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The Landowner's Cause of Action for Imprudent Operations

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I. INTRODUCTION: THE PROBLEM OF WATER IN OIL AND GAS OPERATIONS

> Water produced with oil has been one of the serious problems of oil-well operators since the beginning of the petroleum industry. Sometimes the water came from the formation that contained the oil, but more often its source was an upper sand . . . .[1]

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* B.A. 1972, J.D. 1974 Tulane; LL.M. 1976, Harvard. Member, Louisiana Bar. The author has been actively involved in oil and gas litigation for several decades. He wishes to acknowledge the assistance of William D. Griffin, a long-time petroleum engineer, for his many years of teaching an English major-turned lawyer how to understand some of the technical aspects of oil and gas planning,

When an oil or gas well is drilled, the drill bit penetrates multiple underground layers, or strata, of rock and sand. At shallow levels below the surface, those strata often contain fresh groundwater. At deeper depths, the water becomes increasingly salty, to the point of toxicity. And, of course, at least one stratum, the "target zone," is expected to contain oil or gas.

These fluid-containing zones are often close in proximity to one another and under constant pressure. Underground pressures generally increase with depth. Thus, as the drill bit penetrates each underground zone, the fluids in those zones attempt to flow through the wellbore toward the surface, where the pressure is at its lowest.

Initially, this potential "blowout" or "kick" is prevented by adding sufficient weight to the drilling mud to counteract the pressure in the formations. This equalizes the pressure and restrains the fluids in the formations from flowing into the wellbore and toward the surface.

This remedy is only temporary, however. Each stratum, or zone, must be permanently isolated from the others to prevent the intermixing of fluids during the production of the well. This is called "zonal isolation" and is fundamental to oil and gas operations.

As one industry authority put it: "Of utmost importance in all planning and drilling decisions is the objective of obtaining complete zonal isolation in the wellbore."[2] Another industry source underscored the importance of identifying underground strata with the potential of intermixing, stating: "It is important to evaluate which zone(s) have potential for flow in order to plan the cement job to achieve suitable zonal isolation."[3] Ideally, "[s]uch zones should be covered with cement slurries designed to prevent flow after cementing . . . ."[4]

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drilling, and production. Mr. Griffin also provided many of the technical references cited in this article. Of course, any errors remain the sole responsibility of the author. This essay is dedicated to the late Max Nathan, Jr., whom the author had the privilege of knowing for 50 years. Max was a lawyer's lawyer who inspired everyone who was fortunate enough to know him. His brilliance lit a path for our profession that will shine for many years to come.

1. AM. PETROLEUM INST., HISTORY OF PETROLEUM ENGINEERING 455 (1961).

2. AM. PETROLEUM INST., WORLDWIDE CEMENTING PRACTICES 20 (1991).

3. AM. PETROLEUM INST., API RECOMMENDED PRACTICE (RP) 65-2: ISOLATING POTENTIAL FLOW ZONES DURING WELL CONSTRUCTION § 4.6.2 (1st ed. 2010) [hereinafter API RP 65-2].

4. *Id.*

As the above comment suggests, zonal isolation is achieved by sealing the well with cement at proper intervals between the various zones. This is known as "primary cementing" and is best explained as follows:

> Primary cementing is the process of placing cement in the annulus between the casing and the formations exposed to the wellbore. . . . Since its inception in 1903, the major objective of primary cementing has always been to provide zonal isolation in oil, gas, and water wells, i.e., to exclude fluids such as water or gas in one zone from oil in another zone in the well. To achieve this objective, a hydraulic seal must be created between the casing and cement and between the cement and the formations, while at the same time preventing fluid channels in the cement sheath. This requirement makes primary cementing the most important operation performed on a well. Without complete isolation in the wellbore, the well may never reach its full producing potential.[5]

This is nothing new. The industry has long recognized the importance of properly cementing an oil or gas well:

> Oil-well cementing and cementing practice are important factors in the completion of oil wells. Cementing is the means whereby oil and gas-producing horizons are separated from each other and from water-bearing strata. Adding strength to the casing and protecting it from corrosion are more recent requirements. It was the problem of the source and movement of water into oil wells and the technique of using cement to prevent such movement that led to the first employment of petroleum engineers in the oil fields.[6]

To seal the well and isolate relevant zones, the cement must be placed in the space between the outside of the casing and the inside of the wellbore at proper intervals. This is called the annulus, or annular space, of the well. The industry literature is replete with instructions on how proper cementing is accomplished:

> Cement should be placed in the wellbore and provide good contact with the casing and borehole wall, prevent the formation of channels within the cement and prevent the invasion and propagation of fluid through the cement as it sets, and provide

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5. SCHLUMBERGER, WELL CEMENTING 1 (Erik Nelson & Dominique Guillot eds., 2d ed. 2006).

6. HISTORY OF PETROLEUM ENGINEERING, *supra* note 1, at 455.

> mechanical support. The cement should maintain its integrity through the life of the well.[7]

Another industry authority explained the various benefits to properly cementing an oil or gas well:

> A good cement job serves several important functions. It prevents caving in of the hole; excludes water from the producing formation; and permanently seals off high pressure zones, zones of lost circulation, and other troublesome formations. In essence, primary cementing should seal the downhole formation in the same position and condition that existed before drilling operations began.[8]

Without a complete cement seal, fluids can (and often do) flow between zones through the pathway created by the wellbore. This intermixing is known as communication or commingling and is universally regarded as undesirable. Thus, cementing not only protects shallow freshwater, but it also protects the hydrocarbon-bearing zone from invasion by extraneous water from nearby saltwater zones.

As production depletes an oil or gas reservoir, the pressure within the reservoir drops and subsequently becomes lower than that of adjacent water formations. Aristotle coined the phrase: "Nature abhors a vacuum."[9] In this context, it illustrates how water in higher-pressured zones attempts to migrate to lower-pressured and partially depleted oil or gas zones in order to restore equilibrium. When cement fails to produce an adequate seal, certain pathways are exposed, and extraneous water is known to travel through cracks or gaps in the cement, called "micro annuli," to the reservoir. If not corrected, this water migration increases as the reservoir is emptied and its pressure is lowered. What may have begun as a trickle can eventually flood the reservoir and kill the well. When that occurs, the remaining hydrocarbons in the reservoir are unrecoverable.

