

1983 SUMMARY REPORT
ON THE
PROSPERITY, PORTER-IDAHO SILVER PROPERTY
OF
PACIFIC CASSIAR LIMITED

J.M. Kenyon
Richmond, B.C.
November, 1983

INTRODUCTION

During the field season of 1983, Pacific Cassiar Limited rehabilitated some 2,150 feet of drifts on the Prosperity vein system and completed 92 short percussion drill holes to test drift wall mineralization. The work was completed during the period July 1 to October 25.

PROGRAM

A sub-contracted mining crew of five supervised by Karl Bauer, shiftboss, commenced a two stage rehabilitation and access program to the 101 and 305 levels of the Prosperity vein. The portal and access crosscut to the 101 level were rehabilitated and mucking commenced northward on the 101 level to the old working face some 1,200 feet distant. Concurrently, work commenced on cleaning the 305 S drift in order to shorten the tramming distance for muck from the 305 N drift. Approximately 1 month into the program, it was determined that poor ground conditions near a probable fault intersection, about 150 feet in from the 305 portal would be too costly and time consuming to bypass. Therefore, work commenced directly on the 305 N drift in spite of a 3,600 foot round trip tram distance.

At about this time, complete access to the 101 level was obtained and a program of mapping and drilling of 54 short percussion holes commenced toward the end of August. Access to 550 feet of 305 N drift, to the face, was gained on September 20. Percussion drilling of that level started about September 25 upon completing all holes on the 101 level. After rehabilitating the 305 N drift, a start was made on the Prosperity West vein, which advanced 400 feet from October 1 to October 15. *N_W 1/4?*

After drilling 34 percussion holes in the 305 N drift, a start was made to drill 10 holes on the Prosperity West vein. Unfortunately

only 3 holes were completed prior to an equipment failure. The crew was demobilized on October 25 after winterizing the camp.

DRILL PROGRAM

Using a small jackleg drill with a shortened leg, and 4 foot extension steels, holes a maximum 30 feet in length were drilled each way in drift walls on approximate 50 foot centres. Although all holes were intended to be at right angles to the vein strike, certain narrow sections of the drifts necessitated rotating the drill in a horizontal plane to accommodate the equipment. Drill hole inclination varied between $+10^{\circ}$ and $+20^{\circ}$ for the same reason.

The holes were collared with a $2\frac{1}{4}$ inch diameter bit for 3 to 6 inch depths at which point a $2\frac{1}{4}$ inch outside diameter PVC pipe of 6 inch length was inserted to act as a casing, seal and spout, to ensure against sample loss at the collar. A fiberglass trough underneath this casing emptied into a 5 gallon plastic pail for sample collection. The holes were then drilled with standard $1\frac{5}{8}$ inch diameter bits within the casing. Sample collection was on four foot runs, and the entire sample was submitted for assay to Min-En Laboratories for atomic absorption analysis for silver. Only those intersections with appreciable silver were analysed for lead and zinc. A record of individual sample weight was kept.

Approximately half of the holes drilled on the 305 N drift were limited to 26 feet in length for expediency. Those holes which are less than 26 or 30 feet were terminated due to sample loss probably resulting from intersecting fault or fracture systems. The crew kept a record of the interval where water loss occurred.

GEOLOGY PROGRAM

Concurrent with the mining crew's work, a limited program of geological mapping and sampling was undertaken by the author in the newly exposed drifts. In addition, some surface prospecting was carried out and examination and mapping of one old tunnel and raise was completed.

Using old mine plans as a base, the 101, 305 N and Prosperity West sections exposed, were mapped on a scale of 1 inch to 20 feet. Due to the nature of the vein characteristics, such as heavy manganese alteration and extensive internal shear and gouge zones, it was seldom possible to determine the host rock petrology. Therefore, more attention was paid to fracture and shear patterns and outlining the vein - wallrock contact.

Additionally, access was gained to the 'E' or Shaft Tunnel at 4,511 feet elevation by replacing old ladders, and mapping of the two short drifts and 190 feet of access raise was completed. These workings were also sampled on 20 foot centres over the complete width of the drift and raise.

