LONGHORN ARMY AMMUNITION PLANT

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: LONGHORN ARMY AMMUNITION PLANT

Installation City: KARNACK

Installation County: HARRISON

Installation State: TX

Regulatory Participation - Federal: ENVIRONMENTAL PROTECTION AGENCY (EPA) REGION VI

Regulatory Participation - State: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AUSTIN

ACRONYMS

Acronym	Definition
AST	Aboveground Storage Tanks
BIP	Blew in Place
CA	Cost Analysis
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
COC	Contaminant of Concern
CRL	Cleanup Restoration & Liabilities
CS	Confirmatory Sampling
cy	Cubic Yard
DD	Decision Document
DNAPL	Dense Non-Aqueous Phase Liquid
EBS	Environmental Baseline Survey
EE	Engineering Evaluation
ENV	Environmental
EOD	Explosive Ordnance Disposal
ESD	Environmental Site Design
ESS	Explosive Safety Submission
FS	Feasibility Study
ft	feet
FY	Fiscal Year
FYR	Five-Year Review
GWTP	Groundwater Treatment Plant
HTRW	Hazardous, Toxic, and Radioactive Waste
IAP	Installation Action Plan
ID	Identification
INF	Intermediate-Range Nuclear Forces
IR	Installation Restoration
IRA	Interim Remedial Action
LHAAP	Longhorn Army Ammunition Plant
LTM	Long-Term Management
LUC	Land Use Control
MEC	Munitions and Explosives of Concern
mm	Millimeter
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRSPP	Munitions Response Site Prioritization Protocol
MSC	Medium-Specific Concentration
MSCC	Maximum Soil Contaminant Concentration
NFA	No Further Action

Acronym	Definition
NPL	National Priorities List
O&M	Operations and Maintenance
OB	Open Burning
OD	Open Detonation
PA	Preliminary Assessment
PBA	Performance Based Acquisition
PCB	Polychlorinated Biphenyl
PCL	Protective Concentration Level
PDI	Pre-Design Investigation
POL	Petroleum Oil and Lubricants
PP	Proposed Plan
ppm	Parts Per Million
PR	Periodic Review
PSI	Post-Screening Investigation
QA	Quality Assurance
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RAWP	Remedial Action Work Plan
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
SC	Site Closeout
SI	Site Inspection
TAC	Texas Administrative Code
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TCEQ	Texas Commission on Environmental Quality
TCRA	Time Critical Removal Action
TNT	Trinitrotoluene
UEP	Unlined Evaporation Pond
UFP-QAPP	Uniform Federal Policy for Quality assurance Project Plans
ug/L	micrograms per liter
USACHPPM	US Army Center for Health, Promotion and Preventive Medicine
USATHAMA	US Army Toxic and Hazardous Materials Agency
USEPA	US Environmental Protection Agency

Acronym	Definition
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WP	White Phosphorous
WWTP	Wastewater Treatment Plant

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: 25/38

Number of Open Sites with Response Complete/Total Open MR Sites: 3/3

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

SITE-LEVEL INFORMATION

48315.1001_LHAAP-001_INERT BURNING GROUNDS (SWMU 1)

Env Site ID: LHAAP-001

Cleanup Site: INERT BURNING GROUNDS (SWMU 1)

Alias: LHAAP-001

Regulatory Driver: CERCLA

RIP Date: 1/31/1998

RC Date: 1/31/1998

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	6/30/1984
SI:	6/30/1979	6/30/1984
RI/FS:	8/31/1990	1/31/1998
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: The inert burning ground was used for the burning of trash, ashes, scrap lumber, and waste from burned trinitrotoluene (TNT). Site used during the 1950s to burn photoflash powder and other discarded materials. A no further action record of decision (ROD) was signed by US Environmental Protection Agency (USEPA) in February 1998; the site is suitable for non-residential use. Implementation of the five-year review (FYR) requirement to certify land-use remains non-residential began in 2012.

Cleanup/Exit Strategy – Long-Term Management (LTM) in the form of internal administrative FYRs are required and will continue indefinitely.

48315.1002_LHAAP-002_VACCUM TRUCK OVERNITE PARKING

Env Site ID: LHAAP-002

Cleanup Site: VACCUM TRUCK OVERNITE PARKING

Alias: LHAAP-002

Regulatory Driver: CERCLA

RIP Date: 7/15/2010

RC Date: 7/15/2010

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	- -	- -
RI/FS:	1/15/2009	7/15/2010
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-002 was a parking lot for trucks that were used to pump out various sumps around Longhorn Army Ammunition Plant (LHAAP). It was in use beginning approximately in 1942 through 1997. A no action decision document (DD) was finalized in 2010. A notification (not a remedy or land use control (LUC)) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential. Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1003_LHAAP-003_BUILDING 722-PAINT SHOP

Env Site ID: LHAAP-003

Cleanup Site: BUILDING 722-PAINT SHOP

Alias: LHAAP-003

Regulatory Driver: CERCLA

RIP Date: 4/1/2021

RC Date: 4/1/2021

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: Medium

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	10/15/2007	9/15/2009
RI/FS:	9/15/2009	1/15/2017
RD:	2/15/2014	6/28/2019
IRA:	- -	- -
RA(C):	7/1/2019	4/1/2021
RA(O):	- -	- -
LTM:	4/2/2021	9/30/2054

Site Narrative: LHAAP-03 was a waste collection site outside of the paint shop at Building 722-P. Building 722-P was used for paint spraying and polyurethane spray coating of various items. Heavy metal-based primers, other waste solvents, and contaminated rags were collected in a 55-gallon drum on a gravel pad in an open-sided shed. The site investigation report for LHAAP-03 was completed in August 2009. The site inspection identified soil contaminated with metals exceeding medium-specific concentrations (MSC). A remedial investigation (RI)/feasibility study (FS) was finalized to evaluate removal action alternatives for the metals-contaminated soil at LHAAP-03. The ROD was completed in 2018 with the selected remedy of soil excavation and off-site disposal. The Army and USEPA cosigned an Environmental Site Design (ESD) in 2018 formally documenting that groundwater monitoring (including for arsenic) and LUCs for LHAAP-03 are captured under LHAAP-35A(58) and that the LUC duration would be “until the levels of COCs in soil and groundwater allow unrestricted use and unlimited exposure. The remedial design (RD) was completed in 2019. The soil removal and backfill was completed in 2020 with the final Remedial Action Completion Report (RACR) documenting completion of the remedy completed in 2021. The groundwater for LHAAP-003 is addressed as part of the remedy for LHAAP-058. Because LHAAP-03 is entirely contained within LHAAP-35A(58) LUC boundary this requirement is being met under LHAAP-35A(58). An FYR report in the form of a letter to TECQ that states the use of the site remains non-residential is required.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1004_LHAAP-004_LHAAP PILOT WASTEWATER TREATME

Env Site ID: LHAAP-004

Cleanup Site: LHAAP PILOT WASTEWATER TREATME

Alias: LHAAP-004

Regulatory Driver: CERCLA

RIP Date: 4/15/2021

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: Medium

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	- -	- -
RI/FS:	12/15/2011	1/15/2017
RD:	1/15/2012	4/15/2019
IRA:	8/15/2009	11/15/2011
RA(C):	4/15/2014	4/15/2021
RA(O):	1/15/2012	9/30/2054
LTM:	- -	- -

Site Narrative: LHAAP-004 was a pilot wastewater treatment plant. Wastewater treatment operations began in 1984. The demolition of the former pilot wastewater treatment facility structures tanks and piping and the disposal of the associated wastes were completed in the summer of 1997 as part of the Resource Conservation and Recovery Act (RCRA) closure of the plant. Under the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) program excavation of soil impacted with mercury and perchlorate at the LHAAP-004 site was completed in 2009, along the southern edge of the slab which formerly housed storage tanks for the former pilot wastewater treatment facility. The completion report was finalized in 2011. As part of the removal action a well was installed to sample groundwater beneath the backfilled excavation area. The results indicated that perchlorate was present in the groundwater at a concentration that exceeded the TCEQ groundwater industrial use value for perchlorate. The FS evaluating remedial alternatives for LHAAP-04 was finalized in August 2012. The ROD was finalized in 2017. The RD was completed in FY19. The Remedial Action (Construction) (RA(C)) was completed in April 2021. Over the course of the first annual Remedial Action (Operations) (RA(O)) sampling events only two wells contained perchlorate concentrations exceeding the protective concentration level (PCL) during the first quarterly sampling event. All wells were below the PCL for perchlorate in the following eleven sampling events. RA(O) continues to evaluate the potential for any rebound in perchlorate concentrations.

