

# FY2009

## FORT DETRICK

### 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, the US Army Environmental Command (USAEC), Fort Detrick (FTD), 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.

## Acronyms

AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
bgs	below ground surface
CAA	Civil Aeronautics Administration
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CTC	Cost-to-Complete
DD	Decision Document
DoD	Department of Defense
EPIC	Environmental Photographic Interpretation Center
ER,A	Environmental Restoration, Army
FFA	Federal Facility Agreement
FRA	Final Remedial Action
FS	Feasibility Study
FTD	Fort Detrick
FUDS	Formerly Used Defense Site
FY	Fiscal Year
GIS	Geographical Information System
HEPA	High Efficiency Particulate Air
HSC	Health Services Command
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-Term Management
LUC	Land Use Control
MCL	Maximum Contaminant Level
MDE	Maryland Department of the Environment
MEDCOM	US Army Medical Command
NCI	National Cancer Institute
NFA	No Further Action
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
PA	Preliminary Assessment
PBC	Performance Based Contract
PCE	Tetrachloroethylene
PP	Proposed Plan
ppm	parts per million
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RBC	Risk Based Concentration
RC	Response Complete
RD	Remedial Design
RI	Remedial Investigation
RIP	Remedy-In-Place

## Acronyms

RRSE	Relative Risk Site Evaluation
SI	Site Inspection
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TRC	Technical Review Committee
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency
USAG	US Army Garrison
USAMRIID	US Army Medical Research Institute of Infectious Disease
USEPA	US Environmental Protection Agency
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

## Installation Locale

Installation Size (Acreage): 1212

City: Frederick

County: Frederick

State: Maryland

### Other Locale Information

Fort Detrick occupies 1,212 acres of land northwest of and within the boundary of the city of Frederick, Maryland. It consists of four noncontiguous tracts of land designated Area A, Area B, Area C Water Treatment Plant (WTP), and Area C Wastewater Treatment Plant (WWTP). Area A, the center of FTD activity, covers 797 acres. In 1972 approximately 69 acres of FTD's Area A were transferred to the National Cancer Institute (NCI) to create the Frederick Cancer Research Facility. Area B, the location of the post's main waste disposal area, covers 399 acres. The Area C WTP and WWTP consist of two separate tracts of land totaling 16 acres along the Monocacy River.

## Installation Mission

FTD is a US Army Medical Command (MEDCOM) installation supporting a multi-governmental community that conducts biomedical research and development, medical materiel management, worldwide communications, and the study of foreign plant pathogens. Each branch of the US military is represented among the approximately 8,000 military, federal, and contractor employees assigned here.

## Lead Organization

Medical Command (MEDCOM)

## Lead Executing Agencies for Installation

Performance Based Contract (PBC) - FTD and USAEC

Non-PBCs - FTD US Army Garrison (USAG)

## Regulator Participation

Federal	US Environmental Protection Agency (USEPA) Region III, Federal Facilities
State	Maryland Department of the Environment (MDE) Federal Facilities Division

## National Priorities List (NPL) Status

No NPL Sites have been identified

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

RAB established 199306

## Installation Program Summaries

### IRP

Primary Contaminants of Concern: Biological Material, Metals, Radionuclides, Volatiles (VOC)

Affected Media of Concern: Groundwater, Soil

## Land Use Control (LUC) Summary

LUC Title: Area C WWTP

Site(s): FTD 54

ROD/DD Title: Five Areas located at WWTP IRP Site 54

Location of LUC

Area C WWTP former ash disposal area

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits

Date in Place: 200512

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200604

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

LUC Title: Water Tower Restrictions

Site(s): FTD 68

ROD/DD Title: Area A Seven No Further Action Sites

Location of LUC

Areas below three water towers have lead contamination from weathering and flaking of lead based paint. In addition, past sandblasting operations have also contributed to lead in the soil. Please see Fort Detrick's GIS system for exact locations.

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation

Types of Engineering Controls: Signs

Types of Institutional Controls: Construction Permit, Notations in Master Plan

Date in Place: 200107

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: METALS

Additional Information

N/A

# Cleanup Program Summary

## Installation Historic Activity

Fort Detrick is an active US Army installation operated under the auspices of MEDCOM. It houses over 30 tenant organizations, including some non-Department of Defense (DoD) tenants. These tenants are primarily involved in medical research and development, medical logistics and acquisitions, secure worldwide telecommunications, and reserve activities. Contained within FTD's Area A is the NCI Frederick Cancer Research Center, which was transferred to the Department of Health and Human Services in 1972. On Feb. 5, 1993 environmental areas of concern located on NCI property were transferred from the Formerly Used Defense Site (FUDS) program to the active Installation Restoration Program (IRP).

FTD began in 1929, when Frederick County purchased 90 acres of farmland for use as a municipal airport. In 1930 this tract of land was leased to the Maryland National Guard for use as a summer training camp for the 104th Observation Squadron. This was the first military presence at this site.

Detrick Field was used as a summer training camp until 1940 when, by joint agreement of Frederick County and the Maryland National Guard, the field was leased to the US Civil Aeronautics Administration (CAA). The CAA used the field as a pilot training center until the outbreak of World War II.

In 1941 President Roosevelt ordered the establishment of the US Biological Warfare program and in 1943 Camp Detrick was assigned to the Army Chemical Warfare Service for the development of a biological warfare research center. The original 90-acre tracts, plus an adjoining 53 acres, were purchased in 1944. By that time Camp Detrick was well established as an installation for the research and development of offensive and defensive biological warfare techniques and agents.

Camp Detrick was designated a permanent installation shortly after the end of World War II. A seven and a five-acre tract were acquired in 1944 and were respectively developed for use as water and WWTPs. Collectively, these two tracts are now referred to as Area C. In 1946, 399 acres, now designated as Area B, were acquired to provide an outdoor test area, commonly called the "grid test area." An additional 153 acres adjoining Area A were acquired during 1946 and 1947. The Army acquired an additional 503 acres of land adjacent to the post in 1952. This land was used primarily for plant science research.

In 1955 and 1956 the Flair US Army Reserve Center was constructed as a separate entity in the northeast corner of Area B. Subsequently, the land transfer reverted to FTD, and in 1958 the facility became an on-post tenant. In 1972 approximately 69 acres of FTD's Area A were transferred to the NCI, to create the Frederick Cancer Research Facility. Permanent technical and installation support facilities were constructed during subsequent years, including major development projects such as the East Coast Telecommunications Center (now the 302nd Signal Battalion, a subordinate of the 21st Signal Brigade) and the US Army Medical Research Institute of Infectious Diseases (USAMRIID).

After biological warfare activities were discontinued on April 1, 1972, the control of FTD was transferred from the US Army Materiel Command to the Office of the Surgeon General, Department of the Army, and was further assigned as a subordinate installation of the US Army Medical Department. In 1973 FTD was reassigned from the US Army Surgeon General to the newly created US Army Health Services Command (HSC). In 1995 HSC was reorganized into MEDCOM.

Today, FTD is a growing installation with the addition of a national interagency biodefense campus as a result of executive branch and Congressional direction that addresses leveraging and expanding key competencies to achieve productive and efficient interagency cooperation in support of homeland security biodefense.

## Installation Program Cleanup Progress

### IRP

- Prior Year Progress: In 2009 three additional groundwater monitoring wells in Area B were installed. A decision document (DD) was completed for FTD 51, 69, 70, 71, and 49 selecting capping with land use controls (LUC). Capping installation is anticipated to be completed for FTD 49, 50, 51, 69, 70, and 71 by September 2009. The Army is working with the MDE and the USEPA to develop a work plan to complete the RI at Area B Groundwater (FTD72). In April 2009, the Area B groundwater site was placed on the NPL.
- Future Plan of Action: The work plan for data collection needed for the Area B groundwater will be completed and data collection per the work plan will be implemented. A Federal Facility Agreement (FFA) will be signed with the USEPA.

