

FY2012

FORT LEAVENWORTH
Army Defense Environmental Restoration Program
Installation Action Plan

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Statement of Purpose

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

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

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

Acronyms

AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
bgs	below ground surface
C&GSC	Command and General Staff College
CC	Compliance-related Cleanup
CLIN	Contract Line Item Number
CMI(C)	Corrective Measures Implementation - Construction
CMI(O)	Corrective Measures Implementation - Operation
CS	Confirmatory Sampling
DD	Decision Document
DES	Design
DNF	Document Not Finalized
DOJ	Department of Justice
DOL/DPW	Directorate of Logistics/Directorate of Public Works
E&E	Ecology and Environment, Inc.
e2M	Engineering Environmental Management, Inc.
ECC	Environmental Chemical Corporation
FAWQC	Federal Ambient Water Quality Criteria
FRA	Final Remedial Action
FS	Feasibility Study
FTL	AEDB-R Designation for Fort Leavenworth
GBA	George Butler Associates
GFPR	Guaranteed Fixed Price Remediation
HRR	Historical Record Review
ID	Identification
IMCOM	Installation Management Command
IMP(C)	Implementation- Construction
INV	Investigation
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ISC	Initial Site Characterization
ITS	Intertek Testing Services
K	thousand
KAL	Kansas Action Levels (replaced by RSKs)
KDHE	Kansas Department of Health and Environment
kg	kilogram
LF	Landfill
LTM	Long-Term Management
LUC	Land Use Controls
MEC	Munitions and Explosives of Concern
mg	milligram
mg/L	milligrams per liter
mm	millimeter
MR	Munitions Response
MRS	Munitions Response Site

Acronyms

N/A	Not Applicable
NFA	No Further Action
NPL	National Priorities List
OMA	Operations and Maintenance, Army
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PBC	Performance-Based Contract
POL	Petroleum, Oil and Lubricants
RA	Remedial Action
RA(C)	Remedial Action - Construction
RC	Response Complete
RCI	Residential Construction Initiative
RD	Remedial Design
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RSK	Risk-Based Standards of Kansas
SI	Site Inspection
SoB	Statement of Basis
TAL	Target Analyte List
TAPP	Technical Assistance for Public Participation
TBD	To Be Determined
TCLP	Toxicity Characteristic Leaching Procedure
TRC	Technical Review Committee
USACE	US Army Corps of Engineers
USACHPPM	US Army Center for Health Promotion and Preventive Medicine
USAEC	US Army Environmental Command (formerly called USATHAMA)
USAEHA	US Army Environmental Hygiene Agency (now called USACHPPM)
USATHAMA	US Army Toxic and Hazardous Materials Agency
USDB	US Disciplinary Barracks

Installation Information

Installation Locale

Installation Size (Acreage): 5643

City: Kansas City

County: Leavenworth

State: Kansas

Other Locale Information

The official name of the facility is the United States Army Combined Arms Center and FTL. Located in northern Leavenworth County, Kansas, on the west bank of the Missouri River, it is approximately 25 miles northwest of the edge of the Kansas City metropolitan area, which has a combined population of about 1.5 million. The fort serves as home for the Command and General Staff College (C&GSC), National Simulation Center, the US Army Training and Doctrine Command (TRADOC) Analysis Center and the US Disciplinary Barracks (USDB). The installation was established in 1827 and is the oldest continuously operating Army installation west of the Mississippi River.

Installation Mission

The mission of FTL is to support the TRADOC, whose primary mission on the fort is to train officers for command and staff work. This is done at the C&GSC and battle command training program. Another large mission is the long-term confinement of military prisoners in the USDB. Other significant activities on the fort include coordination of combined arms, collective training, and the National Simulation Center.

Lead Organization

Lead Executing Agencies for Installation

US Army Corps of Engineers (USACE)- northwest region

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region VII, Air and Waste Management Division
State	Kansas Department of Health and Environment (KDHE), Bureau of Environmental Restoration

National Priorities List (NPL) Status

FORT LEAVENWORTH is not on the NPL

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

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

Installation Program Summaries

IRP

Primary Contaminants of Concern: Herbicides, Metals, Pesticides, Polychlorinated Biphenyls (PCB), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

Affected Media of Concern: Groundwater, Other (indoor air), Sediment, Soil, Surface Water

MMRP

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

Affected Media of Concern: Soil

Installation Information

CR

Primary Contaminants of Concern: Metals

Affected Media of Concern: Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	200411	200503	2005
Underway	201103	201212	2013

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
FTL-02 FRA/Capping	FTL-02
FTL-03 FRA/Capping	FTL-03
FTL-04 FRA/Capping	FTL-04
FTL-05 FRA/Capping	FTL-05
FTL-06 FRA/Capping	FTL-06
FTL-07 FRA/Capping	FTL-07
FTL-08 FRA/Capping	FTL-08
FTL-10 FRA/In-situ Soil Treatment	FTL-10
FTL-57 FRA/Removal	FTL-57

Results On target to have sites remediated. 3 sites are Response Complete - FTLs 04/30/65; 4 sites near completion/Statement of Basis (SoB) -FTLs 02/03/05/06; & IRA/pilot studies have shown remedial technology to be effective at FTLs 10 & 15.

Actions Still waiting for EPA to modify Fort Leavenworth RCRA permit for completed actions involving Land Use Controls (LUCs) and Statement of Basis (SoBs).

Plans Fort Leavenworth Restoration Program continues to proceed with cleanup under GFPR Contract #DACA45-02-C-0011. Goal remains for remedies in place on High Relative Risk Sites by September 30, 2007.

Recommendations and Implementation Plans:

Fort Leavenworth's draft Five-Year review report is currently in the Army internal draft review stage which is scheduled for completion in fiscal year (FY)12. In December 2011, Fort Leavenworth requested an extension to have the USACE revise the draft report based on comments generated during this initial Five-Year Review Report. The draft report which should address all comments is scheduled for submittal to Fort Leavenworth in FY12.

Land Use Control (LUC) Summary

LUC Title: FTL-02

Site(s): FTL-02

ROD/DD Title: FTL-02 FRA/Capping

Location of LUC

FTL-02 Inactive Landfill

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 - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200506

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200508

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, PCBs, PESTICIDES, VOC

Additional Information

N/A

LUC Title: FTL-03

Site(s): FTL-03

ROD/DD Title: FTL-03 FRA/Capping

Location of LUC

FTL-03 Inactive Landfill

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 - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200506

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200508

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, PCBs, PESTICIDES, VOC

Land Use Control (LUC) Summary

Additional Information

N/A

LUC Title: FTL-04

Site(s): FTL-04

ROD/DD Title: FTL-04 FRA/Capping

Location of LUC

FTL-04 Inactive Sanitary Landfill

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 - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200506

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200508

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, PAH, VOC

Additional Information

N/A

LUC Title: FTL-05

Site(s): FTL-05

ROD/DD Title: FTL-05 FRA/Capping

Location of LUC

FTL-05 Inactive Sanitary Landfill

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 - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200506

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Land Use Control (LUC) Summary

Documentation Date: 200508

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, PAH, VOC

Additional Information

N/A

LUC Title: FTL-06

Site(s): FTL-06

ROD/DD Title: FTL-06 FRA/Capping

Location of LUC

FTL-06 Inactive Landfill

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 - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200506

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200508

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, PAH, VOC

Additional Information

N/A

LUC Title: FTL-07

Site(s): FTL-07

ROD/DD Title: FTL-07 FRA/Capping

Location of LUC

FTL-07 Inactive Sanitary Landfill

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 - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200609

Modification Date: N/A

Land Use Control (LUC) Summary

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200708

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, VOC

Additional Information

N/A

LUC Title: FTL-08

Site(s): FTL-08

ROD/DD Title: FTL-08 FRA/Capping

Location of LUC

FTL-08 Inactive Sanitary Landfill

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 - Restrict vehicular traffic, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Restrict land use - No residential use

Types of Engineering Controls: Signs

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200803

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200811

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, PCBs, VOC

Additional Information

N/A

LUC Title: FTL-10

Site(s): FTL-10

ROD/DD Title: FTL-10 FRA/In-situ Soil Treatment

Location of LUC

FTL-10 Old Fire Training Area / Burn Pit

Land Use Restriction: 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 w/out treatment, Restrict land use - No residential use

Types of Engineering Controls: Fences

Types of Institutional Controls: Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use,

Land Use Control (LUC) Summary

Zoning

Date in Place: 200609
Modification Date: N/A
Date Terminated: N/A
Inspecting Organization: Installation
Record of LUC: Master Plan or Equivalent
Documentation Date: 200708
LUC Enforcement: Annual Inspections, Other
Contaminants: METALS, VOC
Additional Information
N/A

LUC Title: FTL-15
Site(s): FTL-15
ROD/DD Title: FTL-15 FRA/In-Situ Soil Treatment
Location of LUC

FTL-15 Used Solvent Tank UST Near Building 487-1

Land Use Restriction: 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 w/out treatment, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use, Zoning

Date in Place: 200609
Modification Date: N/A
Date Terminated: N/A
Inspecting Organization: Installation
Record of LUC: Master Plan or Equivalent
Documentation Date: 200708
LUC Enforcement: Annual Inspections, Other
Contaminants: VOC
Additional Information
N/A

LUC Title: FTL-57
Site(s): FTL-57
ROD/DD Title: FTL-57 FRA/Removal
Location of LUC

FTL-57 Skeet Range (Inactive)

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

Types of Engineering Controls: None

Land Use Control (LUC) Summary

Types of Institutional Controls: Notations in Master Plan, Restrictions on land use, Zoning

Date in Place: 200803

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200811

LUC Enforcement: Annual Inspections, Other

Contaminants: METALS, PAH, VOC

Additional Information

N/A

LUC Title: FTL-69

Site(s): FTL-69

ROD/DD Title: FTL-69 Institutional Controls

Location of LUC

FTL-69 Diesel Fuel Spill Area

Land Use Restriction: 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, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200803

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200811

LUC Enforcement: Annual Inspections, Other

Contaminants: PAH

Additional Information

N/A

LUC Title: FTL-70

Site(s): FTL-70

ROD/DD Title: FTL-70 Institutional Controls

Location of LUC

FTL-70 Fuel Oil Leak Site at USDB

Land Use Restriction: 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, Restrict land use - No residential use

Types of Engineering Controls: None

Land Use Control (LUC) Summary

Types of Institutional Controls: Dig Permits, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200803

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200811

LUC Enforcement: Annual Inspections, Other

Contaminants: PAH, VOC

Additional Information

N/A

LUC Title: FTL-71

Site(s): FTL-71

ROD/DD Title: FTL-71 Institutional Controls

Location of LUC

FTL-71 McClellan Avenue Maintenance Site

Land Use Restriction: 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, Restrict land use - No residential use

Types of Engineering Controls: None

Types of Institutional Controls: Construction Permit, Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 200803

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 200811

LUC Enforcement: Annual Inspections, Other

Contaminants: VOC

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

Colonel Henry Leavenworth established FTL in 1827 with his officers and men of the 3d Infantry Regiment. Its mission was to administer the land to the west belonging to the Native American tribes, maintain the peace between them, and protect travelers along the Santa Fe and Oregon Trails.

The fort was the outfitting post for the troops fighting the war with Mexico in 1848.

During the Civil War, FTL was an important depot as well as the major base of operations for Union forces in the west.

Because of its central location, FTL became the primary depot for supplies destined for western military posts. It was the primary base for two of the four US "Colored" Troop regiments that fought in the Native American conflicts.

In 1875, the USDB was established to house military prisoners. Today, it is the only long-term maximum security confinement facility for the Department of Defense.

The School of Application for Cavalry and Infantry, which later evolved into the C&GSC, was established by General William T. Sherman in 1881. Graduates of the school excelled in planning complex expeditionary forces operations in World War I.

In 1946, the school's name changed to the C&GSC.

In 1959, Bell Hall was constructed to house the college. The new college, known as Lewis and Clark Hall, was constructed and occupied during fall 2007.

The fort continues to be on the leading edge of the Army's future. The community's pride in its history of service to the Army and the nation is matched by its readiness to meet the challenges of the future.

The fort is located on the west bank of the Missouri River about 25 miles northwest of downtown Kansas City, Missouri. The Missouri River marks the northern and eastern boundaries of the fort. The city of Leavenworth is located on the southern boundary of the fort. On the southwest side of the installation is the US Penitentiary Leavenworth that was built by prisoners from the fort. Open farmland is to the west.

Due to FTL providing a full range of services to its residents, much of the environmental contamination is similar to that of other civilian communities (i.e., landfills, pesticide mixing areas, underground storage tank (UST) sites, etc.)

Since the introduction of the guaranteed fixed price remediation (GFPR) contract in 2002, the following sites have moved through the statement of basis (SoB) phase:

FTL-02 through FTL-08, FTL-57,
FTL-10, FTL-60,
FTL-11, FTL-65,
FTL-15, FTL-69,
FTL-20, FTL-70,
FTL-24, FTL-71.
FTL-30,

Of these sites, FTL-02, FTL-03, and FTL-08 are landfills and will require continuous long-term management (LTM). ARCADIS US Inc. is currently working on-sites FTL-04 and FTL-001-R-01 (FTL-66) and environmental consulting firm HDR, Inc. is currently working on-site FTL-72.

Installation Program Cleanup Progress

IRP

Prior Year Progress: Site FTL-04 has been removed and achieved a no further action (NFA) in FY11. Sites FTL-72, and FTL-001-R-01 (FTL-66) were part of the GFPR contract modification effective Sept. 30, 2008. Sites FTL-08, FTL-24, FTL-57, FTL-69, FTL-70, and FTL-71 completed the SoB phase. The corrective measures implementation-construction [CMI-(C)] is completed at FTL-08 and FTL-57. There is NFA at FTL-24. Nine reopened sites are in the investigation phase as a regulatory requirement.

Cleanup Program Summary

Future Plan of Action: The LUCs will continue at sites FTL-02 through -08, -10, -15, -57, -69, -70, and -71.

MMRP

Prior Year Progress: A RCRA facility investigation (RFI) has been completed for the FTL Military Munitions Response Program (MMRP). Site FTL-001-R-01 (FTL-66) was part of the GFPR contract with modification effective Sept. 30, 2008.

Future Plan of Action: The risk assessor currently believes that the corrective measures study (CMS) will result in an acceptable risk level for all soils at the site without remediation. For budgetary purposes, an estimate has been prepared for the remediation of the locations that exceeded the preliminary remediation goal (PRG) of 400 milligrams (mg)/kilogram (kg) for lead.

CR

Prior Year Progress: An RFI will be completed at FTL-75.

Future Plan of Action: Pending results of the RFI.

FORT LEAVENWORTH
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 72/50

Installation Site Types with Future and/or Underway Phases

1	Above Ground Storage Tank (FTL-70)
1	Firing Range (FTL-57)
3	Incinerator (FTL-41, FTL-43, FTL-44)
6	Landfill (FTL-02, FTL-03, FTL-05, FTL-06, FTL-07, FTL-08)
1	Sewage Treatment Plant (FTL-22)
2	Spill Site Area (FTL-10, FTL-56)
2	Surface Disposal Area (FTL-71, FTL-72)
3	Underground Storage Tank (FTL-15, FTL-67, FTL-69)
2	Washrack (FTL-34, FTL-35)
1	Waste Treatment Plant (FTL-48)

Most Widespread Contaminants of Concern

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

Media of Concern

Groundwater, Other (indoor air), Sediment, Soil, Surface Water

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

Site ID	Site Name	Action	Remedy	FY
FTL-52	USED OIL TANK BUILDING 109	FRA	REMOVAL	1991
FTL-68	WEED CONTROL AREA, CITY AIRPORT OPER	FRA	WASTE REMOVAL - SOILS	1991
FTL-53	USED OIL TANK BUILDING 471	FRA	REMOVAL	1994
FTL-12	USED OIL TANK AST NEAR BUILDING 305	FRA	REMOVAL	1995
FTL-13	USED OIL TANK UST NEAR BUILDING 689-0	FRA	REMOVAL	1995
FTL-61	TANK REMOVAL, BLDG 431	FRA	WASTE REMOVAL - SLUDGES	1995
FTL-29	PAST PESTICIDE BUILDING 413	FRA	WASTE REMOVAL - SOILS	1996
FTL-01	INACTIVE SANITARY LANDFILL	FRA	NATURAL ATTENUATION	1997
FTL-04	INACTIVE SANITARY LANDFILL	IRA	CAPPING	1998
FTL-09	CLOSED ACTIVE SANITARY LANDFILL	FRA	CAPPING	1998
FTL-14	USED OIL TANK NEAR BUILDING 86	FRA	REMOVAL	2000
FTL-16	USED SOLVENT TANK UST NR BLDG 487-2	FRA	REMOVAL	2000

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTL-17	USED SOLVENT TANK UST NR BLDG 487-3	FRA	REMOVAL	2000
FTL-18	USED SOLVENT TANK UST NR BLDG 487-4	FRA	REMOVAL	2000
FTL-19	SEWAGE LAGOONS	FRA	CONTAINMENT	2000
FTL-22	SEPTIC TANK NR BLDG 425	FRA	REMOVAL	2000
FTL-33	WASH RACK BUILDING 262	FRA	REMOVAL	2000
FTL-34	WASH RACK BUILDING 431	FRA	FREE PRODUCT RECOVERY	2000
FTL-35	WASH RACK BUILDING 571	FRA	REMOVAL	2000
FTL-36	WASH RACK BUILDING 132	FRA	FREE PRODUCT RECOVERY	2000
FTL-37	WASH RACK BUILDING 86	FRA	FREE PRODUCT RECOVERY	2000
FTL-39	WASH RACK BUILDING 496	FRA	REMOVAL	2000
FTL-41	INCINERATOR BUILDING 344	FRA	REMOVAL	2000
FTL-44	INCINERATOR BUILDING 632	FRA	REMOVAL	2000
FTL-45	INCINERATOR BUILDING 136	FRA	REMOVAL	2000
FTL-50	USED SOLVENT TANK NO 5 BUILDING 487	FRA	REMOVAL	2000
FTL-51	USED SOLVENT TANK NO 6 BUILDING 487	FRA	REMOVAL	2000
FTL-55	USED OIL STORAGE, CITY AIRPORT OPERATION	FRA	REMOVAL	2000
FTL-62	UNDERGROUND PROPANE TANK, USDB FARM	FRA	REMOVAL	2000
FTL-64	FTL-64: REMOVE UST BLDG 264	FRA	REMOVAL	2000
FTL-67	UNDERGROUND TANKS OLD PX SERVICE STATION	IRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	2000
FTL-04	INACTIVE SANITARY LANDFILL	FRA	CAPPING	2005
FTL-05	INACTIVE SANITARY LANDFILL	FRA	CAPPING	2005
FTL-06	INACTIVE LANDFILL	FRA	CAPPING	2005
FTL-15	USED SOLVENT TANK UST NR BLDG 487-1	IRA	IN-SITU SOIL TREATMENT	2005
FTL-30	PAST PESTICIDE BUILDING 412	FRA	WASTE REMOVAL - SOILS	2005
FTL-10	OLD FIRE TRAINING AREA/BURN PIT	FRA	IN-SITU SOIL TREATMENT	2006
FTL-10	OLD FIRE TRAINING AREA/BURN PIT	IRA	WASTE REMOVAL - SOILS	2006
FTL-10	OLD FIRE TRAINING AREA/BURN PIT	IRA	IN-SITU SOIL TREATMENT	2006
FTL-15	USED SOLVENT TANK UST NR BLDG 487-1	FRA	IN-SITU SOIL TREATMENT	2006
FTL-02	INACTIVE LANDFILL	FRA	CAPPING	2007
FTL-03	INACTIVE LANDFILL	FRA	CAPPING	2007
FTL-07	INACTIVE SANITARY LANDFILL	FRA	CAPPING	2007
FTL-08	INACTIVE SANITARY LANDFILL	FRA	CAPPING	2008

IRP Summary

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

Site ID	Site Name	Action	Remedy	FY
FTL-57	SKEET RANGE (INACTIVE)	FRA	REMOVAL	2009
FTL-72	Quarry Creek	IRA	REMOVAL	2010
PBC at Leaven.	PBC	FRA	OTHER	2011

Duration of IRP

Date of IRP Inception: 197001

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201405/202110

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

IRP Contamination Assessment

Contamination Assessment Overview

There are 75 sites currently being tracked by the Defense Environmental Restoration Program (DERP). There are 66 Installation Restoration Program (IRP) sites (15 are active), three Military Munitions Response Program (MMRP) sites (two are active: FTL-001-R-01 and FTL-003-R-01) and six Compliance Restoration (CR) sites (two are active: FTL-09 and FTL-63). The solid waste management sites addressed in this IAP include old landfills, contaminated sites, contaminated buildings, incinerators, and other activities that have or had the potential for a significant impact on the environment. This section discusses those sites which have a significant impact on the environment and future installation activities.

