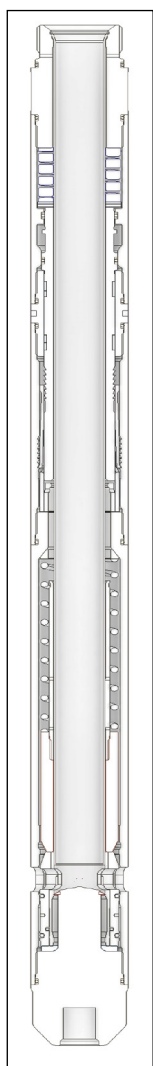


CASE STUDY

Repeatable pressure tests against a shallow-set barrier

A north sea operator required Oilenco's support with an abandonment campaign.



THE CHALLENGE

The objectives of the intervention were:

- Deep-set barrier plug, set in the tubing below packer
- Shallow-set barrier plug, set below the tubing hanger
- Ability to perform multiple pressure tests against the shallow-set barrier
- Lock open the TRSSSV in preparation for pulling the completion

In addition to this, the operational aims were to open both the upper and lower barrier equalising devices without well intervention. The equalising devices were also required to be capable of pumping sufficient fluid volumes and rates through both barriers.

An efficient operation was key to the client, therefore an alternative method to lock open the TRSSSV was requested.

THE CONCEPT

Oilenco proposed using a hold open sleeve, in-line running tool and deep-set plug drift. This involved a single slickline run operation. First, the hold open sleeve was set across the TRSSSV. The toolstring then continued in hole with the simulated bridge plug drift to target setting depth. Once target depth was achieved, the drift was recovered to surface, leaving the sleeve across the TRSSSV. This meant there was no requirement to lock

open the safety valve.

Secondly, Oilenco recommended the pressure wave valve (PWV). This is an intervention-free, open-on-demand equalising device with high tolerance to debris and heavy crude environments.

Functioned by applied pressure via a sequence of pressure cycles, the valve has a high pump-through capability.

The system permits numerous pressure tests against a shallow-set barrier without the risk of unintentionally equalising. These features make the PWV ideally suited to this type of operation.

THE RESULT

The single-run hold open sleeve drift assembly was run into the TRSSSV and the sleeve was set in the safety valve profile. The running tool then sheared out to allow the toolstring to continue into the well. The toolstring carried a drift assembly that precisely simulated the length and OD of the bridge plug. This was run to target depth then recovered, leaving the hold open sleeve across the TRSSSV.

A bridge plug was fitted with an Oilenco pump out sub (burst disc type). This was run to target depth and set. A second bridge plug was fitted with the Oilenco PWV and set below the tubing hanger. The plug was pressure tested to verify barrier integrity. Throughout the operation, further routine pressure tests were performed against the shallow-set barrier.

In the latter stages of the operation, pressure was applied to the shallow-set barrier and cycled between 1,000 psi and 3,000 psi. After three cycles, the PWV opened and provided a positive indication at surface. The tubing was then pressurised to 1,700 psi and the lower barrier plug was opened, allowing full circulation through both barrier plugs.

With the hold open sleeve still installed at the TRSSSV, the upper completion could be freely pulled.

CLIENT SUPPORT

The benefits to the client included:

- Less well intervention runs resulting in considerable time-saving
- Combined function well intervention solutions, again resulting in time-saving activity
- Reliable technology- equipment functioning exactly as intended

FURTHER INFORMATION

To speak to one of our engineers about your application, call +44 (0)1224 548700 or email info@oilenco.com.