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NOTES FOR MINE DESK BOOK

MILDRED MINE

July 14, 1941

Call from Sidney B. Moeur, Title & Trust Building, President of Company.

Over 100 unpatented claims located just north of Bill Williams River, 10 miles west of Alamo Crossing in Township 11 North, Range 14 West, and in Sections 1, 10, 29, etc.

Outcrops cover large area showing copper silicate with quartz and lime on surface and in gulches and in one or more tunnels. Have been mining the better grade of ore since October and shipping to smelters - Magma, Hayden and Clarkdale - and cars run about as follows:

Au 0.01 - 0.02 oz.

Crust:
0.50

Ag 8.00 - 8.30 oz.

5.60

Cu 0.80 - 1.15%

2.40

Fe 2.40 - 3.00

CaO 8.0 - 8.10

probably had an 1% average

CaO
Al₂O₃ 1.70 - 3.10

S 0.70 - 1.30

SiO₂ 54 - 71% (R. unit)

A nearer average of the ore would show same gold and copper but only 1.00 - 1.60 oz. Ag. As mined the ore carries about one-third lime and by putting the lime with the ore instead of discarding it for waste they could increase the lime content to about 30% or more and reduce the iron pro-rata. Also there is about 8-10% barium which would help in smelting and Moeur thinks that they could thus mine a self fluxing ore which should average 0.02 Au, say 5 oz. Ag and over 1% Cu, gross value about \$7.00 per ton and could be mined (at 1000 tons per day) for 75¢ and smelting would be \$3.50 (which is high) say total cost of \$4.50 to recover

\$6.50 value and yield profit of \$2.00 per ton. But if treatment plant were to be put in on basis of 1000 tons per day the initial investment would be in the order of \$4,000,000.00 so that at least 5,000,000 tons or more of ore should be assured to justify such a procedure.

Property has been surveyed by Chris Thompson of Bouse and recently examined by Philip Wiseman and Son (who showed me some of the ore) and by Reber for Phelps Dodge and Moeur may get copy of Reber's report but it is doubtful.

Said that I would examine and make complete report for \$1000 plus expenses, which would not exceed \$200.00 and if could recommend the property would be glad to present it to parties who would be in a position to furnish the funds to continue the exploration and development and build a smelter if this seemed to be best means of treating ore which so far does not appear to be suitable for concentration.

Moeur said they would continue their present program of small scale development and trial shipments for another month or two and might employ me as above in September or October when the weather would be cooler.

Claims are known as Silverfield, North Star, etc.

MILDRED MINE.

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Along with Sidney Moeur, Arthur Vaughn, driller of 723 Grand Ave., is also interested in this property and samples of ore might be obtained from him.

James Girand recently tested some of the ore for concentration in his "barrel" but naturally could get no good results as both the copper and silver occur as carbonates or other oxides.

Girand says that they have one vein which carries substantial gold values with the sulphides and that he was able to make a very high grade concentrate on this material.

Probably the occurrence of gold is very trivial since it was not mentioned by either Wiseman or Reber.

Girand says that the ore which was furnished him for testing and which was supposed to be average grade only contained 6 oz. silver and 0.2% copper but he found 15-20% barite which he thought might have commercial values under present conditions.

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Reber says that Phelps Dodge are no longer interested as they have satisfied themselves that there is no chance to develop a really large ore body,--but it might be basis for a medium sized working if the metallurgy can be solved.

No chance that the ore goes deep and values in outcrops are very spotty and much of the ore could not possibly be commercial under any conditions while much of the balance is likely to be barely marginal.

Recent shipments have been small and some of them have not paid the smelting charges.

Consider C. V. process

NORTH STAR GROUP

or Mildred

From conference with Philip Wiseman in Los Angeles,

9/2/41/

The underlying formation is an igneous rock, probably a grano-diorite which was overlain by a limestone, most of which has now been removed by erosion but the remnants remain in the form of little hills and entire country has been displaced by three or more step faults so that it rises in benches going away to the north from the river.

The ore is found only in these limestone hills and it seems to have been precipitated from solutions which did not penetrate into the underlying igneous rock. Outcrops show brown and red discoloration of the lime and a fresh surface must often be obtained in order to determine that it is ore which consists of silver bearing carbonate and silicate of copper.

Grade of ore varies from 0.5 to 1.5 cu. and from 8 to 20 oz. ag., the average being assumed to be about 1% cu. and 12 oz. ag. Altho there seems to be no chance that the values will continue to depth the outcrops cover a very extensive area and Wiseman thinks that there is a large tonnage, all of which could be cheaply mined by power shovels, but the treatment is a problem and direct smelting is indicated. Grade is uncertain but would probably be sufficiently good to justify operations at present price of silver, but the future price of silver introduces the big gamble and has presented Wiseman-also probably the P. D. Co. from taking it over.

