

Corrosion Protection for an Under Repair Out-of-Service Storage Tank by Drip Tube and Underside Injection IDS

Project Specifics

Installation Dates
April 21, 2020

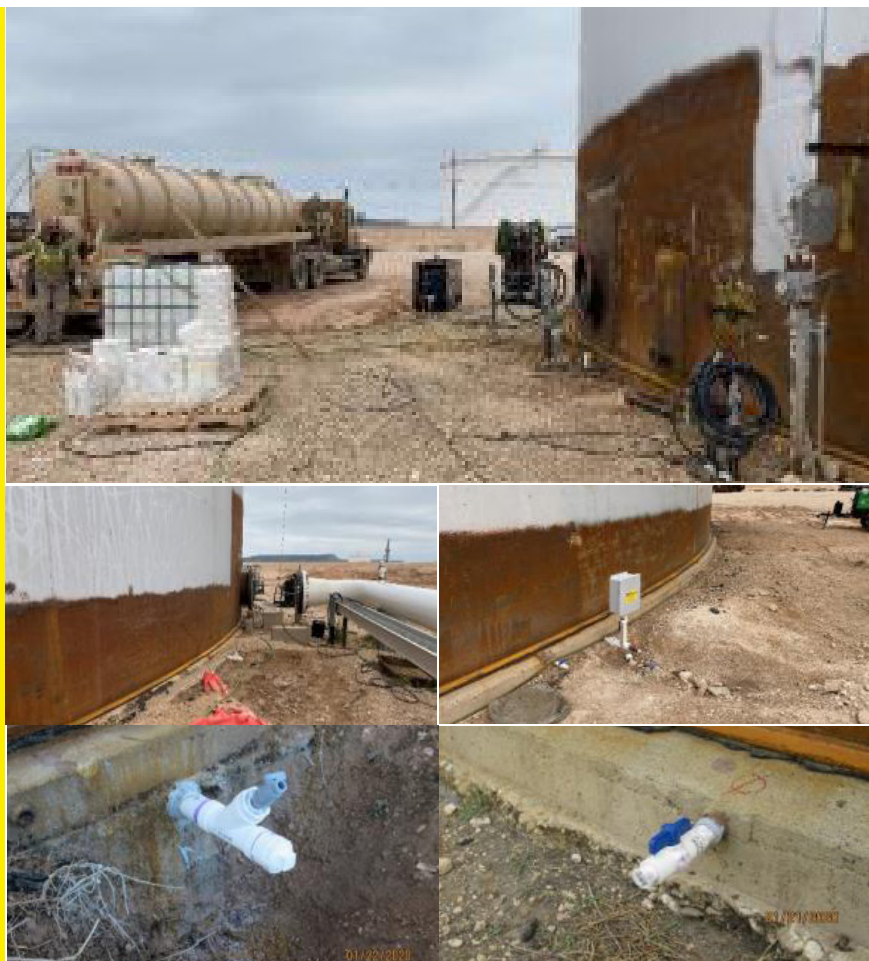
Location
Texas, USA

Environmental Conditions
Windy, no rain.

Asset Details
Diameter: 110 Feet
Storage Product: Not Available
Vessel Construction: Out-of-Service (Under Repair)
Foundation Media: New Sand to be Installed

Inhibitor Delivery System (IDS)
Drip Tube IDS & Underside Injection IDS
with ER Probe Monitoring Systems

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



Project Specifics

The client wanted corrosion protection for an out-of-service aboveground storage tank that was under repair with a concrete ring wall, liner, new sand to be installed, and active Cathodic Protection (CP) System.

Project Installation

Zerion® FVS Corrosion Inhibitor Powder solution was applied. Provided and installed 2" diameter micro slotted PVC pipes and sleeves that cross in the middle of the tank and then come out of the ring wall. The 2" pipes arrived in 20 ft sections and installed with a 4-way connector. Solid 2" PVC pipes were installed through the ring wall and liner; sealed and then continued with the slotted pipes under the tank in the sand foundation (sand to be installed after CP work is completed). The Y-type connectors were fitted on each end of the pipes to allow installation of Stealth copper sulfide reference electrode and corrosion inhibitor slurry. There are (32) original steel pipes noted installed into concrete about 2" below old floor. (5) steel pipes were rimmed out to allow installation of 1/2" PVC pipes equipped with shut-off valves. The pipes were extended through the ring wall and liner; sealed and then continued about 10 feet into the sand. These ports could be used as leak monitoring ports or for VCI replenishment.

IDS Monitoring System Installation

The 1" solid PVC pipes for the ER probes were perforated on site using a 1/4" drill bit. Approximately 12" of the end of the pipe was perforated at 45 degree angles. The approximate lengths were 7 ft, 17 ft, 27 ft, and 37 ft. and installed in each quadrant between the 2 inch injection pipes, 4" beneath the top of the concrete ring wall.

Readings were not able to be taken from the installed ER probes as no ER probe data logger was able to be provided at the time by the client.

Conclusion

Everything went well and all parties were satisfied. A slight slurry leak was noticed between the tank floor and the concrete ring wall during the VCI injection. Estimated 20-25 gallons of slurry was lost. A complete chime seal installation is recommended to prevent the ingress of the water/contaminants and to extend the life of inhibitor.