

FY2012

BLOSSOM POINT RESEARCH FACILITY
Army Defense Environmental Restoration Program
Installation Action Plan

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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), Blossom Point Research Facility (BPRF), 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
ALC	Adelphi Laboratory Center
AOC	Area of Concern
ARL	Army Research Laboratory
BPF	AEDB-R designation for Blossom Point Research Facility
BPRF	Blossom Point Research Facility
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (of 1980)
DD	Decision Document
EE/CA	Engineering Evaluation/Cost Analysis
ER,A	Environmental Restoration, Army (formerly called DERA)
ESTCP	Environmental Security Technology Certification Program
FRA	Final Remedial Action
FS	Feasibility Study
FY	Fiscal Year
HRR	Historical Records Review
IAP	Installation Action Plan
IMCOM	Installation Management Command
IRA	Interim Remedial Action
K	thousand
LTM	Long-Term Management
LUC	Land Use Controls
MC	Munitions Constituents
MD	Maryland
MDE	Maryland Department of the Environment
MEC	Munitions and Explosives of Concern
mm	millimeter
MMRP	Military Munitions Response Program
MPPEH	Material Potentially Presenting an Explosive Hazard
MRA	Munitions Response Area
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
N/A	Not Applicable
NFA	No Further Action
NPL	National Priority List
NTCRA	Non-Time Critical Removal Action
PA	Preliminary Assessment
PBA	Performance-Based Contract
RA	Remedial Action
RA(C)	Remedial Action - Construction
RAB	Restoration Advisory Board
RC	Response Complete
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-in-Place
SI	Site Inspection

Acronyms

TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USEPA	US Environmental Protection Agency

Installation Information

Installation Locale

Installation Size (Acreage): 1600

City: La Plata

County: Charles

State: Maryland (MD)

Other Locale Information

The BPRF is a 1,600-acre installation located on Cedar Neck Point, at the confluence of Nanjemoy Creek and the Potomac River, at the southern tip of Charles County, MD. It is approximately 50 miles south of Washington, DC and nine miles southwest of La Plata, MD. Access to this facility from US 301 is via MD Route 6 and Blossom Point Road.

Installation Mission

The mission of the BPRF is threefold:

- (1) to operate and maintain an ordnance and electronics research facility as a remote site of the US Army Garrison (USAG) Adelphi Laboratory Center (ALC);
- (2) to support the Acoustic/Electro-Optic Propagation Research Site operated by the US Army Research Laboratory (ARL); and
- (3) to provide reimbursable, customer-supported explosives range facility operations for ARL and other Department of Defense and federal agencies.

Lead Organization

IMCOM

Lead Executing Agencies for Installation

US Army Corps of Engineers (USACE), Baltimore District

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region III
State	Maryland Department of the Environment (MDE)

National Priorities List (NPL) Status

BLOSSOM POINT RESEARCH FACILITY is not on the NPL

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

The community has expressed no sufficient, sustained interest in a RAB.

Installation Program Summaries

MMRP

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

Affected Media of Concern: Sediment, Surface Water

5-Year / Periodic Review Summary

No 5-Year / Periodic Reviews have been scheduled

Cleanup Program Summary

Installation Historic Activity

In December 2003, the preliminary assessment (PA) was completed and three Military Munitions Response Program (MMRP) sites were identified. In May 2006, the historical records review (HRR) was completed. Information collected for the HRR determined that the Mortar Range Fan (BPF-001-R-01) never existed. In March 2007, the MMRP site inspection (SI) was completed and this resulted in the Munitions Response Site Prioritization Protocol (MRSPP) scoring of four MMRP sites. One site, Potomac River North (BPF-002-R-02), was recommended for no further action (NFA) based on the findings of the SI.

