Mechanical Water Shutoff Operation Boosts Oil Production by 1,827 BOPD,

Eliminates Water Production by 749 BWPD



PLT interpretation (flowing production profile)

Objectives

- Determine a solution for a well experiencing a water cut of 71%. Repeated workover operations failed to resolve the issue, and the installed inflow control device (ICD) was not functioning optimally.
- Overcome the restrictive ID of 3-1/4 in. (in a 4-in. tubing) that made it challenging to install readily available plugs.

Our Approach

- Weatherford experts identified a well as the ideal candidate for a mechanical water shutoff and recommended the high-expansion, cast-iron bridge plug. Capable of withstanding differential pressure of up to 10,000 psi (68.9 MPa) and temperatures of 350°F (176°C), the high-expansion, cast-iron bridge plug has the ability to run through restrictions to set in larger diameters.
- In collaboration with the operator and the reservoir services team, Weatherford engineers identified the water-producing ports that required isolation.
- During the intervention, field personnel deployed the high-expansion, cast-iron bridge plug effectively using wireline and a non-explosive setting tool to isolate high water-entry zones.
- The remaining ICD ports were cleaned with acid to enhance oil flow.

LOCATION Middle East

WELL TYPE Producer

TUBING SIZE AND ANGLE 4-1/2 in., vertical

TEMPERATURE 198°F (92°C)

PRESSURE 3,200 psi (22 MPa)

TOTAL VERITCAL DEPTH 9,998 ft (3,047 m)

Minimum Restriction 3-1/4 in.

PRODUCTS/SERVICES

High-expansion, cast-iron bridge plug



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Value to Customer

- By installing a high-expansion, cast-iron bridge plug, the water cut in the well was entirely eliminated.
- Production increased from 320 BOPD to 2,147 BOPD, a six-fold increase.
- The operator subsequently choked the well back to align with the allowable production limits of 1,700 BOPD.
- The Weatherford solution was a reliable, cost-effective alternative to chemical methods and the subsequent environmental hazards.



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