



AES DRILLING FLUIDS

CHALLENGES

- Lower costs while delivering required performance in the Delaware basin
- Prevent salt washout and mitigate losses

SOLUTION

- EnerLITE direct emulsion system
- Maintain system leveraging operational and system experience

RESULTS

- Lowered drilling fluid costs by 40% when compared to offset wells
- No hole issues tripping or running casing despite multiple equipment failures
- EnerLITE will be re-used for future wells

EnerLITE⁺ lowers drilling fluid costs by 40%

Overview

In West Texas, an operator was looking to lower overall well cost. Typical challenges in the 12 ¼" intermediate section include loss of circulation, washout of the Salado salt formation, and torque and drag issues. In many parts of the Delaware basin, effectively addressing these issues requires the use of two intermediate casing strings.

EnerLITE is a direct emulsion system designed to address the challenges in the Delaware basin, particularly salt washout and losses. The direct emulsion features a saturated brine continuous phase to limit salt dissolution with a dispersed oil phase to reduce the drilling fluid density below the anticipated fracture gradient. Aware of the success using EnerLITE in the region, the operator concluded the system had the potential to lower costs while addressing key concerns.

A 9.3 lbm/gal EnerLITE system was used to drill out the surface casing at 4699'. Drilling continued with several non-fluid related issues, requiring trips to replace failed drilling tools. In spite of these delays, there were no hole related issues during trips, minimizing costs during downtime.

The interval was drilled to depth at 9130'. Casing was run to bottom trouble-free and cemented. A comparison of drilling fluid costs between wells showed a reduction in fluid costs of nearly 40%. Further savings can be realized as EnerLITE is reused from well to well.

Details

Initial drill-out used a 9.3 lbm/gal system, maintaining weight below 9.5 lbm/gal throughout the interval. Premix additions and aggressive use of the dual centrifuges and 200 mesh screens kept low gravity solids below 6% v/v.

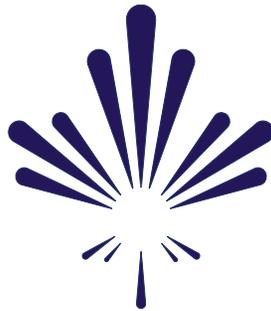
There were no issues with hole cleaning using a flow rate of 725+ gallons per minute and a 6 rev/min reading of 10-12°. Rate of penetration was controlled at 75 feet per hour.



Salt cuttings from the Salado formation



Drilling rig, located in Reeves county



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