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GOLD BAR MINE
Wickenburg, Arizona

OWNERS: Jack and Dorothy Devault
P. O. Box 1498
Wickenburg, Arizona 85358
Telephone: (602) 427 3250

REPORTS BY:	BURKEY	STEINMESCH
	SHANKLIN	HOLBROOK
	HYDE	GILMORE
	FLAGG	McCARTHY
	HILLS	OTHERS

Mr. C. P. Dickenson
Tulsa, Oklahoma

Dear Sir:

In accordance with your request, I herewith report that I have made a very careful examination of the property of the GOLD BAR GROUP of mines, owned and operated by Mr. J.A. Twichell of Okmulgee, Oklahoma, and situated in the Black Rock Mining District, Bradshaw Mountains, Southern Yavapai County, Arizona.

The period of my examination extended over practically all of the month of February, 1927, giving me ample opportunity to fully familiarize and satisfy myself upon the detail and conditions as they now exist upon the property and within the mine, and therefrom to conclude upon the very favorable outlook for the future of this mining property.

That which follows will be devoid of alluring statements and a great display of verbiage elaborated by technological phraseology, but shall be couched in simple language based upon accuracy, brevity and clarity.

ARIZONA is one of the Union's greatest metal producing states, and Yavapai County has within its boundaries some of the State's wealthiest metal mines, which have paid to their owners many hundred million dollars in profits.

Arizona also enjoys peculiar advantages in respect to climate, giving mining an open air advantage the entire year.

THE GOLD BAR MINE is upon an excellently built mountain road just fifteen miles in a northeast direction from Wickenburg, the nearest railroad and through which passes the state highway between Phoenix, Prescott, and California; and three miles from Constellation, the nearest post-office, giving a six day per week mail service.

The camp's elevation above sea level is approximately three thousand to three thousand two hundred feet.

In the vicinity of "Gold Bar", there are many mining properties of merit, among them are the Monte Cristo, Mizpah, American Smelting and Refining Company, State Copper

Company, Octave, Congress, etc., some carrying on rather large operations.

THE GOLD BAR PROPERTY has undergone the many trials and tribulations usually experienced during the earlier history of most all worth-while mines of this day, and is now well past the period of earlier costly exploration and development which is often times so ruinous to smaller camps at their outset, and has now been brought to a stage where real mining and production can be aggressively carried on with a cost very much less than any previous time.

THE MINE has produced from its oxidized ores at a profit, and there is certain assurance that it will do so upon a larger scale and with a greater margin of profit during the future, if such assurance may be concluded upon the large quantities of elegant ores exposed within the mine and those which are certain to be encountered in the lower levels.

THE ESTATE of the Gold Bar Mine is free from encumbrance of any nature or kind, and title thereto is vested in Mr. J.A. Twichell, the sole owner; it consists of sixteen full lode mineral claims, and one Mill-site and water rights of five acres; namely,-

WEST END, BENNETT, GALBRAITH, HOMESTAKE,
WHITE BLAZE, CHARM, FOB, BLACK BEAR, RED
WONDER, CABLE, ROBERT, LITTLE JIM, LITTLE
JOHNNY, CROWN, BURTON, HOME, and the mill
site BRUNTON.

There is ample acreage to fully protect all the principal mineralized features of the property.

THE MINEROLOGY AND GEOLOGY upon the property are simple and present nothing of an unusual nature. The country is in granite which is extensively fissured and some of the fissures show faulting, though, so far as observed, the faults are not of large displacements.

A large number of quartz veins are found upon the property and several of them have received some slight development work, but my examination was mostly confined to the ore-body where mining and milling has been carried on.

THE ORE has a strike of S53W with a dip of thirty degrees from the horizontal.

The Original Ore Deposit consists of Iron Pyrite carrying Gold in quantities, with about four ounces of Silver

to the ounce of gold.

From the surface down to a vertical depth of 307 feet, or about 500 feet upon its dip, the ore has been quite thoroughly oxidized; below this level the appearance of the ORIGINAL SULPHIDES is very rapid. At the first, or 41 feet Winze level, (winze sunk from the 307 ft. vertical level) there is some oxidized ore, but the quantity is so small as to be scarcely noticed in the heavy mass of SULPHIDE ORE.

The ore-body has been opened and partially stoped down to the 307 ft. level upon the oxidized ore, leaving many thousand tons of a good grade of ore yet to be drawn from the mine. From the 307 ft. vertical level a Winze was sunk to a depth of 252 feet upon the SULPHIDE ORE. Lateral work from this winze exposed a greater width to the ore-body and mill-run tests upon these sulphide ores gave a much greater value than those of the oxidized ore above. This sulphide ore is massive and the mill-tests give a more accurate and higher value than the usual hand sample and assay.

No. stoping was done below the 307 ft. vertical level in the sulphide ore, excepting a few tons which had been used in making mill-test runs.

GOLD is the only valuable product of the mine, tho there is a trifle of silver and a high percentage of iron which would serve as an indirect asset by lessening of cost in smelting.

The lower workings of the mine show some copper indications, one of fair magnitude, which have received but very little consideration in the past, but which will probably have considerable bearing upon increased ore values in the future.

ASSAYS were made upon samples taken from the surface oxidized ores, and owing to the difficulty of getting true samples upon this feature, the results proved erratic; but, since costs and values upon 16,000 tons of this ore which was milled where available, it is believed that nothing more correct than this could be obtained, - this 16,000 tons of oxidized ore was from above the 307 ft. level to the surface and returned a few cents above \$8.00 per ton.

Many samples were taken from the 307 ft. level down the 252 ft. winze and its laterals. A good many of the samples were taken outside of the ore-body, which in consequence are of lower value, but incidentally aiding in establishing

the boundary to the pay-ore. Will not encumber this report with these no-ore values as they have served in their purpose.

The following assays will at once herald the fine grade of ORE existing in the mine in large and paying quantities; whereas the lower values plainly indicate that a very large tonnage of lower, but profitable, ore is available if a more modern reduction is practiced over that formerly applied. The samples for these assays were taken in the usual systematic manner covering the ore at the 307 ft. level, down the winze and its laterals and will show the GOLD AND SILVER value contained therein, to-wit: \$20.00

Sample No. 41	Total Value	\$ 15.98
" " 42	" "	15.16
" " 43	" "	23.26
" " 44	" "	47.20
" " 45	" "	.80
" " 46	" "	30.00
" " 47	" "	20.20
" " 48	" "	3.60
" " 49	" "	1,40
" " 50	" "	1.20
" " 51	" "	1.60
" " 52	" "	2.20
" " 53	" "	18.40
" " 54	" "	4.20
" " 55	" "	3.40
" " 56	" "	18.40
" " 57	" "	63.60
" " 58	" "	19.00
" " 59	" "	37.00

Sample No.	60	Total value	\$ 4.60
"	" 61	" "	3.00
"	" 63	" "	4.40
"	" 64	" "	9.60
"	" 65	" "	2.80
"	" 66	" "	26.00
"	" 67	" "	4.80
"	" 68	" "	4.60
"	" 69	" "	4.60
"	" 70	" "	13.40
"	" 71	" "	3.20
"	" 72	" "	3.00
"	" 73	" "	44.00
"	" 78	" "	21.80
"	" 79	" "	1.60
"	" 80	" "	2.20
"	" 82	" "	4.60
"	" 83	" "	30.80
"	" 86	" "	53.00
"	" 97	" "	34.00
"	" 100	" "	2.20
"	" 101	" "	1.60
"	" 102	" "	5.20
"	" 103 MUD	" "	1.40
"	" 104 MUD	" "	13.60
"	" 105 MUD	" "	1.60

Sample No.	106 MUD	Total Value	\$.40
"	" 112	" "	5.60
"	" 113	" "	1.40
"	" 114	" "	12.00

In fairness and justice to the ore values in the mine, I wish to say that I am confident that the foregoing assays are will below the actual value of the ore as it will go through the mill, for it would have been a herculian task to entirely freshen up the entire ore area so as to get perfectly clean samples free from the mud which had accumulated thereon through its being twenty years under water. Available assays taken while all this work was in progress show a much higher value in every instance than here sighted.

During the mining and milling of the property, Four Nisson stamps taking ore from a separate bin, with two Wilfley concentrating tables and one Vanner were set aside for mill-test runs upon the ore. Since the deeper exploration of the mine is most vital to the future of the property the test run covering the sulphide ore will be sighted at this time, to-wit:

The run consisting of all the material taken without sorting from a 4' x 6' x 40' cross-cut through the sulphide ore-body, amounting to 72.33 tons with 3% moisture, or 70.18 tons dry. This ore concentrated 4.52 tons into one with a return of \$29.57 per crude ton of ore. This 70 tons of sulphide ore from an east and west cross-cut through the ore-body at the first or 41 ft. Winze level, and was about as perfect a sample as any one could desire to have taken.

The opening up of this fine grade of Sulphide ore had warranted the owners to sink their present new and large working shaft to a depth of 735 feet at a cost of \$80,000.00; which shaft is of wonderful service for present and future operations at the mine.

COST OF MINING 16,000 tons of the oxidized ore was \$2.10 per ton and the milling thereof was \$1.19 per ton. Considering that mining at that time was done by hand with hammer and hand steel and the antiquated long stroke piston drill, the above cost was not half bad, but today, with the use of the rapid rotating hammer drill of light weight, doing from two to four times the work of its predecessors, mining costs should show an appreciative reduction.

The milling by the present plant was the most modern

in its time, but today, the Ball Mill together with the oil-flotation process an extremely low milling cost upon these ores will be obtained, which ores will lend themselves to such simple treatment and with practically a thorough recovery.

Mentioning ORE IN SIGHT has, in all times as in the present, been problematical to a larger or a smaller degree, yet it must be granted that a reasonable correctness be allowed to the established modes of computing ores in place, even though at times the tonnage prove less or greater than estimated.

It is conservatively estimated that the better grade of sulphide ore in the winze of the mine should equal not less than 39,276 tons at a very nominal value of \$15.00 per ton, equalling \$589,140.00; lower grade of profitable ore in the winze is not estimated, though there are large quantities of it: Oxidized ore just above the 307 ft. level at 6,545 tons at \$15.00 per ton, or \$98,175: 25,000 tons oxidized ore above the 307 ft. level at \$5.00 per ton, or \$125,000.00: Probable ore from winze bottom to the 700 ft. level, 116,363 tons at \$10.00 per ton, or \$1,163,630.

The New or No. 2 Shaft, which is a perfectly constructed shaft, and in A-1 condition, was sunk to a depth of 735 feet; having levels at 380, 500, 600 and 700 feet. The shaft being new, the lateral work therefrom has not yet extended to the ore-body; however, whilst driving the cross-cut at the 500 level to connect with the winze of the older workings this entire 500 ft. level cross-cutted through heavy mineralization for more than 200 feet. This mineralization is of low Gold content and proves itself to be the Matrix to the pay-ore, as is the case in the older workings above.

THE PROPERTY IS EQUIPPED with well built living quarters, with much shade and an abundance of excellent domestic water.

The New or No. 2 Shaft is equipped with a 50 H.P. high speed hoisting plant, compressors and pumping facilities, together with the usual auxiliary requirements.

At the No. 1 Shaft there is a smaller hoisting plant.

The mill is of 100 ton daily capacity, having a coarse crusher, 12 heavy duty Nisson Stamps, amalgamating tables, 6 Wilfley and 2 Vanner concentrating tables.

The Cyanide plant is of 100 ton capacity and consists of ten large steel tanks.

The Assay rooms have the usual equipment.

The pumping plant at the Hassayampa River, $1\frac{1}{2}$ miles away, has a large Heavy Duty Gould Triplex pump 32 H.P. engine, and is connected with the camp by a 4" standard iron pipe.

Good roads and trails reach all the features within the camp and the outside world.

Considerable of this equipment, together with the buildings, can be utilized in modernizing the camp.

Summarization upon the present and the future of the camp and mine may be stated in a brief manner; -

Firstly, it was through the courtesy of Mr. Mueller, and his valuable assistants, who is in charge of the present operations at the mine and who has been connected with the property during its various operating periods, that I was able to get authentic data, which otherwise would not have been available. It is only pleasing to note that conditions actually existing about the mine and property were in every instance as good and even much better than I had been apprised of through either Mr. Twichell or Mr. Mueller. This, in my experience, proves unusual and speaks high for the conservatism of these gentlemen.

The quantity and quality of the high grade ore is very encouraging, whilst the lower grades, but pay ores, are very abundant. Development of the ore in the lower levels is but a simple step to larger ore reserves. There are also great possibilities of opening new and large ore bodies within the adjacent large features upon the property.

The ore-body is richer and also wider where exposed in the lower workings than at other places.

Milling had established approximate costs and values, whereas the application of modern equipment will reduce costs materially, thereby permitting a lower grade of ore to be worked at a profit than formerly and at the same time creating a larger margin of profit upon the better grade of ore.

Width of the ore at the first Winze level is forty feet, was sampled by mill-test and there can be no question as to its value. The full extent of the ore in the winze is still unknown. The known laws in regard to mineral

deposition with depth, closely conform with these ores. Like all rules, it may have its exceptions, but every condition so far shown in this mine is an emphatic illustration of the law. Permanent water has been reached and the ores are of the original sulphide form and are increasing in value with depth. Nothing more could be asked in the line of excellent prospects. The ore should continue to increase in values, but just how far the value will increase would be quite idle to attempt to predict. To say that the prospects are extremely encouraging, even flattering, is a common and often idle expression in mining, but the words truly fit the present case.

The Monte Cristo Mine, a neighbor about 1½ miles to the south, has introduced into the district hydro-electric energy, which, if applied in this camp will greatly reduce power costs over the present internal combustion engines.

It is hereby recommended that immediate steps be taken towards the patenting of the present group of mineral claims; there being nothing to hinder the procedure in that direction.

To at once begin opening up the ores in the oxidized zone, the 500, 600, and 700 ft. levels; and to contemplate the sinking of the shaft to greater depths, so as to establish large ore reserves.

It is recommended to electrify the entire camp; remodel the present mill by the addition of a large gyratory coarse crusher, an initial 250 ton unit Ball Mill with the necessary oil floatation cells, dryers, automatic samples, tramway, etc.

It is estimated that the remodelling of the plant with the required equipment and electrification thereof would call for funds to the extent of about \$125,000.00, With an additional \$25,000.00 for further exploration of the ores and developing of ore reserves.

This report is long but it seems proper that all the foregoing was necessary to give the reader a fair conception of the property.

Respectfully submitted,

CONSTELLATION, ARIZ.
GOLD BAR MINE
Feb. 25, 1927

H. L. Berkey

*Willis
enclosed*

GOLD BAR MINE
Wickenburg, Arizona

INTRODUCTORY LETTER

at \$20.00 oz

L. tum
FORM 543
MADE IN U.S.A.

GOLD BAR MINE
Wickenburg, Arizona.

MILL TEST RUN MADE BY V. G. HILLS, E. M.

LOT NO. 4.

This ore was taken from the 41' Winze Level and consisted of all the material taken from a 4x6x40' cross-cut through the ore-body.

The mine weight was 72.336 tons. Moisture was 3%, making the dry weight 70.166 tons.

Owing to several stops of the mill during the run the time was lost. But during the first day the stamps crushed about 1 1/4 tons per hour or 7.44 tons per stamp for 24 hours.

Owing to the failure of the power the mill stopt and the clean-up was made with 6.41 tons dry left in the bin. Thus there was 63.756 tons in the test.

The concentrates saved were:-

Wilfley table 1"	lot 12.530 tons,	moisture 13.75%,	dry 10.807 tons.
" " 2"	" 2.790 "	" 14.8 "	3.377 "
			13.374 "
Vanner table	1.111 "	" 16.4 "	.929 "

Making one ton of concentrates to 4.52 tons ore.

The coarse rock sample #9427 returns:
Gold 1.04 oz. Silver 5.2 oz.

The sands head sample #9428 returns:
Gold 1.30 oz. Silver 3.2 oz.

Considering the complete and careful manner in which the sands sample was taken it must be regarded as representing the correct value of the ore.

The mint value of the ore is:-

Gold	1.30 oz. at \$20.67	\$26.87
Silver	3.2 oz. at 53	<u>1.71</u>
		\$28.58

==

The savings on the plates was $2\frac{7}{8}$ oz. avoirdupois of amalgam, which at the uniform mine estimate before noted gives value of \$193.33.

			per ton ore
From amalgam (approx. only)		193.33	3.03
Wilfly Cons. Gold 2.33 oz.	\$48.16		
" " Sil. 9.2 "	4.88		
13.184 tons	\$53.04	699.28	10.97
Vanner Cons. Gold 3.83 oz.	79.17		
" " Sil. 12.1 "	6.41		
0.929 tons at	85.58	79.51	1.25
Wilfley tails Gold .22 oz.	4.55		
" " Sil. .6 "	.32		
40.459 tons at	4.87	197.04	3.09
Vanner tails Gold .70 oz.	14.47		
" " Sil. 1.8 "	.95		
9.184 tons at	15.42	141.62	2.22
Discrepancy		<u>510.73</u>	<u>8.02</u>
		\$1821.51	\$28.58
		=====	=====

63.756 tons at \$28.58.

Tam
FORM 543
MADE IN U.S.A.

GOLD BAR MINE
Wickenburg, Arizona.

<u>Sample Marked</u>	<u>SILVER</u> <u>Ounces per ton</u>	<u>Value at</u> <u>60¢ per oz.</u>	<u>GOLD</u> <u>oz. per ton</u>	<u>VALUE</u> <u>\$20. per ton</u> 3 03
Composite sample	1.6	\$.96	.56	11.20
1	.2	.12	.02	.40 (From large outcrop)
41	1.0	.60	.12	2.40
41A	8.6	5.16	1.34	26.80
46	.6	.36	.17	3.40
48	.6	.36	.11	2.20
53	1.1	.66	.28	5.60
55	.9	.54	.30	6.00
59	2.2	1.32	.58	11.60
64	.4	.24	.16	3.20
67	4.0	2.40	1.48	25.60
70	1.0	.60	.53	10.60
72	.1	.06	.20	4.00
78	2.3	1.38	.42	8.40
82	.7	.42	.08	1.60
97	.9	.54	1.45	29.00
102	.3	.18	.03	.60

Signed by Chas. A. Diehl

Assayer.

RM 543
E IN U.S.A.

Elureka
Nevada
May 5th, 1929

Messrs. Foote and Company
136 Liberty Street
New York, New York

Gentlemen:

In answer to your telegram, as to my estimate of the cost of prospecting development and equipment of the Gold Bar Mine at Wickenburg, Arizona, copy of telegram follows:-

KINDLY FORWARD AT YOUR EARLIEST POSSIBLE MOMENT DETAILED STATEMENT OF SUGGESTIONS OF OPERATION OF MINE AND METALURGY AS PRODUCT, AS A RESULT OF CONFERENCE BETWEEN YOU, SHANKLIN AND MUELLER. THIS SHOULD INCLUDE ESTIMATED CAPITAL REQUIRED AND PROBABLE DATE AND AMOUNTS.

FOOTE AND COMPANY

I have dealt fully with the various conditions of the Mine in my report, so have very little time at my disposal, and in view of the fact that conditions will change from time to time as the property is developed, I submit estimates of cash requirements for a period of eighteen months.

I desire to definitely state that great caution should be exercised in developing the property in the future, as great damage was done in the past by pulling pillars and underpinnings. The old management was apparently over zealous to make a showing with high productive ores.

The estimates for cash requirements follow:-

WATER:

The present water supply would be increased from sixty gallons per minute to double the capacity for about \$3,000.00

The installation of a Power Plant would be necessary estimated at 30,000.00

Equipment relating to the Power Plant, motors, starters, transformer, wiring and conductors 12,000.00

CAMP EQUIPMENT:

Providing for extra living quarters, office space, assay office and laboratory and general repairs of the Camp 30,000.00

Road equipment, 25,000.00

Transportation trucks and automobiles 2,500.00

Shaft No. 1 can be made as efficient as Shaft No. 2 for 10,000.00
Shaft No. 2 including Manway 7,000.00

To deepen Shaft No. 1 and hoisting shaft to the 500 foot level in No. 2 and connection No. 1 and 2, 25,000.00

Form
FORM 543
MADE IN U.S.A.

BROUGHT FORWARD

\$144,500.00

It will be necessary to re-equip the Old Mill according to development programme, which will include adequate transportation of the ore, and a Concentrating Plant.

95,000.00

If it can be assumed that the Mine from its inception should be self-sustaining, then the cost would run into very large figures for such a development. For the purpose of a gradual development, based upon experience and experimental work, and possible changes in the ore at the lower levels, we must refrain from giving any estimates, but we cannot overlook the fact, that a large amount of Developing and Prospecting will be required during the first eighteen months of operations, until the ore reserves are determined from the Lower Levels. We therefore set aside a reserve for

125,000.00

\$364,500.00

Until the development definitely determines the ore in place, the above amount must be construed as the initial working capital required for the development of the Gold Bar Mine.

Respectfully submitted,

FOOTE & COMPANY

Attest

(Signed) George P. Hyde
Mining Engineer and Geologist

E. H. Foote

F. A. A., F. C. I., C. P. A.

Form
FORM 543
MADE IN U.S.A.

REPORT ON

GOLD BAR MINE

Wickenburg, Arizona.

By

W. R. SHANKLIN,
Mining Engineer,
Tulsa, Oklahoma.

- - -

To *un*
FORM 543
MADE IN U.S.A.

REPORT UPON THE
GOLD BAR MINES
WICKENBURG, ARIZONA.

LOCATION:

This property is located in the Black Rock mining district of Yavapai County, State of Arizona, about fifteen miles northeasterly from the town of Wickenburg, a station on the Santa Fe railroad, which is about fifty miles northwest of Phoenix. The property is reached by a good road from Wickenburg. This road is in good condition and is easily passable for automobiles and trucks, with the exception of the last two miles, which will require some repairing as it is narrow and rough, but can easily be made into a good road.

This part of the county has been surveyed and laid out in townships and ranges, but only partly subdivided into sections. However, the patented mining claims of this property lay in Sections 27, 28, 33 and 34 of Township 9 North, Range 3 West.

CLAIMS:

There are fifteen full lode mining claims in a body, and a fractional water right or millsite claim on the Hassayampa River, about one and one-half miles from the mine.

These claims are patented lode mining claims, containing a total of 303.713 acres, and are described and named, as follows:-

The Home, Buttons, Crown, Red Wonder, Robert, Cable, Black Bear, Homestake, Fob, Charm, White Blaze, Gilbreth, Bennett, Little Jim, Little John, lode mining claims, and Brunton Millsite claim, as shown on the attached plats of the surveyed and patented claim.

Tam
FORM 543
MADE IN U.S.A.

TOPOGRAPHY:

Topography of the country is generally very rough and mountainous, with narrow, sharp canyons and ^{pre-}precipitous slopes. The general altitude of the area ranges from thirty-two hundred to forty-one hundred feet above sea level, with an elevation at the No. 2 shaft of about thirty-four hundred fifty feet. The surface drainage is to the North and Northwest, leading into the Hassayampa River, which in turn flows to the Southwest and enters the Gila River.

HISTORY:

This property was first discovered and mined by a prospector by the name of James Mahoney, about the year 1877, who shortly thereafter formed a partnership with one O'Brien and became known as the O'Brien mine. Mining operations were started at what is now the Glory Hole and was mined for several years.

In the year 1901, a lease for one year was given to James Brown, Trustee for the Saginaw Lumber Company, with option to purchase. This company undertook to develop the mine and did build a ten-stamp mill on the property and continued mining operations as they were started by the former operators, mining the ores from the Glory Hole and treating them over the stamp mill. It is estimated that they treated about four thousand tons of ore which produced sixty thousand dollars in gold. For some reason the deal to sell the property was not completed and it was returned to the former owners.

A company known as the Interior Mining & Trust Company was then organized, who operated on a much larger scale than the former operators, sinking the No. 1 shaft and opening up the stope down to the present 385 foot

Taun
FORM 543
MADE IN U.S.A.

level and placing on the property all of the machinery that is now on it, except that at No. 2 shaft.

The records of this operation and production are not entirely lost from which it appears that the mill was operated about ten months and treated some twenty thousand tons of ore, which produced about \$225,000.00 in gold and silver.

A re-organization of the Interior Mining & Trust Company was effected about the year 1916 and the property became known as the Cold Bar Mining Company. This company sank the No. 2 shaft to a depth of 735 feet and drove the present drifts on the 500 and 700 foot levels, but no valuable ores were produced and the mill was not operated during this period of development. The mine was shut down about 1918 and remained under water until quite recently when the water was pumped out and the two shafts connected by a drift on the 500 foot level. There was spent during this period of operation, the approximate sum of \$90,000.00. The old Interior Mining & Trust Company was shut down and ceased operation in the year 1908.

GEOLOGY:

The surface rocks of this area are composed of granites and schists, which will probably correlate with the Bradshaw mountain granite and the Yavapai schist. These rocks have been subjected to intensive faulting and fissuring, showing at least two well-defined periods of major fissuring, resulting in a system of North 70 degrees East fissures and a crossing system of South 30 degrees East fissures, both of which have been highly mineralized.

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FORM 543
MADE IN U.S.A.

The largest and most prominent fissure vein on the property belongs to the later system, or North 70 degrees East fissure, with a dip of about 70 degrees Northwest. It forms quite a prominent dike on which occurs several large outcrops or blowouts as they are called. The distance between the extremes being about twelve hundred feet, and it can be traced on the surface for a distance of about two thousand feet, showing a width of sixty to eighty feet, and is intensively mineralized, carrying an abundance of oxidized iron sulphides (now hematite), and showing gold and silver values. This dike and system of fissures is cutting the South 30 degree system at about the point where the largest blowout occurs. The outcrops or blowouts on this vein are all larger and show more extensive mineralization than the outcrop of the vein on which the development has been done, which is on a vein paralleling the main fissure and about six hundred feet to the North and West.

This fissure shows a width of about sixty feet at the surface outcrop and it appears that it is a shoot off the main vein. It has approximately the same dip and strike and has the same general character of mineralization.

Development of this fissure has been carried to the 500 foot level where some evidence of faulting is found at the 445 foot incline level. It is quite evident that the crossing fissure belonging to the South 30 degrees East system has interrupted the formation of the vein which is dipping straight down and accounts for the failure of the No. 2 shaft, which was sunk on the supposed rake of the vein, to encounter the ore. Evidently some thrusting attended this movement forming quite an extensive crushed or brecciated area under the footwall of the vein. This crushed or faulted area is accompanied by heavy mineralization of iron pyrite, carrying gold and silver values. This

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FORM 543
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same condition occurs in the footwall of the vein from the surface to the 445 foot incline level.

ORIGIN OF THE ORES:

The ores were undoubtedly deposited, originally, as sulphides of iron and copper, carrying gold and silver values from the hot mineralized solutions ascending the fault planes or following the formation of the fissures, and inasmuch as these minerals are of deep-seated origin and always associated with igneous rocks, it is a reasonable assumption that the ore body filling the fissures will be permanent and extend to great depth.

As usual with such outcropping, mineralized dikes or bodies of ore, oxidization of the original sulphides has been more or less complete to a depth of two hundred fifty to three hundred feet from the surface to the sulphide zone. The ores, as they now occur, are oxidized sulphides, carrying values of gold and silver. Massive iron pyrites occur in the sulphide zone, carrying the same values, intermixed with quartz and other vein matter.

Observing the present conditions at the mine, it is evident that richer ore will be found as greater depth is attained and that the iron will be replaced by a copper content which will form a considerable portion of the values. This statement is borne out by the occurrence of copper ores at several places in the mine; namely, in a drift on the 475 foot level, called the Bennett cross-cut; in a drift on the 445 foot level, showing values of fourteen to fifty dollars per ton; at the 610 foot level in the No. 2 shaft and in the drift from No. 2 shaft on the 700 foot level at about 165 feet from the shaft. The ore found in the shaft and in the drift at this point is in a fissure vein 3' wide and is largely oxides and carbonates, assays of which show gold \$6.80 per ton and copper 6.15%. Further evidence of copper minerals

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FORM 543
MADE IN U.S.A.

is also found in the body of massive iron sulphides in the main vein.

DEVELOPMENT:

The development of the mine through the old Glory Hole was carried down in various stages. The No. 1 shaft was sunk for the purpose of stoping upward on the vein and was operated by the Interior Mining & Trust Company. The No. 2 shaft was sunk by the Gold Bar Mining Company, together with the drifting on the 500 and 700 foot level, but these drifts were not connected with the old workings from the No. 1 shaft until quite recently when a connection was made and the old workings drained so that they could be entered, surveyed and examined. The attached plats show in detail the plan and cross-sections of the underground workings which comprise a total of about eighteen hundred feet of drifting and cross-cuts.

The old workings above the 385 foot level comprise principally a large incline stope or drift from which the greater portion of the production of the mine was taken. It is reported that the changes in the character of the ore from oxides to sulphides, which commenced at about the 200 foot level, increasing with depth, caused the shut-down of the mill, as the values could not be recovered by amalgamation and cyanide and that although the assay values were very high, the mill recovery showed only seventy to seventy-five per cent and on reaching the 385 foot level the change from oxides to sulphides was so complete that the mill was shut down but further prospecting was carried down the vein, which developed the body of massive sulphides now showing in these old workings.

The pulling of some very rich pillars in the old incline stope caused the caving which closed the entrance to this drift so that the main portions cannot now be entered, but much information regarding this drift is

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contained in the old records at the mine, and from the personal knowledge of Mr. F. A. Mueller, who was in the drift many times and was connected with the property for many years during its operation and is now in charge of the property. A letter from Mr. Mueller, stating conditions in this old drift, is attached hereto, as Exhibit "5".

