THE EMERGING BATTLE OVER PRODUCED WATER OWNERSHIP IN TEXAS: A LEGAL AND PRACTICAL ROADMAP FOR COURTS, GROUNDWATER OWNERS, AND ENERGY PRODUCERS

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ABSTRACT

Water occurring in oil and gas-bearing formations belongs to the surface estate as a matter of law in Texas. Contemporary water midstream acreage dedication transactions now create a challenge because under a conservative estimate, nearly a billion dollars in cash and equity have changed hands in Texas alone since 2017 but without any compensation to the landowners who actually own the produced water pledged in the deals. This omission exposes many of the transactions to potential legal challenges. If a legal challenger prevailed, the oil and gas producers that made the dedications would likely need to make compensatory payments, and in some instances, potentially restructure contracts. On the positive side, large-acreage water owners' increasing desire to monetize their produced water resources sets the stage for practical solutions that would respect water owners' rights and facilitate oil and gas resource development.

"Ultimately, property rights and personal rights are the same thing."

— Calvin Coolidge, 1914[1]

I. INTRODUCTION

While spoken more than 100 years ago (and before he became President of the United States), Coolidge's words aptly frame the public discussions now

1. Calvin Coolidge, *Have Faith in Massachusetts*, Massachusetts Senate President Acceptance Speech (Jan. 7, 1914), https://www.coolidgefoundation.org/resources/have-faith-in-massachusetts/.

underway regarding produced water dedication and exclusive water services agreement sales in Texas. These deals often involve tens—if not hundreds—of millions of dollars in upfront cash and equity payments to the energy producers making the dedication. Two fundamental questions arise from these new developments. First, do the energy companies actually own the water they are exclusively dedicating the rights to? And second, do such transactions require the oil and gas producers reaping the financial benefits to compensate the water owners whose produced water they are monetizing? Texas caselaw, statute, and property rights protection principles strongly suggest the answer to both questions is yes.

Resolving this question also invokes a broader set of public policy concerns regarding the ability of powerful private corporations to monetize property of another person that happens to be co-produced with the good(s) that said corporation does validly own the rights to. What if oil came up from a water well alongside the water and the water producer sold a long-term contract that only had value if it delivered that oil exclusively to the buyer? The mineral owners would certainly expect to share in the economic upside.

Some parties argue that oilfield produced water is a mere "waste product."[2] But the substantial consideration paid in deals over the past three years tells a dramatically different story. Namely, this ancient fossil water has now become a marketable, highly valuable commodity. The number or type of end use markets is irrelevant: what matters is that multiple counterparties are now willing to buy the rights to that produced water (just another form of groundwater, which is surface estate property). Equally important, the purchase transactions convert the future potential extraction of water located in the oil and gas-bearing formations into large sums of guaranteed cash today as well as equity stakes and future contingent cash payments offering additional future upside. The entire value exchange process generally excludes the actual owners of the water.

Imagine the following events:

> Big Water, LLC is seeking to add a large Permian Basin oil and gas operator, GOC, to the catchment area of its produced water gathering and disposal position. To accomplish this, Big Water pays GOC $100 million in cash consideration and also provides a 20% equity stake in Big Water. GOC then grants Big Water the exclusive right to handle produced water from GOC's operated acreage for the next twenty years, future acreage acquisitions in an area of mutual interest, and GOC's existing physical water assets, permits, and surface use rights in the area to be dedicated. GOC's dedication to Big Water occurs over a 100,000-acre expanse in Texas County that includes 25,000 acres of surface estate owned by Long-

2. *See Dedications in Produced Water Contracts*, Winston & Strawn LLP, (July 14, 2020), https://www.winston.com/print/content/1033442/dedications-in-produced-water-contracts.pdf. *See also* TEX. NAT. RES. CODE ANN. § 122.002.

> horn Ranch. The transaction closed in December, but the ranch only learned of the transaction in January when Hart Energy published an article on it.
>
> One week later, the ranch family's matriarch read a client update from a well-regarded Texas firm that surface owners own produced water under Texas law. She forwarded the article to the Ranch's counsel, who did some research and found in GOC's annual report that it had received $100 million in upfront cash for a water dedication sale on lands that included large portions of the Ranch. Counsel also found that the capital value of GOC's physical infrastructure included in the deal was likely less than $35 million. She then promptly called GOC and Big Water's management teams and demanded a pro-rata share of the remaining $65 million in sale proceeds and an overriding royalty interest for produced water originating under the Ranch as compensation for its property being sold. Big Water and GOC reject the Ranch's request and threaten legal action. What are the Ranch's potential options for legal and economic recourse?

This type of scenario would have seemed esoteric—indeed, futuristic— even five years ago, but it is now a live issue with high stakes for water owners, E&P companies, and water midstream firms. For decades, the water that came up from wells alongside oil and gas was truly treated as a waste product. Companies generally disposed of it in their own injection wells or re-injected it on lease into the oil-producing formation to force out additional oil.

However, the advent of hydraulic fracturing dramatically shifted the landscape. Oil and gas producing formations in unconventional plays often have lower porosity than a slab of cement. As such, the water entrained with the hydrocarbons cannot be easily re-injected where it came from, as would be done in most conventional plays. Companies had to find an outlet for formation water in order to ensure their ability to produce hydrocarbons uninterrupted, particularly in the Permian Basin where each barrel of oil equivalent coming from a well can be accompanied by five, and in some areas more, barrels of water.

Investors preferred that the E&Ps focus capital on hydrocarbon production rather than water infrastructure, and a flood of capital began flowing into the water midstream space.[3] Private equity-backed water midstream firms found that purchasing existing water assets—and perhaps even more importantly, exclusive rights for gathering and disposing of produced water on specified land footprints—offered a way to turbocharge volume growth and seek the economies of scale their capital backers sought. Simultaneously, the monetization of formation water has provided a financial lifeline to help E&P operators offset losses in their core business operations and shore up their balance sheets.

3. *See* Jim Summers, *A New Midstream Model for Water*, Permian Basin Water in Energy Conference, (Feb. 22, 2018), https://www.pbwiec.com/presentations-2018 (providing an overview of the water midstream business case).

Pay-upfront transactions attached a substantial price tag to produced water, a development described in detail in Section II (below). With such substantial economic value in play, water owners now have robust incentives to claim their share of value. The water flow from dedicated acres is an irreplaceable contributor of value to oilfield water system deals. Without those water volumes, the physical infrastructure and contracts become "stranded assets." But despite produced water's critical role in underpinning water system sale values, water owners are generally not being compensated. This means water asset sales and dedications executed thus far in Texas are likely subject to unfulfilled financial liabilities to the surface estate or water owner.

This article will unpack how these deals have been structured to date and how they are broadly open to challenges from water owners who were bypassed. The issue is a critical and timely one, with stakeholders including energy producers, water midstream companies, financiers, and most importantly of all, the owners of groundwater and subsurface water resources affected by these deals.

II. THE DEALS

Since 2017, at least ten publicly traded and privately held oil and gas producing firms have sold produced water assets and exclusive acreage dedications in Texas. Collectively, these deals have encumbered at a minimum hundreds of thousands of acres and likely saw approximately $1 billion in upfront cash and equity consideration change hands. Over time, additional contingent payments will likely be made as cumulative volumes of billions of water flow over the life of these deals, many of which have fifteen- or even twenty-year terms. Despite the substantial economic value involved in these monetizations, the author is not aware of any landowners being compensated for their water ownership as part of a water asset and dedication sale that occurred upon their lands.

FIGURE 1: SELECTED PRODUCED WATER ASSET SALES AND DEDICATIONS IN TEXAS SINCE 2017

Date Announced	Seller	Buyer/Transferee	State	Basin	Acres Impacted	Upfront Consideration Paid	Contingent Consideration	Equity Stake in Water Company	Dedication Length, Yrs.
Jun-17	Encana	H2O Midstream	TX	Midland	Unknown	$50	Unknown	Unknown	Unknown
October-18	Halcon Resources	WaterBridge Resources	TX	Delaware	75,000	$200	$125	Unknown	15
January-19	Concho Resources	WaterBridge Resources	TX	Delaware	110,000	$79	Unknown	100,000 Series A-1 Preferred Shares	"long term"
May-19	PDC Energy	WaterBridge Resources	TX	Delaware	50,000	$125	Unknown	Unknown	"long term"
May-19	Diamondback Energy	Rattler Midstream	TX	Delaware/Midland	400,000	$128	Unknown	Unknown	15
Aug-19	Sabalo Energy	H2O Midstream	TX	Midland	22,000	Unknown	Unknown	Unknown	15
Nov-19	Noble Energy	NBLX	TX	Delaware	92,000	$96	Unknown	Unknown	15
Dec-19	Jetta Permian	WaterBridge Resources	TX	Delaware				Unknown	15
Dec-19	Tall City Exploration III	WaterBridge Resources	TX	Delaware	49,900	$173	Unknown	Unknown	15
Dec-19	Primexx Energy Partners	WaterBridge Resources	TX	Delaware				Unknown	20
February-20	Centennial Resource Development	WaterBridge Resources	TX	Delaware	80,100	$150	$75	Unknown	
Unknown	Colgate Energy	WaterBridge Resources	TX	Delaware	Unknown	Unknown	Unknown	Unknown	
Total					**879,000**	**$850**	**$200**		

Note: the consideration amounts for May 2019 Rattler IPO and and November 2019 NBLX dropdown/simplification transactions are estimated using the following methodology: daily volume at nearest reported time relative to monetization event X 365 days/yr X $0.25/bbl EBITDA X 7.0 times annual EBITDA valuation multiple. The NBLX estimate only accounts for the company's Texas Delaware Basin produced water volumes. The WaterBridge Jetta/Tall City/Primexx purchases are estimated as follows: Waterbridge raised $345 million in equity capital in late 2019 to pay for the acquisitions plus organic growth. I thus assume that 50% of the amount raised was earmarked for the three aquisitions.

Water midstream transactions involving upfront payments predominantly utilize one of two basic structures. Under the first structure, an oil and gas producer sells a third-party water midstream developer physical water management assets and an exclusive right to all produced water from a defined set of acreage for a specified time period in exchange for cash payments, and in some instances, equity interests in the water management company.[4] The second deal type entails an E&P company dropping physical water assets into a midstream entity, often a master limited partnership (MLP), that the E&P holds a material ownership interest in and also providing the midstream entity with a long-term exclusive acreage dedication/water services agreement.[5] Other structures exist as well. For instance, an oil and gas producer may transfer its water assets to a special purpose vehicle (SPV) in which it holds a controlling share, while a financial partner injects cash into the SPV in exchange for a minority ownership interest.[6] Such cash injections may be immediately distributed to the E&P company.[7]

Distilled into their simplest form, oilfield water system sales have three core components: (1) the "pipes" (i.e., disposal wells, water pipelines, recycling facilities, etc.), (2) the "paper" (i.e., surface use agreements, rights-of-way, and other relevant contracts governing infrastructure and surface activities), and (3) a water services agreement that exclusively obligates and encumbers the produced water itself.

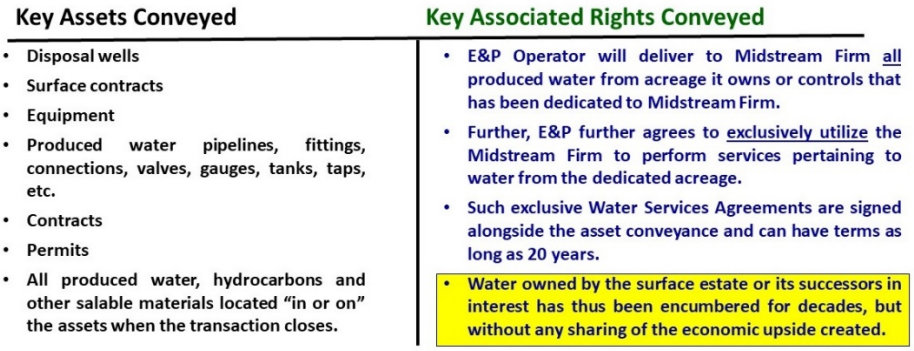
4. Concho Resources Inc., Annual Report (Form 10-K), at 85 (2019); *Halcón Resources Announces the Closing of its Water Infrastructure Asset Divestiture*, GLOBE NEWSWIRE (Dec. 20, 2018), https://www.globenewswire.com/news-release/2018/12/20/1677313/0/en/Halcón-Resources-Announces-the-Closing-of-its-Water-Infrastructure-Asset-Divestiture.html; Emily Patsy, *PDC Energy Divests Permian Basin Midstream Assets For $310 Million*, HART ENERGY (May 2, 2019), https://www.hartenergy.com/exclusives/pdc-energy-divests-permian-basin-midstream-assets-310-million-179620.

