilot study initiated using soils contaminated with explosives from the area of Building F-904. This pilot bioremediation project was successful for remediation of explosives.

Under PBC05 an RI/FS was completed in 2006 for soil and dry sediment. A PP was completed in May 2007. The PP recommended soil and dry sediment removal. Public review of the PP was completed in January 2009 with ROD and RD to be completed third quarter FY09 subsequent with removal action to be completed fourth quarter 2009.

A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. The RAs, including monitored natural attenuation (MNA) for groundwater, are being evaluated for the site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before 2014. MEC will be addressed under MMRP site RVAAP-012-R-01. Remedial alternatives for groundwater are being evaluated, including MNA.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-13
Site Name: BLDG 1200-DILUTION\SETTLING POND

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200408	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

From approximately 1941 to 1971, ammunition was demilitarized at this building by steaming munitions rounds. The steam decontamination generated pink water, which drained to a man-made ditch. The ditch discharged into a 0.5 acre sedimentation pond, and the overflow from this pond discharged into Sand Creek.

Potential COCs at this site are explosive compounds, propellants and metals. Media of concern include soil, surface water, sediment and groundwater.

This site was transferred to NGB in May 1999. The buildings were demolished, and all foundations and footings were removed.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following items in the RA(C) phase:
- Clear and grub one acre
- 200 linear feet of access road
- Excavation of 200cy of soil
- Nonhazardous off-site disposal of 225cy
- One confirmation sample and one disposal sample
- Hazardous off-site disposal of 25cy
- Construction and operation of a decontamination pad for one week.
- Site Closeout

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-16
Site Name: FUZE &BOOSTER QUARRY LANDFILL/PONDS

STATUS

Parcel: 40MM Test Range/Waterworks Ponds (58 acres)

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200101	200801
RD	200708	201009
RA(C)	200803	201009

RIP Date: N/A

RC Date: 201009

SITE DESCRIPTION

The Fuze and Booster Quarry operated from 1945 through 1993. The site consists of three ponds in an abandoned rock quarry. The ponds are 20 to 30 feet deep and are separated by earthen berms. Prior to 1976, the quarry was reportedly used for OB and as a landfill. The debris from the burning/landfill was reported to have been removed during pond construction. From 1976 to 1993, spent brine regenerate and sand filtration backwash water from Waterworks Three was discharged into the ponds. This discharge was regulated under a NPDES permit (revoked May 1, 2000). In 1998, this site expanded to include three other shallow settling ponds and two debris piles, bringing the site to approximately 45 acres.

IRP constituents of concern include explosives and metals in groundwater, soil, surface water and sediment.

An RI was completed in 2005 and an FS was completed in 2006. A ROD proposing soil and dry sediment cleanup by BRACD was submitted to Ohio EPA and was signed by the Ohio EPA Director in January 2008. An RA is scheduled for FY09. This is one of the six sites in the FY05 PBC.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-19
Site Name: LANDFILL NORTH OF WINKLEPECK BURN GRND

STATUS

Parcel: Landfill North of Winklepeck (5 acres)

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200408	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This is an approximately 2.5 acre unlined landfill used for general refuse located upgradient of a wetland. The landfill operated from 1969 to 1976. The general appearance of the site suggests that a trench and fill method of operation was used for waste disposal. Waste types possibly associated with this landfill include booster cups, aluminum liners, municipal waste, explosive and munitions waste and ash, and scrap metal from the Winklepeck Burning Grounds (RVAAP-5).

Potential COCs at this site include metals, explosives, and SVOCs. IRP RI/FS is currently underway.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following items in the RA(C) phase:
- Clear and grub four acres
- Landfill soil cover (2.5 acres, two feet thick with six inches of foundation)
- Landscape four acres
- Construction and operation of a decontamination pad for eight weeks.
- Site Closeout

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-28
Site Name: MUSTARD AGENT BURIAL SITE

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Chemical weapon munitions (CWM)/Chemical agent

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200306	201309

RIP Date: N/A

RC Date: 201309

SITE DESCRIPTION

This unit is a possible mustard agent burial site approximately 15 by 18 feet. In 1969, records indicate that an explosive ordnance disposal (EOD) unit excavated a suspected mustard agent burial site near the west end of the NACA crash strip. Recovered from the site in 1969 were one 190-liter (50 gallon) drum and seven rusty canisters. All recovered items were empty, and no contamination discovered.

The suspected area, southwest across Hinkley Creek, is presently marked, by reflective Seibert stakes. There were two non-intrusive geophysical surveys (EM-31, and EM-61) completed in 1998. The two surveys identified the demarcated area with positive metallic responses. Some, if not all responses, related to cultural features at or near the surface. Surface soil samples collected in 1998 contained no thiodiglycol (mustard breakdown product). The technical survey disturbed soil or numerous buried metallic objects that would clearly delineate a formal burial site.

Groundwater samples collected to test for mustard and mustard breakdown products in 2004 confirmed further no mustard or mustard breakdown products found. Groundwater monitoring is ongoing. The site was transferred to NGB land steward oversight in May 1999.

In 2006 additional wells installed and sampled for mustard agent and associated breakdown by-products. The chemical analysis reported no detections of mustard agent or the latent by-products.

A FY08 second suspected area investigation, suggested by a member of the public, at the end of the NACA crash strip detected unidentified anomalies. An FY08 contract was awarded to perform a DQO study and a formal surface geophysical survey. The studies will focus on portions of the sites that were not investigated during a previous IRA.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-29
Site Name: UPPER AND LOWER COBBS PONDS

STATUS

Parcel: Cobbs Ponds (9 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
PA	198802	198804
SI	198906	198906
RI/FS	200101	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The site is comprised of approximately five acres (Upper Cobbs Pond) and four acres (Lower Cobbs Pond). The Upper and Lower Cobbs Ponds are unlined ponds that contain abundant fish and wildlife. A ponded area known as "a backwater area" is located south of Upper Cobbs Pond. This area, approximately one acre in size, was created by beaver activity and was not present during operations.

The Upper and Lower Cobbs Ponds were used as sedimentation basins for Load Line 12 & 3 waste water effluent and storm water runoff from 1941 to 1971. The Cobbs Pond complex received waste water effluent from Load Line 3 (RVAAP-10) and Load Line 12 (RVAAP-12). Waste types associated with this site include TNT, RDX, HMX, Composition B, lead, chromium, mercury, and aluminum chloride.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks one through four (investigations) have been awarded. Task five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-33
Site Name: LOAD LINE 6

STATUS

Parcel: Load Line 6 (43 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199407	199602
SI	199407	199901
RI/FS	200207	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site operated primarily as a fuze assembly line from 1941 to 1945 and then deactivated until 1950. Then in 1950, the Firestone Defense Products Division became a tenant. In the late 1980s, Firestone sold its Defense Products Division to Physics International that 3-years later became a subsidiary of Olin Corporation and remained as such up to the time of closure in early 1993. Throughout the history of Load Line 6's tenant occupancy the work regimen remained the same. Reported by former workers at RVAAP, Load Line 6 (LL6) was a security classified experimental test facility for munitions. Shaped charges were constructed and tested under contract for the Department of Defense. The site consisted of a pond (underwater test chamber), two above ground test-firing chambers, and several buildings (approximately 45 acres). No original file documentation exists for this site.

The contaminants of potential concern are explosives and metals.

Demolition of all LL6 buildings was completed July 2006. The test chamber foundation and the concrete blocks around the test pond remain at the site.

A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14. MMRP issues will be addressed separately under RVAAP-033-R-01.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following items in the RA(C) phase:
- Clear and grub one acre
- 500 linear feet of access road
- Excavation of 2,000cy of soil
- Nonhazardous off-site disposal of 2,250cy
- Nine confirmation samples and five disposal samples
- Hazardous off-site disposal of 250cy
- Construction and operation of a decontamination pad for four weeks.
- Site Closeout

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-34
Site Name: SAND CREEK DISPOSAL ROAD LANDFILL

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Metals, Semi-volatiles (SVOC)

Media of Concern: Sediment, Soil, Surface Water

Phases	Start	End
PA	199407	199602
SI	199407	199906
RI/FS	200409	200810
IRA	200209	200409
LTM	200810	204409

RIP Date: N/A

RC Date: 200810

SITE DESCRIPTION

This site was reported by former workers at RVAAP to have been an open dump for concrete, wood, asbestos debris, lab bottles, 55-gallon drums and fluorescent light tubes. Debris is at the surface, but covered by vegetation. The site is approximately 2.7 acres and located adjacent to Sand Creek. The dates of operation of this site are unknown, but believed to be around the 1950s.

Sediment and surface water samples indicated metals and SVOCs were leaching into Sand Creek, a State Resource Water.

A surface soil and debris removal (IRA) was completed in summer 2003. The IRA was documented in a report submitted in April 2004. This site was transferred to NGB in May 1999. A FY08 A-E DQO study was awarded to determine data gaps for the FY03 IRA. Following the DQO study, an IRP RI/FS is scheduled for the last quarter of FY09 or second quarter of FY10 and is already funded.

