Compact™ Well Shuttle

Enables Formation Evaluation in Well Suffering Total Losses

Objectives

- Acquire high-quality microimager log data in a 6 1/8-in. openhole section of a horizontal oil production well.
- Improve the data quality over the existing solution from another service provider that ran a microimager on conventional pipe-conveyed logging. This conveyance was causing excessive stick and slip, which degraded the image and made interpretation more difficult.

Our Approach

- Weatherford ran the Compact memory logging (CML) system using Compact well shuttle (CWS) messenger conveyance with the shuttle washpipe extension (SPK) to convey a full-borehole-coverage imager while avoiding the risks associated with conventional pipe-conveyed logging (PCL).
- The CWS messenger conveyance was chosen because the well was suffering total losses, even while pumping up to 3 m^3/min of drilling fluid.
- The rig was also experiencing problems during routine operations. At one point the drillstring was stuck for 5 hours at a depth of 7,218 ft (2,200 m) and was freed only after repeat activation of drilling jars. Unlike PCL, the CWS allows the drillstring to be rotated and reciprocated during the operation, which was considered essential when contingency planning for the logging run.
- Because CWS does not employ wireline and can be rotated while pulling stands of drillpipe, this significantly reduced the stick and slip imager data quality problems experienced by the other service company.

Value to Client

- The client acquired critical formation evaluation data in a well that would have otherwise been extremely difficult to log.
- All data was acquired without incident or lost time.
- Weatherford mitigated the risks associated with a well experiencing total losses.

The Weatherford Compact well shuttle (CWS) transports Compact logging tools inside drillpipe, where they are fully protected from the borehole environment. It requires no wireline; thus, mud can be circulated and pipe can be rotated when desired. When the toolstring reaches total depth, the release mechanism is activated by pumping a “Messenger” from surface, and the Compact tools are pushed into the open hole, landing in a no-go arrangement.

LOCATION
Oman, Nizwa

WELL TYPE
Horizontal

HOLE SIZE AND ANGLE
6.125 in.
92° deviation

TEMPERATURE
147.2°F (64°C)

DEPTH
Total depth 8,038 ft (2,450 m)
Logging depth 7,152 ft (2,180 m)

PRODUCTS/SERVICES
Compact well shuttle messenger (CWS)
Compact microimager (CMI)
Compact array induction (MAI)

Weatherford®