

**FY2012**

**FORT KNOX**

**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 action (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), Fort Knox (FTKX), the Installation Management Command (IMCOM) - Southeast Region, 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-CC	Army Environmental Database - Compliance-related Cleanup
AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
BRA	Baseline Risk Assessment
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
C/DD	Construction/Demolition Debris
CAP	Corrective Action Plan
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CLF	Closed Landfill
CMI(C)	Corrective Measure Implementation (Construction)
CMI(O)	Corrective Measure Implementation (Operations)
CMS	Corrective Measures Study
COC	Contaminants of Concern
CR	Compliance Restoration
CS	Confirmatory Sampling
CTC	Cost to Complete
CTT	Closed, Transferring, and Transferred
DD	Decision Document
DERP	Defense Environmental Restoration Program
DES	Design
DRMO	Defense Reutilization and Marketing Office
EMD	Environmental Management Division
EOD	Explosive Ordnance Disposal
ER,A	Environmental Restoration, Army
FRA	Final Remedial Action
FS	Feasibility Study
FTKX	Fort Knox
FY	Fiscal Year
IAP	Installation Action Plan
ID	Identification
IDW	Investigation-Derived Waste
IM	Interim Measure
IMCOM	Installation Management Command
IMP(C)	Implementation (Construction)
IMP(O)	Implementation (Operation)
INV	Investigation
IR	Installation Restoration
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISC	Initial Site Characterization
K	thousand
KDEP	Kentucky Department of Environmental Protection
kg	kilogram
LF	Landfill

## Acronyms

LTM	Long-Term Management
LTO	Long-Term Operations
LUC	Land Use Controls
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MR	Munitions Response
N/A	Not Applicable
NFA	No Further Action
NOTI	Notice of Technical Inadequacy
NPL	National Priorities List
O&M	Operations and Maintenance
OB	Open Burn
OD	Open Detonation
ODUSD (I&E)	Office of the Deputy Under Secretary of Defense for Installations and Environment
PA	Preliminary Assessment
PAH	Polyaromatic Hydrocarbon
PBA	Performance-Based Acquisition
PBC	Performance-Based Contract
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PCP	Pentachlorophenol
POL	Petroleum, Oil and Lubricants
PRG	Preliminary Remediation Goal
PRT	Former Pesticide Rinse Tank
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TCE	Trichloroethene
TRC	Technical Review Committee
ug/kg	micrograms per kilogram

## Acronyms

USAARMC	US Army Armor Center
USACE	US Army Corps of Engineers
USACHPPM	US Army Center for Health, Promotion and Preventive Medicine
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency (currently USACHPPM)
USEPA	US Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WIT	Warrior in Transition
WWTP	Waste Water Treatment Plant

# Acronym Translation Table

## CERCLA

Preliminary Assessment(PA)  
Site Inspection(SI)  
Remedial Investigation/Feasibility Study(RI/FS)  
Remedial Design(RD)  
Remedial Action (Construction)(RA(C))  
Remedial Action (Operation)(RA(O))  
Long Term Management(LTM)  
Interim Remedial Action(IRA)

## RCRA

= RCRA Facility Assessment(RFA)  
= Confirmation Sampling(CS)  
= RCRA Facility Investigation/Corrective Measures Study(RFI/CMS)  
= Design(DES)  
= Corrective Measures Implementation (Construction)(CMI(C))  
= Corrective Measures Implementation (Operation)(CMI(O))  
= Long Term Management(LTM)  
= Interim Measure(IM)

## CERCLA

Preliminary Assessment(PA)  
Remedial Investigation(RI)  
Feasibility Study(FS)  
Remedial Design(RD)  
Remedial Action (Construction)(RA(C))  
Remedial Action (Operation)(RA(O))  
Long Term Management(LTM)  
Interim Remedial Action(IRA)

## RCRA Underground Storage Tank (UST) Site Phase Terms

= Initial Site Characterization(ISC)  
= Investigation(INV)  
= Corrective Action Plan(CAP)  
= Design(DES)  
= Implementation (Construction)(IMP(C))  
= Implementation (Operations)(IMP(O))  
= Long Term Management(LTM)  
= Interim Remedial Action(IRA)

## Installation Information

### Installation Locale

**Installation Size (Acreage):** 109000

**City:** Fort Knox

**County:** Hardin

**State:** Kentucky

### Other Locale Information

Fort Knox is a certified Kentucky city, covering 109,054 acres or about 170.4 square miles. It is the sixth largest urban community in the Commonwealth of Kentucky with a long and rich history. Fort Knox is adjacent to the city of Radcliff, 15 miles north of Elizabethtown, and approximately 35 miles south of Louisville. Fort Knox contains 63 firing ranges, 18 major training areas, five base camps and 29 bivouac sites and numerous firing points in three Kentucky counties

Fort Knox has the sole responsibility for all Soldier career management, from swearing in to departing service. Currently Fort Knox is the home of the Army Cadet Command, Army Human Resources Command, and the Army Recruiting Command. Included with these units are: the 3rd Brigade of the 1st Infantry Division, the 3rd Expeditionary Sustainment Command, the 84th Training Command, and the Ireland Army Community Hospital. Fort Knox units are considered "Partners in Excellence" making Fort Knox the most multi-functional military base in the United States Army.

### Installation Mission

Fort Knox is a multi-functional US Army installation. Located just 35 miles from Louisville, it encompasses 109,000 acres in three Kentucky counties. Fort Knox currently has a daytime population of 40,000 soldiers, family members and civilian employees.

Fort Knox began as Camp Knox in 1918, when the US government leased approximately 40,000 acres for artillery training. The surrounding area had served as a training area for Cavalry units prior to that. The post was named to honor Henry Knox, chief of Artillery of the Continental Army during the Revolutionary War and the first Secretary of War for the United States. In 1931 a small force of mechanized cavalry was assigned to Camp Knox to use it as a training site. The camp was turned into a permanent garrison in January 1932, and renamed Fort Knox. After the 1st Cavalry Regiment arrived at Fort Knox it became the home of Army Armor and Cavalry training and doctrine until 2011. In 2005 the Base Realignment and Closure (BRAC) announcement set the stage for Fort Knox to transition from the Armor Center to a multifunctional, multicommand installation.

Additional units that relocated to Fort Knox include the 3rd Brigade Combat Team, 1st Infantry Division; Army Reserve Readiness Training Center; 100th Division Headquarters; and the 3rd Sustainment Command (Expeditionary).

### Lead Organization

#### Lead Executing Agencies for Installation

Fort Knox Environmental Management Division (EMD)

US Army Corps of Engineers (USACE), Louisville District /Nashville District

#### Regulator Participation

<b>Federal</b>	US Environmental Protection Agency (USEPA) Region IV
<b>State</b>	Kentucky Department of Environmental Protection (KDEP)

#### National Priorities List (NPL) Status

FORT KNOX is not on the NPL

## Installation Information

### 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, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

**Affected Media of Concern:** Groundwater, Sediment, Soil, Surface Water

#### CR

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

**Affected Media of Concern:** Soil

## 5-Year / Periodic Review Summary

### 5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201110	201209	2012
Planned	201610	201709	2017

### Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Decision Document for SWMU FTK-044 DRMO	FTK-020
FTK-01 Closed Landfill 9th and Wilson	FTKX-01
Pesticide Rinse Tank	FTKX-22
Spent Solvent Storage Area Boatwright	FTKX-21
UST Site 1473-A	FTKX-40
WWTP Sludge Lagoon	FTKX-10

**Results** 7 RIP sites with LUCs evaluated to ensure continued remedy protectiveness. No major issues or deficiencies were noted during the review.

**Actions** Some follow-up action needed: continued LTM, finalization of RCRA permit modification, and continued inspections of LUCs and other engineered controls.

**Plans** Another periodic review will be conducted in FY 2017.

### Recommendations and Implementation Plans:

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## Land Use Control (LUC) Summary

**LUC Title:** DRMO

**Site(s):** FTK-020

**ROD/DD Title:** Decision Document for SWMU FTK-044 DRMO

**Location of LUC**

The Defense Reutilization and Marketing Office (DRMO) land use controls (LUCs) apply to approximately 15 acres located in the north-central portion of the cantonment area east of the intersection of Brandenburg Station Road and Frazier Road.

**Land Use Restriction:** Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - Mitigation area(s) protection, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

**Types of Engineering Controls:** Fences, Markers, Signs

**Types of Institutional Controls:** Deed Notices, Notations in Master Plan, Restrictions on land use

**Date in Place:** 200803

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** USACE District

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200803

**LUC Enforcement:** Annual Inspections, 5 Year Reviews, Other

**Contaminants:** METALS, PETROLEUM HYDROCARBON, VOC

**Additional Information**

N/A

**LUC Title:** FTKX-01 Closed Landfill

**Site(s):** FTKX-01

**ROD/DD Title:** FTK-01 Closed Landfill 9th and Wilson

**Location of LUC**

The FTKX-01 closed landfill is a 15-acre site at the corner of Wilson Road and 9th Avenue.

**Land Use Restriction:** Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Landfill restriction - Restrict construction of buildings that may interfere with LF cap or cover system, Landfill restriction - Restrict plantings that interfere LF cap or cover system (roots that penetrate the cap or cover system), Landfill restriction - Restrict vehicular traffic, Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

**Types of Engineering Controls:** Fences, Guards, Markers, Signs

**Types of Institutional Controls:** Deed Notices, Notations in Master Plan, Restrictions on land use

## Land Use Control (LUC) Summary

**Date in Place:** 200702

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** USACE District

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200802

**LUC Enforcement:** Annual Inspections, 5 Year Reviews, Other

**Contaminants:** METALS, ORGANICS, PAH, PESTICIDES, VOC

**Additional Information**

N/A

**LUC Title:** Pesticide Rinse Tank

**Site(s):** FTKX-22

**ROD/DD Title:** Pesticide Rinse Tank

**Location of LUC**

The pesticide rinse tank site is located adjacent to Building 112 and south of Eleventh Avenue.

**Land Use Restriction:** Media specific restriction - Prohibit groundwater extraction that interferes with Remedial Action system, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

**Types of Engineering Controls:** Markers, Signs

**Types of Institutional Controls:** Deed Notices, Notations in Master Plan, Restrictions on land use

**Date in Place:** 200803

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** USACE District

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200803

**LUC Enforcement:** Annual Inspections, 5 Year Reviews, Other

**Contaminants:** METALS, PESTICIDES, VOC

**Additional Information**

N/A

**LUC Title:** Spent Solvent Area

**Site(s):** FTKX-21

**ROD/DD Title:** Spent Solvent Storage Area Boatwright

**Location of LUC**

The spent solvent area is located south of Frazier Road and north of the Boatwright Maintenance Area in the north central portion of the cantonment area.

**Land Use Restriction:** Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - prohibit use of

## Land Use Control (LUC) Summary

groundwater for consumption or domestic purposes, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

**Types of Engineering Controls:** Fences, Markers, Signs

**Types of Institutional Controls:** Deed Notices, Notations in Master Plan, Restrictions on land use

**Date in Place:** 200803

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** USACE District

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200803

**LUC Enforcement:** Annual Inspections, 5 Year Reviews, Other

**Contaminants:** METALS, VOC

**Additional Information**

N/A

**LUC Title:** UST Site 1473-A

**Site(s):** FTKX-40

**ROD/DD Title:** UST Site 1473-A

**Location of LUC**

The UST site 1473-A is located near the center of the cantonment area between Pershing Drive and Knox Street.

**Land Use Restriction:** Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

**Types of Engineering Controls:** Markers, Signs

**Types of Institutional Controls:** Deed Notices, Notations in Master Plan, Restrictions on land use

**Date in Place:** 200803

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** USACE District

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200803

**LUC Enforcement:** Annual Inspections, 5 Year Reviews, Other

**Contaminants:** VOC

**Additional Information**

N/A

**LUC Title:** UST Site 2823

**Site(s):** FTKX-15D

## Land Use Control (LUC) Summary

**ROD/DD Title:** FTKX-15D UST Site 2823

**Location of LUC**

The underground storage tank (UST) site 2823 is located adjacent to building 2807 in Mansfield Motor Park.

**Land Use Restriction:** Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Restrict land use - Mitigation area(s) protection, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

**Types of Engineering Controls:** Markers, Signs

**Types of Institutional Controls:** Deed Notices, Notations in Master Plan, Restrictions on land use

**Date in Place:** 200807

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** USACE District

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** 200807

**LUC Enforcement:** Annual Inspections, 5 Year Reviews, Markers, Other

**Contaminants:** PETROLEUM HYDROCARBON

**Additional Information**

N/A

**LUC Title:** WWTP Sludge Lagoons

**Site(s):** FTKX-10

**ROD/DD Title:** WWTP Sludge Lagoon

**Location of LUC**

The wastewater treatment plant sludge lagoons are located in the south-central portion and along the eastern perimeter of the cantonment area, adjacent to the current wastewater treatment plant.

**Land Use Restriction:** Media specific - Prohibit activities that results in contact with contaminated sediments, Media specific restriction - Prohibit, or otherwise manage excavation, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Restrict land use - No daycare/hospital/school use, Restrict land use - No residential use

**Types of Engineering Controls:** Fences, Markers, Signs

**Types of Institutional Controls:** Deed Notices

**Date in Place:** 200711

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** USACE District

**Record of LUC:** Master Plan or Equivalent

**Documentation Date:** N/A

**LUC Enforcement:** Annual Inspections, 5 Year Reviews, Other

**Contaminants:** INORGANICS, METALS, PAH, PCBs, PESTICIDES, VOC

**Additional Information**

N/A

# Cleanup Program Summary

## Installation Historic Activity

Fort Knox was named in honor of the Revolutionary War Chief of Artillery, Major General Henry Knox, and was established as Camp Knox in January 1918 on 10,000 acres of leased land. The camp was used to create a training center for field artillery during World War I. Construction of camp facilities began in July 1918. From 1922 to 1931, Camp Knox was closed as a permanent installation and used primarily as a training center for the Fifth Corps Area US Army Reserve Officers, citizens military training camps, and National Guard units. On Jan. 1, 1932, Congress designated the installation as a permanent garrison and renamed it Fort Knox.

The installation had expanded in various military activities before and after World War II, and by 1943 the total area of the installation had increased to approximately 110,000 acres. In 1955 the armored combat division was transferred to Fort Knox, and the principal mission of the installation until 2010 was basic combat training and advanced individual training in armored vehicles.

Currently Fort Knox is a multifunctional, multicommand installation. Fort Knox has a population of over 30,000 Soldiers, family members and civilian employees. Units today include Human Resources Command, Army Recruiting Command and Army Cadet Command. Fort Knox units are considered "Partners in Excellence" and include the 3rd Brigade of the 1st Infantry Division, the 84th Training Command and the Ireland Army Hospital.

Most of the water supply for Fort Knox comes from groundwater, obtained from a shallow well field located five miles north of the cantonment area, in alluvial sediments near the Ohio River. Twelve water supply wells, screened in the river sediments and ranging in depth from 32.3 to 45.1 meters (106 to 148 feet), provide up to approximately 9,462,500 liters (2.5 million gallons) per day. The average public water use is 9,027,225 liters (2,385,000 gallons) per day, while the average industrial use is 1,003,025 liters (265,000 gallons) per day. Approximately 25 percent of the water used at Fort Knox is supplied by Otter Creek. Groundwater quality varies with location. The water from the limestone aquifers is generally hard; this is attributed to the presence of calcium carbonate. The water from Otter Creek is generally hard and fairly clear, but it discolors during flooding, and bicarbonate, hardness, and pH levels are usually higher than those in the other streams on Fort Knox. McCracken Spring, which emanates from the St. Louis limestone located just west of Otter Creek, provides the remainder of the Fort Knox supply. The McCracken Spring reservoir and Otter Creek reservoir (located about 61 meters or 200 feet downstream of the McCracken Spring reservoir) supply up to 5.7 million liters per day (1.5 million gallons per day).

