The John Marshall Law Review

Volume 49 | Issue 2 Article 5

Spring 2015

Horizontal Drilling, Vertical Problems: Property Law Challenges from the Marcellus Shale Boom, 49 J. Marshall L. Rev. 413 (2015)

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HORIZONTAL DRILLING, VERTICAL PROBLEMS: PROPERTY LAW CHALLENGES FROM THE MARCELLUS SHALE BOOM

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I. INTRODUCTION

The Marcellus Shale play is a massive natural resources development area and holds the promise of continued (if fluctuating) growth and expansion.[1] The play covers parts of West Virginia, Ohio, Pennsylvania, and New York,[2] and has created opportunities and challenges from the beginning. Like all economic growth, though, shale development has created significant growing pains.

The recent shale boom in the United States occurred because of the combination of horizontal drilling and hydraulic fracturing.[3] This evolution in oil and gas production has created challenges for lawmakers and regulators, as well as oil and gas companies and landowners, especially with regard to property rights. West Virginia is the center of the Marcellus Shale play,[4] and the state will be used to examine and assess some of these challenges.

This article will focus on key property challenges appearing as part of the West Virginia Marcellus Shale play. The introduction will give an explanation of the region that is the focus of our analysis and explain the horizontal drilling process that is an essential part of shale oil and gas development. The second part of the article will provide an introduction to the concept of severed estates, which can create separate ownership of the

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1. *See, e.g.*, Karen Boman, *Study: Utica Shale Larger than Previous Estimates*, Rigzone.com, www.rigzone.com/news/oil_gas/a/139667/Study_Utica_Shale_Larger_Than_Previous_Estimates (July 16, 2015) (stating "[t]he study results indicate that the Utica—which spans West Virginia, Kentucky, Pennsylvania, Ohio and New York—is comparable to the Marcellus Shale play in terms of size and potential recoverable resources. The Marcellus is the largest U.S. shale play and second largest shale oil and gas play in the world").

2. Marcellus Shale Coalition, *10 Fast Facts About The Marcellus Shale*, http://marcelluscoalition.org/wp-content/uploads/2011/10/MSC_Fast_Facts_Large.pdf (last visited Mar. 30, 2015).

3. *See* Mary Tieman & Adam Vann, Cong. Research Serv., R41760, Hydraulic Fracturing and Safe Drinking Water Act Issues 2 (2011), www.fas.org/sgp/crs/misc/R41760.pdf (explaining that, according to the Independent Petroleum Association of America, in excess of "90% of new natural gas wells in the United States rely on hydraulic fracturing").

4. *See* U.S. Energy Info. Admin., Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays, at app. A, p. 5 (2011), www.eia.gov/analysis/studies/usshalegas/pdf/usshaleplays.pdf (mentioning that "the active area [of the Marcellus Shale], defined using the acreage reportedly under lease by the companies, is primarily located within West Virginia and Pennsylvania.").

surface estate and the mineral estate. Then, the article will focus on two keys issues. First, in part III, this article will discuss whether horizontal drilling is a "reasonably necessary" use of surface land to develop mineral rights.[5] And in part IV, this article will discuss difficulties in analyzing deed language related to minerals rights and royalty interests, which has created difficulty for both owners and mineral leasing companies. Part V provides a brief conclusion.

A. West Virginia and the Emergence of the Marcellus Shale

Long before the lure of horizontal drilling and the Marcellus Shale gas play, West Virginia was home to substantial natural resource development throughout the fifty-five counties of West Virginia.[6] As early as 1859, West Virginia had oil and gas production.[7] The first known natural gas development was known as "Burning Springs" and located near the Kanawha River.[8] The community was named Burning Springs because natural gas in the area routinely escaped from the ground and sometimes burned.[9]

Following the end of the Civil War, hundreds of conventional (vertical) gas wells were drilled in West Virginia.[10] By 1906, West Virginia's natural gas production was greater than any state in the nation.[11] By 1999, the oil and gas industry was still a significant player in the state, employing more than 15,000 people.[12] As of 2002, the industry was still drilling several hundred vertical shallow wells each year in West Virginia.[13] Following the discovery that oil and gas could be extracted from the Marcellus

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5. *See generally*, Lori A. Dawkins et al., *Surface Use in the Age of Horizontal Drilling: Will Horizontal Wells be Considered a "Reasonably Necessary" Use of the Surface*, 88 N.D. L. REV. 595 (2012) (discussing also a surface owner's possible arguments that horizontal drilling is not a reasonably necessary use).

6. Joe Geiger, *Burning Springs Oil Field*, W. VA. HERITAGE ENCYCLOPEDIA, www.wvencyclopedia.org/articles/726 (last revised Mar. 25, 2014).

7. *Id.*

8. *Id.*

9. *Id.*

10. Bernard L. Allen & David Matchen, *Natural Gas and Petroleum*, W. VA. HERITAGE ENCYCLOPEDIA, www.wvencyclopedia.org/articles/1600 (last revised May 10, 2012).

11. *Id.*

12. *Id.*

13. *Id.*

Shale, the oil and gas industry shifted its operation from vertical drilling to horizontal drilling and hydraulic fracturing.[14]

Although the drilling methods and technology used in 1859 are of little comparison to today's multi-million dollar horizontal drilling and hydraulic fracturing operations, implicit in all mineral development is the use of the surface.[15] Horizontal drilling operations require not only "[b]igger-horsepower, higher-tech rig[s]" but larger amounts of surface area to conduct the hydraulic fracturing process.[16] As such, conflicts between mineral owners and surface estates are almost inevitable.[17] Conflicts over surface use occur more often in severed estates[18] because the surface owner is burdened by the development of the underlying minerals even though the mineral owner reaps all (or nearly all) the benefits.[19]

B. The Horizontal Drilling Process

The Marcellus Shale is a low permeability rock formation that contains massive amounts of natural gas.[20] Because the gas is contained in very tiny pore spaces within the rock, the production challenge is not discovering the gas, but recovering the gas from the low permeability rock.[21] Traditional drilling of vertical wells within the Marcellus could only target small pockets of gas and produce small amounts of gas, which is uneconomical.[22] However, through the use of horizontal drilling and hydraulic fracturing,

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14. Bob Williams, *Unconventional Plays Transforming Scope, Shape of U.S. Land Rig Fleet*, THE AMERICAN OIL & GAS REPORTER (Apr. 2012), www.aogr.com/magazine/cover-story/unconventional-plays-transforming-scope-shape-of-u.s.-land-rig-fleet.

15. Dawkins et al., *supra* note 5, at 596.

16. Williams, *supra* note 14. Once the fracking process is complete, horizontal drilling can lead to reduced numbers of well pads, but the early part of the extraction process requires more land than conventional drilling.

17. Dawkins et al., *supra* note 5, at 596.

18. JOSHUA P. FERSHEE, ENERGY LAW: A CONTEXT AND PRACTICE CASEBOOK, 79 (2014). "Severed Estates: Land ownership initially (usually) includes both the surface and minerals estate. If one separates the estate, for example, by selling the surface rights but keeping the mineral right, the result is a severed estate." *Id*.

19. *See* Dawkins et al., *supra* note 5, at 598 (stating, "[c]ourts have long recognized that severed mineral rights lack value unless the mineral estate owner can enter upon and use a portion of the surface to access and develop the minerals.").

20. *See* U.S. Energy Info. Admin., *supra* note 4, at 4–5.

21. FERSHEE, *supra* note 18, at 120–21.

22. *Id*.

production within the Marcellus Shale became economically feasible.[23]

The process begins with a production company drilling a vertical pilot hole and then drill horizontally through the low permeability rock.[24] Next, the producer applies a mixture of sand, water, and chemicals at extremely high pressures to cause fractures and fissures within the rock formation.[25] Then, the fractures release large amounts of natural gas and stimulate heightened production.[26] (This process is the same for shale oil production.) Through the use of this technique, producers are enabled to drill multiple wells from one drill pad to achieve a greater production output.[27] In doing so, producers are forced to construct substantially larger well pads than pads previously used in conventional vertical drilling operations. Consequently, surface owners who do not own the mineral rights beneath their property can thus be forced to cope with large horizontal well pads being operated on their property.

Even though horizontal drilling requires a larger well pad to operate, it would take significantly more vertical wells to amount to the production of one horizontal well.[28] For example, a 300-acre surface owner would only have to endure one horizontal well pad on her property, even though the same amount of production from vertical wells on the property would take several wells to be drilled throughout the acreage.

