

Kronos



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Business Needs

In the oil and gas industry, success is often dependent on the ability of a company to be effective and efficient, while at the same time maintaining low operating costs. Because each well formation has its own unique characteristics, flexibility becomes a strong advantage in achieving these goals. Often, gelled fluids, which can carry larger proppant sizes and higher concentrations through the wellbore completion system, are required, while other times, a slick water fluid with lower viscosity is needed to help create fracture complexity. With this in mind, our customer approached us to help create a fluid system functionality tailored to meet these needs.

Trican Solution

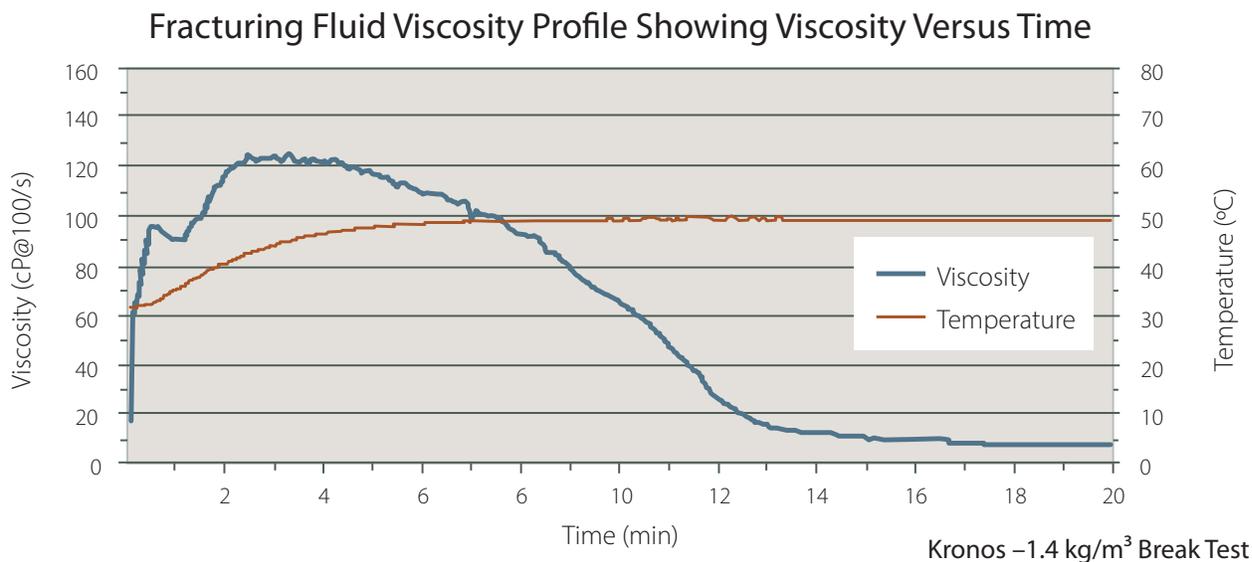
Working alongside our customer, Trican developed a fluid system called Kronos. Kronos is a high temperature, ultra-low polymer crosslinked fluid, with rapid break times. The goals of this fluid system are to safely place higher concentrations of larger proppants, reduce water usage, maintain good conductivity and create Stimulated Reservoir Volumes (SRV) similar to that of a slick water system.

The unique chemical blend of Kronos creates initially high viscosities, while still allowing for a rapid break of the fluid. The fluid system initiates a dominant fracture and fluid stability is provided for the purpose of carrying increased proppant concentrations from the blender down the wellbore, past the completion tools and perforations, and into the formation. As the fluid is pumped further into the fracture, the viscosity rapidly degrades, taking on the characteristics of a slick water system that contributes to the fracture geometry.

An analysis of field data, from several wells and formations, showed Kronos delivered effective results. Higher proppant concentrations and larger proppants were successfully pumped in reservoirs with temperatures as high as 97°C (206.6°F). The dual purpose fluid system resulted in 35% less fluid being pumped on average, with 27.5% lower pump rates. The reduction in fluid usage led to decreased resources invested in fluid transportation and disposal costs, at a significant cost savings to the customer.

The Trican Advantage

Kronos is a fluid system that not only offers multiple benefits with respect to cost, efficiency and productivity, but also has the additional advantage of being customizable to the project at hand. At Trican, we recognize that every formation has its own set of unique properties, and that every job is different. Our team of experts worked with the customer to analyze the specific details of each job, and develop a customized blend of Kronos, made specifically to break at the most effective time. This ability to adapt the fluid system to fit the needs of our customers allows us to provide the best possible service, each and every time.



Case Study Snapshot

Date: 2012

Product: Kronos

Challenges:

- Replace a slick water system with a dual purpose fluid system that could:
 - deliver higher proppant concentrations and larger proppant size
 - retain good conductivity
 - increase fracture width, while creating acceptable Stimulated Reservoir Volumes (SRV) similar to that of a slick water treatment
- Reduce costs by reducing fluid volumes used

Trican Innovation:

- Kronos fluid system
- A high temperature, low polymer crosslinked fluid, with adjustable rapid break times

Results:

- Higher proppant concentrations and larger proppants were successfully placed
- Customer was able to stimulate wells with temperatures as high as 97°C (206.6°F)
- Achieved 27.5% lower pump rates
- Achieved 35% less fluid being pumped on average
- A reduction in fluid usage and disposal, leading to a significant cost savings for the customer



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