**FORT DETRICK**  
**Army Defense Environmental Restoration Program**  
**Installation Restoration Program**

# IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/RC Sites: 43/41

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

- 1 Contaminated Buildings  
(FTD 68)
- 3 Contaminated Ground Water  
(FTD 66, FTD 72, PBC at Detrick)
- 6 Landfill  
(FTD 49, FTD 50, FTD 51, FTD 69, FTD 71, FTD70)
- 1 Waste Treatment Plant  
(FTD 54)

## Most Widespread Contaminants of Concern

Biological Material, Metals, Radionuclides, Volatiles (VOC)

## Media of Concern

Groundwater, Soil

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

Site ID	Site Name	Action	Remedy	FY	Cost
FTD 49	CHEMICAL WASTE PITS B-11 (AREA B)	IRA	WASTE REMOVAL - SOLIDS (NON-SOILS)	2004	\$26,843.0
FTD 49	CHEMICAL WASTE PITS B-11 (AREA B)	FRA	CAPPING	2009	\$780.0 K
FTD 50	LANDFILL B-2(PKA 1.2 ACRE)	FRA	CAPPING	2009	\$372.0 K
FTD 51	LANDFILL B-3 INACTIVE (PKA 5 ACRE)	FRA	CAPPING	2009	\$984.0 K
FTD 69	Area B-6	FRA	CAPPING	2009	\$807.0 K
FTD 71	Area B-10 and B-Grove	FRA	CAPPING	2009	\$238.0 K
FTD70	Areas B-8, B-18,& Trenches N of B-8	FRA	CAPPING	2009	\$775.0 K

## Duration of IRP

Date of IRP Inception: 197610

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201403/201403

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

# IRP Contamination Assessment

## Contamination Assessment Overview

Numerous environmental studies have been conducted at FTD and in the surrounding area to assess and delineate contamination.

In November 1976 an Installation Contamination Assessment of FTD was performed by the Chemical Demilitarization and Installation Restoration office per the direction of the USAEC which was formerly known as the US Army Toxic and Hazardous Materials Agency. In January 1977 the installation assessment report was finalized. There were indications of on-post contamination from biological agents, pesticides, herbicides, and unexploded ordnance (UXO), with the potential of migration. The USAEC recommended follow-on studies to define the extent of the contamination; however, the HSC requested that an ad hoc committee review special hazards associated with drilling in Area B, and a separate analysis of the significant findings to identify any mitigating factors of contaminant source or migration. The contamination review committee did not support a need for follow-on work. In November 1977 the office of the Surgeon General approved the committee's position.

In June 1981, following the installation assessment, the USEPA Region III conducted a field investigation of uncontrolled hazardous waste sites [preliminary assessment (PA)] in which a site visit and limited interviews were performed. The USEPA report surmised that Area B may have been the disposal area for biological, chemical, radioactive, industrial and munitions wastes. In addition, although buildings in Area A (FTD 01) associated with biological research were decontaminated by the Army, there was a potential for anthrax contamination in some areas. The USEPA report recommended that the State and the USEPA monitor the Army's investigations.

In September 1987 the U.S. Army biomedical research and development laboratory discovered trichloroethylene (TCE) in a groundwater supply well at Area A building 568. Investigations to determine the source, extent, and degree of contamination were conducted from 1988 through 1993.

In February 1988 FTD was listed on the Federal Facilities Compliance Docket. During the same year, the Army conducted an environmental audit to determine the existence of or potential for environmental contamination and to assess human health and environmental risks associated with the installation.

In October 1991 Advanced Sciences Inc. performed a preliminary site Inspection (SI) of FTD, using existing sampling and analysis data. The purpose of the report was to score FTD for possible inclusion on the NPL by using the Hazard Ranking System model. Since the site was not adequately sampled, the report recommended further sampling.

In February 1992 TCE concentrations above the maximum contaminant level (MCL) and elevated levels of trichlorofluoromethane were detected in an Area B monitoring well being sampled as part of FTD's state landfill permit requirements. In March 1992 FTD met with the US Army Environmental Hygiene Agency (USAEHA) to discuss the elevated levels. Based on this meeting, the USAEHA began a study of the active landfill and Area B that included installation and sampling of monitoring wells. In February 1993 the report was published.

In October 1992 the MDE sampled 21 off-post residential wells adjacent to Area B. TCE concentrations above the MCL levels were identified in four of the tested wells. Following the discovery of TCE in domestic wells, the Army provided bottled water or connected potentially affected residences to public water. One residence was connected to FTD's drinking water system.

From 1992 through 1993 various investigations were performed to evaluate conditions in Areas A, B, and C, locate potential burial sites, and determine the contamination present at the various AOCs. Reports included geologic studies, soil gas surveys, geohydrologic studies, a preliminary SI, and various groundwater assessments.

From 1994 to the present remedial investigations (RIs) were performed to assess the nature and extent of contamination and associated potential human health and ecological risks. The RI was conducted in two parts: Phase I RI and Phase II RI. Field activities associated with the Phase I RI occurred during 1994 and 1995. Sampling and monitoring operations associated with the Phase II RI occurred in 1997, July 1998 and October 2000. Phase II test trench and subsequent geophysical and soil-gas surveys identified the Area B TCE and tetrachloroethylene (PCE) groundwater contamination source in the vicinity of Area B- 11. In June 2000 Area A's RI report was completed. Since the completion of the Phase II sampling, additional follow-on sampling has occurred in both Areas B and C. Area C's RI report was completed in December 2004.

In February 2001, a feasibility study (FS) was performed to assess remedial alternatives for Area A groundwater. In March 2001 the Area A groundwater proposed plan (PP) was finalized. In July 2001 DDs selecting hydraulic containment of building 568 groundwater and no further action (NFA) for seven Area A sites were signed. Subsequent to the DD, long-term monitoring began

# IRP Contamination Assessment

## Contamination Assessment Overview

in May 2002 and has occurred semi-annually. Mission-funded groundwater production wells are providing hydraulic containment for the site. The Area A TCE plume is no longer migrating off-post above MCLs.

In March 2001, a post-operation cleanup was performed at the former Area B skeet range (FTD 29) to excavate, remove, and dispose of lead shot and clay pigeon debris that was dispersed over an area approximately 565,487 square feet. In August 2005 an additional area by the firing line and pigeon throwers was scraped to remove clay pigeon debris missed during the first clean-up action.

From 2001 to 2004 the installation performed an interim removal action at Area B-11 (FTD-49) to remove the source of the Area B TCE and PCE groundwater contamination. During this removal action, viable biological material was discovered comingled with the excavated hazardous waste. Because of this discovery, FTD and the Army have decided to limit intrusive activities into Area B disposal areas due to safety concerns and the associated costs.

In January 2002 a former ash disposal area at the Area C WWTP was excavated to remove all visible ash, to the extent practicable, with conventional excavation equipment. Approximately 1,020 cubic yards of overburden, ash and commingled soil were excavated and disposed of at the Area B active landfill.

In August 2004 a multi-year fixed-price PBC was awarded. Sites included in the PBC are FTD-49 (Area B-11), FTD-50 (Area B-2), FTD-51 (Area B-3), FTD-66 (TCE Spill Site, Area A), FTD-68 (Water Towers, Area A), FTD-69 (Area B-6), FTD-70 (Area B-8, B-18, and trenches north of B-8), FTD-71 (Area B-10 and B-10 Grove), and FTD-72 (Area B Groundwater).

In June 2005, the Area C WWTP FS was completed. The PP was finalized in August 2005. A DD implementing institutional controls for the former ash disposal area was signed by the Garrison Commander on Dec. 15, 2005.

In February 2008 a NFA DD for five sites in Area B was signed. Sites FTD 05 (Area B-Grid), FTD 07 (Area B-Ammo), FTD 29 (Area B-Skeet) and FTD 43 (Area B-20 North/South) were closed out under the restoration program with no additional funding requirements.

In December 2007 and March 2009, DDs were signed selecting capping with LUCs for six restoration sites encompassing eight disposal areas. These areas include FTD49 (Area B-11), FTD 50 (Area B-2), FTD 51 (Area B-3), FTD 69 (Area B-6), FTD 70 (Areas B-8, Trenches N of B-8, and B-18), and FTD 71 (Area B-10).

## Cleanup Exit Strategy

The PBC requires the contractor to achieve RIP for all sites. Completing RIP for these sites will complete the last of FTD's open restoration sites.

The capping remedies at sites FTD 49, 50, 51, 69, 70, and 71 will be complete in 2009. Once in place, LUCs with annual operations/monitoring of the caps and LUCs and five-year reviews will remain in place indefinitely.

The Area B Groundwater site (FTD 72) is currently projected to have RIP in fiscal year (FY)14. The site was added to the NPL in April 2009. The Army is currently working with the USEPA and the MDE to develop a work plan to complete the RI/FS for the Area B groundwater. It is anticipated that the work plan will be an essential part of the future Federal Facilities Agreement with the USEPA. Future remedy selection will be based on the outcome of the FS. Potential remedies may include treatment systems for potable wells in use or with connections to public water supplies and chemical oxidation, enhanced biological treatment, and natural attenuation for the aquifer. Long-term monitoring of the site is anticipated and five-year reviews will be needed for 30 years or more beyond the RIP date.

