

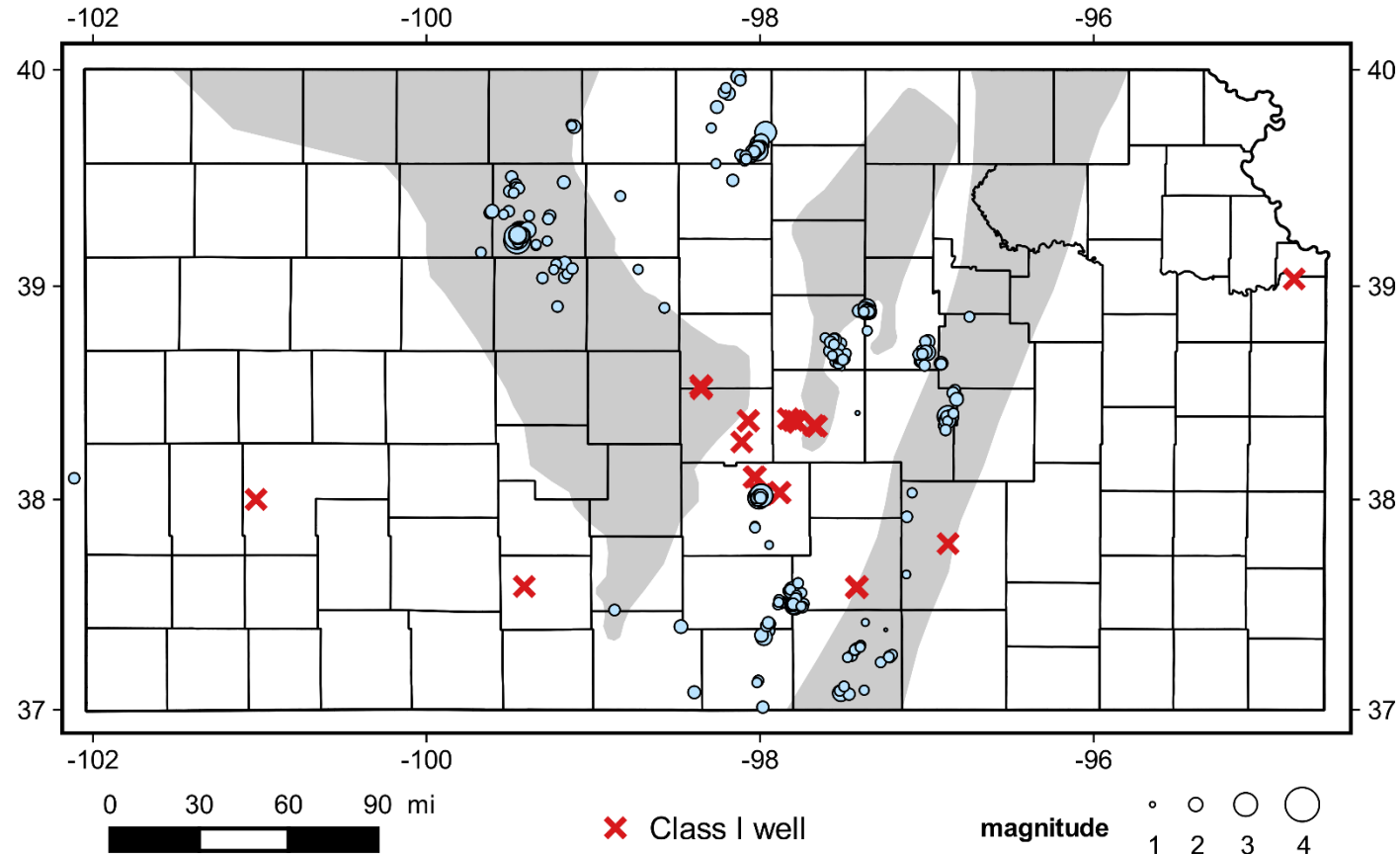
Consortium to Study Trends in Seismicity

