

SOLDIER SYSTEMS CENTER

Army Cleanup Program

Installation Action Plan Final

June 2024

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STATEMENT OF PURPOSE

The Installation Action Plan (IAP) provides evidence that the Army is firmly committed to expeditious identification and cleanup of environmental contamination, and that the installation has a credible, organized program to carry out that commitment. The IAP provides an outline of the total multi-year environmental cleanup program for each site with ongoing or future planned restoration activity and includes the (1) environmental restoration requirements, (2) the rationale for the selected technical approach, and (3) foundation to develop corresponding financial needs for each cleanup site.

INSTALLATION OVERVIEW

Installation Name: SOLDIER SYSTEMS CENTER

Installation City: NATICK

Installation County: MIDDLESEX

Installation State: MA

Regulatory Participation - Federal: US Environmental Protection Agency (USEPA) Region 1

Regulatory Participation - State: Massachusetts Department of Environmental Protection

ACRONYMS

Acronym	Definition
CA	Cooperative Agreement
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CRL	Cleanup Restoration & Liabilities
ENV	Environmental
ESD	Explanation of Significant Differences
FS	Feasibility Study
FY	Fiscal Year
FYR	Five-Year Review
HRS	Hazard Ranking Score
IAP	Installation Action Plan
IC	Institutional Control
ID	Identification
IR	Installation Restoration
IRA	Interim Remedial Action
LTM	Long-Term Management
MA	Massachusetts
MCL	Maximum Contaminant Level
MDEP	Massachusetts Department of Environmental Protection
MR	Munitions Response
MRSP	Munitions Response Site Prioritization Protocol
MW	Monitoring Well
NPL	National Priorities List
NRDEC	Natick Research, Development and Engineering Center
OU	Operable Unit
PA	Preliminary Assessment
PBA	Performance-Based Acquisition
PCE	Perchloroethylene
ppb	parts per billion
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RC	Response Complete
RD	Remedial Design
RI	Remedial Investigation

Acronym	Definition
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SC	Site Closeout
SI	Site Inspection
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
USEPA	US Environmental Protection Agency
UU/UE	Unlimited Use/Unrestricted Exposure

PHASE TRANSLATION TABLE

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

PROGRAM SUMMARY

Number of Open Sites with Response Complete/Total Open IR Sites: 0/3

Number of Open Sites with Response Complete/Total Open MR Sites: 0/0

Number of Open Sites with Response Complete/Total Open CC Sites: 0/0

SITE-LEVEL INFORMATION

25690.1004_NRDEC-05_T25 BULK HAZ WASTE STORAGE AREA

Env Site ID: NRDEC-05

Cleanup Site: T25 BULK HAZ WASTE STORAGE AREA

Alias: NRDEC-05

Regulatory Driver: CERCLA

RIP Date: 4/30/2004

RC Date: 9/30/2032

RC Reason: Not assigned

SC Date: 10/2/2043

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 50

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	3/31/1989	1/31/1992
SI:	3/31/1992	12/31/1992
RI/FS:	9/30/1992	12/31/2001
RD:	--	--
IRA:	--	--
RA(C):	11/30/2001	4/30/2004
RA(O):	9/30/2000	9/30/2032
LTM:	10/1/2032	10/1/2043

