INSTALLATION ACTION PLAN
for
RAVENNA ARMY AMUNITION PLANT

Fiscal Year 2001

PURPOSE

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year restoration program for an installation. The plan will define Installation Restoration Program (IRP) requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each Area of Concern (AOC) at the installation and other areas of concern.

In an effort to coordinate planning information between the IRP manager, major army commands (MACOMs), installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for the Ravenna Army Ammunition Plant (RVAAP). The IAP is used to track requirements, schedules and tentative budgets for all major Army installation restoration programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change during the document's annual review. Under current project funding, all remedies will be in place at the RVAAP by the end of Fiscal Year (FY) 2007 and long term monitoring will be complete by FY 2013. The federal fiscal year runs from October 1 to September 30.

CONTRIBUTORS TO THIS YEAR'S IAP

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RAVENNA ARMY AMMUNITION PLANT

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INFORMATION SHARING

AMC, as well as MSCs and installations believe that it should make its environmental restoration information available openly. This Installation Action Plan was forwarded to the following people:

RAB Co-chair (document provided to all RAB members)

State Regulator

EPA Regulator

Installation RPM

ACRONYMS & ABBREVIATIONS

%GI	percent gastrointestinal absorption efficiency
ADD	Average Daily Dose
ALF	Abandoned Landfill
amsl	above mean sea level
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropiate Requirement
AUF	Area Use Factor
BAF	Bioaccumulation Factor
BCF	Bioconcentration Factor
BEIAS	Biomedical and Environmental Information Analysis System (of the Oak Ridge National Lab)
bgs	below ground surface
BHHRA	Baseline Human Health Risk Assessment
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
CERCLIS	CERCLA Inventory System
COEC	Consituent of Ecoligical Concern
COPC	Chemical of Potential Concern
COPEC	Constituent of potential Ecological Concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CRREL	Cold Regions Research and Engineering Laboratory (USACE)
CSM	Conceptual Site Model
CX	Center of Excellence
DAD	Dermally Adsorbed Dose
DERA	Defense Environmental Restoration Account
DNT	dinitrotoluene
DoD	U.S. Department of Defense
DQO	Data Quality Objective
DSERTS	Defense Site Environmental Restoration Tracking System
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
ER,A	Environmental Restoration, Army (formally called DERA)
FFSRA	Federal Facility Site Remediation Agreement
FS	Feasibility Study
FY	Fiscal Year
GOCO	Government-Owned, Contractor-Operated
HI	Hazard Index
HMX	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HQ	Hazard Quotient
ILCR	Incremental Lifetime Cancer Risk
IOC	Industrial Operations Command
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LOAEL	Lowest Observed Adverse Effect Level
MCL	Maximum Contaminant Level
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NCP	National Oil and Hazardous Substances Pollution Control Plan
NE	Not Evaluated
NEPA	Nation Environmental Policy Act
NFA	No Further Action
NOAEL	No Observed Adverse Effect Level
OBG	Open Burning Ground
ODOW	Ohio Deprtment of Wildlife
OEPA	Ohio Environmental Protection Agency
OHARNG	Ohio Army National Guard

ACRONYMS & ABBREVIATIONS

ONG	Ohio National Guard
PAH	polynuclear aromatic hydrocarbon
PETN	pentaerythritol tetranitrate
POL	Petroleum, Oil & Lubricants
PRG	Preliminary Remediation Goal
QA	Quality Assurance
QA/QC	Quality Assurance/ Quality Control
QC	Quality Control
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RBSC	Risk-Based Screening Concentration
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
REM	Removal
RfC	Refenerce Air Concentration
RfD	Reference Dose
RGO	Remedial Goal Option
RI	Remedial Investigation
RIP	Remedy in Place
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RPD	Relative Percent Difference
RRSE	Relative Risk Site Evaluation
RTLS	Ravenna Training and Logistics Site
RVAAP	Ravenna Army Ammunition Plant
SAIC	Science Application International Corperation
SAP	Sampling and Analysis Plan
SI	Site Inspection
SLE	systemic lupus erythematosus
SRC	Site-Related Chemical
SVOC	Semi-Volatile Organic Compounds
SWMM	Storm Water Management Model
SWMU	Solid Waste Management Unit
T&E	Threatened and Endangered
TAL	Target Analyte List
TEF	Toxicity Equivalancy Factor
TNB	1,3,5-trinitrobenzene
TNT	2,4,6-trinitrotoluene
TPH	Total Petroleum Hydrocarbons
TRV	Toxicity Reference Value
TUF	Temporal Use Factor
UCL_{95}	Upper 95% Confidence Limit
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency (replaced by CHPPM)
USATHMA	United States Army Toxic and Hazardous Material Agency (replaced by AEC)
USCS	Unified Soil Classification System
UTL	Upper Tolerance Limit
UXO	Unexploded Ordnance
VOC	Volatile Organic Compounds
WBG	Winklepeck Burning Ground

SUMMARY

STATUS

RVAAP is not an NPL site. RVAAP had submitted a Part B permit application to U. S. and Ohio Environmental Protection Agencies. The application covered the installation's interim status RCRA sites. The permit application was withdrawn during the 3rd quarter of FY94. The installation is currently revising the existing findings and orders with the Ohio EPA to cover future hazardous waste activities needed for closure of RVAAP.

NUMBER OF DSERTS SITES:

51 DSERTS sites
32 Active ER,A Eligible Sites
19 Response Complete ER,A Eligible

DIFFERENT DSERTS SITE TYPES:

3	Burns Areas	1	Contaminated Building
1	Contaminated Soil Pile	3	Disposal Pit/Dry Well
1	Firing Range	2	Industrial Discharge
3	Landfills	1	Pistol Range
1	Pesticide Shop	4	Storage Areas
3	Other (RVAAP-17, 35, 38)	6	Spill Site Area
3	Above Ground Storage Tank	2	Underground Storage Tank
6	Waste Treatment Plant	1	Explosive Ordnance Disposal Area
1	Unexploded Munitions/ Ordnance		
9	Surface Impoundment/ Lagoon		

CONTAMINANTS OF CONCERN:

Explosives, Heavy Metals

MEDIA OF CONCERN:

Groundwater, Soil, Surface Water, Sediment

COMPLETED REM/IRA/RA:

RVAAP-47, Building T-5301 IRA
RVAAP-12 Load Line 12 IRA

CURRENT IRP PHASES:

RI/FS at 14 sites RD/RA at 3 sites None (funding out past 2002) 15 sites

PROJECTED IRP PHASES:

RI/FS at 20 sites RD at 25 sites RA at 26 sites LTM at 23 sites

IDENTIFIED POSSIBLE REM/IRA/RA:

Winklepeck Burning Grounds RVAAP-05 soil removal and composting

FUNDING:

PRIOR YEAR FUNDS	$ 10,390.492 K
FY 2001 FUNDS	$ 5,149.0 K
FUTURE REQUIREMENTS	$ 32,897.0 K
TOTAL	$ 48,436.492 K

DURATION:

YEAR OF IRP INCEPTION:	1989
PROJECTED COMPLETION DATE OF ALL RA:	2008
YEAR OF IRP COMPLETION	2013

INSTALLATION INFORMATION

LOCALE

The Ravenna Army Ammunition Plant (RVAAP) is located on 21,419 acres in Portage and Trumbull Counties, Ohio. Warren, Ohio is located 7 miles to the east of RVAAP and Kent, Ohio is located 15 miles to the west. The Operations Support Command (OSC) transferred control and operation of 16,164 acres to the National Guard Bureau in May 1999 with the balance of 5,255 acres remaining under its control.

COMMAND ORGANIZATION

MAJOR COMMAND: U.S. Army Materiel Command; Engineering, Housing, Environmental and Installation Logistics, Environmental Quality Division

MAJOR SUBORDINATE COMMAND: U.S. Army Operations Support Command;

INSTALLATION: RVAAP, Commander's Representative and National Guard Bureau

INSTALLATION MODIFICATION CARETAKER CONTRACTOR: Toltest Inc.

INSTALLATION RESTORATION PROGRAM (IRP) EXECUTING AGENCY

- Operations Support Command
- U.S. Army Corps of Engineers, Louisville District

REGULATOR PARTICIPATION

FEDERAL: U.S. Environmental Protection Agency, Region V

STATE: Ohio Environmental Protection Agency (Ohio EPA)

REGULATORY STATUS

- RCRA Interim Part A Permit currently undergoing closure

MAJOR CHANGES TO ACTION PLAN FROM PREVIOUS YEAR (FY 00)

- Building T-5301 Interim Remedial Action completed.
- Load Line 12 IRA and Bio Remediation Pilot Study fieldwork completed with draft report expected by December 2000.
- Winklepeck OB Grounds Ecological Risk Assessment fieldwork conducted with draft report expect by November 2000. FS fieldwork completed with draft report expected March 2001.
- Open Demolition Area #1 RI fieldwork and draft report completed. IRA begun in conjunction with non-IRP, UXO clearance project
- NACA Test Area RI fields work and draft report completed.
- Erie Burning Grounds RI draft report completed.
- Facility-wide Sampling and Analysis Plans (SAP)and Safety and Health Plan (HSP) Updated.
- Planning for UXO avoidance/remediation in support of IRP.

INSTALLATION DESCRIPTION

HISTORY

RVAAP is a government-owned, contractor-operated (GOCO) U.S. Army Operations Support Command facility. In FY 1993, the mission of RVAAP was changed from inactive-maintained to modified caretaker status (limited mission). Toltest, Inc. is the current modified caretaker contractor. The current mission is storage of bulk explosives and propellants. The installation is contained within an 11-mile long, 3.5-mile wide tract and is bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; State Route 534 on the east; the Garrettsville and Berry roads on the west; and the Conrail Railroad on the north.

In August 1940, a tract of land covering 25,000 acres was purchased by the United States Government in the northeastern part of Ohio in Portage and Trumbull counties. Construction of the plant started in September 1940 with the Hunkin-Conkey Construction Company as the principal contractor, Wilbur Watson and Associates as the principal engineers, and the Atlas Powder Company as the operating contractor and consultant. The facility was completed and commenced operations during December 1941/ January 1942, with the primary missions of depot storage and ammunition loading. To accomplish these two missions, the installation was divided into two separate units, the Portage Ordnance Depot and the Ravenna Ordnance Plant. The Portage Ordnance Depot's primary mission was depot storage of munitions and components, while the Ravenna Ordnance Plant's mission was ammunition loading. In August 1943, the installation was redesignated the Ravenna Ordnance Center and again in November 1945 as the Ravenna Arsenal.

Facilities were operated by the Atlas Powder Company from September 1940 until the end of World War II. The operation of the plant was turned over to the Ordnance Department. From 1946 to 1949, the ammonium nitrate line was operated by the Silas Mason Company for the production of ammonium nitrate fertilizer.

The plant was placed in standby status in 1950 and operations were limited to renovation, demilitarization, and normal maintenance of equipment, along with storage of ammunition and components.

Beginning in April 1951, facility operations were contracted with Ravenna Arsenal, Inc., a subsidiary of the Firestone Tire and Rubber Company of Akron, Ohio.

The plant was reactivated during the Korean Conflict for the loading and packing of major caliber shells and components. In July 1954, the Plum Brook Ordnance Works of Sandusky, Ohio and the Keystone Ordnance Works of Meadville, Pennsylvania were made satellites to Ravenna. All production ended in August 1957, and in October 1957 the installation was again placed in a standby condition. The Plum Brook Plant ceased to be under the jurisdiction of Ravenna in March 1958. The Keystone Ordnance Works was transferred to the General Services Administration in July 1959.

Rehabilitation work started in October 1960 to establish facilities in the ammonium nitrate line for the processing and explosive melt-out of bombs. These operations commenced in January 1961, thereby establishing the first operation of this type in the ammunition industry. In July 1961, the plant was again deactivated and in November 1961 the installation was divided once again. The industrial portion was redesignated as the Ravenna Ordnance Plant and the entire facility was designated the Ravenna Army Ammunition Plant. The RVAAP was once again reactivated in May 1968 in support of the Southeast Asian Conflict for loading, assembling, and packing munitions on three load lines and two component lines. These facilities were subsequently deactivated in August 1972. A mission for the demilitarization of the M71A1 90MM projectile extended from June 1973 until March 1974.

In October 1982, the Physics International Company, a subsidiary of Rockcor, Inc., purchased Ravenna Arsenal, Inc. from the Firestone Company. In June 1985, Rockcor Incorporated was purchased by the Olin Corporation.

INSTALLATION DESCRIPTION

Demilitarization of various munitions continued on a periodic basis through 1992. In FY 1993, the installation's status changed from inactive-maintained to modified caretaker. On October 1, 1998, R&R International, Inc. took over as the installation's contractor (R&R was later replaced by Toltest, Inc).
The Operations Support Command (OSC) transferred control and operation of 16,164 acres to the National Guard Bureau in May 1999.

REGULATORY STATUS

RVAAP is not on the U.S. EPA NPL although it is in the U.S. EPA's CERCLIS database. Management of the IRP sites follows CERCLA requirements. There are a number of other regulatory programs addressing other non-IRP sites. RVAAP received a RCRA Part A permit in 1980 for the storage and treatment of off-spec munitions and munitions-related waste. RVAAP submitted a RCRA Part B permit application in 1992 for the installation's Open Burning and Open Detonation Grounds and a hazardous waste storage building. The permit application was withdrawn during the 3rd Quarter of FY 1994. The closure of the storage units and the open burn trays in Winklepeck Burning Grounds was completed and approved in 1998. Three 90-day hazardous waste storage areas were also officially closed.
A closure plan was developed for the Demolition Area #2 (RVAAP-04) in 1998, but is being reconsidered at this time. The site has been used since 1941 for treatment of explosive waste and ordnance by burning and detonation. The need for a treatment unit, to support the IRP and other projects, to detonate unexploded ordnance (UXO) was not known at the time the plan was developed. Subsequently, UXO has been found at several areas at RVAAP. Some of the areas are associated with IRP sites while others are strictly a UXO concern. More UXO will almost certainly be found during future environmental investigations, remediation activities, and National Guard exercises. These circumstances have demonstrated the need for the use of a previously permitted RCRA unit where UXO can be detonated.

CONTAMINATION ASSESSMENT

FY 1989 – FY 1999 IRP Projects

Ravenna Army Ammunition Plant has a total of 51 areas of concern (AOCs) or sites. Of the 51 AOCs, 33 are IRP and 18 are response complete (RC) because they are not eligible for ER,A funds. The AOCs include open burning/ open detonation areas, load lines, dilution/settling ponds, wastewater treatment tanks, landfills/land disposal sites and other miscellaneous contaminated areas.

