



# World's first packer integrity remediation to re-establish annulus integrity using E-Line intervention

Date: Jun-Jul 2021

Region: Asia Pacific, Australia



## Key Capabilities

- Use of E-Line intervention to perform all required operations
- Use of Electronic Precision Drilling Tool (ePDT) with Orientation Tool to precisely drill 17 x 20mm holes in tubing
- Use of Bridge plug complete with Barrier Verification System (BVS) to verify pressure integrity
- Use of Multi Setting Tool (MEST/MAG's) to unset ME and HEX plugs
- Use of Multi-Electronic Setting Tool (MEST/MAG's) to release HEX plug downhole
- Install large ID Single Run ISO qualified Vo Straddle system (APS) to re-instate Well integrity for production

## Challenge

A producing gas well was suspended in 2018 due to a production packer compromise and loss of pressure integrity in the production annulus. A deep-set Interwell HEX bridge plug was set in the liner to isolate the packer from production gas and suspend the well from production. An overbalance of fluid was placed on top as a secondary barrier. Project planning was initiated in early 2020 with the intent to regain annulus integrity by using E-Line intervention. The objective of the campaign was to gain access to the production annulus to deploy a permanent sealant above the compromised production packer then to regain pressure integrity and re-establish tubing to casing integrity post installation. Once performed the deep-set barrier would be released to allow production.

## Solution

An extended Interwell Expandable Junk Catcher (EJC) was run to depth below the penetration point to collect any debris deposited from the annulus whilst drilling, or sealant later in the operation. An Interwell ePDT was run to a predetermined depth above the packer and 17 x 20mm holes were then successfully drilled in the tubing whilst a change in pressure as fluid U-Tubed was noted in gauges below the tool. These holes were drilled at sequentially phased locations on the relative azimuth by using an orientation system supplied by Interwell which was integrated with the ePDT.

A flow diverter system was then run and set just below the tubing holes which allowed the permanent sealant to be diverted on top of the packer then sealant was activated to produce a sealing barrier above the packer before retrieving the EJC.

The tubing/annulus was pressured up via a nearby donor well and an Interwell ME bridge plug was run with a BVS wireless gauge system and set in the tubing below the packer. Once the set was observed and validated live through the EST log, pressure was bled at the surface to verify pressure integrity of the annulus below the packer in the direction of flow.

To negate the additional time to rig down E-Line and rig up of slickline to pull the ME Plug, an Interwell MEST/MAG's electro-hydraulic GS pulling tool was used on E-Line for retrieval. This system also provided a means to safely equalise across the plug without the need to pressure up the entire tubing and annulus above for further efficiencies.

To re-instate tubing integrity an Interwell Slimline / Large Bore ISO qualified APS was then installed to isolate the drilled holes in the tubing, and a pressure test was completed successfully.

Lastly, the Interwell MEST/MAG's tool was used on E-Line to unset the Interwell HEX plug used for suspension in 2018. The plug was unset, then lowered to the bottom of the well, released, and left on the bottom of the well before production was re-instated.



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## Value Created

The entire operation completed by wireline intervention. This successful operation saved the client the need to mobilise a workover rig to the offshore platform to perform a packer replacement operation. Additional rig time savings were realised by using the MEST/MAG's system to unset/retrieve the ME and HEX plugs with E-Line and allowed safe equalisation of the downhole barriers.

