



U.S. v. SALLY L. NEWMAN and POORMAN ENTERPRISES, INC., OF AMERICA
178 IBLA 174
Decided September 28, 2009



United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Land Appeals
801 N. Quincy St., Suite 300
Arlington, VA 22203

UNITED STATES

v.

SALLY L. NEWMAN and POORMAN ENTERPRISES, INC., OF AMERICA

IBLA 2007-17

Decided September 28, 2009

Appeal from an Administrative Law Judge decision declaring four lode mining claims void for failure to discover a valuable mineral deposit. AA-24795.

Affirmed in part; reversed in part.

1. Administrative Procedure: Burden of Proof--Evidence:
Prima Facie Case--Mining Claims: Contests

In a mining contest, the Government establishes a prima facie case when a mineral examiner testifies that he has examined a claim and found the mineral values insufficient to support a finding of discovery. A mineral examiner need not possess expertise in the mineral at issue, but such testimony will be considered in conjunction with claimant's expert testimony in determining whether the claimant has adequately demonstrated the discovery of a valuable mineral deposit.

2. Administrative Procedure: Burden of Proof--Evidence:
Preponderance--Mining Claims: Contests

Once a prima facie case of lode claim invalidity has been established, the burden shifts to the claimant to demonstrate, by a preponderance of the evidence, the discovery of continuous mineralization along a vein or lode ore of such quantity and quality as can be mined at profit. Disconnected pods of mineralized ore, even of high value, do not necessarily constitute the discovery of a valuable mineral deposit.

3. Administrative Procedure: Burden of Proof--Evidence:
Preponderance--Mining Claims: Contests

For a lode claim to be valid, a vein or other mineralized ore body must be exposed on that claim. Once exposure is made on the surface and/or at depth, geologic inference may then be used to project what is reasonably likely to be found. Expert opinion based on area geology and deductions from established facts may properly be considered in determining whether ore exists in sufficient quality and quantity to justify a prudent man in the expenditure of his means with a reasonable anticipation of developing a valuable mine.

4. Mining Claims: Determination of Validity--Mining Claims:
Discovery: Generally

To constitute a valuable mineral deposit on a claim within a group of claims, the recovery expected from each claim must not only exceed the direct cost of mining, transporting, milling, and marketing the deposit on that claim, but must also bear a proportionate share of the development and capital costs attributable to the combined operation.

APPEARANCES: J. P. Tangen, Esq., Anchorage, Alaska, for appellants; Dawn C. Germain, Esq., Office of the General Counsel, U.S. Department of Agriculture, Juneau, Alaska, for the U.S. Forest Service.

OPINION BY ADMINISTRATIVE JUDGE JACKSON

This appeal involves magnetite ¹ and arises out of a September 29, 2006, decision by Administrative Law Judge Harvey C. Sweitzer (Decision), declaring certain lode mining claims void for lack of a discovery. Erik Lindeman located a block of claims (*i.e.*, mining claims identified as Iron King Nos. 3 through 11, 14, and 15 and Poorman Millsites 1 and 2)² in the Tongass National Forest, immediately north of Poorman Bay on Prince Edward Island in secs. 1, 11, and 12, T. 73 S.,

¹ Magnetite is an iron oxide (Fe₃O₄) with magnetic properties.

² This block is four mining claims wide and three claims long, with the millsites adjacent and to the south on Poorman Bay.

R. 85 E., Copper River Meridian, Alaska.³ Sally Lindeman Newman applied for patent to these lands on February 28, 1979. Following mineral examinations by personnel from the Forest Service, U.S. Department of Agriculture, in 1985 and 1991, Iron King Nos. 3, 4, and 6 were recommended for clear listing, with the remainder recommended for rejection due to a lack of discovery (lode claims) or a lack of use in connection with a lode mining claim (millsites). Patent to these three clear-listed claims issued on April 28, 1998; a contest complaint was then initiated as to the remaining claims and assigned to Administrative Law Judge Harvey C. Sweitzer.⁴ Judge Sweitzer's decision concluded Iron King Nos. 7, 8, 10, and 15 were "void for failure to discover a valuable mineral deposit." Decision at 37. For the reasons discussed below, we affirm in part and reverse in part that decision.

BACKGROUND

Norman Day (Mineral Group Leader) and other Forest Service personnel conducted a field examination of the Poorman claims and mill sites in May 1985, performed a magnetic survey using a precision proton magnetometer, and took samples from Iron King No. 8. *See* Mineral Report dated June 1, 1995 (Mineral Report), at 1, 8, 13, Ex. 1.⁵ Ginny R. Grove, a Forest Service mineral examiner detailed to the Ketchikan Area Office, was later directed to perform a supplementary field examination and prepare a mineral report. She performed her field work in March and May 1991, took samples from Iron King Nos. 7, 8, and 10, reviewed

³ These lands were withdrawn from mineral entry in December 1971 pursuant to the Alaska Native Claims Settlement Act, 43 U.S.C. § 1610 (2006). Sealaska, a Native Regional corporation, later selected and received title to lands within these sections on Aug. 17, 1979, by Interim Conveyance No. 225. *See* 43 U.S.C. § 1613 (2006). Although this conveyance excluded the Poorman claims, they were identified as situated only in sections 11 and 12. Since Iron King No. 10 also includes lands conveyed to Sealaska in section 1, Judge Sweitzer limited his decision only to claims in sections 11 and 12. Decision at 4. Appellants do not contest that ruling, claiming the real issue on appeal is whether these lands should be patented to them or conveyed to Sealaska pursuant to its selection of lands embraced by these claims in section 1. *See* Statement of Reasons (SOR) at 23.

