

TRETOLITE CLEAR demulsifier reduces oil in injection water, increases yearly oil revenue

Baker Hughes, a GE company (BHGE), historically has used oil-based demulsifiers to treat the high water cut emulsions found in the mature oil fields of Alberta, Canada.

Looking to field trial a new water-soluble demulsifier, BHGE's Upstream Chemicals technical group identified a **TRETOLITE™ CLEAR demulsifier** based on treating history and costs of a traditional oil-soluble chemistry, injection water-oil carry-over, and volume of water produced. The oil treating facility was producing a significant amount of water—more than 73,500 B/D.

BHGE believed the TRETOLITE CLEAR demulsifier would significantly reduce oil in the injection water, reduce water injection well pressures, improve interphase control, and reduce chemical treating costs.

Before the demulsifier trial, injection water contained an average of 261 ppm of oil. During the trial, that number dropped to an average of 111 ppm—an improvement of 150 ppm. This correlates to a savings of 11.13 BOE/D or a yearly increase in oil revenue of \$264,137 USD, based on a customer-provided price per barrel of oil.

This was one of the first times using a water-based demulsifier in a conventional oil facility. BHGE's Upstream Chemicals team worked closely with the facility operators on a daily basis, providing updates on all chemical rates, vessel cuts, interphase control cuts, and line pressures, as well as all water qualities. Weekly, the team met with management to review key performance indicators and results, and provided recommendations for facility operation changes.

During the TRETOLITE CLEAR demulsifier trial, the customer noted several benefits that resulted in cost savings, including:

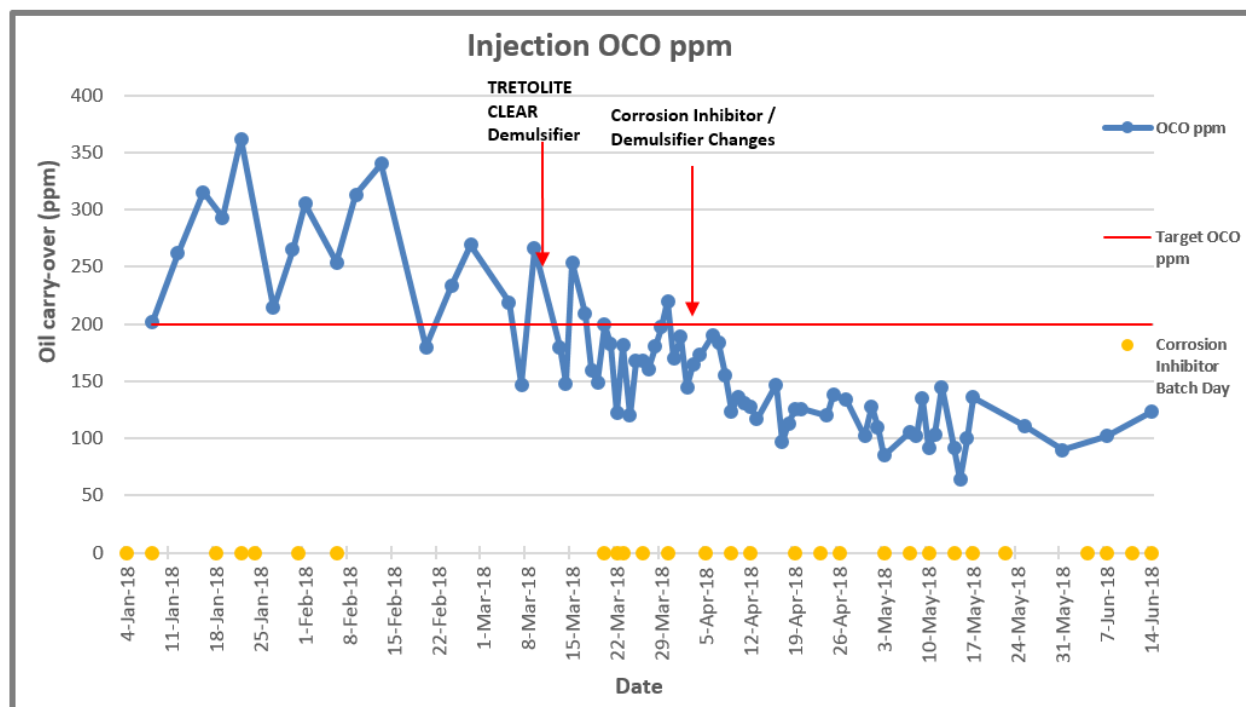
- Less oil carry-over in the injection water helped reduce water injection pressures, which resulted in less power consumption to run the pumps
- More oil recovery that could be sold rather than injected back downhole
- Lower total treating costs due to the demulsifier's ability to improve solids handling and oil wetting, reducing the amount of traditional interphase control products
- Eliminating the need for a water clarifier package

Challenges

- Average of 261 ppm of oil in injection water
- High water injection pressures
- Large vessel interphases
- Facility upsets during batching of corrosion inhibitor

Results

- Reduced oil in injection water
- Increased yearly oil revenue by more than \$264,000 USD due to less oil carry-over of 11.13 BOE/D
- Reduced water injection pressures
- Improved interphase control
- Reduced overall chemical treating costs by 15.4%



Graph shows ppm of oil in the injection water prior to and during the TRETOLITE CLEAR demulsifier trial.