

Slimhole technology recovers well with operational issues

[Canada, Doig](#)
[StackFRAC Slimhole System](#)

Background

The Triassic Doig formation is located in northwest Alberta and stretches across the border to northeast British Columbia. The Doig is composed of siltstone and shale and overlies the Montney formation. A maximum thickness of 190 m (623 ft) is reached in the foothills of the Canadian Rockies and thins out towards the north and east. In northeast British Columbia, the Doig is the main producing interval of the Inga operating area. The reservoir is 25 to 30 m (82 to 98 ft) thick and contains an estimated 12 Bcf of gas and 4 million bbl of condensate in place per section of land. Reservoir characteristics make the Doig a prime candidate for horizontal drilling and multi-stage fracturing techniques.



Challenge

A junior operator targeting the Doig formation in the Inga operational area planned to complete their 11-stage well using an open hole system. The operator was able to successfully stimulate the first six stages, but encountered operational difficulties due to a loss of integrity in the liner hanger packer, which prevented treatment of the remaining stages. Despite the original completion system being supplied by a competitor, the operator approached Packers Plus for an effective solution to recover the well that would allow them to successfully stimulate the remaining stages.

Solution

The operator chose to recover the remaining stages in the well with a 5-stage Packers Plus StackFRAC® Slimhole multi-stage fracturing system by installing it inside the existing open hole liner (Figure 1). The Slimhole system was developed with the same function as the field-proven StackFRAC system, but was specifically designed for applications that require a smaller liner outside diameter, such as re-entry into existing wells.



Results

The 4.5 in. x 2.875 in. Slimhole system was designed with RockSEAL® II packers equipped

with elements engineered to provide effective isolation inside a liner. The breach at the existing liner hanger packer was flanked by a RockSEAL IIS anchor packer above and RockSEAL II packer below the damaged tool to achieve annular isolation.

Prior to re-entry, the last five ball seats in the existing open hole system were milled out and perforations were created to allow for communication with the formation. During installation, FracPORT™ sleeves were precisely aligned with the perforations, enabling the remaining stages to be stimulated. After the successful installation, the well was stimulated with a propane fracture treatment.

The StackFRAC Slimhole system has multiple applications for operators working in formations which require completion and well recovery solutions. These include stimulation of open hole laterals drilled off of existing vertical wells to exploit new or existing producing zones; re-stimulation of existing cemented liner or open hole wells to improve recovery from damaged or depleted zones; and re-completion of cemented liner completed wells where a loss of casing integrity has hindered stimulation.