Tennessee in a unique situation

The Chattanooga shale formation is shallower than the "plays" of New England and western U.S., typically only a few hundred to three thousand feet deep, as opposed to close to a mile in other places. It is also embedded in clay which swells in the presence of water. For this reason well drillers in Tennessee typically use nitrogen gas as the fracking fluid rather than the millions of gallons of water used elsewhere. To date, the largest volume of water used for a frack in Tennessee has been 170,000 gallons.

Under recently adopted state rules, there are almost no safeguards to protect public safety and the environment, such as testing of drinking water wells, public notification of fracking, listing of chemicals used, and adequate distance from homes, schools, streams and drinking water sources for well drilling using under 200,000 gallons of liquids.

Tennessee's karst terrain, with its sinkholes and caves, creates conditions that increase the likelihood that methane, naturally occurring toxic elements, and fracking chemicals will migrate into aquifers and drinking water supplies.

There are only two state government inspectors for the gas industry in Tennessee, and there is no publicly available inventory of fracking operations in the state.

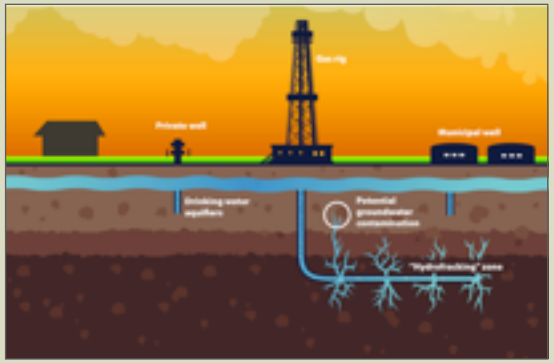
Coalition for a Frack Free Tennessee

http://www.frackfreetennessee.org

http://www.facebook.com/FrackFreeTennessee

Fracking in Tennessee

Fracking, or Hydraulic Fracturing, has been going on for several years in Tennessee. This process of extracting natural gas from deep underground shale formations has captured nationwide media attention in recent months due to increasing incidents of contaminated water, air and soils, and negative health effects stemming from fracking. Two-thirds of Tennessee could be fracked as the gas industry exploits the Chattanooga Shale Formation beneath our homes, schools, and drinking water sources.



THE FRACKING PROCESS

Drilling companies are in the process of buying mineral rights to as much land as they can. Once a site is chosen they will clear and level anywhere from two to ten acres. They will build access roads and pipe lines and bring in potentially hundreds of truckloads of materials.

They will drill down to the formation and then drill horizontally for a mile or more, often in several directions from the same well pad. Explosive charges are set off at the end of the pipelines to crack the rock, followed by high-pressure injection of nitrogen gas (most common in Tennessee so far) or water mixed with sand and up to 750 different chemicals that act as lubricants and sterilizers. Many of these chemicals are carcinogenic and are not disclosed to the public.

When water is used as the fracking fluid, the average volume is 2-8 million gallons, half of which is not recovered. The other half must be stored in open ponds and then hauled to disposal sites.

WHAT IS THE PROBLEM?

Water Pollution: Nationwide, there have been more that 1,000 documented cases of water contamination near drilling sites. Methane leaks related to drilling have caused houses and wells to explode, causing deaths, injuries and loss of property. Six to seven percent of wells leak immediately and fifty percent will leak within 30 years. Methane, the chief ingredient in natural gas, infiltrates aquifers that supply drinking water to wells, municipalities, springs, streams, and rivers, making them undrinkable and, in some cases, explosive. In addition, the spent fracking fluid may contain radioactive elements, cyanide, mercury and other contaminants which are found naturally underground. Above ground storage ponds can leak and can overflow during flood episodes.

Air Pollution: A study by Cornell scientists Robert Howarth and Anthony Ingraffea estimated that fracked wells leak 40 to 60 percent more methane than conventional wells (**Scientific American**, 1/20/12). Because methane is 20 times as potent a greenhouse gas as carbon dioxide, switching from oil or coal to natural gas consumption would significantly worsen global warming over the next several decades.

Human Health: Theo Colborne, PhD, founder and president of The Endocrine Disruption Exchange, detected 649 chemicals in the fracking fluid used in the drilling process; half have been linked to cancers, diabetes, obesity, and metabolic syndrome. Fifty-five percent of the chemicals cause brain and nervous system damage.

As of 2012, a health survey of residents living near Marcellous Shale oil and gas wells shows a clear pattern of negative health impacts from this proximity.

While in Tennessee the industry has not *so far* used the volume of toxic chemicals used elsewhere, negative health effects can still come from methane leaks and naturally occurring toxic and radioactive elements being forced into aquifers. There are no health studies being conducted and there is virtually no monitoring of drilling operations in Tennessee.

Earth quakes: The chemical lubricants used in fracking can lubricate fault lines and cause earthquakes. Large numbers of earth quakes have been linked to deep well disposal of waste frackwater in Texas, Arkansas, Ohio, Oklahoma and Virginia. While there are many deep injection wells in Tennessee, they have not been used for fracking fluids *so far*.

Social Costs: When drinking water wells have gone bad from fracking, families must import water. Property values fall. Farmers suffer when animals develop health issues. Whole herds of cattle have died when exposed to frackwater.