Geologic Carbon Sequestration Leasing: Public Landowner’s Viewpoint

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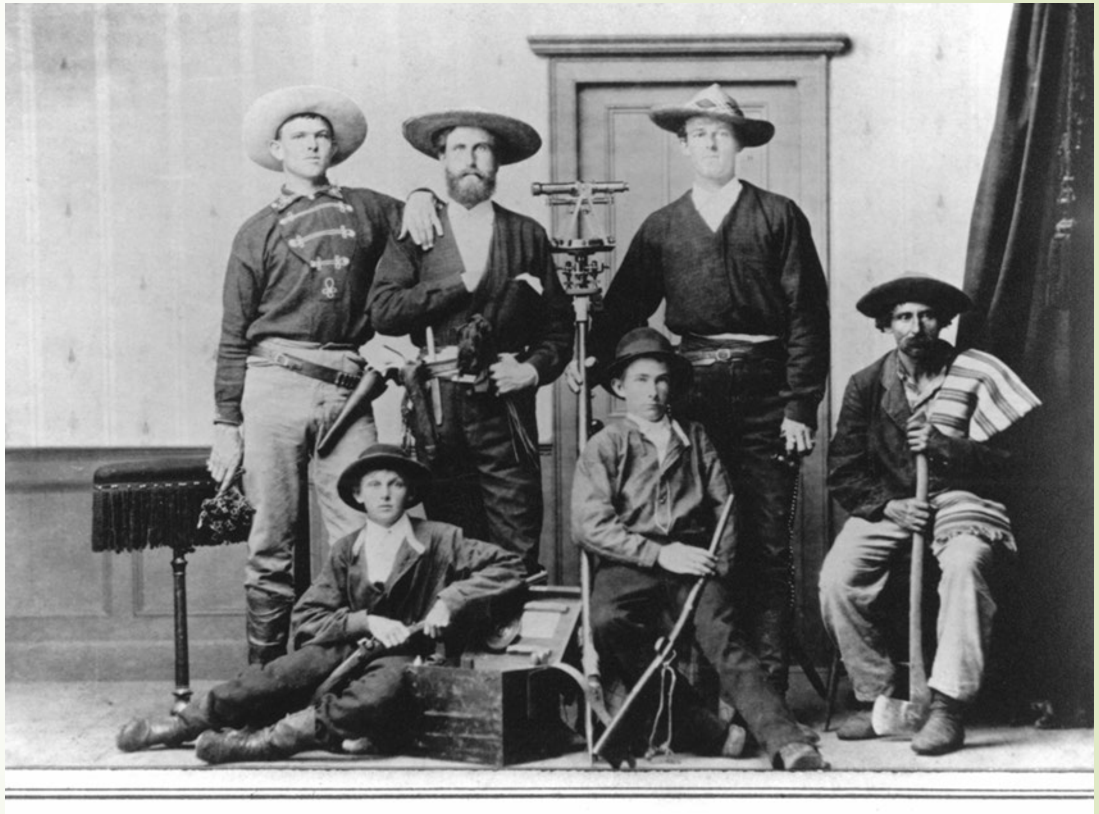
Today's Topics

- **Background on the Texas GLO**
- **Preliminary Steps Taken**
  - Legislative Authority to Lease
  - Regulatory Framework
  - Geologic Study of Potential Lease Tracts
- **Process for Soliciting Lessees**
  - RFP vs. Direct Lease
- **Key Learnings Over Time**
- **Significant Lease Terms**
  - Common Sticking Points in Negotiating
- **Post-Lease Issues**



Texas General Land Office surveying party, 1876, posing with typical tools and weapons found on a surveying expedition.

Texas General Land Office

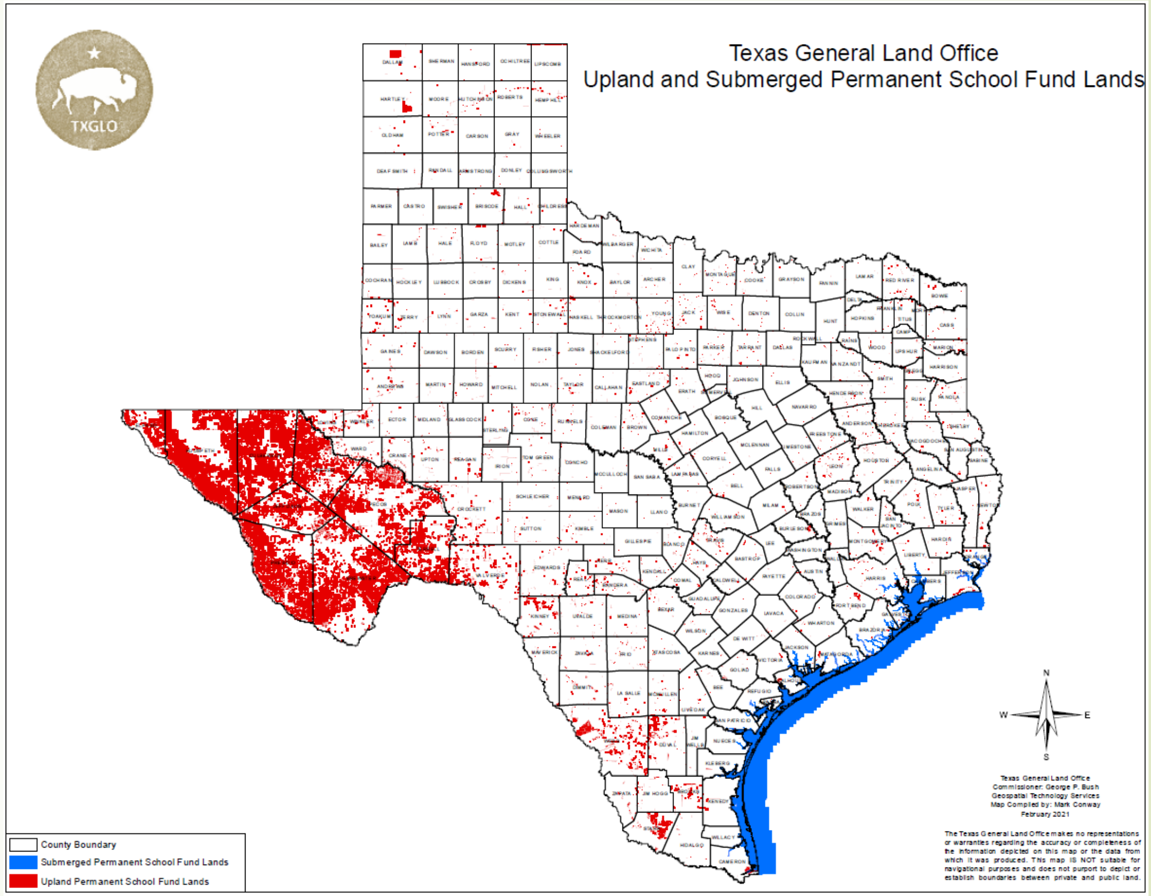
- Established by the Republic of Texas on December 22, 1836
- Custodian of surveys, land titles, and historical archives
- Disaster recovery operations
- Stewardship of the Alamo
- Oversight of the Texas Open Beaches Act and beach restoration
- Veterans’ cemeteries and assisted living facilities
- Oil spill response and prevention