This site also carries the facility-wide non-groundwater LTM and programmatic support requirements.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following programmatic items in LTM (FACILITY-WIDE):
- Risk assessment revisions (390 hours over one year)
- Ravenna Environmental Information Management System (4,692 hours over five years)
- Administrative Record (2,982 hours over five years)
- Property Management Plan (398 hours over five years)
- Project scheduling (6,561 hours over three years)
- USACE support (46,124 hours over five years)
- Project management support (3,976 hours over five years)
- RAB support (994 hours over five years)
- USACE prior year S&AR

CTC assumptions include the following items in the LTM phase for all sites (including RVAAP-34):
- Five-year reviews for 31 IR sites (six reviews per site)
- 30 years of administrative LUCs for 31 IR sites
- Site closeouts for 31 IR sites
- Cap maintenance for three acres

Site ID: RVAAP-34
Site Name: SAND CREEK DISPOSAL ROAD LANDFILL

Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-38
Site Name: NACA TEST AREA

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199508	199602
SI	199508	199812
RI/FS	199909	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This is an approximately 12 acre site previously used as an aircraft test area by NACA. Surplus military aircraft crashed into constructed barriers, using a fixed rail attached to the aircraft landing gear, in an attempt to develop crash-worthy fuel tanks and/or high flashpoint aviation fuel. Burial of some demolished aircraft occurred at the site after the tests. Open Demolition Area 1, RVAAP-03, is surrounded by RVAAP-38.

Soil analysis of the site detected low levels of metals and organics. Dry sediment analysis performed within the NACA site detected nitrocellulose. Additional study was needed of the area. A site inspection (SI)/Phase 1 RI for the site was completed in 2002. This site was transferred to the NGB in May 1999.

Twelve groundwater monitoring wells were installed and sampled in 2004. Analytical results indicated metals and low levels SVOCs.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Cleanup will be addressed by the FY08 PBA (costs are in the PBC at Ravenna site). Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066. No other funding requirements are anticipated.

Site ID: RVAAP-39
Site Name: LOAD LINE 5

STATUS

Parcel: Load Line 5 (39 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200408	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site operated from 1941 to 1945 to produce fuzes for artillery projectiles. Load Line 5 was deactivated and its equipment was removed in 1945.

Metals and SVOCs above screening criteria were detected in soil, sediment, and surface water samples. Nitrates above screening criteria were also detected in surface water.

Removal of buildings, including slabs and foundations, was completed in FY07. An FY08 USACE underslab soil and dry sediment survey was completed with findings reported to the RVAAP stakeholders second quarter FY09.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-40
Site Name: LOAD LINE 7

STATUS

Parcel: Load Line 7 (37 acres)

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200408	201309
RD	200807	201309
RA(C)	200803	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The site use was to assemble booster charges for artillery projectiles between 1941 and 1945. Load Line 7 (LL-7) was deactivated and the equipment was removed in 1945. LL-7 used again in 1969 and 1970 produced 40mm projectiles. The site reactivated between 1989 and 1993 under a tenant contract operated by an Olin Corporation subsidiary, Physics International (PI), for the manufacture of large caliber conventional weaponry. The PI LL-7 munitions process constructed and utilized a carbon-adsorption filtration plant to treat process wastewaters contaminated with explosives. The NPDES permit for the filtration plant was revoked May 2000. Therefore, the plant is considered closed.

An earlier SI showed a presence above screening levels for metals, VOCs, SVOCs and explosives in soil, sediment, surface water and groundwater.

Removal of buildings, including slabs and foundations, was completed in FY07. An FY08 USACE underslab soil and dry sediment survey was completed with findings reported to the RVAAP stakeholders second quarter FY09.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-41
Site Name: LOAD LINE 8

STATUS

Parcel: Load Line 8 (44 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200408	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The site was used to assemble booster charges for artillery projectiles between 1941 and 1945. Load Line 8 was deactivated and the equipment was removed in 1945.

An earlier SI showed a presence above screening levels for metals, VOCs, SVOCs and explosives in soil, sediment, surface water and groundwater.

Removal of buildings, including slabs and foundations, was completed in FY07. An FY08 USACE underslab soil and dry sediment survey was completed with findings reported to the RVAAP stakeholders second quarter FY09.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-42
Site Name: LOAD LINE 9

STATUS

Parcel: Load Line 9 (106 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200208	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site operated from 1941 to 1945 to produce detonators. Load Line 9 deactivated and its equipment removed in 1945.

Limited samples collected in 2000 detected low levels (below 2%) of lead azide in sediment and surface water in the sumps. The removal of buildings, including slabs and foundations, was completed in FY07.

A completed SI/Phase I RI submittal took place in July 2007. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-43
Site Name: LOAD LINE 10

STATUS

Parcel: Load Line 10 (36 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200408	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site operated from 1941 to 1945 to produce percussion elements. Load Line 10 went on standby status in 1945. From 1951 to 1957, LL-10 produced primers and percussion elements. From 1969 to 1971, LL-10 was reactivated, produced munitions primers. It has been inactive since.

An earlier SI showed a presence above screening levels for metals, VOCs, SVOCs and explosives in soil, sediment, surface water and groundwater.

Removal of buildings, including slabs and foundations, was completed in FY07. An FY08 USACE underslab soil and dry sediment survey was completed with findings reported to the RVAAP stakeholders second quarter FY09.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-44
Site Name: LOAD LINE 11

STATUS

Parcel: Load Line 11 (47 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	199910	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

This site operated from 1941 to 1945 to produce primers for artillery projectiles. Load Line 11 was placed on standby in 1945. From 1951 to 1957, LL-11 was used to produce primers and fuzes.

The removal of lead/asbestos-lined sumps, lead-contaminated sediments, and solvent-contaminated soils occurred during an IRA in 2001. The Final IRA report was completed in April 2004. Several of the sewer lines were intentionally plugged with grout to prevent migration of contaminants.

The SI/Phase I RI was completed in FY05 prior to demolition of the buildings. The complete removal of buildings, including slabs and foundations, occurred in FY05.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-45
Site Name: WET STORAGE AREA

STATUS

Parcel: Wet Storage (36 acres)

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Soil

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200409	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The site use from 1941 to 1945 was to store primary explosives in water-filled tanks. There is no documentation concerning any spills in the area.

The COCs at this site include metals and explosives. Four of the six igloos were demolished in spring 2003-2004.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following items in the RA(C) phase:
- Clear and grub one acre
- Excavation of 150cy of soil
- Nonhazardous off-site disposal of 169cy
- One confirmation sample and one disposal sample
- Hazardous off-site disposal of 19cy
- Construction and operation of a decontamination pad for one week.
- Site closeout

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-46
Site Name: BUILDING F-15 AND F-16

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Soil, Surface Water

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200312	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

These buildings were used during World War II, the Korean Conflict and Vietnam War to test miscellaneous explosives. Quantities and exact dates of testing are unknown.

An earlier SI (CY 2005-2006) found metals, explosives, SVOCs in soil and surface water above the screening criteria. Phase I RI did not investigate groundwater.

The site was transferred to NGB in May 1999. In FY09 all foundations and slabs will be removed. Subsequent to removal will be a parallel effort to characterize, remove, and dispose of any contaminated soils found beneath the removed foundations and slabs.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Cleanup will be addressed by the FY08 PBA (costs are in the PBC at Ravenna site). Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066. No other funding requirements are anticipated.

Site ID: RVAAP-48
Site Name: ANCHOR TEST AREA

STATUS

Parcel: Anchor Test Area (2 acres)

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200408	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The Anchor Test Area is located in the central part of the installation. Limited information is known about this research and development area. It is believed that use of the site was for testing of explosively driven soil anchoring devices. The dates of use for this site are unknown. It currently consists of several dirt mounds with a nearby sand pit (approximately 6 x 30ft). There is metal debris in the area.

Metals were found in soil above screening levels.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-49
Site Name: CENTRAL BURN PITS

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: HIGH

Contaminants of Concern: Metals, Semi-volatiles (SVOC)

Media of Concern: Soil

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200010	201009
IRA	200704	200812

RIP Date: N/A

RC Date: 201009

SITE DESCRIPTION

This site of approximately 20 acres was used for burning non-explosive scrap materials. The dates of operation for the site are unknown.

This site was transferred to NGB in May 1999.

This is one of the six sites in the FY05 PBC. An engineering evaluation/cost analysis (EE/CA) was completed. The SI/Phase 1 RI was completed in 2005. Metals (lead and hexavalent chromium) identified were in two debris piles at levels that required removal. An IRA removal and disposition of the two piles was completed in FY09. Removal Action Report was submitted to Ohio EPA with draft ROD Addendum 1 submittal made in February 2009. A NFA ROD for soil and dry sediment is expected to be finalized by June 2009.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-50
Site Name: ATLAS SCRAP YARD

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Semi-volatiles (SVOC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200408	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

In the 1940s the site contained a complex of buildings that supported the installation's principal construction and engineering company staff and barracks type housing. After WWII, a majority of the Atlas building complex was demolished leaving the remaining portion of structures to support the installation's Roads & Grounds Maintenance staff and equipment (e.g. cranes, bulldozers, tractor-trailers, backhoes) that also included 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 and the site became a storage/stockpile yard for various types of bulk materials used in the day-to-day installation operations; e.g. gravel, railroad ballast, sand, culvert pipe, railroad ties, telephone poles. In the mid to late 1980s, the southeast portion of the old Atlas area became a staging area for salvaged ammunition boxes from the demilitarization of defunct Vietnam War era munitions.

Under an earlier SI/Phase 1 RI, analyses found explosives, SVOCs, and metals present in soils, sediment, surface water and groundwater above screening levels.

This site was transferred to NGB in May 1999.

