

Middle East

Utilization of the DatCI™ process enhances bit design, improving ROP and section delivery time

Performance record set by drilling 2,336 feet with a motor BHA, achieves an ROP of 267 ft/hr

CHALLENGE

- Design a drill bit to improve ROP for an unconventional vertical deep gas application, with the ability to be rerun

SOLUTION

- Conducted a holistic application study using the Design at the Customer Interface (DatCI™) process
- Hedron® drill bit with additional backup and updrill cutters

RESULT

- Drilled 2,336 ft using a motor BHA
- Achieved an ROP of 267 ft per hour, the highest in the field
- Pulled the bit in rerun condition, demonstrating reliability
- Reduced section drill time, resulting in cost savings for the operator

Challenge

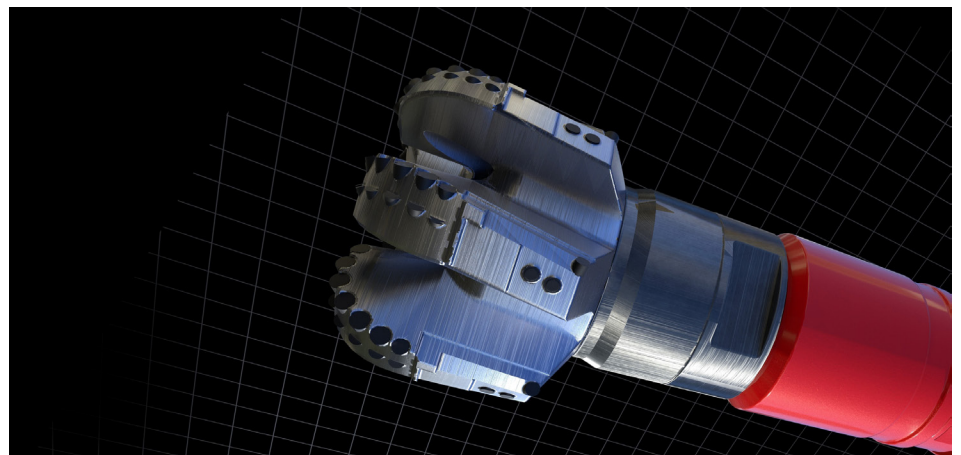
An operator approached Halliburton to engineer a bit for an unconventional, vertical deep gas application. The operator had been experiencing low rates of penetration (ROP) with previous bit configurations and sought improved performance and rerunnability.

Solution

Halliburton conducted a comprehensive application study and employed the Design at the Customer Interface (DatCI™) process. Within this process, Application Design Evaluation (ADE™) specialists collaborated with the customer to define specific bit solutions.

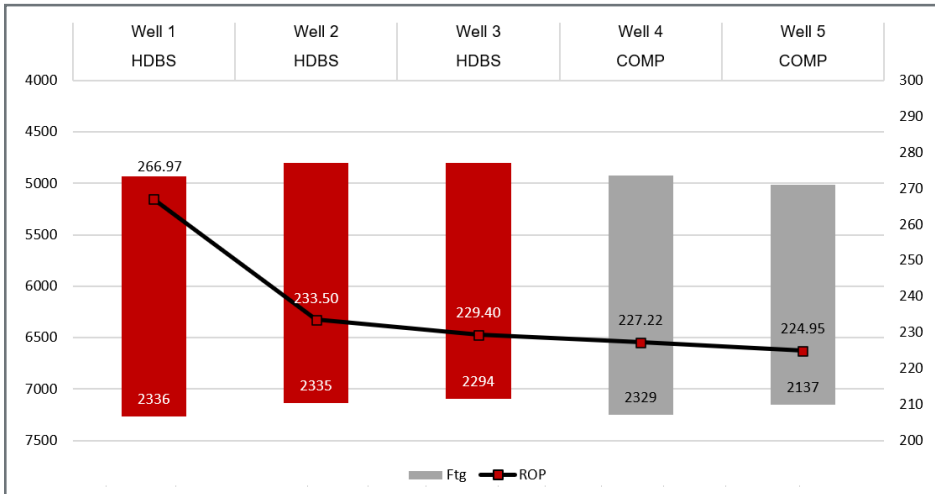
The chosen solution was the Hedron® fixed cutter drill bit. To optimize efficiency, enhance performance, and reduce cost per foot (CPF), the ADE specialist made several adjustments:

- Backup cutters were added in the last row to improve coverage where damage was observed
- Back ream cutters were replaced with updrill cutters to enhance retention
- Parameters in the top half of the section were increased to boost ROP



Result

The Hedron drill bit successfully drilled 2,336 ft using a motor BHA. It achieved an impressive ROP of 267 ft per hour, which was the highest in the field at the time. This performance represented approximately a 15% improvement over the previous field record. The bit's reliability was demonstrated when it was pulled in rerun condition. Additionally, the reduced section drill time resulted in cost savings for the operator.



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