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REPORT ON THE MINERAL CLAIMS

CONSOLATION CREEK

ATLIN, B.C.

By: P. H. Sevensma, 1967

104-N-14

REPORT ON THE
MINERAL CLAIMS

ON
CONSOLATION CREEK
Atlin H. D., B. C.

FOR

SURPRISE LAKE SYNDICATE

BY

P. H. SEVENHIA, Ph. D., P. Eng.

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REPORT ON THE MINERAL CLAIMS
ON CONSOLATION CREEK
Atlin M.D., B.C.

for
SURPRISE LAKE SYNDICATE

1. INTRODUCTION

On July 1st, 1967 the writer examined, on behalf of Surprise Lake Syndicate, the showings located on the Sunrise and Sunset Crown Granted claims and the adjoining Noon 1 - 20 claims, to determine whether these showings warrant further investigation.

2. PROPERTY

The property consists of:

Sunset M.C., Crown Grant Lot 71, staked July 15, 1899, recorded July 26, 1899.

Sunrise M.C., Crown Grant Lot 70, staked July 15, 1899, recorded July 15, 1899.

Noon 1 - 20 M.C.'s, located May 12, 1967, recorded May 15, 1967.

Tag No. 762377 - 762396

Grant Nos. 8210 - 8229

The Sunset and Sunrise were Crown Granted July 23rd, 1907.

The claims are located at about elevation 5000' on a South Fork of Consolation Creek at latitude 59°47' North and longitude 133°18' West, in the Atlin M.D., B.C.

The Noon claims were staked by A.V. Mattson as agent for J.K. Campbell in a manner which conforms to the B.C. Mineral Act, as checked by the writer in the field.

3. ACCESS, CLIMATE

The claims lie above timberline on grassy slopes with rock exposures and are accessible by a jeep road up to the head of

5. GEOLOGY

(a) Areal

The area is underlain by Cache Creek volcanics, quartzites and limestones intruded by ultrabasics and by the Mount Leonard Granite stock and the Surprise Lake Alaskite body.

In places there are Tertiary volcanic rocks.

These rocks form a very favorable assemblage for economic mineral deposits, although so far only placer gold derived from these formations has been produced in the Atlin area.

(b) Local

On the claims under consideration, a body of Permian limestone forms the nose of a NE trending anticline within Cache Creek Quartzites. The limestone is intruded by a body of (quartz)-felspar porphyry (QF II on the map).

The showings lie near the contact of the limestone with the (quartz)-felspar porphyry body, which contact is mostly covered by slide rock and, where visible, is occasionally marked by the development of green epidote-skarn.

The porphyry is light grey with orthoclase phenocrysts of some 1/4" - 1" size at a density of some 15 - 20 per square foot, and with variable amounts of quartz eyes.

6. SHOWINGS

There are two showings of interest on the property (figure 2, No. 1 and 5).

The main showing, No. 1 (see map) has repeatedly been trenched. At present, there is a pit on the slope exposing a 10' face from 2' to 6' high. width and length are difficult to determine.

The adjacent limestone indicates that the trend of the main cleavage, which is believed to coincide with the bedding of the near-massive marbelized limestone, is N30°E, with a 50° - 75° dip to the SE.

The sulphide showing, consisting of a coarse skarny sulphide deposit of pyrite, sphalerite, galena and minor chalcopyrite, magnetite,

Fourth of July Creek and thence up Consolation Creek, for a total distance of about 25 road miles from the Atlin - Jake's Corner road, 6 miles North of Atlin.

The distance by air from Atlin is 20 air miles to the N.

The old Atlin Ruffner silver-lead-zinc property lies about 6 - 8 miles to the SW of the Noon Group, and is presently under active development by Interprovincial Metals Ltd.

The climate is typical of the Atlin area, with a medium snowfall of about 6' of packed snow in winter.

There is abundant water and fair timber in the area with good potential mill sites 2 - 6 miles North of the property at elevations between 3300' and 4000'.

The distance to tidewater is:

| | |
|----------------------------|-------------------------|
| Property to Jake's Corner: | 80 miles by road |
| Jake's Corner to Carcross: | 30 miles by road |
| Carcross to Skagway: | <u>80 miles by rail</u> |
| Total: | 190 miles by road-rail |

4. HISTORY

The claims were originally staked in 1899, and were reported in 1905 to lie 2½ miles from Indian Creek. A 125' tunnel was said to be located on Indian Creek (B.C. Report of Minister of Mines, 1902) and to have exposed good copper values.

A check of the original records indicates that at the time of the legal survey in 1905 the Creek was referred to erroneously as Indian Creek. No tunnel is known on the latter creek, whereas on the present claims there is a caved tunnel with a dump, suggesting a tunnel length of at least 100'.