Explosives and metals are the primary contaminants of concern at RVAAP. Preliminary well sampling, conducted by Ohio EPA in 1998, showed no off-post explosives contamination of groundwater. On-post wells located at the perimeter of the installation have also shown no contamination of groundwater.

A RCRA Facility Assessment - Preliminary Review and Visual Site Inspection was performed at RVAAP in 1989. A remedial investigation (RI) was initiated in 1995. A phase I RI examined 11 high priority sites identified as RVAAP-04, 05, 08, 09, 10, 11, 12, 13, 18, 19, and 29. A final RI report was issued in 1997. The report recommended further study in the form of a Phase II RI at these sites to determine the nature, extent and significance of contamination.

The Phase II RI of Winklepeck Burning Grounds (WBG) (RVAAP-05) was started in FY 98. This AOC was chosen because of the high RRSE rating, the large volume of explosive waste and ordnance historically treated on-site, and high potential use for future Ohio Army National Guard training activities. A Human Health Risk Assessment (HHRA) and a screening Ecological Risk Assessment (ERA) were also done for WBG using the facility-wide background data that was also collected as part of the study. The draft final report for the study is under review. Additional field data was collected in the fall of 2000 in support of an FS.

FY 2000 IRP Projects

The FY 2000 IRP program at RVAAP focused on numerous RIs and IRAs. The RI field work for NACA Test Area, and Open Demolition Area #1 was completed during FY 2000. The purpose of the RIs was to determine the nature and extent of contamination at a level to support a baseline risk assessment. The draft reports for NACA Test Area and Open Demolition Area # 1 are currently under review. The draft report for Load Line 1 and Load Line 11 is expected by March 2001.

The fieldwork was completed for the IRAs at Building T-5301 and Load Line 12 during FY 2000. Building T-5301 was a former decontamination building used to support the activities at the Winklepeck Burning Grounds. Previous investigation showed elevated levels of lead and explosives in the soil around the building and in the drainage way emptying into Sand Creek. The contaminated soil was removed to eliminate the immediate risk to ecological receptors. The Ohio EPA issued a No Further Action letter stating that the site is closed and requires no further remedial action. This is the first CERCLA site at RVAAP to be closed.

The IRA at Load Line 12 involved removal of explosively contaminated soils in the area of a former building where explosives were melted out of ordnance. The operation generated explosively contaminated wastewater that would drain onto the ground before 1980 when a treatment plant was installed. The soils removed from the site were used

in a bioremediation pilot study. Naturally occurring bacteria have been used to break down explosives in the soil at other facilities. The purpose of the study is to show this technology will work at RVAAP given the site-specific conditions at the installation. A report on the findings is expected by January 2001.

The IRA at Open Demolition Area #1 started in November 2000 and is expected to be completed by April 2001. The work is being done in conjunction with a project funded by OSC to remove UXO from the site. This AOC was operational from 1941 through 1949 when small munition parts and dunnage were burned. The soils from areas previously identified during the RI phase as having high levels of contaminants are being stockpiled after the UXO is removed. Uncontaminated soils are placed back on the site. This will significantly reduce the remediation cost by not having to re-excavate the contaminated soils. The stockpiled soil will be tested and remediated, if necessary, upon completion of the excavation work.

Ecological field studies were also conducted at Winklepeck Open Burning Grounds and similar reference sites to more accurately determine whether the plants and small mammals are at significant risk from the explosives, heavy metals and other contaminants found at the site. An earlier base line ecological risk assessment showed significant risk at all the burn pads. The assessment, however, was based on generic risk factors without taking into consideration the ecological site-specific conditions. It did not directly measure the health of the ecosystem found at the Winklepeck Open Burning Grounds. The decision was made to field test the results of the risk assessment when a general inspection of the site revealed an ecological system that appeared to be as healthy as the reference sites. Plants and small mammals were used because they could be expected to have some of the highest exposure rates given their tendency to remain in one place or live in a small area. The results of the study are currently being analyzed and a draft report on the findings is expected in March 2001.

The work plans and supporting documentation for the Load Line 11 RI and IRA were completed during FY 2000. The Army used Load line 11 during World War II, and the Korean and Vietnam Wars for producing fuzes and primers. The current project will involve removal of lead-lined sumps, associated underground drainage, and soils contaminated with explosives and heavy by past production activities. The IRA will remediate known hotspots or sources of obvious contamination to prevent potential migration to off site receptors.

FY 2001 IRP Projects

The fieldwork for the Load Line 1 and Load Line 12 Phase II RIs was completed during October and November of 2000. This included sampling of soil, sediment, surface water and ground water. Load Line 1 was used for the load, assembly, and packing of large caliber artillery shells and aerial bombs during World War II, and the Korean and Vietnam Wars. Both load lines were also used for demil operations and Load Line 12 was used for the production of ammonium nitrate from 1946 to 1950. A previous study identified the principle chemicals of concern at these load lines as explosives and heavy metals. Groundwater monitoring wells were installed at Load Line 1 in July 1999 as part of the Phase II effort. A draft report for each site is expected in May 2001.

The fieldwork for the Winklepeck Open Burning Grounds FS was done in the fall of 2000. Soil samples and groundwater wells were installed to provide additional information in addition to what had been collected during the phase II RI. This information will be used to refine the nature and extent of residual contamination remaining from earlier production activities involving thermal treatment of explosive wastes and off spec munitions. Remedial alternatives will then be

CONTAMINATION ASSESSMENT

evaluated to determine the best approach for reducing the risk at the site to an acceptable level. This may involve cleaning up parts of the site and/or putting land use controls in place to limit exposure to human or ecological receptors.

New IRP funding for FY 2001 will amount to about 5.2 million dollars. This funding will be used to conduct RIs at Load Lines 2, 3, and 4, Upper and Lower Cobbs Ponds, and the Central Burn Pits. It will also be used to conduct an RD/RA at Open Demolition Area #1, Load line 11, Sand Creek Disposal Landfill and the Dump Along Paris Windham Road.

Load Lines 2, 3, and 4 were used for the load, assembly, and packing of large caliber artillery shells and aerial bombs during World War II, and the Korean and Vietnam Wars. The primary chemicals of concern at these sites are secondary explosives (TNT, RDX, HMX, etc.) and heavy metals. The floors, walls and equipment in the production areas of these buildings were routinely washed down with hot steam and water. The explosively contaminated "pink water" would run through drainage ways, out doors, or along the floor's gutter system ultimately ending up on the ground around the buildings or in open unlined ditches. The explosive dust from drilling and other dry operations, was also another common source of explosive contamination. All environmental media will be sampled at these load lines. The knowledge gained from Load Line 1, the initial phase I RIs, and field screening methods will allow the efforts to focus on areas suspected or known to have high levels of contamination. The Upper and Lower Cobbs Ponds RI will be closely linked to the RI work at Load Lines 3 and 12 since most of the surface water from the two production areas flows through these two water bodies. Samples will be taken of the sediment and surface water upstream, downstream and within the ponds to determine if there is any residual contamination left and if so, whether it is posing any significant risk to humans or the environment.

A Phase I RI will be conducted at the Central Burn Pits, a 20-acre site previously used for the burning of non-explosive scrap materials. Burning of waste at the site continued through the mid-1970s. The date the activities started is unknown. Burn marks are still visible in areas where the highest levels of contamination were detected by USACHPPM. Electrical wiring, insulators, metal hardware, and pieces of lead can be seen on the surface. The primary chemicals of concern are heavy metals with the highest hazard coming from the antimony and lead in the soil. Samples of sediment, soil, surface and groundwater will be taken during the RI to determine the nature and extent of the contamination. The fieldwork is expected to be done in the fall of 2001.

The RD/RA at Sand Creek Disposal Landfill and the Dump Along Paris Windham Road will be a combined effort using FY 2001 funding. Both sites are former landfills containing household waste, scrap metal, and transite siding. The waste will be removed, tested, and sent to an approved landfill. It is expected that the waste will be sent to a landfill licensed to handle special waste since the transite contains a significant amount of asbestos. The work is expected to begin in May 2000. Additional funding is expected to be needed in FY2002 to complete the projects.

The majority of the remaining FY 2001 funding will be used to conduct the RD/RA at Open Demolition Area #1. An IRA was done in FY2000 to remove the surface soils posing an immediate risk to human health and the environment. The FY 2001 funding will be used to remove and treat any contaminated soils posing an unacceptable risk after the IRA is complete. Areas adjacent to the site are currently used by the ONG for training. Future use of the site by the ONG will be limited to non-intrusive activities because of the presence of UXO in the soil.

PREVIOUS STUDIES

Title	Author	Date
Installation Assessment of Ravenna Army Ammunition Plant. Report No. 132	USATHMA	Nov-78
Ravenna Army Ammunition Plant, Ravenna, Ohio. RCRA Facility Assessment Draft RR/VSI Report	Jacobs Engineering Group, Inc.	5-Oct-89
Hazardous Waste Management Study No. 37-26-0442-84: Phase 2 of AMC Open Burning/Open Detonation Groundwater Evaluation, Ravenna Army Ammunition Plant, Ravenna, Ohio	USAEHA	Jun-05
Facility-Wide Safety and Health Plan for the Ravenna Army Ammunition Plant, Ravenna, Ohio		Feb-96
Action Plan for the Ravenna Army Ammunition Plant, Ravenna, Ohio		Mar-96
Preliminary Assessment for the Characterization of Areas of Contamination, Ravenna Army Ammunition Plant, Ravenna, Ohio		Feb-96
Facility-Wide Sampling and Analysis Plan for the Ravenna Army Ammunition Plant, Ravenna, Ohio		Apr-96
Phase 1 Remedial Investigation Sampling and Analysis Plan Addendum for High Priority Areas of Concern for the Ravenna Army Ammunition Plant, Ravenna, Ohio		Jul-96
Phase 1 Remedial Investigation Site Safety and Health Plan Addendum for High Priority Areas of Concern for the Ravenna Army Ammunition Plant, Ravenna, Ohio		Jul-96
Remedial Investigation Report for the Phase I Remedial Investigation of High Priority Areas of Concern at the Ravenna Army Ammunition Plant, Ravenna, Ohio. Volume I Main Text		Feb-98
Remedial Investigation Report for the Phase I Remedial Investigation of High Priority Areas of Concern at the Ravenna Army Ammunition Plant, Ravenna, Ohio. Volume II Appendixes A-K		Feb-98
Sampling and Analysis Plan Addendum for the Phase II Remedial Investigation for Winklepeck Burning Grounds at the Ravenna Army Ammunition Plant, Ravenna, Ohio		Jan-98
Safety and Health Plan Addendum for the Phase II Remedial Investigation of the Winklepeck Burning Grounds and Determination of Facility-Wide Background at the Ravenna Army Ammunition Plant, Ravenna, Ohio		Apr-98

ER, A ELIGIBLE ACTIVE DSERTS SITES

RVAAP-02
ERIE BURNING GROUNDS

SITE DESCRIPTION

This 35-acre AOC was used to thermally treat munitions by open burning on the ground surface. Bulk, obsolete, off-spec propellants, conventional explosives, rags, and large explosive contaminated items were treated at this location. The ash residue from the burns was left at the AOC. UXO is present at the site. Waste constituents of concern at this location include RDX, TNT, and heavy metals. There is a potential for release of contaminants from this unit to the surrounding soils, surface water/ sediment and groundwater.

The PA/SI was completed in 1989. Phase I RI field work was conducted at this site in July 1999. The Draft Report is currently under review.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals, SVOCs

MEDIA OF CONCERN:
Groundwater, Soil, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI

CURRENT IRP PHASE:
Phase I RI

FUTURE IRP PHASE:
Phase II RI, LTM

PROPOSED PLAN

With current information, additional sampling, along with sediment and groundwater remediation may be required.

All work/cost are based on no future land use.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	20	285	65	20			
IRA							
RD							
RA(C)							
RA(O)							
LTM				15	100		

Projected Totals: $505,000

RVAAP-03
DEMOLITION AREA #1

SITE DESCRIPTION

This is a 1.5-acre AOC that was used for the purpose of thermal treatment of munitions by burning and detonation. The AOC consists of a circular 1 to 1.5-foot berm surrounding a grassed area approximately 1 to 1.5 acres in size. Operations took place in 8-foot deep unlined pits. Contaminants of concern at this AOC include explosive compounds and metals. There is potential for release of contaminants from this unit to the surrounding soils and groundwater. Munitions fragments including scrap metal, small arms primers, and fuzes lie outside the bermed area. The AOC was operational from 1941 through 1949 (Jacobs Engineering 1989).

The Phase I RI field work was completed at the site in October 1999 with a draft report currently under review. An IRA was started in November 2000 and is with a project funded by OSC to remove UXO from the site. The purpose of the IRA is to remove obvious surface contamination that could pose an immediate risk to human health and the environment. These hot spots are located primarily in an area outside the horseshoe where munitions and scrap were pushed after detonation.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI (1989)

CURRENT IRP PHASE:
RI, IRA

FUTURE IRP PHASE:
RD, RA

PROPOSED PLAN

After soil is removed during the IRA, a RD and RA may be required to remove additional soil.

Groundwater monitoring at this AOC will be addressed under NACA Test Crash Area (RVAAP-38).

All work/cost are based on future land use by the National Guard.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD	100						
RA(C)	600						
RA(O)							
LTM							

Projected Total: $700,000

RVAAP-04
DEMOLITION AREA #2

SITE DESCRIPTION

This AOC was used since 1948 to detonate large caliber munitions and off-spec bulk explosives that could not be deactivated or demilitarized by any other means due to their condition. Detonation was performed in a backhoe-dug pit with a minimum depth of 4 feet. After detonation, metal parts were picked up and removed from the site. The CERCLA (IRP) portion of the site is approximately 25 acres in size. Contaminants of concern at this site are white phosphorus, explosives, and heavy metals.
A Phase I RI was completed for the site in February 1998. The RI found explosives, particularly TNT, and several inorganics including cadmium, lead and mercury in both the surface and subsurface soils. Concentrations of inorganic compounds in sediment appear to be within background values. Groundwater was not investigated at this AOC. There is a smaller 1.5-acre area regulated under RCRA on the north side of Sand Creek, which was regularly used until 1992 for demolition activities. This area is not eligible for ER,A funding. An AEHA geotechnical study was conducted at this site in 1992, with minor amounts of contamination being detected in the soils. Four groundwater monitoring wells were installed at the AOC as part of the AEHA study. The wells are currently sampled on a quarterly basis. Low levels of explosives have been periodically detected in groundwater. Non-IRP funding was used in the 1999 and 2000 to remove UXO/OE to a depth of four feet in the area of the 1.5 acre RCRA unit and two, small dump sites on the south side of Sand Creek. IRP funds are being used to characterize and properly handle any contaminated soils within the eligible areas.