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7. API RP 65-2*, supra* note 3, § 4.7.1 (emphasis omitted). The authorities are virtually unanimous on this. *See, e.g.*, UNIV. OF TEX. AT AUSTIN PETROLEUM EXTENSION SERV., WELL CEMENTING (OIL AND GAS PRODUCTION, LESSON 6) (1983) [hereinafter WELL CEMENTING] ("*Primary cementing* is the cementing operation that takes place immediately after casing has been run into the hole. It is one of the most critical operations performed during the drilling and completing of an oil well.").

8. WELL CEMENTING, *supra* note 7.

9. *See* Marcelo Gleiser, *A Brief History of Nothing*, NPR (June 6, 2012, 10:55 AM), https://www.npr.org/sections/13.7/2012/06/06/154349295/a-brief-history-of-nothing [https://perma.cc/2XFY-R4WM].

II. THE LOUISIANA MINERAL CODE AND THE "PRUDENT OPERATOR" RULE

As a civil-law jurisdiction, Louisiana is understandably fond of codes. The Louisiana Civil Code can proudly trace its origins to Roman law expressed in Justinian's *Institutes*.[10] Indeed, Louisiana courts often refer to Justinian's *Institutes* in opinions.[11] Notably, the seminal case on Louisiana oil and gas law, *Frost-Johnson Lumber Co. v. Salling's Heirs*, invoked portions of the *corpus juris civilis*.[12]

Despite its extensive civil-law heritage, oil and gas law in Louisiana developed in a case-by-case common-law fashion for the greater part of the 20th century, albeit using Civil Code concepts.[13] However, the body of mineral-law jurisprudence was eventually codified in proper civil-law style in the Louisiana Mineral Code.[14] Although it first became effective in 1975, the Mineral Code was the result of more than a decade-long project by the Louisiana State Law Institute.[15] The Mineral Code is, for the most part, a model code, written in clear language, organized in a logical format, and accompanied by commentary explaining the case law that each article was derived from and whether or not the article intended to change the law.[16]

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10. For background, see A.M. Honoré, *The Background to Justinian's Codification*, 48 TUL. L. REV. 859 (1974).

11. *See, e.g.*, *In re* Curry, 16 So. 3d 1139, 1159 (La. 2009) (Victory, J., dissenting); Roy v. Speer, 192 So. 2d 554, 556 (La. 1966); Adams v. Golson, 174 So. 876, 879 (La. 1937); Smith v. Hussey, 43 So. 902, 904 (La. 1907); Stewart v. Ark. S. R. Co., 36 So. 676, 677 (La. 1904); Ducloslange v. Ross, 3 La. Ann. 432, 433 (La. 1848); Barbry v. Dauzat, 576 So. 2d 1013, 1022 (La. Ct. App. Cir.), *writ denied*, 578 So. 2d 136 (La. 1991).

12. 91 So. 207, 228 (La. 1920).

13. *See id.*; *see also* Ohio Oil Co. v. Ferguson, 34 So. 2d 746 (La. 1946); Vincent v. Bullock, 187 So. 35 (La. 1939); Palmer Corp. v. Moore, 132 So. 229 (La. 1930); Gulf Refin. Co. of La. v. Hayne, 70 So. 509 (La. 1915). Indeed, one of the early comments about a mineral code came from the Supreme Court of Louisiana: "[H]aving declined to adopt a Mineral Code, the Legislature has placed a stamp of approval upon the system of interpretation of oil and gas contracts which this court has followed for so many years." Tyson v. Surf Oil Co., 196 So. 336, 343 (La. 1940).

14. Act No. 50, 1974 La. Acts 237 (codified at LA. REV. STAT. §§ 31:1–31:217 (1974)).

15. For an *Introduction by the Louisiana State Law Institute*, see title 31 of the Louisiana Mineral Code. LA. REV. STAT. tit. 31 (2021).

16. Perhaps the best overview of the Mineral Code is found in the comprehensive work of John M. McCollam, *A Primer for the Practice of Mineral*

One of the more important provisions in the Mineral Code is article 122 which imposes the "prudent operator" rule.[17] Specifically, the prudent operator rule provides that anyone who leases land in Louisiana for oil and gas exploration "is bound to perform the contract in good faith and to develop and operate the property leased as a reasonably prudent operator for the mutual benefit of himself and his lessor."[18]

The prudent operator rule is implied by operation of law in every Louisiana mineral lease.[19] The prudent operator rule has numerous aspects including, but not limited to, the obligations to develop known producing formations in a proper manner, to explore and test all portions of the leased premises for minerals, to protect the leased property against drainage by nearby wells, and to produce and market minerals.[20]

Properly sealing a well with cement is arguably the most important of these obligations. Without a properly sealed well, the operator risks extraneous fluids invading from adjacent zones and flooding the reservoir, prematurely killing the well. Thus, the absence of a properly sealed well subsequently renders the operator unable to produce from the reservoir at its full potential. In other words, the operator cannot develop the reservoir in a proper manner, as is required of a prudent operator in accordance with Mineral Code article 122.

The duty to operate prudently includes a requirement that an operator use all available technology to maximize recovery.[21] This indicates that a prudent operator must employ the recognized standard practices for sealing a well with cement. Fortunately for the operator, an abundance of

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Law Under the New Louisiana Mineral Code, 50 TUL. L. REV. 729 (1976). Mr. McCollam was widely recognized as one of the foremost oil and gas lawyers in Louisiana for many years.

17. *See* LA. REV. STAT. § 31:122 (2021).

18. *Id.* For an excellent history of the origin and development of the prudent operator rule, see PATRICK S. OTTINGER, LOUISIANA MINERAL LEASES: A TREATISE § 3.13, at 220–44 (2016).

19. *See, e.g.*, Rainbow Gun Club, Inc. v. Denbury Res., Inc., 247 So. 3d 844, 847–48 (La. Ct. App. 2018); Trinidad Petrol. Corp. v. Pioneer Nat. Gas Co., 416 So. 2d 290, 297 (La. Ct. App. 1982).

