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MINING AND METALLURGY

October 27th, 1961.

Mr. A. L. Parker,
6614½ West Olympic Boulevard,
Los Angeles 48, California,
U. S. A.

Dear Mr. Parker:

Thank you for your answer to our advertisement requiring \$600,000 for a Silver Mine.

I enclose, herewith, a print of a recent report made by Dr. A. C. Skerl, a well known and highly recommended consulting mining geologist in this area. I asked him to make this report as I felt that, although I am quite capable myself of sizing up a proposition, it would be better to have an additional and unconnected opinion. I have not enclosed his maps, but these are available.

You will note from his report that we have a good tonnage of ore already available. Dr. Skerl has recommended a program of over \$1,000,000, as shown on page 17.

However, in answer to your query as to how much would be required to be expended before there was any return, a careful study of this situation shows that we can buy a nearby mill, plant, and houses for \$200,000. Taking this approach would also require an amount of approximately \$100,000 for renovation, \$200,000 for mine preparation, and I believe \$100,000 working capital, making a total of \$600,000 for which the mine could be brought into full production.

Under this program the mine could be started in a short time and undoubtedly the same profit situation would hold; some of the items recommended by Dr. Skerl to be deferred and done out of profit. The final profit outcome would be the same; thus because of the proximity of a plant ready to operate, considerable money would be saved over normal construction and the period required before initial production considerably shortened.

This mine, 14 miles by road from tidewater at Alice Arm, B. C. is an outstanding prospect. It not only has sufficient ore developed and indicated to more than pay off the monies required to bring into production, but it also has large unexplored areas of potential worth.

Mr. A. L. Parker

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October 27th, 1961.

At the present time it is held by Dolly Varden Mines Ltd. (N.P.L.), a company in which myself and friends have a controlling interest. We acquired this interest last spring. Unfortunately, since that time backers who had asked me to acquire the property have died and left it necessary to go elsewhere for funds.

We have no right to sell further shares in our company without registration, and are asking for an operating deal as a joint venture.

Complete maps and other information are available and I would be glad to forward same to you, or preferably to arrange an interview should you be interested.

It should be pointed out that in Canada there is no income tax for the first three years of operation.

Yours truly,

F. C. BUCKLAND

FCB:dm
Encl.

Castle 4-6257

DR. A. C. SKERL
A.R.S.M., PH.D., P. ENG.
CONSULTING MINING GEOLOGIST

3rd September 1961

1758 WESTERN PARKWAY
VANCOUVER 8, B.C.

GEOLOGY OF THE DOLLY VARDEN,
NORTH STAR AND WOLF MINES,
UPPER KITSAULT VALLEY, B. C.

INTRODUCTION

At the request of Dr. F. C. Buckland these three properties were examined from the 15th to 25th August 1961.

Various old plans were available as well as a recent report by Hill, Starck and Associates.

The assistance of Mr. D. Yonston and his helpers V. Anderson and J. McCrory was greatly appreciated.

SUMMARY

A study of the structural setting of the known silver ore occurrences in the Upper Kitsault Valley suggests that further substantial deposits may well be present at certain localities which should be explored by diamond drilling.

At the old Dolly Varden mine 47,000 tons of ore averaging 22.0 oz Ag are indicated within and below the original mining area.

There are excellent possibilities of further ore along the vein to the west for 1000 feet between elevations 1500 and 1350 feet and also for a second ore horizon between 800 and 1300 feet elevations. Diamond drilling can test the first possibility from the surface and the second from the end of the 1000 level of the North Star.

At the North Star mine 75,000 tons averaging 15 oz Ag in one ore-body immediately above the 1000 level have been calculated by Hill from the results of a number of holes drilled by Torbrit Silver Mines.

Another 25,000 tons could be present in the old upper workings.

There are possibilities of further ore both along the strike and below the 1000 level.

At the Wolf property 20,000 tons of proven ore averaging 16.0 oz Ag per ton and 35,000 tons of probable ore averaging 12.0 oz Ag per ton, for which further development could well raise the grade, are available for cheap open pit mining on No 1 vein.

A similar amount of ore could be present in the unexplored middle 300 feet of No 2 vein.

Thus about 200,000 tons of ore are probably available from the present workings in the three properties which could be greatly increased by a vigorous campaign of exploration and development.

A programme of diamond drilling is recommended for which \$100,000 should be made available.

If this drilling is successful then subsequent underground development costing \$250,000 could add another 400,000 tons of ore to the reserve which would then be sufficient to operate a 350 tons per day mill for 5 years.

