JFHQ MA ARNG

Army Cleanup Program

Installation Action Plan

2023

CONTENTS

ACRONYMS

Acronym	Definition
AEDB-R	Army Environmental Database - Restoration
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
DD	Decision Document
ENV	Environmental
FS	Feasibility Study
HQAES	Headquarters Army Environmental System
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
LUC	Land Use Control
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
PA	Preliminary Assessment
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
UST	Underground Storage Tank
WBS	Work Breakdown Structure

PHASE TRANSLATION TABLE

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

SITE ALIAS LIST

HQAES ID	AEDB-R Reference	Site Alias
6893A.1009	CC_MAC35-001-R-01_NDNODS PITTSFIELD RIFLE RANGE	
6893A.1010	CC_MAB35-001-R-01_NDNODS HUDSON RIFLE RANGE	
6893A.1011	CC_MAHQ-001-R-01_NDNODS BIRCHAM BEND RANGE	

JFHQ MA ARNG

COMPLIANCE CLEANUP SITES

CC_MAC35-001-R-01_NDNODS PITTSFIELD RIFLE RANGE

HQAES ID: 6893A.1009

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 2/15/2031

RC Date: 2/15/2031

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	4/30/2007	9/30/2009
SI	7/31/2010	9/30/2012
RI/FS	1/15/2017	6/15/2021
RD	1/15/2029	2/15/2029
IRA	- -	- -
RA(C)	2/15/2029	2/15/2031
RA(O)	- -	- -
LTM	- -	- -

Site Narrative

The Pittsfield Rifle Range is a former small arms range, located in the Pittsfield State Forest in Berkshire County, Pittsfield, Massachusetts. This former range, which is approximately 658.25 acres in size, is located in a heavily wooded area near the southeastern border of the forest. It is situated approximately 0.8 miles southwest of the intersection of West Street and Westbrook Terrace. Currently, this Munitions Response Site (MRS) contains a former firing point and berm/target area that are publicly accessible via a dirt trail through the forest. Site Inspection (SI) field work was conducted in 2011 and the report was made final in 2012. Total site acreage was adjusted and the Final SI report r ecommended splitting out site acreage that required No Further Action (NFA) beyond SI so those 633.33 acres are now identified with the new site MAC35-001-R-02. For the remaining 24.92 acres, antimony and lead exceeded their respective calculated background and human health screening values in the soil, so further investigation is recommended and is identified with MAC35-001-R-01.

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

Restoration Cleanup Strategy: An RI/FS has been completed at this site. A soil excavation will be required.

CC_MAB35-001-R-01_NDNODS HUDSON RIFLE RANGE

HQAES ID: 6893A.1010

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 2/15/2031

RC Date: 2/15/2031

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	4/30/2007	9/30/2009
SI	7/31/2010	9/30/2012
RI/FS	1/15/2026	1/15/2029
RD	1/15/2029	2/15/2029
IRA	- -	- -
RA(C)	2/15/2029	2/15/2031
RA(O)	- -	- -
LTM	- -	- -

Site Narrative

The only Non-Department of Defense Non-Operational Defense Sites (NDNODS) eligible Munitions Response Site (MRS) identified at this site is the former Hudson Rifle Range, which consists of five acres. This site, which is bounded by Coolidge Street (Route 62) to the north, Gates Pond Road to the west and south, and Highland Park Avenue to the east, is located in two towns, Hudson and Berlin that fall in Middlesex and Worcester Counties, respectively. This was a former small arms range used by the Massachusetts Army National Guard (MAARNG) from at least 1921 to 1959; the exact dates of use are unknown.

Site Inspection (SI) field work was conducted in 2011 and the report was made final in 2012. Total site acreage was adjusted and Final SI report recommended splitting out site acreage that required no further action (NFA) beyond SI so those 2.71 acres are now identified with the new site MAB35-001-R-02. For the remaining 2.55 acres, antimony and lead exceeded their respective calculated background and human health screening values in the soil so further investigation is recommended and is identified with MAB35-001-R-01.

Defense Environmental Restoration Program (DERP) funding was used to complete work through the SI at this site. NDNODS sites moving forward with the Remedial Investigation (RI)I/Feasibility Study (FS) phase are reprogrammed into Compliance-related Cleanup.

Restoration Cleanup Strategy: An RI/FS will be completed at this site. Once the RI/FS is completed it is assumed a soil excavation will be required.

CC_MAHQ-001-R-01_NDNODS BIRCHAM BEND RANGE

HQAES ID: 6893A.1011

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 11/30/2023

RC Date: 11/30/2023

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	4/30/2007	9/30/2009
SI	7/31/2010	9/30/2012
RI/FS	1/30/2013	6/15/2018
RD	10/1/2018	10/30/2018
IRA	- -	- -
RA(C)	11/1/2018	11/30/2023
RA(O)	- -	- -
LTM	- -	- -

Site Narrative

The former Bircham Bend Rifle Range is located in the Cities of Chicopee and Springfield, in Hampden County, MA. The only NDNODS eligible MRS identified at this site is approximately 1,790 acres and includes both a former rifle range and a former handgun range used by the MAARNG from 1908 to 1934. Both ranges are located in a wooded area and are bounded by Route 291 to the east, Delta Hills to the south, Carew Street to the west, and residential properties to the north. The rifle range contained five concrete structures; three of these were located in Chicopee and were used as the firing platforms. The other two concrete structures were the targets and were located 500 and 1,000 feet east of the firing points in Springfield. The handgun range contained a soil berm. The concrete target structure, which was used as a target for the rifle range, is located approximately 400 feet northeast of the berm. SI field work was conducted in 2011 and the report was made final in 2012. The final SI report recommended splitting out site acreage that required NFA beyond SI, so about 1744 acres are now identified with the new site MAHQ-001-R-02. Further investigation for MEC and MC was recommended for the remaining 46 acres identified with the original site designation of MAHQ-001-R-01. DERP funding was used to complete work through the SI at this site. NDNODS sites moving forward with the RI/FS phase were reprogrammed into Compliance-related Cleanup. This site is a former rifle and handgun range used for more than 10 years. During a prior excavation of soil, MEC and MD were identified. An RI/FS was funded and RD and RAC are being funded in FY18 for MEC Surface and Subsurface Clearance (8.83 acres) with MC Soil Removal (0.06 acre) to 2 ft. depth and no LUCs.

Restoration Cleanup Strategy: The remaining phase of work is currently under contract.

SITE CLOSEOUT SUMMARY

HQAES ID	Site Name	Site Closeout Date
6893A.1001	MAHQ-001-R-01_NDNODS Bircham Bend Range	9/30/2012
6893A.1002	MAHQ-002-R-01_NDNODS Hosmer Small Arms Range	9/30/2012
6893A.1003	MAHQ-003-R-01_NDNODS Shaughnessy's Farm	9/30/2012
6893A.1004	MAB35-001-R-01_NDNODS Hudson Rifle Range	9/30/2012
6893A.1005	MAC35-001-R-01_NDNODS Pittsfield Rifle Range	9/30/2012
6893A.1006	MAB35-001-R-02_NDNODS HUDSON RIFLE RANGE	9/15/2012
6893A.1007	MAC35-001-R-02_NDNODS PITTSFIELD RIFLE RANGE	9/15/2012
6893A.1008	MAHQ-001-R-02_NDNODS BIRCHAM BEND RANGE	9/15/2012
6893A.1011	CC_MAHQ-001-R-01_NDNODS BIRCHAM BEND RANGE	6/15/2020

COMMUNITY INVOLVEMENT

Technical Review Committee (TRC) Establishment Date:	N/A
Community Involvement Plan (Date Published):	7/10/2014
Restoration Advisory Board (RAB) Establishment Date:	None. Installation or tenant activity is supported by another RAB.
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Additional Community Involvement:	The Massachusetts Army National Guard does not have a formal RAB at Camp Edwards; however, the Joint Base Cape Cod Cleanup Team serves as the community advisory board.
Administrative Record is located at:	The Massachusetts Army National Guard Environmental and Readiness Center Building 1204, West Inner Camp Edwards, MA 02542-5003
Information Repository is located at:	The Massachusetts Army National Guard Environmental and Readiness Center Building 1204, West Inner Camp Edwards, MA 02542-5003
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Review Summary Table

None

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

None

Results, Actions & Plans

None

LAND USE CONTROLS (LUC) SUMMARY

None

MTA CAMP EDWARDS

Army Cleanup Program

Installation Action Plan

2023

CONTENTS

ACRONYMS

Acronym	Definition
AEDB-R	Army Environmental Database - Restoration
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
DD	Decision Document
ENV	Environmental
FS	Feasibility Study
HQAES	Headquarters Army Environmental System
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
LUC	Land Use Control
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
PA	Preliminary Assessment
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
UST	Underground Storage Tank
WBS	Work Breakdown Structure

PHASE TRANSLATION TABLE

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

SITE ALIAS LIST

HQAES ID	AEDB-R Reference	Site Alias
25175.1003	MMR-001-R-01_MOCK VILLAGE	- -
25175.1004	MMR-004-R-01_OLD K RANGE	- -
25175.1006	MMR-003-R-01_OLD GRENADE COURTS	- -
25175.1008	MMR-008-R-01_DEMO 1 OFF SITE GW CONTAMIN	- -
25175.1009	MMR-009-R-01_OTIS GUN CLUB	- -
25175.1010	MMR-010-R-01_FMR AMMU SUPPLY POINT WEST	- -
25175.1011	MMR-011-R-01_FMR AMMU SUPPLY POINT EAST	- -
25175.1023	CC01G_DEMOLITION AREA 1	DEMO 1
25175.1026	CC02G_DEMOLITION AREA 2	DEMO 2
25175.1029	CC04S_TRAINING AREAS	CC04
25175.1032	CC05G_CENTRAL IMPACT AREA	CIA
25175.1033	CC06G_NORTHWEST CORNER GROUNDWATER	CC06
25175.1038	CC09G_J-1 RANGE	J-1 GW
25175.1040	CC10G_J-2 RANGE	J-2
25175.1048	CC12G_L RANGE	L RANGE
25175.1049	CC16_SMALL ARMS RANGES	SMALLARMS
25175.1051	CC11G_J-3 RANGE	J-3

MTA CAMP EDWARDS

MILITARY MUNITIONS RESPONSE PROGRAM SITES

MMR-001-R-01_MOCK VILLAGE

HQAES ID: 25175.1003

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 4/6/2022

RC Date: 4/6/2022

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	3/4/2003	9/24/2003
SI	9/15/2014	10/15/2016
RI/FS	7/15/2016	4/6/2022
RD	- -	- -
IRA	- -	- -
RA(C)	- -	- -
RA(O)	- -	- -
LTM	4/6/2022	4/6/2053

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts are being performed by the Air Force and funded by the Army. The Mock Village was constructed in 1941 on Jefferson Road and was used to instruct troops in urban street reconnaissance and fighting techniques and employed the use of mock buildings with popup targets, booby traps, and building occupants. Ordnance used to simulate battle conditions included 2, 4, 6-trinitrotoluene (TNT) blocks, pyrotechnics, and live hand grenades. Troops used 30 caliber blank ammunition and dummy grenades during training exercises. Available information suggests the village was used during the 1940s only.

