West Penetone

CASE STUDY

VAPOUR PHASE DECONTAMINATION OF SOUR WATER STRIPPER UNIT

S.T.AR. TEAM

ISO 9001:2015

Scope

Vapour phase decontamination of sour water stripper unit using **ROC 60 VP.**

The *Problem*

A Midwestern refinery operator had planned a Turnaround for inspection and maintenance of their Sour Water Stripper unit. Previous unit cleanings using a competitor product had typically resulted in remaining foulants and sludge accumulation, particularly in the Stripper Reflux Drum. The operator of the facility had not undertaken a shutdown or any unit cleaning during the past 4 years, and desired to improve their existing shutdown procedure in order to minimize the duration from shutdown until vessels and equipment could be degassed and made safe for opening, inspection and mechanical work.

Our *Solution*

The Vapour-Phase process is the fastest method for decontaminating and degassing plant process equipment and consistently reducing steam-out time required during the unit shutdown.

In the Vapour-Phase procedure, West Penetone **ROC 60 VP** was injected directly into the plant steam source, allowing contact and penetration of all vessel internal surfaces. In the Sour Water Stripper Unit, the following vessels and equipment were successfully decontaminated in a single step:

1. Sour Water Stripper Tower
2. Stripper Reflux Drum
3. Stripper Reboiler
4. Overhead Condensers
5. Feed / Bottoms Heat Exchangers
6. Stripper Bottoms Pumps
7. Stripper Reflux Pumps
8. All associated process piping

The Vapour Phase process with **ROC 60 VP** removed residual sour water, LEL, hydrogen sulphide (H_2S), benzene and hydrated pyrophoric iron sulphides, eliminating the exothermic reaction between those deposits and the atmosphere.

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RESULTS ACHIEVED

- The Vapour Phase process using **ROC 60 VP** reduced hydrogen sulphide in the Stripper Unit to zero, LEL's to zero, and benzene level to less than 1 ppm within just a few hours. The whole Vapour Phase process was completed in 24 hours.

- The Vapour Phase process using ROC 60 VP can reduce unit decontamination time by as much as 1-2 shifts. It also increases the efficiency of maintenance in spection and repairs by providing oil and sludge free surfaces, minimizing turnaround time and reducing mechanical contractor costs.

- After making entry for initial inspection, the refinery process engineers commented "I like West Penetone; the equipment was clean. We had not seen it this clean. Impressed. We have no issues and no iron sulfide issues. Thank you so much for your help"

Sour Water Stripping Unit

A comprehensive and ***integrated approach***

With over 100 years of product development, manufacturing and application experience, the West Penetone family of companies has designed and patented many products to satisfy the needs of our clients world wide.

Our technical group provides customers effective support to ensure that contaminents are paired with the right chemistry for any task.

Establishing and maintaining a collaborative approach with our customers in tackling their operational and maintenance challenges is key to realizing efficiencies and cost savings.

Questions? solution@westpenetone.com

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