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(191) Item 23

(191) Item 23

COPPER MOUNTAIN MINE

OUTLINE

May 31, 1966

BY : J. H. WREN

Mine Management
Mine Production

Licensed
Bonded

Development
Exploration

J. H. WREN & COMPANY

Mining Contracting Engineers

Cable Address
WRENCO

Post Office Box 2021
Reno, Nevada 89505
Phone (702) 322-4840

May 31, 1966

SUBJECT :

COPPER MOUNTAIN MINE

During the month of March 1966 the writer requested and obtained permission from Charles Oster, Number 1 East First Street, Reno, Nevada, to do a preliminary evaluation of the Copper Mountain Mine, Mineral County, Nevada. Mr. Oster's Reno office was kind enough to lend various technical reports which had been made on the property. The holdings were of sufficient economic interest to make an offer of a contract purchase agreement to Mr. Oster during April of this year.

Following is an outline of observations made as a result of a two day scrutiny of the mine and condensed research data gained from old operating reports.

LOCATION :

The property is located some 29 miles via the Dead Horse Wells Easterly from the town of Schurtz, Nevada. Dead Horse Wells is almost due East of Schurtz and the Copper Mountain Mine is four and one quarter miles South-West of the wells. If a road is bulldozed out of the North-West end of the patented claims, about one and one half mile to the Schurtz road some eight miles of distance to the railroad shipping point will be shortened.

PROPERTY EXTENT :

The mining holdings comprise five patented lode mining claims, amounting to approximately 96.169 acres in the Rand (Bovard) Mining District of Mineral County, Nevada. U. S. Mineral Survey of the claims was made October 15-19, 1907 and designated as Mineral Survey No. 3332.

COPPER MOUNTAIN MINE OUTLINE OF MAY 31, 1966 :

HISTORY :

The Bovard Mining District, also known as the Rand or Copper Mountain District is on the East flank of the Gabbs Valley Range. It was discovered by Al Bovard and other prospectors from Rawhide during the early 1900s. Chief production period was 1914 to the end of the 1st World War with a major portion coming from the Copper Mountain Mine.

The Copper Mountain Mine has an accountable copper ore sales record of some $125,000 but probably actually produced something over $150,000 at the 1914 through 1918 market prices. Copper markets in the following years, per pound were : 1914 = 13.60 ¢, 1915 = 17.275 ¢, 1916 = 27.202 ¢, 1917 = 27.190, 1918 = 24.628 ¢ and rapidly dropped to 12.502 ¢ in the years to 1921.

According to J. K. Turner, who was in charge of the operation, the economic cut-off point for crude ore shipment grade was 6% copper, during the production run. They reportedly had much positive ore tonnage developed which averaged under the 6% copper requirement and tried to finance a concentration plant. Sill And Sill, the most prominent metallurgical firm at the time on the Pacific Coast,was engaged and ran 127 mill tests which the writer has seen, a copy of which is available. However, these tests were not conclusive and , no doubt, held back sources of capital subscription. At that time simple flotation was new, selective flotation unknown and combination precipitation - flotation of copper ores was in its infancy.

In 1937 an attempt was made to raise capital to produce and concentrate the ore reserves as prices had improved from 9.47¢ in 1936 to 13.16 in 1937 but fell to .10 ¢ in 1938, so the financing attempt was not followed through. As a matter of fact copper was only.117 ¢ in 1945.

Poor roads and the early trucks were a detriment to the operation during the production period.

COPPER MOUNTAIN MINE OUTLINE OF JUNE 3, 1966 :

GEOLOGY :

Basic observations of the Copper Mountain Mine geology as reported upon by J. K. Turner and E. L. Stephenson, (see in the herewith Exhibit Section), are correct.

Detailed geologic mapping is an immediate requirement. The extensive mine workings will lend excellent baselines from which to project additional tonnage of probable ore.

EXISTING DEVELOPMENT :

The J. K. Turner and E. L. Stephenson reports herewith have covered the existing development work in some detail.

In spite of the 48 inactive years at the property, the shaft collars and as far as one can see down the shafts, are in surprisingly good condition. The dry air of the region has reduced timber deterioration to a minimum.

The 5,000 feet of development is of some considerable inventory value to any new operation. Under average , normal mine operating cost about 25% of the total expenditure is for exploration and 25% is usually expended for development. In the case of the Copper Mountain Mine, the existing positive ore reserves when produced will not have the foregoing charges to be paid other than the rehabilitation of the existing development entries.

Present replacement value of the development is :

770' of shaft-winze @ $150 per foot =	$115,500
4,200' of drifting, x-cutting and raising @ $ 40 per foot =	189,000
Surface cuts in ore and Misc. utilities=	10,000
Existing development value	$314,500

ECONOMICS :

Mining and milling cost as estimated by Mr. J. K. Turner are no longer accurate. In some instances cost will be less by utilizing mechanization and modern metallurgy and in other costs they'll be more. The copper market, however, is much better than in 1918 when they shut down and much better than in 1938-37 when they last attempted to finance a concentration plant. Our copper market outlook indicates a rise trend in copper prices, so the mining economics will probably become better than the calculations herein based upon .36¢ copper.

