

# Packers Plus® Case Study



## Packers Plus technology opens up a new pool in the Doe Creek formation

### StackFRAC multi-stage system enhances production for economic recovery

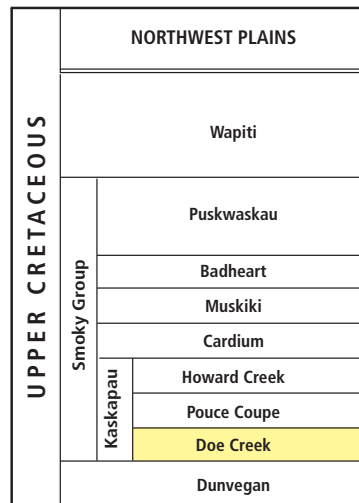
#### Background

The Doe Creek Member of the Kaskapau shale formation is a light oil-bearing sandstone associated with the Dunvegan delta in northwest Alberta. An operator working in the Hythe area, just west of Grande Prairie has discovered a new pool in the Doe Creek formation at 1,000 m with an estimated 10 million barrels of original oil in place. Based on analog pools in the area, the recover factor is expected to be in the range of 19% and average porosity and permeability measurements range from 19 – 23% and 200 – 700 mD, respectively.

#### The Challenge

Based on vertical well production, the Doe Creek formation was classified as marginally economic. However, with recent technological advancements in horizontal drilling, multi-stage fracturing and liquefied petroleum gas (LPG) fracturing, a junior

operator decided to evaluate the potential of these transformative technologies to enhance initial production rates, ultimate recovery and overall production economics of the Doe Creek formation.



#### The Solution

Having successfully used the StackFRAC® system to target reserves in the Dunvegan and deeper Cadomin formations in the Hythe area, the operator decided to work with Packers Plus. A 6-stage StackFRAC system was installed to a total depth of 2,115 m at a total vertical depth of 1,125 m to target the Doe Creek formation. The horizontal open hole accessed 950 m of pay and used gelled LPG to fracture the formation and place the proppant.

#### The Results

The successful application of multi-stage fracture stimulation using the Packers Plus StackFRAC system and LPG fracturing has achieved economic success from an interval that was historically only marginally economic. Overall, this program has validated these exploitation technologies, which the company now plans to apply to other areas.



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. Copyright © 2010 Packers Plus Energy Services Inc. All rights reserved. CAN-03-AUG-10

