EXECUTIVE SUMMARY

The objective of this Corrective Action Plan is to examine remedial alternatives for soil and ground-water contamination beneath underground storage tank (UST) Site 914 at Hill Air Force Base (AFB), Utah. Site 914 consists of one active 1000-gallon JP-4 jet fuel UST that was overfilled on December 2, 1992 due to an equipment malfunction. During the subsurface investigation, four soil borings drilled around the UST identified a perched water table containing free product at approximately 26 feet below ground surface (bgs). A lower water table was identified at approximately 46 feet bgs and is separated from the perched aquifer by a lenticular clay-rich confining layer. One boring was completed as a ground-water monitoring well to monitor the lower aquifer and three borings were completed as product recovery wells in the perched aquifer. Although limited by subsurface utility restrictions, five additional soil borings were drilled around the periphery of the site and indicated that free product is apparently limited to the immediate vicinity of the UST.

Product removal was initiated on August 23, 1993 by bailing each product recovery well "dry". These wells were bailed dry again on September 2, September 8, October 15, November 1, and November 15, 1993. Following each bailing event, product thicknesses in two of the wells have not recovered and the product thickness in the well nearest the UST has decreased. A Free Product Removal Report was submitted on September 21, 1993. Based on abatement measures, analytical and headspace results, hydrocarbon contamination is present in soil from approximately 10 to 40 feet bgs in excess of 8,900 milligrams per kilogram (mg/kg) and free product is limited to the perched aquifer from approximately 26 to 32 feet bgs. The perched aquifer and underlying aquitard have apparently trapped the contamination, preventing it from migrating to the lower water table. This conclusion is supported by ground-water and aquifer soil analytical results for the lower aquifer that were below method detection limits for benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN) and total extractable petroleum hydrocarbons (TEPH).

It is recommended that free-product recovery be continued in recovery well T-914-203 using a skimmer pump. Initially, a two-week pilot test will be performed to determine the effectiveness of free product removal by pumping. During the pilot test, product thickness, recovery rates, and removal volumes will be monitored three times a week. If the pilot test is successful, a skimmer pump will be dedicated to recovery well T-914-203 for full-time operation until all recoverable free product is removed. In-situ bioventing is the preferred alternative for soil remediation, once all free product has been removed from the perched aquifer. During the subsurface investigation, three air injection wells (currently designated as product recovery wells) and two soil vapor probes were installed in the area of highest contamination. After start-up, the biovent system will be monitored monthly by measuring concentrations of carbon dioxide (CO_2), oxygen (O_2), and petroleum hydrocarbons in soil gas to evaluate the progress of biodegradation. Water levels will also be measured monthly and ground-water samples will be collected semi-annually from monitoring well T-914-001 to assess any impacts to the lower aquifer by the shallower jet fuel contamination.