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Nov. 5, 1975

Hammam Reolite Deposit
 Copper - with iron, some calcite.
 ① Too small; something in the
 order of 500,000 tons.
 of low grade with some
 bunches of high grade.
 ② Leaching may be a
 problem because of
 the calcite

There are a number of
 similar deposits but
 larger (Mineral Hill)
 in the general area,
 which have not been large
 enough to make a go of it.
 F.H.C.

Bob Wehrley
 dropped this by
 It is the last one
 and he wants it
 back. Wants
 Kellogg to see it.

Bottom cash figure -
 \$35,000.

Paul
 10-27
 11:00am



REALTOR

BOB WEHRLEY
 REAL ESTATE INVESTMENTS

Phone (602) 955-8920
 Res. 997-1888

2705 E. Ind. School Rd.

Phoenix, Ariz. 85016

114-1115
 34-35
 AZ

Yuma Co

Edward W. Brooks
Mining Geologist and Engineer
Title Insurance Building
Los Angeles, California

March 1, 1917

Mammon Gold and Copper Company,
Cienega Mining District
Parker, Arizona

Gentlemen:

I beg to submit herewith my report upon the property of your Company based upon my recent inspection made on the 23rd ult. In submitting this report I shall pass over all matters pertaining to title to the ground, which I assume, have been fully covered by you, and shall confine myself to the consideration of its possibilities from a mining standpoint alone.

Federal location and
physical surroundings:

The property comprises some 3 patented and 10 unpatented full mining claims, with an aggregate acreage two hundred and sixty acres more or less. It is situated about ten miles northeasterly from the town of Parker, a station on the Arizona and California branch of the Santa Fe Railway. At this point the Railway crosses the Colorado River. Parker is the local point for the general mining locality for supplies. The actively developing property of the Empire-Arizona Consolidated Copper Company, is situated about two and one-half miles northeasterly from the Mammon-Zeolite Group, the local name of the ground belonging to your Company, and the so-called Billy Mack Mine, operated by a Chicago Syndicate at about the same distance westerly. A few miles to the southeast, the Clara Consolidated Company's property is being actively worked with a substantial production of marketable copper ores. Just across the Colorado River to the west, in the same general mineral belt, drilling operations are being pushed by Messrs. Long, McIver and associates, connected with the famous United Eastern Gold Mine at Oatman, Arizona.

A good road with generally easy grade connects your Company's property with the town of Parker, over which transportation can be cheaply maintained, both for mine supplies in and ore shipments out. This road is readily negotiated by automobiles.

The topography is somewhat rugged and broken at the property, but the general configuration of the ground lends itself well to the work of development.

The property is well equipped with the necessary housing for miners and management. For the present, water must be brought in from neighboring well, but will, without doubt, be supplied from the workings when these have attained the proper depth. This, in the writer's opinion, should not exceed a vertical depth of over five hundred feet below the present surface.

Fuel for all purposes must be brought in, while distillate, tops or gasoline are best suited to the development of power, and are readily obtainable from the neighboring California oil fields at reasonable cost.

The climate for the greater part of each year is almost ideal. During the mid-summer months discomfort is experienced from the heat, but not such as to oppose a serious obstacle to continuous work.

Geology:

Geologically the locality is very old and consists of a basal series of Schists and Granitic Rocks overlain by a highly metamorphosed sedimentary series comprising limestone quartzite and shale members. The latter have been deeply carved and greatly eroded and have been recently buried beneath a heavy flow of Basalt which caps the higher elevations. Stream action has cut through this Basalt Capping extensively, exposing the older formation in the valleys and along the flanks of the hills.

The entire country has been much broken and faulted in a manner characteristic of pretty much the entire South-West Copper Belt. The dominant dislocations and fissuring trend generally with almost conceivable trend are common. The blocks between the faults are tilted as a rule, each independently of the others, but generally from northwest to south-east so that for mining purposes each block must be considered separately as a single working unit. They are, however, sufficiently large as a rule to make this entirely feasible.

ORE occurrence and Vein showing:

The showings of copper ore so far found occur in a wide belt or zone of shearing having a width at the surface of fifty to one hundred and fifty feet or more and trending about North-60° West. This Shear Zone outcrops for a distance of six hundred feet, more or less, and to the south-west probably continues under the Basalt Capping for a considerable distance the full extent of which cannot be determined at this time. The outcrop of this Shear Zone is characterized by a heavy Gossan Capping, such as is generally found in connection with a copper bearing veins in this part of Arizona. The dip of this Shear Zone is to the north-east at an angle of approximately forty-five degrees. It is intersected at frequent intervals by a series of cross-fractures which trend to the north-west and intersects the Shear Zone at an acute angle. The effect of this has been to greatly crush and shatter the adjacent wall rocks, and to form a sheeted structure highly favorable to replacement with ore.

