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TERMS - as follows:

Will give lease and bond on all or any part of my holdings,

Am holding the GREEN MONSTER group of 42 patented and 12 unpatented claims at \$25,000.00 on easy terms. Or, ten thousand dollars cash, on terms, and 5% interest in the property.

In case of a lease and bond I would expect ten per cent down.

In case of just a lease I would expect a ten per cent royalty.

I would reserve the grazing right to the above, on account of protecting my water right. I am having it leased out for four years, at a dollar a year.

J. L.<sup>3</sup>

I am the outright owner of 69 patented mining claims in the VERDE DISTRICT, and expect to have clear title to the GADSDEN group of 43 patented claims before

and  
The GREEN MONSTER group consists of 42 patented, and 12 unpatented claims, including the COPPER SILVER PLATE and SOUTH PLATT claims.

The last three claims are the "key" to the GREEN MONSTER group. They were owned by the late Senator Clark, and were not part of the GREEN MONSTER COPPER COMPANY at the time that company was in operation. Ore has been shipped, off and on, from these three claims, for the last 40 years. The deepest workings are about a hundred feet, and there is a lot of mill ore in sight.

Two shipments of ore, carrying copper, gold and silver, have been made from the CLIFF claim this year, by a lessee.

I have a few claims leased out, including the GALVESTON claim where the lessee struck an 18 inch vein. This vein carries no copper, only gold and silver. About an ounce of gold to the ton. A couple of weeks ago the lessee shipped 31 tons, part of it from this vein and part from an adjoining claim, and the net smelter returns amounted to \$667.00.

A lot of ore has been shipped from the GRAND BOUNCE claim in times past.

On the LITTLE JOE claim, it is possible to pan gold.

Lately I gave a prospector permission to go out and prospect on my ground. After a few days he came back and told me that he had struck some ore <sup>on the</sup> east center end of the SOUTH PLATT claim. He struck it within a foot from the surface. It is a yellow gossan and the first two feet sampled about five dollars to the ton in gold, silver and copper. Since that it has improved, and it looks like he will be shipping ore soon.

The GREEN MONSTER COPPER COMPANY sank a 900-foot shaft on the line between the BRAD and the IRON CAP ~~claims~~ unpatented claims, and did about 4000 feet of drifting, raising and cross-cutting. All this was away from the main mineral showing.

The Phelps Dodge holdings are all colored red on this map, while my holdings are colored yellow. The various, little circles indicate ore showings.

Daily shipments of ore are taking place from the EQUATOR and the COPPER CHIEF, by lessee. (To Clarkdale Smelter).

June 28th. 1940.

JOE LARSON.

BEFORE THE REGISTER  
UNITED STATES LAND OFFICE  
PHOENIX, ARIZONA

---

UNITED STATES

Plaintiff

vs

JOE LARSON

Defendant

---

Contests

NOs.

8926 and 8957

Proceedings had before L. O. Tucker, Notary Public.  
at Prescott, Arizona, Oct. 11-12, 1939

---

L. O. TUCKER  
Court and General Reporter  
30 Lawler Block, Prescott, Ariz.

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IN THE UNITED STATES LAND OFFICE AT PHOENIX, ARIZONA,  
BEFORE THE REGISTER

UNITED STATES?	)	Involving the RADIOPHORE COPPER NOS. 3
	)	and 4 Lode Mining Claims, within the
Plaintiff,	)	Verde Mining District, Prescott
	)	National Forest. Contest No. 8926
	)	Serial No. 078722; M.S. No. 4201
v.	)	and
	)	
JOE LARSON,	)	Involving the BLOW OUT No. 2 Lode Mining
Jerome, Arizona,	)	Claim, within the Verde Mining District,
	)	Prescott National Forest. Contest No.
Defendant.	)	8957; Serial No. 079008; M.S. 4215

S T I P U L T I O N

IT IS STIPULATED AND AGREED by and between the parties hereto that the oral testimony and proceedings taken and had at the hearing in the above entitled cause before L. O. Tucker, notary public, at his office, in the County Court House, Prescott, Arizona, on October 11th, 1939, at 10:00 o'clock A. M., may be taken down in short hand by said L. O. Tucker, stenographer, and by him afterwards transcribed, and that the transcribed record, when sworn to by said stenographer as being a full, true and correct record of all the testimony and proceedings taken and had at said hearing, shall be received and considered in all respects as if the witnesses testifying at said hearing and subscribed the testimony respectively given by them, the signatures of said witnesses being specifically waived.

IT IS FURTHER STIPULATED that the said hearing be adjourned from the County Court House to the offices of Favour & Baker, Prescott, Arizona, and the proceedings continued there with the same force and effect as if taken in the County Court House.

IT IS FURTHER STIPULATED that the testimony to be introduced at said proceedings, will be applicable to both proceedings and the two contests shall be tried as one proceeding.

IT IS FURTHER STIPULATED that Mr. L. O. Tucker, before whom the testimony is taken, may file his affidavit as a stenographer, having been sworn before Miss Vera Voge, notary public, Prescott, Arizona.

Signed: \_\_\_\_\_

Attorney for Protestant, United  
States Forest Service.

Signed \_\_\_\_\_

Attorneys for Protestee, Joe  
Larson.

Mr. Crawford: Call Mr. Larson.

Whereupon,

JOE LARSON, the protestee, is called as a witness in his own behalf and, having been first duly sworn, is examined and testifies as follows:

DIRECT EXAMINATION

- Q (By Mr. Crawford) Your name is Joe Larson?
- A Yes, Sir.
- Q And you are the applicant for the patent in these proceedings?
- A I am.
- Q Covering Radiore claims numbers three and four?
- A yes.
- Q Where do you reside Mr. Larson?
- A In Jerome, Arizona
- Q How long have you lived there?
- A Since December, 1898.
- Q And what has been your business or occupation during that time?
- A I have followed mining and prospecting.
- Q And you have considerable knowledge of mining conditions in the Verde District, have you not?
- A I have followed that right along.
- Q You have bought and sold properties there, have you not?
- A Yes I have
- Q And you have been interested in various mining ventures in that district over that period of years, have you not?
- A Yes.
- Q And you have done considerable mining yourself?
- A Yes, I have
- Q You have done actual mining work yourself?
- A Yes
- Q I mean you have handled a pick, shovel, drill and single

Jack, hav\_ you?

A I have sunk many shafts as well as driven tunnels.

Q Tell us of the experience you have had as a mining man in the Verde District, Mr. Larson.

A Well, I have been a foreman for different parties. I have been president of a company. I was instrumental in getting the C. & A. Company interested in the district. and many others.

Q Are you familiar with the United Verde mine, now owned by the Phelps Dodge Corporation?

A Yes, I worked there in 1898.

Q And are you familiar with the Little Daisy, the United Verde Extension Mining Company?

A Yes, I am.

Q You understand the nature of the ore bodies and the country rock in both of those mines, do you not?

A Yes.

Q Are you familiar with the workings of the Verde Central mine?

A Yes.

Q And you understand the formation there?

IA I do.

Q And you are familiar with the Kopper Chief mine, are you not?

A. Yes.

Q And the Cliff mine?

A Yes.

Q And the Green Monster?

A I own the Cliff and the Green Monster mine now.

Q You now own the Cliff and Green Monster mines?

A Yes.

Q And you are familiar with the work that has been done at the Equator mine, are you not?

A Yes.

Q Then I take it you are more or less familiar with the mines in that area that have produced ore and are now producing ore?

A I am.

Q What can you say about the nature of what we might call the mineralization belt in the Verde District?

A The mineralization belt in the Verde District extends from the United Verde a little north beyond the Copper Chief. The formation is mostly greenstone and schist and quartz porphyry, and where you have greenstone and quartz porphyry you generally get some ore. And if you have some iron gossan and quartz schist you are pretty sure of getting ore.

Q You base that upon your own knowledge?

A yes, and experience.

Q Experience you have had in the Verde District?

A Yes.

Q Where is the Copper Chief mine with respect to your property? And when you speak of distance, speak of them in an air line.

A It is a little less than a mile from mine.

Q In which direction is it?

A It is in a southerly direction from my property.

Q With respect to the town of Jerome the Radiore claims numbers three and four and the Blowout number two lie between the town of Jerome and the Copper Chief mine, do they not?

A They do.

Q And with respect to the town of Jerome, how far in an air line are they from Jerome?

A Two miles of a little over.

Q And how far in an air line are they from the Green Monster?

A It almost joins on it.

Q And from the Cliff?

A From the Cliff it is about three thousand feet I should say.

Q When you speak of the mineralization there I believe you said that where you find greenstone and porphyry, you mean on the contact zones between those formations, do you not?

A Yes, There is a contact that runs from the lower fault

up to the Cliff and Green Monster and the Green Monster Extension, and there is some pretty good ore on the Green Monster Extension.

Q And the Green Monster Extension is where?

A It may be close to the end line but there is a good showing.

Q The end line on the Green Monster?

