

82KNW146-00 PIPESTEM

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REPORT ON THE PIPESTEM GROUP
PROPERTY FILE
Lardeau, B. C.

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PROPERTY FILE

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1758 WESTERN PARKWAY
VANCOUVER 8, B.C.

REPORT ON THE

PIPESTEM GROUP, LARDEAU, B. C.

INTRODUCTION

This account includes the results of the exploration that has been done during 1957 and replaces my Preliminary and Progress Reports dated June and September 1957 respectively.

The work done this year consisted of:

1. Bulldozing one mile of road.
2. Erecting a commodious cabin.
3. Line cutting.
4. Self-potential survey.
5. Trenching the various showings.

GENERAL.

The property consists of eight crown granted claims of fractional sizes totalling over 200 acres, one claim staked this year and the Hazel group under option.

It is situated on the steep north slope of Pool Creek opposite the producing Sunshine Lardeau Mine that is on the south slope.

The geology of the district was described in Memoir 161 of the Canadian Geological Survey and includes descriptions of the various properties as of 1929.

In April of this year M. R. Keys published an account of the geology of the Sunshine Lardeau Mine in the Bulletin of the C. I. M. M that provides a useful background to the present report.

Dr. G. E. P. Eastwood of the B. C. Department of Mines is currently studying the geology of the Lardeau in some detail and I was privileged to have a copy of his account of the Mine.

In what follows I discuss at some length the geology of the Sunshine Lardeau Mine because it is pertinent to the understanding of the possibilities in the Pipestem group.

G E O L O G Y

The country rocks of the Pool Creek area have been divided into a volcanic series known as 'greenstone' and a sedimentary series that are now phyllites.

The greenstones are well exposed in the 1000 feet of cross-cut between the No. 4 and Eclipse veins on the 10th level of the Sunshine Lardeau Mine. They are typically chloritic and exhibit strong banding with tight dragfolding so that the original nature of the rocks is open to dispute. Much has been mapped as fragmental but the uniform composition of the 'fragments', some of which are hook-shaped due to folding, suggests to me that originally these greenstones were banded tuffs in which the harder layers have been dragfolded and then attenuated so that the folds were separated into a series of lenses. In some cases it appears possible that the 'fragments' were the elongated 'skins' of pillows in a pillow lava.

The phyllites are non-chloritic and characterized by their black to grey colour with sericite on the cleavage faces. The black bands are often highly graphitic and some bands are sufficiently siliceous to be called quartzites.

F O L D I N G

There is abundant visual evidence that both the greenstones and the phyllites have been extremely dragfolded and cleaved with axial planes and cleavage striking northwest and dipping to the northeast

steeply. Both Keys and Eastwood give an average plunge of 25° S. E. but I noted a number of examples that were much flatter.

Keys describes the volcanic rocks as being strongly dragfolded and occupying an area 7,500 feet long and up to 2,000 feet wide. As depicted on his map the shape of this area of greenstones suggests a large elongated fold that has been refolded.

A similar area that may be as much as one third as long and one third as wide is now known 1500 feet to the north in the St. Joe and Connore claims.

The self-potential survey has indicated large areas of graphitic sediments whose distribution cannot at present be correlated structurally with the volcanics.

F A U L T I N G

A series of four faults that strike north and dip steeply east with a regular spacing of 1000 feet apart are known in the Sunshine Lardeau property because of their associated mineralization. From east to west they are named the Eclipse, No. 4, Barclay and Sandy veins respectively. They have right hand displacements of up to 200 feet at probably -45° to the south.

Associated fractures are usually present as at the south end of No. 4 vein.

A further member of this group is the vein in the Hazel claims which appears to correspond to the group of veins in the Mohawk and Moscow claims.

The geophysical map strongly suggests that the straight south flowing creek near the west side of the Moscow claim follows a major N - S fault that could be the north extension of a structure in the most westerly of the Hazel workings.

The spacing is such that there could be another fault half way between the Eclipse and Hazel veins situated approximately along the east boundary of the Eclipse claim.

WALL ROCK ALTERATION

The main faults have localized zones of carbonate replacement of the wall rocks. Both Keys and Eastwood state that the carbonate is siderite but it appears to be nearer ankerite in composition. The zones are up to 50 feet wide and may spread along certain beds that were more susceptible to this alteration. Barren and irregular quartz - ankerite veins are also common in the alteration zones. The secondary green mica mariposite is present as a minor but characteristic mineral.

The evidence so far indicates that the wall rock alteration is much more pronounced in the volcanics than in the sediments.

ORE - BODIES

The ore minerals consist of galena, sphalerite, tetrahedrite and chalcopyrite in a gangue of quartz, pyrite and ferruginous carbonate. They can be found throughout the veins but only in certain sections are they sufficiently concentrated to form ore.

