

Geophysics

KEY Services

Advantages

Focus subsurface investigations quickly and economically.



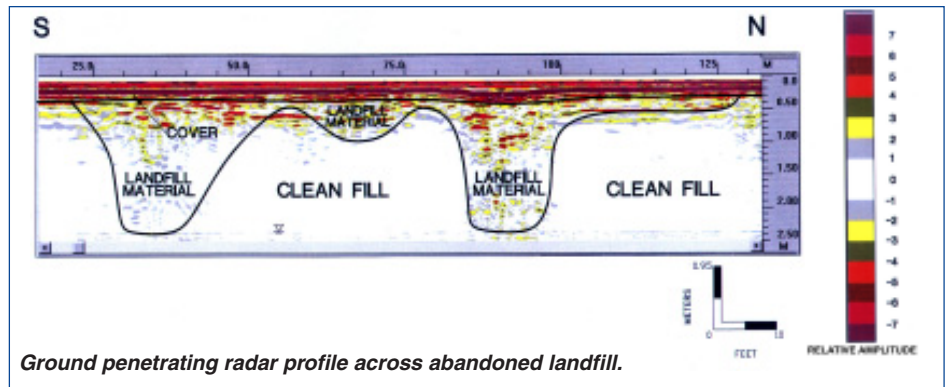
Maximize reconnaissance dollars.



Locate trouble spots cost-effectively.



Provide quick turnaround on field data.



Ground penetrating radar profile across abandoned landfill.

Focus subsurface investigations quickly and economically. Maximize reconnaissance dollars. Locate trouble spots cost-effectively. Key Environmental, Inc. (KEY) offers specialized geophysical services for various environmental, engineering or archeological applications.

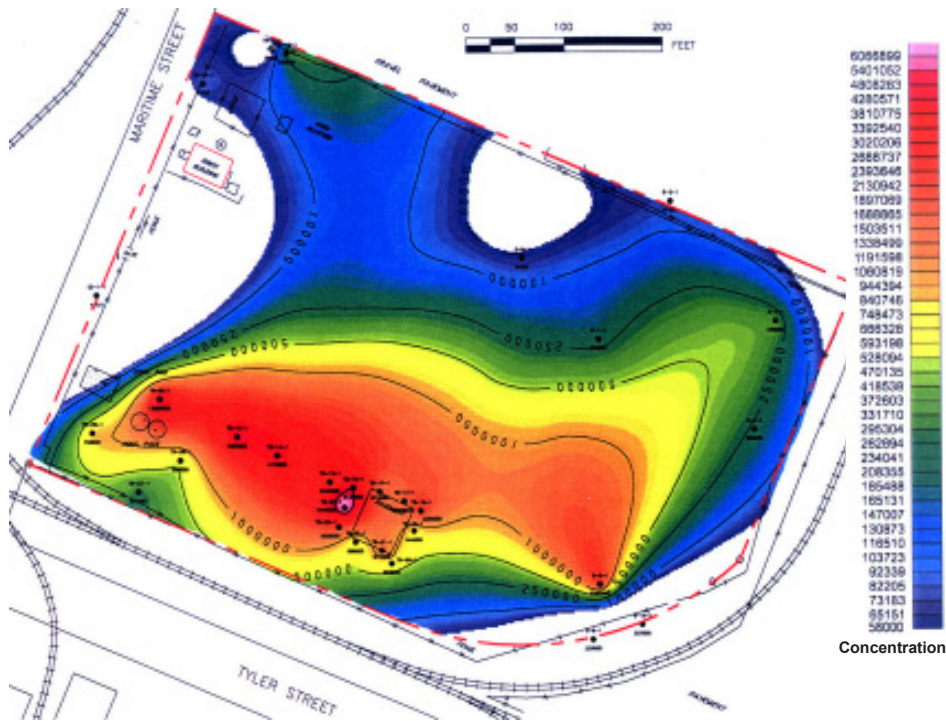
When data for historic waste storage or disposal practices is limited, KEY often recommends a high resolution electromagnetic (EM) or gradiometer survey prior to drilling or test pitting. They are excellent site reconnaissance tools for determining the presence or absence of buried waste.

These reconnaissance tools provide an efficient use of investigation dollars.

The results are used to focus subsurface investigations on potential areas of concern, minimizing site investigation costs.

DNAPL Waste

When dense non-aqueous phase liquid (DNAPL) wastes are known or suspected, knowledge of stratigraphy and bedrock topography is needed before implementing groundwater monitoring programs or installing remediation systems. Seismic refraction, reflection and time domain electromagnetic (TDEM) techniques are often used for mapping bedrock topography and stratigraphy. Using seismic refraction, bedrock depths and topography can commonly be determined up to 100-feet below ground surface at 10 foot intervals. Engineering seismic reflection techniques are commonly used when target soil and bedrock layers are 50- to 300-feet deep. TDEM studies are used to identify clay layers and bedrock stratigraphy to depths of 300 to 500 feet below surface. Data are typically presented in scaled profile or map view formats and in state plane coordinates.



Delineation of contaminated soil.

UST and Drum Location

Leaking underground storage tanks (USTs) or buried drums are common contaminant sources that can be delineated using TDEM equipment, ground penetrating radar (GPR) or gradiometer devices.

Pipes, Cables and Utilities

Abandoned or active pipes, cables and utilities can serve as contaminant pathways and are safety concerns for any subsurface investigation. Prior to the start of the field component of a project, buried pipes, cables and utilities can be located using TDEM, EM and GPR.

GIS, AutoCAD and GPS

Geophysical data are collected in a GIS compatible format and presented as color contour maps or profiles via AutoCAD software. The data are referenced to the state plane coordinate system and a common datum, such as the North American Datum, 1983 (NAD83). Collecting and presenting data in state plane coordinates allows clients to better act on results and more easily locate potential areas of concern.

GIS compatible data are collected by interfacing the geophysical equipment with a minimum 4-inch accuracy global positioning system (GPS). Other uses for our high accuracy GPS systems include re-occupying anomalous geophysical responses for sampling purposes, mapping wetland boundaries, surveying soil boring or test pit locations, or mapping virtually any other surface feature.

Other applications for geophysics include:

- Contaminant plume mapping
- Stratigraphic correlation
- Geologic fault and fracture investigation
- Landfill siting or expansion design
- Sinkhole investigation
- Acid mine drainage source identification and lateral extent determination
- Resource exploration
- Saltwater intrusion studies
- Water resources investigations
- Land- or marine-based archeological studies



KEY SERVICES

Remedial Investigations and Site Assessments

- Phase I Assessments
- Geophysical Evaluations
- Hydrogeological/Aquifer Testing
- Soil/Sediment Characterization
- Groundwater Characterization
- Fate & Transport Evaluations
- Risk Assessments
- Natural Attenuation Assessments
- GIS/GPS/Data Management

Environmental Engineering

- Feasibility Studies
- Remedial Design
- Turnkey Projects
- Construction Management
- Construction QA/QC Oversight
- Monitoring/Reporting
- System Operations

Program Support

- Permitting
- Regulatory Support
- Expert Witness and Reports
- Contractor Procurement
- Decommissioning/Demolition

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