Surface prospecting concentrated on examining new exposures along the margin of a retreating central glacier. It is estimated that this now small glacier is receding approximately 10 vertical feet per year in places and the retreat during 1983 uncovered two new vein exposures, one each on the D and Angelo veins.

UNDERGROUND GEOLOGY

Prosperity Vein

Examination of the entire lengths of the 101 N and 305 N has demonstrated the persistence of this vein underground, beyond the

surface trace. A major north-south fault terminates the surface trace of the Prosperity vein at about 5,750 feet elevation, at the main 102 ventilation raise. The vein, on surface, has not been located north of this intersection point, but continues underground for at least another 600 feet to the drift face. As no evidence of this fault was seen underground, it is unlikely to be westerly dipping.

The vein characteristics on both levels (300 vertical feet apart) is similar. The zones are areas of sheared, brecciated volcanic rock, with or without abundant manganese staining and alteration. On the 101 level, the manganiferous overprint begins to diminish at approximately 14,600 N on the mine grid, and remains sporadic and patchy for an additional 150 feet. Beyond this point, the zone is predominantly non-manganiferous and chloritic alteration characterizes the vein zone. At mine grid 14,950 N, drifting left the main vein to pursue an easterly, sub-parallel shear zone with similar characteristics.

On the 305 N drift, manganese staining diminishes within 150 feet of the 301 X-cut and apart from minor, short re-occurrences, it is not predominant again until the last 50 feet in the drift where it continues to the face. With the lack of manganese overprint, areas of high silicification become apparent in this drift, particularly in the hangingwall and footwall rocks. Only a few minor areas of silicification were noted in the 101 N drift.

Of apparently major interest to the previous mine operators was a gouge zone varying between 6 inches and 3 feet in thickness which was followed in drifting. This zone may follow, or be close to either the footwall or hangingwall boundary and often branches to

form two or more gouge zones. Unfortunately, because of back timbering in good grade areas, no conclusion can be drawn between the relationship of mineralization and gouge.

Vein thickness varies considerably over the length of the 101 N drift, from an estimated 25 plus feet down to 4 feet. From the 101 X-cut north for at least 650 feet, mapping shows that neither or only one of the vein walls is exposed within the drift. In addition, complex branching shears leave the main vein in both directions forming subsidiary structures of unknown extent. One such structure leaves the footwall of the vein at 14,150 N and was intersected in the last 4 feet of several drill holes over a distance of 250 feet north of the drift intersection. Another structure occurs at 14,670 N, again in the footwall and is probably the same shear followed in the east drift face at 15,100 N.

The vein in the 305 N drift appears to vary between 4 and 10 feet, being 5 to 6 feet thick over most of the drift length. At the face, the vein branches into an east and west component. The west portion was abandoned to follow the east vein for a few extra rounds where it widens considerably at the face to about 7 feet. This area on the 305 N is approximately 325 feet south of the main vein face on the 101 level. The relative position of the vein in the two drifts shows a steepening of the structure toward the north.

The areas of silicification noted in the 305 N have produced some good silver intercepts in drill holes. In 3 holes, individual 4 foot intercepts range from less than 1 oz to nearly 40 oz/ton silver. All three holes ended in good grade silver giving an intercepted width, including the drift, of about 60 feet. However, because of the short strike length of this section it is speculated that

movement subsequent to silicification may have produced a shatter zone in this area which was receptive to further mineralization. This zone would provide a good target for exploration below the 305 level.

Prosperity West

This vein apparently coincides with several surface exploration trenches which were not seen. Drifting on this vein was an exploration assessment which resulted in several small pockets of stoping ore being removed.

Geologically, the vein appears to be an immature version of the other veins in that shearing has not been thorough enough to obliterate all of the original characteristics. Abundant vein quartz and calcite occur in the central portions of the drift near and within the gouge zones and crushed veinlets are abundant in wall rocks. Also, silicification particularly on the hangingwall side of the gouge zone is common.

In the section that was exposed, vein width varies from 6 feet to an unknown distance beyond drift walls. Only 3 percussion holes were completed and therefore data for this drift is incomplete. Old drift plans show several 6 foot test holes in the hangingwall which returned good values. This section is further north than the 1983 rehabilitation progressed.

