

OPERATOR CONVERTS ALL WBM WELLS TO BRINEX EP LUBRICANT AFTER A 16% TORQUE REDUCTION AND 19% RATE OF PENETRATION INCREASE VS. INCUMBENT LUBRICANT AT LOWER CONCENTRATIONS

CHALLENGE

- Determine if candidate lubricant outperforms incumbent lubricant through analysis of drilling performance

SOLUTION

- Apply BRINEX EP water and brine-based lubricant across select wells and compare results to incumbent lubricant performance

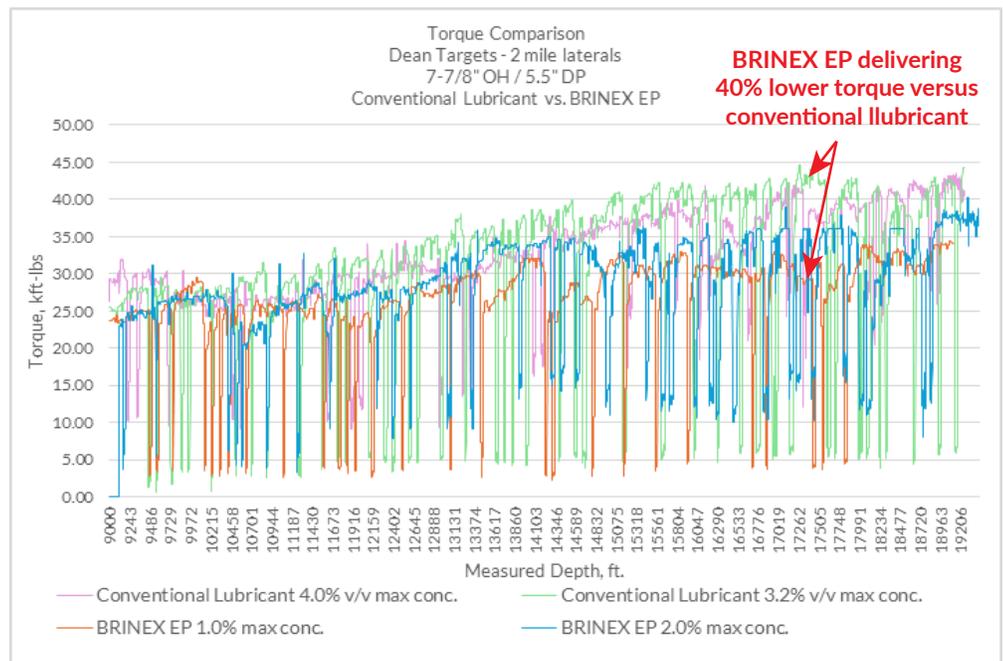
RESULTS

- ROP increased by 19% on average with BRINEX EP versus incumbent lubricant
- Torque was reduced by an average 16% with BRINEX EP versus incumbent lubricant
- Operator elected to use BRINEX EP on all future water-based mud lubricant applications

OVERVIEW

A West Texas operator in the Midland Basin performed a field trial comparing a standard water-based lubricant to BRINEX EP. BRINEX EP is a water and brine-based lubricant with conventional lubricant components and extreme pressure additives. Extreme pressure additives form a boundary layer on metal surfaces such as drill pipe or casing for superior lubricity. The enhanced film strength promotes reduced drill pipe wear and improved transfer of energy to the bit.

A total of four (4) wells were selected with similar well trajectories, casing design, depth, and other properties. Two wells utilized BRINEX EP and two wells utilized the incumbent lubricant. BRINEX EP delivered an average 16% lower torque and 19% higher rate of penetration (ROP) at lower lubricant concentrations in the active system.



DETAILS

The average concentrations of conventional lubricant were between 3-4% v/v with average lateral ROP's of 158.7 ft/hr. While the two well utilizing BRINEX EP held average concentrations of 1-2% v/v with average ROP's of 188.8 ft/hr - 19% increase in ROP. Torque has often been a limiting factor of drilling performance for the operator. The two conventional lubricant wells experienced an average rotary torque of 26,810 ft-lb while the BRINEX EP wells experienced an average rotary torque of 22,450 ft-lb, a 16% reduction.

After reviewing the drilling performance improvement, the operator began using BRINEX EP across its rig fleet on all future water-based mud applications.