COPPER MOUNTAIN MINE OUTLINE OF MAY 31, 1966 :

ECONOMICS, Continuation :

There is a minimum of 2,000 tons of stockpiled ore and copper bearing dumpage that preliminary samples have shown to average between 3 and 4 percent per ton or 60 to 80 pounds of copper. The 3% minimum would designate a gross value of : $43,200. Screen tests of this material should be made to determine the concentration ratio possible by simple fine crushing and screening to deliver a direct shipment product. Contract crushing and screening with a portable unit would not cost over $1.50 per ton. In view of the good graded gravel road to the Schurtz railroad shipping point, a 4½¢ per ton mile charge on trucking by contract or $1.35 per ton to get it into a railroad car. Published freight rates from nearby Wabuska, Nevada were thought by the copper market of A. S. & R. Co, Tacoma, Washington to be amendable to Schurtz, Nevada @ $9.50 per ton. In view of the carbonate plating on the cleavages and rock fractures, screen tests may disclose that a 12% concentrate is probable. This copper value is $86.40 per ton and would be economic to market. Based upon this premise, the writer offered to accept the responsibilities of a purchase contract and make a detailed evaluation of the available stockpiled ore. The object was to have the surface tonnage pay for the underground rehabilitation. The offer by the writer still stands.

A much more efficient manner to capitalize upon the surface tonnage plus some probable additional tonnage from open cuts in ore on the surface would be to mill it on or nearby the property with a combination precipitation-flotation plant of 100 tons capacity. In accordance with the apparent minimum millhead grade of underground production of 4% copper a value per ton mine run figure of $28.80 @ .36¢ copper would deliver $1,000 per day net with amortization of an estimated $300,000 for mine plant , treatment plant and camp establishment deducted before calculation of said net. The $1,000 estimated net would be before taxes. A larger plant than 100 tons per day is anticipated,at this time of contemplation, not to be justified.

Time element and cost before production income will both be greatly reduced as a result of the development work in effect now.

Factual and accurate operating statistics can be compiled with regard to the economics after the steps in the following "Recommendations" have been taken.

COPPER MOUNTAIN MINE OUTLINE OF MAY 31, 1966 :

RECOMMENDATIONS :

1., a). Run a screen test and precipitation test on the stockpiled surface tonnage

b). Run a screen test and precipitation test on surface ore exposures that can be quickly and cheaply mined for immediate production.

c). A). and b). above field time, laboratory time and assay fees are estimated to cost..... $1,200.00

2., a). Set up a transit survey control system for engineering and geologic mapping.

b). Map surface and underground production areas.

c). Put new ladders in shafts, raises and winzes. There are about 770' of shafts and winzes and over 300' of raises. This is needed for access to the ore reserves blocked out.

d). Rent a portable gasoline winch to lower ladders, supplies and hoist samples from the various shafts. Only one winch will be needed as it can be moved from shaft-to-shaft. 6,500.00

e). Cost estimate for No. 2 is .....

3., a). Sample all available ore reserves and compile assay charts. There are over 5,000' of workings in and around the ore zones. Therefore in-order-to accurately evaluate the total positive ore reserve tonnage and calculate probable and possible ore reserves, some 200 underground and about 50 surface samples will have to be taken.

b). Cost estimate for this item with assay fees included is 3,500.00

4. Copper value to cover above work is more than covered in the stockpiled surface tonnage.

Total evaluation, production engineering maps, access installation, sampling, etc. total $11,200.00

COPPER MOUNTAIN MINE OUTLINE OF MAY 31, 1966 :

METALLURGY :

Sill and Sill, Consulting Mining Engineers of Los Angeles, California ran 127 separate mill tests May 17, 1918 through October 20, 1918. While these tests, no doubt cost several thousand dollars their only present value is the average mill head assays taken from the positive production zones. Copper ore treatment metallurgy has advanced far beyond what Sill And Sill knew in 1918 when simple bulk flotation was in its infancy at the time and combined precipitation-flotation was not yet proven to be practical relative to recovery percentage and cost of reagents and acids, for ore character as exists at this property.

The average mill head samples as taken by Mr. Turner as a baseline upon which to expect his treatment plant ore feed run a little better than 4.00% copper or over 80 pounds per ton. This would be $28.80 per ton at 36¢ copper, an excellent mill head for a property with its reserve tonnage already developed.

On the basis of a $28.80 mill head, with tailings losses , marketing losses, investment amortization, mining, milling, transporation and marketing costs deducted, before taxes, a 100 tons per day production movement would be expected to net $1,000 per day at .36¢ per pound copper.

PRODUCTION INSTALLATION COST :

After completion of the steps suggested in "RECOMMENDATIONS" herein, it will be a simple matter to evaluate total positive ore reserve value. It would seem that favorable results will be obtained from the evaluation as Turner's company was already to build a treatment plant on the strength of the developed reserves in spite of much lower markets acceptance price, quite some considerable less machinery efficiency than now is available underground and limited treatment know-how under the then existing metallurgy. Their intent was quite clear as the 127 mill tests run by the most prominent 1918 metallurgical consulting firm was an expensive step to take.

A treatment plant for the Copper Mountain Mine will cost $2,000 per ton capacity, or $200,000 for 100 tons daily treatment.

Camp establishment, surface service hoists and the main production hoist, machine shop, assay lab, and underground equipment will cost $100,000 if efficient layout and careful purchasing is part of the disbursement schedule.

COPPER MOUNTAIN MINE OUTLINE OF MAY 31, 1966 :

EXHIBITS :

Herewith attached please find the following supporting exhibits :

a). May 6, 1955 report by E. L. Stephenson.

b). August 10, 1937 report by J. K. Turner.

c). Office study of the Aug. 10, 1937 Turner Report.

d). J. K. Turner memo of Oct. 25, 1917.

e). Mineral Survey No. 3332 plat of the five patented lode mining claims, dated October 15, 1907.

f). J. H. Wren professional background.

