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THE JOURNAL OF THE ENERGY LAW PRACTITIONER is a biannual practitioner's journal published by students at Texas Tech School of Law. Founded and operated entirely by Texas Tech law students, the journal's mission is to provide legal practitioners with insightful articles to navigate the dynamic field of energy law. Featuring contributions from legal scholars and industry experts, this publication delivers an oil, gas, and energy law analysis, offering readers practical knowledge to apply in the energy sector.

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OWNERSHIP OF PRODUCED WATER UNDER TEXAS LAW: WASTE OR WATER?

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I. INTRODUCTION AND SUMMARY

Ownership of produced water under Texas law depends on which one of two established rules of law controls:

> (1) Produced water belongs to the mineral estate because it is oil and gas waste that was not expressly reserved or excepted from the oil and gas conveyance; or,
>
> (2) Produced water belongs to the surface estate because water, as a substance, was not expressly severed from the surface estate.

If produced water is oil and gas waste, then the first rule controls. If produced water is not oil and gas waste but is groundwater, fresh water, or even regular water, then the second rule controls.

If produced water *is* oil and gas waste, then under the "Greatest Estate" Rule and the rules governing reservations and exceptions, there was no need to list it in a conveyance of oil and gas because it is part of the oil and gas estate that was conveyed.[1] The conveyance of oil and gas was a specific conveyance that included the oil and gas waste.[2] If the intention of the parties truly was to reserve oil and gas waste or produced water from the conveyance of oil and gas in favor of the surface estate or to except it from the conveyance in favor of the surface estate or some other estate, then the parties were required to say so in clear language.[3] Courts do not favor reservations nor exceptions by implication.[4]

If produced water is *not* oil and gas waste but is groundwater, fresh water, or even regular water, then under the "Retention Rule"[5] and the "Specific Conveyance" rule, produced water was retained as a property interest of the surface estate unless there was a specific conveyance of it to the oil, gas, and mineral estate or some other estate.[6] The surface estate retains all property interests except those specifically severed and groundwater is owned by the surface estate as a matter of law, absent express language to the contrary.[7] Courts do not favor conveyances by implication.

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1. *See* Sharp v. Fowler, 252 S.W.2d 153, 154 (Tex. 1952); Garrett v. Dils Co., 299 S.W.2d 904, 906 (1957); Waters v. Ellis, 312 S.W.2d 231, 234 (1958); Perryman v. Spartan Tex. Six Cap. Partners, Ltd., 546 S.W.3d 110, 119 (Tex. 2018); Piranha Partners v. Neuhoff**,** 596 S.W.3d 740, 746 (Tex. 2020).

2. *See* discussion *infra* Section VI.B.

3. *See* discussion *infra* Section VI.B.

4. *See* discussion *infra* Section VI.B; *Sharp*, 252 S.W.2d at 154 (citing Sellers v. Tex. Cent. Ry. Co., 17 S.W. 32 (Tex. 1891); State v. Black Bros., 297 S.W. 213 (Tex. 1927)).

5. The Retention Rule is so named by this author because it aptly names the rule which is derived from *Lightning Oil Co. v. Anadarko E&P Onshore, LLC*, 520 S.W.3d 39 (Tex. 2017) and the preceding cases upon which *Lightning* relies. *See* discussion *infra* at Section IX.A.

6. Gulf Prod. Co. v. Cont'l Oil Co., 132 S.W.2d 553, 561 (Tex. 1939); Emeny v. United States, 412 F.2d 1319, 1323 (Ct. Cl. 1969); Humble Oil & Refin. Co. v. West, 508 S.W.2d 812, 815 (Tex. 1974); Dunn-McCampbell Royalty Int., Inc. v. Nat'l Park Serv., 630 F.3d 431, 441 (5th Cir. 2011); Springer Ranch, Ltd. v. Jones, 421 S.W.3d 273, 283 (Tex. App.—San Antonio 2013, no pet.); *Lightning Oil*, 520 S.W.3d at 39.

7. *See* discussion *infra* Section IX.A.

Therefore, if produced water is oil and gas waste, then it was included in the conveyance of oil and gas, which was specifically severed from the surface estate.[8] If produced water is groundwater, fresh water, or regular water and not oil and gas waste, then it was retained by the surface estate because it was not specifically severed.[9]

This Article asserts and concludes that produced water is oil and gas waste and not groundwater, fresh water, nor regular water. Since the dawn of the petroleum era, produced water has been a fact of oil and gas production—although unwanted. Fee simple owners of land, surface owners, mineral owners, the public, the oil and gas industry, and even the legislative and executive branches of Texas government historically have treated (and still treat) produced water as oil and gas waste that is owned by the mineral estate and a burden to be borne by the mineral estate's oil and gas operator. As a matter of Texas law, the State of Texas declared produced water to be oil and gas waste beginning in 1919 when the Railroad Commission of Texas originally adopted Rule 20 and subsequently when the Texas State Legislature adopted the definition of "oil and gas waste" in 1977 in the Water Code, when the Legislature adopted the definition of "oil and gas waste" in 1983 in the Natural Resources Code, and finally when the Legislature adopted the definition of "fluid oil and gas waste" in 2013 in the Natural Resources Code.[10] The regulatory and statutory definitions under Texas law of "oil and gas waste" and "fluid oil and gas waste" (which include and/or describe produced water) are separate, distinct, and irreconcilable with the statutory definitions of "groundwater" and "fresh water," with judicial holdings regarding groundwater, and with the common definitions of water.[11]

A. Question Presented: At the time of a typical "oil, gas, and other minerals" conveyance, when left unspoken, did the parties intend that produced water be included in the mineral conveyance, reserved as part of the surface estate, or excepted from the conveyance in favor of the surface or some other estate?

B. Short Answer: At the time of a typical "oil, gas, and other minerals" conveyance (whether by deed or lease), the oil and gas waste, including produced water, was included as part of the "oil, gas, and other minerals" conveyance as a matter of law.[12] The conveyance of oil and gas is a specific

8. *See supra* note 1 and accompanying text.
9. *See supra* note 4 and accompanying text.
10. *See* discussion *infra* Section III.B.
11. *See* discussion *infra* Section III.B and Sections IX.B, IX.C.
12. *See* discussion *infra* Part VI. In summary, produced water is oil and gas waste that arises from an oil or gas well and is incidental to the production of oil and gas. TEX. WATER CODE § 27.006(2); TEX. NAT. RES. CODE §§ 91.011(a), 122.001(2). Therefore, produced water is included in conveyances of oil and gas absent an express reservation, exception, or other controlling language to the contrary. *See supra* note 1 and accompanying text.

conveyance that includes oil and gas waste, which includes produced water.[13] Therefore, the Greatest Estate Rule and the rules governing reservations and exceptions ***require*** the parties to expressly reserve or except produced water or any other oil and gas waste from the oil and gas conveyance if that truly is their intention.[14] This does not depend on any intuition into the parties' intent, no matter how obvious the intuition. This conclusion is reached as a matter of law.[15]

1. Produced water is oil and gas waste; it is not groundwater, fresh water, nor regular water.[16]

A. The Texas Legislature declares produced water to be oil and gas waste in three separate statutes.[17]

B. The Railroad Commission of Texas declares produced water to be oil and gas waste in numerous regulations dating back to at least 1919.[18]

C. Land owners, mineral owners, and the oil and gas industry all historically have understood produced water to be oil and gas waste, and this understanding forms the context of their conveyances, leases, surface use agreements, and other documents regarding this subject.[19]

D. The Texas Legislature has adopted separate, distinct, and irreconcilable definitions of oil and gas waste and groundwater.[20]

E. Texas law requires groundwater and surface water to be protected from the pollution that could be caused by untreated produced water.[21]

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13. *See* discussion *infra* Part VI.

14. *See supra* note 1 and accompanying text; *see* discussion *infra* Part VI. Going forward, now that produced water may have economic value, express reservations, exceptions, and even perhaps express severances of produced water (such as contemplated by the Produced Water Lease Agreements in the *Cactus* case, *see* Part X, *infra*.) are likely to become more common. Certainly, explicit agreements regarding produced water in oil and gas leases, surface use agreements, etc., will become more common. However, given the historical context and legal treatment of produced water as a type of oil and gas waste, when there was a severance of the oil and gas from the surface estate, the oil and gas waste must be deemed to have been conveyed along with the oil and gas absent an express reservation or exception to the contrary.

15. *See* discussion *infra* Part VI; *see supra* note 12 and accompanying text.

16. *See* discussion *infra* Part III; *see infra* note 189 and accompanying text.

17. *See* discussion *infra* Part III; *see infra* note 189 and accompanying text.

18. *See* discussion *infra* Subsection III.B.3.

19. *See* discussion *infra* Part III and Sections VIII.B, IX.B, IX.C; Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 740–41 (Tex. App.—El Paso 2023, pet. filed).

20. *See* discussion *infra* Section III.B; *Cactus*, 676 S.W.3d at 739.

21. *See* discussion *infra* Subsections III.B.2, III.B.3; *Cactus*, 676 S.W.3d at 740.

F. Oil and gas waste is not groundwater, and groundwater is not oil and gas waste.[22]

2. Produced water is not fresh water, groundwater, salt water, nor even "water" as those terms are used in the cases holding that "water" belongs to the surface estate as a matter of law.[23]

3. Because oil and gas waste arises out of an oil and gas well or is incidental to the drilling for or producing of oil or gas, it is part of the oil and gas that was conveyed absent specific language to the contrary, such as an express reservation or exception.[24]

4. A conveyance of oil and gas includes all the constituent elements as they exist in their natural form, including produced water.[25]

5. The right, indeed the legal requirement, to dispose of produced water is not a usufruct right.[26] It is an ownership right.[27] A usufruct right is the right to reasonable usage.[28] Reasonable usage does not include the right to destruction unless destruction is the only means necessary.[29] Disposal is a form of destruction.[30]

6. The argument that produced water belongs to the surface estate following a conveyance of oil and gas because water, as a substance, or even produced water, as a substance, was not specifically severed from the surface estate is not correct.[31] This is because a conveyance of oil and gas *is* a specific severance of produced water from the surface estate: a specific conveyance of oil and gas includes oil and gas waste.[32] Oil and gas waste includes produced water.[33]

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22. *See* discussion *infra* Part III; *Cactus*, 676 S.W.3d at 740.
23. *See* discussion *infra* Section IX.B, IX.C.
24. *See* discussion *infra* Section VI.B; *see supra* note 1 and accompanying text.
25. *See* discussion *infra* Part VII; Bowden v. Phillips, 247 S.W.3d 690, 706 (Tex. 2008); Lone Star Gas Co. v. Stine, 41 S.W.2d 48, 49 (Tex. Comm'n App. 1931, judgm't adopted); Humble Oil & Refining Co. v. Poe 29 S. W.2d 1019 (Tex. Comm'n App. 1930, judgm't adopted).
26. *See* discussion *infra* Part VIII.
27. *See* discussion *infra* Part VIII; *see* Brown v. Lundell, 344 S.W.2d, 863, 865 (Tex. 1961); Acker v. Guinn, 464 S.W.2d 348, 352 (Tex. 1971); Getty Oil v. Jones, 470 S.W.2d 618, 622 (Tex. 1971).
28. *See* discussion *infra* Part VIII.
29. *See* discussion *infra* Part VIII; *Acker*, 464 S.W.2d at 352; *Getty Oil*, 470 S.W.2d at 622.
30. *See* discussion *infra* Part VIII; *see infra* notes 252, 253, and accompanying text.
31. *See* discussion *infra* Parts VI, IX.
32. *See* discussion *infra* Parts VI, IX and Sections VI.B, VI.C.
33. *See* discussion *infra* Parts VI, IX; *see also* Part III.

7. The historical public and industry understanding, as well as the legal and regulatory framework that treats produced water as an oil and gas waste and as a burden to be borne by the mineral estate's oil and gas operator, are well known and inextricably woven into Texas law and regulations as well as into the contextual understanding of public landowners (surface and mineral) and industry practices.[34]

8. If parties actually did intend to diverge from this well-known contextual understanding and legal framework or intend to diverge in the future, the established legal way to do so is with an express reservation or exception of oil and gas waste or produced water in the controlling instrument.[35]

II. BACKGROUND AND IMPORTANCE

In a fascinating case of first impression, the question of produced water ownership is now squarely before the Texas Supreme Court at the time of this writing. The case is styled *Cactus Water Services, LLC v. COG Operating, LLC*.[36] At the heart of the matter is the question posed by this Article: In a typical "oil, gas, and other minerals" conveyance (whether by deed or lease), when left unspoken, did the parties intend that produced water be included in the mineral conveyance, excepted from the conveyance, or reserved as part of the surface estate?

My original co-author, Frank Cusimano, and I published a previous article on this same subject in 2020 entitled *Texas Law of Produced Water Ownership*.[37] At that time, produced water ownership was the subject of numerous articles by various commentators but was not yet the subject of litigation.[38] As far as we could ascertain, all of the articles at the time opined that produced water is a form of groundwater that should be held as belonging

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34. *See* discussion *infra* Part III; Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 740 (Tex. App.—El Paso 2023, pet. filed).

35. *See* discussion *infra* Part VI; *see supra* note 1 and accompanying text; *Cactus*, 676 S.W.3d at 740.

36. *Cactus*, 676 S.W.3d at 733.

37. Benjamin W. Sebree and Frank Cusimano, *Texas Law of Produced Water Ownership*, 22nd Annual Permian Basin Oil and Gas Law Live Oak CLE, Texas Tech University School of Law, Midland, Texas, March 6, 2020, and subsequently by the 38th Annual Advanced Oil, Gas, and Energy Resources Law Course, Chapter 2, Sponsored by the State Bar of Texas, Houston, September 24–25, 2020.

38. Gabriel Collins, *The Emerging Battle Over Produced Water Ownership in Texas: A Legal and Practical Roadmap for Courts, Groundwater Owners, and Energy Producers*, 16 TEX. J. OIL, GAS, & ENERGY L. 1 (2021); Gabriel Collins, *Oilfield Produced Water Ownership in Texas: Balancing Surface Owners' Rights and Mineral Owners' Commercial Objectives*, RICE UNIV.'S BAKER INST. FOR PUB. POL'Y (Feb. 16, 2017), https://www.bakerinstitute.org/research/oilfield-produced-water-ownership-texas-balancing-surface-owners-rights-and-mineral-owners-commercia; Peter Hosey et al., *Mine: All Mine? Texas Ownership of Produced Water and Its Constituent Parts (Lithium)*, JACKSON WALKER NEWS (Mar. 29, 2024), https://www.jw.com/news/texas-produced-water-ownership/; CHARLES P. HOSEY, OIL INDUSTRY'S FAUSTIAN BARGAIN: TEXAS PRODUCED WATER OWNERSHIP AND THE FUTURE OF CORRELATIVE RIGHTS, TEX. CLE ADVANCED OIL, GAS & ENERGY RESOURCES LAW 14 (2022).

to the surface estate, absent language to the contrary. A few articles did not reach a conclusion regarding ownership but did state that it was an important matter that needed to be resolved. We believe that our article was the first that articulated an argument that produced water is not groundwater but, rather, is oil and gas waste belonging to the mineral estate or the oil and gas lessee, absent language to the contrary.[39] The El Paso Court of Appeals in the *Cactus* case adopted our line of reasoning.[40]

In 2020, we could find no caselaw specifically addressing the ownership of produced water. No doubt, this is because no two parties have ever asserted competing claims to ownership of produced water because litigation usually involves something of value. Produced water historically has been considered a liability with negative value.[41] However, due to the advancement of recycling and treatment technologies, parties recently have asserted competing claims to the ownership of produced water.[42] At the time of this writing, three cases have been filed in Reeves County, Texas. The *Cactus v. COG* case has proceeded through judgment by the district court and the Court of Appeals in El Paso and is currently on appeal to the Texas Supreme Court.[43] The other two cases are stayed pending the outcome of the appeal to the Texas Supreme Court. There may be other cases, but this author is unaware.

The *Cactus* case is discussed in detail in Part X, *infra*.[44] By quick summary, however, COG Operating was the lessee under four oil and gas leases.[45] Subsequent to executing the oil and gas leases, Cactus entered into a produced water lease with the surface owners.[46] Cactus asserted that it owned the produced water under its produced water lease and had the right to the produced water that was produced as part of the oil and gas under COG's oil and gas leases.[47] COG asserted that it owned the produced water under its oil and gas leases.[48] The district court decided in favor of COG.[49] The District Court ruled that "COG owns . . . the oil, gas, and other products . . . produced from the COG wells" and that "Cactus has no rights in or to the product stream from COG's wells."[50] Although the District Court did not

39. Sebree & Cusimano, *supra* note 37.

40. Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 740–41 (Tex. App.—El Paso 2023, pet. filed).

41. *Id.* at 740.

42. *Id.* at 736–37.

43. *See* Petition for Review, Cactus Water Servs., LLC v. COG Operating, LLC, No. 23-0676 (Tex. Nov. 10, 2023).

44. *See* discussion *infra* Part X.

45. *Cactus*, 676 S.W.3d at 735.

46. *Id.*

47. *Id.* at 737.

48. *Id.*

49. *Id.* at 734.

50. *Id.* at 737.

address whether produced water is oil and gas waste or groundwater and did not rule whether produced water belongs to the mineral or to the surface estate, the Court of Appeals did. The Court of Appeals closely followed the reasoning originally published in our 2020 article, specifically ruling that produced water is oil and gas waste, which belongs to the oil and gas operator absent an express reservation in favor of the surface estate.[51]

The *Cactus* case has garnered considerable attention due to the importance of the matter. Besides this Article, several other articles have been written and published.[52] Additionally, untold numbers of law firm blogs have published online papers regarding this case. In the court of appeals, there were three amici briefs filed by the National Association of Royalty Owners, the Texas Oil and Gas Association, and the Texas Farm Bureau.[53] At the time of this writing, three amici briefs have been filed by the Texas Farm Bureau, the Texas and Southwestern Cattle Raisers Association, and the Texas Land & Mineral Owners Association, respectively, and more are expected if the petition for review is granted.[54] Accordingly, because of the importance of this matter and its unique status as a case of first impression at the Texas Supreme Court, this Article is written to update, expand, and clarify the ideas and arguments originally presented in 2020 in the *Texas Law of Produced Water Ownership*.

This Article assumes that most readers have a basic understanding of the widespread use and success of hydraulic fracturing to unlock and to produce oil and natural gas both in Texas, other states, and around the world. Accordingly, there is no need to reiterate explanations of hydraulic fracturing or its importance to the energy security and independence of the United States. Those matters are well covered by numerous other publications. For this discussion, it is sufficient to note that significant supplies of fluids are necessary in order to induce hydraulic fracturing.[55]

For a variety of reasons, the oil and gas industry has been developing technologies to use less groundwater in oil and gas operations and to use more

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51. *Id.* at 740–41.

52. *See* articles cited *supra* note 38.

53. *See* Brief for Nat'l Ass'n of Royalty Owners-Texas, Inc. as Amicus Curiae, Cactus Water Servs. v. COG Operating, LLC, 676 S.W.3d 733 (Tex. App.—El Paso 2023, pet. filed) (No. 08-22-00037-CV); Amicus Curiae brief of Tex. Oil & Gas Ass'n, Cactus Water Servs. v. COG Operating, LLC, 676 S.W.3d 733 (Tex. App.—El Paso 2023, pet. filed) (No. 08-22-00037-CV); Amicus Curiae brief of Tex. Farm Bureau, Cactus Water Servs. v. COG Operating, LLC, 676 S.W.3d 733 (Tex. App.—El Paso 2023, pet. filed) (No. 08-22-00037-CV).

54. *See* Amicus Curiae brief of Texas Farm Bureau in Support of Cactus Water Servs., LLC's Petition for Review, Cactus Water Servs., LLC v. COG Operating, LLC, No. 23-0676 (U.S. Dec. 15, 2023); Amicus Curiae brief of Texas and Southwestern Cattle Raisers Ass'n in Support of Cactus Water Serv., LLC's Petition for Review, Cactus Water Servs., LLC v. COG Operating, LLC, No. 23-0676 (U.S. Mar. 25, 2024); Amicus Curiae brief of Texas Land & Mineral Owners Ass'n in Support of Cactus Water Servs., LLC's Petition for Review, Cactus Water Servs., LLC v. COG Operating, LLC, No. 23-0676 (U.S. May 16, 2024).

55. Christopher M. Matthews, *The Next Big Bet in Fracking: Water*, THE WALL STREET J. (Aug. 22, 2018), https://www.wsj.com/articles/the-next-big-bet-in-fracking-water-1534930200.

poor-quality fluids such as brackish water or recycled and treated produced water. Recently, the oil and gas industry and the wastewater recycling industry have been improving technologies to treat and to recycle fluid oil and gas waste—also known as produced water.[56] Most oil-and gas-bearing rocks also contain what is colloquially called "produced water."[57] When oil and/or gas are extracted, oil, gas, and produced water arise through the well bore in a mineralized solution along with any frac water that was injected to induce flow of the mineralized solution.[58] Produced water is a waste product of almost all oil and gas extraction.[59] The constituency and quantity can vary widely depending upon the formation, but produced water generally includes oil residues, dissolved organic compounds, solubilized minerals, solids, and potentially naturally occurring radioactive material (NORM).[60] The Court of Appeals in the *Cactus* case described produced water thusly:

> The composition of that fluid depends on the location, but here, those substances include sodium, calcium, potassium, strontium, barium, iron, carbon dioxide, and brine, or water molecules mixed with hydrogen sulfide and chloride.
>
> Once the stream reaches the surface, it is treated by equipment that separates out the oil and gas. What remains is referred to as produced water—a liquid containing chloride, sodium, calcium, potassium, strontium, barium, iron, hydrogen sulfide, carbon dioxide, trace amounts of oil, and water.[61]

As mentioned, produced water may also include fluids used to fracture the well that return to the surface as "flowback."[62] These fluids may introduce very small quantities of chemicals, such as friction reducers and biocides, used in the fracturing process.[63] Produced water is oily brine that exists in a mineralized solution entrained with the oil and gas in the hydrocarbon-bearing geologic strata and is brought to the surface as an unwanted byproduct along with the oil and/or gas.[64]

Depending on the geologic formation and the age of the well, for every barrel of oil that is produced or natural gas equivalent, an additional three to

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56. *Id.*

57. *What is Produced Water?*, AM. GEOSCIENCES INST., https://www.americangeosciences.org/critical-issues/faq/what-produced-water (last visited Nov. 8, 2024).

58. *Id.*

59. *Id.*

60. *Id.*

61. Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 735–36 (Tex. App.—El Paso 2023, pet. filed).

62. *What is Produced Water*, *supra* note 57.

63. *See id.*

64. *Id.*

twenty barrels of fluid oil and gas waste are also produced.[65] Sometimes, the volume of produced water can be significantly higher, as in the case of older conventional reservoirs.[66] Historically, in Texas, this fluid waste has been considered of little value and used only in oilfield applications such as waterfloods.[67] It is disposed of by re-injecting it into underground disposal wells.[68] However, as treatment technologies become more widespread and economical in Texas, it is possible to recycle this produced water into a beneficial product, such as a fluid that can be used by the oil and gas industry for drilling and hydraulic fracturing operations.[69] This means that the oil and gas industry in Texas is capable of turning this produced water into a usable fluid for exploration and production of oil and gas or other purposes.[70] More importantly, this means that the industry is capable of using less good-quality water (such as groundwater and surface water) and leaving more good-quality water available for cities, towns, agriculture, other industries, businesses, and people. Obviously, this is important in a state such as Texas with significant water shortage problems. Finally, recycling helps reduce the amount of produced water being disposed down disposal wells. Too much water disposed into a specific underground formation could possibly over-pressure that formation, resulting in longer hauling routes for disposal of produced water or premature field abandonment. Additionally, disposal of produced water near or along fault lines has been implicated in induced seismicity.

In fact, waste treatment technologies have come to the attention of the Texas Legislature.[71] The Legislature passed two different laws (in 2013 and 2019) with the stated intention of promoting the use of these technologies and encouraging the treatment and recycling of produced water in oil and gas operations.[72] However, absent specific language in the oil, gas, and other minerals conveyance, the question has arisen whether produced water belongs to the mineral estate or to the surface estate. Recently, this question

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65. *Produced Water: Oil and Gas Terminology Glossary*, WATER ENV'T FED'N (2018) https://www.wef.org/globalassets/assets-wef/direct-download-library/public/03---resources/wsec-2017-fs-013-iwwc-og-glossary---final---5.21.18.pdf.; Peter E. Hosey et al., *Mine: All Mine? Texas Ownership of Produced Water and Its Constituent Parts (Lithium)*, JACKSON WALKER: INSIGHTS (Mar. 29, 2024), https://www.jw.com/news/texas-produced-water-ownership/.

66. *Produced Water*, GROUNDWATER PROT. COUNCIL, http://www.gwpc.org/produced-water (last visited Nov. 8, 2024).

67. *Produced Water: Oil and Gas Terminology Glossary*, *supra* note 65.

68. *Id.*

69. *See* Matthews, *supra* note 55.

70. *Id.*

71. H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013) (by Representative Phil King and Senator Craig Estes); H.B. 3246, 86th Leg., Reg. Sess. (Tex. 2019) (by Representative Drew Darby and Senator Kelly Hancock) (both codified at TEX. NAT. RES. CODE § 122.002).

72. H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013); H.B. 3246, 86th Leg., Reg. Sess. (Tex. 2019).

became the central point in the *Cactus* case pending before the Texas Supreme Court at the time of this writing.[73]

Certain learned commentators have published articles opining either explicitly or implicitly that produced water is groundwater and, therefore, is owned by the surface estate.[74] Cactus Water asserted that very position in the lower courts and is reasserting it in the case before the Texas Supreme Court.[75] If that position is correct, then the recent laws passed by the Legislature to promote the treatment and recycling of produced water waste streams are probably unconstitutional.[76] This is because the Legislature does not possess the power to authorize one person (an oil and gas operator or recycler) to confiscate another person's (the surface owner's) property (produced water).[77] Moreover, it would mean that the long-existing laws and regulations requiring oil and gas operators to properly handle, transport, and dispose of produced water in accordance with strict environmental requirements probably would be unconstitutional.[78]

The differing publications begin with the unassailable position that groundwater belongs to the surface estate as a matter of law in Texas.[79] This Article completely agrees that groundwater belongs to the surface estate as a matter of Texas law.[80] However, produced water, in fact, and in law, is *not*

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73. Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733 (Tex. App.—El Paso 2023, pet. filed).

74. *See* articles cited *supra* note 38.

75. Brief for Petitioner at 24, Cactus Water Servs., LLC v. COG Operating, LLC, No. 23-0676 (Aug. 30, 2024).

76. *See* U.S. CONST. amend. V; TEX. CONST. art. I, § 17.

77. U.S. CONST. amend. V; TEX. CONST. art. I, § 17.

78. *Id*. The mineral estate owner, as the owner of the dominant estate, has the right to use as much of the surface estate as is reasonably necessary to conduct operations to extract the minerals. Humble Oil & Refin. Co. v. Williams, 420 S.W.2d 133, 134 (Tex. 1967). Under that concept, those who assert that produced water belongs to the surface estate argue that the mineral estate owner has the right to handle, separate, and dispose of produced water produced from the mineral estate. In other words, a usufruct right. However, if produced water were ever to be ruled to be owned by the surface estate, then the right of the mineral estate owner to handle, separate, and dispose of the produced water probably would *only be true if* the entire process, including disposal, took place on the same surface estate tract as the mineral estate tract where the oil, gas, and waste stream was produced. Any transportation or disposal off that tract's location probably would constitute an undue burden on the surface owner's property (and thus be disallowed) *if* the produced water actually was owned by the surface estate. Such a result would frustrate the legislative intent to encourage recycling as well as the legislative and regulatory intent to require proper handling, transportation, and disposal or reclamation in accordance with strict environmental pollution control laws. Disposal of property is a form of destruction. The Texas Supreme Court in *Acker v. Guinn* stated the mineral estate "is entitled to make reasonable use of the surface for the production of his minerals. *It is not ordinarily contemplated, however, that the . . . surface . . . will be destroyed or substantially impaired*." Acker v. Guinn, 464 S.W.2d 348, 352 (Tex. 1971) (emphasis added). A more thorough discussion of the usufruct arguments is discussed in Section VIII.A, *infra*.

79. *See* articles cited *supra* note 38.

80. Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 832 (Tex. 2012); TEX. WATER CODE § 36.002; *see also* Moser v. U.S. Steel Corp., 676 S.W.2d 99, 102 (Tex. 1984); Robinson v. Robbins Petroleum Corp., 501 S.W.2d 865, 866–67 (Tex. 1973); Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 811 (Tex.1972); Fleming Found. v. Texaco, Inc., 337 S.W.2d 846, 852 (Tex. App.—Amarillo 1960, writ ref'd n.r.e.).

groundwater. Respectfully, the publications opining that produced water is groundwater apparently jump to the assumption that because produced water contains water molecules (ignoring the fact that it contains many other substances, some of which are hazardous and in some cases as much as 30% salt) and that because it exists underground, then it must be groundwater.[81] This assumption also ignores the fact that the Texas Legislature has adopted separate, distinct, and irreconcilable definitions distinguishing produced water from groundwater.[82] Most importantly, those articles fail to recognize the irreconcilable distinction between oil and gas waste and groundwater both in fact and in law.

First, the public historically has treated produced water as an oil and gas waste owned by the mineral estate and a burden borne by the mineral estate's oil and gas operator.[83] Second, the Railroad Commission of Texas and the Texas Legislature define oil and gas waste as including produced water and require that it be handled, treated, and disposed by the mineral estate's oil and gas operator.[84] Moreover, the Legislature and the Railroad Commission of Texas require that groundwater be protected from contamination that could be caused by produced water.[85] Finally, having assumed that produced water is groundwater, the articles neglect to apply the Four Corners Test, the Greatest Estate Rule, and other rules of construction governing conveyances, reservations, and exceptions as mandated by the Texas Supreme Court when analyzing whether parties intended to convey produced water and other oil and gas waste along with the oil and gas in a conveyance that does not mention produced water nor other oil and gas waste.[86] As we will see by analyzing the Texas rules of law that address this question, the conclusion that should be reached under Texas law is that oil and gas waste, including produced water, was conveyed along with the oil and gas unless there was an express reservation or exception to the contrary.[87]

Accordingly, in a typical conveyance of oil, gas, and other minerals beneath a tract of land, the question whether produced water belongs to the mineral or to the surface estate is now ripe for decision by the Texas Supreme Court.

This Article argues that proper application of the law and rules of construction for interpretation of conveyances as prescribed by the Texas Supreme Court leads to the inescapable conclusion that absent a specific reservation, exception, or other language to the contrary, parties to typical conveyances of oil and gas, hydrocarbons, or "oil, gas, and other minerals"

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81. *See* articles cited *supra* note 38.
82. *See* discussion *infra* Subsection III.B.1.
83. *See* discussion *infra* Section III.A.
84. *See* discussion Section III.B.
85. *See* discussion Section III.B.
86. *See* discussion *infra* Section VI.C.
87. *See* discussion *infra* Section VI.C.

intended, as expressed in the instrument, that oil and gas waste, which includes produced water, be conveyed along with the oil and gas.

III. PRODUCED WATER IS OIL AND GAS WASTE. PRODUCED WATER IS NOT GROUNDWATER, FRESH WATER, NOR REGULAR WATER AS A MATTER OF HISTORICAL PUBLIC UNDERSTANDING AS WELL AS TEXAS STATUTORY LAW, REGULATORY LAW, AND CASELAW

Prior to analyzing the rules of construction as prescribed by the Texas Supreme Court that are applicable to conveyances, we need to determine whether produced water is or is not groundwater, fresh water, or even regular water under Texas law and public understanding. It is not. This is necessary so that we can then apply the rules of construction relative to conveyances of oil and gas to determine if produced water and other oil and gas waste was or was not included in the conveyance.

A. Produced Water Is Not Groundwater as a Matter of Science and as a Matter of Historical Public Understanding. Oil and Gas Wells Do Not Produce Groundwater. They Produce a Mineralized Solution Containing Oil, Gas, and Produced Water, but Not Groundwater

What arises out of an oil or gas well is not groundwater, fresh water, nor even regular water.[88] Neither is it usually pure oil or gas.[89] It is a mixture of oil, gas, and oil and gas waste.[90] Oil and gas coexist with produced water in mineralized solutions deep underground, having been trapped, cooked, and blended by nature millions of years ago.[91] It is this mineralized solution, often including flowback water, which arises out of oil and gas wells.[92] This mixture must be separated using mechanical and chemical means at the surface in order to create three streams: oil, gas, and oil and gas waste or produced water.[93] Oil and gas operators would much prefer to find and produce pure oil or natural gas without the associated, expensive, and unwelcome produced water waste in which the oil and gas are mixed. But that is not what nature normally provides.

Produced water waste exists in geologic formations deep beneath the earth's surface and can be very salty, up to thirty times higher than

88. *See What is Produced Water?*, *supra* note 57.
89. *See id.*
90. *See id.*
91. *Id.*
92. *Id.*
93. *Oil and Gas Separator: How it Works*, KIMRAY INC., https://kimray.com/training/oil-and-gas-separator-how-it-works (last visited Nov. 8, 2024).

seawater.[94] The mineralized solution contains naturally occurring hydrocarbons of various molecular weights and miscellaneous compounds, such as salt and water (H_2O).[95] But just because water is an ingredient of a solution does not mean that the solution itself is water. If a court ever were to conclude that anything that contains water molecules is itself water, it would turn the law and science on its head. Numerous things contain water, but that does not mean that the things themselves are water. Most, if not all, living matter contains water. But that does not mean that living matter *is* water or that water *is* living matter. Water is present in natural substances such as milk, blood, fruit, and innumerable other natural substances. But that does not mean that milk, blood, fruit, etc. are themselves water. Cement usually contains 18% to 23% water, but that does not mean that cement is water.[96] Vodka and whiskey usually contain about 60% water.[97] But that does not mean that a bottle of whiskey is a bottle of water. Generally, the first ingredient in a bottle of shampoo is water. But that does not mean that a bottle of shampoo is a bottle of water. This list of examples of things that contain water but are not themselves water could continue virtually ad infinitum.

In chemistry, a hydrate is a substance that contains water.[98] The chemical state of the water varies widely among different classes of hydrates.[99] In fact, partly because it is so rare in nature for a substance *not* to contain water, the science of chemistry gives it a special name: when a substance contains no water, it is said to be an anhydrous substance.[100] In other words, many, many different things (solids, liquids, and gasses) contain water (are hydrates), but that does not mean that the things (hydrates) are water. Produced water is a hydrate. However, as a matter of both science and law, produced water is not water.

Crude oil contains H_2O. Natural Gas often contains varying amounts of H_2O. How this oily brine came to be called produced water is lost in the annals of time. In fact, the El Paso Court of Appeals stated, "the term 'produced water' is essentially a misnomer, as it bears little resemblance to water given the 'numerous constituents' it contains other than water. Instead,

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94. *See What is Produced Water?*, *supra* note 57.

95. *Id.*

96. *Water Held in Concrete*, CONCRETE.ORG, https://www.concrete.org.uk/fingertips-nuggets.asp?cmd=display&id=909# (last visited Nov. 8, 2024).

97. *See* Thijs Klaverstijn, *How Water Affects Whiskey* (July 22, 2021), https://distiller.com/articles/water-affects-whiskey.

98. *Hydrate*, BRITANNICA, https://www.britannica.com/science/hydrate (last visited Nov. 8, 2024); *Hydrate*, CHEMEUROPE.COM, https://www.chemeurope.com/en/encyclopedia/Hydrate.html (last visited Nov. 8, 2024).

99. *CHEMEUROPE.COM*, *supra note 98.*

100. *Anhydrous*, ILLUSTRATED GLOSSARY OF ORGANIC CHEMISTRY, https://www.chem.ucla.edu/~harding/IGOC/A/anhydrous.html (last visited Nov. 8, 2024); *Anhydrous*, DICTIONARY.CAMBRIDGE.ORG, https://dictionary.cambridge.org/us/dictionary/english/anhydrous (last visited Nov. 8, 2024).

produced water is more accurately classified as a waste byproduct of oil and gas production."[101]

Produced water could have been called hydrocarbonic brine. Had it been, perhaps this debate over whether it belongs to the mineral or surface estate never would have occurred.

B. Produced Water Is Not Groundwater as a Matter of Texas Law

1. The Texas Legislature Proclaims Produced Water and Groundwater to be Separate and Distinct Substances with Separate, Distinct, and Irreconcilable Definitions

Texas law declares produced water to be oil and gas waste in three separate statutes provided by the Water Code and the Natural Resources Code. It is important to observe that even though the first two definitions do not specifically *mention* "produced water," the definitions specifically *describe* produced water. The final definition of "fluid oil and gas waste" expressly includes "produced water."

In 1977, the 65th Texas Legislature adopted the following definition of "oil and gas waste," which is codified in Water Code Section 27.002(6):

> (6) "Oil and gas waste" means *waste arising out of or incidental to drilling for or producing of oil, gas*, or geothermal resources, waste arising out of or incidental to the underground storage of hydrocarbons other than storage in artificial tanks or containers, or waste arising out of or incidental to the operation of gasoline plants, natural gas processing plants, or pressure maintenance or repressurizing plants. *The term includes but is not limited to salt water, brine, sludge, drilling mud, and other liquid or semi-liquid waste material*.[102]

In 1983, the 68th Texas Legislature essentially carried over the definition from the Water Code into Section 91.1011 of the Texas Natural Resources Code as follows: "(a) In this subchapter, 'oil and gas waste' means *waste that arises out of or incidental to the drilling for or producing of oil or gas* . . . . (b) 'Oil and gas waste' *includes salt water, brine, sludge, drilling mud, and other liquid, semiliquid, or solid waste material*."[103]

More recently, in 2013, the 83rd Texas Legislature further clarified the concept of oil and gas waste by adopting the following definition of "fluid oil and gas waste" in Chapter 122.001(2) of the Natural Resources Code:

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101. Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 739 (Tex. App.—El Paso 2023, pet. filed).

102. TEX. WATER CODE § 27.002(6) (emphasis added).

103. TEX. NAT. RES. CODE § 91.1011(a), (b) (emphasis added).

"(2) 'Fluid oil and gas waste' means waste containing salt or other mineralized substances, brine, hydraulic fracturing fluid, flowback water, *produced water*, or other fluid that arises out of or is incidental to the drilling for or production of oil or gas."[104]

The Texas statutory definitions of "oil and gas waste" in the Water Code and in the Natural Resources Code describe "produced water" by using the terms salt water, brine, sludge, and other liquid or semiliquid or waste material.[105] The Texas statutory definition of "fluid oil and gas waste" specifically includes "produced water."[106]

By contrast, the Texas Legislature defines "groundwater" with a separate definition, and that definition does *not* include produced water, oil and gas waste, fluid oil and gas waste, nor does it include salt water, brine, sludge, and other liquid or semiliquid or waste material, nor any of the other descriptive terms for oil and gas waste. The Texas Water Code provides the following separate and irreconcilable definitions of groundwater and fresh water: "'Groundwater' means water percolating below the surface of the earth."[107] "'Fresh water' means water having bacteriological, physical, and chemical properties which make it suitable and feasible for beneficial use for any lawful purpose."[108]

Critical in the definitions of groundwater and fresh water is the term "water." Texas statutes do not contain a definition for the term "water." When the law does not provide a specific definition of a term, we apply the plain meaning rule. This rule requires that courts "construe the statute's words according to their plain and common meaning."[109]

Accordingly, looking at the Merriam-Webster Dictionary, we find the following definition of "water":

> [T]he liquid that descends from the clouds as rain, forms streams, lakes, and seas, and is a major constituent of all living matter and that when pure is an odorless, tasteless, very slightly compressible liquid oxide of hydrogen H_2O which appears bluish in thick layers, freezes at 0° C and boils at 100° C, has a maximum density at 4° C and a high specific heat, is feebly ionized to

104. *Id.* § 122.001(2) (emphasis added).

105. *See* TEX. WATER CODE § 27.002(6); TEX. NAT. RES. CODE § 91.1011(b).

106. TEX. NAT. RES. CODE § 122.001(2).

107. TEX. WATER CODE §§ 35.002(5), 36.001(5).

108. *Id.* § 27.002(8).

109. City of Rockwall v. Hughes, 246 S.W.3d 621, 625 (Tex. 2008). "In construing statutes, we ascertain and give effect to the Legislature's intent as expressed by the language of the statute. We use definitions prescribed by the Legislature and any technical or particular meaning the words have acquired. Otherwise, we construe the statute's words according to their plain and common meaning, unless a contrary intention is apparent from the context, or unless such a construction leads to absurd results." *Id.* at 625–26 (internal citations omitted).

> hydrogen and hydroxyl ions, and is a poor conductor of electricity and a good solvent.[110]

Thankfully, produced water does not descend from the clouds as rain, does not form streams, lakes, and seas, and certainly is not a major constituent of all living matter. Additionally, produced water is not odorless or tasteless. It is black, dark, or opaque and has a noxious odor. Moreover, not only is produced water not a major constituent of all living matter, it is actually classified as hazardous by the Occupational Hazard Communication Standard.[111]

Finally, as recognized by the legislative definitions of oil and gas waste, produced water is an unwelcome byproduct that is incidental to oil and gas production. By contrast, people who drill groundwater wells, including brackish water wells, intentionally target and produce fresh or brackish water. It is unheard of to intentionally drill wells targeting produced water or any other kind of oil and gas waste. They target the oil and gas, not the waste (although they are combined). In fact, it is common to drill "water" wells, which produce groundwater that is then used for agricultural irrigation. By contrast, it is illegal to discharge untreated produced water.[112]

Again, oil and gas operators would much prefer to produce pure oil or gas instead of the mineralized solution containing the oil, gas, and produced water waste. This produced water waste adds significant costs to the operation of an oil or gas well since it is expensive to properly and legally handle, separate, transport, dispose, and/or treat and recycle in accordance with environmental pollution control laws, permits, regulations, and financial assurance requirements.[113]

Therefore, Texas statutes proclaim that produced water and groundwater are separate and distinct substances with separate, distinct, and irreconcilable definitions.

2. Texas Law Requires Groundwater to be Protected from Pollution that Could Be Caused by Untreated Produced Water

As shown, the Texas Legislature declares that oil and gas waste—including produced water—is not groundwater, also known as subsurface

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110. *Water*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/water (last visited Nov. 7, 2024).

111. 29 C.F.R. § 1910.1200.

112. 16 TEX. ADMIN. CODE §§ 3.8(b), (d)(1) (2019) (Tex. Railroad Comm'n, Water Protection).

113. In fact, in the *Cactus* case, COG Operating reported that it spent more than $20,520,000 in fees over a roughly 18-month period alone to dispose of produced water. COG Operating LLC v. Cactus Water Servs., LLC, No. 20-03-23456-CVR, COG Operating LLC's Motion for Partial Summary Judgment, pg. 11 (143rd Dist. Ct., Reeves County, Tex. July 23, 2021). COG Reported an additional $6,849,722 in costs to construct two batteries to handle, separate, and store the produced water. *Id.*

water. In addition to separate, distinct, and irreconcilable definitions, the Legislature requires that surface and subsurface water (groundwater) be protected from pollution that could be caused by coming into contact with untreated produced water. Again, the Legislature describes produced water in its definition of oil and gas waste: "waste that arises out of or incidental to the drilling for or producing of oil or gas, including . . . salt water, brine, sludge, drilling mud, and other liquid, semiliquid, or solid waste material."[114]

Specifically, Texas Natural Resources Code Section 91.101 provides:

> (a) To prevent pollution of surface water or subsurface water in the state, the commission shall adopt and enforce rules and orders and may issue permits relating to:
>
> . . . .
>
> (4) the discharge, storage, handling, transportation, reclamation, or disposal of oil and gas waste as defined in Section 91.1011 of this subchapter.[115]

Because the Texas Legislature has determined that untreated produced water could cause pollution of groundwater, then the Legislature unquestionably considers produced water and groundwater to be separate and distinct substances. If produced water actually is groundwater, then groundwater would not need to be protected from untreated produced water.

3. The Railroad Commission of Texas Treats Produced Water and Groundwater as Distinct Substances and Requires Groundwater to be Protected from Untreated Produced Water

The Railroad Commission of Texas (hereinafter, sometimes referred to as RRC) is the chief regulatory agency with jurisdiction over the oil and gas exploration and production industry operating in Texas.[116] Quoting from the commission's website:

> The Railroad Commission of Texas is the oldest regulatory agency in the state and one of the oldest in the country. The Railroad Commission was established in 1891 to regulate the rail industry of the 1800s. Since that time the Commission has been given the responsibility for overseeing many different industries. The Commission considers *protection of the environment* and *preservation of individual property rights* to be two of its primary responsibilities.[117]

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114. TEX. NAT. RES. CODE § 91.1011(b).
115. *Id.* § 91.101(a)(4).
116. *About us*, RRC, https://www.rrc.texas.gov/about-us/ (last visited Nov. 8, 2024).
117. *Id.* (emphasis added).