Sites that have been investigated for soil and/or groundwater contamination are

FTL-02 through FTL-08 FTL-30,
FTL-10, FTL-57,
FTL-11, FTL-60,
FTL-15, FTL-65,
FTL-20, FTL-69,
FTL-24, FTL-70,
FTL-71.

Surface water and/or sediment concerns are located at

FTL-02, FTL-30,
FTL-04, FTL-60,
FTL-05, FTL-65,
FTL-06, FTL-72.
FTL-20,

Metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) herbicides, and pesticide contaminants are located in the groundwater, the surface water, the soil, and the sediments. Polychlorinated biphenyl (PCB), polycyclic aromatic hydrocarbons (PAH), and total petroleum hydrocarbon (TPH) contaminants have been investigated and identified in the soil.

Due to groundwater contamination, FTL-10, a burn pit which is on the RCRA permit, is a high priority site. It was used for many years to train firefighters. Used solvents were dumped on the ground and ignited. The surface area of this site is not large; however, the soil below has significant contamination, with an associated groundwater plume below it. FTL and other communities use the aquifer for potable water; however, the extent of the groundwater contamination appears to be limited and does not appear to pose an imminent threat to the users of this water. The current investigations have located the plume and have generally determined the extent of the soil contamination. The source area was removed in 2006. This is expected to significantly reduce the amount of contamination in the groundwater.

Landfills make up almost half of the active sites on the installation. This includes both sanitary and construction debris landfills. Remediation of the landfills has required the majority of the restoration program funds and efforts to date. All of the landfills are part of the RCRA permit. Seven of these landfills are DERP-funded and another one (FTL-09) is in the CR program, which is funded under Operation and Maintenance, Army (OMA). All of these landfills have been covered and have moved into the LTM phase.

There are six sites identified in the RCRA permit that are addressed in the CR IAP. They are:

- FTL-09: closed active sanitary landfill,
- FTL-12: used oil tank aboveground storage tank (AST) near Bldg. 305,
- FTL-13: used oil tank UST near Bldg. 689,
- FTL-23: mineral settling lagoons,
- FTL-63: Defense Reutilization and Marketing Office scrap yard, and
- FTL-68: weed control area, city of Leavenworth, Airport Operations.

During FY08, the RCRA facilities investigation (RFI)/CMS phase was completed for the following sites:

- FTL-08: inactive sanitary landfill, Chief Joseph Loop,
- FTL-57: former skeet range,
- FTL-69: diesel fuel spill area,
- FTL-70: fuel oil leak site at the USDB, and
- FTL-71: McClellan Avenue maintenance shop.

IRP Contamination Assessment

Contamination Assessment Overview

An NFA was determined for FTL-24. Well abandonment occurred at FTL-11 and FTL-24 with partial well abandonment at FTL-10. Sites FTL-08, FTL-24, FTL-57, FTL-69, FTL-70, and FTL-71 reached the SoB phase.

Response Complete (RC) Sites
FTL-02 through FTL-08, FTL-60,
FTL-11, FTL-65,
FTL-20, FTL-69,
FTL-24, FTL-70,
FTL-30, FTL-71.

Sites FTL-10 and FTL-15 will remain remedy-in-place (RIP). Site FTL-04 has been reopened to remove landfill waste to achieve an NFA; the work is being done due to site development. For sites FTL-02 through -08, -10, -15, -57, -69, and -71 the LUCs continue.

Cleanup Exit Strategy

The GFPR contract addresses all 19 sites covered by the IRP. The GFPR contractor, ARCADIS US Inc., has worked quickly to address the issues at each site and is working towards closure of all sites. All sites should be either RIP or NFA by 2014.

IRP Previous Studies

Year	Title	Author	Date
1975	Water Quality Monitoring Consulting No.24-L06-75/76	US Army Environmental Hygiene (USAEHA)	SEP-1975
1980	Landfill Design and Permit Application	USAEHA	JUL-1980
1983	Installation Assessment of Combined Arms Center Report No. 327	Environmental Science and Engineering, Inc.	MAR-1983
1984	Evaluation of Solid Waste Disposal Practices and Facilities, June 4-8, 1984	USAEHA	NOV-1984
1986	Letter Report Certifying Facility Closure (FTL-49)	Fort Leavenworth Directorate of Engineering and Housing	FEB-1986
	Groundwater Potential Contamination Survey No. 38-26-0916-86	USAEHA	MAR-1986
1987	Interim Final Report, Hazardous Waste Consultation No. 37-26-1386-88, Evaluation of Solid Waste Management Units	USAEHA	FEB-1987
1989	Site Sampling Plan for Old Burn Pit Area Site FTL-10	Hunter/ESE, Inc.	MAY-1989
	Site Health and Safety Plan Old Burn Pit Area, Site FTL-10, Contract No.DACW41-87-D-0151	Hunter/ESE, Inc.	MAY-1989
1990	Contamination Evaluation of Specific Solid Waste Management Units / Site Specific Sampling/Analysis/Quality Control/Quality Assurance Plan	O'Brien & Gere	JAN-1990
	Contamination Evaluation of Specific Solid Waste Management Units-Exhibit II Laboratory Report Volume 1 - 5 & Appendices	O'Brien & Gere	JAN-1990
	Contamination Evaluation of Specific Solid Waste Management Units - Site Safety and Health Plan	O'Brien & Gere	JAN-1990
	Sherman Army Airfield Solid Waste Management Unit 8 Field Sampling Plan	B&V Waste Science and Technology Corporation (Black & Veatch)	MAY-1990
	Transmitting Solid Waste Management Unit 8 Contamination Assessment	Black & Veatch	SEP-1990
	Transmitting Solid Waste Management Unit 8 Contamination Assessment	Black & Veatch	OCT-1990
1991	Volume I Task 1 Report-Preliminary Site Investigation Hazardous Waste Site Remedial Investigation U.S.P.	Geosystems Engineering & George Butler Associates,	AUG-1991
1992	Golf Course Maintenance Building No. 84 Hazardous Materials Building USDB Greenhouse Buildings No. 398 & 399, Construction Solicitation and Specifications	Army Corps of Engineers Kansas City District (USACE-KC)	AUG-1992
1993			

IRP Previous Studies

1993	Title	Author	Date
	Fort Leavenworth Sanitary Landfill Closure Sherman Site	USACE-KC	MAY-1993
	Sanitary Landfill Closure Plan Sherman Site	USACE-KC	MAY-1993
	Sanitary Landfill Closure Construction Solicitation and Specifications	USACE-KC	JUN-1993
1994	Contamination Evaluation of Specific Solid Waste Management Units-Final Report Volume 1 - 7	O'Brien & Gere	JAN-1994
	Environmental Operations, Inc. Project #4654 Project Close-Out Report Stoddard Solvent Tank Removal	Environmental Remediation and Consulting	FEB-1994
	Final Work Plans Volumes I & II for Contamination Evaluation for Old Skeet Range	Law	OCT-1994
	Site Safety and Health Plan Groundwater Sampling Program	Burns & McDonnell Engineers-Architects-Consultants (Burns & McDonnell)	OCT-1994
	Chemical Data Acquisition Plan Groundwater Sampling Program	Burns & McDonnell Engineers-Architects-Consultants (Burns & McDonnell)	OCT-1994
	Work Plan Removal Action Design Old Pesticide Area	Burns & McDonnell	OCT-1994
1995	Groundwater Monitoring Report October 1994 Sampling Event	Burns & McDonnell	APR-1995
	Closure Report Building 431 US Army Corps of Engineers UST Removal Fort Leavenworth, Kansas USACE Contract DACW41-93-D-0037 Delivery Order No. 0010	HDB Construction, Inc	MAY-1995
	Final Design Specifications Contract No. DACW41-94-D-9002 Removal Action Old Pesticide Area Fiscal Year 1995	Burns & McDonnell	MAY-1995
	Final Design Analysis Contract No. DACW41-94-D-9002 Removal Action Old Pesticide Area Fiscal Year 1995	Burns & McDonnell	MAY-1995
	Chemical Data Acquisition Plan for the Groundwater and Surface Water Sampling Program 1995, 1996 and 1997	Burns & McDonnell	DEC-1995
1996	Groundwater Potential Contamination Survey No. 38-26-0916-86	USAEHA	MAR-1996
	Site Assessment Work Plan for the United States Disciplinary Barracks	Burns & McDonnell	MAR-1996
	Quality Control Summary Report Groundwater and Surface Water Monitoring Report December 1995 Sampling Event	Burns & McDonnell	APR-1996
	Site Assessment Work Plan for the United States Disciplinary Barracks	Burns & McDonnell	APR-1996
	Work Plan Hancock Landfill Site Investigation	Burns & McDonnell	APR-1996
	Final Contamination Evaluation Report for Old Skeet Range	Law	SEP-1996
	(Final) Groundwater and Surface Water Monitoring Report December 1995 Sampling Event	Burns & McDonnell	SEP-1996

IRP Previous Studies

1996	Title	Author	Date
	Groundwater and Surface Water Monitoring Report October 1996 Sampling Event	Burns & McDonnell	DEC-1996
1997	Quality Control Summary Report for Fort Leavenworth Investigations at Solid Waste Management Unit FTL-02	Ecology and Environment, Inc. (E&E)	JAN-1997
	Final Site Investigation Report Hancock Landfill	Burns & McDonnell	JAN-1997
	Final Quality Control Summary Report Hancock Landfill Volume I & II	Burns & McDonnell	JAN-1997
	Final Site Assessment Report for the United States Disciplinary Barracks	Burns & McDonnell	FEB-1997
	Final Quality Control Summary Report for Site Assessment at the United States Disciplinary Barracks Volume I & 2	Burns & McDonnell	FEB-1997
	Work Plan for Engineering Evaluation/Cost Analysis (4) Site Investigations (2) Six Sites Attachments A - D	Burns & McDonnell	FEB-1997
	Radiological Survey Work Plan Hancock Landfill	NAVSEADET RASO	JUL-1997
	Quality Control Summary Report for Engineering Evaluation/Cost Analysis (4) Site Investigations (2) Six Sites Background Samples	Burns & McDonnell	SEP-1997
	Radiological Survey Report Hancock Landfill	NAVSEADET RASO	OCT-1997
	Quality Control Plan Annual Monitoring Program	Burns & McDonnell	NOV-1997
	Site Health and Safety Plan Annual Monitoring Program	Burns & McDonnell	NOV-1997
1998	Chemical Data Acquisition Plan Addendum for the 1997, 98 and 99 Groundwater and Surface Water Sampling Program	Burns & McDonnell	FEB-1998
	Final Site Investigation Report for FTL-10 Closed Firefighting Practice Area	Burns & McDonnell	FEB-1998
	Quality Control Plan Annual Monitoring Program	Burns & McDonnell	FEB-1998
	Final Work Plan Addendum for the Phase II Site Investigation at the United States Disciplinary Barracks	Burns & McDonnell	FEB-1998
	Final Quality Control Plan for Phase II Site Investigation Report for the United States Disciplinary Barracks	Burns & McDonnell	FEB-1998
	Final Draft Laboratory Investigation of Physical Separation and Chemical Extraction Treatment Alternatives for Soils Collected from the Old Skeet Range (DNF)	Waterways Experiment Station	FEB-1998
	Remove Above Ground Storage Tank USDB, Fort Leavenworth, Kansas Project NO. EN70093-7P Report of Second Subsurface Site Investigation	Gossen Livingston	APR-1998
	Draft Work Plan/Quality Assurance Project Plan/Health and Safety Plan FTL-8 Site, Inactive Sanitary/Demolition Landfill (DNF)	USACE-KC	JUN-1998
	Draft Preliminary Assessment Report FTL-2 and FTL-3 Demolition Landfills (DNF)	USACE-KCD	JUN-1998
	Final Site Investigation Report for FTL-65 Pond and Drainages	Tech Law, Inc.	AUG-1998
	KDHE UST Removal Project Code # U4052 for KDHE Tank ID#29962U56 Closed Status w/ NFA in KDHE letter (FTL-52)	KDHE	DEC-1998

IRP Previous Studies

Year	Title	Author	Date
1998	Draft Quality Control Plan Addendum to Work Plan for Engineering Evaluation/Cost Analysis (4) Site Investigation (2) Six Sites at Fort Leavenworth, Kansas Attachment D Quality Control Plan for Site Investigation (DNF)	Burns & McDonnell	DEC-1998
1999	Final GW and Surface Water Monitoring Report and Quality Control Summary Report March 1998 Sampling	Burns & McDonnell	JAN-1999
	Draft Phase II Site Investigation Report for the United States Disciplinary Barracks (DNF)	Burns & McDonnell	JAN-1999
	Draft Site Characterization and Penetrometer System (SCAPS) Supplemental Investigation FTL-10/11 Former Fire Training Areas (DNF)	USACE-KCD	FEB-1999
	Draft Preliminary Assessment Report Inactive Landfill FTL-8 (DNF)	USACE-KCD	MAR-1999
	Final Technical Memorandum Chemical Data Acquisition Plan Addendum for the 1999 Groundwater and Surface Water Sampling Event	Burns & McDonnell	AUG-1999
	Final Technical Memorandum Chemical Data Acquisition Plan Addendum for the 1999 Groundwater and Surface Water Sampling Event	Burns & McDonnell	AUG-1999
	Directorate of Contracting DABT19-99-R-0002 Remove and Dispose of AST	USACE-KCD	AUG-1999
2000	Field Sampling Plan, Health and Safety Plan, and Quality Assurance Project Plan Installation Restoration Program Support	Burns & McDonnell	JUN-2000
	(Final) Quality Control Plan Installation Restoration Program Support	E&E	JUN-2000
	United States Penitentiary - Leavenworth, Project L7U - Monitoring Program	GBA	AUG-2000
	Work Plan Addendum for the Risk Assessment for the Pond in Family Housing (FTL-65)	Burns & McDonnell	SEP-2000
	Technical Memorandum Chemical Data Acquisition Plan Addendum No.3 for the 2000 Groundwater and Surface Water Sampling Event	Burns & McDonnell	NOV-2000
	Final Groundwater and Surface Water Monitoring Report September 1999 Sampling Event	Burns & McDonnell	NOV-2000
	Final Quality Control Summary Report 1999 Groundwater and Surface Water Monitoring Event	Burns & McDonnell	NOV-2000
	Final Engineering Evaluation/Cost Analysis for FTL-5 Inactive Sanitary Landfill	Burns & McDonnell	NOV-2000
	Raw Water and Sediment Laboratory Results for FTL-65 Pond and Drainages, October 2000	Burns & McDonnell Engineers-Architects-Consultants	NOV-2000
	2001	United States Penitentiary - Leavenworth, Project L7U - Monitoring Program	GBA
United States Penitentiary - Leavenworth, KS - Permit No. F-MO12-P006		GBA	JAN-2001
FTL-10 Data Summary		E&E	JAN-2001
Final Quality Control Summary Report 2000 Groundwater and Surface Water Monitoring Event		Burns & McDonnell	FEB-2001

IRP Previous Studies

2001

Title	Author	Date
FTL-06 Inactive Incinerator Landfill Additional Field Activities	E&E	APR-2001
Quality Control Summary Report 2000 Risk Assessment for the Pond in Family Housing (FTL-65)	Burns & McDonnell	MAY-2001
ITS QA Data Comparison Report for the Site Investigation Report at the Disciplinary Barracks (FTL-15)	Burns & McDonnell	JUN-2001
Final Engineering Evaluation/Cost Analysis for FLT-6 Inactive Incinerator Landfill	Burns & McDonnell	JUN-2001
Final Initial RCRA Facility Investigation for Solid Waste Management Unit FTL-03	E&E	OCT-2001
Final Initial RCRA Facility Investigation for Solid Waste Management Unit FTL-24	E&E	OCT-2001
Final Initial RCRA Facility Investigation for Solid Waste Management Unit FTL-69	E&E	OCT-2001
Final Initial RCRA Facility Investigation for Solid Waste Management Unit FTL-08	E&E	OCT-2001
Final Initial RCRA Facility Investigation for Solid Waste Management Unit FTL-02	E&E	OCT-2001
Final Groundwater and Surface Water Monitoring Report November/December 2000 Sampling Event	Burns & McDonnell	NOV-2001
Final Global Positioning System Survey and Geographical Information System Fort Leavenworth, Kansas	E&E	NOV-2001
Final Quality Control Summary Report for Fort Leavenworth Investigations at Solid Waste Management Unit FTL-02	E&E	NOV-2001
Final Quality Control Summary Report for Fort Leavenworth Investigations at Solid Waste Management Unit FTL-03	E&E	NOV-2001
Final Quality Control Summary Report for Fort Leavenworth Investigations at Solid Waste Management Unit FTL-10/11	E&E	NOV-2001
Final Quality Control Summary Report for Fort Leavenworth Investigations at Solid Waste Management Unit FTL-24	E&E	NOV-2001
Final Initial RCRA Facility Investigation for Solid Waste Management Unit FTL-10	E&E	NOV-2001
Final Quality Control Summary Report for Fort Leavenworth Investigations at Solid Waste Management Unit FTL-08	E&E	DEC-2001