Quarterly Report October 1 to December 31, 2019

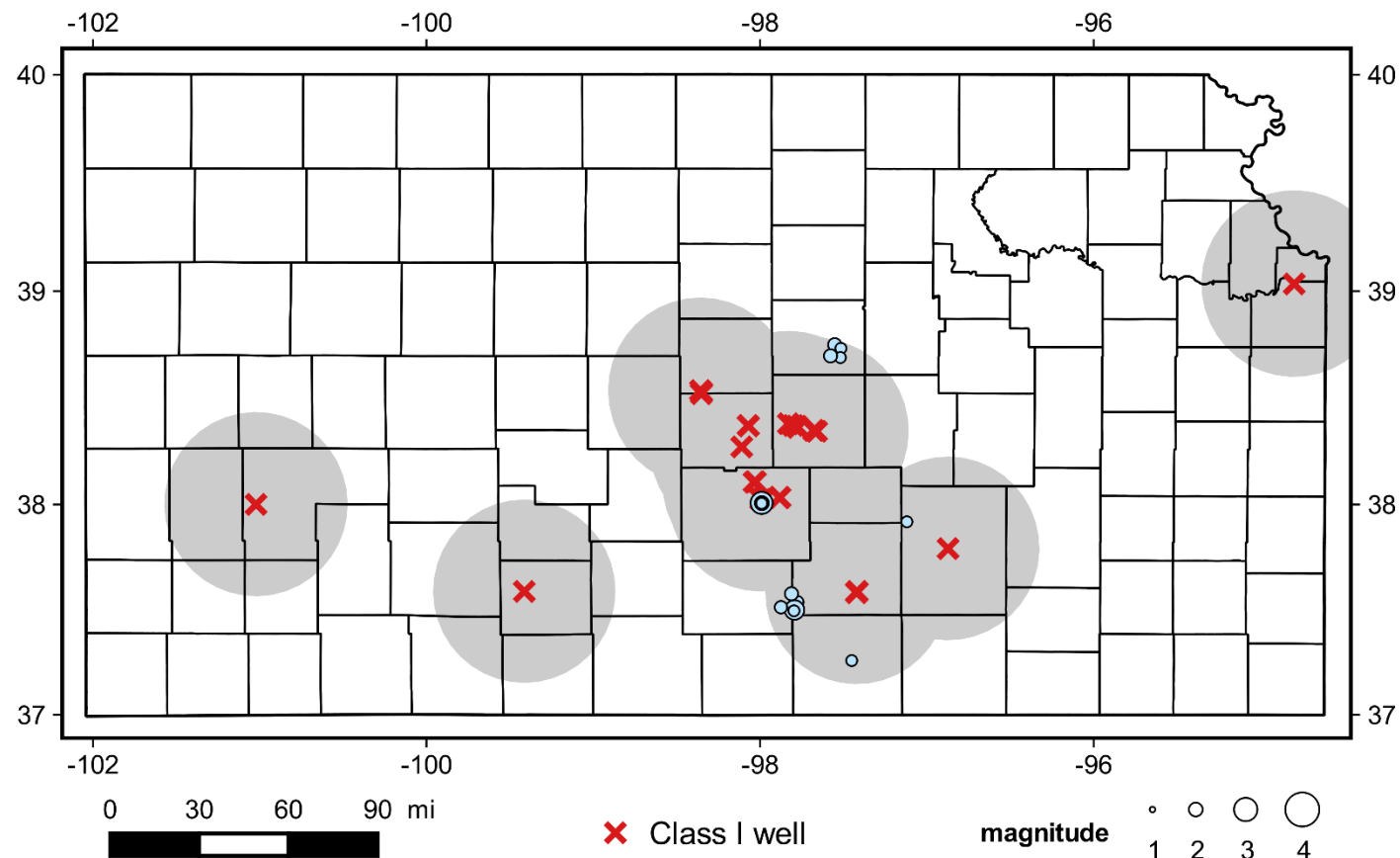
Rex Buchanan, Shelby Peterie, Rick Miller, *Kansas Geological Survey*



