

**FOR PUBLICATION**

**UNITED STATES COURT OF APPEALS  
FOR THE NINTH CIRCUIT**

MARY ANN MURRAY; LIGE M.  
MURRAY,  
*Plaintiffs-Counter-Defendants-  
Appellees,*

v.

BEJ MINERALS, LLC; RTWF, LLC,  
*Defendants-Counter-Claimants-  
Appellants.*

No. 16-35506

D.C. No.  
1:14-cv-00106-  
SPW

OPINION

Appeal from the United States District Court  
for the District of Montana  
Susan P. Watters, District Judge, Presiding

Argued and Submitted February 6, 2018  
Seattle, Washington

Filed November 6, 2018

Before: Milan D. Smith, Jr. and Mary H. Murguia, Circuit  
Judges, and Eduardo C. Robreno,\* District Judge.

Opinion by Judge Robreno;  
Dissent by Judge Murguia

---

\* The Honorable Eduardo C. Robreno, United States District Judge  
for the Eastern District of Pennsylvania, sitting by designation.

**SUMMARY\*\***

---

**Montana Law**

The panel reversed the district court's summary judgment in favor of Lige and Mary Ann Murray, owners of a Montana ranch, who brought the action seeking a declaratory judgment that dinosaur fossils found on the ranch belonged to them as owners of the surface estate.

In 2005, prior to the discovery of the fossils, Jerry and Robert Severson, the previous owners of the ranch, sold their surface and one-third of the mineral estate to the Murrays. In the conveyance, the Seversons expressly reserved the remaining two-thirds of the mineral estate.

The panel held, as an initial matter, that definitions of "mineral" found in Montana statutes, like dictionary definitions, were contradictory and therefore inconclusive. The panel further held that the Montana Supreme Court has generally adopted the test in *Heinatz v. Allen*, 217 S.W.2d 994 (Tex. 1940), for determining whether a particular substance was a mineral in the context of deeds and agreements regarding mineral rights to land. The panel held that under this test, the dinosaur fossils, which were rare and exceptional, were "minerals" pursuant to the terms of the deed, and belonged to the owners of the mineral estate. The panel rejected the Murrays' policy-driven arguments to the *Heinatz* test. The panel remanded for further proceedings.

---

\*\* This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

Judge Murguia dissented, and she would hold that the district court correctly concluded that dinosaur fossils do not fall within the ordinary and natural meaning of the terms “minerals,” as that term was used in the mineral deed in this case. Judge Murguia would affirm the district court’s grant of summary judgment for the Murrays.

---

### COUNSEL

Eric D. Miller (argued), Perkins Coie LLP, Seattle, Washington; Shane R. Swindle, Perkins Coie LLP, Phoenix, Arizona; for Defendants-Counter-Claimants-Appellants.

Harlan B. Krogh (argued) and Eric Edward Nord, Crist Krogh & Nord PLLC, Billings, Montana, for Plaintiffs-Counter-Defendants-Appellees.

---

### OPINION

ROBRENO, District Judge:

Once upon a time, in a place now known as Montana, dinosaurs roamed the land. On a fateful day, some 66 million years ago, two such creatures, a 22-foot-long theropod and a 28-foot-long ceratopsian, engaged in mortal combat. While history has not recorded the circumstances surrounding this encounter, the remnants of these Cretaceous species, interlocked in combat, became entombed under a pile of sandstone. That was then . . . this is now.

In 2006, an amateur paleontologist uncovered the well-preserved fossils of the “Dueling Dinosaurs” on a Montana ranch (“the Ranch”) in an area known as Hell Creek. Lige

and Mary Ann Murray (“the Murrays”), the plaintiffs in this action, own the surface estate of the ranch where the fossils were found. In 2005, prior to the discovery of the fossils, Jerry and Robert Severson (“the Seversons”), the defendants and previous owners of the ranch, sold their surface estate and one-third of the mineral estate to the Murrays. In the conveyance, the Seversons expressly reserved the remaining two-thirds of the mineral estate, giving them ownership, as tenants in common with the Murrays, of all right, title, and interest in any “minerals” found in, on, and under the conveyed land.

These fossils are now quite valuable. After a dispute arose regarding the true owner of the Dueling Dinosaurs and several other valuable dinosaur fossils found on the Ranch (including a nearly intact *Tyrannosaurus rex* skeleton, one of only twelve ever found) (collectively, “the Montana Fossils”), the Murrays filed this action seeking a declaratory judgment that the Montana Fossils belonged to them as owners of the surface estate.<sup>1</sup> In turn, the Seversons asserted a counterclaim seeking a declaratory judgment that the Montana Fossils belong to the mineral estate. The answer turns on whether the Montana Fossils are deemed “minerals”

---

<sup>1</sup> Although the term “surface estate” is used by the district court and the parties to describe the property that constitutes the Ranch other than the mineral estate, “surface estate” is a misnomer. The mineral estate includes any minerals found “in, on or under” the conveyed land, including minerals found on the surface. The surface estate, in turn, includes all of the property other than minerals, including property underneath the surface. Thus, whether a substance is found on the surface of the Ranch or underneath the surface of the Ranch does not determine whether that substance is part of the surface estate or part of the mineral estate. Instead, the only relevant question is whether the substance is a mineral. As a result, whether the Montana Fossils were found under the surface of the Ranch or protruding from the surface of the Ranch is irrelevant to this litigation.

within the meaning of the mineral deed under Montana law. If the Montana Fossils are minerals, the Seversons, as majority owners of the mineral estate, will own two-thirds of the Montana Fossils. If the Montana Fossils are not minerals, they will belong to the Murrays in their entirety.

