Seismic Experiences in Texas

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Conclusions

- Fluid management can cause earthquake sequences, but naturally-caused earthquakes also occur much more frequently.
- To date, the impact from suspected induced seismic events has been minor. Damage from any/all seismic events depends on location and presence of infrastructure.
- Produced water disposal is not new. Texas has 35,000 injection wells, 7,000 of which are deep disposal wells; yet, operation of only a very few appear to correlate to seismicity sequences. Why?
- Data from baseline seismic monitoring in Texas would provide substantial benefits to all stakeholders. Texas needs to invest in baseline and sequence-specific monitoring.







BUREAU OF ECONOMIC GEOLOGY

Some historical earthquakes in Texas (>M3.0)



Disposal wells in Texas



Bureau of Economic Geology

database, 2014

General fluid life cycle - O&G operations





GEOLOGY

Source: Nicot et al., 2014

Injection volumes across Barnett play

- ~977K bbl/day (~46 kaf/yr) of F/P water injected thru ~150 wells
- Most activity is in a few counties
- ~4% of total volume injected in TX (2011-12; 19MMbbl/day, 924 kaf/year)





Recent activity in Azle/Reno TX area







Recent Legislative hearings on seismic activity

** REVISION ** HOUSE OF REPRESENTATIVES NOTICE OF PUBLIC HEARING

COMMITTEE: Energy Resources SUBCOMMITTEE: Seismic Activity TIME & DATE: 1:00 PM, Monday, May 12, 2014 PLACE: E2.036 CHAIR: Rep. Myra Crownover

The House Energy Resources Subcommittee on Seismic Activity will hold a hearing to the consider the following charge:

Study the current conditions surrounding the increased seismic activity in the Barnett Shale and other areas of the State. Specifically, review the possibility that increased exploration and disposal well activity could impact seismic activity. The committee shall review active oil and gas activity and injection wells in areas experiencing increased seismic activity.

The subcommittee will hear invited testimony only.



Current seismogram stations in Texas



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Thank you!



