

# We Are All Connected (and why we shouldn't 'frack')

All our waters are connected, from the headwaters high on mountaintops to the downriver systems of streams, ponds, and wetlands. When one is contaminated or damaged, the others down the chain are inextricably affected. In this linked system, there is an uncompromising relationship between humans and the natural environment. Fracking, a term used to describe the extraction of natural gas or oil from deep within the layers of earth, is a disheartening threat to this healthy relationship.

Fracking is a process that has been around for many years and has taken on a new life with recent improvements in drilling technology. It is now possible to explore layers of earth that were inaccessible before. It is highly controversial, pitting environmentalists and communities against the natural gas and oil conglomerates. There are many who say that it is a perfectly safe process and essential to our continued search for accessible fossil fuels.

## ***But is it safe? And how are our waters affected?***

Let's start with "What is fracking?". Fracking, otherwise known as hydraulic fracturing is used to increase or restore the rate that fluids (natural gas or oil) can be produced from deep natural reservoirs which are found in sandstones, limestones, shale rock or coal beds. At depths of 5,000 to 20,000 feet, there may not be sufficient permeability or reservoir pressure to allow natural gas and oil to flow from the rock into the wellbore at economic rates. Thus, creating fractures in the rock is essential to extract gas. Pumping fluids (primarily water and sand) are injected under high pressure into the rock formation, creating fissures that allow resources to move freely from rock pores where it is trapped.

Typically, steel pipe (casing) is cemented into place at the top portion of a well to protect the groundwater. As the well is drilled deeper, additional casing is installed to further protect the groundwater and creates a seal that is air tight. While 99.5 percent of the fluids injected under high pressure are water and sand, some chemicals are added to improve the flow. Over 600 different chemicals are used in natural gas operations. Some chemical additives are familiar, such as sodium chloride (table salt), ethylene glycol (used in household cleaners), borate salts (used in cosmetics), sodium/potassium carbonate (used in detergent), guar gum (used in ice cream), isopropanol (used in deodorant), and benzene formaldehyde. Once the fracking process is over, and the gas released, the water rises back to the surface. The waste fluids are stored in pits or tanks to be treated (if it is to be reintroduced to surface water) or is injected deep underground.

### ***The issues and concerns are many:***

***Contamination of crops and drinking water  
Degradation of air quality  
Destruction of natural lands, including parks and recreation areas***

### ***The facts are devastating:***

- Gas can escape and enter into drinking water when fracking is executed incompetently and/or when the lining of fracking wells is defective.
- Fracking operations use large amounts of horsepower, requiring the use of diesel engines, thus consuming fossil fuels and spewing pollutants into the air.
- Site construction impacts are detrimental to the environment and increased traffic and noise are a disturbance to local residents.
- The chemicals used in conjunction with the water to force gas out of the fractures is proprietary and, therefore, undisclosed by the companies. The public cannot access records that show what chemicals are being forced into the ground. If groundwater becomes contaminated with these chemicals, it takes years and even decades to clean up.
- Spills, blowouts, leaking wells and other accidents and releases of contaminants do happen. Human error is inherent.
- Toxic chemicals used in the extraction process and the gas itself can seep through natural fractures connected to water sources.
- As the fracking water flows back to the surface, it leaches radium from the ground. Radium is carcinogenic.

### ***Water issues are a critical challenge of hydraulic fracking.***

Fracking requires 2 to 4 million gallons of water per well site. Water can be obtained from surface water, groundwater, municipal water suppliers, treated wastewater from treatment facilities, power plant cooling water and/or flow back water. If possible, wastewater from other industrial facilities or recycled fracking water is used. Withdrawals of water associated with large-scale developments, conducted over multiple years, may have a cumulative impact to watersheds and/or groundwater.

### ***Using millions of gallons of water can deplete local water sources.***

The second biggest issue surrounding the fracking process is the disposal of waste fluids. Five thousand gallons of toxic chemicals are added per well to the water. If there are eight wells at one site, that translates to 40,000 gallons of toxic chemicals that are used. A portion of this water is put into holding wells deep within the earth. In other cases, tanker trucks move this waste water to other surface holding sites. A spill from one of these trucks would be devastating to a river or pond, and leaching from a holding well would horribly compromise a watershed.

### ***We are all connected.***

We are at a tipping point, or beyond it some will say. In our very recent human history, we have put a massive strain on the systems of the earth and we are now seeing many in decline. Our food is threatened by toxic fertilizers and manipulation of genes, our landscapes are scarred by cities and mountain movers, and our waters are resourced beyond their capacity. We have tried to control nature, corral it for our selfish purposes, and have compromised its long term health.

Let's not foolishly jeopardize our water sources. Fracking is dangerous and has already compromised the water resources of people throughout the United States. To irreversibly destroy our watersheds for natural gas is too high a price. We must find energy alternatives that do not destroy our limited natural resources. Stop fracking!



# STOP FRACKING

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[foodandwaterwatch.org](http://foodandwaterwatch.org)  
[theoec.org](http://theoec.org)  
[energyfromshale.org](http://energyfromshale.org)  
[what-is-fracking.com](http://what-is-fracking.com)  
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