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Underground Property Rights in Pennsylvania: Understanding Surface Ownership, Mineral Ownership, and Pore Space

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I. The Meaning of Land Ownership: Physical Immobile and Fugitive Resources

The ownership of real property—land and the structures attached to land—is often analogized to a bundle of sticks. Each stick represents one type of property right. These sticks include discrete rights such as the right to physically possess the property, the right to exclude others from the property, and the right to lease and convey away the property. Someone who owns real property (land and the structures attached to land) in *fee simple* has the strongest form of property ownership: they own property forever, and provided that none of the rights in the bundle of sticks have been conveyed away, they have the benefit of the full bundle of rights. The person who owns all of these property rights in fee simple is often referred to as the "surface owner" or the "fee owner." Surface owners can split up their fee ownership in several ways: they can give up certain rights in the bundle. For example, they can weaken the right to exclude by conveying easements that allow others to use the property. They can also sever off physical portions of the property, as discussed below. In these cases, surface owners are still fee owners but simply with more limited property rights.

Under the court-created (common law) *ad coelum* doctrine, a fee simple real property owner ("landowner" or "surface owner") owns the land from the surface of the land to the core of the earth and also owns from the surface "to the heavens," thus possessing air rights.[1] This means that the surface owner owns all immobile physical property—soil, rocks, and other physical property—extending from the surface to the core of the earth. Figure 1 shows the immobile resources owned by a surface owner when no portions of the property rights have been severed. (Mobile resources, including wind and substances below ground that have the capacity to migrate, are discussed below.)

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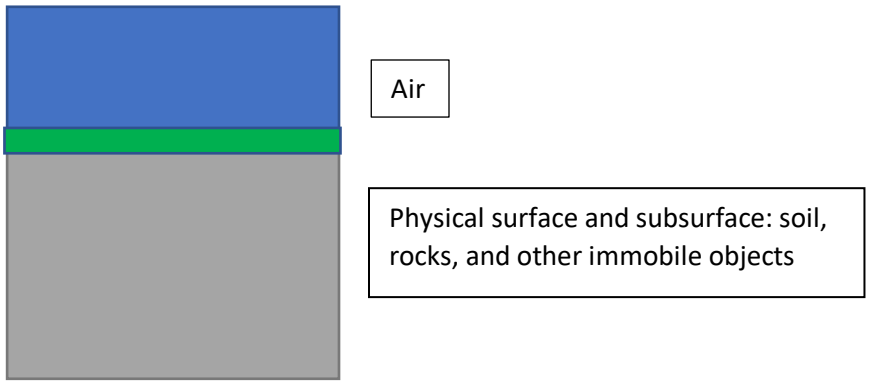
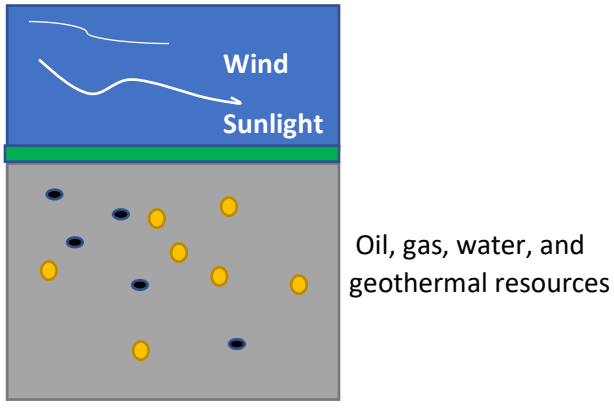
[1] Air rights are somewhat limited. Landowners typically may not sue airplane pilots for an unconstitutional "taking" of their property, for example, with the exception of certain repeated, low, loud flights. *United States v. Causby*, 328 U.S. 256, 266-67 (1946). Landowners also typically may not sever the air rights and separately lease or sell them. Some states, however, allow fifty-year conveyances of air "easements" for activities such as wind energy development. *See, e.g.*, S.D. CODIFIED LAWS 43-13-16. Some courts have also permitted the severance of air or "windpower" rights in the context of valuing land for condemnation. *See, e.g.*, *Contra Costa Water Dist. v. Vaquero Farms, Inc.*, 58 Cal. App. 4th 893, 893-94 (1997). In Texas, where the law is unclear, some landowners previously severed their air space and leased it to wind energy developers with the assumption that those wind energy developers would be able to use the surface as is reasonably necessary to develop wind energy infrastructure. This is a somewhat risky approach, in that it is not clear that Texas will apply oil and gas property principles to wind energy. More cautious wind energy developers simply lease the surface of the land. Ernest E. Smith & Becky H. Diffen, *Winds of Change: The Creation of Wind Law*, 5 TEX. J. OIL, GAS, AND ENERGY L. 165,176-77 (2009-10).

