

**FY2012**

**FORT CARSON**

**Army Defense Environmental Restoration Program**

**Installation Action Plan**

Printed 24 January 2013

# Table of Contents

|   |    |
|---|----|
| Statement Of Purpose.....   | 1  |
| Acronyms.....   | 2  |
| Acronym Translation Table.....  | 6  |
| Installation Information.....   | 7  |
| 5-Year / Periodic Review Summary.....   | 9  |
| Land Use Control (LUC) Summary.....   | 10 |
| Cleanup Program Summary.....  | 12 |
| Installation Restoration Program.....   | 14 |
| IRP Summary.....  | 15 |
| IRP Contamination Assessment.....   | 17 |
| IRP Previous Studies.....   | 18 |
| Installation Restoration Program Site Descriptions.....                               | 49 |
| FTC-006 LANDFILLS 2/3 (1960-1978).....  | 50 |
| FTC-008 LANDFILL 4 (1957).....  | 51 |
| FTC-009 LANDFILL 5 (1946-1956).....   | 52 |
| FTC-011 LANDFILL 7 (1968-1978).....   | 54 |
| FTC-012 LANDFILL 8 (1972-1973).....   | 55 |
| FTC-013 LANDFILL 9 (1965-1973).....   | 56 |
| FTC-020 GRIT OIL PIT.....   | 57 |
| FTC-021 ABANDONED FIRE TRAINING AREA.....   | 59 |
| FTC-023 FORMER USED/WASTE OIL STORAGE TANKS.....                                      | 61 |
| FTC-026 PETE'S HILL.....  | 62 |
| FTC-033 Fmr Waste Oil/Solv USTs, Bldg 8000.....                                       | 63 |
| FTC-056 FORMER UST SITE, BLDG 1382.....   | 64 |
| FTC-058 FORMER VAPOR DEGREASER.....   | 65 |
| FTC-070 UST near Building 202.....  | 66 |
| FTC-075 OLD CENTRAL WASH RACK.....  | 67 |
| FTC-083 North Specker Avenue Plumes.....  | 68 |
| FTC-093 Former POW Camp.....  | 70 |
| PBA@Carson PBA@Carson.....  | 72 |
| Installation Restoration Program Site Closeout (No Further Action) Sites Summary..... | 73 |

## Table of Contents

|  |           |
|--|-----------|
| <b>Installation Restoration Program Schedule.....</b>                              | <b>76</b> |
| Installation Restoration Program Milestones.....                                   | 76        |
| IRP Schedule Chart.....  | 80        |
| <b>Compliance Restoration.....</b>   | <b>82</b> |
| CR Summary.....  | 83        |
| CR Contamination Assessment.....   | 84        |
| CR Previous Studies.....   | 85        |
| <b>Compliance Restoration Site Descriptions.....</b>                               | <b>86</b> |
| CC 102 Buildings 980 and 981.....  | 87        |
| CC 106 BLDG P150.....  | 88        |
| CC 108 Old Hospital Complex.....   | 90        |
| CC SW001 SWMU 1 - Landfill 1.....  | 91        |
| CC SW022 SWMU 22 - Sewage Treatment Plant.....                                     | 93        |
| CC SW023 SWMU 23 - Sewage Treatment Lagoons,BAAF .....                             | 94        |
| CC SW169 SWMU 169 - Building 1211, Former UST.....                                 | 95        |
| CC SW170 SWMU 170 - Const.& Debris Landfill .....                                  | 97        |
| <b>Compliance Restoration Site Closeout (No Further Action) Sites Summary.....</b> | <b>98</b> |
| <b>CR Schedule.....</b>  | <b>99</b> |
| Compliance Restoration Milestones.....   | 99        |
| CR Schedule Chart.....   | 101       |

## 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 (RAs).

In an effort to coordinate planning information between the restoration manager, the Installation Management Command (IMCOM), US Army Environmental Command (USAEC), Fort Carson (FTC) 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

|         |   |
|---------|---|
| 4ID     | 4th Infantry Division   |
| AAFES   | Army, Air Force Exchange Services   |
| ADP     | Analytical Data Package   |
| AECOM   | Architecture, Engineering, Consulting, Operations and Management (an environmental company) |
| AEDB-CC | Army Environmental Database - Compliance-related Cleanup                                    |
| AEDB-R  | Army Environmental Database - Restoration   |
| AFB     | Air Force Base  |
| AOC     | Area of Concern   |
| ARCOM   | Army Reserve Command  |
| AS      | Air Sparging  |
| AST     | Aboveground Storage Tank  |
| ATG     | Automatic Tank Gauging  |
| BAAF    | Butts Army Airfield   |
| BANS    | Battery Acid Neutralization Shop  |
| BECS    | Butts East Combined Site  |
| Bldg    | Building  |
| BMP     | Best Management Practice  |
| BRAC    | Base Realignment and Closure  |
| BTEX    | Benzene, Toluene, Ethylbenzene and Xylenes  |
| CAP     | Corrective Action Plan  |
| CC      | Compliance-related Cleanup  |
| CDD     | Construction and Demolition Debris  |
| CDPHE   | Colorado Department of Public Health and Environment  |
| CGWS    | Colorado Groundwater Standards  |
| CLA     | Combined Landfill Area  |
| CLIN    | Contract Line Item Number   |
| CM      | Corrective Measure  |
| CMI(C)  | Corrective Measures Implementation - Construction   |
| CMI(O)  | Corrective Measures Implementation - Operation  |
| CMS     | Corrective Measures Study   |
| COC     | Contaminant of Concern  |
| CR      | Compliance Restoration  |
| CS      | Confirmation Sampling   |
| CTC     | Cost-to-Complete  |
| cy      | cubic yards   |
| DD      | Decision Document   |
| DECAM   | Directorate of Environmental Compliance and Management                                      |
| DERP    | Defense Environmental Restoration Program   |
| DES     | Design  |
| DF      | Draft Final   |
| DIO     | Directorate of Industrial Operations  |
| DPW     | Department of Public Works  |
| DRMO    | Defense Reutilization and Marketing Office  |
| DRO     | Diesel Range Organics   |
| EFR     | Enhanced Fluid Recovery   |

## Acronyms

|            |   |
|------------|---|
| ER,A       | Environmental Restoration, Army   |
| ESE        | Environmental Science and Engineering   |
| ET         | Evapotranspiration  |
| FLPM       | Field and Laboratory Procedures Manual  |
| FOS        | Free Oil Water Separator  |
| FRA        | Final Remedial Action   |
| FS         | Feasibility Study   |
| FTC        | Fort Carson   |
| FY         | Fiscal Year   |
| GPL        | Groundwater Protection Level  |
| GW         | Groundwater   |
| IAP        | Installation Action Plan  |
| ICM        | Interim Corrective Measure  |
| ICP        | Interim Closure Plan  |
| ID         | Identification  |
| IM         | Interim Measure   |
| IMCOM      | Installation Management Command   |
| IMP(C)     | Implementation - Construction   |
| IMP(O)     | Implementation - Operation  |
| INV        | Investigation   |
| IR         | Installation Restoration  |
| IRA        | Interim Remedial Action   |
| IRP        | Installation Restoration Program  |
| ISC        | Initial Site Characterization   |
| IWTP       | Industrial Wastewater Treatment Plant   |
| JP         | Jet Propellant  |
| K          | thousand  |
| LF         | Landfill  |
| LNAPL      | Light Non-Aqueous Phase Liquid  |
| LTM        | Long-Term Management  |
| LUC        | Land Use Control  |
| MEC        | Munitions and Explosives of Concern   |
| mg/L       | milligrams per liter  |
| MMRP       | Military Munitions Response Program   |
| MR         | Munitions Response  |
| N/A        | Not Applicable  |
| NFA        | No Further Action   |
| NPDES      | National Pollutant Discharge Elimination System                                   |
| NPL        | National Priorities List  |
| OB         | Open Burning  |
| OD         | Open Detonation   |
| ODUSD(I&E) | Office of the Deputy Under Secretary of Defense for Installations and Environment |
| OMA        | Operations and Maintenance - Army   |
| OPS        | Oil and Public Safety   |
| PA         | Preliminary Assessment  |

## Acronyms

|       |   |
|-------|---|
| PAH   | Polynuclear Aromatic Hydrocarbons             |
| PBA   | Performance-Based Acquisition                 |
| PBC   | Performance-Based Contract                    |
| PCE   | Tetrachloroethylene                           |
| PCMS  | Pinon Canyon Maneuver Site                    |
| PCP   | Pentachlorophenol                             |
| PETN  | Pentaerythritol tetranitrate                  |
| POL   | Petroleum, Oil and Lubricants                 |
| POW   | Prisoner of War                               |
| PVC   | Polyvinyl Chloride                            |
| QCSR  | Quality Control Summary Report                |
| Qtr   | Quater  |
| RA    | Remedial Action                               |
| RA(C) | Remedial Action - Construction                |
| RA(O) | Remedial Action - Operations                  |
| RAB   | Restoration Advisory Board                    |
| RBC   | Risk Based Concentration                      |
| RBSL  | Risk-Based Screening Level                    |
| RC    | Response Complete                             |
| RCRA  | Resource Conservation and Recovery Act        |
| RD    | Remedial Design                               |
| RFA   | RCRA Facility Assessment                      |
| RFI   | RCRA Facility Investigation                   |
| RI    | Remedial Investigation                        |
| RIP   | Remedy-in-Place                               |
| ROD   | Record of Decision                            |
| RV    | Revision                                      |
| SEP   | Supplemental Environmental Program            |
| SI    | Site Inspection                               |
| SOP   | Standard Operating Procedure                  |
| STP   | Sewage Treatment Plant                        |
| SVE   | Soil Vapor Extraction                         |
| SVM   | Soil Vapor Monitoring                         |
| SVOC  | Semi-Volatile Organic Compound                |
| SWMU  | Solid Waste Management Unit                   |
| TAPP  | Technical Assistance for Public Participation |
| TBD   | To Be Determined                              |
| TCA   | Trichloroethane                               |
| TCE   | Trichloroethylene                             |
| TCLP  | Toxicity Characteristic Leaching Procedure    |
| TRC   | Technical Review Committee                    |
| TSWP  | Treatability Study Work Plan                  |
| ug/L  | micrograms per liter                          |
| USACE | US Army Corps of Engineers                    |
| USAEC | US Army Environmental Command                 |

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## Acronyms

|        |                                      |
|--------|--------------------------------------|
| USAEHA | US Army Environmental Hygiene Agency |
| USEPA  | US Environmental Protection Agency   |
| UST    | Underground Storage Tank             |
| UXO    | Unexploded Ordnance                  |
| VOC    | Volatile Organic Compound            |

## Acronym Translation Table

### CERCLA

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

### RCRA

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

## Installation Information

### Installation Locale

**Installation Size (Acreage):** 142560

**City:** Fort Carson

**County:** El Paso, Pueblo, Fremont

**State:** Colorado

### Other Locale Information

Fort Carson (FTC) occupies approximately 220 square miles adjacent to the eastern flank of the Rocky Mountain front range and the Pike National Forest in central Colorado. The northern edge of the post is located in El Paso County, south of Colorado Springs, and the southern boundary is approximately 10 miles north of and parallel to US Highway 50 in Pueblo County. A small area in the southwestern portion of the post is located in Fremont County. The Pinon Canyon Maneuver Site (PCMS) is located approximately 150 miles by road southeast of FTC and encompasses 235,000 acres of training opportunities. PCMS provides critical maneuver land for larger units stationed at FTC.

### Installation Mission

The primary mission of FTC is the training and readiness of all assigned and attached troops to ensure combat-ready forces. Activities that support training include: vehicle maintenance, aviation maintenance, weapons maintenance, and range qualifications. Major tenants include the Navy and Marine Corps Reserve, the Colorado Army National Guard, the Army Reserve, Medical Command, and Defense Reutilization. FTC also serves several off-post satellite units and activities in its geographical area of responsibility. The US Air Force Academy, Cheyenne Mountain Air Station, Peterson Air Force Base (AFB), and 58 reserve components in nine states also use FTC's administrative, training, logistical, and other services.

### Lead Organization

#### Lead Executing Agencies for Installation

US Army Corps of Engineers (USACE) - Omaha District

#### Regulator Participation

|                |  |
|----------------|--|
| <b>Federal</b> | US Environmental Protection Agency (USEPA), Region VIII      |
| <b>State</b>   | Colorado Department of Public Health and Environment (CDPHE) |
| <b>Local</b>   | El Paso County   |

#### National Priorities List (NPL) Status

FORT CARSON is not on the NPL

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

RAB established 199411

### Installation Program Summaries

#### IRP

**Primary Contaminants of Concern:** Explosives, Metals, Munitions and explosives of concern (MEC), Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

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

#### CR

**Primary Contaminants of Concern:** Asbestos, Metals, Petroleum, Oil and Lubricants (POL), Semi-volatiles (SVOC), Volatiles (VOC)

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

# 5-Year / Periodic Review Summary

## 5-Year / Periodic Review Summary

| Status   | Start Date | End Date | End FY |
|----------|------------|----------|--------|
| Complete | 201001     | 201010   | 2011   |
| Planned  | 201501     | 201510   | 2016   |

## Last Completed 5-Year / Periodic Review Details

| Associated ROD/DD Name                 | Sites   |
|--|---------|
| Landfill #5 (FTC-009)                  | FTC-009 |
| Landfill 4 (FTC-008)                   | FTC-008 |
| Landfill 9 (FTC-013) Land Use Controls | FTC-013 |

**Results** Repairs to the LF 4 cap were recommended.

**Actions** Repairs are underway.

**Plans** No further plans are required.

## Recommendations and Implementation Plans:

N/A

## Land Use Control (LUC) Summary

**LUC Title:** CDD Landfill

**Site(s):** CC SW170

**ROD/DD Title:** CDD Landfill (SWMU 170)

**Location of LUC**

The Construction and Demolition Debris (CDD) Landfill is located on the Fort Carson Military Post, within Sections 28, 29, and 32, Township 15 South, Range 66 West of the 6th PM, El Paso County, Colorado.

**Land Use Restriction:** Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system

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

**Types of Institutional Controls:** Dig Permits, Restrictive covenants, Zoning

**Date in Place:** 200912

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** State

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

**Documentation Date:** N/A

**LUC Enforcement:** Annual Inspections

**Contaminants:** VOC

**Additional Information**

N/A

**LUC Title:** Landfill 4 (FTC-008)

**Site(s):** FTC-008

**ROD/DD Title:** Landfill 4 (FTC-008)

**Location of LUC**

Fort Carson Military Reservation Landfill 4.  
Sections 28, 29 & 32, Township 15 South, Range 66 West of the 6th P.M. County of El Paso, State of Colorado.

**Land Use Restriction:** Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Landfill restriction - Restrict access to the site, Landfill restriction - Restrict vehicular traffic, Media specific restriction - Prohibit, or otherwise manage excavation, Restrict land use - No residential use

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

**Types of Institutional Controls:** Dig Permits, Notations in Master Plan, Restrictions on land use, Restrictive covenants

**Date in Place:** 200903

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** State

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

**Documentation Date:** 200809

**LUC Enforcement:** Annual Inspections

## Land Use Control (LUC) Summary

**Contaminants:** PETROLEUM HYDROCARBON

**Additional Information**

N/A

**LUC Title:** Landfill 9 LUCs

**Site(s):** FTC-013

**ROD/DD Title:** Landfill 9 (FTC-013) Land Use Controls

**Location of LUC**

Fort Carson Military Post. 6.44 acres located southeast of the intersection of Titus Blvd. and Brown Rd. in the south 1/2 of of the southwest 1/4 of the southeast 1/4 of Section 21 and the north 1/2 of the northwest 1/4 of the northeast 1/4 of Section 28, both in Township 15 South, Range 66 west.

**Land Use Restriction:** Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Landfill restriction - Restrict access to the site, Landfill restriction - Restrict plantings that interfere LF cap or cover system (roots that penetrate the cap or cover system), Landfill restriction - Restrict vehicular traffic, Restrict land use - No residential use

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

**Types of Institutional Controls:** Dig Permits, Restrictive covenants

**Date in Place:** 200812

**Modification Date:** N/A

**Date Terminated:** N/A

**Inspecting Organization:** State

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

**Documentation Date:** 200605

**LUC Enforcement:** Annual Inspections

**Contaminants:** DISSOLVED SOLIDS (TOTAL)

**Additional Information**

N/A

# Cleanup Program Summary

## Installation Historic Activity

Construction of Camp Carson began in 1942, shortly after the bombing of Pearl Harbor. It was originally known as Camp Carson (after the frontier hero, General 'Kit' Carson) and served primarily as a training facility for more than 100,000 Soldiers during World War II. The 71st, 89th, and 104th Infantry Divisions trained at the installation. The camp was also the site of the Mountain Training Center, the Army Nurse Corps Training Center, and as an internment camp for 9,000 German and Italian prisoners of war.

In 1946, the War Department declared Camp Carson a permanent military post. Activities at the camp were greatly reduced and only 600 personnel remained at the site. During the 1950s, the mission of Camp Carson continued to be to provide basic and advanced training for combat-ready troops. Reserve and National Guard units were located on-site during the Korean Conflict. Between 1951 and 1953, Camp Carson served as a separation center where more than 100,000 Soldiers were processed. In 1954, the name of the installation was officially changed from Camp Carson to Fort Carson.

In 1961, FTC was selected as the site for a new Army training center, but the center was phased out after one year. Between 1962 and 1964, the 5th Infantry Division (Mechanized) was activated and stationed at FTC.

In 1965, approximately 78,500 acres were acquired, increasing the size of the installation to 137,403 acres. This meant that FTC was now able to support and train an entire division. Between 1965 and 1967, concurrent with the escalation of the Vietnam Conflict, military strength at FTC was increased from 10,000 to 25,000 troops. In July and August 1965 two floods occurred in the region that caused major damage to the area and the installation. The first flood resulted in the loss of several lives and \$100 million in damage to the region and the second flood caused \$160,000 in damages at the installation.

Throughout the 1970s, the mission of FTC continued to be the maintenance and training of combat-ready troops. The 4th Infantry Division (4ID) (Mechanized), also known as the 'Iron Horsemen,' was redeployed to FTC from Vietnam. During 1995, FTC became the home of the 10th Special Forces Group and the 3d Armored Cavalry Regiment as well as the 43d Support Group. Two brigades of the 4ID along with the division headquarters were moved to Fort Hood, Texas. The 3d Brigade remained at FTC. As of 1995, operations at FTC were carried out by about 20,000 personnel.

The principal industrial operations at FTC have been the repair and maintenance of vehicles and aircraft. The consolidated maintenance facility [ Building (Bldg) 8000] performs specialized repair of tactical and heavy construction and engineering equipment. Vehicle maintenance, at all unit motor pools, includes routine oil changes, lubes, washdowns, and refueling.

On June 4, 1999, the 7th Infantry Division was activated at FTC as an Integrated Division (comprised of an Active component and Army National Guard units). With its headquarters at FTC, the division consists of the 39th Infantry Brigade (Arkansas), the 41st Infantry Brigade (Oregon), and the 45th Infantry Brigade (Oklahoma). The division was originally activated on Dec. 10, 1917.

The US Army announced on Sept. 23, 2004 that FTC would become the new home of the 2nd Brigade, 2nd Infantry Division. FTC underwent a construction boom in 2007 and 2008 in preparation for the arrival of the 4ID from Fort Hood, Texas. In August 2009, the 4ID moved from Fort Hood, Texas, and took over installation command of FTC.

## Installation Program Cleanup Progress

### IRP

**Prior Year Progress:** The following documents were approved:

- RCRA Facility Investigation (RFI) reports for Solid Waste Management Unit (SWMU) 36
- No further actions (NFAs) for SWMU 45 and FTC-023 site (SWMUs 81, 84, 87)
- Presumptive Remedy Work Plan Construction Complete for SWMU 8

In lieu of environmental covenants the state of Colorado will issue a Notice of Environmental Use Restriction for future SWMU land use requirements.

**Future Plan of Action:** Complete RFIs for SWMU 45 and FTC-023 (SWMUs 81, 88, 108).  
Complete or initiate NFAs for SWMUs 36, 45, and FTC-023 (SWMU 88, 108).  
Corrective measures study (CMS) work will be initiated or continued for SWMUs 2/3, 7, 13, 14, 16, 24, 53, 164, 167, 168 and FTC 023 (SWMU78, 79, 88, 89, 108, 109).  
LTM will begin or continue for SWMU 4, SWMU 5, SMWU 9, SWMU 13, and SWMU 14. Monitoring

## Cleanup Program Summary

and maintenance will begin or continue at SWMUs 2/3, 7,8, 16, 24, 53, 164, 168, and FTC 023 (SWMU 79).

### CR

**Prior Year Progress:** The following documents were approved:  
- NFA for SWMU 22, 163 and 166  
- Remedy Completion report for SWMU 28

In lieu of environmental covenants the state of Colorado will issue a Notice of Environmental Use Restriction for future SWMU land use requirements.

**Future Plan of Action:**

- Complete NFA at SWMU 47
- CMS work will be initiated or continued for SWMUs 1, 23, 169, and 170.
- Monitoring and maintenance will be initiated or continued at SWMUs 23 and 169
- Interim closure plan (ICP) monitoring will continue for SWMUs 1 and 170.
- Risk evaluations, soil sampling, monitoring, and well abandonment will be performed at the underground storage tank (UST) sites.

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

# IRP Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 79/61

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

|   |   |
|---|---|
| 1 | Contaminated Fill<br>(FTC-093)  |
| 1 | Contaminated Ground Water<br>(FTC-083)                                      |
| 1 | Dip Tank<br>(FTC-058)   |
| 1 | Disposal Pit/Dry Well<br>(FTC-020)  |
| 1 | Fire/Crash Training Area<br>(FTC-021)                                       |
| 7 | Landfill<br>(FTC-006, FTC-008, FTC-009, FTC-011, FTC-012, FTC-013, FTC-026) |
| 1 | Soil Contamination After Tank Removal<br>(FTC-056)                          |
| 1 | Surface Disposal Area<br>(PBA@Carson)                                       |
| 3 | Underground Storage Tank<br>(FTC-023, FTC-033, FTC-070)                     |
| 1 | Washrack<br>(FTC-075)   |

## Most Widespread Contaminants of Concern

Explosives, Metals, Munitions and explosives of concern (MEC), Petroleum, Oil and Lubricants (POL), Polycyclic Aromatic Hydrocarbons (PAH), Semi-volatiles (SVOC), Volatiles (VOC)

## Media of Concern

Groundwater, Soil, Surface Water

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

| Site ID | Site Name                          | Action | Remedy  | FY   |
|---------|------------------------------------|--------|---|------|
| FTC-051 | FORMER UST SITE, BLDG 9648         | IRA    | WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS | 1987 |
| FTC-033 | Fmr Waste Oil/Solv USTs, Bldg 8000 | IRA    | WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS | 1991 |
| FTC-006 | LANDFILLS 2/3 (1960-1978)          | IRA    | DRAINAGE CONTROLS                             | 1993 |
| FTC-006 | LANDFILLS 2/3 (1960-1978)          | IRA    | FENCE OR OTHER SITE ACCESS CONTROL MEASURES   | 1993 |
| FTC-026 | PETE'S HILL                        | IRA    | DRAINAGE CONTROLS                             | 1995 |
| FTC-068 | FORMER UST SITE, BLDG 8300         | IRA    | WASTE REMOVAL - SOILS                         | 1995 |
| FTC-068 | FORMER UST SITE, BLDG 8300         | IRA    | WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS | 1997 |
| FTC-068 | FORMER UST SITE, BLDG 8300         | IRA    | WASTE REMOVAL - SOILS                         | 1997 |
| FTC-033 | Fmr Waste Oil/Solv USTs, Bldg 8000 | IRA    | GROUND WATER TREATMENT                        | 1999 |
| FTC-051 | FORMER UST SITE, BLDG 9648         | IRA    | BIOREMEDIATION                                | 1999 |
| FTC-055 | FORMER UST SITE, BLDG 981          | FRA    | WASTE REMOVAL - SOILS                         | 1999 |
| FTC-051 | FORMER UST SITE, BLDG 9648         | FRA    | AIR SPARGING                                  | 2000 |

## IRP Summary

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

| Site ID | Site Name                              | Action | Remedy                                  | FY   |
|---------|--|--------|---|------|
| FTC-058 | FORMER VAPOR<br>DEGREASER              | IRA    | REMOVAL                                 | 2000 |
| FTC-009 | LANDFILL 5 (1946-1956)                 | IRA    | CAPPING                                 | 2001 |
| FTC-021 | ABANDONED FIRE TRAINING<br>AREA        | IRA    | REMOVAL                                 | 2001 |
| FTC-068 | FORMER UST SITE, BLDG<br>8300          | IRA    | BIOREMEDIATION - IN SITU                | 2002 |
| FTC-079 | SLUDGE TRENCH PIT                      | IRA    | WASTE REMOVAL - SLUDGES                 | 2002 |
| FTC-020 | GRIT OIL PIT                           | IRA    | FREE PRODUCT RECOVERY                   | 2003 |
| FTC-020 | GRIT OIL PIT                           | IRA    | SOIL VAPOR EXTRACTION                   | 2003 |
| FTC-023 | FORMER USED/WASTE OIL<br>STORAGE TANKS | IRA    | WASTE REMOVAL - SOILS                   | 2003 |
| FTC-009 | LANDFILL 5 (1946-1956)                 | FRA    | CAPPING                                 | 2005 |
| FTC-020 | GRIT OIL PIT                           | IRA    | REMOVAL                                 | 2005 |
| FTC-083 | North Specker Avenue Plumes            | IRA    | AIR SPARGING                            | 2005 |
| FTC-033 | Fmr Waste Oil/Solv USTs, Bldg<br>8000  | IRA    | FREE PRODUCT RECOVERY                   | 2006 |
| FTC-013 | LANDFILL 9 (1965-1973)                 | FRA    | CAPPING                                 | 2007 |
| FTC-070 | UST near Building 202                  | FRA    | BIOREMEDIATION - IN SITU<br>GROUNDWATER | 2010 |
| FTC-012 | LANDFILL 8 (1972-1973)                 | FRA    | CAPPING                                 | 2011 |
| FTC-033 | Fmr Waste Oil/Solv USTs, Bldg<br>8000  | IRA    | IN-SITU SOIL TREATMENT                  | 2012 |

### Duration of IRP

**Date of IRP Inception:** 198210

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201509/201512

**Date of IRP completion including Long Term Management (LTM):** 204101

# IRP Contamination Assessment

## Contamination Assessment Overview

FTC's principal industrial operation has been the repair and maintenance of vehicles, aircraft, and equipment. Approximately 20 maintenance facilities (motor pools) have been constructed throughout FTC, including the consolidated maintenance facility at Bldg 8000, which performs specialized repair of tactical and heavy construction and engineering equipment and vehicles. In addition, since the 1960s, more than 300 USTs and aboveground storage tanks (ASTs) have been installed throughout the fort to store a variety of fuels (gasoline, jet propellant (JP)-4, JP-8, kerosene, diesel), and used/waste oils. To date, over 150 individual USTs have been removed and 36 have been upgraded to comply with 1998 state and USEPA standards. In July 1992 investigations of these facilities detected low levels of tetrachloroethylene (PCE), trichloroethylene (TCE), trichloroethane (TCA), heavy metals, petroleum hydrocarbons, and several other substances in the soil and groundwater at some sites. Results of the investigations prompted the implementation of an installation-wide groundwater monitoring program.

In May 1994, the USEPA completed a Resource Conservation and Recovery Act (RCRA) facility assessment (RFA) of FTC. In September 1994 the CDPHE augmented the RFA and in October 1995, based on sites identified in the RFA, they issued FTC a RCRA hazardous waste Part B permit designating the SWMUs listed in this IAP. The FTC numbers also listed in this IAP were designated in the USAEHA Interim Final Report, Hazardous Waste Consultation No. 37-26-0185-89, Evaluation of SWMUs, Fort Carson, Colorado Springs, Colorado (1988).

The RCRA Part B permit identifies several potential landfill (LF) sites that were primarily used for sanitary and construction debris, open burning/open detonation (OB/OD) units, a fire training area, battery acid neutralization shops (BANS), several vehicle washrack drainage areas, and several additional areas listed in the respective site description sections. The most widespread contaminants of concern are POLs, metals, inorganics, and VOCs including, but not limited to, benzene, toluene, ethylbenzene, and xylene (BTEX), TCE, PCE, TCA, and cis-1,2-dichloroethylene. Limited amounts of contamination other than POL and solvents have been discovered. Groundwater contamination above regulatory limits has been found at several sites. Based on the results of the ongoing groundwater monitoring program, there are no known hazardous constituents migrating off or onto the installation.

The current AEDB-R for the FTC installation contains information on 17 sites [one of which carries information on the fiscal year (FY) 08 performance-based acquisition (PBA)]. The database numbering system does not accurately reflect the number of physical sites because one AEDB-R number refers to multiple site locations. FTC-023 includes 57 locations (SWMUs 55 - 111) of former used/waste oil USTs and each is listed in the RCRA permit as a separate SWMU. Most of the other active sites are currently being addressed under the FY08 PBA (FTC-06, -08, -09, -11, -12, -13, -20, -21, -26, -33, -58, -70, -75, -83, and -93). FTC-017 is in the final stages of completion.