Site Narrative: Groundwater contaminated with trichloroethylene (TCE) and perchloroethylene (PCE) has been detected on and off-post and is in the same aquifer that is used for the municipal water supply. State drinking water regulations limit options for the application of remediation technologies. A pump-and-treat system was installed as a pilot in 1998, to control the movement and reduce concentrations within the plume. The treatment system is proving effective for reducing concentration at the source area and limiting contaminant migration. For example, in the past, monitoring well (MW)-15, a monitoring well in the T-25 Area, had TCE detected at a range of 250 - 950 parts per billion (ppb). Currently, TCE levels have dropped to non-detect at MW-15B. As of fiscal year (FY)21, contaminant levels remain above maximum contaminant levels (MCL) in some wells. Both a cooperative agreement (CA) and a final T-25 groundwater record of decision (ROD) were signed in September 2001. The 2001 ROD requires the Army to maintain the on-post treatment system, monitor the groundwater and establish institutional controls (IC). The CA provided authority for the Army to compensate the town of Natick for a portion of the cost of the off-post operation and maintenance of the municipal water treatment system and for establishing and maintaining IC north of the installation. In FY04 a long-term monitoring plan and an operations plan were finalized. A performance-based acquisition (PBA) was in place September 2005-August 2015 that covered quarterly monitoring and operation and maintenance of the groundwater treatment system. Under this contract the treatment system was expanded in 2007 to collect and treat contaminated groundwater from sites Natick Research, Development and Engineering Center (NRDEC)-11 and -16 in addition to NRDEC-05. An in situ optimization study to enhance groundwater treatment in the T-25 area commenced in FY06 and was completed in FY10. One monitoring well was converted to an extraction well to improve groundwater containment and cleanup in summer 2011. Final explanation of significant differences (ESD) to document remedial system changes and to incorporate NRDEC-11 and -16 into operable unit (OU)-1 was issued May 2013. Two subsequent PBA contracts 2015-2020 and now 2020-2025 continue to collect and treat installation groundwater. An optimization program was begun in 2020, continuing into late 2021 which added extraction wells to improve containment of the southern TCE plume and upgraded the monitoring and control software and hardware in the groundwater

treatment system. Cleanup and monitoring costs for all three groundwater sites are covered under site NRDEC-05. The remedial action (operations) (RA(O)) phase under this site will therefore be ongoing to cover one or more of the three sites from 2021 through 2032. Attainment monitoring will be conducted on a rolling basis as individual sites complete active remediation. Attainment monitoring is typically performed in the long-term management (LTM) phase; however, due to database limitations, both the RA(O) and LTM phases cannot have underway phases at the same time. Due to this, the attainment monitoring for site NRDEC-05 and NRDEC-16 will have their four-year attainment monitoring tracked under RA(O) while Site NRDEC-11 is still performing active RA(O) pumping. The anticipated last cleanup, site NRDEC-11, will perform US Environmental Protection Agency (USEPA) attainment monitoring from 2033 to 2036 in the LTM phase, at which point all cleanups on the installation are expected to be complete. RA(O) will continue until we reach the remedial objectives stated in the ROD. RA(O) includes groundwater collection and liquid phase carbon treatment system. The remedial objective is meeting MCL. While hazardous substances, pollutants, or contaminants remain at the site at concentrations exceeding levels that allow for unlimited use/unrestricted exposure (UU/UE), five-year remedy reviews will continue until UU/UE is achieved. Groundwater monitoring wells will continue to be monitored every five years in support of the required installation five-year review.

25690.1010_NRDEC-11_POST DRINKING WATER WELLS

Env Site ID: NRDEC-11

Cleanup Site: POST DRINKING WATER WELLS

Alias: NRDEC-11

Regulatory Driver: CERCLA

RIP Date: 6/30/2009

RC Date: 9/15/2032

RC Reason: Not assigned

SC Date: 9/16/2043

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	1/31/1990	9/30/1992
SI:	3/31/1994	3/31/1998
RI/FS:	4/30/1998	9/30/2007
RD:	3/31/2006	9/30/2007
IRA:	1/31/1995	11/30/2006
RA(C):	3/31/2006	6/30/2009
RA(O):	12/31/2007	9/15/2032
LTM:	10/15/2033	9/15/2043

