

Illusion[®] Frac Plugs Save Time and Reduce Overall Completion Cost

HALLIBURTON MITIGATED CONCERNS OF REACHING TOTAL DEPTH IN AN EXTENDED-REACH APPLICATION

WILLISTON, NORTH DAKOTA, USA

OVERVIEW

To reduce cost and completion time, an operator in the Williston Basin opted to use a coiled tubing unit to mill out composite frac plugs. But there were concerns about the capability to mill out the composite plugs in the extended-reach laterals. Halliburton Illusion® frac plugs were installed in the first few stages of several wells, and the operator was able to quickly drillout to the total depth of each well without any issues.

CHALLENGE

The operator had been using a workover rig to mill out composite frac plugs after completing the stimulation treatment. But to reduce cost and completion time using the plug-and-perforate technique, they decided to use a coiled tubing unit for the millout. The revised approach raised concerns that they would not be able to mill through the composite at great depths, as well as the potential for intervention costs should the coiled tubing bottomhole assembly get lost or stuck.

SOLUTION

Halliburton recommended using Illusion dissolving frac plugs instead of composite plugs in the toes of the wells. The self-removing nature of the Illusion plug helps eliminate the need for milling to remove them from the wellbore.

CHALLENGES

- » Use a coiled tubing unit to mill out composite frac plugs in extended-reach laterals
- » Uncertainty about whether the millout would succeed
- » Potential for lost or stuck bottomhole assembly

SOLUTIONS

- » Set Illusion[®] dissolving frac plugs in the toes of the wellbores
- » Illusion plugs help eliminate the need for milling to remove them from the wellbore

RESULTS

- Illusion frac plugs were set as deep as 20,911 ft (approx. 6,400 m)
- » The coiled tubing unit easily cleaned out the wells, with no bottomhole assembly issues
- » Operator saved time and reduced overall completion costs.



RESULT

The Illusion frac plugs were pumped and set as much as 20,911 feet deep (approx. 6,400 meters) without any issues. With very little material in the toes of the wellbores, the coiled tubing unit easily cleaned out the wells. After installing over 60 plugs, only twice did the coiled tubing unit encounter debris that required milling near the setting depth of the plugs. When milling was required, the time was substantially reduced compared to composite frac plug mill times.

By reducing the risk of stuck or lost bottomhole assembly components, Halliburton saved the operator as much as USD 200,000 and several days of intervention work. Mitigating the concerns over cleaning out the wellbores with a coiled tubing unit saved the operator time and money, and allowed them to reduce the overall cost of their completions.

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Completion Tools