Nonetheless, many surface owners argue that horizontal drilling operations unreasonably damage the surface and should be regulated to favor the surface owner's estate, and not the mineral owner.[29] Along with pointing to problems of surface disturbance, many surface owners are principally concerned with the environmental effects of horizontal drilling and hydraulic fracturing.[30] Many surface owners are concerned that their water supply will become contaminated and that fracking fluid chemicals will migrate into their home.[31] Simply put, many surface owners

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23. *Id.*
24. *Id.*
25. *Id.*
26. *Id.*
27. Dawkins et al., *supra* note 5, at 597.
28. FERSHEE, *supra* note 18, at 121.
29. *Why Multiple Horizontal Wells from Centralized Well Pads Should be Used for the Marcellus Shale*, West Virginia Surface Owner's Rights Organization (last updated June 24, 2015), www.wvsoro.org/resources/marcellus/horiz_drilling.html [hereinafter *Multiple Horizontal Wells*].
30. *Id.*
31. FERSHEE, *supra* note 18, at 122.

hold a NIMBY and BANANA attitude towards horizontal drilling operations.[32]

1. Mineral Owners, Mineral Rights, and Severed Estates

As with all oil and gas exploration, the surface above the minerals must be used to facilitate the production process.[33] The use of the surface is generally not (or should not be) as much of a concern when the owner jointly possesses the surface and the mineral rights (in fee simple) because the owner can (though they do not always effectively) set the terms of use of his or her property when issuing a lease to the production company.[34]

The process becomes more of a challenge when there is a severed estate. As within many areas of the Marcellus Shale, one owner may own the surface of the land, while someone else owns the minerals beneath. This situation can lead to problems for horizontal drilling because of the large well pad operations that are necessary for production to occur.[35] This is because the mineral estate within a severed estate is the dominant estate and the surface is the subservient estate.[36] This arrangement allows mineral owners to possess an implied easement of surface usage to develop their minerals, which means the surface owner with no mineral rights has limited opportunities to object.[37] This implied easement is not boundless, though, because mineral owners must not create a substantial burden to the surface owner even where surface use is "reasonably necessary" for production.[38]

For traditional drilling, there were few limits placed on those seeking to extract minerals. However, because horizontal drilling has not been used on such a large scale until recently, there is (at

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32. *Absolute Banana,* N.Y. TIMES (Dec. 23, 1993), www.nytimes.com/1993/12/23/opinion/l-absolute-banana-756593.html. "NIMBY" is an acronym standing for "Not In My Backyard," and "BANANA" is short for "Build Absolutely Nothing Anywhere Near Anyone (or Anything)." *Id.*

33. Dawkins et al., *supra* note 5, at 596.

34. *Cf. id.* (discussing conflicts between surface owners and mineral owners that should not exist when the owner of each is the same); Karen Cox & Joshua P. Fershee, *Forced Pooling and Dispute Resolution*, WVU Extension Service Publications, http://anr.ext.wvu.edu/r/download/222182 (Nov. 2015) (stating, "[t]hose who enter leases voluntarily should negotiate the protections they want in their leases.").

35. *Id.* at 597.

36. FERSHEE, *supra* note 18, at 79. "Dominant Estate: A parcel of real property that has an easement over another estate (the servient estate). Mineral rights, such as those to extract coal, oil, and gas, are generally dominant to the surface estate, with an implied easement to reasonable use of the surface and subsurface to access the minerals." *Id.*

37. *Id.*

38. Dawkins et al., *supra* note 5, at 600.

least) some question as to whether it meets the test as being "reasonably necessary" for surface use. To completely understand the rights of ownership within severed estates it is thus important to discuss both expressed rights and implied rights.

The emphasis of this part is on surface use issues associated with horizontal drilling, the development of the common law in West Virginia, and the legislative measures regarding surface use. Initially, a brief introduction of property rights is required to understand mineral development as it pertains to surface use. Next, the substantive rights of both mineral owners and surface owners in severed estates will be examined. Afterward, a detailed analysis of claims involving surface use will be examined to highlight the courts' stance in matters involving mineral development and surface use. Finally, the focus will be on legislative measures that have been enacted to provide surface owners compensation for surface damages caused by the development of minerals. The West Virginia legislature has passed laws seeking to respond to the problems of mineral development in the Marcellus Shale,[39] and an overview of these efforts follows in the next section.

C. Express and Implied Rights

As one might guess, severed estates are generally formed by one party reserving or conveying only the mineral estate.[40] These reservations can be found in severance instruments. These instruments usually come in the form of a lease, will, or deed. The granting instrument can either provide a list of expressed rights to the mineral owner or just have a broad general description of the rights of mineral ownership. In some instances, expressed rights will be absent from the granting instrument. In such cases, courts have held that certain implied rights accompany mineral ownership.[41] Implied rights will be discussed in further depth in below.

A common problem affecting everyone from surface owners to industry groups is that many severance instruments were written more than one hundred years ago and do not contain any explicit language granting the mineral owner the right to access the surface.[42] For example, a typical deed reserving mineral rights

39. W. Va. Code Ann. § 22-6A-2 (West 2015).

40. FERSHEE, *supra* note 18, at 79.

41. Dawkins et al., *supra* note 5, at 598.

42. *See* Jason Proctor, Note, *The Legality of Drilling Sideways: Horizontal Drilling and Its Future in West Virginia,* 115 W. VA. L. REV. 491, 499–500 (2012) (noting that "land owners in West Virginia began to separate surface and mineral rights" and that the court later held that owners of mineral rights

might state: "excepting and reserving to the grantor herein all right and title to the oil and gas underlying said property." Such a reservation clause makes no reference to the mineral owner's ability to use the surface in developing minerals.

Further exacerbating the problem, instead of clarifying the issue of surface use, many subsequent deeds will only reference the prior reservation. An example of a chain title reference contained in a deed might read as follows: "subject to any and all exceptions, reservations, restrictions, easements, rights-of-way and conditions as contained in prior deeds of record in the Grantor's chain of title."

As these clauses show, neither of the deeds in the chain of title contained an expressed grant for the mineral owner to have access to the surface. This situation becomes even more challenging with deeds executed decades ago because no one can distinguish the exact intent of the parties at the time the deed was executed. Ultimately, the court is left to interpret the rights of both the mineral owner and the surface owner in such situations.[43] In contrast to the simplification of usual reservation clauses, leases prepared by oil and gas companies will typically contain an expressed right of access. For companies, the right of access terms in leases is intended to be all encompassing and cover all the ways in which producers might want to use the surface. For example, an oil and gas lease could contain a section that reads as follows:

> Lessor, in consideration of Ten and No/100 Dollars and other good and valuable consideration, receipt of which is hereby acknowledged, and of the covenants and agreements of Lessee hereinafter contained, does hereby grant, lease and let unto Lessee the land covered hereby for the sole purpose and with the exclusive right of exploring, drilling, mining and operating for, producing and owning oil, gas, sulphur and other liquid or gaseous hydrocarbons produced in association with oil or gas, together with the right to make surveys on said land, lay pipe lines, [establish and utilize facilities for the subsurface disposal of saltwater and other liquid wastes produced from the leased premises,] construct roads and bridges, build tanks, and other structures on said land reasonably necessary for Lessee's operations in exploring, drilling for, producing, treating, and transporting said minerals produced from the land covered hereby[, and the non-exclusive right to conduct seismic surveys thereon].[44]

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can use the surface to access minerals under certain circumstances); *see also* Phillips v. Fox, 458 S.E.2d 327, 332–34 (W. Va. 1995) (comparing situations where deeds, written at times like 1904, do not provide for extraction of minerals, with situations where deeds provide for extraction).

43. Dawkins et al., *supra* note 5, at 599.

44. Texas Oil and Gas Accountability Project, *Sample Oil and Gas Lease and Surface Use Agreement*, 31, www.earthworksaction.org/files/publications/

The above lease terms provide the gas producer an expressed right of access to use the surface in developing minerals. A lease like the one above could be executed by a property owner who owns both mineral and surface or by a mineral owner of a severed estate.[45] Recall that when only the mineral owner is involved, the executed lease is only between the mineral owner and gas producer, and it does not include the surface owner.[46] As such, the surface owner is not involved in the initial lease agreement even though the surface can be used by the gas producer following the lease.[47] Accordingly, the mineral owner is giving to a gas company or third party the right to access the surface owner's property and as well as the right to perform operations necessary to develop the mineral estate.[48]

This is the point where a court may become involved because of a conflict involving a gas company's use of the surface.[49] Ultimately, the signed lease agreement does not completely control the company's ability to utilize the surface. Instead, a court will likely be required to analyze the implied rights granted to the mineral estate at severance.

As described above, in many severance deeds there are simply no expressed rights describing if and by what means a mineral owner can use the surface.[50] As such, courts have been left to interpret whether mineral owners have an implied easement to use the surface to obtain their minerals.[51] This often happens after a mineral owner has signed a lease with a gas company and mineral development begins on the surface owner's land. In dealing with such disputes, West Virginia courts have generally examined implied rights either under a multidimensional or a unidimensional approach.[52] The two different approaches have diverse methods of analysis and some courts impose a hybrid approach.

Texas-Sample-Model-Gas-Lease_201106.pdf (last visited Mar. 11, 2016) (brackets in original).

45. Proctor, *supra* note 42, at 499.

46. *Id.*

47. *Id.*

48. *Id.* at 503.

49. *Id.*

50. *Cf.* Coffindaffer v. Hope Nat. Gas Co., 81 S.E. 966, 966 (W. Va. 1914).

51. *See, e.g.*, Buffalo Min. Co. v. Martin, 165 W. Va. 10, 16 (1980) (stating that where a severance deed contains broad, nonspecific rights for surface use, "courts will be inclined to imply compatible surface uses").

52. Dawkins et al., *supra* note 5, at 598.

1. Multidimensional Approach

The multidimensional approach looks specifically at weighing the benefits derived to the mineral owner against the damages to the surface owner.[53] Many consider the multidimensional approach to be a "due regard analysis" balancing benefits to the mineral owner with the detriment to the surface owner.[54] Under this approach, the cost of burdening the surface estate is weighed directly against the benefit of developing the mineral owner's estate.

