Liner System Enables Deployment of Acidizing Treatment in 1 Trip and Saves 1 to 2 Days of Rig Time

Objectives

- Install a liner system to serve as a conduit for an acidizing treatment using 15% hydrochloric acid (HCl). The treatment was intended to dissolve a mud cake, to mitigate future formation compaction, and to enable an increase in production rates.
- Use a hydraulic liner system. Previous mechanical liner hangers provided by other companies had failed in this well.

Our Approach

- Weatherford installed its hydraulic liner system, which consisted of a slotted liner, polished bore receptacle, liner-top packer, and liner hanger. The hydraulic liner system was suited for this deep, highly deviated well because the system could be activated by means of an internal pressure application.
- Before running equipment downhole, the team performed a compatibility analysis to confirm that the components of the liner system could handle short- and long-term exposure to HCI.
- The liner system ran to the setting depth of 7,007 ft (2,136 m) without any incidents.
- The team displaced the well with 15% HCl. The liner equipment was exposed to HCl for approximately 4 hours without a negative impact on performance.
- The liner-top packer successfully set and pressure tested to 2,500 psi (17.2 MPa).
- The entire operation—including running and setting the liner system, and deploying the acidizing treatment—occurred in one trip.

Value to Client

- The single-trip operation saved 1 to 2 days of rig time.
- The operator reported improvements in production rates as a result of the acidizing treatment that was enabled by the Weatherford liner system.



The packing element (left) resists swabbing to enable high circulation rates past the liner- top packer assembly. The premium hydraulic-set, rotating liner hanger (right) is suited for deep, highly deviated wells.

LOCATION Oman

WELL TYPE Onshore, oil

HOLE SIZE, TYPE, AND ANGLE 6-1/8 in., openhole, 90°

CASING SIZE AND TYPE 4-1/2 in., LTC K55, perforated

LINER SIZE AND TYPE

4 1/2- x 5- x 7-in. hydraulic rotating liner

TEMPERATURE

180°F (82.2°C)

PRESSURE

4,000 psi (27.6 MPa)

TOTAL DEPTH 11,377 ft (3,468 m)

PRODUCTS/SERVICES

- Slotted liner
- Polished bore receptacle
- WTSP4H1 liner-top packer
- WPHR liner hanger
- Stinger packoff
- Float shoe



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