

Editor's note: 85 LD. 441; Reconsideration denied by order dated Nov. 5, 1981; Appealed – aff'd, Civ.No. 81-607 (D.Ariz. Mar. 31, 1983), dismissed as untimely, No. 83-2056 (9th Cir. Oct. 3, 1983)

UNITED STATES

v.

FRANK AND WANITA MELLUZZO

IBLA 78-362

Decided December 7, 1978

Appeal from a decision of Administrative Law Judge George A. Koutras declaring null and void 38 lode mining claims situated in Maricopa County, Arizona. AZ 9911, 9912, 9913.

Affirmed.

1. Mining Claims: Discovery: Generally

A discovery exists only where minerals have been found in quantities such that a person of ordinary prudence would be justified in the further expenditure of his labor and means with the reasonable expectation of developing a valuable mine.

2. Mining Claims: Discovery: Generally

A prudent man would be justified in expending his labor and means in developing an unpatented mining claim only where it appears that the mineralization on the claim in question is valuable enough to yield a fair market value in excess of the costs of its extraction, removal, and sale.

3. Mining Claims: Discovery: Generally

When the Government through the testimony of an expert mineral examiner has alleged a lack of valuable mineralization, the burden of showing the contrary by a preponderance of the evidence shifts to the contestees.

4. Mining Claims: Discovery: Generally

Isolated showings of high assay values will not suffice to establish a discovery, especially where the claimants have attempted little or no development of the alleged mineral discovery.

5. Mining Claims: Discovery: Generally

The sale of decorative building stone from the surface of a lode mining claim cannot support a claimant's contention that a valuable mineral discovery has been made on such lode claim, decorative stone being locatable only under the provisions of the placer mining laws, 30 U.S.C. § 161 (1976), and only where such stone is shown to be an "uncommon variety" within the meaning of 30 U.S.C. § 611 (1976).

APPEARANCES: Tom Galbraith, Esq., Louis & Roca, Phoenix, Arizona, for contestees; Fritz L. Goreham, Esq., Office of the Field Solicitor, Department of the Interior, Phoenix, Arizona, for contestant.

OPINION BY ADMINISTRATIVE JUDGE HENRIQUES

Frank and Wanita Melluzzo appeal from a March 7, 1978, decision of Administrative Law Judge George A. Koutras which held that the Melluzzos had failed to demonstrate a discovery of a valuable mineral

deposit on 38 unpatented mining claims, in secs. 3 and 4, T. 4 N., R. 3 E., Gila and Salt River meridian, Maricopa County, Arizona, named in three separate contest complaints, and held the following claims to be null and void:

[Contest] AZ 9911
El rame Lode Mining Claims
2, 3, 11 through 14 Incl.,
22, 23, 24, 36 and 37

[Contest] AZ 9912
El rame Lode Mining Claims
27, 28 and 44

[Contest] AZ 9913
El rame Lode Mining Claims
4 through 8 incl., 15, 16,
17, 25, 26, 29 through 34
incl., 39 through 42 incl.,
45, 46, 47.

The proceeding which gave rise to the above decision was initiated by the Arizona State Office, Bureau of Land Management (BLM), by complaints filed March 23, 1977, charging that the claims in question were invalid under the general mining laws of 1872, as amended, 30 U.S.C. § 22 et seq. (1976). While the original contest complaints charged that the claims were invalid due to (1) the absence of a valuable mineral discovery and (2) the claims being located on land which is nonmineral in character, the decision here appealed from rests solely upon the former charge.

Contestees filed answers to the charges on April 25, 1977, and hearings on the merits of the three complaints were held in Phoenix,

Arizona, on December 6, 7, 8, and 9, 1977, the three contests being consolidated for hearing by agreement of both parties. Both parties filed posthearing briefs and proposed findings and conclusions, and contestees filed a reply brief. Contestees, through counsel, have, additionally, submitted a Statement of Reasons for Appeal from the decision below.

As contestees point out in the hearing below and in their briefs, a condemnation program instituted by the Maricopa County Flood Control District (District) in connection with the Cave Creek Dam project resulted in two condemnation proceedings against the Melluzzos, their Rena placer groups, and the El rame lode claims. The trial of this condemnation action, at the request of the Flood District, has been postponed by the Arizona State Courts pending a resolution of the present contest, and the District has taken possession of the claims, having posted a bond of \$500,000 to guarantee protection of the Melluzzos' rights, if any, in the disputed acreage. The District concedes, moreover, that it contacted the Phoenix office, BLM, on January 31, 1977, and requested a review of the validity of the El rame claims with the avowed intent of avoiding payment of more than a minimal sum for the claims if they should be declared invalid. As the record below indicates (Tr. 21), the District did not request that BLM institute a contest against the Melluzzo claims, but merely sought a determination of the practical state of the title of the El rame tracts. We note parenthetically that this course of action, far

from being improper, could best be characterized as simply prudent action by a public authority which does not wish to pay twice (with public moneys) for the same piece of property.

William M. Lawson, Jr., the first witness called by the Government at the hearing below, is an independent attorney representing the Flood District in the condemnation of the El Rame claims. Lawson described the District's efforts at reaching an agreement with the Melluzzos regarding the claims and made reference to a written mineral evaluation of the property done by Donald F. Reed which recommended that the District pay Melluzzo \$300,000 to quitclaim his interest in the subject lands. While contestees imply that this estimate supports their claim of discovery, we find that Reed's opinion was based on considerations entirely apart from the mineral value of the claims. Exhibit G-6, a transcript of Reed's testimony at the condemnation proceedings in the Maricopa County Superior Court, shows that his acquisition price recommendations were based on avoiding the cost of litigation and the cost inherent in a protracted delay of the project. In Reed's words, "I have made no attempt to appraise the value of minerals found on the El Rame claims since sufficient work to determine the value and extent of such minerals has not been done * * *" (Ex. G-6, p. 10).

Lawson, having indicated that Reed was seriously ill and unable to testify personally, ^{1/} went on to describe the District's request for a second opinion or valuation in connection with the condemnation of the Melluzzo claims. As Lawson stated, this second opinion was provided by Charles L. Fair who was requested by the District's legal counsel to prepare a mineralogical evaluation of the El rame claims. Lawson testified that Fair had valued the claims at \$8,750 in light of the value of the mineralization on the ground, and, at the conclusion of Lawson's testimony, Fair was called as a Government witness.

Charles Fair, who holds a Ph.D. in economic geology from the University of Arizona, has had some 25 years experience as a private consultant in the field of mining. Fair testified that he examined the El rame claims in October 1976 with the assistance of Barton Cross, a geologist, and Edwin Robb, an employee of Fair. The decision below summarized Fair's examination and testimony in the following terms:

In conducting his examination of the claims, Dr. Fair was provided with a claim map similar to Exhibit G-3, and he was able to relate the map with various ground points, such as the dam, some section corners, and other physical features. The examination revolved around two points: (1) locating any surface mineralization that was visible,

^{1/} In response to contestee's counsel's objection that Reed's testimony at the condemnation proceeding constituted hearsay, Reed was deposed in Phoenix, Arizona, on January 20, 1978, with counsel for the contestee and the Government in attendance. His testimony at that time was not materially different from his testimony at the condemnation hearing, supra.

and trying to place some value, if any, on it, and (2) determine enough of the geological relationships so that some estimate might be made on possible occurrence of valuable minerals in the subsurface. The best way to make an appraisal of the surface mineral content is to find old prospect pits that are visible to the eye and he did so in this case finding a good many * * *.

