Weatherford®

REAL RESULTS

World's First Horizontal and Longest Expandable Reservoir Completion System Energizes Oil Production in Saudi Arabia

Objectives

- Install a sandface completion in a deep, extended-reach horizontal well to facilitate solids-free oil production. The completion architecture had to be flexible and robust enough to accommodate lingering geological and reservoir uncertainties for the life of the well. The completion also had to be adaptable to fluid migration patterns, depletion strategy, and retrofit of an electric submersible pump (ESP) system.
- Isolate poor-quality sands and plays behind blank pipe.
- Integrate zonal isolation barriers in the completion to permit selective production from multiple zones.
- Achieve zero or negative completion skin to maximize well productivity.
- Accommodate future internal deployment of a multizone intelligent completion to remotely manage unwanted water production in situ.

Location
Onshore Saudi Arabia

Well Type
Oil producer

Hole Size and Angle
8 1/2-in. horizontal

Setting Depth
9,576 ft (2,919 m) RKB

Hole Length
2,651 ft (808 m)

Number of Zones
Two

ESS® Length
Zone 1: 842 ft (257 m)
Zone 2: 1,440 ft (439 m)

Products/Services
- Expandable reservoir completion system
- *ESS* expandable sand screen system
- EZI™ zonal-isolation packers
- EXR large-bore hanger/packer

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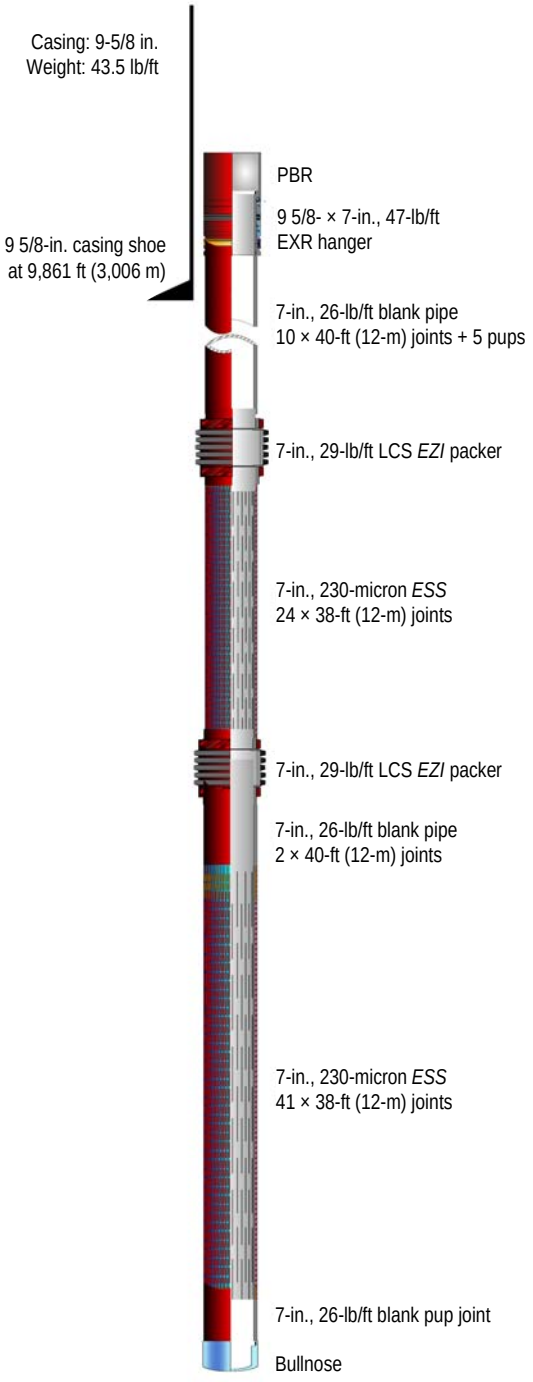
Results

- The world's first horizontal expandable reservoir completion (ERC) was successfully installed to a record depth of 12,475 ft (3,802 m) without incident.
- The completion included a record 2,282 ft (696 m) of 7-in. ESS® expandable sand screen, with Weatherford's EZI™ expandable zonal isolation packers incorporated to facilitate selective production.
- The ERC's highly modular and freely configurable multizone architecture permitted finalization of the sandface completion design at the well site, based on analysis of open-hole logs.
- Completion skin has been kept to a minimum by eliminating the screen-borehole annulus through the unique, fully compliant expansion of the *ESS* system.
- Weatherford's large-bore EXR hanger/packer was used to anchor the ERC system, thereby offering a minimum ID of 6.184 in. (157 mm) throughout the sandface completion to accommodate future internal deployment of a 3.5-in. (89-mm) intelligent completion.

Value to Client

- Record-breaking accomplishments fulfilled the operator's objectives and life-of-well design philosophy.
- Initial well cleanup indicated that well productivity would be substantially greater than that of neighboring wells equipped with other forms of sand control.
- The operator's asset was made ready for future ESP and intelligent completion deployment.



This successful expandable sandface completion set multiple records. Weatherford's *ESS* system provides effective sand control and higher production rates, while *EZI* expandable zonal isolation packers facilitate selective production.

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