CASE STUDY

Slickline Set PKB Bridge Plug successfully deployed for Christmas Tree replacement project.

PROJECT

An International Oil and Gas Exploration and Production Company required a slickline deployed Bridge Plug that that did not require any special running tools for 3 ½" 9.2 lb/ft tubing to provide one of two barriers for a Christmas Tree replacement project in Tanzania.

DTI supplied a standard 5000 psi rated 3 ½" PKB Bridge Plug with Prong Type Equalizing in AISI 4140 80KSI Material. The bridge Plug has a running OD of 2.72" and so will pass the minimum restriction of 2.810" through the TRSCSSSV.

RESULTS

The Bridge Plug was run to provide one of two barriers in the well to enable the Christmas Tree to be replaced safely. The other barrier was a Type H BPV in the tubing hanger. The project took place in Tanzania in November 2024.

The lower slip on the PKB Bridge Plug is set by shock shearing a pin and then jarring down to engage the slips into the tubing. The element can then be to get a seal by jarring down.

There were initially some difficulties in getting the pin retaining the lower slips to shear. After a change to the tool string the Bridge Plug was successfully set at a depth of 900m, per plan, and the operation to replace the Christmas Tree was completed successfully.

After the initial difficulties in getting the lower slip pin to shear DTI provided online technical support to trouble shoot the project. A small change in the tool string along with a change to the way the plug was being deployed was recommended resulting in a successful run and set.

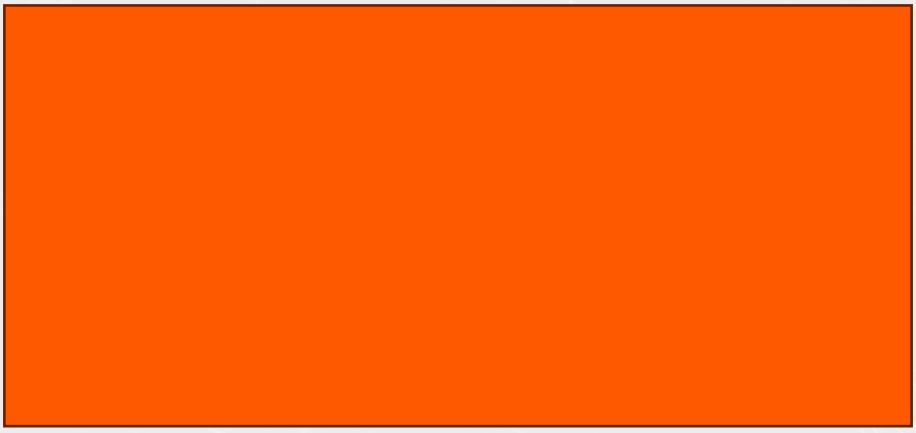
FEATURES & BENEFITS

DTI's PKB retrievable bridge plug meets the need for a low-cost, easy to run downhole plug in 2-3/8” to 4-1/2” completions with a 5,000 psi maximum working pressure. It is designed to be run and set in the well on slickline without any special setting tools and run and pulled using standard GS pulling tools.

It is typically supplied with melon or prong type equalizing devices however it is adaptable and can be used as a gauge hanger, standing valve or injection valve.

The PKB Bridge Plug lower slips are activated by stopping the wireline quickly to shock shear the activation pin, setting down weight then engaging the lower slips with the tubing wall. Jarring down sets the element and then further jarring down sets the upper slips. Picking up the tool string removes the sheared GS Pulling Tool from the bridge plug upper fish neck and the running prong closes the equalizing ports as it's moved up out of the bridge plug. A lock ring traps the setting force into the element so that it will not release during subsequent pressure reversals.

The bridge plug has also been adapted to be used as a packoff as part of a straddle sleeve and for gas lift systems.



KEY FIGURES & STATS

- Set at 900m.
- Run on 3” GS Pulling Tool.
- One of two safety critical barriers.
- Deployed on 0.125” Wire.
- 10ft of 1 7/8” Stem.
- 1 7/8” x 20” stroke Link Jars.