PROPOSED PLAN

A Phase II RI will better delineate the north-side and delineate the south side of the AOC. A RD/RA, such as fencing, may be required.
All work/cost are based on no future land use.
LTM will continue under RCRA.

IRP STATUS

RRSE RATING: High (1B)
CONTAMINANTS OF CONCERN:
Explosives, Metals
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
Phase II RI, RD, RA, LTM

Aerial Photo of the Demolition Area #2.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS		650					
IRA							
RD							
RA(C)							
RA(O)							
LTM			165	165	165	165	810

Projected Total: $2,120,000

RVAAP-05
WINKLEPECK BURNING GROUNDS

SITE DESCRIPTION

The total burning ground area consists of 200 acres and has been in operation since 1941. Prior to 1980, open burning was carried out in pits, pads, and sometimes on the roads within the 200-acre area. Burning was conducted on the bare ground and the ash was abandoned at the site. Prior to 1980, wastes treated in the area included RDX, antimony sulfide, Comp B, lead azide, TNT, propellants, black powder, waste oils, sludge from the load lines, domestic wastes, and small amounts of laboratory chemicals. UXO is present at the AOC. From 1980 to 1998, burns of scrap explosives, propellants and explosive-contaminated materials have been conducted in raised refractory-lined trays within a 1.5-acre area.

An AEHA geotechnical study was conducted at the active portion of this site in 1992. The Part B permit application covering the active portion of the site was withdrawn in 1994. The burn trays along with the 90-day storage unit, Building 1601, were closed in accordance with Ohio EPA guidance in 1998. Minor amounts of contamination were detected in the soils. Field work for a Phase II RI was conducted in 1998 and a draft final report is currently under review. The report includes facility-wide background levels as well as human health and ecological risk assessments. Additional field studies were conducted in FY 2000 at Winklepeck and RVAAP reference locations to more accurately define the risk to ecological receptors at the site. Draft report is due March 2001. FS fieldwork was completed in the fall of 2000. The data will be used along with data from previous studies to evaluate remedial alternatives.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Metals, Explosives

MEDIA OF CONCERN:
Groundwater, Soil

COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)

CURRENT IRP PHASE:
Phase II RI

FUTURE IRP PHASE:
RD, RA, LTM

PROPOSED PLAN

A RD/RA of soil removal may be needed.
All work/cost are based on future land use by the National Guard.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	30						
IRA							
RD			150				
RA(C)			825	675			
RA(O)							
LTM				150	200	200	450

Projected Total: $2,680,000

RVAAP-06
C BLOCK QUARRY DP

SITE DESCRIPTION

This AOC is an abandoned borrow pit approximately 0.3 acres in size. The AOC was used as a disposal area for annealing process wastes for a short time during the 1950's. Liquid wastes were apparently dumped on the ground in the pit bottom. The AOC is now heavily forested with trees of 1 foot diameter or larger. Waste constituents of concern include chromium, lead, and mercury. A detailed sampling investigation of the soils from this unit in 1986 detected no metals above RCRA-regulated levels.

IRP STATUS

RRSE RATING: Low (3B)

CONTAMINANTS OF CONCERN:
Metals, Organics

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI (1989)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RD, RA, LTM

PROPOSED PLAN

RD and RA of soil (source) removal, confirmatory sampling and groundwater monitoring.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD						15	
RA(C)						110	
RA(O)							
LTM						60	150

Projected Total: $335,000

RVAAP-08
LOAD LINE 1

SITE DESCRIPTION

From approximately 1941 to 1971 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 settling pond. Building wash-down water from the melt-pour buildings was also swept out through doorways onto the ground surrounding the buildings. The settling pond was an unlined earthen impoundment approximately 1 acre in size. Water from the impoundment was discharged to a surface stream that exited the installation. This area was also used as a demil area. Contaminants of concern at this unit are explosive compounds and heavy metals (lead, chromium, and mercury). There is a high potential for releases from this unit to the soils, surface water/ sediment and groundwater. Most above ground structures were during 2000. Environmental controls were used during the demolition activities to prevent migration of contaminants to the environment.
The Phase I RI sampling found high levels of explosives around the melt-pour and preparation buildings. Eight wells were installed in 1999 bring the total wells to 13.
Sampling of other environmental media was done under the Phase II RI in the fall of 2000. Draft report due November 2001.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals, VOCs, SVOCs, Propellants

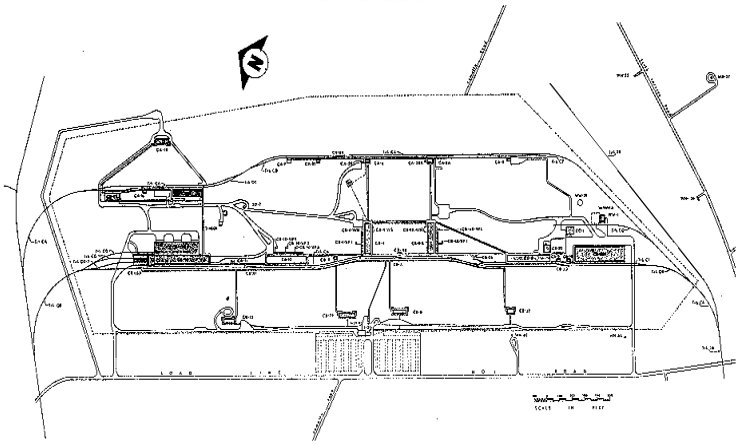
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI (1989), Phase I (1998)

CURRENT IRP PHASE:
Phase II RI

FUTURE IRP PHASE:
FS, RD, RA, LTM

LOAD LINE 1



PROPOSED PLAN

Additional RI will be needed to investigate groundwater. RD and RA of soil removal and stabilization may be required.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	23	60					
IRA							
RD				150			
RA(O)				280	700	1020	
RA(O)							
LTM						60	310

Projected Total: $2,603,000

RVAAP-09
LOAD LINE 2

SITE DESCRIPTION

From approximately 1941 to 1971, 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 settling pond. Building wash-down water from the melt-pour buildings was also swept out through doorways onto the ground surrounding the buildings. The settling pond was an unlined triangular-shaped pond approximately 2 acres in size and 6 to 8 feet deep. Water from the impoundment was discharged to a surface stream that exited the installation. Contaminants of concern at this unit are explosive compounds and heavy metals (lead, chromium, cadmium, and mercury). There is a high potential for releases from this unit to the soils, surface water/sediments and groundwater. The Phase II RI for load lines 2, 3, and 4 will be combined. Phase II RI will be done at the site in 2001

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals, SVOCs, VOCs

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediments

COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)

CURRENT IRP PHASE:
Phase II RI,

FUTURE IRP PHASE:
RD, RA, LTM

PROPOSED PLAN

The funding for this site will also cover a facility wide ground water monitoring program, human health and ecological risk facility wide plan, and information management system. RD and RA of soil removal and stabilization may be required.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	1300	40	150				
IRA							
RD				150			
RA(C)				180	800	1020	
RA(O)							
LTM						50	270

Projected total: $3,960,000

RVAAP-10
LOAD LINE 3

SITE DESCRIPTION

From approximately 1941 to 1971, 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. Building wash-down water from the melt-pour buildings was also swept out through doorways onto the ground surrounding the buildings. Contaminants of concern at this unit are explosive compounds and heavy metals (lead, chromium, and mercury). There is a high potential for releases from this unit to the soils, surface water/sediment and groundwater. The Phase II RI for load lines 2, 3, and 4 will be combined. A Phase II RI will be done in 2001

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals, SVOCs, VOCs

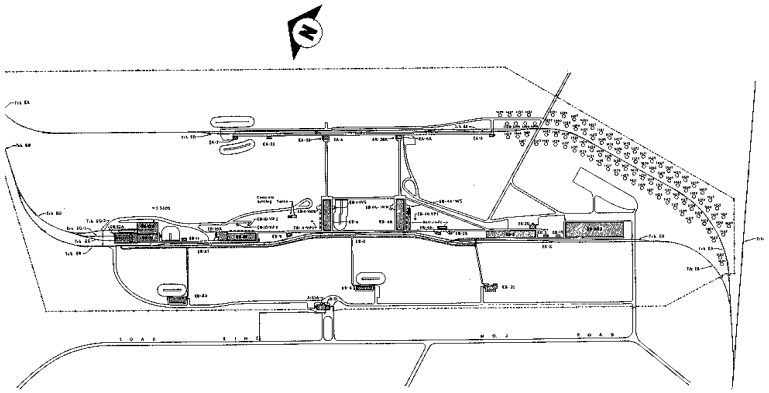
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)

CURRENT IRP PHASE:
Phase II RI

FUTURE IRP PHASE:
RD, RA, LTM

Load Line 3



PROPOSED PLAN

RD and RA of soil removal and stabilization may be required.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	624	45	150				
IRA							
RD				50			
RA(C)				180	800	1020	
RA(O)							
LTM						50	270

Projected Total: $3,189,000

RVAAP-11
LOAD LINE 4

SITE DESCRIPTION

From approximately 1943 to 1971, building wash-down water and waste water from the load line operations were 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 was also swept out through doorways onto the ground surrounding the buildings. The settling pond was an unlined triangular-shaped pond approximately 2 acres in size and 6 to 8 feet deep. Water from the impoundment was discharged to a surface stream that exited the installation. Contaminants of concern at this unit are explosive compounds and heavy metals (lead, chromium, cadmium, and mercury). There is a high potential for releases from this unit to the soils, surface water/sediment and groundwater. The Phase II RI for load lines 2, 3, and 4 will be combined. A Phase II RI will be done in 2001

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:
Metals, Explosives, SVOCs, VOCs

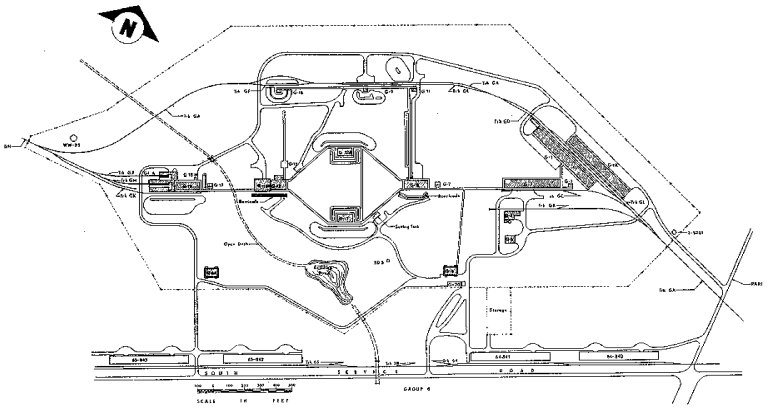
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)

CURRENT IRP PHASE:
Phase II RI

FUTURE IRP PHASE:
RD, RA, LTM

Load Line 4



PROPOSED PLAN

RD and RA of soil removal and stabilization may be required.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	354	296	150				
IRA							
RD				50			
RA(C)				156	1354	46	
RA(O)							
LTM						50	270

Projected Totals $2,726,000

RVAAP-12
LOAD LINE 12

SITE DESCRIPTION

From 1941-43 and 1946- ammonium nitrate was produced. From 1949 to 1993 munitions were periodically demilitarized with building wash-down water and waste water from the bomb melt out facility operations being collected in a house gutter system, and flowing 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 1980's, the water leaked under the building and ponded there. Building wash-down water from Building 904 was also swept out though doorways onto the ground surrounding the building. After 1981, the water was treated in the Load Line 12 waste water treatment system (RVAAP-18). Contaminants of concern at this unit are explosive compounds and heavy metals. There is a high potential for releases from this unit to the soils, surface water/sediment and groundwater.

A composting pilot study is currently underway using soils contaminated with explosives from the area of building F-904. Original pink water treatment plant servicing building 904 was officially closed as of May 2000. Samples of environmental media were collected in the fall of 2000 for the Phase II RI.

IRP STATUS

RRSE RATING: High (1B)

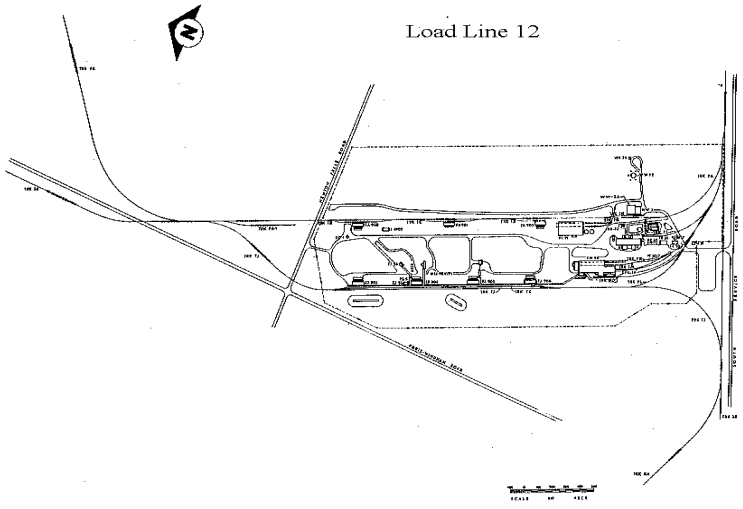
CONTAMINANTS OF CONCERN:
Explosives, metals

MEDIA OF CONCERN:
Groundwater, Soil, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)

CURRENT IRP PHASE:
RI/FS, IRA

FUTURE IRP PHASE:
RD, RA, LTM



PROPOSED PLAN

A RD and RA of additional soil removal may be required. A Phase II RI is beginning in the fall of 2000.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	25	55					
IRA				50			
RD							
RA(C)					1250		
RA(O)							
LTM					65	65	265

Projected Total: $1,725,000

RVAAP-13
BUILDING 1200

SITE DESCRIPTION

From approximately 1941 to 1971, ammunition was demilled 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 to Eagle Creek. Contaminants of concern at this unit are explosive compounds and heavy metals (lead, chromium, and mercury). There is a potential for releases from this unit to the soils, surface water/sediment and groundwater.