In accordance with the RCRA Part B permit requirements, known or suspected constituents of concern identified for each SWMU in the permit were and are currently being addressed. Contaminants of concern identified above regulatory or risk-based screening criteria during the RFI process are listed in the 'STATUS' box for each SWMU. In cases where no RFI has been performed at the SWMU (i.e., active facilities), the contaminants listed in the 'STATUS' box reflect the suspected constituents of concern listed in the Part B permit.

## Cleanup Exit Strategy

The exit strategy for FTC consists of an integrated approach through the use of a large PBA contract to consolidate and streamline the cleanup process. The PBA was awarded in July 2008 and addresses the following Installation Restoration (IR) sites:

IR SWMUs: 2/3, 4, 5, 7, 8, 9, 13, 14, 16, 24, 36, 53, 164, 167, 168

IR sites: 6, 8, 9, 11, 12, 13, 20, 26, 58, 21, 75, 33, 70, 83, 93

These PBA sites include all significant IR cleanup projects at FTC and will move forward according to the PBA schedule, which continues through December 2015. All sites are scheduled for response complete (RC) by the end of the PBA. Several sites will have continuing LTM requirements to address groundwater monitoring and LF cap maintenance.

## IRP Previous Studies

| 1992 | Title   | Author                              | Date     |
|------|---|-------------------------------------|----------|
|      | UST Sites, Remedial Design  | Not on Record                       | JUN-1992 |
|      | FTC-33, SWMU-53, Bldg. 8000, Pre-Design Study Report UST Sites  | Woodward-Clyde Consultants          | JUN-1992 |
|      | Bldg. 8000, Two 26K Gallon Used Oil Tanks   | Not on Record                       | JUN-1992 |
| 1993 | Multiple USTs Final A-E, Chemical Data Acquisition Plan/Work Plan for Site Assessment on Multiple USTs              | Rust Environment and Infrastructure | MAR-1993 |
|      | Final Site Specific Safety, Health and Emergency Response Plan for Sludge Pit Excavation                            | Rust Environment and Infrastructure | JUN-1993 |
| 1994 | Final A-E Chemical Data Acquisition Plan/Work Plan for Site Assessment on Multiple USTs                             | Rust Environment and Infrastructure | MAR-1994 |
|      | Final Site Safety and Health Plan, Grit/Oil Pit   | Rust Environment and Infrastructure | MAR-1994 |
|      | Final Site Safety and Health Plan, Site Assessment on Multiple USTs   | Rust Environment and Infrastructure | MAR-1994 |
|      | FTC-20, SWMU-13, Grit/Oil Pit Final A-E Work Plan   | Rust Environment and Infrastructure | MAR-1994 |
|      | Final RCRA Facility Assessment for Fort Carson  | SAIC                                | MAY-1994 |
|      | Design Concept Submittal  | Rust Environment and Infrastructure | JUN-1994 |
|      | Pre-Final Design Analysis Report  | Rust Environment and Infrastructure | JUL-1994 |
|      | Final Design Submittal, Vol.1: Design Analysis Report   | Rust Environment and Infrastructure | AUG-1994 |
|      | Final Design Submittal, Vol.2: Specifics & Bid Schedule   | Rust Environment and Infrastructure | AUG-1994 |
|      | Final Submittal Grit/Oil Pit Voluntary Corrective Action  | Rust Environment and Infrastructure | AUG-1994 |
|      | Final Design Submittal, Vol.3: Cost Estimates and Construction Schedule   | Rust Environment and Infrastructure | AUG-1994 |
|      | Final Sampling & Analysis Plan for Group A  | Rust Environment and Infrastructure | AUG-1994 |
|      | Final Analytical Data Package Vol. 1-4, for Site Assessment on Multiple USTs  | Rust Environment and Infrastructure | SEP-1994 |
|      | Programmatic Site Safety & Health Plan for Voluntary Site Assessment Health-Based Risk Assessment & Remedial Design | Rust Environment and Infrastructure | OCT-1994 |
|      | Draft Final, Rev 1, Sampling and Analysis and Site-specific Health & Safety Plan for Group B Sites                  | Rust Environment and Infrastructure | NOV-1994 |
|      | Final Sampling and Analysis Plan and Site-specific Health and Safety Plan for Equalization Basin                    | Rust Environment and Infrastructure | NOV-1994 |
|      | Final Sampling and Analysis and Site-specific Health & Safety Plan for Group B Sites                                | Rust Environment and Infrastructure | NOV-1994 |
|      | Sampling and Analysis Plan for Group B Sites (Delivery Order Specific)  | Rust Environment and Infrastructure | NOV-1994 |
|      | Final Sampling and Analysis Plan for Group A Sites  | Rust Environment and Infrastructure | NOV-1994 |
|      | Groundwater Development Photograph Log for Multiple USTs  | Rust Environment and Infrastructure | NOV-1994 |
|      | FTC-6, SWMU-2, Landfill 2 Remedial Design Landfills 2,5 & 6 and Vapor Degreaser(Rev.1) (Delivery Order              | Rust Environment and Infrastructure | DEC-1994 |

## IRP Previous Studies

| 1994 | Title   | Author                                 | Date     |
|------|---|--|----------|
|      | Specific)   |  |          |
|      | Site Safety and Health Plan, Former Fire Training Area  | Rust Environment and Infrastructure    | DEC-1994 |
|      | Site Safety and Health Plan, Voluntary Site Investigation and Health-Based Risk Assessment  | Rust Environment and Infrastructure    | DEC-1994 |
| 1995 | Final Site Assessment Report for Multiple USTs  | Rust Environment and Infrastructure    | FEB-1995 |
|      | Final Analytical Data Package for Site Investigation at Group B Sites   | Rust Environment and Infrastructure    | MAR-1995 |
|      | Final QCSR for Site Investigations at Group B Sites   | Rust Environment and Infrastructure    | APR-1995 |
|      | Site Investigation at Group B Sites   | Rust Environment and Infrastructure    | APR-1995 |
|      | Executive Summary & Rev Table of Contents for Final Site Assessment Report for Multiple USTs  | Foothill Engineering Consultants       | JUN-1995 |
|      | Final, Analytical Data Package for Site Investigation at Group A Sites  | Rust Environment and Infrastructure    | JUN-1995 |
|      | Analytical Data Package for RFI at Landfills 2, 5 & 6 and Vapor Degreaser Site at Building 8000: Vol 1 & 2  | Rust Environment and Infrastructure    | JUL-1995 |
|      | RFIs at Group A Sites: Landfill 4, DRMO Hazardous Waste Storage Area, Vehicle Washrack Drainage   | Rust Environment and Infrastructure    | SEP-1995 |
|      | QCSR for RFIs at Group A Sites: Landfill 4, DRMO Hazardous Waste Storage Area, Vehicle Washrack Drainage  | Rust Environment and Infrastructure    | SEP-1995 |
|      | FLPM, Working Draft Field and Laboratory Manual for Fort Carson Army Installation   | Rust Environment and Infrastructure    | SEP-1995 |
|      | Site Safety and Health Plan, Grit/Oil Pit   | Rust Environment and Infrastructure    | SEP-1995 |
|      | FTC-58, SWMU-16, Vapor Degreaser, Design Analysis for Former Vapor Degreaser and Soil Vapor Extraction System                                     | Rust Environment and Infrastructure    | OCT-1995 |
|      | Final Report Fort Carson Landfill Survey  | Geo-Centers                            | NOV-1995 |
|      | Revised Conceptual (30%) Design Engineering Design Analysis Landfill 2  | Rust Environment and Infrastructure    | NOV-1995 |
|      | Final Revision 2 RFI Work Plan, Grit/Oil Pit  | Rust Environment and Infrastructure    | NOV-1995 |
|      | Final Quality Control Summary Report for RFI at Group A Sites   | Rust Environment and Infrastructure    | NOV-1995 |
| 1996 | Site-specific Safety & Health Plan Landfills 2, 5, 6 Cap Installation Program   | Rust Environment and Infrastructure    | JAN-1996 |
|      | Draft Final RFI Specific Site and Safety Health Plan Battery Acid Neutralization Shops, Bldgs. 8030, 8000, 8142                                   | Foothill Engineering Consultants, Inc. | JAN-1996 |
|      | RFI Work Plan, Draft Final, Landfill 1 SWMU 1, FTC-5  | Rust Environment and Infrastructure    | JAN-1996 |
|      | Draft Final RFI Work Plan, Battery Acid Neutralization Shops, Building 8000, Building 8030, Building 8142 (inclusive of background soil sampling) | Rust Environment and Infrastructure    | JAN-1996 |
|      | FTC-14, SWMU-10, Landfill 10, Draft Final, RFI Work Plan, Landfill 10   | Rust Environment and Infrastructure    | JAN-1996 |

## IRP Previous Studies

1996

| Title  | Author                              | Date     |
|--|-------------------------------------|----------|
| RFI Report and Baseline Human Health Risk Assessment for Group A Sites   | Rust Environment and Infrastructure | JAN-1996 |
| Contractor Programmatic Site Safety & Health Plan for RFI Remedial Design Activities                                       | Rust Environment and Infrastructure | FEB-1996 |
| Revision 2, Program Site Safety & Health Plan for RFI Remedial Design Activity   | Rust Environment and Infrastructure | FEB-1996 |
| Quarterly Groundwater Monitoring Program, Final-Rev 1, Manual/Site-specific Health and Safety Plan                         | Rust Environment and Infrastructure | MAR-1996 |
| FTC-75, SWMU-36, Old Central Washrack, Draft Final RFI Work Plan, Old Central Wash Rack                                    | Rust Environment and Infrastructure | APR-1996 |
| Final Sampling Plans for Quarterly Groundwater Monitoring Program - 1996   | Rust Environment and Infrastructure | APR-1996 |
| FTC-13, SWMU-9, Landfill 9, Draft Final RFI Work Plan, Landfill 9  | Rust Environment and Infrastructure | APR-1996 |
| Draft Final RFI Work Plan, Landfill 7  | Rust Environment and Infrastructure | APR-1996 |
| Landfill 5 Construction Specifications   | Rust Environment and Infrastructure | APR-1996 |
| Final Design Analysis; Landfill 5  | Rust Environment and Infrastructure | APR-1996 |
| Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2002  | Rust Environment and Infrastructure | APR-1996 |
| FTC-13, SWMU-9, Landfill 9 Draft Final RFI Work Plan , Landfill 9  | Rust Environment and Infrastructure | APR-1996 |
| Construction Specifications Landfill 2   | Rust Environment and Infrastructure | MAY-1996 |
| Final Design Analysis; Landfill 2  | Rust Environment and Infrastructure | MAY-1996 |
| Final Field and Laboratory Procedures Manual for Fort Carson Army Installation, Rev 0                                      | Rust Environment and Infrastructure | MAY-1996 |
| Analytical Data Package  | Rust Environment and Infrastructure | MAY-1996 |
| Fort Carson Community Involvement Plan   | Rust Environment and Infrastructure | MAY-1996 |
| Analytical Data Package - Volume 1 & 2   | Rust Environment and Infrastructure | JUN-1996 |
| Draft Final RFI Report, Grit/Oil Pit   | Rust Environment and Infrastructure | JUN-1996 |
| NFA Request Landfill 12  | Rust Environment and Infrastructure | JUN-1996 |
| Draft Final RFI Work Plan, Sludge Trench Pit   | Rust Environment and Infrastructure | JUL-1996 |
| Draft Final RFI Work Plan, Building 8000, Former Waste Oil/Solvent USTs  | Rust Environment and Infrastructure | JUL-1996 |
| Final Analytical Data Packages, Quarterly Groundwater Monitoring Program 1996  | Rust Environment and Infrastructure | JUL-1996 |
| Final No Further Action Request for SWMUs 93, 94, 95, and 97 through 106, Former Used/Waste Oil Above Ground Storage Tanks | Rust Environment and Infrastructure | JUL-1996 |
| QCSR, Fire Training Area   | Rust Environment and Infrastructure | AUG-1996 |
| Rev. 1 QCSR, Grit/Oil Pit  | Rust Environment and Infrastructure | AUG-1996 |
| Analytical Data Package for Landfills 2, 5, & 6 (for samples collected June 1995 to May 1996)                              | Rust Environment and Infrastructure | SEP-1996 |

## IRP Previous Studies

1996

| Title   | Author                              | Date     |
|---|-------------------------------------|----------|
| Analytical Data Package - Former Vapor Degreaser                                      | Rust Environment and Infrastructure | OCT-1996 |
| Final RFI Work Plan on Multiple USTs  | Foothill Engineering Consultants    | OCT-1996 |
| Draft Final Voluntary Site Investigation and Risk Assessment Report for Group B Sites | Rust Environment and Infrastructure | OCT-1996 |
| Draft Final Voluntary Site Inv. and Risk Assessment Report for Group A Sites          | Rust Environment and Infrastructure | OCT-1996 |
| QCSR - Landfills 2, 5, & 6  | Rust Environment and Infrastructure | OCT-1996 |
| Letter Work Plan for Fort Carson, Building 8000                                       | Rust Environment and Infrastructure | NOV-1996 |
| Final Sampling Plans for Quarterly Groundwater Monitoring Program - 1997              | Rust Environment and Infrastructure | DEC-1996 |
| Draft Final Cap Installation Work Plan Landfills 5 & 6                                | Rust Environment and Infrastructure | DEC-1996 |

1997

|  |                                     |          |
|--|-------------------------------------|----------|
| Final Voluntary Assessment Work Plan for Bldg. 749- West Drainage Ditch                            | Rust Environment and Infrastructure | JAN-1997 |
| Additional Direct Push Groundwater Sampling Activities, Building 749 - West Drainage Ditch         | Rust Environment and Infrastructure | MAR-1997 |
| Rationale for Additional Groundwater Sampling Activities, Bldg. 749- West Drainage Ditch           | Rust Environment and Infrastructure | MAR-1997 |
| Final Field and Laboratory Procedures Manual for Fort Carson Army Installation                     | Rust Environment and Infrastructure | MAR-1997 |
| Final Field and Laboratory Procedures Manual for Fort Carson Army Installation                     | Rust Environment and Infrastructure | APR-1997 |
| Final Analytical Data Packages, Quarterly Groundwater Monitoring Program 1997                      | Rust Environment and Infrastructure | APR-1997 |
| Possible Monitoring Well Locations for Foothills Engineering Consultants Activities                | Foothills Engineering Consultants   | APR-1997 |
| Draft Final RFI Work Plan Addendum, Grit/Oil Pit   | Rust Environment and Infrastructure | MAY-1997 |
| Final Newly Identified SWMU Report, North Specker  | Rust Environment and Infrastructure | MAY-1997 |
| Construction Activities at Landfills 5 and 6 (Stormwater Pollution Prevention Plan)                | Rust Environment and Infrastructure | JUN-1997 |
| Letter Report for Relative Risk Groundwater Sampling at Selected Sites completed during Sept. 1996 | Rust Environment and Infrastructure | JUL-1997 |
| Draft Final Gradefill Work Plan for Landfills 5 & 6  | Rust Environment and Infrastructure | JUL-1997 |
| Final Analytical Data Packages, Quarterly Groundwater Monitoring Program 1996                      | Rust Environment and Infrastructure | JUL-1997 |
| Draft Final RFI Work Plan, Landfill 11   | Rust Environment and Infrastructure | JUL-1997 |
| Preconstruction Survey Report, Landfill 5  | Rust Environment and Infrastructure | AUG-1997 |
| Final Quarterly Groundwater Monitoring Program, 1996, First Quarter, Vol 1                         | Rust Environment and Infrastructure | SEP-1997 |

1998

|   |                                     |          |
|---|-------------------------------------|----------|
| Additional ET Cap Modeling Landfills 5 & 6          | Rust Environment and Infrastructure | JAN-1998 |
| Draft Final RFI Work Plan, Bldg. 8000, Former Waste | Rust Environment and Infrastructure | JAN-1998 |

## IRP Previous Studies

1998

| Title   | Author                              | Date     |
|---|-------------------------------------|----------|
| Final Sampling Plans for Quarterly Groundwater Monitoring Program - 1998  | Rust Environment and Infrastructure | JAN-1998 |
| Draft Final Gradefill Work Plan Landfill 2  | Rust Environment and Infrastructure | JAN-1998 |
| Draft Final RFI Report, Landfill 12   | Rust Environment and Infrastructure | JAN-1998 |
| Revised Final Sampling and Analysis Plan for Remedial Design for Landfills 2, 3, 5 and 6 and Vapor Degreaser                                      | Rust Environment and Infrastructure | JAN-1998 |
| Final Analytical Data Package for Site Investigation at Group B Sites   | Rust Environment and Infrastructure | MAR-1998 |
| Final Programmatic Construction Quality Assurance/Quality Control Plan  | Rust Environment and Infrastructure | APR-1998 |
| Analytical Data Package - Volume 2  | Rust Environment and Infrastructure | MAY-1998 |
| Results of Soil-Gas Pilot Test and Letter Work Plan for Additional Investigation Activities at North Specker                                      | Rust Environment and Infrastructure | JUN-1998 |
| Final Analytical Data Packages, Quarterly Groundwater Monitoring Program, 1996, Second Quarter, Vol. 2  | Rust Environment and Infrastructure | JUN-1998 |
| Final RFI Work Plan, Former Used/Waste Oil Tanks - 11 Site  | Rust Environment and Infrastructure | JUN-1998 |
| Draft Final RFI Work Plan, Former Used/Waste Oil Tanks and Oil/Water Separators- 33 Site, Rev. 1  | Rust Environment and Infrastructure | JUN-1998 |
| Gas Probe Monitoring Results for Landfills 2, 5 & 6 (April-June 1998)   | Rust Environment and Infrastructure | JUN-1998 |
| Draft Final, Rev. 1 RFI Work Plan, Former Used/Waste Oil Tanks and Oil/Water Separators- 33 Site  | Rust Environment and Infrastructure | JUL-1998 |
| Final Quarterly Groundwater Monitoring Program, 1996, Third Quarter, Vol 3  | Rust Environment and Infrastructure | SEP-1998 |
| FTC-45A, 45B, 45C, SWMU-28, 29, 30, Bldgs. 8000, 8030, 8142 Battery Acid Neutralization Shops, Final Work Plan, Battery Acid Neutralization Shops | Rust Environment and Infrastructure | SEP-1998 |
| Final RFI Summary and Letter Work Plan Addendum, Bldg 8000  | Rust Environment and Infrastructure | OCT-1998 |
| Final RFI Work Plan, Landfill 12  | ECC                                 | OCT-1998 |

1999

|  |                                     |          |
|--|-------------------------------------|----------|
| Final Sampling Plans for Quarterly Groundwater Monitoring Program, 1999, Quarters 1 & 3        | Rust Environment and Infrastructure | JAN-1999 |
| Final Letter Work Plan for Investigating Bldgs. 1860, 6290, 8300, 1882, 1515, 9648             | Rust Environment and Infrastructure | JAN-1999 |
| FTC-43, SWMU-51, DIO Draft Final Revision 1 RFI Work Plan for DIO Hazardous Waste Storage Area | Rust Environment and Infrastructure | FEB-1999 |
| Draft Final Motor Pool Cap Work Plan, Landfill 5   | Rust Environment and Infrastructure | FEB-1999 |
| Final Quarterly Groundwater Monitoring Program, 1996, Fourth Quarter, Vol. 4                   | Rust Environment and Infrastructure | MAR-1999 |
| Draft Final ET Cap Work Plan Landfills 5 & 6   | Rust Environment and Infrastructure | MAR-1999 |
| Final RFI Report, Range 1, Open Burn Grounds   | ECC                                 | MAY-1999 |
| Final Design Analysis for Landfill 5, Motor Pool Cap   | HLA                                 | JUN-1999 |
| Draft Final RFI for Group A Sites  | Rust Environment and Infrastructure | JUN-1999 |
| Final Analytical Data Packages, Quarterly Groundwater Monitoring Program, 1999                 | Rust Environment and Infrastructure | JUN-1999 |

## IRP Previous Studies

1999

| Title  | Author                                    | Date     |
|--|---|----------|
| Final Motor Pool Cap Work Plan, Landfill 5   | Rust Environment and Infrastructure       | JUN-1999 |
| Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - 11 Site  | Rust Environment and Infrastructure       | JUL-1999 |
| Letter Work Plan Addendum for Northern Manholes, Bldg. 8000  | DECAM/Rust Environment and Infrastructure | JUL-1999 |
| Draft Final QCSR, Phase I RFI Former Used/Waste Oil Tanks - 11 Site  | Rust Environment and Infrastructure       | JUL-1999 |
| Site-specific Safety & Health Plan, Petroleum Hydrocarbon Site Drilling & Remediation  | Earth Tech                                | AUG-1999 |
| Final Letter Work Plan for Subsurface Investigations at Heating Oil Plants, Buildings 1860 & 6290  | Rust Environment and Infrastructure       | AUG-1999 |
| Draft Final RFI Report for Group B Sites   | Rust Environment and Infrastructure       | SEP-1999 |
| Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks and Oil/Water Separators - 33 Site, Modification to Field Sampling for the Former Oil/Water Separator Discharge Locations | DECAM/Rust Environment and Infrastructure | SEP-1999 |
| Draft Final Rev. 1, Phase I CMS Work Plan, Grit Oil Pit  | Rust Environment and Infrastructure       | OCT-1999 |
| Draft Final Oil/Water Separator Removal Work Plan Fire Training Area   | Rust Environment and Infrastructure       | NOV-1999 |
| Draft Site Close Report - Bldg. 749, RFI on Numerous USTs  | Rust Environment and Infrastructure       | NOV-1999 |
| FTC-8, SWMU-4, Landfill 4, Draft Final Revision 1, RFI Work Plan   | Rust Environment and Infrastructure       | DEC-1999 |

2000

|  |                                     |          |
|--|-------------------------------------|----------|
| Draft Final RFI Work Plan, Landfill 10   | Earth Tech                          | JAN-2000 |
| Final Sampling Plans for Quarterly Groundwater Monitoring Program - 2000   | Earth Tech                          | JAN-2000 |
| Draft Final ET Cap Work Plan, Landfill 5   | Earth Tech                          | MAR-2000 |
| Final Certification Report Landfill 5 Motor Pool Cap   | Golder Associates, Inc.             | MAR-2000 |
| Final RFI Report, Equalization Basin   | Rust Environment and Infrastructure | MAR-2000 |
| Draft Final SWMU 167 Summary report, North Specker Avenue Groundwater Plumes   | Earth Tech                          | MAR-2000 |
| Integrated Solid Waste Management Plan   | Earth Tech                          | MAR-2000 |
| Analytical Data Package - Volume 3   | Earth Tech                          | APR-2000 |
| Analytical Data Package - Volume 3   | Earth Tech                          | APR-2000 |
| Final Letter Work Plan for Installing Additional Temporary Direct-push Wells Grit/Oil Pit and Landfill 1 CMA - Phase 1               | Earth Tech                          | MAY-2000 |
| Final RFI Report, Grit/Oil Pit   | Earth Tech                          | MAY-2000 |
| Final Letter Work Plan for Supplemental Background Soil Sampling   | Earth Tech                          | JUN-2000 |
| Final QCSR - Addendum to RFI Report  | Earth Tech                          | JUN-2000 |
| Final Letter Work Plan Addendum for Former Used/Waste Oil Tanks- 33 Site, Re-sampling Associated w/ Quanterra Environmental Services | Earth Tech                          | JUN-2000 |

## IRP Previous Studies

2000

| Title  | Author                            | Date     |
|--|-----------------------------------|----------|
| Performance  |                                   |          |
| SWMU-111, Final Letter Work Plan, Subsurface Investigation - Bldg. 8110  | Earth Tech                        | JUN-2000 |
| Used/Waste Oil Tanks- 33 Site, Re-sampling Associated w/ Quanterra Environmental Services Performance                          | Earth Tech                        | JUN-2000 |
| Final Quality Control Summary Report RFI on Multiple USTs  | Foothills Engineering Consultants | JUL-2000 |
| Letter Work Plan Addendum - Former Used/Waste Oil Tanks and Oil/Water Separators - Buildings 2735, 2840, 9609, and 9620        | Earth Tech                        | JUL-2000 |
| SWMU-110: Final Letter Work Addendum, Former Used/Waste Oil Tanks - Bldg. 2427   | Earth Tech                        | JUL-2000 |
| DIO Analytical Data Package  | Earth Tech                        | JUL-2000 |
| SWMU-110, 72- Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 2427 and 2735                               | Earth Tech                        | JUL-2000 |
| SWMU-74,75 - Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks and Oil/Water Separators - Bldg. 2840 and Bldg. 2940 | Earth Tech                        | JUL-2000 |
| MatcomTM Suitability Report  | Harding Lawson                    | AUG-2000 |
| Final Construction Report Landfill 5 Motor Pool Cap  | Harding Lawson Associates         | AUG-2000 |
| Draft Final QCSR, Former Vapor Degreaser   | Earth Tech                        | AUG-2000 |
| Fort Carson Community Involvement Plan   | Earth Tech                        | AUG-2000 |
| Draft Final RFI Work Plan, Bldg. 8001, Former Waste Oil/Solvent USTs   | Earth Tech                        | AUG-2000 |
| Final Letter Work Plan for the Installation of Additional Soil Borings - Bldg. 6290  | Earth Tech                        | SEP-2000 |
| Final Letter Work Plan for Additional Subsurface Investigation, FTC 83, SWMU 167   | Earth Tech                        | SEP-2000 |
| Interim Report, Subsurface Investigation and Pilot Test Installation   | Earth Tech                        | NOV-2000 |
| Draft Final Newly Identified SWMU Report - POW Camp  | Earth Tech                        | DEC-2000 |

2001

|   |                         |          |
|---|-------------------------|----------|
| Final Sampling Plans for Quarterly Groundwater Monitoring Program, 2001                             | Earth Tech              | JAN-2001 |
| Final Certification Report Landfill 5 Motor Cap   | Golder Associates, Inc. | FEB-2001 |
| Module II, Background Groundwater Proposed Final Well Selection for Background Groundwater Data Set | Earth Tech              | MAR-2001 |
| Draft Final Phase I CMS Report, Landfill 1 and Grit/Oil Pit   | Earth Tech              | MAR-2001 |
| Draft Rev. 2 RFI Work Plan, Landfill 11   | Earth Tech              | MAR-2001 |
| Draft Final RFI Report Landfill 5   | Earth Tech              | MAR-2001 |
| Final Site Characterization Reports, Bldg. 1860 and Bldg. 6290                                      | Earth Tech              | APR-2001 |
| Draft Final RFI Report Vehicle Washrack Drainage Ditches  | Earth Tech              | MAY-2001 |
| Draft Final RFI Report Bldg. 301 Drainage Ditch   | Earth Tech              | MAY-2001 |

## IRP Previous Studies

2001

| Title  | Author                   | Date     |
|--|--------------------------|----------|
| Final RFI Work Plan, BECS  | Earth Tech               | MAY-2001 |
| Final Letter Work Plan for Addition Subsurface Investigation, FTC 83, SWMU 167           | Earth Tech               | MAY-2001 |
| Draft Final RFI Work Plan for Additional Surface Soil Sampling, DIO                      | Earth Tech               | JUN-2001 |
| Draft Final Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit                          | Earth Tech               | JUN-2001 |
| SWMU-84, Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 8300 | Earth Tech               | JUN-2001 |
| Draft Final Oil/Water Separator Removal Work Plan Fire Training Area                     | Earth Tech               | JUN-2001 |
| Draft Final Rev. 1 RFI Report DIO  | Earth Tech               | JUL-2001 |
| Draft Final Oil/Water Separator Removal Work Plan Addendum Fire Training Area            | Earth Tech               | JUL-2001 |
| Final RFI Report DRMO Hazardous Waste Storage Facility                                   | Earth Tech               | JUL-2001 |
| Final Interim Corrective Measure Work Plan, Bldg. 8000                                   | Earth Tech               | AUG-2001 |
| Final Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit                                | Earth Tech               | AUG-2001 |
| Final Quarterly Site Specific Monitoring Program, 4th Quarter 2000                       | Earth Tech               | AUG-2001 |
| Final Letter Work Plan Range 1, Open Burning Grounds                                     | Earth Tech               | SEP-2001 |
| Draft Final RFI Work Plan, Landfill 8  | Earth Tech               | SEP-2001 |
| Final Phase I CMS Summary Report, Landfill 1 and Grit/Oil Pit                            | Earth Tech               | SEP-2001 |
| Draft Final Conceptual Removal Plan, Range 1 Concrete Basin                              | Earth Tech               | SEP-2001 |
| Draft Final RFI Report, Landfill 11  | Earth Tech & Harding ESE | OCT-2001 |
| Final Work Plan, Background Groundwater Data Set   | Earth Tech               | OCT-2001 |
| Final Phase I CMS Summary Report, Landfill 1 and Grit/Oil Pit                            | Earth Tech               | OCT-2001 |
| Final Phase II CMS Work Plan, Landfill 1 and Grit/Oil Pit                                | Earth Tech               | OCT-2001 |
| Draft Final Evaluation of Background Soil Data for Fort Carson                           | Earth Tech               | NOV-2001 |
| Final RFI Report, Demolition Area  | Earth Tech               | NOV-2001 |
| FTC-43, SW051 DIO Analytical Data Package Addendum                                       | Earth Tech               | DEC-2001 |
| Final, Revision 1, Oil/Water Separator Removal Work Plan Addendum Fire Training Area     | Earth Tech               | DEC-2001 |
| Final Construction Report Landfill 5 ET Cap  | Earth Tech               | DEC-2001 |

