TECH REPORT

NORTH SEA

Lithology	Interbedded shale and claystone
Measured depth	2,996 m [9,829 ft]
True vertical depth	1,744 m [5,721 ft]
Bottomhole temperature	78.3 degC [173 degF]
Maximum deviation	89°
Mud weight	10 lbm/galUS

Background

A North Sea operator planned to drill a horizontal production well using a water-base drill-in fluid followed by a gravel-pack completion. Due to interbedded, water-sensitive claystone, the operator sought an inhibitive reservoir drilling fluid and a reliable, noncorrosive filtercake cleanup solution.

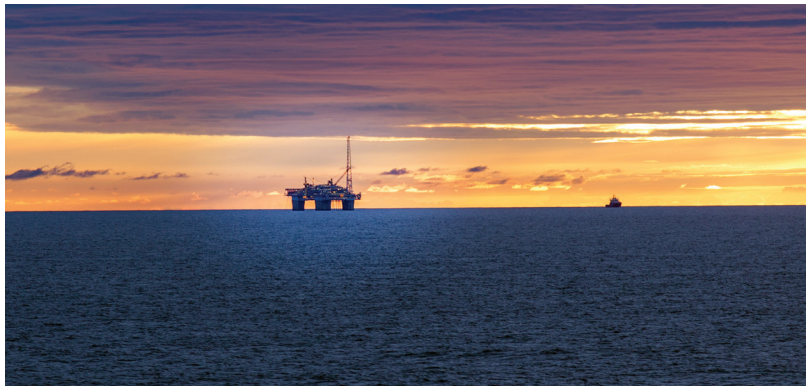
Technologies

- FLOPRO NT* water-base reservoir drill-in fluid
- WELLZYME* starch-specific enzymes
- GLYDRIL* advanced polyglycol system

M-I SWACO
A Schlumberger Company

FLOPRO NT Fluid and WELLZYME Enzymes Maximize Production in North Sea Well

Inhibitive drilling fluid and enzyme breaker enable successful gravel-pack completion in challenging interbedded formation



M-I SWACO recommended a combination of technologies to optimize compatibility with the reservoir crude, stabilize the shale, and maximize cleanup efficiency—including FLOPRO NT water-base reservoir drill-in fluid and WELLZYME starch-specific enzymes. The drilling team drilled to total depth with minimal losses, ran the sand screens, and gravel packed the well using a high-rate water pack. When the screens were set, the operator experienced average returns of 60% and screenout at 145% of the expected gravel pumped. The treatment enabled the operator to overcome the challenges of drilling and completing in sensitive shale, meeting production targets as planned.

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