20. *See, e.g.*, LA. REV. STAT. ANN. § 31:122 cmt. (2021); Broussard v. Hilcorp Energy Co., 24 So. 3d 813, 818–820 (La. 2009); *Rainbow Gun Club*, 247 So. 3d at 848.

21. *See, e.g.*, Waseco Chem. & Supply Co. v. Bayou State Oil Corp., 371 So. 2d 305, 313 (La. Ct. App. 1979) (failing to employ "fire flooding" method of recovery warranted cancellation of lease for violating duty of prudent operation); Vetter v. Morrow, 361 So. 2d 898, 899–900 (La. Ct. App. 1978) (affirming cancellation of lease for failure to develop leased premises).

industry literature and recommended practices exist that set forth how to properly do so.

III. INDUSTRY STANDARDS FOR CEMENTING PRACTICES

After a well is cemented, a prudent operator evaluates whether the cement has fully sealed the well to ensure protection of the reservoir from extraneous fluids. The common tool for conducting this evaluation is called a "cement bond log,"[22] which is operated by lowering an instrument emitting acoustic energy inside the casing. The travel time and amplitude of the reflected sound waves are then recorded and calibrated by depth. A dull sound indicates the cement has fully encircled the casing, whereas a sharper sound indicates the presence of a gap between the cement and the casing. These sound waves differ accordingly, and the log on which they are recorded informs the operator as to whether the cement has fully bonded and sealed the well.

If the cement bond log is interpreted to have a questionable bond at certain intervals, the standard way to address this problem is with a cement squeeze. Also called a block squeeze, this method injects additional cement into the area identified on the cement bond log as being insufficiently bonded.[23] A block squeeze is, in the simplest of terms, a patch that fixes the leak.

Ideally, the only fluid produced by a well consists of hydrocarbons; otherwise, the operator must use a separator to remove the water from the oil or gas at the surface, adding additional costs to the production process. However, it is important to note that some reservoirs contain water as well as oil or gas. Both types are common in Louisiana—particularly in south Louisiana.

Reservoirs containing water and hydrocarbons are referred to as water-driven reservoirs. In those reservoirs, the oil or gas—which both weigh less than water—sits on top of the water resting at the bottom of the reservoir. As the oil or gas is produced, the water rises to fill the area vacated by the produced minerals. At some point, the rising water will reach the perforations where the well was completed in the reservoir. When that occurs, the well begins producing water. If the water is expected, the operator has to evaluate whether a higher point in the

22. *Cement Bond Log*, SCHLUMBERGER OILFIELD GLOSSARY, https://glossary.oilfield.slb.com/en/terms/c/cement_bond_log [https://perma.cc/3XAU-QKB8] (last visited Nov. 6, 2021).

23. *Cement Squeeze*, SCHLUMBERGER OILFIELD GLOSSARY, https://glossary.oilfield.slb.com/en/terms/c/cement_squeeze [https://perma.cc/6LHE-WRJA] (last visited Nov. 6, 2021).

reservoir ("updip") exists where he can modify the well and get above the rising water. This is called producing "attic" oil or gas.

Reservoirs not containing any water are referred to as depletion-driven, or volumetric, reservoirs. Ordinarily, these reservoirs produce only trace amounts of water (referred to in petroleum engineering circles as "vapor" or "humidity").

While rising water may be expected in a water-driven reservoir at a certain point, the premature or unexpected appearance of water in such a reservoir is cause for concern. Of course, the appearance of a significant amount of water in a depletion-driven reservoir is always concerning. In both instances, the unplanned appearance of water suggests extraneous water from another zone may have invaded the producing zone.

It is axiomatic that a problem must be identified before it can be solved; diagnosis must precede cure. The precise location at which the unexpected water gets "behind the pipe" and channels through the annular space to the reservoir must first be identified before anything can be done about it. In addition to a cement bond log identifying where cement has not adequately bonded, other standard tools or tests identify whether water in a well is extraneous. These tools are known as noise logs, temperature surveys, and radioactive tracings.

A noise log is a record of sound measured at different positions in the borehole. The flow of extraneous fluids into a well causes turbulence, which in turn creates noise. High noise amplitudes can pinpoint turbulence, indicating leaks or behind-the-pipe flow of water.[24] The movement of extraneous fluid through the borehole also affects the temperature, and temperature surveys measure those changes.[25] Radioactive tracing involves the release of a radioactive solution into a flow stream and is used to differentiate hydrocarbons from water.[26] All three tests measure differences in conditions at a given point in a wellbore

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24. *Noise Log*, SCHLUMBERGER OILFIELD GLOSSARY, https://glossary.oilfield.slb.com/en/terms/c/cement_bond_log [https://perma.cc/8YYT-64WZ] (last visited Nov. 6, 2021).

25. C.V. Millikan, *Temperature Surveys in Oil Wells*, 142 TRANS. 1 (1941), https://onepetro.org/TRANS/article/142/01/15/161608/Temperature-Surveys-in-Oil-Wells [https://perma.cc/L57J-GNJP].

26. ANALYTICAL TECHNIQUES IN THE OIL AND GAS INDUSTRY FOR ENVIRONMENTAL MONITORING 329 (Melissa N. Dunkle & William L. Winniford eds., 2020), https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119523314 [https://perma.cc/EY9A-GPV2]; *see also* HISTORY OF PETROLEUM ENGINEERING, *supra* note 1, at 78 (stating radioactive tracing began in 1946); WORLDWIDE CEMENTING PRACTICES, *supra* note 2, at 118 (defining radioactive tracing).

and can reveal the location of any leaks or channeling of extraneous water within the well.

As noted above, courts have held that the duty of prudent operation includes using all available technology to produce the reservoir. Arguably, that duty includes utilizing these tests to the extent necessary to identify where unexpected water is entering the well so it can be fixed with a cement squeeze. As in any area of law, these standard measures define the standard of care owed under the circumstances. A deliberate failure to implement recognized methods to identify the location of leaks in a well constitutes negligence, which is synonymous with imprudent operations.[27] Simply put, this failure breaches the duty implied in every mineral lease to operate as a prudent administrator for the mutual benefit of the landowner and the lease operator.