This is one of 14 sites investigated in FY04-FY05 to provide data for a future contract. A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

MEC issues are covered under RVAAP-050-R-01.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following items in the RA(C) phase:
- Clear and grub two acres
- 2,000 linear feet of access road
- Excavation of 6,500cy of soil
- Nonhazardous off-site disposal of 7,313cy
- 43 confirmation samples and 17 disposal samples
- Hazardous off-site disposal of 813cy
- Construction and operation of a decontamination pad for 13 weeks.
- Site closeout

Site ID: RVAAP-50
Site Name: ATLAS SCRAP YARD

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-51
Site Name: DUMP ALONG PARIS-WINDHAM ROAD

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Asbestos, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	199802	199806
SI	199807	199807
RI/FS	200109	201209
IRA	200209	200409

RIP Date: N/A

RC Date: 201209

SITE DESCRIPTION

This AOC 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 landfill are unknown.

Collection and analyses of surface water, sediment and biological samples occurred in Sand Creek adjacent to the site. There were no detections above background identified in the surface water and sediment. Biological samples reflected excellent stream quality.

Debris removal was complete 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 because it would have compromised Paris-Windham Road stability.

A focused feasibility study (FFS) is programmed to address remaining concerns with coordination with the Ohio EPA in late FY09 or early FY10.

CLEANUP/EXIT STRATEGY

Non-groundwater LTM requirements are carried in RVAAP-034. Groundwater monitoring requirements are carried in RVAAP-066.

Site ID: RVAAP-66
Site Name: Facility-wide Groundwater

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: MEDIUM

Contaminants of Concern: Explosives, Metals, Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA	198802	198804
SI	198805	198906
RI/FS	199910	201309
RA(C)	201310	201409
RA(O)	201310	204409

RIP Date: 201409

RC Date: 204409

SITE DESCRIPTION

Groundwater issues at RVAAP are managed through a facility-wide approach called FWGWMP under this site. All groundwater wells are covered under IRP. The FWGWMP was approved in 2004 and monitoring was initiated in 2005 on 36 wells. A review of the FWGWMP was completed in 2007 and the program has been expanded to include all 237 monitoring wells at RVAAP for four quarterly events.

The FWGW site is currently in an RI phase, and quarterly monitoring is being conducted of all 237 wells (4 events per well) to characterize the groundwater quality conditions at those wells. Further delineation of the groundwater impact at the facility was initiated in FY08 in two areas: Groundwater at 17 AOCs will be investigated during Phase II RIs (under PBA 2008), and six deep monitoring wells have been installed (with existing funds) and will be sampled to evaluate groundwater impact in the basal portion of the Sharon Conglomerate aquifer.

Upon completion of the RI phase, it is anticipated that an FS will be conducted to determine the appropriate remedial measures where action (if any) is required.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following items in the RI/FS phase:
- Semi-annual monitoring of 54 shallow wells for four years.
- Semi-annual monitoring of six deep wells for four years
- Abandonment of 120 shallow wells in FY13.
- An FS (high complexity, moderate study detail, broad documentation for all other sites)

In the RA(C) phase, CTC assumptions include two replacement wells (FY14). In the RA(O) phase, CTC assumptions include annual monitoring of 54 shallow wells for 30 years and annual monitoring of six deep wells for 30 years, as well as abandonment of 120 shallow wells in FY17.

Site ID: RVAAP-67
Site Name: Facility-wide Sewers

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
RRSE: LOW

Contaminants of Concern: Explosives

Media of Concern: Soil

Phases	Start	End
PA	198802	198804
SI	198805	198906
RI/FS	199910	201309
RD	200807	201309
RA(C)	200807	201409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The Ravenna plant started loading or demilitarizing ammunition in 1941 and continued operations intermittently until the late 1970s. The operations required processing large quantities of secondary explosives. Periodic cleaning of the process areas resulted in explosive residues in the sanitary and storm sewers and settling ponds. None of the materials have been discovered outside the boundaries of the plant.

Sewers thought to have transported explosive residues during plant operations are believed to be limited to the 12 process areas, 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.

The 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 the sanitary sewers are change houses within the various plants where coveralls were removed and people showered prior to leaving the facility, the laundry where the clothes were washed and the laboratory where small quantities of explosives were tested.

Storm sewers within the plants 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 could migrate to the storm water drain system. Explosives could also enter the storm system from explosive filter effluent traveling to settling ponds.

Lakeshore Engineering was contracted to determine the explosive residues in sewers and make recommendations as recorded in its report "Explosive Evaluation of Sewers" dated November 2007. The Corps of Engineers Research Laboratory performed a similar investigation of explosive contamination in the sewer system in a letter report dated June 15, 2007 which has been included in Lakeshore's report as an appendix.

A PBA was awarded in FY08 which will address all investigation and cleanup through RC for this site. Tasks One through Four (investigations) have been awarded. Task Five (remediation) is carried in the PBA site and will be awarded as needed before FY14.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase include a soil investigation including 65 direct push soil borings with two samples per boring and an FS (low complexity, narrow study detail, documentation). Groundwater will be addressed under RVAAP-66.

Site ID: RVAAP-67
Site Name: Facility-wide Sewers

CTC assumptions in the RA(C) phase include the following:
- Clear and grub one acre
- 2,000 linear feet of access road
- Excavation of 2,500cy of soil
- Nonhazardous off-site disposal of 1,563cy
- 17 confirmation samples and seven disposal samples
- Hazardous off-site disposal of 1,563cy
- Construction and operation of a decontamination pad for five weeks.
- Site closeout

IRP No Further Action Sites Summary

Site ID	Site Name	NFA Date	Documentation
RVAAP-02	ERIE BURNING GROUNDS	200809	An NFA ROD for soil and dry sediment was signed by Ohio EPA in January 2008. Any MEC issues at the site are being covered under RVAAP-002-R-01.
RVAAP-04	OPEN DEMOLITION AREA #2	200801	An NFA ROD for soil and dry sediment was signed by Ohio EPA in January 2008. Any MEC issues at the site are being covered under RVAAP-004-R-01.
RVAAP-07	BLD 1601 HAZ WST STG	198906	Closure plan approval letter from Director of Ohio EPA, dated 02/12/1998 (with modifications). Letter from RVAAP responded with modified pages 06/26/2000. Closed under RCRA.
RVAAP-14	LOAD LINE 6 EVAPORATION UNIT	198906	Operational from 1987-1993. Not eligible for ER,A funding. Closure letter from Ohio EPA dated 20 Jan 2003
RVAAP-15	LOAD LINE 6 TREATMENT PLANT	200001	Operational from 1987-1993. Not eligible for ER,A funding.
RVAAP-17	DEACTIVATION FURNACE	198906	The DFA was not closed under RCRA. Soils and groundwater were moved over to the CERCLA side of the house under the Directors Findings and Orders (see section VI (9) (c). Journalized date June 10, 2004. RCRA closure plan submitted 23 Feb 2001. Soils and GW are covered under Winklepeck (RVAAP-05)
RVAAP-18	LOAD LINE 12 WWT PLANT	199703	Operational until 1983. Termination of NPDES permit effective May 1, 2000.
RVAAP-20	SAND CREEK STP	198906	Operational until 1993. Letter from Director of Ohio EPA. NPDES permit terminated May 1, 2000.
RVAAP-21	DEPOT STP	198906	Operational until 1983. NPDES was terminated May 1, 2000.
RVAAP-22	GEORGE RD STP	198906	Activities for this site are carried under CC RVAAP-75.
RVAAP-23	UNIT TRAINING EQUIPMENT SITE UST	198911	Closeout Letter from OSFM BUSTR dated 02/05/2003.
RVAAP-24	DEPOT AREA	198906	Activities for this site are carried under CC RVAAP-76.
RVAAP-25	BLD 1034 MOTOR POOL AST	198906	Not eligible for ER,A funding.
RVAAP-26	FUZE BOOSTER AREA SETTLING TANKS	200001	15 tanks scattered among LL 5 (1 tank), 7 (1 removed in 1988), 9 (2 tanks), 10 (9 tanks-1 AST, 8 USTs), 11 (3 tanks); all tanks emptied, cleaned and covered in 1971. Soils are being investigated in conjunction with site-specific media investigation/cleanup. (RVAAP-39,

IRP No Further Action Sites Summary

Site ID	Site Name	NFA Date	Documentation
			-40, -42, -43, & -44)
RVAAP-27	BUILDING 854, PCB STORAGE	198906	Letter from Ohio EPA dated September 1, 1999 stating NFA.
RVAAP-30	LL 7 TREATMENT PLANT	200001	Operational until 1983. Termination of NPDES permit effective May 1, 2000.
RVAAP-31	ORE PILE RETENTION POND	200001	Termination of NPDES permit effective May 1, 2000.
RVAAP-32	40 MM FIRING RANGE	200709	All concerns are being addressed under MMRP.
RVAAP-35	1037 BUILDING-LAUNDRY WASTEWATER SUMP	199809	Activities for this site are carried under CC RVAAP-77.
RVAAP-36	PISTOL RANGE	200509	Letter from Ohio EPA regarding the delay of clean-up until range no longer used, dated February 14, 2006. Range being used by OHARNG.
RVAAP-37	PESTICIDE BUILDING S-4452	199602	Closure letter from Ohio EPA dated September 19, 2000.
RVAAP-47	BUILDING T-5301	200109	Statement of Basis - signed by RVAAP and Ohio EPA on December 07, 2000. Clean up to background/bedrock. IRA in FY00 left no contaminants in place.