The Area A TCE spill site (FTD 66) may be closed out prior to the end of the PBC in 2014. If not, groundwater monitoring and additional five-year reviews will be needed until the site is at RC.

The Area A water towers site (FTD 68) LUCs will remain in place indefinitely unless a soil removal action is undertaken. Annual monitoring and five year reviews will be required as long as the LUCs are in place.

For the Area C WWTP former ash disposal area, FTD-54, annual monitoring and five year reviews for the LUCs will remain in place indefinitely.

## IRP Previous Studies

Year	Title	Author	Date
1975	Environmental Impact Assessment	USAHSC	JAN-1975
1977	USCDIR	Record Evaluation Report No. 106	JAN-1977
1981	Preliminary Assessment of Fort Detrick	Ecology & Environment, Inc	JAN-1981
1983	Study of Proposed Sanitary Landfill Area B	USACE	JAN-1983
1984	Report of Audit: Storage and Disposal of Hazardous Materials	USAAA	JAN-1984
1988	Report of Phase I Investigations of TCE Contamination	EA Engineering, Science and Technology, Inc	JAN-1988
	Report of Phase II Investigations of TCE Contamination	EA Engineering, Science and Technology, Inc.	JAN-1988
	Report of Audit: Storage and Disposal of Hazardous Materials	USAAA	JAN-1988
	Environmental Audit No. 38-26-7001-89	USAEHA	JAN-1988
1990	Report No. EC 90-17: Toxic and Hazardous Materials and Wastes Fort Detrick, Maryland	USAAA	JAN-1990
1991	Installation Environmental Assessment	USAG	JAN-1991
	Environmental Compliance Assessment System External Assessment No. 37-26-J193-92	USAEHA	JAN-1991
1992	Geohydrologic Study No. 38-26-KI32-92 Fort Detrick, Maryland (Phase I and II)	USAEHA	JAN-1992
	Preliminary Site Inspection	USACE/Advanced Sciences, Inc.	JAN-1992
	Work Plan for Site Investigation TCE Contamination-Bldg 568	USACE	JAN-1992
	Geohydrologic Study No. 38-26-KF70-93: Area B Fort Detrick	USAEHA	JAN-1992
1993	Site Investigation Report TCE Contamination - Bldg 568	USACE	JAN-1993
	Groundwater Consultation No. 38-26-K1KJ-93 Area B Fort Detrick	USAEHA/ USAEC	JAN-1993
	Seismic Refraction and Electromagnetic Surveys at Fort Detrick, Maryland	Waterways Experiment Station (USACE)	JAN-1993
	No report available, VOC sampling and analysis in sediment and surface water in and around Area B	USAEC	JAN-1993
	Final Report on the Findings of the Petrex Soil Gas Survey Performed at the Fort Detrick Area B Site in Frederick, Maryland	USGS/ USAEC	JAN-1993
1994			

## IRP Previous Studies

Year	Title	Author	Date
1994	Final Phase I Remedial Investigation Work Plan	USAEC/ Woodward Clyde	JAN-1994
	Remedial Investigation Data Report	USAEC/ERM	JAN-1994
1998	Remedial Investigation Area B, Draft Document	USAEC/ICF Kaiser	JAN-1998
1999	Area C WWTP Expanded Site Investigation	USACE/IT	JAN-1999
2000	Remedial Investigation Area A, Revised Final Document	USACE/IT	JAN-2000
	Area B-11 Chemical Waste Disposal Pits Proposed Plan	USACE/IT	JAN-2000
	Feasibility Study, Area A	USACE/IT	JAN-2000
2001	RI Area B Water Sampling Data Report, Nov. 1999 - Feb. 2000	USACE/IT	JAN-2001
	USEPA Aerial Photographic Analysis Fort Detrick (Area B) Site Frederick, Maryland	USEPA	JAN-2001
	Area A Proposed Plan, Final Document	USACE/IT	JAN-2001
	Fort Detrick Anthrax File Summary	UNITECH	JAN-2001
	Fort Detrick, MD Photogeologic Analysis Amended Final Report	USACE	JAN-2001
	Fort Detrick Final Preliminary Assessment and Limited Site Investigation for a Site Near a Tributary to Carroll Creek	IT Corporation	JAN-2001
	Installation Action Plan	Fort Detrick	MAR-2001
	Fort Detrick Area A Groundwater Decision Document/Seven No Further Action Sites Decision Document, Final June 2001	USACE/IT	JUN-2001
	Report on Airborne Geophysical Survey of Fort Detrick, MD Final, August 2001	USACE	AUG-2001
	Chemical Oxidation Bench-Scale Test Report, Final, August 2001	USACE/IT	AUG-2001
	Final Remedial Investigation Area B, Water Sampling Data Report August 2000 - September 2000, Final November 2001	USACE/IT	NOV-2001
	2002	Final Remedial Investigation Area B, Water Sampling Data Report Nov - Dec 2000, Final January 2002	USACE/IT
Final Remedial Investigation Area B, Water Sampling Data Report Jan - Mar 2001, Final January 2002		USACE/IT	JAN-2002
Final Remedial Investigation Area B, Water Sampling Data Report Apr - Jul 2001, Final March 2002		USACE/IT	MAR-2002
Final Remedial Investigation Area B, Water Sampling Data Report Aug - Sep 2001, Final March 2002		USACE/IT	MAR-2002
Fort Detrick Final Area A Long Term Groundwater Monitoring April 2002		USACE/IT	APR-2002
Fort Detrick Final Area A Long Term Groundwater Monitoring Health and Safety Plan - April 2002		USACE/IT	APR-2002

## IRP Previous Studies

Year	Title	Author	Date
2002	Final Remedial Investigation Area B, Water Sampling Data Report Nov - Dec 2001, Final June 2002	USACE/IT	JUN-2002
	Fort Detrick Area B, Water Sampling Data Report February 2002, Final June 2002	USACE/IT	JUN-2002
	Fort Detrick Area B, Water Sampling Data Report - May 2002, Final September 2002	USACE/IT	SEP-2002
	Fort Detrick Revised Final Area B-11 Disposal Pits Operations Work Plan	USACE/IT	SEP-2002
	Fort Detrick Area B Water Sampling Data Report August 2002 - November 2002 Final Document	USACE/IT	NOV-2002
	Fort Detrick Final Area A Long-Term Groundwater Monitoring Design Testing Data Report	USACE/IT	NOV-2002
2003	Remedial Investigation, Area B Data Report for Field Efforts Occurring Between February 1998 and December 1999 Final February 2003	USACE/IT	FEB-2003
	Fort Detrick Area B Water Sampling Data Report November 2002 - March 2003 Final Document	USACE/IT	MAR-2003
	Surface Geophysical Survey Report Area B, Sites B-6 and B-8	USACE/IT	MAR-2003
	Fort Detrick Final Area B-11 Disposal Pits Operations Work Plan, Phase II Activities	USACE/IT	MAY-2003
	Geophysical Survey Report Proposed NIAID/USAMRIID and NCI Construction Sites	Shaw E & I, Inc.	JUN-2003
	Trenching Data Report Proposed NIAID/USAMRIID Construction Site	Shaw E & I, Inc.	JUN-2003
	Remedial Investigation, Area B Water Sampling Data Report May/June 2003 Sampling Event	Shaw E & I, Inc.	JUN-2003
	Fort Detrick Area A Long-Term Groundwater Monitoring Design Testing Data Report June 2003 Sampling Event,	Shaw E & I, Inc.	JUN-2003
2004	Fort Detrick Area A Long-Term Groundwater Monitoring Design Testing Data Report October 2003 Sampling Event	Shaw E & I, Inc.	JAN-2004
	Remedial Investigation, Area B Water Sampling Data Report October 2003 Sampling Event	Shaw E & I, Inc.	JAN-2004
	Fort Detrick Area B Background Study Report	Shaw E & I, Inc.	JAN-2004
	Geophysical Investigation Report, Priority Areas 1 through 5 Within Area B Fort Detrick	USACE Baltimore District	JAN-2004
	Installation Action Plan	Environmental Management Division, U.S. Army Garrison, Fort Detrick	FEB-2004
	Area B-11 Chemical Waste Disposal Pits Interim Removal Action Close-out Report	Shaw E & I, Inc.	JUN-2004
2005	Area C Waste Water Treatment Plant Feasibility Study	Shaw E & I, Inc.	JAN-2005
	Proposed Plan for Fort Detrick Area C, Five Areas Located at the Wastewater Treatment Plant	Shaw E & I, Inc.	JAN-2005
	Fort Detrick Decision Document for Area C, Five Areas Located at The Wastewater Treatment Plant	Shaw Environmental, Inc.	JAN-2005
	Remedial Investigation, Area B Water Sampling Data Report, December 2004 and February 2005 Sampling	Shaw E & I, Inc.	FEB-2005