To place the mine in production would require another \$900,000 making a total capital cost of \$1.25 million. There could be a net profit of \$2.3 million during the 5 years of production after paying back the capital at 10% compound interest.

DOLLY VARDEN MINE

INTRODUCTION

This account replaces the previous notes on the property dated 15th April 1961 and made before visiting the mine.

The 1 inch to 40 feet scale map of the geology of the Dolly Varden area made by J. T. Mandy in 1936 was extended from the 840 ft west coordinate to 2080 west by a brunton compass-tape traverse linking together all the various occurrences of the vein that could be found.

A self-potential survey was conducted between 1200 west and 1500 west and from 0 to 400 north to test the suitability of the method in this area.

In this same section 18 samples were taken in 5 ft lengths along some new cuts.

TOPOGRAPHY

The main workings are situated on the precipitous west side of the valley of the Kitsault River (el. 900 ft). The lowest tunnel is at elevation 1410 feet and the highest at 1781 feet whilst a series of open-cuts trace the vein still further up the steep slope to the 2150 feet elevation where the overall slope becomes much less with the highest point on the vein at about 2200 feet elevation.

A number of gullies that drain northerly form marked features in this area.

GENERAL GEOLOGY

An excellent account with a map of the Geology of the Upper Kitsault Valley by J. M. Black appears in the Minister of Mines Report for 1951.

The Dolly Varden deposit is directly astride the projection of the axis of an elongated intrusion of porphyry that stretches for five miles in a south-southeast direction. The vein is 4000 feet south of the

intrusion with the Torbrit and North Star veins half way between at the 1000 ft elevation.

Numerous faults provide a structural setting to the ore deposits. Thus Black shows a strong fault along Evindsen Creek that strikes north-northeast and another parallel one at 5600 feet to the west. It is quite likely that a third parallel fault is present at 5600 feet to the east of Evindsen Creek defined by Barite Creek and the segment of the Kitsault Valley immediately in line to the south. This fault direction is also found in the Dolly Varden Mine. It is also the direction of elongation of the small intrusion between Tiger and Musket Creeks. Curiously enough the axis of this intrusion when extended to the southwest passes through the Torbrit ore-body, the old North Star workings and just west of the developed section of the Dolly Varden.

The known silver deposits of the Kitsault Valley are confined to a narrow belt 2000 feet wide that strikes north for 4 miles from the Dolly Varden Mine. This also is a fault direction in the mine and by inference elsewhere.

LOCAL GEOLOGY

The accompanying map of the surface exposures at the Dolly Varden shows a westerly striking vein that dips from 40° to 60° north and is cut up into numerous segments by a series of northerly, northwesterly and northeasterly striking faults that usually dip from 30° to 60° west. This combination produces a flat rake to the individual segments of the vein. The horizontal fault movement may be as much as 140 feet so that it proved difficult to follow the vein underground.

The old maps are quite valuable especially as the upper workings are now inaccessible.

The mapping of J. T. Mandy (1936) shows that in the known ore-bearing section of the vein the hangingwall rock is volcanic breccia and the footwall is andesitic lava for a vertical range of about 375 feet. Higher up the hillside both walls consist of andesite and although the vein is quite strong and well mineralized at least with pyrite it is reported to be barren. On the bottom level (1410) only breccia is seen on both walls of the vein which is poorly mineralized and almost barren of silver.

Thus the vein appears to occupy a reversed fault that has displaced a southerly dipping contact between andesite and the underlying breccia.

MINERALIZATION

In the 'glory holes' the exposed vein is seen to contain about 30% pyrite with occasional patches of galena. The high grade material that was shipped originally was reported to consist mainly of galena with subsidiary tetrahedrite, argentite, native silver and ruby silver. Underground sphalerite and chalcopyrite are also present.

Previous observers have decided that the native silver in the very high grade ore was of secondary origin. However the sulphides are usually completely fresh and unoxidized within a few inches to a few feet of the surface due to the recent age of the glaciation in this valley so that it is unlikely that surface enrichment is responsible for the high grade. It is more likely that local structural conditions have caused a concentration of primary silver mineralization and that additional surface enrichment is due to the subtraction of pyrite by oxidation.

Mr. J. Maclean of Alice Arm states that he was a miner in the early days working in the cross-cut that exposed high grade silver ore in massive galena.

ORE DEPOSIT

The known ore appears to be localized in the vein near cross faults that are known underground as the 403, 304, 417 and 206 that all dip to the west.

