

SPIRO-TORQ® CASE HISTORY #1

‘Pregnant Lady’ Well Profile

Location : Caribbean

The Well Profile in this case generated significant side forces which in turn directly contributed to a high surface torque prediction at TD.

The complete section from the 9-5/8” Casing Shoe to TD was planned to be drilled in one bit run, using Rotary Steerable technology, a distance of over 5,000ft. Predicted Surface Torques of around 40,000ft lbs were close to the limits of both the Drillpipe and the Top Drive, hence the need to reduce the Torque using our Non Rotating Sleeve Type (NRST) Spiro-Torq®s.

Spiro-Torq®s were placed (at one tool per stand of drillpipe (93ft)) to cover the zones of high side forces, with additional tools placed above these zones to provide continuous coverage during the bit run.

A distinct advantage of the NRST Spiro-Torq®s was their ability to withstand the open hole environment without harm. The long bit run necessitated movement of a portion of the tools into the open hole. Any other type of device would have required special trips to be made to displace tools away from the Casing shoe (with consequent enormous wastes of rig time and money). The use of a low coefficient of friction chromium alloy bearing surface also precluded any limitation to rotary speed of the drillpipe, essential to ensure efficient operation of the Rotary Steerable system.

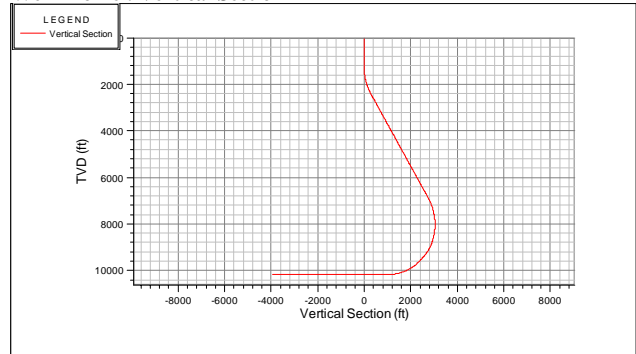
In total 141 NRST Spiro-Torq®s were deployed in the string, with Torque reduction of around 23% observed.



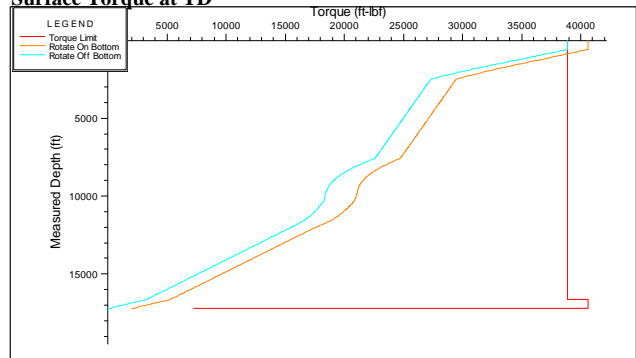
Non Rotating Sleeve Type Spiro-Torq®



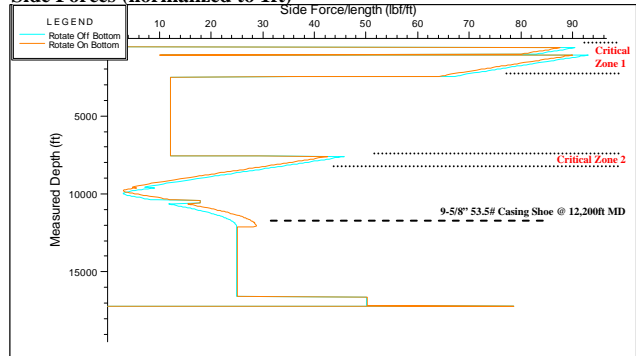
Well Profile : Vertical Section



Surface Torque at TD



Side Forces (normalized to 1ft)



Spiro-Torq® Placement PRIOR to Bit Run