2. Unidimensional Approach

The unidimensional approach focuses primarily on the necessity and convenience of the mineral owner in developing minerals.[55] The sole focus is on the mineral owner's capability to produce the underlying minerals by utilizing surface area.[56] Yet the unidimensional approach does have limitations on what operations a mineral owner can perform on the surface. Following this approach, courts under the unidimensional approach have limited the implied rights of mineral owners to actions that are reasonably necessary for mineral development.[57] In attaching the reasonably necessary limitation on surface use, judges (along with juries) usually have to conduct evidentiary findings for specific facts in each individual case.

D. The Dominant Estate Within a Severed Estate

As is the norm throughout the United States, West Virginia is a state that allows property rights of a parcel of land to sever into two separate and distinctive estates.[58] Thus, a severed estate is created with one person or entity having title to the surface, while another person or entity owns some or all of the mineral rights below. Because of the necessary operations involved in developing minerals, the mineral owner often must be allowed access to the surface.[59] Implicit in the assurance that a mineral owner can use the surface to develop minerals is the concept that a mineral estate is the dominant estate within a severed estate.[60] As a

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53. *Id.*
54. *Id.*
55. *Id.*
56. *Id.* at 599.
57. *Id.*
58. W. Va. Code Ann. § 36-1-9 (West 2015).
59. Dawkins et al., *supra* note 5, at 596.
60. FERSHEE, *supra* note 18, at 79.

practical matter, this view of property rights within severed estates is sensible. Simply put, if a mineral owner could not utilize the surface to develop minerals, ownership of a mineral estate would be valueless.[61] The principal governing that a mineral estate is the dominant estate is accurately described in 1-3 Kuntz, Law of Oil and Gas § 3.2, which states the following:

> In states following the ownership theory, the severance of oil and gas rights from the surface ownership creates a mineral estate which is entirely separate and distinct from the general or surface estate in the land. After such separate estates have been created, the owner of the surface estate and the owner of the mineral estate are not cotenants. Their relationship is more like that of adjoining landowners, and there is no privity of estate between them, except that privity which might exist by virtue of the mutually dominant and servient nature of their respective estates. The mineral estate is dominant in that the owner has the implied right of access, the right to use so much of the surface and substances as may be necessary to the enjoyment of the mineral estate. The surface estate is servient in that it is correspondingly burdened.[62]

The United States Supreme Court has held that the mineral estate is the dominant estate.[63] Although that case surrounded the use of federal land, it involved issues of surface use and mineral development.[64] Specifically, the Supreme Court held that a surface owner could only continue to use the surface in manners that were generally compatible with the mineral owner's usage.[65] In doing so, the Supreme Court made it clear that the mineral estate is the dominant estate.[66] Because mineral development cannot be accomplished without the mineral owner having access to the surface, the Supreme Court reasoned that the mere existence of a severed estate means that separate mineral ownership creates a dominant estate.[67]

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61. Proctor, *supra* note 42, at 499.

62. 1 EUGENE KUNTZ, A TREATISE ON THE LAW OF OIL AND GAS 3.2 (Matthew Bender, Rev. Ed.) (Lexis Nexis 2015).

63. Kinney-Coastal Oil Co. v. Kieffer, 277 U.S. 488, 504 (1927).

64. *Id.*

65. *Id.*

66. *Id.*

67. *Id.*

II. REASONABLE NECESSITY IN HYDRAULIC FRACTURING

A. The Contemplation of the Parties Requirement as It Pertains to Horizontal Drilling

1. West Virginia-Pittsburgh Coal Co. v. Strong

Looking into the West Virginia common law of what surface uses are deemed to be reasonably necessary, it is important to note that the courts give a great deal of deference to mineral owners, even though there are certain activities that are strictly prohibited. That is, the Supreme Court of Appeals of West Virginia is not inclined to find activities that completely destroy the surface to be a reasonably necessary use.[68]

A case illustrating this point is the *Strong* case. In *Strong*, the court was forced to determine whether a coal company could extract coal by means of strip mining, when the severance of the subject mineral rights was executed before the technique of strip mining was established.[69] The coal company argued that the mineral owner was granted the right to strip mine because the severance deed executed in 1904 granted the right to enter upon the surface for purposes of excavating and removing coal.[70] However, the 1904 deed placed a duty on the mineral owner to pay the surface owner $100 per acre for surface area that was used and occupied during mining.[71] In dismissing the coal company's argument, the Supreme Court of Appeals of West Virginia reasoned that use and occupy does not equate to total destruction.[72] For this reason, the court found that the parties did not intend for the mining contemplated in the 1904 deed to include strip mining or any other mining technique that completely destroys the surface.[73] Some have argued that the *Strong* decision is potentially germane to horizontal drilling and hydraulic fracturing; like strip mining, horizontal drilling and hydraulic fracturing are advanced technologies that did not exist at the time many gas leases or mineral severances were executed.[74]

Although no one can dispute that horizontal drilling operations are indeed technological advances, it cannot be said that such operations completely destroy the surface. The size of a

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68. West Virginia-Pittsburgh Coal Co. v. Strong, 42 S.E.2d 46, 49 (W. Va. 1947).

69. *Id.*

70. *Id.* at 48.

71. *Id.*

72. *Id.* at 49.

73. *Id.*

74. Proctor, *supra* note 42, at 502-03.

horizontal drilling well pad[75] is of no comparison to the extensive encompassing surface use of strip mining.[76] Additionally, horizontal well pads are reclaimed in a manner that returns the occupied surface area to a state that is substantially comparable to how the surface was before the operations began.[77] However, like *Strong,* where the court found that the parties in 1904 could not have contemplated that the method of strip mining would be implemented, one could argue that similar parties who severed estates long ago did not contemplate the implementation of horizontal drilling. Thus, the argument goes, like strip mining, horizontal drilling operations should not be permitted on severed estates held by dated leases.[78]

A *West Virginia Law Review* article takes this exact position by stating:

> This "contemplation of the parties" requirement has an obvious connection to horizontal drilling. In *Strong*, the mining company wished to use the new technique of strip mining, a mining practice that had not been conceived at the time the instrument granting the mining rights was executed. The Court did not allow strip mining to take place because the parties to the severance deed could not have contemplated the technique or the burdens imposed by it at the time of the deed's execution. If the Court today were to apply this principle, and nothing more, to the question of whether horizontal drilling should be permitted under leases executed before the technique became commonplace, it would have no choice but to ban horizontal drilling under these circumstances.[79]

This, however, is not an accurate assessment of the intent behind the contemplation of the parties' principle. First, the additional burden imposed by strip mining is not a similar burden to the one imposed by horizontal drilling and hydraulic fracturing. Such an analogy is a significant overstatement of the processes. The total destruction of the surface caused by strip mining is not an apt comparison to the substantial, but largely temporary,

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75. Elizabeth McGowan, *Fracking's Environmental Footprint to Transform Pennsylvania Landscape*, Reuters (Apr. 25, 2011, 3:30 AM) www.reuters.com/article/idUS308837987220110425 (stating that each horizontal well "drilling pad covers a relatively reasonable 3.1 acres," with an overall footprint of approximately 8.8 acres).

76. Ken Ward Jr., *Study Puts Strip-Mining Damage in Perspective*, The Charleston Gazette (Sept. 10, 2013), www.wvgazette.com/News/201309110198 (mentioning that "[a] one-year supply of coal would require converting about 310 square miles of the region's mountains into surface mines, according to the study.").

77. *See generally*, Jeff Skousen & Paul Ziemkiewicz, Reclamation of Marcellus Shale Drilling Sites in West Virginia, West Virginia University, http://anr.ext.wvu.edu/r/download/104190 (last visited Mar. 14, 2016).

78. Proctor, *supra* note 42, at 503.

79. *Id.* at 502–03.

surface disturbance of horizontal drilling operations.[80] Second, the analysis implies that the difference between underground mining and strip mining is analogous to the difference between vertical drilling and horizontal drilling.[81] This analogy, too, fails because the comparison between underground mining and strip mining reveals that the first operation involves relatively modest surface disturbance while strip mining is predicated on removing the entire surface.

Vertical drilling and horizontal drilling both require surface area to construct well pad sites.[82] Although horizontal well pads are four to five times larger in size compared to vertical wells, this difference in surface disturbance cannot be linked to the enormous variation of surface disturbance between underground mining and strip mining.[83] Additionally, a large tract such as the one at issue in *Strong* would actually endure less surface damage if developed through horizontal drilling instead of vertical drilling.[84] Because vertical drilling can only target pockets of gas, to develop a large tract multiple well pad sites would be necessary to adequately extract all the minerals.[85] However, through horizontal drilling all the underlying gas on a large tract could be targeted through the implementation of only one well pad.[86] At best, one could argue there are some tracts of land that are small enough that the parties did not contemplate this type of surface disturbance that horizontal drilling and hydraulic fracturing require, but this is not likely to be an issue because a tract that small would likely not be sufficient to get a drilling permit. For these reasons, the surface use analysis connecting strip mining to horizontal drilling was flawed.

