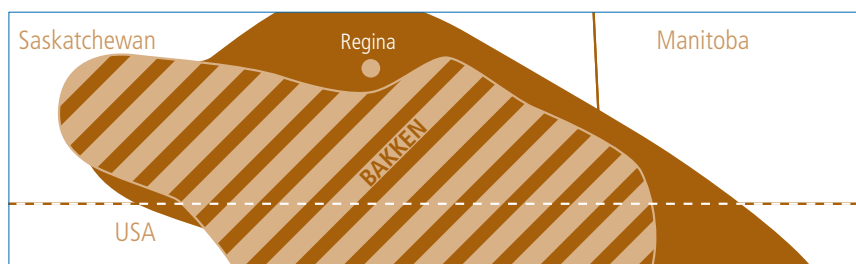


Packers Plus® Case Study



StackFRAC completion of dual laterals provides enhanced reservoir drainage for two major operators in the Bakken



Background

The Bakken formation in southeast Saskatchewan has seen a progression of completions methods with the goal of increasing recovery rates from this tight, light-oil resource play. Currently, open hole horizontals completed with the Packers Plus StackFRAC® Multi-Stage Fracturing System are the mainstay in the Bakken because of the excellent production results and continuous operation, which results in cost savings. Operators are now looking for methods to further increase their ROI.

The Challenge

Two major operators working in the Bakken wanted to improve the performance of their leases by more effectively draining the available resources. To achieve this, they required a well design and completion method to increase reservoir contact. At the same time, the operators needed to minimize additional development costs. This meant

keeping the number of pads and rig time to a minimum. To ensure the highest ROI, operational efficiency was key.

The Solution

One option to increase reservoir contact that is becoming more popular among operators working in the Bakken is to drill two or more laterals off of one vertical wellbore. This design greatly reduces the upfront capital costs compared to drilling individual horizontals as the majority of drilling cost resides in the vertical portion of the well. Additionally, it effectively doubles or triples the reservoir contact from a single vertical.

Both operators were already using the StackFRAC system to complete their open hole horizontals, so it was natural for them to come to Packers Plus to complete their dual laterals. One operator is running 8-stage, 4 ½" StackFRAC systems in their 1,200 m 6 ¼" open hole dual laterals for a total of 16 stages. This operator drills the first leg and installs the

StackFRAC system before drilling the second leg and running the second system.

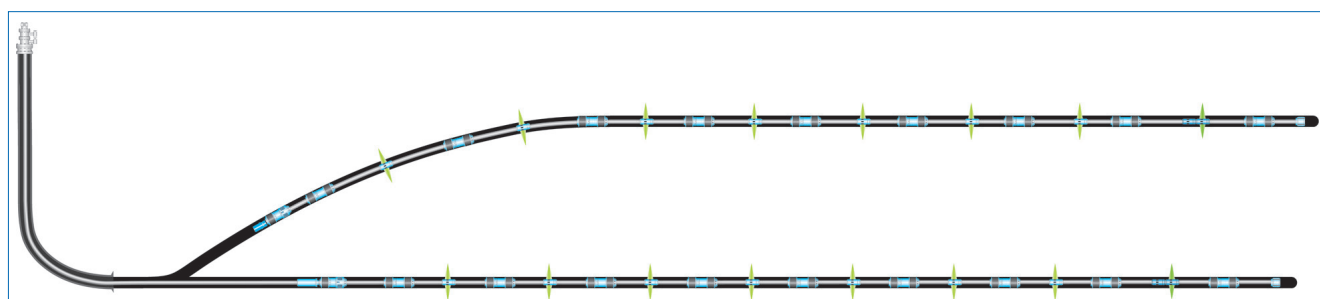
The other operator is using 16-stage, 3 ½" StackFRAC HD™ systems in each 6 ¼", 1,200 m leg, for a total of 32 stages.

This operator drills both laterals and then installs both systems with a service rig. The StackFRAC HD system was launched by Packers Plus in July of 2009 and has improved staging technology allowing for up to 22 stages per lateral. Operationally, these completions take one day per system to stimulate, so two days total for the two laterals.

The Results

To date, over 200 dual laterals (>400 legs) have been run in the Bakken with the Packers Plus StackFRAC and StackFRAC HD systems. Additionally, Packers Plus has completed more than 10 tri-laterals that were originally drilled for natural production. Re-entry of existing horizontals to drill and complete one or more additional legs is another option being taken by these operators.

The key to making these more complex completions succeed is the operational experience Packers Plus has gained from running more than 5,000 systems worldwide in a variety of formations, both on and offshore, which also proves the versatility of these systems.



An open hole, dual lateral well with 8-stage StackFRAC HD systems.

Some or all of the systems, methods or products discussed herein may be covered by one or more patents, or patents pending, including US patent numbers 6,907,936; 7,134,505; 7,108,067; 7,543,634; 7,431,091; 7,021,384; 7,353,878; 7,748,460; 7,762,333. Copyright © 2010 Packers Plus Energy Services Inc. All rights reserved. CAN-13-OCT-10



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