2002

|  |            |          |
|--|------------|----------|
| Final Site Characterization Report Landfill 5        | HLA        | JAN-2002 |
| Final Revision 1 RFI Work Plan, Land Spreading Field | Earth Tech | JAN-2002 |
| Final QCSR Addendum DIO Hazardous Waste Storage Area | Earth Tech | JAN-2002 |
| Final QCSR DIO Hazardous Waste Storage Area          | Earth Tech | JAN-2002 |

## IRP Previous Studies

2002

| Title  | Author   | Date     |
|--|--|----------|
| Final RCRA Facility Investigation Report DIO Hazardous Waste Storage Area  | Earth Tech   | JAN-2002 |
| Draft Final QCSR/ADP, POW Camp   | Earth Tech   | JAN-2002 |
| Draft Final RFI Work Plan, Pete's Hill Dump  | Earth Tech   | JAN-2002 |
| Final QCSR, Battery Acid Neutralization Shops  | Earth Tech   | JAN-2002 |
| Final RFI Report, Battery Acid Neutralization Shops  | Earth Tech   | JAN-2002 |
| Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2001  | Earth Tech   | FEB-2002 |
| Draft Final Pilot Vapor Extraction Treatability Study Report, Grit/Oil Pit   | Earth Tech   | MAR-2002 |
| Draft Final RFI Work Plan Addendum, BECS   | Earth Tech   | MAR-2002 |
| Final ET Cap Work Plan, Landfill 5   | Earth Tech   | MAR-2002 |
| Draft Final Revision 1 RFI Report, Range 1A  | Earth Tech   | APR-2002 |
| Final Development of Sitewide RBCs   | Earth Tech   | APR-2002 |
| Draft Final Module III, Human Health RBCs, Development of Site Wide Risk Concentrations  | Earth Tech   | APR-2002 |
| Final Former Used/Waste Oil Above Ground Storage Tank Legal Descriptions   | Earth Tech   | APR-2002 |
| Final QCSR Addendum, Range 1A  | Earth Tech   | APR-2002 |
| SWMU-84 Draft Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 8300 (Paragon Analytics Chiller Malfunction Resampling) | Earth Tech   | APR-2002 |
| Final Former Used/Waste Oil Above Ground Storage Tank Legal Descriptions   | Earth Tech   | APR-2002 |
| Final RFI Work Plan Landfill 8   | Earth Tech   | MAY-2002 |
| Draft Final 2nd Quarter 2001, Groundwater Sampling Results, Landfill 5   | Earth Tech   | MAY-2002 |
| Module V, ECO, Draft Final Ecological Reconnaissance of B Ditch, Clover Ditch, and Central Unnamed Ditch                             | Earth Tech, engineering environmental Management, Inc. | MAY-2002 |
| Draft Final Risk Based Evaluation Procedures Manual Module 1, Background Soil  | Earth Tech   | JUN-2002 |
| Final Pilot Soil Vapor Extraction Treatability Study Report, Grit/Oil Pit  | Earth Tech   | JUN-2002 |
| Final Quarterly Site-specific Monitoring Program, 1st Quarter 2001   | Earth Tech   | JUL-2002 |
| Draft Proposed Methodology, Ecological Risk Assessment   | Earth Tech   | JUL-2002 |
| Final QCSR, Phase I RFI, Former Used/Waste Oil Tanks - 11 Site   | Earth Tech   | JUL-2002 |
| Draft Final CMS Work Plan Landfill 5   | Earth Tech   | JUL-2002 |
| SWMU-84 Draft Final RFI Addendum, Former Used/Waste Oil Tanks - Bldg. 8300   | Earth Tech   | AUG-2002 |
| Draft Final Certification Report, Landfill 5   | Golder Associates, Inc.                                | AUG-2002 |
| Draft Final QCSR, FTC 83, SWMU 167   | Earth Tech   | SEP-2002 |
| Final, Rev 1, Risk-Based Evaluation Procedures   | Earth Tech   | OCT-2002 |

## IRP Previous Studies

2002

| Title   | Author     | Date     |
|---|------------|----------|
| Manual, Module II, Sitewide Background Data Set for Groundwater                             |            |          |
| Final RFI Report Vapor Degreaser  | Earth Tech | OCT-2002 |
| Draft Final Letter Work Plan for Landfill 5 Soil Gas Investigation                          | Earth Tech | OCT-2002 |
| Draft Final Quarterly Site-specific Monitoring Program, 2nd Quarter 2001 - 2nd Quarter 2002 | Earth Tech | NOV-2002 |
| Draft Final, CMS Workplan Landfill 5  | Earth Tech | NOV-2002 |
| Draft Final Quarterly Site-specific Monitoring Program, 3rd Quarter 2002                    | Earth Tech | DEC-2002 |
| Draft Final RFI Report, Sludge Trench Pit   | Earth Tech | DEC-2002 |
| Draft Final, Rev 1 RFI Report, North Specker Avenue Groundwater Plumes                      | Earth Tech | DEC-2002 |
| Draft Final, Revision 1, RFI Report, Sludge Trench Pit                                      | Earth Tech | DEC-2002 |

2003

|   |                                     |          |
|---|-------------------------------------|----------|
| Draft Final Revision 2 RFI Report   | Harding Lawson Associates           | JAN-2003 |
| Draft Final QCSR Addendum 2   | Harding Lawson Associates           | JAN-2003 |
| Final, Rev. 1, Risk-Based Evaluation Procedures Manual, Module IV, Development of GPLs    | Earth Tech                          | JAN-2003 |
| Final QCSR, Sludge Trench Pit   | Earth Tech                          | JAN-2003 |
| Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2002               | Earth Tech                          | FEB-2003 |
| Supplemental Site Investigation Report, UST Sites   | Rust Environment and Infrastructure | FEB-2003 |
| Draft Final, Revision 1 Landfill 5 Soil Gas Investigation Work Plan                       | Earth Tech                          | MAR-2003 |
| Final Risk-Based Evaluation Procedures Manual, Module III, Site-wide RBCs, Approved       | Earth Tech                          | MAR-2003 |
| Interim Remedial Measure, Initial Summary Report (SVE system), Grit/Oil Pit               | Earth Tech                          | MAY-2003 |
| SWMU-83 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8200        | Earth Tech                          | MAY-2003 |
| SWMU-111, Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks, Bldg. 8110        | Earth Tech                          | MAY-2003 |
| SWMU-85 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8930        | Earth Tech                          | MAY-2003 |
| SWMU-61 - Draft Final & Final Phase I RFI Report, Former Used/Waste Oil Tank - Bldg. 1515 | Earth Tech                          | MAY-2003 |
| Final Certification Report Landfill 5 ET Cap  | Harding Lawson Associates           | MAY-2003 |
| Final Construction Report Landfill 5 ET Cap   | Earth Tech                          | MAY-2003 |
| Draft Final RFI Work Plan, Former Long-Term Hazardous Waste Storage Area                  | Earth Tech                          | MAY-2003 |
| SWMU-75, 84, 110 - Draft QCSR Addendum, Former Used/Waste Oil Tanks - 11 Site             | Earth Tech                          | JUN-2003 |
| Final Landfill 5 Soil Gas Investigation Work Plan   | Earth Tech                          | JUN-2003 |
| SWMU-67 Draft Final Phase I RFI Report, Former Used/Waste Oil Tank, Bldg. 2239            | Earth Tech                          | JUN-2003 |

## IRP Previous Studies

2003

| Title   | Author     | Date     |
|---|------------|----------|
| SWMU-110 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 2427                           | Earth Tech | JUN-2003 |
| SWMU-81 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8142                            | Earth Tech | JUN-2003 |
| SWMU-82 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8152                            | Earth Tech | JUN-2003 |
| SWMU-80 Draft Final Phase I RFI Report, Former Used/Waste Oil Tank - Bldg. 3874                             | Earth Tech | JUN-2003 |
| Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Building 8110                                | Earth Tech | JUN-2003 |
| Final Quarterly Site-specific Monitoring Program, 2nd Quarter 2001 - 2nd Quarter 2002                       | Earth Tech | JUN-2003 |
| SWMU-111 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8110                           | Earth Tech | JUL-2003 |
| SWMU-83 Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8200                                  | Earth Tech | JUL-2003 |
| SWMU-84 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 8300                            | Earth Tech | JUL-2003 |
| SWMU-75 Draft Final Phase I RFI Report, Former Used/Waste Oil Tanks - Bldg. 2940                            | Earth Tech | JUL-2003 |
| Draft Final RFI Landfill 8  | Earth Tech | JUL-2003 |
| Draft Final RFI Work Plan CLA   | Earth Tech | JUL-2003 |
| Draft Final Work Plan for Evapotranspiration Cap, Soil Investigation at Landfill 5                          | Earth Tech | JUL-2003 |
| FTC-5, 7, 11, 20, 26, SWMU-1, 7, 13, 14, 17, 18 Combined Landfill Area Draft Final Interim Closure Plan CLA | Earth Tech | JUL-2003 |
| Final Groundwater and Soil Gas Monitoring Report Third Quarter 2002   | Earth Tech | AUG-2003 |
| Draft Final, Revision 1 Post-Construction Groundwater and Soil Gas Monitoring Plan Landfill 5               | Earth Tech | AUG-2003 |
| Draft Final Groundwater and Soil Gas Monitoring Report 1st Quarter 2003 Landfill 5                          | Earth Tech | AUG-2003 |
| Final Indoor Air Assessment Work Plan   | Earth Tech | AUG-2003 |
| Draft Final RFI Work Plan Addendum, Former Lime Pit at Bldg. 8110   | Weston     | AUG-2003 |
| Draft Final Initial Groundwater Investigation Work Plan Landfill 5  | Earth Tech | SEP-2003 |
| Draft Final, Rev. 1, Risk-Based Evaluation Procedures Manual, Module V, Ecological Risk Procedures Manual   | Earth Tech | SEP-2003 |
| Final, Rev 2, Risk-Based Evaluation Procedures manual, Module IV, Development of GPLs                       | Earth Tech | SEP-2003 |
| Final RFI Work Plan Addendum, Range 1   | Earth Tech | SEP-2003 |
| Draft Final RFI Work Plan Addendum, Landfill 2  | Earth Tech | SEP-2003 |
| Final Interim Closure Plan CLA  | Earth Tech | SEP-2003 |
| Final RFI Work Plan CLA   | Earth Tech | SEP-2003 |
| Final Work Plan for ET Cap Soil Investigation at Landfill 5   | Earth Tech | SEP-2003 |
| Final Risk-Based Evaluation Procedures Manual, Module IV, Development of GPLs                               | Earth Tech | OCT-2003 |

## IRP Previous Studies

2003

| Title  | Author     | Date     |
|--|------------|----------|
| Programmatic Site Safety and Health Plan for RFI and Remedial Design Activities                        | Earth Tech | OCT-2003 |
| Final Risk-Based Evaluation Procedures Manual, Module II, Sitewide Background Data Set for Groundwater | Earth Tech | OCT-2003 |
| Final Groundwater and Soil Gas Monitoring Report, First Quarter 2003, Landfill 5                       | Earth Tech | OCT-2003 |
| Final Post-Construction Groundwater and Soil Gas Monitoring Plan, Landfill 5                           | Earth Tech | OCT-2003 |
| Final Initial Groundwater Investigation Work Plan Landfill 5   | Earth Tech | OCT-2003 |
| Final RFI Work Plan Addendum, Range 1  | Earth Tech | NOV-2003 |
| Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2001                                  | Earth Tech | DEC-2003 |

2004

|  |                          |          |
|--|--------------------------|----------|
| October 2003 Indoor Air Sampling Analytical Results for North Specker  | Earth Tech               | JAN-2004 |
| Draft Final RFI Work Plan, Landfill 9  | Earth Tech               | JAN-2004 |
| Draft Final Landfill 5 Phase I Investigation for ET Cap at Landfill 5  | Golder Assoc.            | JAN-2004 |
| SWMU-58 Draft Final RFI Report, Former Used/Waste Oil Tanks Bldg. 218  | Earth Tech               | FEB-2004 |
| SWMU-57 Draft Final RFI Report, Former Used/Waste Oil Tanks Bldg. 635  | Earth Tech               | FEB-2004 |
| Draft Final Landfill 5 ET Cap GW and Soil Gas Monitoring Report for Nov. 200   | Earth Tech               | FEB-2004 |
| Draft Final Monitoring and Maintenance Plan for Landfill 4   | Earth Tech               | FEB-2004 |
| Draft Final RFI Report, Land Spreading Field   | Earth Tech               | FEB-2004 |
| SWMU-110 - Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 2427   | Earth Tech               | FEB-2004 |
| SWMU-84 - Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks - Bldg. 8300  | Earth Tech               | FEB-2004 |
| SWMU-111 - Draft Final Letter Work Plan Addendum, Former Used/Waste Oil Tanks Bldg. 8110   | Earth Tech               | MAR-2004 |
| Draft Final Supplemental RFI Work Plan, Bldg. 8000 - Former Waste Oil/Solvent Underground Storage Tanks  | Earth Tech               | MAR-2004 |
| Final RFI Work Plan, Former POW Camp   | Earth Tech               | MAR-2004 |
| Final Phase I RFI Report, Former Used/Waste Oil Tank - Building 8110   | Earth Tech               | MAR-2004 |
| Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2003  | Earth Tech               | MAR-2004 |
| Module VI, NFA, Draft Final, Risk-Based Evaluation Procedures Manual, Module IV, Methodology for Identifying No Further Action at Solid Waste Management Units | Earth Tech               | MAR-2004 |
| Draft Final RFI Report, Former Long-Term Hazardous Waste Storage Area  | Earth Tech               | MAR-2004 |
| Final RFI Report, Landfill 11  | Earth Tech & Harding ESE | MAR-2004 |
| Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2002  | Earth Tech               | APR-2004 |

## IRP Previous Studies

2004

| Title   | Author     | Date     |
|---|------------|----------|
| Draft Final Quarterly Monitoring Report, 4th Quarter 2003                                 | Earth Tech | APR-2004 |
| Final Risk Based Evaluation Procedures Manual Module 1, Background Soil                   | Earth Tech | APR-2004 |
| Draft Final CMS Work Plan for North Specker Avenue  | Earth Tech | APR-2004 |
| SWMU-96 - Draft Final RFI Report, Former Used/Waste Oil Tank - Bldg. 1404                 | Earth Tech | APR-2004 |
| Landfill 5 Evapotranspiration Cap Column Lysimeters Precision and Accuracy                | Earth Tech | APR-2004 |
| Landfill 5 Evapotranspiration Cap Monthly Performance Monitoring Modification, Landfill 5 | Earth Tech | APR-2004 |
| Landfill 5 Evapotranspiration Cap Monthly Performance Monitoring Corrective Actions       | Earth Tech | APR-2004 |
| Final Landfill 5 ET Cap Annual Performance Monitoring Report for 2003                     | Earth Tech | APR-2004 |
| Draft Final RFI Report, Old Central Washrack  | Earth Tech | APR-2004 |
| Draft Final RFI, BECS   | Earth Tech | APR-2004 |
| SWMU-85 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tank Bldg. 8930           | Earth Tech | MAY-2004 |
| SWMU-91 - Draft Final Phase I RFI Report, Former Used/Waste Oil Tank Bldg. 9628           | Earth Tech | MAY-2004 |
| Request for Reduction in Groundwater Monitoring Requirements, Landfill 5                  | Earth Tech | MAY-2004 |
| Final RFI Work Plan Addendum, Landfill 2  | Earth Tech | MAY-2004 |
| Draft Final Interim Remedial Action, Source Removal Work Plan, Grit/Oil Pit               | Earth Tech | MAY-2004 |
| Final Quarterly Monitoring Report, 4th Quarter 2003, CLA                                  | Earth Tech | MAY-2004 |
| Draft Final Quarterly Monitoring Report, 2nd Quarter 2004                                 | Earth Tech | JUN-2004 |
| Draft Final Quarterly Monitoring Report, 1st Quarter 2004                                 | Earth Tech | JUN-2004 |
| Draft Final RFI Report Addendum, Sludge Trench Pit  | Earth Tech | JUN-2004 |
| Final Letter Work Plan Addendum, Land Spreading Field                                     | Earth Tech | JUN-2004 |
| Draft Final RFI CLA   | Earth Tech | JUN-2004 |
| Draft Final Former Grit/Oil Pit IRA Summary Report  | Earth Tech | JUN-2004 |
| Final Interim Remedial Action, Source Removal Work Plan, Grit/Oil Pit                     | Earth Tech | JUN-2004 |
| Final Quarterly Groundwater Monitoring Letter Report-2003 Annual Basewide                 | Earth Tech | JUL-2004 |
| Final RFI CLA   | Earth Tech | AUG-2004 |
| Final Risk Based Evaluation Procedures Manual Module V, Tier I                            | Earth Tech | OCT-2004 |
| Final Risk Based Evaluation Procedures Manual Module V, Tier II                           | Earth Tech | OCT-2004 |
| Draft Final RFI Report - Building 1882  | Earth Tech | OCT-2004 |
| Final LF5 Groundwater & Soil Gas Monitoring Plan, LF5                                     | Earth Tech | OCT-2004 |

## IRP Previous Studies

**2004**

| Title   | Author                  | Date     |
|---|-------------------------|----------|
| Final Results of ET Cap Inv., LF5                               | Golder Associates, Inc. | OCT-2004 |
| Final RFI Report, Former Long-Term Hazardous Waste Storage Area | Earth Tech              | NOV-2004 |
| Draft Final Quarterly Monitoring Report, 3rd Quarter 2004       | Earth Tech              | DEC-2004 |
| Draft Final Letter Work Plan Addendum - Building 301            | Earth Tech              | DEC-2004 |
| Draft Final Existing Cover Evaluation Work Plan, Landfill 8     | URS                     | DEC-2004 |
| NFA Request, Range 1A   | Earth Tech              | DEC-2004 |

**2005**

|   |            |          |
|---|------------|----------|
| Final Letter Work Plan Addendum - Bldg 1382   | Earth Tech | JAN-2005 |
| Final Letter Work Plan Addendum - 1692  | Earth Tech | JAN-2005 |
| Draft Final RFI Report, Bldg 1302   | Earth Tech | JAN-2005 |
| CDPHE Approval of NFA Request and Addendum, Range 1A  | Earth Tech | JAN-2005 |
| NFA Request Addendum, Range 1A  | Earth Tech | JAN-2005 |
| LF5 ET Cap Monthly Performance Monitoring CAs Summary   | Earth Tech | JAN-2005 |
| Final Quarterly Monitoring Report, 3rd Quarter 2004   | Earth Tech | JAN-2005 |
| Final Quarterly Monitoring Report, 2nd Quarter 2004 ICP   | Earth Tech | JAN-2005 |
| Draft Final RFI Report - Building 1982  | Earth Tech | JAN-2005 |
| Final RFI Report, Land Spreading Field  | Earth Tech | JAN-2005 |
| Final RFI Report - Bldg 8300  | Earth Tech | JAN-2005 |
| Final RFI Report and QCSR, Landfill 11  | Earth Tech | FEB-2005 |
| Draft Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2004, LF5   | Earth Tech | FEB-2005 |
| Draft Final Supplemental RFI Letter Work Plan, Old Central Washrack   | Earth Tech | FEB-2005 |
| Final Quarterly Monitoring Report, 3rd Quarter 2004   | Earth Tech | FEB-2005 |
| Draft Final ET Cap Annual Performance Monitoring Report for 2004, LF5   | Earth Tech | FEB-2005 |
| Interim Final Risk-Based Evaluation Procedures Manual, Module IV, Methodology for Identifying No Further Action at Solid Waste Management Units | Earth Tech | FEB-2005 |
| Draft Final Risk-Based Evaluation Procedures Manual, Module V, Ecological Risk Procedures Manual  | Earth Tech | FEB-2005 |
| Draft Final Supplemental Indoor Air Assessment Letter Work Plan   | Earth Tech | FEB-2005 |
| Final Letter Work Plan Addendum - Bldg 2792   | Earth Tech | FEB-2005 |
| Draft Final RFI Report - Bldg 2735  | Earth Tech | FEB-2005 |
| Final RFI Report - Bldg 2692  | Earth Tech | FEB-2005 |
| Final RFI Report, Former Used/Waste Oil Tank - Bldg 635   | Earth Tech | FEB-2005 |

## IRP Previous Studies

2005

| Title   | Author     | Date     |
|---|------------|----------|
| Final Letter Work Plan Addendum - Bldg 2434   | Earth Tech | FEB-2005 |
| Final Rev. 1 Risk Based Evaluation Procedures Manual Module V, Tier II  | Earth Tech | MAR-2005 |
| Final Supplemental Indoor Air Assessment Letter Work Plan   | Earth Tech | MAR-2005 |
| Draft Final Letter Work Plan Addendum - Bldg 2840   | Earth Tech | MAR-2005 |
| Final RFI Report, Rev. 1, BECS  | Earth Tech | MAR-2005 |
| Final Existing Cover Evaluation Work Plan, Landfill 8   | URS        | MAR-2005 |
| Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2004, LF5   | Earth Tech | MAR-2005 |
| Final Groundwater & Soil Gas Monitoring Report, 1st Semiannual Report 2004, LF5   | Earth Tech | MAR-2005 |
| Draft Final Quarterly Monitoring Report, 4th Quarter 2004   | Earth Tech | MAR-2005 |
| Final Letter Work Plan Addendum - Bldg. 2840  | Earth Tech | APR-2005 |
| Final Letter Work Plan Addendum - Bldg. 301   | Earth Tech | APR-2005 |
| Final Supplemental RFI Work Plan, Building 8000 - Former Waste Oil/Solvent Underground Storage Tanks  | Earth Tech | APR-2005 |
| Draft Final Letter RFI Work Plan Addendum, Former POW Camp  | Earth Tech | APR-2005 |
| Final RFI Report, North Specker Avenue  | Earth Tech | MAY-2005 |
| Final Letter RFI Work Plan Addendum, Former POW Camp  | Earth Tech | MAY-2005 |
| Final RFI Report, Bldg 1882   | Earth Tech | MAY-2005 |
| Final ET Cap Annual Performance Monitoring Report for 2004, LF5   | Earth Tech | MAY-2005 |
| Final Quarterly Monitoring Report, 4th Quarter 2004   | Earth Tech | MAY-2005 |
| Draft Final Former Grit/Oil Pit Interim Remedial Action Summary Report  | Earth Tech | JUN-2005 |
| Draft Final RFI, Landfill 2   | URS        | JUN-2005 |
| Draft Final Quarterly Monitoring Report, 1st Quarter 2005   | Earth Tech | JUN-2005 |
| Interim Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units | Earth Tech | JUN-2005 |
| Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units         | Earth Tech | JUN-2005 |
| Final RFI Report - Rev. 1, Land Spreading Field   | Earth Tech | JUN-2005 |
| Final Phase I RFI Report, Former Used/Waste Oil Tank - Bldg 9628  | Earth Tech | JUN-2005 |
| CMS Work Plan Technical Memorandum, BECS  | Earth Tech | JUN-2005 |
| Final Letter Work Plan Addendum - Bldg 9072   | Earth Tech | JUN-2005 |
| Draft Final CMS Work Plan, BECS   | Earth Tech | JUL-2005 |
| Draft Final Letter Work Plan Addendum, Bldg 3092  | Earth Tech | AUG-2005 |

## IRP Previous Studies

2005

| Title   | Author     | Date     |
|---|------------|----------|
| Final Letter Work Plan Addendum, Bldg 3292  | Earth Tech | AUG-2005 |
| Draft Final RFI Report, Bldg 2427   | Earth Tech | AUG-2005 |
| Final Letter Work Plan Addendum - Building 3292   | Earth Tech | AUG-2005 |
| Final RFI Report, Landfill 9  | Earth Tech | AUG-2005 |
| Draft Final RFI Report, Landfill 9  | Earth Tech | AUG-2005 |
| Final Letter Work Plan for Statewide Groundwater Monitoring Event   | Earth Tech | AUG-2005 |
| Final Letter Work Plan Addendum, Bldg 1392  | Earth Tech | AUG-2005 |
| Draft Final Letter Work Plan Addendum, Bldg 3192  | Earth Tech | AUG-2005 |
| Final Former Grit/Oil Pit Interim Remedial Action Summary Report  | Earth Tech | AUG-2005 |
| Draft Final Groundwater & Soil Gas Monitoring Report, 1st Semiannual Report 2005, LF5   | Earth Tech | AUG-2005 |
| Final Quarterly Monitoring Report, 1st Quarter 2005   | Earth Tech | AUG-2005 |
| Final RFI Report - Building 2392  | Earth Tech | SEP-2005 |
| Draft Final RFI Report - Building 1682  | Earth Tech | SEP-2005 |
| Draft Final Quarterly Monitoring Report, 2nd Quarter 2005   | Earth Tech | SEP-2005 |
| Final RFI Report - Bldg 2392  | Earth Tech | SEP-2005 |
| Final Phase I RFI Report, Former Used Waste Oil Tank - Bldg 2239  | Earth Tech | SEP-2005 |
| Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for Identifying No Further Action at Solid Waste Management Units, Revision 1 | Earth Tech | SEP-2005 |
| Final Letter Work Plan Addendum - Bldg 9609   | Earth Tech | SEP-2005 |
| Final Letter Work Plan Addendum - Bldg 3192   | Earth Tech | SEP-2005 |
| Final Letter Work Plan Addendum - Bldg 3092   | Earth Tech | SEP-2005 |
| Draft Final Letter Work Plan, Former Building 523/Building 501  | Earth Tech | OCT-2005 |
| Draft Final CMS Work Plan, Rev. 1, BECS   | Earth Tech | OCT-2005 |
| Final RFI Report - Bldg 2427  | Earth Tech | OCT-2005 |
| Final Groundwater & Soil Gas Monitoring Report, 1st Semiannual Report 2005, LF5   | Earth Tech | OCT-2005 |
| Draft Final RFI Report - Building 639   | Earth Tech | NOV-2005 |
| Draft Final RFI Report - Building 2992  | Earth Tech | NOV-2005 |
| Draft Final RFI Report - Building 1382  | Earth Tech | NOV-2005 |
| Risk Module IV (GPLs), 2005 Annual Update   | Earth Tech | NOV-2005 |
| Final Quarter Monitoring Report, 2nd Quarter 2005   | Earth Tech | DEC-2005 |
| Final CMS Work Plan, BECS   | Earth Tech | DEC-2005 |
| Risk Module III, 2005 Annual Update   | Earth Tech | DEC-2005 |

## IRP Previous Studies

2005

| Title   | Author     | Date     |
|---|------------|----------|
| Draft Final RFI Report, Rev. 1, Bldg 2492                 | Earth Tech | DEC-2005 |
| Final RFI Report, Bldg 2492                               | Earth Tech | DEC-2005 |
| Final RFI Report - Bldg 1982                              | Earth Tech | DEC-2005 |
| RFI Summary for SWMU 65, Bldg 1982                        | Earth Tech | DEC-2005 |
| Final Letter Work Plan, Former Building 523/Building 501  | Earth Tech | DEC-2005 |
| Draft Final RFI Report - Building 2492                    | Earth Tech | DEC-2005 |
| Draft Final Quarterly Monitoring Report, 3rd Quarter 2005 | Earth Tech | DEC-2005 |

2006

|  |            |          |
|--|------------|----------|
| Draft Final RFI Report - Building 1692   | Earth Tech | JAN-2006 |
| Final Risk-Based Evaluation Procedures Manual, Module III (2005 Annual Update), Rev. 1   | Earth Tech | JAN-2006 |
| Final Risk-Based Evaluation Procedures Manual, Module IV (2005 Annual Update), Rev. 2  | Earth Tech | JAN-2006 |
| Final (Rev 2) Risk-Based Evaluation Procedures Manual, Module IV (2005 Annual Update) Development of Groundwater Protection Levels | Earth Tech | JAN-2006 |
| Final Quarterly Monitoring Report, 3rd Quarter 2005  | Earth Tech | FEB-2006 |
| Methane Gas Evaluation Letter Work Plan for Former Landfill 2/3  | Earth Tech | FEB-2006 |
| Draft Final Landfill 5 ET Cap Annual Performance Monitoring Report   | Earth Tech | FEB-2006 |
| Draft Final Range 1 Soil RFI Report (text only)  | Earth Tech | FEB-2006 |
| Draft Final RFI Report Bldg 301  | Earth Tech | FEB-2006 |
| Draft Final RFI Report, Rev. 1 - Bldg 8152   | Earth Tech | FEB-2006 |
| Draft Final Supplemental RFI Letter Work Plan, Old Central Washrack, Revision 1  | Earth Tech | MAR-2006 |
| Draft CMS Work Plan - Bldg 8300  | Earth Tech | MAR-2006 |
| Draft Final Quarterly Monitoring Report, 4th Quarter 2005  | Earth Tech | MAR-2006 |
| Draft Final CMS Work Plan, Landfill 1 and CDDL   | Earth Tech | MAR-2006 |
| Draft Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2005, LF5  | Earth Tech | MAR-2006 |
| Draft Final CMS Work Plan, Landfill 7 and Pete's Hill Dump   | Earth Tech | MAR-2006 |
| Draft Final CMS Work Plan, Combined Landfill Area  | Earth Tech | MAR-2006 |
| Final RFI Report, Bldg 2940  | Earth Tech | MAR-2006 |
| Draft Final CMS Work Plan - Building 8300  | Earth Tech | MAR-2006 |
| Draft Final CMS Work Plan for North Specker Avenue   | Earth Tech | MAR-2006 |
| Final Supplemental Letter Work Plan, Former POW Camp   | Earth Tech | MAR-2006 |
| Draft Final Risk-based Evaluation Procedures Manual, Module V, Development of Ecological Screening Values                          | Earth Tech | MAR-2006 |