⁴ Contestee/appellants thereafter relinquished their interests in the millsites and four mining claims, leaving only Iron King Nos. 7, 8, 10, and 15 in dispute. Since Newman is now deceased, we hereafter collectively refer to contestee below and appellant herein (Poorman Enterprises, Inc.) as "Poorman."

⁵ Government exhibits admitted into evidence at the 4-day hearing held in this matter are cited as "Ex.>"; Poorman exhibits are cited as "PEx." The hearing transcript is sequentially paginated (*e.g.*, the third day of hearing begins at Tr. 261).

available drill logs and core samples, and completed her report on June 1, 1995. *Id.* at 2, 13-15. It identifies probable reserves of 2.3 million tons of ore (54% iron, with some copper, gold, and silver) that could be mined at a profit on Iron King Nos. 3, 4, and 6 and recommended they be clear listed for patent. *Id.* at 5, 18-20. As to the remaining claims, the Mineral Report concludes “a discovery of a valuable mineral deposit does not exist” and recommended a contest action. *Id.* at 4-5.

Patent to Iron King Nos. 3, 4, and 6 issued on April 28, 1998; a contest complaint as to the remaining claims was initiated on June 25, 1999. Day and Grove were the only government witnesses who testified at the December 2005 hearing before Judge Sweitzer, and while neither was proffered as an expert in geology or the interpretation of geophysical data (*e.g.*, data from magnetometers),⁶ both are certified minerals examiners. Judge Sweitzer determined they “had sufficient training and experience to qualify as expert witnesses” for purposes of the Government’s *prima facie* case, but that their experience and expertise would be weighed against that of Poorman’s experts in determining whether Poorman preponderated in demonstrating a discovery. Decision at 26. Based on their testimony and the Mineral Report, which showed “dismal” sample results on Iron King No. 8, “relatively low” results on Iron King Nos. 10 and 15, and “small discontinuous pods of material inadequate to qualify as a valuable mineral deposit” on Iron King Nos. 7, 10, and 15, he ruled “the Government established a *prima facie* case of lack of discovery as of the date of withdrawal in 1971.” *Id.* at 26, 29.

Judge Sweitzer recounted the evidence presented as to each claim, *see* Decision at 11-21, and then analyzed whether Poorman established the quality and quantity of mineralization necessary to substantiate the discovery of valuable magnetite deposit that can be mined at profit, concluding that Poorman failed to preponderate on these issues. *Id.* at 34, 37. To place this appeal in context, we summarize that evidence as it pertains to the size and grade of the mineral deposit that may exist on the subject claims.

Iron King No. 7: Samples collected from a discovery trench near the western boundary with Iron King No. 3 were assayed and found to contain 62.2% and 61.5% iron; a drill core at depth (CP-68), also near that boundary but roughly 200 feet south of the trench, showed an 8-foot intercept of 50+% iron. Ex. 1 at 39; Ex. 14; *see* Decision at 11-12. Although Grove determined a mineral deposit was exposed at the trench, she did not believe it was a continuation of the deposit on Iron King

⁶ Day and Grove conceded these were the first magnetite claims they had examined and that their magnetite expertise and experience with magnetometers was limited to a day of training Day received several years earlier. *See* Tr. 9-10, 21-22, 24, 31, 33 (Day); Tr. 49, 79, 130-32 (Grove).

No. 3, stating it “appears to be a small isolated pod of material insufficient in quantity to support mining.” Mineral Report at 4; Tr. at 54; *see* Tr. 57-58 (Grove estimated this surface deposit contained only 1,860 tons of iron ore).

Dr. Donald Stevens was accepted by Judge Sweitzer as an expert in geology and geophysics (*e.g.*, extensive experience in magnetometer instrumentation and magnetic surveys). He prepared an expert report for Poorman, PEx. 6 (Stevens Report), which analyzes core data from CP-68 and identifies two mineralized zones: a 30-foot magnetite intercept (50+% iron) less than 200 feet below Iron King No. 7; and a second, smaller intercept further below this claim. Stevens Report, Fig. 11. Assuming the trench mineralization connects to either of these zones, the Stevens Report estimates the resource on Iron King No. 7 would be 125,600 tons of 45+% iron (if connected to the upper zone) or 41,500 tons of 43+% iron (if connected to the lower zone). *Id.* at 39. As explained by Dr. Stevens:

The orientation from the [trench] outcrop to these intercepts in the drill holes is the same orientation as the structures that are mineralized on the [patented claims]. . . . And so we have this orientation, this north/south structural orientation. We have mineralization in a trench that’s not that far away. The direction between the two is the same as the structured direction, the orientation of the Poorman iron deposit and the orientation of the mineralization in the trench. I believe that they are connected, that this mineralization will connect with the trench.

. . . So either way, the outcrop on [Iron King No.] 7, combined with the drill hole intercepts that we have indicates that we have a significant discovery here of high-grade magnetite. It’s supported by the airborne magnetic data.^[7]

⁷ Dr. Stevens also opined:

[CP-68] is an interesting location, because on the airborne magnetic survey, you will see that there is a - - from the main Poorman magnetite anomaly, there is a plateau area off to the west which includes 7 and 15. Magnetism is a good way to look for magnetite. I mean, they’re joined at the hip. So anytime you see an area that’s anomalously high, like over 7 and 15 and 8, there’s magnetite there to give that anomaly.”

