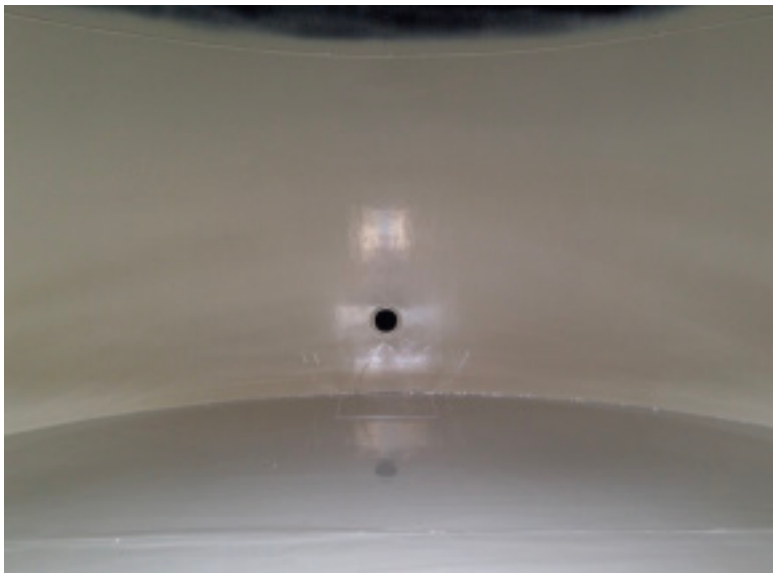
CASE STUDY

970-683-8153

One of the top 15 U.S. independent oil and natural gas development companies, with approximately 6.4 Tcfe of proved reserves in producing U.S. basins, was faced with the dilemma of having a significant number of relatively new oil tanks with unanticipated corrosion in Colorado.



Problem

100 Linn Energy tanks were only two years old but were found to have large pitting issues that were so significant that consideration was being given to scrapping them entirely. Then Linn Energy considered Castagra's SG1's particular strength in being able to fill pitting and retain its strength, integrity and elasticity throughout the entire lifetime of the coating.

Solution

After a NACE 3 level preparation of the steel surfaces in the interiors of an initial batch of 30 tanks, Castagra's SG1 was applied on the floors and walls to a height of 4 ft. The sand-blasting, spray coating work and release back into service was a total of 48 hours on average for each tank.

Application Results

Despite brutally chilly Rocky Mountain temperatures, Castagra's SG1 performed to spec being applied several degrees above the Dew Point to avoid any potential trapped moisture issues.

Being VOC-free, non-toxic, and applied throughout the coating process from start to clean up without the use of any toxic solvents, it meant the applicators only had to wear standard safety equipment and were at no time exposed to harmful chemicals.

Castagra's SG1 specifies a minimum thickness only, whereas conventional epoxy coatings specify of minimum and maximum thicknesses usually of 15 mils to 20 mils. Castagra's SG1 just specifies to 20 mils minimum thickness. The difference between 15 mills and 20 mils is about the thickness of a sheet of paper, which is very difficult to judge in the extreme working environments of the insides of tanks and harder still with pitting on vertical surfaces. With a conventional epoxy coating on pitting on vertical surfaces, it is very difficult to stay within specification.

However, Castagra's SG1 can be applied to a 60+ mils, which is particularly effective in dealing with deep pitting. It achieves a non-mobile state within seconds, hence no run off, but full cure is achieved only after 24 hours.

Pre-coating analysis had suggested that a conventional epoxy coating might have extended the lives of the tanks by two years at best, but post-treatment inspection and analysis has now pushed out the useful storage lifecycle out to four years and possibly longer.

Castagra's SG1, which is a plasticized gypsum formulation, has been shown to resist salt water corrosion for well over 20-years with no measurable degradation. It also has the ability to re-bond to itself in any subsequent repair efforts for its entire lifetime. It is particularly well suited for oil storage tanks as it is highly resistant to most chemicals encountered in sour crude and produced water, and the retained elasticity eliminates the micro-cracking that inevitably results with conventional epoxy coatings.

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