

GROUND PENETRATING RADAR SERVICES

HIGH-RESOLUTION GEOPHYSICAL TECHNOLOGIES

ARM Geophysics (ARM), uses Ground Penetrating Radar (GPR) as a cost-effective method that can be used to map underground utilities, pipes, storage tanks, drums, and voids. Since the GPR is mapping features with different dielectric properties, the method can be used as a cost-effective method to find both metallic, non-metallic, and geologic features.

ARM utilizes a Geophysical Survey Systems Inc. SIR3000 GPR with a 400 Megahertz antenna. The GPR unit is mounted on a three-wheeled cart with a built-in survey wheel. This design allows for quick and accurate collection of GPR traverses in the field. In areas where the use of a cart system is not possible, the GPR unit and antenna can be removed and used with a 30-meter cable.



ARM Geophysicist scanning with GPR for subsurface voids and potential collapse features.

The main GPR unit is designed for use with different antennas depending on site and project requirements. The 400 MHz antenna is considered to be the work horse of the industry. It has a depth capability, depending on the soil composition, of up to 13 feet with good shallow resolution of targets, such as utilities and voids. A 200 MHz antenna can resolve targets up to 20 feet below the ground surface. The 1500 MHz antenna is used exclusively for scanning concrete for rebar, wire mesh, and conduits within concrete.

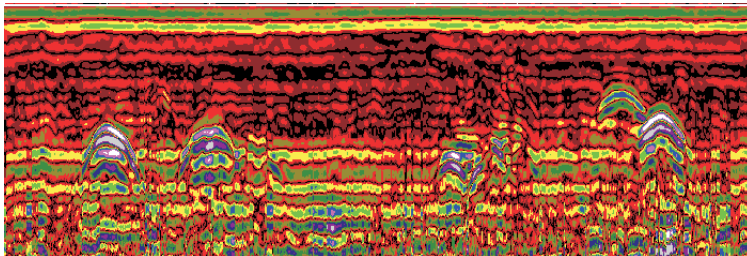
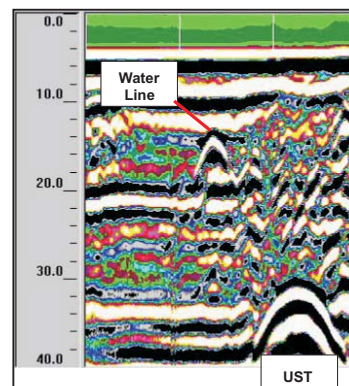


Image depicting grave locations using GPR with a 500 Mhz antenna.

APPLICATIONS

- UST Surveys
- Buried Drum Investigations
- Subsurface Utility Mapping
- Sink Hole Void Investigations
- Fracture Delineation

ARM has also been using its new GPR for a variety of environmental investigations including underground storage tank (UST) surveys, buried drum investigations, and subsurface utility mapping. ARM geophysicists perform spot clearing for borehole drilling as well as site wide utility mark-outs on private property. Use of non-intrusive GPR utility mark-outs can provide both increased project safety and avoidance of utility repair and replacement costs.



GPR record showing identified utility and UST.