Short Course:

Practical Geophysics for Geotechnical Investigations

Ronald S. Bell, *ENW Services*

- AGENDA -

Introduction
- Why use Geophysics?
- Physical Properties of geo-materials
- The importance of Physical Properties
- Overview of geophysical and NDT methods

Ground Penetrating Radar
- How GPR works
  - Considerations in survey parameter design and selection
- Case Histories

Seismic Methods
- Overview of how seismic methods work
- Refraction vs Reflection
- Surface Wave Methods
- Case Histories

Non-Destructive Testing
- What is NDT
- Applications
- Case Histories

Magnetic and Gravity Methods
- Principles of Magnetic and Gravity Methods
- Applications
- Case Histories

Electrical and Electromagnetic (EM) Methods
- Electrical Resistivity Overview
- EM Conductivity Overview
- EM Sounding Methods
- Case Histories

Airborne Geophysical Methods
- When to use airborne geophysics
- Resolution with respect to ground methods
- Case Histories

Marine Geophysical Methods
- Case Histories

Borehole Geophysical Methods
- Overview of technologies and applications
- Case Histories

Summary
- The economics pertaining to the application of geophysical methods

When:	Sunday January 23, 2005	**Registration fee:**	$300.00 per person
Where:	Hilton Austin 500 East 4th Street Austin, TX 78701	**Special registration fee for full-Conference registrants:**	$ 50.00 per person
	http://www.asce.org/conferences/geofrontiers05/	• Registration includes refreshments, lunch, handouts • Participants receive 7 PDHs	

ABOUT THE COURSE

This course is intended for the practicing geotechnical engineer and geologist as well as project managers who wish to gain a better understanding of how to apply non-invasive subsurface geophysical imaging for site characterization as well as to obtain geotechnical engineering properties.

Topics include the application of geophysical methods for: a) pavement studies, b) foundations, c) soils, d) infrastructure, e) groundwater supply and contamination, f) non-destructive testing (NDT), g) engineering properties, h) geological mapping, g) industry trends, and j) emerging technologies.

Technologies that will be discussed include ground penetrating radar (GPR), seismic, magnetic, gravity, electrical resistivity, electromagnetic conductivity, and borehole logging. Also included will be a discussion of airborne and marine applications.

Each attendee will be given a course notebook.

ABOUT THE INSTRUCTOR

Ronald S. Bell is a consulting geophysicist with 28 years experience in the application of surface, airborne, and borehole methods to environmental site characterization, ground water exploration, and mineral exploration. He is one of the original organizers of the Symposium on the Application of Geophysics to Engineering and Environmental Geophysics (SAGEEP) and a founding member of the Environmental and Engineering Geophysical Society. He holds BS in Applied Physics from Michigan Technological University.

Mr. Bell will be assisted by several noted industry specialists in the application in geophysical technology to engineering problems.

ABOUT THE SPONSOR

The course is conducted on behalf of the Environmental and Engineering Geophysical Society (EEGS) whose mission is to promote and advance the appropriate use of geophysical technology for near surface investigations. Additional information on EEGS can be found at http://www.eegs.org.