2002

Final Report Engineering Evaluation/Cost Analysis for FTL-11 Closed Firefighting Practice Area	Burns & McDonnell	FEB-2002
Final Engineering Evaluation/Cost Analysis for FTL-57 Former Skeet Range	Burns & McDonnell	MAR-2002
Final Human Health Risk Assessment for the Pond in Family Housing (FTL-65)	Burns & McDonnell	MAR-2002
Final Sampling and Analysis Plan Addendum	ECC	JUN-2002
Final Fort Leavenworth Groundwater Monitoring Final Quality Control Summary Report Second Quarter 2002 Annual Sampling Event Volume 1 - 5	ECC	OCT-2002
Final RCRA Corrective Action Work Plan Part II: Site-Specific Work Plans	ARCADIS	DEC-2002

IRP Previous Studies

2002	Title	Author	Date
	Final RCRA Corrective Action Work Plan Part I: Site-Wide Work Plans	ARCADIS	DEC-2002
2003	(Final) Quality Control Plan Supplement IRP and OMA Program Support	E&E	MAR-2003
	Final Field Sampling Plan, Health & Safety Plan, & Quality Assurance Project Plan for IRP & OMA Program Support	E&E	MAR-2003
	Firing Ranges and Associated Facilities	E&E	APR-2003
	Final Annual Groundwater Monitoring Report 2002 Annual Sampling Event	ECC	APR-2003
	Final Pilot Test Work Plans FTL-10, Old Firefighting Training Area and FTL-15, Stoddard Solvent Tanks	ARCADIS	MAY-2003
	Background Soil Sampling Work Plan	ARCADIS	MAY-2003
	Biological Characterization FTL-02, Inactive Demolition Landfill, Bundel Avenue	ARCADIS	MAY-2003
	Final Sampling and Analysis Plan and Site Safety and Health Plan Long-Term Groundwater Monitoring	ECC	JUN-2003
	Draft Corrective Measures Study Report FTL-02, Inactive Demolition Landfill, Bundel Road (DNF)	ARCADIS	JUL-2003
	Groundwater Monitoring Report, March/April 2003	ARCADIS	JUL-2003
	Confirmatory Sampling Work Plan FTL-30, Past Pesticide Area	ARCADIS	AUG-2003
	Final (Revision 1) RFI Addendum FTL-65, Pond in Family Housing Area	ARCADIS	OCT-2003
	Final Closed, Transferring and Transferred Range Site Inventory Report,	Engineering-Environmental Management, Inc.	OCT-2003
	Groundwater Monitoring Report-March/April 2003 Analytical Data (Attachment 1) and Final Data Quality Assessment (Attachment 2)	ARCADIS	OCT-2003
	Groundwater Monitoring Report -June/July 2003 Analytical Data (Attachment 1) and Final Data Quality Assessment (Attachment 2)	ARCADIS	OCT-2003
	Final Characterization of Background Levels of Metals in Soil and Groundwater Technical Memorandum	ARCADIS	OCT-2003
	Final (Revision 1) RFI Addendum FTL-04, Inactive Sanitary Landfill, Hancock Avenue	ARCADIS	OCT-2003
	Final (Revision 1) Corrective Measures Study Report FTL-05, Inactive Sanitary Landfill, Hunt Kennels	ARCADIS	DEC-2003
	Final (Revision 1) Corrective Measures Study Report FTL-06, Inactive Incinerator Landfill, Girl Scout Area	ARCADIS	DEC-2003
2004	Final Field Sampling Plan, Health and Safety Plan, and Quality Assurance Project Plan Supplement IRP and OMA Program Support	E&E	JAN-2004
	Groundwater Monitoring Report-September/October 2003 Analytical Data (Attachment 1) and Final Data Quality Assessment (Attachment 2)	ARCADIS	FEB-2004
	Final (Revision 1) Closure Report FTL-30, Past Pesticide Area	ARCADIS	FEB-2004
	Final RFI Work Plan Addendum FTL-07, Inactive Sanitary Landfill, Behind Girl Scout Area, Fort	ARCADIS	JUN-2004

IRP Previous Studies

2004

Title	Author	Date
Leavenworth, Kansas		
Final RCRA Corrective Action Work Plan Part II: Site-Specific Work Plans, Fort Leavenworth, Kansas	ARCADIS	JUN-2004
Final Construction Documents for FTL-06, Inactive Incinerator Landfill, Girl Scout Area - Revision 1, Fort Leavenworth, Kansas	ARCADIS	JUL-2004
Final Corrective Measures Study (CMS) Work Plan Addendum Draft Supplemental Soil Investigation FTL-15, Stoddard Solvent Tanks Area, Fort Leavenworth, KS	ARCADIS	JUL-2004
Final Remedial Closure Construction Drawings FTL-06	ARCADIS	JUL-2004
Revised Final Remedial Closure Construction Drawings FTL-05	ARCADIS	AUG-2004
Final Construction Documents for FTL-05, Inactive Sanitary Landfill, Hunt Kennels-Revision 1, Fort Leavenworth, Kansas	ARCADIS	AUG-2004
Final Corrective Measures Study Report, FTL-02 and FTL-03, Inactive Demolition Landfills, Bundel Road and Wint Avenue, Leavenworth, Kansas	ARCADIS	AUG-2004
Revised Final Remedial Closure Construction Drawings FTL-06	ARCADIS	AUG-2004

2005

Simulation of Groundwater Flow, Contributing Recharge Area, and Groundwater Travel Time in the Missouri River Alluvial Aquifer near Fort Leavenworth, Kansas	US Geological Survey	FEB-2005
Final (Revision 1) Site-Specific Health and Safety Plan FTL-02 and FTL-03, Inactive Demolition Landfills Bundel Road and Wint Avenue, Fort Leavenworth, Kansas	ARCADIS	APR-2005
Final Construction Certification and Closure Report, FTL-05 Inactive Sanitary Landfill Hunt Kennels and FTL-06 Inactive Incinerator Landfill Girl Scout Area, US Army Combined Armed Center and Fort Leavenworth	ARCADIS	JUN-2005
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-02 Inactive Demolition Landfill, Bundel Road	USEPA Region VII	JUN-2005
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-03 Inactive Demolition Landfill, Wint Avenue	USEPA Region VII	JUN-2005
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-04 Inactive Sanitary Landfill, Hancock Avenue	USEPA Region VII	JUN-2005
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-05 Inactive Sanitary Landfill, Hunt Kennels	USEPA Region VII	JUN-2005

IRP Previous Studies

2005

Title	Author	Date
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-06 Inactive Incinerator Landfill, Girl Scout Area	USEPA Region VII	JUN-2005
Final Remedial Closure Record Drawings FTL-05 Inactive Sanitary Landfill Hunt Kennels	ARCADIS	JUN-2005
Final Remedial Closure Record Drawings, FTL-06 Inactive Incinerator Landfill Girl Scout Area	ARCADIS	JUN-2005
Final Corrective Measures Study Report FTL-15, Stoddard Solvent Tanks Area, Fort Leavenworth, Kansas	ARCADIS	JUL-2005
Final Construction Documents FTL-02 and FTL-03, Inactive Demolition Landfills, Bundel Road and Wint Avenue, Fort Leavenworth, Kansas	ARCADIS	SEP-2005
Final Remedial Closure Construction Drawings FTL-02 & FTL-03	ARCADIS	SEP-2005
Replaced Final Remedial Closure Construction Drawings FTL-02 & FTL-03	ARCADIS	OCT-2005
Final Supplemental Investigation Report for FTL-10, Burn Pit, Old Firefighting Training Area	ARCADIS	NOV-2005
Supplemental Investigation Work Plan for FTL-71, Fort Leavenworth, Kansas	ARCADIS	NOV-2005
Final Corrective Measures Study Report FTL-10, Burn Pit, Old Firefighting Training Area, Fort Leavenworth	ARCADIS	NOV-2005
Final RFI Report FTL-11, Closed Fire Training Area, Fort Leavenworth, Kansas	ARCADIS	NOV-2005
Supplemental Investigation Work Plan for FTL-70, Fort Leavenworth, Kansas	ARCADIS	NOV-2005
Final RFI Report FTL-07, Inactive Sanitary Landfill, Behind Girl Scout Area, Fort Leavenworth, Kansas	ARCADIS	DEC-2005

2006

Final RFI Report, Closed Fire Training Area, Fort Leavenworth, KS	ARCADIS	FEB-2006
Final Corrective Measures Study Investigation Work Plan for FTL-08 Fort Leavenworth, Kansas	ARCADIS	APR-2006
Final Groundwater Sampling Work Plan for FTL-57, Fort Leavenworth, Kansas	ARCADIS	MAY-2006
Final Supplemental Investigation Work Plan for FTL-69, Fort Leavenworth, Kansas	ARCADIS	MAY-2006
Final RFI Report FTL-20, Septic Tank, USDB Greenhouse, Fort Leavenworth, Kansas (Appendix A - Final Closure Report FTL-60, Stripped Paint Area)	ARCADIS	JUN-2006
Final Construction Certification and Closure Report, FTL-02 and FTL-03 Inactive Demolition Landfills, Bundel Road and Wint Avenue Fort Leavenworth, Kansas	ARCADIS	JUL-2006
Final Remedial Closure Record Drawings FTL-02 and FTL-03 Inactive Demolition Landfills, Bundel Road and Wint Avenue Fort Leavenworth, Kansas	ARCADIS	JUL-2006
(Revised) Final Corrective Measures Implementation Work Plan: FTL-10, Burn Pit, Old Firefighting Training Area, Fort Leavenworth, Kansas	ARCADIS	JUL-2006
(Revised) Final Corrective Measures Implementation (CMI) Work Plan: FTL-15, Stoddard Solvent Tanks,	ARCADIS	JUL-2006

IRP Previous Studies

2006

Title	Author	Date
Fort Leavenworth, Kansas		
Final Supplemental Groundwater Investigation Work Plan for FTL-24, Fort Leavenworth, Kansas	ARCADIS	JUL-2006
Final Construction Specific Health and Safety Plan Fort Leavenworth, Kansas	ARCADIS	SEP-2006
Final Corrective Measures Study Report FTL-07, Inactive Sanitary Landfill Behind Girl Scout Area Fort Leavenworth, Kansas	ARCADIS	SEP-2006
Site-Wide Work Plan, Appendix B, Quality Assurance Project Plan, Version 3 Fort Leavenworth, Kansas	ARCADIS	OCT-2006
Final Construction Documents FTL-07, Inactive Sanitary Landfill Behind Girl Scout Area Fort Leavenworth, Kansas	ARCADIS	OCT-2006
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-07 Inactive Sanitary Landfill Behind Girl Scout Area	USEPA Region VII	NOV-2006
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-10 Burn Pit, Old Firefighting Training Area	USEPA Region VII	NOV-2006
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-11 Closed Fire Training Area	USEPA Region VII	NOV-2006
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-15 Stoddard Solvent Tanks Area	USEPA Region VII	NOV-2006
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-20 Septic Tank, USDB Greenhouse	USEPA Region VII	NOV-2006
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-60 Stripped Paint Area	USEPA Region VII	NOV-2006

2007

Final Expanded Supplemental Investigation Work Plan for FTL-69 Fort Leavenworth, Kansas	ARCADIS	JAN-2007
Final RFI Report FTL-70, Fuel Tank Leak, USDB Fort Leavenworth, Kansas	ARCADIS	MAR-2007
Final Soil Excavation Certification Report for FTL-10, Burn Pit, Old Firefighter Training Area	ARCADIS	APR-2007
Final RFI Report Addendum FTL-24, Building 227, Entomology Shop	ARCADIS	MAY-2007
Final Site-Wide Post Closure Groundwater Monitoring Plan	ARCADIS	MAY-2007
Final Corrective Measures Study Report FTL-08, Inactive Sanitary Landfill, Chief Joseph Loop	ARCADIS	JUN-2007

IRP Previous Studies

2007

Title	Author	Date
CMI Annual Report Revised FTL-15, Stoddard Solvent Tanks Area	ARCADIS	JUN-2007
CMI Annual Report Revised FTL-10, Burn Pit, Old Firefighting Training Area	ARCADIS	JUN-2007
Final RFI Report FTL-71, McClellan Avenue	ARCADIS	JUN-2007
Final Construction Certification and Closure Report for FTL-07, Inactive Sanitary Landfill Behind Girl Scout Area	ARCADIS	JUN-2007
Work Plan for Land Use Control Installation at FTL-02, FTL-03 and FTL-07, Fort Leavenworth, Kansas	ARCADIS	JUN-2007
(Revised) FTL-15 Corrective Measure Certification Report: Venting System Installation	ARCADIS	JUN-2007
Final Corrective Measures Study Report FTL-57, Former Skeet Range	ARCADIS	JUL-2007
Final Corrective Measures Implementation Work Plan FTL-57, Former Skeet Range	ARCADIS	AUG-2007
Final Construction Specific Health and Safety Plan (HASP) addendum for FTL- 57	ARCADIS	OCT-2007
Final RFI Report Addendum, FTL-69, Building 139, Diesel Tank Leak Area	ARCADIS	OCT-2007
Final Site-Wide Post-Closure 2006 Annual Report	ARCADIS	NOV-2007
Final Corrective Measures Implementation Work Plan for FTL-08, Inactive Sanitary Landfill Chief Joseph Loop	ARCADIS	DEC-2007

2008

Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-08 Inactive Sanitary Landfill, Chief Joseph Loop	USEPA Region VII	MAR-2008
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-57 Former Skeet Range	USEPA Region VII	MAR-2008
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-69 Diesel Tank Area at Building 139	USEPA Region VII	MAR-2008
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-70 USDB Fuel Tank Leak Area	USEPA Region VII	MAR-2008
Final Statement of Basis United States, Environmental Protection Agency Region 7, US Army Combined Arms Center and Fort Leavenworth, RCRA ID No. KS4213720499, FTL-71 Solvent Spill Area on McClellan Avenue	USEPA Region VII	MAR-2008
Final Site-Wide Post-Closure Groundwater Monitoring Plan: Fort Leavenworth	ARCADIS	APR-2008
Final Site-Wide Post-Closure 2007 Annual Report, Fort Leavenworth, Kansas	ARCADIS	MAY-2008
Final CMI Annual Report - 2007 FTL-15, Stoddard	ARCADIS	JUL-2008

IRP Previous Studies

Year	Title	Author	Date
2008	Solvent Tanks Area, Fort Leavenworth, Kansas		
	Final Construction Certification and Closure Report for FTL-08, Inactive Sanitary Landfill Chief Joseph Loop	ARCADIS	OCT-2008
	Final Construction Certification and Closure Report for FTL-57, Former Skeet Range	ARCADIS	NOV-2008
	Final Landfill Removal Preliminary Design Work Plan for FTL-04	ARCADIS	DEC-2008
2009	Final Landfill Removal Investigation Summary FTL-04, Fort Leavenworth, Kansas	ARCADIS	APR-2009
	Final RFI Work Plan for FTL-72, Quarry Creek Archaeological Site, Fort Leavenworth, Kansas	ARCADIS	APR-2009
	Final Site-Wide Post-Closure 2008 Annual Report, Fort Leavenworth, Kansas	ARCADIS	MAY-2009
	Draft Final RFI Report - FTL-66, Fort Leavenworth, KS	ARCADIS	DEC-2009
	Final Corrective Measures Study Implementation Plan FTL-04, Fort Leavenworth, KS	ECC	DEC-2009
2010	RCRA Permit Application, Fort Leavenworth, KS	Fort Leavenworth	JAN-2010
	Final Site-Wide Post Closure Annual Report, Fort Leavenworth, KS	ARCADIS	FEB-2010
	Final Interim Removal Work Plan FTL-72, Fort Leavenworth, KS	ARCADIS	MAY-2010
	Revised RCRA Permit Application, Fort Leavenworth, KS	Fort Leavenworth	JUN-2010
	Final Interim Removal Action Completion Report, Fort Leavenworth, KS	ARCADIS	NOV-2010
	Preliminary Facility Assessment Report FTL-75	Fort Leavenworth, KS	NOV-2010
	Fort Leavenworth's RCRA 2010 Permit	USEPA Region VII	DEC-2010
2011	Final Certified Construction Closure Report - FTL-04	ECC	FEB-2011
	Final Site-Wide Post Closure Report (2010 Annual Report)	ARCADIS	MAR-2011
	Final Work Plan and UFP-QAPP FTL-75	HDR	JUL-2011
	Final Work Plan and UFP-QAPP for Select RCRA Sites	United States Army Corp of Engineers - Kansas City District Office	AUG-2011
2012	Expanded Site Assessment FTL-67	United States Corp of Engineers - Kansas City District Office	JAN-2012

FORT LEAVENWORTH
Installation Restoration Program
Site Descriptions

Site ID: FTL-02
Site Name: INACTIVE LANDFILL

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

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

Phases	Start	End
RFA.....	198702.....	199906
CS.....	199907.....	199912
RFI/CMS.....	200001.....	200411
DES.....	200409.....	200502
CMI(C).....	200504.....	200610
LTM.....	200610.....	203610

RIP Date: N/A

RC Date: 200610

SITE DESCRIPTION

Site FTL-02 is an old construction and demolition landfill located on the southeast end of the fort. The 2000 RFI determined that the site is approximately 4.6 acres. The northern site boundary is One Mile Creek, which originates in the Normandy family housing area and flows east to the Missouri River. The site is also bordered to the north by FTL-03, which starts on the north side of the creek. The eastern site boundary is an old government railroad right-of-way that is now a hiking trail. The southern boundary follows the hiking trail as it curves to the west. The western boundary is Bundel Road. There is family housing and a school to the west.

The 1984 US Army Environmental Hygiene Agency (USAEHA) report stated that the landfill received demolition waste in 1982 and 1983, but indications are that it received wastes before then. The report recommended that it be permitted with the KDHE, but there is no information that a permit was ever requested or received. The USAEHA report estimated the site at about three acres, but subsequent investigations found it to be much larger at 4.6 acres. The site is fairly level, with much of the area covered with trees.

The site was a water-filled depression prior to filling. The area may have been used as a borrow area for soil to build Bundel Road, the government railroad track, and the Union Pacific railroad tracks. The resulting depression held stagnant water that was a breeding ground for mosquitoes. The report states that 28,000 cubic meters of construction demolition waste was placed in the site in 1983. The debris, at that time, was coming from a group of concrete block buildings, located on the southwest corner of the intersection of Cody and Grant, but could have originated from anywhere on the fort. The site supports many trees, but very little grass.

During a 1987 inspection, concerns about lead resulted in an assessment of the site. A USACE site investigation performed in 1998 found some metals in the soil exceeding several of the Kansas interim remedial guidelines for residential use. Ecology and Environment, Inc. (E&E, Inc.) performed an RFI on the site in 2000. Their report was issued in spring 2001. They found that the site is much larger than originally reported. The contamination levels were consistent with the preliminary assessment (PA). PAHs and PCBs were detected in soil at concentrations exceeding screening criteria.

This site became part of the GFPR contract with ARCADIS in 2002. ARCADIS has completed a habitat evaluation for a risk assessment, cover evaluation, groundwater sampling, surface water sampling and sediment sampling, and prepared a final CMS in August 2004. USEPA regulatory approval of the final remedial design (RD) came in September 2005. The landfill cover installation was completed in August 2006.