EQUIPMENT:

The property is now equipped with the following itemized list of mining machinery, oil engines, compressors, buildings, tanks, pipe lines, and other miscellaneous equipment. A lot of this equipment is in fair condition and can be used in the further development and operation of this property, for which purpose it is estimated as being worth approximately \$40,000 to the property; but to tear down and remove it for sale as second-hand machinery, it is worth only a small part of its value if used on the property.

- 1 - 75' x 88' Frame Mill Building
- 1 - 8" x 12" Sturdevant Jaw Crusher
- 1 - 12' x 40' Conveyor
- 3 - 100 Ton Ore Bins
- 13 - 16" Hopper Gates
- 12 - 1750 lb. Nisson Heavy Duty Stamps
- 22 - 3' x 6' Amalgamation Plates
- 6 - Wilfley Type Concentrating Tables
- 2 - Vanners
- 3 - Small Isabelle Classifiers
- 1 - Botulla Cleanup Pan
- 1 - Small Lathe
- 7 - New Shoes and Dies for Stamps

Line Shafting:

- 10' of 3" Line Shaft
- 54' of 4" " "
- 85' of 1½" " "

Couplings, Journal Boxes, etc:

- 3 - 3x16 " "
- 9 - 4x10 " "
- 11 - 1½x8 " "
- 3 - 4" Line Shaft Couplings
- 4 - 1½" " " "

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Pulleys:

- 2 - 12x28 Cast Iron Pulleys
- 1 - 22x46 " " "
- 1 - 14 x60 " " Clutch Drive Pulley
- 3 - 14x20 " " " " "
- 3 - 14x60 Wood Pulleys

Pipe:

- 8000' - 4" Pipe
- 600' - 3" "
- 300' - 2 $\frac{1}{2}$ " "
- 400' - 1 $\frac{1}{2}$ " "

Pumps:

- 1 - 7" Luitweiller Lift Pump
- 1 - #5 - 2" Cameron Sinking Pump
- 2 - 3" Smith Triplex Geared Power Pumps
- 1 - #5 - 2" Cameron Station Pump
- 1 - 4" Gould Triplex Geared Power Pump
- 1 - 1 $\frac{1}{2}$ " Centrifugal Circulating Pump

Oil Engines:

- 1 - 22 HP Fairbanks-Morse Engine
- 1 - 50 HP Western Hoisting Engine
- 1 - 25 HP " " "
- 1 - 50 HP Fairbanks-Morse Engine
- 1 - 12 HP " " Hoisting Engine
- 1 - 6 HP " " " "
- 1 - 12 HP " " Vertical "
- 1 - 32 HP " " Engine
- 1 - 60 HP " " Mill "
- 1 - 12 HP " " Engine direct connected to
- 1 - 75 KW 63 Amperes, 115 Volt Direct Current 325 R.P.M.
Generator Switch Board, etc.
- 1 - 1 $\frac{1}{2}$ HP Weber Hoist Engine.
- 1000' - 3/4" Hoisting Cable
- 500' - 3/4" " "

Compressor Plant:

- 1 - 7 $\frac{1}{2}$ x12x14 - 2 Stage Sullivan Belt Driven Compressor
- 1 - 7x10 Leyner Vertical " " "
- 1 - 3x10 Air Receiver
- 1 - 3x6 " "

Pipe Fittings, etc.

Tanks:

- 6 - 5x28" Steel Cyanide Tanks
- 4 - 10x10 " Slime "
- 2 - 6x10 Galvanized Tanks for Fuel.

Mine Equipment:

- 3 - Denver Jackhammer Drills
- 400 lbs. of drill steel
- 1 - 16" Blower Fan

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2 - 110 gallon valve buckets
3 - 1000 lb. ore buckets
6 - 1000 lb. Tram cars
2 - 1000 lb. Hoist skips
2 - 500 lb. " "
Lot mine pipe, rails, picks, cars, etc.
1 - 10 HP Boiler
1 - 12 HP "
2 - 35' Head Frames
1 - 5 ton chain block
1 - Brown Type #37 Furnace (assay office)
6 - Balances (assay office)

Blacksmith Shop, tools, press drill, forge, etc.

Buildings:

Hoist and compressor at No. 2 shaft
Timber Shed " " "
Engine House for Pump " " "
Blacksmith Shop " " "
Hoister House at No. 1 "
Assay Office
Garage

1 - 1 story stone bunk house, 1 room
1 - 2 story adobe bunk house, 4 rooms
1 - 2 " eating house and kitchen, 5 rooms, frame
1 - 2 " living quarters, frame, 8 "
1 - 1 " " " " 2 "
1 - 1 room office, frame

PRODUCTION:

Most of the records of the past operations of the property have been destroyed or removed by the officers of the Interior Mining & Trust Company, but evidence of the sale of valuable ores and bullion is had in the attached photostatic copies of Mint memorandum and settlement sheets, marked Exhibits No. 1 and No. 2.

The first ores mined from the surface outcrop were either shipped as high grade or washed out on the creek. Later a small ten-stamp mill was built and treated approximately 4000 tons of ore, producing about \$60,000.00 in gold, which on a recovery basis of eighty to eighty-five per cent of the values, shows a value of about \$18.75 per ton of ore mined.

The Interior Mining & Trust Company built the present mill

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and operated it for a period of ten months to one year and it is estimated from the mining that was done and other records, that they treated some 20,000 tons of ore, getting an average recovery of about seventy-five per cent of the values, recovering about \$225,000.00 from a possible \$275,000.00 or a value of about \$13.75 per ton.

The entire production from the property compiled from all available records indicates a total of \$275,000.00 to \$300,000.00 in gold and silver. The ores treated by the present mill over plates, tables and cyanide plant produced the greater portion, but this operation ceased in 1908 and no ores have been produced from the property since that date.

The change in the character of the ores made it impossible for the mill to recover the values. Therefore, the property was shut down and has remained inactive to the present time.

MILL TEST:

During the later period of the operation of the present mill, a mill test was made by V. G. Hills, E. M., on 70.17 tons of dry ore taken from the present 407 foot level on the South side of the incline drift. Of this ore, only 63.75 tons were treated. It was milled very carefully and showed a concentrate recovery of about 22.4% or 14.3 tons of concentrates, of the value of \$127.38 per ton, the ore showing a mine-run value of \$28.58 per ton. This test gives a fair idea of the value and richness of the ores that are now showing in the incline drifts.

A copy of the mill test is given herewith, as follows:-

GOLD BAR MINE
Wickenburg, Arizona.

MILL TEST RUN MADE BY V. G. HILLS, E. M.

LOT NO. 4.

This ore was taken from the 41' Winze Level and consisted of

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all the material taken from a 4x6x40' cross-cut through the ore-body.

The mine weight was 72.336 tons. Moisture was 3%, making the dry weight 70.166 tons.

Owing to several stops of the mill during the run the time was lost. But during the first day the stamps crushed about 1 $\frac{1}{2}$ tons per hour or 7.44 tons per stamp for 24 hours.

Owing to the failure of the power the mill stopt and the clean-up was made with 6.41 tons dry left in the bin. Thus there was 63.756 tons in the test.

The concentrates saved were:-

Wilfley table 1" lot	12.530 tons,	moisture 13.75%,	dry 10.807 tons.
" " 2" "	2.790 "	" "	14.8 " 3.377 "
			13.374 "
Vanner table	1.111 "	" "	16.4 " .929 "

Making one ton of concentrates to 4.52 tons ore.

The coarse rock sample #9427 returns:
Gold 1.04 oz. Silver 5.2 oz.

The sands head sample #9428 returns:
Gold 1.30 oz. Silver 3.2 oz.

Considering the complete and careful manner in which the sands sample was taken it must be regarded as representing the correct value of the ore.

The mint value of the ore is:-

Gold	1.30 oz. at \$20.67	\$26.87
Silver	3.2 oz. at 53	<u>1.71</u>
		\$28.58
		<u><u> </u></u>

The savings on the plates was 2 $\frac{1}{2}$ 8 oz. avoirdupois of amalgam, which at the uniform mine estimate before noted gives value of \$193.33.

				<u>per ton ore</u>
From amalgam (approx. only)		193.33		3.03
Wilfly Cons.	Gold 2.33 oz.	\$48.16		
" "	Sil. 9.2 oz.	4.88		
	13.184 tons	\$53.04	699.28	10.97
Vanner Cons.	Gold 3.83 oz.	79.17		
" "	Sil. 12.1 "	6.41		
	0.929 tons at	85.58	79.51	1.25

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Wilfley tails	Gold .22 oz.	4.55		
"	" Sil. .6 "	.32		
	40.459 tons at	4.87	197.04	3.09
Vanner tails	Gold .70 oz.	14.47		
"	" Sil. 1.8 oz.	.95		
	9.184 tons at	15.42	141.62	2.22
	Discrepancy		<u>510.73</u>	<u>8.02</u>
			<u>\$1821.51</u>	<u>\$28.58</u>

63.576 tons at \$28.58.

WATER:

Water for milling purposes in a semi-arid country such as this is, becomes a problem unless there is an available supply in the mine. Water for this purpose was formerly pumped from the Hassayampa River, a distance of about one and one-half miles. There was installed a pumping plant and a four-inch pipe line from the water right claim on the river to the mill which furnished all the water necessary during the period in which the mill was operated.

When the No. 2 shaft was sunk a flow of ground water was developed that now amounts to about sixty gallons per minute, which is quite sufficient for normal milling purposes, a seven-inch Luitweiller lift pump was installed but having no seven-inch column pipe, it was fitted with some four-inch line pipe of which there is an abundance on the property, which greatly reduced the capacity of the pump, so that it does not take care of the present flow of water as it requires the use of a hoister to bail water in order to keep the mine clear. It is highly probable that the water will increase with deeper development and furnish adequate and dependable supply for future milling operations.

CAMP:

The camp site is located on the Home claim, where there is a good fresh water spring of sufficient size to supply a much larger camp than

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will ever be necessary on this property. Here the living quarters, bunk houses and such like are built, providing excellent accommodations for the crew of men necessary to operate the property. An itemized list of the buildings is included with the other equipment. Some additions and repairs will be necessary as there are no adequate accommodations for office or laboratory.

SAMPLES AND ASSAYS:

Sampling of the mine was done very carefully. Samples were taken approximately five feet apart throughout the drifts that could be entered and examined as the mine had been under water for many years. These drifts were coated and partly filled with a heavy deposit of mud, which added somewhat to the difficulty of cutting fair samples from the walls and roof of the drifts. The assays of these samples are attached hereto on the original sheets from the assay office and are marked Exhibit "3". The location of each sample and assay taken in the mine is shown on the attached map of the underground workings by a line and the number of the assay. The average value of some fifty odd samples taken within the area that is hereafter described as ore body, shows a value of \$11.75 gold and silver.

A summary of the available records of past production gives a good idea of the value of the ore that was mined and the value of the ore body that has been developed:-

Old ten-stamp mill values per ton	-----	\$18.75
The present mill on property, results of which show values per ton,	-----	\$13.75
Result of mill test as given herewith, per ton	--	\$28.56
Average value per ton of samples taken from the mine,	-----	\$11.75

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From the above values, it is quite reasonable to assume a value of \$12.00 per ton as a fair average value of the developed ore body from the surface to the present 445 foot incline level. The following estimates of value are made, using this figure as a basis of valuation.

The massive sulphides occur in the mine in such quantity that it was possible to dig from the walls and faces, two large samples of ore nearly as clean as shipping concentrates. These samples were taken for smelter tests, and taken one to the Magma Smelter at Superior, and the other to the A. S. & R. Smelter, at Hayden. The results of these tests are attached hereto, as Exhibit "4", together with copies of letters from the smelters, and give an idea of the value of the concentrates that can be shipped from the mine.

ORE BODY:

The developed ore body is a fissure vein consisting of quartz intermixed with massive iron sulphides which carry gold and silver values of about four ounces of silver to one ounce of gold. The outcrop of this vein at the surface has been cross-cut showing a width of ore body of about sixty feet. At the 385 foot level, the vein shows a width of forty-five feet and the same width is shown at the 445 foot level, showing a consistent width of the ore body of about forty to forty-five feet, but at no place in the mine has the depth of the ore body been demonstrated. At the surface in the Glory Hole the ore is showing in both top and bottom with exposed depth of about sixty feet and from reports of conditions in the incline stope to about the 385 foot level, good ore is exposed in both top and bottom. This stope passes through the weathered zone into the sulphide zone at about the 300 foot level. With massive sulphides showing in the drifts that can be entered at a point about ten feet above the 385 foot level. These sulphides carrying gold and silver values are

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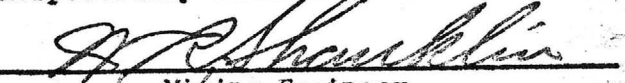
exposed in the incline drift and cross-cuts to the 445 foot level, showing an exposed depth of about seventy feet. At both these levels the vein has been cross-cut, showing an average width of about forty-five feet.

The distance from the 445 foot level where the ore body is in contact with a crossing fissure and turns down the dip of the vein to the surface at the Glory Hole, is about 500 feet. Assuming from the above facts that the same conditions will prevail for the entire distance and using twelve cubic feet of ore in place as one ton and deducting the estimated 24,000 tons mined from the old incline stope, there is 92,000 tons of minable ore which will show average values of \$12.00 per ton or a total value of \$1,104,000.00. This estimate does not include the large amount of low grade ores that are found under the footwall of the vein or the possible ore that can be developed.

CONCLUSION:

The present development of the mine has proven the permanency of the ore body and discloses a considerable tonnage of valuable ores that can be mined at a profit and by so doing will provide the cost of further prospecting and developing the deeper levels and the development of the large mineralized fissure which forms such a prominent feature of the property. The greater development of the property should include the prospecting of the large fissure by drifting or core drilling from the lower drifts in the No. 2 shaft. A few hundred feet of either of the above mentioned methods of prospecting will locate the exact position of the fissure and the character of ore contained therein. The strong showings of copper ore found in the mine indicates that deeper development will show copper sulphides replacing the iron and will form a considerable addition to the value of the property.

Respectfully submitted,


Mining Engineer.

5420

Memorandum of Gold Bullion deposited at the Mint of the United States at San Francisco, for the day of March 23 1908, 100, by William M. T. J. Co.

NOTE.—This Memorandum is for the information of the Depositor, and is of no other value.

DE- SCRIPTION OF BULLION.	SILVER.				GOLD.				SILVER PAID FROM THE GOLD.				GOLD PAID FROM THE SILVER.			
	Troy weight.		Avoirdupois weight.		Troy weight.		Value.		Troy weight.		Value.		Troy weight.		Value.	
	Ounces.	Dms.	Ounces.	Dms.	Ounces.	Dms.	Dollars.	Cents.	Ounces.	Dms.	Dollars.	Cents.	Ounces.	Dms.	Dollars.	Cents.
2. MAL CAKES	330.30		297.38		104.491516		166	2490	104.491516							
3. Bars.																
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99. Bars.																
100. Bars.																

DUPLICATE

I certify that the net amount of the above Deposits is 100 bars hundred and 49 dollars and 14 cents.

Payable at the Mint only on presentation of the receipt of a corresponding date and number hereunder issued.

Gold Ounces, \$
Gold Bars, \$
Silver Ounces, \$

3-4811

W. M. T. J. Co.
For the Superintendent.

No. 3610

U. S. MINT
No. 42 B.
5-1112

Memorandum of Gold Bullion deposited at the Mint of the United States at Denver, Colo., the 6th day of March, 1908, by Frank M. Downer, Supt. of Bank of America

NOTE.—This Memorandum is for the information of the Depositor, and is of no other value.

Description of Bullion.	Weight.				Gold.				Silver paid from the gold.				Charges.			
	Before melting.		After melting.		Precious.	Value.	Precious.	Value.	For melting, refining, assaying, and for loss.		For melting, refining, assaying, and for loss.		For melting, refining, assaying, and for loss.			
	Ounces.	Dms.	Ounces.	Dms.	Libras.	Dollars.	Cents.	Libras.	Dollars.	Cents.	Dollars.	Cents.	Dollars.	Cents.		
Bar	364.76		325.11		732.492285		225	3910	14.00	494.342						

THE CONSOLIDATED KANSAS CITY SMELTING & REFINING CO.

EL PASO SMELTING WORKS BRANCH

El Paso, Texas,

ight of

Address

YORK QUOTATIONS:

LONDON QUOTATIONS:

SETTLEMENT No. 2261

SHIPPER'S LOT No.

WEIGHT				CLASSIFICATION		VALUES	
IT.	WET	H ₂ O	DRY	PAYMENTS		PER TON	TOTAL
99	51000	15	50234	Payments: GOLD 313 OZS. @ \$ 19.50 SILVER 91 OZS. @ 95% @ 50 CTS. LEAD % @ CTS. COPPER % @ CTS. Fe 418 % @ 5 CTS. Mn % @ CTS. CaO % @ CTS. TOTAL PAYMENTS		6104	132
				DEDUCTIONS FRONT TREATMENT BRICKING INSOLUBLE 103% @ 10 CTS. ZINC % @ CTS. SULPHUR % @ CTS. As. Sb. Bi. % @ CTS. TOTAL DEDUCTIONS		300	150
						102	6760
						150	552
						102	6208
						PRICE PER TON	155926

PROCEEDS

FREIGHT FROM

EXCISE FREIGHT A-C

MEXICAN FEDERAL DUTIES

SAMING

BALANCE DUE

CHECKED

CORRECT

APPROVED

INV. CLERK

CHECK CLERK

SETTLEMENT CLERK

MANAGER

B 20.00

The following samples and assays taken within the walls of the Fissure vein and from the 385' level to the 445' level, showing average gold value of \$11.54 per ton.

--00000--

<u>Sample No.</u>	<u>Au. Ounces</u>	<u>Value</u>	<u>Sample No.</u>	<u>Au. Ounces</u>	<u>Value</u>
40	.07	1.40	60	.23	4.60
41	.10	2.00	61	.15	3.00
42	.05	1.00	63	.22	4.40
43	.08	1.60	64	.48	9.60
44	1.88	37.60	65	.14	2.80
45	.04	.80	66	1.30	26.00
46	1.50	30.00	67	.24	4.80
47	1.01	20.20	68	.23	4.60
48	.18	3.60	69	.23	4.60
49	.07	1.40	70	.67	13.40
50	.06	1.20	71	.16	3.20
51	.08	1.60	72	.15	3.00
52	.11	2.20	73	2.20	44.00
53	.92	18.40	78	1.09	21.80
54	.21	4.20	79	.08	1.60
55	.17	3.40	80	.11	2.20
56	.92	18.40	82	.23	4.60
57	3.18	63.60			
58	.95	19.00			
59	1.85	37.00			
					\$ 426.80

No. 917 Sh

CHAS. A. DIEHL

Phoenix, Arizona.

Apr. 19, 1927.

ARIZONA ASSAY OFFICE

Phone 4447

315 North First Street

P. O. Box _____

THIS CERTIFIES That the samples submitted for assay by Mr. W. R. Shanklin, contain as follows per ton of 2000 lbs.

Marks	SILVER	VALUE	GOLD	VALUE	TOTAL V	Percentage
	Ounces / tenths	(oz) 60¢	Ounces/Hundths	At \$20 per oz	G & S	Copper 13¢
						lbs. Value Total
1	.1	\$.06	.17	\$3.40	\$3.46	
2	Trace		.06	\$1.20	\$1.20	
3	2.3	\$1.38	.32	\$6.40	\$7.78	2.33 46.6\$6.05 13.83
4	Trace		Trace			
5	.1	\$.06	.05	\$1.00	\$1.06	
6	.1	\$.06	.02	\$.40	\$.46	

Charges \$8.25

Assayer: Chas. A. Diehl

No. 726 Mu

Phoenix, Arizona.
Feb. 17, 1927.

CHAS. A. DIEHL
ARIZONA ASSAY OFFICE
315 North First
Street

Phone 4447

P. O. Box 1148

THIS CERTIFIES That the samples submitted for assay by Mr. F. A. Mueller, contain as follows per ton of 2000 lbs.

MARKS	GOLD Ounces/Hundths	VALUE At \$20 per oz.
X 1	.05	\$1.00
X 2	.05	\$1.00
X 3	.10	\$2.00
X 4	.04	\$.80
X 5	.02	\$.40
X 6	.01	\$.20
X 7	.03	\$.60
X 8	.03	\$.60
X 9	.04	\$.80
X 10	.01	\$.20
X 11	.02	\$.40
X 12	.22	\$4.40
X 13	.71	\$14.20
X 14	.17	\$3.40
X 15	.71	\$14.20
X 17 small envelope	.06	\$1.20
X 17 large "	.01	\$.20
X 18	.10	\$2.00
X 19	.17	\$3.40
X 20	.22	\$4.40
X 21	.01	\$.20
X 22	.02	\$.40
X 23	.02	\$.40
X 24	.01	\$.20

Charges \$ _____

Assayer: Chas. A. Diehl

No. 726 Mu Page 2.

Phoenix, Arizona.

Feb. 17, 1927.

CHAS. A. DIEHL,
ARIZONA ASSAY OFFICE
215 North First Street

Phone 4447

P. O. Box 1148.

THIS CERTIFIES That the samples submitted for assay by Mr. F. A. Mueller, contain as follows, per ton of 2000 lbs.

Marks	Silver Ounces/Tenths	VALUE (Oz) 60¢	GOLD Ounces/Hundths	VALUE AT \$20 per oz	TOTAL
X 25			.02	\$.40	
X 26			.05	\$1.00	
X 27			Trace		
X 28			.02	\$.40	
# 29			.01	\$.20	
# 30			.01	\$.20	
# 31			.07	\$1.40	
# 32			.01	\$.20	
# 33			.01	\$.20	
# 34			.02	\$.40	
# 35			.02	\$.40	
# 36			Trace		
# 37			.16	\$3.20	
# 38			.02	\$.40	
# 39			Trace		
# 40			.07	\$1.40	
# 41	.6	\$.36	.10	\$2.00	\$2.36
# 42	.2	\$.12	.05	\$1.00	\$1.12
# 43	.2	\$.12	.08	\$1.60	\$1.72
# 44	16.0	\$9.60	1.88	\$37.60	\$47.20

Charges \$45.00

Assayer: Chas. A. Diehl

Feb. 24, 1927.

CHAS. A. DIEHL
ARIZONA ASSAY OFFICE
315 North First Street

Phone 4447

P. O. Box 1148.

THIS CERTIFIES That the samples submitted for assay by Mr. F. A. Mueller, contain as follows per ton of 2000 lbs. Advoir:

Sample Marked Silver Value at Gold Value at
Ounces per ton 60¢ per oz. ounces per ton \$20 per oz.

No. 45	Trace		.04	\$.80
46	7.0	\$4.20	1.50	\$30.00
47	11.8	\$7.08	1.01	\$20.20
48	.6	\$.36	.18	\$3.60
49	.1	\$.06	.07	\$1.40
50	.1	\$.06	.06	\$1.20
51	.2	\$.12	.08	\$1.60
52	3.6	\$2.16	.11	\$2.20
53	.2	\$.12	.92	\$18.40
54	.2	\$.12	.21	\$4.20
55	.2	\$.12	.17	\$3.40
56	.9	\$.54	.92	\$18.40
57	23.1	\$13.86	3.18	\$63.60
58	3.2	\$1.92	.95	\$19.00
59	5.9	\$3.54	1.85	\$37.00
60	.4	\$.24	.23	\$4.60
61	.2	\$.12	.15	\$3.00
62	Trace		Trace	
63	.1	\$.06	.22	\$4.40
64	.3	\$.36	.48	\$9.60
65	.2	\$.12	.14	\$2.80
66	5.4	\$3.24	1.30	\$26.00
67	.6	\$.36	.24	\$4.80

Charges \$

Assayer: Chas. A. Diehl.

Feb. 24, 1927.

CHAS. A. DIEHL,

ARIZONA ASSAY OFFICE

315 North First Street

Phone 4447

P. O. Box 1148

THIS CERTIFIES That the samples submitted for assay by Mr. F. A. Mueller, contain
as follows per ton of 2000 lbs. Advoir:

Sample Marked	Silver		GOLD		
	Ounces per ton	Value at 60¢ per oz.	Ounces per ton	Value at \$20.00 per oz	
No. 68	.3	\$.48	.23	\$4.60	
69	.2	\$.12	.23	\$4.60	
70	1.3	\$.78	.67	\$13.40	
71	.2	\$.12	.16	\$3.20	
72	.4	\$.24	.15	\$3.00	
73	3.7	\$2.22	2.20	\$44.00	
74	Trace		.03	\$.60	
75	Trace		.02	\$.40	
76	Trace		.02	\$.40	
77	Trace		.03	\$.60	
78	3.8	\$2.28	1.09	\$21.80	
79	.4	\$.24	.08	\$1.60	
80	.2	\$.12	.11	\$2.20	
81	Trace		.02	\$.40	
82	.3	\$.18	.23	\$4.60	
83	7.5	\$4.50	1.54	\$30.80	
84	Trace		.06	\$1.20	
85			.05	\$1.00	Trace
86			2.65	\$53.00	1.36
87			.01	\$.20	Trace
88			.15	\$3.00	Trace
89			.06	\$1.20	Trace
90			.03	\$.60	Trace

Charges \$ _____

Assayer: Chas. A. Diehl.

No. 729 Mu

Page 3

CHAS. A. DIEHL,
ARIZONA ASSAY OFFICE
315 North First Street

Phoenix, Arizona.

Feb. 25, 1927.

Phone 4447

P. O. Box 1148.

THIS CERTIFIES That the samples submitted for assay by Mr. F. A. Mueller, contain
as follows per ton of 2000 lbs. Advoir:

Sample Marked	Silver Ounces per ton	Value at 60¢ per oz.	Gold Ounces per ton	Value at \$20 per oz.	
No. 91			.03	\$.60	Trace
92	Trace		.02	\$.40	
93	Trace		.10	\$2.00	
94	Trace		.01	\$.20	
95	Trace		.01	\$.20	
96	Trace		.01	\$.20	
97	Trace		1.70	\$34.00	
98	Trace		.04	\$.80	
99	Trace		.03	\$.60	
100	.4	\$.24	.11	\$2.20	
101	.1	\$.06	.08	\$1.60	
102	.4	\$.24	.26	\$5.20	
103 Mud	.1	\$.06	.07	\$1.40	
104 "	1.5	\$.90	.68	\$13.60	
105 "	.2	\$.12	.08	\$1.60	
106 "	Trace		.02	\$.40	
107	Trace		.01	\$.20	
108	Trace		Trace		
109	Trace		.02	<u>\$.40</u>	
110	Trace		Trace		
111	Trace		.01	\$.20	
112	.2	\$.12	.28	\$5.60	
113	.2	\$.12	.07	\$1.40	

Charges \$_____.

Assayer; Chas. A. Diehl.

No. 729 Mu Page 4.

Phoenix, Arizona.

Feb. 24, 1927.

CHAS. A. DIEHL
ARIZONA ASSAY OFFICE
315 North First Street

P. O. Box 1148.

Phone 4447

THIS CERTIFIES That the samples submitted for assay by Mr. F. A. Mueller, contain
as follows per ton of 2000 lbs. Advoir: -----

Sample Marked	Silver Ounces per ton	Value at 60¢ per oz.	Gold Ounces per ton	Value at \$20 per oz.
No. 114	4.5	\$2.70	.60	\$12.00
115	.3	\$.18	.08	\$1.60
116	Trace		Trace	
117	Trace		.03	\$.60
118	.2	\$.12	.04	\$.80
119	.2	\$.12	.01	\$.20
120	.3	\$.18	.04	\$.80
121	.1	\$.06	.06	\$1.20
122	.2	\$.12	.05	\$1.00
123	Trace		.03	\$.60
124	.1	\$.06	.02	\$.40
125	Trace		.01	\$.20
126	Trace		.02	\$.40
127	Trace		.04	\$.80
128	Trace		Trace	
129	Trace		.01	\$.20
130	Trace		Trace	
131	Trace		Trace	
132	Trace		.02	\$.40

Charges \$111.75

Assayer: Chas. A. Diehl.

Eastern Office,
14 Wall Street
New York City, N. Y.

Mine Office
Superior, Arizona.

MAGMA COPPER COMPANY
Superior, Arizona

April 19, 1927.

Mr. W. R. Shanklin,
Jefferson Hotel,
Phoenix, Ariz.

Dear Sir:-

The sample of ore that you sent to us assayed as per the enclosed certificate.

If you have any ore of this grade to ship, kindly advise us and we will be glad to quote you a treatment rate on the same.

Very truly yours,

Wm. Koerner

General Manager.

ENC.

Eastern Office
14 Wall Street
New York City, N.Y.

Mine Office
Superior, Arizona

MAGMA COPPER COMPANY,
Superior, Arizona.

April 22, 1927.

Mr. W. R. Shanklin,
Jefferson Hotel,
Phoenix, Ariz.

Dear Sir:-

Referring to my letter of April 19th I wish to state that we will be pleased to quote you on ore similar to the sample submitted to us, the following terms and rates:

The base treatment rate will be \$2.50 a ton when the sum of the metals paid for is \$15.00 a ton or less. On any increase over \$15.00 in the sum of the metals paid for, the treatment rate will be increased by 10% of such increase over \$15.00 until a total treatment rate of \$5.00 is obtained which will be the maximum treatment rate up to a total of \$100.00 in value.

We will pay for 90% of the copper at market quotation less 2.5¢ a pound, with a minimum deduction of 8 lbs. and a maximum deduction of 20 lbs. per ton. Quotation used in settlement for copper will be the average of the daily refinery quotations for electrolytic copper as shown by the Engineering & Mining Journal of New York in its issue for the calendar week next preceding the date of arrival of shipment at smelter.

We will pay for 95% of the silver if over one ounce at the market quotation on the date of sampling shipment. We will pay for all the gold if over 0.03 oz. at \$19.50 per ounce.

