CASE STUDY

HALLIBURTON

Offshore Malaysia

Operator optimizes deepwater drilling practices and reduces invisible lost time with integrated remote operations

LOGIX™ automation and remote operations reduced connection times, improved borehole integrity, and helped prevent damage to casing and downhole tools

CHALLENGE

- Drill deepwater well within safe-zone limits
- Operation faced inefficiencies related to washing, back-reaming, and circulating

SOLUTION

- Reduced reaming from full stand to one joint per connection
- Replaced systemic back reaming with step-based approach
- Modified hole-cleaning practice to prevent washouts and cementing issues
- Updated POOH procedure to protect casing and downhole tools
- Improved operational efficiency with LOGIX™ rig states and hydraulic modeling

RESULT

- Reduced bottom-to-slip time by three hours
- Optimized borehole cleaning
- Maintained safe ECD limits
- Reduced risk of damaged casing and downhole tools
- Decreased non-productive time (NPT)

Overview

In offshore Malaysia, an operator faced significant invisible lost time (ILT) due to non-optimized drilling practices in deepwater operations. The operator collaborated with the Halliburton integrated remote operations (IRO) and engineering teams to seek more efficient practices and stay within safe operating limits. Using advanced technologies such as LOGIX™ rig states and hydraulics modeling, the IRO team addressed inefficiencies in washing, back reaming, and circulating. The optimized practices resulted in substantial time savings, increased hole integrity, and reduced risks of damaged casings and non-productive time (NPT). The recommendations and solutions provided by the IRO team led to positive outcomes for the operator.

Challenge

The primary challenges included excessive time spent washing and reaming full stands during each connection in a 16-in. hole, with bottom-to-slip time that exceeded targets. There was also systematic back-reaming due to overpull while pulling out of hole (POOH) in the 12 ¼-in. and 8 ½-in. sections. In addition, there were inefficient hole cleaning and back-reaming practices in the 8 ½-in. section.

3 HOURS

Halliburton efficiencies reduced connection time by three hours

Solution

To resolve the inefficiencies, LOGIX™ rig states and LOGIX™ hydraulics modeling components were implemented to help improve connection times, optimize borehole cleaning, and keep equivalent circulating density (ECD) within safe limits. These digital tools helped the IRO team monitor rig activity, issue alerts for critical events, track performance, define areas of improvement, identify trends and provide recommendations.

With these capabilities, the team implemented several key operational changes to improve operational efficiency. One of the improvement was made in the 16-in. hole section, where reaming was reduced from a full stand to just one joint per connection.

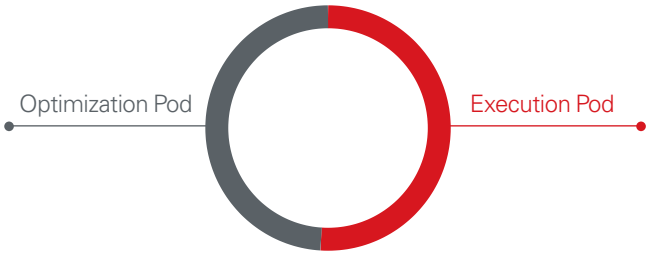
This change helped save three hours on connections. In the 12 ¼-in. and 8 ½-in. sections, the IRO team, in collaboration with engineering, recommended replacing the systemic back reaming with a step-based method. This approach reduced overpull, preserved the mud-cake, and enabled multiple successful trips without unnecessary back reaming. The team also revised the practice of circulating the hole clean after the section total depth to racking stands every hour to avoid washouts and cementing issues. Lastly, the POOH procedure was updated to stop circulation and rotation when passing through the shoe and casing, protecting both casing and downhole tools.

Result

Engineering expertise combined with LOGIX™ automation and remote operations resulted in improved practices for back reaming, washing, and circulation. These capabilities further enabled timely analysis and remote interventions to improve drilling outcomes and reduce bottom-to-slip time by three hours.

The customer acknowledged the engineering team's suggestions and the IRO team's interventions as valid and actionable recommendations. Upon successful project completion, the operator incorporated optimized practices into their standard drilling processes for consistent, high-performance execution.

Integrated Remote Operations



- Multidisciplinary team composition
- Domain expertise
- Fit-for-purpose digital enablers
- Integrated workflows & protocols
- Integral part of engineering team
- Entire well construction life cycle

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com