SHOWCASING THE POWER OF PRESCRIPTIVE CHEMISTRY

WOODFORD | GRADY COUNTY, OK

FLOTEK CLIENT PROFILE

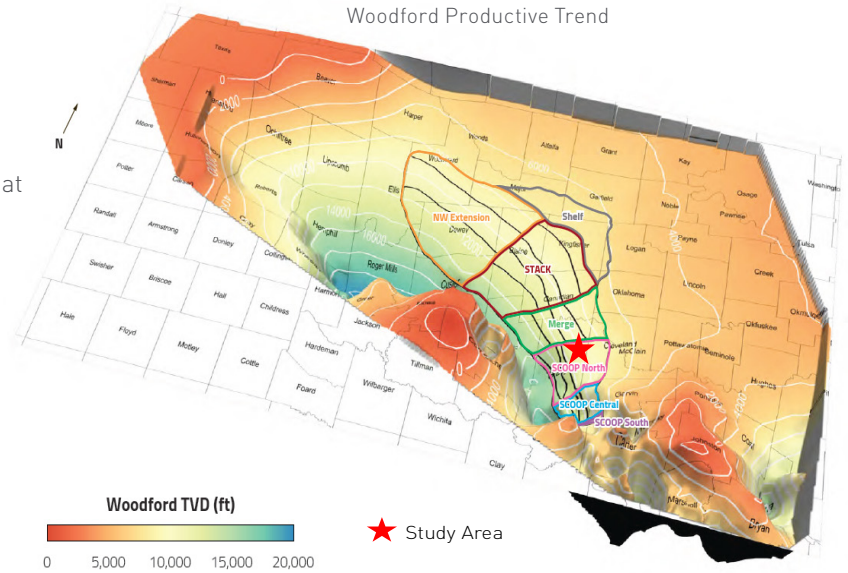
OVERVIEW

Flotek partnered with an operator with acreage in Grady County, Oklahoma in the Woodford play to reverse the negative effects of fracture treatments from nearby offset wells (frac hits), as well as to improve production in wells that under-performed based on pre-drill estimates.

These production challenges are pervasive in the Woodford intervals where clay content, structure and natural fracture density impact well and completion design.

As a part of the pilot program, four producing wells were treated with a customized mix of Complex nano-Fluids® (CnF®), hydroflouric acid, hydrochloric acid and ammonium chloride.

Woodford Productive Trend



*Source: RS Energy Group

OPERATOR

acreage in Woodford Play, Grady County, Oklahoma

WELL/COMPLETION PLAN

The two frac hit wells were drilled 1,500-1,600 ft. apart with a similar lateral length and completion design containing 6.6-7.3 million pounds of proppant over approximately a 4,500 ft. perforation length.

The two wells that under-performed on initial stimulation had a perforated interval that varied from 4,175 to 6,640 ft. with 7.6-10.1 million pounds of proppant.

RESULTS

The four well program has positive economic results. Remediation in all cases provided increased production and additional recovery for each well.

Remediation restored oil and gas production to pre-frac hit decline rates in one well, nearly two years prior to projection. Additionally, oil, gas and water rates more than doubled.

Remediation in one under-performing well led to 4 fold increase in pre-remediation rates and surpassed expectations.