Shaft Tunnel

Mapping and sampling have confirmed both previous assay results and the proposition that the D vein is not exposed in the I tunnel. Mapping of the tunnel and access raise did not disclose the vein

walls and therefore vein width ^{is} unknown. Both the drift and raise date back to private higrade operations and seldom exceed 5 feet in width. Vein characteristics are similar to the D vein in other exposures. All of the Shaft tunnel and raise have a manganese overprint.

The Shaft tunnel is located very near the intersection of the main north-south fault mentioned previously in relation to the Prosperity vein, and the Big Rig fault which strikes east-west and dips north. At a point about 175 feet down the Shaft tunnel raise, the D vein is offset by a series of cross-cutting shears and gouge zones at no predominant dip, but with a general north-west strike. This occurs about 20 feet above the H tunnel and would account for the D vein not being exposed in the I tunnel at 4,222 feet. The good grade of silver mineralization exposed in the raise terminates at the offset faulting at about 4,375 feet elevation. The 170 feet above the fault averages 60.11 oz/ton silver over a 4.4 foot average width. A 165 foot length of the Shaft tunnel averages 34.7 oz/ton silver over a 4.4 foot width.

It is unlikely that percussion drill equipment could be set up in this tunnel and raise to establish vein widths. Testing of this area and the intervening distance to the D tunnel portal (some 600 feet) can easily be accomplished by surface diamond drilling.

VEIN STRUCTURE

In many instances on the Prosperity vein, the gouge zone separates a planar, steeply dipping hangingwall shear from a less steeply dipping footwall shear. However, the vein walls do not converge as the dips might indicate, which leads to the conclusion that the

vein is a normal fault-shear with footwall side down. Such movement would provide the drag necessary to cause flattening of the footwall side.

In the Shaft tunnel, the hangingwall shear remains reasonably constant but the footwall shearing approaches a normal attitude to this plane. This probably indicates a sinistral component to movement on the Big Rig fault which must be post-mineral.

Slickenside attitudes on both footwall and hangingwall shear planes on all veins vary from vertical to horizontal. At this time no attempt has been made to calculate the net resultant movement. It is felt that this exercise in conjunction with a more definitive rock type analysis may provide good evidence for the projection of dilatant zones.

SURFACE EXPLORATION

Continued ice retreat has exposed an additional 150 feet of strike length on the D extension outcrop. While most of this distance is obscured by moraine, one vein outcrop at the ice edge assayed 11.45 oz/ton silver over 8 feet. This outcrop confirms the good mineralization previously discovered.

On the Angelo vein, a new outcrop has emerged halfway between the Melvin dump and the trenches excavated in 1982. The outcrop is surrounded by ice and neither vein wall is exposed. Over the 17 feet exposed, an assay of 7.95 oz/ton silver was obtained. The vein width trenched in 1982 was about 27 feet. Several small hangingwall offshoot veins were also discovered near these trenches on ground covered by ice in 1982. One grab sample of mineralization from an 8 inch vein some 50 feet west of the trenches and at the ice edge, assayed 120 oz/ton silver. Continued ice ablation in this area will provide further good exposures.

Also of excellent potential is a cross cutting vein striking south-west from the end of the Prosperity vein. It has been exposed in a number of trenches from 1930 over a strike length of about 1,300 feet where it disappears under a small ice sheet. The vein (as yet unnamed) dips northwest at 55° to 20° and at the ice sheet becomes nearly horizontal. Good widths are apparent ranging up to 15 feet with good grab sample assays up to 80 oz/ton silver. No new work has yet been carried out on this structure. It is possible that drifting north on the 101 level was an attempt to locate the intersection point of the Prosperity and this northwest dipping vein. However, the current 101 face would be too far south of this point if the new vein has a dip in this area of 25° or less.

CONCLUSION

Work during 1983 confirmed the continuity of the Prosperity vein, and the continued existence of good vein widths. Except for some short sections of good grade on the 305, these widths do not all carry silver values on the 101 as stope data shows both above and below this level.

The D vein continues to show both mineralization strength and continuity, with additional probable tonnage attributable to newly examined exposures at either end. The Angelo vein and the southwest striking crosscutting vein are new targets with excellent potential.

