

Record Run with 7 in x 9⁵/₈ in ProMILL Duo* Dual Casing Section Mill in Brunei in a Critical Well Abandonment Application

Utilization of 6000 Series ProMILL Duo to complete two back-to-back dual casing plugs and guarantee rock-to-rock barrier for Brunei Offshore Abandonment Campaign

CHALLENGE

- Two back-to-back dual casing (7 in x 9⁵/₈ in) plug and abandonment (P&A) operations requiring rock-to-rock isolations
- Remediation of annulus cement to remove micro-annuli, channeling, and other potential barrier failure modes
- High-ratio opening for section milling 9⁵/₈ in casing from inside of 7 in casing
- Underreamer to provide rock-to-rock interface

SOLUTION

- Deploy ProMILL Duo high-ratio expansion section milling system with WavEdge cutters for better swarf quality and efficient hole cleaning
- Offer unique 6-point high-ratio stabilization system to improve system performance
- Enhance operational efficiency and safety by eliminating barrier failure modes
- Ensure efficient operation and minimize shock and vibration with comprehensive BHA analysis

RESULT

- Created expert operational guidelines and best practices allowing the second plug to be done within a single record breaking run
- Delivered 2 successful dual plug rock-to-rock isolations in a critical abandonment application
- Reduced open hole exposure time
- Reduced rig time by 5 days

Market Differentiator: Robust ProMILL Duo system for Dual Plug Isolation

The 6000 ProMILL Duo system utilizes a Spline based actuation system to provide essential stabilization across the milling BHA. It includes a combination of a high-ratio expansion hydraulic section mill with 3-point stabilization and another 3-point hydraulic stabilizer below it. This unique 6-point stabilization geometry can be configured for the well's specifications such as eccentricity.

WavEdge Cutter Technology to Achieve and Optimize Surface Handling Needs

The ProMILL Duo system is ideal for milling casing to set rock-to-rock well abandonment cement plugs. The 3-cutter arms are dressed with high performance ridged milling elements that enables high-quality milling performance. This unique insert geometry, designed with a concave pattern and a narrow leading edge, improves durability and stabilization, resulting in superior hole cleaning and swarf quality.

Highly-Adaptable ProMill Underreamer to Achieve Rock-to-Rock barrier

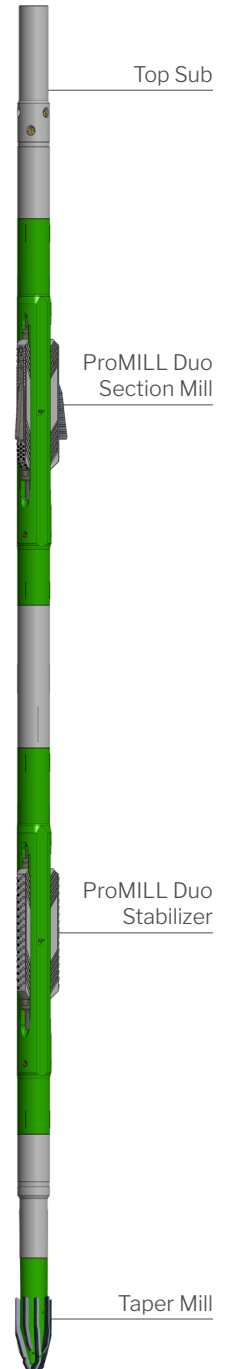
Effective borehole enlargement is accomplished with the ProMill system high-ratio underreamer (HRU). The HRU is designed specially to achieve well abandonment integrity with robust arms and cutter technology integration.



ProMILL Duo knives with only 20% wear after milling the required interval in a single trip

Well information:

Location: Offshore Brunei
 Casing Size: 7 in x 9 ⁵/₈ in casing (Eccentric)
 Depth: 1700m (5576 ft)



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