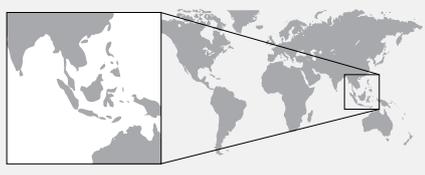


Stronghold™ Barricade Helps Customer Plug and Abandon Well From Workover Unit



STRONGHOLD™



Region: Asia Pacific

Case Benefits

- Eliminates the need for casing milling.
- Ensures controlled direction of cement placement
- No need of wait on cement (WOC) with squeeze pressure.
- Eliminates need to squeeze cement.

Key Capabilities

- Field proven
- High circulation rates
- Dual swab cup design
- High performance swivel

Typical Applications

- Permanent plug and abandonment (P&A)
- Slot recovery
- Workover
- Seal annular pressure

Challenge

A customer was challenged with plugging and abandoning (P&A) a well from a workover unit. There was insufficient casing annular cement and the tubing's condition prevented cement to be pumped into the perforations.

Through a collaborative engagement between the Customer and Archer to identify a fit for purpose solution for the challenge, Archer was required to mobilize the **Stronghold Barricade perforate, wash and cement system** to eliminate the need for section milling. Milling casing would be challenging due to limited swarf handling capabilities and surface equipment to handle metal swarf, including the need to mill at relatively shallower depth with potential eccentricity challenges due to decentralized casing. The objective was to plug and abandon the well by setting two cement plugs: the deep plug just below the 9 5/8" casing shoe into 12 1/4" open hole; and the second plug just inside the 13 3/8" casing shoe.

Solution

Based on the objective for the well, perforating, washing and cementing with Archer's Stronghold Barricade system was deemed more favorable, safer and cost effective, when compared with section milling.

The Barricade provides full lateral isolation in a single run operation. However on this well, the **Tubing Conveyed Perforation (TCP)** runs were done separately. The first plug was set inside the 9 5/8" production casing against 12 1/4" open hole from 3773 ft - 4412 ft the first 100 ft lateral with 639 ft cement above. The washing performance was monitored from the standpipe pressure in combination with sand and dispersed shale coming over the shakers.

The cement job was performed using the pump and pull cementing technique. By directing the flow of cement with the Barricade's dual swab cups, the cement was placed into all the perforations making sure a full lateral isolation was achieved. The cement plug was verified and a pressure test was conducted.

The shallow plug was set from 3045 ft - 3707 ft the first 100 ft lateral with 662 ft cement above inside the 9 5/8" casing. The casing was perforated using a single casing perforation gun that perforated the 9 5/8" casing without compromising the integrity of the 13 3/8" casing. The annular space was washed, with similar positive indications as the first plug. The plug was verified and a pressure test was conducted.

A special charge was used with the second plug. The charge is a single casing perforating gun that penetrates the 9 5/8" casing without compromising the integrity of the 13 3/8" casing, which enables the customer to set the barrier inside the casing shoe and the well to be plugged & abandoned according to regulations.

Result

The Stronghold Barricade system provided full lateral isolation with positive verifications, meeting the customer's expectations and delivered on the objective for the well. This successful job was then marked as the Stronghold Barricade's first operation in Asia and proving the system's operational excellence from a workover unit.



Archer is a global oil services company with a heritage that stretches back over 40 years. With a strong focus on safety and delivering the highest quality products and services, Archer operates in 40 locations over 19 countries providing drilling services, well integrity & intervention, plug & abandonment and decommissioning to its upstream oil and gas clients. **We are Archer.**

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