## IRP Previous Studies

2006

| Title  | Author     | Date     |
|--|------------|----------|
| Final Letter Work Plan Addendum, Former Building 2735  | Earth Tech | APR-2006 |
| Draft Final RFI Report - Building 2434   | Earth Tech | APR-2006 |
| Replacement Pages-Final Risk-Based Evaluation Procedures Manual, Module VI, Methodology for No Further Action at Solid Waste Management Units (Revision 2) April 2006 Update | Earth Tech | APR-2006 |
| 2005 Sitewide Groundwater Monitoring Event, Potable Source Water Sampling Results  | Earth Tech | APR-2006 |
| 2005 Sitewide Groundwater Monitoring Event, Analytical Summary Report  | Earth Tech | APR-2006 |
| Final Letter Work Plan Addendum - Building 3874  | Earth Tech | APR-2006 |
| Final Groundwater & Soil Gas Monitoring Report, 2nd Semiannual Report 2005, LF5  | Earth Tech | APR-2006 |
| Final Quarterly Monitoring Report, 4th Quarter 2005  | Earth Tech | APR-2006 |
| Draft Final RFI Report, Former Building 523/Existing Building 501  | Earth Tech | APR-2006 |
| Draft Final Basis for NFA - Building 2239  | Earth Tech | MAY-2006 |
| Final Supplemental Letter Work Plan - Building 1392  | Earth Tech | MAY-2006 |
| Final Letter Work Plan Addendum - Building 9603  | Earth Tech | MAY-2006 |
| Final Supplemental Letter Work Plan - Building 3092  | Earth Tech | MAY-2006 |
| Draft Final Supplemental Letter Work Plan - Building 2792  | Earth Tech | MAY-2006 |
| Draft Final Landfill 5 Monitoring and Maintenance Plan   | Earth Tech | MAY-2006 |
| Draft Final RFI Report, Landfill 9   | URS        | MAY-2006 |
| Draft Final Basis for NFA - Vehicle Washrack Drainage Ditches  | Earth Tech | JUN-2006 |
| Final Basis for NFA - Building 2239  | Earth Tech | JUN-2006 |
| Final Risk-based Evaluation Procedures Manual, Module V, Development of Ecological Screening Values  | Earth Tech | JUN-2006 |
| Final Letter Work Plan Addendum - Building 9606  | Earth Tech | JUN-2006 |
| Final Supplemental Letter Work Plan - Building 9072  | Earth Tech | JUN-2006 |
| Final Presumptive Remedy Work Plan - Building 2940   | Earth Tech | JUN-2006 |
| Final RFI Report - Building 2840   | Earth Tech | JUN-2006 |
| Final RFI Report - Building 1302   | Earth Tech | JUN-2006 |
| RFI Soil Sampling Results, Building 523/ Building 50   | Earth Tech | JUN-2006 |
| Draft Final Quarterly Monitoring Report, 1st Quarter 2006, CLA   | Earth Tech | JUN-2006 |
| Final Supplemental RFI Letter Work Plan, Old Central Washrack  | Earth Tech | JUL-2006 |
| Draft Final NFA Petition, Revision 1, Vehicle Washrack Drainage Ditches  | Earth Tech | JUL-2006 |
| Draft Final Field and Laboratory Procedures Manual for Fort Carson Army Installation, Revision 5   | Earth Tech | JUL-2006 |

## IRP Previous Studies

2006

| Title   | Author     | Date     |
|---|------------|----------|
| Draft Final Letter Work Plan Addendum for Building 749  | Earth Tech | JUL-2006 |
| Final RFI Report, Multi-Purpose Range Complex   | Earth Tech | JUL-2006 |
| Draft Final Supplemental Letter Work Plan - Building 3292   | Earth Tech | JUL-2006 |
| Draft Final Corrective Measure Design - Building 2940   | Earth Tech | JUL-2006 |
| Final RFI Report - Building 1692  | Earth Tech | JUL-2006 |
| Draft Final RFI Report, Revision 1, Range 1 Open Burning Grounds  | Earth Tech | JUL-2006 |
| Draft Final Letter Work Plan, Supplemental Soil Sampling, Bldg 301 Drainage Ditch                               | Earth Tech | JUL-2006 |
| Final (Revision 2) Risk-Based Evaluation Procedures Manual, Module V1, Methodology for Identifying NFA at SWMUs | Earth Tech | AUG-2006 |
| Draft Final RFI Report - Building 9609  | Earth Tech | AUG-2006 |
| Draft Final Letter Work Plan, NFA Soil Sampling - Former Building 1302  | Earth Tech | AUG-2006 |
| Final RFI Report, Range 1, Open Burn Grounds  | Earth Tech | AUG-2006 |
| Draft Final Soil Risk Screening Letter Report, Range 1  | Earth Tech | AUG-2006 |
| Final Quarterly Monitoring Report, 1st Quarter 2006   | Earth Tech | AUG-2006 |
| Draft Final Basis for NFA - Building 2692   | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA - Building 2492   | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA - Building 2082   | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA - Building 1982   | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA for Building 1882   | Earth Tech | SEP-2006 |
| Final Letter Work Plan, Supplemental Soil Sampling at Building 301 Drainage Ditch                               | Earth Tech | SEP-2006 |
| Replacement pages for the Final RFI Work Plan Addendum, Building 8000   | Earth Tech | SEP-2006 |
| Final Soil Risk Screening Letter Report, Range 1 Open Burning Grounds   | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA - Building 1404   | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA for Building 9628   | Earth Tech | SEP-2006 |
| Draft Final Revised Supplemental Letter Work Plan - Building 3292   | Earth Tech | SEP-2006 |
| Final Basis for NFA - Building 2840   | Earth Tech | SEP-2006 |
| Final RFI Report, Building 2735   | Earth Tech | SEP-2006 |
| Draft Final CMS Work Plan, Revision 1, Landfill 7 and Pete's Hill Dump  | Earth Tech | SEP-2006 |
| Draft Final Quarterly Monitoring Report, 2nd Quarter 2006   | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA - Building 218  | Earth Tech | SEP-2006 |
| Draft Final Basis for NFA - Building 635/631  | Earth Tech | SEP-2006 |

## IRP Previous Studies

2006

| Title  | Author     | Date     |
|--|------------|----------|
| Final Groundwater CMS Work Plan, CLA   | Earth Tech | SEP-2006 |
| Final Basis for NFA, Sludge Trench Pit   | Earth Tech | OCT-2006 |
| Draft Final Basis for NFA, Former Long-Term Haz. Waste Storage Area                    | Earth Tech | OCT-2006 |
| Draft Final Letter Work Plan, NFA Soil Sampling, DRMO Hazardous Waste Storage Area     | Earth Tech | OCT-2006 |
| Final Supplemental Sampling to Evaluate Chromium and Thallium in Soil at Building 9620 | Earth Tech | OCT-2006 |
| Final Corrective Measure Design - Building 8300  | Earth Tech | OCT-2006 |
| Final Letter Work Plan, NFA Soil Sampling - Building 8142                              | Earth Tech | OCT-2006 |
| Draft Final RFI Report - Building 2992   | Earth Tech | OCT-2006 |
| Final NFA Soil Sampling - Building 1302  | Earth Tech | OCT-2006 |
| Draft Final Interim Monitoring Plan, Landfill 2/3                                      | Earth Tech | OCT-2006 |
| Final BECS CMS Work Plan replacement Figure 9-1  | Earth Tech | OCT-2006 |
| Final Letter Work Plan for 2006 Sitewide Groundwater Monitoring Event                  | Earth Tech | NOV-2006 |
| Final RFI Report - Building 8152   | Earth Tech | NOV-2006 |
| Final Remedy Completion Report - Former Building 2940                                  | Earth Tech | NOV-2006 |
| Draft Final Presumptive Remedy Report - Former Building 2940                           | Earth Tech | NOV-2006 |
| Draft Final Revised Basis for NFA, Former Building 2735                                | Earth Tech | NOV-2006 |
| Final Basis for NFA, Former Building 2735  | Earth Tech | NOV-2006 |
| Draft Final RFI Report, Former Used/Waste Oil Tank - Building 218                      | Earth Tech | NOV-2006 |
| Draft Final Basis For NFA, Rev. 1, Building 635 (SWMU 57), replacement pages           | Earth Tech | NOV-2006 |
| Final Basis for NFA for Building 2427  | Earth Tech | DEC-2006 |
| Draft Final RFI Report, Revision 1, Former Building 3874                               | Earth Tech | DEC-2006 |
| Final Supplemental Letter Work Plan - Building 3192                                    | Earth Tech | DEC-2006 |
| Draft Final Quarterly Monitoring Report, 3rd Quarter 2006                              | Earth Tech | DEC-2006 |

2007

|  |            |          |
|--|------------|----------|
| GW Mon Wells Installed & Abandoned in 2006 | Earth Tech | JAN-2007 |
| Draft Final (Rev 1) CMS WP, North Specker  | Earth Tech | JAN-2007 |
| Carson Solar I Project                     | URS        | JAN-2007 |
| 4Q06 Permit Report                         | Earth Tech | JAN-2007 |
| Final Basis for NFA, Bldg. 218             | Earth Tech | FEB-2007 |
| Final Basis for NFA, Bldg. 635             | Earth Tech | FEB-2007 |
| Draft Final Annual M & M Report 2006, LF5  | Earth Tech | FEB-2007 |

## IRP Previous Studies

2007

| Title  | Author     | Date     |
|--|------------|----------|
| Draft Final Annual Monitoring Summary for 2006, LF4  | Earth Tech | FEB-2007 |
| Draft Final Annual M & M for 2006, LF4   | Earth Tech | FEB-2007 |
| Draft Final RFI Report, Bldg. 3092   | Earth Tech | FEB-2007 |
| Final LF9 CMS LF Cover Eval. Report  | URS        | FEB-2007 |
| Draft Final Interim Annual Interim Mon Summary for 2006, LF2   | Earth Tech | FEB-2007 |
| Draft Final Interim Annual Monitoring Summary for 2003 Landfills 2/3   | Earth Tech | FEB-2007 |
| Draft Final NFA SWMU Bldg 635/SWMU 77  | Earth Tech | FEB-2007 |
| Draft Final Basis for NFA, Bldg. 8200  | Earth Tech | FEB-2007 |
| Draft Final Basis for NFA, Bldg 9620   | Ft Carson  | MAR-2007 |
| Final RFI Building 301   | Earth Tech | MAR-2007 |
| Final CMS Work Plan, North Specker   | Earth Tech | MAR-2007 |
| Draft Final Work Plan Addendum Building 9072   | Earth Tech | MAR-2007 |
| Draft Final (Revision 1) NFA Building 9628   | Earth Tech | MAR-2007 |
| ET CAP Performance M&M Monthly Inspection Report   | Earth Tech | MAR-2007 |
| Draft Final Supplemental Letter Work Plan - Land Spreading Field   | Earth Tech | MAR-2007 |
| DF NFA Former Oil/Water Separator Bldg. 2492   | Earth Tech | MAR-2007 |
| 2005 Site-wide Monitoring Event Analytical Summary Rpt, and 2005 Sitewide Monitoring Event Potable Source Water Sampling Results     | Ft Carson  | MAR-2007 |
| Final RFI Building 2434  | Earth Tech | APR-2007 |
| Final Letter Work Plan - Land Spreading Field  | Earth Tech | APR-2007 |
| Draft Final RFI Report, Bldg 202   | Ft Carson  | APR-2007 |
| Proposed Monitoring Well Installation and Groundwater Sampling in Support of the Butts East Combined Sites Corrective Measures Study | Earth Tech | APR-2007 |
| Draft Final RFI Report, Former POW Camp  | URS        | APR-2007 |
| Final Annual Monitoring and Maintenance Report Landfill 5  | Earth Tech | APR-2007 |
| Draft Final NFA Building 1302  | Earth Tech | APR-2007 |
| Final Supplemental Letter Work Plan Building 3292  | Earth Tech | APR-2007 |
| Final (Revision 2) Module VI   | Earth Tech | APR-2007 |
| Final Quarterly Monitoring Report,4Q 2006 CLA  | Earth Tech | MAY-2007 |
| Final NFA Bldg. 2492   | Earth Tech | MAY-2007 |
| Draft Final RFI Building 8000  | Earth Tech | MAY-2007 |
| Final Potable Source Water Sampling Report for 2006  | Earth Tech | MAY-2007 |
| Final Letter Work Plan Addendum Bldg. 9072   | Earth Tech | MAY-2007 |

## IRP Previous Studies

2007

| Title  | Author     | Date     |
|--|------------|----------|
| Draft Final Presumptive Remedy Work Plan BECs                              | Earth Tech | MAY-2007 |
| Draft Final Remedy Completion Report Landfill 9                            | Earth Tech | MAY-2007 |
| Final Basis for NFA Building 9628  | Earth Tech | MAY-2007 |
| Draft Final FLPM   | Earth Tech | MAY-2007 |
| Final Basis NFA Building 8200  | Earth Tech | MAY-2007 |
| Final Analytical Summary Report 2006 Site-wide                             | Earth Tech | MAY-2007 |
| Draft Final Basis for NFA Building 8930                                    | Earth Tech | JUN-2007 |
| Draft Final CMS Work Plan Landfill 7 & Pete's Hill Dump                    | Earth Tech | JUN-2007 |
| CDPHE Approval Draft Final Nitrate Source Work Plan                        | Calibre    | JUN-2007 |
| Final Ltr Work Plan Hydrogeologic Inv. SWMU 1 LF 1, FTC-005                | Earth Tech | JUN-2007 |
| Final NFA SWMU 96, UST at Bldg 1404  | Earth Tech | JUN-2007 |
| Final RFI Building 2992  | Earth Tech | JUN-2007 |
| Draft Final Basis For NFA, Rev.1 Long Term Haz Waste Storage Area, SWMU 54 | Earth Tech | JUN-2007 |
| Final Ltr Work Plan, No Further Action Sampling DIO, SWMU 51               | Earth Tech | JUN-2007 |
| Final RFI Former Building 523/Existing Building 501                        | Earth Tech | JUN-2007 |
| Draft Final CMS Workplan Landfill 7 Revision 2                             | Earth Tech | JUN-2007 |
| Risk Evaluation for Landfill 8   | URS        | JUN-2007 |
| Draft Final Quarterly Monitoring Report 1Q07 CLA                           | Earth Tech | JUN-2007 |
| Draft Final Basis for NFA Building 1515                                    | Earth Tech | JUN-2007 |
| DF Groundwater Treatability Study Work Plan North Specker Avenue           | Earth Tech | JUL-2007 |
| 2nd Quarter Permit Report  | Ft Carson  | JUL-2007 |
| Draft Final Landfill 8 (FTC-012/SWMU 8) Existing Cover Evaluation Report   | URS        | JUL-2007 |
| Final Letter Workplan Addendum Bldg 749                                    | Earth Tech | AUG-2007 |
| Landfill 1 Geophysics Report   | Earth Tech | AUG-2007 |
| Final Basis for NFA Building 2082  | Earth Tech | AUG-2007 |
| ET Cap Maintenance Landfill 5  | Earth Tech | AUG-2007 |
| Monitoring & Maintenance Plan Landfill 5                                   | Earth Tech | AUG-2007 |
| DF Treatability Study Work Plan - BECS                                     | Earth Tech | AUG-2007 |
| Interim Remedy Completion Report Landfill 9                                | Northwind  | SEP-2007 |
| Draft Final Quarterly Monitoring Report 2ndQ CLA                           | Earth Tech | SEP-2007 |
| Draft Final Remedy Construction Completion Report                          | Earth Tech | SEP-2007 |
| Draft Final RFI Report Bldg. 9603  | Earth Tech | SEP-2007 |

## IRP Previous Studies

**2007**

| Title   | Author     | Date     |
|---|------------|----------|
| Final CMS Work Plan Landfill 7 & Pete's Hill Dump                     | Earth Tech | SEP-2007 |
| Draft Final Indoor Air Assessment Letter Report North Specker         | Earth Tech | SEP-2007 |
| Final Quarterly Monitoring Report 1stQ CLA                            | Earth Tech | SEP-2007 |
| Draft Final Nitrate Source Investigation Report Site-wide Groundwater | Calibre    | SEP-2007 |
| Final Letter Work Plan 2007 Site-wide Groundwater Monitoring Event    | Earth Tech | SEP-2007 |
| Final Remedy Construction Completion Report Building 8300             | Earth Tech | OCT-2007 |
| 3rd Q Permit Report   | Earth Tech | OCT-2007 |
| SWMU 5, Final M&M Plan Replacement Pages                              | Earth Tech | NOV-2007 |
| SWMU 4, Landfill 4 Draft Final Remedy Selection Report                | Earth Tech | NOV-2007 |
| Draft Final Risk Module VI  | Earth Tech | NOV-2007 |
| Letter Work Plan for SWMU 107, Bldg 639 UST                           | Earth Tech | NOV-2007 |
| Final Landfill 5 Monitoring and Maintenance Plan                      | Earth Tech | DEC-2007 |
| SWMU 86 Letter Work Plan, Bldg. 9072 UST                              | Earth Tech | DEC-2007 |
| SWMU 54 Final NFA   | Earth Tech | DEC-2007 |
| DF Basis for NFA BANS Building 8030                                   | Earth Tech | DEC-2007 |
| Final Basis for NFA Former Long-Term Hazardous Waste Storage Area     | Earth Tech | DEC-2007 |
| Draft Final CLA 3rd Quarter Monitoring Report 2007                    | Earth Tech | DEC-2007 |

**2008**

|  |            |          |
|--|------------|----------|
| Final Letter Work Plan for Phase 2 Hydrogeologic Investigation in the Vicinity of Landfill 1 | Earth Tech | JAN-2008 |
| Final RFI Report Former Used/Waste Oil UST Former Bldg. 3874                                 | Earth Tech | JAN-2008 |
| Final Letter Work Plan, SWMU 21  | Bay West   | JAN-2008 |
| Final Well Abandonment Summary Report, Bldg 8200   | Earth Tech | JAN-2008 |
| Final Well Abandonment Summary Report, Bldg 1515   | Earth Tech | JAN-2008 |
| Draft Final RCRA Facility Investigation Report, SWMU 169                                     | Earth Tech | JAN-2008 |
| Draft Final Basis for NFA, SWMU 27   | Earth Tech | FEB-2008 |
| Final Letter Work Plan - NFA Soil Sampling, SWMU 165   | Earth Tech | FEB-2008 |
| Final Presumptive Remedy Work Plan, SWMUs 24 and 23  | Earth Tech | FEB-2008 |
| Proposed 2008 Monitoring Well Installation and Groundwater Sampling, SWMUs 24 and 23         | Earth Tech | FEB-2008 |
| Analytical Summary Report 2007 Sitewide Groundwater Monitoring Event,                        | Earth Tech | FEB-2008 |
| Final Potable Source Water Sampling Report 2007  | Earth Tech | FEB-2008 |

## IRP Previous Studies

2008

| Title  | Author     | Date     |
|--|------------|----------|
| Analytical Data Package Technical Review Report GAC Unit Optimization Test Results                 | Earth Tech | FEB-2008 |
| Draft Final Quarterly Monitoring Report First Quarter 2007, CLA                                    | Earth Tech | MAR-2008 |
| Draft Final Letter Work Plan for Phase 1 Hydrogeologic Investigation in the Vicinity of Landfill 1 | Earth Tech | MAR-2008 |
| Draft Final Annual Interim Monitoring Summary for 2007 Landfill 2/3                                | Earth Tech | MAR-2008 |
| Draft Final Monitoring and Maintenance Plan, Landfill 9  | Earth Tech | MAR-2008 |
| Final NFA, SWMU 85   | Earth Tech | MAR-2008 |
| Draft Final Letter Work Plan Addendum, SWMU 109  | Earth Tech | MAR-2008 |
| Final NFA, SWMU 111  | Earth Tech | MAR-2008 |
| Final Basis for NFA, SWMU 19   | Earth Tech | MAR-2008 |
| Final Letter Work Plan - NFA Soil Sampling, SWMU 28  | Earth Tech | MAR-2008 |
| Final FLPM   | Earth Tech | MAR-2008 |
| Final Annual Interim Monitoring Summary for 2006 Landfill 2/3                                      | Earth Tech | APR-2008 |
| Final Interim Groundwater and Soil Gas Monitoring Plan Landfill 2/3                                | Earth Tech | APR-2008 |
| Draft Final Annual Monitoring Summary for 2007 for Landfill 4                                      | Earth Tech | APR-2008 |
| Draft Final Supplemental Investigation Summary for Landfill 6                                      | Earth Tech | APR-2008 |
| Draft Letter Work Plan for Range 1, SWMU 45  | Earth Tech | APR-2008 |
| Draft Final NFA, SWMU 78   | Earth Tech | APR-2008 |
| Final Basis for NFA for Former Building 1302   | Earth Tech | APR-2008 |
| Final Work Plan, RCRA Facility Investigation   | Bay West   | APR-2008 |
| Final Letter Work Plan 2008 Monitoring Well and GW Sampling, BECS                                  | Earth Tech | APR-2008 |
| Final FLPM RV 1  | Earth Tech | APR-2008 |
| Final Letter Work Plan for Phase II Hydrogeologic Investigation in Vicinity of LF 1                | Earth Tech | MAY-2008 |
| Draft Final First Quarter 2008 Groundwater Monitoring Report, SWMU 84                              | Earth Tech | MAY-2008 |
| Final Letter Work Plan Addendum, SWMU 109  | Earth Tech | MAY-2008 |
| Draft Final Evaluation of Chromium Speciation in Soil at FTC 23 sites                              | Earth Tech | MAY-2008 |
| Letter Work Plan, SWMU 32  | Earth Tech | MAY-2008 |
| Draft Final RCRA RFI Report, SWMU 35   | URS        | MAY-2008 |
| Draft Final Evaluation of Chromium Speciation in Soil  | Earth Tech | MAY-2008 |
| Final Annual Monitoring and Maintenance Report 2007, Landfill 5                                    | Earth Tech | JUN-2008 |
| Draft Final Remedy Construction Completion Report for Landfill 9                                   | North Wind | JUN-2008 |

## IRP Previous Studies

2008

| Title  | Author     | Date     |
|--|------------|----------|
| Draft Final NFA, SWMU 81   | Earth Tech | JUN-2008 |
| Final RCRA Facility Investigation Report, SWMU 33                                    | Earth Tech | JUN-2008 |
| Final NFA, SWMU 26   | Earth Tech | JUN-2008 |
| Final FLPM RV 2  | Earth Tech | JUN-2008 |
| Phase II Geophysical Surveys at Landfill 1 CLA                                       | Earth Tech | JUL-2008 |
| Draft Final Remedy Selection Report for Landfill 4                                   | Earth Tech | JUL-2008 |
| Final Annual Monitoring Summary 2006, Landfill 4                                     | Earth Tech | JUL-2008 |
| Final Annual Monitoring Summary 2007, Landfill 4                                     | Earth Tech | JUL-2008 |
| Final RFI Report, SWMU 73  | Earth Tech | JUL-2008 |
| Draft Final Basis for NFA, SWMU 51   | Earth Tech | JUL-2008 |
| Final Basis for NFA, SWMU 27   | Earth Tech | JUL-2008 |
| Final Monitoring and Maintenance Plan for Landfill 4                                 | Earth Tech | AUG-2008 |
| Draft Final RV 1 Basis for NFA, SWMU 165   | Earth Tech | AUG-2008 |
| ET Cap Potential Reference Areas Report, Landfill 5                                  | Earth Tech | SEP-2008 |
| Draft Final Basis for NFA, SWMU 77   | Earth Tech | SEP-2008 |
| Draft Final Basis for NFA, SWMU 69   | Earth Tech | SEP-2008 |
| Draft Final RFI Report, SWMU 21  | Bay West   | SEP-2008 |
| NFA Soil Sampling, SWMU 30   | Earth Tech | SEP-2008 |
| Draft Final RFI Report, SWMU 86  | Earth Tech | OCT-2008 |
| Draft Final Basis for NFA, SWMU 90   | Earth Tech | OCT-2008 |
| Supplement to the Draft Final RFI Report, SWMU 107                                   | Earth Tech | OCT-2008 |
| Final Basis for NFA, SWMU 51   | Earth Tech | OCT-2008 |
| 2008 Groundwater Investigation Data Submittal for BECs                               | Earth Tech | OCT-2008 |
| Final RCRA Facility Investigation Report, SWMU 164                                   | URS        | OCT-2008 |
| Draft Final Letter Work Plan for Phase III Hydrogeologic Invest. In Vicinity of LF 1 | Earth Tech | NOV-2008 |
| Final Safety, Health and Emergency Response Plan                                     | Shaw       | NOV-2008 |

2009

|  |       |          |
|--|-------|----------|
| Draft Final Supplemental RFI Work Plan for Old Central Washrack, SWMU 36               | Shaw  | JAN-2009 |
| Draft Final Presumptive Remedy Work Plan for UST at Former Bldg 202, SWMU 164          | Shaw  | JAN-2009 |
| Final RFI Report for Former POW camp, SWMU 168   | URS   | JAN-2009 |
| Draft Final RFI Report for the Former Used/Waste Oil UST at Former Bldg 1392, SWMU 109 | AECOM | FEB-2009 |
| Draft Final RFI Report for the Former Used/Waste Oil UST at Former Bldg 639, SWMU 107  | AECOM | FEB-2009 |

## IRP Previous Studies

2009

| Title   | Author | Date     |
|---|--------|----------|
| Final Basis for NFA for the BANS at Bldg 8030, SWMU 29  | AECOM  | FEB-2009 |
| Draft Basis for NFA at the DRMO Hazardous Waste Storage Area, SWMU 50                                   | AECOM  | FEB-2009 |
| Final Field and Laboratory Procedures Manual FLPM   | AECOM  | FEB-2009 |
| Final Interim Groundwater and Soil Gas Monitoring Plan for Landfill 2/3                                 | AECOM  | FEB-2009 |
| Final RFI Report for Former Used/Waste Oil UST at Bldg 639, SWMU 107                                    | AECOM  | FEB-2009 |
| Draft Final Annual Monitoring and Maintenance Report 2008, SWMU 5                                       | Shaw   | FEB-2009 |
| Draft Final Annual Monitoring and Maintenance Report 2008, SWMU 9                                       | Shaw   | FEB-2009 |
| Final RFI Report for Former Used/Waste Oil Tanks at Bldg 9072, SWMU 86                                  | AECOM  | FEB-2009 |
| Final Supplemental RFI Letter Work Plan for Former Used/Waste Oil UST at Bldg 9609, SWMU 89             | AECOM  | MAR-2009 |
| Draft Basis RV1 for NFA at DRMO, SWMU 50  | AECOM  | MAR-2009 |
| Final Quarterly Groundwater Monitoring Report Fourth Quarter 2008 for Bldg 1882, OPS                    | AECOM  | MAR-2009 |
| Final Basis or NFA for Former Used/Waste Oil UST at Former Bldg 2434, SWMU 69                           | AECOM  | MAR-2009 |
| Final Basis for NFA for Former Used/Waste Oil Tank at Bldg 9620, SWMU 90                                | AECOM  | MAR-2009 |
| Final Basis for NFA for Former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3092, SWMU 77 | AECOM  | MAR-2009 |
| Final Remedy Construction Completion Report RV 1 for Landfill 9   | AECOM  | APR-2009 |
| Draft Final Basis for NFA for the BANS at Bldg 8142, SWMU 30  | AECOM  | APR-2009 |
| Draft Final RV 1 Basis for NFA for the Former Used Waste Oil UST at former bldg 3874, SWMU 80           | AECOM  | APR-2009 |
| Draft Final Basis for NFA for Former Used/Waste Oil Tanks at Bldg 9072, SWMU 86                         | AECOM  | APR-2009 |
| Final Basis for NFA for Former Used/Waste Oil UST at Bldg 639, SWMU 107                                 | AECOM  | APR-2009 |
| Draft Final Annual Monitoring Report 2008 for Landfill 9  | Shaw   | APR-2009 |
| Sitewide Final Analytical Summary Report for 2008 GW Monitoring Event                                   | AECOM  | APR-2009 |
| Final Basis for NFA for Former Used Waste Oil UST at Former Bldg 3874, SWMU 80                          | AECOM  | MAY-2009 |
| Final Annual Monitoring Summary for 2008 for Landfill 4   | Shaw   | MAY-2009 |
| Draft Final Proposed Soil Strength Testing Work Plan for Landfill 7 and Pete's Hill Dump                | Shaw   | MAY-2009 |
| Final Basis for NFA at BANS at Bldg 8142, SWMU 30   | AECOM  | MAY-2009 |
| Presumptive Remedy Work Plan for Former Building 202 UST, SWMU 164                                      | Shaw   | JUN-2009 |
| Draft Final Phase III Hydrogeologic Investigation Summary in the Vicinity of Landfill 1                 | AECOM  | JUN-2009 |
| Draft Final RFI Report for Former Oil/Water Separator and Former UST at Bldg 1682, SWMU 62              | Summit | JUL-2009 |

