

CATT Trenchless Technology Call for Abstract

Understanding CIPP Sewer Rehabilitation to Address H₂S Corrosion

Countless gravity sewer systems across North America experienced severe deterioration of the pipe walls due to H₂S corrosion. There are several indicators that can be seen during a CCTV inspection to determine if there is H₂S corrosion present with a sewer section and to what extent the deterioration is affecting the pipe wall. Understanding the progression of H₂S corrosion over time can assist owners in determining the opportune time to address the wall loss in order to maximize the service life of the asset. Through the monitoring of critical trunk sewers using CCTV cameras, the Region of Niagara and Utilities Kingston have been able to see the different MIC corrosion stages in their sewers. In addition to the corrosion stages, Utilities Kingston has seen the effects of MIC corrosion on sewer sections left unlined as part of a phased rehabilitation of trunk sewer. This will affect the phasing of future CIPP rehabilitation projects with respect to the time frames between phases and determining the limits of sewer rehabilitation. This paper will focus on case studies from the Region of Niagara's Crystal Beach (CB) trunk sewer rehabilitation and Utilities Kingston's North End Outlet (NEO) Trunk Sewer and Ravensview Trunk Sewer (RTS) rehabilitation.

The Crystal Beach trunk sewer ranges in size from 450 mm to 825 mm (18 inch to 32 inch) and was constructed in 1960 using both concrete and asbestos cement. The NEO is a trunk sewer ranges in size from 750 mm to 900 mm (30 inch to 36 inch) and was constructed in 1960 using concrete pipe. The RTS ranges in size from 1200mm to 1350mm (48 inch to 54 inch) and was constructed in 1960 using concrete pipe. These sewers have been CCTV inspected numerous times, including post CIPP installation of the NEO phase 1, each time resulting in changed corrosion conditions.

Written By:

Patrick Moskwa

Julie Runion

Michelle Moore

Kevin Bainbridge