Although each claim was traversed in an effort to collect rock samples, he and his assistants did not specifically examine each claim as such. In order to make a determination of any possible value of subsurface minerals, a grid over the entire area was laid out and rock chip samples were collected on a wide spacing in an effort to obtain a reflection of the actual mineral content of the entire area in order to estimate what is underground. Any mineral deposits of sufficient size to be mined is [sic] usually surrounded by what a geologist calls an "alteration halo." This is a larger area than the deposit itself in which the original rock has been altered by whatever process concentrates the mineral. This halo can be defined by taking soil or rock samples and assaying those and looking for anomalous values of particular minerals looking for anomalous ratios of elements. [sic]

In traversing the area, they were not able to completely locate each individual claim, that is, they were not able to find the corners or papers. However, by using section corners and known physical features as shown on topographic maps, they were able to locate themselves well in the field, that is, with[in] a few dozen feet. By establishing the grid, he was reasonably sure that at least one, and probably two samples, were collected from each claim (Tr. 39-40).

Dr. Fair's report (Exh. G-1) contains an illustrated diagram of where the samples were taken. He described the sampling process and indicated that rocks were chipped in a 10-foot radius off the outcrop of the sample site and the sample ranged from 1 to 3 pounds. The samples were individually bagged, labeled, and delivered to the Skyline Laboratories in Tucson for assay, and the results are included in his report. Dr. Fair explained the column headings on the assay report as follows: "pmm" [sic] means parts-per-million; "Au" is gold; "Ag" is silver; "Cu" is copper; "Pb" is lead; "Zn" is zinc. In some cases they tested for calcium, magnesium, and sodium because these elements are indicative of alteration affects [sic] for certain types of ore deposits. One thousand parts per

million is one-tenth of 1 percent. Thus, Item No. 4, Sample Number 104 in the assay report in Exhibit G-1, which shows 910 ppm copper, translates into nine-hundredths of 1 percent or .09 (Tr. 40-43). Dr. Fair testified that his original report did not include the results of his examination of claims 29, 30, 33, 34, and 46, because he was told to omit these claims because there had been other disposition made of the claims. Later, he was instructed to examine them and he returned and completed his field examination on March 9, 1977. The examination was similar to the first one, but because most of the surface of these claims was covered with alluvium, i.e., sand and gravel deposits which were washed in over the outcrop, they examined the outcrop which was showing at the edge of the stream. There was some outcrop on claims 30 and 33, but the other claims were entirely alluvial covered. He concluded that there was no evidence of any significant ore deposits buried beneath the wash, and this was based on the fact that no evidence of this was found in the rock observed at the edge of the wash (Tr. 43-44).

Dr. Fair testified that his grid system resulted in at least one sample from every claim, and in those areas where mineralization was found, detailed studies of the mineralization was [sic] made. The results of the rock chip sampling in most cases were in agreement with the backgrounds normally expected of the rock types found. As an example, he stated that granite has a certain background of copper and on an average will contain a copper level in the 10 to 20 ppm range. Other volcanic rocks will have higher levels of copper, such as 20 to 70 ppm. In most cases, his examinations revealed only background levels or below * * *.

Dr. Fair stated that most of his 25 years of experience has been in the area of exploration or evaluation of copper deposits and that it is his business. He is familiar with ongoing operational copper pits and many that were never developed. Most companies would not be interested in copper values below a .75 range, but this depends on tonnage and grade. If the tonnage or deposit is low, the grade must be higher. Massive sulfide deposits in the 10 to 50 million-ton range may contain 2 to 5 percent copper, and depending on the presence of other metals, there may be lead and gold present. As the deposit decreases, i.e., below a million tons, copper in excess of 5 percent is what is being looked at (Tr. 47-49).

Dr. Fair stated that based on his experience, he would not recommend that any mining company invest any money in

the claims, and in his view, a reasonable and prudent man would not invest his time and money with the prospect of developing a paying mine on any of the claims (Tr. 50-51).

At the conclusion of Dr. Fair's testimony, Robert A. McColley, a mining engineer employed by the Bureau of Land Management, was called to testify. McColley, who has received both Bachelor's and Master's degrees in geology from the University of Arizona, has had 2 years experience with the exploration division of Kennecott Copper Corporation, and some 16 years experience as a mineral examiner with BLM. In October 1976 he examined the El rame claims and testified that he conducted further examinations in mid-July 1977 and went over the ground with Mr. Melluzzo on December 1 and 2, 1977. McColley stated (Tr. 86) that his observation and sampling led him to concur with Dr. Fair's analysis of the claims, supra.

McColley's actual sampling appears to have been limited to claims 13, 15, and 40, and the samples on claims 13 and 40 were taken mostly from points which Melluzzo felt contained the best mineralization. As the decision below states:

Mr. McColley testified that most of the copper minerals on the claims that he sampled and could identify were basically oxide minerals, although a couple contained sulphide mineralization. Basically, however, the values that he observed were oxide, which are less recoverable. No samples were obtained from the other 35 claims. Although Mr. Melluzzo referred to other areas where he felt similar values might be obtained, no other points were visited or samples taken. Mr. McColley has been on the other claims several times and has reviewed Dr. Fair's reports. He has

no disagreement with those reports and based on his experience and education in mining, it is his opinion that a reasonable and prudent man would not spend his time and means in developing a paying mine on any of the El Rame claims (Tr. 106-108).

On cross-examination, McColley stated that, "All other things being equal, you're better off having copper present in sulfide minerals which are more readily recoverable than oxide minerals * * * basically the values that I saw [on the El rame] are oxide values" (Tr. 105, 107). Contestee's counsel then asked McColley whether he had ever testified, in a mineral contest, that a contestee had made a valid discovery. McColley replied in the negative (Tr. 112), but noted (Tr. 116) that he had examined "a few hundred" claims which he recommended for patent on the basis of the mineralization that he observed on the ground.

William D. DiPaolo, who accompanied McColley on his June 22 and July 15, 1977, examinations of the El rame claims, is also employed by BLM as a geologic examiner. DiPaolo testified that he read the Fair report after his first visit to the claims and found himself in agreement with the conclusions reached in that evaluation. DiPaolo's second visit to the claim tended to confirm his initial impression that there was no commercially valuable mineralization uncovered on the ground, and he stated that, based on his experience, personal observations and on his review of the assay reports from the McColley sampling, supra, he would conclude that a prudent man would not invest further time and money to try and mine the claims for a profit.