Figure 1. Physical Immobile Resources Owned by Surface Owners (No Severance)



An additional property resource includes substances that can travel through underground physical property, such as oil, natural gas, water, and geothermal resources such as heat.[2] These are called fugitive resources because, although temporarily trapped in the pores of rock, they are not motionless. They can move around, similar to wildlife, although the range of oil and gas movement underground varies substantially by formation. For example, in conventional oil and gas formations, a person drilling a well on one property can sometimes relatively easily drain away oil and gas from other nearby properties. Figure 2 shows these fugitive resources.

Figure 2. Physical Mobile or "Fugitive" Resources Owned by Surface Owner (No Severance)



Landowners who own the air, physical surface, and physical subsurface (rock, soil, etc.) are also deemed to own fugitive resources *while they are trapped in the pores of rock* in the property owned by the

[2] Water is a complex fugitive resource that rests in the pores of underground rock but is not discussed in this document. In Texas, the Supreme Court has applied the oil and gas "ownership in place" and "rule of capture" doctrines to ground water. *Edwards Aquifer Authority v. Day*, 369 S.W.3d 814 (Tex. 2012).

landowner or while they are flowing over the land, in the case of wind or sunlight.[3] The common law "rule of capture" provides that if neighboring property owners legally drill into their own properties and happen to drain away other landowners' minerals, no damages are owed to the landowner whose minerals have been drained away.[4]

In summary, landowners who own property own the air and the physical surface and subsurface (rocks, soil, and other immobile resources) as well as the fugitive resources that happen to be trapped in the rock pores of the physical property. The following section describes how landowners can break apart these rights and convey them away temporarily or permanently.

II. Severance

A landowner who owns the air space, physical surface of the land extending to the core of the earth, and "fugitive" resources can sever (break up) these different physical portions of the property and convey them to other owners. This severance can occur through permanent, fee simple conveyance through a deed—in which a landowner forever conveys away certain minerals, for example, or conveys away land and reserves minerals for herself—or a more temporary lease. When "severance" occurs, courts must determine exactly which property resources the landowner—who previously owned the property from the core of the earth to the heavens—has conveyed away. Several questions arise, including: 1) To what underground depth and width do physically immobile or fugitive severed resources extend?; and 2) Which physically immobile or fugitive resources has the landowner severed?

A. Severance of Specific Vertical or Horizontal Portions of Underground Property

Landowners sometimes only sever and convey away a specific horizontal layer or stratum of underground minerals for example (say, from the surface to 100 feet underground, or a layer ranging from 1,000 to

