EXECUTIVE SUMMARY

The Hill Air Force Base (HAFB) Environmental Management Directorate, Restoration Division (EMR) is conducting a Remedial Investigation (RI) at the Little Mountain Test Annex (LMTA), HAFB, Utah. Chlorinated solvent and metals contamination has been detected at the former LMTA water treatment plant sludge drying beds site including contamination in subsurface bedrock and dissolved chlorinated solvent contamination in groundwater beneath, and a distance away from, the sludge drying beds. The concentrations and lateral extent of dissolved contamination have recently warranted HAFB EMR to designate the sludge drying beds site (site) and the areas impacted by the dissolved contamination as LMTA Operable Unit (OU) A.

The activities presented in this *Work Plan for Little Mountain Test Annex Operable Unit A Remedial Investigation, 2002 Program* were selected based on findings and results from earlier RI studies and the recent 2001 OU A LMTA RI that focused on environmental contamination at the now disused sludge drying beds site and in areas impacted by the dissolved contamination in groundwater. The primary contaminants of concern found at the site are trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE) in groundwater at concentrations substantially exceeding Federal and State maximum contaminant levels (MCLs) for drinking water and groundwater. Consequently, the LMTA OU A RI has been expanded to investigate the LMTA facility and Air Force property area radially from the beds using a sequential, multiple-method, investigation approach. This *Work Plan for Little Mountain Test Annex Operable Unit A Remedial Investigation, 2002 Program* provides rationale and establishes procedures for additional investigation work in the OU A area including near the sludge drying beds, the LMTA facility, and the Air Force property south, west, north, and east of the sludge drying beds. Several "state of the practice" bore hole methods for subsurface characterization in fractured rock will be tested to evaluate their applicability and to develop a "tool box" of methods for future investigations.

SCOPE OF WORK

The following tasks are consistent with the Task Order Statement of Work (SOW) issued by HAFB (14 March 2002) and comprise the scope of work for this 2002 LMTA OU A RI:

Task 1 Perform general planning and develop a schedule for preparation of this Work Plan, conduct of fieldwork, data handling and analysis, and reporting activities.

Task 2 Perform project coordination and conduct planning meetings.

Task 3 Preparation of a LMTA OU A Water Investigation-Derived Waste Disposal Plan for this 2002 OU A LMTA Remedial Investigation.

Task 4 Prepare the Work Plan for this 2002 OU A LMTA RI.

Task 5 Conduct field sampling activities that include:

1. Conducting groundwater sampling and analysis and bore hole testing that includes coring six holes; performing groundwater sampling and packer testing in the first core hole as drilling progresses; and using a mobile laboratory for real-time analysis of the groundwater samples.

2. Performing down-hole hydrologic and lithologic wire-line logging in six core holes and testing for the presence of non-aqueous phase liquid (NAPL) in the first core hole.

3. Installation and development of 24 groundwater monitoring wells (six 3-well nests and six single wells); rock-cuttings analysis of samples from three boreholes; and sampling and analysis of groundwater from the 24 new monitoring wells (two events). The rock cuttings will be analyzed for

volatile organic compounds (VOCs) by SW5035/SW8260B, semi-volatile organic compounds (SVOCs) by SW8270C, and diesel range organics (DRO) and gasoline range organics (GRO) total petroleum hydrocarbon (TPH) by SW8015M. The groundwater also will be analyzed for VOCs (SW8260B), SVOCs (SW8270C), and DRO and GRO TPH (SW8015M). In addition, the conductivity, potential of hydrogen (pH), temperature, dissolved oxygen, oxidation-reduction potential, and turbidity will be measured at the time of sampling.

4. Performing limited aquifer testing by short-term pumping and recovery monitoring for three hours in 20 selected wells and for 8 hours at two selected well locations.

5. Performing three rounds of monthly groundwater elevation monitoring of all new and existing monitoring wells.

6. Performing other related activities to accomplish the field program.

Task 6 Performing data validation and management.

Task 7 Performing investigation-derived waste characterization and handling in accordance with the Final Basewide Investigation-Derived Waste Work Plan (Radian, 1995), recent HAFB guidance, and *Water IDW System Description and Standard Operating Procedure for Remedial Investigation Activities* (Parsons, 2002).

Task 8 Preparing a Strategic Plan Update for site management and remedial planning.

Task 9 Incorporation of the additional rock data and groundwater investigation data into a Data Summary Report and continued development and refinement of the LMTA OU A Site Conceptual Model.