Who Owns the Hole When the Salt is Gone? Storage Rights in Solution-Mined Cavities

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ABSTRACT

Whether it is called a cavern, a jug or a cavity, there is a space left when salt is removed from the earth. Until recently, nobody thought to ask questions about the ownership of that space. But with the advent of profitable storage, especially in solution-mined domes, the question has become important. The paper begins with an overview of the problem, giving examples of how the problem might typically arise and the economics likely to be encountered.

After this overview, the paper discusses the competing interests and some of the practical considerations. Among these are:

- *Those where the lessor is not involved in salt production or the storage of various substances, but the lessee is*
- *Those where one company produces salt and another uses the resulting storage space*
- *Those where characteristics of the particular dome prohibit dual use*
- *Controlling access*
- *The underlying theories of ownership*
- *Miscellaneous considerations, including negotiation tactics and the fact that many jurisdictions have not settled the question.*

The third and final section of the paper reveals the legal solution to the problem in several selected jurisdictions, including Germany, Canada, France and the United States. In the United States special attention is given to Kentucky, Oklahoma, Louisiana, Texas, Virginia and Illinois.

INTRODUCTION

Millions of years ago, nature began a process that has brought us to an interesting legal question. The primordial seas laid down deep salt layers over vast areas, and in many places that salt has pushed up into one of the most reliable geological structures anywhere, the salt dome. Salt domes have been formed worldwide and have been mined since the turn of the century.[1]

Solution mining is the process of pumping fresh water into these domes, letting it dissolve the salt, and pumping it out as brine. Typically that brine is piped to a nearby plant where the sodium chloride is used as chemical feedstock. The resulting caverns are good for more than storing stale brine; because of the plasticity and other properties of the salt that forms the cavern walls, they are excellent storage containers for crude oil, natural gas and other hydrocarbons. There is also a developing market for storing municipal waste and other substances. Engineers can design caverns to any convenient size up to about that of a city skyscraper, so lots of storage can result as the by-product of brining.

Now, the legal problems created by this fortunate engineering technology can be frustrating, precisely because the legal problems are often the only impediment to usage of this near-perfect storage facility. Some of these legal problems, such as those relating to environmental agencies, will not be addressed by this paper. In fact, only one, and yet a fascinating one, will be surveyed, namely, the question "Who owns the hole when the salt is gone?"

In all cases where storage is possible, the salt is not entirely gone. It forms the walls of the storage facility, and the cavern may still be useful for brining. Or, the brining capacity may be practically exhausted, and conversion to storage is done to extend the useful life of the cavern. With care, that useful life may be extended almost indefinitely. The "hole" we are talking about is the portion of the cavern inside the walls, which might presently contain stale brine, but which could contain valuable stored product if the legal problems could be resolved.

In virtually every jurisdiction, there are two classes of persons who have a claim to this "empty" space. One is the landowner, and the other is the mineral owner. As we shall see, that is a very simplistic way of saying it. Depending on the jurisdiction, we will see that what sounds like the mineral owner may actually be the landowner, or vice versa. Likewise, a party at interest may be designated one of the two but be given rights usually reserved to the other. Often the government has an ownership interest. After several attempts to generalize beyond this simplistic beginning, we have concluded that the subject may only be adequately covered jurisdiction by jurisdiction. We will therefore discuss the answer to our question for selected Canadian provinces, for several of the states of the United States, and for the Federal Republic of Germany.

OVERVIEW

So long as all rights related to a piece of property reside in the same person or corporation, the question we have posed does not arise. It is only when some of those rights reside in another party or parties, that courts must answer the question. Worldwide, courts have focused on one or more of six sub-questions to help them in answering our title's question. Those six sub-questions are:

1. What was the intent of the parties at the time the rights were created?
2. What are the horizontal dimensions of the various rights?
3. What are the definitions of "mine" or "mineral"?
4. Are the minerals "owned" or leased?
5. Are the minerals "owned" or merely subject to a right of search?
6. Are the minerals involved solid or fugacious (flowing)?

Now, depending on which of these sub-questions squeak loudest, one court's conclusion will be different from that of another court. We will see that English and Canadian courts try to define "mine," the Texas courts focus on fugacious, and so on.

CANADA

It is appropriate that we begin with Canada for alphabetical reasons, for reasons of etiquette, and for historical reasons. Gas was first stored in the Welland, Ontario field in 1915.[2] An excellent law review article[3] traces not only the Canadian approach before 1961 but the ancient English precedents as well. We suggest it as a beginning place for anyone researching the law of any jurisdiction with England in its heritage, including all those countries which were formerly colonies of Great Britain.