IRP Schedule

Date of IRP Inception: 198802

Past Phase Completion Milestones

1988	
ISC	(RVAAP-23 - UNIT TRAINING EQUIPMENT SITE UST)
RFA	(RVAAP-07 - BLD 1601 HAZ WST STG, RVAAP-14 - LOAD LINE 6 EVAPORATION UNIT, RVAAP-17 - DEACTIVATION FURNACE, RVAAP-27 - BUILDING 854, PCB STORAGE)
PA	(RVAAP-67 - Facility-wide Sewers, RVAAP-01 - RAMSDELL QUARRY LANDFILL, RVAAP-02 - ERIE BURNING GROUNDS, RVAAP-03 - OPEN DEMOLITION AREA #1, RVAAP-04 - OPEN DEMOLITION AREA #2, RVAAP-05 - WINKLEPECK BURNING GROUNDS, RVAAP-06 - C BLOCK QUARRY , RVAAP-08 - LOAD LINE 1 , RVAAP-09 - LOAD LINE 2, RVAAP-10 - LOAD LINE 3, RVAAP-11 - LOAD LINE 4, RVAAP-12 - LOAD LINE 12, RVAAP-13 - BLDG 1200-DILUTION\SETTLING POND, RVAAP-15 - LOAD LINE 6 TREATMENT PLANT, RVAAP-16 - FUZE &BOOSTER QUARRY LANDFILL/PONDS, RVAAP-18 - LOAD LINE 12 WWT PLANT, RVAAP-19 - LANDFILL NORTH OF WINKLEPECK BURN GRND, RVAAP-20 - SAND CREEK STP, RVAAP-21 - DEPOT STP, RVAAP-22 - GEORGE RD STP, RVAAP-24 - DEPOT AREA, RVAAP-25 - BLD 1034 MOTOR POOL AST, RVAAP-26 - FUZE BOOSTER AREA SETTLING TANKS, RVAAP-28 - MUSTARD AGENT BURIAL SITE, RVAAP-29 - UPPER AND LOWER COBBS PONDS, RVAAP-30 - LL 7 TREATMENT PLANT, RVAAP-31 - ORE PILE RETENTION POND, RVAAP-66 - Facility-wide Groundwater)
1989	
SI	(RVAAP-67 - Facility-wide Sewers, RVAAP-01 - RAMSDELL QUARRY LANDFILL, RVAAP-02 - ERIE BURNING GROUNDS, RVAAP-03 - OPEN DEMOLITION AREA #1, RVAAP-04 - OPEN DEMOLITION AREA #2, RVAAP-05 - WINKLEPECK BURNING GROUNDS, RVAAP-06 - C BLOCK QUARRY , RVAAP-08 - LOAD LINE 1 , RVAAP-09 - LOAD LINE 2, RVAAP-10 - LOAD LINE 3, RVAAP-11 - LOAD LINE 4, RVAAP-12 - LOAD LINE 12, RVAAP-13 - BLDG 1200-DILUTION\SETTLING POND, RVAAP-15 - LOAD LINE 6 TREATMENT PLANT, RVAAP-16 - FUZE &BOOSTER QUARRY LANDFILL/PONDS, RVAAP-18 - LOAD LINE 12 WWT PLANT, RVAAP-19 - LANDFILL NORTH OF WINKLEPECK BURN GRND, RVAAP-20 - SAND CREEK STP, RVAAP-21 - DEPOT STP, RVAAP-22 - GEORGE RD STP, RVAAP-24 - DEPOT AREA, RVAAP-25 - BLD 1034 MOTOR POOL AST, RVAAP-26 - FUZE BOOSTER AREA SETTLING TANKS, RVAAP-28 - MUSTARD AGENT BURIAL SITE, RVAAP-29 - UPPER AND LOWER COBBS PONDS, RVAAP-30 - LL 7 TREATMENT PLANT, RVAAP-31 - ORE PILE RETENTION POND, RVAAP-66 - Facility-wide Groundwater)
INV	(RVAAP-23 - UNIT TRAINING EQUIPMENT SITE UST)
CS	(RVAAP-07 - BLD 1601 HAZ WST STG, RVAAP-14 - LOAD LINE 6 EVAPORATION UNIT, RVAAP-17 - DEACTIVATION FURNACE, RVAAP-27 - BUILDING 854, PCB STORAGE)
1990	
IMP(C)	(RVAAP-23 - UNIT TRAINING EQUIPMENT SITE UST)
1996	
PA	(RVAAP-32 - 40 MM FIRING RANGE, RVAAP-33 - LOAD LINE 6 , RVAAP-34 - SAND CREEK DISPOSAL ROAD LANDFILL, RVAAP-35 - 1037 BUILDING-LAUNDRY WASTEWATER SUMP, RVAAP-36 - PISTOL RANGE, RVAAP-37 - PESTICIDE BUILDING S-4452, RVAAP-38 - NACA TEST AREA)
SI	(RVAAP-37 - PESTICIDE BUILDING S-4452)
1997	
RI/FS	(RVAAP-18 - LOAD LINE 12 WWT PLANT)
SI	(RVAAP-32 - 40 MM FIRING RANGE)
1998	

1998	
SI	(RVAAP-35 - 1037 BUILDING-LAUNDRY WASTEWATER SUMP, RVAAP-39 - LOAD LINE 5 , RVAAP-40 - LOAD LINE 7 , RVAAP-41 - LOAD LINE 8 , RVAAP-42 - LOAD LINE 9, RVAAP-43 - LOAD LINE 10, RVAAP-44 - LOAD LINE 11, RVAAP-45 - WET STORAGE AREA, RVAAP-46 - BUILDING F-15 AND F-16, RVAAP-47 - BUILDING T-5301, RVAAP-48 - ANCHOR TEST AREA, RVAAP-49 - CENTRAL BURN PITS, RVAAP-50 - ATLAS SCRAP YARD, RVAAP-51 - DUMP ALONG PARIS-WINDHAM ROAD)
PA	(RVAAP-39 - LOAD LINE 5 , RVAAP-40 - LOAD LINE 7 , RVAAP-41 - LOAD LINE 8 , RVAAP-42 - LOAD LINE 9, RVAAP-43 - LOAD LINE 10, RVAAP-44 - LOAD LINE 11, RVAAP-45 - WET STORAGE AREA, RVAAP-46 - BUILDING F-15 AND F-16, RVAAP-47 - BUILDING T-5301, RVAAP-48 - ANCHOR TEST AREA, RVAAP-49 - CENTRAL BURN PITS, RVAAP-50 - ATLAS SCRAP YARD, RVAAP-51 - DUMP ALONG PARIS-WINDHAM ROAD)
1999	
SI	(RVAAP-33 - LOAD LINE 6 , RVAAP-34 - SAND CREEK DISPOSAL ROAD LANDFILL, RVAAP-36 - PISTOL RANGE, RVAAP-38 - NACA TEST AREA)
2000	
RD	(RVAAP-47 - BUILDING T-5301)
2001	
RA(C)	(RVAAP-47 - BUILDING T-5301)
2003	
PA	(PBC at Ravenna - PBC 2005 and PBA 2008)
IRA	(RVAAP-03 - OPEN DEMOLITION AREA #1)
2004	
IRA	(RVAAP-34 - SAND CREEK DISPOSAL ROAD LANDFILL, RVAAP-51 - DUMP ALONG PARIS-WINDHAM ROAD)
2005	
RI/FS	(RVAAP-36 - PISTOL RANGE)
2007	
RD	(RVAAP-09 - LOAD LINE 2, RVAAP-10 - LOAD LINE 3, RVAAP-11 - LOAD LINE 4)
RI/FS	(RVAAP-01 - RAMSDELL QUARRY LANDFILL, RVAAP-08 - LOAD LINE 1 , RVAAP-09 - LOAD LINE 2, RVAAP-10 - LOAD LINE 3, RVAAP-11 - LOAD LINE 4, RVAAP-32 - 40 MM FIRING RANGE)
2008	
RI/FS	(RVAAP-02 - ERIE BURNING GROUNDS, RVAAP-04 - OPEN DEMOLITION AREA #2, RVAAP-16 - FUZE &BOOSTER QUARRY LANDFILL/PONDS)
IRA	(RVAAP-08 - LOAD LINE 1 , RVAAP-09 - LOAD LINE 2, RVAAP-10 - LOAD LINE 3, RVAAP-11 - LOAD LINE 4)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID	Site Name	ROD/DD Title	ROD/DD Date
RVAAP-12	LOAD LINE 12	Load Line 12, RVAAP-12	20091001
RVAAP-01	RAMSDELL QUARRY LANDFILL	Ramsdell Quarry Landfill, RVAAP-01	20091001

Final RA(C) Completion Date: 201409

NPL Deletion Date: N/A

IRP Schedule

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of IRP at Installation (including LTM phase): 204409

RAVENNA ARMY AMMUNITION PLANT IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
PBC at Ravenna	PBC 2005 and PBA 2008	PA						
		RI/FS						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-01	RAMSDELL QUARRY LANDFILL	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-03	OPEN DEMOLITION AREA #1	PA						
		SI						
		RI/FS						
		IRA						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-05	WINKLEPECK BURNING GROUNDS	PA						
		SI						
		RI/FS						
		IRA						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-06	C BLOCK QUARRY	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-08	LOAD LINE 1	PA						
		SI						
		RI/FS						
		RD						
		IRA						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-09	LOAD LINE 2	PA						
		SI						
		RI/FS						
		RD						
		IRA						
		RA(C)						

