

# Another large earthquake shows seismic activity continues to increase in West Texas, experts say

The 5.2 magnitude earthquake is tied for the fourth strongest in Texas history. It occurred in an area where oilfield companies have long been injecting wastewater from fracking underground.

BY **ERIN DOUGLAS** NOV. 8, 2023 4 PM CENTRAL

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A 5.2 magnitude earthquake was recorded in West Texas early Wednesday near the border of Reeves and Culberson counties, [according to the U.S. Geological Survey](#).

The earthquake that struck around 4:30 a.m. Central northwest of Pecos is tied for the fourth strongest recorded in Texas, according to the [Bureau of Economic Geology at the University of Texas at Austin](#), and [could be felt](#) as far away as El Paso and Roswell, New Mexico.

The number and strength of earthquakes in West Texas has dramatically increased after years of hydraulic fracturing activity in the region. A routine practice of injecting the contaminated, salty water that comes up during the oil production process deep underground has been linked by scientists to the increase in seismic activity in oilfields.

Years of pumping millions and millions of gallons of the so-called produced water back underground as a disposal method has likely increased pressure and awakened ancient fault lines, scientists have told the Tribune.

There are almost 80 injection wells in the Culberson County and Reeves County areas, according to [data from the Texas Railroad Commission](#), which regulates the state's oil and gas industry.

The quake is the second 5.0 magnitude or greater earthquake to occur in the area in [just over a year](#). Such strong earthquakes in Texas used to be quite rare, scientists said.

“It’s not just this earthquake,” said Alexandros Savvaidis, a senior research scientist at the Bureau of Economic Geology at UT-Austin.

He pointed to a recent 4.0 magnitude quake that occurred in the same region at the end of August, and several other 3.5 magnitude or higher quakes that shook Culberson and Reeves counties in the summer and fall.

“There have been other earthquakes and seismicity ramping up again recently in the last few months,” Savvaidis said.

In late 2021, state regulators determined that the “unprecedented frequency” of significant earthquakes in Culberson and Reeves counties was likely being caused by the injection of salty water underground.

The state Railroad Commission ordered companies in the region to create a plan to reduce the amount of water they were injecting underground in that area.

The [plan](#) was supposed to ensure that the frequency of 3.5 magnitude or higher earthquakes was decreasing after 18 months, which would have been in September.

A Railroad Commission inspector was sent to the area Wednesday to inspect disposal wells in the area, according to R.J. DeSilva, a spokesperson for the commission.

“The RRC has been working with operators in the area to limit volumes of produced water injected into disposal wells to reduce the intensity and frequency of earthquakes in the region,” DeSilva said. He added that the agency will decide whether to take further action based on inspections, data, and meetings with oilfield operators and the Bureau of Economic Geology at UT-Austin.

Still, Justin Rubinstein, a research geophysicist at the U.S. Geological Survey, said that he doesn’t necessarily expect that the number and strength of earthquakes will decline in the area even as water injections slow.


“Obviously, the changes have not resulted in a reduced earthquake rate yet,” Rubinstein said.

Other areas where water injections caused seismic activity show that earthquakes can persist for years after injections cease, he said.

“We can make forecasts, but the Earth is incredibly complex,” he added.

After a [5.4 magnitude earthquake occurred last November](#), Railroad Commission staff expanded the region where injections would be restricted and asked companies to further reduce the volume of water being injected underground in the area to 162,000 barrels per day, or about 6.8 million gallons a day. That's a 68% decrease from the volume injected in January 2022, according to the agency.

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