Between the 1640 and 1410 levels the ore has a lower limit that probably coincides with the contact of the breccia and the andesite where it leaves the plane of the vein on the footwall side. A down-hole from the inner end of the 1640 level showed that the ore extended at least 90 feet below the level and against the 206 fault.

A fan of holes from the end of the main cross-cut on the 1640 level failed to find the next segment of the vein although it is known on the surface. It is quite possible that the drilling missed the vein because of the faulting.

When seen in a composite plan the known ore occupies an area 550 feet long and up to 200 feet wide with a vertical range of 375 feet. At present it is limited at the western or inner end of the mine by the 206 fault. As it appears likely that the ore is following the part of the vein that has dissimilar rocks on each wall it should be present at this horizon beyond the 206 fault.

ORE RESERVES

In the following estimates the assay values shown on the old company's plans are accepted but until new workings have penetrated the main blocks of ore below the 1640 level there can be no certainty of the grade which at present is based on the assays on the level and a few diamond drill holes.

As much as 11,000 tons of probable ore averaging 25.0 oz Ag per ton is shown in the old stoping areas above the 1640 level on the old ore-reserve section whilst another 36,000 tons at 20.0 oz Ag of

probable ore could well be present as indicated between the 1410 and 1640 levels. Thus a total of 47,000 tons averaging 22.0 oz per ton is probably available in the present mine.

SURFACE EXPLORATION

The detailed mapping to a scale of 1 inch to 40 feet of Dr. J. T. Mandy has now been extended to show the vein outcrops and cross faults for another 1200 feet to the west.

A most promising section was found between coordinates 1280 and 1440 west. Here there is a bluff of vein material about 50 feet high near the west end where there is a pronounced north striking valley that no doubt follows a fault zone. There is also a large quartz outcrop at the east end of this section plus subsidiary outcrops of what must be faulted segments as shown on the map.

A self-potential survey over this area showed that the main segment contained considerable sulphides since it recorded a large area with a potential difference of 250 millivolts above background.

An old cut (now No 16) at the foot of the bluff was deepened and extended to expose a horizontal width of 45 feet of fresh vein material. It was found to contain from 2 to 5% pyrite, 1 to 2% sphalerite, up to 0.5% chalcocopyrite and up to 2% of galena plus tetrahedrite in a gangue of mostly calcite with subsidiary quartz and a little barytes. The walls are not well-defined but the dip appears to be from 25° to 60°N.

This exposure was sampled in 5 feet sections, as shown on the plan, giving an average of only 0.30 oz Ag per ton with the best section still only 0.80 oz Ag per ton.

Another cut (No 15) was made through the shallow overburden at the middle of the self-potential anomaly. Similar mineralization was

encountered for a width of at least 39 feet after passing through masses of porous limonite, and black manganese wad that both contained malachite and azurite in places. In the fresh material more barytes was recognized than in cut No 15.

The footwall had not been reached and some sections were still partly oxidized when the samples shown on the plan were taken. They give an average of only 0.21 oz per ton, the best being 0.95 oz Ag over 3 feet where a seam of galena and chalcopyrite was cut obliquely.

UNDERGROUND EXPLORATION

The upper levels (1780 and 1716) are inaccessible due to caving from the glory holes.

The 1640 level was recently drained of water that has been dammed back by a fall of ground for many years. From six to eighteen inches of red mud is now left on the floor and should be sluiced out if possible using the water from the diamond drill holes at the face of the main heading.

As far as could be judged from the dirty state of the walls the old mapping of the mineralization, faults and dykes was correctly done.

The 1410 level consists of a 9 ft by 8 ft heading, 1000 feet long, that was to be the main haulage. It is all in purple and green volcanic breccia.

A piece of the Dolly Varden vein was encountered at 600 feet for 25 feet situated between two fault segments of the main northeast dyke known on the levels above. The old sampling here shows a value of 5.6 oz Ag over 5 feet on the north wall; the balance assays 0.4 oz Ag for 20 feet. The south wall averages 0.5 oz over 35 feet.

Drilling from two set-ups to the southeast at 850 feet and the face picked up the vein again. A cross-cut at the 850 feet position exposed

the vein 20 feet wide and dipping 55° north with some pyrite in the hanging and footwall sections. Chalcopyrite was also seen in the hangingwall and a few small streaks with fine galena were also recognized. The old sampling of the west wall gave an average of 2.5oz Ag over 30 feet whilst a streak of galena on the south side near the face gave 128 oz Ag per ton. J. H. Black sampled the same 30 feet in 1951 and obtained an average of 0.70 oz Ag per ton with 0.3% Pb and 4.0% Zn.

