

CASE STUDY

PEAK RETRIEVABLE SYSTEM



RETRIEVABLE MULTISTAGE SYSTEM REDUCES COSTS AND TIME WHILE IMPROVING FRACTURE TREATMENT



Retrievable System Run History Since 2003 (AS OF MAY 2013)

- 373 Installations comprising 2,123 Stages
- 362 Successful Recoveries
- 97% Success

CHALLENGE

Efficiently complete 15,000 ft horizontal wells with 1,800 ft laterals on average inside pre-perforated 5.5" production casing. The formation is considered to be in a complex geologic setting containing complex carbonates and siliclastic sediments. Rock properties are variable both vertically and laterally with high porosity and moderate permeability posing a stimulation challenge with previously experienced high stimulation pressures.

SOLUTION

Operator used the retrievable 10k psi rated Predator™ cased hole multistage completion system. Stage spacing was variable from 300 ft to 380 ft with an average of 350 ft. The keys to success were the advanced tool designs and recommendation to significantly overflush each sand stage to avoid problems with sand affecting the retrievability of the system.

RESULT

The completion tool strings were run in the well and set on depth. The stimulation pressures experienced were as planned and each stage was successfully isolated with up to 7,600 psi treating pressure experienced. Surface treating pressures ranged from 3,900 psi to 7,600 psi. Peak successfully retrieved the completion assembly. The well is producing and the operator is continuing their drilling program and to utilize Peak Completions.



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REDUCE COMPLETION TIME

An operator in the Western Permian/ Delaware Basin was using conventional plug-and-perf methods to fracture stimulate wells with cemented liners. The operator was experiencing long pump times to place plugs and guns on depth due to tight zones resulting in low pump rates. Planned frac treatment was to pump acid and slick water with proppant. In addition the operator was looking to retrieve the completion liner after the frac treatment. The goal was to drastically reduce water requirements, completion time and operational costs while improving the effectiveness of the fracture stimulation treatment.

RIGLESS ALTERNATIVE TO PLUG-AND-PERF

Peak Completions presented the operator with a rigless alternative to plug-and-perf using a 10k psi rated Predator™ cased hole completion system. The system included a toe assembly specifically designed for this well. The Toe Assembly included the HydroPak™ anchor and a first stage hydraulically opened with the HydroPort™. Isolation of individual stages was accomplished with MonoPak™ cased hole isolation packers.

After placing the assembly on depth, a completion fluid was circulated in the lateral section. The system was set by increasing the pressure within the string. The first stage was opened by activation of the Peak HydroPort™ and the first stage stimulation treatment was delivered as planned. Access to stage was achieved with drillable StrataPort™ frac sleeves activated by dropping Peak's proprietary frac balls.

The ball drop was timed to open the next stage as the end of the previous stage pumping schedule was completed. The ball drop was repeated until all stages were completed. As each stage was completed, the pressure to open the next stage indicated the stimulation treatment was successful in accessing the target reservoir and the well would flow after completion of the stimulation program. The well was not flowed back after the stimulation treatment.

JOB PUMP TIME IN LESS THAN ONE DAY

The Predator™ Multistage Completion System performed flawlessly and reduced the total stimulation time to less than one day. All stages were opened as planned at the designed pressures and each zone was stimulated. The operator was able to make decisions about each stage's treatment during the pumping operation allowing for maximum stimulation of each zone. With no transition time between stages, the entire stimulation job time was minimized and used the minimum amount of acid and frac fluid. After shutting the well in and allowing the well pressure to alleviate, Peak immediately pulled over the string weight to shear release the packers and recover the completion assembly. The shearing system in the packers allows the elements and slips to retract and the tools to be recovered from the well. Peak Completions effectively solved the operator's challenges with a highly reliable, efficient, and inexpensive solution. The economic savings and accelerated production allowed this company to expand the number of wells completed and ultimately result in higher revenues for the year.