An engineering evaluation/cost analysis (EE/CA), completed in April 2008, recommended a non-time critical removal action (NTCRA) to address MEC in Nanjemoy Creek (BPF-002-R-01) and Potomac River South (BPF-002-R-03). An action memorandum was prepared which documented the selected alternative. In August 2008 the final action memorandum approving all of the selected interim remedial actions (IRA) for munitions at BPRF for the Nanjemoy Creek Munitions Response Site (MRS) and Potomac River South MRS was signed by the Deputy Garrison Manager, Mr. Joel Salmons. A three-year NTCRA contract was awarded in the fall of 2008. NTCRA actions were completed in August 2011. Completed actions include:

- (1) Installation of a 600-foot erosion control barrier along a portion of the Nanjemoy Creek shoreline.
- (2) Distribution of public education pamphlets and posters at 14 different marinas within a 15-mile radius of the BPRF,
- (3) Updating of the navigation charts for BPRF water courses,
- (4) Annual surface sweeps of approximately 9.5 acres of shoreline along the Nanjemoy Creek and Potomac River South MRSs, and,
- (5) Posting of signage along the two MRS shorelines depicting, "DANGER," "EXPLOSIVE HAZARD" and "KEEP OUT."

A Remedial Investigation (RI) was awarded June 2010 and is ongoing.

Installation Program Cleanup Progress

MMRP

Prior Year Progress: The RI for BPF-002-R-01, BPF-002-R-03, and BPF-003-R-01 started in October 2009 [fiscal year (FY)2010], with a 42-month period of performance.

Future Plan of Action: Feasibility study (FS), remedial design (RD), remedial action - construction [RA (C)] and long-term management (LTM).

BLOSSOM POINT RESEARCH FACILITY
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 6/3

Installation Site Types with Future and/or Underway Phases

3 Unexploded Munitions/Ordnance
(BPF-002-R-01, BPF-002-R-03, BPF-003-R-01)

Most Widespread Contaminants of Concern

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

Media of Concern

Sediment, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
BPF-002-R-01	Nanjemoy Creek	IRA	UXO CLEARANCE	2011
BPF-002-R-03	Potomac River South	IRA	UXO CLEARANCE	2011
PBA@MR BPF	PBA@MR BPRF	IRA	UXO CLEARANCE	2012

Duration of MMRP

Date of MMRP Inception 200306

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201809/201809

Date of MMRP completion including Long Term Management (LTM): 202909

MMRP Contamination Assessment

Contamination Assessment Overview

In December 2003, the Phase 3 Army range inventory was completed at BPRF. The inventory identified three multi-use sites as eligible for the MMRP: the mortar range fan, the shoreline range fan, and the water range fan. The Phase 3 inventory serves as the PA, under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended.

The HRR completed in May 2006 resulted in the mortar range fan (BPF-001-R-01) being recommended for, and subsequently classified as, NFA. The SI report, completed in March 2007, resulted in division of the shoreline range fan (BPF002-R) munitions response area (MRA) into three MRS:

- (1) Nanjemoy Creek (BPF-002-R-01),
- (2) Potomac River North (BPF-002R-02), and
- (3) Potomac River South (BPF-002-R-03).

The EE/CA completed in April 2008 recommended NTCRA to address MEC in BPF-002-R-01 and BPF-002-R-03. An action memorandum was prepared which documented the selected alternative and the NTCRA was awarded in FY2008. Operational range boundaries were adjusted in FY2008 to add landfill No. 1 acreage to BPF-002-R-01. The presence of MEC in Potomac River sediments, BPF-003-R-01, was confirmed by the Environmental Security Technology Certification Program (ESTCP) conducted in the first quarter of FY08. ESTCPs report was finalized in Aug. 20, 2009.

Cleanup Exit Strategy

The NTCRA in BPF-002-R-01 and BPF-002-R-03 was implemented in FY2009 with program funding for three years and completion anticipated in FY2011. The NTCRA included construction of additional shoreline protection in BPF-002-R-01 to prevent potential MEC and MD from eroding out of the slope above the shoreline. Land use controls (LUCs) such as annual surface sweeps, signage, notice to mariners, and public education were part of the selected alternative for both sites. The RI for the three BPRF MMRP sites was awarded by Baltimore USACE on June 30, 2010 and extends through Jan. 20, 2014. An FS will follow the RI.

