

HUNTER ARMY AIRFIELD

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: HUNTER ARMY AIRFIELD

Installation City: HUNTER ARMY AIRFIELD

Installation County: CHATHAM

Installation State: GA

Regulatory Participation - Federal: US Environmental Protection Agency (USEPA), Region 4, Federal Facilities Branch

Regulatory Participation - State: Georgia Environmental Protection Division (GAEPD), Region 4
Environmental Protection Agency has deferred regulatory oversight to GAEPD

ACRONYMS

Acronym	Definition
AOPI	Area of Potential Interest
ABC	Anaerobic Biochem
ACL	Alternate Concentration Limit
AEDB-R	Army Environmental Database- Restoration
AST	Aboveground Storage Tank
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CAP	Corrective Action Plan
CaP	Calcium Peroxide
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CRL	Cleanup Restoration & Liabilities
CSM	Conceptual Site Model
CSR	Compliance Status Report
cy	cubic yard
DAACG	Departure/Arrival Airfield Control Group
DCE	Dichloroethene
DPT	Direct-Push Technology
ENV	Environmental
ERD	Enhanced Reductive Dichlorination
EVO	Emulsified Vegetable Oil
FS	Feasibility Study
FTA	Fire Training Area
FY	Fiscal Year
FYR	Five-Year Review
GAEPD	Georgia Environmental Protection Division
gal	gallon
HAAF	Hunter Army Airfield
HSI	Hazardous Site Inventory
HSRA	Hazardous Site Response Act
IAP	Installation Action Plan
ID	Identification
IR	Installation Restoration
IRA	Interim Remedial Action
LNAPL	Light Non-aqueous Phase Liquid

Acronym	Definition
LTM	Long-Term Management
LUC	Land Use Control
MIP	Membrane Interface Probe
MNA	Monitored Natural Attenuation
MR	Munitions Response
MRSP	Munitions Response Site Prioritization Protocol
NFA	No Further Action
NPL	National Priorities List
OWS	Oil/Water Separator
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PFAS	Polyfluoroalkyl Substances
PMP	Project Management Plan
PP	Proposed Plan
PR	Periodic Review
RA	Remedial Action
RAB	Restoration Advisory Board
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operations)
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
SVOC	Semi-Volatile Organic Compound
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
UE	Unrestricted Exposure
µg/L	Micrograms per liter
USACE	US Army Corp of Engineers
USAEC	US Army Environmental Command
UST	Underground Storage Tank

Acronym	Definition
USTMP	Underground Storage Tank Management Program
UU	Unlimited Use
VE	Vacuum Extraction
VOC	Volatile Organic Compound

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: 0/5

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

1154A.1001_HAA-01_FIRE TRAINING SITE

Env Site ID: HAA-01

Cleanup Site: FIRE TRAINING SITE

Alias: HAA-01

Regulatory Driver: CERCLA

RIP Date: 10/30/2022

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	1/31/1983	10/31/1983
SI:	1/31/1983	10/31/1983
RI/FS:	1/31/1994	8/2/2021
RD:	4/15/2012	8/2/2021
IRA:	12/31/1997	8/31/2011
RA(C):	8/3/2021	10/29/2022
RA(O):	10/30/2022	9/30/2054
LTM:	--	--

Site Narrative: The regulatory statute for this site was initially the Hazardous Site Response Act (HSRA) regulated by Georgia Environmental Protection Division (GAEPD) under Hazardous Site Inventory (HSI) number 10,395. In 2014, this site was transferred to the regulatory statute Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980 and is still regulated by GAEPD. HAA-01 is located on the northwest portion of Hunter Army Airfield (HAAF) and was used until 1991 to train firefighters in a live fire scenario. Training sessions took place about eight times per year and used 300 to 500 gallons (gal) of waste oil solvents and waste fuels [aviation gas and jet propellant number 4] per training session. The fire training site area consisted of a 5,000 square-foot concrete pad bermed on all sides with an oil/water separator (OWS) and a salvaged aboveground storage tank (AST) in the center which was only used to simulate an aircraft. The bermed area contained petroleum oil and lubricants contaminated soil and the soil on the south side of the bermed area was visibly stained from overflow. The berm was observed to be cracked in multiple locations. In March 1987, a preliminary contamination assessment was conducted around the fire training pad. Metals, polycyclic aromatic hydrocarbons (PAH), and phthalates were detected in the surrounding soil. From 1990 to 1992 additional contamination assessments indicated the surface soil and drainage ditch sediments were impacted by volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) and the groundwater was impacted by VOCs. In the first quarter of 1995 samples were collected as a part of the source removal investigation. In 1997 free-product was discovered in groundwater monitoring well HMW-07. During the first and second quarters of fiscal year (FY) 98 an interim remedial action (IRA) was conducted at the former fire training area (FTA). Soil remediation activities included the removal of all structures (i.e., simulated aircraft structure a 20,000-gal AST underground fuel transmission line concrete pad/berm OWS and 5,000 cubic yards (cy) of contaminated soil. Groundwater monitoring was initiated in FY98, and a belt skimmer (thin layer free-product recovery system) was installed at HMW-07 in the second quarter of FY99. Investigations continued in 1999 and 2000 to further delineate the extent of soil and groundwater contamination to background levels per the GAEPD requirements to support preparation of the compliance status report (CSR). Investigations showed VOCs, SVOCs, PAHs, and pesticides present in

