

Magnus[®] Rotary Steerable System Achieves Drilling Record in North Sea Chalk Formations

Objectives

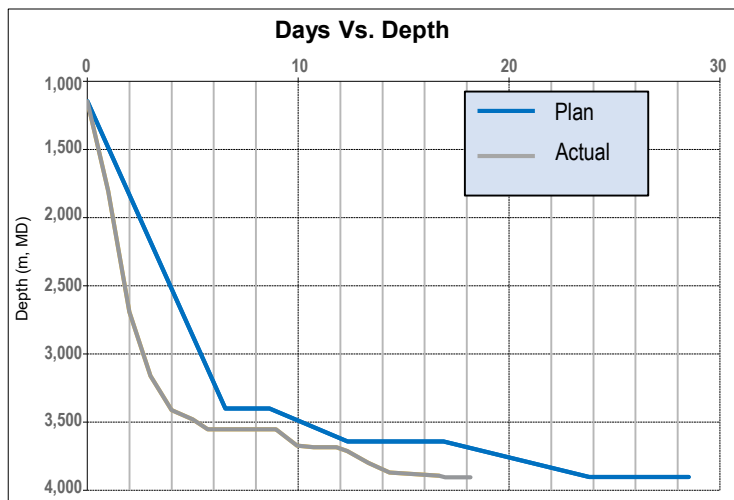
- Drill the trajectory of a 17.5-in. well section in the North Sea without nonproductive time (NPT) and ahead of the P50 estimate, which represents a median performance outcome.

Our Approach

- The Weatherford directional drilling team recommended the Magnus rotary steerable system (RSS) to drill with reliability and stay on plan.
- During the planning phase, the team completed the following items:
 - Scope of work based on the customer's detailed data, including the well trajectory, survey program, anti-collision constraints, steerable system selection, sensor requirements, azimuth uncertainty check, tubular size, and tubular quantities.
 - Offset wells analysis by examining survey quality control (QC), drilling hazards, best practices, and previous bottomhole assembly (BHA) configurations.
 - Detailed hydraulic analysis to optimize RSS directional performance while maintaining parameters within the tool specifications.
 - Risk assessment of the drilling program with consideration toward the drilling hazards based on offset wells.
- The team deployed a solution with 9 1/2-in. technologies—including the Magnus RSS and logging-while-drilling (LWD) tools. The Magnus RSS drilled 2,907 ft (886 m)—a field record for the longest distance drilled in 24 hours.
- The RSS finished drilling the entire section over approximately 106 hours.

Value to Customer

- The Magnus RSS drilled the 17 1/2-in. well section without NPT and significantly ahead of the P50 estimate for a potential cost savings of GBP 2,520,000.



The graph to the left illustrates the actual Magnus performance against the P50 estimate.



Based on record-breaking performance during this job in the North Sea, the Magnus RSS has significant potential for driving efficiency in challenging applications.

LOCATION

North Sea, United Kingdom Continental Shelf (UKCS)

WELL TYPE

Offshore, S-shape

FORMATION

UKCS chalks

HOLE SIZE AND ANGLE

17-1/2 in., 27.03° maximum inclination

MAGNUS RSS RUN

- Circulation hours: 147 hours
- Drilling hours: 104 hours
- Measure depth (MD) drilled: 7,854.6 ft (2,394.1 m)
- Average rate of penetration (ROP): 76 ft/hr (23 m/hr)

PRODUCTS/SERVICES

- Magnus RSS
- HEL™ hostile-environment-logging measurement-while-drilling system
- BAP™ bore and annular pressure sensor
- HAGR™ high-temperature azimuthal gamma ray tool
- TVM true vibration monitor
- IDS integrated directional sonde

