Water Quality Investigations and Water Quality Modeling

ACE has considerable experience in water quality investigations, monitoring and modeling. This experience includes evaluation of water quality issues involving both surface and ground water resources. Surface water quality experience has included evaluation of stream water quality, reservoir modeling and evaluation of trophic status, assessment of nonpoint source pollutants and prescription and development of Best Management Practices and mitigation measures. Ground water quality investigations have included mining related studies, assessment of existing and estimation of future water quality conditions. In addition, the majority of the water quality investigations have required establishment of water quality monitoring networks, stream sampling, and ground water monitoring and establishment of ground water monitoring wells.

Representative water quality investigations completed by ACE staff include:

- *Lake Catamount Ski Area Environmental Impact Statement, Steamboat Springs, CO*: ACE staff evaluated the environmental impacts associated with the development of a proposed ski area in northern Colorado. This project required development of a spreadsheet model to predict impacts to water quality from various sources, evaluation of lake trophic status and negotiation with regulatory agencies.

- *Buss Pit Reclamation, Gas Hills, WY*: ACE scientists participated in the evaluation of water quality impacts resulting from an inactive uranium mine in northern Wyoming. This project included the assessment of existing water quality within an open pit as well as estimates of changes in water quality resulting from proposed reclamation of the mine. The project included water quality modeling using WATEQ4F.

- *Water Supply Alternatives, Town of Dixon, WY*: The purpose of the study was to investigate the quality and quantity problems associated with the current source, develop and evaluate alternatives to rehabilitate the existing sources and evaluate ground water sources as an alternative water supply.

Gravel Pit Reclamation, Fort Collins, Colorado