the soil. Chlorinated solvents [cis-12 dichloroethane (DCE) and trans-12-DCE] were detected in a groundwater sample collected from monitoring well HMW-14R located in the north portion of the FTA; this area was designated as the departure/arrival airfield control group (DAACG) chlorinated solvents area. Additional VOCs, SVOCs, and metals were also detected during this groundwater investigation. The detection of the chlorinated solvents identified another source area which was originally placed in Army Environmental Database - Restoration (AEDB-R) as HAA-016. This information was summarized in the second version of the CSR that was submitted to the GAEPD in March 2000. Review comments were received in January 2001 from the GAEPD requiring additional site delineation in the northeast section of the site and to the south of the site. In March 2001, the GAEPD approved a background soil statistical study and requested further investigation be conducted of the soil and groundwater to complete the delineation of contamination present. In the first quarter of FY02 additional investigation of the soil and groundwater was conducted to complete the delineation for the third revision of the CSR. The extent of previous contaminants in the surface subsurface soil and groundwater were delineated. To further delineate the extent of the chlorinated solvents at the DAACG chlorinated solvents area the US Army Corps of Engineers (USACE) installed 17 vertical-profile borings in 2002. In 2003 a second IRA was conducted to address the free-product present in monitoring well HMW-07. The belt skimmer was removed prior to excavating approximately 67 cubic yards (cy) soil. In June 2003, eight 1-inch diameter monitoring wells were installed throughout the DAACG chlorinated solvent area. In July 2004, groundwater samples were collected from 10 monitoring wells in the DAACG chlorinated solvent area. These field activities were summarized in a revised CSR addendum. The CSR addendum established that four VOC constituents (DCE, benzene, cis-12-DCE, and vinyl chloride) were not in compliance with groundwater risk reduction standard along with naphthalene and lead that were established to be out of compliance in the revised final CSR. The revised CSR and its associated addenda were submitted to the GAEPD in June 2005. The CSR was amended with specific corrective action procedures in FY06. Benzene, naphthalene, and lead are contaminants of concern near the former FTA, while 12-DCE, cis-12-DCE, and vinyl chloride are a concern in the DAACG chlorinated solvent area. While the revised final CSR and the addendum to the CSR were under review by the GAEPD, the installation continued to perform semiannual monitoring of 10 groundwater wells for benzene, toluene, ethylbenzene, and xylene (BTEX) in the former FTA and 10 groundwater wells for VOC constituents in the DAACG chlorinated solvent area. The GAEPD responded to the revised final CSR and the addendum to the CSR the first quarter of FY07 requesting that additional investigation be performed in the DAACG chlorinated solvent area to determine the boundaries of the solvent plume and location of the source. In 2008, the GAEPD responded to the CSR addendum requesting additional soil and groundwater delineation within the DAACG chlorinated solvent area and soil delineation to the north of the former FTA. Additional delineation activities were initiated in fourth quarter of FY08. A semiannual groundwater monitoring event was conducted in February 2009, of 10 groundwater monitoring wells in the former FTA for VOCs, SVOCs, and lead; and 10 groundwater monitoring wells in the DAACG chlorinated solvent area for VOCs. Due to the additional soil and groundwater delineation that was requested by the GAEPD, a CSR work plan was submitted to the GAEPD in July 2009. The work plan proposed the installation of five soil borings, nine shallow aquifer monitoring wells, and two deep aquifer monitoring wells to address the additional characterization requested by the GAEPD. GAEPD completed their review of the CSR in January 2012. In May 2012, the US Army Environmental Command (USAEC) issued a stop work modification for three sites at HAAF, one of which was HAA-01. A modification for this adjustment was issued to the contracting officer in February 2013. A request was sent to GAEPD to withdraw the CSR due to the change in regulatory driver in third quarter of FY14. A draft remedial investigation (RI)/ feasibility study (FS) was completed in 2014 followed by completion of the project management plan (PMP) during FY15. In FY15, a sampling and analysis plan that was combined with the quality assurance project plan was submitted to GAEPD for review and was approved on July 27, 2016. The fieldwork for the RI/FS was