Draftsman’s Room at the Old Texas General Land Office Building, 1887. Legendary mapmaker Charles Pressler can be seen seated in the middle of the front row. His son, Herman, stands behind him alongside famed author William Sidney Porter (aka O. Henry) who was also a TGLO draftsman.

The Permanent School Fund (PSF)

- Established in 1854 with a $2 million appropriation to fund public education
- The Texas Constitution of 1876 reserved the remaining public domain for this purpose
- In 1939, the 46th Texas Legislature dedicated mineral rights in navigable rivers, lakes, channels, and tidelands
- U.S. Supreme Court confirms to extend three marine leagues (about 9 nautical miles or 10.3 miles) into the Gulf of Mexico

- <u>**Total PSF Surface and Mineral Acres: ~13.3 Million**</u>



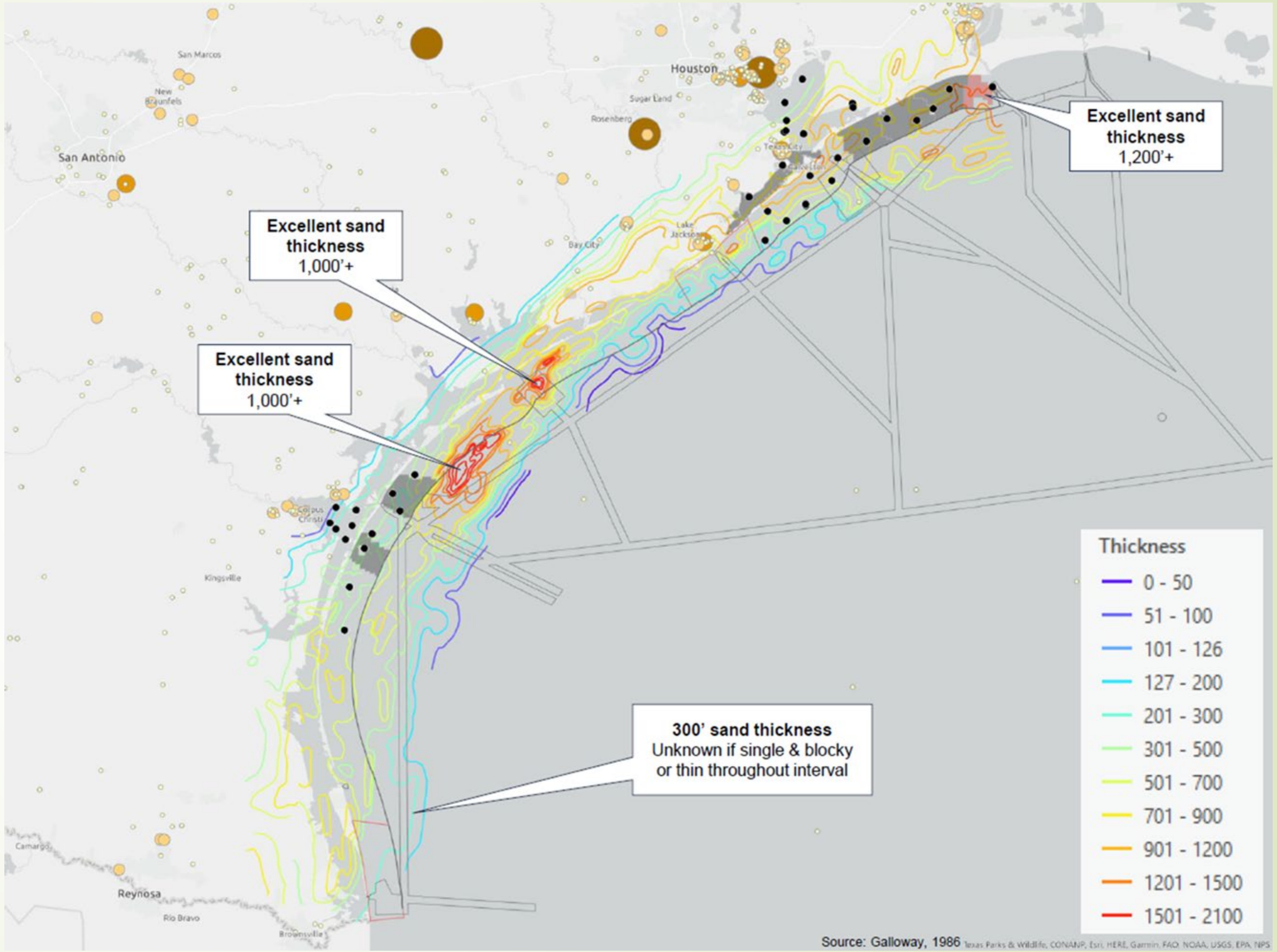
Preliminary Steps (2009)

- **HB 1796 (Texas Health & Safety Code)**
  - Established a broad framework for carbon storage on state-owned land
  - Required the Texas Land Commissioner to contract with the Bureau of Economic Geology (UTBEG) to study offshore submerged lands for potential CO_2 storage sites
- **SB 1387**
  - Directed the GLO, RRC, TCEQ, and BEG to submit a joint report to the Legislature
  - Included regulatory recommendations for managing CCS on state-owned land

Statue of the Goddess of Liberty on the Capitol grounds prior to installation on top of the rotunda, 1888.

