

Fracking endangers California's air, water and earthquake faults

**By Ed Oberweiser
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The gas and petroleum industries have already invaded California with an extremely destructive technology, hydraulic fracturing, also known as fracking. Fracking is used by oil and gas companies to rework aging or abandoned oil wells. It's also used to drill new wells and capture deep, previously untapped oil and natural gas deposits.

Fracking has been used in California without clear regulatory oversight for decades. In a 2002 study, the California Environmental Protection Agency reported that in 1995 the estimated total volume of the state's drilling waste, both solid and liquid, was more than 1.8 million barrels, enough to cover more than 235 acres one foot deep. In 2011 onshore oil and gas wells created more than 2.5 trillion barrels of wastewater contaminated with toxic chemicals.

Vice President Dick Cheney pushed through the 2005 energy bill that exempted the oil and gas companies from the Safe Drinking Water Act, the Clean Air Act, the Toxics Release Inventory, the Resource Conservation and Recovery Act and the National Environmental Policy Act.

The newest fracking technology involves drilling and then blasting a mix of chemicals, water and sand from eight to 11,000 feet underground. There are more than 596 chemicals in that mix. We can't know what all the chemicals are because many of them are protected from scrutiny as trade secrets.

The fracking fluids and sand are pumped underground at a high enough pressure to fracture the rock surrounding the old well or the new well being drilled. The oil and/or gas is freed by the new fractures in the rock and collected by the company. Fracking fluids include corrosion inhibitors, drilling additives, biocides, shale control inhibitors, liquid breaker aids and many toxic chemicals. After the initial fracking, some of the fluids are brought back up and are stored in waste pits above ground. Some is injected back into old wells in the ground.

These fluids can contain, according to Food and Water Watch, benzene, cadmium, arsenic and mercury, radium 226 and other unknown toxics. Naphthalene, benzene and acrylamide are just a few of the known carcinogens that have been identified in fracking fluids. Other toxic chemicals present in many fracking fluids include toluene, ethylbenzene and xylenes. These can cause nervous system, liver and kidney problems. About 25 percent of fracking

chemicals could cause cancer, according to scientists with the Endocrine Disruption Exchange.

Each new well completion uses from one to 1.7 million gallons of water. Each time an existing well is refracked this same one to 1.7 million gallons of water is needed. One well can be fracked as many as 18 times. Californians need to ask where all this water is going to come from - maybe the proposed peripheral canal

Each new well completion requires 1,150 truck trips. This includes 400-600 tanker truck trips for hauling water and fracking fluids. Another 20-25 trips for hauling fracking sand particles. Then another 200-300 tanker truck trips for flowback (processed) water removal. This will drain California's funds even more because all these extra heavy truck trips will damage California's roads and highways.

Only half of the water and toxic chemical mix comes back up as processed water. The rest stays in the ground indefinitely and can contaminate aquifers and water wells in neighboring lands by leaking through the fractures made during the original drilling and fracking.

This has already happened in Colorado, Pennsylvania, New York and other states. Readers can watch the documentary Gasland at:

http://www.filmsforaction.org/watch/gasland_2010/ or at:

<http://www.movie2k.to/GasLand-watch-movie-1117121.html> to learn more about fracking's consequences.

The processed water that comes back up is full of the same toxic soup as the water left in the wells. It's being stored above ground in lined pools or injected back into old unused wells. Food and Water Watch estimates that the oil and gas companies, between 1995 and 2009, generated 5,659 acre feet of drilling waste in California.

Fracking started in sparsely populated states including New Mexico, Colorado, Texas, Oklahoma and Wyoming. Next the companies moved into the Southern states – Alabama, Arkansas, Louisiana. They drilled 450,000 wells in the west, mid west and south. Then they moved east and proposed drilling 50,000 wells along a 75-mile stretch of the Delaware River and hundreds of thousands more wells across New York, Pennsylvania, Ohio and West Virginia.

Fracking threatens California's public health with water pollution. In 1987 a U.S Environmental Protection Agency (USEPA) study found that gel used in fracking operations in West Virginia contaminated a well. Scientific assessment of other cases of possible water well contamination was interfered with by court settlements that sealed the cases' information from public scrutiny. The USEPA released a study in December 2011. It concluded, "the data indicates likely impact to ground water that can be explained by hydraulic fracturing."