In 2014, Air Force Civil Engineer Center (AFCEC) prepared a Comprehensive Site Evaluation (CSE) Phase I Report that evaluated risks to human and ecological receptors from munitions and explosives of concern (MEC) and munitions constituents (MC) at the Mock Village munitions response site (MRS). A CSE Phase II investigation was conducted in November 2015 that recommended further assessment and/or action to address potential residual MEC. AFCEC, Massachusetts Department of Environmental Protection (MassDEP), and Environmental Protection Agency (EPA) agreed to a “streamlined” Remedial Investigation (RI)/Feasibility Study (FS) using existing data to fulfill the further assessment CSE Phase II recommendation. Despite the lack of evidence that MEC was used at the MRS, the project team agreed to a presumptive remedy in the FS included land use controls (LUCs) with unexploded ordnance (UXO) Construction Support.

An RI, FS, proposed plan (PP), and decision document (DD) were completed in the RI/FS phase. The DD (Record of Decision) was signed on 6 Apr 2022.

Restoration/Cleanup Strategy: The CTC estimate for the site implements the long term management (LTM) remedy prescribed in the DD which includes LUCs with UXO Construction Support and geophysical surface sweeps annually for the first 3 years. The Air Force has provided the Army with cost estimates in the form of a Project Cost Estimating Assumptions Document (PCEAD) from their Program Requirements Development process.

MMR-004-R-01_ROCKET RANGE

HQAES ID: 25175.1004

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 3/04/2024

RC Date: 3/30/2024

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	3/4/2003	9/24/2003
SI	9/15/2014	10/15/2016
RI/FS	12/15/2015	3/30/2024
RD	- -	- -
IRA	12/15/2015	10/15/2016
RA(C)	1/15/2020	3/4/2024
RA(O)	- -	- -
LTM	3/30/2024	3/30/2054

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the Army National Guard (ARNG) Military Munitions Response Program (MMRP) sites are being performed by the Air Force and funded by the ARNG. The 149.4-acre Old K Range munitions response area (MRA) is contained within the northern portion of JBCC originally leased from the Commonwealth of Massachusetts to the Army in 1940. The U.S. Coast Guard (USCG) is the current tenant and has been leasing the property from the Commonwealth of Massachusetts for use as a Communication Station since 1976. The MRA was used for training by the Massachusetts Army National Guard (MAARNG) in the 1940s and 1950s as a moving target rifle range and a rocket range. The MRA has been divided into four munition response sites (MRSs) based on its historical use: (1) Rocket Range, (2) Rocket Range Firing Line, (3) Carolina Road, and (4) Remaining Lands.

The Rocket Range MRS is located northwest of Greenway Road and Wood Road and was used as a rocket range. The MRS is a 67.20-acre area that encompasses the former rocket range impact area and was utilized from the 1940s to the 1950s. Munitions historically used at the rocket range include 2.36-inch (in.) and 3.5-in. practice and high explosive (HE) rockets, rifle grenades, and mortars. Material documented as an explosive hazard (MDEH) items included 2.36-in. high explosive anti-tank (HEAT) / white phosphorus (WP) rockets, 40-millimeter (mm) AA projectiles, rifle grenades, and 57-mm recoilless HEAT projectiles. Material documented as safe (MDAS) items included 40mm, 57mm and 75mm munitions, and 2.36-in. and 3.5-in. practice rockets.

A Remedial Investigation (RI) and Feasibility Study (FS) were completed in May 2018 and August 2022, respectively. A draft Proposed Plan was delivered to the regulatory agencies in October 2022. The Environmental Protection Agency (EPA) has invoked a dispute resolution since they (and the state) do not agree with the proposed remedy of groundwater monitoring, annual munitions and explosives of concern (MEC) sweeps, and land use controls (LUCs). The regulatory agencies are pressing for a full MEC removal at the Rocket Range MRS.

Restoration/Cleanup Strategy: An RI/FS, Remedial Design (RD), and Remedial Action (Construction) (RA(C)) were funded at this site. The CTC estimate for the site assumes the remedy will be based on Alternative 3 from the FS (LUCs, long term management (LTM) with Groundwater Monitoring, unexploded ordnance (UXO) Construction Support, and Full Annual MEC Sweeps)). The Air Force has provided the Army with a cost estimate from the Final FS for the assumed Alternative 3 remedy at the MRS.

MMR-003-R-01_DOD PROPERTY

HQAES ID: 25175.1006

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 12/31/2024

RC Date: 12/31/2024

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	3/4/2003	9/24/2003
SI	9/15/2014	10/15/2016
RI/FS	7/15/2016	12/31/2023
RD	- -	- -
IRA	- -	- -
RA(C)	12/31/2023	12/31/2024
RA(O)	- -	- -
LTM	12/31/2024	12/31/2054

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the Army National Guard (ARNG) Military Munitions Response Program (MMRP) sites are being performed by the Air Force and funded by the ARNG. The closed, transferring and transferred (CTT) Range Inventory Report identified the Old Grenade Courts as an munitions response area (MRA) covering approximately 39 acres (now defined as a 72.3-acre MRA). The site is located north of Kittredge Road and primarily to the west of, though spanning, Generals Boulevard. The Old Grenade Courts were used in the 1940s and possibly into the early 1950s for practice in the handling and throwing of live and dummy hand grenades.

Initial investigations (Comprehensive Site Evaluation (CSE) Phase I and II)) did not identify munitions and explosives of concern (MEC) or munitions debris (MD) at the MRA. The CSE Phase II recommended dividing the Old Grenade Courts into 2 munitions response sites (MRSs) (DoD Property and Non-DoD Property). A Fiscal Year (FY) 21 project was funded to further investigate the 2 MRSs with the goal of reaching no further response action planned (NFRAP) in order to support the ARNG's plan to transfer a large portion of the Old Grenade Courts property to Massachusetts Fisheries and Wildlife as mitigation for the proposed Machine Gun Range (elsewhere on JBCC).

The additional investigation of the 51.9-acre DoD Property MRS was conducted as a supplement to the CSE Phase II. MEC and material documented as an explosive hazard (MDEH) were found at the live grenade court areas (a 3-acre area which was the focus of the additional investigation). Based on a review of the surface and subsurface MEC data and historical use of the MRS for grenade training, it was determined that there are potentially complete pathways to receptors (human) for MEC at the DoD Property MRS. Completion of a streamlined Remedial Investigation (RI)/Feasibility Study (FS) and proposed plan (PP)/Decision Document (DD) with a presumptive land use controls (LUC) remedy has been recommended and is being discussed with the regulatory agencies.

Restoration/Cleanup Strategy: All work leading to, and including, the DD was funded at this site. It is assumed that the remedy will be long term management (LTM) with application of LUCs.

MMR-008-R-01_DEMO 1 OFF SITE GW CONTAMINATION

HQAES ID: 25175.1008

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 4/15/2018

RC Date: 10/15/2028

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	1/15/2010	12/15/2010
SI	1/15/2010	12/15/2010
RI/FS	1/15/2011	12/15/2014
RD	7/15/2013	12/15/2014
IRA	- -	- -
RA(C)	12/15/2014	4/15/2018
RA(O)	4/15/2018	10/15/2028
LTM	10/15/2028	10/15/2032

Site Narrative

This CTC for Demolition Area 1 Off Base (HQAES 25175.1008) includes the off-base groundwater treatment system funded under DERP. The on-base treatment system is funded separately under OMA and included in the CTC for Demolition Area 1 On Base (HQAES 25175.1023). The approximately 900 by 500-foot (ft) sized Demolition Area 1 is located in the center of the installation and south of the primary Central Impact Area within MTA Camp Edwards. Demolition Area 1 was formerly used for demolition training, as well as disposal of munitions, fireworks, and related items from the mid-1970s until 1997.

Initial investigations of Demolition Area 1 included historic records reviews, site surveys, and a groundwater investigation. The groundwater investigation identified a comingled groundwater plume of 1,3,5-trinitroperhydro-1,3,5-triazine (RDX) and perchlorate located on-base. The RDX plume was estimated to be approximately 3,500 by 300 by 100 ft with a maximum concentration of 370 micrograms per kilogram (ug/L) and the perchlorate plume was estimated to be approximately 9,000 by 1,000 by 100 ft with a maximum concentration of 500 ug/L. Further investigations of Demolition Area 1 consisted of ground-based geophysical surveys that identified approximately 2,500 magnetic anomalies. Excavation of the largest of these yielded metallic debris, munitions, and six disposal pits containing ash and/or discolored material and munitions. The pits, distributed throughout the source area, were likely sources of groundwater contamination. Testing of approximately 3,900 soil samples found RDX, perchlorate, and other explosive chemicals. The maximum concentrations of RDX and perchlorate detected in soil was 14 milligrams per kilogram (mg/kg) and 0.5 mg/kg, respectively. In 2004, a Rapid Response Action began for source area removal. An approximate 600 by 450 area was excavated to a maximum bottom depth of 12 ft, removing approximately 17,500 cubic yards of soil. The soil was treated using Low Temperature Thermal Desorption and returned to Demolition Area 1. The excavation also removed approximately 70,000 magnetic anomalies and approximately 200 tons of scrap, munitions, and related items.

As part of the Rapid Response Action, construction and operation of a on-base groundwater treatment system began in September 2004. The groundwater treatment system consisted of two extraction wells (EW), three injection wells (IW), and two mobile treatment units (MTUs).

In 2010, an additional investigation identified an off-base perchlorate plume of approximately 5,000 by 500 ft with a maximum concentration of 14 ug/L and a smaller plume of RDX measuring approximately 500 by 100 feet with a maximum concentration of 1.6 ug/L. Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. §6973.

A summary of additional remediation that has occurred or is currently in-progress is listed below:

The off-base treatment system consists of one EW, one mobile treatment unit (MTU), and one infiltration gallery that was constructed and has been operating since July 2016. The treatment system is located on private property.