SUMMARY :

The Copper Mountain Mine in view of its former requirement of 6% copper or better margin before ore could be released for crude shipment during the 1st World War could not deplete its developed ore reserves without a concentration plant. Therefore developed ore reserves with exploration and development paid for still remain open for exploitation.

The copper market futures are very good. It is quite likely that copper will be at least 40¢ per pound within one year.

Metallurgical progress since 1918 has improved treatment recovery on ores such as those contained in this property.

The stockpiled copper tonnage now on the surface may , by screening beneficiation, pay over the herein estimated cost of the recommended mine evaluation and mapping program. In any event , if milled, more profit will be expectable, as well as low cost tonnage stripped from surface production slots, mechanically, at low cost per production ton.

Very truly yours,
J. H. WREN & COMPANY,

BY James H. Wren
James H. Wren.

REPORT ON A PRELIMINARY EXAMINATION AT THE COPPER MOUNTAIN MINE MINERAL COUNTY, NEVADA

By

E. L. Stephenson
Consulting Geophysicist

INTRODUCTION

On May 6, 1955, the writer and Mr. M. E. Bohannan made a preliminary examination of the Copper Mountain copper property located in northern Mineral County, Nevada, and belonging to Copper Mountain Mines Company. The purpose of the examination was to determine geologic and other physical factors with reference to further development, particularly the possibility of using geophysical methods to guide exploration.

The Copper Mountain property, comprising five patented claims, is located at an elevation of about 5,000 feet in low hills off the northeast flank of the north end of the Gabbs Valley Range. The general area is unsurveyed, but the claims lie either in the southeast part of T. 12 N. or the northeast part of T. 11 N., R. 31 E. In an earlier report J. K. Turner states that the mine is in the Regent (Rawhide) mining district, but Lincoln, in his publication on mining districts of Nevada, places it in the Rand (Bovard) district, which appears to be correct. The property last was operated at the time of World War I and is credited with a production of more than $125,000.

The property can be reached from the gravel road through

Rawhide and Deadhorse Well or by desert road from the highway at Schurz. It is five miles southwest of Deadhorse Well and on the order of twenty miles from rail at either Thorne or Schurz. Roads are only in fair condition but it is probable that arrangements for road improvement could be made with Mineral County.

GEOLOGY

The copper ore on the property occurs at or near an intrusive contact between granodiorite and massive gray limestone of probable Mesozoic age. The contact zone is very irregular both laterally and vertically, but appears to have a general steep dip to the south. The ore deposits seem to have the general form of veins on the contact or along associated faults, but copper ores also may occur as replacements in the limestone. There has been a rather high degree of metamorphism along the contact, including silicification and recrystallization of the limestone and the development of large amounts of brown garnet. Surface exposures and material in the old dumps also indicate that aplitic and basic dikes are intruded into the contact zone, and at least part of the ore appears to be intimately associated with these dikes.

Near the surface the ores have been more or less completely oxidized and copper occurs chiefly in the carbonates malachite and azurite, but at a reported depth of about 250 feet primary sulphides occur, including pyrite, chalcopyrite, chalcocite, and bornite. In view of the strong mineralization along the contact zone it is probable that additional copper ore occurs at depth below the present workings. The deepest workings, at about 320 feet did not encounter

appreciable amounts of water.

OLD WORKINGS

According to a letter by J. K. Turner, dated April 5, 1918, the underground workings on the property total more than 5,000 feet. There are three main shafts in or near the contact zone and a fourth shaft sunk by leasors. At least three of these are connected by rather extensive drifts and crosscuts on several levels. The attached sketch map shows the approximate location of the three main shafts and the contact.

Shaft No. 1, about 80 feet deep, shaft No. 2, 200 feet deep, and the nearby leasor shaft, 100 feet or more deep, are directly on the contact and are connected at various levels underground. Shaft No. 3, 320 feet deep and about 725 feet west of shaft No. 2, is in limestone near the surface but is reported to have cut the mineralized zone and the contact in the depth range of 260 feet to 305 feet. There are drifts both east and west from this shaft along the contact zone. Some of the material on the No. 3 dump is a good grade of primary ore, consisting of coarse sulphides in vein quartz and calcite and in a dense, very fine-grained, dark gray basic dike rock.

In the present examination no underground work was done except that two chip samples were taken in the oxidized zone on the 50-foot level of the No. 2 shaft. As shown on the attached assay certificate these samples, taken along the walls of a small stope, both show about 5% copper, which checks well with earlier sampling reported by Turner. It should be emphasized, however, that these

samples cannot be considered to represent any large volume of material and that most of the better grade ore probably has been removed in the zone of the old workings.

RECOMMENDATIONS

As already noted, the high degree of metamorphism and mineralization in and near the contact zone suggest that additional copper ore may occur on the property, particularly at depth. The showings are such that a reasonable amount of additional exploration and development work seems warranted.

In general geophysical work is not recommended because the upper part of the zone already has been well explored, because the water table is deep and the ground is dry and rather deeply oxidized, and because the ore bodies appear to be relatively small and narrow. For these reasons the use of electrical methods does not seem justified, unless exploration is desired in parts of the property not now developed. The contact zone probably could be mapped in detail at the surface with the magnetometer, but it seems doubtful that such work would add much in view of the good exposures and the complexities of local structure both laterally and vertically.

If additional development work is undertaken the first step should be detailed surface and underground mapping, including all of the old workings that are accessible. Such work will determine true elevations, relationships, and depths of the present workings; strikes and dips of contacts and faults; and the locations and relationships of the various ore occurrences.