A The Green Monster and the Extension, two claims owned by the Phelps Dodge. Then it goes along the Cliff toward the Radiore.

Q And how far would that be on an air line from the Radiore claim?

A On the map you can tell just exactly how far it is. It is about two thousand feet, I guess. It is something like that.

Q How long have you been familiar with these particular claims, the Blowout and the Radiore number two?

A Since about 1917.

Q You have been closely connected with them?

A Yes.

Q And you have had an interest in them, have you not?

A I bought in some and located a big group and optioned it to the Radiore Company of Los Angeles. Frank B. Amsted was president. He was the head of it, and H. E. Olund was the chief engineer for the company.

Q You optioned it to them?

Yes.

Q Did they do anything in the way of prospecting and developing the claims?

A The contract provided they had to keep one man working right along and pay him six dollars a day.

Q What else did they do?

A Well, they had this radiore with electricity and I believe you have got-- Mr. Reber I believe has a pamphlet that will explain a good deal of it.

Q In order to shorten it up, the Radiore had an option upon your claims, did they not?

A Yes.

Q And they were also the owners of instruments which made

electrical conductivity determinations of mining claims, were they not?

A They were.

Q And as part of that work they were able to discover whether or not sulphide bodies were within five hundred feet of their instrument, were they not?

A That is what they claimed it would do.

Q Did they do geophysical work with this electrical apparatus on those claims?

A Yes. They were there from, I think, the latter part of July or the first of August, 1927, off and on most of the time until 1928, pretty well towards September or October, or later perhaps. I couldn't tell just off-handed but they were there a long time.

Q Over a year?

A Yes, all of that.

Q. And during that period they conducted these experiments more or less during that period of time, did they not?

A Yes, they did.

Q And what results did they obtain?

A Well, they were supposed to pay me ten thousand dollars in cash for the property; that is, in payments. I have the contract with me if any one should like to see it. I found out during the time it was a success. They claimed they found sulphide very close to the surface.

Q You mean the radiore method was a success?

A Yes, that is what they claim. In fact, they went over to the Copper Chief to prove it. They have a body of iron sulphide there. I am positive the engineers didn't want to see anything of the company maps or anything of that kind. They surveyed with the electrical outfit, and after they were thru they went to the general office to check up on how close they came to the ore body. You couldn't hardly tell it apart.

Q The Radiore Company went to the surface of the Copper Chief and conducted experiments and obtain readings which showed an ore body, which they later checked with the known ore body shown on the maps of the Copper Chief. Is that correct?

A Yes, that is correct. Included with the radiore they had the torsion balance from the School of Mines of Colorado.

Q And was that in there at the same time?

A No, they were there a little separat They worked together. The Radiore Company paid for it.

Q How long were the torsion balance experiments carried on?

A I couldn't tell.

Q Approximately.

A Well, at least sixty days.

Q And they covered what?

A They covered the Radiore number two, three and four, and also the Copper Chief.

Q As I understand it, Mr. Larson, in making the torsion balance experiments they had to have the surface of the claims leveled off. Is that right?

A They had to level off a place about half the size of this room.

Q And those places are still visible over there, are they not?

A Yes.

Q I believe some twelve or fifteen of them are scattered around on the Radiore claims?

A Yes, on Radiore number four there is about four or five of those places now. I think they all saw them, the engineers.

Q And then-- the torsion balance bore out the findings that were made by the radiore instruments, did they not?

A I took that for granted. They both worked together.

Q The Radiore Company used the option, did they not?

A Yes, they made certain payments.

Q Now, coming back to the Radiore determinations, did they cover all of the Radiore claims two, three, and four?

A Yes, they did.

Q And did they get on the Blowout?

A No, they didn't have time. They may have had it on a part of the Blowout; I don't know for sure.

Q They did make a considerable number of measurements on the two, three and four Radiore, did they not?

A Yes, they did.

Q The Radiore Number two, of course, is not involved in this contest. You have discovered mineral there I believe

that goes high as twelve to fifteen per cent copper?

A Yes.

Q And bears considerable gold and silver?

A Yes.

Q What can you say about the Radiore number two measurements as being similar to those made on Radiore numbers three and four?

A It is about the same.

Q In other words, the same indications appeared on the three and four as on the number two, where you do have mineral exposed in quantities which runs as high as twelve to fifteen per cent copper--

A The formation runs east and west.

Q Is that true?

A yes.

Q Now then, at the time the Radiore folks were in there and made these determinations, particularly on your claims Radiore three and four there were indications of sulphide underlying the sandstone, was there not?

A Certainly, there was.

Q And that was also the indications they found from their radiore measurements at the Copper Chief?

A Yes.

Q And at the Copper Chief they proved the value of their determinations by later finding out from the engineers of the Copper Chief that there was an ore body at the place their electrical measurements indicated?

A They did. They had maps of the Copper Chief showing where the ore body was, and it checked up in A-1 condition.

Q Mr. Larson, will you tell us first on your claim Radiore number three what mineral you have found there in place.

A Well, there is quartz and hematite of iron. That is the mother of mineral. If you haven't quartz and iron-- hematite of iron and quartz it is pretty poor.

Q When you say it is the mother of mineral, is that your experience in the Verde District?

A Yes.

Q That where you find a showing of quartz and hematite of iron it leads you to believe there is mineralization there?

A It does

Q Now, what workings have you placed upon Radiore number three claim?

A On Radiore number three claim there is about a forty foot shaft. There is a tunnel that was caved in but you can go in now about 140 feet or something like that. Then on the line between the three and four there is another tunnel which is in about 135 feet. It is right on the line of the working on the three and four.

Q And what have you found on number four claim?

A Well, there is a little iron amongst the lime but it is kind of sediment. There is quite a little bit of iron.

Q Did you find hematite of iron or specularite on number four claim?

A No, I didn't.

Q That dump on number four, far up on the hillside where one of the stations was placed by the torsion balance operator, wasn't there hematite of iron found there?

A With the instrument.

Q I thought it was found there.

A That is on number three, isn't it. I am quite sure that it is.

Q Did you cause samples to be taken and assays to be made from those claims?

A Yes, I have some.

Q Would you refer to that (council passing a paper to the witness). Does that represent the result of assays of materials which you took from these Radiore claims and Blowout Number two.

A Yes, it is.

Q And you caused those assays to be made, did you?

A Yes.

Q Which of those assays by number refer to Radiore number two claims?

A The numbers are here I think, number one, number two, number four.

Q Are part of those assays from Radiore number two?

A Yes.

Q And which ones are from Radiore number two?

A Number two is 12.4 in copper

Q What sample number is it?

A That is sample number one.

Q Is that the only one from number two claim?

A Also number two.

Q That is also from number two?

A Yes.

Q And where is number three sample taken from?

A That is from an open cut.

Q On what claim?

A On the number two.

Q That is on the number two?

A Yes.

Q What is sample number four?

A Number four, let's see, that is on number two too.

Q And number five?

A Number five, that is on the number four.

Q That is from the number four claim?

A Yes.

Q Then sample marked D-1, D-2, and D-3, where are they from?

A They are from the Blowout.

Q That is from the Blowout number two?

A Yes.

Mr. Crawford: We offer this in evidence.

Mr. French: No objection.

(The paper so tendered is by the notary marked as protestee's exhibit number 1, witness Larson, and the same is enclosed herewith.)

Mr. Crawford: We will also offer this affidavit in evidence, which now appears to be a part of the official files of the Land Office.

Mr. French No objection.

(The document so tendred is by the notary marked as Protestee's exhibit number 2, witness Larson, and the same is enclosed herewith.)

- Q (By Mr. Crawford) Now, I believe you said you had been closely connected with these claims for a considerable period of time, and that you had actually worked upon them yourself.
- A I have.
- Q What amount of money have you and your associates spent on the Radiore three and four and the Blowout number two?
- A Well, the Radiore Company must have spent at least twenty-five thousand dollars on the torsion balance. Then they paid me ten thousand dollars when they exercised the option. Then I had foreclosed on them later on because I had done the assessment work for a year or two. They went broke and into the receiver's hands. That is why they didn't develop the property in 1929.
- Q How much have you spent in addition to what they spent?
- A Fully fifteen thousand dollars off and on, including the group, but the most of the work was done on two, three, and four. There was some done on the Blowout; all of the discovery shafts. There were twenty-eight claims in the group.  
I decided afterwards that I couldn't hold them, so I thought I would get a patent on four of the best and relinquish the balance.
- Q Now, have you seen such things as gossan, specular iron, and pyrite and greenstone and porphyry and things of that nature in other places in the Verde District than upon your group of claims which we are now talking about?
- A I have. In many places.
- Q And what has been the history of the presence of those things in the district as being indicative of minerals?
- A They had good mineral and some shipping ore.
- Q You have had considerable experinece in that district and have seen a lot of mines developed and you have had an active part in developing some of them yourself, and would you say from the showing you have on the Radiore three and four and the Blowout number two that a prudent man would be justified in spending money in the hopes of being successful?
- A If I didn't think there was a good chance to open a mine I wouldn't have fought to get a patent at all.
- Q You believe then that a man would have justifiable reason to spend money on those claims in the hopes he would develop a mine which would produce paying quantities of ore?