Following the filing of cross-motions for summary judgment, the district court granted summary judgment for the Murrays, holding that, under Montana law, the Montana Fossils are not “minerals” within the meaning of the mineral deed. The Seversons now appeal. The district court had jurisdiction over this diversity action pursuant to 28 U.S.C. § 1332(a)(1).<sup>2</sup> We have jurisdiction pursuant to 28 U.S.C. § 1291, and for the reasons set forth below, we reverse the district court’s order granting summary judgment for the Murrays, and remand for further proceedings consistent with this opinion.

## I.

The facts of this case are largely undisputed. George Severson previously owned property used as a farm and ranch in Garfield County, Montana (“the Ranch”). In 1983, he began leasing the Ranch to Mary Ann and Lige Murray

---

<sup>2</sup> There is complete diversity between the plaintiffs and the defendants in the underlying action: Plaintiffs Mary Ann and Lige Murray are citizens of Montana; Defendant BEJ Minerals, LLC, is a Washington limited liability company with its principal place of business in Florida and members who are citizens of Florida and Washington; Defendant RTWF, LLC, is a Florida limited liability company with its principal place of business in Florida and members who are citizens of Florida; and Defendants Robert and Jerry Severson are citizens of Florida. In addition, the amount in controversy is over \$75,000, as the parties agree that the Montana Fossils are worth millions of dollars.

(“the Murrays”), who worked there as ranchers. George Severson later transferred a portion of his property interest in the Ranch to his sons, Jerry and Robert Severson (“the Seversons”), and sold the remainder of his interest to the Murrays.

The Seversons and the Murrays jointly owned and operated the Ranch until 2005, when the Seversons sold their surface ownership rights and a portion of their mineral rights to the Murrays.<sup>3</sup> The mineral deed that the parties executed and recorded in connection with the 2005 transaction (“the Deed”) stated that the Seversons and Murrays would own, as tenants in common, “all right title and interest in and to all of the oil, gas, hydrocarbons, and minerals in, on and under, and that may be produced from the [Ranch].” The purchase agreement for the 2005 transaction required the parties “to inform all of the other parties of any material event which may [affect] the mineral interests and [to] share all communications and contracts with all other Parties.”

The Seversons and the Murrays have represented that, at the time of the sale, they did not suspect that there were any valuable dinosaur fossils buried beneath the surface of the Ranch. However, beginning a few months after the sale, the Murrays discovered several rare dinosaur fossils on the

---

<sup>3</sup> Under the 2005 agreement, the mineral estate for all but one parcel of the Ranch is divided as follows: Robert Severson owns one third, Jerry Severson’s company, Severson Minerals, LLC, owns one third, and Lige and Mary Ann Murray each own one sixth. With respect to the other parcel, Billings Garfield Land Company, an unrelated third party, owns half of the mineral rights, with the other half distributed among the Seversons and Murrays in the same proportions as the remainder of the land’s mineral estate (one third to Robert Severson, one third to Severson Minerals, LLC, and one sixth to each of the Murrays).

property, including: (1) the fossils of two separate dinosaurs locked in battle when they died, nicknamed “the Dueling Dinosaurs,” discovered in 2006; (2) a fossilized Triceratops foot and skull, discovered in 2007 and 2011, respectively; and (3) a nearly complete fossilized Tyrannosaurus rex skeleton, nicknamed the “Murray T. Rex,” discovered in 2013.<sup>4</sup> The ownership of all of these fossils (previously defined as “the Montana Fossils”) is implicated in this litigation.

The parties agree that the Montana Fossils are rare and extremely valuable. The Murrays’ experts testified that, because fossils of dinosaurs interacting are rare, the Dueling Dinosaurs are a “one-of-a-kind find” with “huge scientific value.” Although the Dueling Dinosaurs have not yet been sold, they were appraised at between seven million and nine million dollars, and the parties have stipulated that the set is worth several million dollars. The Murrays sold the Triceratops foot for \$20,000 and have offered to sell the skull for \$200,000 to \$250,000. Their expert, in an email attempting to sell the skull, described it as “one of the best if not the best Triceratops skull ever found.” Finally, the Murray T. Rex is one of only a dozen intact Tyrannosaurus rex skeletons ever found. The Murrays sold it to a Dutch museum in 2014 for several million dollars. The proceeds are being held in escrow pending the outcome of the instant litigation.

---

<sup>4</sup> For additional background regarding the discovery of the Montana Fossils, see Mike Sager, *Will the Public Ever Get to See the “Dueling Dinosaurs”?*, Smithsonian Magazine, July 2017, available at <https://www.smithsonianmag.com/science-nature/public-ever-see-dueling-dinosaurs-180963676/> (last visited Sept. 4, 2018).

