

# HANCE SCARBOROUGH WRIGHT WOODWARD & WEISBART

*A Registered Limited Liability Partnership*  
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March 2, 2007

## THE TEXAS EXPERIENCE

### I. Regulatory Oversight of Subsurface Injection Activities in Texas

It is the policy of the State of Texas: (a) to maintain the quality of fresh water in the state to the extent consistent with the public health and welfare and the operation of existing industries, taking into consideration the economic development of the state; (b) to prevent underground injection that may pollute fresh water; and (c) to require the use of all reasonable methods to implement this policy.<sup>1</sup> The Texas Legislature assigned responsibility for regulating underground injection activities to the Railroad Commission of Texas (“RRC”) and the Texas Commission on Environmental Quality (“TCEQ”). As a result of implementing and refining specific agency programs and standards in accordance with the intent of the Texas Legislature, the RRC and TCEQ have created an unparalleled regulatory framework for underground injection activities.

#### A. The Railroad Commission of Texas

The RRC is the state agency with specific oversight over the injection of substances for the extraction of minerals.<sup>2</sup> It has been active in the regulation of underground injection activities for more than fifty years.<sup>3</sup> On April 23, 1982, the RRC’s Underground Injection Control (“UIC”) program was approved by the U.S. Environmental Protection Agency as meeting the federal safe drinking water requirements established by the federal Safe Drinking Water Act of 1974.<sup>4</sup> The Environmental Services Section of the RRC (formerly the Underground Injection Control Section) oversees the permitting and regulation of certain types of injection wells, including: (a) injection wells used to dispose of oil and gas waste, including salt water and other produced fluids, wastes associated with the underground storage of hydrocarbons, and wastes

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<sup>1</sup> TEX. WATER CODE CH. 27 (Texas Injection Well Act).

<sup>2</sup> The Railroad Commission of Texas was established in 1891 and has broad authority over oil and gas exploration and production in Texas. As the oldest regulatory agency in Texas and one of the oldest of its kind in the nation, the Railroad Commission has regulatory divisions that oversee the Texas oil and gas industry, gas utilities, pipeline safety, safety in the liquefied petroleum gas industry, and the surface mining of coal.

<sup>3</sup> The first RRC-permitted injection well was permitted on April 4, 1936.

<sup>4</sup> The Safe Drinking Act of 1974 is codified in 42 U.S.C. §300f et. seq.

arising out of, or incidental to, the operation of gasoline plants, natural gas processing plants, and pressure maintenance or repressuring plants<sup>5</sup>; (b) underground hydrocarbon storage wells<sup>6</sup>; (c) brine mining injection wells<sup>7</sup>; and (d) injection wells used to enhance recovery of oil and gas.<sup>8</sup> Thus, the RRC has direct oversight over the injection of water and carbon dioxide (“CO<sub>2</sub>”) for enhanced oil recovery operations in Texas.

CO<sub>2</sub> injection in Texas began in 1973 on the Sacroc Unit. This was the first CO<sub>2</sub> injection project in the world. Currently, CO<sub>2</sub> injection occurs on 294 leases in Texas. RRC-permitted CO<sub>2</sub> injection wells are currently authorized to inject a total of 64,900,000 MCF *per day*. During the latest RRC reporting cycle, 5,835 wells reported injection of CO<sub>2</sub>.<sup>9</sup> It is estimated that 25 million metric tons per year are injected on an annual basis, with most of that in Texas Permian Basin. It is estimated that more than 55 million barrels of annual crude oil production resulted from these enhance recovery efforts.<sup>10</sup>

The RRC first approved underground gas storage in depleted reservoirs in 1949. The RRC has approved a total of 38 projects for gas storage in depleted reservoirs.<sup>11</sup> Of the 38 approved gas storage projects, 14 are currently active. Of the active projects, the oldest was approved in 1952.

