

# Premcor Increases Hydrotreater Production 25% Through Lubrication Program

## RESULTS

- Refinery operating at all time maximum throughput
- Unscheduled shutdowns eliminated in the past 3 years
- Monthly compressor availability increased



## APPLICATION

Hydrotreater unit lubrication analysis and management

## CUSTOMER

Premcor Port Arthur, TX, fuel refinery with 250,000 barrels per day capacity

## CHALLENGE

Failure of critical machinery can mean an expensive interruption of production.

Residue buildup on compressor valves demanded monthly system shutdowns for service. The downtime due to valve failures reduced hydrotreater production by at least 25 percent at a time when product values were at an all time high.

## SOLUTION

Oil refining is by nature a greasy business, so it was easy to assume that the residue buildup contaminating the compressor valves was due to the process itself. But Lubrication Analyst John Gobert suspected there may be a different reason - something they might be able to correct. He and the maintenance staff, along with their main oil supplier (The Hurt Co.), went to work on the problem.

Gobert and his team used the CSI 5200 Comprehensive Minilab to analyze residue from the valves. The maintenance staff determined the original valve lubricant was causing carbon build-up on the valves, and a new supplier was found to provide the right oil. Since then the hydrotreater has not shutdown for valve servicing in more than three years.

*"We have saved significant money by being able to test the oil onsite every few hours."*

**John Gobert, Premcor  
Lubrication Analyst**

The lubrication staff screens all lubrication oil brought into the plant with the CSI 5200 Minilab, and when required they remove water from the oil or blends oils to achieve proper viscosity.

Premcor's CSI 5200 Comprehensive Minilab includes a Stereo Zoom Microscope for detection of minute particles in lubricants. Using the microscope, Premcor staff diagnosed a failing thrust bearing in a large pump. Early detection meant a planned shutdown with an economic repair schedule, rather than an unscheduled outage.

Weekly lubrication classes are now provided for operators and machinists on particle identification, how to recognize water contamination, differences in oil viscosities, and the importance of maintaining clean oil.

Because of the demonstrated value of precise oil analysis, Premcor's lubrication program has expanded and oil samples are analyzed daily. Solving oil problems is a proven money-saver at Premcor, and has paid for itself many thousands of times over.

*"Total savings has paid for our lubrication program many times over."*

**Jim Crissman, Supervisor  
RER Dept.**

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