Cleanup/Exit Strategy – RA(O) is expected to continue indefinitely. Long-term RA(O) involves monitored natural attenuation (MNA), LUCs, and FYRs.

48315.1006_LHAAP-006_BUILDING 54F SOLVENT

Env Site ID: LHAAP-006

Cleanup Site: BUILDING 54F SOLVENT

Alias: LHAAP-006

Regulatory Driver: CERCLA

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	- -	- -
RI/FS:	12/15/2007	12/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-06 (Building 51-F) was a collection point for waste acids and solvents. A DD was signed in December 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1007_LHAAP-007_BUILDING 50G DRUM PROCESSING

Env Site ID: LHAAP-007

Cleanup Site: BUILDING 50G DRUM PROCESSING

Alias: LHAAP-007

Regulatory Driver: CERCLA

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	- -	- -
RI/FS:	12/15/2007	12/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-007 (Drum Processing Building 50-G) was a wash-down area for empty drums and casting equipment. The site was originally closed under RCRA in 1987. A DD under CERCLA was signed in December 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for nonresidential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1008_LHAAP-008_SEWAGE TREATMENT PLANT

Env Site ID: LHAAP-008

Cleanup Site: SEWAGE TREATMENT PLANT

Alias: LHAAP-008

Regulatory Driver: RCRA-C

RIP Date: 11/15/2008

RC Date: 11/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	6/30/1979	5/31/1987
CS:	- -	- -
RFI/CMS:	2/15/2002	11/15/2008
DES:	- -	- -
IRA:	- -	- -
CMI(C):	- -	- -
CMI(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-008 was the sewage treatment plant that operated from 1942 to 1997. The site was originally closed under RCRA in 1987. A DD under CERCLA was signed in 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas, stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1010_LHAAP-011_SUS TNT BURIAL SITE AT AVE P&Q

Env Site ID: LHAAP-011

Cleanup Site: SUS TNT BURIAL SITE AT AVE P&Q

Alias: LHAAP-011

Regulatory Driver: CERCLA

RIP Date: 1/31/1998

RC Date: 1/31/1998

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	8/31/1990	1/31/1998
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-011 suspected TNT burial site has been inactive since its suspected use in the 1940s. A no further action (NFA) ROD was signed by USEPA in February 1998. The site is suitable for industrial use. Implementation of the FYR review requirement to certify land-use remains non-residential began in 2012.

Cleanup/Exit Strategy – LTM in the form of internal administrative FYRs are required indefinitely.

48315.1011_LHAAP-012_ACTIVE LANDFILL (SWMU 12)

Env Site ID: LHAAP-012

Cleanup Site: ACTIVE LANDFILL (SWMU 12)

Alias: LHAAP-012

Regulatory Driver: CERCLA

RIP Date: 6/30/2007

RC Date: 9/30/2125

RC Reason: Not assigned

SC Date: 9/30/2155

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	8/31/1990	7/31/2006
RD:	9/30/2005	6/30/2007
IRA:	9/30/1995	9/30/2005
RA(C):	9/30/2005	6/30/2007
RA(O):	6/30/2007	9/30/2125
LTM:	10/1/2125	9/30/2155

Site Narrative: Landfill 12 (previously called the Active Landfill) consisting of seven acres was used for the disposal of nonhazardous industrial waste. The landfill had been used intermittently since 1963. Continuous use of the landfill began around 1978. Although the back section had been closed the front section of the landfill continued to be used until its closure in March 1994. Site Inspections (SI) conducted in 1993 concluded that an early Interim Remedial Action (IRA) (landfill cap) was necessary to reduce further contamination to the groundwater. In 1997, the cap was completed using treated soils from LHAAP-18 as subgrade fill. Cap maintenance started in 1998. In 2002, the RI was completed. Groundwater analysis showed that some metals, chlorides, volatile organic compounds (VOCs), explosive compounds, and low levels of perchlorate were present. Surface water and sediment sample analysis showed similar contamination. Low levels of perchlorate were also detected in the soils. In three groundwater sampling rounds conducted in February 2003, February 2004, and December 2004, perchlorate was not detected with reporting limits of four micrograms per liter (ug/L) in the first two rounds and only detected twice when a method with a lower reporting limit (0.2 ug/L) was used. Chromium in groundwater is now believed to be related to stainless steel well casings. In January 2006, the 12 wells with stainless steel casings and screen were removed. In 2006, five new wells were installed for long-term monitoring using polyvinyl chloride casing and screen. Results of subsequent groundwater sampling supported the postulation that the stainless-steel casing in the monitoring wells was the source of the chromium. In 2005, the FS was finalized. In August 2006 sampling to support MNA began. The proposed plan (PP) addressed human and ecological risk. The ROD was signed in July 2006, selecting the final remedy including MNA with LUCs consisting of cap protective provisions and groundwater restrictions and in June 2007, the RD addendum was signed. The surrounding sediment and surface water were evaluated as part of the plant-wide ecological risk assessment and no chemicals of concern were identified. The expected duration of RA(O) consisting of MNA and LUCs (cap protective provisions and groundwater restrictions) is 118 years based on the groundwater model from the remedial design. The first full year of RA(O) was completed in 2008. A monitoring well was installed in 2019 to confirm

boundary extent to the southeast. FYRs completed in 2002, 2008, 2013, 2018 (report finalized in 2019), and 2023 are performed to ensure the remedy is still protective of human health and the environment.

Cleanup/Exit Strategy – RA(O) in the form of MNA, LUCs, and FYRs. LUCs and FYRs are expected to continue indefinitely.

