CASE STUDY

HALLIBURTON

Indonesia

Thixotropic cement cures severe losses and stabilizes wellbore offshore Indonesia

SentinelCem™ Pro cement eliminates sidetrack and saves operator USD $2.2 million

CHALLENGE

- Severe losses in fractured carbonate formation
- Wellbore instability
- Insufficient downhole pressure to prevent fluid influx

SOLUTION

- Pump SentinelCem Pro™ cement through BHA
- Mix with available bulk cement for fast execution

RESULT

- Reduced losses from 505 to 24 bbl/hr
- Eliminated sidetrack and saved USD $2.2 million
- Maintained wellbore stability
- Achieved early compressive strength

Overview

Severe lost circulation, wellbore instability, and influx threatened drilling progress and well control offshore eastern Indonesia. Conventional lost circulation materials (LCMs) and cement plugs delivered limited success, often forcing costly sidetrack operations. The operator required a fast, reliable solution to restore stability and avoid delays.

Challenge

The operator drilled the 8.5-in. production section and encountered severe to total losses after penetrating a fractured carbonate formation 900 ft above target depth. For five days, the team attempted to mitigate losses using conventional methods, including a cement plug, but every attempt failed. During this period, influx and instability worsened, which increased complexity and risk. Multiple trips between the drilling BHA and cement stinger jeopardized well control, extended downtime, and raised HSE concerns, which threatened the well completion schedule.

Solution

Halliburton recommended the use of the SentinelCem Pro™ cement system to address the lost circulation event. Its low abrasion and thixotropic properties allowed it to be safely pumped through the BHA. The system penetrated fractures and sealed the loss zone while quickly developing gel strength and early compressive strength. Its 50-lbm sack packaging and compatibility with available bulk cement enabled rapid mixing and execution under tight timelines.

The operation pumped 60 bbl of SentinelCem Pro directly through the BHA, which eliminated the need to trip out of hole and trip back in with open-ended pipe. This approach reduced nonproductive time (NPT) significantly. After the treatment was pumped and while waiting on cement, the system quickly developed gel strength and early compressive strength. This stabilized the wellbore and allowed drilling operations to resume successfully, passing through the initial loss zone without further complications.

Result

The prompt application of SentinelCem Pro™ cement allowed the operator to continue drilling to reach target depth at a manageable loss rate. The loss rate was reduced from 505 to 24 bbl/hr in dynamic condition and 0 bbl/hr in static condition. The treatment also addressed the hole-stability issue. The operator saved USD $2.2 million by avoiding the planned contingency sidetrack and completed the well on schedule. SentinelCem Pro cement delivered a fast, effective solution that minimized risk and maximized operational value.

Operator saved USD $2.2 million by avoiding the planned contingency sidetrack.

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