INSITU

CASE STUDY

CHLORINATED VOCs REMEDIATION IN BEDROCK

BACKGROUND

CLIENT: LANDOWNER
DURATION: 3 MONTHS
LOCATION: GUELPH, ONTARIO

During the decommissioning of a former institutional facility in Guelph, Ontario , PCE and its daughter products were found in the groundwater. The plume, located in overburden and fractured bedrock, was initially treated using excavation and Multi-Phase Extraction. These activities were only partially successful in reducing the level of groundwater impacts. IRSL was retained to design, test and implement a multi technology in-situ program to address the remaining groundwater impacts.

APPROACH

To mitigate the chlorinated volatile organic compounds (cVOCs) including tetrachloroethylene (PCE), trichloroethene (TCE), 1,1 dichloroethene (1,1 DCE), cis- and trans-1,2-dichloroethene (cis & trans1,2 DCE) and vinyl chloride (VC) in the groundwater, IRSL developed and executed a progressive in situ approach using a combination of adsorption, chemical reduction and anaerobic biodegration.

For more information, contact:

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GEOLOGY: Overburden overlying fractured carbonate bedrock **PLUME SIZE:** 3,800 m^2

Treatment Approach

A combination of adsorption, chemical reduction and anaerobic biodegradation using well injection.

Reagents Used:

- PlumeStop
- Micro Sulphidated ZVI
- Hydrogen Releasing Compound
- KB1 Bioaugment

Challenges

- Factured rock
- Thick vertical plume
- Incomplete plume characterization
- Plumes within overburden and bedrock
- Back diffusion concerns
- Budget and time constraints

Results

- Sustained reductions of greater than 96% within two months of application
- Remedial objectives met

INSITU | INNOVATIVE TECHNOLOGIES GROUNDED IN EXPERIENCE

InSitu Remediation Services Ltd. (IRSL) is one of Canada's most experienced remediation companies. Our team has designed, implemented, and optimized, soil and groundwater remediation programs in diverse geological environments in North, Central, and South America, Asia, Europe, and the Middle East.

We confidently implement innovative solutions, based on sound knowledge, using seasoned field staff. Our pragmatic, flexible approach reduces effort, cost to our clients, and environmental risk.

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