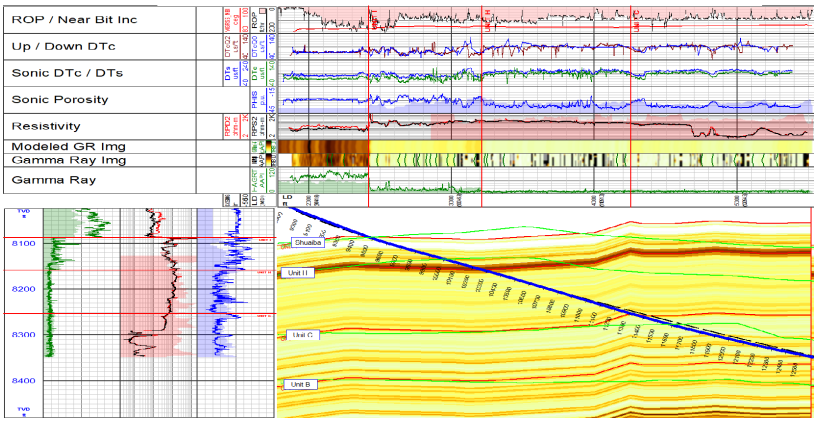
Magnus® RSS, CrossWave® Sonic LWD Tool

Provide Sourceless Geosteering Solution, Overcome Shale Instability, High Overbalance



The in-zone report for a successful geosteering solution featuring the Magnus RSS and the CrossWave sonic tool.

Objectives

- Mitigate geologic uncertainty and land the well inside the Shuaiba reservoir.
- Set 9 5/8-in. whipstock across the Nahr Umra formation and drill the 8 1/2-in. section using oil-based mud (OBM).
- Continue drilling using geosteering across Shuaiba units I, H and C to the well total depth (TD).

Our Approach

- The Weatherford drilling services team worked closely with the operator to identify the challenges—including a hole collapse that occurred below the casing shoe after displacement from OBM to water-based mud—and the requirements for successfully achieving the stated well objectives.
- Shale instability was identified as a primary risk, along with the significant possibility of differential sticking across the Shuaiba formation due to a high overbalance exceeding 2,000 pounds psi (13.7 MPa).
- After careful consideration and well reconnaissance, the UAE Weatherford drilling experts chose to combine the reliability, high-performance and precise directional control of the Magnus rotary steerable system (RSS) with CrossWave sonic technology to drill the curve section, land the well, and successfully geosteer to TD.
- The Magnus RSS features three fully independent pad controls that make proportional drilling adjustments to minimize tortuosity for a smooth, high-quality wellbore that can increase the efficiency—and reduce the costs—of future well-construction operations.

LOCATION
United Arab Emirates

WELL TYPE
Single oil producer

FORMATION
Shuaiba

HOLE SIZE AND ANGLE
8-1/2 in., 85°

CASING SIZE AND TYPE
9-5/8 in.

TEMPERATURE
260°F (126°C)

TOTAL DEPTH
12,587 ft (3,836 m)

PRODUCTS/SERVICES
- Drilling Services
- Magnus RSS
- CrossWave sonic and MFR resistivity tool

Weatherford®

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Value to Customer

- The use of the Magnus RSS, combined with the sourceless LWD solutions CrossWave sonic and MFR resistivity tools, successfully overcame geologic uncertainty, enabling the operator to measure and record acoustic data for accurate placement, reservoir characterization, and 100% target zone contact.
- All well objectives were successfully achieved and the bottomhole assembly was tripped safely out of the hole.
- Weatherford delivered a best-in-field performance, correcting a competitor's executional and computational errors with no tool failures, HSE events, or nonproductive time.

