

# FY2011

FORT HAMILTON

Army Defense Environmental Restoration Program

Installation Action Plan

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## Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

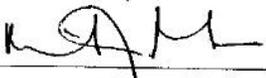
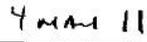
In an effort to coordinate planning information between the restoration manager, US Army Environmental Command (USAEC), Installation Management Command (IMCOM)-Northeast Regional Office, Fort Hamiton, the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following persons contributed to the formulation and completion of this Installation Action Plan for FORT HAMILTON:

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FORT HAMILTON  
Installation Action Plan Approval Signatures

	
MICHAEL J. GOULD COL, FA Commanding US Army Garrison Fort Hamilton	Date

## Acronyms

A-E	Architect-Engineer
AAFES	Army, Air Force Exchange Services
AEDB-CC	Army Environmental Database - Compliance-related Cleanup
AEDB-R	Army Environmental Database-Restoration
AOC	Area of Concern
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CAP	Corrective Action Plan
CC	Compliance-related Cleanup
CR	Compliance Restoration
DD	Decision Document
DERP	Defense Environmental Restoration Program
ER,A	Environmental Restoration, Army
FRA	Final Remedial Action
FS	Feasibility Study
FY	Fiscal Year
IAP	Installation Action Plan
IMCOM	Installation Management Command
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-Term Management
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response
N/A	Not Applicable
NPL	National Priorities List
NRHP	National Register of Historic Places
NYSDEC	New York State Department of Environmental Conservation
ODUSD(I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
PA	Preliminary Assessment
POL	Petroleum, Oils and Lubricants
RA	Remedial Action
RA(C)	Remedial Action (construction)
RAB	Restoration Advisory Board
RC	Response Complete
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RIP	Remedy-in-Place
ROD	Record of Decision
SI	Site Inspection
TAPP	Technical Assistance Public Participation
TBD	To be determined
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command

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## Acronyms

USEPA US Environmental Protection Agency  
UST Underground Storage Tank  
WWI World War I  
WWII World War II

## Installation Information

### Installation Locale

Installation Size (Acreage): 120

City: Brooklyn

County: Kings

State: New York

### Other Locale Information

Historic Fort Hamilton is located in the southwestern corner of Brooklyn, New York surrounded by the communities of Bay Ridge, Dyker Heights and Bensonhurst. The cornerstone of this coastal defense fort was set in 1825 and the first garrison flag was raised in 1831. While many of the original structures are gone, some having yielded to the construction of the Verrazano Narrows Bridge, part of the old fort remains on the grounds of the US Army Garrison Fort Hamilton. The Fort Hamilton Community Club and the Harbor Defense Museum are on the National Register of Historic Places (NRHP) and Colonels Row is eligible for the NRHP. The historic museum is located in the caponier of the old fort and is virtually untouched.

### Installation Mission

To provide effective and efficient services, facilities and infrastructure to service members, families, and civilians; to engage and support our joint and interagency partners; and to support our community.

### Lead Organization

IMCOM - Northeast

### Lead Executing Agencies for Installation

USAEC

### Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region II
State	New York State Department of Environmental Conservation (NYSDEC)
Local	New York City Department of Environmental Protection

### National Priorities List (NPL) Status

FORT HAMILTON is not on the NPL

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

Installation at RIP/RC.

### Installation Program Summaries

#### CR

Primary Contaminants of Concern: Petroleum, Oil and Lubricants (POL)

Affected Media of Concern: Soil

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 200909/201506

Prior Funding: \$.0 K

Current Requirements: \$257.0 K

Future Requirements: \$1,105.0 K

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## 5-Year / Periodic Review Summary

No 5-Year / Periodic Reviews have been scheduled

# Cleanup Program Summary

## Installation Historic Activity

On June 11, 1825 the cornerstone was laid for Fort Hamilton.

In 1831, Battery F, 4th Artillery left Governors Island with two officers and 52 enlisted men, and became Fort Hamilton's first garrison.

In 1839, the 27th Regiment, New York Militia, found a home at Fort Hamilton and began training. The post became the first national guard training camp in the United States. President Martin Van Buren visited on July 4, 1839.

From 1861 to 1865, during the Civil War, Fort Hamilton was a training site for volunteer regiments and the post strength reached as high as 1000 enlisted men. Troops from the fort helped to quell the great draft riots in Manhattan.

From 1898 to 1903, the old waterside casemated defenses of the fort were destroyed to make way for new armaments. New rapid fire breech loading mortars and guns, including 12 inch disappearing rifles, as well as electrically detonated mines controlled from Fort Hamilton, made it the most powerful seacoast fort in the New York Harbor.