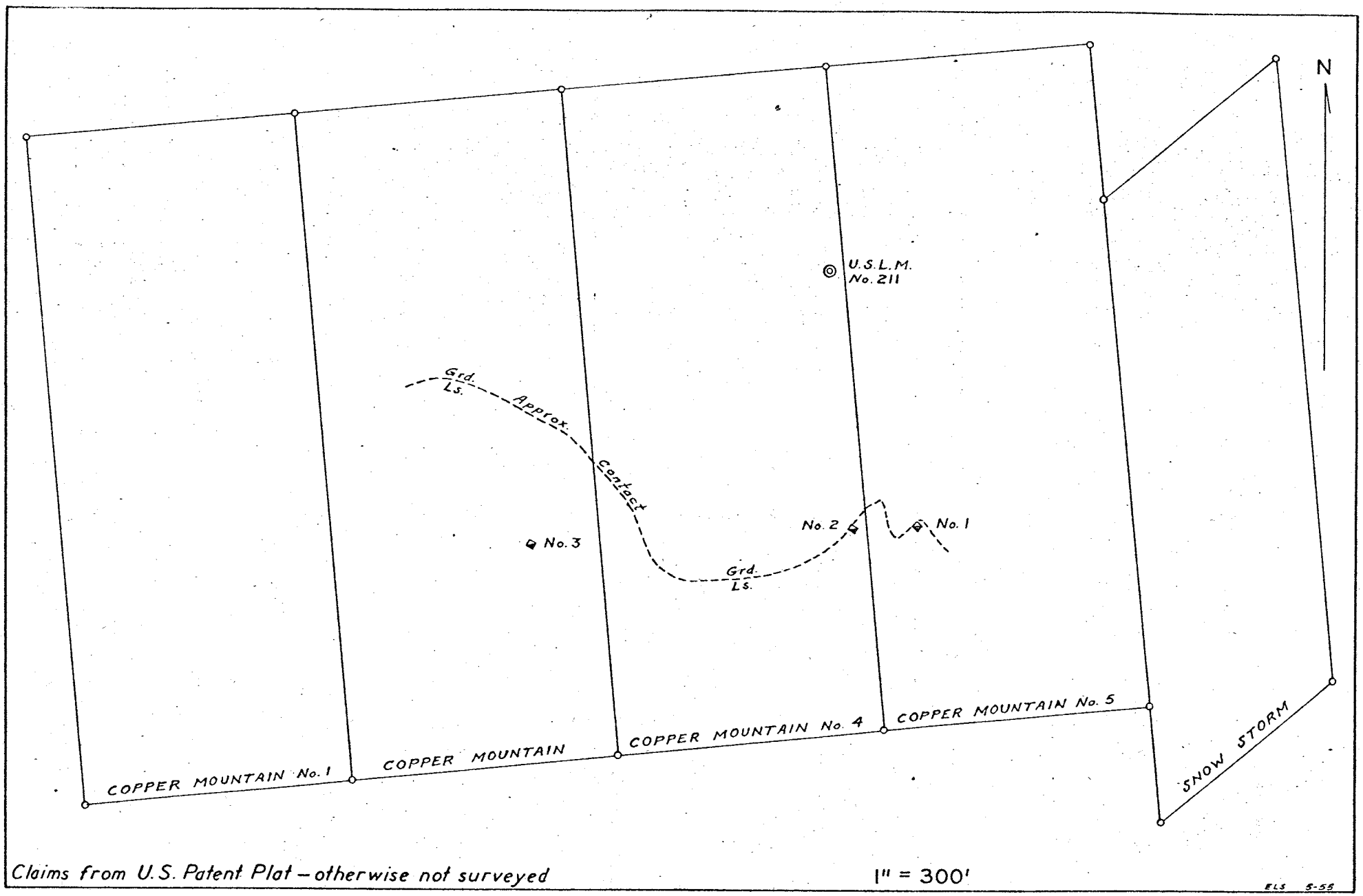
When detailed maps are completed, drilling or further

underground development can be planned. Diamond drilling could be done from the surface if necessary, but in view of the extensive old workings, the relatively small size of the targets, and the high fractured nature of the rock, such work does not seem most feasible.

Since the chief objective would appear to be exploration at depth, it seems better to do underground diamond drilling from the present workings, most of which appear to be in good condition. The area of the No. 3 shaft, where a certain amount of recent work already has been done, appears to be the best locality in which to start. About the only immediate requirements would be a small hoist and head frame and guides in the shaft, and probably the cutting of underground drill stations. An alternative would be additional direct underground development, which would involve deepening of one or more of the present shafts and the driving of drifts and crosscuts. Whatever method or combination of methods may be decided upon, the locations and objectives of such work should be determined strictly upon the basis of the mapping recommended above.

Reno, Nevada
May 10, 1955

E. L. Stephenson
Consulting Geophysicist



Claims from U.S. Patent Plat – otherwise not surveyed

1" = 300'

ELS 5-58

SKETCH MAP OF THE COPPER MOUNTAIN PROPERTY, MINERAL COUNTY, NEVADA

J. BENJ. PARKER

NEVADA MINERAL LABORATORIES

336 MORRILL PHONE RENO 21001

RENO, NEVADA

ASSAY CERTIFICATE

M E. L. Stephenson 5-9-55

Copper Mountain Mine - 50-foot level - No. 2 Shaft

WE HAVE ASSAYED YOUR SAMPLES AND FIND CONTAINS: (PER TON OF 2000 LBS.)