The sample submitted by you to us is a heavy sulphide ore and it went 40.6% iron and 42.1% sulphur, and it does not seem as if a man would be able to do any concentrating on an ore of this character and grade. Even should you decide to mill this ore it might be a good plan for you to mine a car of it and ship it to a smelter sampling works where a good sample could be obtained.

Freight rates from Wickenburg to Superior are as follows:

Value of Ore--	\$20.	\$30.	\$40.	\$50.	\$60.	\$70.	\$80.	\$90.	\$100.
Rate --	2.50	2.85	3.25	3.60	4.00	4.20	4.80	5.10	5.10

Very truly yours,

Wm. Koerner

General Manager.

MAGMA COPPER COMPANY

ASSAY CERTIFICATE

DATE

4/19/77

No.	LOCATION	Cu. %	Ag. Oz.	Au. Oz.	Fe %	Si O ₂ %	% Moisture	REMARKS
	Good Bas. mine	9.15	6.30	27.2	40.6	12.2		
	various portions		Ag. 6.30 oz @ 6.25 per oz.					3.78
			Au. 27.2 g @ 19.50 " "					53.04
			Fe. 40.6 % @ 1.01 per unit					4.06
			Total					60.88

W. H. Simon ass

Assayer

AMERICAN SMELTING & REFINING CO.
HAYDEN PLANT,
HAYDEN, ARIZONA.

April 26, 1927.

Mr. W. R. Shanklin,
Jefferson Hotel,
Phoenix, Arizona.

Dear Sir:

We are enclosing assay certificate on sample left with us. This is a very good grade of ore and the gross value would be over \$100.00 per ton. If you are contemplating shipment of either this grade of ore or a lower grade, we would suggest that you write to Mr. Howard H. Fields, El Paso Smelting Works, El Pas, Texas, advising him what point shipments would be made, the approximate tonnage you would ship, and any other information you may have. Mr. Fields will give you treatment rates and shipment instructions.

Yours very truly,

AMERICAN SMELTING & REFINING COMPANY,

By C. C. Kiser,
Business Manager.

Enc-1

CCK:T

cc. Mr. Howard H. Fields.

AMERICAN SMELTING & REFINING CO.
HAYDEN PLANT

ASSAY CERTIFICATE

DATE ASSAYED

19

MARKED

LOT NO.	GOLD OUNCES PER TON	SILVER OUNCES PER TON	LEAD		CU. %	INS. %	SiO ₂ %	FE %	MN. %	CAO. TOTAL %	CAO. AVAIL %	ZN. %	SUL. %	AL ₂ O ₃ %	SB BI.
			FIRE %	WET %											
	5.00	13.36			0.10	11.0		42.4							
		Values per ton						ag. 1336oz @ .60 cl/oz					8.01		
		"						an. 500oz @ .20 " "					100.00		
		"						Fe. 42.4% @ .01 per unit					4.24		
								Total					\$ 112.25		

AMERICAN SMELTING & REFINING CO.

By

Assayer

Chemist

EXHIBIT "5"

F. A. MUELLER (letterhead)

Constellation, Ariz.,
April fifteenth,
1927.

Mr. W. R. Shanklin,
Tulsa, Okla.

Dear Sir:-

This is to state that during my many years upon the property now known as the Gold Bar Mine, I, on many occasions, had entered into that portion of the mine lying between the "Glory Hole" and the 385 ft. level and have observed much mineralization in this area together with a great deal of a nice grade of gold ore. The ores are of a sulphide, a semi-sulphide and an oxidized character. Such samples and assays as I had taken indicated a good commercial value to the ore, ranging from \$8. to \$30. per ton.

This portion of the mine is partially stopped and was partly let down owing to the drawing of two pillars containing high grade ore, and has remaining therein a goodly tonnage of millable ore which should show a profit if mined.

Respectfully,

(Signed) F. A. Mueller.



m

43
S.A.

GOLD BAR MINE
Wickenburg, Arizona.

CROSS SECTIONS

BOB and C-C

um
543
U.S.A.

GOLD BAR MINE
Wickenburg, Arizona.

LONG SECTION OF MINE WORKINGS. SECTION A-A.

GOLD BAR MINE
Wickenburg, Arizona

REPORT OF EXAMINATION

T A B L E O F C O N T E N T S

Introductory Letter

Location of Property

Claims, of which there are sixteen, contiguous claims

Topography

History

Geology

Origin of Ores

Ore Bodies and Values

Equipment

Water

Power

Metalurgy and Reduction

Conclusions

PHOTOSTATS:-

Long Section of Mine Workings

Section A-A

Cross Sections

Section B-B, C-C

Location of Underground Workings

Plat of Claims, showing locations of Development Work

-56-

FOOTE AND COMPANY
Industrial Engineers, Auditors and Appraisers
136 Liberty Street
New York

Telephone Rector 9186

May
Tenth
1929

James A. Twichell, Esq.
Gold Bar Mines
Wickenburg, Arizona

Dear Sir:-

In accordance with your instructions, we have made an examination of your Mining Property located at Wickenburg, Arizona, in the County of Yavapai, Known as the:

G O L D B A R M I N E

At the time of our examination between the dates of April the Eleventh and Twenty Third, Nineteen Hundred and Twenty Nine, considerable time was saved, as we were furnished accurate maps of the surface and underground workings, which maps and other valuable data was offered to us by Mr. W. R. Shanklin, Mining Engineer and Geologist. These maps by the courtesy of Mr. Shanklin, have been made a part of this report, who was present during our examination of the mine, and rendered valuable assistance to our Engineer.

The specific data contained on the aforesaid maps, were carefully checked, and found to be correct.

The maps submitted consist of:-

Long Section of Mine Workings and Marked A-A
Cross Sections and Marked Sections B-B and C-C
Location of Underground Workings
Plat of Claims, showing locations of Development Work

Our Mining Engineer and Geologist, Mr. Geo. F. Hyde was instructed to pursue a policy of brevity during the period of his examination of your property, where the data had been so ably treated in other reports, but to give consideration and careful study to the treatment of the ores, and a decided opinion of the best ways and means for the proper development of the Mine, to ultimately extract therefrom the best results obtainable without jeopardizing the underground working, which would result in a large capital outlay for its rehabilitation and safety of operations.

(Signed)

Respectfully submitted
FOOTE AND COMPANY
E. R. FOOTE
F.A.A., F.C.I., C.P.A.

GOLD BAR MINE

Wickenburg, Arizona

Location:-

This Property is located in Yavapai County, in the State of Arizona, about fifteen miles North Easterly from Wickenburg, which is on the Santa Fe Railroad, which is reached by a road in good condition, tho having in places steep grades, which could be bettered by the expenditure of a few thousand dollard.

Claims:-

The Property consists of sixteen full, contiguous patented claims as follows:-

- | | |
|---------------|------------------|
| 1 West End | 9 Red Wonder |
| 2 Bennett | 10 Cable |
| 3 Galbraith | 11 Robert |
| 4 Homestake | 12 Little Jim |
| 5 White Blaze | 13 Little Johnny |
| 6 Charm | 14 Crown |
| 7 Fob | 15 Buttons |
| 8 Black Bear | 16 Home |

and a fractional claim, the Brunton, situated on the Hassayampa River, and on which is a pumping station.

A suit to quiet Title has been instituted, and a favourable decision rendered by the Court.

TOPOGRAPHY:-

The country in which the claims are located is rough, with deep canyons and precipitous sides. The elevations of the camp being about three thousand five hundred (3,500) feet above sea level.

The climate conditions are favourable for continuous operations the entire Year. A decided advantage.

HISTORY:-

The property was discovered about 1877 by James Mahoney, who interested Mr. F.X. O'Brien, who was then mining in Colorado. Later O'Brien purchased Mahoney's interest. In 1901 a year's lease was given John Brown, Trustee of the Saginaw Lumber Company. During the life of this lease a ten stamp mill was erected. The ore treated came from an open cut in the out-crop, of the ore chute and from measurements of this cut in the out-crop, I estimate about 4,000 tons of ore were treated with a recovery, according to Mr. O'Brien, of \$60,000. On the basis of an 80% recovery, the ore treated contained a value of approximately \$18.75 per ton.

The interior Mining and Trust Company was then formed. This company sank the No. 1 shaft to a depth of 325 feet, erected a

Hundred tons capacity and worked the ore body by means of an incline from the 385 foot level to the surface, a distance of approximately 500 feet. These workings are inaccessible owing to caving, the rich supporting pillars having been pulled. Through the courtesy of Mr. F.A. Mueller who was in touch with the operations during this period, and from a few records which escaped destruction, I find the mill ran ten months, treating some twenty thousand tons of ore with a recovered value of \$200000.00, this from ore containing \$275000.00 value of \$13.75 per ton treated. A poor recovery.

Then came a reorganization and the property became known as the Gold Bar Mining Company. \$80000.00 was raised with which the No. 2 shaft was sunk to the 700 foot level and connections made between the 500 foot level of No. 2 shaft and the old workings at the 385 foot level by means of drifts and upraise. A small amount of ore was mined at this period and mill runs made.

GEOLOGY:-

The geology of this district offers nothing complex. The country rock is granite, and is known as the Bradshaw Mountain granite. There has been extensive fissuring, showing two major periods of movements. One resulting in a system of North 70 degrees East fissures, and the other in South 30 degrees East fissures. Both systems show evidence of intensive mineralization.

Development has been almost entirely confined to one of the fissures of the North 70 degrees East system, with a dip of 30 degrees Northwest. Evidence of faulting in this fissure is encountered on the 445 foot incline level, where a thrust movement interrupted the ore body. The downward extension of the ore body will be found in the Northwest or hanging wall side of the vein. This displacement was undoubtedly caused by one of the fissures of the South 30 degree East system. There being a strong cross feature evidence at this point in the workings and it corresponds in position to what is known on the surface as the Black Bear vein. This displacement accounts for the fact that while No. 2 shaft was sunk on the supposed rake of the ore body, it failed to encounter the ore. On the 500 foot level of the No. 2 shaft, and about 100 feet from the shaft, there is encountered a condition of extreme crushing, accompanied by extensive mineralization of Marcasite.

This same condition with Marcasite exists in the foot-wall and adjacent to the ore body from the surface to the 445 foot level. The downward extension of the ore body at the 500 foot level will undoubtedly be picked up by driving a short cross-cut to the Northwest.

Paralleling this fissure on which the work has been done, and about 600 feet distant to the Southwest, is another fissure having the same dip 30 degrees N.W. There are three very strong out-crops or blow-outs on this fissure. The two extremes

being about 1000 feet distant from each other. All three are larger and show very much more extensive mineralization than the outcrop on the fissure in which the mining was done.

I was particularly impressed by the one furtherest to the South West, which is located on the Cable Claim, and is where the Red Wonder Vein or Fissure, the strongest fissure of the South 30 degree East system joins the S. 70 W system. I believe when this property is developed, it will be found that underor in connection with this outcrop, the largest and richest ore-bodies will exist. I cannot understand why this feature of the property has received so little attention in the past. The invitation is unmistakable.

ORIGIN OF ORES:-

That the ores have been deposited as sulphides, filling, pre-existing deep fissures in the granite and by hot ascending solutions is so evident in view of present knowledge that it requires little further argument. In as much as deep seat-ed ascending origin are always genetically associated with igneous rocks and this condition pre-eminately exists in the case under observation, there is every reason to expect permanency and continuation of the ore bodies to the depth.

From conditions I observe at the property I should expect stronger and ricker ore bodies to occur as greater depth is attained and be accompanied in the values by copper content. The copper will eventually form a considerable proportion of the values is sustained by its occurence in a drift on the 445 foot level, in the Bennett drift on the 475 foot level, at 610 feet in the No. 2 shaft and 165 feet from the No. 2 shaft on the 700 foot level. This copper occurs as carbonates and oxides and as assays gave copper 8.15%, Gold \$6.80.

ORE BODIES AND VALUES:-

The ore body developed consists of quartz intermixed with massive sulphides, carrying Gold and Silver values in the proportion of four ounces silver to one ounce gold.

From the surface to the 385 foot incline level, the ore is oxidized to a more or less extent, at the surface completely, then in diminishing proportion until at the 385 foot level the ores occur almost completely as original sulphides.

In only two places, the surface and on the 407 foot incline level has the ore been cross cut. In the former place for a width of 60 feet and in the latter place 45 feet. The distance between these two points being approximately 500 feet. The depth of the ore body on the dip of the vein has in no place been demonstrated. At the surface the ore in the bottom of the Glory hole is still "going" and is exposed at this point 40 feet in depth.

On the 407 feet incline level, the same depth has been exposed by stoping with ore still in the roof and floor.

Assuming, as one is justified, from reports of conditions as they existed in the stoped area that the same dimensions of width and depth hold for the distance of 560 feet or from that 445 foot incline level to the surface, and using twelve cubic feet for a ton of ore in place and deducting 20000 tons as mined, we have an available ore supply of 69600 tons, not to mention a large expectancy of probable ore.

Various results of values in this ore body are as follows:

Ten stamp mill, Results per ton.....	\$18.75
Large mill, " " "	13,75
Mill-run of 70.166 tons, taken without sorting across a 4' x 6' x 40' cross-cut on the 407 foot level- Copy of this report of this run attached as exhibit A	28.56
Average of 43 samples of the ore body taken in the winze area	12.80
Composite of 15 samples, taken at random by me as a check on above (See exhibit B)...	11.20

From the foregoing results a valuation of \$12.00 is conservative. On this basis the 69,600 tons represent a value of \$835200.00. This estimate takes no account of the low profitable grades of ore of which there is an abundance, nor the large expectance of probable ore.

In justice to the property, it should be noted that the conditions existing when the samples were taken, the mine having been under water for many years, with resulting muddy accretions on walls and roof, would tend to give lower results than would be attained in the extraction and milling of the ore. With modern mining and milling methods, this ore carrying \$12.00 in value per ton, should give a handsome profit.

EQUIPMENT:-

Excellent living quarters for both staff and a large crew are on the property.

No. 2 shaft is well constructed, a double compartment shaft, and is well equipped for hoisting. It has in connection compressor and pumping facilities.

No. 1 Shaft while not so well equipped or in as good a condition as No. 2, can with but little expense be made into a good workable shaft.

Mill buildings are well constructed, in good condition and with a little expense will lend itself to the installation of modern machinery. The advance of late years in ore reduction methods since the installation of this plant has rendered much of the machinery obsolete, still a very considerable portion can be utilized.

WATER:-

The mine as a present developed produces about 60 gallons of water per minute. This will undoubtedly be increased with further developement, This gives an assurance of sufficient water for all mill purposes.

POWER:-

A power line has been brought to the Monte Cristo Mine, one and one-half miles distant. The rate for power is two cents per KWH.

METALLURGY AND REDUCTION:

While decision as to reduction and condensation of the ore should be left for more detailed investigation than I was able to give it, the process that will undoubtedly be adopted will follow more or less on this line:

Crushing and sizing to a four mesh product, tabling same.

The reject from the tables going to a ball mill circuit to be finished by flotation cells. The product of tabling and flotation sent for reduction to a smelter.

Should tonnage of concentrates warrant, it might be well to investigate the feasibility of a Dwight-Lloyd cintering plant.

CONCLUSIONS:

In order to complete this report the following summary of conclusions may be briefly stated.

The large body of excellent grade of ore so far exposed warrants an extensive campaign of development. This should be done as follows:

- 1 - Sink No. 1 shaft 125 feet deeper and drive connections between the two shafts on the 500 foot level of the No. 2 shaft.
- 2 - At the 385 foot incline level of No. 1 shaft a working station should be made and so constructed as to easily handle large timbers and long lengths of pipe.

Twenty feet below this level a sub-level of short length should be run to act as a discharge for a reserve or pocket bin, extending from the station above. Such a bin is necessary to prevent delays. Drifts should be run on this level to delimit the ore body.

- 3- From the station at the 500 foot level of the No. 1 shaft drifts should be run to pick up and delimit the ore body on that horizon.
- 4- The cross cut on the 500 foot level and 100 feet from the No. 2 shaft should be driven ahead with every expectation of picking up the ore body within a short distance.
- 5- From this same station a drift should be run about S10 degrees W for six or seven hundred feet to prospect for the downward extension of the ore under the No. 3 blow-out.
- 6- This campaign of development should cost not to exceed \$300.00 and should be done before any decision is reached as to the character and size of the permanent reduction plant. It would be advisable to install a small pilot plant of about 25 ton capacity for reducing the ore extracted from the development campaign. This could be done at a reasonable cost as the machinery necessary is largely on the ground. What would have to be purchased could be done with the idea of its being a unit of the permanent plant. The profit from the pilot plant should largely pay for the development cost and being an excellent guide as to character of the permanent plant.

The property at present is not sufficiently developed for the extraction of large tonnage. The commodity in this instance being gold is not subject to market fluctuations. The cost of opening up and proving this exceptional ore showing will be nominal and the outcome will undoubtedly result in a large and successful mining venture.

(Signed) FOOTE AND COMPANY

Attest:

Signed by George P. Hyde
Mining Engineer and Geologist

(Signed) E. R. FOOTE
F.A.A., F.C.I., C.F.A.

Mr. Ward Twichell,
Constellation, Arizona.

Dear Sir :

I submit herewith the results of my investigation at the property formerly owned by the Gold Bar Mining Company, in the Black Rock Mining District, Yavapai County, Arizona.

Data furnished: (1) Mine maps and assay results from a formal report by W.R. Shanklin, 1927; (2) assay results and copy of a mill test run from a report by George P. Hyde, 1929; (3) assay results of the sampling by Smith & Holderness, 1930. No detailed records of previous operations are available, except the report of the milling test made by V.G. Hillis, in 1908

Scope of investigation: Except for a brief reconnaissance of an area approximately three thousand square feet, in the center of which the principal developed ground is situated, the investigation was confined to the 385, 445, 478 503 levels, entered through the No. 2 shaft. The surface investigations were carried out merely for the purpose of general information.

Geological Studies: except for a few hand specimens for general consideration no geological material was gathered. Questions affecting the genesis of the ores were not a part of the problem as submitted, neither were any special problems in structural geology.

Sampling: Sampling was limited to check samples below the 407 level, and were taken for the purpose of determining whether or not any part of this block might be estimated as ore in sight. The samples were assays at the Arizona Assay Office, in Phoenix, Arizona, and the original certificate is attached hereto.

FOR THE PURPOSE OF EVALUATING THE Property as a development project the agreement between the Shanklin general sampling and the Hyde check sampling is sufficiently close. In arriving at an average value of the block between the 385 and the 445 levels, as determined by the Smith and Holderness sampling, an average of a little more than 18.00 is obtainable in the one high-grade sample No. 6 is included. If this sample is not included the average is \$ 8,50. The average of the check samples taken by the writer from the block between the 407 and the 445 levels is \$ 8,88. Since previous sampling of the whole section, as well as the mill run, have indicated a higher value, the "sweetening" effect of an occasional higher value may be allowed for to the extent of assuming that in all probability the ore in the shoot explored so far will break to an average around eleven dollars per ton in gold alone

Ward Twichell
4/20/31 Page Two

ASSAY RESULTS		
Sample No. 1	0.04 oz gold	\$0.80
" " 2	.46 " "	9.20
" " 3	.72 " "	11.40
" " 4	.82 " "	16.40
" " 5	.30 " "	6.00
" " 6	.10 " "	2.00
" " 7	.66 " "	13.20

TONNAGE ESTIMATES: The nature of the development in the region and below the 385 level is such that it is impossible to say, in the strict sense of the term, that there is any ore blocked out. In the reports by Messers Shanklin and Hyde certain positive tonnages are mentioned. While the method of computing this tonnage is stated in general terms, the area is not so sub-divided that it is possible to compare the amounts estimated in either of these reports with that set out as being indicated ore in the present report. Furthermore, the workings below the 385 level were inaccessible at the time of the present investigation. Therefore, no opinion can be expressed by me as to the positive indicated ore above the 385 level.

From the data gathered during the time of investigation in which this report is based, and, after making the allowance for the dimensions as reported for the ore removed from the stoped out areas above the 385 level, now inaccessible, there is believed to be between the 385 level and a point just below the 445 level, a block approximately forty feet square in cross section by one hundred fourteen (114) feet long, secured on the longer axis of the winze; a volume of 182,400 cubic feet, or 15,200 gross tons. From this 25% might be deducted as representing ore removed from the winze and the other workings at these levels, leaving a net of 11,400 tons of indicated ore.

CONCLUSION: The present investigation indicate a minimum of 11,400 tons of ore of an average value of not less than \$8.88 per ton in gold, between the 385 and 445 levels. In view of the milling test record, which is a sample on a large scale, and after making allowance for higher averages obtained by closer sampling in the small sections, it is reasonable to assume that an average value of from \$11.00 to perhaps \$12.00 per ton will be realized as this area is mined out.

Respectfully submitted.

A.L. Flagg
Consulting Engineer

Phoenix, Arizona.
April 20th. 1931

65-
THE GOLD BAR DEVELOPMENT COMPANY CONSTELLATION ARIZONA.

REPORT OF PARTIAL EXAMINATION.

J.H. STEINMESCH CONSULTING MINING ENGINEER

ROLLA MISSOURI.

JULY 1934.

INDEX

Report of J. H. Steinmesch on The Gold Bar Development Company

SUMMARIZING LETTER	Page	1
Acknowledgements		2
Time		2
Scope of the Report		2
The Claims		2
HISTORY -- PRODUCTION.		3-5
TENTATIVE APPRAISAL OF THE PROJECT		6-9
SAMPLING		9-10
The Old Assay Record		11
Sample list and description		12-29
Copper Gold Ratios		29
Sampling by three engineers in the sulfide ore		30
Assay map		
GENERAL GEOLOGY -- MAP -- MODEL		31-32
The main Ore shoot		32-35
Blue Moon -- Sketch		36
Crown Drifts and Shaft -- Sketch		37
Black Bear Shaft and Tunnel No. 3		37
The Red Wonder -- Sketch		38
The White Blaze		38
The Cable	Sketch	..
OUTSIDE PROSPECTS SUMMARIZED.		39
Geology Hills Report		40-48
W. R. Shanklin		49-51
Geo. P. Hyde		52-55
A. L. Flagg Report		56-61
E. D. Wilson Ariz. Geol. Survey		62-63
E. N. Weber		64
ORE ESTIMATES		65
Water Supply		66
Equipment		66
Prospect		67
CONCLUSIONS		68
RECOMMENDATIONS		69-71
GENERAL SUMMARY		71
MAPS WITH NOTES	In Pocket	

Rolla, Missouri
Aug. 16, 1934.

Mr. S. R. Francis,
610 South Kenmore Avenue
Los Angeles, California

Dear Sir:

Herewith detailed report of my examination of The Gold Bar Claims, Constellation Ariz., during July 1934.

- The objects of this examination were
- (a) To check statements previously made regarding the value and profit possibilities of the property.
 - (b) To decide whether the possible profits were large enough, and probable enough to justify the capital required to bring the property to profitable production.

This mine was not unwatered, and while I was unable to complete my investigation, I gathered evidence enough to form the following opinions.

On the first point I find the property has a substantial record, and considerable developed ore of good grade, although short in some ways of previous estimates.

On the second point, I advise completion of the examination and the doing of development work underground to the amount of 8000.00.

If this work results favorably I would advise further steps along the line of detailed recommendations in the body of the report.

If this work makes realization of 89000 tons of .4 to .5 ounce ore seem impossible or improbable, a small non-mining organization should not attempt to operate the property unless other conditions have changed radically in the meantime.

I wish to thank you for the opportunity of doing this work and to express my regret at being unable to follow it thru to completion.

Yours very truly,

J. H. Steinmesch

ACKNOWLEDGMENTS.

Mr. Ward Twichell and Mr. Fred A. Mueller have been of great assistance in securing authentic information. Messrs. Morone E. Pratt, C. G. Pennell, Earl Stone, Howard Fields were also helpful. I wish especially to acknowledge the friendly cooperation of Mr. A. L. Flegg, the only previous examiner I met.

TIME.

I interviewed Mr. Sidney R. Francis and Mr. M. Conn Grable in St. Louis on this matter, June 26, 1934.

I arrived at Gold Bar Camp July 9 and left July 30, 1934. I was assisted by Mr. J. D. Martin, Jr.

I have spent about 10 days office work at Rolla and Mr. Martin about an equal time constructing a model of the workings on a scale of 25 ft. to the inch. Shanklin's 50' plan map was used in constructing the model.

At the mine I was assisted for two weeks by Mr. Hills Musick whose time I did not keep.

SCOPE OF THIS REPORT.

The mine was not unwatered during my stay and my examination was therefore confined to the surface workings and a study of previous work done on the property.

A number of the conclusions and recommendations are for this reason tentative, and subject to results of the underground examination.

Extracts from other reports are included for ready comparison but repetition of locations etc. is avoided.

CLAIMS.

Shanklin and Hyde list 16 claims in a body besides the Brunton mill site. The West End Claim listed by Hyde is not shown on the map. The 15 claims shown on the map give a good margin around the known discoveries; when a geologic map is made, options adjoining the Red Wonder, Robert and Bennet claims would be desirable if no case is required.

I did not check title as I was told this had been done and found O.K.

HISTORY.

I. The mine now called the "Gold Bar" discovered in 1888 by James Mahoney. F. X. O'Brien, an able mining man who had made money in Leadville, later became interested.

According to Conlee's report written in 1905, the first mill (10 stamp) had by that time treated 4000 tons of ore yielding \$10 (15 oz.) from the plates, and making a tailing of .132 oz. The mine there fore produced better than .6 oz. ore at this time.

Most of this ore came from the glory hole on the Homestake claim, but some ore was milled from the openings on the Black Bear wash, where 1200 ft. of shafts and drifts were driven. This work was abandoned in favor of the glory hole where several shafts and a long incline were driven.

II. The Interior Mining and Trust Company was formed and became active about 1906. No. 1 shaft was sunk, and the present 12 stamp mill with plates, tables, vanners, and cyanide was built.

This work probably cost \$150000. The wagon road is said to have cost \$40000, up to this time.

The mill ran from July 1907 to June 1908; about 11 months. 786 daily assays of mill heads average .4 oz. Check assays indicate the ore was a little better than these assays.

Production in this period was \$120000, or 6000 oz. mine development was active but expensively done. Adn incline 250 ft. long is said to have cost over \$60000. In and off this incline a body of excellent sulfide ore was partially proven. It contains high grade spots, and examiners have been very cautious in sampling this ore.

The mill stoppad in June 1908. Financial friction because of the panic of 1909 probably contributed to the decision. Some sampling was done between June and November 1908.

III.

The Gold Bar Mining Company was formed in 1915 and in 1916 No. 2 shaft was sunk 735 ft. probably with the expectation of cutting the extension of the main ore shoot. It is badly off the line. The 500 ft. level was connected to the bottom of the incline, some drifting was done on this and the 700 level, but no sampling was recorded or technical advice secured.

HISTORY (Continued)

The shaft is said to have cost \$80000; installation of the Luitweiler pump indicated operation was intended, but no commercial production was made at this time.

IV The mine was unwatered for examination by Shanklin in 1927, Hyde in 1929, Smith and Holderness and Flagg in 1931.

V. Some 5000.00 in gold was sold in 1933 and 1934 from high grading in the glory hole by Earl Stone and Harry Major.

VI. The present option was executed in the spring of 1934, by S. R. Francis, for the Gold Bar Development Co. It provides for the payment of \$300000 in 5 annual installments.

VII. Stripped of all imagination, Production in the period covered has been between 7000 and 8500 oz. of gold from something over 20000 tons of mill ore. (Other statements estimate 19000 oz.).

Value of metal sold at \$20 per oz. for gold was \$165000.

I estimate cost of equipment and development to date \$250000. Omitting No. 2 shaft, which was an unnecessary error, the property broke even.

At \$35 per oz. for gold, it should have made some money anyway. With improved technology it should do better today.

PREVIOUS REPORTS.

I. By Wann in 1900. No details available.

II. By Conlee in 1905. Extracts are attached. Says "200000 Tons of Ore".

III By Victor G. Hills in 1908. Hills' report without maps. Conclusions or recommendations is separately attached. I believe the copy is authentic. Miss Mary I. Hills, 2678 Hudson St., Denver, on Aug. 11, "regrets she cannot accede to the use of her father's property." I judge from this she has a complete copy. Hills was an able man and was on the mine when it was operating.

IV. W. R. Shanklin 1927. Mr. Shanklin assembled a set of maps, took 138 samples, and estimated 110000 tons of .5875 oz ore.

HISTORY. (Continued)

V. George P. Hyde 1929. Mr. Hyde made the examination for Foote and Company, Appraisers 136 Liberty St. New York, who addressed their report to Mr. Jas. A. Twichell, Wickenburg, Arizona. Hyde estimated 69000 tons of .6 oz. ore.

VI. In 1931 Cecil Smith and Ed Holderness, mining men of Arizona sampled the sulfide ores between the 385 and 445 levels for a group of Phoenix men, among whom were Howard Fields, Wayne Hefner, J. M. Alexander, and probably Benj. N. Webber, a geologist.

VII. A. L. Flagg, Phoenix, Arizona, sampled the sulfide ores as a check on the work of Smith and Holderness 1931; for the owners.

VIII. Morton E. Pratt, C. G. Fennell and the others have commented on various aspects of the property.

TENTATIVE APPRAISAL OF THE PROJECT. Based on treating
890000 tons of ore.

I. The project has been presented as one with enough proven ore to give and "Operating profit of 602593.00" In another place "Net Operating profit is given as 914,523.00"

There is no profit from such an enterprize until all bills are paid.

In this case the money advanced and the price of the property must be amortized on 89000 tons of ore - about four years' operation.

The object of this tentative appraisal is to clear the fog from large figures which could be misunderstood.

The figures used are illustrative; no large tonnage is yet proven.

