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REPORT ON THE VULCAN MINE.

LOCATION:

This property is located in the Black Rock-Blue Tank Mining District, in the southern part of Yavapai County, Arizona, 12 miles northeast of Wickenburg, a station on the Santa Fe Railway, and 3 miles south of Constellation. The county highway from Wickenburg to Constellation is within 3 miles of the camp and all parts of the property are easily accessible. The property is excellently situated for extensive development. The camp arrangement, water supply, roads and other improvements can be adapted without expensive outlay, to any proposed plan.

WATER SUPPLY:

Water for domestic purposes now developed furnishes approximately 3000 gals. daily. More is available. A concrete dam, 30% complete, on Hamlyn wash will provide reservoir storage for flood water, sufficient for development operations and should larger quantities be later required for mill purposes, water rights and storage can be acquired on Wade Creek, 3 miles west. The ground water developed by deep shafts to the north and south proves an unfailing source that can be relied upon to a great extent.

POWER:

Power for preliminary development would utilize oil or gasoline. Later, connection for electrical power can be made with the power line of the Central Arizona Light and Power Co., 2½ north.

FREIGHT:

Railroad freight rates at Wickenburg approximate:

Outgoing:	El Paso Smelter,	Ore Concentrates $100 val.	$11.00 ton
	Douglas "	"	10.60
	Selby "	"	12.50.

Motor truck freight rates, Wickenburg to mine range from $5.00 to $7.00 per ton.

PROPERTY & TITLE (See property Map No.2)

The area embraced is covered by 12 unpatented mining claims. Elevation 3500 to 4200 feet above sea level:

Name of Claim	Area-Acres	Recorded at Prescott, Arizona Record of Mines, Yavapai Co.	
Pole Star	20.	Book 127	Page 191
Pacific	13.43	127	187
Pontiac	18.82	127	190
Palomar	13.9	127	188
Millsite	15.51	100	451
Venus	20.	100	282
Pelon	15.75	127	189
Genung	12.8	100	452
Constance	10.54	110	551
Constance No. one	20.	110	552
Constance No. two	14.1	110	553
Fairview	11.21	110	231
TOTAL	186.06 acres		

Title to same is clear and no defects can be found.

HISTORY OF PROPERTY:

The original group, 5 claims, was located in 1896 by John Witherlay, one of the pioneers of this district and held by him until 1916, when he sold out to Foster & Blackwell. These men shortly afterward sold to H. A. Smith. Under the new ownership a company was formed to begin development. Some work was accomplished, but financial troubles arose, and after a period of litigation the property was sold, in 1920, at Sheriff's Sale to H. H. Temple in satisfaction of a mortgage for the sum of $9190.00. Since that time the property has been under the present ownership. The property has been increased in size by the acquisition of a number of adjoining claims. During 1916-1917 the property produced approximately $30,000 from shallow workings, mainly ores carrying high values in lead-molybdate. During the war and until 1921, no development work was done. Since 1921 a steady program of development has been followed to determine the extent and value of the low-grade lead-silver ores and sufficient work has been done to warrant deep development to explore the deposit at the sulphide level.

Improvements consist of the following:

50 feet incline shaft, 50 ft. drifting, see Assay Map, point 18
70 " vert. shaft, 108 ft. " , " " " " 20
45 " tunnel " " " " 15
35 " open cut " " " " " 10
14 miner shafts and cuts.

5600ft. roads, not including improvements off property.
4 camp buildings
1 garage
1 barn

Test mill, 20 ton (60% complete)
Assay laboratory
Blacksmith shop
Pumping plant and pipe lines
Headframe and equipment
Storage Dam and Reservoir (30% complete)

A large quantity of equipment and supplies is on hand, such as tools, track, ore cars, lumber, and miscellaneous material. This equipment is for hand work only, and should be added to if air drills are to be used. One Republic truck and one light Ford truck are available for transportation.

