



WWT Non-Rotating Protectors

WWT Non-Rotating Protector Provides Torque Reduction Case History - ME - 11752

WWT NRPs Reduce Torque in Challenging ME Well

Executive Summary

High torque was expected on a directional well for a major ME operator. WWT's Non-Rotating Protectors (NRPs) were installed for torque reduction in the 8.5 in. section and resulted in 18% on bottom and 24% off bottom torque reduction.

NRP Performance

WWT NRPs were installed to cover the build section of the well and covered from 752 ft to 7,066 ft MD when the bit was at TD. WWT SS3-550 model NRPs were installed at a frequency of one per joint to provide tool joint stand-off with the casing in the area of concern, and effectively reduce torque.

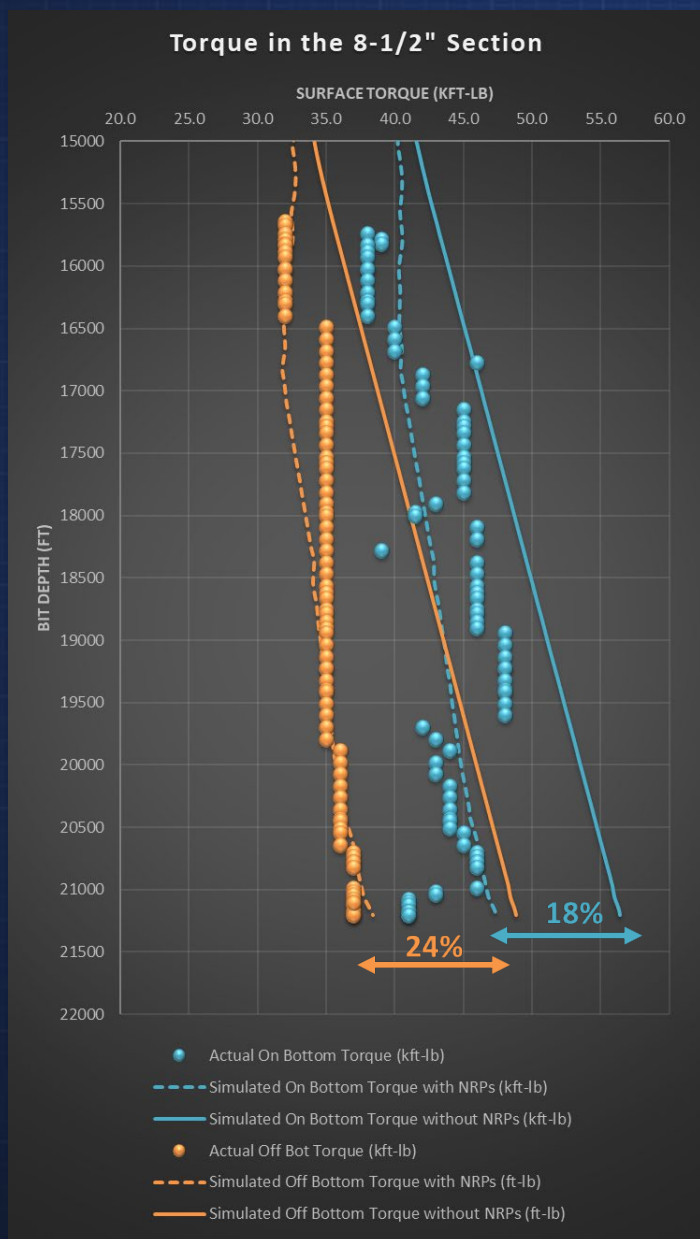


Figure 1 : Actual torque and simulated torque for friction factors 0.27 CH and 0.35 OH.

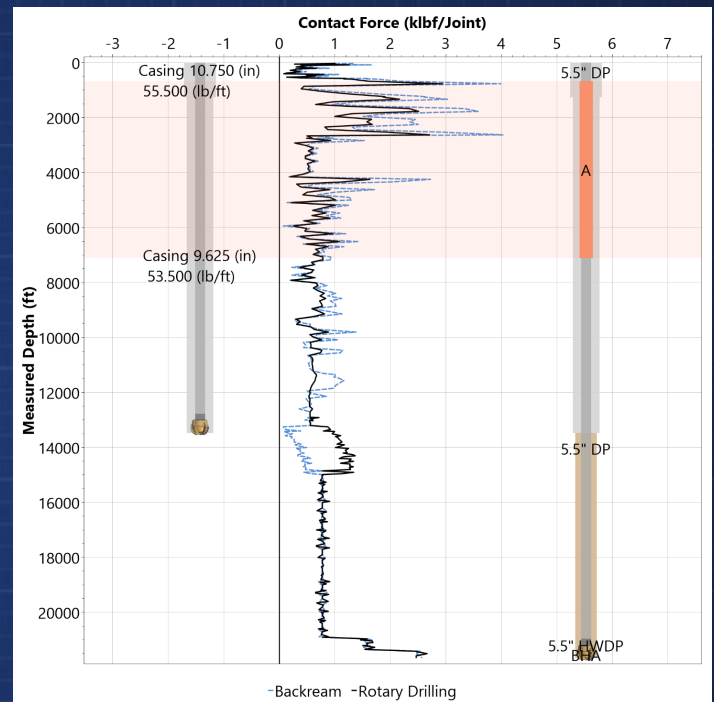


Figure 2: Contact force and protector placement graph.

NRP Performance

- Backmodels showed FFs 0.27 CH and 0.35 OH matched actual On-bottom and Off-bottom torque..
- Average ROP fluctuated between 70 ft/hr and 100 ft/hr throughout the section
- RPM remained steady throughout the section at around 120 c/min.
- **WWT NRPS** yielded:

18% Reduction for On-Bottom Torque
24% Reduction for Off-Bottom Torque
from backmodeled simulations