

Torque Reduction and Casing Protection of S-Shaped Well with Shallow Sidetrack

Shallow Sidetrack

Operator had to sidetrack at a shallow depth in an S-shaped well which resulted in a severe dogleg. This dogleg has raised the concern of casing wear and resulted in high torque while drilling the 12-1/4" section. WWT's Non-Rotating Protectors (NRPs) were used to reduce the torque and minimize casing wear.

NRP Recommendation

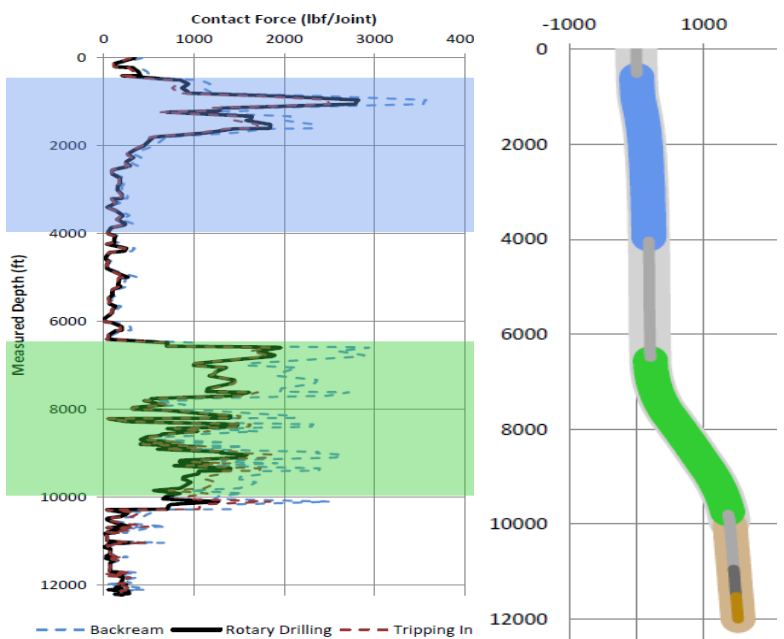
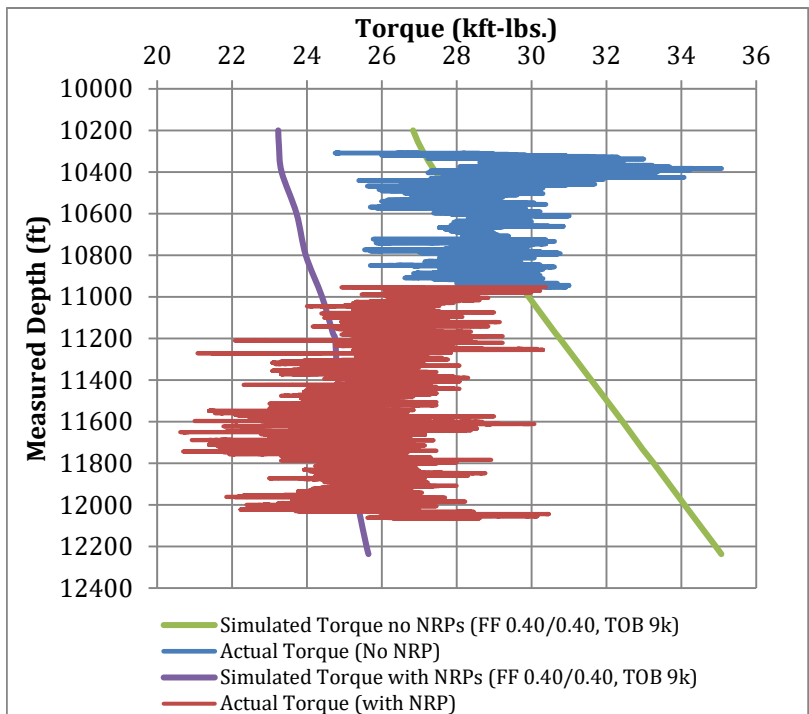
WWT Performed Torque and drag analysis to decide the optimum NRP placement and the model that will be used to reduce the torque and protect the casing in this well. HT-550 model was used to compensate for the high wellbore temperature. 228 NRPs were installed to cover the two high side force areas. The side force diagram and the vertical projection represent the NRPs placement at the TD of this section.

Around 16% Immediate Torque Reduction upon installing NRPs

The 12-1/4" section was drilled to 10,953ft without NRPs. The torque trend before installing the NRPs followed the simulated torque values without NRPs for 0.40 friction factor for cased hole and open hole. After installing NRPs, the torque started to follow the simulated torque value with NRPs for the same friction factor, achieving an immediate 16% torque reduction. More NRPs were installed while drilling to reduce the torque further. At TD, 21% torque reduction was achieved compared to the simulated torque value without NRPs.



Location: Middle East
Well Type: S-Shaped
Objective: Torque Reduction & Casing Protection
Solution: WWT HT-550 NRPs
Results: 21% Torque Reduction



WWT Non-Rotating Protectors
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