

OKLAHOMA OPERATOR ENHANCES BIT AND BHA INTEGRITY, REDUCES FAILURE AND REPAIR COSTS

H&P Reduces BHA Count From 3 to 1 and Saves an Estimated \$165,000

Challenge

A major operator drilling in the Woodford formation of central Oklahoma wanted to reduce stick slip, which is a common issue while drilling wells in the relatively young Merge play. This reoccurring issue often caused costly bit and bottom hole assembly (BHA) damage, leading to additional time spent on the well due to extra trips and BHA changes.

Solution

H&P identified the key challenges and recommended FlexTorque® software as a resolution.

FlexTorque technology reduces vibration from stick slip that can lead to BHA damage by maintaining constant bit speed based on the model created by the unique BHA configurations.

Outcomes

After installing FlexTorque software on one of wells and comparing its KPIs to a well that did not install H&P technology, the operator recognized the true impact FlexTorque technology had on achieving their desired outcome.

Torque Standard Deviation

- 64% reduction in the average torque standard deviation, indicating a smaller severity of torque swings.

Intermediate Section BHA Count

- 66% reduction in total intermediate BHA count – reduced from a total of three to one.

Total Days on Intermediate Section

- 20% time savings of total days spent drilling the intermediate section – a reduction from 8.3 days to 6.6 days.

Additional Savings

- \$165,000 estimated cost reduction from nonproductive time and BHA savings.



PROJECT OVERVIEW

Location

Grady County, Oklahoma
Woodford Formation

Outcomes

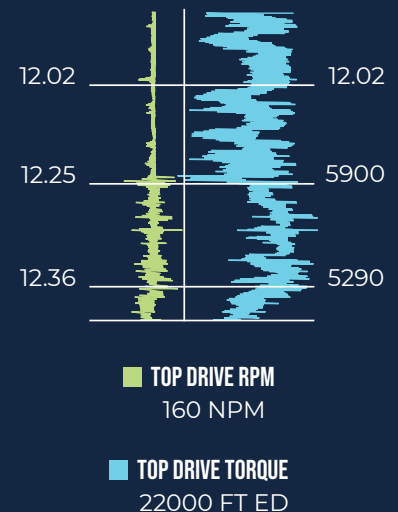
- Enhance Bit and BHA Integrity
 - Reduce Failures and Repair Costs

Technology & Services

- FlexTorque® Software

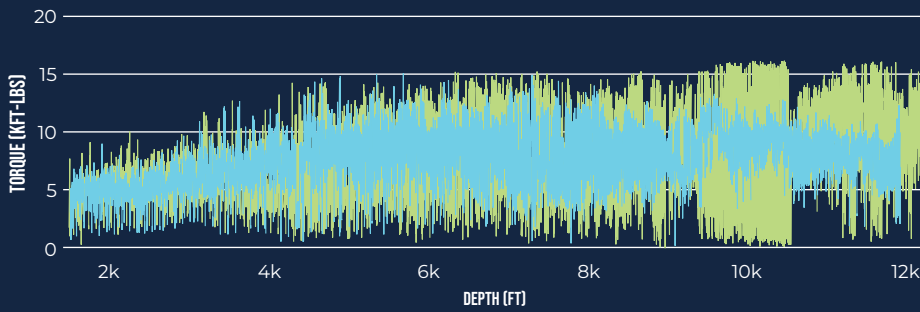
Are you looking to achieve a similar outcome?

[Contact us today.](#)



TORQUE COMPARISON

Reduce torque fluctuation by utilizing FlexTorque® technology

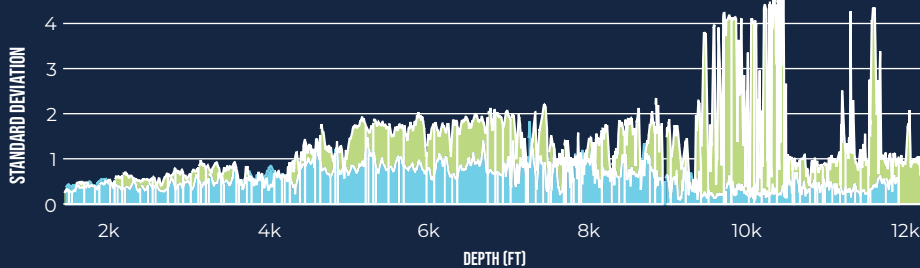


■ STATUS QUO TORQUE
■ FLEXTORQUE® TORQUE

Note the difference in torque responses throughout the intermediate section.

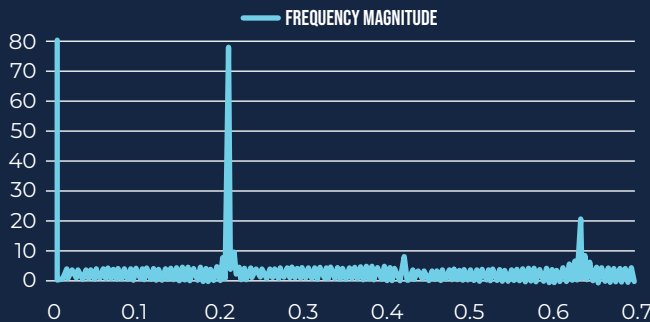
Much less torque fluctuation is seen on the well using FlexTorque technology.

TORQUE STANDARD DEVIATION COMPARISON



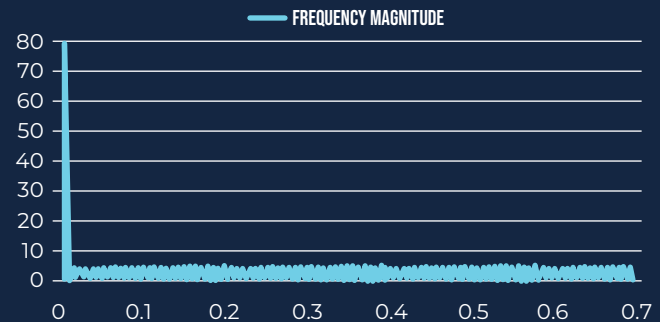
■ STATUS QUO TORQUE
■ FLEXTORQUE® TORQUE

The problem section between 9,350 ft and 10,470 ft saw an 88% decrease in standard deviation of torque with FlexTorque technology.



STATUS QUO

The first graph from the offset well shows a resonant frequency at 0.210Hz and an additive echo at 0.631Hz, indicating a high severity of torque.



FLEXTORQUE® TECHNOLOGY

The second graph is from the FlexTorque technology well in the same trouble zone, but FlexTorque technology has eliminated all resonant torque fluctuations.



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