Quest inspar
Pipeline Life Extension Specialists

CASE: RECOVERY OF USE OF OWS PIPELINE

SUBJECT

Rehabilitation/Recovery of Oil Water Separator (OWS) Pipeline
Chemical and Refining: Chemical Process Pipeline
Liner: PipeArmor 150S

Hazard

A 36” diameter OWS pipeline at a major refinery was being bypassed at a substantial expense due to effluent exfiltration from the pipe into surrounding soils and wet wells. The company sought to remove the environmental hazard and recover use of the pipeline to reduce excessive operating costs.

Process Environment

Effluent	Hydrocarbons/Acids/Solvents/Coke Fines
Process Temperature	375°F
Operating Pressure	Ambient

Serviced Pipeline

- 136 linear feet (LF) of 36” reinforced concrete pipe (RCP) under a road crossing.

Challenges

- The RCP pipe was fully compromised with perforations, exposed aggregate and protruding rewire.
- Buried under a road crossing precluded direct access except at substantial expense.
- The chemical effluent within the pipe was rated highly flammable and so man access was prohibited as well.

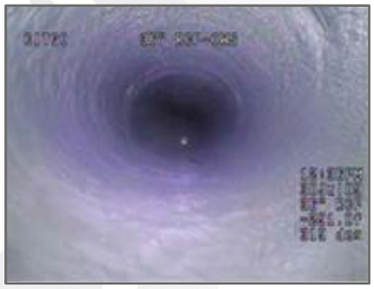
Solution and Process

- The pipeline was cleaned robotically to remove the aggregate and wall contaminants using water jet blast and pigging.
- The pipeline joints were remotely grouted with acrylamide to seal as well as to fill exterior soil voids to stabilize the pipe.
- The pipe was lined with PipeArmor 150S (equivalent) at the circumferential application of 1050 mil (1.05”) to meet or exceed design highway loads and to arrest further substrate deterioration.

Findings / Results

- Quest Inspar’s robot methodologies enabled the repair-in-place of a highly damaged pipe, restricted from man entry.
- The liner sealed all perforations and cracks and improved flow; restoring the pipe for use and a suspension of the bypass.
- Client reduced its environmental/process risks and achieved substantial economic savings, including replacement costs.

Process Step: The robotic grouting process is shown, with the application of the acrylamide to seal and fill exterior voids.



Post Lining: The lined pipe was restored with the benefit of a chemical and temperature resistent liner to protect against future erosion