

### Detailed Evaluation of a Vertical Weathering Profile in a Crystalline Bedrock Aquifer

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In Brazil, where the current research is based, the application of core-derived scientific studies of weathered bedrock aquifer systems is normally neglected, due to difficulties in achieving good drilling recovery and the collection of representative samples for geochemical, mineralogical and physical properties characterization. Within this geological setting, hydrogeological studies focused on contaminant evaluation rely mainly on hydraulic testing for mapping site heterogeneities and groundwater concentration.

The evaluation of VOC profiles in rock matrixes with emphasis on contaminant conceptual modeling derived from discrete coring and rock sampling was studied by different authors. Those studies were conducted mainly in sedimentary deposits, following the Discrete Fracture Network (DFN) approach, which relies on both core-based information, borehole hydraulic testing and discrete groundwater information. However, not very much is known of the role of VOC diffusion into weathered crystalline bedrock aquifers and its importance for building reliable contaminant conceptual models for remedial purposes.

This project aims to evaluate a detailed vertical VOC-profile in a contaminated weathered bedrock aquifer, located in the Jurubatuba channel, São Paulo, Brazil. Along with the contaminant profile, a discrete evaluation of fractures, bedrock mineralogy, geochemistry and physical properties was studied to evaluate the role of matrix characteristics into the contaminant distribution.

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