

Pall Coalescer Rental Skids Help US Refinery Meet Ultra Low Sulfur Diesel Specification



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CASE STUDY

Background

A US Refinery producing hydrotreated Ultra Low Sulfur Diesel (ULSD) via a steam stripper identified free water carryover and rock salt drier breakthrough in their final product, resulting in a low NACE TM0172* score. The rock salt drier is used to remove excess moisture from the hydrocracking process which helps optimize the reaction rate, reduce the amount of waste generated, and improve the overall efficiency of the hydrocracking process.

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To meet the regulatory specification of ULSD, (≤ 15 ppm sulfur, $< 0.05\%$ water by volume, and $< 0.05\%$ salt by weight), the refinery needed to further process the diesel to remove the water, salts and other contamination before it could be released to market.

** NACE TM0172 is a standard developed by the National Association of Corrosion Engineers (NACE) for measuring the corrosion resistance of metals that are exposed to hydrogen sulfide (H₂S) environments. The test measures the corrosion rate of the material by monitoring the weight loss of a material sample over a specified period. The corrosion rate is then expressed as a score, which can be used to compare the relative corrosion resistance of different materials.*

After consultation with the Pall Rentals and Service team, the Refinery Operations Management team agreed to proceed with the installation of 2 off 19-element, high flow filter vessels, utilizing absolute rated Ultipleat® High Flow, 60" length filter elements as particulate pre-filters to protect 2 off 37-element PhaseSep® liquid/liquid coalescer skids, capable of handling the complete flow to the unit. All filters were supplied by the Pall Rentals service group and installed 6-8 weeks after initial contact.



Photo showing one of two LL coalescer rental skids installed.

Results

NACE TM0172 scores dramatically improved (often achieving a perfect mark), even when large (26' OD x 80' L) dual rock salt driers were bypassed downstream of the Pall equipment! The refinery subsequently purchased the equipment after several months of rental.

To learn more about Pall Rentals and Services, please visit our website or contact your local Pall sales representative.

Visit us on the Web at www.pall.com/industry
Contact us at www.pall.com/contact

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