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adford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

October 23, 2009

Mr. William Geiger
RCRA General Operations Branch, Mail Code: 3WC23
Waste and Chemicals Management Division
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. James L. Cutler, Jr.
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 24143-0100

Subject: With Certification, FY2009 Radford Army Ammunition Plant, Army Defense Installation Restoration Program, Installation Action Plan, Printed 10 August 2009
EPA ID# VA1 210020730

Dear Mr. Geiger and Mr. Cutler:

Enclosed is the certification for the subject document that was sent to you on October 22, 2009. Also enclosed is the 22 October 2009 transmittal email.

A draft of the FY2009 Installation Action Plan (IAP) was provided to your agency, the Department of Environmental Quality and the Radford AAP Restoration Advisory Board during the data validation process that occurred during the Spring of 2009. We did not receive any comments. As this was an internal and external group effort, comments were to be addressed and incorporated into the IAP during that process. For 2010, a similar process is to be implemented for revising and updating the IAP. Any new issues and/or revisions are to be addressed during that time.

Please coordinate with and provide any questions or comments to myself at (540) 639-8658, Jerry Redder ATK staff (540) 639-7536 or Jim McKenna, ACO Staff (540) 731-5782.

Sincerely,

P.W. Holt, Environmental Manager
Alliant Techsystems Inc.

c: Karen Sismour
Virginia Department of Environmental Quality
P. O. Box 10009
Richmond, VA 23240-0009

09-815-172
JMcKenna

E. A. Lohman
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Blue Ridge Regional Office
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Roanoke, VA 24019

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Rock Island, Illinois 61299

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ATTN: CENAB-EN-HM
10 South Howard Street
Baltimore, MD 21201

09-815-172
JMcKenna

bc: Administrative File
J. McKenna, ACO Staff
Rob Davie-ACO Staff
P.W. Holt
J. J. Redder
Env. File

Coordination: J. McKenna M. A. Miano

09-815-172
JMcKenna

Concerning the following:

FY2009
Radford Army Ammunition Plant
Army Defense Environmental Program
Installation Action Plan
Printed 10 August 2009

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE: _____
PRINTED NAME: for Antonio Munera
TITLE: LTC, CM
Commanding

SIGNATURE: _____
PRINTED NAME: Kent Holiday
TITLE: Vice President and General Manager
ATK Energetics Systems

09-815-172
JMcKenna

Greene, Anne

From: McKenna, Jim
Sent: Thursday, October 22, 2009 1:33 PM
To: Greene, Anne; ealohman@deq.virginia.gov; Druck, Dennis E Mr CIV USA MEDCOM CHPPM; diane.wisbeck@arcadis-us.com; durwood willis2; Geiger.William@epamail.epa.gov; Redder, Jerome; jim spencer; jlcutler@deq.virginia.gov; kjsismour@deq.virginia.gov; Llewellyn, Tim; Mendoza, Richard R Mr CIV USA IMCOM; Meyer, Tom NAB02; Parks, Jeffrey N; Timothy.Leahy@shawgrp.com; Tina_Devine@URSCorp.com
Cc: Davie, Robert
Subject: FY2009 Radford AAP Installation Action Plan attached (UNCLASSIFIED)
Attachments: 09 815 00 RADFORD_FY09IAP_FINAL_PUBLIC.pdf

Classification: UNCLASSIFIED
Caveats: FOUO

All,

The subject document is attached. A certification letter will follow.

Thank you for your support of the Radford AAP Installation Restoration Program.

Jim McKenna
Classification: UNCLASSIFIED
Caveats: FOUO

FY2009

RADFORD ARMY AMMUNITION PLANT

Army Defense Environmental Restoration Program

Installation Action Plan

Printed 10 August 2009

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Statement of Purpose

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

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), the Army Materiel Command (AMC), Radford Army Ammunition Plant (RAAP), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

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

Acronyms

AEDB-R	Army Environmental Database-Restoration
AMC	US Army Materiel Command
AOC	Area of Concern
ASD	Alternate Source Determination
BDDT	Building Debris Disposal Trench
BLA	Bag Loading Area
CAP	Corrective Action Plan
CERLA	Comprehensive Environmental Response, Compensation and Liability Act
CMS	Corrective Measures Study
COC	Contaminants of Concern
CORA	Corrective Action Permit
cy	cubic yard
DD	Decision Document
DNT	Dinitrotoluene
ER,A	Environmental Restoration, Army
FLFA	Former Lead Furnace Area
FRA	Final Remedial Action
FS	Feasibility Study
FY	Fiscal Year
GIS	Geographic Information System
GPS	Groundwater Protection Standard
HBN	Health-Based Numbers
HHRA	Human Health Risk Assessment
HWMU	Hazardous Waste Management Unit
IAA	Igniter Assembly Area
IAP	Installation Action Plan
ID	Identification
IDM	Investigative Derived Material
IM	Interim Measure
IMWP	Interim Measure Work Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
K	thousand
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituents
MCL	Maximum Contaminant Level
MMA	Main Manufacturing Area
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MRSPP	Munitions Response Site Prioritization Protocol
N/A	Not Applicable
NBG	Northern Burning Ground
NFA	No Further Action
NPL	National Priorities List

Acronyms

NRU	New River Unit
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
RA	Remedial Action
RA(C)	Remedial Action - Construction
RAAP	Radford Army Ammunition Plant
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RY	Rail Yard
SI	Site Inspection
SLERA	Screening Level Ecological Risk Assessment
SSP	Site Screening Process
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leachate Procedure
TNT	Trinitrotoluene
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USACHPPM	US Army Center for Health Promotion and Preventive Medicine
USAEC	US Army Environmental Command
USATHAMA	US Army Toxic and Hazardous Materials Agency
USEPA	US Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VI	Verification Investigation
VOC	Volatile Organic Compound
WBG	Western Burning Ground
WPA	Work Plan Addendum

Acronym Translation Table

CERCLA	RCRA
Preliminary Assessment(PA)	= RCRA Facility Assessment(RFA)
Site Inspection(SI)	= Confirmation Sampling(CS)
Remedial Investigation/Feasiblity Study(RI/FS)	= RCRA Facility Investigation/Corrective Measures Study(RFI/CMS)
Remedial Design(RD)	= Design(DES)
Remedial Action (Construction)(RA(C))	= Corrective Measures Implementation (Construction)(CMI(C))
Remedial Action (Operation)(RA(O))	= Corrective Measures Implementation (Operation)(CMI(O))
Long Term Management(LTM)	= Long Term Management(LTM)
Interim Remedial Action(IRA)	= Interim Measure(IM)

CERCLA	RCRA Underground Storage Tank (UST) Site Phase Terms
Preliminary Assessment(PA)	= Initial Site Characterization(ISC)
Remedial Investigation(RI)	= Investigation(INV)
Feasibility Study(FS)	= Corrective Action Plan(CAP)
Remedial Design(RD)	= Design(DES)
Remedial Action (Construction)(RA(C))	= Implementation (Construction)(IMP(C))
Remedial Action (Operation)(RA(O))	= Implementation (Operations)(IMP(O))
Long Term Management(LTM)	= Long Term Management(LTM)
Interim Remedial Action(IRA)	= Interim Remedial Action(IRA)

Site Alias List

AEDB-R Site ID to Alias List

AEDB-R #	Alias
PBC @ Radford	PBC site
RAAP-001	SWMU 51
RAAP-005	SWMU 13
RAAP-009	SWMU 40
RAAP-010	S35,37,38
RAAP-011	SWMU 41
RAAP-013	SWMU 49
RAAP-014	SWMU 54
RAAP-016	SWMU 39
RAAP-018	SWMU 48
RAAP-022	SWMU 57
RAAP-023	SWMU 43
RAAP-025	SWMU 50
RAAP-026	SWMU 31
RAAP-028	SWMU 59
RAAP-031	AOC A
RAAP-037	AOC P
RAAP-039	HWMU 16
RAAP-040	FLFA
RAAP-042	HWMU #5
RAAP-043	HWMU #7
RAAP-044	NRU
RAAP-047	RAAP-047
RFAAP-001-R-01	

Installation Information

Installation Locale

Installation Size (Acreage): 6900
City: Radford
County: Pulaski and Montgomery Counties
State: Virginia
Other Locale Information

RAAP is located in the western part of Virginia, approximately 40 miles west of Roanoke. It consists of two locations in mountainous terrain: the main manufacturing area (MMA) and New River Unit (NRU). The NRU is located approximately six miles from the MMA, near Dublin, Virginia. The New River flows through the MMA. Land use surrounding the MMA and NRU is primarily agricultural with some residential and industrial use.

Installation Mission

The primary mission of the RAAP is the manufacture of propellants. Since 1968 RAAP has also produced trinitrotoluene (TNT) on an intermittent basis.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

Investigation Phase Executing Agency: RAAP and United States Army Corps of Engineers (USACE), Baltimore District

Remedial Design/Action Phase Executing Agency: The USACE, Baltimore Districts as well as some interim remedial actions (IRA) conducted through RAAP

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region III (Resource Conservation and Recovery Act (RCRA) and Office of Superfund)
State	Virginia Department of Environmental Quality (VDEQ), Federal Facilities Restoration Program

National Priorities List (NPL) Status

No NPL Sites have been identified

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

RAB established 199807

Installation Program Summaries

IRP

Primary Contaminants of Concern: Explosives, Metals, Perchlorate, Pesticides, Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Other (Sludge), Sediment, Soil, Surface Water

MMRP

Primary Contaminants of Concern: Munitions constituents (MC)

Affected Media of Concern: Soil

Cleanup Program Summary

Installation Historic Activity

RAAP is located in the mountains of southwest Virginia in Pulaski and Montgomery counties. It consists of two noncontiguous areas: the MMA and the NRU. The MMA is located approximately five miles northeast of the city of Radford, Virginia which is approximately ten miles west of Blacksburg and 47 miles southwest of Roanoke. The NRU is located about six miles west of the MMA, near the town of Dublin.

RAAP lies in one of a series of narrow valleys typical of the eastern range of the Appalachian Mountains. Oriented in a northeast-southwest direction, the valley is approximately 25 miles long, eight miles wide at the southeast end and narrowing to two miles at the northeast end. RAAP lies along the New River in the relatively narrow northeastern corner of the valley. The New River divides RAAP into two areas. The Horseshoe Area (which is part of the MMA) lies within a meander of the New River.

RAAP began manufacturing propellants in 1941 and continues that work today. Since 1968, RAAP has also produced TNT on an intermittent basis. The working population at RAAP varies greatly with the mission requirements.

Installation Program Cleanup Progress

IRP

Prior Year Progress:	RFI/CMS reports were approved for SWMUs 51, 54, & FLFA. WPAs were approved for 020, 021, 022, 023, 024, & 025 and were submitted for 026 & 027. Sampling efforts were completed at SWMUs 35, 37, 38, AOC Q, 57, 45, 13, 31, HWMU 5/RAAP-047, 31, AOC A, & NRU. RFI/CMS reports were submitted for SWMUs 40/71, 48, 49, AOC O, 57, & 31. Interim measure work plans (IMWP) were submitted for SWMU 51 and AOC FLFA with SWMU 51 approved. Interim measure (IM) efforts were started at SWMUs 51 & 39.
Future Plan of Action:	The RFI/CMS for SWMUs 13, 40/71, 45, 31, 41, 48, 49, 50, 59, 43, 35, 37, 38, AOCs O, P, former lead furnace area (FLFA), A, Q, and NRU will be completed, as will the cleanup at SWMUs 39, 41, 48, 49, 51,54,AOC FLFA and hazardous waste management unit (HWMU) 5. RAAP-047 is anticipated to be no further action (NFA), and closure documentation will be prepared.

