RipTide® Ball Drop Drilling Reamer Enlarges Two Challenging Intervals in Single Runs to Save More Than $175,000 in Rig Time

Objectives

- Enlarge two borehole sections characterized by hard drilling through sandstones and indurated siltstones.
- Reduce rig time by avoiding reamer trips.

Our Approach

- Weatherford drilling experts met with the operator to review plans for a deepwater well. The operator needed to drill and enlarge the wellbore through two interbedded sandstone and siltstone intervals before running liner and casing. Previous reaming operations in offset wells were hampered by siltstone stringers, with their high uniaxial compressive strength (UCS). Each interval took three runs to ream, and the operator sought to reduce this number.
- Using OneSync® planning and hydraulics software to analyze offset well data, the Weatherford team evaluated lithology, temperature gradients, pore-pressure gradients, and fracture gradients.
- The Weatherford ReamSync™ borehole enlargement performance system modeled a virtual drilling environment, including rock strength and formation abrasiveness. The team used this model to optimize cutter placement and polycrystalline diamond compact (PDC) selection for improved rate of penetration (ROP) and hole-cleaning performance.
- Based on the analyses, the Weatherford team recommended using a RipTide ball drop drilling reamer for each interval.
- Weatherford crews deployed to the drillship with a RipTide drilling reamer for each of the two intervals. They made up the reamer to the bottomhole assembly (BHA) and attached stabilizers as needed to centralize the reamer downhole.
- Upon activation, the first reamer enlarged the hole from 17 to 20 in. to facilitate running 16-in. liner. The second interval was enlarged from 14-3/4 to 17 in., which enabled the operator to run 13 5/8-in. casing.

Value to Customer

- The Weatherford RipTide drilling reamer enlarged the wellbore as planned, to deliver a smooth gauge hole that greatly eased subsequent liner- and casing-running operations.
- Using Weatherford tools, the operator successfully completed the job without failures or interruptions. By enlarging each interval in a single run, the operator avoided additional trips for a savings of more than US $175,000.

RipTide thermally stable PDC cutters provided superior strength and erosion resistance to deliver a full-gauge hole without failures. The, enlarged section enabled subsequent installation of liner and casing.

LOCATION
India, Bay of Bengal

WELL TYPE
Deepwater, exploratory

FORMATION
Sandstone grading to siltstone

HOLE SIZE
- 17 × 20 in. from 7,087 to 9,852 ft (2,160 to 3,003 m)
- 14-3/4 × 17 in. from 9,970 to 12,484 ft (3,039 to 3,805 m)

TEMPERATURE
142°F (61°C)

LINER
16 in. to 9,836 ft (2,998 m)

CASING
13-5/8 in. to 12,467 ft (3,800 m)

PRESSURE
3,800 psi (26.2 MPa)

PRODUCTS/SERVICES
- RipTide drilling reamer, 16500 series
- RipTide drilling reamer, 14750 series
- OneSync and ReamSync software

Weatherford®

