

Enhancing wellbore security with PrimeSET® Liner Hanger: a collaborative innovation with triple anti-presetting features

Saudi Arabia, Middle East

Packers Plus worked closely with a major operator in the Middle East to address premature setting issues during installation on challenging wellbore environments observed with liner hanger operations.

The operator identified an urgent need for solutions by all providers operating in the same environments. Packers Plus, known for its agile and rapid technology departments, quickly responded to the operator's needs and engineered a bespoke solution to enhance the running tool, ensuring the liner hanger packer would not pre-set when working the tool string downhole.

CHALLENGE

The operator had encountered multiple issues with liner top packers from other vendors setting prematurely while being run-in-hole before reaching total depth (TD). If the tool string would become stuck during installation, upward movement would activate setting operations and cause the hold down slips and element package to engage, packing off the well before reaching bottom and causing costly remedial operations to be required.

The operator required a solution on an accelerated timeline that would isolate the hold down slips and element from any upward force without changing the liner hanger design or operational procedures.

SOLUTION

The Packers Plus PrimeSET Liner Hanger uses premium sealing technology on a single piece mandrel to pack off the annulus and secure the liner in intermediate casing. The element package and slips can withstand high pressure applications, while the specially designed bonded liner seal can withstand high pump rates and requires minimal set down weight to pack off. The entire hanger system is API 19LH V1 Gas Tight qualified.

In response to the operator's request, the Packers Plus engineering team developed three options for an enhanced anti-preset feature for the PrimeSET Liner Hanger which all three solutions underwent testing simultaneously to expedite the engineering processes.

The final design did not require a redesign of the liner hanger assembly, thereby avoiding the need for re-validation testing to API 19LH V1 standards. The selected configuration eliminated the risk of downward and upward forces through the PrimeSET Liner Hanger, preventing all risks of setting of the liner top packer.

RESULTS

During testing, the newly engineered tool achieved the scope of the customer's request by exceeding the technical specifications requirements of tension, which delivered negligible movement and withstood the highest torque requirements that would be seen in operations.

On the first trial run, a 15K PrimeSET Liner Hanger was run into a cemented horizontal well. The liner was successfully deployed to the planned depth without pre-setting or operational challenges.

This successful project showcases the ability of Packers Plus to rapidly solve customer challenges with design agility and further enhances the innovative PrimeSET Liner Hanger. The new anti-preset capabilities ensure the PrimeSET Liner Hanger will reach designed depths, no matter the challenge. These features provide customer assurances by protecting against high circulation pressures, high torque requirements in standard and drilldown operations, and now external tension and compression forces applied to the tie-back receptacle and liner hanger setting cylinder. For more information about PrimeSET Liner Hangers and other completion solutions, visit packersplus.com.

