

WelSAVER™ Controls Severe Losses and Enables Successful Drilling Through Olmos Formation in Eagle Ford Basin

Location: Frio County, Texas, USA

Application: Lost circulation control while drilling

Product: WelSAVER™ Advanced Multi-Modal Bridging Technology

Challenge

- Losses ranged from 55 bbl/hr to total losses
- Complex lithology encountered in Olmos conglomerate formations
- Approximately 3,500–4,000 ft drilled through unstable loss-prone formations
- Operator required reliable loss control to reach 19,000 ft TD in a single run

Solution

- Implemented WelSAVER multi-modal bridging technology
- Customized pill and sweep treatment strategy developed
- Particle blend engineered for Olmos formation loss zones
- Maintained drilling fluid weight of 10.4 ppg during treatment
- Collaboration between WelDril engineers and field team ensured proper placement

Results

- Complete elimination of fluid losses across the interval
- Zero nonproductive time attributed to lost circulation
- Stable wellbore conditions maintained throughout drilling
- Production casing successfully landed and isolated
- High-quality cement job achieved with strong zonal integrity

CHALLENGE

While drilling the intermediate section of a well in Frio County, Texas, the operator encountered unexpected formation behavior that resulted in significant drilling fluid losses. Loss rates ranged from approximately 55 barrels per hour to complete loss of returns, creating a high risk of nonproductive time and operational delays.

The wellbore traversed complex lithology within the Olmos conglomerate formations, including intervals of Escondido and Anahuac shale with underlying San Miguel or Bigford formations. These formations are known for structural instability, shale reactivity, and differential compaction, which can create challenging loss zones and unstable drilling conditions.

The operator's objective was to drill to the planned total depth of approximately 19,000 ft using an 8½ in. bit in a single trip, while maintaining circulation and ensuring wellbore stability. Achieving reliable fluid loss control across the interval was therefore critical to maintaining drilling progress and preserving zonal integrity.

SOLUTION

WelDril recommended applying WelSAVER™ advanced multi-modal bridging technology to mitigate the severe loss conditions encountered across the interval. WelSAVER is engineered with a broad particle size distribution designed to bridge fractures, vugs, and permeable formations, enabling rapid mechanical sealing and sustained circulation during drilling operations.

The WelDril engineering team designed a custom treatment strategy consisting of sweeps and pill applications, optimized for the Olmos formation and lateral drilling conditions. The engineered particle blend was placed strategically across the identified loss zones to improve sealing efficiency and fluid retention.

Throughout the operation, the drilling program maintained a 0mud weight of approximately 10.4 ppg, allowing the treatments to be deployed without introducing wellbore instability. Close collaboration between WelDril engineers and the operator's field team ensured proper placement and effective execution of the treatment program.

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RESULTS

The WelSAVER treatment program successfully controlled the severe losses and stabilized the wellbore throughout the drilling interval. Fluid losses were eliminated across the affected zones, allowing drilling operations to proceed without interruption. The well was drilled to total depth while maintaining stable wellbore conditions and without incurring nonproductive time associated with lost circulation events.

Production casing was successfully landed, followed by a high-quality cement job that ensured long-term zonal integrity.

The operator reported strong satisfaction with the treatment performance and subsequently stocked WelSAVER for use in upcoming drilling projects.