The Murrays first informed the Seversons about the Montana Fossils in 2008. After the Seversons asserted an ownership interest, the Murrays filed this action in Montana state court seeking a declaratory judgment that, as owners of the surface estate (*i.e.*, all of the Ranch’s property other than the mineral estate, *see supra* note 1), they are the sole owners of the Montana Fossils. The Seversons removed the action to federal court and asserted a counterclaim seeking a declaratory judgment that the Montana Fossils are part of the mineral estate.<sup>5</sup>

During discovery, both parties produced experts who testified regarding the composition of the Montana Fossils. The Seversons’ expert, Raymond Rogers, testified that bones and teeth, including in living vertebrates, naturally contain the mineral hydroxylapatite. Rogers performed an x-ray diffraction test on the Montana Fossils and determined that they had recrystallized from hydroxylapatite into the mineral francolite during the fossilization process that occurred over millions of years. The Murrays’ expert, Peter Larson, agreed with Rogers regarding the fossilization process in general. However, Larson concluded that the Montana Fossils had not been replaced by francolite, and instead contained the same patterns of the mineral hydroxylapatite as a modern bison bone, “just as when [the dinosaurs were] alive.”

Following discovery, the parties filed cross-motions for summary judgment. In an opinion dated May 20, 2016, the district court found that the Montana Fossils are not included

---

<sup>5</sup> Robert Severson’s interest is now held by BEJ Minerals, LLC (“BEJ”), and Jerry Severson’s interest is now held by RTWF LLC (“RTWF,” and hereinafter, together with Robert Severson, Jerry Severson, and BEJ, “the Seversons”).

in the ordinary and natural meaning of “mineral” under Montana law and therefore are not part of the mineral estate. Accordingly, the court granted summary judgment for the Murrays. The Seversons now appeal.

## II.

We review a district court’s ruling on motions for summary judgment *de novo*. *Guatay Christian Fellowship v. County of San Diego*, 670 F.3d 957, 970 (9th Cir. 2011). Summary judgment is appropriate when “there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). We review a district court’s interpretation of state contract law *de novo* as well. *AmerisourceBergen Corp. v. Dialysist West, Inc.*, 465 F.3d 946, 949 (9th Cir. 2006). The parties agree that Montana law applies.

## III.

Under Montana law, the interpretation of a deed conveying an interest in real property is governed by the rules of contract interpretation. *Mary J. Baker Revocable Tr. v. Cenex Harvest States, Coops., Inc.*, 164 P.3d 851, 857 (Mont. 2007) (citing Mont. Code Ann. § 70-1-513). The interpretation of a contract is a question of law. *Id.* Words in a contract are interpreted “in their ordinary and popular sense unless the parties use the words in a technical sense or unless the parties give a special meaning to them by usage.” *Dollar Plus Stores, Inc. v. R-Montana Assocs., L.P.*, 209 P.3d 216, 219 (Mont. 2009). If the language in a contract is ambiguous, *i.e.*, subject to at least two reasonable but conflicting meanings, then “a factual determination must be made as to the parties’ intent in entering into the contract.” *Mary J. Baker Revocable Tr.*, 164 P.3d at 857.

## A.

In order to determine the ordinary meaning of a word used in a contract, we typically begin with dictionary definitions. However, as the Supreme Court has recognized and is particularly applicable to this case, “[t]he word ‘mineral’ is used in so many senses, dependent upon the context, that the ordinary definitions of the dictionary throw but little light upon its signification in a given case.” *N. Pac. Ry. Co. v. Soderberg*, 188 U.S. 526, 530 (1903). In this case, for example, the parties do not dispute that the Montana Fossils *are* minerals in a scientific sense, as they are composed entirely of the minerals hydroxylapatite and/or francolite.<sup>6</sup> The Montana Fossils thus fit within definitions of the word “mineral” that focus on a substance’s chemical composition. *See, e.g., Webster’s Third New International Dictionary, Unabridged* 1437 (3d ed. 2008) [hereinafter *Webster’s*] (“an inorganic substance; *especially*: a mineral element whether in the form of an ion, compound, or complex”); *New Oxford American Dictionary* 1113 (3d ed. 2010) (“a solid inorganic substance of natural occurrence”); *Mineral, Black’s Law Dictionary* (10th ed. 2014) (“Any

---

<sup>6</sup> The parties’ experts testified that the bones and teeth of living vertebrates are composed of the inorganic mineral hydroxylapatite and various organic components, including, for example, tissue, marrow, nerves, blood vessels, and collagen. After a vertebrate’s death, all of the organic components of the bones and teeth eventually decompose, leaving only the inorganic mineral hydroxylapatite. Over time, this mineral may “recrystallize” into a different mineral, francolite. As noted above, the parties’ experts dispute whether the x-ray diffraction test results indicate that the Montana Fossils are composed of the mineral hydroxylapatite, or whether the Montana Fossils instead contain the mineral francolite (which the mineral hydroxylapatite could have recrystallized into during the fossilization process). The parties do not dispute, however, that the Montana Fossils are entirely composed of one or both of these two mineral substances.

natural inorganic matter that has a definite chemical composition and specific physical properties that give it value <most minerals are crystalline solids>.”).

