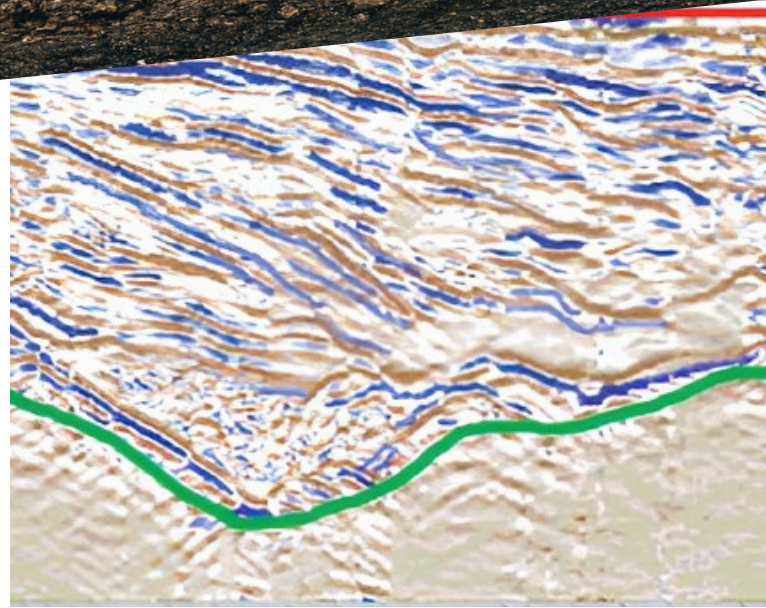




GROUND PENETRATING RADAR (GPR): UNVEILING THE SUBSURFACE SECRETS

Ground penetrating radar (GPR) is a geophysical method that uses radar pulses to image the subsurface. It is a non-intrusive method of surveying the sub-surface to investigate underground utilities such as concrete, asphalt, metals, pipes, cables, or masonry. GPR is a non-destructive method that uses electromagnetic radiation in the radio spectrum's microwave band (UHF/VHF frequencies) to detect reflected signals from subsurface structures. It can be used in various media such as rock, soil, ice, fresh water, and pavements to detect subsurface objects, changes in material properties, voids, and cracks.

GPR works by emitting electromagnetic energy into the ground using a transmitter and antenna. When the energy encounters a buried object or a boundary between materials with different permittivity, it may be reflected, refracted, or scattered back to the surface. A receiving antenna then records the variations in the return signal. GPR uses high-frequency radio waves, typically in the range of 10 MHz to 2.6 GHz.



The effective depth range of GPR investigation is limited by factors such as the electrical conductivity of the ground, the transmitted center frequency, and the radiated power. Higher frequencies provide better resolution but do not penetrate as far as lower frequencies due to frequency-dependent attenuation mechanisms.

WHAT IS GPR DATA USED FOR?

- **Utility Detection**
- **Archaeology**
- **Geology and Environmental Studies**
- **Civil Engineering**
- **Forensics**
- **Geotechnical Engineering**
- **Mining and Exploration**





AXIOM GROUP's GPR uses the latest technology available; our in-house proprietary systems were developed (and are continually refined) by a team of highly qualified and experienced engineers and geophysicists.

From initial design and operation to project management and optimization, AXIOM GROUP will confidently meet all your requirements to the highest of standards. Our services are developed in-house with our industry and academic partners; we can rapidly deploy the right solutions to meet your needs.

Think GPR can help your project?
Contact us and we will:

- Work with you to identify the data and other deliverables you need to meet your goals
- Identify our in-house services to meet your needs
- Assign a team to integrate project management with technical components
- Clearly communicate at every step

