Case History

X-Prima™ Squeeze Remediates Deteriorating Wellbore

Lake Washington, Louisiana

Challenge
Total loss returns while drilling

Solution
Newpark's proprietary X-Prima squeeze

Results
Successfully remediated total losses and gained full returns

An operator drilling in Lake Washington, Louisiana, experienced total losses while drilling and sliding in sand and shale with a 14.1 lbm/gal (1,690 kg/m^3) oil-based drilling fluid. The mud weight was reduced to 13.2 lbm/gal (1,582 kg/m^3) in the surface pits and the pipe was then tripped out of the hole to surface casing shoe. After tripping back in the hole, attempts to circulate the 13.2 lbm/gal (1,582 kg/m^3) fluid while pumping conventional LCM sweeps were only met with failure. The decision was made to use an X-Prima squeeze for remediation of fractured formation.

A 100-bbl (15.9-m^3) self-contained mixing unit was delivered to the rig, and 75 bbl (11.9 m^3) of 13.2 lbm/gal (1,582 kg/m^3) slurry were built. After the slurry was built, the bit was run in the hole to deliver the slurry volume between the bit and the fracture. The slurry was bullheaded into the wellbore and casing pressure increased. The bit was pulled to the shoe and the hole was static for over an hour to allow sedimentation of slurry solids to occur. The drillstring was then rotated briefly to break gel strengths and the pump was turned on at 16 strokes/min. After five minutes with no losses, the pump rate was increased to 50 strokes/min and 1,730 psi (11,930 kPa) with full returns. The hole was circulated as mud weight was increased to 14.1 lbm/gal (1,690 kg/m^3) to control increasing gas levels.

This unique example of an extremely difficult and deteriorating wellbore exemplifies the recommendations as well as the product effectiveness delivered by Newpark technical staff. The success of the X-Prima squeeze enabled the operator to continue drilling operations as planned.

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