IV. MEASURING DAMAGES CAUSED BY IMPRUDENT OPERATIONS

Article 1995 of the Louisiana Civil Code provides: "Damages are measured by the loss sustained by the obligee and the profit of which he has been deprived." Article 1995 has represented Louisiana's measure of recovery for breach of contract for many years. As the Louisiana Supreme Court has succinctly stated: "The proper measure of damages . . . is therefore the amount necessary to place [the plaintiff] in the same position he would have been in had [the defendant] completely fulfilled [its obligation]."[28]

Obviously, a mineral lease is a type of contract. Thus, courts have applied article 1995's measure of recovery to cases concerning the breach of a mineral lease or a contract involving oil and gas operations.[29] This includes cases where a landowner claims damages incurred due to the imprudent operation of a mineral lease on his property.[30] Where the claim asserts the imprudent operations caused the well to cease production prematurely, the courts have recognized the measure of recovery is the

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27. Rainbow Gun Club, Inc. v. Denbury Res., Inc., 247 So. 3d 844, 847–48 (La. Ct. App. 2018).

28. Gibbs Constr. Co. v. Thomas, 500 So. 2d 764, 770 (La. 1987); *see also* Dixie Roofing Co. of Pineville, Inc. v. Allen Par. Sch. Bd., 690 So. 2d 49, 56 (La. Ct. App. 1996) ("The measure of damages for a breach of contract is the sum that will place plaintiff in the same position as if the obligation had been fulfilled."). Federal courts have recognized this as the rule in Louisiana in diversity cases. *See, e.g.*, Meltzer v. Roof Coatings, Inc., 536 F.2d 663 (5th Cir. 1976).

29. *See, e.g.*, Corbello v. Iowa Prod., 850 So. 2d 686, 695 (La. 2003); Amoco Prod. Co. v. Texaco, Inc., 838 So. 2d 821, 837 (La. Ct. App. 2003).

30. *See Rainbow Gun Club*, 247 So. 3d at 847–48.

amount of royalties the landowner would have received from the production lost.[31]

Pursuant to industry custom, before any oil or gas well is drilled, an oil company performs a reservoir calculation. Using various forms of geological and production information available from other wells in the area (called "analogy"), petroleum engineers estimate the size of the reservoir and the volume of hydrocarbons it contains. Based on whether the engineers believe the reservoir to be water-driven or depletion-driven (or a combination of both), they then apply a "recovery factor" to the estimated reservoir contents. This can range from 60–70% for water-driven reservoirs to 80–90% for depletion-driven reservoirs.[32]

When a landowner sues to recover royalties lost, because the well prematurely ceased production, a petroleum engineer or other knowledgeable expert can use these reservoir calculations as a starting point to compute damages. This is done by deducting actual production from the expected production (determined by applying the recovery factor to the remaining reservoir contents) to ascertain the amount of lost production. The expert or engineer then researches the prices at which production would have sold for the remaining time the well should have produced. Finally, the landowner's royalty is applied to the relevant sale proceeds. This establishes the total amount of lost royalties, equaling the landowner's recoverable damages.

V. RESERVOIR SIZE AND THE "COLLATERAL ATTACK" RULE

Most oil and gas wells are "unit wells." A unit well is the well designated to drain a reservoir for which a forced unit is created by the Commissioner of Conservation (the "Commissioner").[33]

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31. *See id.* at 847–89; *see also* Frankel v. Exxon Mobil Corp., 923 So. 2d 55, 77 (La. Ct. App. 2005) (affirming the damages awarded by the lower court for lost overriding royalties for defendant's breach of the reassignment clause of the sublease); Mobil Expl. & Producing U.S. Inc. v. Certain Underwriters Subscribing to Cover Note 95-3317(A), 837 So. 2d 11, 39 (La. Ct. App. 2002) (holding the defendant-driller liable for damages to the State for lost hydrocarbon production due to defendant's negligence).

32. *See Factors Influencing Recovery from Oil and Gas Fields*, *in* 91 M. SHEPHERD, OIL FIELD PRODUCTION GEOLOGY: AAPG MEMOIR 37–46 (2009), https://people.wou.edu/~taylors/es486_petro/10_Production_Recovery.pdf [https://perma.cc/8JYN-P642].

33. *See* LA. REV. STAT. §§ 30:9–9.2 (2021).

To create a forced drilling unit,[34] a lessee must apply for a unit order with the Commissioner. The application requires notice to all interested landowners, a pre-hearing conference (where efforts are made to reach an agreement on the size and structure of the unit), and a public hearing where all interested parties are invited to attend. At the hearing, the applicant presents his proposal for the formation of the unit, supported by testimony from one or more expert witnesses—usually either geologists or petroleum engineers. Applicants support their testimony with exhibits, including geological or engineering drawings of the dimensions of the reservoir they expect to produce.

After considering all evidence, the Commissioner issues an order with, *inter alia*, findings about the size, shape, and location of the reservoir, including a designation of the specific well to serve as the unit well. In so doing, the Commissioner is required to consider "all available geological and engineering evidence" and to assure to each participant in the unit his "just and equitable share of the oil and gas in the pool."[35] Participation in a unit is usually measured by surface acreage. Typically, a landowner expected to contribute 10% of the oil and gas produced from the well should receive 10% of the surface acreage in the unit, which equates to his or her "just and equitable share."[36]

The exclusive method to challenge any finding or order of the Commissioner is by appealing the order to the 19th Judicial District Court pursuant to Louisiana Revised Statutes section 30:12, and the assistant secretary of the Department of Natural Resources ("DNR") must be a named defendant. This exclusive method includes any challenge to the Commissioner's findings or orders regarding the acreage of a reservoir as established in a unit order. Unless this specific process is followed, no party can challenge or dispute any order of the Commissioner, or a finding therein, in another proceeding, as to do so constitutes a prohibited "collateral attack."[37]

Oil companies have long used this rule of law to shield against claims by neighboring landowners that the unit well is draining oil or gas beneath their land. The oil companies have successfully defended such claims by

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34. A drilling unit is commonly defined as the maximum area that may be efficiently and economically drained by one well. *See, e.g.*, Delatte v. Woods, 94 So. 2d 281 (La. 1957); Alexander v. Holt, 116 So. 2d 532 (La. Ct. App. 1959).