This annalysis shows that the tentative profit after all bills are paid, would be 2000000.00 to 400000.00 from 89000 tons mined and milled in four years, if the operation was then closed down. See Sec. IV, line 11.

On additional tonnage, after the first 89000 tons, profits would be about doubled - See Sec IV, line 12.

II. GRADE OF THE ORE.

From Mill operation in 1907 and 1908, from the sampling in the sulfide ore between the 365 and 445 levels by Hills in 1908, Shanklin 1927, Hyde in 1929, Smith and Holde ness in 1931, Flagg in 1931, from my own and Shanklin's sampling in the Glory Hole, I conclude that with skillful mining and sorting, a grade of .5 oz. per ton should be delivered to the mill. Other assume .6 oz.

III. TONNAGE.

the tonnage will depend upon.

- (a) Cross section and continuity of the ore shoot from the 445 level back toward the surface.
- (b) Mining from foot of old stopes.
- (c) Extension of present shoot in depth.
- (d) Tonnage developed on outside prospects.

TONNAGE (Continued)

- (a) 11000 tons of sulfide from the 385 to 445 levels may be assumed as proven. I was unable to get underground, but believe substantial tonnage will be proven on the main chimney by drifting and raising.
- (b) From thorough examination of glory hole, I believe considerable fair grade sulfide ore will be found in the bottom of old stopes. Recovery cost, in the caved area may be high.
- (c) I think the ore will go deeper than so far found. From surface examination only, I conclude the main shoot has been faulted. The amount of displacement and difficulty of finding the extension I cannot estimate without further work above and below ground.
- (d) Values on the outside prospects may be important but they are very much more speculative. No tonnages or values can be given.

IV. COSTS.

Costs will depend on management. Assume 80 tons per day capacity.

Open stope mining should cost	per ton	\$2.00
Development		1.00
Prospecting		.50
Milling (including sorting)		2.00
Freight and Smelting (considerable free milling ore)		1.00
Miscellaneous	66	1.50
Total Operating cost per ton milled		<u>7.00</u>

No city office or absentee expense can be supported. Mr. Pennell estimates 8.50 per ton.

Mining, Milling and overhead on 16000 tons were \$5.00 in 1908, according to Mr. Fred Mueller, the book-keeper at that time. Development was not included.

V. Without having examined the underground I cannot estimate any tonnage. To illustrate the case, let us assume the average of Hyde's and Shanklin's estimates, 89000 tons, is verified by further work. It is also assumed that this 89000 tons is mined and milled in about four years.

TENTATIVE APPRAISAL OF THE PROJECT (Continued)

Costs will be higher to start, but should improve; the condition of the mine openings may be quite serious; development and prospecting should be strongly pushed.

The figures given are reasonable objectives. In the following tabulation please note that lines 6, 7, 8 are nonrecurrent charges, and that the net profit, line 11, is after return of original capital plus 6% int.

10,000 tons of ore in the ground will be necessary to supply 89,000 tons to the mill.

Illustrative Comparison of results on a per ton basis.
Gold \$35.00 per oz. From treatment of 89,000 tons of ore.

	Previous	J.H.S.
1. Grade of ore	\$20176	\$17.50
2. Loss in milling	2.08	2.62
3. Net sales value per ton milled	18.68	14.88
4. Mining, milling and mis. costs.	8.50	7.00
5. "Operating profit"	10.18	7.88
6. Money advanced \$100,000.00	1.123	1.123
7. Int. rest at 6% for four years	.28	.28
8. Cost of property \$300,000.00	3.37	3.37
9. Operating profit	5.41	3.11
10. Depreciation of plant, roads, etc.	.50	.50
11. Net profit on above basis per ton	4.91	2.61
(a) On first 89,000 tons	437,000.00	231,400.00

Lines 6, 7, 7, are non recurring charges

Additional ore of the same grade with the same costs should return,

12. Line 5 less line 10 per ton	9.68	7.38
13. On 22,000 tons per year line 11	\$108000.	\$52000
	per year	per year
14. " " " " " " " 12	\$19300	\$147000
	per year	per year

The same grade of ore formerly put in the mill .4 oz would pay out on 89,000 tons. Additional tonnage would be quite profitable. Raising the grade .1 oz. in either case would increase return \$3. per ton, and might cost, additionally, 30 cents per ton.

TENTATIVE APPRAISAL OF THE PROJECT (continued)

V. (a) less than 89,000 tons of .4 oz. ore would be unlikely to return a profit.

(b) If 50,000 tons can be promptly proven, on the main sheet, the outside prospects, plus the ore developed in mining should total an equal amount.

How much weight to give this will be apparent after the first stage of development work has been completed.

(c) I think there is a good chance of substantiating the rough estimates of Hyde and Shanklin. I recommend completion of the examination on this basis.

SAMPLING.

Where a large number of samples had previously been taken, I made a point to take fairly large samples at points where I thought there was a chance of getting a mine size opening.

My samples in the glory hole show a higher average than Shanklin's; .23 oz. vs. .12 oz.

It must be borne in mind that a number of my samples were taken to prove some workable ore, while Shanklin cut a sample every 10' regardless.

Samples S 19, S 20, S 23, S 24, S 27 were taken outside the recognized ore body. Some gold was found. If the property goes into operation, I think that careful mining, and sorting out of coarse waste, will permit working small stopes in this area just above the hanging wall.

The dump samples S29 and S30 A & B prove the dump to contain good mill ore, after .4 oz. had been taken out by selecting high grade and scraping rusty pockets.

D. Stone gave me the following which I partly checked. They broke 4500 tons in foot of Glory Hole.

They sold	Amalgam	3,000.00
" "	15 tons of tails from their little mill	
	@ 150.00 per ton	2,250.00

SAMPLING (Continued)

They broke 4500 tons in foot of Glory Hole		
They sold Amalgam		3,600.00
" " 15 tons of tails from their little mill		
@ 150.00 perton		2,350.00
They piled up 15 tons they estimated at 1.50 oz.		790.00
Had 500 tons of rejects (represented by 29 AxBx		
30 A x B @ .24 oz.		<u>4,080.00</u>
Total gold @ 20.00	500 oz.	10,120.00

He checked closely on the 500 tons of rejects and as he cut a good deal of rich sulfide, the grade as broken was very good.

I saw the certificate on the 15 tons but not on the amalgam.

This ore ran twice the grade necessary to pay, and was mined down the dip to the N. W., and just above the foot wall. Contained a good deal of sulfide.

In connection with these samples, note that an experienced high grader, did a very poor job of recognizing ore - See S 29.

S 30 tends to prove that picking coarse waste out of the oxide ores would be workable; might raise the grade from \$8 to \$10 per ton.

Description of samples is given in detail and relevant information is also added.

Samples on outside prospects were generally smaller and less surely representative. The Blue Moon, Crown Drifts, and the Red Wonder, were encouraging, the remainder negative.

Samples SI to S8 inclusive, were assayed by I. L. Wright, Silver City, New Mexico, and the remainder by The Arizona Assay Office, Phoenix. Total number 55.

Duplicate samples were boxed and placed in the office at the Gold Bar Camp.

A gasoline driven sample crusher was invaluable in reducing the large samples.

The ore is very spotty.

OLD ASSAY RECORD.

Thru Mr. Ward Twitchell, I secured the original assay record of The Interior Mining and Trust Company, which was in good order, and recorded all assays made at the Mine between July, 1907 and November, 1908.

Millheads for each of the three sections were assayed daily and 786 pages of these assays are summarized by months on the next page.

The Low day was September 9, 1907	.0967 oz.per ton
High " " August 16, 1908	1.486
The High month was August, 1907	.677
Low " " July, 1907	.2782
Average	.403

Check assays by Newman of the Portland Gold Mining Company, Cripple Creek, Colorado, indicate the ore ran 5% better than the mine assays.

Tailing assays are less complete but a recovery of 75% seems probable.

Mine assays were very numerous, a good many being specimens.

Twenty-five assays of "Blow Out" samples gave generally low values. They indicate these crops were not ignored by the old timers.

Daily Heads assays for 3 months are included to indicate fluctuations in the ore.

Hill's report contains a long list of samples.

Gold Bar Devv. Co. Sampling by J. H. Steinmesch July 1934

Values where stated are based on \$35.00 per oz. for gold.
Assayers can be identified as follows:

I.M.T. - Interior Mining & Trust Company
I.L.W. - Ira L. Wright
A.A.O. - Arizona Assay Office
New - Newman

<u>New N o.</u>	<u>Description</u>	<u>Date</u>	<u>Assayer</u>	<u>Oz. Au</u>	<u>Oz. Ag.</u>
S1	Shipment No. 1, I panned; pyrite & black sands; no fisible gold.	9/11/07	I.L.W. L.M.T.	2.40 2.18	3.92 3.90
S2	Mill heads 8/23/24 combined sections, 1, 2, & 3 no visible gold in panning.	8/24/07	I.M.T. I.L.W.	1.16 1.24	1.64
S3	Conc. 8/23/07-Red dish conc. high pyrite, no visible gold on panning.	8/24/07	I.L.W.	3.10	5.20
S4	Heads 8/24/07 Similar appearance	8/25/07	I.L.W. I.M.T.	.74 1.16	.98
S5	to S 2 Conc. 8/24/07 Similar appearance	8/25/07	I.L.W.	1.94	2.88
S5	to S3				
S6	Heads 9/2/07 Com- bined heads No. 1-2-3 -- similar in appearance to S4 & S2	9/3/07	I.M.T. I.L.W.	.45288 .34	.94
S7	Heads 9/2/07 No. 3 Sec. about same	9/8/07	I.M.T. I.L.W.	1.6 .18	
S8	Heads 9/11/07 Sec No. 1 -- about same as others	9/12/07	I.M.T. I.L.W.	.1 .16	.28
S9	Heads 9/7/07 Sec No. 2	9/19/07	I.L.W. I.M.T.	.44 .44	.38

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>Assayer</u>	<u>Oz. Au</u>	<u>Oz. Ag.</u>
?S10	Tails from Slime Tank No. 2 brighter red than head. Did not payn.	9/15/07	I.L.W.	.02	.18
S11	#16 sand tank No. 4 Panning gave samll amount of pyrite-say 1/4 or less than heads. The preceding are old pulps from the assay labrotary which were apparently as left in 1908.	9/14/07	I. L. W.	.04	.34
S12	Moil sample 4' ling in roof of glory hole. Horizontal. about 4' south of Shanklin's #21. Value at \$35 per oz. 5.95 per t.	7/20/34		ft. ozs .68	.17
S13	Moil sample 7' long on upper part of pillar about 9' long horizontally across pillar and about 6' west of Shanklin's #22. Earl Stone seemed to think the above ground representative of the Glory Hole. There was someclear quartz but a good deal of decomposed granite, and some whitish rock carrying pale pyrite also some packet material that might run very good .	7/20/34		ft. ozs. 1.89	.21
S14	Fines fromrejects from high grade work of E. Srone - H.Major. North side of Glory Hole opposite pillar and just east of small drift. This panned rather more free gold than any other sample so far.			.47	----

-14-

<u>NEW NO.</u>	<u>Description</u>	<u>Date</u>	<u>Assayer</u>	<u>Oz. Au.</u>	<u>Oz.</u>
S15	About 20' north of Shanklin's No. 10 and 6 ft. back of face of drift. Sample cut ft. oz. .04 a series of brown streaks 2' wide which cross drift at right angles. 9 channels 2' long were cut per sketch, making about 80 lbs.	7/15/34	.02		

Front elevation.

Side elevation

S16	White Pyrite, sericitic rock from No. 2 shaft dump. 12 pits 15# each cut to about 40# after breaking lumps to 1-3/4" by taking alternate scoops. Rejects after going thru small cursher were concentrated by panning by H. Musick. 2# 1 oz. (33 oz.) gave .75 oz. of Pyrite concentrate about 2/3 FeS2 indicating 11% pyrite in rock. This concentrate is sample #17. *It showed no free gold.	7/20/34	A.A.O.	.08 oz.	
-----	--	---------	--------	---------	--

717

7/-34*

.18 oz.

S18 Old sample No. 123
about 1908 from

.94

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>Assayer</u>	<u>Oz. Au</u>	<u>Oz. Ag</u>
S18	(cont'd.) laboratory --- "Average sample in the winze from 41 to 110". Winz sample 407 to 445' Levels compare with Flaggs Sketch Was reddish dust like mill feed-- .94 oz.-- \$32.70 Interior Mining I Trust Sample				
S19	Chip sample across vertical seams in raise at end of x cut in run around drift; where E. Stone reported getting high grade. Horizontal sample, 30" long; included several seams which Musick thought would surely be good. 25# taken to crusher.	7/-/34 ft. ozs. .2		.08	
S20	Lump of Mica Schist from corner of above drift and x cut came from horizontal seam 7" thick almost black and may have contain- ed Manganese. Musick panned this lump after crushing and got one piece 1/16 in. diam. & 1/4" long, which he estimated at 20dts. There was considerable other smaller gold; not assayed -- see S23	7/-/34			
S21	Millheads Section No. 1	9/9/07	I.M.T.	.08	
S22	Composite Mill heads, Sec. 1-2-3 for 8/25/ & 8/26/07		I.M.T.	.89	

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>Assayer</u>	<u>Oz. Au</u>	<u>Oz. Ag</u>
S23	350# sample with 7/-34 Pick and Moil starting at S20 and including half of roof and all of north wall for 10 ft. east of S20; channels were cut about every foot. Panned fair concentrate and some free gold. The other side of the drift may be better			.1 oz.	ft. oz. 3.00
S24	10' north of Shanklin's No. 9; 5 channels each 3' long in roof and brow of drift where the roof drops down. 80# sample.	8/-34		.1 oz.	ft. oz. .3
S25	3 vertical channels 10' long moiled from hard rock. Bottom of small drift between Shanklin's 12x13 to the rock pile below about 120#	7/-/34		.27 oz.	ft. oz. 8.1
S 26	2 vertical channels roof to floor about 1' apart and half way between Shanklin's 16x17. This is geologically above the apparent hanging wall. Panned some free gold -- and good concentrate.	7/-/34		.32 oz.	
S 27	15# pick sample from lower 1' of breast small drift nearly chocked with rock. North side of Glory Hole -- opposite pillar; This would seem to be	7/-/34		.21	ft. oz. 1.26

New No. Description Date Assayer Oz. Au Oz. Ag

S27 (Cont'd)

in the orebody.
Red Stone says the
best part of this,
was near the top which
I did not include.

S28 Grab sample 25# 7/-/34 .39
 from higher grade
 rejects from Stone
 & Majors work.
 Stone estimated
 this pile at 15
 tons. 1.5 oz. Au.

S29 Ax B Lower dump in 7/-/34
 Glory Hole which
 Stone estimated at
 .24 oz. 10,000#
 was shoveled -- 29A .3
 the 10th shovel
 thrown on the sheet 29B .25
 for sample making
 about 900 lbs. of
 sample -- no piece
 larger than shovel-
 size. This pile was
 then sorted into:

Waste; 29A -- 5 cans (75 lb. each) all 3" or larger.
Ore: 29B -- 6 cans " "
Object to test sorting of oxidized ore.
E. Stone and H. Musick used their own judgment.
At close they said:

S29 A would not exceed a dollar or two (.1 oz.)
29 A -- .3 oz. -- \$10.50
29 B -- .25 oz. - 8.75
Weighted Average 29 -- .2727 oz. or \$9.55

S30 About 12' SW of S29 and 30A .10
 taken in same manner except 30B .36
 sorting was done by Martin
 and Musick who selected
 "white rock" as waste and
 left the other as ore. There
 was more fine dirt in this
 part of the pile.

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>Assayer</u>	<u>Oz. Au</u>	<u>Oz Ag</u>
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S30 (Cont'd)

Sc0A -- 5 cans waste (75 lb. each)

S30B -- 7/ 1/3 cas ore (75 lb. each)

30A --.1 oz. -- \$3.50

30B --.36 " -- 12.60

S30 weighted average --- .2546 -- \$8.91
Stone expected S30 to be better than
S29. Average of lower 200 tons in pile
will be about \$9.00 at \$35.00 gold, the
other 200-300 should be as good -- in
the actual clean up fines from the bottom
should be fair grade.

E Stone's estimate of .24 oz. for the
pile is confirmed.

S31	#100 grab sample of rejects pile on Blue Moon; included much fines from wash and road way, which probably re- duced its value. The values apparently go with Copper	%Cu. .7	.18 au
-----	--	---------	--------

Stone shipped 2.9 tons		
Gold Ran 18.00 per cent		
Copper	2%	1.13

Rejects - 15 tons	.7%	.18
-------------------	-----	-----

Weighted average for the
Blue Moon ore should be
about .3 oz. Au, 1% Cu.
Stone was chiefly guided
in his sorting by the
Copper Stain.

S32	Foot wall sample -- 7/-/34 south side of Glory Hole.	ft. oz..12	.04	Value 1.40
	16' W of Compass Station. No. 3-- Not the white rock but a rusty seamed granite 50# wt.			

-19-

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>%Cu</u>	<u>Oz. Au</u>	<u>Value</u>
S33	Foot wall sample in iron stained granite about 21 ft. E of 832 which it resembled. 65# wt. seven ft. long,	7/-/34	1.68	.24 at	\$8.40
S34	Sample from roof also on S. side of Glory Hole -- 10' SE of Shanklin's 23 (wt. 100#) six foot channel.	7/-/34	.24	.04 at	1.90
S35	Large sample from 3 trenches in dirt in bottom of drift at Shanklin's No. 9 Took 1 shovel, re- jected 1 shovel about 35# taken. See sketch on S15	7/-/34	.3	.03 at.	1.05
S36	300# blasted from White foot wall with pale pyrite like S 16	7/-/34	.16	.02 at	.70
S37	Sample from solid about middle of Red Wonder cut. This hump shows consider- able copper stain and is 5 ft. wide. rock is more or less modified granite. 3.00\$ per % cu.	7/-/34	2.61% 1.32	.22 at	7.70
S38	Composite of middle dump at Red Wonder cut. Taking every 3rd. shovel from 5 cuts breaking to 1 3/4" carrying 35# to crusher. Say 200 tons in this dump.	7/-/34		.13	4.55
S39	Selected high copper rock from above dump. \$1.30 % of Cu.	7/-/34	19.07%	.72	25.20

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>%Cu</u>	<u>Oz. Au</u>	<u>Value</u>
S40	Black Bear Wash Crown claim. Pick- ed small sample 10# from roof of No. 1 BB. Tunnel 15" from Portal. In quartz vein on which old shaft was sunk.	7/-/34		.2	\$ 7.00
S41	Same location sample from vein above portal of short No. 2 BB Tunnel. 15" S of N o. S40 about 2 1/2 ft. long.	7/-/34		.52	18.20
S42	Similar sample from unmined quartz be- tween No. 1 and No. 2 tunnels. 2 ft. channel. S40-41-42 were small samples and results should be checked as noted elsewhere.	7/-/34		.12	4.20
S43	Blue Moon crop. 100# taken every 3 Shovel from 7 pot holes in talus pile from Blue Moon just above road. Would be very low in copper.	7/-34/		.02	.70
S44	High copper grab sample from White Blaz-dump. Fairly high quartz. This checks other reports that there is no gold here.	7/-/34	7.33	trace	
S45	South side of Cable outcrop in road cut mostly decomposed granite with brown spots. In- cludes vert. cut thru 6" red seam which runs horizontally.	7/-/34		.02	0.70

-21-

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>%Cu</u>	<u>Oz Au</u>	<u>Value</u>
S\$46	Copper stained quartz and granite from E end of Cable outcrop. Selected for high copper. At small cut.-- 4 ft. 50cts. AU per per cent Cu.	7/-/34	10.84%	.16	\$ 5.60
S47	100# from left side of above cut 3' width of reddish rock. Cable	7/-/34	ft. ozs. .03	.01	0.35
S48	Grab sample of high quartz with many vugs. Should be similar to S49. Cable.	7/-/34		.06	2.10
S49	Vertical chipped sample 4' long from large quartz. Boul-ft. ozs. der North of cut. (E end of Cable crop)	7/-/34	.04	.01	0.35
S50	No. 3 Black Bear Tunnel. Pick sample from white quartz vein in roof of tunnel about 45' from face. Highly fractured; no iron, either sulfide or oxide.	7/-/34		.1	3.50
S51	Sample similar to S50 from fault in roof of same tunnel about 100' in from portal. More black fines in this than in S50	7/-/34	ft. ozs. .02	.01	0.35
S52	No. 4 "Old OBrien Tunnel. 25# selected sample from copper stained soft granite with all pyrite at face of tunnel 1' above floor; horizontal cut. Material resembles foot wall of Glory Hole.	7/-/34	.37%	.03	1.05

<u>New No.</u>	<u>Description</u>	<u>Date</u>	<u>%Cu</u>	<u>Oz. Au.</u>	<u>Value</u>
S53	Pyrite in large crystals with quartz. 5' above and 5' east of S52. Sample rich in pyrite.	7/-/34		.01	\$0.35
S54	Red dirt from cross-cut at end of above tunnel 20' E of S52. Red seam is perpendicular to x cut and was considered as a possible connection to the main chimney if it were near. Only the soft oxidized fines were taken.	7/-/34			
S55	Shaft on Crown Claim. Every 10th shovel from old dump from 10 pits taken by H. Musick alone. 200# cut to 50# at 1-3/4" and thence to crusher. Mainly quartz. Samples by C. G. Fennell. 7/29/34			.03	1.05
C100	F--Black Bear character sample. Dark streaks in mineralized rock taken in 200' tunnel. (No. 3) course N 43W (true north) Should be same as S50 & S51			.03	1.05
E101	F.X. Cable Outcrop. Fines from breast of floor of open cut on NW side. 25' below apex.			tracg	

-23-

<u>New No.</u>	<u>Date</u>	<u>%Cu</u>	<u>Oz. Au.</u>	<u>Value</u>
S102	F.C. Selected Mineralized streaks in breast and sides of high open cut exposed along side road. This cut about 20' below apex. Similar to S 45.		.03	\$ 1.05
S103	F. F. No. 2 shaft dump Selected Pyrite probably last taken from mine from east slope of main dump. (Should and does check S16).		.08	2.80

Summary of Mill Assays

	No. Assays	Heads Au -- Ag	No. Assays	Concentrate Au-----Ag	
1907					
July	23	.27827	3	1.75	7.01
August	56	.6770	8	2.705	3.87
September	66	.2847	4	1.85	
October	68	.3965	2	2.0	
November	69	.3379		2.2	
December	62	.2655			
1908					
January	89	.4744	4	2.8	
February	65	.4016	1	1.29	
March	78	.4722			
April	93	.3867			
May	87	.3051			
June	30	.5573		2.96	

786 assays -- numerical average is .403 oz. per ton.

If the above mill ran 80 t. day and there are 3 assays per day operated there would be 262 days at 80 ton per day equals 20,960 tons.

Gross per ton ---\$8.00
Gross content -- \$167,680.00
at 75% recovered= 125,760

I think 120,000 is about right. In the 2 years the U.S.G.S. gives the district credit for 123,000.00 the greater part produced by Interior Mining & Trust Company.

The actual tonnage treated in this mill was between 16,000 to 20,000 tons.

Exce rpts from Original Assay Book

Interion Mining and Trust Company, Constellation, Arizona.

1st Assay 7/21/07

Last Assay 11/7/08

Date	Section	Heads		Conc.	
		Au.	Ag.	Au.	Ag.
7/21/07	2	.28		1.34	6.7
	3	.28			
22	1	.28			
	2	.18			
	3	.56			
23	2	.30			
	3	.26			
24	1	.42		2.0	7.1
	2	1.16			
	3	.22			
	1	.18			
	2	.18			
	3	.16			
25	1	.24			
	2	.20			
26	1	.24		1.92	6.6
	3	.24			
28	1	.64			
	3	.32			
29	2	.26			
	3	.34			
30	2	.20			
	3	.26			
8/1/07	1	.24			
	2	.38			
	3	.46			
8/7	1	.26			
	2	.34			
	3	.64			
8/10	1	.24		1.40	5.3
	2	.28			
	3	.56			
8/11	1	.32		1.74	4.1
	2	.40			
8/12	1	.54			
	2	.44			
	3	.42			
8/15	1	.50		3.34	4.3
	2	.74			
	3	.66			

1st Assay 7/21/07

Last Assay 11/7/08

Date	Section	Heads		Conc.	
		Au.	Ag.	Au.	Ag.
8/16/07	1	.88		3.7	3.8
	2	2.60			
	3	.98			
8/17	1	.98		4.20	3.1
	2	1.47			
	3	1.28			
8/18	1	1.10			
	2	.84			
	3	1.18			
8/19	1	.80			
	2	.72			
	3	.52			
8/20	1	1.04			
	2	.62			
	3	.64			
8/21		.38			
		.34			
		.66			
8/22	1	1.04			
	2	.40			
	3	.58			
8/23	1	1.37			
	2	.56			
	3	1.56			
8/26	1	.57		2.80	4.09
	2	.90			
	3	.64			
8/25 & 26	1	1.02			
	2	.54			
	3	.95			
8/27	1	.46			
	2	.42			
	3	.35			
8/29	1	.30			
	2	.29			
	3	.47			
8/30	1	.38			
	2	.56			
	3	.32			
Average for Month		.677			
9/2	1	.34		2.27	2.24
	2	.44			
	3	.59			

1st Assay 7/21/07

Last Assay 11/7/08

Date	Section	Heads		Conc.	
		Au.	Ag.	Au.	Ag.
9/3	1	.46		1.70	2.7
	2	.40			
	3	.73			
9/4	1	.32		1.56	3.2
	2	.37			
	3	.58			
9/6	1	.27		2.44	1.0
	2	.22			
	3	.20			
9/7	1	.17		1.32	1.8
	2	.21			
	3	.16			
9/9	1	.11		0.72	0.9
	2	.13			
	3	.05			
9/10		.11		0.76	0.8
		.13			
		.26			
9/11		.10			
		.12			
		.17			

Shipment of Concentrate

	Au 2.18	Ag 3.9	S102	16.3	Fe 49.9	S14.2
9/13				.18	1.52	1.4
				.10		
				.15		
9/14				.05		
				.16		
				.16		
9/15				.14		
				.13		
				.15		
9/18				.20		
				.48		
				.69		
9/19				.30		
				.52		
				.26		
9/20				.40	2.0	2.4
				.28		
				.20		
9/21				.40		
				.21		
				.12		

-27-

1st Assay 7/21/07

Last Assay 11/7/08

Date	Section	Heads		Conc.	
		Au.	Ag.	Au.	Ag.
9/22	1	.70		1.92	2.9
	2	.26			
	3	.44			
9/23	1	.36			
	2	.16			
	3	.29			
9/24	1	.33			
	2	.14			
	3	.16			
9/25	1	.32			
	2	.44			
	3	.24			
9/26	1	.21			
	2	.20			
	3	.24			
9/29	1	.21			
	2	.27			
	3	.43			
9/30	1	.38			
	2	.84			
	3	.44			
Average for Month		.2847			
10/1	1	.40		2.32	
	2	.90			
	3	.58			
10/2	1	.36			
	2	.20			
	3	.39			
10/3	1	.266			
	2	.226			
	3	.32			
10/4	1	.346		2.15	
	2	.50			
	3	.533			
10/11	1	.27			
	2	.36			
	3,	.80			
	1	.36			
	2	.36			
	3	.34			
	1	.41			
	2	.52			
	3	.62		9.058	
?	?	.173			
		.32		1.81	

1st Assay 7/21/07		Last Assay 11/7/08			
		Heads		Conc.	
Date	Section	Au.	Ag.	Au.	Ag.
10/13	1		.266		
	2		.24		
	3		.693		
	1		.56		
	2		.493		
10/15	3		.40		
	1		.293		
	2		.853		
	3		.349		
	1		.32		
10/17	2		.36		

FROM ORIGINAL ASSAY RECORD: "BLOWOUT" SAMPLES

May 24, 1908

Oz. Au per ton

Holmes	#1	White Blowout Sample		.09
"	#2	Lower Side "	"	.07
"	#1	Black "	"	.06
Baldwins	Big	Sample	"	.08
"	#1		"	.05
Bennett	#1		"	.37
"	#2		"	.07
Sample	#3		"	.06

May 25, 1908

Bennetts	#1	Blowout Sample		.15
"	#2	"	"	.03
"	#3	"	"	.10
"	#4	"	"	.02
"	#5	"	"	.09
Baldwin	White	"	"	.02
"	Light Red	"	"	.01

FROM ORIGINAL ASSAY RECORD "BLOWOUT" SAMPLES

May 25, 1908

Oz. Au per ton

Baldwin Black	Blowout Sample	.12
" Lennys	" "	.03

May 27, 1908

Breast 110 ft.	Winze Oxidized	12.81
Bennett's #1	Blowout Samples	.37
" #2	" "	.07
" #3	" "	.01
" #4	" "	.02
" #5	" "	.01

May 28, 1908

Bennett's #1	Blowout Samples	Tr
" #2	" "	.21
" #3	" "	.63

COPPER GOLD RATIOS

Location and description of sample	Oz. Au	% Cu	\$ Au at 35 - oz.	\$ Au Per % Cu
Blue Moon Shipment 12/21/33	1.13	2.32	39.55	17.04
Blue Moon Rejects S31	.18	.7	6.30	9.00
Red Wonder S37 off solid	.22	2.61	7.70	2.95
Red Wonder S39 Selected for high Cu	.72	19.07	25.20	.132
Red Wonder Dump Sample S38	.13		4.55	
Cable S46 Selcted for high Cu	.16	10.89	5.60	.51
Old O'Brien Tunnel No. 4 S52 pale pyrite like in footwall	.03	.37	1.05	.28
Shanklin #3 on 445 level	.32	2.33	11.20	4.80
" 66 on 445 level	2.65	1.36	92.75	68.00
" 4/23/27 Hand Sample	5.00	.50	175.00	350.00
" 4/19/27 " "	2.72	.15	95.20	634.00
White Blaze S44	.00	7.33		-----

The above indicates that on the Blue Moon and Red Wonder copper stain would be a guide in sorting; would probably be used in connection with the relative amount of rusty material in pockets.

