

FOR PUBLICATION

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

GRAND CANYON TRUST; CENTER
FOR BIOLOGICAL DIVERSITY; SIERRA
CLUB,

Plaintiffs-Appellants,

and

HAVASUPAI TRIBE,

Plaintiff,

v.

HEATHER PROVENCIO, Forest
Supervisor, Kaibab National Forest;
UNITED STATES FOREST SERVICE, an
agency in the U.S. Department of
Agriculture,

Defendants-Appellees,

and

ENERGY FUELS RESOURCES (USA),
INC.; EFR ARIZONA STRIP LLC,
Intervenor-Defendants-Appellees.

No. 20-16401

D.C. No.
3:13-cv-08045-
DGC

OPINION

2 GRAND CANYON TRUST V. PROVENCIO

Appeal from the United States District Court
for the District of Arizona
David G. Campbell, District Judge, Presiding

Argued and Submitted August 30, 2021
San Francisco, California

Filed February 22, 2022

Before: Mary M. Schroeder, Johnnie B. Rawlinson, and
Jay S. Bybee, Circuit Judges.

Opinion by Judge Bybee

SUMMARY*

Mining Law

The panel affirmed the district court's summary judgment in favor of the United States Forest Service and intervenors Energy Fuels Resources (USA), Inc. and EFR Arizona Strip LLC in an action by environmental groups (collectively, the Trust) challenging the Forest Service's determination that Energy Fuels held a valid existing right to operate Canyon Mine, a uranium mine in the Kaibab National Forest.

Canyon Mine is located within an area of public lands that have been withdrawn from new mining claims by the

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

Secretary of the Interior, although the withdrawal did not extinguish “valid existing rights.”

When this court last considered this case, the court held that the Trust had Article III standing with respect to its fourth claim – that the Forest Service violated federal law by failing to take various costs into account when determining whether Canyon Mine could be operated at a profit. The panel held that the district court did not err in finding that the law of the case doctrine applied to the issue of standing.

The Trust argued that sunk costs – costs that have already been incurred and that cannot be recovered – should be considered when evaluating whether the discovery of a “valuable mining deposit” was made under the Mining Act.

The panel held that it was not arbitrary and capricious for the Forest Service to ignore sunk costs in determining that Energy Fuels had a claim to “valuable mineral deposits,” 30 U.S.C. § 22. Applying *Chevron* analysis, the panel held at step one that the critical term in the Mining Act – “valuable mineral deposits” – was ambiguous. Proceeding to step two, the panel held that the Department of the Interior (“DOI”)’s interpretation of the Mining Act – in which sunk costs are not considered when determining whether a mine is profitable – was a permissible one. First, the fact that the DOI excludes sunk costs from its profitability analysis was not manifestly contrary to the Mining Act because this interpretation was consistent with the prudent person and marketability tests, which the Supreme Court has repeatedly upheld. Second, DOI’s interpretation was not arbitrary and capricious in substance because it was consistent with established economic principles. It is a basic principle of economics that sunk costs should be ignored when making a rational decision

about whether to make further expenditures. Since the panel would be required to give DOI deference under the *Chevron* doctrine, it was appropriate for the Forest Service to do so as well in its valid existing rights determination. Accordingly, it was not arbitrary and capricious for the Forest Service to rely on DOI's interpretation of the Mining Act.

COUNSEL

Aaron M. Paul (argued), Grand Canyon Trust, Denver, Colorado; Marc Fink, Center for Biological Diversity, Duluth, Minnesota; Neil Levine, Public Justice, Denver, Colorado; Roger Flynn, Western Mining Action Project, Lyons, Colorado; for Plaintiffs-Appellants.

Thekla Hansen-Young (argued), Andrew C. Mergen, Michael T. Gray, and Sean C. Duffy, Attorneys; Jean E. Williams, Acting Assistant Attorney General; Environment and Natural Resources Division, United States Department of Justice, Washington, D.C.; Nicholas L. Pino, Attorney, Office of General Counsel, United States Department of Agriculture, Washington, D.C.; for Defendants-Appellees.

Bradley J. Glass (argued), Gallagher & Kennedy P.A., Phoenix, Arizona, for Intervenor-Defendants-Appellees.

