

Enhanced Solution for Wellbore Cleanup Operations Maximize Asset Value

CLEANWELL® SOLUTIONS DELIVER OPERATOR A DIRECT SAVINGS OF \$400K

GULF OF MEXICO

CHALLENGES

An operator required a wellbore cleanup and displacement solution for a high-profile deepwater operation.

- » 7,000 ft water depth
- » 40 degree maximum deviation
- » Displace drilling mud to completion brine
- » Accelerate filtration rates

SOLUTIONS

Halliburton recommended CleanWell Solutions, a comprehensive wellbore cleanup and displacement service.

- » Solids-free transition spacer system and software
- » 12 CleanWell riser and casing cleaning tools
- » BaraClear™ Hi-Flow DE filtration system

RESULTS

Operations were completed with zero HSEQ, zero NPT, and zero COPO.

- » Saved 60% of mix time
- » Recovered 500 lbs of debris
- » Saved \$400K in operation costs

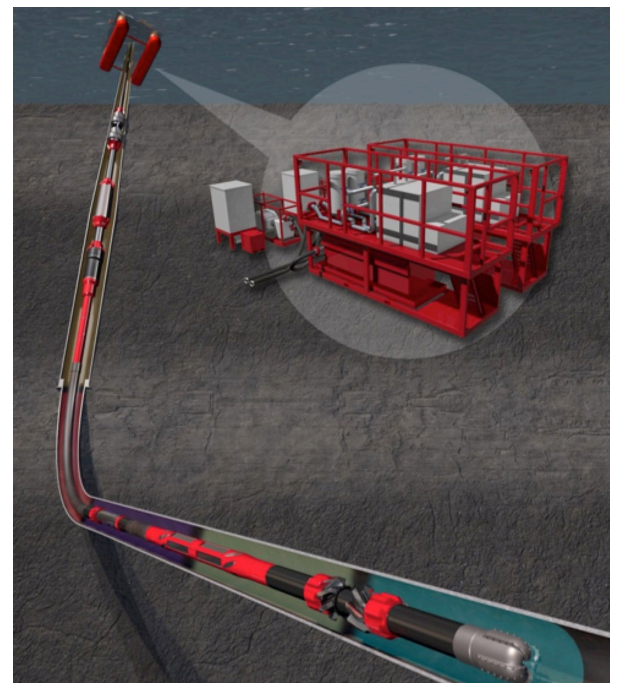
OVERVIEW

For a deepwater, Gulf of Mexico project, an operator turned to Halliburton to deliver an integrated solution for their wellbore cleanup and displacement operation. Halliburton delivered with CleanWell® Solutions, an integrated service comprised of tools, chemistry, filtration, and software modeling to reduce trips in the well, minimize rig time, and improve operational efficiency.

CHALLENGES

Halliburton was tasked to plan and execute a wellbore cleanup and displacement solution for a high-profile deepwater operation. Finding the right mix of cleanup tools and chemistry to ensure optimized performance was the objective, but many pieces had to come together for the plan to be successful.

Halliburton needed to first provide a detailed proposal, complete with hydraulics and torque and drag modeling for a well in close to 7,000 ft of water with a maximum deviation of 40 degrees. Next, the team needed to design and implement a series of cleanup pills specific to the well and rig fluid system. A comprehensive set of wellbore cleanup tools for both the riser and casing sections had to be thoroughly vetted and arranged to ensure that all debris could be extracted. The filtration unit, working in tandem with the pills and tools, had to also allow for accelerated online filtration rates of up to 5,000 bbls of completion fluid to ensure overall operational efficiency.



HAL 121424



HAL 121425

Mag Tech® riser magnet recovers 97.43 lbs of well debris.



HAL 121426

9 7/8-in. Bristle Tech® brush was residue free when pulled out of hole

SOLUTION

To help achieve the operator's objectives, Halliburton recommended CleanWell Solutions, a fully integrated wellbore cleanout service. This comprehensive wellbore cleanup and displacement service combines mechanical cleanup tools, chemicals, filtration services and leading edge proprietary software modeling.

A smooth transition from drilling to completion is key to ensuring our customers meet their production targets. Halliburton made certain that this transition was delivered in a consistent manner with all strategic design and engineering parameters being considered.

Halliburton designed a solids-free transition spacer system and validated the recommendation with extensive lab testing. The team then utilized Completions Fluids Graphics (CFG™) software to finalize pill volumes, recommend flow rates, and to predict flow regimes when circulating.

Halliburton provided a total of 12 tool assemblies specific for the well profile for the following dedicated runs:

- » Run # 1 - Drill out tie-back and shoe track cement
- » Run # 2 - Displacement from drilling mud to completion fluid
- » Run # 3 - Installation of the suspension plug
- » Run # 4 - Retrieve suspension plug
- » Run # 5 - Retrieve wear bushing

To ensure there were no potential torque and drag issues, WELLPLAN™ software was used for accurate analysis of the operation.

After reviewing previous operational reports supplied by the customer and conducting a rig survey, Halliburton utilized its BaraClear™ Hi-Flow DE filtration system due to its ability to filter at rates in excess of 32 bbl/min.

RESULTS

The operation was completed in a safe manner with zero HSEQ incidents and zero non-productive time attributed to the cleanup and displacement phase, as well as zero dollars assigned for cost of poor quality.

The introduction of the new solids-free transition spacer system saved approximately 60% of mix time in comparison to standard cleanup pills and CleanWell tools recovered close to 500 lbs of ferrous and non-ferrous materials. Completion fluids were processed at up to 32 bbl/min (double the rates of standard equipment) and the introduction of the Hi-Flow DE filtration system saved the customer \$400K in operational costs.

The operator spoke highly of Halliburton's collaborative efforts and upfront planning, loadout of equipment, and the execution of all planned procedures on the rig. CleanWell Solutions saved time and money for the operator, ensuring the wellbore was free of any debris and fluid cleanliness levels were achieved.

www.halliburton.com

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