Quest inspar
Pipeline Life Extension Specialists

CASE: DETERIORATED SEWER FORCE MAIN

SUBJECT

Rehabilitation of Deteriorated Sewer Force Main
Wastewater System*: PipeArmor® 160SW*

The City of Hollywood Florida has an aging wastewater collection system that has experienced increased incidences of pipeline failure and effluent leakage. In its effort to seek an improved method to rehabilitate at risk pipelines, in September 2014, the city made the decision to pilot **PipeArmor®**, the **Manufactured in Place Pipe™** liner, to evaluate the advantages of PipeArmor's robotic installation process. The subject for the trial was a 48" diameter ductile iron pipeline deemed in a condition of "imminent failure". The grade of pipe coupled with the interface of the concentric increase in diameter created a low flow line area, resulting in continual exposure to the aggressive effects of Hydrogen Sulfide (H2S) erosion. The deteriorated pipe section required a full structural rehabilitation.

Process Environment

Use	Sewer Force Main
Process Temperature	Ambient
Operating Pressure	30 psi

Serviced Pipeline

- 50 linear feet of 48" ductile iron pipe under an urban roadway.

Challenges

- The deteriorated section of pipeline contained a number of large perforations and thin wall surface areas.
- No upstream or downstream access presented significant challenges to other rehabilitation technologies.

Solution and Process

- The deteriorated pipe section was prepared to an SSPC – SP2 specification.
- A camera inspection was conducted to assess the condition of the compromised pipe.
- The pipe system received a full structural liner engineered for external loading by the robotic installation of PipeArmor® 160SW.

Findings / Results

- City engineers inspected the PipeArmor® 160SW manually and remotely and the lined pipe was put back into service after installing the new concentric reducer.
- The PipeArmor® process minimized traffic and community disruptions by limiting excavations and road blockages for additional accesses.

Subject Wastewater Line: The deteriorated pipe section post-cleaning and pre-lining. Evident is significant wall loss and major perforations from aggressive H2S erosion.

Installed PipeAmor: Shown in foreground is the completed PipeArmor® polymer pipe-in-pipe. In background, for contrast is the downstream section which remains in service in its orginal state.