Groundwater beneath Fort Knox will likely occur in two hydrologic regimes: in the bedrock zone and in the unconsolidated zone where the groundwater table is expected to be located at or below the soil-bedrock interface. The bedrock hydrogeology in the Fort Knox area is primarily karstic with sinking streams, springs, and sinkholes. The karst topography is the product of the physical and chemical weathering of limestone bedrock. Flow through the subsurface in karst terrains often occurs in discrete dendritic or trellised conduits that can be similar to the flow of surface streams. Conduits in the Fort Knox vicinity originate along pre-existing planar structures such as bedding planes, joints, and faults. Acidic waters gradually erode the existing secondary permeability, forming larger solution features. Flow along bedding planes is typically the preferred route, until solution features are found. Where the soil cover is thick, a perched water table may exist at or above the soil-bedrock interface, where its flow is controlled by differences in the lithology of the unconsolidated material, or by irregularities in the weathered bedrock surface. Thin perched water is considered transient in nature, and eventually recharges the bedrock aquifer. Surface water generally falls into one of three categories: rivers, streams and drainage, and impoundments.

The installation is a large quantity hazardous waste generator and currently has a permitted transportation, storage, and disposal facility to store hazardous waste generated at the installation. A variety of hazardous waste is generated as a result of maintenance activities, printing and painting operations, and shops (i.e., automotive, battery, electric communications, and medical supply). Typical hazardous wastes include solvents and heavy metals, effluent fixer and developer, spent batteries, and chemical defense equipment. Additionally, many of the wastes received by the hazardous waste storage building (building 2949) are commercial chemical products that are either surplus or have exceeded their shelf lives. The installation's hazardous waste is stored in a single hazardous waste storage building segregated into five bays.

The installation applied for and received a Resource Conservation and Recovery Act (RCRA) Part B permit for hazardous waste storage, in accordance with the 1984 hazardous and solid waste amendments to RCRA. The Kentucky Natural Resources and Environmental Protection Cabinet, KDEP, Division of Waste Management was the regulatory agency that granted and administered the compliance reporting and inspections of this permit.

On Sept. 28, 1986 permit number KY6-210-020-479 became effective, with an expiration date of Sept. 28, 1996. The installation received a notice of violation from the USEPA, dated Feb. 19, 1987, for not providing corrective action information by December 1986, as required by the RCRA Part B permit.

# Cleanup Program Summary

## Installation Historic Activity

In January 1987, the US Army Environmental Hygiene Agency (USAEHA) made a site visit to develop a preliminary corrective action information package. The RCRA facility assessment (RFA) plan, dated April 20, 1988, was prepared by the USAEHA based on the site visit and other information subsequently provided by Fort Knox. This plan was submitted to the USEPA, thereby fulfilling the requirements of the RCRA Part B permit.

The installation received a notice of technical inadequacy (NOTI) on the RFA plan dated Dec. 20, 1988. On Feb. 16, 1989 Fort Knox submitted the response comments to the NOTI. The response comments included a narrative discussion of each of the technical inadequacies, along with a revised Appendix C of the RFA plan.

In FY96 the RCRA hazardous waste management permit was submitted to the KDEP for renewal. The effective date of this permit was Feb. 21, 1997 with an expiration date of Feb. 21, 2007.

In August 2007 an application for the RCRA permit renewal was submitted to KDEP where it is currently under review.

On May 27, 2009 a notice of RA protective measures at Fort Knox Military Reservation was filed in the Hardin County courthouse. This notice was filed to fulfill the environmental covenant requirement in Kentucky for all solid waste management units (SWMUs) with land use controls (LUCs).

A Hazardous Waste Management Storage Permit was issued July 13, 2009 with an effective date of Aug. 12, 2009.

On Sept. 1, 2009 Fort Knox prepared and submitted a notification letter to KDEP of our intentions to close building 2949, the hazardous waste storage building.

## Installation Program Cleanup Progress

### IRP

**Prior Year Progress:** Corrective measures implementation (operation) [CMI(O)] ongoing at two sites. Long-term management (LTM) remained ongoing at six sites. LUCs are ongoing at seven sites. Site-wide groundwater characterization continues. Complete confirmatory sampling (CS) at two oil/water separator (OWS) sites. Continue investigation at multiple heating/fuel USTs to achieve RC. A five year progress review will be performed at seven sites.

**Future Plan of Action:** FY13: Two sites will continue with CMI(O) and six sites will continue with LTM. Seven sites will have LUCs. Ramp-down strategy of LTM sites will be evaluated based on site-wide groundwater contaminant trends.

FY14: Eight sites will continue with LTM and seven sites under LUCs. Ramp-down strategy of LTM sites will be evaluated based on site-wide groundwater contaminant trends.

### CR

**Prior Year Progress:** An NFA was received for 12 UST sites in CCFTK-103. Closure reports requesting NFA for 11 UST sites in CCFTK-103 were submitted.

An environmental covenant will be filed at the Hardin County Court House for 4 UST sites in CCFTK-103. An environmental covenant will also be filed for CCFTK-104.

**Future Plan of Action:** FY13: Receive NFA for 7342.1, 7342.2, and 7342.3, if funding is available. Remove OWS FTK-017AA, FTK-017AB, FTK-017AH, and FTK-017AK in CCFTK-017. Perform repairs and improvements of seven OWS in CCFTK-017.

FY14: Remove non-active OWSs.

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**Installation Restoration Program**

## IRP Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 50/40

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

2	Landfill (FTKX-01, FTKX-02)
1	Oil Water Separator (CCFTKX-017)
1	Storage Area (FTKX-21)
2	Surface Impoundment/Lagoon (FTKX-10, PBC at Knox)
4	Underground Storage Tank (FTK-020, FTKX-15D, FTKX-22, FTKX-40)

### Most Widespread Contaminants of Concern

Metals, Pesticides, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

### Media of Concern

Groundwater, Sediment, Soil, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
FTKX-43	OIL & GREASE PIT	FRA	REMOVAL	1994
FTKX-37	PARKERIZATION PROCESS AREA, BLG 2783	FRA	REMOVAL	1996
FTK-41A	ANDERSON GOLF COURSE	FRA	WASTE REMOVAL - SOILS	2000
FTK-41L	LINDSEY GOLF COURSE	FRA	WASTE REMOVAL - SOILS	2000
FTK-038	PCB TRANSFORMER STORAGE SITE BLDG 7331	FRA	WASTE REMOVAL - SOILS	2001
FTKX-33	FORMER TRANSFORMER STG PAINT SHOP YD	FRA	WASTE REMOVAL - SOILS	2001
FTKX-35	FORMER TRANSFORMER STG BLD 4019	FRA	WASTE REMOVAL - SOILS	2001
FTKX-15A	UST & PIPELINE REMOVALS BLDG 102	FRA	WASTE REMOVAL - SOILS	2003
FTKX-39	ABANDONED GASOLINE LINE DISTRIB SYSTEM	FRA	REMOVAL	2003
FTKX-01	CLOSED LANDFILL (9TH AND WILSON ROAD)	FRA	CAPPING	2005
FTK-020	DRMO FORMER WASTE OIL TANK SITE	FRA	NATURAL ATTENUATION	2007
FTKX-10	WWTP SLUDGE LAGOONS (2)	FRA	WASTE REMOVAL - SOILS	2007
FTKX-15D	UST SITE 2823 INVESTIGATION/REMEDIATION	FRA	AIR SPARGING	2007
FTKX-21	BOATWRIGHT MAINT AREA NR BLD 2775	FRA	WASTE REMOVAL - SOILS	2007
FTKX-22	BLD T-112 UST PESTICIDE	FRA	NATURAL ATTENUATION	2007
FTKX-24	FIRE FIGHTER TRNING AREA	FRA	WASTE REMOVAL - SOILS	2007
FTKX-30	TIOGA SPRINGS EOD SITE	FRA	WASTE REMOVAL - SOILS	2007
FTKX-40	UST 1473-A SITE CLOSURE	FRA	NATURAL ATTENUATION	2007
PBC at Knox	PBC	FRA	OTHER	2007

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## IRP Summary

### Duration of IRP

**Date of IRP Inception:** 198602

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201312/201312

**Date of IRP completion including Long Term Management (LTM):** 202309

# IRP Contamination Assessment

## Contamination Assessment Overview

On Feb. 16, 1989 Fort Knox submitted a final RFA to the USEPA. The RFA addressed 36 SWMUs. Since that submission, an additional nine SWMU sites have been identified that require an RFA, for a total of 48. Petroleum, oil, and lubricants (POL) and metals are the most common contaminants at these sites.

The RFA originally included 96 underground waste oil tanks requiring a RCRA facility investigation (RFI) prompted by evidence of releases in the area of these tanks. The tank integrity was to be tested at each site and, where necessary, analysis of soil and groundwater were to be performed.

The RFA also included 47 OWSs requiring an RFI. Since no regular maintenance of these units had been established, soil sampling and analysis were to be done so that a determination could be made, based upon the evidence of releases, as to whether or not further investigation would be required.

Sites requiring an RFI, addressed by this RFA, are the closed and operating landfills, the hospital, the wastewater treatment plant (WWTP), washracks, aboveground tanks, DRMO, the Boatwright Maintenance Area, Godman Airfield, the transformer storage areas, and the explosive ordnance disposal (EOD) sites. There were 14 other SWMUs addressed by the RFA that did not require an RFI.

In 2005 ToITest, Inc. was selected by the USACE to perform environmental restoration service. A guaranteed fixed-price performance-based contract (PBC) was awarded for remediation for the following sites:

- FTKX-10 Former Sludge Lagoons,
- CCFTK-11 Sludge Drying Beds,
- FTKX-15 Site 2823 USTs,
- FTKX-020 DRMO,
- FTKX-21 Boatwright Maintenance Area,
- FTKX-22 Pesticide UST,
- FTKX-24 Fire Training Area,
- FTKX-30 Tioga Springs EOD,
- FTKX-40 UST 1473, and
- FTKX-01 and FTKX-02 landfills.

The RAs at these sites were conducted pursuant to the RCRA, the corrective action portion of the Fort Knox Hazardous Waste Permit (KY6-210-020-479), and regulatory coordination with the KDEP.

A RIP was achieved in FY07 for all sites in the Installation Restoration Program (IRP). Operation and Maintenance (O&M) activities continued at sites FTKX-021, spent solvent storage area, FTKX-22, pesticide rinse tank (PRT), and FTKX-40, UST Site 1473-A, until September 2007. Currently O&M is ongoing for natural attenuation at one site, FTKX-40. The LTM is ongoing at sites FTKX-01, FTKX-02, FTKX-020, FTKX-15D, FTKX-21, and FTKX-22, PRT.

In May 2009 an LUC Document "Notice of Remedial Action Preventive Measures at the Fort Knox Military Reservation" was filed at the Hardin County Court House. Sites that were included in this document were FTKX-01, FTK-020, FTKX-10, FTKX-21, FTKX-15D, FTKX-22, and FTKX-40.

Currently, the installation is continuing with LUCs and long-term monitoring at the eight remaining sites.

## Cleanup Exit Strategy

FTKX-01: The LTM for groundwater analysis and methane gas field screening will be reported annually until 2011. At the end of the five years, the compliance monitoring report will include a recommendation to either continue the sampling program as described, or to adjust it to fit conditions present at that time. At a minimum, groundwater and spring sampling will be performed every five years and reported in compliance monitoring reports until 2024.

FTKX-02: The residential portion of the landfill is considered inactive and only long-term detection monitoring under the modified solid waste permit is required. Monitoring will continue at this site for at least 30 years.

FTKX-10: Hot spot removal was performed at six surface locations that exceeded the arsenic geochemical background

## IRP Contamination Assessment

screening; the site will be filled and regraded and then brought under land use restriction controls. The site is designated as an industrial area and will be allowed to return to its natural vegetative state. No construction, excavation, or other activities that would disturb the surface soils or would allow unacceptable contact with surface or subsurface soil will be allowed. The LUCs will remain in place at this site until 2024.

FTKX-15D: In 2008 the corrective action, consisting of a sparge system with an ozone generator, began for a duration of 24 to 30 months. The RA will be followed by two years of semiannual monitoring to verify that contaminant concentrations are remaining stable or declining. Monitoring will be conducted at five monitoring wells for benzene, toluene, ethylbenzene, and xylene (BTEX) analysis following methods specified by the KDEP UST guidance. Based on the site's current physical setting and future land use there are no exposure pathways present. In 2014, if concentrations are stable or declining, a determination will be made whether or not to ramp-down the sampling events to annual sampling.

FTK-020: In 2008 the selected corrective action began for this site. It consisted of LTM of two springs and four wells for a period of five years and LUCs for at least 30 years. An O&M plan was implemented to maintain conditions of the signage, fencing and gravel cover, inspection, and erosion repairs. An annual O&M report will be issued. The ramping down of LTM is expected to reach no further sampling in 2014. The LUCs will continue until 2039.

FTKX-21: The LTM semiannual sampling for natural attenuation began in 2009 and will continue until 2013. In 2013 the site will be reevaluated to determine if LTM is still required. An NFA is expected at this site in 2014.

FTKX-22: The LTM semiannual sampling for natural attenuation began in 2009 and will continue until 2013. In 2013 the site will be reevaluated to determine if LTM is still required. An NFA is expected at this site in 2014.

FTKX-40: In FY07 monitoring for natural attenuation began with semiannual sampling. A ramp-down to annual sampling is expected in 2010. Annual monitoring for natural attenuation is expected to continue until 2024.

CCFTKX-017: In FY10, the OWS operation and maintenance plan was completed. In FY11, 22 of 24 active OWS were cleaned, inspected, and evaluated. The DPW/EMD personnel will perform annual inspections. In FY13, repairs and improvements will be made to seven OWSs. Also in FY13, OWSs FTK-017AA, FTK-017AB, FTK-017AH, and FTK-017AK will be removed. In FY14, non-active OWS will be removed.

## IRP Previous Studies

Year	Title	Author	Date
1989	RFA, All Sites, Final	USAEHA	FEB-1989
1990	Final Pre-Investigation Submittal for RFI Closed Landfill and Tioga Springs EOD Site, Volume V. Chemical Data Acquisition Plan, Appendices	Law Environmental	NOV-1990
	Final Pre-Investigation Submittal for RFI Closed Landfill and Tioga Springs EOD Site, Volume 1, Data Management & Work Progression Plan, Volume 2 Monitoring Well Installation, Volume 3 Site Safety and Health Plan, Vol 4 Chemical Data Acquisition Plan	Law Environmental	NOV-1990
1992	Preliminary Contamination Assessment for RCRA Facility Investigation, Multiple Solid Waste Management Units	Law Environmental	JAN-1992
	Final Quality Control Summary Report for RCRA Facility Investigation Multiple Solid Waste Management Units	Law Environmental	APR-1992
1993	Final Report of SI Pesticide Rinsate Tank Closure, FTKX-22	Law Environmental	MAR-1993
	Environmental Site Assessment Former Underground Storage Tank Sites 2730, 2823, 2952 and 7560	Ogden	MAR-1993
	Final Phase I RCRA Facility Investigation Multiple Solid Waste Management Units	Law Environmental	SEP-1993
	Draft Supporting Documents Modification of Existing Residential Landfill to Construction/Debris Landfill	Engineering-Science	OCT-1993
	Final Phase I RCRA Facility Investigation for Multiple Solid Waste Units	Law Environmental	NOV-1993
1994	Groundwater Assessment Plan for Residential Landfill Closure	Dames & Moore	APR-1994
	SWMU Assessment Report Site 2827 Grease Pit	Ogden	JUL-1994
	Phase II Environmental Assessment Former Underground Storage Tank Site 2952	Odgen	AUG-1994
	Summary of Pit Remediation	Four Seasons Environmental Inc	SEP-1994
1995	RCRA Facility Investigation Work Plans Site 1473-A	Ogden	FEB-1995
	Workplan for the Spring Survey and Background Monitoring Residential Landfill	Dames & Moore	MAY-1995
	Sampling and Analysis Plan for Site Investigation at Sites 102, 2730 and 2952	Sverdrup	JUN-1995
	Final Sampling and Analysis Plan Site Check at the Abandoned Petroleum Pipeline System	Sverdrup	JUN-1995
	Phase I RFI Former UST Site 1473-A SWMU FTK-040, FTKX-40	Ogden	SEP-1995
	RCRA Facility Investigation for the WWTP Sludge Drying Beds SWMU FTK-011 and the WWTP Sludge Lagoons SWMU FTK-010	Sverdrup	OCT-1995
1996	Work Plan Conduit Groundwater Study Residential and C/DD Landfill	Dames & Moore	FEB-1996

