

MPD Techniques and SafeShield® RCD Enable Safe Drilling Through Salt Dome to Reach Designated Casing Point With Zero NPT, Saving 17 Days of Rigtime

Objectives

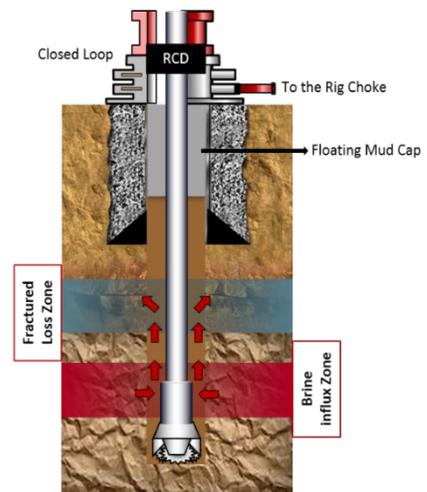
- Manage wellbore fluids and pressures while drilling through a salt dome to reach an underlying casing point.
- Safely and efficiently conduct all drilling and tripping operations without nonproductive time (NPT).

Our Approach

- An operator experienced a high-velocity brine influx of 31 to 38 bbl/min (5 to 6 m³/min) and total losses of drilling fluid while drilling through a salt dome. In response, Weatherford mobilized drilling specialists to implement managed pressure drilling (MPD) solutions that would enable the operator to safely drill through the salt to reach the casing point.
- The Weatherford MPD team installed a SafeShield Model 7100 rotating control device (RCD) to establish a pressure-tight annular seal around the drillpipe during drilling and tripping operations. The RCD enabled the MPD team to combine techniques for flow- and mud-cap drilling while staying within a narrow pore-pressure and fracture-gradient envelope imposed by the salt dome.
- The MPD team used the SafeShield RCD to drill ahead while managing wellbore pressures and to contain or divert fluids as needed. The RCD also provided backpressure sufficient for safely unloading the brine influx through the drilling choke to surface brine pits. The operator subsequently used the 1.28 to 1.33 SG brine as a drilling fluid during mud-cap drilling.
- The RCD responded to pressure changes as drilling proceeded through the salt dome to a casing point in an underlying formation.

Value to Customer

- The SafeShield RCD created a closed, pressurized drilling system that safely controlled flows when drilling through a challenging salt dome. The RCD also enabled the operator to use MPD techniques and establish a casing seat in a stable formation beneath the salt.
- The RCD supported safe drilling and tripping operations, including stripping and rotating drillpipe to prevent stuck pipe. This enabled the operator to drill through the challenging salt interval without incurring NPT, thereby cutting 17 days from the authorization for expenditure (AFE) budget.



The SafeShield RCD helped to eliminate the NPT associated with mitigating kick-loss cycles when drilling through a fractured zone atop a brine-influx zone.

LOCATION

Kazakhstan

WELL TYPE

Onshore, development

FORMATION

Salt

HOLE SIZE AND ANGLE

11-5/8 in., vertical

CASING SIZE

9-5/8 in.

MANAGED PRESSURE DRILLING INTERVAL

From 3,527 to 8,070 ft (1,075 to 2,460 m)

PRODUCTS/SERVICES

- Managed pressure drilling services
- Flow drilling services
- Mud-cap drilling services
- SafeShield Model 7100 RCD

