

FY2012

FORT SHAFTER

Army Defense Environmental Restoration Program

Installation Action Plan

Printed 24 January 2013

Table of Contents

Statement Of Purpose.....	1
Acronyms.....	2
Installation Information.....	4
5-Year / Periodic Review Summary.....	5
Land Use Control (LUC) Summary.....	6
Cleanup Program Summary.....	9
Installation Restoration Program.....	11
IRP Summary.....	12
IRP Contamination Assessment.....	14
IRP Previous Studies.....	15
Installation Restoration Program Site Descriptions.....	17
FTSHF-27 DUMP SITE (WSC #26).....	18
FTSHF-46 FORMER FUEL STATION NEAR USARC, BLD 1537.....	19
FTSHF-48 FORMER LAUNDRY FACILITY, FLATS.....	20
FTSHF-50 FORMER REPAIR SHOP, BLDG 1553.....	21
FTSHF-51 WASHRACK T-1539.....	22
FTSHF-52 FORMER WAREHOUSE (T1542).....	23
Installation Restoration Program Site Closeout (No Further Action) Sites Summary.....	24
IRP Schedule.....	27
Installation Restoration Program Milestones.....	27
IRP Schedule Chart.....	29
Military Munitions Response Program.....	30
MMRP Summary.....	31
MMRP Contamination Assessment.....	32
MMRP Previous Studies.....	33
Military Munitions Response Program Site Descriptions.....	34
FTSHF-003-R-01 RIFLE RANGE 2.....	35
FTSHF-004-R-01 Rifle Range 1 (TD).....	36
FTSHF-005-R-01 Skeet Range.....	37

Table of Contents

Military Munitions Response Program Site Closeout (No Further Action) Sites Summary.....	38
Military Munitions Response Program Schedule.....	39
Military Munitions Response Program Milestones.....	39
MMRP Schedule Chart.....	40

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, Installation Management Command, Pacific Region (IMCOM-P), Fort Shafter, the US Army Environmental Command (USAEC), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and tentative 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.

Acronyms

AEDB-R	Army Environmental Database- Restoration
BAR	Browning Automatic Rifle
BAR	Browning Automatic Rifles
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COPC	Contaminant of Potential Concern
CTT	Closed, Transferring and Transferred
DD	Decision Document
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DMM	Discarded Military Munitions
DoD	Department of Defense
DU	Decision Unit
EAL	Environmental Action Level
ER,A	Environmental Restoration, Army
FRA	Final Remedial Action
FTSHF	Fort Shafter Flats
FY	Fiscal Year
HDOH	Hawaii Department of Health
IAP	Installation Action Plan
IMCOM-P	Installation Management Command, Pacific Region
IMP(C)	Implementation - Construction
IRA	Interim Remedial Action
IRP	Installation Restoration Program
IS	Incremental Sampling
KMR	Kahauiki Military Reservation
LTM	Long-Term Management
LUC	Land Use Control
MC	Munitions Constituents
MCL	Maximum Contaminant Level
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MR	Munitions Response
NCO	Noncommissioned Officer
NCP	National Contingency Plan
NFA	No Further Action
NFRAP	No Further Response Action Planned
NPL	National Priorities List
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PBA	Performance-Based Acquisition
PCB	Polychlorinated Biphenyl
POL	Petroleum, Oil, and Lubricants
PRG	Preliminary Remediation Goal
RA	Remedial Action
RA(C)	Remedial Action - Construction

Acronyms

RAB	Restoration Advisory Board
RAC	Risk Assessment Code
RC	Response Complete
RD	Remedial Design
RI	Remedial Investigation
RI/RA	Remedial Investigation/Risk Assessment
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSL	Regional Screening Level
SI	Site Inspection
SVOC	Semi-Volatile Organic Compound
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TRC	Technical Review Committee
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency
USAG-HI	US Army Garrison, Hawaii
USARPAC	US Army Pacific Command
USATHAMA	US Army Toxic and Hazardous Materials Agency
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

Installation Information

Installation Locale

Installation Size (Acreage): 593

City: Honolulu

County: Honolulu

State: Hawaii

Other Locale Information

Fort Shafter is located on the Island of Oahu, approximately three miles northwest of downtown Honolulu. The 593-acre base is divided into two areas: Shafter Flats and the main post. The main post is the older section of the base. The two areas are divided by the Moanalua Highway, which cuts through the installation at the H-1 interchange and was installed in the early-1960s.

Installation Mission

Fort Shafter's mission is to train, equip, and sustain Army forces in the Pacific Theater.

Lead Organization

Lead Executing Agencies for Installation

USAEC

Regulator Participation

Federal

US Environmental Protection Agency (USEPA), Region IX

State

Hawaii Department of Health (HDOH)

National Priorities List (NPL) Status

FORT SHAFTER is not on the NPL

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

The community has expressed no sufficient, sustained interest in a RAB.

Installation Program Summaries

IRP

Primary Contaminants of Concern: Metals, Pesticides, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Soil

MMRP

Primary Contaminants of Concern: Metals, Munitions constituents (MC)

Affected Media of Concern: Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Planned	201410	201412	2015

5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
FTSHF-46, DD	FTSHF-46, FTSHF-48, FTSHF-50, FTSHF-51, FTSHF-52

Land Use Control (LUC) Summary

LUC Title: FTSHF-46 LUCs

Site(s): FTSHF-46

ROD/DD Title: FTSHF-46, DD

Location of LUC

AEDB-R Site FTSHF-46 at Fort Shafter Flats, HI

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200909

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 200909

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PETROLEUM HYDROCARBON

Additional Information

N/A

LUC Title: FTSHF-48 LUCs

Site(s): FTSHF-48

ROD/DD Title: FTSHF-46, DD

Location of LUC

AEDB-R site FTSHF-48 at Fort Shafter, HI.

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: Fences

Types of Institutional Controls: Restrictions on land use

Date in Place: 200909

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 200909

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PCBs, PESTICIDES

Additional Information

N/A

LUC Title: FTSHF-50 LUCs

Site(s): FTSHF-50

Land Use Control (LUC) Summary

ROD/DD Title: FTSHF-46, DD

Location of LUC

AEDB-R site FTSHF-50 at Fort Shafter Flats, HI.

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200909

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 200909

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: FTSHF-51 LUCs

Site(s): FTSHF-51

ROD/DD Title: FTSHF-46, DD

Location of LUC

AEDB-R site FTSHF-51 at Fort Shafter Flats, HI

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200909

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 200909

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: FTSHF-52 LUCs

Site(s): FTSHF-52

ROD/DD Title: FTSHF-46, DD

Location of LUC

Land Use Control (LUC) Summary

AEEDB-R site FTSHF-52 at Fort Shafter Flats, HI

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Restrictions on land use

Date in Place: 200909

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: State

Record of LUC: Master Plan or Equivalent

Documentation Date: 200909

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS, PAH

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

Fort Shafter Military Reservation is an active US Army Garrison-Hawaii (USAG-HI) sub-installation. This sub-installation serves as the US Army, Pacific Command (USARPAC) Headquarters. Fort Shafter was established in 1907 and is the oldest Army sub-installation in Hawaii. The land in the area surrounding this sub-installation is used as residential, park, school, business/commercial, light industrial and forest reserve.

Fort Shafter is situated in an approximately 1,438 acre area formerly known as Kahauiki, which extended from sea level to 1,440 feet. The area was part of the Hawaiian Crown Lands that were ceded to the US government after annexation. The earliest recorded uses of Kahauiki were reported to indicate the presence of irrigated agricultural terraces fed by the Kahauiki Stream extending inland from the sea for about one-half mile.