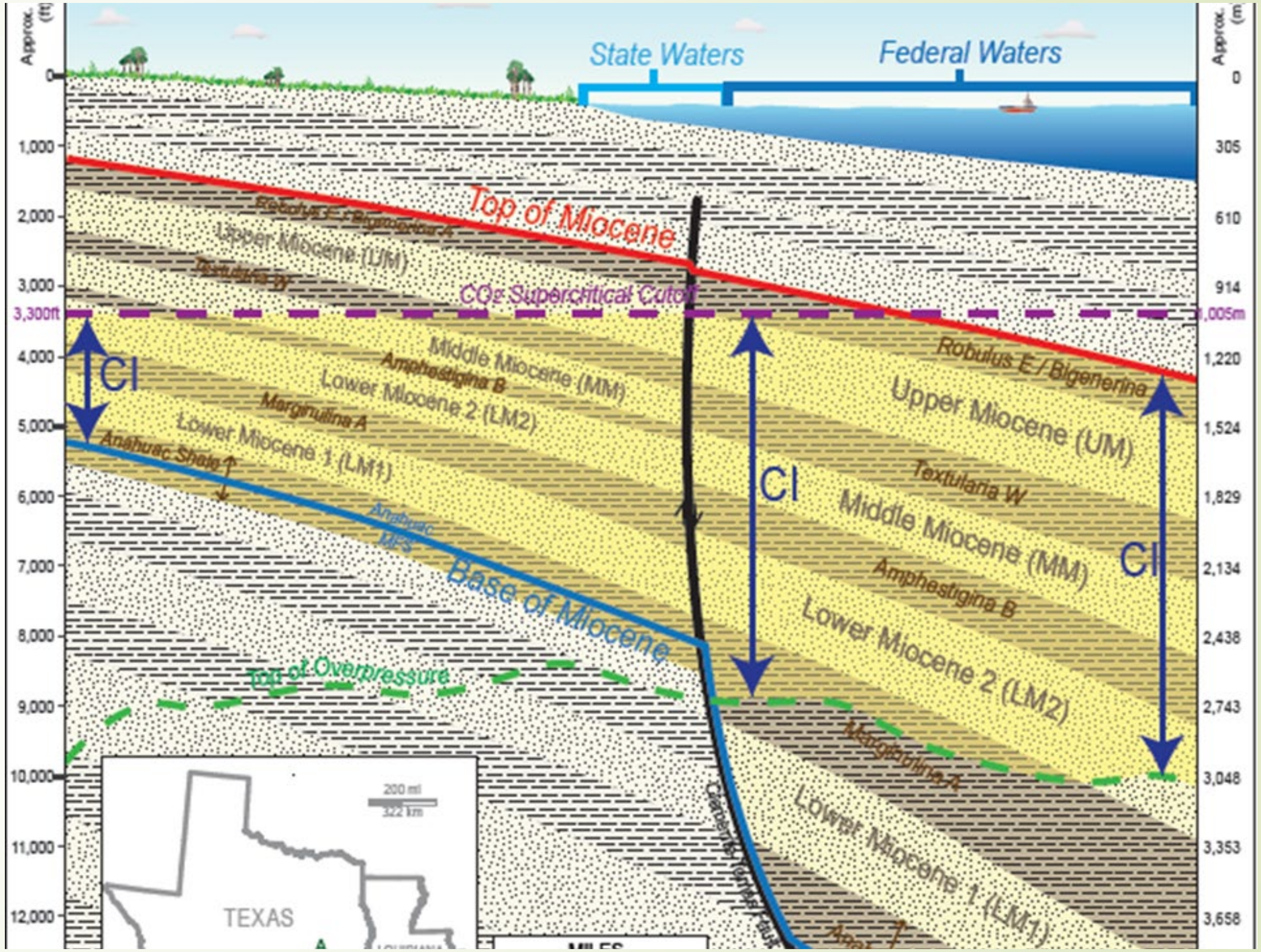
UTBEG Report (2014)

- "The Miocene of the Texas state waters, especially along the upper Texas coast, represents a region with great potential for future CO2 sequestration development."
- Still no serious market or interest in large-scale projects



