

AGENDA ITEM #4 | Exxon Carbon Capture Permit
Prepared Remarks by Commissioner Wayne Christian

Commissioners, I believe that the eyes of Texas are upon all of us. We are establishing a precedent that will shape Texas industry for years to come.

I have to apologize to you, everyone in this room, and the people of Texas. I fear that I have failed. I spent years making my concerns known on the issue before us today, and I fear I did not do enough to change hearts and minds on this vital issue.

PART I: DUTY AS STATEWIDE ELECTED OFFICIAL AND POLICYMAKER ROADMAP

As a statewide elected official of the executive branch of Texas government, I believe it is my responsibility to represent Texans to the best of my ability. The RRC is not an appointed position. It is not TXDOT or TCEQ. We are elected statewide by 30+ million Texans. I am not merely a judge of cases; there's more to it than that. I am also a statewide elected official and a policymaker for the biggest and most important industry in the state of Texas

In my capacity as a statewide elected official and policymaker, and regarding the issue of carbon capture generally, and not this specific permit:

- I have consistently rejected the premise underlying much of the carbon-capture movement: that carbon dioxide is a dangerous boogeyman requiring the government to reorganize our entire energy economy. The Net Zero agenda is a fantasy that has been used to justify a continued war on fossil fuels.
- Carbon capture and storage, as it is being pursued today, is largely another taxpayer-funded boondoggle—no different from the billions of dollars Washington has poured into unreliable wind and solar projects. It is being sold as innovation, but much of the industry cannot survive without government subsidies. It is the Green New Deal dressed in Republican colors.
- The federal 45Q tax credit is not free-market energy policy. It is corporate welfare that allows some of the largest corporations in the world to collect billions of dollars from taxpayers for complying with a climate agenda those same taxpayers never asked for.
- We have watched government subsidies distort Texas energy markets before. They allow politically favored companies and technologies to profit regardless of whether they provide affordable, reliable energy. That is not capitalism. It is energy socialism — government picking winners and losers and forcing taxpayers and consumers to pay the bill.
- I opposed government-mandated proration of Texas oil production because I believed private companies—not government bureaucrats—should decide what they produce. The same principle applies here: markets, not mandates and subsidies, should determine whether carbon capture is economically viable.
- Carbon capture subsidies also threaten smaller independent oil and gas producers. The largest corporations may be able to build billion-dollar projects, collect federal tax credits, and satisfy ESG mandates.

- Smaller operators may eventually be forced to purchase carbon offsets or comply with a system they cannot afford, further consolidating the industry and driving independent producers out of business.
- Right now, this is something voluntary being propped up with our tax dollars; if it becomes commonplace for large companies, pushing this on small mom-and-pops is inevitable.
- We have already seen this experiment fail. The Petra Nova carbon-capture facility was celebrated when it opened. I attended the ribbon cutting with Governor Abbott and then-Energy Secretary Perry... but it shut down after only a few years when it was no longer economically sustainable. If technology cannot survive without permanent taxpayer support, it is not a market-ready solution.
- Speaking of former Governor and Secretary Perry - I spoke with him this weekend, and he told me to reiterate his opposition to CCUS.
- Furthermore, Current Energy Secretary Chris Wright said I could share the following:
 - America needs to produce more energy. Carbon-storage projects do not generate a single megawatt of electricity; they consume enormous amounts of energy to capture, compress, transport, and inject carbon dioxide underground. At a time when Texas urgently needs more reliable power, taxpayers should not be subsidizing energy-intensive projects that produce no energy themselves. The Department of Energy has already canceled billions of dollars in funding for carbon-capture and decarbonization projects that failed to advance the nation's energy needs.
 - Even the world's largest and most sophisticated carbon storage projects have encountered pressure buildup, declining injectivity, corrosion, fluid migration, and underground formations behaving differently than predicted. That record should make us cautious about assuming any model can guarantee what carbon dioxide will do underground for generations. For example:
 1. Gorgon (Chevron, Australia) World's largest carbon storage project — injecting into the Dupuy Formation beneath Barrow Island, targeting 4 Mt/year. Rising reservoir pressure forced Chevron to build a pressure-management system: production wells pull formation water from the Dupuy Formation to relieve pressure, with that water re-injected into a shallower reservoir. The fix created its own problem — the water production wells produced significant sand, clogging equipment and delaying startup by years. Actual injection has run at roughly 1.6 Mt/year, well below the 4 Mt target, and Chevron has had to buy roughly 10 million tonnes of carbon offsets to cover the shortfall.
 2. Quest (Shell, Canada) Injects ~1.1 Mt/year into the Basal Cambrian Sandstone near Fort Saskatchewan, Alberta. Injectivity — the rate carbon can be pushed into the well — dropped significantly over time because dry carbon draws water out of the brine, precipitating solid halite (salt) that plugs the near-wellbore rock. Shell has had to periodically flush wells with water-based fluid to dissolve the salt buildup and restore injection rates. As of the most recent regulatory filings, well integrity itself hasn't been compromised — this has been a performance/injectivity challenge rather than a containment failure.
 3. ADM Illinois Industrial CCS (Decatur, Illinois, U.S.) Injects into the Mt. Simon Sandstone, one of the first four fully permitted Class VI wells in the country. In 2024, corrosion in monitoring wells allowed carbon and brine to migrate into unauthorized zones — two separate leak events were detected (March and September), with an