An earthen banked fishpond named Weli was a resource of Kahauiki and appeared to have received a portion of freshwater from Kahauiki Stream (McCallister, 1933:91). This man-made prehistoric structure was filled with dredge soil from construction of the Keehi seaplane harbor during the 1940s and is now located under the area seaward of Loop Road at Shafter Flats known as the Motor Park (Thompson, 1983:99).

The series of native Hawaiian land reforms adopted by Kamehameha III during the mid-1800s saw no Kuleana registrations or awards for cultivated lands in Kahauiki, which became Crown Lands. Most of this land was subsequently leased to the Dowsett Estate, who then subleased it to Star Dairy Company. The higher elevation lands that comprised the dairy were reportedly used for grazing cattle and the lower elevation lands for raising feed.

Following annexation in 1898, the Kahauiki Crown Lands were designated the Kahauiki Military Reservation (KMR). In 1902, all tenant leases were negotiated and completed; military construction began in 1905. In 1907, a portion of KMR was set aside and renamed Fort Shafter, and from 1907 to 1909, two areas were constructed consisting of the initial battalion cantonment at Palm Circle and Post Hospital (or old Tripler General Hospital), where the present noncommissioned officer (NCO) family housing area is serviced by Funston Loop.

In 1913, Fort Shafter was authorized to expand the original Palm Circle cantonment area, and construction was completed in December 1914. Construction consisted of a complete Regimental Post consisting of troop barracks, officer and NCO quarters, gun parks, and support facilities along the length of Wisser Road from the Shafter Bowling Alley to Shafter Patch Gate (Meeken, 1974:16).

In 1917, the Hawaiian Ordnance Depot was designated and formed in the area that included the high ground adjacent and north of the present Middle Street and east of King Street which overlooked the Kahauiki Stream and its wetlands to the west.

The depot served as a separate post within Fort Shafter with its own gate house, Post Headquarters (lost during H-1 Freeway construction), quarters along Montgomery Drive (the depot commander's quarters is currently T-305), a fire station, an officer's club (T-313), a series of warehouses served by railroad sidings (T-341 to T-347, T-434, T-435, T-438, T-441, and T-443), and barracks (now T-320, Headquarters 94th Army Air and Missile Defense Command), which became known as the Hawaii Arsenal Military Reservation at the end of 1918.

In October 1940, the Signal Corps area at Shafter Flats was initially occupied and consisted largely of warehouses, a Bachelor Officers Quarters, office buildings, and a photo lab. This area lies on a former tidal marsh area behind the old Weli fishpond which was covered with over one and a half million cubic yards of dredge fill to an average elevation of 12 feet above sea level.

Prior to 1949, much of the area seaward of King Street was cleared off and used as a storage area for the Signal Corps. By 1962, the Ordnance Corps was eliminated through the reorganization of the Army and the use of many of the standing structures was assigned to other commands. This area consists of the present-day 300-400 area, the Craft Shops and Child Care Center, the USARPAC Support Training Battalion Consolidated Motor Pool and Base Plant, and the Shafter Flats area.

Between 1956 and 1961, most of the 1914 Regimental Post barracks, offices, officer and NCO quarters, motor pool areas, and warehouse facilities were demolished and removed. After 1969, Parks Road was realigned and rerouted south of the Fourth Street intersection and extended to intersect with Chamberlain Road.

In 1984, the Palm Circle Historic District, which incorporates a majority of the original 1907 cantonment structures, was listed on the National Register of Historic Places, and in 1987 it was declared a National Historic Landmark.

Cleanup Program Summary

Installation Historic Activity

References:

- McCallister, J. Gilbert, 1933, Archeology of Oahu. B.P. Bishop Museum Bulletin 104, Honolulu.
- Meeken, Stanley R., 1974, "A History of Fort Shafter, 1894-1974." Machine reproduced copy at Fort Shafter Library.
- Thompson, Erwin N., 1983, History of the US Army Corps of Engineers in the Pacific 1905-1980.
- Watanabe, Farley K., Archeologist, US Army Corps of Engineers, Pacific Ocean Division, June 1993, Verbal Conversation.

Installation Program Cleanup Progress

IRP

Prior Year Progress: Long-term management (LTM) was conducted at FTSHF-46, FTSHF-48, FTSHF-50, FTSHF-51, and FTSHF-52.

Future Plan of Action: LTM will continue for FTSHF-46, FTSHF-48, FTSHF-50, FTSHF-51, and FTSHF-52.

MMRP

Prior Year Progress: All future anticipated costs for the MR sites have been funded in FY11 or will be funded in FY12. FTSHF-003-R-01 will be administratively closed out with an NFA PP/DD in FY12.

Future Plan of Action: Following PP/DD, RAs will be conducted at FTSHF-004-R-01 and FTSHF-005-R-01. No future LTM is anticipated at these sites.

FORT SHAFTER
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 46/40

Installation Site Types with Future and/or Underway Phases

2	Contaminated Ground Water (FTSHF-48, FTSHF-50)
1	Landfill (FTSHF-27)
1	Soil Contamination After Tank Removal (FTSHF-46)
1	Storage Area (FTSHF-52)
1	Washrack (FTSHF-51)

Most Widespread Contaminants of Concern

Metals, Pesticides, Petroleum, Oil and Lubricants (POL), Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
FTSHF-33	USARC BLDG A,FT SHAFTER FLATS UST SITE	IRA	WASTE REMOVAL - SOILS	1991
FTSHF-33	USARC BLDG A,FT SHAFTER FLATS UST SITE	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1991
FTSHF-15	USTS-USASCH MAINTN AREA, BLD422 (WSC#11)	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1992
FTSHF-45	LUST SOIL REMEDIATION - BLDG 1605	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1992
FTSHF-37	UST BLDG 508	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1994
FTSHF-20	USTS AT BLDG 535 (SERVICE STAT)(WSC #16)	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-34	USTS BLDG 310	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-35	USTS BLDG 320	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-36	USTS BLDG 430	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-38	USTS BLDG 507	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-39	UST BLDG 520	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-41	UST BLDG 1500	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-42	UST BLDG 1528	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-43	UST BLDG 1535	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1995
FTSHF-45	LUST SOIL REMEDIATION - BLDG 1605	FRA	THERMAL DESORPTION	1996
FTSHF-15	USTS-USASCH MAINTN AREA, BLD422 (WSC#11)	FRA	THERMAL DESORPTION	1997
FTSHF-01	BLD 225, 434 FORMER PEST STG (WSC #20)	FRA	WASTE REMOVAL - SOILS	1998

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTSHF-23	PAINT/PLATING BLDG 1507- WING A (WSC #22)	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1998
FTSHF-42	UST BLDG 1528	FRA	WASTE REMOVAL - SOILS	2000

Duration of IRP

Date of IRP Inception: 198306

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 200609/200609

Date of IRP completion including Long Term Management (LTM): Indefinite

IRP Contamination Assessment

Contamination Assessment Overview

Investigations at Fort Shafter were initially conducted from 1983 through 1984 as part of the Army's sub-installation assessment program. No significant sources of contamination were identified and NFA was recommended.

