

A True One-Trip Section Milling Solution with New Milling Technology Successfully Delivers 50 meter Section Lengths.

Using the ProMILL* system, two 50 m sections were successfully milled using knives dressed with both WaveEdge* and a new milling insert technology.

CHALLENGE

A customer required a one-trip solution to perform both cut-out and section mill two 50 m (164 ft) sections to allow the placement of rock-to-rock well abandonment barriers. In both cases, the sections were planned to be at a high well inclination.

SOLUTION

The ProMILL system was deployed to perform the cut-out and section mill each section in a single trip. For the second section, a new milling insert technology was introduced to increase milling performance in terms of durability and ROP.

RESULTS

- A true single-trip operation was provided for each section.
- A 50 m section was successfully delivered in both cases.
- A new milling insert technology was successfully introduced, that provided an increased ROP with reduced wear.



June 2020, North Sea – Norway

Well: C-2
Rig: Stafjord C
Customer: Equinor

Wellbore Integrity Solutions, Norway successfully section milled two sections in 9 5/8 in. casing on Stafjord C, C-2 well, in the North Sea.

- Two Section Milled Windows in 9 5/8 in. 53,5lbs/ft, P110 casing were requested by the customer to establish a rock-to-rock abandonment barrier in Well C-2.
- The deepest section was milled using WaveEdge insert technology. Interval milled: 2395 – 2445 mMD at an inclination of 77-81 deg.
- The 2nd section was milled with a newly developed milling insert. Interval milled: 2289 – 2339 mMD at an inclination of 74-76 deg.

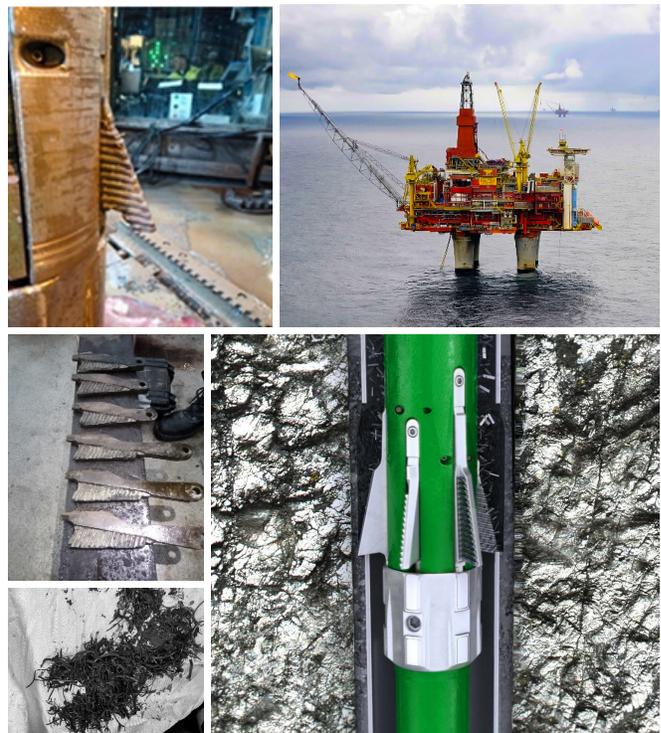
Both sections were successfully milled in a single-trip, with the new milling insert design providing a higher ROP (1.7 m/hr) and less knife wear (31%) compared to WaveEdge inserts. The combination of the robust ProMILL design and experienced Field Service Supervisors resulted in this successful field test for the newly developed milling insert design.

(top left photo)
Wear profile on cutter knife

(top right photo)
North Sea
Stafjord C

(bottom left photos)
Mill knives and cuttings

(bottom right photo)
ProMILL with WaveEdge cutter knives



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