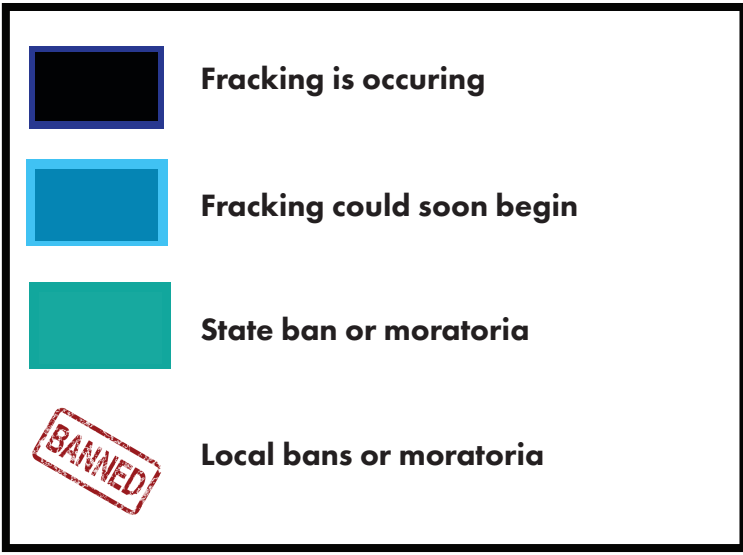


FRACKING IN THE USA

This map shows how widespread fracking has become in the United States since it became commercially viable in the 1990s. Fracking is currently occurring in 27 states and could soon begin in four more states. 17 states remain untouched but that is only because there are no economically feasible resources. New York and Maryland are the only two states with potential natural gas reserves that currently prohibit fracking.

Cass County, ND
In December 2013, a mile-long train carrying crude oil collided with another train, triggering a series of explosions and sending toxic fumes into the air. A train carrying grain derailed first, and then knocked several cars of the crude oil train off adjoining tracks. A mushroom cloud of fire blasted into the sky and then black smoke covered the surrounding area. The flames created dark clouds that could be seen for miles. This explosion was the third accident in six months involving trains transporting North Dakota crude oil.



WHAT IS FRACKING?

FRACKING IS SHORT FOR HYDRAULIC FRAC-TURING. It's an industrial process that breaks apart rock formations deep under-ground by directing a high-pressure mixture of water and toxic chemicals to extract fossil fuels like oil and methane gas. Because this oil and gas is found in rock formations called shale, these fuels are usually called shale oil or shale gas.

Hydraulic fracturing is a process done after a well has been drilled but before oil and gas can be brought from the well. The term fracking has come to describe the entire process of creating a fracked well, from drilling the initial hole through the hydraulic fracturing stage and the production of fossil fuels.

Dawson County, MT
In January 2015, a rupture in the Poplar pipeline, which transports crude oil from Montana and North Dakota, spilled up to 50,000 gallons of Bakken shale crude oil into the Yellowstone River. Local residents worried that their water supplies had been contaminated, and the extent of environmental damage is unknown.

Berrien County, MI
In September 2014, a gas pipeline owned by TransCanada ruptured, causing more than 500 people to be evacuated from their homes. Farmer Vic Rogers said that TransCanada advised him that his three acres of potatoes around the explosion may be contaminated and should not be harvested.

Oakland, CA
A 4-inch natural gas pipeline owned by PG&E erupted and caught fire, burning for hours. Six homes were evacuated, and other residents were told to shelter in place.

Allegany County, NY
Dave Eddy lives in Allegany County, New York, near a gas well operated by U.S. Energy Development Corporation. The company, he says, uses hydraulic fracturing to extract the gas. In the spring of 2009, Eddy's wife filled up the bath tub for their kids and "foamy, chocolate-brown" water came out of the faucet. Testing by U.S. Energy found the family's well was polluted with gas. The company has since installed a water filter in the Eddy home.

Penn Township, PA
On December 12, 2009, Chief Gathering LLC was boring a path for a pipeline 13 feet under a stream, wetland and road in Penn Township, in Lycoming County, when the synthetic muds used to drill the hole erupted to the surface. Between 3,000 and 6,000 gallons of synthetic drilling mud spilled into the wetland and some of it reached the stream. The state's Department of Environmental Protection inspector who visited the site also discovered there had been a previously unreported spill of about 110 gallons on December 10, 2010.

Santa Clara, CA
On November 18, 2014, an explosion, fire and mile-high plume of toxic gas severely injured three firefighters and 12 employees at the Santa Clara Waste Water site. Over 50 people were sent to the hospital for treatment after inhaling toxic black clouds that included chlorine dioxide, a poisonous gas. According to company officials, 80 percent of the waste water processed at the site comes from oil-field production.

