

Kymera hybrid drill bit tripled the distance of other bit, saving \$160,000 USD

An operator in Southeastern Turkey was drilling in a well-known, challenging field of interbedded anhydrite, limestone, chert, sandstone, dolomite, shale, and claystone. The operator's main objective was to drill efficiently to increase performance through the chert and the softer layers.

This type of interbedded formation is perfect for the **Kymera™ hybrid drill bit**, from Baker Hughes, a GE company (BHGE), which combines PDC and roller cone bit technology or smoother drilling, remarkable torque management, and precise steerability.

Because the Kymera bit is designed to leverage the cutting superiority of polycrystalline diamond compact (PDC)

bits in soft formations and the rock-crushing strength and stability of roller cones successfully drilling, it successfully drilled the interbedded chert.

The Kymera bit was equipped with three cones, three blades, and an impact-resistant, 19-mm cutting structure with BHGE **StaySharp™ application-specific premium polished cutter technology**.

The diamond-polishing process used for the cutters decreases friction on the cutter face to improve wear resistance and run life.

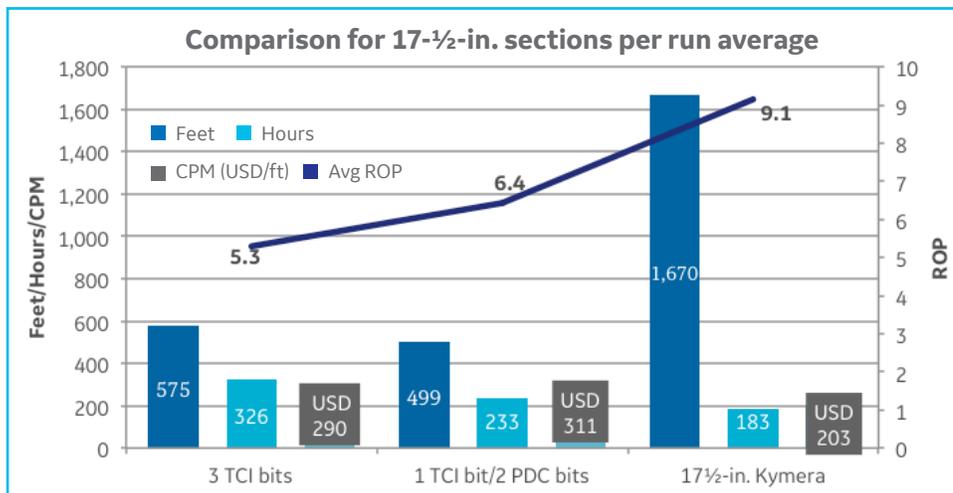
The Kymera drilled 1,660 ft (506 m) in the medium/hard section of the formation at 9.2 ft/hr (2.8 m/h), increasing the ROP almost by 43% when compared to another well drilled in a similar formation.

Challenges

- Highly interbedded formation of anhydrite, limestone with abundant chert
- Reduce number of trips and maximize ROP

Results

- Saved a total of \$160,000 USD
- Maintained an average overall ROP of 9.2 ft/hr; approximately 75% higher than offset wells
- Reduced drilling time by 144 hours by reaching TD in one run
- Maintained effectiveness of bearings even after 1.1 million revolutions
- Accomplished a single run of 1,660 ft in 182 hours
- Replaced three tungsten carbide insert and PDC bits
- Saved more than \$108 USD per foot drilled

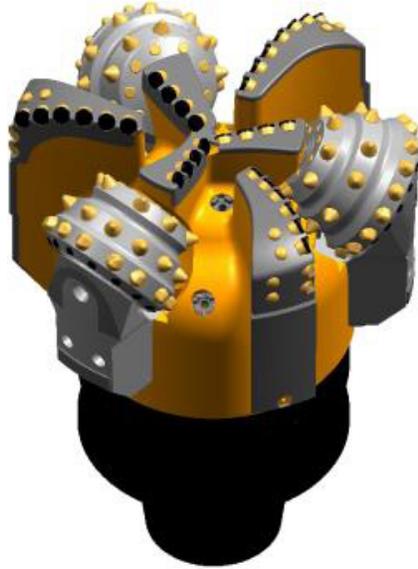


Performance of the Kymera bit when compared with other bits used in an offset well.

The Kymera bit also drilled three times longer than tungsten carbide insert and PDC bits used previously in the formation.

Although the cutters were worn due to the hardness of the formation and the hours on-bottom, the bit drilled smoothly and efficiently along the entire run to total depth (TD). The Kymera bit was pulled out of hole after 182 drilling hours with the bearings intact and still effective.

The Kymera bit drilled up to 75% faster than standard tricone bits and 43% faster than PDC bits. The bit drilled the section in a single run, enabling the operator to cut a total of 144 drilling hours (six rig days), decreasing the cost per foot to \$203 USD for a total savings of \$160,000 USD.



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