

RipTide® Ball-Drop Reamer, Magnus® RSS

Enlarged 14 1/2 x 16-in. Section in a Single Run, Eliminated Invisible Lost Time, Set Field Record

Objectives

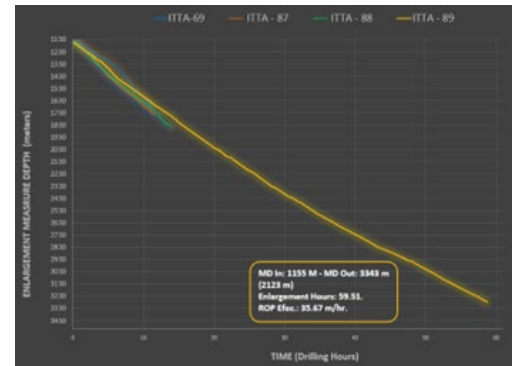
- Deploy a hole-enlargement-while-drilling assembly with the RipTide drilling reamer combined with the Magnus rotary steerable system (RSS) to achieve the desired hole diameters according to the well design, reaching target depth and profile according to the strategic planning requirements of the field.
- Ensure operational parameters meet or exceed historic records in the field. The Weatherford drilling engineers had an extensive knowledge of the area, enabling them to optimize the design of the drilling parameters and generate a higher performance.

Our Approach

- Before the job, the Weatherford drilling and evaluation team met with the customer to establish the scope of work and analyze offset well data. To counteract torsional vibration while improving drilling efficiency, the team recommended a different bit with specialized cutter technology.
- The Weatherford tools and services were deployed in a 14 1/2 x 16-in. section, with the starting depth from 3,789 to 10,987 ft (1,155 to 3,349 m). The team continued to build the stage with 2.68°/100 ft (30 m) dogleg severity (DLS) to reach a high inclination of 81.75° at the end of the curve, with a maximum displacement of 7,244 ft (2,208 m).
- A drilling engineering and optimization team at a real-time operation center (RTOC) analyzed live data transmitted from the rig site via WITSML to optimize the drilling process.
- The total enlargement section was 6,965 ft (2,123 m), the longest in the field. The average ROP was 117 ft/hr (35.67 m/h) while the total depth (TD) was 10,987 ft (3,349 m).

Value to Customer

- Using Weatherford's tools and expertise enabled the customer to maintain the original design bases without changes to the plan or trajectories. The planned profile reached the targets of interest at the expected depths and inclinations with hole diameters that enabled correct casing settlement, ensuring subsequent operations.
- The single run with a single tool without bottomhole assembly (BHA) changes reached the target depth in 59.51 drilling hours, eliminating any invisible lost time associated with BHA trips. The optimized drilling assembly design and parameters also maintained the overall operation's progress in accordance with field requirements.



In comparison to offset wells, the length of the enlarged 14 1/2 x 16-in. section is four times the average length of the offset wells.

LOCATION

Gulf of Mexico

FORMATION

Sandstone, Miocene

HOLE SIZE AND ANGLE

14-1/2 in. (317.5 mm), 81.75°

FLOW RATE

726 gal/min (2,748.21 L/min)

TORQUE

20,500 lb-ft (27,792.84 N m)

ENLARGED SECTION DISTANCE

6,965 ft (2,123 m)

PRODUCTS/SERVICES

- RipTide drilling reamer
- Magnus RSS
- RTOC