NO.	MARK	GOLD Ozs. per Ton	VALUE GOLD	SILVER Ozs. per Ton	LEAD Per Cent Wet	COPPER Per Cent	MERCURY Lbs. Per Ton	ZINC Per Cent	WO₃ Per Cent	LIME CaO	Per Cent
1	Chip sample N.W. wall					4.8					
2	Chip sample S.E. wall					5.0					

Remarks:

Charges: $6.00

J. Benj. Parker

PRELIMINARY REPORT

on the

COPPER MOUNTAIN PROPERTY

by

J. K. TURNER, E.M.

The Copper Mountain Property has an area of about 100 acres. The title is perfect being held by the U. S. Government Patent. There are no disputes or conflicts with the adjoining properties on the County records. It is located in the Regent Mining district, Mineral County, Nevada -- 14 miles from Nolan, a station on the Southern Pacific R. R. A good down grade road connects the mine with the railroad. The property is particularly well situated as to natural and economical conditions. Good mine labor is available and the general facilities for cheap mining and milling are good. The elevation is about 5000 feet.

The names of the 5 claims are Copper Mountain, Copper Mountain No. 1, Copper Mountain No. 4, Copper Mountain No. 5, and Sandstorm.

Almost all of the various copper ores are found on the property. The richer deposits occur in irregular masses, along the contact between the granite - porphyry and limestone. The larger bodies of lower grade, partly oxidized and pyrite ore, are found in the limestone adjacent to the contact. The extensive contact metamorphism, the association of ore and other contact mineral, and the close resemblance of the structural conditions to those prevailing at the Copper Queen Mine and the mines at Morenci, Arizona, seem to prove that the ore deposits have a similar genesis. The contacts between the granite - porphyry and limestone are irregular and jagged, vertically and

horizontally. Frequently it is hard to recognize the contact under ground, both rocks being highly silicified. Ore stringers varying from mere thin coatings to several inches very often lead to valuable ore bodies.

The development work on the property totals an approximate amount of 5000 feet. A portion of this work was done by leasers, but the greater amount was performed on our company account. Four shafts have been sunk, three of which have connecting cross-cuts and drifts. These shafts were located at certain points with a view of proving the extent of the ore zone. All our company work was planned for deep development and not for immediate production of ore.

The shaft on lease No. 1 is 100 feet or more deep. A winze sunk from the bottom of shaft for 48 feet. Drifts from the bottom of this winze aggregate a total of 77 feet. Drifts on the 100 foot level of the shaft total 69 feet, and raises from the same level aggregate 65 feet. The winze and connecting drifts expose mill ore having a copper content of 2-½ to 5%. The drifts and raises on the 100 foot level expose low-grade material.

No. 1 Company shaft is 80 feet or more deep and the cross-cut from the bottom to cut the contact shows 3 feet of ore averaging 7% copper and five feet of 4% material.

No. 2 shaft is 200 feet deep. A crosscut at the 50 foot point to the contact exposes three feet of ore averaging 8% copper and four feet of 4% copper ore. The Copper Mountain Company mined some of this higher grade, sorting it, and shipping it to Smelter. Two crosscuts were driven from the bottom of this shaft easterly and westerly to intersect the contacts.

Shaft No. 3 is at least 315 feet deep. At the 260 foot point the north end of the shaft entered the vein, and continued in same until it dipped out of the south end of the shaft at the

295 foot point. The vein, as cut in shaft, has a dip of 65 degrees, which would show the vein to be 12 to 14 feet wide. Assays taken daily showed an average of 4.2% copper over entier width of vein. The contact between the lime, which constitutes the hanging wall, and the porphyry foot wall was found at the 300 foot point, and the contact of the latter with granite was cut on the 305 foot point. The ore as exposed in this shaft is in the form of chalcopyrite (copper pyrites) being similar to the copper ore of Montana. The development in this No. 3 shaft shows the existance of profitable values in paying quantities on the same contact, a distance of 725 feet west from shaft No. 2. The development work connecting with Lease No. 1 shaft and the company No. 1 shaft proves the existance of ore, a portion of the distance between shafts No. 2 and No. 3.

The ores found in this mine at the limestone-monzonite or granite contact at surface are carbonates of copper or azurite, and chalcopyrite (copper pyrite) and charcocite (vitreous copper) in depth. Very little gold or silver are present in the ores.

The shafts and other workings are in good condition.

Water can be had at Dead Horse Wells about 8 miles from property sufficient to supply a mill of 200 tons capacity. I believe water can be found about 3½ miles west of property. No trouble to get plenty water need be anticipated.

The Copper Mountain Mine is credited with a production of more than $125,000. Of this amount $93,500. was produced by the Jumbo Extension Mining Company and its leasers.

The metallurgy of the ores has not been satisfactorily solved. The sulphide ores can be floated, but the carbonates and silicates of copper give some trouble. I have the Sill & Sill report on 127 metallurgical tests on this ore which is at your disposal at any time. I am convinced a satisfactory method can be found to treat the carbonate

the silicate ores, found on this property.

I advise all the shafts be connected at above the 350 foot level in shaft No. 3. This does not mean all the shafts have to be 350 feet deep as the mouths of the shafts are on different levels. This work will allow the development of at least 5 known veins, at a depth on their dip, of from 400 to 500 feet.

Would recommend a survey be made of all the surface and underground work and that a thorough sampling of the entire mine be made.

I consider this property well worthy of thorough development and I believe if the above recommendations are followed it will not only show a large tonnage of mill ore, but bunches of high grade ore will be encountered.