Another cross-cut at the 920 feet position only reached the hangingwall of the vein.

There is little doubt from the position and appearance of this vein that it is the Dolly varden structure; unfortunately it is not ore. Down holes from the 1640 level show that ore values are present 130 feet above this section.

The face of the heading appears to have stopped at the 206 fault. two holes 150 feet long were fanned ahead in an unsuccessful attempt to locate the vein again. The correct procedure was to have driven a few feet beyond the fault and then drilled parallel to it on its west side to find the next segment of the vein.

FUTURE EXPLORATION

An exploration programme must be based on a correct appraisal of the significant features in the geological settings of the known deposits in an area. Thus in the Upper Kitsault Valley the following factors appear to be significant in the locations of the silver deposits:

1. The occurrences are confined to a belt striking N 8°W that is 4 miles long and 2000 feet wide with the major deposits at the south end.
2. Strong fracturing in a northerly direction although the ore-bodies may strike in any direction.

3. There is a limited vertical range to the individual ore-bodies due possibly to wall rock, tension conditions and temperature at the time of mineralization. Thus :

The known ore at Torbrit was between 800 & 1200' el. and an upper body could have been eroded away.

The ore at the North Star is between 1000 & 1300' and also 1500' & 1700'.

At the Dolly Varden between 1500' & 1850'

At the Wolf between 1400' & 1650'

4. The presence of small intrusions of feldspar porphyry
5. Major north-northeast faults.

These factors suggest that there is an excellent geological possibility of a major ore deposit on the Dolly Varden structure between the 800 and 1300 feet elevations. This possibility can best be tested by diamond drilling from the end of the 1000 level in the North Star workings.

There is also a good chance of further ore to the west on the Dolly Varden structure between the 1500 and 1850 feet elevations especially down the dip and rake of the wide section of the vein that was recently explored on the surface. This area could be tested by vertical diamond drill holes from 300 to 500 feet deep.

N O R T H S T A R M I N E

This property was extensively drilled by Torbrit Silver Mines but unfortunately many of the results are not available at present.

An examination was made of each of the four adits that range in elevation from 1660 down to 1017 feet.

The main exploration was the driving of the 1017 adit by Torbrit Silver Mines a few years ago which resulted in the discovery of an ore-body at 800 to 1100 feet along the vein from the portal. This ore is not exposed but was proved by a series of diamond drill up holes from a 200 feet long cross-cut in the footwall. The vein strikes $N 30^{\circ} E$ and dips $45^{\circ} N W$. It is cut up into segments by numerous faults that strike northwesterly.

There is also a set of three workings at much higher elevations that are almost certainly on the same vein. Because of the dirt and iron staining it was difficult to assess the true mineral content of the vein in these workings.

The topmost one consists of a 40 ft adit at elevation 1660 feet where a 20 ft vein is exposed containing about 20% pyrite and some galena. A few tons of sorted material on the dump contains considerable galena and presumably is of good grade.

At elevation 1560 feet a tunnel 200 feet long exposes a similar vein and J. M. Black reported a sample over 7 feet from it that assayed 36.7 oz Ag. The distribution of the mineralization suggests that such values could exist for 140 feet along the adit.

At elevation 1490 feet an irregular tunnel was driven for 320 feet with some cross-cuts. It follows the vein in part but also the more easily drilled dykes. The full width of the vein is only exposed by the cross-cutting at the inner end. Copper stains are frequent and

when investigated were found to be associated with chalcopyrite. A fragment of rich galena-sphalerite ore was picked up at the portal but was not seen in place. No assay plan is available for this level and there is no evidence of systematic sampling.

An attempt was made to follow the outcrop from the 1600 level to the south. At about 200 feet, probably just inside the Dolly Varden No 1 claim, an outcrop of iron-stained quartz was found at the side of a pronounced gully and just west of an old cabin. The gully was followed to the portal of the 1730 level of the Dolly Varden mine and it therefore corresponds to the 304 fault. Some quartz was found in a few places on the east side of the gully.

Hill has reported that the North Star ore-body contains 75,000 tons averaging 15 oz Ag per ton, 1% Pb and 3% Zn between the 1000 and 1200 elevations. His longitudinal section shows just the holes of ore grade of which there is only one on the 1000 level.