Site Narrative: Contaminants detected at the former installation drinking water wells were TCE, PCE and dichloroethane, all at levels below MCLs. During the investigation, a second TCE groundwater plume was found that is believed to be coming from Buildings 2 and 45, extending to the lake. Levels in this plume were up to 150 ppb. Building 2 was constructed between 1952 and 1955 to conduct performance testing of food, clothing, equipment, and human response to in arctic and tropical climates temperatures, weather, and work conditions. TCE and Freon 11 were used within closed systems of the building for climate control. In fall 2003, the Army installed ten additional monitoring wells southeast and southwest of Buildings 2 and 45 to delineate the plume. A PBA was in place September 2005-August 2015 that covered quarterly monitoring and operation and maintenance of the groundwater treatment system. Under this contract the treatment system was expanded in 2007 to collect and treat contaminated groundwater from sites NRDEC-11 and -16 in addition to NRDEC-05. Final ESD to document remedial system changes and to incorporate NRDEC-11 and -16 into OU-1 was issued May 2013. Two subsequent PBA contracts 2015-2020 and now 2020-2025 continue to collect and treat installation groundwater. An optimization program was begun in 2020, continuing into late 2021 which added extraction wells to improve containment of the southern TCE plume and upgraded the monitoring and control software and hardware in the groundwater treatment system. Cleanup and monitoring costs for all three groundwater sites are covered under site NRDEC-05. RA(O) phase for NRDEC-11 will therefore be on-going to cover one or more of the three sites from 2021 through 2032. Attainment monitoring will be conducted on a rolling basis as individual sites complete active remediation. Attainment monitoring is typically performed in the LTM phase; however, due to database limitations, both the RA(O) and LTM phases cannot have underway phases at the same time. Due to this the attainment monitoring for site NRDEC-05 and NRDEC-16 will have their four-year attainment monitoring tracked under RA(O) while Site NRDEC-11 is still performing active RA(O) pumping. The anticipated last cleanup site, NRDEC-11, will perform USEPA attainment monitoring from 2033 to 2036 in the LTM phase, at which point all cleanups on the installation are expected to be complete. With the exception of the LTM attainment monitoring and the

final five-year review, all costs for NRDEC-11 are carried under site NRDEC-05. RA(O) will continue until we reach the remedial objectives stated in the ROD. RA(O) includes groundwater collection and liquid phase carbon treatment system. The remedial objective is meeting MCL. While hazardous substances, pollutants, or contaminants remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Groundwater monitoring wells will continue to be monitored every five years in support of the required installation five-year review.

25690.1015_NRDEC-16_BUILDING 22

Env Site ID: NRDEC-16

Cleanup Site: BUILDING 22

Alias: #

Regulatory Driver: CERCLA

RIP Date: 6/30/2009

RC Date: 9/15/2032

RC Reason: Not assigned

SC Date: 9/15/2043

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/30/1998	6/30/1998
SI:	8/31/1998	10/31/2000
RI/FS:	9/30/2000	9/30/2007
RD:	3/31/2006	9/30/2007
IRA:	--	--
RA(C):	3/31/2006	6/30/2009
RA(O):	12/31/2007	9/15/2032
LTM:	10/1/2032	9/15/2043