5. Noble Midstream Partners, Annual Report (Form 10-K), at 8 (Sep. 13, 2020).

6. Dale Smith, Molly Butkus, Lytch Gutmann, & John Stavinoha, *There's Floodin' Down in Texas*, OIL AND GAS INVESTOR, 92 (Apr. 2020).

7. *Id.*

FIGURE 2: ASSETS AND RIGHTS TRANSFERRED IN A TYPICAL PRODUCED WATER ASSET PURCHASE AGREEMENT



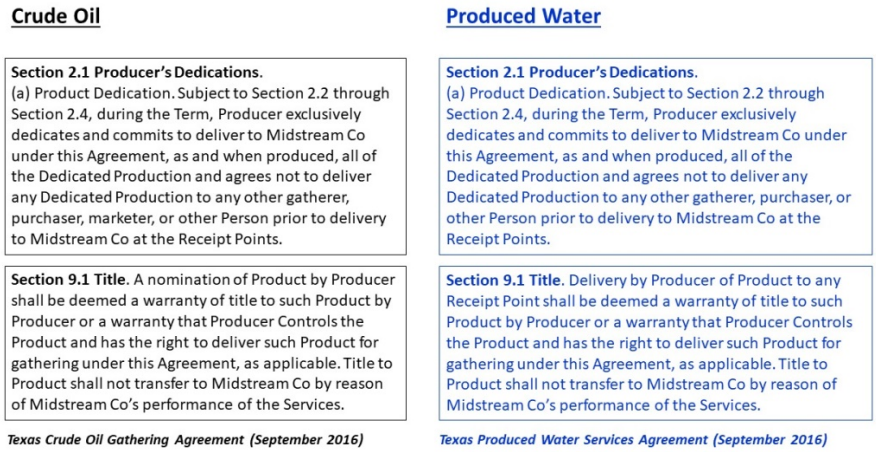
Publicly available sale and purchase agreements for oilfield water system transactions clearly delineate the pipes and paper end of the deal.[8] And this is not surprising, since the E&P company clearly owns the physical assets and is generally legally empowered to assign rights provided in surface use and right-of-way agreements, among others. When the discussion turns to the water itself, however, things become more complex.

To date, E&P operators in Texas have taken varying stances on whether they can transfer merchantable title to produced water as part of an asset and water dedication sale. One large operator with a significant Texas presence, when asked by the author at a conference in December 2018 "would you warrant title to the produced water you're sending the water midstream provider?" replied plainly: "No, how could we warrant title to something we don't own?" Other E&Ps have been much more forward leaning. At least one firm dedicated produced water gathering rights with agreement language that assumed it owned clear title to the water, mirroring word-for-word the language used by the firm's crude oil gathering contract.[9]

8. Plaintiff's Original Petition at 6, COG Operating LLC v. Cactus Water Services, LLC, No. 20-03-23456-CVR (143rd Dist. Ct. March 28, 2020); Response of COG Operating to Special Exceptions at 1, COG Operating LLC v. Cactus Water Services, LLC, No. 20-03-23456-CVR (143rd Dist. Ct. June 11, 2020).

9. Noble Midstream Partners, Annual Report (Form 10-K). [CORRECTED FOOTNOTE]

FIGURE 3: CRUDE OIL AND PRODUCED WATER SERVICES DEDICATION AND TITLE LANGUAGE USED BY A LARGE PERMIAN BASIN OPERATOR[10]



Crude Oil	Produced Water
Section 2.1 Producer's Dedications. (a) Product Dedication. Subject to Section 2.2 through Section 2.4, during the Term, Producer exclusively dedicates and commits to deliver to Midstream Co under this Agreement, as and when produced, all of the Dedicated Production and agrees not to deliver any Dedicated Production to any other gatherer, purchaser, marketer, or other Person prior to delivery to Midstream Co at the Receipt Points.	**Section 2.1 Producer's Dedications.** (a) Product Dedication. Subject to Section 2.2 through Section 2.4, during the Term, Producer exclusively dedicates and commits to deliver to Midstream Co under this Agreement, as and when produced, all of the Dedicated Production and agrees not to deliver any Dedicated Production to any other gatherer, purchaser, or other Person prior to delivery to Midstream Co at the Receipt Points.
Section 9.1 Title. A nomination of Product by Producer shall be deemed a warranty of title to such Product by Producer or a warranty that Producer Controls the Product and has the right to deliver such Product for gathering under this Agreement, as applicable. Title to Product shall not transfer to Midstream Co by reason of Midstream Co's performance of the Services.	**Section 9.1 Title.** Delivery by Producer of Product to any Receipt Point shall be deemed a warranty of title to such Product by Producer or a warranty that Producer Controls the Product and has the right to deliver such Product for gathering under this Agreement, as applicable. Title to Product shall not transfer to Midstream Co by reason of Midstream Co's performance of the Services.
Texas Crude Oil Gathering Agreement (September 2016)	*Texas Produced Water Services Agreement (September 2016)*

While this agreement only offers one evidence point, the verbatim transfer of crude oil midstream contract language (and the embedded title and ownership assumptions) is not surprising given the prevalence of executives in the business who came from crude, products, and natural gas midstream backgrounds. The key problem is that while the E&P companies clearly own title and rights to hydrocarbons under their leases, in most cases, they do not own the formation water. As such, they lack the right to sell it without sharing economic gains with the water owner.[11]

It is also likely that at least some operators believe that Texas House Bill 3246, which became law in September 2019 (albeit without the Governor's signature), effectively transfers them ownership of produced water.[12] But this view is almost certainly legally unsustainable (discussed in detail in Section III) and regardless, would not protect the many dedication sales conducted prior to the bill becoming law.

10. *Id. [CORRECTED FOOTNOTE]*

11. Peter E. Hosey & Jesse S. Lotay, *Quench My Thirst: Water Rights in the Context of Water Treatment Technologies*, 23RD ANNUAL ROBERT C. SNEED TEXAS LAND TITLE INSTITUTE (Dec. 5-6, 2013), https://www.tlta.com/legallibrary/papers/2013/B_WaterRights.pdf; Maxwell B. Kallenger, *Who Owns All This Fracking Water?*, LA. L. REV. (2015), https://lawreview.law.lsu.edu/2015/10/29/who-owns-all-this-fracking-water; Gabriel Collins, *Oilfield Produced Water Ownership in Texas: Balancing Surface Owners' Rights and Mineral Owners' Commercial Objectives*, BAKER INSTITUTE FOR PUBLIC POLICY: CENTER FOR ENERGY STUDIES 2, 6 (2017), https://www.bakerinstitute.org/research/oilfield-produced-water-ownership-texas-balancing-surface-owners-rights-and-mineral-owners-commercia.

12. H.B. 3246, 86th Leg. (Tx. 2019), https://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=86R&Bill=HB3246.

"Who owns the produced water?" is thus a critical question for these deals, as the physical "wet water" underpins the lion's share of value in most water asset sales. Water midstream firms certainly find specific physical asset packages attractive, but as a general rule, the forward cashflow generated by produced water volumes moving through a system is the real prize they are willing to pay for. The statements made by WaterBridge Texas Midstream in its June 2020 Original Answer to a suit filed against it by Centennial Resource Development in the wake of a busted water asset deal are instructive. WaterBridge, which has purchased at least eight packages of water assets in the Texas Permian Basin since 2017 and is the state's largest third-party oilfield produced water handler by volume, minces no words, stating:

> WaterBridge did not need the Assets for additional capacity or to complete its water disposal system. The value to WaterBridge in acquiring the Assets was the revenues to be generated from the produced water volumes under the Services Agreement. Put simply, the deal—including the proposed purchase price for the Assets—was predicated on WaterBridge's expected revenues under the Services Agreement for disposing of water generated from Centennial's future drilling and completion activities.[13]

WaterBridge's statement is congruent with a trend in multiple Texas Permian Basin oilfield water deals where the value of the consideration paid substantially exceeds a market-based assessment of what the capital cost of physical infrastructure transferred in the deal would be. Comparing the upfront cash consideration paid in several recent deals to the likely capital replacement value of the physical infrastructure transferred in the transactions suggests that buyers are paying at least 1.5-to-2.5 times more upfront money than would be expected based on replacement value alone

13. Defendant WaterBridge Texas Midstream LLC's Original Answer and Counterclaims at 8, Centennial Resource Production, LLC v. WaterBridge Texas Midstream LLC, No. 2020-31308 (269th Dist. Ct, Harris County, Tex. June 30, 2020).

FIGURE 4: WATER MIDSTREAM FIRMS PAYING MUCH MORE THAN LIKELY REPLACEMENT VALUE OF PHYSICAL INFRASTRUCTURE PURCHASED

	Date	Estimated Replacement Value of Infrastructure	Upfront Consideration	Consideration as % of Infrastructure Replacement Value	Notes
Halcon Resources	Oct-18	$88	$200	227%	
Concho Resources	Jan-19	$32	$79	248%	Equity stake in WaterBridge likely drives upfront consideration value above $100
PDC Energy	May-19	$68	$125	183%	
Jetta Permian, Tall City Exploration III, Primexx Energy Partners	Dec-19	$78	$173	221%	Estimated based on assumption that 1/ $345 million in equity capital WaterBrid in late 2019 was used to fund a acquisitio produced water infrastructure the com and the other half was used to support growth projects in the Southern Delawa Basin."

Infrastructure replacement value assumes SWD costs of $5 million per finished facility, $1 million for SWD permits, and $35,000/mile/inch of diameter for PW pipelines, with a system average assumed diameter of 8 inches

Water midstream companies generate the bulk of their cashflow through volumetric payments for water actually taken and processed (for example, " $0.75 per barrel for gathering and disposal"), and the water services agreements make them the only party with a right to that water. As such, the upfront consideration paid effectively functions as a forward purchase of the exclusive rights to produced water in the ground. In purest form, the intent—securing exclusive volumes—and mode used (paying large sums of money and equity stakes) to secure those water volumes are thus not substantially different from traditional purchases of groundwater in place. But the practical economic effects are dramatically different—most notably because the surface owner that actually owns the water as a matter of law is in most cases is excluded from the economic bounty.

III. SURFACE OWNERS, NOT OIL COMPANIES, OWN THE PRODUCED WATER

The time is ripe for a Texas court to explicitly affirm the surface estate's ownership of produced water as just another species of subterranean water. Strong precursors exist for precisely such a decision when produced water ownership comes before a court in Texas. Private ownership of the water molecules underlying a set of lands has a long history in Texas law and ultimately traces its heritage sixteen centuries back to Roman law first laid out under Emperor Theodosius II.[14]

A. The Surface Estate By Default Owns All Subsurface Water

In Texas, the surface owner "owns all non-mineral 'molecules' of the land, i.e., the mass that undergirds the surface."[15] Naturally that "mass" encompasses the molecules of water residing in oil-and gas-bearing geological formations. Water is not a mineral under Texas law and clearly belongs to the surface estate.[16]

Some supporters of mineral estate ownership of water contained in oil- and gas-bearing formations premise their arguments on an incorrect presupposition that surface owners must affirmatively reserve the rights to formation water.[17] This approach improperly transposes the surface and mineral estates and assumes that co-location implies co-conveyance of ownership. Analyzing the relevant Texas caselaw yields a very different view.

Surface owners own the formation water despite the close physical proximity of hydrocarbons to formation water in the oil and gas-bearing layers. In the 2013 *Springer* decision, the San Antonio Court of Appeals notes, "the physical structures and subsurface substances that the surface estate and mineral estate owners possess are inherently intertwined, at least with respect to hydrocarbons."[18] The *Springer* court acknowledged that in purely physical terms "[s]ome conflation is unavoidable" but adds that "if there are no minerals beneath the surface, the mineral estate owner owns the legal fiction of an estate that is nothing."[19] Furthering the point, the Texas Supreme Court takes the po-

14. For a detailed and erudite discussion of how water ownership doctrine evolved in Texas, *see* Dylan O. Drummond et. al., *The Rule of Capture in Texas-Still So Misunderstood After All These Years*, 37 TEX. TECH L. REV. 1, 15 (2004).

