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Webinar Series featuring **Tim Kemmis, Ph.D., PG.** and **Dan Kelleher, PG., CIPM**
Co-Authors of *The Field Guide for Soil and Stratigraphic Analysis*

Taking the Mystery Out of Complex Glacial Sequences at Environmental and Geotechnical Sites

30 March 2010	**Part 1**: Deciphering Stratigraphy and Depositional Environments
06 April 2010	**Part 2**: Understanding the Effects of Post-Depositional Weathering: Development of Soils, Weathering Zones, and Secondary Jointing
13 April 2010	**Part 3**: Managing Unanticipated Subsurface Conditions in the Field When Budgets Matter Most **PART 3 IS FREE !** when registered for both Parts 1 & 2

Hydrogeologists and geotechnical engineers face a common problem: how do you take the mystery out of the subsurface at sites underlain by complex glacial sequences – sequences featuring deposits from successive glacial advances with interbedded stratified meltwater deposits occurring as isolated lenses within a glacial unit or as continuous stratified units between successive glacial advances?

What does taking the mystery out of such complex subsurface conditions require? An understanding of glacial stratigraphy, glacial depositional environments, and the magnitude of any post-depositional weathering alteration.....plus a process that allows staff to think on their feet in the field.

PART 1 provides techniques for identifying and understanding glacial stratigraphy and depositional environments. For hydrogeologists, a key is knowing whether the various stratified meltwater deposits are contaminant pathways through continuous units underlying the site or if they are merely isolated lenses within a fine-grained glacial unit. The questions are no less challenging for geotechnical engineers. How can the stratigraphic sequence beneath the site be determined so that the effects of site stratigraphy on foundation conditions can be assessed?

PART 2 provides methods for identifying and understanding weathering zones and the occurrence of secondary jointing. Accompanying weathering is the development of secondary jointing: fractures that affect infiltration, near surface water movement and sediment strength. Examination of fracture geometry indicates that they develop from desiccation. Although there is still much research to be completed, the desiccation process significantly affects the hydraulic conductivity of fine-grained glacial deposits.

PART 3 provides a process to identify and cope with unanticipated subsurface site conditions. Hydrogeologic field analysis is a project management style that supports making field decisions during field activities, making sense of subsurface samples from boring-to-boring, targeting meaningful monitoring well placements, and selecting geotechnical samples that are rational and diagnostic of actual site-specific conditions. It is the key element for weaving QA/QC into the fabric of the field activities.

REGISTER NOW for Parts 1 & 2 and receive Part 3 free. You will benefit from this 3-part series by learning practical steps for taking the mystery out of the subsurface. Each part is 90-minutes for a total of 4.5 hours of instruction.

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