## IRP Previous Studies

2005	Title	Author	Date
	Event		
	Fort Detrick Area A Long-Term Groundwater Monitoring Data Report March 2005 Sampling Event	Shaw E & I, Inc.	MAR-2005
	Remedial Investigation, Area B Water Sampling Data Report, March - April 2005 Sampling Event	Shaw E & I, Inc.	APR-2005
	Fort Detrick Remedial Investigation Area B (IRP Site 72) Water Sampling Data Report, July 2005 Sampling Event	Shaw Environmental, Inc.	JUL-2005
	Fort Detrick Area A Long-Term Groundwater Monitoring Data Report - September 2005 Sampling Event, Final Document	Shaw Environmental, Inc.	SEP-2005
	Area B Remedial Investigation Water Sampling Data Report, September 2004 Sampling Event	Shaw E & I, Inc.	SEP-2005
	Fort Detrick Remedial Investigation Area B Water Sampling Data Report, September 2005 Sampling Event, Final Document	Shaw Environmental, Inc.	SEP-2005
	Fort Detrick Remedial Investigation Area B Water Sampling Data Report, December 2005 Sampling Event, Final Document	Shaw Environmental, Inc.	DEC-2005
2006			
	Fort Detrick Remedial Investigation Area B (IRP Site 72) Water Sampling Data Report, March 2006 Sampling Event	Shaw Environmental, Inc.	JUL-2006
	Fort Detrick Area A Long-Term Groundwater Monitoring Design Testing Data Report Mar 2006 Sampling Event	Shaw Environmental, Inc.	JUL-2006
	Area B-2 (IRP Site FTD 50) Remedial Investigation/Feasibility Study, Final Document, October 2006	Shaw Environmental, Inc.	OCT-2006
	Remedial Investigation of Five Sites in Area B; Areas B-Ammo, B-Grid, B-20 North, B-20 South, and B-Skeet. (Sites FTD 07, 05, 43, and 29), Final Document, December 2006	Shaw Environmental, Inc.	DEC-2006
2007			
	Fort Detrick Remedial Investigation Area B (IRP Site 72) Water Sampling Data Report, June 2006 Sampling Event	Shaw Environmental, Inc.	FEB-2007
	Fort Detrick Remedial Investigation Area B (IRP Site 72) Water Sampling Data Report, September 2006 Sampling Event	Shaw Environmental, Inc.	FEB-2007
	Area B-6 (IRP Site FTD 69) Remedial Investigation/Feasibility Study, Final Document, February 2007	Shaw Environmental, Inc.	FEB-2007
	Fort Detrick Area A Long-Term Groundwater Monitoring Data Report September 2006 Sampling Event, Final Document March 2007	Shaw Environmental, Inc.	MAR-2007
	Remedial Investigation, Area B (IRP Site 72) Water Sampling Data Report, December 2006 Sampling Event, Final Document June 2007	Shaw Environmental, Inc.	JUN-2007
	Area B-18 Site Inspection Work Plan / Health and Safety Plan, Final June 2007	Shaw Environmental, Inc.	JUN-2007
	Proposed Plan for Area B-2 (Site FTD 50) Final Document August 2007	Shaw Environmental, Inc.	AUG-2007

## IRP Previous Studies

2007	Title	Author	Date
	Proposed Plan for Five Sites in Area B Areas B-Ammo (FTD 07), B-Grid (FTD 05), B-20 North (FTD 43), B-20 South (FTD 43), and B-Skeet (FTD 29) Final Document August 2007	Shaw Environmental, Inc.	AUG-2007
	Fort Detrick Decision Document of Five Sites in Area B: Areas B-Ammo, B-Grid, B-20 North, B-20 South, and B-Skeet	Shaw Environmental, Inc.	DEC-2007
	Fort Detrick Decision Document for Area B-2 (FTD-50)	Shaw Environmental, Inc.	DEC-2007
2008			
	Fort Detrick Area A Long-Term Groundwater Monitoring Data Report March 2007 Sampling Event, Final Document February 2008	Shaw Environmental, Inc.	FEB-2008
	Fort Detrick Remedial Investigation Area B (IRP Site 72) Water Sampling Data Report, March/May 2007 Sampling Event	Shaw Environmental, Inc.	FEB-2008
	Fort Detrick Western Disposal Areas (FTDs 70, 71, 49) Area B-8, Area B-10/Grove, and Area B-11 Remedial Investigation/Feasibility Study	Shaw Environmental, Inc.	APR-2008
	Fort Detrick Area B-3 Inactive(FTD 51) Remedial Investigation/Feasibility Study	Shaw Environmental, Inc.	AUG-2008
	Fort Detrick Remedial Investigation, Area B (IRP Site 72) Water Sampling Data Report July 2007 Sampling Event, Final Document September 2008	Shaw Environmental, Inc.	SEP-2008
	Fort Detrick Remedial Investigation, Area B (IRP Site 72) Water Sampling Data Report September 2007 Sampling Event, Final Document September 2008	Shaw Environmental, Inc.	SEP-2008
	Fort Detrick Area A Long-Term Groundwater Monitoring Data Report October 2007 Sampling Event, Final Document September 2008	Shaw Environmental, Inc.	SEP-2008
	Fort Detrick Remedial Investigation, Area B (IRP Site 72) Water Sampling Data Report January 2008 Sampling Event, Final Document September 2008	Shaw Environmental, Inc.	SEP-2008
	Fort Detrick Area A Long-Term Groundwater Monitoring Data Report March 2008 Sampling Event, Final Document September 2008	Shaw Environmental, Inc.	SEP-2008
	Fort Detrick Remedial Investigation, Area B (IRP Site 72) Water Sampling Data Report March 2008 Sampling Event, Final Document September 2008	Shaw Environmental, Inc.	SEP-2008
	Fort Detrick Remedial Investigation, Area B (IRP Site 72) Water Sampling Data Report June 2008 Sampling Event, Final Document September 2008	Shaw Environmental, Inc.	SEP-2008
	Area B-18 (FTD 70) Data Report, December 2008	Shaw Environmental, Inc.	DEC-2008
2009			
	Proposed Plan for For Area B-3 Inactive (FTD 51), Area B-6 (FTD 69), and the Western Disposal Areas (FTDS 70, 71, 49)	Shaw Environmental, Inc.	JAN-2009
	Fort Detrick Five-Year Review Area A Groundwater Building 568 TCE Spill Site (FTD66) Final Document - January 2009	Shaw Environmental, Inc.	JAN-2009
	Decision Document for Area B-3 Inactive (FTD51), Area B-6 (FTD 69), and the Western Disposal Areas (FTD 70, 71, 49), Final Document February 2009	Shaw Environmental, Inc.	FEB-2009

# FORT DETRICK

## Installation Restoration Program

### Site Descriptions

Site Name: CHEMICAL WASTE PITS B-11 (AREA B)

**STATUS**

Regulatory Driver: CERCLA  
 RRSE: HIGH  
 Contaminants of Concern: Biological Material, Radionuclides, Volatiles (VOC)  
 Media of Concern: Soil

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200809
RD.....	200407.....	200906
IRA.....	200102.....	200406
RA(C).....	200406.....	200909
RA(O).....	200407.....	200909
LTM.....	200909.....	204009

RIP Date: 200909  
 RC Date: 200909

**SITE DESCRIPTION**

This landfill is a 5.2 acre section of a larger 19.6 acre landfill complex. For administrative purposes, sections of this complex were broken out into three other AEDB-R sites: FTD 69 (Area B-6), FTD 70 (Area B-8), and FTD 71 (Area B-10).

Area B-11 is located on the southwest side of Area B and consists of numerous disposal pits. These pits received wastes from FTD, the US Bureau of Standards, and Walter Reed Army Medical Center. Wastes included metals, general wastes from laboratory modifications, general housing refuse, laboratory chemicals, pesticides/herbicides, drums of TCE/PCE, radiological materials including carbon, sulfur and phosphorus compounds, and medical wastes.