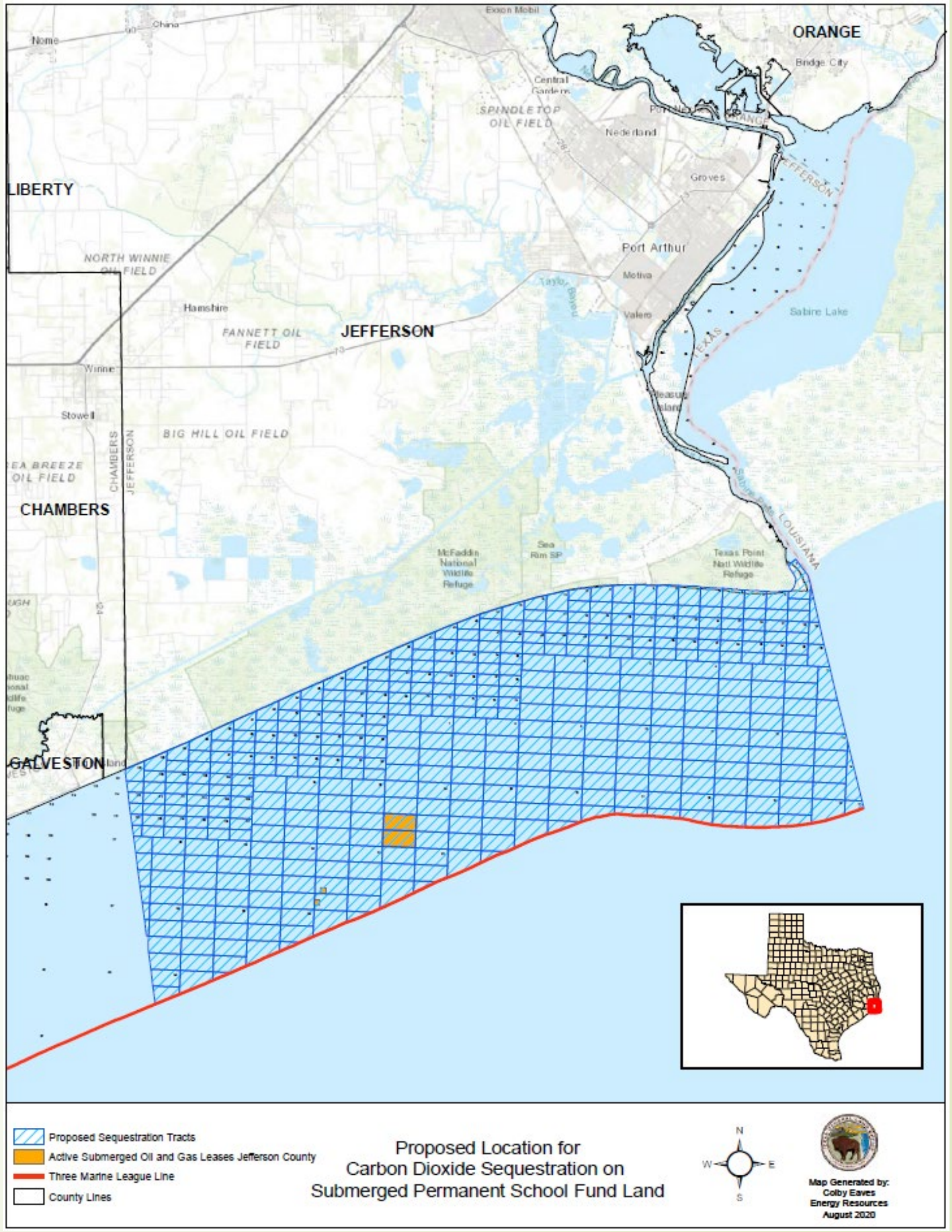
Major Expansion of 45Q (2018)

- 75 Million Tonne Cap Removed
- Phased Increases to Tax Credit Value
- Market Activity Accelerating



First Request For Proposals (2020)

- In September 2020, the School Land Board designated tracts in Jefferson County as suitable for carbon storage
- Established criteria for the Request for Proposals (RFP)
- Criteria included: developer experience, financial capacity, technical approach, and proposed payments to the PSF



Momentum Accelerates (2021)

- March 2021: School Land Board designates the entire Texas coast as suitable for carbon storage, enabling future RFPs statewide

- April 7, 2021: RFP published
  - Received 12 responses

- August 28, 2021: SLB approves a single award to Talos Energy and partner Carbonvert