MMRP Previous Studies

Year	Title	Author	Date
2003	Closed, Transferring, and Transferred Range/Site Inventory Report II	Adelphi Laboratory Center	DEC-2003
2006	Final HRR Report, Adelphi Laboratory Center, BPRF, MD	Malcolm Pirnie, Inc. under contract to the USACE, Baltimore District	MAY-2006
	Final SI Work Plan Report, Adelphi Laboratory Center, BPRF, MD	Malcolm Pirnie, Inc. under contract to the USACE, Baltimore District	AUG-2006
2007	Final SI Report, Adelphi Laboratory Center, BPRF, MD	Malcolm Pirnie, Inc. under contract to the USACE, Baltimore District	MAR-2007
	Final EE/CA Work Plan, Adelphi Laboratory Center, Blossom Point Research Facility, MD	Malcolm Pirnie, Inc.	OCT-2007
2008	Final EE/CA Report, Adelphi Laboratory Center, Blossom Point Research Facility, MD	Malcolm Pirnie, Inc.	APR-2008
	Final Action Memorandum, EE/CA Report, BPRF, MD (signed by Deputy Garrison Manager, August 2008)	Malcolm Pirnie, Inc.	JUL-2008
	Final Project Management Plan, MMRP, NTCRA	Jacobs Engineering/Malcolm Pirnie, Inc.	NOV-2008
2009	Final Explosives Safety Submission, MMRP, NTCRA, BPRF	Jacobs Engineering/Malcolm Pirnie, Inc.	FEB-2009
	Final Land Use Control Plan, MMRP, NTCRA, BPRF	Jacobs Engineering/Malcolm Pirnie, Inc.	MAR-2009
	Final Annual Surface Sweep Work Plan, MMRP, NTCRA, BPRF	Jacobs Engineering/Malcolm Pirnie, Inc.	MAY-2009
	First Annual Surface Sweep After Action Report, MMRP, NTCRA, BPRF	Jacobs Engineering/Malcolm Pirnie, Inc.	JUL-2009
	Final Construction Work Plan MMRP NTCRA, BPRF	Jacobs Engineering/Malcolm Pirnie, Inc.	AUG-2009
	First Annual Surface Sweep After Action Report, MMRP NTCRA, BPRF	Jacobs Engineering/Malcolm Pirnie, Inc.	AUG-2009
	Final Erosion and Sediment Control Plan and 100% Design Submittal for Revetment Construction, MMRP, BPRF	Jacobs Engineering/Malcolm Pirnie, Inc.	AUG-2009
2010	Final Non-Time Critical Removal Action Report, MMRP, BPRF	Malcolm Pirnie / Jacobs Engineering Group	FEB-2010
	Final Second Annual Surface Sweep After Action Report, MMRP, NTCRA, BPRF	Malcolm Pirnie, Inc. / Jacobs Engineering Group	JUL-2010
2011	Draft-Final RI Workplan, BPRF	Earth Resources Technology, Inc.	JUL-2011

MMRP Previous Studies

	Title	Author	Date
2011			
	Final Third Annual Surface Sweep After Action Report, MMRP, NTCRA	Jacobs Engineering	AUG-2011
2012			
	Final Remedial Investigation Workplan, BPRF	Earth Resources Technology, Inc.	MAR-2012

BLOSSOM POINT RESEARCH FACILITY
Military Munitions Response Program
Site Descriptions

Site ID: BPF-002-R-01
Site Name: Nanjemoy Creek

STATUS

Regulatory Driver: CERCLA
MRSP Score: 03
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200306.....	200312
SI.....	200508.....	200703
RI/FS.....	201006.....	201509
RD.....	201510.....	201609
IRA.....	200703.....	201109
RA(C).....	201609.....	201809
LTM.....	201810.....	202909
RIP Date:	N/A	
RC Date:	201809	

SITE DESCRIPTION

The Nanjemoy Creek MRS consists of 7.1 acres defined by a 30-foot wide swath of land extending from the bluff that surrounds the installation towards Nanjemoy Creek. The site covers the area along the coastline of Nanjemoy Creek, which extends south from the northwest installation boundary to the southwesternmost tip at BPRF. Depending on tidal effects, a significant portion of the Nanjemoy Creek MRS is submerged in shallow water.