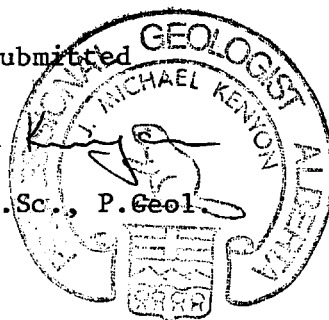
Further geological evidence gathered adds credence to the theory that the veins are the result of collapse of a coarse volcanic pile, possibly a caldera feature. Confirmation of this possibility would open a tremendous exploration potential by analogy to mining districts in the western United States.

Diamond drill evaluation of the known, accessible strike length of all veins is the next logical step in tonnage appraisal. This step necessitates both logistical and financial considerations which are beyond the scope of this report. It is however recommended that no small attempt be made due to the length, depth and number of targets to be assessed.

Respectfully submitted

J. Michael Kenyon

J.M. Kenyon, M.Sc., P.Geol.



CERTIFICATE

I, J. Michael Kenyon hereby certify that:

1. I hold degrees in Geology from the University of Alberta:
B.Sc. - 1974, M.Sc. - 1978.
2. I am a professional geologist registered with the Association of Professional Engineers, Geologists and Geophysicists of Alberta and have been practicing for the past six years.
3. I am a member of the Canadian Institute of Mining and Metallurgy and a Fellow of the Geological Association of Canada.
4. This report is based upon personal observation and analysis of the results of 4 successive field programs on the property from 1980 to 1983 and that I have been responsible for much of the direct fieldwork.
5. I am a director and officer of Pacific Cassiar Limited and thereby hold an interest in the Company's properties and securities.

Addendum

PROBABLE, POSSIBLE AND GEOLOGICAL RESERVES
AT THE
PROSPERITY, PORTER-IDAHO MINE
OF
PACIFIC CASSIAR LIMITED

J.M. Kenyon, P.Geol.
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TONNAGE SUMMARY

Probable

D vein - 571,445 tons at 17.3 oz/ton
Prosperity vein - 263,250 tons at 26.4 oz/ton
Blind vein - 18,660 tons at 21.6 oz/ton

Total - 853,355 tons at 20.2 oz/ton silver
or - 938,690 tons at 18.3 oz/ton diluted (10% dilution)

Possible

D vein - 484,260 tons at 15 oz/ton
Prosperity vein - 100,000 tons at 25 oz/ton

Total - 584,260 tons at 16.7 oz/ton silver

Probable and Possible total - 1,437,615 tons at 18.7 oz/ton silver
non-diluted.

INTRODUCTION

Ore reserve estimations vary in accuracy with the weight of geologic information available to define confidence limits. The most accepted standard of confidence limits, particularly for newly discovered deposits describes and subdivides reserves into proven, probable and possible ore. The parameters dividing reserves into the three categories are not absolute, but rather they are variable within limits, from geologist to geologist and company to company.

To be considered definitive they must be calculated in relation to a mining plan with specified mining limit. Individual specific gravities of in-place blocks must be known, and mining dilution, cut-off grade and metallurgical recoveries also taken into account. Metal price variations can change a number of these parameters in a short period of time.

In this examination, proven reserves will not be discussed. These reserves are contained within the limits of 3 sided development of length, depth and thickness in a particular block whose determined boundaries have been physically inspected. This stage generally follows from in-place examination of drill-indicated mineralization.

Probable reserves are those that have several characteristics necessary for proven reserves but whose proposed margins have not been drill delimited and examined. The confidence limit is based upon a reasonable knowledge of the deposit and the inspection and assay of at least a part of two and preferably three dimensions. It should be considered that the further projection beyond the inspected limits is therefore subjective and becomes a starting point for definition that may increase or decrease tonnage and/or grade.

Possible (or inferred) reserves are those projections that can be made knowing the geologic parameters of the deposit. The number is constantly under revision as data and information are obtained. Possible reserves become either disproven or fall into probable and proven with examination. They generally constitute the first stage in any exploration program and the projection of the geologic host to mineralization. As a geologic 'rule of thumb' based upon experience, the depth extent of mineralization is estimated to be at least one half of its horizontal extent.