35. LA. REV. STAT. § 30:9(C), (D).

36. *See id.* § 30:9.

37. *See, e.g.*, Pierce v. Goldking Props., Inc., 396 So. 2d 528, 534 (La. Ct. App. 1981); Breaux v. Apache Oil Corp., 240 So. 2d 589, 591–92 (La. Ct. App. 1970); Brown v. Alice-Sidney Oil Co., 343 So. 2d 745, 746 (La. Ct. App. 1977); Vincent v. Hunt, 221 So. 2d 577, 582 (La. Ct. App. 1969).

arguing that unit boundaries in the Commissioner's order define the reservoir, meaning no reservoir outside of the unit is beneath the adjacent owner's land.[38]

As the United States Court of Appeals for the Fifth Circuit explained in a survey of Louisiana jurisprudence on the subject:

> Louisiana decisions clearly reflect the principle that suit under [Louisiana Revised Statutes section 30:12] is the exclusive means by which an order of the Commissioner may be called into question in a judicial proceeding. The application of this rule prohibiting "collateral attack" of an order of the Commissioner is not limited to suits in which the judgment will directly affect actual enforcement of, or compliance with, the Commissioner's order, such as suits by or against the Commissioner, or suits between private parties for injunctive relief requiring of one party conduct or inaction which will, in fact, violate an order of the Commissioner. Rather, the rule also extends to suits between private parties in which a particular order of the Commissioner is an operative fact upon which the determination of the parties' respective rights directly depends, even though all relief sought can be given, such as by money damages or lease cancellation, without thereby causing any actual violation of the Commissioner's order. Thus, where the lessee has drilled on a unit established by the Commissioner and including the leased land, the lessor, in a suit to cancel the lease for want of production or for damages under a compensatory royalty clause respecting off-lease production, is prohibited from challenging the validity of the Commissioner's unit order. [39]

The Fifth Circuit further explained: "The rule forbidding collateral attack on orders of the Commissioner has been applied to suits by lessors for lease cancellation or damages on account of drainage."[40] The lessor's theory in these cases is that "the orders forming the respective units for the offending wells wrongfully excluded their lands."[41]

Although the collateral attack rule is most often invoked by oil companies, equal protection requires the rule works both ways. Thus,

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38. *See, e.g.*, Mayer v. Tidewater Oil Co., 218 F. Supp. 611, 614–15 (W.D. La. 1963).

39. Trahan v. Superior Oil Co., 700 F.2d 1004, 1015–16 (5th Cir. 1983).

40. *Id.* at 1016.

41. *Id.*

landowners have likewise invoked the rule to challenge an oil company's attempt to change an order or finding of the Commissioner.[42]

The reasons for this well-settled rule are evident. The original forced pooling statute was passed in the early 1940s and was immediately attacked on constitutional grounds. Landowners claimed the state could not deprive them of their exclusive right to drill for and capture oil or gas beneath their land[43] by forcing them into a unit, designating a well on another landowner's property as the unit well, and forbidding them from drilling a well. Simply put, the landowners argued this amounted to a "taking" of a valuable property right without just compensation. The statute survived constitutional attacks as courts ultimately found this "taking" permissible because the conservation statutes guaranteed landowners be justly compensated for the taking.[44] Specifically, the conservation statute required forced units to guarantee each landowner his "just and equitable share" of production attributable to the minerals beneath his land.[45]

For this reason, anyone seeking a unit order must prove to the Commissioner that the configuration of the proposed unit assures each landowner within the unit will receive his "just and equitable share" of production.[46] The typical order also provides that the reservoir can be efficiently and economically drained by the unit well. The typical order further provides that if the oil company ever discovers additional scientific evidence warranting a change in the unit boundaries, it "shall" submit that evidence and seek to amend the unit order. This provision is within virtually every order issued by the Commissioner.

If the surface owners' percentages of acreage in the unit do not adequately correspond to the percentage of minerals beneath their land,

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42. *See, e.g.*, Miami Corp v. Exxon Co., USA, 509 So. 2d 39, 42–43 (La. Ct. App. 1987) (applying the collateral attack rule to prevent Exxon from changing the Commissioner's order regarding allowables in a suit filed by a landowner to cancel its lease).

43. Although Louisiana Civil Code article 490 states that a landowner owns everything above and below his land, courts have long held that minerals are "fugacious" and thus are not owned in place. *See, e.g.*, King v. Buffington, 126 So. 2d 326, 328 (La. 1961); Gliptis v. Fifteen Oil Co., 16 So. 2d 471, 474 (La. 1943). Instead, the landowner possesses the exclusive right to explore for and capture those minerals, reduce them to his possession, and then become their owner. This long standing rule now finds expression in Mineral Code article 6. *See* LA. REV. STAT. § 31:6 (2021).

44. *See, e.g.*, Hunter Co. v. McHugh, 11 So. 2d 495, 498, 502–03 (La. 1942).

45. *See id.* at 497–98 (quoting LA. REV. STAT. § 30:9(A)(1)).

46. LA. REV. STAT. § 30:9.

they cannot receive their "just and equitable share" of production.[47] If the reservoir is larger than the unit, then landowners outside the unit are not getting their "just and equitable share" of production from the reservoir. If the reservoir is smaller than the unit, then unit landowners with minerals beneath their land are sharing with unit landowners with no minerals beneath their land and thus are deprived of their "just and equitable" share of production from the reservoir. None of the above situations can be reconciled with the Commissioner's findings, and thus any claim (too large or too small) not appealed in accordance with Louisiana Revised Statutes section 30:12 constitutes an impermissible collateral attack.

Obviously, reservoir size is the largest component of a landowner's damage claim that imprudent operations left significant unrecovered reserves. The collateral attack rule can be invoked against any defendant oil company seeking to shrink a reservoir—and thus reduce its damages—from the size fixed in a unit order. Such *ex post facto* revisions constitute collateral attacks and as such should logically be barred.