Although the Montana Fossils clearly fall within these dictionary definitions of the word “mineral,” our analysis does not end there. Under traditional principles of contract interpretation, words are interpreted “in their ordinary and popular sense unless the parties use the words in a technical sense or unless the parties give a special meaning to them by usage.” *Dollar Plus Stores*, 209 P.3d at 219. While the above-cited definitions of the word “mineral” are quite broad, other dictionary definitions are more narrow, relating to the manner in which a substance is used, as opposed to its chemical composition. For example, *Webster’s* includes the following secondary definition of “mineral”:

any of various naturally occurring homogeneous or apparently homogeneous and usually but not necessarily solid substances (as ore, coal, asbestos, asphalt, borax, clay, fuller’s earth, pigments, precious stones, rock phosphate, salt, soapstone, sulfur, building stone, cement rock, peat, sand, gravel, slate, salts extracted from river, lake, and ocean waters, petroleum, water, natural gas, air, and gases extracted from the air) obtained for man’s use usually from the ground[.]

*Webster’s* 1437. Similarly, *Black’s Law Dictionary* provides one definition of mineral as including “[a] subsurface material that is explored for, mined, and exploited for its useful properties and commercial value.” Mineral, *Black’s Law Dictionary* (10th ed. 2014).

Although, as explained above, the parties agree that the Montana Fossils fit within the scientific definition of minerals, they disagree about whether the Montana Fossils fit within the more narrow use-related definitions of minerals. The Murrays argue that they do not, while the Seversons argue that they do. Relying on dictionary definitions and several Montana mining statutes, the district court agreed with the Murrays and determined that:

[T]he common understanding of “mineral” includes the mining of a hard compound or oil and gas for refinement and economic exploitation. In contrast, dinosaur fossils are the remains of once-living vertebrates. The fossils’ properties are not what make them valuable. Fossils are not subject to further refinement before becoming economically exploitable. Instead, the fossils are valuable because of their very existence. Dinosaur bones are not economically valuable to be processed into fuel or materials or manufactured into jewelry. Further, dinosaur fossils are not mined in the traditional sense, but rather discovered by happenstance.

The definition that the court created – “the mining of a hard compound or oil and gas for refinement and economic exploitation” – did not itself appear in any of the dictionary or statutory definitions the court cited, but instead represented the court’s own interpretation of what it believed to be the relevant portions of those dictionary and statutory definitions.

On appeal, the Seversons argue that the district court’s interpretation of the dictionary definitions is disconnected

from the definitions themselves, and that even the narrower, use-related dictionary definitions include – or at the very least, do not exclude – the Montana Fossils. The Seversons have the better of the arguments.

First, the fact that the narrower dictionary definitions found in *Webster's* and *Black's Law Dictionary* emphasize the “use” of a substance does not exclude the Montana Fossils. Some of the Montana Fossils are being “used” for economic or commercial purposes: they were sold (or offered for sale) for millions of dollars and subsequently displayed in a museum that charges admission to view them. Further, certain of the definitions do not limit the “use” of the substance to use for economic or commercial purposes; surely the Montana Fossils are being “used” in the general sense. For example, under the *Webster's* definition, the Montana Fossils are clearly “naturally occurring homogeneous . . . solid substances . . . obtained for man's use.” *Webster's* 1437. Although it could be argued that dinosaur fossils are unlike oil, gas, coal, and other substances traditionally thought of as minerals because they are not used as fuel, neither are many of the other substances specifically listed in the *Webster's* definition, such as salt, sand, and gravel. In addition, as the Seversons point out, oil, gas, and coal all derive from the remains of plants and animals,<sup>7</sup> just like dinosaur fossils, and should not be treated any differently because they are valuable for a different reason.

Second, there are other definitions of the word “mineral” not considered by the district court that explicitly include fossils in general. For example, an older edition of *Black's*

---

<sup>7</sup> See *Webster's* (defining “fossil fuel” as “a fuel (such as coal, oil, or natural gas) that is formed in the earth from plant and animal remains”).

*Law Dictionary* defines a mineral as including “all fossil bodies or matters dug out of mines or quarries, whence anything may be dug, such as beds of stone which may be quarried.” Mineral, *Black’s Law Dictionary* (6th ed. 1990).

Given the inconsistencies in dictionary definitions of “minerals,” and recognizing that at least one of the definitions explicitly includes fossils as minerals, we disagree with the district court’s conclusion that the word “minerals” in the Deed did not encompass dinosaur fossils. As the parties agree that the Deed must be interpreted under Montana law, we next rehearse Montana law.

#### B.

The Montana Supreme Court, when tasked with interpreting the meaning of the word “minerals” in a similar deed, noted that the need to determine the ordinary and popular meaning of the term “mineral” has created “considerable confusion in mineral law litigation nationwide.” *Farley v. Booth Brothers Land & Livestock Co.*, 890 P.2d 377, 379 (Mont. 1995).

Attempting to make sense of the legal morass regarding the term “mineral,” the court observed:

[t]he only reliable rule which surfaces from the confusing and inconsistent approaches taken by those courts attempting to ferret out the subjective intent of the parties is that the word ‘mineral’ means what the court says it means. The result is title uncertainty and the need to litigate each general reservation of minerals to determine which minerals it encompasses.