Drilling and fracking have also caused serious local and regional air pollution in the U.S. After fracking, when some of the fluids come back out of the well, many of the gases, including methane, are vented into the atmosphere. This happens while the flowback liquids are poured into the holding pools or pumped back into old wells.

The oil and gas companies have their eyes on California's natural gas fields that lie beneath the watershed of the Sacramento River and more that lie below the San Joaquin, Santa Maria, Ventura and Los Angeles basins. These contain most of the states oil fields.

In 2011, 2,294 new wells were drilled in California, 2,343 wells were completed for production and 3,376 notices were filed for the reworking of existing wells. These numbers will increase. Nine California counties have already been documented as having fracking operations in them. They are Colusa, Glenn, Kern, Los Angeles, Monterey, Sacramento, Santa Barbara, Sutter and Ventura Counties.

The newest generation of fracking technology uses more fluid and chemicals injected at a much higher pressure. It will create more waste, pollution and seismic risk. When processed water is pumped back into injection wells to deep porous rock, it can flow in every direction including into and around earthquake faults. The added pressure and lubrication of these faults by the processed water could cause normally stable faults to slip, causing more earthquakes.

In the Midwest the number of earthquakes has increased from 50 in 2009 to 134 in 2011. U.S. government scientists said in a study that this increase is "almost certainly" man-made and may be caused by wastewater from oil and gas drilling into the ground. The danger here in California with its many faults is far worse. We have two nuclear power plants sitting over or adjacent to known earthquake faults.

There has been little or no scrutiny by state regulators. California maintains no information about which wells have been fracked, when they were fracked or what chemicals were used. This is due to the fact that there are no regulations requiring the reporting and disclosure of this information. There aren't any consistent and comprehensive regulations in place.

The California Department of Conservation's Division of Oil, Gas and Resources(DOGGR) has been assigned by the California legislature to draft fracking regulations. There was a pre-rulemaking draft workshop in Sacramento on March 21 for eight and half hours. Attendees learned that, under the proposed regulations, that companies will only have to give three days advance notice of fracking operations on an internet website. People whose lands are adjacent to the proposed fracking site will not get any personal notice. There will be no disclosure of the "protected" fracking fluids formula to the public. After a spill has happened only agencies and officials dealing with the consequences of a spill will be given

information by the company responsible for the spill. “Trade secret” information disclosed to regulators and medical personnel must be maintained as confidential and not released to the public under the proposed regulations. Information about the proposed regulations will be available at www.conservation.ca.gov.

California Governor Jerry Brown said on March 13, 2013 that California should consider the use of fracking technology to develop its massive shale oil reserves and reduce its dependence on imported oil.

I urge interested readers to access an anti fracking site at:

<http://www.environmentcalifornia.org/programs/cae/no-fracking-california>

where they can send a message to Governor Jerry Brown to ban fracking in California. Readers can sign a no fracking petition at:

<http://www.thepetitionsite.com/takeaction/572/885/705/>.

I originally wrote that another action would be to write your state senator and urge him/her to support State Senator Fran Pavley’s bill, SB 4 which would “require an independent scientific study on fracking addressing occupational, public and environmental health and safety be conducted by January 1, 2015.” It would also “require the California Division of Oil, Gas and Geothermal Resources to adopt fracking regulations by January 1, 2015 that include full disclosure of the composition and disposition of hydraulic fracturing fluids with trade secret protection for chemical formulas extended to industry.”

However just before the bill was introduced to the California Legislature, its most effective sections were gutted due to the influence of the state’s gas and water lobby. Unfortunately this fracking-favorable, watered down version passed both the California Assembly and the State Senate and was immediately signed into law by Governor Brown. The rationalization by politicians for this cave in was that some regulation was better than none at all. Now the only choice for communities is to pass fracking bans or community rights ordinances to protect themselves.

Outraged Californians can write letters to Brown and their state assembly members and senators and tell them that they failed to protect our state from the rapacious oil and gas corporations. Tell them to educate themselves about fracking and start working to undo the damage. Writing letters to the editor of your local newspaper and talking with your friends and neighbors about fracking are also positive steps you can take. Interested visitors to our website can go to the site of the Community Environmental Legal Defense Fund (www.CELDF.org) to learn more about what communities are doing to protect themselves.