Where the copper content is extremely low it would be no help. The White Blaze had previously been reported to carry no gold.

COMPARISON OF SAMPLING IN SULFIDE OREBODY BY THREE ENGINEERS

SAMPLES ON THE SAME HORIZONTAL LINE ARE QUITE CLOSE TOGETHER

	Shanklin	Smith-Hold	A. L. Flagg	Average
S. Number	.65	.16	1	
Assay	.14	.32	.04	.16
Oz. per ton				
S. Number	.66	17	2	
Assay	1.30	.30	.46	.666
S. Number	.67	--	3	
Assay	.24		.72	.48
S. Number	.69	18	4	
Assay	.23	.24	.82	.43
S. Number	1.02	----	5	
Assay	.26		.30	.28
S. Number	.70	19	6	
Assay	.67	.41	.10	.393
Average	.476	.37	.442	

Hills sampling 1908 of winze on both sides at 5 ft. intervals has 14 samples 1st. fifteen feet averaged on 7 samples---.53 oz. per ton. From 20 to 35 feet averaged on 7 samples.----.23 oz. per ton. Total average for 35 ft. of winze from 385 level down would be 1.38 oz. worth \$48.00 per ton--\$35.00 o. gold. Hills shows special pyrite samples in to 13.5 oz. per ton. Flagg throws out the Smith Holderness Sample No. 6 which ran 12.4 oz. but says the ore thus showing 8.00 should mine to 11.00 due to these rich spots.

Hills makes this note--

Sample 9362 (mostly pyrite) 13.52 oz. Au; was taken between 9341 (.18 oz.) and 9343 (.03)

This shows the very spotty character of the ore.

GENERAL GEOLOGY.

Extracts from other examiners are appended.

Little actual work has been done and no geologic map of the claims has been made. All opinions including my own are likely to be upset when a real study has been completed.

The topographic map of the Congress Quadrangle made in 1901 is on too large a scale to work from satisfactorily. I have advised that the geology of the claims be mapped as part of the second stage of development.

If options on adjoining claims can be had without down payments, and it is at reasonable prices, I advise doing this before the map is commenced. The company probably has ample area but the map may show a strong trend in the ore which has not so far been recognized. It might be desirable to prospect a claim and the owner be too excited to deal with. Option should give one year free and provide for a year extension at nominal cost if desired.

The claims generally are in the Bradshaw Granite. The main shoot is a mineralized fracture zone in granite. It strikes S 55 W.

The crown tunnels are in heavy quartz striking S 55-60 E. A strong fissure in the wash 350 ft. East of No. 2 Shaft has about the same strike. I think it marks a fault. It is in line with the drifts on the Crown claim.

The diorite dike in the Black Bear wash strikes S 55 - 60 W. It is faulted just west of No. 3 Drift (East of Old O'Brien Tunnel No. 4)

If the outcrops on the Black Bear and Cabel were ever parallel to the main ore shoot and this dike, they are badly out of line now.

Using the diorite dike as a marker I would say that a substantial displacement had taken place about as shown on the map.

This faulting if verified by further work would displace the main shoot on the 445 level.

No. 4 Tunnel and the workings of the Inclines shaft are in the same sort of material that came from No. 2 shaft at the 500 level. It may indicate a large fault zone mineralized with pyrite carrying low values in gold. This pale pyrite is secondary.

I did not see any of the high-grade pyrite from the 445 level but Flagg examined it and said he was no evidence of enrichment. If he is right this grade of ore should continue in depth. If not the shoot might become very lean.

Diorite is usually a late intrusion; the Crown quartz was probably later; if it came with the fault, the main shoot is probably displaced by not killed. I think this is the case.

On the other hand, intersection of the fault with the main ore shoot on the 445 level may result in a much larger orebody than found elsewhere. There should at least be some drag ore in the direction of throw.

This is all very speculative; the details should be worked out by a good geologist who can keep his feet on the ground.

THE MAIN ORE SHOOT.

The stope resembles a chimney. The orebody had been so defined.

The chimneys or pipes are much scarcer than veins, shear zones or other more or less tabular orebodies.

The faces indicated by the arrow on the snapshot, are slickensided, as are many others more or less parallel. Opposite and the parallel to the above is a well defined footwall of white sericitic granite. In the Glory Hole it appears to be a real footwall. I understand that the same well marked foot was found underground.

If the ore body is a pipe its diameter has been found to be a little over 40 ft. and its length 700.

If even slightly tabular, its volume would be greatly increased. The net cross-section will probably enlarge and decrease.

Footwall.

In the Glory Hole the footwall dips 40 to 50 degrees. It is an altered rock and carries the pale pyrite with low gold which is noted by Shanklin and others.

Stone and Major in their high grading mined high grade pyrite right off the footwall. It is a clear cut contact.

Stone was optimistic about this high grade pyrite 10 ft. in thickness continuing down the dip to the footwall.

The shaft and drifts under the Glory Hole were choked and the bottom covered by a thick dump so that I could not sample to test extension of the ore down the dip. The drift on the north side of the Glory Hole is well above the footwall.

The footwall dips N 30 W about 45 degrees.

The orebody dips S 55 W about 30 degrees using the big stope as an indicator.

Shanklin's samples 27-28, Fennell's 3103 and Steinmesch S16, S36 are of this same sort of rock.

S52-S53-S54 are from similar material in the No. 4 Tunnel.

S17 indicates that this private might be concentrated to a grade of .33 oz. or better.

The tonnage of this material is very large and might some time become of value.

Hanging Wall.

Samples S15- .02 oz., S24 - .1 oz., S35- .03 oz., are from layers above the hanging wall and indicate low gold values. Shanklin's 9b-.04 oz. is a check.

Samples S25, S26, and Shanklin's 12, 13, 14, are in the north side wall and below the layers classed as hanging wall slips. These samples confirm the theory that ore should be found in some quantity down the dip.

Stone and Major's high grading on the outside is shown in the snapshot. This work is above the hanging wall slips down in the other phot. They mined good ore where Shanklin's samples 1 to 5 showed little value.

S13, S12, and S34 were at the roof of the orebody but between hanging and footwall slips; they show low grade ore where Shanklin showed only traces.

Twenty-one of Shanklin's samples in the Glory Hole and above the footwall average .12 oz. In the same general area Steinmesch took five samples averaging .236 oz.

These samples indicate that considerable low grade ore should be minable from the Glory Hole on the north sidewall but below the hanging wall slips.

MAIN ORE SHOOT
Hanging Wall (Cont'd)

Some of this would be mined in small stopes.

Similar extensions should be expected occasionally under ground.

The hanging wall is less clearly defined than the footwall; the rock above these slips looks about the same as material in the stope.

If the Blue Moon and the quartz outcrop west of it parallel the main shoot they would overlie the hanging wall slips previously mentioned.

Conclusions:

In prospecting, the hanging wall should carry values more often than the footwall.

From reports of those who examined the 445 and 478 levels and from material on the dump + think well of Hyde's advice to swing right on the 478, and on the 500 level Cross cut.

The following assays from the old record, probably Mill's sampling, should be located in the drifts if possible; the notes may be understood better after drifts are cleaned out.

On 445 level. (old 110')	
" Drift south on Copper 110' level"	.52 oz.
From same drift	1.47 oz.
 " From drift on copper of 110' level	
6/5/08 average"	1.64 oz.

"Breast going east from right side of winze 110 level 12 ft. from plug at corner". 3.55 (not certain whether this is ounces or dollars.)

On 478 level (old 180)
"7/18/08 Copper from 180 C.C. west 9.55 (probably dollars.) "Sample 112 Breast of Bennet drift 180 level 10 ft. from 3d plug 1.44." (not certain if this is dollars or ounces).

MAIN ORE SHOOT
Hanging Wall (Cont'd)

The winze.

From 385 to 407	Left side	2.50 oz.
" " "	Right side	1.5 "
" 10/26/08 From 407 to 445 average sample		.9 "

Drifts advised are marked on the map. On the 385 level good sulfide ore is said to have been cut in the bottom and covered up. This old story may refer to the old drift where Shanklin's sample 114 is located, but I believe not. If the old gauge can be located Drift #100 could be started on that point. Otherwise locate the drift about 30' north east of the ore chute. If good ore is cut, follow it up and incline with No. 10 near the footwall.

If the caved crosscut on 385 level can be cleaned and the ore is found, follow it up the shoot parallel to the footwall.

On the 200' level the examiner will have to use his judgment.

On 407 level drill several long holes in roof and floor at point indicated.

On the 445 level. Drift No. 103 should be given a short distance on Shanklin's No. 86 Sample following the strike of that ore and the face and roof may show.

At Shanklin's No. 1 sample drift several long holes in roof and floor, saving duffings at 1 foot intervals.

On 478 level. Sample and cut 102. Raise at or near point indicated on map.

505 level. Drive 50' or more of No. 105 drift.

If Drift No. 103 shows strength for 50 ft. start drift at X on 105 level to intersect the ore at this level.

Contract the drifts; give bonus for speed; in ore sample by the tenth shovel method. Make openings as small as can be worked.

OUTSIDE PROSPECTS:

L. The Blue Moon.

Sketch and photos are attached. On either side of the marked fissure, copper is found from bottom to top.

The boulder on the sketch was partly worked up and selected ore shipped by Stone and Major in 1934 as per note on sketch.

Sand from the wash came in rapidly and their rejects represented by sample S31 contained a large portion of this barren material.

Sample from just above the road level S43 contained an even larger amount of this material.

The prospect of getting some .4 o. ore from open work is good.

Procedure is advised as per notes on the sketch.

This crop is specially favored for early development because,

1. It promises ore within easy reach of mill.
2. It is conveniently located.
3. It is close to the best ore so far found on the claims.
4. Development of this crop may well throw light on the underground ore.

It seems likely that the Blue Moon, the pegmatite outcrop to the west and the Glory Hole outcrop, are the surface expression of mineralized shoots on a single large fracture zone. They are about in line with the main body.

From east to west are found: copper, coarse quartz, and ore (Glory Hole).

On the Cable, copper is on the East, a great deal of coarse quartz follows, but so far the overlying ore shoot has not been discovered on the west end. The quartz on the Cable was better mineralized than that on the so-called pegmatite crop, but these and also the coarse quartz on the Black Bear are very similar.

5. The contact between the Blue Moon crop and the pegmatite should be investigated.
6. Development should follow ore not only on a dip parallel to the main shoot, but if possible N.W. down the dip of any healthy fractures.

OUTSIDE PROSPECTS:

II. Crown Claim. Incline shaft.

A dump sample, every tenth shovel from ten small pits was cut to 40 lbs. at 1-3/4" by H. Musick, then reduced in sample crusher. It showed .03 oz. gold.

The dump is mainly quartz like that in the side of the hill.

Do not recommend the shaft for development until drifts #1 and #2 have been thoroughly tested.

The shaft is on the wet side of a diorite dike and would be possible location for water supply pump.

Shaft is 100 ft. deep, and is said to have sent some ore to the mill; my inference would be that values did not increase with depth.

No. 1 and No. 2 Drifts.

A sketch shows the location of three samples S40, S41, S42, averaging over .3 oz. Samples S50 and S51 in the No. 3 Tunnel are on the same veins, but beyond the diorite dike which may cut off the mineral. The above samples were small and should be checked by taking samples in the drifts at 5 ft. intervals. No. 3 Tunnel should be so checked to the dike.

If through sampling showed additional ore, drifting somewhat as per sketch should be done, to actually block out some positive ore.

The rock from this work should be separated into first and second class ore and waste.

This selection is emphasized because of the difficulty would have of transportation, on mill ore, and because rather low grade ore may in a few years become very desirable.

The quartz is wide, goes a long way up the hill and would make tonnage very rapidly. The ore is free milling and could be efficiently treated at low cost.

Not unpromising.

Black Bear Claim Tunnel No. 4 and Old Incline Shaft.

The dumps from these openings are similar to the dump at No. 2 shaft, and to the footwall in the Glory Hole. Rock is well mineralized with the pale pyrite, but Samples S52, and S52, S54, seemed lower grade than similar pyrite at No. 2 Shaft.

OUTSIDE PROSPECTS:
(Cont'd)

The theory that the face of the drift must be near the pipe (if there is a pipe) because it is in the footwall is likely to prove disappointing. There is some quartz at the shaft, but I think the 800 ft. of openings driven by the old timers should suffice until the geology is thoroughly worked out.

If this width of altered granite with sericite is in a wide zone of faulting S50 to 60E it probably intersects the main shoot as elsewhere noted. If a large part of the zone carried 5 to 10% pyrite and the pyrite carries \$15.00 in gold, it could easily reach important figures.

It appears non-commercial today.

I recommend taking sizable samples from the dumps and treating as was done with S16 and S17.

The gold content of this pyrite might be higher, if and where it intersects the main fracture zone northeast of No. 2 Shaft.

Red Wonder Claim.

The sketch shows where samples were taken. This has some of the marks of a contact deposit.

Float is found some distance up the hill. Some further sampling should be done, but the geology of the claims should be worked out before much is spent on this opening.

It would be a good place for leasing, with purchase of mill ore from the leaser. Looks better in some ways than the Crown. Has had less work than others.

The White Blaze.

This opening, a larger one than the Incline shaft on the Black Bear, apparently carries no gold and is therefore not of much interest today.

A sample selected for high copper, ran 7.33% trace of gold, which checks other reports.

OUTSIDE PROSPECTS. SUMMARY.

The cable of other prospects referred to in previous reports may prove to be great ore bodies. Without ore to start on, they are mere gambles today.

The outside prospects are secondary in importance to the main shoot, - today. A small amount of work may increase their importance.

Money should be sparingly used on these prospects until a geologic map has been made and studied.

The geologic map should be made after the underground investigation has given some assurance that tonnage to justify a mill is available.

If and when it is decided to explore an outside prospect, procedure should be about as follows:

1. Allot a given amount of money to the prospect.
2. Put a good man with adequate equipment on the job.
3. Give him daily technical assistance, and advice. Give him a map and educate him to go after ore, to understand sampling vs. specimen taking. Require him to make a daily report. Summarize this weekly as to time, materials, footage, tonnage of ore, of waste, etc.
4. Assay and record on his map.
5. As far as possible do the work in ore and separate 1st class, 2d Class and waste.
6. When the allotment is used up summarize results and their cost.
7. Work one place at a time.
8. Failure to keep work like this separate from production always results in greater expenditures than contemplated.
9. If claim A absorbs \$5000 and produces 200 tons first class and 400 tons second class with 800 tons of waste, and claim B for a like input yields 2000 tons of waste and 20 tons of 2nd. Class ore, and important distinction has been made. Likewise if the weekly results from a drift show the first class ore to deep steadily for a month, the decision about continuing, will be even more soundly based than it would be on regular sampling of the roof. The real meaning of sampling will be better understood.

The Blue Moon justifies some immediate work.

HILLS REPORT

Mr. Twichell also secured me a partial copy of the report of Victor G. Hills (Hills and Willis) made in January, 1908.

Mr. Hills had the advantage of making this examination while mining was going on and he could immediately and freely confer with everyone who knew anything about the ore; he could also watch the daily changes in drifts and stopes as they were cut.

Hill Mill lot No. 4 from and East West crosscut on the 407 ft. level contained 70 tons of ore and assayed 1.3 oz. Au.

All his samples are well described and if an old survey station or two could be identified, many of the samples could be located in the stopes even though his maps are lacking from the report.

His conclusions and recommendations are also lacking.

Mr. Fred A. Mueller has furnished extracts from Hills' report which he believes authentic.

Some of the quotations seem unlike Hill's. The summary is very favorable in factflowery. It is said "The geology and mineralogy are simple and present nothing unusual." It seems strange that Hills, primarily a geologist, makes so little comment on the geology of the main shoot and of the other claims.

Mr. Mueller said that Hills first defined the deposit as a pipe or chimney, but later said he thought of it as vein.

Hill's report merits thorough study.

G O L D - B A R - M I N E

WICKENBURG, ARIZONA

Report of Examination By Hills and Willis
mining engineers

To The Board of Directors,
Interior Mining and Trust Company
Hartje Building, Pittsburg, Pa.

Gentlemen:

In accordance with your request, I have made an examination of your mining property located 16 miles Northeast of Wickenburg in the Black Rock Mining District, Yavapai County, Arizona.

In the period of my examination on the ground, was from December 8th, 1907 to January 1st, 1908.

There are certain items such as the extent of the estate the character and condition of the title, the mines history, the location with reference to railroads and other transportation facilities, the question of water supply, drainage, inventories of machinery and other equipment, and other particulars which commonly form important and extensive parts of mine reports; which are not considered in this case. You are already fully posted in regard to these features.

However, the subject of the extent of the ore shoots within your vertical plane and boundaries and the question of extralateral rights and possible future litigation in regard thereto was discussed but after certain surveys and maps were made and considered, the matter was left with the members of the board, who were on ground. The property or surface maps were left at the mine and I did not take any copy of same.

GEOLOGY AND MINERALOGY:

The country is granite, which is extensively fissured and some of the fissures show faulting, though so far as observed, the faults were not of large displacement. The mineral deposits of the veins seem to have been subsequent to the faulting. A number of quartz veins were observed on the property and several of them have received some development of work; but my examination was practically confined to the orebody where mining and milling operations were being conducted. This ore deposit is in the form of a pipe or chimney. It has a strike S 53 degrees with a dip of 30 degrees from the horizontal. Within or near the ore body signs of vein structure are obscure and the valuable ore is seldom bounded in any direction by wall. The original ore deposit

consists of iron pyrite carrying gold, with a little silver and traces of copper, antimony and lead. I did not observe any zinc.

From the surface down to a vertical depth of about three hundred feet, the ore has been oxidized quite thoroly; below this level the appearance of the original sulphide form is rapid. At the winze level there is still some iron oxide but the quantity is so small as to be scarcely noticeable in the mass of sulphides. Quartz, the most common material of vein filling, is found in comparatively small quantities aside from the quartz which is a constituent part of the granite.

SURVEY AND MAP:

During the period of any examination it was found necessary to make a survey of the underground workings of the mine. The survey and map were made under my supervision, and sections were left at the mine as a working map. This report shows only such portions as have some important connection with the subject considered. The ore shoot has been opened for a little more than 500 feet on its dip, which is but a little over three hundred feet on its dip, which is in vertical depth. The mine workings consist of a vertically depth. The mine workings consist of all vertically below the collar of the shaft as follows:

Adit level	112 feet.
No. 1 "	114 "
No. 1 1/2	171 "
200' "	209 "
300' "	307 "
Winze "	333 "

Only the 200 and 300 foot levels are connected with the shaft, but all of the workings are connected through stopes in the ore shoot. A plat attached hereto and forming a part of this report shows separately the plan of the winze and the plan of the 300 foot level at the near the ore shoot. On another sheet there is a vertical section showing the dip of the ore shoot. On both plan and section the extent of the pay ore, as far as developed, is shown by red coloring, and the ground which was sampled and proven barren is colored green.

THE ORE:

Gold is practically the only valuable product of the mine; though there is a trifle of silver and the high per cent of iron figures as an indirect asset by lessening the reductions charge in the case of smelting ore. Iron, Sulphur and Silicas (insoluble) are factors in determining the cost of treatment, hence some of the important mill runs and concentrate samples were assayed for these minerals.

ASSAY LIST:

The following list shows the value of samples in ounces troy per ton of 2000 lbs. avoirdupois. The first column shows the returns obtained at the mine assay office and the second by Robert Newman, the assayer at the Portland Mine, Victor, Colorado. The scales and other equipment at the mine were not adequate to determine gold values with a reasonable degree of accuracy.

Mr. Newman's work was done with the best appliances in every particular, the same as daily used for settlement in selling ore and Umpire work. He used a full assay ton in all cases, and all the mill runs and other important samples were run in duplicating form and coarse part of the sample, probably due to scales of free gold or escaped amalgam, hence the smaller sample taken at the mine would likely not check even with the most refined assaying, and the disagreements are not to be taken as any discredit to your assayer at the mine. On the contrary, they seem to have done well considering their disadvantages. With larger samples to begin with, double quantity melted, the best appliances in duplicating, the latter column must be taken for valuations.

Eight samples, No's 9436 to 9439 and 9471 to 9474 were forwarded to me after leaving the mine. Samples No's 9425 to 9426 and 9471 to 9474 inclusive were assayed by Henry E. Wood and Co. of Denver. \$26.00

N o.	level	Location	Description	Width Feet	Ounces Mine	Gold Newman
7975	200	7' E of Sta 216	Dark Red Bunch----		10.08	6.20
6	Winze		Selected Pyrite----		3.80	3.96
7	"		Ft. wall test ----		.03	.02
8	300 ft.	Wall Drift	Sugar Quartz -----		1.70	1.40
9	"	" " " "	Dec. Granite -----		.34	.22
80	"	" " " "	Soft Black -----		.16	.02
1	Winze Cross Cut		Fines -----		.03	.05
2	"	" " " E. Breast	Course Black -----		.01	.tr
3	Adit North side		Horizontal Cut	34.00	.04	.02
4	"	7' E. of Sta 6	"	7.10	.45	.70
5	"	S.W. side crosscut	"	18.40	.05	.tr,
6	"	" " " "	"	18.60	.02	.02
7	"	N.W. Corn. shaft	"	8.40	.05	.02
8	"	At N end shaft	"	6.50	.04	.12
9	"	W of Sta 6	"	9.60	.04	.02
90	"	N of 7989	"	12.60	.04	.02
1	"	Cor. hoist chamber	"	12.80	.06	.02
9277	"	Cor. sta 6W	Sel. Vug. Matl. -----		.52	.52
8	"	" " Open Cut next ft. wall	Horizontal cut	5.80	.21	.02

No.	Level	Location	Description	Width Feet	Ounces Mine	Gold Newman
9	Adit side pillar W. sta. 1			8.50	.23	.34
80	"	Grab from 11 scks.		----	2.92	2.34
1	"	Sta. 4S	Horizontal Cut Flat Seam	10.00	.56	.26
2	"	Pillar left between		6.00	.16	.03
3	"	1 1/2 to 9 ft. down from Vertical Cut St. 114		5.00	.15	.06
4	"	5' SW of sta. 114		5.00	.14	.02
5	"	10' SW " "		4.40	.12	.18
6	"	15' SW " "		4.00	.18	1.10
7	"	20' SW " "		3.20	.11	.04
8	"	25' SW " "		3.20	.18	.05
9	"	W of Sta 113		3.00	.18	.05
9290	1	1/2 SW of Sta 114	Selected Oxd. ore	---	.27	.24
1	"	Bottom Stope Fine		---	.26	.10
2	"	Grab				
2	"	10' SE Sta 114		7.00	.18	.05
3	"	10' of station. Horizontal Cut		8.40	.18	.10
4	"	4' N from Sta. 104 Vertical		4.00	.13	.08
5	"	6' S from Sta. 102 Horizontal Cut		4.50	.36	.35
6	"	Grab Broken Ore		----	.38	.20
7	"	S. Corn. Winze all	All of Exd.	4.20	.18	.10
8	"	Under Sta. 3	Fines grab	-----	3.86	1.72
9	"	By Sta. 2	Coarse "	-----	.14	.20
9300	"	8' N of Sta 1	Horizontal Cut	9.50	.06	.06
1	"	NE of Sta.	Grab below 9300	-----	.22	.12
2	"	8' S of Sta. 7	Horizontal Cut	8.00	1.00	.93
3	"	Breast S of Sta. 7	" "	8.00	.18	.18
4	"	4' from Sta. 7	" "	13.30	.11	.06
5	"	S of Sta. L	Grab of fines	----	1.25	1.28
6	"	Below Sta 1 & 7	" "	----	.69	.60
7	"	Lost				
8	200	Brst E branch Horiz. cut		6.00	.25	.24
9	"	" " Grb. from last rnd		-----	.12	.28
10	"	Bet 200 and 201	Coarse grab	-----	.25	.16
11	"	" " " Fines "		-----	.60	.44
2	"	21' from Sta. 203	Horizontal Cut	10.00	.39	.38
3	200	2' W of Sta 214	" "	8.00	5.09	2.50
4	"	E. of Sta 214	Pyrite streak	.40	.87	1.52
5	"	E of Sta 214	" Oxidized	.40	.49	.44
6	"	23' SW of Sta 204	Breast	7.00	.47	.42
7	"	Under 9316	Grab of coarse	----	.16	.16
8	"	Under E of Sta 204	at cor.	4.20	.04	.04
9	Winze	between Sta 400 & 401	Grab last rd.	-----	1.76	1.76
20	"	Same as 9319	Selected without sulphides		.09	.02
1	200	E. of Sta 204	Foot wall cut	3.00	.70	.48
2	"	S end of raise cut		3.60	.02	.04
3	"	NE end of raise	soft oxidized	6.00	.01	.22
4	"	NE Sta. 216	Brst Black soft	4.20	.08	.22
5	"	NW Sta 215	Horizontal Cut	5.80	.03	.18

No.	Level	Dec. Location	Description	Width Feet	Ounces Mine	Gold Newman
30		90	drill hole	5	2.0	
1			6 tons left in bin after lot No. 4			1.64
2			Slimes part of 94 28			1.10
3			Grab from last night round Dec. 31			.58
4			Breast W of Sta. 401 drill hole by Mr. T.			.12
5	Winze		" 27' W of Sta. 401 face 4 x 7'			.32
6			Moody sample of clean up run of 6.1 tons			.96
7			Clean up lot Table No. 1 Wilfley Conc.			1.90
8		"	" " " 2 " "			2.20
9		"	" " Vanner Conc.			2.00
9471	Winze	No. 1	By Mr. Baldwin		.14	.11
2	"	Aver. No. 2	"		2.50	4.46
3	"	"	"		.04	.09
4	"	No. 2	"		.26	.20

Mill Runs:

Four of the N issen stamps taking ore from a separate bin, sith wto Wilfley concentrating table and one Vanner, were se t apart for test runs during my examination. With mill runs Nos. 1, 2, and 3 the sampling was done by regular mill men in their daily work. Only in the case of run No. 4 was the sampling done under my supervision.

The amalgam saved on the plates was weighted on poor avoid-rupois scales and, according to your Managers practive, it was assumed that a retort would be 1.3 the wieght of the amalgam and would have a mint value of \$14.50 per ounce avoirdupois. These estimatesa are curde and unsatisfactory, but none better could be made with the appliances at hand.

LOT NO. 41

This ore was from the Winze level.
 Mine weight was 72.336 tons. moisture 3%. Dry weight 70.16
 During the first day stamps crushed 7.44 tons per stamp.
 Wwing to a failure of the power a cleanup was made with
 6.41 tons dry left in the bin. Thus 63.756 tons in test.

The concentrates saved were:

Wilfley Tables	1st Lot	12.53 tons, moisture	13.65% dry	10.807
"	" 2nd "	2.79 " "	14.8 "	2.377
				<u>13.374</u>
Vanner		1.11 " "	16.4	.929

-48-

(One ton of concentrates to 4.52 tons of ore)

Coarse rock sample (9472) returns Gold 1.04 oz. Silver 5.2 oz.

Sands head sample (9428) " " 1.30 " 3.2

Considering the complete and careful manner in which the sands sample was taken it must be regarded as representing the correct value of the ore.

The mint value of the ore is:	Gold 1.30 oz. at \$20.67	\$26.87
	Silver 3.2 oz. .53	1.71
	Total per ton	<u>28.58</u>

The saving on the plates was 2# 8 Oz. avoirdupois of amalgam which at the uniform mine estimate before noted, gives

			\$193.33
Wilfley Concentrates	Gold 2.33 oz. at \$20.67		48.16
"	Silver 9.2 oz. .53		4.88
Vanner	Gold 3.83 oz. 20.67		79.17
"	Silver 2.1 oz. .53		6.41
Wilfley tails	Gold .22 oz. 20.67		4.55
	Silver 12.1 .53		.32
Vanner	Gold .70		14.47
	Silver 1.8		.95
Discrepancy			510.73

63,756 tons at \$28.58

Assayed by Henry E. Wood And Company, Denver, Colo.

No.	Silver	Antimony	Copper %	Iron %	Sulphur %	Silica %
9263	20.00			46.4	24.6	18.0
9390	4.4					
1	1.7					
4	1.2					
6	5.3					
7				46.8	19.0	26.0
8	.7					
9420	14.72					
3	9.2			43.4	52.0	3.4
4	12.1			37.2	43.5	19.0
5	0.6	Trace	Trace			
6	1.80	"	"			
7	5.20					
8	3.20			14.0	15.6	67.4

66616gy:-- From report of Mr. W. R. Shanklin, April 1927

The surface rocks are granite, with many local variations, and should probably be correlated with the Bradshaw mountain granite. It is quite uniform over the area, and is found in all the levels of the mine to a depth of over 700 feet in the No. 2 shaft.

There is a number of dioritic dikes of varying character outting into this granite, which have a general strike of Ne and SW, and with varying dips to the NW. Occurring with these dikes is a system of fault and fracture planes having approximately the same dip and strike.

The mineralized zone, or vein, follows the general trend of the dikes and fault system and dips about 30° NW. No foot or hanging walls are discernible in the mine, except for the presence of heavy quartz vein matter, which occurs between the ore body and the large faulted crushed or bracciated section of the SE side of Mine. This evidently cuts off the ore body, as no value of any consequence are found beyond this contact.

On the West side of the incline, or winze, at the 445 foot level, there is found an intrusive dike along which occurs heavy quartz vein matter in contact with a strong copper vein, showing good values in gold and silver. This vein, or lead, probably dips to the NW and may develop into a body of copper ore, but at present it is found at no other point in the mine.