The ancient English cases give us a good introduction to the problem, and give insight into the differing treatments. Halsbury defined a "mine," for instance, as the *space* that is left after substances are removed.[4] That seems reasonable, but the definition omitted the fact that remaining minerals are themselves also in the mine. So another court defined a mine as anything below the surface of the earth.[5] But that definition won't work because it includes roots, animals in holes, perhaps fish, and worthless dirt. So the redefining process continues until today.

The earliest rule in Canada was the same as in England, namely, that the space remaining after removal of minerals was part of the mine.[6] Doubtless because of great political power of mine owners in England, the focus was on a definition of "mine," and the mineral owner had the right to grant storage.

More recently, that result has been subject to differing analysis in Canada. Probably it is still true as to the "owner" of minerals and the holder of a reservation of minerals. But, absent legislation to the contrary, a lessee of minerals would not generally have storage rights.[7]

The Canadian law is not nearly so cohesive as it may seem, however. In fact, there are at least six situations where the mineral owner may not own the storage:

1. We have already mentioned leases, which will probably be judged on their own terms, as the best expression of the intent of the parties. The "standard" lease makes it clear that the substances named in it are exclusive,[8] which would mean the mineral lessee would *not* have the right to storage. Likewise, in any other case where the parties have made their intent clear, that intent will no doubt prevail.
2. The cases that establish the dominance of a mineral title (as opposed to a lease)[9] contain some interesting language. The relevant English case[10] was approved in Alberta by a 1953 case,[13] which concluded that the mineral owner is entitled to "all that is not animal or vegetable, beneath the surface, with intrinsic value *apart from its bulk*." The part of that conclusion which we have underlined excludes such obvious exceptions (to the definition of mineral) as fill dirt. But one wonders, does the space that results when a cavity is empty have any value *apart from its bulk*? If not, then a court following this case would say the space belongs to someone other than the mineral owner. Frankly, that argument might be sound academically and historically, but we suspect the contrary thinking has been around too long to permit a look at its ancestry. However, there is a strong tendency in certain of the states of the United States to take away storage rights once minerals are exhausted, and the same impulse seems likely to bear on a depleted salt dome in Canada. The way to this rationale might best be found by the path given in this section, should a Canadian judge be inclined toward it. That would be consistent with Canadian

legal history, since such a mine would thereafter have no value "apart from its bulk."

3. A special statute applies to Ontario,[12] where most underground storage takes place.[13] There the mineral owner must get a permit to store, and he must make just and equitable compensation to the landowner, whatever that means. But except for damage to the surface, it would appear that the landowner has no rights subject to fair compensation, if the mineral owner owns the minerals or has a reservation of minerals, because in these cases there is no reason not to apply the caselaw to determine what the landowner's rights are, and the answer is: none. Perhaps in Ontario a mineral lessee would be in a better circumstance than elsewhere in Canada—"just and equitable" might mean some amount after the storage company pays its expenses and makes a good return on its investment. On the other hand, the definition section of a related statute[14] might strengthen the position of a mineral owner, and certainly the permit requirement encourages all the parties to negotiate an agreement among themselves before seeking a permit.

   A mineral lessee could also apply for a permit, and in that case the "just and equitable" settlement to the landowner (or other mineral owner) would presumably be substantial.

4. Let us suppose you hold a mineral lease from the provincial crown of Ontario, over lands the surface of which are owned by another citizen. Under Ontario's statute cited previously you could request a storage permit but would have to make just and equitable compensation to the surface owner. Nothing in the statute directly overrules what we have said above, namely, that the storage rights belong to the mineral owner and not to the leaseholder, who is only given the right to request a storage permit. If the crown originally sold the land subject to a mineral reservation, which is often the case, then the storage rights would lie with the crown, and fair compensation to the surface owner should theoretically be small. If I represented the mineral company, as many of you do, I would be aware of the potentially rewarding tightrope I was walking—if the crown overlooks its potential interest, and the surface owner can be persuaded that his or her interest is small, the company's expenses might be drastically cut.