INCREASE

4 fold increase in pre-remediation rates in one under-performing well

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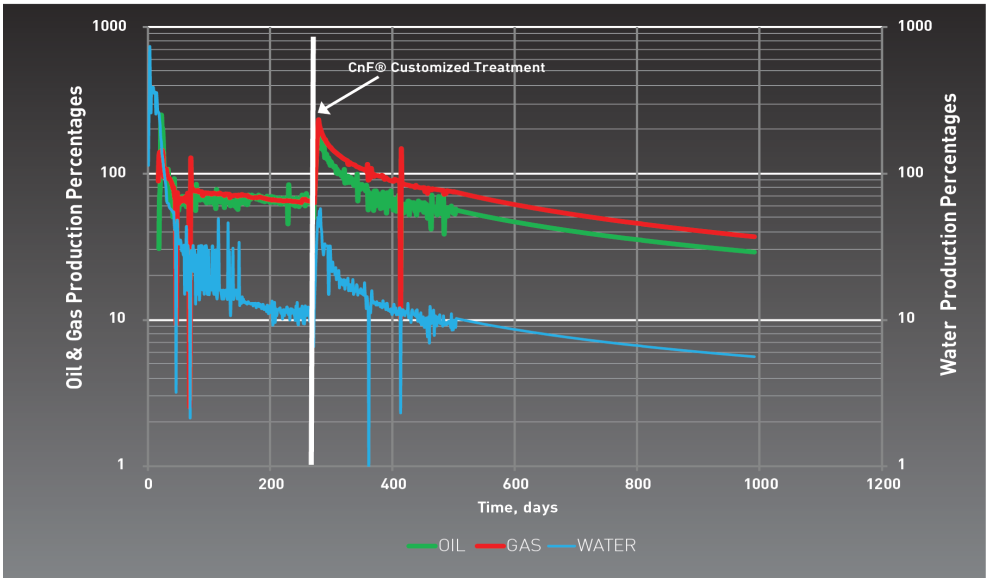
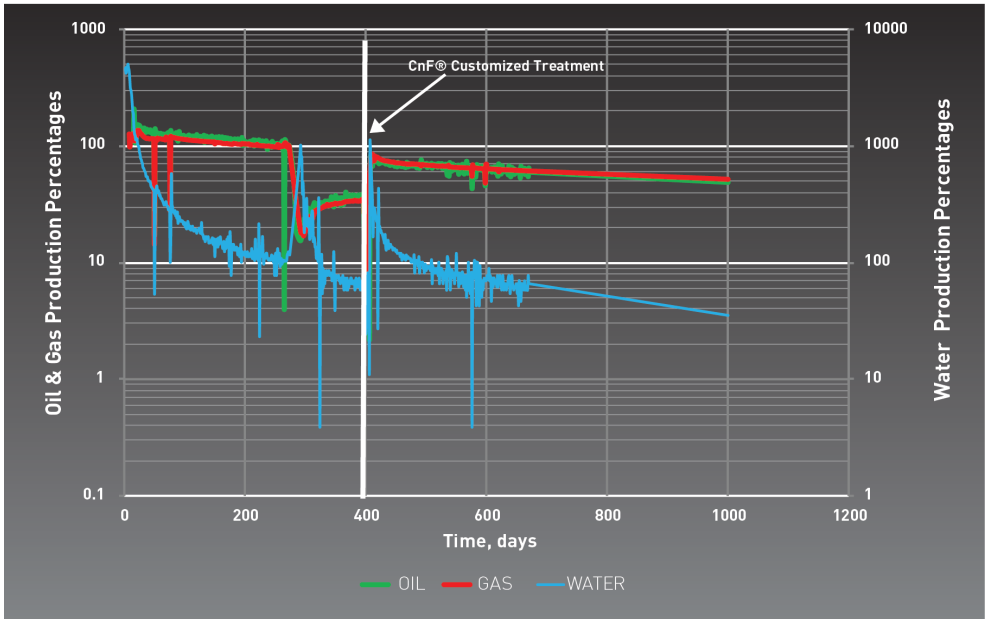
UNDER-PERFORMING WELL
EXPRESSED AS PERCENT OF WELL'S 30 DAY IP



FRAC HIT REMEDIATION
EXPRESSED AS PERCENT OF WELL'S 30 DAY PRE FRAC-HIT RATES



References: SPE-187192-MS and URTEC-2902400-MS

FLOTEK CHEMISTRY-AT-WORK

The chemistry used in the treatment of the wells impacted the reservoir by changing rock/fluid interfacial tension, breakdown pressures, phase trapping and controlling clay swelling and fines migration. Additionally, solvents used in the CnF® patented chemistry reduced the potential for high viscosity emulsions and increased flow capacity within the reservoir.

The reservoir challenges seen in Grady County can be present throughout the Woodford trend.