Tr. at 248. He earlier testified that this airborne survey was performed for the State of Alaska using a “state-of-the-art” cesium vapor magnetometer that is 100 times more sensitive than a precision proton magnetometer, such as the one used by the Forest Service in its 1985 magnetic study of the claims. Tr. 191-92; *see* Mineral

(continued...)

Tr. 245-46, 249-50.

Iron King No. 8: Samples taken from a trench showed iron content of 3.5-5.0%; the Forest Service magnetic survey did not indicate magnetite on this claim. Tr. 37-38; see Mineral Report, Ex. 1 at 45. Dr. Stevens testified:

There is no mineralization that you can put your hand on or sample, but the magnetic data is excellent. We've got a magnetic anomaly that comes right across [Iron King No.] 8. There's a one-to-one relationship between magnetite and magnetit[ic] anomalies. And although there haven't been any samples taken that could - - so you can assay it, a prudent miner would look very carefully at 8, with every tool at his disposal to find the magnetite that has to be there because of the airborne magnetic survey.

Tr. 255. The Stevens Report used the results of the airborne magnetic survey to identify this claim as being on the east flank of the magnetic high over the patented Poorman claims. Stevens Report at 23; Tr. 219 (readings for Iron King No. 8 are "strongly magnetic anomalous"). However, Dr. Stevens acknowledged this survey could not be used to identify the grade of ore present, its depth, or thickness. Tr. 256, 265-66, 284.

Iron King No. 10: Surface samples showed iron content of 4.8%, 23.8%, and 37.5%. Mineral Report at 14; Ex. 1 at 41. Since the log for drill hole P-26 did not indicate magnetite, Grove estimated this exposed deposit contained less than 500 tons of magnetite. Dr. Stevens reviewed these data and also considered core hole data from CP-62, because he determined it entered Iron King No. 10 "about 250 feet" south of the sampled surface area and intercepted a section of magnetite (16% iron) approximately 200 feet under this claim. Stevens Report at 35; *id.*, Fig. 9. Assuming the intercept connected with the surface exposure,⁸ and by averaging their iron values, Dr. Stevens estimated this deposit held at least 32,500 tons of ore containing 24% iron. Stevens Report at 35; see Tr. 243. As to connectivity between that exposure and this intercept, Dr. Stevens opined:

Here's an outcrop that is right on the strike of the structure that hosts the main Poorman deposit. We have drill hole CP62, which is - - the

⁷ (...continued)

Report, Ex. 1 at 8, 45; Stevens Report at 23-24, Figures 3, 4 (survey maps, Alaska Division of Geological & Geophysical Surveys, Geophysical Report 1999-10-A1).

⁸ Computer modeling by Grove showed this intercept underlies Iron King No. 3 (not Iron King No. 8). Tr. 102-04.

mineralization there is on that same trend. I have to believe that we have the main Poorman deposit, the structures continue, we have other magnetite occurrences, one down the drill hole, one is exposed on the surface. That trend is highly prospective for the - - developing additional tonnage of magnetite.

. . . The drill intercept is lower grade. It's deeper, but it's on structure, which has to be interpreted as meaning that the plumbing system is still in place, and that there will be more magnetite - - which further exploration, there will be - - you know, the prudent miner is going to find more magnetite along that zone.

Tr. 237-38, 239. Recognizing he lacked sufficient information to determine the grade, depth, or thickness of this deposit, Dr. Stevens stated it has "potential" and "is probably going to develop into a large enough magnetite site to mine. Tr. 238.⁹

Iron King No. 15: Grove reviewed logs for 5 holes drilled on the claim, and while they indicated magnetite, she was unable to correlate them and therefore opined that only "isolated pods" exist below the surface. Tr. 56, 133; *see* Tr. 114 ("five holes were drilled in varying directions and depths, and they intercepted small amounts of mineralization at differing depths and differing north/south separation"). The Stevens Report reaches a similar conclusion, noting "further drilling to determine the shape, orientation, and controlling factors of this mineralization" would be prudent and that these hole data "suggest there is excellent potential for the discovery of additional economic deposits of magnetite on Iron King [No.] 15." Stevens Report at 45; *see* Tr. 253 ("This is a great place to be - - - to continue your search for magnetite").¹⁰

⁹ Although the airborne survey did not indicate magnetite, Dr. Stevens suggested this could be attributable to a dense forest which required flying higher above this claim than over other surveyed claims. Tr. 218, 241; *but see* Tr. 450-51 (similar forest cover exists on Iron King Nos. 7 and 8).

¹⁰ As explained by Dr. Stevens at the December 2005 hearing:

As hard as I tried to figure out the three-dimensional spatial connections between these - - - the magnetite intercepts . . . [and] these five drill holes, I couldn't figure it out. You just can't connect the dots.

And so every drill hole had mineralization that was excellent grade. But until you understand how to connect them, you can't calculate volume. And that's unfortunate, but that's just the geometry.

. . . The airborne magnetics show[] a magnetic anomaly over

(continued...)

DISCUSSION

Poorman raises three principal issues on appeal. First, whether the testimony of certified minerals examiners who are not proffered as experts in magnetite or the interpretation of magnetometer surveys for detecting magnetite is sufficient to establish the Government's prima facie case, and if so, were their expert opinions supported by probative evidence concerning the character, quality, and extent of mineralization on these claims. SOR at 25-33. Second, whether Judge Sweitzer erred in concluding Poorman failed to demonstrate a discovery of significant magnetite deposits on these claims through geologic inference and Dr. Stevens' expert testimony. *Id.* at 34-49. And finally, whether Poorman adequately showed these deposits could be mined, processed, transported, and then sold at a profit. *Id.* at 49-53. We address each of these issues in the order presented.

