

Kuwait Oil Company Saves 4 Drilling Days Using Xplorer Bit with Xplorer Helix Configuration

Tungsten carbide insert bit with spiral configuration increases ROP 107% over best-in-field ROP in interbedded soft and hard formations

CHALLENGE

- Increase ROP while drilling 4,500-ft intervals through interbedded soft and hard formations where previous bits were damaged due to impact.

SOLUTION

- Drill using the Xplorer* premium roller cone drill bit with Xplorer Helix* spiral insert configuration to achieve a higher ROP without compromising durability or hole quality.

RESULTS

- Increased ROP 107% over the best field ROP.
- Drilled faster, saving 4 drilling days.



Increase ROP while drilling a challenging well with a high risk of impact damage

Kuwait Oil Company needed to drill a vertical 28-in section from approximately 500-ft to 5,000-ft MD through highly interbedded soft and hard limestone, dolomite, anhydrite, and shale layers. While drilling, they discovered that the formations, combined with unconfined compressive strength (UCS) values ranging from 6,000 to 24,000 psi, caused impact-related breakage and chipping on the cutting structures. This led to a decrease in ROP. Additionally, the section was very long, which meant that seal and bearing life were an important aspect for the roller cone bit design.

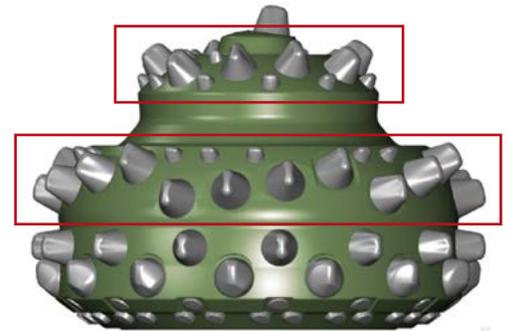
Kuwait Oil Company needed to maintain cutting structure, seal, and bearing durability so that the section could be drilled in one trip.

Drill using the Xplorer bit with Xplorer Helix configuration

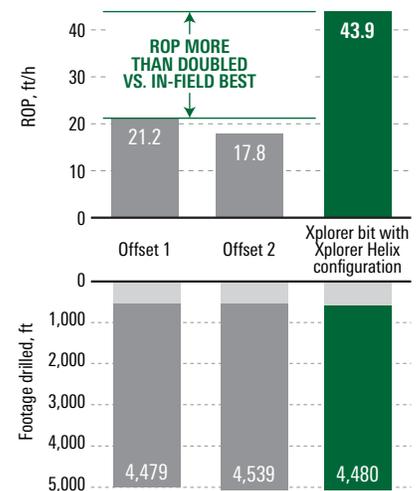
Schlumberger suggested an Xplorer bit with Xplorer Helix configuration to achieve a higher ROP without sacrificing the dull condition of the bit. The bit features arrays of staggered carbide inserts that better handle impact and can drill the section to TD in one trip.

Saved 4 drilling days over AFE

The Xplorer bit set a new benchmark, achieving an ROP 107% greater than the fastest ROP in the field in similar applications. The use of this bit saved a total of 4 drilling days. When the bit was pulled out of hole, the dull condition on the bit was in good condition.



Xplorer bits with the Xplorer Helix configuration provide better bottomhole coverage to improve ROP without sacrificing durability.



With similar footage drilled, the Xplorer bit significantly outperformed offsets.



After reaching TD, the Xplorer bit was pulled out of hole, and the dull condition on the bit was in good condition.

slb.com/rollercone

Drill Bits

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