5. The cases and statutes sometimes talk of mineral rights as a "profit à prendre."[15] In French that means a reward for reducing minerals to ownership. In other jurisdictions, such as our own, this has led to a striking result. Since the mineral owner owns nothing but only a right to search, the space left after the minerals are gone should belong to the surface owner immediately, and not just when the minerals are exhausted. The engineering is such that brining and storage can co-exist, which leads to some interesting negotiations. I know of no Canadian court that has followed the logic of profit à prendre, except in the case of leases.[16]

6. In Alberta a mine is defined as "any opening ... (made) for the purpose of ... recovering ... any mineral."[17] Once the salt has been removed, especially when the size of the cavity renders further mining unfeasible, is the opening still a mine? Perhaps so, especially since derivatives of natural gas are defined as minerals.[18] But perhaps not. A mineral owner would do well to fill such a cavity with some hydrocarbon which it intends to remove later, before the Canadian courts follow the logic in some of the United States cases cited below, namely that the mine quits being a mine after the minerals are removed.

We have not tried to treat all the several provinces of Canada and have taken examples from only three. But I hope I have not left the impression that Canadian law is monolithic or unified on this issue. The legislation and caselaw of each province is highly relevant. Although it may generally be said that a mineral owner (but not a mineral lessee) owns storage rights in Canada, such an owner has no reason to be over-confident. The six situations discussed above demonstrate this.

FEDERAL REPUBLIC OF GERMANY

The German Civil Code provides that a landowner's right "extends to the space above the surface and to the substance [Erdkörper] under the surface."[19] Naturally existing underground caverns would be included.[20]

Minerals, however, have since the turn of the century been subject to state regulation, and the "ownership" of minerals has always been considered outside the scope of Section 905, due principally to the strong public interest in mineral exploration in a densely populated, relatively mineral-poor land such as the Federal Republic.[21] The state, however, not the landowner, grants a drilling or mining enterprise the right to go on another's land and search for and reduce minerals to possession.[22] The person or entity seeking a permit to drill or mine must make a sufficient showing before an administrative agency; upon an adequate showing, the necessary permit must issue.[23] The landowner must tolerate the mining activity, and he receives nothing for the minerals brought forth from under his land.[24] His only recourse is to be paid for damages to the surface and, if the damages are extensive enough, to demand that the permit holder buy his land.[25] In addition to granting minerals a special status, such a view accords well with the concept expressed in the second sentence of Section 905: "The landowner, however, may not forbid inter-

ferences [Einwirkungen] which take place at such a height or such a depth that he has no interest in excluding them."[26] In other words, society as a whole, not the individual landowner, has the stronger interest in controlling and regulating the exploration for and production of minerals.

The type of conflict presupposed by this paper would therefore arise in Germany only where activities under a valid permit were occurring or had occurred and only where the surface had not been bought by the permit holder. If, however, the permit holder has not bought the surface and wishes to use the area formed by the depletion of minerals, for underground storage, does he have the right? The landowner, as we have seen, has a right of ownership over pre-existing caverns.[27] Therefore, the question becomes whether the activity of the permit holder in creating the storage area or the permit itself makes any difference. The most recent commentaries cite no cases precisely on point; however, they do cite an article written in 1969 by a leading legal authority on mineral law.[28] He argues that Section 905 should be applicable to such instances, and that the exception to the landowner's right of ownership must be construed broadly in his favor and against the exceptional character of the permit holder's interest.[29] The state's interest is in regulating the production of minerals, not their underground storage,[30] and the permit entitles the holder only to mine and produce the minerals covered by it.[31] Only storage activities which are clearly necessary and customary in the given mining process should be allowed under the permit; the permit should not be construed to allow the commercial use of the area by the permit holder for storage.[32] A third party who wishes to use the area commercially should go to the landowner and arrange for the use of the area by means of a real servitude [Grunddienstbarkeit].[33] Section 905(2), however, arguably allows a third party to seek permission from a court to use the area upon a showing that the activities would occur at such a depth that the landowner would "have no interest in excluding them."[34] Such a party's rights, if successful (presumably enforced by means of an injunction), would be analagous to the rights of a permit holder in relation to the landowner. Damages to the surface would be due, but the landowner would otherwise be obliged to tolerate the activities without benefit to himself.[35] The landowner, however, would be permitted to show that he has an interest in excluding them,[36] whereas in the case of minerals he has no choice but to allow the activities, no matter what his interest in excluding them might be.