15. Dunn-McCampbell Royalty Interest, Inc. v. Nat'l Park Serv., 630 F.3d 431, 442 (5th Cir. 2011) (applying Texas law).

16. Fleming Foundation v. Texaco, 337 S.W.2d 846 (Tex. App.—Amarillo 1960, writ ref'd n.r.e.); *see also* Moser v. U.S. Steel Corp., 676 S.W.2d 99, 102 (Tex. 1984); Reed v. Wylie, 597 S.W.2d 743, 747 (Tex. 1980) (near surface lignite, iron and coal); Heinatz v. Allen, 217 S.W.2d 994, 1000 (Tex. 1949) (building stone and limestone); Atwood v. Rodman, 355 S.W.2d 206, 213 (Tex. App.—El Paso 1962, writ ref'd n.r.e.) (limestone, caliche, and surface shale); Psencik v. Wessels, 205 S.W.2d 658, 659 (Tex. App.—Austin 1947, writ ref'd) (sand and gravel).

17. Benjamin Sebree, *Session Six – Produced Water Legislation Presentation*, Permian Basin Water In Energy Conference (Feb. 21, 2020).

18. Springer Ranch, Ltd. v. Jones, 421 S.W.3d 273, 284 (Tex. App.—San Antonio 2013, no pet.).

19. *Id.*

sition that "[t]he minerals owner is entitled, not to the molecules actually residing below the surface, but to 'a fair chance to recover the oil and gas in or under his land…"[20]

In this respect, the surface estate controls a robust and expansive set of property interests. The mineral owner only possesses the right to recover hydrocarbon and other selected molecules from the subsurface area it has leased. In contrast, the surface estate holds a true corporeal, tangible interest. If the minerals have not been severed, the surface owner owns everything from the surface to the center of the earth. And even if the minerals have been severed, the surface estate still owns the dirt, voids, H2O molecules, and every substance other than the ones explicitly named as "minerals" under Texas law.

In other words, a mineral owner (1) only owns the right to extract hydrocarbons, salt, uranium, sulfur, metals, or another substance classified as a mineral under Texas law, and (2) has no ownership right to other non-mineral substances such as water, even if they are co-located with the minerals. Mineral owners operate within a limited scope of allowable activities congruent with their right to access and exploit the minerals.[21]

To be sure, the mineral estate is dominant over the surface estate in split estate situations. But this dominance aims only to facilitate the mineral owner's right to access his or her property. It confers use rights, not ownership rights nor the right to monetize surface estate property at all, much less for purposes that extend beyond lease boundaries. The Texas Supreme Court notes that the mineral estate is "benefitted by an implied right to the reasonable use of the surface."[22] Readers should note it is not yet clear in the wake of the 2016 *Coyote Lake Ranch* decision how a court might specifically adjudicate a dispute between the mineral estate and a severed groundwater estate—for instance, a reservation of water in oil- and gas-bearing formations.[23] But what is manifestly clear is that the concept of "reasonable use" as well as the accommodation doctrine both clearly give the mineral estate a capacity to use incidents of the surface estate, but without granting any of the rights of ownership that would be necessary for the mineral owner to sell or monetize those incidents without sharing the benefits with the surface owner or its successors in interest.

The grant of a certain degree of use rights, but not ownership or a right to monetize, makes sense when viewed in conjunction with core public policy goals long espoused by Texas politicians and voters. On the first level, Texas does embrace, as recently noted in these pages, "longstanding public policy

20. Coastal Oil & Gas Corp. v. Garza Energy Tr., 268 S.W.3d 1, 15 (Tex. 2008).

21. Dunn-McCampbell Royalty Interest, Inc. v. Nat'l Park Serv., 630 F.3d 431, 442 (5th Cir. 2011) (applying Texas law) ("Texas law establishes that the holder of a mineral estate has the right to exploit minerals, but does not own the subsurface mass.").

22. Coyote Lake Ranch, LLC v. City of Lubbock, 498 S.W.3d 53, 64 (Tex. 2016).

23. For detailed discussion, *see* Haley King, Note, *Conflicts in Groundwater and Mineral Estates in Texas*, 48 TEX. ENVTL. L. J. 299, 305 (2018).

goals of promoting oil and gas development and preventing waste."[24] But the state's approximately century-old presumption of support for energy resource development almost certainly yields to a more fundamental set of protections for private property ownership, which are enshrined in the Constitution of the State of Texas to a degree exceeding even the substantial protections provided in the United States Constitution.[25] As a recent analysis of the potential unconstitutional taking of produced water wrought by House Bill 3246 notes, "The state of Texas, time and time again has made it clear that among the government's responsibilities, the protection of private property ownership is paramount."[26]

For more than fifty years, Texas law has stood for the proposition that even when there is a mineral lease, "[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 respective landowners" who owned the surface estate.[27] In other words, if the surface owner drilled a 10,000-foot deep well to produce ancient, saline water and then sell the water, an oil company that had leased the minerals on those tracts would have no right to claim compensation for the water sold.[28]

Conveyances of oil, gas, and other minerals will in some circumstances bestow a limited set of use rights on oil and gas producers. For instance, a producer may recycle, reuse, and dispose of water from a given lease on that lease and in doing so be protected by its common law rights to reasonably use the surface to develop the minerals. But those are use rights only. The conveyance of minerals clearly *does not* grant ownership rights of surface substances unless the surface estate owner specifically expressed its intent to convey them. As the Texas Supreme Court states in the *Robinson* decision, "It has been decided that water is part of the surface estate according to the ordinary and normal use of

24. Jason A. Newman & Cornelius M. Sweers, *Get Off My Lease: Predicting How Texas Courts Will Resolve Off-Lease Drilling Disputes Under Lightning Oil v. Anadarko*, 13 TEX. J. OIL GAS & ENERGY L. 103, 107 (2018).

25. *See* TEX. CONST. art. I, § 21 ("No conviction shall work corruption of blood, or forfeiture of estate, and the estates of those who destroy their own lives shall descend or vest as in case of natural death").

26. Melissa Waggoner, *The Cut and Dry of Texas Groundwater Law: Unconstitutional Takings of Produced Water from Oil and Gas Wells as a Result of House Bill 3246*, 50 TEX. ENV'T. L. J. 4 (forthcoming 2020).

27. Emeny v. United States, 412 F.2d 1319, 1323 (Ct. Cl. 1969).

28. Under the reasoning in the Texas Supreme Court's 2017 *Lighting Oil* decision, the oil company would not even be able to prevent the surface owner from penetrating the oil and gas-bearing formations it had leased. *See* Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 520 S.W.3d 39, 50 (Tex. 2017) ("With respect to Lightning's interest in preventing the destruction of its minerals, Anadarko's proposed drilling activities will inevitably remove some of the minerals Lightning holds under its lease, even though that amount will be small. The amount of minerals Lightning will lose is roughly the amount of minerals embedded in fifteen cubic yards of dirt and rock for each thousand linear feet drilled with an eight-inch wellbore. *And as discussed, Lightning does not have any right to the materials surrounding any such minerals—only the minerals themselves, which will be a much smaller quantity than the mass of the materials in which they are lodged*.") (emphasis added) (internal citations omitted).

the words conveying or reserving minerals. . . . In either case *the water itself is an incident of surface ownership in the absence of specific conveyancing language to the contrary*."[29]

Against this precedential backdrop, to claim that contractual silence in a mineral conveyance also transfers ownership of subsurface water that is surface property would twist Texas contract law beyond recognition. What if a surface owner claimed that because the surface lease taken fifty years ago was silent regarding lithium (which became very valuable in the interim), the lithium entrained in the groundwater they are producing today pursuant to that lease is owned by the surface estate? Co-location in the formation does not constitute conveyance, for the substances in question each belong to distinct ownership estates.

B. Water Contained in Oil and Gas-Bearing Formations is Groundwater

There is also an alternative argument for surface estate ownership of formation water based on the fact that it is groundwater. Groundwater is a form of real property owned by the surface estate unless severed or otherwise reserved.[30] The legislature erased any lingering doubt as to the ownership of groundwater in the Lone Star State in the 2011 session, when it amended the Texas Water Code to plainly state that "the legislature recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property."[31] Accordingly, groundwater owners in Texas enjoy a range of state and federal constitutional protections. No political entity—regardless of its intended objective—can take groundwater from a property owner in Texas without appropriately compensating them.[32]

As such, the core question is whether the law also accords surface owners the same rights to own water in and from oil- and gas-bearing formations. A step-by-step analysis demonstrates the answer is "yes." To start, the Texas Legislature defines groundwater as "water percolating below the surface of the

29. Robinson v. Robbins Petroleum Corp., 501 S.W.2d 865, 867 (Tex. 1973) (citing Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 811 (Tex. 1972)) (emphasis added).

30. TEX. WATER CODE ANN. § 36.002; Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 832 (Tex. 2012).

31. TEX. WATER CODE ANN. § 36.002.

32. TEX. CONST. art. I, § 17 ("Public use" does not include the taking of property under Subsection (a) of this section for transfer to a private entity for the primary purpose of economic development or enhancement of tax revenues"). Furthermore, even private property taken via eminent domain would be subject to Supreme Court precedent holding that "[t]he taking by a state of the private property of one person or corporation, without the owner's consent, for the private use of another, is not due process of law, and is a violation of the fourteenth article of amendment of the constitution of the United States." Missouri Pac. Ry. Co. v. Nebraska, 164 U.S. 403, 417 (1896). For an item such as produced water that water owners already seek to make accessible through the market, it is difficult to imagine a "public purpose" capable of justifying a legislative taking of that water. For an in-depth discussion of how a court would likely analyze the "public purpose" requirement, *see* Kelo v. City of New London, Conn., 545 U.S. 469, 480, 125 S. Ct. 2655, 2663, 162 L. Ed. 2d 439 (2005).

earth."[33] For nearly 100 years, Texas law has presumed that "all underground waters" are percolating.[34] Courts strongly adhere to this presumption. For instance, the *Denis v. Kickapoo* decision by the Austin Court of Appeals in 1989 found that a borehole that bottomed within about seven feet of a spring's outflow opening was still extracting "percolating" water even though expert testimony showed that the well was drawing water from a subsurface cavity.[35]

While the *Kickapoo* court decided a case whose facts involved extreme subsurface permeability, its reasoning applies equally to groundwater owners with reservoirs at the tighter end of the permeability spectrum. Specifically, the court emphasized the importance of water being intercepted by a wellbore before reaching the surface.[36] *Kickapoo*'s facts also suggest that the precise subsurface completion procedure used to access the water (whether a wellbore screen or hydraulic fracturing) is legally irrelevant and does not affect the surface estate's legal ownership of that water.

The corollary of the subsurface interception requirement is that the permeability of the water-bearing layer is irrelevant so long as it is not a subterranean river. Indeed, when it comes to the ownership of groundwater, Texas law appears to primarily focus on ascertaining whether landowners are claiming subterranean river flows, which would be the property of the State of Texas. As stated in the Texas Administrative Code, which implements Texas's water rights statute, "groundwater" means "water under the surface of the ground *other than underflow of a stream and underground streams*, whatever may be the geologic structure in which it is standing or moving."[37] Once it is clear that the landowner is not trying to backdoor appropriate an underground river flow, Texas law reverts to its presumption that the water in question is indeed groundwater owned by the surface owner unless proven otherwise.[38]

Supporting that position, Texas courts have long held that underground water capable of being obtained via a well is percolating.[39] Produced water emanates from an underground formation and is obtained through a wellbore, thus meeting the definition of percolating endorsed by the Texas Supreme Court. Scientific evidence further supports the claim that produced water is indeed percolating groundwater. A peer-reviewed 2016 analysis by researchers from the U.S. Geological Survey, the University of Texas at El Paso, and New Mex-

33. TEX. WATER CODE ANN. § 36.001.

34. Tex. Co. v. Burkett, 296 S.W. 273, 278 (Tex. 1927); Pecos Cty. Water Control & Imp. Dist. No. 1 v. Williams, 271 S.W.2d 503, 506 (Tex. App.—El Paso 1954, writ ref'd).

35. Denis v. Kickapoo Land Co., 771 S.W.2d 235, 237 (Tex. App.—Austin 1989, writ denied).

36. *Id.* at 239.

37. 30 TEX. ADMIN. CODE § 297.1(22).

38. *See id.* (provisions implementing the state's water rights statute, which defines "groundwater" as "water under the surface of the ground *other than underflow of a stream and underground streams, whatever may be the geologic structure in which it is standing or moving*.") (emphasis added).

39. Friendswood Dev. Co. v. Smith-Sw. Indus., Inc., 576 S.W.2d 21, 25 (Tex. 1978) (citing Houston & T.C. Ry. Co. v. East, 81 S.W. 279, 281 (Tex. 1904)).

ico State University concluded that the formation waters in the Permian Basin's Cline and Wolfcamp intervals originated from ancient seawater *diffusing* its way into the rock layers *after* they had assumed a structural composition similar to what is found today.[40] Other basins such as the Eagle Ford might have a different palaeogeological profile, but the Permian is the center for much of the legal action that could unfold in coming years regarding ownership of formation water in unconventional oil and gas plays in Texas.

