Case Study

Liner hanger and cementing stage collar combine to overcome challenging geology

Canada, Wilrich
StackFRAC HD System, SF Cementor Stage Collar, PrimeSET Liner Hanger

An operator working in a geologically challenging area of the Western Canadian Sedimentary Basin successfully installed and completed an open hole system after combining an SF Cementor® D with a PrimeSET™ liner hanger to cement the heel and build section of a well.

Challenge

Central-Western Alberta has some areas that are known to be challenging for drilling and completions due to its stratigraphy. To access some of the deep, high pressure formations, operators must drill through a number of unstable or low pressure zones that can cause the loss of drilling mud and vital wellbore fluids. To provide wellbore stability and isolate problem zones, there are typically two options:
– Install intermediate casing
– Cement the vertical and build sections using a stage collar
However, there is increased cost associated with running intermediate casing all the way to the targeted formation. In both cases, there is a risk of losing circulation.

Solution

Rather than installing intermediate casing all the way to the target formation, or risking lost circulation while cementing the vertical section, specific areas of the vertical well can be isolated by combining a liner hanger and a stage collar. This way, the annulus of the problem area can be cemented only between the stage collar up to the liner hanger. For this installation, intermediate casing was cemented to the minimum depth required to isolate known unstable and low pressure zones, but this was not deep enough to cover all formations above the targeted depth.

PrimeSET Liner Hanger and SF Cementor D

An open hole StackFRAC® HD system was installed with the TREX™ PrimeSET Liner Hanger and the SF Cementor D stage tool to provide cemented zonal isolation from the heel of the producing interval back to the liner hanger.

Results

The PrimeSET Liner Hanger and SF Cementor D were assembled in the completion string and run into the wellbore. For this special combination of tools, the closing dart for the SF Cementor D was modified to work with the liner wiper on the end of the PrimeSET running

tool. After the dart closed the stage tool, the liner hanger packer and slips were set without incident.
The cement between the intermediate casing and the stage tool provides an economic way to achieve full isolation above the targeted formation.

The efficiency of the installation allowed the operator to meet all completion requirements, and saved considerable time and resources. This economic design and operation will continue to help operators complete similarly challenging wells, in Alberta and around the world. Packers Plus has continued to provide innovative solutions for the completion industry's newest challenges since 2000. For more details about the PrimeSET liner hanger, the SF Cementor D stage tool, or other Packers Plus technology, visit packersplus.com.