MMRP

Prior Year Progress:	A site investigation (SI) is being completed in fiscal year (FY)09. The remedial investigation/feasibility study (RI/FS) will begin.
Future Plan of Action:	The RI/FS will continue.

RADFORD ARMY AMMUNITION PLANT

Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/RC Sites: 47/27

Installation Site Types with Future and/or Underway Phases

1 Burn Area
(RAAP-005)

1 Chemical Disposal
(RAAP-039)

1 Contaminated Ground Water
(RAAP-047)

1 Contaminated Soil Piles
(RAAP-040)

1 Drainage Ditch
(RAAP-031)

11 Landfill
(PBC @ Radford, RAAP-001, RAAP-009, RAAP-011, RAAP-013, RAAP-014, RAAP-016, RAAP-018, RAAP-023, RAAP-025, RAAP-028)

2 Storage Area
(RAAP-037, RAAP-044)

5 Surface Impoundment/Lagoon
(RAAP-010, RAAP-022, RAAP-026, RAAP-042, RAAP-043)

Most Widespread Contaminants of Concern

Explosives, Metals, Perchlorate, Pesticides, Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Groundwater, Other (Sludge), Sediment, Soil, Surface Water

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

Site ID	Site Name	Action	Remedy	FY	Cost
RAAP-041	SURFACE IMPOUNDMENT #4 (HWMU #4)	FRA	REMOVAL	1988	TBD
RAAP-014	PROPELLANT BURNING ASH DISPOSAL (S54)	IRA	REMOVAL	2000	$2,205.3 K
RAAP-045	FORMERCADMIUM PLATING FACILTY(BLDG 4343)	FRA	REMOVAL	2007	TBD

Duration of IRP

Date of IRP Inception: 198409

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201208/201208

Date of IRP completion including Long Term Management (LTM): 204009

IRP Contamination Assessment

Contamination Assessment Overview

The initial requirements for the corrective action process were specified in a RCRA permit issued by the USEPA in 1989. In October 2000, the permit, which governs corrective action, was reissued. In October 1992, the first phase of investigations at the SWMUs was completed under the 1989 permit. In some cases SWMUs are grouped together based on similar histories or proximity. Various investigations and actions have been completed since the first phase and submitted to the USEPA and the Commonwealth of Virginia. They are currently reviewing the results of these investigations.

The October 2000 Corrective Action Permit is the USEPA Region III enforceable document to manage the RAAP Installation Restoration Program (IRP) and specific environmental restoration, Army (ER,A) eligible sites. The RAAP has separate permits issued by the Commonwealth of Virginia to manage operations pertaining to RCRA Subpart C, D and X. Similarly, the post-closure care permits are the enforceable documents issued by the Commonwealth of Virginia to manage the RAAP IRP and specific ER,A eligible sites.

The primary contaminants of concern at RAAP include metals and explosives. Groundwater within the RAAP boundaries has been impacted. Groundwater is believed to eventually discharge to the New River. Current data does not suggest that off-post groundwater has been impacted. Regional efforts are underway to delineate the occurrence and flow of the groundwater. The efforts are complicated due to the presence of karst geology (highly fractured and channelized limestone). Due to the nature of this geology, source removal (clean closure) is the preferred alternative when an action may be required.

Cleanup Exit Strategy

RAAP, in consultation with the USEPA and the VDEQ, will investigate sites to assess what action, if any, is required to achieve RC. The remaining sites will most likely fall into three broad categories: NFA, source removal, or waste-in-place with LTM.

IRP Previous Studies

	Title	Author	Date
1992			
	Verification Investigation Report	Dames and Moore	OCT-1992
	RCRA Facility Investigation Report	Dames and Moore	OCT-1992
1994			
	SWMU 69 Closure Report	Dames & Moore	AUG-1994
1995			
	Final Community Relations Plan	Radford Army Ammunition Plant	SEP-1995
1996			
	RCRA Facility Investigation for Solid Waste Management Units 17, 31, 48, 54	Parsons Engineering and Science, Inc.	JAN-1996
1997			
	New River and Tributaries Study, Radford Army Ammunition Plant	Parsons Engineering Science, Inc.	DEC-1997
1998			
	Site Management Plan	ICF Kaiser Engineers, Inc.	MAY-1998
	Closure Documentation for Solid Waste Management Unit 10, Biological Treatment Plant Equalization Basin	Radford Army Ammunition Plant	DEC-1998
	Closure Report for the Eastern Lagoon of SWMU 8	Radford Army Ammunition Plant	DEC-1998
1999			
	RCRA Facility Investigation Report for SWMUs 31, 39, 48, 49, & 58	ICF Kaiser	JAN-1999
	Work Plan Addendum 8: RI/FS for the Northern and Western Burning Grounds (at the NRU) and RFI for Building 4343	ICF Kaiser	JUN-1999
	Work Plan Addendum 009: RFI Activities at Solid Waste Management Units 31, 48, and 49 and Horseshoe Area Groundwater Study	The IT Group	NOV-1999
2000			
	Work Plan Addendum 010: Background Study	Radford Army Ammunition Plant	AUG-2000
	Final Work Plan Addendum 11: Soil Sampling and Reporting SWMU 6	Radford Army Ammunition Plant	NOV-2000
2001			
	Final SWMU 6 Sampling Results Report	Radford Army Ammunition Plant	MAY-2001
2002			
	Final Work Plan Addendum 009: SWMU 31 and Horseshoe Area Groundwater Study	Radford Army Ammunition Plant	SEP-2002
	Final Work Plan Addendum 012: SWMUs 39, 48, 49, 50, 58, 59, AOC-FLFA, AOC-Building 4343, New River Unit	Radford Army Ammunition Plant	SEP-2002
	Final Master Work Plan	Radford Army Ammunition Plant	SEP-2002
	Final Work Plan Addendum 13 RFI at SWMU 54	Radford Army Ammunition Plant	SEP-2002
	Final Work Plan Addendum 14 RFI at SWMU 40/71	Radford Army Ammunition Plant	SEP-2002
	Final SWMU 6 Decision Document	Radford Army Ammunition	OCT-2002

IRP Previous Studies

	Title	Author	Date
2002			
		Plant	
2003			
	Final Work Plan Addendum 16, Site Screening Process fro SWMUs 13, 37, 38, 46, 57, 68, 69, 75, 76, and AOCs A, F, Q	Radford Army Ammunition Plant	MAR-2003
	Final Work Plan Addendum 17 SWMU 51 RCRA Facility Investigation	Radford Army Ammunition Plant	DEC-2003
	Final Work Plan Addendum 18, RCRA Facility Investigation at SWMU 41	Radford Army Ammunition Plant	DEC-2003
	Final SWMU 58 RCRA Facility Investigation Report	Radford Army Ammunition Plant	DEC-2003
2004			
	Final Soil Sampling Report, SWMU 8 and 36	Radford Army Ammunition Plant	JAN-2004
	Final Building 4343 RCRA Facility Investigation/Corrective Measures Study Report	Radford Army Ammunition Plant	FEB-2004
	Final Work Plan Addendum 17 SWMU 51 RCRA Facility Investigation	Radford Army Ammunition Plant	FEB-2004
	Final New River Unit Additional Characterization: Work Instructions	Radford Army Ammunition Plant	MAY-2004
	Final SWMU 54 Additional Characterization: Work Instructions	Radford Army Ammunition Plant	JUL-2004
	Final SWMU 58 Decision Document No Further Action	Radford AAP, Shaw	AUG-2004
	Final SWMU 39 RCRA Facility Investigation/Corrective Measures Study Report	Radford Army Ammunition Plant	OCT-2004
2005			
	Final SWMU 39 RCRA Facility Investigation/Corrective Measures Study Report	Radford Army Ammunition Plant	JUN-2005
	Final No Further Action Decision Documents for SWMUs 8 and 36	Radford Army Ammunition Plant	JUL-2005
	Decision Document SWMU 8: Calcium Sulfate Treatment/Disposal Area No Further Action	Radford AAP, URS Corp	JUL-2005
	Decision Document SWMU 36: Calcium Sulfate Drying Beds No Further Action	Radford AAP, URS Corp	JUL-2005
2006			
	Final Sampling Plan Site Screening Process for SWMUs 13, 37, 38, 46, 57, 68, 69, and AOCs A, F, Q January 2006	Radford AAP, URS Corp	JAN-2006
	Final Sampling Plan (email) in re Site Screening Process for SWMUs 13, 37, 38, 46 57, 68, 69 and AOCs A, F, Q	Radford Army Ammunition Plant	JAN-2006
	Radford AAP Installation Action Plan, 2006	US Army	MAY-2006
	Final Building 4343 Interim Measures Work Plan, October 2006	Radford AAP, Shaw	OCT-2006
2007			
	Final RFI Report SWMU 31	Shaw Environmental	JAN-2007
	Final Building 4343 Interim Measure Completion Report, Radford AAP	Radford AAP, Shaw	APR-2007
	Radford Army Ammunition Plant, Site Screening Process Report for Solid Waste Management Units 13, 37, 38, 46, 57, 68, 69 and Areas of Concern A, F, Q	URS	MAY-2007