RAVENNA ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-10	LOAD LINE 3	PA						
		SI						
		RI/FS						
		RD						
		IRA						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-11	LOAD LINE 4	PA						
		SI						
		RI/FS						
		RD						
		IRA						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-12	LOAD LINE 12	PA						
		SI						
		RI/FS						
		RD						
		IRA						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-13	BLDG 1200-DILUTION\SETTLING POND	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-16	FUZE &BOOSTER QUARRY LANDFILL/PONDS	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-19	LANDFILL NORTH OF WINKLEPECK BURN GRND	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-28	MUSTARD AGENT BURIAL SITE	PA						
		SI						
		RI/FS						

RAVENNA ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-29	UPPER AND LOWER COBBS PONDS	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-33	LOAD LINE 6	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-34	SAND CREEK DISPOSAL ROAD LANDFILL	PA						
		SI						
		RI/FS						
		IRA						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-38	NACA TEST AREA	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-39	LOAD LINE 5	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-40	LOAD LINE 7	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-41	LOAD LINE 8	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						

RAVENNA ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-42	LOAD LINE 9	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-43	LOAD LINE 10	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-44	LOAD LINE 11	PA						
		SI						
		RI/FS						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-45	WET STORAGE AREA	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-46	BUILDING F-15 AND F-16	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-48	ANCHOR TEST AREA	PA						
		SI						
		RI/FS						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-49	CENTRAL BURN PITS	PA						
		SI						
		RI/FS						
		IRA						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-50	ATLAS SCRAP YARD	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						

RAVENNA ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-51	DUMP ALONG PARIS-WINDHAM ROAD	PA						
		SI						
		RI/FS						
		IRA						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-66	Facility-wide Groundwater	PA						
		SI						
		RI/FS						
		RA(C)						
		RA(O)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-67	Facility-wide Sewers	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						

RAVENNA ARMY AMMUNITION PLANT

Non-BRAC Excess
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Response Complete (RC) Sites: 20/5

Installation Site Types with Future and/or Underway Phases

2 Disposal Pit/Dry Well
(RVAAP-019-R-01, RVAAP-032-R-01)

2 Explosive Ordnance Disposal Area
(PBA@MR Ravenna, RVAAP-034-R-01)

4 Open Burn
(RVAAP-001-R-01, RVAAP-002-R-01, RVAAP-004-R-01, RVAAP-016-R-01)

7 Unexploded Munitions/Ordnance
(RVAAP-008-R-01, RVAAP-033-R-01, RVAAP-050-R-01, RVAAP-060-R-01, RVAAP-061-R-01, RVAAP-062-R-01, RVAAP-063-R-01)

Most Widespread Contaminants of Concern

Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern

Groundwater, Sediment, Soil, Surface Water

Completed Remedial Actions (Interim Remedial Actions / Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY	Cost
RVAAP-004-R-01	OPEN DEMOLITION AREA #2	IRA	FENCE OR OTHER SITE ACCESS CONTROL MEASURES	2008	$264.0 K

Duration of MMRP

Year of MMRP Inception: 200209

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201909/201909

Date of MMRP completion including Long Term Management (LTM): Indefinite

MMRP Contamination Assessment

Contamination Assessment Overview

In October 2007 a CERCLA site inspection (SI) was completed at RVAAP to initially assess the munitions response sites (MRS) at the facility. The MRSs were addressed under the US Army. The MMRP. SI activities included historical records reviews (HRR), magnetometer assisted Unexploded Ordnance (UXO) surveys, and sampling and laboratory analysis of surface soils. The results of these activities are presented in Engineering-Environmental Management, Inc. (e²M) final SI report, dated May 2008.

Nineteen (19) MRSs were originally identified at RVAAP. Two of the MRSs became ineligible for the MMRP because of their redevelopment as active operational ranges. As such, they were not investigated during the SI. The MRSs not eligible for the MMRP are as follows the Winklepeck Burning Grounds (RVAAP-005-R-01) and Old Hayfield (RVAAP-064-R-01)

The Winklepeck Burning Ground MRS had also been formerly addressed with BRAC and IRP funding. Chemical contamination at this MRS was addressed under the IRP, whereas BRAC funding was used to address explosive safety.

Only 17 MRSs were determined to require further investigation under the SI. Those MRSs and recommendations on whether further characterization is needed or if NFA is recommended are spelled out below.

Ramsdell Quarry Landfill MRS (RVAAP-001-R-01)
Potential presence of MEC in pond in the northern quarry area. MRS is recommended for further characterization.

Erie Burning Grounds MRS (RVAAP-002-R-01)
Subsurface anomalies detected in southwest portion of MRS. One possible MEC item found partially buried northwest of wooded area. MEC is also expected in the flooded sections of the MRS. MRS is recommended for further characterization.

Open Demolition Area No. 2 MRS (formerly Demolition Area No. 2) (RVAAP-004-R-01)
MEC found at Rocket Ridge, the Bomb Disposal Area, Burial Site 2, and on the hill across Sand Creek from Rocket Ridge. MRS is recommended for further characterization.

Load Line No. 1 MRS (RVAAP-008-R-01)
Based on the UXO survey and MC results, MRS is recommended for Further Characterization to address MEC and MC.

Load Line No. 12 MRS (RVAAP-012-R-01)
No evidence of MEC, NFA.

Fuze and Booster Quarry MRS (RVAAP-016-R-01)
Munitions debris found on southeastern side of southern pond. Subsurface anomalies detected on south and east sides of southern pond, east side of the central pond, and eastern and northern sides of the north pond (possible MEC). RVAAP personnel have indicated presence of potential MEC in northern and southern ponds. MRS is recommended for further characterization. MRS footprint can be reduced to the 4.92 acres that encompass the banks and three ponds. MC will continue to be addressed under the IRP.

Landfill North of Winklepeck MRS (RVAAP-019-R-01)
Munitions debris found. Multiple subsurface anomalies detected along the length of the hillside adjacent to the former landfill. MRS is recommended for further characterization.

40MM Firing Range MRS (RVAAP-032-R-01)
Munitions debris found from target point to a point approximately 100ft beyond former impact area. Reduce MRS size to include only the impact area and 100ft beyond. MRS is recommended for further Characterization to address MEC and MC concerns.

Firestone Test Facility MRS (RVAAP-033-R-01)
Subsurface anomalies detected around pond and location of the test chamber. Decrease footprint of MRS to 0.41 acres to include areas around pond and former test chamber. Conduct further characterization to address MEC concerns. No additional characterization is required to address MC.

Sand Creek Dump MRS (RVAAP-034-R-01)
Possible presence of MEC could not be ruled out. As such, additional characterization was recommended to address MEC concerns. MC will continue to be addressed under the IRP.

Building No. F-15 and F-16 MRS (RVAAP-046-R-01)
No evidence of MEC, NFA.

Anchor Test Area MRS (RVAAP-048-R-01)
No evidence of MEC, NFA.

Atlas Scrap Yard MRS (RVAAP-050-R-01)
Complete assessment could not be completed in south-central section due to obstructions. Subsurface anomalies detected around piles and in other areas of MRS. MRS is recommended for further characterization to address MEC concerns. MC will continue to be addressed under the IRP. -Block D Igloo MRS (RVAAP-060-R-01) - A complete survey could not be completed. Only a few scattered subsurface anomalies were detected. Additional characterization work will be required at the MRS under the MMRP to address MEC. MC will continue to be addressed under the IRP. The revised MRS footprint would include approximately 340.2 acres.

Block D Igloo MRS (RVAAP-060-R-01)
Two new off-post areas identified where munitions debris or MEC may be present. New areas were not surveyed during the SI. The MRS has been revised to include the new locations outside the Installation boundary. Area 1 consists of privately owned agricultural land (12 acres), and Area 2 is a densely wooded area (2.13 acres). Combined, the MRS consists of 14.13 acres. The new locations require additional characterization under a future MMRP action.

Water Works No. 4 Dump MRS (RVAAP-062-R-01)
Munitions debris found at site reportedly void of energetic material. Subsurface anomaly detections were made in open field. It is recommended that the MRS footprint be decreased to include only the open field where subsurface anomalies were detected. New MRS footprint is recommended for further characterization.

Group 8 MRS (RVAAP-063-R-01)
T-bar fuzes considered potential MEC were discovered. Munitions debris was found in the MC2, MC3 and MC4 areas of the MRS. Estimated concentrations of 2,4-dinitrotoluene, 2,6-dinitrotoluene, 1,3,5trinitrobenzene, and TNT were detected in surface soil samples. The MRS is recommended for further characterization.

The above-listed recommendations for further characterization and assessment will be addressed in the award of a PBA award in 2009.

Cleanup Exit Strategy

The 2009 PBA is being awarded. Remedial investigations will be completed at all MMRP sites by 2014, and RIP/RC will be completed at all MMRP sites by 2019.