OPINION

BYBEE, Circuit Judge:

This dispute concerns Canyon Mine, a uranium mine operated by Energy Fuels Resources (USA), Inc., and EFR Arizona Strip LLC (collectively, Energy Fuels) in the Kaibab National Forest. Canyon Mine is located within an area of public lands that have been withdrawn from new mining claims by the Secretary of the Interior, although the withdrawal did not extinguish “valid existing rights.” The Havasupai Tribe and three environmental groups—Grand Canyon Trust, Center for Biological Diversity, and Sierra Club (collectively, the Trust)—challenge the United States Forest Service’s determination that Energy Fuels holds a valid existing right to operate Canyon Mine. The primary question in this appeal is, in determining that Energy Fuels has a claim to “valuable mineral deposits,” 30 U.S.C. § 22, whether it was arbitrary and capricious for the Forest Service to ignore sunk costs. The district court held that it was not and granted summary judgment to the defendants. *Grand Canyon Tr. v. Provencio*, 467 F. Supp. 3d 797, 804–05, 812–23 (D. Ariz. 2020). We affirm.

I. BACKGROUND AND PROCEEDINGS

This is the second time this case has come before us. Background concerning the history of Canyon Mine and this case is discussed in *Havasupai Tribe v. Provencio*, 906 F.3d 1155, 1159–61 (9th Cir. 2018). Additional background may be found in *National Mining Ass’n v. Zinke*, 877 F.3d 845, 854–60 (9th Cir. 2017), and *Havasupai Tribe v. United States*, 752 F. Supp. 1471, 1475–77 (D. Ariz. 1990), *aff’d sub nom. Havasupai Tribe v. Robertson*, 943 F.2d 32 (9th Cir.

1991) (per curiam). We will repeat the background here only as necessary for the context of the issues before us.

A. *Background*

1. Canyon Mine

Uranium was first discovered near Grand Canyon National Park in 1947. Uranium is often found in breccia pipes—cylindrical deposits of broken sedimentary rock located thousands of feet underground. *See Nat’l Mining Ass’n*, 877 F.3d at 857. One such breccia pipe was located in the Kaibab National Forest in northern Arizona, a few miles south of Grand Canyon National Park and in the area around Red Butte, a site of religious and cultural significance to the Havasupai Tribe.

In 1984, Energy Fuels Nuclear, Inc. (EFN) submitted a plan of operations to mine uranium from the breccia pipe by building and operating what became known as Canyon Mine. The Forest Service approved the plan in 1986. The Havasupai Tribe challenged the approval, but the district court rejected the tribe’s claims and we affirmed the judgment. *See Havasupai Tribe v. Robertson*, 943 F.2d at 34–35. Over the next years, EFN built the mine’s surface facilities and sank the first fifty feet of a 1,400-foot shaft. However, EFN suspended operations in 1992 due to a drop in uranium prices. Denison Mines Corp. (later acquired by Intervenor-Defendant Energy Fuels Resources (USA), Inc.) acquired the mine in 1997.

2. The Grand Canyon Mineral Withdrawal

In 2007, a spike in the price of uranium generated renewed interest in mining operations near the Grand Canyon and with it, thousands of new mining claims. The large volume of new claims raised concerns about the potential environmental impact of increased uranium mining on the Grand Canyon area. *Nat'l Mining Assoc.*, 877 F.3d at 857. In response, the Secretary of the Interior published a Notice of Intent to withdraw approximately one million acres of public and National Forest System lands from new uranium mining claims. *Notice of Proposed Withdrawal and Opportunity for Public Meeting; Arizona*, 74 Fed. Reg. 35,887 (July 21, 2009). The withdrawn land would include the land occupied by Canyon Mine. *Grand Canyon Trust*, 467 F. Supp. 3d at 802. However, consistent with the Federal Land Policy and Management Act of 1976 (FLPMA), the Secretary noted that the withdrawal was “subject to valid existing rights.” 74 Fed. Reg. 35,887. After two years of study, the Department of the Interior (DOI) issued the order withdrawing the lands. *Public Land Order No. 7787; Withdrawal of Public and National Forest System Lands in the Grand Canyon Watershed; Arizona*, 77 Fed. Reg. 2563 (Jan. 18, 2012). We upheld the withdrawal decision in *National Mining Ass'n*, 877 F.3d at 878. Before the decision became final, Energy Fuels notified the Forest Service, which is within the Department of Agriculture, that it intended to return Canyon Mine to active operations. Although Forest Service approval was not required for Energy Fuels to restart its operations at Canyon Mine, at the Forest Service’s request, Energy Fuels agreed not to resume sinking the mineshaft pending review, known as a Valid Existing Rights

Determination (VER Determination), of its claim of existing rights.¹

3. The Forest Service's VER Determination

The Forest Service issued its VER Determination in April 2012. The Forest Service concluded that “a discovery of a valuable mineral deposit existed” on July 21, 2009 (the date of the Secretary’s segregated withdrawal). It also concluded that, under the economic conditions as of January 11, 2012 (the date of the mineral exam), “the uranium deposit on the claims could be mined, removed, transported, milled and marketed at a profit.”