estimated ~8,000 metric tons of carbon escaping its intended zone. The company also faced criticism for delayed EPA notification (months after detection). EPA issued a Safe Drinking Water Act violation notice. The site sits near the Mahomet Aquifer, a sole-source drinking water aquifer, which has intensified local opposition.

4. Sleipner and Snøhvit (Equinor, North Sea/Barents Sea, Norway) The oldest and most-cited CCS projects globally (Sleipner since 1996, Snøhvit since 2008), together storing ~22 Mt. Both saw unexpected subsurface behavior: at Sleipner, injected carbon migrated upward roughly 220 meters within three years, revealing a previously unknown geological layer that wasn't part of the original containment model. At Snøhvit, injection pressure rose far faster than modeled, cutting the reservoir's projected storage life from 18 years to about six months and forcing an emergency well intervention and a new injection site. Neither project has confirmed atmospheric leakage, but both demonstrated that even well-studied saline reservoirs can behave unpredictably underground.

- Common thread across all four: every one of these projects encountered subsurface behavior — pressure buildup, injectivity loss, or fluid migration — that wasn't fully predicted by pre-injection reservoir modeling, regardless of operator sophistication or how long the project had been running. That's a useful data point for any 45Q framework that assumes long-term storage permanence without robust, funded monitoring and remediation requirements.
- I do not believe the Railroad Commission should become a promotional arm for the federal climate agenda. Our responsibility is not to guarantee profits, validate Net Zero, or help companies capture federal subsidies. Our responsibility is to protect the public, our natural resources, and the safety of the communities affected by the projects we regulate.

PART II: DUTY AS JUDGE

Even if I reject the political and economic premise behind carbon capture and storage, companies still have a legal right to submit permit applications. When they do, we must evaluate each application based on the law and the evidence in the record. And because these permits could last for generations, approval must come only when we are certain the project is safe.

Now, to discuss Exxon's carbon capture permit specifically, I believe we owe it to the people of Texas to vote to approve this permit only with absolute certainty that we have it right and it is safe. However, I remain very concerned that we have not gotten this permit right and it is not safe.

Chapter 27 of the Texas Water Code provides that the RRC “may” grant a permit for the injection and geological storage of anthropogenic carbon dioxide if, among other things, and I quote:

1. “...both ground and surface fresh water can be adequately protected from carbon dioxide...”
2. “...the injection of...carbon dioxide will not endanger or injure human health and safety.”
3. “...that the reservoir into which the...carbon dioxide is injected is suitable for...protecting against the escape or migration of the...carbon dioxide from the reservoir.”

RRC Rule 16 Texas Administrative Code Chapter 5 Section 2.06, adds some specifics, but essentially mirrors the requirements of Chapter 27 of the Texas Water Code.

In short, my job as an RRC Commissioner is to review the facts in the record of this case to determine whether this facility as proposed meets the minimum safety requirements under Texas law. Safety, that is our job here, Commissioners. I have serious reservations that this facility is safe.

The Occupational Safety and Health Administration (OSHA) permissible 8-hour workplace exposure limit for carbon dioxide is 5,000 parts per million. Short-term exposure to carbon dioxide is immediately dangerous to life or health at around 30,000 to 40,000 parts per million. Exposure of 100,000 parts per million causes unconsciousness and death within minutes.