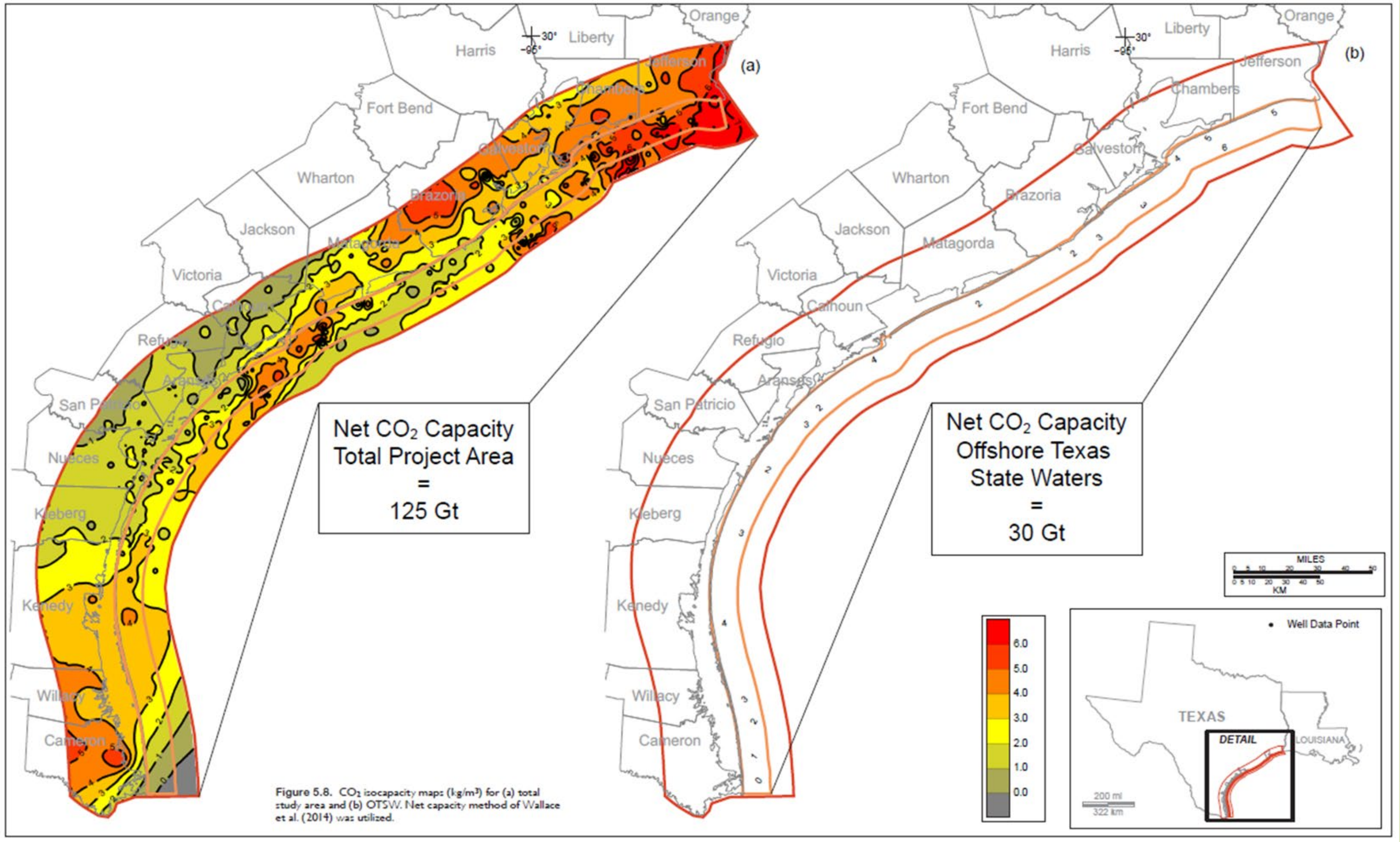
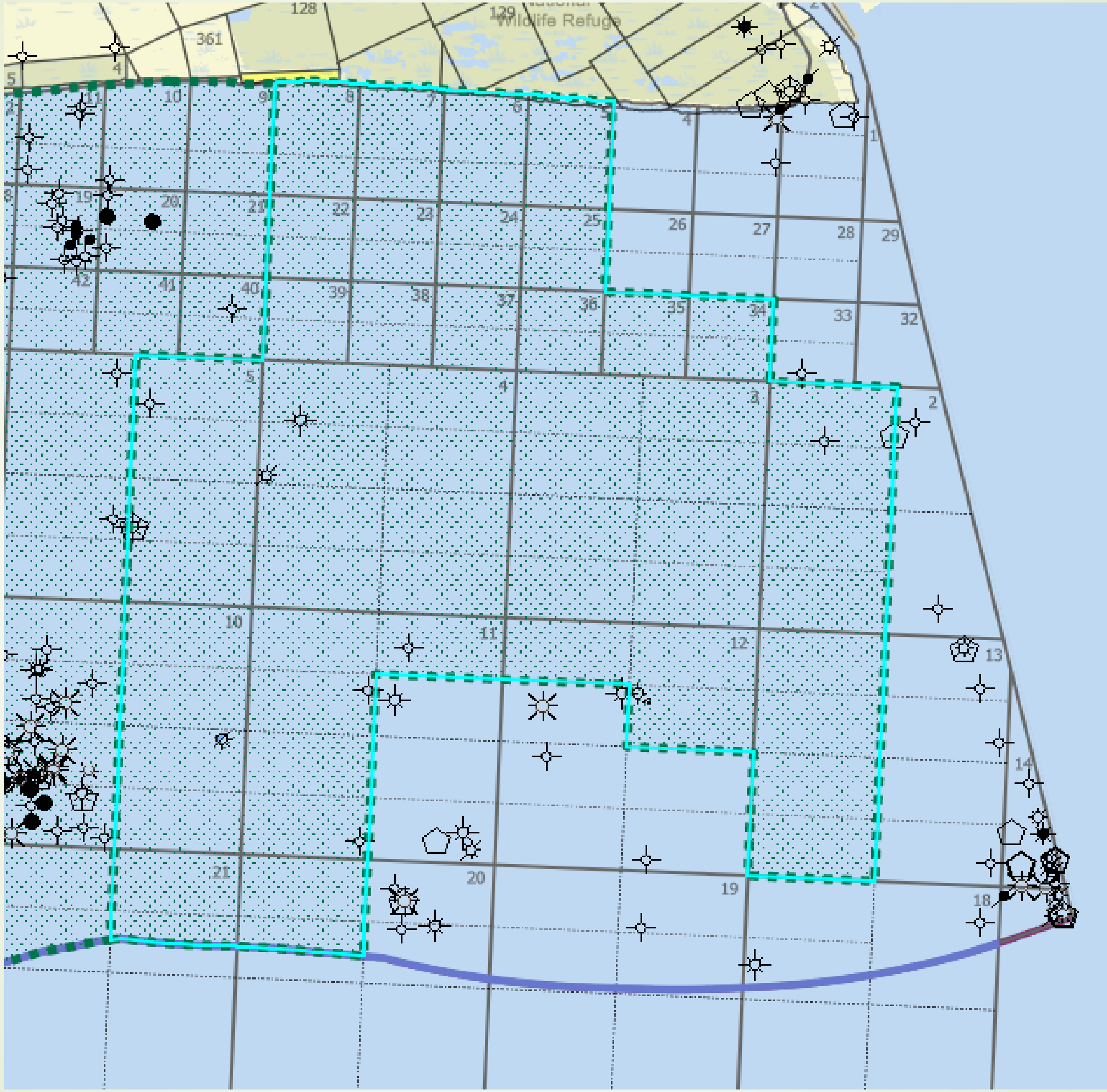


Figure 5.8. CO_2 isocapacity maps (kg/m^3) for (a) total study area and (b) OTSW. Net capacity method of Wallace et al. (2014) was utilized.