Actions of the Railroad Commission are instructive because for over a century, the Commission has adopted and enforced regulations, permits, and orders to protect groundwater from pollution by untreated produced water. Currently, the Commission's main water protection rule, which requires protection of surface water and groundwater, is Statewide Rule 8 (SWR 8).[118] SWR 8 had its origins in Rule 20, which was adopted by the commission in 1919. Quoting from the commission's website:

> The Oil and Gas Division's Rule 8, Water Protection, had its origins in Rule 20, which became effective in 1919. Rule 20 then read as follows:
>
> FRESH WATER TO BE PROTECTED - Fresh water, whether above or below the surface, shall be protected from pollution, whether in drilling or plugging.
>
> In 1933, the Commission amended Rule 20 to state that fresh water was also to be protected from pollution when disposing of produced salt water.[119]

Accordingly, in 1919, the Commission required that all fresh water (surface and groundwater) be protected from pollution that could be caused by drilling an oil and gas well, which could include contamination by untreated produced water. Then in 1933, the Commission made absolutely clear that "produced salt water" was a potential source of pollution requiring protection of fresh water.[120] Because produced water waste usually has extremely high concentrations of salt, historically, it has been called produced salt water or even salt water. But it is not the salt water that was referenced in *Robinson v. Robins Petroleum*.[121]

The Railroad Commission provides its own definition of "oil and gas wastes" in SWR 8, which is very close to the Texas statutory definitions, although different because it is more encompassing. As with the statutory definition, it is instructive that the Commission's definition effectively describes produced water as an oil and gas waste and not as groundwater. Specifically, SWR 8(a)(26) provides the following:

> (26) Oil and gas wastes—Materials to be disposed of or reclaimed which have been generated in connection with activities associated with the exploration, development, and production of oil or gas or geothermal

118. 16 TEX. ADMIN. CODE § 3.8 (2019) (Tex. Railroad Comm'n, Water Protection).

119. *Chapter II—Statewide Rule 8 History*, RRC, https://www.rrc.texas.gov/oil-and-gas/publications-and-notices/manuals/surface-waste-management-manual/chapter-ii-statewide-rule-8-history/ (last visited Nov. 8, 2024).

120. *Id.*

121. *See* discussion *infra* Section IX.C.

> resources, as those activities are defined in paragraph (30) of this subsection, and materials to be disposed of or reclaimed which have been generated in connection with activities associated with the solution mining of brine. The term "oil and gas wastes" includes, but is not limited to, saltwater, other mineralized water, sludge, spent drilling fluids, cuttings, waste oil, spent completion fluids, and other liquid, semiliquid, or solid waste material.[122]

Additionally, the Railroad Commission has adopted definitions for the phrase "pollution of surface and subsurface water" and for the phrase "surface or subsurface water." Specifically, SWR 8 provides the following definitions:

> (28) Pollution of surface or subsurface water—The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any surface or subsurface water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.
>
> (29) Surface or subsurface water—Groundwater, percolating or otherwise, and lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all watercourses and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state.[123]

Statewide Rule 8 has evolved into a very long, detailed, and multi-page rule that provides for many waste handling techniques, requirements, and permit conditions all designed to protect surface and groundwater from oil and gas activities including contamination by untreated produced water.[124] However, the heart of SWR 8 is its prohibition against pollution of surface and subsurface water (groundwater) as well as its prohibited disposal methods under its pollution control provision. These are found in paragraphs (b) and (d) as follows:

> (b) No pollution. No person conducting activities subject to regulation by the commission may cause or allow pollution of surface or subsurface water in the state.

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122. 16 TEX. ADMIN. CODE § 3.8(a)(26) (2019) (Tex. R.R Comm'n, Water Protection) (emphasis added).

123. *Id.* §§ 3.8(a)(28), (29) (Tex. R.R. Comm'n, Water Protection).

124. *See, e.g., id.* §§ 3.8–3.30.

. . . .

(d) Pollution control.

> (1) Prohibited disposal methods. Except for those disposal methods authorized for certain wastes by paragraph (3) of this subsection, subsection (e) of this section, or §3.98 of this title (relating to Standards for Management of Hazardous Oil and Gas Waste), or disposal methods required to be permitted pursuant to §3.9 of this title (relating to Disposal Wells) (Rule 9) or §3.46 of this title (relating to Fluid Injection into Productive Reservoirs) (Rule 46), no person may dispose of any oil and gas wastes by any method without obtaining a permit to dispose of such wastes. The *disposal methods prohibited by this paragraph include*, but are not limited to, the unpermitted *discharge of oil field brines, geothermal resource waters, or other mineralized waters, or drilling fluids* into any watercourse or drainageway, including any drainage ditch, dry creek, flowing creek, river, or any other body of surface water.[125]

When reading these definitions and the rest of the accompanying rule, we see that the Commission unquestionably considers produced water as something separate and distinct from groundwater. In fact, the Commission considers untreated produced water as something harmful to groundwater, requiring groundwater to be protected from pollution by oil and gas wastes, one of which is untreated produced water.

Given that two of the Commission's stated primary responsibilities are "protection of the environment" and "preservation of individual property rights," it is instructive that the Commission does not consider and has never considered produced water as a property right of the surface estate.[126] Rather, it considers produced water as a burden of the mineral estate imposed on the mineral estate's oil and gas operator, who is required to comply with Rule 8 (formerly Rule 20) and other regulations to ensure that untreated produced water does not cause pollution of groundwater or surface water.[127]

Under Texas property law for waste that has not been abandoned, the obligation under law to properly handle, dispose, or reclaim a waste cannot be divorced from the ownership of the waste. One must own the waste in order to be required to handle, dispose, or reclaim it. In this case, the waste in question—produced water—must be owned by the mineral estate or its oil and gas operator. Otherwise, the Railroad Commission would not have the

125. *Id.* §§ 3.8(b), (d)(1) (Tex. R.R. Comm'n, Water Protection) (emphasis added).
126. *See About Us*, *supra* note 116.
127. *See supra* notes 123, 125.

authority to require and/or regulate the manner by which the mineral owner's oil and gas operator handles, disposes, or reclaims the surface owner's property.[128]

4. Recent Laws Passed by the Texas Legislature to Encourage the Treatment and Recycling of Produced Water: H.B. 2767 in 2013 and H.B. 3246 in 2019

As we have seen, on each of the three specific times when the Legislature addressed produced water in the definitions of "oil and gas waste" and "fluid oil and gas waste," the Legislature implicitly determined that produced water is part of an oil, gas, and other minerals estate.[129] Additionally, when the Legislature ordered the Railroad Commission of Texas to prevent pollution of surface and groundwater that could be caused by untreated produced water, the Legislature implicitly determined that produced water is part of an oil, gas, and other minerals estate.[130] Moreover, the Commission's rules and regulatory definitions discussed above implicitly conclude that produced water is part of an "oil, gas, and other minerals" estate.[131]

Recently, in 2013 and 2019, the Legislature passed two laws that *explicitly* provide that produced water becomes the property of an oil and gas operator or of a recycler if possessed by or transferred to such person for the purpose of treating the waste for a subsequent beneficial use.[132] The laws also *explicitly* provide that if transferred to another person, the treated waste becomes the property of the person to whom it is transferred.[133]

Accordingly, because the Legislature explicitly vests ownership of produced water in oil and gas operators and recyclers if they take possession of the waste for the purpose of treating it for a subsequent beneficial use, then it follows that the Legislature implicitly concluded that produced water is a component of the oil, gas, and mineral estate established by an oil, gas, and other minerals conveyance:

> All statutes are presumed to be enacted by the legislature with full knowledge of the existing condition of the law and with reference to it. They are therefore to be construed in connection and in harmony with the existing law . . . their meaning and effect is to be determined in connection, not only

128. U.S. CONST. amend. V; TEX. CONST. art. I, § 17. *See* discussion *infra* Part VIII. *See supra* note 77.

129. *See* discussion *supra* Section III.B.

130. *See* discussion *supra* Section III.B.

131. *See* discussion *supra* Section III.B.

132. H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013); H.B. 3246, 86th Leg., Reg. Sess. (Tex. 2019).

133. H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013); H.B. 3246, 86th Leg., Reg. Sess. (Tex. 2019).

> with the common law and the constitution, but also with reference to other statutes and the decisions of the courts.[134]

If produced water *is* owned by the surface estate, for example, if it actually *is* groundwater or if it *is* a form of "water" belonging to the surface estate as a matter of law, then the Legislature could not have vested ownership of it in the oil and gas operator, the recycler, and/or subsequent title owners without just and adequate compensation to millions of surface tract owners.[135]

a. H.B. 2767 by Representative Phil King and Senator Craig Estes

The specific language of H.B. 2767, as well as the legislative history, demonstrate that the Legislature knowingly intended to explicitly clarify ownership of produced water. This is the law that adopted the definition of "fluid oil and gas waste": (2) "'Fluid oil and gas waste' means waste containing salt or other mineralized substances, brine, hydraulic fracturing fluid, flowback water, *produced water*, or other fluid that arises out of or is incidental to the drilling for or production of oil or gas."[136]

The bill analysis shows that the Legislature was aware of the controversy concerning the ownership of produced water—or, in their words, "legal ambiguity about the ownership of oil and gas waste."[137] Moreover, the legislative history and the language adopted by the law itself establish that the Legislature meant to settle the question by establishing that fluid oil and gas waste—specifically including produced water—becomes the property of a recycler if transferred to the recycler for the purpose of treating the waste into a beneficial product, such as fluid that can be used by the oil and gas industry for drilling and hydrofracturing. Additionally, the treated waste becomes the property of subsequent people down the chain of title from the recycler.

Specifically, the bill analysis stated:

> The parties report that . . . the *legal ambiguity about the ownership of oil and gas waste* transferred for treatment are obstacles to recycling oil and gas waste. C.S.H.B. 2767 *seeks to address these obstacles* by proposing statutory changes to the law relating to treating and recycling for beneficial

134. McBride v. Clayton, 166 S.W.2d 125, 128 (Tex. [Comm'n Op.] 1942).

135. *See* U.S. CONST. amend. V; TEX. CONST. art. I, § 17.

136. TEX. NAT. RES. CODE § 122.001(2) (emphasis added).

137. H. Comm. on Energy Res., Bill Analysis, H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013); *see also* S. Comm. on Nat. Res., Bill Analysis, H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013).

> use certain waste arising out of or incidental to drilling for or producing oil or gas.[138]

Seeking to address the obstacles about "the legal ambiguity about the ownership of fluid oil and gas waste,"[139] both chambers of the Legislature unanimously adopted the following language into Section 122.002 of the Natural Resource:

> Sec. 122.002. OWNERSHIP OF CERTAIN OIL AND GAS WASTE TRANSFERRED FOR TREATMENT AND SUBSEQUENT BENEFICIAL USE. Unless otherwise expressly provided by a contract, bill of sale, or other legally binding document:
>
> (1) when fluid oil and gas waste is transferred to a person who takes possession of that waste for the purpose of treating the waste for a subsequent beneficial use, the transferred material is considered to be the property of the person who takes possession of it for the purpose of treating the waste for subsequent beneficial use until the person transfers the waste or treated waste to another person for disposal or use; and
>
> (2) when a person who takes possession of fluid oil and gas waste for the purpose of treating the waste for a subsequent beneficial use transfers possession of the treated product or any treatment byproduct to another person for the purpose of subsequent disposal or beneficial use, the transferred product or byproduct is considered to be the property of the person to whom the material is transferred.[140]

Importantly, the Legislature is charged with awareness of the law, both of its own statutes and court decisions.[141] Accordingly, at the time it considered H.B. 2767 in 2013, the Legislature was aware of its own definition of "groundwater" contained in Texas Water Code § 36.001(5).[142] As a crucial matter, the Legislature also was aware of its own law that "recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property."[143] Finally, the Legislature was aware of the line of Texas Supreme Court decisions holding, absent specific language to the contrary, that groundwater, fresh water, and salt water belong to the surface estate.[144] Therefore, being aware of its own laws, the common law,

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138. H. Comm. on Energy Res., Bill Analysis, H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013) (emphasis added).

139. *Id.*

140. H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013).

141. McBride v. Clayton, 166 S.W.2d 125, 128 (Tex. [Comm'n Op.] 1942).

142. *Id.*; TEX. WATER CODE § 36.001(5).

143. TEX. WATER CODE § 36.002(a).

144. Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 832 (Tex. 2012); *see also* Moser v. U.S. Steel Corp., 676 S.W.2d 99, 102 (Tex. 1984); Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 811 (Tex.1972);

and of the Texas Supreme Court decisions, when passing H.B. 2767, the Legislature by necessity must have concluded that produced water is not groundwater, fresh water, nor salt water and that produced water is not owned by the surface estate, but rather is owned by the oil, gas, and minerals estate, absent specific language to the contrary.

b. H.B. 3246 by Representative Drew Darby and Senator Kelly Hancock

H.B. 3246 in 2019 was a clean-up bill to H.B. 2767 from 2013. The statute passed in 2013 clearly vests ownership of produced water and other fluid oil and gas waste in recyclers and subsequent purchasers. However, H.B. 2767 neglected to clarify the ownership question regarding oil and gas operators when the operators must take possession of the waste at the wellhead in order to transfer the waste to a recycler or when the operators recycle it themselves.[145] In other words, the Legislature was aware that despite their passage of H.B. 2767 in 2013, there was a lingering question about whether oil and gas operators had the legal right to possess and transfer the produced water for the purpose of treating it and recycling it in the oilfields. The bill analysis stated the following:

> Although the state promotes the recycling of fluid oil and gas waste and the legislature has sought in the past to clarify ambiguities regarding the ownership of such waste, concerns have been raised regarding an ambiguity relating to ownership between water haulers and oil and gas operators. C.S.H.B. 3246 seeks to address this oversight by addressing a situation in which fluid oil and gas waste is produced and used by a person who takes possession of that waste for the purpose of treating the waste for a subsequent beneficial use.[146]

Accordingly, the Legislature adopted the following clarifying amendments to Section 122.002 of the Texas Natural Resources Code:

> (1) when fluid oil and gas waste is <u>produced and used by or</u> transferred to a person who takes possession of that waste for the purpose of treating the waste for a subsequent beneficial use, the <u>waste</u> [~~transferred material~~] is considered to be the property of the person who takes possession of it for the purpose of treating the waste for subsequent beneficial use until the

Robinson v. Robbins Petroleum Corp., 501 S.W.2d 865, 867 (Tex. 1973); Fleming Found. v. Texaco, Inc., 337 S.W.2d 846, 852 (Tex. App.—Amarillo 1960, writ ref'd n.r.e.).

145. *See* H.B. 2767, 83rd Leg., Reg. Sess. (Tex. 2013).

146. H. Comm. on Energy Res., Bill Analysis, H.B. 3246, 86th Leg., Reg. Sess. (Tex. 2019); S. Nat. Res. Comm., Bill Analysis, H.B. 3246, 86th Leg., Reg. Sess. (Tex. 2019).

> person transfers the waste or treated waste to another person for disposal or use.[147]

This amendment to the law clarifies that ownership of produced water and other fluid oil and gas waste vests in the oil and gas operator if the operator takes possession of the waste for the purpose of transferring it to a recycler or for the purpose of recycling it himself.[148] As discussed above, the Legislature probably would not have passed this law without implicitly concluding that produced water belongs to the oil, gas, and mineral estate, absent specific language to the contrary.

C. Conclusion

Produced water simply is not water under the ordinary and natural meaning of the word "water." Finally, under the Texas statutory and regulatory definitions of the terms, groundwater is not produced water; groundwater is not oil and gas waste; and groundwater is not fluid oil and gas waste.

IV. BRIEF HISTORY OF MINERAL OWNERSHIP IN TEXAS AND THE TEXAS CONSTITUTION[149]

In order to address the rules governing conveyances, reservations, and exceptions as applied to a typical severance of oil and gas or "oil, gas, and other minerals," it is helpful to review Texas history regarding the ownership and severance of minerals in general.

As explained by Williams and Haigh, "Private title to all land in Texas originates from a grant by the sovereign of the soil."[150] Successively, not including Indigenous peoples, the sovereigns were Spain, Mexico, the Republic of Texas, and the State of Texas:

> Under the laws of Spain and Mexico, mines and their metals or minerals did not pass by the ordinary grant of the land without express words of designation. In one of the earliest acts of the Congress of the Republic of Texas, this rule was adopted, and it was continued in force after Texas became a state. Accordingly, a grantee of land before 1866 had no interest in the minerals in the land unless that interest was expressly granted.[151]

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147. H.B. 3246, 86th Leg., Reg. Sess. (Tex. 2019).

148. *See id.*

149. Most of this Part was published originally in Benjamin Sebree, *Who Owns the Heat? Ownership of Geothermal Energy and Associated Resources Under Texas Law: Surface Versus Mineral Ownership and Newly Enacted Senate Bill 785*, 19 TEX. J. OIL, GAS, & ENERGY L. 236 (2024).

150. Howard R. Williams & Berte R. Haigh, *Mineral Rights and Royalties in Texas*, TEX. STATE HIST. ASS'N (May 28, 2020), http://www.tshaonline.org/handbook/entries/mineral-rights-and-royalties.

151. *Id.*

Because the sovereign of Spain declared all minerals and mines to be sovereign property, the first severance of the surface estates and mineral estates in Texas actually occurred pursuant to an eighteenth-century Spanish royal decree issued on May 22, 1783, by Charles III of the Spanish House of Bourbons and approved by the King of Spain on January 15, 1784, which declared all minerals and mines in "New Spain" to be property of the throne.[152] Additionally, because of this, the right to sever the mineral estate in Texas originates in Spanish law, which recognized that "a property may be acquired in mines which will be quite independent of the property in the lands in which they are situated."[153]

However, the State Constitution of 1866 changed the rule that private title to land does not include mines and their metals or minerals.[154] This change was carried over in substantially the same language into the Constitutions of 1869 and 1876.[155] Pursuant to the new provision, the State released to "owners of the soil" (commonly known today as "surface owners") all mines and mineral substances therein.[156] This constitutional provision had a retrospective effect.[157] Therefore, landowners (excluding Relinquishment Act Lands) were given complete ownership of the minerals in all lands that passed from the sovereign before the effective date of the Constitution of 1876.[158]

The provision, adopted in 1866, read "That the State of Texas hereby releases to the owner of the soil all mines and mineral substances, that may be on the same, subject to such uniform rate of taxation, as the Legislature may impose."[159] The provision was re-adopted in substantially the same words as Section 9, Article X of the Constitution of 1869[160] and as Section 7, Article XIV of the present Constitution of 1876 (that provision and numerous other sections which were considered "deadwood" were repealed by ballot proposition in 1969).[161]

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152. *See* WALLACE HAWKINS, EL SAL DEL RAY 7–15 (Tex. State Hist. Ass'n ed., 1947) (providing a detailed history of the royal mining ordinances and their impact on the development of Texas mineral law).

153. Cowan v. Hardeman, 26 Tex. 217, 223 (Tex. 1862) (quoting JOHN A. ROCKWELL, A COMPILATION OF SPANISH AND MEXICAN LAW, IN RELATION TO MINES, AND TITLES TO REAL ESTATE, IN FORCE IN CALIFORNIA, TEXAS AND NEW MEXICO 580 (John S. Voorhies ed., 1851)).

154. Williams & Haigh, *supra* note 150.

155. *Id.*

156. *Id.*

157. *Id.*

158. *Id.*

159. TEX. CONST. OF 1866, art. VII, § 39.

160. TEX. CONST. OF 1869, art. X, § 9.

161. TEX. CONST. art. XIV, § 7 (repealed Aug. 5, 1969).

Importantly, the provision in question did not define either "mines" nor "minerals" and it also did not define mineral estate nor surface estate.[162] Therefore, it has been left to the courts and to the Legislature to interpret these terms and to provide clarity in various factual circumstances.

The phrase, "oil, gas, and other minerals" is the most widespread language found in Texas for severing the mineral and surface estates.[163] This phrase and similar phrases are the subjects of numerous Texas Supreme Court and lower court decisions.[164] Accordingly, we must engage in a review of Texas caselaw regarding the construction of documents in general and in particular of caselaw construing conveyances of "oil, gas, and other minerals" and similar phrases to determine if produced water and other oil and gas wastes were conveyed along with the oil and gas and are likely to be held as belonging to the mineral or the surface estate in the absence of controlling language in a legally binding document.

V. THE INTENT OF THE PARTIES TO A CONVEYANCE DETERMINES WHETHER PRODUCED WATER WAS OR WAS NOT CONVEYED[165]

A. Minerals, Mineral Estate, and Surface Estate

As shown, through the adoption of the people, the Texas Constitution (applicable history discussed *Supra* at Part IV) declared that minerals belong to the owner of the land.[166] However, owners of land are permitted to divide their land as they see fit, for example, into surface and mineral estates or any other various divisions and descriptions.[167] Neither the Constitution nor the Legislature determines what constitutes the surface and the mineral estates.[168] Those are determined by private parties to the conveyances themselves.[169] When conveyances, such as deeds or mineral leases, dividing land into separate estates are unclear and disputes occur, courts interpret the

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162. *See* TEX. CONST. OF 1866, art. VII, § 39; TEX. CONST. OF 1869, art. X, § 9; TEX. CONST. art. XIV, § 7 (repealed Aug. 5, 1969).

163. Moser v. U.S. Steel Corp., 676 S.W.2d 99, 100–01 (Tex. 1984). In the leading case of *Moser*, the Texas Supreme Court stated, "In Texas, the mineral estate may be severed from the surface estate by a grant of the minerals in a deed or lease, or by reservation in a conveyance. This severance is often accomplished by a grant or reservation of 'oil, gas and other minerals.' Consequently, Texas courts have had many occasions to construe the scope of the term 'other minerals.'" *Id.* (internal citations omitted). *See, e.g.*, Rio Bravo Oil Co. v. McEntire, 95 S.W.2d 381, 386 (Tex. 1936) (construing the phrase "oil, gas, and other minerals"); Heinatz v. Allen, 217 S.W.2d 994, 1000 (Tex. 1949) (same), Acker v. Guinn, 464 S.W.2d 348, 349 (Tex. 1971) (same); Reed v. Wylie, 554 S.W.2d 169, 171 (Tex. 1977) (Reed I) (same); Reed v. Wylie, 597 S.W.2d 743, 744 (Tex. 1980) (Reed II) (same).

164. *Moser*, 676 S.W.2d at 101.

165. Portions of this section were published originally in Sebree, *supra* note 149.

166. *See* discussion *supra* Part IV.

167. Coyote Lake Ranch, LLC v. City of Lubbock, 498 S.W.3d 53, 59 (Tex. 2016).

168. *See id.*

169. *See id.*

conveyances and rule on their meanings.[170] Acts of the Legislature (pertinent ones discussed *Supra* at Section III.B) may provide significant guidance to the courts in their quests to ascertain the most reasonable meaning of the parties to the conveyances.[171]

When disputes arise over property records, deeds, conveyances, reservations, mineral leases, and property interests of separate estates, courts must interpret the documents and rule on their meanings.[172] Courts are guided first by what the parties intended as expressed within the four corners of the applicable document(s).[173] "[O]bjectively determinable factors that give a context to the transaction,"[174] including acts of the Legislature (pertinent ones discussed *Supra* at Section III.B), such as those previously discussed which are codified in the Water Code, Natural Resources Code, Property Code, etc., may provide guidance to the courts in their quests to ascertain the most reasonable meaning of the parties.[175] However, "[w]hen interpreting a written contract, the prime directive is to ascertain the parties' intent as expressed in the instrument."[176] Texas courts have long pronounced judgments regarding private property rights by interpreting the documents and facts in evidence.[177] Therefore, in our search to determine whether produced water is owned by the surface estate or the mineral estate (or its oil and gas lessee), we review the following.

B. Oil, Gas, and Mineral Severances

Texas courthouse records are replete with mineral deeds that commonly grant, reserve, or except interests in "oil, gas, and other minerals" (not to mention all of the oil, gas, and mineral leases that convey a fee simple determinable title to the oil, gas, and other minerals in place).[178] However,

170. URI, Inc. v. Kleberg Cnty., 543 S.W.3d 755, 763–64 (Tex. 2018).

171. *Id.* at 757–58; Piranha Partners v. Neuhoff, 596 S.W.3d 740, 749 (Tex. 2020).

172. *URI*, 543 S.W.3d at 763–64.

173. *See, e.g.*, Anderson & Kerr Drilling Co. v. Bruhlmeyer, 136 S.W.2d 800, 805 (Tex. 1940) (ascertaining that when terms are not ambiguous, intent can be ascertained from the document alone); Winsett v. Watson, 206 S.W.2d 656, 658 (Tex. App.—Fort Worth 1947, writ ref'd n.r.e.) (deciding that a provision in deed did not show intent to convey sand and gravel); Praeletorian Diamond Oil Ass'n v. Garvey, 15 S.W.2d 698, 700 (Tex. App.—Beaumont 1929, writ ref'd) (determining that the question was not whether gravel is a mineral, but whether gravel was intended to be conveyed); Laura H. Burney, *'Oil, Gas, and Other Minerals' Clauses in Texas: Who's on First?*, 41 SW. L. J. 695, 697 (1987).

174. *URI*, 543 S.W.3d at 768 (emphasis omitted) (quoting Hous. Expl. Co. v. Wellington Underwriting Agencies, Ltd., 352 S.W.3d 462, 469 (Tex. 2011)).

175. *Id.* at 757; Anglo-Dutch Petroleum Int'l, v. Greenberg Peden, P.C., 352 S.W.3d 445, 451 (Tex. 2011).

176. *URI*, 543 S.W.3d at 757.

177. *See, e.g.*, *Anderson*, 136 S.W.2d at 805 (interpreting the document in question); *Winsett*, 206 S.W.2d at 658 (same); Burney, *supra* note 173.

178. Stephens Cnty. v. Mid-Kan. Oil & Gas Co., 254 S.W. 290 (1923).

because these terms are rarely defined or described with sufficient particularity, it has been left to Texas courts to interpret their meaning.

Oil, gas, and mineral estates are accomplished by either a grantor conveying minerals or by reserving minerals from a conveyance of land. In *Benge v. Scharbauer*, the Texas Supreme Court stated: "It is well settled that the owners of land may reserve to themselves minerals or mineral rights, including the oil or any right or ownership therein."[179]

When the intent of the parties is unclear as to whether or not a particular substance was conveyed by a document, the Texas Supreme Court has stated repeatedly that the primary analysis for ascertaining the parties' intent is the Four Corners Rule.[180]

VI. TEXAS SUPREME COURT RULES GOVERNING CONVEYANCES, RESERVATIONS, AND EXCEPTIONS: HOW TO INTERPRET CONVEYANCES OF OIL, GAS, AND OTHER MINERALS CONCERNING THE OWNERSHIP OF PRODUCED WATER UNDER TEXAS LAW

A. The Four Corners Rule[181]

The Four Corners Rule is the umbrella rule of construction that controls when interpreting a deed or conveyance (or any contract).[182] Conveyances, reservations, and exceptions of oil, gas, and minerals are frequently unclear. The instruments are often silent regarding what specific substances, other than oil and gas, are included in the conveyance, reservation, or exception (not to mention the amounts, for whom, for the benefit of whom, or on behalf of whom). To resolve these matters, the intent of the parties is to be determined first by considering the instrument as a whole and is known as the Four Corners Rule. "The primary duty of the courts in interpreting a deed is to ascertain the intent of the parties. But it is the intent of the parties as expressed within the four corners of the instrument which controls."[183] "The intention of the parties to a deed, or contract, is the paramount consideration, and such intention is to be gathered from a consideration of the entire instrument taken by its four corners."[184]

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179. Benge v. Scharbauer, 259 S.W.2d 166, 167–68 (Tex. 1953) (citing Humphreys-Mexia Co. v. Gammon, 254 S.W. 296 (Tex. 1923); Hoffman v. Magnolia Petroleum Co., 273 S.W. 828 (Tex. Com .App. 1925); Watkins v. Slaughter, 189 S.W. 2d 699 (Tex. 1945); Curry v. Tex. Co., 18 S.W.2d 256 (Tex. App.—Eastland 1929, writ dism'd)).

180. Altman v. Blake, 712 S.W. 2d 117, 118 (Tex. 1986); Perryman v. Spartan Tex. Six Cap. Partners, Ltd., 546 S.W.3d 110, 119 (Tex. 2018); Wenske v. Ealy, 521 S.W.3d 791, 794 (Tex. 2017); Luckel v. White, 819 S.W.2d 459, 461 (Tex. 1991).

181. Portions of this subsection were published originally in Sebree, *supra* note 149.

182. *See supra* note 180.

183. *Altman*, 712 S.W.2d at 118; *see also, e.g.*, Garrett v. Dils Co., 299 S.W.2d 904, 906 (Tex. 1957); *Luckel*, 819 S.W.2d at 461; JVA Operating Co. v. Kaiser-Francis Oil Co., 11 S.W.3d 504, 506 (Tex. App.—Eastland, 2000, pet. denied).

184. City of Stamford v. King, 144 S.W.2d 923, 927 (Tex. App.—Eastland 1940, writ ref'd).

In *Garrett v. Dils Company*, the Texas Supreme Court explained what has become known as the Four Corners Rule as follows:

> We have long since relaxed the strictness of the ancient rules for the construction of deeds, and have established the rule for the construction of deeds as for the construction of all contracts,—that the intention of the parties, when it can be ascertained from a consideration of all parts of the instrument, will be given effect when possible. That intention, when ascertained, prevails over arbitrary rules.[185]

More recently, in 2018, The Supreme Court of Texas re-emphasized this basic governing principle: "Deed construction requires us to traverse and reconcile well-settled principles of legal interpretation with principles of our oil-and-gas common law."[186] "We 'ascertain the intent of the parties from all of the language within the four corners of the deed.'"[187] And in 2020, the Court reiterated, "As with any deed or contract, our task is to determine and enforce the parties' intent as expressed within the four corners of the written agreement."[188]

B. A Conveyance of Oil and Gas Includes Oil and Gas Waste, Absent Specific Language to the Contrary such as an Express Reservation or Exception

As established, under Texas statutory law, regulatory law, and historical, contextual, and public understanding, produced water is a form of oil and gas waste.[189] More specifically, all three definitions of oil and gas waste under Texas law declare that oil and gas waste arises out of or is incidental to the drilling for or producing of oil or gas.[190] Accordingly, oil and gas waste is included as part of every oil and gas conveyance unless there is express language to the contrary.[191]

Therefore, because oil and gas waste arises out of or is incidental to the drilling for or producing of oil or gas, this conclusively establishes that oil and gas waste is a part of the oil and gas as originally conveyed absent language to the contrary. Thus, a conveyance of oil and gas includes the oil

185. *Garrett*, 299 S.W.2d at 906 (quoting Harris v. Windsor, 294 S.W.2d 798, 799, 800 (Tex. 1956)).
186. Perryman v. Spartan Tex. Six Cap. Partners, LTD., 546 S.W.3d 110, 118 (Tex. 2018).
187. *Id.* at 117–18 (citing Wenske v. Ealy, 521 S.W.3d 791, 794 (Tex. 2017)).
188. Piranha Partners v. Neuhoff, 596 S.W.3d 740, 743 (Tex. 2020).
189. *See* discussion *supra* Part III.
190. *See* statutes cited *supra* notes 102, 103, 104 (defining "oil and gas waste).
191. *See* discussion *supra* Part III.

and gas waste absent specific language to the contrary, such as an express reservation or exception.[192]

Accordingly, in the public history and context of surface and mineral severances prior to the recent advent of beneficial uses for produced water, it would be extraordinary—and literally unheard of—if parties intended for the oil and gas waste to be reserved to the surface estate or excepted from the oil and gas conveyance. In fact, the *Cactus Water v. COG* case is a case of first impression.[193] Other than this litigation, neither this author, nor the parties, nor the amici in the *Cactus* case can cite any Texas case specifically addressing the ownership of produced water relative to an oil and gas conveyance. If parties actually did intend for produced water to be reserved to the surface estate or to be excepted from the conveyance of oil, gas, and other minerals, then to memorialize this extraordinary intention, they could have—and are required under law to have—provided either a reservation or an exception in the instrument.[194]

When applying the Four Corners Rule, as mandated by the Texas Supreme Court, to a typical "oil, gas, and other minerals" conveyance or reservation, the most reasonable and logical conclusion to reach is that the parties intended for the oil and gas waste stream to be conveyed along with the oil, gas, and other minerals. It simply does not make sense that parties intended for the oil, gas, and other minerals to be conveyed to the mineral estate but that the oil and gas waste was to be reserved or excepted from the conveyance as a property interest and liability of the surface estate. It especially does not make sense that such would be the parties' intention without so stating. Although this is a reasonable and logical conclusion, courts must determine as a matter of law what the parties intended as expressed within the four corners of the instrument without relying on intuition, no matter how obvious the intuition is.[195] As we will see through the analysis provided in the next Section, the question is dispositively resolved, as a matter of law, through the application of the rules prescribed by the Texas Supreme Court: a conveyance of oil and gas includes oil and gas waste absent an express reservation or exception to the contrary.[196]

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192. Sharp v. Fowler, 252 S.W.2d 153 (Tex. 1952); Garrett v. Dils Co., 299 S.W.2d 904, 906 (Tex. 1957); Waters v. Ellis, 312 S.W.2d 231, 234 (1958); *Perryman*, 546 S.W.3d at 119; *Piranha Partners*, 596 S.W.3d at 746.

193. *See* Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733 (Tex. App.—El Paso 2023, pet. filed).

194. *See* discussion *infra* Section VI.C.

195. *Piranha Partners*, 596 S.W.3d at 743–44 (citing Luckel v. White, 819 S.W.2d 459, 461–62 (Tex. 1991)).

196. *See* discussion *infra* Section VI.C.

C. The Rules Governing Conveyances, Reservations, and Exceptions Establish that Produced Water Belongs to the Mineral Estate Absent Express Language to the Contrary

The definitions of reservations and exceptions were stated in *Bagby v. Bredthauer* as follows:

> Technically, a reservation is the creation, by and in behalf of the grantor, of a new right issuing out of the thing granted—something which did not exist as an independent right before the grant, a taking back of a part of the thing already granted. An exception operates to exclude from the grant some part of the thing granted which would otherwise pass to the grantee, with the whole of the thing granted. An exception does not itself pass title but rather prevents the particular excepted interest from passing with the grant. Title to the interest excepted remains in the grantor by virtue of his *original* title. In *Coyne v. Butler*, the grantor "excepted" the interest in question from his grant. The court held that no new interest was created since no words of reservation were used in the instrument.[197]

Additionally, in *Patrick v. Barrett*, the Texas Supreme Court stated:

> The keystone of this opinion is a clear understanding of the distinctions between an exception and a reservation. It is manifest that an exception does not pass title itself; instead it operates to prevent the excepted interest from passing at all. On the other hand, a reservation is made in favor of the grantor, wherein he reserves unto himself royalty interest, mineral rights and other rights.[198]

Admittedly, the distinction between a reservation and an exception can be confusing. Recently, in *Perryman*, the Texas Supreme Court did an excellent job explaining the difference: "Although an 'exception' can refer to any 'mere exclusion from the grant,' a 'reservation' must 'always be in favor of and for the benefit of the grantor.' We will not find 'reservations by implication.' 'A reservation of minerals to be effective must be by clear language.'"[199]

When analyzing whether a conveyance of oil and gas included oil and gas waste, such as produced water, the Texas Supreme Court provides the

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197. Bagby v. Bredthauer, 627 S.W.2d 190, 195 (Tex. App.—Austin 1981, no writ) (citations omitted).

198. Patrick v. Barrett, 734 S.W.2d 646, 647 (Tex. 1987).

199. Perryman v. Spartan Tex. Six Cap. Partners, Ltd., 546 S.W.3d 110, 119 (Tex. 2018) (internal citations omitted) (first quoting Pich v. Lankford, 302 S.W.2d 645, 650 (1957); and then quoting Sharp v. Fowler, 252 S.W.2d 153, 154 (1952)).

following well-established rules of construction and instructions for how to apply them.

1. The Greatest Estate Rule

Under the Greatest Estate Rule, a conveyance will be construed as passing the entire estate unless there are express words limiting the estate conveyed.[200] In one of the most frequently cited cases regarding reservations and exceptions, the Texas Supreme Court in *Sharp v. Fowler* reaffirmed this rule while approving of the lower courts' decisions, stating "[t]heir conclusions were based upon the broad ground that a deed passes whatever interest a grantor has in the land, in the absence of language showing an intention to grant a less estate. That is a sound elementary principle of conveyances."[201]

Putting a finer point on this rule, the Texas Supreme Court clarified that a deed will be construed to confer upon the grantee the greatest estate that the terms of the instrument will permit.[202] Therefore, under this well-established rule, a deed or lease which conveys oil and gas also conveys oil and gas waste (such as produced water) absent express language reserving or excepting the oil and gas waste.[203]

2. Reservations and Exceptions Are Not Effective by Implication

To be effective, a reservation or exception must be by clear language.[204] Any alleged reservation or exception, such as produced water or any other oil and gas waste, from the conveyance must be clearly stated in the written document.[205] The Court in *Sharp* stated, "A reservation of minerals to be effective must be by clear language. Courts do not favor reservations by implication."[206] More recently, in 2018, the Texas Supreme Court in *Perryman* reaffirmed this rule with even stronger language, stating, "We will not find 'reservations by implication.' 'A reservation of minerals to be effective must be by clear language.'"[207]

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200. Klein v. Humble Oil & Refin. Co., 67 S.W.2d 911, 914 (Tex. App.—Beaumont 1934, writ granted), *aff'd*, 86 S.W.2d 1077 (Tex. 1935).

201. *Sharp*, 252 S.W.2d at 154.

202. Garrett v. Dils Co., 299 S.W.2d 904, 906 (1957); Waters v. Ellis, 312 S.W.2d 231, 234 (1958).

203. *See supra* notes 200, 201, 202.

204. *Sharp*, 252 S.W.2d at 154 (citing Sellers v. Tex. Cent. Ry. Co., 17 S.W. 32 (Tex. 1891); State v. Black Bros., 297 S.W. 213 (Tex. 1927)); *Perryman*, 546 S.W.3d at 119.

205. *Sharp*, 252 S.W.2d at 154.

206. *Id.* (citing *Sellers*, 17 S.W. at 32; *Black Bros.*, 297 S.W. at 213).

207. *Perryman*, 546 S.W.3d at 119 (internal citations omitted) (quoting *Sharp*, 252 S.W.2d at 154).

3. Ambiguous Versus Unambiguous Language in a Conveyance; *Piranha Partners v. Neuhoff*

Even more recently, in 2020, the Texas Supreme Court had the opportunity to consider all of the controlling rules of construction (Four Corners Rule, reservations and exceptions not allowed by implication, clear language required for reservations and exceptions), and they provided careful instructions on how to apply them.[208] The analysis and instructions by the Texas Supreme Court in *Piranha* are directly applicable for how to determine if a conveyance of oil and gas includes oil and gas waste, such as produced water. Accordingly, we will review *Piranha* and the Court's instructions in detail and apply them to the question concerning produced water waste in an oil and gas conveyance.

In the *Piranha* case, the two parties had different interpretations concerning an assignment of overriding royalty interests and oil and gas leases through which a party called Neuhoff assigned its interests to a party called Piranha.[209] The Court began with the governing rule of law: "As with any deed or contract, our task is to determine and enforce the parties' intent as expressed within the four corners of the written agreement."[210]

The Court then reviewed the foregoing described rules of construction and cited cases (as well as other cases) and provided additional clarifying instructions on how to apply them to various factual circumstances,

> We must first determine whether the Assignment is ambiguous, considering its language as a whole in light of well-settled construction principles and the relevant surrounding circumstances. Whether the agreement is ambiguous is a question of law that we decide de novo.
>
> That the parties interpret an agreement differently does not make it ambiguous; ambiguity exists only if both parties' interpretations are reasonable.[211]

This Article asserts that it is reasonable to interpret a conveyance of oil and gas as including oil and gas waste. Furthermore, this article asserts that it is unreasonable to interpret a conveyance of oil and gas as excluding the oil and gas waste unless it is so stated. If the parties actually intended such a

208. *See* Piranha Partners v. Neuhoff, 596 S.W.3d 740, 743 (Tex. 2020).

209. *Id.* at 743.

210. *Id*. (citing *Perryman*, 546 S.W.3d at 117–18).

211. *Id*. at 743–44 (internal citations omitted) (citing URI, Inc v. Kleberg Cty., 543 S.W.3d 755, 763 (Tex. 2018); First Bank v Brumitt, 519 S.W.3d 95, 109 (Tex. 2017)).

result, then an express reservation or exception is required to be included in the instrument.[212]

> But [ambiguity] does not exist if the agreement's language creates a definite or certain legal meaning. If we conclude the agreement is ambiguous, we must remand for a jury to determine its meaning as a factual issue; but if it is unambiguous, we will determine its meaning as a matter of law. In doing so, we look not for the parties' actual intent but for their intent as expressed in the written document. We consider the entire agreement and, to the extent possible, resolve any conflicts by harmonizing the agreement's provisions, rather than by applying arbitrary or mechanical default rules.[213]

This means that if the Texas Supreme Court, in the *Cactus* case before it at the time of this writing, concludes that typical conveyances of oil and gas (whether by deed or lease) are not ambiguous—that they *do* include oil and gas waste—then disputes over produced water ownership can be resolved as a matter of law—the oil and gas waste belongs to the owner of the oil and gas.[214] However, if courts conclude that typical conveyances of oil and gas (whether by deed or lease) are, in fact, ambiguous—that we do *not* know as a matter of law whether they included oil and gas waste or not and that either interpretation is reasonable, then virtually every dispute arising in the future over the ownership of produced water or any other oil and gas waste must proceed to a trial on that factual issue.

Piranha asserted that the Texas Supreme Court must construe the assignment:

> (1) "to confer upon the grantee the greatest estate that the terms of the instrument will permit," (2) to reject any alleged exception, reservation, or limitation that is not expressly and clearly stated in the written document, and (3) to resolve any doubts against the party who drafted the document.[215]

In response, the Neuhoffs argued that "these construction rules do not apply because the Assignment is unambiguous" and the Court "can determine the parties' intent simply by harmonizing its language, as the court of appeals has done. *See, e.g.*, *Citizens Nat'l Bank*, 150 S.W.2d at 1006 ('Courts do not

212. *See* Sharp v. Fowler, 252 S.W.2d 153, 154 (1952) (citing Sellers v. Tex. Cent. Ry. Co., 17 S.W. 32 (Tex. 1891); State v. Black Bros., 297 S.W. 213 (Tex. 1927)); *Perryman*, 546 S.W.3d at 119.

213. *Piranha Partners*, 596 S.W.3d at 744 (internal footnotes and citations omitted).

214. Alternatively, although this Article considers it unlikely, if the court in the *Cactus* case concludes that conveyances of oil and gas are not ambiguous because they do *not* include oil and gas waste, then disputes over produced water ownership still can be resolved as a matter of law—the oil and gas waste belongs to the surface owner.

215. *Id.* at 746 (internal footnotes and citations omitted).

resort to arbitrary rules of construction where the intention of the parties is clearly expressed in unambiguous language').'"[216]

The Texas Supreme Court then explained many previous rulings and contrasted rigid, arbitrary, and mechanical rules of construction with well-settled contract-construction principles as follows:

> The Neuhoffs are correct that we have long rejected reliance on "arbitrary" rules when construing unambiguous contractual language. And more recently, particularly in our decisions addressing mineral-interest conveyances, we have "incrementally cast off rigid, mechanical rules" and "warned against quick resort to . . . default or arbitrary rules" in favor of determining intent by "conducting a careful and detailed examination of a deed in its entirety, rather than applying some default rule that appears nowhere in the deed's text." Relying on "default rules or other mechanical rules of construction to determine the deed's meaning is, therefore, both unnecessary and improper."
>
> On the other hand, we have also recognized, even quite recently, that we must rely on "well-settled contract-construction principles" to determine whether a contract is ambiguous and to interpret the contract if it is not.
>
> . . . .
>
> We have not yet endeavored to clearly distinguish between the "arbitrary," "mechanical," "default" rules we have "cast off" and the "well-settled contract-construction principles" on which we continue to rely when construing deeds and other contracts.[217]

The Court goes on to discuss the "arbitrary," "mechanical," and "default" rules that have been "cast off" and the "well-settled contract-construction principles" on which reliance is maintained when construing deeds and other contracts under various factual circumstances arising under the various rules.[218] None of the rules cited in this Section[219] as governing were mentioned by the Court under the categories of "arbitrary," "mechanical," and "default" rules that have been "cast off."[220] However, the specific factual question of whether an oil and gas conveyance

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216. *Id.*

217. *Id.* at 746–47 (internal citations omitted) (first quoting Wenske v. Ealy, 521 S.W.3d 791, 792, 796 (Tex. 2017); and then quoting URI, Inc., v. Kleberg Cnty., 543 S.W.3d 755, 763 (Tex. 2018)).

