

Corrosion Protection of 376 ft Mechanically Shorted Pipe Casing in Mexico using Zerust's Zerion FVS, FAN-5, PGH-300, & PGH-400

Project Specifics

Installation Dates

December 2022

Location

Mexico

Environmental Conditions

Avg. Temp. 83°F, ~75% humidity, partly cloudy

Asset Details

Casing Dia. 36", Carrier Dia. 30", Length 376-ft
Mechanically shorted

Vessel Construction:

3 (3") vent pipes that extend above the ground;
pressure tested successfully two (2) weeks prior

Zerust Product(s) Used

Zerion® FVS Corrosion Inhibiting Powder
Zerion® FAN-5 Corrosion Inhibiting Powder
Zerion® PGH-300 Corrosion Inhibiting Gel
Zerion® PGH-400 Corrosion Inhibiting Gel



Problem

The client wanted corrosion protection for a 376-foot mechanically shorted pipe casing.

Solution Specifics

The contracting team had 4 (5000-L) polyurethane tanks that were used for premixing the Zerion FVS and FAN-5 corrosion inhibitors with water. The entirety of the corrosion inhibitor solution to be injected was done so in batches. Tanks were first connected in series, with 3" T-valves, independently of each other through a one-way hose to the eductor system.

After the circulation of corrosion inhibitors, the introduction of the Zerion PGH-300 and Zerion PGH-400 corrosion inhibitor gels was done through the eductor system and the solution batches were injected using the bottom vent.

For proper distribution, a higher concentration was premixed in the first three (3) injected batches, with the last batch being just potable water. During the injection of the corrosion inhibitor solutions, the contractors simultaneously mixed the Zerion PGH-300 and PGH-400 corrosion inhibitor gels at a constant flow.

Solution Specifics Continued

To allow the settlement and proper distribution of the corrosion inhibitor gels through the hopper and the Venturi system, the pump was set at a medium thrust to minimize back pressure. The pressure was below 1-PSI throughout the first and third tanks of the inhibitor solution while injecting. The pressure built up to 5-PSI halfway through the fourth tank of potable water. The pressure was then bled through the manifold system which had a check valve attached to a hose to release the pressure which was built within the casing. The pressure was regulated and released, and it dropped to zero within a minute. The overall volume to be injected was 4,403-US gallons (~16,670-US L). The asset was injected with approximately 90% of this estimated casing volume.

Results

The project went well with no issues. Zerust recommends installing a Remote Monitoring Unit (RMU) with Electrical Resistance (ER) probe on one (1) vent pipe to monitor the lifespan of the applied corrosion inhibitor solution. A quote for this equipment can be provided by Zerust upon request. The contracting team was very well prepared throughout the application of the project.

CASE STUDY

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