The only reasonable connection between strip mining and horizontal drilling is that both methods of mineral extraction are technological advances. This reason alone, however, is not enough to conclude that a court following the precedent in *Strong* would prohibit horizontal drilling when the deeds or leases involved were executed before the method became common. Rather, this analysis misguidedly emphasizes that the court ruled solely on the issue of technological advances.[87]

Such a rule would deliver absurd results counter to public policy. For example, if a new technological breakthrough

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80. McGowan, *supra* note 75 (noting that a horizontal well pad can extract natural gas from hundreds more surrounding acres as a vertical well pad).

81. *See id.*

82. FERSHEE, *supra* note 18, at 121.

83. McGowan, *supra* note 75.

84. *Multiple Horizontal Wells*, *supra* note 29.

85. *Id.*

86. *Id.*

87. Proctor, *supra* note 42, at 502–03.

permitted the mining of coal to be performed by microscopic transportation resulting in no surface damage, the method would be disallowed on lands with dated leases solely on the grounds for being a technological advance. This result would be illogical and counter to the interests of the surface owners because the new technology would actually cause less damage to the surface than previous methods.[88] Under the unforeseen technology rationale, a 1904 deed would not allow coal mining using mechanized drilling equipment instead of people because the technology was simply not conceivable at the time the deed was entered. This is clearly erroneous.

Furthermore, horizontal drilling, writ large, actually damages less surface area as compared to vertical drilling overall.[89] The real point of the *Strong* case was less about the process used and more about the harm reasonably contemplated to the surface. Specifically, the court held that strip mining could not be a reasonably necessary use under the 1904 lease terms because the parties at the time could not have contemplated mining techniques that would completely destroy the surface.[90] As such, the distinction the court found in *Strong* would not be appropriately applied to create a blanket prohibition to horizontal drilling and hydraulic fracturing.

A court applying the *Strong* decision should still find that horizontal drilling is, in many (if not most) cases, a reasonably necessary use of the surface because its operations do not completely destroy the surface.[91] Though a new extraction process may create a larger temporary disturbance than what might have been expected in 1904 for each well, the disturbance from horizontal drilling and hydraulic fracturing is often substantially less than what might have occurred had multiple wells been drilled on the land in 1904 because new technologies and spacing regulations now limit surface disturbances in comparison to the old drilling methods.[92] Thus, the "contemplation of the parties" includes what would have been deemed a reasonable harm to the surface when the lease was entered,[93] but does not limit the possible extraction processes used to those processes available on the date the deed or lease was created. The question, then, is whether the extraction process used causes a harm to the surface

88. *Multiple Horizontal Wells*, *supra* note 29.

89. *Id.*

90. *Strong*, 42 S.E.2d at 49.

91. *Id.*

92. *See* McGowan, *supra* note 75 (noting that "[o]ne vertical well on a single pad can 'drain' natural gas from, say, 10 to 80 acres. But a heftier pad with numerous vertical wells to accommodate far-reaching horizontal drilling technology can pull in gas from 500 to 1,000 acres.").

93. *Strong*, 42 S.E.2d at 49.

that was reasonably contemplated or whether the harm to the surface is unreasonable based on the contemplation of the parties.

2. Lowe v. Guyan Eagle Coals, Inc.

Another West Virginia case involving the issue of whether a new technology or method overburdened a surface estate is the *Lowe* case.[94] Like the *Strong* case, the main issue before the court in *Lowe* was whether, at the time of severing the mineral estate in 1902, the parties involved contemplated a boundless right of way.[95] The trial court granted summary judgment in favor of the coal company who sought a right of way over the surface for uses of transporting equipment and employees to and from a strip mine.[96] The trial court held that because the mineral owner had used a right of way to transport coal from the previous deep mine across the surface for a number of years, the mineral owner was entitled to continued access even for strip mining activities.[97]

On appeal, the state supreme court overturned the grant of summary judgment on the grounds that the trial court had committed error by not conducting an evidentiary hearing.[98] Specifically, the court stated an evidentiary hearing should have been held to determine whether the mineral owner's use of the surface to transport coal was a reasonable use of the surface property.[99] The court remanded the case back to the trial court so that a jury could determine if the modern method of hauling strip mined coal was substantially different from what was contemplated in 1902 by the parties.[100] Additionally, the Supreme Court noted that the jury was permitted to assess damages for unauthorized use if it was determined that the coal company's access over burdened the surface owner's estate.[101]

A dramatic statement from *Lowe* is found in Syllabus Point Two, which states that "[n]o use may be made of a right-of-way different from that established at the time of its creation so as to burden the servient estate to a greater extent than was contemplated at the time of the grant."[102] Thus, the key factor for determining whether an intended use is reasonably necessary is whether the operation burdens the surface estate more than was

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94. Lowe v. Guyan Eagle Coals, Inc., 273 S.E.2d 91, 92 (W. Va. 1980).
95. *Id.*
96. *Id.*
97. *Id.* at 93.
98. *Id.*
99. *Id.*
100. *Id.*
101. *Id.*
102. *Lowe*, 273 S.E.2d at 91.

originally contemplated by the parties.[103] If the intended use substantially over burdens the property more than originally contemplated, the intended surface use is not reasonably necessary.[104] On the other hand, if the intended use is within the scope of burden that could have been expected at the time of contemplation, such surface use would be reasonably necessary.[105]

To some, this may appear to apply to operations related to horizontal drilling and hydraulic fracturing operations. However, such an assumption would be incorrect. This rule of law does not mean that the exact process used at the time the deed was created must be used. Nor does it mean that the exact same surface disturbance is all that is permissible. Instead, it means that future mineral extractions cannot create significantly different burdens than the ones that could have been expected when deed was created.

As previously discussed, horizontal drilling operations more often than not require less surface area to develop minerals as compared to vertical drilling operations.[106] Because of this, horizontal drilling operations will not overburden surface owners' estate more than vertical drilling, and thus such operations fall within the scope of burden of even old leases and severances.[107] Therefore, horizontal drilling operations are, in most cases, a reasonably necessary use of the surface.

B. The Reasonably Necessary Approach to a Mineral Owner's Implied Easement of Surface Use

Implicit in the mineral owner developing minerals is the right of access to the surface.[108] The mineral owner possesses a right of implied easement to access the surface and when necessary to perform operations in support of developing the underlying mineral estate.[109] Such access generally entitles the mineral owner to occupy as much surface area as reasonably necessary to develop his estate.[110] However, the mineral owner's utilization of the

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103. *See id*. (stating, "[N]o use may be made of a right-of-way, different from that established at the time of its creation so as to burden the servient estate *to a greater extent than was contemplated at the time of the grant*.") (emphasis added).

104. *See id*. at 93.

105. *See id*.

106. FERSHEE, *supra* note 18, at 121.

107. *Multiple Horizontal Wells*, *supra* note 29.

108. Dawkins et al., *supra* note 5, at 596.

109. FERSHEE, *supra* note 18, at 79.

110. *See id*. (explaining that mineral rights are dominant to the surface estate and are granted "reasonable use of the surface and subsurface to access the minerals.").

surface owner's land does have limitations. The United States Supreme Court, recognized this limitation on implied access when it held a mineral owner could use as much of the surface as reasonably necessary for the operations of removing, mining, and prospecting minerals.[111] As a general matter horizontal drilling operations would fall into the specific categories recognized by the United States Supreme Court. Along with fitting into the categories listed, horizontal drilling is a reasonably necessary use of the surface because it is the only feasible way to develop gas (i.e., access minerals) in the Marcellus Shale region.

1. Coffindaffer v. Hope Natural Gas Co.

An early case in West Virginia, involving a conflict between a surface owner and gas developer is outlined in *Coffindaffer*.[112] The court faced the question of whether a gas company had the right to build a roadway across a surface owner's land even though the lease signed by the mineral owner granted only the right "to bore and develop said land for oil and gas, with the necessary usual and convenient rights for said oil and gas development."[113] The roadway at issue was essential for the gas company in transmitting materials to the drilling location.[114] Without the materials, the drilling operations could not begin at the drill site.[115] Despite the need for a roadway to conduct drilling operations, the surface owner maintained that the gas company lacked the necessary rights to construct the road.[116]

The court held that the gas company had the right to build a roadway across the surface because such actions were needed to develop gas as described in the lease.[117] In doing so, the court created a rule establishing that injury necessarily inflicted by a mineral owner in the exercise of a lawful right does not constitute liability to the surface owner.[118] The court reasoned, "[t]he injury must be the direct result of the commission of a wrong," "if the defendant did no wrong, it is not liable, notwithstanding the injury."[119] However, a key fact in the *Coffindaffer* case was that the drill site was abandoned after the road way was built.[120] For this reason, the court stated in Syllabus Point Two that "[b]ut if,

111. Kinney-Coastal Oil Co. v. Kieffer, 277 U.S. 488, 504 (1927).
112. *Coffindaffer,* 81 S.E. 966.
113. *Id.* at 966.
114. *Id.*
115. *Id.*
116. *Id.*
117. *Id.* at 967.
118. *Id.*
119. *Id.*
120. *Id.*

after building the road, he abandons the contemplated exploration for oil and gas, before drilling a well, he is liable for injury to the land, caused by the building of the road, notwithstanding the landowner has no interest in the oil and gas under his land."[121] The decision focused its analysis on the reasonably necessary approach to surface use.[122] The court's analysis hinged on the gas company's convenience and necessity rather than the surface owner's rights.[123]

The court noted that if the gas company had completed its operations, or even drilled one hole in prospect of exploration, the surface owner would not have been entitled to recover damages.[124] This is because, when executed in good faith, the damages incurred on the surface would have been within the constructs of the gas lease.[125] If a mineral owner or gas company uses the surface in a manner that is for the purpose of developing minerals (whether or not that attempt is successful), liability for surface injury would not be proper.[126] However, if surface damage results from actions not associated with the attempted development of minerals, a gas company becomes liable for those surface damages.[127]

This model of surface damage liability is directly related to the issue of horizontal drilling operations. If horizontal drilling is exercised by a mineral owner properly for the development of minerals and damage to the surface occurs, such damage does not create liability for this good faith attempt at mineral development.[128] *Coffindaffer, as* applied to horizontal drilling and hydraulic fracturing, supports a finding that when exercised diligently, the processes are a reasonably necessary use of the surface.

