EXECUTIVE SUMMARY

An Engineering Evaluation/Cost Analysis (EE/CA) was performed for a proposed Comprehensive Environmental Restoration and Compensation Liability Act (CERCLA) removal action at the Idol City Mine. This inactive gold mine is located on the Malheur National Forest, about 15 miles northeast of Burns, Oregon (Figure 1). The site is in the Gold Gulch drainage, which is an ephemeral tributary to Trout Creek. There are currently active mining claims upstream of the site. Sensitive ecosystems at the site include jurisdictional wetlands, and sensitive species have been observed on site.

The scope of removal actions evaluated in this EE/CA focus on:

(1) Eliminating direct contact with high concentrations of metals in the waste rock, soil, and sediment;
(2) Reducing or eliminating the migration of contaminants to the environment;
(3) Improving surface water quality; and
(4) Mitigating physical hazards at the site.

Potential human health and ecological risks were evaluated by comparing contaminant concentrations in samples collected during the Site Inspection by EA Engineering, Science, and Technology, Inc. (EA) in 2003 to Oregon state and federal risk screening criteria. The streamlined risk evaluation indicated significant potential risk to both human and ecological receptors at the site from exposure to high concentrations of metals, particularly arsenic and lead, in the mine waste, soil, sediment, and surface water. Hot spot concentrations and risk-based cleanup levels were developed using human health risk equations and site-specific exposure factors to back-calculate values based on acceptable risk levels.

Four removal action alternatives were evaluated:

- Alternative 1 – No Action
- Alternative 2 – Excavation and Off-site Disposal
- Alternative 3 – Excavation and On-site Disposal
- Alternative 4 – Treatment of Adit Discharge

The preferred alternative consists of a combination of Alternatives 3 and 4. Approximately 2,200 cubic yards (cy) of mine waste, soil, and sediment would be excavated and disposed of in an on-site repository. An additional 100 cy of waste rock would be used to backfill the open shaft. Physical hazards would be addressed by installing a bat gate in the open adit, backfilling the open shaft, and grading collapsed adits in the main working area. The backfilled areas and excavated waste areas would be covered with topsoil, seeded, and mulched. Trees and brush cleared at the site would be used to generate mulch and cover for seeded areas. The structures would be demolished and all debris would be hauled to the nearest sanitary landfill. Untreated woody debris will be burned on site, if possible. A settling pond would be constructed to treat up to 7,200 gallons per day of discharge from the open adit. Effluent from the settling pond would be monitored to assess water quality. If metal concentrations continue to exceed cleanup levels, an aerobic wetland would be constructed adjacent to the settling pond to provide additional treatment.

The total estimated cost for the preferred alternative is **$229,373**. The estimated additional cost for an aerobic wetland, if needed, is $30,562.