



Introduction to earthVision 2D and 3D Modeling



This course provides an introduction to earthVision using actual data from an abandoned mine drainage site in north central Pennsylvania that was later permitted for new mining. Using 2D and 3D data, the class will learn to build structure and acid-base accounting models to assess site conditions and make a “permitting” decision. Class topics include: data import, validation, editing; 2D and 3D modeling; and volume calculation. *Course is certified for 24 Professional Development Hours.*

earthVision has application to many other situations in the mining industry (e.g., soils, materials handling, highly accurate cut-and-fill volumes mine pool modeling). Contact TIPS to discuss your special needs and the possibility of a tailored on-site training class.

Duration: 3 full days

Course Code: GSM

TOPICS COVERED

Import data

- ▼ Horizon (stratigraphy) and property data from spreadsheets
- ▼ Linework and data from CAD and GIS
- ▼ Elevation models from DEMs and grids
- ▼ Data “exploration” in 3D viewer
- ▼ Image files

Introduce 2D gridding using topography

- ▼ Discuss 2D gridding (how “grids” differ, what makes a good grid, gridding controls, etc.)
- ▼ Create 2D contour map of grid and explore in 3D viewer
- ▼ Introduce Graphic Editor and Grid Editing
- ▼ QC grid - Use formula processor and EDA for QA/QC and explore tools to improve model
- ▼ Segue to Workflow Manager

Introduce Workflow Manager by building and validating multi-layer horizon/structure/ models using depositional and stratigraphic controls.

Introduce 3D gridding for Property Modeling

- ▼ 3D View of property data within structure model for visualization, QC, and editing
- ▼ Discuss property grids and gridding parameters

- ▼ Calculate single property model with default settings; examine and QC
- ▼ Discuss property features and distribution characteristics
- ▼ Adjust parameters, remodel, and QC
- ▼ Model additional properties and QC

Volumetrics

- ▼ Discuss EV volumetrics; introduce types and methods
- ▼ Calculate Bulk Rock Volumes of layers and areas of interest
- ▼ Calculate property volume for single property with layer and area controls
- ▼ QC volumes - compare Volumetric results among methods
- ▼ Discuss individual property volumes and their implications

COURSE PRE-REQUISITES: Experience and/or education (preferably in the Regulatory/AML fields) with geologic, geochemical, soil, materials volumes, or hydrologic conditions that affect mining and reclamation. Familiarity with spreadsheets, mapping, and GIS software will enhance the learning experience. **Class size limited to 12-17 students, depending on location.**