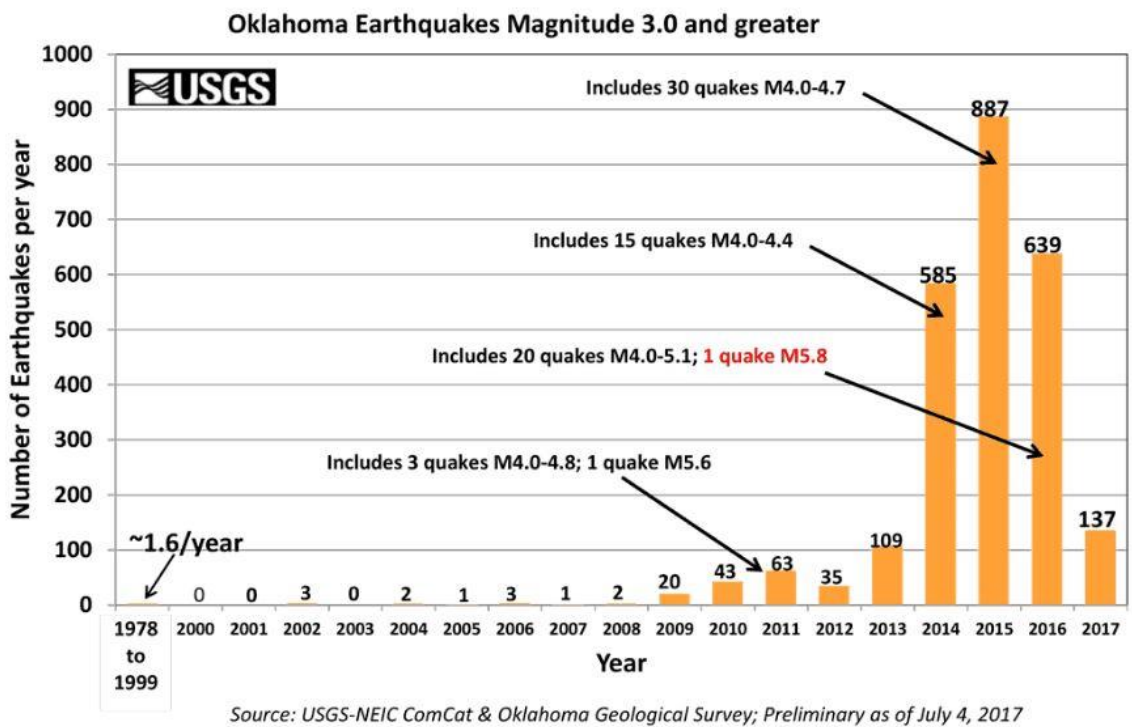


To: Committee On Water & Environment, House Bill 2641
Topic: Let's learn from Oklahoma's experience
Recommendation: Please pass House Bill 2641

Rationale: Historically, Oklahoma has had very few earthquakes. The graph below shows that Oklahoma had an average of about three earthquakes per year up until about 2008, when horizontal drilling and fracking began to be used to recover gas and oil. Along with the increase in fracking, came the need for disposal wells to get rid of the waste water from the fracking operations. And along with the wastewater disposal wells, came an increase in earthquakes.



For some reason, it took Oklahoma a long time to link the two and take effective action, even though the [link has been known for decades](#). When the U.S. Army Rocky Mountain Arsenal built a disposal well in 1961 to get rid of waste fluids, seismic activity in the area increased. The well was plugged and the earthquakes stopped. A study by the "U.S. Army Corps of Engineers and the U.S. Geological Survey (USGS) determined that a deep, hazardous waste disposal well at the Rocky Mountain Arsenal was causing significant seismic events in the vicinity of Denver, Colorado."

In November of 2011, an earthquake measuring 5.6 rattled Oklahoma and was felt as far away as Illinois. We were living in Terlton, Oklahoma at the time and felt several earthquakes, including that one. Small cracks appeared in our sheet rock and in the foundation of our house. When we sold our house there to move back to Kansas, the mortgage company insisted the damage be inspected by a structural engineer. Structural engineers were in great demand at the time to inspect earthquake damage and it caused a long delay. Our house passed the inspection but we had the added delays and expense of hiring the structural engineer.

A search on Google for "newspaper articles on earthquake damage in Oklahoma, gave 2,270,000 hits" and there are thousands of pictures showing the earthquake damage in Oklahoma. Do a search and take a look for yourself.

Some of the damage has extended as far north as Wichita, as shown below:



Fracking induced earthquakes have caused millions of dollars of property damage in Oklahoma, and many Oklahoma residents are now purchasing earthquake insurance when it was never needed before. Many Kansas residents are also wondering if they need to undergo the additional expense of earthquake insurance. The damage costs to public utilities, buildings, roads, and bridges are born by taxpayers. Although there have been several lawsuits in Oklahoma against disposal well companies, very little money has been recovered to pay for induced earthquake damages.

Further action: Kansas has a unique opportunity to learn from what happened in Oklahoma, and take action to limit induced earthquakes and the cost to Kansas citizens. Effective legislation is needed to:

- 1) restrict the location of disposal wells.
- 2) limit the amount of wastewater that can be disposed of at a site.
- 3) limit the pressure which can be used to inject the wastewater.
- 4) require that any disposal well linked to significant seismic activity be further regulated.
- 5) require that disposal well companies carry liability insurance and pay earthquake damage claims promptly.

House Bill 2641 is certainly a step in the right direction. It addresses number 2) above and asks that every county in Kansas be under the same regulations by the KCC to keep volume at 8,000 barrels per day, which is the level that minimizes earthquakes. Please pass it.

Respectfully submitted,

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