conducted in FY16 and the report was submitted to GAEPD in FY17 for approval. The RI/FS dated November 2018, was submitted to GAEPD for approval on Dec. 6, 2018. The response to comments to Revision 3 (October 2019) RI/FS was approved for implementation by GAEPD on Nov. 27, 2019. The proposed plan (PP) was submitted to the regulator for approval on Dec. 3, 2020. Regulatory approval of the HAA-01 Final Proposed Plan was received on March 10, 2021. The HAA-01 Record of Decision (ROD), dated October 2021, was submitted for regulatory review in January 2022 and was approved by GAEPD. For the DAACG Area, groundwater enhanced reductive dichlorination (ERD), monitored natural attenuation (MNA), and land use controls (LUC) were selected as the recommended alternatives to meet the remedial action objectives. For the former FTA, groundwater MNA, and LUCs were selected as the RI/FS approved recommended alternatives to meet the remedial action objectives. For impacted soil at the former FTA, vegetative cover was selected in the approved RI/FS and the proposed plan as the recommended alternatives to meet the remedial action objectives. The RD was completed, and remedial action construction (RA(C)) began in FY21. The Remedial Action Work Plan (RAWP) approval from GAEPD is dated May 27, 2022. The injection wells and injections of emulsified vegetable oil (EVO) and sodium bicarbonate for the remediation process at HAA-01 were completed in October 2022. Per the approved RAWP, a total of two (2) years of quarterly sampling is required following the injections. Two (2) quarterly groundwater sampling events were completed in FY23, and two (2) more sampling events are scheduled during FY24. A CAP Progress Report with the results of the four (4) quarterly sampling events will be submitted to GAEPD for approval. The quarterly groundwater sampling will continue for one (1) additional year to determine contaminant trends. After the quarterly sampling is completed, semiannual sampling is planned for five (5) additional years and then will transition to annual sampling. The initial annual LUC Inspection Report for the Fire Training Area vegetative cover is scheduled for FY24. Since hazardous substances, pollutants, or contamination remains at the site above levels that allow for unlimited use (UU)/unrestricted exposure (UE), LUCs and five-year reviews will be required indefinitely.

1154A.1015_HAA-13_PUMP HOUSES #1 #2 AND #6

Env Site ID: HAA-13

Cleanup Site: PUMP HOUSES #1 #2 AND #6

Alias: HAA-13

Regulatory Driver: RCRA-I

RIP Date: 4/30/2010

RC Date: 9/30/2054

RC Reason: Not assigned

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
ISC:	1/31/1983	10/31/1983
INV:	6/30/1996	1/31/1997
CAP:	6/30/1996	9/30/2002
DES:	--	--
IRA:	3/31/1995	9/30/2003
IMP(C):	1/31/2001	4/30/2010
IMP(O):	10/31/2002	9/30/2054
LTM:	--	--

Site Narrative: This project consists of 32 underground storage tanks (UST) located at three former pump houses. The pump houses were taken out of service in 1973. Removal of 16 USTs located at Pump House #1 and Pump House #2 was completed in FY95. Fourteen of the remaining USTs at this site were removed and two defueling tanks with all associated piping were closed in place in June 1998. The corrective action plan (CAP)-part A was submitted to the GAEPD in May 1997 for each pump house (#1, #2, and #6) and was approved. The CAP-part B for Pump House #6 recommending no further action (NFA) was approved by the GAEPD in November 1998. In April 2010, the Semiannual Progress Report for Pump House #2 recommending NFA was approved by the GAEPD in August 2010. The former Pump House #1 was an aviation-gas fuel island located along the east-west taxiway of HAAF that was used from about 1953 until the early-1970s. It consisted of 10 25,000 gal USTs and a 50,000-gal underground defueling tank. Various closure activities and CAP-part A and CAP-part B investigations were performed at the former Pump House #1 site between 1995 and 2000. Analytical data from all the investigations indicated the DAACG facility and the former Pump House #1 should be combined into one CAP-part B report. This report was submitted to the GAEPD in August 2000 and approved in a correspondence dated December 2000. The former Pump House #1 CAP-part B report indicated that there are two distinct and separate plumes located in the vicinity of Pump House #1. Release No. 1 is an area of soil and groundwater contamination near the DAACG facility that is in the vicinity of former fuel pits 1A and 1B located approximately 900 feet west of former building 8060 (i.e., Pump House #1). This area had previously been designated in AEDB-R as HAA-11 and was combined with this site due to the groundwater BTEX plumes being contiguous. Release No. 2 is an area of soil and groundwater contamination located near the former Pump House #1 facility and former fuel pits 1C and 1D located approximately 200 feet north of the former tank pits. The CAP-part B recommended additional investigation be conducted in the fuel pit 1A / DAACG area (Release No. 1) to further define the extent of the free-product. For Release No. 2 the CAP-part B Report recommended semiannual monitoring of eight groundwater monitoring wells for BTEX.