[3] There are three primary forms of ownership of fugitive (potentially mobile) minerals. Each state follows one of these approaches. In "ownership in place" states, mineral owners are deemed to have full possessory ownership of minerals as those minerals are sitting within the pores of rock. Pennsylvania is an ownership in place state. *See Westmoreland & Cambria Natural Gas Co. v. DeWitt*, 130 Pa. 235, 249 (1889) ("Water and oil, and still more strongly gas . . . . belong to the owner of the land and are part of it, so long as they are on or in it, and are subject to his control"); *Hamilton v. Foster*, 272 Pa. 95, 102 (1922) ("It has been many times decided that oil and gas are minerals, though not commonly spoken of as such, and while in place are 'part of the land . . . ."). But even in ownership in place states, ownership of fugitive minerals is qualified or "weakened" by the rule of capture. If someone else legally drills and drains away the minerals that were sitting in the pores, the owner of the minerals that were sitting in the pores has no legal recourse. *See Westmoreland & Cambria Natural Gas Co*., 130 Pa. at 249 (finding that when fugitive minerals "escape, and go into other land, or come under another's control, the title of the former owner is gone" but not specifically using the phrase "rule of capture"); *Briggs v. Southwestern Energy Production Company*, 224 A.3d 334, 352 (2020) (finding that when a well is drilled and hydraulically fractured legally on one property, the rule of capture applies). The second form of mineral ownership is "exclusive right to take." The mineral owner has the right to drill for minerals such as oil or gas but does not technically own those minerals as they are sitting underground. This type of ownership, too, is subject to the rule of capture. In practice, there is little difference between "ownership in place" and "exclusive right to take" aside from very technical differences. For example, if someone illegally drills into the mineral owner's minerals, in ownership-in-place states the mineral owner could sue for trespass, whereas in exclusive right to take states the mineral owner might have to sue for conversion—a different legal claim. The third form of mineral ownership is the "servitude" in Louisiana, in which mineral owners have a right to develop minerals for a specified number of years and then lose their right if they fail to act on it. LA. REV. STATS. §§ 31:21, 31:27.

[4] Briggs v. Southwestern Energy Production Company, 224 A.3d 334, 337 (2020).

2,000 feet underground). Landowners also sometimes sever and convey away a specific "vein" or deposit underground and do not specify the depth. For example, in one Pennsylvania Supreme Court case addressing the ownership of substances trapped within coal, the landowner had severed away "[a]ll the coal of the Pittsburgh or River vein underlying" a specific tract of land.[5]

Alternatively or in addition to horizontal severance, landowners sometimes only sever and convey away a small "vertical" chunk of their property, such as the minerals underlying the northwest quarter of their property. In the most complex conveyances, landowners sometimes sever a specific horizontal and vertical chunk, such as the minerals 0 to 100 feet underground, which underlie the northwest quarter of their property.

B. Severance of Specific Types of Immobile and Fugitive Underground Resources

The question of which physically immobile or fugitive resources the landowner has severed is also quite complex. Say a landowner writes a deed that conveys away the "minerals" or "oil, gas, and other minerals" underlying her property. What does the term "minerals" or "other minerals" include? The courts employ a range of tests to determine this. Most of these tests attempt to ascertain, to some degree, what the *intent* of the surface owner was when she severed a portion of her land. In Texas, historically the courts used a surface destruction test, which assumed that the surface owner conveying away (severing) minerals from her land ownership did not intend to convey away minerals that would require destruction of the surface. The courts had difficulty, however, deciding what "surface destruction" meant and ultimately created a specific list of minerals that were presumed to be conveyed away with a conveyance of "minerals" and those that were presumed to be retained by the surface owner.[6]

In Pennsylvania, the courts presume that when a landowner conveys away or reserves for himself a certain portion of property, this severance is relatively *narrow*. In *Butler v. Charles Powers Estate ex rel. Warren*,[7] the Pennsylvania Supreme Court applied the *Dunham Rule* (in modified form) to modern-day interpretations of deeds conveying away "other minerals." The *Dunham* Rule—nearly two centuries old—provides that "natural gas and oil . . . are not minerals because they are not of a metallic nature, as the common person would understand minerals."[8] The court in *Butler*, applying the *Dunham Rule*, determined that even in modern times, Pennsylvania courts must presume that a conveyance of "other minerals" does not include natural gas unless there is an express intent to convey natural gas.[9] In other words, even though lay people might now tend to include natural gas in their definition of "minerals," if someone wishes to sever the natural gas from their land and convey it to someone else, they must expressly indicate a conveyance or reservation of natural gas within a deed (or lease, if it is a temporary conveyance).

