



Design of 550 Acre Evaporation Pond Complex

As part of a design-build team working under an extremely short deadline, EIL's engineers designed approximately 550 acres of geomembrane-lined evaporation ponds for a mineral mining operation.

By combining experienced engineers, advanced cad software and spreadsheet-based volume modeling, the EIL team was able to prepare multiple options in a fraction of the time typically required. This allowed optimization of numerous parameters and a highly efficient, operations-friendly design.

Client: Confidential
Location: Southwestern U.S.

Grading plan optimization parameters included:

- Maximize
 - evaporative area and efficiency
 - sorting, stockpiling & handling efficiency of on-site soils based on test pit observations & mapping
- Minimize
 - geomembrane liner area
 - “dead space” in ponds (areas too tight for heavy equipment to navigate)
 - cut and fill
 - soil conditioning requirements
 - heavy equipment trip distance between ponds and processing plant
- Optimize
 - traffic flow
 - Individual pond & consistency of pond areas
 - Slurry & soil handling by maximizing gravity flow

Constraints included:

- Multiple power line rights of way
- Protected archaeological areas

Other work included berm and anchor trench design, surface water modeling calculations, phasing plan development, and other tasks.