It would seem advisable to cross-cut, drift and raise in the ore-body to check the grade. A 200 ft cross-cut should also be driven into the hangingwall to establish drill stations from which to explore for ore below the 1000 level. The vein should also be followed to the southwest where an ore value has reportedly been obtained by diamond drilling.

There is no real evidence for the idea suggested by Hill and others that the North Star vein is faulted off here and thrown several hundred feet to the southeast where it becomes the Dolly Varden vein.

Another 25,000 tons of ore could be present in the area of the upper tunnels. Evidence was seen of surface diamond drilling in this section so the results should be obtained from Torbrit Silver Mines.

W O L F M I N E

An examination of the surface showings and a study of the diamond drilling results form the basis of the following account. A number of old plans are available showing the open-cuts and diamond drilling with the assay results. The only inaccuracy noted is the contouring along No 1 vein which does not show the steep gully along the south edge of the outcrop nor the similar gully running northeast from the site of the holes drilled in 1960.

There are three parallel veins striking $N15^{\circ}E$ to $N30^{\circ}E$ and dipping steeply west that are here designated Nos 1 to 3 in order from east to west. It is possible that all three are segments of one original structure now divided up by faults striking due north.

No 1 V E I N

The topography here is extremely steep so that there has been some confusion over the true strike and dip of the vein. Thus Hill set out his diamond drilling in 1960 for a strike of about $N 60^{\circ}E$ and a dip of $50 - 55^{\circ}W$. He decided that his drill results indicated a still flatter dip. Actually the vein strikes $N 30^{\circ}E$ and dips $70^{\circ}W$ as can be found by construction using the original diamond drilling results.

All the information to date has been plotted on the accompanying vertical projection using this strike and dip and calculating the equivalent horizontal width for each drill intersection and open-cut exposure.

There is some doubt as to the actual positions of the drill holes directed by Hill because it was not possible to confirm the attitude of several of them. Not one of them has been labelled in the field to help identification. Thus #4 almost certainly was not drilled in the direction that he gives in his report.

As can be seen in the projection this new drilling is clustered in one small area and can hardly be claimed to be set out 'to check previous drilling and to explore the downward extension of the best section of the Wolf vein'.

The discrepancy between the surface sampling and the values in the tunnel or diamond drilling suggests that enrichment at least by leaching out of sulphides has taken place in the first few feet below the surface. Thus in the trench at elevation 1766 feet where the old sampling gave 12 feet averaging 10 oz Ag per ton recent sampling after blasting down to fresh unoxidized sulphides gave 14 feet averaging 3.6 oz Ag per ton.

It is interesting to note however that high grade streaks can be traced by the assays from the tunnel through the nearer drill holes and that therefore high values obtained by drilling should not necessarily be reduced as being purely local erratic highs. It is guessed that #4 hole was not drilled where Hill reports and that the high value of 110 oz Ag per ton that he reduced corresponds to one of the high grade streaks.

As indicated on the vertical projection an estimate has been made of 20,000 tons of proven ore averaging 16 oz per ton and 35,000 tons of probable ore averaging 12 oz Ag per ton for the No 1 vein. All of this ore is available to cheap open pit mining.

The proven ore is based on a continuous outcrop, an 80 feet tunnel and 7 diamond drill holes. The bulk of the probable ore is based on a continuous but largely inaccessible outcrop and only five diamond drill holes that are poorly spaced.

For the same vein Hill gives a reserve of 50,000 tons averaging 19 oz Ag per ton. To obtain this grade he probably included the results of two open cuts that gave 51 feet of 25.5 oz Ag and 20 feet of 93.5 oz Ag per ton.

A fault striking northwest and dipping 60° northeast probably displaces the vein outcrop at elevation 1690 feet about 30 feet horizontally to the southeast and would also account for the anomalous relative positions of some of the diamond drill intersections.

The absence of the vein in #28 hole indicates that No 1 vein does not extend much further south of the tunnel. A steep fault striking due north to the upper end of No 2 vein could have displaced an original single vein.

No 2 V E I N

This vein which is 270 feet west of No 1 vein has a northerly section that is well exposed over a length of 300 feet and 20 feet wide between elevations 1500 and 1700 feet. It has been explored with 8 open cuts and 12 diamond drill holes as shown on the accompanying projection.

Most of the holes are clustered around the south end of this section where 5000 tons of ore averaging 13 oz Ag per ton can be estimated.

There are no outcrops for the next 300 feet to the south and it has not been tested by diamond drilling but it is interesting to note that the best drill intersection of the previous section is at the beginning of this one.