218. *Id.*

219. *E.g.*, the Greatest Estate Rule, reservations and exceptions not allowed by implication; they must be by clear language.

220. *Id.*

is ambiguous concerning whether or not oil and gas waste was included was not mentioned.

Accordingly, we are presented with a decision tree: what are the results under the unambiguous theory and under the ambiguous theory? Again, "ambiguity exists only if both parties' interpretations are reasonable."[221] However, upon examination, we find that applying both principles yields the same result under either the unambiguous or ambiguous rules of construction.

a. Unambiguous

A typical conveyance of oil and gas or oil, gas, and other minerals does not mention oil and gas waste. It is reasonable to interpret such a conveyance as including the oil and gas waste. This is consistent with historical, contextual, and public understanding and with Texas statutory, regulatory, and case law. It is unreasonable to interpret a conveyance of oil and gas as excluding the oil and gas waste. Such an interpretation would be contradictory to the public's historical and contextual understanding. Moreover, it directly contradicts Texas statutory, regulatory, and case law. The public, the Legislature, the Railroad Commission of Texas, and Texas courts all consider oil and gas waste to be owned by the mineral estate and to be a burden borne by the mineral estate's oil and gas operator.[222]

b. Ambiguous

Again, a typical conveyance of oil and gas or oil, gas, and other minerals does not mention oil and gas waste. For a court to conclude that such a conveyance is ambiguous, the court would need to conclude that both interpretations are reasonable: (1) that a conveyance of oil and gas *includes* the oil and gas waste and (2) that a conveyance of oil and gas *does not include* the oil and gas waste.

Therefore, to resolve the ambiguity to determine the intent of the parties as actually expressed in the four corners of the conveyance, a court would need to apply the "well-settled contract-construction principles"[223] as follows:

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221. *Id.* at 744; *see supra* note 213 and accompanying text.

222. Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 740 (Tex. App.—El Paso 2023, pet. filed). *See infra* cases discussed Part VIII.

223. *Piranha Partners*, 596 S.W.3d at 747 (quoting URI, Inc v. Kleberg Cty., 543 S.W.3d 755, 763 (Tex. 2018)); *see* Coker v. Coker, 650 S.W.2d 391, 394 (Tex. 1983) (applying "the rules of construction" to "ascertain the true intention of the parties").

> (1) The Greatest Estate Rule would "confer upon the grantee the greatest estate that the terms of the instrument will permit."[224] Accordingly, under this rule, the conclusion should be that the oil and gas waste was included in the conveyance of oil and gas.
>
> (2) Any "reservation" or "exception" must be "by clear language" and cannot be implied.[225] Therefore, under this rule, because there was no reservation nor exception of oil and gas waste, it should be ruled that the oil and gas waste was conveyed along with the oil and gas.

4. Partial Conveyance

Finally, the Court in *Piranha* included a discussion that drew a distinction between "language conveying an interest" versus language "reserving an interest or excepting it from a conveyance."[226]

There is a:

> "difference between a deed that conveys only a partial interest and a deed that conveys an entire interest but reserves a part of that interest." A grantor may withhold for itself a part of its estate *either* by granting the entire estate but reserving the portion it desires to retain *or* by granting only the portion it desires to convey.[227]

The Court notes that the language in question in the *Piranha* case "contains no language attempting to reserve or except anything from the interest granted, so rules governing the construction of exceptions or reservations could not apply."[228] The Court concludes that it "must determine the interest . . . granted, not the interest it excepted or reserved."[229]

Under a "partial conveyance" theory, a surface owner litigant could assert that a conveyance of oil and gas or oil, gas, and other minerals only conveyed the oil and gas and excluded the oil and gas waste because the

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224. Perryman v. Spartan Tex. Six Cap. Partners, Ltd., 546 S.W.3d 110, 119 (Tex. 2018); Klein v. Humble Oil & Refin. Co., 67 S.W.2d 911, 914 (Tex. App.—Beaumont 1934, writ granted), *aff'd*, 86 S.W.2d 1077 (Tex. 1935).; Sharp v. Fowler, 252 S.W.2d 153, 154 (Tex. 1952); Garrett v. Dils, 299 S.W.2d 904, 906 (Tex. 1957); Waters v. Ellis, 312 S.W.2d 231, 234 (Tex. 1958).

225. Sharp v. Fowler, 252 S.W.2d 153, 154 (Tex. 1952) (citing Sellers v. Tex. Cent. Ry. Co., 17 S.W. 32 (Tex. 1891); State v. Black Bros., 297 S.W. 213 (Tex. 1927)); *Perryman*, 546 S.W.3d at 119.

226. *Piranha Partners*, 596 S.W.3d at 748.

227. *Id.* (internal citations omitted) (first quoting Wenske v. Ealy, 521 S.W.3d 791, 806 (Tex. 2017) (Boyd, J., dissenting); and then citing Harris v. Currie, 176 S.W.2d 302, 304–05 (1943) ("explaining that a landowner may sever the mineral estate from the surface estate 'either by the conveyance of the minerals alone or by the conveyance of the land with a reservation of the minerals'")).

228. *Id.*

229. *Id.* at 748–49.

instrument only recited oil and gas and did not mention oil and gas waste. The argument would assert that such language is not ambiguous. Accordingly, the case would turn on that assertion: whether the conveyance is ambiguous or not—did the conveyance of oil and gas include oil and gas waste or not?[230] As stated, that parties may interpret an agreement differently does not make it ambiguous; ambiguity exists only if *both* parties' interpretations are reasonable.[231]

Accordingly, under this argument, courts would be forced to ask and answer: is it reasonable to interpret a conveyance of oil and gas as *including* the oil and gas waste, *and* is it also reasonable to interpret a conveyance of oil and gas as *excluding* the oil and gas waste?

It must be noted that until the *Cactus* case before the Supreme Court of Texas at the time of this writing (following the advent of produced water being treated and recycled for use in the oilfield as a replacement for fresh water), no such conveyances have ever been the subject of these two different interpretations. Despite the millions of surface and mineral estate severances in Texas, there are no cases reported in the entire history of Texas jurisprudence where, following severance, a surface owner claimed that produced water, or any other kind of oil and gas waste, was still a property interest belonging to the surface estate. The Texas Supreme Court observed over one hundred years ago that "it is not consistent with human experience for one really owning property of value to assert no claim thereto, but to acquiesce for a long period of time in an unfounded, hostile claim."[232]

Accordingly, under this argument, courts would need to ask themselves which of the following is reasonable and which is unreasonable:

> 1. When parties severed the mineral and surface estates conveying the oil and gas to one party, they intended to convey the oil and gas waste along with the oil and gas; or
>
> 2. When parties severed the mineral and surface estates conveying the oil and gas to one party, they intended that only the oil and gas was to be conveyed, but that the oil and gas waste was not to be conveyed because they intended—without so stating—that it was to remain unsevered and owned by the surface estate as a burden to be borne by the surface estate.

Under this partial conveyance argument, courts *are* required to use their intuition to determine which interpretation is reasonable and which is not.[233] Here, it is intuitively obvious that the first alternative is reasonable and the

230. *See* URI, Inc v. Kleberg Cty., 543 S.W.3d 755, 763, 765 (Tex. 2018).
231. *Id.*; *Piranha Partners*, 596 S.W.3d at 744.
232. Magee v. Paul, 221 S.W. 254, 256 (1920).
233. *Piranha Partners*, 596 S.W.3d at 744.

second alternative is unreasonable. That the parties intended to convey oil and gas but intended to retain the oil and gas waste as a liability of the surface estate without expressly stating is not only unreasonable, it is absurd.

If the historical, contextual, public understanding of produced water and other oil and gas wastes actually was that the oil and gas waste belonged to the surface estate following a severance of oil and gas, then Texas would have a totally different history. We would have over one hundred years of experience where oil and gas operators and surface owners would have negotiated and worked out such thorny problems as:

- Whether or not payment is required by the surface owner to the oil and gas operator for:
  - Construction of facilities to handle the produced water,
  - Separation of the produced water from the oil and gas,
  - Storage of the produced water,
  - Transportation of the produced water,
  - Disposal of the produced water.
- Whether or not to tender the produced water to the surface owner.
- Whether or not the surface owner will construct and operate all of the facilities and equipment necessary to handle, store, transport, and dispose of the produced water.
- Whether or not the surface owner will obtain all necessary permits in order to comply with applicable rules for the protection of human health and the environment. etc.

Finally, there is no doubt that we would have a totally different regulatory and statutory framework because, beginning over one hundred years ago, the Railroad Commission of Texas, as well as the Legislature, would have needed to recognize the public understanding that produced water and other oil and gas wastes are owned by the surface owners.

D. Conclusion

In conclusion, the *Uri* and *Piranha* cases (and the cases upon which they rely) guide us to the correct conclusion regarding interpretations of conveyances of oil and gas which do not mention produced water nor other oil and gas wastes. “We agree . . . that ‘objectively determinable facts and circumstances that contextualize the parties’ transaction’ may help clarify the

parties' intent as expressed in the text of their written agreement."[234] "[E]vidence of surrounding circumstances may 'aid the understanding of an unambiguous contract's language," "inform the meaning" of the language actually used, and "provide context that elucidates the meaning of the words employed.'"[235]

Because the public, the Railroad Commission of Texas, and the Texas Legislature have historically understood produced water and other oil and gas wastes as being conveyed along with the oil and gas as a burden to be borne by the mineral estate and its oil and gas operator, because Texas statutes and regulations have created a legal framework based on this understanding that oil and gas waste belongs to the mineral estate, because oil and gas operators are legally and financially responsible for produced water, and because groundwater is required to be protected from produced water, courts should contextualize these facts, circumstances, laws, and regulations "to inform the meaning" of oil and gas conveyances as including oil and gas waste such as produced water, absent clear language to the contrary such as an express reservation or exception.

VII. A CONVEYANCE, LEASE, OR RESERVATION OF OIL AND GAS INCLUDES ALL THE CONSTITUENT ELEMENTS AS THEY EXIST IN THEIR NATURAL FORM

This established rule of law can be traced back, at least, to the case of *Magnolia Petroleum Co. v. Connellee*.[236] It has been reaffirmed many times. This discussion will specifically reference the following cases that bear upon the question of whether produced water was conveyed with oil and gas in a typical oil, gas, and other minerals conveyance: *Humble Oil & Refin. Co. v. Poe*, 29 S.W.2d 1019 (Tex. Comm'n App. 1930, judgm't adopted); *Lone Star Gas Co. v. Stine*, 41 S.W.2d 48, 49 (Tex. Comm'n App.1931, judgm't adopted), and *Bowden v. Phillips Petroleum Co.*, 247 S.W.3rd 690, 706 (Tex. 2008).

Initially, we must consider the question, is produced water a "constituent element of oil and gas?" As discussed at length, oil, gas, and produced water (including all of the substances contained therein such as H_2S (hydrogen sulfide), natural gas liquids, natural gas in its various components, and high chloride water with high levels of dissolved solids, varying amounts of oil residues, sand or mud, naturally occurring radioactive materials, bacteria, and dissolved organic compounds)[237] exist in a mixture underground, blended by nature. "A constituent is a part of something that

234. *Id.* at 749 (quoting *URI*, 543 S.W.3d at 757–58).

235. *Id.* (quoting *URI*, 543 S.W.3d at 757–59).

236. Magnolia Petroleum Co. v. Connellee, 11 S.W.2d 158 (Tex. Comm'n App. 1928, judgm't adopted).

237. *See What is Produced Water?*, *supra* note 64.

makes up a whole."[238] Accordingly, because produced water and any non-hydrocarbon molecules are embedded/entrained with the hydrocarbons, they all are natural and constituent elements of the mixture that arises out of an oil and gas well.[239]

Quoting language from the *Lone Star Gas* case that the Court adopted in 1931, the Texas Supreme Court reiterated in 2008, "[w]e have explained that '[h]aving bought and paid for such gas [the lessee] owned the same, *including all of its constituent elements*, and therefore had the lawful right to make such use of it as it might deem proper.'"[240]

Bowden v. Phillips concerned natural gas and the liquids that arose together out of a gas well.[241] More specifically, *Bowden* was concerned with the calculation of gas royalty agreements and whether those agreements allowed the royalties to be calculated before or after post-production treatment and separation of the liquid hydrocarbons.[242] "If sales of natural gas liquids and LNG are included in the weighted average price, the price factor of the royalty formula will be higher as 'wet' gas is more valuable than dry residue natural gas. If they are not, the price factor will be lower."[243]

Interpreting gas royalty agreements (GRAs), the Texas Supreme Court explained, "just as the GRAs do not contemplate [the operator] separating liquid components from dry residue gas before calculating a royalty, they do not evidence the intent to give the royalty owners the benefit of the value added by further processing. To read the GRAs otherwise would *give the royalty owners the benefit of costs and risks* [*the operator*] *voluntarily undertook*."[244] Accordingly, the Texas Supreme Court in *Bowden* recognized that raw natural gas arising at the wellhead along with liquids (albeit hydrocarbon liquids but constituent elements nonetheless) requires post-production treatment and separation.[245]

Logically, this means that the Texas Supreme Court should also recognize that oil or gas arising from an oil or gas well, along with produced water waste, requires post-production treatment and separation. Accordingly, under the analyses provided by *Bowden*, *Lone Star Gas*, and *Poe*, to give the surface estate ownership of produced water following expensive exploration and production, as well as costly and highly regulated post-production

238. *Constituent*, LSDEFINE, https://www.lsd.law/define/constituent, (last visited Nov. 7, 2024); *see also Constituent*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/constituent (last visited Nov. 7, 2024) ("Constituent" . . ."1: Serving to form, compose, or make up a unit or whole").

239. *See* Lone Star Gas Co. v. Stine, 41 S.W.2d 48, 49 (Tex. Comm'n App.1931, judgm't adopted); Bowden v. Phillips Petroleum Co., 247 S.W.3rd 690, 706 (Tex. 2008).

240. *Bowden*, 247 S.W.3d at 706 (quoting *Lone Star Gas Co.*, 41 S.W.2d at 49) (emphasis added).

241. *Id.* at 694.

242. *Id.* at 703.

243. *Id*. at 704.

244. *Id.* at 706 (emphasis added).

245. *Id.* at 702.

surface handling and separation, would *give to surface owners* "*the benefit of costs and risks* [*the operator*] *voluntarily undertook.*"[246] Such a result would directly contravene the Texas Supreme Court's and the Texas Commission of Appeals' reasoning and holdings in *Bowden* and *Lone Star Gas*.

The Texas Supreme Court in *Bowden* explained: "This interpretation . . . comports with industry practice. . . . Unless otherwise specified in the mineral lease, . . . the lessee or producer will bear both the *cost and benefits* from processing and treatment of those minerals after the initial production."[247]

A conveyance, lease, or reservation of "oil, gas, and other minerals" includes all the hydrocarbons along with all the "constituent elements" in their natural form in the earth. This includes produced water.

VIII. THE ARGUMENT THAT THE MINERAL ESTATE HAS A USUFRUCT RIGHT TO PRODUCED WATER BUT NOT AN OWNERSHIP RIGHT SHOULD FAIL

A. The Usufruct Argument

The claim by numerous commentators, as well as Cactus Water Services, LLC in the case before the Texas Supreme Court at the time of this writing, that the mineral estate's operator has a usufruct right but not an ownership right to the produced water should fail.[248] This is the claim that the operator is allowed to bring produced water to the surface along with oil and gas and then is allowed to dispose of the produced water (after highly regulated and costly post-production surface separation processes). In addition to all of the reasons discussed above, this argument should fail because the usufruct right allows for the mineral estate's oil and gas operator to use such portion of the surface estate as is *reasonably necessary* for the production of the minerals.[249] It does *not* allow for the destruction of the surface estate,[250] unless that is the "only one manner of use of the surface whereby the minerals can be produced."[251] "[T]he right to use does not imply the right to damage negligently or unnecessarily."[252]

Making use of the surface owner's property as reasonably necessary is one thing. Destroying the surface owner's property is quite another, both factually and legally. This usufruct right to reasonable use does not include

246. *Id*. at 706 (emphasis added).

247. *Id.* (emphasis added).

248. *See* articles cited *supra* note 38; Brief for Petitioner, Cactus Water Servs., LLC v. COG Operating, LLC, No. 23-0676 (Aug. 30, 2024).

249. Brown v. Lundell, 344 S.W.2d 863, 865 (Tex. 1961); Acker v. Guinn, 464 S.W.2d 348, 352 (Tex. 1971); Getty Oil v. Jones, 470 S.W.2nd 618, 622 (Tex. 1971).

250. *Acker*, 464 S.W.2d at 352.

251. *Getty Oil*, 470 S.W.2d at 622.

252. *Lundell*, 344 S.W.2d at 867.

the right to destroy or to dispose of another's property. Disposal is one form of destruction. Merriam-Webster defines "disposal" as "the power or authority to make use of as one chooses; the power or authority to dispose of something."[253] Disposal and destruction are the ultimate expressions of ownership.[254] The Texas Supreme Court in *Acker v. Guinn* stated that the mineral estate "is entitled to make reasonable use of the surface for the production of his minerals. *It is not ordinarily contemplated, however, that the . . . surface . . . will be destroyed or substantially impaired.*"[255]

The Texas Supreme Court in *Getty* clarified that the right of the oil and gas operator to use such portion of the surface estate as is reasonably necessary *does not include destruction* unless it is the "only one manner of use of the surface whereby the minerals can be produced."[256] Obviously, disposal is not the only alternative available concerning produced water. Once the produced water is separated from the oil and gas at the surface, if it were not for environmental and regulatory law (which presumes that the mineral estate or the oil and gas operator owns the produced water), there is nothing in the business of the oil and gas production industry which requires that the produced water be disposed in order to effectuate the final purposes of the lease—the marketing of the oil and gas.

Instead of disposal, the produced water simply could be tendered to the surface owner as the surface owner's property. In fact, under the law, because an oil and gas operator may only use that portion of the surface owner's property that is reasonably necessary for the production of the minerals and may not destroy the surface owner's property unless that is the "only one manner of use of the surface whereby the minerals can be produced," it

253. *Disposal*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/disposal (last visited Nov. 7, 2024).

254. *See e.g.*, *Acker*, 464 S.W.2d at 352; *Getty Oil*, 470 S.W.2d at 622. *See also, e.g.*, Humble Oil Refin. Co. v. Williams, 420 S.W.2d 133 (Tex. 1967); Gen. Crude Oil Co. v. Aiken, 344 S.W.2d 668 (1961); Brown v. Lundell, 344 S.W.2d 863 (1961); Eva Pongrácz & Veikko J. Pohjola, *Re-defining Waste, the Concept of Ownership and the Role of Waste Management*, RESS. CONSERVATION & RECYCLING 40, 141, (2004) https://www.sciencedirect.com/science/article/abs/pii/S0921344903000570; *Notion of Property*, NEW ADVENT, https://www.newadvent.org/cathen/12462a.htm (last visited Nov. 7, 2024), (describing Property: "The proprietor or owner of a thing, in the current acceptation of the word, is the person who enjoys the full right to dispose of it in so far as is not forbidden by law. The thing or object of this right of disposal is called property, and the right of disposal itself, ownership. Taken in its strict sense, this definition applies to absolute ownership only. As long as the absolute owner does not exceed the limits set by law, he may dispose of his property in any manner whatsoever; he may use it, alienate it, lease it etc. . . . It may happen that several persons have different rights to the same thing, one subordinate to the other: one has the right to the substance, another to its use, a third to its *usufruct*, etc. Of all these persons he alone is called the proprietor who has the highest right, viz., the right to the substance; the others, whose rights are subordinate, are not called proprietors.") (emphasis added)).

255. *Acker*, 464 S.W.2d at 352 (emphasis added); s*ee also, e.g.*, *Getty Oil*, 470 S.W.2d at 618; *Williams*, 420 S.W.2d at 133; *Aiken*, 344 S.W.2d at 668; *Lundell*, 344 S.W.2d at 867.

256. *Getty Oil*, 470 S.W.2d at 622.

appears that operators would be required to tender the produced water to surface owners (if produced water is ruled as belonging to surface owners).[257]

However, this would create insurmountable challenges. In this author's opinion, the challenges that would be encountered could not be solved in any foreseeable period of time. For example, according to the Railroad Commission of Texas, in 2023, there were 553,467,340 barrels of produced water disposed in disposal wells.[258] That equates to 22,138,693,600 gallons. In addition to the 553,467,340 barrels of oil and gas waste fluid disposed of in *disposal* wells in 2023, there were copious amounts that were disposed of in *injection* wells where the waste was injected into geologic zones productive of oil and gas for the purpose of increasing the oil and gas production. According to Railroad Commission data, in 2023, an additional 1,137,514,713 barrels or 45,500,588,520 gallons was disposed of by injection.[259] That equates to a total of over 67 billion gallons in 2023 alone.

The entire oil and gas industry in Texas has developed the ability to handle these massive volumes of waste through steady and regulated progress over the last one hundred and twenty-plus years, slowly advancing over time under the legal framework that the mineral estate and/or the oil and gas operator owns the waste. Obviously, surface owners across Texas are not equipped to take possession of (let alone properly handle, transport, and dispose of or reclaim in accordance with required permits and regulations to protect human health and the environment) these enormous amounts of oil and gas waste.

Admittedly, this intractable problem that would be faced if produced water were to be ruled as owned by surface owners does not bear on the legal question of ownership. However, it does bear on the public policy considerations and it does illuminate the fact that the public has historically (at least until the *Cactus* case) considered produced water to be owned by the mineral estate and a burden to be borne by the oil and gas operator.

In conclusion, disposal of produced water in disposal or injection wells is equivalent to destruction. Accordingly, the waste in question, produced water, must be owned by the mineral estate or the oil and gas operator. Otherwise, the Legislature and the Railroad Commission would not have the authority to require or allow the mineral estate's oil and gas operator to confiscate, dispose, or reclaim the surface owner's property.[260] Therefore, if produced water actually does belong to the surface estate, then the long-existing laws and regulations requiring oil and gas operators to handle,

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257. *Id.*

258. *H10 Filing System*, RRC ONLINE SYSTEM, https://webapps.rrc.state.tx.us/H10/searchVolume.do?fromMain=yes (last visited Nov. 7, 2024).

259. *Id.*

260. U.S. CONST. amend. V; TEX. CONST. art. I, § 17; *see* Cockrell v. Tex. Gulf Sulphur Co., 299 S.W.2d 672, 675 (Tex. 1957) ("a deed can pass no greater estate than that owned by the grantor").

treat, transport, and dispose of produced water in accordance with strict environmental laws are and always have been unconstitutional.[261]

B. Usufruct Rights and Water-Use Prohibitions

Under the theory advanced by those who assert that produced water is groundwater, water-use prohibition clauses, which are common in many oil and gas leases, would render the entire oil and gas lease meaningless.

In 1972, the Texas Supreme Court ruled, under the dominant estate doctrine, that oil and gas operators could use fresh water for secondary recovery or water flooding operations without payment to the surface owner.[262] Following that case, it became common for oil and gas lessors to include language in oil and gas leases prohibiting the use of "water" and to reach separate agreements to be paid for the use of such "water."

Virtually every article and commentary that argues that produced water is groundwater also argues that the oil and gas operator only has a usufruct right to the produced water—the right to use the produced water as reasonably necessary for the production of the oil and gas, but not a right of ownership.[263]

If produced water is groundwater or "water," then water-use prohibition provisions would prohibit the production of oil and gas itself—the very purpose of the lease. This is because it is impossible to produce oil and gas without produced water if the produced water is present in the oil and gas bearing formation, which it almost always is. It is all one entrained mixture that arises out of an oil and gas well. The law does not allow such a result (where on part of an agreement renders the entire agreement meaningless).[264] Therefore, under an oil and gas lease that contains a water prohibition provision, produced water is not water.

Accordingly, it is evident that the public understands that produced water is not water. In the context of the public (landowners and oil and gas operators) who enter into oil and gas leases containing water-use

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261. U.S. CONST. amend. V; TEX. CONST. art. I, § 17. There is a possible limited exception *if* the disposal takes place on the same tract of land where the oil, gas, and produced water are produced. *See supra* note 77.

262. Sun Oil Co. v. Whitaker, 403 S.W.2d 808, 812 (Tex. 1972).

263. *See* articles cited *supra* note 38.

264. *See* Piranha Partners v. Neuhoff**,** 596 S.W.3d 740, 744 (Tex. 2020). "We consider the entire agreement and, to the extent possible, resolve any conflicts by harmonizing the agreement's provisions." *Id.* (citing Wenske v. Ealy, 521 S.W.3d 791, 792, 796 (Tex. 2017)). "To be enforceable, a contract must address all of its essential and material terms with 'a reasonable degree of certainty and definiteness.'" Fischer v. CTMI, L.L.C., 479 S.W.3d 231, 237 (Tex. 2016) (quoting Pace Corp. v. Jackson, 284 S.W.2d 340, 345 (Tex. 1955)); *see* J.M. Davidson, Inc. v. Webster, 128 S.W.3d 223, 229 (Tex. 2003) (contracts must be read holistically to harmonize and give effect to every word or phrase); Burlington Res. Oil & Gas Co. v. Tex. Crude Energy, LLC, 573 S.W.3d 198, 210–11 (Tex. 2019) (rejecting construction of contract that would produce "strange result" which parties could not have intended).

prohibitions, it is apparent that they understand and accept that produced water is not water. This is because water-use prohibitions would result in prohibiting the production of oil and gas.

IX. THE ARGUMENT THAT PRODUCED WATER BELONGS TO THE SURFACE ESTATE BECAUSE NEITHER WATER, AS A SUBSTANCE, NOR PRODUCED WATER WAS SPECIFICALLY SEVERED FROM THE SURFACE ESTATE UNDER A TYPICAL OIL AND GAS CONVEYANCE SHOULD FAIL

The three strongest arguments in favor of ruling that produced water belongs to the surface estate under a typical conveyance of oil and gas or oil, gas, and other minerals are:

> (1) The Retention Rule and Lack of a Specific Conveyance. Absent language to the contrary in a controlling document, when there is a severance of the surface and mineral estates, the surface owner retains ownership of all non-mineral property interests without limitation that were not specifically severed.[265]
>
> (2) Absent language to the contrary in a controlling document, fresh water, groundwater, salt water, and regular water belong to the surface estate as a matter of law.[266]
>
> (3) The reasoning of *Robinson v. Robbins* requires a determination that produced water belongs to the surface estate.[267]

This section will address all three arguments. We begin with the Retention Rule and lack of a specific conveyance.

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265. Gulf Prod. Co. v. Cont'l Oil Co., 132 S.W.2d 553, 561 (Tex. 1939); Emeny v. United States, 412 F.2d 1319, 1323 (Ct. Cl. 1969); Humble Oil & Refin. Co. v. West, 508 S.W.2d 812, 815 (Tex. 1974); Dunn–McCampbell Royalty Int., Inc. v. Nat'l Park Serv., 630 F.3d 431, 441 (5th Cir. 2011); Springer Ranch, Ltd. v. Jones, 421 S.W.3d 273, 283 (Tex. App.—San Antonio 2013, no pet.); Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 520 S.W.3d 39, 39 (Tex. 2017).

266. Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 832 (Tex. 2012); TEX. WATER CODE ANN. § 36.002; *see also* Moser v. U.S. Steel Corp., 676 S.W.2d 99, 102 (Tex. 1984); Robinson v. Robbins Petroleum Corp., 501 S.W.2d 865, 866–67 (Tex. 1973); Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 811 (Tex. 1972); Fleming Found. v. Texaco, Inc., 337 S.W.2d 846, 852 (Tex. App.—Amarillo 1960, writ ref'd n.r.e.).

267. *Robinson*, 501 S.W.2d at 866–67.

A. The Argument under The Retention Rule and Lack of a Specific Conveyance Should Fail[268]

1. Original Ownership of Real Property in Texas Includes Everything

Texas real property law begins at the starting point where the original owner of a parcel of property owns everything on the surface and beneath the surface.[269] It is well-established in Texas that a fee simple owner of land owns all property concerning that parcel of real property without limitation unless so stated.[270] Fee simple means "[a]n estate in land that is conveyed or devised . . . *unless the estate is limited* by express words or unless a lesser estate is conveyed or devised by construction or operation of law."[271] This concept is often referred by analogy as the "bundle of sticks" or "bundle of rights"—an owner of property owns all of the bundle of sticks or property rights until and unless one or more of those rights is specifically severed and conveyed to another.[272]

The original owners of parcels of land historically were called owners of the soil and are now commonly referred to as surface owners.[273] Landowners may divide their property or convey any portion or right in their property to anyone else as they see fit.[274] Importantly, the "surface estate" does not mean that it only refers to the surface, as is sometimes misunderstood. The surface estate refers to everything—to all property rights—except those that have been severed.[275] In the example where "oil, gas, and other minerals" have been severed from the original fee simple estate, the surface estate refers to all the bundle of property rights—everything—except the oil, gas, and other minerals and their accompanying rights.[276] Some would argue that this means that produced water was retained

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268. Portions of this Section were published originally in Sebree, *supra* note 149.

269. TEX. PROP. CODE § 5.001; *Gulf Prod.*, 132 S.W.2d at 561; *Emeny*, 412 F.2d at 1323; *Humble Oil*, 508 S.W.2d at 815; *Dunn–McCampbell*, 630 F.3d at 441; *Springer Ranch*, 421 S.W.3d at 283; *Lightning Oil*, 520 S.W.3d at 39.

270. TEX. PROP. CODE § 5.001.

271. *Id*. (emphasis added).

272. *See* Dolan v. City of Tigard, 512 U.S. 374, 384, 393 (1994); Kaiser Aetna v. United States, 444 U.S. 164, 176 (1979); United States v. Gen. Motors Corp., 323 U.S. 373, 377–78 (1945) ("property" denotes the group of rights "to possess, use and dispose of it"); Severance v. Patterson, 370 S.W.3d 705, 709, 741, 749 (Tex. 2012); *Lightning Oil*, 520 S.W.3d at 49.

273. *See* TEX. CONST. OF 1869, art. IX, § 9; TEX. CONST. OF 1876, art. XIV, § 7.

274. Coyote Lake Ranch, LLC v. City of Lubbock, 498 S.W.3d 53, 59 (Tex. 2016) ("'As a rule, parties have the right to contract as they see fit as long as their agreement does not violate the law or public policy.'") (quoting *In re* Prudential Ins. Co. of Am., 148 S.W.3d 124, 129 (Tex. 2004)); *see also* Sonny Arnold, Inc. v. Sentry Sav. Ass'n, 633 S.W.2d 811, 815 (Tex. 1982) (recognizing "the parties' right to contract with regard to their property as they see fit, so long as the contract does not offend public policy and is not illegal").

275. *See* discussion *supra* Section VII.B.

276. *See* discussion *supra* Section VII.B.

by the surface estate because it was not specifically mentioned in the conveyance. However, as established above, it must be remembered that a severance of oil and gas includes the oil and gas waste absent an express reservation or exception to the contrary.[277]

In a 1939 case, which has been upheld numerous times, the Texas Supreme Court held that the "surface, and *everything* in the land itself, except the minerals covered by the lease, was still in their possession and was their property, subject to a reasonable use, qualified only by the express provisions of the lease."[278] In another case, the Texas Supreme Court clarified, "[i]n the law of servitudes, the mineral estate is called 'dominant' and the surface estate 'servient,' not because the mineral estate is in some sense superior, but because it receives the benefit of the implied right of use of the surface estate."[279]

2. Retention Rule—Following a Severance of Oil, Gas, and Other Minerals, the Surface Owner Retains Ownership of all Property Interests Except the Mineral Interests

There is a long line of decisions under Texas oil, gas, and mineral case law that establishes the following rule of law: absent language to the contrary, in the event of a severance of the surface and mineral estates, the surface owner retains ownership of all property interests—everything—left in the land except the severed mineral interests and their accompanying rights.[280] This includes all non-mineral molecules,[281] all geologic structures,[282] including the earth surrounding the minerals,[283] and the empty space left in the earth once the minerals are extracted.[284] This also includes all resources other than the severed minerals.[285] Although this is a firmly established rule

277. *See supra* Part VI (discussing the Texas Supreme Court's methods of interpreting conveyances, reservations, and exceptions).

278. Gulf Prod. Co. v. Cont'l Oil Co., 132 S.W.2d 553, 561 (Tex. 1939) (emphasis added).

279. *Coyote Lake Ranch*, 498 S.W.3d at 60; *see also* Acker v. Guinn, 464 S.W.2d 348, 352 (Tex. 1971); Restatement (Third) of Prop.: Servitudes § 1.1(1) (Am. Law Inst. 1998) ("A servitude is a legal device that creates a right or an obligation that runs with land or an interest in land. (a) Running with land means that the right or obligation passes automatically to successive owners or occupiers of the land or the interest in land with which the right or obligation runs. (b) A right that runs with land is called a 'benefit' and the interest in land with which it runs may be called the 'benefited' or 'dominant' estate. (c) An obligation that runs with land is called a 'burden' and the interest in land with which it runs may be called the 'burdened' or 'servient' estate.").

280. *Gulf Prod.*, 132 S.W.2d at 561; Emeny v. United States, 412 F.2d 1319, 1323 (Ct. Cl. 1969); Humble Oil & Refin. Co. v. West, 508 S.W.2d 812, 815 (Tex. 1974); Dunn–McCampbell Royalty Int., Inc. v. Nat'l Park Serv., 630 F.3d 431, 441 (5th Cir. 2011); Springer Ranch, Ltd. v. Jones, 421 S.W.3d 273, 283 (Tex. App.—San Antonio 2013, no pet.); Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 520 S.W.3d 39, 39 (Tex. 2017).

281. *Lightning Oil*, 520 S.W.3d at 46, 48 (quoting *Dunn–McCampbell*, 630 F.3d at 441).

282. *Emeny*, 412 F.2d at 1323.

283. *Humble Oil*, 508 S.W.2d at 815; *Lightning Oil*, 520 S.W.3d at 47.

284. *Emeny*, 412 F.2d at 1323.

285. *Lightning Oil*, 520 S.W.3d at 46–48.

of law in Texas, this author is not aware that it has ever been ascribed any particular name (such as the "Four Corners Rule"). Accordingly, this author names this rule of law the "Retention Rule"[286] because the rule establishes that the surface owner retains ownership of all property interests without limitation that were not severed.[287]

As mentioned, the 1939 case *Gulf Production Co. v. Continental Oil Co.* featured a dispute between a surface owner lessor and the lessee of the oil, gas, and other minerals.[288] Ruling in favor of the surface owner, the Texas Supreme Court held that the "surface, and *everything* in the land itself, *except the minerals* covered by the lease, was still in [the surface owner's] possession and was their property, subject to a reasonable use, qualified only by the express provisions of the lease."[289] Accordingly, the Texas Supreme Court established the rule that when there is a severance of oil, gas, and mineral interests (in this case, an "oil, gas, and other minerals" lease) from a surface owner's fee simple estate, the surface owner retains ownership of everything except the specifically severed oil, gas, and other minerals and their accompanying interests.

This Retention Rule was carried forward by the United States Court of Claims in the leading case of *Emeny v. United States*.[290] In that case, the court was required to apply Texas law to a property rights dispute between the United States government, as the lessee of certain oil and gas leases, and the surface owners of the tract overlying the leases.[291] The United States contended that it had the right to store helium in a depleted natural gas reservoir, the same reservoir out of which the government had the rights to extract natural gas under the leases.[292] The surface owners asserted that they owned the empty space in the depleted natural gas reservoir.[293] Therefore, they argued, the United States had no right to such space and any use of such space amounted to an unconstitutional taking without just compensation.[294]

The court in *Emeny* agreed with the surface owners, stating:

> [t]he surface of the leased lands and *everything* in such lands, except the oil and gas deposits covered by the leases, were still the property of the

286. *See* Sebree, *supra* note 149, at 259.

287. Gulf Prod. Co. v. Cont'l Oil Co., 132 S.W.2d 553, 561–62 (Tex. 1939); *Emeny*, 412 F.2d at 1323; *Humble Oil*, 508 S.W.2d at 815; Dunn–McCampbell Royalty Int., Inc. v. Nat'l Park Serv., 630 F.3d 431, 441 (5th Cir. 2011); Springer Ranch, Ltd. v. Jones, 421 S.W.3d 273, 283 (Tex. App.—San Antonio 2013, no pet.); Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 480 S.W.3d, 628, 635 (Tex. App.—San Antonio 2015), *aff'd*, 520 S.W.3d 39 (Tex. 2017); *Lightning Oil*, 520 S.W.3d at 46–48.

288. *Gulf Prod.*, 132 S.W.2d at 533.

289. *Id.* at 561 (emphasis added).

290. *Emeny*, 412 F.2d at 1319.

291. *Id.* at 1322–23.

292. *Id.* at 1321.

293. *Id.* at 1320.

294. *Id.* at 1320–21.

> respective landowners. This included the geological structures beneath the surface, including any such structure that might be suitable for the underground storage of "foreign" or "extraneous" gas produced elsewhere.[295]

Citing with approval the decision in *Emeny*, the Texas Supreme Court reaffirmed this rule of law that the surface owner owns "not only the surface . . . but also the matrix of the underlying earth, i.e., the reservoir storage space" including "the geological structures beneath the surface."[296]

More recently, in the 2017 case *Lightning v. Anadarko*, the Texas Supreme Court cited with approval all of the foregoing decisions and expanded on them.[297] In *Lightning*, the Court stated, "the surface owner, and not the mineral owner, 'owns all non-mineral "molecules" of the land, i.e., the mass that undergirds the surface' estate."[298] The Court stressed, "there is a distinction between the earth *surrounding* hydrocarbons and earth *embedded* with hydrocarbons."[299] Continuing, the Texas Supreme Court quoted with approval a statement from the lower court that "ownership of the hydrocarbons does not give the mineral owner ownership of the earth surrounding those substances."[300] This distinction illustrates that while severed mineral interests may be owned by the mineral party, the surface owner owns everything else except that which has been severed. Finally, the Court concluded that it "agree[d] that the surface owner owns and controls the mass of earth undergirding the surface."[301]

Accordingly, the Texas Supreme Court and cases in other courts establish a Retention Rule: absent language to the contrary, when there is a severance of the surface and mineral estates in Texas, the surface owner retains ownership of *everything*—all property interests without limitation—except the severed minerals and their accompanying rights. In other words, everything in the original parcel of land from which an "oil, gas, and other minerals" conveyance is severed remains the property of the original parcel of land, i.e., the surface estate. This includes ownership of all non-mineral molecules of the land, ownership of the mass of the—earth undergirding the surface, and even ownership of empty space within the earth. Therefore, the argument would conclude that any conveyance of oil and gas that does not mention produced water or any other oil and gas waste did not include the

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295. *Id.* at 1323 (emphasis added) (citation omitted).

296. Humble Oil & Refin. Co. v. West, 508 S.W.2d 812, 815 (Tex. 1974).

297. Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 520 S.W.3d 39 (Tex. 2017).

298. *Id*. at 46 (quoting Dunn–McCampbell Royalty Int., Inc. v. Nat'l Park Serv., 630 F.3d 431, 441 (5th Cir. 2011)).

299. *Id.* at 47 (emphasis in original).

300. *Id*. at 48 (quoting Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 480 S.W.3d 628, 635 (Tex. App.—San Antonio 2015), *aff'd*, 520 S.W.3d 39 (Tex. 2017)).

301. *Id.* at 47.

produced water or any other oil and gas waste because oil and gas waste is not a mineral.[302]

3. How Do We Reconcile the Retention Rule and So-Called Lack of a Specific Conveyance? Under a Typical Conveyance of "Oil, Gas, and Other Minerals," Is It Correct That Produced Water Was Retained as an Ownership Interest by the Surface Estate Because It Was Not Named Under a Specific Conveyance in Favor of the Mineral Estate?

No. The reason is precisely because there *was* a specific conveyance. There was a specific conveyance of oil and gas. A conveyance of oil and gas includes oil and gas waste.[303] Oil and gas waste includes produced water.[304] Therefore, there was a specific conveyance of produced water.

a. A Conveyance of Oil and Gas Includes Oil and Gas Waste as a Matter of Law[305]

It is not because produced water contains minerals that it should be held as belonging to the mineral estate. As established, produced water is oil and gas waste.[306] Therefore, the well-established rules of construction as provided by the Texas Supreme Court and lower courts provide, as a matter of law, that produced water and other oil and gas waste was conveyed along with the oil and gas in a typical oil, gas, and other minerals conveyance absent an express reservation or exception to the contrary.[307]

b. The Analysis Provided by the Texas Supreme Court in Piranha *Regarding the "Interest Granted" Also Controls*[308]

In *Piranha*, the Court stated that "the Assignment contains no language attempting to reserve or except anything from the interest granted, so rules governing the construction of exceptions or reservations could not apply."[309] The Court concludes that it "must determine the interest . . . granted, not the interest it excepted or reserved."[310] Therefore, because a conveyance of oil and gas includes oil and gas waste absent a specific reservation or exception,

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302. *See id.*
303. *See* cases cited *supra* note 192 and discussion Part VI.
304. TEX. WATER CODE §§ 27.002(6), 91.1011(b); TEX. NAT. RES. CODE 122.001(2); *see* discussion *infra* Part VIII.
305. *See* cases cited *supra* note 192 and Part VI.
306. *See* statutes cited *supra* note 304.
307. *See* cases cited *supra* note 192 and discussion Part VI.
308. Piranha Partners v. Neuhoff**,** 596 S.W.3d 740, 748 (Tex. 2020).
309. *Id.* at 748.
310. *Id.* at 748–49.

there was a specific conveyance of oil and gas waste. The interest granted included oil and gas waste. Produced water is a type of oil and gas waste. Therefore, there *was* a specific conveyance of produced water because there was a conveyance of oil and gas.

c. A Conveyance, Lease, or Reservation of Oil and Gas Includes All the Constituent Elements as They Exist in Their Natural Form[311]

Under the constituent elements rule, produced water is included in a conveyance of oil and gas because the Texas Supreme Court has ruled that non-mineral substances that are entrained with hydrocarbons are constituent elements of the oil and gas which was conveyed, leased, or reserved.[312]

d. "There Is a Distinction Between the Earth Surrounding Hydrocarbons and Earth Embedded With Hydrocarbons."

First, the Texas Supreme Court directs us to distinguish between "earth *surrounding* hydrocarbons and earth *embedded* with hydrocarbons."[313] In the language of *Lightning*, oil, gas, and produced water are embedded with each other.[314] In other words, they are thoroughly mixed by nature and exist blended together deep underground. The produced water does not *surround* the oil and gas—they exist blended or embedded together. They are entrained with each other. When this mixture arises out of an oil and gas well, the non-mineral matrix of the earth that *surrounded* the mixture is still underground—and is still the property of the surface owner. Moreover, produced water does not exist above (or even below) oil and gas the way that a groundwater aquifer does. Oil, gas, and produced water exist embedded with one another in an entrained mixture in oil and gas-bearing geologic zones underground.

Second, the Texas Supreme Court in *Lightning* stated that "the surface owner, and not the mineral owner, 'owns all non-mineral "molecules" of the land, i.e., the mass that undergirds the surface' estate."[315] It is crucial to observe the entire quote and not just the "non-mineral" excerpt. Here again, produced water is not part of "the mass of earth undergirding the surface."[316] Produced water is mixed and embedded with the minerals. When this mixture

311. *See* discussion *supra* Part VII.

312. Bowden v. Phillips Petroleum Co., 247 S.W.3d 690, 706 (Tex. 2008); Lone Star Gas Co. v. Stine, 41 S.W.2d 48, 49 (Tex. Comm'n App. 1931, judgm't adopted); Humble Oil & Refin. Co. v. Poe, 29 S. W.2d 1019 (Tex. Comm'n App. 1930, judgm't adopted). *See* discussion *supra* Part VII.

313. Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 520 S.W.3d 39, 47 (Tex. 2017).

314. *Id.* at 50.

315. *Id.* at 46 (quoting Dunn–McCampbell Royalty Int., Inc. v. Nat'l Park Serv., 630 F.3d 431, 441 (5th Cir. 2011)).

316. *Id.* at 47.

arises out of an oil and gas well, "the mass . . . undergirding the surface" is still there.[317]

Third, the other major precedential case upon which *Lightning* relied was *Humble Oil & Refining Co. v. West*.[318] There, the Court "held that the surface overlying a leased mineral estate is the surface owner's property, and those ownership rights include the geological structures beneath the surface."[319] Here again, produced water and other oil and gas waste are not "geological structures beneath the surface."[320] Produced water and oil and gas are an entrained, mineralized solution existing underground that arises out of an oil and gas well.

The Texas Supreme Court in *Lightning* specifically distinguishes between "earth *surrounding* hydrocarbons and earth *embedded* with hydrocarbons."[321] The Supreme Court in *Cactus* may and should rely on *Lightning* and the other well-established rules of construction to conclude that a typical conveyance of "oil, gas, and other minerals" includes oil and gas waste. This will not overrule nor run afoul but, rather, will be in harmony with the well-established rule that a typical conveyance of oil, gas, and other minerals does not include any non-mineral molecules of the land. This is because a typical conveyance of oil, gas, and other minerals includes oil and gas waste, even though some of those molecules may be non-minerals.

