Rise in New Mexico Earthquakes Likely Triggered by Oil Industry

Wastewater injection wells are believed to be behind the significant increase in seismic activity.

Published on

September 29, 2021

By

Jerry Redfern

…"That's definitely the most likely cause," Litherland says of the recent seismicity. She says that a lot of forces are at play in creating an induced earthquake — the amount of brine, the rate it's injected, the depth of injection and the rock formation where it all takes place.

But, "when there starts to be a lot of fluid injection … and the seismicity increases year over year, it's pretty undeniable that that seismicity is induced."

Dr. Alexandros Savvaidis, manager of the Texas Seismological Network, says that these conditions make the quakes difficult to study and very difficult to predict. Plus, there is often a time lag between injection and when a slip happens.

"You don't inject today, and you have an earthquake tomorrow," he says. Seismicity generally happens at the time of injection, or a few days to a few weeks later.

Also, the seismicity doesn't always happen at the injection site — it can happen miles away. "It can be 20 to 25 kilometers [12 to 15 miles] and longer than that," he says. He thinks that quakes can be triggered up to 24 miles away from the triggering injection wells.

The DOE spokesperson wrote that there are no injection wells within 16 square miles of the facility — a radius of about 2.25 miles.

But according to records from the New Mexico Oil Conservation Division, there are five injection wells within a 12-mile radius of WIPP — the distance Savvaidis says that quakes can travel — 74 within a similar radius of the proposed Holtec site and 448 within 12 miles of URENCO and the proposed storage facility in Texas.

Those are just the injection wells on the New Mexico side. There are more in Texas.