Statewide Earthquakes



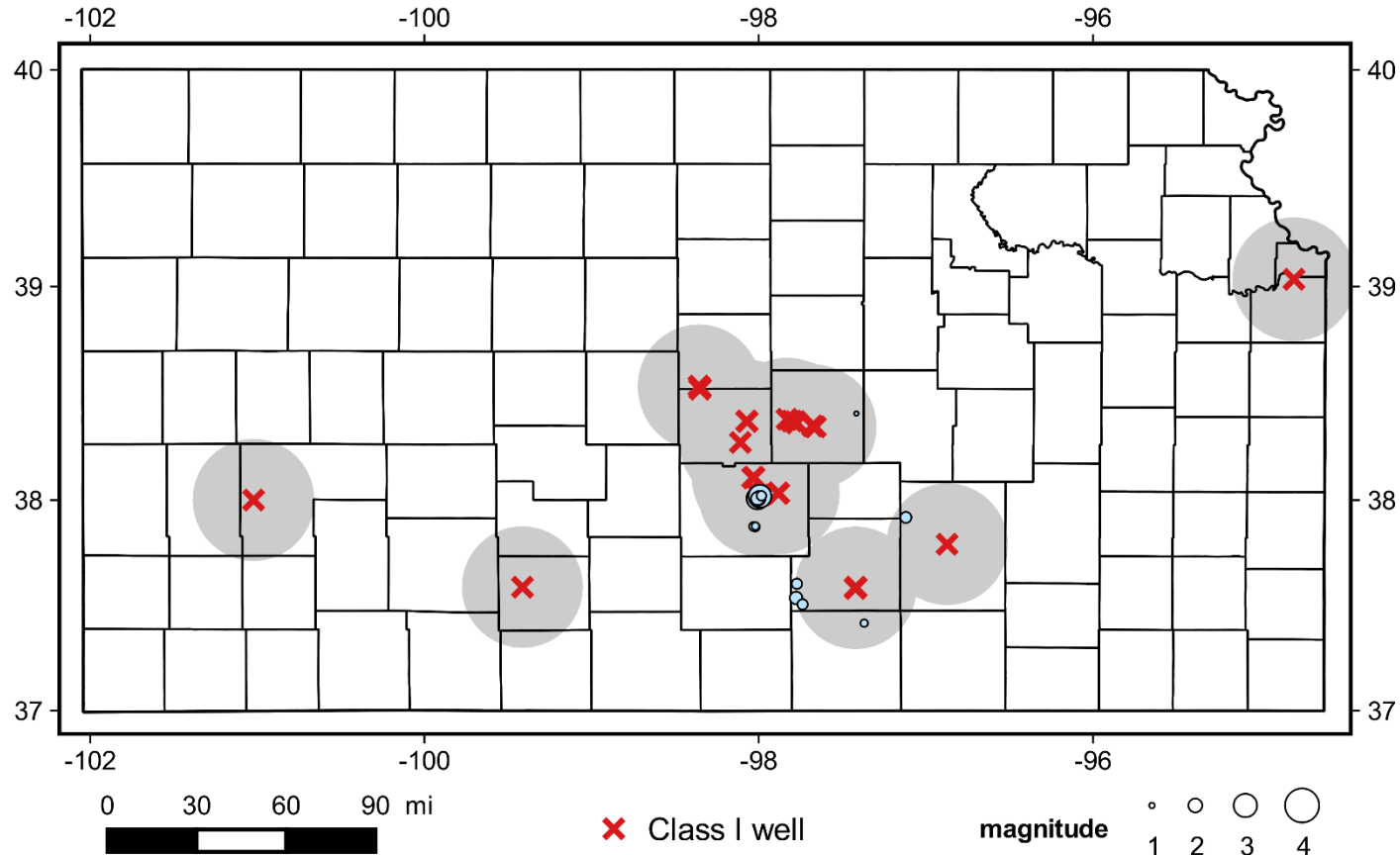
CSTS Alerts



$M \geq 2$ within
30 miles

Total: 18

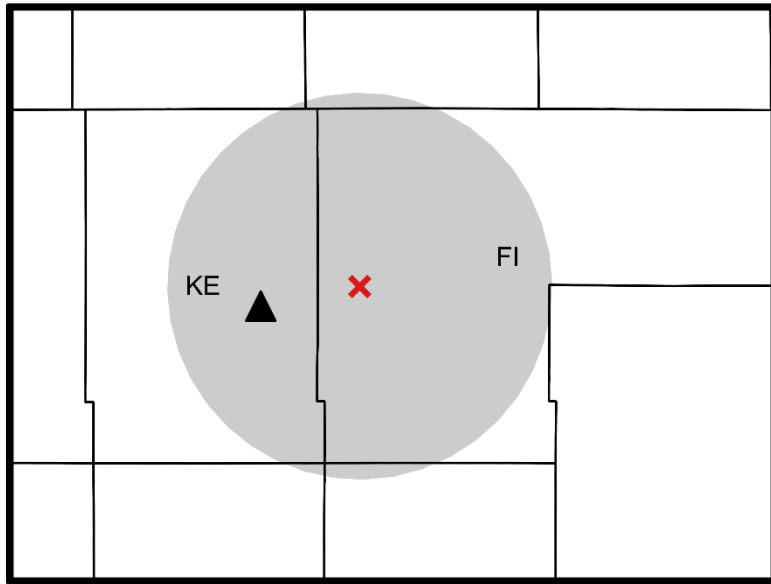
Earthquakes Within 20 miles



Total: 31

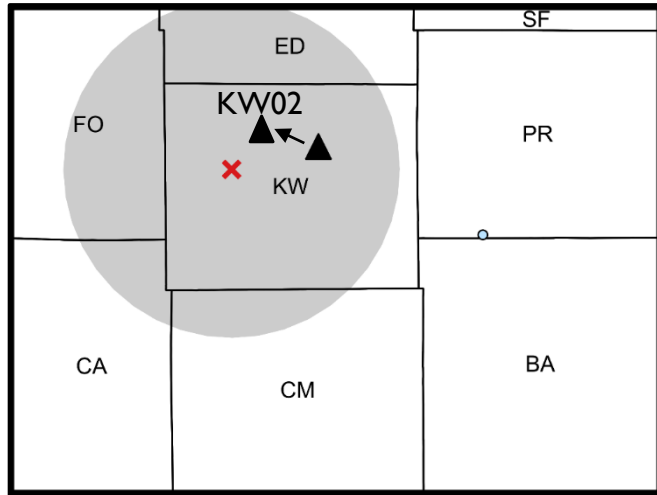
*93 in the
previous quarter*

Finney County



- No located earthquakes
- One subnetwork event
 - $M < 0$
 - 5 mi from the station