VI. IMPRUDENT OPERATIONS AND CONTAMINATION

Notwithstanding lost royalties, other damages may be sustained by a landowner as a result of an operator's failure to seal a well and control extraneous fluids. For instance, an operator who allows waste products to contaminate a landowner's soil or water can be liable for the cost of restoring the property to its proper condition.[48] This can prove particularly costly in cases involving the failure to control brine, a by-product of oil and gas production referred to as "produced water."[49] An estimated 20 to 30 billion barrels of produced water are generated by oil and gas

47. *Id.*

48. *See, e.g.*, State v. La. Land & Expl. Co., 110 So. 3d 1038, 1057 (La. 2013); Marin v. Exxon Mobil Corp., 48 So. 3d 234, 256 n.18 (La. 2010); Walton v. Burns, 151 So. 3d 616, 622 (La. Ct. App. 2013).

49. James K. Otten & Tracey Mercier, *Produced Water Brine and Stream Salinity*, USGS (2015), https://water.usgs.gov/orh/nrwww/Otten.pdf [https://perma.cc/9ZNK-8DLW]; Advanced Water Tech. Ctr., Colo. Sch. Mines, *About Produced Water (Produced Water 101)*, PRODUCED WATER TREATMENT & BENEFICIAL USE INFO. CTR., http://aqwatec.mines.edu/produced_water/intro/pw/ [https://perma.cc/5CJK-GPNN] (last visited Nov. 9, 2021); Miranda Meehan et al., *Environmental Impacts of Brine (Produced Water*), N.D. ST. UNIV. EXTENSION SERV. (2017), https://www.ag.ndsu.edu/publications/environment-natural-resources/environmental-impacts-of-brine-produced-water [https://perma.cc/6HXP-HWT7].

operations in the country every year—70 times the volume of all liquid hazardous wastes generated in the United States.[50]

Brine contains heavy concentrations of salt, ranging from a few thousand milligrams per liter, or parts per million, to several hundred thousand of salt, or chlorides.[51] In comparison, clean fresh water contains around 50 parts per million, and the Environmental Protection Agency Secondary Drinking Water Regulations limit public water supplies to no more than 250 parts per million.[52] Salt in heavy concentrations is toxic to plants, animals, and humans. Salt is also non-biodegradable. If large concentrations of salt are released into soil, the soil must be removed and replaced with clean soil to restore the land to its previous condition. This process is referred to as a "dig and haul." If the brine escapes into the groundwater, the consequences are far more severe because the cost of cleaning the groundwater through desalination can be extremely high. Thus, when the well stream contains produced water, that water must be separated from the oil, gas, and gas condensate and then properly disposed of, usually in a disposal well.[53]

Unsurprisingly, "[o]ilfield operations are a leading cause of groundwater contamination in Louisiana."[54] Thus, the landowners' cause of action for damages by contamination due to imprudent operations is a vital remedy that not only vindicates private rights but also protects the public's interest in a clean environment. Just as civil liability for negligence on roadways presumably deters bad driving, an oilfield operator's civil liability for imprudent contamination of the environment should likewise deter poor management of waste.

The seminal case on landowners' rights to seek recovery of the costs incurred from restoring their property after oilfield contamination is the

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50. Otten & Mercier, *supra* note 50.

51. Meehan et al., *supra* note 50.

52. *Drinking Water Regulations and Contaminants*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/sdwa/drinking-water-regulations-and-contaminants#List [https://perma.cc/PGL4-KLKA] (last visited Nov. 9, 2021).

53. *Class II Oil and Gas Related Injection Wells*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/uic/class-ii-oil-and-gas-related-injection-wells [https://perma.cc/R9WD-MKQH] (last visited Nov. 9, 2021). It is estimated that over 2 billion gallons of oilfield waste fluids are injected into disposal wells in the United States every day. *Id.*

54. J. Michael Veron, *Oilfield Contamination Litigation in Louisiana: Property Rights on Trial*, 25 TUL. ENVTL. L.J. 1, 3 (2011) (first citing LA. DEP'T ENV'T QUALITY, THE LOUISIANA GROUND WATER PROTECTION STRATEGY 2–5, 15–16 (1989); and then citing LA. DEP'T ENV'T QUALITY, GROUND WATER PROTECTION IN LOUISIANA: PROBLEMS AND OPTIONS 3–4 (1985)).

2003 Louisiana Supreme Court case, *Corbello v. Iowa Production*.[55] The decision was widely publicized, and its aftermath generated similar lawsuits around the state referred to by industry sympathizers as the "legacy lawsuits."[56] The oil industry responded by seeking help from the Louisiana State Legislature, which it perceived to be more sympathetic to its interests. In 2006, the oil industry presented the legislature with a "reform" package, and landowners and their attorneys responded with their own lobbyists. The resulting compromise legislation was Act No. 312 of 2006 ("Act 312").[57]

Essentially, Act 312 provides a procedural mechanism for oilfield operators to admit environmental liability and transfer a legacy lawsuit to the DNR, which then determines the "most feasible" plan to restore the property to regulatory standards.[58] The landowner is entitled to attorney's fees and expert costs incurred in establishing his evidentiary proof before the state agency. In addition, the landowners' rights to additional remedies under a private lease, usually based on lease language requiring remediation to original condition or something greater than regulatory standards, are reserved and remain with the courts.[59]

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55. 850 So. 2d 686 (La. 2003).

56. For a history and accounts of that decision, see J. MICHAEL VERON, SHELL GAME: ONE FAMILY'S LONG BATTLE AGAINST BIG OIL (2007); J. Michael Veron, *In Pursuit of Bigfoot: Confronting Oil and Gas Mythology in Louisiana*, 75 LA. L. REV. 1251 (2015).

57. Act No. 312, 2006 La. Acts 1472 (codified at LA. REV. STAT. § 30:29). Even before then, the oil industry had immediately gone to the legislature in 2003 and obtained the passage of what the Louisiana Supreme Court referred to as the "Corbello Act of 2003." That law, enrolled as Louisiana Revised Statutes § 30:2015.1, required plaintiffs alleging contamination claims related to usable groundwater to notify the Department of Environmental Quality of such claims. If a claim was established, the responsible party was required to formulate a remediation plan and deposit funds in the registry of the court so that the plan could be implemented under court supervision. Act 312 expanded this requirement to all environmental damage claims resulting from oilfield exploration and production, not just groundwater claims. *See* Marin v. Exxon Mobil Corp., 48 So. 3d 234, 240 n.7 (La. 2010).