In August 1990, the US Army Toxic and Hazardous Materials Agency (USATHAMA) conducted an assessment to establish baseline data for potential waste. Waste sites were broadly defined as locations from which hazardous constituents might be released into the environment, regardless of whether the material is a solid or a hazardous waste. The report identified 29 potential hazardous waste sites at Fort Shafter. Although the report did not differentiate between sites that are eligible for the Defense Environmental Restoration Account (DERA) funds under the sub-installation restoration program, it did form the basis of sites listed in the Defense Environmental Restoration Tracking System database.

In 1992, the US Army Corps of Engineers, Pacific Ocean Division conducted a preliminary assessment (PA)/ site inspection (SI) at 13 selected sites that were eligible for DERA funds. The primary contaminants of concern were petroleum, oil, and lubricants (POL), heavy metals, and pesticides. The PA recommended seven sites for further investigation [Army Environmental Database-Restoration (AEDB-R) sites FTSHF-01, -02, -14, -16, -23, -24, and -25] and six sites for no further response action planned (NFRAP), response complete (RC) (AEDB-R sites FTSHF-04, -07, -09, -13, -18, and 22). The SI recommended remediation of the former pesticide storage building 225 (FTSHF-01), and in March 1998 the plating shop, building 1507 (FTSHF-23), was completed. At the pesticide storage building No. 225, approximately 290 tons of pesticide (chlordane) contaminated soil was excavated from the site. A subsequent risk assessment determined that there were no unacceptable risks present at the site. A sump and surrounding soil were removed from the former plating shop, building 1507 (FTSHF-23). No further RAs are planned for the site.

The original database of potential hazardous waste sites (29 sites) was expanded in FY94 to 43 AEDB-R sites. The increase was primarily due to the inclusion of abandoned underground storage tanks (USTs) (AEDB-R sites FTSHF-33 through -43). In FY94 removal actions were completed.

In June 1994, the US Army Environmental Hygiene Agency (USAEHA) conducted a PA on the remaining 16 sites identified in the USATHAMA Property Report. The purpose of the PA was to determine the potential threat to human health and the environment, and to identify any waste sites needing an SI. The PA recommended three sites for further action (AEDB-R sites FTSHF-17, -20, -27) and 13 sites for NFRAP RC (AEDB-R sites FTSHF-06, -08, -10, -11, -12, -15, -19, -21, -26, -28, -29, -30, and -43). For sites that require further action to be eligible for DERA funds, evidence of contamination must have resulted from past activities; however, in most cases this assessment was difficult. After review of the PA recommendations, sites FTSHF-21 and -28 were added to the list of sites requiring further investigation. Additional investigation conducted by Dames & Moore in 1995 recommended NFRAP RC for sites FTSHF-17, -21 and -28. In 1997, an SI was conducted at FTSHF-27 which concluded there was no risk to human health or the environment.

In a 1996 PA/SI, an additional seven sites were identified as requiring further investigation. The seven sites are referred to in the remedial investigation/risk assessment (RI/RA) report (2006) that has been accepted by the HDOH. At these sites in 2009, 16 wells were abandoned and a remaining 16 will be maintained during LTM. A fence was constructed at FTSHF-48 as an engineering control at this site.

Cleanup Exit Strategy

An RI/RA was accepted by the HDOH. Two DDs were signed in November 2009 (ECC, 2009): one for FTSHF-47 and FTSHF-49 selecting NFA and the other one collectively for the remaining five sites tracked under FTSHF-46 selecting LUCs as the remedy. A five-year review will be conducted in FY15.

The LTM estimates for sites at FTSHF-46, FTSHF-48, FTSHF-50, FTSHF-51, and FTSHF-52 are covered under FTSHF-46. Please see the specific site cleanup exit strategies for more details.

IRP Previous Studies

Year	Title	Author	Date
1984	Installation Assessment of US Army Support Command, Hawaii, Installations - Volume I: Fort Shafter and Subinstallations: Tripler Army Medical Center, Fort Kamehameha, and Kapalama Military Reservation, Oahu, Hawaii. Report 338	Environmental Science and Engineering, Inc	DEC-1984
	Installation Assessment of US Army Support Command, Hawaii. Prepared for the US Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland,	Roy F. Weston, Inc	DEC-1984
1990	Regional Hawaii Army Solvent Recycling Study. Prepared for US Army Support Command, Hawaii, and US Army Western Command	Woodward-Clyde Consultants	JUL-1990
	Property Report. Prepared for the US Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland	Roy F. Weston, Inc	DEC-1990
1991	Survey of Polychlorinated Biphenyls (PCBs), Fort Shafter Flats, Oahu, Hawaii. Prepared for the US Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii	Woodward-Clyde Consultants	JAN-1991
1992	Preliminary Assessment, Various Sites, Fort Shafter, Oahu, Hawaii	US Army Corps of Engineers, Pacific Ocean Division, Design Division/Military Division	JUL-1992
	Preliminary Assessment for Six Selected Sites, Fort Shafter, Hawaii, Pacific Ocean Division, Honolulu, Hawaii	US Army Corps of Engineers	NOV-1992
1993	Site Inspection at the Underground Storage Tank Site, US Army Reserve Center, Fort Shafter Flats, Hawaii	US Army Corps of Engineers, Pacific Ocean Division, Honolulu, Hawaii by PRC Environmental Management Inc	AUG-1993
1994	Site Investigation at Various Sites, Fort Shafter, Oahu, Hawaii, Pacific Ocean Division, Honolulu, Hawaii	US Army Corps of Engineers	JAN-1994
	Site Assessment No. 38-26-K28U-94, Waste Sites at Army properties, Hawaii. Prepared for USARPAC and USAG-HI	US Army Environmental Hygiene Agency	JUN-1994
1995	Interim Preliminary Assessment Report, Various Sites, Fort Shafter, Hawaii	Dames and Moore	JUN-1995
1996	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii Vol 1, 2, 3	Harding Lawson Associates	FEB-1996
1997	Site Inspection Report, Fort Shafter Solid Waste Dump, Oahu, Hawaii Vol I and II	Dames and Moore	MAR-1997
1998			

IRP Previous Studies

	Title	Author	Date
1998	Site Characterization and Remediation at the Pesticide Storage Building 225 and Plating Shop Building 1507, Fort Shafter, Hawaii	PRC Environmental Management, Inc	MAR-1998
2006	Final Remedial Investigation and Risk Assessment for Various Sites, Ft. Shafter, Oahu, Hawaii. Sites included in this study included: FTSHF-46, -47, -48, -49, -50, -51, -52, and -53, as outlined in other sections of this write-up.	Environment	SEP-2006
2009	Proposed Plan Seven Sites Fort Shafter Flats, Oahu, Hawaii (covers FTSHF-46, -47, -48, -49, -50, -51, and -52)	ECC	JUL-2009
	Final Land Use Controls Work Plan Fort Shafter Flats, Sites 46, 48, 50, 51, and 52, Fort Shafter, Oahu, Hawaii	ECC	SEP-2009
	Final Decision Document Fort Shafter Flats, Sites 47 and 49, Fort Shafter, Oahu, Hawaii	ECC	OCT-2009
	Final Decision Document Fort Shafter Flats, Sites 46, 48, 50, 51, and 52, Fort Shafter, Oahu, Hawaii	ECC	OCT-2009

FORT SHAFTER
Installation Restoration Program
Site Descriptions

Site ID: FTSHF-27
Site Name: DUMP SITE (WSC #26)

STATUS

Regulatory Driver: CERCLA
RRSE:

Phases	Start	End
PA.....	199001.....	199008
SI.....	199409.....	199704
LTM.....	201103.....	201309
RIP Date:	N/A	
RC Date:	199704	

SITE DESCRIPTION

This is a no cost site. The LTM phase was opened in order to fund an NFA DD in FY11. The work is currently underway, but fully funded in FY11. No future funding is required at this site.

