

Geotechnical Investigation and Heap Leach Design at the Castle Mountain Mine

Hart, California

Client

Equinox Gold

Timeframe

2016 – Present

Contract Amount

\$250,000

Personnel

Monte Christie

David Romo

Ralph Murphy

Jorge Ortega



Castle Mountain Mine, located in San Bernardino County, California, operated as an open-pit heap leach gold mine from 1991-2004. Equinox Gold, Corp. (Equinox) is in the process of re-opening the Mine.

Equinox hired GLA to conduct geotechnical sampling and testing to provide a preliminary assessment of available materials for the heap leach pad. Part of the assessment included potentially available qualities and quantities of structural and low permeability materials, which included test pit sampling and laboratory testing of materials.

The GLA field staff comprehensively collected representative soil samples and tested for key geotechnical engineering properties, including shear strength, gradation, plasticity, and remolded permeability parameters of the earth materials present in the project area for subsequent engineering analyses. The locations and extent of potential clay borrow sources were established.

As part of the scoping study, GLA reviewed all available project data and developed an initial design concept including sizing and storage capacity of the Heap Leach facility and the liner system. The team also provided a PFS Water Supply Investigation. During the Prefeasibility Study (PFS) stage, GLA supported Equinox with the preparation of the Report of Waste Discharge (ROWD) report in parallel with the design of the Run-of-Mine (ROM) Heap Leach facility that will allow Equinox to process about 208 million tons of low grade ore. Between 2018 and 2019 GLA developed the detail engineering design of the Phase 1A Heap Leach Pad that is planned to be constructed in late 2019.

Project Highlights

- Geotechnical field investigation for heap leach pad
- Heap Leach Scoping Study
- Water Supply Investigation
- Prefeasibility Study (PFS) support
- Phase 1A Leach Pad Detail design
- Run-of-Mine (ROM) pad design
- Report of Waste Discharge (ROWD)
- Closure/Post-Closure Maintenance Plan (CPCMP)
- Construction documents
- Permitting support