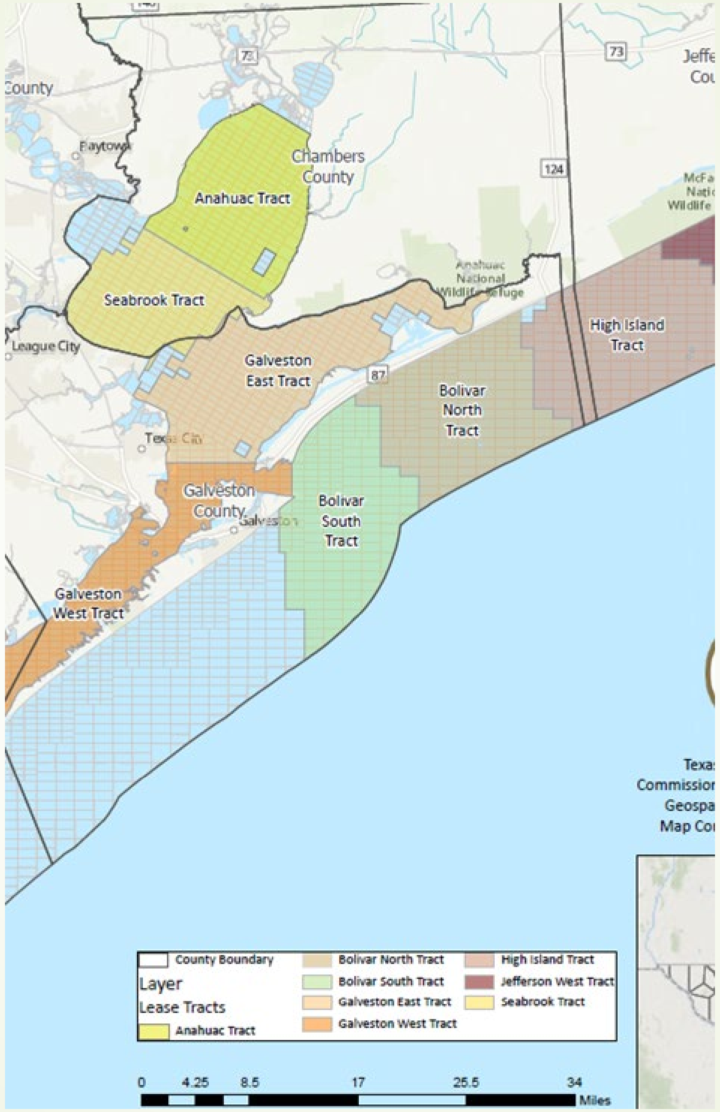
First Lease (2022)

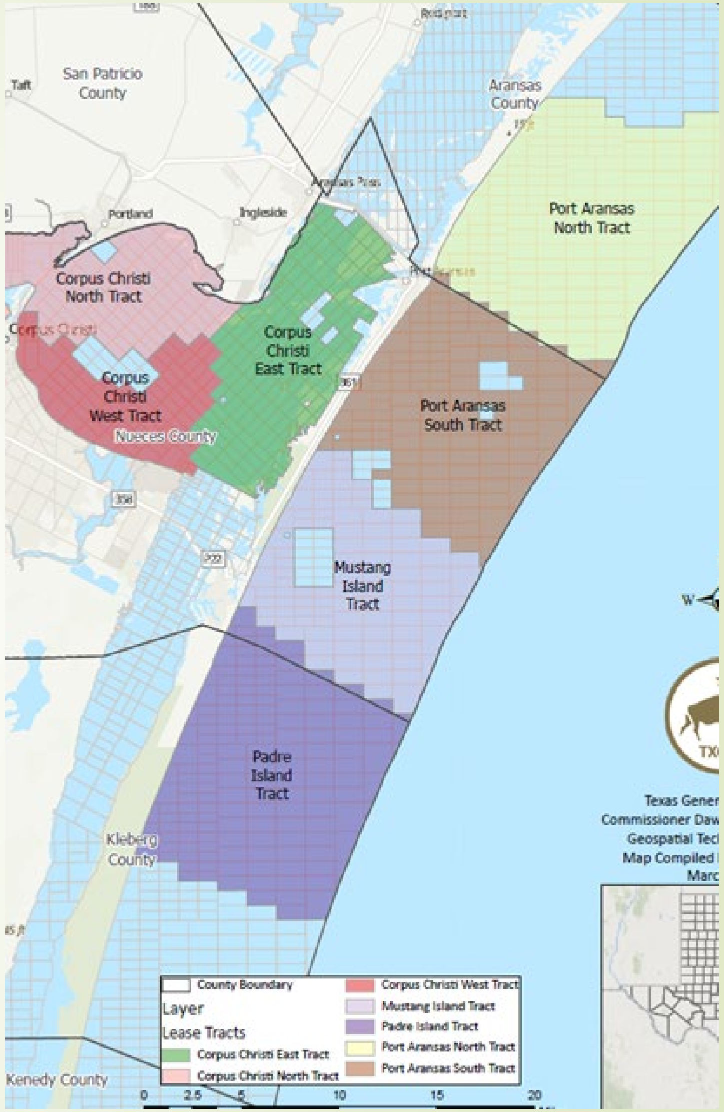
- Covers approximately 40,380 acres in Jefferson County
- Financial terms:
  - $4.5 million bonus at signing
  - $4.5 million due when commit 4 million tonnes
  - $4.5 million due at first injection
- Royalty structure:
  - 3% of gross revenue up to 50 million tonnes
  - Increases to 6% after 50 million tonnes
- Target formation: Miocene
- Planned sequestration of 225 to 275 million tonnes of CO_2 from industrial sources
- Estimated injection rate: 10 million tonnes per year


Wildlife Refuge
128
129
361

Key Learning: Predesignate Tracts

- Next RFP offered 15 predesignated tracts
- Located in the Galveston and Corpus Christi areas
- Received 14 bids on 10 of the 15 tracts
- Ultimately, 6 new tracts were leased
- **<u>$130 million in bonus</u>**