4. Conclusion

Lightning v. Anadarko and the other precedential cases preceding it establish the Retention Rule. This rule establishes that *absent language to the contrary* under the document in question, all non-mineral substances and even empty spaces belong to the surface estate following a severance of the mineral and surface estates. However, a typical conveyance of oil and gas or "oil, gas, and other minerals" *does contain language to the contrary*. As established, the specific conveyance of oil and gas *includes* oil and gas waste as a matter of law.[322]

It is not because produced water contains minerals that it should be held as belonging to the surface estate. It is because produced water is a type of oil and gas waste that was included, as a matter of law, in the conveyance of oil and gas absent a specific reservation or exception to the contrary.

317. *Id.*
318. Humble Oil & Refin. Co. v. West, 508 S.W.2d 812 (Tex. 1974).
319. *Lightning Oil*, 520 S.W.3d at 46 (citing Humble Oil, 508 S.W.2d at 815).
320. *Id.*
321. *Id.*
322. *See* cases cited *supra* note 192 and Part VI.

B. The Argument that Produced Water Belongs to the Surface Estate Because Fresh Water, Groundwater, Salt Water, and Even Regular Water Belong to the Surface Estate as a Matter of Law Should Fail

Prior to *Moser v. U.S. Steel Corp.*, there was a long line of Texas Supreme Court decisions and lower court decisions where the courts held that certain substances belonged to the surface estate.[323] In the *Moser* decision, the Texas Supreme Court reaffirmed many of those previous decisions and announced that they belong to the surface estate as a matter of law.[324] Accordingly, when ascertaining whether a substance was included as part of an oil, gas, and other minerals conveyance, we look to see if the substance is on the list as belonging to the surface as a matter of law.

In *Moser*, the Texas Supreme Court established that the following substances belong to the surface estate as a matter of law:

1. Fresh water;
2. Building stone;
3. Limestone;
4. Caliche;
5. Surface Shale;
6. Sand;
7. Gravel; and
8. Near-surface lignite, iron, and coal.[325]

Reviewing the list, we see that produced water and oil and gas waste are not on the list. However, it is necessary to consider whether the Court's listing of "fresh water" could be interpreted to include produced water, even though ownership of produced water was not and has never been the subject of any Texas court decision prior to the *Cactus v. COG* case now pending before the Texas Supreme Court. As reviewed above, fresh water and produced water are two entirely different substances both legally, scientifically, and as a matter of the public's common understanding.[326] It would be fair to say that concludes the analysis. Nonetheless, because reasonable people, including Cactus Water Services, LLC and various amici in the *Cactus* case, may differ over the meaning of "fresh water," it is appropriate to engage in a more in-depth analysis to understand what the Texas Supreme Court meant by "fresh water."

Listing fresh water, the *Moser* court relied on one of its own previous decisions with the following statement: "*See, e.g., Sun Oil Co. v. Whitaker*, 483 S.W.2d 808 (Tex.1972) (fresh water not included in mineral estate

323. Moser v. U.S. Steel Corp., 676 S.W.2d 99 (Tex. 1984).
324. *Id.* at 104.
325. *Id.* at 101–02.
326. *See* discussion *supra* Part III.

reservation of 'oil, gas, and other minerals')."[327] Accordingly, when we review the *Sun Oil* case, we find that the key holding by the Supreme Court was as follows, "Water, unsevered expressly by conveyance or reservation, has been held to be a part of the surface estate."[328] Here, we see that the Court used the term, "water" whereas in the more recent *Moser* decision, the Court used the term "fresh water" to designate the substance that is part of the surface estate as a matter of law. In *Sun Oil*, the Texas Supreme Court relied on and specifically referenced the *Fleming* case.[329]

Accordingly, we turn to the case upon which the Supreme Court relied in *Sun Oil* when it used the term "water." That case was out of the Amarillo Court of Civil Appeals known as *Fleming v. Texaco, Inc*.[330] When we review the *Fleming* case and the authorities upon which it relied, we understand what the Texas Supreme Court meant by the terms "fresh water" and "water."[331] The *Fleming* Court and its authorities were making a distinction between the substance commonly understood in the vernacular of landowners, the commercial world, and the mining industry as water and not substances commonly understood as minerals.[332]

Specifically, the Fleming Court stated:

> We are of the opinion that in deciding whether or not in a particular case exceptional substances are minerals that the true test is what that word means in the vernacular of the mining and mineral industry, the commercial world and the land owners at the time of the grant, and whether the particular substance was so regarded as a mineral. The mineral rights are to be interpreted according to their ordinary and natural meaning where there is no manifestation of an intention expressed in the deed to use them in a scientific or technical sense.[333]

Following this adopted line of reasoning, the mining and mineral industry, the commercial world, and landowners do, in fact, consider produced water to be part of the mineral estate. Not necessarily because produced water is a mineralized solution containing hydrocarbons and numerous other minerals. Rather, it is because "the mining and mineral industry, the commercial world and the land owners," as well as the Texas Legislature and the Railroad Commission of Texas, consider produced water to be oil and gas waste belonging to the mineral estate or the oil and gas

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327. *Moser*, 676 S.W.2d at 102 (citing Sun Oil Co. v. Whitaker, 483 S.W.2d 808 (Tex.1972)).

328. *Sun Oil*, 483 S.W.2d at 811 (citing Fleming Found. v. Texaco, Inc., 337 S.W.2d 846 (Tex. App.—Amarillo 1960, writ ref'd n.r.e.).

329. *Id.*

330. *Fleming Found.*, 337 S.W.2d at 852.

331. *Id.*

332. *See id.*

333. *Id.* (citing Heinatz v. Allen, 217 S.W.2d 994 (Tex. 1949)).

operator.[334] "[T]he mining and mineral industry, the commercial world and the land owners" have historically considered produced water to be completely different and distinct from "water."[335] The oil and gas industry has accepted the legal responsibility as required by the Texas Legislature and the Railroad Commission of Texas to properly handle, treat, transport, and dispose of or reclaim produced water in compliance with strict laws, permits, regulations, and financial responsibility requirements.[336]

Finally, in relying on previous authorities, the *Fleming* court stated,

> In instructing the jury as to the surface of the land, Judge Dooley, in the case of the estates of *Genevra O'Brien v. United States*, 8 Oil & Gas Reporter, 845 stated: "What is referred to in said issue as the surface ownership and interest means not only the soil, but also any underground water supplies at all depths under the land, and, on the other hand, excludes the oil, gas and other minerals therein." This statement, if correct, and we believe it is, would dispose of both issues as to the surface estate and also that the term "other minerals" does not include water.[337]

The *Fleming* court explained, "The word 'surface' in mining controversies means that part of the earth or geologic section lying over the minerals in question unless the contract or conveyance otherwise defines it."[338]

Produced water is not "part of the earth or geologic section lying over the minerals in question," such as a fresh water aquifer or a saltwater aquifer.[339] As explained, produced water is part of the mineralized solution in the mineral-bearing formation itself, blended by nature with the oil and/or gas and other substances. Moreover, although explained above, it is worth restating the common meaning of "water" here:

> the liquid that descends from the clouds as rain, forms streams, lakes, and seas, and is a major constituent of all living matter and that when pure is an odorless, tasteless, very slightly compressible liquid oxide of hydrogen H_2O which appears bluish in thick layers, freezes at 0° C and boils at 100° C, has a maximum density at 4°C and a high specific heat, is feebly ionized to hydrogen and hydroxyl ions, and is a poor conductor of electricity and a good solvent.[340]

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334. *Id.*
335. *Id.*; *see* discussion *supra* Part III.
336. *See* discussion *supra* Part III.
337. *Fleming Found.*, 337 S.W.2d at 850.
338. *Id.* (quoting Marquette Cement Mining Co. v. Oglesby Coal Co., D.C., 253 F. 107, 111 (N.D. Ill. 1918).
339. *Id.*
340. *Water*, *supra* note 110.

Again, produced water does not descend from the clouds as rain, does not form streams, lakes, and seas, and certainly is not a major constituent of all living matter. Additionally, produced water is not odorless or tasteless. It is black, dark, or opaque and has a noxious odor.

Finally, as recognized by the legislative definitions of oil and gas waste, produced water is an unwelcome byproduct that is incidental to oil and gas production.[341] By contrast, people who drill water wells, including brackish water wells, intentionally target and produce fresh or brackish water. It is unheard of to intentionally drill wells targeting produced water or any other kind of oil and gas waste. They target the oil and gas, not the waste (although they are combined). In fact, it is common to drill "water" wells, which produce groundwater that is then used for agricultural irrigation and other beneficial uses. By contrast, it is illegal to discharge untreated produced water for irrigation or any other purpose.[342]

Accordingly, produced water is not "water" as used in *Fleming* and is not "water" as used by the Texas Supreme Court in *Sun Oil*. Finally, and conclusively, produced water is not "fresh water" as used in *Moser*, which relies on *Sun Oil*, which relies on *Fleming* for the rule of law in Texas that "fresh water" belongs to the surface estate as a matter of law. When stating that "water" and "fresh water" belong to the surface estate, those decisions were not referring to what is colloquially called "produced water," otherwise known as oil and gas waste.

Produced water has never been ruled to belong to the surface estate as a matter of law. There exists no such precedent. *Fresh water and salt water* have, but *produced water* has not.

C. The Argument that Robinson v. Robbins *Requires the Texas Supreme Court to Rule that Produced Water Belongs to the Surface Estate Should Fail. Salt Water, Produced Water, and the* Robinson *Case*

Robinson does not require holding that produced water belongs to the surface estate because of the reasons explained immediately above and for the additional reasons explained below.

Interestingly, the *Moser* Court did not include salt water in the list of substances that it held belonged to the surface estate as a matter of law.[343] Prior to *Moser*, the Texas Supreme Court in *Robinson v. Robbins* held that salt water is owned by the surface estate.[344] Even though the *Moser* case did not list salt water, because the earlier case of *Robinson* held that salt water

341. TEX. WATER CODE §§ 27.002(6), 91.1011(b); TEX. NAT. RES. CODE 122.001(2); *see* discussion *supra* Part VIII.

342. 16 TEX. ADMIN. CODE §§ 3.8(b), (d)(1) (2019) (Tex. Railroad Comm'n, Water Protection).

343. *See* Moser v. U.S. Steel Corp., 676 S.W.2d 99, 101–02 (Tex. 1984).

344. Robinson v. Robbins Petroleum Corp., 501 S.W.2d 865, 867 (Tex. 1973).

belongs to the surface estate and because this holding has never been overruled, then it follows that salt water still belongs to the surface owner as a matter of law.

The *Robinson* case held that salt water is not a mineral even though it might contain a mineral in solution.[345] Accordingly, by analogy, some commentators rely on *Robinson* to argue that even though produced water contains large amounts of hydrocarbons and other minerals in solution, it likewise is not a mineral and, therefore, belongs to the surface owner. This Article respectfully disagrees with this analogy, not necessarily because produced water contains minerals but for reasons discussed in Section IX.B *supra* and for the reasons to be discussed below.[346] Additionally, because the salt water well in question in *Robinson* was converted from a failed oil well, some commentators even go so far as to cite *Robinson* as holding that produced water belongs to the surface estate.[347] Respectfully, that is incorrect.

The *Robinson* case was a salt water ownership case, not a produced water ownership case.[348] Actually, *Robinson* was a reasonable/unreasonable use-of-the-surface-estate case specifically addressing whether the "lease or the reservation contained in Robinson's deed authorized the mineral owner to increase the burden on the surface estate for the benefit of additional lands" (it did not).[349] However, in order to arrive at the question concerning the reasonableness of the lessee's use of the surface estate, the Court first had to dispose of a question concerning whether the salt water at issue belonged to the mineral owners or the surface owner.[350]

The *Robinson* case addressed the ownership of water from a saltwater well, *not* the ownership of produced water from an oil or gas well.[351] This is a crucial distinction. The question whether produced water is or is not groundwater was not before the Court, and the Court did not address it. The question whether oil and gas waste is or is not groundwater was not before the Court, and the Court did not address it. Finally, the question whether produced water is or is not regular water was not before the Court, and the Court did not address it. The *Robinson* case was about whether salt water from a saltwater well belonged to the mineral estate or to the surface estate.[352] *Robinson* was *not* a produced water ownership case.

345. *Id.*
346. *See supra* Section IX.B.
347. *See* articles cited *supra* note 38.
348. *Robinson*, 501 S.W.2d at 865.
349. *Id.* at 868.
350. *Id.* at 866.
351. *Id.*
352. *Id.*

The facts in the *Robinson* case concerned a non-producing oil well that was converted into a saltwater-producing well.[353] The well was originally drilled with the intention of finding and producing oil, but it was unsuccessful.[354] It was then converted into a saltwater-producing well.[355] The record does not reveal whether the well in question was re-completed for the production of salt water in a saltwater aquifer above the zone where the operator had hoped to find oil or whether it produced salt water from the zone where the operator had hoped to find oil. In any event, this case never addressed salt water nor produced water that came from an oil-producing zone because the well in question never produced oil. *Robinson* did not address produced water, which is an unwanted waste stream of oil or gas production. Instead, it specifically addressed the ownership of salt water.[356]

In *Robinson*, the surface owner brought an "action against the unit operator and mineral interest owners to collect damages for the salt water which has been taken to repressure the oil bearing formation."[357] The unit operator and the mineral owners argued that salt water is a mineral belonging to the mineral estate. The surface owner claimed that it belonged to the surface estate.[358] The Texas Supreme Court ruled that absent specific language to the contrary, salt water belongs to the surface estate, relying on its decision in *Sun Oil*.[359] Specifically, the Court held, "It has been decided that water is part of the surface estate according to the ordinary and normal use of the words conveying or reserving minerals."[360] It is correct that the Court in *Robinson* expressed a broader view of the word "water" so that it encompasses salt water. Nonetheless, as discussed, the legal definitions of produced water and groundwater are separate, distinct, and irreconcilable. Conclusively, "produced water" is a separate and distinct substance from regular "water" in "the ordinary and normal use of the words conveying or reserving minerals."[361]

353. *Id.* at 866 ("Robbins Petroleum Corporation is the operator and is using a former oil well located on the Robinson 80 acres to produce salt water to be injected and drive the three waterflood units").

354. *Id.* The lower court decision provided greater clarification: "There were apparently three wells drilled on the 80-acre tract of the Wagoner lease involved here, two of which became producing oil wells, and the third well was not made to produce. When Robbins, as operator, began waterflood operations the non-producing well on the 80-acre tract was converted into a salt water producing well." Robinson v. Robbins Petroleum Corp., 487 S.W.2d 794, 796 (Tex. App.—Tyler 1972), *aff'd*, 501 S.W.2d 865 (Tex. 1973).

355. *Robinson*, 487 S.W.2d at 796.

356. *Robinson*, 501 S.W.2d at 867.

357. *Id.* at 866.

358. *Id.*

359. *Id.* at 867 (citing Sun Oil Co. v. Whitaker, 483 S.W.2d 808 (Tex.1972)).

360. *Id.* (citing *Sun Oil*, 483 S.W.2d at 808).

361. *Id.*

It is correct that the *Robinson* Court ruled that the salt water from the converted oil well was owned by the surface estate.[362] However, it is *not* correct that the Court ruled that oil and gas waste or that produced water is groundwater or even regular water that is owned by the surface estate. At the time of *Robinson* and until the court of appeals ruling in *Cactus*, that specific question had never been ruled on by any court in Texas, and no Texas court decision has ever held that oil and gas waste or produced water is groundwater or even regular water. As will be discussed in Part X, *infra*, the court of appeals in *Cactus* specifically ruled that produced water is oil and gas waste and is not groundwater.[363] Moreover, the *Robinson* case has been cited by numerous other court decisions as precedential authority, but it has *never* been cited by any court for the proposition that produced water or oil and gas waste is groundwater and belongs to the surface estate.

Despite the foregoing, *Robinson v. Robbins* is still one of the strongest cases for those who assert that produced water should be held to belong to the surface estate, absent specific language to the contrary.[364] Accordingly, it is necessary to address the critical language from the decision head-on. The Texas Supreme Court stated the following:

> It has been decided that water is part of the surface estate according to the ordinary and normal use of the words conveying or reserving minerals. It has been said, and is argued here, that a different result should be reached as between fresh water and salt water. We are not attracted to a rule that would classify water according to a mineral contained in solution. Water is never absolutely pure unless it is treated in a laboratory. It is the water with which these parties are concerned and not the dissolved salt. If a mineral in solution or suspension were of such value or character as to justify production of the water for the extraction and use of the mineral content, we would have a different case. The substance extracted might well be the property of the mineral owner, and he might be entitled to use the water for purposes of production of the mineral. In either case the water itself is an incident of surface ownership in the absence of specific conveyancing language to the contrary. And in our case the saline content has no consequence upon ownership.[365]

Numerous commentators, including Cactus Water Services LLC, cite the above dicta from *Robinson* for the proposition that the Texas Supreme Court determined that water entrained in oil and gas formations belongs to

362. *Id.*

363. Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 741 (Tex. App.—El Paso 2023, pet. filed).

364. *Robinson*, 501 S.W.2d at 866. In addition to *Lightning v. Anadarko* and the cases upon which it relies. Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 520 S.W.3d 39 (Tex. 2017).

365. *Robinson*, 501 S.W.2d at 867 (citations omitted).

surface owners.[366] That is not correct. *Robinson* addressed whether the same rule or a different rule should apply to fresh water and salt water. It had nothing to do with produced water. Produced water is not water "according to the ordinary and normal use of the words conveying or reserving minerals."[367] Produced water is an unavoidable oil and gas waste. Produced water is understood by the mining industry and the public to be waste, the burden of which is legally placed on the mineral estate's oil and gas operator.[368] Produced water is legally declared in Texas statutes to be "oil and gas waste" and "fluid oil and gas waste."[369] Texas statutes and RRC regulations require that groundwater, including underground salt water be protected from untreated produced water, which could cause pollution of groundwater if allowed to come into contact with untreated produced water.[370]

Even though produced water is fundamentally different from both groundwater and salt water, it may be difficult for some to reconcile the *Robinson* Court's *dicta* with the idea that produced water belongs to the oil, gas, and mineral estate. Specifically, the *Robinson* Court stated that it disfavors "a rule that would classify water according to a mineral in solution."[371] However, as the Texas Supreme Court referenced, in "the ordinary and normal use of the words conveying or reserving minerals," produced water is oil and gas waste that is conveyed with the oil and gas.[372] It is not because produced water contains hydrocarbons and many other minerals in solution that it should be held as belonging to the oil, gas, and mineral estate. Rather, it is the intention of the parties as expressed in a conveyance that determines whether a substance was or was not conveyed.[373] We do not need to conclude whether produced water waste is or is not a mineral. Rather, we need to conclude whether the parties to a typical "oil, gas, and other minerals" conveyance intended for the produced water waste to be conveyed along with the oil and gas. As discussed above, oil and gas waste *is* conveyed along with oil and gas as a matter of law, absent express language to the contrary.

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366. *See* articles cited *supra* note 38.

367. *Robinson*, 501 S.W.2d at 867.

368. *See* discussion *supra* Part III.

369. TEX. WATER CODE § 27.002(6); TEX. NAT. RES. CODE § 91.1011; TEX. NAT. RES. CODE § 122.001(2).

370. TEX. NAT. RES. CODE § 91.101(a)(4); 16 TEX. ADMIN. CODE § 3.8(b), (d)(1) (2024) (Tex. Railroad Comm'n, Water Protection); *see supra* Subsections III.B.2, III.B.3.

371. *Robinson*, 501 S.W.2d at 867.

372. *Id.*

373. Benge v. Scharbauer, 259 S.W.2d 166, 168 (Tex. 1953); Altman v. Blake, 712 S.W.2d 117, 118 (Tex. 1986); City of Stamford v. King, 144 S.W.2d 923 (Tex. App.—Eastland 1940, writ ref'd); *see* discussion *supra* Part V.

To that point, when construing a typical conveyance of oil and gas (whether by deed or lease), when considering all of the rules of construction as articulated in all of the applicable precedents, including the recent case of *Piranha*, and when faced with all of the evidence discussed above regarding produced water being defined as oilfield waste, the different characteristics among water, salt water, and produced water, and the public policy to encourage the recycling of produced water, we believe that today's Supreme Court might very well revisit the *Robinson* dicta and clarify that it does not apply to the question of produced water ownership because:

> (1) the Robinson dicta referred to water and salt water but it did not refer to produced water,
>
> (2) produced water is a separate and distinct substance from both water and salt water,
>
> (3) produced water legally is considered to be a source of pollution if allowed to contaminate "water" (both surface and groundwater including fresh and salt water), and
>
> (4) produced water is a type of oil and gas waste that is included in a conveyance of oil and gas absent an express reservation or exception to the contrary.

Produced water has never been ruled to belong to the surface estate as a matter of law. There exists no such precedent. Fresh water and salt water have but produced water has not.

X. *CACTUS WATER SERVICES, LLC V. COG OPERATING, LLC*

A. District Court

COG Operating LLC (COG) is the oil and gas operator under four leases executed between 2005 and 2014 covering 37,000 acres in Reeves County, Texas.[374] One of the leases contains an express water-use prohibition.[375] This prohibits the use of any "water from any source . . . for any purpose," specifically stating, "[n]o water from any source from said land shall be used for any purpose without written consent of Lessor."[376] The other three leases do not contain water-use prohibitions. COG also entered into one or more

374. Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733, 735 (Tex. App.—El Paso 2023, pet. filed).

375. *Id.* at 737.

376. *Id.*

surface-use agreements and right-of-way agreements, allowing COG the right to handle and transport produced water.[377]

Subsequent to the execution of the mineral leases, in 2019 and 2020, Cactus Water Services, LLC (Cactus) entered into a "produced water lease agreement with the surface owners," one of whom was also a partial mineral owner.[378] Under the produced water lease agreements, Cactus has "the right to sell all water 'produced from oil and gas wells and formations on or under the [covered properties].'"[379] Cactus asserted that it owns the produced water from COG's wells and the right to prevent COG from disposing of that waste.[380]

COG sued Cactus, seeking a declaratory judgment that it has the sole right to the produced water by virtue of its mineral leases, surface-use agreements, and common law.[381] Cactus countersued, asserting its right to the produced water because it is groundwater; alternatively, because it is composed of non-mineral molecules that are part of the surface estate.[382]

There are four oil and gas leases at issue. The pertinent parts of each granting clause provide as follows:

> Leases 1 & 2:
> Lessor[s] . . . have GRANTED, DEMISED, LEASED and LET, and by these presents do GRANT, DEMISE, LEASE and LET exclusively unto the said Lessee . . . for the sole and only purpose of investigating, exploring, prospecting, drilling, *mining and operating for oil and gas and other hydrocarbons, and . . . to produce, save, take care of, store and treat products produced hereunder*, and then transport those products from the land.
>
> Lease 3:
> Lessor . . . hereby exclusively grants, leases and lets unto Lessee for the purpose of investigating, exploring, prospecting, drilling and *producing oil and gas*, from the [land covered by the lease] . . . . *No water from any source . . . shall be used for any purpose* without written consent of Lessor.
>
> Lease 4:

377. *Id.* at 736.
378. *Id.* at 734, 736–37.
379. *Id.* at 736.
380. *Id.* at 737; Brief for Appellant at 13, Cactus Water Servs., LLC v. COG Operating, LLC, 676 S.W.3d 733 (No. 08-22-00037-CV), 2022 WL 2318570, at *13.
381. *Cactus*, 676 S.W.3d at 737–38.
382. *Id.*

> Lessor . . . hereby grants, leases and lets exclusively unto lessee for the purpose of investigating, exploring, prospecting, drilling and mining for and *producing oil, gas*, and other such minerals *and substances as may be produced incident to the production of oil and/or gas*, the grant effected hereby to include the right to . . . produce, save, take care of, treat, process store, transport and market said lease substances.[383]
>
> Take Note:
>
> - Leases 1 and 2 refer to "products" produced.
> - Lease 4 refer to "substances" produced.
> - Lease 3 includes no such reference but only references "producing oil and gas." Moreover and as a crucial matter, Lease 3 includes a *specific prohibition against the operator using any "water from any source . . . for any purpose*."[384] This is a water-use prohibition.

The district court held the following:

> COG *owns* . . . the oil, gas, and *other products* contained in . . . commercial . . . bearing formations that are produced from the COG wells on the four leases [including Lease 3, which was more traditional and did not mention "products" or "substances"]; and
>
> Cactus has no rights in or to the product stream from COG's wells so long as the mineral leases remain in effect [including Lease 3, which prohibited the use of "water"].[385]

Certain commentators argue that the district court case was decided specifically because of the particular granting clauses at issue and that the ruling does not apply to more traditional "oil, gas, and minerals" language.[386] Under their reasoning, they opine that the district court's ruling does not apply to the question of produced water ownership.[387] This Article respectfully disagrees for the following reasons.

It is accurate that the district court did not *specifically* rule on the question whether produced water is or is not groundwater. However, the court implicitly *did* determine that produced water is not groundwater. This is because the entire argument of Cactus hinged on the court agreeing with

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383. *Id.* at 735, 737 (emphasis added); Brief for Petitioner at 30, Cactus Water Servs., LLC v. COG Operating, LLC, No. 23-0676 (Aug. 30, 2024) (emphasis added).

384. *Cactus*, 676 S.W.3d at 737 (emphasis added).

385. *Id.* (emphasis added).

386. *See* articles cited *supra* note 38.

387. *Id.*

Cactus that produced water is groundwater or a non-mineral substance belonging to the surface estate as governed by the Retention Rule (*Lightning* and its predecessor cases).[388] Most importantly, the district court must have concluded that produced water is not water, let alone groundwater. This is because Lease 3 contains an express water-use prohibition against COG using any "water from any source . . . for any purpose."[389] Therefore, the district court must have concluded that produced water is not water. Otherwise, it would be impossible for the court to have ruled in favor of COG under Lease 3. The district court could not have reached the judgment it reached regarding all four leases if it did not implicitly conclude that produced water is not groundwater nor even regular water.

Cactus appealed.

B. Court of Appeals

The court of appeals closely followed the reasoning originally explained in the predecessor article, *Texas Law of Produced Water Ownership*, published in 2020.[390] The court of appeals explained, "[t]he parties' disagreement as to whether produced water is part of the mineral estate essentially depends on whether 'produced water' is, as a matter of law, water or if it is waste."[391] The court ruled that it is waste.[392] Specifically, "[t]he relevant legal definitions of oil and gas waste include produced water. And because the Legislature defines produced water as oil and gas waste, it cannot also be groundwater."[393]

The court began with the Four Corners Rule. "'When interpreting a written contract, the prime directive is to ascertain the parties' intent as expressed in the instrument.'"[394] Because produced water was not specifically mentioned in the subject leases, the court explained that it is helpful to seek meaning from the context in which the agreement was reached.[395] "While our 'focus is on the words the parties chose to memorialize their agreement,' we recognize 'language is nuanced, and meaning is often context driven.'"[396] In other words, the court looked to the historical understanding of the parties (and the public) to determine whether

388. *Cactus*, 676 S.W.3d at 738.
389. *Id.* at 737.
390. Sebree & Cusimano, *supra* note 37.
391. *Id.* at 738.
392. *Id.* at 739.
393. *Id.*
394. *Id.* at 738 (citing URI, Inc. v. Kleberg Cnty., 543 S.W.3d 755, 757 (Tex. 2018)).
395. *Id.*
396. *Id.* (citing *URI, Inc.*, 543 S.W.3d at 757).

or not they considered produced water to be oil and gas waste that was conveyed along with the oil and gas.[397] The court explained,

> That includes "the commercial or other setting in which the contract was negotiated and other *objectively* determinable factors that give a context to the transaction," as "[s]etting can be critical to understanding contract language[.]" *Id.* at 768 (citations omitted). Though surrounding facts and circumstances "cannot be used to augment, alter, or contradict the terms of an unambiguous contract," they can "inform the meaning of language." *Id.* at 758. "Understanding the context in which an agreement was made is essential in determining the parties' intent *as expressed in the agreement*, but it is the parties' expressed intent that the court must determine." *Anglo-Dutch Petroleum Int'l, Inc. v. Greenberg Peden, P.C.* , 352 S.W.3d 445, 451 (Tex. 2011).[398]

The court noted that the position of Cactus depended on what this Article names the Retention Rule and the lack of a specific conveyance of "water." Specifically, the court stated, "Its argument hinges on the chemical composition of water: Because water is not a hydrocarbon, Cactus argues that water was not conveyed as part of the mineral estate."[399] However, the court's analysis and holding makes clear that it concluded that this rule did not apply to the question of produced water ownership for the reasons explained in the 2020 original article as well as this Article. For example, the court went through a lengthy comparative analysis of the relevant statutory terms: groundwater, fresh water, oil and gas waste, and fluid oil and gas waste.[400] It also discussed the legal framework that requires the safe handling, transportation, disposal, and/or reclamation of produced water in accordance with permits and specific regulations for the protection of human health and the environment.[401] Moreover, the court noted the laws and regulations that require that groundwater and surface water be protected from contamination that could be caused by contact with produced water.[402] The court stated, "the term 'produced water' is essentially a misnomer, as it bears little resemblance to water given the 'numerous constituents' it contains other than water. Instead, produced water is more accurately classified as a waste byproduct of oil and gas production."[403]

The following excerpts from the court's decision demonstrate the key factors relied on by the court of appeals, also discussed in this Article and the earlier article from 2020:

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397. *See id.*
398. *Id.* at 738.
399. *Id.*
400. *Id.* at 739.
401. *Id.* at 740–41.
402. *Id.* at 740.
403. *Id.* at 739.

> Characterizing produced water as oil and gas waste, rather than groundwater, also conforms with industry practice. Indeed, produced water has long been treated as a liability, not an asset . . . . The mineral leases were likewise executed before the parties perceived produced water as a substance with value. However, "[t]he knowledge of the parties of the value, or even the existence of the substance at the time the conveyance was executed" is "irrelevant to its inclusion or exclusion from a grant of minerals." *Moser v. U.S. Steel Corp.*, 676 S.W.2d 99, 102 (Tex. 1984). To read the mineral leases as reserving produced water—something that exists separate from oil and gas only after processing and treatment—for the surface estate would give the surface estate (and thus Cactus) "the benefit of costs and risks [COG] voluntarily undertook." *Bowden v. Phillips Petroleum Co.*, 247 S.W.3d 690, 706 (Tex. 2008).
>
> The mineral leases were negotiated against this backdrop—with a legal framework distinguishing oil and gas waste from groundwater, making clear that produced water is categorized within the former, and placing the burden of its safe disposal on operators, and according to years of the common industry practice in which operators have processed, transported, and disposed of oil and gas waste . . . . Here, that context clarifies that the grant of "oil, gas and other hydrocarbons" or "oil and gas" includes the rights and duties associated with disposing of its waste, including produced water, which cannot be extracted separate from the oil and gas. *See Turner v. Big Lake Oil Co.*, 128 Tex. 155, 96 S.W.2d 221, 226 (1936) ("One of the by-products of oil production is salt water[.]"). Nothing in the mineral leases indicates that the parties intended to upend the definitions of these terms or common practices. Indeed, *they could have—through an express reservation*. TEX. NAT RES. CODE ANN. § 122.002; *see Sharp v. Fowler*, 151 Tex. 490, 252 S.W.2d 153, 154 (1952) ("A reservation of minerals to be effective must be by clear language. Courts do not favor reservations by implication.") . . . .
>
> In sum, nothing in the mineral leases suggests the parties intended to assign rights at a molecular level, following both extraction from the well and post-production processing. Nor do the mineral leases indicate an intent to reserve oil and gas waste produced through COG's drilling operations.[404]

Summarizing the Court's language from above, we see the key points to the Court's decision are as follows:

> (1) the public as well as industry have historically considered produced water to be a liability, not a valuable asset like water;[405]

404. *Id*. at 740–41 (emphasis added).
405. *Id*. at 740.

> (2) this historical context informs the meaning of a typical oil and gas conveyance concerning the ownership of produced water;[406]
>
> (3) it is irrelevant whether the parties knew about the potential value of produced water at the time of the conveyance;[407]
>
> (4) produced water is a type of oil and gas waste; [408]
>
> (5) produced water is a constituent element that arises with oil and gas from an oil and gas well;[409]
>
> (6) to grant ownership of produced water to the surface estate, absent a specific reservation, would give the surface estate the benefit of costs and risks that the oil and gas operator undertook;[410]
>
> (7) the legal framework and historical public understanding that produced water is a liability owned by the mineral estate and borne by the mineral estate's oil and gas operator are well known;[411] and
>
> (8) if parties actually intend to deviate from this well-known context that produced water is oil and gas waste conveyed along with the oil and gas, then *the way to do so is with an express reservation in the controlling instrument*.[412]

In conclusion, the court of appeals ruled that produced water is not groundwater nor even water. The court ruled that it is oil and gas waste. Accordingly, neither produced water nor any other oil and gas waste was retained by the surface estate at the time of severance with the mineral estate. Oil and gas waste, including produced water, was conveyed along with the oil and gas. Therefore, COG has the exclusive right to the produced water. If the parties truly had intended for the produced water to remain owned by the surface estate, then the proper and legal way to effectuate that intention would have been with an express reservation or exception of the oil and gas waste or an express reservation or exception of just the produced water in favor of the surface estate.

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406. *Id*. at 741.
407. *Id*. at 740.
408. *Id*. at 739, 740 n.4, 748 ("produced water is oil and gas waste byproduct, not regarded as 'water' as Cactus claims.").
409. *See id*. at 739, 740.
410. *Id.* at 740.
411. *Id*. at 740–41.
412. *Id*. at 741.

C. Supreme Court

At the time of this writing, the *Cactus* case is pending at the Texas Supreme Court. It has attracted considerable attention from the oil and gas industry, landowners, commentators, and law firm blogs. It is a fascinating case of first impression regarding a property interest that has never been contested in any reported Texas case. The reason why is obvious: produced water is a type of oil and gas waste that surface owners, mineral owners, and industry have always considered to be a liability and a burden owned by the mineral estate's oil and gas operator. This common historical public understanding is expressed and codified in numerous Texas statutes and regulations. It is only now that produced water may have some value following recycling and treatment that the question of ownership has given rise to litigation.[413] However, as the Texas Supreme Court instructs in the leading case of *Moser*, "The knowledge of the parties of the value, or even the existence of the substance at the time the conveyance was executed has been found to be irrelevant."[414]

D. Conclusion

The Texas Supreme Court in *Cactus* should affirm the decision of the El Paso Court of Appeals and hold that produced water is oil and gas waste which was included in each of the four conveyances of oil and gas under the four leases and because none of them included any language to the contrary such as an express reservation or exception regarding oil and gas waste or produced water.

413. *See id.* The question of potential value is still undecided and is in the eye of the beholder. The economic analyses of many operators conclude that disposal of produced water and acquisition of other forms of fluids is less expensive than recycling and treatment of produced water.

414. Moser v. U.S. Steel Corp., 676 S.W.2d 99, 102 (Tex. 1984).

AN INTRODUCTION TO RESERVE-BASED LENDING

M.C. Cottingham Miles[*]

ABSTRACT

This article provides a general discussion regarding oil and gas reserve-based lending. Third-party financing of oil and gas production has a storied and colorful history that is fraught with cautionary tales of overleveraged producers and cavalier lenders, which came to a head in the 1980s. As a result, lenders take a more conservative approach to financing oil and gas reserve-based

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lending, and attorneys place more emphasis on due diligence prior to the loan closing and funding. While there are other ways for oil and gas companies to raise capital, such as private equity and mezzanine lending, this article focuses on conventional reserve-based lending.

I. INTRODUCTION

Reserve-based lending (RBL) is a type of asset-based lending used by oil and gas companies through which a borrower oil and gas company pledges the company's oil and gas reserves as collateral to secure a loan, which most often is a revolving loan.[1] A revolving loan occurs when a lender grants a borrower a loan whereby the borrower may borrow money up to an approved amount, pay down such loan, and thereafter re-borrow for the term of the loan.[2] A revolving loan may be secured by various collateral such as real estate, accounts receivable, equipment and inventory, and oil and gas reserves, to name a few options.[3] The oil and gas reserves pledged for such a loan may be undeveloped, developed, and producing, and the amount of financing available to a borrower by RBL is tied to the borrowing base for such RBL, which will be discussed more particularly below.[4]

II. THE BORROWING BASE

"[O]ne of the fundamental rules of oil-and-gas banking says that you can borrow more or less half the future value of the oil-and-gas production that you can prove you own."[5] The technical term for the foregoing rule is known as the "borrowing base." A "borrowing base" constitutes the amount of money that a lender is willing to loan a borrower based on the value of the collateral pledged.[6] With respect to RBL, the value of the oil and gas reserves constitutes the collateral and the amount of money that may be pledged.[7] For example, while a promissory note may have a face amount of One Million Dollars ($1,000,000.00), pursuant to the terms of the loan agreement for RBL, a typical provision for advances under the loan agreement (to be

1. ZACKARY D. CALLARMAN, II. RBL 101: AN INTRODUCTION TO TITLE DUE DILIGENCE AND OIL & GAS RESERVE BASED LENDING, STATE BAR OF TEX., TXCLE OIL, GAS & MIN. TITLE EXAMINATION COURSE CHAPTER 9-II, 2022 WL 3162050 (2022).

2. *See Lending: Overview*, THOMPSON REUTERS PRAC. L. FIN., https://us.practicallaw.thomsonreuters.com/0-381-0295 (last visited Nov. 4, 2024).

3. Daniel F. Susie, *Critical Aspects of the Documentation of an Oil and Gas Loan*, ADVANCED OIL, GAS & MINERAL LAW COURSE L-3 (1983); *see also Lending: Overview*, *supra* note 2.

4. Callarman, *supra* note 1, at 1.

5. MARK SINGER, FUNNY MONEY 30 (Mariner Books 2004) (1985).

6. Callarman, *supra* note 1, at 1.

7. *Id.*

discussed below) would be "that the outstanding principal balance of the promissory note shall never exceed the lesser of (i) the face amount of the promissory note, or the Borrowing Base." The loan agreement would include a definition of the "Borrowing Base," an example of such definition being as follows: "a base equal to or less than fifty percent (50.0%) of the present worth of future net income of proved developed producing reserves discounted at ten percent (10.0%) as determined by the lender." The foregoing terms of the loan, including the borrowing base, are set by the lender.[8] The lender sets these terms based on a reserve report from an engineer.[9] If an engineering reserve report (to be discussed below)[10] stated that the projected net income discounted to a present value at a rate of nine percent (9.0%) per annum would be $100,000.00 and the borrowing base constitutes a base of fifty percent (50.0%) of the present worth such future net income, the borrower could only borrower up to $50,000.00 from the lender, regardless of whether the face amount of the promissory note was $1,000,000.00 or even $10,000,000.00.

The key factor in the definition of "Borrowing Base" in a loan agreement is the determination of the borrower's pledged oil and gas reserves, which is based on the engineering reserve report rendered by a reservoir engineer working on behalf of a lender.[11] The engineering reserve report will include a section called "Economic One-Liners" which will categorize the mineral property pledged as one of the following:

1. "PDP," which is an acronym for "proved, developed producing," and is defined as proved volumes of oil, gas, and products that may be recovered from completion intervals that are open and producing at the effective date of the estimate;
2. "PDNP," which is an acronym for "proved, development, non-producing," and is defined as proved reserves, including shut-in and behind pipe reserves, whereby production may be initiated or restored with relatively low expenditure compared to the cost of drilling a new well; or
3. "PUD," which is an acronym for "proved undeveloped" reserves which are oil and gas reserves expected to be recovered from a new well or existing well, that will require significant investment and costs.[12]

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8. SINGER, *supra* note 5, at 30.
9. *Id.*
10. *See* discussion *infra* Part III.
11. *See* discussion *infra* Part III.
12. RHETT G. CAMPBELL, VALUING OIL & GAS RESERVES IN COURT, 23RD ANNUAL ADVANCED OIL, GAS AND ENERGY RESOURCES LAW COURSE CHAPTER 14, 1 (2005).

In my experience, lenders do not provide financing secured by PUD oil and gas properties, only PDP oil and gas properties and sometimes PDNP oil and gas properties. In reviewing the engineering reserve report, the engineer will provide an estimate for the lender to base the amount that may be borrowed by the oil and gas company.[13] An example is set forth below:

Category	Net Oil (MBbl)	Net Gas (MMcf)	Net Income (M$)	Net Income Disc. 9%/yr (M$)	Average Oil Price ($/Bbl	Average Gas Price ($/Mcf)
PDP	5.2	102.11	200	100	65.2	2.50

The Category section of the above schedule shows the classification of the oil and gas reserves, and the schedule also shows the discount rate, which in this example is nine percent (9.0%). One should also note that the schedule provides that the present worth of future net income from the PDP oil and gas reserves discounted to nine percent (9.0%) is $100,000.00. Because of that fact, assuming the borrowing base is fifty percent (50.0%), such borrower may only borrow from the lender up to $50,000.00 at that time. Some claim that the forgotten element in the borrowing base determination is the discount rate used to determine the present value of future production.[14] The discount rate is set by the lender and not all lenders use the same assumptions to determine the discount rate.[15] That said, in my experience, the discount rate is typically either nine percent (9.0%) or ten percent (10.0%). The discount rate is generally influenced by the interest rate at the time the loan is made. The discount rate and the interest rate directly correlate with one another such that the higher the interest rate, the greater the discount rate, and the less valuable future oil and gas production is considered contrasted to a lower interest rate.[16] Thus, since the New York Prime Rate is currently 7.75% per annum, making borrowing more expensive, the discount rate will also be higher in valuing future oil and gas production, which will reduce the borrowing base and credit availability for oil and gas producers.[17] Generally, the lower the discount value, the more money that a borrower may obtain from RBL.[18] Regardless, most lenders require a discount value of ten percent (10.0%) or more because providing a lower discount rate only allows the borrower oil and gas company "more rope to hang themselves," i.e., the borrower becomes overleveraged.[19]

13. Callarman, *supra* note 1, at 1.

14. Robert C. Shearer, *Oil and Gas Lending – The Borrower's Perspective*, 26TH ANNUAL ERNEST E. SMITH OIL, GAS & MINERAL LAW INST. THE UNIV. OF TEX. SCH. OF L., STATE BAR OF TEXAS, 6 (2000).

15. *Id.*

16. *Id.*

17. *See id.*; *see also*, *Money Rates*, WALL ST. J., https://www.wsj.com/market-data/bonds/money rates (last visited Nov. 27, 2024, 11:59 PM).

18. Anonymous bank officer interview (August 30, 2024).

19. *Id.*

Without question, the borrowing base is the single most likely source of trouble in RBL for oil and gas producer borrowers, and how the borrowing base is determined, redetermined, and who makes the final determination are important factors to be considered.[20] In my opinion, an energy law practitioner representing a borrower oil and gas producer should plan to negotiate for a reduced discount rate to increase the amount of money available to the borrower and advocate for sufficient time for the borrower client to gradually reduce the loan amount ("right size" the loan) rather than be faced with a sizable repayment obligation within for example, ten (10) days after a reserve redetermination. Consider this example: a borrowing base redetermination occurs after a biannual reserve report has been completed. The price of oil has significantly fallen. The borrower oil and gas company has currently borrowed $1 million under a loan agreement that provides that fifty percent (50.0%) of the present worth of future net income of the borrower's collateral PDP discounted at nine percent (9.0%) is worth $2,000,000.00 under the most recent reserve report. Under the redetermination of the borrowing base by a new reserve report, the borrower's collateral is now only valued as being worth $1,000,000.00, and the borrower company must now quickly "right size" the loan by paying down the loan to $500,000.00, usually within days, not weeks, after such redetermination.[21] Very few small oil and gas companies have sufficient liquid capital to make that principal reduction payment in ten days, let alone thirty days. The goal when representing a borrower client would be to have a gradual paydown provision, such as $50,000.00 per month, until the paydown was complete. In multiple downturns, I have seen too many oil and gas companies go bankrupt because of the principal paydown provision after a reserve redetermination. Favorable negotiation of this provision when representing a borrower oil and gas company is crucial.