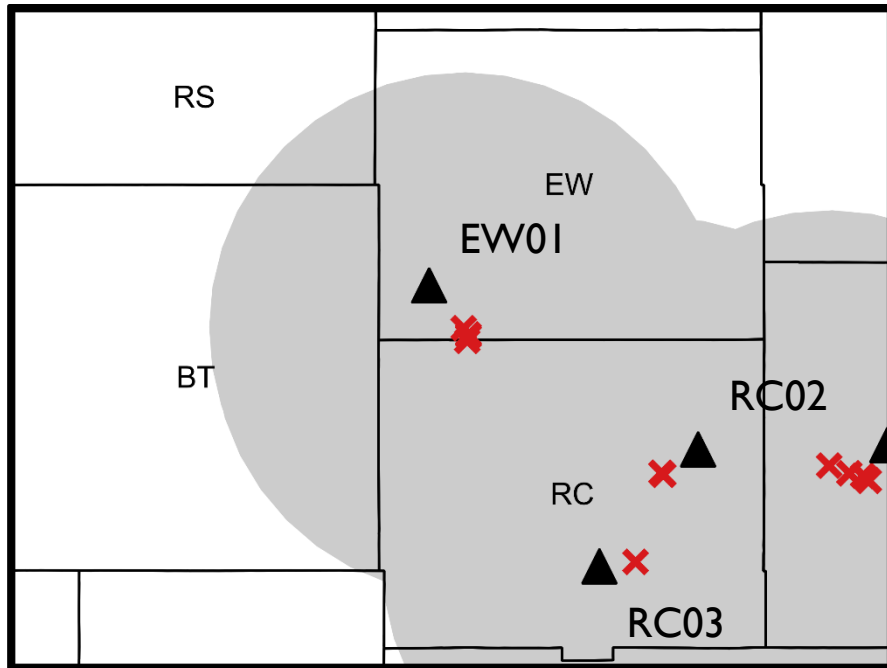
Kiowa County



- Station moved to KW02
- No located earthquakes
- No subnetwork events

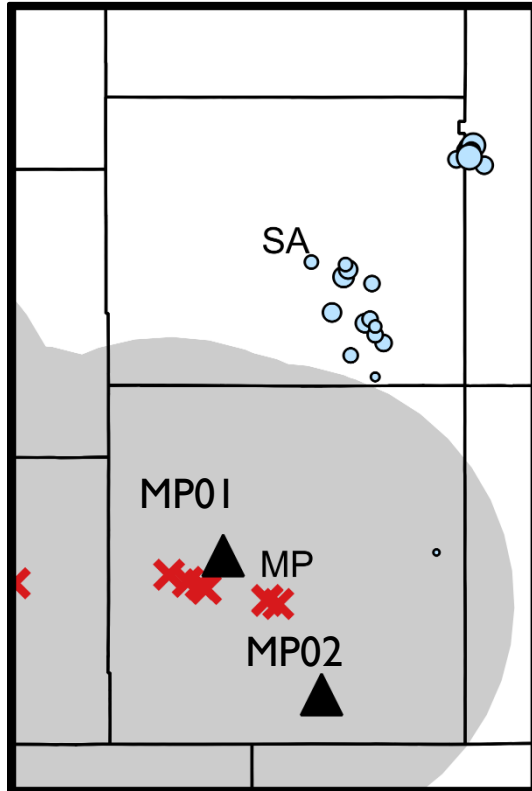


Rice and Ellsworth Counties



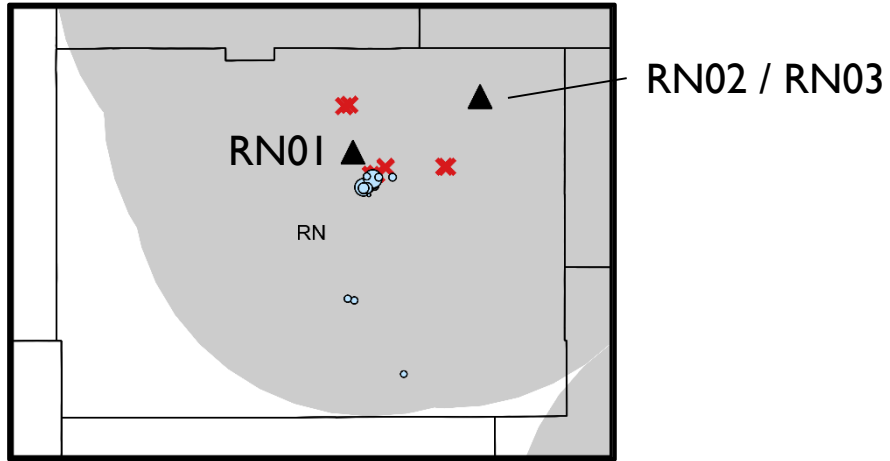
- No located earthquakes
- Subnetwork events
 - RC03: 132 (blasts)
 - RC02: two $M < 0$

McPherson County



- One located earthquake
 - M 1.0
 - > 10 miles from wells
 - previous earthquakes
- 10 subnetwork events
 - MP02: 8
 - MP01: 2
 - $M < 0$

