

EXECUTIVE SUMMARY

This report describes the findings of the groundwater classification data review performed by James M. Montgomery, Consulting Engineers, Inc. (JMM). The objective of the study was to determine if sufficient groundwater quality data exist to classify the shallow unconfined aquifer, the Sunset aquifer, and the Delta aquifer present beneath and contiguous to Hill AFB. Water quality information required to classify groundwater includes total dissolved solids concentrations and concentrations of contaminants regulated under Utah Administrative Code (UAC) R317-6-2.

In order to achieve the objective of this study, JMM obtained groundwater quality data from government agencies and from published sources, including the results of environmental investigations at Hill AFB. Most of the water quality data available for the shallow unconfined aquifer were retrieved from published reports of investigations of Operable Units 1 to 4 at Hill AFB, while most of the water quality data available for the Sunset and Delta aquifer were obtained from the Utah Department of Environmental Quality's Division of Water Quality. These data were reviewed, summarized, and compared to relevant Utah regulations regarding groundwater quality standards (UAC R317-6-2) and groundwater classes (UAC R317-6-3). Additionally, JMM compiled a survey of groundwater rightholders, compiled a list of all monitoring wells at Hill AFB with available water quality, identified potential contaminant sources, and summarized the hydrogeologic characteristics of the three aquifers. Maps showing the concentration and distribution of TDS in each aquifer, as well as the direction of groundwater flow, were prepared.

Based on the available data, the TDS in the shallow unconfined aquifer ranges from 160 to 1780 mg/L. Within each operable unit area at Hill AFB, several of the compounds regulated under UAC R317-6-2 exceeded their respective groundwater quality standards in at least one well tapping the shallow unconfined aquifer. At the operable units at Hill AFB, JMM believes sufficient water quality data exist to classify portions of the shallow aquifer. Where regulated contaminant concentrations exceeded groundwater quality standards, the shallow aquifer was classified as Class III groundwater (Limited Use Groundwater). Where the regulated contaminant concentrations were less than the groundwater quality standards (or not detected), the aquifer was classified based on TDS, and portions of the aquifer were classified as Class IA (Pristine Groundwater), Class II (Drinking Water Quality Groundwater), or unclassified. Maps showing the classified portions of the shallow aquifer at each operable unit were prepared.

There were not sufficient groundwater quality data available to classify the Sunset aquifer.

Based on the available groundwater quality data for the Delta aquifer, the TDS ranges from 160 to 354 mg/L. None of the regulated contaminants measured in the available analyses exceeded the groundwater quality standards of UAC R317-6-2. JMM believes there are sufficient groundwater quality data available to classify the Delta aquifer as Class IA (Pristine Groundwater) groundwater.

Recommendations for a scope of work to obtain the additional water quality data needed for classification of the Sunset aquifer and the remaining portion of the shallow aquifer were prepared. However, based on the findings of this study, JMM believes the Sunset aquifer probably would be classified as Class IA groundwater, and the shallow aquifer probably would be classified as Class IA or Class II groundwater (Class III areas at each OU will be defined by ongoing RI/FS projects). Because both Class IA and Class II groundwaters must be protected so that none of the groundwater quality standards of UAC R317-6-2 are exceeded, proceeding with the recommended scope of work would be largely an academic exercise, with limited benefit for Hill AFB.