IRP Previous Studies

	Title	Author	Date
2007			
	Final		
	Closure Evaluation for Hazardous Waste Management Unit 4 (HWMU #4)-Interim Status, Radford Army Ammunition Plant, EPA ID VA 1210020730	ATK letter 07-815-129 dated 28 June 2007	JUN-2007
	Final SWMU 31 RCRA Facility Investigation Report	Radford AAP, URS Corp	JUL-2007
	Final Master Work Plan Addendum 19: SWMU 48, SWMU 49, SWMU 50, SWMU 59, SWMU 41, Area O, FLFA, SWMU 43, Area P	Radford AAP, URS Corp	JUL-2007
	Decision Document SWMU 46: Propellant Burial Area No Further Action	Radford AAP, URS Corp	AUG-2007
	Decision Document SWMU 68: Chromic Acid Treatment Tanks No Further Action	Radford AAP, URS Corp	AUG-2007
	Decision Document SWMU 69: Pond by Chromic Acid Treatment Tanks No Further Action	Radford AAP, URS Corp	AUG-2007
	Decision Document SWMU 75: Used Oil Storage Tank (Inert Gas Plant) No Further Action	Radford AAP, URS Corp	AUG-2007
	Decision Document SWMU 76: Used Oil Tanks No Further Action	Radford AAP, URS Corp	AUG-2007
	Decision Document AOC F: Former Drum Storage Area No Further Action	Radford AAP, URS Corp	AUG-2007
	Final Work Plan Addendum 021 RCRA Facility Investigation for Solid Waste Management Unit 57	Radford AAP, URS Corp	OCT-2007
	Final Work Plan Addendum 020 RCRA Facility Investigation for Solid Waste Management Units 35, 37, 38 and Area of Concern Q	Radford AAP, URS Corp	OCT-2007
	Final NRU Additional Characterization Sampling & Groundwater Investigation Data Report	Radford AAP, Shaw	OCT-2007
	Final Work Plan Addendum 022 Site Screening Process at Solid Waste Management Unit 45	Radford AAP, URS Corp	DEC-2007
2008			
	Final Historical Records Review Radford Army Ammunition Plant, Virginia, Military Munitions Response Program	Radford AAP, URS Corp	JAN-2008
	Master Work Plan Addendum 025: TCE Plume at Bldgs 1549,1041, 1034 (RAAP-047)	ARCADIS	MAY-2008
	Work Plan Addendum 023: RFI at SWMU 13, Radford Army Ammunition Plant, Virginia	URS	JUL-2008
	SWMU 51 RCRA Facility Investigation/Corrective Measures Study Radford Army Ammunition Plant, Radford, VA	Shaw	JUL-2008
	Final SWMU 39 Interim Measures Work Plan, Radford Army Ammunition Plant, Virginia	Shaw	JUL-2008
	Draft SWMU 51 Interim Measures Work Plan, Radford Army Ammunition Plant, Radford, VA	Shaw	JUL-2008
	Semiannual Groundwater Monitoring Report, HWMUs 5, 7, 10 & 16, Second Quarter, 2008	Radford Army Ammunition Plant	AUG-2008
	Final Master Work Plan Addendum 024: MMRP Site Screening Process	URS	SEP-2008
	Final SWMU 54 RCRA Facility Investigation/ Corrective Measures Study Radford Army Ammunition Plant, Radford, VA Volumes I and II	URS	SEP-2008
	Final Former Lead Furnace Area RCRA Facility Investigation/Corrective Measures Study Report	Shaw	NOV-2008

RADFORD ARMY AMMUNITION PLANT

Installation Restoration Program

Site Descriptions

Site ID: PBC @ Radford
Site Name: PBC site
Alias: PBC site

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	199909	200101
DES	200609	201006
CM(C)	200609	201006
LTM	201006	201909

RIP Date: N/A

RC Date: 201006

SITE DESCRIPTION

This site tracks the costs from two performance-based contracts (PBCs), one that was awarded in 2006 and one that was awarded in 2008.

The PBC that was awarded in September 2006 includes the following sites: RAAP-001, 011, 013, 016, 018, 023, 025, 028, 037, 038, and 040. Options remain for RAAP-011, 013, and 018.

All other options of this PBC have been awarded. Please refer to individual sites for descriptions and for post-PBC cost information.

The second PBC, awarded in February 2008, includes these sites: RAAP-026, 031, 042, 044, and 047. All options for RAAP-026 and 042 have been awarded. Unfunded options remain for the other sites. Please refer to individual sites for descriptions and post-PBC cost information.

CLEANUP/EXIT STRATEGY

Please refer to the individual cleanup strategies for each site.

Site ID: RAAP-001
Site Name: TNT WASTE ACID NEUTRALIZATION PITS(S51)
Alias: SWMU 51

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200207	200801
DES	200709	200802
CMI(C)	200709	201003

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

SWMU 51 is located on a plateau in the southeastern section of the horseshoe area and consists of one unlined trench, approximately 20 feet wide by 200 feet long. From 1968 through 1972, an estimated 10 tons of red water ash was reportedly disposed of in the trench. The trench also was used in the 1970s for disposal of TNT neutralization sludge from the treatment of red water. The pits were backfilled and revegetated.

A 1992 RCRA facility investigation (RFI) by Dames & Moore evaluated groundwater and soil samples and a corrective measures study (CMS) was recommended. The soil and groundwater concentrations of contaminants of concern (COCs) exceeded health-based numbers (HBNs) in the 1989 RCRA corrective action permit (CORA) and could indicate risk under an industrial worker scenario.

In FY04 the soil samples for the site-screening process, a quantitative human health risk assessment (HHRA), and a screening-level ecological risk assessment (SLERA) were collected.

Groundwater and soil samples were collected and analyzed for semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) and explosives to support a quantitative HHRA. Due to the nature of the karst geology, source removal is recommended. LTM will be performed for five years. SWMUs 28 and 52 are in the same vicinity. During the May 2006 IAP workshop, Department of the Army representatives understood that this site would not be RIP/RC by FY07. In September 2006, a PBC was awarded with a RIP of September 2009. In 2007 additional samples were collected in accordance with work plan addendum (WPA) 019 that was approved by the stakeholders. In 2008 an RFI/CMS report was prepared and approved by the stakeholders that contained a recommendation for source removal (clean closure) as groundwater was not affected. A follow-on IMWP was prepared and similarly approved to implement this recommendation. IM effort was started in January 2009.

CLEANUP/EXIT STRATEGY

Cleanup is underway per approved RFI/CMS and IMWP. Upon completion, an IM Closeout Report will be prepared to document that the effort was performed per the approved documents so that NFA will be required.

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-005
Site Name: WASTE PROPELLANT BURNING GROUND (S13)
Alias: SWMU 13

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200505	201001
DES	201002	201004
CMI(C)	201010	201208

RIP Date: N/A

RC Date: 201208

SITE DESCRIPTION

SWMU 13 constitutes about 20 acres in the southeast section of the horseshoe area on the northern bank of the New River within the 100 year floodplain. Since manufacturing operations began at RAAP in 1941, the SWMU has been used to burn waste explosives, propellants, and laboratory wastes (propellant and explosive residues, samples and analytical residues). Until 1985 burning was conducted on the soil. Since then burning has been performed in pans.

A 1992 RFI by Dames & Moore evaluated groundwater quality and potential soil contamination for explosives, VOCs, SVOCs and heavy metals. The concentrations of COCs exceeded HBNs in the 1989 CORA and could indicate risk under an industrial worker scenario.

In FY04 a site-screening sampling was performed. The site-screening effort identified off-site migration associated with activities before 1986. A final site-screening process (SSP) report was submitted in May 2007; it contained a recommendation for further investigation that was subsequently approved on June 7, 2007 by the USEPA and on April 13, 2007 by the VDEQ on an earlier draft. In FY05, in anticipation of those approvals, an RFI/CMS was procured. Also in FY05, a permit was issued by the VDEQ governing burning operations at the open burning ground. A groundwater and soil monitoring program is part of the permit.

In 2008 the WPA 023 RFI work plan for sampling the area from the fence to the river was prepared and approved by the stakeholders. In November 2008 sampling was performed in accordance with WPA 023. The RFI/CMS report is being prepared.

CLEANUP/EXIT STRATEGY

The RFI/CMS and soil cleanup will address the area outside of the permitted unit from the fence to the river (about 30 to 50 feet). The soil cleanup is likely to be a hot spot removal with off-site disposal.

Site ID: RAAP-009
Site Name: LANDFILL NITRO AREA (S40)
Alias: SWMU 40

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil, Surface Water

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200105	200909
DES	201001	201007
CMI(C)	201001	201101
LTM	201101	204009

RIP Date: N/A

RC Date: 201101

SITE DESCRIPTION

In the 1970s and early 1980s SWMU 40, which is approximately 1.5 acres, was reportedly used as a sanitary landfill to dispose of uncontaminated paper, municipal refuse, cement, and rubber tires. Whether hazardous wastes or wastes containing hazardous constituents were ever disposed of in the landfill is not known. Between 1991 and 1992, a fenced enclosure for asbestos storage was constructed over the northeast corner of this SWMU. The unit was strictly an area fill and was covered with soil and grass.

A 1992 RCRA verification investigation (VI) by Dames & Moore attempted to install four monitoring wells which could not be sampled because the four borings were dry. In 1993 and 1994 a dye-trace study was conducted by Engineering-Science in the adjacent area to identify groundwater flow paths in the south-central section of the MMA; however, this site is not believed to affect groundwater. This site and SWMU 71 (RAAP-02) are combined for the RFI. In FY01 a contract to perform a RFI/CMS was procured and in FY03 field investigations were completed. Soil samples were collected to confirm previous investigative results and provide additional data to support a quantitative HHRA and SLERA. A portion (20 cubic yards (cy)) of the investigative derived material (IDM) was determined to be hazardous waste (lead) and was stabilized and disposed of in a permitted treatment storage and disposal facility.

In FY04 the RFI was submitted to the VDEQ and the USEPA for review. In FY05 there were several comment review cycles. Stakeholders agreed that additional sampling was needed to address soil and groundwater data gaps, and in FY06 additional sampling was procured. In 2008 a new RFI/CMS report was submitted.

CLEANUP/EXIT STRATEGY

Cap repair, institutional controls and LTM are anticipated.

Site ID: RAAP-010
Site Name: CASO4 TRMT/DISP (8,9,35,36,37,38,Q)
Alias: S35,37,38

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB), Volatiles (VOC)

Media of Concern: Other (Sludge), Soil

Phases	Start	End
RFA	198409	198410
CS	198410	198412
RFI/CMS	199201	201001
DES	201001	201007
CMI(C)	201007	201101

RIP Date: N/A

RC Date: 201101

SITE DESCRIPTION

SWMU 8 consisted of two unlined, below-grade earthen lagoons located in the MMA along the New River. The lagoons were designed to neutralize acidic wastewater from the acidic wastewater treatment plant with hydrated lime. The supernatant is discharged to the New River via Outfall 007. In 1998 the eastern lagoon was closed and replaced with a concrete tank. In 1999 the closure documentation was submitted to the USEPA Region III and the VDEQ demonstrating NFA is required. In 2005 the western lagoon was replaced with a concrete tank. Sludge was dredged from the lagoons and was placed in the adjacent unlined drying beds (SWMU 36). In 2004 an RFI report (non-ER,A funded) that encompassed both SWMUs 8 and 36 contained a recommendation for NFA and was approved by the USEPA and the VDEQ. In 2006 concrete drying beds were constructed within the SWMU 36 area.

SWMU 9 consists of two unlined, below-grade earthen lagoons located in the northwest section of the MMA operated similar to SWMU 8. The supernatant is discharged to the New River via Outfall 005. Operations as a sludge settling lagoon ceased in 1993, so SWMU 9 is ineligible for ER,A. Between 1982 and 1991, sludge was dredged from the lagoons and was placed in the adjacent drying beds then to SWMU 29. In 1987, a RCRA facility assessment (RFA) was conducted by the USEPA that included a preliminary data review, evaluation, and visual site inspection. A VI was performed in 1992.

SWMU 35 is an unlined calcium sulfate drying bed that is 160 feet by 80 feet with approximately eight feet of sediment remaining in the basin. The SWMU is located along the New River in the northeast section of the MMA. Calcium sulfate sludge was dredged from SWMU 8 prior to 1980 and pumped into SWMU 35. RAAP reported that sediment from SWMU 10 was also deposited in SWMU 35 during the early 1980s. A RCRA VI and a supplemental VI that included groundwater sampling were performed. Explosives and metals in soil, groundwater, surface water and sediment exceeded HBNs as per the 1989 RCRA CORA permit.