## IRP Previous Studies

1996	Title	Author	Date
	Report Spring Survey and Initial Background Spring Monitoring	Dames & Moore	APR-1996
	Draft Report Site Investigation at Site 2952	Sverdrup	JUN-1996
	Final Phase II RCRA Facility Investigation Work Plan for Solid Waste Management Unit Group #2 SWMU's FTK-031, -032.-033.-035, -038	SAIC	SEP-1996
	Final Phase II RCRA Facility Investigation Site Safety and Health Plan for Solid Waste Management Unit Group #1, SWMU FTK-001 Closed Landfill and SWMU FTK-030 Tioga Range EOD Site	SAIC	OCT-1996
	Final Phase II RCRA Facility Investigation Workplan for Solid Waste Management Unit Group 1, SWMU FTK-001 Closed Landfill and FTK-030 Tioga EOD Site	SAIC	OCT-1996
	Final Phase II RCRA Facility Investigation Work Plan for Solid Waste Management Unit Group #1, SWMU FTK-001 Closed Landfill and SWMU FTK-030 Tioga Range EOD Site	SAIC	NOV-1996
1997	Phase I RCRA Facility Investigation Former Underground Storage Tank Site 1473-A	Ogden	JAN-1997
	Final Report Diffuse Groundwater Study Residential and C/DD Landfill	Dames & Moore	MAR-1997
	Work Plan Sitewide Karst Ground Assessment	Dames & Moore	MAR-1997
	Unexploded Ordnance (UXO) Support Services and Geophysical Surveys, FTKX-30	SAIC	APR-1997
	Site Specific Safety and Health Plan Addendum #5 Phase II Sitewide Karst Groundwater Investigation for Residential and C/DD Landfill	Dames & Moore	JUL-1997
	Work Plan Landfill Monitoring System Installation	Dames & Moore	JUL-1997
	Sampling and Analysis Plan for Preliminary Spring Sampling	SAIC	JUL-1997
	Site Check Report for the Abandoned Petroleum Pipeline System Site No. 2	Sverdrup	DEC-1997
	Site Check Report for the Abandoned Petroleum Pipeline System Site No. 3	Sverdrup	DEC-1997
	Site Check Report for the Abandoned Petroleum Pipeline System Site No. 4	Sverdrup	DEC-1997
	Site Check Report for the Abandoned Petroleum Pipeline System Site No. 5	Sverdrup	DEC-1997
	Site Check Report for the Abandoned Petroleum Pipeline System Site No. 6	Sverdrup	DEC-1997
1998	Report Conduit Groundwater Study, Karst	Dames & Moore	JAN-1998
	Confirmatory Sampling Anderson and Lindsey Golf Course Pesticide Mixing Pads, FTKX-41A and FTKX-41L	Sverdrup	JAN-1998
	Draft Work Plan for the Ordnance and Explosives Characterization Tioga Springs EOD Site	SAIC	JAN-1998
	Final Report, Sitewide Soil Background Level Investigation	Sverdrup	APR-1998
	Final Report Site-Wide Soil Background Level Investigation	Sverdrup	APR-1998

## IRP Previous Studies

1998	Title	Author	Date
	Sitewide Karst Groundwater Assessment Report Phase I Activities, Karst	SAIC	JUN-1998
	Sitewide Karst Groundwater Assessment Report Phase I Activities	Dames & Moore	JUN-1998
	Draft RCRA Facility Investigation Report for the Firefighter Training Area SWMU FTK-024	Sverdrup	AUG-1998
	Interim Removal of Soil From Former Pesticide Mixing Pads SMUG # 7, FTKX-41A and FTKX-41L	IT	SEP-1998
	Interim Removal of Soils Former Pesticide Mixing Pads SWMUG #7 Sampling and Analysis Plan, FTKX-41A and FTKX-41L	IT	SEP-1998
	Quality Assurance Report Construction of Construction Demolition Debris (C/DD) Landfill Phase II and III Permit # 047-00008, FTKX-02	IT	SEP-1998
1999	Report Diffuse Groundwater Study, Karst	Dames & Moore	MAR-1999
	Work Plan Confirmatory Sampling at the Defense Reutilization and Marketing Office (DRMO)	Sverdrup	SEP-1999
	Draft Work Plan Phase II Sitewide Karst Groundwater Assessment	Dames & Moore	SEP-1999
	Technical Memorandum for Fort Knox Pesticide Rinse Tank Site FTK-022 and Maintenance Area Results of Historical Documents Evaluation and Passive Soil Gas Survey Sampling Plan and Rational	SAIC	OCT-1999
	Closure of Abandoned Gas Line Distribution System Closure Report, Site No. 2	IT	OCT-1999
	Closure of Abandoned Gas Line Distribution Systems Closure Report, Site No. 3	IT	OCT-1999
	Closure of Abandoned Gas Line Distribution Systems Closure Report No. 4	IT	OCT-1999
	Closure of Abandoned Gas Line Distribution Systems, Closure Report Site No. 5	IT	OCT-1999
	Closure of Abandoned Gas Line Distribution Systems Closure Report No. 6	IT	OCT-1999
	Work Plan Sitewide Karst Groundwater Assessment	Dames & Moore	OCT-1999
	Site Wide Karst groundwater Assessment Report Phase II Activities., Karst	SAIC	NOV-1999
	Interim Removal of Soils Former Pesticide Mixing Pads	IT	DEC-1999
	Decontamination of the Burn Pans at the OB/OD Unit and the Proposed Geophysical Investigation, FTKX-29	AimTech	DEC-1999
	Final Work Plan for the Confirmatory Sampling at the Defense Reutilization and Marketing Office (DRMO) SWMU FTK-044	Sverdrup	DEC-1999
	Phase III RCRA Facility Investigation Work Plan Development Meeting for Closed Landfill FTK-001 and Pesticide Rinse Tank, FTK-022	Nasville COE	DEC-1999
2000	Final Report Conduit Groundwater Study Residential and C/DD Landfill	Dames & Moore	JAN-2000
	Phase II RCRA Facility Investigation Report for SWMU FTK-040 Underground Storage Tank Site 1473-A	SAIC	JAN-2000
	Groundwater Assessment Report, FTKX-02	URS	FEB-2000

## IRP Previous Studies

2000

Title	Author	Date
Draft Report Landfill Monitoring System Installation	Dames & Moore	MAR-2000
Final Phase III RFI SWMU FTK-022 Former Pesticide Rinse Tank, FTKX-22	SAIC	APR-2000
Final Phase II RFI for SMUG 2 Former Pesticide Rinse Tank FTKX-22	SAIC	APR-2000
Amendment to the Phase II RCRA Facility Investigation Work Plan SWMU FTK-001 Closed Landfill	SAIC	APR-2000
Work Plan Amendment Phase III RCRA Facility Investigation Underground Storage Tank Site 1473-A SWMU FTK-040	SAIC	APR-2000
Interim Removal of Soils Former Pesticide Mixing Pads SWMUG #7	IT	APR-2000
Final Phase II RFI for SWMU FTKX-30 Tioga Springs EOD Site	SAIC	MAY-2000
Draft Groundwater Monitoring Plan	Dames & Moore	MAY-2000
Final Phase II RFI for SMUG#2 Former Transformer Sites FTK-31, 32, 33, 35, 38	SAIC	JUN-2000
Phase I RFI Report WWTP, Two Central Washracks, FTKX-018	Jacobs	AUG-2000
Final Phase I RFI WWTP Sludge Lagoons FTK-010 and Sludge Drying Beds FTK-011, FTKX-10 and FTKX-11	Jacobs	AUG-2000
Final Report Phase I RFI WWTP Filter Press Building FTKX-012	Jacobs	AUG-2000
Chemical Data Quality Report for Groundwater Investigation Phase II Residential and C/DD Landfill	Jacobs	AUG-2000
Soil Excavation Removal and Site Closure Bldg 5222 FTKX-16	IT	SEP-2000
Final Phase II RCRA Facility Investigation Report for SWMU FTK-001 Closed Landfill	SAIC	OCT-2000
Draft Confirmatory Sampling Report for the Defense Reutilization and Marketing Office (DRMO)	Jacobs	OCT-2000
Draft Confirmatory Sampling Report for the Defense Reutilization and Marketing Office (DRMO) SWMU FTK-044	Jacobs	OCT-2000
Phase III RCRA Facility Investigation Work Plan SWMU FTK-030 Tioga Range EOD Site	SAIC	NOV-2000
Sitewide Karst Groundwater Assessment Report Phase I Activities	SAIC	NOV-2000
Groundwater Monitoring Plan for Residential and C/DD Landfill	URS	NOV-2000
Phase II RCRA Facility Investigation for the Waste Water Treatment Plant Sludge Lagoons FTK-10 and Sludge Drying Beds, FTKX-011	Jacobs	DEC-2000
Report Landfill Monitoring System Installation Groundwater Investigation Phase II Residential and C/DD Landfill	URS	DEC-2000
Phase II RCRA Facility Investigation for the Waste Water Treatment Plant Sludge Lagoons FTK-10 and Sludge Drying Beds, FTKX-011	SAIC	DEC-2000

2001

Sampling and Analysis Report to Support Closure of the Fort Knox OB/OD Unit at Crumb Range FTKX-29	Tetra Tech	FEB-2001
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## IRP Previous Studies

**2001**

Title	Author	Date
Final Phase I RFI for the OWS FTK-017, FTKX-17, Final 2 Volumes	Jacobs	MAR-2001
Soil Excavation and Removal Interim Measures (IM) Transformer Storage Area Concrete Pad, Bldg 7331, FTKX-38, Final, IT, Apr-01	IT	APR-2001
Soil Excavation and Removal IM Transformer Storage Paint Yard FTK-033, FTKX-33	IT	APR-2001
Analytical Summary First Quarter 2001 Groundwater Sampling Baseline Groundwater Sampling Event #4 Residential and C/DD Landfill	URS	APR-2001
Evaluation of IDW Report WWTP Former Sludge Lagoons FTKX-10 and Sludge Drying Beds FTKX-11	Jacobs	JUL-2001
Investigative Derived Waste Disposal Summary for the Corrective Action Plan Development at UST Site 2730 FTKX-15B	Jacobs	JUL-2001
Investigative Derived Waste Disposal Summary for the Corrective Action Plan Development at DRMO, FTKX-044	Jacobs	JUL-2001
Investigative Derived Waste Disposal Summary Report for the Pre-CAP RI at UST Site 2823, FTKX-15D	Jacobs	JUL-2001
Analytical Summary Second Quarter 2001 Groundwater Sampling Baseline Groundwater Sampling Event #5 Residential and C/DD Landfill	URS	JUL-2001
Phase I RFI Report for Firefighter Training Area, FTKX-24,	Jacobs	AUG-2001
Analytical Summary Third Quarter 2001 Groundwater Sampling Baseline Groundwater Sampling Event #6 Residential and C/DD Landfills	URS	OCT-2001
Phase II RFI Addendum for the WWTP Filter Press Building FTKX-12	Jacobs	OCT-2001
Phase II Report Sitewide Groundwater Assessment,	URS	OCT-2001
Analytical Report for Residential and C/DD Landfill, FTKX-02	URS	DEC-2001

**2002**

Analytical Summary Fourth Quarter 2001 Groundwater Sampling Event #7 Residential Landfills, FTKX-02	URS	JAN-2002
Analytical Summary Fourth Quarter 2001 Groundwater Sampling Baseline Groundwater Sampling Event #7 Residential and C/DD Landfills	URS	JAN-2002
Data Validation Report for Sept 2001 Preclosure Sampling for the OBOD Site Crumb Range, FTKX-29	Tetra Tech	FEB-2002
Soil Excavation and Removal IMs, Transformer Storage Paint Yard (FTK-33)	IT	APR-2002
Soil Excavation and Removal IMs, Transformer Storage Building 4019 (FTK-35)	IT	APR-2002
Soil Excavation and Removal IMs Report, Transformer Storage Area Concrete Pad, Building 7331 (FTK-038)	IT	APR-2002
Interim Removal of Soils and Site Closure Building 5222 (FTKX-16Q)	IT	APR-2002
Analytical Summary Second Quarter 2002 Groundwater Sampling Baseline Groundwater Sampling Event #9 Residential and C/DD Landfills	URS	JUL-2002
Analytical Report for Residential and C/DD Landfill	URS	AUG-2002

## IRP Previous Studies

**2002**

Title	Author	Date
Analytical Report for Residential and C/DD Landfill	URS	AUG-2002
Phase II RFI of the Firefighter Training Area SWMU FTKX-24	SAIC	SEP-2002
Sites 4 and 6 Site Investigation, Closed Abandoned Gas Line Distribution System	IT	OCT-2002
Phase II RFI for the WWTP Filter Press Building SWMU FTKX-12	Jacobs	OCT-2002
Final Phase II RFI for the WWTP Filter Press Building SWMU FTK-012	Jacobs	OCT-2002
Analytical Summary Third Quarter 2002 Groundwater Sampling Event #10 Residential and C/DD Landfills	URS	OCT-2002
Analytical Summary Third Quarter 2001 Groundwater Sampling Baseline Groundwater Sampling Event #6 Residential and C/DD Landfill	URS	OCT-2002
Analytical Summary Third Quarter 2002 Groundwater Sampling Baseline Groundwater Sampling Event #10 Residential and C/DD Landfills	URS	OCT-2002
Quality Control Plan Continuation of Detection-Mode Groundwater Monitoring and Associated Reporting Residential and C/DD Landfill	URS	NOV-2002
Site-Specific Report for Digital Geophysical Mapping Operations Tioga Springs EOD Site	SAIC	DEC-2002

**2003**

Analytical Summary Fourth Quarter 2003 Groundwater Sampling Detection Groundwater Sampling Event #3 Residential and C/DD Landfill	URS	JAN-2003
Analytical Summary Fourth Quarter 2002 Groundwater Sampling Baseline Groundwater Sampling Event #11 Residential and C/DD Landfills	URS	JAN-2003
Fort Knox Residential and C/DD Landfill Groundwater Monitoring Fourth Quarter of 2002 (High and Low Flow Events) Analytical Reports	URS	JAN-2003
Phase II RFI Report for the OWS SWMU FTKX-017	Jacobs	FEB-2003
September 2002 and October 2002 Groundwater Sampling, Baseline Sitewide Karst Groundwater Sampling Event #1 and Event #2, Karst	URS	MAR-2003
October 2002 Groundwater Sampling Baseline Sitewide Karst Groundwater Sampling, Karst	URS	MAR-2003
Analytical Summary Jan 2003 Groundwater Sampling Baseline Sitewide Karst Groundwater Sampling Event #3, Karst	URS	APR-2003
Analytical Summary First Quarter 2003 Groundwater Sampling Baseline Groundwater Sampling Event # 12 Residential and C/DD Landfills	URS	APR-2003
Analytical Summary Second Quarter 2003 Groundwater Sampling Detection Groundwater Sampling Event #1 Residential and C/DD Landfill	URS	JUL-2003
Analytical Summary Second Quarter 2003 Groundwater Sampling Detection Groundwater Sampling Event #1 Residential and C/DD Landfills	URS	JUL-2003
Fort Knox Residential and C/DD Landfill Groundwater Monitoring Second Quarter 2003 (High and Low Flow Events) Analytical Reports	URS	JUL-2003

