Technical Webinar Series

FRACTURED BEDROCK CHARACTERIZATION

Case Study Implementation Of The Parsons Bedrock Matrix Tool

Wednesday, January 17, 2024
12:30 pm EST

Presentation Description

Background/Objectives

Characterizing environmental contamination in fractured bedrock is challenging due to the inherent nature of the complicated hydrodynamic system, especially when compared to the better understood characteristics in unconsolidated soil and groundwater systems. Oftentimes stakeholders lack the knowledge base for evaluating remedial investigations and remedial actions in bedrock. Parsons was tasked with developing an evaluation "tool," using a variety of published referenced documents, to help regulatory agencies at these challenging sites.

Approach/Activities

Parsons developed a Bedrock Matrix Tool, an investigation reference guide, to help investigation teams and regulators evaluate work plans and conceptual site models for thoroughness and detail, focusing on a robust understanding of geology, hydrology, and chemistry of the fractured rock system. During a phased site investigation, aspects of the tool were implemented, such as rock coring and on-site laboratory analyses, downhole geophysics, packer testing, and borehole fluid replacement tracer testing.

Results/Lessons Learned

A case study demonstrating the use of the Bedrock Matrix Tool and advanced geological/hydrogeological analyses for a remedial investigation at a fractured bedrock chlorinated solvent site in New York State will be presented. The key to successful fractured rock site characterization is using multiple tools for multiple lines of evidence and employing high-resolution data collection methods. The presenters will demonstrate the use of a variety of tools and techniques for development of a discrete fracture network approach to hydro-stratigraphic unit development and show applicability to the Bedrock Matrix Tool.

Microsoft Teams Meeting

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About the Presenters

JAMES W. SCHUETZ, PG (NY and PA)

Jim Schuetz is a Principal Hydrogeologist and Technical Manager with Parsons specializing in groundwater modeling, advanced 4D visualization modeling, and investigation and remediation of sites in complicated geological environments.

TAYLER SCHWEIGEL

Tayler is a geologist with Parsons who specializes in advanced field data collection techniques, bedrock structural geology, geographical information systems, and data visualization.