

# Regulating Injection and Fracking In Oil & Gas Operations

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Environmental Law in Oil & Gas

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# First, a review – The Clean Water Act and surface water discharges



- Water demands and impacts of oil and gas development
- Federal and state clean water laws
  - Federal: the Clean Water Act, Oil Pollution Act
  - State: Texas Water Code
- Need a discharge of a pollutant through a point source to water of the United States. Banned if not via federal NPDES or state permit.
- “Waters of the United States” – *Rapanos*, WOTUS rulemaking
- Getting a jurisdictional determination for wetlands permit
  - *U.S. v. Hawkes*
- STATE LAWS DIFFER – Texas and “waters of the State”
  - Railroad Commission regulations govern discharges too
  - NOTE – Delegation in Texas dual permitting





Let's get real...

- So what physical options do you have to dispose of produced water and flowback?
- “Flowback” – frac fluids making a return trip
- “Produced water” – naturally occurring waters in formation with oil and gas
  - Salt, minerals, HCs, NORM
  - Billions of gallons (Texas – 7.4)





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- Options include:
  - Discharge onto land or water
  - Discharge to sewer plant (WWTP)
  - Dispose by injection well
  - Recycle and reuse





## Walking through the options

- Option 1 – discharge onto land or water
  - Land:
    - No WOTUS, no CWA – but Texas Water Code and regs
    - CERCLA, RCRA
  - Water
    - NPDES, TPDES, and delegation
    - No Texas delegation for E&P – dual permitting
    - For oil and gas, we have the framework in place
      - effluent limitations guidelines
      - Subcategories for onshore, offshore, coastal, agricultural and wildlife, and stripper wells

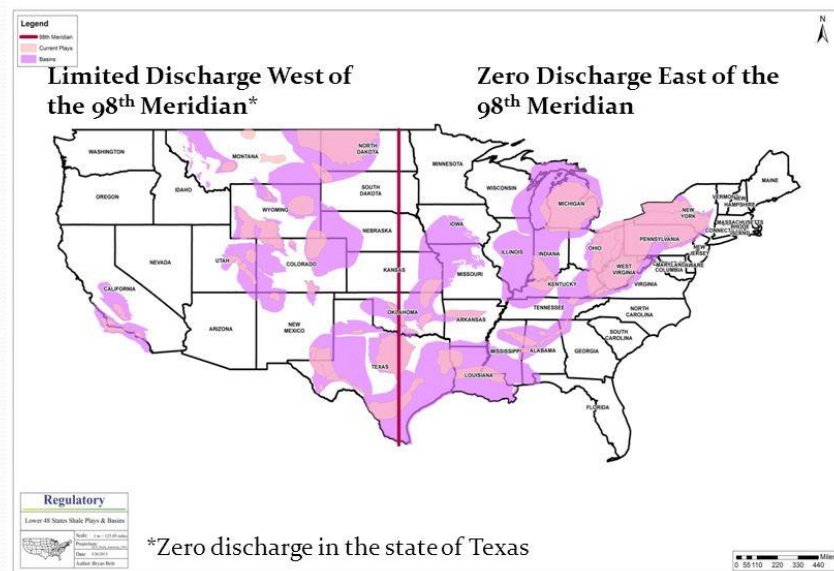




# Walking through the options

- Option 1 – discharge in water
  - NPDES, TPDES, and delegation
  - No Texas delegation for E&P – dual permitting
  - East vs West
    - Zero discharge east of 98<sup>th</sup> Meridian
    - General permit for west if agriculture or wildlife

## 98TH MERIDIAN VS. SHALE PLAYS





## Walking through the options: Wastewater Treatment Plants

- “Indirect discharge” – permit actually held by plant operator
- Requires pretreatment to meet standards in a pretreatment order
- Slugs, Upsets, Bypasses, and other bad things
- Concern: NORM, metals, chlorides, chemicals