At the conclusion of DiPaolo's testimony, the Government rested its preliminary case and contestees called Frank Magini, a self-employed contractor, to testify. Magini, who is in the road building and earth moving business testified principally concerning the relative cost of the excavation which would be necessary if the El rame group was to be developed into a paying mine. As he stated at the outset, he had been asked by Melluzzo to compute an estimate of the quantity of copper and gold ore on the El rame claims, and relate this figure to the cost of recovering the material (Tr. 235, 236). In order to develop figures for the gold and copper values on the claims, Magini set up a small leaching operation using a cyanide leaching solution to process approximately 1 ton of material taken from the top of an ore dump (Tr. 244) located on claims 28 and 32 (Tr. 248) and some 5 tons of material taken from claims 13, 40, and 42. The leaching solution, which was filtered through an activated charcoal element to recover the mineral values, yielded .068 ounce of gold (Tr. 253) and, in the case of the copper leach, a 1.32 percent copper (Tr. 258) assay value for the 1 ton sample. Magini used these assay values to estimate a projected figure of \$15.04 per ton copper recovery value for the claims, and stated that the cost for removal, crushing, stockpiling, and leaching would total \$6.35 per ton. Contestees moved to submit the cost and recovery figures which Magini projected from these sampling results and were met with the Government's objection that the computation procedures of Exhibit M-13 were flawed, being based on ore volume figures which contestees themselves

characterized as "only a guesstimate [sic]" (Tr. 267), and percentage figures which were unsupported by sampling (Tr. 262, 263), these latter being proffered by contestees as "admittedly only gross estimates" (Tr. 272). Exhibit M-13 was received over the Government's objection.

While Magini, testifying on the basis of his prior experience and the above-mentioned leaching results, saw a bright commercial future for the El rame claims, Government experts seriously questioned the reliability of his conclusions. Dr. Fair, testifying upon recall for the Government, criticized the assays derived from Magini's leaching plant stating that:

[U]nless we know exactly the amount of gold or copper that was precipitated out, we don't have any handle on that [the actual value of the sample]. Because if you only assay the solvent itself or you only assay the char without knowing exactly how much copper was actually extracted, you don't really have anything. What we really need to know is how much copper, how much gold, was physically taken out of the rock and deposited somewhere else, and those assays that I heard yesterday didn't tell me that.

(Tr. 499, 500). Fair then went on to state that the 2.3 percent assay report average which Magini used to make the calculations set out in Exhibits M-13 and M-14 was not based on a scientifically valid cluster of sample values (Tr. 499). Fair characterized the statistics derived from his own report, from contestee's six drill holes, and from the above-described leaching operation as being wholly insufficient to support the tonnage and profitability figures set forth by Magini.

Following Magini's testimony, contestee Frank Melluzzo was called to the stand and described the drilling and sampling which he had conducted on various of the contested claims. Melluzzo described in detail the manner in which he had located the claims and spoke at length of the assessment and exploration work which he performed on the El rame claims, illustrating his narrative with a series of photos and maps. Exhibit M-57 is an assay report which Melluzzo testified was derived from a sample taken from a pit on the El rame No. 13. The assay, dated October 14, 1959, reports a copper content of 3.6 percent from the sample, but makes no mention of the quantity of material assayed or the method of assay.

We find that the most significant portions of Melluzzo's testimony are his statements regarding the sale of copper mineralized stone which he picks up on the claims and markets through his building stone business in Phoenix. As the decision below indicates, Melluzzo began selling rock from the El rame claims shortly after he located the first of the claims. The rock which is readily marketable due to its unique coloration, initially commanded a price of \$15 per ton and now brings \$75 per ton. Melluzzo's success in marketing the stone from these claims is uncontroverted and the legal significance of this obviously profitable operation is the issue at the very core of this appeal. The decision below records that:

Mr. Melluzzo testified that in a number of instances he has removed and sold rock from the El Rame claims over

a period of years, and that his son has been mining rock up to the time of withdrawal. He has been able to sell the rock building stone because of its copper mineralization characteristics. The overburden of dark surface coloration of the stone enabled him to market it while he was digging his location holes. He sold the minerals, "which I call mineral in character, rock" for \$15 and \$25 a ton, and his son is selling it for \$75 a ton. He described the rock as follows (Tr. 353-354):

Q. This is for rock on the surface with copper coloration?

A. Copper coloration and the dark color of the surface, and the dark, dark aging. In the quartz, the quartz molders are using landscaping boulders. All the huge, massive boulders we use as landscaping. And some of those boulders would bring in \$150, \$200 just for one boulder.

Q. As a result, what is the condition of the ground now as opposed to what it was before you removed rocks from the surface?

A. Well, if everybody who was on the land would notice, you would see all the shafts and all the cuts and all the diggings. There wasn't any piles of rubble rock around them. There wasn't hardly any rock of any size that was saleable. It was gone.

And if you noticed on top of the mountains where I wasn't able to get my trucks, my ore was still there. The rock was still there. Copper rock or stained rock was still there. But all on the lower parts where I was able to mine it, take it out without any problem, it's been sold and gone, picked over all these years.

On cross-examination, Mr. Melluzzo testified that he obtained the building stone from his discovery shafts, and as he removed the material, he loaded it on his trucks, and would leave the find. He defined "ore" as "any mineral that a prudent man could make any money off of" (Tr. 357). He dug a discovery hole on all but claim 44 and he sold the ores he recovered from the holes. Most of the holes were 4 or 5 feet wide, 6 or 7 feet long and 10 feet deep and he sold the saleable stone that looked good (Tr. 358). On certain claims, 60 percent of the stone was saleable, and he made a living at selling this stone for some 20 years (Tr. 359).

On some claims he recovered entire boulders, which he sold for \$25 a ton, and for some of the "beautiful boulders," he would get \$50 to \$75 a ton. His biggest market is for surface rock, which is just picked up rather than quarried. This rock was the "stain and the color" (Tr. 359-361).

Mr. Melluzzo testified that in an effort to develop copper mining on the claims, he has drilled, kept up his assessment work, and has talked and had different companies visit the property. He had a lease drafted in 1962 or 1967 with an O. L. Johnson from Midland, Texas, but Mr. Johnson had a heart attack and that ended the lease. The lease was for a percentage of the mining. Since then, prospective customers have been scared away because of talk in BLM that the property would be withdrawn because of a flood control claim (Tr. 363-364).

Mr. Melluzzo testified that there "is a body of ore out there. I was making money on these claims" (Tr. 365). When reminded by Government counsel that he was selling building stone, Mr. Melluzzo replied (Tr. 365):

A. You call it building stone? It was my minerals. Now, I'm a business man. You're a lawyer. I'm a business man. I go on the property and I've got a copper stone that I can sell for \$25 or \$30 a ton to an individual.

Now I can take that same stone and sell it to a mining company and get 30 cents. Now, as a business man, what would you do? Who would you sell to?

And, at page 366:

Now, when I'm digging that stone, and I can sell it for \$25 a ton to an individual, why should I be crazy and sell it to the smelters for 30 cents? That don't make sense.