Restoration/Cleanup Strategy: The Decision Document (DD), Addendum No. 2, issued in September 2013 required implementation of the following response actions:

- *"Continued operation of the current [on-base] extraction and treatment system consisting of six extraction wells operating at 665 gpm, one permanent treatment facility and two mobile treatment units (MTUs)"*
- *"Installation of one new off-base extraction well west of Lily Pond operating at 100 gpm, one off-base MTU, and a new infiltration trench"*
- *"Long-term groundwater monitoring at existing and new monitoring wells to verify that groundwater is being restored as predicted and to ensure that any remaining contamination remains below risk-based levels"*
- *"Implementation and verification of Land Use Controls to prevent use of contaminated portions of the aquifer for drinking water until contamination is reduced to below risk-based levels and to prevent actions that would interfere with the remedy"*
- *"Five year reviews to determine if the groundwater treatment system is still protective and achieving the goals established and to determine if source response actions continue to protect groundwater"*

Following LTM, a site closeout document will be prepared and submitted to the MassDEP and USEPA. Once approval is received, the treatment systems will be decommissioned, and all wells will be abandoned. LUCs prohibiting the use of drinking water wells within Demolition Area 1 will be required until cleanup levels are reached. There were no changes to the cleanup strategy at Demolition Area 1.

MMR-009-R-01_SKEET AND TRAP RANGE

HQAES ID: 25175.1009

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 11/15/2026

RC Date: 11/15/2026

RC Reason: Not assigned

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	1/15/2006	12/15/2006
SI	9/15/2014	2/28/2018
RI/FS	10/15/2016	10/15/2024
RD	10/15/2024	2/15/2025
IRA	- -	- -
RA(C)	2/15/2025	11/15/2026
RA(O)	- -	- -
LTM	11/15/2026	12/31/2031

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the Army National Guard (ARNG) Military Munitions Response Program (MMRP) sites are being performed by the Air Force and funded by the ARNG. The 75-acre Otis Gun Club munitions response area (MRA) is primarily an undeveloped, forested area with wetlands and two kettle ponds. The Otis Gun Club was originally constructed in the 1950s by the United States Air Force (USAF) as a Morale, Welfare, and Recreation activity area operated by the Otis Rod & Gun Club until 1972. In 1975, a newly formed Otis Fish & Game Club began using the small arms range at the MRA. The range was periodically opened and closed during the 1980s and 1990s in response to range safety fan issues and environmental concerns. The site continued to be used for small arms range firing until 2005, when these activities were reportedly suspended by Massachusetts Army National Guard (MAARNG). After 2005, when live firing was suspended, the Otis Fish & Game Club members utilized the MRA for an archery range in the northeast portion of the Skeet and Trap Range until their access agreement was terminated in November 2015. The MRA includes three small arms munitions response sites (MRSs), the Skeet and Trap Range, Rifle Range, and Pistol Range. A fourth MRS, the no further action (NFA) Area, is also part of the MRA.

The Skeet and Trap Range MRS encompasses a 16.62-acre area. The MRS was used for skeet and trap training with small arms (12-gauge shotgun). Evidence of small arms ammunitions (SAA) and clay pigeons was observed at the Skeet and Trap Range. Detections of munitions constituents (MC), particularly polycyclic aromatic hydrocarbons (PAHs), antimony, and lead, are at various locations across surficial soils within the MRS. Concentrations of MC are above screening values within the skeet and trap range fan, with higher concentrations at the surface than in the subsurface soil intervals indicating that MC are complexed and relatively immobile. Some MC, particularly lead, has migrated into groundwater at concentrations above Environmental Protection Agency (EPA) screening levels. MC were also observed in sediment (PAHs with some limited areas of lead) and surface water (lead only) in North Pond.

A Remedial Investigation (RI) was completed in August 2020 and a draft Feasibility Study (FS) was provided to the regulatory agencies in November 2020. A supplemental RI is underway to more closely evaluate ecological risks and will lead to a revised draft FS.

Restoration/Cleanup Strategy: An RI/FS was funded at this site. In fiscal year (FY) 21, a supplemental RI was funded to conduct a site-specific ecological risk assessment along with developing an updated FS based on the results of the Supplemental RI. The CTC estimate for this site assumes a Proposed Plan (PP)/Decision Document (DD), Remedial Design (RD), Remedial Action (Construction) (RA(C)) and Long Term Management (LTM) (land use controls (LUCs) and five-year reviews)).

MMR-010-R-01_FMR AMMU SUPPLY POINT WEST

HQAES ID: 25175.1010

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 3/30/2026

RC Date: 3/30/2026

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	6/15/2008	6/15/2010
SI	3/15/2012	7/15/2017
RI/FS	10/1/2020	3/30/2026
RD	- -	- -
IRA	- -	- -
RA(C)	- -	- -
RA(O)	- -	- -
LTM	3/30/2026	3/30/2056

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts are being performed by the Air Force and funded by the Army. The Former Ammunition Supply Point is an approximately 58-acre area on which 26 portable ammunition storage igloos (i.e., Quonset huts) and associated earthen bunkers were constructed for the storage and distribution of ammunition during the 1940s and 1950s. The area associated with the Former Ammunition Supply Point is located south of Curtis Boulevard and north of Hunter Avenue. Little information is available about the operations of the Former Ammunition Supply Point.

The Former Ammunition Supply Point munitions response area (MRA) was subdivided into two separate munitions response sites (MRSs), Former Ammunition Supply Point West (42.5 acres) and Former Ammunition Supply Point East (15.6 acres). The Former Ammunition Supply Point West MRS comprises the non-wooded areas west of Tibbets and Gibson Streets and the former footprint of the Campbell School and residential area. The Former Ammunition Supply Point East comprises the wooded area east of Tibbets Street and includes the remnants of the former storage igloos.

Restoration/Cleanup Strategy: A Comprehensive Site Evaluation (CSE) Phase II was completed and recommended No Further Action (NFA). The Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (MassDEP) both approved the CSE Phase II Report and its conclusions, but now believe that 100% digital geophysical mapping (DGM) is required to close out the site with unlimited use/unrestricted exposure (UU/UE). The current strategy is to conduct a Remedial Investigation (RI)/Feasibility Study (FS)/Proposed Plans (PP)/Record of Decision (ROD) with an assumed long term management (LTM) remedy with land use controls (LUCs) and five year reviews. The Air Force has provided the Army with cost estimates in the form of Draft Project Cost Estimating Assumptions Document **(**PCEADs) from their fiscal year (FY) 24 Program Requirements Development process.

MMR-011-R-01_FMR AMMU SUPPLY POINT EAST

HQAES ID: 25175.1011

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 3/30/2026

RC Date: 3/30/2026

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	6/15/2008	6/15/2010
SI	3/15/2015	7/15/2017
RI/FS	10/1/2020	3/30/2026
RD	- -	- -
IRA	- -	- -
RA(C)	- -	- -
RA(O)	- -	- -
LTM	3/30/2026	3/30/2056

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts are being performed by the Air Force and funded by the Army. The Former Ammunition Supply Point is an approximately 58-acre area on which 26 portable ammunition storage igloos (i.e., Quonset huts) and associated earthen bunkers were constructed for the storage and distribution of ammunition during the 1940s and 1950s. The area associated with the Former Ammunition Supply Point is located south of Curtis Boulevard and north of Hunter Avenue. Little information is available about the operations of the Former Ammunition Supply Point.

The Former Ammunition Supply Point MRA was subdivided into two separate munition response sites (MRSs), Former Ammunition Supply Point West (42.5 acres) and Former Ammunition Supply Point East (15.6 acres). The Former Ammunition Supply Point West MRS comprises the non-wooded areas west of Tibbets and Gibson Streets and the former footprint of the Campbell School and residential area. The Former Ammunition Supply Point East comprises the wooded area east of Tibbets Street and includes the remnants of the former storage igloos.

Restoration/Cleanup Strategy: A Comprehensive Site Evaluation (CSE) Phase II was completed and recommended No Further Action (NFA). The Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (MassDEP) both approved the CSE Phase II Report and its conclusions, but now believe that 100% digital geophysical mapping (DGM) is required to close out the site with unlimited use/unrestricted exposure (UU/UE). The current strategy is to conduct a Remedial Investigation (RI)/Feasibility Study (FS)/Proposed Plans (PP)/Record of Decision (ROD) with an assumed long term management (LTM) remedy with land use controls (LUCs) and five year reviews. The Air Force has provided the Army with cost estimates in the form of Draft Project Cost Estimating Assumptions Document **(**PCEADs) from their fiscal year (FY) 24 Program Requirements Development process.

MMR-004-R-02_CAROLINA ROAD

HQAES ID: 25175.1012

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 7/4/2024

RC Date: 7/4/2024

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	3/4/2003	9/24/2003
SI	9/15/2014	10/15/2016
RI/FS	12/15/2015	3/30/2024
RD	- -	- -
IRA	12/15/2015	10/15/2016
RA(C)	1/15/2020	7/4/2024
RA(O)	- -	- -
LTM	7/4/2024	7/4/2054

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the ARNG MMRP sites are being performed by the Air Force and funded by the ARNG. The 149.4-acre Old K Range MRA is contained within the northern portion of JBCC originally leased from the Commonwealth of Massachusetts to the Army in 1940. The U.S. Coast Guard (USCG) is the current tenant and has been leasing the property from the Commonwealth of Massachusetts for use as a Communication Station since 1976. The MRA was used for training by the Massachusetts Army National Guard (MAARNG) in the 1940s and 1950s as a moving target rifle range and a rocket range. The MRA has been divided into four MRSs based on its historical use: (1) Rocket Range, (2) Rocket Range Firing Line, (3) Carolina Road, and (4) Remaining Lands.

The Carolina Road MRS comprises 14.60 acres of land and is an area where there have been incidental munitions and explosives of concern (MEC) discoveries during construction activities. Five items were found within the MRS during the RI and identified as material documented as an explosive hazard (MDEH) including one 2.36-inch (in.) high explosive (HE) rocket and four 60-millimeter (mm) HE mortars. Items found and id

An RI and FS were completed in May 2018 and August 2022, respectively. A draft Proposed Plan was delivered to the regulatory agencies in October 2022. The EPA has invoked a dispute resolution since they (and the state) do not agree with the proposed remedy of groundwater monitoring, annual MEC sweeps, and land use controls. The regulatory agencies are pressing for a full MEC removal at the Rocket Range MRS which impacts a final remedy for the entire Old K Range MRA.

