Preliminary Geological Report

on the

SILVER TIP MINE

Stewart, B. C.

by

W. N. Plumb, P. Eng.

July, 1957

C O N T E N T S

I L L U S T R A T I O N S

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SUMMARY AND CONCLUSIONS

The Silver Tip mine is in the Upper Salmon Valley, 21 miles north of Stewart, B.C., at an elevation of 3400 feet. The property is underlain by slates, argillites and tuffs of the Hazelton series, intruded by a prominent belt of granitic dykes. On the May P.J. and Good Hope claims, two mineralized quartz veins have been developed by 1000 feet of underground workings on the east side of Silver Creek. Two shoots, carrying low to moderate values in gold, silver, lead and zinc, occur over narrow widths in the May P. J. vein. The Blind vein is sparsely mineralized with lead and zinc and contains erratic high silver values. Assay results of channel samples taken at regular intervals underground show that neither vein contains commercial ore over minimum three-foot mining widths.

The mineral deposits are directly related to underlying rock structure and occur along short tension faults developed on the east side of a strong pre-mineral north-south fault following Silver Creek. They are localized within the tension faults by (1) proximity to Silver Creek and (2) the intensity of the brecciation where the tension faults cut downward into the hangingwall of a massive granitic dyke that dips shallowly south into the mine workings. Since the granitic dyke apparently continues to the south at a shallow dip, it is possible that more deposits may occur along the hangingwall contact at depth, wherever it is intersected by similar tension faults. A series of short diamond drill holes along the east side of Silver Creek could investigate this possibility by progressively tracing the dyke contact to the south. Due to low metal prices, however, such a program should be deferred for the present.

The rest of the property was not examined. As soon as feasible, geologic work should be resumed to determine (1) whether similar structural possibilities exist elsewhere on the property and (2) the most suitable areas for future exploration.

PURPOSE AND SCOPE OF EXAMINATION

The writer and one assistant spent six days at the Silver Tip mine, from July 9th to 14th inclusive, mapping and sampling the underground geology and as much of the surface in the immediate vicinity as time and the snow conditions permitted. Only the current workings were examined, the objective being to determine, if possible, the specific geologic features controlling the mineralization in the Main adit, as a basis for an economic evaluation of

the ore potential on this part of the property. Valuable assistance was rendered by Mr. H. Smith, Resident Manager, in preparing the underground workings and part of the East Shoot Open Cut for examination. The valleys of Silver and Porphyry creeks and most of the open cuts were snow filled to depths of 3 to 8 feet, so much of the surface was not examined. This should be done at a later date, preferably in August.

The history of the property, which extends back to 1925, has been adequately covered in various annual reports of the B.C. Minister of Mines and will not be discussed here. As far as known, all recent work has been concentrated in the vicinity of the Main adit and the only recorded production has also come from this area. The geology of workings on other parts of the claims has been briefly detailed in a private report by Dr. J. T. Mandy, Consulting Mining Engineer, dated December 10th, 1947.

Maps prepared by W. P. Dunbar, B.C.L.S., showing the underground workings and a small part of the overlying surface on a scale of 40 feet to the inch, with 10-foot contours, were used as a base for mapping the geology. These were supplemented by Brunton compass and tape surveys of the ends of the Blind drift and the Armstrong tunnel and a rough traverse was made of the open cut area on the west side of Silver Creek.

PROPERTY

The property comprises the following six Crown-granted and nine "located" claims, all believed to be in good standing:

Crown-Granted:
- Lot 4036 BELLA COOLA
- Lot 4037 GOOD HOPE
- Lot 4038 MAY P.J.
- Lot 4039 SILVER LEAF
- Lot 4040 LADYBIRD
- Lot 4163 SEPTEMBER FRACTION

Held by Location:

Record No.	Name
14192 H	Good Hope No. 1
14193 H	Good Hope No. 2
15349 K	Elhunt
15350 K	Good Hope No. 4
15351 K	Kollaura
15352 K	Good Hope No. 3
16983 G	Winkler
16984 G	Drurie
16985 G	Halsor Fraction

These claims occupy a gently rolling upland, between elevations of 3200 and 4200 feet, on the southern slopes of Mount Dilsworth, between the Big Missouri Ridge on the west and Long Lake on the east. The property is approximately 21 miles north of Stewart, B.C. and is reached by 14 miles

of good highway to Sleepy Hollow on the Silbak Premier road, thence by five miles of rough mountain road to the old Big Missouri camp and, finally, by two miles of rough road with very steep gradients suitable only for 4-wheel drive vehicles.

