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QUALITY STATEMENT

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District: Cedar
PROPERTY: Copper World
LOCATION: About 15 miles east of Yucca, by road, thence 3 miles south to top of mountain, difference of elevation between mine and road about 1500 feet.

OWNERS: Phelps Dodge Corporation

DATE VISITED: August 6th and 17th, 1919

NOTES: Geology

Pre Cambrian complex, consisting of granite, gneissoid granite and injection Gneiss with banded micropegmatites.

Vein a fissure striking N 4° E and dipping about 90°. Pegmatite on one wall and gaeiss on opposite wall. Width of vein from a few inches to eight feet. Visible ore shoot on surface two hundred and fifty feet long with probable extension of 100 feet. Ore developed by tunnels shows length of approximately 200 feet.

Development

Development consists of a cross-cut tunnel cutting vein at depth of 100 feet, from this tunnel on vein a winze sunk approximately 200 feet. At surface several shallow tunnels and pits, from which old operators shipped the higher grade copper ores. (Accompanying plan shows workings and locations of samples).

Ore Bodies

The main ore body developed shows a copper-zinc ore with the zinc predominating, width from a few inches to eight feet. Present workings show considerable oxidation as a result of leaching by surface waters since property was opened. All workings accessible with exception of the winze and one sample taken at 80 feet from collar of winze. Ladders are missing from this point to the bottom, and there is no means of reaching same.

Property might be developed by means of lower tunnel at an elevation of 400 feet below collar of winze, thereby saving considerable packing of ore. This would then require a pack of about two miles to the main road. This tunnel at present is in 200 feet, and just beginning to show mineralization. Would probably require an additional 100 feet to reach end of ore body as exposed in upper workings.

No water on the ground and water would probably have to be packed three miles.

Ore a heavy sulphide, and some means of concentration would be necessary for separating the copper and zinc.

Deposit undoubtedly of deep-seated origin, and property has considerable merit though isolation and conditions generally are rather difficult.

Results of sampling South Drift No.1

<u>Number</u>	<u>Width</u>	<u>Location</u>	<u>Au</u>	<u>Ag</u>	<u>Cu</u>	<u>Zn</u>
1	72"	At X Ct	.02	.88	5.13	36.40
2	28"	10' S	T	1.04	4.74	7.40

NOTES: (Continued)

Results of sampling South Drift No.1 (Cont'd)

<u>Number</u>	<u>Width</u>	<u>Location</u>	<u>Au</u>	<u>Ag</u>	<u>Cu</u>	<u>Zn</u>
3	34"	20' S	T	.48	2.49	9.80
4	41"	30	.02	1.18	9.25	24.30
5	43	40	.02	.84	6.55	48.00
6	58	50	.02	.94	4.61	51.50
7	24	60	.01	1.01	6.47	49.10
8	20	70	.01	.79	5.66	41.00
9	24	80	.01	.83	4.20	20.30
10	58	90	T	.64	3.09	22.60
11	58	100	.01	.81	4.88	40.00
12	58	120	.02	1.02	6.16	41.80
13	39	130	.01	.87	5.79	31.20
14	22	140	T	.84	6.76	41.10
15	15			Highly Oxidized		
16				"	"	
17				"	"	
18				"	"	
19	60"	In Winze 80' below collar T		1.0	6.74	8.0

At last four points no samples were taken, since the ore was so highly oxidized that a fair sample could not be obtained.

Mining Costs

Mining	\$4.00
Packing	2.00
Hauling	6.00
Freight	<u>3.00</u> ?
TOTAL	\$15.00

Conclusion

The property presents transportation, mining and metallurgical difficulties, the latter due to high zinc content, which are difficult of solution at the present time.

Tonnage developed on two sides:

<u>Tons</u>	<u>Au & Ag</u>	<u>Cu</u>	<u>Zn</u>
2160	\$1.10	5.45 %	30.3 %

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REPORT ON THE COPPER WORLD MINE.

LOCATION:

Wallapai District, Mohave Co., Arizona, 15 miles ^{East} by road and two miles by rough trail from Yucca Station. Owned by Phelps-Dodge Corporation.

Examined by G. J. Harbauer, October 23rd, 1925.

FORMATION:

Schist and gneiss in a granite mass near a wide belt of pegmatite. Ore occurs in a vein, although the wall rock also is mineralized near the surface. The vein is almost vertical and near the surface contained much azurite and hematite. At about 50 feet below the outcrop sphalerite was encountered, and this with pyrite increased in depth. There is some chalcopyrite present but the sphalerite and pyrite compose the bulk of the vein in depth.

DEVELOPMENT:

There are numerous surface workings and tunnels and one main crosscut tunnel which cuts the vein at about 100 feet below the outcrop and from which a drift was driven in two directions on the vein. A raise connects the lower level with the upper workings.

ORE BODIES:

Shipments of copper carbonate ore were made from the upper workings, the ore having been packed two miles to the road on burros. The Southwestern Leasing Company shipped the last car from the property in 1918.

The upper workings have been cleaned of shipping ore but some heavy sulphides remain in the lower workings.

