CASE STUDY

Corrosion Protection for 3 Single Bottom Storage Tanks on Sand Foundation via Internal Flood and Underside Injection

Zerust® OIL & GAS
WORLDWIDE CORROSION SOLUTIONS

Project Specifics

Installation Dates
May 23, 2020 to June 3, 2020

Location
Texas, USA

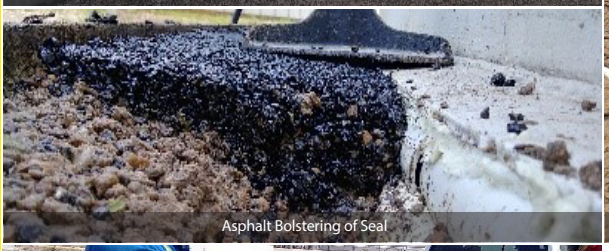
Environmental Conditions
5/25 - 5/30/2020 | 90°F, ~70% humidity, hot and sunny
6/1/2020 | 80°F, Heavy thunderstorms
6/2-3/2020 | 90°F, ~70% humidity, hot and sunny

Asset Details
Diameter: Tank (1) 74-ft, Tank (2) 117-ft, Tank (3) 50-ft
Vessel Construction: Single-Bottom with Concrete Ring Wall (Tank 2 and 3), Existing Liner
Foundation Media: Compacted Sand ~4 inch Depth

Inhibitor Delivery System (IDS)
Underside Injection and Internal Flood IDS with IDS Sealant & Monitoring Systems

Zerust Product(s) Used
Zerion® FVS Corrosion Inhibiting Powder


Internal Flood IDS (Zerust® Animation)


Asphalt Bolstering of Seal


Chime Excavation and Seal Installation


Mixing Zerion® FVS Corrosion Inhibiting Powder with Water


ER Probe and Box

Project Specifics
The client wanted corrosion protection for (3) aboveground storage tanks on sand foundation with a concrete ring wall, existing liner, and no anchor bolt(s).

Zerust Solution
The engineers at Zerust® Oil & Gas developed custom solutions for this client, and with the support of local contractors, successfully installed an IDS sealant system around the chime area of the targeted assets and completed the injection of the corrosion inhibiting solution slurry on the tanks using Zerust's Internal Flood IDS for Tank 1 and Underside Injection IDS for Tanks 2 and 3, along with the installation of ER probes for IDS monitoring.

Tank 1 Project Details
Internal Flood IDS was used for this tank and since the tank was out-of-service, the corrosion inhibitor solution was injected through the tank floor. Eight ports were installed at this interface as well (Four injection and Four ER probe). Only three ER Probes were installed. All 150-gallons of corrosion inhibitor slurry was injected.

Tank 2 Project Details
Underside Injection IDS was used for this tank. Half of the tank had been sealed prior to arrival and Zerust team finished the seal and provided necessary touch up work on what had previously been completed. Three ports with HDPE pipes extruding from the wall were available for our use. A series of adapters were assembled for both ER Probe insertion and inhibitor slurry injection. A manifold was used to connect the pump to all three ports. Each port successfully received a third of the 400-gallon corrosion inhibitor slurry.

Tank 3 Project Details
Underside Injection IDS was used for this tank. This was a reinjection. Pails that had been left from the previous injection were used to complete the installation. There were no issues with the injection of the 200-gallons of corrosion inhibitor slurry via three ports.

Conclusion
Everything went well. There was a brief delay due to heavy thunderstorms at the beginning of the second week. The pumping systems at the client site were able to remove all the water from the diked areas with ease and prevented any additional delays. The injections were completed without a hitch, and all water/slurry was easily injected. This was a successful Zerust Installation.