# ENERLOC and EOSEAL II Team Up to Control Losses in the STACK When Other Products Fail

## CHALLENGES

Initial standard procedures recommended third party LCMs at 65 lb/bbl without proven results in the area

Total losses required additional volume deliveries while circulating at lower pump rates

Unable to maintain full returns at standard circulating rates

## SOLUTION

One 45 lb/bbl sweep consisting of 15 lb/bbl EOSEAL II†, 10 lb/bbl ENERLOC†, 10 lb/bbl CAL CARB MIX†, and 5 lb/bbl Cedar Fiber eliminated losses

Hourly treatments of sweep formulation enabled return to full circulating rate of 575 gal/min

## RESULTS

- Hourly treatments of sweep formulation enabled return to full circulating rate of 575 gal/min
- Drilled to TD without additional losses
- Mud volume losses of oil-based drilling fluid reduced 75% from previous wells

EOSEAL II (left) is a proprietary blend of cellulose fiber and polymer and ENERLOC (right) is a blend of granular and fibrous materials. Both blends are designed to address losses in challenging environments where typical lost circulation products fail.

## OVERVIEW

An operator was drilling in the STACK and encountered total losses. Standard treatments included sweeps of 65 lb/bbl third-party lost circulation materials with limited results. Partial circulation required an order of additional oil-based drilling fluid and reduced circulation rates to 350 gal/min, with limited hole-cleaning performance. Additional 45 lb/bbl sweeps failed to produce returns at 400 gal/min.

AES Drilling Fluids recommended a blend of 15 lb/bbl EOSEAL II, 10 lb/bbl ENERLOC, 10 lb/bbl CAL CARB MIX, and 5 lb/bbl Cedar Fiber based upon experience and the optimized blend of products for the thief zone. Losses were eliminated to the point where circulation resumed at typical circulation rates of 575 gal/min.

After applying the new treatment with EOSEAL II and ENERLOC, losses were eliminated while drilling.

## DETAILS

When the third party materials failed to produce results, the recommended sweep was pumped bypassing the shakers. After one sweep circulating rates reached 413 gal/min with no losses. Sweeps continued hourly, with rates reaching 575 gal/min.

Mud weight continued to elevate due to the bypassed shakers, so circulation returned across the shakers at 14,018'. Drilling commenced to TD without losses. Once on bottom with casing, partial losses were noted, with 778 bbl lost circulating and cementing. In the past, similar scenarios resulted in losses approaching 11,000 bbl. Compared to these scenarios, the EOSEAL II and ENERLOC treatment resulted in a savings of over $750,000 in mud losses.

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