

Operator Controls Major Loss Event in GOM Deepwater Environment

BARABLEND®-680 LOST CIRCULATION MATERIAL HELPED SALVAGE THE WELL, REDUCE LOSSES, AND MOVE TO THE PRODUCTION ZONE WHILE SAVING OVER USD 1M

GULF OF MEXICO

CHALLENGE

- » Drill the 12¼-in. section of a bypass well to a horizontal (88 degrees) through multiple loss zones
- » Minimize NPT related to curing lost circulation event

SOLUTION

- » Used BaraBlend®-680 engineered composite LCM to seal large fractures
- » Spotted pills as losses were encountered during drilling

RESULTS

- » Reduced losses in bypass, so drilling could resume
- » Successfully reached target total depth (TD)
- » Enabled operator to continue to drill the production section

OVERVIEW

A major operator in the Gulf of Mexico encountered multiple loss zones drilling the overburden prior to reaching the production zone of a deepwater well. Severe losses were not expected based on offset well experience; however, the marl-bearing formation, which would be encountered as part of the well plan, can be easily fractured and, therefore, susceptible to losses. The objective was to minimize non-productive time (NPT) and reduce losses with an effective lost circulation material (LCM), in this case, BaraBlend®-680, as recommended by Baroid personnel for this application.



GOM deepwater drilling platform

CHALLENGE

Drilling the 12¼-in. well section to a horizontal (inclination of 88 degrees) through multiple loss zones was more challenging than drilling the pilot hole to 60 degrees. A further challenge was to keep NPT to a minimum during the curing process related to any lost circulation events, so that drilling could quickly resume. The operator sought Baroid's LCM expertise and technology to help accomplish its goals, despite the difficulties.

SOLUTION

BaraBlend-680 composite LCM was selected for its uniquely engineered design that helps seal large fractures—up to 3,000 microns in size—in depleted formations. Multiple pills were pumped at concentrations ranging from 20-ppb to 70-ppb to cure losses encountered during the drilling of the 12¼-in. bypass. This allowed the operator to successfully reach total depth (TD) and install the liner.

The well would not have been able to be drilled to TD without curing the severe losses encountered along the way. It is the highest profile well in the Gulf of Mexico for this operator at the present time, due to the next section being a lateral drilled with a customized reservoir drilling fluid to be followed by an open hole gravel pack.

RESULTS

Thanks to the BaraBlend-680 LCM treatments, downhole losses were significantly reduced, allowing the operator to run the liner and drill the production interval. This represented savings in excess of USD 1 million. For detailed results, see the job specifications chart below.

Hole size (in.)	MD, ft (m)	Lost Volume, bbl	BaraBlend-680 Concentration, ppb	Pill Volume Pumped, bbl	Results
12.25 in.	19,303 (5,884)	1242	70	100	Reduced losses and reduced mud weight by 0.2 ppg
	19,264 (5,872)	< 100	20	100	Reduced losses and drilled ahead
	19,613 (5978)	< 100	20	50	Pumped sweep and reduced mud weight to 12.2 ppg
	19,613 (5,978)	< 100	20	40	Regained circulation and ran the 9.875-in. liner

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