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## **Bedrock Injections – A Success Story Built on Chapters of Failure**

This presentation outlines a case study of remedial injection challenges and ultimate success in shale bedrock beneath a large commercial mall in southern Ontario, Canada, impacted by commingled CVOC plumes from historical dry-cleaning operations affecting both overburden and a complex sequence of weathered, competent, and fractured shale. The project narrative follows an iterative path of initial program design, geophysical testing, injection failures, redesigns, and mounting frustration, followed by adaptation, innovation, and collaboration that ultimately led to a successful remedial strategy.

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### **Samuel Lingwood Pinchin**

Samuel Lingwood has a background in mining, mechanical and environmental engineering and is a Senior Technical Manager within the Pinchin Remediation Team, located in the GTA. His primary focus is on soil and groundwater remedial design, evaluation/costing, and implementation - predominantly within the real estate and mining sectors. Mr. Lingwood has widespread experience with challenging projects across Canada, including in northern and remote environments.