The GFPR contract funded all work on this site through the warranty period. The SoB [i.e., decision document (DD)] was finalized in June 2005. The site was closed under the USEPA corrective action complete with LUC classification in 2006; however, the KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years after closure.

Site ID: FTL-02
Site Name: INACTIVE LANDFILL

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, landfill maintenance and LUCs. The ARCADIS warranty for this site began Aug. 2, 2006 and expired Aug. 2, 2011. The FTL has programmed funds for maintenance and compliance sampling to continue post closure efforts.

The site is included in the FTL LUC action plan dated Aug. 1, 2005. Future use of this site is limited to activities that do not disturb the materials contained in the landfill or the cover materials.

The KDHE statutes and administrative regulations require long-term care of the site for 30 years which began in 2006 when the landfill closed (Kansas Administrative Regulations, Article 29-Solid Waste, 65-3406(a)(18)).

Site ID: FTL-03
Site Name: INACTIVE LANDFILL

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198702.....	199806
CS.....	199807.....	199906
RFI/CMS.....	199907.....	200411
DES.....	200409.....	200502
CMI(C).....	200504.....	200610
LTM.....	200610.....	203610

RIP Date: N/A

RC Date: 200610

SITE DESCRIPTION

Site FTL-03 is a construction demolition landfill of approximately two acres that has some large pieces of concrete at the surface. The northern site boundary is about 50 meters north of the intersection of Wint and Stimson Avenues. Further to the north is a steep embankment, which slopes to the east until it reaches the Missouri River. The eastern site boundary is the abandoned government railroad right-of-way, which comes from FTL-02 from the south, and is now a hiking trail. An active Union Pacific railroad track and the Missouri River are past the trail. The southern boundary, One Mile Creek, forms the boundary between this site and FTL-02. The western boundary is Stimson Avenue. The closest development is family housing, about 100 meters from the northwest corner and Bell Hall, which houses the C&GSC. Features of note include a large abandoned natural gas pipeline running across the south side of the site and along the west side. The site has numerous steep slopes trending downhill to the river, on the east, and the creek, on the south.

The history of this site is unclear. The 1983 USAEHA study found that the site received waste in 1975 which consisted of clean fill comprised of soil, rocks, and concrete. There are locations where large pieces of concrete extend above the surface. The study reported that FTL had requested a permit for this site in May 1984; however, no records have been located to show that a permit was requested or issued.

The 1988 USAEHA report indicated that this site had a low hazard potential and did not require investigation. The 1997 environmental compliance assessment survey (ECAS) inspection recommended that this site be investigated, based on a concern that construction waste could contaminate the stream or river. The USACE performed and completed the site investigation in 1998. The investigation found levels of PCBs in the soil that were above the USEPA accepted screening levels. VOCs and SVOCs have been a concern with all of the restoration landfills and the regulators required testing for VOCs and SVOCs in soil and groundwater.

In 2000 Ecology & Environment, Inc. (E&E) performed an RFI and in October 2001 submitted their final report, recommending further investigation of FTL-03. The investigation reported that even though the extent of the landfill material appears to have been delineated, the extent of the contamination has not.

The perimeter of the landfill was defined by the geophysical survey during the RFI; however, high PCB detections at the north edge of the landfill indicate that the extent of PCB contamination may extend further north and possibly west. The investigation also reported that aside from the fill material in the landfill, the abandoned natural gas pipeline, located north of the target landfill, might also be the source of PCBs.

In 2002 this site became part of the GFPR contract with ARCADIS. They have completed a habitat evaluation for a risk assessment, cover evaluation, groundwater sampling, surface water sampling, and sediment sampling, and in August 2004 they prepared a final CMS. Final USEPA regulatory approval of the RD came in September 2005. The landfill cover installation was completed in August 2006.

The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in June 2005. The

Site ID: FTL-03
Site Name: INACTIVE LANDFILL

site was closed under the USEPA corrective action complete with LUC classification in 2006; however, the KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years.

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, landfill maintenance and LUCs. The ARCADIS warranty for this site began on Aug. 2, 2006 and expired on Aug 2, 2011. Fort Leavenworth has programmed funds for maintenance and compliance sampling to continue post-closure efforts.

This site is included in the FTL LUC action plan dated Aug. 1, 2005. Future use of this site is limited to activities that do not disturb the materials contained in the landfill or the cover materials.

The KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years which began in 2006 when the landfill closed (Kansas Administrative Regulations, Article 29-Solid Waste, 65-3406(a)(18)).

Site ID: FTL-05

Site Name: INACTIVE SANITARY LANDFILL

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

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

Phases	Start	End
RFA.....	198702.....	198806
CS.....	198806.....	199506
RFI/CMS.....	199608.....	200310
DES.....	200311.....	200408
CMI(C).....	200409.....	200506
LTM.....	200507.....	203507

RIP Date: N/A

RC Date: 200506

SITE DESCRIPTION

This landfill of about eight acres received sanitary solid waste. The north edge of the site is about 120 meters south of McPherson Avenue along a barbed wire fence. The kennel for the hunting dogs occupies the area located between the road and the site. The east boundary is a barbed wire fence that is about 200 meters west of West Warehouse Road. The south boundary of the site is Quarry Creek. The west boundary is a barbed wire fence that runs primarily north and south from the Hunt Club riding arena. Access to the site is from McPherson Avenue down the road leading past the ammunition bunker and the riding arena.

This sanitary landfill was used from 1970 to 1977. A new sanitary landfill replaced this landfill (see FTL-09). The site was covered with soil when it was closed. The 1983 USAEHA report indicated the site was covered with shallow gullies that had cut into the top of the refuse. Additional cover was being placed on the site at the time the report was written.

The 1988 USAEHA solid waste management unit (SWMU) report recommended investigation of this site. O'Brien and Gere Engineers, Inc. performed an SI that started in 1990 and was completed in 1993. SVOCs and metals were detected in the groundwater. Cadmium and lead above maximum contaminant levels (MCLs) were detected in one groundwater monitoring well. Annual groundwater and surface water sampling of the monitoring wells at this site was started in 1994. The groundwater and surface water samples were analyzed for VOCs, SVOCs, and target analyte list (TAL) metals. None of the groundwater or surface water results exceeded the MCLs for tested analytes. In October 2000 Burns and McDonnell, Inc. completed an engineering evaluation/cost analysis (EE/CA) for the site.

In 2002 this site became part of the GFPR contract with ARCADIS. In 2003 ARCADIS completed a CMS that recommended repairing the landfill cover to comply with the prescriptive remedy for the landfill covers. The recommended IRA was approved by the USEPA and the KDHE.

Although the work was performed as part of the completion of the corrective measures implementation-construction (CMI(C)), it was referenced as an IRA due to phasing of remedial work performed prior to the completion of the SoB. The IRA cover was installed in the fall of 2004.

The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in June 2005. The site was closed under the USEPA corrective action complete with LUC classification in 2005; however, the KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years.

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, landfill maintenance and LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period starting on July 11, 2005.

Site ID: FTL-05

Site Name: INACTIVE SANITARY LANDFILL

This site is included in the FTL LUC action plan dated Aug. 1, 2005. Future use of this site is limited to activities that do not disturb the materials contained in the landfill or the cover materials.

The KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years which began in 2005 when the landfill closed (Kansas Administrative Regulations, Article 29-Solid Waste, 65-3406(a)(18)).

Site ID: FTL-06
Site Name: INACTIVE LANDFILL

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC)

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

Phases	Start	End
RFA.....	198702.....	198806
CS.....	198806.....	199506
RFI/CMS.....	199608.....	200310
DES.....	200311.....	200408
CMI(C).....	200409.....	200506
LTM.....	200507.....	203907

RIP Date: N/A

RC Date: 200506

SITE DESCRIPTION

This approximately two-acre landfill received incinerator ash. It is located across an intermittent creek north of McPherson Avenue. The east side of the site extends on to Sylvan Trail Road and is heavily wooded. The west side is forested.

Prior to the remediation, the stream ran west to east through a pipe across the site. The 30-inch concrete culvert was constructed in the creek channel with ash and other debris filled in around it. The depth of the fill over the culvert was six to eight feet.

The 1983 USAEHA report states that a large refuse incinerator was active at this site in the 1940s until sometime into the 1950s. The ash from the incinerator was reportedly deposited in the surrounding area. The materials incinerated included household refuse, office wastes, and maintenance shop wastes.

The 1988 USAEHA SWMU report recommended that this site be investigated due to the potential of contamination caused by toxic metals in the fill material.

The SI started in 1990 and was completed in 1993 by O'Brien and Gere Engineers, Inc. One SVOC (benzo(a)pyrene) was detected in soil at a level above the USEPA Region IX PRG. One metal (chromium) was detected in groundwater at a level above surface water criteria and/or MCLs. Two metals (lead and zinc) were detected in surface water at levels above the Federal ambient water quality criteria (FAWQC). Annual sampling of the monitoring wells at this site started in 1994. The groundwater and surface water samples were analyzed for VOCs, SVOCs, and TAL metals. None of the groundwater or surface water results exceeded the MCLs for analytes that were tested, with the exception during the 1994 sampling event of an exceedance of lead and cadmium from monitoring well 6W2 and in the rinsate blank associated with this sample. The surface water samples collected from 1994 through 2000 had no exceedances for VOCs or SVOCs. Lead and zinc were detected at levels that exceeded the FAWQC during this period, although zinc was detected in the rinsate blanks also associated with these samples. E&E completed a study in 2001 that detected lead in the fill material above regulatory standards. Burns and McDonnell, Inc. completed an EE/CA report for the site in 2002.

This site became part of the GFPR contract with ARCADIS in 2002. ARCADIS prepared a CMS that recommended grouting the culvert in place, rerouting the stream through a channel constructed east of the landfill along Sylvan Trail Road, and repairing the landfill cover (including placing contaminated stream sediments under the landfill cover) to comply with the prescriptive remedy for landfills. The recommended IRA was approved by the USEPA and the KDHE. Although the work was performed as part of the CMI(C), it was referenced as an IRA due to phasing of remedial work performed prior to the completion of the SoB. The IRA was completed in April 2005.

The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in June 2005. The site was closed under the USEPA corrective action complete with LUC classification in 2005; however, the KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years.

Site ID: FTL-06
Site Name: INACTIVE LANDFILL

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, landfill maintenance and LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period starting on July 11, 2005.

This site is included in the FTL LUC action plan dated Aug. 1, 2005. Future use of this site is limited to activities that do not disturb the materials contained in the landfill or the cover materials.

The KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years which began in 2005 when the landfill closed (Kansas Administrative Regulations, Article 29-Solid Waste, 65-3406(a)(18)).

Site ID: FTL-07

Site Name: INACTIVE SANITARY LANDFILL

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198702.....	199806
RFI/CMS.....	200110.....	200604
DES.....	200203.....	200608
CMI(C).....	200203.....	200612
LTM.....	200701.....	203601

RIP Date: N/A

RC Date: 200612

SITE DESCRIPTION

This landfill of approximately 3.5 acres is located northeast of FTL-06, the Girl Scout area. The northern boundary of the site and the area to the east and southwest is forest. A gravel road marks the western boundary of the site with forest beyond it.

Currently, the site is covered with waste lime sludge from the fort's lime sludge lagoons. This area was used as a sanitary landfill between 1967 and 1970. The 1988 USAEHA report lists petroleum, oils, and lubricants (POL), wood waste, ash from incinerated material, and other types of solid waste as being disposed of in FTL-07. In 1990 the site was used as a disposal site for lime sludge from FTL-23. The 1989 USAEHA report indicated that this site had a low hazard potential and did not require investigation; however, this assessment was made before the site was covered with lime sludge. Regulatory agencies have requested investigation of the site to characterize the nature and extent of contamination.

In 2002 this site became part of the GFPR contract with ARCADIS. ARCADIS completed the initial site characterization and prepared a draft RFI report in 2003. Site characterization activities included soil boring sampling, surface soil sampling, monitoring well installation, groundwater sampling, lime sludge sampling, waste delineation via geophysical surveys, and cover evaluation. Based on the review of the draft RFI report, additional site characterization was conducted in winter 2004.

In August 2006 the GFPR contract funded all work on this site through the warranty period. ARCADIS prepared CMS and RD documents. In November 2006 the landfill cover installation was completed. The SoB (i.e., DD) was completed in December 2006. The site was closed under the USEPA corrective action complete with LUC classification in 2006; however, the KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years.

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, landfill maintenance and LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period starting on March 30, 2007.

This site is included in the FTL LUC action plan dated Aug. 1, 2005, revised Aug. 24, 2007. Future use of this site is limited to activities that do not disturb the materials contained in the landfill or the cover materials.

The KDHE Statutes and Administrative Regulations required long-term care of the site for 30 years which began in 2006 when the landfill closed (Kansas Administrative Regulations, Article 29-Solid Waste, 65-3406(a)(18).

Site ID: FTL-08

Site Name: INACTIVE SANITARY LANDFILL

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198702.....	199806
CS.....	199807.....	199906
RFI/CMS.....	199907.....	200710
DES.....	200711.....	200712
CMI(C).....	200801.....	200809
LTM.....	200810.....	203801

RIP Date: N/A

RC Date: 200809

SITE DESCRIPTION

The Inactive Sanitary Landfill, comprising approximately 7.5 acres is located in the northwest corner of the flood plain area of the fort. The site is bounded on the north by flood plain forest and then by the Missouri River. The area to the east is farmland that has been leased to a private individual. The area to the south starts with the levee protecting the airfield and a wetland. The west side is bounded by the Union Pacific railroad tracks.

The 1983 USAEHA report indicates that this site was used from the 1950s to 1967 as a wood recycling area, where tree trimmings and other wooden debris were sent. Wood that was not recycled was burned and/or buried on the site.

The 1988 USAEHA report indicates this landfill received construction and demolition wastes, residential wastes, and bulk wastes. Bulk wastes consisted of appliances, mattresses and springs, and wood waste. The 1988 report lists this site as a sanitary landfill. In 1998 several employees reported that this site was used as a burn area to reduce the debris coming from the numerous wooden barracks that FTL demolished in 1975 and 1976.

The July 1997 FTL ECAS inspection recommended that this site be investigated. Headquarters TRADOC provided FY98 funds for investigation. The PA, performed in summer 1998, found sufficient contamination to allow the site to be placed into the Army restoration program. The primary concerns are lead in the soil and benzene in the groundwater above regulatory limits. Several other SVOCs, PCBs, and pesticides also were detected in the soil at low levels.

In 2001 E&E performed an RFI on the site. Due to anomalies found during a previous geophysical investigation that indicated possible contamination, E&E also investigated a 3.5-acre area to the east of the site as part of the RFI at FTL-08. In October 2001 the final report was issued. E&E advanced a total of eight soil borings at the site and installed six observation wells.

Contamination levels, consistent with the PA, were found. Numerous VOCs, SVOCs, PCBs, and pesticides were detected in surface and subsurface soil within the landfill; only benzo(a)pyrene exceeded human health screening criteria. Arsenic, iron, and lead were detected in soil at levels exceeding human health screening criteria. Two VOCs were detected in the groundwater, but neither exceeded human health screening criteria. SVOCs, PCBs, and pesticides were not detected in the groundwater, but arsenic, iron, and manganese exceeding human health screening criteria were detected. PCBs were not detected by the testing. ARCADIS started groundwater testing in May 2005 to support finalization of the RFI/CMS.

This site is part of the FY06 option to the ARCADIS contract. The option has been executed and ARCADIS personnel have completed an evaluation of the site; the results of the RFI were used to complete a risk assessment. The risk assessment results were incorporated into a CMS for the site that will be used for selecting a remedy. The CMS completed in June 2007 included the selection of landfill cover as the remedy. ARCADIS proceeded with the design and implementation; this was completed in December 2007. Remediation work was substantially completed in May 2008. The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in March 2008.

In October 2008 a final construction completion and closure report was submitted. The site was closed under the USEPA

Site ID: FTL-08

Site Name: INACTIVE SANITARY LANDFILL

corrective action complete with LUC classification in 2008; however, the KDHE Statutes and Administrative Regulations require long-term care of the site for 30 years.

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, landfill maintenance and LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period starting on Oct. 14, 2008.

This site is included in the FTL LUC action plan dated Aug. 1, 2005 and revised Nov. 24, 2008. Future use of this site is limited to activities that do not disturb the materials contained in the landfill or the cover materials. The KDHE statutes and administrative regulations required long-term care of the site for 30 years which began in 2008 when the landfill closed (Kansas Administrative Regulations, Article 29-Solid Waste, 65-3406(a)(18)).

Site ID: FTL-10

Site Name: OLD FIRE TRAINING AREA/BURN PIT

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198702.....	198806
CS.....	198807.....	199506
RFI/CMS.....	199608.....	200601
DES.....	200203.....	200601
IRA.....	200510.....	200609
CMI(C).....	200203.....	200609
CMI(O).....	200610.....	202110

RIP Date: 200610

RC Date: 202110

SITE DESCRIPTION

Site FTL-10 is located on the Missouri River floodplain at the north end of the levee area, towards the northeast corner of the area. The surface area is approximately 0.80 acre (60 by 60 meters) and is primarily an open field with a few trees. A levee road borders the north side of the site. The east, south, and west sides are bounded by leased agricultural areas.

The site was used for firefighting training. These activities probably started in the 1950s and continued until 1980. The flammable materials used for firefighting training are reported to have been POL wastes, solvents, paint thinners, paint sludge, and other flammable materials. These materials were placed directly on the ground and ignited.

In 1981 FTL requested that the USAEHA analyze four samples of soil from the area for PCBs. The request stated that the area was contaminated with organic solvents, paint sludges, and thinners that had been placed in the area and ignited semiannually for use in firefighting training.

In June 1981 approximately 40 drums and 10 five-gallon cans of various ignitable solvents were removed from the site and taken to a shed located at FTL-09. The 1983 USAEHA inspection found 30 drums at the site. These drums were believed to contain POL and/or other solvents. The USAEHA found oily residue materials adjacent to the drum storage area. The drums were properly disposed of in accordance with regulatory requirements. The assessment did not find records identifying the type or quantities of wastes that had been disposed at this site.

After their site visit in the early-1980s, shortly after the site ceased to be used as a fire training area, the USEPA directed FTL to perform a time-critical removal action. Discussions indicated that FTL personnel performed surface remediation of contaminated soil in the early-1980s and that the material was buried in the FTL sanitary landfill, FTL-09.

An SI began in October 1988 when Hunter Environmental Services, Inc. started an examination of the site. Contractual problems caused the work to stop and it was never restarted. The 1989 USAEHA report recommended that this study continue and appropriate corrective measures be determined.