## IRP Previous Studies

**2003**

Title	Author	Date
Phase III RFI Report for SWMU FTK-040, UST Site 1473-A	SAIC	AUG-2003
Interim Removal of soils and Site Closure Bldg 5222, FTKX-16Q	IT	AUG-2003
Site Wide Karst August 2003 Groundwater Sampling Event #5, Karst	URS	AUG-2003
Final Supplemental Site Characterization Report for the DRMO SWMU FTK-044	Jacobs	SEP-2003
Amendment #2 to the Phase II RCRA Facility Investigation Work Plan SWMU FTK-001 Closed Landfill	SAIC	OCT-2003
Soil Excavation and Removal IMs Report Transformer Storage Paint Yard, FTKX-33	IT	OCT-2003
Soil Excavation and Removal IMs Report Transformer Storage Bldg 4019	IT	OCT-2003
Soil Excavation and Removal IMs Report Transformer Storage Area Concrete Pad Bldg 7331	IT	OCT-2003
Final Phase III RFI Report for the Former Pesticide Rinse Tank Site	SAIC	OCT-2003
Analytical Summary Third Quarter 2003 Groundwater Sampling Detection Groundwater Sampling Event #2 Residential and C/DD Landfills	URS	OCT-2003
Analytical Summary August 2003 Groundwater Sampling Baseline Karst Groundwater Sampling Event #5, Karst	URS	OCT-2003
Analytical Summary Third Quarter 2003 Groundwater Sampling Detection Groundwater Sampling Event #2 Residential and C/DD Landfill	URS	OCT-2003
Amendment #2 To The Phase II RCRA Facility Investigation Workplan, SWMU FTK-001, Closed Landfill Soil Gas Survey	SAIC	OCT-2003
Final Phase III RFI Report for SWMU FTK-001 Closed Landfill	SAIC	NOV-2003
Corrective Measures Study for SWMU FTK-001 Closed Landfill	SAIC	DEC-2003
Year One Baseline Monitoring Report Sitewide Karst Groundwater Assessment, Karst	URS	DEC-2003

**2004**

Analytical Summary October 2003 Groundwater Sampling Baseline Sitewide Karst Groundwater Sampling Event #6	URS	JAN-2004
Analytical Summary Fourth Quarter 2003 Groundwater Sampling Detection Groundwater Sampling Event #3 Residential and C/DD Landfill	URS	JAN-2004
Closure of Abandoned Gas Line Distribution Systems Closure Report Addendum, Site No. 6	SAIC	FEB-2004
Closure of Abandoned Gas Line Distribution Systems Closure Report Addendum, Site No. 6	SAIC	FEB-2004
Decision Document for the CMS at Closed Landfill (SWMU fTK-001)	Knox, EMD	MAR-2004
Phase II RFI of the Firefighter Training Area SWMU FTKX-24	SAIC	MAR-2004
Report of Remedial Design Closed Landfill	FMSM	APR-2004

## IRP Previous Studies

2004

Title	Author	Date
Phase III RFI Report for SWMU FTK-040: UST Site 1473-A	SAIC	APR-2004
C/DD Landfill Groundwater Monitoring First Quarter of 2004 (High and Low Flow Events Analytical Reports Analytical Summary January 2004 Groundwater Sampling Baseline Sitewide Karst Groundwater Sampling Event #7, Karst	URS	APR-2004
Analytical Summary Second Quarter 2004 Groundwater Sampling Detection Groundwater Sampling Event #5 Residential and C/DD Landfill	URS	APR-2004
Analytical Summary Second Quarter 2004 Groundwater Sampling Detection Groundwater Sampling Event #5 Residential and C/DD Landfill	URS	JUL-2004
Decision Document for Corrective Measures Study SWMU FTK-011 Closed Landfill	Fort Knox	JUL-2004
Baseline Groundwater Monitoring Report	URS	SEP-2004
Analytical Summary Third Quarter 2004 Groudwater Sampling Detection Groundwater Sampling Event #6 Residential and C/DD Landfill	URS	OCT-2004

2005

Analytical Summary Fourth Quarter 2004 Groundwater Sampling Detection Monitoring Event D-13 and D-14 Residential and C/DD Landfill	URS	JAN-2005
Residential and C/DD Landfill groundwater Monitoring Second Quarter of 2005 Detection Events D17 and D18	URS	JAN-2005
Analytical Summary September 2004 Spring Sediment Sampling Sitewide Karst Groundwater Study	URS	FEB-2005
Modified Tier I Risk Assessment for SWMU FTKX-24 Firefighter Training Area	SAIC	MAR-2005
Technical Specification Remedial Action Close Landfill	FMSM	APR-2005
Analytical Summary First Quarter 2005 Groundwater Sampling Detection Groundwater Sampling Event D-15 and D-16 Residential and C/DD Landfill	URS	APR-2005
Analytical Summary Third Quarter 2005 Groundwater Sampling Detection Groundwater Sampling Event D-19 and D-20 Residential and C/DD Landfill	URS	OCT-2005
Phase III RFI Report Addendum For SWMU-FTK-040: UST 1473-A Site	SAIC	OCT-2005
Draft Letter Work Plan for Collection of Arsenic Background Chromium Speciation and Microcosm Samples at SWMUs FTK-010, -011, -020, -021, -024, and -030.	TolTest, Inc.	OCT-2005
Addendum to the Phase III RFI Report Addendum For The Former Pesticide Rinse Tank Site SWMU-FTK-022	TolTest, Inc.	OCT-2005
Residential and C/DD Landfill GW Monitoring Third Quarter of 2005 Detection Monitoring Events D-19 and D-20	URS	NOV-2005
Final Phase III RFI Report for the Spent Solvent Storage Area (SWMU FTK-021)	TolTest, Inc.	NOV-2005
Draft Work Plan for Sitewide LTM/LTO and Landfills O&M Groundwater Sampling	TolTest, Inc.	NOV-2005
RCRA Facility Investigation Report for the DRMO SWMU FTK-044	TolTest, Inc.	NOV-2005

2006

## IRP Previous Studies

2006

Title	Author	Date
Final Phase III RFI and Addendum Reports for SWMUs FTK-010 and FTK-011 Former Sludge Lagoons and Sludge Drying Beds	TolTest, Inc.	JAN-2006
Analytical Summary of Detection Event 4 for the Fort Knox Sitewide Karst Groundwater Monitoring Program, Event 4, (2nd Quarter 2005)	TolTest, Inc.	JAN-2006
Analytical Summary Fourth Quarter 2005 Groundwater Sampling Detection Groundwater Sampling Events D-21 and D-22.	TolTest, Inc.	JAN-2006
Analytical Summary Fourth Quarter 2005 Groundwater Sampling Detection Groundwater Sampling Events D-21 and D-22 Residential and C/DD Landfill	TolTest, Inc.	JAN-2006
Draft Supplemental Risk Analysis for SWMU FTKX-24 Firefighter Training Area	TolTest, Inc.	FEB-2006
Draft Supplemental Risk Analysis for SWMU FTKX-030 Tioga Spring EOD Site	TolTest, Inc.	FEB-2006
Draft Supplemental Risk Analysis for SWMU FTK-010 and FTK-011 Former Sludge Lagoons and Sludge Drying Beds	TolTest, Inc.	FEB-2006
Final RCRA Facility Investigation Report for the DRMO SWMU FTK-044	TolTest, Inc.	MAR-2006
Draft Supplemental Risk Analysis for SWMU FTK-020: DRMO	TolTest, Inc.	MAR-2006
Draft Supplemental Site Characterization Report for the Collection of SWMU Specific Arsenic Background and Chromium Speciation Samples at SWMU's FTK-010, -024, -021, and -030	TolTest, Inc.	MAR-2006
Analytical Summary Annual Spring and Sediment Sampling Closed Landfill SWMU FTK-001	TolTest, Inc.	APR-2006
Analytical Summary First Quarter 2006 Groundwater Sampling Detection Groundwater Sampling Events D-23 and D-24 Residential and C/DD Landfill	TolTest, Inc.	MAY-2006
Final Supplemental Risk Analysis for SWMU FTK-024 Firefighter Training Area	TolTest, Inc.	MAY-2006
Final Supplemental Risk Analysis for WMU FTK-030 Tioga Springs EOD Site	TolTest, Inc.	MAY-2006
Final Supplemental Risk Analysis for SWMU FTK-010 and FTK-011 Former Sludge Lagoons and Sludge Drying Beds	TolTest, Inc.	JUN-2006
Analytical Summary Second Quarter 2006 Groundwater Sampling Detection Groundwater Sampling Event D-25 Residential and C/DD Landfill	TolTest, Inc.	JUN-2006
Draft Corrective Measures Study for Tioga Springs EOD Site	TolTest, Inc.	JUN-2006
Draft Corrective Measures Study for the Former Sludge Lagoons and Drying Beds SWUM FTK-010 and FTK-011	TolTest, Inc.	JUN-2006
Addendum To The Phase III RCRA Facility Investigation Report for the Pesticide Rinse Tank SWMU FTK-022	TolTest, Inc.	JUL-2006
Draft Corrective Measures Study for the Firefighter Training Area SWMU FTK-024	TolTest, Inc.	JUL-2006
Draft Risk Assessment for SWM<U FTK-21: Spent Solvent Storage Area	TolTest, Inc.	AUG-2006

## IRP Previous Studies

2006

Title	Author	Date
Final Supplemental Risk Analysis for SWMU FTK-020 Defense Reutilization Marketing Office	TolTest Inc.	AUG-2006
Draft Corrective Measures Study for DRMO SWMU FTK-044	TolTest, Inc.	SEP-2006
Corrective Measures Study for the Former Pesticide Rinse Tank SWMU FTK-022	TolTest, Inc.	SEP-2006
Draft Work Plan for the MEC Support of Tioga Springs EOD Site FTK-030	TolTest, Inc.	SEP-2006
Analytical Summary Third Quarter 2006 Groundwater Sampling Detection Groundwater Sampling Event D-26 Residential Landfill and C/DD Landfill	TolTest, Inc.	OCT-2006
Fort Knox Sitewide Karst Groundwater Spring Monitoring Results Second Quarter 2006 Detection Monitoring Event D-8 Report & Analytical Reports	URS	NOV-2006
Final Risk Assessment for SWMU FTK-021 Spent Solvent Storage Area	TolTest, Inc.	NOV-2006
Year Two Baseline Monitoring Report Sitewide Karst Groundwater Assessment	URS	DEC-2006
Karst Spring Sampling Addendum to the Work Plan for Sitewide LTM/LTO and Landfills O&M Groundwater Sampling	TolTest, Inc.	DEC-2006

2007

Draft Remedial Action Report for Closed Landfill (CLF) SWMU FTK-001	Shaw	FEB-2007
Addendum to the Site Investigation Report for Underground Storage Tank Site 2823	TolTest, Inc.	FEB-2007
Final Work Plan for Site-Wide LTM/LTO and Landfills O&M Groundwater Sampling	TolTest, Inc.	FEB-2007
Draft Corrective Measures Study for Spent Solvent Storage Area SWMU FTK-021	TolTest, Inc.	MAR-2007
Final Supplemental Site Characterization Report for the Collection of SWMU-Specific Arsenic Background and Chromium Speciation Samples at SWMU FTK-010, 011,020,021,024,030	TolTest, Inc.	MAR-2007
Final Corrective Measures Study for Tioga Springs Explosive Ordnance Disposal (EOD) Site SWMU FTK-030	TolTest, Inc.	APR-2007
Analytical Summary First Quarter 2007 Groundwater Sampling Detection Groundwater Sampling Event D-28 Residential and C/DD Landfills	TolTest, Inc.	MAY-2007
Final Corrective Measures Study for the Former Sludge Lagoons and Sludge Drying Beds SWMU FTK-010	TolTest, Inc.	OCT-2007
Final Corrective Measures Study for the Spent Solvent Storage Area SWMU FTK-021	TolTest, Inc.	OCT-2007
Draft Land Use Controls Assurance Plan for Underground Storage Tank 1473-A Site SWMU FTK-040	TolTest, Inc.	OCT-2007
Final Corrective Measures Study For The Former Sludge Lagoons and Drying Beds SWMU FTK-010 and FTK-011	TolTest, Inc.	OCT-2007
Final Corrective Measures Study for the Firefighter Training Area SWMU FTK-024	TolTest, Inc.	NOV-2007
Site Investigation at Underground Storage Tank Site 2823 SWMU FTK-15D	TolTest, Inc.	NOV-2007

## IRP Previous Studies

Year	Title	Author	Date
<b>2007</b>	Final Corrective Measures Study for DRMO SWMU FTK-044	TolTest, Inc.	DEC-2007
	Final Corrective Measures Study for the Former Pesticide Rinse Tank Site SWMU FTK-22	TolTest, Inc.	DEC-2007
<b>2008</b>	Analytical Summary, Fourth Quarter 2007 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	JAN-2008
	Decision Document SWMU FTK-040 Underground Storage Tank 1473-A Interim Measures	TolTest, Inc.	JAN-2008
	Draft Site Wide Long-Term Monitoring Report for Groundwater and Karst Springs	TolTest Inc./SAIC	JAN-2008
	Analytical Summary, First Quarter 2008 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	MAY-2008
	Analytical Summary, Second Quarter 2008 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	AUG-2008
	Analytical Summary, Third Quarter 2008 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	DEC-2008
	Analytical Summary, Third Quarter 2008 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	DEC-2008
<b>2009</b>	Analytical Summary, Fourth Quarter 2008 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	JAN-2009
	Analytical Summary, First Quarter 2009 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	MAY-2009
	Analytical Summary, Second Quarter 2009 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	AUG-2009
	2008 Sitewide LTM Report for Groundwater and Karst Springs	TolTest, Inc.	SEP-2009
	Sampling and Analysis Plan for RCRA Facility Investigation at Gammon Field House, Fort Knox, Ky	US Army Corps of Engineers, Nashville District	NOV-2009
	Analytical Summary, Third Quarter 2009 Groundwater Sampling, Detection Groundwater Events D34, Residential and C/DD Landfills	TolTest, Inc.	NOV-2009
	Interim Measures Remedial Action Report, Spent Solvent Storage Area (SWMU FTK-021), Former Pesticide Rinse Tank (SWMU FTK-022)	TolTest, Inc.	DEC-2009
	Interim Measures Remedial Action Report for Spent Solvent Storage Area (SWMU FTK-021) and the Pesticide Rinse Tank Site (SWMU FTK-022)	TolTest, Inc.	DEC-2009
<b>2010</b>	Analytical Summary, Fourth Quarter 2009 Groundwater Sampling, Detection Groundwater Sampling Event D-34 Residential and C/DD Landfills, Fort Knox, Kentucky	TolTest, Inc.	FEB-2010
	Analytical Summary, First Quarter 2010 Groundwater Sampling, Detection Groundwater Sampling Event D-34, Residential and C/DD Landfills, Fort Knox, Kentucky	TolTest, Inc.	APR-2010

## IRP Previous Studies

	<b>Title</b>	<b>Author</b>	<b>Date</b>
<b>2010</b>	Closure Hazardous Waste Management Unit, Building 2949	TriEco	JUN-2010
	Project Work Plan Closure Hazardous Waste Managment Unit, Building 2949, Fort Knox, Kentucky	US Army Corps of Engineers, Nashville District	JUN-2010
	Analytical Summary Second Quarter 2010 Groundwater Sampling Detection Groundwater Sampling Event D-34, Residential and C/DD Landfills, Fort Knox, Kentucky	TolTest, Inc.	JUL-2010
	Analytical Summary, Third Quarter 2010 Groundwater Sampling, Detection Groundwater Sampling Event D-34, Residential And C/DD Landfills, Fort Knox, Kentucky	TolTest, Inc.	OCT-2010
<b>2011</b>	Analytical Summary, 4th Quarter 2011 Groundwater Sampling, Detection Groundwater Sampling Event D-34 Residential and C/DD Landfills	TolTest	FEB-2011
	Final 2010 Sitewide Long-Term Monitoring Report for Groundwater, Land Use Controls and Karst Springs	TolTest	MAR-2011
	Analytical Summary, First Qtr. 2011 Groundwater Sampling, Detection Groundwater Sampling Event D-34 Residential and C/DD Landfills	TolTest	APR-2011
	Analytical Summary, 2nd Quarter 2011 Groundwater Sampling, Detection Gorundwater Sampling Event D-34 Residential and C/DD Landfills	TolTest	SEP-2011
	Analytical Summary 3rd Quarter 2011 Groundwater Sampling, Detection Groundwater Sampling Event D-34 Residential and C/DD Landfills	TolTest	NOV-2011
<b>2012</b>	Groundwater Assessment Plan for Residential and C/DD Landfills	URS	JAN-2012

**FORT KNOX**  
**Installation Restoration Program**  
**Site Descriptions**

**Site ID: CCFTKX-017**

**Site Name: Removal of two Oil Water Separators**

**STATUS**

**Regulatory Driver:** RCRA

**RRSE:** NOT EVALUATED

Contaminants of Concern: Metals, Semi-volatiles (SVOC)

Media of Concern: Soil

<b>Phases</b>	<b>Start</b>	<b>End</b>
RFA.....	201111.....	201112
CS.....	201201.....	201312

**RIP Date:** N/A

**RC Date:** 201312

**SITE DESCRIPTION**

During the demolition of St Johns Motor Park two OWSs will be removed. Funding is required to perform CS of the site when the two tanks are removed. These two OWS's are assigned SWMU FTK-017M and FTK-017P in the Fort Knox RCRA Permit. Any future phase requirement will be determined after all CS is completed.