Two Forest Service certified mineral examiners conducted the analysis for the VER Determination and their findings were approved by a Forest Service locatable minerals specialist. The mineral examiners conducted their examination over several months, making multiple trips to Canyon Mine as well as Energy Fuels’s offices, its Arizona One Mine, and its White Mesa Mill. Their work included verifying claim boundaries, documenting development activities, observing drill core samples, and reviewing various documents provided by Energy Fuels and the United States. They also conducted an economic analysis that considered the

¹ Although the Forest Service did not have to prepare a VER Determination, such a determination was relevant to whether the Forest Service would contest the mining claim before DOI. *See Forest Service Manual* §§ 2814.11, 2819.1–2. *See also* 43 C.F.R. § 4.451 (DOI regulations providing for the government to contest decisions). The Forest Service’s determination would have been relevant, even if not binding, to DOI’s own decision. *See Havasupai Tribe v. Provencio*, 906 F.3d at 1162–63 (holding that the VER Determination was “final agency action” for APA review).

tonnage and grade of uranium, the capital and operating costs, commodity pricing, and a cash flow feasibility analysis. The economic analysis treated costs incurred prior to 1992 (when operations were suspended) to develop the surface structures and sink the first fifty feet of shaft as “‘sunk’ costs since they were previously completed for mine development and are fixed assets on the claims.” As such, these costs were not incorporated into its calculation of Canyon Mine’s “net sum of cash flows.” The discounted cash flow feasibility analysis showed that, at a uranium price of \$56 per pound, Canyon Mine would have a net sum of cash flows of \$29,350,736. The report describes this number as “the stream of income generated by the project as a function of time. The sum of cash flows shows whether the proposed mining operation would result in a profit or a loss.”

In addition to the VER Determination, the Forest Service conducted a “Mine Review,” dated June 25, 2012. The review was conducted by a thirteen-person interdisciplinary team, which evaluated the 1984 plan of operations as well as environmental, historical, and religious issues related to continued operation of Canyon Mine. The Forest Service concluded that “no modification or amendment to the existing Plan of Operation [was] necessary” and “no new federal action subject to further NEPA analysis [was] required.”

B. *Proceedings*

In 2013, the Tribe and Trust asserted four claims under the Administrative Procedure Act to challenge the Forest Service’s determination. We found the VER Determination reviewable and affirmed the district court’s grant of summary judgment for three claims related to the National Environmental Policy Act of 1969 and the National Historic

Preservation Act of 1966. *Havasupai Tribe v. Provencio*, 906 F.3d at 1163–65. On the fourth claim—that the Forest Service violated federal law by failing to take various costs into account when determining whether Canyon Mine could be operated at a profit—the district court held that the Trust did not have prudential standing. *Id.* at 1165. We reversed, holding that the Trust had prudential standing to pursue claim four because “the FLPMA, and not the Mining Act, forms the legal basis of the Trust’s fourth claim” and that the claim fell within the FLPMA’s zone of interests. *Id.* at 1166–67. We remanded to the district court for consideration on the merits.

On remand, the parties cross-moved for summary judgment on the fourth claim, and the district court granted summary judgment to the defendants. The district court held that (1) the Trust had Article III standing based on the law of the case doctrine; (2) assuming that environmental monitoring and wildlife-conservation costs were omitted, the error was harmless because the Trust had not shown that such costs would change the Forest Service’s finding that Canyon Mine would be profitable; and (3) the Forest Service’s failure to consider sunk costs when evaluating the profitability of Canyon Mine was consistent with the Bureau of Land Management’s Handbook and the Interior Board of Land Appeal’s (IBLA) precedent, the Forest Service’s reliance on these sources was not arbitrary and capricious, and any error was harmless. *Grand Canyon Tr.*, 467 F. Supp. 3d at 804–05, 812–23.

The Trust and the Tribe timely appealed the district court’s ruling with respect to whether the VER Determination should have considered sunk costs in its appraisal of the mine’s profitability. The Forest Service continues to claim that the plaintiffs lack standing.

II. STANDARD OF REVIEW

We review the district court’s grant of summary judgment de novo. “Viewing the evidence in the light most favorable to the nonmoving party, we must determine whether there are any genuine issues of material fact and whether the district court correctly applied the relevant substantive law.” *Gordon v. Virtumundo, Inc.*, 575 F.3d 1040, 1047 (9th Cir. 2009) (quoting *Devereaux v. Abbey*, 263 F.3d 1070, 1074 (9th Cir. 2001) (en banc)).