In 1997 Burns and McDonnell, Inc. conducted an SI that included installation of four additional monitoring wells and subsurface soil and groundwater sampling. Traces of free-phase hydrocarbons at the soil/groundwater interface and stained soil were observed at several locations during the SI. VOCs were detected throughout much of FTL-10; however, there was only one location where VOC concentrations in the soil exceeded the screening criteria. SVOCs were also detected in the soil in only one location, but none of the concentrations reported exceeded screening criteria. The only metal in the soil that exceeded screening criteria was arsenic; however, the concentrations are believed to be naturally occurring. Ten VOCs were detected at levels that exceeded criteria in various samples at FTL-10. SVOCs exceeded screening criteria in the groundwater at two locations. Monitoring well 10W5 also contained extremely elevated metals in the groundwater.

Investigation of the site continued in fall 1998 when the USACE site characterization and penetrometer system truck was brought

Site ID: FTL-10

Site Name: OLD FIRE TRAINING AREA/BURN PIT

to the site. Groundwater contaminated with VOCs was found at depths ranging from 40 to 65 feet below ground surface (bgs). The fort obtains drinking water from wells screened at 120 feet bgs, located approximately 3,500 feet to the south of FTL-10.

In November 2001 E&E completed an RFI at the site. Twelve VOCs in monitoring well 10W5 exceeded the residential risk-based standards of Kansas (RSK) established by KDHE and/or USEPA Region IX PRGs. Wells were drilled to help model the groundwater flow in the area, in addition to a line of sentinel wells between the site and FTL drinking water wells. The US Geological Survey has produced a groundwater flow model for this area of the installation. The site has been monitored annually under the installation-wide groundwater monitoring program.

In 2002 this site became part of the GFPR contract with ARCADIS. Additional monitoring and injection wells were installed in June 2003. An enhanced bioremediation pilot test began in August 2003 and was successfully completed with a draft CMS submitted in December 2004. In March 2005 additional source delineation was conducted and a final CMS was submitted in November 2005. The corrective measures implementation (CMI) work plan was finalized in June 2006. The initial excavation was cut 20 feet by 20 feet square and extended to a depth of approximately 14 feet bgs. Upon further evaluation and coordination with FTL personnel, the USACE, the USEPA, and the KDHE, the extent of the excavation was ultimately increased by five feet in all directions. In September 2006 the source soil removal was completed. In November 2006 a new well, MW-20, was installed adjacent to the former location of MW-3. The SoB was completed in December 2006.

The GFPR contract funded all work on this site through RIP.

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, landfill maintenance and LUCs. Monitored natural attenuation (MNA) has been implemented. Access to the site will be restricted until the site is closed. No alterations to the site will be planned until clean closure is obtained. As part of the GFPR contract option award, ARCADIS began a five-year warranty period on Dec. 14, 2006. Additional groundwater monitoring is programmed beyond the five-year warranty period.

This site is included in the FTL LUC action plan dated Aug. 1, 2005 and revised Aug. 24, 2007. Future use of this site is limited solely to commercial and/or industrial purposes and not for residential purposes. There is a groundwater restriction; no access or use of the groundwater underlying the site is allowed. No activities are allowed that would disturb remaining contaminated materials until it has been demonstrated that natural attenuation has removed the threat to human health.

Site Name: USED SOLVENT TANK UST NR BLDG 487-1

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Other (Indoor Air), Soil

Phases	Start	End
RFA.....	198702.....	198806
CS.....	198807.....	199410
RFI/CMS.....	199411.....	200510
DES.....	200511.....	200601
IRA.....	200303.....	200503
CMI(C).....	200602.....	200603
CMI(O).....	200203.....	202110

RIP Date: 200603

RC Date: 202110

SITE DESCRIPTION

This site is located at a former dry cleaning shop that was inside the old USDB located on McPherson Avenue along the west side of the prison about 100 meters north of the south wall. The source for the contamination at this site was underground tanks containing tetrachloroethylene (PCE) and other solvents. The tanks were located in the grass-covered area between the dry cleaning shop, Building 487, and the maintenance shop, Building 468.

The site is normally referred to as FTL-15 for convenience, since each of the six tanks at this location was assigned a tracking number. The tank location was on the east side of the dry cleaning shop, in a grass-covered area about 50 feet wide and 250 feet long. There is an eight-foot wide and eight-foot deep below ground steam tunnel, running north to south along the entire distance of the site, which makes work at the site difficult.

The FTL numbers and KDHE tank registration numbers for each tank were:

- FTL-15 = 23462U036
- FTL-16 = 23462U037
- FTL-17 = 23462U038
- FTL-18 = 23462U039
- FTL-50 = 23462U043
- FTL-51 = 23462U044.

Prior to 1988 the KDHE issued an order directing that four tanks at the site be removed (FTL-15, FTL-16, FTL-17, and FTL-18). Records show that a removal contract for the four tanks was issued in 1988 and documentation of the removal was filed with the KDHE. No other information about this contract has been located. During the removal action, two more tanks (FTL-50 and FTL-51) were found and were removed in September 1993 under a second contract.

Based on the results of the sampling conducted at the time of the removal of the first four tanks, the 1989 USAEHA report documented that additional testing was required. The test results were forwarded to regulatory agencies for their review and determination of the necessary corrective actions. After the last two tanks were removed, KDHE issued an administrative order, based on RCRA UST regulations, directing the fort to test and determine the extent of the solvent contamination. In April 1996 Burns and McDonnell, Inc. performed the first round of testing. Significant contamination was found in three borings and in each of the three wells that were installed. The sampling indicated contamination had reached the water table and was migrating along it. Subsequent testing, in 1997 and 1998 by Burns and McDonnell, Inc., provided a better characterization of the site. Groundwater contamination from the site is moving primarily west and north.

The 1997 final site assessment and 1999 Phase II site investigation, performed by Burns and Mc Donnell, Inc., included analytical data from ITS, which the USEPA later determined to be unreliable, due to fraudulent manipulation of organic data on projects not related to FTL.

Site ID: FTL-15

Site Name: USED SOLVENT TANK UST NR BLDG 487-1

In 2002 this site became part of the GFPR contract with ARCADIS. Additional monitoring and injection wells were installed in June 2003. An enhanced bioremediation pilot test began in August 2003 and was successfully completed with a final CMS submitted in July 2005.

The GFPR contract funded all work on this site through RIP. The results of the investigations, pilot study, and risk assessment were used in development of the final corrective action plan (CAP) for remedy selection. ARCADIS is proceeding with the design and implementation of natural attenuation. Additional GFPR contract options are available to address implementation-operation [IMP(O)]. ARCADIS developed a plan for a venting system at the former dry cleaning building. The SoB (i.e., DD) was finalized in December 2006.

CLEANUP/EXIT STRATEGY

Building ventilation has been implemented. MNA has been implemented. The use of this site will be restricted until the completion of the natural attenuation. Ventilation of Building 487 is required until it is shown that there is no unacceptable risk to occupants. As part of the GFPR contract option award, ARCADIS began a five-year warranty period on Dec. 14, 2006.

This site is included in the FTL LUC action plan dated Aug. 1, 2005 and revised Aug. 24, 2007. Future use of this site is limited to commercial and/or industrial purposes and not for residential purposes. There is a groundwater restriction: access or use of the groundwater underlying the site is not allowed. These restrictions will be left in place until the MNA has reduced groundwater contamination to levels below Safe Drinking Water Act standards. The ventilation system in Building 487 must be kept operational until testing determines the airborne risk has decreased below screening levels, which is estimated for completion in approximately five years.

Site ID: FTL-22
Site Name: SEPTIC TANK NR BLDG 425

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198702.....	198806
DES.....	199001.....	199006
CMI(C).....	199103.....	200007
LTM.....	201102.....	201309

RIP Date: N/A

RC Date: 200007

SITE DESCRIPTION

The Hunt Lodge is located south at 800 Wainwright Road and west of the Fort Leavenworth NIKE Launch Site. The road to the facility runs west from the south side of the NIKE Site. The tank was located on the west side of Hunt Lodge, Building 425. The tank and leachate field were located between the road and the hill to the west, approximately where the existing holding tank is situated. The area directly associated with the systems is less than two acres. The waste going into the tank was sewage from the users of the facility.

The original septic tank was installed in 1919 when the building was constructed to house prisoners. The original discharge from the tank was to the ditch that runs west from the building. The building was subsequently converted to a recreational facility. The direct discharge to the ditch was replaced sometime in the past by a leachate field. The septic tank and associated leachate field were removed in 1989 after numerous complaints about the waterlogged soil over the leachate field. A Jet Aeration Package Plant discharging to the waterway to the west was installed to replace the septic tank system. The discharge from the aeration plant flowed off-post. The aeration plant could not meet discharge parameters required by KDHE due to batch loading caused by the irregular use of the facility. To correct the violation, the aeration system was replaced in 1991 with a holding tank that is periodically pumped by American Water Company crews. The sewage is then discharged into the Fort Leavenworth sewage collection system which is connected to the city of Leavenworth Wastewater Treatment Plant.

The site was identified in the 1984 RCRA Permit Application as an area of concern. The USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 Permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive an NFA.

Site ID: FTL-34
Site Name: WASH RACK BUILDING 431

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198702.....	198806
DES.....	199201.....	199206
CMI(C).....	199210.....	200007
LTM.....	201102.....	201309

RIP Date: N/A

RC Date: 200007

SITE DESCRIPTION

This indoor washrack located at 316 McPherson Avenue was in a facility known as the USDB Car Wash. The building was located at the intersection of McPherson Avenue and Bluntville Loop Road. The building is approximately 20 feet wide and 60 feet long. The washrack is indoors and discharges into the sanitary sewer.

Building 431 was originally constructed as a Post Exchange Service Station in 1927. The building served as a service station until 1955, when Building 350 (FTL-67) replaced it. Building 431 then became a car wash staffed by USDB prisoners. The discharge from this building reportedly went into the storm sewer, but it had been changed to the sanitary sewer by 1988. An oil/water separator was installed in 1993. The building used detergents to aid the washing process. There is no record of hazardous materials usage at the site. The car washing operation ceased in 2001. The building is currently being used as a storage facility for the Ft. Leavenworth Fire Department.

The washrack stopped being used in 2001. The site was identified in the 1984 RCRA Permit Application as an area of concern. USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 Permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive an NFA.

Site ID: FTL-35
Site Name: WASH RACK BUILDING 571

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198302.....	198306
CMI(C).....	198401.....	200007
LTM.....	201102.....	201309

RIP Date: N/A

RC Date: 200007

SITE DESCRIPTION

This facility was located east of the Post Exchange Shoppette in the area now occupied by a Burger King. The washrack was a hand wash covered facility with no grit chamber or oil/water separator and discharged to the storm sewer system. The size of the building is unknown, but was probably 40 to 60 feet wide and 20 feet long.

The building used detergents to aid the washing process. There is no record of hazardous materials usage at the site. The exact construction date of the facility is unknown, but probably was not before 1975 when the Post Exchange Service Station located to the west was constructed. This facility was demolished in 1982 due to high maintenance costs.

The 1988 USATHAMA SWMU Study lists the Site and expressed a concern that it discharged directly into Corral Creek. The 1989 Draft RCRA USEPA Facilities Assessment indicated that this site had a low hazard potential and did not require investigation.

The washrack was demolished in 1982. A Burger King was built on the site in 1987. The site was identified in the 1984 RCRA Permit Application as an area of concern. The USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 Permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive an NFA.

Site ID: FTL-41

Site Name: INCINERATOR BUILDING 344

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Dioxins/Dibenzofurans, Metals

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	197802.....	197806
CMI(C).....	197901.....	200007
LTM.....	201102.....	201309
RIP Date:	N/A	
RC Date:	200007	

SITE DESCRIPTION

The incinerator was located at 544 Pope Avenue in Building 344, Munson Army Hospital Boiler Plant. It was located on the east side of the building towards the north end in the area where the boilers are located. The incinerator occupied an area about 10X10 feet. It was manufactured by Alamo Destructor and was a Model IGS-IP, used for incinerating pathological/infectious wastes.

The incinerator was installed when Munson Army Hospital was constructed in 1961. It began operation shortly thereafter. This site is discussed in a 1988 study, which indicated the incinerator stopped processing controlled pharmaceuticals that were in excess of the needs of the facility in 1979.

There are no records to document the types and quantities of materials sent to the incinerator for disposal. It is likely that some hazardous materials were incinerated in the unit. The ash resulting from the operation of the incinerator probably contained metals in excess of the PRGs. All residual ash from the unit was sent to the sanitary landfill open at that time.

The 1989 Draft RCRA USEPA Facilities Assessment indicated this site had a low hazard potential and did not require investigation. The incinerator was removed in 1993 during a renovation of the hospital.

The site was identified in the 1984 RCRA Permit Application as an area of concern. USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 Permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive a no further action.

Site ID: FTL-43
Site Name: INCINERATOR BUILDING 111

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	198702.....	200007
LTM.....	201102.....	201309

RIP Date: N/A

RC Date: 200007

SITE DESCRIPTION

The incinerator located in Building 111, Bell Hall, in Room 310 was manufactured by Joseph Goder, Inc., and was a Model 150-1-N. It occupied an area about 10X10 feet. It was installed in 1959 when the building was constructed, and operated until the early-1980s when it was removed from service. The 1988 study documented this unit still existed. The 1989 draft RCRA USEPA Facilities Assessment indicated this Site had a low hazard potential and did not require investigation.

A search of the building in 2005 was not able to locate this incinerator. It was most likely removed in the early-1990s during a renovation of the space. The building was demolished in 2009. There are no records to document the types of materials or the quantity that were incinerated in this unit. Experience from other incinerators would indicate that the ash probably contained metals in excess of the PRGs.

The incinerator was removed in the 1990s. The building was demolished in 2009. The RCRA permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive an NFA.

Site ID: FTL-44
Site Name: INCINERATOR BUILDING 632

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Dioxins/Dibenzofurans

Media of Concern: Soil

Phases	Start	End
RFA.....	197702.....	197806
CMI(C).....	198001.....	200007
LTM.....	201102.....	201309

RIP Date: N/A

RC Date: 200007

SITE DESCRIPTION

This incinerator was located in the old commissary that was located on the west side of Grant Avenue near what is now the front door of the IHG lodging facility. It occupied an area about 10X10 feet. The Commissary was about the size of a large barracks. The unit was used to reduce about 700 tons per year of corrugated paper boxes. The ash was sent to the sanitary landfills.

The commissary building was built around 1942 as part of the World War II expansion. The Incinerator was probably installed at that time. It continued operating until the new commissary was opened in 1984. The incinerator, along with the building, was demolished in August 1984. The site was listed in a 1988 study. The 1989 draft RCRA USEPA Facilities Assessment indicated this site had a low hazard potential and did not require investigation. Records indicate that cardboard was the main material incinerated in the unit. Cardboard contains substantially less printing than printed pages. The metals content of the ash was probably substantially less than found in the other incinerators.

The building, including the incinerator was demolished or removed in 1984. The site was identified in the 1984 RCRA Permit Application as an area of concern. The USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 Permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive a no further action.

Site Name: SEWAGE TREATMENT SYSTEM BUILDING 138

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Metals

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198702.....	198806
CS.....	198806.....	200007
LTM.....	201102.....	201309

RIP Date: N/A

RC Date: 200007

SITE DESCRIPTION

Building 138 was located on Chief Joseph Loop Road on the northeast side of the levee that surrounds Sherman Army Airfield. The plant, which was approximately 20 feet wide, 8 feet across and 4 feet deep, was located at the southeast corner of the site. The aerobic plant was designed to treat 5,000 gallons of sewage per day. Wastewater was discharged onto the floodplain to the east.

The buildings were constructed in 1960 to house high powered radio equipment. The original sewage disposal system was a septic tank. The waste going into the tank was sewage from the occupants of the building. The building was used for office space. The mission of the buildings was expanded in 1980 when a second floor was added and offices constructed. This required additional sewage treatment capacity. The site was found to be unsatisfactory for additional septic tank capability so a package aeration system was installed. The system had an NPDES discharge permit.

The erratic operating schedule of the facility made compliance with the terms of the NPDES permit impossible. The problems were resolved in 1992 by converting the system into a holding tank and stopping all discharges. The wastes were pumped into a tank truck and disposed to the sanitary sewer system for treatment by the city of Leavenworth. This continued until 1998 when all operations at the building ceased. The site was reported in a 1988 study. The 1989 draft RCRA USEPA Facilities Assessment indicated this site had a low hazard potential and did not require investigation.

The building and sewage treatment facility were demolished in February 1999.

The site was identified in the 1984 RCRA Permit Application as an area of concern. The USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 Permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive a no further action.

Site Name: USED OIL CONTAMINATED FUEL STORAGE AREA

STATUS

Regulatory Driver: RCRA

RRSE:

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
RFA.....	198702.....	200007
LTM.....	201102.....	201309

RIP Date: N/A

RC Date: 200007

SITE DESCRIPTION

Building 132, an aircraft hangar, is located at Sherman Army Airfield at the intersection of Chief Joseph Loop Road and Sheridan Drive. The storage area measured about 10 feet wide and 15 feet long. The facility stored used oil and off specification aviation fuel. The total storage capacity of the site was probably two drums.

The Flying Club has been in operation since the 1950s. They used the north hangar as their base of operations until the early-1980s when handball courts were built in the hangar, and locker rooms were built in the north wing. Waste/used materials were probably stored in the hangar until that time. The storage location found by a 1988 study was probably opened in the 1980s and closed in the mid 1990s. The 1989 draft RCRA USEPA Facilities Assessment indicated this site had a low hazard potential and did not require investigation. The Flying Club stored used oil and off specification fuel in drums located in the open area between the hangar and the north concrete pad used to park aircraft. The used oil was stored in 55-gallon drums and was picked up by a used oil contractor.

The site was identified in the 1984 RCRA Permit Application as an area of concern. The USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 Permit and required additional site evaluation. The site evaluation including collection of analytical data occurred during this data call and tracked under long term monitoring.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. Upon collection of additional analytical data and completion of the RCRA RFI, the results are anticipated to be below the Kansas Risk Based Standards and the regional screening levels and this site is anticipated to receive a no further action.

Site ID: FTL-57
Site Name: SKEET RANGE (INACTIVE)

STATUS

Regulatory Driver: RCRA

RRSE: MEDIUM

Contaminants of Concern: Metals, Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199007.....	199007
CS.....	199307.....	199608
RFI/CMS.....	199609.....	200707
DES.....	200203.....	200709
CMI(C).....	200710.....	200810
LTM.....	200810.....	201309

RIP Date: N/A

RC Date: 200810

SITE DESCRIPTION

This site of approximately 800 by 560 feet is located inside the levee north of the aircraft parking ramp. The site is bounded by Chief Joseph Loop Road on the west, an open field and the levee on the north, and a runway on the east. The site is now a grass field.

The site was not reported in the 1988 USAEHA study, but it was identified in 1992 as eligible for the IRP and was added to the action plan. The range opened in 1942 and closed in August 1988, when the skeet club moved to their new facility. OMA funds were programmed and received for the 1993 site investigation work. Law Engineering and Environmental Services submitted the final contamination evaluation report in 1996. The investigation found lead and PAHs at concentrations significantly exceeding the Kansas Action Levels (KALs) and risk-based screening levels in the soils. IRP funds were used for the EE/CA which was performed by Burns & McDonnell, Inc. The final EE/CA report was issued in March 2002.