## IRP Previous Studies

2009

| Title   | Author | Date     |
|---|--------|----------|
| Draft Final Basis for NFA at the Former Used/Waste Oil Portable Bladder Tank at Former Bldg 523 and Existing Bldg 501 | Summit | JUL-2009 |
| Draft Final Basis for NFA, Former Used Waste Oil UST at Bldg 301, SWMU 56   | Summit | JUL-2009 |
| Existing Cover Evaluation Report for Landfill 8   | URS    | JUL-2009 |
| Draft Final Presumptive Remedy Work Plan for the Former POW Camp, SWMU 168  | Shaw   | JUL-2009 |
| Draft Basis for NFA for Former Oil/Water Separator and Former Used Waste Oil UST at Bldg 1692, SWMU 63                | Summit | JUL-2009 |
| Draft Final CMS Work Plan at Former USTs at Bldg 8000 and Former Vapor Degreaser                                      | Shaw   | AUG-2009 |
| Final Basis for NFA for Former Used/Waste Oil Tank at Bldg 1515, SWMU 61  | AECOM  | AUG-2009 |
| Draft final Basis for NFA at the Former Oil/Water Separator and Former UST at Bldg 1382, SWMU 60                      | Summit | AUG-2009 |
| Final Maintenance and Monitoring Report for Landfills 2 and 3   | Shaw   | AUG-2009 |
| Draft Final Basis for NFA for Former Oil/Water Separator and Former Used Waste Oil UST at Bldg 1692                   | Summit | SEP-2009 |
| Final Proposed Soil Strength Testing Letter Work Plan for Landfill 7 and Pete's Hill Dump                             | Shaw   | SEP-2009 |
| Draft Final Basis for NFA for Former Oil/Water Separator and Former Used Waste Oil UST at Bldg 1692, SWMU 63          | Summit | SEP-2009 |
| Final CMS Work Plan at Former Waste Oil/Solvent USTs at Bldg 8000 and the Former Vapor Degreaser                      | Shaw   | OCT-2009 |
| Draft Final Basis for NFA at the Former Oil/Water Separator and Former Used/Waste Oil Tank at Bldg 2392, SWMU 68      | Summit | OCT-2009 |
| Draft Final RV 1 Basis for NFA at Bldg 2792, SWMU 73  | AECOM  | DEC-2009 |
| Final Basis for NFA at DRMO, SWMU 50  | AECOM  | DEC-2009 |
| Final Basis for NFA at Former UST at Bldg 301, SWMU 56  | Summit | DEC-2009 |
| Final Basis for NFA at the Former Oil/Water Separator and Former UST at Bldg 1382, SWMU 60                            | Summit | DEC-2009 |
| Final Basis for NFA at the Former Used/Waste Oil Portable Bladder Tank at Former Bldg 523 and Existing Bldg 501       | Summit | DEC-2009 |

2010

|  |        |          |
|--|--------|----------|
| Draft Final Groundwater Extraction Testing at the Grit/Oil Pit, SWMU 13                                      | Shaw   | JAN-2010 |
| Draft Final Basis for NFA at Former Oil/Water Separation and Former Used Waste Oil UST at Bldg 1682, SWMU 62 | Summit | JAN-2010 |
| Draft Final CMS Report for Landfill 7 and Pete's Hill Dump, SWMUs 7 and 14                                   | Shaw   | JAN-2010 |
| Final Basis for NFA at Former Oil/Water Separator and Former UST at Bldg 1692, SWMU 63                       | Summit | FEB-2010 |
| Draft Final Fourth Quarter 2009 Groundwater Monitoring Report for the Former UST at Bldg 8300, SWMU 84       | AECOM  | FEB-2010 |

## IRP Previous Studies

2010

| Title   | Author | Date     |
|---|--------|----------|
| Draft Final Annual Five-Year Monitoring Summary for 2009 at Landfill 4  | Shaw   | FEB-2010 |
| Draft Final Annual Groundwater Monitoring Report for 2009 at Landfill 8   | Shaw   | MAR-2010 |
| Draft Final Annual Groundwater Monitoring Report for 2009, Landfill 9   | Shaw   | MAR-2010 |
| Draft Final RFI Letter Work Plan for the Former Used Oil UST and Former Oil/Water Separator at Bldg 1392, SWMU 109                      | Summit | MAR-2010 |
| Draft Final Annual Monitoring and Maintenance Report for 2009, Landfill 2/3   | Shaw   | MAR-2010 |
| Draft Final Annual Groundwater Monitoring Report for 2009, Landfill 5   | Shaw   | MAR-2010 |
| Final Quarterly Report for Second Quarter 2009 at the Combined Landfill Area  | Shaw   | MAR-2010 |
| Final Annual M&M Report for 2008 at Landfill 5  | Summit | MAR-2010 |
| Draft Final Treatability Study Report for the North Specker Plume, SWMU 167   | Shaw   | MAR-2010 |
| Draft Final Presumptive Remedy Work Plan at BECS Fire Training Area and Sewage Treatment Lagoons  | Shaw   | MAR-2010 |
| Final Annual Groundwater Monitoring Report for 2009, Landfill 9   | Shaw   | APR-2010 |
| Final Annual Groundwater Monitoring Report for 2009 at Landfill 8   | Shaw   | APR-2010 |
| Draft Final Basis for No Further Action at the Former Used/Waste Oil Tank USTs, Building 8152, SWMU 82                                  | URS    | APR-2010 |
| Final Annual Monitoring and Maintenance Report for 2009 at Landfill 2/3   | Shaw   | APR-2010 |
| Final Annual Five-Year Monitoring Summary for 2009 at Landfill 4  | Shaw   | APR-2010 |
| Final Quarterly Monitoring Report Third Quarter 2009 at the Combined Landfill Area  | Shaw   | MAY-2010 |
| Draft Final Presumptive Remedy Work Plan for Landfill 8   | Shaw   | MAY-2010 |
| Draft Final 1st Quarter 2010 GW Mon Report at the Former UST at Bldg 8300, SWMU 84  | AECOM  | MAY-2010 |
| Draft Final RFI Old Central Washrack, SWMU 36   | Shaw   | JUN-2010 |
| Final Basis for No Further Action at the Former Used/Waste Oil Tank USTs, Building 8152, SWMU 82  | URS    | JUN-2010 |
| Final Basis for NFA at the Former UST Multi Purpose Range Complex, SWMU 92  | URS    | JUN-2010 |
| Final Basis for NFA at the Former Oil/Water Separator and former Used/Waste oil USTs at Bldg 2992, SWMU 76                              | Summit | JUN-2010 |
| Final Basis for NFA at Former Oil/Water Separation and Former Used Waste Oil UST at Bldg 1682, SWMU 62                                  | Summit | JUN-2010 |
| Draft Final Quarterly Monitoring Report 1st Quarter 2010 at the Combined Landfill Area  | Shaw   | JUN-2010 |
| Draft Final RFI Letter Work Plan Former Used Waste Oil Underground Storage Tanks and Active Oil Water Separator, Building 749, SWMU 108 | Summit | JUL-2010 |
| Methane Monitoring, Second Quarter 2010 at CLA  | Shaw   | AUG-2010 |

## IRP Previous Studies

2010

| Title   | Author | Date     |
|---|--------|----------|
| Draft Final RFI Report Former Used/Waste Oil Tank and Former Oil/Water Separator, Bldg. 1392, SWMU 109                | Summit | SEP-2010 |
| Final Presumptive Remedy Work Plan at BECS Fire Training Area and Sewage Treatment Lagoons, SWMUs 23 and 24           | Shaw   | SEP-2010 |
| Draft Final Third Quarter 2010 Groundwater Monitoring Report, Former Used/Waste Oil Tank -Building 8300, SWMU 84      | AECOM  | OCT-2010 |
| Draft Final Annual and Five Year Groundwater Monitoring Data at Range 121 Open Detonation Grounds, SWMUs 47 and 25    | AECOM  | OCT-2010 |
| Final Quarterly Monitoring Report, First Quarter 2010 for the Combined Landfill Area                                  | Shaw   | OCT-2010 |
| Final Third Quarter 2009 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300, SWMU 84       | AECOM  | NOV-2010 |
| Final Fourth Quarter 2009 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300, SWMU 84      | AECOM  | NOV-2010 |
| Final First Quarter 2010 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300                | AECOM  | NOV-2010 |
| Final Second Quarter 2010 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300               | AECOM  | NOV-2010 |
| Final Third Quarter 2010 Groundwater Monitoring Report for the Former Used/Waste Oil Tank at Bldg 8300                | AECOM  | NOV-2010 |
| Final Presumptive Remedy Work Plan for Landfill 8   | Shaw   | NOV-2010 |
| CLA Draft Final Quarterly Monitoring Report Third Quarter 2010 Combined landfill Area                                 | Shaw   | DEC-2010 |
| SWMU 168 Draft Final Presumptive Remedy Annual Progress Report for 2010 at the Former Prisoner of War Camp            | Shaw   | DEC-2010 |
| CLA Draft Final Revised CMS Work Plan for Combined Landfill Area  | Shaw   | DEC-2010 |
| SWMU 89 Draft Final Letter Work Plan Supplemental well installation and Sampling at Former Waste Oil UST at Bldg 9609 | Summit | DEC-2010 |
| SWMU 79 Draft Final Presumptive Remedy Work Plan at Former Waste Oil USTS and Former Oil/Water Separator at Bldg 3292 | Summit | DEC-2010 |

2011

|  |       |          |
|--|-------|----------|
| SWMU 36 Draft Final RFI Report for the Old Central Washrack  | Shaw  | JAN-2011 |
| CLA Final Quarterly Monitoring Report for Second Quarter 2010 Combined Landfill Area                                     | Shaw  | JAN-2011 |
| Sitewide - Draft Final Risk-Based Evaluation Procedures Manual Module VI (RV 5) Methodology for Identifying NFA at SWMUS | AECOM | JAN-2011 |
| SWMU 78 Draft Final RFI at former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3192                        | AECOM | JAN-2011 |
| SWMU 5 Final Landfill 5 Monitoring and Maintenance Plan Landfill 5   | Shaw  | JAN-2011 |

## IRP Previous Studies

2011

| Title   | Author | Date     |
|---|--------|----------|
| CLA Draft Final Quarterly Monitoring Report for Fourth Quarter 2010 Combined Landfill Area  | Shaw   | FEB-2011 |
| Sitewide - Final Risk Module VI   | AECOM  | FEB-2011 |
| SWMU 2 and 3 Draft Final Annual Monitoring and Maintenance Report for 2010  | Shaw   | FEB-2011 |
| SWMU 8 90% Design Package Appendices to the Presumptive Remedy Work Plan at Landfill 8  | Shaw   | FEB-2011 |
| SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9   | Shaw   | FEB-2011 |
| SWMU 5 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 5   | Shaw   | FEB-2011 |
| SWMU 164 Final Presumptive Remedy Annual Progress Report at Former Bldg 202 UST   | Shaw   | FEB-2011 |
| CLA RTCs for the Draft Final Quarterly Monitoring Report for Third Quarter 2010 at the Combined Landfill Area                       | Shaw   | FEB-2011 |
| SWMU 5 Final Annual M&M Report for 2010 at Landfill 5   | Shaw   | FEB-2011 |
| SWMU 87 Draft Final RCRA Facility Investigation Report, Active Oil/Water Separator -Building 9603                                   | AECOM  | MAR-2011 |
| SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9   | Shaw   | MAR-2011 |
| SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9   | Shaw   | MAR-2011 |
| SWMU 9 Draft Final Annual Monitoring and Maintenance Report for 2010 Landfill 9   | Shaw   | MAR-2011 |
| SWMU 168 Response to Comments for the Draft Final Presumptive Remedy Annual Progress Report for 2010 Former Prisoner of War Camp    | Shaw   | MAR-2011 |
| CLA Response to Comments for Revised Draft Final Corrective Measures Study Work Plan Combined Landfill Area Groundwater             | Shaw   | MAR-2011 |
| SWMU 4 Draft Final Annual Monitoring Summary for 2010 at Landfill 4   | Shaw   | APR-2011 |
| SWMU 8 CD 100% Design Package Appendices to the PRWP at Landfill 8  | Shaw   | APR-2011 |
| SWMU 79 Replacement pages for the Presumptive Remedy Work Plan at Former Waste Oil USTs and former Oil/Water Separator at Bldg 3292 | Summit | APR-2011 |
| SWMUs 2 and 3 Final Annual M&M Report for 2010 at landfills 2/3   | Shaw   | APR-2011 |
| SWMUs 23 and 24 Draft Final Enhanced Bioremediation Pilot Study, Annual Progress Report, 2010, Butts East Combined Sites,           | Shaw   | APR-2011 |
| SWMU 8 Draft Final Annual Groundwater Monitoring Report for 2010 at Landfill 8  | Shaw   | APR-2011 |
| SWMU 78 Final RFI at former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3192   | AECOM  | APR-2011 |
| SWMU 87 Final RCRA Facility Investigation Report, Active Oil/Water Separator -Building 9603   | AECOM  | APR-2011 |
| CLA Final Interim Closure Plan for the Combined Landfill Area   | Shaw   | APR-2011 |
| SWMU 168 Final Presumptive Remedy Annual Progress Report for 2010 at the former POW Camp  | Shaw   | APR-2011 |

## IRP Previous Studies

2011

| Title  | Author | Date     |
|--|--------|----------|
| SWMU 89 Draft Final RCRA Facility Investigation Report, Former Used/Waste Oil UST, Building 9609   | Summit | MAY-2011 |
| SWMU 109 Draft Final Corrective Measures Study Work Plan, Former Waste Oil UST and Former Oil/Water Separator, Building 1392                             | Summit | MAY-2011 |
| SWMUs 2 and 3 Draft Final Presumptive Remedy Work Plan at landfills 2/3  | Shaw   | MAY-2011 |
| SWMUs 23 and 24 Draft Final Remedy Construction Completion Report for Butts East Combined Sites,   | Shaw   | JUN-2011 |
| SWMU 28 - Draft Final Remedy Completion Report for the Battery Acid Neutralization Shop at Bldg 8000   | Summit | JUL-2011 |
| SWMU 36 Final RFI for Old Central Washrack   | Shaw   | AUG-2011 |
| SWMUs 2 and 3 Final Letter Work Plan Existing Cover Soil Confirmatory Testing, Landfill 2/3  | Shaw   | AUG-2011 |
| Site-wide - Draft Final Site-wide Selenium Study, Occurrence and Distribution of Selenium in Groundwater   | Summit | AUG-2011 |
| SWMU 109 Draft Final Corrective Measures Study Work Plan for SWMU 109  | Summit | AUG-2011 |
| Sitewide - Final Analytical Summary Report for the 2011 Sitewide Groundwater Monitoring Event  | AECOM  | AUG-2011 |
| SWMU 16/53 and 26 Proposed GW Sampling at SWMUs  | Shaw   | AUG-2011 |
| SWMU 87 Draft Final RCRA Facility Investigation Report, Active Oil/Water Separator -Building 9603  | AECOM  | AUG-2011 |
| SWMU 108 DF RFI Letter Work Plan for UST at Bldg 749   | Summit | AUG-2011 |
| SWMU 88 DF Supplemental RFI Letter Work Plan for UST at Bldg 9606  | Summit | AUG-2011 |
| SWMU 78 Draft Final CMS Work Plan at former Used/Waste Oil USTs and Former Oil/Water Separator at Bldg 3192  | AECOM  | AUG-2011 |
| SWMU 108 Draft Final RFI Letter Work Plan Supplemental Groundwater Sampling and Oil/Water Separator Inspection, Active Oil/Water Separator, Building 749 | Summit | SEP-2011 |
| SWMU 47 Submittal of Annual Groundwater Monitoring Data for Range 121 Open Detonation Grounds  | AECOM  | SEP-2011 |
| Sitewide - Table L2, Summary of Parameter Changes for Screening Criteria, Risk Module VI   | Summit | SEP-2011 |
| SWMU 23/24 - Final Enhanced Bioremediation Pilot Study Annual Progress Report for 2010 Butts East Combined Sites   | Shaw   | SEP-2011 |
| SWMU 89 Draft Final Corrective Measures Study Work Plan, Former Used/Waste Oil UST, Building 9609  | Summit | SEP-2011 |
| "CLA - Draft Final Quarterly Monitoring Report, Second Quarter 2011  | Shaw   | SEP-2011 |
| "CLA - Draft Final Quarterly Monitoring Report, Second Quarter 2011  | Shaw   | SEP-2011 |
| SWMUs 23/24 Draft Final Pilot Study Report Butts East Combined Sites   | Shaw   | SEP-2011 |

**FORT CARSON**  
**Installation Restoration Program**  
**Site Descriptions**

Site ID: FTC-006

Site Name: LANDFILLS 2/3 (1960-1978)

### STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Explosives, Volatiles (VOC)

Media of Concern: Groundwater, Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198210..... | 198301 |
| CS.....      | 199503..... | 199811 |
| RFI/CMS..... | 199605..... | 201109 |
| DES.....     | 200910..... | 201210 |
| IRA.....     | 199209..... | 199212 |
| CMI(C).....  | 201110..... | 201309 |
| CMI(O).....  | 201110..... | 201512 |
| LTM.....     | 201601..... | 204101 |

RIP Date: 201309

RC Date: 201512

### SITE DESCRIPTION

Landfills 2 and 3 (SWMUs 2/FTC-006 and 3/FTC-007) were combined for tracking purposes under FTC-006. From 1957 to 1978 they were operated as contiguous LFs located east of the cantonment area. These LFs were properly closed in accordance with solid waste regulations at the time LF operations ceased. The RFA conducted in 1994 identified this site for inclusion in the RCRA Part B permit. Therefore, all investigations and remediation are being conducted under the RCRA Corrective Action Program. Waste at this site consists of sanitary waste, sludge from multiple sources, waste POL, cinder ash and, potentially, explosives and unexploded ordnances (UXO). A combined trench and area fill method was used at this 80-acre site. Part of the LF (about 50 acres) is currently covered with a soil cover.

Surface water control measures were installed in 1992. Grading activities were conducted in 1998 and 2000 to further control surface water.

Groundwater monitoring results indicate that no significant impacts to the surrounding environment have resulted from the past Landfill 2 operations. Methane levels at the unit boundary in one permanent soil gas probe were detected above the five percent permitted under solid waste regulations.

In November 2005 the RFI report was approved, a CMS was imposed, and a request made for further delineation of methane at one soil gas monitoring probe. In February 2006 the Draft Final (DF) Methane Evaluation Letter Work Plan (Earth Tech) was submitted to the CDPHE. In 2006 the methane evaluation and installation of additional permanent probes were completed. A methane monitoring plan was submitted. Quarterly soil gas monitoring of existing permanent probes and annual monitoring are currently being performed. In 2008, at the request of the CDPHE, two additional downgradient groundwater monitoring wells were installed.

Future actions at this site will be conducted under a performance based contract (PBA) that was awarded in July 2008. The PBA contractor submitted the Draft Final CMS Work Plan in FY11.

### CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The CMI-C phase will include the installation of fencing.
- The PBA will address all requirements (CMS, landfill cover construction, monitoring, and maintenance) through FY15.
- The post PBA LTM (cover monitoring and maintenance) is based on the FY15 PBA amount for this site multiplied by 26 years.

**Site ID: FTC-008**  
**Site Name: LANDFILL 4 (1957)**

**STATUS**

**Regulatory Driver:** RCRA

**RRSE:** LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198210..... | 198301 |
| CS.....      | 199503..... | 199812 |
| RFI/CMS..... | 199810..... | 200409 |
| LTM.....     | 200410..... | 203409 |

**RIP Date:** N/A

**RC Date:** 200409

**SITE DESCRIPTION**

Landfill 4 (SWMU 4) is located in the northeast section of the cantonment area. According to historical records, Landfill 4 covered approximately 14 acres. The LF was excavated into the alluvium and operated for about six months in 1957 to receive construction debris, sanitary wastes, and possibly small amounts of sludge and waste POL. The presence of shallow groundwater [less than five feet (ft)] forced the LF to be abandoned. Subsequently, the Defense Reutilization and Marketing Office (DRMO) storage yard (FTC-024, SWMU 50) was built over the former LF. This LF was properly closed in accordance with solid waste regulations at the time LF operations ceased. The RFA conducted in 1994 identified this site for inclusion in the RCRA Part B permit. Therefore, all investigations and remediation are being conducted under the RCRA Corrective Action Program.

Groundwater monitoring indicated metals and VOCs below Colorado groundwater standards (CGWS) in the vicinity of this site. In 2002, an existing well was overdrilled to collect samples of the polyvinyl chloride (PVC) casing for analysis of vinyl chloride to determine if the well casing was degrading and the cause of vinyl chloride in groundwater. Analytical results indicated concentrations below the laboratory practical quantitation limits.

In October 2003 the RFI report (revision 2) was approved and no CMS was imposed. Annual groundwater monitoring and inspections of the asphalt cover are currently being performed. In 2006 the monitoring and maintenance plan was submitted and the remedy selection report was submitted in April 2007.

The CDPHE selected the remedy (existing asphalt cap) and, in a September 2008 permit modification, required "land use and additional controls" for Landfill 4. As part of normal maintenance operations, the FTC Directorate of Public Works initiated repair and repaving of the southern portion of the asphalt cap. These maintenance operations were completed in 2008. LUCs are specified in the RCRA Part B permit (Part IV.E).

Future actions at this site will be conducted under a PBA that was awarded in July 2008. The site is currently undergoing long-term monitoring. The PBA contractor will perform annual monitoring in accordance with the monitoring and maintenance plan.

**CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- The PBA will address all requirements (landfill cap maintenance and monitoring) through FY15.
- The post PBA LTM (landfill cap maintenance and monitoring) is based on the FY15 PBA amount for this site multiplied by 19 years.

**STATUS**

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198210..... | 198301 |
| CS.....      | 199503..... | 199707 |
| RFI/CMS..... | 199605..... | 200412 |
| IRA.....     | 199805..... | 200010 |
| CMI(C).....  | 200001..... | 200412 |
| LTM.....     | 200412..... | 203409 |

RIP Date: N/A

RC Date: 200412

**SITE DESCRIPTION**

Landfill 5 (SWMU 5) is an abandoned LF located in the northeast corner of the cantonment area, close to the installation boundary, covering about 20 acres. It was operated from 1946 to 1956. Historical records indicate that accepted wastes including construction debris, mixed sanitary waste, waste POL, waste from the old mule barn area, coal cinders, and ash. This LF was properly closed in accordance with solid waste regulations at the time LF operations ceased. The RFA conducted in 1994 identified this site for inclusion in the RCRA Part B permit. Therefore, all investigations and remediation are being conducted under the RCRA Corrective Action Program. In September 2001 the RFI report was approved by the CDPHE.

In fall 1999 a composite cap interim remedial action (IRA) with an asphalt surface was installed over five acres of the site to manage storm water runoff and facilitate vehicle parking for the 96th Army Reserve Command (ARCOM). In 2000 an evapotranspiration (ET) cap was installed over 15 acres and upgradient and downgradient wells were installed. Moisture monitoring at the ET cap continues to perform above expectations.

Elevated levels of methane have been detected in soil gas probes east of the motorpool cap; however, wind-driven turbines placed on select gas probes have been effective in venting the elevated levels. In August 2004 new soil gas monitoring probes were installed and are sampled quarterly in accordance with the approved corrective action work plans.

In November 2004 the ET cap was approved by the CDPHE, following additional soil classification and cap installation investigation activities. In December 2004 the CDPHE approved the final initial groundwater investigation summary report. No CMS was imposed, acknowledging that Landfill 5 has not contributed to groundwater contamination above screening levels downgradient of the LF.

As a result, this SWMU has completed the remedy phase of corrective action and is now undergoing the LTM phase. In October 2005 a five-year review of the monitoring and maintenance results since 2000 was evaluated with the CDPHE and revisions were made to the LTM and maintenance work plans.

During construction of the respective LF caps, two groundwater seeps were located in the southern portion of the LF. French drains were constructed to drain the seep water away from the LF during construction. In July 2005 FTC recommended that the existing French drain at the geotextile cap be reconnected and allowed to discharge to B-Ditch as a second outfall at Landfill 5 under the existing National Pollutant Discharge Elimination System (NPDES) permit (designated as outfall 007). In March 2006 the USEPA approved the request and the revised permit is effective from April 1, 2006 to March 21, 2011. There has never been any discharge observed at outfall 007.

In 2007 video camera inspections of the methane vent system indicated that portions of the vent piping were crushed and that water was entering the system, partially obstructing the vents. Water will be pumped out of the vent system and a second video survey will be conducted to determine the extent of damage to the piping.

**Site ID: FTC-009**  
**Site Name: LANDFILL 5 (1946-1956)**

Additionally, the associated methane monitoring system located in Bldg 8930 was inspected in 2007 and found to be non-operational. The control unit was repaired, reinstalled, and is now fully operational. Currently methane concentrations are below five percent at the Landfill 5 boundary soil gas monitoring wells.

Future actions at this site will be conducted under a PBA that was awarded in July 2008. The PBA contractor is currently performing monitoring activities in accordance with the monitoring and maintenance plan.

## **CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- The PBA will address all requirements (landfill cap maintenance and monitoring) through FY15.
- The post PBA LTM (landfill cap maintenance and monitoring) is based on the FY15 PBA amount for this site multiplied by 19 years.

**Site ID: FTC-011**

**Site Name: LANDFILL 7 (1968-1978)**

## STATUS

**Regulatory Driver:** RCRA

**RRSE:** LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

| <b>Phases</b> | <b>Start</b> | <b>End</b> |
|---------------|--------------|------------|
| RFA.....      | 198210.....  | 198301     |
| CS.....       | 199810.....  | 199812     |
| RFI/CMS.....  | 200312.....  | 201109     |
| DES.....      | 201010.....  | 201210     |
| CMI(C).....   | 201110.....  | 201309     |
| CMI(O).....   | 201110.....  | 201512     |
| LTM.....      | 201601.....  | 204101     |

**RIP Date:** 201309

**RC Date:** 201512

## SITE DESCRIPTION

Landfill 7 (SWMU 7) is an inactive LF located within the Landfill 1 certificate of designation and has been included as part of the combined LF area (CLA) investigation. It operated as a canyon fill LF from 1968 to 1978, accepting construction debris and other material. The total area of the LF is six acres, which currently has a soil cover. This LF was properly closed in accordance with solid waste regulations at the time LF operations ceased. The RFA conducted in 1994 identified this site for inclusion in the RCRA Part B permit. Therefore, all investigations and remediation are being conducted under the RCRA Corrective Action Program.

The CLA RFI report was submitted to the CDPHE in June 2004 and approved in August 2004, at which time a CMS was imposed. In September 2007 the final CMS work plan was approved. In December 2007 geotechnical samples to support LF cap design were collected. Field data from the sampling effort was submitted to the CDPHE for review and their initial comments indicate that the incumbent contractor needs to provide additional data analysis.

After resolution of the CDPHE's comments, future actions at this site will be conducted under a PBA that was awarded in July 2008.

The Final Proposed Soil Strength Testing Work Plan (Shaw, September 2009) was submitted to CDPHE and approved in September 2009. Geotechnical sampling is complete and will support the remedy selection.

The PBA contractor is currently performing Monitoring and Maintenance activities and submitted the Draft Final CMS addendum in FY11.

## CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The CMI-C phase will include the installation of fencing.
- The PBA will address all requirements (CMS, landfill cover construction, monitoring, and maintenance) through FY15.
- The post PBA LTM (cover monitoring and maintenance) is based on the FY15 PBA amount for this site multiplied by 26 years.

Site ID: FTC-012

Site Name: LANDFILL 8 (1972-1973)

### STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Surface Water

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198210..... | 198301 |
| CS.....      | 199805..... | 199912 |
| RFI/CMS..... | 199910..... | 200909 |
| DES.....     | 200807..... | 201011 |
| CMI(C).....  | 201012..... | 201109 |
| CMI(O).....  | 201110..... | 201512 |
| LTM.....     | 201601..... | 204101 |

RIP Date: 201110

RC Date: 201512

### SITE DESCRIPTION

Landfill 8 (SWMU 8) consists of two canyon fill LFs that operated from 1972 to 1973. These areas total about 13 acres and received construction and demolition debris. This LF was properly closed in accordance with solid waste regulations at the time LF operations ceased. The RFA conducted in 1994 identified this site for inclusion in the RCRA Part B permit. Therefore, all investigations and remediation are being conducted under the RCRA Corrective Action Program and in accordance with Subtitle D regulations.

This LF is located directly north of Landfill 2/3 (SWMU 2/3). RFI fieldwork activities were conducted in 2002 and included trenching, soil gas monitoring, and groundwater monitoring well installation (all dry).

RFI data demonstrates minimal impacts to soil, groundwater and surface water. However, VOCs below CGWS have been detected in two downgradient wells.