Narrative for Release No. 1 – In May 2000, an interim action to remove the free-product within the Pump House #1 Release No. 1 area was implemented using absorbent socks. An addendum to the CAP-part B was completed in July 2002 to address the additional investigation required at Pump House #1 Release No. 1. During the investigation free-product more than 0.125 inch was observed in six monitoring wells. The CAP-part B Addendum No. 1 report recommended sampling of 30 monitoring wells annually for BTEX in the Pump House #1 Release No. 1 area. The use of absorbent socks for free-product removal at Pump House #1 Release No. 1 continued until July 2003. In 2003, an additional investigation was conducted to further delineate the horizontal and vertical extent of the free-product in the subsurface at Release No. 1 and Release No. 2 using cone-penetrometer-technology equipment with fluorescence detection. The use of absorbent socks was initiated again in 2004. In 2005, the free-product removal method was bi-monthly vacuum extraction (VE) from numerous wells located throughout the Pump House #1 Release No. 1 area. In 2006, a CAP-part B Addendum No. 2 was prepared for Pump House #1 Release No. 1 and approved by the GAEPD for quarterly VE of free-product at four wells for at least eight hours and annual monitoring of 30 groundwater wells. In 2008, a supplemental site investigation was conducted at Pump House #1 Release No. 1 in which 45 soil borings were installed throughout the identified plume area to fully delineate soil and groundwater. In 2009, to reduce the estimated time frame for groundwater to reach the approved alternate concentration limits (ACL) levels at the Release No. 1 area an active remedy of injecting calcium peroxide (CaP) was proposed in a revised CAP-Part B Addendum in 2009. CaP injections at the Release No. 1 area were conducted in April 2010. Semiannual groundwater monitoring events have been completed for Release No. 1 since September 2010. The CaP injections in the Release No. 1 area exhibited a boost to the rate of attenuation of BTEX and to enhance the attenuation rates in the northern portions of the impacted area a third injection of CaP was conducted in March 2012. Semiannual performance monitoring events have been being performed between FY12 – FY23. Periodic review of this final remedy was completed in FY20 and will be completed every five years thereafter. Periodic review was also completed for this site in FY16. No monitoring wells exceeded the ACL 285 microgram per liter ($\mu\text{g}/\text{L}$). During the June 2020 sampling event Light Non-aqueous Phase Liquid (LNAPL) was not measured in any monitoring wells. Dissolved-phase benzene concentrations were observed in seven monitoring wells with a maximum concentration of 226 $\mu\text{g}/\text{L}$ which were below the ACL. During the April 2021 Sampling Event LNAPL was not measured in any of the monitoring wells. Dissolved-phase benzene concentrations were observed in seven wells with a maximum concentration of 154 $\mu\text{g}/\text{L}$ (all concentrations were below the ACL). During the October 2021 sampling event, LNAPL was not observed in any monitoring wells. However, dissolved-phase benzene concentrations were observed in six wells. Two wells exceeded the benzene ACL with a maximum concentration of 385 $\mu\text{g}/\text{L}$. The data from the April 2022 sampling event indicated LNAPL was not measured in any monitoring wells and all samples collected were below the ACLs for Benzene. The GAEPD Underground Storage Tank Management Program (USTMP) requested comprehensive sampling of the site, which was completed in July and August 2022 by the Savannah USACE. The July/August 2022 comprehensive sampling event indicated LNAPL was not measured in any monitoring wells. Dissolved-phase benzene was detected in 16 of the 24 wells sampled and two wells exceeded the benzene ACL with a maximum concentration of 370 $\mu\text{g}/\text{L}$. The data for the October 2022 sampling event indicated LNAPL was not measured in any monitoring wells. However, dissolved-phase benzene was observed in seven (7) wells with a maximum concentration of 400 $\mu\text{g}/\text{L}$. The data for the April 2023 sampling event indicated LNAPL was not measured in any monitoring wells. However, dissolved-phase benzene was observed in seven (7) wells with a maximum concentration of 250 $\mu\text{g}/\text{L}$.

Narrative for Release No. 2 – In May 2006, six injection wells were installed around the Pump House #1 Release No. 2 tank pit area to inject an oxygen-releasing material to enhance the degradation of BTEX compounds. To monitor natural attenuation in the Pump House #1 Release No. 2 area, eight

groundwater monitoring wells were sampled for BTEX. Injections in this area were conducted from July 2006 through April 2007. To decrease the remedial time frame and to mitigate impacts to the canal surface water downgradient of the petroleum hydrocarbon plume at the Release No. 2 area, two additional RAs were proposed. In situ chemical oxidation using sodium persulfate was used to reduce the contaminant mass in two source areas that were designated as Area A and Area B. To mitigate the migration of BTEX to the drainage canal in situ application of CaP into two offset rows of injection points (barrier wall) upgradient of the canal (Area C). The injected CaP would serve as a reactive barrier to stimulate aerobic biodegradation of contaminants in groundwater prior to the discharge into the canal. These three proposed actions were approved by GAEPD in the first quarter of calendar year 2010. Sodium persulfate injections were performed in the Release No. 2 area from February to March 2010. In December 2010, a second round of sodium persulfate was injected in the Release No. 2. To maintain the downgradient biological reactive barrier wall of this area a second injection of CaP was performed in February 2011. Quarterly monitoring after the initial injection was conducted for both releases. The injection of sodium persulfate resulted in significant reductions in one area of Release No. 2, while demonstrating variable reductions in another area. As indicated in the third quarterly performance monitoring report after the second sodium persulfate injection (March 2012) concentrations in three injections wells within the Release No. 2 area all rebounded to above the ACL (285 µg/L) for benzene after the injections. This gives an indication of a greater mass of hydrocarbons than originally suspected. This greater mass of hydrocarbons significantly reduces the effectiveness of the sodium persulfate injections. As an alternative to the sodium persulfate injections in Release No. 2, the contractor proposed that a biosparge system be installed to promote aerobic degradation. After the third injection application in June 2012 and a sampling event conducted in December 2012, an additional focused sodium persulfate application was recommended due to a rebound in concentrations. This injection application was conducted in June 2013 and was followed by groundwater monitoring events in July and October 2013. Another application of sodium persulfate to reduce the contaminant mass in the two source areas (Area A and Area B) was completed in May 2014. Another application of CaP to replenish and maintain the barrier was completed in June 2014. A sixth injection of sodium persulfate was performed in November 2016. Performance monitoring events were conducted in FY17 and FY18. Semiannual performance monitoring events have been performed between FY20 – FY23. During the June 2020 sampling event, LNAPL was not measured in any of the ten sampled monitoring wells and the maximum benzene concentration was 1,180 µg/L which exceeded the ACL. During the April 2021 Sampling Event, LNAPL was not measured in any of the monitoring wells. Dissolved-phase benzene concentrations were observed in 10 wells with a maximum concentration of 830 µg/L. Five monitoring wells exceeded the ACL of 285 µg/L during this event. During the October 2021 sampling event, LNAPL was not observed in any monitoring wells. However, dissolved-phase benzene concentrations were observed in nine (9) monitoring wells with a maximum concentration of 1,360 µg/L. Five wells had levels of dissolved-phase benzene concentrations above the ACL of 285 µg/L. During the April 2022 sampling event, LNAPL was not measured in any monitoring wells. However, dissolved -phase benzene concentrations were observed in nine wells with a maximum concentration of 1,410 µg/L and five wells had dissolved-phase benzene concentrations above the ACL of 285 µg/L. During the October 2022 sampling event, LNAPL was not measured in any monitoring wells. However, dissolved-phase benzene concentrations were observed in nine (9) wells with a maximum concentration of 1,130 µg/L. During the April 2023 sampling event, LNAPL was not measured in any monitoring wells. However, dissolved-phase benzene concentrations were observed in nine (9) wells with a maximum concentration of 860 µg/L (J) (Estimated/Diluted). The GAEPD USTMP requested comprehensive sampling for Release No. 2, which was conducted in May 2023 by the Savannah USACE. The groundwater analytical data from the May 2023 sampling event indicated eight (8) of the sampled results from the forty-four (44) wells exceeded the ACL for benzene (levels ranged from 310 µg/L to 1,400 µg/L).