In 1992 TCE contamination was discovered off-post in residential wells above MCLs. The highest historical off-post measurement was 20,000 parts per million (ppm) PCE (4000 times the MCL) in a spring. Data from the RI investigations indicated that B-11 was the likely source of the groundwater TCE/PCE plume. In 2004 an interim removal action was completed at four pits within Area B-11. 3300 tons of soil and waste were removed. During excavation, viable bacteria in heat-sealed vials were discovered. This discovery significantly increased the cost and health and safety requirements for this IRA due to the biological testing of air and soil, increased processing of soil and debris, application of disinfectants, and the installation of High Efficiency Particulate Air (HEPA) filters on containment exhaust.

This site currently addresses soil contamination only. Because of the complexity of the Area B disposal sites, the groundwater component for this site and all other Area B sites was broken out as a separate site called Area B Groundwater (FTD 72).

The site is under a PBC. A DD was signed in March 2009 which selected capping with LUCs as the preferred remedy. The cap is anticipated to be complete in 2009. LUCs will remain in place indefinitely.

**CLEANUP/EXIT STRATEGY**

Long-term operation of the cap and LUCs with annual monitoring and five-year reviews will remain in place indefinitely. The current PBC includes operation and monitoring until 2014 and one five-year review. After 2014 new contracts for operation and monitoring and five-year reviews will be awarded.

Site ID: FTD 50  
Site Name: LANDFILL B-2(PKA 1.2 ACRE)

**STATUS**

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

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200610
RD.....	200407.....	200906
RA(C).....	200407.....	200909
RA(O).....	200407.....	200909
LTM.....	200909.....	203909

RIP Date: 200909  
RC Date: 200909

**SITE DESCRIPTION**

This 1.2 acre landfill is located in the north central portion of Area B. It operated between 1948 and the mid-1970s, receiving unknown quantities of waste (metal, wood, general refuse from laboratory remodeling and building demolition). Four groundwater monitoring wells located downgradient of the site have contamination above risk based concentrations (RBCs), but below MCLs. There is not enough data to complete a risk assessment. Aerial extent from an Environmental Photographic Interpretation Center (EPIC) study versus areas sampled show few if any true waste samples. The soil samples taken for the RI did not fully delineate the site.

The site currently addresses soil contamination only. Because of the complexity of the Area B disposal sites, the groundwater component for this site and all other Area B sites was broken out as a separate site called Area B Groundwater (FTD 72).

The site is under a PBC. A DD was signed in February 2008 which selected capping with LUCs as the preferred remedy. The cap is anticipated to be complete in 2009. LUCs will remain in place indefinitely.

**CLEANUP/EXIT STRATEGY**

Long-term operation of the cap and LUCs with annual monitoring and five-year reviews will remain in place indefinitely. The current PBC includes operation and monitoring until 2014 and one five-year review. After 2014, new contracts for operation and monitoring and five year reviews will be awarded.

Site Name: LANDFILL B-3 INACTIVE (PKA 5 ACRE)

**STATUS**

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

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200809
RD.....	200407.....	200906
RA(C).....	200407.....	200909
RA(O).....	200407.....	200909
LTM.....	200909.....	203909
RIP Date:	200909	
RC Date:	200909	

**SITE DESCRIPTION**

B-3 is a 7.3 acre disposal site located on the north side of Area B. It was previously known as "the five acre site". Waste disposal activities occurred there from 1955 to 1990. From approximately 1970 until 1990, B-3 was the principal repository of waste generated at FTD. From 1989 to 1990, a new landfill with liner was installed over a portion of B-3.

Area B-3 received unknown quantities of waste (metals, sludge from WWTP, general refuse from laboratory remodeling and building demolition, drums, herbicide/pesticide waste, potential dioxin contamination associated with phenoxy-acid herbicides, laboratory glassware and autoclaved animal carcasses and municipal trash). Soil samples were taken; however, they do not sufficiently characterize the entire site.

The site currently addresses soil contamination only. Because of the complexity of the Area B disposal sites, the groundwater component for this site and all other Area B sites was broken out as a separate site called Area B Groundwater (FTD 72).

The site is under a PBC. A DD was signed in March 2009 which selected capping with LUCs as the preferred remedy. The cap is anticipated to be complete in 2009. LUCs will remain in place indefinitely.

**CLEANUP/EXIT STRATEGY**

Long-term operation of the cap and LUCs with annual monitoring and five-year reviews will remain in place indefinitely. The current PBC includes operation/monitoring until 2014 and one five-year review. After 2014, new contracts for operation and monitoring and five-year reviews will be awarded.

Site Name: WASTEWATER TREATMENT PLANT (AREA C)

**STATUS**

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

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200512
LTM.....	200512.....	204009
RIP Date:	N/A	
RC Date:	200512	

**SITE DESCRIPTION**

The WWTP, located on Area C, is a gravity-flow system consisting of primary and secondary clarifiers and a trickling filter. It is operated under a national pollution discharge elimination system (NPDES) permit. The following areas were investigated as potential restoration sites:

- a fill area and area surrounding and downwind of a former incinerator stack,
- a former ash disposal area,
- treatment plant process water (including former mercury seals on trickling filters),
- the Monocacy river and unnamed stream sediment and surface water, and
- Area C groundwater.

Based on results of the RI, the only AOC was the former ash disposal area.

The incinerator operated at this site from 1944 to the mid 1960s. The types of materials burned in this incinerator are not well documented, but are believed to have included medical waste and general refuse. The incinerator was demolished in 1975. Some ash from the incinerator was disposed onsite, adjacent to the incinerator. In 2002 a compliance-funded action was completed to transport the ash to FTD's active landfill. Residual amounts of ash still remain at the former ash disposal area.

The RI did not find any unacceptable risks with the current use of the former ash disposal site; however, there are elevated hypothetical risks for a potential future child resident due to metals. In December 2005 a DD implementing institutional controls for the former ash disposal area was signed by the Garrison Commander.

The former ash disposal area was added to the FTD geographic information system (GIS) LUC layer as an institutional control site. In addition, "no-dig" signs were installed at the site.

Per USAEC guidance, the maximum duration for projecting costs is 30 years, therefore the LUC cost-to-complete (CTC) will be calculated based upon 30 years duration. Five-year reviews will be required in FY10, FY13, FY18, FY23, FY28, FY33 and FY38.

The five-year review in FY13 will be performed early in order to synchronize the review period with the Area B landfill caps.

**CLEANUP/EXIT STRATEGY**

In the event that the Army sells this property, the site restrictions will be incorporated into any real property documents necessary for transferring ownership from the Army and in a deed restriction for the property.

Five-year reviews will be conducted beginning in 2010. The Army will investigate combining the five-year review for this site with other five-year reviews for the post.

Site ID: FTD 66  
Site Name: TCE SPILL SITE (AREA A)

## STATUS

Regulatory Driver: CERCLA  
RRSE: HIGH  
Contaminants of Concern: Volatiles (VOC)  
Media of Concern: Groundwater

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200107
LTM.....	200107.....	201402
RIP Date:	N/A	
RC Date:	200107	

## SITE DESCRIPTION

This site is located in Area A near building 568. TCE was used at this building as a refrigerant. Between 1970 and 1971 the refrigeration system that contained the TCE was removed. There were no visible leaks upon removal. The quantity of TCE, which may have spilled during the filling, operation, or maintenance of these tanks, is unknown; however leaks of mechanical seals were documented as early as 1964. Currently, there is a TCE plume in the groundwater. In July 2001 a DD was signed requiring hydraulic containment of the plume and the plume now is being monitored to verify that MCLs are not exceeded at the facility boundaries.

A tenant mission-funded groundwater production well (with one backup well) is used to supply water for aquatic biological laboratories housed in building 568. The current well use is providing the required hydraulic containment. The Area A TCE plume is no longer migrating off-post above MCLs.

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to perform LTM and five-year reviews for the site until 2014. The first five-year review began in FY07. The review was finalized in January 2009.

The levels of TCE within the source area have significantly lowered and are approaching the MCL. The site most likely will be closed out within the term of the current PBC. Costs associated with this site are tracked under the site "PBC at Detrick".

## CLEANUP/EXIT STRATEGY

The mission-funded groundwater production well will continue to provide the required hydraulic containment. The next five-year review is scheduled for FY10, to coincide with the five-year review for site FTD 54 Area C WWTP.

