

# REMEDIAL LINING REPAIRS DUKE POINT WATERMAIN GREATER NANAIMO WATER DISTRICT

The Duke Point Water Supply Main was constructed in 1981 and consists of 11km of 762 mm (30 inch) diameter butt-welded steel pipe. The pipe interior was originally coated with coal tar epoxy and the exterior was coated with extruded polyethylene (Yellow Jacket #1)

Portions of the supply main were relocated and realigned during the construction of the Duke Point Highway. Inspection of these sections revealed several areas of random corrosion pitting within the pipe, some as deep as halfway through the pipe wall.

Several methods of repair were investigated, including relining, spot coating, and total replacement. Testing indicated that the spot repair program, using a two part epoxy coating material, was the most effective and economical approach.



*Preparing the pipe interior with abrasive blasting prior to the application of the coating material*



*Dehumidification equipment used to cure the applied coating material*

A trial repair was prepared and implemented consisting of the following work program:

- Installation of a temporary water supply main to maintain service to the Duke Point Reservoir.
- Installation of additional access hatches.
- Welded repairs to the deep seated corrosion pits.
- Development and implementation of a Confined Space Entry Procedure and Rescue Program.
- Abrasive blasting and coating of the sections of main that exhibited deficient coating.