III. THE RESERVE REPORT

Additionally, as part of the due diligence process of the lender's counsel, an energy law practitioner will review the Economic One-Liners in the reserve report, which will provide the well name, the gross reserves of oil and

20. Shearer, *supra* note 14, at 10.
21. *Id.* at 10–11.

gas, the net reserves of oil and gas, the net revenue of oil and gas, and expenses and cash flow, among other items as shown in the example below:

Economic One-Liners
As of Date: 9/1/2024

	Gross Reserves		Net Reserves		Net Revenue			Expense		Cash Flow	
Lease Name	Oil	Gas	Oil	Gas	Oil	Gas	Other	& Tax	Invest.	Non-Disc.	Disc. CF
Risked / UnRisked	(Mbbl)	(MMcf)	(Mbbl)	(MMcf)	(M$)	(M$)	(M$)	(M$)	(M$)	(M$)	(M$)
Grand Total											
Miles RANCH #1	11.30	1500.6	2.10	105.33	298.44	811.33	0.00	1.55	0.00	811.23	815.24

All of the items shown in the table above are points that a reservoir engineer uses to make his determination of the value of the oil and gas property to be pledged. Based on the information shown in the table above, the borrowing base is usually determined using four (4) factors:

A. The amount of pledged recoverable oil and gas reserves;
B. The rate of production of those oil and gas reserves;
C. The price to be paid for those reserves when produced; and
D. The discounted present value of future production.[22]

The determination of how much recoverable oil and gas is in a reservoir falls to the reserve engineer and is a particularly important determinant of how much money a borrower producer may borrow by pledging its reserves.[23] Many borrower producers will claim that they have in-house employees who are capable of calculations for an engineering reserve report; however, as a lender's counsel, an energy law practitioner must insist that a third-party independent reserve engineering firm calculate the reserves.[24] In my experience, the lender's counsel may work with the borrower to find a reserve engineer locally who is less expensive (but still very good) as opposed to a reservoir engineer from a bigger firm in a large city who is very expensive.[25] More expensive reserve engineering firms do not always mean better, just more expensive.[26]

There is one critical assumption that must be made by the reservoir engineer that, in my opinion, is more an educated guess than actual science, which is the pricing assumption for oil and gas in the future.[27] If history has taught me anything, it would be that the price of oil and gas will fluctuate

22. *Id.* at 5.
23. *Id.*
24. *Id.*
25. Anonymous bank officer interview, *supra* note 18.
26. *Id.*
27. Shearer, *supra* note 14, at 6.

drastically.[28] When I graduated from law school in 1997, the price of oil was around $19.00 to $20.00 a barrel.[29] I have also seen several times in my twenty-seven-year career as an attorney where the price of oil exceeded $100.00 a barrel, and then, on April 20, 2020, a day that will live in infamy as far as the oil and gas industry is concerned, the price of oil went negative for the first time in history whereby oil and gas producers were actually paying buyers up to almost $38.00 a barrel to take their oil. It is understood that the oil and gas market is exceedingly volatile. Consequently, any redetermination of a borrowing base for RBL when oil and/or gas prices are down significantly changes the value of the oil and gas reserves, resulting in less borrowing power for the oil and gas producer.

IV. TITLE REVIEW

A. Title Report

After obtaining a reserve report, an energy law practitioner representing a lender should review title for the oil and gas leases and oil and gas wells pledged.[30] Most lenders require updated title opinions and/or title audit letters for such production for 80% to 90% of the total value of the oil and gas collateral pledged, as discussed in the engineering reserve report.[31]

In my experience, at most, 80% to 90% of the value of the collateral to be pledged exists in two or three wells, even though possibly twenty to thirty wells may be pledged. In such a scenario, one may receive word from the lender client that title to only one well (and oil and gas lease or leases) is required, greatly reducing the cost as one will not be required to examine title to all of the other oil and gas wells (and leases) to be pledged. In reviewing title to the oil and gas wells or wells providing 90% of the value of the collateral pledged, one will review a current or prior title opinion or division order title opinion to determine the working interest (WI) and net revenue interest (NRI) of the proposed borrower in the oil and gas well and whether the proposed borrower is an operator or non-operator.[32]

At a minimum, an energy law practitioner representing a lender should confirm that the borrower's WI and NRI in the well as referenced in the reserve report matches the borrower's WI and NRI in well(s) as provided in the title opinion and/or division order title opinion.[33] If the title opinion and/or division order title opinion shows a different record owner of the oil and gas

28. *Id.*

29. *Petroleum & Other Liquids*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=rwtc&f=m (last visited Nov. 28, 2024).

30. Callarman, *supra* note 1, at 1.

31. *Id.*

32. *Id.*

33. *Id.*

leases and wells to be pledged or a different WI and NRI ownership amount than owned by the borrower, the energy law practitioner representing a lender should request updated copies of the recorded assignments showing how the borrower/pledgor owns record title to such wells and leases and WI and NRI in such wells.[34] The review of title for RBL cannot and will not equate to a title opinion or division order title opinion, as lenders and borrowers do not want to pay for an extensive due diligence title review, and one is only permitted a short, almost cursory, time period to review title for such properties to be pledged.[35]

Generally, most title review for RBL is simply to confirm WI and NRI ownership and provide details for material title defects and/or existing liens/security interests that could adversely affect title to the oil and gas properties to be pledged by the borrower/pledgor.[36]

B. Liens

In addition to reviewing title to oil and gas leases and wells for recorded liens, both voluntary and involuntary, the lender's counsel should also be wary of unrecorded liens, which should certainly be reviewed, especially if the borrower/pledgor is a non-operator.[37] As a brief introduction, an operator is responsible for the day-to-day operations of a well project, including, without limitation, drilling an oil and gas well and maintaining safety and environmental issues, while a non-operator is not involved in day-to-day operations of the well but is consulted on investing in such well.[38] Operating agreements typically have liens in favor of the operator, such as the 1989 AAPL Operating Agreement, and the lender's counsel will want to obtain a subordination agreement from the operator as to such oil and gas interests pledged covered by such operating agreement.[39] Under such a subordination agreement, the operator's security interest pursuant to the operating agreement would be subordinated to the security interests of the lender's deed of trust.[40] Record notice of the oil and gas operating agreement lien may be shown by a memorandum of the operating agreement filed in the Real

34. *Id.*
35. *Id.*
36. *Id.*
37. *See, e.g.*, MBank Abilene, N.A. v. Westwood Energy, Inc., 723 S.W.2d 246, 250 (Tex. App.—Eastland 1986, no writ) (holding MBank was charged with notice of liens contained in prior unrecorded operating agreements); *see also In re* Meg Petroleum Corp., 61 B.R. 14, 20 (Bankr. N.D. Tex. 1986) (demonstrating mineral contractors can perfect mechanic's and materialmen's liens on oil wells by filing lien affidavits in the proper county clerk's office within six months of concluding activities and such lien will relate back to the date such contractors provided materials and services for purposes of lien priority).
38. 55A TEX. JUR. 3d *Oil & Gas* § 579 (2023); *see also* 3 TEXAS LAW OF OIL AND GAS § 17.3 (2024).
39. Samuel Denny, Partner, Snakard & Gambill, P.C., Oil and Gas Lending (Sept. 28, 1990).
40. *See id.*; *see also Subordination*, BLACK'S LAW DICTIONARY (5th Pocket ed. 2016).

Property Records where the oil and gas interests are located; however, even without recording, a third party may be on notice of the lien for other reasons, including without limitation, a reference to the operating agreement in the chain of title.[41]

Other recorded liens to be wary of include involuntary liens such as recorded affidavits of mineral contractor liens and affidavits of mechanic's and materialmen's liens, all of which are discussed more particularly in Texas Title Examination Standard Section 15.20.[42] It is important to remember that lien priority for these liens is typically determined on the basis of the inception date (when work claimed under the affidavit first began) and not upon the date the work ended or the date the affidavit was filed.[43] When representing a lender, one should ensure no work has commenced on any of the wells to be pledged before the deed of trust/mortgage has been recorded. An attorney representing a lender in an RBL transaction should also be wary of judgment liens, which are generally discussed in Texas Title Examination Standard Section 15.30.[44] A non-favorable judgment in a lawsuit is not the issue unless and until an abstract of judgment is properly prepared, recorded, and indexed, at which time, the judgment lien will attach to the judgment debtor's non-homestead real property then owned or thereafter acquired located in the county or counties where the abstract of judgment is of record.[45] Practically, if an abstract of judgment is recorded in a county where oil and gas interests are located, which will be pledged to secure RBL if the abstract of judgment is recorded prior in time to the deed of trust, the abstract of judgment lien will be superior to the deed of trust lien and must be released.

C. Taxes

Lender's counsel should also ensure that no recorded federal tax liens have attached to the oil and gas properties to be pledged.[46] If such tax liens are recorded prior to the recording of the deed of trust, they must be released.[47] Tax liens are valid liens for ten years and thirty days from the date of assessment.[48] There are several other involuntary statutory liens that one should ensure are not recorded and affecting the to-be-pledged oil and gas interests, a summary of which are referenced in Texas Title Examination Standard Section 15.50, including, without limitation, Texas Workforce

41. TEX. PROP. CODE ANN., Title 2 app., Tex. Title Examination Standards § 15.10; *see also MBank Abilene*, 723 S.W.2d at 250.

42. TEX. PROP. CODE ANN., Title 2 app., Tex. Title Examination Standards § 15.20.

43. *See* Longhart Supply Co. v. Keystone Pipe Supply Co., 26 S.W.2d 389, 390 (Tex. App.—Fort Worth 1930, writ ref'd).

44. TEX. PROP. CODE ANN., Title 2 app., Tex. Title Examination Standards § 15.30.

45. TEX. PROP. CODE §§ 2.001, 52.002.

46. TEX. PROP. CODE ANN., Title 2 app., Tex. Title Examination Standards § 15.60.

47. *See id.*

48. *See id.*; *see also* Internal Revenue Code, 26 U.S.C. §§ 6322, 6502, 6503.

liens, as more particularly described in Section 61.081, et. seq of the Texas Labor Code.[49]

It is also recommended that the lender attorney obtain current ad valorem tax statements to ensure all taxes on the oil and gas properties to be pledged have been paid through the end of the prior year.[50] Ad valorem tax liens will always have priority over a deed of trust lien.[51] Therefore, just as a commercial real estate deed of trust typically has a provision whereby the lender has the option to pay delinquent ad valorem taxes on pledged real estate, and such payment by the lender is added to the principal of the indebtedness of such borrower as a protection advance, so too should the RBL deed of trust have a similar provision for payment of ad valorem taxes.

V. DOCUMENTING THE LOAN

In documenting the loan secured by oil and gas reserves, one usually prepares the following at a minimum:

(i) a loan agreement;
(ii) a promissory note;
(iii) a guaranty agreement; and
(iv) a mortgage or deed of trust, security agreement, and financing statement.[52]

A. The Commitment Letter/Term Sheet

When I represent the borrower, I do my best to obtain a commitment letter/term sheet as it will summarize the key aspects of the proposed financing such as the amount of the facility, interest rate, maturity date, collateral, borrowing base determination, fees, including engineering fees, legal fees, and governing law.[53] It is during this period that an energy law practitioner representing the borrower should attempt to obtain the best terms for his or her client.[54]

In reviewing the commitment letter, the borrower should be wary of provisions that grant the lender too much discretion in determining the amount of the borrowing base, such as the following provision:

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49. TEX. PROP. CODE ANN., Title 2 app., Tex. Title Examination Standards § 15.50; *see also* TEX. LAB. CODE ANN. § 61.081 et. seq.
50. Denny, *supra* note 39, at G-7.
51. TEX. TAX CODE ANN. § 32.05(b).
52. Shearer, *supra* note 14, at 8.
53. *Id.*
54. *Id.*

> "Bank shall redetermine the Borrowing Base on a quarterly basis or at such other time as Bank, acting in its sole discretion, so elects."

Anytime a bank is left with the option of "sole discretion," especially as to the borrowing base, a borrower is left with uncertainty. For example, if a loan calls for a borrowing base redetermination at the sole discretion of the lender, then the borrowing base may be redetermined when there is a sudden reduction in oil and gas prices, which would then probably cause a principal payment reduction on the loan. Additionally, the borrower usually pays for each report by the reservoir engineer. When I represent an oil and gas company borrower, I try to have redeterminations no more than twice a year, and I suggest redeterminations in the sole discretion of the lender should only occur when a default of the loan has occurred and is continuing past thirty days after notice of such default.

Besides trying to curb the effects of the borrowing base in the commitment letter, if representing the borrower, one should also try to negotiate the loan fee and put a cap on the legal fees of the bank in documenting the loan. I suggest requesting that the lender charge a loan fee of no more than one-half (1/2) of one percent (1.0%) of the amount of the loan. For example, if the loan would be for $100,000.00, the loan fee would be one-half (1/2) of one percent (1.0%) of $100,000.00 or $500.00.

B. The Loan Agreement

Once the lender and the borrower agree on the content of the commitment letter and execute it, the lender's counsel will provide the borrower's counsel with drafts of the loan documents to review. In reviewing the drafts of the loan documents, the borrower's counsel should focus first on the loan agreement as that document is typically the principal document in a traditional oil and gas secured loan, including, without limitation, RBL, and is, therefore, the most heavily negotiated.[55] Usually, a loan agreement will have several key provisions, which are explained in more detail in this section.

1. Definitions

A loan agreement will include definitions for key terms such as "Application for Advance," "Borrowing Base," "Collateral," and "Engineer," sample definitions of these are set forth below. It is important to make sure that all definitions in a loan agreement comport with the deal points in the commitment letter and deed of trust.[56]

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55. Shearer, *supra* note 14, at 9.
56. *See* Denny, *supra* note 39, at G-19.

> A. Application for Advance. The term "Application for Advance" shall mean a written application (on a form approved by Lender in its sole discretion) by Borrower (and such other parties as Lender may require) to Lender specifying by name, current address, and amount all parties to whom Borrower is obligated, requesting an Advance for the payment of such items, containing, if requested by Lender, an Affidavit of Borrower, accompanied by such schedules, affidavits, releases, waivers, statements, invoices, bills, and other documents as Lender may request in its sole discretion. Each Application for Advance shall set forth the following:
>
> (a) Borrower shall not be in default of the Note, this Loan Agreement, or the other Loan Documents;
>
> (b) Tax or assessment certificates or other similar evidence of payment from all appropriate bodies or entities which have taxing or assessing authority, stating that all taxes and assessments are current, if applicable;
>
> (c) Financial statements of Borrower approved by Lender;
>
> (d) Proof of insurance in such amounts and such policies as Lender may require, if applicable; and
>
> (e) A Borrowing Base certificate.
>
> Upon completion of the above requirements to the satisfaction of Lender, Lender may, in its sole and absolute discretion, make an Advance of the Note.

This definition of "Application for Advance" provides the general terms and requirements for how a borrower applies for any advance of the loan proceeds, including without limitation, for RBL.

> B. Borrowing Base. The term "Borrowing Base" shall mean a base that is equal to or less than _____ percent (____0%) of the present worth of future net income of the proved producing Mortgaged Properties discounted at ____ percent (___%) as determined by Lender in its sole discretion, using such materials and information as Lender may require,

> including without limitation, the Engineering Reserve Report.

The above definition is an example of a borrowing base definition for RBL.

> C. Collateral. The term "Collateral" shall mean any and all assets of Borrower, both tangible and intangible, including without limitation, the Mortgaged Properties, and any and all other personal and real property howsoever evidenced, and in the future during the term of the Loan, all of which are to be collaterally pledged, mortgaged and/or otherwise conveyed as security for repayment of the Indebtedness, including without limitation, the Loan, and for the performance of all of the Obligations. Obligor covenants and agrees that there are no other security interests/ liens covering the Collateral other than the liens and security interests of Lender and that there will be no other security interests/ liens covering the Collateral other than the liens and security interests of Lender during the term of the Loan unless otherwise approved in advance by Lender in Lender's sole and absolute discretion.

It is important to note that when representing a lender, the definition of collateral should be as wide and expansive as possible so that all assets of the borrower are included in that definition, not just the oil and gas interests pledged.[57]

> D. Engineer. The term "Engineer" shall mean such employees, representatives, and agents of Lender or third parties selected by Lender in Lender's sole and absolute discretion, including without limitation, Joe Bob Earl, who may, from time to time issue an Engineering Reserve Report, conduct inspections of the Mortgaged Properties, verify and evaluate the value of the oil and gas reserves of the Mortgaged Properties, and/or offer other services related thereto.
>
> E. Engineering Reserve Report. The term "Engineering Reserve Report" shall mean any and all engineering reports rendered by the Engineer in a form approved by Lender in

57. *See, e.g.*, Susie, *supra* note 3, at L-5 (stating that the extraction of oil and gas classifies it as "goods" under Article 9 of the Uniform Commercial Code, the sale of production is classified as an "account" under Article 9, and the payment of the accounts results in "cash proceeds" under Article 9).

> its sole and absolute discretion and delivered to Lender pursuant to Section _____ hereof whereby the oil and gas reserves of the Mortgaged Properties are verified and evaluated by the Engineer semi-annually.

When representing the borrower, there is some control over who is chosen as the reserve engineer before the loan transaction is closed. Selecting the correct reserve engineer is important and will save the borrower costs over the life of the loan. For example, the lender may want to select a large brand-name engineering firm based in Houston that charges double the cost of a decent reserve engineer based in San Antonio.[58]

> F. Indebtedness. The term "Indebtedness" shall mean the principal amount of the Loan as described in the Note and interest payable thereto together with any fees, late charges, and all other sums due under, or secured by, the Loan Documents.
>
> G. Obligations. The term "Obligations" shall mean any and all of the covenants, warranties, representations, and other obligations, including without limitation, the repayment of the Indebtedness, made or undertaken by Borrower, or any other person to the Lender, as set forth in the Loan Documents.

If representing the lender, expansive definitions of "Indebtedness" and "Obligations" should be included in the loan agreement so that all obligations of the borrower to the lender are covered.

2. Representations and Warranties

When representing a lender, it is important to obtain representations and warranties from the borrower.[59] Assuming the borrower is a business entity, some typical representations and warranties in a RBL loan agreement are items such as: (1) The borrower-entity actually exists and may lawfully transact business in the State of Texas; (2) the persons governing the internal affairs of the borrower-entity have duly authorized the borrower's actions in becoming a party to the loan documents; (3) the borrower-entity will comply with all applicable laws and regulations; (4) the financial records borrower-entity presented to the lender are accurate; and (5) that there are no

58. Anonymous bank officer interview, *supra* note 18.
59. Shearer, *supra* note 14, at 9.

current mineral liens, abstracts of judgment or current material litigation pending against the borrower-entity.[60] Examples of the foregoing representations and warranties are listed below along with several other representations and warranties that are standard in RBL transactions.

> A. Good Standing and Identity. Borrower is a Texas _____, duly organized and in good standing under the Laws of the State of Texas. Borrower's legal name is reflected in the introductory paragraph of this Loan Agreement. Borrower has the power to own its property and to carry on its business in each jurisdiction in which Borrower operates. Borrower has heretofore delivered to Lender true, correct, and complete copies of its Certificate of Formation, Company Agreement, and Corporate Resolution authorizing this transaction, each as amended (if necessary) to the date hereof.
>
> B. Authority and Compliance of Borrower. Borrower has full power and authority to enter into this Loan Agreement, to make the borrowing hereunder, to execute and deliver the Note, to mortgage, pledge, assign the Collateral to Lender, including without limitation, the Mortgaged Properties, and to incur the Indebtedness and Obligations provided for herein, all of which will be duly authorized by all proper and necessary corporate action. The person signing as the representative of Borrower, represents, warrants, and covenants to Lender that all authorizations for the transaction contemplated herein have been properly obtained. The execution and delivery of this Loan Agreement by Borrower, the performance by Borrower of all the terms and conditions hereof to be performed by it and the consummation of the transactions contemplated hereby have been, or will be, duly authorized, reviewed, and approved by Borrower. This Loan Agreement has been duly executed and delivered by Borrower and constitutes the valid and binding obligation of Borrower, enforceable against it in accordance with its terms, except as such enforceability may be limited by Debtor Relief Laws.
>
> C. Ownership of Collateral. Borrower has good title to the Collateral, including without limitation, the Mortgaged Properties, which are all owned free and clear of liens, claims, judgments, or liabilities except the Mortgage.

60. *See id.*; *see also* Susie, *supra* note 3, at L-9–L-10.

Borrower will at all times maintain the Collateral, including without limitation, the Mortgaged Properties, real and personal, in good order and repair.

D. Mortgaged Properties Taxes. All ad valorem, property, production, severance and similar taxes and assessments based on or measured by the ownership of property or the production of hydrocarbons or the receipt of proceeds therefrom on the Mortgaged Properties that are due and payable have been properly paid and all such taxes and assessments which become due and payable shall be properly paid by Borrower on its behalf and as operator of any of the wells drilled or to be drilled under the Mortgaged Properties in which Borrower is the operator.

E. Royalty. All royalties (other than royalties held in suspense), rentals and other payments due under the Oil and Gas Leases have been properly and timely paid and accepted, and all conditions necessary to keep the Oil and Gas Leases in force have been fully performed. No notices have been received by Borrower of any claim to the contrary and all of the Oil and Gas Leases are in full force and effect.

F. Take-or-Pay. Borrower is not obligated by virtue of any prepayment arrangement under any contract for the sale of hydrocarbons and containing a "take or pay" or similar provision or a production payment or any other arrangement to deliver hydrocarbons produced from the Mortgaged Properties at some future time without then or thereafter receiving full payment therefor, and Borrower has not produced a share of gas greater than its ownership percentage and Borrower is under no obligation to reduce its share of production under any gas balancing agreement or similar contract to allow under-produced parties to come back into balance.

G. Sale of Production. None of the Mortgaged Properties are subject to any contractual or other arrangement (i) whereby payment for production is or can be deferred for a substantial period after the month in which such production is delivered (in the case of oil, not in excess of 60 days, and in the case of gas, not in excess of 90 days) or (ii) whereby payments are made to Borrower other than by checks, drafts, wire

transfer or other similar writings, instruments or communications for the immediate payment of money. Furthermore, none of the Mortgaged Properties are subject to any contractual or other arrangement for the sale, processing, or transportation of production (or otherwise related to the marketing of production) which cannot be canceled on thirty (30) days (or less) notice. All contractual or other arrangements for the sale, processing, or transportation of production (or otherwise related to the marketing of production) are bona fide arm's length transactions made with third parties not affiliated with Borrower. Borrower is presently receiving a price for all production from (or attributable to) each of the Mortgaged Properties covered by a production sales contract or marketing contract listed on Exhibit B that is computed in accordance with the terms of such contract, and Borrower is not having deliveries of production from such Mortgaged Properties curtailed substantially below such property's delivery capacity.

H. Operation of Mortgaged Properties. The Mortgaged Properties (and all properties unitized therewith) are being and will be maintained, operated, and developed in a good and workmanlike manner, in accordance with prudent industry standards and in conformity with all applicable Governmental Requirements. None of the Mortgaged Properties are subject to having allowable production after the date hereof reduced below the full and regular allowable (including the maximum permissible tolerance) because of any overproduction (whether or not the same was permissible at the time) prior to the date hereof and none of the wells located on the Mortgaged Properties (or properties unitized therewith) are or will be deviated from the vertical more than the maximum permitted by applicable Governmental Requirements, and such wells are bottomed under and producing from, with the well bores wholly within, such unitized properties or the wells are located on appropriately permitted off-lease surface locations and conform to applicable penetration and drain hole regulations covering such off-lease locations.). There are no dry holes, or otherwise inactive wells, located on the Mortgaged Properties or on lands pooled or unitized therewith, except for wells that have been properly plugged and abandoned. Borrower has all Permits necessary or appropriate to own

> and operate the Mortgaged Properties. Borrower has not received notice of any violations in respect of any Permits.
>
> I. Rights of First Refusal, Consents to Assign, and Reversionary Interests. Obligor covenants and agrees that no party has any call upon, preferential right or option to purchase, right of first refusal or similar rights under any agreement with respect to the Collateral, including without limitation, the Mortgaged Properties, or to the production therefrom or the proceeds from the sale of such production. Obligor further covenants and agrees that no party has any consent to assign or transfer any of the Mortgaged Properties or any reversionary interests in the Mortgaged Properties.

As noted above, each of the foregoing representations and warranties are generally standard in RBL, and it is self-explanatory as to why such representations and warranties should be included in the loan agreement. Furthermore, at a minimum, a lender's counsel should ensure its loan agreement for RBL has the above representations and warranties.

3. Terms of the Loan

All loan agreements, not just the ones used in RBL, must set forth the financial terms under which the lender will provide a loan to the borrower and the borrower will repay the lender, which includes terms such as the interest rate of the loan, advances of the loan, repayment terms, and the type of loan being proposed, such as a revolving loan.[61] An example of a revolving loan provision in a RBL transaction, which would be included in the advance section of the loan agreement, is as follows:

> Revolver. The principal of the Note represents funds which Lender may advance to Borrower from time to time upon the request of Borrower in Lender's sole and absolute discretion. Any part of the principal of the Note may be repaid by Borrower and thereafter reborrowed, provided the outstanding principal amount of the Note shall never exceed the lesser of (i) the Borrowing Base, or (ii) the face amount of the Note. Each Advance shall constitute a part of the principal thereof and shall bear interest from the date of the Advance. The provisions of Tex. Fin. Code Ann. § 346.001, et seq, as may be amended, shall not apply to the Note or to any of the Loan Documents executed in connection with the Note.

61. Shearer, *supra* note 14, at 8.

Several other terms that any lender's counsel should consider including in the loan agreement are items such as:

> 1. Conditions precedent are conditions that must be satisfied before the lender is legally obligated to initially fund the loan. Conditions precedent include items such as the full execution of all loan documents, payment of fees and expenses, rendering of borrower's counsel opinion letter, and other conditions.[62]
>
> 2. Affirmative and negative covenants are covenants that include items such as the borrower's agreement to do or not do certain specified actions, including without limitation, payment of taxes, not incurring other indebtedness, comply with material agreements, comply with the Borrowing Base covenant, and remain a special purpose entity solely for the loan.[63] An example of the Borrowing Base covenant is set forth below:
>
> > A. Borrowing Base. Borrower covenants and agrees that it shall not exceed the Borrowing Base during the term of the Loan. Testing of the Borrowing Base shall be administered semi-annually and reported to Lender on April 1 and October 1 of each year; with the first Borrowing Base to be tested on April 1, 2024, however, testing may also occur at other times during the calendar year in Lender's sole discretion. Each semi-annual test shall be based on the data of Borrower received as of January 1 and July 1 of each year. If at any time the outstanding principal balance of the Note exceeds the Borrowing Base, the Borrower shall either (i) pledge or cause to be pledged Additional Collateral acceptable to Lender or provide additional security or guaranties, all by instruments satisfactory in execution, form, and substance to Lender, or (ii) pay down the outstanding principal balance of the Note to bring the Note into compliance with the herein described requirements within ten (10) days after written notice thereof from Lender. Failure to bring the Note into compliance to Lender's satisfaction in its sole discretion within such ten (10) day time period shall constitute, at the option of Lender, an Event of Default hereunder, and Lender shall be entitled to enforce all remedies under the Loan Documents, in equity and at law.

62. *See id.* at 10.
63. *See id.*

> If representing the Borrower, it is important to limit the redetermination of the borrowing base to occur no more than semi-annually and remove all "Lender's sole discretion" language on the part of the lender.[64]
>
> 3. Events of default are events causing the default of the loan, such as failing to pay the promissory note in accordance with its terms or breach of any of the covenants of the loan agreement. A borrower's counsel should try to obtain, at a minimum, 10 days' notice and opportunity to cure for payment defaults and 30 days' notice and opportunity to cure for non-payment defaults, which cure periods may be extended if the Borrower is actively engaged in the completion of curing the default.[65] An energy law practitioner representing a borrower should also attempt to delete any "deemed insecure" event of default by the lender.
>
> 4. Miscellaneous provisions are provisions that will include, typically governing law, a usury savings clause, and notice provisions, similar to other loan agreements besides RBL.[66]

If representing the borrower, an energy law practitioner should focus on the following:

> 1. Confirm all business terms set forth in the commitment letter are set forth accurately in the loan agreement;
>
> 2. Ensure the borrowing base definition and testing times/redeterminations are correct and build in as much time as possible to gradually reduce the principal of the loan if a principal paydown is required after a redetermination so that the borrower is not faced with a sizeable principal repayment obligation all at one time;
>
> 3. Add "materiality," "best of knowledge," and "reasonable" qualifications where appropriate to the representations and warranties section and covenants section;
>
> 4. Limit representations and warranties as to oil and gas properties that have been verified by title opinions and/or title audit letters;

64. *See id.* at 9.
65. *See id.* at 8.
66. *Id.*

5. Resist giving the lender control of the borrower's cash flow and delete lock box and cash collateral arrangements because of lender's ability to direct the borrower's cash flow could force the Borrower into bankruptcy more quickly;[67]

6. Delete provisions requiring payment direction letters whereby all purchasers of the borrower's oil and gas products will be required to make such payments solely to the bank account with the lender that has been pledged to secure such loan and from which the lender may take such funds, including without limitation under a set-off provision;[68]

7. As a borrower's counsel, an energy law practitioner should also add a provision in the Miscellaneous Section that provides that in the event of a conflict between the terms of the loan agreement and the terms of any other loan documents, the terms of the loan agreement will control over the other loan documents so that all of the negotiated terms in the loan agreement apply to the other loan documents, such as notice and opportunity to cure;[69] and

8. Resist caps to the borrower's general and administrative expenses as these caps are analogous to handcuffs on borrower's use of its income, such as paying salaries, office expenses, and the like, or in the alternative, ensure such caps are as high as possible.

C. The Promissory Note

After reviewing the loan agreement draft, the borrower's counsel should review the promissory note to ensure all terms thereof comport with the loan commitment letter, including without limitation, the name of the borrower, the interest rate and other payments terms, namely, to ensure the promissory note is a revolving line of credit, allowing borrowing, payment and then borrowing again.[70]

As the borrower's counsel, an energy law practitioner should ensure that the promissory note includes the "promise to pay" and delete any default provisions in the promissory note, as the loan agreement should be the only loan instrument to include default provisions if possible.[71] As borrower's counsel, an energy law practitioner should also eliminate any "due on

67. *See id.* at 10.

68. *Contra* Susie, *supra* note 3, at L-11 (stating banks desire control of proceeds from the sale of oil and gas produced from mortgaged properties).

69. Denny, *supra* note 39, at G-19.

70. Shearer, *supra* note 14, at 9.

71. *See id.*

demand" provision so that the promissory note may only become due after the term thereof ends except for an event of default. Furthermore, this author strongly suggests that any attorney representing a borrower add the following provision to the promissory note:

> "Notwithstanding any other provision of this Note to the contrary, this Note is subject to the terms and conditions of that certain Loan Agreement dated _____, executed by Borrower and Lender, including without limitation, the notice and opportunity to cure provisions contained therein."

By adding the above provision to the promissory note, borrower's counsel will ensure that all negotiated terms in the loan agreement apply to the promissory note. Generally, there is nothing particularly magic about the form of the promissory note used in oil and gas lending except to follow the above suggestions.

D. The Guaranty Agreement

Like the promissory note, there is not really any magic as to the guaranty agreement. A lender's counsel should aspire for the guaranty agreement to be an unconditional guaranty of all indebtedness of the borrower, including collection costs.[72] A borrower's counsel should try to limit the guaranty to only the promissory note, or better yet, only a percentage of the indebtedness of the promissory note, such as twenty-five percent (25.0%) or a ceiling, such as the first $100,000.00 of the indebtedness of the borrower. If possible, the borrower's counsel should attempt to eliminate the guaranty agreement. However, in this author's experience, that is unlikely to occur, especially for small oil and gas companies where the lender will want the principal owner of the oil and gas company to typically guarantee the loan to the borrower oil and gas company at a minimum show the owner is "all in" on the loan and will commit his or her entire efforts to ensure the venture succeeds.

From time to time, I have seen RBL where no guaranty exists, the loan is non-recourse, and the principal officer/owner of a borrower operator may inform the lender to simply foreclose on the assets (the oil properties), walk away from the transaction, and thereafter commence a new oil and gas company. Where the principal officer/owner of the oil and gas company has an unconditional guarantee of his loan for his oil and gas company, the lender knows that in most cases, the principal officer/owner of the borrower oil and gas company will do everything possible to ensure the success of the venture and the repayment of the loan.

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72. *See* Amanda K. Martin, *Advanced Real Est. Drafting Course*, STATE BAR OF TEX. F-3 (1993) (describing generally absolute guaranties).

E. The Mortgage/Deed of Trust

The final draft instrument to review, which, for the lender, is the seminal document to secure the loan, is the mortgage/deed of trust, security agreement, and financing statement. An oil and gas deed of trust is similar in many ways to a deed of trust used in conventional commercial real estate transactions; therefore, this article will primarily focus on the differences between such deeds of trust.[73]

First, an energy law practitioner must ensure that the name of the pledgor in the deed of trust is the same as the owner of the oil and gas properties to be pledged.[74] While this may seem self-evident, that is not always the case. For example, if the borrower entity was recently re-named or, merged with another entity, the name of the pledgor of the oil and gas properties may be different. In that case, and to ensure a chain of title from the pledgor of record to the pledgor named in the deed of trust, I will use the words "also known as," "formerly known as," or similar words to tie the borrower or pledgor back to the record title holder of the mortgaged properties as the party having record title should execute the deed of trust.[75]

An oil and gas mortgage should include a wide description of all of the oil, gas, and mineral interests pledged, a typical provision being as follows:

> A. All of the properties, including without limitation, all oil, gas and mineral estates and leases, royalties, overriding royalties, production payments, pooled units and other interests more particularly described on Exhibit A, attached hereto and incorporated herein for all purposes.
>
> B. All of the right, title and interest which Grantor has or may hereafter acquire in the lands, properties and interests described on Exhibit A, together with all appurtenances thereto; all of the right, title and interest of Grantor in and to any other property or property rights which Grantor has or may hereafter acquire in other lands and properties by pooling or unitization; all of the rents, income, and profits thereof, and all of the oil, gas and other minerals in or under any of the lands to which Grantor is or may be entitled; all of the right, title and interest of Grantor in and to oil and gas wells, personal property, and equipment located on the properties covered by the oil, gas and mineral leases

73. Denny, *supra* note 39, at G-8.
74. *See id.*
75. *Id.*

> described on Exhibit A, including without limitation, all wells presently drilled (including injection wells and disposal wells) and all wells hereafter drilled and all connection apparatus and flow lines from wells to flow tanks and all casing, tanks, reservoirs, pipe, gauges, pumping derricks, tools and supplies thereon and thereafter acquired, and all machinery and equipment appurtenant to or used in connection with the production of oil, gas or other minerals from the lands described on Exhibit A, and any replacements thereof or property that may thereafter be placed on the lands described on Exhibit A or used in connection therewith.
>
> C. All right, title and interest of Grantor now owned or hereafter acquired in all agreements, easements, permits, licenses, and rights in exploring for, developing, operating, treating, storing, marketing and transporting oil, gas and other minerals that may be found in or under or produced from any of the properties described herein, including without limitation, all rights of ingress and egress to and from any of the properties described herein.
>
> D. All of the above-described properties, including without limitation, the properties described on Exhibit A, and after-acquired properties included herein, are collectively referred to as the "Mortgaged Properties" in this Mortgage.

For the lender and the borrower, the "Mortgaged Properties" definition should be consistent between the deed of trust and the loan agreement.[76] Furthermore, if representing a lender, an energy law practitioner should ensure that the Exhibit A legal description contains a sufficient property description so that the oil and gas interests may be identified from the description of the oil and gas interests on the face of the deed of trust or by reference to another recorded document listed on Exhibit A to the deed of trust, such as the recorded oil and gas leases or memorandums thereof covering an oil and gas interest.[77] An energy law practitioner should ensure that each oil and gas lease referenced contains a legal description of the lands covered by the oil and gas lease. Depth limitations, or if only a proration unit out of a lease is the collateral to be pledged, should also be referenced correctly.[78] When representing a lender and the borrower is pledging

76. *See id.* at G-19.
77. *Id.* at G-9.
78. Susie, *supra* note 3, at L-20.

anything less than all of the borrower's right, title, and interest in the lease or wants to provide only a pledge of a wellbore or a proration unit, an energy law practitioner should add a metes and bounds legal description for better specificity.[79]

In this author's opinion, it is best practice for an energy law practitioner representing a lender to advise the lender not to take only a wellbore or a proration unit pledge. However, such pledges are occurring more often, as borrowers and their attorneys have become more sophisticated in only pledging certain oil and gas interests. Obviously, bargaining position greatly influences this discussion as a well-capitalized borrower who is not desperate for the loan funds may command more consideration and can set parameters as to the collateral pledged better than the less capitalized borrower. When I first began representing lender clients in the late 1990s, I always heard that as a lender's counsel, you had the "Golden Rule" on your side, that is, "He who has the gold, makes the rules." Now, the bargaining dynamics have changed where some oil and gas lenders are courting well capitalized borrowers for their RBL business, and the borrower may require more concessions.

The property description should also contain a statement regarding the WI and NRI of the pledgor in the oil and gas properties pledged, along with a statement that the intent of the deed of trust is to mortgage any interest that the pledgor owns now or in the future, regardless of what the NRI and WI numbers shown in the deed of trust provide, as the primary purpose of adding such WI and NRI interests is to satisfy the lender that the interest being mortgaged is the interest the lender has relied upon in its loan evaluation and so that in a foreclosure sale, a potential buyer generally knows the interests to be purportedly sold at such foreclosure sale.[80] As counsel to a borrower, an energy law practitioner should ensure that the WI and NRI are accurate as that is what the borrower is representing and warranting to the lender that the borrower/pledgor owns.[81] As lender counsel, one should ensure that the deed of trust contains an after-acquired title provision because the interest of the pledgor may change due to the pledgor purchasing additional mineral interests or acquiring additional mineral interests in the oil and gas leases pledged because of a back-in or reversion.[82] Clause B and Clause D of the above example definition of "Mortgaged Properties" include after-acquired language so that the deed of trust will capture such interests of the borrower/ pledgor, if any, in the future.

A typical deed of trust constitutes a lien on both real property and an Article 9 security interest under the Uniform Commercial Code.[83] Much of

79. *Id.*
80. Denny, *supra* note 39, at G-9.
81. Shearer, *supra* note 14, at 14.
82. Denny, *supra* note 39, at G-9.
83. Shearer, *supra* note 14, at 17.

the collateral contained in the deed of trust constitutes personal property such as the pledgor's rights in operating agreements, participation agreements and other contracts, equipment, and severed oil and gas and accounts arising from the sale of oil and gas.[84] Because of that fact, the deed of trust should also serve as a security agreement and financing statement in order for the lender to obtain a security interest in the pledgor's personal property, and the deed of trust will then serve as a financing statement to be filed in the real property records of the Texas county where the lands covered by the oil and gas leases are located.[85] To accomplish that goal, the deed of trust must meet the requirements of Section 9.502 of the Texas Business and Commerce Code, reflecting the names of the debtor (the pledgor) and the secured party (the lender) providing the addresses of the debtor and secured party and describe the collateral pledged.[86] So long as the requirements of Section 9.502 of the Texas Business and Commerce Code are met, the deed of trust will perfect the lender's security interest in the oil, gas, and other minerals to be produced or extracted, the accounts attributable thereto, and fixtures.[87]

To ensure all personal property of the pledgor in the oil and gas real property interests have been pledged, counsel should file a financing statement with the Secretary of State office where the borrower/pledgor is incorporated in addition to the deed of trust filed in the county where the pledged oil and gas interests are located, which also serves as a financing statement. I will usually copy the description of the personal property covered by the deed of trust and add same to the collateral description of a financing statement and then file same with the applicable Secretary of State's office. An example of a collateral description for a financing statement filed with a Secretary of State's office regarding personal property oil and gas interests is as follows:

> All (i) oil, gas and other minerals produced from those certain real property interests described more particularly on Exhibit A, attached hereto and incorporated herein for all purposes (collectively, the "Mortgaged Properties"), (ii) accounts, contract rights and general intangibles arising in connection with the sale or other disposition of such production, (iii) equipment and other personal property at any time used on the Mortgaged Properties or in connection with such production, (iv) fixtures, and (v) products and proceeds from the sale or other disposition of the Mortgaged Properties or the property described in clauses (i), (ii), (iii), and (iv) preceding.

84. Denny, *supra* note 39, at G-10.
85. *Id.*
86. TEX. BUS. & COM. CODE § 9.502.
87. Denny, *supra* note 39, at G-10–G-11.

As to the indebtedness secured by the deed of trust, the promissory note should be referenced. If representing the borrower, an energy law practitioner should try and limit the indebtedness secured solely to the promissory note and the collection costs in connection. If representing the lender, an energy law practitioner should require the deed of trust to cover future advances and all other indebtedness of the borrower.[88] A future advance clause in a mortgage creates a security interest in the oil and gas properties pledged.[89] If and when a debt arises that is covered by the deed of trust, the inchoate security interest will ripen into a lien.[90] Future advances have the same priority as the obligations specifically described unless it is determined that future advances are not in the reasonable contemplation of the parties when the borrower/pledgor signed the deed of trust.[91] If the parties to the deed of trust reasonably contemplated future advances, then such future advances are given the same priority as the obligation primarily secured even if a lender had actual knowledge at the time of the future advance that junior liens existed.[92] With respect to a revolving note, all future advances of the promissory note are certainly reasonably contemplated and, therefore, secured by the deed of trust.

The deed of trust will also include usually a dragnet clause securing all other indebtedness of the borrower to the lender of any nature.[93] A dragnet clause may read:

> "All other indebtedness, obligations, and liabilities of any kind or character of Grantor to Lender, now or hereafter existing, absolute or contingent, arising by operation of law or otherwise or direct or indirect, primary or secondary, joint, several, fixed or contingent, and whether incurred by Grantor as principal, surety, endorser, guarantor or otherwise."[94]

It is strongly recommended that the language in the dragnet clause be as specific as possible because dragnet clauses are not favored by Texas courts.[95] Personally, over the course of my career, I have not taken much stock in dragnet clauses in deeds of trust to secure promissory notes not

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88. *Id.* at G-12.

89. *See* TEX. PROP. CODE ANN., Title 2 app., Tex. Title Examination Standards § 15.10.

90. *See id.*; *see also* Robinson v. Nat'l Bank of Com., 515 S.W. 2d 166, 168 (Tex. App.—Dallas 1974, no writ).

91. Kimbell Foods, Inc. v. Republic Nat'l Bank of Dall., 557 F.2d 491, 495 (5th Cir. 1977) (*citing* Wood v. Parker Square State Bank, 400 S.W.2d 898, 901 (Tex. 1966); Moss v. Hipp, 387 S.W.2d 656, 658 (Tex. 1965); and James H. Wallenstein & Frank A. St. Claire, *Property, Annual Survey of Texas Law*, 30 SW. L. REV. 28, 53 n.214 (1976).

92. Coke Lumber & Mfg. Co. v. First Nat'l Bank, 529 S.W.2d 612, 615 (Tex. App.—Dallas 1975, writ ref'd).

93. Denny, *supra* note 39, at G-12.

94. *See* TEX. PROP. CODE ANN., Title 2 app., Tex. Title Examination Standards § 15.10.

95. *See, e.g.*, Estes v. Republic Nat'l Bank of Dallas, 462 S.W.2d 273, 275 (Tex. 1970); *see also Moss*, 387 S.W.2d at 658.

referenced in a deed of trust as I do not want to argue that a note not referenced in the deed of trust was contemplated by the parties. I prefer in any deed of trust that I draft that all notes and other indebtedness, such as letter credit applications, are listed in the deed of trust so that there is no question regarding whether the note or the lack of the listing thereof in the deed of trust, was contemplated at the time the deed of trust was signed by the parties thereto. I strongly suggest any lender's counsel do likewise as I have done. I have often heard from older attorneys that the payoff of a promissory note cures any possible malpractice issues; however, I suggest that practitioners should take an additional step in the right direction to prevent potential malpractice issues by listing all promissory notes in the deed of trust.

With respect to warranties and covenants of the borrower/pledgor contained in the deed of trust, there will be some duplication to the warranties and covenants contained in the loan agreement. If possible, when representing the borrower, I prefer for the covenants and warranties in the deed of trust to be reduced as much as possible since most of the warranties and covenants are duplicates of what is already in the loan agreement. Likewise, as to events of default listed in the deed of trust, as a borrower counsel, I prefer that the event of default section in the deed of trust be eliminated and that there is only a reference to the loan agreement events of default instead. If representing the lender, I do not like to delete any representations, warranties, or events of default in the deed of trust, as I typically inform a borrower's counsel that my client lender prefers to have all warranties, representations, and events of default reviewed collectively. As a lender's counsel, a covenant that an energy law practitioner should ensure is included is the covenant to restrict a pledgor from pooling or unitizing its pledged oil and gas leases without the consent of the lender, as the lender should be informed of all operations, both present and future, that the borrower contemplates and how such actions, such as pooling and/or unitizing could affect the pledged collateral.[96] I also suggest ensuring that the deed of trust includes a covenant that the pledgor will not use funds belonging to third parties for its operations, which is especially important if the borrower/pledgor is the operator.[97] Operators will find themselves in serious trouble if they use any funds for their own purposes instead of paying non-operators.[98] Additionally, there should be a covenant that the pledgor must operate the oil and gas properties as a prudent operator if the pledgor is an operator, and if the pledgor is not an operator but a non-operator instead, the covenant should be revised to require the pledgor to ensure that the oil

96. Denny, *supra* note 39, at G-14.
97. *Id.* at G-15.
98. *Id.*

and gas properties are operated in the manner of a prudent operator and in compliance with applicable rules and regulations.[99]

The final discussion regarding the deed of trust concerns including an assignment of production therein, which is similar to an assignment of rents contained in a normal commercial real estate deed of trust.[100] The assignment of production is an assignment to the lender of the pledgor's right to receive the proceeds from the sale of the pledgor's oil and gas under the oil and gas interests, securing the promissory note as collateral.[101] The main contention between the borrower and lender regarding an assignment of production in a deed of trust is whether runs should go directly to the bank upon execution of the deed of trust or only after an event of default.[102] If the borrower is the operator and disburses proceeds of the runs to royalty owners, other working interest owners, and other parties entitled to payment, the energy law practitioner should counsel a lender client from taking runs until an event of default occurs. Otherwise, the lender may be taking on those same payment obligations instead of the borrower unless the deed of trust assignment of production section provides otherwise.