Sampling and Assays:

SAMPLING of the mine was done very carefully, samples being taken throughout the drifts, approximately every five feet. The assays of these samples are attached hereto on the original sheets from the Assay Office, and speak for themselves (Exhibit 3). The location in the mine from which each sample was taken is shown on

the attached map of the underground workings with a line and number of the assay. The average value of these samples taken out of the area hereafter described as "ORE BODY" is \$11.75 gold and silver per ton.

There was taken from the mine two large samples of ore as near shipping concentrates as could be obtained for smelter tests. These samples were taken, one to the Magna Smelter at Superior, and the other to the Hayden smelter at Hayden. The results of these tests are also attached hereto as "EXHIBIT 4". and furnish a good idea of the value of the concentrates that can be shipped from the mine.

Ore Body:

This ore body, as developed by the underground workings, is apparently a vein or veins of disseminated ores in a comparatively narrow strip paralleling and intermixed with a mass of quartz vein matter which lies between the ore and the faulted or severally brecciated area, which is evidently a fault and in turn parallels the general strike of the fault or fracture planes as observed on the surface and in the mine.

The ores are iron sulphides in association with this vein of quartz carrying gold and silver values. There is also some oxidation throughout the sulphide zone extending from the old 200 foot level to the present 445 foot level. Above the old 200 foot level all the ores are pretty well oxidized to the surface at the Old Glory Hole.

The underground workings have in no way blocked out or developed what might be termed an ore reserve, but the showing of sulphide

ores carrying values as shown by the sampling, shows beyond doubt that there is a body of ore which can be mined at a profit. To estimate an available tonnage of mineable ore is largely a matter of opinion as to the extent of the ores carrying average values large enough to make mining profitable. Naturally, such an estimate should be conservative, using only such measurements as come well within the limits of the exposed ores that show good values.

On the attached map of the underground workings is outlined an area that enclosed the major portion of the observed mineralization, which shows an average width of about 40 feet, a length of about 330 feet, and an average height of probably 100 feet, a length of extending from the 445 level up to the old 200 foot level, which is correctly a distance of about 175 feet. This area seems to cover the large part of what is apparently the extent of the present known ore body, and contains a total of about 110,000 tons of ore, using 12 cubic feet of rock in place of one ton, and the average value per ton rock or mine run of \$11.75, as indicated by the sampling, giving a total value of \$1,292,500.00. This sum must be considered as an estimate only, and that the actual value may vary widely from these figures. However, as considerable value is indicated by the above estimate, further development of the property should develop extensions to the present ore body, both laterally and with depth.

The point on the map indicating the presence of copper sulphides carrying values in gold, silver and copper, the assays of which are shown (but the area not included in the above estimate) gives values of \$13.83 to \$54.86 per ton. This is a good, strong showing of copper ores, and is worthy of further development, as the vein

Geology:-- From report of Mr. G. P. Hyde May 1929

The geology of this district offers nothing complex. The country rock is granite, and is known as the Bradshaw Mountain Granite. There has been extensive fissuring, showing two major periods of movement. One resulting in a system of North 700, with a dip of 30° Northwest. Evidence of faulting in this fissure is encountered on the 445 foot incline level, where a thrust movement interrupted the ore body. The downward extension of the ore body will be found in the Northwest or hanging wall side of the vein. This displacement was undoubtedly caused by one of the fissures of the South 30° East System. There being a strong cross fissure in evidence at this point in the workings and it corresponds in position, to what is known on the surface as the Black Bear Vein. This displacement accounts for the fact that while No. 2 Shaft was sunk on the supposed rake of the ore body, it failed to encounter the ore. On the 400 foot level of the No. 2 Shaft, and about 100 feet from the shaft, there is encountered a condition of extreme crushing accompanied by extensive mineralization of Marcasite.

This same condition with Marcasite exists in the foot-wall and adjacent to the ore body from the surface to the 445 level. The downward extension of the ore body at the 500 foot level will undoubtedly be picked up by driving a short cross-cut to the Northwest.

Paralleling this fissure on which the work has been done, and about 600 feet distant to the Southeast, is another fissure having a same dip of 30° NW. There are three very strong out-crops or blowouts on this fissure. The two extremes being about 1000 feet distant from each other. All three are larger and show very much more

extensive mineralization than the out-crop on the fissure, in which the mining has been done.

I was particularly impressed by the one furthest to the South West, which is located on the Cable Claim, and is where the Red Wonder vein or fissure, the strongest fissure of the South 30° East system joins the S 70° system. I believe when this property is developed, it will be found that under or in connection with this out-crop - the largest and richest ore bodies will exist. I cannot understand why this feature of the property has received so little attention in the past. The invitation is unmistakable.

Origin of Ores:

That the ores have been deposited as sulphides, filling, pre-existing deep fissures in the granite and by hot ascending solutions is so evident in view of present knowledge that it requires little further argument. In as much as the ores of deep-seated ascending origin are always genetically associated with igneous rocks and this condition pre-eminently exists in the case under observation, there is every reason to expect permanency and continuation of the ore bodies to depth.

From conditions I observed at the property I should expect stronger and richer ore bodies to occur as greater depth is attained and be accompanied in the values by a copper content. That copper will eventually form a considerable proportion of the values is sustained by its occurrence in a drift on the 445 foot level, in the Bennet drift on the 475 foot level at 510 foot in the "o. 2 shaft and 165 feet from the N. 2 shaft on the 700 foot level. This copper occurs as carbonate and oxides and an assay gave copper 6.15%. Gold \$6.80.

Ore Bodies and Values:

The ore body developed consists of quartz intermixed with massive iron sulphides, carrying gold and silver values in the proportion of four ounces of silver to one ounce gold.

From the surface to the 385 foot incline level, the ore is oxidized to a more or less extent, at the surface completely then in diminishing proportion until at the 385 level the ores occur almost completely as original sulphides.

In only two places, the surface and on the 407 foot incline level has the ore body been cross cut. In the former place for a width of 60 feet and in the latter place for 45 feet. The distance between these two points being approximately 500 feet. The depth of the ore body on the dip of the vein has in no place been demonstrated. At the surface the ore in the bottom of the glory hole is still going and is exposed at this point 40 feet in depth. On the 407 foot incline level, the same depth has been exposed by stoping with ore still in the roof and floor.

Assuming, as one is justified, from reports of conditions as they existed in the stoped area that the same dimensions of width and depth hold for the distance of 560 feet or from the 445 foot incline level to the surface, and using twelve cubic feet for a ton of ore in place and deducting 20,000 tons as mined, we have an available ore supply of 69,600 tons, not to mention a large expectance of probable ore.

Various results of values in this ore body areas follows:

Ton stamp mill, results per ton.....\$18.75
 Large mill " " " " 13.75
 Mill Run of 70,166 tons, taken
 without sorting across a
 4'x6' x 40' cross-cut on the
 407 foot level--
 Copy of the report of this run
 attached as exhibit A-28.56
 Average of 43 samples of the ore
 body taken in the winze area 1.....12.80
 Composite of 15 samples, taken at random
 by me as check on above (see Exh.A)11.20

From the foregoing results a valuation of \$12.00 is conserva-
 tive. On this basis the 69,600 tons represent a value of
 \$835,200.00.

This estimate takes no account of the low profitable grades of ore
 of which there is an abundance, nor of the large expectance of pro-
 bable ore.

In justice to the property, it should be noted that the
 conditions existing when the samples were taken, the mine having
 been under water for many years, with resulting muddy accretions
 on walls and floor, would tend to give lower results than would be
 attained in the extraction and milling of the ore. With modern
 mining, and milling methods, this ore carrying \$12.00 in value
 per ton, should give a handsome profit.

Mr. Ward Twichell,
Constellation, Arizona

Dear Sir:

I submit herewith the results of my recent investigation at the property formerly owned by the God Bar Mining Company, in the Black Rock Mining District, Yavapai County, Arizona.

DATA FURNISHED: (1 Mine maps and assay results from a formal report by W. R. Shanklin, 1927; (2) assay results and a copy of a mill test-run from a report by George P. Hyde, 1929; (3) assay results of a sampling by Smith & Holderness, 1930. No detailed records of previous operations are available, except the report of the milling test, made by V. G. Hills, in 1908.

SCOPE OF INVESTIGATION: Except for a brief reconnaissance of an area approximately three thousand feet square, in the center of which the principal developed ground is situated, the investigation was confined to the 385, 407, 445, 478 and 503 levels, entered through the No. 2 Shaft. The surface investigations were carried out merely for the purpose of general information.

GEOLOGICAL STUDIES: Except for a few hand specimens for consideration no geological material was gathered. Questions affecting the genesis of the ores were not a part of the problems as submitted, neither were any special problems in structural geology.

SAMPLING: Sampling was limited to check samples below the 407 level, and were taken for the purpose of determining whether or not any part of this block might be estimated as ore in sight. The samples were assayed at the Arizona office in Phoenix, Arizona, and the original certificate is attached hereto.

For the purpose of evaluating the property as a development project this agreement between the Shanklin general sampling and the Hyde check sampling is sufficiently close. In arriving at an average value of the block between the 385 and the 445 levels as determined by the Smith and Holderness sampling an average of a little more than \$18.00 is obtained if the one high sample No. 6 is included. If this sample is not included the average is \$8.50. The average of the seven check samples taken by the writer from the block between the 407 and 445 levels is \$8.88. Since previous sampling of the whole section, as well as the mill run, have indicated a higher value, the "sweetening" effect of an occasional higher value may be allowed for to the extent of assuming that in all probability the ore in the sheet explored so far will break to an average of around eleven dollars per ton in gold alone.

ASSAY RESULTS:

Sample Number 1		0.04 oz. gold		\$0.80
"	"	2	.46 " "	9.20
"	"	3	.72 " "	14.40
"	"	4	.82 " "	16.40
"	"	5	.30 " "	6.00
"	"	6	.10 " "	2.00
"	"	7	.66 " "	13.20

The attached blue-print shows the approximate location of the above samples.

TONNAGE ESTIMATES: The nature of the development in the region at and below the 385 level is such that it is impossible to say, in the strict sense of the term, that there is any kind of ore blocked out. In the reports by Messrs. Shanklin and Hyde certain positive tonnages are mentioned. While the method of computing this tonnage is stated in general terms the area is not so sub-divided that it is possible to compare the amounts estimated in either of these reports with that set out as being indicated ore in the present report. Furthermore, the workings above the 385 level were inaccessible at the time of the present investigation. Therefore no opinion can be expressed as to the positive or indicated ore above the 385 level.

From the data gathered during the time of investigation on which this report is based, and after making due allowance for the dimensions as reported for the ore removed from the stoped out areas above the 385 level, now inaccessible, there is believed to be between the 385 level and a point just below the 445 level a block approximately forty (40) feet long, measured on the longer axis of the winze, a volume of 182,400 cubic feet or 15,200 tons gross. From this 25% might be deducted as representing the ore removed from the winze and the other working at these levels, leaving a net of 11,400 tons of indicated ore.

CONCLUSION: The present investigations indicate a minimum of 11,400 tons of ore of an average value of not less than \$8.88 per ton in gold between the 385 and 445 levels. In view of the milling test record, which is a sample on a large scale, and after making due allowance for the higher averages obtained by a closer sampling on the same section, it is reasonable to assume that an average value of from \$11.00 to perhaps over \$12.00 per ton will be realized as this area is stoped out.

Respectfully submitted,

(signed) A. L. Flagg
Consulting Engineer

Phoenix, Arizona

April 20th, 1931.

NOTES ON FLAGG REPORT

7/15/34

Mr. Flagg gave me a copy of his sampling, assays, maps and reports.

He said he examined only the sulfide area because Smith and Holderness claimed that the ore in this block had been misrepresented to them by Twitchells'.

He found as per his report 11,000 tons of \$8.80 (.44 oz.) Au. as compared with Smith & Holderness of 1.04. Arithmetical average of all - .92 oz.

Omitting the high sample of Smith & Holderness, average would be .3982 oz. which is not far from Flagg.

Flagg said he was unable to get into the 385' level going into No. 1 Shaft or rather was afraid of loose cutting him off from escape.

From there he might have gotten into the old stopes or might not.

He was clear on the 11,000 tons of 8.88. He said he could not see how he could prove 80,000 tons of ore, say 60,000 tons from 385 level up.

Said he would not raise his hand and swear there was 20,000 tons, just would not know.

Said the cleanup of drifts, etc., to permit proper sampling would be a big job in some places.

Said he tried to interest George Hasley in it on the following basis:

1. No consider any ore as proven or developed, i.e. forget it.
2. Get a good geologist on the ground for 60 days.
3. Do some development work - on the Cable and Black Bear as indicated by the geologic work.

He did not work at the Glory. Hale was very pessimistic about the Gold Bar Mine paying out on the main shaft alone. He said the pump was ruined when column was broken and rock got in. He said Baling alone would not unwater it as a great deal of water would come in from contiguous country. More water by 2 to 1 the first year than thereafter. Flagg is a good man. Flagg found no evidence of Secondary Enrichment - looked for it. Flagg found no Chalcopyrite.

J. H. Steinmesch.

G O L D B A R M I N E

Report of

Smith & Holderness Assays - 4/1/31

On the Sulfides between 385 and 445 ' levels.

Sample No.	Oz. Au
1	.04
2	.04
3	.03
4	1.14
5	.26
6	12.40
7	.66
8	.02
9	1.31
10	.29
11	.03
12	.19
13	1.68
14	.60
15	.48
16	.32
17	.30
18	.24
19	.41
20	.24
21	.06
22	.08
23	<u>.34</u>
Composite	1.04
Omitting No. 6	.3982
Arithmetical Average	.92

Gold Bar or O'Brien Mine

Advance copy from E. D. Wilson of the Arizona Geological Survey. 7/8/34.

The Gold Bar or O'Brien mine is fifteen miles by road northwest of Wickenburg and 2.7 miles northeast on Constellation.

This deposit was located in 1888 by J. Mahoney. About 1901, the Saginaw Lumber Company erected a ten-stamp mill on the property and is reported to have treated 4,000 tons of ore that yielded about \$60,000.00

Oral communication from Mr. Ward Twichell:

In 1907-1908, the Interior Mining and Trust Company is reported to have mined the ore body from the surface to the 385 foot level on the incline. This company erected a 100-ton mill, equipped with stamps, amalgamation plates, tables, and vanners. Heikes states that the 1907 production amounted to \$53,402 in bullion and concentrates. These concentrates averaged, per ton, two ounces of gold, three ounces of silver, 40 percent of iron, fifteen percent of silica, and fifteen percent of sulphur. He (U.S. Geol. Survey, Mineral Resources, 1907, Pt. 1, pp 182-183) says that, in 1908, \$91,749 of gold came from the Black Rock District, of which the larger producer was the Interior Mining and Trust Company.

Worked cited, 1908, Pt. 1, p. 310.

About 1915, the company reorganized the Gold Bar Mining Company and a shaft was sunk to the 700-foot level.

in February, 1934, the property was under the trusteeship of the Commonwealth Trust Company of Pittsburg, and was being worked in a small way by lessees.

This region has been deeply dissected by northward-flowing tributaries of Hassayampa Creek. The principal rock is medium-grained granite, with some inclusions of schist. It is intruded by pegmatite, granite porphyry, and basalt dikes. Fissuring in S. 70° and S 30° E. Directions is evident. The vein, which outcrops on the western side of the O'Brien Gulch, at an altitude of 3,400 feet, occurs within a fissure zone that strikes N. 70° E. and dips 30° NW. Its filling consists of coarsely crystalline, glassy, grayish-white quartz. In places, the quartz, from the oxidized zone is rather cellular with cavities that contain abundant hematite and limonite formed from pyrite. Pyrite is present in the deeper workings. The gold occurs as fine to medium coarse particles, both in the quartz and with the iron minerals. The wall rock shows intense sericitization.

The mine workings indicate that the ore shoot was a chimney that measured about forty or fifty feet in cross-section at the surface and plunged 30° SW.

Gold Bar Mine

From letter by B. N. Webber, Geologist of Phoenix, Arizona.
11/2/31 -- to "Engineers Incorporated" Phoenix, Arizona.
Extracted by J. H. Steinmesch.

Webber characterizes ore body as Pyrite replacement of a granite gneiss pipe or lense pitching about 45°. He quotes Shanklin as estimating 16,000 ton - \$11.00 - .55 oz. ore. Cecil Smith and Ed Halderness as giving \$9.00 value - .45 oz. He says no values below 445 foot level. Says pitch Azimuth changes at 445 foot level - orebody may swing north, if so values on 478 level would be in an index. He says ore body may be faulted at 445 foot level or that the change from partially oxidized ore to primary ore might account for lack of values below 445 foot level. Also that the low values below 445 look bad for future extension; and if good ore is due to enrichment, the 16,000 ton of \$11.00 ore is all that would be expected.

Conclusion:

There is every expectancy of \$11.00 - .55 oz. ore and possibility of extension of good ore above 445 foot level. The ore may be extracted at a profit.

Benjamin H. Webber, Geologist
Letter 2/17/32. B. N. Webber to "Engineers Incorporated"
He says he thinks other outcrops O.K. i.e. The Cable, Black Bear, etc.

Of the preceding geological opinions, Hydes are most stimulating. He also makes definite recommendations for development.

I do not "get" his statement that the Cable outcrop "is where the "The Red Wonder fissure joins the N70E system"; this will show up on the geological map.

His recommendations are,

- I. Sink No. 1 Shaft 125' deeper and connect on the 500' level with No. 2 Shaft. (This should be considered in connection with making No. 1 the ore hoisting shaft and No. 2 merely an escape. No. 1 might well cut ore in going down to the 500, if the hanging and floor walls dip a little more steeply in this area than they do in the Glory Hole.
- II. Enlarge openings to handle pipe rails etc.
- III. From 500 level run drifts to delimit ore body. (see my Recommendations I and II)
- IV. Drive drift on 500 near No. 2 etc. (This drift #105 on map notes)
- V. From 500 level No. 2 shaft, drive 600 to 700 ft south to cut downward extension of No. 3 Blowout (Cable) which is a wild gamble until the Cable has ore which had been followed down a hundred ft. or so from the surface.)
- VI. Hyde's quota for development does not greatly suffer from mine.

B. A. Webber also expresses definite opinions which should be respectfully considered; altho I did not meet him I think he might be a good man to do further work such as making the map. He is rated as a good geologist.

ORE ESTIMATES.

Shanklin assumes a chimney 40-x50x700' long, 1,400,000 cu. ft., 110,000 tons of ore (12 oz cu. ft. per ton).

Hyde assumes a cross section 40' x 52.5 x 560' long making 89,000 tons. He deducts 20,000 tons as mined, leaving 89,000 tons reserve.

Pennel averages the above estimates in appraising the property, thus getting 89,000 tons.

The computations of the two examiners are not safe. Neither surveyed the old stopes, and cannot know the volume which has already been excavated. The cross section of the shoot may vary.

If Shanklin's Plan and Section AA are taken, the tonnage already excavated from the old stopes above the 385 level is 40 x 50 x 375' or 62,500 tons.

The total milled is less than 25,000 tons, a discrepancy of 37,000 tons, an important figure.

The first stage of underground examination should clear up this point because it is possible that the entire ore reserves may be those from the 445 level back toward the surface.

A. W. Flagg estimates between 385 and 445 - a section 40x40 x 114 ft. long, 15,000 tons. He deducts 25% for the winze and level openings, leaving net 11,000 tons of ore.

This tonnage is the only ore that is assured, and this is not fully blocked out.

The grade of the sulfide ore is well checked, as can be seen in Flagg's report and sketch, and the tabulation of sampling by three engineers.

The grade of ore from the 385 level up will depend on the skill used in mining and sorting, as well as on the deposit itself. A young engineer to sample the stopes and fight the grade will pay as well in this mine as any place he have ever seen. The former operators maintained an average of .4 to .425 oz; in virgin ore with sorting, this should be bettered today.

ORE ESTIMATES (cont'd)

If 40,000 tons can be proven, the engineer who does so should be able to estimate the probability of proving another 40,000 with a reasonable amount of development.

To increase the positive ore from 11,000 tons to 40,000 tons, it will be necessary to do some drifting, etc. Cutting samples cannot alter the situation. Hence my recommendation that compressed air be provided in Stage 1 of the investigation. Drifts cannot be driven without hoisting dirt. If material is being hoisted - hoist some ore and stack it as 1st Class, 2nd Class and Waste, in a place where it will stay.

Nothing will give as much light on an ore deposit as to mine some of it even though the amount be small.

WATER SUPPLY

The mine formerly made 50 gals. per minute. From the unwatering, it appears to be near that now. This flow will decrease as contiguous territory is drained, and reach a more or less constant figure after a year. What this permanent supply will be cannot be predicted.

Strict economy will permit milling with a makep of 500 gallons per ton treated. The old cyanide tanks will be useful for water salvage. If the mine makes 33 g.p.m., 48,000 gals per day, it should be ample for milling purposes at 1100 tons per day or less.

Plants are having water trouble now that never ran short before.

The shaft at the Crown Claim might be tested for its permanent flow if a deficiency arises. It is on the same side of the diorite dike as the camp well.

EQUIPMENT

Equipment is elsewhere listed and much of it is in good condition.

Cost of getting Mill into operation will be 1/3 or less than to start with a bare hillside.

EQUIPMENT (Cont'd)

The principal consideration is power. The gasoline engine drives formerly used when gas was 8¢ instead of 16¢ as now, can be readily converted to electric motor or Diesel type drive.

In Section V of Recommendations, a careful study of the power situation is advised.

My allowance for power may seem high, but I have been through this matter several times. Invariably, power consumption is increased beyond original estimates; large staffs of the best engineers have been off 200% in a three year forecast of requirements.

Cost of power is likely to be 10¢ per AWH with the gasoline engines. At 25 AWH per ton treated, which I would expect on your 80 ton plant, this would be \$2.50 per ton or \$200.00 per day.

The gasoline engines may be tolerated on the hoist and other intermittent operations, but on the milling equipment and air compression the cost will be prohibitive for normal operation.

The Waukesha Diesel is used by Ingersoll-Rand on many of their units and since they manufacture the Price Oil Engine, it indicates they think well of the Waukesha Unit.

As with the cost of the property and its development, amortization of the power equipment should be made in four years.

In the first stage in investigation use what you have as far as possible.

When the power question is up, get an AI power man from the Arizona Power Company to make a survey and recommendations with estimated costs in black and white.

Get you a Diesel man in and do the same; get them down on paper. Then compare and let your engineer use his judgment.

Electrical Pumping and underground hoisting will be indispensable.

PROSPECT DRILLING

+ advise that you order from the Flannery Bolt Company, Flannery Building, Pittsburgh, the following drill rods and bits for drilling - 15 ft. to 20 ft. holes in roofs and floors of drifts.

PROSPECT DRILLING (Cont'd)

- 3 Drill Rods 3' long, thread one end
- 4 " " 5' " " both ends
- 12 Bits 2" gage
- 12 Bits 1 7/8" gage
- 12 Bits 1 3/4" gage
- 12 Bits 1 5/8" gage

Shanks to fit your drills (or the drill you use in Stage I of investigation). If your drills use 7/8" hexagon hollow steel with 3 1/4" shank over the collar, the cost will be \$3.40 each for the 3' rods, about \$4.25 for the 5' rods, and 35cts. each for standard cross bits.

These rods can be coupled together for long ball drilling. Catch all sludge. Bag each foot separately, and pan or assay or both.

Catalog is being sent you direct.

I think diamond drilling will ultimately be practical.

CONCLUSIONS:

From my partial examination, to July 30, 1934, I conclude:

- I. That the group of claims has produced over 20,000 tons of mill ore of a grade slightly over .4 oz. per ton.
- II. That underground examination with some development work will prove a size ble tonnage of .4 oz. ore, which will be recoverable between the 385 level and the outcrop in the Glory Hole.
- III. That the former operators left more or less sulfide ore of .4 to .6 oz. grade in the floor of the Glory Hole.
- That the same thing occurred to a greater or less degree in the stopes I was uable to see, it is probable enought to justify the cost of investigation.
- IV. That 11,000 tons of sulfide ore of .5 oz. grade is fairly certain between the 385 and 445 levels.
- V. That this main shoot, now sulfide ore, will probably extend to greater depth. Other mines in the formation do so.
- VI. That if this main shoot be faulted it should be possible to locate its extension.

CONCLUSIONS (Cont'd)

VIII. That the Blue Moon, The Red Wonder, and the Crown Tunnels merit further sampling and probably some development.

VIII. Geological conditions are favorable.

IX. The ore carrying over .4 oz. gold will be profitable, in quantities above 80,000 tons. There is a fair chance of proving this tonnage or its equivalent.

X. That the price of the property is high but not prohibitive when it is considered that it may pay for itself.

XI. It is likely to call for as little at \$40,000, or up to \$100,000 in capital, if further work comes up to expectations. If not, the input might be stopped at \$10,000; it is useless to start work without having available \$30,000. See Recommendations XII.

RECOMMENDATIONS

These recommendations are based on partial examination of the property and may be modified by further investigation.

They outline a definite plan for doing those things which at this time appear to promise the most definite results in the shortest time.

- I. (a) Clear No. 1 shaft and put ladder in pipe compartment.
 (b) Unwater and provide for compressed air drilling.
 (c) Sample Gold Bar (main) shoot on 200' level.
 (d) Do additional sampling on Crown and Red Wonder Claims.
 (e) Make cut on Blue Moon.
 (f) Clean up and sample 385' level; if spot where good sulfide ore is alleged to have been cut and covered up can be found, sample and drift on it. If not follow general idea shown on map.
 (g) Sample lower levels as they become accessible using map notes in red and yellow pencils as far as they then seem good.
- II. Aa) Profiding former ore estimates are sufficiently verified.
 (a) Drive drifts as shown on map, sampling each round by the tenth shovel. Follow ore where possible, hoist the rock and sort into First Class (.5

RECOMMENDATIONS. Cont'd

- II. (a) Cont.
Ore, (plus .4) Second Class, and waste, (minus. 1oz.)
- (b) Make geologic map; if the developments in stage I are very favorable, the map should be made at once.
- (c) Provide for cheap and prompt assaying.
- (d) Drift and/or sink on Blue Moon or other prospect which has by then proven attractive.
- III. Summarize all results to date and decide as to further work.
- IV. If considerable first class ore has been hoisted, and 40,000 tons can be guaranteed, and your engineer is satisfied that an additional 40000 tons can be proven by a reasonable amount of further development,
A mill seems justified.
- Laboratory tests of representative ore should be made and mill equipment decided on.
- V. Decide on future power supply, even tho part of the gasoline engines are operated for a time longer.
- VI. (a) Put 25 to 40 ton section of mill in operation probably on mixed oxide and sulfide ore.
- (b) Operate till satisfactory.
- (c) Raise mill to full capacity.
- (d) Conduct mining operations in a carefully selective manner and continue sorting. Object highest grade feed to mill. If possible continue separating second class ore and waste on the dump and at the face.
- (e) Continue a strong prospecting and development program. Buying ore from leasers in a good way to get this work at low cost.

COSTS AND COMMENT.

VII	Stage I will require 8 weeks and about	\$8000.00
VIII	Stage II will require 8 to 14 weeks and a	14000.00
IX.	Stage III	
X	Stage V Power. Electrification would cost	12000.00
XI	Stage VI. Construction and experimentation cost with first section of mill including ore and concentrate shipment,	12000.00
	Reconditioning mine levels and equipment should be completed about this time,	5,000.00

RECOMMENDATIONS. Concluded.

XI. Cont.

Completing other two sections and improving mill	\$12000.00
Prospecting continued	5000.00
Provide office at mine	
Assay facilities	
Telephone	
Engineering instruments	
Welding and other shop equipment	
Camp improvement	5000.00
Already supplied	5000.00
Total capital	82000.00
Up to time mill is decided on,	30,000.00
Up to time production commences	5000.00
If Stage I is the only one completed, --about--	10000.00

XII. Part of last two stages may be met from production reducing required capital to 40000.00 or a little over. Reconditioning mine openings may absorb much more than allowed.

Favorable development on an outside prospect might make it advisable to greatly increase the amount allotted to prospecting.

GENERAL SUMMARY.

The gold Bar Development Co., is largely a development proposition, but with 11000 tons of good ore fairly assured.

I recommend a real examination of the underground workings, including some drifting.

If this results favorably or equivalent favorable results are obtained outside, I then advise further work along the lines laid down above.

Respectfully submitted,

J. H. Steinmesch.

Consulting Mining Engineer.

GOLD BAR MINE
WICKENBURG, ARIZONA

REPORT BY

SURVEY CONDUCTED BETWEEN
NOV. 7, 1955 AND DEC. 4, 1955

TABLE OF CONTENTS

1. INTRODUCTORY LETTER
2. SCOPE OF REPORT
3. LOCATION
4. HIGHWAYS
5. RAILROADS
6. CLIMATE
7. WATER SUPPLY
8. POWER:
 - (A) MONTHLY BILL RATE
 - (B) DETERMINATION OF K. W.
 - (C) CONTRACT PERIOD
 - (D) TERMS & CONDITIONS
9. LABOR
10. LIST OF ASSETS
11. GEOLOGY
12. TOPOGRAPHY
13. FLORA
14. FAUNA
15. #2 SHAFT
16. WHITE BLAZE
17. OPINIONS & RECOMMENDATIONS
18. ASSAYS BY J. W. SHARPE
19. ASSAYS BY E. L. GILMORE
20. BIBLIOGRAPHY
21. PHOTOGRAPHS
22. MAP
23. ISORAD MAP

GILMORE ENTERPRISES

1206 W. 19TH.
TULSA, OKLA.

Box 601
PICHER, OKLA.