The palaeogeological history advanced by the USGS/University research team matters greatly. It offers a highly plausible scientific account of how formation water came to reside in the Permian Basin's most important oil and gas producing interval—the Wolfcamp—and very strongly suggests the water entered the layer via a diffusion process. This in turn provides empirical support to the legal presumption that formation waters qualify as percolating.

C. Texas Law Does Not Distinguish Between Groundwater Types Based on Salinity or Depth

Neither the Texas Courts nor the Texas Legislature make any ownership distinction based on the salinity or potability of groundwater under a tract of land. Moreover, none of the signature Texas groundwater cases leading up to *Day*—a case line more than 110-years old—distinguishes between "fresh" water and more saline waters. *Robinson*, the sole Texas Supreme Court case focused on water salinity as a potential determinant of groundwater ownership, delivered a clear message: salinity bears "no consequence upon ownership."[41]

Despite the fact that the water was produced from a converted oil well, the Court determined that the water was "an incident of surface ownership in the absence of specific conveyancing language to the contrary."[42] In its decision, the *Robinson* court pointed out that, in essence, highly saline produced water from a deep layer was just another form of groundwater. Indeed, when the *Robinson* court affirmed that "water is part of the surface estate," it did so citing *Sun Oil Company v. Whitaker*, a prior Texas Supreme Court decision *entirely predicated* on the surface and mineral estates' respective property and use rights to groundwater.[43]

Furthermore, the Beaumont Court of Appeals (2012) has noted that based on statute and prior cases—including the Texas Supreme Court's decisions in *Robinson* and *Day*—"…with respect to the question of who owns it, saltwater is not

40. Mark A. Engle et al., *Geochemistry of Formation Waters From the Wolfcamp and "Cline" Shales: Insights into Brine Origin, Reservoir Connectivity, and Fluid Flow in the Permian Basin, USA*, CHEMICAL GEOLOGY, Vol. 425, 76, 90 (2016), https://doi.org/10.1016/j.chemgeo.2016.01.025. For rock composition data, *see* Morgan Garner, *Clay Mineralogy and Porosity Estimates of the Lower Permian Wolfcamp Shale*, (unpublished Master's Thesis, Ga. St. U., 2019) (copy on file with author).

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

42. *Id.*

43. *Id.* (referencing Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 811 (Tex. 1972)) (emphasis added).

treated any differently than fresh water."[44] Furthermore, in a line of reasoning that would be highly relevant to a produced water ownership dispute, the Beaumont Court specifically stated that "[a]lthough [defendant] EPS attempts to draw a distinction between ownership of fresh underground water and deep subsurface saltwater formations, such a distinction is not supported by the Texas Water Code."[45] (bracket clarification added)

D. Water Contained in Oil and Gas-Bearing Formations is Also Clearly Property of the Surface Owner

This is where the *Robinson* decision again joins the debate. In that case, the plaintiff owned the surface estate of an eighty acre tract that sat atop a patchwork of three waterflood units.[46] The defendant oil producer used a converted oil well located on Robinson's tract to produce salt water that was then carried by pipeline to injection wells located elsewhere among the waterflood units.[47] Robinson subsequently brought suit against the oil company claiming damages for saltwater taken to re-pressure the oil-bearing formation.[48] A key issue in the case was whether saltwater was part of the surface or mineral estate, an issue that at the time attracted sufficient legal attention to stimulate a 1972 article in the Texas Law Review arguing that saltwater should be considered a "mineral."[49]

The *Robinson* court rejected the aforementioned article's position and specifically stated that "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*."[50] Emphasizing the fact that water is what the parties really care about brought clarity for the justices in *Robinson* and would also serve as a focusing principle for a contemporary Texas court entrusted with deciding a produced water ownership dispute.

E. Water Contained in Oil and Gas-Bearing Formations Can be Bought, Sold, or Leased in situ Just Like Any Other Species of Groundwater

Texas landowners regularly sever groundwater rights and buy and sell them before physical extraction of the water ever takes place. Whether the water in question is ten feet underground or 10,000 feet deep, the principle remains the

44. FPL Farming Ltd. v. Envtl. Processing Sys., L.C., 383 S.W.3d 274, 281 (Tex. App.—Beaumont 2012), *rev'd on other grounds* 457 S.W.3d 414 (Tex. 2015).

45. *Id.*

46. *Robinson*, 501 S.W.2d at 866.

47. *Id.*

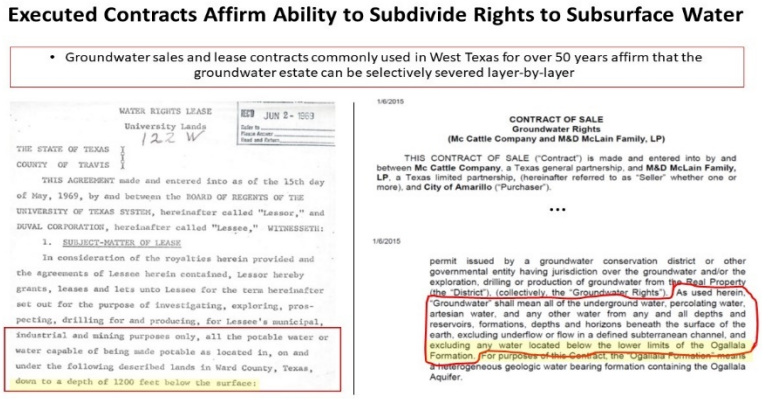
48. *Id.*

49. *Id.*; *see also* Luther Hudson, *Salt Water Is A Mineral: Ownership of A Natural Resource of Increasing Importance in Oil-Producing States*, 50 TEX. L. REV. 448, 449 (1972).

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

same. Indeed, the author possesses multiple water sales contracts spanning nearly seventy years executed by entities including University Lands and the City of Amarillo that involve severing, reserving, and trading the groundwater in specific geologic intervals years before it was actually tapped by wells.

FIGURE 5: SEVERANCE OF SPECIFIC SUBSURFACE WATER LAYERS HAS BEEN DONE FOR MORE THAN FIFTY YEARS IN TEXAS



Leasing water in place offers the added benefit of defeating claims that it is "fluid oil and gas waste." Proponents of HB 3246 emphasized referring to produced water as "fluid oil and gas waste." Indeed, a produced water white paper published in September 2019 by the Texas Alliance of Energy Producers notes that HB 3246 specifically seeks to frame produced water ownership in Texas as "an oil field waste issue and not a water ownership issue."[51] Any other construction of HB 3246 would necessarily result in a taking of groundwater by private parties for private purposes, a result contrary to the Texas Constitution and Tex. Gov't Code 2206.001(b).

But a well-crafted lease structure can sidestep that whole debate. The legislation's opening clause specifically states that "[u]nless otherwise expressly provided by an oil or gas lease, a surface use agreement, *a contract*, a bill of sale, or *another legally binding document*…"[52] This contractual reservation clause poses an existential challenge for the "produced water as fluid oil and gas waste" theory because a water owner could structure an agreement that reserves the surface owner's right to only the connate water (i.e., the H_2O molecule) while it is still in place in the oil and gas bearing formation.

51. Blythe Lyons et al., *Sustainable Produced Water Policy, Regulatory Framework, and Management in the Texas Oil and Gas Industry*, 18 TEX. ALLIANCE OF ENERGY PRODUCERS (Sep. 23, 2019), https://texasalliance.org/executive-summary-sustainable-produced-water-policy-regulatory-framework-and-management-in-the-texas-oil-and-gas-industry-2019-and-beyond/.

52. TEX. NAT. RES. CODE ANN. § 122.002 (West 2019).

If there is a specific contractual agreement that addresses *only the water* in an oil- and gas-bearing formation, the matter is re-framed because rather than being claimed at the surface as part of a mixed stream alleged to be waste, the water is being claimed as groundwater owned *in situ*, per the *Day* and *Coyote Lake Ranch* Texas Supreme Court decisions and Chapter 36 of the Texas Water Code. A reservation of groundwater rights to water located inside the pore space of an oil- and gas-bearing formation would in legal terms be no different than a reservation of less saline, shallower groundwater rights—an action taken on a virtually daily basis by surface estate owners all over Texas and whose legal validity is universally recognized by Texas courts.

F. If One Party Owns the Water in Place and Another Produces It, Severance Does Not Change or Extinguish the Original Owner's Rights

Furthermore, the surface owner's legal ownership rights to water reserved *in situ* would not be eliminated by a trip up an oil and gas wellbore, nor by the water mixing with hydrocarbons during its liberation from the formation and trip to the surface.

At least one oil and gas producing company has claimed that "[i]t is settled law in Texas that produced water, oil and gas are personal property at the surface when produced" and that because it is personal property, it is "subject to sale and commerce."[53] To justify its position, the company's filing to the court cites *Humble Oil & Refining Co. v. West* to support the proposition that "once severed from the realty, gas and oil, like other minerals, become personal property. . ."[54]

Yet *West* does not address the question of who owns the water to begin with—a fundamental flaw. The company instead takes the approach that because produced water is "a byproduct" of "development and production of oil and gas" on the lands in question, it thus has "the right to exclusive possession, custody, and control of the produced water."[55] The oil company seeks to ignore the produced water lessee's contractual ownership of water molecules residing in the oil- and gas-bearing formations, and instead argue in effect that ownership of the water and the accompanying rights to monetize it only attach when the H2O molecules in question are reduced to physical possession.

Such an approach uncannily resembles a tactic used by the City of Del Rio in the early 2000s when it completed a municipal water supply well on a tract where it owned the surface, but another party owned the reserved subsurface

53. Response of COG Operating to Special Exceptions at 1, COG Operating LLC v. Cactus Water Services, LLC, No. 20-03-23456-CVR (143rd Dist. Ct. June 11, 2020).

54. Humble Oil & Ref. Co. v. West, 508 S.W.2d 812, 817 (Tex. 1974).

55. Plaintiff's Original Petition, COG Operating LLC v. Cactus Water Services, LLC, No. 20-03-23456-CVR (143rd Dist. Ct. Mar. 28, 2020).

water rights.[56] Del Rio argued that "pursuant to the rule of capture, the corpus of groundwater cannot be "owned" until it is reduced to possession," a position the San Antonio Court of Appeals struck down on the basis that the surface owner enjoyed exclusive, absolute ownership of the groundwater in place and was thus "entitled to sever the groundwater from the surface estate by reservation."[57]

Four years later, the Texas Supreme Court's *Edwards Aquifer Authority v. Day* decision conclusively precluded water ownership arguments based on physical capture without ownership of the underlying *in situ* rights. In relevant part, *Day* held that surface owners "separately, distinctly, and exclusively" owned all of the groundwater under their lands, noting specifically that with respect to Section 36.002 of the Texas Water Code, "[b]y ownership of groundwater as real property, the Legislature appears to mean ownership in place."[58] The *Day* court further noted that the surface estate's physical ownership interest in groundwater was also compensable (i.e., a vested interest while still *in situ*) under the Takings Clause of the Texas Constitution.[59] Against this legal backdrop, it is clear that subsurface water becomes personal property after severance, but the act of production does not transfer title or ownership. This is particularly true for produced water that was leased or purchased *in situ* prior to Texas House Bill 3246 becoming law in September 2019.[60]

IV. MANY RECENT PRODUCED WATER TRANSACTIONS IN TEXAS ARE VULNERABLE TO LEGAL CHALLENGES FROM WATER OWNERS

Produced water owners' rights to economic rents from the disposition of produced water in Texas depend on a range of factors. To illustrate some of these in a way that hopefully makes the discussion more concrete, this paper will walk through a range of plausible scenarios that either conclusively exist already, or which could come into existence in the near future. Please note that the three core scenarios below are arranged according to how strong the author believes the produced water owner's (generally surface owner's) claims to a

56. City of Del Rio v. Clayton Sam Colt Hamilton Trust, 269 S.W.3d 613, 615 (Tex. App.—San Antonio 2008, pet. filed).

57. *Id.* at 617.

58. Edwards Aquifer Auth. v. Day, 369 S.W.3d 814, 831–32 (Tex. 2012). The *Day* justices relied on the 1948 *Elliff* decision where the Texas Supreme Court held that "the landowner is regarded as having absolute title in severalty to the oil and gas in place beneath his land," including rights to "the usual remedies against trespassers who appropriate the minerals or destroy their market value." Elliff v. Texon Drilling Co., 146 Tex. 575, 580, 210 S.W.2d 558, 561 (Tex. 1948).

