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NAME AUFFAS (JUMBO

SUBJECT REPORTS

A. J. ARLAND

92H/6W
92H/SW-3E

PRELIMINARY REPORT

AUFEAS MINE

HOPE, B. C.

249-121

INTRODUCTION:

The preliminary examination, on which this report is based, took place on March 18th, 1937. Owing to snow conditions and the limited time available, the examination was limited chiefly to the crosscut and drifts at an elevation of 1300 feet above sea level, which are referred to in this report as the workings of the Main level. The vein developed by drifting on this level is called in this report the Main vein.

The outcrops above the Main level and the short tunnel above the Main level were not examined. Full descriptions of these can be found in Government reports.

Several samples only were taken to serve as a check on assays reported from different sources, including Government engineers.

Main consideration was given to the possibility of opening other ore shoots, either on the known veins or veins to be discovered.

PROPERTY AND LOCATION

The Aufeas mine is located near the town of Hope, B.C., on the C.P.R. and approximately 1 mile from the main highway from Vancouver. The distance to Vancouver by this highway is 90 miles, most of which is hard-surfaced and the remainder of which is being improved.

The mineral showings are on Wardle mountain at the confluence of Wardle creek and Silver creek. The property consists of seven claims, Mineral claims Star Nos. 1-7, extending up from Silver Creek from an elevation of 100 feet, on both sides of Wardle Creek.

See also Unpublished Report by J. D. McLennan 1947

Most of the development work has been done on mineral claim Star No. 5. On this claim most of the surface showings have been found and two tunnels driven into the mountain.

TOPOGRAPHY:

The area at the mine is one of steep cliffs, with stream channels cut deeply. Silver creek to the north occupies a channel about 100 feet above sea level. Wardle creek has cut a deep channel at a steep angle to Silver creek.

The local topography permits deep development of the mine to be done with cheap crosscutting and drifting. No shaft sinking will be necessary for a long time to come as a tunnel can be run a short distance above Silver creek.

GENERAL GEOLOGY:

The area at the mine is underlain with granitic rocks which may be classed in part as quartz diorite. Into these granite rocks are intruded small diorite dykes. The surface, except the cliffs, is obscured by a mantle of slide rock, vegetation and earth. Vein outcrops are, in general, hard to follow.

Fissuring and shearing on a large scale have taken place. Mineralization on an extensive scale has taken place in both the fissures and shears. The Main vein occupies a shear at its south end and has become a fissure to the north. The greatest mineralized width of the main vein is in a shear. Mineralization consists of massive and disseminated arsenopyrite which carries most of the gold and silver values, quartz and calcite. The matrix is chefly soft altered diorite

gouge.

STRUCTURAL GEOLOGY:

The main structural features are fissures and shears in the quartz-diorite which is competent to maintain both over great lengths and depths.

The fissures and shears are roughly parallel, striking at an angle a little east of north and dipping 50° to the east. Wardle creek occupies much a shear. The veins exposed on the surface and developed underground correspond to the same general dip and strike, The strength of the fissuring is shown by the fissures seen on the Silver creek slope of Wardle mountain, 1500 feet north of the mine workings.

A large series of parallel fissures and shears can be expected to be opened by development in depth east and west of the Main vein.

Minor fissures intersect the large fissures and shears with an attendant greater width of mineralization at the intersections. It is at these points that good widths of milling ore can be expected to be developed. Such an occurrence is seen on the Main vein on the Main vein level where a raise has partially developed the ore shoot. Good mineralization occurs here in widths up to 4 feet. Milling ore should be expected over greater widths.

ORE DEVELOPED:

A good grade of ore has been developed for 150 feet on the Main vein on the Main level. The width of this ore shoot varies from several inches to four feet. Greater widths can be mined to make good mill feed.

Taking the slope distance of the vein to the surface as 300 feet, calculations show that a few thousand tons of ore can be considered to be developed, using the smaller widths in this vein alone. Using greater widths to make a mill-feed would greatly increase the reserves of ore in sight.

The best surface assays given by Government Engineers run as high as 6.21 ounces gold per ton. These are from an open-cut, probably on the Main vein, a hundred feet north in section from the north face of the main level Main drift. It appears that the best part of the Main vein on the Main level has not yet been developed.

