BaraKlean®-648 casing cleaner provides client with optimized displacement, superior environmental performance

CENTRAL NORTH SEA, U.K. SECTOR

CHALLENGE

The operator needed an effective, environmentally sanctioned casing cleanout product during displacement to completion brine.

SOLUTION

The Baroid team recommended the BaraKlean®-648 casing cleaner, which requires lower concentrations than other cleaners and is approved for use in the North Sea.

RESULTS

The BaraKlean-648 treatment cut three hours off the displacement procedure, reduced waste, and saved the operator more than USD 4,000.

OVERVIEW

When a client needed an optimal casing cleanout that would minimize the volume of waste and be environmentally safe, Halliburton Baroid provided its BaraKlean®-648 casing cleaner and Completion Fluids Graphics (CFG™) displacement modeling software, thus saving the client hours on the displacement and thousands of dollars in cleanout costs.

CHALLENGE

An operator in the North Sea sought an effective, high-quality casing cleanup when displacing from a 9.5-ppg solids-free BARADRIL-N® reservoir drilling fluid to a 9.6-ppg blended sodium chloride/potassium chloride (NaCl/KCl) completion brine. Two key objectives were to maximize efficiency and minimize the volume of waste.

SOLUTION

Pill formulations were tested in the laboratory to determine the best option, and BaraKlean-648 casing cleaner was shown to be superior as it could be used in lower amounts compared to other cleaners, thus reducing the volume of waste.

The BaraKlean-648 casing cleaner also provides environmental benefits as it does not carry a substitution warning issued by the U.K.'s Centre for Environment, Fisheries and Aquaculture Science (Cefas). Products assigned the warning must be phased out within a certain time frame. Because it carries no such warning, the BaraKlean-648 casing cleaner can be adopted and used without concern that it will soon no longer be available.

To optimize the completion fluid design and displacement parameters, Baroid's CFG displacement modeling software was used. The software simulates the effects of critical parameters like pump rates, circulating pressures, and annular velocities. The selected values were then be incorporated into the design of service prior to executing the cleanout and displacement.

The operator benefited from the environmentally superior cleanout product, which yielded excellent results at lower concentrations. The BaraKlean®-648 pill, along with the CFG™ modeling, saved three hours on the displacement and approximately USD 4,260 in cleanout costs.

Baroid experts communicated the results of the CFG modeling, along with the procedure for using BaraKlean-648 casing cleaner, to the onsite engineering and service personnel through pre-job briefs and offshore toolbox talks.

RESULTS

In contrast to other cleaners used in previous wells, the BaraKlean-648 pill did not foam during mixing. In the field, a 4 percent volume/volume BaraKlean-648 wash pill was pumped after a push pill, and clean brine returns were observed, tested, and confirmed. After collecting the cleanup train returns, the clean fluid was circulated, ensuring no contamination and a solids content less than 0.05% was achieved.

The operator benefited from the environmentally superior cleanout product, which yielded excellent results at lower concentrations. The BaraKlean-648 pill, along with the CFG modeling, saved three hours on the displacement and approximately USD 4,260 in cleanout costs.

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