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Groundwater, Surface Water, Soil, Sediment

COMPLETED IRP PHASE:
PA/SI (1989), RI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RD, RA, LTM

PROPOSED PLAN

Soil removal may be required.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD							15
RA(C)							85
RA(O)							
LTM							210

Projected Totals: $310,000

RVAAP-16
FUZE AND BOOSTER QUARRY LANDFILL/POND

SITE DESCRIPTION

This AOC operated during the period 1945 through 1993. The site consists of three elongated ponds situated end to end in an abandoned rock quarry. The ponds are 20 to 30 feet deep and are separated by earthen berms. In 1998, this AOC was expanded to include three other shallow settling ponds and two debris piles.

Prior to 1976, the quarry was reportedly used for open burning and as a landfill. Since 1976, spent brine regenerate and sand filtration backwash water from one of the RVAAP drinking water treatment plants has been discharged to the ponds. This discharge was regulated under a NPDES permit. The lands adjacent to the quarry were utilized as an impact area to test 40mm projectiles and to incinerate/deactivate fuze and booster components. Constituents of concern include explosive compounds and heavy metals. There is a potential for release of contaminants to the groundwater, soils and surface water/sediment from this AOC.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI (1989)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI, RD, RA, LTM

PROPOSED PLAN

RI work will be required. A RD and RA of sediment and/or debris removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS		800					
IRA							
RD						5	
RA(C)						50	
RA(O)							
LTM						80	320

Projected Total: $1,245,000

RVAAP-19
LANDFILL NORTH OF WINKLEPECK BURNING GROUNDS

SITE DESCRIPTION

This is a 5-acre unlined landfill used for general plant refuse (sanitary wastes, possibly also explosive wastes and ash residue). It was used from 1969 until 1976.
The RI sampling found low levels of contaminates.

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Explosives, Metals
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment
COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RI, RD, RA, LTM

PROPOSED PLAN

Addition RI work to better delineate shallow contamination. Limit soil cover may be needed, followed by LTM.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS				200			
IRA							
RD						20	
RA(C)						200	
RA(O)							
LTM						20	90

Projected Total: $530,000

RVAAP-28
MUSTARD AGENT BURIAL SITE

SITE DESCRIPTION

This unit is a possible mustard agent burial site approximately 15 ft. by 18 ft. by 18 ft. In 1969, records indicate that an EOD Unit had excavated a suspected mustard agent burial site near the west end of the NACA runway. One 190 liter (50 gallon) drum and seven rusty canisters were recovered. All recovered items were empty and no contamination was discovered. Mustard agent may have been disposed of in barrels and buried at this site. There is a potential for release of contaminants to the soils and groundwater from this unit. Following this excavation, an unidentified and undocumented source reported that the site had not been correctly identified and was actually in an adjacent area.

The new area is located southwest of the original and was enclosed by a wooden cyclone fence. The area in now marked by SIBER stakes. Two non-intrusive, geophysical surveys (EM-31, and EM-61) of the site were completed in 1998. Several areas were identified with metallic responses. Some, if not all, may be related to cultural features at or near the surface. Soil samples taken in 1998 found no thiodiglycol (mustard breakdown product). There was no signature of disturbed soils or numerous buried metallic objects that would clearly delineate a formal burial site. The area will be fenced off in FY2001

IRP STATUS

RRSE RATING: Low (3B)

CONTAMINANTS OF CONCERN:
Mustard Agent

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)

CURRENT IRP PHASE:
RA

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Completion of Decision Document, Five Year Reviews. .

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD							
RA(C)	5						
RA(O)							
LTM							

Projected Total: $5,000

RVAAP-29
UPPER & LOWER COBBS PONDS

SITE DESCRIPTION

The Upper and Lower Cobbs Pond complex consists of two unlined ponds that received discharges from Load Lines 3, 4 and 12 explosive waste water treatment systems from 1941 through 1971. Upper Cobbs Pond is approximately 5 acres in size and Lower Cobbs Pond is 4 acres in size. Contaminants of concern include explosives, metals and aluminum chloride. The Phase I RI found low levels of explosives in sediment; no contaminants were found in the surface water. A Phase II RI will be done in FY2001 to further characterize the nature and extent of the contamination.

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:
Explosives, Metals, Aluminum chloride

MEDIA OF CONCERN:
Groundwater, Surface Water, Soil

COMPLETED IRP PHASE:
PA/SI (1989), Phase I RI (1998)

CURRENT IRP PHASE:
RI/FS (Eco along with RVAAP-12)

FUTURE IRP PHASE:
LTM

PROPOSED PLAN

Human and Ecological Risk Assessment will be done, followed by LTM.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	450						
IRA							
RD							
RA(C)							
RA(O)							
LTM				20	20	10	60

Projected Total: $560,000

RVAAP-32
40 & 60 MM FIRING RANGE

SITE DESCRIPTION

This AOC was reported by former workers at RVAAP to have been a test firing range for munitions. The dates of operation for this area was from 1969-71. This site was used as a test firing range for 40 mm and 60 mm projectiles during the1940s and 1950s. The site is now covered with pole timber. Known UXO exist at this site. No file documentation currently exists.

IRP STATUS

RRSE RATING: Medium (2B)

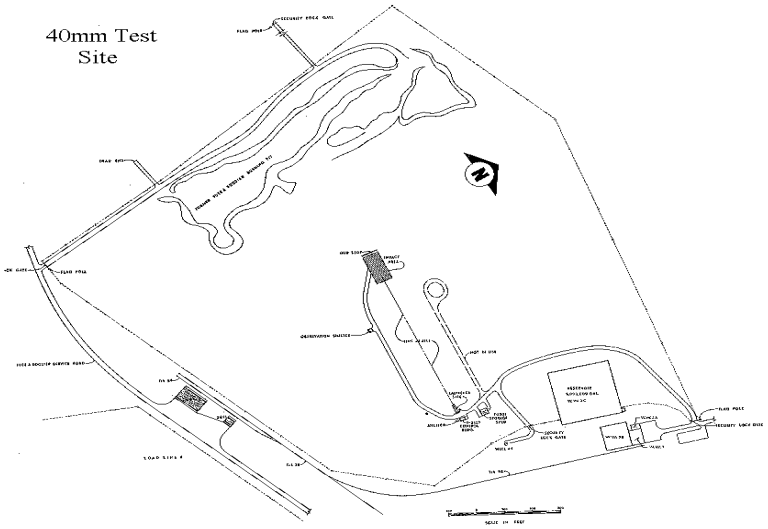
CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI (1989)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI



PROPOSED PLAN

RI will be needed to investigate for contaminants leaving the area, the area will be fenced.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							300
IRA							
RD							
RA(C)							
RA(O)							
LTM							

Projected Total: $300,000

RVAAP-33
LOAD LINE 6 FUZE AND BOOSTER

SITE DESCRIPTION

This unit, also known as the Firestone Test Facility, was reported by former workers at RVAAP to have been a security classified experimental test facility for munitions. Shaped charges were constructed and tested for the Department of Defense. The site consists of a pond (underwater test chamber) and several buildings. The dates of operation are not known.

This is a recently identified area of concern; no file documentation currently exists. The contaminants of concern are lead azide, TNT, RDX, and other explosives.

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:
Lead Azide, Explosives

MEDIA OF CONCERN:
Groundwater, Soil, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI, RD, RA, LTM

PROPOSED PLAN

A RI will be completed. A RD and RA such as soil removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS			700				
IRA							
RD						60	
RA(C)						600	
RA(O)							
LTM						40	140

Projected Total: $1,540,000

RVAAP-34
SAND CREEK DISPOSAL ROAD LANDFILL

SITE DESCRIPTION

This AOC was reported by former workers at RVAAP to have been a construction landfill for concrete, wood, asbestos debris, and fluorescent light tubes (debris is exposed). The AOC is approximately 8 acres and located adjacent to a stream. The dates of operation of this unit are not known. No file documentation currently exists. RD and RA will be done in 2001 to include debris removal, followed by confirmatory sampling.

IRP STATUS

RRSE RATING: High (1A)

CONTAMINANTS OF CONCERN:
Heavy Metals, Asbestos

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
RD/RA

FUTURE IRP PHASE:
RC

PROPOSED PLAN

Five-year reviews following RD/RA will be done.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD	20						
RA(C)	200						
RA(O)							
LTM							

Projected Totals $220,000

RVAAP-36
PISTOL RANGE

SITE DESCRIPTION

This AOC was used by the installation security force for pistol qualification. Bullets were fired across the creek into the opposite embankment. The unit size is 350 ft. by 150 ft.

No file documentation exists.

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:
Lead

MEDIA OF CONCERN:
Soil, Surface Water

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RD, RA

PROPOSED PLAN

RD and RA will include the removal of the top foot of soil. The area will then be used as a range by the National Guard.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD						5	
RA(C)						20	
RA(O)							
LTM							

Projected Total: $25,000

RVAAP-38
NACA TEST AREA

SITE DESCRIPTION

This is an approximately 12.4-acre AOC that was used as an aircraft test area. Surplus military aircraft were crashed into a barrier using a fixed rail attached to the aircraft landing gear in an attempt to develop explosion-proof fuel tanks and/or explosion-proof fuel. Some of the aircrafts were buried at the site after test. Phase I RI samples were taken in October 1999. Phase I RI was completed in 2000 and draft report is under review.

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:
Petroleum hydrocarbons

MEDIA OF CONCERN:
Soil, Surface Water, Groundwater, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
RI

FUTURE IRP PHASE:
RD, RA, LTM

PROPOSED PLAN

Additional RI, including GW and risk assessment. LTM may be needed.

Aerial photo of NACA Test Area.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	20	461	19				
IRA							
RD							
RA(C)							
RA(O)							
LTM			55	25	25	60	

Projected Total: $665,000

RVAAP-39
LOAD LINE 5 FUZE AND BOOSTER

SITE DESCRIPTION

This AOC was a load line that was operated from 1941 to 1945 to produce fuzes for artillery projectiles. Load line 5 was deactivated and its equipment removed in 1945.

The relative risk site evaluation was completed in 1998 by USACHPPM. The surface soil and groundwater pathways are considered complete. Six surface soil samples were collected from outside of the production buildings and analyzed for explosives and metals. The buildings were selected based on the production use. Emphasis was placed on those buildings that were used to load the black powder and mercury fulminate. One sediment sample was originally going to be collected from one of the settling ponds at the AOC, but no settling ponds or other sediment pathways were evident.

Groundwater data collected for RVAAP-26, Fuze and Booster Area Settling Tanks during the first RRSE, was used to score the groundwater pathway at the AOC. Groundwater was collected from an approximate depth of 12 feet adjacent to the settling tank next to Building 1F-3.

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:

Explosives, Metals

MEDIA OF CONCERN:

Soil, Surface Water, Groundwater, Sediment

COMPLETED IRP PHASE:

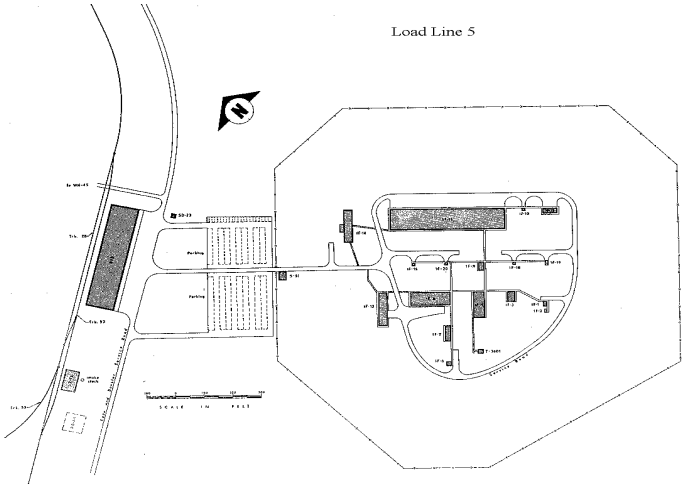
PA/SI (1998)

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RI, RD, RA, LTM



PROPOSED PLAN

A RI will be completed. A RD and RA such as soil removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS					700		
IRA							
RD						60	
RA(C)						392	208
RA(O)							
LTM							180

Projected Totals $1,540,000

RVAAP-40
LOAD LINE 7 FUZE AND BOOSTER

SITE DESCRIPTION

This AOC was used to assemble booster charges for artillery projectiles between 1941 and 1945. Load Line 7 was deactivated and the equipment was removed in 1945. The LL-7 was used again in 1969 and 1970 to produce 40mm projectiles, and between 1989 and 1993 the LL-7 Pink Water Treatment Plant was in operation.

The relative risk site evaluation was completed in 1998 by USACHPPM. The surface soil and groundwater pathways are considered complete. Six surface soil samples were collected from outside of the production buildings and analyzed for explosives and metals. The buildings were selected based on the production use. Emphasis was placed on melt/pour facilities and explosive storage buildings. One sediment sample was originally going to be collected from one of the settling ponds at the AOC, but no settling ponds or other sediment pathway were evident. One groundwater sample was collected north-northwest of Building 1B-2 (down gradient by surface topography) and analyzed for explosives and metals. The groundwater was collected from between 8 and 9 feet bgs.

IRP STATUS

RRSE RATING: Low (3B)

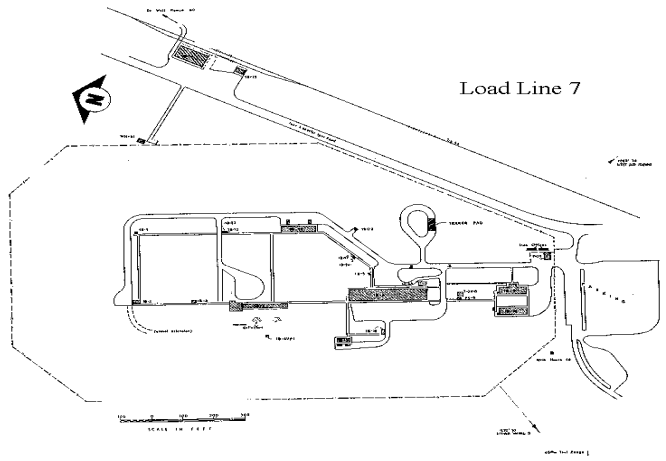
CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Soil, Surface Water, Groundwater, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI, RD, RA, LTM



PROPOSED PLAN

A RI will be completed. A RD and RA such as soil removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS			700				
IRA							
RD						60	
RA(C)						600	
RA(O)							
LTM						40	140

Projected Total: $1,540,000

RVAAP-41
LOAD LINE 8 FUZE AND BOOSTER

SITE DESCRIPTION

This AOC 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.