CLEANUP/EXIT STRATEGY

An NFA DD is in progress and expected to be complete in FY13.

Site Name: FORMER FUEL STATION NEAR USARC, BLD 1537

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB), Semi-volatiles (SVOC), Volatiles (VOC)

Media of Concern: Soil

Phases	Start	End
PA.....	199309.....	199605
SI.....	199309.....	199605
RI/FS.....	200206.....	200609
LTM.....	200808.....	204209

RIP Date: N/A

RC Date: 200609

SITE DESCRIPTION

This site was a fueling station and paint spray booth (Building T-1537) located in Area 4 (HLA, 1996) in the southwest corner of FTSHF. A review of historical aerial photographs and topographic maps indicates that gasoline and oil storage tanks were present at the site in 1952, and the structure was built prior to 1969. The buildings and structures, including the tanks, have been demolished and removed, and the area is currently an open field with short grasses and shrubs. The SI sampling results show low level trichloroethylene (TCE) groundwater contamination below maximum contaminant levels (MCLs). The RI/RA concluded that the observance of TCE in the shallow groundwater is consistent with an off-site source.

In RI/RA report (Environet, 2006), this site (FTSHF-46) is also known as Site G. Contaminants of potential concern (COPCs) for this site are arsenic, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons, total petroleum hydrocarbons, and three volatile organic compounds (VOCs). Based upon the risk assessment for this site, LUCs is the selected remedy in the Decision Document (DD) to maintain this site as industrial use only. The LTM began in August 2008 to account for work conducted under a performance-based acquisition (PBA) contract.

The PBA contract covers five sites (FTSHF-46, -48, -50, -51, and -52). The DD, which was signed in November 2009 for these five sites, has LUCs as the selected remedy for the LTM. Programming for sites FTSHF-46, FTSHF-48, and FTSHF-50 to FTSHF-52 is tracked under site FTSHF-46.

CLEANUP/EXIT STRATEGY

Implementation of LTM is ongoing at the site. The LTM includes inspection and maintenance of existing monitoring wells and associated parts such as well protective casing, well vaults, traffic bollards and others on a semiannual basis. A semiannual LTM report is prepared and submitted to HDOH. A five-year review will be conducted in FY15. The LTM funding is tracked under the PBA contract and inclusive of FTSHF-48, FTSHF-50 to -52.

Site Name: FORMER LAUNDRY FACILITY, FLATS

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Pesticides, Polychlorinated Biphenyls (PCB)

Media of Concern: Soil

Phases	Start	End
PA.....	199309.....	199605
SI.....	199309.....	199605
RI/FS.....	200206.....	200609
LTM.....	200808.....	204209

RIP Date: N/A

RC Date: 200609

SITE DESCRIPTION

The site, Bldg 305, is a former laundry facility in the FTSHF area. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1950 and demolished prior to 1978. Building 305 was located on the north side of Building 1547. About one-third of the former building would have been in the footprint of Building 1547. The area is currently a paved parking lot with some landscaping. The draft PA/SI report indicated mercury contamination in the groundwater and soil samples indicated the presence of VOCs below action levels.

In the RI/RA report (Environet, 2006) this site is also known as Site B. The risk assessment for the site itself will likely allow for closure for industrial use; however, this site (FTSHF-48) includes additional work that may be necessary to evaluate on-site concentrations and consideration of sources of contamination to differentiate between site-specific and regional anthropogenic contamination should a change in land use occur.

Based upon the risk assessment for this site, LUCs are the selected remedy in the Decision Document (DD) to maintain this site as industrial use only. LTM began in August 2008 to account for work conducted under a PBA contract. Additional LUCs for this site include installation of a fence with warning signs along the drainage channel on the perimeter of this site.

The PBA contract covers five sites (FTSHF-46, -48, -50, -51, and -52). The DD, which was signed in November 2009, for these five sites has LUCs as the selected remedy. Programmed funding for sites FTSHF-46, FTSHF-48, and FTSHF-50 through FTSHF-52 is tracked under site FTSHF-46; therefore, this site has a zero cost estimate.

CLEANUP/EXIT STRATEGY

Implementation of LTM is ongoing at the site. The LTM includes inspection and maintenance of existing monitoring wells and associated parts such as well protective casing, well vaults and traffic bollards, and inspection of the fence condition and signage on a semiannual basis. A semiannual LTM report is prepared and submitted to HDOH. A five-year review will be conducted in FY15. The LTM funding is tracked under the FTSHF-46 PBA contract.

Site ID: FTSHF-50

Site Name: FORMER REPAIR SHOP, BLDG 1553

STATUS

Regulatory Driver: CERCLA

RRSE: LOW

Contaminants of Concern: Metals

Media of Concern: Soil

Phases	Start	End
PA.....	199309.....	199605
SI.....	199309.....	199605
RI/FS.....	200206.....	200609
LTM.....	200808.....	204209

RIP Date: N/A

RC Date: 200609

SITE DESCRIPTION

This is the former repair shop site. It is located on the south side (near Middle Street) of what is now the US Army Reserve Center and includes former Buildings 1553 and 1567. A review of historical aerial photographs and topographic maps indicates that Building 1553 was built prior to 1950 and was demolished after 1969 and prior to 1978. The former repair shop, Building 1553, overlaps a portion of the southeast corner of the Unit Storage Warehouse (Building 1556), and the south end of the former building extended to what is now a part of the H-1 viaduct roadway. The location of the former building is now asphalt paved roadways and parking area and some landscaped grounds. The former motor pool repair shop, Building 1567, is also a part of the Building 1553 RI site. SI samples retrieved indicate concentrations of pentachlorophenol above US Environmental Protection Agency (USEPA) MCLs.

The RI/RA report (Environet, 2006) refers to this site as Site C. The risk assessment for the site will likely allow for closure for industrial use. Further evaluation of on-site concentrations and consideration of sources of contamination at this site (FTSHF-50) may be necessary to evaluate petroleum contamination in site soils should a change in land use occur. The LTM phase began in August 2008 to account for work conducted under a PBA contract.

The PBA contract covers five sites (FTSHF-46, -48, -50, -51, and -52). The Decision Document, which was signed in November 2009, for these five sites has LUCs as the selected remedy. Programmed funding for sites FTSHF-46, FTSHF-48, and FTSHF-50 through FTSHF-52 is tracked under site FTSHF-46; therefore, this site has a zero cost estimate.

CLEANUP/EXIT STRATEGY

Implementation of LTM is ongoing at the site. The LTM includes inspection and maintenance of existing monitoring wells and associated parts such as well protective casing, well vaults and traffic bollards. A semiannual LTM report is prepared and submitted to HDOH. A five-year review will be conducted in FY15. The LTM funding is tracked under the FTSHF-46 PBA contract.

Site ID: FTSHF-51
Site Name: WASHRACK T-1539

STATUS

Regulatory Driver: CERCLA
RRSE: LOW
Contaminants of Concern: Metals
Media of Concern: Soil

Phases	Start	End
PA.....	199309.....	199605
SI.....	199309.....	199605
RI/FS.....	200206.....	200609
LTM.....	200808.....	204209

RIP Date: N/A
RC Date: 200609

SITE DESCRIPTION

This site is located south (near Middle Street) of what is now the US Army Reserve Center. The vehicle washrack, Structure T1539 in Area 4, consists of a rectangular paved vehicle parking area that is surrounded by a six-inch high asphalt concrete berm. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1969. The area around the washrack and the buildings directly north of the washrack, T-1533 and T-1354, are being used by a contractor for materials and equipment storage and truck parking. The washrack is no longer in use, and vegetation is starting to grow in the pavement. Samples retrieved indicate concentrations of arsenic in groundwater just below USEPA MCLs. The arsenic concentrations are likely naturally occurring.