58. *See* Act No. 312, 2006 La. Acts 1472 (codified at LA. REV. STAT. § 30:29).

59. The jurisprudence interpreting Act 312 and its permutations is somewhat muddled. *Compare* M.J. Farms, Ltd. v. Exxon Mobil Corp., 998 So. 2d 16 (La. 2008), *with* State v. La. Land & Expl. Co., No. 2020-C-00685, 2021 WL 2678913 (La. 2021). It is beyond the scope of this article to address those ambiguities.

VII. PRESCRIPTION

Oil and gas operations are highly technical. The average landowner cannot see underground and has no knowledge of how wells are drilled and operated. Thus, the average landowner cannot be expected to know whether the drilling and production of a well was imprudently conducted.

Further, when the well ceases to produce, the operator or his lessee rarely provides the landowner an explanation as to why production has stopped. If the landowner does inquire, he is usually informed that the well simply watered out naturally, played out, or harbored a much smaller reservoir than anticipated. Consequently, the landowner often does not learn of an operator's negligence, if at all, until years later. Thus, when the landowner does file a claim, he is often met with the defense of prescription.

A claim for a breach of contract is considered to be a "personal action" with a prescriptive period of ten years.[60] Such claims include actions for the breach of a mineral lease.[61]

Louisiana law disfavors prescription. In the words of the Louisiana Supreme Court, "[P]rescriptive statutes are to be strictly construed against prescription and in favor of the obligation sought to be extinguished. . . ."[62] To that end, a court must resolve any doubt by denying the prescription exception and affording the litigant his or her day in court.[63]

Prescription will not begin to run at the earliest possible indication a plaintiff may have suffered a wrong.[64] Prescription should not be used to

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60. *See* LA. CIV. CODE art. 3499 (2021); *see, e.g.*, Norwood v. Mobley Valve Servs., 144 So. 3d 1143, 1149 (La. Ct. App. 2014); Victory Oil Co. v. Perret, 183 So. 2d 360, 364 (La. Ct. App. 1966).

61. *See, e.g.*, Union Oil & Gas Corp. of La. v. Broussard, 112 So. 2d 96, 99 (La. 1958); Jones v. Jones, 106 So. 2d 713, 722 (La. 1958); J.C. Trahan Drilling Contractor, Inc. v. Hagy, 172 So. 2d 732, 733 (La. Ct. App. 1965). Note, however, that an action to recover underpayments or overpayments of oil and gas royalties is subject to the liberative prescription of three years. LA. CIV. CODE art. 3494.

62. Bustamento v. Tucker, 607 So. 2d 532, 537 (La. 1992) (citing Lima v. Schmidt, 595 So. 2d 624, 629 (La. 1992)).

63. *See, e.g.*, Woodlawn Park Ltd. P'ship v. Doster Constr. Co., 623 So. 2d 645, 648 (La. 1993); *see also* Wells v. Zadeck, 89 So. 3d 1145, 1149 (La. 2012) ("[O]f two possible constructions, that which favors maintaining, as opposed to barring an action, should be adopted.").

64. Labbe Serv. Garage Inc. v. LBM Distribs., Inc., 650 So. 2d 824, 829 (La. Ct. App. 1995) ("[P]rescription will not commence at the earliest possible indication that plaintiff may have suffered some wrong. It will begin to run when plaintiff has a reasonable basis to pursue a claim against a specific defendant." (quoting Jordan v. Emp. Transfer Corp., 509 So. 2d 420, 423–24 (La. 1987))).

force a person believing he may have been damaged in some way to rush to file suit against all parties who might have caused that damage.[65]

When a party raises the issue of prescription through a peremptory exception, that party generally bears the burden of proving the relevant claim has prescribed.[66] But if the face of the petition reveals the claim has prescribed, then the burden shifts to the plaintiff to show that prescription was sufficiently suspended or interrupted.[67]

The Louisiana Supreme Court has held that a claim for breach of a lease can be brought, regardless of notice, within ten years from the date the lease expired.[68] Even after that point, prescription will not begin to run until a plaintiff knew or should have known of the alleged breach.[69] This is referred to by Louisiana courts as the equitable estoppel doctrine of *contra non valentem agree non currit prescriptio*, roughly translating to "prescription does not run against a person who is unable to act."[70] It is also known as the "discovery rule."[71]

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65. *See id.*; *Wells*, 89 So. 3d at 1156 (Guidry, J., dissenting); *see also* Glisan v. Eaton, 30 So. 3d 1150, 1153 (La. Ct. App. 2010) ("Prescription should not be used to force a potential plaintiff who believes that he may have a cause of action to rush to the courthouse to file suit against all parties that may have caused the damage." (quoting *Labbe*, 650 So. 2d at 829)).

66. *See* Hogg v. Chevron USA, Inc., 45 So. 3d 991, 998 (La. 2010).

67. *See Wells*, 89 So. 3d at 1149. Even if the alleged wrong occurred in the distant past, an allegation that the claim was not discovered until within the prescriptive period before suit was filed means that the petition has not prescribed on its face. In that instance, the burden does not shift to the plaintiff to rebut prescription. *See, e.g.*, Campo v. Correa, 828 So. 2d 502, 509 (La. 2002) (reversing lower courts for shifting burden to plaintiffs on exception of prescription).

68. *See* Corbello v. Iowa Prod., 850 So. 2d 686, 705 (La. 2003) (allowing recovery for breaches of the contract going back to the 1960s).

69. *See Wells*, 89 So. 3d at 1150–52 (quoting Amoco Prod. Co. v. Texaco, Inc., 838 So. 2d 821, 831–32 (La. Ct. App. 2003); *see also* Harvey v. Dixie Graphics, Inc., 593 So. 2d 351, 354 (La. 1992) ("[F]or prescription to begin to run under [Louisiana Civil Code article] 3492, it must be shown that the plaintiff knew or reasonably should have known that he or she has suffered harm due to a tortious act of the defendant, unless one of the contra non valentem exceptions applies to delay further the commencement or to suspend the running of prescription."); Cartwright v. Chrysler Corp., 232 So. 2d 285, 287 (La. 1970) (explaining that prescription began to run when plaintiff when plaintiff was cognizant that brake failure caused the accident , not when she later learned the real cause of the brake failure, i.e., defective brake lines).

