



Weatherford®

WaterSure™ Fluid System

Conserve fresh water by using 100% produced water



Use 100% produced water and no fresh water for environmentally friendly, lower-cost fracturing.

With the average fracturing stage using about 158,300 gallons (3,769 barrels) of water and an average of 30 stages in a well, you likely use about 4.75 million gallons (113,100 barrels) of fresh water per well. Once used downhole and returned to the surface, it is wastewater that requires treatment and injection in an underground storage well. You repeat this process for every well.

At Weatherford, we think there's a more efficient way to operate. That's why we designed the WaterSure™ fluid system. It enables you to fracture using produced or flowback water—filtered or unfiltered—without sacrificing performance.

Reuse your wastewater as a key ingredient in stimulation fluids that perform reliably in a variety of downhole conditions, while conserving the freshwater supply and reducing your costs. Using any available water at your wellsite, we add an environmentally friendly gelling agent and crosslinker to the water. The result is a low-residue stimulation fluid that is unaffected by flowback additives and can handle waters high in salinity, total dissolved solids (TDS), divalent ions, and boron. WaterSure fluids imitate the conductivity and permeability of fresh water, which protects formations from damage.

The WaterSure Advantage

- End your dependence on the availability of fresh water
- Avoid the downtime, costs, logistics, fuel consumption, and emissions associated with delivering fresh water to your wellsite, or transporting produced water off-site for treatment
- Reduce wastewater disposal
- Stop drilling and maintaining storage wells
- Eliminate the need to remove interfering ions or boron from water





The WaterSure Fluid Treatment Process

1. Filter Suspended Solids (Optional)

Should you decide to filter your produced water but you lack the necessary equipment, Weatherford has teamed up with Omni Water Solutions to offer a practical option for on-site filtration. With minimal to no chemical treatment, the on-site Omni system removes all suspended solids from produced water that can hinder fracturing performance, and clarifies water down to the 15-micron to sub-micron level. Because interfering ions, salinity, boron, calcium, and chlorides have no effect on WaterSure fluid performance, their removal is unnecessary, which reduces your treatment costs. The filtered waste can be disposed of in an environmentally safe manner.

2. Oxidization

Without any harm to the environment, the addition of chloride dioxide (ClO_2) to filtered or unfiltered water kills bacteria that can sour your well while helping to decrease reservoir pressure and improve the permeability, wetness, and porosity of the formation, which can increase production rates. ClO_2 won't affect the pH balance in your well or react with most organics and ammonia. We choose ClO_2 as a biocide because the U.S. Environmental Protection Agency (EPA) recognizes it as a powerful yet safe water disinfectant according to the Safe Water Drinking Act (SWDA) of 1974.

3. Ready for Stimulation

We combine filtered or unfiltered water with an environmentally friendly gelling agent and crosslinker to create fluids with excellent proppant transport and conductivity. WaterSure fluids handle salt concentration in excess of 300,000 parts per million (ppm), between 5,000 to 30,000 ppm of divalent ions, and greater than 400 ppm of boron and 185,000 ppm of chlorides. Additionally, the fluids perform well within temperatures from 100°F to 300°F (38°C to 149°C). With the addition of our specialized crosslinkers, WaterSure fluids maintain high, closely controlled viscosity levels that are sufficient to carry proppant during long periods of exposure to high temperatures and bottomhole pressures.

Part of the Weatherford FracSure® suite of fluid systems, our environmentally friendly WaterSure™ system conserves local fresh water by using 100 percent produced water to maintain high stimulation performance and reduce costs. For more information about integrating the WaterSure system into your fracturing operations, visit weatherford.force.com/cpp and request that a Weatherford representative contact you, or visit weatherford.com/fracture.



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