Q. Okay, now –

A. You've seen money lost. I think they're crazy. This is economics.

Mr. Melluzzo testified that he visited a leaching operation in Prescott on December 14, 1976, and identified pictures of the Bluebell Mine leaching operation (Tr. 354, Exhs. M-80 and M-81). The average ore at that operation leached from one-half to 1 percent, but he had no production

figures (Tr. 356). Mr. Melluzzo produced copies of sales receipts from his records in support of his contention that he was selling copper ore from the El Rame claims in 1958 (Exh. M-95). He testified that while some of the receipts show the sale of rocks or building stone, others show copper (cooper). The amounts of copper sold in 1958 came from the El Rame claims (Tr. 436). He also identified a picture of a "copper rock" which he had bulldozed on El Rame claim 26 (Exh. M-96, Tr. 437), and a picture of some stone quarried from the "El Rame Mine" which he delivered to a local housing development for use as decorative entryway and which was published in the local newspaper beautifying section (Exh. M-97, Tr. 437).

The following colloquy took place between Mr. Melluzzo and Government Counsel Goreham (Tr. 438-439):

Q. Mr. Melluzzo, I think you gave us a story about goat and the dollar yesterday in response to selling building stone rather than copper.

A. Yes.

Q. Now, keep in mind your goats and your dollars, would you sell at \$40 or \$50 a ton for building stone if you could make \$4.5 million on a claim on copper as Mr. Magini says?

A. It takes special mineralization, a certain amount. All the ore out there doesn't have the same coloration. And if you look at the job, it has a certain leaching. It takes leaching effect to make it.

Now, I can't just go pick up every rock and say, this is copper. They won't buy it. They won't give me \$60 for that one when they can buy for \$18. Now, it has to have a mineral characteristic in that rock to make it special quality. It's gem stone, you have crysacolla there. You may run into a beautiful sample. You can take it to a store and sell it for \$25. But you may find one that ground. Yes, if you could find a million of them, yes, you have a million \$25. But it takes that mineralization of copper and that leaching to make that color. And that's what they're buying now.

I never saw anything that said I had to sell it to a smelter. I call it copper and that's what it's specified. It's billed that. I sold my other rock

at one cent a pound. I got three cents for the copper. It was a special and distinct quality.

A review of the sales receipts produced by Mr. Melluzzo describes the alleged copper sold as "cooper stone," "copper," "cooper ore," "copper stain," "cooper crysacolla," and "green copper ore." The material was sold by the ton, or lesser amounts, and the "green copper ore" was described as being three-fourths to 1-inch size, and the price ranged from \$25 to \$60 a ton.

Contestees stipulated (Tr. 368) that the only mining operations which Melluzzo personally conducted on the claims "has been in copper in the form of building stone."

Hale C. Tognoni, a registered mining engineer and attorney, is president of the Mineral Economics Corporation of Phoenix, Arizona. At the conclusion of Melluzzo's testimony, Tognoni was sworn as a witness for the contestees with the Government agreeing to stipulate to his professional expertise as a mining engineer. Tognoni testified that he first visited the El rame claims in 1954 on behalf of a client and returned again in 1956 in connection with an inquiry as to whether the claims could be declared nonmineral in character (Tr. 446-7). He subsequently visited the area of the contested claims on two additional occasions prior to the spring of 1976 when he inspected the El rame group for Melluzzo in connection with the Flood District's condemnation action.

Tognoni stated that, in making his present evaluation of the El rame claims, he reviewed all the exhibits and reports generated in

the contest proceeding including those of Dr. Fair, Magini and Reed. Tognoni testified that the values he has seen on the ground together with the applicable reports, leave him with the opinion that a prudent man would be justified in expending his time, effort, and money on the claims with the reasonable expectation of developing a profitable mine. He cited the extensive production of copper from the claims in the form of building stone, the rising price of copper on the world market, and records of past production in the district as factors evidencing the economic viability of a mine on the El Rame claims. He felt that the dumps on claims 27, 28, and 32 are "very likely to contain these small amounts of gold that Magini is talking about, or the values that he is talking about, in order to merit a leaching operation and one that would make a profit. Tognoni made various calculations in regard to the leaching recovery of copper, and his conclusions are recounted as follows in the decision below:

Mr. Tognoni estimated the acreage of leachable area that he believes is present within the El Rame claims. He estimated that there are 20 acres of copper zone within approximately 500 acres of the claims containing 1 percent leachable copper. His estimates are based on all the past reports, Mr. Magini's computations and the sampling conducted on the claims. Calculating an acre of land as covering 43,560 square feet, 1 foot deep, and assuming 1 cubic foot of rock weighing 100 pounds, he estimates there is a total of 4,356,000 pounds of rock, and since 1 percent copper will yield 43,560 pounds of copper per acre, at 60 cents a pound, he computed the copper value per acre 1 foot thick at \$26,136. He then computed a yield of 20 pounds of copper per ton, and at 60 cents a pound indicates that the copper would sell for \$12 per ton. There would be no problem in removing the overburden since the top layer values have already been removed, and the minerals would probably increase right below the surface in

that top 1 foot. His estimates are conservative [in his opinion] because his drill hole samples increase in parts per million in those holes. In his opinion, a prudent man could reasonably anticipate being able to leach the quantity of copper ore on the claims which he described, and that a prudent man would invest his time and money in the development of the claims into a larger producing copper property. It would be prudent to spend time and money with financing with the reasonable expectation of developing a large sulfide copper deposit (Tr. 463-466; Exhs. M-99, M-100).

There are massive sulfide deposits in Arizona, and a number of major producers are massive sulfide deposits. He identified Exhibit M-101 as a mapping on the copper association map of porphyry coppers and it indicates the locations of recognized massive sulfide deposits which are near or on the trend of the El Rame claims with similar geology. (The circles show the deposits, and the El Rames are shown by an "X.") Exhibit M-102 is the production figures for the mines shown (Tr. 466-468).

On voir dire, Mr. Tognoni indicated that the classification of the mines as massive sulfide deposits is not his classification. It is a "Canadian term recently injected into our geological thinking" (Tr. 468).

On cross-examination, Mr. Tognoni testified that the 1 percent copper he used in his calculations was based on 100 percent recovery. The industry experience on a leachable operation is from 10 to 90 percent, depending on the efficiency of the individual operation. He is familiar with the Bluebird Mine at Globe as an industry recognized leaching operation, but does not know its average recovery, and would be surprised to learn it was 50 percent (Tr. 478-480). No reserves have been calculated on any of the El Rame claims, other than the information presented during the hearing, and his testimony is based on his surface examination and sampling (Tr. 479-481).