48315.1015_LHAAP-016_OLD LANDFILL (SWMU 16)

Env Site ID: LHAAP-016

Cleanup Site: OLD LANDFILL (SWMU 16)

Alias: LHAAP-016

Regulatory Driver: CERCLA

RIP Date: 4/15/2021

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	8/31/1990	1/15/2017
RD:	8/31/2005	4/15/2017
IRA:	10/31/1994	9/30/2005
RA(C):	8/31/2005	4/15/2021
RA(O):	8/31/2005	9/30/2054
LTM:	- -	- -

Site Narrative: Landfill 16 (formally called the old landfill) consisting of about 22 acres was originally used to dispose of products generated from the TNT wastewater treatment plant (WWTP); however, a variety of waste was disposed of in the landfill until the 1980s. This waste may have included burned rocket motor casings, substandard TNT barrels of chemicals, oil paint, scrap iron, and wood. VOCs and metals above action levels have been found in the soil surface water and groundwater around the site. Low levels of explosive compounds were detected in the groundwater. SIs conducted in 1993 concluded that an early IRA (landfill cap) was necessary to reduce further contamination to the groundwater. The cap was completed in 1998, using treated soils from LHAAP-18 as subgrade fill. In late-1997 as part of the treatability study, eight extraction wells were installed to prevent contaminated groundwater from impacting Harrison Bayou. This system ceased operation in 2020 with the implementation of the final remedy. Groundwater extracted from the Landfill 16 containment system was piped to the LHAAP-18 groundwater treatment plant (GWTP). Perchlorate was first detected in groundwater at this site in 2000. VOCs and perchlorate have been detected in the surface water of Harrison Bayou. In 2002, the RI was completed. In March 2002, a final interim FS for Site 16 was issued. A FS addendum to the March 2002 interim FS was submitted in February 2007. The FS was finalized in March 2010. A preliminary MNA evaluation was completed in 2007. The PP was finalized September 2010. Quarterly surface water sampling of the Harrison Bayou area has not shown significant contamination. An environmental security technology certification program research and development project for enhanced in situ bioremediation (VOCs perchlorate and explosives in groundwater) was started in 2003 and continued to 2008. The ROD was finalized in 2016. The ROD includes cap maintenance, in situ bioremediation, bio barriers, MNA, and LUCs. RA(C) was completed in 2021. Post-RA(C) actions include groundwater monitoring and LUC RA(O). FYRs completed in 2002, 2008, 2013, 2018 (report finalized in 2019), and 2023 are performed to ensure the remedy is still protective of human health and the environment.

Cleanup/Exit Strategy – RA(O) in the form of MNA with maintenance of the cap LUCs and FYRs will continue indefinitely.

48315.1016_LHAAP-017_NO 2 FLASHING AREA BRN GROUND(

Env Site ID: LHAAP-017

Cleanup Site: NO 2 FLASHING AREA BRN GROUND(

Alias: LHAAP-017

Regulatory Driver: CERCLA

RIP Date: 10/1/2026

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	8/31/1990	1/15/2017
RD:	4/15/2018	3/30/2019
IRA:	- -	- -
RA(C):	3/30/2019	10/1/2026
RA(O):	10/1/2019	9/30/2054
LTM:	- -	- -

Site Narrative: This site (about 500 by 600-feet) was used to burn bulk TNT photoflash powder and reject material. From 1959 until 1980, the site was operated as a burning ground. In 1959, buildings razed at Site 29 (the former TNT production area) were burned at Burning Ground No. 2/Flashing Area (LHAAP-17). This site is situated about 400-500 feet southwest of Burning Ground No. 3. In 1984, waste residues were removed, and the area grassed over. VOCs and explosive compounds were found in the groundwater. Explosive compounds were found in the soil. In 2000, perchlorate was detected at this site (in groundwater at 300 parts per million (ppm) but less in soil)]. A research and development project for enhanced in situ- bioremediation (VOCs perchlorate and explosives in soil and groundwater) was started in 2002 and completed in 2004. Results indicate that perchlorate contamination in soil was reduced. An additional intermediate well was installed at the site in February 2008. In 2002, the RI was completed, and a draft FS was prepared. In 2004, additional data gap studies were completed. A revised FS was finalized in 2010. The PP was finalized in May 2010. The ROD was finalized in 2016. The ROD includes soil removal extraction and treatment of groundwater MNA and LUCs. A pre-design investigation (PDI) was completed in 2018. The RD was completed in 2019 and RA(C) in the form of soil removal was initiated in 2019. During soil removal activities munitions and explosives of concern (MEC) items were encountered that required intrusive activities to cease. The MEC encountered included two M301 81-millimeter (mm) illumination mortars nine artillery base tracer elements and one M19 series rifle-launched green parachute signal. A Time Critical Removal Action (TCRA) memorandum was signed, and a Uniform Federal Policy for Quality assurance Project Plans (UFP-QAPP) was approved in 2021 to address MEC in soil as a primary source for groundwater contamination of perchlorate and to include MEC safety LUCs. The groundwater remedy implementation was completed in August 2022, with the interim RACR expected to finalize in 2024. Soil remedy implementation is expected in 2025, with the final RACR documenting completion of the remedy expected in 2026. Post-RA(C) actions during RA(O) will involve MNA.

Cleanup/Exit Strategy – RA(O) in the form of MNA, LUCs, and FYRs will continue indefinitely.

48315.1017_LHAAP-018_BURNING GROUND/WASHOUT POND(SW

Env Site ID: LHAAP-018

Cleanup Site: BURNING GROUND/WASHOUT POND(SW

Alias: LHAAP-018

Regulatory Driver: CERCLA

RIP Date: 9/30/2031

RC Date: 9/30/2060

RC Reason: Not assigned

SC Date: 9/30/2060

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	8/31/1990	2/25/2020
RD:	3/30/2020	3/1/2024
IRA:	3/31/1995	9/30/2031
RA(C):	6/7/2025	9/30/2031
RA(O):	9/30/2031	9/30/2060
LTM:	- -	- -

Site Narrative: This 34.5-acre site also known as Burning Ground No. 3 began operations in 1955. It was used for the treatment storage and disposal of solid and liquid explosives pyrotechnics and combustible solvent waste by open burning (OB) open detonation (OD) and burial. The unlined evaporation pond (UEP) (LHAAP-024) was constructed in 1963 within Burning Ground No. 3. Explosive compounds, VOCs, and metals were detected in the soils and groundwater. In 1986, sludge from the UEP was removed and the area was capped. Quarterly monitoring has been conducted at the site since closure of the UEP. In May 1995, an IRA ROD was signed. This IRA addressed soil and shallow groundwater contamination. In 1997, 30,000 cubic yards (cy) of soil were excavated and treated. The treated soil was used as fill in LHAAP-012 and -016. A GWTP with approximately 5,000 feet of interception collection trenches has been installed to control migration of contaminated groundwater. After treatment the extracted groundwater is discharged into Harrison Bayou. In 1999, perchlorate was detected at this site and a fluidized bed reactor treatment system was installed. In 2002, the RI was completed followed by a draft FS. In September 2007, an optimization pilot study began for the groundwater extraction system with a report completed in February 2009. A post-screening investigation (PSI) work plan was finalized in 2013 to address site data gaps and support completion of the RI/FS. The PSI work continued into 2016 and the revised FS was completed in 2017. The ROD was signed in February 2020, with the selected remedy of enhanced groundwater extraction and treatment LUCs enhanced in situ-bioremediation for Shallow zone and Wilcox formation groundwater thermal dense non-aqueous phase liquid (DNAPL) removal maintenance of existing cap over UEP unsaturated soil excavation and off-site disposal MNA long-term monitoring and FYRs. RA(O) is expected to continue indefinitely. The site is currently in IRA phase consisting of groundwater treatment plant monitoring maintenance and operation anticipated to continue until RIP achieved which is anticipated FY31.

Cleanup/Exit Strategy – RA(O) in the form of GWTP, Operations and Maintenance (O&M), MNA, LUCs, and FYRs after completion of the RA(C) activities.