The relative risk site evaluation was completed in 1998 by USACHPPM. The surface soil, groundwater and sediment pathways are considered complete. Five surface soil samples and one groundwater sample were collected from outside of the assembly buildings and analyzed for explosives and metals. The buildings were selected based on assembly use. Sample point selection emphasized melt/pour facilities and explosives storage buildings. One sediment sample was collected from the small (approximately 10 feet in diameter) settling pond at the AOC and analyzed for the same compounds. No surface water was collected from the settling pond since this would be an intermittent source, and is not significant for the purpose of the RRSE. The subsurface soil used to estimate the groundwater pathway was collected approximately 60 feet north-northwest of Building 2B-1 (downgradient by surface topography).

IRP STATUS

RRSE RATING: Medium (2B)

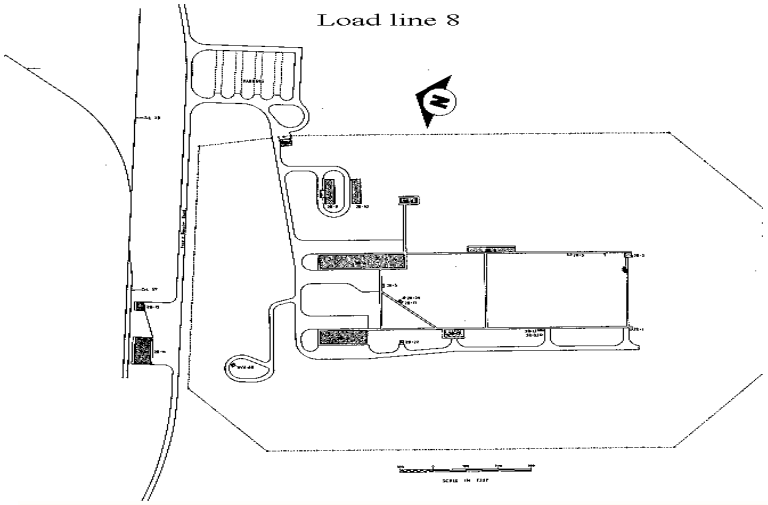
CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Soil, Surface Water, Groundwater, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI, RD, RA, LTM



PROPOSED PLAN

A RI will be completed. A RD and RA such as soil removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS			700				
IRA							
RD					60		
RA(C)					600		
RA(O)							
LTM						40	140

Projected Totals: $1,540,000

RVAAP-42
LOAD LINE 9 FUZE AND BOOSTER

SITE DESCRIPTION

This AOC operated from 1941 to 1945 to produce detonators. Load Line 9 was deactivated and its equipment removed in 1945.
The relative risk site evaluation was completed in 1998 by USACHPPM. The surface soil and groundwater pathways are considered complete. Six surface soil samples were collected from outside of the production buildings and analyzed for explosives and metals. The buildings were selected based on the production use. Emphasis was placed on the building that were used to produce and store the lead azide and tetryl. One sediment sample was originally going to be collected from one of the settling ponds at the AOC, but no settling ponds or other sediment pathways were evident. Subsurface soil data collected for RVAAP-26, Fuze and Booster Area Settling Tanks during the first RRSE, will be used to score the groundwater pathway at the AOC. The subsurface soil used to estimate the groundwater pathway was collected adjacent to the settling tank on the east side of Building DT-5.

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:
Explosives, Metals

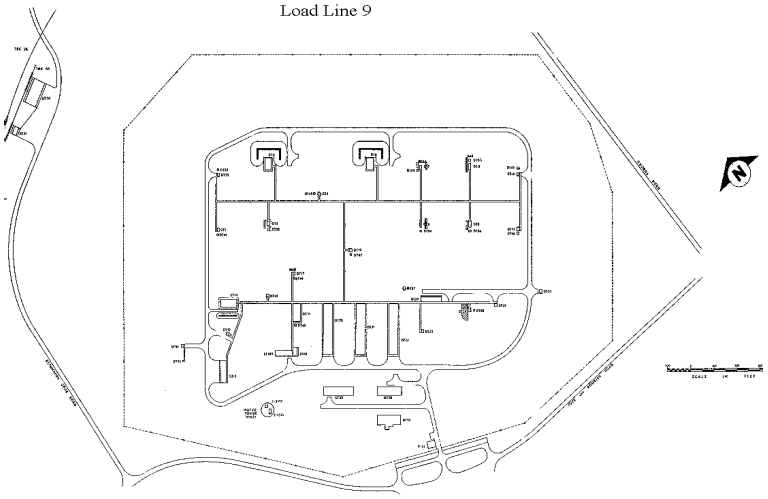
MEDIA OF CONCERN:
Soil, Surface Water, Groundwater, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI, RD, RA, LTM

Load Line 9



PROPOSED PLAN

A RI is scheduled for 2002 to facilitate early use by Ohio Army National Guard. A RD and RA such as soil removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS		730					
IRA							
RD				60			
RA(C)				570			
RA(O)							
LTM				40	40	20	80

Projected Funds: $1,540,000

RVAAP-43
LOAD LINE 10 PERCUSSION ELEMENT

SITE DESCRIPTION

This AOC operated from 1941 to 1945 to produce percussion elements. Load Line 10 was placed on standby in 1945. From 1951 to 1957 LL-10 produced primers and percussion elements. From 1969 to 1971 LL-10 was used again to produce primers. It has been inactive since.

The relative risk site evaluation was completed in 1998 by USACHPPM. The surface soil and groundwater pathways are considered complete. Six surface soil samples were collected from outside of the production buildings and analyzed for explosives, metals and cyanide. The buildings were selected based on the production use. Emphasis was placed on those buildings that were used to produce or store the explosives. Load Line 10 is the only load line known to have lead thiocyanate, so cyanide was added to the list of analytes. One sediment sample was originally going to be collected from one of the settling ponds at the AOC, but no settling ponds or other sediment pathway were evident. Subsurface soil data collected for RVAAP-26, Fuze and Booster Area Settling Tanks during the first RRSE, will be used to score the groundwater pathway at the AOC. The subsurface soil used to estimate the groundwater pathway was collected adjacent to the settling tank on the west site of Building PE-6.

IRP STATUS

RRSE RATING: Medium (2B)

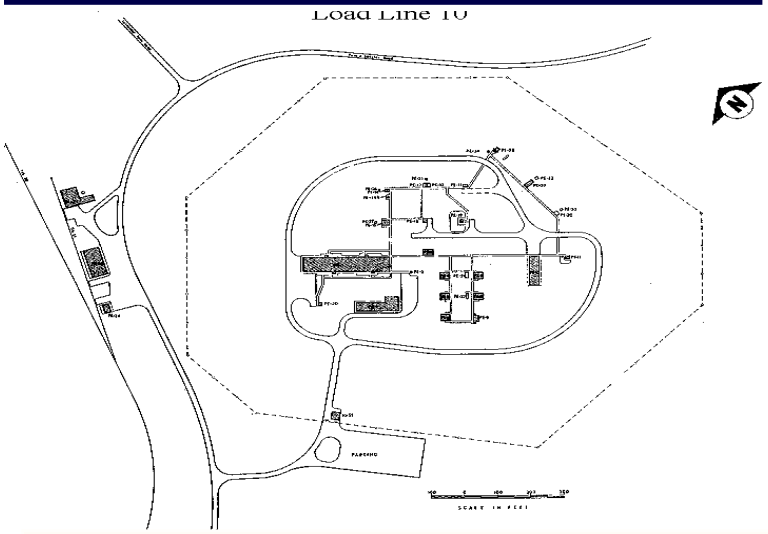
CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RI, RD, RA, LTM



PROPOSED PLAN

A RI will be completed. A RD and RA such as soil removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS			700				
IRA							
RD						60	
RA(C)						600	
RA(O)							
LTM							180

Projected Total: $1,540,800

RVAAP-44
LOAD LINE 11 FUZE AND BOOSTER

SITE DESCRIPTION

This AOC 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 relative risk site evaluation was completed in 1998 by USACHPPM. The surface soil, groundwater and sediment pathways are considered complete. Five surface soil samples were collected from outside of the production buildings and analyzed for explosives and metals. The buildings were selected based on the production use. Emphasis was placed on those buildings that were used to produce and store explosives. One sediment sample was collected and analyzed for the same parameters. The sediment sample was collected from a drainage ditch running north from the load line. Data collected for RVAAP-26, Fuze and Booster Area Settling Tanks during the first RRSE, was used to score the groundwater pathway at the AOC. The subsurface soil used to estimate the groundwater pathway was collected adjacent to the settling tank immediately to the east of Building AP-3. A RI and IRA are currently underway to remove soil, sumps and lines. The RI will further characterize the nature and extent of the contamination. A RD and RA will be funded in FY2001 to remediate any areas found to have unacceptable risk during the RI.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals

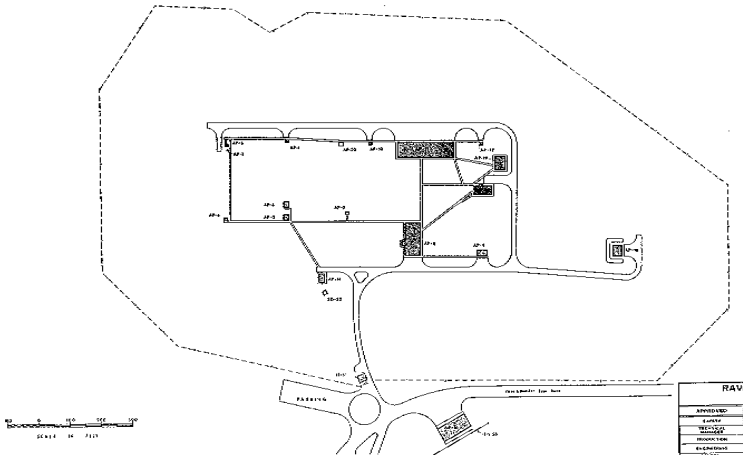
MEDIA OF CONCERN:
Soil, Groundwater, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
RI, IRA

FUTURE IRP PHASE:
RD, RA, LTM

Load Line 11



PROPOSED PLAN

A RI and IRA is currently underway to remove soil, sumps and lines will be completed. A RD and RA such as soil removal may be needed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	20						
IRA							
RD	60						
RA(C)	600						
RA(O)							
LTM		40	40	20	20	60	

Projected Total: $860,000

RVAAP-45
WET STORAGE AREA

SITE DESCRIPTION

This AOC was used from 1941 to 1945 to store lead azide, mercury fulminate and tetryl. The product was stored in water-filled drums. There is no documentation concerning any spills in the area. The surface soil pathway is considered complete. Five surface soil samples were collected from the AOC and analyzed for explosives and metals. One sample was collected outside the door, just off of the edge of the concrete pad from each of the five buildings used for storage, or from the soil immediately below a discharge from a floor drain.

IRP STATUS

RRSE RATING: Low (3B)

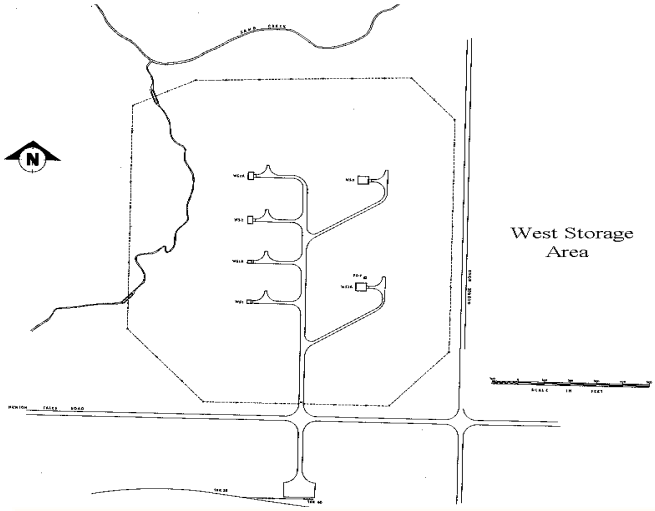
CONTAMINANTS OF CONCERN:
Lead azide, Mercury fulminate, Tetryl

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
RI/FS

FUTURE IRP PHASE:
RC



PROPOSED PLAN

A RI will be completed.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS						100	
IRA							
RD							
RA(C)							
RA(O)							
LTM							

Projected Total: $100,000

RVAAP-46
BLDG F-15 & F-16

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.

The surface soil and sediment pathways are considered completed at this AOC. Four surface soil samples were collected from the AOC and analyzed for explosives and metals. Two samples were collected just outside of the foundations of each of the buildings. One sediment sample was collected in a drainage ditch leading to Sand Creek near Building F-16.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
Explosives, Metals

MEDIA OF CONCERN:
Soil, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
RI

FUTURE IRP PHASE:
RD, RA

PROPOSED PLAN

A RI will be completed. Limited sediment removal may be required.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS			150				
IRA							
RD					10		
RA(C)						75	
RA(O)							
LTM							

Projected Total: $235,000

RVAAP-48
ANCHOR TEST AREA

SITE DESCRIPTION

The function of this area in unknown. It currently consists of several dirt mounds with a nearby sand pit. There is some metal debris in the area. It is believed that the site was used for some type of testing. The dates of use for this AOC are unknown.
The PA/SI was completed in 1998. The surface soil and groundwater pathways are considered complete. Five soil samples and one Geoprobe groundwater sample were collected from around the dirt mound and in the sand pit, these were analyzed for metals and explosives.

IRP STATUS

RRSE RATING: Medium (2B)
CONTAMINANTS OF CONCERN:
Explosives, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI (1998)
CURRENT IRP PHASE:
IRA, RI
FUTURE IRP PHASE:
RI

PROPOSED PLAN

IRA to removal limited soil with confirmatory sampling.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS			20				
IRA							
RD			20				
RA(C)			60				
RA(O)							
LTM							

Projected Total: $100,000

RVAAP-49
CENTRAL BURN PITS

SITE DESCRIPTION

This approximately 20-acre AOC was used for the burning of non-explosive scrap materials. The dates of operation for the AOC are unknown.
The surface soil and groundwater pathways are considered complete. Five surface soil samples were collected and analyzed for SVOCs, PCBs, herbicides, explosives and metals. One subsurface soil sample was collected, and analyzed for the same compounds plus VOCs. The subsurface soil used to estimate the groundwater pathway was collected from the eastern limit (downhill side) of the main disturbed area. A Phase I RI will be done in 2001 to characterize the nature and extent of the contamination.