The Trust raises its challenge to the VER Determination under the judicial review provisions of the APA, 5 U.S.C. §§ 701–06. In general, “[t]he form of proceeding for judicial review is the special statutory review proceeding relevant to the subject matter.” 5 U.S.C. § 703. Because the Mining Act does not contain a “special statutory review” provision, we will review final agency action under § 706. *See id.* § 704; *Whitewater Draw Nat. Res. Conserv. Dist. v. Mayorkas*, 5 F.4th 997, 1006–07 (9th Cir. 2021). Under § 706, we will “hold unlawful and set aside agency action, findings, and conclusions” when they are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A); *see Kalispel Tribe of Indians v. U.S. Dep’t of the Interior*, 999 F.3d 683, 688 (9th Cir. 2021).

An open question regarding the appropriate standard under the APA for reviewing the Forest Service’s VER Determination will be addressed below. *See infra* Part III.B.2.

III. DISCUSSION

A. *Standing*

The Forest Service argues that the Trust does not have Article III standing to pursue its claim. It reasons that, because the Trust alleges that it is injured by the continuation of mining operations and the VER Determination was not legally required for operations at Canyon Mine to resume, the Trust's injury cannot be traced to the VER Determination and setting aside the VER Determination would not redress the Trust's alleged injury.

When this case was last before us, we held that the Trust had Article III standing with respect to its fourth claim. We noted that:

While the parties dispute whether continued mining required the Forest Service's approval, we must assume that it did in assessing standing. If the Tribe and Trust are correct that continued mining required approval, then their injuries are fairly traceable to that approval and could be redressed by setting it aside.

Havasupai Tribe v. Provencio, 906 F.3d at 1162 n.3 (citation omitted). The district court held that this conclusion was "both law of the case and binding precedent." *Grand Canyon Tr.*, 467 F. Supp. 3d at 804.

"Under law of the case doctrine, one panel of an appellate court will not as a general rule reconsider questions which another panel has decided on a prior appeal in the same case."

Valenzuela Gallardo v. Barr, 968 F.3d 1053, 1062 (9th Cir. 2020) (alteration omitted) (quoting *Thomas v. Bible*, 983 F.2d 152, 154 (9th Cir. 1993)). “[T]he law of the case doctrine is subject to three exceptions that may arise when ‘(1) the decision is clearly erroneous and its enforcement would work a manifest injustice, (2) intervening controlling authority makes reconsideration appropriate, or (3) substantially different evidence was adduced at a subsequent trial.’” *Minidoka Irrigation Dist. v. Dep’t of Interior*, 406 F.3d 567, 573 (9th Cir.) (quoting *Old Person v. Brown*, 312 F.3d 1036, 1039 (9th Cir. 2002)), *amended on denial of reh’g* No. 03-35697, 2005 WL 1560395 (9th Cir. July 6, 2005). In *Nordstrom v. Ryan*, we held that our prior determination that the plaintiff had standing was “both the law of the case and binding precedent that we must follow” when the case returned “in virtually the same procedural posture.” 856 F.3d 1265, 1270 (9th Cir. 2017).

The district court did not err in finding that the law of the case doctrine applied to the issue of standing. The government has not pointed us to any circumstances that would trigger an exception to the general rule. *See Minidoka*, 406 F.3d at 573. We have already held that the Trust has Article III standing, and the present appeal has returned “in virtually the same procedural posture.” *See Nordstrom*, 856 F.3d at 1270.

B. *Sunk Costs*

The Trust argues that sunk costs—costs that have “already been incurred and that cannot be recovered,” *Black’s Law Dictionary* (11th ed. 2019)—should be considered when evaluating whether the discovery of a “valuable mineral deposit” was made under the Mining Act. In order to rule on

this issue, we must first review the relevant law and the standard of review.

1. Statutory and regulatory background

The General Mining Act of 1872 (Mining Act) allows citizens of the United States to gain rights to “valuable mineral deposits” on federal land. 30 U.S.C. § 22. To do so, a claimant must first “locate” a mining claim by following certain statutory and regulatory procedures, including posting notice. *United States v. Shumway*, 199 F.3d 1093, 1099 (9th Cir. 1999). Locating a mining claim gives the claimant a vested possessory right to the real property at issue. *Id.* at 1095. For the claimant to secure an enforceable property right, a claimant must make a “discovery” of a “valuable mineral deposit.” *See* 30 U.S.C. §§ 22–23. Congress has delegated the authority to administer the Mining Act to the Secretary of the Interior and the Bureau of Land Management. *Cameron v. United States*, 252 U.S. 450, 459–60 (1920). The Mining Act does not define what constitutes a “valuable mineral deposit,” so the Secretary has applied a “prudent person” test to assess whether a claimant has discovered a valuable mineral deposit. In the Secretary’s view, the prudent person test means that

where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing the valuable mine, the requirements of the statute have been met.