Both the KDHE and the USEPA conditionally approved the Burns and McDonnell, Inc. EE/CA report in their comment letter dated April 23, 2002. The EE/CA identified six alternative remedial technologies: soil cover, compacted cap, excavation and off-site disposal, waste minimization and off-site disposal, waste minimization and on-site disposal, and no action. The chosen remedy in the EE/CA is waste minimization and off-site disposal.

This site is part of the FY06 option to the ARCADIS Contract. This option has been executed and ARCADIS personnel completed an evaluation of the site in July 2007. Through the CMS process, the selected remedy chosen was excavation, stabilization, and off-site disposal of surface soils above industrial PRGs for lead that was treated in place after the application of a stabilizing agent was mixed into the soil. ARCADIS produced a CMI plan in August 2007 and completed soil removal in October 2008. The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in March 2008.

A final construction completion and closure report was submitted in November 2008.

CLEANUP/EXIT STRATEGY

The LTM includes LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period starting on Dec. 3, 2008.

This site is included in the FTL LUC action plan dated Aug. 1, 2005, revised Nov. 24, 2008. Future use of this site is limited to use solely for commercial and/or industrial purposes and not for residential purposes. No activities are allowed that would disturb remaining contaminated soil until it has been demonstrated that contaminant concentrations no longer pose unacceptable human health risks to potential future on-site residents.

Site Name: UNDERGROUND TANKS OLD PX SERVICE STATION

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	197001.....	197012
CS.....	201102.....	201201
RFI/CMS.....	201201.....	201210
IRA.....	198506.....	200007
CMI(C).....	201303.....	201403
LTM.....	201404.....	201712

RIP Date: N/A

RC Date: 201403

SITE DESCRIPTION

This location was associated with the storage tanks at the old PX Service Station, Building 350 that was located on the south side of Sedgwick Avenue just east of Building 314. The site was about 15 feet wide and 30 feet long. The area is now a parking lot.

The service station was built in 1955, ceased operations in 1975, and was demolished in March 1986. There were two steel tanks at the site. The tanks, which were 8,000 and 12,000 gallons capacity, contained gasoline. They were removed, probably in 1985, and went to DRMO for disposal. The purpose of this record was to help provide a comprehensive record of contaminated or potentially contaminated sites for future construction purposes.

The site was identified in the 1984 RCRA Permit Application as an area of concern. The USEPA elected to not upgrade the site to a SWMU at that time. The permit modification signed on May 30, 2008, declared this site a SWMU and placed it on the 2000 permit. The Kansas City USACE completed confirmatory sampling in 2011 which identified contaminants in soil and groundwater above regional screening levels.

CLEANUP/EXIT STRATEGY

The RCRA permit modification signed on May 30, 2008 declared this site a SWMU. An expanded investigation to determine the horizontal and vertical extent of contamination followed by remediation is planned to return this site to response complete.

Site ID: FTL-69
Site Name: DIESEL FUEL SPILL AREA

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Polycyclic Aromatic Hydrocarbons (PAH)

Media of Concern: Groundwater, Soil

Phases	Start	End
ISC.....	199811.....	199812
INV.....	199901.....	200110
CAP.....	200111.....	200806
LTM.....	200807.....	201209

RIP Date: N/A

RC Date: 200806

SITE DESCRIPTION

Site FTL-69 is to the south and under former Bldg 139. Building 139 was located on elevated ground on the northeast corner of the levee. Chief Joseph's Loop Road is used to access the site. The entire site is approximately four acres. The AOC was approximately 60 meters square.

Building 139 was constructed in the late-1950s to house diesel generators that supplied backup power to Building 138, a radio transmitter facility. A 30,000-gallon underground diesel storage tank was installed when the facility was built. The facility was used until the early-1970s, when the tank was abandoned in place. The generators were removed and the building converted to a computer development center in 1982. The tank was removed in July 1991 as part of a UST removal contract. Clean closure of the tank site was obtained. The facility served as an Army reserve center until 1998.

The building was demolished in February 1999. During the demolition, the contractor found soil that demonstrated a diesel fuel odor. Subsequent testing confirmed that selected soils had a detectable TPH content.

In October 2001, E&E performed and reported a final facilities investigation at the site as part of the FTL-10 investigation. They found PAHs in deep soils beneath the area of the former Building 139 floor slab. No groundwater samples have been collected in the immediate area of either the floor slab or the former UST location, to the south of it.

This site is part of the FY06 options to the ARCADIS contract. This option was exercised in August 2005. ARCADIS conducted supplemental sampling of the soil and groundwater in August 2006 and issued a final RFI addendum report of the site in October 2007. Through the corrective measures evaluation performed in February 2008, the selected remedies chosen were LUCs to limit future use of the site to nonresidential, restriction of activities which would disturb the soil, and prevention of domestic use of the groundwater in the area. The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in March 2008.

CLEANUP/EXIT STRATEGY

The LTM includes LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period on Oct. 23, 2007.

This site is included in the FTL LUC action plan dated Aug. 1, 2005 and revised Nov. 24, 2008. Future use of this site is limited to commercial and/or industrial purposes and not for residential purposes. There is a groundwater restriction: access or use of the groundwater underlying the site is not allowed. Digging or excavation is not allowed without approval. The LUCs will remain in effect until it has been demonstrated that contaminant concentrations no longer pose unacceptable human health risks to potential on-site residents.

Site ID: FTL-70

Site Name: FUEL OIL LEAK SITE AT USDB

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199910.....	200002
RFI/CMS.....	200110.....	200806
LTM.....	200807.....	201209
RIP Date:	N/A	
RC Date:	200806	

SITE DESCRIPTION

This site of approximately 1.4 acres is located north of the USDB boiler plant. The boiler plant is located on the northwest corner of the facility. The north end of this site, which is north of the confinement wall, was the outdoor recreation area for the prisoners. The area immediately around the boiler plant building is a paved driveway.

The area of this site north of the wall was used for fuel oil storage until the late-1980s. Numerous tanks have been sited at this location, including a wooden staved oil tank (removed in the 1930s), six 20,000-gallon ASTs (removed by 1970), and a 168,000-gallon aboveground oil tank (its operation was stopped in the late-1980s and it was removed in 1999). All tanks stored No. 6 fuel oil that was the backup fuel for the boiler plant. During removal of the 168,000-gallon tank, contamination was found under the slab supporting the tank.

The piping between the tanks and boiler plant was replaced in 1979. Due to the number of tanks on the site and the problems with the broken piping, there is the potential for fuel oil contamination at this site.

There were also three 20,000-gallon USTs at this site. They were installed in 1979 to add additional storage capacity. These tanks also stored No. 6 fuel oil that was the backup fuel for the boiler plant. The USTs ceased operations in the late-1980s and were removed about 1995. These three tanks were closed clean.

ARCADIS submitted a final work plan in August 2004 and conducted investigations in January 2005 for site characterization to support the development of an RFI for the site, to determine the extent of fuel contamination.

This site was part of the FY06 option to the ARCADIS contract. The site was funded in March 2004 due to the early availability of funds. An RFI was performed and completed by ARCADIS in January 2005.

ARCADIS prepared a draft RFI report for this site dated Sept. 19, 2005. Based upon the results, the determination was made that ARCADIS would install two additional temporary groundwater monitoring wells, located near existing soil boring No. 19 as referenced in the draft RFI report. Results from this sampling effort were captured in the final RFI report issued March 28, 2007. Through the corrective measures evaluation performed in February 2008, the selected remedies chosen were LUCs to prevent residential use of the site, prevention of groundwater use, and restriction of activities on the site which could disturb the soil. The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in March 2008.

CLEANUP/EXIT STRATEGY

The LTM includes LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period starting on April 20, 2007.

This site is included in the FTL LUC action plan dated Aug. 1, 2005 and revised Nov. 24, 2008. Future use of this site is limited to commercial and/or industrial purposes and not for residential purposes. There is a groundwater restriction: access or use of the groundwater underlying the site is not allowed. No digging or excavation allowed without approval. The LUCs will remain in effect

Site ID: FTL-70
Site Name: FUEL OIL LEAK SITE AT USDB

until it has been demonstrated that contaminant concentrations no longer pose unacceptable human health risks to potential on-site residents.

Site Name: MCCLELLAN AVENUE MAINTENANCE SITE

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

Phases	Start	End
RFA.....	199801.....	199912
CS.....	200110.....	200112
RFI/CMS.....	200201.....	200806
LTM.....	200807.....	202110

RIP Date: N/A

RC Date: 200806

SITE DESCRIPTION

This site is comprised of the hill and valleys on either side of McClellan Avenue on the north end of the installation. The site centers around Building 89 which is a former typewriter repair shop.

The site was placed into the program after carbon tetrachloride was found at the west edge of FTL-15, which is just east of the site. Since the carbon tetrachloride had not been found in any other samples from FTL-15, this material was assumed to have come from a different source. The source is expected to be found somewhere along McClellan Avenue, which is hydraulically upgradient from the location where the carbon tetrachloride was detected. Past activities in this area include a maintenance shop, a vehicle maintenance facility, and a veterinary clinic. Building 85, which is currently the main administrative building for the Directorate of Installation Support, is reported to have been a vehicle maintenance shop at one time. Building 86, which was a riding arena, is currently a vehicle maintenance facility. Building 88 has been a veterinarian clinic since it was built in the early 1900s. Fire Station No. 1 is located at the south end of this area. Carbon tetrachloride was used in early chemical fire extinguishers.

In 2004 ARCADIS prepared and submitted a work plan and conducted a Phase I site investigation which started in October 2004 and ran through December 2004 to determine the potential source(s) and extent of carbon tetrachloride in the vicinity of McClellan Avenue. A Phase II site investigation work plan was submitted in November 2005.

This site is part of the FY04 option to the ARCADIS contract, which was funded in January 2004. A Phase I remedial field investigation was performed and completed by ARCADIS in December 2004. ARCADIS has prepared an additional work plan to address groundwater impacts in the vicinity of well 15MW15. The initial investigation showed that groundwater impacts appeared to be limited to this area. Two additional temporary well points were installed and sampled. The results were captured in the final RFI report issued June 1, 2007. Through the corrective measures evaluation performed in February 2008, the selected remedy chosen was LUCs to limit current and future uses of the site to nonresidential, prohibit the use of groundwater at the site for domestic purposes, and require vapor intrusion mitigation measures in any new construction over the groundwater plume. The GFPR contract funded all work on this site through the warranty period. The SoB (i.e., DD) was finalized in March 2008.

CLEANUP/EXIT STRATEGY

The LTM includes periodic groundwater monitoring, five-year reviews, and LUCs. As part of the GFPR contract option award, ARCADIS began a five-year warranty period on April 26, 2007.

This site is included in the FTL LUC action plan dated Aug. 1, 2005 and revised Nov. 24, 2008. Future use of this site is limited to commercial and/or industrial purposes and not for residential purposes. There is a groundwater restriction: access or use of the groundwater underlying the site is not allowed. Vapor intrusion mitigation measures are required in any new construction over the groundwater plume. The LUCs will remain in effect until it has been demonstrated that contaminant concentrations no longer pose unacceptable human health risks to potential on-site residents.

Site ID: FTL-72
Site Name: Quarry Creek

STATUS

Regulatory Driver: RCRA

RRSE: HIGH

Contaminants of Concern: Polychlorinated Biphenyls (PCB)

Media of Concern: Soil

Phases	Start	End
RFA.....	200702.....	200703
RFI/CMS.....	200808.....	201210
DES.....	201110.....	201210
IRA.....	201003.....	201008
CMI(C).....	201110.....	201405
LTM.....	201503.....	203512

RIP Date: N/A

RC Date: 201405

SITE DESCRIPTION

The FTL-72 Quarry Creek restoration site is located to the west of Building 260. Building 260 was constructed to shelter and maintain the FTL government railroad locomotives. The area to the north is undeveloped woods. McPherson Avenue is the southern boundary. Quarry Creek borders on the west, and the old FTL Railroad right-of-way is on the east. This archeological site was one of the first landfills on FTL.

In March 2007 over a dozen steel drums were found in a ravine in the woods at this site. All of the drums were empty. The soil beneath the drums was a dark color. The dark soil was sampled and found to be contaminated with PCBs. A toxicity characteristic leaching procedure (TCLP) result found lead at 87 mg per liter (mg/L), which exceeds the five mg/L hazardous waste cutoff level.

This site was part of the GFPR contract modification effective Sept. 30, 2008. ARCADIS has prepared a draft RFI work plan for this site; it was submitted on Jan. 6, 2009. Under this modification, action completion is to produce a CMI work plan. A final RFI work plan was completed on April 3, 2009 and a final IRA was submitted in May 2010.

During FY2012, procurement of the contract to perform work through the design and remediation was through the Kansas City Corps of Engineers.

CLEANUP/EXIT STRATEGY

Remediation efforts will start with an investigation to determine the extent of the contamination. The contaminated material will be removed and sent to a hazardous waste disposal facility. A final RFI work plan was completed on April 3, 2009.

This site will be included in the FTL LUC action plan dated Aug. 1, 2005, revised Nov. 24, 2008 and under revision for 2011 to include FTL-72. Future use of this site is limited to activities that do not disturb the materials contained in the landfill. The KDHE Statutes and Administrative Regulations required long-term care of the site for 30 years (Kansas Administrative Regulations, Article 29-Solid Waste, 65-3406(a)(18) which will begin after RAs are complete.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTL-01	INACTIVE SANITARY LANDFILL	199701	Bureau of Prisons (DOJ Lead) USP Leavenworth
FTL-04	INACTIVE SANITARY LANDFILL	201106	EPA issued this Site a no further action in 2011.
FTL-09	CLOSED ACTIVE SANITARY LANDFILL	200009	Transferred to Compliance-Cleanup Program
FTL-11	CLOSED FIRE TRAINING AREA	200612	NFA Statement of Basis signed September 19, 2006
FTL-12	USED OIL TANK AST NEAR BUILDING 305	199506	Transferred to Compliance-Cleanup Program. NFA Statement of Basis signed September 19, 2006.
FTL-13	USED OIL TANK UST NEAR BUILDING 689-0	199506	Transferred to Compliance-Cleanup Program. NFA Statement of Basis signed June 20, 2005.
FTL-14	USED OIL TANK NEAR BUILDING 86	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-16	USED SOLVENT TANK UST NR BLDG 487-2	200007	2000 RCRA Permit - Site has been closed out to FTL-15. All future actions will be tracked under FTL-15.
FTL-17	USED SOLVENT TANK UST NR BLDG 487-3	200007	2000 RCRA Permit - Site has been closed out to FTL-15. All future actions will be tracked under FTL-15.
FTL-18	USED SOLVENT TANK UST NR BLDG 487-4	200007	2000 RCRA Permit - Site has been closed out to FTL-15. All future actions will be tracked under FTL-15.
FTL-19	SEWAGE LAGOONS	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-20	SEPTIC TANK NR BLDG 398	200612	NFA Statement of Basis signed September 19, 2006
FTL-21	SEPTIC TANK NR BLDG 428	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-23	MINERAL SETTLING LAGOONS	199506	Transferred to Compliance-Cleanup Program. NFA Statement of Basis signed March 10, 2008.
FTL-24	PESTICIDE AREA NR BLDG 227	200808	NFA Statement of Basis signed March 10, 2008
FTL-25	OLD PESTICIDE BUILDING 234	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-26	OLD PESTICIDE BUILDING 234A	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-27	PAST PESTICIDE BUILDING 237	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-28	CURRENT PESTICIDE BUILDING 93	200007	This Site is listed in AEDB-R as NFA

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-29	PAST PESTICIDE BUILDING 413	199609	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-30	PAST PESTICIDE BUILDING 412	200507	NFA Statement of Basis signed June 20, 2005; included FTL-29.
FTL-31	CURRENT PESTICIDE BUILDING 399	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-32	PESTICIDE BUILDING 84	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-33	WASH RACK BUILDING 262	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-36	WASH RACK BUILDING 132	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-37	WASH RACK BUILDING 86	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-38	WASH RACK BUILDING 305	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-39	WASH RACK BUILDING 496	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-40	WASH RACK BUILDING 237	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-42	INCINERATOR BUILDING 111	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-45	INCINERATOR BUILDING 136	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-46	HAZARDOUS WASTE STG AT BLDING 279	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-47	MEDIA SUPPORT AREA BUILDING 77	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit;

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			however, USEPA directive requiring additional investigation.
FTL-49	HAZARDOUS WASTE STORAGE BUILDING 829	198912	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-50	USED SOLVENT TANK NO 5 BUILDING 487	200007	2000 RCRA Permit - Site has been closed out to FTL-15. All future actions will be tracked under FTL-15.
FTL-51	USED SOLVENT TANK NO 6 BUILDING 487	200007	2000 RCRA Permit - Site has been closed out to FTL-15. All future actions will be tracked under FTL-15.
FTL-52	USED OIL TANK BUILDING 109	199109	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-53	USED OIL TANK BUILDING 471	199310	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-54	USED OIL STORAGE, BUILDING 132	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-55	USED OIL STORAGE, CITY AIRPORT OPERATION	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-58	SKEET RANGE (ACTIVE)	199307	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-59	KINDER RANGE	199704	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-60	USDB GREENHOUSE	200612	NFA Statement of Basis signed September 19, 2006
FTL-61	TANK REMOVAL, BLDG 431	199505	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-62	UNDERGROUND PROPANE TANK, USDB FARM	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-63	DRMO SCRAP YARD	200207	Transferred to Compliance-Cleanup Program
FTL-64	FTL-64: REMOVE UST BLDG 264	200007	This Site is listed in AEDB-R as NFA based on the year 2000 RCRA Permit; however, USEPA directive requiring additional investigation.
FTL-65	POND IN FAMILY HOUSING	200507	NFA Statement of Basis signed June 20, 2005
FTL-68	WEED CONTROL AREA, CITY AIRPORT OPER	199012	Transferred to Compliance-Cleanup

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			Program
PBC at Leaven.	PBC	201101	Directed by AEC to close this site.