To place the discussion in the perspective of the questions posed at the beginning of this paper, one can conclude the following: 1) The rights to search for and reduce minerals to possession and market them, are governed by statute and are regulated by the state. The "intent of the parties" is therefore a misnomer. The terms of the statute and the administrative determinations control the relationship of the parties. The land may be used solely for the mining or drilling activity for which the permit is issued. 2) The landowner has a right to everything beneath his land except minerals expressly reserved under the statute; in the absence of some valid court order restricting his rights in favor of another to use the underground area for storage, the landowner has the right to use and/or grant the use of the area to third persons. 3) Those activities for which a permit is necessary are set forth in the statute.[37] 4) It is difficult to say whether the permit holder "owns" or "leases" the minerals; he has the right to find, produce, and market them upon meeting the necessary requirements.[38] 5) At best, the permit holder's right is in the nature of a real right of use [dingliches Nutzungsrecht].[39] The statute and the administrative agencies, however, not the parties themselves, create and determine the rights of the parties.

UNITED STATES

Illinois

The law in Illinois is uncomplicated. A 1910 case[40] adopts the English rule, that the mineral owner owns the storage rights. The case is remarkable in that it interpreted three words in a deed, namely "coal rights reserved," to give the mineral owner unfettered use of the mine space. Notice, however, that a later case holding the same thing[41] added that the mineowner has these rights "until expiration of the rights to remove coal."

No cases since these old cases bear directly on our question, but several observations should be made. 1) Illinois treats oil and gas differently from other minerals, because of their fugacious nature. A salt mine is much more analogous to a coal mine, and so the strong language of the old cases is probably still the law. 2) In defining what a mine is, the Illinois courts make a sharp distinction, in a long line of cases, between surface rights and subsurface rights. These cases would also support the older cases as to our question. 3) Mineral rights are perpetual in Illinois, or rather they are a separate estate. The cases invariably show a tendency to give mineral owners a long time to exercise their rights. But any Illinois salt dome operator would do well to convert caverns to storage as soon as possible, and to continue brining very slowly, if the economics otherwise supports that tack.

Kentucky

The mineral owner owns storage rights in Kentucky[42] because of a focus on the fugacious nature of most hydrocarbons. Based on an analogy to an ancient doctrine regarding wild animals,[43] the court reasoned that only the controller of flowing elements or animals can be granted rights over them, and those rights belong to mineral owners. One interesting result in this case was that neighbor-

ing owners could siphon off stored product, as part of their search for minerals. Presumably this would not cause a problem in a well-defined dome storage facility, except in those cases where the cavern underlaps a neighbor's land.

However, there may be a way out for a Kentucky landowner in the case of a salt dome. First, an old case[44] implies that the space belongs to the surface owner after all minerals are removed therefrom.[45] Second and better, it seems the landowner should bar the lion in his den. By this we mean he should take the wild animal analogy as he finds it, and reason from it. A well-defined salt mine, capable of precise sonar measurement, is like a cage, and so any "ferae naturae," or wild animal, or fugacious mineral placed therein is not loose, as is true (under the cases) of oil pumped into underground strata of depleted oil wells. The general rule of law supports the distinction between hard minerals and fugacious ones and should be applicable in Kentucky.[46]

Louisiana

We are confident that in Louisiana the landowner, and not the mineral owner, controls storage rights. One of us tried the definitive case[47] which held to this effect, but since it was settled during the appellate process, the state Supreme Court has not ruled. However, a law professor at the state university[48] agrees with the federal district court's ruling. And the court's opinion is entirely consistent with the mineral code, which holds the mineral owner to a mere right to search for minerals and reduce them to possession.[49] Furthermore, this right is said to be in the nature of a servitude,[50] which is important, because that is the historical basis for a statute[51] which requires the competing interests to operate with due regard for each other's rights. Thus the storage owner could, in our opinion, force the mineral owner to brine in such a way that the resulting space is a good storage facility. Any additional costs to accomplish this result would undoubtedly be at the expense of the landowner/storage owner.

Oklahoma

In Oklahoma the courts focus on the original intent of the parties.[52] To them, the term "surface" is uncertain and needs further inquiry into the instrument, the circumstances attending its execution, the subject matter and the situation of the parties at that time.[53] A recent case[54] decided that the landowner had the right to inject gas into an abandoned well, and that storage rights are not granted by an ordinary mineral grant. Another case[55] makes it clear that the landowner owns storage rights in Oklahoma, absent a clear and lawful agreement to the contrary, and provided the landowner can exercise the storage rights without damaging others.

Despite a statute[56] which has been widely discussed,[57] this general language makes us confident that, however noble and fair the sentiment, every case in Oklahoma will go to court, unless the question has been dealt with precisely in the instrument.[58]

Texas

Most of Texas' mineral law gushed out of its oil deposits, but it has a number of salt domes. A pragmatic case[59] which was reversed on other grounds[60] holds that the mineral owner's rights terminate when he has extracted all he can by ordinary means.[61] In the case of salt this would come down to a safety decision based on expert engineering opinion, in the absence of a definitive statute, as to when the cavern is exhausted. The question is, can the salt owner take out so much salt that doing so would destroy the walls to an excellent storage facility? We don't know the answer to that question, but we doubt it.