SWMU 37, an unlined drying bed approximately 100 feet long, 80 feet wide, and eight feet deep, is located in the northwest section of the MMA. The SWMU is immediately southwest of and adjacent to SWMU 9 and received calcium sulfate sludge. Beds have been inactive since the 1980s. A 1992 RCRA VI by Dames & Moore included the collection of one composite sludge sample to determine whether concentrations exceeded permit levels for VOCs, SVOCs, and toxicity characteristic leachate procedure (TCLP) metals. Although VOCs and SVOCs were detected, reported results were below 1989 RCRA CORA permit levels.

SWMU 38, an unlined drying bed approximately 225 feet long, 40 feet wide, and eight feet deep, is located in the northwest section of the MMA. The drying bed received calcium sulfate sludge and, the overflow was pumped to Area Q via pipes that ran through a depression in the berm surrounding the drying bed. Beds have been inactive since the 1980s. A 1992 RCRA VI by Dames & Moore included the collection of one composite sludge sample to determine whether concentrations exceeded permit specifications for VOCs, SVOCs, and TCLP metals. The limited data indicates no exceedences of 1989 RCRA CORA permit HBNs.

Area Q is an abandoned lagoon located in the northwest section of the MMA. This site is less than a quarter of an acre and is immediately northwest of SWMU 38. It was reportedly used as a sludge drying bed when SWMU 38 reached capacity.

In FY04 a site-screening report was submitted for SWMUs 35, 37, 38 and AOC Q. In May 2007 a final SSP report was submitted

that contained a recommendation for further investigation that was subsequently approved by the USEPA on June 7, 2007 and by the VDEQ on April 13, 2007 in an earlier draft.

In 2007 the WPA 020 RFI work plan for SWMUs 35, 37, 38 and AOC Q was prepared and approved by stakeholders. In 2008 sampling was performed in accordance with WPA 020. The RFI/CMS report is being prepared.

CLEANUP/EXIT STRATEGY

SWMU 35, 37, 38 and Area Q will have further action. These sites contain identical wastes and are close to one another. Source removal is anticipated.

Site ID: RAAP-011
Site Name: RED WATER ASH BURIAL GROUND (S41)
Alias: SWMU 41

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater, Soil, Surface Water

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200207	200912
LTM	200912	203909

RIP Date: N/A

RC Date: 200912

SITE DESCRIPTION

SWMU 41 is located in the MMA and consists of two noncontiguous disposal areas for red water ash. The northern area consisted of an unlined lagoon approximately 50 feet by 70 feet, which was backfilled. The southern area consisted of a clay-lined disposal area approximately 100 feet by 150 feet. Prior to construction of the red water treatment plant, red water was concentrated by evaporation and burned in four rotary kilns located in the TNT manufacturing area. From 1967 to 1971 the ash produced from these kilns was disposed of in SWMU 41.

A 1992 RCRA VI by Dames & Moore included the collection and analysis of groundwater samples near the landfill, ash and soil samples from the lagoon north of the landfill, and a surface water sample from Stroubles Creek.

Data from the VI indicate explosives and metals in the soil and SVOCs and metals in the groundwater above 1989 RCRA CORA permit HBNs. The soil samples for the SSP, a quantitative HHRA and a SLERA, were collected in FY04.

In September 2006 a PBC was awarded with a RIP of September 2009. In 2007 additional samples were collected in accordance with WPA 019 that was approved by the stakeholders. An RFI/CMS report is being prepared.

CLEANUP/EXIT STRATEGY

An RFI/CMS effort is underway to address site-specific groundwater and repairs to the existing cap are anticipated for the southern area. A request for NFA is anticipated for the northern area. The site is included in the PBC that was awarded in 2006. LTM is anticipated.

Site ID: RAAP-013
Site Name: RED WATER ASH BURIAL #2 (S49)
Alias: SWMU 49

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199712	200912
LTM	201003	203909

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

SWMU 49 is approximately 75 feet by 50 feet and is located in the horseshoe area, contiguous with SWMUs 48, 50 and 59. The four SWMUs were classified together during the 1980s because a distinction could not be made between the areas by visual observation. SWMU 48 was later divided into an upper and a lower disposal area, and SWMU 49 was determined to be part of the SWMU 48 lower disposal unit. SWMU 49 reportedly received 10 tons of redwater ash during its active life.

A 1992 RCRA VI by Dames & Moore and a 1996 RFI by Parsons Engineering-Science were conducted to determine the impacts to groundwater quality and soil. A 1999 draft RFI by ICF Kaiser included the verification of previous RFI results. Metals, VOCs and SVOCs were detected above 1989 RCRA CORA permit HBNs.

The RFI sampling was completed in FY02. In September 2006, a PBC was awarded with a RIP of September 2009 at SWMUs 49, 48, 50 and 59, which are close to each other. In 2007 additional samples were collected in accordance with WPA 019 that was approved by the stakeholders. An RFI/CMS report is being prepared.

CLEANUP/EXIT STRATEGY

An RFI/CMS effort is underway to address site-specific groundwater. Due to the contiguous nature of RAAP-013 (SWMU 49), RAAP-018 (SWMU 48), RAAP-025 (SWMU 50), and RAAP-028 (SWMU 59), local groundwater issues may be best addressed under a monitored natural attenuation (MNA)/LTM plan for RAAP-013 (SWMU 49) and RAAP-018 (SWMU 48), as these two sites are thought to be the likely source areas.

NFA or, possibly, land use control (LUC) is anticipated for soil at RAAP-013 (SWMU 49) and RAAP-018 (SWMU 48). MNA/LTM is anticipated for groundwater at and in the vicinity of RAAP-013(SWMU 49) and RAAP-018 (SWMU 48).

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-014
Site Name: PROPELLANT BURNING ASH DISPOSAL (S54)
Alias: SWMU 54

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

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

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199601	200810
DES	200907	200911
IRA	199808	200001
CMI(C)	200911	201009
LTM	201010	201809

RIP Date: N/A

RC Date: 201009

SITE DESCRIPTION

SWMU 54 is an inactive disposal area situated on approximately five acres within the easternmost section of the horseshoe area. This SWMU was used during the 1970s to dispose of the propellant burning ground (SWMU 13) ash.

A 1992 RCRA VI by Dames & Moore, a 1996 RFI by Parsons Engineering-Science, and a 1997 Supplemental RFI by ICF Kaiser were conducted. Soil and groundwater samples were taken in these efforts. Soil data indicates the presence of metals and VOCs and explosives exceeding the 1989 RCRA CORA permit HBNs.

A 1999 interim removal action was performed by Parallax to remove hot spots associated with lead.

A contract to perform an RFI/CMS was procured in FY01. Clean closeout will mitigate long-term monitoring and long-term operation liability. From FY03 through FY06 RFI sampling was conducted. More sampling is needed per the March 29, 2006 to March 30, 2006 meeting of RAAP, the USAEC, the USACE, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM), the VDEQ and the USEPA. In FY06 additional sampling was procured and the field effort was completed in fall 2007. In 2008 an RFI/CMS report was prepared and approved by the stakeholders that contained a recommendation for source removal (clean closure) to prevent further leaching to groundwater and allow for continued attenuation.

CLEANUP/EXIT STRATEGY

The RFI/CMS report was prepared and approved by the stakeholders that contained a recommendation for source removal (clean closure) to prevent further leaching to groundwater and allow for continued attenuation. Internal decision documents (DDs) are being prepared to implement this remedy.

Site ID: RAAP-016

Site Name: WASTEWATER PONDS FROM PROP INCINER(S39)

Alias: SWMU 39

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199802	200512
DES	200802	200805
SMI(C)	200805	201003

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

SWMU 39 consists of two unlined earthen ponds totaling approximately two acres, located in the north-central section of the horseshoe area, adjacent to and associated with SWMU 14 (hazardous waste incinerator). The settling ponds were excavated approximately six to eight feet into the natural grade. These ponds received overflow from the former incinerator spray pond. Caustic was reportedly added to neutralize the water. Sludges are believed to remain in the former ponds.

A 1992 RCRA VI and a 1994 Supplemental VI, both by Dames & Moore, installed and sampled three monitoring wells near the ponds. Metals exceeding 1989 RCRA CORA permit HBNs were detected in the soil and groundwater.

In 1999 a draft RFI was submitted by ICF Kaiser and in FY04 the RFI/CMS was submitted. This latter document was subsequently reviewed, revised and approved by the USEPA on June 6, 2005 and by the VDEQ on Dec. 9, 2004. On Aug. 17, 2005 an internal Army DD was prepared and submitted by RAAP. In September 2006, a PBC was awarded with RC of September 2009 at SWMU 39. In 2008 a follow-on IMWP was prepared and approved by the stakeholders to implement the recommendation from the RFI/CMS, which is source removal (clean closure) as groundwater is not affected. IM effort was started in February 2009.

CLEANUP/EXIT STRATEGY

An effort will be directed to implement the remedy in the approved RFI/CMS. Contaminated soil removal is expected.

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-018
Site Name: OILY WATER BURIAL AREA (S48)
Alias: SWMU 48

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198409	198410
CS	198410	198412
RFI/CMS	199712	200912
LTM	201003	203909

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

This unit is contiguous to SWMU 49 (red water ash disposal area), SWMU 50 (calcium sulfate disposal area) and SWMU 59 (bottom ash pile). An estimated 200,000 gallons or more of oil-contaminated wastewater were disposed of in unlined trenches at this unit prior to the off-plant recycling of used oil .

A 1992 RCRA VI by Dames & Moore and a 1996 RFI by Parsons Engineering-Science were conducted to evaluate potential groundwater contamination. Four monitoring wells were installed and sampled. Soil data from the VI indicated the presence of metals and explosives above 1989 RCRA CORA permit HBNs. Groundwater data from the VI indicated the presence of chlorinated solvents and metals above 1989 RCRA CORA permit HBNs.

In 1999 a draft RFI was submitted by ICF Kaiser. Soil data from the RFI indicated the presence of metals above 1989 RCRA CORA permit HBNs. In FY02 the RFI sampling was completed. In September 2006 a PBC was awarded with a RIP of September 2009 at SWMUs 49, 48, 50 and 59, which are in proximity to each other. In 2007 additional samples were collected in accordance with WPA 019 that was approved by the stakeholders. An RFI/CMS report is being prepared .

CLEANUP/EXIT STRATEGY

An RFI/CMS effort is underway to address site-specific groundwater.

Due to the contiguous nature of RAAP-013 (SWMU 49), RAAP-018 (SWMU 48), RAAP-025 (SWMU 50), and RAAP-028 (SWMU 59), local groundwater issues may be best addressed under an MNA/LTM plan for RAAP-013 (SWMU 49) and RAAP-018 (SWMU 48), as these two sites are thought to be the likely source areas.

NFA or, possibly, LUC is anticipated for soil at RAAP-13 (SWMU 49) and RAAP-018 (SWMU 48). MNA/LTM is anticipated for groundwater at and in the vicinity of RAAP-013 (SWMU 49) and RAAP-018 (SWMU 48).

