Case study: Canada

SULFIX 9290 H_2S scavenger improved HSE, lowered OPEX at Canadian refinery

A Canadian refinery was challenged with a significant volume of sour naphtha that required treatment for hydrogen sulfide (H_2S). The material needed to be stored in tanks before being re-processed through the hydrotreater.

Originally, the only available treatment method was diluted caustic. This required a complex dilution system with full winterization for all equipment. Operations personnel were required to handle 50% caustic, adding significant health, safety and environmental (HSE) risks. Additionally, the spent caustic had to be drained from the treated tanks into frac tanks, adding further complexity and cost.

Previous scoping studies found the H_2S scavenger unsuitable due to the high cost, potential deactivation of the hydrotreater catalyst, and limited pipeline shipping options.

Baker Hughes proposed the new **SULFIX™ 9290 H_2S scavenger** as an alternative to the caustic system. This newly available product is nitrogen-free and specifically designed to be reprocessed through a hydrotreater.

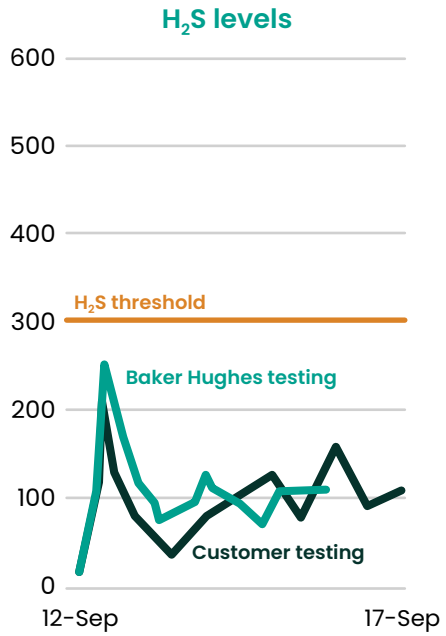
The SULFIX 9290 scavenger provides additional key benefits, including excellent handling (non-corrosive, winterized) and a much lower HSE risk. This resulted in a simpler injection system, reducing setup and operating costs.

The initial treatment lasted 7 days and was an immediate success. The SULFIX 9290 scavenger was able to quickly achieve the H_2S target of <300 ppm.

The simple injection system offered reliable and consistent injection over the course of the treatment.

Upon completion, the treated naphtha was quickly reprocessed with no operational impact, eliminating the need to drain tanks or undertake lab testing.

Treatment summary	
SULFIX 9290 H_2S scavenger	
Baseline H_2S	10,000 ppm
Target limit	<300 ppm
Actual H_2S results	100 ppm
Total OPEX savings	$320,000 USD



Challenges

- Sour naphtha with very high H_2S content routed to storage
- High HSE risks
- Fast, effective H_2S removal necessary
- Hydrotreater reprocessing required

Results

- Less handing improved HSE
- Reliable chemical injection
- Fast and irreversible reaction
- Immediate reprocessing without draining or additional lab testing
- No operational impact during reprocessing
- 40% reduction in operational expenditures (OPEX)