In 1917 and 1918, during World War I (WWI), the post became a processing point for hundreds of thousands of American soldiers going to France. During WWI, Fort Hamilton, now equipped with new breech-loading anti-ship guns, mortars and electric mines, served as a training, embarkation and separation center, a role it again played during World War II (WWII). Between the wars it became an infantry center, as a new generation of coastal artillery was able to engage ships from greater distances was installed farther away from the city.

In 1922, the 18th Infantry Regiment and Headquarters of the 1st Infantry Division were stationed at Fort Hamilton.

In 1942, over three million soldiers were processed through the New York Port of Embarkation for transport to Europe in WWII, and at the close of hostilities, Fort Hamilton also served as point of discharge for millions of returning troops.

In 1949, Fort Hamilton was placed under 1st Army control and in 1950, during the Korean War, United Nations troops were staged, processed and shipped from Fort Hamilton.

From 1959 to 1964, construction of the Verrazano Bridge required the destruction of Fort Hamilton's parade ground and most of her turn of the century brick barracks.

In 1974, the old fortress was designated a national historic landmark and in 1976, the New York City Recruiting Battalion was established at Fort Hamilton.

In 1998, the Military District of Washington took over command of Fort Hamilton.

In 2002, the Installation Management Agency began overseeing all facets of Fort Hamilton's installation management, such as construction, family care, food management, environmental programs, well being, logistics, public works and installation funding.

Today, Fort Hamilton is the face of America's Army in New York City, serving full time active duty personnel, Army Reserve units, military retirees and numerous Department of Defense agencies throughout the greater New York City metropolitan area.

## Installation Program Cleanup Progress

### CR

Prior Year Progress: Continued operation of the dual-phase extraction system at site CCHAM0200.

Future Plan of Action: Continue to operate the dual-phase extraction system until contamination is remediated. Total operation time of system is projected to be three years. Monitored natural attenuation (MNA) will follow for two years.

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**FORT HAMILTON**  
**Army Defense Environmental Restoration Program**  
**Compliance Restoration**

## CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 2/1

### Installation Site Types with Future and/or Underway Phases

1 Contaminated Ground Water  
(CCHAM0200)

### Most Widespread Contaminants of Concern

Petroleum, Oil and Lubricants (POL)

### Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY	Cost
CC FTHM-01	AFRC Soil Remediation	IRA	WASTE REMOVAL - SOILS	2009	TBD
CCHAM0200	UST Site Remediation (Bldg 200)	FRA	NATURAL ATTENUATION	2009	TBD
CCHAM0200	UST Site Remediation (Bldg 200)	FRA	DUAL-PHASE EXTRACTION	2009	TBD

### Total Environmental Restoration, Army (ER,A) Funding

Prior Funding: \$0.0 K  
 Current Requirements: \$257.0 K  
 Future Requirements: \$1,105.0 K

### Duration of CR

Date of CR Inception: 199805  
 Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 200909/201506  
 Date of CR completion including Long Term Management (LTM): 202506

## CR Contamination Assessment

### Contamination Assessment Overview

Environmental restoration activities include the Installation Restoration Program (IRP) and Military Munitions Response Program (MMRP). On Dec. 29, 2008, the Office of the Deputy Under Secretary of Defense for Installations and Environment, ODUSD(I&E), issued an interim policy for the Defense Environmental Restoration Program (DERP) eligibility that rescinded the 1986 eligibility date for the IRP and the 2002 eligibility date for the MMRP. This made many sites previously addressed in the Army's Compliance-related Cleanup (CC) program eligible for the DERP. Sites that are now eligible for the Munitions Response (MR) program have been migrated from Army Environmental Database - Compliance-related Cleanup (AEDB-CC) and given the naming convention of other MR sites. The newly eligible non-MR type sites are considered to be installation restoration (IR) sites; however, the newly eligible sites are being coded as Compliance Restoration (CR) in the Army Environmental Database-Restoration (AEDB-R) to distinguish them from the original IR sites and IR metrics.

In March 1995, soil and groundwater contamination was found during routine underground storage tank (UST) replacement at building 200 (site CCHAM0200). Building 200 is a UST site and requires cleanup under NYSDEC regulations. The building is listed in the NYSDEC spills database (spill site #9802727) as an open spill with further action required. There are no complicating factors, and there has been no need to involve the public.