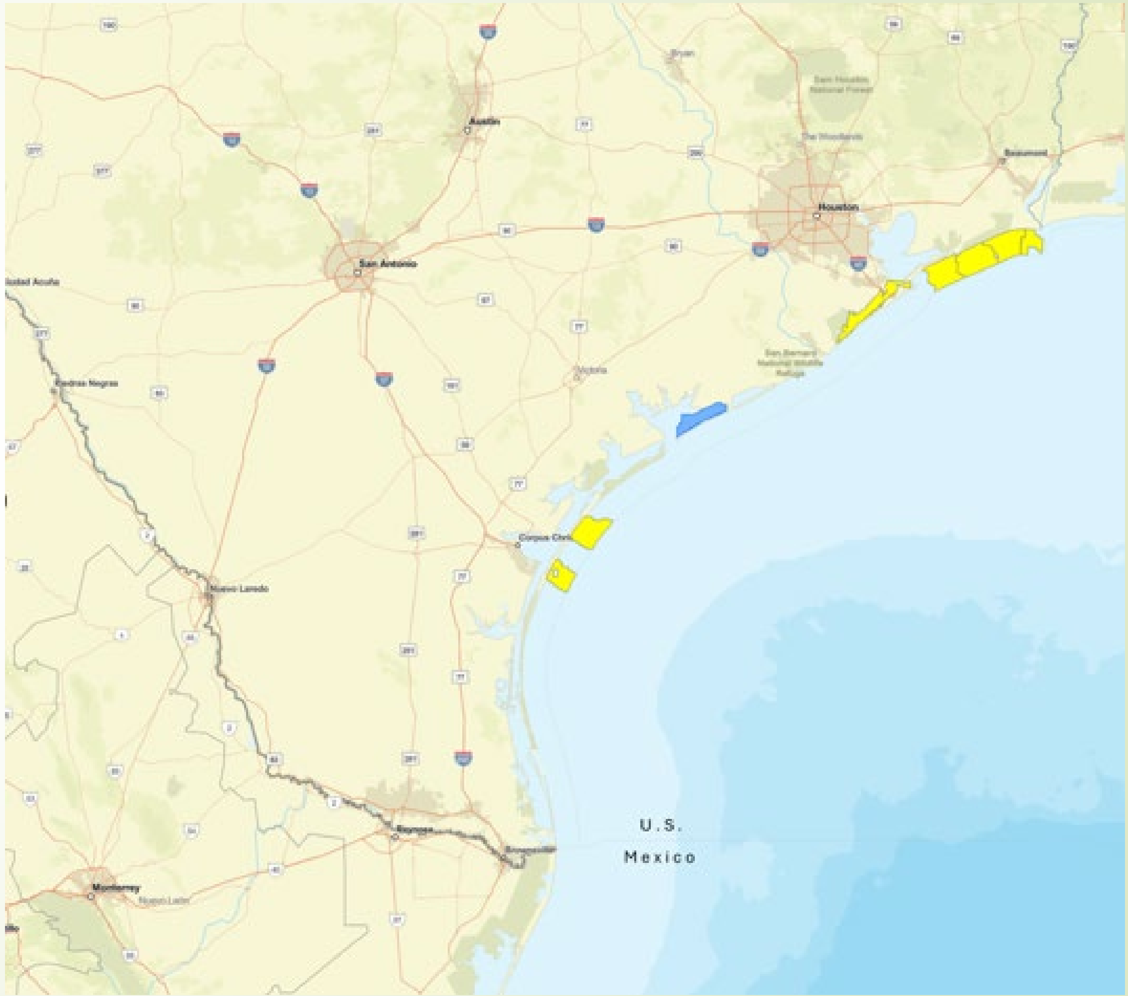




Key Learning: Set Fee Structure

- Currently, approximately 500,000 acres are under lease
- Lease terms require:
    - Bonus payment (minimum $50/acre)
    - Annual rental (minimum $50/acre)
    - Injection fee (minimum $4/tonne)
    - Non-45Q value share (minimum 6%)
    - Minimum annual injection volume

- **<u>Estimated $10 billion in revenue over the life of the leases</u>**



RFP Response summary of key terms

Lease name	XXXXXX	X acres	
Respondent			
Signature Bonus		$/acre	*$50/acre minimum*
Development Phase Agreage Rental		$/acre	*$50/acre minimum*
Construction Phase Agreage Rental		$/acre	*$50/acre minimum*
Operations Phase Agreage Rental		$/acre	*$50/acre minimum*
Injection Fee		$/Tonne	*$4/Tonne minimum with future increase tied to 45Q/CPI inflation rate*
Minimum annual Injection volume		Mln Tonne	*3MTpa minimum*
Additional non-45Q value		% future value	*e.g. A share of the value of any Carbon credits or offsets originating from the Lease*
Optional Injection Fee Uplift based on Injection volume and/or injection rate		$/Tonne	*for e.g. Injection volume > XX MT cumulative volume and/or injection rates above X MTpa*

Key Lease Terms

- Carbon credits and offsets
- Drill-through restriction for O&G
- Acreage Relinquishment/Release
- Term Structure:
  - Development Term: 2 years
  - Construction Term: 3 years
  - Operations Term: 25 years
  - Must submit Class VI within 2 years
- Progress reports every six months
- Minimum injection volumes: 2-5MTPA
- Bonding required after year 10

Texas Land Commissioner, Dawn Buckingham, MD, signs an agreement with ExxonMobil to lease over 271,000 acres of submerged land in Jefferson, Chambers, and Galveston Counties.

