



Optimised Completion Deployment and Well Start-up Utilising Our Inter Removable Barrier Device - Mechanical Open

Date: July 2022
Region: New Zealand



Key Capabilities

- Interventions-less completion.
- Bi-directional ISO14310 Vo qualified barrier.
- Self-filling when running closed ended.
- Full bore ID after removal.
- Remotely activated, efficient barrier removal.

Challenge

A major operator in New Zealand was planning a new well. The design required a lower completion barrier that could provide a sufficient inside diameter for production, maintain integrity during and after upper completion run and testing, displace the tubing string above the barrier to Nitrogen, and finally mechanically equalise with the coil tubing at high deviation in under balance conditions.

Solution

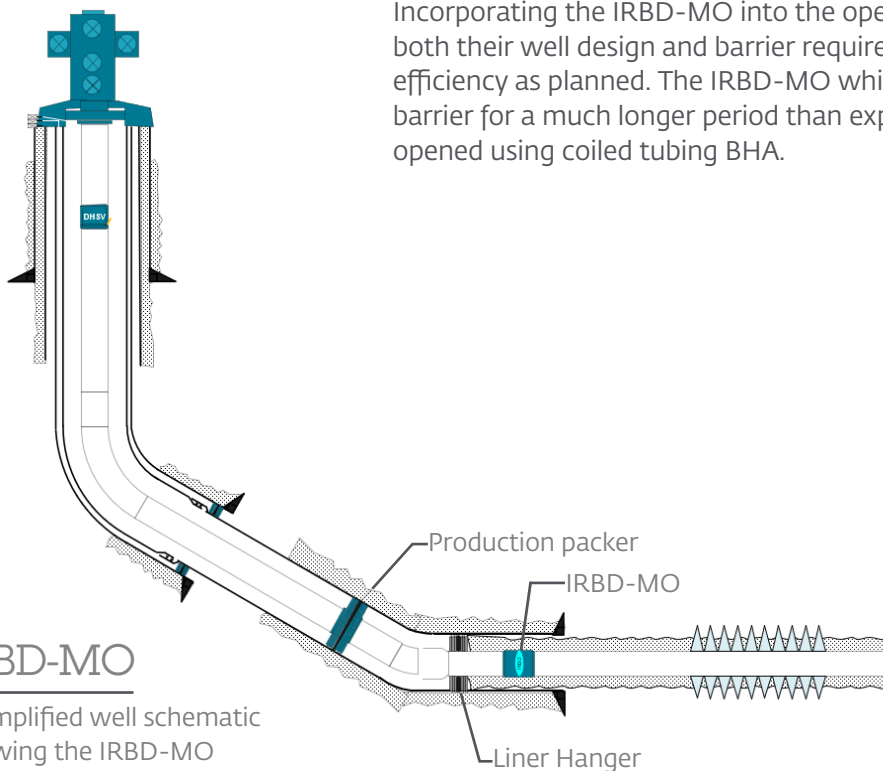
We implemented the Inter Removable Barrier Device Mechanical Open (IRBD-MO) run in conjunction with the preferred liner hanger assembly in the lower completion. The IRBD-MO maintained the maximum completion string ID, increased efficiencies, and reduced the risk associated with well intervention.

The IRBD-MO, qualified according to ISO 14310 and 14998 validation grade Vo is a bi-directional barrier device that can be installed below any intervention tool or as an integrated part of the completion string. The barrier is removed by breaking it with a spear on slickline or coil tubing. This can be achieved in the same run as the unloading/displacement; therefore, no additional runs are required to open up the Well.

With its simple robust design, the large pressure differential rating across the barrier negates concerns over high, under or overbalance scenarios whilst maintaining Vo qualification without compromising equalising features. Once broken, the high-tension glass shatters into small, sand-like particles (or smaller). These don't cause any issues during production at surface or within the completion.

Value Created

Incorporating the IRBD-MO into the operator's well design enabled them to meet both their well design and barrier requirements whilst increasing operational efficiency as planned. The IRBD-MO which was successfully installed held as a barrier for a much longer period than expected with a high underbalance and was opened using coiled tubing BHA.



IRBD-MO

A simplified well schematic showing the IRBD-MO