In any event, the energy law practitioner should counsel his or her lender client to have the borrower execute undated transfer orders/payment direction letters providing directions to the oil and gas purchaser which direct the oil and gas purchasers to pay such proceeds directly to the lender because with transfer letters/payment direction letters already signed and in the lender's file, the assignment of runs contained in the deed of trust may be implemented quickly. Having such transfer orders/payment direction letters already in place will allow the lender to commence taking the proceeds of the runs without needing to go to the borrower/pledgor for such orders/letters, which, in a default situation, may be difficult to obtain, especially if the borrower/pledgor is not cooperating.

Upon approval of the loan documents, the completion of all conditions precedent, including, without limitation, the sufficient curing of any title issues, and the preparation of the opinion letter by the borrower's counsel, the closing may then occur. In certain circumstances, the closing may occur before all conditions precedent as completed; however, no advance of the loan will usually occur until the conditions precedent are completed post-closing or there will be a ceiling on the amount to be borrowed until the remaining conditions precedent are completed. There is usually no title company involved in an RBL closing because mineral title is not insured under a title policy; therefore, the closings usually occur at the office of the lender or the office of the lender's counsel. At closing, the borrower signs the loan documents, the bank credit department ensures all requirements to book

99. *Id.* at G-14.
100. *Id.* at G-16.
101. *Id.*
102. *Id.*

the loan have been completed, and then the loan is booked and closed. When those requirements have all been completed, congratulations are then in order as you have just completed your oil and gas reserve-based lending loan! However, because you need to continue paying the mortgage, car payment, and private college tuition for your daughters, there is no rest for the weary or resting on your laurels. Now, it is time to move on to the next loan, which, if you are fortunate, will be another RBL transaction!

VI. RBL HISTORY

As we discuss RBL in 2024, it is important to know the history of RBL over a generation before 2024. Winston Churchill, the prime minister of the United Kingdom during World War II, said "[t]hose who fail to learn from history are doomed to repeat it."[103] As I grow older, these words ring true in so many ways.

Oil and gas companies, at least those that still exist from the 1970s, would agree that the good times for Texas producers began with an oil embargo by the Organization of Petroleum Exporting Countries (OPEC) in 1973 and the Iranian Revolution of 1979, which greatly reduced the supply of imported oil in the United States of America (USA).[104] I remember, as a child, my father rising early in the morning on certain days of the week for my mother's car and my father's pickup truck to fill up their vehicles with gas, lining up for several hours. Persons with vehicles that had license plates ending in even numbers went to gas stations for gas on one day, and persons with vehicles that had license plates ending in odd numbers went to gas stations for gas on another day.[105] Additionally, home heating prices skyrocketed, spurring then-President Jimmy Carter, who recently became one hundred years of age, to deregulate the price of American oil.[106] The result of both outside and inside influences is that demand for oil became high, as the price of West Texas Intermediate Crude soared from $16 a barrel (equivalent to about $70 in 2023) to the incredible height of $40 a barrel (equivalent to about $145 in 2023), and between 1979 and 1981, the number of rigs in production in the USA rose from 2,571 to 4,321.[107]

With the increase in oil and gas prices came the desire to lend money by banks, one example being Penn Square Bank in Oklahoma City, Oklahoma,

103. Winston Churchill, Address to British House of Commons (May 7, 1948).

104. Mimi Swartz, *The Oil Boom That Went Bust*, TEX. MONTHLY (May 2023), https://www.texasmonthly.com/being-texan/houston-oil-boom-that-went-bust/.

105. Reis Thebault, *Long Lines, High Prices and Fisticuffs: The 1970's Gas Shortages Fueled Bedlam In America*, THE WASHINGTON POST (May 13, 2021, 8:00 AM), https://www.washingtonpost.com/history/2021/05/13/gas-shortages-1970s/.

106. Swartz, *supra* note 104.

107. *Id.*

which based its loan portfolio more on "character lending," as discussed below, instead of RBL.[108] "Lending money in the absence of a formal loan application . . . looking a customer in the eye but not looking closely at his financial statement; neglecting to update reservoir-engineering reports. . . . This was 'character lending with a vengeance.'"[109] Character lending and loans based on PUD reserves, not PDP reserves, became popular while normal RBL and clearing serious documentation exceptions by the credit departments of banks occurred much less.[110]

One of the issues regarding RBL on PUD reserves is that while a well to be drilled may produce, the decline profile might be different than what was anticipated at the time of the loan. For example, if the engineering for an anticipated oil and gas well was predicted to have a five percent decline curve but instead had a 50% to 80% decline curve, the collateral value for the original loan was then grossly overstated. That is why lenders believe PDP collateral constitutes much better collateral than PUD collateral because the bank is receiving pledge proven to produce collateral instead of taking the risk that the PUD collateral will not result in a producing well or may be a producing well but with a significant decline curve rendering the collateral near worthless.[111]

A further issue was that banks in the late seventies and early eighties were loaning money to oil and gas companies to drill very deep (called ultra deep) gas wells (below 15,000 ft below the surface of the earth) because of major governmental incentives.[112] Once oil and gas prices collapsed, the value of the gas from those wells became essentially worthless.[113] Again, banks loaning on PUD gas from wells not yet drilled for which estimates of the value of such gas drilled from such wells became worthless, resulted in the default of several loans and ultimately, the collapse of the bank's lending on same, including without limitation, Penn Square Bank and First National Bank of Midland as discussed more particularly below.[114]

For a normal commercial construction loan, a lender obtains an as-built appraisal, providing the lender with the value of the raw land and the value of the land once the building built on the raw land is completed. The lender will then lend on a loan-to-value ratio (LTV) of 70% to 80% of the as-built

108. SINGER, *supra* note 5 at 122–23.

109. *Id.*

110. *Id.* at 125.

111. Anonymous bank officer interview, *supra* note 18.

112. Bruce A. Wells & K.L. Wells, *Anadarko Basin in Depth*, AM. OIL & GAS HIST. SOC'Y (July 14, 2014), https://aoghs.org/technology/anadarko-basin-depth/.

113. BRYAN BURROUGH, THE BIG RICH: THE RISE AND FALL OF THE GREATEST TEXAS OIL FORTUNES 407 (2009).

114. *See In re* Meg Petroleum Corp., 61 B.R. 14, 16 n.1 (Bankr. N.D. Tex. 1986) (explaining how the Federal Deposit Insurance Corporation assumed the First National Bank of Midland's loans after its failure); *see also* SINGER, *supra* note 5, at 142.

value of the land.[115] For example, if the value of certain real estate to be pledged with the construction of a retail office building thereon is $1 million, the lender will loan the borrower on a 70% LTV the amount of $700,000.00. For a loan using PUD reserves whereby one anticipates that an oil and gas well to be drilled will produce a certain income after being drilled, there are too many issues that could arise for a well to be drilled to be deemed a good credit risk, such issues being at a minimum, the following:

1. Dry hole;
2. Long payout;
3. Oil and gas prices collapse; and
4. Steep decline curve.

However, with loans secured by PDP reserves, the lender has a known collateral as the issues of a dry hole, long payout and steep decline curve are removed with the only variable being oil and gas prices, for which a lender then only lends on one half or less of the future income discounted to present value.

There was a seemingly willful blind optimism that the good times brought by the oil boom would never end and the price of oil would never go down as oil-rich "Texans drove 'Midland Mustangs'—a two-seater Mercedes—and each wore a solid gold Rolexes, a.k.a. Texas Timexes."[116] Such optimism defies the law of gravity and economics, that is, the law of supply and demand, because "the allure of big profits produced too much of a good thing" as crude oil prices began to teeter in 1982 and by 1986, oil prices had imploded.[117] A barrel of West Texas Intermediate Crude dropped to $10.42 a barrel, and the 1981 rig count of 4,500 had fallen to 663 in July 1986.[118] A new bumper sticker started showing up around the State of Texas stating "Please God, give me one more oil boom" with more colorful language afterwards.[119]

As a prescient marker of the oil bust to come, on July 5, 1982, the United States Comptroller declared Penn Square Bank insolvent, and the Federal Deposit Insurance Corporation (FDIC) entered Penn Square Bank's offices to settle the bank's affairs because Penn Square Bank owned a portfolio of uncollectible loans whose face value exceeded Penn Square Bank's capital, making the bank now bankrupt.[120] After the collapse of Penn Square Bank in

115. Jonathan Thalheimer, *High Volatility Commercial Real Estate Loans: New Federal Rules and Their Impact On Loan Availability*, 11TH ANN. ADVANCED REAL EST. STRATEGIES CHAPTER 3.3, STATE BAR OF TEXAS (2017) (*citing* 12 CFR part 365, subpart A).

116. Swartz, *supra* note 104.

117. Id.

118. *Id.*

119. *Id.*

120. Singer, *supra* note 5, at 4.

October 1983, just eight months after a major OPEC price reduction, the largest independent bank in Texas, First National Bank of Midland, collapsed, and then nine of the ten largest banks in Texas would follow suit and collapse as well.[121] Indeed, a joke was making the rounds in Dallas: "How do you get a Texas oilman out of a tree?" "Cut the rope."[122] As the oil patch collapse occurred, banks began to call in not just oil and gas-secured notes but commercial real estate notes too, and when neither the borrower oil and gas companies nor borrower real estate developers could pay their called-in notes, the banks then collapsed.[123]

I was in junior high and high school in San Angelo, Texas, where I hail from, a fact that I am immensely proud of, during the historic boom and epic destruction of the oil and gas, real estate, and banking industry in the 1980s. Although in the late 1980s, I was aware that times for my parents were difficult, I had no idea just how bad things got. Looking for homecoming and prom dates, going to class, and focusing on college applications was much more important to me than being overly concerned about all the foreclosure sales, for-sale signs, and job losses in the Concho Valley. It is a testament to my parents, who have since gone to their reward, that they insulated my sister and me from what, in many ways for Texans, was much worse than the Great Recession and COVID combined. In the movie "Field of Dreams," Doc Graham informs Ray Kinsella that "We just don't recognize the most significant moments of our lives while they're happening."[124] While that era was certainly not the most significant time in my life, reading non-fiction books about that era, some of which have been quoted in this article, and listening to war stories from some of the older attorneys in my firm and elsewhere who were relatively young attorneys practicing oil and gas law at that time is beyond fascinating to me.

One may be surprised to learn that one of my favorite books about Texas oil and gas is fiction, unlike the great non-fiction seminal work by Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power* (which I like too and have seen the documentary), but a novel, *The Iron Orchard*, published in 1966, written under the pen name, Tom Pendleton as the actual name of the author was Edmund Pendleton Van Zandt, Jr.[125] This book won the Texas Institute of Letters Jesse H. Jones Award for Best work of Fiction in 1967 along with Larry McMurtry's *The Last Picture Show*.[126] This book has garnered a serious following for the author's authentic representation of the West Texas oil fields in the 1950s.[127] There are several lines in the book

121. Burrough, *supra* note 113, at 407.
122. *Id.* at 406.
123. Swartz, *supra* note 104.
124. FIELD OF DREAMS (Universal Pictures 1989).
125. TOM PENDLETON, THE IRON ORCHARD (1966).
126. *The Iron Orchard*, TCU PRESS, https://www.tcupress.com/9780875657400/ (last visited Dec. 2, 2024).
127. *Id.*

that are relevant to this article, including a quotation from the book's protagonist, Jim McNeely, where he states the following: "A man that owes nearly three million dollars and is only forty-two years old has got to be successful. When you owe that much money, your creditors are gonna see that you make out."[128]

Unfortunately, for many oil and gas companies in the 1980s, such banks could not see the bankrupt oil and gas companies back to black because such banks collapsed too.[129] The result of the 1979–1982 boom and the bust that followed for many years was a much more conservative approach to RBL so that such issues would not occur again, or at least, banks would have better protections against such headwinds in the future.[130]

Regardless, in my practice, I have continued to see epic highs and lows in the price of oil and gas from April 2020, when the price of oil per barrel was negative $37.00 a barrel to two years later when the price of oil per barrel was $114.00.[131] As I write this article, crude oil futures continue to trade around $70.00 per barrel.[132] Although oil is trading at a respectable level, because of the constant volatility in the market, few banks are participating in RBL. Most banks providing RBL loans to small independent oil companies now include a kicker or backstop, usually some other collateral, such as real estate, a pledge of a certificate of deposit account, stock, gold, or silver, that is not subject to such volatility.[133] Another option for the bank as an alternative kicker is having a participant investor with a high net worth willing to guarantee at least partially the RBL loan for the small oil and gas company. The true RBL remaining is for large independent oil and gas companies, such as Marathon Oil Company, and is typically a loan that exceeds $100 million and has several participant banks.[134] I add that RBL for small independent oil and gas companies has all but disappeared because small independent oil and gas companies have all but disappeared too, a fact that I dislike as the chance to be a Texas wildcatter in the spirit of Jett Rink from the movie "Giant" has seemingly vanished from Texas for future generations of oil men and women.[135]

Additionally, due to the fact that RBL is greatly dependent on a certain percentage of the present worth of future net income discounted at a certain value, while the marker of fifty percent of the present net worth is typical, some more conservative lenders have reduced that amount to forty percent or

128. PENDLETON, *supra* note 125.
129. Swartz, *supra* note 104.
130. Denny, *supra* note 39, at G-1.
131. Swartz, *supra* note 104.
132. MARKETWATCH, https://www.marketwatch.com/investing/future/cl.1 (last updated Sept. 20, 2024, 2:29 PM).
133. Anonymous bank officer interview, *supra* note 18.
134. *Id.*
135. GIANT (1956).

even thirty percent so that such lender is better insulated from a serious fall in oil and gas prices.

VII. CONCLUSION

Regardless of the reduced nature of RBL for the small oil and gas companies remaining in existence, RBL will continue to be utilized as a financing vehicle so long as enough small independent oil and gas companies continue to have the drive to acquire oil and gas-producing properties and drill. Banks want PDP collateral, generally producing wells for which the oil and gas leases are no longer in their primary term, because while the price of oil per barrel may change, the constant of continuous production of the pledged PDP assets provides some stability. Furthermore, independent oil and gas companies, both large and small, will remain and truly capture the quintessential essence of the Texas spirit.

From *The Iron Orchard*:

> There's an element of luck in all business . . . but in the oil business, luck is the queen of destiny. You say this boy . . . has dreams of a big oil field somewhere with his name on it, waiting on him to find it. They all do. That's kind of a lifelong disease. It drives some crazy, some crooked, breaks the hearts of the strong and unlucky, and rewards a few lucky ones with wealth and power beyond their deserving.[136]

So long as Texas continues to produce oil men (and women) with dreams of luck in the oil patch, there will be a need for RBL. This article is dedicated to the current and future oil men and women and the banks willing to lend on their dreams because "[s]o long as you can still borrow money, you're solvent."[137]

136. Pendleton, *supra* note 125, at 232–33.
137. *Id.* at 244.

THE NEW A.A.P.L. MODEL FORM PARTICIPATION AGREEMENT

Paul G. Yale[*]

I. INTRODUCTORY

In the summer of 2022, the Executive Committee and Board of Directors of the American Association of Professional Landmen (AAPL) approved the first-ever Model Form Participation Agreement (hereinafter,

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sometimes referred to as PA) endorsed by the Association.[1] The PA form was subsequently made available in the forms section of the AAPL website.[2]

The PA form resulted from the work of an ad hoc committee organized by the AAPL Forms Committee five years earlier. The ad hoc committee was co-chaired by Oklahoma City landman Dorsey Roach, CPL, and Dallas landman Dave Harper, CPL/CPA.[3] The Ad Hoc Committee subsequently renamed itself the Participation Agreement Drafting Committee (the PADC). The progress of the PADC was reported on in a paper at the 2018 Rocky Mountain Mineral Law Foundation Annual Institute by Roach and Harper.[4] The purpose of this Article is to introduce the PA in its final form to AAPL members and others who are interested.

Part II discusses participation agreements in general. Part III discusses the overall structure of the PA and what distinguishes it from other participation agreement forms that readers may have encountered. Part IV summarizes the key provisions of the PA. Part V includes practice pointers for utilizing the PA form. Part VI concludes with some general comments and observations.

II. BACKGROUND

The term "participation agreement," as used in the oil and gas industry, can mean different things to different people. The Williams & Meyers oil and gas treatise defines the term as an agreement whereby "certain parties agree to participate, usually by the contribution of capital, in an exploration and/or development project."[5]

Perhaps a better way of thinking about participation agreements is to consider what they are not. They are rarely intended to be joint ventures or partnership agreements, and the PA contains a specific disclaimer to this effect in Article XVII.[6] This is for reasons of avoiding joint or collective liability and the tax consequences that can result from a partnership structure.[7]

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1. AM. ASS'N OF PRO. LANDMEN, MODEL FORM PARTICIPATION AGREEMENT (2022) [hereinafter MODEL FORM PA].

2. *AAPL Model Forms – Premium Forms*, AAPL, https://learning.landman.org/products/aapl-model-forms-premium-forms (last visited Oct. 25, 2024).

3. *Id.* Other original members of the PADC who saw the work of the PADC through to the end included Amarillo, Texas landman, Debbie Dominguez, RPL; Denver, Colorado attorney, Howard Boigon; and Houston, Texas attorney, Paul Yale, CPL. *Id.* Additional AAPL members along the way brought a nationwide perspective to the PADC's work, and an extensive peer review by other landmen and attorneys was undertaken before the PA form was finalized and presented to the AAPL Board.

4. Dorsey Roach & David Harper, Address at the 64th Annual Rocky Mountain Mineral Law Institute on new AAPL Form Participation Agreement (July 21, 2018).

5. HOWARD R. WILLIAMS & CHARLES J. MEYERS, MANUAL OF OIL AND GAS TERMS 847 (Patrick H. Martin & Bruce M. Kramer eds., 18th ed. 2021) [hereinafter WILLIAMS & MEYERS].

6. MODEL FORM PA, *supra* note 1, at Art. XVII.

7. *See* WILLIAMS & MEYERS, *supra* note 5, at 847.

Participation agreements can also be distinguished from joint operating agreements. Joint operating agreements are frequently attached to participation agreements but serve a different purpose.[8] Joint operating agreements govern the day-to-day operations of wells drilled and produced by working interest owners and remain effective beyond the initial drilling phase for the life of the lease or the life of the field.[9] Participation agreements are transactional agreements that provide the deal terms between two or more parties and are typically limited in scope to the initial exploration phases of a prospect, with a joint operating agreement superseding the PA when the development phase begins.[10]

A participation agreement, in further contrast to a joint operating agreement, usually describes what it will cost a participant to buy into a prospect generator's drilling deal and typically involves "front-end loading," also known as a "promote," through which a buyer pays a greater share of the exploration and development costs than the seller as part of the consideration the seller is receiving for having identified the prospect and putting the deal together.[11] Perhaps the classic participation agreement structure is the "third for a quarter" deal by which a seller transfers three-quarters of the leasehold interest in a prospect to a buyer in exchange for the participants paying 100% of the cost of drilling and completing the initial well on a prospect.[12]

Participation agreements can also be distinguished from farmout agreements, though farmout agreements are close cousins. Williams & Meyers defines a farmout agreement as a "form of agreement between operators, whereby a lease owner not desirous of drilling at the time agrees to assign the lease, or some portion of it (in common or in severality) to another operator who is desirous of drilling the tract."[13] The farmor in a farmout arrangement typically assigns 100% of its leasehold to a farmee in exchange for the farmor's reservation of an overriding royalty with the option to convert it, after payout, to a working interest.[14] As further consideration, the farmee usually commits to drill a well or wells on the farmor's lease at the farmee's sole cost, risk, and expense.[15]

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8. *See id.* at 600 (defining joint operating agreement).
9. *Id.*
10. *Id.* at 600, 847.
11. *See* MODEL FORM PA, *supra* note 1, at Art. VII.
12. *See* WILLIAMS & MEYERS, *supra* note 5, at 1203 ("[I]f the deal included three people plus the operator, each person (other than the operator) would put up one-third of the drilling cost and would receive a one-quarter interest in the well. The operator's quarter interest in the well is its reward for searching for, identifying, and leasing the prospect as well as the efforts it exerts in supervising the actual drilling and completion").
13. *Id.* at 415.
14. *Id.*
15. *Id.*

Participation agreements may be near identical to farmout agreements in structure, with the main difference being that the seller in a participation agreement will often operate the wells with the buyer agreeing to bear a "promote" as part of the consideration the seller is receiving, as in the "third for a quarter" example referenced above. Nevertheless, distinctions between farmouts and participation agreements can be subtle.

To further complicate, the term "participation agreement," as it is used in the oil and gas industry, is often utilized interchangeably with terms such as "exploration agreement,"[16] a development agreement, a joint development agreement, or a combination of such terms, such as an "exploration and development agreement,"[17] or even an "acquisition, exploration, and development agreement."[18] The differing terminology used to describe participation agreements reflects the wide variety of objectives that parties to the agreement may have.

For example, some participation agreements include provisions for shooting or purchasing seismic to develop prospects. In other participation agreements, a prospect generator has already shot or acquired seismic and defined a drillable prospect, which is then sold to participants to finance drilling and completion operations. Some participation agreements are designed for the initial drilling phase of a single prospect and end when subsequent operations are covered by a single JOA contract area. Other participation agreements cover vast areas and contemplate multiple prospects with multiple JOA contract areas.

Early on, the PADC decided when approaching the task of drafting a model form agreement that the name "participation agreement" was a better choice than the variety of other terms used by the industry to describe such arrangements because the word "participation" focused the agreement on its core issue: how to allocate working interest percentages and costs. Hence, the title given to the PA form is "Model Form Participation Agreement."

Regardless of what title is used, participation agreements can be considerably more complex than the classic "third for a quarter" drilling deal described above and can involve numerous options and variations as well as differences in scope and scale. The sheer variety of possible deal structures led one eminent Texas oil and gas lawyer to suggest that an effort to put together a form agreement for such purposes would be foolhardy.[19]

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16. *Id.* at 400 (defining an "exploration agreement" as "[a] contract providing for the joint exploration and development of a given prospect or land area"). The term "exploration agreement" can include a broad range of agreements ranging from simple, single-well joint operating agreements to large federal exploration units covering tens of thousands of acres or more. *Id.*

17. *See* Debra J. Villarreal & Lucas LaVoy, *Participation Agreements*, 31 E. MIN. L. FOUND. 10, § 10.09 (2010).

18. *See* Steven B. Richardson & Peter D. Robinson, *Comprehensive Exploration Agreements*, No. 2 ROCKY MTN. MIN. L. INST. Paper No. 9, Appendix II (2010).

19. *See* Allen D. Cummings, *Complex Exploration Agreements; Getting Down to Business*, No. 2 ROCKY MTN. MIN. L. INST. Paper No. 7, A (2004), https://law-journals-books.vlex.com/vid/chapter-7-

Other commentators have also expressed skepticism of standard form participation agreements.[20] Foolhardy or not, the charge of the PADC was to do just that—develop a model form participation agreement that could be used in multiple jurisdictions for a wide variety of well trades, and especially those prospects and deals that are commonly sold at the North American Prospect Expo (NAPE). It is hoped that the introduction of a model form PA will enable documenting well trades at NAPE and elsewhere to be easier and quicker. It was also the goal of the PADC to develop a model form that would become widespread in use by industry. Only time will tell if the PADC's goals were met.

III. STRUCTURE

As part of its process, the PADC collected and reviewed a large number of sample participation agreements (some bearing the name "participation agreement" and others bearing names like "exploration agreement," "development agreement," and so forth).[21] As would be expected, the content and structure of the agreements varied widely, and each case was very deal specific. This is because the historical approach to participation agreements has been to negotiate the deal and then draft a customized, deal-specific contract.

The PADC took a different approach. It identified the most common features and alternatives used in participation agreements and incorporated them into a form that could be customized by filling in blanks and checking boxes.

For example, assume that two parties, a prospect generator and a participant, wish to enter into a drilling deal with the following terms:

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complex-exploration-971589970 ("In this author's experience, the form of exploration agreements is as varied as the companies and individuals who explore for oil and gas and the exploration trades they put together. It would be foolhardy then to suggest there is a usual form of exploration agreement. Moreover, it would be an insurmountable task to analyze and present the law in each jurisdiction that might be applicable to the drafting of the various provisions of a complex exploration agreement."). Note: though an "exploration agreement" was referred to the sentiment could be inferred to apply to "participation agreements" to the extent that the author drew any distinction between the two. *See id.*

20. *See* Karen E. Lynch, *Diagram of an Exploration Agreement: Legal and Practical Pointers for Promoters and Participants*, 43 ROCKY MTN. MIN. L. INST. 17, 317.01 (1997) ("3-D exploration activities will probably never lend themselves to 'fill-in-the blank' documentation . . ."); *see also* Richardson & Robinson, *supra* note 18, at 1 ("Unlike other common agreements in the oil and gas industry, there is no 'standard form' of exploration and development agreement"); Villareal & LaVoy, *supra* note 17, at § 10.03 ("There is certainly no one form of participation agreement."). Nevertheless, both Richardson & Robinson, in their 2010 paper for the Rocky Mountain Mineral Law Foundation, and Villarreal & LaVoy, in their 2010 paper for the Eastern Mineral Law Foundation, included detailed sample participation agreements. *See* Richardson & Robinson, *supra* note 18, at Appendix II (sample participation agreement); Villareal & LaVoy, *supra* note 17, at § 10.09 (same).

21. *See* discussion *supra* Part I (discussing participation agreements and other interchangeable terms).

1. Seller is to be paid $10 million in upfront prospect buy-in costs; Buyer gets an assignment upon payment of such costs.
2. Seller retains an overriding royalty in its leases equal to the difference between existing burdens and 25%.
3. Seller to be carried through the tanks, with a 25% working interest in the initial test well.
4. All wells drilled after the initial test well are governed by a JOA with Seller (now operator) owning 75% and Buyer (now nonoperator) owning 25%, with no further well carries.
5. Three-year term of agreement with coincident Area of Mutual Interest (AMI) acquisitions not subject to Seller's override.
6. No tax partnership; no arbitration unless agreed; Texas law and venue in Harris County, Texas.

The above deal could be documented by checking boxes and filling in blanks in the PA form, as described in the following footnote.[22] How much

22. *See generally* MODEL FORM PA, *supra* note 1. Boxes checked and blanks filled in hypothetically as follows:

1. Preamble: insert effective date and name/address of prospect generator plus County/Parish location of lands and name of prospect. (participant's name is on the signature page).
2. Article II: check boxes of all exhibits that apply.
3. Article III: insert names of parties with a 25% working interest credited to the prospect generator and 75% working interest credited to the participant.
4. Article VI: insert prospect buy-in costs and fill in the total in the blank provided.
5. Article VI.A: select Option No. 1 (assignment due upon participant's payment of working interest share of existing lease costs).
6. Article VI.D: check Option No. 1 (no spud fees)
7. Article VI.E: leave blank.
8. Article VII: check the box for the prospect generator's reserved overriding royalty and insert "twenty-five percent" (25%) in the blanks.
9. Article VII: check the box for the prospect generator's carried interest and insert "twenty-five percent" (25%) in the blanks, plus check Option No. 2A (Carried interest includes all drilling and completion costs).
10. Article VII: select Option No. 1B, carried interest applies only to the initial obligation well.
11. Article VII: additional promotes, beginning at Article VII.C., ignore all text up to Article VIII, obligation wells (no back-in interests after payout).
12. Article VIII: obligation wells, select Option No. 1, the participant is obligated to participate in the drilling of the initial obligation well only.
13. Article X: select an option (addresses wells proposed by third parties).
14. Article XI: insert name of the operator.
15. Article XIII: insert "three" and "3" in the blanks for the term of AMI.
16. Article XIII: select Option No. 2 (override does not apply to acquisition of drilling rights).
17. Article XIV: fill in names, addresses, and contact information.
18. Article XVII: select one of the options for a tax partnership. (See discussion infra Part IV, Practice Pointers).
19. Article XIX: select Option No. 1 (no arbitration unless agreed).
20. Article XXI.K: fill in the blanks with "Texas" and "Courts of Harris County."
21. Article XXII: fill in "three" (3) years as the term of the agreement.

time it would take to complete the agreement would depend on the drafter's familiarity with the PA form, but it should be self-evident that the time spent would be minimal compared to drafting a participation agreement from scratch.[23]

What if the terms were to be modified through further negotiation? For example, what if there were three participants instead of one? What if the participants had to carry the prospect generator on the first two wells that were drilled instead of only the first well? What if the carried interest was limited to costs incurred before the casing point election only? Or what if, in lieu of a carried interest, the prospect generator was to receive a back-in after payout of 25%? These changes and more can be easily made to the PA form in a matter of minutes by including additional parties and checking other boxes.

At this point, an engaged reader might be raising a multitude of questions and expressing considerable skepticism. What if the prospect had not yet been fully developed and additional seismic is needed? What if the lease block has not been fully put together by the prospect generator? What if the prospect area includes multiple prospects? Rather than having a single prospect generator, what if the parties wish to form a prospect-generating team that will identify prospects and then be voted on by the participants before commitments to drill are made? What downstream facilities (gathering, gas plant, pipelines) will be needed to produce the prospect, and how are such needs addressed by the PA form?

In answer, the PA was designed to address what is believed to be the most common participation agreement scenario—where a prospect generator who has identified a prospect and put together a lease block that is ready, or close to ready, to drill is seeking participants to fund the initial test well or wells. If seismic data was utilized in developing the prospect, the assumption is that the seismic data has already been acquired and interpreted.

But if additional seismic and prospect development is needed, the PA form could be attached to an umbrella exploration agreement providing for the acquisition of seismic and leasehold, which would then be utilized in developing prospects. The exploration agreement would provide the parameters of the seismic and leasehold acquisition program, with the PA providing for how the costs would be shared and how the prospect generator would be compensated.

If there is no prospect generator bringing something unique to the table, whether it is a geologic idea, a lease block, or an interpreted seismic data set,

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22. Signature page: the prospect generator and participant date and sign the agreement. That would be it. The rest of the text of the PA is mostly definitions and contractual boilerplate.

23. *Id.* Practice Tip: If you download the PA Form off the AAPL website, change the page numbers at the bottom, which currently refer to page numbers EC-17 through 49 in an AAPL Executive Committee approval package. *See id.*

then perhaps a joint operating agreement with appropriate modifications would be a better choice than a participation agreement. Or alternatively, a joint venture or partnership agreement with a formal management committee and a prospect-generating team.

If the PA area is large and multiple prospects are anticipated, the PA form could be set up such that a separate PA applies to each prospect. This could be addressed in Article XXIII, Other Provisions, in the PA form, similar to how other provisions are addressed in Article XVI, Other Provisions, of the AAPL JOA form.[24]

If the parties wished to collaborate with a prospect generator in identifying prospects or include restrictions on proposing prospects that might otherwise trigger sole risk or forfeiture provisions before there is a consensus among the participants to move forward with a drilling program, Article XXIII of the PA form is available to incorporate additional provisions. Downstream provisions could likewise be included in Article XXIII of the PA, though those might be more appropriately included in the JOA form attached to the PA.

It is conceded that the PA form may not fit every conceivable participation deal structure, but the form was designed to cover the most common situations in a manner intended to avoid as many potential questions and issues as possible while still keeping the PA form to manageable length. In that sense, the project could be likened to the efforts in the 1950s of the landmen, lawyers, and others who helped develop the original AAPL 610 Joint Operating Agreement form. Just as the AAPL 610 Joint Operating Agreement has been amended multiple times through the decades to improve upon its original provisions, the 2022 PA form may see future modifications.

IV. KEY PROVISIONS

A. Introductory (Articles I–V)

The PA form begins with a preamble, recitals, and definitions.[25] There was considerable discussion within the PADC as to what labels should identify the parties (seller/buyer, promoter/promotee, assignor/assignee?) with the terms "prospect generator" and "participant" finally agreed upon. The recitals, definitions, and exhibits should look familiar to those who work with other similar industry agreements.

Article II of the PA form includes the following exhibits:

A—Description of Prospect Area Lands
B—List of Existing Leases

24. *Id.* at Art. XXIII.
25. *Id.* at Preambles, Recitals.

C—AFE for Initial Obligation Well
D—Form of Assignment of Oil and Gas Leases
E—Form of Operating Agreement (including exhibits)
F—Permitted Encumbrances
G—Tax Partnership Agreement
H—List and Description of all Subsequent Obligation Wells
I—AFEs for all Subsequent Obligation Wells
J—Other[26]

Article III includes blanks for the insertion of the working interest owner's names and working interest shares for the prospect generator and each participant.[27] Articles IV and V include representations of ownership of existing leases by the prospect generator with title representations and verification provisions.[28] The net acres and burdens associated with the existing leases are to be reflected on Exhibit B as required by the definition of "permitted encumbrances" and Article IV, Existing Leases.[29] Article V, Title Representations and Verification, provides for a special warranty of title "by, through and under [the prospect generator (assignor)], but not otherwise."[30] Under Article V, the participants "verify and accept title to the [e]xisting [l]eases and waive claims for adjustment other than for breach of the special warranty of title provided by [the prospect generator]."[31]

B. Promote and Obligatory Well Provisions (Articles VI–VIII)

The heart of the agreement is found in Articles VI through VIII. Article VI includes a list of prospect buy-in costs, including costs of existing leases, geological and geophysical (G&G) costs, prospect generation fees, spud fees, legal fees, land costs, and other.[32] An invoice for a participant's share of the prospect buy-in costs is to be submitted to each participant, with payment due at closing.[33]

Article VI.A addresses existing leases and when assignments of the existing leases are due to the participants.[34] Article VI.B addresses G&G costs and licensing.[35] Article VI.B addresses whether an additional prospect

26. *Id.* at Art. II.
27. *Id.* at Art. III.
28. *Id.* at Art. IV, V.
29. *Id.* at Recitals, Art. IV.
30. *Id.* at Art. V.
31. *Id.*
32. *Id.* at Art. VI.
33. *Id.*
34. *Id.* at Art. VI.A.
35. *Id.* at Art. VI.B.

generation fee may be due to a third party.[36] Article VI.D addresses spud fees, which may be due to the prospect generator or third parties upon commencement of well operations.[37]

Article VII.A provides for an optional reservation of an overriding royalty by the prospect generator.[38] Article VII.B provides for the prospect generator to receive a carried interest in the initial obligation well and possibly subsequent obligation wells, depending on the option selected.[39] Options are provided for the carried interest to be to casing point, through the tanks, or otherwise.[40] Also addressed is to which wells the carried interest will apply: the initial obligation well only, a fixed number of obligation wells, all obligation wells drilled under the PA, and possibly even non-obligation wells if Article VII.B, Option No. 5B is selected and the blank is filled in.[41]

Article VII.C provides for the optional reservation of a back-in interest after payout by the prospect generator.[42] This could be in lieu of, or in addition to, a carried interest. For example, a prospect generator could reserve a 25% carried interest and no back-in interest after payout or a 12.5% carried interest and an additional 12.5% back-in interest after payout. Irrespective, the back-in interest after payout does not apply to carried interests to avoid a double dip.[43]

Options 1 through 4 in Article VII.C.3 provide for the back-in interest after payout to apply to the initial obligation well, a specified number of obligation wells, all obligation wells, or an alternative arrangement to be written in (for example, all wells, including non-obligation wells).[44] Article VII.C.3 also allows "payout" to be defined as a percent recovery of drilling and completion costs, such as 100%, 200%, etc.[45] A relatively complex dual option is written into Article VII.C.3, Options 1A and 1B addressing the scenario where a second well is proposed before payout of the initial obligation well.[46]

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36. *Id.*
37. *Id.* Art. VI.D.
38. *Id.* at Art. VII.A.
39. *Id.* at Art. VII.B.
40. *Id.*
41. *See id.*
42. *Id.* at VII.C.
43. *Id.* Per the last sentence of Article VII.C.1, any back-in after payout reserved by the prospect generator shall not apply to a carried interest in a well or wells that have previously been reserved by the prospect generator. *Id.* at Art. VII.C.1.
44. *Id.* at Art. VII.C.3.
45. *Id.*
46. *Id.* In the event participants are obligated to participate in the initial obligation well, only, pursuant to either Options 1 or 2 under Article VIII.A, and if Option 1 under Article VII.C.3 is selected such that the back-in after payout only applies to the initial obligation well, and if a second well is proposed to be drilled prior to payout of the initial obligation well, then if Option 1A is selected, the initial obligation well shall be deemed to have reached payout irrespective of whether the participants had recovered the payout costs inserted in the blanks in Option 1. *Id.* The prospect generator must then either participate in or elect to go non-consent in the second well with its after-payout interest subject to whatever non-consent

Other options are provided in connection with a back-in interest after payout. Under Article VII.C.4, the options of including or not including prospect buy-in costs in the payout calculation are provided.[47] Under Article VII.C.6, the options of making the prospect generator's election to acquire its back-in interest after payout automatic (Option No. 1) or only upon an election made within sixty days of receiving a payout statement (Option No. 2) are included.[48]

Under the first paragraph of Article VII.C, unless otherwise stated in the agreement, if the prospect generator backs into a well in which its back-in interest after payout attaches, it is deemed to have relinquished its reserved overriding royalty.[49] If the prospect generator does not back into a well with its back-in interest after payout, then under Article VII.C.7, the prospect generator's reserved overriding royalty can either remain the same or be increased.[50] An increase could be accomplished by providing for the override to be calculated on a higher difference between a set percentage and existing burdens, or it could be calculated in another manner (e.g., it could become a fixed percentage in addition to existing burdens).[51]

Article VIII provides for the initial obligation well and specifies the date on which operations must commence the surface location, and if a directional or horizontal well, the approximate bottom hole location, and the footage, which may be in either vertical feet for a vertical well or measured depth in feet for a directional or horizontal well.[52] Article VIII also specifies the formation to be drilled and includes a blank for estimated drilling and completion costs as reflected on Exhibit C, the authorization for expenditure (AFE) for the initial obligation well.[53]

In addition, Article VIII establishes what subsequent wells are also obligation wells.[54] There can be any number of subsequent obligation wells depending on the option selected. Furthermore, Article VIII provides

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penalty would be applicable under the JOA. *See id.* The logic behind Option 1A is that the prospect generator is being placed in the position of having to make a non-consent election in the second well prior to seeing the full pre-payout production history for the initial obligation well. *See id.* The acceleration of the payout period in the initial obligation well under Article VII.C.3 Option 1A serves as a disincentive for the participants to propose a second well prior to the initial obligation well's payout and as compensation to the prospect generator for the loss of an otherwise longer pre-payout production history. *See id.* Alternatively, if Article VII.C.3 Option 1B is selected, the prospect generator's back-in applies after the full recoupment period. *Id.* Note: At the time this Article was written, a revision of Article VII.C.3 Option No. 1 was being considered to clarify that the back-in interest after payout would not apply to the second well in lieu of the non-consent penalty that would otherwise be applicable under the JOA. *See id.*

47. *Id.* at Art. VII.C.4.
48. *Id.* at Art. VII.C.6.
49. *Id.* at Art. VII.C.
50. *Id.* at Art. VII.C.7.
51. *Id.*
52. *Id.* at Art. VIII.
53. *Id.*
54. *Id.*

consequences for a participant's failure to pay costs when due and a provision for the advancement of well costs.[55] There is no non-consent penalty associated with obligation wells because the participants make a firm commitment to pay their share of costs in all obligation wells when they execute the PA.[56]

C. Subsequent (Non-Obligatory) Wells, the Operator, and the Operating Agreement (Articles IX–XII)

Article IX addresses subsequent wells drilled under the JOA, which, unlike the subsequent obligation wells described in Article VIII, are not obligatory.[57] Article X addresses wells proposed by third parties on lands lying within the prospect area.[58] Article XI designates the operator, and Article XII provides for a joint operating agreement to be attached to the PA, which governs day-to-day operations during the drilling of all obligation wells and all subsequent, non-obligatory wells.[59] The PA controls over the JOA.

D. Area of Mutual Interest (Article XIII)

Article XIII establishes an AMI encompassing the prospect area.[60] Normally the term of the PA should coincide with the term of the AMI. Article XIII also provides options for applying the prospect generator's reserved overriding royalty to leases and other drilling rights acquired with the AMI.[61]

The AMI is set up so that any party has the right to acquire leases or other drilling rights within the AMI area, but the acquiring party must tender an interest in these leases and drilling rights to the other parties subject to payment of their proportionate shares of acquisition costs.[62] The PA does not designate a single party, such as the prospect generator, to handle all AMI acquisitions. The PADC felt allowing any party to make acquisitions within the AMI was preferable due to anti-competitive concerns.

There are several options in Article XIII dealing with the prospect generator's reserved overriding royalty and whether or not it carries over to the acquisition of new leases and drilling rights within the AMI.[63] There are

55. *Id.*
56. *Id.*
57. *Id.* at Art. IX.
58. *Id.* at Art. X.
59. *Id.* at Art. XI, XII.
60. *Id.* at Art. XIII.
61. *Id.*
62. *Id.*
63. *Id.*

also options addressing the situation where the prospect generator's reserved overriding royalty in a newly acquired lease causes leasehold burdens to exceed what would otherwise be provided for in Article VII.A.

E. All Other (Articles XIV–XXIII)

The remaining articles in the PA address notices, representations and warranties, disclaimers, relationship of the parties, confidentiality, force majeure, arbitration, and miscellaneous topics, all of which are typical of the contractual "boilerplate" found frequently in participation agreements. Article XXII establishes the term of the PA, which, as noted above, should coincide with the term of the AMI established in Article XIII.[64]

V. PRACTICE POINTERS

A. Read the Agreement; Use of Checklists

The first and most important practice pointer is to become familiar with the PA form before using it. Though the PA form is thirty-five letter-size pages long, much of it is blanks to be filled in and boxes to be checked depending on the options selected. Regardless, the PA form is a relatively quick read when compared, for example, with the AAPL Model Form Joint Operating Agreement.

Most, if not all, of the common features of a basic participation agreement are included in the various options in the PA form. So, the PA form is itself a checklist that can be used to think through issues and formulate deal terms. Beyond that, two of the papers cited earlier, written by Karen Lynch and Alan Cummings, incorporate detailed checklists for negotiating participation agreements.[65] Lynch's paper deals more with seismic agreements, while Cummings's paper addresses exploration agreements more generally.[66]

Both of these papers are excellent, and their checklists are comprehensive, thoughtful, and as relevant to participation agreements today as they were when the papers were written in 1997 and 2004. Studying the PA form simultaneously with the checklists provided by Lynch and Cummings is a good way to achieve a further understanding of participation agreements and is likely to stimulate more careful thought in selecting options and considering additional provisions for the PA form.

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64. *Id.* at Art. XXII.

65. *See* Lynch, *supra* note 20; Cummings, *supra* note 19.

66. *See* Lynch, *supra* note 20; Cummings, *supra* note 19. Also known as participation agreements, though Cummings does not call them that. *See* Cummings, *supra* note 19.

B. Classification and Transparency of Prospect Buy-in-Costs

Article VI of the PA provides for a detailed breakdown of the most common prospect buy-in costs.[67] The PADC believed it was important to segregate these costs because the costs can be treated differently on a participant's tax return, and it can be difficult to get such cost breakdowns from a prospect generator many months after a PA is signed.

It is common for prospect buy-in costs to be in excess of what the prospect generator has actually invested in leases, G&G, and so forth. Amounts included in the prospect buy-in costs that are in excess of the actual amounts invested by the prospect generator are generally to compensate the prospect generator for time, salaries, and expenses incurred by the prospect generator, as well as the time value of money and risks that have been incurred.

Nevertheless, it is not unreasonable to ask a prospect generator how much of a "promote" is included in prospect buy-in costs. As with anything else in the PA, the "promote" included in prospect buy-in costs can be a matter of negotiation.