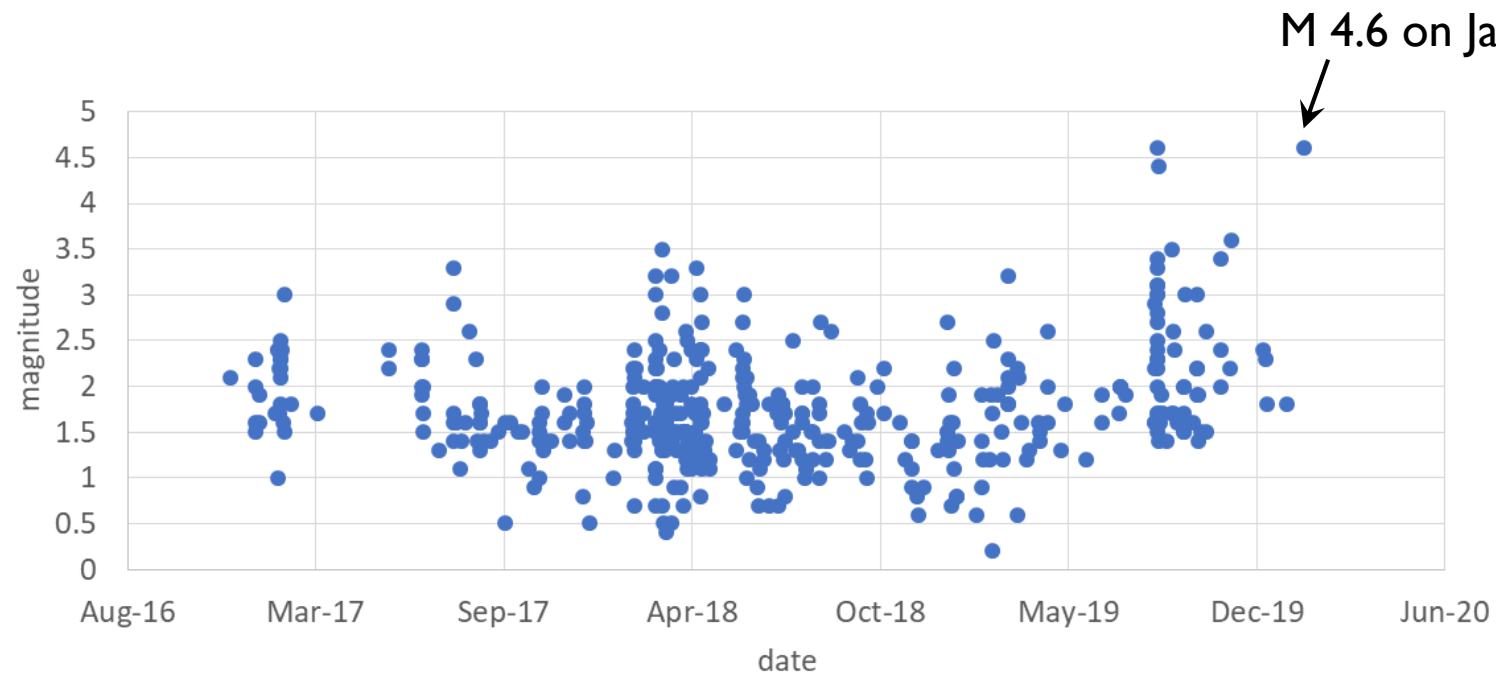
Reno County



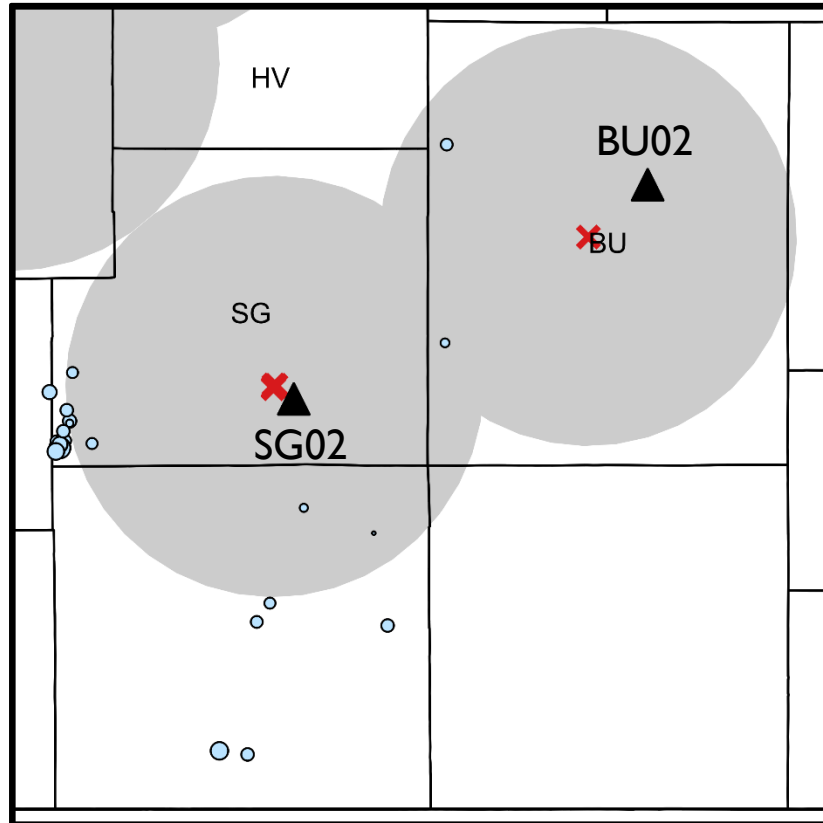
- RN02 moved to RN03
- 21 located earthquakes
 - decrease
 - M 0.7 to M 3.5
- 98 subnetwork events at RN01
 - consistent with the Hutchinson cluster



