

Use of Remotely Operated Technology Saves 59 Hours Rig Time

UNITED KINGDOM

CHALLENGE

Set a production packer and provide dual barriers with minimal intervention operations.

SOLUTION

Deep-set eMotion®-LV remotely operated barrier valve and a shallow-set Evo-RED® bridge plug used in combination to set the production packer and provide dual barriers for removing the BOP.

RESULT

Use of eMotion-LV valve and Evo-RED bridge plug saved the operator approximately 59 hours rig time and greatly reduced the number of interventions required to complete the well.

OVERVIEW

In the UK North Sea, Chevron wanted to eliminate interventions during completion installation to reduce the rig time associated with these operations. Halliburton proposed the use of eMotion®-LV remotely operated barrier valve and the Evo-RED® bridge plug to help eliminate a number of intervention runs while increasing the efficiency of the operation.

Upon Halliburton's recommendations, the operator elected to run the eMotion-LV valve as a production packer-setting device and deep-set barrier, permanently installed as part of the completion tubing. The Evo-RED bridge plug was used as a preinstalled shallow-set barrier, which would later be retrieved from the well via slickline. The valve and the plug use onboard decision-making electronics that monitor well conditions and are programmed to either open or close whenever a specified condition (known as a trigger) is detected. This allowed the operator to communicate with the tool remotely from surface using a combination of applied pressure commands and timers.

Using the combination of eMotion-LV valve to set the production packer and an Evo-RED plug to provide a dual barrier for removing the BOP and installing the tree, reduced the need for conventional intervention methods, increasing the efficiency of the operation and helping reduce the associated operational and HSE risks.

CHALLENGE

Chevron wanted to hydraulically set a production packer and provide dual well barriers with minimal intervention methods. The completion design had a limitation where only low pressure could be applied against the fluid loss device, hence the requirement for a separate packer-setting solution. The typical completion method would normally involve two full wireline rig ups/downs, 10 shallow wireline runs and one deep wireline run.



SOLUTION

Halliburton proposed the use of an eMotion-LV remotely operated isolation barrier valve, deployed in the open position, as the packer-setting device and deep-set barrier. Once the completion was landed and the hanger was tested, the eMotion-LV valve was remotely closed to allow setting of the production packer. The eMotion-LV valve was then remotely opened via pressure command to allow the annulus to be tested and reclosed to act as the deep-set barrier.

An Evo-RED bridge plug was proposed as the shallow-set barrier to allow removal of the BOP and installation of the christmas tree. The Evo-RED plug was preinstalled in a tubing joint onshore and deployed as part of the completion in the open position. Once the production packer had been set and the eMotion-LV valve had been reclosed, the Evo-RED plug was remotely closed via pressure command to act as the second barrier.

Upon installation of the christmas tree, the Evo-RED plug was remotely opened and subsequently pulled from the well via slickline. The eMotion-LV valve and fluid loss device were then remotely opened via pressure commands to allow production to commence.

RESULT

Use of eMotion-LV valve and Evo-RED bridge plug technology in this application saved the client an estimated 59 hours rig time compared to the typical intervention methods. Use of remotely operated barrier valves eliminated one full wireline rig up/rig down, eight shallow runs and one deep wireline run. This technology also allowed the onboard wireline crew to perform SIMOPS offline on another well, which reduced the scope of work on that well by a minimum of four days. The health, safety, and environment (HSE) risks involved with rigging up and running wireline were also eliminated in this case.



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