

New Technology Provides an Engineered Solution for Operator in Complex Wellbore Cleanup

“MOST COMPLICATED CLEANOUT THAT I HAVE SEEN IN MY CAREER AND IT WENT FLAWLESS”

NORTH SEA, NORWAY

CHALLENGE

A single-trip operation to perform a negative test of a liner top, clean four casing sections and displace the well prior to running the completion

SOLUTION

Halliburton wellbore cleaning tools are designed to perform single-trip operations.

- » Turbo Tech II valve allows high flow rates when open during cleanup
- » String allows reciprocation during displacement
- » Single-trip saves time and cost

RESULTS

Flawless execution resulting in a well prepared for completion operations

- » Casing sections clean and prepared for completion assemblies
- » Successful negative test on liner top
- » Well displaced to completion fluid, meeting clients required fluid cleanliness specification
- » Eliminated an additional two runs

OVERVIEW

A major operator in the Norwegian sector of the North Sea was planning a single-trip inflow test and displacement wellbore cleanup run on one of its high profile wells. The client required a string design that gave them the flexibility to perform a negative test and allow for high flow rates during the reverse circulation phase when displacing the well to seawater. A complex string set up was necessary to achieve all of their requirements as a single-trip solution.



CHALLENGE

The operator asked Halliburton to design a single-trip solution to scrape packer setting areas, conduct a negative test and a full wellbore displacement. This particular well had four casing sections (5 in., 7 ¾-in., 10 ¾-in., and 13 5/8-in.) down to a depth greater than 20,000 feet. The operator needed Halliburton to effectively clean all casing sections, conduct a negative test on the 7 ¾-in. x 10 ¾-in. liner top, and achieve high enough annular velocities to prevent solids from dropping out in all casing sections during the displacement of the well from mud to completion fluid. Cleaning of the smaller liner sections was absolutely key and had been a cause for concern when working with a competitor on previous wells.

“Most complicated cleanout that I have seen in my career and it went flawless”-operator’s completion engineering manager.

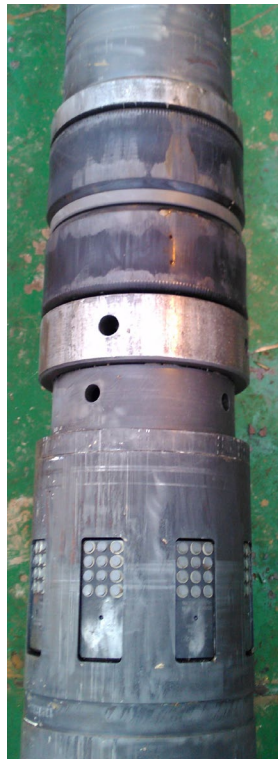
SOLUTION

The Halliburton Turbo Tech® II valve circulating sub provided the operator with a reliable weight-set tool, which meant the string could be pulled clear of the liner top for high rate circulations. Additionally, the tools could rotate and reciprocate the string during the fluid displacement, improving the efficiency and reducing the time it takes to complete the well. The Inflow Tech® packer combined with the Setting Control Module (SCM) allowed the operator to place the negative test packer as close to the liner top as possible for testing, as well as to pull the string into tension and reciprocate the string during the clean-up. The key elements to this customized solution was Halliburton's ability to provide a single-trip clean up, negative test and displacement string.

RESULTS

The operation was completed flawlessly, exceeding the operator's expectations for such a complicated wellbore cleanup operation. Challenges like the space-out between the four casing strings, the functioning of ball activated tools, as well as two compression-set tools to complete the single trip operation were completed successfully due to proper planning and Halliburton's ability to provide the best engineered solution.

By achieving the operator's objectives in a single-trip, Halliburton was able to eliminate up to two additional runs and recover 82 kg of debris, saving both time and money.



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