

Success Study

Customer saves water consumption by whopping 900 m³ by using Kobold's Surefrac service

CHALLENGE

A Calgary-based oil and gas producer with wells located in the Alberta Valleyview area was accustomed to using 5.5" casing size for their jobs, since larger size casing allowed for higher frac rates. From past experience, however, the producer had been using a larger quantity of water during the process than they would have liked. With that in mind, they wanted to control or reduce water usage as much as possible and also ensure the use of frac chemicals would not be affected due to any changes in water usage – without adversely affecting well production.

For the 5.5" job, the producer wanted to work with Kobold. However, Kobold did not have a 5.5" tool at the time so the challenge was to design a new tool that could not only accommodate larger size casing, but also do the job for the producer at higher frac rates without compromising performance, reliability and efficiency. This would be the first ever 5.5" job that Kobold did for a customer.

APPROACH

With the 5.5" casing, the producer fractured at a typical rate of 8.3 m³/min. For 4.5" casing, Kobold's existing Surefrac frac service using Kobold's Sandhawk bottom hole assembly typically operated at 5 to 6 m³/min. A modified version of Surefrac and Sandhawk was developed to accommodate the larger size 5.5" casing and handle higher frac rates – all the while keeping the same functionality of being able to efficiently locate, frac and move between zones as the 4.5" system.

The job involved frac-opening the sleeves. While fracturing down the annulus, the producer was using too much fluid down coil to maintain differential pressure. Kobold tweaked the Surefrac by incorporating a blanking sub with a smaller jet port that decreased the amount of fluid used for the producer's tubing pump units, without needing to adjust differential pressure. The blanking sub gave a positive pressure inside the coil at lower frac rates. This saves the cost and waste of fluid being pumped down the tubing during an annular frac. It also does not dilute the frac chemicals in the annulus from having to pump at higher rates to maintain positive pressure.

CLIENT ADDED VALUE

Using the modified 5.5" version of Surefrac in conjunction with Kobold's Surelocate positive locating technology, the producer saw significant gains in speed and efficiency by being able to locate, frac and move between zones much quicker than before. The producer averaged 2 days per well over the course of 6 to 10 wells. While it typically takes 20 to 30 minutes to fracture between zones, the producer was able to perform the job in 8 to 10 minutes with the 5.5" Surefrac. There was substantial time and cost savings associated with spending less time between zones. Notably, the producer was a full 24 hours ahead of their original schedule. This effectively meant the producer was able to save a full day of costs from having to pay a frac crew, coil crew, or any other services that may have been required. As a result of having to spend less time fracturing wells and taking advantage of utilizing a blanking sub, the producer was able to save a considerable amount of water/fluid usage to the tune of 900 m³ – without affecting frac chemical composition – which further added to the cost savings.

With the success in using the 5.5" Surefrac, the producer was not only able to save costs and water usage, but they now had a reliable system from Kobold they could use for future jobs in their preferred casing size.

Service Line

Surefrac Service - Unlimited Stage Sequencing

Location

Valleyview, AB

Formation

Montney

Well Type

Onshore, horizontal, gas

Casing Size

139.7 mm (5-1/2")

True Vertical Depth

Approx. 2,700 to 3,000 m

Total Measured Depth

4,000 to 5,000 m