

WelSAVER™ Drilling Fluid Technology Eliminates Downhole Losses by 94%

Location: Denton County, Texas | **Formation:** Barnett Shale

Application: Lost Circulation Control and Wellbore Strengthening While Drilling

Product: WelSAVER™ Advanced Multi-Modal Bridging Technology

Challenge

- Offset Well 5H experienced 2,143 bbl of downhole losses at 8.5-8.6 ppg; reported depth: 25,819 ft
- Offset Well 6H experienced 637 bbl of downhole losses at 8.3-8.8 ppg; reported depth: 20,357 ft
- Well 9H encountered significant operational complications after reaching approximately 17,100 ft
- The operator needed to increase mud weight while maintaining circulation and controlling losses

Solution

- Implemented WelSAVER™ as part of a proactive wellbore-strengthening program
- Pumped sweeps every third connection
- Treatment contained 10 lb/bbl WelSAVER™, 5 lb/bbl CC Fine, and 5 lb/bbl CC Medium
- Used 146 sacks of WelSAVER on Well 9H; Well 8H used 108 sacks and reached a reported TD of 18,965 ft
- Increased mud weight to 9.5 ppg

Results

- Reduced downhole losses from the 2,143-bbl offset benchmark to just 127 bbl
- Achieved approximately 94% fewer losses than offset Well 5H
- Avoided more than 2,000 bbl of losses compared with the offset
- Drilled Well 9H successfully to a reported TD of 15,885 ft
- Ran casing with full returns

CHALLENGE

While drilling a multi-well pad in the Barnett Shale in Denton County, Texas, the operator experienced significant downhole losses on offset wells.

Offset Well 5H, drilled to a reported depth of 25,819 ft, recorded 2,143 bbl of losses while drilling with an 8.5-8.6 ppg mud weight. Well 6H, drilled to a reported depth of 20,357 ft, lost 637 bbl while drilling at 8.3-8.8 ppg.

Well 9H presented additional operational challenges. After drilling to approximately 17,100 ft, operations were suspended for top drive repairs. The drill string became stuck, leaving approximately 5,625 ft of fish downhole. An attempted sidetrack was unsuccessful, requiring the operator to set a cement plug and temporarily move to the next well on the pad.

When operations resumed, the operator needed a loss-control strategy capable of strengthening the wellbore, supporting an increase in mud weight, and avoiding the severe losses experienced on the offsets.

SOLUTION

WelSAVER™ was incorporated into the drilling fluid program as part of a proactive wellbore-strengthening and lost circulation strategy.

On Well 9H, sweeps were pumped every third connection containing:

- 10 lb/bbl WelSAVER™
- 5 lb/bbl CC Fine
- 5 lb/bbl CC Medium

A total of 146 sacks of WelSAVER™ were used while drilling Well 9H. The treatment program allowed the operator to progressively increase mud weight from approximately 9.0 ppg to 9.5 ppg while maintaining control of downhole losses.

WelSAVER™ was also deployed on Well 8H, where 108 sacks were used while drilling with mud weights ranging from 9.0 to 9.7 ppg. Well 8H reached a reported TD of 18,965 ft.

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RESULTS

The WelSAVER™ treatment delivered a substantial improvement in loss performance compared with the offset wells.

Well 9H recorded just 127 bbl of downhole losses compared with 2,143 bbl on offset Well 5H, an approximately 94% reduction in total losses.

That represents more than 2,000 bbl of avoided losses compared with the offset, even as the operator increased mud weight to 9.5 ppg.

Despite the earlier drilling complications, the operator was able to maintain circulation, increase mud weight, drill Well 9H to a reported TD of 15,885 ft, and run casing with full returns.

The results demonstrate the effectiveness of the WelSAVER™-based treatment in controlling severe fluid losses while strengthening the wellbore and supporting the higher mud weight required to complete drilling operations.