MMR-004-R-03_ROCKET RANGE FIRING LINE

HQAES ID: 25175.1013

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 7/4/2024

RC Date: 7/4/2024

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	3/4/2003	9/24/2003
SI	9/15/2014	10/15/2016
RI/FS	12/15/2015	3/30/2024
RD	- -	- -
IRA	12/15/2015	10/15/2016
RA(C)	1/15/2020	7/4/2024
RA(O)	- -	- -
LTM	7/4/2024	7/4/2054

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the ARNG MMRP sites are being performed by the Air Force and funded by the ARNG. The 149.4-acre Old K Range MRA is contained within the northern portion of JBCC originally leased from the Commonwealth of Massachusetts to the Army in 1940. The U.S. Coast Guard (USCG) is the current tenant and has been leasing the property from the Commonwealth of Massachusetts for use as a Communication Station since 1976. The MRA was used for training by the Massachusetts Army National Guard (MAARNG) in the 1940s and 1950s as a moving target rifle range and a rocket range. The MRA has been divided into four MRSs based on its historical use: (1) Rocket Range, (2) Rocket Range Firing Line, (3) Carolina Road, and (4) Remaining Lands.

The Rocket Range Firing Line MRS comprises 5.6 acres of land. The MRS is located northwest of Greenway Road and Wood Road and was used as the firing line associated with the rocket range. Munitions items discovered within the MRS are attributed to burial activities and are classified discarded military munitions (DMM). Material documented as safe (MDAS) items discovered within the MRS include 2.36-inch (in.) practice rockets. A 2.36-in. practice rocket with a live motor was identified as material documented as an explosive hazard (MDEH).

An RI and FS were completed in May 2018 and August 2022, respectively. A draft Proposed Plan was delivered to the regulatory agencies in October 2022. The EPA has invoked a dispute resolution since they (and the state) do not agree with the proposed remedy of groundwater monitoring, annual MEC sweeps, and land use controls. The regulatory agencies are pressing for a full MEC removal at the Rocket Range MRS which impacts a final remedy for the entire Old K Range MRA.

MMR-004-R-04_REMAINING LANDS

HQAES ID: 25175.1014

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 7/4/2024

RC Date: 7/4/2024

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	3/4/2003	9/24/2003
SI	9/15/2014	10/15/2016
RI/FS	12/15/2015	3/30/2024
RD	- -	- -
IRA	12/15/2015	10/15/2016
RA(C)	1/15/2020	7/4/2024
RA(O)	- -	- -
LTM	7/4/2024	7/4/2054

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the ARNG MMRP sites are being performed by the Air Force and funded by the ARNG. The 149.4-acre Old K Range MRA is contained within the northern portion of JBCC originally leased from the Commonwealth of Massachusetts to the Army in 1940. The U.S. Coast Guard (USCG) is the current tenant and has been leasing the property from the Commonwealth of Massachusetts for use as a Communication Station since 1976. The MRA was used for training by the Massachusetts Army National Guard (MAARNG) in the 1940s and 1950s as a moving target rifle range and a rocket range. The MRA has been divided into four MRSs based on its historical use: (1) Rocket Range, (2) Rocket Range Firing Line, (3) Carolina Road, and (4) Remaining Lands.

The Remaining Lands MRS comprises 57.9 acres and includes the Former Rifle Range fan. The MRS was historically used as a small arms range during the 1940s and 1950s with the Remaining Lands occupying territory within the Old K Range munitions response area (MRA) with no indication of use or impacts from training or storage of munitions. No material documented as an explosive hazard (MDEH) was discovered within the MRS.

An RI and FS were completed in May 2018 and August 2022, respectively. A draft Proposed Plan was delivered to the regulatory agencies in October 2022. The EPA has invoked a dispute resolution since they (and the state) do not agree with the proposed remedy of groundwater monitoring, annual MEC sweeps, and land use controls. The regulatory agencies are pressing for a full MEC removal at the Rocket Range MRS which impacts a final remedy for the entire Old K Range MRA.

MMR-003-R-02_NON_DOD PROPERTY

HQAES ID: 25175.1015

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 12/31/2023

RC Date: 12/31/2023

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	3/4/2003	9/24/2003
SI	9/15/2014	10/15/2016
RI/FS	7/15/2016	12/31/2023
RD	- -	- -
IRA	- -	- -
RA(C)	- -	- -
RA(O)	- -	- -
LTM	- -	- -

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the ARNG MMRP sites are being performed by the Air Force and funded by the ARNG. The CTT Range Inventory Report identified the Old Grenade Courts as an MRA covering approximately 39 acres (now defined as a 72.3 acre MRA). The site is located north of Kittredge Road and primarily to the west of, though spanning, Generals Boulevard. The Old Grenade Courts were used in the 1940s and possibly into the early 1950s for practice in the handling and throwing of live and dummy hand grenades. Initial investigations (CSE Phase I and II) did not identify MEC or MD at the MRA. The CSE Phase II recommended dividing the Old Grenade Courts into 2 MRSs (DoD Property and Non-DoD Property). An FY21 project was funded to further investigate the 2 MRSs with the goal of reaching NFRAP in order to support the ARNG's plan to transfer a large portion of the Old Grenade Courts property to MA Fisheries and Wildlife as mitigation for the proposed Machine Gun Range (elsewhere on JBCC). The additional investigation of the entire 20.4-acre Non-DoD Property MRS was conducted as a supplement to the CSE Ph II. Although some MDAS items were discovered, no MEC or MDEH were found at the Non-DoD Property MRS. Based on a review of the surface and subsurface data and historical use of the MRS for grenade training at the site, it was determined that there is no source of MEC associated with the grenade courts at the Non-DoD Property MRS. Completion of a NFRAP DD (site closure to UU/UE) has been recommended and is being discussed with the regulatory agencies.

MMR-009-R-02_PISTOL RANGE

HQAES ID: 25175.1016

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 11/15/2026

RC Date: 11/15/2026

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	1/15/2006	12/15/2006
SI	9/15/2014	2/28/2018
RI/FS	10/15/2016	10/15/2024
RD	10/15/2024	2/15/2025
IRA	- -	- -
RA(C)	2/15/2025	11/15/2026
RA(O)	- -	- -
LTM	11/15/2026	12/15/2031

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the ARNG MMRP sites are being performed by the Air Force and funded by the ARNG. The 75-acre Otis Gun Club MRA is primarily an undeveloped, forested area with wetlands and two kettle ponds. The Otis Gun Club was originally constructed in the 1950s by the USAF as a Morale, Welfare, and Recreation activity area operated by the Otis Rod & Gun Club until 1972. In 1975, a newly formed Otis Fish & Game Club began using the small arms range at the MRA. The range was periodically opened and closed during the 1980s and 1990s in response to range safety fan issues and environmental concerns. The site continued to be used for small arms range firing until 2005, when these activities were reportedly suspended by MAARNG. After 2005, when live firing was suspended, the Otis Fish & Game Club members utilized the MRA for an archery range in the northeast portion of the Skeet and Trap Range until their access agreement was terminated in November 2015. The MRA includes three small arms MRSs, the Skeet and Trap Range, Rifle Range, and Pistol Range. A fourth MRS, the NFA Area, is also part of the MRA. The Pistol Range MRS encompasses a 0.17-acre area. Small arms were used at the MRS and evidence of small arms debris (i.e., casings) have been observed during investigations. Detections of MC, particularly lead, have been detected within the MRS. An RI was completed in August 2020 and a draft FS was provided to the regulatory agencies in November 2020. A supplemental RI is underway to more closely evaluate ecological risks and will lead to a revised draft FS.

MMR-009-R-03_RIFLE RANGE

HQAES ID: 25175.1017

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2024

RC Date: 10/15/2024

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	1/15/2006	12/15/2006
SI	9/15/2014	2/28/2018
RI/FS	10/15/2016	10/15/2024
RD	- -	- -
IRA	- -	- -
RA(C)	- -	- -
RA(O)	- -	- -
LTM	- -	- -

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the ARNG MMRP sites are being performed by the Air Force and funded by the ARNG. The 75-acre Otis Gun Club MRA is primarily an undeveloped, forested area with wetlands and two kettle ponds. The Otis Gun Club was originally constructed in the 1950s by the USAF as a Morale, Welfare, and Recreation activity area operated by the Otis Rod & Gun Club until 1972. In 1975, a newly formed Otis Fish & Game Club began using the small arms range at the MRA. The range was periodically opened and closed during the 1980s and 1990s in response to range safety fan issues and environmental concerns. The site continued to be used for small arms range firing until 2005, when these activities were reportedly suspended by MAARNG. After 2005, when live firing was suspended, the Otis Fish & Game Club members utilized the MRA for an archery range in the northeast portion of the Skeet and Trap Range until their access agreement was terminated in November 2015. The MRA includes three small arms MRSs, the Skeet and Trap Range, Rifle Range, and Pistol Range. A fourth MRS, the NFA Area, is also part of the MRA. The Rifle Range MRS encompasses a 0.38-acre area. Small arms were used at the MRS and evidence of small arms debris (i.e., casings) have been observed during investigations. Detections of MC were all below project screening levels and the MRS was designated as NFA in the CSE Ph II report (February 2018). The MRS will be included in the future Otis Gun Club MRA PP/DD to meet closure requirements stipulated in the JBCC Federal Facilities Agreement.

MMR-009-R-04_NFA AREA

HQAES ID: 25175.1018

Alias: None

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2024

RC Date: 10/15/2024

RC Reason: Study Completed, No Cleanup Required

Program: ENV Restoration, Army

Subprogram: MR

Phases	*Start*	*End*
PA	1/15/2006	12/15/2006
SI	9/15/2014	2/28/2018
RI/FS	10/15/2016	10/15/2024
RD	- -	- -
IRA	- -	- -
RA(C)	- -	- -
RA(O)	- -	- -
LTM	- -	- -

Site Narrative

The installation, MTA Camp Edwards, is located on Joint Base Cape Cod (JBCC). Clean-up efforts for the ARNG MMRP sites are being performed by the Air Force and funded by the ARNG. The 75-acre Otis Gun Club MRA is primarily an undeveloped, forested area with wetlands and two kettle ponds. The Otis Gun Club was originally constructed in the 1950s by the USAF as a Morale, Welfare, and Recreation activity area operated by the Otis Rod & Gun Club until 1972. In 1975, a newly formed Otis Fish & Game Club began using the small arms range at the MRA. The range was periodically opened and closed during the 1980s and 1990s in response to range safety fan issues and environmental concerns. The site continued to be used for small arms range firing until 2005, when these activities were reportedly suspended by MAARNG. After 2005, when live firing was suspended, the Otis Fish & Game Club members utilized the MRA for an archery range in the northeast portion of the Skeet and Trap Range until their access agreement was terminated in November 2015. The MRA includes three small arms MRSs, the Skeet and Trap Range, Rifle Range, and Pistol Range. A fourth MRS, the NFA Area, is also part of the MRA. The No Further Action (NFA) Area MRS encompasses a 57.96-acre area. No evidence of historical munitions use for training or storage has been identified in this MRS either historically or during CSE Phase II visual surveys and the MRS was designated as NFA in the CSE Ph II report (February 2018). The MRS will be included in the future Otis Gun Club MRA PP/DD to meet closure requirements stipulated in the JBCC Federal Facilities Agreement.