70. *E.g.*, Kennard v. Yazoo & M.V.R. Co., 190 So. 188, 190 (La. Ct. App. 1939).

71. Marin v. Exxon Mobil Corp., 48 So. 3d 234, 245 (La. 2010).

Under the discovery rule, the knowledge sufficient to begin the running of prescription is defined as the "acquisition of sufficient information, which, if pursued, will lead to the true condition of things."[72] Thus, "the ultimate issue in determining whether a plaintiff had constructive knowledge sufficient to commence a prescriptive period is the reasonableness of the plaintiff's action or inaction in light of his education, intelligence, and the nature of the defendant's conduct."[73]

In this respect, Louisiana courts have distinguished between what a claimant "could" have known and what he "should" have known. A "mere apprehension" of a claim's existence is not sufficient knowledge to commence prescription.[74] Indeed, prescription does not run against one who is ignorant of the facts upon which his cause of action is based, as long as such ignorance is not willful, negligent, or unreasonable.[75]

Even sophisticated oil companies enjoy the benefit of this rule of law. In *Amoco v. Texaco*, the Louisiana Third Circuit Court of Appeal affirmed the denial of prescription where Amoco sued for the breach of a lease assignment 18 years after the breach.[76] In that case, Texaco and IMC canceled the assigned leases without providing Amoco notice as required by the lease assignment, but they filed the lease cancellations in the public records.[77] The cancellation was not discovered until some 18 years later when Amoco was conducting an audit of its outside-operated properties.[78]

After Amoco filed suit, the defendants asserted the defense of prescription.[79] They argued that Amoco was very sophisticated about such matters and as such had knowledge of its claim more than ten years before filing suit because (1) it was no longer receiving any royalties and (2) the lease cancellations had been filed in the Vermillion Parish public

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72. *Id.* at 246 (quoting Young v. Int'l Paper Co., 155 So. 2d 231, 232 (La. 1934)).

73. *Id.*

74. Campo v. Correa, 828 So. 2d 502, 511 (La. 2002) ("Even if a malpractice victim is aware that an undesirable condition has developed after the medical treatment, prescription will not run as long as it was *reasonable* for the plaintiff not to recognize that the condition might be treatment related." (citing Griffin v. Kinberger, 507 So. 2d 821, 823–24 (La. 1987))); Cardova v. Hartford Accident & Indem. Co., 387 So. 2d 574, 577 (La. 1980).

75. *See, e.g.*, Cole v. Celotex Corp., 620 So. 2d 1154, 1156–57 (La. 1993); Young v. Clement, 367 So. 2d 828, 830 (La. 1979).

76. Amoco Prod. Co. v. Texaco, Inc., 838 So. 2d 821, 829–32 (La. App. Ct. 2003).

77. *Id.* at 830.

78. *Id.* at 826–27.

79. *Id.* at 827.

records.[80] The Louisiana Third Circuit affirmed the district court's ruling that giving Amoco constructive notice that it had a claim for breach did not suffice and therefore did not commence the running of prescription.[81]

Clearly, any party considering a claim for imprudent operations needs to know and understand the rules governing prescription in such cases is important.

VIII. JUDICIAL INTEREST

Because many lawsuits seeking damages for imprudent operations are filed a number of years after the questionable conduct takes place, judicial interest can be a significant component of the landowner's recovery. In cases involving breach of contract (including breach of a mineral lease), prejudgment interest must be calculated from the date of the breach of the lease, not from the date of judicial demand.[82] As a result, Louisiana courts have commenced judicial interest on damages awarded for imprudent operations decades before the claim was filed.[83]

IX. CONCLUSION

The first significant discovery of oil in Louisiana occurred in the Heywood #1 Jules Clement well, drilled near Evangeline, Louisiana, in Acadia Parish in September 1901.[84] In the over 120 years since, some 1,165,000 producing wells have been drilled in the state and have produced an estimated 25.2 billion barrels of oil and 214 trillion cubic feet of gas.[85]

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80. *Id.* at 830–32.

81. *Id.* at 832.

82. Rainbow Gun Club, Inc. v. Denbury Res., Inc., 247 So. 3d 844, 850 (La. Ct. App. 2018) ("Therefore, we amend the trial court's judgment to award judicial interest from July 13, 2003, which is the date that Denbury completed the well and the latest date that it could have stuck the [drill] pipe at issue.").

83. Corbello v. Iowa Prod., 851 So. 2d 1253, 1254 (La. App. Ct. 2003) ("Finding each unauthorized disposal of saltwater by Shell to be a violation of the parties' lease agreement, we calculated interest from Shell's first unauthorized disposals of saltwater in 1956 based on the total number of barrels disposed of that year and each year thereafter.").

84. *First Oil Well in Louisiana*, OFF. CONSERVATION, LA. DEP'T NAT. RES., http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=48 [https://perma.cc/Q8UD-W7BX] (last visited Jan. 31, 2022).

85. *History of Oil & Gas in Louisiana and the Gulf Coast Region*, LA. DEP'T NAT. RES., http://www.dnr.louisiana.gov/assets/TAD/education/BGBB/6/la_oil.html [https://perma.cc/7LUB-SM9W] (last visited Jan. 31, 2022).

In that time, the oil industry has become the wealthiest industry in the world. Ironically, despite this massive exploitation of the state's oil and gas resources, Louisiana has remained near the bottom of every significant ranking including morbidity, income, and quality of life.[86]

This is due in no small part to Louisiana's failure to reap its proper share of the benefits of the minerals produced beneath the state's surface.[87] In any case, where an operator has failed to operate prudently, the landowner has a lawful remedy to recover the royalties he lost or the cost to restore his property from contamination.

86. *See* Veron, *supra* note 57, at 1255–56 nn.20–21.

87. *See, e.g.*, *id.* at 1252 (providing a poignant example seen through the strange fate of Senate Resolution 142, which failed to pass in 2014).