ALICE MAY EVERSON
DAVID TWICHELL
ROSENA TWICHELL
GOLD BAR MINE
WICKENBURG, ARIZONA

DEAR SIR:

IN ACCORDANCE WITH OUR CONVERSATION AT THE TIME FOR MY SURVEY OF YOUR PROPERTY I SUBMIT THE FOLLOWING REPORT.

I WILL NOT GO INTO THE HISTORY OF THE MINE AT THIS TIME AS I FEEL THAT THIS SUBJECT WAS ADEQUATELY COVERED IN THE MANY REPORTS BEFORE GIVEN.

I AM MUCH INDEBTED TO MY PREDECESSORS FOR THE USE OF THEIR MAPS AND REPORTS WHICH SAVED MUCH TIME IN THE FIELD.

MOST OF THESE REPORTS I FOUND TO BE VERY GOOD, PARTICULARLY THE ONES BY SHANKLIN, HILL, STEINMECH, FLAGG, HYDE AND BURKEY. THE REPORTS BY MR. HYDE AND MR. BURKEY ARE PROBABLY THE MOST ACCURATE IN REGARD TO THE PRESENT SITUATION.

I DID NOT SEE THE REPORT BY WANN AND ONLY EXCERPTS BY SMITH, CONLEE, AND HOLDERNESS.

AS FOR THE REPORT BY GEORGE SHERIDAN, IT IS MY OPINION THAT HE NEVER DID ANY FIELD WORK AND HIS REPORT IS TYPICAL OF AN INEXPERIENCED LAYMAN IN THE MINING PROFESSION.

AS PER YOUR INSTRUCTIONS I HAVE LIMITED MY SURVEY TO THE SURFACE EXCEPT FOR THE #2 SHAFT, THE GLORY HOLE, THE BLACK BEAR TUNNELS, THE WHITE BLAZE TUNNEL AND OTHER READILY ACCESSIBLE AREAS. I AM OF THE OPINION THAT THE GOLD BAR IS ONE OF THE FINEST UNDER-DEVELOPED MINES IN THE WEST AND I BELIEVE IT TO BE A POTENTIALLY LARGE PRODUCER.

I HAVE NOT GONE INTO THE AMOUNT OF CAPITAL NECESSARY FOR RE-OPENING OF THE GOLD BAR MINE AS THIS HAS BEEN VERY THOROUGHLY COVERED, BUT CONSIDERING THE POSSIBILITIES OF THIS MINE AND THE ASSETS SUCH AS SHAFTS, TUNNELS, AND EQUIPMENT PRESENT IT WOULD NOT BE TOO GREAT.

RESPECTFULLY SUBMITTED

E. L. Gilmore

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MINING CONSULTANT

1955

GOLD BAR MINE

SCOPE OF REPORT

THE SCOPE OF THIS REPORT IS A SURFACE SURVEY AS TO GEOLOGY AND MINERALIZATION AND OTHER PERTINENT INFORMATION CONCERNING THE GOLD BAR GROUP OF CLAIMS AND SOME SURROUNDING TERRITORIES, CONDUCTED BETWEEN NOV. 7, AND DEC. 4, 1955.

LOCATION

THE GOLD BAR MINE CONSISTS OF 15 PATENTED CLAIMS HELD BY DAVID TWICHELL AND ALICE MAY EVERSON & ROSINA TWICHELL AS OWNERS. IT IS LOCATED IN TWP. NO. 9N. RANGE NO. 3W. GILA AND SALT RIVER MERIDIANS, ARIZ., AND LIES IN THE FOLLOWING SECTIONS: THE SE 1/4 OF SECTION 28, THE SW 1/4 OF SECTION 27, THE NW 1/4 OF SECTION 34 AND THE NE 1/4 OF SECTION 33, - A PART OF THE LITTLE JOHN CLAIM LYING IN THE SE & SW 1/4's OF SECTION 33, - A POINT OF THE RED WONDER CLAIM EXTENDING INTO THE SW 1/4 OF SECTION 34, - THE BRUNTON MILL SITE LYING ACROSS THE CENTER LINE OF SE 1/4 OF THE NE 1/4 AND THE NE 1/4 OF THE SE 1/4 OF SECTION 21, YAVAPAI COUNTY, LOCATED SOME 15 MILES NORTHEAST OF WICKENBURG, ARIZONA.

HIGHWAYS

WICKENBURG IS SITUATED AT THE JUNCTION OF THE EAST-WEST HIGHWAY FROM PHOENIX AND THE NORTH-SOUTH HIGHWAY FROM PRESCOT. BOTH THESE HIGHWAYS ARE PAVED. THE ROAD TO THE GOLD BAR MINE IS APPROXIMATELY FIFTEEN MILES IN LENGTH OF GRADED DIRT. IT IS IN VERY GOOD CONDITION TO THE MARICOPA COUNTY LINE AND IS IN GOOD CONDITION TO THE GOLD BAR MINE WHICH IS LOCATED IN YAVAPAI COUNTY. THE ROAD IS ENTIRELY

HIGHWAYS (CONTINUED)

PASSABLE TO LATE MODEL AUTOMOBILES AND IS IN EXCELLENT CONDITION AS A TRUCK ROAD. THE ROAD IS MAINTAINED BY THE COUNTY. THERE ARE A NUMBER OF RELIABLE TRUCKING CONTRACTORS IN WICKENBURG WHO DO ORE TRUCKING. AVERAGE RATE IS APPROXIMATELY TEN TO FIFTEEN CENTS PER TON MILE.

RAILROADS

THE AREA IS SERVED BY TWO BRANCHES OF THE ATCHISON, TOPEKA, AND SANTA FE RR. THE MAIN BRANCH RUNS SOUTH FROM ASHFORK IN NORTHERN ARIZONA TO PHOENIX AND THE OTHER FROM CADIZ, CALIFORNIA ON THE MAIN LINE THROUGH PARKER TO THE ASHFORK BRANCH. WICKENBURG IS ABOUT FIVE MILES EAST OF THE JUNCTION OF THE TWO BRANCHES.

MOST OF THE ORE OF THE AREA IS SHIPPED TO ONE OF THE FOLLOWING SMELTERS:

AMERICAN SMELTER AND REFINING CO. - EL PASO, TEXAS

AMERICAN SMELTER AND REFINING CO. - HAYDEN, ARIZONA

PURCHASING AGENT - 810 VALLEY NATIONAL BLDG., TUSCON, ARIZONA

INTERNATIONAL SMELTER AND REFINING CO., MIAMI, ARIZONA

PURCHASING DEPARTMENT - 818 KEARNS BLDG., SALT LAKE CITY, UTAH

MAGMA COPPER SMELTER AT SUPERIOR, ARIZONA

PHELPS DODGE SMELTER AT AJO, ARIZONA

PHELPS DODGE SMELTER AT DOUGLAS, ARIZONA

DISTANCES TO SMELTERS:

WICKENBURG TO SUPERIOR	- 124	MILES
" TO HAYDEN	- 145	"
" TO EL PASO	- 470	"
" TO MIAMI	- 141	"
" TO DOUGLAS	- 305	"
" TO AJO	- 171	"

RAILROADS (CONTINUED)

FREIGHT RATES:

FREIGHT RATES ARE ON A SLIDING SCALE IN PROPORTION TO THE METAL VALUE IN DOLLARS PER TON OF ORE. UP TO FIFTEEN DOLLARS VALUE TO HAYDEN - \$3.65 PER TON IN A MINIMUM CAR LOT, INCREASING APPROXIMATELY 12 PER CENT PER TEN DOLLARS INCREASE IN VALUE OF ORE. TO EL PASO THIS RUNS TWO TO THREE PER CENT MORE.

CLIMATE:

CLIMATE OF THE AREA IS CHARACTERIZED BY HOT SUMMERS AND MILD WINTERS, THE AVERAGE MEAN TEMPERATURE BEING 64 DEGREES. AVERAGE RAINFALL AT THE GOLD BAR MINE IS APPROXIMATELY 13 INCHES PER YEAR. THE GREATEST RAINFALL IS DURING DECEMBER AND JANUARY; THE LEAST DURING THE MONTH OF JUNE. MINING MAY BE CARRIED ON ALL YEAR AROUND.

WATER SUPPLY

THE AREA IS DRAINED BY THE HASSAYAMPA RIVER. WATER MAY BE OBTAINED FROM THIS RIVER FOR OPERATION OF THE GOLD BAR MINE, ONE CLAIM OF WHICH LIES AS A PUMPING STATION ON THE RIVER AND IS APPROXIMATELY SIX THOUSAND FEET FROM THE MAIN AREA OF THE CLAIMS.

UTILITY WATER FOR THE MINE IS OBTAINED FROM A WELL AT THE LIVING QUARTERS AREA OF THE MINE, WHICH IS LOCATED IN O'BRIAN GULCH. UP THE GULCH APPROXIMATELY 200 FEET FROM THE LIVING QUARTERS IS ANOTHER WELL WHICH IS EQUIPPED WITH A PUMP AND GASOLINE ENGINE FOR PRODUCTION OF A LARGER SOURCE OF WATER. THERE IS A SPRING SITUATED IN THE ALL GONE GULCH WHERE IT CROSSES THE NORTHERN BOUNDARY LINE OF THE GILBRAITH CLAIM. THE SPRING WOULD SUPPLY APPROXIMATELY TWENTY GALLONS PER MINUTE. THE #2 SHAFT FORMERLY MADE FIFTY GALLONS PER MINUTE.

POWER

AT THE PRESENT TIME THE GOLD BAR MINE IS GASOLINE POWERED. APPROXIMATE OPERATING COST WOULD BE \$2.50 PER TON HANDLED. MY PROPOSAL IS THAT THE MINE BE ELECTRIFIED EITHER BY THE INSTALLATION OF A POWER GENERATING PLANT OR THE BRINGING IN OF A POWER LINE FROM THE NEAREST POINT, THAT BEING WICKENBURG. MANY MINES IN THE AREA GENERATE THEIR OWN POWER; AN EXAMPLE OF THIS BEING HILLSIDE MINE WHICH HAS A POWER PLANT CONSISTING OF 6-CYLINDER FAIRBANKS-MORSE DIESEL ENGINE OF 420 HP. DIRECTLY CONNECTED TO A 355-KVA GENERATOR. CURRENT IS DISTRIBUTED AT 428 VOLTS AND THE ENGINE USES ABOUT 300 GALLONS OF FUEL OIL PER DAY.

POWER MAY BE OBTAINED FROM CENTRAL ARIZONA LIGHT AND POWER COMPANY WHOSE OFFICES ARE IN PHOENIX OFFERING THE FOLLOWING TYPES OF SERVICE; SINGLE OR 3 PHASE, 60 CYCLE AT ONE STANDARD VOLTAGE (11500, 2400/4160, 440, 115/230 OR 128/208 VOLTS). UNDER THE TERMS OF THEIR EXTENSION POLICY, THE CUSTOMER ADVANCES THE COST OF CONSTRUCTION INCLUDING TRANSFORMER WHICH IS REFUNDABLE FOR A PERIOD OF FIVE YEARS. TWENTY-FIVE PER CENT OF THE REVENUE IN EXCESS OF THE ANNUAL GUARANTEE BUT LIMITED TO TWENTY PER CENT OF THE AMOUNT ADVANCED. THE ESTIMATED COST OF CONSTRUCTION OF A POWER LINE FROM WICKENBURG TO THE GOLD BAR MINE AS ESTIMATED BY THE ARIZONA POWER AND LIGHT COMPANY IS TWENTY-FIVE HUNDRED DOLLARS PER MILE.

POWER (CONTINUED)

(A) MONTHLY BILL RATE:

95.0¢ WHICH INCLUDES THE USE OF 12 KWH

2.95¢ PER KWH NEXT 488 KWH*

2.3¢ PER KWH NEXT 3,000 KWH

0.9¢ PER KWH NEXT 42,000 KWH

0.7¢ PER KWH NEXT 4000,000 KWH

0.6¢ PER KWH ALL ADDITIONAL KWH

MINUS 0.1¢ FOR EACH KWH IN EXCESS OF 300 KWH

PER KW OR 12,000 KWH WHICHEVER IS GREATER.

* SUBJECT TO CERTAIN ADJUSTMENTS BASED ON CHANGES IN THE PRICE OF NATURAL GAS BURNED IN THE GENERATING PLANTS OR SHOULD ANOTHER FUEL BE BURNED IN LIEU OF NATURAL GAS. COST OF SUCH ALTERNATE FUEL TO BE EQUATED TO THE PRICE OF NATURAL GAS FOR THE PURPOSE OF COMPUTING THIS ADJUSTMENT PLUS ANY PROPORTIONATE PART OF ANY TAXES OF GOVERNMENT IMPOSITIONS WHICH ARE ASSESSED ON THE BASIS OF GROSS REVENUES OF THE COMPANY.

(B) DETERMINATION OF KW

THE AVERAGE KW SUPPLIED DURING THE 15 MINUTE PERIOD OF MAXIMUM USE DURING THE MONTH, AS DETERMINED FROM READINGS OF THE COMPANY'S METER.

(C) CONTRACT PERIOD

UP TO 15 KW: AS PROVIDED IN COMPANY'S STANDARD AGREEMENT FOR SERVICE

OVER 15 KW: 3 YEARS, OR LONGER AT COMPANY'S OPTION.

(D) TERMS AND CONDITIONS

SUBJECT TO THE COMPANY'S TERMS AND CONDITIONS FOR THE SALE OF ELECTRIC SERVICE.

LABOR

IN THE WICKENBURG AREA THERE IS AN ABUNDANCE OF EXPERIENCED MINERS. THE WAGE SCALE IS AS FOLLOWS:

ENGINEER - \$600.00 PER MONTH

MINE AND MILL FOREMAN - \$500.00 PER MONTH

CARPENTER - \$2.60 PER HOUR

MACHINE MAN OR MINER - \$2.60 PER HOUR

MUCKER - \$1.95 PER HOUR

LABORERS - \$1.00 TO \$1.50 PER HOUR

NOTE: THESE ARE UNION WAGE SCALE. NON-UNION WAGES RUN APPROXIMATELY 30% LESS.

LIST OF ASSETS

15 PATENTED CLAIMS COMPRISING THE GOLD BAR MINE

15 BUILDING AND SHEDS INCLUDING 1 OF STONE AND 1 OF STONE AND ADOBE

4 SHAFTS AND 11 TUNNELS

1 - 7" LUTWEILER PUMP WITH FAIRBANKS-MORSE 22HP ENGINE GASOLINE

DRIVEN WITH ALL SHAFTHING LINES AND IDLERS IN PLACE.

1 - 12 HP FAIRBANKS-MORSE VERTICAL ENGINE

1 HOIST DRIVEN BY 12HP FAIRBANKS-MORSE ENGINE

1 HOIST DRIVEN BY 50HP WESTERN GAS ENGINE

1 HOIST DRIVEN BY 25HP WESTERN GAS ENGINE

1 AIR COMPRESSOR - SULLIVAN MACHINERY CO., CHICAGO - CLASS WH 2-

2 STAGE - SIZE 12 X 7½ X 14

1 LEYNER VERTICAL AIR COMPRESSOR USED AS AN AUXILIARY

1 AIR RECEIVER 30" X 72"

1 AIR RECEIVER 44" X 120"

ALL CONNECTIONS AND VALVES AND PIPES IN OPERATING CONDITION

LIST OF ASSETS (CONTINUED)

- 1 CENTRIFUGICAL PUMP 4"
- 1 TRIPLEX PUMP SIZE 4 X 6
- 1 VENTILATION FAN 16" DIAMETER DRIVEN BY MAIN HOIST ENGINE
- 13 MISCELLANEOUS TANKS
- 1 SMALL ORE BUCKET
- 2 ORE TUBS - 1 TON CAPACITY
- 3 STEEL ORE CARS
- 4 INCLINE SHAFTS STEEL ORE CARS
- 1 DE-WATERING BUCKET
- 1 ORE HOPPER
- 4 TIMBERING JACKS
- 1 LARGE CROWN PULLEY AND TIMBERS FOR HEAD FRAME FOR #1 SHAFT
- 1 HEAD FRAME - INTACT AT #2 SHAFT
- 1 HORSEDRAWN SLIP
- 750 FEET OF MINE TRACT AT VARIOUS LOCATIONS ON THE CLAIMS (APPROXIMATELY)
- 400 FEET OF 4" PIPE (APPROXIMATELY)
- 40 FEET OF 4" LINE SHAFT (APPROXIMATELY)
- 300 FEET OF MISCELLANEOUS PIPE (APPROXIMATELY)
- 5 DRIVE WHEELS TO FIT THE 4" LINE SHAFT LISTED ABOVE
- 100 LBS. OF DRILL STEEL (APPROXIMATELY)

GEOLOGY

THE MINE LIES IN THE BRADSHAW GRANITE IN THE WICKENBURG MOUNTAINS.

THE COUNTRY IS INTRUDED IN MANY PLACES BY DIORITE DIKES OF TERTIARY PERIOD, PROBABLY THE MIOCENE AGE. THE GRANITE IS CHARACTERIZED BY MANY INCLUDED LENSES OF SCHIST WHICH ARE THE REMAINS OF PRE-CAMBRIAN SEDIMENTS. THE MINERALIZED ZONE IN WHICH THE GLORY HOLE, THE #1 AND THE #2 SHAFTS, AND THE WORKINGS ON BLACK BEAR GULCH LAY ON OPPOSITE

GEOLOGY (CONTINUED)

SIDES OF A MUCH BREACCIATED ZONE STRIKING SOUTH 56 DEGREES WEST.

THERE IS A DIKE ON THE BLACK BEAR CLAIM WHICH STRIKES SOUTH 55 TO 58 DEGREES WEST. THIS DIKE IS FAULTED AT ABOUT 250 FEET WEST OF THE OLD O'BRIAN TUNNEL, THE HADE BEING TO THE NORTHWEST WHICH POSSIBLY ACCOUNTS FOR THE DIORITE ON THE BENNETT & GILBRAITH CLAIMS. IF THIS IS SO, THE MINERALIZATION IN THE #2 SHAFT AND THE OLD INCLINE SHAFT ARE PROBABLY CONTINUOUS ON OPPOSITE SIDES OF THE SHEERING ZONE. WITH A THROW OF ABOUT 200 TO 300 FEET, THIS WOULD ALSO ACCOUNT FOR THE MISPLACEMENT OF THE #2 SHAFT WHICH IS ABOUT 80 TO 100 FEET OFF THE ORE SHOOT.

IF FURTHER WORK SHOWS THIS TO BE SO, THERE IS A GOOD POSSIBILITY OF A LARGE ORE BODY LYING IN THIS AREA WITH MUCH ORE IN THE DRAG ZONE. THIS FAULTING CAME AT A MUCH LATER GEOLOGICAL DATE THAN THE INTRUSIVE DIKE.

THE MINERALIZATION HAS BEEN IN TWO STAGES: THE FIRST A PRIMARY MINERALIZATION OF BASIC IRON SULPHIDES DEPOSITED IN FRACTURES EXISTING IN THE GRANITE. THIS WAS ACCOMPLISHED BY HYDROTHERMAL WATER FROM A DEEP SOURCE, AND AS WITH ALL DEEP-SEATED MINERALIZATION THIS HAS A GOOD CHANCE TO CONTINUE IN DEPTH.

A LATER SECONDARY MINERALIZATION WAS DEPOSITED, POSSIBLY AT THE TIME THE INTRUSIVE DIKES WERE FORMED. THE BASIC MINERALIZATION IS A CRUDE PYRITE CARRYING GOLD; THE UPPER OXIDE ZONE IS PYRITE ALTERED TO LIMONITE, MUCH OF WHICH HAS BEEN LEACHED TO FORM SECONDARY ENRICHMENT ALONG CRACK SEAMS AND VEIN FILLINGS.

IN THE UPPER OXIDE ZONE THERE IS AN ABUNDANCE OF MOLYBDENUM IN THE MINERALS AS NOTED: MOLYBDITE, FERRO-MOLYBDATE, AND WULFENITE. THIS MINERALIZATION SHOWS UP AT VARIOUS POINTS ON THE

GEOLOGY (CONTINUED)

GOLD BAR CLAIMS AND ON THE LITTLE BEAR CLAIM ADJOINING, NOTABLY AT THE LARGE OUTCROP ON THE BLACK BEAR CLAIM AND AT THE GLORY HOLE. AS THE MOLYBDENUM MINERALIZATION SHOWS NEAR 1 PER CENT ON AN AVERAGE IT IS POSSIBLE THAT THIS WILL ADD CONSIDERABLE TO THE INCOME OF THE GOLD BAR MINE.

TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS VERY ROUGH IN NATURE, BEING MOSTLY NARROW RIDGES AND DEEP GULCHES, THE GENERAL TREND OF WHICH IS TO THE NORTHEAST. THE DRAINAGE OF THE AREA IS TO THE NORTH AND NORTHEAST TO THE HASSAYAMPA RIVER WHICH LIES ABOUT TWO MILES DOWN THE O'BRIAN GULCH FROM THE MINE. THE SURFACE OF THE AREA IS COVERED LIGHTLY WITH WEATHERED GRANITE AND SOIL TO A DEPTH OF APPROXIMATELY 4 INCHES.

FLORA

THE PLANT LIFE IS TYPICAL OF THE ARID REGIONS OF THE SOUTHWEST BEING PRIMARILY OF CACTI, PALO VERDE, OCOTILLA, CATCLAW, ACACIA, SOME LIVE OAK, AND OTHER LOW-GROWING DESERT PLANTS, THE ONLY LARGE PLANTS BEING THE SAGURO CACTUS AND AN OCCASIONAL COTTONWOOD TREE.

FAUNA

ANIMALS OF THE REGION ARE DEER, BOB-CAT, PUMA, COYOTE, GROUND-SQUIRREL; A VARIETY OF BIRDS INCLUDING GAMBELS QUAIL, GILA-WOODPECKER, ROCK-TRESH, HOUSE-WREN, CARDINAL, BLUE-JAY. A VARIETY OF REPTILES ARE FOUND IN THE AREA, THE ONLY DANGEROUS ONES BEING THE SIDEWINDER, THE DESERT RATTLE-SNAKE, AND THE GILA-MONSTER. OTHER VENOMOUS SPECIES

OF THE AREA ARE TWO VARIETY OF SCORPION AND ONE VARIETY OF TARANTULA.

#2 SHAFT

THE ELEVATION AT THE COLLAR OF THE #2 SHAFT IS 3480 FEET. THE SHAFT IS IN GOOD REPAIR EXCEPT FOR A SLIPPAGE OF ABOUT 8½" WHICH STARTS WHERE THE CONCRETE COLLAR OF THE SHAFT ENDS AND THE TIMBERING BEGINS. THE CRIBBING BOARDS AT THIS POINT ARE LOOSE. THE CONCRETE COLLAR WAS CONSTRUCTED IN 1920. THE ENTIRE SHAFT WAS RETIMBERED BY WADE TWICHELL IN THE MIDDLE 1930'S. THE WATER NOW STANDS AT THE 285' LEVEL. THE SHAFT AND TIMBERING ARE IN EXCELLENT CONDITION TO THE WATER LINE AS OBSERVED BY MY INSPECTION. THERE HAS BEEN SOME SLIGHT DAMAGE BY VARIOUS OBJECTS BEING THROWN INTO THE SHAFT. ALL THE LADDERS ARE IN GOOD CONDITION TO THE WATER LEVEL.

THE LINE FROM THE LUTWEILER PUMP IS IN GOOD CONDITION. THE ONLY REPAIRS NECESSARY ARE TO THE BRACES HOLDING IT IN LINE IN THE SHAFT, AS SOME HAVE PULLED LOOSE WHEN THE TIMBERING SETTLED AND NEED RE-ADJUSTING AS ONLY ONE LAG-SCREW HELD THEM TO THE TIMBERING.

THE VENTILATION PIPE WHICH CONSISTS OF AN EITHT INCH GALVANIZED TUBE OF ABOUT TWENTY GAUGE ENDS AT ABOUT THE 100 FOOT LEVEL AND IS IN GOOD CONDITION UP TO THAT POINT.

THE SHAFT IS OF THE DOUBLE TYPE; ONE SIDE FOR AN ESCAPE LADDER; THE OTHER SIDE FOR THE CARRYING OF ORE AND MEN BY WAY OF HOISTING. THE SHAFT IS APPROXIMATELY 6' X 10'.

THIS SHAFT COULD BE PUT INTO OPERATION AT VERY LITTLE COST AS ALL THE MACHINERY AND EQUIPMENT APPEARS IN FAIR SHAPE. THE

- 50 -

#2 SHAFT (CONTINUED)

GALLOW'S FRAME IS IN PLACE AND THE HOISTING EQUIPMENT APPEARS IN OPERATING CONDITION. THE ENGINES FOR THE AIR COMPRESSOR AND LUTWEILER PUMP APPEAR TO BE IN OPERATING CONDITION.

WHITE BLAZE

THE WHITE BLAZE TUNNEL IS AN INCLINE SHAFT DIPPING N 40 TO 45 W AND IS IN FAIR SHAPE, BEING ACCESSIBLE FOR SOME 45 FEET, THEN THE ROOF AT THIS POINT NEEDS SOME TIMBERING TO MAKE IT SAFE FOR POSSIBLE 100 FEET FURTHER, WHICH WAS AS FAR AS I COULD SEE. THIS TUNNEL HAS GOOD POSSIBILITIES AS MUCH COPPER ORE IS IN EVIDENCE. THERE IS ONLY TRACE AMOUNTS OF GOLD AS INDICATED BY MY ASSAY. THE COPPER RUNS FROM 0.58% TO 12.0% WITH AN AVERAGE OF BETTER THAN 5% IN 20 SAMPLES. A GEIGER COUNTER SHOWS A HIGH PERCENTAGE OF RADIOACTIVE MINERALIZATION ON A 6 FOOT GRIND STARTING AT THE TUNNEL ENTRANCE AND FOR THE FIRST 45 FEET THE RADIATION LEVEL RAN FROM 41 CPM AT THE SURFACE TO 88 CPM AT THE 40 FOOT LEVEL, AND AT THE 45 TO 50 FOOT LEVEL AND ON DOWN AS FAR AS I INSPECTED THE INCLINE, THE METER REGISTERED A CONSTANT BACKGROUND OF FROM 0.07 TO 0.10 MR. PER MIN. THIS WARRANTS FURTHER INVESTIGATION. SOME PICKED HAND SAMPLES RAN AS HIGH AS 0.30 MR. PER MINUTE.

OPINIONS AND RECOMMENDATIONS

IT IS MY OPINION THAT THE GOLD BAR MINE IS LOCATED ON A LARGE ORE BODY, THE SCOPE OF WHICH CAN ONLY BE DETERMINED BY FURTHER DEVELOPMENT WORK. I BELIEVE THE LARGEST UNDEVELOPED ORE DEPOSIT WILL BE FOUND ON THE BLACK BEAR CLAIM IN CONJUNCTION WITH THE TWO LARGE QUARTZ OUTCROPS.

OPINIONS AND RECOMMENDATIONS (CONTINUED)

I DO NOT BELIEVE THAT THE PROPOSAL BY MR. HYDE OF DRIFTING 700 FEET FROM THE #2 SHAFT SHOULD BE FOLLOWED THROUGH UNTIL FURTHER MINERALIZATION IS PROVEN.

MY RECOMMENDATION WOULD BE TO SINK A SHAFT DOWN ON THE MOST EASTERLY BLOWOUT ON THE BLACK BEAR CLAIM, AS I BELIEVE THAT ORE IN PAYING QUANTITIES WOULD BE ENCOUNTERED AT A VERY SHALLOW DEPTH; ALSO THERE IS MOLYBDENUM ORE AT THIS LOCATION WHICH BY ASSAY BY MR. SHARPE SHOWED 1.79% MOLYBDENUM. THIS WOULD BE MUCH MORE PROFITABLE THAN DRIVING 700 FEET OF DEAD DRIFT AS THE SHAFT WOULD BE SUNK INTO ORE.

IT IS MY OPINION THAT THIS OUTCROP IS VERY SIMILAR TO THE GLORY HOLE AND VERY LIKELY WILL BE A HIGH GRADE PRODUCER. IT IS WITHOUT A DOUBT ONE OF THE MOST PROMISING POSSIBILITIES OF THE PROPERTY BUT HAS BEEN BADLY NEGLECTED IN THE PAST.

I BELIEVE THAT IN DEPTH THE GOLD BAR ORE BODY WILL DEVELOP INTO A COPPER PRODUCER CARRYING HIGHER PERCENTAGES OF SILVER AND LESS GOLD BUT THAT IT WILL BE A LARGE VOLUME PRODUCER.

AFTER PRODUCTION IS AGAIN UNDER WAY, I RECOMMEND THAT THE AREA SHOWN IN RED ON THE ISORAD MAP BE CORE-DRILLED TO BLOCK OUT ALL POSSIBLE ORE BODY IN THE AREA. AS SURFACE INDICATIONS AGREE VERY CLOSELY TO INDICATE A HIGHLY MINERALIZED ZONE, THE URANIUM MINERALIZATION AT GOLD BAR MAY INCREASE IN DEPTH, ESPECIALLY AS THE CONTENT OF COPPER INCREASES AND AS THE ISORAD SURVEY CORRESPONDS VERY CLOSELY WITH THE KNOWN MINERALIZATION. IT IS MY RECOMMENDATION THEREFORE THAT THE ENTIRE GROUP OF CLAIMS BE ISORAD SURVEYED AND PLOTTED TO INDICATE OTHER POSSIBLE ORE BODIES, ESPECIALLY

OPINIONS AND RECOMMENDATIONS (CONTINUED)

ON THE CABLE CLAIM IN CONJUNCTION WITH THE QUARTZ OUTCROP AND ON THE CROWN AND BUTTONS CLAIMS IN CONTINUATION OF THE HIGH COUNT AREA SHOWN ON THE ISORAD MAP; ALSO THAT THE WHITE BLAZE CLAIM BE PARTICULARLY TAKEN NOTE OF AS CONSIDERABLE RADIATION WAS FOUND AND THE RADIATION INCREASED IN DEPTH.