Morgan County, OH
In May of 2014, 100 barrels of drilling lubrication fluid leaked from a fracking well into a nearby stream. Several residents were evacuated out of fear that natural gas, also leaking from the well, would cause an explosion. No one was injured and the spill was contained several days after it was discovered. However, environmental experts state that the oily lubricant could be harmful to marine life.

Glen Dale, WV
In April 2015, a 4-inch pipeline rupture spilled 100 barrels of Marcellus shale condensate into Little Grave Creek, and a 12-inch gas pipeline rupture that occurred after the first caused five families to evacuate for a period of time.

Brazos County, TX
Monica and Richard Palasota are concerned about ongoing fracking at a well owned by Halcon that's 1,800 feet away from their house. They have experienced vibrations that rattle the windows against their frames, a coating of dust on their family truck, and they have been unable to sleep due to 40 days of noise from the well. John Opersteny and family have experienced headaches and worsening of asthma, as well as lack of sleep from the noise.

Rankin County, MS
In January 2015, a 30-inch Gulf South natural gas pipeline ruptured and exploded, scorching at least an acre of land off Three Prong trail. Gas was cut off to at least 25 customers, and an observer said that it "felt like an atomic bomb or something had gone off".

Enviromental Effects

Water Use & Pollution

Oil and natural gas fracking, on average, uses more than 28 times the water it did 15 years ago, gulping up to 9.6 million gallons of water per well and putting farming and drinking sources at risk in arid states, especially during drought. The process involves injecting a huge quantity of fresh water mixed with toxic chemicals—called fracking fluids—deep into the ground. Even worse, the oil and gas industry have no idea what to do with the massive amount of contaminated water they are creating.

Fracking fluids and waste have made their way into our drinking water and aquifers. In fact, it has already been linked to drinking water contamination in Pennsylvania, Colorado, Ohio, Wyoming, New York, and West Virginia. An Enviromental Protection Agency draft report released in 2015 found more than 150 instances of groundwater contamination due to shale drilling and fracking. Home-owners in some affected areas even report being able to light the water coming out of their kitchen sinks on fire due to gas contamination.

Earthquakes

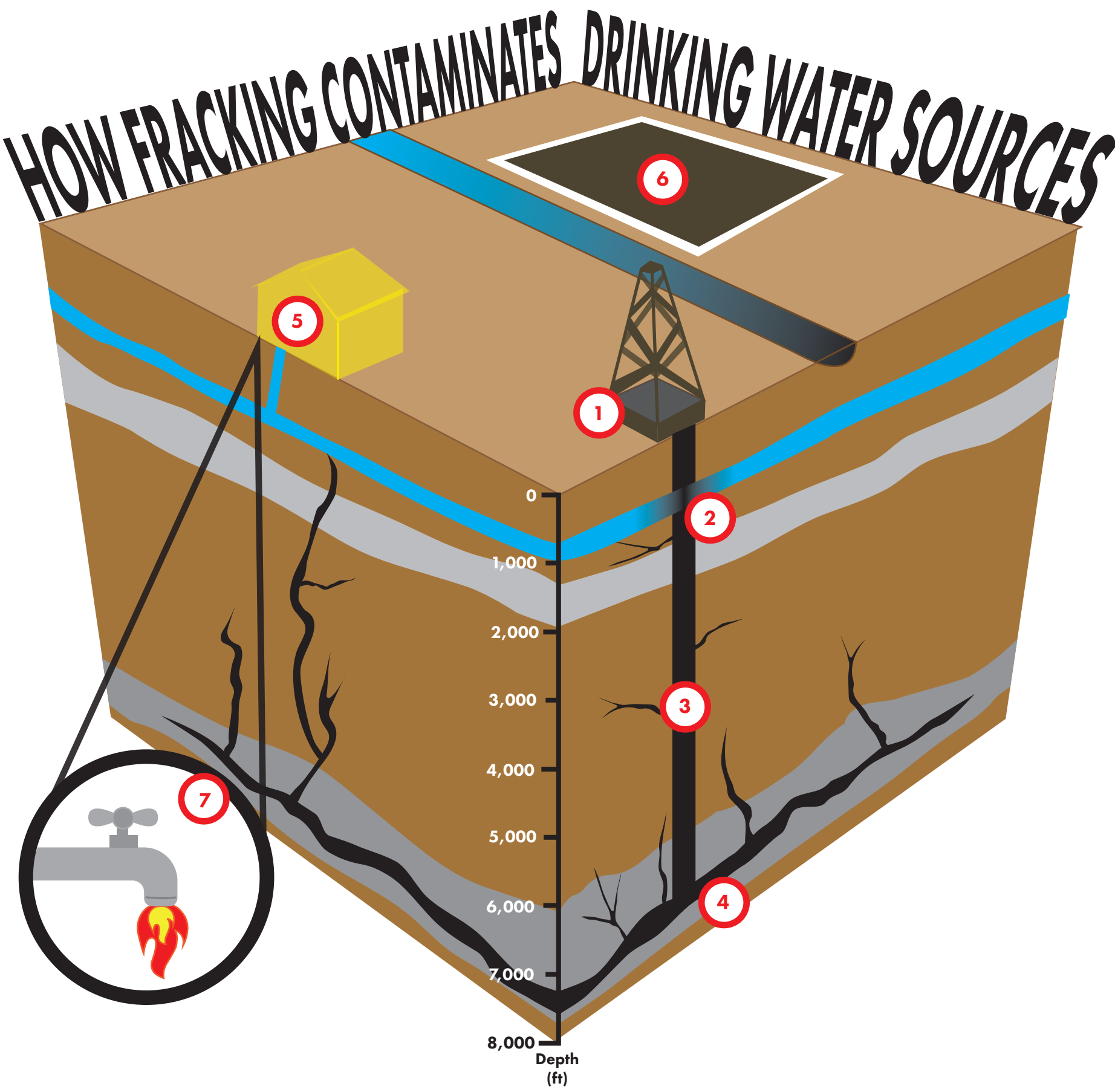
While the fossil fuel industry denies it, the EPA has acknowledged the connection between fracking and increased earthquakes since 1990. Scientists have made firm links between earthquakes in Colorado, Oklahoma, Ohio and Arkansas in the past few years. Oklahoma, for example, averaged 21 earthquakes per year above a 3.0 magnitude between 1967 and 2000. Since 2010 the state has averaged more than 300 earthquakes above 3.0 magnitude every year.

