

High Rate Annular Coiled Tubing Fracturing

Marcellus

OVERVIEW

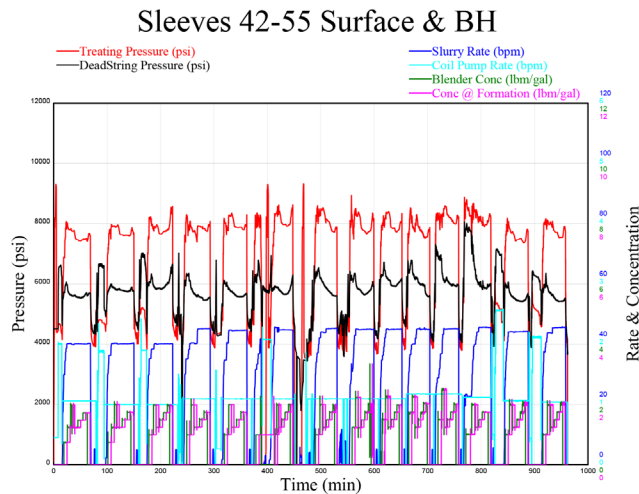
Calfrac Well Services' Smithfield district operation performed above and beyond customer expectations on the first annular coiled tubing fracturing completion technique executed in the Pennsylvania Marcellus Basin. Using NCS Multistage casing sleeves, the treatment was performed with Calfrac's CWS-600 Slickwater System.

CHALLENGE

Regardless of the economic climate, it is important for operators to get the most out of their wells. To ensure as much of the lateral length was stimulated as possible, the customer came to Calfrac and NCS Multistage to use frac with coil to pinpoint stimulate every foot of the lateral and achieve optimal production.

SOLUTION	RESULTS
<p>Calfrac used specifically designed surface equipment and operating procedures to complete the annular fracturing operation.</p> <ul style="list-style-type: none"> • Annular frac entry was pinpointed at an average of 42.6 bpm at 7557 psi down 5.5" casing with 2-3/8" coil • Ability to circulate screenouts to avoid excessive downtime • Ability to spot acid down coil during flush to minimize pump times and water volumes • Increase stage count to 110+ stages per lateral • Ability to optimize job design on-the-fly due to the ease of reversing a screenout • Reduce location footprint 	<ul style="list-style-type: none"> • Lower water volumes than traditional plug and perf fracture treatment • Reduced necessary horsepower on location • 336 stages completed successfully and efficiently: <ul style="list-style-type: none"> • ~15 minute turnaround from sleeve to sleeve • Minimal downtime due to maintenance • No wellbore restrictions • No drill outs • Quick screenout recovery

RESULTS



High Rate Annular Coiled Tubing Fracturing Operation.
Calfrac Well Services Photo