When called as the Government's witness on rebuttal, Dr. Fair voiced a number of criticisms of Tognoni's conclusions, supra. At the outset, he stated that the Tognoni/Magini cost estimates included no allowance for grinding and crushing costs, procedures which Fair thought would be necessary to achieve a leach recovery in excess of

40 to 50 percent of the extractable copper in a relatively low grade ore sample. With respect to Tognoni's projections for 100 percent leach recovery, Fair stated that the industry average was in the 40 to 50 percent range (Tr. 501). Fair introduced into evidence (Ex. G-18) an April 1973 copy of Mining Engineering, the journal of the American Institute of Mining, Metallurgical and Petroleum Engineers, which listed a statistical breakdown of "Principal Copper Mine Statistics" rating capacity, production, and recovery efficiencies for major U.S. copper mines. This document listed two leaching operations in Arizona, the Bluebird and the Oxide mines, which claim recovery rates of 41.7 and 50 percent total copper recovered, respectively. Fair noted that the Bluebird, which was cited by contestee's witnesses as an example of a successful leaching operation, processes over 6 million tons of material each year, and thus gleans a volume profit from low grade ore that would be impossible to achieve on a claim (such as the El rame group), which is tiny by comparison. Fair stated, furthermore, that the Oxide and Bluebird mineralization is in excess of a 3.5 percent copper average, a value far above the most optimistic projections for the El rame group. ^{2/} Fair testified, moreover, that most of the large currently producing copper mines were developed at a time when labor costs were much lower than at

^{2/} See, Tr. 457-461 where Mr. Tognoni, in developing his projections for the El rame, anticipates mining deposits in the 1.3 to 2.3 percent copper range. Tognoni feels that copper ore in the 1 percent range can be profitably leached on the claims (Tr. 461), but Fair asserted (Tr. 502) that, "for any kind of a leaching operation to be successful * * * you're going to have to have an average ore grade of 3.5 to 4 percent, probably more in today's inflated rates."

present and that many of them could not now be profitably brought into initial production (Tr. 60-62).

Fair's opinion regarding contestee's assertion that the El rame group is valuable as a "massive sulfide deposit" is that this contention is both unproved and improbable. As he stated on rebuttal:

A. Well, massive sulfide deposits in the literature are normally accepted as being those that contain at least 50 to 60 percent by volume sulfide. To develop any tonnage, this means an awful lot of sulfide in the area.

But one of the things that I pointed out in my first report, in walking over this area, yes, here and there you can, in the shear zones, in the course veins, you can find some sulfide.

But when we speak of massive sulfide, we're talking about large concentrations of sulfide. And by that I mean areas where there are several hundred feet wide in which the pyrite content is certainly high enough to see it. It would develop a gossan or a capping if those outcrops disturbed those. These things are very recognizable and all the geologists recognized them.

There is nothing of that sort up there on the surface.

(Tr. 506-7). Fair concluded his rebuttal testimony with a general criticism of the extrapolations which contestees made from the sampling data in their possession. As he stated at Tr. 495:

A lot of what has been said here is based upon visual examination, with the exception of just a few of the samples. The sampling has really been undocumented. It certainly covers the old, so-called historical sampling.

When a sample is taken, it is necessary to know for one thing if you are taking a sample perpendicular to the geologic structure in which the mineralization occurs.

And this normally means a lode or a vein which has some narrow thickness and large linear and depth extensions so that it's rather tabular.

If you are sure that you are crossing such a structure, in order to get a true indication of the grade of the material in it. [sic] If you cross in an oblique angle, it's possible to get erroneous results in the sense you may go 20 or 30 or 40 or 50 feet with the high assay. And this won't really be true of the amount that is there because it may be only one foot thick.

And the mineralization [sic] as it occurs, all of us here have been out on the property, if you examined it carefully, at least I feel that what I saw there was that the mineralization occurred along the partings in this schist.

Now, probably all of us are familiar with slate. Slate is a common rock that breaks in large, flat pieces in the normal break. And this break is along its foliation plane.

And the mineralization that occurs along the El rame claim occurs along these foliation planes. In some cases, the zone has moved later so there has been some rock fracturing so that you can get anything from a few inches to a foot or more wide filled with quartz and copper mineralization [sic].

But basically, we are talking about mineralization that does occur in the tiny vertical fractures.

Now, when the rock weathers on the surface, it breaks apart along these fractures. If the huge slabs or little pieces of various sizes falling [sic] open, you can see the copper. That's the basis for Mr. Melluzzo's copper rock he's been able to sell.

But if you actually took one of these slabs and ground it up and assayed it in toto, you would find that the amount of copper is relatively small.

I once did a job in Baja, California, on a property that had many fractures covered green like this. And in the morning light, the mountains were green. My client was ecstatic.

But when we actually cut the samples across the structures and assayed the entire rock, we found that the values were low.

Now, my observations on the El rame claim is that this is the way that mineralization occurs. It is true that you can walk over these claims and you can pick a rock here and a rock there, here on an outcrop, there on an outcrop, and you're going to see copper. It looks very good.

If you physically channel across these foliation planes in most of these areas and took a large amount of rock and assayed it, you are going to find that the assays are lower.

I'm not saying that in some places you would two percent assays [sic]. Both sides have had very few of these assay levels.

But much of the testimony here has been talking about large masses of rock. Extrapolation, especially in the testimony yesterday morning, was talking about huge volumes of rock for which I feel there is just no basis for such testimony for the average grade of these huge volumes of rock.

Following the testimony of Hale Tognoni, Robert T. Wilson, a geologist employed by Tognoni's Mineral Economics Corporation, was called as a witness for contestees. The decision below details his testimony as follows:

He [Wilson] first became acquainted with the Winifred Mining District in 1976 when he was assigned to a project to research literature on the various mining districts within the Pima Indian Maricopa land. He identified Exhibit M-83 as a mining district map of the Gila and Salt River basin mineral province, Pima-Maricopa land, put together by Mineral Economics personnel and stated that the El Rame claims are basically in the heart of the Winifred Mining District. He identified Exhibits M-84 as a set of three maps compiled by Mineral Economics showing occurrences of copper, gold, and silver within the boundaries of the

areas shown in Exhibit M-83. All of these maps (Exhs. M-83 and M-84) were compiled with information obtained from historical research of the area. Four reports compiled in 1917 were obtained from the files of the Department of Mineral Resources (Exhs. M-1 through M-4). One of those reports, the Hubbard report, contains information on claims in California, but the portion of the report dealing with the "Copper Hill Group" pertains to the El Rame claims, since that is the name used in all four reports that applied to the El Rame's. After conducting his research, he visited the property and surrounding area, beginning on October 20, 1976, and compiled a geology map of the El Rame claims showing the various rock units, strikes and dips, and Corps of Engineers' drill holes (Exh. M-85). He identified Exhibit M-86 as a cross-section drawing from the Corps of Engineers' drill holes and from the geology map (cross A-A prime and B-B prime), and the drill holes are labeled with numbers taken directly from the Corps' map and drill logs. The geology map is designed to show the rock outcrop and rock attitudes of the property, and no mineral values are shown on the maps (Tr. 404-411).

Mr. Wilson visited the property on November 9, 1976, in the company of Mr. Hale Tognoni and Mr. Melluzzo. Mr. Melluzzo pointed out the discovery holes and Mr. Tognoni indicated where he wanted channel samples to be taken across these holes. He returned on November 14 and took channel samples at those points, and returned again on November 17 doing more field checking as to sample locations. On November 21 he went to Los Angeles and sampled the Corps of Engineers drill core for the property. With him was a man from Dr. Fair's office, a Mr. Ned Robb, and a Corps geologist. Thereafter, on November 22, 23, and 25 he conducted and established a geo-chem sampling grid over the property. A number of samples were taken for age-dating, on the El Rame claims, and just to the east of the claims, and Exhibit G-87 is a map he prepared showing the location of the samples he took and those taken by Dr. Fair, which are mentioned in his reports (Exhs. G-1 and G-2, Tr. 411-413).