A I do believe that.

Q That applies to Radiore three and four and Blow-out number two?

A One claims is no good. You need at least a few claims surrounding it.

Q Had you finished?

A I was going to say you can't get capital interested in one claim very well. They always want a bunch of them, but I couldn't afford to apply for a patent for any more.

Q You did apply for three and four?

A Yes.

Q There is no one who could contest Radiore number two, is there?

A No.

Q You have a showing of twelve to fifteen per cent copper there, have you not?

A Yes.

Q It is your thought that Radiore number two, being a worthwhile property beyond any question, you couldn't interest people in a single claim. Is that right?

A Not very well.

Q Do you know where the claim commonly known as the Ewing Hooker property is located?

A Yes, I do.

Q And where is that in an air line from your property here?

A Radiore number two I believe comes in about two or three hundred feet of the side line of the Hooker-Ewing property in one place.

Q Do you know anything about the production of ore on this Ewing and Hooker claim?

A They have some ore below the road. They have a shaft with a very good showing of hematite of iron and quartz and during the boom they bonded it for fifty thousand dollars. It was for two hundred fifty thousand dollars but fifty thousand was actually paid by Kastner here in Prescott.

Q Was any money spent in developing the property?

A Yes, they ran in about eighteen hundred feet but they didn't get up under the Blowout.

Q About how much would that figure?

A I don't know. An engineer could figure the actual cost.

Q By road, that is, just around the point from your camp there, is it not?

A Yes.

Q On an air line it is just up over the ridge?

A Yes, part of the ground joins on, as I say.

Q You are familiar with the workings in there called the Black Hill, are you?

A Yes.

Q Where is that in relation to your claim?

A Well, it is a short distance to the north east.

Q About how far on an air line?

A On an air line, would be a whole lot less than a mile.

Q How much?

A I couldn't tell exactly. I think Mr. Reber could tell it on the map.

Q What about the ore production there?

A There was not a great deal but right below there, that joins right on, is what is called the Ballard group. A shipment was made in the early days by a fellow named Tommy Martin. I don't know what the results were. I own that property now. A bunch paid eighty thousand dollars for it. I bought it in at a tax sale.

Q What group is that?

A The Ballard group.

Q And there is a definite showing of ore upon those properties?

A A good showing.

Q And a definite showing on the Green Monster?

A Yes, and between there and the Green Monster.

Q. Now, are there any other properties around there that did produce ore?

A The Cliff mining claim produced quite a lot of copper. There is some very rich ore been shipped out of there and there ~~is some~~ is some you can go down and take a sample of now that

will run entry three per cent in copper and some gold and silver. It runs right due east and west, right into the Radiore property. There is one place the engineers took a sample ten feet wide of this gossan outcropping that sampled about thirteen dollars to the ton. In fact, you can find samples of good ore all the way thru to the Radiore one, two, three and four. It is a dyke all the way through. I have some samples. And the Green Monster--

Q You found some evidence of pyrite?

A Yes, I have a sample here which you may be interested in (the witness handing a paper to council). I think that it is. I think Mr. Smoot knows that ground pretty well all the way from the lower fault up through there.

Q This assay sheet represents samples taken of surrounding properties, does it?

A Yes, that assay sheet represents samples that were taken from surrounding properties there.

Q The Green Monster, the Silver Plate, Blue Bell, the Cliff, the Lone Pine, the Missouri, and the Brookshire?

A Yes. On the Silver Plate--

Q Tell us where the Silver Plate is.

A It was formerly owned by the United Verde Copper Company, by Senator Clark. There is a lead going east and west the whole width of the drift that runs about four ounces in silver. There is a streak of quartz and iron sulphide. Some runs away up, and that has been drifted on and followed due toward the Radiore, and I believe that is going to develop an ore body when they get farther up under the hill. The Cliff has been faulted. It looks like it slid right over. The flat fault is nothing but a diorite. The Silver Plate is in place. There is quartz porphyry on the foot wall, greenstone schist on the hanging wall.

Well, I have been with quite a few of them. They seem to think it will lead to the main ore body up in the direction of the Radiore. There is a mighty fine chance. I had some assays that went one hundred and eighty eight ounces in silver and some eight or ten per cent in copper.

Q Where is the Silver Plate in relation to your claims?

A I can show it on the map. It joins on the Cliff.

Q About how far away is it?

A Well, you can figure it out on the map and tell exactly.

Q And it is your belief that the ore body on the Silver Plate continues on in the direction of the Radiore three and four, is it?

A No doubt.

- Q It is not exposed now?
- A No. With development it should be.
- Q Now, where is the Blue Bell, and tell us about that Mr. Larson.
- A That lays parallell with the Cliff on the north side of the Cliff.
- Q Is it closer to yours than the Cliff?
- A You can tell there on the map.
- Q And how about the ore body there?
- A Well, that is where the geologists sampled it. They said about ten feet will average about thirteen dollars to the ton.
- Q Is there any indication of the direction of the ore body?
- A Well, that has been faulted in there. That runs a little to the north west and south east, almost due north and south you might say. But the Cliff is not in place. It is similar to the outcroppings on the United Verde Copper Company.
- Q How about the Lone Pine?
- A Ore was shipped in the early days. It shows the assays on that paper.
- Q Where is the Lone Pine?
- A That is about I should judge, roughly I would estimate it is about twelve or fifteen hundred feet from the Silver Plate, north. The map shows it.
- Q How about the formation in there?
- A It is porphyry schist and quartz. There is quite a nice quartz vein you can trace up.
- Q Do you still have this overcapping of limestone there?
- A No, not on this property.
- Q Is there any indication of the direction that the ore body on the Lone Pine might take?
- A It is kind of faulted. It runs east and west through the Ewing property.
- Q That is just over the ridge?
- A Yes, almost in conflict with my ground.
- Q How about the Missouri claim?

The following three samples were taken by the Green Monster Mining-Company and assayed by the United Verde Copper Company:

	Cu. Per Cent	Ag. Ounces	Au. Ounces
2-27-17 Green Monster Mining Co. Sample #44-Prospect		2.60	0.25
" "45 " #2	18.4	1.20	0.20
3-2-17 Green Monster Mining Co. Sample 46- Gorge Tunnel	5.60	1.00	0.02
3-9-17 Green Monster Mining Co. Sample #13 52	2.30	3.00	1.08
" #14 53	1.10	0.50	0.60

Picked samples from dumps of SILVER PLATE:

3-18-38 #2 Red		15.12	2.88
#3		121.40	0.28

SILVER PLATE VEIN Picked sample	8.5	187.88	.12
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Silver Plate vein		70.12	0.03
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Silver plate vein (width 18 inches) 10-17-38	11.23	3.64	.04
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140 ft Incline Shaft, Silver Plate #1 Sample, 5 ft. wide		\$6.35 per ton in gold and silver		
#2 " "		\$8.87	"	"

	Cu.	Ag.	Au.	Insol.
CLIFF CLAIM, APEX SHAFT - 1-21-38 Sample	22.65	1.87	0.03	
Apex Rhyolite (large body)	4.2	0.3	.02	87.2

BLUEBELL CLAIM Oxide gossan, about 10 feet wide	5.9	0.5	0.6	
Incline dump	1.2	2.2	0.5	

LONE PINE CLAIM 5-14-38 Incline 40 ft deep	1.3	3.68	0.72	72.
Outcrops	4.8	0.6	0.24	64.0
10 in. x 10 feet #2	0.5	0.1	0.4	56.8
14 in x 7 " #3	1.0	5.10	0.20	63.8

MISSOURI CLAIM Dump Sample #2	2.4	.5	.20	78.6
----------------------------------	-----	----	-----	------

BROOKSHIRE SHAFT Vein 4 to 10 inches wide	12.73	5.42	0.28	
Dump #1	7.7	10.0	0.19	53.0

A That is way down on the fault. There is about twelve or fourteen inches of that ore I took samples of. It all belongs to me.

Q How far is it from the Radiore claims?

A Well, that is a mile, I guess, down there. The map will show that.

(Mr. Crawford: We will offer this assay sheet in evidence at this time.)

Mr. French: No objection.

(Thereupon, the document so tendered is by the notary marked as Protestee's exhibit number 3, witness Larson, and the same is enclosed herewith.)

Q (By Mr. Crawford) Now, Mr. Larson, these geological formations, the ore bodies and the indications you have seen on these properties listed on protestee's exhibit number three, are they any different from the showings you have on the Radiore two, three and four, and the Blowout number two?

A It is a little higher up. The character of the formation is a little different.

Q That is because it is higher up?

A Yes, and overcapped.

Q With limestone and sandstone formations?

A Yes. The only one that could tell is the torsion balance, about the mineralization there.

Q Now, is there anything in connection with your testimony that I have overlooked which you would like to bring out yourself?