Most of these earthquakes are caused by underground injection wells, which are used to dispose of contaminated water created by the fracking process (these wells do not produce gas or oil). However, the shale industry creates so much contaminated wastewater—and has so few options for disposing of it—that injection wells have become a critical part of shale drilling and fracking.

Climate & Air Quality

Shale drilling and fracking is understood so poorly and regulated so little, we don't know exactly how much air pollution is leaking from fracking wells across the country. States like Colorado have seen tremendous spikes in air pollution due to fracking wells.

Methane gas—the main component of natural gas—is a less common but more potent greenhouse gas than carbon dioxide. In fact, it's 86 times more potent at capturing heat than carbon dioxide in its first twenty years in the atmosphere. There is still no consensus as to how much methane is leaking into the air due to shale drilling and fracking, but some studies suggest it could be worse than burning coal for the climate.



- 1 A mixture of millions of gallons of water, chemically treated sand and toxic chemicals, called fracking fluids, are injected under high pressure using a drilling well that can go more than 7000 ft in depth.
- 2 Because fracking fluids are injected at a high pressure it causes leaks, called fissures, which contaminate aquifers.
- 3 Fracking fluids are injected at high pressure which create fractures, releasing methane, benzene and other carcinogens.
- 4 The majority of fracking fluids remain in the ground and are not biodegradable.
- 5 Residential wells pump water that is not safe for use from contaminated aquifers.
- 6 Fracking fluid waste is dumped into poorly constructed, sometimes unlined pits, which allow toxins to seep into local waterways and aquifers.
- 7 Concentrated methane gas creates flammable water and poisonous fumes.

