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Property File

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REPORT  
ON THE  
TRUE FISSURE MINE.  
FERGUSON, B.C.

To Mr. P.R. Weekes, Manager,

Porcupine Goldfields Development & Finance Co. Ltd.

By Chas. C. Starr,  
October 1925.

TRUE FISSURE MINE - SUMMARY

LOCATION: Three miles northerly from Ferguson, D.C. at an altitude of 5500 feet, in the Trout Lake Mining Division.

ACCESSIBILITY: Access is via Beaton, at the head of Arrowhead Lake, thence by road fifteen miles, and a steep trail three and a half miles.

OWNERS: True Fissure Mining Co. Traction Building Cincinnati, Ohio. Seven claims, partly fractional, in the group.

GENERAL CONDITIONS: Conditions as to timber and water are good. Water power may be developed at a distance; Deep snow may be expected in the winter.

EQUIPMENT: None, except two cabins and hand mining tools.

DEVELOPMENT: Two thousand feet of drifts and eighteen hundred feet of crosscuts. This is distributed over four tunnels on the True Fissure vein, covering a vertical range of five hundred feet and two tunnels on the Blue Bell vein 120 feet apart vertically.

GEOLOGY & VEINS: There are two nearly parallel north and south veins which dip about forty degrees to the east. They occur in graphitic slates, and are in general of the replacement type, consisting of pyrite, sphalerite, and galena with silver in a quartz gangue. They vary from ten to fifty feet in width but so far as known the width of ore is from 1 $\frac{1}{2}$  to 14 feet with an average of about four and a half feet.

ORE DEVELOPED: The presence of 12,000 tons of ore carrying about 10 ounces of silver, 4% lead, and 11% zinc is indicated although only a small part of this is thoroughly developed.

CONCLUSION: The development footage is large as compared to the tonnage of ore developed, and the profit from operations would be small even if a plant were now on the property.

There is no reason to expect future development to be more successful.

The property does not justify further attention.

INTRODUCTION: The time spent in the field in making this examination, was six days by Mr. O.D. Prith, and three days by the writer; a fairly thorough examination was made.

LOCATION & ACCESSIBILITY:

The property is situated on the east slope of Great Northern Mountain, on the west side of Ferguson Creek, about three miles northerly from the town of Ferguson.

It is in the Trout Lake Mining Division of the West Kootenay District of British Columbia.

The District may be reached by way of Kootenay and Trout Lakes (Via Laro and Gerard), or, better, from the Lake boats at Arrowhead, by way of Beaton, which is on the north-east arm of Arrow Lake. From Beaton a good road leads to Ferguson, about 15 miles, and from there a rather steep trail, 3½ miles long, leads to the mine.

The elevation of the lower workings is about 5500 feet, but the upper end of the property is some thousand feet higher.

PROPERTY & OWNERS: There are seven claims in the group, of which the principal ones are the True Fissure, Blue Bell and St. Elmo.

They are all said to be Crown Granted. They are owned by the True Fissure Mining Co. Ltd., of which Theodoric W. Mitchell, Traction Building, 5th & Walnut Sts. Cincinnati, Ohio, is Secretary and Treasurer.

POWER, TIMBER, etc., Water sufficient for domestic use and ore concentration flows through the middle of the property, but the

quantity is not sufficient for power development.

Power, in probably ample amount, could be developed from Ferguson Creek (often called North Fork of Lardo Creek) at a distance of two or three miles from the Mine.

There is ample timber on the property for mine use.

The property is situated in a steep mountain side, which is, however, not particularly rough, and is free from snowslides although the snow fall is quite heavy.

HISTORY:

The property was acquired by the present owners about 1906, and intermittent development has been carried on since that time. A few tons of high grade ore have been shipped to the smelters, the greater part of which came from stopes on the Blue Bell vein.

At the present time seven men are employed in development in the lower Blue Bell tunnel.

EQUIPMENT:

There is no power equipment of any kind on the property, but there are tools and equipment for hand mining sufficient for eight or ten men. Blacksmith shops are located at the Lower Blue Bell tunnel, and at the Morgan tunnel.