IRP Schedule

Date of IRP Inception: 197001

Past Phase Completion Milestones

1971

RFA (FTL-67 - UNDERGROUND TANKS OLD PX SERVICE STATION)

1978

RFA (FTL-41 - INCINERATOR BUILDING 344, FTL-44 - INCINERATOR BUILDING 632)

1983

PA (FTL-59 - KINDER RANGE)

RFA (FTL-35 - WASH RACK BUILDING 571)

1988

SI (FTL-39 - WASH RACK BUILDING 496)

RFA (FTL-04 - INACTIVE SANITARY LANDFILL, FTL-05 - INACTIVE SANITARY LANDFILL, FTL-06 - INACTIVE LANDFILL, FTL-09 - CLOSED ACTIVE SANITARY LANDFILL, FTL-10 - OLD FIRE TRAINING AREA/BURN PIT, FTL-11 - CLOSED FIRE TRAINING AREA, FTL-14 - USED OIL TANK NEAR BUILDING 86, FTL-15 - USED SOLVENT TANK UST NR BLDG 487-1, FTL-20 - SEPTIC TANK NR BLDG 398, FTL-22 - SEPTIC TANK NR BLDG 425, FTL-24 - PESTICIDE AREA NR BLDG 227, FTL-30 - PAST PESTICIDE BUILDING 412, FTL-34 - WASH RACK BUILDING 431, FTL-45 - INCINERATOR BUILDING 136, FTL-48 - SEWAGE TREATMENT SYSTEM BUILDING 138, FTL-49 - HAZARDOUS WASTE STORAGE BUILDING 829, FTL-55 - USED OIL STORAGE, CITY AIRPORT OPERATION, FTL-60 - USDB GREENHOUSE)

PA (FTL-01 - INACTIVE SANITARY LANDFILL, FTL-19 - SEWAGE LAGOONS, FTL-23 - MINERAL SETTLING LAGOONS, FTL-29 - PAST PESTICIDE BUILDING 413, FTL-33 - WASH RACK BUILDING 262, FTL-36 - WASH RACK BUILDING 132, FTL-37 - WASH RACK BUILDING 86, FTL-39 - WASH RACK BUILDING 496)

ISC (FTL-12 - USED OIL TANK AST NEAR BUILDING 305, FTL-13 - USED OIL TANK UST NEAR BUILDING 689-0, FTL-16 - USED SOLVENT TANK UST NR BLDG 487-2, FTL-17 - USED SOLVENT TANK UST NR BLDG 487-3, FTL-18 - USED SOLVENT TANK UST NR BLDG 487-4, FTL-50 - USED SOLVENT TANK NO 5 BUILDING 487, FTL-51 - USED SOLVENT TANK NO 6 BUILDING 487, FTL-52 - USED OIL TANK BUILDING 109, FTL-53 - USED OIL TANK BUILDING 471, FTL-54 - USED OIL STORAGE, BUILDING 132)

INV (FTL-16 - USED SOLVENT TANK UST NR BLDG 487-2, FTL-17 - USED SOLVENT TANK UST NR BLDG 487-3, FTL-18 - USED SOLVENT TANK UST NR BLDG 487-4, FTL-50 - USED SOLVENT TANK NO 5 BUILDING 487, FTL-51 - USED SOLVENT TANK NO 6 BUILDING 487, FTL-53 - USED OIL TANK BUILDING 471)

1989

CAP (FTL-16 - USED SOLVENT TANK UST NR BLDG 487-2, FTL-17 - USED SOLVENT TANK UST NR BLDG 487-3, FTL-18 - USED SOLVENT TANK UST NR BLDG 487-4, FTL-50 - USED SOLVENT TANK NO 5 BUILDING 487, FTL-51 - USED SOLVENT TANK NO 6 BUILDING 487)

RFA (FTL-68 - WEED CONTROL AREA, CITY AIRPORT OPER)

1990

DES (FTL-16 - USED SOLVENT TANK UST NR BLDG 487-2, FTL-17 - USED SOLVENT TANK UST NR BLDG 487-3, FTL-18 - USED SOLVENT TANK UST NR BLDG 487-4, FTL-22 - SEPTIC TANK NR BLDG 425, FTL-50 - USED SOLVENT TANK NO 5 BUILDING 487, FTL-51 - USED SOLVENT TANK NO 6 BUILDING 487, FTL-52 - USED OIL TANK BUILDING 109)

RFA (FTL-57 - SKEET RANGE (INACTIVE))

PA (FTL-62 - UNDERGROUND PROPANE TANK, USDB FARM)

1991

IMP(C) (FTL-52 - USED OIL TANK BUILDING 109)

RD (FTL-36 - WASH RACK BUILDING 132)

CMI(C) (FTL-68 - WEED CONTROL AREA, CITY AIRPORT OPER)

1992

SI (FTL-01 - INACTIVE SANITARY LANDFILL)

PA (FTL-65 - POND IN FAMILY HOUSING)

DES (FTL-34 - WASH RACK BUILDING 431)

RD	(FTL-19 - SEWAGE LAGOONS, FTL-33 - WASH RACK BUILDING 262)
1993	
PA	(FTL-58 - SKEET RANGE (ACTIVE), FTL-63 - DRMO SCRAP YARD)
ISC	(FTL-61 - TANK REMOVAL, BLDG 431, FTL-64 - FTL-64: REMOVE UST BLDG 264)
CS	(FTL-24 - PESTICIDE AREA NR BLDG 227)
RI/FS	(FTL-01 - INACTIVE SANITARY LANDFILL)
DES	(FTL-14 - USED OIL TANK NEAR BUILDING 86)
1994	
SI	(FTL-29 - PAST PESTICIDE BUILDING 413)
DES	(FTL-61 - TANK REMOVAL, BLDG 431)
CS	(FTL-30 - PAST PESTICIDE BUILDING 412, FTL-60 - USDB GREENHOUSE)
IMP(C)	(FTL-53 - USED OIL TANK BUILDING 471)
RD	(FTL-01 - INACTIVE SANITARY LANDFILL)
1995	
CS	(FTL-05 - INACTIVE SANITARY LANDFILL, FTL-06 - INACTIVE LANDFILL, FTL-09 - CLOSED ACTIVE SANITARY LANDFILL, FTL-10 - OLD FIRE TRAINING AREA/BURN PIT, FTL-11 - CLOSED FIRE TRAINING AREA, FTL-15 - USED SOLVENT TANK UST NR BLDG 487-1)
RD	(FTL-29 - PAST PESTICIDE BUILDING 413, FTL-37 - WASH RACK BUILDING 86)
IMP(C)	(FTL-12 - USED OIL TANK AST NEAR BUILDING 305, FTL-13 - USED OIL TANK UST NEAR BUILDING 689-0, FTL-61 - TANK REMOVAL, BLDG 431)
RI/FS	(FTL-39 - WASH RACK BUILDING 496)
SI	(FTL-23 - MINERAL SETTLING LAGOONS)
DES	(FTL-30 - PAST PESTICIDE BUILDING 412)
1996	
CS	(FTL-57 - SKEET RANGE (INACTIVE))
RA(C)	(FTL-29 - PAST PESTICIDE BUILDING 413)
1997	
CS	(FTL-04 - INACTIVE SANITARY LANDFILL)
RA(C)	(FTL-01 - INACTIVE SANITARY LANDFILL)
1998	
CMI(C)	(FTL-09 - CLOSED ACTIVE SANITARY LANDFILL)
DES	(FTL-09 - CLOSED ACTIVE SANITARY LANDFILL)
IRA	(FTL-04 - INACTIVE SANITARY LANDFILL)
RFA	(FTL-03 - INACTIVE LANDFILL, FTL-07 - INACTIVE SANITARY LANDFILL, FTL-08 - INACTIVE SANITARY LANDFILL)
1999	
ISC	(FTL-69 - DIESEL FUEL SPILL AREA)
CS	(FTL-03 - INACTIVE LANDFILL, FTL-08 - INACTIVE SANITARY LANDFILL)
RFA	(FTL-02 - INACTIVE LANDFILL)
2000	
IMP(C)	(FTL-16 - USED SOLVENT TANK UST NR BLDG 487-2, FTL-17 - USED SOLVENT TANK UST NR BLDG 487-3, FTL-18 - USED SOLVENT TANK UST NR BLDG 487-4, FTL-50 - USED SOLVENT TANK NO 5 BUILDING 487, FTL-51 - USED SOLVENT TANK NO 6 BUILDING 487, FTL-64 - FTL-64: REMOVE UST BLDG 264)
CS	(FTL-02 - INACTIVE LANDFILL, FTL-48 - SEWAGE TREATMENT SYSTEM BUILDING 138)

IRP Schedule

IRA	(FTL-67 - UNDERGROUND TANKS OLD PX SERVICE STATION)
PA	(FTL-21 - SEPTIC TANK NR BLDG 428, FTL-25 - OLD PESTICIDE BUILDING 234, FTL-26 - OLD PESTICIDE BUILDING 234A, FTL-27 - PAST PESTICIDE BUILDING 237, FTL-28 - CURRENT PESTICIDE BUILDING 93, FTL-31 - CURRENT PESTICIDE BUILDING 399, FTL-32 - PESTICIDE BUILDING 84, FTL-38 - WASH RACK BUILDING 305, FTL-40 - WASH RACK BUILDING 237, FTL-42 - INCINERATOR BUILDING 111, FTL-47 - MEDIA SUPPORT AREA BUILDING 77)
SI	(FTL-63 - DRMO SCRAP YARD)
RFA	(FTL-43 - INCINERATOR BUILDING 111, FTL-46 - HAZARDOUS WASTE STG AT BLDING 279, FTL-56 - USED OIL CONTAMINATED FUEL STORAGE AREA, FTL-70 - FUEL OIL LEAK SITE AT USDB, FTL-71 - MCCLELLAN AVENUE MAINTENANCE SITE)
RA(C)	(FTL-19 - SEWAGE LAGOONS, FTL-33 - WASH RACK BUILDING 262, FTL-36 - WASH RACK BUILDING 132, FTL-37 - WASH RACK BUILDING 86, FTL-39 - WASH RACK BUILDING 496, FTL-62 - UNDERGROUND PROPANE TANK, USDB FARM)
CMI(C)	(FTL-14 - USED OIL TANK NEAR BUILDING 86, FTL-22 - SEPTIC TANK NR BLDG 425, FTL-34 - WASH RACK BUILDING 431, FTL-35 - WASH RACK BUILDING 571, FTL-41 - INCINERATOR BUILDING 344, FTL-44 - INCINERATOR BUILDING 632, FTL-45 - INCINERATOR BUILDING 136, FTL-55 - USED OIL STORAGE, CITY AIRPORT OPERATION)
LTM	(FTL-09 - CLOSED ACTIVE SANITARY LANDFILL)
INV	(FTL-54 - USED OIL STORAGE, BUILDING 132)
2001	
RFA	(PBC at Leaven. - PBC)
2002	
RI/FS	(FTL-63 - DRMO SCRAP YARD)
CS	(FTL-20 - SEPTIC TANK NR BLDG 398, FTL-71 - MCCLELLAN AVENUE MAINTENANCE SITE)
SI	(FTL-65 - POND IN FAMILY HOUSING)
INV	(FTL-69 - DIESEL FUEL SPILL AREA)
2004	
DES	(FTL-05 - INACTIVE SANITARY LANDFILL, FTL-06 - INACTIVE LANDFILL)
RFI/CMS	(FTL-05 - INACTIVE SANITARY LANDFILL, FTL-06 - INACTIVE LANDFILL)
2005	
RI/FS	(FTL-65 - POND IN FAMILY HOUSING)
DES	(FTL-02 - INACTIVE LANDFILL, FTL-03 - INACTIVE LANDFILL, FTL-04 - INACTIVE SANITARY LANDFILL)
RFI/CMS	(FTL-02 - INACTIVE LANDFILL, FTL-03 - INACTIVE LANDFILL, FTL-04 - INACTIVE SANITARY LANDFILL)
IRA	(FTL-15 - USED SOLVENT TANK UST NR BLDG 487-1)
CMI(C)	(FTL-04 - INACTIVE SANITARY LANDFILL, FTL-05 - INACTIVE SANITARY LANDFILL, FTL-06 - INACTIVE LANDFILL, FTL-30 - PAST PESTICIDE BUILDING 412)
2006	
DES	(FTL-07 - INACTIVE SANITARY LANDFILL, FTL-10 - OLD FIRE TRAINING AREA/BURN PIT, FTL-15 - USED SOLVENT TANK UST NR BLDG 487-1)
RFI/CMS	(FTL-07 - INACTIVE SANITARY LANDFILL, FTL-10 - OLD FIRE TRAINING AREA/BURN PIT, FTL-15 - USED SOLVENT TANK UST NR BLDG 487-1)
CMI(C)	(FTL-10 - OLD FIRE TRAINING AREA/BURN PIT, FTL-15 - USED SOLVENT TANK UST NR BLDG 487-1)
IRA	(FTL-10 - OLD FIRE TRAINING AREA/BURN PIT)
2007	
DES	(FTL-57 - SKEET RANGE (INACTIVE))
RFA	(FTL-72 - Quarry Creek)
CMI(C)	(FTL-02 - INACTIVE LANDFILL, FTL-03 - INACTIVE LANDFILL, FTL-07 - INACTIVE SANITARY LANDFILL)

IRP Schedule

RFI/CMS (FTL-11 - CLOSED FIRE TRAINING AREA, FTL-20 - SEPTIC TANK NR BLDG 398, FTL-57 - SKEET RANGE (INACTIVE), FTL-60 - USDB GREENHOUSE)

2008

CMI(C) (FTL-08 - INACTIVE SANITARY LANDFILL)

RFI/CMS (FTL-08 - INACTIVE SANITARY LANDFILL, FTL-24 - PESTICIDE AREA NR BLDG 227, FTL-70 - FUEL OIL LEAK SITE AT USDB, FTL-71 - MCCLELLAN AVENUE MAINTENANCE SITE)

DES (FTL-08 - INACTIVE SANITARY LANDFILL)

CAP (FTL-69 - DIESEL FUEL SPILL AREA)

2009

CMI(C) (FTL-57 - SKEET RANGE (INACTIVE))

2010

IRA (FTL-72 - Quarry Creek)

2011

CMI(C) (PBC at Leaven. - PBC)

LTM (FTL-04 - INACTIVE SANITARY LANDFILL)

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: 201405

Schedule for Next Five-Year Review: 2012

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

FORT LEAVENWORTH IRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-02	INACTIVE LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-03	INACTIVE LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-05	INACTIVE SANITARY LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-06	INACTIVE LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-07	INACTIVE SANITARY LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-08	INACTIVE SANITARY LANDFILL	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-10	OLD FIRE TRAINING AREA/BURN PIT	CMI(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-15	USED SOLVENT TANK UST NR BLDG 487-1	CMI(O)						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-22	SEPTIC TANK NR BLDG 425	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-34	WASH RACK BUILDING 431	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-35	WASH RACK BUILDING 571	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-41	INCINERATOR BUILDING 344	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-43	INCINERATOR BUILDING 111	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-44	INCINERATOR BUILDING 632	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-48	SEWAGE TREATMENT SYSTEM BUILDING 138	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-56	USED OIL CONTAMINATED FUEL STORAGE AREA	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-57	SKEET RANGE (INACTIVE)	LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-67	UNDERGROUND TANKS OLD PX SERVICE STATION	RFI/CMS						
		CMI(C)						
		LTM						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-71	MCCLELLAN AVENUE MAINTENANCE SITE	LTM						

FORT LEAVENWORTH IRP Schedule

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-72	Quarry Creek	RFI/CMS						
		DES						
		CMI(C)						
		LTM						

FORT LEAVENWORTH
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 3/1

Installation Site Types with Future and/or Underway Phases

- 1 Small Arms Range
(FTL-001-R-01)
- 1 Unexploded Munitions/Ordnance
(FTL-003-R-01)

Most Widespread Contaminants of Concern

Metals, Munitions constituents (MC)

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
FTL-001-R-01	5TH ARTILLERY ROAD FIRING RANGE	IRA	INSTITUTIONAL CONTROLS	2012
FTL-003-R-01	Kinder Grenade Range	IRA	REMOVAL	2012

Duration of MMRP

Date of MMRP Inception 200303

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201308/201308

Date of MMRP completion including Long Term Management (LTM): 201308

MMRP Contamination Assessment

Contamination Assessment Overview

Two sites currently are being tracked under the MMRP. One site was tracked as FTL-66, but is now known as FTL-001-R-01. This site is having a negative impact on the residential construction initiative (RCI). This makes this the most important restoration site on FTL.

This former range was established in 1880 and used for small arms training through 1960. The site extends to the south from 5th Artillery Road to just above Hunt Road and totals 374.86 acres. The area is now residential multi-family housing and undeveloped land. Munitions constituents (MC) were not found during construction of the family housing. The direction of fire on the rifle range was from south to north. The range fan overlaps portions of the current operational property. Therefore, only the portion of the rifle range and range fan south of Hatch Road that falls outside operational property is included. This range appears as four noncontiguous parcels of land.

When it was identified in the Army's Phase III range inventory in 2003, FTL-001-R-01 consisted of four noncontiguous parcels of land totaling 375 acres; however, as of the end of the SI in 2007, only the most southern of the four parcels remains as part of the munitions response site (MRS) and the site's acreage has been reduced to 201 acres.

This site was identified in 1997, when the US Army requested information on all the old firing ranges on each installation. The site was identified in the 1998 IAP; however, it was rejected by the USAEC as an IRP site, since no chemical contamination had been identified. The site was placed into the OMA Program for FY02. The E&E completed a records search in 2003 to aid in identifying the location of historical firing ranges.

In November 2008 Engineering-Environmental Management, Inc. (e2M) performed and reported a final RFI at the site. Results of the RFI field activities conducted at the firing positions area indicated that MC, lead, and other metal constituents (antimony, arsenic, copper, mercury, nickel, and zinc) are generally not found at levels exceeding PRGs or at levels exceeding 95 percent upper tolerance limits (UTLs) across the majority of the site, with exception to grids found in the northwest corner of the firing positions area. Results of metal detection surveys did not indicate the presence of any significant quantities of lead slugs and fragments or empty brass cartridges. Additionally, no unexploded ordnance (UXO) was discovered during the surveying activities.

Additional results in the November 2008 final RFI conducted at the target berm/trench area indicated that MC (lead) is present at concentrations exceeding the PRG in a number of samples. Other metal constituents (antimony, arsenic, copper, mercury, nickel, and zinc) were detected occasionally at levels above the 95 percent UTLs. As a whole, metal concentrations exceeding the PRG for lead or above the 95 percent UTLs for the other metals are considered to be anthropogenic (above naturally occurring) in the target berm/trench area. Results of the metal detector surveying indicated the greatest number of bullets recovered during the investigation were located on the northern half of the study area on the existing hillside; however, only one lead exceedance of the PRG was observed in this area. Although there appears to be a significant quantity of lead bullets in the shallow soil on the northern hillside of the target berm/trench area, the lead concentrations in the soil appear to be typical of lead deposited by the slowing or stopping of the bullets. Given the evidence from the rest of the site, there is no evidence of lead leaching into the soil from the bullets that have been lying at the site.

The other MMRP site recently identified is known as FTL-003-R-01 (alias FTL-74). A study of maps and historical records has determined that the Kinder Range area probably was used for grenade training. The records indicate that rifle-propelled grenades and 20 millimeter (mm) grenades were fired on the range. A number of the rounds did not explode, which creates a hazard to people in the area.

Cleanup Exit Strategy

The next action for FTL-001-R-01 (FTL-66) is to execute a contract for a risk assessment to be performed by ARCADIS. This work has been contracted as part of an amendment to the GFPR contract dated Sept. 30, 2008. Funds are being programmed for a design and RA with the goal for the site to have unrestricted use.

The plan for FTL-003-R-01 (Grenade Range - alias FTL-74) is to perform a locate-and-remove action in one step. Prior to performing locate-and-remove, a site investigation, including a historical records review (HRR), is programmed to be performed with this MMRP site. Following the SI phase, a munitions and explosives of concern (MEC) site characterization and removal assessment is to be performed with the expectation that NFA is required at this site.

