



June 17, 2022

Rules Coordinator
Office of General Counsel
Railroad Commission of Texas
PO Box 12967
Austin, Texas 78711-2967

Re: Proposed Amendments to 16 TAC Chapter 5 and
Pre-Application for Class VI Primacy from EPA

Dear Sir or Madam:

The Energy Advance Center (EAC) is pleased to file these comments in strong support of the Railroad Commission of Texas' (the Commission) proposal to apply to the US Environmental Protection Agency (EPA) for primacy under EPA's Safe Drinking Water Act Underground Injection Control Class VI program. EAC is an unincorporated coalition of three members, each of which is headquartered in Texas and engaged in substantial operations in Texas relevant to the permitting, engineering, construction, and operation of underground injection technology associated with the Class VI program. The three EAC member companies are: Denbury Inc. of Plano, Texas; Kinder Morgan of Houston; and Mitsubishi Heavy Industries of Houston. The three companies are leading Carbon Capture, Utilization and Sequestration (CCUS) project participants involved across the entire CCUS value chain. The EAC members operate over 50% of existing CO₂ pipeline transportation infrastructure in the United States, capture millions of tonnes of CO₂ per year, and are among the largest users of anthropogenic CO₂ in enhanced oil recovery operations. Individually and collectively these three companies possess the most significant operating experience with carbon capture engineering, carbon transportation and carbon sequestration in the nation. They are pleased to offer their very relevant experience and expertise to the Commission in these comments.

I. **The Energy Advance Center members strongly support the Commission's Class VI primacy application:**

The EAC companies vigorously support the notion of providing primacy for EPA's Class VI program to knowledgeable and competent states that agree to commit to conduct that program in accord with EPA's standards and to commit the financial and human resources to achieve that result. EAC absolutely believes that the Commission possesses the experience, seriousness of interest, and financial and human resources to effectively administer the Class VI program.

Conducting the Class VI program in a world class manner is completely in the interest of the state of Texas, and having Texas assume primacy for doing so is clearly in EPA's interest as well. Compared to the EPA, Texas has considerably more intimate and extensive knowledge of the geology, hydrology, and related geo-engineering considerations involved in locating, permitting, and operating Class VI carbon injection wells within Texas. Moreover, Texas has a compelling interest in conducting the Class VI program in a manner that protects and enhances the environment in Texas and ensures that the program operates to protect the health and welfare of Texans. In that regard, EAC observes that the Commission has decades of experience with the widest range of subsurface oil and gas drilling and related technologies involving injection of substances underground in furtherance of oil and gas production. The Commission is universally recognized as being at the vanguard of regulatory bodies with the technical engineering and policy understanding of the subject matter that relates to the Class VI program. EAC further observes that the proposed application reflects in the most detailed of manners that the Commission has adopted or proposes to adopt each and every obligation required by an applicant for the EPA primacy regime.

It is noteworthy that in the recently enacted "Infrastructure Investment and Jobs Act" (IIJA), Congress specifically directed the EPA to expeditiously expand the number of states that receive Class VI primacy authorization. In authorizing the expenditure of \$50 million over the next five fiscal years (FY-22 through FY-26) on the EPA's state primacy permitting program for Class VI, Congress approved EPA's awarding of grants to approved Class VI primacy states to help defray the related expenses of those states incurred in administering their Class VI programs. See, Section 40306 of the IIJA (P.L. 117-58). In EAC's view, this expression of Congressional intent clearly indicates the strong federal interest in encouraging states such as Texas to apply for the right to take on the obligations of primacy for the Class VI activities within their respective borders.

EAC cannot envision any other state's regulatory body being more fit to assume primacy for the Class VI program than the Commission. Further, it is well recognized that the business and civic leadership of Texas has aggressively embraced the significant challenge of sequestering the considerable carbon emissions emanating from the state's industrial base—whether that sequestration is conducted on land, under the Gulf, in dedicated storage or in enhanced oil and gas recovery operations, or in other creative utilization opportunities. Texas has turned a corner on the issue of carbon sequestration and the Commission's admirable willingness to assume the regulatory leadership of the Class VI program speaks volumes regarding the Commission's seriousness of purpose in guiding the state to successful and beneficial outcomes relating to carbon sequestration. In our view, the Commission's assumption of primacy for Class VI will expedite the realization by Texas of the substantial environmental, economic and employment benefits derived from effective geologic sequestration of the state's carbon emissions.

