

Buzzard's Roost Group
Yavapai Co.

INVESTMENT REPORT ON BUZZARD'S ROOST GROUP OF MINING CLAIMS.

Messrs. Luplow & Kent,
Phoenix, Arizona.

Gentlemen:

In accordance with your instructions of recent date, I have examined the Buzzard's Roost Group of Mining Claims, situated in the Castle Creek Mining District, Yavapai County, Arizona, and beg to report thereon as follows:

CHARACTER OF VEIN:

The vein is of the contact-fissure type, with a N. W. - S. E. strike and a dip of 70° or 75° to the northeast. Judging from a cursory surface examination, and also from various workings visited, the vein varies in width from three to ten or twelve feet. Evidences of post-deposition movement are apparent in the somewhat brecciated condition of the vein filling and occasional slickensiding exhibited, principally on the footwall. The massive outcrops and extensive horizontal continuity of the lode furnish strong evidence of its vertical persistence, while the extensive mineralization of the vein matter leads naturally to the conclusion that ore chutes of satisfactory dimensions and profitable values, in addition to the two at present exposed in the Swallow and Moonlight shafts, will eventually be encountered.

METHOD OF ORE DEPOSITION, ETC.:

It is very probable that the ores owe their origin to super-heated mineral-bearing solutions ascending and

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circulating in the fissure under hydrostatic pressure, their mineral contents being gradually precipitated through the chemical reaction set up by contact with certain of the enclosing rock-elements, and also by a greatly decreased temperature of the solutions as they reached and circulated through the higher levels of the fissure.

A moderate amount of leaching of the copper content has occurred in the ores at present accessible, which consist of the green carbonate (malachite) and the red and black oxides of copper (cuprite and melaconite). Ore in workable quantities being in evidence at the present levels reached by development, there is reasonable assurance on which to base the conclusion that a like economic condition will be found to obtain at lower levels wherein similar agencies of precipitation and deposition have been equally active. To this favorable conclusion must be added the reasonable certainty that a zone of secondary enrichment will be found to exist at some point above the permanent water level; that is, that part of the original copper content leached from the ores of the upper levels will be found to have been redeposited at a lower level within the vein walls, thus enriching the ores of the zone within which redeposition has taken place.

ASSAY VALUES OF SAMPLES, ETC.:

The probable existence of one or more ore bodies of profitable dimensions and value having been conceded, it remains for us to ascertain, as accurately as the data at hand will

permit, the average amount of profit per ton to be expected from the mining and milling of the ore bodies sampled by me.

In order to arrive at a conservative estimate it is necessary to use as a basis of calculation the general average value per ton, and the general average width of the ore faces sampled, which are as follows:

	Copper	Gold	Width Sampled
Sample #1,		\$ 11.60	2 feet
" #2,	\$ 41.28	4.40	2 feet
" #3,	23.04	4.60	5 feet
" #4,	<u>16.32</u>	<u>10.20</u>	3 feet
	80.64	30.80	
		80.64	
		\$ 111.44	
Total value per ton of four samples,			\$111.44
General average per ton,			27.86
Average width of ore bodies,			3 feet

An average sample taken across five feet of ore in the Moonlight stope assays \$23.04 copper and \$4.60 gold - a total value of \$27.64 per ton. Considering the width of ore sampled the above values are very satisfactory.

	Per Ton
Estimated cost of operation,	
Mining (including hoisting, timber & supplies)	\$ 4.50
Transportation to mill,	.50
Crushing and concentrating,	1.50
Superintendence, office, etc.,	.50
Freight to R. R., as concentrate,	1.50

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R. R. to Smelter,	\$ 2.00
Smelting,	1.50
Total cost per ton	<u>12.00</u>
Average value per ton,	27.86
Less estimated loss in concentration, 30%,	8.35
	<u>19.51</u>
Total cost operation per ton,	<u>12.00</u>
Estimated profit per ton,	\$ 7.51

Estimated twenty-four-hour-day duty of ten stamps
crushing to 30-mesh screen, 3 tons per stamp - 30 tons.

Estimated daily profit, 30 tons at \$7.51 per ton,
\$225.30.

The above estimates are based on what should be a
maximum of operation costs and loss of values in concentration,
under proper methods of management and operation, for the grade
and character of ore under consideration.

CONCLUSIONS:

The physical features of the property, judged from
an economic standpoint, and likewise taking into consideration
the very liberal terms on which you have been offered an interest,
amply justify an investment of the amount necessary to acquire
the holding offered to you. As I see it, the future success of
the enterprise depends almost entirely on the executive ability
of those in charge of operations. Given intelligent, energetic
and businesslike methods, together with adequate technical
knowledge of economical and efficient mining and reduction
processes, I can perceive no present reason why the group should
not enter the list of profitable producers in the very near

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future. This is one of the very few prospects I have ever seen in which the amount required for initial operations may be regarded as a safe and profitable investment rather than a precarious speculation. I must repeat, however, that the success of the undertaking depends very largely on the methods of management and operation pursued, and this remark applies particularly to the limited capital available for the inception of the enterprise.

Very truly yours,

F. A. Clifford

Mining Geologist.

Phoenix, Arizona,

April 9, 1915.

Kindly return this report.