

IPR Industrial Services: Chemical Plant Relines Process Sewer Line

Case Study



The Situation

Pipe Collapse Causes Sinkhole at Chemical Plant. Further Inspection Reveals Leaking Manholes in Section of Process Sewer Line.

The top half of a process sewer line has collapsed due to internal corrosion over the last 80+ years. The collapse caused a sinkhole in close proximity to an industrial chemical plant. The line segment was initially created with a combination of clay and concrete pipe and ranged from 20" to 24" in pipe diameter. After an initial inspection, the corrosion revealed a pair of manholes with deteriorated bottoms. Without proper repair, the sewer flow could leak to the soil below, consequently causing an environmental hazard. In all, the 50 linear foot pipe and two manholes needed immediate and reliable restoration.

With Repair Options Limited, Plant Opts for Trenchless Renewal of Pipe and Manholes.

The sinkhole laid directly beneath a pipe rack approximately 2 ft above the ground. Traditional "dig and replace" methods would have forced a site shutdown and temporary removal of the pipe rack. The plant company would have lost production time and incurred additional cost. Plant engineers contacted IPR Industrial Services to provide an alternative method of repair. IPR Industrial Services' trenchless pipe solutions eliminate the need for production halts and high construction footprint. Upon assessment, IPR Industrial Services recommended the "Cured-In-Place Pipe" rehabilitation method or CIPP and the EcoCast geopolymer lining system to rehabilitate the manholes.

The Solution

IPR Industrial Services' trenchless pipe and manhole renewal methods were calculated to be 30% less expensive than traditional rehabilitation methods and have saved the plant from a costly shutdown.

Plant Engineers immediately agreed with IPR Industrial Services' to use the CIPP and EcoCast relining solutions. Although IPR's crews are already certified for industrial safety training, the crews went through the plant's specific safety training procedures before entering the site.

A Little Bit About the CIPP Systems Used:

IPR Industrial Services' certified and manufactured CIPP liner consists of a woven material with custom formulated resins. IPR engineered the felt liner for structural strength, corrosion resistance and the ability to withstand pressurized lines. The CIPP liners are inserted, inverted and cured through one access point, thus avoiding unnecessary digging and surface disruption.

Pipe and Manhole Relining Took Only Two Days

Once on site, the IPR crew went to work fast. The 50 linear foot section of pipe was prepped, cleaned, relined and cured in day one. By day two, IPR crews successfully sprayed with IPR's EcoCast geopolymer mortar application into the two manholes.



Access point for CIPP liner underneath pipe rack.



CIPP liner above ground at inversion point.



CIPP liner termination point.