A Well, I can't think of anything just exactly now, but later I may have something.

Q You think you have told it all?

A I think I have told the principle part of it. On the Cliff there is almost identically the same kind of quartz porphyry and diorite and mineralization as they had in the glory hole before they stripped the pit. You know, at the United Verde Copper Company.

Q Do you want to expand upon that as to just what you mean?

A They had a Cleopatra quartz porphyry as well as the United Verde diorite.

Q That is a diorite?

A From the United Verde geologists; they named that.

Q And that same diorite is out on the Green Monster and almost abuts your property?

A Yes.

Q And the Cleopatra quartz porphyry occurs in both places. Is that what you mean?

A Yes.

Q That the Cleopatra quartz porphyry occurred in the steam shovel pit at the United Verde.

A It is the same formation out there also.

Q Now, is there anything else?

A On the Silver Plate there is nearly all quartz porphyry in underground workings, and greenstone. On the surface there is free gold shown. I have some myself. There is quite a lot of shipping ore that will run eight and ten dollars, on the surface, and some will run a way up.

Q The Radiore number two really overlaps on your three, does it not?

A Yes.

Q And Radiore number three?

A Yes, there is a conflict between all three of them.

Q There is no overlap on four of two, is there?

A No, not on two. You come in conflict with the Blowout claim.

Mr. Crawford: Well, I believe that is all. Oh, there is another question of two.

Q Mr. Larson, on your Radiore number two, which is the uncontested claim, you found iron pyrite and you found, of course, some oxydized iron, did you not?

A Yes.

Q And some quartz porphyry?

A It is kind of altered quartz porphyry, because it is high up.

Q And some you called jasper?

A Yes.

Q You, of course, have seen that quartz porphyry exposed in other properties, have you not?

A Yes, it is similar.

Q The quartz porphyry upon your place is the same?

A Yes, sir, practically.

Q What is the general effect of the discovery of pyrite in that district upon the mind of prospector or geologist?

A You take pyrite of iron, that is generally the mother of mineral, that is, from the prosepctor's viewpoint. I am not a geologist. I have had experience since 1894.

Q From your experience in the Verde Valley is that pyrite the forerunner of copper mineral?

A It is a good chance for orebody. In fact, we took two samples showing speckled iron and quartz. The mineral shows all thru it. I think the Government men were with ~~me~~ us yesterday when we were up there. I think they will verify that.

Q Mr. Crawford: I think that is all.

#### CROSS EXAMINATION

Q (By Mr. French) Now, Mr. Larson, you said you had a copy of the option you had with the Radiore Company that you would be glad to produce. We would be glad to have you produce it.

A I will. It is right here handy. Here is the option on the stock they wanted to buy afterwards.

Mr. Favour: Let me put that together (council fastens papers together ).

Mr. French: The protestant will offer in evidence the option produced by the witness.

Mr. Favour: Well, I suggest--

Q (By Mr. Favor:) Do you want to keep this original Mr. Larson?

A Yes, sir, for future reference.

Mr. French: We are perfectly willing to substitute a copy.

Mr. Favour: No objection.

(Thereupon, the document so tendered is by the Notary marked as Protestant's exhibit A, witness Larson, and the same is enclosed herewith.)

Q (By Mr. French) Now, Mr. Larson, you spoke of a book which you laid on the table, of the Radiore Company. I suppose that was a prospectus?

A Which?

Q You have there a pamphlet of the Radiore Company which you started to offer.

A Yes.

Q May we have that in record too?

A Yes

Q Is that the only one you have of that?

A ~~Maxxixx~~ Yes.

Q Have you an extra copy of that?

A No, sir.

Mr. Favour: It is part of the geophysical work. I don't know whether you want it or not. If you start putting in geophysical pamphlets we had better put in some books upon it. We have no objection to it.

Q (By Mr. French) Are you willing that this copy be put in the record?

A Just as you feel like.

Mr. French: I would like to put it in.

The witness: How about it?

Mr. Favour: It is the only one you have. Probably you can't get another one.

The witness: I don't think it is anything important to keep.

Mr. Favour: It could be photostated very quickly. We will consent that it be made a part of the record.

Mr. French: Mark it as protestant's exhibit B.

(Thereupon, the document so tendered is by the notary marked as protestant's exhibit B, witness Larson, and the same is enclosed herewith.)

Q (By Mr. French) Now, as I understand you Mr. Larson, the Radiore Company entered into this option with you and paid you ten thousand dollars. Is that right.

A Yes, the option was in Mr. Olund's name but he was the chief engineer for the company.

Q You actually received ten thousand dollars upon that?

A I did. If you want to take a look at this other (the witness indicating other papers).

Q What is that?

A They organized the Rajah Mining Company after they paid me and took an option upon my stock (the witness handing a paper to council). They thought it might be valuable you know.

Mr. French: We offer it in evidence as protestant's exhibit C.

Mr. Crawford: Just a question on voir dire.

Q This exhibit C was the option which you gave to H. E. Olund who was the representative of the company which was later formed as the Rajah Mining Company. Is that right?

A Yes.

Q And this option covered covered the property now known as Radiore two, three, and four?

A Yes.

Q And they exercised this option and paid you ten thousand dollars?

A In payments. The last was made in 1921.

Q And later they asked for and got this option, exhibit C, which is an option on your mining stock?

A Yes, That shows, you know, they made a payment.

Mr. Crawford: I think that clears it up.

Q (By Mr. French) Well, now, was it the Rajah or the Radiore Company that paid you the ten thousand dollars?

A Olund paid me the ten thousand dollars. That Southwestern Engineering Company were in back of it.

(The document so tendered is by the notary marked as protestant's exhibit ~~EXEM~~ C, witness Larson, and the same is enclosed herewith.)

Q He paid you in behalf of the Company?

A Yes. Then they organized this Rajah Mining Company.

Q And which company was organized first?

A The Radiore, according to the pamphlet. I think they were a separate concern from what the Rajah Company was, you see.

Q Then they did this work you have testified about and went broke?

A They went broke in 1929 like everybody else did. I went broke myself.

- Q And they never paid you the other payments stipulated in the option?
- A Yes, they paid me all the payments.
- Q Ten thousand dollars was the end of it?
- A That was the end of the option. They deposited the Rajah stock in the bank to my credit.
- Q Then you testified you foreclosed. Who did you foreclose on?
- A On the company.
- Q The Radiore Company?
- A On the Rajah, because I did the assessment work.
- Q Did you do that in a court proceeding or under a forfeiture proceeding under the mining law?
- A In court proceeding as near as I recollect.
- Q You formally foreclosed and got a judgment in the Superior Court against the Radiore Company covering the twenty-eight claims listed in exhibit A?
- A Yes.
- Q And this group covered by these twenty-eight claims in part is the Radiore three, four and the Blowout?
- A Yes.
- Q In other words, the Radiore three and four and the Blowout were included in the ground included in exhibit A?
- A It was included right in there.
- Q And then in what way did this Radiore three and four and the Blowout become lost?
- A Well, then later on I couldn't afford to do the assessment work, you know, and a fellow by the name of Hayvus located that ground. That was later on. I couldn't tell you the date.
- Q I see. And where is Hayvus now?
- A Well, he is pretty well along in age. He is in the Pioneer's Home.
- Q Well, he relocated the ground?
- A He relocated twenty-two of the claims.
- Q What?
- A He relocated twenty-two of the claims.

- Q And included in the twenty-two claims that he located it included the Radiore three and four and the Blowout?
- A Yes.
- Q Then do you remember when Hayvus located or relocated this ground?
- A I haven't the record with me.
- Q Just approximately.
- A It might be along in thirty-two, perhaps, or thirty-three. I don't know exactly. I could look it up.
- Q Your application for patent would be correct in that respect?
- A What do you mean.
- Q I say, your application for patent would be correct in that respect?
- A Yes. I bought them afterwards you see.
- Q Yes.
- Mr. French: The protestant will request the reviewing officers to judicially notice the application for patent in this connection.
- Q And then you bought these twenty-two claims from Mr. Hayvus?
- A Yes.
- Q In about 1937?
- It may be, yes. It is on the record.
- Q Whatever the record shows is correct?
- A Yes, that is correct.
- Q And the Blowout claim, how did that come to be known as the Blowout number two?
- A Blowout number two?
- Q Yes.
- A Let's see. The Blowout number two was not included in those twenty-two claims because it was owned by the Verde Combination.
- Q Well, now, was the Blowout number two included in the twenty-two claims listed in exhibit A?
- A I am not sure. The Blowout number two wasn't, no. You can see that on the map.

