

ELECTRICAL IMAGING

GEOPHYSICAL METHOD FOR SUBSURFACE CHARACTERIZATION

Electrical Imaging (EI) is a geophysical method that provides a two- or three- dimensional resistivity image of the subsurface. EI can provide information about distinct subsurface boundaries and conditions that other geophysical methods cannot.

ARM utilizes an automatic multi-electrode switching system, which passes an electrical current along multiple paths at various depths and measures the resulting associated voltages between electrodes. Apparent resistivity measurements are recorded from all possible combinations between two electrodes. Processing of the data using resistivity inversion software provides a subsurface model with a more unique or quantitative interpretation of the data than possible in the past.

New advances in EI methods have included three-dimensional surveys and cross-borehole surveys which will now make this technique more successful for subsurface characterization. In areas where very complex three-dimensional subsurface features are present, three-dimensional survey data collection techniques and data inversion software can provide better subsurface models.

APPLICATIONS

- Map top of bedrock
- Identify potential sinkhole, void and cavern locations
- Map the lateral and vertical limits of waste pits and landfills
- Identify the location of preferential groundwater flow paths in sand and gravel channels
- Identify bedrock fractures.