MMRP Previous Studies

	Title	Author	Date
2003			
	Final US Army Closed, Transferring and Transferred Range/Site Inventory for Ravenna Army Ammunition Plant, Ohio	engineering-environmental Management, Inc.	NOV-2003
2004			
	Archives Search Report for the Ravenna Army Ammunition Plant	US Army Corps of Engineers	JUN-2004
2007			
	Military Munitions Response Program Historical Records Review, Ravenna Army Ammunition Plant, Ohio	e2M	JAN-2007
	Final Work Plan for the Military Munitions Response Program, Munitions Response Sites Site Inspection	Engineering-Environmental Management, Inc.	SEP-2007
	Final Work Plan for Sand Creek Survey Rocket Ridge Area of Open Demolition Area #2 Military Munitions Response Program Time Critical Response Action	Engineering-Environmental Management, Inc.	OCT-2007
2008			
	Final Site Inspection for the Military Munitions Response Program	Engineering-Environmental Management, Inc.	MAY-2008

RAVENNA ARMY AMMUNITION PLANT

Non-BRAC Excess

Military Munitions Response Program
Site Descriptions

Site ID: PBA@MR Ravenna
Site Name: PBA@MR Ravenna

STATUS

Parcel: NONE

Regulatory Driver: CERCLA

MRSPP Score: No known or suspected hazard

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200905	201409
RD	200905	201909
RA(C)	200905	201909

RIP Date: N/A

RC Date: 201909

SITE DESCRIPTION

This site will track funding requirements of a PBA that will be awarded in FY09 which will address 14 MR sites. Seven of the sites (RVAAP-001-R-01, RVAAP-004-R-01, RVAAP-008-R-01, RVAAP-019-R-01, RVAAP-033-R-01, RVAAP-050-R-01, and RVAAP-060-R-01) will receive base award funding in FY09 for all requirements through the ROD, except for RVAAP-008-R-01 and RVAAP-033-R-01, which will be funded through RIP.

The other seven sites (RVAAP-002-R-01, RVAAP-016-R-01, RVAAP-032-R-01, RVAAP-034-R-01, RVAAP-061-R-01, RVAAP-062-R-01, and RVAAP-063-R-01) will receive option awards, currently scheduled for FY11. All sites will be funded through the ROD except for RVAAP-034-R-01 and RVAAP-062-R01, which will be funded through RIP.

No requirements are currently carried in this site because the base award will occur in FY09. The negotiated option awards will be added to this site in the FY10 CTC update. Estimated option requirements are carried in each of the individual sites in the current CTC.

CLEANUP/EXIT STRATEGY

Site ID: RVAAP-001-R-01
Site Name: RAMSDELL QUARRY

STATUS

Parcel: Ramsdell Landfill (15 acres)

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200810	201209
RD	201210	201309
RA(C)	201310	201509
LTM	201510	204509

RIP Date: N/A

RC Date: 201509

SITE DESCRIPTION

During the period 1946 to 1950, Ramsdell Quarry was used to thermally treat waste explosives and napalm bombs. No historic information has been located for the period of 1950-1976. From 1976, the site was used as a non hazardous solid waste landfill. The site was permitted as a sanitary landfill in 1978 by the State of Ohio until its closure in 1990.

The MRS is comprised of two separate areas: a northern area where open OB/OD operations were conducted in a former quarry, and a southern area that contains a small inactive quarry and wooded area where installation personnel had found munitions debris. The northern quarry area is collocated with an IRP AOC.

For the SI fieldwork, a magnetometer and metal detector assisted UXO survey was conducted in the northern quarry area and at the southern quarry area, where little historical data exists. Subsurface anomalies were detected at the northern quarry, specifically around the pond; however, no evidence of MEC was observed at the MRS. Large caliber munitions debris (MD) was found at two locations in the southern quarry during the SI fieldwork. The potential presence of MEC in the pond in the northern quarry area (Area 1) and MC in the southern quarry area (Area 2) will require additional investigation under future CERCLA actions.

A PBA will be awarded in FY09 for RVAAP-001-R-01 to address remedial investigative work for this site, with the objective of an RI report in three years. A PBA will be awarded in FY09 to address investigative work for this site. RVAAP-001 addressed IR concerns at this location site.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RA(C) phase include excavation and off-site disposal of 8066cy of soil (expanded volume) and MEC clearance (to a depth of four feet) of three acres.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-002-R-01
Site Name: ERIE BURNING GROUNDS

STATUS

Parcel: NONE

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Sediment

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	201110	201409
RD	201410	201509
RA(C)	201510	201709
LTM	201710	204709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

Erie Burning Grounds was used from 1941 to 1951 to thermally treat bulk, obsolete, off-spec propellants, conventional explosives, rags, and large explosive contaminated items (e.g., railcars) through OB on the ground surface. The MRS is collocated with an IRP AOC.

During the SI, several subsurface anomalies were detected in the northwest and central portions of the MRS; however, no MEC was observed. Further, several subsurface anomalies were detected in the southwest portion of the MRS and one possible MEC item was found partially buried northwest of the wooded area. MEC is also expected in the flooded sections of the MRS and will require further investigation under future CERCLA actions.

The PBA scheduled in FY09 contains an option for an RI at RVAAP-002-R-01 that is scheduled to begin in FY12 and be completed within three years. RVAAP-02 addressed IR concerns at this location.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase include preparation of an RI and an FS and MEC characterization of 12 acres.

CTC assumptions in the RA(C) phase include excavation and off-site disposal of 2,420cy of soil (expanded volume) and MEC clearance (to a depth of four feet) of three acres.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-004-R-01
Site Name: OPEN DEMOLITION AREA #2

STATUS

Parcel: Open Demolition Area No. 2 (25 acres)

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Groundwater, Sediment, Soil, Surface Water

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200810	201209
RD	201210	201309
IRA	200710	201009
RA(C)	201310	201509
LTM	201510	204509

RIP Date: N/A

RC Date: 201509

SITE DESCRIPTION

The Open Demolition Area No. 2 MRS was used from 1948 until 1991 to detonate large caliber munitions and off-specification bulk explosives and for burial of white phosphorus and bombs of unknown type. The MRS is collocated with an IRP AOC (RVAAP-04). The MRS consists of the former demolition area; Burial Sites 1 and 2; Rocket Ridge; the Bomb Disposal Area located adjacent to the northwestern section of the MRS; and all areas in between.

MEC was found at Rocket Ridge, the Bomb Disposal Area, Burial Site 2, and on the hill across Sand Creek from Rocket Ridge. At Rocket Ridge, MEC observed included T-bar fuses (model unknown), white phosphorus grenades, and possibly 500-lb bombs. One partially buried fuse (model unknown), considered MEC, was found at the Bomb Disposal Area. A partially buried fuse (model unknown), considered MEC, was also found at Burial Site 2. On the hill directly across (i.e., north) from Rocket Ridge, two 40millimeter (mm) cartridges (considered MEC) with intact primers were found. Munitions debris was found throughout the MRS and consisted of demilitarized 155mm projectiles, remnants of 40mm rounds, casing fragments from large caliber projectiles, and remnants of donor charge bags.

Rocket Ridge, where potential MEC items have been discarded on the ground surface and into Sand Creek, is located along a 70 foot embankment northeast of Building 1503 overlooking Sand Creek. In June 2007 a white phosphorous grenade detonated at Rocket Ridge. A Time Critical Response Action (TCRA) was installed May 2008 for abating potential munitions migration during high stream storm events via the installation of steel mesh barrier screens within the main stream of Sand Creek. Another TCRA removal action for four suspect conventional munition items from Rocket Ridge (R2) expects to be executed beginning third quarter 2009 and ending 4tth Qtr FY09; concurrent with an investigation detailing a disposal strategy for the remaining R2 mass of munitions items.

A PBA will be awarded in FY09 for RVAAP-004-R-01 to address remedial investigative work for this site, with the objective of an RI report in three years. RVAAP-04 addressed IR concerns at this location.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RA(C) phase include MEC clearance (to a depth of four feet) of eight acres and excavation and off-site disposal of 6,454cy of soil (expanded volume).

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-008-R-01
Site Name: LOAD LINE #1

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200810	201109
RD	200909	201209
RA(C)	200909	201409
LTM	201410	204409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

Load Line 1 (LL-1) operated from approximately 1941 to 1992 for loading various types of projectiles. Ordnance was demilitarized at this site from 1973 to 1974. LL-1 was used to melt and load TNT and Composition B explosives into large-caliber shells during World War II (WWII) and the Korean War. Wash down water and wastewater from the load line operations collected in concrete sumps, pumped through sawdust filtration units and then discharged to an off-site settling pond. Workers, on a weekly basis during operations, would periodically use steam and hot water to hose down equipment and the floors and walls of buildings contaminated with explosive dust, spills, and vapors. Wash down water and wastewater from the LL operations collected in concrete sumps, pumped through sawdust filtration units and then discharged to a settling pond. Building wash-down water from the melt-pour buildings would exit in some instances out through doorways onto the ground surrounding the buildings when using high-pressure steam assist water hoses. The settling pond was an unlined rectangular-shaped pond approximately one acre and two to four feet deep. Water from the impoundment discharged to a surface stream that exited south from the installation. The MRS is collocated with an IRP AOC (RVAAP-08).

The MRS consists of approximately one-half acres of the LL site and is composed of several areas associated with Buildings CB-13/CB-13B, and CB-14, and areas where triple base propellants still exist. The MRS is collocated with an IRP AOC. MEC, in the form of propellant grains, was found during the SI.

A PBA will be awarded in FY09 to address work for this site through RC. The performance objective is to achieve RIP/RC in five years. RVAAP-08 addresses IR concerns at this location.