Castle v. Womble, 19 Pub. Lands Dec. 455, 457 (D.O.I. 1894). That test has been repeatedly cited with approval by the Supreme Court. See *Watt v. West. Nuclear, Inc.*, 462 U.S. 36, 58 n.18 (1983); *Andrus v. Charlestone Stone Prod. Co.*, 436 U.S. 604, 607 n.4 (1978); *United States v. Coleman*, 390 U.S. 599, 602 (1968); *Best v. Humboldt Placer Mining Co.*, 371 U.S. 334, 335–36 (1963); *Chrisman v. Miller*, 197 U.S. 313, 322 (1905).

In 1962, the Secretary issued an opinion restating the “prudent person” test in terms of a “marketability test,” which requires that a claimant show that a mineral can be “extracted, removed and marketed at a profit” for it to be considered “valuable” under the Mining Act. See *Coleman*, 390 U.S. at 600. The Supreme Court approved the restatement as “an admirable effort to identify with greater precision and objectivity the factors relevant to a determination that a mineral deposit is ‘valuable.’ It is a logical complement to the ‘prudent-man test’ which the Secretary has been using to interpret the mining laws since 1894.” *Id.* at 602. The Court explained that the Mining Act “was to reward and encourage the discovery of minerals that are valuable in an economic sense.” *Id.* “Thus, profitability is an important consideration in applying the prudent-man test, and the marketability test” because if a claimant is pursuing a mineral deposit that lacks “economic value and cannot in all likelihood be operated at a profit” it “may well suggest that a claimant seeks the land for other purposes”—purposes not sustainable under the Mining Act. *Id.* at 602–03.

In 1980, DOI first announced that when determining whether a mine is profitable, it would not consider sunk costs. *United States v. Mannix*, 50 IBLA 110 (1980). In *Mannix*,

the government attorneys argued that “all earlier expenses in development of the property must be considered, *e.g.*, the cost of constructing cabins, shed, and an access road and the purchase of rail and ore cars and that such expenses must be recouped before it can be said the mine is a profitable venture.” *Id.* at 119. DOI rejected the argument, reasoning that “[t]here is no case law of which we have knowledge . . . that compels consideration of the above mentioned development costs in determining if an ongoing operation is presently profitable.” *Id.* So long as “the mineral material may be now mined, removed, and marketed at a present profit over and above the costs of such operations,” the mine may be considered “valuable” under the Mining Act. *Id.* DOI has applied this rule for over forty years. *See United States v. Clouser*, 144 IBLA 110, 131–32 (1998); *United States v. Collord*, 128 IBLA 266, 288 n.24 (1994); *United States v. Copple*, 81 IBLA 109, 129 (1984).

In this case, the mineral examination was conducted by the U.S. Forest Service. Although DOI has primary jurisdiction to determine the validity of mining claims, the Forest Service is authorized to conduct mineral examinations on National Forest System lands and to recommend that DOI initiate administrative contests of invalid mining claims. *See* 16 U.S.C. §§ 478, 482; *Forest Service Manual* §§ 2810.41, 2814.11, 2819, 2819.1–2.

2. Standard of review

The Forest Service determined that Energy Fuels has a valid existing right to operate Canyon Mine. The VER Determination relied on the legal standard for discovery of a valuable mineral deposit announced by DOI. It twice cited DOI’s core decision in *Castle v. Womble*, and it noted which

costs it regarded as sunk. The parties disagree over what standard of review we should apply here. The Trust argues that we can review DOI's interpretation of the Mining Act *de novo*, because it is a pure question of law. The district court disagreed, finding that the question was whether the Forest Service's reliance on DOI's construction of the act was arbitrary and capricious, rather than whether the interpretation itself was valid. *See Grand Canyon Tr.*, 467 F. Supp. 3d at 819–21. The Forest Service argues that, since an action by DOI is not being challenged and DOI is not a party to this lawsuit, the validity of DOI's interpretation is not before us.

