

Case study – La Cira-Infantas Basin, Colombia

BAKERMESH Screens and REPacker Self-energizing Packers Delivered Field-first Sand Control Solution

As one of the oldest fields in Colombia, the La Cira-Infantas basin has undergone significant redevelopment with updated solutions and technologies in recent years. An operator in the region had experienced sand control issues in a previous well, and asked Baker Hughes to provide a reliable, efficient, cost effective sand control solution for their next completion. Total measured depth on the new well was 6,571 ft (2003 m), and the design included a 2,500 ft (762 m) target production area. In addition to keeping sand out, the production area needed to be segmented into zones that could later be shut off to stop unwanted inflow of water.

With reliability, efficiency, and cost control established as customer priorities, the Baker Hughes team designed a field-first stand alone completion that combined self-energizing REPacker™ open hole packers with the superior sand filtration offered by plug-resistant BAKERMESH™ screens. The REPacker elastomers swell when exposed to wellbore fluids, establishing reliable isolation in production zones and rugged BAKERMESH screens offer maximum protection against damage while being run in open hole wellbores. The Baker Hughes team used Advantage™ torque and drag analysis software to establish limits and parameters for running the completion, taking full advantage of the ability of BAKERMESH screens to stand up to the environment.

Once onsite, the team stayed within pre-job analysis limits while running the completion, resulting in zero non-productive time (NPT) for the operation. The BAKERMESH screens delivered expected production rates while eliminating sand from produced fluids and the robust design of the screens will ensure long-term sand control for extended reliability. The REPacker elastomers swelled as designed after being exposed to reservoir fluids, and remain firmly set in the open hole wellbore. As the well matures, water production may become an issue. Non-perforated production tubing can be installed between the packers to straddle and shut off water producing zones, enabling the operator to optimize hydrocarbon production.

This standalone sand-control completion delivered the sand-free production rates the operator desired, while giving them the flexibility to control water production in the future.

Benefits

- Performed first horizontal standalone completion in La Cira-Infantas basin
- Ensured smooth deployment with no incidents or NPT
- Created effective sand filtration without sacrificing production rates

Background and challenges

- Anticipated sand and water production
- First horizontal standalone completion in the field
- 2,500 ft production zone in a 6,571 ft well

Baker Hughes solution and results

- Installed 1,746 ft (532 m) of BAKERMESH screens to provide exceptional sand filtration
- Ran REPacker self-energizing packers to create isolation between zones and to stem future water production
- Used Advantage torque and drag analysis software to model accurate parameters and to ensure smooth, trouble-free completion installation