2. Adkins v. United Fuel Gas

In determining whether horizontal drilling operations are a reasonably necessary surface use, it is also important to assess surface owner complaints of trespass involving drilling operations. West Virginia law provides that once an operator or mineral owner goes beyond the scope of reasonably necessary actions on the surface a trespass claim may be valid. The *Adkins v. United Fuel*

121. Coffindaffer v. Hope Natural Gas Co., 81 S.E. 966, 966 (1914).
122. *Id.* at 967.
123. *Id.*
124. *Id.*
125. *Id.*
126. *Id.*
127. *Id.*
128. *Id.*

Gas case dealt specifically with drilling operations conflicting with a surface owner's right to farm.[129] In *Adkins,* a surface owner brought a trespass claim against the mineral owner for damages to the surface caused by drilling operations.[130] The gas company had drilled a well in the center of a fifty-acre tract that the surface owner used to grow row crops.[131] Along with the drilling operations conducted on the surface, the gas company also constructed roadways and dug ditches to lay pipelines.[132]

After the drilling was completed and other operations ceased, the subject surface area was left unsustainable to grow crops.[133] The surface owner maintained that he was entitled to damages for loss of his crops, which resulted from the deprivation of his garden, alfalfa field, and standing corn crop.[134] The Supreme Court of Appeals of West Virginia agreed that the surface owner had sustained concrete injuries, but because the gas company had caused the injuries to the surface by my means of extracting, producing, and transporting the underlying minerals in a manner that was reasonably necessary, the court ultimately ruled in favor of the gas company.[135]

The precedent in *Adkins* suggests that horizontal drilling is a reasonably necessary use. Specifically, because horizontal drilling is the only means by which a mineral owner can economically extract and produce gas within the Marcellus Shale region, such operations on the surface must be reasonably necessary. In addition, because any injuries caused to the surface during horizontal drilling results from the extraction and production of gas, such surface use is reasonably necessary. Horizontal drilling operations will disturb the surface, at least to some degree, but these disturbances are inherent in the process of developing minerals.

3. Buffalo Mining Co. v. Martin

Turing to the West Virginia court's application of the reasonably necessary approach, it is important to focus on the implications of what operations are permissible on the surface. A case directly on point is *Buffalo Mining Co. v. Martin*.[136] In that case, there was a severed estate involving a dispute over surface

129. Adkins v. United Fuel Gas Co., 61 S.E.2d 633, 634 (W. Va. 1950).
130. *Id.*
131. *Id.*
132. *Id.*
133. *Id.*
134. *Id.*
135. *Id.*
136. Buffalo Mining Co. v. Martin, 267 S.E.2d 721 (W. Va. 1980).

use.[137] The Martin family owned the surface rights to the subject land and Buffalo Mining Company had acquired the mineral rights beneath.[138] Ultimately, Buffalo Mining Company sought an injunction against the Martin family to prevent the family from obstructing the company's intended operations.[139] The Martin family did not want the company to construct an electric transmission line on the surface of their land.[140] The company stressed that without constructing the electric lines, the company would not be able to ventilate the coalmine.[141] As such, the proposed construction of the electric lines was absolutely necessary for the company to mine the coal.[142] Eventually, the court ruled in favor of the coal company, affirming the trial court's grant of injunction, but not without examining the reasonably necessary approach in detail.[143]

The overall implications of the *Buffalo Mining* decision support a rule that a mineral owner must show that operations on the surface are reasonably necessary for the extraction of minerals and that the actions sought do not substantially over burden the surface.[144] In conducting its analysis of the reasonably necessary approach, the court distinguished two types of conflicts that occur between surface owners and mineral owners.[145] The first type of conflict arises where the mineral owner's activity has disturbed the surface negatively, but not completely.[146] The second type of conflict involves mineral owner actions that either destroy the surface or entails operations that are totally incompatible with the rights of the surface owner.[147] In doing so, the court recognized that surface uses that fall into the second category are generally not a reasonable and necessary use of the surface because such operations substantially over burden the surface.[148]

Following this reasoning, it would appear that horizontal drilling would not fall in the second category listed in *Buffalo Mining*. Specifically, horizontal drilling operations do not destroy

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137. *Id.* at 722.
138. *Id.*
139. *Id.*
140. *Id.*
141. *Id.*
142. *Id.*
143. *Id.* at 726.
144. *Id.* at 725.
145. *Id.*
146. *See id.* at 724 (stating, "[t]he issue here presented involves no claim of any widespread destruction of the surface, but whether the utilization of the surface . . . can be inferred as a reasonable use within the context of the severance deed language.").
147. *See id.* at 725 (citing *Strong*, 42 S.E.2d 46).
148. *See id.* (noting that "a right to surface use will not be implied where it is totally incompatible with the rights of the surface owner.").

the surface and are usually not completely incompatible with the rights of surface owners. Although there are certain circumstances where horizontal drilling operations would be contrary to a surface owner's rights, these situations are limited and do not satisfy a strict finding of incompatibility. As such, the common law applying the reasonably necessary approach in West Virginia supports the implementation of horizontal drilling in most circumstances.

4. Crowder v. EQT Production Co.

A recent trial court case in Doddridge County, West Virginia, is consistent with this reasoning.[149] In *Crowder v. EQT Production Co.*, two surface owners did "not dispute that the owner of the mineral tract underlying their property ha[d] the implied right to 'reasonable use' of their surface lands for well pads, roads, and pipelines to drill into, and produce gas from, but only from, the mineral tract underlying their surface lands."[150] Instead, the surface owners sued the oil and gas production company (EQT) for trespass for conducting horizontal drilling and hydraulic fracturing and related activities on their land for the purpose of extracting oil and gas from adjacent properties.[151] The court agreed, explaining that because "no such right [to use the plaintiffs' surface to drill neighboring tracts] was ever obtained, no

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149. Order Granting Plaintiff's Motion for Summary Judgment and Denying Defendant's Motion for Summary Judgment, *Crowder v. EQT Prod. Co.*, Civil Action No. 14-C-64, Circuit Court of Doddridge County, West Virginia (Feb. 19, 2016) (on file with author). This case has certified the following question to the West Virginia Supreme Court of Appeals:

> Where neither the mineral owner nor the mineral owner's lessees or agents have an express agreement from the surface owners (or their predecessors) by deed, lease, or other document to explore for and produce oil or gas from neighboring mineral tracts, is there any implied or other right to use a tract of surface land in order to explore for and produce minerals from neighboring mineral tracts that do not underlie the surface tract (other than by the natural migration of oil or gas to well bores drilled from the surface tract into its underlying mineral tract pursuant to the rule of capture)?

Order Certifying Question of Law, *Crowder v. EQT Prod. Co.*, Civil Action No. 14-C-64, Circuit Court of Doddridge County, West Virginia (Feb. 19, 2016) (on file with author). The Supreme Court of West Virginia, though, declined to docket the certified question. Sup. Ct. of W.V., Decisions, Notes, and Orders, Apr. 26, 2016, at 2, www.courtswv.gov/supreme-court/order-lists/spring2016/April-29-2016.pdf.

150. Order Granting Plaintiff's Motion for Summary Judgment and Denying Defendant's Motion for Summary Judgment, *Crowder v. EQT Prod. Co.*, ¶ 11.

151. *Id.* at ¶¶ 6, 13.

further inquiry regarding reasonable use is necessary."[152] In a footnote, the court went on to explain that even if there were an implied right, that right could "only be exercised where there was no substantial burden on the surface owner."[153]

The court is accurate in this assessment, and it is worth nothing that the "substantial burden" of hydraulic fracturing and horizontal drilling must be assessed based on the additional burden the surface owners experience because of the activities from extracting from the adjacent properties, not the total burden.[154] The court determined that "EQT's drilling activities constitute a cognizable, material, additional servitude on Plaintiffs' surface lands."[155] In this case, EQT admitted "that 62.5% of the nine horizontal well bores are outside the [relevant] Lease, while 32.5% are within the boundary of the [relevant] Lease that underlies Plaintiffs' surface lands."[156] Thus, a major portion of the oil and gas was being extracted from other plats of land, even though the 100% of the surface burden was borne by the plaintiffs.[157] This case, while reluctant to extend reasonable use to extraction from adjacent land, reinforces that horizontal drilling and hydraulic fracturing can be (and are probably presumptively) reasonably necessary to extract oil and gas where the right to extract oil and gas otherwise exists.