In the Sunshine Lardeau area the faults described above are occupied by veins in which ore-bodies are found. The main ore-body is in No. 4 vein where the country rock is entirely volcanic and which has therefore been assumed to be the favourable host rock as compared with the sediments.

The ore on the Eclipse vein however is located in the length of the vein fracture that spans the faulted segments of a band of sediments in the volcanics.

Interesting mineralization is known in two areas of the Pipestem Group. One is in the Connore claim where a vein has been found that

strikes with the cleavage at W. N. W. and dips 70° N thus resembling a bedded vein. When I saw the occurrence early in September 1957 it was exposed in an open-cut for a length of 9 feet that is well mineralized with just galena. A sample cut over 3 feet in the east face gave : Pb 10.25% Au 0.005 oz Ag 0.65 oz.

At 35 feet west of this face and 15 feet lower the vein is only 2 inches wide. At 100 feet west of the face and 85 feet lower an outcrop of the same vein was found that is 18 inches wide with fair mineralization estimated to contain 5% galena. There are signs of an old caved tunnel 30 feet east of this outcrop.

Mr. Humphry now reports that a new trench 80 feet east of the original has exposed 10 feet of vein width that has galena on each wall.

The other area is on either side of the common boundary between the Mohawk and Moscow claims. Here there are two sets of small veins that appear to converge at the Moscow tunnel. The country rock is well sheared black argillite. A considerable amount of both old and new trenching has been done to expose the veins. They are well mineralized with pyrite and galena for widths up to 12 inches at intervals over a length of 350 ft in the west set. At the Moscow tunnel there is three feet of quartz vein well mineralized with pyrite and galena. It was stripped this summer for 30 feet along the strike to the north until the overburden became too deep. At the north end there is 18 inches of vein with 20% galena. An oblique fault dipping 40° E. slices the vein into two segments. Underground the vein wedges out on the top of this fault and then appears underneath the fault as it turns to the northeast and flattens to 30° . The vein was followed for 130 feet in the drift but only a lens about 7 feet long with galena was found and then extracted in a small raise. It can still be found

in the floor where a two inch streak of fine-grained galena is associated with another two inches of pyrite and sphalerite.

Another potential area for ore that has already been partly explored is the Hazel group of claims that are immediately east of the Eclipse claim and include the extension of the greenstone belt in which the Sunshine Lardeau ore is found.

I inspected the various old workings in this section without the benefit of the partial map that was subsequently provided. There are two main tunnels which appear to be on the same vein but their elevations are 40 feet apart. The vein strikes N 20° W, dips 70° E and usually has a sparse mineralization of galena and spalerite for widths up to 2 feet. In the upper tunnel, called the Excise, there is a zone of mineralization 20 feet long that is 10 feet wide due to the proximity of a second parallel vein. In both tunnels the country rock is sedimentary and mostly quartzitic.

Another working that is further to the west consists of two short parallel tunnels 7 feet apart both horizontally and vertically, one 15 and the other 30 feet long. They are both on the same vein which strikes N / S and dip at 40 to 60° E; it contains pyrite with some galena and sphalerite. The southern extension of this vein was presumably the objective of the two large trenches 200 feet to the south and 150 feet higher where greenstone is present. The actual position of the vein is probably further to the west.

In 1955 Sunshine Lardeau drilled five holes into the mountainside in a southwest direction to explore the area immediately south of the workings but with negative results. This drilling however would not have intercepted the vein to the west.

G E O P H Y S I C A L P R O S P E C T I N G

Because of the widespread overburden that masks so much of the claims I recommended a geophysical survey to explore for hidden ore bodies.

From August 20 to 31 I conducted a self-potential survey in four selected areas where lines had already been cut. Unfortunately my instructions had been misunderstood so that the lines were not run due north or very straight nor was allowance made for the slope of the ground when measuring the distances. However I have been able to map the shape of the grids accurately enough for present purposes.

Messrs. J. Roscoe and S. Constantine continued the work during October but there are still some blank sections left.

The interesting results that were obtained are shown on the accompanying maps to a scale of 1" to 50ft and described below:

AREA 1

This section consists of a strip 400 feet wide near the west side of the Moscow claim. It is characterized by a remarkably straight mountain creek that flows south into Pool Creek. The potential lines strongly suggest that it follows a fault.

Immediately west of the creek there is a pronounced anomaly for 100 feet from C 8 to C 10 and a ferruginous spring is present at the south end indicating the probable presence of sulphides.

The area of high readings to the north and west of the creek is interpreted as graphitic sediments with a strong shear zone that strikes southeasterly towards the anomaly C 8-10. The anomaly in the northeast section of the area is probably due to graphitic sediments as well.