Due to decreasing TCE concentrations in groundwater, the site may be closed out prior to the end of the PBC in 2014. No future costs are anticipated; however, if the site is not closed out, groundwater monitoring and additional five-year reviews may be needed until the site is at RC.

## STATUS

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

Phases	Start	End
PA.....	197610.....	197701
SI.....	197610.....	197701
RI/FS.....	199303.....	200101
LTM.....	200103.....	204009
RIP Date:	N/A	
RC Date:	200103	

## SITE DESCRIPTION

Water Towers North, South and West are located on Area A. These water towers were painted with lead-based paints. Particles of the dried paint were dispersed in the shallow soils surrounding the towers as a result of normal weathering and sandblasting of the towers. Due to the potential for high lead levels in the shallow soils, sampling was performed around each water tower to assess the concentrations of lead and other metals in the shallow soils. Three metals above background concentrations were reported for the soil: chromium (total), lead, and thallium. There were not any unacceptable human or ecological risks for these metals.

In July 2001, based upon the data generated during the RI and institutional controls currently in place at the subject site, FTD signed a DD recommending no further RA at the water towers under the environmental restoration, Army (ER,A) funded IRP.

The first five-year review began in FY07. Ft. Detrick is currently awaiting regulator review and concurrence with the report and its recommendations.

## CLEANUP/EXIT STRATEGY

The LUCs with monitoring and five-year reviews will remain in place indefinitely unless a soil removal action is undertaken. Semiannual visual inspections will be used to confirm the LUCs are working effectively and that there have not been any unauthorized disturbances.

This site is included in a PBC that was awarded in August 2004. The PBC requires the contractor to perform semiannual reviews of FTD's institutional controls and five-year reviews for the site until 2014. The first five-year review was completed in January 2009. A new contract will be needed in 2014.

## STATUS

Regulatory Driver: CERCLA  
 RRSE: MEDIUM  
 Contaminants of Concern: Biological Material, Metals  
 Media of Concern: Soil

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200710
RD.....	200407.....	200906
RA(C).....	200407.....	200909
RA(O).....	200407.....	200909
LTM.....	200909.....	204009
RIP Date:	200909	
RC Date:	200909	

## SITE DESCRIPTION

Area B-6 operated from 1952 until 1970. During this time it received unknown quantities of waste including ash, metals, wood and general debris from laboratory remodeling and building demolition, and animal carcasses. Autoclaved carcasses included animals ranging from mice to horses. Animals that were used in special operations involving live biological agents were routinely incinerated prior to burial. Some carcasses may not have been incinerated prior to disposal, but were reportedly autoclaved prior to leaving the laboratory. Surface and subsurface soil samples have been taken; however, the site has not been sufficiently characterized.

In 1995 thirty soil boring locations were randomly selected with 50-foot spacing between grid nodes. Four additional borings were drilled to fully characterize waste material. Waste materials were encountered in seven out of 34 borings between two to seven feet below ground surface (bgs).

In October 1999 surface geophysical surveys were conducted to locate and define burial pits containing metal debris and animal remains. The survey mapped several landfill pits and trenches containing buried metal.

In fall 2002 field observations of B-6 showed areas with soil erosion and small animal holes. Once uncovered, miscellaneous stainless steel objects, laboratory apparatuses, and empty laboratory glassware were revealed. Severely eroded areas and animal holes were backfilled with clay.

The site currently addresses soil contamination only. Because of the complexity of the Area B disposal sites, the groundwater component for this site and all other Area B sites was broken out as a separate site called Area B Groundwater (FTD 72).

The site is under a PBC. A DD was signed in March 2009 which selected capping with LUCs as the preferred remedy. The cap is anticipated to be complete in 2009. LUCs will remain in place indefinitely.

## CLEANUP/EXIT STRATEGY

Long-term operation of the cap and LUCs with annual monitoring and five-year reviews will remain in place indefinitely. The current PBC includes operation and monitoring until 2014 and one five-year review. After 2014, new contracts for operation and monitoring and five-year reviews will be awarded.

**STATUS**

Regulatory Driver: CERCLA  
 RRSE: MEDIUM  
 Contaminants of Concern: Biological Material, Metals  
 Media of Concern: Soil

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200809
RD.....	200407.....	200906
RA(C).....	200407.....	200909
RA(O).....	200407.....	200909
LTM.....	200909.....	203909
RIP Date:	200909	
RC Date:	200909	

**SITE DESCRIPTION**

Waste burial activities were conducted in Area B-10 from 1958 to 1970. Area B-10 received general housing area refuse and autoclaved, and sometimes incinerated, animal carcasses. The grove of trees surrounding Area B-10 (referred to as the B-10 Grove) is reported to have been a surface dumping site for unregulated solids, mainly household trash and miscellaneous debris. The quantity and types of waste is unknown. Potential trenches on the east side of the grove have been identified, but have not been investigated.

In 1995 soil samples were taken at fifteen locations selected randomly in a 25-foot grid. Borings were taken to 12 feet bgs or refusal. A plastic bag was encountered in one boring six feet bgs. No other wastes were found. Tree cores were acquired to date the nine oldest-appearing trees in the forested area. The tree ages were from 39 to 95 years. The conclusion is that most of the forested area most likely is not a disposal area.

The site currently addresses soil contamination only. Because of the complexity of the Area B disposal sites, the groundwater component for this site and all other Area B sites was broken out as a separate site called Area B Groundwater (FTD 72).

The site is under a PBC. A DD, signed in March 2009, selected capping with LUCs as the preferred remedy for the disposal areas. The cap is anticipated to be complete in 2009. LUCs will remain in place indefinitely.

**CLEANUP/EXIT STRATEGY**

Long-term operation of the cap and LUCs with annual monitoring and five-year reviews will remain in place indefinitely. The current PBC includes operation and monitoring until 2014 and one five-year review. After 2014 new contracts for operation and monitoring and five-year reviews will be awarded.

## STATUS

Regulatory Driver: CERCLA  
RRSE: MEDIUM  
Contaminants of Concern: Volatiles (VOC)  
Media of Concern: Groundwater

Phases	Start	End
PA.....	199211.....	199312
RI/FS.....	200407.....	201208
RD.....	200407.....	201303
IRA.....	199211.....	201201
RA(C).....	200803.....	201403
RA(O).....	200803.....	201403
LTM.....	201403.....	204009
RIP Date:	201403	
RC Date:	201403	

## SITE DESCRIPTION

This site is under a PBC. All groundwater in Area B was included in this site in FY04. Presently, a TCE/PCE plume extends from Area B-11 in an easterly direction beyond the installation boundary which is approximately one mile away. Although Area B-11 is the main source of the plume, other sites in Area B may be contributors to groundwater contamination. The exact dimensions of the plume are unknown due, in part, to the Karst geology. Contamination has been found in off-post drinking water wells and alternate water sources have been provided to potentially affected residents.

Currently, the Army is working with the MDE and the USEPA to develop a work plan to complete the groundwater RI. Work plan components being discussed include: 33 additional monitoring wells, a new dye trace study, off-post wells, direct-push sampling in the Carroll Creek basin, stream and sediment sampling, and additional site specific sampling parameters.

A minimum of three additional years will be needed to complete the work plan tasks listed above. Because the work plan has not been finalized the future phase schedule is currently estimated.

On April 9, 2009, the USEPA formally listed FTD Area B groundwater on the NPL. This action will necessitate the development of an FFA. The details of the agreement will also be dependent on the finalization of the groundwater RI/FS work plan.

## CLEANUP/EXIT STRATEGY

This site is included in a PBC that was awarded in August 2004. The site has had technical and regulatory delays which may push back the RIP date until FY14. The site was added to the NPL in April 2009. The Army is currently working with the USEPA and the MDE to develop a work plan to complete the RI / FS for the Area B groundwater. It is anticipated that the work plan will be an essential part of the future FFA with the USEPA. Future remedy selection will be based on the outcome of the FS. Potential remedies may include treatment systems for potable wells in use or connections to public water supplies. Potential remedies for the aquifer include chemical oxidation, enhanced biological treatment, and natural attenuation.

After the remedy is in place under the current PBC, long-term monitoring and five-year reviews most likely will be needed for 30 years or more.