There are two log buildings, - a bunk-house and a cook-house - , which give ample accommodations for ten or a dozen men.

DEVELOPMENT: (See map)

The development on the property amounts to approximately 3945 feet, divided as follows:

True Fissure.

	<u>Drifts</u>	<u>Crosscuts</u>	<u>Raises</u>	<u>Total</u>
Upper St. Elmo Tunnel				Caved
Lower St. Elmo Tunnel	55 ft.	50 ft.		115 ft
Upper Blue Bell "	155	200	40ft	395
Lower " " "	430	150	80	660
True Fissure "A" "A "	20	90	-	110
" " "B" "	145	60	-	205
" " "C" " T.F.Vn.	520	-	-	
" " " " B.B.Vn.	40	230	-	790
True Fisher Morgan Tun. T.F.Vn.	640			
" " " " B.B.Vn.	40	990		1670
	<u>2045</u>	<u>1780</u>	<u>120</u>	<u>3945</u>

There are also a number of small open-cuts.

GEOLOGY:

The mine lies in what is known as the "Central Mineral Belt" of the Lardeau; the principal rock is a black graphitic slate (phyllite). There are also small areas of a widely distributed gray sericite-schist; the origin and relation of which to the black slates is not clear.

The slates strike in a general NW-SE direction and dip steeply to the NE; they appear to have been severely crushed without having undergone any great folding or faulting.

VEINS:

There are three veins on the property; of these the St. Elmo and the Blue Bell strike approximately N 35° W and dip 40° NE.

The True Fissure vein strikes N 15° W and dips 45° NE.

It is possible that the Blue Bell and the True Fissure veins are the same; they are nearly the same in dip and strike, but insufficient work has been done to determine it definitely.

There is a slight difference in the vein filling, which, in con-

junction with the difference in strike, indicates the presence of two veins.

The St. Elmo workings have caved so that the vein cannot be seen. It is said to have been narrow and of good grade; a small amount of ore was shipped from it.

The Blue Bell vein consists of ~~which~~<sup>white</sup> massive quartz with pyrite, galena, sphalerite in varying amounts, replacing the sheared slates. Calcite siderite, and feldspars are rare. In width it varies up to 30 feet or more, the ore, however, is rarely over three or four feet. The hanging wall is well defined and marked by considerable movement, but, strictly speaking there is no definite footwall as the mineralization decreases gradually. There are several quite small stopes on this vein.

The True Fissure vein contains the same sulphides as the Blue Bell, but the quartz is somewhat less, and ~~is~~ finer in grain; it also contains in places considerable amounts of feldspar and siderite. In it the slates have not been, on the average quite as completely replaced as in the Blue Bell.

The width of the True Fissure vein is somewhat indefinite; the hanging wall is sharply defined by a narrow zone of intense shearing and a small gouge, but towards the foot there is no line of demarkation between the vein and the country rock, but simply a gradual diminution of mineralisation. The zone of intense silicification is perhaps fifteen feet in width, and the vein proper, from thirty to forty feet at right angles to the dip. Best values appear generally to lie near the hanging wall, but not directly on it. At one point on the outcrop the dip of

the hillside and of the vein are nearly the same and the hanging wall has been eroded, exposing the vein over an area perhaps of 300 by 500 feet. A few tons of ore have been shipped from this exposure.

Both veins are apparently replacements along a shear zone where the locus of ore was to some extent governed by cross fractures.

The original shear has been entirely healed and later movement has taken place along the hanging wall.

SAMPLING:

True Fissure vein.

In "B" Tunnel two samples were taken in the 3rd west AD, covering a width of 7.0 ft. which averaged Ag. 10.5 oz.; Pb. 6.8%; Zn. 12.8% . These do not extend to either wall as the vein against the hanging is timbered, and the foot is not exposed; the best of the vein is represented. The other crosscuts in this tunnel show mineralization, but were considered too low grade to sample. At the face of the tunnel a sample shows 4.3' of Ag. 6.7 oz., Pb. 4.8%, Zn. 11.2%.