MTA CAMP EDWARDS

COMPLIANCE CLEANUP SITES

CC01G_Demolition Area 1

HQAES ID: 25175.1023

Alias: DEMO 1

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 6/30/2007

RC Date: 6/15/2041

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	7/31/1997	2/28/1998
SI	2/28/1998	3/31/1999
RI/FS	3/31/1999	11/30/2006
RD	8/31/2005	11/30/2006
IRA	11/30/2002	6/30/2007
RA(C)	7/31/2006	6/15/2007
RA(O)	6/30/2007	6/15/2041
LTM	6/15/2041	6/15/2045

Site Narrative

The approximately 900 by 500-foot (ft) sized Demolition Area 1 is located in the center of the installation and south of the primary Central Impact Area within MTA Camp Edwards. Demolition Area 1 was formerly used for demolition training, as well as disposal of munitions, fireworks, and related items from the mid-1970s until 1997.

Initial investigations of Demolition Area 1 included historic records reviews, site surveys, and a groundwater investigation. The groundwater investigation identified a comingled groundwater plume of 1,3,5-trinitroperhydro-1,3,5-triazine (RDX) and perchlorate located on-base. The RDX plume was estimated to be approximately 3,500 by 300 by 100 ft with a maximum concentration of 370 micrograms per kilogram (µg/L) and the perchlorate plume was estimated to be approximately 9,000 by 1,000 by 100 ft with a maximum concentration of 500 µg/L.

Further investigations of Demolition Area 1 consisted of ground-based geophysical surveys that identified approximately 2,500 magnetic anomalies. Excavation of the largest of these yielded metallic debris, munitions, and six disposal pits containing ash and/or discolored material and munitions. The pits, distributed throughout the source area, were likely sources of groundwater contamination. Testing of approximately 3,900 soil samples found RDX, perchlorate, and other explosive chemicals. The maximum concentrations of RDX and perchlorate detected in soil was 14 milligrams per kilogram (mg/kg) and 0.5 mg/kg, respectively.

In 2004, a Rapid Response Action began for source area removal. An approximate 600 by 450 area was excavated to a maximum bottom depth of 12 ft, removing approximately 17,500 cubic yards of soil. The soil was treated using Low Temperature Thermal Desorption and returned to Demolition Area 1. The excavation also removed approximately 70,000 magnetic anomalies and approximately 200 tons of scrap, munitions, and related items.

As part of the Rapid Response Action, construction and operation of a on-base groundwater treatment system began in September 2004. The groundwater treatment system consisted of two extraction wells (EW), three injection wells (IW), and two mobile treatment units (MTUs).

In 2010, an additional investigation identified an off-base perchlorate plume of approximately 5,000 by 500 ft with a maximum concentration of 14 µg/L and a smaller plume of RDX measuring approximately 500 by 100 feet with a maximum concentration of 1.6 µg/L.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

A summary of remediation that has occurred or is currently in-progress is listed below:

In 2006, a third EW and fourth IW were added to the existing groundwater treatment system.

In 2007, a fifth EW was added and a permanent treatment building was constructed to increase the total flow rate capacity to 906 gpm.

In 2013 and 2019, system optimization studies reduced the total flow rate.

In 2021, an optimization study resulted in shutting-down an MTU (located on Pew Road) and one extraction well (D1-EW-2).

Restoration/Cleanup Strategy: The Decision Document (DD), Addendum No. 2, issued in September 2013 required implementation of the following response actions:

"Continued operation of the current [on-base] extraction and treatment system consisting of six extraction wells operating at 665 gpm, one permanent treatment facility and two mobile treatment units (MTUs)"

"Installation of one new off-base extraction well west of Lily Pond operating at 100 gpm, one off-base MTU, and a new infiltration trench"

"Long-term groundwater monitoring at existing and new monitoring wells to verify that groundwater is being restored as predicted and to ensure that any remaining contamination remains below risk-based levels"

"Implementation and verification of Land Use Controls to prevent use of contaminated portions of the aquifer for drinking water until contamination is reduced to below risk-based levels and to prevent actions that would interfere with the remedy"

"Five year reviews to determine if the groundwater treatment system is still protective and achieving the goals established and to determine if source response actions continue to protect groundwater"

Following LTM, a site closeout document will be prepared and submitted to the Massachusetts Department of Environmental Protection (MassDEP) and USEPA. Once approval is received, the treatment system will be decommissioned and all wells will be abandoned. LUCs prohibiting the use of drinking water wells within Demolition Area 1 will be required until numerical cleanup levels are reached.

CC02G_Demolition Area 2

HQAES ID: 25175.1026

Alias: DEMO 2

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 4/30/2010

RC Date: 4/15/2018

RC Reason: All Required Cleanup(s) Completed

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	7/31/1997	2/28/1998
SI	2/28/1998	7/31/2002
RI/FS	7/31/2002	4/30/2010
RD	4/30/2010	4/30/2010
IRA	5/31/2004	9/30/2005
RA(C)	4/30/2010	4/30/2010
RA(O)	4/30/2010	4/15/2018
LTM	4/15/2018	6/15/2028

Site Narrative

The approximately 2,300 by 300-foot (ft) sized Demolition Area 2 is located in the north-central portion of the installation within MTA Camp Edwards. Demolition Area 2 was formerly used from the late 1970s to the late 1980s for light demolition training using C-4 and TNT charges of less than 10 pounds each.

Initial investigations of Demolition Area 2 included historic records reviews, site surveys, and sampling of over 20 monitoring wells. Data from these wells indicated an approximately 1,000 by 300 ft groundwater plume of 1,3,5-trinitroperhydro-1,3,5-triazine (RDX) with a maximum concentration of approximately 6 micrograms per kilogram (µg/L). Additionally, the investigations tested soil samples from approximately 40 locations in and around the potential source area identifying explosives chemicals including RDX at a maximum concentration of 2 milligrams per kilogram (mg/kg).

In 2004, a Rapid Response Action began for source area removal, in which 30 cubic yards of soil was removed. There are no nearby down gradient public water supplies.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

Restoration/Cleanup Strategy: The Decision Document (DD), Addendum No. 1, issued in September 2015 required implementation of the following response actions:

"…Monitored Natural Attenuation and Land Use Controls, continues to be the appropriate remedy for the site…"

"Five year reviews will continue as part of base-wide future evaluation"

CC04S_Training Areas

HQAES ID: 25175.1029

Alias: CC04

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 3/31/2012

RC Date: 3/31/2012

RC Reason: All Required Cleanup(s) Completed

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	7/31/1998	2/28/1999
SI	2/28/1999	1/31/2002
RI/FS	9/30/2005	3/31/2012
RD	- -	- -
IRA	- -	- -
RA(C)	- -	- -
RA(O)	- -	- -
LTM	8/15/2017	10/15/2024

Site Narrative

The Training Areas include training ranges, maneuver areas and bivouac areas located throughout MTA Camp Edwards. The Training Areas formerly used smoke and pyrotechnic devices and munitions.

Initial investigations included historic records reviews, site surveys, and testing of over 500 soil samples, which identified perchlorate and other explosive chemicals as well as lead and other metals in soil. Investigations concluded that munitions/pyrotechnic were minimally used and soil impacts are not widespread. Additionally, investigations concluded that groundwater beneath the Training Areas are not significantly impacted by past training activities.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

Restoration/Cleanup Strategy: The Decision Document (DD) issued in February 2019 specifies no further action.

CC05G_Central Impact Area

HQAES ID: 25175.1032

Alias: CIA

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 9/15/2042

RC Date: 10/15/2067

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	12/31/1996	7/31/1997
SI	7/31/1997	7/31/1998
RI/FS	7/31/1998	2/15/2012
RD	1/31/2011	6/15/2013
IRA	3/31/2009	10/31/2018
RA(C)	6/15/2014	9/15/2042
RA(O)	9/15/2041	10/15/2067
LTM	10/15/2067	10/15/2071

Site Narrative

The 330-acre Central Impact Area (CIA) is located within MTA Camp Edwards near the center of the installation and was formerly used as the primary target area for artillery, mortar, and other firing activities from the early 1900s until firing ceased in 1997.

Initial investigations of the CIA, including historic records reviews and site surveys, identified 49 mortar/artillery targets and numerous magnetic anomalies that could be unexploded ordnance (UXO) or low order munitions (munitions that failed to function completely). These targets and anomalies identified throughout the CIA are considered potential sources of groundwater contamination. Further investigations of the CIA consisted of testing over 2,000 soil samples at approximately 300 locations. Chemicals detected in soil samples included 1,3,5-trinitroperhydro-1,3,5-triazine (RDX), 1,3,5,7-tetranitro-1,3,5,7-tetrazocane (HMX), pentaerythritol tetranitrate (PETN), perchlorate, 2-methyl-1,3,5-trinitrobenzene (TNT), 2,3-dinitrotoluene (2A-DNT), and 4-amino-2,6-dinitrotoluene (4A-DNT). RDX was a prominent chemical detected at concentrations up to 16 milligrams per kilogram (mg/kg) in soil at 35 targets. Additionally, perchlorate was also a prominent chemical found at concentrations up to 42 mg/kg. Sampling groundwater from monitoring wells identified a comingled groundwater plume of RDX and perchlorate, with detections up to approximately 40 micrograms per kilogram (µg/L) and 4 µg/L, respectively. While the chemicals are comingled, the RDX plume is more extensive, extending approximately 120 feet into the aquifer and over an area approximately 13,000 feet by 6,000 feet. The plume extends to the northwest, toward the installation's boundary with the Town of Bourne. There are no nearby downgradient public water supplies or private drinking water wells.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

A summary of additional remediation that has occurred or is currently in-progress is listed below:

- Phase I UXO clearance of 30 acres occurred between 2013 and 2015.
- Phase II UXO clearance of 20 plus an additional 8 acres occurred in 2017.
- Phase III UXO clearance of 35 acres occurred between 2018 and 2022.
- Phase IV (Area 1) UXO clearance of approximately 7 acres occurred in 2021.
- Phase IV (Area 1) UXO clearance of approximately 8 acres occurred in 2022.
- Phase IV (Area 2) UXO clearance of approximately 8.5 acres occurred in 2022.
- Phase IV (Area 2) UXO clearance of approximately 1.5 acres initiated in 2022 will be completed in 2023.
- Phase IV (Area 3) (15 acres) and Area 4 (10 acres) UXO clearance of approximately 25 acres was initiated in 2023.
- Based on the Draft 2022 Source Removal Annual Report, dated February 2023, a combined total of 2,095 high explosive (HE) containing UXO items were recovered and destroyed during Phase 1, Phase II, Phase III, and Phase IV (Areas 1 and 2).
- A two-extraction well (EW) pump and treat system was constructed along Burgoyne Road in 2015. A third EW and treatment system was constructed at the leading edge of the RDX plume along Avery Road in 2016. The current groundwater treatment system consists of three EWs, three mobile treatment unit (MTUs), and three infiltration galleries.
- Five Year Review Reports were completed in 2012, 2017, and in 2022 (pending final regulatory agency approval). The next Five-Year Review Report is due in 2027.