C. Tax Partnerships

Consider whether a tax partnership is to be included or not as an exhibit to the PA. The options to include or not a tax partnership are included in Article XVII of the PA.[68] A detailed discussion of tax partnerships is beyond the scope of this Article, but in very general terms, a tax partnership is usually appropriate where carried interests are involved, and one party is paying a disproportionate share of drilling and completion costs. Not having a tax partnership when carried interests are involved can jeopardize a party's eligibility to deduct its full share of the intangible drilling costs incurred in obligatory wells on its tax return.

However, tax partnerships are administratively expensive to set up and maintain with annual partnership tax filings and so forth and will likely require the involvement of a professional accounting firm. Thus, the question becomes, are they worth it? The answer to that question may depend on the number of wells in which a disproportionate sharing of costs will occur. Professional tax advice should be sought in making the determination as to whether a tax partnership would be beneficial.

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67. *See* MODEL FORM PA, *supra* note 1, at Art. VI.
68. *See id.* at Art. XVII.

D. AMI Issues

Having a term limit on the AMI is desirable for several reasons, including avoiding potential violations of the rule against perpetuities. The term of the AMI should never exceed the term of the PA itself, or at least it should not without adding a special provision that the AMI survives the term of the PA.

The AMI provision in Article XIII addresses acquisitions of drilling rights within the AMI, which, per the definitions section in the PA, includes oil and gas leases, farmins, mineral acquisitions, and other operating rights.[69] But what if an oil and gas lease, for example, covers land both inside and outside the AMI? Article XIII, as written, would only cover the portion of the lease in the AMI.[70]

Excluding outside acres from leases partially within and outside the AMI is one way of handling it, but that necessitates an allocation of costs between the portion of the lease falling outside of the AMI and the portion within the AMI. Will the allocation be accomplished on a per-acre basis or by using another yardstick, such as an estimate of oil and gas reserves in place? Basing the allocation on per acre bonus paid may be the most expedient way of handling the allocation, but if the lease purchased includes proven reserves outside the AMI, the allocation to undeveloped acreage within the AMI could be inflated.

Alternatively, outside acreage could be covered by the AMI through the addition of a special provision in Article XXIII, but that could also raise issues. For example, what if the portion of the lease within the AMI is minimal? A Participant would nevertheless have to participate in the entire acquisition or else forfeit its interest in a newly acquired lease covering lands in the AMI. If the portion of the lease outside of the AMI is offered to and acquired by the participants, it is recommended that the AMI area be amended to include the outside acreage.

E. Form Assignment

Exhibit D to the PA is a form assignment of an oil and gas lease.[71] The assignment form will, of necessity, be deal-specific and cannot be drafted until after the parties have agreed on the options included in the PA form. The assignment is an important document for constructive notice purposes because the PA is normally not recorded.[72] When drafting the assignment,

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69. *Id.* at Art. VIII.

70. *See id.*

71. *See id.* at Exhibit D.

72. If the PA covers lands in Texas, an excellent set of assignment forms can be found in Volume 7, Chapter 10, Lease Transfers, West's Texas Forms, Fourth Edition (Thompson West 2008), by Midland,

care should be taken to ensure that the assignment follows the PA. For example, no title warranties are provided by the PA, except for the special warranty of title from the prospect generator provided for in Article V. So, unless otherwise changed by the PA, the assignment, likewise, should provide for only a special warranty of title by, through, and under the prospect generator as the assignor. Proportionate reduction clauses are also important and should be included in the assignment even though the PA form itself does not address proportionate reduction.

F. Buyer Beware of Title Issues.

Though specific net acre information and disclosure of all burdens in connection with existing leases must be included in Exhibit B to the PA, Article V specifies that participants verify and accept title to the existing leases and waive any claims for adjustment other than for breach of the special warranty of title provided by the prospect generator.[73] Furthermore, under Article XVI.B, participants accept title to the existing leases "as is."[74] This suggests that prospective participants need to be "buyer beware" regarding title, especially since the prospect generator is likely to be carried in one or more obligation wells and thus lacks the same degree of "skin in the game" as the participants when it comes to title.

VI. CONCLUSION

As discussed earlier in this Article, there is skepticism among some lawyers and landmen about using standardized forms when it comes to participation agreements, perhaps even more so today now that computers utilizing artificial intelligence can create customized contracts and agreements specific to each transaction. Artificial intelligence aside, modern, computerized, cloud-based word processing has made reliance on printed standardized forms in the upstream oil and gas sector increasingly obsolete. One need look no further than the widespread replacement of the printed Producer's 88 Oil and Gas Lease form with customized lease forms as an example of the decline in usage of standardized forms within the upstream oil and gas industry.

Nevertheless, standardized forms will reduce the time spent negotiating and documenting transactions. What would the oil and gas industry be like if the AAPL Form Operating Agreement had never been introduced and each company still used its own operating agreement form, necessitating a lengthy

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Texas oil and gas lawyer William B. Burford. 7 WEST'S TEX. FORMS, MINERAL, OIL & GAS § 10 (4th ed., 2023). The chapter is updated annually.

73. *See* MODEL FORM PA, *supra* note 1, at Art. V.

74. *Id.* at Art. XVI.B.

negotiation each time a joint well is proposed? Even then, there has been a decline in usage of the AAPL Form Operating Agreement as parties, especially outside of Texas, increasingly rely on forced pooling orders or even common law co-tenancy rules instead of taking the time and trouble to negotiate a joint operating agreement. This trend further demonstrates the erosion of standardized forms within the upstream oil and gas industry.

A question that can be raised about participation agreements more generally is how relevant they are today when so much of US drilling is in shale plays, where geologic considerations are often secondary to cost and technological feasibility. Are prospect generators really needed in mature shale basins? Industry mergers and acquisitions are leading to the consolidation of large blocks of leases in the Permian Basin and elsewhere by major oil companies and large independents, making it ever more difficult for prospect generators to assemble large lease blocks. Plus, climate concerns and anti-fossil fuel sentiment in the US appears to be here to stay. So, are prospect generators and participation agreements fading into the sunset?

These are fair questions. Nevertheless, until US oil and gas resources are substantially depleted or substantially replaced by renewable energy sources, the need for robust oil and gas exploration and development in the US is anticipated to continue.[75] With such continued oil and gas exploration and development will invariably come opportunities to put together new lease blocks and test new or refined geologic concepts through participation agreements. It is hoped that the new AAPL Model Form Participation Agreement will help facilitate such opportunities.

75. Robert Bryce, *What the Media Won't Tell You About the Energy Transition*, SUBSTACK: ROBERT BRYCE (May 7, 2024), https://robertbryce.substack.com/p/what-media-wont-tell-you-about-energy-transition.

CAPACITY CRISIS: THE WIDENING GAP BETWEEN RENEWABLE AND DISPATCHABLE RESOURCE CAPACITY

Abigail Cheek[*]

ABSTRACT

The disastrous effects of Winter Storm Uri in 2021 exposed major weaknesses in the Texas power grid. In response, policymakers proactively addressed grid reform during the 87th and 88th Legislative Sessions, passing multiple bills to improve operational problems with the grid. However, the grid's malfunction on September 6, 2023, confirms that the grid's reliability remains vulnerable due to a fundamental capacity problem.

There are several reasons for this capacity deficit. First, federal subsidies and tax credits have distorted Texas's deregulated energy market by affecting wholesale electricity prices. Additionally, state subsidies and policies have encouraged large investments in wind and solar generation that show little return for the capacity they offer to the market. Finally, wind and

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solar generation offset the grid's frequency in times of peak demand, leaving dispatchable generators responsible for protecting the grid from sudden outages. However, because incentives and credits are exclusively offered to renewable energy, dispatchable generators face economic uncertainty by staying available at any time.

This overinvestment in subsidies and wind and solar generation has led to an unbalanced market and an unreliable power grid. As demand for more energy continues to skyrocket in Texas, the Legislature must acknowledge the grid's capacity problem to ensure the grid functions properly. While lobbyists, industry analysts, and the media disagree on the severity of the grid's capacity deficit, the grid's conditions during Winter Storm Uri and on September 6, 2023, make clear that the market is overcrowded with unreliable resources that cannot be produced when needed.

Ultimately, the Texas grid is unreliable due to the widening gap between renewable and dispatchable capacity. Until the Legislature acknowledges this capacity deficit, the market will continue to overinvest in wind and solar resources that strain the grid, subjecting Texans to more frequent outages. While there are several approaches to reforming the market's capacity, this comment argues that the most practical solution is to require all generation, including wind and solar, to pay a fee reflective of the capacity they bring to the market. This solution would allow for a more balanced market that ensures the grid will operate efficiently and smoothly in the future.

I. INTRODUCTION

Texas is the largest energy producer in the United States, producing nearly one-fourth of the nation's energy using its abundant fossil fuel and renewable resources.[1] On the other hand, Texas consumes more energy than any other state in the nation, accounting for more than ten percent of the nation's electricity generation.[2] This trend is primarily attributed to the thousands of residents and businesses that migrate to Texas each year, attracted by the state's thriving economy, desirable tax incentives, and warm climate.[3] Annual increase in population and power consumption results in a higher demand for more electricity.[4]

Meeting the demand for more electricity requires the Electric Reliability Council of Texas (ERCOT), the grid operator, to maintain sufficient generating capacity, meaning the ability to produce electricity on demand so Texas consumers can readily access power.[5] Traditionally, ERCOT operated the grid relying primarily on Texas's abundance of fossil fuel resources, including natural gas, coal, and nuclear energy.[6] In the last decade, ERCOT has increasingly relied on wind and solar generation to meet the growth in Texas's electricity demand, as wind and solar energy now make up "a third of ERCOT's electric generation capacity."[7] The recent push for reliance on renewables is largely due to incentives from the state and federal levels that encourage investment in wind and solar resources.[8] After Texas deregulated the energy market in 1999, the federal government provided heavy federal subsidies and tax credits exclusively available to wind and solar generation.[9] As a result, Texas has focused significantly on investing in renewable energy, spending over sixty billion dollars in wind and solar generation in the last decade alone.[10] Aside from the incentives offered to renewable generation, Texas's deregulated energy market and geographic conditions favor the development of wind and solar generation.[11] "The lack of vertically integrated utilities and long regulatory approval processes, combined with

1. *Texas State Profile and Energy Estimates*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/state/analysis.php?sid=TX (last updated July 18, 2023).

2. *Id.*

3. *Id.*

4. Peter R. Hartley et al., *ERCOT and the Future of Electric Reliability in Texas*, RICE UNIV.'S BAKER INST. FOR PUB. POL'Y 1 (Feb. 7, 2024), https://www.bakerinstitute.org/research/ercot-and-future-electric-reliability-texas.

5. *See id.*

6. Brent Bennett et al., *Pushed to the Brink: The 2021 Electric Grid Crisis and How Texas Is Responding*, TEX. PUB. POL'Y FOUND. 8 (Aug. 17, 2022), https://www.texaspolicy.com/wp-content/uploads/2022/08/2022-08-RR-LP-PushedtoBrinkElectricGridCrisis-BennettTahuahuaNasi.pdf [hereinafter Bennett et al., *Pushed to the Brink*].

7. *Id.* at 3.

8. *Id.* at 5.

9. *Id.* at 8–10.

10. *Id.* at 3–4.

11. *Id.* at 10.

transmission costs that are entirely paid by ratepayers and the availability of cheap land, favors new entrants to the market."[12] Furthermore, ERCOT's unique energy-only market design allows generation sources to bid into the market on an as-available basis with no capacity requirements.[13] This market model particularly favors wind and solar developers that have zero-fuel costs, as wind generators can sell electricity at near-zero or even negative prices and still profit from tax incentives.[14]

This emphasis on investing in wind and solar resources has taken a toll on investment in dispatchable energy, particularly coal and natural gas power plants.[15] In the last decade, Texas has seen nearly six gigawatts of coal and nearly five gigawatts of natural gas plants retire due to the lack of investment in the market.[16] Meanwhile, ERCOT continues to add more wind and solar capacity to the grid.[17] This decline in dispatchable energy affects the grid because generators maintain the grid's frequency when renewable energy sources cannot produce.[18] Moreover, wind and solar energy are intermittent sources, meaning they only generate "when the sun shines or the wind blows."[19]

When wind and solar lack variability, ERCOT depends on dispatchable resources to be available to keep the grid stable.[20] Consequently, as intermittent sources push generators out of the market, ERCOT increasingly relies on dispatchable energy to meet the demand for more electricity because wind and solar generation cannot guarantee generation at any point in time.[21] This shift towards wind and solar generation has left the Texas grid unreliable and vulnerable to outages in times of unexpected peak demand.[22] Specifically, the grid's failure during Winter Storm Uri and on the evening of September 6, 2023, emphasizes a market design problem due to the widening gap between reliable and dispatchable resource capacity.[23]

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12. *Id.*

13. Brad Bowen, *Texas Wind Energy and the Missing Money Problem*, 100 TEX. L. REV. 771, 790 (2022).

14. *Id.* at 780.

15. Bennett et al., *Pushed to the Brink*, *supra* note 6, at 4.

16. *Id.* at 11.

17. *Id.*

18. Jillian Marie Borreson, *Houston, We Have a Market Design Problem: Why the Legislative Response to Winter Storm Uri Does Not Yet Develop a More Efficient Market Mechanism to Ensure Reliability*, 7 OIL & GAS NAT. RES. & ENERGY J. 867, 871 (2022), https://digitalcommons.law.ou.edu/cgi/viewcontent.cgi?article=1359&context=onej.

19. *Id.* at 899 (quoting Josh Lederman, *Texas Officials Circulated Climate Skeptic's Talking Points on Failures During Storm*, NBC NEWS (Apr. 1, 2021), https://www.nbcnews.com/politics/politics-news/texas-officials-circulated-climate-skeptic-s-talking-points-power-failures-n1262700).

20. *Id.* at 892–99.

21. Bennett et al., *Pushed to the Brink*, *supra* note 6, at 8.

22. *Id.* at 12.

23. Brent Bennett, *Tight Grid Conditions This Summer Highlight the Investment Problem Plaguing the Texas Grid*, TEX. PUB. POL'Y FOUND. (Sept. 8, 2023), https://www.texaspolicy.com/tight-grid-

Part II provides a general overview of the circumstances surrounding Winter Storm Uri and the grid's failure on September 6, 2023. Part III provides a background of how the Texas grid operates under a deregulated energy market. Part IV analyzes the reason for the grid's capacity deficit. Part V discusses why wind and solar generation should pay a fee reflective of the capacity they bring to the market and how this would improve the grid's reliability.

II. OVERVIEW OF RECENT GRID OUTAGES IN TEXAS

A. Winter Storm Uri

In February 2021, Winter Storm Uri brought historic cold weather to Texas, resulting in record power outages and widespread damage to the power grid.[24] Although Texas has survived more severe winter weather in the past, no other winter storm in Texas history has caused the level of power loss as Winter Storm Uri.[25] The weather conditions brought by Uri led to widespread failures across the electricity supply system, "from the natural gas supply network to power plants to the transmission and distribution network."[26]

Texas found itself practically defenseless against the storm when more than thirty gigawatts of power generation capacity was taken offline.[27] Gas-powered electricity outages peaked at over 25,000 megawatts of lost capacity as wind-generation outages approached 20,000 megawatts of lost capacity.[28] Meanwhile, electricity demand reached a record of more than sixty-nine gigawatts as Texas customers needed natural gas to provide heat during periods of frigid temperatures.[29] Ultimately, the storm's duration of frigid temperatures and winter precipitation resulted in peak "electricity demand that significantly outpaced historical and expected seasonal demand."[30]

In response to this historically high demand and unanticipated supply shortage, ERCOT was forced to "shed load" from the system, calling on

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conditions-this-summer-highlight-the-investment-problem-plaguing-the-texas-grid/ [hereinafter Bennett, *Investment Problems*].

24. Jess Donald, *Winter Storm Uri 2021: The Economic Impact of the Storm*, TEX. COMPTROLLER (Oct. 2021), https://comptroller.texas.gov/economy/fiscal-notes/archive/2021/oct/winter-storm-impact.php.

25. *Id.*

26. Bennett et al., *Pushed to the Brink*, *supra* note 6, at 12.

27. Le Xie et al., *What Went Wrong With Texas' Power Failure and How to Fix It*, TEX. A&M TODAY (Feb. 20, 2021), https://today.tamu.edu/2021/02/20/what-went-wrong-with-texas-power-failure-and-how-to-fix-it/.

28. *Id.*

29. Bowen, *supra* note 13, at 788.

30. *Id.*

transmission companies to implement rotating outages across the state.[31] Over two hundred people lost their lives as thousands of Texans were stranded without power, heat, and water during periods of freezing temperatures.[32] To make matters worse, electricity customers who lost power were also slammed with property damages and outrageously high electricity prices.[33] The aftermath of the winter storm prompted widespread confusion as to why the nation's leading energy producer could not provide power to its own state when needed most.[34] ERCOT attributed the record power outages to a combination of factors, including underestimated peak demand, misjudged weather forecasts, and energy generators powered by natural gas, wind, and coal that all failed during the storm.[35] Generation outages experienced during Uri were largely influenced by the storm's extreme weather conditions as all resource technology failed, including wind turbines and natural gas-fired plants that failed to operate at their expected output.[36]

Taking these factors into consideration, the 87th and 88th Legislative Sessions prioritized grid reform, passing multiple bills to improve operational solutions to repair the grid's reliability.[37] Because the Winter Storm did not favor any particular type of generation, the Legislature focused on providing solutions to operational problems such as weatherization of infrastructure, additional development of fossil fuel generation, and implementing a firming requirement that would require renewable energy to secure backup capacity.[38] However, despite the Legislature's efforts to improve operational problems exposed during Winter Storm Uri, the grid's reliability remains unstable due to a market design problem.[39] The grid's failure on September 6, 2023, confirms the underlying problem with the Texas grid is a fundamental capacity problem that cannot be solved by operational solutions alone.[40]

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31. *Id.*

32. *Id.*

33. Borreson, *supra* note 18, at 867.

34. *See id*.

35. Bill Magness, *Review of February 2021 Extreme Cold Weather Event—ERCOT Presentation*, ERCOT (Feb. 25, 2021), https://www.ercot.com/files/docs/2021/03/03/Texas_Legislature_Hearings_2-25-2021.pdf.

36. *Id.*

37. Brent Bennett, *Improving the ERCOT Grid Through a Reliability Requirement for Variable Generation*, TEX. PUB. POL'Y FOUND. 11 (Oct. 22, 2021), https://lifepowered.org/wp-content/uploads/2021/10/LP-ImprovingReliabilityofERCOTGrid-10-18-21-BrentBennett-FINAL.pdf [hereinafter Bennett, *Improving the ERCOT Grid*].

38. *See id.* (citing S.B. 3, 87th Leg., Reg. Sess. (Tex. 2021); H.B. 1500, 88th Leg., Reg. Sess. (Tex. 2023)).

39. *See id.*

40. Bennett, *Investment Problems*, *supra* note 23.

B. September 6th

As the sun went down on September 6, 2023, the Texas power grid nearly collapsed due to a combination of low wind and solar generation, peak demand, and poor preparation.[41] That evening, wind maintained nearly five gigawatts, which is only half of the ten gigawatts that were expected during the 7–8 p.m. hour.[42] Meanwhile, peak demand set a record for September at 82,704 megawatts but was still below the peak demand record of 85,435 megawatts set the month before on August 10, 2023.[43] Because the sun sets later in August than in September, the decline in solar output during the evening hours means that ERCOT must rely on other generation sources to maintain the grid's output and, thus, its frequency.[44] However, on September 6th, wind generation did not pick up as the sun set, leaving ERCOT in a vulnerable position when demand did not drop off fast enough to match the drop in solar output.[45] As a result, system frequency declined from 60 hertz (Hz) to 59.77 Hz between 7:10 p.m. and 7:25 p.m., forcing ERCOT to declare its first emergency energy alert (EEA) since Winter Storm Uri in February 2021 and its first summer EEA since August 2019.[46] Fortunately for Texas consumers, ERCOT was able to return to normal grid conditions after exhausting ancillary resources and did not have to resort to rotating outages.[47] However, Texas consumers were just minutes from experiencing grid conditions similar to those experienced during Winter Storm Uri in 2021, only this time during record-temperature summer heat instead of a snowstorm.[48]

On September 13, 2023, ERCOT filed a report claiming a variety of factors resulted in the system frequency decline on September 6, "The most significant factor is that the ERCOT region has experienced an unusually hot summer, resulting in abnormally high electric power demand."[49] Another factor contributing to the frequency decline was that grid conditions were

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41. *Id.*

42. *Id.*

43. *Id.*; *see also ERCOT Expects Tight Grid Conditions, Requests Conservation Today from 5 p.m. to 9 p.m. CT*, ERCOT (Sept. 7, 2023), https://www.ercot.com/news/release/2023-09-07-ercot-expects-tight.

44. *See* Bennett, *Investment Problems*, *supra* note 23.

45. *Id.*

46. *Id.*; Paul Ciampoli, *Texas Grid Operator Details Response to Recent Spike in Power Demand*, AM. PUB. POWER ASS'N (Sept. 18, 2023), https://www.publicpower.org/periodical/article/texas-grid-operator-details-response-recent-spike-power-demand.

47. Rob Allerman, *An Overview of the ERCOT EEA2 Event 2023-09-07*, LINKEDIN (Sept. 7, 2023), https://www.linkedin.com/pulse/overview-ercot-eea2-event-2023-09-07-rob-allerman/; *see also ERCOT Has Exited Emergency Operations, Returned to Normal Grid Conditions. No Grid-Related Outages Were Necessary* (Sept. 6, 2023), https://www.ercot.com/news/release/2023-09-06-ercot-has-exited#:~:text=(Austin%2C%20TX)%20-%20ERCOT.dropping%20operating%20reserves%20and%20frequency.

48. *See* Bennett, *Investment Problems*, *supra* note 23.

49. Ciampoli, *supra* note 46.

already tight the week of September 6th due to six gigawatts of gas and coal power plants being offline, which is more than the usual four gigawatts.[50] While more than ninety percent of gas and coal plants were still online during that week, the grid would've collapsed if those plants suddenly produced fifty percent less than expected, as wind did on September 6th.[51]

These outages are mainly the result of ERCOT's "conservative operating posture" and procedures, which have kept extra resources online all summer to ensure variability of wind and solar output do not cause sudden outages.[52] However, these extra resources are kept online at the expense of foregoing needed maintenance, a process that is not sustainable in the long run.[53] While this continuous cycle does help mitigate the risk of sudden outages, as it did on September 6th, it points to signs of a broken system in need of repair.[54] Despite recent efforts to address grid reform, it is clear from the grid's malfunction on September 6th that the Legislature has not yet solved the root of the problem.[55]

C. Underlying Market Design Problem

In the last four years alone, ERCOT has added ten gigawatts of wind and fifteen gigawatts of solar capacity to the grid.[56] Ironically, on September 6th, these subsidies only produced five gigawatts during the critical evening hours when the grid needed them most.[57] The main reason for this is that wind and solar energy, as intermittent resources, lack the capacity to produce power to the grid at any point in time.[58] Unlike dispatchable resources that can adjust their power output to the electrical grid on demand, wind and solar resources are intermittent resources, meaning they are not constantly available or predictable because they only produce when weather conditions are stable.[59] Their lack of capacity is particularly concerning in peak times of demand, like during Winter Storm Uri and on September 6th, because all of the load is suddenly expected to be met with fossil fuel resources from traditional generation plants.[60] Consequently, as noted above, dispatchable generators are not offered the same incentives as renewable resources,

50. Bennett, *Investment Problems*, *supra* note 23.
51. *Id.*
52. *Id.*
53. *See id.*
54. *Id.*; *see* Borreson, *supra* note 18, at 868.
55. *See* Borreson, *supra* note 18, at 868.
56. Bennett, *Investment Problems*, *supra* note 23.
57. *Id.*
58. *See* Borreson, *supra* note 18, at 873.
59. *ERCOT Market Education: Intermittent Renewable Resources*, ERCOT 39, https://www.ercot.com/files/docs/2024/07/30/2024_07%20IRR.pdf (last visited Oct. 22, 2024).
60. *See* Borreson, *supra* note, 18 at 896.

making it a gamble for them to stay available.[61]The ERCOT market consistently favors renewable energy while relying on generators to maintain grid reliability. However, the market fails to provide adequate support for generators in times of peak demand.[62]

Texas has spent almost one hundred billion dollars installing wind and solar capacity to the grid, and tens of billions in state and federal subsidies, yet this additional capacity is still not reliable in times when the grid needs it most.[63] This large investment in wind and solar energy has crowded the market for investing in other sources, leaving little room for investing in the reliable capacity needed to make the grid function.[64] Despite the billions invested in these resources, the demand for dispatchable energy is still increasing because ERCOT relies on generators to protect the grid from sudden outages caused by wind and solar's variable in output.[65] This market system is not sustainable in the long run and is not an efficient use of Texas's energy resources.[66]

The grid's malfunction on September 6th shows that the underlying reason for this broken system is a capacity deficit caused by overinvestment in wind and solar resources and subsidies that strain the market.[67] The 87th and 88th Legislature's efforts to reform the grid have improved operational issues with the power grid.[68] However, the Legislature has yet to address the widening gap between dispatchable and renewable resources.[69]

This comment argues the most practical solution to this problem is to require all generators, including wind and solar generation to pay a reliability fee reflective of the capacity they bring to the market. Implementing this fee structure would foster a more balanced market, ensuring grid reliability and resilience while protecting Texans from frequent outages in the future.

III. OPERATING THE GRID IN A DEREGULATED MARKET

A. ERCOT's Role in Managing the Grid

In order to understand the capacity problem with ERCOT's market, it is essential to understand how the Texas grid operates. Texas is unique in that it is the only state in the continental United States to operate on its own power

61. *Id.*
62. *See id.* at 873.
63. Bennett, *Investment Problems*, *supra* note 23.
64. *Id.*
65. *Id.*
66. Brent Bennett, *It's Official: Winter is Becoming the New Summer*, TEX. PUB. POL'Y FOUND. (Jan. 22, 2024), https://www.texaspolicy.com/its-official-winter-is-becoming-the-new-summer/ [hereinafter Bennett, *Winter is the New Summer*].
67. *See id.*; Bennett, *Investment Problems*, *supra* note 23.
68. *See* Bennett, *Winter is the New Summer*, *supra* note 66.
69. *Id.*

grid.[70] Unlike other states that receive power from either the Western or Eastern Interconnection, subject to the Federal Energy Regulatory Commission (FERC), Texas is free to operate its grid independent of the federal government's control.[71] In 1970, Texas established the Electric Reliability Council of Texas (ERCOT) to manage the reliable transmission of electricity to the Texas power grid.[72] ERCOT is a non-profit corporation governed by a twelve-member board of directors who answer to the Public Utility Commission of Texas (PUC) and the Texas Legislature for policy direction.[73]

ERCOT's main responsibility is to ensure open access to transmission of electricity for over twenty-six million customers around Texas.[74] ERCOT itself is not an operator but instructs operators when to start up and when to shut down so that the grid maintains a constant frequency of 60 Hz.[75] This means when demand rises, ERCOT calls on generators to be available to match the current.[76] When demand drops, typically during periods of mild weather and at night when people are asleep, ERCOT instructs generators to shut down.[77] Otherwise, the frequency will deviate from the 60 Hz standard, and because the grid is magnetically coupled, the entire system will lose synchronization.[78]

"When reserves on the system get low, ERCOT begins emergency operations using three levels of Energy Emergency Alerts (EEAs) . . . [to] provide access to additional power sources only available during emergency conditions to protect the [grid's] reliability."[79] "Entering emergency operations does not mean that ERCOT is expecting to call for controlled power outages," but allows ERCOT to access more power reserves that help prevent power outages.[80] When operating reserves drop below 2,500 megawatts and are not expected to recover within thirty minutes, ERCOT declares an EEA 1 and "bring[s] all available generation online, releasing any remaining reserves, and using demand response to lower electric demand."[81] When operating reserves are less than 2,000 megawatts and are not expected

70. Donald, *supra* note 24.

71. *What is ERCOT?*, COMPTROLLER.TEXAS.GOV, https://comptroller.texas.gov/economy/economic-data/energy/2023/ercot.php (last visited Oct. 25, 2024).

72. *Id.*

73. *Id.*

74. *Id.*

75. Borreson, *supra* note 18, at 870–71.

76. *Id.* at 871.

77. *Id.*

78. *Id.*

79. *Energy Emergency Alert 1*, ERCOT, https://www.ercot.com/energyemergone (last visited Oct. 25, 2024).

80. *Id.*

81. *Id.*

to recover within thirty minutes, ERCOT declares an EEA 2.[82] ERCOT can then choose to either reduce demand on the system by calling on industrial customers who have contractually agreed to have their electricity turned off during an emergency or use demand response resources that have been procured to address tight operating conditions.[83] ERCOT declares an EEA 3 when operating reserves have dropped below 1,500 megawatts, and if conditions do not improve, ERCOT will order transmission companies to reduce demand on the system through controlled outages.[84] If this happens, the entire grid can malfunction, resulting in local or widespread outages that impact all customers, including residential, commercial, and industrial.[85]

Determining when the grid must start up and shut down is highly dependent on the electrical demand.[86] To track and analyze electrical demand, ERCOT evaluates multiple weather forecasts and then aggregates the information into a load-and-supply forecast.[87] Tracking electricity is no easy task as electricity is produced, transmitted, and consumed in the same instant.[88] In normal grid conditions, load demand maintains a consistent pattern.[89] However, tracking demand becomes more tedious throughout the day, depending on various circumstances, including time of day, season, and weather conditions.[90] The grid is easily frustrated when weather results in periods of low wind and sunlight, which often complicates ERCOT's job to match supply and demand levels.[91] For example, as power demand peaks on a hot summer day, like on September 6th, the frequency of the grid may vary due to lack of wind generation, causing power plant generators to impart some of their inertial energy (spinning mass) to the grid, boosting the available power and pushing the frequency back to 60 Hz.[92] Otherwise, the grid could deviate from the 60 Hz frequency standard for too long, and the whole system can collapse.[93] Therefore, one of ERCOT's most important

82. *Energy Emergency Alert 2*, ERCOT, https://www.ercot.com/energyemergtwo (last visited Oct. 25, 2024).

83. *Id.*

84. *Energy Emergency Alert 3*, ERCOT, https://www.ercot.com/energyemergthree (last visited Oct. 25, 2024).

85. Megan Munce, *How to Know the Difference Between a Local Power Outage and Rolling Blackouts*, TEX. TRIBUNE, https://www.texastribune.org/2022/07/19/ercot-power-grid-outage-texas/ (last updated Jan. 30, 2023).

86. *Resource Adequacy*, ERCOT, https://www.ercot.com/gridinfo/resource#details-d4b75b8d-e29e-a0c8-5574-c295a3266b36 (last visited Sept. 17, 2024).

87. *Id.*

88. Borreson, *supra* note 18, at 870.

89. *Id.*

90. *Id.*

91. Chuck DeVore, *Texas Lawmakers Strive to Make Their Electrical Markets Work Despite Federal Meddling*, TEX. PUB. POL'Y FOUND. (Apr. 11, 2023), https://www.texaspolicy.com/texas-lawmakers-strive-to-make-their-electrical-markets-work-despite-federal-meddling/.

92. *Id.*; *see also* Bennett, *Investment Problems*, *supra* note 23.

93. Borreson, *supra* note 18, at 871.

responsibilities in operating the grid is to monitor generation supply and demand levels carefully to ensure the grid is not at risk for sudden outages.[94]

B. The Energy Only Market

Another unique aspect of the Texas power grid is the market in which it operates.[95] Traditionally, the Texas energy market followed a vertically integrated monopoly model where electricity was generated, distributed, and consumed locally by the same regulated utility.[96] However, by 1999, the Texas Legislature effectively deregulated the energy market to facilitate competitive wholesale and retail markets, maintain electric system reliability, and allow consumers to choose their energy supplier.[97] As a result, ERCOT overturned the traditional market model, and power generators and retailers began to operate independently, which virtually eliminated utility monopolies and lowered energy costs for consumers.[98] Almost twenty-five years later, ERCOT still operates the grid under the deregulated market model today.[99]

A key feature of ERCOT's deregulated market is that it only trades energy.[100] Unlike other markets where power plants are given capacity payments to remain in the market to ensure enough generating capacity to meet peak demand, the Texas wholesale electricity market "does not pay generators to secure capacity in the future."[101] This feature means that a generator is only paid if it puts power on the grid.[102] Under this energy-only market approach, ERCOT operates the day-ahead, real-time, and ancillary service markets.[103] For the day-ahead auction, ERCOT forecasts demand, and generators submit financially binding bids for every hour of the following day.[104] ERCOT then arranges the bids from lowest to highest and accepts them in that order until they meet demand.[105] Sellers offering power receive the same clearing price, meaning every electricity supplier is paid the price of the highest accepted bid.[106] This single market clearing price mechanism

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94. *Id.* at 872.
95. *Id.*
96. *See* Bennett et al., *Pushed to the Brink*, *supra* note 6, at 6–7.
97. *See id.*
98. *Id.*
99. *See id.*
100. *See id.* at 8.
101. Borreson, *supra* note 18, at 872.
102. *Id.*
103. *Id.*
104. *Day-Ahead Market*, ERCOT, https://www.ercot.com/mktinfo/dam (last visited Oct. 25, 2024).
105. *See* Mark C. Christie, *It's Time to Reconsider Single-Clearing Price Mechanisms in U.S. Energy Markets*, 44 ENERGY L. J. 1, 2 (2023).
106. *Id.*

reflects the highest price it takes to meet full demand.[107] Because forecasted demand is not always exactly accurate to actual demand, ERCOT'S real-time market is mandatory and clears once every five minutes, meaning a single price is paid for energy once every five minutes, and the lowest bidder serves the market.[108] "As a result, sellers that have offered to sell at prices lower than the clearing price, including those offering at zero or even below zero due to out-of-market subsidies, still receive the highest clearing price."[109]

ERCOT's secondary market, called the ancillary services market, "procures short-term reserves to meet unanticipated events and compensates generators for other services that keep the grid stable."[110] When wind and solar generation output drops below their expected output during peak periods, ERCOT utilizes four main ancillary services to maintain reliability: Regulation Up, Regulation Down, Responsive Reserve, and Non-Spinning Responsive Reserve.[111] ERCOT uses regulation up and down to balance the grid when supply and demand levels fluctuate due to a decrease in wind output.[112] Additionally, ERCOT uses responsive reserves and non-spinning reserves when the grid is at risk of an emergency operation due to inadequate generation.[113]

There are several problems with this market system. First, the system negatively impacts dispatchable generators, which adversely affects the reliability and resilience of the grid.[114] The ERCOT market strongly favors wind generation because sellers can bid into the market on an as-available basis with no capacity requirements, and because they have nearly zero fuel costs, wind generators can sell electricity at near zero or negative prices while still earning a profit from tax credits.[115] Consequently, wind and solar resources are consistently chosen over dispatchable resources that are not selected to serve the market until really needed.[116] Renewable sources do not provide enough inertia to support the system's frequency, but the deregulated market pays them the same price as dispatchable resources that carry the market.[117] Moreover, the market overpays wind and solar generation for the amount of capacity they provide to the system.[118]

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107. *Id.*
108. *Id.*
109. *Id.*
110. Bennett, *Improving the ERCOT Grid*, *supra* note 37, at 11.
111. *Ancillary Services*, ERCOT, https://www.ercot.com/gridmktinfo/dashboards/ancillaryservices (last updated Oct. 25, 2024).
112. *Ancillary Services*, ERCOT (Dec. 2023), https://www.ercot.com/files/docs/2023/06/06/Ancillary-Services-Handout-0524.pdf.
113. *Id*.
114. Bowen, *supra* note 13, at 771–72.
115. Id. at 779–90.
116. *See id.*
117. Bennett et al., *Pushed to the Brink*, *supra* note 6, at 31.
118. *Id.*

As ERCOT increasingly relies on wind and solar generation, which often produce "40% less than their expected output during peak periods," ERCOT relies more on ancillary services to keep the grid from experiencing sudden outages.[119] Essentially, ERCOT puts a band-aid on the market's capacity problem, hoping that ancillary resources will continue to rescue the grid during times of peak demand.[120] However, ERCOT cannot continue to exhaust ancillary resources by keeping them on the grid at all times because it is not sustainable in the long run.[121] It seems inefficient for ERCOT to operate the market this way, encouraging investment in wind and solar resources that make their job more difficult.[122] So, why encourage more investment in wind and solar resources that distort the market?[123] Because federal and state energy subsidies disproportionately benefit renewable sources.[124]

IV. RENEWABLE INVESTMENT CROWDING OUT DISPATCHABLE ENERGY

For most of ERCOT's existence, it has mainly relied on dispatchable capacity to manage the grid.[125] In the last decade, several factors have led to renewable generation occupying a large portion of the grid's energy capacity, including overinvestment in wind and solar resources due to heavy energy subsidies from the federal, state, and local levels.[126] When Texas deregulated the energy market, the federal government introduced subsidies for wind energy with the Energy Policy Act of 1992, known as the Production Tax Credit (PTC), which was set to expire in 1999.[127] However, the Production Tax Credit was revived in December 1999 and has been extended through 2025 by President Joe Biden's Inflation Reduction Act.[128] The federal government implemented these subsidies to encourage investment in new technologies or businesses that traditional energy markets do not invest in.[129] The federal government assured subsidies would combat climate change concerns and emission control by reshaping our energy market to reduce reliance on fossil fuels, diversifying our energy market as a whole.[130] As a

119. Bennett, *Improving the ERCOT Grid*, *supra* note 37, at 11.
120. *See id.*
121. *Energy Subsidies*, TEX. PUB. POL'Y FOUND. (Sept. 14, 2020), https://www.texaspolicy.com/wp-content/uploads/2020/09/2021-22-Lege-Guide-1-pager-LP-Energy-Subsidies.pdf.
122. Bennett, *Investment Problems*, *supra* note 23.
123. *See id.*
124. *Id.*
125. *See* Borreson, *supra* note 18, at 881.
126. *Id.*
127. *See* DeVore, *supra* note 91.
128. *Id.*
129. *Energy Subsidies*, *supra* note 121.
130. *Id.*

result, the federal government has spent over $230 billion dollars on energy subsidies in the last decade.[131]

Along with federal government subsidies, Texas state subsidies also impact the electricity market.[132] For example, "[t]he CREZ transmission line project paved the way for the continued exponential growth of wind generation projects in Texas—at no cost to the wind generator beneficiaries."[133] Additionally, the Texas Legislature's mandate declaring minimum renewable energy goals ensured the continued growth of wind generation in Texas.[134] Texas has invested over eighty billion dollars in private capital and twenty billion dollars in federal and state incentives to support the massive buildout of wind and solar infrastructure in ERCOT.[135] Without these subsidies and policies, there would be fewer wind projects in Texas.[136] Despite this significant investment, subsidies have not lived up to their expectation as neither the United States nor Texas has consumed any less fossil fuel generation during that time.[137] In fact, demand for fossil fuel generation has increased.[138]

The reason for this is that energy subsidies have many harmful effects on energy markets, including inefficient use of existing generation, increased transmission costs, and low or even negative wholesale prices that drive out reliable generation.[139] These harmful effects have distorted the Texas energy market by allowing for overinvestment in wind and solar subsidies that prove unreliable when needed.[140] As discussed above, heavy investment in subsidies leaves little room for investing in dispatchable resources needed in the market.[141] Because added wind and solar capacity strains the grid, the need for dispatchable generators increases to keep the grid stable, as renewables are not equipped to meet increasing demand.[142] However, investment decline, coupled with the fact that generators are not offered the same incentives as subsidies, has led to the retirement of many power plants in the last decade because generators lose money by being available to serve the market.[143]

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131. *Id.*
132. *See* Bowen, *supra* note 13, at 780.
133. *Id.*
134. *Id.*
135. Brent Bennett, *The Texas Grid Is Reaching a Turning Point, but There Is Still Time to Fix It if We Start Now*, TEX. PUB. POL'Y FOUND. (June 20, 2023), https://www.texaspolicy.com/the-texas-grid-is-reaching-a-turning-point-but-there-is-still-time-to-fix-it-if-we-start-now/.
136. *Id.*
137. *See* Bennett, *Improving the ERCOT Grid*, *supra* note 37, at 13.
138. *See id.*
139. *See* Bennett, *supra* note 135.
140. *See id.*
141. *Id.*
142. *Id.*
143. Bennett, *Improving the ERCOT Grid*, *supra* note 37, at 4.

Furthermore, the power grid's stability depends on ERCOT to adequately incentivize generators to perform when Texas needs it most.[144] ERCOT does not rely "on the willingness of generators alone; 'caps on market-price offers have been raised to relatively high levels in hopes of providing sufficient compensation to the generation sector to incentivize investment during times of peak demand.'"[145] ERCOT has also utilized scarcity pricing of wholesale electricity to make the availability of supply appear more attractive to generators.[146] "When demand is high, the price increases significantly," theoretically incentivizing generators to make short-term investments to ensure their facilities are available during peak demands and long-term investments in plants that become available during times of high prices.[147] However, this scarcity pricing method particularly favors wind and solar generation, which could not compete in a market that values stored capacity by allowing them to bid into the market and profit from inflated pricing.[148] In a market that favors renewables and does not pay generators for stored capacity, ERCOT operates the grid, hoping adequate incentivization will be enough.[149] However, ERCOT cannot always guarantee generators will buy into incentives, especially when generators owe no legal duty to supply electricity to the grid, even in emergency conditions.[150]

ERCOT is gradually shifting away from dispatchable energy as it continues to operate a crowded market that benefits and encourages overinvestment in renewable energy and subsidies.[151] The gap between renewable and dispatchable capacity is growing and is a major problem as the demand for more power in Texas only increases the demand for more traditional generation.[152] The aftermath of Winter Storm Uri and the circumstances surrounding September 6th, 2023, reveals an underlying market design problem with the Texas power grid's reliability.[153] To neutralize the effects of wind energy on the grid's overall reliability, the Legislature must solve the grid's capacity problem.[154]

144. Borreson, *supra* note 18, at 872–73.
145. *Id.*
146. *Id.* at 873.
147. *Id.*
148. *Id.*
149. *Id.*
150. *See id.*; In re Luminant Generation Co. LLC, No. 01-23-00097-CV, 2023 WL 8630982 (Tex. App.—Houston [1st Dist.] Dec. 14, 2023, no pet.).
151. Bennett et al., *Pushed to the Brink*, *supra* note 6, at 12.
152. *See id.*
153. *See id.*; *see also* Bennett, *Investment Problems*, *supra* note 23.
154. Borreson, *supra* note 18, at 896–97.

V. SOLVING THE CAPACITY PROBLEM

A. Ensuring the Appropriate Reliability Standard

While there are several ways the Legislature could address the capacity problem, the Legislature must first determine the appropriate reliability standard, meaning the appropriate mix of resources to ensure sufficient capacity in the future.[155] ERCOT cannot prevent outages from ever happening again, but ensuring the appropriate reliability standard can control the frequency, duration, and magnitude of outages to prevent a system failure as severe as Uri from happening again.[156] Furthermore, the Legislature must determine how to pay for this reliability standard.[157] As discussed above, ERCOT has traditionally burdened ratepayers with the cost of deploying ancillary services to keep the grid stable when wind and solar decline.[158] However, the exhaustion of ancillary resources will continue to raise ratepayer costs in the future—a heavy price to pay for a system showing little return.[159]

The most practical solution is to require all generators, particularly wind and solar, to pay a fee reflective of the capacity they bring to the market.[160] Implementing this fee would hold wind and solar generation accountable for the cost their variability imposes on the system instead of leaving all the responsibility to ratepayers.[161] Therefore, the single market clearing price could adjust to a more balanced market, improving grid reliability and protecting consumers from more frequent outages in the future as demand continues to skyrocket in Texas.[162]

B. Offsetting Market Impact

Critics of the capacity deficit acknowledge that wind and solar generation lack capacity as intermittent sources but argue that the capacity deficit is not as serious as dispatchable energy makes it seem.[163] Pointing to the fact that fossil fuel generators also failed during Winter Storm Uri due to weatherization, advocates for wind and solar argue the Legislature's efforts to improve operational issues have worked well to aid the grid's frequency

155. Robert Walton, *Texas Regulators Should Consider a Combination of Metrics to Establish Reliability Standard, Stakeholders Urge*, UTILITY DIVE (Apr. 4, 2023), https://www.utilitydive.com/news/texas-puc-ercot-reliability-standard/646734/.

156. *Id.*

157. *Id.*

158. Bennett, *supra* note 119, at 13.

159. *Id.* at 4.

160. *See id.* at 10.

161. *See id.* at 10–13.