#### B. The Texas Commission on Environmental Quality

The TCEQ regulates underground injection activities that are not associated with the exploration and production of oil and gas. A few examples of injection wells regulated by the TCEQ are: (a) wells that inject municipal, industrial, or hazardous wastes into a layer that is below the lowermost underground source of drinking water; (b) wells that inject fluids to extract uranium or sulfur and to get rid of waste byproducts from the mining operation; (c) wells that inject hazardous waste above an underground source of drinking water; and (d) any well or similar apparatus that releases a liquid or liquids into or above an underground source of drinking water.<sup>12</sup>

#### C. Underground Injection Application Review Process in Texas

In accordance with their jurisdictions defined above, the RRC and TCEQ have rigorous review procedures for proposed injection activities. The RRC and TCEQ application review processes ensure that appropriate license conditions for the specific activity are in place to protect human health and the environment. Once a completed license application for a certain type of injection activity is submitted to either the RRC or TCEQ, it will undergo a technical review by agency

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<sup>5</sup> See TEX. WATER CODE CH. 27.

<sup>6</sup> See TEX. NAT. RES. CODE §91.201 et. seq.

<sup>7</sup> See TEX. WATER CODE CH. 27.

<sup>8</sup> See TEX. NAT. RES. CODE §91.101.

<sup>9</sup> These active wells are part of the 9,999 wells that still have current RRC permits that allow CO<sub>2</sub> injection.

<sup>10</sup> *Carbon Capture and Storage: A Regulatory Framework for States*, p. 30; Interstate Oil and Gas Compact Commission 2005.

<sup>11</sup> This excludes gas cycling and pressure maintenance projects.

<sup>12</sup> See TEX. WATER CODE CH. 27.

experts who routinely judge the available technologies for injection and geologic evaluation.<sup>13</sup> The applicant must demonstrate to the agency experts that the radius or cone of influence (plume) that the injected material will form in the target formation(s). The pressures of the injection and of the injection formation must be shown to be compatible with what is being injected and permanently stored. The mechanical integrity of the wells must be demonstrated. An “area of review” analysis must be provided and studied to ensure that all wells or other potential pathways are located, investigated and plugged if necessary. Only after a thorough engineering and geologic review is completed will a license be granted.

## II. Limitations to Liability during Captured CO<sub>2</sub> Operations

The proposal of carbon sequestration has raised legal questions with protecting the host site owner or operator from liability for the remote possibility of claims for damages to another’s personal or real property resulting from the injection of CO<sub>2</sub> into the subsurface strata. As discussed below, Texas case law and statutory law offers adequate protections to the host site owner or operator upon injection of the CO<sub>2</sub> into the subsurface strata.

### A. Texas Case Law

Existing case law protects the operator from exposure to liability if the captured CO<sub>2</sub> operations are conducted in accordance with state-issued permits and applicable regulations. The Supreme Court of Texas has held that subsurface injection operations approved by a state agency insulates the operator from liability under the theory of trespass because “the operator lacks the necessary intent” to physically invade another’s subsurface or minerals.<sup>14</sup> Further, state agency approval of the injection operations will likely minimize any liability in a cause of action brought under the theory of private nuisance, which requires a finding of a substantial and unreasonable interference with another’s use of his or her property.<sup>15</sup> A state court would likely find that no nuisance exists because the interference, if any, is not unreasonable due to the fact that the state authorized the CO<sub>2</sub> injection operations.

Under Texas case law, it is highly unlikely that a court would find any strict liability in a products liability cause of action for damages resulting from the injection of CO<sub>2</sub> into the subsurface strata. The injection process is not an abnormally dangerous activity because it does

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<sup>13</sup> RRC evaluates underground injection permit applications under its jurisdiction in accordance with Title 16, Texas Administrative Code (“TAC”), Chapter 3 (Oil and Gas Division). TCEQ evaluates underground injection permit applications under its jurisdiction in accordance with 30 T.A.C. Chapter 331 (Underground Injection Control).