The veins are strong and the character of ore and the geology is such that it should go down. This property justifies further development. The geological conditions are right for ore deposition.

Taking into consideration all of the facts as mentioned in this report, it is my opinion that this property is one of merit and with the proper intelligent management, the showing on surface and underground is sufficient to warrant the expenditure of the money necessary with a view of exposing ore bodies by following out the development as advised.

Respectfully,

J. K. Turner, E.M.

Reno, Nevada,
August 10, 1937.

Office Study -- Copper Mountain Property, Mineral County, Nevada.

Based on report of J. K. Turner, August 10th, 1937.

Development - Summary

Lease Shaft No. 1	100' deep, plus 48' winze			
Drifts	100' level	- 69'		
"	148' "	- 77'		
Raises		65'	- width ?	Assay 2.5 - 5%
No. 1 Company Shaft	80' deep		3'	" 7.0%
		Plus	5'	" 4.0%
			8'	" 5.12%
No. 2 "	" Cross-cut @ 50'		3'	" 3.0%
		Plus	4'	" 4.0%
			7'	" 5.71%
No. 3 "	" 315'	12-14'	(13' av.)	" 4.20%
	Average		9.3'	" 4.84%

Ore

Chalcopyrite with minimum amounts of secondary carbonate and silicate ore. Ore dips 65° (free running). Water for milling available 3½ or 8 miles. 14 miles down-hill haul to railway at Nolan. Nearest Copper Smelter at McGill, Nevada. (Kennecott Copper Co. - Nevada Unit.)

Capital Cost

200 ton (feed) per day plant

Mine Plant	$ 40,000
Concentrator	125,000
Surface Plant	25,000
Cars, Pipe, Track, etc.	10,000
Power Line	20,000
Mine Preparation	30,000
	$ 250,000

Crew

Staff	5 - 6 men
Mine	50 -60 "
Mill	9 -12 "
Surface	5 -10 "
Truck	2 - 4 "
Total	71 - 92 men

Metallurgy

The grade of feed ore is reasonably expected to be 5% copper. Normal flotation practice would yield 90 to 92% of the copper into a 25 to 27% copper concentrate.

Output

The estimated output would be:

	Per Day	Per Year
Tons, Ore	200	70,000
Tons, Concentrate	36	12,600
Pounds Copper	18,000	6,300,000

Estimated Operating Costs

	Per Ton Ore	Per Ton Conc.	Per Lb. Copper
Development	$0.40		
Mining	3.50		
Concentration	1.25		
General	.35		
	5.50	(5.55 to 1 ratio)	$ 30.52
Haulage			.56
Freight			5.00
Smelting			6.00
			42.08 plus
			70# - 8.93¢
Refining			1.59
Administration	($15,000)		.24
			10.67

ESTIMATED PROFIT

Price Copper	25.5	17.6
Profit, per lb.		6.93
" per ton ore (90 lb. recoverable)		6.25
" " year (70,000 tons)		$ 437,500
(Before depreciation, depletion, taxes)		

Checking

The foregoing figures indicate what might reasonably be expected from a normally skilled equipment and operation of the property. Before the plant construction is commenced, however, a resampling of the mine, estimate of reserve tonnage and grade, and a more carefully checked estimate of capital and operating costs should be made.

. . . . . .

The Company owns five patented claims of about 100 acres, located in the Regent Mining District, Mineral County, Nevada, fourteen (14) miles from Nolan, a station on the Southern Pacific Railway. A good road connects the mine with the railroad and highways.

There has been over $125,000 worth of high grade ore shipped from the property to the smelter, and there is a large tonnage of a fine grade of milling ore opened up ready to be concentrated and shipped to the smelter, besides the high grade ore, some of which carries good gold values.

There is approximately 5,000 feet of underground work done on the property from three different veins on which there has been opened up the following orebodies:

No. 1 Shaft has exposed 3 feet of ore averaging 7% copper, and 5 feet of 4% copper.

No. 2 Shaft has exposed 3 feet of ore averaging 8% copper, and 4 feet averaging 4% copper.

No. 3 Shaft has opened up a vein 12 to 14 feet in width assaying 4.2% copper over the entire width of vein.

Mr. J. K. Turner, the engineer under whose direction the work was done in this mine, states the following:

> "The results of the development work in Shaft No. 3 are most important and it is believed further development, as outlined, will expose large bodies of both shipping and milling grade ore. The result of this late development with the ore exposures in other portions of the ground justifies the belief that this property can be developed into one of the most profitable mines in the state."

A crosscut to be driven from Shaft No. 3 on the 350-foot level will connect with all the shafts, and will allow the development of at least five (5) known veins at a depth on their dip of from 400 to 500 feet.

The property has a large tonnage of fine milling ore ready to be mined and it is proposed to build a 200-ton concentrating plant to put the mine into production as soon as possible.

By mining 200 tons per day of 5% copper ore, without including the gold values, the company can earn $35,000. per month to start with, or $437,000. per year.

JUMBO EXTENSION MINING COMPANY

J. K. TURNER, VICE-PRESIDENT
AND CONSULTING ENGINEER

MINES IN
GOLDFIELD MINING DISTRICT

Goldfield, Nevada, October 25, 1917.

Mr. Charles S. Sprague, President,
Jumbo Extension Mining Company,
Goldfield, Nevada.

