

Case History

Increasing Producing Pay in a Horizontal Well With EQUALIZER™/MPas™

Problem

A client needed to recomplete an existing horizontal open-hole well with a completion able to provide an effective distribution and equalization of the oil influx from the reservoir into the wellbore. It needed to equalize the oil influx in the entire horizontal wellbore, including the toe section, to mitigate water production, prolong well life, and increase sweep efficiency and ultimate recovery. The well was a highly permeable, naturally fractured carbonate reservoir with medium density and low viscosity oil. The well showed a very uneven flow distribution and one third of the horizontal length at the toe was not contributing to flow at all.

Solution

- Baker Oil Tools was selected due to its extensive experience with EQUALIZER inflow control devices and MPas open-hole packers
- The production logging tool (PLT) data was matched with dedicated software, and simulations were performed to select the best completion design
- EQUALIZER joints were evenly distributed along the horizontal and blank sections were run across highly fractured zones to maximize flow distribution and prevent future problems
- Workover time was very short, about six days, allowing the operator to keep the entire recompletion operation very cost-effective

Results

- Production log was run after recompletion of the well and showed perfect packer sealing and excellent contribution of the entire horizontal section
- The toe section, previously not flowing, contributed to almost half of the well production after workover
- Although the total production increased, the water cut did not increase
- The customer was able to increment the oil production by 22%, from 5,600 bbl/d to 6,825 bbl/d
- With the increased revenue, the payback time of the entire recompletion project cost was estimated in only a few weeks

Project Details

Location: Saudi Arabia

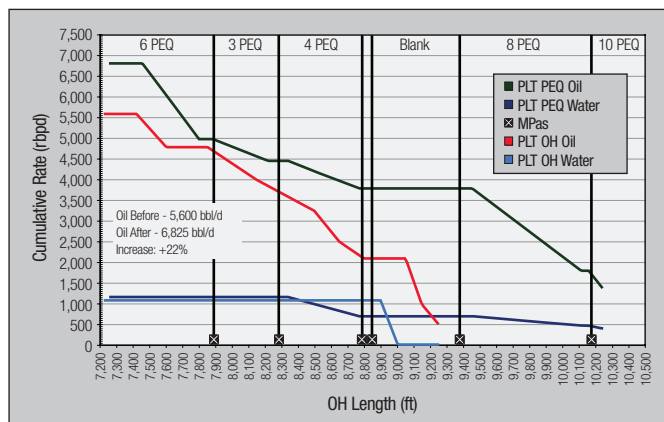
Date: May 2006

Open-Hole Horizontal Length: 5,200 ft (1585 m)

Open-Hole Size: 6-1/8 in.

Baker Hughes Oil Tools Equipment

- 31 4-1/2-in. EQUALIZER CF (consolidated formation) joints
- Six MPas open-hole packers
- SLZXP™ liner hanger/packer
- Hyflo™ III hydraulic liner packer



Production increase after EQUALIZER/MPas recompletion