48315.1020_LHAAP-024_FORMER UNLINED EVAP POND (SWMU

Env Site ID: LHAAP-024

Cleanup Site: FORMER UNLINED EVAP POND (SWMU

Alias: LHAAP-024

Regulatory Driver: CERCLA

RIP Date: 9/30/2031

RC Date: 9/30/2060

RC Reason: Not assigned

SC Date: 9/30/2060

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	5/31/1990
SI:	5/31/1990	8/31/1990
RI/FS:	8/31/1990	2/25/2020
RD:	3/30/2020	3/1/2024
IRA:	3/31/1995	9/30/2031
RA(C):	6/6/2025	9/30/2031
RA(O):	9/30/2031	9/30/2060
LTM:	- -	- -

Site Narrative: This three-acre UEP was constructed in 1963, within Burning Ground No. 3. Explosive compounds, VOCs, and metals were detected in the soils and groundwater. In 1986, sludge from the UEP was removed and the area was capped. Quarterly monitoring has been conducted at the site since closure of the UEP. In May 1995, an IRA ROD was signed. This IRA addressed soil and shallow groundwater contamination. In 1997, 30,000 cy of soil were excavated and treated. The treated soil was used as fill in LHAAP-012 and LHAAP-016. A GWTP with approximately 5,000-feet of interception collection trenches has been installed to control migration of contaminated groundwater. After treatment the extracted groundwater is discharged into Harrison Bayou. In 1999, perchlorate was detected at this site, and in 2001, a fluidized bed reactor treatment system was installed. In 2002, the RI was completed followed by a draft FS. In September 2007, an optimization study began for the groundwater extraction system with a report on the results completed February 2009. A PSI work plan was finalized in 2013, to address site data gaps and support completion of the RI/FS. The PSI work was completed in 2016 and the revised FS was completed in 2017. The ROD was signed in February 2020, with the selected remedy of enhanced groundwater extraction and treatment LUCs enhanced in situ-bioremediation for Shallow zone and Wilcox formation groundwater thermal DNAPL removal maintenance of existing cap over UEP unsaturated soil excavation and off-site disposal MNA long-term monitoring and FYRs. The site is currently in IRA phase consisting of groundwater treatment plant monitoring maintenance and operation anticipated to continue until RIP achieved which is anticipated FY31 RA(O) is expected to continue indefinitely.

Cleanup/Exit Strategy – RA(O) in the form of GWTP, O&M, MNA, LUCs, and FYRs after completion of the RA(C) activities.

48315.1022_LHAAP-029_FORMER TNT PRODUCTION AREA(SWM

Env Site ID: LHAAP-029

Cleanup Site: FORMER TNT PRODUCTION AREA(SWM

Alias: LHAAP-029

Regulatory Driver: CERCLA

RIP Date: 4/30/2026

RC Date: 9/30/2055

RC Reason: Not assigned

SC Date: 9/30/2055

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	8/31/1990	9/15/2019
RD:	8/31/2005	2/29/2024
IRA:	- -	- -
RA(C):	6/1/2024	4/30/2026
RA(O):	5/1/2026	9/30/2055
LTM:	- -	- -

Site Narrative: The former TNT production area consisting of about 85 acres was in operation from April 1943 to August 1945, as a six-line plant with a supporting acid plant. The plant produced 180 million kilograms of TNT throughout the period of operation. A bulk toluene storage area servicing the TNT production area was located adjacent to the production area. The TNT wastewater (red water) from the production of the TNT was sent through wooden pipelines to a storage tank and pump house and then to the TNT WWTP (LHAAP-032). Cooling water (blue water) from the production area ran through main lines and into an open ditch. In 1959, the structures except for the foundations were demolished and removed. Through the late-1980s, a portion of the northeast corner of the site (approximately two acres) was used for the washout of Pershing 1 and 2 rocket motor casings using trichloroethylene (TCE) and methylene chloride. Explosive compounds have been detected in the soil surface water sediment and groundwater samples. High concentrations of VOCs (including TCE and methylene chloride) have been detected in the groundwater with the highest concentrations in the intermediate hydro stratigraphic unit and methylene chloride DNAPL is suspected. In 2000, perchlorate was first detected in the soil and in the groundwater (at 88 ppm) at this site. In 2002, the RI was completed. In FY2005, field sampling for soils was conducted. In FY2006, six wells were installed and sampled. Sediment samples were also collected from waste lines and outfall ditches. A revised FS was finalized in 2010. Fieldwork to support an addendum to the RI/FS for LHAAP-29 was completed in 2013 and the RI/FS addendum was finalized in FY17. The final ROD was signed in 2019 and selected Alternative 4a from the FS Addendum as the final remedy. A PDI was completed in 2022, with a RD anticipated to be finalized in 2024. The remedy selected for this site is in situ thermal desorption followed by MNA/LUCs and excavation and disposal for soil and sediments and flushing and plugging lines.

Cleanup/Exit Strategy – RA(C) is anticipated to be completed in FY26 with RA(O) beginning in FY26. At this time RA(O) is expected to include MNA/LUCs and FYRs and is expected to continue indefinitely.

48315.1025_LHAAP-035_SUMPS (145) VARIOUS

Env Site ID: LHAAP-035

Cleanup Site: SUMPS (145) VARIOUS

Alias: LHAAP-035

Regulatory Driver: CERCLA

RIP Date: 11/15/2010

RC Date: 11/15/2010

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	1/31/1993	11/15/2010
RD:	8/31/2005	11/15/2010
IRA:	- -	- -
RA(C):	8/31/2005	11/15/2010
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: This site contained 125 industrial wastewater sumps. The sumps were located in different production areas within Longhorn Army Ammunition Plant. Many of the sumps were removed or closed in 1996. Several buildings at sites where sumps were located have a history of perchlorate use. Perchlorate contamination at these sites has been identified in the soil surface water and groundwater. RA(C) consisted of soil removal around sumps. In 2002, the RI was completed, and in late FY03, the initial perchlorate assessment was completed. Additional soil sampling for the sumps was completed in Fall 2006. The following sites are associated with LHAAP-35 because there were sumps at the sites; however, they are being addressed as separate sites for other environmental issues [i.e., FYRs RA(O)/LTM]- LHAAP-002, LHAAP-003, LHAAP-004, LHAAP-006, LHAAP-007, LHAAP-036, LHAAP-058, LHAAP-060, LHAAP-65, LHAAP-068 (PBC), LHAAP-008, and LHAAP-037 (TERC). The DD was signed in November 2010. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1026_LHAAP-036_EXPLOSIVE WASTE PADS (27)

Env Site ID: LHAAP-036

Cleanup Site: EXPLOSIVE WASTE PADS (27)

Alias: LHAAP-036

Regulatory Driver: CERCLA

RIP Date: 11/15/2010

RC Date: 11/15/2010

RC Reason: Other

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	6/30/1979	5/31/1987
RI/FS:	1/15/1993	11/15/2010
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: This site consists of 20 waste pads made of metal roofing over four foot (ft) by eight ft concrete pads. It is included in Group 4 RI/FS. Production buildings had sumps that collected wash down water. Sumps were associated with the wash racks (waste rack sumps) where containers were cleaned and stored. The DD was signed in November 2010. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1027_LHAAP-037_CHEMICAL LABORATORY WASTE PAD

Env Site ID: LHAAP-037

Cleanup Site: CHEMICAL LABORATORY WASTE PAD

Alias: LHAAP-037

Regulatory Driver: CERCLA

RIP Date: 9/15/2013

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	- -	- -
RI/FS:	3/15/2010	6/15/2010
RD:	6/15/2010	8/15/2011
IRA:	- -	- -
RA(C):	1/15/2012	9/15/2013
RA(O):	1/15/2012	9/30/2054
LTM:	- -	- -

Site Narrative: This site is a collection point for spent solvents from the quality assurance (QA) lab. It consists of one 55-gallon drum set on a concrete pad. The site is included in the Group 4 RI/FS. The ROD was finalized in August 2010 and included MNA and LUCs for the site. The RD was finalized in August 2011. The remedial action work plan (RAWP) was finalized in 2013. RIP was achieved in September 2013. The RA(O) was on hold while a two-year bio plug demonstration was implemented at the site. The bio plug demonstration was completed at the end of 2014 and the aquifer was being monitored for return to pre-study conditions before proceeding with RA(O).