The claims are bounded on the north, west and south by old Crown-grants, and on the east by Long Lake. They are traversed from north to south by the canyons of Silver and Williams creeks, along which rock exposures are nearly continuous. On the remainder of the property, bedrock either outcrops or is buried by only a few feet of heather-covered soil. There is no timber. Most of the ground is snow-covered from November to June, with snow persisting in the valleys until late July.

WORKINGS

The underground workings are chiefly on the Good Hope and May P.J. Crown grants, with open cuts extending into the Ladybird and Silverleaf claims. The Main adit is collared at elevation 3400 feet on the east bank of Silver Creek and extends 237 feet in a N 40 E direction. From the end of this crosscut, the May P.J. drift extends ESE for 290 feet and WNW for 60 feet, following the May P.J. vein. At a point 60 feet from the portal, the Blind drift has been driven 310 feet to the ENE along the Blind vein. 25 feet from the end of the Blind drift, a cross vein trending NW-SE was followed for 70 feet. At the end of the Main crosscut, a small open stope has been driven, following the May P.J. vein above the level for 20 feet at an angle of 28 degrees, over a length of 40 feet.

260 feet upstream from the Main adit, the Armstrong Tunnel , at elevation 3420, has been driven 50 feet into the east bank of Silver Creek, following the outcrop of the May P.J. vein for 25 feet. 300 feet upstream, from the Armstrong adit, another small adit, called the Jeep tunnel, extends for about 50 feet into the west bank of Silver creek.

At least 14 open cuts have been excavated in the vicinty of the Main workings, on Silver and Porphyry creeks and along the west side of Silver Creek. Most of these were snow-filled and were not examined. The largest cut, known as the East Shoot, about 250 feet up Porphyry Creek from its junction with Silver Creek, is the most important as shipments of ore have been made from it.

There is a good, two-storey frame building, capable of accomodating six men, on the east side of Silver Creek, 250 feet downstream from the Main adit.

REGIONAL GEOLOGY

The geology of the Salmon River District was mapped by S. J. Schofield and G. Hanson and published as Memoir 132 by the Geological Survey of Canada in 1922. Briefly summarized, three conformable formations belonging to the Hazelton Series, of Jurassic age, are superimposed from south to north along Bear River Ridge. The oldest and lowest of these is known as the Bear River Formation and consists of a huge thickness of volcanic tuffs, breccias and lava flows. These are overlain by a thin layer of fine-grained tuffaceous conglomerates and sandstones, exposed on

Slate Mountain and on either side of Big Missouri Ridge, known as the Salmon River Formation. Overlying the conglomerates is the Nass Formation, comprising chiefly black slates with some interbedded grey argillites and quartzites.

These formations are gently folded into a series of northerly trending and northerly plunging anticlines and synclines. An anticlinal axis follows Big Missouri Ridge, while a synclinal axis runs from the top of Slate Mountain, along the west side of Long Lake, just east of the Silver Tip mine. This folding is due to lateral pressure exerted by the intrusion of the great intrusive mass of granitic rock known as the Coast Range Batholith, the eastern contact of which lies along the western margin of the Salmon Glacier, two miles west of the Silver Tip mine.

As a very late phase of the intrusion of the Coast Range Batholith, a belt of closely-spaced granitic dykes, about a mile wide, cuts all the rocks of the Hazelton group in a northwest-southeast direction, extending from Mount Dilsworth, across the Silver Tip ground to the southeast, across Bear River Ridge, Bear River valley, Bitter Creek valley and disappearing under the Cambria Icefield 15 miles to the southeast.

