

Tailored Spacer System Helps Mitigate Losses and Enhance Cement Bond Log in Largest UAE Offshore Field

FIRST GLOBAL APPLICATION OF TUNED® DEFENSE™ CEMENT SPACER ENABLES FULL CEMENT RETURNS TO SURFACE

OFFSHORE MIDDLE EAST

CHALLENGE

- » Prevent lost circulation during cementing and successfully circulate cement to surface

SOLUTIONS

- » Tuned® Defense™ cement spacer to mitigate lost circulation
- » BridgeMaker™ II LCM to help prevent severe losses

RESULTS

- » Mitigated dynamic losses
- » Achieved excellent bond logs
- » Avoided sustained casing pressure, eliminating the need for remedial operations to secure zonal isolation
- » Operator added Tuned Defense cement spacer to its program for future wells
- » Avoided sustained casing pressure, eliminating need for remedial operations to secure zonal isolation, and resulted in estimated cost savings of USD 760,000

ESTIMATED COST SAVINGS OF
USD 760K



OVERVIEW

Lost circulation is commonly encountered in drilling and cementing practices, and can be a costly problem that increases non-productive time. Various methods may be applied to control losses, ranging from the application of best operational practices to the incorporation of lost circulation materials (LCMs) in treatment fluids and cement slurries. Development of new tailored solutions could help meet operator requirements for preventing losses, bringing cement to surface, and achieving a dependable barrier.

CHALLENGE

An operator experienced dynamic losses while drilling a production well in a large offshore field in the Middle East. Losses of 12 bph to 60 bph occurred during drilling of the 12¼-inch intermediate hole to 8,700 feet (2652 meters) at nearly 60° deviation. The well plan called for 9½-inch casing to be run and cemented to surface; however, previous wells had not achieved cement to surface. Sustained casing pressure between the 9½-inch casing and the previous 13¾-inch casing was identified as a high risk. Previous unsuccessful attempts to manage losses and circulate cement to surface involved the addition of LCM to conventional spacer fluids that were not formulated with specialized loss control features. Halliburton Cementing was tasked with implementing a new solution to help this operator avoid future losses.

SOLUTION

Halliburton Cementing applied its Tuned® Defense™ cement spacer with 10 lb/bbl of BridgeMaker™ II LCM at a density of 12 lb/gal. The team pumped approximately 180 bbl of volume ahead of the cement slurry. The tailored cement spacer system utilizes additive synergies to help prevent lost circulation in porous and fractured formations. Tuned Defense cement spacer was designed to optimize cementing jobs where losses are observed, and, in this case, to incorporate additional LCMs in order to help prevent severe losses and achieve desired cement returns to surface.

RESULTS

Tuned® Defense™ cement spacer helped ensure that the operator was able to bring cement to surface, and that cased-hole logs showed excellent cement bonding. Sustained casing pressure was avoided, thus eliminating the need for remedial operations to secure zonal isolation. This elimination of remedial work helped the operator save an estimated six days of rig time, resulting in estimated cost savings of up to USD 760,000 for this well. With these successful results, the operator planned to add Tuned Defense cement spacer to its program for future wells.

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