

---

## ENVIRONMENTAL/ENGINEERING GEOLOGISTS

### HGS ENVIRONMENTAL/ENGINEERING COMMITTEE DINNER MEETING NOVEMBER 13, 1991

- Time:** 6:00 - 7:00 p.m., social  
7:00 - 8:00 p.m., program
- Location:** Italian Market and Cafe  
2615 Ella Blvd.  
(Behind Memorial Northwest Hospital)
- Speaker:** Dr. James Pritchard  
President of MagnaScan  
for information call 680-1515.

#### MAGNA SCAN: A GEOPHYSICAL TOOL FOR ENVIRONMENTAL SITE ASSESSMENTS

Development of new supplies of water, conservation of water, reuse of waste water, and clean-up and prevention of pollution are at an all-time high demand by all sectors of the population. Today, most of the technology applied to these efforts has been limited to drilling exploratory wells, generating subsurface geologic pictures from the well logs, setting monitor wells, and performing hydrological pumping tests and chemical analysis of fluid samples. This approach alone is quite costly compared to an integrated approach of combining this data with geophysical surveys.

The addition of geophysical surveys to subsurface analysis for natural resources has proved to reduce exploration costs and time by as much as 30 to 80 percent. Properly performed electrical resistivity surveys will likewise reduce the costs and time to perform subsurface analysis for Water Resources Management.

MagnaScan, since its inception in August of 1988, set out to bring electrical-resistivity tomography to the Water Resources Management with its OFFSET LOG and VECTOR SCAN techniques. By August of 1991, some 20 sites in California, Texas, Oklahoma, and Kansas had been successfully investigated, demonstrating the great cost and time effectiveness of these techniques. MagnaScan was successful because it has treated the Water Resource problem as a subsurface reservoir problem rather than as a shallow-depth engineering problem.

MagnaScan moves onward today under the direction of its principal scientists and its capable support staff. It looks forward to continuing to bring economy and solutions to the Water Resources problems.

#### JAMES I. PRITCHARD—Biographical Sketch

Dr. James Pritchard, the innovator of the MagnaScan adaptation for environmental work, first became aware of the EM offset logging technique when he was a research scientist with Newmont Mining in the early 1970s. Pritchard has been performing tests, demonstrations and services using MagnaScan for the past three years.

Pritchard has been a consultant, research scientist, professor, and businessman in geophysical technology for over forty years. His schooling and professorial activities at the Colorado School of Mines cover more than twenty of those years. His broad background includes many projects in oil and gas, geothermal, mineral, potable water and engineering-environmental problem solving and exploration. His expertise in electrical and electromagnetic geophysical techniques is recognized on a worldwide basis.