HISTORY OF THE DISTRICT:

During the early days of the Wickenburg district, when the gold bonanzas of the Vulture, Congress, Octave and Yarnell were producing their millions, little attention was given to the possibilities of the many occurrences of copper and lead. Later sporadic attempts were made to develop these deposits, but it was not until the past three years that systematic development was undertaken on any large scale, with the exception of the famous Monte Cristo Mine at Constellation. During the past two years the entry of the American Smelting & Refining Co., at the Groom Mine, and the Tonopah Belmont Mining Co. at the McNeill Mine, has stimulated activity on both sides of the railroad. Owing to the advance of the lead market numerous lead properties have been active, among them the Tonopah Belmont, Newsbory, Moon Anchor, Divide Extension, Ballas, Great Southern, Tindale, and South Belmont, and development to date gives promise of several producers that may rank with the McNeill Mine of the Tonopah Belmont.

On the surface all of these properties, altho the deposits are massive and of large extent, contain a low average in lead. Very little high grade or shipping ore is encountered in the oxidized zone, and it is the opinion of most investigators that the real ore bodies will be at or near the sulphide zone. This will vary to a great extent, due to the difference of elevation above water level. It is evident, therefore, that any development program should provide for exploration to a sufficient depth to reach the sulphide level.

Development on properties adjoining the Vulcan lead deposit leads to the conclusion that a shaft 300' deep at a point midway of the main ore shoot, will enter the sulphides. At the Accident shaft of the O'Brien group to the north, disseminated sulphides with a combined value of from $60.00 to $70.00 were encountered on the 40' level. This will correspond with the 200' level of the proposed United shaft, the difference being due to the topography of the country. At the Ada shaft, 1 mile south, high grade sulphides carrying combined values of over $90 per ton, began to appear at the 50' level. At the Monte Cristo and Mizpah Mines, 2½-3 miles north, large bodies of sulphide ores have been developed, and the occurrence of high grade ore on the 1100' level of the Monte Cristo is a pertinent factor in determining the value of deep development in this district. 3 miles south the Tindale and Great Southern Mines are developing promising lead properties.

GEOLOGY:

The area in the immediate vicinity is a spur of the Bradshaw uplift. Granites, granite, gneiss and schist form the major portion with many intrusions of both acid and basic rocks; local breccia and limestone, with small areas of later conglomerates.

The main feature on this property is the great fault or shear zone, traversing this section from the O'Brien group on the northwest to the Ada Group on the southeast, a distance of over 2 miles. The dip averaging 40--50 degrees to the southwest.

Evidence of profound movement is shown by the displacement and brecciation following this fault. Later intrusions of basic rocks followed this fissure and formed additional channels for the mineral bearing solutions.

The main ore body is found on the Genung and Constance claims forming a continuous deposit nearly 1000' long and from 4 to over 50 feet in width. Another ore body is found on the Millsite claim where the surface indications predict a deposit almost as large as the one above.

The footwall rocks are granite-gneiss and schists; no well defined bedding planes are in evidence.

The hanging wall country rock is granitic, but adjacent the ore shoots are areas of breccia and lime. A well-defined gouge follows the hanging wall from point 14 to 23.

MINERALIZATION:

Lead, copper, gold and silver are the predominating economic metals. Some zinc occurs in all parts explored.

The ore so far developed is primarily oxidized, altho more or less sulphides are found in all the workings. Evidence of surface leaching is plentiful in the upper parts of the outcrop, the silver and copper values being almost entirely gone. Free gold is found along the entire fault. The oxidized silver minerals are found, especially in the harder more impervious portions. Native silver occurs in small quantities in several openings on the north end, where a lower elevation is found.

The lead minerals are disseminated throughout the ore zones and some replacement is found in the footwall rocks to a depth of sometimes 15'. Pockets and streaks of galena are exposed in the lower workings, but so far the major portion of the leadis in the form of lead carbonate. Near the creek level, where erosion is deeper, copper begins to appear and secondary replacement by copper carbonate is noted throughout the exposed lime, and a portion of the breccia. The heavy iron-stained gossan here predicts a large mineralized zone.

ASSAY MAPS AND VALUES. See Map No. 4.

A study of the Assay map and accompanying detail sheet, will enable a thorough understanding of the size and value of the deposit. No attempt has been made to estimate the value of the ore so far exposed, altho aprobable tonnage could be estimated. It is evident that this is primarily a development project, and that the data so far available is very favorable and warrants the prediction that exploration at depth will uncover large bodies of commercial ore. The high values in gold and the evidence of former high values in silver are of great interest. The ratio of values in gold and silver to the percentage of lead is very favorable.