The Nanjemoy Creek MRS contains hazards from MEC and material potentially presenting an explosive hazard (MPPEH) related to historical operations. During the SI, MPPEH was encountered in three locations, but was not conclusively identified as MEC by the responding explosive ordnance division unit.

The EE/CA was completed at this site during the IRA phase. The MEC RA costs conducted during the IRA phase at this site also reflected the costs for the MEC RA that was conducted during the IRA phase for site BPF-002-R-03.

Operational range boundaries were adjusted in FY2008 to add landfill No. 1 acreage to BPF-002-R-01. This MRS encompasses 7.1 acres to include landfill No. 1.

CLEANUP/EXIT STRATEGY

An NTCRA was completed under the IRA phase. This action was completed in September 2011. The RI was awarded in June 2010 and extends through January 2014. The current MMRP cost-to-complete for BPF-002-R-01 includes costs for the following:

- an FS
- an RD,
- a RA(C), and
- LTM.

The RA(C) costs include excavation, removal and off-site transport for MEC, and the implementation of institutional controls. LTM includes MEC monitoring.

Site ID: BPF-002-R-03
Site Name: Potomac River South

STATUS

Regulatory Driver: CERCLA

MRSPP Score: 05

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

Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200306.....	200312
SI.....	200508.....	200703
RI/FS.....	201006.....	201509
RD.....	201510.....	201609
IRA.....	200703.....	201109
RA(C).....	201609.....	201809
LTM.....	201810.....	202909

RIP Date: N/A

RC Date: 201809

SITE DESCRIPTION

The Potomac River South MRS consists of a 3.3 acre 30-foot wide swath of land extending from the bluff that surrounds the installation towards the Potomac River. The site covers the area along the Potomac River that extends east from the southwesternmost tip at Blossom Point to the operational range area (safety danger zone for range 1) near Cedar Point. Depending on tidal effects, a significant portion of the Potomac River South MRS is submerged in shallow water.

The EE/CA was completed at this site during the IRA phase. The MEC RA costs associated with the IRA phase at this site were captured in the MEC RA costs assigned to the IRA phase for site BPF-002-R-01.

CLEANUP/EXIT STRATEGY

An NTCRA was completed under the IRA phase. This action was completed in September 2011. The RI was awarded in June 2010 and will extend through January 2014. The current MMRP cost-to-complete for BPF-002-R-03 includes costs for the following:

- an FS,
- an RD,
- a RA(C), and
- LTM.

The RA(C) costs include excavation, removal and off-site transport for MEC, and the implementation of institutional controls. LTM includes MEC monitoring.

Site ID: BPF-003-R-01
Site Name: Water Range Fan

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 04
Contaminants of Concern: Munitions and explosives of concern (MEC), Munitions constituents (MC)
Media of Concern: Sediment, Surface Water

Phases	Start	End
PA.....	200306.....	200312
SI.....	200508.....	200703
RI/FS.....	201006.....	201509
RD.....	201510.....	201609
RA(C).....	201609.....	201809
LTM.....	201810.....	202909
RIP Date:	N/A	
RC Date:	201809	

SITE DESCRIPTION

This 5,413-acre transferred range fan surrounds the BPRF, and consists of 14 distinct range firing fans overlapping into the Nanjemoy Creek in the east and northeast directions and into the Potomac River to the south, southeast and east from BPRF. Between 1942 and 1976 the ranges were used for experimental testing of mortars, rockets and projectiles. The munitions fired into the range fan were 2.75-inch, 3.25-inch, 3.5-inch, 4.5-inch and five-inch rockets; 60 millimeters (mm), 80mm and 4.2-inch mortars; 20mm, 30mm, 40mm, 75mm, and 105mm projectiles; and 20-pound and 750-pound bombs.