This is further confirmed by the name of the Group, the McDonald Group, reported in 1902 on "Indian Creek"; one of the original owners was Alec McDonald for whom the Sunrise and Sunset were Crown Granted in 1907. (B.C. Report of Minister of Mines 1907).

The property has been examined from time to time by various people and in the nineteen-fifties, 2 or 3 drill holes were drilled by Rio Tinto Exploration.

No other development is known to the writer, a member of whose crew sampled the showings on behalf of Cominco Ltd. in 1964.

pyrrhotite, and arsenopyrite, is likely conformable with this same trend.

If this is so, the core-holes drilled from the two set-ups found by the writer are likely to have missed the showing, as hole "A" appears to have been drilled about parallel to the above dip, and hole "B" was started in the hanging wall about 200' away from the showing. The actual direction of drilling of hole "B" could not be determined at all.

Both these drill holes were stopped in porphyry.

Figure 2 shows the assay values obtained by the writer.

It will be noted that these assays are somewhat lower than those taken by Cominco. Assay variations are partly due to the coarse nature of the ore and the difficulty of taking a truly representative sample of the hard, oxidized sulphide surface.

A good estimate is to average the three samples, weighting them by the footage represented. This gives the following average:

| <u>Sample</u> | <u>Width</u> | <u>Au</u> | <u>Ag</u> | <u>Pb</u> | <u>Zn</u> | <u>Cu</u> | <u>W.Ag.</u> | <u>W.Pb.</u> | <u>W.Zn.</u> | <u>W.Cu.</u> |
|---------------|--------------|-----------|-----------|-----------|-----------|-----------|--------------|--------------|--------------|--------------|
| ADM 1 | 4' | tr | 6.3 | 10.3 | 10.3 | 2.2 | 25.2 | 41.2 | 41.2 | 8.8 |
| ADM 2 | 5' | tr | 3.3 | 8.6 | 7.6 | 0.6 | 16.5 | 43.0 | 38.0 | 3.0 |
| PMS204 | 10' | tr | 4.6 | 9.5 | 6.0 | 0.5 | 46.0 | 95.0 | 60.0 | 5.0 |
| | 19' | tr | 4.6 | 9.4 | 7.3 | 0.9 | 87.7 | 179.2 | 139.2 | 16.8 |

The writer is fully satisfied that this is a good average grade of the material in place. No true width can be given, but it is probably of the order of at least 6'.

At the time of writing, no assays for minor metals (Cd, Bi) were yet available.

The 2nd showing, No. 3-5 occurs near the NW edge of the limestone. It provided a better natural showing, as the No. 1 was originally probably entirely buried.

However, most of the material in place has been dug out and the tunnel has entirely caved for a length of some 30' - 40' at least.

The dump reveals that the last section of the adit intersected at least some 40' or 50' of (quartz)-felspar porphyry, which entirely covers the latest part of the dump.

Mineralized rock is not abundant and is of two types:

- (a) An epidote-actinolite-garnet skarn with scattered galena-spahlerite and magnetite. Chips of a number of 6" to 1' blocks averaged:

Sample 202: tr Au., 3.34 Ag., 1.7 Pb., 7.6 Zn., Tr Cu.

- (b) A quartzite with disseminated chalcopyrite, chips of which averaged:

Sample 203: tr Au., 2.32 Ag., tr Pb., 0.1 Zn., 1.32 Cu.

The assay values of both types are significant and attractive and are representative of the material present, of which there is however little, and no estimate of size can be given.

In view of the old reports of good copper in the McDonald Group, a significant zone of the disseminated chalcopyrite could be present and adds speculative interest to the property.

7. ECONOMIC POTENTIAL

Two showings occur some 400' apart, both of interesting grade, in a very favorable environment near the contact of a (quartz)-felspar porphyry mass with faintly bedded limestone.

The limestone is marbled and otherwise very little altered near the sulphide mass.

The showings are only some 6 - 8 miles away from an area well mineralized with silver-lead-zinc in veins on the Atlin Ruffner property, the development of which is at present giving good encouragement.

The structure, an anticlinal nose plunging gently to the NE, is favorable, and magnetite float is said to occur in the next creek to the NE, about half a mile away.

The property is easily accessible and easy to work and there is a chance that a near-surface body could be mined at least partly by open-cut.

No prediction can be made at present of the possible size of an occurrence of this type but it is an assumption with good odds that the showing may reflect the presence of a body anywhere from a few hundred thousand tons to a couple of million tons.

If a grade is assumed intermediate between the values in 1 and 5 locations, the grade would be of the order of 4.0 Ag., 5.5 Pb.,

7.5 Zn., 0.5 Cu. A small body of this type, say a few hundred thousand tons with a net smelter value of some \$20.00 to \$30.00 a ton, could likely be millable on a customs basis on this location.

A body of several million tons could well warrant a mill with added customs capacity.