Site Name: Areas B-8, B-18,& Trenches N of B-8

**STATUS**

Regulatory Driver: CERCLA  
 RRSE: MEDIUM  
 Contaminants of Concern: Biological Material, Metals, Radionuclides  
 Media of Concern: Soil

Phases	Start	End
PA.....	199110.....	199202
SI.....	199110.....	199202
RI/FS.....	199303.....	200809
RD.....	200407.....	200906
RA(C).....	200407.....	200909
RA(O).....	200407.....	200909
LTM.....	200909.....	204009
RIP Date:	200909	
RC Date:	200909	

**SITE DESCRIPTION**

Waste burial activities were conducted in Area B-8 from 1948 through 1972. It received unknown quantities of waste including metal, wood, and general debris from laboratory remodeling and building demolition. This area also received autoclaved carcasses of animals ranging from mice to horses. Animals used in special studies, involving live biological agents, were routinely incinerated before burial. Some carcasses may not have been incinerated prior to disposal, but all were reportedly autoclaved prior to leaving the laboratory. Area B-8 also received housing area refuse from 1950 to 1955. In 1971 and 1972 Area B-8 received 150 tons of liquid waste and decontamination plant sludge. The sludge contained viable anthrax spores and was mixed with hypochlorite to kill the anthrax. The sludge was tested for sterility prior to its disposal.

Area B-8 also reportedly received radioactive carbon, sulfur, and phosphorus compounds. The Trenches North of Area B-8 consist of depressions, thought to represent abandoned burial trenches. Disposal activities at these locations are unknown. From EPIC study photographs, the trenches appear to have been operated in 1958 and 1970. The trenches are apparent as high conductivity anomalies in a 1993 Electromagnetic Geophysical Survey. To further characterize possible contamination, surface and subsurface soil samples were collected and analyzed as part of the Phase II field investigation.

Area B-18 represents a former disposal area located in the central western portion of Area B northeast of the three trenches and northwest of Area B-20 South. The location was not accurately documented. Area B-18 was a landfill that received all types of waste and operated until 1950. Historical documents mention no other description of the types of waste that were disposed in Area B-18. Waste materials were not encountered in any of the borings completed in the original area thought to be B-18. A small group of trees near the investigation site for Area B-18 may be the true location of Area B-18. This area contains several sinkholes and a former disappearing stream. Within the sinkholes and around the trees there are miscellaneous pieces of metal and glass debris.

An SI was performed at Area B-18 to determine whether subsurface waste disposal occurred. The inspection included debris removal and a geophysical survey. Based on the results, it was determined that subsurface disposal had occurred. The area was included in the cap design for B-8.

The site currently addresses soil contamination only. Because of the complexity of the Area B disposal sites, the groundwater component for this site and all other Area B sites was broken out as a separate site called Area B Groundwater (FTD 72).

The site is under a PBC. A DD was signed in March 2009 which selected capping with LUCs as the preferred remedy for the disposal areas and B-18. The cap is anticipated to be complete in 2009. LUCs will remain in place indefinitely.

Site ID: FTD70

Site Name: Areas B-8, B-18,& Trenches N of B-8

## CLEANUP/EXIT STRATEGY

Long-term operation of the cap and LUCs with annual monitoring and five-year reviews will remain in place indefinitely. The current PBC includes operation and monitoring until 2014 and one five-year review. After 2014, new contracts for operation and monitoring and five-year reviews will be awarded.

## STATUS

Regulatory Driver: CERCLA  
RRSE: LOW

Phases	Start	End
PA.....	199809.....	200109
RA(C).....	200407.....	201201
RA(O).....	200407.....	201402
RIP Date:	201201	
RC Date:	201402	

## SITE DESCRIPTION

This site identification is used to track funding for a PBC contract. It is not an actual installation restoration site. Funding covers all PBC work performed at these sites:

- FTD 49 (Area B-11),
- FTD 50 (Area B-2),
- FTD 51 (Area B-3),
- FTD 66 (TCE Spill Site, Area A),
- FTD 68 (Water Towers, Area A),
- FTD 69 (Area B-6),
- FTD 70 (Area B-8, B-18 and trenches north of B-8),
- FTD 71 (Area B-10 and B-10 Grove), and
- FTD 72 (Area B Groundwater).

## CLEANUP/EXIT STRATEGY

Please see the individual sites for Cleanup Strategies.

## Response Complete (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTD 01	BLDG 201,263,375,470	199407	Initial assessment of site determined no further investigation is required
FTD 02	UNDERGROUND STORAGE TANKS	199407	Initial assessment of site determined no further investigation is required
FTD 03	CONTAMINATED SEWER SYSTEM	199407	Initial assessment of site determined no further investigation is required
FTD 04	ABOVE GROUND STORAGE TANK	199407	Initial assessment of site determined no further investigation is required
FTD 05	AREA B OUTDOOR SIMULANT TEST GRID	200709	A No Further Decision Document was signed in February 2008.
FTD 06	INFECTIOUS MATERIALS STORAGE (BLDG 434)	199407	Initial assessment of site determined no further investigation is required
FTD 07	AMMUNITION STORAGE AREA (AREA B)	200709	A No Further Decision Document was signed in February 2008.
FTD 08	AREA A LANDFILL	199706	Initial assessment of site determined no further investigation is required
FTD 09	CLEAN FILL AREA (FORMALLY CONST DEBR LF)	200006	Initial assessment of site determined no further investigation is required
FTD 10	LANDFILL (0.45 ACRE)	199407	Initial assessment of site determined no further investigation is required
FTD 11	COMBUSTIBLE BURN PIT	200009	Initial assessment of site determined no further investigation is required
FTD 29	SKEET RANGE	200709	A No Further Decision Document was signed in February 2008.
FTD 38	SPRAY FACILITY (BLDG 391)	199407	Initial assessment of site determined no further investigation is required
FTD 39	CONTAINMENT FACILITY (BLDG 374)	199407	Initial assessment of site determined no further investigation is required
FTD 43	PIT 20 DETONATION AREA	200709	A No Further Decision Document was signed in February 2008.
FTD 46	INCINERATOR (BLDG 393)	199407	Initial assessment of site determined no further investigation is required
FTD 47	AREA A TEST AREA	199407	Initial assessment of site determined no further investigation is required
FTD 48	LANDFILL B-1 (PKA 0.5 ACRE )	200503	Initial assessment of site determined no further investigation is required
FTD 52	RAD WASTE STORAGE (BLDG 261)	199407	Initial assessment of site determined no further investigation is required
FTD 53	HAZ WASTE STORAGE (BLDG 1520)	199408	Maryland Dept. of the Environment Letter November 1, 1994
FTD 55	USAMRID BLDGS 1425	199407	Initial assessment of site determined no further investigation is required
FTD 56	FIRE PROTECTION DIVISION (BLDG 1504)	199407	Initial assessment of site determined no further investigation is required
FTD 57	BLDG & GROUND MAINTENANCE SHOP(BLDG 201)	199408	Maryland Dept. of the Environment Letter November 1, 1994
FTD 58	VEHICLE WASH AREA	199407	Initial assessment of site determined no further investigation is required
FTD 59	AUTO CRAFT SHOP	199407	Initial assessment of site determined no further investigation is required
FTD 60	GENERATOR BUILDING	199407	Initial assessment of site determined no further investigation is required
FTD 61	VEHICLE MAINTENANCE SHOP	199407	Initial assessment of site determined no further investigation is required
FTD 62	CAR WASH (WASH RACK) BLDG 951	200006	Initial assessment of site determined no further investigation is required

## Response Complete (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTD 63	WATER TREATMENT PLANT (AREA C)	199408	Maryland Dept. of the Environment Letter November 1, 1994
FTD 64	FORMER BIOLOGICAL RESEARCH LABS (32)	199407	Initial assessment of site determined no further investigation is required
FTD 65	PESTICIDE & HERBICIDE STORAGE - BLDG 122	200006	Initial assessment of site determined no further investigation is required
FTD 67	BLDG 1301 - LABORATORY COMPLEX	200009	Maryland Dept. of the Environment Letter dated August 4, 2000

# IRP Schedule

Date of IRP Inception: 197610

## Past Phase Completion Milestones

1977

PA (FTD 01 - BLDG 201,263,375,470, FTD 03 - CONTAMINATED SEWER SYSTEM, FTD 07 - AMMUNITION STORAGE AREA (AREA B), FTD 09 - CLEAN FILL AREA (FORMALLY CONST DEBR LF), FTD 10 - LANDFILL (0.45 ACRE), FTD 11 - COMBUSTIBLE BURN PIT, FTD 29 - SKEET RANGE, FTD 38 - SPRAY FACILITY (BLDG 391), FTD 39 - CONTAINMENT FACILITY (BLDG 374), FTD 43 - PIT 20 DETONATION AREA, FTD 46 - INCINERATOR (BLDG 393), FTD 47 - AREA A TEST AREA, FTD 67 - BLDG 1301 - LABORATORY COMPLEX, FTD 68 - WATER TOWERS (AREA A))