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-022
Site Name: POND BY BLDGS 4931 & 4928 (S57)
Alias: SWMU 57

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Sediment

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199201	200909
DES	201001	201007
CMI(C)	201007	201107

RIP Date: N/A

RC Date: 201107

SITE DESCRIPTION

SWMU 57 is an acid settling pond that supported the Nike program. It is located in the western section of the horseshoe area, is approximately 30 feet in diameter, surrounded by a gravel berm, and is enclosed by a perimeter fence. The pond is connected to a maintenance shop (Building 4931) by an underground pipe. A similar practice occurred at Building 4343 (RAAP-045), where subsequent investigations found metal concentrations above action levels.

A 1992 RCRA VI by Dames & Moore collected one surface water and one sediment sample. No COCs were detected against HBNs. The VI never received regulatory approval.

Site-screening sampling was performed in FY04 to comply with the 2000 RCRA CORA. The report was submitted in FY04 and there were several comment review cycles in FY05. A final SSP report was submitted in May 2007 that contained a recommendation for further investigation that was subsequently approved by the USEPA on June 7, 2007 and the VDEQ on April 13, 2007 on an earlier draft.

In 2007 additional samples were collected in accordance with WPA 021 that was approved by the stakeholders. In 2008 an RFI/CMS report was prepared and submitted for review. It recommended source removal (clean closure) as groundwater was not affected.

CLEANUP/EXIT STRATEGY

Based on the draft RFI/CMS, source removal (clean closure) is recommended.

Site ID: RAAP-023
Site Name: SANITARY LANDFILL NO.2 (S43)
Alias: SWMU 43

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Groundwater, Sediment, Surface Water

Phases	Start	End
RFA	198409	198410
CS	198410	198412
RFI/CMS	200610	201006
LTM	201007	203909

RIP Date: N/A

RC Date: 201006

SITE DESCRIPTION

SWMU 43 is a closed, unlined sanitary landfill of approximately two acres, located immediately adjacent to the New River in the northeast section of the RAAP MMA. It operated from 1958 to 1969. The exact boundaries of the unit have not been determined because of the unavailability of a site plan or documents. The site was regraded in accordance with a VI recommendation. A 1992 RCRA VI by Dames & Moore installed six groundwater monitoring wells. Groundwater and surface water data indicates the presence of metals and VOCs which did not exceed 1989 RCRA CORA permit HBNs.

In September 2006, a PBC was awarded to produce an RFI/CMS by September 2009.

CLEANUP/EXIT STRATEGY

An RFI/CMS will be completed, followed by LTM.

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-025
Site Name: CASO4 TREATMENT/DISPOSAL AREA (S50)
Alias: SWMU 50

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199201	200912

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

SWMU 50, an open area south of SWMU 48, is approximately 300 feet long by 300 feet wide and is located within the horseshoe area. Until 1982, SWMU 50 was one of the major disposal areas at RAAP for sludge removed from the calcium sulfate drying beds (SWMUs 35, 36, 37, 38, and Area Q).

A 1992 RCRA VI by Dames & Moore collected two subsurface soil samples. Metals, VOCs and SVOCs were detected above 1989 RCRA CORA permit HBNs.

The RFI sampling was completed in FY02. In September 2006, a PBC was awarded with a RIP of September 2009 at SWMUs 49, 48, 50 and 59, which are close to each other. In 2007 additional samples were collected in accordance with WPA 019 that was approved by the stakeholders. An RFI/CMS report is being prepared .

CLEANUP/EXIT STRATEGY

An RFI/CMS effort is underway to address site-specific groundwater. Due to the contiguous nature of RAAP-013 (SWMU 49), RAAP-018 (SWMU 48), RAAP-025 (SWMU 50), and RAAP-028 (SWMU 59), local groundwater issues may be best addressed under a MNA/LTM plan for RAAP-013 (SWMU 49) and RAAP-018 (SWMU 48), as these two sites are thought to be the likely source areas.

NFA is anticipated for soil and groundwater from RAAP-025 (SWMU 50). Separate closeout documentation is to be submitted.

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-026
Site Name: COAL ASH SETTLING LAGOONS (S31)
Alias: SWMU 31

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Soil, Surface Water

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199601	200909
DES	200909	200910
CMI(C)	200909	201004
LTM	201004	203909

RIP Date: N/A

RC Date: 201004

SITE DESCRIPTION

SWMU 31 consists of three unlined settling lagoons totaling approximately 2.5 acres located in the northwest section of the horseshoe area. The site received fly ash wastewater flow from power house no. 2 when it was operating and filter backwash from the active potable water plant.

A 1992 RCRA VI by Dames & Moore and a 1996 RFI by Parsons Engineering-Science collected sludge, groundwater, and subsurface soil samples to determine the migration of metals from the lagoons. In 1999 a draft RFI was submitted by ICF Kaiser and in FY01 a contract for additional RFI effort was procured. In the summer of 2002 the RFI fieldwork was completed. The draft RFI report had to be revised based on the March 29 to March 30, 2006 meeting of the stakeholders. The revised RFI report was submitted in January 2007 and went through several review and comment cycles. In July 2007 a final report was submitted that recommended a CMS and was approved by the EPA on Sept. 20, 2007 and by the VDEQ on Sept. 26, 2007. In February 2008, a PBC was awarded to achieve RC by March 2010.

In June 2008 an additional groundwater sample was collected to fill a data gap. The draft RFI report was submitted and recommended NFA.

CLEANUP/EXIT STRATEGY

NFA is anticipated; however, long-term monitoring is assumed to be required, along with five-year reviews and well abandonment. Closeout documentation will need to be prepared in accordance with the RCRA CORA.

The site is included in the PBC that was awarded in 2008.

Site ID: RAAP-028
Site Name: BOTTOM ASH PILE(S59)
Alias: SWMU 59

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199102	200912

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

SWMU 59, the bottom ash pile, is located near SWMUs 48 and 50 in the horseshoe area of RAAP, approximately 3,400 feet east of the main bridge over the New River. Although there are currently no bottom ash accumulation piles, bottom ash has been spread within the immediate SWMU vicinity.

A 1992 RCRA VI by Dames & Moore collected soil samples. The soil data indicates metals in excess of 1989 RCRA CORA permit HBNs. Groundwater data indicates VOCs in excess of 1989 RCRA CORA permit HBNs.

In FY02 the RFI sampling was completed. In September 2006 a PBC was awarded with a RIP of September 2009 at SWMUs 49, 48, 50 and 59, which are close to each other. In 2007 additional samples were collected in accordance with WPA 019 that was approved by the stakeholders. An RFI/CMS report is being prepared.

CLEANUP/EXIT STRATEGY

An RFI/CMS effort is underway to address site-specific groundwater.

Due to the contiguous nature of RAAP-013 (SWMU 49), RAAP-018 (SWMU 48), RAAP-025 (SWMU 50), and RAAP-028 (SWMU 59), local groundwater issues may be best addressed under a MNA/LTM plan for RAAP-013 (SWMU 49) and RAAP-018 (SWMU 48) as these two sites are thought to be the likely source areas.

NFA is anticipated for soil and groundwater from RAAP-028 (SWMU 59); separate closeout documentation is to be submitted.

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-031
Site Name: AREA A NITROCELLULOSE RAINWTR DITCH
Alias: AOC A

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199201	200909
DES	200909	200910
CMI(C)	200909	201003
LTM	201004	203903

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

AOC A is located in the eastern portion of the MMA, near Building 1558. It was identified during the April 1987 visual site inspection as a one-foot-deep soil depression that received runoff from the A-Line (Visual Inspection Field Notes, 1987).

In FY04 an SSP was performed and a report was submitted. In FY05 several comment review cycles followed. In May 2007 a final SSP report was submitted. It contained a recommendation for further investigation and was subsequently approved by the USEPA on June 7, 2007 and the VDEQ on April 13, 2007 in an earlier draft. In February 2008 a PBC was awarded to achieve RC by March 2010.

Two sampling events occurred during June 2008 and December 2008 (WPA 029). An RFI report is being prepared.

CLEANUP/EXIT STRATEGY

NFA is anticipated; however, source removal and monitoring may be necessary.

The site is included in the PBC that was awarded in 2008.

Site ID: RAAP-037
Site Name: BATTERY STORAGE AREA (P)
Alias: AOC P

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200610	201012
DES	201101	201103
CMI(C)	201104	201109

RIP Date: N/A

RC Date: 201109

SITE DESCRIPTION

The spent battery storage area (Area P) consists of an open lot of several acres that was used to store shredded scrap metal, decommissioned tanks, powder cans and batteries prior to off-post shipment. The area is approximately 50 feet by 200 feet long and is located within the former scrap metal salvage yard, 600 feet west of the biological treatment plant (SWMU 10).

A 1992 RCRA VI by Dames & Moore evaluated surface and subsurface soils within the SWMU to determine the impact of spent battery acid spillage. Data from the soil sampling indicates metals in excess of 1989 RCRA CORA permit HBNs.

In September 2006, a PBC was awarded to produce an RFI/CMS to cover all media of concern by September 2009.

CLEANUP/EXIT STRATEGY

Based on the 1992 RCRA VI, excavation, transportation, and disposal of impacted soil are anticipated.

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-039
Site Name: HAZARDOUS WASTE LANDFILL (HWMU16)
Alias: HWMU 16

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Explosives, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200010	200210
LTM	200210	203909

RIP Date: N/A

RC Date: 200210

SITE DESCRIPTION

HWMU 16 covers about two acres and is located in the horseshoe area of the plant between RAAP-007 (SWMU 28, Permit 401) and RAAP-029 (SWMU 52, Permit 401). The site is a landfill, closed in the early 1980s, which was used for lab chemicals and incinerator residue and as a burning ground.

Groundwater data indicates the presence of elevated concentrations of explosives and chlorinated solvents. There are indications that the groundwater contamination at HWMU 16 is migrating to the areas of SWMU 28 and 52.

In October 2002 a post-closure care permit requiring LTM was issued by the VDEQ.

On May 29, 2007, for LTM reduction, the RAAP submitted a Class 1 minor modification request to the VDEQ which was approved on June 14, 2007.

CLEANUP/EXIT STRATEGY

LTM is planned for 30 additional years at this site. Wells will be sampled as required in the permit. The costs for geographic information system (GIS) upgrades and modifications to the RCRA CORA permit to close out sites are also included under this site.

Site ID: RAAP-040
Site Name: FORMER LEAD FURNACE AREA
Alias: FLFA

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	199803	200812
DES	200803	200902
CMI(C)	200902	201003

RIP Date: N/A

RC Date: 201003

SITE DESCRIPTION

The former lead furnace area (FLFA), which is located in the south-central portion of the MMA adjacent to SWMU 17A (stage and burn area), was operational during World War II. Typically, lead recovered during routine operations would be melted in the furnace and cast into ingots for salvage. The precise time period during which the lead furnace was in operation is not known. Apparently, the SWMU location has been used for various activities and is listed in the RCRA Permit as a used oil and transfer location.

The FLFA was added to the VI of 1992 by the United States Army Toxic and Hazardous Materials Agency (USATHAMA) after solid lead slag was discovered in the soil during the removal of used oil tanks in SWMU 76. The VI included sampling and analyzing subsurface soil in the vicinity of the FLFA, located within SWMU 17A. An RFI, which was conducted to verify VI results, included sampling and removing lead hot spots and collecting and analyzing subsurface soil samples. In FY02 RFI sampling was completed.

