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Wellbore Cleanup Best Practices – A North Sea Operator’s Experiences

Abstract

Wellbore clean up is a critical component of any new well construction. Failure to adequately clean the wellbore can cause major difficulties in running the completion resulting in large amounts of NPT with all the associated costs. Conversely, performing over-complicated clean ups to ensure success adds additional risks and unnecessary extra cost. This paper examines an operator’s experience with wellbore clean ups over a wide range of assets in the UK and Norwegian sectors of the North Sea. The operator wished to reduce the time taken by developing best practice guidelines. This would provide a common approach to wellbore clean up operations over all assets.

Using reports from 19 offshore wells completed between 2002 and 2004, the time taken during clean up operations was split between nine categories:

- Running Tools
- Chemical Clean up / Displacement
- Pit Cleaning
- Waiting on Equipment
- Waiting on Weather
- Pressure Testing
- Non clean up Ops
- Safety Events
- Waiting on Permits

This allowed the causes of extended time to be identified and pinpointed the areas where most time could potentially be saved. Some of these were:

- Clean up tool failures
- Over-complicated tool-strings
- Becoming stuck due to over ambitious toolstrings
- Rig equipment failures
- Incomplete tools being sent offshore
- Repeating of chemical clean up due to wellbore filters being full of mud/debris
- Delays while waiting for pit cleaning to be completed
- Lessons not being learned from other assets

These and other causes were further examined and discussed by operator staff in a workshop and vendor interviews. Guidelines were then developed by combining existing good practices from different assets and other industry experience.

Background

Talisman Energy is one of the largest oil and gas operators in the UK sector of the North Sea. At the time of this study, Talisman operates a wide ranging portfolio of assets in the UK and Norway comprising of platforms, FPSOs and many Subsea developments. Talisman has acquired all of these assets from other operators, normally retaining the staff and, to an extent, the working practices of the previous operator. As a result, there can be differing ‘best practice’ approaches between personnel working on different assets. For this reason as well as reviewing benchmarking data, a study was initiated with the aim of developing in-house wellbore clean up best practices to allow a common, efficient approach across all assets and operations.

Benefits of Guidelines

- Will provide uniform approach across all assets.
 - Lessons learned across assets are captured to ensure continuous improvement.
 - Aid development of less experienced Engineers.
 - Will reduce overall time of clean ups through consistent best practice use.
 - Reduced time = Reduced costs
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