**CLEANUP/EXIT STRATEGY**

A Cleanup/Exit strategy will be determined after all CS is completed.

Site Name: DRMO FORMER WASTE OIL TANK SITE

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals, Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198802.....	198902
CS.....	198802.....	198902
RFI/CMS.....	199206.....	200705
CMI(C).....	200703.....	200709
CMI(O).....	200709.....	201309
LTM.....	201310.....	202309

RIP Date: 200709

RC Date: 201309

SITE DESCRIPTION

The DRMO former waste oil tank is located in the vicinity of Building 2952 and is used as a salvage yard. Aerial photographs indicate that the site was used as early as 1964 as a storage yard for US Army vehicles, scrap metals, shell casings, and drums. The site formerly contained a 12,000-gallon UST that stored waste oil. The RFA recommended that the tank be removed and the site cleaned up. The tank and associated OWS (FTKX-017BD) were reportedly removed in July 1990.

Investigations suggest that surface drainage flows into a karst window southwest of the site. Currently, elevated levels of grease and oil persist in the soil at depths greater than 30 feet. Soil and groundwater samples collected from the site have indicated the presence of petroleum hydrocarbons, metals, and PAHs. No single definitive source for contamination has been identified; there may be multiple sources contributing to contamination on-site. State regulations require further investigation to define horizontal and vertical extent of contamination before remediation measures are implemented.

The draft site inspection (SI) report recommended an RFI due to multiple contaminant concerns. Due to the types of contamination, the site was removed from UST regulatory requirements and picked up as a RCRA regulated SWMU in FY99, and assigned SWMU number FTKX-44. Site FTKX-44 was assigned as an alias in the Army Environmental Database-Restoration (AEDB-R) database. The site is now regulated under a RCRA Part B permit signed on Jan. 21, 1997. The CS fieldwork was performed in FY00. In FY01 the CS report was submitted. The KDEP reviewed the CS report in FY03.

In 2007 the Phase II RFI report, risk assessment, and corrective measures study (CMS) was approved. The CMS recommended institutional controls, maintenance of gravel cover, long-term maintenance, annual inspections, five years of groundwater monitoring, and CS of five wells and two springs, followed by 27 years of annual monitoring for VOCs and metals.

In FY12 a periodic review will be performed.

CLEANUP/EXIT STRATEGY

The CMS is tentatively approved by the KDEP, pending a RCRA permit modification. The LUCs will be implemented with annual groundwater monitoring (five wells and two springs) for ten years.

This site is included in the Fort Knox performance-based acquisition (PBA) contract. All post-PBA costs for LUC management (annual inspection and report) and five-year reviews are captured in the site FTKX-01 cost-to-complete (CTC).

Site Name: CLOSED LANDFILL (9TH AND WILSON ROAD)

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198608.....	198902
CS.....	198608.....	198902
RFI/CMS.....	198905.....	200312
DES.....	200405.....	200503
CMI(C).....	200505.....	200509
LTM.....	200608.....	202309

RIP Date: N/A

RC Date: 200509

SITE DESCRIPTION

This closed landfill, located at the southwest side of the intersection of 9th Avenue and Wilson Road, covers an area of 13.5 acres with a depth between two and 25 feet and a calculated volume of 300,500 cubic yards. The landfill was operated during the 1940s and was used for solid waste disposal. The solid waste managed at this site includes undifferentiated wood, paper and metals, incinerator ash, and hospital trash. Cinders, collected from coal fired heating units, were mixed with the cover soil to provide more volume and soil stabilization. The landfill is located over a broad sinkhole. Some leachate has been noted in a spring near the southeast corner of the landfill (Satan's Cave); however, groundwater has been traced to Rushing Spring.

In 1950 this landfill was closed and has been partially graded and covered with gravel. The landfill does not have a leachate collection system or bottom liner. It has a non-engineered one- to two-foot clay cap. The site is identified as a SWMU in the installation RCRA Part B permit, signed Jan. 21, 1997. The Phase I RFI report submitted in 1991 identified the need for further investigation.

In FY97 Phase II RFI fieldwork identified contaminants of concern (COCs). In FY98 the draft Phase II RFI report was submitted to the state. Phase II identified the necessity to characterize the landfill contents to assess groundwater impact and to determine the volume of waste material.

In FY99 Phase III RFI/baseline risk assessment (BRA) began in order to determine leachate impact on the groundwater, the volume and characteristics of waste material, and the groundwater flow path. In FY00 the final Phase II report was submitted and the Phase III RFI/BRA fieldwork was performed.

In FY03 the Phase III RFI report was finalized. In December 2003 the CMS was finalized and approved. The decision document (DD) was finalized in the summer of 2004. In January 2005 a 90 percent RD was submitted to the state for review and in March 2005 a 100 percent RD was approved.

Capping was completed in 2005. The LTM began in FY06 and is projected through 2023. Post-PBC, groundwater will be monitored annually for VOC, SVOC, metals, pesticides, and herbicides.

Costs for post-PBA LUCs and five-year reviews for all IR sites are consolidated under this site CTC.

In FY12 a periodic review will be performed.

CLEANUP/EXIT STRATEGY

The LUCs and groundwater use restrictions have been implemented. The CMI(O)/LTM included cap maintenance and sampling of five monitoring wells and two springs (Rushing Spring and Satan's Cave) quarterly for two years. They will be monitored annually

**Site ID: FTKX-01**

**Site Name: CLOSED LANDFILL (9TH AND WILSON ROAD)**

thereafter. The groundwater and spring samples will be analyzed for VOCs, SVOCs, total metals, pesticides, and herbicides.

Groundwater and spring monitoring is currently projected to extend through 2024. The decision to continue groundwater and spring monitoring, reduce the sampling schedule or the analyte list, or take additional action will be made at the conclusion of the fifth monitoring event. Methane will be monitored annually at the soil gas vent stacks and monitoring wells.

The site is expected to be used for recreational purposes only. It is included in the Fort Knox PBC.

Site ID: FTKX-02

## Site Name: RESIDENTIAL LANDFILL

### STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198608.....	198902
CS.....	198608.....	198902
RFI/CMS.....	199410.....	200105
LTM.....	200109.....	202309

RIP Date: N/A

RC Date: 200108

### SITE DESCRIPTION

Site FTKX-02 is located north of the cantonment area bounded by Baker Road on the north and by Brandenburg Station Road on the west. It has two components. The lower landfill comprises the entire landfill footprint and was used from 1953 until November 1984; it is of trench and fill construction. The overlying area-type lined landfill was used from 1984 until 1992; it covered approximately two-thirds of the lower trench and fill landfill. Both landfills were used for disposal of residential and installation solid waste consisting of asbestos, construction debris, large inert objects, POL contaminated soil, grit and grease, rinsed empty pesticide containers, and infectious/pathological wastes (bandages, dressings, glass, metal, dead animals, sewage treatment plant sludge, and pentachlorophenol (PCP) treated wood). The residential landfill is overlain by a newly constructed construction and demolition debris (C/DD) landfill in the northeastern portion of the residential landfill. The combined landfills occupy approximately 285 acres of permitted area with 42 acres of residential waste and 27.4 acres of C/DD waste. The site was investigated to assess the potential for groundwater contamination from the underlying pre-1984 trench-type landfill.

This site is identified as a SWMU, in SWMU-G 3, in the installation RCRA Part B permit signed Jan. 2, 1997. The initial groundwater monitoring system consisted of five monitoring wells installed around the landfill. A first quarter sample analysis in 1993 indicated contamination in one of the five wells; the contaminants were lead and benzene. A groundwater assessment plan, including a dye trace study and the construction of new wells, was implemented. Dye trace work plans were approved and the Commonwealth of Kentucky issued a permit to allow placement of a C/DD landfill over a portion of the old landfill. In FY98 the state approved the final conduit flow study (dye tracing) report and reviewed the draft diffuse flow study (monitoring well) report.

In FY98 a sinkhole at the landfill was entered in an unsuccessful attempt to locate a suitable groundwater monitoring point beneath the landfill. Appendix IX groundwater sampling was performed as a follow-up to the diffuse flow study. In FY99 a conduit mapping report was submitted and the installation of a new groundwater monitoring system, consisting of six wells (all five old wells were decommissioned), was completed. In FY00 the final groundwater monitoring plan was submitted and baseline groundwater characterization was initiated. In FY01 the final well installation and decommissioning report was submitted, as well as the first through fifth quarterly monitoring letters.

In FY02 the KDEP approved the groundwater monitoring plan with the stipulation that monitoring be increased to semiquarterly to accommodate high and low flow conditions each quarter. The evaluation of eight baseline monitoring events indicated no significant issues with organic COCs, but did identify significant background issues with metals and indicator parameters. Consequently, Fort Knox requested an extension of the baseline period by eight events to characterize those influences. Six monitoring events were conducted in FY02 and eight events in FY03. Activities accomplished in FY04 included two baseline monitoring events (and associated quarterly reporting to KDEP), a baseline summary report, and six detection-mode monitoring events. In FY07 four detection-mode monitoring events (five wells per event) were conducted and the data was submitted to the state. Post-PBA, groundwater will be monitored annually for VOC, metals, ethanol, and general chemistry.

Post-PBA costs for the LUC and five-year reviews for all installation restoration (IR) sites are consolidated under FTKX-01.

In FY11 entered into groundwater assessment due to high levels of magnesium.

**Site ID: FTKX-02**

**Site Name: RESIDENTIAL LANDFILL**

## **CLEANUP/EXIT STRATEGY**

This site is considered RIP. Subsequent years (FY13-FY23) will involve continued long-term monitoring on a detection-mode basis, as required for the C/DD landfill permit, unless some indication of impact is identified. Currently, four sampling events are conducted per year. Beginning in FY14, monitoring frequency will decline to annual.

This site is included in the Fort Knox PBC that extends through FY13.

Site ID: FTKX-10

## Site Name: WWTP SLUDGE LAGOONS (2)

### STATUS

Regulatory Driver: RCRA

RRSE: HIGH

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

Media of Concern: Soil

Phases	Start	End
RFA.....	198608.....	198902
CS.....	198608.....	198902
RFI/CMS.....	198905.....	200705
CMI(C).....	200608.....	200709
LTM.....	200803.....	202309

RIP Date: N/A

RC Date: 200709

### SITE DESCRIPTION

The WWTP former sludge lagoons are located approximately 500 feet to the southeast of the Fort Knox sewage treatment plant. The two former lagoons are approximately 150 feet by 200 feet and three to 10 feet deep. The volume of the lagoons is approximately 18,500 cubic yards. From 1942 to 1960 the lagoons received sewer sludge from throughout the installation. The lagoons are inactive. Improper disposal of petroleum, chemicals, solvents, pesticides, and other compounds directly into the lagoons via sewer outfalls or direct discharge into the lagoons is suspected to have resulted in the release of contaminants into the lagoon surface waters and sediments. The lagoons are not lined. The nearest surface water body is a stream, approximately three-quarters of a mile southeast of the site, which drains into Mill Creek. During 1980 the western-most lagoon was filled in with C/DD. This site is identified as a SWMU in the installation RCRA Part B permit, signed Jan. 21, 1997.

In FY99 the draft Phase I (A) RFI report was submitted to the state for review. The RFI Phase IA draft report recommended a Phase II RFI. In FY00 a final Phase I RFI report and draft Phase II RFI work plan were submitted. Fieldwork for phase II was completed in FY01. The draft Phase PI RFI report was submitted to the state for review in 1st quarter of FY02. The draft report noted that contamination was found and recommended additional sampling of the soil in the release areas located at the southern end of the lagoons and at isolated locations along the access roadway to further characterize the site. In November 2003 the Phase III RFI report was submitted and in FY06 the final Phase III RFI report and final supplemental risk assessment were approved.

In FY08 the CMI was submitted; it received tentative approval from the KDEP and LUCs (annual SI report) began. This is a zero cost site; post-PBA LUC costs are captured under FTKX-01.

### CLEANUP/EXIT STRATEGY

The CMI consists of hot spot removal and regrading of lagoons. The LUCs were included in the CMS to reflect the KDEP statutes and guidance. This is a zero cost site; the LUC implementation during LTM is funded under the PBC through FY13 and under site FTKX-01 thereafter.

This site is included in the Fort Knox PBC.

Site Name: UST SITE 2823 INVESTIGATION/REMEDIATION

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
ISC.....	198608.....	198902
INV.....	198608.....	198902
CAP.....	199409.....	200708
IMP(C).....	200703.....	200709
IMP(O).....	200709.....	201009
LTM.....	201010.....	202309

RIP Date: 200709

RC Date: 201009

SITE DESCRIPTION

The UST Site 2823 is a former one-acre vehicle fueling area operated from the 1930s until 1986. This site is regulated under the state UST program. It contained a 5,000 gallon gasoline UST and a 5,000 gallon diesel UST. In June 1990 both USTs were removed and a closure report was filed with the state. In 1998 the site was completely paved over with a 12-inch thick concrete hard stand for use as a tank maintenance facility. Given that the site is at a central location within an approximately 20 acre hardstand and at a topographic high, there is no groundwater recharge. Groundwater may be present as a perched condition, but there is no evidence of contaminant migration. There are seven wells at the site, each 30 to 40 feet deep.

In 1993 the initial SI was completed, indicating BTEX contamination in subsurface soils and groundwater. An additional investigation in FY00 included the collection of chemical and soil biological data as part of the pre corrective action plan (CAP). The KDEP requested additional site data. In FY04 an additional round of sampling of all site wells and the draft CAP was submitted. Because the FY04 sampling results indicated increases in concentrations, two additional wells were installed and two more sampling events were conducted per a request from the KDEP.

In November 2006 an addendum to the SI report was submitted. In FY07 the RA phase began and is projected to continue into FY10. The LTM consists of semiannual monitoring (five wells) for two years followed by annual sampling to verify that contaminant concentrations are remaining stable or declining.

Post-PBA, site groundwater will be monitored annually for BTEX. Installation-wide post-PBA costs for LUCs and five-year reviews are captured under FTKX-01.

FY12 a periodic review will be performed.

CLEANUP/EXIT STRATEGY

The LTM consists of annual monitoring (five wells) for ten years.

The LUCs will be included in the CAP to reflect current KDEP statutes and guidance.

This site is included in the Fort Knox PBC. Post-PBA costs for five-year reviews and LUC management (annual inspection and reporting) are captured in the FTKX-01 CTC.

Site ID: FTKX-21

Site Name: BOATWRIGHT MAINT AREA NR BLD 2775

### STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198609.....	198701
CS.....	198609.....	198701
RFI/CMS.....	198905.....	200703
DES.....	200703.....	200704
CMI(C).....	200608.....	200709
CMI(O).....	200709.....	200909
LTM.....	200910.....	202309

RIP Date: 200709

RC Date: 200909

### SITE DESCRIPTION

The spent solvent storage area is a fenced and bermed concrete pad of approximately 2,500 square feet with a self-contained drainage system. This system consists of a catch basin and an OWS. Waste chemicals such as trichloroethene (TCE), sodium hydroxide, lubrication fluid, and acids were stored in drums at this location. The site is located at the Boatwright Maintenance Area, south of Frazier Road, next to building 2782. Effluent from the OWS is discharged through a storm drain which passes under Frazier Road into the forested area. Spent solvent storage was discontinued at this site in 1987.

The site is part of the RCRA Part B permit signed Jan. 21, 1997. Phase I and II RFIs were completed. Phase II RFI fieldwork included soil and sediment sampling. In FY98 a draft report submitted to the state recommended NFA. In February 2000 the state furnished comments on the Phase II draft report and requested additional sampling. In FY01 the final Phase II RFI report was submitted and the additional sampling was performed as Phase III RFI. In FY02 the draft Phase III RFI report was submitted.