Not mentioned by Hanson, but very obvious from stereoscopic study of aerial photographs and often visible from ground study, are a series of very persistent northerly-trending faults that have strongly influenced the present topography. They control the valleys of American Creek and Bear River; Long Lake and East Fork of Cascade Creek; Silver Creek and the Main branch of Cascade Creek; and very likely also control the trend of Salmon Glacier, Salmon River and Portland Canal. Along Bear River, Long Lake and Silver Creek they successively offset the belt of dykes, in each case the east side apparently moving southward. These faults are probably due to periphery cooling of the batholithic magma.

Due to differential movement on successive northerly-trending faults, a widespread network of easterly-trending tension fractures, shears and faults developed throughout the region. Regionally, these appear to have been the most important localizing factor in the formation of ore deposits. It is believed that concentrated solutions or gases, the last phase of the cooling magma, percolated upward along the north-south faults and deposited their minerals chiefly in the more open east-west tension fractures and faults, giving rise to orebodies such as the Silbak Premier and the Silver Tip. Evidence to support these beliefs is still somewhat empirical.

Following the deposition of mineral deposits very closely, swarms of narrow but persistent dark basic dykes, locally termed Lamprophyres or Malchites, cut all other formations, including the mineral deposits, but are themselves barren.

Subsequent erosion has closely followed geologic structure, especially the north-south faults, which are nearly all occupied by streams or glaciers. Due to the folding, Bear River tuffs are exposed along Big Missouri Ridge and Nass slates in the Long Lake area. The

bedded rocks in the Silver Tip area, at the contact between these two formations, occupy the east limb of the Big Missouri anticline.

The last of the Pliestocene glaciers still occupy Salmon Valley, and cap Mount Dilsworth and Bear River Ridge, surrounding the Silver Tip ground to the west, north and east.

LOCAL GEOLOGY

(1) Lithology

The following rock types occur in the vicinity of the main Silver Tip workings:

Argillaceous Tuffs

These are the oldest rocks in the area and represent the uppermost beds of the Bear River formation. They are massive, light greyish-green to purple fragmental rocks, containing angular fragments of black argillite, in places so numerous that the rock is very dark and could be named "tuffaceous argillite". They outcrop on the west side of Silver Creek, in the angle between Silver and Porphyry creeks, and to the north of Porphyry creek. They were not recognized underground.

Grey Argillites

This soft, mouse-grey band of argillites outcrops over a width of 130 feet on the east side of Silver Creek and lies stratigraphically between the underlying tuffs and the overlying black slates. It is probably part of the Nass formation, as thin layers of this material were found interbedded with he black slates. It was not found underground.

Black Slates

The black slates of the Nass formation outcrop almost continuously between Silver Creek and Long Lake to the east. They are in conformable contact with the underlying grey argillites, and in places ith the Bear River tuffs, along the east side of Silver Creek. The contact trends north-northeast. The slates dip easterly but the exact angle of dip could not be determined, although it must be shallow as they have not been intersected in the mine. They are very fine grained, cleavable and rusty weathering.

Granitic Dykes

These dykes are a very prominent feature of the landscape, visible for miles as semi-parallel ridges striking generally southeast and dipping moderately southwest. They range from 5 to 150 feet in width and undulate considerably in both strike and dip. They also vary widely in composition. The most southerly member of the belt, referred to in this report as the "Main" dyke, outcrops 150 feet north of Porphyry Creek, strikes easterly, and dips 40 to 45 degrees southerly into the mine workings. It is cream

colored and contains phenocrysts of quartz and feldspar. In the mine, what is believed to be the same dyke varies from cream colored to pale green and contains phenocrysts of feldspar but not quartz. On the surface, the contacts between the Main dyke and the intruded formations were obscured. In the mine, the hanging wall was in faulted contact with the Black Porphyry along the May P.J. drift and was apparently gradational into it in the Main crosscut. The footwall of the dyke has not been reached underground, althouth the dyke has been crosscut for 50 feet.