Periodic review of this final remedy was completed in FY20 and will be completed every five years thereafter. Periodic review was also completed for this site in FY16. Pump House #1 Release No. 1 – Corrective action activities will be discontinued when benzene concentrations in groundwater are reduced to below the GAEPD approved ACL of 285 µg/L. Continued semiannual sampling will be conducted to monitor the natural attenuation of the residual BTEX. Pump House #1 Release No. 2 – Corrective action activities will be discontinued when benzene concentrations in groundwater are reduced to below the GAEPD approved ACL of 285 µg/L. Additionally benzene and chrysene concentrations in soil must be below the approved alternate threshold limits of 9.3 and 2.1 milligrams per kilogram, respectively. Semiannual sampling of groundwater monitoring wells near the canal and of the canal surface water will be performed to monitor potential impacts. Confirmatory soil samples will be collected after groundwater remedial levels are met. Since hazardous substances, pollutants, or contamination remains at the site above levels that allow for UU/UE, LUCs and periodic reviews will be required indefinitely.

1154A.1017_HAA-15_MCA BARRACKS SITE

Env Site ID: HAA-15

Cleanup Site: MCA BARRACKS SITE

Alias: HAA-15

Regulatory Driver: CERCLA

RIP Date: 5/1/2023

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: High

MRSPP: N/A

Phase	Start	End
PA:	2/28/1998	9/30/1999
SI:	8/31/2000	12/31/2001
RI/FS:	10/31/2000	8/2/2021
RD:	1/15/2013	8/2/2021
IRA:	7/31/2004	1/31/2008
RA(C):	4/30/2008	4/30/2023
RA(O):	5/1/2023	9/30/2054
LTM:	--	--

Site Narrative: The regulatory statute for this site was initially the HSRA regulated by GAEPD under HSI number 10,521. In 2014, this site was transferred to the regulatory statute CERCLA and is still regulated by GAEPD. It is located north of Lightning Road, west of Mitchell Blvd, east of Griffen Street, and south of Cook Blvd. The estimated 75-acre site contains a 10-acre pond and is approximately 0.5 miles and 1.5 miles from the installation's two main potable water wells (Well No. 1 and Well No. 2 respectively), which withdraw water at a considerably lower depth than the contaminated surficial groundwater. In July 2000, contamination of trichloroethylene (TCE) and DCE at concentrations exceeding action levels [parts per million range] were detected. The chlorinated solvent contamination extends from six to 50 feet below ground surface (bgs). Contamination has been identified in groundwater only and the source of contamination is unknown. The most probable source of contamination is former aircraft maintenance operations located at Buildings 811, 813, 843, 844, and/or 845, and/or a former fuel/de-icing fluid transfer line located in the area. In FY01, subsurface geophysical studies were conducted to assist in defining a sampling strategy and 10 vertical profiles/deep wells were installed in fourth quarter FY01. In FY02, additional wells were installed and purging of pipelines A and B (under HAA-03) was completed. In FY04 an ongoing historical investigation identified the potential of a former hospital and motor pool in the area as possible sources. Direct-push technology (DPT) screening of soil at 5-foot intervals with groundwater sampling at discrete intervals from the water table to 45 feet bgs was conducted at 20 locations beyond the previously defined site boundary. TCE was identified at multiple locations. However, additional sampling will be required to determine if these are discrete or part of a continuous plume. No major source has been identified. The production well and pond remain uncontaminated. An archive search was conducted in FY04 to identify the source of the contamination. A draft PMP was submitted in early FY05. As an HSRA site this site will be delineated to background concentrations. In FY06 and FY07 site delineation for groundwater was conducted and a pilot study was performed to optimize the corrective action of groundwater contamination. The groundwater corrective action consists of implementation of ERD. The baseline groundwater monitoring event was conducted in