Dear Sir:

Development on the Copper Mountain property is progressing as rapidly as expected and the results of the work are entirely satisfactory. No. 1 shaft is 80 feet deep and the crosscut driven from the bottom to intersect the contact shows three feet of ore averaging seven per cent copper and five feet of four per cent material. The No. 2 shaft is 200 feet deep. A crosscut at the 50-foot point to the contact exposes three feet of ore assaying eight per cent copper and four feet averaging four per cent. We are now mining this higher grade ore for shipment to smelter. Two crosscuts are being driven from the bottom of this shaft easterly and westerly to intersect the contacts. No. 3 shaft has a depth of 235 feet, but must be sunk to at least the 300-foot point to cut the same contact which carries the ore on the surface. The development work in the tunnel, known as the Murphy Tunnel, has exposed four feet of four per cent ore. Numerous shallow shafts and cuts on the various contacts in the mineralized zone show ore having a width of three to four feet which averages five per cent copper. All the above work has been performed on Company account.

The leasers on block 5 are now shipping ore, which sampling shows should run over eight per cent. The bottom of their shaft shows eight feet averaging four per cent. Ore now being mined from block No. 18 averages over seven per cent.

The recent purchase by the Company of lease No. 1 with all the equipment will enable the Company to immediately start shipping quite a tonnage of ore that will average above seven per cent. There is also exposed in this lease workings a large tonnage of material averaging three to four per cent copper.

The workings on all the lease blocks expose bodies of concentrating ore. The development work performed by the Company was planned to determine the estimate ultimate value of the property and not for the immediate ore production; however, ore of a shipping and smelting grade has been exposed at two points which fully warrants further development. It must be remembered that this development work outlined and now being performed is planned to gain depth and therefore must be extensive; however, the Company's present developments and the work done on the lease blocks warrants the Company in making preparation for the erection of a moderate-sized concentrating mill. The mill capacity can be enlarged as development warrants. I advise that exhaustive flotation and other tests be made upon the ore.

Work will be continued along the original plans of deep development with the expectation of exposing bodies of both low and high-grade ore.

In view of the expanding operations, in my opinion, the affairs of the Copper Mountain proposition could be much more advantageously handled if incorporated into a separate and distinct company.

Respectfully yours,

J. K. TURNER,
General Superintendent.

(197)

Mine Management
Mine Production

Licensed
Bonded

From Development
Exploration

J. H. WREN & COMPANY

Mining Contracting Engineers

Cable Address
WRENCO

Post Office Box 2021
Reno, Nevada 89505
Phone (702) 322-4940

August 26, 1966

Mr. Charles Oster,
No. 1 East First Street,
Reno, Nevada.

Dear Mr. Oster :

Here are some observations derived from the Turner report on the Copper Mountain Mine :

1. No. 1 Lessee Shaft is 100' deep with a 48' winze. Reported values on the winze level are : 2.5 % Cu. = $18.00 value to 5% = $36.00 per ton value in the winze drifts.

   Estimated cost to make the 100' of shaft and 48' of winze safe for preliminary reporting and sampling plus lend access for a potential buyer's engineers is..... $750.00

2. No. 1 Company Shaft is 80' deep with 3' of 7% Cu. = $50,00 per ton and 5' of 4% Copper = $26.80 on this shaft's levels.

   Estimated cost to make the shaft safe for preliminary reporting, sampling and potential buyer's engineer's access is$400.00

3. No. 2 Company Shaft is 200' deep with 3' of 8% copper ore = $57.60 per ton and 5' of 4% copper ore = $39.68 on the levels.

   Estimated minimum preliminary reporting and sampling cost after establishment of access is $1,000.00

4. The Main Shaft over 300' deep would be optional to you with regard to establishment of access and preliminary sampling. However, at the 260' elevation Turner reports that the vertical shaft was sunk through a 65 degree vein which was 12 to 14 feet thick and ran 4.2% copper per ton which = $31.24. Estimated cost of access establishment if this important ore occurrence is to be checked and a buyer's engineers furnished right-of-way is $1,000.00

Memo of August 26, 1966 to Chas. Oster :

If the first three items are scheduled the cost will be $2,150.00

If the main shaft is added to the schedule the estimated cost will be $1,000 additionally or a total of$3,150.00

The main shaft access and proving 12' to 14' of 4.2% copper ore at $31.24 per ton value would, of course, insure a sale by you at probably a higher figure than you now anticipate. You'll have more than 260' of mineralized ground above the point where the shaft cut the vein as it is at an inclination of 65 degrees which will lend longer slope line distance than the 260' in the vertical shaft.

The above estimates cover ladderway access, landings where vitally necessary and some shaft repair, plus preliminary sampling and sampling lab charges for a limited number of assays. They do not include payment for my time if I setup the movement and follow it through. The estimates, however, do include some timber purchase, ladders, winch rental, and supplies plus the procurement of men to do the work and their wages. The men will have to camp on the job site while completing the project.

