



Hydrofracturing in Water Wells vs. Hydraulic Fracturing in Oil and Gas Wells

Issue

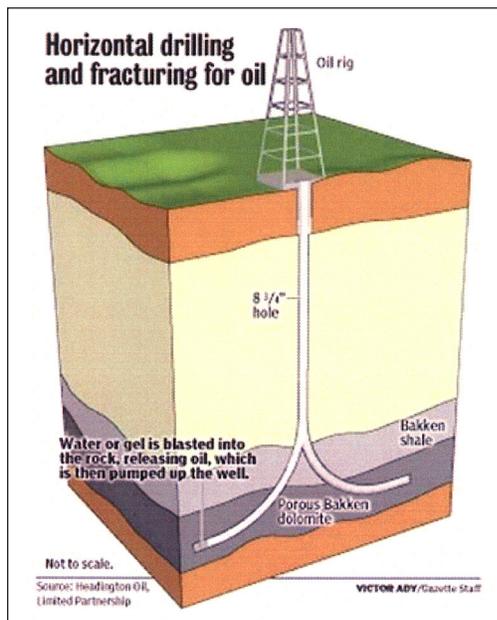
Hydrofracturing of water wells is different than hydraulic fracturing for oil and gas production. While there are some similarities there are many differences, and the two should not be confused with each other.

Our concern now is policymakers may unknowingly link the two practices together under regulations intended to govern the oil and gas industry. Because of their marked differences, please consider a special exemption for water well hydrofracturing. We'd welcome the opportunity to work with your office on how to address that exemption legislatively.

Background

Hydraulic fracturing began as a process for the stimulation of oil and gas wells, and was first used in the United States in 1947. The procedure was deployed commercially in 1949, and because of its success in increasing production from oil wells, was quickly adopted industrywide. It is now practiced in thousands of oil and gas wells annually.

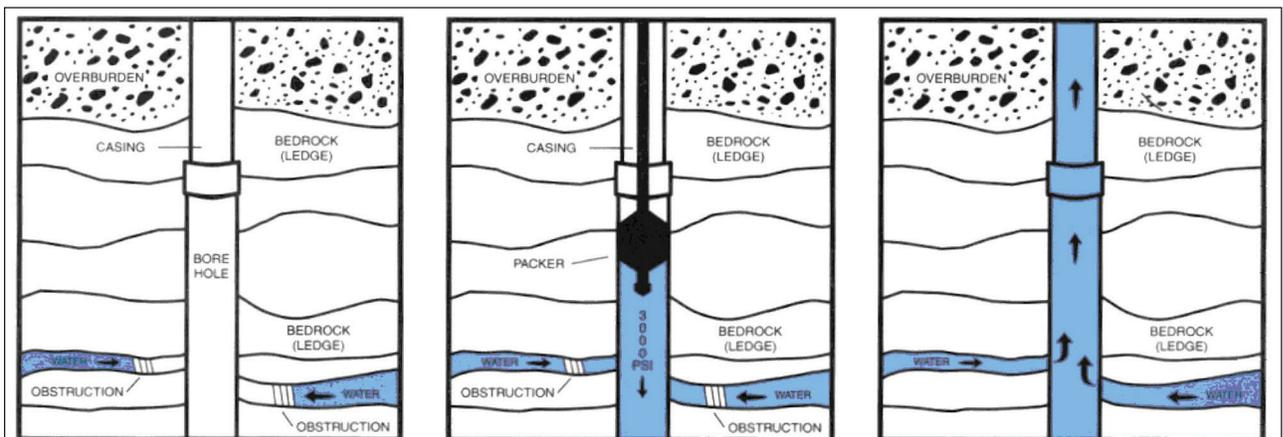
Hydraulic fracturing is a method used to create fractures that extend from a borehole into rock formations, which are typically maintained by a proppant, a material such as grains of sand or other inert substance, which prevents the fractures from closing.



Hydraulic fracturing for oil

The basic concept of hydraulic fracturing was introduced, modified, and adapted for the water well industry in the late '60s and early '70s. The hydrofracturing of water wells has proven beneficial in areas where water is difficult to locate or extract from underground. Alternatives to hydrofracturing available for homeowners in such locations include having multiple wells drilled in hopes of locating a more productive source of supply, or hauling in water.

The number of water wells that are hydrofractured annually varies widely among states. For some states, given the geology and groundwater occurrence, no water well hydrofracturing is necessary, e.g., Illinois, South Carolina, South Dakota. In other areas, e.g., Michigan, Tennessee, Washington (state), state agencies report an average of 20 to 60 water wells developed via hydrofracturing annually. Still other states report that even higher numbers of water well owners depend on hydrofracturing to obtain adequate supplies, e.g., Minnesota (150), Wisconsin (300), New Hampshire (543 or about 11 percent of wells drilled are hydrofracked).



Hydrofracturing of a Water Well

Figure courtesy of Northeast Water Production

Key Differences

The following table identifies some of the key differences between water well hydrofracturing and hydraulic fracturing of oil and gas wells.

	Groundwater Industry	Oil and Gas Industry
Chemicals	Chemicals are seldom needed, but when used, they are third-party certified for use in potable water.	Chemicals such as polycyclic aromatic hydrocarbons, methanol, formaldehyde, ethylene glycol, glycol ethers, hydrochloric acid, and sodium hydroxide.
Footprint	Footprint of 0.018 acres	Footprint up to 5.5 acres or 300 times larger
Pressures used	Up to 3,000 psi	Up to 13,500 psi
Amount of water used	1,000 gallons to 18,000 gallons	500,000 gallons to 8 million gallons
Typical use	To increase the production of potable water for homes and communities	To increase the flow of oil and gas
Use of proppants	No proppants are needed.	Proppants are needed.
Condition of fracture after procedure	Fracture remains open.	Proppants are used to maintain existing and newly created fractures.

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