Reno County

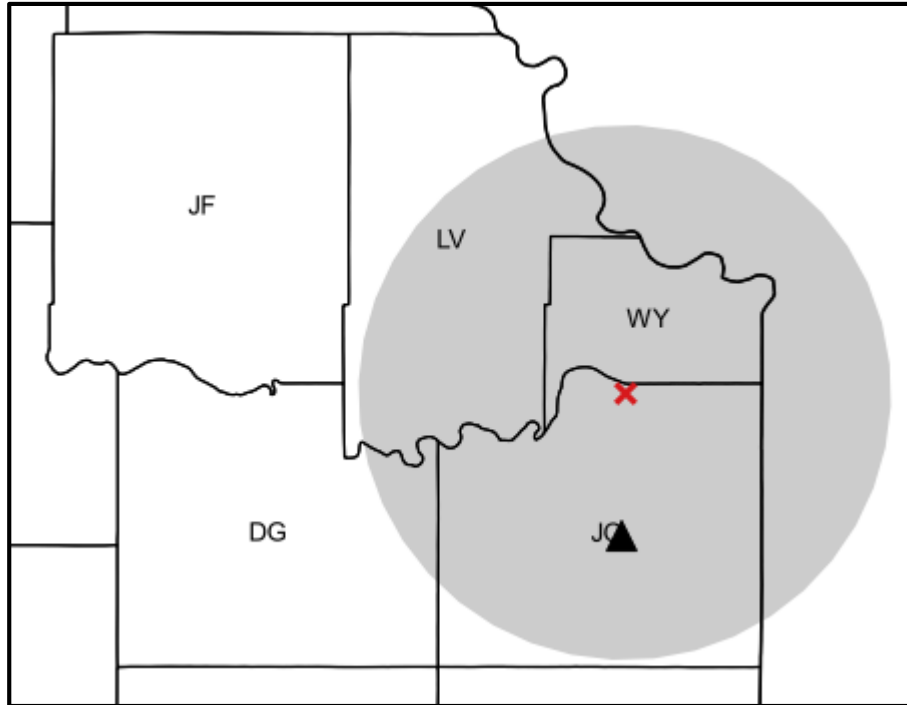


Sedgwick and Butler Counties



- 9 located earthquakes
 - M 0.8 to M 2.2
 - along known trends
- Subnetwork events
 - BU01: none
 - SG02: seven, $M \leq 0.2$