- Q The Blowout number two was not included in these twenty-two claims that are listed in exhibit A?
- A No. It joins on.
- Q It was not in the twenty-two claims that Mr. Hayvus located?
- A No. I located that in-- well, the record will show for it.
- Q And this Blowout number two, had you at any time prior to the present location held that ground ore claimed it or had you any interest in it?
- A No.
- Q You understand that the Blowout number two is one of the claims you are now applying for patent for, do you not?
- A Yes. The work is done upon it and the money spent upon it.
- Q Now, we will take the Blowout number two first. What discovery of valuable mineral have you made upon the Blowout number two, Mr. Larson?
- A There is hematite of iron and quartz and some specks of pyrites of iron.
- Q Some specks, did you say?
- A A little iron, white iron.
- Q Specks of iron. Now, are these things you have just mentioned valuable ~~mineral~~ mineral?
- A Well, that is the indication, what we go by. If you haven't got quartz and pyrites the chance is very slim of opening up a body of ore.
- Q Isn't it true that you have these indications and don't have any valuable mineral?
- A I haven't seen any. You won't get it if you don't get depth. This is very shallow depth, not over twenty feet.
- Q Well, what values have you gotten on Blowout number two?
- A Well, just a trace. I think the assays show that.
- Q Now, Mr. Larson, in order that there may not be any confusion, will you mark on exhibit one the claim that each one of these assays refer to.
- A "B" is the Blowout--
- Q Could you put this on there?

Mr. Crawford: It is all in the record.

Mr. French: I was not able to follow it all.

Q (By Mr. French) Samples one, two, three, four and five, where did they come from?

A One, two, three, and four came from Radiore number two.

Mr. French: Will it be all right for me to mark that on there?

Mr. Favour: Yes. I think it is in the record already.

Q (By Mr. French) Then as I understand you, Mr. Larson, samples marked one, two, three and four on protestee's exhibit number one refer to Radiore number two and that is not involved in these proceedings.

A This Radiore number two? It is not being contested, no.

Q Now, where did this sample number five on exhibit one come from?

A That is from the tunnel on the line between the two claims three and four.

Q That came from the tunnel along the line or three and four you say?

A Yes, The work is done there for the numbers three and four, the patent work.

Q And you claim that for both three and four, do you?

A Yes.

Q Yes. That is right. Now, this sample number five as shown on protestee's exhibit number one is four hundredths of a per cent copper, is it not?

A Yes.

Q What is the approximate value?

A I don't know exactly. It is very small. It shows there is mineral there.

Q Well, that, then, that four one-hundredths of a per cent of copper, as shown by sample number number five, would be about twelve cents, would it not?

A I don't know.

Mr. Reber: A little less than a pound to the ton.

Q (By Mr. French) What is copper worth now?

A Twelve and a half cents.

Q So that would be nine or ten cents or something like that, would it not?

A Something like that.

- Q Well, now, on this protestee's exhibit number one, what do samples one-B, and three-B, Two-B, where did they come from?
- A They were taken from the Blowout.
- Q You mean Blowout number two?
- A Yes.
- Q And what is the approximate value of those samples, Mr. Larson?
- A Well, you will have to figure that out.
- Q Whatever it figures out?
- A Yes.
- Q All right. And would it be a profitable operation to work the Blowout number two for the values shown on these samples one-B, two-B, and three-B?
- A It would not but that is the indications. There is something underneath.
- Q Well, now, as to the Radiore number three and the Radiore number four, what values did you get on those claims, other than the tunnel that is already covered by protestee's exhibit number one, which is between three and four? Did you get any other values on those claims?
- A Those assays came from the two and three.
- Q Well, I understood you a little while ago that the first four samples numbered one, two, three, and four, on exhibit one are from number two.
- A Two and three didn't I say?
- Q Did you say they all came from number two?
- A Yes.
- Q They are from number two. Radiore number three had nothing to do with these samples one, two, three and four. Is that right?
- A There was some assays I had. I think you people have them.
- Q I am talking about this exhibit (council indicating to the witness).
- A I would have to see the map to tell you.
- Q Which map do you want to see?
- A (There is no response.)

Mr. French: Where is the affidavit (the paper is produced and passed to council).

Q (By Mr. French) Now, Mr. Larson, I will refer you to your exhibit number two and ask you to look at that.

A (After the witness examines the exhibit for some time) That is right.

Q Now, Mr. Larson, the assays numbered one, two and three, referred to on your exhibit number two which you hold in your hand, what claim did they come from?

A They came from number two.

Q All three of them?

A Yes.

Q Assay number two-B, that speaks for itself; that is from the tunnel between three and four?

A Yes.

Q Now, I will call your attention to the paragraph immediately following the paragraph that refers to assay number two-B, and ask you to read it into the record.

Mr. Favour: I object. It is already in the record.

Q (By Mr. French) that statement is correct in the next to the last paragraph in that affidavit, namely:

"The workings of this property are all in the exploratory stage of development, and but little ore has been extracted. No shipment has been made by me, and no ore in quantity is available for shipment."

That was correct at that time, was it?

A Yes. You mean it was working at that time?

Q Yes. The statement is:

"The workings of this property are all in the exploratory stage of development, and but little ore has been extracted. No shipment has been made by me, and no ore in quantity is available for shipment."

A Yes.

Q All of that was true at that time?

A Yes.

Q And it is true now?

A Yes, sir.

Q And that is also true as to the Blowout number two?

A There is no pay ore there. There is indications and mineral showing. That is all.

Q Now, Mr. Larson, if you had the Blowout claim number two removed from the vicinity of the United Verde, the United Verde mines, would you consider it of itself a valuable prospect?

A I don't understand just exactly what the question was.

Q If you had it in some other location with reference to the United Verde and the United Verde Extension--

Mr. Crawford: We object to that as assuming a state of facts that does not exist. It is in the United Verde Mining district; it is there physically, and there is no evidence that it is some place else. That is not a proper question to ask. It is purely a hypothetical question.

Mr. French: I believe in these proceedings the answer is recorded, subject to the objection.

Mr. Crawford: Yes. Go ahead and answer the question.

The witness: State the question once more.

Mr. French: Will you please read the question Mr. Reporter?

(Thereupon, the last question and answer and the partial question following, as above shown, are read aloud by the reporter.)

Q (By Mr. Crawford) Do you understand the question?

A Well, I don't quite understand that question just as it is put, but the indication--

Mr. Crawford: Maybe Mr. French could reframe the question.

The witness: Explain the question, Mr. French. Just what do you mean by it?

Q (By Mr. French) Well, I will ask it this way, Mr. Larson. If the Blowout number two claim was not near the United Verde or the United Verde Extension, would you still consider the Blowout number two a valuable claim?

A Yes, I would.

Mr. Crawford: We make the same objection as heretofore to this question.

Q (By Mr. French) Now, why would you consider the Blowout number two claim a valuable claim under this condition?

A Because there is iron and quartz and the general character of the formation.

Q And yet all the value you have been able to get from this claim is but a few cents.

A Yes. You can't find any value in the United Verde Extension until you get to depth.

Q When does a discovery take place under the mining law?

Mr. Crawford: That calls for conclusion.

Mr. French: He testifies as a miner of years of experience.

Mr. Crawford: I don't think you have any right to ask him what the law is.

A I know that a discovery shaft is and what the location of the claim is and all of those things.

Q What is a mineral discovery according to your understanding, Mr. Larson?

A It is a ten foot face, two hundred forty feet of dirt taken out of it is an open cut.

Q What kind of material exposed?

A You are supposed to have ledge matter or mineral in place.

Q What?

A You are supposed to have a ledge, ledge matter, or mineral in place.

Q What is mineral?

A That is quartz and iron.

Q And does it have to have any value?

A It is all leached out on the surface. You find leached quartz, then mineral below, lots of times.

Q Well, when, in your opinion, does the discovery occur? at the time you actually find valuable mineral or at some other time?

A With development. The location of the discovery shaft is all in the iron quartz and schist.

Q Now, when do you say a discovery occurs?

A When the work is done.

Mr. Crawford: We interpose the same objection.

Q (By Mr. French) What do you mean by "when the work is done," Mr. Larson?

A When you do the work with a pick and shovel, open cut or sink a ten foot hole. All of those things is what the discovery constitutes.

Q You have a discovery then regardless of whether you find any mineral or not?

A That applies to the law, I think.

Q Do you or not have to have valuable material to have a discovery?

Mr. Favor: Let us interpose a very earnest protest to this questioning. What he says wouldn't make the law or unmake the law. We are here to discover what is in Mr. Larson's mine, the actual condition out there, and we earnestly protest against this line of examination.

We submit he is not a lawyer and that he is not qualified to answer those questions.

(Thereupon, at 12:00 o'clock noon, a recess is taken until 1:15 o'clock this afternoon.)

AFTER RECESS

1:15 o'clock p.m.

Mr. French: Will you please read the last question, Mr. Reporter.

(Thereupon, the last question, as above shown, is read aloud by the reporter.)

A To the best of my knowledge you have to have mineral in place.

Q By Mr. French) And do you mean, Mr. Larson, valuable mineral or just mineral in the broad sense?

A Well, when you have a good showing, good surface indications, that should be sufficient. But that is the way we used to get a patent; that is what we used. If you had iron and quartz and mineral they would always pass the patent.

Q And the value of the mineral was not a prerequisite?