Health Effects

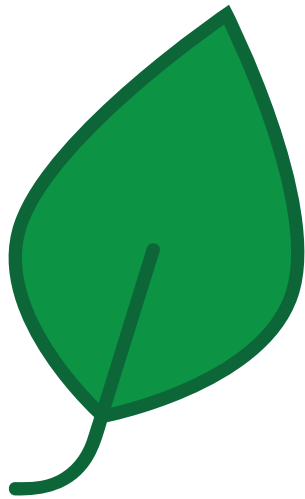
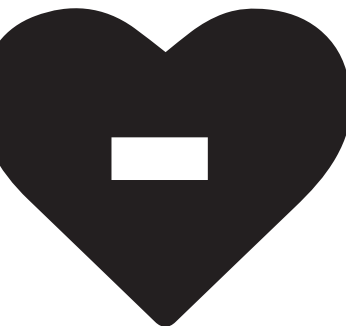
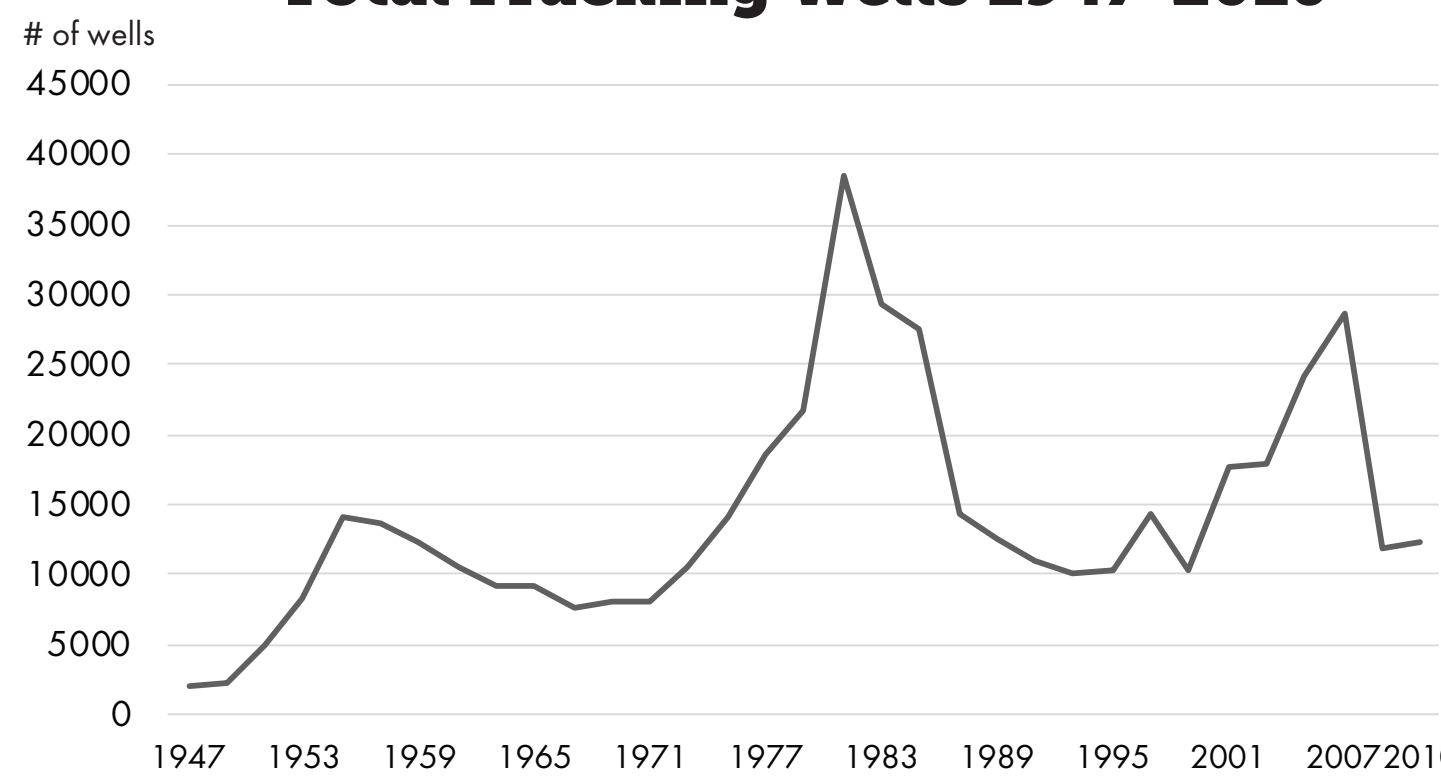
Human exposure to fracking chemicals can occur by ingesting chemicals that have spilled and entered drinking water sources, through direct skin contact with the chemicals and wastes or by breathing in vapors from flowback wastes stored in pits or tanks. So far there are eleven health categories that are affected these include: skin, eyes, sensory organs, respiratory system, gastrointes, liver, brain, nervous system, immune system, kidneys, cardiovascular system. In addition, fracking has also been linked to cancer and mutations.

How To Help

Fracking is diverting money and attention from the real long-term solutions we need for a sustainable energy system, while adding to greenhouse gas pollution and environmental degradation. Listed below are some organizations that are helping in the fight to ban hydraulic fracking.

- Green Peace
- Food & Water Watch
- Earth Justice
- Environment America
- EcoWatch
- Stop the Frack Attack
- Big Green Radicals
- Global Frackdown
- Americans Against Fracking
- Gas Drilling Awareness Coalition

Total Fracking Wells 1947-2010



By Brenda Lopez
Pino Trogue - DAI 523

<http://www.greenpeace.org/usa/global-warming/issues/fracking/>
<http://earthjustice.org/features/campaigns/fracking-across-the-united-states/>
<http://www.greenpeace.org/usa/where-fracking-was-banned-this-year/>
<http://www.greenpeace.org/usa/global-warming/issues/fracking/fracking-infographic/>
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