Black Porphyry

This is the "country rock" in the mine. It is a hard, black, fine-grained rock of igneous origin, resembling porphyritic basalt, with very numerous white feldspar phenocrysts. In the Main crosscut it appears to be gradational into the Main granitic dyke and at several places in the crosscut lighter variations appear that could be phases of the same material as the Main dyke. Toward the eastern end of the Blind drift, where it is cut by faults, considerable graphite has been developed on the fault planes which, in the absence of the black slates, must have come from the Black porphyry itself. This rock could be either a flow or an intrusive, but the evidence strongly suggests the latter. It is felt that it must be a differentiate from the same magma that formed the Main dyke and that it must have derived its color by absorption of some of the overlying black slates and argillites that it intruded. On the surface it is found in faulted contact with the cream colored granitic dykes and in gradational contact with the tuffs. The rather large areal extent of the Black Porphyry in the mine is probably explained by its shallow dip to the south.

Aplite

A few thin lenses of brittle white aplite occur in the Main crosscut and accompany the quartz in the veins. The aplite appears to have been injected along with the quartz or shortly before it, as it is often brecciated and always occurs along faults. In a few places it is slightly mineralized.

(2) Geologic Structure

The contact between the Nass slates and the underlying Bear River tuffs crosses the property just east of Sivler Creek, striking north-northeast and dipping moderately southeast. In general, slates underlie the area to the east of Silver Creek and tuffs the area to the west. Intruding these rocks almost at right angles is the "Belt of Dykes". The most southerly of these dykes outcrops just north of Porphyry Creek, striking easterly and dipping about 26 degrees southerly into the mine. The western end of this dyke appears to swing sharply southward along the east side of Silver Creek and has been cut by faults at the junction of Porphyry and Silver creeks, while its westward extension across Silver Creek has been offset about 250 feet to the north. This, together with topographic evidence, strongly suggests that Silver creek is following a major northerly-striking fault.

As a result of differential movement along this fault, short easterly-striking, southerly-dipping tension faults developed on either side of Silver Creek. The faults containing the May P.J. and Blind veins are of this type. The May P. J. fault controls the course of Porphyry Creek. As it dips southward at a slightly steeper angle than the Main dyke, it intersects this dyke in the mine. Being more brittle and massive than the surrounding rocks, the dyke fractured more openly and became intensely brecciated along the fault, resulting in more permeability to the later ore-forming solutions, and consequently localizing the ore along the dyke contacts and within the dyke itself. The Blind fault cuts the black porphyry which, being less competent than the granitic dyke, fractured less cleanly and was consequently less well mineralized.

Movement on these faults is considered to have been chiefly rotational, with the formation of gouge and fault breccia adjacent to the main Silver Creek fault at their western ends, but tending to weaken toward the east. They appear to be merging, towards the east end of the Blind drift, into a zone of shearing which will probably die out entirely within the black slates farther east.

(3) Controls of Mineralization

The mineral deposits in this area are directly related to the underlying rock structure. The sequence of events that resulted in the emplacement of the veins is believed to have been about as follows:

(i) Following the intrusion of the dykes but before the mineralizing period, strong north-south faulting occurred along Silver Creek.

(ii) Tension fractures developed to east and west of Silver Creek.

(iii) Mineralizing solutions rising along the main Silver Creek fault spread out and deposited veins in the tension fractures. The intensity of the mineralization would depend upon the permeability of the fractures, with the result that the veins were localized chiefly in the east-west faults, near Silver Creek, within or near the hangingwall of the Main dyke.

Applying these controls to the search for more mineral deposits, the following possibilities are suggested:

(i) On the east side of Silver Creek, the Main granitic dyke appears to underlie the workings at an average dip of 26 degrees, while the tension faults dip in the same direction at a slightly steeper angle. There could thus be a series of semi-parallel veins occurring along the hangingwall side of the dyke, at depth to the south of the main workings, at irregular intervals, close to the east bank of Silver Creek. Such veins would probably not reach the surface, so exploration would be a matter of tracing the hangingwall contact of the main dyke to depth by diamond drilling.

(ii) On the west side of Silver Creek, the main granitic dyke appears to strike north-northwest and the tension faults to strike northeast. The exact relationships between the dyke and the faults should be determined and the intersections checked for mineralization such as that occurring in the Jeep adit. Drilling is not yet indicated here but some prospecting could be done along the southern margin of the Main dyke.

(iii) Similar tension faults could conceivably occur on either side of Silver Creek to the north of the main workings but within the belt of dykes. Mineralization would probably be restricted to a few hundred feet on either side of Silver Creek. This area should be prospected on the the surface.