Negotiation Sticking Points

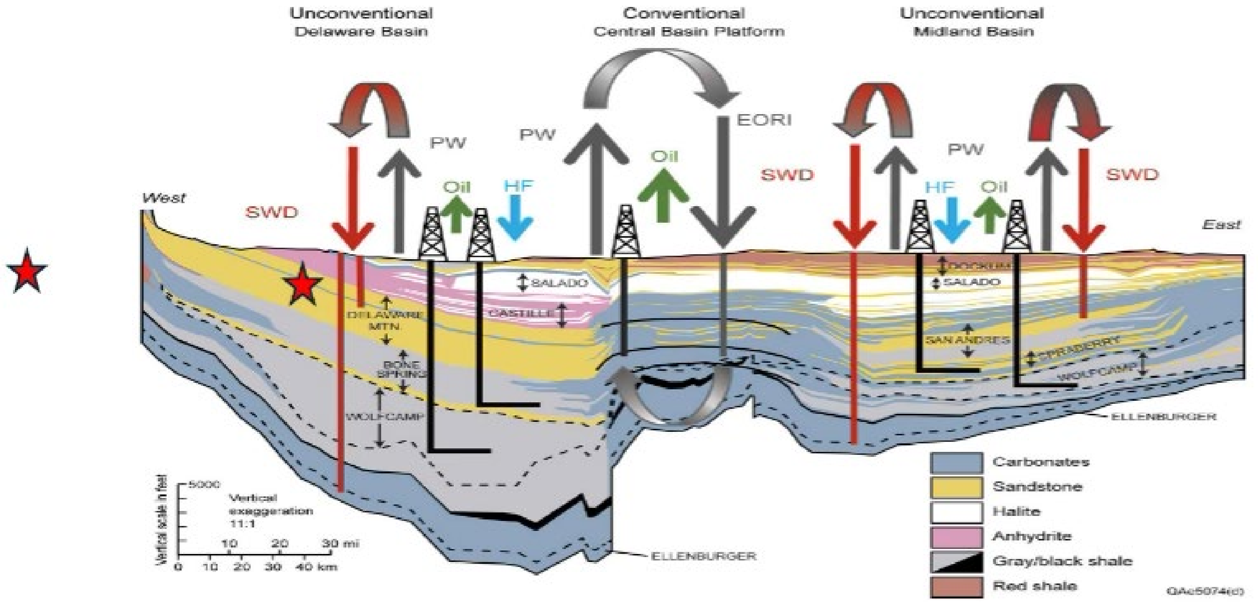
- Surface access
- Option to acquire adjacent acreage
- Timeline considerations
- Extension consideration
- Injection fees offset by rentals
- Injection fee increases over time
- Additional value royalty (non-45Q)
- Audit rights
- Parent company guarantee

Standoff between Blondie, Angel Eyes, and Tuco from the 1966 classic *The Good, The Bad and The Ugly*.

Upland Leasing Issues

- Ownership of pore space
- The mineral estate is dominant
- CCS targets relative to oil and gas zones
- No “forced pooling” for CCS in Texas

Permian Basin Cross Section illustrating position of current target intervals for EP and injection intervals for H2O and CO2



After the Ink Dries

What We Track:

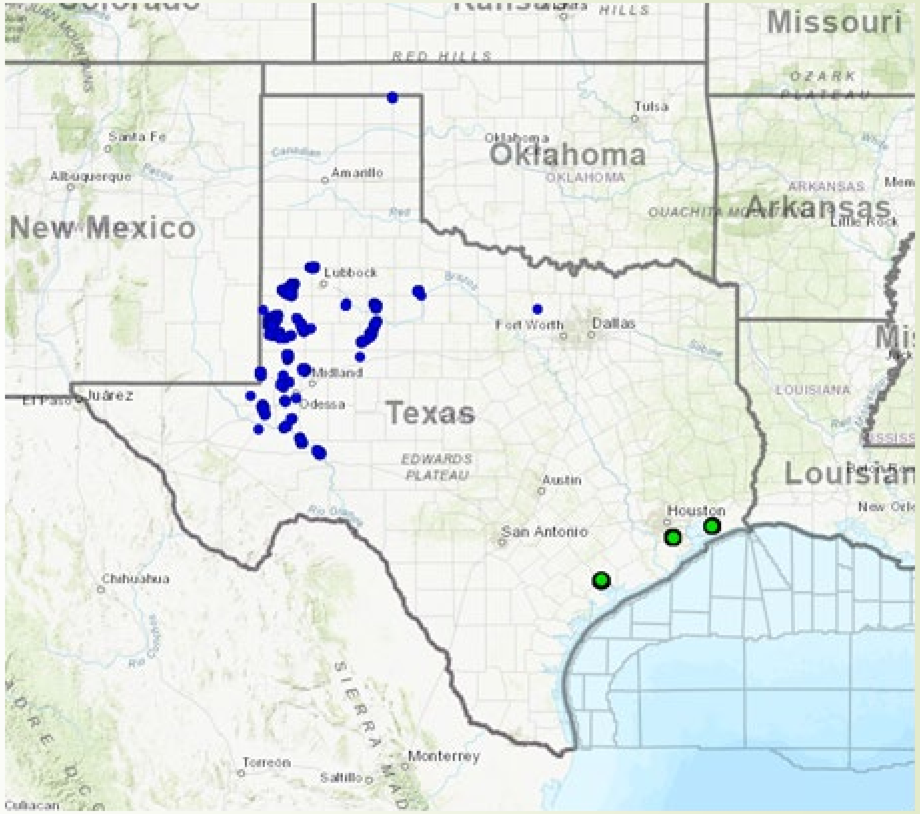
- Progress on Class VI submission
- Securing emitters
- DOE funding

What We're Hearing:

- Corporate refocus on E&P
- Lack of transparency from some lessees
- Retrading (downsizing, foot-dragging)
- Requests for support on project viability
- Don't oversaturate the market

Big Beautiful Bill (2025)

- Increased EOR credit from $60 to $85, bringing it to parity with geologic storage
- Competition for the same emissions
- Minimal impact in Texas state waters, but may affect CCS projects elsewhere
- Preserved CCS Tax Incentives



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