The RI/RA report (Environet, 2006) refers to this site as Site E. The risk assessment for the site will likely allow for closure for industrial use. Further evaluation of on-site concentrations and consideration of sources of contamination may be necessary at this site (FTSHF-51) should a change in land use occur. The LTM began in August 2008 to account for work conducted under a PBA contract.

The PBA contract covers five sites (FTSHF-46, -48, -50, -51, and -52). The Decision Document, which was signed in November 2009, for these five sites has LUCs as the selected remedy. Programmed funding for sites FTSHF-46, FTSHF-48, and FTSHF-50 through FTSHF-52 is tracked under site FTSHF-46; therefore, this site has a zero cost estimate.

CLEANUP/EXIT STRATEGY

Implementation of LTM is ongoing at the site. The LTM includes inspection and maintenance of existing monitoring wells and associated parts such as well protective casing, well vaults and traffic bollards. A semiannual LTM report is prepared and submitted to HDOH. A five-year review will be conducted in FY15. The LTM funding is tracked under the FTSHF-46 PBA contract.

Site ID: FTSHF-52

Site Name: FORMER WAREHOUSE (T1542)

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Soil

Phases	Start	End
PA.....	199306.....	199602
SI.....	199306.....	199602
RI/FS.....	200206.....	200609
LTM.....	200808.....	204209

RIP Date: N/A

RC Date: 200609

SITE DESCRIPTION

This site is located on the southern edge of what is now the US Army Reserve Center in FTSHF. The warehouse structure (T1542) is no longer present at the site. A review of historical aerial photographs and topographic maps indicates that the structure was built prior to 1950. A portion of the former warehouse building location overlaps the west side of Building 1556, the Unit Storage Warehouse. The location of the former warehouse building is currently a paved driveway and parking area for Building 1556. The risk drivers for this site are polynuclear aromatic hydrocarbons and metals.

The RI/RA report (Environet, 2006) refers to this site as Site F. The risk assessment for the site will likely allow for closure; however, further evaluation will probably be required should the site be disturbed. The LTM began in August 2008 to account for work conducted under a PBA contract.

The PBA contract covers five sites (FTSHF-46, -48, -50, -51, and -52). The Decision Document, which was signed in November 2009, for these five sites has LUCs as the selected remedy. Programmed funding for sites FTSHF-46, FTSHF-48, and FTSHF-50 through FTSHF-52 is tracked under site FTSHF-46; therefore, this site has zero cost estimate.

CLEANUP/EXIT STRATEGY

Implementation of LTM is ongoing at the site. The LTM includes inspection and maintenance of existing monitoring wells and associated parts such as well protective casing, well vaults and traffic bollards. A semiannual LTM report is prepared and submitted to HDOH. A five-year review will be conducted in FY15. The LTM funding is tracked under the FTSHF-46 PBA contract.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTSHF-01	BLD 225, 434 FORMER PEST STG (WSC #20)	199805	Final Remediation Completion Report, Site Characterization and Remediation at the Pesticide Storage Building 225 and Plating Shop Building 1507, Fort Shafter, Hawaii, PRC Environmental, 1998
FTSHF-02	BLD 725 PESTICIDE STG (WSC #17)	199401	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-03	SHAFTER FLATS VEH MAINT BLD 1515/1519	199602	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-04	VEHICLE MAINT BLD 345 (WSC #19)	199211	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992
FTSHF-06	AUTOCRAFT SHOP (WSC #2)	199602	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-07	VEHICLE WASH AREA AT FSACS (WSC #3)	199602	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-09	VEH WASH AREA NR T1521 & T1522 (WSC #5)	199307	Site Inspection at the Underground Storage Tank Site, Fort Shafter Flats, PRC Environmental, 1993
FTSHF-10	VETERINARY CLINIC (WSC #6)	199602	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-11	PHOTO LAB (BLDG 1500) (WSC #7)	199602	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-12	ARTS AND CRAFTS CENTER (WSC #8)	199008	USATHAMA Property Report, Fort Shafter, Property Number 15835, Fort Shafter, Hawaii, 1990
FTSHF-13	MAINTENANCE AREA IN 400 BLOCK-6(WSC #9)	199211	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992
FTSHF-14	VEHICLE WASH AREA NR BLDG 405 (WSC #10)	199401	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-15	USTS-USASCH MAINTN AREA, BLD422 (WSC#11)	199610	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-16	VEHICLE WASH AREA NR BLDG 420 (WSC #12)	199401	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-17	USASCH MAINTEN AREA AT BLDG 420(WSC #13)	199605	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-18	FLAM MATLS STG (BLDG 346, 347) (WSC #14)	199207	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992
FTSHF-19	DENTAL CLINIC (WSC #15)	199008	USATHAMA Property Report, Fort Shafter, Property Number 15835, Fort Shafter, Hawaii, 1990
FTSHF-20	USTS AT BLDG 535 (SERVICE STAT)(WSC #16)	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-21	TRANSFORMER STG AREA (WSC #18)	199008	USATHAMA Property Report, Fort Shafter, Property Number 15835, Fort

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			Shafter, Hawaii, 1990
FTSHF-22	FORMER HERBICIDE STG BLDG 310 (WSC #21)	199401	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-23	PAINT/PLATING BLDG 1507-WING A (WSC #22)	199805	Final Remediation Completion Report, Site Characterization and Remediation at the Pesticide Storage Building 225 and Plating Shop Building 1507, Fort Shafter, Hawaii, PRC Environmental, 1998
FTSHF-24	PHOTOGRAPHY LABS(435,1290,1292)(WSC #23)	199401	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-25	STORMWATER RUNOFF AREA (WSC #24)	199207	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992
FTSHF-26	LIFT STATION AT BLDG 1605 (WSC #25)	199008	USATHAMA Property Report, Fort Shafter, Property Number 15835, Fort Shafter, Hawaii, 1990
FTSHF-28	WATER TREATMENT LAB (WSC #27)	199008	USATHAMA Property Report, Fort Shafter, Property Number 15835, Fort Shafter, Hawaii, 1990
FTSHF-29	WATER TREATMENT PLANT AT 511 (WSC #28)	199008	USATHAMA Property Report, Fort Shafter, Property Number 15835, Fort Shafter, Hawaii, 1990
FTSHF-30	INDOOR FIRING RANGE (WSC #29)	199008	USATHAMA Property Report, Fort Shafter, Property Number 15835, Fort Shafter, Hawaii, 1990
FTSHF-33	USARC BLDG A, FT SHAFTER FLATS UST SITE	199308	Final Site Inspection Report, Site Inspection at the Underground Storage Tank Site, US Army Reserve Center, Fort Shafter Flats, Volumes I to IV
FTSHF-34	USTS BLDG 310	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-35	USTS BLDG 320	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-36	USTS BLDG 430	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-37	UST BLDG 508	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-38	USTS BLDG 507	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-39	UST BLDG 520	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-41	UST BLDG 1500	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994
FTSHF-42	UST BLDG 1528	200003	
FTSHF-43	UST BLDG 1535	199410	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division,

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			1994
FTSHF-45	LUST SOIL REMEDIATION - BLDG 1605	199612	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996
FTSHF-47	FORMER FUELING STATION, BLDG 1593	200911	A DD signed in FY10 recommended no further action at this site.
FTSHF-49	FORMER WAREHOUSE 45	200911	A DD signed in FY10 recommended no further action at this site.