IT IS MY RECOMMENDATION THAT THE CLAIM KNOWN AS THE GREEN MONSTER BE CLAIMED IF IT IS OPEN OR AN OPTION BE TAKEN IF NOT; ALSO THAT THE AREA JOINING THE BENNETT, THE ROBERTS, AND THE LITTLE JIM CLAIMS BE CLAIMED OR AN OPTION TAKEN AS THIS SHOULD SHOW A CONTINUATION OF THE MAIN ORE SHOOT.

ASSAY BY J. W. SHARPE - WICKENBURG, ARIZONA

	AU OZ. PER TON	AG OZ. PER TON	PB PERCENT	MO PERCENT	V PERCENT
NORTH WALL OF THE GLORY HOLE.	0.17	2.01	3.7	1.2	--
BURNTON CLAIM GRAB SAMPLE.	--	--	--	--	0.06
BLOWOUT ON BLACK BEAR CLAIM	--	--	--	1.79	--
ENLO #1 CLAIM AD- JOINING BRUNTON CLAIM.	0.02	1.17	--	1.08	--
MILL TAILS FROM UNDER GRAVITY TABLES.	0.04	0.89	--	0.61	--
CYANIDE TAILS O'BRIAN GULCH	0.10	0.86	--	0.28	--

ASSAY BY E. L. GILMORE - TULSA, OKLA.

	AU OZ. PER TON	AG OZ. PER TON	CU PERCENT	MO PERCENT	U PERCENT
GLORY HOLE N. SIDE OPPOSITE PILLAR.	0.20	1.87	--	1.3	TRACE
GLORY HOLE SAMPLE FROM FLOOR.	0.36	2.04	--	1.72	0.09
GLORY HOLE FROM ENTRANCE TO LOWER LEVEL.	0.25	2.01	--	0.87	TRACE
GLORY HOLE BLACK DUST FROM VUGS.	2.4L	7.40	--	3.29	0.71
DUMP #2 SHAFT MUCH PYRITE	0.09	--	--	--	--
DUMP #2 SHAFT OLD SECTION	0.10	--	--	--	--

ASSAYS BY E. L. GILMORE - TULSA, OKLA.

	AU OZ. PER TON	AG OZ. PER TON	CU PERCENT	MO PERCENT	U PERCENT
BLUE MOON OUTCROP ON MIKE GULCH	0.20	1.40	12.0	--	TRACE
BLUE MOON IN BACK OF TUNNEL.	0.16	1.28	0.68	--	TRACE
OLD O'BRIAN TUNNEL MAIN TUNNEL.	0.04	1.06	0.35	--	0.01
OLD SHAFT ON CABLE ACROSS FROM OLD O'BRIAN TUNNEL	0.02	---	--	--	TRACE
#2 DUMP	0.07	--	--	--	--
WHITE BLAZE DUMP.	TRACE	--	7.64	--	0.07
WHITE BLAZE TUNNEL ENTRANCE	0	--	4.87	--	TRACE
WHITE BLAZE 25FT. DOWN THE INCLINE	TRACE	--	6.67	--	0.09
WHITE BLAZE PICKED FOR HIGH COPPER.	TRACE	--	19.09	--	0.16
GLORY HOLE AVERAGE SAMPLES EVERY 10'	0.28	--	--	--	--
GLORY HOLE AVERAGE OF SAMPLES EVERY 5' NORTH WALL.	0.21	--	--	--	--
RED WONDER PROSPECT CUT	0.35	0.85	4.0	0	0
RED WONDER DUMP	1.04	--	11.03	--	0
RED WONDER DUMP	0.09	--	0.52	--	--
BLACK BEAR TUNNEL AT CENTER LINE OF CLAIM AT ENTRANCE OF TUNNEL	0.34	--	--	1.14	--
BLACK BEAR TUNNEL AT CENTER LINE OF BLACK BEAR CLAIM NEAR BACK.	0.14	---	--	0.38	--

ASSAY BY E. L. GILMORE - TULSA, OKLAHOMA (CONTINUED)

	AU OZ. PER TON	AG OZ. PER TON	CU PERCENT	MO PERCENT	U PERCENT
DUMP BLACK BEAR TUNNEL PICKED SAMPLE.	0.24	--	--	0.57	--
DUMP AVERAGE OF 10 SAMPLES BLACK BEAR TUNNEL.	0.08	--	--	--	--
OLD O'BRIAN TUNNEL BLACK BEAR CLAIM FIRST DRIFT OFF MAIN TUNNEL.	0.02	--	--	TRACE	0.11

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- TERTIARY INTRUSIVES IN ARIZONA - BUREAU OF MINES - #1 19.16:256
- COPPER - GOVERNMENT PRINTING OFFICE - #1 28.97:C79
- MINERAL YEARBOOK - GOLD-SILVER-COPPER IN ARIZ. #1 28.37/A:G563/2/952
- MINERAL YEARBOOK - MOLYBDENUM - 1 28.37/A:M739/950
- CIRCULAR #13 ARIZ. BUREAU OF MINES - UNIVERSITY OF ARIZONA
- RADIOACTIVE URANIUM AND THORIUM
- ARIZONA STATE WEATHER BUREAU - TUSCON
- ARIZONA POWER & LIGHT CO. - RATE'S BULLETIN
- I WISH TO ENTEND THANKS TO THE MINERAL RESOURCES BOARD AT PHOENIX,
AND PARTICULARLY TO MR. A. L. FLAGG FOR THE MANY COURTESIES SHOWN
ME, AND FOR THE USE OF THE BOARD'S RECORDS; AND TO MR. SHARPE OF
THE WICKENBURG ASSAY OFFICE, AND TO THE MANY OTHERS IN THE WICKEN-
BURG AREA FOR THE HELP GIVEN ME DURING MY STAY THERE.

CONCLUSIONS

This orebody is confined to a roughly circular, pipe-like, geologic feature and two other practically identical but larger pipe-like features outcrop within 1,000 feet. In spite of the fact that gold can be panned from most of the detritus around these outcrops no effort has been made to explore their possibilities. It is considered likely that the two unexplored pipes will yield ore of a grade comparable to the known orebody. If so a large and profitable mining operation could result and the preliminary testing of these features is amply warranted.

The geologic features referred to are three relatively small, oval-shaped pipes or small stocks of Cretaceous age granite porphyry which have been injected into a complex of early pre-Cambrian schists, paragneisses, and granites. The porphyry pipes are cut by a complicated stockwork of quartz stringers and veinlets and are heavily mineralized by coarse pyrite in blebs and stringers. The outer shells of the pipes across a width of several feet are much more heavily silicified and brecciated than the interior portions and carry less sulphides. In the one pipe explored the shell is relatively barren but the interior portion forms a gold orebody running between 0.60 ounces and 0.88 ounces gold per ton.

The No. 1 porphyry pipe plunges S65°W at about 28° and has been developed from two vertical and one inclined shaft to a vertical depth of approximately 220 feet below the outcrop. The No. 2 vertical shaft is 735 feet deep and is located near the plunge line of the pipe 750 feet horizontally and +170 feet vertically from the outcrop.

The interior auriferous portion of the No. 1 pipe contains 225 tons per vertical foot of ore grading between 0.60 and 0.88 ounces gold per ton. During the early 1900's approximately 78% of this prebody was mined out from surface to 20 feet above the water table which is here 155 feet below the outcrop. This resulted in a production of roughly 16,800 ounces from 24,000 tons of ore grading 0.88 ounces per ton. From the bottom of the old stope to the 445 level, which is 55 feet below the water table, there is indicated 17,000 tons of ore having an estimated grade of 0.60 ounces gold per ton. The orebody is lost below the 445 level but the lower workings are probably

in the barren silicified brecciated shell of the pipe . . it should not be difficult to pick up the downward continuation of the ore.

The No. 2 porphyry pipe outcrops 700 feet south of and 150 feet above the No. 2 shaft. It is practically identical to the No. 1 pipe in composition, silicification and mineralization. Eliminating the outer, presumably barren shell it contains approximately 1,400 tons per vertical foot. The similar No. 3 pipe outcrops 800 feet southeast of the No. 2 shaft at about the same elevation. Its interior portion is estimated to contain 2,000 tons per vertical foot.

There is every reason to expect that the Nos. 2 and 3 pipes will be found to carry orebodies similar to the No. 1 pipe. If so there is a strong possibility that an aggregate tonnage of well over 3,500 tons per vertical foot grading better than 0.50 ounces gold per ton could be developed. This would indicate a production rate in excess of 1,500 tons per day and as there are no particular obstacles to operating at normal costs a very profitable operation could result.

RECOMMENDATIONS

The only information concerning the Nos. 2 and 3 porphyry pipes is obtained from their outcrops. There is no indication of the direction or dip of their plunges although these will probably be similar to the No. 1 pipe.

In order to intelligently explore these pipes it will first be necessary to determine their plunges. It is recommended that this be done by drilling a series of vertical diamond drill holes spaced 50 feet apart horizontally and collared approximately 100 feet horizontally from the edge of each pipe. It should be assumed for a start that the plunges are ^S365° W at 30° and the first holes should be located over the projected centre-line of each pipe 100 feet from their southwest ends. The next holes should be located 50 feet from the first ones and 100 feet from the edge of the pipes and the drilling should continue in this manner until the plunges are definitely determined. All holes should be continued completely through the pipes and sampled to determine the gold content.

The above drilling will require at least four, 250 foot holes for each pipe.

INTRODUCTION

The following report is based on an examination of the property between October 17th and 21st, 1963. The underground workings were inaccessible and the report represents a compilation and interpretation of all available data.

LOCATION, ACCESS, FACILITIES

The property is located in Yavapai County, Arizona some 12 miles northeast of the town of Wickenburg. It consists of 15 contiguous patented lode claims covering approximately 300 acres in sections 27, 28, 33 and 34. Township 9 north Range 3 west, and one patented mill-site on the Hassayampa River in section 21 same Township.

Access to the property is from the town of Wickenburg via a 17 mile long, county maintained, gravel road. This road is suitable for cars and moderate sized trucks but the grades and switchbacks of the last 3 miles make it unsuitable for heavy hauling or long loads. The property lies on the western slopes of the Hassayampa River which flows through Wickenburg and a practically level road now follows the river for some 12 miles to a large ranch. This road could easily be continued 4 miles to the property at a cost of about \$3,000 and would provide easy access.

Wickenburg lies some 40 miles northwest of Phoenix on the main State Highway system and is served by the Kingman-Phoenix branch of the Santa Fe Railroad. Five custom smelters for the treatment of concentrates from the property are located from 140 to 450 miles by rail from Wickenburg.

Water might possibly be a problem for a large scale milling operation but as the mine is reported as making 60 gallons per minute and as this can be augmented by pumping from the nearby Hassayampa River no shortage is to be anticipated.

There is no electric power nearer than Wickenburg but a line was once installed to the old Monte Cristo mine some 2 miles from the property. This mine is now closed and the line has been removed but under the terms of the contract will be replaced if other users are found in the area. All timber must be imported and there is no adequate camp accommodation near the property.

HISTORY AND PRODUCTION

Prior to 1905 some 4,000 tons of ore grading about 0.90 ounces gold per ton were mined from a glory hole and 60 foot shaft at elevation 3285 in O'Brien Gulch.

Subsequently in 1907 and 1908 a 100 ton gravity and amalgamation mill was installed and a 26° inclined shaft was sunk from the bottom of the glory hole for 525 feet down the plunge of the orebody. During this period the vertical 5 x 9 foot No. 1 shaft was sunk 270 feet from the north wall of the gulch at elevation 3,378 feet to connect with the incline 250 feet from the glory hole.

The incline was in the ore a little above the bottom of the orebody which was mined out above the incline for a slope length of 320 feet or to a vertical depth of 135 feet. Approximately 20,000 tons of ore were milled and 13,200 ounces of gold were produced. The recovered grade was 0.66 ounces per ton. and, as the mill extraction is reported at 73%, the grade of this ore was 0.87 ounces per ton. The total reported production was thus 16,800 ounces gold from 24,000 tons of ore grading 0.88 ounces per ton.

Later the property was acquired by the Gold Bar Mining Company and the No. 2 vertical, 5 x 9 foot shaft was sunk to a depth of 735 feet from a site on the north wall of the gulch at elevation 3,450 feet and 400 feet southwest of No. 1 shaft. A crosscut was driven to connect with the 500 foot level at the bottom of the old incline and some 300 feet of lateral work was done on the 700 foot level of the No. 2 shaft. A small amount of ore was mined during this period for test purposes but there was no production reported. The property has been idle since the early 1920's.

EQUIPMENT

The old mill has long since been dismantled and the plant and headframe removed from the No. 1 shaft. At the No. 2 shaft the headframe is still standing but is badly weathered and usable only for very light loads. The buildings at this shaft are in fair condition and contain an old 500 cubic foot per minute compressor and a small single drum hoist which are still usable.

GEOLOGY

The general geology of the area consists of a basement complex of early pre-Cambrian schists and paragneisses intruded by irregular masses, batholiths, dykes and sills of granitic rock, also of early pre-Cambrian age. The basement rocks have been involved in the Laramide orogeny of late Mesozoic times which in this region consisted principally of large scale block-faulting and the intrusion of stocks and small masses of granitic rocks. Aside from the Cretaceous granitic intrusives post pre-Cambrian rocks are essentially lacking in the area although a small down-faulted block of Cretaceous sediments lies to the east of the Hassayampa River a mile or so from the mine.

Across the property itself practically all of the rocks are either pre-Cambrian granites or very highly altered older pre-Cambrian schists and paragneisses. The granites predominate in volume but the geology has not been mapped in detail and the complicated distribution of the granites and sediments has not been determined.

In the general vicinity of the Gold Bar shafts the pre-Cambrian rocks have been intruded by a series of pipes or small stocks of granite porphyry which are connected with the Laramide orogeny and are presumably of late Cretaceous age. It is only recently that the mapping of Mr. D. P. McCarthy has established these features in the general granitic background of the area. As one of these pipes forms the host rock of the Gold Bar orebody they are described in some detail below using the No. 2 shaft as a point of reference.

Three porphyry pipes have been outlined by the mapping, each outcropping approximately 800 feet in different directions from the No. 2 shaft. All are roughly oval in plan with the long axes trending N50° to 55° W. They are strongly jointed in both northeast and northwest directions in common with the pre-Cambrian rocks. The three pipes are as follows:

- 1) No. 1 porphyry pipe outcrops 750 feet at N65° E from the No. 2 shaft along the northern edge of O'Brien Gulch, approximately at elevation 3,300 feet. The pipe has a horizontal length of 90 feet and a maximum width of 60 feet. Underground development shows that it has a plunge of 28° in a S65°W direction for at least the first 500 feet of its length.

The pipe consists of brecciated and altered granite porphyry cut by a large number of quartz stringers, veinlets, and small masses running in every

direction. It is strongly mineralized by coarse pyrite in scattered blebs and in irregular stringers and veinlets. The outer shell of the pipe, across a horizontal width of several feet, is much more heavily brecciated and silicified than the interior portion and apparently carries fewer sulphides.

The upper part of the pipe, down to the water table at approximate elevation 3,125 feet, is completely oxidized and the pyrite has been converted to earthy limonite. Immediately below the water table rusty pyrite appears and at deeper horizons becomes quite fresh. On the 445 foot level the pipe is apparently cut by a small basic dyke and considerable copper sulphide mineralization is reported in association with this feature.

- ii) No. 2 porphyry pipe outcrops 750 feet at $S10^{\circ} W$ from No. 2 shaft along the top of the ridge between O'Brien and Black Bear gulches at an elevation of about 3,610 feet. Two outcrops are to be seen separated by some 25 feet of basic dyke material.

The larger mass to the southwest is 170 feet long by 120 feet wide in horizontal section while the smaller one is 80 feet long by 35 feet wide. This pipe is practically identical to the No. 1 pipe in composition, silicification, and sulphide mineralization. There is no indication of its plunge in the surface exposures and the best assumption is that it will plunge southwest at a flat angle in conformity with the No. 1 pipe.

- iii) The No. 3 pipe outcrops 800 feet at $S60^{\circ} E$ from the No. 2 shaft along the same ridge as No. 2 pipe approximately at elevation 3,450. It is larger than the other pipes but is identical to the No. 1 pipe in composition, silicification, and sulphide mineralization. Its long horizontal axis measures 280 feet while its greatest width is 180 feet. As in the case of the No. 2 pipe there is no indication in the surface exposure of the amount or direction of plunge and the best assumption at present is that it plunges in conformity with the No. 1 pipe.

Approximately contemporaneous with the porphyry pipes and presumably as a different expression of the same igneous activity a number of diabase and diorite dykes are found cutting the basement complex to the west of the mine area. For the most part these features trend from $N30^{\circ} W$ to $N30^{\circ} E$ and dip from 40° to 70° in both directions.

In the mine area itself a zone of strong shearing passes 300 feet west of No. 2 shaft and has been traced for several thousand feet along its irregular $N30^{\circ} E$ trend and 45° west dip. Much of its length is marked by 15 feet or so of sheared basic rock, probably intrusive, and alternatively considerable stretches carry a massive quartz vein 5 or more feet wide. In one spot, some distance north of the No. 1 porphyry pipe, the quartz carries considerable copper mineralization and a small shaft has been sunk 50 feet or so on the vein.

A second zone of fracturing and shearing in the mine area strikes $N30^{\circ} E$ with a 50° to 60° east dip and passes just west of the No. 3 porphyry pipe. Its course is marked by intermittent occurrences of basic dyke material and in one place near O'Brien gulch by quartz veining. The basic dyke material is occasionally accompanied by copper mineralization in quartz veinlets and one such area has been investigated by the Black Bear workings near the edge of the No. 3 porphyry pipe.

ECONOMIC GEOLOGY

Aside from the apparently unimportant, scattered, copper mineralization associated with some of the Cretaceous basic dykes and quartz veins the economic possibilities

of the property are confined to gold mineralization associated with the silicified and mineralized porphyry pipes. Although all three known pipes are almost identical in composition and mineralization only the No. 1 pipe has received any exploration or development.

As noted under the caption "History and Production" a large proportion of the central portion of the No. 1 pipe was mined from a glory hole and an inclined shaft for a length of 320 feet down its plunge or to a vertical depth of 137 feet below the outcrop in the gulch at elevation 3,285 feet. This work yielded some 24,000 tons, or 175 tons per vertical foot, of ore grading 0.88 ounces gold per ton.

The bottom of the stoping lies some 20 feet above the water table but the incline continues for some 250 feet below the stope and is connected to the Nos. 1 and 2 shafts. Lateral work and recent diamond drilling to the 500 foot slope level at elevation 3,025 feet shows that the oreshoot continues to just below the 445 foot level at elevation 3,065 feet. As noted above abundant pyrite makes itself evident below the water table and continues to the 445 foot level where it decreases sharply in quantity and the porphyry becomes much more brecciated and silicified. The gold content also falls off abruptly below the 445 foot level and this may be explained in one of the three following ways:

- a) The incline has steepened somewhat below the stope and this has caused the underground openings below the 445 level to drift into the highly brecciated and silicified but poorly mineralized lower shell of the porphyry pipe which carries only a little gold. This is considered to be the most likely explanation.
- b) There is some evidence of N30° W, east dipping faulting below the 445 level in the form of gouge planes and slickensides which apparently indicate a right-lateral displacement of unknown magnitude. If this displacement is more than a few feet the resultant fault gap in the flat plunging pipe could make the downward extension difficult to locate.
- c) There is no evidence of a gradual diminution in gold content as the 445 foot level is approached and for this reason it is not considered likely that the workings have reached the bottom of the oreshoot.

The No. 2 shaft was recently de-watered to the 500 foot level, the accessible workings below the old stope were examined and sampled, and eight short diamond drill holes were drilled to investigate the orebody in this area. Two of the holes, drilled horizontally across the pipe from opposite sides of the 407 drift, showed the horizontal width of the oreshoot to be 44.8 feet. Including the results across the drift this width has an average assay value in gold and silver of \$24.60 per ton or a gold equivalent of 0.71 ounces per ton. The other holes were designed to be part of a programme of ring drilling to outline the oreshoot and to find its downward continuation but the drilling was stopped before the pattern could be completed. In addition to the drilling some 60 feet of channel sampling was done on the levels and the incline. A 200 pound weighted composite sample of the rejects from all of the core, sludge, and channel samples in the orezone was assayed and returned 0.32 ounces gold and 1.7 ounces silver per ton.

The above results combined with the available assay results of three previous samplings of the underground openings indicate approximately 17,000 tons of ore grading 0.60 ounces gold per ton in the block between the bottom of the old stope and the 445 foot level below which the orebody has been lost.

From the dimensions of the No. 1 porphyry pipe and eliminating the barren, heavily silicified, outer shell the auriferous central portion should yield 225 tons per vertical foot which is somewhat more than the 175 tons per vertical foot removed

by the old stoping. As noted above the incline is above the bottom of the oreshoot which precluded the complete removal of the orebody. It is therefore considered that there is a reasonable expectancy that the No. 1 pipe will yield 225 tons per vertical foot of unoxidized ore grading approximately 0.60 ounces gold per ton.

As noted above the outcrops of the Nos. 2 and 3 porphyry pipes are practically identical to that of the No. 1 pipe. The pipes have never been tested in any way in spite of the fact that gold can be panned from most of the detritus around their outcrops and there is a strong possibility that they will be found to carry oreshoots comparable in grade to the No. 1 pipe but larger. Eliminating the presumably barren shells the No. 2 pipe contains approximately 1,400 tons per vertical foot and the No. 3 pipe 2,000 tons per vertical foot. If exploration and development can confirm the grade possibilities in these features a very profitable mining operation would result. There would then be over 2,000,000 tons of ore to the elevation of the bottom of the No. 2 shaft and, if the plunge of the Nos. 2 and 3 pipes is comparable to that of the No. 1 pipe, they will lie within reach of that opening. The preliminary testing of these pipes by diamond drilling is amply warranted.

October 23rd, 1963

G. L. Holbrooke

Because of the danger of () nding the brittle sulphides it) strongly recommended that AXL drill equipment be used. It is estimated that the total cost of the 2,000 feet of drilling will be \$15,000.

Further drilling will depend on the results of the first holes. If these are encouraging the pipes should be followed down their plunges by a pattern of vertical holes designed to sample the pipes at 50 foot horizontal intervals down to an elevation of 3,000 feet. This will require 3,000 feet of drilling in eight holes and is estimated to cost \$20,000. Additional exploration will depend on the results to this point and cannot be outlined at this time.

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Jack, this is the last
page of Holbrook's report I
gave you 1/6
D.T.

CONTENTS

	PAGE
INTRODUCTION	1
OUTCROPPING ROCKS	2
MINE WORKINGS	2
MINERALIZATION	3
CORE-DRILLING	3
EXPLORATION	4
CONCLUSIONS AND RECOMMENDATIONS	5

MESA ARIZONA, APRIL 1963

-165-

REPORT OF PRELIMINARY GEOLOGICAL EXAMINATION OF
THE GOLD-BAR MINE, YAVAPAI COUNTY, ARIZONA.

BY DONALD P. MCCARTHY, GEOLOGIST, APRIL 1963.

This a preliminary report on the Gold-Bar or O'Brien Mine situated in Yavapai County, Arizona. The property consists of 15 contiguous patented lode claims located in Secs: 27, 28, 33, and 34, T. 9 N. - R. 3 W., and one patented Mill-Site claim on the Hassayampa River in Sec. 21, T. 9 N. - R. 3 W. The purpose of this report is to record the results of preliminary work that I have done in the area during the period between March 18 and the present time. This includes a study of all available recorded data, a reconnaissance of surface outcropping rocks and an examination of the accessible underground workings. Also included are results of core-drilling from the 407-foot level of the mine which has been conducted this month.

The Gold Bar Mine was discovered in 1888 by J. Mahoney. The values occur in a porphyritic rock which is intruded by numerous intersecting stringers, veinlets, and lenses of quartz and pyrite carrying free gold. The property was developed by following the vein or the porphyritic zone to the west-southwest by glory-holing and later by sinking shafts and by extending an incline to the 500-foot level. Total recorded production as bullion and concentrates from these early workings totals over \$300,000.00 (gold at \$35.00 per oz.). The old workings are not accessible above the 385-foot level, however workings

below that level can be reached from the No. 2 Shaft which is situated on strike with the ore-body, but outside of the ore zone about 700 feet southwest of the glory hole. This shaft has a total depth of 735 feet. It has been dewatered to just below the 500-foot level.

Outcropping rocks in the area consist of Pre-Cambrian granite, granite gneiss, and schist. In addition there are three areas where younger granite porphyry outcrops. One of these areas is the site of the initial discovery. The other two lie a few hundred feet to the south and outcrop on the crest of a ridge. These porphyrys dip generally northward toward the mine and appear to be identical to the one which has been mined. The mineralogical content and the apparent degree of iron mineralization is comparable. By panning the weathered detritus from the vicinity of these porphyrys, gold values can be readily demonstrated.

In addition to the gold-bearing porphyritic dikes, which have a northeast-southwest lineament, there are several veins of quartz which strike northwest and also carry some gold.

Mine workings at the Gold Bar show that the ore zone as mined, had a plunge to the southwest at about 35° dip; that is the approximate angle of the incline. Surface measurements of the dip of the porphyry is around 30 to 40 degrees to the northwest. There are several indications of faulting at about the 500-foot level, near the bottom of the incline, in the form of slickensided planes, and a general rubble and brecciated zone.

Near the surface the porphyry is about 60 feet wide at the old caved-in glory hole. Much of this width has been mined out entirely. The glory hole is about 20 feet high by 60 feet wide, and 60 feet deep available to examination at present. Available mine maps show that stoping was carried to about the 340-foot level for a width of about 40-feet and 35-feet high. There is no apparent explanation for the failure to stop the mineralized zone below the 385-foot level.

Mineralization occurs in the sidewalls, the floor, and the back of the incline, as an intersecting mass of stringers, veinlets, and lenses making up as much as one-fourth of the exposed surfaces in places. Visible mineralization extends from the 385-foot level which is as far up as the old workings are accessible, to about the 470-foot level. Detailed assay maps of the underground workings are not available as far as the old workings are concerned. However the ore zone, carrying sulfides and quartz in stringers has been core-drilled from the 407-foot level. Drill Site No. 1 extended flat, north and south from a short drift in highly mineralized porphyry and intersected the granite sidewalls of the porphyry at 10 feet and 17.6 feet respectively. The interval between the portals of the drill holes on opposite sides of the drift was channel sampled a few feet to the north. The composite sample: the drill hole north, the channel sample, and the drill hole south, covering a width of mineralized porphyry of 44.8 feet has an average weighted assay in gold and silver of \$24.60 per ton, based upon dry weights and assays of cores and total sludge recovered from the drill holes.

The contact zone between the porphyry and the granite at DII Site 1 is represented by a zone 6 feet wide on both north and south sides consisting of red, limonite stained, vuggy quartz and some sulphides. These contact zones at the 407-foot level are oxidized. This is in contrast to the middle part of the porphyry where the sulphides occur nearly free of oxidation. Sericite is a common alteration mineral within the porphyry and to some degree in the adjacent granite. DDH 2, inclined 45° upward in a southwest direction from the 407-foot level is designed to delimit the back of the ore zone. The total depth of this hole is 13½ feet as of the date of this report. It is bottomed in mineralized porphyry and will be deepened. The weighted assay of sludge and core for this 13½-foot hole is \$25.40 in gold and silver. This type of gold occurrence, in the form of thin lenses, stringers, and veinlets of quartz and pyrite in a porphyry dike is quite unusual. The porphyry will no doubt extend to great depth and the mineralization may likewise extend to great depth. It is thought probable that there will be certain zones within the porphyry where the veinlets are less numerous and the grade will consequently be lower than in the areas mined near the surface or as examined below the 305-foot level. However, there probably will be recurring ore zones or shoots below this one. Concerning the two other porphyry masses in the area, it is considered probable that similar ore shoots will be found in them. These dikes can be explored by either of two methods: 1 is to drill from the nearest underground point to intersect them in their

underground extension, or 2, some surface drilling could be done to explore them down dip in the area between their outcrop and the outcrop of the mined porphyry in the wash. The main problem to be anticipated in exploration of the porphyrys is that a long hole from the underground may encounter the porphyry outside of a zone of high mineralization and a valuable ore body could be overlooked. By drilling from the surface the possibility of overlooking such an ore shoot would not be as likely. Above all, these porphyrys should not be condemned with merely one or two test holes. They will have to be examined with sufficient regularity to preclude the possible existence of a sizeable ore body. Concerning the extension of the ore body below the present known occurrence along the incline, it appears to drift away from the line of the incline toward the north in the vicinity of the 478-foot level. It also may be displaced by a fault.

Conclusions and recommendations

The ore shoot exposed along the incline from the 385-foot level to the 478-foot level can be outlined by core-drilling from the incline. It is probable that about 25,000 tons of ore can be developed between these levels having a gross value per ton of around \$20.00 or about \$500,000.00 total gross value. Further examination of the old workings above the 385-foot level to the bottom limit of the old stops should reveal additional ore, possibly 15,000 tons with gross value of \$300,000.00.

The prospects of finding additional ore bodies at lower levels, below the 478-foot level are excellent. Ore shoots

similar to the one developed by the underground workings are very likely to occur in the other two nearby porphyry dikes.

It is recommended that:

- 1) Surface detailed geologic mapping be done, employing aerial photo base map.
- 2) Continued underground drilling to outline the known ore body.
- 3) Underground and surface drilling to explore all the porphyry dikes.
- 4) Further examination of the northwest striking quartz veins.



Donald P. McCarthy,
Geologist