The district court was correct. When reviewing the Forest Service's VER Determination, the proper standard of review is arbitrary and capricious. We have consistently applied the arbitrary and capricious standard to cases in which an agency relies on or defers to the opinions or interpretations of another agency. *See, e.g., San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 640 (9th Cir. 2014); *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010); *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990). The Trust argues that arbitrary and capricious review applies only when an agency defers to another agency's judgment about factual matters, as opposed to pure questions of law. Our law is to the contrary. In *Defenders of Wildlife v. U.S. EPA*, we concluded that the Fish and Wildlife Service had prepared a biological opinion that relied on legal errors. 420 F.3d 946 (9th Cir. 2005), *rev'd on other grounds and remanded sub nom. Nat'l Ass'n of Home Builders v. Defs. of Wildlife*, 551 U.S. 644 (2007). EPA had, in turn, relied on the biological opinion. We held EPA was arbitrary and capricious when it relied on the flawed opinion. *Id.* at 976. Although we observed that an agency

“should be able to rely on the expert judgments that underlie [a] Biological Opinion[]” prepared by another agency, in this case “the Biological Opinion’s flaws are *legal* in nature. Discerning them requires no technical or scientific expertise.” *Id.* They were errors “EPA should have understood.” *Id.*

Since the VER Determination cited and applied DOI’s interpretation of the Mining Act,² we may reach through the VER Determination and review DOI’s interpretation “only to the extent that [it] demonstrate[s] whether [the Forest Service’s] reliance on the [interpretation] is ‘arbitrary and capricious.’” *Pyramid Lake*, 898 F.2d at 1415 (quoting *Stop H-3 Ass’n v. Dole*, 740 F.2d 1442, 1460 (9th Cir. 1984)). Because DOI has authority to administer the Mining Act, its interpretation is analyzed under *Chevron, U.S.A., Inc. v. National Resources Defense Council, Inc.*, 467 U.S. 837 (1984).³ *Lambert v. Saul*, 980 F.3d 1266, 1275 (9th Cir.

² Although the VER Determination cited *Castle v. Womble*, it did not refer explicitly to *Mannix*. That suggests the possibility that the Forest Service expressed its own views on the irrelevance of sunk costs, rather than reflecting DOI’s view of such costs. Since both agencies took the same view of sunk costs, and we conclude that such position is not arbitrary and capricious, we do not need to explore further this question. The result would be the same in either case.

³ The Trust argues that *Chevron* deference should not apply because DOI failed to provide the “minimal level of analysis” required. *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 221 (2016) (requiring that an agency give “adequate reasons for its decisions,” meaning that the agency’s explanation must be “clear enough that its ‘path may be reasonably discerned’” (quoting *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 286 (1974))). While DOI’s analysis in *Mannix* is brief, it cites cases that use language consistent with its interpretation. See *Mannix*, 50 IBLA at 117–18 (citing *Castle*, 19 Pub. Lands Dec. at 457; *United States v. McKenzie*, 20 IBLA 38, 45 (1975) (“[E]vidence should focus on current estimates of costs and prices.”)).

2020). If DOI's interpretation of the Mining Act is not entitled to *Chevron* deference, then it is arbitrary and capricious for the Forest Service to rely on the erroneous interpretation. This approach is consistent with that of our sister circuits. *See, e.g., Florida Key Deer v. Paulison*, 522 F.3d 1133, 1145 (11th Cir. 2008) (“If [one agency’s opinion is] arbitrary and capricious, an[other] agency’s decision to adopt [it] is likewise arbitrary and capricious and may be challenged.”); *CTIA-Wireless Ass’n v. FCC*, 466 F.3d 105, 117 (D.C. Cir. 2006) (finding that, if the court must defer to the agency’s interpretation, it is not arbitrary and capricious for another agency to do so).

3. *Chevron* deference

Chevron analysis has two steps: “[W]e must first exhaust the traditional tools of statutory construction to determine whether Congress has directly spoken to the precise question at issue.” *Turtle Island Restoration Network v. U.S. Dep’t of Com.*, 878 F.3d 725, 733 (9th Cir. 2017) (internal quotations omitted). If the statute is “silent or ambiguous on the question at hand, then at *Chevron* step two we must respect the agency’s interpretation so long as it is based on a permissible construction of the statute”—that is, one not “arbitrary, capricious, or manifestly contrary to the statute.” *Id.* (internal quotations omitted).

This would indicate that DOI was reading the Mining Act to be consistent with its prior case law on the prudent person and marketability tests, which the Supreme Court approved of on multiple occasions. This is sufficient for us to proceed with a *Chevron* analysis. *See Encino Motorcars*, 579 U.S. at 222 (“[S]ummary discussion may suffice . . .”).

At *Chevron* step one, “[t]o maintain the proper separation of powers between Congress and the executive branch, we must ‘exhaust all the traditional tools of construction’ before we ‘wave the ambiguity flag.’” *Route v. Garland*, 996 F.3d 968, 978 (9th Cir. 2021) (quoting *Medina Tovar v. Zuchowski*, 982 F.3d 631, 634 (9th Cir. 2020)). In this case, however, we have little difficulty determining that the critical term in the Mining Act—“valuable mineral deposits”—is ambiguous. See 30 U.S.C. §§ 22–23. It is neither a defined term nor a term of art in the industry. In *Chrisman*, the Court first considered, and approved the Secretary’s “prudent person” test. 197 U.S. at 322–23. The Court stated the statutory requirement in the most general of terms: “[T]here must be such a discovery of mineral as gives reasonable evidence of the fact, either that there is a vein or lode carrying the precious mineral, or, if it be claimed as placer ground, that it is valuable for such mining.” *Id.* at 323.