RECOMMENDATIONS:

A study of existing conditions and the compiled data leads to the conclusion that an incline shaft, located midway of the main ore body will be the most economical method of exploration. Not less than 300' should be provided for with provision for lateral drifts from at least two levels. This will be in the ore body at all times and no dead work will be required. Sinking and timbering costs can be held at the lowest figure.

I would suggest that at least $25,000 be spent for this work and the installation of additional machinery.

CONCLUSIONS:

After consideration of all the possibilities of the Vulcan property; the final results from proper development and exploration; the general locationof the property adjacent to others in the district; its formations and large ore bodies which are so prominently in evidence; the recommended preliminary work will no doubt develop a substantial quantity and quality of commercial ore.

However, by no means should the financing cease at the above stated amount of $25,000, as it would only be for preliminary expenditures. You should prepare for at least a fund of $100,000 to place the property on a commercial footing. You should adhere to strict economy, as should be practiced in all mining ventures,

and see that this economy is strictly practiced but discriminate between true and fictitious economy.

The writer feels sure that if the course outlined is followed the results will bring very favorable results to you and your enterprise.

Its accessibility and location make it possible for year round operations and most favorable for this class of mineral product owing to your close proximity to the El Paso and Douglas smelters.

T. B. FISHER MINING ENGINEER

Long Beach, California
Januaty 20, 1927.

ASSAY RETURNS

No. and Location of Sample	Gold oz.	Silver oz.	Lead %	Cu. %	Total per ton
1. Dump St. Isabel 10' shaft	.04	tr.	.25		$ 1.10
2. " " "	.06	.8	1.90		3.96
3. Constance vein 4" H-Wall	.35	1.5	6.30		15.46
4. Average of 2' on footwall	.20	.75	2.		6.85
5. Dump Upper shaft #1	.40	2.	1.5		11.00
6. " " " #2	.05	.15	.4		1.57
7. Chip sample 20' outcrop	.25	10.00			11.00
8. Average of 10' at face of 30' cut	.30	1.	2.00		9.00
9. " " 7' at Sta.20 " "	.10	1.	4.		7.40
10. " " 5' " " 10 " "	.10	.50	4.		7.10
11. Average of 5' at start of" W	.02	.5	2.40		3.58
11A. Sorted high grade ore	.70	40.00	64.00		110.80
12. Average of 3' top of 12' shaft	.06	1.	7.80		11.16
13. " " 6' bottom " "	.20	1.	5.		10.60
14. Top of outcrop	.02	tr.	.4		.88
15. Average of 1' H-wall gouge, tunnel	.12	1.5			3.30
16. " " 4' Tunnel	.15	tr.	1.7		4.44
17. " " 1' FOotwall	.40	1.			
18. " " 2ft. surface, incl. shaft	.35	.5	5.00		8.60
19. " " 4' 50' level " "	.30	3.00	4.5		13.30
20. " " 3' bottom 70' Vt.	.20	7.00	2.6		11.32
21. " " 2' Sta.100 Drift 70'V.shaft	.20	4.5	3.		10.30
22. " " 3' " " " " " "	.25	3.	4.5		12.20
23. " " 4' bottom 10' shaft.	.50	1.	4.		15.40
24. " " 4' top " "	.32	.70	.05		6.85
25. G.S. from dump at Cut	.06	tr.	-	.75	3.00
26. " " " " shaft	.12	tr.		1.1	5.04
27. Sorted sample cut	.20	1.5		3.5	13.20
28. Average of 6' lower shaft.	.12	tr.			2.40
29. GS from seam on H. Wall	.40	146.00			95.60
30. Average of 8" Pacific tunnel	.15	6.	3.00		10.20
31. " " 12" Polestar cut	.08	tr.	1.		2.80
32. GS Sulphide ore from Accident shaft	1.4	118.00	6.		46.00
33. " " " " " "	2.00	21.00	13.50		68.80
10 A. Sorted Silicious ore	.40	1.5	10.00		20.90

GS indicates grab samples. Averages are from channel cuts.
Sample Number locations are indicated by number on Assay Map.
Values: Gold @ $20 oz. Silver @ $.60 oz. Lead @ o¢ lb. Copper @ 12¢ lb.