Another question arises, however, when a landowner severs and conveys away immobile minerals or rock, such as coal or shale, and there is a dispute about another substance contained within that mineral or rock. If a landowner, or someone owning severed immobile minerals, owns immobile minerals or rock, do they also own the substances trapped within the rock? In Pennsylvania, the answer is "sometimes." In a case called, in shorthand, *Hoge II,* the Pennsylvania Supreme Court determined that someone who owned

[5] U.S. Steel Corp. v. Hoge ("*Hoge II*"), 503 Pa. 140 (1983).
[6] Moser v. United States Steel Corp., 676 S.W.2d 99 (Tex. 1984).
[7] 620 Pa. 1, 65 A.3d 885 (2013).
[8] *Butler*, 620 Pa. at 23.
[9] *Butler*, 620 Pa. at 19-20.

coal underground also owned the methane trapped within the pores of the coal.[10] The holding was in fact even broader, stating: "[A]s a general rule, subterranean gas is owned by whoever has title to the property in which the gas is resting."[11] Under *Hoge II*, when the gas escapes out of the coal vein into the pores of other rock, the gas is then owned by the person who owns the other rock.[12]

Hoge II is not limitless in its determination that the owner of immobile rock also owns the fugitive resources trapped within that rock, however. The Pennsylvania Supreme Court in *Butler* rejected the assertion that the owner of shale also necessarily owned the natural gas trapped within the shale. The court distinguished *Hoge II* from the shale gas context, concluding that the court in *Hoge II* saw a meaningful difference between coalbed gas and other forms of natural gas.[13]

III. Pore Space: Ownership and Forced Ownership Transfer Through Pooling

This part explores the ownership of underground pore space, as opposed to minerals. States—specifically, state legislatures and state courts—define property law and therefore define who owns what types of property in the United States. Courts and legislatures in many U.S. states have specified who owns the pore space. The majority rule followed by state courts, called the "American Rule," specifies that the surface owner owns the pore space beneath the surface.[14]

A. Ownership

From the discussion in Part II, one now knows that a conveyance of "minerals" in Pennsylvania, without further detail, is presumed to be a conveyance of hard, metallic minerals. Any surface owner who owns land from which minerals have never been severed also owns all of the immobile (and fugitive) minerals underground. Additionally, someone who has received a conveyance of "minerals" in Pennsylvania definitively owns the immobile minerals and underground rocks. But the question remains: who owns the holes (technically called the "pores") within the immobile rocks? These holes include the air space within the rock and the "container"—the tiny rock wall around this air space, which creates a tiny open "pocket" within the rock.[15]

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[10] *Hoge II*, 503 Pa. at 147.

[11] *Hoge II*, 503 Pa. at 147.

[12] *Hoge II*, 503 Pa. at 147 (finding that when a landowner owns the rock surrounding the coal vein and coalbed gas escapes out of the coal vein into the surrounding rock, the landowner owns the migrated gas).

[13] *Butler*, 620 Pa. at 24.

[14] Ellis v. Ark. La. Gas Co., 450 F. Supp. 412, 421 (E.D. Okla. 1978); STEFANIE L. BURT, REED SMITH, LLP., WHO OWNS THE RIGHT TO STORE GAS: A SURVEY OF PORE SPACE OWNERSHIP IN U.S. JURISDICTIONS at 3, http://www.duqlawblogs.org/joule/wp-content/uploads/2016/07/Who-Owns-the-Right-to-Store-Gas-A-Survey-of-Pore-Space-Ownership-in-U.S.-Jurisdictions-.pdf.

[15] Some have even characterized pore space as the opposite of mineral because pore space is the "absence" of substance, although they also note that pore space would not exist in the absence of the physical rock around it. *See* Kevin L. Doran & Angela M. Cifor, *Does the Federal Government Own the Power Space Under Private Lands in the West? Implications of the Stock-Raising Homestead Act of 1916 for Geologic Storage of Carbon Dioxide*, 42 ENVTL. L. 527, 541 (2012):

> "[P]ore space is clearly not a mineral, but is rather the absence of something—a void constituted by surrounding structures. But while pore space is itself nothing, that which encapsulates the pore space is. This is an essential distinction. The matrices that create pore space and give if form—such as dolomite, limestone, lignite, and sandstone—are certainly mineral in character. Without these minerals, the pore space would not exist.

