CASE STUDY

HALLIBURTON

Gulf Coast

Hot train antifoulant strategy provides a recurring ROI of 300% and saves refinery ~$1.5 million per year

Program reduces fouling rate and mechanical costs and improves flexibility, energy efficiency, and production

CHALLENGE

- A refinery faced a significant fouling increase due to their desired blend strategies
- The goal was to find a solution to mitigate this fouling

SOLUTION

- Engineer a trial using RPA-302 antifoulant, which had previously shown success in similar applications
- Upon successful trial results, extend to a permanent application

RESULT

- The permanent application effectively addressed the fouling issue
- It eliminated expenses related to excessive fouling rates
- The refinery can now process crude flexibly without penalties
- The estimated recurring chemical ROI exceeded 300%, which led to annual net savings of ~$1.5 million

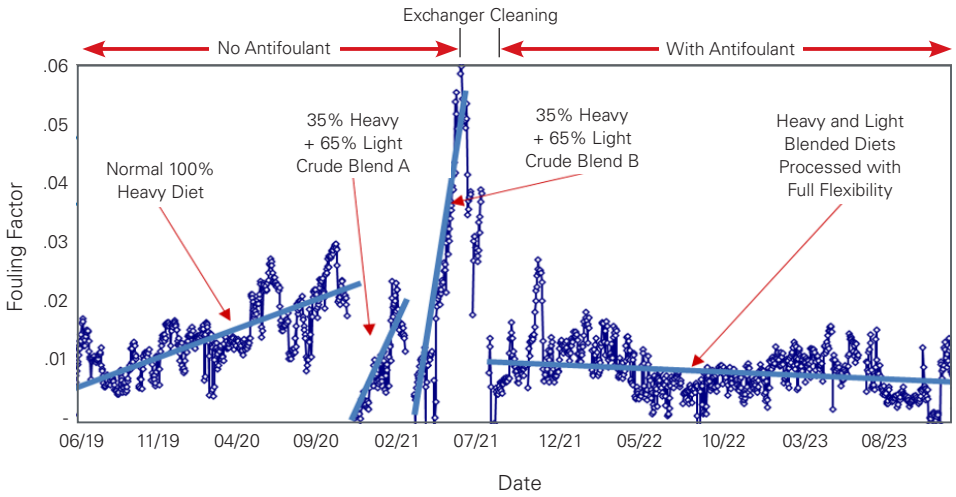
Challenge

A major refinery faced significant but controllable fouling rates while processing heavy crude. To enhance profitability, the operator blended 35% light crude with the typical heavy diet. However, this dramatically increased fouling rates, approximately six times higher than the normal diet. Despite multiple attempts to mitigate the increase using other light crudes and components, the fouling became even more aggressive, which reached levels approximately 24 times higher than the normal diet. As a result, an unplanned shutdown was necessary to clean the exchangers, which would impact production efficiency and costs.

Solution

Halliburton engineered a trial solution using RPA-302 antifoulant, drawing from previous successes in similar applications. Shortly after initiating the trial, the treatment proved effective, which led to its adoption as a permanent solution.

Fouling Rates in Exchanger Train



Result

The permanent application successfully eliminated expenses related to increased fouling rates. The refinery can now process crude flexibly, blending light crudes into their normal heavy diet without penalty.

The RPA-302 antifoulant strategy not only improved fouling rates but also facilitated gradual system cleanup over time. This effective program delivered an estimated recurring chemical return on investment (ROI) exceeding 300%, resulting in annual net savings of ~$1.5 million.