

EWS 4 DJ Basin LLC (#10649)
 EWS-4B
 NESE 18-2N-63W
 Weld County
 API: 123-48766

Seismic Evaluation-COGCC

USGS Earthquake Catalog has no recorded earthquake activity within at least a 5-mile radius of the well location. Search criteria were Magnitude >1.0M, from 1900 to present, 18x24 mile rectangle around well site.

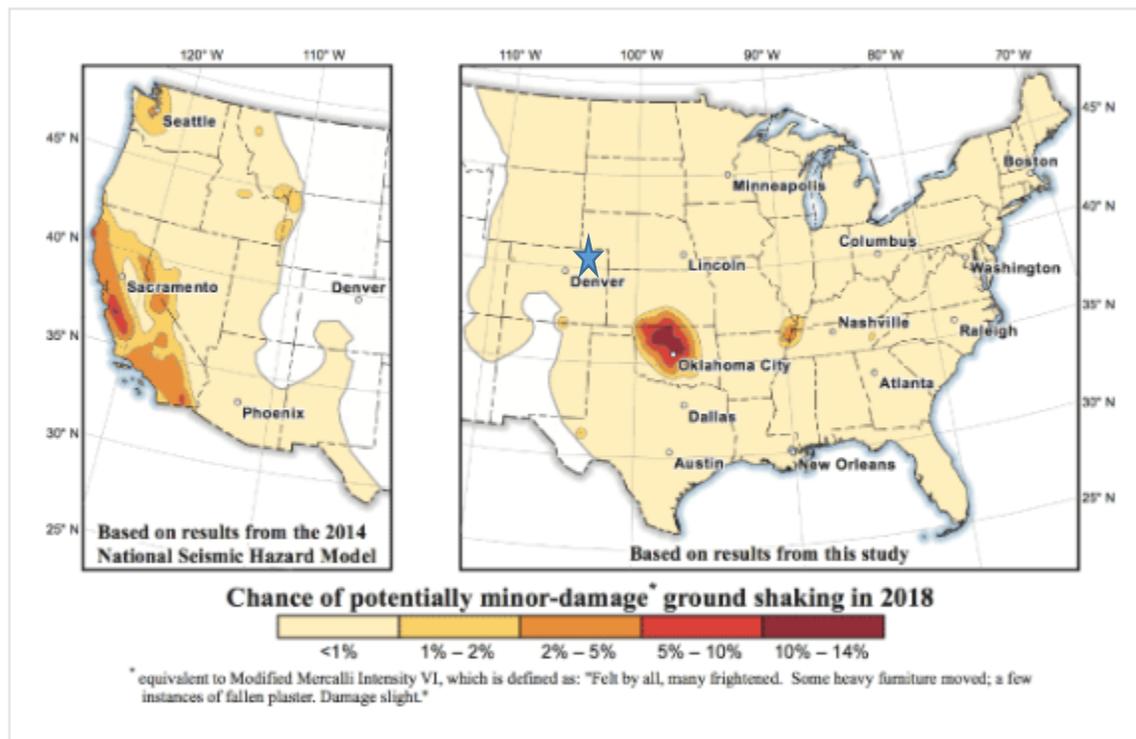
No recorded earthquakes on COGCC “Earthquakes (1973-Present) (CGS)” map layer.

Operator has been monitoring seismic activity since the inception of injection in the EWS-4 and EWS-4A wells and has not detected any activity greater than 2.5M magnitude.

From the USGS Earthquake Website: 2018 Short Term Induced Seismicity and 2014 Long Term Seismic Hazard Maps indicate the EWS-4 Facility has low potential for seismic activity, induced or naturally occurring.

Short-term Induced Seismicity Models

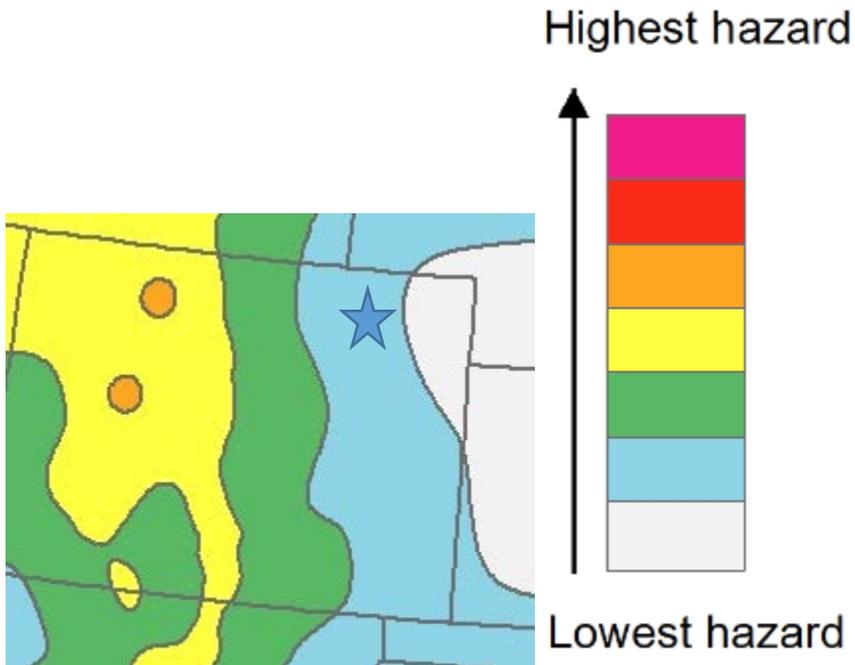
2018 One-Year Model



Map showing chance of damage from an earthquake in the Central and Eastern United States during 2018. Percent chances are represented as follows: pale yellow, less than 1 percent; dark yellow, 1 to 2 percent; orange, 2 to 5 percent; red, 5 to 10 percent; dark red, 10 to 12 percent. See Hazard from the western United States from the [2014 National Seismic Hazard Maps \(Petersen et al., 2014\)](#) for comparison.

The area around the EWS-4 Facility is in the area of the U.S. with <1% “Chance of potentially minor-damage ground shaking in 2018” in 2018 (no map available for 2019).

USGS 2014 Long Term Model



The EWS-4 Facility is in the Light Blue zone with a low hazard potential on the [Simplified 2014 Hazard Map \(PGA, 2% in 50 years\)](#) map. (PGA = Peak Ground Acceleration)

Bob Koehler
6/18/2019