PRODUCTION ENHANCEMENT

TENDEKA

SwellFrac

Operationally simple and effective permanent isolation of existing perforations

Production decline in unconventional wells happens rapidly and quite often the wells become uneconomical to produce within 2 years of completion. When this happens, operators have a number of solutions available to them including re-fracturing to access untapped reserves. Older wells in particular may have been completed sub optimally exacerbating the rapid decline.

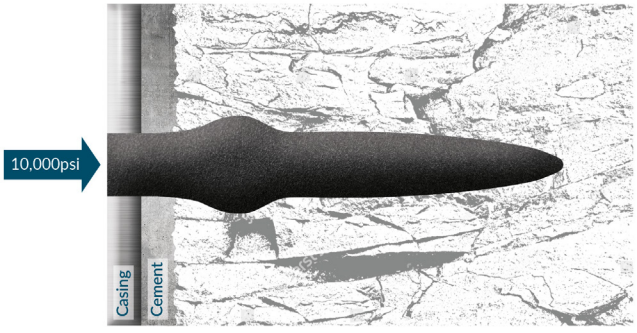
A typical re-fracturing operation involves running an insert liner and cementing or an expandable liner then repeating the plug and perf procedure. However, this can be costly, operationally complex and results in a significantly reduced ID which can limit production and/or limit future opportunity to re-complete.

Tendeka has developed SwellFrac, a cost effective, low complexity patent protected method to isolate existing perforations and allow re-fracturing to take place without the need to isolate existing fractures with an insert liner.

SwellFrac uses Tendeka's patented, field proven swelling elastomer technology to isolate existing perforations.

SwellFrac sized swellable elastomer particles are pumped from surface into existing perforation tunnels and allowed to swell in-situ to provide an effective high pressure seal up to 10,000psi.

SwellFrac's proprietary water swellable particles use a combination of super absorbent polymers and osmotic swell mechanisms to optimise speed and strength of the swelling process and maximum chemical resistance.



SwellFrac plug withstands 10,000psi pressure

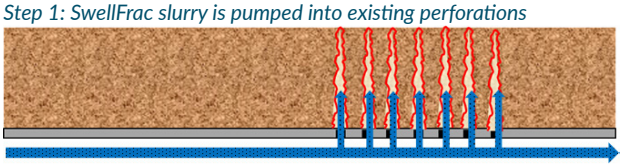
Features

- Water swellable combination of super absorbent and osmotic polymers
- Pumped in aqueous slurry from surface
- Chemical and temperature resistant
- Customizable particle size distribution
- Forms tight seal when swollen

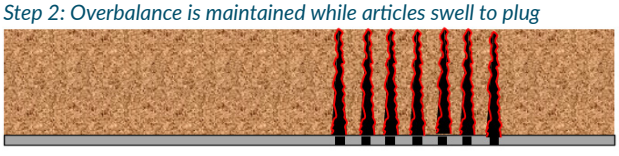
Benefits

- Remains swollen after the water is removed from the system
- Operationally simple
- Suitable for harsh environments
- Multiple uses including water shut off and re-fracturing
- Capable of withstanding up to 10,000psi pressure

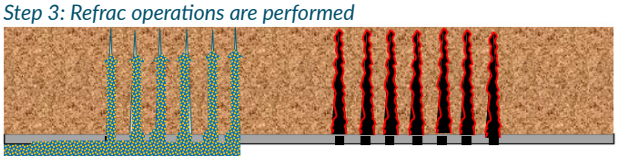
Step 1: SwellFrac slurry is pumped into existing perforations



Step 2: Overbalance is maintained while articles swell to plug



Step 3: Refrac operations are performed



Sized swellable elastomer particles are pumped from surface into the existing perforation tunnels and allowed to swell in-situ to provide an effective high pressure seal to enable re-fracturing operations to take place in the wellbore.

 www.tendeka.com
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