Where exposed the Shear Zone is in Schist heavily stained with iron oxides often carrying copper in commercial quantity and grade, lime is present as Calcite in seams and stringers, and limestone itself has been encountered close by in the underground workings. The iron frequently appears as specular Hematite which occurs in large bunches and kidney-shaped masses more or less accompanied by copper minerals. The ordinary earthy forms of Hematite and Limonite form by far the larger part of the Gossans, and plainly point to the former existences of copper bearing iron sulphides which have suffered later

oxidation and leaching. Two outstanding features of this process are to be especially noted. In the oxidation of copper bearing sulphides the iron is largely left behind in the form of its insoluble oxides to form the so-called gossan cap of the miner and to stain up the rocks within the oxidized zones. The copper is, however, converted into the form of soluble sulphates largely. These pass into solution with the percolation of surface waters down along the vein and through the rocks adjacent and as these surface waters come from fallings rains and followed by periods of drouth and high temperature, some of the water works back up the vein by capillary action carrying its contained copper during the dry seasons and by evaporation at and just below the surface, precipitates the copper which thus accumulates into sometimes very considerable bodies of oxidized copper ores. These are the so-called surface concentrations or enrichments. Another and much the greater portion of the copper-bearing underground water works on down the vein until it reaches the level of the permanent standing ground water below which it cannot go far. Here the contained copper is precipitated and unites with the primary unoxidized copper-iron sulphides. In this manner the latter are frequently enriched and form the most important ore bodies known to copper mining in the South-West. It is at the level of and just below the permanent standing ground water that the best and largest bodies of copper ore are to be anticipated, and this is the horizon to be reached as rapidly as possible in the work of development.

Both the copper forming the surface enrichment and that forming the secondary sulphide enrichment at groundwater level are derived largely from a middle zone lying between the two. This middle zone being largely robbed of its original copper contents, is apt to be lean and poor, if not entirely barren for the greater part. It is due to failure to recognize or understand this that many promising properties fail through discouragement of their operators on entering the barren middle zone of impoverishment. It is the permanent groundwater level below this barren middle zone that affords, under such conditions, the greatest promise and all effort should be directed to exploring this horizon as soon as possible.

The copper ores so far disclosed in the Mammon-Zeolite Group are characteristic, and consist of the carbonates, oxides and perhaps silicates of the metal in a gangue composed chiefly of iron oxide with Calcite as accessory. Some quartz is usually present. These ores all occur in the zone of surface enrichment and may be expected to extend to a vertical depth of from one hundred to two hundred feet. The water level has not yet been reached. Under the existing conditions in your property the amount of ore in the zone of surface enrichment bears directly upon that to be anticipated at the groundwater level and the writer therefore regards the probability of finding large bodies of commercial copper ore at the water level as very promising.

Present Workings:

Two tunnels have been driven through the Shear Zone for present purposes to be called a vein at a maximum depth of about one hundred and eighty and one hundred and forty feet respectively. Considerable exploratory work has been done from these tunnels and considerable oxidized copper ore uncovered, some of which has been shipped. All this work has been done in the zone of

surface enrichment. An inclined shaft is being sunk to cut this vein at greater depth. This incline is on the north side of the vein at an angle of about fifty degrees from the horizontal. It is now down some seventy one feet and should intersect the vein in a further distance of about one hundred and forty feet from the bottom of the incline on the pitch of the incline. If continued to water level, assuming this level to lie at a depth of five hundred feet, the incline will pass into the foot-wall of the vein and a cross-cut about six hundred feet in length will be required to be driven back to catch the vein. In order to accomplish the same exploratory object-which is to determine first the character of the vein at this level - at less expense to your Company and in much quicker time, the writer begs to suggest the use of drills for the purpose.

Suggested Development:

The incline should be continued to cross-cut vein and all workings connected therewith extended to enable the ores now exposed in the surface zone of enrichment to be mined and delivered through it to a centralized loading station from which they can be delivered for haulage to the railroad. Further exploratory work along the trend of the vein in this horizon should result in a substantial increase in the available supply of oxidized copper ores, all of which would be tributary to the incline.

Before extending the incline to groundwater level, if indeed it should be done at all, it seems to the writer advisable to sink a series of well placed drill holes along the north side of the vein at such points and at such distance therefrom as, considering the dip of the vein, shall intersect it at a depth of five hundred feet more or less as the results in the first drill-hole suggest. These holes can be sunk vertically and at a cost of probably less than four dollars per foot of hole drilled, whereas the sinking of the incline will cost in the neighborhood of thirty to forty dollars per vertical - or rather per foot measured on the incline.

Predicated upon the success in disclosing bodies of copper sulphide ores in the drill holes, a vertical shaft will then be found, probably, the most efficient, and the proper location of such a vertical shaft will be facilitated. The writer believes that not to exceed five drill holes will be required to adequately determine the nature of the vein at groundwater level. With a competent drill crew this work can be done in one third the time required to sink a shaft and drive the necessary cross-cuts and levels. The cost of sinking the incline to groundwater level will be in the vicinity of twenty two thousand for seven hundred feet, the approximate distance that it will be necessary to sink to attain a vertical depth of five hundred feet. The drilling-five holes each five hundred feet- will cost approximately one half this amount or from ten to twelve thousand. As the work now to be done is essentially for exploratory purposes drilling appears, under the circumstances, to be much the better and cheaper method to pursue.

