Statewide Earthquakes

- Statewide earthquakes
  - This quarter: 477
  - Last quarter: 676
- Fewer in Saline County
- Largest: M 3.7 near Cheney
  - Three M 3+
  - a dozen M 2
CSTS Alerts

- Criteria
  - $M \geq 2$
  - 30 mi of tier 1 wells

- Alerts
  - This quarter: 67
  - Last quarter: 141
Earthquakes Within 20 miles

- Earthquakes w/in 20 mi
  - This quarter: 69
  - Last quarter: 12
- Primarily from Cheney cluster
Kiowa County

- Located earthquakes
  - None

- Subnetwork events
  - $3 \ M < 0$
  - 1.2 to 3.4 mi

- Consistent with past observations
Rice and Ellsworth Counties

- Located earthquakes
  - none w/in 20 mi
  - continued seismicity in RS

- Subnetwork events
  - EW01: 1
  - RC02: 3
  - RC03: 4, largest M 0

- Reduced seismicity in RS
McPherson County

- Located earthquakes
  - 16, M 1.0 to 1.2
  - >15 miles from wells
  - consistent with MGA

- Subnetwork events
  - MP01: 10, largest M 0.1
  - MP02: 7, all M < 0
  - Subzero

- Similar to previous quarters, slightly elevated
Reno County

- Located earthquakes
  - 2 earthquakes
  - largest = M 1.4

- Subnetwork events
  - RN01: 7
  - RN03: 12

- Seismicity continues to be low
  - M2+ since last quarter
Sedgwick County

- Located earthquakes
  - 49 events
    - 12 M 2-2.9
    - 4 M 3+ (largest = M 3.7)
    - only 2 previous quarter

- Subnetwork events
  - 19 events M ≤ 0
  - less than 2 mi from SG02
  - most from January 2-3
Butler County

• Located earthquakes
  – 2, M 1.4 and 1.5

• Subnetwork events
  – 29 events, < 2 mi
  – majority Jan 2 and Feb 23
Johnson and Atchison Counties

- Located earthquakes
  - one
  - M 1.4 in DG

- Subnetwork events
  - 5 in JO M ≤ 0.1
  - 2 in AT M < 0
Disposal Volumes

2020

2021
Harper County

Disposal Volume

Arbuckle Formation Pressure
Consortium to Study Trends in Seismicity

Quarterly Report
January 1 to March 31, 2022

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