I. The Government Established a Prima Facie Case that these Claim are Invalid.

[1] Poorman contends mineral examiners are not automatically qualified as expert witnesses in a mining claim contest, and that for the Government to establish a prima facie case under Board precedent, they must be qualified as experts on the issues here presented (*i.e.*, magnetite and magnetometer surveys). SOR at 27-28, citing *Rodgers v. Watt*, 725 F.2d 1376, 1380 (9th Cir. 1984). We have factually distinguished *Rodgers* and refused to apply it to require that certified mineral examiners must also be qualified as experts on the specific mineral at issue. *United States v. Willsie*, 152 IBLA 242, 255-56 (2000). As was stated more recently:

Where the Government contests a mining claim because it is not supported by the discovery of a valuable mineral deposit, it bears the initial burden of making a prima facie case that no discovery exists. The Government presents such a case when a mineral examiner "testifies that he has examined a claim and found the mineral values insufficient to support a finding of discovery."

¹⁰ (...continued)

this area. This was confirmed by the Forest Service's ground magnetic survey that they did just to the north of these drill holes, where they had a several thousand gamma magnetic anomaly So the magnetics, both airborne and ground, confirm that there is magnetite near these drill holes. We know there's magnetite in the drill holes because of the drill logs and the assays.

Tr. 250-51.

United States v. Martinek, 166 IBLA 347, 404 (2005), quoting *United States v. Boucher*, 147 IBLA 236, 248 (1999) (citations omitted). Under circumstances strikingly similar to this case, the Board then held:

Martinek states that we cannot affirm Judge Sweitzer's findings that the Government presented a prima facie case, because he erred in lending the Government witnesses any credibility at all, as they had no prior experience with the mineral antimony. Martinek's objection to the testimony of the Government's witnesses in this case goes to the weight that should be given that testimony. As a matter of determining whether the Government presented a prima facie case, the

question is whether the testimony of the Government's witnesses, if standing by itself, unchallenged and unrefuted, would warrant the conclusion that there had been no discovery of a valuable mineral deposit on any of the claims in question. How that testimony looks in the light of the testimony of expert witnesses for the opposing party relates solely to the question of whether the contestee has demonstrated a discovery by a preponderance of the evidence. *Cf. Foster v. Seaton*, 271 F.2d 836 (D.C. Cir. 1959).

Martinek, 166 IBLA at 405,¹¹ quoting *United States v. Larsen*, 9 IBLA 247, 256 (1973), *aff'd*, No. 73-119 (D. Ariz. Sept. 24, 1974). We are unpersuaded we should take a new approach and reach a different result in this case.¹²

Poorman next argues the Government failed to present probative evidence during its case-in-chief because the Forest Service field examinations were "rife with errors, shortcomings, commissions, and mistakes" and, therefore, "not sufficiently credible" to establish a prima facie case. SOR at 30, 31. Judge Sweitzer held that the deficiencies identified by Poorman, as well as its critique of Day and Grove's expertise

¹¹ Whether the mineral examiners in *Martinek* were otherwise qualified as "experts" was not apparently at issue. While more than simply being a certified mineral examiner may need to be shown, we are satisfied that Day and Grove's education, training, and experience are sufficient in this case for them to establish a prima facie case on the Government's contest complaint. *See Willsie*, 152 IBLA at 256.

¹² Poorman claims its due process right under the Fifth Amendment, United States Constitution, were violated because its magnetite claims were adversely affected by the testimony of witnesses who were not sufficiently qualified as experts. SOR at 29. While novel and creative, this Board does not address or resolve constitutional claims. *See Mark Patrick Heath*, 175 IBLA 167, 196 (2008), and cases cited.

and experience, did not go to admisability or credibility, but to the weight accorded that evidence and their testimony. Decision at 26, citing *Larson*, 9 IBLA at 256. While the quality of the evidence presented by the Government was challenged, we are unpersuaded it lacked all probative value and, therefore, find no error in Judge Sweitzer's determining that the Government established a prima facie case, see *United States v. Rannells*, 175 IBLA 163, 183 (2008), and then ruling that the Government's evidence must be weighed and considered with Poorman's evidence, including the testimony of its expert witnesses, in determining whether Poorman preponderated in demonstrating the discovery of valuable mineral deposits. See Decision at 26, 29. It is to those issues we now turn.

II. *Poorman Failed Adequately to Demonstrate the Quantity and Quality of Mineral Deposits on Iron King Nos. 8, 10, and 15.*

[2] In order to be valid and thus subject to patent, a mining claim must contain a "valuable mineral deposit" within its boundaries. 30 U.S.C. § 22 (2006); see 30 U.S.C. § 29 (2006). Such a deposit consists of minerals of such quality and in such quantity as to warrant a person of ordinary prudence in the further expenditure of his labor and means with a reasonable prospect of success in developing a valuable mine. See *Moon Mining Co. v. Hecla Mining Co.*, 161 IBLA 334, 356 (2004), and cases cited. Once a prima facie case of claim invalidity has been established, the burden shifts to the claimant to demonstrate, by a preponderance of the evidence presented, its discovery of a valuable mineral deposit (*i.e.*, ore of such quantity and quality as can be mined at profit). See, *e.g.* *United States v. Pass Minerals, Inc.*, 168 IBLA 115, 123 (2006); *United States v. Whitney*, 51 IBLA 73, 84 (1980). For lode claims, "there must be evidence of continuous mineralization along the course of a vein or lode; the mere showing of disconnected pods of mineral concentration, even of high values, does not satisfy the test." *Whitney*, 51 IBLA at 85; accord *United States v. Cook*, 71 IBLA 268, 279 (1983); *United States v. Wells*, 69 IBLA 363, 366 (1983); see *Martinek*, 166 IBLA at 417.