## Walking through the options: Disposal Wells

- Federally regulated under Safe Drinking Water Act, and Underground Injection Control program
- Six classes of wells:
  - Class II – oil and gas activity injections
    - Produced waters, unless “classified as hazardous waste at the time of injection”
    - EOR
    - Hydrocarbon storage (but not natgas storage)
- *LEAF v. EPA* (11<sup>th</sup> Cir. 1997)



# Produced waters, fracking, and injection wells

- The Halliburton Amendment -- in 2005 Energy Policy Act
  - Excludes from definition of “underground injection”

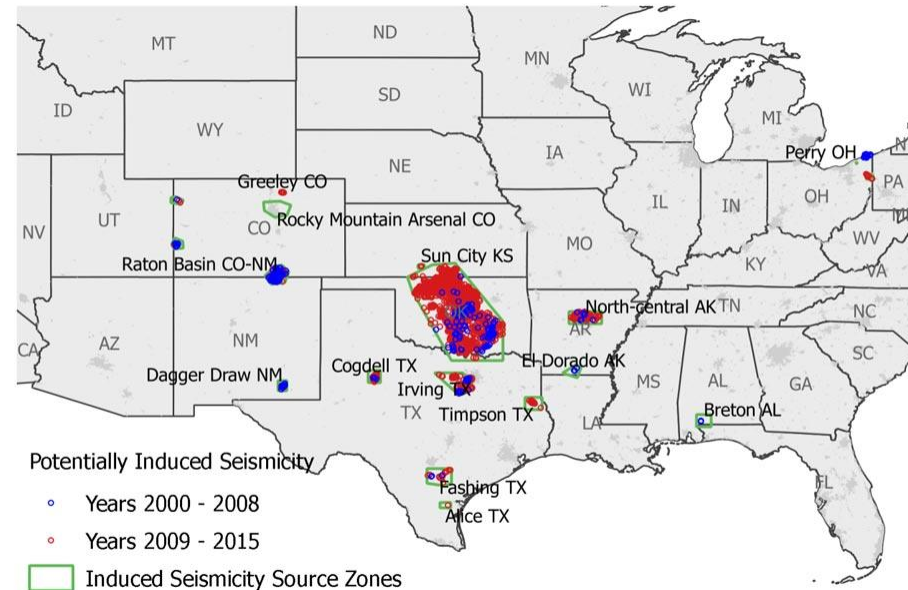
“the underground injection of fluids or propping agents (other than diesel fuel) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities.”

So what’s still regulated under SDWA and UIC?

# Induced seismicity



- Texas:
  - Between 1975 to 2008, 1 to 2 earthquakes above 3.0 magnitude
  - Between 2008 to 2016, now see 12 to 15 earthquakes per year
- Disposal wells vs fracturing







# Stormwater management

- Regulated under federal Clean Water Act under certain circumstances
- Oil and gas, again, have special rules
  - 1987 Amendments to Clean Water Act
  - Only regulated if “contact” storm water – 42 U.S.C. 1342(I)(2)
  - Also, not applicable to construction per Energy Act of 2005



# Oil Spills and Discharges

- *In re Deepwater Horizon* (2010)
- OPA v CERCLA
  - Owners and operators
  - Arrangers
  - Liability limits
- Reporting obligation
- Penalties



# What's ahead – frac hits and abandoned wells



## HYDRAULIC FRACTURING

**Now it's oilmen who say fracking could harm groundwater**

Mike Soraghan, E&E News reporter

Published: Wednesday, November 1, 2017



A pumpjack atop a Silver Creek Oil & Gas well in Hughes County, Okla. Mike Soraghan/E&E News

HOLDENVILLE, Okla. — It's no longer just environmentalists who suspect hydraulic fracturing is contaminating groundwater.



A frack hit at this well site near Holdenville, Okla., has been suspected of causing groundwater contamination. Oklahoma Corporation Commission



## Questions?

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