Samples taken near the north face of the Main vein on the Main level are as follows:-

Samples	Width	Oz. Gold per ton
Arland	8"	0.32
Government Engineer	4"	0.30
" "	6"	1.01

A sample taken in the oreshoot partially developed in raise, Main vein, Main level, assayed as follows:-

Sample	Width	Oz. Gold per ton
Arland	18"	0.72

Other samples over greater width show the oreshoot to be commercial. Widths of good sulphide ore measured in the raise vary up to 4 feet. Milling grade ore extends over greater widths in this shoot.

Development on the Main level will undoubtedly show a much

greater length of vein to the North.

MILLING:

Milling of the Aufeas ore needs but a single treatment involving concentration of the arsenopyrite in which the gold occurs, and shipping the concentrates to a smelter. Recovery of the gold at the property could be done with more complex treatment. The nearness of the property to a smelter with the attendent low freight rates should probably make a simple concentration of the sulphides satisfactory.

Milling costs, due to the softness of the ore and the coarseness of the arsenopyrite, should be a very cheap item.

MINING:

Due to the softness of the ore, the cost of mining should be a minimum. Powder and steel used per ton of ore mined should be a minimum. A good hanging-wall will make much timbering unnecessary.

EXTENSION OF ORE TO DEPTH:

There is no reason tobelieve that the ores in the Aufeas mine will not go to depth. Geological conditions are favourable for a persistence of mineralization to reasonable mining depths.

CONCLUSIONS:

1. Locations of the property close to Vancouver on the main highway and railway insures a minimum of expense for freight to and from the mine, and transportation.

2. The development of this property by low-level tunnels against the costly practice of shaft-sinking in less favoured mines, assures

a minimum expense in developing ore reserves, and bringing the mine to production. The lower level can be put in at a few hundred feet elevation.

3. The soft character of the ore insures a low mining and milling cost.

4. A few hundred feet of combined drifting and cross-cutting has satisfactorily opened up ore for 150 feet in the Main vein on the Main level. At least another 100 feet of ore can be expected to be opened up at the north end of this vein where the fissure is stronger and the surface assays are higher.

5. Ore can be expected to go to depth.

6. Other parallel veins are in evidence on the surface and others can be expected to be opened up at depth east and west of the Main vein.

RECOMMENDATIONS:

1. That work be commenced at the earliest opportunity to survey a site for a low level tunnel to cut the main vein at a considerably lower elevation than the present Main level. Later, crosscuts east and west should be run to explore parallel veins. If the distance is too great, it would be advisable to commence tunnelling on the Silver creek side of the property, close to the road already built.

2. That the Main level drifts be driven north to explore the Main vein under the richest surface exposures.

Respectfully submitted,

"A.J. Arland",
Reg. Prof. Eng. of B.C.

92H/6W
92H/SW-36

A. J. ARLAND

249-121

REPORT
ON
THE AUFEAS MINE.

On March 18th, 1937, the writer made a preliminary examination of the Aufeas mine on which he issued a preliminary report.

As a result of recommendations in this report, further examination was made on March 26-29 inclusive, to obtain further data and to survey the ground from a point easily accessible by road to the workings, in order to determine a site for a low-level crosscut. The writer was assisted in this surveying by Mr. E. Worthington, who has kindly prepared the maps accompanying this report.

LOCATION:

The Aufeas mine is situated on Wardle creek, a tributary of Silver creek which crosses the main highway from Vancouver, B.C., about 2 miles west of Hope, B.C. The distance from the mine to the highway is about 5000 feet and that to Vancouver, 90 miles. Most of this highway is hard surfaced and the remainder is being improved. The Canadian National Railway passes through Hope and the C.P.R. near it. Transportation facilities are almost ideal.

The property extends from Silver creek at an elevation of several hundred feet above sea level, to the Star crosscut at an elevation of 1500 feet above sea level, and farther up Wardle creek. A good road extends along Silver creek to the lower part of the property.

HISTORY OF LODE MINING IN THE DISTRICT

The immediate district is one of the oldest successful ones in the Province. The Eureka-Victoria silver deposits several miles south on Silver Peak, were discovered in 1868, and in the ensuing 6 years high-

See also Unpublished Report by J. W. McCammon 1947

grade silver ore was shipped, notwithstanding their unfavourable location at an altitude of 5000 feet above sea level.

A few miles north of Hope, the B.C. Nickel mines are developing a large copper-nickel mine from which high-grade shipments have been made.

HISTORY OF THE MINE.