C. West Virginia's Legislative Reaction to Conflicts Involving Surface Use

The West Virginia legislature was one of the first states in the Union to consider passing a law that would ensure citizens can recover damages caused by mineral development.[158] In 1983, the legislature passed the state's first surface owners' damages law called the West Virginia Oil and Gas Production Damage Compensation Act.[159] Another act passed by the legislature intended to ease the tensions between surface use and mineral development was the Oil and Gas Wells Act enacted in 1994.[160]

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152. *Id.* at ¶ 22.
153. *Id.* at ¶ 22 n.4.
154. *See id.*
155. *Id.*
156. *Id.* at ¶ 12.
157. *Id.*
158. *See* Clifford B. Levine & Shawn N. Gallagher, *State and Local Regulation of Oil and Gas Operations: Drilling Through the Maze of Preemption, Severed Mineral Estates and Surface Owner Rights*, 29 Energy & Min. L. Inst. 11, at 364 & nn. 83 & 84 (2008), www.emlf.org/clientuploads/directory/whitepaper/Levine_08.pdf (citing similar statutes).
159. W. Va. Code Ann. § 22-7-1 (West 2015).
160. W. Va. Code Ann. § 22-6-1.

More recently, the West Virginia legislature has been proactive in enacting additional statutory measures to ensure surface owners would be protected from damages caused by oil and gas operations, emphasizing the issues of surface use and horizontal drilling. In doing so, the legislature passed the Horizontal Well Production Compensation Act, which is intended to regulate and control horizontal drilling operations.[161]

1. West Virginia Oil and Gas Production Damage Compensation Act

The West Virginia Oil and Gas Production Damage Compensation Act or "Compensation Act" as detailed by the legislature was passed "to provide constitutionally permissible protection and compensation to surface owners of lands on which oil and gas wells are drilled from the burden resulting from drilling operations commenced after [June 9, 1983]."[162] The legislature noted that the new modern methods of mineral extraction require more surface use than the methods commonly in used at the time that most mineral estates were either created or leased.[163] Additionally, the Compensation Act details that the language of the statute shall be interpreted for the benefit of surface owners notwithstanding whether the mineral estate at issue was separated from the surface estate.[164] Further, the statute shall be applied for the benefit of surface owners regardless of which estate entity signed the oil and gas lease for developing the minerals.[165]

Although the Compensation Act might have not initially contemplated the issues directly involving horizontal drilling practices, the statute nonetheless provides an ample structure to ensure surface owners can recover damages caused by drilling operations. The statute enables surface owners to recover damages up to two years past the date that the gas developer filed the notice of reclamation operations beginning.[166] To recover such damages, the surface owner must simply notify the gas developer of the damage amount requested and the gas developer must respond within sixty days by either making an offer or rejecting

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161. W. Va. Code Ann. § 22-6A-2.
162. W. Va. Code Ann. § 22-7-1(d).
163. W. Va. Code Ann. § 22-7-1(a)(2).
164. W. Va. Code Ann. § 22-7-1(d).
165. *Id.*
166. W. Va. Code Ann. § 22-7-5 (stating that "[a]ny surface owner, to receive compensation under section three of this article, shall notify the oil and gas developer of the damages sustained by the person within two years after the date that the oil and gas developer files notice that reclamation is commencing under section thirty, article six of this chapter.").

the surface owner's claim.[167] If the gas developer timely responds with a counteroffer, the surface owner may also elect to reject or accept the offer.[168] Section 3 of the Compensation Act, details what damages and expenses a gas developer is obligated to pay the surface owner for

> (1) Lost income or expenses incurred as a result of being unable to dedicate land actually occupied by the driller's operation or to which access is prevented by such drilling operation to the uses to which it was dedicated prior to commencement of the activity for which a permit was obtained or measured from the date the operator entered upon the land until the date reclamation is completed;
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> (2) the market value of crops destroyed, damaged, or prevented from reaching market;
>
> (3) any damage to water supply in use prior to the commencement of the permitted activity;
>
> (4) the cost to repair personal property up to the value of replacement by personal property of like age, wear and quality; and
>
> (5) the diminution in value, if any, of the surface lands and other property after completion of the surface disturbance done pursuant to the activity for which the permit was issued determined according to the actual use made thereof by the surface owner immediately prior to the commencement of the permitted activity.[169]

Ultimately, the total compensation to be paid must be agreed to by both parties involved. Additionally, the formula for calculating the associated damages must be approved by both parties.[170] As is apparent in the above section, the Compensation Act's broad text covers a large number of differing types of surface claims that could result from oil and gas operations. Although the act does allow surface owners to recover compensation for property damages without filing claims in court, a surface owner is not precluded from filing a suit.[171] Additionally, if the conflict is not settled within the sixty-day window, Section 7 of the act authorizes a surface owner to either file a suit seeking damages or seek compensation by way of arbitration.[172] Ultimately, the statutory scheme of the Compensation Act supports the development of minerals by horizontal drilling. On its face, the statute not only acknowledges that natural gas drilling operations

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167. W. Va. Code Ann. § 22-7-6.
168. *Id*.
169. W. Va. Code Ann. §§ 22-7-3(a)(1)–(5).
170. *Id* at § (a).
171. W. Va. Code Ann. § 22-7-4(a).
172. W. Va. Code Ann. § 22-7-7(a).

cause surface use problems, but also seeks to mitigate the conflicts through a statutory scheme.

2. Oil and Gas Wells Act

The Oil and Gas Wells Act was enacted in 1994 and, like the Compensation Act, it mainly regulated vertical drilling operations.[173] The Oil and Gas Wells Act simply lacked the teeth or the governing regulations to cover horizontal drilling operations. The statute was designed for the regulation of small vertical drilling operations and not intended to deal with overarching industry of horizontal drilling.

Horizontal drilling operations in West Virginia did not wait for a new law, and production of natural gas using the drilling process began in 2007.[174] Specifically, production accelerated dramatically from 0.2 million thousand cubic MCF in 2007 to 142 million MCF in 2011.[175] Early on, it was apparent that the regulations setup by the statute could not sufficiently govern horizontal drilling operations. For example, the statute, as written, lacked any regulations concerning hydraulic fracturing (or fracking),[176] the main drilling completion technique that makes horizontal drilling viable.[177] Responding to concerns from citizens, the West Virginia legislature tackled the issues surrounding horizontal drilling and passed the Natural Gas Horizontal Well Act discussed below.

3. Natural Gas Horizontal Well Act

On December 14, 2011, the West Virginia legislature passed a statute directly aimed at regulating horizontal drilling operations within the Marcellus Shale region.[178] The Natural Gas Horizontal Well Act or "Horizontal Well Act" applies specifically to wells drilled by the use of horizontal drilling.[179] Like the previous

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173. *See* W. Va. Code Ann. § 22-6-1 (mentioning the word "horizontal" only once throughout the entire act.).

174. *Which County Leads WV's Marcellus Production*, THE STATE JOURNAL, www.statejournal.com/story/19853093/which-county-leads-wvs-marcellus-production (last updated Nov. 17, 2012).

175. *Id.*

176. *Cf.* Vinson & Elkins, Shale & Fracking Tracker: West Virginia, http://fracking.velaw.com/west-virginia-hydraulic-fracturing-profile/ (last updated Mar. 2015) (stating that the Natural Gas Horizontal Well Control Act "establishes a permitting process for horizontal wells, requires additional studies, and authorizes WVDEP to adopt new rules.").

177. Tieman & Vann, *supra* note 3, at 1–2.

178. W. Va. Code Ann. § 22-6A-2.

179. *Id.*

discussed statutes, the Horizontal Well Act purpose is designed (at least in part) to benefit surface owners, regardless of whether the property rights involve a severed estate or lease executed by a mineral owner.[180] The Horizontal Well Act offers greater protections to surface owners than the previous statutes. Specifically, Section § 22-6B-1(b) of the Horizontal Well Act prohibits a surface owner from waiving compensation or damages by any provision in a lease, deed, or other document entered into after December 31, 2011.[181] This statutory provision protects surface owners from inadvertently waiving any possible property damages before drilling operations begin. By safeguarding surface owners from waiving damages, the statute not only ensures property damage claims will not be barred, but also prohibits unfair contract relations from industry representatives.

Along with providing a means for surface owners to recover property damages, the Horizontal Well Act also features provisions that inhibit surface conflicts from occurring. For example, the statute prohibits wells from being drilled within two hundred fifty feet of an existing water source intended for human or livestock consumption.[182] Another provision of the statute sets limits on how close horizontal drilling operations can occur in location of a house or barn.[183] Specifically, the statute mandates that a distance of six hundred twenty-five feet should exist between the center of a well pad and an occupied dwelling structure or a shelter used for livestock.[184] By setting these limitations on horizontal drilling operations the statute seeks to protect surface owners from adverse conditions of not only water contamination but general nuisances as well. It is worth noting here that there are significant questions as to whether these acts have reached the stated goal of protecting surface owners sufficiently.