PROSPERITY, PORTER-IDAHO VEINS

The genetic model which is evolving for the property is that of domal collapse of a coarse, intermediate volcanic pile accumulated in partial submarine conditions. This model has implications for both exploration and tonnage potential in that the major precious metals deposits of the western United States and Mexico are of such origin. The set of sub-parallel mineralized shears at Porter-Idaho are probably fissure veins subjected to post-mineral shearing, faulting and further mineralizing events. As such, they are usually persistent both horizontally and vertically and further 'blind', non-outcropping veins can be expected. Furthermore, the number of outcropping ore-shoots should be very small in comparison to the total number of shoots on any given vein.

This scenario is evident at Porter-Idaho on all veins discovered to date. There is but one interesting outcrop on the Prosperity vein over a length of about 150 feet, four such outcrops on the D vein (only one of which is greater than 100 feet), none on the Blind vein and one each on the Wake and Angelo veins. However, previous mining

has shown shoots to persist over at least 800 feet horizontally and 700 feet vertically for the Prosperity vein. At least 600 feet horizontally and 400 feet vertically for the D vein and 200 feet horizontally and 300 feet vertically for the Blind vein. The conclusion drawn from this is that shoot dimension is far in excess of preliminary expectation.

PROBABLE RESERVES

D Vein

Assay data from 1980 on the D level (4,692 ft) shows a shoot with a 600 foot length and 20 foot average width assaying 16.3 oz/ton silver. At 11.5 cubic feet per ton in-place, this area of 12,000 ft² represents 1,043 tons per foot in either direction above and below the level. Raise and stope data extend in this block to at least 330 vertical feet (390 vein feet) above the level. Sixty feet above this raise, the D vein assays 16 oz over 14 feet in the 3 level haulageway and 160 feet higher, a surface outcrop assays 26 oz over 11 feet.

To be conservative, the probable tonnage block above the level was taken only to 200 vertical feet. This however represents 230 vein feet (at a 60° dip). Likewise this block was assumed to extend an equal distance below the level for a total block height of 400 vertical feet or 460 vein feet. It is now known from data in the E tunnel that mineralization, although cut off in this area by a fault, extends at least another 125 feet vertically lower than that proposed for the bottom of the central D block.

Therefore the in-place, dry vein tonnage probably contained within the boundaries set out above is 1,043 tons/foot for a total of 460 feet or 472,000 tons at 16.3 oz/ton silver, after subtracting existing workings. In addition to this in-place material, there is at the D portal, a dump containing an estimated 13,000 tons grading 12.5 oz/ton silver.

The E tunnel through drift and raise data (over an average 4.3 foot width) extends over a horizontal distance of 260 feet and dip length of 170 feet. Unfortunately, the real vein width is not exposed although it must extend to at least 6 feet as one wide spot in the raise assayed 145 oz over 5.5 feet still within the vein. Assuming the 6 foot width, the block extending from surface to an average depth of 250 feet with length of 260 feet contains 34,745 tons at approximately 30 oz/ton.

In the D extension area, two outcrops 150 feet apart average 19.5 oz/ton over 11.9 feet. Assuming a 50 foot influence on each end and a 200 foot vein depth, this area should contain 51,700 tons at 19.5 oz/ton.

The four areas discussed above contain a total of 571,445 tons with a weighted average grade of 17.3 oz/ton silver.

Prosperity Vein

The 305 S. drift returned 31.6 oz/ton silver over a 375 foot length and average width of 15.5 feet. This represents 505 tons per vein foot. The 201 level is 170 vein feet above the 305 level with no information below the level. Assuming the mineralization encountered does not diminish either above or below the level in a total of 400 vein feet, there are 202,000 in-place tons contained in this block.

North on the 305 level, three percussion holes recently completed all terminated in good mineralization giving at least a 60 foot width to this area. Just south of this zone, data is available in a winze to 60 feet below the level. In a similar manner, stope data 75 feet above the level confirms good mineralization in this sector although neither area has information for widths greater than 10 feet.

If this shatter zone continues to the stope data above and to at least 100 feet below the level (40 feet beyond the winze) there would be contained in this block 61,250 tons at 9.5 oz/ton silver.