MINERAL DEPOSITS

(1) General

The mineral deposits in this area are quartz-filled fissure veins, following easterly-trending faults containing considerable gouge and brecciated wallrock, including angular fragments of aplite, evidently introduced at the same time as the quartz. The ore minerals, which are chiefly galena, sphalerite and pyrite, occur in lenticular concentrations rimming the fragments of wallrock. The best mineralization occurs where the veins cut through the main granitic dyke or follow its hangingwall contact and is thus clearly related to the brittleness of the transected rock. The zones range in width from one to six feet, but the mineralization is restricted to bands from 5 to 30 inches thick. Silver values are moderate but the gold content is generally low. The veins dip from 25 to 45 degrees to the south.

The fault zones are well-defined, the hangingwall marked by a clean-cut, slickensided fault plane accompanied by a thin layer of gouge, while the footwall is usually a series of shingling faults that merge upward into the main fault and thus cause pinching and swelling. The mineralization is concentrated at the western end of the veins, in the proximity of Silver Creek, while the quartz continues to the east and gradually dies out as the faults weaken.

(2) The May P.J. Vein

Except for one gap of 35 feet, this vein is continuously exposed in the underground workings for 320 feet. Assuming continuity between the end of the Armstrong tunnel and the May P.J. drift, it is continuously mineralized for the first 95 feet, barren for a further 35 feet, and mineralized again for 40 feet, where a small stope has been started above the level. Beyond the stope to the east, it continues as a fault-breccia zone for a further 140 feet but contains only barren quartz.

On the surface, the same vein outcrops along Porphyry Creek for a reported length of 150 feet eastward from the junction with Silver Creek,

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is then apparently missing for 100 feet, and occurs again as a well-mineralized shoot 40 feet long, beyond which it disappears. It has not been definitely established that this shoot is a continuation of the May P.J. vein, although structural sections suggest that it may be. The outcrop is 100 feet above the adit. An open cut was blasted here in 1951, from which 11.2 tons of hand-sorted ore was shipped.

As the surface outcrops were almost completely snow-covered at the time of the examination, only the underground exposures were examined and sampled in detail. The zone strikes S 60 E at an average dip of 35 degrees to the southwest. For the first 170 feet, the zone has an average total width of 22 inches, within which the mineralized band averages 16 inches. In the Armstrong tunnel it follows the hangingwall contact of the Main dyke, while in the May P.J. drift it cuts through a hangingwall bulge in the dyke. Where it cuts the dyke, the vein is well mineralized and sharply defined. Where it again follows the dyke contact to the east, it contains only quartz, and where it finally leaves the dyke contact, the quartz also disappears.

On the surface, the two mineralized bands within the May P.J. vein are known as the West and East shoots, respectively. The West shoot appears to be continuous with the mineralization in the Armstrong adit and, probably, with that in the west end of the May P.J. drift, in which case it would have a steep westerly rake. It is possible that the East shoot may also rake to the west and be continuous with the May P.J. Stope underground. If it does not, it apparently dies out before reaching the mine elevation. As a working hypothesis only, for calculation purposes, it is assumed herewith to be continuous with the stope. From cross-sections it is evident that both shoots should project downward within or close to the dyke for some distance below the level and, as they are still mineralized on the level, it is reasonable to assume that they will remain mineralized as long as they are in the dyke. Postulating continuity between the surface outcrops and the adit and persistence down dip for a slope distance of 200 feet, the following maximum tonnages and grades would be indicated:

Tonnage

	Length	Width	Slope Height	Tons
West Shoot - above level	100	3	75	2,250
West Shoot - below level	100	3	200	6,000
Total	100	3	275	8,250
East Shoot - above level	40	3	150	1,800
East Shoot - below level	40	3	200	2,400
Total	40	3	350	4,200

TOTAL, Both Shoots, May P.J. Vein 12,450 Tons.