Cleanup/Exit Strategy – RA(O) in the form of MNA, LUCs, and FYRs will continue indefinitely.

48315.1029_LHAAP-045_MAGAZINE AREA

Env Site ID: LHAAP-045

Cleanup Site: MAGAZINE AREA

Alias: LHAAP-045

Regulatory Driver: CERCLA

RIP Date: 8/18/2004

RC Date: 8/18/2004

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	3/31/2000	7/30/2004
RI/FS:	8/18/2004	8/18/2004
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	10/15/2004	9/30/2054

Site Narrative: This site consists of 800 acres with 58 bunkers and two buildings used for storage of munitions. An SI conducted by US Army Center for Health Promotion and Preventive Medicine (USACHPPM) (now known as the Public Health Command) determined perchlorate contamination. The RI was completed in September 2003. The final evaluation of LHAAP-45 surface soil analytical data was finalized in September 2004. The site received USEPA concurrence for no further environmental investigation necessary. The site is suitable for industrial use. An FYR report in the form of a memorandum report stating the use of the site remains industrial will be required for internal Army records.

Cleanup/Exit Strategy – LTM in the form of FYRs is required.

48315.1030_LHAAP-050_FORMER WASTE DISPOSAL FACILITY

Env Site ID: LHAAP-050

Cleanup Site: FORMER WASTE DISPOSAL FACILITY

Alias: LHAAP-050

Regulatory Driver: CERCLA

RIP Date: 11/5/2020

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	6/30/1995	7/31/1997
RI/FS:	1/31/1998	1/31/2010
RD:	8/31/2005	2/28/2011
IRA:	- -	- -
RA(C):	8/31/2005	11/5/2020
RA(O):	10/28/2013	9/30/2054
LTM:	- -	- -

Site Narrative: This site of about one-acre received wastewater from the sumps at Plants 2 and 3, from 1955 to the early-1970s. Washout of ammonium perchlorate containers was also performed on this site. VOCs and perchlorate were detected in the soil samples. VOCs metals and perchlorate were detected in groundwater. The VOCs and perchlorates in groundwater pose an unacceptable risk. In 2004, an additional data gap sampling was completed, and in February 2008, an additional shallow well was installed downgradient of this site. In 2002, the RI was completed, and the FS was finalized in 2010. The ROD was finalized in 2010. The ROD includes soil removal MNA and LUCs (groundwater use restriction) for the site. A notification (not a remedy or LUC) has been filed in Harrison County Texas, stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. An FYR report in the form of a letter stating the use of the site remains non-residential is required. The RD was finalized in September 2011. The RAWP was finalized in 2013. This site is in RA(O). RIP was achieved in November 2020. The 3rd annual Remedial Action Operations report concluded that MNA was not effective, and the contingency remedy be implemented to enhance MNA. The contingency remedy was implemented in FY20. The RA(C) is complete for the contingency remedy (enhanced MNA).

Cleanup/Exit Strategy – RA(O) in the form of MNA, LUCs, and FYRs, is expected to continue indefinitely.

48315.1031_LHAAP-051_PHOTOGRAPHIC LABORATORY/BLDG

Env Site ID: LHAAP-051

Cleanup Site: PHOTOGRAPHIC LABORATORY/BLDG #

Alias: LHAAP-051

Regulatory Driver: RCRA-C

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
RFA:	5/31/1990	8/31/1990
CS:	- -	- -
RFI/CMS:	12/15/2007	12/15/2008
DES:	- -	- -
IRA:	- -	- -
CMI(C):	- -	- -
CMI(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: Building 60B was the location for processing x-ray film. It was closed under RCRA. A DD was signed in December 2008 under CERCLA. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. LTM is expected to continue indefinitely.

48315.1032_LHAAP-052_MAGAZINE AREA WASHOUT

Env Site ID: LHAAP-052

Cleanup Site: MAGAZINE AREA WASHOUT

Alias: LHAAP-052

Regulatory Driver: CERCLA

RIP Date: 9/15/2015

RC Date: 9/15/2015

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	6/30/1995	4/30/1998
RI/FS:	6/15/1997	9/15/2015
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	9/15/2015	9/30/2054

Site Narrative: A standpipe near the intersection of Avenue E and 19th was used to wash out trucks used for transport of TNT. A DD was finalized in September 2015. The LTM phase was initiated in 2015 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1035_LHAAP-055_SEPTIC TANK (10)

Env Site ID: LHAAP-055

Cleanup Site: SEPTIC TANK (10)

Alias: LHAAP-055

Regulatory Driver: CERCLA

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	- -	- -
RI/FS:	8/15/1990	12/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-055 consisted of 10 septic tanks that served outlying areas of the installation that could not be connected to the plant sanitary sewer system. This site was closed under RCRA guidelines. A DD was signed in December 2008 under CERCLA. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1037_LHAAP-058_MAINTENANCE COMPLEX

Env Site ID: LHAAP-058

Cleanup Site: MAINTENANCE COMPLEX

Alias: LHAAP-058

Regulatory Driver: CERCLA

RIP Date: 9/15/2013

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	2/28/1995	6/30/1995
RI/FS:	6/15/2010	9/15/2010
RD:	6/15/2011	9/15/2011
IRA:	- -	- -
RA(C):	9/15/2011	9/15/2013
RA(O):	9/15/2011	9/30/2054
LTM:	- -	- -

Site Narrative: LHAAP-35A(58) also known as the shops area was used to provide plant-operated laundry, automotive, woodworking, metalworking, painting, refrigeration, and electrical services. VOCs were detected in groundwater. The ROD was finalized in 2010 and includes in situ-bioremediation for the eastern plume and MNA and LUCs (groundwater use restriction) for both the eastern and western groundwater plume for the site. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. An FYR review report in the form of a letter stating the use of the site remains non-residential will be required. The RD was finalized in September 2011. The RAWP was finalized in 2013. Per the RAWP annual sampling is required from 2019 onward. RIP was achieved in September 2013. An ESD to incorporate LHAAP-03 groundwater and LUCs under LHAAP-058 was finalized in 2018. An ESD for contingency remedy in situ-bioremediation in the western plume was completed in 2018. A contingency remedy of in situ-bioremediation was implemented in the western plume in 2018. Two additional wells were installed in 2022 to define the downgradient and upgradient extent of the shallow western plume and one additional well was installed in 2023 to define the extent of VOCs between the eastern and western plumes.

Cleanup/Exit Strategy – RA(O) in the form of MNA, LUCs, and FYRs will continue indefinitely.

48315.1038_LHAAP-060_FORMER STORAGE BUILDING #411 &

Env Site ID: LHAAP-060

Cleanup Site: FORMER STORAGE BUILDING #411 &

Alias: LHAAP-060

Regulatory Driver: CERCLA

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: Other

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	6/30/1995	7/31/1997
RI/FS:	1/31/1998	12/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: This site consists of two buildings formerly used for storage of pesticides and herbicides. It is included in Group 4 for RD/RA efforts. A DD was signed in December 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. This site falls within the boundary of LHAAP-35A (58). The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1040_LHAAP-063_BURIAL PITS

Env Site ID: LHAAP-063

Cleanup Site: BURIAL PITS

Alias: LHAAP-063

Regulatory Driver: CERCLA

RIP Date: 9/15/2015

RC Date: 9/15/2015

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	6/30/1995	4/30/1998
RI/FS:	4/15/1998	9/15/2015
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	9/15/2015	9/30/2054

Site Narrative: LHAAP-063 was used in late-1950s for the detonation of Plant 3 reject material of unknown composition. A DD was finalized in September 2015. Limited monitoring in the form of certification of proper land use every five years is required for this site. The LTM phase was initiated in 2015 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1041_LHAAP-064_TRANSFORMER STORAGE