IRP STATUS

RRSE RATING: High (1B)
CONTAMINANTS OF CONCERN:
VOCs, SVOCs, PCBs, Herbicides, Metals
MEDIA OF CONCERN:
Soil, Groundwater, Sediment, Surface water
COMPLETED IRP PHASE:
PA/SI (1998)
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RI, RD, RA, LTM

PROPOSED PLAN

A RD and RA of soil removal may be required, followed by LTM.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS	630						
IRA							
RD			30				
RA(C)				300			
RA(O)							
LTM				30	30	15	35

Projected Total: $1,020,000

RVAAP-50
ATLAS SCRAP YARD

SITE DESCRIPTION

This AOC is the site of an old construction camp (approximately 150 acres) built to house workers during the construction of the plant. Facilities were demolished following World War II. Since that time the area has been used as a scrap yard for miscellaneous materials.

The surface soil and groundwater pathways are considered complete. Seven surface soil, one groundwater and two subsurface soil samples were collected from the site. The surface soil samples were analyzed for SVOCs, PCBs, herbicides, explosives and metals. The groundwater and subsurface soil samples were analyzed for the same compounds with the addition of VOCs. The groundwater sample was collected from near the metal scrap in the center of the site, and the subsurface soil used to estimate the groundwater pathway was collected from the eastern side of the site in the middle of the wooden pallets. Non-IRP sorting and

IRP STATUS

RRSE RATING: Medium (2B)

CONTAMINANTS OF CONCERN:

VOCs, SVOCs, PCBs, Herbicides, Explosives, Metals

MEDIA OF CONCERN:

Soil, Surface Water, Groundwater, Sediment

COMPLETED IRP PHASE:

PA/SI (1998)

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RI, RD, RA, LTM

PROPOSED PLAN

A RI will be completed. A RD and RA debris and soil removal may be required.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS				1000			
IRA							
RD					60		
RA(C)					600		
RA(O)							
LTM						60	190

Projected Total: $1,910,000

RVAAP-51
DUMP ALONG PARIS WINDHAM RD.

SITE DESCRIPTION

This AOC is an area adjacent to Sand Creek that was used as a landfill for miscellaneous materials including transite siding. The dates of operation for the landfill are unknown.

The surface soil and sediment pathway are considered complete. Three surface soil samples and one sediment sample were collected and analyzed for SVOCs, explosives and metals. RD and RA will be done in 2001 to include debris removal, followed by confirmatory sampling.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:
SVOCs, Explosives, Metals

MEDIA OF CONCERN:
Soil, Sediment

COMPLETED IRP PHASE:
PA/SI (1998)

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RD, RA

PROPOSED PLAN

Five-year Reviews following the RD/RA.

CONSTRAINED COST TO COMPLETE

PHASE	2001	2002	2003	2004	2005	2006	2007+
RI/FS							
IRA							
RD	10						
RA(C)	50						
RA(O)							
LTM							

Projected Total: $60,000

RESPONSE COMPLETE
DSERTS SITES

RVAAP-01
RAMSDELL QUARRY LANDFILL

SITE DESCRIPTION

This site is not eligible for ER,A funds.

The Ramsdell Quarry Landfill is an unlined 10 acre landfill in the bottom of an abandoned quarry. Water is ponded in the northern end of the quarry. During the period 1946 to 1950 the site was used as a surface-burning site to thermally treat waste explosives and napalm bombs. No historical information has been located for the period of 1950-1976. Since 1976, the site has been used strictly as a nonhazardous solid waste landfill. The site was permitted as a sanitary landfill by the State of Ohio from 1978 to its closure in 1990.

Because this unit is unlined, there is a high potential for releases from the landfill to surrounding soils and groundwater. Five groundwater monitoring wells were installed around the landfill perimeter 1988. The wells are monitored on a regular basis as part of the landfill closure requirements. New wells were installed in 1998 to further investigate the nature and extent of groundwater contamination at the landfill. A final report of findings was published in October 1998.

IRP STATUS

RRSE RATING: High (1B)
CONTAMINANTS OF CONCERN:
Explosives, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site is RC becauseit is not eligible for IRP funding (ER,A).

RVAAP-07
BLDG. 1601 HAZARDOUS WASTE STORAGE

SITE DESCRIPTION

This site is not eligible for ER,A funds.
This is a RCRA storage facility for solid ash residue and spent activated carbon. It was operated under interim status from 1980 to 1998. No hazardous wastes are currently being stored in the building. The Part B permit application covering the facility was withdrawn during 1994. The building is a 20 by 22 foot concrete igloo. Wastes stored in this building were containerized in 55 gallon DOT drums. There is little potential for contamination resulting from operation of this unit. Closure plans were approved and implemented in 1998. This site has been officially closed by Ohio EPA.

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site is RC becauseit is not eligible for IRP funding (ER,A).

RVAAP-14
LOAD LINE 6 EVAPORATION UNIT

SITE DESCRIPTION

This site is not eligible for ER,A funds
From 1981 through 1987, tenant operations at this load line generated building wash down and waste-water, which was discharged into an 18 by 14 by 4 foot concrete tank. This unit was closed under a RCRA closure in 1989. The closure required removal of all contaminated soils associated with the unit. Soil sampling conducted after removal of soils confirmed clean closure of this unit.

IRP STATUS

RRSE RATING: NE
CONTAMINANTS OF CONCERN:
Explosives, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RA - RCRA Closure
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site is RC because it is not eligible for IRP funding.

RVAAP-15
LOAD LINE 6

SITE DESCRIPTION

This was an active unit in operation since 1987 by a Physics International, which closed in 1993. The unit consists of dual activated carbon units for filtration of pink water generated from load line operations. The wastewater treatment system discharged under an NPDES-permitted discharge to the RVAAP sanitary sewer system. Contaminants of concern at this unit are explosive compounds. There is a low potential for releases from this unit.

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site is RC under the IRP because itis not eligible for IRP funding.

RVAAP-17
DEACTIVATION FURNACE

SITE DESCRIPTION

This site is not eligible for ER,A funds.
This unit is a No. 2 oil-fired horizontal rotary retort furnace used for the deactivation of small munition items. It was operated from 1960 through 1983. The furnace is currently undergoing closure under a RCRA closure plan. Sampling during closure activities indicates heavy metals contamination to the soils surrounding the furnace area. The closure plan calls for the removal of all contaminated soils associated with the unit. Closure plans have been approved. The buildings were demolished and properly disposed of in October and November 1999.

IRP STATUS

RRSE RATING: High (1B)
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-18
LOAD LINE 12 PINK WASTE WATER TREATMENT

SITE DESCRIPTION

This site is not eligible for ER,A funds.
This is an active unit, consisting of dual mode activated carbon filters for the treatment of explosive contaminated wastewater. This unit has operated from 1982 to the present. The wastewater treatment discharge is regulated under the NPDES permitted discharge system. Contaminants of concern include explosive compounds. The plant and the associated demil building (904) were closed and demolished under the supervision of Ohio EPA in the fall of 1999. A final closure report has been prepared and forwarded to Ohio EPA. A closure letter was received from Ohio EPA in May 2000.

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Explosives
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-20
SAND CREEK SEWAGE TREATMENT PLANT

SITE DESCRIPTION

This site is not eligible for ER,A funds.
This is an inactive domestic sewage treatment plant regulated under an NPDES discharge permit. This plant is no longer needed by the installation under modified caretaker status and was closed in FY 1993 in accordance with EPA requirements. There is a low potential for releases to the soil and groundwater from this unit.

IRP STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-21
DEPOT SEWAGE TREATMENT PLANT

SITE DESCRIPTION

This site is not eligible for ER,A funds.
This is an inactive domestic sewage treatment plant regulated under an NPDES discharge permit. This plant is no longer needed by the installation under modified caretaker status and was closed in FY 1993 in accordance with EPA requirements. There is a low potential for releases to the soil and groundwater from this unit.

IRP STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-22
GEORGE ROAD SEWAGE PLANT

SITE DESCRIPTION

This site is not eligible for ER,A funds.

This is an inactive domestic sewage treatment plant regulated under an NPDES discharge permit. The plant was closed in FY93 in accordance with EPA requirements. There is a low potential for releases to the soil and groundwater from this unit.

IRP STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS OF CONCERN:
Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-23
UNIT TRAINING EQUIPMENT SITE UST

SITE DESCRIPTION

This site is not eligible for ER,A funds.

This unit was a underground storage tank for waste oil used by an RVAAP tenant organization. The PA/SI was completed in 1989. The tank, and any associated contaminated soil, were removed in 1989.

IRP STATUS

RRSE RATING: Medium (2B)
CONTAMINANTS OF CONCERN:
Waste Oil
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RA
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-24
WASTE OIL TANK

SITE DESCRIPTION

This site is not eligible for ER,A funds.

This unit is an above-ground storage tank, without secondary containment, for waste oil from the vehicle maintenance operations of an RVAAP tenant organization located in the Depot Area, Bldg. U4, of RVAAP. The tank was used from 1983 to 1993. The contents were emptied and the tank has remained inactive. Contaminants of concern include petroleum and metals. There is a potential for release of contaminants to the surrounding soils and groundwater from this unit.

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Waste Oil
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-25
BLDG. 1034 MOTOR POOL AST

SITE DESCRIPTION

This site is not eligible for ER,A funds.

This unit is an inactive above-ground storage tank used to store waste oil from RVAAP vehicle maintenance operations. Use of the tank began in 1974 and was emptied of all contents in FY93 and remains inactive. Contaminants of concern include petroleum and metals. There is a low potential for release of contaminants to the surrounding soils and groundwater from this unit.

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Waste Oil
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site in RC because it is not eligible for IRP funding.

RVAAP-26
FUZE BOOSTER AREA SETTLING TANKS

SITE DESCRIPTION

The fuze and booster area covers approximately 450 acres and includes load lines 5, 6, 7, 8, 9, 10 and 11. These load lines were used for the manufacture of miscellaneous fuzes, boosters, primers, detonators and percussion elements from 1941 through 1971. Within the line areas are 14 concrete underground storage tanks and 1 concrete above ground storage tank which were used as settling basins for explosive-contaminated waste water. The tanks were emptied, cleaned and covered in 1971.

Contaminants of concern from these units are explosives, lead, lead azide, lead styphnate, mercury, and unknown compounds. Shallow monitoring wells were installed in 1981 around the perimeter of the fuze and booster area. Subsequent sampling of the wells did not detect heavy metals in the groundwater. The wells were eventually destroyed by frost heave.

IRP STATUS

RRSE RATING: Medium (2B)
CONTAMINANTS OF CONCERN:
Explosives, Metals
MEDIA OF CONCERN:
Groundwater, Soil, Surface Water
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site is RC, because each LL became its own AOC (DSERTS site).

RVAAP-27
BUILDING 854, PCB STORAGE

SITE DESCRIPTION

This unit consists of a 50 ft. by 250 ft. area within a wooden frame building used for the storage of PCB contaminated materials. All PCB contaminated material was removed from the building and the interior decontaminated to nondetection limits in the summer of 1998.

IRP STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS OF CONCERN:
PCB's
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

Currently awaiting final closure letter from Ohio EPA.

RVAAP-30
LL7 PINK WASTE WATER TREATMENT

SITE DESCRIPTION

This AOC is an inactive dual activated carbon pink waste water treatment unit that was used by a Physics International from 1989 through 1992. The discharge from the unit was regulated under the NPDES permit system. Contaminants of concern associated with this unit include explosive compounds.

PROPOSED PLAN

This site is RC because it is not eligible for IRP funding (ER,A)

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Explosives
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

RVAAP-31
ORE PILE RETENTION POND

SITE DESCRIPTION

This unit consists of a small pond constructed to prevent potentially contaminated surface runoff from strategic manganese and chromium ore piles from entering a receiving stream. The pond was constructed in the mid-1950's. There is a potential for release of contaminants from this unit to the surrounding soils, groundwater and surface water/sediment.

PROPOSED PLAN

This site is RC because it is not eligible for IRP funding (ER,A)

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Explosives, Maganese, Chromium
MEDIA OF CONCERN:
Groundwater, Soil, Surface Water
COMPLETED IRP PHASE:
PA/SI (1989)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

RVAAP-35
BLD 1037 - LAUNDRY WASTEWATER SUMP

SITE DESCRIPTION

This AOC consists of a concrete sump that was used as a settling tank for RVAAP laundry facilities. This sump was in operation from the early 1940s until 1992.

No file documentation exists.

IRP STATUS

RRSE RATING: Medium (2B)
CONTAMINANTS OF CONCERN:
Metals, Explosives
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI (1998)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site is RC because it is not eligible for IRP funding (ER,A)

RVAAP-37
PESTICIDE BUILDING S-4452

SITE DESCRIPTION

This unit consists of a 12.2 by 6.1 meter (40 by 20 foot) wooden structure with a crawl space, which housed various pesticides. A 6.1 by 3.6 meter (20 by 12 foot) pesticide mixing area was also located in a gravel area outside of the building. This unit was in use from the 1970's until 1993. An empty can with chlorinate residue and a hand sprayer were found in the building crawl space. No file documentation exists. The building and soil were removed from the site and properly disposed of in the fall of 1999 in accordance with Ohio EPA guidance and recommendations

IRP STATUS

RRSE RATING: Low (3B)
CONTAMINANTS OF CONCERN:
Synthetic organic compounds
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI (1998)
CURRENT IRP PHASE:
RC
FUTURE IRP PHASE:
RC

PROPOSED PLAN

This site is RC because it is not eligible for IRP funding (ER,A)

RVAAP-47
BLDG T-5301

SITE DESCRIPTION

This building was used to clean and decontaminate small miscellaneous production equipment of explosives and propellants. Quantities and dates of testing are unknown, but should correspond to the dates of production (intermittent from World War II to Vietnam. The PA/SI was completed in 1998. The surface soil and sediment pathways are considered complete. The surface water pathway is not considered complete because the ditch no longer has water in it. Two surface soil samples were collected outside of the roll-up door adjacent to the concrete floor and one sediment sample was collected from the drainage ditch outside of the building that drains to Sand Creek. All of the samples were analyzed for metals and explosives. A IRA was completed in FY2000. No industrially related contaminants were found during the confirmation sampling. All naturally occurring analytes were within normal background levels. Ohio EPA has issued a letter stating no further action is needed.