Exhibit M-88 is the results of the channel samples taken on the El Rame claims from the discovery holes, and the geochemical analysis was conducted by the Arizona Testing Laboratory. The exhibit shows a picture of where the sample was taken, the lines and arrows depict where the channel sample was taken, and the last page indicates the results of the samples. Exhibit M-89 are copies of the Corps of Engineers' drill logs indicating the drill

holes the elevation of the collar, the depth of the drill hole, and the results of the laboratory tests for each sample. These samples were submitted for age-dating analysis to Teledyne Isotopes, Westwood, New Jersey, for the purpose of obtaining a regional picture of the geology of the El Rame claims area, and Exhibit M-90 is the letter dated December 7, 1977, reporting the results of that analysis (Tr. 413-416). Mr. Wilson marked the "copper occurrence" map, Exhibit M-84, with the locations of the samples depicted on Exhibit M-90, and he identified Exhibit M-19 as the geochemical analysis used in preparing the geochem anomalie maps, along with the grids and the geochemical analysis reported in the two Fair reports (Tr. 417-419). Using this information, he and Mr. Tognoni established their own grid analysis and used 170 samples to do this, and this resulted in the preparation of three geochemical analysis value maps for copper, lead, and zinc (Exhs. M-92, M-93, and M-94). The color codes depicted on the maps show the mineral content in parts per million and the degree of anomalous background represented, the numerical values are parts per million, and the markings depicted by "x," a circle, etc., are labeled as to the identity of the samples. All of the 170 samples from both his work and Dr. Fair's report were used to plot the background values for all three maps. However, he used a slightly different method than Dr. Fair in plotting the backgrounds namely, logarithmic probability, rather than a histogram, because Dr. Fair probably did not have available a large enough sample population to have all the anomalous values (Tr. 419-430).

Mr. Wilson was asked whether he was able to express an opinion as to whether or not the El Rame properties are such that a man would develop them with a reasonable expectation of developing them into a paying mine. Mr. Wilson stated that while he has had considerable academic schooling, the past 2 years of his experience has been "on the ground dealing with mineral properties, geochemical surveys and the likes," and he did not feel that his level of professional expertise or maturity allows him to give an honest answer to the question. However, he indicated that in the past several months he has done studies on massive sulfide deposits, and has visited many of the deposits in Arizona, and he is "quite excited" about the El Rame area (Tr. 431).

On cross-examination, Mr. Wilson testified that he is "excited" about sulfide deposits because on the western half of the claims he sees many of the key types of outcrop or marker beds mineralization that is sought in such

deposits, and these are similar to what he has observed on the ground of other locations that had been mined in Arizona. He could not state whether he would recommend that additional work be done on the claims because of his lack of experience. He considers the El Rame claims as a "prospect" for a volcanic massive sulfide deposit and has seen sulfides. Dr. Fair's age analysis of the rocks as precambrian was exactly the results obtained from the Teledyne Isotopes Company analysis (Tr. 433-434).

[1] It is a well-established principle of law that a discovery under the Federal mining laws exists only where minerals have been found in quantities such 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 a valuable mine. United States v. Maley, 29 IBLA 201 (1977); United States v. Arcand, 23 IBLA 226 (1976). See also, Castle v. Womble, 19 L.D. 455, 457 (1894). This test, often known as the "prudent man" test has been refined to require a showing that the mineral in question can be presently extracted, removed, and marketed at a profit. United States v. Coleman, 390 U.S. 599 (1968); United States v. Vaux, 24 IBLA 289 (1976).

[2] The Government, in a mineral contest, must meet the initial burden of going forward with a prima facie showing that no valuable mineral discovery has been made. Such a prima facie case is established when a Government mineral examiner samples and evaluates a claim and gives his expert opinion that the mineral values on the claim are not such as would prompt a prudent man to believe that the mineralization could be extracted, removed, and marketed at a profit.

United States v. Hunt, 29 IBLA 86 (1977). United States v. Bechthold, 25 IBLA 77 (1976). In the case before us, the Government's prima facie case was established beyond dispute by the opinions of three expert mineral examiners: Fair, McColley, and DiPaolo, supra.

[3] When, as here, the Government has made its prima facie case, the burden of going forward with the evidence shifts to contestees who must show by a preponderance of the evidence, the existence of a valuable mineral deposit sufficient to support discovery. Foster v. Seaton, 271 F.2d 836 (D.C. Cir. 1959); Maley, supra. Thus, the testimony below of the Government's mineral examiner placed upon the contestees the ultimate burden of proving discovery, or, stated conversely, the burden of overcoming the Government's case. United States v. Springer, 491 F.2d 239, 242 (9th cir. 1974).

Contestees herein have sought to demonstrate discovery through the testimony of four different witnesses including that of contestee Frank Melluzzo. Contestee's first witness, Frank Magini, offered testimony relating both to the value fo the mineralization on the claims and the cost of its extraction and removal. As noted above, Magini's assessment of the value of mineralization on the ground has been seriously challenged by Government witnesses on rebuttal. More specifically we find considerable merit in Dr. Fair's objections to the validity of the assays derived from Magini's leaching plant and his objections to the incomplete or cursory sampling process on which Magini based his recovery value figures (Tr. 499, 500). We find,

therefore, that Magini's testimony is entitled to little weight except in regard to his assessment of the cost of earth moving on the claim, an area where his expertise remains unchallenged.

Although both Melluzzo and Magini appear to have good business acumen, neither appears to have expertise in the specialized business of mineral extraction. At the hearing below, Melluzzo testified (Tr. 304-310) that he sampled claims using an eyedropper of acid solution, a honing stone and a pocket knife. He explained that he would pick up likely looking rocks, apply the acid, and scratch the rock with his knife. Thus he claims he is able to obtain a quick indication of mineralization if the knife turns a copper color showing a copper stain. He sought to demonstrate the efficacy of this admittedly preliminary sampling technique at the hearing, and the decision below records that: "Mr. Melluzzo conducted an experiment during the hearing by placing the four drill hole samples in four cups, adding acid, and placing a nail in each solution. The nails showed indications of copper, and Mr. Melluzzo concluded that he has leachable copper ore on the claims" (Tr. 317).

On rebuttal, Dr. Fair criticized Melluzzo's conclusion stating that:

Well, in difference [sic] to Mr. Melluzzo, I think he mentioned that it was only an indication of copper. And the reason for this is the deposition of copper on those nails was in the matter of a molecule or hemolecule stick.

This is an extremely thin layer. For instance, if we had been able to dissolve that penny, and there are some acids [sic] that would, the amount of copper in that penny would have covered hundreds of nails, maybe hundreds of kegs of nails. We could scatter nails all over the room that were copper covered just from the amount of copper that is in that penny.

And again, this brings me back to what worries me about the—what's been claimed for the assays and the grades and the material from the claims. Because copper, as Mr. DiPaulo tried to emphasize in his testimony, the copper is very mobile. That would mean the copper moves around. In the vernacular, a little bit goes a long way.

The green that you see out there on the outcrop, well, it's very colorful but it may not represent great amounts of copper. Similar to the deposit I described in Baja, California, when the hills were virtually a malachite green.

