

**CASE HISTORY**

Chemical decontamination of gas separation towers and heat exchangers results in elimination of LELs and inorganic scaling and wash is waste water treatment safe

**Results Achieved**

Benzene and hydrogen sulfide free

Zero LEL's after
18 hours of circulation

No inorganic scales remaining

Chemicals Utilized**FQE Solvent-H****FQE LEL-V****FQE H₂S Scavenger****FQE Scale-Solv**

A large ethylene plant used our decontamination products FQE® LEL-V, FQE Solvent-H, FQE H₂S Scavenger, and FQE Scale-Solv to prepare their quench water towers (T-1401/1501), cold-end separation towers, heat exchangers, and flare knock-out drum for maintenance.

The equipment required degassing, heavy tar removal and descaling of water-born scales. Flare knock-out drums were contaminated with heavy tars from entrained asphaltenes and waxes. The heavy sludge had been a problem for the facility, as deposits that have trapped light end hydrocarbons made vessel entry unsafe. The typical cleaning process resulted in work stoppage and extended purging of steam through the system to void the equipment of hazardous levels of flammable gases.

The flare knock drums were circulated with diesel oil containing 5% FQE Solvent-H for 24 hours at 71°C (160°F) and drained. Following the solvent circulation, the drums were circulated with a combination of FQE LEL-V and FQE Scale-Solv to degas and descale the equipment.

After 12 hours of circulation at 60°C (140°F) the equipment was successfully descaled of inorganic deposits and was at zero LEL. The scaling was found to



be mostly carbonate and sulfate scale with some iron sulfide. The iron sulfide was controlled by use of FQE H₂S Scavenger for hydrogen sulfide off-gassing. The heat exchangers and all associated piping were circulated with FQE LEL-V and FQE Scale-Solv to simultaneously de-oil and descale the equipment. The upstream de-ethanizer and de-propanizer towers were successfully degassed and de-oiled simultaneously.

Both quench water towers were decontaminated with FQE LEL-V and FQE Scale-Solv using a cascade circulation at 60-70°C (140-150°F). The quench water system was circulated through the towers, exchangers, and piping to remove water-born scale deposits. The wash water from each operation was sent directly to waste water treatment without delay or upset. Upon inspection, the equipment was found to be clean and acceptable for hot work.

Visit our website to access technical bulletins, white papers, videos and our extensive library of case histories.

**Case Histories**fqechemicals.com/case-histories**White Papers**fqechemicals.com/resources**Video Library**fqechemicals.com/videos

Contact us

Head Office**Deer Park, Texas**

4820 Railroad Street
Deer Park, Texas 77536

+1 (281) 476-9249

Calgary, Alberta

Suncor Energy Centre, West Tower
#5100 – 150 6th Ave SW
Calgary, Alberta T2P 3Y7

+1 (403) 538-3050

Perth, Western Australia

14 Cocos Drive
Bibra Lake, Perth, WA 6163

Office: 08 9434 3919

Intl: +61 8 9434 3919