

NOV's Automated Real-time Torque and Drag Data Collection and Monitoring System Helps Optimize Well Construction

Innovation in action

A client needed to acquire and evaluate accurate torque and drag data in real time to ensure good hole cleaning, reduce NPT, and enable control and monitoring of wellbore friction. NOV worked with the client, using the cerT&D real-time torque and drag data collection and monitoring service, to enable immediate analysis of downhole conditions, greatly reducing their torque and drag risks and helping ensure all casing runs reached TD.

- Helped reduce NPT caused by hole cleaning and stuck pipe situations
- Ran all casing strings to TD without damage to equipment or casing

Technology

NOV's cerT&D™ automated real-time torque and drag data collection and monitoring system provides real-time information on downhole friction and hole issues during deviated drilling operations. The service works in conjunction with rigsite instrumentation, providing torque and drag data that helps make necessary adjustments to reduce the chances of getting stuck, lower the risk of damaged equipment, and improve wellbore quality. The service provides a real-time collaborative tool for all involved in the drilling process, from the driller at the rig to the drilling engineer and the drilling manager in the office.

Performance

Our cerT&D system was deployed in the client's three-well batch-drilling campaign. This operation consisted of three intermediate sections where the well would build from vertical to land at 90° inclination, and three lateral production sections of more than 6,562 ft (2,000 m). The client was able to use the cerT&D service to effectively monitor torque and drag while drilling, ensuring good hole cleaning was achieved for the rates of penetration that were drilled. Drilling and tripping data was also used in real time to update friction factors for the casing operation models, helping ensure each casing run would reach total depth (TD).

Results

All three wells were drilled without nonproductive time (NPT) caused by tight holes, poor hole cleaning, or stuck pipe while drilling, and all casing runs successfully reached TD without damage to the equipment or casing. The cerT&D service proved valuable in monitoring wellbore conditions both at the rigsite and remotely via the WellData™ RT application, equipping all members of the drilling team with an effective solution for addressing torque and drag concerns.

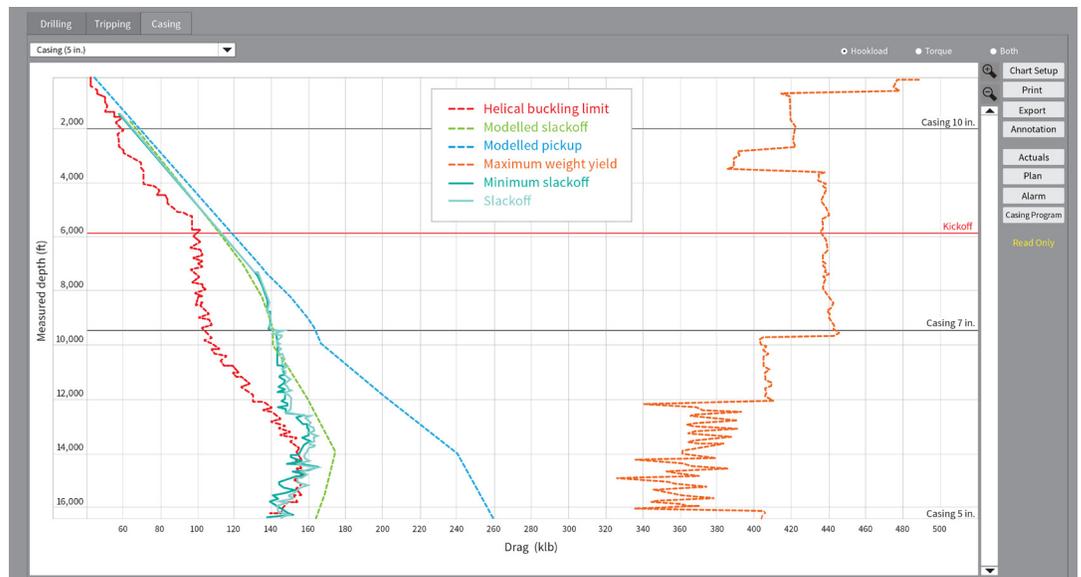


Figure 1 – The real-time production casing drag plot is used to monitor and follow the casing run, ensuring proper actions are taken when drag is in close proximity of the modeled helical buckling limit.

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