The RFI report was submitted in July 2003 and approved in June 2004. A CMS was not imposed for this SWMU. A work plan evaluating the cover for thickness, erosion, and drainage adequacy was approved by the CDPHE in March 2005. The cover evaluation was performed in late 2005 and the cover evaluation summary report, which included a risk evaluation, was reviewed in September 2006 and additional revisions were submitted.

In December 2007 the CDPHE provided additional and extensive comments regarding slope stability, erosion control, vegetation, and final land use. Additional fieldwork was required to address CDPHE's comments. The cover evaluation report was submitted to CDPHE in June 2010. FTC's mission to train military personnel may impact the ability to achieve RC for this unit.

Future actions at this site will be conducted under a performance based contract (PBA) that was awarded in July 2008. Currently, remedy design sampling is complete and the Presumptive Remedy Work Plan was approved by the state in early December 2010. Cover construction activities began in April 2011 and were completed in the fall of 2011.

### CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

-The PBA will address all requirements (landfill cover construction, monitoring, and - maintenance) through FY15.

The post PBA LTM (cover monitoring and maintenance) is based on the FY15 PBA amount for this site multiplied by 26 years.

Site ID: FTC-013

Site Name: LANDFILL 9 (1965-1973)

### STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil, Surface Water

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198210..... | 198301 |
| CS.....      | 199801..... | 199901 |
| RFI/CMS..... | 200210..... | 200703 |
| DES.....     | 200703..... | 200705 |
| CMI(C).....  | 200705..... | 200706 |
| LTM.....     | 200707..... | 203609 |

RIP Date: N/A

RC Date: 200706

### SITE DESCRIPTION

Landfill 9 (SWMU 9) is a six-and-a-half acre, abandoned LF located south of the cantonment area. The specific nature of activities conducted during the LF's period of operation (1965 to 1973) is unknown, but most likely consisted of receiving construction debris. This LF was properly closed in accordance with solid waste regulations at the time LF operations ceased. The RFA conducted in 1994 identified this site for inclusion in the RCRA Part B permit. Therefore, all investigations and remediation are being conducted under the RCRA Corrective Action Program.

During the RFA two temporary wells were installed downgradient of the LF. Groundwater samples collected from these wells contained metals below CGWS, but above interim background levels established at the time.

In spring 2006 the RFI was finalized. Results of soil gas monitoring performed for two quarters following completion of the RFI fieldwork to fulfill one year of monitoring did not detect LF gases. Annual groundwater monitoring of surrounding wells is currently being performed.

In January 2007 the CMS, a cover evaluation, was approved. It recommended additional cover material to meet the 24-inch depth requirement and additional sloping to meet erosion and drainage requirements. These requirements have been implemented and the LF is being used as a solar panel farm. A remedy completion report was submitted and the CDPHE provided additional and extensive comments regarding the accompanying engineering documentation. Responses to the comments have been provided and are pending resolution. LUCs are specified in the RCRA Part B permit (Part IV.E).

LTM requirements for this site will be conducted under a PBA that was awarded in July 2008. The PBA contractor will continue monitoring and maintenance activities in accordance with the monitoring and maintenance plan. Elevated concentrations of soil gases were not detected during quarterly monitoring.

### CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The PBA will address all requirements (landfill cover maintenance and monitoring) through FY15.
- The post PBA LTM (landfill cover maintenance and monitoring) is based on the FY15 PBA amount for this site multiplied by 21 years.

## STATUS

**Regulatory Driver:** RCRA

**RRSE:** LOW

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

Media of Concern: Groundwater, Soil, Surface Water

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198803..... | 198804 |
| CS.....      | 199511..... | 199901 |
| RFI/CMS..... | 199511..... | 201210 |
| DES.....     | 201110..... | 201210 |
| IRA.....     | 199909..... | 200509 |
| CMI(C).....  | 201110..... | 201309 |
| CMI(O).....  | 201110..... | 201512 |
| LTM.....     | 201512..... | 202012 |

**RIP Date:** 201309

**RC Date:** 201512

## SITE DESCRIPTION

The Grit/Oil Pit (SWMU 13) is located within the LF certificate of designation and has been included as part of the CLA investigation. This site was an open pit where FTC deposited material from the vehicle wash facilities and sludge from the industrial and sanitary wastewater treatment plant. The operations were conducted from the 1960s to 1992. The material was placed in a trench measuring 240 ft by 60 ft by 30 ft. This site was included in both the 1994 and 1997 compliance orders on consent.

Samples indicated the presence of metals, VOCs (including TCE, vinyl chloride, BTEX), and PAH in the sludge, surrounding soil, and leachate/groundwater immediately downgradient of the site.

In 1998 a surface water control measure (temporary cap) was placed over the pit to reduce the infiltration of surface water. In 1999 water and product removal commenced and the oily product was successfully removed from the pit. In March 2000 the RFI was approved by the CDPHE. In 2002 a soil vapor extraction (SVE) pilot test was completed and considered moderately successful in reducing the concentrations of VOCs in the pit material.

In July 2004 the CDPHE approved an interim measure (IM) source removal work plan. Between November 2004 and January 2005 the contents of the Grit/Oil Pit were removed. Analytical results of the confirmatory soil samples collected from the excavation following removal were below FTC site-specific risk-based screening levels.

The DF CLA CMS Work Plan (Earth Tech, 2006) for impacts to groundwater was submitted to CDPHE in March 2006. CDPHE suspended all work on the CMS work plan in December 2006 until additional investigation of Landfill 1 was completed and Phase III of the investigation was submitted to CDPHE in December 2008. The Grit/Oil Pit is currently undergoing interim monitoring. Monitoring results indicate the presence of 1,4-dioxane in addition to previously reported metals and VOCs.

Future work will be conducted under a performance based contract (PBA) that was awarded in July 2008. The PBA contractor is currently preparing the CMS and Draft Final Corrective Measures Implementation Work Plan for groundwater. A recently proposed extraction test was not included in the Draft Final CLA Groundwater CMS work plan. A revised CMS work plan was prepared and submitted for CDPHE review concurrently with the extraction test work plan in FY11.

## CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

-The PBA will address all requirements (CMS, groundwater remediation and monitoring) through FY15.

**Site ID: FTC-020**  
**Site Name: GRIT OIL PIT**

-The post PBA LTM (groundwater monitoring) is based on the FY15 PBA amount for this site, multiplied by five years.

Site Name: ABANDONED FIRE TRAINING AREA

STATUS

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater, Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198803..... | 198804 |
| CS.....      | 199504..... | 199810 |
| RFI/CMS..... | 199605..... | 201009 |
| DES.....     | 200807..... | 201210 |
| IRA.....     | 200106..... | 200108 |
| CMI(C).....  | 200807..... | 201309 |
| CMI(O).....  | 200807..... | 201512 |
| LTM.....     | 201601..... | 202009 |

RIP Date: 201309

RC Date: 201512

SITE DESCRIPTION

This site (SWMU 24) consists of the fire training area (FTC-021) and fire training storage area (FTC-022). The two sites were combined under one AEDB-R number because they are contiguous.

FTC-021, located at the east end of Butts Army Airfield, was a 60 ft by 60 ft by three ft deep concrete basin (which was removed in 1996). Burns were conducted from the 1960s to 1993. The water and fire-retardant chemicals used in the exercises were discharged to an oil/water separator, which discharged to the adjacent sewage treatment lagoon (FTC-039).

The former storage area (FTC-022), located east of the former fire training area, was used from the 1970s to 1992. Off-specification/waste fuels were stored there for exercises at the adjacent fire training area.

In 1992 the USACE Research Laboratories conducted a sludge study. Samples collected from the oil/water separator detected metals, chlorinated VOCs (solvents), and total petroleum hydrocarbons (TPH). In 2000 the oil/water separator was removed. Groundwater samples taken between 1995 and 2000 indicated PCE above CGWS [five micrograms per liter (ug/L)] in several wells downgradient from the storage area.

In 2001 removal of the oil/water separator, separator contents and surrounding shallow soil was completed. Leaks were detected in the piping between the concrete structure and the oil/water separator resulting in solvent- and POL-contaminated soil. Between 2001 and 2003 additional soil and groundwater samples were collected at the site.

This site has been combined with the nearby sewage treatment lagoons (SWMU 23/FTC-039) under one investigation, which is referred to as the Butts East Combined Sites (BECS) RFI. In April 2005 the BECS RFI was approved by the CDPHE and a CMS imposed. In July 2005 the CMS work plan was submitted to the CDPHE and was approved on Dec. 30, 2005. In March 2006 remedy-specific data gap fieldwork was performed and in August 2007 a DF treatability study work plan (TSWP) was submitted to the CDPHE. Five additional wells are needed to better characterize the dimensions of the plume.

Soil excavation is required for VOCs and may be necessary for diesel range organics (DRO) depending on the applicable regulatory requirements and identification of a funding mechanism that is appropriate for cleanup of a non-RCRA contaminant DRO.

Future actions at this site will be conducted under a PBA that was awarded in July 2008. The PBA contractor is expected to revise the TSWP.

As of September 2009, CDPHE approved the Enhanced Bioremediation Study Work Plan and the PBA contractor has commenced pilot test field construction activities as well as injection well installation.

**Site ID: FTC-021**

**Site Name: ABANDONED FIRE TRAINING AREA**

## **CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- The PBA will address all requirements (CMS, soil and groundwater remediation and monitoring) through FY15.
- The post PBA LTM (monitoring) is based on the FY15 PBA amount for this site multiplied by five years.

Site Name: FORMER USED/WASTE OIL STORAGE TANKS

STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Polycyclic Aromatic Hydrocarbons (PAH), Volatiles (VOC)

Media of Concern: Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198210..... | 198301 |
| CS.....      | 199811..... | 199904 |
| RFI/CMS..... | 199811..... | 201509 |
| IRA.....     | 200010..... | 200306 |
| CMI(C).....  | 201110..... | 201509 |

RIP Date: N/A

RC Date: 201509

SITE DESCRIPTION

This site consists of 44 locations that contained one or more underground storage tanks and/or oil water separators, and 13 locations containing above ground storage tank locations for a total of 57 separate solid waste management units (SWMU 55-111). Two of the oil water separators are active and remain in place, all of the other units have been removed. The underground storage tanks were used to store waste oil; therefore soil confirmation samples, taken prior to removal, were only analyzed for BTEX and total hydrocarbons. Thirteen of these sites were recommended to CDPHE for no further action in 1994-95, since the tanks were ASTs that were no longer in service and their former locations could not be determined. CDPHE concurred.

Current site status is summarized below.

- Forty eight USTs have been closed through the NFA process.
- Two sites require NFA petitions.
- Three sites require completion of the RFI and subsequent phases.
- Three sites will reach remedy completion in FY12

This site carries costs relating to remediation of five USTs (SWMUs 79, 88, 89, 108, and 109) and site-wide well abandonment. Other site-wide costs include risk module updates and other support tasks which address all IR sites at Fort Carson.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- Costs for the remediation of five USTs (SWMUs 79, 88, 89, 108, and 109 and site-wide well abandonment are carried in the CMI(C) phase.
- Site-wide costs over two years are carried in the RFI/CMS phase. These include USACE Support, Risk Module Updates, Periodic Review, and Field/Lab Procedure Manual Updates.

## STATUS

**Regulatory Driver:** RCRA

**RRSE:** LOW

Contaminants of Concern: Metals

Media of Concern: Groundwater, Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198803..... | 198804 |
| RFI/CMS..... | 200010..... | 201109 |
| DES.....     | 201010..... | 201210 |
| IRA.....     | 199309..... | 199509 |
| CMI(C).....  | 201110..... | 201309 |
| CMI(O).....  | 201110..... | 201512 |
| LTM.....     | 201601..... | 204101 |

**RIP Date:** 201309

**RC Date:** 201512

## SITE DESCRIPTION

Pete's Hill dump (SWMU 14) is an inactive LF of about 13.5 acres located within the Landfill 1 certificate of designation and has been included as part of the CLA investigation. From sometime before 1976 to the early-1990s, waste and construction debris were dumped over the head wall of a box canyon. Records indicate that the site received construction debris, municipal waste, and washrack residuals. In 1992 and 1993 the area was recontoured and covered to control surface water. In 2002 preliminary RFI activities were conducted.

Monitoring wells installed downgradient of Pete's Hill have detected metals above background levels, but below groundwater standards. In June 2004 the CLA RFI report was submitted to the CDPHE and approved in August 2004, at which time a CMS was imposed. The site is currently undergoing interim monitoring until closure. The final CMS work plan was submitted to the CDPHE and approved in September 2007. In December 2007 geotechnical samples to support LF cap design were collected. Field data from the sampling effort was submitted to the CDPHE for review and their initial comments indicate that the incumbent contractor needs to provide additional data analysis.

After resolution of CDPHE's comments, future actions at this site will be conducted under a PBA that was awarded in July 2008. The Final Proposed Soil Strength Testing Work Plan (Shaw, 2009) was submitted to CDPHE and approved in September 2009. Geotechnical sampling is complete and will support the remedy selection.

The PBA contractor is currently performing monitoring and maintenance activities and submitted a Draft Final CMS addendum in FY11.

## CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The CMI-C phase will include the installation of fencing.
- The PBA will address all requirements (landfill cover construction, monitoring, and maintenance) through FY15.
- The post PBA LTM (cover monitoring and maintenance) is based on the FY15 PBA amount for this site multiplied by 26 years

Site ID: FTC-033

## Site Name: Fmr Waste Oil/Solv USTs, Bldg 8000

### STATUS

Regulatory Driver: RCRA

RRSE: LOW

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater, Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 198803..... | 198804 |
| CS.....      | 199703..... | 199902 |
| RFI/CMS..... | 199902..... | 201210 |
| DES.....     | 201110..... | 201210 |
| IRA.....     | 199105..... | 201110 |
| CMI(C).....  | 201110..... | 201309 |
| CMI(O).....  | 201110..... | 201512 |
| LTM.....     | 201601..... | 202009 |

RIP Date: 201309

RC Date: 201512

### SITE DESCRIPTION

This site (SWMU 53) consisted of two 25,600-gallon tanks and associated piping from Bldg 8000. From 1973 to 1984, FTC stored used oil and solvents generated at the Bldg 8000 Maintenance Facility prior to disposal. The tanks were removed in June 1991, but the piping was left in place. An unsuccessful pump-and-treat system was installed in 1993 and turned off in 1998.

Investigations around the tank pit between 1990 and 1993 identified petroleum hydrocarbons and chlorinated VOCs. This site was identified in the 1987 compliance order. In February 1997, soil samples were collected from within the tank pit and were found to contain chlorinated VOCs. Sampling in 1998 found hydrocarbon and chlorinated VOC contamination in the tank pit and at the northern and southern manholes/piping. TCE has been found above CGWS in the vicinity of the tank pit and manholes. The RFI report was submitted to the CDPHE in 2000.

In 2001 the fluids remaining in the manholes were removed, the manholes were decontaminated, and the piping was plugged. Free-product recovery commenced as an IRA and additional investigation upgradient of the northern manholes was performed to determine the source of chlorinated solvent contamination.

A work plan was submitted in February 2004 to evaluate groundwater conditions for the entire Bldg 8000 complex and to determine if a relationship existed between this and nearby SWMUs. groundwater cleanup and monitoring for the former vapor degreaser (FTC-058/SWMU 16), also located at the Bldg 8000 complex, will be addressed under SWMU 53. This work plan was approved by the CDPHE in November 2004 and the fieldwork was performed in late 2005. In February 2006 evaluation of the field data with the CDPHE identified the need for another field investigation. Annual groundwater monitoring is currently being performed.

The RFI was finalized in December 2007. Future actions at this site will be conducted under a performance based contract (PBA) that was awarded in July 2008. A CMS Work Plan was submitted to CDPHE in July 2009 and was approved in August 2009. In FY12, the PBA contractor will finalize the CMS report and begin the remediation design.

### CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The PBA will address all requirements (CMS, groundwater remediation and monitoring) through FY15.
- The post PBA LTM (monitoring) is based on the FY14 PBA amount for this site multiplied by five years.

**Site ID: FTC-056**

**Site Name: FORMER UST SITE, BLDG 1382**

## **STATUS**

**Regulatory Driver:** RCRA

**RRSE:** LOW

| <b>Phases</b> | <b>Start</b> | <b>End</b> |
|---------------|--------------|------------|
| ISC.....      | 198210.....  | 198301     |
| INV.....      | 199004.....  | 199105     |
| CAP.....      | 199004.....  | 200002     |
| IMP(C).....   | 201203.....  | 201212     |

**RIP Date:** N/A

**RC Date:** 201212

## **SITE DESCRIPTION**

Echelon Above Brigade (EAB) Central Operations Facility (COF) project located in the former Bldg 1382 area at Magrath and Ellis. The EAB COF is a former vehicle maintenance facility (Building 1382) that serviced military vehicles. The site previously incorporated a combined vehicle wash rack and oil/water separator, vehicle maintenance ramps and associated waste oil underground storage tank (UST), and a fueling area comprised of three 20,000-gallon diesel fuel USTs and six dispenser islands. All of these systems have since been removed, and ensuing environmental investigations have been completed.

During MILCON construction in FY12, additional contamination was found. The contaminated soil will be removed through a modification to the MILCON contract.

## **CLEANUP/EXIT STRATEGY**

The cleanup of contaminated soils will continue to be funded until Bldg 1382 construction is complete. Construction is anticipated to be completed in FY13.

Site Name: FORMER VAPOR DEGREASER

STATUS

Regulatory Driver: RCRA
RRSE: LOW
Contaminants of Concern: Volatiles (VOC)
Media of Concern: Groundwater, Soil

Table with 3 columns: Phases, Start, End. Rows include RFA, CS, RFI/CMS, DES, IRA, CMI(C), CMI(O), RIP Date, and RC Date.

SITE DESCRIPTION

The Vapor Degreaser (SWMU 16) operated from the mid-1970s until 1992, when it was removed. Maintenance personnel used the vapor degreaser to clean parts with either TCE or 1,1,1-TCA (VOCs). The stainless steel vapor unit was located in a 7-foot deep concrete lined pit.

Chlorinated VOCs have been detected in the soil below the pit in sampling events between 1992 and 1996, but groundwater was not encountered during the RFI activities. After the first phase of the RFI, CDPHE requested additional soil samples below the sump area.

In 2001, water trapped in the former sump excavation was sampled and purged (total of 119 gallons) on a quarterly basis to determine if shallow groundwater or residual liquid was the source of the water.

The RFI report was submitted to the CDPHE in October 2002 and approved in November 2002, at which time a CMS was imposed. All work for SWMU 16 will be addressed in a single comprehensive approach with SWMU 53 (FTC-033).

Future actions at this site will be conducted under a performance based contract that was awarded in July 2008. CMS Work Plan submitted to CDPHE in July 2009 and was approved in August 2009.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The PBA will address all requirements (CMS, groundwater remediation and monitoring) through FY15.
-No further requirements are anticipated.

**Site ID: FTC-070**  
**Site Name: UST near Building 202**

**STATUS**

**Regulatory Driver:** RCRA

**RRSE:** LOW

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

Media of Concern: Groundwater, Soil

| <b>Phases</b>    | <b>Start</b> | <b>End</b> |
|------------------|--------------|------------|
| RFA.....         | 198801.....  | 198803     |
| CS.....          | 199610.....  | 199912     |
| RFI/CMS.....     | 200010.....  | 200910     |
| DES.....         | 200807.....  | 200912     |
| CMI(C).....      | 200807.....  | 200912     |
| CMI(O).....      | 200807.....  | 201512     |
| LTM.....         | 201601.....  | 201809     |
| <b>RIP Date:</b> | 200912       |            |
| <b>RC Date:</b>  | 201512       |            |

**SITE DESCRIPTION**

The Paint Shop used this tank (SMWU 164, FTC-070) to hold paintbrush-cleaning chemicals. The building was removed in the late-1990s and the tank was removed in 1994. This site is now part of a vehicle parking lot.

Contents of the UST were determined to be POL products prior to removal. The excavation of contaminated soil was stopped after a chlorinated solvent was detected in one sample. Sampling in 1996-97 did not encounter chlorinated solvents in soil or groundwater and POL concentrations were below regulatory limits. Bis(2-ethylhexyl) phthalate has been detected above Colorado groundwater standards.

The RFI Report was submitted to CDPHE in January 2003. Based on their review, the CDPHE requested the installation of additional groundwater wells to assess the nature and extent of elevated concentrations of bis(2-ethylhexyl)phthalate detected in groundwater. The work plan to perform the additional work was submitted to CDPHE in August 2004, approved in September 2004, and implemented in November 2004. In March 2005, the Colorado groundwater standard was revised eliminating bis(2-ethylhexyl)phthalate as a contaminant of concern.

Two additional permanent groundwater monitoring wells were installed north and east of the former tank excavation in 2004 and PCE in concentrations exceeding CGWS have been identified. Additional RFI activities were performed in 2006. The RFI report was submitted in April 2007 and approved by CDPHE in July 2008.

A Draft Final Presumptive Remedy Work Plan was prepared under the performance based contract and submitted to CDPHE in January 2009. A Final Presumptive Remedy Work Plan was submitted to the state in May 2009 and approved June 2009. In FY12 Fort Carson will be performing monitoring and maintenance activities. RC will be achieved in FY13.

**CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- The PBA will address all requirements (CMS, groundwater remediation and monitoring) through FY15.
- The post PBA LTM (monitoring) is based on the FY15 PBA amount for this site, multiplied by three years.

**Site ID: FTC-075**  
**Site Name: OLD CENTRAL WASH RACK**

**STATUS**

**Regulatory Driver:** RCRA

**RRSE:** LOW

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Soil

| <b>Phases</b> | <b>Start</b> | <b>End</b> |
|---------------|--------------|------------|
| RFA.....      | 199401.....  | 199403     |
| CS.....       | 199801.....  | 199812     |
| RFI/CMS.....  | 200310.....  | 201212     |

**RIP Date:** N/A

**RC Date:** 201212

**SITE DESCRIPTION**

The Old Central Washrack (SWMU 36) is located just south of the new Central Washrack (FTC-074) along Clover Ditch. The site was operated from about 1980 to 1989. It discharged wastewater to the industrial wastewater treatment facility. The washrack equipment was removed and the sumps were filled with concrete when the new central washrack was constructed in 1989.

Two temporary wells were installed during the voluntary investigation, and metals were detected at concentrations below regulatory standards.

The RFI report, submitted to the CDPHE in February 2004, was based on historical documents, limited site operations, and groundwater samples from the temporary wells installed adjacent to the site. Following review of the RFI report, the CDPHE requested a work plan to perform additional fieldwork.

In 2006 initial RFI activities were conducted and follow-on activities were conducted in 2007. Review of the draft RFI indicates that thallium concentrations exceeding the FTC screening criteria exhibit are present throughout the site. Additional investigative work is required to fully define the extent of contamination; initial efforts will concentrate on an area within the SMWU where a new concrete batch plant will be constructed.

Future actions at this site will be conducted under a PBA that was awarded in July 2008.

The Supplemental RFI Work Plan was submitted to CDPHE in January 2009. The state approved the document in April 2009. The Draft Final RFI report was submitted to CDPHE in July 2010. RFI results indicate no exceedances of COCs in soil. NFA is expected based on the soil results. The RFI was submitted to CDPHE in February 2011. Comments from CDPHE were received in June 2011 and a Response to Comments was submitted in August 2011.

**CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- The PBA will address all requirements (CMS, site closeout) through FY15.
- No further requirements are anticipated.

**STATUS**

Regulatory Driver: RCRA

RRSE: LOW

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

Media of Concern: Groundwater

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 199703..... | 199705 |
| CS.....      | 199703..... | 199705 |
| RFI/CMS..... | 199705..... | 201210 |
| DES.....     | 201110..... | 201210 |
| IRA.....     | 200103..... | 200509 |
| CMI(C).....  | 201110..... | 201309 |
| CMI(O).....  | 201110..... | 201512 |
| LTM.....     | 201601..... | 202009 |

RIP Date: 201309

RC Date: 201512

**SITE DESCRIPTION**

This site (SWMU 167) was identified following sampling conducted in conjunction with the UST removals at Bldg 749 (FTC-060). PCE and TCE were found in the groundwater. Investigations performed along North Specker Avenue between 1994 and 2002 located a source area and defined the nature and extent of contamination. Benzene, bis(2-ethylhexyl)phthalate, chloroform, 1,1-dichloroethene, ethylbenzene, PCE, TCE, methylene chloride, pentachlorophenol (PCP), and vinyl chloride were detected in groundwater at concentrations exceeding CGWS. Four of the analytes (benzene, 1,1-dichloroethene, PCE, and TCE) have been detected over the course of the investigation and have a wide spatial distribution. PCE forms a plume that averages roughly 450 ft wide and 3,900 ft long. The source of the plume is attributed to several underground sand and grease traps.

In 2001, a pilot SVE/air sparging (AS) system was installed in the source area as an IRA and four abandoned sand and grease traps, along with impacted soils, were removed. In September 2002 the DF RFI report was submitted to the CDPHE and was conditionally approved pending an indoor air assessment of occupied buildings over the chlorinated VOC plume.

In October 2003 and May 2004 indoor air assessments were performed. In October 2004 an RFI report addendum summarizing the results of the indoor air assessment was submitted to the CDPHE. In December 2004, the CDPHE requested additional indoor air sampling at Bldg 1044 to evaluate the elevated detection of TCE above risk-based screening criteria in the basement. In February 2005 the work plan for additional sampling was approved by the CDPHE and was implemented in May 2005.

In August 2005 the CDPHE issued a compliance advisory related to the North Specker Avenue plume. In September 2005 the SVE/AS system was decommissioned and in March 2007 the CMS work plan for the North Specker contaminant plume was approved by the CDPHE. Fieldwork to address data gaps was conducted in 2007. Bench-scale treatability study results were reported in January 2008. Future actions at this site will be conducted under a PBA that was awarded in July 2008.

A Draft Final Corrective Measures Study Work Plan Addendum was prepared under the performance based contract (PBA) and submitted to CDPHE in December 2008. CMS preparation has begun but is on hold pending pilot study on bioremediation at BECS (FTC-021 and CC SW023). CDPHE requested that activities on the site not move forward until data are reviewed from the BECS pilot test. The pilot test will evaluate the effectiveness of the proposed bioremediation for the site on a limited scale. In FY12, Fort Carson will prepare a CMS and a CMI(C) work plan as well as an indoor air sampling work plan.

**CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- The PBA will address all requirements (CMS, groundwater remediation and monitoring) through FY15.

**Site ID: FTC-083**  
**Site Name: North Specker Avenue Plumes**

-The post PBA LTM (groundwater monitoring) is based on the FY14 PBA amount for this site multiplied by five years.

DRAFT FORT CARSON Installation Action Plan - 68

**Site ID: FTC-093**

**Site Name: Former POW Camp**

## STATUS

**Regulatory Driver:** RCRA

**RRSE:** LOW

**Contaminants of Concern:** Explosives

**Media of Concern:** Soil

| <b>Phases</b>    | <b>Start</b> | <b>End</b> |
|------------------|--------------|------------|
| RFA.....         | 200009.....  | 200011     |
| CS.....          | 200009.....  | 200011     |
| RFI/CMS.....     | 200011.....  | 200809     |
| DES.....         | 200810.....  | 200906     |
| CMI(C).....      | 200907.....  | 200912     |
| CMI(O).....      | 201001.....  | 201512     |
| LTM.....         | 201601.....  | 202009     |
| <b>RIP Date:</b> | 201001       |            |
| <b>RC Date:</b>  | 201512       |            |

## SITE DESCRIPTION

The former prisoner of war (POW) camp area (SWMU 168) was not identified by FTC or the CDPHE as an area of environmental concern and was not included in the initial RCRA Part B permit; however, in late July 2000, construction activities uncovered an orange-red substance from the underlying soil near the intersection of Mabry Court and Funk Avenue on the west side. These soils were located on the edge of what had at one time been a POW camp.

Analysis of the stained soils detected PCP. To avoid any delay on the part of the contractor doing the utility installation, the decision was made to excavate the impacted soil [about 75 cubic yards (cy)] with off-site disposal.

Following excavation, confirmatory samples detected low levels of PCP at the bottom of the excavation [greater than 20 ft below ground surface (bgs)]. Soil was excavated to bedrock. Groundwater was not encountered during excavation activities. The site was backfilled and a road was built over the site.

A DF RFI report was submitted to the CDPHE in January 2002. Based on comments, additional site investigations were performed in June 2004 to further evaluate the nature and extent of PCP. Results of the additional fieldwork further defined the location of the former excavation and identified 2,4-dinitrotoluene and n-nitroso-di-n-propylamine at concentrations above screening criteria in a soil sample collected outside of the former excavation. As a result, another work plan was submitted to further define the nature and extent of the PCP and the newly identified contaminants. In May 2005 the work plan was approved and, in July 2005, fieldwork was performed. All PCP, n-nitroso-di-n-propylamine, and 2,4-dinitrotoluene soil results were nondetected; however, groundwater encountered and sampled from a boring advanced within the former excavation detected PCP above the CGWS.

A supplemental letter work plan was submitted to CDPHE in January 2006 and approved in February 2006. Fieldwork was performed in April 2006. The RFI report was submitted in April 2007, and CDPHE provided comments in January 2008 that required additional fieldwork. A field sampling plan was submitted in June 2008 and approved by CDPHE in August 2008. A revised RFI was submitted in January 2009. Pending CDPHE approval of the RFI, future work at this site will be conducted under the PBA, which was awarded in July 2008.