IRP STATUS

RRSE RATING: High (1B)

CONTAMINANTS OF CONCERN:

Explosives, Metals

MEDIA OF CONCERN:

Soil, Sediment

COMPLETED IRP PHASE:

PA/SI (1998)

CURRENT IRP PHASE:

RC

FUTURE IRP PHASE:

RC

SCHEDULE

PAST MILESTONES

1990

PA, Installation 38 AOCs

1996

PA/RI Action Plan
Phase I RI High Priority Sites

1998

Phase II RI Winklepeck Burning Grounds Field Work Complete/Draft Report under Review
Facility-wide Background Field Work Complete/ Draft Report currently under Review
RRSE for 13 new sites Field Work Complete/Draft Report Currently Under Review

1999

RI - Phase II Erie Burning Grounds
RI - Phase II NACA Test Area
RI - Phase II Open Demolition Area #1

2000

IRA – LL 12/ Bioremediation Pilot Study Demonstration Complete
RI – Phase II Erie Burning Grounds Draft Report Completed/ Under Review
RI – Phase I NACA Test Area Field Work/Draft Report Completed/Under Review
RI – Phase I Open Demolition Area #1 Field Work/Draft Report Completed/ Under Review
RI – Winklepeck Open Burning Grounds Ecological Risk Assessment Field Work Complete
IRA – Building 5301 Completed/No Further Action Status
Facility-Draft Revision to Wide SAP and HSP completed

2001

RI – Phase I Load Line 11 Field Work Complete
RI - Phase II Load Line 1, 12 Field Work Complete
FS – Winklepeck Field Work Completed
RI – Phase I LOAD LINE 11 Field Work Completed
IRA – Open Demolition Area #1 Fieldwork started

SCHEDULE

PROJECTED MILESTONES

2001

RI – Phase I Load Line 11 Field Work Complete
RI - Phase II Load Line 1, 12 Field Work Complete
FS – Winklepeck Field Work Completed
RI – Phase I LOAD LINE 11 Field Work Completed
IRA – Open Demolition Area #1 Fieldwork started

2007

- All Remedies In Place (RIP)

NO FURTHER ACTION SITES

The following sites currently require no further action under the ER,A program. The have been or will be addressed under other programs.

- RVAAP-01 RAMSDELL QUARRY LANDFILL
- RVAAP-07 BLD 1601 HAZ WASTE STORAGE
- RVAAP-14 LOAD LINE 6 EVAPORATION UNIT
- RVAAP-15 LOAD LINE 6 TREATMENT PLANT
- RVAAP-17 DEACTIVATION FURNACE
- RVAAP-18 LOAD LINE 12 WWT PLANT
- RVAAP-20 SAND CREEK STP
- RVAAP-21 DEPOT STP
- RVAAP-22 GEORGE RD STP
- RVAAP-23 UNIT TRAINING EQUIPMENT SITE UST
- RVAAP-24 WASTE OIL TANK
- RVAAP-25 BUILDING 854, PCB STORAGE
- RVAAP-26 FUZE BOOSTER AREA SETTLING TANKS
- RVAAP-27 BUILDING 854, PCB STORAGE
- RVAAP-30 LL7 PINK WASTE WATER TREATMENT
- RVAAP-31 ORE PILE RETENTION POND
- RVAAP-35 BLD 1037 - LAUNDRY WASTE WATER TANK
- RVAAP-37 PESTICIDE BUILDING S-4452

RVAAP-47 BUILDING T-5301

Ravenna Army Ammo Plant IRP Schedule

(Based on Cost to Complete current funding constraints)

CURRENT PHASE | FUTURE PHASE

DSERTS #	SITE NAME	PHASE	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007+
RVAAP-02	Erie Burning Grounds	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-03	Demolition Area #1	RI/FS							
		RD							
		RA							
		IRA							
RVAAP-04	Demolition Area #2	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-05	Winklepeck Burning Ground	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-06	C Block Quarry DP	RD							
		RA							
		LTM							
RVAAP-08	Load Line 1	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-09	Load Line 2	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-10	Load Line 3	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-11	Load Line 4	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-12	Load Line 12	RI/FS							
		RD							
		RA							
		LTM							
		IRA							
RVAAP-13	Building 1200	RD							
		RA							
		LTM							
RVAAP-16	Fuze and Booster Quarry Landfill/Pond	RI/FS							
		RD							
		RA							
		LTM							

Ravenna Army Ammo Plant IRP Schedule

(Based on Cost to Complete current funding constraints)

CURRENT PHASE | FUTURE PHASE

DSERTS #	SITE NAME	PHASE	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007+
RVAAP-19	Landfill North of Winklepeck Burning Grounds	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-28	Mustard Agent Burial Site	RAC							
RVAAP-29	Upper & Lower Cobbs Ponds	RI/FS							
		RA							
RVAAP-32	40 & 60 MM Firing Range	RI/FS							
RVAAP-33	Load Line 6 Fuze and Booster	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-34	Sand Creek Disposal Road Landfill	RD							
		RA							
RVAAP-36	Pistol Range	RD							
		RA							
RVAAP-38	NACA Test Area	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-39	Load Line 5 Fuze and Booster	RI/FS							
		RD							
		RA							
		IRA							
RVAAP-40	Load Line 7 Fuze and Booster	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-41	Load Line 8 Fuze and Booster	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-42	Load Line 9 Fuze and Booster	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-43	Load Line 10 Fuze and Booster	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-44	Load Line 11 Fuze and Booster	RI/FS							
		RD							
		RA							
		LTM							
		IRA							
RVAAP-45	Wet Storage Area	RI/FS							

Ravenna Army Ammo Plant IRP Schedule

(Based on Cost to Complete current funding constraints)

CURRENT PHASE | FUTURE PHASE

DSERTS #	SITE NAME	PHASE	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007+
RVAAP-46	Bldg F-15 & F-16	RI/FS							
		RD							
		RA							
RVAAP-47	Bldg T-5301	RI/FS							
		IRA							
RVAAP-48	Anchor Test Area	RI/FS							
		RD							
		RAC							
RVAAP-49	Central Burn Pits	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-50	Atlas Scrap Yard	RI/FS							
		RD							
		RA							
		LTM							
RVAAP-51	Dump Along Paris Windham Rd.	RD							
		RA							

DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTE

Installation Phase Summary Report 1/28/00

Installation: RAVENNA AAP

Programs: BRAC I, BRAC II, BRAC III, BRAC IV, IRP

Subprograms: Compliance, Restoration, UXO

Installation count for Programs: 1

NPL Options: Delisted, No, Proposed, Yes

Installations count for Programs and 1

Site count for Programs and NPL: 51

Phase / Status / Sites

PA

C	U	F	RC
51	0	0	0

SI

C	U	F	RC
51	0	0	10

RI / FS

C	U	F	RC
1	3	35	1

RD

C	U	F
0	0	38

RA(C)

C	U	F	RC
2	0	38	2

RA(O)

C	U	F	RC
0	0	1	0

LTM

C	U	F	N
0	0	34	17

Remedy / Status / Sites (Actions)

IRA

C	U	F
0 (0)	0 (0)	0 (0)

FRA

C	U	F
2 (2)	0 (0)	38 (38)

RIP Total: 0

RC Total: 13 03/31/2000

DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM

RISK INSTALLATION ACTION PLAN REPORT 01/28/2000

Installation: RAVENNA AAP
Major Command: AMC

SubCommand: IOC
Program Options: IRP, BRAC I, BRAC II, BRAC III, BRAC IV

Subprogram Options: Compliance, Restoration, UXO

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
RVAAP-01	1B	GW SL	PA SI						N		198906
RVAAP-02	1B	SH WH	PA SI	RI	RAC RD				F		200210
RVAAP-03	1B	SL	PA SI		RAC RD RI				F		200109
RVAAP-04	1B	GW SL WEF	PA SI		RAC RD RI				F		200609
RVAAP-05	1B	GW SL	PA SI	RI	RAC RD				F		200309
RVAAP-06	3B	SL	PA SI		RAC RD RI				F		201109
RVAAP-07	3B	SL	PA SI						N		198906
RVAAP-08	1B	GW SL WH	PA SI	RI	RAC RD				F		200509
RVAAP-09	1B	GW SH SL WH	PA SI		RAC RD RI				F		200609
RVAAP-10	1B	SL WH	PA SI		RAC RD RI				F		200709
RVAAP-11	2B	GW SH SL	PA SI		RAC RD RI				F		201209
RVAAP-12	1B	SL WH	PA SI		RAC RD RI				F		200309
RVAAP-13	3B	SL	PA SI		RAC RD RI				F		201109

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
RVAAP-14	NE		PA RAC SI						N		198906
RVAAP-15	3B	SL	PA SI		RAC RD RI				F		201209
RVAAP-16	1B	SH WH	PA SI		RAC RD RI				F		200909
RVAAP-17	1B	SL	PA SI						N		198906
RVAAP-18	3B	SL	PA RI SI						N		199703
RVAAP-19	3B	GW SL	PA SI		RAC RAO RD RI				F	201009	201009
RVAAP-20	NE		PA SI						N		198906
RVAAP-21	NE		PA SI						N		198906
RVAAP-22	NE		PA SI						N		198906
RVAAP-23	2B	GW SL	PA RAC SI						N		198911
RVAAP-24	3B	SL	PA SI						N		198906
RVAAP-25	3B	SL	PA SI						N		198906
RVAAP-26	2B	GW SL	PA SI		RAC RD RI				F		200909
RVAAP-27	NE		PA SI						N		198906
RVAAP-28	3B	SL	PA SI		RAC RD RI				F		201209
RVAAP-29	2B	SH SL WH	PA SI		RAC RD RI				F		201109
RVAAP-30	3B	SL	PA SI		RAC RD RI				N		201309

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
RVAAP-31	3B	SH	PA		RAC				F		201209
			SI		RD						
					RI						
RVAAP-32	2B	SL	PA		RAC				F		201209
			SI		RD						
					RI						
RVAAP-33	2B	SH	PA		RAC				F		201009
		SL	SI		RD						
		WH			RI						
RVAAP-34	1B	SEF	PA		RAC				N		200909
		SH	SI		RD						
		SL			RI						
RVAAP-35	2B	GW	PA		RAC				F		201109
		SL	SI		RD						
					RI						
RVAAP-36	2B	SEF	PA		RAC				F		201109
		SH	SI		RD						
		SL			RI						
RVAAP-37	3B	SL	PA						N		199512
			SI								
RVAAP-38	2B	SEF	PA		RAC				F		200309
		SH	SI		RD						
		SL			RI						
RVAAP-39	2B	GW	PA		RAC				F		200909
		SL	SI		RD						
					RI						
RVAAP-40	3B	GW	PA		RAC				F		201409
		SL	SI		RD						
					RI						
RVAAP-41	2B	GW	PA		RAC				F		201209
		SH	SI		RD						
		SL			RI						
RVAAP-42	2B	GW	PA		RAC				F		201009
		SL	SI		RD						
					RI						
RVAAP-43	2B	GW	PA		RAC				F		201009
		SL	SI		RD						
					RI						
RVAAP-44	1B	GW	PA		RAC				F		200209
		SEF	SI		RD						
		SH			RI						
		SL									
RVAAP-45	3B	SL	PA		RAC				F		201109
			SI		RD						
					RI						
RVAAP-46	1B	SEF	PA		RAC				F		200609
		SH	SI		RD						
		SL			RI						

Site	RRSE	Media Evaluated	Phase (s) Completed	Phase (s) Underway	Phase (s) Future	#IRA Completed	#IRA Underway	#IRA Future	LTM Status	RIP Date	RC Date
RVAAP-47	1B	SEF	PA		RAC				F		200309
		SH	SI		RD						
		SL			RI						
RVAAP-48	2B	GW	PA		RAC				N		201109
		SL	SI		RD						
					RI						
RVAAP-49	1B	GW	PA		RAC				F		200809
		SL	SI		RD						
					RI						
RVAAP-50	2B	GW	PA		RAC				F		201109
		SL	SI		RD						
					RI						
RVAAP-51	1B	SEF	PA		RAC				N		200909
		SH	SI		RD						
		SL			RI						

RRSE - Relative Risk Site Evaluation; Risk Category - 1=High, 2=Medium, 3=Low;

Legal Agreement - A = with agreement, B = without agreement; C = Complete, U = Underway, F = Future, N = Not Applicable

Reporting Period End Date: 03/31/2000

REM/IRA/RA ASSESSMENT

PAST REM/IRA/RA

- Building T-5301 IRA
- Load Line 12 IRA

CURRENT REM/IRA/RA

- Open Demolition Area #1 IRA

FUTURE REM/IRA/RA

- RD and RA at RVAAP-02, 03, 04, 05, 06, 08, 09, 10, 11, 12, 13, 16, 19, 33, 34, 36, 38, 39, 40, 41, 42, 43, 44, 46, 49, 50, 51
- IRA at RVAAP-03, 12, 44, 47, 48

PRIOR YEAR FUNDING

FY 1994	Scoping		$9,371.88
		SUBTOTAL =	**$9,371.88**
FY 1995	Group A Site/ RI		$225,207.33
	Group A		$1,007,114.03
		SUBTOTAL =	**$1,232,321.36**
FY 1996	Phase I RFI		$15,000.00
	Winklepeck Burning Grounds		$21,460.64
	Demo Area 2		$2,259.78
	Load Line #1 Dil/ Set Ponds		$23,722.57
	Load Line #12 Dil/Set		$19,620.97
	Landfill/ Winklepeck		$2,101.08
	Load Line #12 Pink Waste		$2,279.60
	Load Line #3 Dil/Set		$20,502.48
	Load Line #4 Dil/Set		$2,287.58
	Upper & Lower Cobb Pond		$2,279.60
	Load Line #2 Dil/Set		$21,994.65
	RI/FS Group A Sites		$200,319.16
		SUBTOTAL =	**$333,828.11**
FY 1997	RAB Support		$21,590.43
	Mustard Agent Burial Site		$23,664.74
	Winklepeck Burning Ground		$1,230,226.72
	Firestone Test Fac., SI		$50,000.00
		SUBTOTAL =	**$1,325,481.89**
FY 1998	RAB Support		$23,320.96
	Burning Grounds		$10,000.00
	GIS Database Dev P.O.		$28,991.12
		SUBTOTAL =	**$62,312.08**
FY 1999	Winklepeck Burning Ground		$75,000.00
	NACA Test RI/FS		$12,000.00
	Load Line #1 RI/FS		$65,000.00
	Erie Burning Ground RI/FS		$761,389.00