As for permitting horizontal drilling operations, the Horizontal Well Act entails an all-encompassing permitting process with the West Virginia Department of Environmental Protection or "DEP."[185] Before filing for a permit with the DEP, a gas operator must first conduct surveys and inspections on the designated surface area.[186] Additionally, the statute mandates that the gas operator must notify the surface owner of such intended activities at least seven days, but no more than 45 days

180. § 22-6B-1(c).
181. W. Va. Code Ann. § 22-6B-1(b).
182. W. Va. Code Ann. § 22-6A-12(a).
183. *Id.*
184. *Id.*
185. W. Va. Code Ann. § 22-6A-7(a).
186. W. Va. Code Ann. § 22-6A-10(a).

prior to entering the surface owners land.[187] Further, the gas operator must inform any surface owner that has a water well, spring, or other water source located within one thousand five hundred feet of the center of the intended well pad site.[188] Included in the notice sent to all surface owners, should be a copy of the erosion and sediment control plan. Along with a copy of the erosion and sediment control plan sent, should be information detailing that the surface owner can contact the DEP to receive a copy of statutes and regulations governing gas operations.[189] All of the above requirements mandate communication and transparency between gas developers and surface owners. Because communication and transparency occur way before drilling operations begin, surface owners are given the opportunity to assert grievances and criticisms before such operations escalate to conflicts.

The Horizontal Well Act commands an elaborated erosion and sediment control plan.[190] Specifically, the statute has requirements pertaining to the methods of stabilization, drainage systems, and the types of reclamation that are allowable.[191] Additionally, submitted permits can be denied for numerous reasons, up to and including insufficiencies in reclamation plans.[192]

The permitting requirements are significant, and at least in part, support surface owner protection. The mission of the erosion and sediment control plan, for example, is to return disturbed surface areas back to their original state by methods of grading, seeding and planting.[193] As a whole, the Horizontal Well Act seeks to proactively protect surface owners from damages that could be caused by horizontal drilling operations and simultaneously these rules place limits on surface owner recovery. In doing so, the statute acknowledges that horizontal drilling operations will occur in the Marcellus Shale region and advocates a system to handle conflicts of surface use.

Under both statute and common law, horizontal drilling and hydraulic fracturing is a reasonably necessary use of the surface. First, the Marcellus Shale could never be economically developed without the implementation of horizontal drilling and hydraulic fracturing, and existing case law, along with statutory enactments, support horizontal drilling. As detailed above, the

187. *Id.*
188. W. Va. Code Ann. § 22-6A-10(b)(5).
189. W. Va. Code Ann. § 22-6A-10(j)(3).
190. W. Va. Code Ann. § 22-6A-7(c).
191. W. Va. Code Ann. § 22-6A-7(c)(1).
192. W. Va. Code Ann. § 22-6A-7(b)(15).
193. *See generally* Skousen & Ziemkiewicz, *supra* note 77.

West Virginia courts have continuously granted a great deal of deference to the mineral estate owner in developing underlying minerals. Additionally, the courts have made it clear that they will not rule in favor of a trespass claim for a surface owner unless the mineral owner is unreasonably acting outside the limitations expressed in a deed. Further, the courts have repeatedly held that a surface owner may only prevail when there is substantial damage that can be proven with a high degree certainty by demonstrable evidence. As such, the court system has placed a substantial burden on surface owners seeking damages caused by the development of underlying mineral rights, thus establishing a clear finding that when horizontal drilling operations are conducted appropriately, such operations are a reasonably necessary use of the surface.

The West Virginia legislature has supported a finding that horizontal drilling is a reasonably necessary use of the surface by the issuance of legislation intended to solve conflicts between surface owners and natural gas developers. Specifically, the legislation targeted problems involving horizontal drilling in a manner that was practical in addressing surface owner concerns. As such, in passing legislation intended to mitigate problems caused by horizontal drilling, the legislature was acknowledging and approving that horizontal drilling would occur in the Marcellus Shale region. The mere titles of the statutes passed support a finding that horizontal drilling operations are a reasonably necessary use of the surface.

Specifically, the Compensation Act, the Horizontal Well Compensation Act, and the Horizontal Well Act all were passed on the basis of providing benefits to surface owners in matters of horizontal drilling. The Horizontal Well Compensation Act and the Compensation Act provides an explicit means through which surface owners can recover compensation for property damages without filing claims in court. The statutes suggest to the courts that horizontal drilling is a reasonably necessary use even in decades old mineral leases or severed estates.[194] Overall, West Virginia statutes support the implementation of horizontal drilling to develop mineral rights within the Marcellus Shale region.

III. WHO OWNS WHAT?

Another significant challenge in the Marcellus Shale has been how to assess deeds and leases to determine who has a right to what. One recurring issue is the question of whether an interest holder has mineral rights or just royalty rights. Although parties

194. W. Va. Code Ann. § 22-6A-2.

often, of course, try to solve such problems through negotiation and settlement, litigation has become rather common.

A. Mineral Rights and Royalty Rights

The issues usually turn on the language of the reservation clause and granting clause. When someone has mineral rights, that person holds the rights to oil and gas in place.[195] This right contains executive rights, which includes the operating rights to explore and produce oil and gas.[196] A holder of the mineral rights also has the power to lease the executive rights of exploration and production to another party. In contrast, the holder of a royalty interest only has a right in the oil and gas if and when that oil and gas is produced by the owner of the mineral rights (thus, having no rights to lease).

Traditionally, the term royalty means "a lessor's share of the oil produced under a lease."[197] It has also been said that a royalty interest gives the holder "a share of production, if, as and when there is production, free of the cost of production."[198] "The concept of royalty always presupposes development or production of the mineral to which it relates."[199] Following is an example of a royalty clause:

> Should a well be found for producing gas only, the full consideration to Lessor for such gas well and its products shall be a rental [royalty] payable within 30 days after the expiration of each quarter beginning with the date when gas is marketed therefrom and continuing so long as gas is produced and marketed or used off the premises, equal to one-eighth (1/8) of the proceeds received by the Lessee . . . .[200]

In contrast, a mineral interest gives the holder the "right to enter the land to explore, drill, produce, and otherwise carry on mining activities."[201] The holder of the mineral interest also has the option to lease his or her operational right to explore, drill, and produce the mineral.[202] This right to engage in operations or to

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195. *See* Davis v. Hardman, 133 S.E.2d 77, 80–82 (W. Va. 1963) (citing cases noting that an interest in royalties, rentals, and income from minerals within a tract of land amounts to an interest in the minerals located in that tract of land.).

196. *See id.*

197. ROBERT T. DONLEY, THE LAW OF COAL, OIL AND GAS IN WEST VIRGINIA AND VIRGINIA § 162a (1951) [Hereinafter DONLEY, 1951].

198. PATRICK H. MARTIN & BRUCE K. KRAMER, WILLIAMS & MEYERS: MANUAL OF OIL AND GAS TERMS 922 (15th ed.).

199. McIntosh v. Vail, 28 S.E.2d 95, 97 (W. Va. 1943).

200. DONLEY, 1951, *supra* note 197, at § 159a.

201. Martin & Kramer, *supra* note 198, at 606–07.

202. *See id.* at 607.

lease that operational right is called the "executive right."[203] An example of language creating a mineral interest might be as follows:

> Grantor hereby reserves unto itself, its successors and assigns, any and all of the oil and gas and their constituents, sulfur, coal, lignite, uranium, and other fissionable material, geothermal energy, base and precious metals, rock, stone, gravel, and any other mineral substances presently in or under the [subject] premises described . . . .[204]

The case of *Davis v. Hardman* articulates the difference between a "royalty interest" and "an interest in oil and gas in place," the latter of which is, again, often known as a mineral interest.[205] In *Davis*, the court stated that the "distinguishing characteristics" of a royalty interest are:

> '(1) Such share of production is not chargeable with any of the costs of discovery and production; (2) the owner has no right to do any act or thing to discover and produce the oil and gas; (3) the owner has no right to grant leases; and (4) the owner has no right to receive bonuses or delay rentals.'[206]

In contrast, the court explained,

> 'the distinguishing characteristics of an interest in minerals in place are: (1) Such interest is not free of costs of discovery and production; (2) the owner has the right to do any and all acts necessary to discover and produce oil and gas; (3) the owner has the right to grant leases, and (4) the owner has the right to receive bonuses and delay rentals.'[207]

The term "royalty" has, however, also been used in West Virginia to describe a "grant, or exception, of title to the oil in place."[208] Where terms in the deed may be confusing, a court will look to the intent of the parties from the entire deed. It does not matter whether certain words are used, "the intent being the

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203. *See* Robert T. Donley, *Development of the Law of Coal, Oil and Gas From 1951 to 1971*, 74 W. VA. L. REV. 260, 276–77 (1972) [hereinafter Donley, 1972] (discussing Davis v. Hardman, 133 S.E.2d 77 (W. Va. 1963)).

204. Ohio Dep't of Transportation, Office of Real Estate, Forms, Mineral Rights Reservation Clause, www.dot.state.oh.us/Divisions/Engineering/Real Estate/Real%20Estate%20Forms/RE%2074-40-MR%20Mineral%20Rights%20 Reservation%20Clause.docx (last visited Mar. 14, 2016).