II. **EAC's Comments on Specific Issues in the Proposed Commission Primacy Application:**

Recognizing the strong support EAC offers above for the proposed application, based on its members' considerable experience with underground injection and carbon sequestration both in Texas and other states, EAC offers several specific recommendations below designed to bring additional needed clarity and precision to the Commission's proposal:

A. **Clarify Delineation of AOR (Page 30)**

EAC recommends that the Commission substitute the word "stabilizes" in lieu of the word "ceases" with respect to movement of the injection plume. We note that Wyoming requires "plume stabilization" in this context, meaning the moment when the injected CO₂ stream stops expansion vertically or horizontally and thereby no longer creates a threat to drinking water, human health and safety, or the environment. In EAC's view, the adoption of a similar "stabilization" concept is warranted by the engineering experience accumulated by actual practice in the industry to date.

B. **Endangerment of existing or prospective mineral resources (Page 48)**

The Commission's proposed draft properly focuses on protecting existing or prospective subterranean resources or wasting of such resources due to the injection of CO₂. However, EAC urges the Commission to reflect on the excessive breadth of the term "injure" used in the proposed language which warrants greater precision of definition and reduction in the potential scope of its interpretation to obviate future disputes concerning the intent of the provision in protecting other resources.

C. **"Change in chemical composition" as a cause for modification of permit (Pages 22 and 23)**

EAC urges the Commission to appreciate the value that regulatory predictability has in allowing potential Class VI permittees to commit to the considerable long-term investment in such sequestration opportunities with maximum confidence and assurance that fairly understood expectations will continue to govern operations throughout the term of the project. EAC has no objection to the notion reflected in this section of the proposed draft which accepts the reality that circumstances may arise necessitating consideration of modification and reissuance of a given permit. That said, it is incumbent on the Commission to create a rule governing such reconsiderations based on "new information" that is maximally clear and minimally vague in order to avoid disputes as to the appropriate circumstances justifying a reconsideration of the permit in question. In that regard, the language on pages 22 and 23 regarding "new information" indicates that changes in the chemical composition of the CO₂ stream might constitute such a basis for reconsideration. In EAC's view, what qualifies as a

change in the chemical composition of the CO₂ stream is inadequately defined in the proposed language. Among carbon sequestration operators, it is well understood that when the CO₂ streams of new emitters are added to the underground injection there is a prospect of a change in the constitution of the injected stream. Such change may be very minor or insignificant. EAC believes that further clarification of the threshold that might be considered to trigger a possible permit modification be added to this provision. More specifically, EAC suggests insertion of a reasonable minimum molar percentage change in chemical composition before the Commission would require consideration of a permit modification under this “new information” provision.

D. Long string requirements (Page 32)

The Commission’s proposal understandably focuses attention on the safety of long string casing construction, requiring at least one long string casing to extend “*through the injection zone*” in order to isolate the injection zone as necessary for the protection of underground sources of drinking water and to ensure confinement of the injected and formation fluids. EAC recommends that the provision be modified to require that the casing extend “to the injection zone” rather than “through the injection zone” in order to facilitate use of other technology options that have been proven to be safe and effective in Class VI operations in other states (specifically, North Dakota and Wyoming), such as the use of chrome liners which can run through the injection interval.

E. Annulus pressure (Page 50)

The Commission’s proposal requires the operator to maintain annulus pressure to prevent exceeding the operating injection pressure level that might harm the integrity of the well or endanger the integrity of underground drinking water. EAC observes that due to the gradient differential between water and CO₂ there exists the prospect that a higher annulus pressure at the well surface can produce a very significant pressure differential “downhole” in the well. As a result, EAC would suggest to the Commission a revision of this provision which focuses the risk assessment on ensuring that the “bottom hole pressure” does not exceed the operating injection pressure.

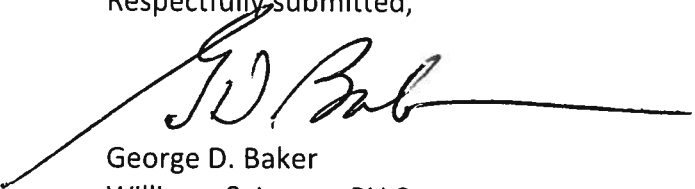
F. Operator’s notice to the Commission prior to well activities (Pages 52 and 53)

EAC agrees that providing the Commission with sufficient notice to witness planned well workovers and other stimulation activities is appropriate. That said, EAC views the amount of time for such notice reflected in the proposal to be excessive, raising the risk that unnecessary downtime and operating delays will result. Noting that previously the notice requirement was 48 hours, EAC recommends that the 30-day notice period be reduced to 7 days rather than the 30 days that the Commission has proposed.

In the event that the Commission convenes public hearings once the comment period closes, EAC would appreciate the opportunity to have a representative participate to discuss our views on this important issue.

If the Commission has any questions regarding these EAC comments, we look forward to discussing with the Commission and we would be happy to provide any elaboration or further information that the Commission might deem helpful in its deliberations.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "G. D. Baker", is written over a horizontal line. The signature is fluid and cursive.

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