Chance to develop a really large ore body; - but it
might be too basic for a medium sized
looking if the metallurgy can be solved.

No chance that the ore goes deep &
values in outcrops are very spotty & much of
the ore could not possibly be commercial
under any conditions. While much of the
balance is likely to be fairly marginal.

Recent shipments have been small & some
of them have not paid the smelting charges.

Re C. V. success

NOTE RE MILDRED MINE. 2/4/42

Talk with Arthur Vaughn, of 723 Grand Avenue

Men now ^{working} poking in the gold vein in which there are pockets of high grade ore from which they hope to soon make some shipments and they may put in a little mill using a Girand Barrell concentrator.

The main body of surface ore is not being developed at present and it is located right on the bank of the Bill Williams River and close to the crossing where the road runs up from Bouse and Midway.

Vaughn thinks that this ore will average close to 6 oz. silver 1% copper, and 0.02 oz. gold, on which basis the gross value would be close to \$8.00 per ton (with bonus price for copper) but they cannot afford to ship any ore to the smelters which has a value of less than \$9.50 per ton.

The ore carries considerable barium and a lot of lime and all silver and copper minerals are oxidized so that neither gravity, flotation or cyanide treatment can be applied.

The C. V. process might work if the fusion point of the ore is not too low, but this can only be determined by a test.

To reach the property one must drive up from Bouse to Midway and then keep on north to the old Thompson (C) crossing of the river near wash and the Mildred Camp is right at the crossing while the claims extend westward along the north bank of the river.

No road from there to the Alamo crossing and country between is very rough with a box canyon in the river. Vaughn will bring in a sample.

*Property planned by Jordan in 44 & later dropped
after investigation*

2// 2/6/42

Vaughn called on 5th and left large sample of ore, part of which was sent to W.P. Co. for C.V. test and specimen given to Morton.

Vaughn states that camp and mine are located some 10-12 miles below the Alamo Crossing but there is no connecting road and river runs through a box canyon. Camp is some 3 to $3\frac{1}{2}$ miles above the Mexican Ranch which is close to the Swansea pumping plant. Vaughn says that the surface showings of copper-silver ore are cut thru by bands of nearly pure limestone in which there are always some silver values from \$1.65 to 8.00 per ton and might average \$3.00 or better (This is probably an exaggeration.)

No one has yet determined whether or not any values extend down from the surface capping into the underlying gneiss (Reber and Wiseman were quite sure that they did not do so.

There is no big fault crossing the claims and this may dislocate the ore body and throw it downwards.

The present costs are :

Mining, about	\$2.00
Hauling to R.R.	1.50 (only possible when river can be crossed with truck)
Freight to Superior	2.60
Smelter Toll	<u>3.50</u>

TOTAL 9.60

The average grade of surface ore is too low to stand these charges but if a local treatment plant were erected Vaughn thinks that this ore could be mined and put in the plant for \$0.75 to \$1.00 per ton and subsequent costs would depend on the method and efficiency of the treatment which might be adopted.

Ore might be smelted as flux with basix ore such as may be produced at Swansea or to some extent with concentrates from Bagdad.

Better transportation will probably be provided after the river has been dammed at Alamo when it is proposed to build a good road along the north bank and connect with Congress Junction and Yucca.

February 13th, 1942

Mr. Arthur Vaughn
723 Grand Ave.
Phoenix, Arizona

Re: Mildred Mine

File

Dear Mr. Vaughn:

The sample of the Mildred ore which you recently left with me was tested in Los Angeles for treatment by the Chloridizing Volatilization Process, and as I feared they found that the fusion point was too low and therefore it does not seem possible to treat your ore by this method. I am sorry that such is the case, because otherwise we would have been in a position to make a further investigation without expense to you or your associates and might have been able to work out a satisfactory process for treating the bulk of your low grade material.

As matter stand it seems as if the metallurgy of the ore would require very careful study which would involve a fairly extensive examination and sampling of the property itself, but I hope that you will be able to arrange to carry out this work in one way or another since any large deposit of valuable ore such as you seem to have discovered can almost certainly be satisfactorily treated by one or another of the processes which are now in use.

I shall always be glad to discuss this matter further with you at any time that you find it convenient to stop in the office and assuming that you believe that I could be of any help.

Yours very truly,

[Signature]

GMC:BF

COLORADO

RIVER

COLORADO RIVER INDIAN RESERVATION

FORT MOHAVE INDIAN RESERVATION