So that this test that we had, in answer to your question, shows copper is there, yes. It shows some of it is leachable, yes. It gives us no idea of how much is leachable or how much is there.

(Tr. 508, 509).

We believe that the above discussion highlights the major problem with Melluzzo's claim of discovery; *i.e.*, that the purported discovery is based largely upon visual indications of copper which are of absolutely no quantitative significance. Melluzzo's testimony, for example, abounds in references to "good visual indications" "black mineralized zone," "green mineralization of copper," etc., and, while numerous photos of the claims were introduced in connection with Melluzzo's testimony, only a single assay was produced. This solitary assay, as noted, *supra*, contained no mention of the quantity of material examined or the method of assay used, and is therefore entitled to little weight.

Melluzzo's visual orientation is perhaps best understood in light of the history of his "mining" on the claims. Melluzzo is in the business of selling building stone and has evidently made a comfortable profit selling the attractively colored rock from the claims. ^{3/} It makes not a whit of difference to Melluzzo or to his customers whether the coloration is the result of a commercially mineable copper presence. It is the visual attractiveness of the rock which makes it saleable at a price of \$75 per ton as building stone and, until recently, Melluzzo has had little reason to know or care about the percentage or mineral grade of the copper on the El rame claims. We therefore find that his testimony was material and relevant to the issue of discovery only to the extent that the sale of building stone may be considered as evidencing a commercially mineable deposit of copper ore.

Mr. Hale Tognoni, contestee's major expert witness, testified that, in his opinion, the El rame group is the sort of property upon which a prudent man would spend money and time with the reasonable expectation of developing a paying mine. This opinion, in turn, was based upon what Tognoni saw as three possible methods of working the El rame claims, namely, (1) the sale of "surface copper" for use in decorative walls or as souvenirs, (2) the development of a commercial

^{3/} However, to avoid any inference that this finding is inconsistent with the findings and conclusions expressed in United States v. Melluzzo (Supp. on Judicial Remand), 32 IBLA 46 (1977), we note that this market did not develop until long after July 23, 1955, when the location of mining claims for common stone was prohibited by statute. 30 U.S.C. § 611 (1976).

scale copper leaching on the claims, and (3) the exploitation of the claims as a "massive sulfide." Since, in our opinion, Tognoni's evaluation is the vital item of proof with which contestee's case must stand or fall, we will examine each of these contentions separately.

As for the assertion that the El rame claims should go to patent on the strength of decorative stone sales, we find that contention difficult to reconcile with Tognoni's statement that no decorative rock remains on the surface of the El rame claims. At the hearing below, Tognoni spoke of:

[T]he production of the surface copper, which has been going on since my first visit to the ground in 1954 to now, a literal denudeing [sic] of the surface of the copper colored rock as specimens and part of decorative walls. [Emphasis added.]

We are thus left to wonder how the El rame claims can be valuable for decorative stone if it has been "denuded" of the same.

We note, furthermore, that Melluzzo himself stated (Tr. 354):

A. Well, if everybody who was on the land would notice, you would see all the shafts and all the cuts and all the diggings. There wasn't any piles of rubble rock around them. There wasn't hardly any rock of any size that was saleable. It was gone.

And if you noticed on top of the mountain where I wasn't able to get my trucks, my ore was still there. The rock was still there. Copper rock or stained rock was still there. But all on the lower parts where I was able

to mine it, take it out without any problem, it's been sold and gone, picked over all these years.

Since it is the surface rock that Melluzzo has been successfully marketing (Tr. 353), and since the surface is now "denuded," we conclude that surface building stone sales cannot support an application for patent or a present claim of discovery in this case, even if common variety building stone sales could be considered in support of a lode claim location. (See, infra.)

Turning to Tognoni's assertion that the El rame claims could be developed as a copper leaching operation, we find Dr. Fair's criticism of Tognoni's projections to be so well taken as to render those projections meaningless. As stated, supra, Fair pointed out grave flaws in the sampling techniques which gave rise to Tognoni's mineral value figures, and demonstrated that Tognoni's expectations of a 100 percent copper recovery rate were wildly at odds with general industry expectations and experience. Most significantly, however, Fair's criticism of the relatively small number of samples involved in the Tognoni projections leads us to agree with his judgment that those profitability figures are constructed on a foundation in which highly optimistic guesswork is substituted for provable fact. We therefore conclude that the testimony and projections which Tognoni and his employee Robert Wilson developed fail to demonstrate that a reasonable man might expect to make a profit by leaching copper on the El rame claims.

In regard to Tognoni's prediction that the El rame group is valuable as "a target area for a massive sulfide deposit," we would first note that this assertion is entirely distinct from the contention that the El rame claims can be profitably leached for copper. Although the distinction was never explained at the hearing or discussed in the decision below, it would appear that Tognoni's prediction of a "massive sulfide" simply refers to the possible existence of a zone of copper sulfide material occurring at a greater depth than the surface and shallow level mineralization which Magini and Tognoni felt could be leached for profit. These upper level mineral occurrences are, in the case of the El rame claims, largely copper oxide-type occurrences. As Robert McColley stated while describing his examination of the claims (Tr. 107), "In other words, the copper minerals that I could identify were all oxide minerals. I take that back. There were a couple of sites where we did see sulfide mineralization on the claim. But, basically the values that I saw are oxide values."

The significance of this oxide/sulfide distinction is briefly explained by the following excerpt from Mineral Facts and Problems, a 1975 publication of the Department of the Interior, Bureau of Mines, which states, at page 293, that:

Domestic mine production is approximately four-fifths from open pit mining and one-fifth from underground mining. Most of the ores are sulfides which are subjected to crushing, fine grinding, and concentration by flotation.

Oxide ores are leached with acid, and the dissolved copper is recovered by precipitation on scrap iron or by direct electrowinning. Copper concentrates and precipitates are smelted to an impure blister copper, and then upgraded to refined copper by fire refining or electrolytic refining.

Donald F. Reed, in his examination of the claims, noted that:

In several instances chalcopyrite (copper-iron sulphide) is found. This is of significance because such sulphides are normally primary in origin, and indicate that mineralization may have been deposited from hypogenic (ascending from below) solutions, and that the mineralization may extend to considerable depth. In other words, the copper and iron minerals found in the outcrops may be only residual values remaining in the upper leached or oxidized zone. If this is so, then concentrations of mineral may be expected to be found below, in a zone of secondary enrichment, at the ancient or permanent [sic] water level, perhaps even below this in the primary zone. This could only be determined by a systematic program of diamond (core) drilling, which should extend to a depth of 500 to 1000 feet. Such a program would be expensive and highly speculative. [Emphasis in original.]

With regard to the present state of knowledge of the lower strata of the El rame group, Reed states that:

The Corps of Engineers did drill several holes at the proposed dam site, but these holes were drilled for the purpose of determining the stability of the bedrock as a base for the dam. The deepest was about 100 feet and no assays to determine mineral content were taken. I talked to Mr. Fenimore Turner, Geologist for the Corps in Los Angeles, where the drill cores are presently stored. Over the telephone he told me that he had visually examined the cores and had not seen any copper minerals in any of them, that the only mineralization observed was in the form of iron oxides (limonite and hematite).