[3] It is well settled a vein or other mineralized ore body must be exposed on a lode mining claim and that absent exposure, geologic inference may not be used to establish the existence of valuable mineral deposit on that claim. *United States v. Miller*, 165 IBLA 342, 355 (2005), citing *United States v. Clouser*, 144 IBLA 110, 115-16 (1988). But as we there explained:

[G]iven an exposure somewhere within the claim, it is not necessary that the vein be exposed at depth, by drilling or other means, in order reasonably to conclude that mineral values disclosed extend below the surface, or that a valuable mineral deposit actually exists at depth. *United States v. Clouser*, 144 IBLA 116. The use of geologic inference is

a projection regarding what is reasonably likely to be found, but which has not yet been uncovered. It is entirely permissible, since a mining claimant is plainly not required to “block out” an ore body, in order to demonstrate that he has discovered a valuable mineral deposit. *United States v. Clouser*, 144 IBLA at 113; *United States v. Hooker*, 48 IBLA [22,] 30 [(1980)].

However, geologic inference may not be used to establish that gold values at depth are higher than those reflected in surface sampling: “Mineral values must be physically disclosed before they may be projected by geologic inference.” *United States v. Clouser*, 144 IBLA at 116; *see, e.g., United States v. Winkley*, 160 IBLA 126, 145 (2003). We have acknowledged that

where ore has been found, the opinions of experts, based upon knowledge of the geology of the area, the successful development of similar deposits on adjacent mining claims, deductions from established facts--in short, all of the factors which the Department has refused to accept singly or in combination as constituting the equivalent of a discovery--may properly be considered in determining whether ore of the quality found, or of any mineable quality, exists in sufficient quantity to justify a prudent man in the expenditure of his means with a reasonable anticipation of developing a valuable mine.

United States v. Larsen, 9 IBLA 247, 262 (1973).

United States v. Miller, 165 IBLA at 355-56. Applying the above precedent to this case, we find Poorman clearly failed to meet its burden of demonstrating the discovery of a valuable mineral deposit on Iron King Nos. 8, 10, and 15.

A deposit containing less than 5% iron was exposed on the surface of Iron King No. 8. Dr. Stevens opined magnetite “has to be there” based on airborne survey results, but conceded that this survey and those surface samples did not identify the grade, depth, thickness, or extent of magnetite on this claim. Tr. 255-56, 265-66, 284. Nor does Poorman assert that ore of such low iron content is or could be mined at profit. *See* Tr. 253-54 (Dr. Stevens: “35% iron is probably a reasonable . . . cutoff grade”), 308-09 (Scott Stebbins, Poorman’s mining expert, applied a cutoff grade of 32.3% for analyzing each claim’s economics). Surface samples from Iron King No. 10 yielded more promising results, but a section of magnetite at depth contained only 16% iron (the airborne survey failed to indicate the presence of magnetite on this

claim). Potentially valuable ore was exposed at depth under Iron King No. 15, but no surface samples were taken and drill hole results could not be correlated. Thus, neither Grove nor Dr. Stevens were able to opine whether this claim contained anything more than small subsurface pods of iron ore. See Tr. 254 (Dr. Stevens: “This is a great place to be - - to continue your search for magnetite”).

These three claims, whether viewed individually or as a group, may be “highly prospective,” “great place[s] to be,” and justify “further exploration,” see Tr. 237-38, 239, but more than exploratory potential must be shown to constitute the discovery of a valuable mineral deposit. See *Martinek*, 166 IBLA at 417, quoting *United States v. Bagwell*, 143 IBLA 375, 392-93 (1998) (“evidence of mineralization which may justify further exploration, but not development of a mine, does not establish the discovery of a valuable mineral deposit”); see also *Whitney*, 51 IBLA at 85, and cases cited. We therefore find no error in Judge Sweitzer concluding that Poorman failed to meet its burden of demonstrating the discovery of a valuable mineral deposit on Iron King Nos. 8, 10, and/or 15. See Decision at 32-34. However, a very different case is presented with respect to Iron King No. 7.

III. *The Quality and Quantity of Ore on Iron King No. 7 was Adequately Demonstrated by Poorman.*

Trench samples, as well as samples at depth, showed significant mineralization (*i.e.*, ore containing more than 50% iron); the airborne magnetic survey confirmed the presence of substantial magnetite on this claim. These circumstances are to be compared and contrasted with those presented in *United States v. Whittaker*, 95 IBLA 271 (1987), *aff'd*, No. 87-140-GF-PGH (D. Mont. Feb. 8, 1989), where magnetite was also at issue. In that case, Administrative Law Judge Morehouse determined Whittaker had discovered a valuable mineral deposit based on a magnetite intercept at depth and a magnetic survey map. *Id.* at 288-89. Although “the evidence of the drill hole together with the magnetic readings would support a geologic inference that a substantial body of iron ore underlay the Fault claim,” we found the “[survey] map is clearly *not* accurate” and therefore reversed Judge Morehouse’s determination. 95 IBLA at 289 (emphasis in original); see *id.* (“the map is flawed in so many ways that no reliance thereon can be justified”).