A There would be no ground patented if you had to have pay ore in sight. It wouldn't be any use in prospecting.

Q Are quartz porphyry and greenstone contacts always associated with mineralization in this district?

A I have found it that way.

Q And by mineralization do you mean valuable minerals?

A Where you have an indication, even though it don't carry more than a trace, it is mineral.

Q How much ore has been produced on the Green Monster and Cliff claim?

A Well, the Green Monster and the Cliff claims, there was a

carload of very rich ore taken out in the early days, I should judge about ninety-nine.

Q Ninety-nine?

A Yes.

Q I see.

A prospector took that out.

Q And in recent years has there been anything taken out of those?

A I have shipping ore there now on my property, on the Cliff and the Bluebell and Silver Plate.

Q Now, can you tell by geophysics methods as to the quality and quantity of an underground ore body?

A It is impossible for me to tell but both the State of Arizona and the University of Arizona and the State of California agree they can locate the mineral but not tell the quality. But if you find iron sulphide or a body of sulphide you are bound to get copper, gold and silver with it in the Verde District. That has been the history.

Q Now, isn't it true in this district as it is in other districts that there are times when you don't get those values below?

A There are different districts. All are not the same formation but all look for the iron quartz and iron sulphides. If they have any of that formation they are willing to dig upon it and spend some money.

Q In other words, you mean they are willing to do further prospecting?

A Yes, they are always willing to spend money on that kind of formation.

Q Now, you testified about this Radiore Company spending twenty-five thousand dollars.

A That is approximately.

Q Yes, approximately. That was on these twenty-eight claims mentioned in exhibit A?

A Yes.

Q Now, where was that money spent, if you know?

A There was one fellow worked there for about a year on Radiore number two and three. They didn't do much work on four. It was on two and three the work was done.

Q Then why didn't they pursue this work any further?

- A Well, they went broke like good many others, in 1929.
- Q Nobody else had taken their place until you got it?
- A They tried to get it back but the leader died, Frank B Amsted. I had some correspondence with him. But he died and that was the end of it.
- Q Yes. Now, Mr. Larson, does any quartz porphyry outcrop on Radiore number three?
- A ~~XXX~~ On Radiore number three?
- Q Yes.
- A No, it is mostly greenstone schist, because the porphyry is covered. There is a very little that looks like porphyry.
- Q Then is the same true of number four?
- A Number four is mostly covered with sedimentary.
- Q That is mostly covered?
- A Yes.
- Q And the Blowout number two?
- A On the Blowout number two there is porphyry in that.
- Q On the surface?
- A Yes. Some call it porphyritic schist. It is pretty much the same thing.
- Q And does that carry values on the surface?
- A Some times it does.
- Q I mean on these claims.
- A It may carry four-bits in silver. One assay went eighteen dollars gold, silver and copper.
- Q What claim is that?
- A Radiore number two.
- Q No. I am talking about three and four.
- A Well, there is values there, a little gold, silver, and copper.
- Q You mean these assay certificates which are already in evidence here?
- A Yes. It shows some. Of course, it is not in paying quantities.
- Q It is not?

A No. You have to get some depth.

Q Yes.

A They started a three-compartment shaft and went down about forty feet. That didn't amount to anything.

Q Yes.

Mr. French: That is all.

#### REDIRECT EXAMINATION

Q (By Mr. Crawford) Mr. Larson, on Radiore claims three and four and Blowout number two, on each of these did you find valuable mineral in place?

A It is valuable mineral.

Q What mineral?

A There is some copper, gold and silver, but it is not in paying quantities. I think the record will show that.

Q Now, then, I just want to clear up one thing. This Radiore Company went broke for reasons independent of these mining claims, did it not?

A Yes.

Q It was just due to the general depression, was it not?

A Yes. They were not patented.

Mr. Crawford: I believe that is all.

#### RECROSS EXAMINATION

Q (By Mr. French) Now, Mr. Larson, the valuable mineral you have testified to just now is these values as shown on this assay certificate, protestee's exhibit number one, is it not?

A Yes. I think there is some others that will come up too.

Mr. French: That is all.

Mr. Crawford: Call Mr. Reber.

Whereupon,

LOUIS R. REBER, Jr., is called as a witness in behalf of the protestee herein and, having been heretofore duly sworn, is examined and testifies as follows:

#### DIRECT EXAMINATION

Q (By Mr. Favour) Please state your name for the record/.

A Louis R. Reber, Jr.

- Q What is your residence, Mr. Reber?
- A Jerome.
- Q And what is your profession?
- A Mining geologist.
- Q How long have you been a mining geologist?
- Mr. French: We think he is undoubtedly qualified.
- Mr. Favour: I am going to put it in the record.
- Mr. French: All right.
- Q (By Mr. Favour) How long have you been a mining geologist, Mr. Reber?
- A I have been working at it to some extent since 1910. I finished school work in 1917.
- Q What degrees have you received?
- A B. S. in civil engineering and P. H. B. in Yale University.
- Q And you have been working at your profession since when?
- A Since 1910 intermittently; continuously since 1917.
- Q And at the present time with what company are you connected?
- A Phelps Dodge Corporation.
- Q You have acted as consulting geologist, have you not?
- A Since 1917 I have done a certain amount of consulting work, a portion of my time over that whole period; that is, consulting work for other parties.
- Q And for how long have you been acquainted with the Jerome District, and by that I mean the district north and south through Jerome.
- A Since 1917.
- Q Since 1917. And would you say that you have a knowledge of that district?
- A Yes, I have done more work and been responsible to a considerable extent for the working out of the geology of the district as it is now known, having done more of that myself than any other one individual.
- Q In addition to your knowledge of mineralogy and geology, would you say that you understand the theory and practice of geophysics?
- A I have had a good deal to do with geophysical work at one time and another in connection with prospecting operations.

I think I understand the possibilities and the limitations of the various methods. I would not attempt to qualify as a technical expert.

Q You understand the practical application of geophysical experimentation?

A I do.

Q And have the mining companies been guided and counseled to a large degree over the past twenty years by your recommendations, in that district, do you know?

A Yes.

Q And now, Mr. Reber, I am going to let you, in your own language, if you will, explain the general geological situation in that district, and if you will please outline what it is, describe it and tell us what it is, and also the bearing it has on general mining and prospects of mining.

Before we do that however, I would like to ask you about this map. I hand you a map and ask you what is this map.

A This is a part of the geological map of the Verde District which has been prepared under my direction over a considerable period of years in connection with the general study of the geology of the district.

Q It shows the group that we now have under discussion, does it not?

A It shows that group and it shows the geological features in that part of the district that have a bearing upon the conditions there

Q In a general way will you explain the district.

A I will define the Verde District as an area showing the mineralizations that are prevalent. In other words, there is some evidence of the important copper mineralization which is responsible for the valuable mines of the district which is detectable every here and there over a given area. In other words, that is the extent of the Verde mineralization, and the extent of that is what the prospector defines as the Verde District.

The mineralization is of the pre-Cambrian age, while there is some secondary material of a younger formation.

There has been some commercial ore from this secondary material of a younger formation. The primary mineralization is pre-Cambrian, so that a knowledge of the surface is confined to the area in which these formations are exposed. This area extends along the side of the Verde Valley. The upper limit of the exposure of the pre-Cambrian formation is determined by the relative flat lying capping of the younger formation tending to follow the contour line along the side of the Verde Valley.

The downhill limit is determined chiefly by the great Verde Fault, the displacement of which caused the younger formations to occupy the surface on the lower side.

In spite of this limitation as to exposure of pre-Cambrian, the exposure is extensive enough underneath to cover the younger rocks and the upper side of the younger rocks, and in consideration of the deepest re-entrance in the upper contour line boundary we are able to determine with a fair degree of approximation the extent of the mineralized area determining the district.

- Q Generally speaking, this district that you are now talking about lies along the east slope of the Mingus Mountain. Is that right?
- A Yes.
- Q And it extends more or less in a north and south direction, does it not?
- A It is somewhat west of north and south of east.
- Q Yes. And running through that district is a considerable fault which is commonly known as the Verde Fault, which you have just mentioned?
- A Yes.
- Q And that runs generally from the south to the north, does it not?
- A Yes, paralleling the side of the valley.
- Q And the pre-Cambrian rock that is exposed there, is that an old rock as compared with other rocks?
- A Yes.
- Q And it is in the pre-Cambrian that we find the mineralization usually. Is that right?
- A Yes.
- Q Is it not true that there are very few exposures of the pre-Cambrian rock in this part of the country? That is true, isn't it, that the pre-Cambrian is not generally close to the surface?
- A Well, going to the south it is quite extensive.
- Q But up in this district (council indicating upon the map) you find it going south of this?
- A Well, I was talking about the Verde Mining District as being defined as a mineralized area. That is all more or less pre-Cambrian.
- Q In what are the United Verde and the United Verde Extension ore bodies, What kind of rock?

A Pre-Cambrian.

Q In what are all of the known mines in that district, what kind of rock?