Env Site ID: LHAAP-064

Cleanup Site: TRANSFORMER STORAGE

Alias: LHAAP-064

Regulatory Driver: CERCLA

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	2/28/1995	6/30/1995
RI/FS:	6/15/1995	12/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-064 was used for storage of non-polychlorinated biphenyl (PCB) transformers. A DD was signed in December 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1042_LHAAP-066_TRANSFORMER AT BLDG 401

Env Site ID: LHAAP-066

Cleanup Site: TRANSFORMER AT BLDG 401

Alias: LHAAP-066

Regulatory Driver: CERCLA

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	2/28/1995	6/30/1995
RI/FS:	6/15/1995	12/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: A transformer at Building 401 dripped oil for approximately one year. The transformer did not contain PCBs, so no remedial action was required. A DD was signed in December 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1043_LHAAP-067_ABOVE GROUND STORAGE TANK

Env Site ID: LHAAP-067

Cleanup Site: ABOVE GROUND STORAGE TANK

Alias: LHAAP-067

Regulatory Driver: CERCLA

RIP Date: 4/15/2013

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	9/30/1998	6/30/1999
RI/FS:	10/31/2001	6/15/2010
RD:	5/15/2011	8/15/2011
IRA:	- -	- -
RA(C):	1/15/2012	4/15/2013
RA(O):	1/15/2012	9/30/2054
LTM:	- -	- -

Site Narrative: This site consisted of seven aboveground storage tanks (ASTs) containing Number 2 fuel oil kerosene or solvents. The ASTs had earthen dikes sufficient to contain a potential spill. Motor fuel tanks were registered with the state and have been removed. Central Creek runs to the south of this site. In 2001, VOCs (TCE; 11-dichloroethene; 1 2-dichloroethane; and 112-trichloroethane) were detected in the groundwater. The data indicates that the impact is limited. In 2002, the RI was completed, and in 2004, additional sampling was conducted with the final FS completed in August 2005. The ROD was finalized in August 2010 and included MNA and LUCs (groundwater use restriction) for the site. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. An FYR report in the form of a letter stating the use of the site remains non-residential will be required. The RD was finalized in August 2011. The RAWP was finalized in 2013 and RIP was achieved in April 2013. This site is in RA(O). A redefinition of the plume was recommended in the 2018 FYR and as a result two new wells were installed in 2019.

Cleanup/Exit Strategy – RA(O) in the form of MNA, LUCs, and FYRs will continue indefinitely.

48315.1044_LHAAP-068_MOBILE STORAGE TANK PARKING AR

Env Site ID: LHAAP-068

Cleanup Site: MOBILE STORAGE TANK PARKING AR

Alias: LHAAP-068

Regulatory Driver: CERCLA

RIP Date: 12/15/2008

RC Date: 12/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	- -	- -
RI/FS:	8/15/1990	12/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: LHAAP-068 is located in the maintenance shops and power area near the service station. LHAAP-068 consisted of two mobile 600-gallon storage tanks on trucks. The mobile storage tanks contained No. 2 diesel and gasoline fuel. One PCB (Aroclor 1254) was measured above the applicable MSC in one sample. Soil from this location was selected for leachability testing and analysis of the test leachate for PCBs. Concentrations of Aroclor 1254 in the leachate meets the requirements of 30 Texas Administrative Code (TAC) 335.559(g)(2)(B) for site closure and PCBs are of no further concern. This site was corrected under RCRA guidelines in 1993. A DD was signed in December 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas, stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. This site falls within the boundary of LHAAP-35A (58). The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1045_LHAAP-069_SERVICE STATION UST'S

Env Site ID: LHAAP-069

Cleanup Site: SERVICE STATION UST'S

Alias: LHAAP-069

Regulatory Driver: CERCLA

RIP Date: 1/15/2014

RC Date: 1/15/2014

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/31/1990	8/31/1990
SI:	- -	- -
RI/FS:	8/15/1990	1/15/2014
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2014	9/30/2054

Site Narrative: LHAAP-069 (Service Station Underground Storage Tanks) consisted of six gasoline underground storage tanks (UST) that were leak tested in 1989 and determined to be leaking. The tanks were replaced in 1993 and the site has been remediated. LHAAP-069 was corrected under RCRA guidelines in 1993. The contaminant of concern (COC) was petroleum oil and lubricant (POL). Petroleum product and its constituents is not a CERCLA hazardous substance. A DD was finalized in early 2014. A notification has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. Because LHAAP-069 is entirely contained within the LHAAP-35A (58) land use control boundary this requirement is being met under LHAAP-35A(58). The LTM phase was initiated in 2014 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1046_LHAAP-070_LOADING DOCK-MAGAZINE AREA

Env Site ID: LHAAP-070

Cleanup Site: LOADING DOCK-MAGAZINE AREA

Alias: LHAAP-070

Regulatory Driver: CERCLA

RIP Date: 9/15/1995

RC Date: 9/15/1995

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	2/28/1995	6/30/1995
RI/FS:	6/15/1995	9/15/1995
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	9/15/2015	9/30/2054

Site Narrative: LHAAP-070 (Loading Dock-Magazine Area) is located in the magazine area LHAAP-045. There was a report of spill of boxes of TNT at LHAAP-070; however, SIs revealed no visual evidence of TNT contamination. A DD was finalized in September 2015. The LTM phase was initiated in 2015 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1047_LHAAP-071_OIL SPILL, BLDG 813

Env Site ID: LHAAP-071

Cleanup Site: OIL SPILL, BLDG 813

Alias: LHAAP-071

Regulatory Driver: CERCLA

RIP Date: 9/15/2015

RC Date: 9/15/2015

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	6/30/1979	5/31/1987
SI:	2/28/1995	6/30/1995
RI/FS:	6/15/1995	9/15/2015
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	9/30/2015	9/30/2054

Site Narrative: LHAAP-071 (Building 813) though unrelated to the TNT Waste Disposal is located in the TNT Waste Disposal Plant. An oil tank spill occurred at Building (Bldg.) 813 in 1978. The spill was contained before it could reach Central Creek. A DD was finalized in September 2015. The LTM phase was initiated in 2015 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1053_LHAAP-046_PLANT 2 AREA

Env Site ID: LHAAP-046

Cleanup Site: PLANT 2 AREA

Alias: #

Regulatory Driver: CERCLA

RIP Date: 4/15/2013

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	1/15/2002	1/15/2002
SI:	- -	- -
RI/FS:	6/15/2010	9/15/2010
RD:	6/15/2011	9/15/2011
IRA:	- -	- -
RA(C):	1/15/2012	4/15/2013
RA(O):	1/15/2012	9/30/2054
LTM:	- -	- -

Site Narrative: LHAAP-046 also known as Plant 2 had facilities for production of JB-2 propellant fuel from 1944 to 1945, and was used to produce pyrotechnic ammunition such as photoflash bombs simulators hand signals and tracers for 40mm ammo from 1952 to 1956. Plant 2 was reactivated to produce pyrotechnic and illuminating devices from 1964 to 1997. SIs determined that groundwater was contaminated with VOCs. The ROD was finalized in September 2010 and includes MNA and LUCs for the site. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. An FYR report in the form of a letter stating the use of the site remains non-residential will be required. The RD was finalized in September 2011. The RAWP was finalized in 2013 and RIP was achieved in April 2013. A new well was installed in 2020 to redefine extent to the northeast.

Cleanup/Exit Strategy – RA(O) in the form of MNA, LUCs, and FYRs will continue indefinitely.