There is no question the State’s highly precise magnetic survey map accurately depicts the presence of substantial magnetite on Iron King No. 7 or that exposure data from the trench and at depth show high-quality ore to be present. Thus, the question here presented is whether geologic inference was properly used by Poorman to connect these exposures of valuable magnetite, mindful that the standard to be applied for the discovery of a valuable mineral deposit is an objective one that is framed in terms of what a “prudent person” would do based on the facts presented

and the reasonable inferences drawn from those facts (e.g., to develop a paying mine “with a reasonable prospect of success”). See *United States v. Miller*, 165 IBLA at 351, 356.

The Government’s mineral examiner testified that the surface exposure “appears to be a small isolated pod” and does “not appear to be . . . continuous with the deposit on [Iron King No.] 3.” Tr. 56-57, 79, 133; see Tr. 82 (“I am not convinced that [the exposures on the surface and at depth] are connected”).¹³ Dr. Stevens, an accepted expert in geology and geophysics with considerable magnetometer and magnetite experience, viewed the circumstances quite differently.

Dr. Stevens first set the stage by testifying on how magnetite was formed throughout the Poorman deposit:

The magnetite deposit was formed by deposition of magnetite through hot water solutions that were percolating through the structures that crosscut the greenstones. The dikes, the igneous dikes, probably served as the heat engines to develop convection cells of water adjacent to the dikes.

. . . It’s usually the water that is moving through the bedrock. As the water moves and gets hotter, it can take on chemicals and transport those things. And in this case, iron is what was transported, along with copper and gold and silver.

. . . [Y]ou have to remember these deposits are formed along fault zones, that structure controls where the magnetite can be deposited. Therefore, the structure should be viewed as the plumbing system. And what appears in an outcrop to be a pod . . . has the potential of going down into the - - below the surface for as great a depth as the mechanisms that form the deposit allowed.

. . . [T]here will be discontinuous sections in magnetite. And the reason is, in this case, from what we can see, the faulting continued during the process in which the mineral deposit is forming. Therefore, you might have a pod of magnetite formed, subsequent faulting moved part of it on, then you may continue precipitation on the other part of the original magnetite. So these things can be continuous. But they’re

¹³ Assuming the surface exposure on Iron King No. 7 “was dipping at the same angles as the ore body on [Iron King No.] 3,” she believed the subsurface intercept “was too deep to be connected with the surface exposure.” Tr. 77.

all related - - they're all generated through the same plumbing system
so - - which starts off below and comes up.

Tr. 234-36. Applying the general to the specifics of Iron King No. 7, he continued:

[O]n the surface, not too far into Iron King 7, is where the surface outcrop occurred, that was sampled by Ms. Grove. And the distance between the drill hole on that outcrop is not that long a distance. The downward extent of the mineralization from the outcrop to some point in depth, you have to - - you're looking at this data. You would assume that this mineralization extends downward because here's a drill hole with mineralization at several different depths down this drill hole. In other words, you're going to assume that this mineralization is continuous downward and extends to one of these intercepts in [CP-68].

. . . We have mineralization in a trench that's good grade. We have mineralization in a drill hole that's not that far way. The direction between is the same as the structured direction, the orientation of Poorman iron deposit and the orientation of the mineralization in the trench. I believe that they are connected, that this mineralization will connect with the trench.

Tr. 244-46. In his best professional judgement (using geologic inference), Dr. Stevens opined: “[T]he outcrop on [Iron King No.] 7, combined with the drill hole intercepts that we have, indicates that we have a significant discovery here of high-grade magnetite.” Tr. 249-50; *see* Tr. 238 (“that intercept combined with the trench certainly make a valuable mineral discovery”). Dr. Stevens remained steadfast on cross-examination, stating it is not just “reasonable to assume,” but “probable,” that exposed mineralization in the trench and at depth are connected and continuous. Tr. 270-71, 272.

In sum, Dr. Stevens, an accepted expert in geology with demonstrated expertise in magnetite, magnetometers, and interpreting magnetic survey data, opined that exposures on the surface and at depth, when coupled with state-of-the-art magnetic survey data, show continuous mineralization on Iron King No. 7 through geologic inference. The only evidence presented by the Government on geologic inference was through its mineral examiner, who stated she was “not convinced” these exposures were connected but admitted she is neither an expert in geology nor had experience (much less expertise) with magnetite claims, using magnetometers, or interpreting magnetic survey data. Judge Sweitzer nonetheless agreed with Groves and gave virtually no weight to the expert testimony of Dr. Stevens. He did so not

because Dr. Stevens lacked credibility or expertise to interpret the facts of record, but simply because he considered those facts insufficient to support Dr. Stevens' expert opinion and geologic inference. Decision at 32.

While we agree with Judge Sweitzer that geologic inference based only on magnetic survey data is insufficient to demonstrate a discovery where there has been no exposure, *see* discussion *supra*, Dr. Stevens combined exposures at depth, magnetic survey data, and his understanding of the area geology to form an expert opinion based on geologic inference that a valuable mineral deposit is present on Iron King No. 7. We are persuaded by his testimony and our review of the record that Poorman preponderated in demonstrating that a substantial deposit of valuable ore containing iron, copper, gold, and silver was discovered on Iron King No. 7 (*i.e.*, significantly more than an isolated pod with only 1,860 tons of iron ore, as observed and estimated by Grove). *Cf. United States v. Norman Whitaker*, 95 IBLA at 288-90. This does not end our inquiry, however, as Poorman must also show "there is a reasonable likelihood that the value of the deposit exceeds the costs of extracting, transporting, processing, and marketing it." *Miller*, 166 IBLA at 352, *quoting Clouser*, 144 IBLA at 113.

