

# MSE Wall Corrosion Evaluation

## Client:

Atlantic Industries Limited

## Location:

Revelstoke, BC

## Services Provided:

- Field and laboratory investigations
- In-situ corrosion monitoring
- Engineering evaluation
- Wall deconstruction protocol

## Value Provided:

- Expertise with corrosion of buried metallic reinforcements

## Background & Project Challenges

In 2000 and 2001, Atlantic Industries Limited (AIL) designed eight (8) welded wire Mechanically Stabilized Earth (MSE) walls for the British Columbia Ministry of Transportation and Infrastructure (MOTI) along a section of the Trans-Canada highway. Premature corrosion on the wall facing on some of the walls was noted in fall 2009. AIL initiated investigations to determine the root cause of the observed face corrosion, as well as assess the condition of the primary welded wire soil reinforcement.



## Geocomp Role & Accomplishments

Geocomp was retained to provide expert services in connection with the corrosion evaluation of the welded wire MSE walls. A test boring and laboratory testing program was developed and executed to determine the electrochemical properties of the reinforced fill at five (5) walls. Corrosion monitoring stations were installed through the face into the reinforced fill at eight (8) walls to facilitate linear polarization resistance (LPR) measurements, in order to identify the real-time rate of any corrosion that might be occurring in the primary metallic reinforcements. Measurements were obtained over a one-year period. A report was prepared presenting results and conclusions from these investigations.

One wall was selected for deconstruction during planned highway improvements. Geocomp developed a protocol as to the procedures to be used to document the condition of the primary welded wire reinforcement and sampling and testing of the reinforced fill.