Grades

	Width	Gold oz	Silver oz	Lead %	Zinc %
West Shoot-Armstrong Adit (5 samples)	1.32	0.03	3.12	2.90	2.88
" " West Drift (6 samples)	0.73	0.01	2.60	4.20	7.30
" " Average Across 1 Foot	1.03	0.02	2.94	3.41	4.58
West Shoot--Average Across 3 Feet:	3.00	0.01	1.00	1.2	1.5
East Shoot - May P.J. Stope (8 samp)	2.0	0.01	3.01	6.32	4.46
" " - Open Cut (1 sample)	2.0	0.15	29.55	3.40	3.05
" " Average Across 2 Feet	2.0	0.08	16.28	4.86	3.76
East Shoot--Average Across 3 Feet:	3.0	0.05	10.84	3.2	2.5

Note: The above grades are all weighted averages from carefully moiled samples taken at regular intervals across the veins as plotted on the assay plans. Here they are expanded to a minimum mining width of three feet.

While the above grades are believed to be thoroughly representative of the underground exposures, only one sample was taken across the surface outcrops. These should be channel-sampled at uniform intervals as soon as conditions permit. The reported smelter assay of the 11.2 dry tons of sorted ore shipped from the East Open Cut in 1951 was:

Gold:	0.43	oz. per ton. 150 g Au
Silver:	84.9	" " "
Lead	12.6	per cent 2560.32
Zinc	18.5	" "

As an alternative projection, instead of raking to join the underground stope, the East Shoot outcrop may be simply a high-grade lens with a limited depth extension. Assuming a 3-foot width, a slope depth of 75 feet, a width of 40 feet and one-third of the above grade, it could contain about 900 tons grading:

Gold:	0.14	oz. per ton
Silver	28.3	" " "
Lead	4.2	per cent
Zinc	6.2	" "

Due to the flat dip of about 30 degrees, such a shoot would probably have to be developed by raising from below.

(3) The Blind Vein

This is a northeasterly trending fault zone, exposed for 150 feet underground, entirely within the black porphyry which, being less brittle than the granitic dyke, did not fracture as cleanly. It has a strong, slickensided fault for a hangingwall, while a series of shingling faults form an indefinite footwall. Considerable graphite has developed on the faults.

This zone varies from 4 inches to more than 6 feet in width and consists of angular fragments of black porphyry, fault gouge, quartz, aplite, and graphite. At its western end it is erratically mineralized for 70 feet with pyrite, galena and sphalerite, with low silver values, over part or all of the vein width. This is followed by a 15-foot barren zone, beyond which it is again mineralized over narrow widths for 30 feet. Eastward from this point, the zone continues as a series of slickensided faults, still in black porphyry, but only a few inches of quartz and pyrite persist along the fault. At the extreme eastern end of the drift, the faults weaken by curving and splitting and join another zone of weak faults that trend westerly toward the May P.J. zone. This area is locally mineralized with quartz and a little ruby silver, but not in commercial concentrations.

Westward from the Main crosscut, the Blind vein swings southerly and may be continuous, under the dump, with the "Silver Creek" vein, from which high silver values are reported to have been obtained in the past. This could not be checked.

The mineralized portion of the Blind vein strikes east-west and dips average 40 degrees south. Cross-sections indicate that it should be underlain by the granitic dyke, which it could intersect at about 200 feet down dip. If so, it could possibly be better mineralized at depth. With the exception of one erratic high silver assay, the results of 13 regularly-spaced channel samples were uniformly low, as follows:

	Length	Width	Gold oz	Silver oz	Lead %	Zinc %
No. 1 Shoot	70 '	3.71'	0.02	2.28	0.18	0.25
Waste	15		-	-	-	-
No. 2 Shoot	30	1.51	0.11	23.30	0.67	Trace
Average	115'	2.61'	0.04	7.46	0.3	0.2

(4) Other Veins

Several other mineralized occurrences are reported to have been found along Silver Creek adjacent to the workings. These were mainly snow covered and could not be examined. From reported approximate locations, however, they appear to be as follows:

On the east bank of Silver Creek, about 150 feet north of the cabin, two cuts have been made on the McGillivray vein. This apparently trends northeasterly about parallel to the Blind vein and may have the same depth possibilities.

Two veins apparently outcrop in Silver Creek itself. The northerly one is about in line with the Armstrong adit and may be a westward continuation of the May P.J. vein. The southerly one extends southwesterly from the waste dump in front of the Maid adit and may be continuous with the Blind vein. It is reported to carry high silver values over narrow widths and is known as the Silver Creek vein.