59. *Day*, 369 S.W.3d at 833.

60. "*Unless otherwise expressly provided by an oil or gas lease, a surface use agreement, a contract, a bill of sale, or another legally binding document*: . . . . (1) when fluid oil and gas waste is produced and used by or transferred to a person who takes possession of that waste for the purpose of treating the waste for a subsequent beneficial use, the waste 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…" TEX. NAT. RES. CODE ANN. § 122.002 (West) (emphasis added).

share of economic rent are. Scenarios are grouped into two fundamental brackets, borderline claims and strong claims, and then discussed on a continuum beginning with the weakest claims and culminating in the strongest.[61] All scenarios discussed below are becoming more salient as produced water marches toward becoming a more fungible (and potentially tradable) commodity in the Permian Basin.

E&P operators in Texas enjoy a common law right to *reasonable* use of the surface to develop their minerals.[62] This generally allows them significant freedom to dispose, recycle, and otherwise handle produced water on lease. But operators do not have a right to take and monetize water (i.e., surface estate property) without compensating the owner. Furthermore, in the asset plus acreage dedication transactions analyzed in this article, produced water is being monetized to serve high-level corporate objectives. Such monetizations exceed the bounds of activities longstanding common law doctrines seek to protect.

Consider the case of *Sun Oil Co. V. Whitaker*, decided by the Texas Supreme Court in 1972. In *Sun*, the landowner plaintiffs had sought to enjoin the oil company from producing fresh water on the lease and using it to feed a waterflood operation.[63] The court noted that "[t]he oil and gas lessee's estate is the dominant estate and the lessee has an implied grant, absent an express provision for payment, of free use of such part and so much of the premises as is reasonably necessary to effectuate the purposes of the lease, having due regard for the rights of the owner of the surface estate."[64] The Texas Supreme Court continues to embrace the concept of reasonable necessity, noting in the 2017 *Lightning* decision that while the mineral estate's rights relative to the surface are "not absolute," "the mineral owner has the right to use as much of the sur-

61. The author's rank-ordering is based on the assumption that existing caselaw and statute are the main arbiters of value distribution. Landowners and E&P companies can enter into a range of private contractual agreements that are limited only by the parties' respective legal creativity and risk distribution preferences. For instance, a surface owner might simply charge the operators on its land a per barrel fee for produced water.

62. Plainsman Trading Co. v. Crews, 898 S.W.2d 786, 789 (Tex. 1995) (Just as the mineral estate would be worthless absent a right to make use of the surface, the surface estate would be worthless if the reasonable use granted to the mineral owner encompassed the right to consume or deplete the surface. Thus, in Acker v. Guinn, 464 S.W.2d 348 (Tex. 1971), this court created the presumption that a surface owner conveying "minerals" did not intend to convey the right to destroy his interest. Likewise, we presumed the grantee of a surface estate from which "minerals" are reserved did not intend to accept an estate with little or no value.).

63. Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 809 (Tex. 1972).

64. *Id.* at 810. The *Sun* Court drew upon decisions dating back to at least 1929 and further stated that "The implied grant of reasonable use extends to and includes the right to use water from the leased premises in such amount as may be reasonably necessary to carry out the lessee's operations under the lease." *Id.* (citing Guffey v. Stroud, 16 S.W.2d 527, 528 (Tex. [Comm'n Op.] 1929)). Texas courts have held that waterflood projects such as that at issue in Sun are "reasonably necessary operations" that justify access to groundwater under the lease, even if the surface owner is not being compensated for water withdrawals because it did not contractually arrange for that. *Id.* at 811 (citing Carroll v. Roger Lacy, Inc., 402 S.W.2d 307, 316 (Tex. App.—Tyler 1966, writ ref'd n.r.e.); Gulf Oil Corp. v. Walton, 317 S.W.2d 260, 263 (Tex. App.—El Paso 1958, no writ)).

face 'as is reasonably necessary to produce and remove the minerals' encompassed by the lease."[65]

The rights to "use" and "sell" are dramatically different. A mineral owner can mine caliche to build roads on lease or extract freshwater to support drilling and completion on the lease. But the minute that operator moved to sell caliche or freshwater to other parties, it would instantly exceed the boundaries of common law protections for its activities on that mineral lease.[66] Likewise, monetizing produced water without the consent of and/or compensation to the water owner exposes energy producers that make such dedications to a range of potential claims.[67]

V. POTENTIAL SCENARIOS IN WHICH LANDOWNERS MIGHT BRING CLAIMS BASED ON E&P OPERATOR MONETIZATION OF PRODUCED WATER

A. Proprietary Water Systems: Generally Weak Claims

Mineral lessees in Texas have an implied right to dispose of saltwater on lease.[68] Accordingly, operators disposing of produced water in self-owned disposal systems (serving one lease or multiple), or water management systems that are owned by a completely captive entity[69] that only serves the parent company, do so at market rates. They further do not monetize the water (basically managing a cost/liability in a way that does not result in an independent monetization of the water), and thus are not liable to the landowner for gains unjustly reaped.[70] If an E&P were to engage in a cost-neutralizing produced water transaction with a captive subsidiary, this might still constitute a sale under Texas law. Concretely, such a transaction might involve the use of preferential transfer pricing—such as transferring the water to a captive water midstream subsidiary for a reduced fee because the subsidiary was planning to treat

65. Lightning Oil Co. v. Anadarko E&P Onshore, LLC, 520 S.W.3d 39, 48 (Tex. 2017) (citing Getty Oil Co. v. Jones, 470 S.W.2d 618, 621 (Tex. 1971)).

66. Robinson v. Robbins Petroleum Corp., 501 S.W.2d 865, 868 (Tex. 1973) ("Robinson, as owner of the surface, is entitled to protection from uses thereof, without his consent, for the benefit of owners outside of and beyond premises and terms of the Wagoner lease.").

67. *Id.* ("We hold that Robinson is entitled to recover the value of that portion of the salt water which has been consumed for the production of oil for owners of lands outside the Wagoner lease.").

68. Brown v. Lundell, 344 S.W.2d 863, 869 (Tex. 1961) ("Under the rule that he had the right to use so much of the land as was reasonably necessary in the production of oil and since the production of oil necessarily involved its separation from the salt water, he would have had the right, ordinarily under the implied terms of the lease, to use the land for that purpose without paying any additional compensation.").

69. Consider, for instance, Pioneer Water Management, LLC, the "dedicated water management subsidiary" of Pioneer Natural Resources, *Vertically Integrated Services*, PIONEER NATURAL RESOURCES, https://pxd.com/operations-innovation/vertically-integrated-services (accessed July 20, 2020).

70. As a matter of custom, disposal operators in Texas (whether oil and gas producing companies or specialist water handling firms) often pay surface owners a royalty per barrel of water injected to compensate them for utilizing their subsurface pore space.

and re-sell the water or trade the water to another company for some type of in-kind benefit.

Landowners would be more likely to bring claims if they learned an operator was wheeling water through an integrated pipeline system for both recycling and disposal purposes in a manner that potentially (1) reduced freshwater sales, (2) reduced disposal royalties from the landowner's tract, and (3) took produced water from the surface owner's tract without compensation while simultaneously inducing royalty reductions on two fronts.[71] Such claims, however, would generally not have a strong legal foundation.

One way that an operator might handle this situation, particularly if it desired to keep peace with the landowner, would be to negotiate a per barrel severance charge for produced water, upon payment of which the operator would assume full ownership and the right to do as it pleases with the water. Surface owners might also seek to impose "trespass fees" for each barrel of water crossing the lands. Multiple Permian Basin landowners have adopted various transit-based "toll road" approaches that charge fees for water moving across their lands—in some cases regardless of whether it were as fresh as the ultrapure water used in semiconductor manufacturing or saline as saturated brine.[72] Other landowners impose steep right of way or surface damage fees on water pipelines as a way of recouping value. But the operator's legal exposure under these circumstances would be low, and a resolution of disputes with the landowner would be almost exclusively driven by practical diplomatic concerns as opposed to legal ones.

B. Water Dedications to Third Parties with No Consideration Received: Possible Claims, But Generally Weak

In the event an E&P operator dedicated produced water gathering responsibilities to a third-party water midstream company but structured the agreement solely as a services contract for which it received no upfront consideration, it would likely be protected from landowner claims. Such a deal structure would likely either involve the transfer of existing water handling infrastructure at no cost as part of the agreement or the sale of the assets themselves at a price closely approximating their capital cost of replacement.

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71. For an example of water wheeling, *see* Cimarex Energy's Q3 2019 Earnings Call, where the firm's Chief Operating Officer noted that "[t]he optionality and the cost optimization of those systems provide us, allow us to swing water to use for our fracs. And at the same time we're using that water for a fracs we're not having to incur any kind of electrical charges to the SWD wells to dispose it. Although that sounds like a small item that can add up, so that's where those efficiencies have been coming from and that's where our focus is going to be going forward."

72. University Lands, the Permian Basin's largest surface owner, uses a version of the toll road system that imposes a charge of $0.10 per barrel for water sourced from aquifers that is moved across its lands, whether through temporary or permanent pipelines. *See Rate and Damage Schedule,* THE UNIVERSITY OF TEXAS SYSTEM UNIVERSITY LANDS (Feb. 12, 2019), http://www.utlands.utsystem.edu/Content/Documents/Operations/Rate_Damage_Schedule.pdf.

A potential wrinkle arises in the case of produced water trades between operators. Even if these do not involve explicit exchange of monies, they may, under some circumstances, still constitute a sale under Texas law. If that turned out to be the case, it could open the door to landowner claims that the E&P company wrongfully took and monetized their water.

In 2014, the El Paso Court of Appeals decided *Commissioner of Gen. Land Office of State v. SandRidge Energy, Inc.*, which centered on whether a producer had to pay royalties to the mineral owner on carbon dioxide that another company was separating from a mixed gas stream provided to it free of charge by the producer in exchange for the processing company not charging for the cost of isolating the CO_2.[73] While the case was decided on specific analysis of contractual provisions, the court made several points in footnotes that would be exceptionally important in any proceedings focused on what types of E&P company actions might constitute a "sale" of produced water from the perspective of landowners seeking an economic seat at the table.

First, in *SandRidge*, the producing company's transfer of the CO_2-containing gas stream to the processing company free of charge in exchange for the processor separating the CO_2 for free and using it in its own operations still constituted a sale on the basis that in property transactions, "sale" is "commonly understood to mean any conveyance of an estate for money or money's worth."[74] Second, the court specifically stated that a "sale, in its broadest sense, includes any transfer of property from one person to another for a valuable consideration."[75] Finally, the court in *SandRidge* determined that it was *"unquestionable that Oxy's processing of the raw gas stream at no charge to SandRidge constitutes valuable consideration.*"[76]

C. Direct and Indirect Monetization of Produced Water: Strongly Supported Claims

There are at least three clear scenarios in which an E&P company would be explicitly monetizing the rights to produced water in a way that would require it to compensate landowners or face substantial exposure to legal claims for not doing so. Scenario (1) entails an E&P selling existing water handling assets plus an associated acreage dedication/water services agreement that exclusively obligates and encumbers produced water flows from a given land tract. Scenario (2) involves an E&P company transferring its produced water assets into an

73. *See* Comm'r of Gen. Land Off. of State v. SandRidge Energy, Inc., 454 S.W.3d 603, 607 (Tex. App.—El Paso 2014, pet. filed).

74. *Id.* at 620 n.15 (citing Cherokee Water Co. v. Forderhause, 641 S.W.2d 522, 525 (Tex. 1982)).

75. *Id.* at 624 n. 19 (quoting Walden v. Affiliated Computer Serv., Inc., 97 S.W.3d 303, 316 (Tex. App.—Houston [14th Dist.] 2003, pet. denied)).

76. *Id.*

SPV and then having a financial partner inject cash in exchange for an ownership stake in the assets and rights to a portion of future cashflows.

Scenario (3) would arise when an operator takes water handling assets along with an associated exclusive dedication of the rights to water flows from a defined set of lands and "drops them down" into a publicly traded "child entity," often structured as an MLP. Consider, for instance, the November 2019 Contribution and Simplification Agreement in which Noble Midstream Partners LP acquired incentive distribution rights and remaining midstream interests of Noble Energy for $1.6 billion pursuant to what management called "a midstream strategic review" conducted by Noble Energy.[77]

Drop down transactions create an interesting set of legal circumstances because the E&P company transferring the assets is economically "double dipping" by dint of (1) realizing upfront sale/transfer proceeds and (2) being able to move water management costs into a separate entity that it still holds a substantial economic stake in, thus transforming what was formerly a cost-center into a source of positive economic value (for proceeds generated with water the E&P does not actually own). This financial alchemy very likely exposes the E&P to additional financial liability vis-à-vis the affected water owner.

