

EAGLE FORD OPERATOR UTILIZES MICRO STRENGTH⁺ TO STRENGTHEN WELLBORE, DRILL SECTION WITH NO LOSSES

CHALLENGE

- Mechanically weak Wilcox formation risks mud losses and wellbore instability.
- Maintaining wellbore strengthening material in narrow mud weight window.

SOLUTION

- 5 lb/bbl of MICRO STRENGTH loss prevention and wellbore strengthening material.
- Sand bed test to track and maintain MICRO STRENGTH performance.

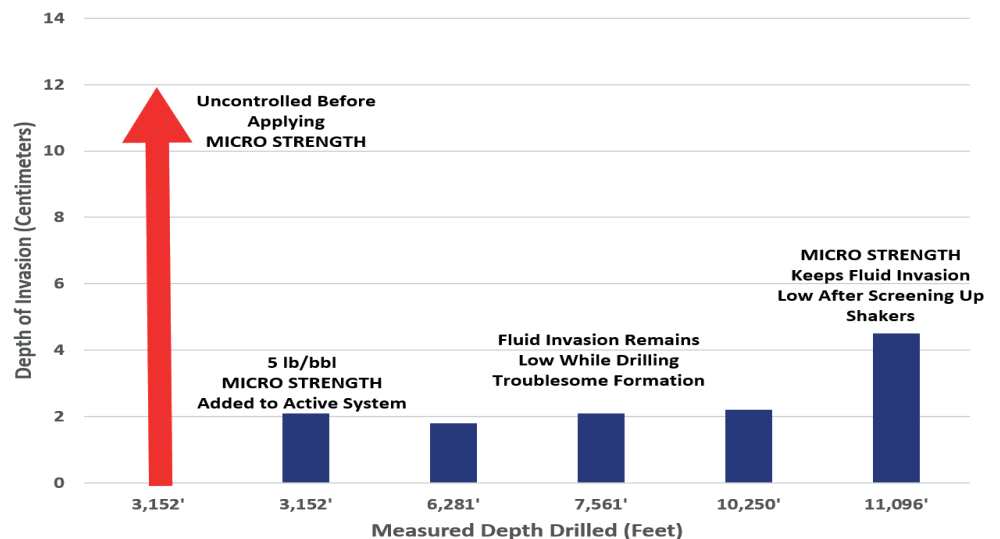
RESULTS

- No losses beyond minor seepage occurred while drilling troublesome Wilcox formation.
- Sand bed test indicated MICRO STRENGTH vastly reduced fluid loss.
- MICRO STRENGTH remained in the system after screening up shaker screens to 140/200 API mesh, no losses encountered through out curve and lateral sections.

OVERVIEW

An operator drilling in Gonzales County, Texas, planned to drill through the weak Wilcox formation in the Eagle Ford using oil-based mud. Offset well data indicated a risk of mud losses and wellbore instability while drilling the 8-³/₄" vertical section. Maintaining sufficient mud weight for wellbore stability without inducing mud losses is difficult to manage in these formations.

5 lb/bbl of MICRO STRENGTH was maintained as background material in the active system throughout the entire interval. MICRO STRENGTH is specifically designed to limit the propagation of drilling induced fractures, effectively strengthening the wellbore. It features a blend of materials with superior compressive strength and packing properties.



Sand Bed Test Results While Drilling 8-³/₄" Section with MICRO STRENGTH

DETAILS

Offset well data indicated a range of 10.0 to 10.2 lbm/gal mudweight to balance wellbore instability with the potential for whole mud losses. Before drilling out the section, shakers were dressed with API 45 mesh shaker screens. Sand bed testing before adding MICRO STRENGTH demonstrated uncontrolled fluid invasion. After treating the system with MICRO STRENGTH, the initial sand bed test resulted in 2.1 cm of invasion. As drilling progressed, 2 out of 3 shakers were screened up to 140/200 API mesh screens and the centrifuge was run intermittently to maintain mud weight. The sand bed test remained below 2.5 cm as no losses were encountered, notably while drilling through the Wilcox formation.

After screening up all shaker screens to 140/200 API, the sand bed test still remained below required specification of <5.0 cm of invasion after drilling the lateral section, indicating continued fluid loss improvement from MICRO STRENGTH.

Operator personnel indicated that MICRO STRENGTH did offer improved performance compared to other wellbore strengthening products used on previous wells on the same pad.