---

*Id.* (quoting *Miller v. Land & Mineral v. Highway Comm’n*, 757 P.2d 1001, 1002 (Wyo. 1988)). Explaining that the question of the interpretation of the word “mineral” in a land transfer agreement was one of first impression in Montana, the court surveyed the definition of “mineral” in several Montana statutes and case law from other states. Finding these statutory definitions inconclusive,<sup>8</sup> the court rested on the following test from the Texas Supreme Court’s decision in *Heinatz v. Allen*, 217 S.W.2d 994 (Tex. 1949):

[S]ubstances such as sand, gravel and limestone are not minerals within the ordinary and natural meaning of the word unless they are rare and exceptional in character or possess a peculiar property

---

<sup>8</sup> The court looked at two conflicting statutory definitions of mineral from Title 82 of the Montana Code, which relates to minerals, oil, and gas. The first statutory definition, relating to metal mine reclamation, defined “mineral” as:

any ore, rock, or substance, other than oil, gas, bentonite, clay, coal, sand, gravel, phosphate rock, or uranium, taken from below the surface or from the surface of the earth for the purpose of milling, concentration, refinement, smelting, manufacturing, or other subsequent use or processing or for stockpiling for future use, refinement, or smelting.

*Farley*, 380 P.2d at 379 (quoting Mont. Code Ann. § 82-4-303(9)). The second statutory definition, from the section relating to “open-cut” mining reclamation, defined “minerals” as “bentonite, clay, scoria, phosphate rock, sand, or gravel.” *Id.* (quoting Mont. Code Ann. § 82-4-403(6)). Recognizing that these two statutory definitions were “not necessarily consistent” – given that one definition explicitly included scoria but it was “unclear” whether it would be included in the other – the court concluded that the term “mineral” has varying definitions in different contexts. *Id.*

giving them special value, as for example sand that is valuable for making glass and limestone of such quality that it may be profitably be manufactured into cement. Such substances, when they are useful only for building and road-making purposes, are not regarded as minerals in the ordinary and generally accepted meaning of the word.

*Id.* at 380 (quoting *Holland v. Dolese Co.*, 540 P.2d 549, 550–51 (Okla. 1975) (citing *Heinatz*, 217 S.W.2d at 997)).

The particular question at issue in *Farley* was whether “scoria,” a local term referring to the baked roof rock (composed of shale, sandstone and clay) that results from the burning of coal outcropping, was a mineral within the meaning of a mineral reservation in a lease agreement. *Id.* at 380. Like the Montana Fossils, scoria is a mineral in the scientific sense, that is, it is composed of minerals. Applying the *Heinatz* test, the court noted that the scoria at issue was used in road construction, and then found that “[t]he use of scoria in constructing roadways does not elevate scoria to the status of a compound which is ‘rare and exceptional in character’ and therefore, a ‘mineral.’” *Id.* (quoting *Holland*, 540 P.2d at 550–51).

On appeal, the Seversons argue, as they did below, that the Montana Fossils are minerals under the test adopted by the Montana Supreme Court in *Farley*. The Seversons claim that, pursuant to *Farley*, a substance that is technically a mineral in the scientific sense is also a mineral within the meaning of a real property agreement if it is rare and exceptional in character or possesses a peculiar property giving it special value. The Seversons then argue that the Montana Fossils satisfy that test because the Montana

Fossils are composed of mineral substances as a technical matter, and the Montana Fossils are rare and exceptional and have special value.

In response, the Murrays first argue that the Montana Supreme Court did not adopt the *Heinatz* test in *Farley* as a general universally applicable measure to determine whether a substance is a mineral, and instead the court merely used the *Heinatz* test as a “secondary reference” to determine whether scoria was a mineral. They next argue that, to the extent *Farley* did adopt *Heinatz’s* “rare and exceptional” test, the test is a categorical one: a particular dinosaur fossil cannot be a mineral unless all dinosaur fossils, in general, are minerals. Because the Seversons admit that not all dinosaur fossils are rare and valuable – and that, in fact, many are virtually worthless – the Murrays contend that dinosaur fossils, including the Montana Fossils at issue in this case, are not minerals under *Heinatz*. The Murrays also argue that the test the Seversons ask this Court to adopt would create a confusing distinction between rare and valuable mineral fossils and common and worthless non-mineral fossils, requiring litigation with respect to each individual fossil. Instead, the Murrays urge the Court to focus its legal analysis on definitions of minerals found in various Montana statutes and regulations, under which, the Murrays claim, dinosaur fossils have “never” been defined as minerals under Montana law.

We address each of these arguments in turn.

### C.

As an initial matter, we agree with the Seversons that definitions of “mineral” found in Montana statutes, like dictionary definitions, are contradictory and therefore inconclusive. Contrary to the Murrays’ assertions, the

majority of the statutes and regulations the Murrays cite *do* encompass fossils in their definition of “minerals,” and those definitions that exclude fossils are limited to particular statutory schemes that are not relevant here.<sup>9</sup>

---

<sup>9</sup> The Murrays first cite a statutory definition stating in relevant part that “mineral” means “any . . . substance, other than oil, gas, bentonite, clay, coal, sand, gravel, phosphate rock, or uranium, taken from below the surface of the earth or from the surface of the earth for the purpose of . . . subsequent use or processing or for . . . future use.” *See* Mont. Code Ann. § 82-4-303(16)). Although the Murrays claim that this definition does not include the Montana Fossils, it does: the Montana Fossils are a substance (other than the specific substances listed) taken from below the surface of the earth for the purpose of subsequent use. The Murrays’ second statutory definition, which states that “mineral” means “any . . . nonrenewable merchantable products extracted from the surface or subsurface of the state of Montana,” *see* Mont. Code Ann. § 15-38-103(3)), is similarly applicable to the Montana Fossils: the Montana Fossils are nonrenewable, merchantable products, and they were extracted from the subsurface of Montana.