SI (FTD 01 - BLDG 201,263,375,470, FTD 03 - CONTAMINATED SEWER SYSTEM, FTD 09 - CLEAN FILL AREA (FORMALLY CONST DEBR LF), FTD 11 - COMBUSTIBLE BURN PIT, FTD 38 - SPRAY FACILITY (BLDG 391), FTD 39 - CONTAINMENT FACILITY (BLDG 374), FTD 43 - PIT 20 DETONATION AREA, FTD 47 - AREA A TEST AREA, FTD 67 - BLDG 1301 - LABORATORY COMPLEX, FTD 68 - WATER TOWERS (AREA A))

1992

PA (FTD 02 - UNDERGROUND STORAGE TANKS, FTD 04 - ABOVE GROUND STORAGE TANK, FTD 05 - AREA B OUTDOOR SIMULANT TEST GRID, FTD 06 - INFECTIOUS MATERIALS STORAGE (BLDG 434), FTD 08 - AREA A LANDFILL, FTD 48 - LANDFILL B-1 (PKA 0.5 ACRE ), FTD 49 - CHEMICAL WASTE PITS B-11 (AREA B), FTD 50 - LANDFILL B-2(PKA 1.2 ACRE), FTD 51 - LANDFILL B-3 INACTIVE (PKA 5 ACRE), FTD 52 - RAD WASTE STORAGE (BLDG 261), FTD 53 - HAZ WASTE STORAGE (BLDG 1520), FTD 54 - WASTEWATER TREATMENT PLANT (AREA C), FTD 55 - USAMRID BLDGS 1425, FTD 56 - FIRE PROTECTION DIVISION (BLDG 1504), FTD 57 - BLDG & GROUND MAINTENANCE SHOP(BLDG 201), FTD 58 - VEHICLE WASH AREA, FTD 59 - AUTO CRAFT SHOP, FTD 60 - GENERATOR BUILDING, FTD 61 - VEHICLE MAINTENANCE SHOP, FTD 62 - CAR WASH (WASH RACK) BLDG 951, FTD 63 - WATER TREATMENT PLANT (AREA C), FTD 64 - FORMER BIOLOGICAL RESEARCH LABS (32), FTD 65 - PESTICIDE & HERBICIDE STORAGE - BLDG 122, FTD 66 - TCE SPILL SITE (AREA A), FTD 69 - Area B-6, FTD 71 - Area B-10 and B-Grove, FTD70 - Areas B-8, B-18,& Trenches N of B-8)

SI (FTD 02 - UNDERGROUND STORAGE TANKS, FTD 04 - ABOVE GROUND STORAGE TANK, FTD 05 - AREA B OUTDOOR SIMULANT TEST GRID, FTD 06 - INFECTIOUS MATERIALS STORAGE (BLDG 434), FTD 07 - AMMUNITION STORAGE AREA (AREA B), FTD 08 - AREA A LANDFILL, FTD 10 - LANDFILL (0.45 ACRE), FTD 29 - SKEET RANGE, FTD 46 - INCINERATOR (BLDG 393), FTD 48 - LANDFILL B-1 (PKA 0.5 ACRE ), FTD 49 - CHEMICAL WASTE PITS B-11 (AREA B), FTD 50 - LANDFILL B-2(PKA 1.2 ACRE), FTD 51 - LANDFILL B-3 INACTIVE (PKA 5 ACRE), FTD 52 - RAD WASTE STORAGE (BLDG 261), FTD 53 - HAZ WASTE STORAGE (BLDG 1520), FTD 54 - WASTEWATER TREATMENT PLANT (AREA C), FTD 55 - USAMRID BLDGS 1425, FTD 56 - FIRE PROTECTION DIVISION (BLDG 1504), FTD 57 - BLDG & GROUND MAINTENANCE SHOP(BLDG 201), FTD 58 - VEHICLE WASH AREA, FTD 59 - AUTO CRAFT SHOP, FTD 60 - GENERATOR BUILDING, FTD 61 - VEHICLE MAINTENANCE SHOP, FTD 62 - CAR WASH (WASH RACK) BLDG 951, FTD 63 - WATER TREATMENT PLANT (AREA C), FTD 64 - FORMER BIOLOGICAL RESEARCH LABS (32), FTD 65 - PESTICIDE & HERBICIDE STORAGE - BLDG 122, FTD 66 - TCE SPILL SITE (AREA A), FTD 69 - Area B-6, FTD 71 - Area B-10 and B-Grove, FTD70 - Areas B-8, B-18,& Trenches N of B-8)

1994

PA (FTD 72 - Area B Groundwater)

1997

RI/FS (FTD 08 - AREA A LANDFILL)

2000

RI/FS (FTD 09 - CLEAN FILL AREA (FORMALLY CONST DEBR LF), FTD 11 - COMBUSTIBLE BURN PIT, FTD 62 - CAR WASH (WASH RACK) BLDG 951, FTD 65 - PESTICIDE & HERBICIDE STORAGE - BLDG 122, FTD 67 - BLDG 1301 - LABORATORY COMPLEX)

2001

RI/FS (FTD 66 - TCE SPILL SITE (AREA A), FTD 68 - WATER TOWERS (AREA A))

PA

(PBC at Detrick - PBC)

2004

IRA (FTD 49 - CHEMICAL WASTE PITS B-11 (AREA B))

2005  
 RI/FS (FTD 48 - LANDFILL B-1 (PKA 0.5 ACRE ))

2006  
 RI/FS (FTD 54 - WASTEWATER TREATMENT PLANT (AREA C))

2007  
 RI/FS (FTD 05 - AREA B OUTDOOR SIMULANT TEST GRID, FTD 07 - AMMUNITION STORAGE AREA (AREA B), FTD 29 - SKEET RANGE, FTD 43 - PIT 20 DETONATION AREA, FTD 50 - LANDFILL B-2(PKA 1.2 ACRE))

2008  
 RI/FS (FTD 49 - CHEMICAL WASTE PITS B-11 (AREA B), FTD 51 - LANDFILL B-3 INACTIVE (PKA 5 ACRE), FTD 69 - Area B-6, FTD 71 - Area B-10 and B-Grove, FTD70 - Areas B-8, B-18,& Trenches N of B-8)

**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: 201403

NPL Deletion Date: N/A

Schedule for Next Five-Year Review: 2010

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

## FORT DETRICK IRP Schedule

  = phase underway

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD 49	CHEMICAL WASTE PITS B-11 (AREA B)	PA						
		SI						
		RI/FS						
		RD						
		IRA						
		RA(C)						
		RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD 50	LANDFILL B-2(PKA 1.2 ACRE)	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
		SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13
FTD 51	LANDFILL B-3 INACTIVE (PKA 5 ACRE)	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
		SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13
FTD 54	WASTEWATER TREATMENT PLANT (AREA C)	PA						
		SI						
		RI/FS						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD 66	TCE SPILL SITE (AREA A)	PA						
		SI						
		RI/FS						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD 68	WATER TOWERS (AREA A)	PA						
		SI						
		RI/FS						
		LTM						

## FORT DETRICK IRP Schedule

SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD 69	Area B-6	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD 71	Area B-10 and B-Grove	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD 72	Area B Groundwater	PA						
		RI/FS						
		RD						
		IRA						
		RA(C)						
		RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
FTD70	Areas B-8, B-18,& Trenches N of B-8	PA						
		SI						
		RI/FS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY10	FY11	FY12	FY13	FY14	FY15+
PBC at Detrick	PBC	PA						
		RA(C)						
		RA(O)						

## Community Involvement

Technical Review Committee (TRC): None

Restoration Advisory Board (RAB): RAB established 199306

RAB Adjournment Date: N/A

RAB Adjournment Reason: None

Community Involvement Plan (Date Published): 200212

Additional Community Involvement Information

None

Administrative Record is located at

Installation Restoration Program Office  
Building 810  
Fort Detrick, MD 21702-5000

Information Repository is located at

C. Burr Artz Central Library  
110 East Patrick Street  
Frederick, MD 21701  
301-694-1630

Fort Detrick Public Library  
Building 1520  
1520 Freedman Drive  
Fort Detrick, MD 21702-5000  
301-619-7519

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

TAPP Title: N/A

Potential TAPP: N/A

