Coiled-Tubing-Conveyed Wireline Technology

Acquired Critical Openhole Data in Three Slim, High Dogleg Severity Wells, Offshore Norway

Objectives

- Assess the viability of coiled-tubing drilling through 5-in. liners to reduce well construction costs for injection wells. This would require multiple slim laterals of between 3-5/8 in. and 4-1/8 in. with planned high dogleg severity (DLS) of up to 35°/100 ft (30 m).
- Evaluate the formation in a multi-well offshore coiled-tubing drilling campaign.

Our Approach

- The customer reached out to Weatherford based on established global experience in both slimhole and high radius drilling programs.
- After collaboration with the customer, Weatherford experts recommended the Compact™ triple combo to provide the needed formation evaluation data. During the planning phase, the European wireline team worked closely with the customer and other major service companies to ensure seamless interfaces.
- The logging rig up heights were quite limited and required short and slim toolstrings to allow for coiled-tubing pressure deployment.
- Weatherford's responsiveness enabled modifications and changes to allow for the wireline tool deployment and inclusion of a safe deployment mechanism.
- During the execution phase, Weatherford mobilized experienced logging engineers from multiple European countries while simultaneously reducing personnel on board to only three people.

Value to Customer

- Weatherford's expertise and technology demonstrated that the customer could pressure deploy coiled-tubing drilling and a wireline bottomhole assembly and successfully acquire openhole formation logs.
- Weatherford provided high-quality formation evaluation logs despite high differential pressure gradients and differential sticking.
- Weatherford played a key role in allowing the customer to prove the technical feasibility of this coiled-tubing drilling campaign which is expected to bring significant well construction savings and access to additional reserves in the future.

Weatherford's industry leading wireline conveyance technology successfully provides critical formation evaluation data in slim offshore wells in the Norwegian Sector.

LOCATION
Offshore, Norwegian Continental Shelf

WELL TYPE
Slim horizontal injectors

HOLE SIZE AND ANGLE
- 3-5/8 in. with 36°/100 ft (30 m) DLS
- 4 in. with 20°/100 ft (30 m) DLS
- Deviations between 90° and 116°

LINER SIZE AND TYPE
5 in., 23.2# Q125 liner exit

TEMPERATURE
268°F (131°C)

PRESSURE
8,000 psi (55.1 MPa)

DEPTH
14,763 ft (4,500 m)

PRODUCTS/SERVICES
- Wireline conveyance
- Compact gamma ray (MCG) tool
- Compact photodensity (MPD) tool
- Compact dual neutron (MDN) tool
- Compact array induction (MAI) tool

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