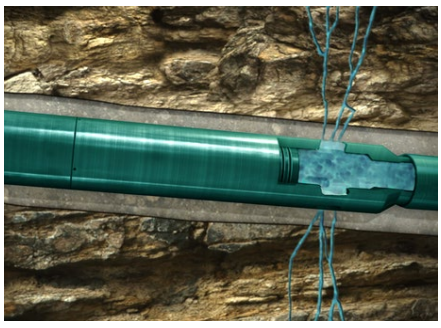
Case study: Permian Basin, United States

Alpha Sleeve successfully opened after six years in well and saved customer $150,000 USD

A customer in Texas was looking for new ways to reduce costs and enhance efficiencies in a cemented completion that required an interventionless access to a formation. In some long horizontal wells, it can be impossible to get to the toe of the well with coiled tubing, leaving some sections of a lateral unable to be fractured. This could result in millions of dollars of lost production revenue.

Over six years ago, Baker Hughes installed an Alpha Sleeve™ atmospheric chamber pressure-actuated sliding sleeve (toe sleeve / toe valve) in the horizontal section of a 7 x 4.5 in. liner.

The Alpha Sleeve provides interventionless access to formations. Ideal applications for the Alpha Sleeve include plug-and-perf and cemented frac sleeve completions. Both completion options require formation access to begin the hydraulic fracturing process. Using the toe sleeve in completion strategies that incorporate the plug-and-perf method for a well or group of wells, eliminates the need for a dedicated tubing conveyed perforating (TCP) trip, saving time and operational costs.



Ensure effective access to your formation, without an intervention, with the Alpha Sleeve™.

The customer left the well drilled and uncompleted for 2,423 days (6.64 years) with the Alpha Sleeve cemented in the wellbore. They then contacted Baker Hughes to open the Alpha Sleeve and ensure the well was ready for hydraulic fracturing operations. If the Alpha Sleeve failed to open, the customer would have to deploy coiled tubing and perform tubing conveyed perforation.

Despite remining in the downhole environment for a prolonged period of time, the Alpha Sleeve opened successfully. Since the Alpha Sleeve has two atmospheric chambers (each at 14.7 psi (1 atm) pressure), this means that the seals on both atmospheric chambers never leaked.

By using the Baker Hughes Alpha Sleeve, the customer was able to achieve interventionless access to a well more than six years after installation. By selecting this method instead of the coiled tubing alternative, the customer not only achieved significant cost savings, but was also able to begin their hydraulic fracturing operations without delay.

Challenges

- Enable interventionless access to the formation in a cemented liner completion after the tool remained downhole for six years

Results

- Saved customer $150,000 USD operational costs
- Achieved cost and time savings using this interventionless method over coiled tubing alternative