The RFI was approved in May 2009; however, the state responded that because there was contamination at the site which exceeded action levels a CMS is required. A Presumptive Remedy Work Plan was submitted to CDPHE in July 2009 and approved October 2009. As of November 2009, baseline sampling began. Monitoring and maintenance activities were performed in FY11.

**Site ID: FTC-093**  
**Site Name: Former POW Camp**

## **CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- The PBA will address all requirements (CMS, soil remediation) through FY15.
- The post PBA LTM (monitoring) is based on the FY15 PBA amount for this site multiplied by five years.

## STATUS

**Regulatory Driver:** RCRA  
**RRSE:** LOW

| <b>Phases</b> | <b>Start</b> | <b>End</b> |
|---------------|--------------|------------|
| RFA.....      | 198210.....  | 198301     |
| RFI/CMS.....  | 200807.....  | 201210     |
| DES.....      | 200910.....  | 201210     |
| CMI(C).....   | 201010.....  | 201409     |
| CMI(O).....   | 201110.....  | 201512     |

**RIP Date:** 201409

**RC Date:** 201512

## SITE DESCRIPTION

FTC awarded a PBA contract in July 2008 to address remediation at the following IR SWMUs (Sites):

1 (CC SW170), 2/3 (006), 4 (008), 5 (009), 7 (011), 8 (012), 9 (013), 13 (020), 14 (026), 16 (058), 21 (CC SW021), 22 (CC SW022), 23 (CCSW023), 24 (021), 35 (CC SW035), 36 (075), 53 (033), 164 (070), 167 (083), 168 (093), 169 (CC SW169), 170 (CC SW170).

SWMUs 1, 21, 22, 23, 35, and 169 were transferred from the Army Environmental Database - Compliance-related Cleanup(AEDB-CC) to AEDB-R in July 2009. SWMU170 was transferred in April 2010.

Funding for the PBA is carried in this site. The PBA includes remedial construction and operation and extends to December 2015. Any additional funding requirements for the sites beyond FY15 are carried in the respective sites. This site also carries anticipated PBA Oversight costs. All remedial construction tasks were fully funded in FY09 (with the exception of oversight).

## CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The PBA CLINs for all involved sites are included.
- PBA oversight costs are also included.
- A significant portion of the PBA tasks has been awarded and will address remedial construction at the involved sites.
- The unawarded portion of the PBA includes remedial operations (monitoring and maintenance).

## Site Closeout (No Further Action) Summary

| Site ID  | Site Name                                | NFA Date | Documentation  |
|----------|--|----------|--|
| FTC-005  | LANDFILL 1                               | 199901   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-010  | LANDFILL 6 (1942-1946)                   | 200203   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-014  | LANDFILL 10                              | 200008   | NFA in Part B Permit, no investigation was required.                     |
| FTC-015  | LANDFILL 11                              | 200509   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-016  | LANDFILL 12                              | 199710   | NFA in Part B Permit, no investigation was required.                     |
| FTC-017  | Range 1, Open Burn Grounds               | 201209   |  |
| FTC-018  | Range 1A, Open Burn Grounds              | 200606   | NFA in Part B Permit based on investigation and risk assessment results. |
| FTC-019  | Range 121, Open Detonation Grounds       | 199801   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-024  | DRMO, Inactive Haz Waste Stor Area       | 200509   | NFA in Part B Permit based on investigation and risk assessment results. |
| FTC-025  | Haz Waste & PCB Stor Fac, Bldg 9248      | 199612   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-027  | Range 123, Open Burn Grounds             | 200309   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-028  | Silver Recovery Unit, Bldg 6270          | 198804   | NFA in Part B Permit, no investigation was required.                     |
| FTC-029  | OLD ARMY HOSPITAL INCINERATOR            | 198804   | NFA in Part B Permit, no investigation was required.                     |
| FTC-030  | WASTE OIL BURNER BUILDING 1860           | 198804   | NFA in Part B Permit, no investigation was required.                     |
| FTC-031  | INDUSTRIAL WASTE WATER PLANT(ACTIVE)     | 199610   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-032  | Vehicle Wash Rack Storm Drainages        | 200609   | NFA in Part B Permit based on investigation and risk assessment results. |
| FTC-034  | Golf Course Sewage Trtmnt Plt Efflu      | 199610   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-035  | Silver Recovery Unit, Bldg 6010          | 198804   | NFA in Part B Permit, no investigation was required.                     |
| FTC-036  | Golf Course Holding Pond                 | 199610   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-037  | PHOTO SHOP SILVER RECOVERY UNIT          | 198804   | NFA in Part B Permit, no investigation was required.                     |
| FTC-038  | Silver Recovery Unit, Bldg 1800          | 198804   | NFA in Part B Permit, no investigation was required.                     |
| FTC-039  | SEWAGE TREATMENT LAGOONS AT BAAF         | 199612   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-040  | FORMER OPEN DUMPING AREA, RANGE 121      | 200308   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-041  | Fmr Long-Term Haz Waste Stor, 8000       | 200802   | This was completed as a permit mod by CDPHE on Feb. 20, 2008.            |
| FTC-042  | SEWAGE TREATMENT PLANT(ACTIVE)           | 199704   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-043  | DIO Hazardous Waste Storage Area         | 200709   | NFA in Part B Permit based on investigation and risk assessment results. |
| FTC-044  | DRAINAGE DITCH, ADJACENT TO BUILDING 301 | 200412   | NFA in Part B Permit based on investigation and risk assessment results. |
| FTC-045A | BATTERY ACID NEUTRALIZATION BLDG 8030    | 200509   | NFA in Part B Permit based on investigation and risk assessment results. |

## Site Closeout (No Further Action) Summary

| Site ID  | Site Name                                | NFA Date | Documentation  |
|----------|--|----------|--|
| FTC-045B | BATT. ACID NEUTRAL.-8000 (active)        | 199612   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-045C | BATTERY ACID NEUTRALIZATION BLDG 8142    | 200509   | NFA in Part B Permit based on investigation and risk assessment results.   |
| FTC-046  | Veterinary Clinic Incinerator            | 198804   | NFA in Part B Permit, no investigation was required.   |
| FTC-047  | LAND SPREADING FIELD                     | 200809   | SWMU 19 remedy selection (NFA) was finalized on July 1, 2008   |
| FTC-048  | Demolition Area                          | 200401   | NFA in Part B Permit, little investigation was required.   |
| FTC-049  | Commissary Incinerator                   | 198804   | NFA in Part B Permit, no investigation was required.   |
| FTC-050  | Classified Doc Incnrtr, Bldg 1430        | 198804   | NFA in Part B Permit, no investigation was required.   |
| FTC-051  | FORMER UST SITE, BLDG 9648               | 200408   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-052  | FORMER UST SITE, BLDG 1092               | 199301   | Remedied site through soil excavation.   |
| FTC-053  | FORMER UST SITE BLDG 7500                | 199005   | Remedied site through soil excavation.   |
| FTC-054  | FORMER UST SITE, BLDG 8000               | 200002   | Regulatory authority for this site was transferred from OPS to CDPHE because it is located within FTC-045A (SWMU 29) |
| FTC-055  | FORMER UST SITE, BLDG 981                | 200106   | Remedied site through soil excavation.   |
| FTC-059  | IND WASTE TREAT. PLANT PONDS(ACTIVE SITE | 199612   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-060  | FORMER UST SITE, BLDG 749                | 200002   | Regulatory authority for this site was transferred from OPS to CDPHE because it is located within FTC-083 (SWMU 167) |
| FTC-061  | FORMER UST SITE, BLDG 1392               | 200002   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-062  | FORMER UST SITE, BLDG 2392               | 200010   | NFA based on remedial action.  |
| FTC-063  | FORMER UST SITE, BLDG 2492               | 200002   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-064  | FORMER UST SITE, BLDG 2692               | 200002   | NFA based on remedial action.  |
| FTC-065  | FORMER UST SITE, BLDG 2792               | 200002   | NFA based on remedial action.  |
| FTC-066  | FORMER UST SITE, BLDG 3192               | 200012   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-067  | FORMER UST SITE, BLDG 8200               | 200002   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-068  | FORMER UST SITE, BLDG 8300               | 200207   | NFA based on remedial action.  |
| FTC-069  | UST SITE, PINON CANYON MANEUVER SITE     | 200002   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-071  | FORMER UST SITE, BLDG 1100               | 199912   | Structure was a concrete vault and determined to not be regulated by OPS. No work was required.                      |
| FTC-072  | FORMER UST SITE, BLDG 700                | 199912   | Structure was a concrete vault and determined to not be regulated by OPS. No work was required.                      |
| FTC-073  | EQUALIZATION BASIN, BLDG. 1399 (ACTIVE)  | 199612   | This is an OMA site and is carried in AEDB-CC.   |
| FTC-076  | Fort Carson Sewer System                 | 199612   | This is an OMA site and is carried in AEDB-CC.   |

## Site Closeout (No Further Action) Summary

| Site ID | Site Name                         | NFA Date | Documentation  |
|---------|-----------------------------------|----------|--|
| FTC-077 | Former Lime Pit Site in Bldg 8110 | 199507   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-078 | Wash Rack Site North of Bldg 8110 | 199612   | This is an OMA site and is carried in AEDB-CC.                           |
| FTC-079 | SLUDGE TRENCH PIT                 | 200701   | NFA in Part B Permit based on investigation and risk assessment results. |
| FTC-081 | FORMER UST SITE, BLDG 638         | 199912   | NFA based on remedial action.  |
| FTC-082 | FORMER UST SITE, BLDG 2992        | 199912   | NFA based on remedial action.  |
| FTC-088 | BUILDING 1211                     | 200105   | This is an OMA site and is carried in AEDB-CC.                           |

# IRP Schedule

Date of IRP Inception: 198210

## Past Phase Completion Milestones

### 1983

ISC (FTC-051 - FORMER UST SITE, BLDG 9648, FTC-054 - FORMER UST SITE, BLDG 8000, FTC-055 - FORMER UST SITE, BLDG 981, FTC-056 - FORMER UST SITE, BLDG 1382, FTC-061 - FORMER UST SITE, BLDG 1392, FTC-062 - FORMER UST SITE, BLDG 2392, FTC-063 - FORMER UST SITE, BLDG 2492, FTC-064 - FORMER UST SITE, BLDG 2692, FTC-065 - FORMER UST SITE, BLDG 2792, FTC-066 - FORMER UST SITE, BLDG 3192, FTC-067 - FORMER UST SITE, BLDG 8200, FTC-071 - FORMER UST SITE, BLDG 1100, FTC-072 - FORMER UST SITE, BLDG 700, FTC-081 - FORMER UST SITE, BLDG 638, FTC-082 - FORMER UST SITE, BLDG 2992)

RFA (FTC-005 - LANDFILL 1, FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-008 - LANDFILL 4 (1957), FTC-009 - LANDFILL 5 (1946-1956), FTC-010 - LANDFILL 6 (1942-1946), FTC-011 - LANDFILL 7 (1968-1978), FTC-012 - LANDFILL 8 (1972-1973), FTC-013 - LANDFILL 9 (1965-1973), FTC-014 - LANDFILL 10, FTC-015 - LANDFILL 11, FTC-016 - LANDFILL 12, FTC-017 - Range 1, Open Burn Grounds, FTC-018 - Range 1A, Open Burn Grounds, FTC-019 - Range 121, Open Detonation Grounds, FTC-023 - FORMER USED/WASTE OIL STORAGE TANKS, FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-025 - Haz Waste & PCB Stor Fac, Bldg 9248, FTC-027 - Range 123, Open Burn Grounds, FTC-028 - Silver Recovery Unit, Bldg 6270, FTC-029 - OLD ARMY HOSPITAL INCINERATOR, FTC-030 - WASTE OIL BURNER BUILDING 1860, FTC-031 - INDUSTRIAL WASTE WATER PLANT(ACTIVE), FTC-032 - Vehicle Wash Rack Storm Drainages, FTC-035 - Silver Recovery Unit, Bldg 6010, FTC-036 - Golf Course Holding Pond, FTC-037 - PHOTO SHOP SILVER RECOVERY UNIT, FTC-038 - Silver Recovery Unit, Bldg 1800, FTC-039 - SEWAGE TREATMENT LAGOONS AT BAAF, FTC-041 - Fmr Long-Term Haz Waste Stor, 8000, FTC-042 - SEWAGE TREATMENT PLANT(ACTIVE), FTC-043 - DIO Hazardous Waste Storage Area, FTC-045B - BATT. ACID NEUTRAL.-8000 (active), FTC-047 - LAND SPREADING FIELD, FTC-048 - Demolition Area, FTC-058 - FORMER VAPOR DEGREASER, FTC-059 - IND WASTE TREAT. PLANT PONDS(ACTIVE SITE, FTC-078 - Wash Rack Site North of Bldg 8110, PBA@Carson - PBA@Carson)

### 1985

ISC (FTC-052 - FORMER UST SITE, BLDG 1092)

### 1988

RFA (FTC-020 - GRIT OIL PIT, FTC-021 - ABANDONED FIRE TRAINING AREA, FTC-026 - PETE'S HILL, FTC-033 - Fmr Waste Oil/Solv USTs, Bldg 8000, FTC-034 - Golf Course Sewage Trtmt Plt Efflu, FTC-040 - FORMER OPEN DUMPING AREA, RANGE 121, FTC-044 - DRAINAGE DITCH, ADJACENT TO BUILDING 301, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142, FTC-046 - Veterinary Clinic Incinerator, FTC-049 - Commissary Incinerator, FTC-050 - Classified Doc Incnrtr, Bldg 1430, FTC-070 - UST near Building 202, FTC-073 - EQUALIZATION BASIN, BLDG. 1399 (ACTIVE))

CS (FTC-028 - Silver Recovery Unit, Bldg 6270, FTC-029 - OLD ARMY HOSPITAL INCINERATOR, FTC-030 - WASTE OIL BURNER BUILDING 1860, FTC-035 - Silver Recovery Unit, Bldg 6010, FTC-037 - PHOTO SHOP SILVER RECOVERY UNIT, FTC-038 - Silver Recovery Unit, Bldg 1800, FTC-046 - Veterinary Clinic Incinerator, FTC-049 - Commissary Incinerator, FTC-050 - Classified Doc Incnrtr, Bldg 1430)

ISC (FTC-069 - UST SITE, PINON CANYON MANEUVER SITE)

### 1990

ISC (FTC-053 - FORMER UST SITE BLDG 7500)

### 1991

CAP (FTC-051 - FORMER UST SITE, BLDG 9648)

ISC (FTC-068 - FORMER UST SITE, BLDG 8300)

INV (FTC-051 - FORMER UST SITE, BLDG 9648, FTC-052 - FORMER UST SITE, BLDG 1092, FTC-055 - FORMER UST SITE, BLDG 981, FTC-056 - FORMER UST SITE, BLDG 1382)

### 1993

IRA (FTC-006 - LANDFILLS 2/3 (1960-1978))

CAP (FTC-055 - FORMER UST SITE, BLDG 981)

INV (FTC-061 - FORMER UST SITE, BLDG 1392, FTC-069 - UST SITE, PINON CANYON MANEUVER SITE)

## 1994

ISC (FTC-060 - FORMER UST SITE, BLDG 749)  
 INV (FTC-060 - FORMER UST SITE, BLDG 749, FTC-062 - FORMER UST SITE, BLDG 2392, FTC-065 - FORMER UST SITE, BLDG 2792)  
 RFA (FTC-075 - OLD CENTRAL WASH RACK, FTC-076 - Fort Carson Sewer System, FTC-079 - SLUDGE TRENCH PIT)

## 1995

IRA (FTC-026 - PETE'S HILL)  
 INV (FTC-063 - FORMER UST SITE, BLDG 2492, FTC-064 - FORMER UST SITE, BLDG 2692)  
 RFA (FTC-077 - Former Lime Pit Site in Bldg 8110)

## 1997

RFA (FTC-083 - North Specker Avenue Plumes)  
 RFI/CMS (FTC-078 - Wash Rack Site North of Bldg 8110)  
 CS (FTC-009 - LANDFILL 5 (1946-1956), FTC-083 - North Specker Avenue Plumes)

## 1998

INV (FTC-054 - FORMER UST SITE, BLDG 8000, FTC-066 - FORMER UST SITE, BLDG 3192, FTC-067 - FORMER UST SITE, BLDG 8200)  
 CS (FTC-010 - LANDFILL 6 (1942-1946), FTC-016 - LANDFILL 12, FTC-019 - Range 121, Open Detonation Grounds)

## 1999

IMP(C) (FTC-055 - FORMER UST SITE, BLDG 981)  
 IRA (FTC-051 - FORMER UST SITE, BLDG 9648)  
 CS (FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-008 - LANDFILL 4 (1957), FTC-011 - LANDFILL 7 (1968-1978), FTC-013 - LANDFILL 9 (1965-1973), FTC-014 - LANDFILL 10, FTC-015 - LANDFILL 11, FTC-017 - Range 1, Open Burn Grounds, FTC-018 - Range 1A, Open Burn Grounds, FTC-020 - GRIT OIL PIT, FTC-021 - ABANDONED FIRE TRAINING AREA, FTC-023 - FORMER USED/WASTE OIL STORAGE TANKS, FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-027 - Range 123, Open Burn Grounds, FTC-032 - Vehicle Wash Rack Storm Drainages, FTC-033 - Fmr Waste Oil/Solv USTs, Bldg 8000, FTC-040 - FORMER OPEN DUMPING AREA, RANGE 121, FTC-041 - Fmr Long-Term Haz Waste Stor, 8000, FTC-043 - DIO Hazardous Waste Storage Area, FTC-044 - DRAINAGE DITCH, ADJACENT TO BUILDING 301, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142, FTC-047 - LAND SPREADING FIELD, FTC-048 - Demolition Area, FTC-058 - FORMER VAPOR DEGREASER, FTC-075 - OLD CENTRAL WASH RACK, FTC-079 - SLUDGE TRENCH PIT)

## 2000

RFI/CMS (FTC-010 - LANDFILL 6 (1942-1946), FTC-014 - LANDFILL 10)  
 CS (FTC-012 - LANDFILL 8 (1972-1973), FTC-070 - UST near Building 202)  
 CAP (FTC-054 - FORMER UST SITE, BLDG 8000, FTC-056 - FORMER UST SITE, BLDG 1382, FTC-060 - FORMER UST SITE, BLDG 749, FTC-061 - FORMER UST SITE, BLDG 1392, FTC-063 - FORMER UST SITE, BLDG 2492, FTC-064 - FORMER UST SITE, BLDG 2692, FTC-065 - FORMER UST SITE, BLDG 2792, FTC-067 - FORMER UST SITE, BLDG 8200)  
 IMP(C) (FTC-051 - FORMER UST SITE, BLDG 9648)  
 INV (FTC-068 - FORMER UST SITE, BLDG 8300, FTC-071 - FORMER UST SITE, BLDG 1100, FTC-072 - FORMER UST SITE, BLDG 700, FTC-081 - FORMER UST SITE, BLDG 638, FTC-082 - FORMER UST SITE, BLDG 2992)  
 ISC (FTC-088 - BUILDING 1211)  
 IRA (FTC-058 - FORMER VAPOR DEGREASER)

## 2001

CS (FTC-093 - Former POW Camp)  
 RFA (FTC-093 - Former POW Camp)

## IRP Schedule

|             |  |
|-------------|--|
| INV         | (FTC-088 - BUILDING 1211)  |
| CAP         | (FTC-062 - FORMER UST SITE, BLDG 2392, FTC-066 - FORMER UST SITE, BLDG 3192)   |
| IRA         | (FTC-009 - LANDFILL 5 (1946-1956), FTC-021 - ABANDONED FIRE TRAINING AREA)   |
| IMP(O)      | (FTC-055 - FORMER UST SITE, BLDG 981)  |
| <b>2002</b> |  |
| CAP         | (FTC-068 - FORMER UST SITE, BLDG 8300)   |
| LTM         | (FTC-010 - LANDFILL 6 (1942-1946))   |
| IRA         | (FTC-068 - FORMER UST SITE, BLDG 8300, FTC-079 - SLUDGE TRENCH PIT)  |
| <b>2003</b> |  |
| RFI/CMS     | (FTC-027 - Range 123, Open Burn Grounds, FTC-040 - FORMER OPEN DUMPING AREA, RANGE 121, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030)  |
| IRA         | (FTC-023 - FORMER USED/WASTE OIL STORAGE TANKS)  |
| <b>2004</b> |  |
| RFI/CMS     | (FTC-008 - LANDFILL 4 (1957), FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-043 - DIO Hazardous Waste Storage Area, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142, FTC-048 - Demolition Area, FTC-079 - SLUDGE TRENCH PIT)                |
| IMP(O)      | (FTC-051 - FORMER UST SITE, BLDG 9648)   |
| <b>2005</b> |  |
| IRA         | (FTC-020 - GRIT OIL PIT, FTC-083 - North Specker Avenue Plumes)  |
| CMI(C)      | (FTC-009 - LANDFILL 5 (1946-1956))   |
| RFI/CMS     | (FTC-009 - LANDFILL 5 (1946-1956), FTC-015 - LANDFILL 11, FTC-018 - Range 1A, Open Burn Grounds, FTC-032 - Vehicle Wash Rack Storm Drainages, FTC-041 - Fmr Long-Term Haz Waste Stor, 8000 , FTC-044 - DRAINAGE DITCH, ADJACENT TO BUILDING 301) |
| LTM         | (FTC-024 - DRMO, Inactive Haz Waste Stor Area, FTC-045A - BATTERY ACID NEUTRALIZATION BLDG 8030, FTC-045C - BATTERY ACID NEUTRALIZATION BLDG 8142)   |
| <b>2006</b> |  |
| LTM         | (FTC-018 - Range 1A, Open Burn Grounds, FTC-032 - Vehicle Wash Rack Storm Drainages)   |
| RFI/CMS     | (FTC-047 - LAND SPREADING FIELD)   |
| <b>2007</b> |  |
| LTM         | (FTC-043 - DIO Hazardous Waste Storage Area, FTC-079 - SLUDGE TRENCH PIT)  |
| CMI(C)      | (FTC-013 - LANDFILL 9 (1965-1973))   |
| DES         | (FTC-013 - LANDFILL 9 (1965-1973))   |
| RFI/CMS     | (FTC-013 - LANDFILL 9 (1965-1973))   |
| <b>2008</b> |  |
| RFI/CMS     | (FTC-093 - Former POW Camp)  |
| LTM         | (FTC-041 - Fmr Long-Term Haz Waste Stor, 8000 , FTC-047 - LAND SPREADING FIELD)  |
| <b>2009</b> |  |
| RFI/CMS     | (FTC-012 - LANDFILL 8 (1972-1973))   |
| DES         | (FTC-093 - Former POW Camp)  |
| <b>2010</b> |  |
| CMI(C)      | (FTC-070 - UST near Building 202, FTC-093 - Former POW Camp)   |
| DES         | (FTC-070 - UST near Building 202)  |
| RFI/CMS     | (FTC-021 - ABANDONED FIRE TRAINING AREA, FTC-070 - UST near Building 202)  |
| <b>2011</b> |  |
| DES         | (FTC-012 - LANDFILL 8 (1972-1973))   |

# IRP Schedule

CMI(C) (FTC-012 - LANDFILL 8 (1972-1973))  
RFI/CMS (FTC-006 - LANDFILLS 2/3 (1960-1978), FTC-011 - LANDFILL 7 (1968-1978), FTC-026 - PETE'S HILL)

## 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 |
|---------|-----------|--------------|-------------|
|---------|-----------|--------------|-------------|

Final RA(C) Completion Date: 201509

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of IRP at Installation (including LTM phase): 204101

## FORT CARSON IRP Schedule

= phase underway

| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
|---------|-------------------------------------|---------|------|------|------|------|------|-------|
| FTC-006 | LANDFILLS 2/3 (1960-1978)           | DES     |      |      |      |      |      |       |
|         |                                     | CMI(C)  |      |      |      |      |      |       |
|         |                                     | CMI(O)  |      |      |      |      |      |       |
|         |                                     | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-008 | LANDFILL 4 (1957)                   | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-009 | LANDFILL 5 (1946-1956)              | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-011 | LANDFILL 7 (1968-1978)              | DES     |      |      |      |      |      |       |
|         |                                     | CMI(C)  |      |      |      |      |      |       |
|         |                                     | CMI(O)  |      |      |      |      |      |       |
|         |                                     | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-012 | LANDFILL 8 (1972-1973)              | CMI(O)  |      |      |      |      |      |       |
|         |                                     | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-013 | LANDFILL 9 (1965-1973)              | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-020 | GRIT OIL PIT                        | RFI/CMS |      |      |      |      |      |       |
|         |                                     | DES     |      |      |      |      |      |       |
|         |                                     | CMI(C)  |      |      |      |      |      |       |
|         |                                     | CMI(O)  |      |      |      |      |      |       |
|         |                                     | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-021 | ABANDONED FIRE TRAINING AREA        | DES     |      |      |      |      |      |       |
|         |                                     | CMI(C)  |      |      |      |      |      |       |
|         |                                     | CMI(O)  |      |      |      |      |      |       |
|         |                                     | LTM     |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-023 | FORMER USED/WASTE OIL STORAGE TANKS | RFI/CMS |      |      |      |      |      |       |
|         |                                     | CMI(C)  |      |      |      |      |      |       |
| SITE ID | SITE NAME                           | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-026 | PETE'S HILL                         | DES     |      |      |      |      |      |       |
|         |                                     | CMI(C)  |      |      |      |      |      |       |
|         |                                     | CMI(O)  |      |      |      |      |      |       |
|         |                                     | LTM     |      |      |      |      |      |       |

## FORT CARSON IRP Schedule

| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
|------------|------------------------------------|---------|------|------|------|------|------|-------|
| FTC-033    | Fmr Waste Oil/Solv USTs, Bldg 8000 | RFI/CMS |      |      |      |      |      |       |
|            |                                    | DES     |      |      |      |      |      |       |
|            |                                    | CMI(C)  |      |      |      |      |      |       |
|            |                                    | CMI(O)  |      |      |      |      |      |       |
|            |                                    | LTM     |      |      |      |      |      |       |
| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-056    | FORMER UST SITE, BLDG 1382         | IMP(C)  |      |      |      |      |      |       |
| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-058    | FORMER VAPOR DEGREASER             | RFI/CMS |      |      |      |      |      |       |
|            |                                    | DES     |      |      |      |      |      |       |
|            |                                    | CMI(C)  |      |      |      |      |      |       |
|            |                                    | CMI(O)  |      |      |      |      |      |       |
| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-070    | UST near Building 202              | CMI(O)  |      |      |      |      |      |       |
|            |                                    | LTM     |      |      |      |      |      |       |
| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-075    | OLD CENTRAL WASH RACK              | RFI/CMS |      |      |      |      |      |       |
| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-083    | North Specker Avenue Plumes        | RFI/CMS |      |      |      |      |      |       |
|            |                                    | DES     |      |      |      |      |      |       |
|            |                                    | CMI(C)  |      |      |      |      |      |       |
|            |                                    | CMI(O)  |      |      |      |      |      |       |
|            |                                    | LTM     |      |      |      |      |      |       |
| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| FTC-093    | Former POW Camp                    | CMI(O)  |      |      |      |      |      |       |
|            |                                    | LTM     |      |      |      |      |      |       |
| SITE ID    | SITE NAME                          | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| PBA@Carson | PBA@Carson                         | RFI/CMS |      |      |      |      |      |       |
|            |                                    | DES     |      |      |      |      |      |       |
|            |                                    | CMI(C)  |      |      |      |      |      |       |
|            |                                    | CMI(O)  |      |      |      |      |      |       |

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

## CR Summary

**Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count:** 18/10

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

- 1 Contaminated Soil Piles  
(CC 108)
- 2 Landfill  
(CC SW001, CC SW170)
- 1 Sewage Treatment Plant  
(CC SW022)
- 1 Soil Contamination After Tank Removal  
(CC SW169)
- 1 Surface Impoundment/Lagoon  
(CC SW023)
- 1 Underground Storage Tank  
(CC 106)
- 1 Underground Tank Farm  
(CC 102)

**Most Widespread Contaminants of Concern**

Asbestos, Metals, Petroleum, Oil and Lubricants (POL), Semi-volatiles (SVOC), Volatiles (VOC)

**Media of Concern**

Groundwater, Soil, Surface Water

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

| Site ID  | Site Name                               | Action | Remedy                                  | FY   |
|----------|---|--------|---|------|
| CC SW006 | SWMU 6 - Landfill 6                     | FRA    | REMOVAL                                 | 2000 |
| CC SW166 | SWMU 166 - Building 8110,<br>Former UST | IRA    | REMOVAL                                 | 2004 |
| CC 102   | Buildings 980 and 981                   | FRA    | NATURAL ATTENUATION                     | 2009 |
| CC SW169 | SWMU 169 - Building 1211,<br>Former UST | FRA    | BIOREMEDIATION - IN SITU<br>GROUNDWATER | 2010 |
| CC 107   | Former Booster Station PCMS             | FRA    | WASTE REMOVAL - SOLIDS (NON-SOILS)      | 2012 |
| CC SW028 | SWMU 28 - Battery Neutral<br>Shop,BLDG  | FRA    | WASTE REMOVAL - SOILS                   | 2012 |

**Duration of CR**

**Date of CR Inception:** 198810

**Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC):** 201409/201512

**Date of CR completion including Long Term Management (LTM):** 204109

## CR Contamination Assessment

### Contamination Assessment Overview

FTC has a total of 17 CR sites, all of which were transferred from AEDB-CC in FY09 and FY10. Seven of the sites (CC SW001,021, 022, 023, 035, 169, and 170) are included in the FY08 PBA, which also carries several IR sites. Only two other CR sites (CC 102 and CC106) are currently active with completion anticipated in the next two years.