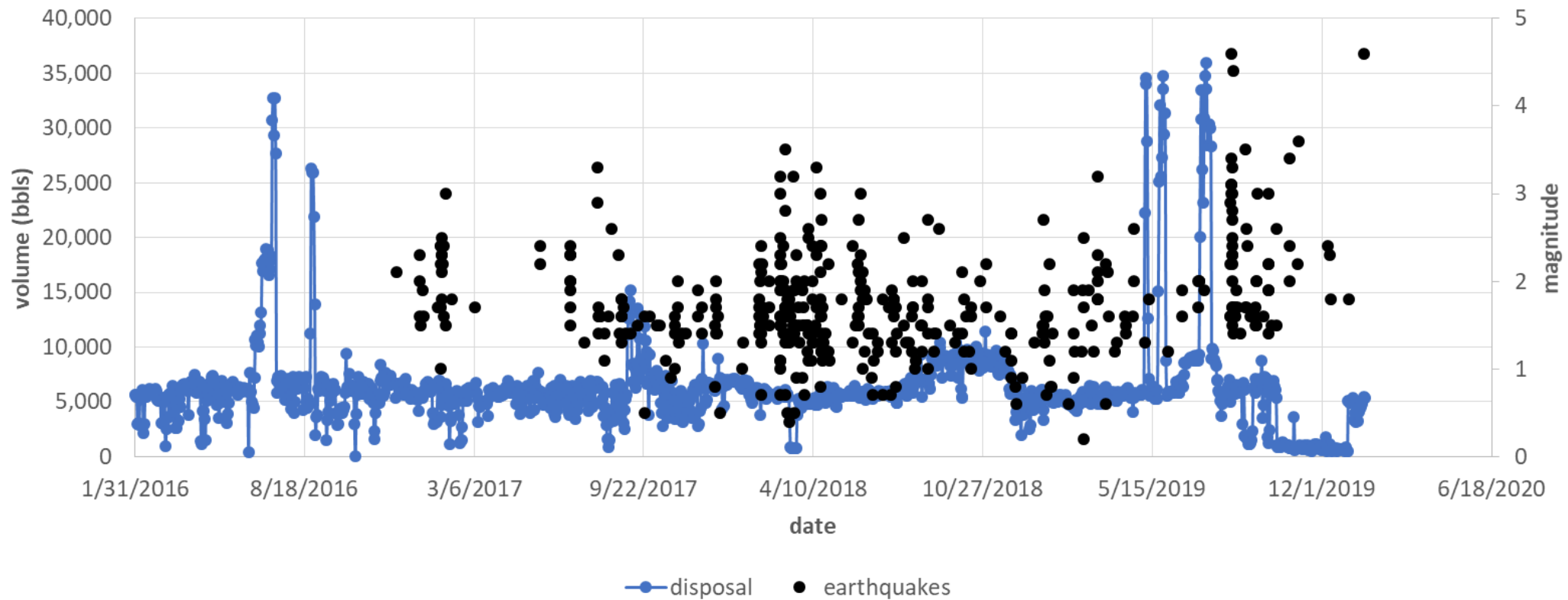
Johnson County



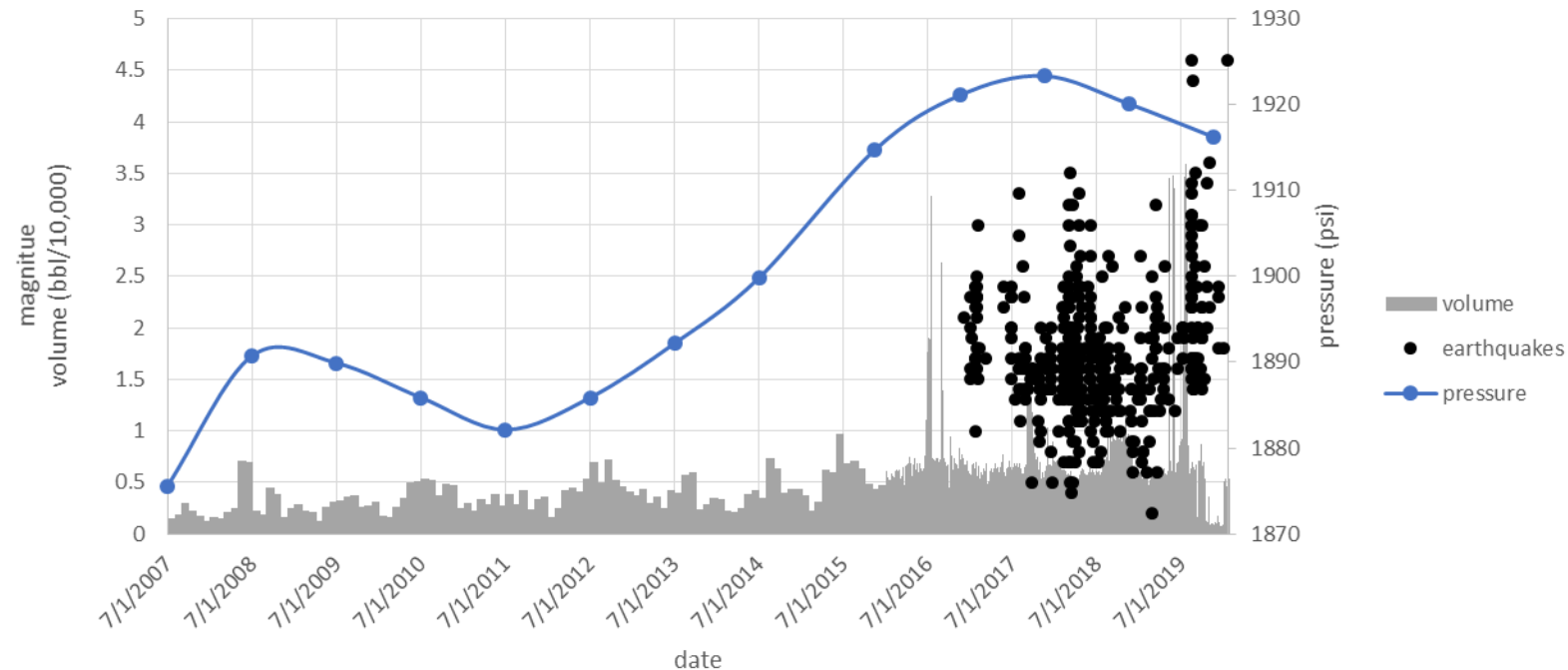
- No located earthquakes
- One subnetwork event
 - M 0.1

Discussion

Hutchinson: Daily Disposal within 2 mi



Hutchinson: Pressure, Volume, Earthquakes



* from 2007-2015, the daily value is the daily average estimated from the monthly total

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