PureChem™ Services

True Successes

Water Clarifier Delivers 85% Savings in Costs and Usage

Challenge

An oil and gas producer in Saskatchewan had SAGD well pairs producing with electric submersible pumps. The production as approximately 18% heavy crude oil with an API gravity of ~11°. The operator was experiencing production of a reverse emulsion where the crude oil was emulsified in a water exterior phase and needed to be broken prior to the FWKO (free water knock out) treating vessel to allow oil/water phase separation. The oil and gas operator felt their chemical provider's treating rates were excessive and no improvements had been made for years, PureChem was asked to evaluate and provide a recommendation.

Solution

To be successful, we needed to identify a reverse emulsion breaker that would function synergistically with a common emulsion breaker to adequately separate the fluids within the FWKO treatment vessel.

After extensive field bottle testing, PCR-4204 was recommended due to its strong attraction for the oil/water interface and ability to neutralize the effects of the emulsifier and reduce the surface tension between the oil and water droplets, allowing separation.

PCR-4204 was injected into the flowline on a continuous basis at a pump rate of 1.0-1.5 ppm, upstream of the FWKO. It successfully broke the reverse emulsion and worked extremely well in conjunction with the selected emulsion breaker, making the water crystal clear.

Benefit

PureChem's PCR-4204 exceeded the criteria of <0.5% BS&W specifications for sellable oil, with BS&W levels of 0.1% to 0.2%.

Oil Carryover in the produced water was <50 ppm in water exiting the FWKO, consistently better than the required specification of <100 ppm.

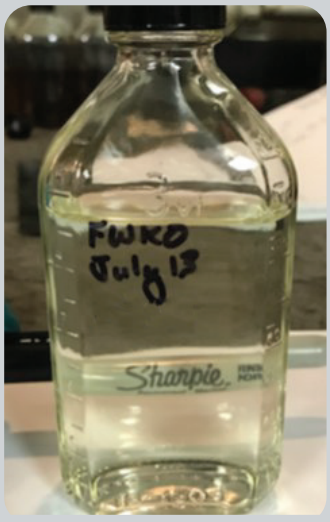
The implementation and performance of PCR-4204 resulted in chemical usage and costs to be reduced an average of 85% while maintaining excellent oil and water quality.

Area
East Central Saskatchewan

Form of Lift
Electric Submersible Pump

Formation
North Bakken

PureChem Products
PCR-4204



Excellent water quality exiting the FWKO