In the several years prior to 1914 about 1100 feet of crosscutting and drifting was done on the property, all on the upper part of the property and on what is now the Star No. 5 M.C. This work is shown on the map accompanying this report and consists, in brief, of a 64-foot crosscut (250 feet above Wardle Creek) which cuts a vein but not the vein exposed above it in an open=cut, and a parallel crosscut (65 feet above Wardle Creek) which was driven 460 feet intercepting at 385 feet from the portal, a vein system which was followed 45 feet to the left and 214 feet to the right.

In this development work low-grade ore, then, but high-grade ore now, was followed by drifting for a length of 225 feet.

In 1914 a light aerial tramway was constructed between the mine workings and Silver creek, and some ore was taken down, some being shipped to a smelter and the rest left on the ground. Presumably due to the price of gold at that time and high freight rates, shipments ceased. The tramway has since fallen into disrepair and has been removed.

Surface stripping and rock cuts have, since that time, revealed the existence of other deposits at a lower elevation, several of these being on the Star No. 3 M.C. These are shown on the map as veins "D" and "E".

PROPERTY

The property consists of seven full claims and two fractions as follows:-

Star M.C. 1-7, and Fractions Star No. 2 and 3. They comprise a solid block of ground extending from Silver Creek over more than four claims' length up Wardle Creek. Over most of this length the block is two claims wide.

TRANSPORTATION:

The mine has such a favourable location that transportation costs will be at a minimum. If an aerial tram several thousand feet long were constructed from the present workings, in place of the one built in 1914, shipment would involve only the cost of hauling by road a few miles to Hope plus the freight charges to Vancouver or elsewhere. If a low-level crosscut were driven from a lower part of the property, say at the "E" vein, a few hundred yards of road would be all that is necessary to connect it with the road on Silver creek, making a tramway unnecessary.

TOPOGRAPHY:

The general topography of the area is one of precipitous mountains rising from the channel of Silver Creek, which, in this area is only several hundred feet above sea level. Creeks flowing into Silver Creek have cut deep channels in the mountains. Wardle Creek, on which the Aufeas mine is situated, is one of these and rises at an angle of about 15 degrees. Both walls of Wardle Creek are steep above the mouth of the gorge, and slope about 50 degrees

from the horizontal. The occurrences of the deposits near the bottom of the gorge permits of deep development by tunnelling rather than by shaft sinking, the latter being an expensive method. Elevations along the centre line of the property, that is, along Wardle Creek, range from about 600 feet above sea level at Silver Creek to 1900 feet at the upper boundary on Wardle Creek. The south and north boundaries, being up the precipitous slope, are much higher. The Star crosscut is at an elevation of about 1500 feet and the McGillis crosscut about 185 feet higher.

GEOLOGY

The area in the vicinity of the Aufeas mine is underlain by granitic rocks of different ages. Wardle mountain, which holds the Aufeas deposits, is wholly quartz-diorite. Immediately south of Wardle mountain is a later intrusion of granite which has invaded the area after shearing and fissuring took place in the quartz-diorite. It is probable that the diorite dykes found at the mine and the deposits themselves, are a consequence of the granite invasion.

Mineralization has taken place on both fissures and shears. Where vein matter occurs in fissures, a small vein of arsenopyrite containing a little lead-zinc and chalcopyrite lies between strong walls unless the country rock is altered and soft.

Where mineralization has taken place in shears or altered zones, parallel veins of solid arsenopyrite with sub-ordinate minerals and cross-veinlets of sulphides extend over good mining widths. It is in these shears, or shear and vein intersections, that it is hoped that a large

tonnage of millable ore may be developed.

The gold appears to be almost wholly confined to the sulphides, and a recovery of the sulphides would mean a recovery of practically all of the gold.

VEIN SYSTEMS

Wardle creek occupies a gorge which has been cut down into a major shear or series of shears, one of which is shown on the accompanying map, at the portal of the Star crosscut. This parallels the channel of Wardle Creek and dips 55 degrees to the south. Widths of the shear vary up to 10 feet and strong arsenopyrite mineralization occurs in it west of the portal.

Another parallel shear developed by No. 2 drift was encountered 380 feet in the Star crosscut. These are seen on the accompanying map to be roughly parallel.