Examining the purpose and history of the Mining Act similarly yields no definitive understanding of the term. In *Coleman*, the Supreme Court said that the purpose of the Mining Act was to make “public lands available to people for the purpose of mining valuable mineral deposits and not for other purposes. The obvious intent was to reward and encourage the discovery of minerals that are valuable in an economic sense.” 390 U.S. at 602. That description is far too general to cabin the definition of “valuable mineral deposits.” That does not mean that an enforcing agency such as DOI can define it in any way it pleases, but it also means that we may not insist that the phrase is so clear as to be capable of a single meaning.

If the terms of the statute are not capable of precise definition at step one, we cannot see how we could determine

that “valuable mineral deposits”—which the agency has concluded means that the deposits would be pursued by a prudent person—forecloses how the agency accounts for “sunk costs,” which is not a statutory term, but is a commonly used economic phrase. Concluding that the statute is ambiguous, we may now proceed to step two.

At *Chevron* step two, we hold that DOI’s interpretation of the Mining Act—in which sunk costs are not considered when determining whether a mine is profitable—is a permissible one and not “arbitrary and capricious in substance, or manifestly contrary to the statute.” *Mayo Found. for Med. Educ. & Rsch. v. United States*, 562 U.S. 44, 53 (2011) (quoting *Household Credit Servs., Inc. v. Pfennig*, 541 U.S. 232, 242 (2004)). First, we find that the fact that DOI excludes sunk costs from its profitability analysis is not manifestly contrary to the Mining Act because this interpretation is consistent with the prudent person and marketability tests, which the Supreme Court has repeatedly upheld. *See West. Nuclear, Inc.*, 462 U.S. at 58 n.18; *Coleman*, 390 U.S. at 602. Although the Court has not addressed the question of sunk costs specifically, the language of these tests and the cases in which they are applied suggest that the profitability analysis is forward looking. *See, e.g., Coleman*, 390 U.S. at 602 (“... a person of ordinary prudence would be justified in the further expenditure of his labor and means.”); *see also McKenzie*, 20 IBLA at 38, 45 (“[E]vidence should focus on current estimates of costs and prices.”). Sunk costs, on the other hand, are backward looking.

More importantly, DOI’s interpretation is not arbitrary and capricious in substance because it is consistent with established economic principles. It is a basic principle of

economics that sunk costs should be ignored when making a rational decision about whether to make further expenditures. See N. Gregory Mankiw, *Principles of Economics* 275 (8th ed. 2016) (“Because nothing can be done about sunk costs, you should ignore them when making [rational] decisions about various aspects of life, including business strategy.”); Richard A. Posner, *Economic Analysis of Law* 8 (9th ed. 2014) (“‘Sunk’ (already incurred) costs do not affect a rational actor’s decisions on price and quantity. . . . Fully rational people base their decisions on expectations of the future rather than on regrets about the past.”); Paul A. Samuelson & William D. Nordhaus, *Economics* 179 (18th ed. 2005) (“One of the most important lessons of economics is that you should look at the marginal costs and marginal benefits of decisions and ignore past or sunk costs.” (emphasis omitted)); Thomas Kelly, *Sunk Costs, Rationality, and Acting for the Sake of the Past*, 38 *Noûs* 60, 61 (2004) (“[I]t is widely agreed that honoring sunk costs is obviously and clearly irrational, and that doing so is, without exception, to be avoided. In economics and business textbooks, the tendency to honor sunk costs is treated as an elementary fallacy.”); Armen A. Alchian & William R. Allen, *Exchange and Production: Theory in Use* 288 (1969) (a “fixed or sunk cost” is “‘fixed’ upon you and irrevocable. For any subsequent decision this ‘cost’ is totally irrelevant and can be forgotten.”). Federal courts have acknowledged the validity of the sunk cost principle in other contexts. See, e.g., *Verizon Commc’ns, Inc. v. FCC*, 535 U.S. 467, 499 n.17 (2002) (stating that “costs” in an economic sense do not include sunk costs); *Alenco Commc’ns, Inc. v. FCC*, 201 F.3d 608, 615–16 (5th Cir. 2000); *Fresno Mobile Radio, Inc. v. FCC*, 165 F.3d 965, 969 (D.C. Cir. 1999) (rejecting an argument that a business’s actions are motivated by its past investment because “[t]his is a foolish notion that should not be

entertained by anyone who has had even a single undergraduate course in economics,” and collecting sources); *MCI Commc’ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1117 (7th Cir. 1983). See also *United States v. Park Place Assoc., Ltd.*, 563 F.3d 907, 921 (9th Cir. 2009).

