



## OVERVIEW

As part of a real estate transaction, our client was committed to restoring a heavy metal plume to below the applicable Standards. The heavy metals of concern included:

- Copper (maximum concentration of 86 µg/L)
- Cobalt (maximum concentration of 210 µg/L)
- Nickel (maximum concentration of 350 µg/L)

## SCOPE OF WORK

- Acquired all relevant permits to complete the remediation program.
- Designed and optimized an *in-situ* program to maximize treatment efficiencies.
- Implemented a program that minimized capital expenditures and infrastructure.
- Monitored pre- and post-injection treatment parameters.



## THE VERTEX APPROACH

- Sulphate reduction
- Three injections under moderate pressure
- Injection of multiple compounds
  - > 600 kg of EHC-M
  - Reactive gas
- Injections completed using:
  - Direct push
  - Packer and gas delivery system
  - Direct Placement

## OUTCOME

- Sulphate reducing conditions within 5 days
- Remediation objectives meant:
  - Copper (within 10 days of injection)
  - Cobalt (within 55 days of injection)
  - Nickel (within 139 days of injection)
- Record of Site Condition Obtained