The VOC and metal contamination has been found in deep subsurface soil. Both TCE and tetrachloroethene (PCE) have been detected in one monitoring well near the site. In FY04 additional Phase III groundwater characterization was conducted to determine the extent of contamination. The final Phase III RFI report, risk assessment, and CMS are tentatively approved. The CMI is expected to run from FY07 through FY09, with the installation goal of managing the site risk, using industrial standards and LUCs.

Post-PBA, site groundwater will be monitored annually for BTEX and monitored natural attenuation (MNA) parameters. Installation-wide costs for post-PBA five-year reviews and LUC management are captured under FTKX-01.

In FY12 a periodic review will be performed.

### CLEANUP/EXIT STRATEGY

The site will be monitored semiannually for MNA progress at six wells. The LUCs are included in the CMS to reflect the KDEP statutes and guidance. MNA is expected through 2023.

This site is included in the Fort Knox PBC. Post-PBA costs for five-year reviews and LUCs are captured in the FTKX-01 CTC.

Site ID: FTKX-22

Site Name: BLD T-112 UST PESTICIDE

### STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198609.....	198902
CS.....	198609.....	198902
RFI/CMS.....	198905.....	200703
DES.....	200703.....	200704
CMI(C).....	200608.....	200709
CMI(O).....	200709.....	200909
LTM.....	200910.....	202309

RIP Date: 200709

RC Date: 200909

### SITE DESCRIPTION

This site consists of a removed 4,000-gallon underground pesticide rinse tank (PRT) and building 112. The site served as a rinse area for pesticide distribution vehicles and equipment from the early-1970s to 1988. Prior to its use as a pesticide or rodenticide mixing facility, building 112 was an automotive maintenance facility. Mixing and formulation of insecticide and rodenticide solutions were performed in building 112. The UST also received rinse water from empty containers. The rinse water was then used as a diluent with chlordane for use in termite treatment under slab foundations. In October 1988 the UST was removed as part of closure activities.

Excavated soil from the UST pit was analyzed and found to contain chlordane from 6.5 to 536.6 micrograms per kilogram (ug/kg), prompting over-excavation and removal of 180 cubic yards of soil. During the closure process of the UST, groundwater samples were analyzed. The analysis revealed that chlorinated VOCs were present in the groundwater and could be associated with prior maintenance activities at building 112. Further investigation was required to determine the source and extent of contamination. The Phase I RFI report identified the presence of impacted soil and groundwater. In April 2000 the final Phase II report was submitted and in October 2003 the final phase III RFI report was submitted. The KDEP indicated the need for further investigation and an additional Phase III characterization began in FY04. As a result, the KDEP has mandated source identification. In August 2006 the final Phase III RFI report addendum was submitted and was approved in October FY07. The CMS, tentatively approved by the KDEP in FY07 recommended biostimulation, bioaugmentation, MNA, and interim institutional controls. The CMI began in FY07 and will be followed by LTM. The LTM is projected to include groundwater monitoring for BTEX and MNA parameters. Post-PBA costs for five-year reviews and LUC management are captured under FTKX-01.

In FY12 a periodic review will be performed.

### CLEANUP/EXIT STRATEGY

The presumptive remedy to groundwater contamination is enhanced bioremediation. Contingent measures may include construction of a rip-rap channel, at the exit of the springs, and reinjection of biostimulants. The site will be monitored annually for MNA progress at seven wells. The site risk will be managed using industrial standards and LUCs. The LUCs were included in the CMS to reflect the KDEP statutes and guidance.

This site is included in the Fort Knox PBC.

**STATUS**

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA.....	199304.....	199306
CS.....	199304.....	199306
RFI/CMS.....	199401.....	200603
CMI(C).....	200703.....	200709
CMI(O).....	200709.....	201309
LTM.....	201310.....	202309

RIP Date: 200709

RC Date: 201309

**SITE DESCRIPTION**

The SWMU site 1473A comprises about one acre located within the Fort Knox cantonment area, southeast of the intersection of Bullion Boulevard and Chaffee Avenue. Formerly, the site was part of a gasoline fueling station that contained a 10,000-gallon UST. The tank was installed in 1947 and used until 1986. There was a nearby 2,000-gallon tank (designated as 1473B) that contained diesel fuel. In July 1992 the USTs were removed. Site 1473A is now vacant and predominantly covered with grass.

A railroad track is located 50 feet northeast of the former UST location and an asphalt drive is located immediately southwest of the site. Several underground utilities are located along the railroad right-of-way. Surface drainage flows west to a tributary of Dry Branch Creek. The Kentucky UST branch was regulating the tank removal until the analysis indicated that chlorinated solvents contaminated the contents of the tank. The site is regulated under the installation's RCRA Part B permit signed on Jan. 21, 1997.

The Phase I RFI, consisting of one groundwater monitoring well and four soil borings, indicated that VOCs and metals were present in the soil and groundwater. The Phase II RFI fieldwork, completed in FY98, consisted of four groundwater monitoring wells. The draft report submitted to the state in FY99 recommended a Phase III RFI to determine the nature and extent of contamination and the potential for natural attenuation at the site. In FY00 the final Phase II report was submitted and the Phase III RFI fieldwork was performed.

Findings from the Phase III RFI indicate that BTEX is present in-groundwater at levels greater than the KDEP standards. Additional sampling was conducted to complete the Phase III RFI fieldwork. In August 2003 the draft Phase III report was submitted. Monitoring was performed for four quarters (ending in December 2004); the data were reviewed by the KDEP. The Phase III RFI addendum was approved by the KDEP in FY06.

The CMI(O) monitoring for natural attenuation began in FY07. The CMI(O) phase will continue until FY13. In FY09 a LUC document "Notice of Remedial Action Preventive Measures at the Fort Knox Military Reservation" was filed at the Hardin County Court House. The LTM phase is anticipated to start in FY13 will continue through 2023.

In FY12 a periodic review will be performed.

**CLEANUP/EXIT STRATEGY**

The KDEP agreed with the conclusion that monitoring for natural attenuation is the remedial alternative of choice, until final cleanup of VOC contamination in-groundwater can be demonstrated. Additionally, LTM for compliance with risk management strategy is expected.

This site is included in the Fort Knox PBC.

**Site ID: PBC at Knox**  
**Site Name: PBC**

**STATUS**

**Regulatory Driver:** RCRA

**RRSE:** LOW

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: Groundwater, Soil

<b>Phases</b>	<b>Start</b>	<b>End</b>
RFA.....	198609.....	198709
CMI(C).....	200508.....	200709
CMI(O).....	200709.....	201309
<b>RIP Date:</b>	200709	
<b>RC Date:</b>	201309	

**SITE DESCRIPTION**

In FY05 a PBC was awarded; it covers sites FTKX-01, -02, -10, -15D, -21, -22, -24, -30, -40, and FTK-020.

**CLEANUP/EXIT STRATEGY**

This site was created to compile all PBC remediation sites (FTKX-01, 02, 10, 15D, 21, 22, 24, 30, 40, and FTK-020).

See the above-listed sites for individual cleanup strategies and current phases. Sites 24 and 30 have reached NFA. All funding for the above listed sites is reflected under this site for the term of the contract (through FY13).

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTK-008	PATHOLOGICAL INCINERATOR BLDG. 847	199510	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTK-011	17 WWTP SLUDGE DRYING BEDS	198902	This Site was moved to the Cleanup Compliance IAP for funding purposes.
FTK-014	4 WATER TREAT. PLANT LIME SLUDGE LAGOONS	199510	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTK-018	2 CENTRAL WASH RACKS	198902	This Site was moved to the Cleanup Compliance IAP for funding purposes.
FTK-038	PCB TRANSFORMER STORAGE SITE BLDG 7331	200109	Tentative NFA status was received form KDEP 31 AUG 04.
FTK-41A	ANDERSON GOLF COURSE	200006	In FY00 an NFA status from the state was received 15 JUN 00.
FTK-41L	LINDSEY GOLF COURSE	200006	An NFA was received from the state 15 JUN 00.
FTKX-03	STEAM GENERATOR INCINERATOR	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-04	BOILER USED TO BURN CLASSIFIED WASTE	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-05	CLASSIFIED DOCUMENT INCINERATOR	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-06	PATHOLOGICAL INCINERATOR IRELAND USACH	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-07	PATH INCINERATOR BLDG T-1068	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-09	WASTEWATER TREATMENT PLANT	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-12	WWTP FILTER PRESS BLDG	198902	This Site was moved to the Cleanup Compliance IAP for funding purposes.
FTKX-13	WWTP 3 LIME SLUDGE LAGOONS MULDRAUGH	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-15A	UST & PIPELINE REMOVALS BLDG 102	200307	Receive a Tentative NFA 30 JUN 05 from KDEP.
FTKX-15B	UST'S BURK MOTOR PARK BLDG 2730	198902	The report submitted to the state presented results of four quarters of monitoring and recommendation in FY04 for no further action.
FTKX-15C	UST SITE BUILDING 2952	199602	Site FTKX-15C was originally entered in

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			error because it is the same UST site as FTK-020. The site was closed to correct the error after it was found.
FTKX-16	MULTIPLE ABOVE GROUND STORAGE TANKS	199802	The revised report was submitted to the state in FY03. No further fieldwork is required. The installation expects NFA after state review.
FTKX-17	MULTIPLE OIL WATER SEPARATORS	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-19	FORMER DRMO HW STG AREA	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-23	PCP TRANSFORMER STORAGE AREA T-6	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-24	FIRE FIGHTER TRNING AREA	200709	KDEP Tentative NFA letter signed 04 JUN 09.
FTKX-25	RAD HOS WST STG AREA BNKER 1070	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-26	HOSPITAL SILVER RECOVERY OPERATION	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-27	DENTAL CLINIC SILVER RECOVERY OPERATION	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-28	PHOTOGRAPHIC LAB SILVER RECOVERY	198902	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-29	CRUMB RANGE EOD SITE	198902	Received RCRA Closure from KDEP 30 SEP 02. Site was move to Cleanup Compliance.
FTKX-30	TIOGA SPRINGS EOD SITE	200709	Tentative NFA received from KDEP 08 OCT 07
FTKX-31	FORMER TRANSFORMER STG BLD 58,59,60	200309	Tentative NFA received from KDEP 24 AUG 04.
FTKX-32	FORMER TRANSFORMER STG BLD 2953	199903	Site is now carried as part of FTK-020, DRMO Waste Oil Tank. Expect NFA action at this OWS site since it does not contribute to the contamination of the DRMO site.
FTKX-33	FORMER TRANSFORMER STG PAINT SHOP YD	200109	The DD was signed 21 FEB 01. Tentative NFA status received from KDEP 08 DEC 04.
FTKX-34	FORMER TRANSFORMER STG BLD 4240	199510	Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			time.
FTKX-35	FORMER TRANSFORMER STG BLD 4019	200109	Tentative NFA received from KDEP 18 NOV 04.
FTKX-36	PRINTING PLANT SILVER RECOVERY OPERATION	198902	This site is included in the RCRA Part B Permit Modification. The site is Operations and Management Account funded. Site is listed in Appendix A-2 of the RCRA Part B Permit, List of SWMUs that required no further Investigation at this time.
FTKX-37	PARKERIZATION PROCESS AREA, BLG 2783	199605	RA was completed in May 1996. This site is included in the RCRA Part B Permit Modification. The Electronic Components Repair Shop presently uses this building.
FTKX-39	ABANDONED GASOLINE LINE DISTRIB SYSTEM	200309	The Final report was submitted to state 2nd quarter FY04. NOTI received OCT 2004. The Sites are clean and the installation expects NFA
FTKX-41	SANDERS SPRING	199406	The lake has been reopened for recreational purposes, and FTKX does not plan further action.
FTKX-42	TWO GOLF COURSES	198902	This AEDB-R site has been discontinued. New AEDB-R numbers are FTKX-41A for Anderson Golf Course and FTKX-41L for Lindsey Golf Course.
FTKX-43	OIL & GREASE PIT	199407	A SWMU Assessment Report was prepared and approved by the state and the site is closed. The RA of this site is completed and NFA is required under the IRP.

# IRP Schedule

**Date of IRP Inception:** 198602

## Past Phase Completion Milestones

### 1987

RFA (FTKX-21 - BOATWRIGHT MAINT AREA NR BLD 2775, PBC at Knox - PBC)

CS (FTKX-21 - BOATWRIGHT MAINT AREA NR BLD 2775)

### 1989

RFA (FTK-008 - PATHOLOGICAL INCINERATOR BLDG. 847, FTK-011 - 17 WWTP SLUDGE DRYING BEDS, FTK-014 - 4 WATER TREAT. PLANT LIME SLUDGE LAGOONS, FTK-018 - 2 CENTRAL WASH RACKS, FTK-020 - DRMO FORMER WASTE OIL TANK SITE, FTK-038 - PCB TRANSFORMER STORAGE SITE BLDG 7331, FTKX-01 - CLOSED LANDFILL (9TH AND WILSON ROAD), FTKX-02 - RESIDENTIAL LANDFILL, FTKX-03 - STEAM GENERATOR INCINERATOR, FTKX-04 - BOILER USED TO BURN CLASSIFIED WASTE, FTKX-05 - CLASSIFIED DOCUMENT INCINERATOR, FTKX-06 - PATHOLOGICAL INCINERATOR IRELAND USACH, FTKX-07 - PATH INCINERATOR BLDG T-1068, FTKX-09 - WASTEWATER TREATMENT PLANT, FTKX-10 - WWTP SLUDGE LAGOONS (2), FTKX-12 - WWTP FILTER PRESS BLDG, FTKX-16 - MULTIPLE ABOVE GROUND STORAGE TANKS, FTKX-17 - MULTIPLE OIL WATER SEPARATORS, FTKX-19 - FORMER DRMO HW STG AREA, FTKX-22 - BLD T-112 UST PESTICIDE, FTKX-23 - PCP TRANSFORMER STORAGE AREA T-6, FTKX-24 - FIRE FIGHTER TRNING AREA, FTKX-25 - RAD HOS WST STG AREA BNKER 1070, FTKX-26 - HOSPITAL SILVER RECOVERY OPERATION, FTKX-27 - DENTAL CLINIC SILVER RECOVERY OPERATION, FTKX-28 - PHOTOGRAPHIC LAB SILVER RECOVERY, FTKX-29 - CRUMB RANGE EOD SITE, FTKX-30 - TIOGA SPRINGS EOD SITE, FTKX-31 - FORMER TRANSFORMER STG BLD 58,59,60, FTKX-32 - FORMER TRANSFORMER STG BLD 2953, FTKX-33 - FORMER TRANSFORMER STG PAINT SHOP YD, FTKX-34 - FORMER TRANSFORMER STG BLD 4240, FTKX-35 - FORMER TRANSFORMER STG BLD 4019, FTKX-36 - PRINTING PLANT SILVER RECOVERY OPERATION, FTKX-42 - TWO GOLF COURSES)

CS (FTK-008 - PATHOLOGICAL INCINERATOR BLDG. 847, FTK-011 - 17 WWTP SLUDGE DRYING BEDS, FTK-014 - 4 WATER TREAT. PLANT LIME SLUDGE LAGOONS, FTK-018 - 2 CENTRAL WASH RACKS, FTK-020 - DRMO FORMER WASTE OIL TANK SITE, FTK-038 - PCB TRANSFORMER STORAGE SITE BLDG 7331, FTKX-01 - CLOSED LANDFILL (9TH AND WILSON ROAD), FTKX-02 - RESIDENTIAL LANDFILL, FTKX-03 - STEAM GENERATOR INCINERATOR, FTKX-04 - BOILER USED TO BURN CLASSIFIED WASTE, FTKX-05 - CLASSIFIED DOCUMENT INCINERATOR, FTKX-06 - PATHOLOGICAL INCINERATOR IRELAND USACH, FTKX-07 - PATH INCINERATOR BLDG T-1068, FTKX-10 - WWTP SLUDGE LAGOONS (2), FTKX-12 - WWTP FILTER PRESS BLDG, FTKX-17 - MULTIPLE OIL WATER SEPARATORS, FTKX-19 - FORMER DRMO HW STG AREA, FTKX-22 - BLD T-112 UST PESTICIDE, FTKX-24 - FIRE FIGHTER TRNING AREA, FTKX-25 - RAD HOS WST STG AREA BNKER 1070, FTKX-29 - CRUMB RANGE EOD SITE, FTKX-30 - TIOGA SPRINGS EOD SITE, FTKX-31 - FORMER TRANSFORMER STG BLD 58,59,60, FTKX-32 - FORMER TRANSFORMER STG BLD 2953, FTKX-33 - FORMER TRANSFORMER STG PAINT SHOP YD, FTKX-34 - FORMER TRANSFORMER STG BLD 4240, FTKX-35 - FORMER TRANSFORMER STG BLD 4019, FTKX-36 - PRINTING PLANT SILVER RECOVERY OPERATION)

