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Oklahoma has been and is a seismically active state. However, seismologists agree that the recent increase in seismic activity is extremely unusual.

While a direct, definitive link of oil and gas activity to the current major seismic events in Oklahoma has not been established, the Oklahoma Corporation Commission (OCC) is not waiting for one.

As relates to oil and natural gas exploration and production activity, the primary area of interest of researchers regarding the strong recent earthquakes in Oklahoma has been injection wells used for wastewater disposal. The vast majority of the wastewater disposed of in these wells comes from pre-existing water in the produced formation that comes up with the oil and natural gas.

The (OCC) has an ever-evolving and proactive approach to the issue of seismic activity in Oklahoma. This approach currently includes:

- **Adoption of the “traffic light” system as recommended by the National Academy of Sciences. Using the latest data, staff reviews proposed disposal wells for proximity to faults, seismicity in the area, and other factors in determining whether the wells should be permitted, permitted only with special restrictions and requirements, or not permitted. The system is also applied to existing wells in seismically active areas.**
- **An area within a 10 kilometer circle is designated around the epicenter of each earthquake 4.0 or greater in magnitude. This area (about 112 square miles) forms an “area of interest.”**
- **Data regarding disposal well operation in areas of interest is shared with Oklahoma Geological Survey seismologists and other researchers. Key to the effort is determining whether there is data supporting a possible correlation between a well’s activity and seismic events in the area.**
- **For existing disposal wells in an area of interest, issues that may once have been considered minor now must be addressed immediately, even if that requires well shut-down.**
- **Daily volume recording is required of disposal wells in areas of interest, regardless of formation.**

- **New rules that took effect September 12, 2014 increase from monthly to daily the required recording of well pressure and volume of disposal wells that dispose into the Arbuckle formation (the state’s deepest injection formation).**
- **Under the new rules, Mechanical Integrity Tests for wells disposing of volumes of 20,000 barrels a day or more have increased from once every five years to every year, or more often if so directed by the Commission.**
- **For those wells injecting into the state’s deepest formation (the Arbuckle), any question regarding the well’s actual depth must be addressed using modern technology to determine true depth. Any issue with depth must be corrected before restart, and permission for restart must be received from the oil and gas division.**
- **OCC has provided matching funds necessary for OGS to secure a large Federal grant to further earthquake research and monitoring.**
- **OCC is working with OGS, Stanford University (Dr. Mark Zoback) and the oil and gas industry in an on-going process of developing more detailed fault maps, as well as maps showing faults under the greatest stress. This new information is being incorporated as available into the disposal well permitting process under the “traffic light” system.**
- **The OCC has begun preliminary planning for a joint project with the Oklahoma Secretary of Energy and Environment that will provide essential reservoir and other data on the Arbuckle formation.**
- **Recent staff changes within the OCC’s Oil and Gas Conservation Division will allow key staffers to devote more time to the issue of seismicity.**
- **The OCC is an active participant on Governor Fallin’s Coordinating Council on Seismic Activity.**
- **The OCC has been part of the “StatesFirst” initiative since its beginning. The program focuses on the issue of seismicity in energy states, and brings together regulators and researchers from all over the country in a collaborative effort.**