Surface strikes of the A, B, and C veins, as can be seen on the map, are considerably different from those of the two shears described above. Indications are that the A, B, and C veins cut across the two shears. The A vein and No. 1 shear can be seen converging on the surface. The section through the McGillis and Star crosscuts, as shown on the accompanying profile map, shows that the A and B vein system was cut by the Star crosscut at the point of intersection with the No. 2 shear. What was thought to be the A vein on the Star crosscut level, was followed west for 214 feet. The B vein was not followed west as it cuts into the footwall and parallels in strike and dip the surface exposes of the A. B. veins. The vein system was followed east

for 45 feet from the Star crosscut and evidence here suggests that the A and B veins will remain parallel, easterly, to the surface exposures. Ore shows in the face of the east drift. As shown on the map of the workings, the A and B vein system is cut a little to the west by a short crosscut, where the veins occur in badly altered ground. Undoubtedly, drifting west on this vein system will prove it to be the same as developed on the surface and show minable widths of good ore.

Both shears, notably No. 2 shear, are mineralized with arsenopyrite. It is in No. 2 shear that ore has been developed over a good distance. The writer did not take samples from No. 1 shear but good assays have been reported from it.

High grade ore was followed for 150 feet in the No. 2 shear in the belief that it was the A vein. The wider part of mineralized shear, as developed by astope above No. 2 drift, consists of two strands of arsenopyrite with veinlets between giving a width of ore of about 4 feet. This is commercial milling ore. A sample taken by the writer at this point across 18 inches gave a gold assay of 0.72 ounces gold per ton. The dip and strike of this oreshoot indicate that it has not been uncovered on the surface. High-grade indicated ore in the mine workings is, at least, several thousand tons. The estimate of milling ore must be greatly increased above this figure.

D vein The D vein shown on the map as farther down Wardle creek from the Star crosscut, was discovered since the mine was developed. As exposed in one open-cut, it shows about 8 inches of rusty quartz with some coarse sulphides, between strong walls. A sample

of this rusty quartz assayed 0.02 oz. gold per ton, which, wile low, shows an interesting gold content. This vein apparently runs into the Wardle Creek gorge a short distance to the west.

E Vein The E vein, near the mouth of the gorge, was discovered since the mine was developed. A 7-foot width of silicified shear and quartz is shown between strong walls in an open-cut. This vein dips 70 degrees to the east and strike just east of the mine workings. It should intersect the D vein within a short distance. The writer was unable to sample the full width of this vein, but took a sample of the soft footwall containing a minor amount of quartz, which assayed 0.01 ounces gold per ton. This is a strong shear in competent quartz-diorite and should persist for a considerable distance towards the apparent direction of mineralization. There is a good chance that commercial ore shoots exist in this shear, especially when it intersects other veins. It should intersect the E vein within a short distance.

PERSISTENCE OF ORE AT DEPTH

The question as to whether the ore extends to depth at the Aufeas mine is a pertinent one. High-grade samples from the surface, running as high as 6.1 ounces gold per ton, are reported by Government Engineers.

A study of gold values in the McGillis and Star crosscuts, which are 185 feet apart, vertically, shows that within this distance there is no drop in the gold content of the ore; instead, there is an apparent increase, if the same B vein was cut in both crosscuts.

Assays of samples taken in the McGillis crosscut by Government Engineers, gave results, as follows:-

Width	Gold oz. per ton	Silver oz. per ton
3"	0.21	0.09
8"	0.24	0.20
Average 5½"	0.225	0.145

Assays of samples taken by Government Engineers from B vein in the No. 2 drift off the Star crosscut gave results, as follows:

Width	Gold oz. per ton	Silver oz. per ton
4"	0.30	0.18
6"	1.01	1.09
5"	0.45	0.34
Average - 5"	0.59	0.54

The writer feels that there is no reason to believe that the arsenopyrite with the accompanying high gold values will not persist to reasonable mining depths. Certainly within the depths that can be attained on this property by a low-level crosscut there should be no drop in values. It may be that some of the parallel veins may converge at a slightly greater depth and give greater widths of high-grade ore.

WATER SUPPLY Wardle creek, at all seasons of the year, will furnish enough water to supply power for an aggressive development campaign.

MILLING M.C. Star No. 1, which covers the ground from Silver creek to the mouth of Wardle creek gorge, holds a good site for a mill.