205. *Davis*, 133 S.E.2d at 81; *see also* Stan Ingram & Travis Connor, *Mineral vs. Royalty Distinction*, 26 (June 15, 2012), www.landman.org/docs/ educational-material-(pdf)/mineral-v-royalty-aapl-paper.pdf (stating that a mineral interest is also known as "oil and gas in place" in West Virginia).

206. *Davis*, 133 S.E.2d at 81 (quoting Mounger v. Pittman, 108 So. 2d 565, 566 (Miss. 1959)).

207. *Id.* at 81–82 (quoting *Mounger*, 108 So. 2d at 566).

208. DONLEY, 1951, *supra* note 197, at § 228.

matter to be considered. Nowadays we construe deeds as well as wills by the four corners and get at the intention, no matter that the word may not be entirely apt."[209]

B. Distinguishing Mineral Rights from Royalty Rights

The problem, not surprisingly, is that deed language varies, which can create questions as to whether a reservation clause reserved mineral rights or merely royalty rights. The difference between these two rights can be substantial because a mineral rights holder with the executive rights to allow drilling can be compensated with a "bonus payment" for the right to begin production, as well as received royalties for the product sold. A royalty owner, in contrast, cannot decide drilling should commence. A royalty owner simply gets compensated if and when production occurs.

For example, consider the following Sample Reservation Clause from a deed that "reserves and excepts from the operation of this deed and does not convey hereby the usual consideration of 1/8 royalty of the oil and natural gas saved and produced from each drilled well producing oil and natural gas used and marketed off site." Despite using the term "royalty," such a clause uses language that could be used to imply both mineral rights language and mere royalty language. Here, the clause likely created a right only to oil and gas if and when it is produced, but it could be argued it is a mineral right.

In determining whether a royalty interest or a mineral interest was created, courts often look to whether the language in the deed refers to all rights in the minerals in or under the ground or if the reference is to the minerals after extraction. Consider a recent summary of specific terms of construction for determining whether a deed clause has created a royalty interest or a mineral interest.[210] The summary's authors note that terms such as "in, on or under," when used alone, typically create a mineral interest.[211] The words "produced and saved" (in the past tense) have "consistently resulted in interpretation of a royalty interest."[212]

In our sample state of West Virginia, courts have consistently determined the term "produced" indicates the intent to create a royalty interest, and not a mineral interest in the oil and gas in place. In *McDonald v. Bennett*, the deed at issue stated, "[T]here is reserved and excepted from this conveyance 1/8 of all the oil and

209. Jackson v. Dulaney, 67 S.E. 795, 796 (W. Va. 1910) (quoting Preston v. White, 50 S.E. 236, 238 (W. Va. 1905)).

210. *See* Ingram & Connor, *supra* note 205, at 3–5.

211. *Id.* at 3.

212. *Id.* at 4.

gas in and underlying said tract of land that may be produced therefrom, and the right of ingress and egress for the purpose of utilizing the same . . . ."[213] The court determined that the conveyance provided a 1/8 right in the oil and gas produced, as opposed to the oil and gas in place, and that the rights of ingress and egress attached only to the right to retrieve the oil and gas once it was produced.[214] The use of the term "produced" in this instance, like the terms "drilled . . . and producing" in the deeds in question, makes clear the right is a royalty interest, and not a mineral interest (a right to oil and gas in place).[215]

Similarly, in *Davis v. Hardman*, the court explained,

> It is apparent from the words "when produced" that the parties were not speaking in terms of an interest in the oil and gas then in place, but rather of the royalty interest which would follow production of oil or gas, or both. If the language of the . . . deeds were treated as constituting a reservation of oil and gas in place, the words "when produced" would have to be regarded as meaningless surplusage. Such a construction also would be wholly out of harmony with a grant to the several grantees, their heirs and assigns of the right to lease the land for oil and gas purposes and to receive the bonuses and carrying rentals."[216]

Another West Virginia court stated that a deed reserving the "usual royalty of one-eighth of all the petroleum or oil in and underlying the tract of land hereby conveyed" might not have been deemed an interest in oil and gas in place had the term "when produced" been used.[217] It is worth noting that, in *Harris*, the reservation is even stronger than the Reservation Clause at issue because the deed in Harris reserved a right in "*all* of the petroleum or oil underlying" the land, yet the court still indicated that "when produced" may have eliminated the right to oil and gas in place. [218]

The Sample Reservation Clause states that grantor "reserves and except from the operation of this deed and do not convey hereby . . . the consideration for gas for each gas well drilled on said land and producing gas and used and marketed off premises

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213. McDonald v. Bennett, 164 S.E. 298, 299 (W. Va. 1932).

214. *Id.*; *see also* DONLEY, 1951, *supra* note 197, at 228.

215. *McDonald*, 164 S.E. at 299.

216. *Davis*, 133 S.E.2d at 91; *see also* Donley, 1972, *supra* note 203, at 276–77 (referring to *Davis v. Hardman* as "perhaps the most important oil and gas case decided in the Virginias in the last twenty years.").

217. Harris v. Cobb, 38 S.E. 559, 560–61 (W. Va. 1901) overruled on other grounds by Paxton v. Benedum-Trees Oil Co., 94 S.E. 472, 475 (W. Va. 1917) ("It might have been different if the reservation had been expressed, as appellants would have it,-that she 'reserved a one-half of the usual royalty of one-eighth of said oil when produced.'").

218. *Id.* (emphasis added).

. . . ."[219] The use of the term "producing" here indicates an interest in the gas after extraction (i.e., the well is "drilled . . . and producing" before the reservation is effective). Similarly, "marketed off site" indicates a subsequent attempted sale of the gas off the premises. The terms in the clause do not create an interest in the oil or gas in place (meaning the oil or gas where it sits in the ground).[220]

Similarly, in *McIntosh v. Vail*, the court considered a deed clause, which, after a reservation of "all oil and gas" to the grantor, stated "[b]ut, in event of oil or gas being developed on said land, said [grantee] or his assigns shall be entitled to one full sixteenth of all oil marketed and one half of the next proceeds from all gas sold from said land."[221] The court determined that "[t]he oil and gas right thus conferred upon the grantee takes the familiar form of a royalty, with which the courts and people of this State have been familiar for half a century."[222] The court further noted, "[g]as as having been developed on the premises," the grantee was thus "entitled to one-half the net proceeds of all of that mineral sold . . . ."[223] Although *McIntosh* did not determine whether the grantee had legal title to or merely an equitable right to "the oil and gas interest mentioned," the case notably does not suggest the grantee had any operational rights (e.g., a right to drill or lease) to the minerals in question.[224] Instead, the grantee took an interest in the minerals that had "been developed on the premises."[225] This language, is thus consistent with a royalty interest and not a mineral interest.

Further evidence that the term "produced" relates to a royalty interest can be gleaned from looking at a mineral lease between a mineral rights holder and a lessee (as opposed to a conveyance by deed). In a mineral lease, the mineral owner conveys his or her rights to the oil and gas in place to the lessee, in exchange for the right to receive royalties.[226] In *Goodwin v. Wright*, the court

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219. *Supra*, Part IV.B.

220. *See Davis*, 133 S.E.2d at 91 (stating that the words "when produced" mean "that the parties were not speaking in terms of an interest in the . . . gas then in place, but rather of the royalty interest which would follow production of . . . gas").

221. McIntosh v. Vail, 28 S.E.2d 95, 96 (W. Va. 1943).

222. *Id.* at 96–97.

223. *Id.* at 97.

224. *See id.*

225. *Id.*

226. *See* FRED BOSSELMAN, ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT 244 (3rd ed. 2010) ("[T]he lessor transfers the exclusive right to develop the oil and gas to the lessee in return for a cost-free share of production, called a royalty."); JOHN S. LOWE, ET AL., OIL AND GAS LAW 126 (4th ed. 2002) (stating that a mineral owner conveys to an oil and gas company the rights to explore or develop oil and gas).

explained that "the very purpose of the [mineral rights owner] in executing the lease is to have the oil and gas on the leased premises produced and marketed so that he may receive his royalty therefrom," on the other hand, "the purpose of the lessee is to discover and produce oil and gas in such quantities as will yield him a profit."[227] The Sample Reservation Clause uses the similar terms, providing that wells which are "producing oil and natural gas used and marketed off site," thus results in a royalty interest and not a mineral right.

IV. CONCLUSION

Surface use disputes related to horizontal drilling and hydraulic fracturing will continue to be an area of conflict within the Marcellus Shale region and around the nation. As case law evolves, it will likely continue to support the finding that horizontal drilling and hydraulic fracturing are a reasonably necessary use and the processes will continue to be used to develop minerals in West Virginia and around the country.

Legislators and regulators may choose to add surface owner protections and impose other measures to lessen the burden on impacted regions to ease the conflict between surface owners and mineral developers. Such efforts may, at times, be necessary to ensure continued economic development in shale regions. Communities, landowners, interest groups, companies, and governments would be well served to work together to seek balance and compromise in development-heavy regions. Although courts are well-equipped to handle individual cases, large-scale policy is better developed at the community level (state and local) than through the adversarial system.

227. Goodwin v. Wright, 255 S.E.2d 924, 925 (W. Va. 1979) (emphasis added) (finding that the term "produced" in an oil and gas lease means "produced in paying quantities").