High on the west bank above Silver Creek, there are seven trenches, shown on the map as "A" to "G". Trench "D" showed only argillaceous tuffs impregnated with fine-grained pyrite, between parallel, vertical, north-south fault planes. Trench "G", about opposite the Armstrong adit, contained a gougy northeasterly-striking fault and a small pile of mineralized quartz on the the dump. The others were snow covered.

About 300 feet upstream from the Armstrong adit, on the west bank of Silver Creek, a 50-foot adit has been driven along the hangingwall side of a large granitic dyke. It intersects two northeasterly-striking faults, mineralized with 6 to 10 inches of quartz and sulphides. This is apparently called the Jeep adit. It warrants a little further investigation as it appears to have a smilar structure to that of the Armstrong adit, and the dyke is probably the offset continuation of the Main dyke across Silver Creek.

CONCLUSIONS

(1) The veins on this part of the Silver Tip property are fissure fillings of the fault-breccia type, trending easterly from a major north-south fault that is believed to underlie Silver Creek. Mineralization is localized within these veins by (i) proximity to the Silver Creek fault and (ii) the intensity of brecciation where the vein-faults cut brittle rocks such as the Main granitic dyke.

(2) The results of channel sampling at uniform intervals underground show that, as currently developed, neither the May P.J. nor the Blind vein contains commercial ore over a minimum 3-foot mining width. It is possible that the surface outcrops of the May P.J. vein, when these can be adequately sampled, may indicate higher values but the tonnage potential would be small.

(3) Underground development to the east shows that the vein-faults tend to weaken and split in that direction and has thus effectively eliminated the possibility that the downward projection of the East Shoot will be found there. This could be easily checked, however, by a few short test holes, using ordinary drill steel. The East Shoot must, therefore, either rake southwesterly to join the May P.J. stope, or die out down dip before reaching the level.

(4) Geologic mapping indicates that the Main granitic dyke underlies the mine workings shallowly. A reasonable interpolation of this structure suggests that the May P.J. vein, the Blind vein and even, possibly, the McGillivray vein may intersect it at no great depth. There could be local concentrations of ore along such postulated intersections, especially near Silver Creek. Such a possibility could be readily tested by a series of short diamond drill holes from the surface.