The "C" Tunnel was driven along the hanging wall of the vein, but in the slates instead of the quartz, on account of the easier drifting. Three crosscuts appeared to carry sufficient values to be sampled; the first crosscut (or more properly drift on the Blue Bell vein) assays will be given under the Blue Bell.

In crosscut No. 2 five samples show there is no

ore exposed.

In crosscut No. 3 four samples average a little better, but below the grade of possible ore.

In crosscut No. 4 four samples, representing a vein width of 14' average Ag. 5.1 oz., Pb. 4.1%, Zn. 8.9%.

In crosscut No. 5, there is some ore near the face, along a cross slip. This was not sampled as it is very bunchy and probably of limited extent.

Crosscut No. 6 shows no ore. The drift has been driven in the hanging wall and is not on the ore.

The "A" tunnel and the Morgan tunnel were not sampled as there appeared to be no ore of sufficient value, except in narrow seams or small bunches.

In the Morgan tunnel there is no vein matter that appears to be ore and no samples were taken. The drift was driven in the hanging wall, and the vein has been opened by crosscuts at intervals.

#### Blue Bell Vein-

In the Upper Blue Bell tunnel eighteen samples were taken. Fifteen of these were taken along the drifts north and south, at (generally) ten foot intervals, the remainder were from small stopes and not far from the drift. They average Ag. 5.38 oz., Pb. 3.1%, Zn. 9.8% over a width of 4.5 feet and a length along the strike 150 feet.

The True Fissure.

In the lower Blue Bell tunnel nine samples, spaced ten feet apart, give an average of Ag. 4.7 oz., Pb. 3.1%, Zn. ~~16.9%~~ // 2% over a width of 1.5 feet and length of 80 ft; the remaining width of the vein is very low grade. In the raise above this level, the first forty feet averages Ag. 6.4 Oz., Pb. 5.1%, Zn. 16.9% over a width of 2.5 feet. Above the 40 foot point the "pay streak" has pinched.

The Blue Bell vein in the "C" tunnel was sampled at five foot intervals and shows an average of Ag. 6.3 Oz., Pb. 3.7%, Zn. 10.2 % for a diwth of 1.6 feet over a length of 35 feet.

ORE DEVELOPED:

On the True Fissure vein no ore can be considered as fully developed. A block, lying between "B" and "C" tunnels that might be considered "possible" ore amounts to 4500 tons that will probably average Ag. 8.3 Oz., Pb. 5.3%, Zn. 12.0%.

On the Blue Bell vein, between the upper and lower tunnels, there is a block that may be considered "Positive" ore amounting to 4000 tons, with an average width of 3½ feet and a value of Ag. 5.2 Oz., Pb. 3.1 %, Zn. 10.3%. "Possible" ore may be considered to extend for 50 feet above the Upper tunnel and 50 feet before the Lower tunnel, and amounts to 3900 tons of a value of Ag. 5.3 Oz., Pb. 3.1% Zn. 10.0% and a width of 4.0 ft.

## SUMMARY OF ORE DEVELOPED.

	Positive Ore					Possible Ore				
	Tons	Width	Ag.	Pb.	Zn.	Tons	Width	Ag.	Pb.	Zn.
True Fissure						4500	9.5	8.3	5.3	12.0
Blue Bell	4000	3.5	5.2	3.1	10.3	3900	4.0	5.5	3.1	10.0
Total	4000	3.5	5.2	3.1	10.3	8400	7.0	7.0	4.3	11.1

CONCLUSION:

The above grade of ore would necessarily have to be concentrated on the ground in order to show a profit, and would require substantial equipment to do it, without including development costs. Development to the extent of 4000 feet has been done to partially develop 12,000 tons of ore, therefore the development cost along per ton of ore must have been over \$5.00 per ton. On this basis the property could not likely be operated at a profit, even if it were fully equipped with mining and concentrating facilities.

As for future development, there are no particular indications that further work will open any greater proportion of ore, and there is no doubt that the work now done has been in the best places and under the cheapest conditions, if not always to the best advantage..

I therefore conclude that this Company is not justified in becoming interested in the property.

Respectfully submitted.

*Chas. C. Starr*