The Murrays next argue that “minerals” cannot include dinosaur fossils in general because certain Montana statutes and regulations differentiate between “fossils” and “minerals.” The Murrays point to the definition for “general recreational use” within the Montana Department of Natural Resource’s regulations regarding surface management rules for leasing of state-owned land, which contains separate exclusions for the “collection, disturbance, alteration, or removal of archeological, historical, or paleontological sites or specimens (e.g. fossils, dinosaur bones . . .)” and “mineral exploration, development, or mining,” and notes that the former requires an antiquities permit and the latter requires a mineral lease or license. *See* Mont. Admin. R. 36.25.145. The Murrays also note that the Montana Historical Society has the power to collect and preserve “fossils, plants, minerals, and animals,” suggesting that the separate listing of “fossils” and “minerals” means that they must be distinct, non-overlapping categories. *See* Mont. Code Ann. § 22-3-107. Contrary to the Murrays’ assertion, the separate listing of minerals and fossils does not establish that fossils are not a subset of minerals. More

It is true that the Montana Supreme Court did not explicitly announce in *Farley* that it intended to adopt the *Heinatz* test for all mineral disputes going forward. However, fourteen years later, when faced with the next dispute regarding whether a substance was a mineral in the context of a deed, the Montana Supreme Court again quoted and applied the *Heinatz* test, pointing to *Farley* to support its reliance on *Heinatz*. See *Hart v. Craig*, 216 P.3d 197, 198 (Mont. 2009). The Montana Supreme Court's reliance on the *Heinatz* test for a second time reinforces our conclusion that the Montana Supreme Court has generally adopted the *Heinatz* test for determining whether a particular substance is a mineral in the context of deeds and agreements regarding mineral rights to land.<sup>10</sup>

---

fundamentally, these definitions relate to a particular statutory scheme and are not relevant here.

Finally, the Murrays cite the federal Paleontological Resources Preservation Act ("the PRPA"), 16 U.S.C. § 470aaa, which defines "paleontological resources" as including "fossilized remains," and the regulations under that act, which provide that "paleontological resources" do not include "coal, oil, natural gas, and other economic minerals that are subject to the existing mining and mineral laws." See 36 C.F.R. § 291.9(d). In addition to their irrelevance to this case since they apply to federal land, the PRPA regulations actually undermine the Murrays' argument, because the regulations would not need to *exclude* coal, oil, natural gas, and other similar minerals from the definition of paleontological resources unless those substances would otherwise be included in the definition.

<sup>10</sup> To the extent that the Montana Supreme Court has not formally adopted the *Heinatz* test, we predict that, if faced with the issue, it would do so. See *First Intercontinental Bank v. Ahn*, 798 F.3d 1149, 1157 (9th Cir. 2015) (explaining that, as a federal court sitting in diversity, "when the state's highest court has not squarely addressed an issue, we must predict how the highest state court would decide the issue") (internal

Under the *Heinatz/Farley* test, the court asks whether a substance that is scientifically a mineral is also “rare and exceptional in character or possess[es] a peculiar property giving [it] special value.” *Farley*, 890 P.2d at 380 (quoting *Holland*, 540 P.2d at 549 (citing *Heinatz*, 217 S.W.2d at 997)). As noted above, the parties disagree about whether the test is “categorical” or “non-categorical;” that is, whether *all* examples of a particular substance (*e.g.*, all dinosaur fossils) must meet the test in order for *some* examples of the substance (*e.g.*, the Montana Fossils at issue here) to be considered minerals.

The Murrays do not argue that the Montana Fossils are not rare and exceptional or have special value. Instead, they contend that *Farley* did not address whether the test is categorical or not, and that we should reject the “non-categorical” approach as confusing and unworkable.

It may well be that the non-categorical approach generates some unpredictability regarding which substances are rare and valuable enough to be considered minerals within the context of a mineral deed. Regardless, it is clear from the explanation provided in *Heinatz*, which the Montana Supreme Court quoted in *Farley*, that the test is non-categorical. The court gave the examples of “sand that is valuable for making glass” and “limestone of such quality that it may profitably be manufactured into cement,” *Farley*, 890 P.2d at 380 (quoting *Heinatz*, 217 S.W.2d at 997), suggesting that there exist sand that is *not* valuable for making glass and limestone that is *not* of such quality that it can become cement, neither of which would qualify as minerals under the test. Likewise, although many dinosaur

---

quotation marks omitted) (quoting *Glendale Assocs., Ltd. v. Nat'l Labor Relations Bd.*, 347 F.3d 1145, 1154 (9th Cir. 2003)).

fossils have little or no value, the Murrays concede that the Montana Fossils are rare and exceptional. Therefore, under the teachings of *Farley*, the Montana Fossils are “minerals” pursuant to the terms of the Deed, and belong to the owners of the mineral estate.