The total probable tonnage contained within the areas of the Prosperity vein examined to date total 263,250 tons with a weighted average grade of 26.4 oz/ton silver.

Blind Vein

Stoping preparations were still in progress when the previous operation closed down. While this vein appears narrower than the others, it has not been well examined. Re-calculation of old assay data is restricted to narrow widths averaging just under 1.5 feet. Assuming a 6 foot mining width where additional material is entirely waste, there remains within and above the subdrift and raise information several blocks totalling 12,260 tons at 23.2 oz/ton.

On the 3 level, a section 123 feet long averages 18.6 oz/ton if taken to a 6 foot width. A drill intercept 30 feet below the level assayed 88 oz/ton over 1.5 feet or 22 oz over 6 feet. If this block continues to 100 feet below the level there are 6,400 tons available at 18.6 oz/ton. The total tonnage contained in these Blind vein locations is a probable 18,660 tons at 21.6 oz/ton silver.

Limited drilling by Pacific Cassiar in this shoot area indicated the existence of an offshoot structure to the Blind vein that assayed 20 oz/ton over 12 feet. Only one hole location is possible at present so that the contribution of this new area to the vein potential is unknown.

POSSIBLE RESERVES

D Vein

This vein covers a strike length of 2,500 feet encompassing an elevation change of 1,140 feet between end exposures. Over this interval there is no change in silver/lead ratios or in the nature of mineralization and thus it can be concluded that limits are not being approached. In fact, standard practice of one half of strike length being a depth proposal, has nearly already been examined. Therefore it is a logical assumption that this system should continue to at least the 4,200 foot level, or approximately 500 vertical feet below the D tunnel.

Therefore below the main D block there are 290 dip feet of possible extra depth over a 600 foot length and assumed 12 foot width for an approximate total of 181,560 tons at say 15 oz/ton.

The possible block above the stope data for D tunnel and continuing to surface (where widths and assays are known) accounts for an additional 125,200 tons at a 12 foot width of say 15 oz/ton.

Below the E tunnel block is a possible reserve to the same datum plane of 230 dip feet by 6 foot width by 260 foot length encompassing 31,200 tons at say 20 oz/ton silver. Between the end of the E tunnel

and the portal of D tunnel, is a possible block with dimensions of 10 feet by 560 feet by 200 feet totalling 97,400 tons at 15 oz/ton.

If the D extension continues halfway toward the last underground D working, the dimensions of this block would measure 225 feet horizontal by 250 feet vertical by 10 feet to total 48,900 tons at 15 oz/ton.

Therefore the total tonnage attributable to the D vein in areas adjacent to known blocks is an inferred 484,260 tons at about 15 oz/ton.

Prosperity Vein

Calculations of possible reserves in this vein are limited to areas south of, and below the lowest level. Drill information must be obtained between upper levels to proceed with reserve estimates in this area.

The lowest level on the Prosperity vein is 700 feet higher than the lowest mineralization on the D vein. All of this area is prospective but will be discussed under geological potential.

The only possible reserve block attributable to this vein at the current time is an area of half the tonnage located in the 305 S. or 100,000 tons at an arbitrary 25 oz/ton located below the main block.

GEOLOGIC POTENTIAL

D Vein

On the Porter Idaho site, this vein extends beneath a talus covered depression for a further 800 feet to an elevation 500 feet higher

than the last mineralized outcrop before being covered by ice. None of this area has been tested and while its potential is unknown it is unlikely to be barren.

The mine dump at the D tunnel was waste rock in the previous mining operation. Thus it represents all material removed from the workings minus the high grade component. It is probable that the grade attributable to the D tunnel area is too low since sampling accounts for examination of material left, not that which had been removed. A back calculation to include recorded production from this area would suggest an in-place grade closer to 25 oz/ton rather than 16 oz/ton for projected reserves.

Prosperity Vein

As mentioned, these workings are at a high elevation in comparison to the D vein. Since all veins are no doubt genetically linked, it is likely the Prosperity vein continues to at least the same level as the D. The area encompassed by this projection is 1,500 feet horizontal by 700 feet vertical. At a 6 foot mining width there is a potential for about 780 tons per vein foot in this sector. All of this interval remains to be tested.