MMRP Previous Studies

	Title	Author	Date
2001	Final Global Positioning System Survey and Geographical Information System	Ecology and Environment, Inc. (E&E)	NOV-2001
2003	Firing Ranges and Associated Facilities	Ecology and Environment, Inc. (E&E)	APR-2003
	Final Closed, Transferring and Transferred Range Site Inventory	Engineering-Environmental Management, Inc.	OCT-2003
2006	Final Transfer/Closure Work Plan for Bullet Containing Soils Housing Area 22B to Railroad Cuts (FTL-66) Fort Leavenworth, KS	Fort Leavenworth DIS Environmental Division	AUG-2006
	Final Fort Leavenworth Housing Area 22B Soil Testing Sampling Results Report (FTL-66) Fort Leavenworth, KS	Fort Leavenworth DIS Environmental Division	OCT-2006
	Final Military Munitions Response Program Historical Records Review Fort Leavenworth, Kansas	Engineering-Environmental Management, Inc.	NOV-2006
	Final Site Investigation Work Plan for Bullet Containing Soils Housing Area 23 (FTL-66) Fort Leavenworth, KS	Fort Leavenworth DIS Environmental Division	DEC-2006
	Site Investigation Housing Area 23 (FTL-66) Search for Metallic Material Fort Leavenworth, KS	Fort Leavenworth DIS Environmental Division	DEC-2006
2007	Final Site Inspection Report	Engineering-Environmental Management, Inc.	MAY-2007
	Final Work Plan Military Munitions Response Program (MMRP) RCRA Facilities Investigation (RFI)/Corrective Measures Study (CMS)	Engineering-Environmental Management, Inc.	AUG-2007
	Stakeholder Draft Firing Positions Area RCRA Facility Investigation Report (DNF)	Engineering-Environmental Management, Inc.	DEC-2007
2008	Final Work Plan Addendum MMRP Firing Positions Area RFI, Fort Leavenworth, Kansas	Engineering-Environmental Management, Inc.	MAR-2008
	Quality Assurance Summary Report Firing Positions Area Field Activities: 25 March - 2 April 2008, RCRA Facility Investigation (RFI) Military Munitions Response Sites Fort Leavenworth, Kansas	US Army Corps of Engineers Kansas City District and U.S. Army Combined Arms Center and Fort Leavenworth, Kansas	APR-2008
	Final Fort Leavenworth Housing Area 13 Soil Testing Sampling Results Report, Fort Leavenworth, Kansas	US Army Combined Arms Center and Fort Leavenworth	MAY-2008
	Final Work Plan Addendum Military Munitions Response Program Target Bench/Trench Area & Golf Course MRS RCRA Facility Investigation (RFI), Fort Leavenworth, Kansas	Engineering-Environmental Management, Inc.	MAY-2008
	Final Fort Leavenworth Housing Area 19 Soil Testing Sampling Results Report, Fort Leavenworth, Kansas	US Army Combined Arms Center and Fort Leavenworth	JUL-2008
	Final RCRA Facility Investigation Report 5th Artillery Road Firing Range MRS and Golf Course MRS MMRP Fort Leavenworth, KS	Engineering-Environmental Management, Inc.	NOV-2008
2009	Final CMS Work Plan FTL-66, 5th Artillery Road Firing Range	ARCADIS	MAY-2009
2010			

MMRP Previous Studies

	Title	Author	Date
2010	Final Corrective Measures Study Report FTL-66, Fort Leavenworth, KS	ARCADIS	OCT-2010
2011	Final Interim Removal Action Work Plan FTL-003-R-001 (FTL-74)	Bay West	OCT-2011
	Revised Contractor Construction Management Plan - FTL-66 (HA 22B)	Coastal Environmental	OCT-2011

FORT LEAVENWORTH
Military Munitions Response Program
Site Descriptions

Site ID: FTL-001-R-01

Site Name: 5TH ARTILLERY ROAD FIRING RANGE

STATUS

Regulatory Driver: RCRA
MRSPP Score: 03
Contaminants of Concern: Metals
Media of Concern: Soil

Phases	Start	End
RFA.....	200303.....	200310
CS.....	200602.....	200705
RFI/CMS.....	200706.....	201308
IRA.....	201010.....	201207

RIP Date: N/A
RC Date: 201308

SITE DESCRIPTION

This parcel is a former range that was established in 1880 and used through 1960 for small arms training. The site extends to the south from 5th Artillery Road to just above Hunt Road and is now residential multi-family housing and undeveloped land. No MEC are known to have been found during construction of the family housing. The direction of fire on the rifle range was from south to north. The historical range fan overlaps portions of the current operational ranges. Only the portion of the rifle range that falls outside operational ranges is included in the MRS. The 2000 RCRA permit identifies a portion of the MR site as FTL-001-R-01 (FTL-66). The FTL-66 parcel is included in the areas leased to the RCI for housing areas.

When it was identified in the Army's Phase III range inventory in 2003, FTL-001-R-01 consisted of four noncontiguous parcels of land totaling 375 acres; however, as of the end of the SI in 2007, only the most southern of the four parcels remains as part of the MR site and the site's acreage has been reduced to 201 acres. This site was initially identified in 1997 when the Army requested information on all the old firing ranges on each installation. The site was included in the 1998 IAP; however, it was rejected by the USAEC as an IRP site, since no chemical contamination had been identified. The site was placed into the OMA program for FY 2002. The E&E completed a records search in 2003 to aid in identifying the location of historical firing ranges.

In November 2008, an environmental consulting firm, e2M performed and reported a final RFI at the site. Results of the RFI field activities conducted at the firing positions area indicated that MC, lead, and other metal constituents (antimony, arsenic, copper, mercury, nickel, and zinc) were not found at levels exceeding PRGs or at levels exceeding 95 percent UTLs across the majority of the site, with exception to grids found in the northwest corner of the firing positions area. Results of metal detection surveys did not indicate the presence of any significant quantities of lead slugs and fragments or empty brass cartridges. Additionally, no UXO was discovered during the surveying activities.

Additional results in the November 2008 final RFI conducted at the target berm/trench area indicated that MC (lead) is present at concentrations exceeding the PRG in a number of samples. Other metal constituents (antimony, arsenic, copper, mercury, nickel, and zinc) were detected occasionally at levels above the 95 percent UTLs. As a whole, metal concentrations exceeding the PRG for lead or above the 95 percent UTLs for the other metals are considered to be anthropogenic occurrences in the target berm/trench area. Results of the metal detector surveying indicated the greatest number of bullets recovered during the investigation were located on the northern half of the study area on the existing hillside; however, only one exceedance of the lead PRG was observed in this area. Although there appears to be a significant quantity of lead bullets in the shallow soil on the northern hillside of the target berm/trench area, the lead concentrations in the soil appear to be typical of lead deposited by the slowing or stopping of the bullets. Given the evidence from the rest of the site, there is no evidence of lead leaching into the soil from the bullets that have been lying at the site.

CLEANUP/EXIT STRATEGY

The Area 22B Railroad Cut (RR Cut) soils area within FTL-001-R-01 is a ravine-like topographic feature in which small arms firing range impacted soil has been deposited and provided an engineered cover consisting of a geo-textile, clay cap, and topsoil. The firing range soil was relocated to the RR Cut as a result of a military housing project being sited on the former small arms

Site ID: FTL-001-R-01
Site Name: 5TH ARTILLERY ROAD FIRING RANGE

firing range (FTL-001-R-01).

Placement of the soil in the FTL-001-R-01 railroad cut area occurred during the FY2006. Since that time, a decision was made that the location would become the future site for a new Ft. Leavenworth School. A RCRA Facility Investigation conducted at the source area of the Area 22B Soils firing range reported that munition constituents; lead and other metals(antimony, arsenic, copper, mercury, nickel, and zinc) were not found at concentrations exceeding Preliminary Remediation Goals or at concentrations exceeding 95 percent Upper Threshold Levels across the majority of the firing range.

The soil from the railroad cut area will be removed in FY12 according to residential cleanup standards for future construction of the new school. An NFA status is anticipated.

Site ID: FTL-003-R-01
Site Name: Kinder Grenade Range

STATUS

Regulatory Driver: RCRA
MRSPP Score: Evaluation pending
Contaminants of Concern: Explosives
Media of Concern: Soil

Phases	Start	End
RFA.....	200808.....	200812
RFI/CMS.....	201006.....	201304
IRA.....	201008.....	201204

RIP Date: N/A
RC Date: 201304

SITE DESCRIPTION

The Kinder Range area covered approximately 20 acres on heavily rolling forested terrain. A study of maps and historical records has determined that the range area probably was used for grenade training from about 1945 to 1970. The records indicate that rifle-propelled grenades and 20mm grenades were fired on the range. A number of the rounds did not explode, which creates a hazard to people in the area. The plan to perform a locate-and-remove in one step was completed during this data call. A site investigation and a munitions and MEC site characterization are required by USEPA and planned for FY13.

CLEANUP/EXIT STRATEGY

A MEC site investigation is programmed to be performed with this MMRP site. Following the site investigation phase, an NFA is expected.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
FTL-002-R-01	Golf Course	200810	Final 5th Artillery Road Firing Range MRS and Golf Course MRS RCRA Facility Investigation Report

MMRP Schedule

Date of MMRP Inception 200303

Past Phase Completion Milestones

2004

PA (FTL-002-R-01 - Golf Course)
RFA (FTL-001-R-01 - 5TH ARTILLERY ROAD FIRING RANGE)

2007

CS (FTL-001-R-01 - 5TH ARTILLERY ROAD FIRING RANGE)
SI (FTL-002-R-01 - Golf Course)

2009

RI/FS (FTL-002-R-01 - Golf Course)
RFA (FTL-003-R-01 - Kinder Grenade Range)

Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

Final RA(C) Completion Date:

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of MMRP at Installation (including LTM phase): 201308

FORT LEAVENWORTH MMRP Schedule

= phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-001-R-01	5TH ARTILLERY ROAD FIRING RANGE	RFI/CMS						
SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
FTL-003-R-01	Kinder Grenade Range	RFI/CMS						

FORT LEAVENWORTH
Army Defense Environmental Restoration Program
Compliance Restoration

CR Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 1/0

Installation Site Types with Future and/or Underway Phases

1 Landfill
(CC FTL-75)

Most Widespread Contaminants of Concern

Metals

Media of Concern

Soil

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

Site ID	Site Name	Action	Remedy	FY
N/A				

Duration of CR

Date of CR Inception: 201008

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201306/201306

Date of CR completion including Long Term Management (LTM): 201306

CR Contamination Assessment

Contamination Assessment Overview

HDR, Inc. was retained to complete a RCRA Facility Investigation in 2011 to determine if chemicals were present at concentrations exceeding human health and ecological screening criteria. Surface soil, subsurface soil and groundwater samples were collected and analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), pesticides, herbicides, Target Analyte List (TAL) metals, polychlorinated biphenyls (PCBs), Total Petroleum Hydrocarbons (TPH) Diesel and Gasoline Range Organics (DRO/GRO), and Toxicity Characteristic Leaching Procedure (TCLP) analyses. Chemical results were compared to regulatory screening criteria, and compounds with method detection and reporting limits greater than the Regional Screening Levels (RSLs) or Kansas Risk-Based Standards for Kansas (RSKs), were evaluated and included in the Human Health Risk Evaluation (HHRE). Several compounds were detected at concentrations greater than the risk values. These values were included in the HHRE and Screening Level Ecological Risk Assessment (SLERA). Based on results of the soil analytical data and the spatial distribution of the chemicals detected above the screening criteria, there does not appear to be a need for further investigation of soils or groundwater at FTL75. The waste disposal area appears to be confined to the northern portion of the site adjacent to the former 5th Artillery Road. This material is scheduled to be removed as a removal action to accommodate the construction of military housing.

Cleanup Exit Strategy

The waste disposal area appears to be confined to the northern portion of the site adjacent to the former 5th Artillery Road. This material is scheduled to be removed as a removal action to accommodate the construction of military housing. An NFA is anticipated with removal of the landfill to residential cleanup standards.

CR Previous Studies

2012

Title	Author	Date
Final RCRA Facility Investigation Report	HDR	FEB-2012

FORT LEAVENWORTH
Compliance Restoration
Site Descriptions

Site ID: CC FTL-75
Site Name: Iowa Avenue Sanitary Landfill

STATUS

Regulatory Driver: RCRA
 Contaminants of Concern: Metals
 Media of Concern: Soil

Phases	Start	End
RFA.....	201008.....	201011
CS.....	201008.....	201011
RFI/CMS.....	201102.....	201306
IRA.....	201203.....	201212

RIP Date: N/A
RC Date: 201306

SITE DESCRIPTION

The site is located at the intersection of 5th Artillery Road and Iowa Avenue. This area has been leased to (MMH) as part of the RCI initiative. The site must be remedied before construction can resume.

The Site was discovered during the installation of a sewer line for Housing Area 22B. A preliminary assessment (PA) has been conducted by Fort Leavenworth (FLV) personnel and results were reported via letter to Environmental Protection Agency (EPA) Region 7, dated Nov. 3, 2010. HDR, Inc. was retained to complete a Resource Conservation and Recovery Act (RCRA) Facility Investigation to determine if chemicals are present at concentrations exceeding human health and ecological screening criteria. Surface and subsurface soil, surface water, and groundwater samples were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, target analyte list (TAL) metals, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH) diesel and gasoline range organics (DRO/GRO), and toxicity characteristic leaching procedure (TCLP) analyses. Chemical results were compared to regulatory screening criteria, and compounds with method detection and reporting limits greater than the Regional Screening Levels (RSLs) or Kansas Risk-Based Standards for Kansas (RSKs), were evaluated and included in the Human Health Risk Evaluation (HHRE). Several compounds were detected at concentrations greater than the risk values. These values were included in the HHRE and Screening Level Ecological Risk Assessment (SLERA). Based on results of the soil analytical data and the spatial distribution of the chemicals detected above the screening criteria, there does not appear to be a need for further investigation of soils or groundwater at FTL75. The waste disposal area appears to be confined to the northern portion of the site adjacent to the former 5th Artillery Road. This material is scheduled to be removed as a removal action to accommodate the construction of military housing. The RCRA Facility Investigation including the collection of analytical data occurred during this data call with a Final Report submitted dated February 2, 2012.

During FY2012, an IRA contracted through the Kansas City Corp of Engineers is planned. An NFA is anticipated with removal of the landfill to residential cleanup standards.

CLEANUP/EXIT STRATEGY

The waste disposal area appears to be confined to the northern portion of the site adjacent to the former 5th Artillery Road. This material is scheduled to be removed as a removal action to accommodate the construction of military housing. A no further action is anticipated with removal of the landfill to residential cleanup standards.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
There are no NFA sites			

CR Schedule

Date of CR Inception: 201008

Past Phase Completion Milestones

2011

RFA (CC FTL-75 - Iowa Avenue Sanitary Landfill)

CS (CC FTL-75 - Iowa Avenue Sanitary Landfill)

Projected Phase Completion Milestones

See attached schedule

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

To Be Determined

Final RA(C) Completion Date:

Schedule for Next Five-Year Review: 2012

Estimated Completion Date of CR at Installation (including LTM phase): 201306

FORT LEAVENWORTH CR Schedule

 = phase underway

SITE ID	SITE NAME	PHASE	FY13	FY14	FY15	FY16	FY17	FY18+
CC FTL-75	Iowa Avenue Sanitary Landfill	RFI/CMS						
		IRA						

Community Involvement

Technical Review Committee (TRC): None

Community Involvement Plan (Date Published): 201011

Restoration Advisory Board (RAB): No

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

Community Interest Solicited on: 201008

Efforts Taken to Determine Interest

The fort's personnel attempts to establish a RAB resulted in less than a dozen people requesting information and only one participating in the meeting where the purpose of the RAB was discussed. Over the past few years, public participation at public meetings involving environmental issues has been sparse. On Nov. 2, 2006, the USEPA held a public availability session for the proposed cleanup plan for seven environmental restoration sites (FTL-07, -10, -11, -12, -15, -20, and -60). On April 8, 2008, the USEPA held another public availability session for the proposed cleanup plan for seven additional environmental restoration sites (FTL-08, -23, -24, -57, -69, -70, and -71). No one from the public attended these sessions. No significant comments are expected from the public review process. The lack of public interest during these public comment periods substantiates the decision by the stakeholder agencies not to pursue the establishment of a RAB at FTL.

Fort Leavenworth as a community has its own local newspaper (The Fort Leavenworth Lamp). It also has a cable television channel available for community interest items. The city of Leavenworth has a local newspaper (The Leavenworth Times) and a separate community television channel for public announcements. The Tonganoxie Mirror is the Leavenworth County newspaper of record. The regulatory agencies agreed that using these newspapers and television channels met the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Community Relations requirements.

Results

The fort operates under a RCRA Permit (KS4213720499) issued by the USEPA in June 2000. Since that time, the USEPA has formed a regulatory partnership with the KDHE regarding issues related to the RCRA permit. Both regulatory agencies continue to work together on regulatory actions. The fort has always had and still maintains an excellent working relationship with both regulatory agencies. This has benefited all parties; close coordination has resulted in a team effort to move the program ahead with the goal of protecting human health and the environment.

Follow-up Procedures

In late 2007, the USEPA was informed the FTL Planning Division had made a determination that the planned future use for FTL-04 would be as a potential build site for an aquatic center and a parking lot for a new Child Development Center.

In February 2008, FTL informed the USEPA that they had requested and received Army funding approval for revision of the remedy at FTL-04 to remediate the site by removal action to an NFA level. The removal of the landfill was deemed beneficial in regards to making land area available for construction of facilities supportive of the morale and welfare of Army families.

The USEPA issued an explanation of significant difference (ESD) for public review on Dec. 21, 2009 explaining the desired change in remedy and requesting comments for FTL-04. The public comment period concluded on Jan. 23, 2010 with no interest generated from the public.

Regulatory agencies have requested that FTL continue to place paid advertisements in the newspapers in lieu of legal notices. Advertisements were placed in a section of the Fort Leavenworth Lamp, Leavenworth Times, and the Tonganoxie Mirror newspapers on Aug. 19, 2010 during renewal of the fort's 2010 RCRA permit. In addition, representatives from FTL, US Army Environmental Command (USAEC), and USEPA Region VII were available to provide information and answer questions regarding the proposed Part II permit renewal at the Leavenworth Public Library.

Additional Community Involvement Information

A final CMI community relations plan was developed for removal of FTL-04 landfill in December 2009.

Community Involvement

The fort updated the Community Relations Plan in November 2010 which has been approved by the Public Affairs Office and signed by the Garrison Commander.

Administrative Record is located at

Fort Leavenworth DOL/DPW Environmental Division
810 McClellan Avenue
Building #80
Fort Leavenworth, KS 66027-1360
Telephone: (913) 684-8976

Information Repository is located at

Due to lack of community interest, there is no rationale for an off-site information repository. The administrative records are open to the public for review.

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

TAPP Title: N/A

Potential TAPP: N/A

