

Case Study: Re-establish Gas Lift using APS to recover stuck valve

Challenge

The well was drilled and then completed in October 2015 with 7" 29lb./ft production tubing, the well equipped with two Dual Side Pocket Mandrels required an intervention soon after the completion had been set to swap out a valve in the uppermost of the two Dual Side Pocket Mandrel. This valve had become unseated whilst efforts were made to shear open the Tubing To Casing Barrier Valve which was set in the pocket. Multiple wireline runs were carried out to attempt to change out the faulty Valve, however each attempt failed to recover the valve. Further attempts resulted in the fishing neck being damaged and the valve breaking whilst trying to recover the valve with a Kick Over Tool. A camera and further investigation tools were run to attempt to improve the recovery efficiency. After some time, it was discovered that recovery using a Kick Over Tool was no longer feasible and it was concluded that a systematic machining deficiency within the Dual Side Pocket Mandrel was causing the Kick Over Tool to pre-activate meaning that it did not locate correctly in the pocket. This was eventually confirmed with subsequent testing.

Solution

Interwell came up with a specially designed single run Anchored Production Straddle (APS). The elements on this straddle were both located near the top of the device, perfectly spaced out to straddle the bottom communication port and seal again at the midpoint of the pocket leaving the upper part of the pocket free of any obstruction. The straddle also had a perforated catcher sub fitted to the bottom of the system. The straddle was correlated to depth by the client firstly setting a Medium Expansion (ME) retrievable bridge plug below the side pocket mandrel using the Kick Over Tool to place the plug on depth.

Value Created

By using the specially designed Interwell straddle, the gas lift function in the well is now re-established. An expensive work over was avoided and most importantly, the well integrity has again been fully established.

Date:

November 2017

Region/Field:

North Sea

Key Capabilities:

- Short distance from top straddle to element
- Big ID in straddle

