Schlumberger

Infinity System Saves Zavanna 50 Hours by Eliminating Poststimulation Plug Millout

Dissolvable plug-and-perf system reduces risk on second installed well after successful TD check on first well, Bakken Formation

CHALLENGE

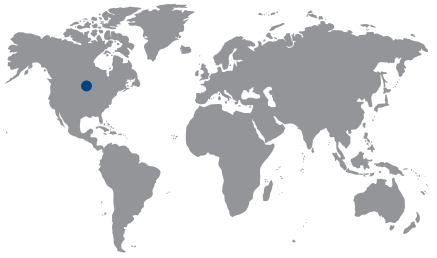
Improve efficiency by eliminating conventional millout of plugs while maintaining advantages of plug-and-perf completion methods in a high-temperature (275-degF [135-degC]) unconventional well.

SOLUTION

Deploy Infinity* dissolvable plug-and-perf system to eliminate poststimulation millout of plugs.

RESULTS

- Eliminated millout on the second well after successfully completing a TD verification check on the first well.
- Saved costs of a CT run and approximately 50 hours of operating time.
- Eliminated risks associated with conventional milling operations.



Zavanna investigates multiple plug-and-perf completions systems to improve efficiency

While operating in the Bakken Formation in North Dakota, Zavanna investigated and tested several different dissolvable plug technologies to improve efficiency and eliminate poststimulation plug millout instead of using conventional plug-and-perf completion methods, which included milling out plugs with CT.

Infinity dissolvable plug-and-perf system isolates zones without using plugs

Schlumberger recommended the Infinity system, which uses degradable seats instead of plugs to temporarily isolate zones during multistage hydraulic fracturing stimulation. The Infinity system was installed in two wells that were stimulated with a total of 100 stages and successfully placed on flowback. Tough well conditions resulted in a couple of stuck events during the operation, but they were simply resolved by injecting brine to dissolve the aluminum-base seat material. After a few hours, the tool was free to move, and operations continued with no need for mechanical intervention. After stimulation was completed, Zavanna performed a successful confirmation check to TD on the first well, validating that the degradation process had occurred as expected.

Dissolvable system saved Zavanna 50 hours in operating time

After the success of the first well, Zavanna chose to eliminate poststimulation milling, saving 50 hours of operating time as well as the costs and risks associated with a CT run. The well was put straight onto production, and initial results showed that both of the wells stimulated using the Infinity system matched the productivity of offset wells but did so quicker, with fewer people at the wellsite, and with fewer interventions and their associated risks.

The degradable fracture ball and seat dissolve completely and predictably, eliminating the need for milling and enabling fullbore production.