INV (FTKX-15A - UST & PIPELINE REMOVALS BLDG 102, FTKX-15B - UST'S BURK MOTOR PARK BLDG 2730, FTKX-15D - UST SITE 2823 INVESTIGATION/REMEDIATION)

PA (FTKX-13 - WWTP 3 LIME SLUDGE LAGOONS MULDRAUGH)

ISC (FTKX-15A - UST & PIPELINE REMOVALS BLDG 102, FTKX-15B - UST'S BURK MOTOR PARK BLDG 2730, FTKX-15C - UST SITE BUILDING 2952, FTKX-15D - UST SITE 2823 INVESTIGATION/REMEDIATION)

### 1992

RFA (FTKX-37 - PARKERIZATION PROCESS AREA, BLG 2783)

CS (FTKX-37 - PARKERIZATION PROCESS AREA, BLG 2783)

### 1993

CS (FTK-41A - ANDERSON GOLF COURSE, FTK-41L - LINDSEY GOLF COURSE, FTKX-39 - ABANDONED GASOLINE LINE DISTRIB SYSTEM, FTKX-40 - UST 1473-A SITE CLOSURE)

RFA (FTK-41A - ANDERSON GOLF COURSE, FTK-41L - LINDSEY GOLF COURSE, FTKX-39 - ABANDONED GASOLINE LINE DISTRIB SYSTEM, FTKX-40 - UST 1473-A SITE CLOSURE)

### 1994

RFA (FTKX-41 - SANDERS SPRING, FTKX-43 - OIL & GREASE PIT)

CMI(C) (FTKX-43 - OIL & GREASE PIT)

CS	(FTKX-41 - SANDERS SPRING, FTKX-43 - OIL & GREASE PIT)
<b>1995</b>	
RFI/CMS	(FTKX-37 - PARKERIZATION PROCESS AREA, BLG 2783)
<b>1996</b>	
CMI(C)	(FTKX-37 - PARKERIZATION PROCESS AREA, BLG 2783)
DES	(FTKX-37 - PARKERIZATION PROCESS AREA, BLG 2783)
<b>1998</b>	
DES	(FTK-41A - ANDERSON GOLF COURSE, FTK-41L - LINDSEY GOLF COURSE)
RFI/CMS	(FTK-41A - ANDERSON GOLF COURSE, FTK-41L - LINDSEY GOLF COURSE)
<b>1999</b>	
RFI/CMS	(FTKX-32 - FORMER TRANSFORMER STG BLD 2953)
<b>2000</b>	
DES	(FTKX-39 - ABANDONED GASOLINE LINE DISTRIB SYSTEM)
CMI(C)	(FTK-41A - ANDERSON GOLF COURSE, FTK-41L - LINDSEY GOLF COURSE)
RFI/CMS	(FTK-038 - PCB TRANSFORMER STORAGE SITE BLDG 7331, FTKX-33 - FORMER TRANSFORMER STG PAINT SHOP YD, FTKX-35 - FORMER TRANSFORMER STG BLD 4019, FTKX-39 - ABANDONED GASOLINE LINE DISTRIB SYSTEM)
<b>2001</b>	
RFI/CMS	(FTKX-02 - RESIDENTIAL LANDFILL)
CMI(C)	(FTK-038 - PCB TRANSFORMER STORAGE SITE BLDG 7331, FTKX-33 - FORMER TRANSFORMER STG PAINT SHOP YD, FTKX-35 - FORMER TRANSFORMER STG BLD 4019)
CAP	(FTKX-15A - UST & PIPELINE REMOVALS BLDG 102)
<b>2003</b>	
IMP(C)	(FTKX-15A - UST & PIPELINE REMOVALS BLDG 102)
CMI(C)	(FTKX-39 - ABANDONED GASOLINE LINE DISTRIB SYSTEM)
RFI/CMS	(FTKX-31 - FORMER TRANSFORMER STG BLD 58,59,60)
<b>2004</b>	
RFI/CMS	(FTKX-01 - CLOSED LANDFILL (9TH AND WILSON ROAD))
<b>2005</b>	
DES	(FTKX-01 - CLOSED LANDFILL (9TH AND WILSON ROAD))
CMI(C)	(FTKX-01 - CLOSED LANDFILL (9TH AND WILSON ROAD))
<b>2006</b>	
RFI/CMS	(FTKX-40 - UST 1473-A SITE CLOSURE)
<b>2007</b>	
CMI(C)	(FTK-020 - DRMO FORMER WASTE OIL TANK SITE, FTKX-10 - WWTP SLUDGE LAGOONS (2), FTKX-21 - BOATWRIGHT MAINT AREA NR BLD 2775, FTKX-22 - BLD T-112 UST PESTICIDE, FTKX-24 - FIRE FIGHTER TRNING AREA, FTKX-30 - TIOGA SPRINGS EOD SITE, FTKX-40 - UST 1473-A SITE CLOSURE, PBC at Knox - PBC)
RFI/CMS	(FTK-020 - DRMO FORMER WASTE OIL TANK SITE, FTKX-10 - WWTP SLUDGE LAGOONS (2), FTKX-21 - BOATWRIGHT MAINT AREA NR BLD 2775, FTKX-22 - BLD T-112 UST PESTICIDE, FTKX-24 - FIRE FIGHTER TRNING AREA, FTKX-30 - TIOGA SPRINGS EOD SITE)
DES	(FTKX-21 - BOATWRIGHT MAINT AREA NR BLD 2775, FTKX-22 - BLD T-112 UST PESTICIDE)
IMP(C)	(FTKX-15D - UST SITE 2823 INVESTIGATION/REMEDIATION)
CAP	(FTKX-15D - UST SITE 2823 INVESTIGATION/REMEDIATION)
<b>2009</b>	
CMI(O)	(FTKX-21 - BOATWRIGHT MAINT AREA NR BLD 2775, FTKX-22 - BLD T-112 UST PESTICIDE)

# IRP Schedule

2010

IMP(O) (FTKX-15D - UST SITE 2823 INVESTIGATION/REMEDIATION)

## 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: 200709

Schedule for Next Five-Year Review: 2017

Estimated Completion Date of IRP at Installation (including LTM phase): 202309

## FORT KNOX IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
CCFTKX-017	Removal of two Oil Water Separators	CS						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTK-020	DRMO FORMER WASTE OIL TANK SITE	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTKX-01	CLOSED LANDFILL (9TH AND WILSON ROAD)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTKX-02	RESIDENTIAL LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTKX-10	WWTP SLUDGE LAGOONS (2)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTKX-15D	UST SITE 2823 INVESTIGATION/REMEDIATION	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTKX-21	BOATWRIGHT MAINT AREA NR BLD 2775	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTKX-22	BLD T-112 UST PESTICIDE	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTKX-40	UST 1473-A SITE CLOSURE	CMI(O)						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
PBC at Knox	PBC	CMI(O)						

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

## CR Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 25/24

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

1 Underground Storage Tank  
(CCFTK-103)

### Most Widespread Contaminants of Concern

Petroleum, Oil and Lubricants (POL)

### Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
CCFTK-101	St John Motor Park	FRA	WASTE REMOVAL - SOILS	2009

### Duration of CR

**Date of CR Inception:** 198608

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201312/201312

**Date of CR completion including Long Term Management (LTM):** 201312

## CR Contamination Assessment

### Contamination Assessment Overview

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

### Cleanup Exit Strategy

In FY12 over-excavation, sampling, and data collection will be completed at 11 UST sites. Closure assessment reports are anticipated to recommend NFA for all sites.

In FY13, anticipate NFA for 7342.1, 7342.2, and 7342.3, if funding is available.

An environmental covenant document or notice of remedial action protective measures will be filed at the Hardin County Court House for four UST sites: 1118, 1483, 1486, and 6901.

The UST Program is anticipated to be at RC by end of FY13.

## CR Previous Studies

**2007**

Title	Author	Date
Initial Response Letter to KDEP for Regulated UST 175.1 and 175.2	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 708.1, 708.2, and 708.3	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 890.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 2756.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 2757.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 2762.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 4208.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 5540.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 6115.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 6117.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 6145.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 6576.11	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 7873.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 8928.1	ICI	MAR-2007
Initial Response Letter to KDEP for Regulated UST 6143.1	ICI	APR-2007
Initial Response Letter to KDEP for Regulated UST 5220.1	ICI	SEP-2007
Secondary Response to Comments to KDEP for UST Site 6144.1	ICI	DEC-2007

**2008**

Initial Response Letter to KDEP for Regulated UST 1206.2	ICI	JAN-2008
Initial Response Letter to KDEP for Regulated UST 7233.1	ICI	JAN-2008
Initial Response Letter to KDEP for Regulated UST 9310.1	ICI	JAN-2008
Secondary Response to Comments to KDEP for UST Site 4015.1	ICI	FEB-2008
Secondary Response to Comments to KDEP for UST Sites 6251.1, 5251.2, 5251.3, and 5251.4	ICI	FEB-2008
Initial Response Letter to KDEP for Regulated UST 861.1	ICI	MAR-2008
Initial Response Letter to KDEP for Regulated UST 610.1	ICI	APR-2008
Initial Response Letter to KDEP for Regulated UST 611.1	ICI	APR-2008
Closure Report for Heating Fuel UST Site 1310	ICI	APR-2008
Closure Report for Heating Fuel UST Site 1467	ICI	APR-2008

## CR Previous Studies

2008

Title	Author	Date
Secondary Response to KDEP for UST Site 893.1, 893.2, 893.3, and 893.4	ICI	APR-2008
Initial Response Letter to KDEP for Regulated UST 1003.1	ICI	APR-2008
Initial Response Letter to KDEP for Regulated UST 1006.1	ICI	APR-2008
Initial Response Letter to KDEP for Regulated UST 1055.1 and 1055.2	ICI	APR-2008
Secondary Response to Comments to KDEP for UST 1227.1	ICI	APR-2008
Closure Report for Heating Fuel UST Site 2944	ICI	APR-2008
Closure Report for Heating Fuel UST Site 5949	ICI	APR-2008
Closure Report for Heating Fuel UST Site 6541	ICI	APR-2008
Closure Report for Heating Fuel UST Site 6568	ICI	APR-2008
Closure Report for Heating Fuel UST Site 6570	ICI	APR-2008
Closure Report for Heating Fuel UST Site 6577	ICI	APR-2008
Secondary Response to Comments to KDEP for UST Sites 2987.1, 2987.2 and 2987.3	ICI	APR-2008
Initial Response Letter to KDEP for Regulated UST 5901.1 and 5901.2	ICI	APR-2008
Secondary Response to Comments to KDEP for UST Sites 6121.1, 6121.2 and 6121.3	ICI	APR-2008
Secondary Response to Comments to KDEP for UST Site 5231.1	ICI	JUN-2008
Secondary Response to Comments to KDEP for UST Sites 6141.1, 6141,2 and 6141.3	ICI	JUN-2008
Secondary Response to Comments to KDEP for UST Sites 6565.1, 6565.2 and 6565.3	ICI	JUN-2008
Initial Response Letter to KDEP for Regulated UST 94.1	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 94.2	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 479.1 and 479.2	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 486.1	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 578.1	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 613.3	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 1612.1, 1612.2, and 1612.3	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 1727.1, 1727.2, and 1727.3	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 2764.1	ICI	AUG-2008
Secondary Response to Comments to KDEP for UST Site 2765.1	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 2765.1	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 2788.1	ICI	AUG-2008

## CR Previous Studies

2008

Title	Author	Date
Initial Response Letter to KDEP for Regulated UST 2788.2	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 2977.1,2977.2, and 2977.3	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 2964.1	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 2964.2	ICI	AUG-2008
Secondary Response to Comments to KDEP for UST Site 6146.1	ICI	AUG-2008
Secondary Response to Comments to KDEP for UST Site 6147.1	ICI	AUG-2008
Secondary Response to Comments to KDEP for UST Site 9245.2	ICI	AUG-2008
Initial Response Letter to KDEP for Regulated UST 851.1	ICI	SEP-2008
Initial Response Letter to KDEP for Regulated UST 5901.3	ICI	SEP-2008
Closure Report for Site 9312.1	ICI	SEP-2008
Initial Response Letter to KDEP for Regulated UST 483.1	ICI	NOV-2008
Initial Response Letter to KDEP for Regulated UST 613.1 and 613.2	ICI	DEC-2008

2009

Secondary Response to Comments to KDEP for UST Sites 1395.1, 1395.2 and 1395.3	ICI	JAN-2009
Secondary Response to Comments to KDEP for UST Sites 2758.1, 2758.2, and 2758..3	ICI	JAN-2009
Secondary Response to Comments to KDEP for UST sites 2985.1, 2985.2 and 2985.3	ICI	JAN-2009
Initial Response Letter to KDEP for Regulated UST 7233.2	ICI	JAN-2009
Initial Response Letter to KDEP for Regulated UST 9367.1	ICI	JAN-2009
Initial Response Letter to KDEP for Regulated UST 9357.2	ICI	JAN-2009
Closure Report for Heating Fuel UST Site 2958	ICI	MAR-2009
Closure Report for Heating Fuel UST Site 6143	ICI	MAR-2009
Closure Report for Heating Fuel UST Site 6561	ICI	MAR-2009
Closure Report for UST Site 2944.1	ICI	MAR-2009
Closure Report for Heating Fuel UST Site 6607	ICI	MAR-2009
Closure Report for Heating Fuel UST at Knox and Cornwell	ICI	MAR-2009
Closure Report for UST Site 167	ICI	APR-2009
Closure Report Heating Fuel UST Site 93	ICI	APR-2009
Closure Report for Heating Fuel UST Site 121	ICI	APR-2009
Closure Report for Heating Fuel UST Site 486.2	ICI	APR-2009

## CR Previous Studies

2009

Title	Author	Date
Closure Report for Heating Fuel UST Site 1002	ICI	APR-2009
Closure Report for Heating Fuel UST Site 1110	ICI	APR-2009
Data Collection Letter to KDEP for Heating Fuel UST Site 1731	ICI	APR-2009
Closure Report for Heating Fuel UST Site 2380	ICI	APR-2009
Closure Report for Heating Fuel UST Site 2724	ICI	APR-2009
Closure Report for Heating Fuel UST Site 2757	ICI	APR-2009
Closure Report for Heating Fuel UST Site 2788	ICI	APR-2009
Closure Report for Heating Fuel UST Site 2943	ICI	APR-2009
Closure Report for Heating Fuel UST Site 2970	ICI	APR-2009
Closure Report for Heating Fuel UST Site 4249	ICI	APR-2009
Closure Report for Heating Fuel UST Site 4250	ICI	APR-2009
Closure Report for Heating Fuel UST Site 5213	ICI	APR-2009
Closure Report for Heating Fuel UST Site 6550	ICI	APR-2009
Closure Report for Heating Fuel UST Site 6569	ICI	APR-2009
Secondary Response to Comments to KDEP for UST site 5901.4	ICI	APR-2009
Closure Report for Heating Fuel UST Site 6578	ICI	APR-2009
Initial Response Letter to KDEP for Regulated UST 2730.5, 2730.6	ICI	JUL-2009
Initial Response Letter to KDEP for Regulated UST 6118.1	ICI	SEP-2009
Closure Report for Heating Fuel UST Site 5375	ICI	NOV-2009
Closure Report for Heating Fuel UST Site 482	ICI	DEC-2009
Closure Report for Heating Fuel UST Site 483	ICI	DEC-2009
Closure Report for Heating Fuel UST Site 485	ICI	DEC-2009
Closure Report for Heating Fuel UST Site 486.1	ICI	DEC-2009
Secondary Response to Comments to KDEP for UST Site 2754.1	ICI	DEC-2009
Closure Report for Heating Fuel UST Site 2770	ICI	DEC-2009
Closure Report for Heating Fuel UST Site 2942	ICI	DEC-2009
Closure Report for Heating Fuel UST Site 6114	ICI	DEC-2009
Secondary Response to Comments to KDEP for UST 6142.1	ICI	DEC-2009
Closure Report for Heating Fuel UST Site 6580	ICI	DEC-2009