High readings were also obtained along the southern edge of the area close to Pool Creek and around the workings. The presence of

both graphitic sediments and pyritic veins account for the high readings. However the Moscow tunnel extends for 150 feet to the north below an area of low readings although the tunnel is in sheared graphitic sediments that gave high readings when tested underground. The only explanation appears to be that the overburden is so thick - greater than 30 feet - that it masks the effect of the bedrock. An extreme example was encountered recently at Pioneer Gold Mine where a -30° drill hole into the mountainside failed to reach bedrock in 400 feet! It is therefore possible that the Mohawk vein extends under a thick cover of overburden for 300 feet to the northwest to join the anomaly C 3-10.

AREA 2

This is on the east side of the Pipestem claim.

The high potential readings indicate that the northern two thirds of this area are underlain with graphitic sediments with the northwest extension of the strong graphitic shear noted in Area 1. The low readings in the southern portion are due either to a great depth of overburden or possibly non-graphitic siliceous sediments.

A minor N - S anomaly along the southern part of the east side of the area could be due to a mineralized fault or possibly a ridge of sediments under the overburden. This area was checked with samples for geochemical tests but the laboratory work has not yet been performed.

AREA 3

Only the last three lines at the north end of this area were in the graphitic sediment zone. The remainder is devoid of outcrops so it is either covered with thick overburden overlying the same graphitic rocks or is underlain by non-graphitic siliceous sediments.

Slight but definite kinks in the potential lines indicate two

anomalies: one of them extends N - S for 800 feet and could well correspond to the Eclipse vein offset to the east 100 feet. The other is 250 feet further east and 250 feet long.

AREA 4.

This area was selected to investigate the origin of the float galena ore found in Red Horse Creek earlier in the year. Some old workings were discovered on the east side of the creek before the survey was started and they proved to be the source of the float.

The geophysical work showed that a persistent deflection of the potential lines indicated that the vein extended for at least 200 feet to the east beyond the discovery trench. Owing to the lack of suitable sulphides with the weakly reactive galena only a weak response is obtained.

To the west in the St. Joe claim a slight crowding of the lines is the only possible evidence for the vein but a well defined N - S anomaly strongly suggests another vein at least 200 feet long but which could extend further south where no geophysical work has been ~~done~~ done. It is interesting to note that this anomaly is directly in line with the productive No. 4 vein of the Sunshine Lardeau Mine 3000 feet to the south.

At 200 feet south of the Conmore vein there is the suggestion of a parallel anomaly that could be significant.

Since the country rock in this area is volcanic and exactly similar to that of the Sunshine Lardeau Mine half a mile to the south any discoveries in it are of special importance. As indicated on the 1 in to 300 ft plan the volcanics in this area could extend across the full width of the St. Joe and Conmore claims so that the Conmore vein would have a potential strike length of 1800 feet in which to search for ore-bodies.

PROPOSED DEVELOPMENT

AREA 1

In the Moscow tunnel there is some doubt as to whether the correct vein was followed below the flat fault. The main vein may be further to the west. Two Holes should be drilled from inside the tunnel due east and west across the general strike of the vein system.

The most interesting geophysical find is the C 8-10 anomaly along the west side of the creek that presumably follows a strong N - S fault. An attempt should be made to bulldoze the ferruginous spring at the south end of the anomaly in case bedrock can be reached here. A drill hole may be necessary and will require careful setting out owing to the steep topography.

AREA 2

A bulldoze cut should be tried across ~~XXXX/XY/YAB/SABEPPPP~~ the partially indicated anomaly at the S. E. corner of this area.

AREA 3

Bulldoze across both of the supposed anomalies here, particularly the one that could be the extension of the Eclipse vein.

AREA 4

To trace the Conmore vein on the surface it will be necessary to put in bulldoze cuts at intervals. This can be followed by diamond drilling.

The pronounced N - S anomaly in the St. Joe claim should be tested in the same way.

The weak indication 200 feet south of the Conmore vein could be tested with a N - S cut at the F 8 position.

HAZEL CLAIMS

Here a 200 ft flat diamond drill hole aimed due west from the end of the cross-cut in the lower main tunnel or a -60° hole to the west for 200 feet from the east end of the large trench would cut the projected position of the N - S vein about 180 feet ahead of the two short tunnels and presumably in greenstone country rock.

RECOMMENDATIONS

1. Carry out the bulldozing and diamond drilling suggested above.
2. If the anomalies are found to correspond to mineralization extend the self-potential survey to cover such favourable sections as the volcanic areas in the St. Joe - Conmore claims and the Hazel claims.

