

Infill Well Design to Enhance Hydrocarbon Recovery from a Multiple Transverse Fracture Horizontal Well

Summary

Improvements to oil extraction over the past several decades has strengthened the marketability of oil recovery from tight oil/unconventional oil reserves such as those that are abundant in the US and Canada and that were once considered impractical and too expensive. This technology makes further improvements by specific design considerations for an oil well and especially during secondary extraction. Extraction during secondary oil operations can lead to significantly increased total oil recovery and by as much as a factor of ten times. This technology focuses on the design and placement of infill injection lines with respect to the main oil well. Infill injection lines add pressure to a reservoir which can force more oil out of a well. The design of the well and the adjacent infill injection lines is important as described by this technology in order to ensure that this process works effectively by avoiding “water breakthrough” and efficiently over extended periods of time through pressure monitoring. Pressure is the key for enhanced oil recovery, and this technology ensures that pressure is in the right places deep down inside of the well.

Competitive Advantages

- Smart design and monitoring during operation avoids water breakthrough which is considered failure of secondary recovery efforts
- Smart design of well pattern enables multiple simultaneous plane to plane displacements making the process efficient

Meet the Inventor

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Problem Addressed

Current well designs preclude displacement from one well to another

Application

Primary and secondary oil recovery operations and especially for tight oil

Patents

- PCT/US2016/061289
- US 62/349,659

Publication

- Ehlig-Economides C.A et al., 2016, Actual and Optimal Hydraulic-Fracture Design in a Tight Gas Reservoir. Society of Petroleum Engineers.

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