Given that original landowners, prior to severance, own *everything* under the *ad coelum* doctrine—the air above the surface, the surface, the underground immobile property, and fugitive resources that sit within the immobile property—the simple answer is that the surface owner also owns the pore space.[16] For example, a federal district court in North Dakota interprets an 1877 (or earlier) statute that reads "[t]he owner of land in fee has the right to the surface and to *everything* permanently situated beneath or above it" as meaning that "[i]n North Dakota, it is clear that the surface owner owns the subsurface pore space."[17] The court reached this conclusion based on the old *ad coelem* language in the North Dakota statutes, but in 2009 North Dakota had also enacted a statute that provided: "Title to pore space in all strata underlying the surface of lands and waters is vested in the owner of the overlying surface estate." The court read this specific pore space language as simply putting a "finer point" on the older *ad coelum* statute, affirming that the surface owner owns everything above and below the surface.[18] Also in North Dakota, even when a surface owner severs the minerals and conveys them to someone else, the surface owner continues to own the pore space.[19] North Dakota statutes expressly prohibit the surface owner from severing pore space from the surface estate.[20]

Similar to North Dakota, the Supreme Court of Montana interprets Montana's *ad coelum* statutory language ("[t]he owner of land in fee has the right to the surface and to everything permanently situated beneath or above it") to mean that the surface owner owns pore space in rocks below ground.[21] The court concludes: "The pore space beneath [the surface owner's] . . . property belongs to . . . [the] surface estate in the same manner that all the non-mineral material beneath the physical boundaries of [the surface owner's severed]. . . property belongs" to the surface estate. California follows the same rule.[22]

Many states have also specified through state statutes that the surface owner owns the pore space (absent express language to the contrary within a conveyance). This primer does not present a comprehensive review of state statutes, but to name a few examples, Indiana,[23] Kentucky,[24] North Dakota

[16] In property law terminology, the landowner is often referred to as the "surface owner" to distinguish her from any later "mineral owners" who might emerge when severance occurs.

[17] Mosser v. Denbury Resources, Inc., 112 F.Supp.3d. 906, 919 (D.N.D. 2015).

[18] *Mosser*, 112 F.Supp.3d at 919.

[19] Continental Resources, Inc. v. Fisher, 2021 WL 665102 at *6.

[20] N.D. CENT. CODE § 47-31-05.

[21] Burlington Resources Oil & Gas Co., LP v. Lang and Sons, Inc., 361 Mont. 407 (2011) (citing Montana Code Ann. 70-16-101).

[22] Cassinos v. Union Oil Co., 14 Cal.App.4th 1770, 1782–83 (Cal.App. 2nd Dist.1993).

[23] IND. CODE § 14-39-2-3. This statute specifying pore space ownership applies after June 30, 2022. It is part of a larger statutory chapter that addresses underground storage of carbon dioxide. Indiana makes clear that even where minerals and the surface estate were severed, the surface owner owns pore space after June 30, 2022, unless there was express language to the contrary in the conveyance creating the severance. Indiana Code § 14-39-2-3.

[24] KY. REV. STAT. ANN. § 353.800. Note that Kentucky, in which courts previously followed the minority "English Rule" and held that mineral owners owned pore space, does state that when minerals have been severed from the surface, "the pore space owner shall include all persons reasonably known to own an interest in the pore space." For a discussion of Kentucky courts' use of the English Rule and subsequent questioning of that rule, *see* BURT, *supra* note 14, at 7.

(as noted above),[25] Oklahoma,[26] Utah,[27] West Virginia, and Wyoming[28] all specify that surface owners own the pore space underlying the surface.