48315.1054_LHAAP-047_PLANT 3 AREA

Env Site ID: LHAAP-047

Cleanup Site: PLANT 3 AREA

Alias: #

Regulatory Driver: CERCLA

RIP Date: 9/30/2034

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	1/1/1980	5/15/1987
SI:	- -	- -
RI/FS:	1/15/2012	7/19/2022
RD:	9/9/2022	3/30/2025
IRA:	- -	- -
RA(C):	3/31/2025	9/30/2034
RA(O):	3/31/2025	9/30/2054
LTM:	- -	- -

Site Narrative: LHAAP-47 also known as Plant 3 was used from 1954 to the early-1980s to produce rocket motors. Some of the rocket motor facilities converted to produce pyrotechnic and illumination devices and continued this operation until 1997. SIs determined that groundwater was contaminated with VOCs perchlorate and metals and a soil source for perchlorate was identified. The FS evaluating remedial alternatives for LHAAP-47 was finalized in July 2011. The Final ROD was delayed until a PSI addendum 2 was completed and the FS revised. The PSI addendum 2 was completed in 2020 and the FS addendum and revised proposed plan were finalized in 2021. The ROD was finalized in 2022. A pre-design investigation (PDI) is expected to be finalized in 2024 and the RD is expected to be finalized in 2025. Four additional wells are planned to be installed in 2024.

Cleanup/Exit Strategy – The final remedy includes enhanced in situ-bioremediation, bio barriers, in situ-thermal desorption, soil excavation, MNA, and LUCs. RA(O) includes MNA, LUCs, and FYRs and is expected to last indefinitely, after RA(C).

48315.1055_LHAAP-056_VEHICLE WASH RACK AND O/W SEP

Env Site ID: LHAAP-056

Cleanup Site: VEHICLE WASH RACK AND O/W SEP

Alias: #

Regulatory Driver: CERCLA

RIP Date: 1/15/2014

RC Date: 1/15/2014

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	4/15/1993	10/15/2008
SI:	- -	- -
RI/FS:	1/15/2012	1/15/2014
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/30/2014	9/30/2054

Site Narrative: This site consisted of a concrete wash rack sloped to drain connected to an oil/water separator. The site had a permitted discharge to a drainage ditch. The site is located within the shop area. The sump on this site was investigated under LHAAP-035. The DD was finalized in early 2014. A notification has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. Because LHAAP-056 is entirely contained within the LHAAP-35A(58) land use control boundary this requirement is being met under LHAAP-35A(58). The LTM phase was initiated in 2014 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1056_LHAAP-049_FORMER ACID STORAGE AREA

Env Site ID: LHAAP-049

Cleanup Site: FORMER ACID STORAGE AREA

Alias: #

Regulatory Driver: CERCLA

RIP Date: 8/15/2010

RC Date: 8/15/2010

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	3/15/2009	6/15/2009
SI:	- -	- -
RI/FS:	5/15/2010	8/15/2010
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	8/16/2010	9/30/2054

Site Narrative: LHAAP-49 is the former acid storage area, which was used from 1942 to 1945, for storage and formulation of acids and acid mixtures in support of TNT production during World War II. A ROD requiring nonresidential use and five-year reviews was finalized in August 2010. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566.

Cleanup/Exit Strategy – LTM in the form of FYRs is required indefinitely.

48315.1057_LHAAP-059_BUILDING 725

Env Site ID: LHAAP-059

Cleanup Site: BUILDING 725

Alias: #

Regulatory Driver: CERCLA

RIP Date: 8/15/2008

RC Date: 8/15/2008

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	5/15/2007	8/15/2007
SI:	- -	- -
RI/FS:	5/15/2008	8/15/2008
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2012	9/30/2054

Site Narrative: Building 725 at LHAAP-59 was constructed in 1984 to support maintenance activities at the plant as a pesticide storage building. It was determined through site investigations that no significant release had occurred at this site. The DD was finalized in August 2008. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule§335.566. The LTM phase was initiated in 2012 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1058_LHAAP-065_BUILDING 209

Env Site ID: LHAAP-065

Cleanup Site: BUILDING 209

Alias: #

Regulatory Driver: CERCLA

RIP Date: 1/15/2014

RC Date: 1/15/2014

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	3/15/2011	6/15/2011
SI:	- -	- -
RI/FS:	1/15/2012	1/15/2014
RD:	- -	- -
IRA:	- -	- -
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	1/15/2014	9/30/2054

Site Narrative: Building 209 was used for chemical storage for items such as paint and solvents. This building has a concrete floor with floor drains connected to sumps. The site is located just off 11th street near the fire station. A DD was finalized in early 2014. A notification has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566. Because LHAAP-065 is entirely contained within the LHAAP-35A (58) land use control boundary this requirement is being met under LHAAP-35A(58). The LTM phase was initiated in 2014 with the implementation of an FYR report in the form of a letter sent to TCEQ that states the use of the site remains non-residential.

Cleanup/Exit Strategy – LTM in the form of an FYR letter to TCEQ every five years certifying the site as non-residential use. The FYRs are anticipated to take place indefinitely.

48315.1048_LHAAP-001-R-01_SOUTH TEST AREA / BOMB TE

Env Site ID: LHAAP-001-R-01

Cleanup Site: SOUTH TEST AREA / BOMB TE

Alias: #

Regulatory Driver: CERCLA

RIP Date: 5/10/2018

RC Date: 5/10/2018

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: Yes

Hazardous Ranking Score: 36

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	2/12/2002	5/1/2003
SI:	2/29/2004	6/30/2005
RI/FS:	3/31/2005	9/13/2016
RD:	3/1/2018	5/9/2018
IRA:	10/31/2007	4/30/2009
RA(C):	4/30/2009	5/10/2018
RA(O):	- -	- -
LTM:	5/11/2018	9/30/2054

Site Narrative: This site is approximately 79 acres. It is also known as environmental site LHAAP-027 and is located southeast of Avenue P and the magazine area at the end of 70th street near the southern boundary of LHAAP. The site was constructed in 1954 and used to test photoflash bombs that were produced at the facility until about 1956. The bombs were tested by exploding them in the air over an elevated semi-elliptical earthen test pad. Bombs awaiting testing were apparently stored in three earth-covered concrete bunkers. The bombs tested were 150-pound M120/M120A photoflash bombs filled with photoflash powder and containing a black powder booster charge for bursting the bomb with a timed nose fuse. The location of the site for this purpose was not ideally suited to the task as fragments from this testing landed beyond the installation boundary. By June 1954, static testing of photoflash bombs had been discontinued because of the possibility of damage and injuries beyond the installation boundary. During the late-1950s, illuminating signal devices were also demilitarized within pits at this site. During the early-1960s, leaking production items were demilitarized in the area. The May 1997 final RI report for Group I Sites indicates approximately 52,000 one-half and one-pound photoflash cartridges were demilitarized at the site in the early-1980s. In 1982, investigations included installation and sampling of two wells and three shallow soil samples. Explosives metals chloride and sulfate were detected above background levels in the soil samples. In January 1998, a ROD was signed by the USEPA based upon the site-specific risk analysis for human and ecological exposure to the contaminants of potential concern for the site. In 2004, the explosive ordnance disposal (EOD) division at Fort Johnson [former Fort Polk] blew in place (BIP) one 155 mm white phosphorous (WP) round. The identification of this round as a live 155 mm WP round is suspect. In the 2005 Environmental Baseline Survey (EBS) (page 46), it states that Confirmatory Sampling (CS) WP operations at Longhorn Army Ammunition Plant were assembly and pack out operations only; no loading of these materials was conducted at the site. The WP rounds were stored and worked in the east line area of Plant 2 (US Army Toxic and Hazardous Materials Agency (USATHAMA) 1980). Testing of the payload at LHAAP would not be part of the mission since it was not manufactured at this installation. Others indicate that it was a 105 mm or 81mm smoke round. A

reported demolition site was identified on the northwest perimeter of this site. This was added to the investigation. In FY2008, an engineering evaluation (EE)/cost analysis (CA) report was completed approved and signed. An IRA has been funded with the final Explosives Safety Submission (ESS) completed in March 2008. The removal action was completed in 2009. The ROD was finalized in 2016. The ROD includes limited groundwater monitoring for perchlorate LUCs for restrictions against digging and residential use and sign maintenance. Limited groundwater monitoring concluded in 2019 after three rounds of confirmation sampling in accordance with the ROD.