February 2006 followed by the initial anaerobic biochem (ABC) pilot study injection. Two additional rounds of injections of enhanced ABC injections included the addition of zero-valent iron dehalococoides and buffering agent (sodium bicarbonate) in FY06 thru FY07. Six rounds of groundwater sampling were conducted in FY06 through FY07 to optimize the performance of the pilot study. A draft CAP and a CSR were completed in FY07. Reports were not submitted due to site transfer to a new contractor in 2008. A partial excavation of a grease trap located in Building 811 was conducted by the installation in FY07 that did not include soil removal. In 2009, an investigation to finalize the delineation of the source(s) of the TCE impacts in groundwater was conducted. The activities comprising the investigation of the TCE plume at HAA-15 included – collection of water level from monitoring wells evaluation of surface water drainage vertical profiles using membrane interface probe (MIP) technology followed by soil and groundwater sampling and installation of four groundwater monitoring wells. Based on a compilation of all data collected under the conceptual site model (CSM) investigations, two source areas for TCE groundwater impacts at the HAA-15 site were identified – Hanger T-811 area and the former industrial waste treatment plant/wash-rack area. A revised CSR was submitted to the GAEPD in the first quarter of FY11. The regulatory driver for this site was changed from the HSRA to the CERCLA by the USAEC during 2012. A modification for this adjustment was issued to the contracting officer in February 2013. A request was sent to GAEPD to withdraw the CSR due to the change in regulatory driver in third quarter of FY14. The draft RI/FS was completed in 2014, followed by completion of the PMP during FY15. In FY15, a sampling and analysis plan that was combined with the quality assurance project plan was submitted to GAEPD for review and was approved on July 27, 2016. The fieldwork for the RI/FS was conducted in FY18 and the final RI/FS report was submitted to GAEPD for approval on Nov. 18, 2018. The response to comments with revised pages for the RI/FS were approved for implementation by GAEPD on Aug. 26, 2019. A revised PP was submitted for approval to the regulator on Dec. 3, 2020. Regulatory approval of the HAA-15 Final Proposed Plan was received on Sept. 22, 2021. The HAA-15 ROD, dated October 2021, was submitted for regulatory review in January 2022 and was approved by GAEPD. For the impacted soil at the Old Hospital Area, excavation and disposal were selected in the approved RI/FS and the proposed plan as the recommended alternatives to meet the RAOs. For the chlorinated volatile organic compounds in groundwater, ERD, MNA, and LUCs were selected as the recommended alternatives to meet the RAOs. The RD was completed, and RA(C) began in FY21. The Remedial Action Work Plan approval from GAEPD is dated May 27, 2022. The injection wells and injections of EVO and sodium bicarbonate for the remediation process at HAA-15 were completed in January 2023 and the excavation for the soil contamination was completed in the second quarter of FY23. Per the approved RAWP, a total of one (1) year of quarterly sampling is required following the injections. Two (2) quarterly groundwater sampling events were completed in FY23, and two (2) more sampling events are scheduled during FY24. A CAP Progress Report with the results of the four (4) quarterly sampling events will be submitted to GAEPD for approval. After the quarterly sampling is completed, semiannual sampling is planned for five (5) additional years and will then transition to annual sampling. Since hazardous substances, pollutants, or contamination remains at the site above levels that allow for Unlimited Use/Unrestricted Exposure (UU/UE), LUCs and five-year reviews will be required indefinitely.

1154A.1019_HAA-19_PFAS

Env Site ID: HAA-19

Cleanup Site: PFAS

Alias: #

Regulatory Driver: CERCLA

RIP Date: 9/30/2028

RC Date: 9/30/2028

RC Reason: Not assigned

SC Date: 9/30/2028

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE:

MRSPP: N/A

Phase	Start	End
PA:	9/30/2017	9/15/2019
SI:	12/15/2019	9/30/2022
RI/FS:	2/1/2023	9/30/2028
RD:	--	--
IRA:	--	--
RA(C):	--	--
RA(O):	--	--
LTM:	--	--

Site Narrative: Per direction from Deputy Chief of Staff G-9 Environmental, this site was created to account for all per- and polyfluoroalkyl substances (PFAS) costs at the Installation. The preliminary assessment (PA) was completed on Sept. 15, 2019. Preliminary Assessment and Site Investigation (SI) of Per- and Polyfluoroalkyl Substances Report Hunter Army Airfield Georgia dated July 2022 has been completed. Per request, the final PA/SI report was sent to GAEPD in December 2022. Based on the PA, 14 Areas of Potential Interest (AOPIs) were identified and recommended for the SI phase. The PA/SI Report recommended 12 AOPIs for further remedial investigation (Fire Training Site (HAA-01) Fire Station 04; Sleepy Hollow FTA; Fire Station 02; Vehicle Fire 03; Nozzle Testing Area Hangar 830; Hangars 7901 and 7902; Hangar 7911; HAAF Wastewater Treatment Plan; Vehicle Fire 04; Hangar 805), which began in FY23. The Remedial Investigation is underway and future actions will be determined after the completion of the investigation.