VI. LANDOWNER CLAIMS AND POTENTIAL E&P/WATER MIDSTREAM COUNTERCLAIMS

A. Conversion

Conversion would not provide a valid cause of action for water claimed *in situ* because groundwater is owned in Texas as real private property and Texas does not recognize conversion claims for real property.[78] If the midstream company claimed water after severance from the subsurface, it would be considered personal property under Texas law.[79] Accordingly, a landowner could bring a conversion claim on the basis that (1) it owned the produced water both in the ground and after severance (since it did not relinquish title upon the water entering a wellbore or reaching the surface); (2) the defendant unlawfully and without authorization assumed and exercised dominion and control over the property to the exclusion of, or inconsistent with, the plaintiff's rights as an

77. *Noble Midstream Announces Simplification and Acquisition of Midstream Interests From Noble Energy*, NOBLE MIDSTREAM PARTNERS (Nov. 15, 2019), http://investors.nblmidstream.com/press-releases/2019/11-15-2019-120014194.

78. Corral-Lerma v. Border Demolition & Envtl. Inc., 467 S.W.3d 109 (Tex. App.—El Paso 2015), opinion modified and supplemented, 474 S.W.3d 481 (Tex. App.—El Paso 2015, no pet.)

79. Acreage dedications that "concern only minerals extracted from the ground" would "indisputably constitute personal property, not real property, under Texas law." *In re* Sabine Oil & Gas Corp., 550 B.R. 59, 66 (Bankr. S.D.N.Y. 2016), *aff'd* 567 B.R. 869 (S.D.N.Y. 2017), *aff'd* 734 F. App'x 64 (2d Cir. 2018).

owner; (3) the plaintiff demanded return of the property (or in this case, value generated from it); and (4) the defendant refused to return the property.[80]

The act of producing the water from an oil and gas wellbore and subsequently processing or handling it does not confer ownership upon the producer. To the contrary, it confers a custodial interest at most, unless otherwise specifically agreed upon in a surface use agreement or mineral conveyance. The surface estate (default) or produced water estate (if severed) retains ownership of, and title to, produced water. Certain energy producers' contracts with their water midstream counterparties in fact follow the same logic—that handling water confers custodial rights and responsibilities, not ownership—even when the midstream handler bears legal liability.[81]

For example, one producer with substantial Texas Permian Basin operations notes in its Produced Water Services Agreement that "[t]itle to Product shall not transfer to Midstream Co by reason of Midstream Co's performance of the Services" and then adds that once the midstream entity has taken delivery of the water, while it does not have title, it nonetheless "shall have custody and control of, and be responsible for" the water delivered.[82] In a nutshell, the contract cited above illustrates that title and ownership of produced water can be divorced from custody and the associated responsibilities (and exposure to liability), and that at least one major oil company itself has taken this position when it dedicated produced water rights.

Allowing one party to retain ownership of produced water (in this case, claimed ownership) while having another legally distinct entity take custody of the water and assume responsibility/liability is a critical point. Most importantly, it undermines arguments that the producer must effectively be given ownership rights to produced water because it "must do something with the produced water (store, transport, sell, dispose, recycle, discharge, etc.) in order to continue producing the mineral estate."[83] To illustrate the problems with the position of "I am required to handle the water; therefore, I effectively own it," consider the following hypothetical:

> Water Company drills into the over-pressured San Andres formation outside of Midland, Texas under its lease with Surface Owner, which only grants the rights to water from the San Andres formation. Water Company completes its well and the water flowing from it turns out to be accompanied by a substantial amount of oil, which Water Company skims off and sells. Oil Company who has the mineral lease in the area then sues Water

80. Smith v. Maximum Racing, Inc., 136 S.W.3d 337, 341 (Tex. App.—Austin 2004, no pet.).

81. Although they assert that the E&P can warrant title to the produced water, a position which Texas law does not support.

82. Noble Midstream Partners LP Form S-1A Figure 10.8.9, *Third Amended and Restated Agreements Terms and Conditions Relating to Produced Water Services,* 35 (Nov. 14, 2019), https://investors.nblmidstream.com/static-files/3e51b07e-4af9-4e53-bb66-9ae5ef604f46.

83. *See Dedications in Produced Water Contracts*, *supra* note 2.

> Company for selling the oil. Water Company responds by saying "the oil is co-produced with the water I have rights to extract and I must separate the oil in order for my water to be useful, therefore I have the right to sell the oil without compensating Oil Company."

What is the chance a Texas court would allow Water Company to retain the full proceeds from selling oil it has no legal right of ownership to, but must separate out in order to render its water usable?

B. Trespass

Surface owners or owners of the severed produced water estate may also be able to collect damages for trespass. The Texas Supreme Court states three key elements necessary to sustain a trespass claim, namely: (1) entry (2) onto the property of another (3) without the property owner's consent or authorization.[84] Case law strongly suggests that an oil company which sells the right to future cashflows from produced water-related services and exclusively obligates and encumbers produced water from a certain set of lands for years thereafter has in fact committed a trespass against the water owner if that person/entity did not consent to the monetization. Furthermore, this same body of Texas law also potentially would sustain claimants seeking to hold water midstream buyers liable as facilitators of the trespass.

When the holder of a dominant estate (for instance, the mineral estate) exceeds the scope of rights granted by the servient estate (for instance, the surface estate), that party commits a trespass.[85] As noted earlier in this analysis, longstanding Texas common law grants oil and gas operators the right to *reasonably use* the surface estate and substances incident to it in order to facilitate hydrocarbon production. But using or disposing of produced water on tract and selling the rights to ten or even twenty years of future water volumes in exchange for large sums of upfront cash, equity stakes in water midstream firms, and other valuable consideration almost certainly exceeds the bounds permitted within the parameters of reasonable use. Mineral leases may confer a right to handle and move the water, but in the author's experience generally do not transfer title to the water nor do they confer any rights to independently monetize the water without sharing proceeds with the water owners. E&P companies that sell exclusive water dedications without sharing proceeds with surface owners or water lessees thus risk exposing themselves to claims of unjust enrichment.

Furthering that point, produced water monetizations accrue not at the lease level, but instead at the corporate balance sheet level. Consider, for instance,

84. Envt'l. Processing Sys., L.C. v. FPL Farming Ltd., 457 S.W.3d 414, 419 (Tex. 2015).

85. *See* CenterPoint Energy Houston Elec. LLC v. Bluebonnet Drive, Ltd., 264 S.W.3d 381, 387 (Tex. App.—Houston [1st Dist.] 2008, pet. filed) ("An easement holder who exceeds the rights granted by the owner of the servient estate thus commits a trespass").

Centennial Resource Development's disclosure statement on its attempted February 2020 produced water asset sale to WaterBridge Resources, where management told investors that "[u]pfront cash proceeds will be used to repay existing borrowings under the credit facility and are expected to essentially fund the 2020 cash flow deficit and reduce leverage metrics."[86]

Centennial's water asset and dedication sale to WaterBridge was terminated in May 2020 and the parties are now litigating against each other, but the associated statements remain a useful indicator of the intent behind these deals, and how they dramatically exceed the boundaries of reasonable use. If a mineral lessee were to sell a twenty-year freshwater supply agreement underpinned by an aquifer it had been using to support drilling and completions on a specific lease, a court would almost certainly side with the surface owner and either unwind the deal or force the transfer of proceeds to the surface owner as rightful owner of the water. Produced water should, as a matter of law, be treated no differently.

The action of trespass is binary—i.e., "the defendant either trespassed or did not"—and the determination of liability is thus blind to the defendant's intent or prior thought. But the damages determination process *does* examine what a defendant was thinking at the time they committed the trespass. For cases involving a trespasser's extraction of oil, gas, or other minerals, "the method by which damages are calculated depends on whether the producer's actions are in good faith."[87] A "good faith" trespasser with "an honest and a reasonable belief in the superiority" of their title would be liable for the value of the minerals extracted minus drilling and operating costs incurred.[88] A "bad faith" trespasser, however, would be liable for substantially more: the value of the extracted minerals "at the time of severance without making deduction for the cost of labor and other expenses incurred in committing the wrongful act or for any other value added."[89] The heightened damages for bad faith trespass arise from a desire to "compensate the owner and to punish the trespasser."[90]

With respect to the produced water dedications performed thus far, a determination of "bad faith" trespass could draw upon a number of standards laid out by courts tasked with deciding oil and gas trespass disputes. To be sure, Texas law does not classify underground water as a "mineral," but the state's water law and oil and gas law spring from a common root. As the Texas Supreme Court's 2016 *Coyote Lake Ranch* decision noted: "Common law rules

86. Centennial Resource Development, *CDEV Fourth Quarter and Full-Year 2019 Earnings Presentation* (Feb. 24, 2020), http://ir.cdevinc.com/events-and-presentations/presentations.

87. Victory Energy Corp. v. Oz Gas Corp., 461 S.W.3d 159, 178 (Tex. App.—El Paso 2014, pet. filed) (citing Moore v. Jet Stream Inv., Ltd., 261 S.W.3d 412, 428 (Tex. App.—Texarkana 2008, pet. denied)).

88. *Id.*

89. *Id.*

90. *Moore*, 261 S.W.3d at 429.

governing mineral and groundwater estates are not merely similar; they are drawn from each other or from the same source."[91] It would thus require only a tiny leap of logic to apply the "good faith" and "bad faith" standards to a trespass case involving subsurface water.

So, what does the judicial yardstick for determining good or bad faith potentially look like? At the clearest end of bad faith, a party who knows of a pending action to enforce an adverse claim to a set of premises and nonetheless "enters into possession of land and makes improvements" would be "conclusively considered a trespasser in bad faith."[92] But the absence of a pending lawsuit does not automatically mean that an entry was "done in good faith."[93] Indeed, most real world situations are likely to fall in grayer areas that require a court to weigh the "totality of circumstances" as it works to ascertain the faith a trespasser acted in.[94]

Consider for instance an oil and gas operator that dedicates acreage it knows to be covered by a produced water lease to another party or other explicit severance or reservation of the rights to produced water, particularly if the instrument has been recorded. Courts might also examine whether a trespasser relied on the advice of counsel. In assessing the advice of counsel, the court might also assess the broader public discussion on produced water ownership and dedications by knowledgeable attorneys, sector participants, regulators, and industry trade associations, among other sources.[95]

Such an inquiry might also ask if credible information on the surface estate was brought to the attention of relevant decisionmakers in the companies selling produced water dedications, as well as those purchasing them. Courts might then further inquire as to whether the information was carefully considered, or instead set aside or willfully ignored because it conflicted with corporate financial priorities. A court tasked with deciding a produced water ownership claim, a dedication-related trespass claim, or both, might also inquire as to whether the company selling the dedication or the purchaser had conducted internal studies or commissioned external analyses on who owns the produced water.

Additional legal wrinkles would likely impact a trespass damages discussion stemming from a produced water dedication deal. For instance, water midstream companies who purchased a dedication knowing that a producer may be selling rights to property it does not actually own could be found liable for

91. Coyote Lake Ranch, LLC v. City of Lubbock, 498 S.W.3d 53, 64 (Tex. 2016).

92. Mayfield v. de Benavides, 693 S.W.2d 500, 504 (Tex. App.—San Antonio 1985, writ ref'd n.r.e.).

93. *Id*. at 505.

94. *Id.*

95. *See* Gabriel Collins, *Produced Water in Texas: No Dedication Without Compensation* at 8, Presentation for Texas Water Intelligence (June 1, 2020), https://texaswaterintelligence.com/.

abetting and ratifying a bad faith trespass.[96] Dedication buyers that knowingly ratified a bad faith trespass could also potentially be liable for exemplary damages if they were found to be consciously indifferent to water owners' rights.[97]

C. Trespass to Try Title

Texas water owners whose produced water rights were dedicated by an oil and gas operator without their consent are likely to employ trespass-to-try-title actions to recover their property rights. Under Texas law, trespass-to-try-title actions are "the method of determining title to lands, tenements, or other real property."[98] In Texas, the trespass-to-try-title statute replaced common law ejectment actions and "is typically used to clear problems in chains of title or to recover possession of land unlawfully withheld from a rightful owner."[99]

To prevail in a trespass-to-try-title action, the claimant must generally (1) prove a regular chain of conveyances from the sovereign, (2) prove a superior title out of a common source, (3) prove title by limitations, or (4) prove prior possession, and that the possession had not been abandoned.[100] In disputes over produced water dedications, the first two criteria are likely to be the most salient. Proving the chain of conveyances from sovereign to surface owner to produced water rights owner will be especially important because establishing that title chain will allow title to be compared against granting language contained in relevant mineral leases and associated surface use agreements.