Cleanup/Exit Strategy – LTM in the form of LUCs and FYRs will continue indefinitely.

48315.1050_LHAAP-003-R-01_GROUND SIGNAL TEST AREA

Env Site ID: LHAAP-003-R-01

Cleanup Site: GROUND SIGNAL TEST AREA

Alias: #

Regulatory Driver: CERCLA

RIP Date: 5/10/2018

RC Date: 5/10/2018

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: Yes

Hazardous Ranking Score: 36

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	2/12/2002	5/1/2003
SI:	2/29/2004	6/30/2005
RI/FS:	3/31/2005	9/13/2016
RD:	3/1/2018	5/9/2018
IRA:	10/31/2007	4/30/2009
RA(C):	4/30/2009	5/10/2018
RA(O):	- -	- -
LTM:	5/11/2018	9/30/2054

Site Narrative: This site also known as environmental site LHAAP-054 encompasses approximately 80 acres and is located in the southeastern portion of LHAAP. Starting in April 1963, the site was used intermittently for aerial and on-ground testing and destruction of a variety of devices including red phosphorus smoke wedges infrared flares illuminating 60- and 81-mm mortar shells illuminating 40 to 155 mm cartridges button bombs and various types of explosive simulators. The site was also used intermittently over a 20-year period for testing and burnout of rocket motors from Nike-Hercules Pershing and Sergeant missiles. Around 1970, one of the Sergeant rocket motors exploded in an excavated pit near the center of the site. Debris was reportedly placed in the resulting crater and backfilled. From late-1988 through 1991, the site was also used for burnout of rocket motors in Pershing missiles destroyed in accordance with the Intermediate-Range Nuclear Forces (INF) Treaty between the United States and the former Soviet Union. In January 1998, a ROD for Hazardous Toxic and Radioactive Waste (HTRW) under CERCLA was signed. The site is currently undeveloped. In December 2004, the EOD unit at Fort Johnson [former Fort Polk] BIP 105 mm and 81 mm rounds. In FY08, an EE/CA report was completed approved and signed. An IRA was funded with the final Explosive Safety Submission (ESS) and completed in March 2008. The removal action was completed in 2009. The ROD was finalized in 2016. The ROD includes limited groundwater monitoring for perchlorate LUCs of restrictions against digging and residential use and sign maintenance. Limited groundwater monitoring concluded in 2017 after one round of sampling in accordance with the ROD.

Cleanup/Exit Strategy – LTM in the form of LUCs and FYRs will continue indefinitely.

48315.1052_LHAAP-004-R-01_PISTOL RANGE

Env Site ID: LHAAP-004-R-01

Cleanup Site: PISTOL RANGE

Alias: #

Regulatory Driver: CERCLA

RIP Date: 8/15/2010

RC Date: 8/15/2010

RC Reason: All Required Cleanup(s) Completed

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: MR

NPL Status: Yes

Hazardous Ranking Score: 40

RRSE: N/A

MRSPP: 10

Phase	Start	End
PA:	9/15/2008	2/15/2009
SI:	- -	- -
RI/FS:	5/15/2010	8/15/2010
RD:	- -	- -
IRA:	12/15/2009	1/15/2010
RA(C):	- -	- -
RA(O):	- -	- -
LTM:	8/16/2010	9/30/2054

Site Narrative: The former pistol range was known to have been used by LHAAP security personnel for small arms target qualification and recertification. The pistol range was established in the 1950s and used intermittently through 2004. SI results identified areas where the surface and near surface soil was contaminated with lead at concentrations that exceeded the TCEQ maximum soil contaminant concentration (MSCC) for industrial use. A non-time critical soil removal action was completed. The IRA of soil excavation and disposal for this site became the final remedial action. A ROD requiring nonresidential use and five-year reviews was finalized in August 2010. A notification (not a remedy or LUC) has been filed in Harrison County Texas stating that the site is suitable for non-residential use in accordance with Texas Administrative Code Title 30 Rule §335.566.

Cleanup/Exit Strategy – LTM in the form of FYRs is required indefinitely.

SITE SUMMARY

SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
48315.1005	LHAAP-005_POWER HOUSE BOILER POND	9/15/2015
48315.1009	LHAAP-009_BUILDING 31-W DRUM STORAGE	9/15/2015
48315.1012	LHAAP-013_SUS TNT BET ACTIVE&OLD LANDFIL	12/31/1995
48315.1013	LHAAP-014_AREA 54 BURIAL GRND (SWMU 14)	12/31/1995
48315.1014	LHAAP-015_AREA 49W DRUM STORAGE	5/31/1987
48315.1019	LHAAP-023_BUILDING 707-STORAGE AREA PCBS	1/15/2006
48315.1021	LHAAP-027_SOUTH TEST AREA/BOMB TEST AREA	1/31/1998
48315.1023	LHAAP-032_FORMER TNT WASTEWATER PLT(SWMU	9/30/2008
48315.1024	LHAAP-034_BUILDING 701 PCB STORAGE	9/15/2015
48315.1028	LHAAP-039_25X WASHOUT PAD	8/31/1990
48315.1033	LHAAP-053_STATIC TEST AREA	11/15/2008
48315.1034	LHAAP-054_GRD SIGNAL TEST AREA (LHAAP-XX	1/31/1998
48315.1036	LHAAP-057_RUBBLE BURIAL SITE	9/15/2015
48315.1039	LHAAP-061_POTABLE WTP SEDIMENT POND	9/15/2015
48315.1051	PBC Longhorn_PBC at Longhorn	6/15/2017
48315.1049	LHAAP-002-R-01_STATIC TEST AREA	10/31/2007

COMMUNITY INVOLVEMENT

Community Involvement Plan (Date Last Reviewed):	5/1/2023
Technical Review Committee Establishment Date:	3/31/1992
Restoration Advisory Board (RAB) Establishment Date:	12/31/2004
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:	A RAB was formed, 12/31/2004.
Current Technical Assistance for Public Participation (TAPP):	N/A
TAPP Title:	N/A
Potential TAPP:	N/A
Administrative Record Location:	Marshall Public Library, 300 S Alamo Blvd, Marshall, TX 75670, LHAAP (Army Corps trailer in GWTP compound), Hwy. 43, Karnak, TX 75670 and on-line at www.longhornaap.com.
Information Repository Location:	Marshall Public Library, 300 S Alamo Blvd, Marshall, TX 75670, LHAAP (Army Corps trailer in GWTP compound), Hwy. 43, Karnak, TX 75670, and on-line at www.longhornaap.com.

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Completed	FYR	5/1/2018	5/15/2019	N/A	LHAAP-16, Implement remedy in 2016 ROD. LHAAP-18/24, LHAAP-46, LHAAP-67, address long-term protectiveness. LHAAP-50, implement contingency remedy to enhance MNA. LHAAP-35A(58), implement Enhanced In Situ-Bioremediation.	N/A
Underway	FYR	2/1/2023	04/30/2024	N/A	N/A	N/A