1154A.1022_HAA-17_Groundwater Contamination HAAF

Env Site ID: HAA-17

Cleanup Site: Groundwater Contamination HAAF

Alias: HAA-17

Regulatory Driver: CERCLA

RIP Date: 11/13/2022

RC Date: 9/30/2054

RC Reason: Not assigned

SC Date: 9/30/2054

Program: ENV Restoration, Army

Subprogram: IR

NPL Status: No

Hazardous Ranking Score: 0

RRSE: Low

MRSPP: N/A

Phase	Start	End
PA:	9/30/2007	12/31/2007
SI:	9/30/2008	10/31/2009
RI/FS:	9/30/2008	8/2/2021
RD:	10/15/2015	8/2/2021
IRA:	--	--
RA(C):	8/3/2021	11/12/2022
RA(O):	11/13/2022	9/30/2054
LTM:	--	--

Site Narrative: During the investigation at USTs 25, 26, and the HAAF purge facility for BTEX, the following VOCs were detected in the groundwater – TCE; 1,2-DCE; 1,1-DCE; 1,1-Dichloroacetic Acid; vinyl chloride; acetone; and chloroform. Potential sources were identified as Building 1290, UST 25/26, the purge facility, the special weapons facility, the weapons cleaning facility, and a dry cleaner. Maximum TCE detected was 7,730 µg/L. In May 2007, a total of 21 (shallow and deep combined) groundwater monitoring wells were installed around Building 1290. Wells were installed above the clay confining layer which is at 40 to 45 feet bgs. In July 2007, 23 groundwater monitoring wells were sampled for VOCs. Analytical results demonstrated no TCE impacts in the vicinity of Building 1290. There was a TCE detection located approximately 675 feet southeast of Building 1290. Between October 2007 and January 2008, 40 MIP vertical profiles were installed approximately 40 to 50 feet bgs. Twenty DPT borings for soil and groundwater samples were collected from multiple depth intervals. TCE was detected in five DPT locations. Investigations to date indicate that the TCE impact is concentrated around USTs 25 and 26. In FY09 and FY10 additional site investigations were conducted to define the extent of groundwater impacted by TCE. Conclusions of the CSM indicate there are three areas impacted by TCE. The area with the highest concentrations of TCE is in the vicinity of former USTs 25/26. TCE impacts have been observed predominantly at the 20 to 30 feet and 30 to 40 feet bgs intervals. The area extent of the TCE impacts decreases with depth and the highest TCE concentrations occur predominantly at 20 to 30 foot interval which is just above the upper clay layer. The other areas impacted by low levels of TCE, and VOCs include the former purge facility and a former dry cleaner. A CSR was completed and submitted to GAEPD in the second quarter of FY11. With one exception the full extent of TCE in groundwater at the site is delineated horizontally and vertically. Based on the assessment of impacted areas and ecological conditions there are no ecological risks at this site. The revised CSR was generated based on data from investigations conducted from FY10 to FY13. In May of 2012, the USAEC issued a stop work modification for three sites at HAAF; HAA-17 was one of them. The regulatory driver for this site was changed from the Georgia HSRA to CERCLA. A modification for this adjustment was issued to the contracting officer in

February 2013. A request was sent to GAEPD to withdraw the CSR due to the change in regulatory driver in third quarter of FY14. The draft RI/FS was completed in 2014, followed by completion of the PMP during FY15. Also, in FY15 a sampling and analysis plan was combined with the quality assurance project plan and submitted to GAEPD for review and approved on July 27, 2016. The fieldwork for the RI/FS was conducted in FY17 and the Final RI/FS Report was submitted to GAEPD on Oct. 25, 2018 and approved on Nov. 25, 2019. The PP was submitted to the regulator for approval on Feb. 28, 2019 and a revised PP was submitted to the regulator for approval on Dec. 3, 2020. Regulatory approval of the HAA-17 Final Proposed Plan approval letter was received on March 10, 2021. The HAA-17 ROD, dated October 2021, was submitted for regulatory review in January 2022 and was approved by GAEPD. For the chlorinated volatile organic compounds in groundwater, ERD, MNA, and LUCs were selected in the approved RI/FS and proposed plan as the recommended alternatives to meet the RAOs. The RD was completed, and RA(C) began in F21. The Remedial Action Work Plan approval from GAEPD is dated May 27, 2022. The injection wells with injections of EVO and sodium bicarbonate for the remediation process at HAA-17 were completed in November 2022. Per the approved RAWP, a total of one (1) year of quarterly sampling is required following the injections. Two (2) quarterly groundwater sampling events were completed in FY23, and two (2) more sampling events are scheduled during FY24. A CAP Progress with the results of the four (4) quarterly sampling events will be submitted to GAEPD for approval. After the quarterly sampling is completed, semiannual sampling is planned for five (5) additional years and will then transition to annual sampling. Since hazardous substances pollutants or contamination remains at the site above levels that allow for Unlimited Use/Unrestricted Exposure (UU/UE), LUCs and five-year reviews will be required indefinitely.