NOTE BY G. M. C. No assay map was presented with this report. The record of the Vulcan Mine is bad and from surface indications it would seem to have little if any value.

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REPORT ON THE VULCAN MINE

LOCATION

This property is located in the Black Rock-Blue Tank Mining District, in the southern part of Yavapai County, Arizona, 12 miles north-east of Wickenburg, a station on the Santa Fe Railway, and three miles south of Constellation. The county highway from Wickenburg to Constellation is within 3 miles of the camp and all parts of the property are easily accessible. The property is excellent situated for extensive development. The camp arrangement, water supply, roads and other improvements can be adapted without expensive outlay, to any proposed plan.

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Power for preliminary development would utilize oil or gasoline. Later, connection for electrical power can be made with the power line of the Central Arizona Light & Power Company, 2½ north.

FREIGHT

Railroad freight rates at Wickenburg approximate:

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Douglas	"	"	10.60
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Name of Claim	Area-Acres	Recorded at Prescott, Arizona Record of Mines, Yavapai County	
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TOTAL	186.06 acres		

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HISTORY OF PROPERTY

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50 feet incline shaft, 50 feet drifting, see Assay Map, point 18
70 " vert. shaft 108 " drifting, 20
45 " tunnel 15.
35 " open cut 10
14 miner shafts and cuts.

5600 feet roads, no including improvements off property.
4 camp buildings
1 garage
1 barn
Test mill, 20 ton, (60% complete)
Assaylaboratory
Blacksmith shop
Pumping plant and pipelines
Headframe and equipment
Storage Dam and Reservoir (30% complete)

A large quantity of equipment and supplies is on hand, such as tools, track, ore cars, lumber and miscellaneous material. This equipment is for hand work only, and should be added to, if air drills are to be used. One Republic truck and one light Ford truck are available for transportation.

HISTORY OF THE DISTRICT.

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GEOLOGY

The area in the immediate vicinity is a spur of the Bradshaw uplift. Granites, granite, gneiss and schists form the major portion with many intrustions ob both acid and basic rocks; local breccias and limestone, with small areas of later conglomerates.

The main feature on this property is the great fault or shear zone, traversing this section from the O'Brien group on the northwest to the Ada Group on the south-east, a distance of over 2 miles. The dip averaging 40-50 degress to the southwest. Evidence of profound movement is shown by the displacement and brecciation following this fault. Later intrusions of basic rocks followed this fissure and formed additional channels for the mineral bearing solutions.

The main ore body is found on the Genung and Constance claims forming a continuous deposit nearly 1000' long, and from 4 to over 50 feet in width. Another ore body is found on the Millsite claim where the surface indications predict a deposit almost as large as the one above.

The footwall rocks are granite-gneiss and schists; no well

defined

defined bedding planes are in evidence.

The hanging wall country rock is granitic, but adjacent the ore shoots are areas of breccia and lime. A well defined gouge follows the hanging wall from point 14 to 23.

MINERALIZATION

Lead, copper, gold and silver are the predominating economic metals, Some zinc occurs in all parts explored.

The ore so far developed is primarily oxidized, although more or less sulphides are found in all the workings. Evidence of surface leaching is plentiful in the upper parts of the outcrop, the silver and copper values being almost entirely gone. Free gold is found along the entire fault. The oxidized silver minerals are found, especially in the harder more impervious portions. Native silver occurs in small quantities in several openings on the north end, where a lower elevation is found.

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ASSAY MAP AND VALUES See Map no. 4

A study of the Assay Map and accompanying detail sheet, will enable a thorough understanding ofthe size and value of the deposit. No attempt has been made to estimate the value of the ore so far exposed, although a probable tonnage could be estimated. It is evident that this is primarily a development project, and that the data so far available is very favorable and warrants the prediction that exploration at depth will uncover large bodies of commercial ore. The high values in gold and the evidence of former high values in silver are of great interest. The ration of values in gold and silver, to the percentage lead is very favorable.

RECOMMENDATIONS:

A study of existing conditions and the compiled data leads to the conclusion that an incline shaft, located midway of the main ore body, will be the most economical method of exploration. Not less than 300 feet should be provided for, with provision for lateral drifts from at least 2 levels. This will be in the ore body at all times and no dead work will be required. Sinking and timbering costs can be held to the lowest figure.