Restoration/Cleanup Strategy: The Decision Document (DD) issued in March 2012 required implementation of the following response actions:

- *"The development and implementation of a Long-Term Source Area Response Plan to address the estimated 4,000 to 9,000 munitions items and related soil contamination located throughout the CIA. The plan will be developed by EPA, the Army, the National Guard Bureau (NGB), and Massachusetts Department of Environmental Protection (MassDEP) and will be implemented by the Army/NGB in a phased approach. The first phase will consist of UXO clearance of an additional 30 acres of the CIA over a three-year period followed by a second phase consisting of UXO clearance of an additional 28 acres of the CIA. The development and implementation of additional phases, if necessary, will be based on the results of these first two phases. The Army/NGB will prepare Work Plans for each phase of the removal, which will be submitted to EPA and MassDEP for review. These Work Plans shall be approved by EPA, in consultation with MassDEP. The plans for the first two phases will employ techniques to minimize habitat destruction while maximizing the reduction of UXO with a goal to remove 75% to 95% of the UXO within the fifty acres covered by the first two phases."*
- *"A 550 gallons per minute (gpm) pump and treat system consisting of three extraction wells to contain groundwater with concentrations of hexahydro- 1,3,5- trinitro-1,3,5-triazine (RDX) greater than 2 parts per billion (ppb) at Burgoyne Road which will use the Demolition Area 1 treatment system and injection wells."*
- *"Development and implementation of a long-term monitoring (LTM) program to verify that the groundwater is being restored as predicted and to determine if additional source removal work is needed."*
- *"Implementation of land use controls (LUCs) to prevent access to and use of the contaminated portions of the aquifer for drinking water and maintain the integrity of any current or future groundwater monitoring wells and treatment systems."*
- *"Five year reviews to determine if the groundwater treatment system is still protective and achieving the goals established, to determine if additional or more expedited source response actions are necessary to protect groundwater and to determine if improved technologies are available."*

Following LTM, a site closeout document will be prepared and submitted to MassDEP and EPA. Once approval is received, the treatment systems will be decommissioned and all wells will be abandoned. LUCs prohibiting the use of drinking water wells within the CIA will be required until cleanup levels are reached.

CC06G_Northwest Corner Groundwater

HQAES ID: 25175.1033

Alias: CC06

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 4/30/2010

RC Date: 4/30/2018

RC Reason: All Required Cleanup(s) Completed

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	12/31/2002	7/31/2003
SI	7/31/2003	1/31/2004
RI/FS	1/31/2004	4/30/2010
RD	- -	- -
IRA	- -	- -
RA(C)	4/30/2010	4/30/2010
RA(O)	4/30/2010	4/30/2018
LTM	4/30/2018	10/15/2024

Site Narrative

The Northwest Corner (NWC) encompasses portions of the B-9 and B-11 Training Areas located within MTA Camp Edwards. The NWC was formerly used for artillery training and pyrotechnics.

Initial investigations of NWC included historic record reviews, geophysical surveys, testing groundwater and approximately 250 soil samples. The investigation identified a perchlorate plume with a maximum concentration of 24 micrograms per kilogram (µg/L) that extended into the aquifer approximately 60 feet (ft) below ground surface (bgs). An approximate 3,000 by 150 ft 1,3,5-trinitroperhydro-1,3,5-triazine (RDX) plume with a maximum concentration of 15 µg/L was found to generally underflow the perchlorate plume. The investigation also found low-level concentrations of RDX in a community water supply well and perchlorate in a private well located outside the installation boundary near the NWC. Residences in the immediate area are connected to a municipal water source and do not use groundwater for drinking.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

Restoration/Cleanup Strategy: The Decision Document (DD) for Western Boundary, Demolition Area 2, and Northwest Corner issued in March 2010 required implementation of the following response actions:

"Development and implementation of a long-term monitoring program that would be optimized yearly, as contamination levels are reduced through natural processes,"

"Implementation of land use controls to prevent access to and use of the contaminated portions of the aquifer for drinking water,"

"Monitoring reports to verify actual versus predicted migration and attenuation (i.e., confirmation that cleanup levels have been achieved),"

“Site closeout documentation,”

“Well abandonment after monitoring is complete”

CC09G_J-1 Range

HQAES ID: 25175.1038

Alias: J-1 GW

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 9/15/2013

RC Date: 6/15/2052

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	7/31/1997	2/28/1998
SI	2/28/1998	8/31/2000
RI/FS	8/31/2000	3/31/2011
RD	3/31/2011	6/30/2012
IRA	10/31/2006	6/30/2013
RA(C)	6/30/2011	6/30/2013
RA(O)	9/15/2013	6/15/2052
LTM	6/15/2052	6/15/2056

Site Narrative

The approximately 600 by 7,000 foot (ft) sized J-1 Range is located in the southeastern portion of the installation. The J-1 Range was formerly used as an anti-tank range and transition range for small arms fire beginning in the 1940s. From 1957 to the late 1990s, it was leased to various DoD contractors who conducted munitions testing. Contractor activities included burial and burning of munitions and excess energetic materials.

Initial investigations included historic records reviews, witness interviews, and groundwater sampling of approximately 100 monitoring wells. Two groundwater plumes were identified: an approximate 6,000 by 1,100 ft sized northern plume and 1,700 by 700 ft sized southern plume. The northern plume contained ,3,5-trinitroperhydro-1,3,5-triazine (RDX) concentrations up to 32 micrograms per kilogram (µg/L) and perchlorate up to 33 µg/L, while the southern plume contained RDX at concentrations up to 120 µg/L. The northern plume appears to be migrating northwest towards the center of the installation. The southern plume appears to be migrating to the southeast towards the base boundary; however, residences in the immediate area are connected to a municipal water source and do not use groundwater for drinking.

In 2007, a Rapid Response Action began consisting of construction and operation of a groundwater treatment system. The groundwater treatment system includes one extraction well (EW), one infiltration trench (IT), and a mobile treatment unit (MTU), which began operation in 2007. In 2010, a source removal action was conducted that removed 325 cubic yards of explosives contaminated soil.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

A summary of remediation that has occurred or is currently in-progress is listed below:

In 2012, a second EW was added to the existing groundwater treatment system addressing the southern plume treating a total of 375 gpm.

In 2013, a northern plume groundwater treatment system was built consisting of two EWs treating a total of 250 gpm.

Restoration/Cleanup Strategy: The Decision Document (DD) issued in May 2011 required implementation of the following response actions:

Groundwater treatment systems consisting of "a 250 gallon per minute (gpm) pump and treat system containing two extraction wells and two mobile treatment units (MTUs)" and "a 125 gpm pump and treat system containing two extraction wells and one MTU";

"Development and implementation of a long-term monitoring program that would be optimized as required, as contamination levels are reduced";

"Implementation of land use controls to prevent access to and use of the contaminated portions of the aquifer for drinking water, and maintain the integrity of any current or future groundwater monitoring systems;"

"Monitoring to verify actual versus predicted migration and attenuation (i.e., confirmation that cleanup levels have been achieved and to demonstrate that the source removal is adequate);"

"Site closeout documentation;" and,

"Well abandonment after monitoring is complete."

Following LTM, a site closeout document will be prepared and submitted to the MassDEP and USEPA. Once approval is received, the treatment system will be decommissioned and all wells will be abandoned. LUCs prohibiting the use of drinking water wells within the J1 Range will be required until numerical cleanup levels are reached.

CC10G_J-2 Range

HQAES ID: 25175.1040

Alias: J-2

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 3/15/2012

RC Date: 9/15/2035

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	7/31/1997	2/28/1998
SI	2/28/1998	8/31/2000
RI/FS	8/31/2000	3/15/2012
RD	- -	- -
IRA	7/31/2003	3/15/2012
RA(C)	3/31/2010	3/15/2012
RA(O)	9/30/2011	9/15/2035
LTM	9/15/2035	9/15/2039

Site Narrative

The J-2 Range was used in the 1940s as a firing and transition range for small arms fire. From 1953 to the late 1980s, it was used by various Army contractors for munitions testing and other activities including burial and burning of munitions, excess energetic materials, and other materials.

Initial investigations included historic records reviews, witness interviews, magnetometry and geophysical surveys, and soil sampling. Soil sampling identified 3,5-trinitroperhydro-1,3,5-triazine (RDX), perchlorate, and other explosive compounds in soil. Geophysical investigations found and removed burn and burial areas containing over 17,000 munitions items and identified over 30 potential source areas. Initial investigations also included groundwater sampling of over 200 monitoring wells. Two groundwater plumes were identified: an approximate 5,800 by 1,500 by 130 foot (ft) sized northern plume and a 4,600 by 2,200 by 140 ft sized eastern plume. The northern plume contained RDX and perchlorate at concentrations up to 11 micrograms per kilogram (µg/L) and 149 µg/L, respectively, while the eastern plume contained RDX and perchlorate at concentrations up to 10 µg/L and 50 µg/L, respectively. The northern plume appears to be migrating towards a public water supply. The eastern plume appears to be migrating along the eastern boundary of the installation.

In 2004, a source removal action excavated and treated approximately 5,600 cubic yards (cy) of explosives and perchlorate impacted soil. More than 39,000 metallic objects were also investigated and removed. In 2010, another source removal action excavated and treated 1,100 cy of explosives impacted soil.

In 2006, a Rapid Response Action (RRA) to address the northern plume consisted of a 475 gallons-per-minute (gpm) pump and treat system with three extraction wells (EW) and four injection trenches (IT). In 2008, An RRA to address the eastern plume consisted of a 495-gpm pump and treat system with three EWs and two ITs.

