

[Case Study](#)

Slimhole System Boosts Production by up to 468 Times

[United States, Cleveland Sand StackFRAC Slimhole System](#)

The Cleveland formation is a tight gas reservoir discovered in the 1950s and initially developed with hydraulically fractured vertical wells. With many older vertical wells nearly depletion and having flat decline rates, operators have looked to re-entry as a cost-effective means to boost production by reducing the cost of drilling a new well.



Challenge

An operator working in Lipscomb County was looking to bring new life to old vertical wells that came on production between 1970 and 2000. These wells had somewhat flat decline rates indicating they may have been stimulated. The operator was interested in re-entering the wells and also increasing reservoir coverage.

Solution

Six vertical wells in the Lipscomb County were targeted by the operator between 2005 and 2008. To increase connectivity between the wells and the target Cleveland formation, the wells were re-entered by drilling horizontal sidetrack laterals from the vertical using whipstock connections. Packers Plus StackFRAC® Slimhole systems run on 2.875-in. liner were used to complete the wells, using three to five completion stages, stimulating lateral lengths up to 2,200 ft. Up to 320,000 lbs of proppant was pumped for each well.

Results

The vertical wells had been on production for a period of 9 to 32 years prior to re-entry. With the significant increase in reservoir coverage from drilling horizontal wells, the average monthly production for the 5 months after re-entry was noticeable higher than the 5 months before re-entry. Relative increases ranging from factors of approximately 10 to 468 were observed between the 5-month post-frac and pre-frac average monthly production rates.

