Seismic Monitoring in Kansas

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Earthquake Statistics

Statistics for earthquakes detected by the Kansas-Nebraska seismic network (1977-1989) and USGS (1990-present)

**Statewide**
- Increase in magnitude 2.5 earthquakes
  - 1977 to 2012: 34
  - 2013 to present: 115

**Harper and Sumner Counties**
- Increase in magnitude 2.0 earthquakes
  - 1977 to 2012: 2
  - 2013 to present: 138
KGS and USGS Temporary Networks
KGS and USGS earthquakes

Earthquakes detected by both the USGS and KGS networks. KGS locations (blue) are within 2 miles of the USGS locations (red) for the same event.
Earthquakes detected using only the KGS Temporary Network

A total of 123 earthquakes (white circles) were detected by the KGS temporary network (green triangles) during the first 16 days of recording.
Earthquakes detected by the USGS in 2014 (prior to November) and map of lineaments interpreted by scientists at KGS.
Earthquakes detected by the USGS near Conway Springs in 2014 (blue circles) and possible fault interpreted by scientists at USGS (dashed red line).
USGS Proposed Fault near M 4.9 in Sumner Co.

Earthquakes in the M 4.9 sequence (red and yellow circles) and fault interpreted by scientists at USGS (dashed red line). Courtesy of USGS.
Proposed Permanent Network

- Menlo
- Tuttle Creek
- Finney Lake
- Toronto Lake
- Lake Meade
- WSU field station
Proposed Permanent Network

- KGS stations
- USGS stations
- NSF station
- Kansas Wesleyan station
- Alternate KGS station
Network Sensitivity to M 1.5

- KGS stations
- USGS stations
- NSF station
- Kansas Wesleyan station

60 miles
Potential Utility of Collected Data

- Reduce injection volume
- Constrain locations for approving new permits
- Define zones of increased risk