

An Outstanding Pilot Milling Performance in Brunei Results in > \$2M in Cost Savings

A step change in total meterage milled and a ROP improvement of 182% compared to offset data was achieved. The operational rig time was reduced by 9½ days.



An optimization of milling performance demonstrated.

The Wellbore Integrity Solutions (WIS) Red Baron team supported the customer effectively in the abandonment of two wells. Pilot milling performance was highlighted as a key success in both wells, with a step-change in results when compared to competitor offset data. Operational planning, proven procedures and a robust risk assessment all contributed to the results:

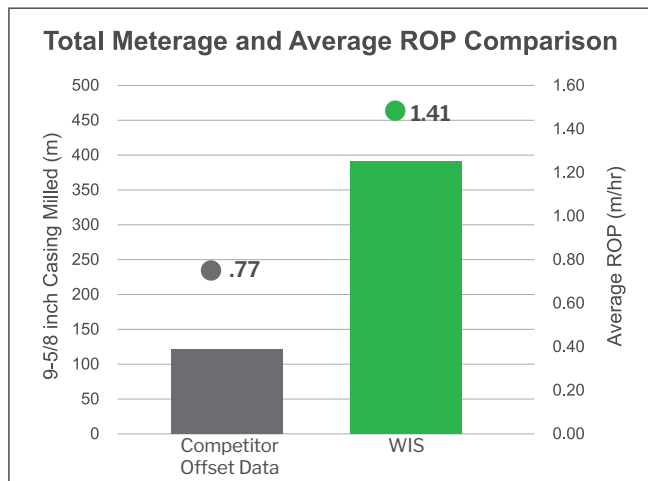
- Mitigation of risks while milling uncemented casing.
- BHA design optimization to improve dynamic behavior and increase milling ROP. An average milling ROP of 1.4 m/hour was achieved.
- Milling parameter optimization.



In addition to the significant time and rig cost savings realized, the corresponding emissions reduction was also considerable, as illustrated in ESG Operational Efficiency graphic.



Photos 1-3 show the mill wear after the pilot milling run.



ESG OPERATIONAL EFFICIENCY
Reduced Safety Risk

Equivalent CO₂ Emissions:

557 METRIC TONS REDUCTION

124 VEHICLES DRIVEN FOR 1 YEAR

OR

108 HOMES POWERED FOR 1 YEAR

CHALLENGE

A customer in Brunei required a total of 389m of 9½ inch casing to be milled in two wells. Uncemented casing increased the milling operational risk.

SOLUTION

- Rigorous planning, procedures and risk assessment.
- An optimized pilot milling BHA design with Red Baron pilot milling technology.

RESULTS

- A successful milling operation with no non-productive time (NPT).
- An improvement of 182% in overall ROP.
- A rig time reduction of 9½ days and a cost savings for the customer of > \$2M.
- Significant reductions in emissions generated.

*Mark of Wellbore Integrity Solutions. Other company, product, and service names are the properties of their respective owners. Copyright © 2023 Wellbore Integrity Solutions. All rights reserved. WIS-FS-MKT-223_rev3