<sup>14</sup> See *Railroad Comm’n v. Manziel*, 361 S.W.2d 560 (Tex. 1962) (Court indicated that it is unlikely that a plaintiff who is objecting to secondary recovery in the oil and gas industry or analogous operations authorized by the Railroad Commission can recover in trespass); also see *Z.A.O., Inc. v. Yarbrough*, 50 S.W.3d 531, 543 (Tex. App.—El Paso, 2001) (Court held that a private cause of action for trespass could not be maintained because the state agency with regulatory jurisdiction determined that the level of contaminants at the site did not exceed the standards established by state law).

<sup>15</sup> *Z.A.O., Inc.*, 50 S.W.3d at 542 (“In Texas, nuisance involves a condition which substantially interferes with the use and enjoyment of land by causing unreasonable discomfort or annoyance to persons of ordinary sensibilities attempting to use and enjoy it.”).

not pose a high risk of injury to persons or property, and such activity has been commonly undertaken by the energy industry in this state for decades.<sup>16</sup> Further, CO<sub>2</sub> by itself is not an abnormally dangerous or defective product. It is a chemical compound naturally found in the earth's atmosphere with many beneficial and safe uses.

As a result of the existing case law in Texas, it is highly unlikely that a court would find a clean coal project operator to be negligent if the operator was conducting operations and activities in accordance with its permits and applicable regulations.

B. Texas House Bill 149

Responding to the specific issues presented as part of the FutureGen effort, Texas passed House Bill 149 into law during the 3<sup>rd</sup> Called Session of the 79<sup>th</sup> Legislature (2006). HB 149 transfers ownership of the generated CO<sub>2</sub> from the FutureGen Alliance to the State of Texas. Specifically, once the extraction or "capture" of the CO<sub>2</sub> byproduct from the clean coal electrical generation process occurs, by law, the Railroad Commission of Texas ("Commission") acquires the right, title and interest to the captured CO<sub>2</sub>.

Transfer of ownership of the captured CO<sub>2</sub> to the Commission is significant for long-term liability concerns. If injection is performed in accordance with its state permits and regulations, the operator's conduct will be concluded regarding the permanent sequestration of the CO<sub>2</sub>. Possible claims for damages from unanticipated migration, upset or release would be caused by the State's property, not the property of the operator. Although the Commission would assume legal responsibility for these claims, the Commission is protected under Texas law from liability under the principles of governmental sovereign immunity.

Because the state and its political subdivisions enjoy complete sovereign immunity at common law, a plaintiff must establish both a waiver of immunity from suit and liability pursuant to a Constitutional or statutory provision in order to successfully pursue to judgment a tort claim against the Commission for its acts or omissions involving the captured CO<sub>2</sub>.<sup>17</sup> The Texas Tort Claims Act ("TTCA") does provide an *extremely limited* waiver of sovereign immunity for certain torts.<sup>18</sup> Waiver of immunity is provided in situations where personal injury is caused by a condition or use of tangible personal or real property if the government unit would, were it a private person, be liable to the claimant under Texas law.<sup>19</sup> The TTCA does not waive immunity

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<sup>16</sup> See *Hicks v. Humble Oil*, 970 S.W.2d 90 (Tex. App.—Houston [14<sup>th</sup> Dist.], 1998, pet denied) (Texas courts "have rejected the doctrine of abnormally dangerous activities as a basis for strict liability.")

<sup>17</sup> See *Tex. Parks & Wildlife Dep't v. Davis*, 988 S.W.2d 370, 372 (Tex. App.—Austin 1999, pet. filed); see also *Tex. Nat. Res. Cons. Comm. v. IT-Davy*, 74 S.W.3d 849, 854 (Tex. 2002) (Concerning contracts with the state, the Texas Supreme Court has expressly recognized that immunity allows governmental entities to breach their contracts and rely upon immunity to preclude suit when it is determined that the contract no longer serves the best interest of the entity).

<sup>18</sup> See *Univ. of Texas Med. Branch v. York*, 871 S.W.2d 175, 177 (Tex. 1994).