IV. *Valuable Ore Can be Extracted from Iron King No. 7, but the Record is Inadequate to Determine Whether that Ore Can also be Transported and Processed at a Profit from this Group Claim.*

Grove testified that the small, isolated pod she observed on Iron King No. 7 very nearly could be mined at a profit. Although unit costs were higher than for mining 2.1 million tons of high-grade ore on now patented Iron King No. 3, she recognized the ore values for that pod "were fairly close to the break-even price." Tr. 57; *see* Tr. 58. However, the costs reflected in her analysis of this claim were based upon a misapplication of and unsupported adjustments to the cost model and data she used and relied on. These data and that model were provided by Western Mine Engineering, Inc. (Western), and had been earlier developed and updated for Western by Poorman's mining expert, Scott Stebbins. Tr. 146, 291, 293, 304.

As explained by Stebbins, the Western model used by Grove is generic and not applicable to the cost of extending mining operations to a nearby site, which clearly is this case because the Iron King No. 7 deposit is less than 300 feet from the large, valuable mineral deposit on Iron King No. 3. Tr. 307. As to Western's mineral processing model, Stebbins testified it uses "two-product flotation" which would be unnecessary for this deposit because much smaller, less costly "one-product flotation" could be used. Tr. 307-08. Moreover, Western's model and data show mining costs of \$6 per ton and mill operating costs of \$9.50 per ton, yet Grove estimated these costs would be 60% and 30% higher and was unable to explain why, how, or on what

basis she adjusted these costs to \$9.50 and \$12 per ton. Tr. 146-48, 155-56. Under these circumstances, we find Poorman adequately rebutted the Government's prima facie case. See *Rannells*, 175 IBLA at 383-84. However, since a patent is at issue, the burden is on Poorman to demonstrate that this claim is valid, including whether there is a reasonable likelihood it can be developed into a paying mine. See *Miller*, 165 IBLA at 353, n.15.

Stebbins prepared an expert report for Poorman, "Economic Viability of the Poorman Iron Deposit with specific reference to the Iron King #7, Iron King #10, and Iron King #15 Claims" (Stebbins Report). PEx 8. The Stebbins Report evaluates the Poorman Deposit as a group of claims and concludes that this group could be profitably mined, with the majority of the deposit underlying the three already patented claims (*i.e.*, Iron King Nos. 3, 4, and 6). Stebbins Report at 1, 3. As to each peripheral claim in that group (*i.e.*, Iron King Nos. 7, 10, and 15), it presents the results of Stebbins' "sensitivity analysis," which determined that extracted ore values would exceed the cost of extraction if the grade of that ore is at least "similar to the main portion of the Poorman deposit¹⁴ and] can be recovered at stripping ratios equal to, or less than the following . . ." *Id.* at 3. The stripping ratios which there followed are claim and product-specific: if processed ore is sold in the Chinese iron and steel mill feed market, the stripping ratio for Iron King No. 7 must be no greater than 1.35 tons of waste for each ton of extracted ore; but if processed and sold in the heavy media separation market for coal processing, that ratio must be no greater than 2.36:1.¹⁵ *Id.*

Stebbins explained his methodology at the December 2005 hearing, noting that Western's generic mining model is "not representative of any specific operation" and that Western expressly and explicitly cautions its users "against relying too heavily on these or any other models for making significant economic decisions." Tr. 305, 306. Since the data and other information Stebbins had available to him was "much more than I usually work with," he was able to "come up with a pretty good pit design, a pretty good project layout, a pretty good idea of haul distances and haul gradings. And we can figure out, to I think an acceptable degree of assurance, the kind of equipment we need and the size we need for both the mine and the mineral processing plant." Tr. 306. The project design for the Poorman deposit

¹⁴ The ore grades for the main, 2.3 million ton resource used in that analysis were: 52.6% iron; 0.255% copper; and 0.0286 ounces of gold per ton. Stebbins Report at 4.

¹⁵ The above-ratios were for operations in 2005; less stringent ratios were determined for 1971 when these claims were withdrawn from mineral entry (*i.e.*, 1.86:1 for the mill/feed market and 4.15:1 for the coal processing market). Stebbins Report at 3.

envisioned by Stebbins includes certain shared facilities: “a project facilities site, a mineral processing plant, a tailings pond, a waste dump, and port facilities.” Stebbins Report at 6;¹⁶ *see id.*, Figs. 1, 5, 6, PEx at 10, 18, 22. Stebbins estimated the capital cost for constructing these shared facilities at \$20,663,600 (circa 2005) and \$4,638,900 (circa 1971). PEx at 26, 28.

Based on his expert report’s sensitivity analysis, Stebbins stated the “critical element” in his evaluation was whether ore above a cutoff grade of 32.3% iron can be extracted from Iron King No. 7 at a stripping ratio of less than 1.35:1. Tr. 314-15. His best professional opinion is that ore mined from a separate pit on Iron King No. 7 could be delivered to the on-site mill at a profit. Tr. 319. From our review of the Stebbins Report and his testimony, we find his opinion is clearly true for direct operating costs, but we are unable to discern whether Stebbins also considered whether this claim could profitably carry a share of the capital cost for facilities necessary to process that ore for sale.