SITE SUMMARY

SITE CLOSEOUT SUMMARY

CRL ID	Site Name	Site Closeout Date
1154A.1002	HAA-02_PCB STG AT DEH STG YD BHND BLD 10	10/31/1983
1154A.1003	HAA-03_FORMER USTS AT BLDG 728	10/31/2008
1154A.1004	HAA-03B_FORMER USTS AT BLDG 133	6/30/2006
1154A.1005	HAA-03C_FORMER USTS AT BLDG 710	6/30/1996
1154A.1006	HAA-04_SEW TRT PLANT	10/31/1983
1154A.1007	HAA-05_AIRCRAFT WSH RACKS OW SEP	10/31/1983
1154A.1008	HAA-06_PHOTO LAB BLD 1287, 332	10/31/1983
1154A.1009	HAA-07_FORMER BLDG 1022 PESTICIDE STORAG	10/31/1983
1154A.1010	HAA-08_BLD 1029 FORMER PESTICIDE STORAGE	10/31/1983
1154A.1011	HAA-09_BULK FUEL FACILITY	6/23/2016
1154A.1012	HAA-10_FORMER SANITARY LANDFILL	10/31/1983
1154A.1013	HAA-11_DAACG/AIRFIELD INVESTIGATION	11/30/1996
1154A.1014	HAA-12_FORMER PDO FACILITY	3/31/2009
1154A.1016	HAA-14_FORMER AIRFIELD AREA UST SITES	10/31/2002
1154A.1018	HAA-16_DAACG AREA CHLORINATED SOLVENTS	7/31/2003
1154A.1021	PBA@HAAF_Funding for PBA @ HAAF	12/31/2015
1154A.1023	HAA-18_HAAF Boundary Investigation	12/31/2010
1154A.1024	CCHAAF-001_HAAF PURGE FACILITY; ID#9-025	1/31/2008
1154A.1025	CCHAAF-002_USTS 25 & 26, FAC ID # 9-0250	9/30/2008
1154A.1026	CCHAA03_RANGER MOTORPOOL USTs 122-123;ID	1/31/2007
1154A.1027	CCHAAF-004_Aircraft Hangar Bldg 1290	1/31/2008
1154A.1028	CCHAAF-005_HAAF Boundary Investigation	1/31/2008

COMMUNITY INVOLVEMENT

Community Involvement Plan (Date Last Reviewed):	2024
Technical Review Committee Establishment Date:	N/A
Restoration Advisory Board (RAB) Establishment Date:	N/A
RAB Adjournment Date:	N/A
RAB Adjournment Reason:	N/A
Reasons for Not Establishing RAB:	No sufficient, sustained community interest in a RAB has been expressed by the community
RAB Date of Solicitation from Community:	06/2024
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:	U.S. Army Garrison, Fort Stewart; Directorate of Public Works, Building 1337; 1550 Veterans Parkway; Fort Stewart, Georgia 31314. https://home.army.mil/stewart/index.php/about/Garrison/DPW/environmental/prevention-and-compliance/adminrecord
Information Repository Location:	U.S. Army Garrison, Fort Stewart; Directorate of Public Works, Building 1337; 1550 Veterans Parkway; Fort Stewart, Georgia 31314

FIVE-YEAR / PERIODIC REVIEW SUMMARY

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
Completed	PR	12/05/2019	10/21/2020	<p>At HAA-13 Pump House # 1, Release #1 (PH #1, R#1) the corrective action objective is to remediate groundwater contamination and reduce dissolved benzene concentrations to below the ACL of 285 µg/L. At HAA-13 PH#1, R#2, the corrective action objective is to remediate groundwater contamination and reduce dissolved benzene concentrations to below the ACL of 285 µg/L.</p>	<p>At HAA-13 PH #1, R#1, the plume boundary has not been fully captured based on the sampling points identified in the CAP Progress Reports. The southeastern limit does not appear to be based on detected concentrations and is not defined by sampling results. At HAA-13 PH #1, Release #2 (R#2), the corrective action is protective of human health and the environment.</p>	<p>At HAA-13 PH #1 R#1, the corrective action objective to reduce the estimated timeframe for groundwater to reach ACLs cannot be evaluated because the estimated timeframe has not been established in previous CAP reports dated from 2002 through 2009. The remedy at PH#1, R#1 currently protects human health and the environment because the removal of free product was achieved to the required measurable thickness of one-eighth inch in the monitoring wells. Groundwater sampling confirmed lead was below the IWQS of 30 µg/L following free product removal. Active remediation, including calcium peroxide injections, has reduced the plume mass. However, in order for the remedy to be protective in the long term, the following actions need to be taken. Evaluate additional corrective</p>

Status	Review Type	Start Date	End Date	Plans Narrative	Actions Narrative	Results Narrative
						actions in the downgradient portion of the plume, near monitoring well P1R1- MW-02. Evaluate and determine an estimated timeframe for groundwater to reach ACLs. At HAA-13 PH #1, R#2, the removal of free product was achieved to the required measurable thickness of one-eighth inch and there have been no observed impacts to the stormwater drainage canal south of the site since 2007. HAAF is continuing to determine the optimum persulfate dosing requirement and injection volume of calcium peroxide. HAAF continues to evaluate the plume status and general site geochemistry semiannually. The calcium peroxide seems effective at reducing hydrocarbon mass as observed at monitoring well P1-MW-19.
Planned	PR	12/31/2025	10/31/2026	TBD	TBD	TBD