The current J-2 Range Northern and Eastern groundwater treatment systems consist of six EWs and six ITs.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

Restoration/Cleanup Strategy: The Decision Document (DD) issued in September 2013 required implementation of the following response actions:
"Extraction and treatment of groundwater…"

"A contingency for additional active treatment in the area of Gibbs Road on Camp Edwards, and modifying the system to optimize the system performance to ensure protection of the Upper Cape Water Supply…"

"An investigation including soil sampling and removal of additional geophysical anomalies in select J areas of the range to verify source removal is complete…"

"Long-term groundwater monitoring at existing and new monitoring wells to verify the effectiveness of the source response action; to ensure that groundwater modeling predictions regarding the reduction and migration of contamination are valid; and to ensure that any remaining contamination remains below risk-based levels".

"Implementation and verification of Land Use Controls to prevent use of contaminated portions of the aquifer for drinking water until contamination is reduced to below risk-based levels and to prevent actions that would interfere with the remedy."

"Five year reviews to determine if the groundwater treatment system is still protective and achieving the goals established and to determine if source response actions continue to protect groundwater."

Following LTM, a site closeout document will be prepared and submitted to the MassDEP and USEPA. Once approval is received, the treatment system will be decommissioned and all wells will be abandoned. LUCs prohibiting the use of drinking water wells within the J2 Range will be required until numerical cleanup levels are reached.

CC12G_L Range

HQAES ID: 25175.1048

Alias: L RANGE

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 9/15/2018

RC Date: 10/15/2021

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	7/31/1997	2/28/1998
SI	2/28/1998	8/31/2000
RI/FS	8/31/2000	8/31/2010
RD	3/31/2010	8/31/2010
IRA	1/31/2009	10/31/2010
RA(C)	3/31/2010	8/31/2010
RA(O)	9/15/2018	10/15/2021
LTM	10/15/2021	10/15/2032

Site Narrative

The approximately 600 by 1,500-foot (ft) sized L-Range is located within MTA Camp Edwards approximately 600 ft west of the installation's southeastern boundary with the town of Sandwich. The L Range was developed in the 1940s and formerly used until the mid-1990s as an Infantry course. From the mid-1970s to the late 1980s, L Range was used as a grenade launcher familiarization range.

Initial investigations of L Range included historic record reviews and witness interviews that helped identify potential source areas. Monitoring well sampling results identified an approximately 1,000 by 800 ft groundwater plume consisting of 1,3,5-trinitroperhydro-1,3,5-triazine (RDX), perchlorate, and other explosives chemicals. The highest detection of RDX in the L Range plume was approximately 9 micrograms per kilogram (µg/L) and the highest detection of perchlorate was approximately 3 µg/L. The plume appears to be detached from its source and concentrations are decreasing as the plume migrates to the south. No public water supplies are located in the area.

In 2009 and 2010, a source area removal action removed approximately 2,700 cubic yards of soil and treated it on site using alkaline hydrolysis.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

Restoration/Cleanup Strategy: The Decision Document (DD) issued in September 2010 required implementation of the following response actions:
"Development and implementation of a long-term monitoring program that would be optimized as required, as contamination levels are reduced through natural processes;"

“Implementation of land-use controls to prevent access to and use of the contaminated portions of the aquifer for drinking water, and maintain the integrity of any current or future groundwater monitoring systems;”

“Monitoring to verify actual versus predicted migration and attenuation (i.e., confirmation that cleanup levels have been achieved and to demonstrate that the source removal is adequate);”

“Site closeout documentation;”

“Well abandonment after monitoring is complete.”

CC16_Small Arms Ranges

HQAES ID: 25175.1049

Alias: SMALLARMS

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/31/2011

RC Date: 10/31/2011

RC Reason: All Required Cleanup(s) Completed

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	1/31/1998	6/30/1999
SI	8/31/2001	7/31/2002
RI/FS	12/31/2004	10/31/2011
RD	- -	- -
IRA	1/31/1998	10/31/2010
RA(C)	- -	- -
RA(O)	- -	- -
LTM	10/15/2018	9/15/2035

Site Narrative

The Small Arms Ranges consists of 34 current and former small arms ranges located within MTA Camp Edwards around the Central Impact Area. The Small Arms Ranges were used at various times since the 1940s for training in small arms firing. Ranges include firing points and target areas with earthen berms used to capture fired rounds. The main concern at the Small Arms Ranges were lead from the berms potentially leaching into the soil and groundwater, as well as contamination from propellant residue at the firing points.

Initial investigations of the Small Arms Ranges included historic records reviews, site surveys, magnetometer surveys, and testing of groundwater and over 1,200 soil samples. Lead and nitroglycerin were found in either the berms or at the firing line at 17 ranges with maximum concentrations of 10,100 milligrams per kilogram (mg/kg) and 73 mg/kg, respectively. Identified chemicals in groundwater of concern was limited to elevated concentrations of tungsten in one well at B Range.

In 1999, a source area removal action removed approximately 60 tons of lead bullets and fragments from the berms at 16 of the 34 small arms ranges. In 2009, approximately 4,000 cubic yards (cy) of soil was removed from berm areas of Former B, D and M2.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

Restoration/Cleanup Strategy: The Decision Document (DD) issued in September 2015 required implementation of the following response actions:
"…long-term groundwater monitoring with land use controls to protect monitoring wells and other environmental sampling equipment…"

"…limited soil sampling, and soil removal at certain ranges is protective of human health and the environment"

CC11G_J-3 Range

HQAES ID: 25175.1051

Alias: J-3

Regulatory Driver: Safe Water Drinking Act

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/15/2018

RC Date: 12/15/2037

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	7/31/1997	2/28/1998
SI	2/28/1998	8/31/2000
RI/FS	8/31/2000	6/15/2014
RD	1/15/2013	10/15/2016
IRA	6/30/2003	2/28/2011
RA(C)	1/15/2013	10/15/2016
RA(O)	10/15/2018	12/15/2037
LTM	12/15/2037	12/15/2041

Site Narrative

The approximately 300 by 3,000 foot (ft) sized J-3 Range is located near the southeastern boundary of MTA Camp Edwards with the Town of Sandwich. The J-3 Range was used as a mortar range starting in the 1940s. Two World War II era mortar/rocket impact areas lie within the range. From 1968 through 1997, J-3 Range was used by Army contractors as a test range to develop and test weapons systems. Contractor activities included burial and burning of munitions, excess energetic materials, and other materials. Release of wastewater containing explosives and other contaminants to subsurface drywells and leaching structures also occurred.

Initial investigations included historic records reviews, witness interviews, and soil sampling at over 2,000 locations. Soil sampling identified 3,5-trinitroperhydro-1,3,5-triazine (RDX), perchlorate, and other explosive compounds in soil near former detonation pits, a former burn box, and several other former J-3 Range features. RDX and perchlorate were identified at maximum concentrations of 1 milligrams per kilogram (mg/kg) and 2.3 mg/kg, respectively. Initial investigations also included groundwater sampling of over 170 monitoring wells. Sampling results indicated an approximate 3,750 by 1,100 ft sized groundwater plume of RDX and perchlorate extending southeast that was up to 135 ft deep in the aquifer. The J-3 Range plume extends beyond the southeastern boundary of MTA Camp Edwards into the Town of Sandwich near Snake Pond, a town recreation area. The plume contained RDX and perchlorate at concentrations up to 35 micrograms per kilogram (µg/L) and 770 µg/L, respectively. Surface water samples taken at Snack Pond did not contain RDX, perchlorate, and other explosive compounds. Residences in the immediate area are connected to a municipal water source and do not use groundwater for drinking.

In 2004, a source removal action excavated and treated approximately 2,500 cubic yards (cy) of explosives impacted soil.

In 2006, a Rapid Response Action (RRA) to address the plume consisted of a 175 gallons-per-minute (gpm) pump and treat system with three extraction wells (EW) and using an existing treatment system housed in the Installation Restoration Program Fuel Spill 12 (FS-12) treatment building and associated re-injection well network. In 2007, the pumping rate was increased from 175 to 195 gpm as part of system optimization.

Remediation is required by U.S. Environmental Protection Agency (USEPA) Region 1 Administrative Orders under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a), and Section 7003 of the Resource Recovery and Conservation Act, 42 U.S.C. § 6973.

A summary of remediation that has occurred or is currently in-progress is listed below:

- Soil investigation and source area removal completed in 2006 RRA.
- In 2016, a fourth EW was built of 60 gpm that increased the total flow rate of the groundwater treatment system to 255 gpm.

Restoration/Cleanup Strategy: The Decision Document (DD) issued in September 2015 (**Enclosure B**) required implementation of the following response actions:

"An investigation including soil sampling and removal of additional geophysical anomalies..."

"Extraction and treatment of groundwater…"

"Long-term groundwater monitoring…"

"Implementation and verification of LUCs…"

"Five year reviews…"

Following LTM, a site closeout document will be prepared and submitted to the MassDEP and USEPA. Once approval is received, the treatment system will be decommissioned and all wells will be abandoned. LUCs prohibiting the use of drinking water wells within the J-3 Range will be required until numerical cleanup levels are reached.

SITE CLOSEOUT SUMMARY

HQAES ID	Site Name	Site Closeout Date	Program Code
25175.1001	MMR-007-R-01_STABLES AREA	6/15/2010	ENV Restoration, Army
25175.1002	MMR-005-R-01_OTIS TARGET BUTT	6/30/2010	ENV Restoration, Army
25175.1005	MMR-002-R-01_OLD G RANGE	6/30/2010	ENV Restoration, Army
25175.1007	MMR-006-R-01_SMALL ARMS RANGE	6/30/2010	ENV Restoration, Army
25175.1024	CC01S_Demolition Area 1 Soil	9/30/2009	Compliance Cleanup
25175.1025	CC02S_Demolition Area 2 Soil	10/31/2009	Compliance Cleanup
25175.1027	CC03S_Gun and Mortar Positions	6/30/2011	Compliance Cleanup
25175.1028	CC03G_Gun and Mortar Positions Groundwater	1/31/2001	Compliance Cleanup
25175.1030	CC04G_Phase IIB Groundwater	3/31/2003	Compliance Cleanup
25175.1031	CC05S_Central Impact Area Soil	9/30/2012	Compliance Cleanup
25175.1034	CC07G_Western Boundary	4/30/2010	Compliance Cleanup
25175.1035	CC08S_Former A Range Soil	7/31/2002	Compliance Cleanup
25175.1036	CC08G_Former A Range	6/30/2011	Compliance Cleanup
25175.1037	CC09S_J-1 Range Soil	6/30/2010	Compliance Cleanup
25175.1039	CC10S_J-2 Range Soil	9/30/2010	Compliance Cleanup
25175.1041	CC11S_J-3 Range Soil	9/30/2010	Compliance Cleanup
25175.1042	CCS11G_J-3 Range Groundwater	8/31/2000	Compliance Cleanup
25175.1043	CC12S_L Range Soil	4/30/2010	Compliance Cleanup
25175.1044	CC13S_Former K Range	6/30/2011	Compliance Cleanup
25175.1045	CC14GW_Long Term Monitoring Program	7/31/1997	Compliance Cleanup
25175.1046	CC15WASA_Wide-Area Source Assessment	9/30/2010	Compliance Cleanup
25175.1047	CCCE081103_AST Fuel Spill 08/11/03	10/31/2005	Compliance Cleanup
25175.1050	CC17_BA-4 Disposal Area	9/30/2009	Compliance Cleanup