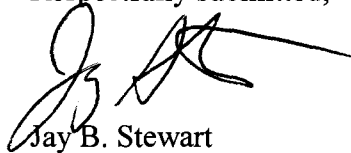
<sup>19</sup> See *Medrano v. City of Pearsall*, 989 S.W.2d 141, 144 (Tex. App.—San Antonio, 1999, no pet.).

for claims arising out of an intentional tort. Further, immunity is not waived for property damage caused by a condition or use of governmental real property.<sup>20</sup>

TTCA places significant limitations on the ability of a plaintiff to recover damages against a governmental unit of the state. Money damages for governmental liability are limited under the TTCA. Most importantly, a judgment in a suit under TTCA may be enforced only in the same manner and to the same extent as other judgments against the governmental unit are enforceable as provided by law, unless the governmental unit has liability or indemnity insurance protection, in which case the holder of the judgment may collect the judgment, to the extent of the insurer's liability, as provided in the insurance or indemnity contract or policy or as otherwise provided by law.<sup>21</sup>

In sum, an owner or operator of a clean coal project in Texas will be protected from liability once the CO<sub>2</sub> is captured (and title is transferred to the State of Texas). Likewise, there is a very low probability that a plaintiff will succeed in recovering damages from the State of Texas as the result of an act or omission involving the captured CO<sub>2</sub>. Given the established legal protections applicable to these circumstances, Texas is a viable and practical location for hosting a clean coal project.

Respectfully submitted,



Jay B. Stewart

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<sup>20</sup> Tex. Civ. Prac. & Rem. Code Ann §101.057.

<sup>21</sup> Tex. Civ. Prac. & Rem. Code Ann. §101.107(a).

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March 2, 2007

The Honorable John D. Dingell, Chairman  
The Honorable Joe Barton, Ranking Member  
Committee on Energy and Commerce  
2125 Rayburn House Office Building  
Washington, D.C. 20515

Re: Carbon Sequestration: Submission of testimony regarding the Texas Experience.  
Subcommittee on Energy and Air Quality hearing on "Carbon Capture and Sequestration:  
An Overview" – March 6, 2007.

Dear Chairman Dingell, Ranking Member Barton and Members of the Committee:

Thank you for the opportunity to discuss with you today the State of Texas' experience with legal issues regarding the injection and storage of carbon dioxide. For the record, my name is Jay B. Stewart. I am an attorney who practices regulatory law in Austin, Texas. As part of my practice, I represent entities and individuals before the Railroad Commission of Texas ("RRC") and the Texas Commission on Environmental Quality ("TCEQ") regarding oil and gas and injection activities. I have also been retained to work with the FutureGen Texas team regarding the State's efforts to site a clean coal project in Texas. I come before you today to discuss the Texas Experience with CO<sub>2</sub> injection and the existing and prospective regulatory framework necessary to ensure successful and secure geologic sequestration of CO<sub>2</sub>.

Evaluating and licensing CO<sub>2</sub> injection in Texas has a regulatory track record that spans back more than 30 years. The prolific Permian Basin in West Texas began utilizing CO<sub>2</sub> injection as a recovery technology in 1973. Once the traditional extraction of oil and gas has exhausted itself, secondary and tertiary recovery technologies are used to extract the vast remaining reserves. Recent data indicates that up to 70 licensed enhance oil recovery projects utilizing CO<sub>2</sub> were operational in the Permian Basin of West Texas alone. Over 5,800 wells have reported injection of CO<sub>2</sub> with a total injection of 25 million metric tons per year. It is estimated that more than 55 million barrels of annual crude oil production resulted from these enhance recovery efforts. With more than 30 years of history of using CO<sub>2</sub> for oil recovery, these operations have a safety record of no major accidents.