2010

Secondary Response to Comments to KDEP for UST Site 1395.5	ICI	JAN-2010
Initial Response Letter to KDEP for Regulated UST	ICI	JAN-2010

## CR Previous Studies

2010

Title	Author	Date
2942.1		
Secondary Response to Comments to KDEP for UST Site 2943.1	ICI	JAN-2010
Initial Response Letter to KDEP for Regulated UST 7473.1	ICI	JAN-2010
Closure Report Heating Fuel UST 400	ICI	MAR-2010
Summary Report, Hazardous Waste Management Unit, Building 2949	TriEco	MAR-2010
Closure Report for Heating Fuel UST Site 2377	ICI	MAR-2010
Closure Report for UST Site 297	ICI	APR-2010
Closure Report for Heating Fuel UST Site 1720	ICI	APR-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1725	ICI	APR-2010
Closure Report for Heating Fuel UST Site 2756	ICI	APR-2010
Closure Report for Heating Fuel UST Site 2969	ICI	APR-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 5943	ICI	APR-2010
Closure Report for Heating Fuel UST Site 6146	ICI	APR-2010
Closure Report for Heating Fuel UST Site 6564	ICI	APR-2010
Closure Report for Heating Fuel UST Site 7504	ICI	APR-2010
Closure Report for Site 87	ICI	MAY-2010
Data Collection Response Letter to KDEP for UST Site 158	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST 484	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 601	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1055	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1109	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST 1306	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1307	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1545	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 2680	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 2963	ICI	MAY-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 4553	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 5047	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 6761	ICI	JUN-2010

## CR Previous Studies

2010

Title	Author	Date
Data Collection Letter to KDEP for Heating Fuel UST Site 6908	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 7330	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9297.1	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9298.2	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9298.3	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9298.3	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site	ICI	JUN-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9344	ICI	JUN-2010
Secondary Response to Comments to KDEP for 1395.4	ICI	AUG-2010
Data Collection Letter to KDEP for Heating Fuel UST 1468	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 1475	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 1479	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1483	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1486	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 1488	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1536	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 1537	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 2010	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 2373	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 2723	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 2730	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 2780	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 2959	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 3075	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 5542	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 6117	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 6548	ICI	SEP-2010
Closure Report for Heating Fuel UST Site 6557	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST's 9189 and 9246	ICI	SEP-2010

## CR Previous Studies

**2010**

Title	Author	Date
Data Collection Letter to KDEP for Heating Fuel UST site 9297.2	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9297.3	ICI	SEP-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9298.1	ICI	SEP-2010
Data Collection Letter to KDEP for UST Site 1118	ICI	OCT-2010
Closure Report for Heating Fuel UST Site 127	ICI	DEC-2010
Initial Response Letter to KDEP for Regulated UST Bullion Depository	ICI	DEC-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9244	ICI	DEC-2010
Data Collection Letter to KDEP for Heating Fuel UST Site 9804	ICI	DEC-2010

**2011**

Final Workplan for Removal, Soil Excavation, and Site Closure of Hospital Oil Water Separator (SWMU FTK-17X)	ICI	FEB-2011
Work Plan for Removal, Soil Excavation and Site Closure of Oil Water Separator (SWMU FTK-017AL)	Bhate Environmental	MAR-2011
Data Collection Letter to KDEP for Heating Fuel UST Site 1391	ICI	MAY-2011
Initial Response Letter to KDEP for Regulated UST 889.1	ICI	MAY-2011
Secondary Response to Comment to KDEP for 1730.1 and 1730.2	ICI	MAY-2011
Initial Response Letter to KDEP for Regulated UST 2730.1, 2730.2, 2730.3, and 2730.4	ICI	MAY-2011
Closure Report for Heating Fuel UST Site 1174	ICI	JUN-2011
Closure Report for Heating Fuel UST Site 6587	ICI	JUN-2011
Final Workplan for Removal, Soil Excavation, and Site Closure of Oil Water Separator (SWMU FTK-017AL)	Bhate Environmental	JUN-2011
Final RCRA Facility Investigation Gammon field House	SAIC	AUG-2011
Oil Water Separators Operation and Maintenance Plan	Shaw Environmental	SEP-2011
Initial Response Letter to KDEP for Regulated UST 580.1	ICI	NOV-2011
Initial Response Letter to KDEP for Regulated UST 608.1	ICI	NOV-2011
Initial Response Letter to KDEP for Regulated UST 609.1	ICI	NOV-2011
Final Closure Assessment Report for site 580.1	ICI	NOV-2011
Final Closure Assessment Report for 608.1	ICI	NOV-2011
Final Closure Assessment Report for 609.1	ICI	NOV-2011
Final Closure Assessment Report for 2763.1	ICI	NOV-2011
Initial Response Letter to KDEP for Regulated UST 2763.1	ICI	NOV-2011
Final Closure Assessment Report for 2974.1	ICI	NOV-2011

## CR Previous Studies

2011

Title	Author	Date
Final Closure Assessment Report for 7238.1	ICI	NOV-2011
Initial Response Letter to KDEP for Regulated UST 2974.1	ICI	NOV-2011
Initial Response Letter to KDEP for Regulated UST 7238.1	ICI	NOV-2011
Draft Operation Manual for Vault Water Collection System at Gammon Field House	SAIC	NOV-2011

**FORT KNOX**  
**Compliance Restoration**  
**Site Descriptions**

**Site ID: CCFTK-103**

**Site Name: Multiple Heating Fuel UST Remedial**

**STATUS**

**Regulatory Driver:** RCRA

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

Media of Concern: Soil

Phases	Start	End
ISC.....	200709.....	200712
INV.....	200812.....	200907
CAP.....	200912.....	201312

**RIP Date:** N/A

**RC Date:** 201312

**SITE DESCRIPTION**

Part of the Fort Knox UST Program in the past was to close numerous exempt petroleum tank systems, some of which were heating oil tanks. Many of these sites met the applicable soil limits during closure and received an NFA letter from the state; however, some of the sites required further remediation in order to meet applicable soil levels. Analytical tests of soil samples taken during the removal action indicated that the sampling results did not meet the PRGs for PAH at many of these sites. In FY08 a CC project number CCFTK-102, Heating Fuel UST Cleanup Program was created to investigate 55 UST sites. In 2009 additional sampling was conducted and analyzed. Based on analytical tests of soil samples during this sampling event, it was determined that over-excavation, CS, and submittal of a closure report were required to close out 26 of these sites.

This project will resolve any deficiencies associated with 26 UST closures. The project will fund the over-excavation, CS, and submittal of a closure report to KDEP for 26 heating fuel UST sites; the sites numbers are 17, 1118, 1173, 1468, 1483, 1486,1537, 1797, 2001, 2373, 2723, 2959, 4769, 5222, 6544, 6548, 6553, 6590, 6901, 9189, 9244, 9661, 9297.2, 9297.3, 9298.1, and 9298.4. Meeting applicable evaluation criteria is anticipated at each one of these sites in order to achieve a NFA. The project was funded in December 2009. All work was expected to be completed and closure reports submitted to KDEP by FY10. An NFA letter was received from KDEP in November 2010 for the following sites: 1468, 1537, 2373, 2723, 2959, 6548, 9189, 9297.2, 9297.3, and 9298.1. An environmental covenant document or Notice of Remedial Action Protective Measures will be filed at the Hardin County Court House for the following above projects: 1118, 1483, 1486, and 6901. An NFA was expected from KDEP early in FY11 but could not be achieved because five UST sites (1535, 17, 1173, 4769 and 5222) required additional over- excavation not funded in this project. In FY11, 18 additional waste oil USTs were added to this project because Fort Knox received a Closure Assessment Report Request letter from KDEP in June 2010. Based on the state's records, these underground storage tanks were listed as removed; however, no closure assessment reports or sampling results were available to support the closures. In order to update KDEP's records, the following sites were sampled and over-excavated and closure assessment reports submitted to KDEP: 580.1, 608.1, 609.1, 2763.1, 2974.1, and 7238.1.

November 2010 NFA received for the following sites: 1468, 1475, 1479, 1537, 2010, 2373, 2723, 2730, 2780, 2959, 3075, 5542, 6117, 6548, 9189, 9246, 9297.2, 9297.3, and 9298.1,

FY2012 anticipate NFAs based on sampling results on the following sites: 580.1, 608.1, 609.1, 889.1, 2763.1, 2766.2, 2786.1, 2963.1, 2974.1, 4238.1, 6577.1, 7238.1, 7342.1, 7342.2, 7423.1, 7425.1, and 7474.1.

Anticipate response complete by September 2013.

**CLEANUP/EXIT STRATEGY**

Anticipate response complete by September 2013.

## Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
CCFTK-101	St John Motor Park	200909	
CCFTK-104	Warrior In Transition Complex RA	201107	
CCFTK-127	Heating Fuel UST Building 127	201009	
CCFTK-1395	UST ID# 5628-047 (1395.5)	201009	
CCFTK-1475	Heating Fuel UST Building 1475	201009	
CCFTK-1479	Heating Fuel UST Building 1479	200903	
CCFTK-1725	Heating Fuel UST Building 1725	201009	
CCFTK-1730	UST ID# 5631-047 (1730.1 and 1730.2)	201009	
CCFTK-2010	Heating Fuel UST Building 2010	201009	
CCFTK-2754	UST ID#5634-047 (2754.1)	201009	
CCFTK-2764	UST ID# 5641-047 (2764.1)	200809	
CCFTK-2942	Waste Oil UST Building 2942	201009	
CCFTK-2943	Waste Oil UST Building 2943	201009	
CCFTK-297	Heating Fuel UST Building 297	201009	
CCFTK-479	UST ID# 5605-047 (479.1, 479.2)	200809	
CCFTK-5901	UST ID# 5978-047 (5901.1, .2, .3, .4)	200910	
CCFTK-5943	Heating Fuel UST Building 5943	201009	
CCFTK-6142	UST ID# 5686-047 (6142.1)	201009	
CCFTK-6143	UST ID# 5687-047 (6143.1)	200809	
CCFTK-6146	UST ID# 5690-047 (6146.1)	200809	
CCFTK-6147	UST ID# 5991-047 (6147.1)	200809	
CCFTK-6564	Heating Fuel UST Building 6564	201009	
CCFTK-9245	UST ID# 5720-047 (9245.2)	200809	
CCFTKX-15B	UST'S BURK MOTOR PARK BUILDING 2730	200912	

**Date of CR Inception:** 198608

**Past Phase Completion Milestones**

**1989**

ISC (CCFTKX-15B - UST'S BURK MOTOR PARK BUILDING 2730)

**1999**

ISC (CCFTK-2754 - UST ID#5634-047 (2754.1), CCFTK-2764 - UST ID# 5641-047 (2764.1), CCFTK-479 - UST ID# 5605-047 (479.1, 479.2), CCFTK-5901 - UST ID# 5978-047 (5901.1, .2, .3, .4) , CCFTK-6142 - UST ID# 5686-047 (6142.1), CCFTK-6143 - UST ID# 5687-047 (6143.1), CCFTK-6146 - UST ID# 5690-047 (6146.1), CCFTK-6147 - UST ID# 5991-047 (6147.1), CCFTK-9245 - UST ID# 5720-047 (9245.2))

**2000**

ISC (CCFTK-1395 - UST ID# 5628-047 (1395.5))

**2007**

CAP (CCFTK-101 - St John Motor Park)

ISC (CCFTK-101 - St John Motor Park, CCFTK-1730 - UST ID# 5631-047 (1730.1 and 1730.2))

**2008**

ISC (CCFTK-103 - Multiple Heating Fuel UST Remedial, CCFTK-127 - Heating Fuel UST Building 127, CCFTK-1479 - Heating Fuel UST Building 1479, CCFTK-1725 - Heating Fuel UST Building 1725, CCFTK-2010 - Heating Fuel UST Building 2010, CCFTK-297 - Heating Fuel UST Building 297, CCFTK-5943 - Heating Fuel UST Building 5943, CCFTK-6564 - Heating Fuel UST Building 6564)

INV (CCFTK-2764 - UST ID# 5641-047 (2764.1), CCFTK-479 - UST ID# 5605-047 (479.1, 479.2), CCFTK-6143 - UST ID# 5687-047 (6143.1), CCFTK-6146 - UST ID# 5690-047 (6146.1), CCFTK-6147 - UST ID# 5991-047 (6147.1), CCFTK-9245 - UST ID# 5720-047 (9245.2))

**2009**

IMP(C) (CCFTK-101 - St John Motor Park)

INV (CCFTK-103 - Multiple Heating Fuel UST Remedial, CCFTK-1479 - Heating Fuel UST Building 1479)

ISC (CCFTK-1475 - Heating Fuel UST Building 1475, CCFTK-2942 - Waste Oil UST Building 2942, CCFTK-2943 - Waste Oil UST Building 2943)

**2010**

CAP (CCFTK-1395 - UST ID# 5628-047 (1395.5), CCFTKX-15B - UST'S BURK MOTOR PARK BUILDING 2730)

INV (CCFTK-127 - Heating Fuel UST Building 127, CCFTK-1475 - Heating Fuel UST Building 1475, CCFTK-1725 - Heating Fuel UST Building 1725, CCFTK-1730 - UST ID# 5631-047 (1730.1 and 1730.2), CCFTK-2010 - Heating Fuel UST Building 2010, CCFTK-2754 - UST ID#5634-047 (2754.1), CCFTK-2942 - Waste Oil UST Building 2942, CCFTK-2943 - Waste Oil UST Building 2943, CCFTK-297 - Heating Fuel UST Building 297, CCFTK-5901 - UST ID# 5978-047 (5901.1, .2, .3, .4) , CCFTK-5943 - Heating Fuel UST Building 5943, CCFTK-6142 - UST ID# 5686-047 (6142.1), CCFTK-6564 - Heating Fuel UST Building 6564)

**2011**

RFA (CCFTK-104 - Warrior In Transition Complex RA)

RFI/CMS (CCFTK-104 - Warrior In Transition Complex RA)

**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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## CR Schedule

**Final RA(C) Completion Date:** 200909

**Schedule for Next Five-Year Review:** 2017

**Estimated Completion Date of CR at Installation (including LTM phase):** 201312

## FORT KNOX CR Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
CCFTK-103	Multiple Heating Fuel UST Remedial	CAP						

## 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:** 200905

### **Efforts Taken to Determine Interest**

Insufficient community interest in the past has indicated a lack of interest in establishing a RAB. In 1996 when the RCRA Part B permit was renewed and in 2001 when a public notice was posted announcing an open burning/open detonation (OB/OD) site closure plan, Fort Knox received no comments. In May 2009 the RCRA Permit Renewal Application was submitted for public review and comments by the Kentucky Natural Resources and Environmental Protection Cabinet, KDEP, Division of Waste Management, Hazardous Waste Branch. A determination was made at the end of this 45-day comment period that there is no sufficient community interest for a RAB.

### **Results**

The surrounding communities of Fort Knox include the towns of Muldraugh, Radcliff, Shepardsville, Vine Grove, Colesburg, Lebanon Junction and Elizabethtown. None of these towns have expressed any interest in establishing a RAB.

### **Follow-up Procedures**

N/A

### **Additional Community Involvement Information**

N/A

### **Administrative Record is located at**

Environmental Management Division, Bldg 1110-B, Room 212, Fort Knox, KY. 40121

### **Information Repository is located at**

Environmental Management Division, Bldg 1110-B, Room 212, Fort Knox, KY, 40121 and Department of Environmental Protection, Hazardous Waste Branch, 200 Fair Oaks Lane, Frankfort, KY 40601

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

**TAPP Title:** N/A

**Potential TAPP:** N/A