The remainder of the Murrays’ arguments are policy-based criticisms of the *Heinatz/Farley* test. The Murrays argue that the test is disconnected from the ordinary and natural meaning of the word “minerals;” creates needless litigation to determine which substances are valuable enough to be considered minerals; and leads to absurd results in the case of dinosaur fossils, including jeopardizing museums’ ownership of their fossil collections. Of course, as a federal court sitting in diversity, in matters of state law we are not free to impose our policy preferences over those of the Montana Supreme Court. In any case, the Murrays’ assertions lack merit. The *Farley* test is connected to the ordinary and natural meaning of the term “minerals” as used in a deed, because the purpose of retaining or acquiring a mineral estate is to extract something valuable from the land. In a mineral estate transaction where the quantity, quality, or type of substances present underneath the land may be unknown to both the seller and purchaser of the mineral estate, it is logical to tie the definition of the material conveyed to whether or not it is valuable. Further, it is unlikely that the *Farley* test will result in much, if any, needless litigation, given the extremely broad definition of “value” provided in *Heinatz*, which included both glass and cement as examples of materials made of rare and valuable

minerals. Finally, the Murrays' concern regarding museum collections is hypothetical and unlikely to arise often.<sup>11</sup>

#### IV.

For the foregoing reasons, we reverse the decision of the district court granting summary judgment for the Murrays and remand for further proceedings consistent with this disposition.

#### **REVERSED AND REMANDED.**

---

MURGUIA, Circuit Judge, dissenting:

Because I disagree with the majority's conclusion that dinosaur fossils fall within the ordinary and natural meaning of the word "mineral" and that they accordingly pertain to the mineral estate, I respectfully dissent.

The present case involves a dispute over ownership of several valuable dinosaur fossils that were found on a large ranch in Garfield County, Montana. The Severson family owned the ranch until 2005, when the mineral and surface estates were severed through a mineral deed that transferred

---

<sup>11</sup> As the Seversons point out, a museum's ownership of fossils would only be in doubt following this decision if the museum purchased fossils from the owner of the surface rights of the property where the fossils were found, the mineral estate was owned by another party that did not consent to the sale of the fossils to the museum, and the mineral estate was defined to include all "minerals" without any further definition or clarification of the term. Even then, if the mineral estate's owner successfully sued the museum for ownership of the fossils, the museum could recover the value of the sale from the owner of the surface estate.

the surface estate to the Murrays in full, but made express reservations regarding the mineral estate. Specifically, the mineral deed granted to Severson Minerals LLC, Robert E. Severson, and the Murrays, in varying percentages,

all right title and interest in and to all of the oil, gas, hydrocarbons, and minerals in, on and under, and that may be produced from the lands situated in Garfield County, Montana . . . together with the right, if any, to ingress and egress at all times for the purpose of mining, drilling, exploring, operating, and developing said lands for oil, gas, hydrocarbons, and minerals, and storing, handling, transporting, and marketing the same therefrom together with the rights to remove from said lands all of Grantors' property and improvements.

After the transfer was executed, the Murrays—now owners of the surface estate and a portion of the mineral estate—discovered the first dinosaur fossil: a *Pachycephalosaurus* spike cluster. Thereafter, the Murrays discovered and excavated more valuable fossils, including the “Dueling Dinosaurs” and the “Murray T-Rex.” The question presented in this case is whether these rare and valuable dinosaur fossils are “minerals” under the 2005 mineral deed.

The question whether dinosaur fossils constitute “minerals” is a question of first impression under Montana law.<sup>1</sup> The Montana Supreme Court has twice considered

---

<sup>1</sup> In spite of the novel question of law and the potential policy implications of this case, the parties did not request certification of this question to the Montana Supreme Court. *See* M. R. App. P. 15(3)(a)–(b).

whether a particular substance constitutes a “mineral” for the purposes of property transfers. In *Farley v. Booth Brothers Land and Livestock Co.*, 890 P.2d 377, 378 (Mont. 1995), the Montana Supreme Court asked whether scoria, a type of rock used in road construction, was a mineral. The court concluded it was not. *Id.* at 381. In *Hart v. Craig*, the Montana Supreme Court considered whether sandstone used for rip-rap and landscaping was a mineral, again concluding that it was not. 216 P.3d 197, 211 (Mont. 2009). In both cases, the court looked to the particular properties of the substance to see if it fell within the “ordinary and natural meaning” of the term “mineral.” See *Farley*, 890 P.2d at 380 (quoting *Holland v. Dolese Co.*, 540 P.2d 549, 550–51 (Okla. 1975)); *Hart*, 216 P.3d at 211 (quoting *Heinatz v. Allen*, 217 S.W.2d 994, 997 (Tex. 1949)); see also *Dollar Plus Stores, Inc. v. R-Montana Assocs., L.P.*, 209 P.3d 216, 219 (Mont. 2009) (Words in a contract are interpreted “in their ordinary and popular sense unless the parties use the words in a technical sense or unless the parties give a special meaning to them by usage.”).

