

Reduced Torque and Rig Cost due to Non-Rotating Protectors

High Torque on 5kft laterals

While drilling 5kft laterals, the operator experienced the rig operating at max torque. This was problematic as longer 7.5kft laterals were planned. The operator looked at ways to reduce torque and avoid a costly upgrade to the rig's top drive. After considering lubes, WWT Non-Rotating Protectors were selected as the way to reduce torque for the upcoming extended laterals.

NRP Recommendation

WWT Non-Rotating Protectors (NRPs) were recommended to be installed in the build section of the well. A total of 100 SS3-500 NRPs in open hole were installed mid-span at a frequency of one per joint to reduce the effects of buckling and whirl. The shaded blue area in the projected vertical section plot represent the NRP placement at TD.

Estimated Torque Reduction

Prior to installing NRPs, the torque trend indicated friction factors of 0.40 to 0.50. Torque gradually decreased after installing NRPs at approximately 7,000ft MD. Comparing torque trend prior to installing NRPs to the actual torque at TD suggests a reduction of 16%. Using NRPs has allowed the operator to drill longer 7.5kft laterals without upgrading the top drive. This is an estimated savings of \$1 million based on metrics provided. Additionally, upgrading the top drive would have resulted in approximately 2 weeks of downtime for the rig, an increase the daily rig rate, and extended their contract with the drilling contractor.



Location: Permian
Well Type: Horizontal
Objective: Torque Reduction
Solution: WWT SS3-500 NRPs
Results: Torque and Cost reductions