IRP Schedule

Date of IRP Inception: 198306

Past Phase Completion Milestones

1984

PA (FTSHF-03 - SHAFTER FLATS VEH MAINT BLD 1515/1519)

1990

PA (FTSHF-06 - AUTOCRAFT SHOP (WSC #2), FTSHF-10 - VETERINARY CLINIC (WSC #6), FTSHF-11 - PHOTO LAB (BLDG 1500) (WSC #7), FTSHF-12 - ARTS AND CRAFTS CENTER (WSC #8), FTSHF-15 - USTS-USASCH MAINTN AREA, BLD422 (WSC#11), FTSHF-19 - DENTAL CLINIC (WSC #15), FTSHF-20 - USTS AT BLDG 535 (SERVICE STAT)(WSC #16), FTSHF-21 - TRANSFORMER STG AREA (WSC #18), FTSHF-26 - LIFT STATION AT BLDG 1605 (WSC #25), FTSHF-27 - DUMP SITE (WSC #26), FTSHF-28 - WATER TREATMENT LAB (WSC #27), FTSHF-29 - WATER TREATMENT PLANT AT 511 (WSC #28), FTSHF-30 - INDOOR FIRING RANGE (WSC #29))

1991

IRA (FTSHF-33 - USARC BLDG A,FT SHAFTER FLATS UST SITE)

PA (FTSHF-33 - USARC BLDG A,FT SHAFTER FLATS UST SITE)

1992

ISC (FTSHF-34 - USTS BLDG 310, FTSHF-35 - USTS BLDG 320, FTSHF-36 - USTS BLDG 430, FTSHF-37 - UST BLDG 508, FTSHF-38 - USTS BLDG 507, FTSHF-39 - UST BLDG 520, FTSHF-41 - UST BLDG 1500, FTSHF-43 - UST BLDG 1535, FTSHF-45 - LUST SOIL REMEDIATION - BLDG 1605)

IRA (FTSHF-15 - USTS-USASCH MAINTN AREA, BLD422 (WSC#11))

PA (FTSHF-01 - BLD 225, 434 FORMER PEST STG (WSC #20), FTSHF-02 - BLD 725 PESTICIDE STG (WSC #17), FTSHF-18 - FLAM MATLS STG (BLDG 346, 347) (WSC #14), FTSHF-22 - FORMER HERBICIDE STG BLDG 310 (WSC #21), FTSHF-23 - PAINT/PLATING BLDG 1507-WING A (WSC #22), FTSHF-24 - PHOTOGRAPHY LABS(435,1290,1292)(WSC #23), FTSHF-25 - STORMWATER RUNOFF AREA (WSC #24), FTSHF-42 - UST BLDG 1528)

1993

PA (FTSHF-04 - VEHICLE MAINT BLD 345 (WSC #19), FTSHF-07 - VEHICLE WASH AREA AT FSACS (WSC #3), FTSHF-09 - VEH WASH AREA NR T1521 & T1522 (WSC #5), FTSHF-13 - MAINTENANCE AREA IN 400 BLOCK-6(WSC #9), FTSHF-14 - VEHICLE WASH AREA NR BLDG 405 (WSC #10), FTSHF-16 - VEHICLE WASH AREA NR BLDG 420 (WSC #12))

SI (FTSHF-09 - VEH WASH AREA NR T1521 & T1522 (WSC #5), FTSHF-33 - USARC BLDG A,FT SHAFTER FLATS UST SITE)

1994

IMP(C) (FTSHF-37 - UST BLDG 508)

SI (FTSHF-01 - BLD 225, 434 FORMER PEST STG (WSC #20), FTSHF-02 - BLD 725 PESTICIDE STG (WSC #17), FTSHF-14 - VEHICLE WASH AREA NR BLDG 405 (WSC #10), FTSHF-16 - VEHICLE WASH AREA NR BLDG 420 (WSC #12), FTSHF-22 - FORMER HERBICIDE STG BLDG 310 (WSC #21), FTSHF-23 - PAINT/PLATING BLDG 1507-WING A (WSC #22), FTSHF-24 - PHOTOGRAPHY LABS(435,1290,1292)(WSC #23))

1995

IRA (FTSHF-42 - UST BLDG 1528)

IMP(C) (FTSHF-34 - USTS BLDG 310, FTSHF-35 - USTS BLDG 320, FTSHF-36 - USTS BLDG 430, FTSHF-38 - USTS BLDG 507, FTSHF-39 - UST BLDG 520, FTSHF-41 - UST BLDG 1500, FTSHF-43 - UST BLDG 1535)

RA(C) (FTSHF-20 - USTS AT BLDG 535 (SERVICE STAT)(WSC #16))

1996

PA (FTSHF-17 - USASCH MAINTEN AREA AT BLDG 420(WSC #13), FTSHF-46 - FORMER FUEL STATION NEAR USARC, BLD 1537, FTSHF-47 - FORMER FUELING STATION, BLDG 1593, FTSHF-48 - FORMER LAUNDRY FACILITY, FLATS, FTSHF-49 - FORMER WAREHOUSE 45, FTSHF-50 - FORMER REPAIR SHOP, BLDG 1553, FTSHF-51 - WASHRACK T-1539, FTSHF-52 - FORMER WAREHOUSE (T1542))

SI (FTSHF-03 - SHAFTER FLATS VEH MAINT BLD 1515/1519, FTSHF-06 - AUTOCRAFT SHOP (WSC #2), FTSHF-07 - VEHICLE WASH AREA AT FSACS (WSC #3), FTSHF-10 - VETERINARY CLINIC (WSC #6), FTSHF-11 - PHOTO LAB (BLDG 1500) (WSC #7), FTSHF-46 - FORMER FUEL STATION NEAR USARC, BLD 1537, FTSHF-47 - FORMER FUELING STATION, BLDG 1593, FTSHF-48 - FORMER LAUNDRY FACILITY,

IMP(C) FLATS, FTSHF-49 - FORMER WAREHOUSE 45, FTSHF-50 - FORMER REPAIR SHOP, BLDG 1553,
 FTSHF-51 - WASHRACK T-1539, FTSHF-52 - FORMER WAREHOUSE (T1542)
 (FTSHF-45 - LUST SOIL REMEDIATION - BLDG 1605)
1997
 RA(C) (FTSHF-15 - USTS-USASCH MAINTN AREA, BLD422 (WSC#11))
 SI (FTSHF-27 - DUMP SITE (WSC #26))
1998
 RA(C) (FTSHF-01 - BLD 225, 434 FORMER PEST STG (WSC #20), FTSHF-23 - PAINT/PLATING BLDG 1507-
 WING A (WSC #22))
2000
 RA(C) (FTSHF-42 - UST BLDG 1528)
2006
 RI/FS (FTSHF-46 - FORMER FUEL STATION NEAR USARC, BLD 1537, FTSHF-47 - FORMER FUELING
 STATION, BLDG 1593, FTSHF-48 - FORMER LAUNDRY FACILITY, FLATS, FTSHF-49 - FORMER
 WAREHOUSE 45, FTSHF-50 - FORMER REPAIR SHOP, BLDG 1553, FTSHF-51 - WASHRACK T-1539,
 FTSHF-52 - FORMER WAREHOUSE (T1542))
2010
 LTM (FTSHF-47 - FORMER FUELING STATION, BLDG 1593, FTSHF-49 - FORMER WAREHOUSE 45)