RECOMMENDATIONS

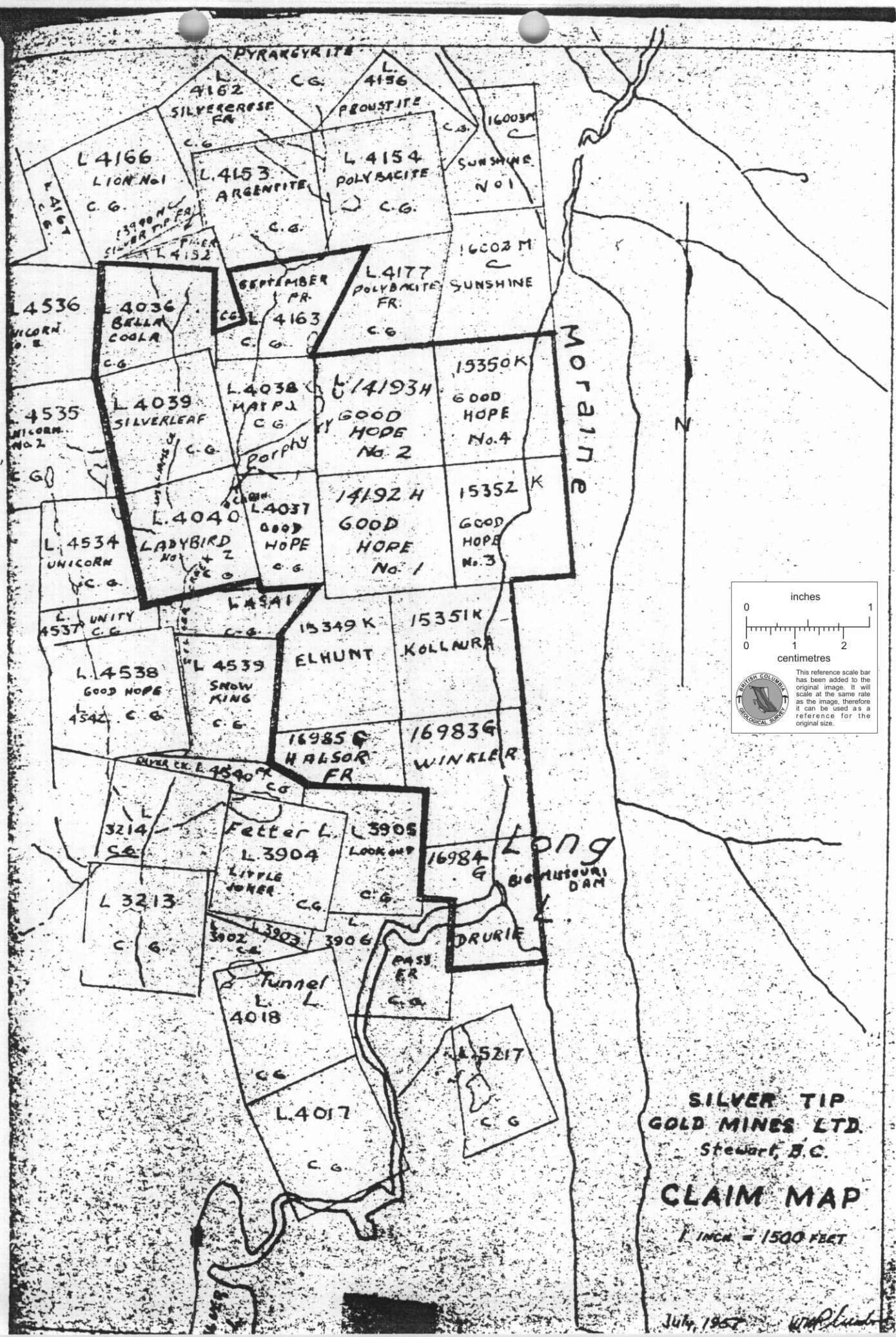
(1) Although the geologic structure appears favorable to the discovery of more mineralization at depth, it is considered that, due to the currently depressed state of metal prices, diamond drilling should be deferred for the present.

(2) In order to determine more exactly the relation of the McGillivray, Silver Creek and other veins to the general structure, the geological program in the vicinity of the main workings should be resumed as soon as snow conditions allow. This should include careful sampling of the surface outcrops of the May P.J. vein and an attempt to determine the inter-relationship of the veins on either side of Silver Creek.

(3) In addition, it would probably be advisable to extend the program to the remaining claims in an effort to ascertain whether current exploration is currently being conducted in the most suitable part of the property.

Respectfully submitted,

W. N. Plumb, P.Eng.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L 4536
UNICORN
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BELLA COOLA
C.G
L 4038
MAY PJ
C.G.
porphy
L 14193H
GOOD HOPE No. 2
15350K
GOOD HOPE No.4
4535
UNICORN No 2
C G
L 4039
SILVERLEAF
C.G.
L 4040
LADYBIRD No 2
L 4037
GOOD HOPE
C.G.
14192 H
GOOD HOPE No. 1
15352 K
GOOD HOPE No.3
L 4534
UNICORN
C. G.
L 4541
15349 K
ELHUNT
15351K
KOLLNURA
L 4537
UNITY
C.G
L 4538
GOOD HOPE
L 4542
C G
L 4539
SNOW KING
C.G.
16985 G
HALSOR FR
16983G
WINKLER
SILVER CK.
L 4540
C.G
L 3214
C.G.
Fetter L.
L 3904
LITTLE JOKER
C.G.
L 3905
LOOKOUT
C.G.
16984 G
Long
BIG MISSOURI DAM
L 3213
C G
L 3902
C.G.
L 3903
3906
DRURIE
PASS FR
C.G.
Tunnel
L.
4018
C.G.
L 5217
C G
L 4017
C. G.
Moraine
N
inches
0
1
0
1
2
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
SILVER TIP
GOLD MINES LTD.
Stewart, B.C.
CLAIM MAP
1 INCH = 1500 FEET
July, 1957