In 2003 an investigation was completed and in 2004 a corrective action plan (CAP) was completed for the building. In December 2004 the US Army Corps of Engineers (USACE) - Baltimore District completed a review of the CAP. In 2006 and 2007 the Baltimore District managed the preparation of the remedial design and work plan using an Architect-Engineer (A-E) design-build contract. The remediation system construction started in November 2007 and lasted through April 2009, when the operations and optimization phase started.

The remediation includes use of a multiphase remediation system to run for three years, followed by MNA for two years. The project is coordinated with NYSDEC.

### Cleanup Exit Strategy

Remediation of the site will be achieved by operating a dual-phase extraction system followed by MNA. After obtaining NYSDEC concurrence that cleanup is sufficient, equipment will be removed, wells abandoned, and the site restored.

## CR Previous Studies

	Title	Author	Date
1997	Site Investigation at Gasoline USTs Bldg 200	TRC Environmental Corp. and Staunton Chow Engineers, P.C.	AUG-1997
2000	Fort Hamilton Service Station Site Investigation	Parsons Engineering Science Inc.	AUG-2000
2003	Site Assessment at AAFES Station Bldg 200	General Physics Corp.	JUN-2003
2004	Corrective Action Plan for AAFES Station Bldg 200	General Physics Corp.	JUN-2004
2005	CAP-Design Optimization Study, Bldg 200	EA Engineering P.C.	SEP-2005
2006	Basis of Design/Remedial Action, Bldg 200	Plexus Scientific, Inc.	DEC-2006
2007	Remediation Construction Work Plan, Bldg 200	Plexus Scientific, Inc.	AUG-2007

**FORT HAMILTON**  
**Compliance Restoration**  
**Site Descriptions**

Site ID: CCHAM0200  
Site Name: UST Site Remediation (Bldg 200)

**STATUS**

Regulatory Driver: RCRA  
Contaminants of Concern: Petroleum, Oil and Lubricants (POL)  
Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199805.....	199806
INV.....	199807.....	199808
CAP.....	200306.....	200503
DES.....	200504.....	200703
IMP(C).....	200703.....	200904
IMP(O).....	200904.....	201506
LTM.....	201506.....	202506
RIP Date:	200904	
RC Date:	201506	

**SITE DESCRIPTION**

The Building 200 site has been used as an Army, Air Force Exchange Services (AAFES) gas station. The station is still operating.

During an FY98 investigation, subsurface benzene, toluene, ethylbenzene, and xylene (BTEX) contamination was discovered near the gasoline USTs at Building 200. Measurements taken at on-site monitoring wells showed the free-product plume to be up to six feet thick at the location of the historically leaking UST, which has been replaced with a new UST. The A-E consultants estimated approximately 2,000 gallons of free-product to be present at the site on top of the water table at a 30-foot depth. Spill number 9802727 was assigned by the NYSDEC. Article 12 of New York State navigation law requires cleanup to Technical and Administrative Guidance Memorandum 4046 and New York Code of Rules and Regulations Part 703 levels. Also applicable are 40 CFR 280 and 6NYCRR Parts 40 and 370. Data from the investigation and CAP indicated the contaminant plume covered an area approximately 100 feet by 75 feet and was moving about four feet per year. The contamination is located in the Brooklyn-Queens aquifer, which is designated as a drinking water source; however, this particular area of the aquifer is not currently used as a drinking water source.

The following activities have taken place at this site:

FY99-03

Initial site characterization, investigation & feasibility study: An investigation and remediation pilot study indicated an approximately 9,750 square foot contaminated plume is confined. An alternatives analysis was performed.

FY04 and FY06

CAP recommended biosplurping, followed by MNA.

FY05

Additional design field data collected.

FY08

A dual-phase extraction remediation system was installed.

FY09-FY10

Operation of the dual-phase extraction system. Numerous problems were encountered and addressed.

FY11

The second year of three years of operating dual-phase extraction remediation system.

Site ID: CCHAM0200

Site Name: UST Site Remediation (Bldg 200)

## CLEANUP/EXIT STRATEGY

It is anticipated that the dual-phase extraction remediation system (consisting of removal of free-product) will operate for a total of three years until June 2012. After three years of system operation, MNA will be conducted for three years to June 2015. Following MNA, LTM is anticipated until 2025. Following LTM and NYSDEC coordination, the site remediation equipment will be removed, wells abandoned, and the site will continue to function as an AAFES gas station.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CC FTHM-01	AFRC Soil Remediation	200909	

Date of CR Inception: 199805

## Past Phase Completion Milestones

1998

INV (CCHAM0200 - UST Site Remediation (Bldg 200))