Projected Phase Completion Milestones

See attached schedule

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

Site ID	Site Name	ROD/DD Title	ROD/DD Date
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Final RA(C) Completion Date: 200003

Schedule for Next Five-Year Review: 2014

Estimated Completion Date of IRP at Installation (including LTM phase): Indefinite

FORT SHAFTER IRP Schedule

 = phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-27	DUMP SITE (WSC #26)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-46	FORMER FUEL STATION NEAR USARC, BLD 1537	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-48	FORMER LAUNDRY FACILITY, FLATS	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-50	FORMER REPAIR SHOP, BLDG 1553	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-51	WASHRACK T-1539	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-52	FORMER WAREHOUSE (T1542)	LTM						

FORT SHAFTER
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 5/2

Installation Site Types with Future and/or Underway Phases

3 Small Arms Range
(FTSHF-003-R-01, FTSHF-004-R-01, FTSHF-005-R-01)

Most Widespread Contaminants of Concern

Metals, Munitions constituents (MC)

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
FTSHF-001-R-01	PISTOL RANGE	FRA	WASTE REMOVAL - SOILS	2010

Duration of MMRP

Date of MMRP Inception 200204

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201412/201412

Date of MMRP completion including Long Term Management (LTM): 201412

MMRP Contamination Assessment

Contamination Assessment Overview

The Department of Defense (DoD) has established the Military Munitions Response Program (MMRP) under the Defense Environmental Restoration Program (DERP) to address DoD sites with munitions and explosives of concern (MEC) including unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC). The US Army's inventory of closed, transferring, and transferred (CTT) military ranges and sites, identified three sites at Fort Shafter eligible for action under MMRP. The MMRP eligible sites include other than operational ranges where UXO, DMM, and MC is known or suspected. Properties classified as operational ranges are not eligible and, therefore, are excluded from the MMRP.

The MMRP began in the early 2000s as a result of key drivers such as processes outlined in the National Contingency Plan (NCP - 40 CFR 300) as authorized by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 US Code 9605, as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499, (hereinafter CERCLA). The process began with three phases of range inventories. Phase 1 consisted of installations completing an initial data call. The USAEC managed the implementation of Phases 2 and 3 of the MMRP inventory. The Phase 2 inventory dealt with active and inactive range considerations. Phase 3 involved the CTT range inventory conducted in 2002. The inventories included extensive mapping, data collection for upload to the Army Range Inventory Database, assessment of explosives safety risk using the Risk Assessment Code (RAC) methodology for CTT ranges or sites with UXO or DMM identified in the inventory, and determination of which sites on the inventory potentially qualify for the MMRP.

There are five MMRP sites at Fort Shafter. A PA (final CTT inventory report) was completed for Fort Shafter and three small arms ranges were identified. They were FTSHF-001-R-01, FTSHF-002-R-01, and FTSHF-003-R-01. Two additional munitions response (MR) sites were identified through the research conducted for the final historical records review (HRR). One of the sites, FTSHF-004-R-01, is a transferred range. The other, FTSHF-005-R-01, is a skeet range. An SI was completed in FY09 for all sites which recommended NFA for FTSHF-002-R-01 and additional investigative actions for MC at the remaining four sites (FTSHF-001-R-01, FTSHF-003-R-01, FTSHF-004-R-01, and FTSHF-005-R-01). A time-critical removal action (TCRA) was performed at FTSHF-001-R-01 in the 1st Qtr of FY10 to remove lead-contaminated soil above HDOH Environmental Action Levels (EALs). After the TCRA was completed, an NFA letter was issued by HDOH for this site.

Cleanup Exit Strategy

An RI for the three active sites is currently underway and funded under a PBA awarded in FY09. A PBA contract awarded in FY11 funded the three active sites to Response Complete (RC). Please see the site-specific cleanup/exit strategies for future actions anticipated at the three active sites.

MMRP Previous Studies

	Title	Author	Date
2002	Final CTT Inventory Report	TechLaw	OCT-2002
2007	Final Historical Records Review	TLI Solutions, Inc.	JAN-2007
	Final Site Inspection Work Plan	TLI Solutions, Inc.	MAR-2007
2009	Final SI Report	TLI Solutions, Inc.	FEB-2009
	Final Project Work Plan, Time Critical Response for Former Pistol Range Removal Action, Fort Shafter, Oahu, Hawaii	Project Resources, Inc.	AUG-2009
	Final Closure Report, Time Critical Response, Former Pistol Range Removal Action, Fort Shafter, Oahu, Hawaii	Project Resources, Inc.	DEC-2009
2010	Final Work Plan Fort Shafter Hawaii Phase 2 MMRP	Weston Solutions	FEB-2010

FORT SHAFTER

Military Munitions Response Program

Site Descriptions

Site ID: FTSHF-003-R-01
Site Name: RIFLE RANGE 2

STATUS

Regulatory Driver: CERCLA

MRSPP Score: No known or suspected hazard

Contaminants of Concern: Metals, Munitions constituents (MC)

Media of Concern: Soil

Phases	Start	End
PA.....	200204.....	200305
SI.....	200604.....	200903
RI/FS.....	200906.....	201208

RIP Date: N/A

RC Date: 201208

SITE DESCRIPTION

Rifle Range 2 is comprised of 34.92 acres in the northeastern portion of Fort Shafter. It is located within the bounds of the Walter Nagorski Golf Course, except for the extreme eastern portion which is located within a portion of the installation housing area.

The site is comprised of three historic ranges which were in operation from 1909 through the 1930s. The Site Inspection (SI) field activities for the site were completed in 2008. Lead was found in soil at concentrations exceeding the USEPA Region 9 Regional Screening Levels (RSLs). The eastern area of the site showed evidence of being a target area based on bullet impact holes in a rock outcropping. Munitions and Explosives of Concern (MEC) were not observed. Based on these results, the site was recommended for further investigation for Munitions Constituents (MC).

A Remedial Investigation (RI) was completed for the site. The RI included 10.6 lines miles of instrument aided visual survey for MEC, investigative intrusive activities, and Incremental Sampling (IS) of ten Decision Units (DUs) for lead and antimony. No MEC or MD was identified during the RI; however, one DU reported lead at concentrations that exceed the unrestricted/residential Tier 1 Environmental Action Level (EAL) (200mg/kg). The current land use of the site is commercial/industrial. The Final RI report recommends No Further Action (NFA) for MEC and NFA for MC based on current land use.

A new PBA contract was awarded in FY11 and requires the site to reach Response Complete (RC) by 201208. No LTM will be required.

CLEANUP/EXIT STRATEGY

Results from the RI indicate that no known or suspected hazard exists at the site. It is anticipated a focused Feasibility Study (FS), followed by an NFA DD and NFA PP will close the site by August 2012. LTM will not be necessary.

