

In the 2009 Clean Sweep Operation, 40 cubic yards of visibly stained soil was excavated and transported to a designated land spreading area in the Granite Mountain disposal area at the Upper Camp (USAF 2010). Following land spreading, the soil was configured into two soil stockpiles that were sampled and analyzed for DRO. Analytical results from stockpile sampling indicated that concentrations of DRO were below the ADEC criterion (10,250 mg/kg), and the soil was used as cover for the new onsite disposal area at Upper Camp.

Two grab samples were collected from the packed sand foundations of the tanks and analyzed for DRO. No DRO was detected above the ADEC cleanup criterion (10,250 mg/kg). Confirmation soil samples were collected from the base of each excavation (southern and northern). Analytical results from the excavations indicate that remaining DRO concentrations were below the cleanup level. The site was backfilled and graded.

Contaminated soil planned for removal was excavated and disposed of during the 2009 removal action. Analysis of the remaining soil revealed DRO concentrations to be below the ADEC criterion (10,250 mg/kg). Because no fuel or hazardous substances were found at concentrations above applicable cleanup levels, Site SS005 requires no further action under state law and will be designated Cleanup Complete.

2.5.5.5 Site SS006 (Spill/Leak No. 4; AOC07)

Site SS006 (also known as Spill/Leak No. 4; AOC07) consists of a former 3,100-barrel diesel AST, approximately 500 feet of associated aboveground piping suspected to have been used for fuel offloading, and a small Control Building adjacent to the runway. The AST has since been moved to an offsite area west of the runway. The concrete foundation of the tank remains to mark its former location.

During the 1994 PA/SI, soil staining was observed near the easternmost valves of the AST piping. Surface soil samples collected from the site indicated DRO concentrations up to 17,600 mg/kg (USAF 2001). Surface seep water and soil sampled in an area of standing water approximately 100 feet downgradient of the easternmost valves showed detectable levels of GRO, DRO, and 1,1,1-trichloroethane (USAF 1995).

During the 1999 RI, test pits, soil borings, surface soil, and collocated soil/surface seep water locations were sampled to investigate potential sources of contamination. Soil samples from the borings and test pits were analyzed for GRO, DRO, RRO, and lead. Soil samples were analyzed for GRO, DRO, RRO, metals, pesticides, PCBs, and SVOCs; surface seep water samples were analyzed for these same analytes as well as VOCs. Surface soil samples were analyzed for DRO and RRO (USAF. 2001).

Soil samples from the Control Building area revealed DRO concentrations up to 1,840 mg/kg, RRO concentrations up to 39,300 mg/kg, and a lead concentration of 21.2 mg/kg. In the pipeline valve area, soil samples exhibited concentrations of DRO up to 11,000 mg/kg, RRO up to 130 mg/kg, and lead at 34.1 mg/kg; the soil sample taken from this area contained 0.0027 mg/kg 4,4'-DDT, 8.2 mg/kg arsenic, and 23.1 mg/kg lead. In the former AST area, soil samples revealed DRO at 3,550 mg/kg and lead at 29.2 mg/kg; arsenic (17.4 mg/kg) and lead (53.4 mg/kg) were found in the soil samples.

Soil borings were also sampled and analyzed for GRO, DRO, and RRO as part of the 1999 RI. In the boring located 20 feet southwest of the Control Building near the runway, drilling encountered primarily gravel, cobbles, and small boulders. A subsurface soil sample was collected at refusal (18 inches bgs). No analytes exceeded the ADEC cleanup criteria. In the boring located 30 feet downslope of the former diesel tank pad, refusal was encountered at 8 feet bgs where a subsurface soil sample was collected. No analytes exceeded the ADEC cleanup criteria. Refusal was encountered at 6 feet bgs and a subsurface soil sample collected in the boring 60 feet downslope of the valve at the 4-inch-diameter pipeline connecting the Control Building to the former diesel tank. This sample contained 1,170 mg/kg DRO, which is above the ADEC migration to groundwater limit (250 mg/kg). Groundwater was not encountered in any of the boreholes.

In the 2008 RI, field screening and analytical sampling were performed east of the pipeline valve and around the locations of historical DRO exceedances. Sampling was also conducted north and west of the pipeline, utilizing step-outs to fully delineate the extent of contamination. Soil near the pipeline was contaminated from near the surface down to

bedrock. As test pits were excavated downgradient, contamination from the pipeline appeared to have migrated to the bedrock layer, running downgradient toward the wetland area. Test pits downgradient of the pipeline had no visual or olfactory signs of contamination from 0 to 2.5 feet bgs; however, fuel was noted just above the bedrock layer. Approximately 250 cubic yards of soil was found to be contaminated with DRO above ADEC Method Two migration to groundwater criterion (Lower Camp 250 mg/kg). This DRO-contaminated soil and a small surface stain near the Control Building were recommended for removal.