PRIOR YEAR FUNDING

FY 1999 contd.	Demo Area #1		$42,931.00
	NACA Test Area		$43,069.00
	RAB Support		$20,000.00
	Winklepeck Data Project Order		$20,000.00
	Winklepeck Wells Project Order		$20,000.00
	NACA Test Area		$386,788.00
	Load Line #1 Phase II RI		$25,000.00
		SUBTOTAL =	**$1,471,177.00**
FY 2000	Erie Burning Grounds RI		$39,200.00
	Open Demolition Area #1 IRA		$401,100.00
	Open Demolition Area #1 RI		$350,500.00
	Open Demolition Area #2 RI		$45, 500.00
	Winklepeck Burning Grounds RI/FS		$1,432,900.00
	Load Line I RI		$230,000.00
	Load Line 12 RI		$1,239,800.00
	Load Line 12 IRA		$408,700.00
	NACA Test Area RI/FS		$138,800.00
	Load Line 11 RI		$525,000.00
	Load Line 11 RI		$975,000.00
	Building T-5301		$215,000.00
		SUBTOTAL =	**$5,956,000.00**
		TOTAL =	**$10,390,492.32**

TOTAL PRIOR YEARS FUNDING	**$10,390,492.32**
TOTAL CURRENT YEAR REQUIREMENTS (FY 2001)	**$ 5,149,000.00**
TOTAL FY 2002 REQUIREMENTS	**$ 3,462,000.00**
TOTAL FUTURE REQUIREMENTS (FY03+)	**$ 29,435,000.00**
TOTAL COST TO COMPLETE IRP	**$ 48,436,492.32**

Ravenna AAP FY01 Constrained CTC SHORT

DSERTS #	SITE TITLE	PHASE	FY01	FY02	FY03	FY04	FY05	FY06	FY07	PHASE SUM	SITE TOTAL	DESCRIPTION OF WORK
RVAAP-02	Erie Burning Grounds *	RI/FS	20	285	65	20				390		FY01 - GW well installation (~10 wells to max of 50 ft for 150K), monitoring GW for 8 Qtrs (160K); ~10 surface water & ~20 sediment (40K); ~25 soil (35K); RI report (200K); Risk Asst/Eco (150K); S&R and needed extras (~250K); (w/ UXO support for all work)
	* Assuming no future land use.	RD								0		Additional RI/FS work will be done in hopes that RD/RA will not be needed. No UXO removal.
		RA								0		Additional RI/FS work will be done in hopes that RD/RA will not be needed. No UXO removal.
		LTM				15	100			115	505	~10 wells, semi-annual, Final Report
RVAAP-03	Demolition Area #1 **	RI/FS								0		Report for FY99 sampling (350K), safety plans etc
	** Assuming future land use by the Nation Guard.	IRA								0		Soil removal in bare hot spots
		RD	100							100		Sampling to delineate additional soil removal
		RA	600							600	700	Additional soil removal for explosive and metals contamination ~7000cy
RVAAP-04	Demolition Area #2 *	RI/FS		650						650		Sampling of south side for surface to 3 ft bgs contamination (~20 locations) and to place wells, ~6 sediment, ~2 surface water, install ~14 wells (500K), Risk (150K)
	* Assuming no future land use.	RD								0		design of RA
		RA								0		Fencing (150K), bank stabilization (150K)
		LTM			165	165	165	165	810	1470	2120	Fence maintenance (15K), LTM- 14 wells, 6 times/year (150K), Closure report
RVAAP-05	Winklepeck Burning Grounds **	RI	38							38		Eco, additional wells, GW sampling
	** Assuming future land use by the Nation Guard.	RD			150					150		design of RA
		RA			825	675				1500		Assuming soil removal to 3 ft bgs at ~18 pads (~2.5 acres), remediated
		LTM				150	200	200	450	1000	2688	~15 wells, quarterly, 5 years
RVAAP-06	C Block Quarry DP	RD						15		15		design of RA
		RA						110		110		Soil removal ~1000cy, confirmatory sampling (50K), GW ~4 wells (60K)
		LTM						60	150	210	335	~4 wells, starting at quarterly
RVAAP-08	Load Line 1	RI	23	60						83		FS, No Eco - risk based on Industrial use.
		RD				150				150		design of RA
		RA				280	700	1020		2000		Soil removal ~2000cy, stabilization (2M), remove piping (1M)
		LTM						60	310	370	2603	~13 wells, quarterly, closure report
RVAAP-09	Load Line 2	RI	1300	40	150					1490		Additional RI (1.1M), FS (250K)
		RD				150				150		design of RA
		RA				180	800	1020		2000		Soil removal ~2000cy, stabilization, remove piping
		LTM						50	270	320	3960	~10 wells, quarterly, closure report
RVAAP-10	Load Line 3	RI	624	45	150					819		Additional RI (1.1M), FS (250K)
		RD				50				50		design of RA
		RA				180	800	1020		2000		Soil removal ~2000cy, stabilization, remove piping
		LTM						50	270	320	3189	~10 wells, quarterly, closure report
RVAAP-11	Load Line 4	RI	354	296	150					800		Additional RI (1.1M), FS (250K)
		RD				50				50		design of RA
		RA				156	1354	46		1556		Soil removal ~2000cy, stabilization (2M), remove piping (400K)
		LTM						50	270	320	2726	~10 wells, quarterly, closure report
RVAAP-12	Load Line 12	RI	25	55						80		Additional RI for groundwater
		IRA				50				50		Soil removal ~1200cy
		RD								0		design of RA
		RA					1250			1250		Additional soil removal ~1000cy
		LTM					65	65	265	395	1775	~14 wells, quarterly, closure wells

Ravenna AAP FY01 Constrained CTC SHORT

DSERTS #	SITE TITLE	PHASE	FY01	FY02	FY03	FY04	FY05	FY06	FY07	PHASE SUM	SITE TOTAL	DESCRIPTION OF WORK
RVAAP-13	Bldg. 1200	RD							15	15		design of RA
		RA							85	85		Soil removal ~500cy, confirmatory sampling (25K), GW ~4 wells (60K)
		LTM							210	210	310	~4 wells, starting at quarterly
RVAAP-16	Fuze and Booster Quarry Landfill/ Pond	RI		800						800		RI including 8 wells
		RD						5		5		design of RA
		RA						50		50		Sediment (~400cy) & debris removal
		LTM						80	320	400	1255	8 wells, starting at quarterly, closure report
RVAAP-19	Landfill North of Winklepeck Burning Ground	RI				200				200		Additional RI including 4 wells
		RD						20		20		design of RA
		RA						200		200		Limit soil cover (2 ft) on ~2.5 acres
		LTM						20	90	110	530	4 wells, starting at quarterly, closure report
RVAAP-28	Mustard Agent Burial Site	RAC	5							5	5	fence area
RVAAP-29	Upper & Lower Cobbs Ponds	RI	450							450		additional sampling & Eco (fish and limited plant tissue)
		LTM				20	20	10	60	110	560	~4 wells, starting at quarterly, closure report
RVAAP-32	40 & 60 MM Firing Range	RI							300	300	300	sampling to investigate if contaminants are leaving area, fence
RVAAP-33	Load Line 6 Fuze and Booster	RI			700					700		RI including GW
		RD						60		60		design of RA
		RA						600		600		assuming soil, sump and pipe removal
		LTM						40	140	180	1540	assuming 8 wells, starting at quarterly, closure report
RVAAP-34	Sand Creek Disposal Road Landfill	RD	20							20		design of RA
		RA	200							200	220	debris removal (~4000cy), confirmatory sampling
RVAAP-36	Pistol Range	RD						5		5		design of RA
		RA						20		20	25	remove top ~foot of soil, backfill
RVAAP-38	NACA Test Area	RI	20	461	19					500		RI including ~12 wells, risk, eco, plugging onsite well
		RD								0		design of RA
		RA								0		Limited capping ~100cubic yards
		LTM			55	25	25	60		165	665	12 wells, stating at quarterly, closure report
RVAAP-39	Load Line 5 Fuze and Booster	RI					700			700		RI including GW
		RD						60		60		design of RA
		RA						392	208	600		assuming soil, sump and pipe removal
		LTM							180	180	1540	assuming 8 wells, starting at quarterly, closure report
RVAAP-40	Load Line 7 Fuze and Booster	RI			700					700		RI including GW
		RD						60		60		design of RA
		RA						600		600		assuming soil, sump and pipe removal
		LTM						40	140	180	1540	assuming 8 wells, starting at quarterly, closure report
RVAAP-41	Load Line 8 Fuze and Booster	RI			700					700		RI including GW
		RD					60			60		design of RA
		RA					600			600		assuming soil, sump and pipe removal
		LTM						40	140	180	1540	assuming 8 wells, starting at quarterly, closure report
RVAAP-42	Load Line 9 Fuze and Booster	RI		730						730		RI including GW
		RD				60				60		design of RA
		RA				570				570		assuming soil, sump and pipe removal
		LTM				40	40	20	80	180	1540	assuming 8 wells, starting at quarterly, closure report

Ravenna AAP FY01 Constrained CTC SHORT

DSERTS #	SITE TITLE	PHASE	FY01	FY02	FY03	FY04	FY05	FY06	FY07	PHASE SUM	SITE TOTAL	DESCRIPTION OF WORK
RVAAP-43	LL-10 Percussion Element	RI			700					700		RI including GW
		RD						60		60		design of RA
		RA						600		600		assuming soil, sump and pipe removal
		LTM							180	180	1540	assuming 8 wells, starting at quarterly, closure report
RVAAP-44	Load Line 11	RI	20							20		additional RI
		IRA								0		removing soil, sump and pipe removal
		RD	60							60		design of RA
		RA	600							600		surface soil removal
		LTM		40	40	20	20	60		180	860	assuming 8 wells, starting at quarterly, closure report
RVAAP-45	Wet Storage Area	RI						100		100	100	sample 5 buildings and closure report
RVAAP-46	Bldg F-15 & F-16	RI			150					150		sampling 2 areas
		RD					10			10		design of RA
		RA						75		75	235	limited sediment removal with confirmatory sampling
RVAAP-47	Bldg T-5301	IRA								0		soil, building removal
		RI/FS								0	0	confirmatory sampling
RVAP-48	Anchor Test Area	RI			20					20		limited soil removal
		RD			20					20		confirmatory sampling
		RAC			60					60	100	
RVAAP-49	Central Burn Pits	RI	630							630		soil 80 locations (surface and sub - total 120 samples), ~6 wells, ~6 sediment, 2 surface water, risk, eco
		RD			30					30		design of RA
		RA				300				300		soil removal and/or in-situ
		LTM				30	30	15	35	110	1070	~6 wells, starting with quarterly, closure report
RVAAP-50	Atlas Scrap Yard	RI				1000				1000		UXO support - 100 soil locations, ~8 wells, ~8 sediment, 2 surface water, risk, eco
		RD					60			60		design of RA
		RA					600			600		debris and soil removal
		LTM						60	190	250	1910	~8 wells, quarterly, closure report
RVAAP-51	Dump Along Paris Windham Rd.	RD	10							10		design of RA
		RA	50							50	60	soil removal
	FISCAL YEAR TOTALS IN THOUSANDS OF DOLLARS		**5,149**	**3,462**	**$4,849**	**$4,536**	**$7,599**	**$7,283**	**$5,168**	**$38,046**	**$38,046**	
		POM	5,149	3,462	4,849	4,536	7,599	7,283	7,976		54,931	
		Difference	**$0**	**$0**	**($165)**	**($15)**	**$35**	**$35**	**($360)**		**$ 16,885**	

COMMUNITY INVOLVEMENT

The RVAAP Restoration Advisory Board (RAB) was established in 1996 and has 25 members consisting of 23 community members and 2 non-community members. The community members include a township appointee from each of the surrounding 6 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 February 19, 1997, a copy can be found in the RVAAP technical library as well as two public repositories.

The RVAAP RAB generally meets every two to three months depending on the need for relevant issues to be addressed. 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. There have been presentations by the Ohio Department of Health addressing health issues related to the cleanup, Corps of Engineers describing newly identified contaminated sites, and the Army Center for Health Promotion and Preventative Medicine to explain the rating of AOCs for funding and the process of performing ecological and human health risk assessments. The minutes of all RAB meetings are recorded. All meetings are announced in the local media. A field trip was taken by RAB members on April 10, 1999 to view the new AOCs that were added to the DSERTS database. Another field trip was taken in July 24, 1999 so the RAB could view field work (sampling) of the Erie Burning Grounds. The RAB took their latest field trip on July 22, 2000 to view and discuss numerous work including the Load Line 12 Bioremediation project, the UXO clearance work at Open Demolition Area #2, and the ecological risk assessment at the Winklepeck Burning Grounds.

All IRP records are made available to the RAB members and any other interested parties through the two local libraries. A web site where all IRP and other RVAAP documents will be available is currently under development. RVAAP publishes the semiannual Community Access Newsletters to keep the public up to date on all IRP and other environmental work at RVAAP. The RAB received $25,000 for technical assistance for public participation (TAPP) (technical review) in April 1999. They have recently applied for a second TAPP grant of $25,000. The money will be used to acquire the services of an independent environmental contractor who will advise the RAB on the ongoing ecological risk assessment at Winklepeck Burning Grounds.

DEFENSE SITE ENVIRONMENTAL RESTORATION TRACKING SYSTEM

RAB REPORT 01/28/2000

Command: AMC **SubCommanc** IOC

Installation: RAVENNA AAP

RAB Established Date: 199610 **Reason RAB Not Establish:**

RAB Adjourned Date: **Reason RAB Adjourned:**

TRC Date:

RAB Community Members: **Total RAB Community Members:** 23

Local Environmental Groups/Activists

RAB Government Members: **Total RAB Government Members:** 9

Local Government Officials

RAB Activities:

Advice On Scope/Sch Studies/Cleanup

RAB Advice

Other

TAPP Application Approval Dat 199906

TAPP Project Title: Winklepeck OB Grounds Phase II Documents 03/31/2000

TAPP Project Description: Interpret Technical Documents

Study Of Cleanup Schedule **Purchase Order**

Award Number	Award Date	Completion Date
01	199906	199912