All of the firing points for these ranges are located within the current operational area of BPRF. The area is used for recreational purposes.

MEC was confirmed in this MRS by the ESTCP technology transfer project conducted in 2007.

HRR results indicate the potential for MEC, MPPEH, and munitions debris. During a magnetometer-assisted visual survey of the adjacent Nanjemoy Creek MRS, munitions debris and MPPEH were spotted in portions of the Nanjemoy Creek MRS along the shoreline of Nanjemoy Creek. As a result of this survey, the Final SI Report, Adelphi Laboratory Center, BPRF, MD (2007) recommended this site for RI/FS.

CLEANUP/EXIT STRATEGY

The current MMRP cost-to-complete for BPF-003-R-01 includes costs for the following:

- an FS,
- an RD,
- a RA(C), and
- LTM.

The RA(C) costs include excavation, removal and off-site transport for MEC, and the implementation of institutional controls. LTM includes MEC monitoring.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
BPF-001-R-01	Mortar Range Fan	200703	According to the May 2006 HRR Report: "The Mortar Range Fan MRS was included in the Phase 3 Inventory Report but was determined to be ineligible for the MMRP based upon the lack of evidence that munitions were ever fired into the area."
BPF-002-R-02	Potomac River North	200703	According to the March 2007 SI Report: "NFA is recommended for the Potomac River North MRS based on the lack of observable MEC, MPPEH, or munitions debris related to the historic use of the site and the lack of munitions constituents in concentrations indicative of the presence of MEC."
PBA@MR BPF	PBA@MR BPRF	201201	

MMRP Schedule

Date of MMRP Inception 200306

Past Phase Completion Milestones

2004

PA (BPF-001-R-01 - Mortar Range Fan, BPF-002-R-01 - Nanjemoy Creek, BPF-002-R-02 - Potomac River North, BPF-002-R-03 - Potomac River South, BPF-003-R-01 - Water Range Fan, PBA@MR BPF - PBA@MR BPRF)

2007

SI (BPF-001-R-01 - Mortar Range Fan, BPF-002-R-01 - Nanjemoy Creek, BPF-002-R-02 - Potomac River North, BPF-002-R-03 - Potomac River South, BPF-003-R-01 - Water Range Fan, PBA@MR BPF - PBA@MR BPRF)

2011

IRA (BPF-002-R-01 - Nanjemoy Creek, BPF-002-R-03 - Potomac River South)

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: 201809

Schedule for Next Five-Year Review: N/A

Estimated Completion Date of MMRP at Installation (including LTM phase): 202909

BLOSSOM POINT RESEARCH FACILITY MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
BPF-002-R-01	Nanjemoy Creek	RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
BPF-002-R-03	Potomac River South	RI/FS						
		RD						
		RA(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
BPF-003-R-01	Water Range Fan	RI/FS						
		RD						
		RA(C)						
		LTM						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201012

Restoration Advisory Board (RAB): No

Reason Not Established: The community has expressed no sufficient, sustained interest in a RAB.

Community Interest Solicited on: 201202

Efforts Taken to Determine Interest

In February 2012, USAG ALC solicited the community to determine if there was enough interest in forming a RAB.

Results

Seven responses were received with varying levels of interest, thus the Garrison staff determined there was not sufficient interest at the time in forming a RAB.

Follow-up Procedures

Additional Community Involvement Information

The installation solicited community interest in a RAB in February 2012 and determined that comments received from the public do not comprise sufficient and sustainable interest/involvement to form a RAB.

Administrative Record is located at

US Army Garrison Adelphi Laboratory Center
ATTN: IMAL-PWE (Building 103, Room 107)
2800 Powder Mill Road
Adelphi, MD 20783
POC: Mr. John Feustle, (301) 394-6309

Information Repository is located at

Charles County Public Library
2 Garrett Avenue
La Plata, MD 20646
Tel: (301) 394-9001

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

TAPP Title: N/A

Potential TAPP: N/A

