HGS Environmental & Engineering Geologists Dinner Meeting, October 9, 1996

Accelerated Site Characterization

by Bruce Manchon, R.G., IT Corporation, Houston, Texas

Accelerated Site Characterization (ASC) is a process for collecting site information in a single mobilization, utilizing innovative sampling techniques and on-site analytical methods. Cone penetrometer testing (CPT), Geoprobe®, and groundwater samplers are innovative technologies that provide a cost-effective method for site characterization and the design of a groundwater monitoring system. These methods can reduce the lengthy period of time it takes to conduct a site characterization, which will then accelerate the corrective action process.

The CPT can help determine the stratigraphy and soil properties of a site. The CPT provides information on specific lithologic characteristics necessary to obtain a groundwater sample from vertically separated aquifers. Additionally, the CPT is used to correlate equivalent strata from one location to the next and to determine lithology. With the use of the Geoprobe®, soil samples can be collected for analysis to determine contaminant impact in the vadose zone.

Groundwater samplers (with analysis, e.g. mobile or fixed-based laboratory analysis) can delineate the horizontal and vertical extent and concentration of a contaminant plume and define the extent and thickness of a free product plume. This is obtained when the groundwater samplers obtain a discrete, chemically representative groundwater sample from the targeted aquifer.

Hydrogeologic and geologic data obtained from these methods can be employed to maximize the cost-effectiveness and design efficiency of a groundwater monitoring system or the identification of an appropriate corrective measure. The ASC methods are accepted by regulator agencies. This presentation will explain the ASC philosophy supported by successful case studies.

Biographical Sketch

Bruce Manchon is a Senior Technical Associate for IT Corporation in Houston. He is a California Registered Geologist with more than 18 years of experience in the environmental and petroleum industries. He has performed hazardous waste site assessments and site remediation for assorted government and commercial facilities.

Through various assignments, Mr. Manchon has successfully used accelerated site characterization methods for stratigraphic interpretation and correlation, contaminant plume definition, and for the proper selection of well location and screen placement. Other relevant work experience includes detailed bore hole geophysical log interpretation, well construction and design, subsurface mapping and stratigraphic analysis.

Chairman's Note: This presentation will be the preview for a field demonstration in March of next year during the second GSH/HGS "Looking Into The Earth" Forum.

*Also at the October dinner meeting, **Dr. Dean Ayers** of HCC-Southwest will give a brief overview of GIS applications in environmental geology as a preview to a HGS short course next spring.* ■