CLEANUP/EXIT STRATEGY

All requirements through RC will be covered under the FY09 PBA.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-016-R-01
Site Name: FUZE AND BOOSTER QUARRY

STATUS

Parcel: 40MM Test Range/Waterworks Ponds (58 acres)

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	201110	201409
RD	201410	201509
RA(C)	201510	201709
LTM	201710	204709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

The Fuze and Booster Quarry MRS consists of three elongated ponds separated by berms, constructed within an abandoned rock quarry, which was used for open burning of various types of munitions from 1945 to 1975. The MRS is collocated with an IRP AOC (RVAAP-16).

No MEC was observed during the SI; however, munitions debris was found on the southeastern side of the southern pond. It is suspected that subsurface anomalies identified during the SI represent buried munitions debris and possibly MEC. Additionally, RVAAP personnel have indicated presence of potential MEC in the northern and southern ponds when water levels are low. The bottoms of the ponds have not been investigated

The PBA scheduled in FY09 contains an option for an RI at RVAAP-016-R-01 that is scheduled to begin in FY12 and be completed within three years. RVAAP-16 addresses IR concerns at this location.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase include MEC characterization of three acres.

CTC assumptions in the RA(C) phase include MEC clearance (to a depth of four feet) of two acres and excavation and off-site transportation of 3,226cy of soil (expanded volume).

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-019-R-01
Site Name: LANDFILL NORTH OF WINKLEPECK

STATUS

Parcel: Landfill North of Winklepeck (5 acres)

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Sediment, Soil, Surface Water

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200810	201209
RD	201210	201309
RA(C)	201310	201509
LTM	201510	201709

RIP Date: N/A

RC Date: 201509

SITE DESCRIPTION

The Landfill North of Winklepeck accepted general plant refuse, explosive wastes residue, and OB waste including flares and booster cups from Winklepeck Burning Grounds. The landfill was used from 1969 to 1976. The MRS, which is located adjacent to an IRP AOC, consists of the slope area and adjacent small stream where MEC was reportedly found. The MRS is collocated with an IRP AOC (RVAAP-19).

No MEC was discovered during the SI, although munitions debris was found.

A PBA will be awarded in FY09 for RVAAP-019-R-01 to address remedial investigative work for this site, with the objective of an RI report in three years. RVAAP-19 addresses IR concerns at this location.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RA(C) phase include excavation and off-site disposal of 3,226cy of soil (expanded volume) and MEC clearance (to a depth of four feet) of two acres.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-032-R-01
Site Name: 40MM FIRING RANGE

STATUS

Parcel: 40MM Test Range/Waterworks Ponds (58 acres)

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	201110	201409
RD	201410	201509
RA(C)	201510	201709
LTM	201710	204709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

The 40mm Firing Range MRS is a former test range for the 40mm cartridge and is surrounded by forest. The MRS was used from 1969 to 1971. The MRS is collocated with an IRP site (RVAAP-32). The impact area was sited in the western portion of the MRS while the firing point was sited at the opposite end. UXO was reported to be present beyond the impact area, on the slope that leads down to the Fuze and Booster Quarry MRS.

MEC was not discovered during the SI; however, munitions debris was found scattered from the target point to a point approximately 100ft beyond the former impact area.

The PBA scheduled in FY09 contains an option for an RI at RVAAP-032-R-01 that is scheduled to begin in FY12 and be completed within three years.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase MEC characterization of five acres.

CTC assumptions in the RA(C) phase include MEC clearance (to a depth of four feet) of five acres.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-033-R-01
Site Name: FIRESTONE TEST FACILITY

STATUS

Parcel: Load Line 6 (43 acres)

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200810	201109
RD	200909	201209
RA(C)	200909	201409
LTM	201410	204409

RIP Date: N/A

RC Date: 201409

SITE DESCRIPTION

The Firestone Test Facility MRS consisted of two buildings used as test chambers for tube-launched, optically-tracked, wire-guided (TOW) missiles and Dragon missiles, and a pond and two test chambers where shaped charges were tested under water. The site was used from the late 1960s to 1992. The former test chambers have been demolished and all of the debris removed. Another suspect area was included in the SI fieldwork that consists of a small clearing and piles of dirt and large timbers. The MRS is collocated with an IRP AOC Load Line 6 (RVAAP-33).

Neither MEC nor munitions debris were discovered during the SI of the two former missile test chambers locations and the small clearing. Only a few subsurface anomalies were recorded. Neither MEC nor munitions debris were observed lying on the ground surface at the pond and associated location of the former shaped charge test chamber; however, multiple closely spaced subsurface anomalies were detected around the pond and the location of the test chamber. The submerged portion of the pond was not investigated under the SI.

A PBA will be awarded in FY09 to address work for this site through RC. The performance objective is to achieve RIP/RC in five years. RVAAP-33 addresses IR concerns at this location.

CLEANUP/EXIT STRATEGY

All requirements through RC will be covered under the FY09 PBA.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-034-R-01
Site Name: SAND CREEK DUMP

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC)

Media of Concern: Sediment, Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	201110	201309
RD	201310	201409
RA(C)	201410	201609
LTM	201610	204609

RIP Date: N/A

RC Date: 201609

SITE DESCRIPTION

The Sand Creek Dump MRS, which is collocated with an IRP AOC (RVAAP-34), is undeveloped land that stretches along the banks of Sand Creek for approximately 1,000 ft. The Sand Creek Dump was used as a disposal site for concrete, wood, asbestos debris, lab bottles, 55-gallon drums and fluorescent light tubes from 1950 to 1960. Debris remains at the site.

During an IRA performed in October 2003, two 75mm inert projectiles were discovered at this site. MEC was not discovered during the SI; however, one empty 105mm projectile was discovered in Sand Creek downstream of the former dump. The MMRP SI was completed in FY08 resulting in the need for further investigation to address a potential MEC concern along a reach of Sand Creek. A last quarter FY08 contract was let to conduct a full geophysical reconnaissance of the affected stream bank area.

The PBA scheduled in FY09 contains an option for RIP/RC at RVAAP-034-R-01 that is scheduled to begin in FY12. The performance objective is to achieve RIP/RC in five years. RVAAP-34 addresses IR concerns at this location.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase include MEC characterization of one acre.

CTC assumptions in RAC include MEC clearance (to a depth of four feet) of one acre and excavation and off-site transportation of 3,226cy of soil (expanded volume).

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-050-R-01
Site Name: ATLAS SCRAP YARD

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200810	201209
RD	201210	201309
RA(C)	201310	201509
LTM	201510	204509

RIP Date: N/A

RC Date: 201509

SITE DESCRIPTION

The Atlas Scrap Yard MRS, which is collocated with IRP AOC RVAAP-50, consists of mostly open land that contains a network of roads. Originally used as a construction camp, the MRS was used for scrap storage and currently consists of scattered piles of debris.

During the 2003 RI, MEC was uncovered in the southwest corner of the site. Most of the MEC and MEC scrap was removed. Accessible areas were surveyed during the SI. No MEC or munitions debris were found lying on the ground surface, and only a few scattered subsurface anomalies were detected. In the north-central section, no MEC or munitions debris were observed lying on the ground surface around or on top of the debris piles. No MEC or munitions debris were observed lying on the ground surface in the east-central section of the MRS.

A PBA will be awarded in FY09 for RVAAP-050-R-01 to address remedial investigative work for this site, with the objective of an RI report in three years. RVAAP-50 addresses IR concerns at this location.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RA(C) phase include MEC clearance (to a depth of four feet) of two acres and excavation and off-site disposal of 3,226cy of soil (expanded volume).

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-060-R-01
Site Name: BLOCK D IGLOO

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	200810	201209
RD	201210	201309
RA(C)	201310	201509
LTM	201510	204509

RIP Date: N/A

RC Date: 201509

SITE DESCRIPTION

The Block D Igloo MRS resulted when fuzed bombs in Igloo 7-D-15 (D Block) exploded on March 24, 1943. The initial 3,000-foot radial MRS boundary was established by the USACE, Huntsville District to capture the probable debris field resulting from the explosion and was based on the type of munitions stored in the bunker at the time of the explosion. As described below, the area of this MRS was adjusted based on the 2008 SI findings.

During the 2008 SI, a magnetometer/metal detector assisted UXO survey was conducted within and around the former igloo and at four documented locations where explosion-related debris was found. Neither MEC nor munitions debris were found within the interior of the former igloo and within a circumference of approximately 100 feet surrounding this area. At the four documented debris locations, no visual evidence of MEC and/or munitions debris was found, and very few subsurface anomalies were detected.

Based on the observations and findings of the UXO survey, MEC and/or munitions debris are not present at these locations; however, no such declaration can be made for the remaining areas that were not included in the SI fieldwork.

A PBA will be awarded in FY09 for RVAAP-060-R-01 to address remedial investigative work for this site, with the objective of an RI report in three years.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RA(C) phase include excavation and off-site disposal of 1,009cy of soil (expanded volume) and MEC clearance (one foot depth) of five acres.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-061-R-01
Site Name: BLOCK D IGLOO -TD

STATUS

Parcel: NONE

Regulatory Driver: CERCLA
MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	201110	201409
RD	201410	201509
RA(C)	201510	201709
LTM	201710	204709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

The Block D Igloo MRS resulted when fuzed bombs in Igloo 7-D-15 ("D" Block) exploded on March 24, 1943. The initial 3,000-foot radial MRS boundary was established by the USACE, Huntsville District to capture the probable debris field resulting from the explosion and was based on the type of munitions stored in the bunker at the time of the explosion. The HRR identified an acreage of 19.25 for the site. The 2008 SI found that NFA was required to address MEC or MC at the 19.25 acres; however, the SI identified a new area of land that captured debris locations situated northeast of the installation. The new area is 14.13 acres. This area was not investigated during the 2008 SI. The site will require additional characterization work to address MC and MEC

The PBA scheduled in FY09 contains an option for an RI at RVAAP-061-R-01 that is scheduled to begin in FY12 and be completed within three years.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase include preparation of an RI and an FS and MEC characterization of six acres.