Blind and Wake Veins

Some small tonnages are contained in and near existing workings but the surface trace of both veins is largely obscured. The partial underground exposure of the Blind vein suggests 4-5 foot widths and the one exposure on the Wake vein is 5 feet. The veins' characteristics are the same as the D and Prosperity and therefore these veins are valid exploration targets of good potential, with projected strike lengths of about 1,000 feet.

Prosperity West Vein

Recent examination of this vein shows it to be a strong, wide structure whose surface trace is obscured by talus. Drifting by Premier Mines disclosed several high grade areas over good widths. If it continues under the scree slope to the Big Rig fault, it presents a potential strike length of about 1,200 feet beyond the drift face.

Angelo Vein

This vein is projected a distance of 1,200 feet from one small high grade adit to another. Between these two extremes, only two exposures are known with excellent widths but lower grades, i.e. 17 ft of 8 oz and 27 ft of 2 oz. Since these two outcrops represent less than 5% of the vein trace, and the vein does contain high grade silver, it also constitutes an easily tested target with promise of better than 2,000 tons/foot for the known length.

Other Veins

Three drill holes in 1930 intersected good values over narrow widths (3ft-20oz) in an unknown vein between the D and Blind veins. This vein was reconfirmed by one hole in 1975. Nothing further is known of this vein but it underlines the significance of the geological environment for re-occurrence of mineralized structures.

A cross cutting vein striking southwest from the Prosperity has been examined by old trenches intermittently over 1,300 feet. It has widths to 15 feet and good silver assays up to 80 oz/ton. Only cursory examination has been carried out. An average 10 foot width presents a possible 1,100 tons/foot in this area.

All of this Porter-Idaho potential pales in significance if it is demonstrated that these veins are the same, or part of the same system that outcrops on the Silverado ground some 6,500 feet distant, on strike from the edge of the Porter-Idaho claims. The Silverado veins occur at 3,000 feet elevation, are contained within the same rock units, have the same strike and dip, and have the same mineral components with a higher relative gold content (a possible clue to vertical zonation). Only a cursory examination of the Silverado veins has been made, and it is not possible to attribute reserves to this area based on the limited information at hand.

Since the intervening distance is ice covered, a test of this theory is possible only from underground which must await a production decision on the Porter Idaho side to justify access tunnel construction.

SUMMARY

In calculating reserve figures, several assumptions have been made. Firstly, no specific gravity tests have been performed to accurately classify the number of cubic feet per ton of rock. An andesitic to dacitic composition at 2.75 gm/cc contains 11.66 cubic feet/ton. With an average 5% lead-zinc content in mineralized sections, an estimated specific gravity of 2.9 gm/cc is appropriate to calculate 11.1 cubic feet/ton as most representative. While it was decided that 11.5 cubic feet/ton be used as a more conservative estimate, it should be pointed out that those sections with average metal content probably have more in-place tons than proposed.

Secondly, the vein material appears for the most part, to form an easily separated boundary with the wall rock. This will reduce mining dilution if all the vein is removed. On the other hand it is likely

that dilution will occur if a mining cut-off designates some internal portion of the vein as waste. Therefore even though the dilution figure may be too large, a factor of 10% is applied to the final probable tonnage figures.

This summation does not take into account a specified cut-off grade, although preliminary metallurgical recoveries have been tested. As no particular mining sequence has been concluded, mining costs are unknown and hence a cut-off grade at this time is arbitrary. It will have to be factored into the proven and probable reserves once diamond drilling and examination proceed.

As mentioned, within the mineralized blocks is an estimated 5% combined lead-zinc which will certainly have an impact on mine economics. As well, a small amount of gold, copper and cadmium is present in concentrate assays. Not enough metallurgical work has been conducted to estimate procedures to maximize beneficial recovery of these minor components but their value will impact on cut-off grade estimations.

In conclusion, there is a total probable tonnage in all veins of 853,355 tons at 20.2 oz/ton with a possible additional 584,260 tons at 16.7 oz/ton silver. Total reserves in both categories is 1,437,615 tons at 18.7 oz/ton silver, non-diluted.

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Respectfully submitted

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J.M. Kenyon, P. Geol.