The remaining 300 feet has 4 open cuts and 4 diamond drill holes but there are no exposures between them. Three of the drill holes are at the north end and the results suggest that more drilling is warranted. These appear to be higher grade bands on the hanging wall and footwall sides of the 20 feet wide vein. Thus the hanging wall section gave 5 feet of 33.2 oz Ag and 6 feet of 6.9 oz Ag in two open cuts whilst drill holes returned 10 feet of 13.5 oz Ag, 5 feet of 10.3 oz and 6 feet of 11.1 oz. The corresponding footwall band gave 9 feet

of 14.8 oz in one trench with 15 feet of 7.2 oz, 6 feet of 6.8 oz and 5 feet of 13.6 oz Ag in the drill holes.

At the southeast end of this 300 feet length a value of 2 feet of 43.2 oz Ag in an old open cut was found to correspond to 6 inches of sheared and mineralized material containing 20% pyrite and 10% galena.

No 3 VEIN

This vein is exposed for 150 feet between elevations 1370 and 1460 feet. It is 130 feet west of No 2 vein and is from 15 to 20 feet wide. There are 5 open cuts in which the only significant value was 48.8 oz Ag per ton over 5 feet at elevation 1476 feet. The north end of the vein could be cut off by a fault that also terminates the south end of No 2 vein.

EXPLORATION

The 300 feet of the middle section of No 2 vein offers an excellent possibility of developing an ore-body by diamond drilling from say two set-ups.

Further extensions of the veins could be explored for by means of a self-potential survey.

ECONOMICS.

The considerable width of 15 to 30 feet for much of the known ore and the sound wall rocks will give low mining costs. It is estimated that approximately half of the gross income derived from the ore will be working profit which should be ample to pay for capital expenditures and provide a substantial true profit. Thus the successful outcome of the exploration and development programmes could make 600,000 tons of ore available with an average grade of 17 oz Ag per ton, 0.5% Pb and 2% Zn from which a total value of \$15 per ton would be extracted.

The following schedule of expenditures is proposed :

	\$	
1st year - Diamond drilling	100,000	
2nd year - Underground development	250,000	
3rd year - Acquisition and renovation Torbrit mill	150,000	
Power plant and mining equipment	250,000	
North Star ore - purchase or royalty	50,000	
Purchase and renovation Torbrit camp	50,000	
Truck road to Wolf	50,000	
Tunnel and ore-pass to upper Dolly Varden	50,000	
Working capital	250,000	

Total capital requirements	\$1,200,000	

SEE F.C.B. LETTER

These can be deferred
\$500,000 can be purchased for \$200,000.

Assuming that a total working profit of \$4,000,000 will then be available over the next 5 years, that the capital is raised as needed for each of the first three years as required and that a return of 10% is specified on the outstanding amount each year then the capital could be paid back in the first 2½ years of production totalling with

interest \$1,625,000 leaving a profit of \$2,375,000 over the next 2½ years, less tax.

By deferring the repayment of capital expenditures during the first three years of production the maximum benefits of this tax free period can be realized.

It should be fully realized that the above figures are given to indicate the possible scale of operations and that they are predicated on successful results from the diamond drilling and the subsequent development of a sufficient tonnage and grade of ore to yield the assumed profit.

R E C O M M E N D A T I O N S

1. On the surface drill a series of vertical holes from 300 to 500 feet deep to trace the supposed productive horizon of the Dolly Varden vein west from the present mine at approximate locations 1000 W, 1120 W, 1280 W and 1440 W for a total of up to 4000 feet.
2. From the end of the southwest heading on the 1000 level of the North Star drill flat holes for about 500 feet to due south, S 15°W, S 35°W and S 50°W to explore for a second productive zone in the Dolly Varden vein for a total of 2000 feet.
3. From the end of the southeast heading on the 1000 level of the North Star drill flat holes for 600 feet to S 15°W, due south and S 15°E. to further test for the Dolly Varden vein - say 2000 feet.
4. Obtain the detailed maps of the North Star property from Torbrit Silver Mines before setting out further drilling on the 1000 level or the old upper levels.
5. At the Wolf property plan two drill set-ups on the west side of No 2 vein so as to explore the central covered section that is 300 feet long with a total of say 2000 feet.
Also set up at 1550 elevation to further test No 1 vein with say 1000 feet of drilling.
6. Follow up favourable drilling results with underground development.
7. Negotiate an arrangement with Torbrit Silver Mines to lease or buy the North Star claim together with their mining and milling facilities

A. C. Skerl