[4] We recently summarized our case law on shared facilities and related capital costs applicable to individual claims within a group of claims in *United States v. Wigglesworth*, 178 IBLA 51 (2009), which we quote at length below.

Although the mining law requires the discovery of a valuable mineral deposit on each claim, this Board has long recognized that a group of mining claims may be considered together for purposes of determining whether a valuable mineral deposit exists on each claim. *United States v. New York Mines, Inc.*, 105 IBLA 171, 191, 95 I.D. 223, 234 (1988); *United States v. Foresyth*, 100 IBLA 185, 250, 94 I.D. 453, 489 (1987); *Schlosser v. Pierce*, 92 IBLA 109, 130, 93 I.D. 211, 223 (1986). Even though the nature of the deposit of minerals on each claim is such that extracting, removing, and marketing the deposit would not result in a profitable operation if each claim were operated as an independent mine, development of the claims may be found to result in a profitable operation if locatable minerals are exposed on each of the claims and deposits are considered in combination.

¹⁶ As later detailed, the facilities and mill site would include a 3,000 square foot shop, a 17,000 gallon fuel storage tank, two warehouses (3,000 square feet for the mine and 2,100 square feet for concentrate storage), a 3,400 square foot crusher building, a worker change house, laboratory, and office building. Stebbins Report at 11, 14-16. The port facility would be 2.5 miles away and include a wharf, storage building, warehouse, and a series of conveyors. *Id.* at 18.

However the validity of one or more claims does not necessarily make every claim in the group valid, even if there is a physical exposure on all claims. More than twelve years before the first of the hearings was held in this contest, the Board considered *en banc* a case involving two mining claims considered as a group on land withdrawn from mineral location within the Payette National Forest, Idaho. Seven judges found that only one of those claims was valid. Two judges dissented in part and would have found both claims valid. A third judge would have made no finding on the issue of validity and would have remanded the matter for further hearing on the basis of new evidence.

Even though the 7-judge majority emerged from two separate opinions, all seven recognized the following two-pronged principle:

In order for there to be a valuable mineral deposit on each of the claims in a group, the recovery expected from each claim must not only exceed the costs of mining, transporting, milling, and marketing the particular deposit on that claim but each claim must also bear a proportionate share of the development and capital costs attributable to the combined operation. *See Schlosser v. Pierce*, supra at 131-32, 93 I.D. at 224 (referring to *In re Pacific Coast Molybdenum Co.*, [75 IBLA 16,] 24, 24 n.7, 25-26, 32, 90 I.D. at 357, 357 n.7, 357-58, 361). . . . Accordingly, we must conclude that the deposit on each claim must be sufficient to bear at least a proportionate share of the development and capital costs. We find no sanction for another approach in the mining laws.

United States v. Collord, 128 IBLA 266, 287-88 (1994) (lead opinion by Arness, A.J.) (emphasis added), *aff'd in relevant part, rev'd in part*, No. 94-0432-S-EJL (D. Idaho Sept. 28, 1994), *aff'd*, 154 F.3d 933 (9th Cir. 1998) (as to attorney's fees); *see* 128 IBLA at 311 (Burski, A.J., concurring in the result). In reaching this conclusion, the majority rejected the argument that the validity of those claims could be established simply by adding up the revenues that could be mined from the two claims and subtracting the total costs of mining the two claims.

178 IBLA at 58-60 (footnotes omitted).¹⁷ Although Stebbins' analysis is considerably more refined than the analysis reviewed in *Wigglesworth*, we are unable to determine whether he determined that the value of ore extracted from Iron King No. 7 would be sufficient to bear a proportionate share of the capital costs for developing the Poorman deposit and its shared facilities. We therefore remand this matter for a proper determination on this issue.¹⁸

¹⁷ Since recovery from the disputed claim (GB-2) was less than the direct cost "of mining, transporting, milling, and marketing" ore from that claim, the lead opinion held the GB-2 claim was properly invalidated because no prudent man "would be justified in continuing his operations into the GB-2 claim where the final result would be a diminishing of his initial profit [from GB-1]." 128 IBLA at 287. Whether or not the above-quoted language from that opinion is dicta, it was expressly concurred in by others, 128 IBLA at 301-05 (Burski, A.J.), and is now the law as determined by this Board. *Wigglesworth*, 178 IBLA at 58-60.

¹⁸ We express no opinion on the possible import of patent having issued to the main deposit underlying Iron King Nos. 3, 4, and 6. For example, if these patented lands are under active development (e.g., for the construction of on-site facilities), it may be proper to conclude that Iron King No. 7 need not bear a share of these or other anticipated capital costs. See *Collord*, 128 IBLA at 305 (Burski, A.J., concurring). Nor do we here opine on what basis a "proportionate share" is to be determined for this claim (e.g., pro rata based on its share of anticipated resources (which could be less than a \$1 per ton), added costs for a larger facility to process additional ore or from delay by developing this claim after other group claims are developed, or some other basis supported by the record). Rather, we believe these and other related issues are better determined on remand based on more fulsome record than is here presented.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the September 29, 2006, decision by Administrative Law Judge Sweitzer is affirmed in part, reversed in part, and remanded for further proceedings.

_____/s/_____
James K. Jackson
Administrative Judge

I concur:

_____/s/_____
Christina S. Kalavritinos
Administrative Judge