



AlphaApps™

Z-Torque & Twister II
CANADA - ONSHORE
CASE STUDY

CHALLENGE

To improve overall drilling productivity by overcoming drilling dysfunction and sliding efficiency

SOLUTION

Use AlphaApps™ Z-Torque and Twister II to mitigate stick-slip and reduce drag forces while sliding for direction control

RESULT

Increased drilling productivity to 0.42 days/1,000ft when compared to 2,900 offsets in the operators North American Unconventional division

AlphaApps™ Z-Torque and Twister II Records Increased Drilling Productivity in North American Unconventional Shale.

THE CHALLENGE

Friction between the BHA and the borehole wall is a common cause of drilling dysfunction that results in reduced ROP, pronounced equipment failure, and reduced wellbore quality.

While drilling Rotational friction forces cause severe torsional oscillation known as stick-slip. While sliding, axial friction creates drag forces that impede adequate weight to the bit to maintain directional control. To facilitate reduction and negating these frictional forces, our operator in the Groundbirch area added the use of two Alpha Apps to overcome these challenges.

AlphaApps™

The Z-Torque application mitigates stick-slip by using advanced algorithms to react to and prevent the buildup of torsional energy in the drillstring while rotating. The software application integrates with the Alpha Automation platform and seamlessly interacts with the top drive system to control harmful energy.

TwisterII is an advanced software application used to control the top drive system with oscillations allowing relief from axial friction. The operation is conducted while sliding and the automation system uses user defined parameters of number of turns, direction of turn and speed to turn to overcome friction and transfer weight to the bit while controlling toolface in a consistent manner.

THE RESULTS

By effectively using Z-Torque and Twister II, the operator was able to achieve a record drilling productivity of 0.42 days/1000ft in their North American Unconventional (Shale) divisions when compared against 2,900 wells within the division. This performance was achieved using a mud motor and saved the operator cost when evaluating the days/1000 feet similar to that of the rotary steerable tool in the lateral sections of the wells. The performance of the apps was also replicated on other wells on two pads with similar BHA configurations (Figure 1).



Our leading-edge Alpha™ suite of technologies maximize drilling performance and produce consistent reliable performance.

RECORD DRILLING
PRODUCTIVITY

0.42 days/1,000ft

for North American
Unconventional Shale
wells when measured
over 2,900 offsets

FIGURE 1

Comparison of drilling productivity as days/1,000ft on two consecutive pads in the operator's area.