The “ordinary and natural meaning” test, as applied to minerals conveyed through a property transfer, was first set forth in a 1949 Texas Supreme Court case, *Heinatz v. Allen*, 217 S.W.2d 994 (Tex. 1949). The Texas court held that “mineral,” for the purposes of property transfers, is to be understood as used in its “ordinary and natural meaning unless there is a clear indication that it was intended to have a more or less extended signification.” *Id.* at 997. The driving principle behind this test is to effectuate the intent of the contracting parties. *Id.* (“The words ‘the mineral rights’ used in the will are to be interpreted according to their ordinary and natural meaning, there being nothing in the will manifesting an intention on the part of the testatrix to use them in a scientific or technical sense.”). In other words,

when Party A transfers to Party B the rights to all “minerals” in the estate, the court presumes that parties intended to apply the ordinary and natural meaning of “minerals,” unless the contract says otherwise. In determining the ordinary and natural meaning of “mineral,” the *Heinatz* court considered several factors, including “the evidence as to the nature of the [substance], its relation to the surface of the land, its use and value, and the method and effect of its removal.” *Id.* at 995–96. In concluding the limestone at issue was not a mineral, one factor that the court considered was that the limestone was not valuable, but the court also considered the fact that limestone was quarried at the surface and would significantly affect the use of the surface estate.

As in *Heinatz*, in *Farley* and *Hart*, the Montana court considered several factors, such as the substance’s particular properties and use, in order to determine whether that substance was a mineral. Specifically, *Farley* and *Hart* relied on the principle that “substances such as sand, gravel and limestone are not minerals within the ordinary and natural meaning of the word unless they are rare and exceptional in character or possess a peculiar property giving them special value . . . . Such substances, when they are useful only for building and road-making purposes, are not regarded as minerals in the ordinary and generally accepted meaning of the word.” *Hart*, 216 P.3d at 211 (quoting *Heinatz*, 217 S.W.2d at 997); *Farley*, 890 P.2d at 380 (quoting *Holland*, 540 P.2d at 550–51).

Here, the district court began by considering definitions of the term “mineral,” including dictionary, statutory, and regulatory definitions.<sup>2</sup> *See, e.g.,* Mineral, *Black’s Law*

---

<sup>2</sup> The majority goes to pains to distinguish each and every definition presented by the Murrays, in an effort to prove that fossils fall under none

*Dictionary* (10th ed. 2014); Mont. Code Ann. § 15-38-103(3); Mont. Code Ann. § 82-4-303(16). The district court noted that all of the definitions described the mining of hard substances or oil and gas that are primarily extracted for future refinement and economic purposes, and that dinosaur fossils do not seemingly fall into those statutory definitions. I agree with the district court's summation of the quoted definitions. I further note that the district court's observation is supported by the way the term "mineral" is used in the mineral deed here, which clearly contemplates traditional mineral extraction for an economic purpose.

The district court went on to consider the unique properties of dinosaur fossils that distinguish them from those substances that we typically think of as minerals. The district court explained that fossils' mineral properties are not what make them valuable, but instead the value turns on characteristics other than mineral composition, such as the completeness of the specimen, the species of dinosaur, and how well the fossil is preserved. The district court further noted that fossils are the remains of once-living vertebrates, with paleontological value, and that they are not refined for economic purposes or mined in the traditional sense, but rather are discovered by happenstance. These are precisely the same types of factors that were determinative in *Farley*,

---

of them. While I would agree that no single definition cited by the district court or the parties on appeal is wholly dispositive here, I see no error in the district court's use of these statutes in an effort to discern whether any similar properties exist among these definitions that might shed light on the scope of the term "mineral." See *Dollar Plus Stores*, 209 P.3d at 219; *Newman v. Wittmer*, 917 P.2d 926, 930 (Mont. 1996) ("[S]tatutory definitions provide guidance in interpreting the ordinary and popular meaning of undefined terms in a restrictive covenant.").

*Hart*, and *Heinatz* under the ordinary and natural meaning test.

Indeed, if we only apply the factors applied by the Texas Supreme Court under *Heinatz*—“the evidence as to the nature of the [substance], its relation to the surface of the land, its use and value, and the method and effect of its removal”—we would still reach the district court’s conclusion that dinosaur fossils are not minerals.<sup>3</sup> *Heinatz*, 217 S.W.2d 995–96. First, the nature of the substance here is organic matter that has fossilized over time into a mineral compound. This factor weighs in favor of finding that fossils are minerals. Second, however, fossils pertain much more closely to the surface of the land. Like the quarried limestone in *Heinatz*, fossils are not “mined” but rather excavated. A large excavation would interfere with the use of the surface estate—a factor which the *Heinatz* court found weighed heavily against a finding that limestone was a mineral. Third, the use and value of fossils are not akin to other substances deemed minerals, such as coal, gas, or oil, which are typically extracted for some economic purpose. Collectively, these factors lead to the conclusion reached by the district court here—that dinosaurs are not “minerals” as that term is ordinarily understood.

In sum, the district court correctly concluded that dinosaur fossils do not fall within the ordinary and natural meaning of the term “minerals,” as that term is used in the mineral deed in this case. I would accordingly affirm the

---

<sup>3</sup> I agree with the majority’s conclusion that although the Montana Supreme Court did not expressly adopt the *Heinatz* test, it would likely do so. In any event, the ultimate question—whether fossils fall within the ordinary and natural meaning of “mineral”—is the same under *Farley*, *Hart*, and *Heinatz*.

district court's grant of summary judgment for the Murrays. For these reasons, I respectfully dissent.