Some legal experts in oil and gas law take a similar approach to these statutes, and to the courts that use the *ad coelum* doctrine to confirm surface owners' ownership of pore space. Tara Righetti notes that the "the majority of courts have concluded that pore space is included as part of the surface estate."[29] Owen Anderson also concludes that the "the most likely 'owner' of the pore space is the surface owner" because of the *ad coelum* doctrine and the fact that "a property right not expressly conveyed [e.g., when the minerals are severed] is retained," among other reasons.[30] So when a surface owner who owns property from the heavens to the core of the earth conveys away minerals, the surface owner retains the underground pore space under this reasoning.

A small number of states take a different approach, however. For example, in Alaska, when a state issued patents[31] to land but reserved mineral rights, the reservation of mineral rights includes reservation of the pore space and storage rights.[32] Texas courts have also concluded that the mineral owner owns pore space, but more recent Texas cases might throw doubt on this conclusion.[33] This issue has yet to be decided in Pennsylvania. There is some language, however, suggesting that a Pennsylvania court might view the empty holes in non-valuable rock as belonging to the surface owner. For example, in *Chartiers Block Coal Co. v. Mellon*, the Pennsylvania Supreme Court found that after a large hole had been opened up in the ground following removal of a coal seam, the owner of that particular coal seam was not the owner of the hole.[34]

B. Compulsory or "Forced" Pooling

Beyond specifying who owns pore space, some states, such as West Virginia and Kentucky, also allow compulsory or "forced" pooling of pore space for carbon sequestration. Forced pooling involves the aggregation of underground property rights. The operator of a proposed underground operation, such as the extraction of oil and gas from a large underground reservoir or sequestration of carbon dioxide in a large underground facility, typically needs to pull together or "aggregate" numerous individual private

[25] N.D. CENT. CODE ANN. § 47-31-03.
[26] OKLA. STAT. tit. 60 § 6.
[27] UTAH CODE ANN. § 40-6-20.5.
[28] WYO. STAT. ANN. § 34-1-152.
[29] Tara Righetti, *The Private Pore Space: Condemnation for Subsurface Ways of Necessity*, 16 WYO. L. REV. 77, 79 (2016).
[30] Owen L. Anderson, *Geologic CO2 Sequestration: Who Owns the Pore Space?*, 9 WYO. L. REV. 97, 99 (2009), https://scholarship.law.uwyo.edu/cgi/viewcontent.cgi?article=1188&context=wlr.
[31] A patent in this context is the equivalent of a deed, but is conveyed by a governmental entity instead of a private owner.
[32] City of Kenai v. Cook Inlet Natural Gas Storage Alaska, LLC, 373 P.3d 473 (2016).
[33] Burt, *supra* note 14, at 2 (citing Mapco, Inv. v. Carter, 808 S.W.2d 262 (Tex. App. 1991); Emeny v. United States, 412 F.2d 1319 (Ct. Cl. 1969).
[34] *Chartiers*, 152 Pa. at 296-97 ("When the coal is all removed, the estate ends, for the plain reason that the subject of it has been carried away. The space it occupied reverts to the grantor by operation of law."). *See also id*. at 297 ("It cannot be seriously contended that, after the coal is removed, the owner of the surface may not utilize the space it had occupied for his own purposes, either for shafts or wells, to reach the underlying *strata*. . . . The position that the owner of the coal is also the owner of the hole from which it has been removed, and may forever prevent the surface owner from reaching underlying *strata*, has no authority in reason, nor, do I think, in law.").

property rights. These operators often encounter "holdouts" or non-consenting property owners who do not wish to convey their property rights to the operator. Many states allow oil and gas operators to apply to a state regulatory agency to force non-consenting property owners to convey their property to the operator for compensation. Some states allow forced pooling for carbon dioxide storage facilities as well. For example, the statutory language in West Virginia provides that if owners of at least 75 percent of the interests in pore space agree to use the pore space for a carbon dioxide storage facility, the 25 percent of remaining non-consenting owners can be forced to allow their tract to be included in the storage facility.[35] Kentucky allows forced pooling if at least 51 percent of the interests in the pore space has been voluntarily included in a carbon dioxide storage facility.[36]

IV. Conflicts Among Underground Owners on One Property

Even if in Pennsylvania the surface owner owns the pore space, there is a question involving the strength of property rights in pore space as compared to other uses. For example, it is possible that a surface owner might want to use pores for storing carbon dioxide, but a mineral owner or lessee with rights above, below, or beside the pore space might want to drill down through the pores to access oil and gas or inject wastewater (brine) into the pores. In this case, the mineral owner, at least under current common law doctrine, is likely to have the first right to the pore space, with important caveats.

