GEOTECHNICAL APPLICATIONS
HIGH RESOLUTION GEOPHYSICAL TECHNOLOGIES

During construction and land development projects, ARM's geophysicists provide enhanced subsurface characterization capabilities. We use non-destructive geophysical techniques such as ground penetrating radar (GPR), microgravity, resistivity (electromagnetic imaging), and seismic surveys to obtain subsurface information more quickly and often more cost effectively than using conventional methods of data acquisition.

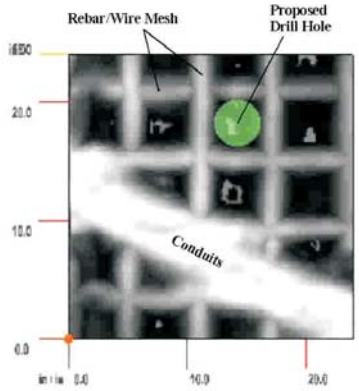
It is important to identify and locate potential hazards to planned construction sites for new residential communities, buildings, roadways, dams, and power plants before they can affect the schedule and project costs. Surface geophysical methods can be used to characterize the subsurface to identify areas of concern such as sinkholes, voids, or shallow bedrock. Borehole geophysics can be used to obtain information such as porosity, density, fracture locations, and virtual bedrock core images (shown to the right). By identifying these features, engineers and planners can make decisions for proper design and to mitigate the impact of these influences.

Our areas of expertise include:

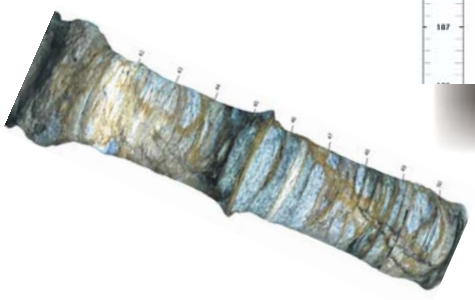
- Karst Investigations
- Sinkhole and Void Detection
- Abandoned Mine Detection
- Top of Rock Surveys
- Bedrock Rippability
- Dam & Reservoir Seepage Investigations
- Concrete inspections (Structure Scans)
- Shear Wave Determination
- Earthquake Design

Geophysics can be used to map and detect areas of concern after construction activities to identify the development of voids or potential collapse features under or near buildings, parking lots, and road ways.

Although there are numerous geophysical methods available today, a single method will not provide information for all of the geological and cultural scenarios encountered by the architect, engineer, and/or planner. The utilization of the most appropriate method from the geophysical toolbox allows the geophysicist to provide timely, accurate, and concise information to the stakeholders such as owners, developers, regulators, etc.



Plan view 2D map of radar data showing rebar & conduits with proposed coring location.



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