As to mines not depleted, it would appear that the mineral owner owns the storage rights. The cases tend to divide ownership horizontally,[62] the mineral estate is dominant, and the scholarly opinion is to the same effect.[63] Note, however, that the cited scholarly opinion cautiously limits itself to fugacious situations like depleted oil fields. Our guess is that the courts would leave storage rights with the dominant mineral owner so long as it was producing salt at a reasonable rate, and no longer.

West Virginia

West Virginia presents an interesting study, in that there are two contrary lines of cases, either of which might apply to a salt dome. Most of the cases coming out of the coalfields deal with the question: "Can a mineral lessee or owner use the horizontal shaftspace left after mining, to transport coal from its adjacent property?" Generally, the answer is yes. The principal case[64] holds that the mineral owner owns such a space provided 1) the coal is not exhausted; 2) the mine is not abandoned; and 3) the mining is being prosecuted with due diligence. But as we have seen in other states, these are conditions that should be heeded by brining companies and researched by landowners. The case did observe, by the way, that the mineral holder occupied the underground chamber-space as the *owner* of the coal, and not as the lessee.

Another line of cases[65] seems to say the landowner owns the space, and it is significant that this line of cases is found in the oil and gas sphere. The landmark case cited is a confusing one factually: a landowner sold land to another, reserving all minerals except coal, which went with the land. The agreement specified that "minerals" would not include clay, sand or stone. The court ruled that he therefore sold with the land the limestone stratum which later turned out to permit oil storage. That this is the law seems borne out by the doctrinal writings; Professor Robert

T. Donley opines[66] that oil and gas cannot be injected from above without a specific right.

There are other West Virginia cases that sometimes get cited in the literature, but they are distinguishable on other grounds.[67]

CONCLUSIONS AND CAVEAT

In the introduction we claimed that our subject could only be approached jurisdiction by jurisdiction. But after sloshing around in the muddy law of three Canadian provinces, Germany and six states of the United States (plus five other states and England in the appendix), perhaps we can find a few islands of firm and common ground to stand on after all:

1. If there is a specific and unambiguous agreement between the parties, it will certainly be given effect, absent strong public policy to the contrary.
2. A mineral lessee has fewer rights than a mineral owner or the holder of a reservation of minerals. However, I cannot go as far as Professor Harrell, who says the rights of a mineral lessee work out the same in every jurisdiction (i.e., no storage rights.)
3. It is probable, though many jurisdictions have not yet said this, that the mineral holder's rights to the *space* will terminate when the minerals are exhausted.
4. A good case can be made that the mineral holder must diligently prosecute the extraction of the minerals, though as a practical matter it is hard to imagine what would constitute unreasonable slowness in removing the minerals, especially in the case of a salt dome.
5. Some degree of cooperation, or at least consideration of each others' rights, is required of the various interests on a dome. Thus a salt miner should not mine in such a way as to destroy the possibility of storage, and he may even have to mine in such a way as to create an adequate storage facility.
6. Though it is possible to engineer joint storage and brining, and though the law is flexible enough to enforce that possibility on parties holding different interests, we are left with the strong impression that courts would be reluctant to require a mining operator to permit storage until he is finished, except of course in the case of expropriation.
7. It is highly unlikely that any jurisdiction will hold (despite language that sounds like it) that one may drill into a well-defined dome and remove substances stored there by someone else. The proper remedy, in the event one stores when he is in good faith but has no right, is the payment of rent or the removal of the substance, together with payment for any damage caused.
8. Very few cases deal specifically with salt domes, most of the law being extracted from coalfields and oilfields. A dome being better defined, it is likely that the law will be more precise. Specifically, the wild animal analogies and the cases based on fugacious minerals, are not likely to persuade the court, if the contrary argument is competently presented.

Finally, any good legal writing contains warnings for its own use, and so must this one. The authors must not be assumed to be expert in the law of any jurisdiction but their own. Therefore, the law of other jurisdictions cited here, while serving an interesting comparative function, should not be relied upon. If this paper causes questions to arise about particular cases, take it to a competent mineral lawyer of your own jurisdiction, and let him or her use it and the other sources cited as a beginning place for more specific research.