Site ID: FTSHF-004-R-01
Site Name: Rifle Range 1 (TD)

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 05
Contaminants of Concern: Metals, Munitions constituents (MC)
Media of Concern: Soil

Phases	Start	End
PA.....	200204.....	200305
SI.....	200604.....	200903
RI/FS.....	200906.....	201212
RD.....	201103.....	201312
RA(C).....	201103.....	201412

RIP Date: N/A
RC Date: 201412

SITE DESCRIPTION

Background Information: This site occupies approximately 1.27 acres of land located beyond the installation boundary on the eastern portion of the installation south of the south branch of Kahauiki Stream at the end of Hase Drive. It is the transferred portion of Rifle Range 1 and includes the 200-yard targets from that range. Rifle Range 1 was in operation from 1937 through the early-1960s and was identified as a known distance range for the use of rifles, carbines, Browning Automatic Rifles (BAR), and .30 caliber machine guns. There is also documentation limiting the weapons used at the range to shotguns and .22 caliber, .30 caliber, .38 caliber, and .45 caliber guns. Targets and other equipment were readily available for the range. included targets, frames, pasters, spotters, marking discs, and paste.

A Site Inspection (SI) was conducted in 2009 and identified four Munitions Debris (MD) items (three small arm projectiles and expended slap flare). The SI concluded that further investigation for Munitions of Explosive Concern (MEC) and Munitions Constituents (MC) was warranted.

The RI included 9.9 lines miles of instrument aided visual survey for MEC, investigative intrusive activities, and Incremental Sampling (IS) of seven Decision Units (DUs) for lead and antimony. During vegetation clearance, the UXO Safety identified one MEC item (partial M-9 rifle grenade) and one MD item (small arms projectile) on-site. Explosive ordnance disposal (EOD) conducted a blow-in-place action, and explosives confirmation sampling was conducted. No other MEC or MD items were encountered during the RI. Five of the seven DUs reported lead and antimony at concentrations that exceed the Tier 1 Environmental Action Level (EAL) (200 mg/kg and 6.3 mg/kg). The current land use of the site is commercial/industrial.

Future anticipated phases include a Feasibility Study (FS), Proposed Plan (PP), Decision Document (DD), Remedial Design (RD) and Remedial Action-Construction [RA(C)].

A new contract was awarded in FY11 and funded the site to reach Response Complete (RC) by 201412. Long-term management (LTM) is not expected.

CLEANUP/EXIT STRATEGY

Future anticipated actions include:

- a Feasibility Study (FS),
- a Decision Document (DD),
- a Proposed Plan (PP),
- a Remedial Design (RD), and
- a Remedial Action-Construction [RA(C)] implementing load and haul for 100 percent contamination removal.

No LTM is required. RC will be achieved by December 2014.

Site ID: FTSHF-005-R-01
Site Name: Skeet Range

STATUS

Regulatory Driver: CERCLA
MRSPP Score: 05
Contaminants of Concern: Metals, Munitions constituents (MC)
Media of Concern: Soil

Phases	Start	End
PA.....	200204.....	200305
SI.....	200604.....	200903
RI/FS.....	200906.....	201212
RD.....	201103.....	201312
RA(C).....	201103.....	201412

RIP Date: N/A
RC Date: 201412

SITE DESCRIPTION

The Skeet Range MR site is a fan shaped area located on the western edge of the Fort Shafter Flats installation boundary. The site occupies 15.98 acres and is intercepted by the Kahauiki Stream and Moanalua Canal. The northern portion of the site is an open grassy area used for physical training, and the western part of the site extends beyond the installation boundary into the Mapunapuna Industrial district. The eastern portion of the site extends into the Army Reserve motor pool parking area. The area of investigation was reduced to exclude the redeveloped portions of the motor pool and the Manpunapuna industrial district due to their pre-existing impervious caps. During a historical records review, the Skeet Range was identified in historical maps dated May 16, 1956, and Jan. 19, 1962, and aerial photographs from 1953.

A Site Inspection (SI) was completed at the site in 2009; Munitions Constituents (MC) and polycyclic aromatic hydrocarbons (PAHs) were detected in soil samples at concentrations above the USEPA Regional Screening Levels. Munitions and Explosives of Concern (MEC) were not observed. The SI recommended further investigation for MC, including PAHs and recommended No Further Action (NFA) for MEC.

A Remedial Investigation (RI) was completed for the site. The RI fieldwork included instrument aided visual surveys for MEC, and incremental sampling (IS) of nine Decision Units (DUs) for metals and PAH. The RI sampling found lead and PAH concentrations that exceed the Tier 1 Environmental Action Level (EAL). The current land use of the site is commercial/industrial. The RI recommended the site for No Further Action for MEC, and recommended further action for MC.

Future anticipated phases include a Feasibility Study (FS), Proposed Plan (PP), Decision Document (DD), Remedial Design (RD) and Remedial Action-Construction [RA(C)].

A new contract was funded in FY11 to achieve RC by 201412. Long-term management (LTM) is not expected.

CLEANUP/EXIT STRATEGY

Based on the results of the RI report, the following are anticipated:

- a Feasibility Study (FS),
- a Decision Document (DD),
- a Proposed Plan (PP),
- a Remedial Design (RD), and
- a Remedial Action-Construction [RA(C)] implementing load and haul for 100 percent contamination removal.

No LTM is required. RC will be achieved by December 2014.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTSHF-001-R-01	PISTOL RANGE	200912	A December 2009 letter from HDOH agreed to NFA at this site.
FTSHF-002-R-01	RIFLE RANGE 1	200903	The Final SI Report (2009) recommended no further action at this site for MEC or MC. HDOH concurred with the report's recommendation in an NFA letter dated 18 Feb. 2009.

MMRP Schedule

Date of MMRP Inception 200204

Past Phase Completion Milestones

2003

PA (FTSHF-001-R-01 - PISTOL RANGE, FTSHF-002-R-01 - RIFLE RANGE 1, FTSHF-003-R-01 - RIFLE RANGE 2, FTSHF-004-R-01 - Rifle Range 1 (TD), FTSHF-005-R-01 - Skeet Range)

2009

RI/FS (FTSHF-001-R-01 - PISTOL RANGE)

SI (FTSHF-001-R-01 - PISTOL RANGE, FTSHF-002-R-01 - RIFLE RANGE 1, FTSHF-003-R-01 - RIFLE RANGE 2, FTSHF-004-R-01 - Rifle Range 1 (TD), FTSHF-005-R-01 - Skeet Range)

2010

RA(C) (FTSHF-001-R-01 - PISTOL RANGE)

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: 201412

Schedule for Next Five-Year Review: 2014

Estimated Completion Date of MMRP at Installation (including LTM phase): 201412

FORT SHAFTER MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-004-R-01	Rifle Range 1 (TD)	RI/FS						
		RD						
		RA(C)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTSHF-005-R-01	Skeet Range	RI/FS						
		RD						
		RA(C)						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): TBD

Restoration Advisory Board (RAB): No

Reason Not Established: The community has expressed no sufficient, sustained interest in a RAB.

Community Interest Solicited on: 201107

Efforts Taken to Determine Interest

Installation Restoration Program (IRP):

The installation solicited interest in establishing a RAB in July 2011. A public notice was published in the Honolulu Advertiser from July 24-26, 2011. No interest was received from the community.

A community involvement plan has not been developed.

Results

Follow-up Procedures

MMRP:

The USAG-HI solicited community interest in a RAB in February 2010. No interest was received from the community.

Additional Community Involvement Information

None

Administrative Record is located at

Directorate of Public Works
948 Santos Dumont Ave, Bldg. 105
Wheeler AAF, Schofield Barracks, HI 96857-5013

Information Repository is located at

Salt Lake/Moanalua Public Library
3225 Salt Lake Blvd.
Honolulu, HI 96818

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

TAPP Title: N/A

Potential TAPP: N/A

