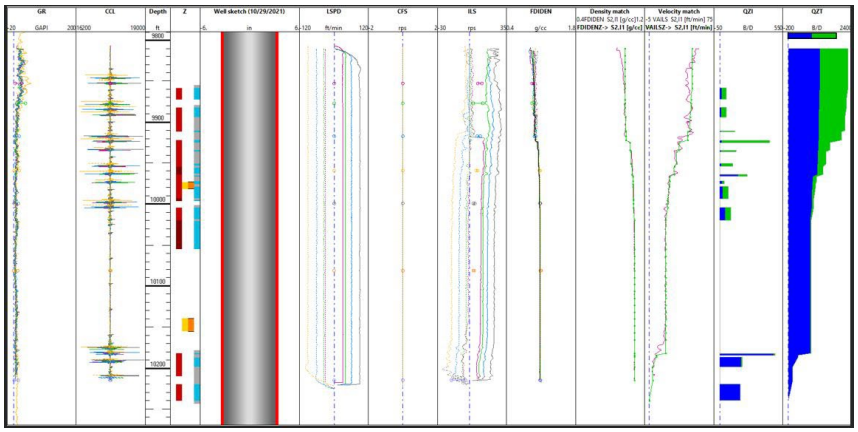
Mechanical Water Shutoff Operation

Boosts Oil Production by 1,827 BOPD, Eliminates Water Production by 749 BWPD



PLT interpretation (flowing production profile)

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

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.

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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.