Elucidating the title chain and cross-referencing it against the granting language in agreements struck along the way accomplishes two important objectives. First, the court can confirm that a produced water rights owner validly traces their grant back to the surface owner and ultimately, the sovereign. Second, once chain of title is clear, examining the granting language will clarify whether a prior water owner may have conveyed the rights to the produced water. The existence of an explicit conveyance matters because the Texas Supreme Court finds the surface estate to be the default owner of subsurface water "in the absence of specific conveyancing language to the contrary."[101]

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96. *See* Victory Energy Corp. v. Oz Gas Corp., 461 S.W.3d 159, 177 (Tex. App.—El Paso 2014, pet. denied) (quoting Parker v. Kangerga, 482 S.W.2d 43, 47 (Tex. App.—Tyler 1972, writ ref'd n.r.e)) ("[L]iability for trespass is not dependent upon personal participation. . ..[O]ne who aids, assists, advises or gives encouragement to the actual trespasser, or concert and cooperation in the commission of a trespass, or subsequent ratification or adoption by one of an act of another for his benefit or in his interest is equally liable. . . .").

97. *Mayfield*, 693 S.W.2d at 506 (citing Trenholm v. Ratcliff, 646 S.W.2d 927 (Tex. 1983)) ("A conscious indifference to and disregard of the rights of others, whether displayed while committing a surface trespass or a subsurface trespass, displayed by one who trespasses in bad faith, is sufficient to support an award for exemplary damages.").

98. TEX. PROP. CODE ANN. § 22.001.

99. Martin v. Amerman, 133 S.W.3d 262, 265 (Tex. 2004).

100. Plumb v. Stuessy, 617 S.W.2d 667, 668 (Tex. 1981).

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

An example of granting language that specifically conveys ownership of produced water might read as follows:

> Surface Owner has leased and let to [Rightful Owner Water Company], the rights to all water contained in, and produced from, formations that are considered oil and gas objectives in the Permian Basin underlying the Subject Property as well as certain rights related thereto for purpose of [Rightful Owner] capturing, owning, storing, treating, transporting, selling, delivering, disposing of, recycling, reusing, and marketing water from oil and gas producing formations and flowback water (collectively, "Water") produced from oil and gas operations on the Subject Property, on the terms and conditions described herein[102]

Now consider the hypothetical example of an E&P company operating on the same lands under a Surface Use Agreement that does not give rights to produced water. The E&P then sells a produced water dedication for a substantial sum of upfront cash and an equity stake in the water management company it had dedicated to. The mineral lease covering the largest set of acreage on the ranch is governed by the following granting clause:

> Lessor hereby grants, demises, leases, and lets the mineral rights associated with the Subject Lands exclusively unto Lessee, its successors and assigns, for the *sole and only purpose* of investigating, exploring, prospecting, drilling, mining and operating for *oil and gas and other hydrocarbons*. Lessor further grants Lessee the right to lay pipelines and build tanks, power stations and structures thereon, to produce, save, take care of, store and treat products produced hereunder, and then transport *those products* from the land in County X, Texas hereby described in Figure X to the Lease.

Now consider that the first mineral lease (covering most of the leased acreage) also contains the following restrictions on the use of water by oil and gas operators on the property:

> Lessee, its successors and assigns, shall have no right to use water originating from on or under the Subject Lands, except it may itself drill a water well and then use the water from that well to conduct drilling operations on Lands covered by this lease. Lessee shall have no right to the use of water from the lands covered hereby for other uses.

A prospective water dedicator operating under the above granting language plus the water restriction would face at least three barriers to being able to legally dedicate the rights to that water in exchange for payment. First, the granting language encompasses only oil and gas, and clearly lacks the specific conveyancing language required to effect a severance of water from the surface

102. *Memorandum of Produced Water Lease Agreement* at 1, Between Collier Enterprises, Inc. and Cactus Water Services, LLC, (Instrument No. 2019014227) (Reeves Co., TX Feb. 7, 2019).

estate.[103] Second, the oil and gas producer seeking to dedicate lands covered by such granting language would not be able to defensibly claim that the words "those products" conferred rights to produced water. Texas Natural Resources Code Chapter 3, Section 85 clearly defines "products" in the hydrocarbon context to mean:

> [A] commodity or thing made or manufactured from oil or gas and derivatives or by-products of oil or gas, including refined crude oil, crude tops, topped crude, processed crude petroleum, residue from crude petroleum, cracking stock, uncracked fuel oil, treated crude oil, fuel oil, residuum, gas oil, naphtha, distillate, gasoline, kerosene, benzine, wash oil, waste oil, lubricating oil, casinghead gas, casinghead gasoline, blended gasoline, and blends or mixtures of oil, or gas, or any derivatives or by-products of them.[104]

In other words, a product must be composed of compounds whose molecular structure in all cases features hydrogen atoms bound in some way to carbon atoms. H2O thus does not qualify.

Third, the lease contains an express provision which indicates that water *should not* be included in the grant. A court reading the mineral lease granting language together with the stringent and express restrictions the landowner included regarding the use of water would very likely find it impossible to conclude that the landowner intended to (1) grant the operator any ownership rights whatsoever in produced water from the lands or (2) any right to sell or monetize those water resources without the consent of the landowner or its successor in interest to the aforesaid water.

So, what about instances where the E&P produced water dedicator likely could persuade the court that it had the right to the water and could thus validly dedicate the rights to it? To start, no such situations would occur by default under Texas law. All instances in which an E&P validly dedicated and obligated produced water in exchange for consideration would require either the express consent of the landowner or specific contractual provisions that explicitly, or at least, effectively, conveyed ownership and rights of disposition to the produced water. Figure 6 below compares two examples of lease language—one from a mineral lease and one from a surface use agreement—that likely give the E&P company the right to dedicate rights to the water, should it choose to do so.

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103. *See Robinson*, 501 S.W.2d at 867 ("[W]ater itself is an incident to surface ownership in the absence of specific conveyancing language to the contrary . . .."); Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 811 (Tex. 1972) (acknowledging that "[w]ater, unsevered expressly by conveyance or reservation, has been held to be part of the surface estate"); Fleming Foundation v. Texaco, Inc., 337 S.W.2d 846, 852 (Tex. App.—Amarillo 1960, writ ref'd n.r.e.) ("the reservation of oil, gas, and other minerals does not include sub-surface water").

104. TEX. NAT. RES. CODE ANN. § 85.001.

FIGURE 6: LANGUAGE THAT LIKELY (CASE 1) AND CLEARLY (CASE 2) GRANTS AN E&P OPERATOR THE RIGHT TO MONETIZE PRODUCED WATER

Less Clear, But Likely Sufficient Language (from mineral lease)	**Clear Language (from Surface Use Agreement)**
"…grants, leases and lets exclusively unto lessee, for the purpose of owning, producing and marketing oil, gas, and other *substances that may be produced incident to the production of oil, gas, and/or other hydrocarbons* as well as the rights to conduct activities that facilitate the treating, processing, storing, transporting, *and marketing of such substances as may be produced under this lease*…"	"Grantor grants, leases and lets unto Operator the Land to drill and operate horizontal or directional oil and gas wells and related facilities and to construct, maintain, repair, replace and construct facilities and conduct operations necessary for the production of oil and gas and producing, handling, measuring, treating, storing and/or transferring produced oil, gas, related products ***and water*** produced on the Land or other lands (the "Products)."

VII. COUNTERCLAIMS E&P DEDICATORS MIGHT BRING AGAINST LANDOWNERS

A. Tortious Interference With Contract

If a landowner or a landowner's lessee claims economic and physical rights to produced water from its lands, an E&P company may respond by claiming tortious interference (1) with its mineral lease (in cases where the landowner also owns the minerals) or (2) with the water services agreement it has with the buyer of the assets and water dedication it sold.[105] In Texas, a plaintiff must prove four elements to sustain a claim of tortious interference with existing contract: (1) that a contract subject to interference exists, (2) that the alleged act of interference was willful and intentional, (3) that the willful and intentional act proximately caused damage, and (4) that actual damage or loss occurred.[106]

At a fundamental level, the E&P plaintiff would only be able to sustain tortious interference claim if (1) it owns the produced water or was contractually granted the right to monetize it and (2) it was actually harmed. Ownership of the water matters for at least two key reasons. First, the Texas Supreme Court has found that "[i]nterference with contractual relations is privileged where it results from the exercise of a party's own rights or where the party possesses an equal or superior interest to that of the plaintiff in the subject matter."[107] In oth-

105. *See* Original Petition for Declaratory Judgment and Tortious Interference with Existing Contract at 6, COG Operating LLC v. Cactus Water Servs., LLC, No. 20-03-23456-CVR (143rd Judicial District, Reeves County, Tex. March 28, 2020).

106. ACS Inv'rs, Inc. v. McLaughlin, 943 S.W.2d 426, 430 (Tex. 1997).

107. Sw. Bell Tel. Co. v. John Carlo Texas, Inc., 843 S.W.2d 470, 472 (Tex. 1992).

er words, even if the surface owner has a mineral lease with the E&P suing it for tortious interference over the surface owner's lease or sale of the produced water estate to another party, so long as it indeed owns the water in question, it has an independent, superior right to it, and can thus lease it *even if* an alleged contractual conflict results. If a court rules that the surface estate owns the produced water as a matter of law, that would destroy any tortious interference claims brought by the E&P against the rightful water owner.

Second, the Texas Supreme Court also states that justification "is an affirmative defense to tortious interference with contract" and "can be based on the exercise of either (1) one's own legal rights or (2) a good-faith claim to a colorable legal right, even though that claim ultimately proves to be mistaken."[108] If the surface owner reasonably believes it owns the produced water and the lessor also holds this belief, and can support it with evidence, each can justify the decision to lease those rights. The Texas Supreme Court further affirms that "if a trial court finds as a matter of law that the defendant had a legal right to interfere with a contract, the defendant has conclusively established the justification defense, and the motive is irrelevant."[109]

As a practical matter, multiple qualified legal commentators have now for years argued that based on established Texas caselaw and statute, the surface estate very likely owns the produced water in Texas as a matter of law.[110] Consider also the growing ranks of regional and national law firms with oilfield and surface estate owner clients who have increasingly recognized surface estate ownership of produced water in Texas over the past several years. Even legal analysts who appear to oppose the practical implications of surface estate produced water ownership for their client base still admit that the surface estate owner owns produced water *in situ*.[111]

108. Prudential Ins. Co. of Am. v. Fin. Review Servs., Inc., 29 S.W.3d 74, 80 (Tex. 2000) (citing Calvillo v. Gonzalez, 922 S.W.2d 928, 929 (Tex. 1996)).

109. *Id*.

110. *See* Gabriel Collins, *Oilfield Produced Water Ownership in Texas,* Presentation for Rice U.'s Baker Institute for Public Policy, (Feb. 2017) at 6; Peter E. Hosey & Jesse S. Lotay, *Quench My Thirst: Water Rights in the Context of Water Treatment Technologies*, 23rd Annual Robert C. Sneed Texas Land Title Institute (Dec. 5–6, 2013) https://www.tlta.com/legallibrary/papers/2013/B_WaterRights.pdf; Maxwell B. Kallenger, *Who Owns All This Fracking Water?*, LA. L. REV. (Oct. 29, 2015), https://lawreview.law.lsu.edu/2015/10/29/who-owns-all-this-fracking-water/; Melissa Waggoner, *The Cut and Dry of Texas Groundwater Law: Unconstitutional Takings of Produced Water from Oil and Gas Wells as a Result of House Bill* 3246, (Feb. 3, 2020), http://dx.doi.org/10.2139/ssrn.3530977.

111. *See Dedications in Produced Water Contracts*, *supra* note 2.

FIGURE 7: RESPECTED LEGAL ADVISORS INCREASINGLY RECOGNIZE SURFACE ESTATE OWNERSHIP OF PRODUCED WATER IN TEXAS[112]

As to the questions of harm, the E&P would first need to show harm and then present factual evidence that the landowner/produced water lessee's conduct was the proximate cause of whatever harm it claims to have suffered.[113] Such a proximate cause finding "cannot be established by mere guess or conjecture, but rather must be proved by evidence of probative force."[114] An E&P plaintiff will face an uphill battle showing that it suffered *harm* if it in fact dedicated the rights to the water owner's property without seeking consent to do so, or sharing economic upside reaped through the dedication. The difficulty will be magnified if factual evidence shows that after the E&P became aware of the produced water owner having leased or otherwise asserted a claim, it continued to operate as if the rival claim to the water effectively did not exist.