REFERENCES AND NOTES

1. An excellent legal history of brining and storage is presented in the article by Alan Stamm, *Legal Problems in the Underground Storage of Natural Gas*, 36 Texas Law Review 161 (1957) [hereinafter cited as Stamm]. That article also gives a good description of possible ownership situations at p. 169.
2. Lyndon, *The Legal Aspects of Underground Storage of Natural Gas—Should Legislation be Considered Before the Problem Arises?*, 1 Alberta Law Review 543 (1961).
3. Stewart, *The Reservation or Exception of Mines and Minerals*, 40 Canadian Bar Review 329 (1962). N. J. Stewart is now Vice President for Marketing, Amoco Canada Petroleum Company. He was most gracious in discussing his paper with us, and in orienting us in the Canadian legal structure; yet any errors are certainly our own.
4. 26 Halsbury's Laws of England (3rd ed. 1959), at 317.
5. Bell vs. Wilson (1866), 35 L.J. Ch. 337.
6. The English rule was expressly adopted in a 1922 case, Little v. Western Transfer and Storage Co., 18 Alta L.R. 407, 3 W.W.R. 356, 69 D.L.R. 364.
7. This is also the opinion of Mr. John Bishop Ballem, in *The Oil and Gas Lease in Canada (1973)*. He gives an excellent discussion of the problem at p. 97 [hereinafter cited as Ballem].
8. Id. at 82. *See also* Lyndon, *supra* note 2, at 545–46 (summary of report of a subcommittee of the Canadian Mines' Ministers' Conference, called the Underground Storage Committee).
9. Mr. Ballem agrees that, where no lease is involved but rather a mineral title, the mineral title is dominant. See Ballem, *supra* note 7, at 92.
10. Proud v. Bates (1865), 34 L.J.Ch. 406.
11. Western Minerals Ltd. v. Gaumont (1951), 1 W.W.R. (N.S.) 369.
12. Ontario Energy Board Act (5 Ont. Rev. Stat. ch. 332, sec. 21, 1980).
13. Lyndon, *supra* note 2, at 543. Mr. N. J. Stewart believes this still to be the case.

