

Another Study Finds Links Between Fracking and Earthquakes in Canada



One of the many concerns raised about hydraulic fracturing'commonly called 'fracking"is that the practice causes earthquakes. In fact, [one study](#) by Canadian researchers already found that fracking of oil and gas wells was behind earthquakes caused by humans in AB and BC.

A new study, which was recently published in [Science](#), appears to confirm the links between fracking and earthquakes.

Researchers at the University of Calgary's Department of Geoscience examined the timing and dynamics of seismic events in an area about 30 km west of Fox Creek, Alberta. The area had had small earthquakes, which were attributed to extensive fracking of oil and gas wells in the area.

The researchers were able to link seismic events to specific operations at individual wells. For example, the largest induced earthquake took place during 'flowback,' a post-injection process during which fracturing fluid is partially recovered in a controlled manner.

They also found that small earthquakes were triggered when fracking of wells imposed mechanical stresses on the rocks underlying the hydrocarbon-bearing zone, causing slippage in the fault. This seismic activity stopped when the fracking stopped.

But more than two weeks later, a magnitude 3.9 earthquake occurred. The study found that this event appears to have been associated with the subsequent infiltration of the fracture fluids into part of the fault.

In short, the study's results indicate that fault activation during and after fracking can be triggered by different mechanisms, including:

- Stress changes due to the elastic response of the rock mass to fracking
- Pore-pressure changes due to fluid diffusion along a permeable fault zone.

Although stress-related triggering appears to diminish shortly after operations, a fluid-pressurized fault may be susceptible to persistent seismic activity for a period of at least several months, suggesting that increased sensitivity of a fluid-pressurized fault should be considered in ongoing development of mitigation strategies for seismic activity induced by fracking.

For more on the environmental and health impacts of fracking, see:

- [FRACKING: New Report on Environmental Impact of Shale Gas Extraction Released](#)
- [Study: Air Emissions Near 'Fracking' Sites May Be Hazardous](#)
- [Hazard Alert: Worker Exposure to Silica During Fracking](#)
- [12 Ways to Protect Workers from Silica at 'Fracking' Sites](#)
- [Study Finds Natural Gas Wells Can Impact Health of Residents.](#)