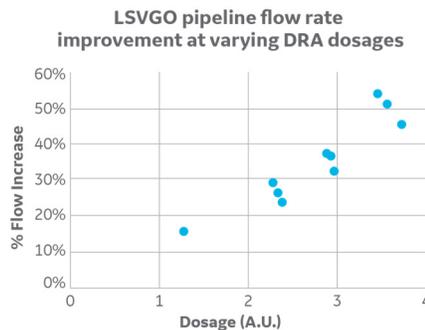


FLO NOW instant drag reduction services increased FCCU throughput by 54%

During a turnaround, a US Gulf Coast refiner shut down the low sulfur vacuum gas oil (LSVGO) process stream that fed the still-operating fluid catalytic cracking unit (FCCU). In an effort to maintain FCCU operations, purchased LSVGO was brought in on ships and barges from the marine dock. The offload pumps on these shipping vessels were only able to maintain 50% of the original FCCU feed rate due to pressure limitations of the import pipeline. The refiner contacted Baker Hughes, a GE company (BHGE) for a solution to improve the flow under these conditions for the duration of the 50-day turnaround.

BHGE evaluated the LSVGO import pipeline using proven hydraulic simulation models. Results indicated that a conventional drag reducing agent (DRA) treatment was not suitable for this application due to the short dissolution time required. The team recommended **FLO™ NOW instant drag reduction services**, which offered on-demand DRA performance at the point of injection to address capacity limitations in short-line applications.

During the turnaround, BHGE treated the LSVGO pipeline between the dock and the FCCU feed tanks, achieving drag reduction performance of 51%. The significant reduction in frictional pressure loss across the pipeline enabled the ship and barge pumps to increase flow rates by as much as 54%. As a result, the refiner was able to increase its FCCU throughput during the turnaround, capturing \$4 million USD in revenue.



Challenges

- Limited LSVGO feed rate from the docks due to pipeline pressure rating
- Short residence time prevented the use of conventional DRAs

Results

- Reduced frictional pressure loss of LSVGO import pipeline by 51%
- Enabled refiner to increase FCCU feed rate by as much as 54%
- Gained \$4 million USD from additional FCCU throughput during turnaround

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