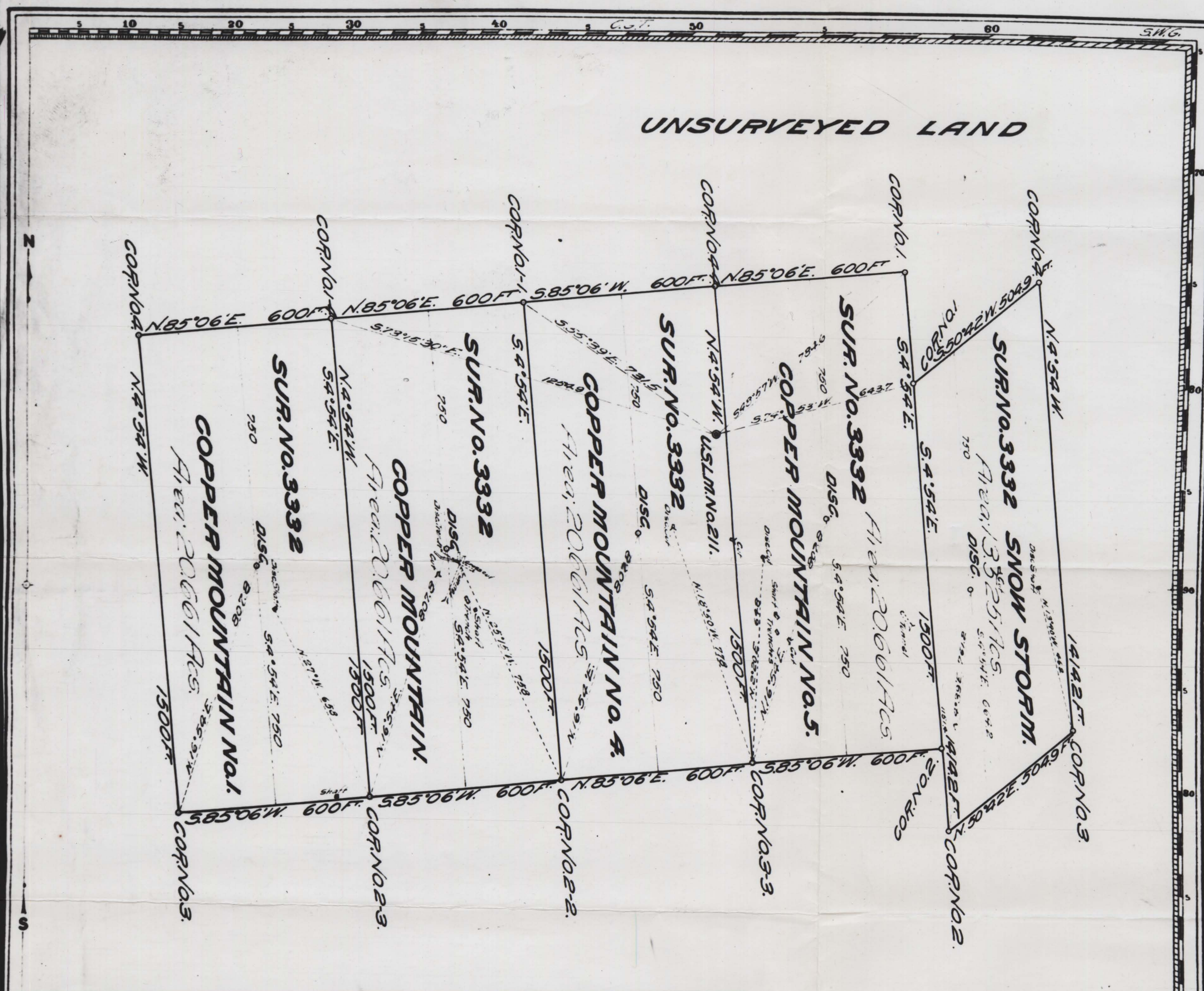
I had calculated that the thorough sampling, effecting access, mapping, mill testing, etc. was going to cost me about $6,500 last Spring when I made you an offer. This would have been my direct cost with no charge for my time. The above estimates are the lowest that I can "guess-timate" without seeing underground conditions of the shafts and levels. They will only lend a preliminary sampling, no mill testing and give access for you to show the property properly. Without access it'll be difficult to sell the property for anything like its true value, if Turner is only 80% correct in his reports. If he is 80% accurate this mine will hold long range production tonnage for a 100 ton plant, and therefore its sale should command an acceptable price. You know from Como and Rochester ore values that there are few mines with blocked out ore averaging over $30.00 per mine run ton. Frankly, I don't know of one such mine as available at this time.

Very truly yours,

James H. Wren.

(4-675)

Pat. #94780 - Dec. 6, 1909



Name of location	Located	Amended
Copper Mountain.	June 9, 1906.	November 17, 1906.
Copper Mountain No.1.	" " "	" " " "
Copper Mountain No.4.	August 22, 1906.	" " " "
Copper Mountain No.5	" " " "	" " " "
Snow Storm	November 22, 1906.	August 12, 1907.

J.R.C. ~~Claim located~~ ~~190~~ FEB.

Mineral Survey No. 3332

~~Lot No.~~

Carson City Land District.

PLAT

OF THE CLAIM OF

R. Gay, L. Woodward, L. Durand and Ed. Lappat.

KNOWN AS THE

COPPER MOUNTAIN, COPPER MOUNTAIN No.1, COPPER MOUNTAIN No.4, COPPER MOUNTAIN No.5 AND SNOW STORM LODES

IN Walker Lake MINING DISTRICT.

Esmeralda COUNTY. Nevada

Containing an Area of 96.169 Acres.

Scale of 300 Feet to the inch.

Variation 17°30' East

SURVEYED October 15-19, 1907 BY

Chris C. Thompson U.S. Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of R. Gay, L. Woodward, L. Durand and Ed. Lappat known as the "Copper Mountain," "Copper Mountain No. 1," "Copper Mountain No. 4," "Copper Mountain No. 5" and "Snow Storm" Lodes

from which this plat has been made under my direction have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon (or for each location of) said Mining Claim by claimants —— or their grantors, and that said improvements consist of 5 cuts, 4 trenches, 3 shafts and 1 tunnel and crosscut. Value, $4440.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office.
Reno, Nevada
February 1, 1908

Matthew Kyle
U.S. Surveyor General for Nevada

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