Site Narrative: A volume of groundwater contaminated with PCE, likely associated with releases from Building 22 and/or Building 36 was identified during the site inspection (SI) of the boiler plant. A remedial investigation (RI) was started in FY00 to delineate the contamination. Subsurface soil samples in area borings also showed PCE contamination. The plume (440 feet by 500 feet) extended from Building 36 to Building 22 and discharged into the lake sediments on both sides of the peninsula. Diffusion samplers indicated presence of PCE in sediment. Groundwater sampling results indicated up to 600 ppb of PCE. A PBA was in place September 2005-August 2015 that covered quarterly monitoring and operation and maintenance of the groundwater treatment system. Under this contract the treatment system was expanded in 2007 to collect and treat contaminated groundwater from sites NRDEC-11 and -16 in addition to NRDEC-05. Final ESD to document remedial system changes and to incorporate NRDEC-11 and -16 into OU-1 was issued May 2013. Two subsequent PBA contracts 2015-2020 and now 2020-2025 continue to collect and treat installation groundwater. Cleanup and monitoring costs for all three groundwater sites are covered under site NRDEC-05. RA(O) phase for NRDEC-16 will therefore be ongoing to cover one or more of the three sites through 2032. Attainment monitoring will be conducted on a rolling basis as individual sites complete active remediation. Attainment monitoring is typically performed in the LTM phase; however, due to database limitations, both the RA(O) and LTM phases cannot have underway phases at the same time. Due to this, the attainment monitoring for site NRDEC-05 and NRDEC-16 will have their four-year attainment monitoring tracked under RA(O) while site NRDEC-11 is still performing active RA(O) pumping. RA(O) will continue until we reach the remedial objectives stated in the ROD. RA(O) includes groundwater collection and liquid phase carbon treatment system. The remedial objective is meeting MCL. While hazardous substances, pollutants, or contaminants remain at the site at concentrations exceeding levels that allow for UU/UE, five-year remedy reviews will continue until UU/UE is achieved. Groundwater monitoring wells will continue to be monitored every five years in support of the required installation five-year review.

SITE SUMMARY

SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
25690.1001	NRDEC-02_BUILDING 30 INCINERATOR	4/30/1994
25690.1002	NRDEC-03_T62,T68 LAB PACK WASTE STORAGE	9/30/2007
25690.1003	NRDEC-04_PIT AREA WASTE OIL STORAGE TANK	7/31/2005
25690.1005	NRDEC-06_FORMER PROPOSED GYMNASIUM SITE	9/30/2007
25690.1006	NRDEC-07_TRANSITORY SHELTER AREA OF T-25	9/30/2009
25690.1007	NRDEC-08_TANKS LIQUID NITROGEN	5/31/1993
25690.1008	NRDEC-09_BLDG 14 POL HAZARDOUS SITE	8/31/2008
25690.1009	NRDEC-10_BLDG 5,PCB CONTAMINATION SITE &	1/30/2012
25690.1011	NRDEC-12_BUILDING 13 CLASSIFIED INCINERA	8/31/2008
25690.1012	NRDEC-13_PAH CONTAMINATION	4/30/2005
25690.1013	NRDEC-14_BOILER PLANT AREA	8/31/2008
25690.1014	NRDEC-15_CHLORADANE CONTAMINATION	8/31/1998
25690.1016	NRDEC-17_BUILDING NO. 2 & 45 PARKING LOT	9/30/2009
25690.1017	PBC @ SSC_PBC	9/30/2015
25690.1018	CC-SSC-001_JP8 Spill Area - North Campus	2/28/2007
25690.1020	CC-SSC-003_Diethylbenzene UST	11/30/2007

COMMUNITY INVOLVEMENT

Community Involvement Plan (Date Last Reviewed):	7/1/1996
Technical Review Committee Establishment Date:	N/A
Restoration Advisory Board (RAB) Establishment Date:	8/31/1995
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Reasons for Not Establishing RAB:	N/A
RAB Date of Solicitation from Community:	N/A
RAB Results of Solicitation:	N/A
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A
Administrative Record Location:	Natick Soldiers Systems Center Bldg 45, Natick, MA 01760-5049
Information Repository Location:	Morse Institute Library, 14 East Central Street, Natick, MA 01760

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Completed	FYR	5/10/2021	4/25/2022	Upgrades and maintenance of existing groundwater extraction and treatment system must be completed to optimize system, capture contaminant plume from migrating off-site, improve treatment efficiency, and reduce time required to restore the aquifer.	The remedy at NSSC OU1 – Groundwater currently protects human health and the environment because institutional controls prevent any potential exposure to contaminated groundwater beneath the facility and off-facility. Long-term monitoring will continue to be used to monitor plume capture and verify that contaminant concentrations decrease over time.	See Actions
Planned	FYR	3/1/2026	4/30/2027	TBD	TBD	TBD