

## Packers Plus® Case Study



# Packers Plus and Schlumberger combine their proprietary technology to complete a best-in-field well in the Black Sea offshore Romania

### Background

The Lebada Vest Field is situated approximately 95 km offshore from Constanta, Romania. The zone of interest is 50 to 60% limestone laminated with streaks of permeability ranging from 0.1 to 2 mD and porosity between 15 to 22%. The reservoir is also situated close to an undesirable gas cap. The largest oil and gas producer in southeast Europe had a horizontal well in Lebada Vest which they wanted to multi-stage stimulate without fracturing into the gas cap.

### The Challenge

Because of the high costs inherent to offshore wells, the main focus for completing these wells was to increase operational efficiency to minimize the time required for stimulation. Previously, the Operator had completed their wells with cemented perforated liners and polymer-based, conventional fracture fluids

prepared with fresh water. The latter required that the treatment boat return to port after each stimulation because the fracture fluid had to be batch-mixed into the boat tanks at the dock. This process required an average of three days for each fracture treatment.

### The Solution

After evaluating all completion options, the Operator chose to run a 3-stage open hole Packers Plus StageFRAC\* system to gain the time and cost advantages from the single, continuous stimulation operation. Schlumberger's non-polymer-based ClearFRAC\* XT fracturing fluid allowed for mixture with seawater instead of freshwater. Additionally, due to the lack of a dedicated treatment boat, a supply boat was modified to hold Schlumberger land-based fracture equipment.

### The Results

The 3-stage stimulation was executed in one day with eight hours of pump time versus an estimated 9 days for a conventional cemented liner "plug and perf" completion. The innovations provided by Schlumberger's ClearFRAC XT and supply boat modifications negated the need to return to shore after each stage and shaved 12 days off of the operation.

Ultimately, the Operator's goal was to stimulate a part of the reservoir which had not been exploited by using multi-stage fracturing. The combined use of Packers Plus and Schlumberger proprietary technology enabled this to be an efficient and cost effective process. After treatment, the well became the record producer in the Black Sea and its stabilized production rate was 2.5 times the best offset well in Lebada Vest completed with conventional methods.

The well was such a success that the Operator presented the results at the SPE European Formation Damage Conference held in Scheveningen, The Netherlands, 27-29 May (SPE 121415) and the SPE EUROPEC/EAGE Annual Conference and Exhibition held in Amsterdam, The Netherlands, 8-11 June, 2009 (SPE 121204). Because of this success, the operator has continued to use the Packers Plus StageFRAC system in their Black Sea offshore wells.



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