Present Ore Supply:

There is no ore blocked in the strictly technical sense - that is exposed and measured on three sides. There is, however, a considerable showing of ore in faces exposed in several parts of the present workings, such that it is entirely probable that considerable tonnage of shipping ore can be mined and shipments continued indefinitely. No estimates of reserves are at this time possible and the future of the property depends entirely upon development work still to be done. Expenditures should be held down to include only such work and equipment as will serve the relatively temporary purpose of proving the possibilities of the locality in the vicinity of the incline shaft now being sunk as the showing at this point is exceedingly promising and much the best seen by the writer on the property. If successful in proving the ores at the ground water level, the work of equipping the property for operations and production can be taken up to correspond with the indicated requirements.

Summary:

The Mammon-Zeolite Group is well within the recognized Copper Belt of Arizona. The property has a strong, well defined vein within which good copper ores have been and are being developed. It affords strong indications of large commercially valuable bodies of copper ore in the zone of sulphide enrichment and also in the zone of surface enrichment. It is easily accessible and can be worked at cost comparing favorably with any in this part of Arizona. A substantial tonnage of oxidized ores at or near the surface has been disclosed but not blocked and further extension of the work will undoubtedly greatly increase this showing. These ores are in large part of commercial grade under existing cost conditions. The cost conditions now entailed can be measurably reduced to take in a still greater tonnage of ore available for mining. Development of the enriched sulphide ores at groundwater level should receive immediate attention and their presence fully determined at the earliest possible moment. Drilling is suggested as the quickest and cheapest method of accomplishing this. There is abundant warrant for this expenditure as the formation is very favorable, the indications pronounced and unmistakeable. Work and the expenditures entailed should be concentrated and strictly limited to the smallest requirements adequate for preliminary exploratory work, and permanent installations avoided until this has been accomplished.

In view of the foregoing the writer regards the property of your Company as one of great promise fully justifying such expenditure as shall be needed to prove its unmistakably great possibilities.

(Signed) Edward W. Brooks
Consulting Engineer

Magma Copper Company

SUPERIOR DIVISION
SUPERIOR, ARIZONA

August 29, 1969

Mr. Tom Beard
P. O. Box 1742
Prescott, Arizona
86301

Dear Mr. Beard:

Enclosed is the assay certificate on the sample recently submitted by you. An ore represented by this sample would net you approximately \$29.51 per ton after a smelting charge of \$7.87 per ton.. We would be willing to accept a trial car of 30 tons or more of this material if you wish. Please notify me if you intend to ship.

Sincerely yours,

Claude L. Soule'

For: Robert Lane
Smelter Supt.

Tom: Beard-
P.O. Box - 1242

MAGMA COPPER COMPANY
Assay Certificate "A"

Prescott, Arizona 86301

Date 25-6-20

[illegible]

MCCO. 'No.

M. B. Davis
CHIEF CHEMIST

Tom Beard-
P.O. Box-1742

MAGMA COPPER COMPANY
Assay Certificate "A"

Prescott, Arizona 86301

Date 8-28-69

[illegible]

MCCO. No. 1

M B Marvin
CHIEF CHEMIST

IRON KING ASSAY OFFICE
ASSAY CERTIFICATE

BOX 14
HUMBOLDT, ARIZONA 86329



SUBMITTED BY: **TOM BEARD**

August 23, 1969

DESCRIPTION	oz/ton Au	oz/ton Ag		% Fe	% Pb	% Zn	% Cu
Mammon Zeolite	Tr	0.40					5.90

\$5.75

CHARGES _____

ASSAYER _____

ASSAY OFFICE

DATE 3-14-67

ASSAYER.

2M 2-66 MC

Iron King Branch

HUMBOLDT, ARIZONA

Tom Beard

DATE: 7-26-66

	DESCRIPTION	As	As	Fe	Pb	Zn	Cu
1	W-1	.02	Tr				1.12
2	Surface Sheft cut	.02	Tr				5.58
3	Center Cut	Tr	Tr				3.74
4	Tunnel	Tr	Tr				3.28
5	Dump	Tr	Tr				2.28
6	apx Cut	.01	Tr				3.50

Charges \$1950

Walter
Stall
1950

Charges \$1950

ASSAYER

24 10-85 MC

SAMPLE W-1. From west cut on ore beneath capping.
 " " 2. AREA on massive formation portal of shaft
 " " 3. SURFACE cut in central zone of anomaly
 " " 4. Across massive area 12' in Tunnel apex
 " " 5. General sample cut across Total Dump
 " " 6. " " " Apex cut of Tranching on anomalies

AVERAGE General over all sample = 4.08 Copper.
 Gold and Silver Run from .2.00 To .5.00 per Ton.