In September 2006 a PBC was awarded with an RC of September 2009 for soil. In addition, the PBC is to produce an RFI/CMS to address site-specific groundwater by September 2009.

In 2007 additional samples were collected in accordance with WPA 019 that was approved by the stakeholders. In 2008 an RFI/CMS report was prepared, submitted to, and approved by the stakeholders. It contained a recommendation for source removal (clean closure) as groundwater was not affected. A follow-on draft IMWP was prepared and submitted to regulators to implement this recommendation.

CLEANUP/EXIT STRATEGY

Source removal (clean closure) is required in accordance with the approved RFI/CMS report. Actions are underway to implement this recommendation. Upon completion an IM closeout report will be prepared to document that the effort was performed per the approved documents so that NFA will be required.

The site is included in the PBC that was awarded in 2006.

Site ID: RAAP-042
Site Name: SURFACE IMPOUNDMENT #5 (HWMU #5)
Alias: HWMU #5

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200010	200210
LTM	200210	203009

RIP Date: N/A

RC Date: 200210

SITE DESCRIPTION

HWMU 5 is located in the middle of the MMA. It was a surface impoundment used for acidic wastewaters. Sludge was removed, but contaminated soil below the sludge layer was left in place. The lagoon was filled and capped. The presence of residual waste precludes clean-closure.

Groundwater monitoring has been performed for the past 15 years. Dinitrotoluene (DNT) and trichloroethylene (TCE) were recently detected. TCE exceeded groundwater protection standards (GPS). In FY04 an alternate source determination (ASD) report for TCE was resubmitted to the VDEQ.

In fall 2002 an investigative effort was completed for HWMUs 5 and 7. The subsequent Draft Field Investigation Report and Risk Assessment for HWMUs 5 and 7 (DAA 2003) was submitted to the VDEQ. This report is intended to facilitate elimination of LTM. In October 2002 a post-closure care permit requiring LTM was issued by the VDEQ.

In 2007 RAAP submitted several documents to the VDEQ to reduce or eliminate LTM. One of the documents was an ASD for TCE, later formalized in a multi-site permit modification request. The VDEQ review comments indicated that the ASD could not be approved with the current data because the TCE source was not identified. Soil data does not show TCE within and below HWMU 5, so there is merit in pursuing an ASD. A new site, RAAP-047, was created to address TCE issues in the vicinity and to prepare and resubmit the HWMU 5 ASD. In February 2008 a PBC was awarded to achieve an HWMU 5 ASD by March 2009.

Two sampling events occurred during May and July 2008 in accordance with WPA 025 that was approved by the stakeholders. Over summer 2008 several stakeholder discussions of the preliminary data and assessments occurred. Their conclusion was that an ASD could not be approved for TCE at HWMU 5. Therefore, the process to modify the post closure care permit for HWMU 5 was begun to incorporate a corrective action plan (CAP). In December 2008 a draft CAP was prepared and put in public notice that proposed MNA/LTM as the cleanup remedy; however, the data and assessments indicated that NFA was appropriate for RAAP-047.

CLEANUP/EXIT STRATEGY

An ASD could not be approved for TCE at HWMU 5. Therefore, the post closure care permit for HWMU 5 must be modified to incorporate a CAP. The draft CAP proposes MNA/LTM as the cleanup remedy.

LTM is planned for 30 years at this site or until clean closure has been demonstrated through the post closure care permit process, also known as the CAP. Wells will be installed and sampled as required in the CAP.

The site is included in the PBC that was awarded in 2008.

Site ID: RAAP-043
Site Name: SURFACE IMPOUNDMENT #7 (HWMU #7)
Alias: HWMU #7

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	198410	198412
CS	198410	198412
RFI/CMS	200010	200210
LTM	200210	203009

RIP Date: N/A

RC Date: 200210

SITE DESCRIPTION

HWMU 7 is located in the western section of the MMA along the New River. It was a surface impoundment used for acidic wastewaters. In 2001 the VDEQ issued a post-closure permit which requires LTM.

In the fall of 2002, an investigative effort was completed for HWMUs 5 and 7. The subsequent Draft Field Investigation Report and Risk Assessment for HWMUs 5 and 7 (DAA 2003) was submitted to the VDEQ. This report is intended to facilitate elimination of LTM. In October 2002 a post-closure care permit requiring LTM was issued by the VDEQ.

The following RAAP document submissions are provided as LTM reduction status:
- Jan. 9, 2007: ASD,
- Feb.9, 2007: amended closure plan,
- May 29, 2007: Class 1 minor modification request, and
- Aug. 9, 2007: Class 3 permit modification request.

On June 14, 2007, the VDEQ approved the ASD and Class 1 modification. VDEQ action is pending on the Class 3 modification because it combines actions on several sites.

CLEANUP/EXIT STRATEGY

LTM is planned for 30 years at this site or until clean closure has been demonstrated through the post closure permit process. Wells will be sampled as required in the permit. A closure report will need to be submitted as the VDEQ has approved the amended closure plan. When, and if, the VDEQ approves the amended closure report and the Class 3 modification, the post closure care/LTM can be eliminated.

Site ID: RAAP-044
Site Name: NEW RIVER UNIT
Alias: NRU

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Metals, Polychlorinated Biphenyls (PCB)

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

Phases	Start	End
PA	199705	199708
SI	199712	199806
RI/FS	199806	201001
RD	200802	201005
RA(C)	200802	201008
LTM	201010	203009

RIP Date: N/A

RC Date: 201008

SITE DESCRIPTION

The NRU is located approximately six miles west of the RAAP MMA and consists of approximately 2,813 acres. Between 1940 and 1945 the NRU was used to load propellants and igniter charges and to manufacture igniter charge bags. Between 1943 and 1945 operations were expanded to include an additional bag-loading line, rolled powder operations, flash-reducer loading lines, and black powder drying facilities. Production ended after World War II, and the plant was officially designated as part of the RAAP installation. Since 1947, approximately 1,000 acres in the western section of the plant have been sold or transferred for other uses.

There is conductive flooring in several buildings. The material is made of barium, copper, asbestos, and lead. It is exposed to the elements and is leaching to surrounding soil.

An RI sampling effort included the collection of surface soil, sludge and water samples. Metals have been detected in excess of the 1989 RCRA CORA permit HBNs; however, this site is not subject to any RCRA CORA permit. Six areas within the NRU are being investigated:
- the bag loading area (BLA),
- the igniter assembly area (IAA),
- the northern burning grounds (NBG),
- the western burning grounds (WBG),
- the rail yard (RY), and
- the building debris disposal trench (BDDT).

In FY02 the RI fieldwork was completed. In FY04 effort from the work instructions was performed.

In an e-mail dated Feb. 16, 2007, the USAEC confirmed that the BLA and IAA are eligible for ER,A funding.

In FY06, the USAEC decided to implement a PBC at the NRU. In February 2008, a PBC was awarded to achieve RC by August 2010.

In 2008 draft WPA 027 was submitted to the VDEQ. The VDEQ is sole regulatory review agency and provided comments but formal approval has not occurred. In any case, sampling was performed in accordance with WPA 027 during the summer of 2008. RI/FS documents are being prepared.

Site ID: RAAP-044
Site Name: NEW RIVER UNIT
Alias: NRU

CLEANUP/EXIT STRATEGY

The effort will include groundwater as part of the site conceptual model. Excavation, transportation and disposal of contaminated soil are anticipated at the BLA, IAA, NBG, WBG, and BDDT.

The site is included in the PBC that was awarded in 2008.

Site ID: RAAP-047
Site Name: TCE Plume at BLDGS 1549,1041&1034
Alias: RAAP-047

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA	200704	200704
CS	200704	200704
RFI/CMS	200802	200911
LTM	200911	203811

RIP Date: N/A

RC Date: 200911

SITE DESCRIPTION

The April 2007 HWMU 5 (RAAP-041) TCE ASD was used by RAAP to identify buildings 1549, 1041 and 1034 in the vicinity of HWMU-5 as sources of TCE detected in the groundwater. Between 1960 and 1970 chlorinated solvents were used at these buildings.

Building 1549 is an area maintenance shop located approximately 300 feet southeast of HWMU-5 and was constructed on a filled sinkhole. Products used to clean equipment included Varsol and WD-40. Disposal of the used solvents consisted of pouring the solvents down the nearest floor drain.

Building 1041 was used as the degreasing shop. This building is located approximately 980 feet southeast of HWMU-5. It contained a dip tank which has been removed.

Building 1034 housed a facility nitrocellulose laboratory and currently houses the electric and refrigeration shop. This building is located approximately 950 feet southeast of HWMU-5. DuPont cleaning solvent No. 49, which contains tetrachloroethylene (PCE), is one of the solvents commonly used in electric motor cleaning and it was used at building 1034. TCE is a daughter product of the degradation of PCE. There is no available documentation of lab waste disposal practices. Surface drainage and geologic features generally directed surface water and groundwater, along with any contaminates from these buildings, into the groundwater monitoring network of HWMU 5 where TCE has been detected above the maximum contaminant level (MCL).

In February 2008 a PBC was awarded to achieve an approved RFI/CMS report by March 2009.

Two sampling events occurred during May and July 2008 in accordance with WPA 025 that was approved by the stakeholders. Over summer 2008 several stakeholder discussions of the preliminary data and assessments occurred. The conclusion reached was that an ASD could not be approved for TCE at HWMU 5. Therefore, the process to modify the post closure care permit for HWMU 5 was begun to incorporate a CAP. A draft CAP was prepared and put in public notice in December 2008 that proposed MNA/LTM as the cleanup remedy; however, the data and assessments did indicate that NFA was appropriate for RAAP-047.

CLEANUP/EXIT STRATEGY

NFA is anticipated for this site, and closeout documentation in the form of an RFI report will be prepared. However, LTM may be required.

The site is included in the PBC that was awarded in 2008.

