



8-1/2-in. Hedron[®] Fixed Cutter PDC Bit Sets Record in Deepwater Exploration Well

DRILLED INTERVAL 45% LONGER THAN THE PREVIOUS LONGEST OFFSET AND IMPROVED ROP BY 68%

CARIBBEAN

CHALLENGE

- » Design a new bit to enhance durability in a deepwater exploratory environment

SOLUTION

- » Use of DatCI™ process and IBitS™ software to customize an 8-1/2-in. Hedron[®] HDi75DMKF fixed cutter drill bit
- » Razor™ 4D-shaped cutters designed for the toughest and most abrasive applications
- » Cerebro Force™ in bit sensing technology to provide direct, in-bit measurements of weight, torque, bending, vibration, and rotational speed
- » Oculus™ automated dull grading technology to capture and precisely dull grade every cutter on the drill bit

RESULT

- » 1,034 m drilled at 27 m/hr. ROP
- » ROP 68% faster than the previous record
- » 45% longer interval than the previous best offset
- » Valuable field insight provided by Cerebro Force™ in-bit sensing report

CHALLENGE

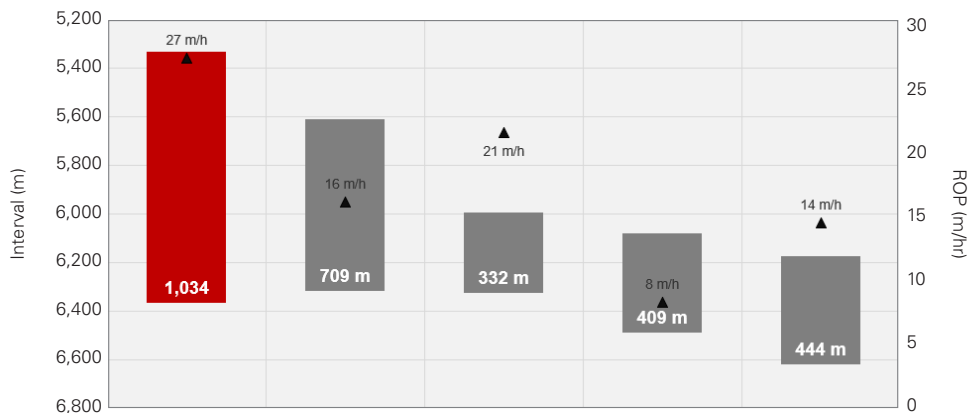
With a focus on continuous improvement, an operator in the Caribbean regularly evaluates its technology needs. Their goal is to reliably drill each new well farther and faster, so they recruited Halliburton to improve drilling operations for a deepwater exploration well. The team determined they required a new bit design to enhance durability and performance compared to previous offset wells.

SOLUTION

The team selected an 8-1/2-in. Hedron™ HDi75DMKF drill bit, which combines state-of-the-art technology with an industry-leading customization process to deliver the highest-performing, application-specific design on the market. The bit was designed using the design at the customer interface (DatCI™) process along with proprietary IBitS™ drilling software.

The bit was equipped with Razor™ 4D-shaped cutters specifically designed for the toughest and most abrasive applications. The bit was also outfitted with Cerebro Force™ in-bit sensing technology, which records weight, torque, bending, vibration, and rotational speed at the bit. Oculus™ automated dull grading technology was used to capture and precisely dull grade every cutter on the drill bit, allowing the design engineers to quickly identify trouble zones and optimize the bit design.

8-1/2-in. Exploration Well Performance



RESULTS

The team drilled a 1,034 m section at an outstanding ROP of 27 m/h using the optimized bit configuration, reaching the planned measured depth (MD) to run wireline logs. This interval was 45% longer than the previous longest offset well drilled and ROP improved by 68% compared to the previous record. This resulted in operational time savings for the operator, and a report generated using the Cerebro Force in-bit sensing technology provided valuable field insight.

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