From a legal, regulatory and engineering standpoint, CO<sub>2</sub> injection into geologic formations for productive use is nothing new in Texas. A developed regulatory framework exists to evaluate and judge each and every project. The Railroad Commission of Texas regulates injection of water and CO<sub>2</sub> for enhanced oil recovery operations. It also has decades of evaluating and regulating the common practice of brine and oil and gas waste injection into geologic formations, insuring that those formations are not productive of oil and gas and that they do not contain useable groundwater. The Texas Commission on Environmental Quality regulates injection of non-hazardous waste, hazardous waste and experimental wells. Both these agencies have experienced staff that routinely judge the available technologies for injection and geologic evaluation. It is only after these experts have approved an injection project that a project license is allowed to proceed.

Acknowledging the experience in oil and gas and geologic evaluation of both the state's regulators and industry, Texas courts have consistently developed case law that clearly delineate the liability of the actors and neighbors of these projects. Evaluation of legal liability rests primarily in the common law. Liability for negligence or malfeasance in the construction and operation of a facility utilized for capture and injection of CO<sub>2</sub> would rest in traditional tort law causes of action. There is no liability forgiveness for bad actors that operate negligently.

Legal challenges to the activity of injection, however, have been thoroughly adjudicated in Texas and those causes of action are limited under the common law. Actions for trespass, nuisance and negligence are severely limited in Texas so long as the operator has a valid license from the state agency and that operator has acted in accordance with the license and applicable regulations. Texas has adjudicated the public policy implications of injection activities within its borders, and has consistently ruled with the state agencies charged with enforcing those requirements.

I have discussed the legal treatment of liability in Texas as to the practice of injection of CO<sub>2</sub> and its use under existing regulatory frameworks. Carbon sequestration intended to be permanent adds a significant new component to the legal analysis. Liability for the unlikely possibilities of release or migration of sequestered CO<sub>2</sub> that could occur well beyond the time frames that are occasioned by operations in Texas should be evaluated.

Proper geologic and technical considerations are the first requirements to avoid possible liability for long-term events. Carbon sequestration into proven, confined geologic formations is paramount. Proposed storage of CO<sub>2</sub> in depleted oil and gas formations, deep saline formations, salt caverns and unminable coalbeds all have containment and absorption characteristics that minimize the possibilities of any release or migration. Before a license is granted, the operator must prove to the agency experts the radius of influence or plume that the injected material will form in the injection formation. The pressures of the injection and of the injection formation must be shown to be compatible with what is being injected and permanently stored. Thorough evaluation and study of the injection proposal and target formation is the first and foremost check on potential future liability of permanent geologic storage of carbon.

March 2, 2007

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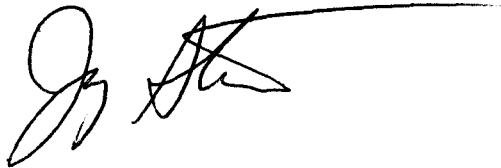
As with any good legal analysis, the lawyer must then ask the question "But what if...?" In Texas, we answered this question by passing into law a transfer of ownership of the CO<sub>2</sub> from the FutureGen facility to the State of Texas. Acknowledging the goal of permanence of carbon sequestration, the permanence of the State is the only entity that can provide the necessary notice and monitoring beyond what one could expect in a private entity's lifespan. The State is protected by the principals of sovereign immunity while it cares for the injected CO<sub>2</sub> that is, by state law, its property and responsibility.

Oil and gas producing states have significant regulatory frameworks for geologic evaluation and approval of injection technologies. Texas' 100-year plus experience of oil and gas exploration and production in almost every corner of the state provides significant data points to predict where and to what extent appropriate geologic formations exist for carbon sequestration. Texas law regarding mineral exploration and extraction has likewise matured along side the technology and realities of an energy hungry nation. Application of Texas' experienced body of law, and of new modifications that have been added to ensure long term care of sequestered carbon, makes Texas an ideal candidate for carbon sequestration analysis and operation.

I have attached a legal brief discussing in more detail my testimony regarding applicable Texas law. I ask that the brief be added to the record as part of my testimony.

Thank you, and I am available for any questions.

Respectfully submitted,

A handwritten signature in black ink, appearing to be "Jay B. Stewart", with a long horizontal line extending to the right.

Jay B. Stewart

enclosure