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**Elsyca**

Cathodic protection experts

**Mission**

Trendsetter in innovative and sustainable pipeline integrity solutions

## Abstract

The preferred method of new pipeline construction for a major liquid products transmission company at significant watercourse and roadway crossings is horizontal directional drilling (HDD). This Operator is responsible for a pipeline network with a total length of over 25 000 km's containing 100's of HDD and bored crossings throughout North America. Pipelines installed by horizontal directional drilling have an increased likelihood of experiencing coating damage as opposed to those constructed through conventional open trench techniques. Current methods for identifying damaged coating regions on buried pipe cannot always provide absolute or accurate information on the location, size and geometry of the holidays.

Although cathodic protection monitoring at HDD locations can typically be validated within the entry/exit extremities, the region in between is either assumed or speculated. Additionally, should there be coincidental damage situated in the mid-region of the HDD, in a high resistivity rock stratum, the resistance to earth may be too high for adequate current to reach and protect defects. Locations under such circumstances will not be protected and may corrode.

The Company has initiated a comprehensive evaluation of the CP performance at HDD locations. The approach utilizes a combination of monitoring techniques and field surveys with computational modeling technology to ascertain the threat for corrosion on the pipeline within HDD locations.

## The article

This article discusses a proof-of-concept for measuring procedures and demonstrates how field data is applied into computational modeling for predicting the CP effectiveness throughout critical, inaccessible regions of the HDD's.

## Keywords

horizontal directional drill (HDD) crossings, test procedure, predictive model