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

### Cleanup Exit Strategy

The exit strategy for FTC consists of an integrated approach through the use of a large PBA contract to consolidate and streamline the cleanup process. The PBA was awarded in July 2008 and addresses the following Compliance Restoration (CR) sites:

CR SWMUs: 1, 21, 22, 23, 35, 169, 170

## CR Previous Studies

|             | <b>Title</b>   | <b>Author</b> | <b>Date</b> |
|-------------|--|---------------|-------------|
| <b>2010</b> | SWMU 169 Draft Final Presumptive Remedy Annual Progress Report for 2010 for the Former Bldg 1211 UST | Shaw          | DEC-2010    |
|             | SWMU 163 Draft Final Basis for NFA at FTC Industrial Wastewater System                               | Summit        | DEC-2010    |
| <b>2011</b> | SWMU 21 Draft Final Basis for NFA at the Industrial Wastewater Treatment Plant                       | Shaw          | JAN-2011    |
|             | PCMS Third Quarter 2010 Monitoring and Remediation Report at Pinon Canyon Maneuver Site OPS          | Summit        | JAN-2011    |
|             | OPS PCMS CAP revised pages at the Pinon Canyon Maneuver Site (PCMS).                                 | Summit        | JAN-2011    |
|             | SWMU 35 Final Basis for No Further Action at the New Central Washrack                                | Shaw          | JAN-2011    |
|             | PCMS Monitoring and Remediation Report for Pinon Canyon Maneuver Site                                | Summit        | MAR-2011    |
|             | SWMU 169 Final Presumptive Remedy Annual Progress Report for 2010 for the Former Bldg 1211           | Shaw          | APR-2011    |

**FORT CARSON**  
**Compliance Restoration**  
**Site Descriptions**

**Site ID: CC 102**  
**Site Name: Buildings 980 and 981**

**STATUS**

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

| <b>Phases</b>    | <b>Start</b> | <b>End</b> |
|------------------|--------------|------------|
| ISC.....         | 198810.....  | 199109     |
| CAP.....         | 199110.....  | 200610     |
| IMP(C).....      | 200610.....  | 200810     |
| IMP(O).....      | 200908.....  | 201309     |
| <b>RIP Date:</b> | 200908       |            |
| <b>RC Date:</b>  | 201309       |            |

**SITE DESCRIPTION**

CC 102 (Bldgs 980 and 981, OPS Event ID 5380) is a former Army Air Force Exchange Service (AAFES) gasoline station, located on the north side of O'Connell Boulevard, near the north gate in the Cantonment Area of FTC. Bldg 981 was a car wash and not historically associated with any contamination or remediation related to the UST system.

A series of voluntary subsurface investigations were initiated in 1989 after the first set of USTs were removed, including GW monitoring well installation, soil excavation, soil gas and geophysical surveys, and product recovery trench installation. In March 2005, OPS assigned a leak event ID to this site and upon review of historical documentation indicated that the site was a candidate for closure through a Tier 1A risk model for soil and a Tier 2 risk model for groundwater. To provide data required for the soil and groundwater risk models, OPS recommended the installation of four soil borings and five groundwater monitoring wells at this site. Subsequently, a comprehensive field search of the site identified several groundwater monitoring wells that were thought to have been destroyed. However, the wells were determined to be intact and quarterly sampling of the wells provided the data to support a request for NFA.

Analytical groundwater data from the fourth quarter 2008 monitoring event indicated no petroleum hydrocarbon constituents above OPS Tier 1 RBSLs. Preliminary soil and groundwater models were completed in January 2009. Additional work consisting of soil excavation was required and funded in FY09. A remediation system including a subsurface intercept trench was also installed, but the system is no longer operational.

A monitoring well directly connected to intercept trench recently indicated PCE and TCE concentrations slightly greater than the Colorado Groundwater Standards. Additional soil and groundwater sampling are required at this site based on the OPS denial of closure letter dated March 15, 2011.

**CLEANUP/EXIT STRATEGY**

CTC Assumptions include the following:

-Quarterly monitoring of 10 wells will occur for one year, followed by well abandonment.

**STATUS**

**Regulatory Driver:** RCRA

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

Media of Concern: Groundwater

| Phases      | Start       | End    |
|-------------|-------------|--------|
| ISC.....    | 199306..... | 200006 |
| INV.....    | 199906..... | 200006 |
| CAP.....    | 200709..... | 200712 |
| IMP(C)..... | 200809..... | 201210 |
| IMP(O)..... | 200810..... | 201309 |

**RIP Date:** 201210

**RC Date:** 201309

**SITE DESCRIPTION**

CC 106, known as Bldg P150 (FTC-069/OPS Event ID 10495), is an active bulk fueling point located in the western portion of the PCMS. The original UST system was installed in 1986 and replaced in 1993 following a gross product leak created at Tank 4 while the system was being retrofitted with leak detection. Approximately 4,000 gallons of JP-4 fuel was released into the subsurface. An unknown quantity of petroleum-contaminated groundwater was removed from the tank pit, which was subsequently excavated. The excavated soil was landfarmed in an area directly west of the site. The new system was installed with a Soil Sentry soil vapor monitoring (SVM) unit and an Encompass automatic tank gauging (ATG) unit. A comprehensive site investigation was performed following the initial response, and the site was granted NFA status by OPS on May 4, 2000.

The ATG system began to malfunction over time and was replaced in September 2007 with a Veeder-Root auto tank gauging system (model TLS-350). Following installation of the system, the USTs and product lines were integrity tested as required by OPS regulations. During a test of a recirculation line at Tank 3, approximately 100 gallons of JP-8 fuel drained into the south manway via the interstitial space between the primary and secondary containment of the recirculation line. The fuel was immediately evacuated from the manway, and the UST system was taken out of service.

On Oct. 22, 2007, liquid levels within the SVM wells were measured with a fuel/water interface probe to determine if a product release had occurred outside of the secondary containment system. Approximately one foot of free-product was detected in each of the SVM wells. Evidence of a product release was immediately reported to OPS. Free-product removal from the tank-field commenced on Oct. 23, 2007, and continued during subsequent pumping events in November 2007 and March, April, May, and November 2008. An estimated total of 10,375 gallons of free-product and approximately 21,000 gallons of groundwater were removed from the excavation through the SVM wells. The average thickness of the free-product layer was reduced from an average of 1.04 ft (approximately 12.25 inches) to 0.045 ft (0.56 inch). The estimated volume of free-product remaining in the tank pit is approximately 450 gallons. No long-term free-product rebound has been evident since commencement of extraction activities.

The Final Site Characterization Report was submitted to OPS in June 2009. Quarterly groundwater monitoring is currently underway. The CAP was implemented in August FY11 due to current concentrations of MTBE current above the CGWS in seven wells and previous detections of PCE slightly above CGWS in two wells. A Corrective Action Plan (CAP) was submitted to the Colorado Division of Labor and Employment, Division of Oil and Public Safety (OPS) on August 31, 2010. Under the CAP 1,090 gallons of fuel have been recovered. Based on product thickness +/-1300 gallons remain.

To address the remaining fuel the CAP will be modified to include the following actions which are scheduled to take place starting in September 2012 or October 2012 depending on pending contract actions: Installation of a new remediation well inside the tank pit. Flushing with a surfactant (two events) to remove residual fuel from the granular backfill surrounding the USTs. Seven additional extraction events to remove both surfactant and fuel.

Quarterly ground water monitoring will continue through 2013 to allow assessment of the effectiveness of the remedial implementation. Completion of a Tier II Risk Assessment in accordance with Colorado's Division of Oil and Public Safety will lead to notice of No Further Action.

**Site ID: CC 106**  
**Site Name: BLDG P150**

## **CLEANUP/EXIT STRATEGY**

CTC Assumptions include the following:

-Quarterly monitoring of 20 wells will occur for one year, followed by well abandonment.

**Site ID: CC 108**  
**Site Name: Old Hospital Complex**

**STATUS**

Regulatory Driver: TSCA

| <b>Phases</b> | <b>Start</b> | <b>End</b> |
|---------------|--------------|------------|
| RFA.....      | 201201.....  | 201202     |
| CS.....       | 201203.....  | 201204     |
| RFI/CMS.....  | 201205.....  | 201206     |
| DES.....      | 201207.....  | 201208     |
| CMI(C).....   | 201209.....  | 201306     |

**RIP Date:** N/A

**RC Date:** 201306

**SITE DESCRIPTION**

Abate Old Hospital Complex Bldgs. 6231, 6232, and 6234, and 6282, 6283, 6284, and 6285, provides for the abatement of the contaminated soil from around the listed buildings.

**CLEANUP/EXIT STRATEGY**

**Site ID: CC SW001**

**Site Name: SWMU 1 - Landfill 1**

## STATUS

**Regulatory Driver:** RCRA

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater, Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 199410..... | 199510 |
| CS.....      | 199510..... | 199511 |
| RFI/CMS..... | 199511..... | 201210 |
| DES.....     | 201110..... | 201309 |
| CMI(C).....  | 201110..... | 201409 |
| CMI(O).....  | 201110..... | 201512 |
| LTM.....     | 201601..... | 204101 |

**RIP Date:** 201409

**RC Date:** 201512

## SITE DESCRIPTION

CC SW001, also known as Inactive Landfill 1, is located south of the cantonment area. The municipal portion of the LF is approximately 50 acres and has been inactive since 1998. FTC also maintained a 12-acre construction debris area (FTC-099) within the Landfill 1 Certificate of Designation boundary until 2002. This site is part of the 2002 Compliance Order No. 02-03-22-01.

Groundwater sample results indicated inorganics in both upgradient and downgradient wells, at concentrations above CGWS, and chlorinated VOCs in several downgradient wells. It is unknown whether downgradient contamination is related to Landfill 1 or the Grit/Oil Pit (FTC-020, SWMU 013). A surface water channel was constructed in 1999 to control drainage in preparation for capping of the municipal portion.

Landfill 1 has been designated as part of the CLA. The CLA SWMUs include: Landfill 1 (FTC-005, SWMU1), Landfill 7 (FTC-011, SWMU 7), Grit/Oil Pit (FTC-020, SWMU 013), Pete's Hill Dump (FTC-026, SWMU 014), Sludge Trench Pit (FTC-079, SWMU 018), and the Construction and Demolition Debris Landfill (FTC-099/SWMU 170).

The ICP for the CLA, which identified both solid waste and hazardous waste interim closure requirements, was approved by CDPHE in September 2003.

RFI activities were completed and the ICP compliance monitoring was initiated. The RFI report was submitted in June 2004 as part of the CLA RFI. The RFI report was approved in August 2004 and a CMS was imposed by CDPHE. The CMS work plan was submitted to CDPHE in March 2006 and approved in October 2006. The CMS for the LF cap was submitted in April 2007. CDPHE is requiring a hydrogeologic investigation to determine whether groundwater is in contact with waste in the LF trenches. Phase III of the hydrogeologic investigation was completed and the results were submitted to CDPHE in December 2008.

A PBA was awarded at FTC in July 2008. The PBA covers remedial construction and operation activities for this site through December 2015. Elevated concentrations of methane were detected during quarterly monitoring in the 3Q09 and 4Q09 monitoring reports. Notification letters were provided to CDPHE.

The PBA contractor is currently performing monitoring and maintenance activities and submitted a Draft Final CMS addendum in FY11.

## CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

**Site ID: CC SW001**  
**Site Name: SWMU 1 - Landfill 1**

- The CMI-C phase will include the installation of fencing.
- PBA funding for a CMS and cap construction has been awarded.
- The CMI-O phase will consist of remedial operation (landfill cap maintenance and monitoring) under the PBA. Post PBA LTM (landfill cap maintenance and monitoring) will consist of 26 years.

Site Name: SWMU 22 - Sewage Treatment Plant

**STATUS**

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 199410..... | 199510 |
| CS.....      | 199510..... | 199511 |
| RFI/CMS..... | 200610..... | 201212 |

RIP Date: N/A

RC Date: 201212

**SITE DESCRIPTION**

CC SW022, also known as the STP (FTC-042, SWMU 22), is located at the southeast corner of the cantonment area at FTC. When the old units were demolished, soil samples were collected from below the trickling filters, primary clarifiers, secondary clarifiers, and anaerobic digesters. These units were backfilled with concrete debris and a soil cover after soil sampling. A portion of the treated effluent is discharged from the STP to the Golf Course Effluent Holding Pond (FTC-036/SWMU 32).

There is no evidence of past releases to the environment, and waste management activities are conducted in accordance with NPDES regulations. The process unit demolition report summarizes the sampling conducted during the demolition activities (data to be incorporated into the RFI report).

RFI fieldwork was initiated in April 2008. RFI data indicated the need for additional sample collection; therefore, a sampling plan was submitted to CDPHE in November 2008. The additional fieldwork was conducted in January 2008, and the RFI was submitted in July 2009. In October 2009 CDPHE sent comments regarding the RFI, and consultant is required to perform additional sampling.

A Performance Based Acquisition (PBA) was completed at Fort Carson in July 2008. The PBA covers remedial construction and operation activities for this site through 2015. The Final RFI was submitted to CDPHE in March 2011 and approved in April 2011. The PBA contractor is currently working on the Draft Risk Evaluation which is expected to be submitted to CDPHE early FY12. The NFA request will be submitted in FY12.

**CLEANUP/EXIT STRATEGY**

CTC assumptions include the following:

- PBA funding for a CMS and site closeout has been awarded.
- The site closeout is underway.

Site Name: SWMU 23 - Sewage Treatment Lagoons, BAAF

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Volatiles (VOC)
Media of Concern: Groundwater, Soil

Table with 3 columns: Phases, Start, End. Rows include RFA, CS, RFI/CMS, DES, CMI(C), CMI(O), LTM, RIP Date, and RC Date.

SITE DESCRIPTION

CC SW023, also known as the Sewage Treatment Lagoons, Butts Army Airfield (BAAF) (FTC-039, SWMU 23), is being investigated with the Fire Training Area (FTC-021/022, SWMU 24). Both sites are known as the BECS.

PCE has been detected at this site above groundwater standards in several wells on the west side of the site, and low levels of metals were encountered in the sludge within the lagoons. DPW removed the sludge from the lagoons in 1999 and backfilled the site.

In 2001, 2002, and 2003, additional soil and groundwater samples were collected at the site to address CDPHE comments on RFI activities.

CDPHE approved the revised RFI report in April 2005, as part of the BECS RFI. The CMS work plan was submitted to CDPHE in July 2005 and approved in December 2005. Remedy-specific data gap fieldwork was performed in March 2006 and the pilot study work plan was submitted to CDPHE in summer 2006.

Future work at this site will be conducted under the Fort Carson Performance Based Contract, which was awarded in July 2008. The PBA covers remedial construction and operation activities for this site through 2015.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- PBA funding for a CMS and groundwater remediation has been awarded.
-The CMI(O) phase will consist of remedial operation (groundwater monitoring) under the - PBA.
-The post PBA LTM (monitoring) is based on the FY12 PBA amount for this site multiplied by five years.

Site Name: SWMU 169 - Building 1211, Former UST

STATUS

Regulatory Driver: RCRA

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

Media of Concern: Groundwater, Soil

| Phases       | Start       | End    |
|--------------|-------------|--------|
| RFA.....     | 199410..... | 199510 |
| CS.....      | 199510..... | 199511 |
| RFI/CMS..... | 199910..... | 200809 |
| DES.....     | 200810..... | 200909 |
| CMI(C).....  | 200910..... | 201009 |
| CMI(O).....  | 201010..... | 201512 |
| LTM.....     | 201601..... | 202009 |

RIP Date: 201010

RC Date: 201512

SITE DESCRIPTION

The investigation of CC SW169, also known as former Bldg 1211 (FTC-088, SWMU 169), was initiated based on results of an RFI conducted at nearby Landfill 6 (FTC-010/SWMU 6). The Landfill 6 RFI concluded that the origin of organic compounds in the groundwater and petroleum hydrocarbon compounds in soil collected from monitoring well LF6MW8, located crossgradient of the LF near the location of former Bldg 1211, may be associated with former fueling station activities.

Four separate investigations were performed between October 1999 and October 2000 to determine whether the former Bldg 1211 area is the source of constituents detected in monitoring well LF6MW8. Subsurface investigations confirmed that soil and groundwater impacts initially detected in LF6MW8 are associated with the former Bldg 1211 fueling facility. Consistent concentrations of cis-1,2-dichloroethene and vinyl chloride have been detected in groundwater. Free-phase product [light non-aqueous phase liquid (LNAPL)] was encountered in the former tank pit.

Based on the results of the investigations, a newly identified SWMU report was submitted to CDPHE in April 2001 with an RFI work plan. Additional groundwater wells were installed in January 2003, additional groundwater sampling was conducted in August 2004, and the RFI Report was submitted to CDPHE in January 2005. CDPHE provided comments in October 2005 and requested additional fieldwork to further define the nature and extent of groundwater contamination in the former UST excavation and hydrogeologic conditions in the southeast portion of the site. A supplemental letter work plan proposing the additional fieldwork was submitted in December 2005 and approved in January 2006. Fieldwork was performed in March and April 2006.

The revised RFI report was submitted in January 2008; CDPHE approved the RFI in September 2008 and imposed a CMS. In December 2008, a concrete vault was exposed during a construction project adjacent to the site. The location of the vault is coincident with the maximum concentration 1,2-dichlorethane in groundwater. The disposition of the vault and its potential contribution to groundwater contamination are under evaluation.

A PBA was completed at FTC in July 2008. The PBA covers remedial construction and operation activities for this site through 2015. The final presumptive remedy work plan was submitted in August 2009 and approved in September 2009. In December 2009 CDPHE finalized the permit modification to select the remedy at the site. Injections at the site began in early 2010. Monitoring and maintenance activities were performed in FY11.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- PBA funding for a CMS and groundwater remediation has been awarded.
- The CMI-O phase will consist of remedial operation (groundwater monitoring) under the PBA.

**Site ID: CC SW169**  
**Site Name: SWMU 169 - Building 1211, Former UST**

-The post PBA LTM (monitoring) is based on the FY11 PBA amount for this site multiplied by five years.

Site Name: SWMU 170 - Const.& Debris Landfill

STATUS

Regulatory Driver: RCRA
Contaminants of Concern: Volatiles (VOC)
Media of Concern: Groundwater, Soil

Table with 3 columns: Phases, Start, End. Rows include RFA, CS, RFI/CMS, DES, CMI(C), CMI(O), LTM, RIP Date, and RC Date.

SITE DESCRIPTION

CC SW170, known as the Construction and Debris Landfill (FTC-099, SWMU 170) is located south of the cantonment area in the Landfill 1 certificate of designation.

The construction and debris LF has recently been included as part of the CLA.

The ICP for CLA, which identified both solid waste and hazardous waste interim closure requirements, was approved by CDPHE in September 2003.

The CLA RFI report was submitted in June 2004, approved by CDPHE in August 2004, and a CMS was imposed. The CMS work plan was approved by CDPHE in October 2006.

A PBA was completed at FTC in July 2008. The PBA covers remedial construction and operations activities for this site through December 2015.

In FY12 Fort Carson will submit the CMS addendum and preliminary landfill design (30 and 60 percent design). Fieldwork will also begin and the monitoring and maintenance program will continue.

CLEANUP/EXIT STRATEGY

CTC assumptions include the following:

- The CMI-C phase will include the installation of fencing.
-PBA funding for a CMS and cap construction has been awarded.
-The CMI-O phase will consist of remedial operation (landfill cap maintenance and monitoring) under the PBA.
-Post PBA LTM (landfill cap maintenance and monitoring) will consist of 26 years.

## Site Closeout (No Further Action) Summary

| Site ID  | Site Name                               | NFA Date | Documentation   |
|----------|---|----------|---|
| CC 085   | Building 1882                           | 201109   | NFA approval was received from OPS in April 2010 and wells were abandoned in FY11.  |
| CC 107   | Former Booster Station PCMS             | 201205   |   |
| CC SW006 | SWMU 6 - Landfill 6                     | 200909   | CDPHE approved the Remedy Completion Report and issued the Remedy Completion Notice in the April 2009 Part B Permit Mod.                            |
| CC SW021 | SWMU 21 - Ind.Waste Treatment Facility  | 201102   | The NFA request was approved by CDPHE in February 2011.   |
| CC SW028 | SWMU 28 - Battery Neutral Shop,BLDG     | 201202   | SWMU 28 was approved Remedy Complete in August 2011.  |
| CC SW032 | SWMU 32 - Golf Course Holding Pond      | 201009   | As of December 2009 CDPHE finalized the permit modification to select NFA at the site.  |
| CC SW033 | SWMU 33 - GC STP Effluent & Sludge      | 201009   | As of December 2009 CDPHE finalized the permit modification to select NFA at the site.  |
| CC SW035 | SWMU 35 - New Central Wash Rack         | 201102   | CDPHE finalized the permit modification to select NFA at the site in February 2011.   |
| CC SW163 | SWMU 163 - Industrial Waste Water Lines | 201106   | CDPHE approved the NFA in April 2011 and CDPHE initiated a permit modification in June 2011 to select No Further Action as the remedy for the site. |
| CC SW166 | SWMU 166 - Building 8110, Former UST    | 201204   |   |

## CR Schedule

**Date of CR Inception:** 198810

### Past Phase Completion Milestones

#### 1991

ISC (CC 102 - Buildings 980 and 981)

#### 1996

CS (CC SW001 - SWMU 1 - Landfill 1, CC SW006 - SWMU 6 - Landfill 6, CC SW021 - SWMU 21 - Ind.Waste Treatment Facility, CC SW022 - SWMU 22 - Sewage Treatment Plant, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF , CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG, CC SW032 - SWMU 32 - Golf Course Holding Pond, CC SW033 - SWMU 33 - GC STP Effluent & Sludge , CC SW035 - SWMU 35 - New Central Wash Rack, CC SW163 - SWMU 163 - Industrial Waste Water Lines, CC SW166 - SWMU 166 - Building 8110, Former UST, CC SW169 - SWMU 169 - Building 1211, Former UST, CC SW170 - SWMU 170 - Const.& Debris Landfill )

RFA (CC SW001 - SWMU 1 - Landfill 1, CC SW006 - SWMU 6 - Landfill 6, CC SW021 - SWMU 21 - Ind.Waste Treatment Facility, CC SW022 - SWMU 22 - Sewage Treatment Plant, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF , CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG, CC SW032 - SWMU 32 - Golf Course Holding Pond, CC SW033 - SWMU 33 - GC STP Effluent & Sludge , CC SW035 - SWMU 35 - New Central Wash Rack, CC SW163 - SWMU 163 - Industrial Waste Water Lines, CC SW166 - SWMU 166 - Building 8110, Former UST, CC SW169 - SWMU 169 - Building 1211, Former UST, CC SW170 - SWMU 170 - Const.& Debris Landfill )

#### 2000

CMI(C) (CC SW006 - SWMU 6 - Landfill 6)

INV (CC 106 - BLDG P150)

ISC (CC 085 - Building 1882, CC 106 - BLDG P150)

RFI/CMS (CC SW006 - SWMU 6 - Landfill 6)

#### 2001

INV (CC 085 - Building 1882)

#### 2004

IRA (CC SW166 - SWMU 166 - Building 8110, Former UST)

#### 2007

CAP (CC 085 - Building 1882, CC 102 - Buildings 980 and 981)

#### 2008

CAP (CC 106 - BLDG P150)

RFI/CMS (CC SW169 - SWMU 169 - Building 1211, Former UST)

#### 2009

IMP(C) (CC 102 - Buildings 980 and 981)

RFA (CC 107 - Former Booster Station PCMS)

CS (CC 107 - Former Booster Station PCMS)

RFI/CMS (CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG)

LTM (CC SW006 - SWMU 6 - Landfill 6)

DES (CC SW169 - SWMU 169 - Building 1211, Former UST)

#### 2010

RFI/CMS (CC 107 - Former Booster Station PCMS, CC SW023 - SWMU 23 - Sewage Treatment Lagoons,BAAF , CC SW032 - SWMU 32 - Golf Course Holding Pond, CC SW033 - SWMU 33 - GC STP Effluent & Sludge )

DES (CC 107 - Former Booster Station PCMS)

CMI(C) (CC SW169 - SWMU 169 - Building 1211, Former UST)

#### 2011

RFI/CMS (CC SW021 - SWMU 21 - Ind.Waste Treatment Facility, CC SW035 - SWMU 35 - New Central Wash Rack, CC SW163 - SWMU 163 - Industrial Waste Water Lines)

LTM (CC 085 - Building 1882)

DES (CC SW028 - SWMU 28 - Battery Neutral Shop,BLDG)

## CR Schedule

### 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 |
|---------|-----------|--------------|-------------|
|---------|-----------|--------------|-------------|

Final RA(C) Completion Date: 201409

Schedule for Next Five-Year Review: 2015

Estimated Completion Date of CR at Installation (including LTM phase): 204109

## FORT CARSON CR Schedule

= phase underway

| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
|----------|---|---------|------|------|------|------|------|-------|
| CC 102   | Buildings 980 and 981                   | IMP(O)  |      |      |      |      |      |       |
| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| CC 106   | BLDG P150                               | IMP(C)  |      |      |      |      |      |       |
|          |   | IMP(O)  |      |      |      |      |      |       |
| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| CC 108   | Old Hospital Complex                    | CMI(C)  |      |      |      |      |      |       |
| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| CC SW001 | SWMU 1 - Landfill 1                     | RFI/CMS |      |      |      |      |      |       |
|          |   | DES     |      |      |      |      |      |       |
|          |   | CMI(C)  |      |      |      |      |      |       |
|          |   | CMI(O)  |      |      |      |      |      |       |
|          |   | LTM     |      |      |      |      |      |       |
| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| CC SW022 | SWMU 22 - Sewage Treatment Plant        | RFI/CMS |      |      |      |      |      |       |
| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| CC SW023 | SWMU 23 - Sewage Treatment Lagoons,BAAF | DES     |      |      |      |      |      |       |
|          |   | CMI(C)  |      |      |      |      |      |       |
|          |   | CMI(O)  |      |      |      |      |      |       |
|          |   | LTM     |      |      |      |      |      |       |
| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| CC SW169 | SWMU 169 - Building 1211, Former UST    | CMI(O)  |      |      |      |      |      |       |
|          |   | LTM     |      |      |      |      |      |       |
| SITE ID  | SITE NAME                               | PHASE   | FY13 | FY14 | FY15 | FY16 | FY17 | FY18+ |
| CC SW170 | SWMU 170 - Const.& Debris Landfill      | RFI/CMS |      |      |      |      |      |       |
|          |   | DES     |      |      |      |      |      |       |
|          |   | CMI(C)  |      |      |      |      |      |       |
|          |   | CMI(O)  |      |      |      |      |      |       |
|          |   | LTM     |      |      |      |      |      |       |

## Community Involvement

**Technical Review Committee (TRC):** None

**Community Involvement Plan (Date Published):** 200008

**Restoration Advisory Board (RAB):** RAB established 199411

**RAB Adjournment Date:** N/A

**RAB Adjournment Reason:** None

### Additional Community Involvement Information

In 1994 FTC was in the process of voluntarily forming a RAB when a local environmental organization petitioned the installation to form one. FTC's RAB was established and initial community involvement was high, but it has since declined. Information given to the public has increased the trust level of the community and RAB members.

FTC's RAB was established to inform interested citizens about FTC's environmental restoration activities, and for representatives of the surrounding communities to provide input to FTC for consideration in the environmental restoration decision-making process. This citizen-based advisory group is made up of two members and there is a mailing list of over 200 recipients. The group provides input to the installation for community decision-making that will be responsive to community needs and concerns. The RAB is also charged with distributing information about environmental restoration to the communities it represents. Progress reports on corrective action processes provided to the RAB are key factors in promoting informed and valuable reviews and comments from this group. Public meetings are held, as appropriate or required, in order to provide additional forums for community input. The meetings may be held in conjunction with RAB meetings. The community co-chair or a RAB member is invited to review the annual IAP update and to provide input regarding the community's environmental restoration priorities.

In December 1998 additional input was solicited from neighborhoods adjacent to FTC and a community involvement plan was generated.

RAB meetings are currently held on semiannual basis. An update to the community involvement plan is underway.

### Administrative Record is located at

Directorate of Public Works, Environmental Division  
1626 O'Connell Boulevard, Bldg 813  
Fort Carson, CO 80913-4356  
Phone: 719-526-1682

### Information Repository is located at

Grant Library (Fort Carson)  
1637 Flint Street  
Fort Carson, CO 80913  
Phone: 719-526-2350  
Reference Librarian: Kevin Bokay

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

**TAPP Title:** N/A

**Potential TAPP:** N/A

