



**AES DRILLING FLUIDS**

## CHALLENGES

- Control losses in the Cherry Canyon and Brushy Canyon formations known for losses
- Avoid short-setting of casing or loss of the well

## SOLUTION

- EnerSEAL MMH system to minimize fluid invasion into known loss-prone areas
- Drill surface with EnerSEAL to control surface losses. Drill salt in the intermediate with brine and displace to EnerSEAL prior to entering challenging formations.

## RESULTS

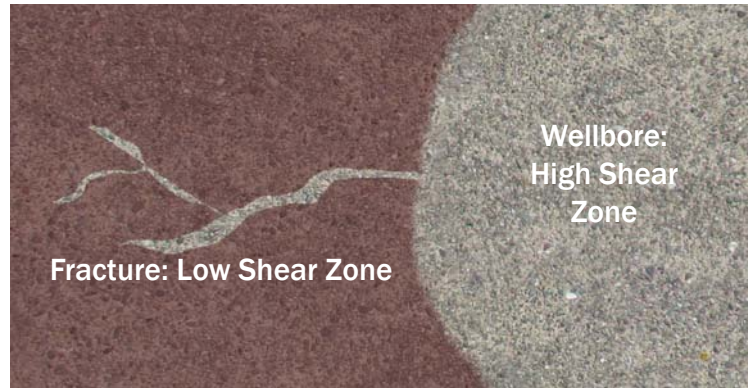
- Reached total depth without issues
- Casing set at planned depth and cemented with no losses, securing the well

# EnerSEAL<sup>†</sup> mixed metal hydroxide system controls losses, securing the well

## Overview

A client in Reeves County noted a number of offset wells with uncontrollable losses while drilling the Cherry Canyon and Brushy Canyon formations, resulting in stuck pipe, short set casing, and well abandonment. The client requested a fluid solution to prevent losses and lower the risk of well failure.

AES recommended EnerSEAL for its unique properties that make it an ideal system for lost-circulation prone areas. As fluid moves away from the wellbore, it reaches areas of lower and lower shear. In these low shear zones, EnerSEAL is extremely thick, limiting the ability for fluid to invade further into the formation.



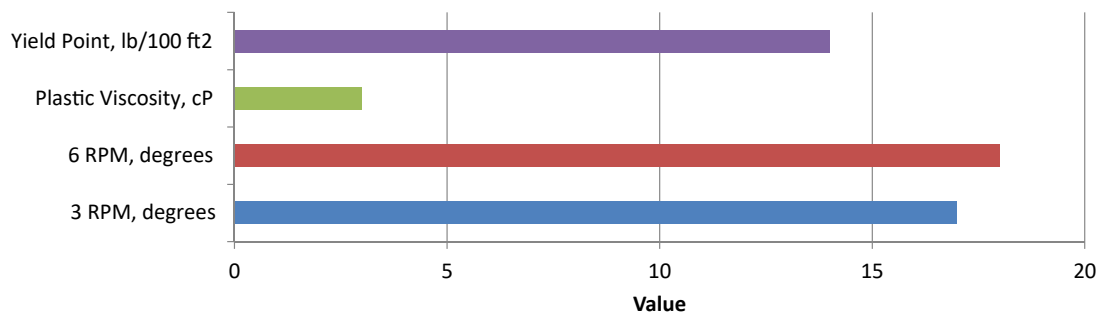
EnerSEAL mitigates losses as it becomes thicker at low shear, such as near fractures, slowing or eliminating lost circulation in troublesome zones such as the Brushy Canyon and Cherry Canyon formations

Both surface and intermediate sections were drilled with only seepage losses. The intermediate section featured a trouble-free casing run and zero losses cementing.

## Details

The 17 ½" hole section was drilled maintaining a mud weight between 8.6 and 9.3 lbm/gal using API 120 screens and the centrifuge to control solids. With the 13 5/8" surface casing set, the 12 ¼" section commenced using field brine to drill through the salt layer, minimizing washout. After clearing the salt, the well was displaced to the EnerSEAL system once again to complete the interval using a 9.0 - 9.1 lbm/gal mud weight.

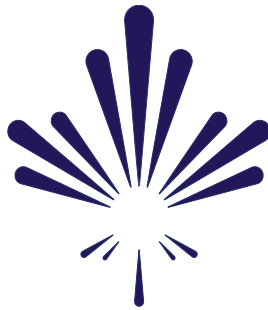
## EnerSEAL Rheology Readings at 120°F



Typical rheology while drilling the intermediate section with EnerSEAL

## **Details (continued)**

Drilling continued with regular additions of loss prevention material while maintaining the EnerSEAL properties to control losses, which did not exceed basic seepage rates. At 9,665' total depth was called and the fluid properties were reduced for a logging run. After logging, casing was run and cemented via a two-stage cement job. No losses occurred during either stage.



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[www.aesfluids.com](http://www.aesfluids.com)

[info@aesfluids.com](mailto:info@aesfluids.com)

**888-556-4533**

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