ISC (CCHAM0200 - UST Site Remediation (Bldg 200))

2005

CAP (CCHAM0200 - UST Site Remediation (Bldg 200))

2007

DES (CCHAM0200 - UST Site Remediation (Bldg 200))

2009

SI (CC FTHM-01 - AFRC Soil Remediation)

IMP(C) (CCHAM0200 - UST Site Remediation (Bldg 200))

PA (CC FTHM-01 - AFRC Soil Remediation)

IRA (CC FTHM-01 - AFRC Soil Remediation)

## Projected Phase Completion Milestones

See attached schedule

## Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

To Be Determined

Final RA(C) Completion Date: 200904

Schedule for Next Five-Year Review: N/A

Estimated Completion Date of CR at Installation (including LTM phase): 202506

# FORT HAMILTON CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY12	FY13	FY14	FY15	FY16	FY17+
CCHAM0200	UST Site Remediation (Bldg 200)	IMP(O)						
		LTM						

## CR Costs

Total Funding through FY 2008: \$0 K

### Prior Funding

FY	Phase	Site ID	Obligations	FY Total
TOTAL PRIOR FUNDING:				\$0 K

### Current Requirements

FY	Phase	Site ID	Requirements	FY Total
2011	RA(O)	CCHAM0200	\$257.0 K	\$257.0 K

TOTAL CURRENT REQUIREMENTS: \$257.0 K

TOTAL FUTURE REQUIREMENTS: \$1,105.0 K

TOTAL PROGRAM COST: \$1,362.0 K

Required Cost-to-Complete

SITE ID	SITE NAME		FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Out Yrs	Total
ACTIVITY	Phase											
CCHAM0200	UST Site Remediation (Bldg 200)											
	IMP(O)	311	299	160								770
	LTM				50	50	50	50	50	50	83	335
Monitoring, Decontamination Facilities, Long-term Operation, Site Close Out, Well Abandonment.											Site Total	1105
Totals												
		311	299	160	50	50	50	50	50	50	83	1105
											Site Total	1105

Programmed Cost-to-Complete

SITE ID	SITE NAME		FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Out Yrs	Total
ACTIVITY	Phase											
CCHAM0200	UST Site Remediation (Bldg 200)											
	IMP(O)	311	299	160								770
	LTM				50	50	50	50	50	83		335
Monitoring, Decontamination Facilities, Long-term Operation, Site Close Out, Well Abandonment.										Site Total	1105	
Totals												
		311	299	160	50	50	50	50	50	83		1105
										Site Total	1105	

Costs - Combined Requirements Spreadsheet

PROGRAM	SITE ID		SITE NAME								
	Phase	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Out Yrs	Total
ACTIVITY											
CR	CCHAM0200		UST Site Remediation (Bldg 200)								
	IMP(O)	311	299	160							770
	LTM				50	50	50	50	50	83	335
Monitoring, Decontamination Facilities, Long-term Operation, Site Close Out, Well Abandonment.											
											CR Total
		311	299	160	50	50	50	50	50	83	1105
											Grand Total
		311	299	160	50	50	50	50	50	83	1105

Costs - Combined Programmed Spreadsheet

PROGRAM	SITE ID		SITE NAME								
	Phase	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Out Yrs	Total
ACTIVITY											
CR	CCHAM0200	UST Site Remediation (Bldg 200)									
	IMP(O)	311	299	160							770
	LTM				50	50	50	50	50	83	335
Monitoring, Decontamination Facilities, Long-term Operation, Site Close Out, Well Abandonment.											
											CR Total
		311	299	160	50	50	50	50	50	83	1105
											Grand Total
		311	299	160	50	50	50	50	50	83	1105

## Community Involvement

Technical Review Committee (TRC): None  
Community Involvement Plan (Date Published): TBD

Restoration Advisory Board (RAB): No  
Reason Not Established: Installation at RIP/RC.

### Additional Community Involvement Information

The cleanup issues are not of the magnitude that community involvement is required or necessary. There is no community involvement plan. There are no complicating factors. The extent of the contamination is confined to an area of approximately one quarter acre at the footprint of the AAFES site.

### Administrative Record is located at

US Army Garrison Fort Hamilton  
Directorate of Public Works  
129 Wainwright Drive  
Brooklyn, NY 11252-6800  
(718)-630-4485

### Information Repository is located at

US Army Garrison Fort Hamilton  
Directorate of Public Works  
129 Wainwright Drive  
Brooklyn, NY 11252-6800  
(718)-630-4485

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

TAPP Title: N/A

Potential TAPP: N/A