14. The definition portion of the Mining Act [4 Ont. Rev. Stat. ch. 268, sec. 1(18)] defines mining rights so broadly that the mineral lessee might hold the storage rights, leaving open the question of what "just and equitable compensation" is.
15. *E.g.* Devolution of Real Property Act, 2 Sask. Rev. Stat. ch. D-27, sec. 15(1)(c) (1978).
16. Berkheiser v. Berkheiser (1957), S.C.R. 387, 7 D.L.R. (2d) 721.
17. The Mines and Minerals Act, 4 Alta.Rev.Stat. ch. 238, sec. 2(13) (1970).
18. *Id.* at Sec. 31(6).
19. Bürgerliches Gesetzbuch Section 905(1).
20. Palandt, Bürgerliches Gesetzbuch Section 905(1), at 1000 (41 ed. 1982) (citing cases).
21. *See* Schulte, *Das Bundesberggesetz*, 34-1 Neue Juristische Wochenschrift 88, 88–90 (1981) [hereinafter cited as Schulte]. Prior to the Bundesberggesetz [BBergG] vom 13.August.1980, Bundesgesetzblatt [BGBl] I 1310 (W.Ger.), the various Länder all had mineral codes. The new federal law does not change the basic concepts underlying the earlier codes; rather, it serves mainly to provide uniformity. *See id.* at 89. *See also* F. Baur, Lehrbuch des Sachenrechts, Section 30, at 280–81 (9.ed. 1977) [hereinafter cited as Baur]; A. N. Yiannopoulos, Personal Servitudes Section 28, at 117 & n.140 (3 Louisiana Civil Law Treatise, 1st ed. 1968) ("According to mineral codes and special statutes . . . , a number of important minerals are either considered to be *res nullius* or are reserved to the state. The rights to search for and reduce to possession these minerals are not exclusive prerogatives of land ownership.")
22. Schulte, *supra* note 21, at 90–91; Baur, *supra* note 21, at 281.
23. Baur, *supra* note 21, at 281. The BBerG of 1980, however, may have granted some discretion to the administrative agency. *See* Schulte, *supra* note 21, at 281.
24. Baur, supra note 21, at 281, 282.
25. *Id.* Of course, an expropriation for the public good under special statutes is possible. *See* Turner, *Das Recht auf Anlage und Nutzung Unterirdischer Hohlräume*, Der Betriebs-Berater 156, 158 (1969) [hereinafter cited as Turner].
26. BGB Section 905(2). *See* Turner, *supra* note 25, at 156–57.
27. *See supra* note 20 and accompanying text.
28. Turner, *supra* note 25; *see* 4 Münchener Kommentar zum Bürgerlichen Gesetzbuch Section 905 (1981) ("Schrifttum").
29. Turner, *supra* note 25 at 158–161. Moreover, should a permit holder use his permit precisely to create underground storage, the landowner should be able to defend his rights successfully. The public interest (and hence the permit system) is to regulate and control commercial *mining* activity, not storage. *Id.* at 161.
30. *Id.*
31. *Id.*
32. *Id.* at 159–61.
33. *Id.* at 162.
34. *Id.* at 156–57, 162–63. The notion would appear similar to that familiar to U.S. readers in the case of airplanes flying overhead.
35. *Id.* at 157.
36. *Id.* at 156–57, 162–63. German jurisprudence protects legitimate subjective fears of the landowner. Such a suit by a third party would therefore be difficult to win; nevertheless, the possibility of it is probably desirable because underground storage is desirable and one interest which the courts have not held sufficient is the landowner's right to be compensated. If his only reason for excluding the actions is the failure to receive what he wants and he can show no other reason or interest for excluding the other party's plans, then he should lose. *See id.* at 156.
37. *See* BBergG, BGBl I 1314 (1980); Schulte, *supra* note 21, at 90. Most, but not all minerals are covered by the statute and subject to the regulation by means of the permit process.
38. Commentators admit that the status of the permit holder's right is difficult to categorize in terms of traditional private law, because it is created by statute and regulated by an administrative agency. *See* Baur, *supra* note 21, at 281; Schulte, *supra* note 21, at 90–91 & n.10.
39. The permits are recorded in the public records, may be transferred, and may be made subject to security interests of third parties. Baur, *supra* note 21, at 281; Schulte, *supra* note 21, at 91.
40. Attebery v. Blair, 244 Ill. 363, 91 N.E. 475 (1910).
41. Schobert v. Pittsburg Coal & Mining Co., 254 Ill. 474, 98 N.E. 945 (1912).
42. Central Ky. Natural Gas v. Smallwood, 252 S.W.2d 866 (Ky. Ct. App. 1952).
43. Hammond v. Central Ky. Natural Gas, 255 Ky. 685, 75 S.W.2d 204 (1934).
44. Middleton v. Harlan-Wallis Coal Corp., 252 Ky. 29, 66 S.W.2d 30 (Ct.App. 1933).
45. *See also* Moore v. Lackey Mining Co., 215 Ky. 71, 284 S.W. 415 (Ct. App. 1926); Buck Creek Ry. v. Haws, 253 Ky. 203, 69 S.W.2d 333 (Ct. App. 1934).
46. For a listing of cases, including one in Kentucky, where this result has been reached, see Note, 7 Okla. L. Rev. 225, 227 (1954).
47. U.S. vs. 52.48 Acres, Civil Action No. 79-1018 (W.D. La. 1981).
48. Thomas A. Harrell, *Developments in Nonregulatory Oil and Gas Law*, presented at the Thirtieth Annual Institute on Oil and Gas Law Taxation of the Southwestern Legal Foundation.
49. La. R.S. 31:5–7.
50. Frost-Johnson Lumber Co. v. Salling's Heirs, 150 La. 756, 91 So. 207 (1922).
51. La. R.S. 31:11.
52. *See* Note, *Ownership Rights in Subsurface Natural Gas Storage Areas*, 16 Tulsa L.J. 470 (1981). The author concludes that in Oklahoma, storage rights belong to the landowner, absent a clear statement to the contrary. *Id.* at 472.