162. Bennett, *Investment Problems*, *supra* note 23.

163. Bennett, *Winter is the New Summer*, *supra* note 66.

since Winter Storm Uri.[164] There is some merit to this argument, as weatherization and operational improvements aided the grid in January 2024 when cold weather led to a new record for electricity demand.[165] Specifically, some parts of Texas saw temperatures drop as low as 10º in January 2024, resulting in electricity demand that reached seventy-seven gigawatts twice.[166] This record exceeded the forecast demand during Uri and shattered the record set on Christmas in 2022 of seventy-five gigawatts.[167] Relying on this event, advocates for wind and solar energy argue that weatherized generation kept the grid stable as demand set a new record, preventing ERCOT from rotating outages.[168] However, this event is not comparable to grid conditions during Winter Storm Uri because Texas did not see the level of ice or snow in January 2024 that Winter Storm Uri brought.[169] The reason ERCOT did not have to roll outages during the cold weather in January 2024 was not because weatherized wind and solar generation aided the grid's frequency but because the grid was not stressed as "net load did not exceed the available supply of gas, coal, and nuclear power."[170] Another factor discrediting this argument follows that the net load in January 2024 exceeded the previous winter and summer records, although ERCOT has added ten gigawatts of wind and fifteen gigawatts of solar capacity to the grid in the last four years.[171]

Other critics argue the grid's reliability problem could be solved by building transmission lines to connect to other states that could supply power in times of need.[172] However, looking at Uri, "neither the eastern nor the western half of the national grid would have let Texas borrow large amounts of power," as other states were facing similar weather circumstances.[173] Additionally, building transmission lines to connect to other states would require a long approval process and cost billions of dollars, leaving the question of who would pay for expensive build-out costs.[174] Because the Texas grid is independent, it must rely on its own market and resources to resolve the grid's reliability problem and should not invest in transmission lines that do not guarantee to fix the problem.[175]

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164. *Id.*
165. *Id.*
166. *Id.*
167. *Id.*
168. *Id.*
169. *Id.*
170. *Id.*
171. *Id.*
172. *See* Brent Bennett, *Proposed Transmission Line in East Texas Shows Why Connecting Texas to Other States Won't Solve Its Electric Grid Problems*, TEX. PUB. POL'Y FOUND. (Jan. 10, 2024), https://www.texaspolicy.com/proposed-transmission-line-in-east-texas-shows-why-connecting-texas-to-other-states-wont-solve-its-electric-grid-problems/.
173. Borreson, *supra* note 18, at 887.
174. *Id.*
175. *Id.*

While Texas does not have authority to mandate federal subsidies and policy, it can utilize this fee structure to offset their harmful effects on the market.[176] As noted above, the Inflation Reduction Act guarantees federal subsidies will continue to incentivize investment in wind and solar in the market until 2025, harming dispatchable generators.[177] "[R]evenue insufficiency from ERCOT's energy-only market model, influenced by federal and state subsidization of intermittent resources, fails to adequately pay for reliable dispatchable generation and . . . these market model deficiencies are the leading contributor to making the ERCOT system less reliable."[178] While Texas cannot control the direction of federal subsidies and policies that favor wind and solar, implementing this fee in the market helps deter overinvesting in wind and solar resources by holding subsidies accountable for the costs their variability imposes on the system.[179]

VI. CONCLUSION

The disastrous effects brought by Winter Storm Uri, followed by the grid's malfunction on September 6th, confirm that weatherization and backup generation is not the answer to reliability.[180] The Legislature must address the underlying problem with the grid's reliability–capacity. "Driving more investment into the market without correcting the underlying causes of unreliability will . . . increase costs without ensuring a reliable grid."[181] If Texas continues to ignore the market's capacity deficit, Texans will be faced with more frequent outages in the future, following in the footsteps of California.[182] Texas must balance the market by implementing a fee that requires all generation to pay for the lack of capacity they offer to the market.[183] Being an energy-rich state, Texas must reform the market to utilize its abundance of fossil fuel resources instead of continuing to rely on the wind and solar generation that favor unreliable electricity production.[184] As Texas continues to experience explosive growth in population and economic opportunity, the Legislature must implement this fee structure to close the widening gap between renewable and dispatchable capacity to ensure supply is able to meet demand in the future.[185]

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176. *See* Bennett, *Improving the ERCOT Grid*, *supra* note 37, at 11.

177. *See supra* Part II (highlighting federal subsidies' effect on Texas energy markets).

178. Robert Bryce, *Civil Engineers On Texas Blackouts: ERCOT Market Design, Subsidies For Renewables, 'Fails To Adequately Pay For Reliable' Generation*, FORBES (Feb. 20, 2022 11:44 a.m.) https://www.forbes.com/sites/robertbryce/2022/02/20/civil-engineers-on-texas-blackouts-ercot-market-design-subsidies-for-renewables-fails-to-adequately-pay-for-reliable-generation/?sh=240f481c32fc.

179. Bennett, *Improving the ERCOT Grid*, *supra* note 37, at 11.

180. Borreson, *supra* note 18, at 884.

181. Bennett et al., *Pushed to the Brink*, *supra* note 6, at 34.

182. *Id.*

183. *Id.*

184. *See id.*

185. *See id.*

"STUCK" IN THE GROUND: SOLAR PANELS AND HOW THEIR FIXTURE CLASSIFICATION IMPACTS TITLE INSURANCE

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ABSTRACT

The legal realm of solar energy is much like that of wind energy; it is underdeveloped and ultimately open to the interpretative discretion of the lease drafter and the energy company. Without explicit laws guiding the creation of solar farms, issues are bound to arise, and already have. While energy practitioners are left to their own laurels, unsatisfied landowners are scrounging to slip-ups, and lawmakers are left to put things together and clean up the pieces.

This Comment addresses a complicated issue surrounding solar title and title insurance in the instance of defining what a solar panel is to the land on which it rests. First, it is important to recognize that no two solar farms are alike. From the acreage that it takes up, the shape that it forms, to the way that each panel is stuck into the ground, each solar farm is different, meaning the issues that could arise likely would be addressed differently and accordingly. Second, because the solar industry is not a form-mold followed by energy companies, there is no set-in-stone classification of the solar panels to the land. Whether or not this particular energy generator follows suit with the rest of the energy industry, with classification as a fixture to real property, changes much of the approach to the legality of these endeavors. This poses a real issue should a surface landowner come out of the woodwork and claim title to a section where solar panels have already been installed. This Comment takes issue with the vagueness of Texas title insurance and the vulnerability that it leaves the solar industry with. Should this claim to land arise, solar companies are ultimately left uninsured, leaving the law to decide where these panels should go back in the hands of the company or to the landowner who may now take possession of the "fixture," should the panels be considered as such.

Finally, a solution can be found to this issue by Texas insurance companies following the proposition of the American Land Title Association and its more specific coverage over the energy industry. Adoption of the energy forms proposed by the American Land Title Association would secure the industry that the Lone Star State not only prides itself on but should seek to protect and secure as much as it can.

I. INTRODUCTION

Much of the law surrounding the energy industry continues to develop on an as-needed basis, waiting for issues to arise before the court rather than troubleshooting from the beginning. The same is the case for the solar industry, specifically. Across the United States, there is a lack of governing regulations and precedents tailored to the protection of solar farms both for the energy company and the landowner. Blazing its own trail in typical fashion, Texas follows its own very sparse regulations in this field, leaving the nature of this type of property undefined. With an opportunity to save the entire industry and those it impacts both time and money, the Texas Department of Insurance (TDI) should get out in front of the issue, defining what solar panels on solar farms are to the land and how that classification will impact title and title insurance for the solar industry.

II. SOLAR PANELS AS FIXTURES

A. Overview of Solar Energy & the Classification of Solar Panels

As the energy industry continues to expand, the law accompanying each project and energy venture must also grow and change. Although the world is extremely far from relying solely on wind and solar energy, both fields have significantly progressed in recent years.[1]

Generally speaking, solar farms present more cost appeal than wind projects and are substantially less invasive to the land upon which they lie compared to wind, oil, gas, and other energy projects.[2] However, a major drawback, and likely the largest drawback for harvesting and producing Texas landowners, is the acreage required to build these solar projects.[3] Technology may eventually allow the land housing the solar panels to be productive for farming and ranching while making a return on renewable energy; however, that is not currently in sight.[4] For now, these solar panels are stuck in the ground, close enough to the surface that farmers are prevented from pursuing traditional agriculture on the acreage but not barred from utilizing the area for wildlife or small livestock, such as sheep.[5]

One thing that is true for all solar power plants is their geographical requirements: on flat, well-drained soils, with close proximity to transmission

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1. Whitney Haigwood, *Solar Leases, Part 1: What Should You Consider Before Signing?*, FARM PROGRESS (Aug. 3, 2023), https://www.farmprogress.com/conservation-and-sustainability/solar-leases-part-1-what-to-consider-before-signing-.
2. *Id.*
3. *Id.*
4. *Id.*
5. *Id.*

lines, and, most importantly, ample sunshine.[6] Aside from the necessity of electrical lines, solar plants require much of the same natural conditions as that of a farmer's crops, making the choice between the two "plants" often a difficult one.[7]

Solar farms, plants, parks, gardens, or whatever else you may call them, can vary greatly in size, shape, type, and purpose.[8] One of the biggest differences in solar farms is not just their vast size but who owns them.[9] Utility-scale solar farms, such as the Mickey-Mouse-shaped solar park helping power Walt Disney World, are generally larger than community solar farms.[10] These utility plants are either operated as the property of an electric utility company or a private company, both of which sell the produced electricity to consumers.[11] Ownership of the solar farm also often determines the method of installation preferred or chosen by each individual.[12] These differing methods of installation are what makes the classification of solar panels difficult: Are they personal property, fixtures to real property, fixtures for trade purposes, or something different altogether?

B. Overview of Fixtures

A fixture is a personalty that has become permanent to the land realty to which it is affixed.[13] Such a classification hinges on three main determinations: (1) the sufficiency and method of annexation, whether real or constructive; (2) the adaptation of the item to the use or purpose of the land; and (3) the intent of the party who annexed the chattel to the realty.[14] Property that cannot easily be removed from the land to which it is affixed is classified as a fixture more easily.[15] However, just because an item can be removed from the property does not mean that it is not considered a fixture.[16] Even an item placed on real property that was not specifically intended to stay there may also be classified as a fixture, particularly if it is considered an improvement to the land.[17] To go further, "[w]hile an improvement may

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6. *Id.*
7. *Id.*
8. *What's a "Solar Farm?" All About Solar Parks, Solar Gardens & Solar Power Stations*, PERCH ENERGY, https://www.perchenergy.com/blog/energy/what-are-solar-farms-how-they-work (last updated Sept. 30, 2024).
9. *Id.*
10. *Id.*
11. *Id.*
12. *Id.*
13. State v. Clear Channel Outdoor, Inc., 463 S.W.3d 488, 493 (Tex. 2015); Alphonse M. Squillante, *The Law of Fixtures: Common Law and the Uniform Commercial Code—Part 1: Common Law of Fixtures*, 15 HOFSTRA L. REV. 191, 194 (1987).
14. *Clear Channel Outdoor*, 463 S.W.3d at 493.
15. *Id.*
16. *Id.*
17. *Id.*

not be a fixture, a fixture is necessarily an improvement."[18] "An improvement includes all additions to the freehold except for trade fixtures which can be removed without injury to the property."[19]

Texas Business and Commerce Code Section 9.313 provides that "goods are 'fixtures' when they become so related to particular real estate that an interest in them arises under the real estate law of the state."[20] Everyday utilities and household items are often considered fixtures, such as home renovations and additions,[21] air conditioning and heating systems in a home,[22] wall-to-wall carpets, mirrors, security equipment, light fixtures, landscaping, and much else.[23] Other items often related to a home are not considered fixtures, for some more obvious distinctions, such as above-ground swimming pools.[24] When you leave a particular home or purchase another property, there are always things that must stay and some things that may leave with you, even if not specifically addressed in a contract agreement.[25] The same is true when addressing fixtures to acreage-type land and energy projects that may develop thereon.

Relating to both households and acreage, there is an additional classification of fixtures to be considered: trade fixtures.[26] The term "trade fixture" has been defined many times by the courts, having settled that the term refers to:

> [S]uch articles as may be annexed to the realty by the tenant to enable him properly or efficiently to carry on the trade, profession, or enterprise contemplated by the tenancy contract or in which he is engaged while occupying the premises, and which can be removed without material or permanent injury to the freehold.[27]

Particularly, Texas case law "treats trade fixtures as a subset, or a special type, of fixture—in order for an article of personalty to be a trade fixture, it

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18. Karisch v. Allied-Signal, Inc., 837 S.W.2d 679, 680 (Tex. App.— Corpus Christi 1992, no writ).
19. Sonnier v. Chisholm-Ryder Co., 909 S.W.2d 475, 479 (Tex. 1995).
20. *In re* Camareno, 105 F. App'x 3, 4 (5th Cir. 2004) (quoting TEX. BUS. & COM. CODE § 9.313).
21. *See* Van Ness v. Pacard, 27 U.S. 137, 143 (1829).
22. *In re Camareno*, 105 F. App'x at 5.
23. Kerri Lewis, *Should It Stay or Should It Go?*, TEX. A&M UNIV. TEX. REAL EST. RSCH. CTR. (Jan. 28, 2021), https://www.recenter.tamu.edu/articles/tierra-grande/Should-It-Stay-or-Should-It-Go-2296.
24. *In re* Easter, 628 B.R. 32, 36 (Bankr. N.D. Miss. 2020).
25. Byron L. Brown, *How to Know Which House Fixtures Can Leave With the Seller*, THE RANDLE L. OFF. (Mar. 17, 2017), https://www.randlelawoffice.com/real-estate/house-fixtures-seller/.
26. *Id.*
27. C.W. 100 Louis Henna, Ltd. v. El Chico Rests. of Tex., L.P., 295 S.W.3d 748, 754–55 (Tex. App.—Austin 2009, no pet.) (quoting Granberry v. Tex. Pub. Serv. Co., 171 S.W.2d 184, 186 (Tex. App—Amarillo 1943, no writ)).

must first be a fixture generally."[28] Property that has previously been considered a fixture for trade purposes includes electrical equipment,[29] display cases, shipping containers, other articles of the like,[30] and even buildings erected specifically for a particular trade on the property.[31]

For most energy projects, the question of affixing is fairly easy to answer.[32] For example, wind turbines are not only massive above-ground structures but are clearly invasive to the property in which they are placed by creating a massive hole in the ground, as well as being set in the soil, often with cement.[33] Additionally, oil and gas drilling requires deep and usually very large holes in the ground, along with multiple other structures aside from the pump, intended to be situated on the property for at least the remainder of the project.[34] Oil and gas projects, including all of the structures required to carry them out, are considered fixtures, becoming part of the realty and ultimately belonging to the owner of the soil in the end.[35] Similarly built structures, such as billboards, have also historically been held as fixtures to real property.[36] While more readily movable property in such an endeavor, even if stored on the land for a period of time, is not considered fixed to the property, anything else enhancing or affecting the land is determined to be a fixture.[37] But, solar projects, and the way the solar panels are put into the ground, while still for the purpose of energy, are very different from the invasiveness of most other energy equipment, despite taking up generally much more space.[38]

Apart from some stark differences, wind and solar leases and the law that follows are often quite similar, given the precedent that wind law has laid before the solar industry.[39] However, some areas are more set in stone in the wind industry, as the projects are known to create a more severe impact on the land.[40] It is not difficult to understand that a wind turbine fits the bill of a fixture, and it has never been considered anything else. As solar energy continues to stake its claim in the renewable energy industry, the law supporting it is only developed on an as-needed basis because solar lawyers

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28. *In re* Demay Int'l, LLC, 431 B.R. 164, 176 (Bankr. S.D. Tex. 2010) (quoting *In re* San Angelo Pro Hockey Club, 292 B.R. 118, 130 (Bankr. W.D. Tex. 2003)).

29. *Id.*

30. Deena ElGenaidi, *Trade Fixtures: When Should They Be Removed?*, LEV CAPITAL (Dec. 11, 2021), https://lev.co/blog/assets/trade-fixtures/.

31. Van Ness v. Pacard, 27 U.S. 137, 138 (1829).

32. *Id.*

33. Carter v. Harvey, 525 S.W.3d 420, 425 (Tex. App.—Fort Worth 2017, no pet) (referencing affixing of a wind turbine to the surface).

34. *In re* Easter, 628 B.R. 32, 36 (Bankr. N.D. Miss. 2020).

35. Brazos River Conservation and Reclamation Dist. v. Adkisson, 173 S.W.2d 294, 297 (Tex. App.—Eastland 1943, writ ref'd).

36. State v. Clear Channel Outdoor, Inc., 463 S.W.3d 488, 493–94 (Tex. 2015).

37. *Adkisson*, 173 S.W.2d at 297.

38. Haigwood, *supra* note 1.

39. *Compare id. with* RODERICK E. WETSEL & BECKY H. DIFFEN, WIND AND SOLAR LAW (2021).

40. *See* Haigwood, *supra* note 1.

may not know what regulations or lease provisions are necessary until real issues arise. Much of the framework surrounding the solar law industry is based on the ramifications of the wind industry.[41] However, solar panels, being relatively small compared to wind turbines and other fixtures, are sure to require a different analysis for fixture classification.[42] Therefore, it follows suit that there is not yet case law determining whether a solar panel installed in the ground is a fixture. Despite there being scant Texas case law regarding solar panels, a number of courts have considered that solar panels affixed to the roof of a house have the potential to be filed as a fixture, but they have not been determinatively classified as such by those same courts.[43] Solar leases, solar law, the methods for putting these projects into place, title, and title insurance will likely all be altered in the State of Texas when this determination is finally made.[44]

C. Title Insurance: Texas Versus the Other Forty-Nine

The majority of the fifty states subscribe to and are covered by the American Land Title Association (ALTA) and its title insurance policies.[45] Texas, trailblazing as usual, follows its own title insurance protocols and regulations according to TDI.[46] The law of title insurance is becoming increasingly more complex, and the need for both the law and the insurance companies themselves to evolve is crucial to the protection of all titles and spaces that it impacts.[47]

> Title insurance is written today practically entirely by corporations or associations having defined and limited powers and under strict regulation by the states in which they operate. Their facilities are becoming so great, due to their extensive and multiplied examinations of titles that it is becoming more and more difficult for the individual attorney to compete with them in this branch of legal work. Thus, it should be of interest, to lawyers, at least, to know the extent of protection these companies actually

41. *See* WETSEL & DIFFEN, *supra* note 39.

42. *See id.*

43. *See* Mattlage v. Dividend Solar Fin., LLC, No. 6:19-CV-00409-ADA-JCM, 2019 WL 7879962, at *2–3 (W.D. Tex. Oct. 2, 2019), report and recommendation adopted, No. 6:19-CV-00409-ADA, 2019 WL 6464009 (W.D. Tex. Dec. 2, 2019).

44. *See id.*

45. G. Timothy Hardin, Senior Vice President and Counsel, 2013 RENEWABLE ENERGY INST., THE UNIV. OF TEX. SCH. OF L., 1 (Jan. 30, 2013), https://utcle.org/conferences/WE13/get-asset-file/asset_id/28652.

46. *See id.*

47. L.A. Pelkey, *The Law of Title Insurance*, 12 MARQ. L. REV. 38, 38–39 (1927) (footnotes omitted).

> afford their clients, and the duties and responsibilities imposed upon them by the courts.[48]

As title companies combine conveyancing, abstracting, and the examination of title, all while insuring title, the liability of doing so ultimately rests upon the attorney representing involved parties in the capacities to which they were contracted.[49]

1. American Land Title Association

ALTA is a trade association representing thousands of title insurers, agents, independent abstracters, researchers, and real estate attorneys throughout the United States.[50] ALTA issues a number of services, but namely, for this article, endorsements that states and their title insurers may subscribe to as methods to carry out certain title insurance policies.[51] Under ALTA, the majority of the questions posed around the issue of title insurance companies insuring solar panels on solar farms do not hinge upon the classification of affixing.[52] The ALTA 32 Policy, Severable Improvement Endorsements, is the policy most related to this topic and dovetails into the ALTA 36, Energy Endorsements.[53] These energy endorsements are designed predominantly to insure energy projects before and during construction.[54] However, with the appropriate definition modifications and a few other adjustments, the ALTA 36 policy may also be used for existing, completed energy projects.[55] Generally, according to this policy, everything that is on the ground is insured as if it is real property unto the company in which placed it, regardless of fixture classification.[56] When these seven "new" endorsements were adopted by ALTA in 2012, thirty-six states had already adopted them, with several others pending.[57] At that point, and currently, the endorsements have been proposed for promulgation with TDI but are without

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48. *Id.* (citations omitted).

49. *Id.*

50. Megan Hernandez, *American Land Title Association Reports Title Insurance Premium Volume Up 6.5 Percent in 2019*, AM. LAND TITLE ASS'N (Apr. 23, 2020), https://www.alta.org/news-and-publications/press-release/American-Land-Title-Association-Reports-Title-Insurance-Premium-Volume-Up-65-Percent-in-2019.

51. *Id.*

52. Telephone Interview with Scott Bank, Vice President and Senior Partner, First Am. Title Ins. Co. (Oct. 11, 2023).

53. *See Guideline: ALTA Endorsement 36-06 Series (Energy Projec*t), STEWART VIRTUAL UNDERWRITER, https://www.virtualunderwriter.com/en/guidelines/2013-1/GL133461086300000030.html (last visited Sept. 27, 2024) [hereinafter *Guideline*].

54. *Id.*

55. *Id.*

56. Telephone Interview with Scott Bank, *supra* note 52.

57. Hardin, *supra* note 45, at 1; *All ALTA Forms*, STEWART VIRTUAL UNDERWRITER, https://www.virtualunderwriter.com/en/forms-by-organization/american-land-title-association/all-alta-forms.html (last visited Sept. 27, 2024).

a firm timeline for the completion of that process, seeing as though the endorsements have still not been adopted in Texas.[58]

Additionally, the ALTA endorsements are governed according to the Federal Register, which publishes Internal Revenue Service (IRS) Letter Rulings.[59] IRS Letter Rulings come about via the IRS responses and answers to inquirers who have sent in questions, both specific and broad, about a given topic.[60] People and entities outside of the particular question inquirer may rely on these IRS Letter Rulings but must acknowledge that any different facts could produce a different response.[61] Naturally, many of these questions posed to the IRS surround tax.

2. Texas Department of Insurance

Texas, having yet to adopt any of the ALTA energy endorsement policies, sets and regulates its own policy that all insurance agencies in the state must comply with.[62] With the most tightly regulated title insurance industry in the United States, Texas standardizes both its insurance rates and forms, making the language of every policy both the same and very narrowly tailored down to the same premium amount charged, no matter the insurance agent used.[63] However, this narrow fit for insurance, in general, does not encompass solar energy projects specifically, even if the individual looking to be insured includes the available endorsements in Texas, which only cover minerals specifically rather than renewables and the energy projects that produce them.[64] This leaves the renewable industry with little to no protection, especially compared to other energy projects, such as oil and gas, almost ensuring that if a problem arose, the policy the company pays for would not "cover it."[65] As solar energy continues to be a rapidly growing industry in Texas, it is of great interest to both those seeking insurance and the insurers to enforce a policy that protects the title of these projects for all parties involved.[66]

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58. Hardin, *supra* note 45, at 1.

59. Telephone Interview with Scott Bank, *supra* note 52.

60. *Id.*

61. *Id.*

62. *TITLE INSURANCE FAQS*, TEX. LAND TITLE ASS'N, https://tlta.com/TLTA/Resources/Title_Insurance_FAQs/TLTA/Resources/Title_Insurance_FAQs.aspx?hkey=e337aba4-6bb1-4237-aa69-bd614e28e436 (last visited Sept. 27, 2024).

63. *Id.*

64. *Restrictions, Encroachments, Minerals Endorsement – Owner's Policy (Form T-19.1*), TEX. DEP'T OF INS., https://www.tdi.texas.gov/title/documents/form_t-19-1.pdf (last visited Sept. 27, 2024) [hereinafter *Form T-19.1*].

65. *Title Insurance FAQs*, *supra* note 62.

66. Fiscal Notes Staff, *Texas' Energy Profile: A Review of the State's Current Traditional and Renewable Energy Capabilities*, COMPTROLLER.TEXAS.GOV (Sept. 2022), https://comptroller.texas.gov/economy/fiscal-notes/archive/2022/sep/energy.php#:~:text=In%202021%2C%20Texas%20produced%

III. THE TEXAS DEPARTMENT OF INSURANCE SHOULD IMPLEMENT A FRAMEWORK THAT ADDRESSES SOLAR PANELS AND THEIR CLASSIFICATION FOR ENERGY INSURANCE PURPOSES

Under current solar law practices in Texas and across the United States, there is little to no uniformity.[67] While it is common for states to implement their own energy laws, Texas especially has been at the forefront of this notion and continues to be the longer it waits to protect the rising solar industry.[68] It is important to note that much of the delay behind implementing regulations to cover the industry and the landowner in these scenarios is caused by a lack of urgency: if there is no present pressing issue, why create a law?[69] In some cases, waiting to resolve an issue once it presents itself may be the right choice, but this is certainly not the case given the policy measures that already exist and could serve to be productive in Texas.

The "as-needed" approach is not precautionary in a beneficial way when addressing property fixtures and their coverage under insurance as more solar farms continue to be built. Some of this issue has been touched on by the existing Texas energy endorsements, but ALTA protects, more specifically, severable improvements under its energy endorsement policies.[70] These improvements include a multitude of differing types of property, both personal and for trade, that may be brought onto the land for energy production purposes.[71]

To go further, current case law in the United States provides little to no guidance for practitioners on the specific standard that will be used in circumstances relating to the coverage and protection of both parties in solar leases.[72] Without any directional path stemming from the legislature or TDI, companies, landowners, and both parties' representatives are left to their own foresight and creativity with the leases they both draw up and ultimately agree to.[73] The lawyers and other representatives of these parties are surely also the ones who have already noticed potential issues with title coverage when executing solar leases and are left to guess what the best option or language would be to include to work around this potential ownership issue.[74] With any energy project or title question that might arise, there are many factors to account for, yet there almost always seems to be something left out or some work-around-way to alter an agreement because of some circumstantial or language issue in either the policy coverage or lease

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67. Hardin, *supra* note 45, at 1–2.
68. *See* Pelkey, *supra* note 47, at 38.
69. *Id.*
70. *Id.*
71. *Title Insurance FAQs*, *supra* note 62.
72. *Id.*
73. *Id.*
74. *Id.*

agreement.[75] This scenario is what creates the stand-still that solar farm representatives are left within the present: without any protection from the removal, coverage for the costs that come with removal, or in the event a potential landowner takes possession of the solar panels by Texas regulations, how are solar companies capable of protecting their title?

Overall, the solar industry needs to have a clear standard for how the panels will be protected under title insurance, if at all. Operating without a clearly defined way to recover said property leaves all parties reliant on ultimately ineffective policies and potentially faulty lease language because there is no framework worth standing upon relating to these circumstances in Texas.[76] Therefore, Texas has the opportunity to define the nature of these projects and their protection and to save both its legislature and constituents time and money by either following suit with ALTA or producing its own regulations that are of a similar nature under TDI.[77]

A. Picture This: An Easily Arising Issue

While no two solar farms or energy companies are alike, similar issues may nonetheless arise between them. Here is a hypothetical to put into perspective the uncertainty that the lack of regulation and support in this area could cause. A solar energy company that enters into a solar lease with what they know to be one landowner includes many of the necessary clauses and provisions in the solar lease, following the little guidance they have with the precedent of wind leases. Of course, with any energy endeavor, the company seeks to insure its project and often does so by clearing the title and insuring the project as a whole. However, in some cases, searching title is not enough, and it is in every party's best interest to attempt to protect their assets should any additional issues arise. In an effort to do just that, the solar company claims the entirety of the panels as "personal property" on the lease. In that case, if an unknown individual came forward with a claim to the land, the company *should* be protected from that person claiming the panels as their own as well.

On the other hand, because the solar company classified the panels themselves and agreed with the lessor in constituting them as personal property, not only can the panels now *not* be considered fixtures to the land at all, but title insurance, specifically in Texas, is certain not to insure the panels or their removal in any instance. Because the energy endorsements

75. *See* Pelkey, *supra* note 47, at 42.
76. *See id.*
77. *Guideline*, *supra* note 53; *Title Insurance FAQs*, *supra* note 62.

provided by TDI are so minimal and vague, it is unlikely for the company to find a remedy that incentivizes continuing this practice at all.[78]

The number of issues that could arise similar to this proposed instance are vast and likely more complex upon fruition. It is imperative that energy companies and TDI get out in front of the situation and implement a remedy as soon as possible, ultimately saving all those involved much time and headache.

B. The Proposed American Land Titles Association Solution: Following Suit

ALTA published a multitude of severable improvement endorsements for the protection of the operators of energy projects.[79] Labeled under ALTA 36, these energy endorsements list out the suggested policy implementations that may be adopted on a state-by-state basis.[80] Texas has yet to follow the path of the thirty-six states that have adopted these endorsements, leaving its energy companies to their own laurels when attempting to dot their i's and cross their t's under the available policy coverage for these projects.[81]

The renewable energy industry is one of the few energy productions that Texas does not yet have dominion over.[82] While the industry still stands to be "new" in a general sense, lacking much information on approaches to potential issues, Texas is not at the forefront with experience in this particular field.[83] Therefore, adopting the ALTA 36 endorsements by states leading this industry, such as California, presents a viable solution to the rising issue at hand.[84]

Endorsements under an insured's policy may be "tacked" onto the coverage that the insured subscribes to in Texas, according to the Texas Land Title Association (TLTA).[85] Of the few energy-related endorsements available in Texas, the T-19.1 "Restrictions, Encroachments, Minerals Endorsement" form is the most similar to endorsements under the ALTA 36 policies. However, the language shared between the two forms is slim to none.[86] Under T-19.1, an improvement, also known as a fixture, is defined as: "mean[ing] a building, structure, road, walkway, driveway, or curb,

78. *See* FIDELITY NATIONAL TITLE INSURANCE COMPANY, ALTA ENDORSEMENTS: AN OVERVIEW OF OUR MOST COMMON COMMERCIAL ENDORSEMENTS, 228 (2023), https://media.fntic.com/ncs/endorsementbook/228/ [hereinafter ALTA 36]; *Form T-19.1*, *supra* note 64.

79. *Guideline*, *supra* note 53.

80. *Id.*

81. *See* Hardin, *supra* note 45, at 1.

82. *Id.*

83. *See* Joel Atkins, *Title Insurance in Wind and Solar Projects*, UNIV. TEX. SCH. L. CLE 2 (Sept. 28, 2017) https://utcle.org/ecourses/OC6993/get-asset-file/asset_id/42182.

84. *Id.*

85. *Title Insurance FAQs*, *supra* note 65.

86. *Compare* ALTA 36, *supra* note 78, *with Form T-19.1*, *supra* note 64.

affixed to either the Land or adjoining land and that by law constitutes real property, but excluding any crops, landscaping, lawn, shrubbery, or trees."[87] Notably, this definition includes structures but lacks any parameters defining what those structures may include, nor does the form define what constitutes "affixed to the land."[88] T-19.1 provides that the insurance company used will insure against loss or damage sustained to the improvements located on the land in the event of removal of the improvement or another method of encroachment.[89] Coverage of improvements and fixtures is clearly what the insured is seeking to achieve; however, should the term "improvement" not extend to solar panels and related materials, which are undefined in case law, renewable energy companies would surely be at a loss.

Additionally, T-19.1 does not insure against loss or damage resulting from covenants contained in a lease or similar instrument relating to the land at issue.[90] Therefore, should a practitioner utilize the potential remedy of naming solar panels as personal property in a solar farm lease agreement, there would not be coverage under this Texas endorsement, likely at all.[91] While there may be other methods or coverage options outside of energy endorsements for these materials, the solar industry would not have to invent this assurance on its own if it were protected under title insurance as most other energy projects are.[92]

Unlike TDI's Endorsements for Mineral and Surface Exploration under the T-19.1 endorsement form, ALTA 36.1-06 provides tailored guidelines in the event of an eviction from land used in energy projects.[93] Paragraph four of the ALTA 36.1-06 Endorsement writes, "In the event of an Eviction, the calculation of the loss shall include . . . the diminution in value of the Insured's interest in any Severable Improvement resulting from the Eviction, reduced by the salvage value of the Severable Improvement."[94] This endorsement, additionally, is more specific in its rendering of what constitutes an improvement covered under the policy proposal.[95] 36.1-06 defines "Severable Improvements" as:

> [P]roperty affixed to the Land at Date of Policy or to be affixed in the locations according to the Plans, that would constitute an Electricity Facility

87. *Form T-19.1*, *supra* note 64.
88. *Id.*
89. *Id.*
90. *Id.*
91. *Id.*
92. *See id.*
93. *Compare* ALTA 36, *supra* note 78, at 224 (providing tailored guidelines for evictions from land used in energy projects) *with Form T-19.1*, *supra* note 64 (failing to provide eviction guidelines for energy land evictions).
94. ALTA 36, *supra* note 78, at 224.
95. *Compare* ALTA 36, *supra* note 78, at 223 (defining severable improvements) *with Form T-19.1*, *supra* note 64 (failing to define severable improvements).

> but for its characterization as personal property, and that by law does not constitute real property because (a) of its character and manner of attachment to the Land and (b) the property can be severed from the Land without causing material damage to the property or to the Land.[96]

Additionally, the policy labels an "Electricity Facility" as:

> [A]n electricity generating facility which may include one or more of the following: a substation; a transmission, distribution or collector line; an interconnection, inverter, transformer, generator, turbine, array, *solar panel*, or module; a circuit breaker, footing, tower, pole, cross-arm, guy line, anchor, wire, control system, communications or radio relay system, safety protection facility, road, and other building, structure, *fixture*, machinery, equipment, appliance and item associated with or incidental to the generation, conversion, storage, switching, metering, step-up, step-down, inversion, transmission, conducting, wheeling, sale or other use or conveyance of electricity, on the Land at Date of Policy or to be built or constructed on the Land in the locations according to the Plans, that by law constitutes real property.[97]

Not only does ALTA 36.1-06 explicitly include solar panels that were agreed to be built according to the lease or built prior to the Date of Policy as an electricity facility covered under the insurance policy, but also all other structures or materials that accompany the project for the project's intended purpose.[98] Additionally, the policy defines a fixture as a coverable facility, making this endorsement much more applicable and accessible to those in the energy industry seeking title insurance.[99] These clear classifications and inclusions are wholly left out of TDI's energy endorsements, leaving much law in this area up to the lease drafters' discretion as specific language may bar coverage.[100] By adopting the ALTA 36.1-06 Endorsement, Texas would be implementing a clear-cut policy, protecting energy companies and, therefore, incentivizing the continued growth of this industry. By insuring one aspect of a project, many benefits will likely follow suit, allowing for a beneficial level of focus elsewhere.[101]

It is easy to assume that Texas, known for the hand that it plays in the energy production industry across the board, would have its own specific, well-regulated policies according to the TLTA. However, this is just not the case, especially in the renewable energy industry. Should TDI implement a policy using language according to ALTA 36.1-06, not only will energy companies be assured a step further than their title research, but an added

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96. ALTA 36, *supra* note 78, at 223.
97. *Id.* (emphasis added).
98. *Id.*
99. *Id.*
100. *See* Pelkey, *supra* note 47, at 38–39.
101. *Id.*

degree of comfort may also create leeway in the benefits companies may offer to the landowner.[102] The more energy production there is, the greater the likelihood for higher landowner payouts, making the Texas economy happier on both sides of the renewable energy sector.

1. Texas Department of Insurance Needs This Regulation

Most similar to the ALTA 36.1-06 Endorsement provisions is Form T-19.1, titled "Restrictions, Encroachments, Minerals Endorsement – Owner's Policy," TDI's Mineral Endorsement.[103] In totality, this form's policy lacks any reference to evictions or coverage thereof for the company itself. Rather, the form lays out that the solar energy company will cover merely enforced removal of an improvement located on the land at the "Date of Policy," not known to include any improvement made since the date of the policy's creation.[104] In that case, even if solar panels were to be classified as improvements within this policy, the majority of the time, the insured's policy will be implemented at the time the energy project is set to begin and maintained thereafter.[105] The way TDI Form T-19.1 spells out its coverage, it clearly will not cover what is constructed according to the lease agreement if it is not already completed before the date of the insurance policy.[106]

To go further, TDI Form T-19.1 gives an unclear and shockingly open-to-interpretation definition of "improvement," leaving "structure" as the closest, plainly provided term that *could* be interpreted to include a solar panel.[107] Not only is this vague definition far from the explicit "electricity facilities" protected under ALTA 36.1-06, but it also purports not to protect any property related to the energy industry as a whole, even though this form is written for the purpose of protecting mineral and surface energy interests.[108] Texas energy companies need this regulation to protect the renewable opportunities that continue to grow each year in a way that is clear and easily perceivable by both the owners and title insurance companies.

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102. *Id.*
103. *Form T-19.1*, *supra* note 64.
104. *Id.*
105. *Id.*
106. *Id.*
107. *Id.*
108. *Compare* ALTA 36, *supra* note 78, at 223 (defining electricity facility) *with Form T-19.1*, *supra* note 64 (providing vague definitions of structure and improvement).

2. Texas Department of Insurance Can Implement This Regulation

"A title policy's coverage only goes so far," which is the very reason endorsements were created as "add-ons" to an insurance policy.[109] Endorsements expand the coverage available to lenders and range from run-of-the-mill endorsements to uncommon, more unique endorsements, such as for a specific transaction to real estate.[110] The purpose of the proposed Severable Improvement Endorsements by ALTA is for their potential adoption by any of the States, per their discretion.[111] Therefore, there is no question as to Texas's capability of adopting the ALTA 36.1-06 Endorsement and rendering any definitions similar or slightly different, should TDI choose to, just as the adopting thirty-six states already had in 2013.[112] As of 2021, ALTA updated the totality of its forms, which were approved for use by forty-four states, as well as the District of Columbia and Guam.[113] This update made no changes to the policy or terms defined under ALTA 36 generally; ensuring that the same coverage was offered and accepted by these governing entities.

Among the states that adopted these forms were many of the leading states in 2022 for solar electric capacity installed, including Ohio, Colorado, and one of the states leading the U.S. in solar energy, California.[114] Additionally, Florida and Kansas, two other states, are pending form filing approval.[115] Therefore, with thirty-six states explicitly adopting the ALTA 36 Energy Endorsements as a whole and a total of forty-nine states and territories who have approved or are pending approval of ALTA's forms, Texas is a great outlier in the title insurance world.[116]

Not only is Texas fully able to adopt such an endorsement for insurance policies under TDI, but without doing so, this great state puts the insured at a great disadvantage for lack of this specific type of coverage.[117] Texas, of course, "goes their own way" when it comes to the adoption of ALTA's variety of endorsements and the ALTA 36 Endorsement, specifically.[118] However, the coverages, by and large, for other endorsements are very

109. Matthew B. Gunter, *Unavailable Endorsements: State Regulation and Title Company Stubbornness*, GERACI LAW FIRM (June 5, 2023), https://geracilawfirm.com/unavailable-endorsements-state-regulation-and-title-company-stubbornness/.

110. *Id.*

111. *Id.*

112. *See* Hardin, *supra* note 45, at 1.

113. James L. Gosdin et al., *New Alta 2021 Policy Developments and ALTA Policy Case Law Updates*, STEWART TITLE GUAR. CO. (Aug. 23, 2022), https://public.stewart.com/vu/alta/2021-new-alta-2021-policy-developments-and-alta-policy-case-law-updates-8-23-22.pdf.

114. *Leading the Charge: The Top 5 Solar States of 2023*, SOLAR ENERGY INDUS. ASS'N (Mar. 7, 2024), https://seia.org/blog/leading-charge-top-5-solar-states-2023/; Godsin et al., *supra* note 113.

115. Godsin et al., *supra* note 113.

116. *See id.*

117. Gunter, *supra* note 109.

118. *Id.*

similar in title policies between TDI, TLTA, and ALTA, aside from the 36.1-06 form.[119] Texas title policies are not composed of ALTA forms, are arranged differently, and follow their own classification scheme.[120] However, after comparing the available energy endorsements both in Texas and through ALTA, it is evident that Texas is capable of either utilizing the ALTA 36.1-06 Endorsement in and of itself or utilizing its language within an updated version of the T-19.1 Form.

C. Classifying Solar Panels as Trade Fixtures: Going a Step Further

Whether or not the ALTA 36.1-06 Endorsement is adopted in the policy forms written by TDI, Texas should openly classify solar panels on solar farms as a form of fixture to real property for trade purposes. By going a step further and explicitly labeling these types of energy projects as trade fixtures to real property, Texas will mitigate any issues arising from questions resulting from the title insurance policy covering the defined "Severable Improvement" and "Electricity Facility" under ALTA or "Improvement" under TDI T-19.1 alone.[121]

This classification is needed based on the property classification allotted in the ALTA 36.1-06 and is entirely lacking in TDI T-19.1.[122] Both policies cover property situated on the energy project lands referred to as an improvement or severable improvement but not personal property.[123] In the adoption of ALTA endorsements or the adjustment of the TDI endorsement policy, it is imperative to account for the impact that these changes may have in currently implemented solar leases.[124] Prior to this proposed adjustment, to ensure the solar company has the opportunity to recover its panels should an eviction arise or circumstance of a similar nature, lease agreements have held solar panels to be personal property.[125] This classification has been standard because it allows for the company, at the very least, to get its materials "back" from the landowner or individual to has a claim of title.[126] However, after extensive title research, labor and development costs, cost of equipment, and the multitude of other factors that it takes to get an energy project up and running, the company is essentially left to cover itself in these events.[127] Ultimately, energy companies may be less likely to take on such an

119. *Id.*
120. *Id.*
121. ALTA 36, *supra* note 78, at 223.
122. *Compare* ALTA 36, *supra* note 78, at 223 (classifying property) *with Form T-19.1*, *supra* note 64 (failing to classify property to the extent the ALTA 36 form does).
123. *See* ALTA 36, *supra* note 78, at 223; *Form T-19.1*, *supra* note 64.
124. *See id.*
125. Telephone Interview with Lisa Chavez, Senior Partner, Wagstaff LLP (Aug. 3, 2023).
126. *Id.*
127. *Id.*

endeavor, specifically in a state that refuses to extend such coverage to its energy producers.[128]

With this knowledge, classifying solar panels as trade fixtures to property would remedy the personal property issue that comes to fruition under the ALTA endorsements, as the defined electricity facilities also include fixtures.[129] As solar panels are installed for the sake of energy production, a trade, solar panels should be considered trade fixtures, just as many other structures in the energy industry are.[130] This classification will stand to protect the panels themselves from landowners, or others who may claim title, from obtaining these improvements in the event of eviction from the energy-related property because trade fixtures revert back to the company or individual who implemented the structure for the purpose of the trade itself.[131]

Additionally, should an issue arise with a land or title owner, neither would have a purpose for the materials placed in the ground for energy production themselves.[132] This classification would aid the insured removal by the insured energy company of these items.[133]

D. Benefits of a State Regulation

Should TDI adopt the same or similar framework as that of ALTA, the Lone Star State would be taking another step toward furthering an industry it has worked so fervently to cultivate: the energy industry.[134] Texas leads the nation in energy production and consumption, making renewable energy facilities, both planned and underway, imperative to bear the energy needs of Texas residents.[135] Texas Comptroller Glenn Hegar, speaking to the immediacy of energy regulation, stated: "We must work together to advance timely, practical solutions that develop renewable energy, while acknowledging the continued importance of a diversified energy portfolio. Our economic health and well-being depend on it."[136]

As the title industry is of growing importance in furthering the energy industry and fueling the State of Texas, the benefits accruing for the protection of these efforts continually multiply.[137] As Texas waits patiently for the impact renewable energy will have on its soils in the future, efforts taken to protect that future will encourage the industry as a whole and

128. *See id.*
129. *See* ALTA 36, *supra* note 78.
130. *See* State v. Clear Channel Outdoor, Inc., 463 S.W.3d 488, 493 (Tex. 2015).
131. *Id.*
132. Carter v. Harvey, 525 S.W.3d 420, 425 (Tex. App.—Fort Worth 2017, no pet).
133. *Id.*
134. Fiscal Notes Staff, *supra* note 66.
135. *Id.*
136. *Id.*
137. *See* Pelkey, *supra* note 47, at 38.

promote its use to consumers throughout the state, ultimately preparing the Lone Star State for what is to come out of solar energy down the line.

IV. CONCLUSION

The solar industry lacks guidance in many areas and factors of the practice both within the Texas boundary lines and in the United States as a whole.[138] With an opportunity to remedy significant title litigation that may arise between a solar energy company and one who claims title to the land, Texas can classify solar panels as trade fixtures affixed to real property for the purpose of energy production and secured to the individual who created and seeks to continue that particular trade.[139] Shockingly, as Texas leads the energy industry as a whole, the state has very little regulation relating to both wind and solar energy production.[140] Going beyond the classification of solar panels as trade fixtures, Texas would be able to improve and encourage the energy industry as it always has by adopting ALTA's 36.1-06 Endorsement for Severable Improvements.

138. *See supra* Section II.C (analyzing Texas's, as well as the other forty-nine states' approach to title insurance).

139. Fiscal Notes Staff, *supra* note 66.

140. *Id.*