So, in high enough concentrations, carbon dioxide can kill you. In fact, yesterday (September 14, 2023) was the three-year anniversary of the tragic death of an employee at an industrial facility in Star, Mississippi, from accidental exposure to a high concentration of carbon dioxide. It happens. Even here, in the United States.

Given the dangerous nature of high concentrations of carbon dioxide, this application and this facility have serious issues.

First, the applicant's proposed network of groundwater monitoring wells excludes the most vulnerable portion of the aquifer. Monitoring wells are wells for which water samples are obtained and tested for pollution.

Here, the applicant proposed monitoring wells for the aquifer at 350 feet and at 2,500 feet. That is a potentially dangerous gap according to evidence presented by the complainant. The complainant suggested monitoring wells at 1,500 to close this gap and better protect the aquifer. Why deny that?

Relevant excerpt PFD is the last paragraph on page 43:

"Dr. Ross asserted that ExxonMobil's groundwater monitoring plan is insufficient because it only includes four wells, three of which are 350 feet below ground, which would monitor only the USDW in the upper part of the Chicot. She emphasized that the monitoring plan does not cover the lower Chicot, the Evangeline, or the Jasper. Dr. Ross said that the groundwater monitoring wells for the Rose Project should be looking for migration of brine into the wells, caused by the pressure from the injection of CO₂. She testified that in order to monitor for brine contamination in USDWs, there should be more than one monitor well at or near the base of the USDW around 1,500 feet below ground. She concluded that the monitoring plan is inadequate to protect the Evangeline Aquifer."

Second, the well logs in the record show permeable sands in the "allegedly" upper confining zone. There is strong evidence in the record that there are at least FOUR permeable zones within the confining interval, which means, of course, that the confining layer may not be confined at all. The evidence shows that some sands in the rock could be permeable, and that several intervals labeled "shale" did not contain enough clay to function as reliable confining rock. A "confining rock" that doesn't confine is a serious problem.

Relevant excerpt PFD is first two paragraphs on page 39:

"Mr. Gish testified that the UCCZ exhibits similar characteristics to the upper Fleming, where deltaic channeling creates pathways for CO₂ migration. He opined that the UCCZ is a risky confining zone because of the interbedded sand zones, and that it may have some confining properties for water or hydrocarbons, but will not provide an adequate seal for CO₂. He asserted that the variability of the depositional sequence results in a lack of continuity of the confining zones, which would make it incapable of providing a seal."

“Mr. Gish testified that the well log data for the Appraisal Well and Walter Co. No. 1 wells showed at least four zones within the UCCZ that had permeability that could allow CO₂ migration. He asserted that the UCCZ is a composite of small thin sands separated by thin shales and is therefore not a good seal.”

Lastly, there is evidence in the record of undetected small faults that could connect the “interbedded sands and create vertical leakage pathways.” The complainant argued that small faults that don’t show up on seismic tests and maps might connect successive layers within rock formations to create a “stair-step” migration pathway up to the surface. Apparently, these faults become smaller and thus harder to detect precisely where they enter shale rock formations.

Relevant excerpt PFD is paragraphs 3 and 4 on page 36:

Mr. Gish questioned another fault identified by ExxonMobil, saying that it cuts through thousands of feet vertically but does not have any lateral extent, which he says is likely because ExxonMobil could not resolve the fault on the seismic data and was unable to map where it continued.

Mr. Gish disagreed with the assertion made in the Application that small sub-resolution faults in the UCCZ are insignificant. He said that because the UCCZ is not homogeneous, a fault would not need to extend all the way through the 500-foot-thick composite interval—it would only need to cut through enough to juxtapose the sand intervals and create a pathway. He added that if there was a small fault that juxtaposes one sand against another, it would be a leak-off risk not detectable on the seismic data.

So, in other words, the evidence in the record shows a very high concentration of carbon dioxide would be injected into a potentially non-confining layer of rock with faults that could lead toward the surface and a proposed monitoring network with a huge gap. Commissioners, with all due respect, that does not sound reasonably safe to me.

Due to these safety concerns, I have a motion. I think we owe it to our constituents to know more about this permit. I cannot vote to approve this permit without being completely sure that it is safe. I hope you agree.