I would suggest that at least $25,000 be spent for this work and the installation of additional machinery.

CONCLUSIONS

After consideration of all the possibilities of the Vulcan property; the final results from proper exploration and development; the general location of the property adjacent to others in the district; its formations and large ore bodies which are so prominently in evidence; the recommended preliminary work will no doubt develop a substantial quantity and quality of commercial ore.

However, by no means should the financing cease at the above stated amount of $25,000, as it would only be for preliminary expenditures. You should prepare for at least a fund of $100,000 to place the property on a commercial footing. You should adhere to strict economy, as should be practiced in all mining ventures, and see that this economy is strictly practiced but discriminate between true and fictitious economy.

The writer feels sure that if the course outlined is followed, the results will bring very favorable results to you and your enterprise.

Its accessibility and location makes it possible for year round operation and most favorable for this class of mineral product owing to your close proximity to the El Paso and Douglas smelters.

ASSAY RETURNS

Number and Location of Sample	Gold. oz.	Silver oz.	Lead %	Copper %	Total per ton
1 Dump St. Isabel 10' shaft	.04	tr	.25		$1.10
2 " "	.06	.8	1.90		3.96
3 Constance Vein 4" H-Wall	.35	1.5	6.30		15.46
4 Average of 2 ft. on footwall	.20	.75	2.		6.85
5 Dump Upper shaft #1	.40	2.	1.5		11.00
6 " " " #2	.05	.15	.4		1.57
7 Chip Sample 20' gssoutcrop	.25	10.00			11.00
8 average of 10' at face of 30' cut.	.30	1.	2.00		9.00
9 " " 7' at Sta. 20 " "	.10	1.	4.		7.40
10 " " 5' at Sta. 10 "	.10	.50	4.		7.10
11 Average of 5' at start of" "	.02	.5	2.40		3.58
11A Sorted high grade ore	.70	40.00	64.00		110.80
12 average of 3' top of 12' shaft.	.06	1.	7.80		11.16
13 Average of 6' bottom 12' shaft.	.20	1.	5.		10.60
14 Top of outcrop	.02.	.tr	..4		..88
15 Average of 1 ft. H.-wall gouge,	.12	1.5			3.30
tunnel.	.	.tr			
16 " " 4 ft. Tunnel	.15	.tr	1.7		4.44
17 " " 1 ft. F-wall	.40	1.			
18 " " 2 ft. surface, incl.shaft	.35	.5	5.00		8.60
19 " " 4 ft. 50' level " "	.30	3.00	4.5		13.30
20 " " 3 ft. bottom 70' Vt.	.20	7.00	2.6		11.32
21 " " 2 ft. Sta. 50 Drift 70'	.20	4.5	3.		10.30
V. shaft.		3.			
22 " " 3 ft. Sta. 100 Drift 70'	.25	3.	4.5		12.20
V. Shaft.		.			~~15.40~~
23 " " 4 ft. bottom 10' shaft	.50	1.	4.		15.40
24 " " 4 ft. top " "	.32	.70	..05		6.85
25 GS from dump at Cut	.06	.tr	-	.75	3.00
26 " " " " shaft.	.12	.tr		1.1	5.04
27 Sorted sample cut	.20	1.5		3.5	13.20
28 average of 6' lower shaft	.12	.tr			2.40
29 GS from seam on H. wall	.40	146.00			95.60
30 Average of 8" Pacific tunnel	.15	6.	3.00		10.20
31 Average of 12" Polestar cut	.08	tr	1.		2.80
32 G. S. Sulphide ore from Accident S.	1.4	18.00	6.		46.00
33 GS " " " "	2.00	21.00	13.50		68.80
<u>10A</u> Sorted Siliceous ore.	.40	1.5	10.00		20.90

GS indicates grab samples, Average are from channel cuts.
Sample number locations are indicated by number on Assay Map
Values: Gold @ $20 oz. Silver @ $.60 oz. Lead @ 6¢ lb. Copper @ 12¢ lb.

Note by G. Lyle

No assay map was presented with this report.

The record of the Vulcan mine is bad &

from surface indications it would seem to have

little if any value.