

CASE STUDY

PermaSeal Connectors featuring metal to metal seal technology ensure Coiled Tubing Gas Lift Completion integrity.

PROJECT

A major international energy services provider deployed DTI's PermaSeal Connectors and Self Aligning Connectors as part of Coiled Tubing (CT) gas lift completions with multiple gas lift stations. The campaign successfully restarted production in previously shut-in wells in Pakistan.

CT gas lift completions were selected to maximize return on investment for these wells. Each gas lift station, which included a gas lift mandrel, two DTI Perma-Seal Connectors and a DTI Self-Aligning Connector, had to be securely attached to the CT sections and ensure pressure integrity over the life of the completion.

Metal to metal sealing thread connections used between gas lift station components were industry standard and DTI's patented PermaSeal Connectors ensured an equivalent metal seal was present between the CT and gas lift stations. Traditional CT connectors feature elastomeric seals which degrade with time and temperature cycles, whereas utilizing DTI's PermaSeal Connector ensures prolonged completion integrity. In addition, DTI PermaSeal Self Aligning Connectors were used to make up gas lift stations to the next CT section without rotation.

RESULTS

Two wells were converted to Gas Lift utilising 1.50" and 1.25" CT and "production stabilized at rates of 420 and 325 B/D respectively" [1]. The DTI PermaSeal Connectors were successfully installed and pressure tested using DTI test equipment which enables the lower connector to be pressure tested after makeup to the CT and without applying pressure to the complete completion. The PermaSeal connector continues to provide a gas tight seal in the producing wells and additional CT gas lift completions in the same field are now planned.



The metal-to-metal seals on the coiled tubing PermaSeal connectors provide a secure long term gas tight barrier. This barrier is ideal for longer term completion projects using coiled tubing.

FEATURES & BENEFITS

DTI PermaSeal Connectors enable CT to be connected to completion stations without elastomeric seal potential leak paths and feature client specified thread connections including API or premium completion threads. The makeup procedure is efficient to complete on location and connectors can be pressure tested when they are made up to CT sections hanging in the BOP, without pressuring up the completion.

DTI Self Aligning Connectors enable sections of CT to be joined without rotation and also ensure metal to metal seals throughout.

PermaSeal CT Connectors can also be used for high pressure, high temperature and highly corrosive well intervention operations to ensure the well barrier does not rely on downhole elastomers.



KEY FIGURES & STATS

- 1 ¼" and 1 ½" External PermaSeal Coiled Tubing Connectors
- DTI Self Aligning Connectors provide a metal-to-metal seal.
- No special make up tools required.
- 5,000 psi rated although the PermaSeal connector has been used in 20,000 psi WP applications.