

# We Image the Subsurface

## Your Environment Benefits



### Geophysical Services

Environmental	Characterization of contaminant plumes and hydrogeology for subsurface flow paths
Engineering	Non-invasive characterization of geological materials and geotechnical hazards
Ground Water	Aquifer characterization and depth to bedrock mapping
Mining Related	Optimization of extraction of mineral and base metals on heap leach pads. Mapping of hydrologic controls affecting acid rock drainage
Exploration	Exploration for economically extractable resources including: base and precious metals geothermal sources and groundwater

[www.hgiworld.com](http://www.hgiworld.com)

Tucson, AZ • Richland, WA



Subsidiary of Columbia Energy and Environmental Services

**HYDROGEOPHYSICS, INC. HGI** is an innovative, solutions oriented geophysical consulting, services provider, and research organization headquartered in Tucson, AZ with offices in Richland, WA. HGI has become a recognized leader in the application of geophysical methods to the characterization and monitoring of environmental waste sites that include solid waste landfills, contaminated disposal areas, and subsurface contaminant plumes. We specialize in 3D geophysical methods for time lapse subsurface characterization and monitoring of fluid flow through geological materials. Additionally, HGI has worked extensively on water resource problems, geotechnical applications, geothermal opportunities, and oil and gas production. Our core services include:

## ENVIRONMENTAL

We characterize the subsurface to map contaminant plumes and hydrogeology. We locate leaks in lined ponds, heap leach pads, and landfills as well as buried tanks and pipes. In addition, we provide time lapse monitoring of fluid injections for corrective action of environmental contamination.

## ENGINEERING

By using geophysics we can obtain engineering properties of geological materials, assess geotechnical hazards, and provide non-invasive subsurface geological mapping. Our Geophysical Operations Cart (G.O. Cart™) survey tool is a proven, cost effective, rapid wide-area approach to site clearance mapping of buried infrastructure and objects. Our High Resolution Resistivity™ (HRR) technique is particularly well suited for characterization of earthen dams and levees to delineate seeps and piping.

## MINING

Optimize the mineral extractive processes for enhanced heap leach and in situ recovery of metals and minerals. HGI is proficient in geophysical services related to base and precious metal exploration. Additionally, we provide mapping of subsurface groundwater controls on acid rock drainage, effectively mapping probable flow paths.

## OIL & GAS EXPLORATION

We have developed a unique electrical method for monitoring fluid behavior resulting from enhanced oil recovery (EOR) processes such as water floods and injections of surfactant and CO<sub>2</sub>. We also provide subsurface characterization of near-surface environmental contamination and mapping of buried infrastructure.

## RESOURCE EXPLORATION

Our experience in the exploration for economically extractable resources includes but is not limited to the following applications: resistivity and electromagnetics for detecting geothermal sources; induced polarization, magnetics, and gravity for identification of base and precious metals; and seismic refraction and reflection for locating ground water resources.

### Contact Us:

Tel: 520-647-3315 Fax: 520-647-3428

Email:

[questions@hgiworld.com](mailto:questions@hgiworld.com)

2302 North Forbes Blvd.  
Tucson, AZ 85745 USA



[www.hgiworld.com](http://www.hgiworld.com)

Tucson, AZ - Richland, WA