Response Complete (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
RAAP-002	FLASH BURN PARTS AREA (S71)	200909	The RFI was completed and no further action is required.
RAAP-003	POND BY CR ACID TREATMENT TANKS(S69)	200710	A final Site Screening Process (SSP) report was submitted in May 2007 that contained a recommendation for no further action, which was subsequently approved by EPA June 7, 2007 and VDEQ April 13, 2007.
RAAP-004	INERT LANDFILL NO3 (S74)	200009	Active Landfill - not eligible for ER,A
RAAP-006	FORMER DRUM STORAGE AREA 9387-2(F)	200009	A final SSP report was submitted in May 2007 that contained a recommendation for no further action that was subsequently approved by EPA June 7, 2007 and VDEQ April 13, 2007 on an earlier draft. In accordance with the RCRA CORA Permit, a decision document for no further action was submitted in August 2007 and was approved by EPA September 21, 2007 and VDEQ October 1, 2007.
RAAP-007	CLOSED SANITARY LANDFILL (S28)	200009	Handled under post closure care permit for RAAP-039, HWMU 16
RAAP-008	CASO4 TREATMENT/DISPOSAL AREA (S27)	200009	Site is active (VDEQ permit 353) - Not eligible for ER,A funding
RAAP-012	ACID WASTEWATER LAGOON(S6)	200209	The Decision Document was approved by EPA on October 9, 2002 and by VDEQ on October 24, 2002
RAAP-015	FLY ASH LANDFILL #1 (S26)	200009	Completed post-closure care under VDEQ permit 399. Not eligible for ER,A funding
RAAP-017	ACTIVATED CARBON DISPOSAL AREA(S53)	200009	See RAAP-007, S28. Not eligible for ER,A funding
RAAP-019	INERT LANDFILL NO.1 (S32)	200009	Site closed under VDEQ permit 400. Not eligible for ER,A funding
RAAP-020	FLY ASH LANDFILL #2 (S29)	200009	Site is active - VDEQ permit 353. Not eligible for ER,A funding
RAAP-021	PROPELLANT BURIAL (S46)	200710	A final SSP report was submitted in May 2007 that contained a recommendation for no further action, which was subsequently approved by EPA June 7, 2007 and VDEQ April 13, 2007.
RAAP-024	LANDFILL NO.3 (S45)	200909	The SSP recommended NFA.
RAAP-027	RUBBLE PILE(S58)	200412	VDEQ approved the RFI Report on August 5, 2003 and EPA approved it on May 24, 2004. A Decision Document was submitted to EPA and VDEQ on September 10, 2004. EPA approved DD on 16 December 2004.
RAAP-029	CLOSED SANITARY LANDFILL (S52)	200009	Handled under post closure care permit for RAAP-039, HWMU 16
RAAP-030	AIR CURTAIN DESTRUCTOR & OPEN BURN (S17)	200009	VDEQ approve closure action for the Air Curtain Destructor on 12 Aug 2005. The Open Burn Pit is still active. Not eligible for ER,A funding

Response Complete (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
RAAP-032	MOBILE USED OIL TANKS (S61,75,76)	200305	SWMU 61 not eligible for ER,A funding, as it no longer exists (trailer-mounted tank). SWMU 75: VDEQ letter of October 3, 1995 and EPA approval of Work Plan Addendum 16 on September 8, 2003; SWMU 76: VDEQ letter of August 28, 1992 and EPA approval of Work Plan Addendum 16 on September 8, 2003. In accordance with the RCRA CORA Permit, a decision document for no further action was submitted in August 2007 for SWMUs 75 & 76 and was approved by EPA September 21, 2007 and VDEQ October 1, 2007.
RAAP-033	CHROMIC ACID TREATMENT TANKS (S68)	200710	A final Site Screening Process (SSP)report was submitted in May 2007 that contained a recommendation for no further action, which was subsequently approved by EPA June 7, 2007 and VDEQ April 13, 2007.
RAAP-035	SEWAGE LINES	200205	Sewer system work plan, electronic data disk, line inspection and manhole reports 35 video tapes, etc. were submitted to EPA and VDEQ on 23 Jan 2003. Not eligible for ER,A funding
RAAP-036	BIOPLANT BASIN (S10)	199812	Clean-closed for soils and GW is monitored according to post-closure permit for HWMUs 5, 7, 10, and 16. Not eligible for ER,A funding
RAAP-038	UNDERGROUND FUEL OIL SPILL (O)	200904	RFI was completed. Site may be regulated under the Virginia Oil Program, and if so, the data collected and assessments performed to date would suggest NFA.
RAAP-041	SURFACE IMPOUNDMENT #4 (HWMU #4)	200809	On June 28, 2007, RAAP submitted a closure evaluation and requested clean closure for groundwater such that the post closure care period could be terminated. On August 16, 2007, the VDEQ concurred that clean closure for groundwater had been achieved and advised RAAP to discontinue remaining post closure activities.
RAAP-045	FORMERCADMIUM PLATING FACILTY(BLDG 4343)	200709	The Final RFI/CMS was submitted in FY04 and was approved by EPA on August 16, 2004 and by VDEQ (draft) on August 28, 2003 In FY06, the interim measures workplan was prepared in accordance with the RFI/CMS and was approved by the EPA Sep 20, 2006 and VDEQ Sep 11, 2006. The Final Interim Measures Completion Report was submitted in Apr 2007 and was approved by the EPA Jun 8, 2007 and by the VDEQ Mar 30, 2007 on an earlier draft. As the action achieved unrestricted use no further action is needed.

Response Complete (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
RFAAP-046	MMA GROUNDWATER STUDY	200703	Cleanup strategy changed from site-wide to site-specific.

IRP Schedule

Date of IRP Inception: 198409

Past Phase Completion Milestones

1985

CS	(RAAP-001 - TNT WASTE ACID NEUTRALIZATION PITS(S51), RAAP-002 - FLASH BURN PARTS AREA (S71), RAAP-003 - POND BY CR ACID TREATMENT TANKS(S69), RAAP-004 - INERT LANDFILL NO3 (S74), RAAP-005 - WASTE PROPELLANT BURNING GROUND (S13), RAAP-006 - FORMER DRUM STORAGE AREA 9387-2(F), RAAP-007 - CLOSED SANITARY LANDFILL (S28), RAAP-008 - CASO4 TREATMENT/DISPOSAL AREA (S27), RAAP-009 - LANDFILL NITRO AREA (S40), RAAP-010 - CASO4 TRMT/DISP (8,9,35,36,37,38,Q), RAAP-011 - RED WATER ASH BURIAL GROUND (S41), RAAP-012 - ACID WASTEWATER LAGOON(S6), RAAP-013 - RED WATER ASH BURIAL #2 (S49), RAAP-014 - PROPELLANT BURNING ASH DISPOSAL (S54), RAAP-015 - FLY ASH LANDFILL #1 (S26), RAAP-016 - WASTEWATER PONDS FROM PROP INCINER(S39), RAAP-017 - ACTIVATED CARBON DISPOSAL AREA(S53), RAAP-018 - OILY WATER BURIAL AREA (S48), RAAP-019 - INERT LANDFILL NO.1 (S32), RAAP-020 - FLY ASH LANDFILL #2 (S29), RAAP-021 - PROPELLANT BURIAL (S46), RAAP-022 - POND BY BLDGS 4931 & 4928 (S57), RAAP-023 - SANITARY LANDFILL NO.2 (S43), RAAP-024 - LANDFILL NO.3 (S45), RAAP-025 - CASO4 TREATMENT/DISPOSAL AREA (S50), RAAP-026 - COAL ASH SETTLING LAGOONS (S31), RAAP-027 - RUBBLE PILE(S58), RAAP-028 - BOTTOM ASH PILE(S59), RAAP-029 - CLOSED SANITARY LANDFILL (S52), RAAP-030 - AIR CURTAIN DESTRUCTOR & OPEN BURN (S17), RAAP-031 - AREA A NITROCELLULOSE RAINWTR DITCH, RAAP-033 - CHROMIC ACID TREATMENT TANKS (S68), RAAP-035 - SEWAGE LINES, RAAP-036 - BIOPLANT BASIN (S10), RAAP-037 - BATTERY STORAGE AREA (P), RAAP-038 - UNDERGROUND FUEL OIL SPILL (O), RAAP-039 - HAZARDOUS WASTE LANDFILL (HWMU16), RAAP-040 - FORMER LEAD FURNACE AREA, RAAP-041 - SURFACE IMPOUNDMENT #4 (HWMU #4), RAAP-042 - SURFACE IMPOUNDMENT #5 (HWMU #5), RAAP-043 - SURFACE IMPOUNDMENT #7 (HWMU #7))
RFA	(RAAP-001 - TNT WASTE ACID NEUTRALIZATION PITS(S51), RAAP-002 - FLASH BURN PARTS AREA (S71), RAAP-003 - POND BY CR ACID TREATMENT TANKS(S69), RAAP-004 - INERT LANDFILL NO3 (S74), RAAP-005 - WASTE PROPELLANT BURNING GROUND (S13), RAAP-006 - FORMER DRUM STORAGE AREA 9387-2(F), RAAP-007 - CLOSED SANITARY LANDFILL (S28), RAAP-008 - CASO4 TREATMENT/DISPOSAL AREA (S27), RAAP-009 - LANDFILL NITRO AREA (S40), RAAP-010 - CASO4 TRMT/DISP (8,9,35,36,37,38,Q), RAAP-011 - RED WATER ASH BURIAL GROUND (S41), RAAP-012 - ACID WASTEWATER LAGOON(S6), RAAP-013 - RED WATER ASH BURIAL #2 (S49), RAAP-014 - PROPELLANT BURNING ASH DISPOSAL (S54), RAAP-015 - FLY ASH LANDFILL #1 (S26), RAAP-016 - WASTEWATER PONDS FROM PROP INCINER(S39), RAAP-017 - ACTIVATED CARBON DISPOSAL AREA(S53), RAAP-018 - OILY WATER BURIAL AREA (S48), RAAP-019 - INERT LANDFILL NO.1 (S32), RAAP-020 - FLY ASH LANDFILL #2 (S29), RAAP-021 - PROPELLANT BURIAL (S46), RAAP-022 - POND BY BLDGS 4931 & 4928 (S57), RAAP-023 - SANITARY LANDFILL NO.2 (S43), RAAP-024 - LANDFILL NO.3 (S45), RAAP-025 - CASO4 TREATMENT/DISPOSAL AREA (S50), RAAP-026 - COAL ASH SETTLING LAGOONS (S31), RAAP-027 - RUBBLE PILE(S58), RAAP-028 - BOTTOM ASH PILE(S59), RAAP-029 - CLOSED SANITARY LANDFILL (S52), RAAP-030 - AIR CURTAIN DESTRUCTOR & OPEN BURN (S17), RAAP-031 - AREA A NITROCELLULOSE RAINWTR DITCH, RAAP-033 - CHROMIC ACID TREATMENT TANKS (S68), RAAP-035 - SEWAGE LINES, RAAP-036 - BIOPLANT BASIN (S10), RAAP-037 - BATTERY STORAGE AREA (P), RAAP-038 - UNDERGROUND FUEL OIL SPILL (O), RAAP-039 - HAZARDOUS WASTE LANDFILL (HWMU16), RAAP-040 - FORMER LEAD FURNACE AREA, RAAP-041 - SURFACE IMPOUNDMENT #4 (HWMU #4), RAAP-042 - SURFACE IMPOUNDMENT #5 (HWMU #5), RAAP-043 - SURFACE IMPOUNDMENT #7 (HWMU #7))

1987

RFA	(RAAP-032 - MOBILE USED OIL TANKS (S61,75,76))

1988

RFA	(RFAAP-046 - MMA GROUNDWATER STUDY)
RFI/CMS	(RAAP-041 - SURFACE IMPOUNDMENT #4 (HWMU #4))
CMI(C)	(RAAP-041 - SURFACE IMPOUNDMENT #4 (HWMU #4))

1993

RFI/CMS	(RAAP-006 - FORMER DRUM STORAGE AREA 9387-2(F))