A cave from the raise has cut off entrance to the south drift on the 100 foot level so it could not be examined and the vein is narrow in the north drift. At the junction of the crosscut and drift the vein shows a width of 3½ feet of massive sulphides. A sample taken at this place assayed 3.04% copper and 20.4% zinc. *Gold-Trace Silver 0.4 oz*
This would not be commercial ore for a copper smelter.

CONCLUSIONS:

As a zinc mine this property may have further possibilities, but as a copper mine its possibilities have been exhausted, as the copper content has decreased and the zinc content has increased

Copper World # 2 ✓

with depth.

The distance from the road and the bad condition of the last three miles of the road would be an unfavorable feature in marketing the ore and would require a copper content of 10% to break even on shipping it.

Samples taken by others, and the sample mentioned above indicate that there is no quantity of ore of 10% grade in the mine.

The complete analysis of the sample taken by Harbauer is as follows:

Au. Ozs.	Ag. Ozs.	Cu. %	Insol.	Fe.	S.	Zn.
Trace	0.4	3.04	42.4	8.0	13.0	20.4

COPPER WORLD

DISTRICT: HUALAPAI

LOCATION: Fifteen miles east of Yucca Station. One mile from the road to the Yucca Tungsten Mine, and four miles south of that mine.

OWNERS AND OPERATORS: Leased by G. W. Watson.

Date Visited: August 19, 1918, by J. L. White.

NOTES: Country rock, Mica gneiss or schist, granite.

There is an outcrop of copper carbonates for a length of 250 feet and 15 to 20 feet wide. In the outcrop there has been considerable work done in shallow tunnels and open cuts, and apparently considerable ore shipped. Fifty tons of ore on the dump are said to run 10% copper and 15% zinc.

100' below is a crosscut tunnel about 200' long that intersects the vein and a raise and winze driven to the surface and 100' below. The vein has been drifted on at the tunnel level for 250', and shows a strong vein all the way with only a little zinc ore in places. There is a little copper, mostly in the form of sulphate. Copper World Sample #1 from here.

Au.-----01 Ag. .87
Copper 6.84% Zinc 30.1%

The only think of interest here is the broken carbonate ore at the upper workings, which can be packed to the road for \$2.00 and from there easily handled by truck to Yucca.

The vein width in the lower workings is 1 to 3 feet.

The sample taken was of some of the best looking ore in the 100' drift.

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DEVELOPMENT:

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ORE BODIES:

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A cave from the raise has cut off entrance to the south drift on the 100' level so it could not be examined and the vein is narrow in the north drift. At the junction of the crosscut and drift the vein shows a width of $3\frac{1}{2}$ feet of massive sulphides. A sample taken at this place assayed 3.04% copper and 20.4% zinc. Gold tr. silver 0.4 oz. This would not be commercial ore for a copper smelter.

CONCLUSIONS As a zinc mine this property may have further possibilities, but as a copper mine its possibilities have been exhausted, as the copper content has decreased and the zinc content has increased

COPPER WORLD

Cedar District; About 15 miles east of Yucca, by road, thence 3 miles south to top of mountain, difference of elevation between mine and road about 1500'.

Owned by Phelps Dodge Corporation. Visited August 6th and 17th, 1919.

Geology: Pre-Cambrian complex, consisting of granite, gneissoid granite and injection Gneiss with banded micropegmatites.

Vein a fissure striking No. 4° E. and dipping about 90 degs. Pegmatite on one wall and gneiss on opposite wall. Width of vein from a few inches to eight feet. Visible ore shoot on surface 250 feet. long with probable extension of 100 feet. Ore developed by tunnels shows length of approximately 200'.

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No water on the ground and water would probably have to be packed three miles.

Ore a heavy sulphide and some means of concentration would be necessary for separating the copper and zinc.

Deposit undoubtedly of deep-seated origin, and property has considerable merit though isolation and conditions generally are rather difficult.

Results of sampling South Drift No. 1.

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At last four points no samples were taken, since the ore was so highly oxidized that a fair sample could not be obtained.

Mining Costs.

Mining	\$4.00
Packing	2.00
Hauling	6.00
Freight	3.00
Total	<u>\$15.00</u>

Conclusion

The property presents transportation, mining and metallurgical difficulties, the latter due to high zinc content, which are difficult of solution at the present time.

Tonnage developed on two sides:

2160 Tons Au & Ag. \$1.10 Cu. 5.45% Zn. 30.3%

W.V.DeC.

the added expense of placing it in the mill will just about offset the net receipt from the recovered copper concentrates, at present prices of refined copper, when the cost of the necessary preparation of the ore passage is considered as well as the rehandling or tramping of the ore at the 3 compartment upraise.

No reference herein has been made to capital investment or interest thereon, but this will be taken up in a separate letter. In conclusion, I believe all material parts have been covered in the foregoing report, which is respectfully submitted.

Yours very truly,

GRANVILLE MOORE

2-

with depth.

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Tr.		0.4		3.04		42.4	8.0	13.0	20.4

R. 222

COPPER WORLD MINE
Scale 1" = 40'

