

EXECUTIVE SUMMARY

Around the periphery of Hill Air Force Base (AFB), Utah, many seeps and springs discharge contaminated ground water from a shallow aquifer. Past Base operations released potentially hazardous substances into on-Base soil and ground water. Seeps and springs that discharge contaminated water may pose a health risk to nearby human and ecological communities. Cleanup of the contaminated ground water will be addressed in future remedial actions, and all known areas of ground-water contamination are currently under investigation. However, in some instances, interim measures called "removal actions" may be undertaken to reduce risks while a final remedial action is being investigated, selected, and implemented. This Base-wide Engineering Evaluation/Cost Assessment (EE/CA) creates a system to develop, evaluate, and select interim measures to reduce the risks to human health and the environment in the vicinity of contaminated seeps and springs. The purposes of the EE/CA are to:

- Develop a procedural framework for selecting removal actions for contaminated seeps and springs.
- Evaluate and recommend removal actions for 17 of the seeps and springs identified around the periphery of Hill AFB.

This EE/CA has a "base-wide" scope. It contains general information applicable to all seeps or springs in the vicinity of Hill AFB, and specific information that applies to the 17 individual seeps included in this evaluation. General information includes Base and operable unit descriptions, objectives of the removal actions including Applicable or Relevant and Appropriate Requirements (ARARs), identification and screening of removal action alternatives, and procedures for evaluating these alternatives for a specific seep or spring, choosing a recommended alternative, and analyzing the cost of the alternative. The second part of the EE/CA uses these procedures to select removal actions for the 17 seeps and springs and evaluate their costs.

EPA drinking water maximum contaminant levels (MCLs) were identified as preliminary cleanup goals for the water from seeps and springs because they are relevant and appropriate requirements for these conditions. The MCLs are the main criteria used to determine whether a particular seep or spring is a candidate for an interim removal action.

The removal action alternatives considered for each seep or spring range from no action or no further action to limited action (involving institutional control and/or fencing) to collection, treatment, and discharge of the water. Several options are available under each of the collection, treatment, and discharge portions of the removal action. These options include: collection—underdrains or horizontal drains, surface diversions, and collection tanks; treatment—air stripping, granular activated carbon, and metal-enhanced reductive dehalogenation; and discharge—infiltration trenches, storm drains, irrigation ponds, the local publicly owned treatment works, and the Base industrial waste treatment plant. Each was selected for its applicability to some of the conditions at Hill AFB, its potential to meet MCLs, and its predicted cost. The EE/CA contains procedures for selecting the most appropriate alternative and combination of options available for each seep or spring. This

methodology is based on evaluating the relative advantages and disadvantages of each option under the types of conditions observed or expected in the vicinity of Hill AFB.

The 17 specific seeps and springs included in this EE/CA were selected by Hill AFB Environmental Management Restoration (EMR) personnel. Flow rates and contaminant concentrations are variable, and several springs have currently operating treatment systems. The contaminants that occur most frequently in concentrations above their MCLs are the volatile organic compounds (VOCs) trichloroethene and 1,2-dichloroethene. Several other VOCs have been detected in seeps/springs in concentrations less than their MCLs. The 17 seeps/springs were selected to cover most of the current and anticipated conditions that may occur at Hill AFB and to demonstrate how the EE/CA may be applied to each condition in the future. The proposed removal actions for each of these seeps/springs included in this document are discussed and tabulated in Section 8.0. Of the 17 seeps and springs included in this EE/CA, eight were recommended for air strippers, five for GAC units, two for limited action, one for no further action, and one for no treatment with discharge to the IWTP.

The recommendations in this document do not necessarily commit Hill AFB to implement any specific removal action. The purpose of the EE/CA is to guide the HAFB Project Manager in evaluating the technical aspects of the remedial alternatives. The final decision to implement a removal action will be made by the Hill AFB Project Manager after taking into account all relevant factors, some of which are beyond the scope of this document. Additional factors may include availability of funds, benefit-to-cost considerations with respect to other Base response actions, and integration of the seep/spring removal action into the overall Base remedial strategy.