To illustrate, let us suppose that ABC Mining spent \$31 million to develop what it thought was a valuable mine, but had to take it out of operation when the market value of the mineral declined. Let us also suppose that if ABC Mining wishes to restart operation of the mine, it will earn \$50 million in revenue but incur \$20 million in further capital and operating expenses. If we ignore sunk costs, ABC Mining should reopen the mine because the benefit from mining (\$50 million) still exceeds the nonsunk cost of operating the mine (\$20 million). In fact, the revenue far exceeds the nonsunk cost. The operation stands to make \$30 million by extracting the deposit; by any measure that makes the mineral deposit a valuable one.

By contrast, if ABC Mining considers the sunk costs as part of its decision whether to re-start operations, it would refuse to continue operation because it would stand to lose \$1 million after considering sunk costs (\$31 million + 20 million – 50 million). But if ABC Mining decides not to re-open the mine, it will lose \$31 million total, instead of \$1 million, because it chose not to offset its prior losses against the promise of a \$30 million benefit. No prudent person should follow such a plan. ABC Mining will have misjudged the situation by considering its *total* costs rather than its *nonsunk* costs. It is true that the mine operator will have lost \$1 million over the life of the mine, but if the

operator declines to proceed when its revenues will exceed its costs, it will have lost \$31 million at the mine.⁴

DOI's sunk costs rule from *Mannix*⁵ simply recognizes that a prudent person cannot change sunk costs, and thus those costs should not be considered when determining whether that person is "justified in the further expenditure of his labor and means." *Castle*, 19 Pub. Lands Dec. at 457; see also Thomas T. Nagle, John E. Hogan, & Joseph Zale, *The Strategy and Tactics of Pricing: A Guide to Growing More Profitably* 224 (5th ed. 2011) ("Since nonincremental fixed and sunk costs do not change with a pricing decision, they do not affect the relative profitability of one price versus an alternative."); David D. Friedman, *Price*

⁴ Of course if a mine operator knew from the outset that it would lose even one dollar over the life of the mine, it would decline to file the mineral claim. But the operator—and DOI, which must approve such claims—can only work off the information they have. They are not responsible for accurately predicting the vagaries of the market over the life of the mine. And DOI has decided not to punish operators whose claims, once unprofitable, have returned to profitability.

⁵ The Trust argues that, even if DOI's interpretation is entitled to deference, the Forest Service erred in applying *Mannix* because *Mannix* has an exception for withdrawn land. The Trust relies on the "absent a prior withdrawal" language in the *Mannix* opinion and a concurrence in *Collord*, in which the concurring ALJ stated that the existence of the withdrawal was "critical" to the *Mannix* decision. *Mannix*, 50 IBLA at 119; *Collord*, 128 IBLA at 304 (Burski, J., concurring in the result). However, the majority in *Collard* decided to exclude sunk costs even in the face of a withdrawal. See *Collard*, 128 IBLA at 288 n.24. Furthermore, DOI has applied the *Mannix* rule consistently—without an exception for withdrawal—for the past forty years. See, e.g., *Clouser*, 144 IBLA at 131; *Copple*, 81 IBLA at 129. Given this precedent, the Forest Service did not act arbitrarily and capriciously by failing to apply a nonexistent exception for withdrawn land.

Theory: An Intermediate Text ch. 13, pt. 1 (2d ed. 1990), http://www.daviddfriedman.com/Academic/Price_Theory/PThy_ToC.html (“The significance of sunk costs is that a firm will continue to produce even when revenue does not cover total cost, provided that it does cover nonsunk costs (called recoverable costs), since nonsunk costs are all the firm can save by closing down.”).

We need not go so far as to pronounce DOI’s approach to sunk costs required by the statute or correct as a matter of principle. See *Friends of Santa Clara River v. U.S. Army Corps of Eng’rs*, 887 F.3d 906, 922 (9th Cir. 2018). We do not decide that any other approach would be arbitrary and capricious. It is sufficient that we can conclude that DOI’s rule excluding sunk costs is not arbitrary and capricious. And since we would be required to give DOI deference under the *Chevron* doctrine, it was appropriate for the Forest Service to do so as well in its VER Determination. As such, it was not arbitrary and capricious for the Forest Service to rely on DOI’s interpretation of the Mining Act.

IV. CONCLUSION

The judgment of the district court is **AFFIRMED**.