To reiterate, if underground pore space is deemed to belong to the surface owner, other underground mineral rights are likely to take precedence over pore space use. This is because there is a longstanding common law rule in all fifty states that the owner (in fee or as a lessee) of mineral rights has the "dominant" property interest—dominant over the surface property. Both of these property interests are called "estates," so the typical terminology is that the mineral estate is dominant over the surface estate. Under the "reasonable use" doctrine, as long as mineral owners are using a surface owner's property interests in a manner "reasonably necessary" to access minerals, the mineral owners may do this without compensating the surface owner.[37] Some statutory provisions (surface damages acts, or acts with similar titles) have changed this rule to some degree in a limited number of states, but the rule remains as strong, clear court-created doctrine. Therefore, in a state such as North Dakota, even though the surface owner owns the pore space, oil and gas developers may use this pore space to dispose of brine produced from oil and gas drilling on the same property.[38] Indeed, a statute in North Dakota makes clear that North Dakota's statutory language specifying that the surface owner owns the pore space does not alter the dominance of the mineral estate over the surface estate.[39]

The only common law rule that would protect a surface owner from a mineral owner's reasonable use of underground pore space would be the accommodation doctrine, which provides that when a surface owner was using her property *prior to* the mineral owner's use of the property, and when there is a reasonable alternative that would allow the mineral owner to develop minerals without displacing the

[35] W.V. Code Ann. § 22-11B-19.
[36] KY. REV. STAT. ANN. § 353.806.
[37] *Chartiers*, 152 Pa. at 296 ("As against the owner of the surface, each of the several purchasers would have the right, without any express words of grant for that purpose, to go upon the surface to open a way by shaft, or drift, or well, to his underlying estate, and to occupy so much of the surface beyond the limits of his shaft, drift, or well, as might be necessary to operate his estate, and to remove the product thereof.")
[38] *Mosser*, 112 F.Supp.3d at 917.
[39] N.D. CENT. CODE ANN. § 47-31-08.

surface owner's use, the mineral owner must follow this reasonable alternative.[40] Therefore, if a surface owner stored carbon dioxide in pore space prior to a mineral owner wanting to use those pores, the surface owner would prevail under the accommodation doctrine, provided she could show that there were reasonable alternatives to, say, brine disposal or drilling in the pores. "Reasonable" alternatives include those that are established as industrial practices and are not exceedingly expensive. Pennsylvania has not expressly adopted the accommodation doctrine, however.[41]

If the pore space is deemed to belong to the mineral owner, the issue of pore space use versus other underground uses, such as oil and gas development, is more complex. For example, in *Chartiers Block Coal Co. v. Mellon*, the Pennsylvania Supreme Court concluded that the owner of an underground coal seam (one mineral owner) could not block another mineral owner (the owner of surface and of the unsevered natural gas and oil below the coal) from drilling through the coal to get to the natural gas and oil below the coal, particularly after the coal had been removed.[42]

[40] Texas follows this common law rule. For an explanation of the several cases establishing and broadening Texas's accommodation doctrine, *see Coyote Lake Ranch. v. City of Lubbock*, 498 S.W.3d 53, 61-62 (Tex. 2016).

[41] Belden & Blake Corp. v. Com., Dept. of Conversation and Natural Resources, 600 Pa. 559 (2009) (extensively addressing surface and underground rights but not mentioning or establishing an accommodation doctrine).

[42] Chartiers Block Coal. Co. v. Mellon, 152 Pa. 286, 296 (1893) ("The grantee of the coal owns the coal, but nothing else, save the right of access to it, and the right to take it away.").