IRP Schedule

1996	
RFA	(RAAP-045 - FORMERCADMIUM PLATING FACILTY(BLDG 4343))
1997	
PA	(RAAP-044 - NEW RIVER UNIT)
1998	
SI	(RAAP-044 - NEW RIVER UNIT)
1999	
RFI/CMS	(RAAP-036 - BIOPLANT BASIN (S10))
2000	
IRA	(RAAP-014 - PROPELLANT BURNING ASH DISPOSAL (S54))
RFI/CMS	(RAAP-004 - INERT LANDFILL NO3 (S74), RAAP-007 - CLOSED SANITARY LANDFILL (S28), RAAP-008 - CASO4 TREATMENT/DISPOSAL AREA (S27), RAAP-015 - FLY ASH LANDFILL #1 (S26), RAAP-017 - ACTIVATED CARBON DISPOSAL AREA(S53), RAAP-019 - INERT LANDFILL NO.1 (S32), RAAP-020 - FLY ASH LANDFILL #2 (S29), RAAP-029 - CLOSED SANITARY LANDFILL (S52), RAAP-030 - AIR CURTAIN DESTRUCTOR & OPEN BURN (S17))
2001	
RFA	(PBC @ Radford - PBC site)
2002	
RFI/CMS	(RAAP-012 - ACID WASTEWATER LAGOON(S6), RAAP-035 - SEWAGE LINES)
2003	
RFI/CMS	(RAAP-039 - HAZARDOUS WASTE LANDFILL (HWMU16), RAAP-042 - SURFACE IMPOUNDMENT #5 (HWMU #5), RAAP-043 - SURFACE IMPOUNDMENT #7 (HWMU #7))
2004	
RFI/CMS	(RAAP-045 - FORMERCADMIUM PLATING FACILTY(BLDG 4343))
2005	
DES	(RAAP-045 - FORMERCADMIUM PLATING FACILTY(BLDG 4343))
RFI/CMS	(RAAP-027 - RUBBLE PILE(S58))
2006	
RFI/CMS	(RAAP-016 - WASTEWATER PONDS FROM PROP INCINER(S39))
2007	
CMI(C)	(RAAP-045 - FORMERCADMIUM PLATING FACILTY(BLDG 4343))
RFI/CMS	(RFAAP-046 - MMA GROUNDWATER STUDY)
CS	(RAAP-047 - TCE Plume at BLDGS 1549,1041&1034)
RFA	(RAAP-047 - TCE Plume at BLDGS 1549,1041&1034)
2008	
LTM	(RAAP-041 - SURFACE IMPOUNDMENT #4 (HWMU #4))
DES	(RAAP-001 - TNT WASTE ACID NEUTRALIZATION PITS(S51), RAAP-016 - WASTEWATER PONDS FROM PROP INCINER(S39))
RFI/CMS	(RAAP-001 - TNT WASTE ACID NEUTRALIZATION PITS(S51), RAAP-003 - POND BY CR ACID TREATMENT TANKS(S69), RAAP-021 - PROPELLANT BURIAL (S46), RAAP-033 - CHROMIC ACID TREATMENT TANKS (S68))

Projected Phase Completion Milestones

See attached schedule

IRP Schedule

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

Site ID	Site Name	ROD/DD Title	ROD/DD Date
RAAP-010	CASO4 TRMT/DISP (8,9,35,36,37,38,Q)	RAAP-10 (SWMU's 35,37,38,AOC Q)CaSO	20100630

Final RA(C) Completion Date: 201208

NPL Deletion Date: N/A

Schedule for Next Five-Year Review: N/A

Estimated Completion Date of IRP at Installation (including LTM phase): 204009

RADFORD ARMY AMMUNITION PLANT IRP Schedule

■ = phase underway

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
PBC @ Radford	PBC site	RFA						
		DES	■					
		CMI(C)	■					
		LTM	■	■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-001	TNT WASTE ACID NEUTRALIZATION PITS(S51)	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)	■					
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-005	WASTE PROPELLANT BURNING GROUND (S13)	RFA						
		CS						
		RFI/CMS	■					
		DES	■					
		CMI(C)		■	■			
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-009	LANDFILL NITRO AREA (S40)	RFA						
		CS						
		RFI/CMS						
		DES	■					
		CMI(C)	■	■				
		LTM		■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-010	CASO4 TRMT/DISP (8,9,35,36,37,38,Q)	RFA						
		CS						
		RFI/CMS	■					
		DES	■					
		CMI(C)	■	■				
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-011	RED WATER ASH BURIAL GROUND (S41)	RFA						
		CS						
		RFI/CMS	■					
		LTM	■	■	■	■	■	■
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-013	RED WATER ASH BURIAL #2 (S49)	RFA						
		CS						
		RFI/CMS	■					
		LTM	■	■	■	■	■	■

RADFORD ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-014	PROPELLANT BURNING ASH DISPOSAL (S54)	RFA						
		CS						
		RFI/CMS						
		DES						
		IRA						
		CMI(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-016	WASTEWATER PONDS FROM PROP INCINER(S39)	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-018	OILY WATER BURIAL AREA (S48)	RFA						
		CS						
		RFI/CMS						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-022	POND BY BLDGS 4931 & 4928 (S57)	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-023	SANITARY LANDFILL NO.2 (S43)	RFA						
		CS						
		RFI/CMS						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-025	CASO4 TREATMENT/DISPOSAL AREA (S50)	RFA						
		CS						
		RFI/CMS						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-026	COAL ASH SETTLING LAGOONS (S31)	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)						
		LTM						

RADFORD ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-028	BOTTOM ASH PILE(S59)	RFA						
		CS						
		RFI/CMS						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-031	AREA A NITROCELLULOSE RAINWTR DITCH	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-037	BATTERY STORAGE AREA (P)	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-039	HAZARDOUS WASTE LANDFILL (HWMU16)	RFA						
		CS						
		RFI/CMS						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-040	FORMER LEAD FURNACE AREA	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-042	SURFACE IMPOUNDMENT #5 (HWMU #5)	RFA						
		CS						
		RFI/CMS						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-043	SURFACE IMPOUNDMENT #7 (HWMU #7)	RFA						
		CS						
		RFI/CMS						
		LTM						

RADFORD ARMY AMMUNITION PLANT IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-044	NEW RIVER UNIT	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RAAP-047	TCE Plume at BLDGS 1549,1041&1034	RFA						
		CS						
		RFI/CMS						
		LTM						

RADFORD ARMY AMMUNITION PLANT

Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/RC Sites: 1/0

Installation Site Types with Future and/or Underway Phases

1 Small Arms Range
(RFAAP-001-R-01)

Most Widespread Contaminants of Concern

Munitions constituents (MC)

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY	Cost
N/A					

Duration of MMRP

Date of MMRP Inception: 200202

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201103/201103

Date of MMRP completion including Long Term Management (LTM): 201603

MMRP Contamination Assessment

Contamination Assessment Overview

In May 2003 the phase III Army range inventory was completed at RAAP. The phase III inventory serves as the preliminary assessment under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). One site was identified as eligible for the military munitions response program (MMRP). In October 2006 a site inspection was initiated.

Cleanup Exit Strategy

The SSP Report is being completed in 2009. The installation will address potential MC issues at the site.

MMRP Previous Studies

	Title	Author	Date
2002			
	US Army Closed, Transferred and Transferring Range/Site Inventory for Radford Army Ammunition Plant, Virginia	Malcolm Pirnie, Inc.	NOV-2002
2008			
	Final Historical Records Review, Radford Army Ammunition Plant, Virginia	URS	JAN-2008
2009			
	Draft Site Screening Process Report	URS	JAN-2009

RADFORD ARMY AMMUNITION PLANT

Military Munitions Response Program

Site Descriptions

Site ID: RFAAP-001-R-01
Site Name: ARMY RESERVE SMALL ARMS RANGE
Alias: None

STATUS

Regulatory Driver: RCRA

MRSPP Score: 07

Contaminants of Concern: Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
RFA	200202	200305
CS	200703	200905
RFI/CMS	200909	201009
DES	200909	201011
SMI (C)	200909	201103
LTM	201104	201603

RIP Date: N/A

RC Date: 201103

SITE DESCRIPTION

The closed Army Reserve small arms range occupied approximately 7.6 acres which was used for small arms training from about 1941 to 1967. This closed range is located along the southeastern boundary of RAAP. A berm (approximately 200 feet long by 10 feet high) is still present and indicates that the direction of fire was southeast. The berm is adjacent to a stream which forms the installation boundary. This range most likely contained between 10 and 15 stations. The Radford ordnance works historic investigation states that 155,375 rounds of ammunition were "expended in the pistol range by the RAAP police department from October 1941 to October 1945." From 1946 to 1967 the local rifle club also may have used the range.

The former small arms range is not within the secure limited manufacturing area, but public access is restricted. The range is currently a grass field surrounded by an unlocked fence. It was once used as a baseball field and until the late 1960s it was accessible to the public.

CLEANUP/EXIT STRATEGY

The cleanup/exit strategy includes the completion of the RFI/CMS, which is scheduled to be awarded in FY09. The remedial action phase includes soil excavation and off-site transport, along with MNA. LTM is anticipated.

Response Complete (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation

There are no NFA sites

MMRP Schedule

Date of MMRP Inception: 200202

Past Phase Completion Milestones
2003
RFA (RFAAP-001-R-01 - ARMY RESERVE SMALL ARMS RANGE)

Projected Phase Completion Milestones
See attached schedule

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

To Be Determined

Final RA(C) Completion Date: 201103

NPL Deletion Date: N/A

Schedule for Next Five-Year Review: N/A

Estimated Completion Date of MMRP at Installation (including LTM phase): 201603

RADFORD ARMY AMMUNITION PLANT MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
RFAAP-001-R-01	ARMY RESERVE SMALL ARMS RANGE	RFA						
		CS						
		RFI/CMS						
		DES						
		CMI(C)						
		LTM						

Community Involvement

Technical Review Committee (TRC): None

Restoration Advisory Board (RAB): RAB established 199807

RAB Adjournment Date: N/A
RAB Adjournment Reason: None

Community Involvement Plan (Date Published): 200401

Additional Community Involvement Information

The surrounding community for RAAP includes the counties of Montgomery (2004 Pop. 83,959), Pulaski (2004 Pop. 35,152), Floyd (2004 Pop. 14,464), Giles (2004 Pop. 16,989) and the City of Radford (Pop. 15,940).

In February 1995 and January 1998, surveys were conducted to determine if there was enough community interest to sustain a RAB. In September 1995 a community involvement plan was finalized.

In February 1995 and January 1998, RAAP, with the assistance of the USAEC, conducted community interviews with residents of the surrounding counties and the city of Radford and placed two newspaper advertisements soliciting community members to volunteer for RAB positions.

In June 1998 RAAP held a public meeting to share information about the RAAP cleanup program and about forming a RAB.

In August 1998, consistent with a RAB recommendation, RAAP held the first RAB-style meeting. A community co-chair person was selected and in September 1999 an information repository was established at the Christiansburg Branch of the Montgomery Floyd Regional Library.

RAB activities to date have included quarterly meetings with regulators present, plant tours, and project and program status briefings.

RAAP is committed to involving the public in the restoration program and will do everything necessary to make it a success.

Administrative Record is located at

Christiansburg Library, as CDs and online
125 Sheltman St
Christiansburg, VA 24073

Information Repository is located at

Christiansburg Library, as CDs and online
125 Sheltman St
Christiansburg, VA 24073

Current Technical Assistance for Public Participation (TAPP): N/A

TAPP Title: N/A

Potential TAPP: N/A