

36-INCH DUAL PROCESSOR RENTAL SKID DRAMATICALLY REDUCES SOLIDS

SOLIDS REDUCTION IN BTX STREAM ON A LIGHT OIL PROCESS TREATING AN AROMATIC FEED STREAM

Major Challenge

A refiner in the Midwest was faced with expensive catalyst bed “clean-out” shutdowns and fouling heat exchangers on a light oil process treating an aromatic feed stream. This 2,500 BPD stream, consisting of Benzene, Xylene and Toluene, was elevated in temperature to 200 degrees F (80 psig) before being fed to their tower. They believed if they could reduce the stream solids size down to 3-5 micron they could alleviate their problems.

Pentair's Solution

Already familiar with our capabilities, the unit engineer requested we recommend a solution that could validate solid reduction, without the need for them to make an immediate capital investment. It was determined that a Pentair dual ProcessOR rental skid would accommodate their needs utilizing nylon Compax solid/liquid separator elements rated Beta 5000 for 5 micron sized particles. By having two 36” O.D. vessels on a single skid the refiner could benefit from element change-out without interruption of his process, as well as a single installation step for the vessels (verses two individual steps).

Performance Validation

After insertion to the process upstream of the heat exchangers, the refiner was quickly convinced of its immediate positive impact. Internally his reliability engineer measured nearly a 3-fold solids weight reduction (ie .10 down to .03 lb./barrel) in the stream. [The image below was taken by the refiner showing solid samples collected at inlet/outlet of the Pentair rental skid.



Path Forward

During several months of the rental period the refiner ran trials with 2 and 3 micron rated elements to further protect their catalyst beds and heat exchangers. After a successful performance utilizing these new ratings they decided to purchase the skid from Pentair and make the pair of ProcessORs a permanent part of their process.