Although these above-mentioned drill cores were examined, in Los Angeles, by Tognoni's associate, Robert T. Wilson, contestees themselves appear to have conducted no exploratory drilling of the type described by Reed, supra. Wilson, for his part, expressed no opinion as to the question of whether a prudent man would invest in the El rame claims. Robert E. Wilson, a retired geologist (no relation to Robert T. Wilson, supra) who testified for contestees also expressed no opinion regarding the probability of a massive sulfide existing on the El rame group. Only Hale Tognoni ventured to suggest that the El rame group was a likely prospect for development as a massive sulfide, and his testimony on this issue (Tr. 465-474, Ex. M-101, M-102) contains not one scintilla of probative evidence suggesting the occurrence of such a deposit. Tognoni's testimony, rather, is confined to a discussion of surface value occurrences and the suggestion that, since the El rame group is located roughly 100 miles southeast of a cluster of massive sulfides, it too is probably a massive sulfide. We would note that, while geologic inference may not be relied upon as a substitute for the actual finding of a mineral deposit, Tognoni's "massive sulfide" predictions are so badly strained and so completely unsupported that they cannot even rise to the status of legitimate inference. See United States v. Grigg, 8 IBLA 331, 79 I.D. 682 (1972).

Weighing carefully all the evidence submitted by contestees on the issue of discovery, we find that they have failed to carry the burden of coming forward and rebutting the presumption of invalidity

raised by the testimony of the Government's mineral examiners. At best, contestee's evidence suggests the possibility that a prudent man might embark on a program of diamond core drilling to test the El rame area for the presence of a deep lying zone of secondary enrichment or "massive sulfide." As the Reed report notes, even this possibility "would be expensive and highly speculative." We find, moreover, that evidence which merely suggests that a prudent man might invest in further exploration with the hope of finding a paying deposit will not, without more, support a claim of discovery. Chrisman v. Miller, 197 U.S. 313 (1905); United States v. Walls, 30 IBLA 333 (1977).

[4] The following colloquy took place at the hearing below as Mr. Tom Galbraith, counsel for contestees, cross-examined Dr. Fair:

Q. [Galbraith] And if a prudent man wants to develop a mine, isn't one of the best ways for him to learn whether it would really work economically is to give it a try on a small scale?

A. [Fair] Would you define small scale? In other words, what are we talking about here?

Q. Well, let's take the little leach operation that Frank Magini set up. I think that was something that a prudent man would do to determine what the economics would be.

A. If he made careful measurements of the amounts in material, if he took proper assays, if he controlled his solutions in a certain way so he could come out with useful data, yes.

Q. Well, maybe somebody like Frank Melluzzo would be – or Magini would be lost with the idea of useable data.

Maybe he would understand it a little better if he took five tons of ore, put some acid on it and was able to sell the copper and came out with a little bit of profit.

A. I'm sure if – oh, I'm sorry.

Q. My question is, wouldn't that be a way a prudent man would develop the apparently leachable material that at least from his view was on his claims?

A. If it's done exactly the way you said it with the profit on the end. I'm sure Mr. Magini recognizes profit. I would agree.

We agree wholeheartedly with the suggestion which counsel puts forward in the above line of questioning. Our approval of his proposal, however, leaves us with another question, i.e.: Why hasn't Melluzzo tried to leach the El rame on a small scale? Melluzzo has held the contested claims, in most instances, since 1957, but he has made no attempt whatever at developing the sort of small scale, leaching-for-profit operation which his counsel enthusiastically recommends. Melluzzo states at the hearing that he has been unable to mine the claims on a large scale due to the threat of condemnation which has overshadowed the claims and discouraged capital investment for the past several years. This uncertainty, however, should have no effect on the ability of Melluzzo or Magini to work the claims themselves on the scale suggested by Mr. Galbraith, supra. We therefore conclude that the reason for contestees inaction is quite simple; they have made no discovery which might warrant development. As the Court of Appeals for the Tenth Circuit held in the case of United States v. Zweifel, 508 F.2d 1150, 1156 (10th Cir. 1975):

If mining claimants have held claims for several years and have attempted little or no development or operations, a presumption is raised that the claimants have failed to discover valuable mineral deposits or that the market value of discovered minerals was not sufficient to justify the costs of extraction. *E.g.*, United States v. Humboldt Placer Mining Co., 8 IBLA 407 (1972); United States v. Ruddock, 52 L.D. 313 (1927); Castle v. Womble, 19 L.D. 455 (1894). [Italics added.]

[5] Melluzzo asserts both below and on appeal, that his sale of decorative stone from the El rame claims constitutes "copper mining." Judge Koutras refused to accept this contention and, counsel for contestees refers to the judge's logic as creating "a reverse Midas touch." While we agree that Melluzzo has been successfully selling stone from the El rame group, and this stone contains a certain amount of copper coloration, this does not, without more, support Melluzzo's characterization of the rock as "copper ore." Melluzzo defines "ore" as "any mineral that a prudent man could make a profit off of" (Tr. 357) and points out that his records refer to material from the El rame claims as "copper" or "copper stone." Melluzzo thus appears to reason that, since he is selling stone from the El rame claims at a profit, the stones are "ore," and since the stones are "ore," he is mining copper. We disagree.

In the first place, no showing has been made of the actual copper content of this building stone. Melluzzo protests that he cannot be forced to sell the stone to a smelter when he profits more by selling it to builders. He neglects to prove, however, that the stone would be in any way useful to a smelter. The fact that Melluzzo calls the

rock "copper" does not make it so, and Dr. Fair's observation, supra, that a small amount of copper can produce a striking coloration effect leads us to believe that Melluzzo's decorative building stone may have been low in actual copper content. We do not wonder that Melluzzo's records show only the removal of "copper" as opposed to "building stone" from the El rame since, as Melluzzo undoubtedly knows, common varieties of building stone were excluded from the coverage of the mining laws by the Act of July 23, 1955, as amended, 30 U.S.C. § 611 (1976), commonly called "The Multiple Use Act." While "uncommon varieties" of building or decorative stone remain locatable under the Act of August 4, 1892, 30 U.S.C. § 161 (1976), such location must be supported by a showing that the deposit in question has a unique property giving it a special value reflected by the fact that the material commands a higher price in the marketplace than "common varieties" of the same material. United States v. Chartrand, 11 IBLA 194, 80 I.D. 408 (1973). Locations of such claims, moreover, must be made as placer locations, and a lode claim location, such as the claims here at issue, cannot support a building stone placer claim under the Act of August 4, 1892, supra. U.S. v. Chartrand, supra; United States v. Edwards, 9 IBLA 197 (1973). We therefore hold that Melluzzo's removal of building stone from the claims cannot be considered as evidence of a discovery of a valuable mineral deposit on the El rame claims. See also Cole v. Ralph, 252 U.S. 286, 295 (1920), holding that a placer discovery will not support a lode location nor a lode discovery a placer location.

Accordingly, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed from is affirmed.

Douglas A. Henriques
Administrative Judge

We concur:

Edward W. Stuebing
Administrative Judge

Anne Poindexter Lewis
Administrative Judge