VIII. POTENTIAL IMPACTS OF WATER OWNERS PREVAILING ON THE PRODUCED WATER OWNERSHIP QUESTION

A victory by water owners in a trespass-to-try-title suit over the produced water estate would engender certain legal and practical consequences. The most direct legal impact would be a failure of consideration for some oilfield water

112. *See, e.g.*, Anna G. Rotman, Shubi Arora, Kim Hicks, and Chad M. Smith, *Water Dedications in Bankruptcy May Be Less Secure Than You Think*, KIRKLAND & ELLIS (April 29, 2020), https://www.kirkland.com/-/media/publications/blog-post/2020/04/water-dedications-in-bankruptcy-may-be-less-secure.pdf; Stephen Cooney, *Produced Water in Texas . . . Who Owns It?*, GRAY REED & MCGRAW, (Feb. 5, 2020), https://www.grayreed.com/portalresource/lookup/wosid/cp-base-4-133104/media.name=/Cooney%20-%20Produced%20Water%20Article.pdf; Philip Lau, Max Stubbs, and Gerald Higdon, *Produced Water: The Next Big Wave in E&P*, LOCKE LORD (Oct. 11, 2018), https://capitalmarkets.lockelord.com/wp-content/uploads/sites/13/2018/10/Presentation-Produced-Water-The-Next-Big-Wave-in-EP.pdf.

113. Clark v. Waggoner, 452 S.W.2d 437, 439 (Tex. 1970).

114. McClure v. Allied Stores of Texas, Inc., 608 S.W.2d 901, 903 (Tex. 1980).

dedication deals where E&P companies sold the exclusive rights to produced water flows with the consent of, or compensation to, the landowner or water owner. Under Texas law, "[f]ailure of consideration occurs when, due to a supervening cause after an agreement has been reached, the promised performance fails."[115] A court finding that certain E&P companies monetized property they did not actually own or have the rights to obligate in exchange for pay-payment could constitute such a supervening event.

With a judicial decision in hand, the water owner would then be able to pursue multiple potential courses of action. These would include, but not necessarily be limited to (1) potentially claiming a share of the proceeds from the monetization event, (2) demanding royalty payments for water flows under the deal, (3) demanding that the E&P company or its water midstream transferee purchase any produced water lease the landowner had granted to a third party in order to confer full and valid ownership of produced water sold and transferred under the original dedication agreement, or (4) moving to invalidate the offending dedication and raising capital to build and operate its own system in the area wrongfully dedicated.

Amidst these circumstances, it is likely that certain water midstream firms might consider cancelling or rescinding their agreements and demanding repayment of upfront sums paid to the E&P companies. Texas law allows cancellation or rescission of contracts in cases where the failure of consideration has been "total," but also says contracts will not be invalidated by a "partial failure of consideration."[116] Accordingly, potential litigation between E&P dedicators and water midstream recipients over disputed dedication transactions would likely focus significantly upon the degree to which consideration had failed in the wake of a finding that the E&P did not own the water it dedicated.

Insofar as transactions involving upfront payments of cash, equity stakes, or both in water management companies are concerned, certain involved parties' public statements to date suggest a number of plausible pathways. E&P companies would likely argue for a partial failure of consideration and against rescission of the agreements, since they received upfront cash payments that are high-certainty "birds in hand" while the midstream firms made those payments for the rights to "birds in the bush" consisting of future water flows from the lands in question and that they knew most, or even all, of the potential volumes were contingent on activity and not guaranteed. Water midstream firms, in contrast, would be much more likely to argue that the primary reason they offered upfront cash and equity consideration was to secure future water flows and the

115. Bassett v. Am. Nat'l Bank, 145 S.W.3d 692, 696 (Tex. App.—Fort Worth 2004, no pet.).

116. Cheung-Loon, LLC v. Cergon, Inc., 392 S.W.3d 738, 748 (Tex. App.—Dallas 2012, no pet.) (citing Huff v. Speer, 554 S.W.2d 259, 263 (Tex. App.—Houston [1st Dist.] 1977, writ ref'd n.r.e.)); Carter v. PeopleAnswers, Inc., 312 S.W.3d 308, 312 (Tex. App.—Dallas 2010, no pet.) ("A partial failure of consideration does not invalidate the contract but entitles the injured party to a suit for damages.").

associated cashflow potential.[117] Accordingly, from their perspective, if a water owner could "upstream" them and either physically commandeer flows or impose royalty charges upon them, the failure of consideration would, practically speaking, be closer to total.

That said, deciding produced water ownership in favor of surface owners will likely not materially impact oil and gas industry operations at a net, statewide level. Consider the strong precedent established and proven by sourcing of other forms of groundwater for use in hydraulic fracturing completions and other activities that facilitate mineral production. In that space, oil and gas operators have universally recognized that surface owners own the freshwater in Texas and yet this has not negatively impacted oil and gas extraction. Longstanding common law doctrines govern the reasonable use of the surface to benefit the mineral estate, but do not provide the mineral estate with the right to independently monetize surface estate property—even if the property is co-produced with substances classified as minerals.

Such doctrines are also likely to apply to produced water. For at least fifty years, Texas courts have made clear that mineral owners can reasonably use subsurface water to facilitate oil and gas extraction.[118] If it is on lease and not governed by a surface use agreement requiring compensation, they may not even have to pay for it. It is thus likely that a similar set of parameters will govern the use and disposition of produced water—even if the courts decide (as they should) to judicially affirm that the surface owner owns the produced water as a matter of law. The only group of oil and gas operators who will suffer a negative impact from a ruling affirming that the surface estate owns PW are those firms that sold water asset packages deriving a material portion of their deal value from the exclusive obligation of produced water from a set of tracts for terms ten–twenty years into the future. But this is a predicament they created through their own greed and actions. Had the managements of these E&P companies sought landowner consent and shared a reasonable portion of the economic upside, ownership disputes likely would not have arisen. Put simply, the E&P companies that improperly sold landowners' produced water failed to answer the most basic transactional diligence question: Do we legally own what we are about to sell?

Some of the involved companies used these water asset sales to plug balance sheet holes. Yet that is no justification for converting another's property. If one is renting a home and runs into challenging economic circumstances, one cannot take items within the home that they have a right to reasonably use but do not own and sell them to remedy their situation. Nor can they sub-let the prop-

117. Defendant WaterBridge Texas Midstream LLC's Original Answer and Counterclaims at 8, Centennial Res. Prod., LLC v. WaterBridge Tex. Midstream LLC, No. 2020-31308 (269th Dist. Ct., Harris County, Tex. June 30, 2020).

118. *See* Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 110 (Tex. 1972).

erty without the owner's consent (and presumably, an accounting to share the economic gains reaped). This is a simple matter of legally proper behavior and economic justice.

There is also an economic efficiency angle. Judicially affirming that PW ownership indeed resides with the surface estate in many cases will open the door to water handling solutions that are more economically efficient than many offered currently in the Texas Permian Basin. Dedications obtained from large surface owners come with natural protective boundaries set by the tract's borders. This means that a water midstream developer on the tract operating in partnership with the landowner—or the landowner itself—can methodically calibrate its system buildout to the demand likely to be realistically generated, rather than rushing to overbuild a system in order to exclude competitors.

More methodical system buildouts would allow capital to be used more efficiently. All else held equal, building water systems at a more measured pace and more closely calibrated to demand may also help better manage emerging challenges with seismicity and water intrusion from disposal intervals into producing formations. Transitioning to a more landowner-centric, property-rights-centric, and methodical development mode is likely to ultimately yield a more sustainable water management framework for the Permian—an important consideration given that we are dealing with what could potentially be a multi-decade unconventional resource base.

Finally, there is a risk-based case for greater landowner inclusion in the produced water economic value chain. Whether the landowners participate or not, they bear the greatest long-term physical risks of produced water transport, since the impacts of spills can literally linger for a century. As evidence, consider the area near Big Lake in Reagan County, where surface discharge of saltwater from the Santa Rita No.1 well left denuded areas where vegetation still cannot grow ninety-seven years after the well first came online.[119] Produced water dedication sales that garner large sums of upfront cash and equity interest value for oil companies while saddling landowners with the risk of spills without providing commensurate risk compensation unfairly skew the balance of benefits and liabilities in favor of the oil producers.

IX. CONCLUSION

Produced water is real private property in Texas when still in the ground and becomes personal property upon severance and is still owned by the surface estate or its successor in interest. If such water is encumbered and obligated, the

119. Mella McEwen, *University Lands works to remediate site of Santa Rita No. 1*, MIDLAND REPORTER TELEGRAM (Apr. 13, 2011), https://www.mrt.com/business/energy/article/University-Lands-works-to-remediate-site-of-Santa-7434189.php; Luke Metzger, *Testimony on Water & Wastewater in Fracking,* Environment Texas (Feb. 6, 2019), https://environmenttexas.org/blogs/blog/txe/testimony-water-wastewater-fracking.

party taking such actions owes an accounting to the water owner. Put simply, "no dedication without compensation." The only exception would be if the surface owner explicitly consented to the E&P dedicating the rights to the water or otherwise expressly conveyed them to the E&P or water midstream company.

The oilfield water dedication question directly impacts private property rights in water as well as social license to operate. With few exceptions, Texas oil and gas production occurs on private surface, where by default, the surface estate owns the rights to all subsurface water. In the Permian Basin and other active play areas property owners are concerned about water rights issues and want to ensure that (1) their property is not being taken without appropriate compensation and (2) private ownership rights in underground water are not confiscated for the economic convenience of powerful interests. Maintaining landowner buy-in is critical to the industry's long-term social license to operate. Reasonable compensation to water owners for produced water monetization would help maintain this license, and ultimately, would protect investments in the domestic oil and gas production activity that Texas leads the nation in.

The U.S. Supreme Court noted in 2017 that "[p]roperty rights are necessary to preserve freedom, for property ownership empowers persons to shape and to plan their own destiny in a world where governments are always eager to do so for them."[120] In today's Texas, it is not just government bureaucracies eager to shape and plan people's destinies—powerful private economic interests are as eager, in in some cases, perhaps more so. To that point, if a corporation can take a person's produced water and monetize it without sharing any of the gains reaped, what barriers remain to prevent further infringement and depredations against other private groundwater ownership rights over time?

Violations of private property rights protections are akin to a small, initial tear in a piece of clothing that tends to substantially widen over time—often in ways that were not necessarily foreseeable when the first rip happened and was left unrepaired. If courts allow powerful private economic interests to effectively take another person's groundwater (or subsurface water) and monetize it without any compensation paid, this would set a disturbing precedent that could ultimately undermine groundwater ownership rights more broadly in Texas. Texas courts deciding challenges to produced water dedications should therefore not allow private property rights to be sacrificed at the altar of corporate greed.

Courts should also acknowledge that groundwater owners' produced water rights can be protected without prejudicing the mineral estate's capacity to develop. Certain oil companies' reliance on selling midstream assets—including water systems and associated acreage dedications—is a product of their inabil-

120. Murr v. Wisconsin, 137 S. Ct. 1933, 1943 (2017).

ity to consistently produce oil and gas profitably. Water owners' property rights should not become a casualty of these oil producers' inability to sustain themselves via their core hydrocarbon exploration and production operations. The point rings especially true given that these firms are unwilling to compensate water owners, yet year after year pay top executives at rates that often proportionately exceed compensation levels at the largest (and profitable) global supermajors.[121]

The surface estate's produced water ownership rights and resultant right to compensation for monetization of the water are compatible with continued dynamic development of unconventional oil and gas resources in Texas. Energy producers generally do not appear inclined to dispense such compensation voluntarily, particularly in cases where they have already sold exclusive rights to produced water flows and absorbed the cash and equity stake value from these deals. If E&P firms remain unwilling to share the economic upside from water dedication deals with the water owners, courts will be called upon to adjudicate these rights and help determine appropriate compensation or damages. A corporate willingness to negotiate with water owners in good faith would go a long way toward finding a mutually beneficial resolution to these emerging produced water monetization challenges.

121. See the Need for Change: Performance, Pay and Putting PDC on a Path to Profitability, KIMMERIDGE.COM, http://kimmeridge.com/wp-content/uploads/2019/05/PDC-Final-Presentation.pdf (last visited November 11, 2020).