

Water Treatment Case History

Heavy Oil Brine Recovery - TUNA

Challenge

A Gulf of Mexico operator was using zinc bromide (ZnBr) for well control in a heavy oil (API <17) application with high paraffin's and asphaltines. At the flowback temperature of 70°F, the oil was so thick and viscous that the ZnBr could not be separated from the oil. Typically utilized by this operator to receive workover flowbacks, CETCO Energy Services was requested to provide a solution to separate and recover the ZnBr solution.

CETCO Solution

CETCO employed the TUNA, a flameless heat exchanger suitable for this Class I, Division II platform environment. The TUNA generates heat from engine exhaust to raise the temperature of a glycol solution. This heated glycol is then used to raise the process stream temperature. Using glycol as a heat transfer fluid prevents the process stream from ever coming into contact with the heat source. The TUNA raised the process stream temperature to 160°F. At this elevated temperature, the viscosity of the heavy oil was reduced sufficiently to allow the ZnBr solution to separate from the oil in the CETCO Energy Services separation package.

Outcome

CETCO Energy Services recovered 3,000 bbls of ZnBr and produced water then off loaded it into 500 bbl tanks on the adjacent work barge, separating out the brine allowed the recovered oil to go into the sales line. This solution prevented contaminating the oil with zinc and allowed the ZnBr to be recovered and recycled. The operator was satisfied with CETCO Energy Services approach as it was a safer operation.