

Case Study



HI TOOL® Harmonic Isolation Tool Assists in Setting Longest Footage and Highest Rate of Penetration in Field

An operator sought a solution to reduce vibrations and BHA damages in the Middle East.

OBJECTIVE

An operator in the Middle East sought a solution to achieve vibration mitigation and bottom hole assembly (BHA) protection while drilling a 8 ½” lateral section. They also wanted to increase the overall efficiency of the drilling operation.

SOLUTION

The HI TOOL® was selected to provide optimum vibration mitigation and BHA protection while drilling, and was positioned above the logging while drilling (LWD) tool. This would decouple the drill-string from the important directional tools in the lower BHA. By protecting the lower BHA, the rotary steerable system (RSS) would track truer and the bit would stay directly engaged to the formation enabling a more efficient drill.

RESULTS

The presence of the HI TOOL® placed above the LWD tool allowed for an efficient re-distribution (decoupling) of the vibration energy back into the wellbore. This resulted in a more efficient transmission of torque/energy down to the bit for more efficient drilling and protected the LWD/MWD tools from vibrational harmonics. Mitigating these vibrations also allowed for the use of higher rotations per minute (RPM) with lower weight on bit (WOB). This helped to achieve higher penetration rates and more flexible control of WOB.

BENEFITS

- Successfully drilled the longest drain geosteering section in field, 12,140 feet in length.
- Achieved the highest average ROP (86 fph) and highest average on bottom ROP (122 fph) in field.
- Customer stated that the synergy between the bit, RSS, HI TOOL®, and NAF delivered a safe operation and smooth hole trajectory.
- Reduced axial vibrations, lateral vibrations, and stick-slip.
- Bit came out in green, rerunnable condition with dull grading 1-1-WT.



Drilling Technologies



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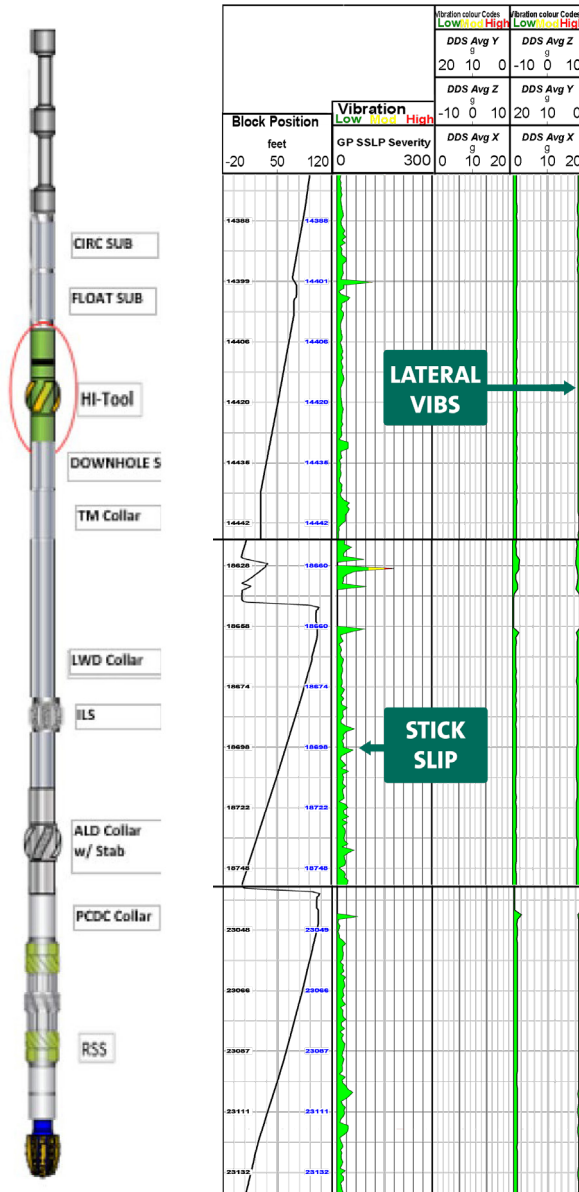
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Snap #1
14,380 ft
to
14,445 ft

Snap #2
18,625 ft
to
18,750 ft

Snap #3
23,047 ft
to
23,135 ft



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