A Well, I have already qualified that. There has been some commercial ore in the younger formation. The primary mineralization is entirely confined to the pre-Cambrian rock.

Q Now, confining ourselves to this exhibit four, which is your map, are the general geological conditions in exhibit four similar to those in Jerome?

A Yes. But you have cut out a little of my general story. If you will let me go on--

Q Yes. You go ahead.

A We have a more or less definitely determined area where there is general evidence of the copper mineralization. Then I will not attempt to go into any details of formation beyond the quartz porphyry and the other rock.

Looked at in that way, we have two belts. One is a continuous belt crossing on the north, and further south we have another more discontinuous belt where quartz porphyry predominates.

The two formations I am making a point of are the intrusive quartz porphyry, the Cleopatra porphyry. So far as we can determine it is all the same type of rock and has the same relation to mineralization as the older schist and greenstone included in this quartz porphyry.

Now, while we have scattered traces of this mineralization practically everywhere, all of the stronger showings appear on or near the shear zones of belts of schist from quartz porphyry. All of the mines which have produced commercial ore, pre-eminently the big mines, have this relation to the quartz porphyry; and the study of the district as a whole, of all the small showings and even the slight showings, brings out the importance of this association of the copper mineralization in the vicinity of quartz porphyry contact.

Out of the important mines the United Verde and the United Verde Extension are on the north side of the north porphyry and the Verde Central is on the opposite side.

There are a number of places that have produced mixed porphyry and older schists in this zone of which the Radiore claims are a part.

The Copper Chief is in this same belt, more or less on the south side of the south porphyry area.

We find, as I have already brought out, the most important, from a prospecting and geological point of view, showings with quartz porphyry; that is, not exactly on the

contact, some are on the contact but in the general vicinity, particularly shear zones and schist belts leading out from the shear zones.

Q Now, this general district you have been describing is the district in which we find the mines that you have referred to and also the ground that is being sought in patent in these proceedings, is it not?

A Yes.

Q That is to say, you would include in this district you have just described those particular claims designated as the Radiore number three, the Radiore number four, and the Blowout number two, would you?

A Yes. Of course, that is only by reference on the basis of a presumption as applied to Radiore number four. The surface of the Radiore number four is entirely covered by a Paleozoic formation. There is no question but that the trend of the north side of the southerly porphyry belt carries it through that ground.

Q There is no doubt in your mind but that underneath this Paleozoic formation there is the pre-Cambrian formation, is there Mr. Reber?

A No.

Q Nobody would question that, would they?

A No, sir.

Q And that is true over the entire surface of Radiore number three and Radiore number four and the Blowout number two, is it not?

A Yes.

Q Now, did you finish your general statement?

A Yes.

Q Now, Mr. Reber, I would like for you to confine your comments to exhibit number four, and you might perhaps describe the coloring and this map a little in detail, so that we can get a kind of a background of it.

A Well, as far as the significant features go this maroon colored line represents Cambrian sandstone, which is the lowest formation of the overlying younger rock. That limits the possibility of showing the primary mineralization on the surface.

The limit of our pre-Cambrian area is the Verde Fault (the witness indicating on the map.)

Q That is the blue line on the east?

A That is the blue line, yes.

Mr. French: Mr. Favour, would it be possible to put a legend upon this?

Mr. Favour: Yes, we will do that.

A (continuing) Between those limits the yellow color represents the Cleopatra quartz porphyry, and the purple color the older greenstone schist. The orange color represents the larger masses of jaspery quartz. The green color represents the United Verde diorite ( the witness indicating on the map)/ There are some additional diorites occurring in there in this area. This map is very largely generalized to bring ~~bring~~ out the distinction between porphyry and the older schist.

The United Verde diorite is not very significant in relation to mineralization.

Q Well, there are shown upon this map various claims, are there not?

A Yes.

Q And what have you to say in regard to the area shown on this map with respect of the commonly designated mineralized zone of mining area, as distinguished from a agricultural area?

A Well, I think what I define as the area of the Verde District, where there is some evidence of the copper mineralization of the district, I mean evidence of the jaspery quartz and evidence of pyrite; I think there is enough general evidence of that mineralization related to the important copper deposits throughout the area I have referred to so there is really no possible question as to that being a mineral area rather than a agricultural area.

Q And this particular ground where we are applying for a patent, is that ground that men have, during the time you have been in Jerome, spent money on with the expectations of getting paying ore bodies?

A Absolutely.

Q They have spent vast sums of money thereon, have they not, Mr. Reber?

A Yes.

Q They have explored it from one end to the other, have they not?

A Yes.

Q And they have carried on rather extensive mining operations all through here?

A That is a very indefinite question.

Q I mean to say that men have worked and prospected in this area, have they not?

A Yes.

Q Now, I just wanted to eliminate the possibility of it being an agricultural area. Now, let's get down to the mineralization. If you will, just describe in detail this district in your own words.

A Of course, the point can be raised, with this great amount of exploration that has been done, a great deal of which didn't establish operations, whether that eliminated the importance of the area.

In this particular area it is my belief, and I have spent a good deal of my time over many years in studying it, this district, with that particular idea in mind, as to the part not adequately shown where there was justification for further exploration, and it was my conclusion that this belt I have explained is a favorable belt, particularly the north part-- that this quartz porphyry still has possibilities that warrant further exploration work.

Q Now, you have made a showing on the map of a section that you have referred to in your last remark, and I would like to have you describe in detail that district on this map, so we may have it for the record as to just where it is.

A (There is no response.)

Q Let me put it this way: That district to which you have referred as offering possibilities, does that include the ground upon which we are seeking patent in these proceedings?

A Yes.

Q Yes. All right. Now, Mr. Reber, will you please in your own words tell about this district in detail.

A Well, there is one important structural point. The trend of shearing is generally east-west in this part of the district (the witness indicating upon the map). There are extremely strong showings from which some commercial ore has been taken, more or less to the east of this ground under consideration, with a very strong east trend continuing into it.

I think perhaps I had better describe the copper mineralization in this connection. We have masses of typical jaspery quartz already referred to. We have masses of pyrite with relatively little copper, and masses of sulphide and quartz with varying proportions of copper bearing sulphide. The non-commercial gangue minerals of quartz and the pyrites are more extensive, somewhat more general occurrence than the commercial material. Nevertheless, particularly the iron sulphide is very definitely a gangue mineral and an associate of copper bearing material.

To a degree which, in my mind, there is no question but that a strong lead of iron sulphide, with perhaps a negligible amount of copper actually visible and determinable, in a particular showing, the body of the iron sulphide is a part of the mineralization. It always shows a trace of copper at least and may be looked upon as a ledge or lode which one is justified in following with a reasonable hope of encountering commercial ore.

The same is true, perhaps to somewhat lesser degree, of the jaspery quartz. There is no question but that the jaspery quartz represents a phase of the district's copper mineralization. In other words, it is rather closely related as to time and source to the other material that is produced in connection with mineralization and carrying commercial values.

On this ground the general east-west trend structure and shearing is quite evident (the witness indicating on the map.)

- Q Now, when you say "on this ground" what ground do you refer to, Mr. Reber?
- A That part of the Radiore claims in which the pre-Cambrian formation is exposed.
- Q That shows on two and three?
- A Yes, sir.
- Q And it also shows on Blowout number two, does it not?
- A Yes, it also shows on Blowout number two. On Radiore number two there is more copper showing but the same general situation holds as to the east-west shearing, certain bands of which show iron oxides, which have been positively interpreted as being developed from sulphide formation.
- Q Did you find on Radiore number three indications of the iron sulphides?
- A There are several such bands in the principal tunnel on the Radiore number three claim. It is impossible to determine from this oxidized material what value in copper, gold and silver may have been present. Nevertheless, the conclusion is believed absolutely sound that these strips of oxydized schist represent bands of mineralized rock formed by mineralization which is a part of the copper mineralization of the district. That has been the experience in the district. The association between the iron sulphide and the copper sulphide is such that there is a fair assumption that following any strong lead of iron sulphide it is bound to result in encountering some copper mineral and that it offers a reasonable hope of encountering such mineral in commercial quantities. And the probable continuity and degree of strength or size of such showing required to make a good prospect or a poor prospect, of course,

is very large, is a matter of opinion, but there are leads showing on this ground, the thorough exploration of which may be expected to show up appreciable amounts of copper ore and offer a possibility of commercial amounts.

Q Do you find on Radiore number three those indications that you have just described, Mr. Reber?

A Yes. I was referring specifically to the showing in the tunnel on Radiore number three. I believe that is the most definite and cleancut place. You have bands of schistose rock with ~~rather~~ relatively abundant iron oxide in which I believe there is no question but that the bulk of that iron oxide has been formed from sulphide.

Q And do you also find that on Radiore number three to a stronger degree?

A There is more copper showing on Radiore number two.

Q But the two grounds are identical in geological conditions, are they not?