The recovery of gold from the known ores of the Aufeas mine can be made in several ways, the most feasible being one of the following:

1. Simple concentration of sulphides followed by smelting. This being the simplest treatment, the cost of mill erection

would be a minimum. The cost of milling would be very low as fine grinding would be unnecessary and no reagents would be used. No finer grinding than 100 mesh would probably be necessary as the sulphides carrying the gold are coarse and occur in a soft gangue from which the sulphides are easily separable.

Actual milling costs should not exceed $0.90 per ton for a hundred ton capacity. Freight and smelting charges on concentrates must be added and should not be greater than $2 per ton milled. The total cost of gold recovery by this process should not exceed $0.90 for milling and $2 for freight and smelting, a total of not more than $2.90 per ton of ore milled. It is possible that some smelter charges would be remitted due to a possible payment for the arsenic content of the ore.

2. Treatment by flotation, roasting and cyanidation.

A process of using a combination of flotation, roasting and cyanidation, or two of these, could be worked out by experiment. This would involve find grinding with an attendant higher milling cost and would need a costlier mill but would possibly increase recovery and do away with cost of shipping and smelting concentrates. Research work on the ores would show which method is most economical for the size of the mill it is proposed to construct when sufficient ore is blocked out.

Should a different type of ore be found in other veins it is probable that the second process of extraction would be the more feasible.

MINING While high-grade ore extends over widths of inches rather than feet, commercial milling ore is found in the stope above No. 2 level over widths of four feet or more. This is a good mining width as the cost of mining must be based on a minimum width of between three and four feet.

Due to the occurrence of the high-grade arsenopyrite in shears or altered rock, mining will require little powder and the drilling costs will be low. Powder can be delivered to the Aufeas mine at about two-thirds the cost at some mines in the interior of British Columbia.

The shear zones and fissure veins have a strong hanging-wall so a minimum of timbering will be required in a shrinkage system of stoping that is suitable for this type of deposit.

The cost of mining the known developed deposits should not exceed $2.00 per ton, and, if sampling indicates greater widths of milling ore, the cost will be correspondingly less.

SUMMARY

1. The Aufeas mine is more than a prospect; at least several thousand tons of high-grade, gold-arsenopyrite ore being considered to be blocked out. Taking widths of four feet as exposed in a stope above the No. 2 drift, it is evident that the ore considered to be blocked out is much greater than several thousand tons.

2. The shear zone developed by No. 2 drift does not appear to be the vein system that is exposed on the surface and in the McGillis crosscut. The probable position of the A and B vein system on the Star crosscut level is shown on the accompanying map.

3. The numerous mineralized veins and shears, some of which have been proven to be high-grade, show that Wardle mountain is highly

mineralized and should be prospected thoroughly, both on the Star level and at a lower horizon on which the D and E veins lie.

RECOMMENDATIONS

1. That thorough sampling be done on all the veins developed, to prove the grade and tonnage of ore that can be considered to be blocked out. It is possible that this would justify the erection of a fair-sized mill.

2. That development work be continued of the A-B vein system east and west from the Star crosscut, as shown on the accompanying map.

3. That the D vein be stripped to permit sampling for as great a length as possible.

4. That further development work be done by a lower crosscut when the above recommendations are carried out or as conditions warrant.

Respectfully submitted,

Signed: "A.J. Arland"

Registered Professional Engineer of
British Columbia.

92H/6W
249-121
92H/SW-36

VICTOR DOLMAGE
Consulting Geologist

May 19, 1938.

THE AUFEAS GOLD DEPOSIT

HOPE, B. C.

The Aufeas gold deposit is situated three miles west of Hope, B.C. and about 100 miles east of Vancouver. It is about one and one half miles distant from, and about 1200 feet higher than the Provincial Highway and the Canadian National Railway. The Tacoma smelter is about 150 miles distant.

The deposit was discovered in 1910 and has been periodically investigated since that date. About 550 feet of tunneling and a little stoping have been done and the main vein explored to a depth of 200 feet below the outcrop. At present it is being worked under lease by H.L. Woods of Hope, who makes small periodic shipments of selectively mined and hand sorted ore to the Tacoma smelter.

There are on the property two small quartz-arsenopyrite veins known respectively as the Main and "C" veins; also a large mineralized fault situated close to these veins and a wide mineralized shear situated 300 to 600 feet south of the veins.

