



BACKGROUND

This project proposes extensive remediation work to multiple sites located at the Denver Federal Center (DFC). These sites are required by the State of Colorado to be cleaned up under the three Resources Conservation and Recovery Act Consent Orders Program (RCRA). RCRA is Federal legislation enacted in 1976 aimed at protecting the environment. RCRA addresses the treatment, storage, disposal, and cleanup of hazardous waste. This work will not only bring the DFC within compliance with the state requirements, but will also bring the land up to residential standards for future development.

Most of the buildings on the Federal Center were constructed in 1941 for the Denver Ordnance Plant that produced ammunition in support of World War II. The DFC has since been used by over 27 different federal agencies over more than 67 years. The various agencies have used the property for many reasons including but not limited to:

- Pesticide and herbicide testing
- Animal testing
- Landfills (disposal of waste and construction debris), storage of hazardous materials, firing ranges, burn pits, underground storage tanks (USTs) that have leaked,
- A waste water treatment plant
- Disposal of Asbestos Containing Material (ACM).

KNOWN AREAS OF CONCERN

Based on historical review of the DFC, GSA has identified over 600 areas which have had the potential to have managed, disposed of, or used hazardous materials.

1. The DFC has three main solvent plumes in groundwater on the east half of the facility which has been sourced from known locations such as the Federal Highway Administration (FHWA) leaking waste solvent tank and other unknown sources such as facilities that were run during the WWII era. In the southwest portion of the DFC there are several more plumes with petroleum and solvents that are also affecting the groundwater.
2. Localized soil and sediment contamination has also been identified with contamination including pesticides, herbicides, metals and polynuclear aromatic hydrocarbon (PAH). Metals and PAH contamination have been identified in sediments as well as surface water. In addition, large areas of asbestos in soil have been identified, related to historic building demolition practices and on site disposal of these materials.

FUNDING REQUIREMENTS

To date this project has received and obligated approximately \$30 million for investigation and approximately \$7.6 million in funding for cleanup which has accomplished varying levels of work on 27 different geographic areas on the facility (please see the attached map for site locations and phase of work in progress). Recently, this project was approved for an additional \$10.427 million which is planned for remedial action in the Northwest and Southeast portion of the facility in coordination with planned development action in coordination with the RTD Light Rail Alignment and City of Lakewood Parks respectively. All parts of the facility are in some stage of investigation and cleanup under the RCRA Consent Order Program.

NEXT STEPS

The following steps give a brief overview of the process this program follows for each site:

- I. Develop a Phase I RCRA Facility Investigation Work Plan (RFIWP).
- II. Implement the Phase I RFIWP.
- III. Develop a Phase II RFIWP for those sites that have been investigated and exceed allowable levels or pose a risk to human health and/or the environment, this phase determines the nature and extent of the contamination.
- IV. Implement the Phase II RFIWP.
- V. Develop a Corrective Measure Study (CMS) for those sites which require remediation. The CMS determines the most cost effective and protective remedial action.
- VI. Develop a Corrective Measure Work Plan (CMWP) for the selected remedy.
- VII. Implement the CMWP.
- VIII. Upon completion of the implementation of the CMWP request a No Further Action (NFA).

DEVELOPMENT NEEDS

GSA has recently been involved in a large master planning effort aimed at improving utilization of the land and buildings located at the DFC. The Master Plan for the DFC is in its final stages. The Master Plan calls for mixed use of the DFC although the three State of Colorado Consent Orders requires GSA to remediate the facility as required for residential use.

To date, the overall program has focused on two different types of remedial action at this facility including groundwater treatment by a passive iron fillings wall and soil removal. Further remediation techniques that will most likely be used in the future will include in place water treatment by chemical oxidation.

ACTIONS TO DATE

The following projects include the primary remedial action that has taken place to date. These projects have completed clean up to residential standards except for groundwater projects:

- April 1996: Groundwater treatment along Kipling, south of Downing Reservoir
- August 2004: Soil removal of the North Regional Transportation District (NRTD) transfer area and Investigation Area (IA) 6
- October 2005: Soil removal of the South Regional Transportation District (SRTD) transfer area
- August 2007: Soil removal of IA 10N, the solar park
- October 2008: Sediment and Soil Removal IA 01, Unnamed Ditch
- October 2008: Interim Corrective Action for IA04F, Building 25. Covered approximately 21000 sq ft of Asbestos contaminated soil in core campus area, removing immediate risk to tenants.
- April 2009: Chemically Contaminated Soil and Asbestos Contaminated Soil removal of IA 6, Former Storage Bunker Area
- May 2009: IA04E, Refurbished Building 25, EPA National Enforcement Laboratory