53. Blythe v. Hines, 577 P.2d 1268 (Okla. 1977).
54. Ellis v. Arkansas-Louisiana Gas Co., 450 F. Supp 412 (E.D. Okla 1978).
55. Sunray Oil Co. v. Cortez Oil Co., 188 Okla. 690, 112 P. 2d 792 (1941).
56. 52 Okla. Stat. Ann. tit. 52, secs. 36.1-36.7 (West 1969).
57. *See, e.g.*, Stamm, *supra* note 1, at 177.
58. Note also that, while Oklahoma is usually referred to as a "non-ownership" state, that may only be true for fugacious minerals and not rock minerals—*see* Note, 7 Okla. L. Rev. 225, 228 (1954). If so, the case for the landowner would be further strengthened, since the Kentucky-like "ferae naturae" cases would not apply to a captured and caged animal.
59. Dreeben v. Whitehurst, 45 S.W.2d 705 (Tex. Civ. App. 1931).
60. Dreeben v. Whitehurst, 68 S.W.2d 1025 (Tex. 1934).
61. *See also* Reed v. Wylie, 554 S.W.2d 169 (Tex. 1977).
62. Iron Ore-Acker v. Guinn, 464 S.W.2d 348 (Tex. 1971).
63. *See* Stamm, *supra* note 1, at 172 (opines that mineral owner should have storage rights).
64. Fisher v. West Va. Coal & Transp. Co., 73 S.E.2d 633 (W. Va. 1952).
65. Tate v. United Fuel Gas, 137 W. Va. 272, 71 S.E.2d 65 (1952). Notice that Lyndon, *supra* note 2, at 545 claims that this case was reversed but unreported on appeal. That would seem highly unlikely, since the question was certified to the Supreme Court of Appeals of West Virginia, but perhaps the author of that article had information not available to us.
66. Donley, *Use of the Containing Space after the Removal of Subsurface Minerals*, 55 W. Va. L. Rev. 202.
67. *See* Amherst V. United Fuel Gas, 140 W. Va. 389, 84 S.E.2d 225 (1954), (a fairly specific contract); United Fuel Gas Co. v. Allen, 137 W. Va. 897, 75 S.E.2d 88 (1953) (an expropriation case the economics of which is hopelessly out of date); Robinson v. Wheeling Steel & Iron Co., 99 W. Va. 435, 129 S.E. 311 (1925) (mineral owner also owned a specifically identified stratum).

APPENDIX

In the course of researching the law in the jurisdictions above, we made notes on other jurisdictions. They are highly tentative and are not supported by further research but may serve as a helpful beginning place. So here are the remaining notes, which we hope will be useful to you.

A. Arkansas. *See* Mercury-Mining Corporation of Arkansas v. International Paper Co., 324 F. Supp 705 (W.D. Ark 1971); Goodson v. Comet Coal Co., 182 Ark 193, 31 S.W.2d 293.
B. California. *See* Geothermal Energy-Geothermal Kinetics v. Union Oil Co., 75 Cal. App. 3d 56, 141 Cal Rptr. 879 (1977).
C. England. Most of the English cases are very old, and no effort was made to update them. One strong case says the mineral owner owns storage rights even after all minerals are removed from the cavern. *See* Bowser v. MacLean, 17 Eng.Ru.Cas. 452, 2 DeG. F & J 415 (1860).
D. Kansas. *See* 21 U. Kan. City L. Rev. 217 (1953).
E. Pennsylvania. A common-sense middle ground has been taken by Pennsylvania courts, who say the space belongs to the mineowner to do with as he wishes until all minerals have been removed. The storage does no harm to the landowner, and is not a trespass. Presumably in the case of a solution mine, this would not mean the salt must be entirely exhausted before the space reverts to the landowner, but that it must be commercially unfeasible to take more salt. This is a boon to salt companies who realize it soon enough, because brining can usually be scheduled in such a way as to prevent the factual circumstance envisioned by the courts from *ever* arising. *See* Lillibridge v. Lackawanna Coal Co., 143 Pa. 293, 22 A. 1035 (1891); Webber v. Vogel, 189 Pa. 156, 42 A. 4 (1899); 94 Pitt L.J. 239.
G. Virginia. In an interesting casenote on the Kentucky "Hammonds" case at 36 Virginia Law Review 947, it is reasoned that a private owner can't use the airspace far above his head, and neither can he use a hollow space far below his land. But the author seems to mean this only in cases where the private landowner isn't resourceful enough to actually develop the space for use, and only in cases where the public does need to use it, as through a public utility company. This is similar to the German approach.
H. Condemnation.
   a. Can utilities condemn for storage? Not in Kansas in 1938 [*see* Strain v. Cities Service Gas Co., 148 Kan 393, 83 P.2d 124 (1938)]. *See also* Stamm, *supra* note 1, at 175 for longer listing.
   b. If condemned, who gets storage award, since normally value isn't a piecemeal question?
   c. Twelve states have given specific condemnation power, according to Stamm, *supra* note 1, at 175. Two such statutes are Illinois Stat. Ann. ch. 96.5, secs. 5501-5604 (West 1979), and 5 Ky. Rev. Stat. sec. 502 (1982).
   d. *See also* Lyndon, *supra* note 2, at 547.