The fault and the shear were examined and sampled but found to have no commercial possibilities. All the development work has been confined to the quartz veins, principally the Main vein. This vein has been exposed on the surface by open cuts for a distance of 170 feet. Sixty feet below this the vein has beem cut by a small

See also unpublished Report by J.W. McCammon, 1947.

crosscut tunnel and drifted on for about 20 feet. Two hundred feet below the outcrop a long crosscut tunnel was driven into the vein and drifts run both east and west on the vein. The east drift is 40 feet in length and the west drift, now partly caved, is about 200 feet in length. In the west drift at a point 70 feet from the crosscut a stope has been driven up on the vein for 55 feet and a small winze sunk to 10 or 15 feet. The latter is now filled in. The ore recently shipped by Mr. Woods was drawn mainly from the stope.

The "C" vein has been exposed only by a surface cut about 25 feet in length.

GEOLOGY

The deposits occur in a large body of quartz diorite about half a mile north of its contact with an intrusion of younger quartz diorite and granodiorite.

The quartz - arsenopyrite veins are parallel to one another and 40 feet apart. They strike easterly and dip to the south. The Main vein dips 50 to 60 degrees and the "C" vein, 40 feet to the north, dips only 20 degrees. This will cause it to intersect the Main vein at some point about halfway between the surface and the lower tunnel.

The veins consist of arsenopyrite with a little quartz and minute quantities of chalcopyrite and pyrite. The wall rocks are intensely sheared and altered but contain little or no arsenopyrite or other metallic minerals.

MAIN VEIN

The Main vein has been exposed on the surface continuously for 60 feet and is also exposed by a small shaft 110 feet west of the 60 foot cut giving it a known length on the surface of 170 feet. In the lower tunnel it is exposed for a length of 200 feet and as the east face of the drift exposes a strong vein eight inches wide its length on this level must be somewhat greater than 200 feet. The distance up the dip of the vein from the lower level to the surface is 300 feet. The width of the vein varies from two to twenty-seven inches but the average width based on forty measurements is only nine inches. If the vein maintains its average width between the surface and the lower level it will contain between 3,000 and 4,000 tons.

The gold values in the vein appear to be higher on the surface than in the tunnels and this is probably due to surface enrichment. The vein was thoroughly sampled by the writer and the results are shown on the accompanying plan. The foot-ounce average of these samples is 0.50 ounces of gold or $17.50 per ton across an average width of nine inches. A sample from the "ore" dump from which shipments to the smelter are now being made assayed .34 ounces of gold per ton and checks closely samples 6, 7, 8, and 9 taken from the stope from which this material was extracted. Three hundred pounds shipped to Ottawa for making mill tests assayed 0.68 ounces of gold per ton. Two shipments of hand sorted vein material to the Tacoma smelter returned respectively 0.87 and 0.64 ounces of gold per ton with small amounts of silver and

copper. It is evident from all the above data that this vein will average little more than 0.5 ounces of gold per ton.

The mill tests at Ottawa showed the "ore" to be difficult to treat. In cyanide tests only 65 per cent. of the gold content was recovered. In flotation tests 88 per cent. of the gold was recovered. The hand-sorted material shipped to Tacoma carried 26 to 27.42 per cent. of arsenic. This is a higher arsenic content than Mascot concentrates and proves that this material was nearly solid arsenopyrite and that therefore very little further concentration can be effected by milling.

"C" VEIN

The "C" vein is narrower and has been traced only about 50 feet. Over one half of this distance the vein is just a mere stringer and over the remaining 25 feet its average width is only three or four inches. Its flat dip of twenty degrees, if it persisted far enough, would cause it to intersect the main vein at a distance from its outcrop of 100 feet. It is possible that if the veins do intersect there may be at that point a body of ore wider and richer than the exposed parts of either the Main or "C" vein.

The "C" vein is similar in composition to the Main vein but has a higher gold content. Only one sample was taken by the writer which assayed 0.67 ounces of gold per ton. Two samples taken by the present owners and assayed at the Tacoma smelter ran respectively 3.84 and 6.40 ounces of gold per ton together with a little silver and copper.

From the above data it is concluded that the Main vein is too

narrow in relation to its average value to be mined at a profit. A small profit might be made by shipping ore from the "C" vein but the indications are that it will not persist very far and will yield only a small tonnage. The possibility of finding a commercial body of ore at the intersection of the two veins is hardly good enough to warrant the expenses involved in making the test.

Respectfully submitted,

"V. Dolmage"

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