A Yes. I don't feel that a small amount of copper ore-- in other words, the possibility of getting small quantities, if you had it in more abundance the commercial value would be more significant because of the fact we know the iron sulphide mineralization is definitely a part of the mineralization of the district, and that a strong lead of pyrite is a good prospect to follow in the hope of finding commercial quantities of copper-bearing material, whether or not it has a certain amount of copper in any particular place.

The pyrite, I don't think you can get away from the considering of that as associated with the material you are looking for.

In other words, as a ledge it is a legitimate prospect for a prospector to locate on. We have plenty of assays showing traces of copper, gold, and silver, but that merely confirms the view that this material is part of the copper mineralization, and where you have a belt containing enough of the mineralization material to justify a hope of sufficient continuity and extent to that you can follow it far enough, you have got a chance for finding your commercial material.

Q Do you think that those indications there would justify an ordinary, prudent mining man in prospecting and developing such ground? Would he be justified in expecting to develop ore in commercial quantities?

A Yes.

Q On Radiore number three and four?

A yes.

Q If you were exploited in the sense of carrying on real mining operations and spending money there?

A Yes.

Q And that is true of Blowout number two, is it not?

A Yes.

Q Now, Mr. Reber there has been some discussion here this morning in regard to certain geophysical experiments that were carried out on. Possibly you are more or less familiar with the fact, that those experiments were carried on down there?

A Yes.

Q Now, suppose you for the record give us a sort of explanation, if you can, and make it clear for the record just what geophysical experimentation is in regard to exploring for minerals.

A Well, that is a pretty large one.

Q Well, that is a large question, but what is the theory of geophysical prospecting?

A Well, there are a number of widely different methods, a number of which have been used with some success. Perhaps one of the most successful, as applied to sulphide ore bodies, is the method the Radiore used on this ground. The other method which was used on this ground in connection with the radiore investigation was the torsion balance, which is not proper there but which may be entitled to some weight, by the electrical method in which the Radiore Company places their chief dependence.

However, practically all geophysical methods depend on the recognition of differences in the physical properties of the ore material sought and the country rock. I has not reached the point where different sulphides may be distinguished. In most cases they have attempted to recognize the existence of sulphide bodies and no light has been obtained as to whether or not such sulphide bodies may be commercial.

The radiore method depends on the creation of a high frequency electro-magnetic field created by a sending apparatus which has an antenna similar to a radio aerial. This electro-magnetic field causes highly connected bodies in the ground to create a secondary field and by means of a detectors somewhat like the radiore direction finder the strength and direction of the magnetic field resulting from the original field produced by the explorers and the secondary field, due to presence of conducting ~~mineral~~ bodies in the ground, is determined and the field strength and direction of the field, and resultant field is plotted over the area under investigation.

Such survey can be quite definitely interpreted to show at least the approximate location of such highly conductive bodies as may exist. As can be seen from this description, it does not even prove that such highly conductive bodies are composed of sulphide minerals. However, sulphide minerals are the most highly conductive materials which are at all likely to be present in the area under investigation.

And experienced operators should be able to be reasonable sure as to whether or not such conductive bodies as may be located do represent sulphide or some other material or structure underground.

Q Has geophysical data come to be recognized among mining men as of real value?

A Unquestionably.

Q And it is becoming more and more so as the methods become perfected and the data becomes more exact?

A Yes.

Q In certain lines the geophysical experimentation has been very definite in connection with the location of oil, has it not?

A Yes. Of course, the seismic method which is entirely different again is used most satisfactorily.

Q That is to say, both are seeking data below the surface, are they not? Which can not be seen with the eye?

A Yes.

Q And both are working upon more or less the same general principles, are they not, of wave?

A Yes. Most of the methods do have that much in common, involving wave motions in one way or another.

Q Those are waves set up by different forces, are they not?

A Yes.

Mr. Favour: We will offer this and then prove it afterwards (council indicating a paper in his hand).

The witness: Those are merely a little further evidence showing there are traces of copper, gold and silver associated with iron oxide, showing mineralization. If there is iron oxide there is a good deal of staining washed from the sandstone, but it shows that there is a considerable amount, and particularly these special bands where the rocks are more sheared, where there is an abundance of iron oxide, which unquestionably is the result of sulphide mineralization.

These samples are from some of those streaks, and they bring out the fact that detectible traces of copper, gold and silver are nearly always present.

Q Now, Mr. Reber, looking at exhibit number four, I call your attention to the so called Copper Chief, as shown here on this map. What can you tell us about the mineralization there? Was there mineral in that?

A The Copper Chief mine and the Equator, or Iron King mine, are both located on the same ore body or ore zone, a large massive sulphide which is more or less cut in half by an arbitrary property line. The Copper Chief produced chiefly from Gold and Silver in the oxidized rock, and the Equator, or Iron King, produced from both of these.

They treated their ore in a small ~~smelter~~ smelter, treating both the oxidized gold and silver ore and the sulphide copper ore.

Q And what can you tell us about the Copper Chief production, if anything, or the Blue Bell?

A Well, on the Cliff, the Cliff showing was one of the extremely conspicuous and promising showings responsible for the development of the Green Monster Copper Company. There is not only ledge material, gossan, but actual commercial ore in place, and there still is, on the ground.

Q Now, what do you know in regard to this Hooker and Ewing property over here on the north east side of the Radiore group (council indicating on the map)? Do you know anything about the history of those claims?

A Yes. That long tunnel was driven to develop jaspery quartz masses. They didn't find anything. That may be due to the fact that they didn't get under the most promising mass on the surface. However, the jaspery masses are more widespread and are a manifestation of the district's copper mineralization.

Somewhat further to the east on it there are some showings where a small amount of copper, gold, and silver ore has been taken out, and these extended to the Blowout number two.

Q I will show you a memorandum and ask you: if you can identify it that.

A Yes. ~~in what~~ In what way?

Q What is that?

A This is a list of the samples I took on the Radiore claims.

Q Could you tell us where you took those samples, on which claims? Were they all taken from one place?

A No. The first ~~was~~ four on this list was on the longest tunnel on number three.

Q That is the tunnel on the boundary between three and four, is it not?

A No. It is this tunnel here (the witness indicating on the map, exhibit four).

Q The tunnel that is on the west side of number three, or the east side of number three--- east side of number three and on number three?

A Yes.

Q Now, where did the others, numbers one, two, three, and four come from? They were taken in the tunnel, were they not?

A Yes.

Q And where were numbers five and six taken?

A Number five is a sample of heavy iron oxides occurring in the limestone above number three.

Q Whereabouts on number three?

A More or less up the hill from that tunnel (the witness indicating on the map).

Q I see. And number six was taken from where?

A There is something omitted from the description on that. That was from the tunnel on the other side, the tunnel near the north east corner of Radiore number three.

Q Well, then, these were all taken on number three, were they not?

A Yes.

Mr. Favour: We will offer this in evidence. Also, if we have not already done so, the map, exhibit four, and the assays of samples, exhibit number five.

(There being no objection made, the documents to tendered are by the notary marked as protestee's exhibits numbers four, five, and six, and the same are enclosed herewith.)

Q (By Mr. Favour) I show you protestee's exhibit number six. As I understand it this is a series of six samples which were taken by you on September 10th, on the Radiore number three, at different places on that claim. Is that correct, Mr. Reber?

A Yes.

Q And the description which has been given on page two of this exhibit, those are observations made by you?

A Yes.

Q And in part the opinion that you have expressed as to the possibilities on three and four is based on this evidence of it. That is true, that you took this into consideration, is it not?

A Yes, but I would hardly say that. I mean the fact that any pyritic mineralization is a part of the mineralization that you follow in the search for copper ore, a part of the Verde mineralization, and that gossan nearly always does show at least traces and often does not show more than that. It is something that frequently determines a ledge or lode which comes under a claim location.

Q This is a confirmation of that?

A Yes. These are usually present where this mineralization is usually found.

Q Now, have you omitted anything, Mr. Reber, that you think would be helpful in this proceeding?

A Well, I might say a word about the question of a lead of iron sulphide or a lead of gossan material, which we can be fairly sure is developed from iron sulphide without carrying more than traces of the actual commercial material we are looking for. It is entirely possible to the consideration of the more common case of a quartz vein which may only have traces of valuable material in it, but which is known to be a carrier and associate of valuable material. The fact that such a ledge of gangue material with only a trace, or traces, of the valuable material has been considered the basis of legitimate claim locations in the past; and I believe that iron sulphide gangue is such a common part of the ledge that it has functioned to just nearly the extent that a vein of quartz has functioned as determining a ledge or lode which does justify a legitimate claim location.

Q And that you find in these claims?

A Yes.

Mr. Faour: You may cross-examine.

#### CROSS EXAMINATION

Q (By Mr. French) Mr. Reber, you have just said that these showings you have found have been considered a legitimate foundation for a claim location. Do you mean also that they would be sufficient for a patent or to hold locations?

A It is my understanding that if the location was valid and met all of the requirements of the mining law that the matter of patent followed without any further restrictions or qualifications or requirements. Now, I don't pretend to know anything more than that.