A soil sample was collected and analyzed for lead to determine a background concentration for the site. The area where the sample was collected was upgradient of the potential sources of contamination, highly vegetated, and did not appear to have been previously disturbed. This sample contained 111 mg/kg of lead, indicating that the 1999 sample concentration of 53.4 mg/kg was less than the background concentration.

During the 2009 Clean Sweep Operation, approximately 1,010 cubic yards of stained and contaminated soil was excavated and transported to a designated land spreading area in the Granite Mountain disposal area at the Upper Camp. Following land spreading, the soil was configured into stockpiles and sampled. Analytical results from stockpile sampling indicated that DRO/RRO concentrations were below the Lower Camp (250/10,000 mg/kg) cleanup criteria. The 1,010 cubic yards of soil was used as cover for the new onsite disposal area at the Upper Camp. A soil sample collected from the packed sand in the tank ring foundation exhibited a DRO concentration of 67.4 mg/kg; the tank ring was demolished and transported to the disposal area at the Upper Camp. The small surface stain adjacent to the former location of the Control Building was hand-shoveled into a truck and transported to the Upper Camp. The central excavation (adjacent to the tank foundation) achieved cleanup criteria (Lower Camp 250/10,000 mg/kg) with remaining DRO/RRO concentrations of 24.4/76.9, 23.8/76.8, and 72/101 mg/kg. The site was backfilled and graded. The northern excavation achieved cleanup criteria (Lower Camp 250/10,000 mg/kg) with final DRO/RRO concentrations of 56.6/124, 50.6/107, and 52.7/123 mg/kg. The largest excavation was the south-central area. Analytical results from confirmation soil samples indicated that DRO/RRO concentrations in the remaining soil were below the cleanup criteria (Lower Camp 250/10,000 mg/kg).

Contaminated soil planned for removal was excavated and disposed of during the 2009 removal action. Analysis of the remaining soil revealed DRO and RRO concentrations to be below the ADEC criterion (Lower Camp 250 mg/kg and 10,000 mg/kg, respectively). Because no fuel or hazardous substances were found at concentrations above applicable cleanup levels, Site SS006 requires no further action under state law and will be designated Cleanup Complete.

2.5.5.6 Site SS007 (Spill/Leak No. 5; AOC08 and AOC09)

Site SS007 (also known as Spill/Leak No. 5; AOC08 and AOC09) consists of the Temporary Air Terminal and the Warm Storage Building west of the runway at the Lower Camp; this site was reportedly used for the storage of supplies, maintenance materials, electrical equipment, and more than 26 known drums (USAF, 1989).

During the 1994 PA/SI, numerous areas of stained soil were documented. Surface soil samples collected from these areas contained DRO concentrations up to 7,540 mg/kg, above the ADEC cleanup level of 250 mg/kg. DRO was also detected in samples collected from nearby runoff water (3.78 mg/L) above the cleanup level of 1.5 mg/L and soil (454 mg/kg) above the soil cleanup level of 250 mg/kg (USAF 1995).

In the 1999 RI, four soil borings were installed and sampled for GRO, DRO, RRO, metals, pesticides, PCBs, VOCs, and SVOCs; two of these borings were also analyzed for dioxins. A surface water sample was collected and analyzed for the same list of analytes above, excluding dioxins. A soil sample was also analyzed for the same list, excluding VOCs. Fourteen surface and subsurface soil samples were taken from stained soil throughout the site and analyzed for DRO and RRO (USAF 2001). Surface soil sample results ranged from nondetect to 11,000 mg/kg DRO and from nondetect to 31,600 mg/kg RRO. A subsurface soil sample showed concentrations of DRO and RRO above the ADEC cleanup levels of 250 mg/kg and 10,000 mg/kg, respectively. The soil sample near the stained area contained 162 mg/kg DRO and 460 mg/kg RRO. Surface water from run-off indicated a presence of DRO and RRO. Hepta-chlorinated dibenzo-p-dioxins (total) were detected at low levels (127 mg/kg and 101 mg/kg) in two soil borings, northeast of the Warm Storage Building and southwest of