OVERVIEW

A study of the washer with a cracked panel. An external inspection of a Pulp and Paper Bleach Washer was completed as part of the UTComp® System Inspection.

This was the 1st time that UltraAnalytix™ evaluation had been completed for this equipment. The observations in the field were reviewed by an experienced FRP Engineer and Analyst to draw conclusions and make recommendations.

SUMMARY

A site visit by one of our Engineering Analysts in October 2018 was in conjunction with Horizon Testing. The external inspection procedure generally follows the principles of API 653 as adapted to specific experience with Fiberglass Reinforced Plastic (FRP) vessels. The external inspection was completed following UltraAnalytix™ guidelines.

UTComp took readings in an approximate grid pattern, with readings taken in 8 rows down, with 4 readings across each row. The images below show the gel residue where readings were taken on the 2 panels with cracks. Site personnel had not identified the cracking on the rear (east) panel prior to UTComp’s visit.

A plot of the Percentage of Design Stiffness (PDS) revealed that it was significantly lower in the area of the crack. Measured thickness also decreased towards the cracked area. For these reasons, it was determined that the FRP was weaker in the area of the crack, and should be repaired or replaced.
CONCLUSION

After analysis and review of the data and the inspection report, UTComp drew conclusions as to the condition of the vessel and its support parts. There was no detected defect or damage to the support structure or pipe and nozzle connections of the tank.

However, there was damage to the exterior of the tank that was detected, specifically cracks in the west and east panels. UTComp recommended that the cracked panels on the Bleach Washer be repaired or replaced.

Overall, the FRP vessel was suitable for continued service to the next recommended UltraAnalytix™ inspection once recommended repairs are performed.