CTC assumptions in the RA(C) phase include MEC clearance (to a depth of one foot) of five acres

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-062-R-01
Site Name: WATER WORKS #4 DUMP

STATUS

Parcel: NONE

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	201110	201309
RD	201310	201409
RA(C)	201410	201609
LTM	201610	204609

RIP Date: N/A

RC Date: 201609

SITE DESCRIPTION

The Water Works No. 4 Dump MRS is an approximate 0.77 acre open area located immediately west of Water Works No. 4 and Load Line 7, in the southwestern portion of RVAAP. The MRS boundary identified in the US Army closed, transferred, and transferring (CTT) Range/Site Inventory was not accurate. The actual MRS is located approximately 400 ft to the east.

During the SI, no MEC or MC was identified, although further characterization is needed to confirm the presence or absence. Munitions debris was found during the SI. Several subsurface anomaly detections were also made in the open field.

The PBA scheduled in FY09 contains an option for RIP/RC at RVAAP-062-R-01 that is scheduled to begin in FY12. The performance objective is to achieve RIP/RC in five years.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase include MEC characterization of one acre.

CTC assumptions in the RA(C) phase include MEC clearance (to a depth of four feet) of one acre.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

Site ID: RVAAP-063-R-01
Site Name: Group 8 MRS

STATUS

Parcel: NONE

Regulatory Driver: CERCLA

MRSPP Score: Evaluation pending

Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA	200209	200312
SI	200509	200805
RI/FS	201110	201409
RD	201410	201509
RA(C)	201510	201709
LTM	201710	204709

RIP Date: N/A

RC Date: 201709

SITE DESCRIPTION

The Group 8 MRS consists of most of the area between Buildings 846 and 849. This area is disturbed land that may have historically been used for debris and rubbish burning.

In 1996, one anti-personnel fragmentation bomb (referred to as a hammerhead anti-personnel bomb) was found at the MRS. MEC and MC were identified during the SI.

The PBA scheduled in FY09 contains an option for an RI at RVAAP-063-R-01 that is scheduled to begin in FY12 and be completed within three years.

CLEANUP/EXIT STRATEGY

CTC assumptions in the RI/FS phase include preparation of an RI and an FS and MEC characterization of two acres.

CTC assumptions in the RA(C) phase include excavation and off-site disposal of 1,614cy of soil (expanded volume) and MEC clearance (to a depth of four feet) of one acre.

CTC assumptions in the LTM phase include administrative LUCs for 30 years and six five-year reviews.

MMRP No Further Action Sites Summary

Site ID	Site Name	NFA Date	Documentation
RVAAP-005-R-01	WINKLEPECK BURNING GROUNDS	200603	Operational Range. Ineligible for ER,A funding.
RVAAP-012-R-01	LOAD LINE #12	200805	The May 2008 Final SI recommended NFA for the site.
RVAAP-046-R-01	BUILDING #F-15 AND F-16	200805	The May 2008 Final SI recommended NFA for the site.
RVAAP-048-R-01	ANCHOR TEST AREA	200805	The May 2008 Final SI recommended NFA for the site.
RVAAP-064-R-01	Old Hay Field MRS	200805	Operational Range. Ineligible for ER,A funding.

MMRP Schedule

Date of MMRP Inception: 200209

Past Phase Completion Milestones

2004

PA	(RVAAP-062-R-01 - WATER WORKS #4 DUMP, RVAAP-063-R-01 - Group 8 MRS, RVAAP-064-R-01 - Old Hay Field MRS, PBA@MR Ravenna - PBA@MR Ravenna, RVAAP-001-R-01 - RAMSDELL QUARRY , RVAAP-002-R-01 - ERIE BURNING GROUNDS, RVAAP-004-R-01 - OPEN DEMOLITION AREA #2, RVAAP-005-R-01 - WINKLEPECK BURNING GROUNDS, RVAAP-008-R-01 - LOAD LINE #1, RVAAP-012-R-01 - LOAD LINE #12, RVAAP-016-R-01 - FUZE AND BOOSTER QUARRY, RVAAP-019-R-01 - LANDFILL NORTH OF WINKLEPECK, RVAAP-032-R-01 - 40MM FIRING RANGE, RVAAP-033-R-01 - FIRESTONE TEST FACILITY, RVAAP-034-R-01 - SAND CREEK DUMP, RVAAP-046-R-01 - BUILDING #F-15 AND F-16, RVAAP-048-R-01 - ANCHOR TEST AREA, RVAAP-050-R-01 - ATLAS SCRAP YARD, RVAAP-060-R-01 - BLOCK D IGLOO, RVAAP-061-R-01 - BLOCK D IGLOO -TD)

2008

SI	(RVAAP-062-R-01 - WATER WORKS #4 DUMP, RVAAP-063-R-01 - Group 8 MRS, RVAAP-064-R-01 - Old Hay Field MRS, PBA@MR Ravenna - PBA@MR Ravenna, RVAAP-001-R-01 - RAMSDELL QUARRY , RVAAP-002-R-01 - ERIE BURNING GROUNDS, RVAAP-004-R-01 - OPEN DEMOLITION AREA #2, RVAAP-008-R-01 - LOAD LINE #1, RVAAP-012-R-01 - LOAD LINE #12, RVAAP-016-R-01 - FUZE AND BOOSTER QUARRY, RVAAP-019-R-01 - LANDFILL NORTH OF WINKLEPECK, RVAAP-032-R-01 - 40MM FIRING RANGE, RVAAP-033-R-01 - FIRESTONE TEST FACILITY, RVAAP-034-R-01 - SAND CREEK DUMP, RVAAP-046-R-01 - BUILDING #F-15 AND F-16, RVAAP-048-R-01 - ANCHOR TEST AREA, RVAAP-050-R-01 - ATLAS SCRAP YARD, RVAAP-060-R-01 - BLOCK D IGLOO, RVAAP-061-R-01 - BLOCK D IGLOO -TD)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

To Be Determined

Final RA(C) Completion Date: 201909

NPL Deletion Date: N/A

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of MMRP at Installation (including LTM phase): Indefinite

RAVENNA ARMY AMMUNITION PLANT MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
PBA@MR Ravenr	PBA@MR Ravenna	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-001-R-0	RAMSDELL QUARRY	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-002-R-0	ERIE BURNING GROUNDS	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-004-R-0	OPEN DEMOLITION AREA #2	PA						
		SI						
		RI/FS						
		RD						
		IRA						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-008-R-0	LOAD LINE #1	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-016-R-0	FUZE AND BOOSTER QUARRY	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						

RAVENNA ARMY AMMUNITION PLANT MMRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-019-R-0	LANDFILL NORTH OF WINKLEPECK	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-032-R-0	40MM FIRING RANGE	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-033-R-0	FIRESTONE TEST FACILITY	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-034-R-0	SAND CREEK DUMP	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-050-R-0	ATLAS SCRAP YARD	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-060-R-0	BLOCK D IGLOO	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						

RAVENNA ARMY AMMUNITION PLANT MMRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-061-R-0	BLOCK D IGLOO -TD	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-062-R-0	WATER WORKS #4 DUMP	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RVAAP-063-R-0	Group 8 MRS	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						

Community Involvement

Technical Review Committee (TRC): None

Restoration Advisory Board (RAB): RAB established 1996

RAB Adjournment Date:
RAB Adjournment Reason:

Community Involvement Plan (Date Published): 200309

Additional Community Involvement Information

The RVAAP RAB was established in 1996 and has 25 members consisting of 23 community members and two non-community 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, as well as in two public repositories (The Reed Memorial Library in Ravenna and the Newton Falls Public Library).

The RVAAP RAB generally meets every two to three months. 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. All meetings are announced in the local media. Regular RAB meetings were held during the past year covering such topics as performance-based contracts at LLs 1-4, progress of the remedial investigations at the high RRSE AOCs, and thermal decontamination at excess production buildings. Tours were held in 2005, 2006, and 2008 for RAB members. During the 2006 tour, the public also attended to view ongoing restoration activities.

All IRP records are made available to the RAB members and any other interested parties through the two public repositories. IRP and other RVAAP documents are available at www.RVAAP.org. The RAB receives technical assistance for public participation (TAPP).

In 2003, a Community Involvement Plan was developed to facilitate communication, identify issues of concern and serve as a guide for public involvement goals and objectives. The plan outlines the many ways that Ravenna AAP involves the community in the restoration activities, including through the RAB, site tours, and the website.

Administrative Record is located at

RVAAP
Building 1037
8451 State Route 5
Ravenna, OH 44266

Information Repository is located at

Reed Memorial Library
167 East Main Street
Ravenna, OH 44266

Newton Falls Public Library
204 South Canal Street
Newton Falls, OH 44444

Current Technical Assistance for Public Participation (TAPP): 199906
TAPP Title: Winklepeck OB Grounds Phase II
Current Technical Assistance for Public Participation (TAPP): 200102
TAPP Title: Winklepeck Burning Grounds site

Potential TAPP: The RVAAP RAB plans to apply for additional funds for the TAPP.