

CASE HISTORY

Increase in the operating window, avoiding the sacrifice of a casing and reducing drilling times with the use of FLC[®] technology in the Quesqui 49 well in Mexico.

North America – Tabasco, Mexico OVERVIEW

CHALLENGE:

- ▶ Find areas of low gradient and highly permeable formation.
- ▶ Avoid running a sacrifice casing.
- ▶ Reduce possible sticking events due to differential pressure.
- ▶ Improve wellbore stability.
- ▶ Improve ROP and reduce drilling time.
- ▶ Avoid mud losses in the interval.

SOLUCIÓN:

- ▶ FLC 2000[®] y FLC[®] SUPREME added to the circulating system
- ▶ FLC[®] EXTREME pill
- ▶ LCP 2000[®] pill
- ▶ ROCKBLOCK[®] 5 pill

RESULT:

- ▶ Operating window was increased by more than 900 psi equivalent to 0.11 g/cm³.
- ▶ Kept the well stable in the sandstone zone.
- ▶ The section was completed in 26 days
- ▶ Reduced fluid loss while drilling 10 5/8" inch hole and 12 1/4" inch expander.



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In the Quesqui 49 well, prior to drilling the 9 7/8 stage, the 11 3/4" liner was placed at 4,542m on a section of 50% low gradient sandstone, in such a way that when starting to drill the shoe of 11 3/4", severe circulation loss was immediately observed, with a loss rate up to 15 m³/hr with a density of 2.02gr/cc.

Shoe drilled from 4541 to 4542 m, suspended due to observing severe loss of circulation of 24.8 m³ of fluid of 2.02 g/cc.

Electric Registers shown reliable evidence of the complexity that the field presented, which despite the fact that the 11 3/4" liner was settled in a safe area, which was confirmed with the real-time records of the previous stage

It can be seen how at the exit of the Shoe there is a sand with a lower gradient, which could not withstand the start density, and which caused high mud losses at the beginning of the stage, which with team synergy, good practices combined with the use of FLC hole reinforcement technology, they could be solved, reaching the maximum densities and being able to complete the stage successfully.

SOLUTION

Cure severe circulation loss by pumping a 14m³ pill with a concentration of 350 kg/m³ of FLC products (150 kg/m³ Rock Block 5 + 150 kg/m³ of LCP 2000 + 50 kg/m³ of FLC Extreme)

Once the severe loss of circulation has been cured, It was added 20 kg/m³ of FLC 2000 + 10 kg/m³ of FLC Supreme to the circulating system.

The concentrations of the low invasion materials FLC were modified while drilling according to the behavior of the well.

RESULT

Severe loss of circulation at the beginning of the drilling was cured

The operating window was increased, being able to reach a maximum ECD of 2.15gr/cc

It was possible to increase the density of the circulating system above the permissible limits in the loss zone, gaining an increase in the ECD of more than 900 psi (0.11 g/cm³).

Partial losses that occurred during drilling were reduced to zero.

It was not necessary to run an additional sacrifice Casing to reach the geological stage of the program

The stability of the well was improved, no resistance, high torques or stuck pipe attempts were recorded.

Drilling was achieved to a depth of 7,090m, *programmed depth