COMMUNITY INVOLVEMENT

Technical Review Committee (TRC) Establishment Date:	N/A
Community Involvement Plan (Date Published):	06/2011
Restoration Advisory Board (RAB) Establishment Date:	None. Installation or tenant activity is supported by another RAB.
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Additional Community Involvement:	The Massachusetts Army National Guard does not have a formal RAB at Camp Edwards; however, the Joint Base Cape Cod Cleanup Team serves as the community advisory board.
Administrative Record is located at:	The Massachusetts Army National Guard Environmental and Readiness Center Building 1204, West Inner Camp Edwards, MA 02542-5003
Information Repository is located at:	The Massachusetts Army National Guard Environmental and Readiness Center Building 1204, West Inner Camp Edwards, MA 02542-5003
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Review Summary Table

Status	Start Date	End Date	End FY
COMPLETE	3/1/2017	9/1/2017	2017
FUTURE	3/1/2023	9/1/2023	2023

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

Associated ROD/DD Name	HQAES ID
DEMOLITION AREA 1 OFF BASE	25175.1008

Results, Actions & Plans

None

LAND USE CONTROLS (LUC) SUMMARY

ROD/DD	LUC Title	HQAES ID
CENTRAL IMPACT AREA	CENTRAL IMPACT AREA	25175.1032

NIKE 19 TS REHOBOTH

Army Cleanup Program

Installation Action Plan

2023

CONTENTS

ACRONYMS

Acronym	Definition
AEDB-R	Army Environmental Database - Restoration
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
DD	Decision Document
ENV	Environmental
FS	Feasibility Study
HQAES	Headquarters Army Environmental System
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
LUC	Land Use Control
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
PA	Preliminary Assessment
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
UST	Underground Storage Tank
WBS	Work Breakdown Structure

PHASE TRANSLATION TABLE

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

SITE ALIAS LIST

HQAES ID	AEDB-R Reference	Site Alias
3640A.1001	CC-REHGW01_Rehoboth Phase V (MNA)	MAC5504001

NIKE 19 TS REHOBOTH

COMPLIANCE CLEANUP SITES

CC-REHGW01_Rehoboth Phase V (MNA)

HQAES ID: 3640A.1001

Alias: MAC5504001

Regulatory Driver: CERCLA

RRSE: Not assigned

MRSPP: Not assigned

RIP Date: 10/31/2004

RC Date: 8/15/2040

RC Reason: Not assigned

Program: Compliance Cleanup

Subprogram: CC

Phases	*Start*	*End*
PA	11/30/1996	11/30/1996
SI	11/30/1996	11/30/1996
RI/FS	4/30/1999	10/31/2003
RD	10/31/2003	7/31/2004
IRA	3/31/2004	3/31/2004
RA(C)	1/31/2001	9/30/2004
RA(O)	10/31/2004	8/15/2040
LTM	- -	- -

Site Narrative

The site was first listed under the Massachusetts Contingency Plan (MCP) in November 1996 when Massachusetts Army National Guard (MAARNG) received a Notice of Responsibility (NOR) from the Massachusetts Department of Environmental Protection (MASSDEP). The NOR was issued based on findings of a US Army Center for Health Promotion and Preventive Medicine site investigation in the fall of 1995. As a result, MASSDEP issued five Release Tracking Numbers (RTNs) for the site. In March 1996, four Limited Removal Actions were completed to remove impacted soils exceeding MCP reportable concentrations. These actions closed three of the five RTNs.
The two remaining RTNs are: RTN 4-12548, which pertains to groundwater contamination consisting predominantly of tetrachloroethylene (PCE) found in monitoring well-3 at an initial concentration of approximately 110 microgram per liter (ug/L); and RTN 4-12550 that pertained to PCE soil contamination at an initial concentration of 4.8 parts per million (ppm), associated with a former Hazardous Materials Storage Shed.

On November 26, 1997, a Phase I Environmental Site Investigation Report was completed that included a Numerical Ranking System score sheet and Tier Classification submittal that classified the site as Tier II (medium risk). A Phase II Comprehensive Site Assessment (Phase II) was completed in March 1998, but was found to be deficient in meeting the requirements of the MCP by MAARNG. A subsequent Phase II was completed in October 1998.

Soil and groundwater sampling, ongoing since 1999, defined the source and extent of the PCE plume. The investigation identified two potential sources for the PCE in site groundwater: the former hazardous materials storage shed, and a catch basin located adjacent to a former paint shed.

A Release Abatement Measure (RAM) completed in March 2000 removed 82 cubic yards of contaminated soil in the vicinity of the hazardous materials storage shed. A Class A Response Action Outcome Statement was filed with MASSDEP in March 2000 to close out RTN 4-12550. In 2001 a RAM

was performed to remove contaminated sediment from within the catch basin next to the former paint shed and contaminated soil from below an associated outfall on the eastern property boundary. Soil contamination associated with the catch basin outfall was more extensive than had initially been anticipated, and was found to extend off-property, beyond the existing groundwater monitoring network. A RAM Completion Statement for this work was submitted to MASSDEP in February 2002. These actions completed the soil remediation.

Due to the unexpected expansion of the soil contamination removal, additional groundwater monitoring wells (MWs) were installed in August 2002, downgradient of the catch basin outfall to evaluate the nature and extent of the off-property migration of the plume. Groundwater monitoring results indicated that a previously unidentified methyl tert butyl ether (MTBE) plume existed downgradient of the MAARNG facility at 219 ug/L. This unexpected finding required that additional off-property wells be installed to define the full extent of the MTBE plume.

Property access and wetland permitting issues delayed installation of the additional monitoring wells needed to define the MTBE plume. A Tier II Permit Extension Request was filed with MASSDEP in November 2002 and was approved by the MASSDEP with the stipulation that all further investigations at the site be completed by November 26, 2003 and an Response Action Outcome filed for RTN 4-12548.

Eleven groundwater microwells were installed across the interpreted downgradient edge of the plume and five additional groundwater monitoring wells were installed to define the extent of the MTBE and PCE plumes. Groundwater sampling results from these new wells showed that the PCE plume naturally attenuated before reaching the wetland area east of the MAARNG Facility, but the MTBE plume discharged to the wetlands. A human health and ecological risk assessment was conducted on August 4, 2003. The risk assessment concluded that a condition of No Substantial Hazard existed at the site; however a condition of No Significant Risk does not exist because concentrations of Volatile Organic Compounds (VOCs) (including PCE and MTBE) in site groundwater exceed drinking water standards of 5 parts per billion (ppb) and local residents rely on groundwater as their drinking water source. The Site Conceptual Model, developed as part of the Phase II activities, concluded that local residential wells would not be impacted by VOCs from the MAARNG Facility, However, as a precaution, sampling of six residential supply wells located downgradient of the plumes was conducted on July 22, 2003. The results of the residential well sampling confirmed that VOCs were not migrating past the wetland area to the residential wells.

A Final Interim Phase II Comprehensive Site Assessment (CSA) Report and a Final Supplemental Phase II CSA Report were submitted to MASSDEP in August 2003. A Phase III Remedial Action Plan (RAP) was submitted to MASSDEP on 24 November 2003. The Phase III RAP concluded that Monitored Natural Attenuation (MNA) was the preferred alternative for this site. Consequently, a Phase IV Remedy Implementation Plan that described the MNA monitoring program was prepared and submitted to MASSDEP on 8 July 2004. The initial sampling round was conducted on 22 July 2004, and a Phase V Groundwater Monitoring Report was submitted to MASSDEP on 15 October 2004. Quarterly monitoring was conducted until October 2006. Results from the initial groundwater sampling round show a sharp decline in peak contaminant concentrations at the site, suggesting that this remedy may be effective at reaching the remediation goals.

Semi-annual groundwater sampling was conducted through October 2007. Data collected in the semi-

annual sampling was analyzed to determine future action.

While a No Substantial hazard rating exists at this site, MNA will continue until a condition of No Significant Risk is achieved.

Due to a series of sampling events that indicated non-detectible (ND), 3 MWs and the sampling of the six residential wells were removed from the sampling plan.

As discussed at the Rehoboth Board of Health update in 2010, annual public meetings will no longer be required for this project.

During FY 16 the MASSDEP requested the MAARNG to provide a midyear remediation operation status report to identify any changes or non-changes to the remediation operation plan. In FY 16 the MAARNG provided a report entitled *Status Report to maintain a Remedy Operation Status.* The MAARNG will continue to provide MASSDEP with both a midyear and year end remediation operation status report for all remediation out years.

Going forward, MNA will remain as the preferred remediation method as presented in the Remedial Action Plan (November 2003). Recent assessments of the site conditions have determined that MNA is effective and will continue, however, the duration has been projected to extend until 2037 with an anticipated reduction in sampling efforts as contaminant levels decrease. Annual sampling of 12 MWs wells was conducted through FY16.

In an effort to accelerate the reduction of chlorinated solvents in the vicinity of the catch basin, a limited application of in situ chemical oxidation in the form of permanganate candles was installed in MW-3 and monitored in downgradient wells. Monitoring occurs quarterly.

Restoration/Cleanup Strategy:

Annual sampling of a reduced monitoring well network will be conducted through FY28, and a biennial monitoring program of the reduced well network is expected to be completed from FY29 through FY39, with final close out of the site projected for FY40.

SITE CLOSEOUT SUMMARY

None

COMMUNITY INVOLVEMENT

Technical Review Committee (TRC) Establishment Date:	N/A
Community Involvement Plan (Date Published):	7/10/2014
Restoration Advisory Board (RAB) Establishment Date:	N/A
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Additional Community Involvement:	N/A
Administrative Record is located at:	Joint Forces Headquarters 2 Randolph Road Hanscom Air Force Base, MA 01731
Information Repository is located at:	Joint Forces Headquarters 2 Randolph Road Hanscom Air Force Base, MA 01731
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Review Summary Table

None

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

None

Results, Actions & Plans

None

LAND USE CONTROLS (LUC) SUMMARY

None