In addition, there is the possibility of significant amounts of copper ore of the disseminated type, some of which has been encountered in the old drifting.

Taking into account other developments in the area and the reasonable distance to tidewater, a significant body of the above grade is believed to have a reasonable chance for profitable development.

The presence of disseminated chalcopyrite in quartzite adds a speculative note of interest in view of the presence of a significant porphyry mass on the property.

8. FURTHER DEVELOPMENT

Stage 1

As the ore is variously magnetic and conductive and enclosed within non-magnetic and non-conductive formations, a magnetic survey and a survey with a Ronka MM-16 is strongly recommended to investigate the potential size.

This work should be done in conjunction with geological mapping.

All three techniques should be used along a picketed grid laid out by using the line between showings 1 and 3 as the 00-line, with a NE baseline lying at right angles to it.

In this manner, the nose of the anticline can be picketed along lines lying at about right angles to the axial plane of this structure.

Near the showings, the lines should be spaced at 100', further away at 200', and still further away in the adjacent valleys at 400', to obtain a good background and to discover any possible extensions of any anomalies encountered.

Stage 2

The above work is likely to lead to initial drilling totaling some 1500' to 3000', the amount depending upon the size of the anomalous conditions encountered in stage 1.

Stage 3

Success in the first two stages would lead to an expanded drill program of the order of from 5000' to 10,000' or more.

9. COST OF PROGRAM

Stage 1

| | | |
|----------------------------|-----|---------------|
| Picket lines, 5 line miles | | \$ 200.00 |
| Magnetic and AM survey | | 1,500.00 |
| Geological survey | | 1,200.00 |
| Transportation | | 600.00 |
| Camp Costs | | 300.00 |
| Engineering, Contingencies | 20% | <u>700.00</u> |
| Total Stage 1 | | \$ 4,500.00 |

Stage 2

| | | |
|---|-----|---------------------------|
| Diamond Drilling, 2500' @ \$16.00/ft. overall | | 40,000.00 |
| Engineering, Contingencies | 20% | <u>8,000.00</u> |
| Total Stage 2 | | <u>48,000.00</u> |
| Total Stages 1 and 2 | | <u><u>\$52,500.00</u></u> |

No cost estimate of stage 3 can be made at present, as the scope of it will depend upon the results of stages 1 and 2.

10. SUMMARY AND RECOMMENDATIONS

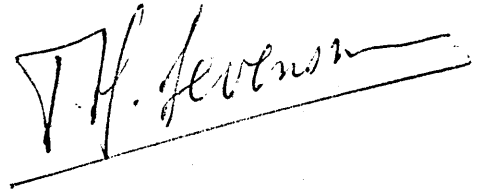
Two showings 400' apart occur near a (quartz)-felspar porphyry body intruding an anticline of limestone overlain by quartzites of Permian age.

Average grade of the material exposed is about 4.0 Ag., 5.5 Pb., 7.5 Zn., and 0.5 Cu.

A short tunnel driven near the turn of the century and two or three core-holes drilled in the nineteen-fifties have not provided new information on the possibility that these showings reflect the presence of a much larger body of a grade similar to, or better than, the above.

A two stage program is recommended, to consist of geological and geophysical work to cost \$4,500 to be followed by an estimated 2500' of drilling more or less, to cost \$48,000 for a total expenditure of \$52,500.

Respectfully submitted,

A handwritten signature in cursive script, reading "P.H. Sevensma", is written over a horizontal line.

P.H. Sevensma, Ph.D., P.Eng.

PHS/lz

CERTIFICATE

I, Peter H. Sevensma, of Vancouver, B.C. do hereby certify that:

1. I am a graduate of the University of Geneva, Switzerland (Physics and Chemistry, 1937; Geology and Mineralogy, 1937), where I obtained my Ph. D. in Geological and Mineralogical Sciences in 1941.
2. I am a Consulting Geological Engineer and a registered member in good standing of the Association of Professional Engineers of British Columbia and of the Association of Professional Engineers of Yukon Territory.
3. From February 1948 until December 1965 I have been engaged continuously in mining and exploration geology in the employ of Cominco Ltd. As a Senior Exploration Geologist, I have worked extensively both in Eastern and Western Canada.
4. I have examined the property which is the subject of this report on July 1st, 1967.
5. I have not received, nor do I expect to receive or to acquire, any interest, directly or indirectly in the properties or securities of Surprise Lake Syndicate.

Respectfully submitted,






A handwritten signature in cursive script, reading "P.H. Sevensma", is written over a horizontal line.

P.H. Sevensma, Ph.D., P.Eng.

July 26, 1967



LEGEND

- Camp = Sunset—Sunrise showings.
-  Interprovincial Metals Ltd.
(Old Atlin — Ruffner prospect)
-  Granitic rocks
-  Alaskite
-  Cache Creek Group
-  Ultrabasics

J. H. Sevensma

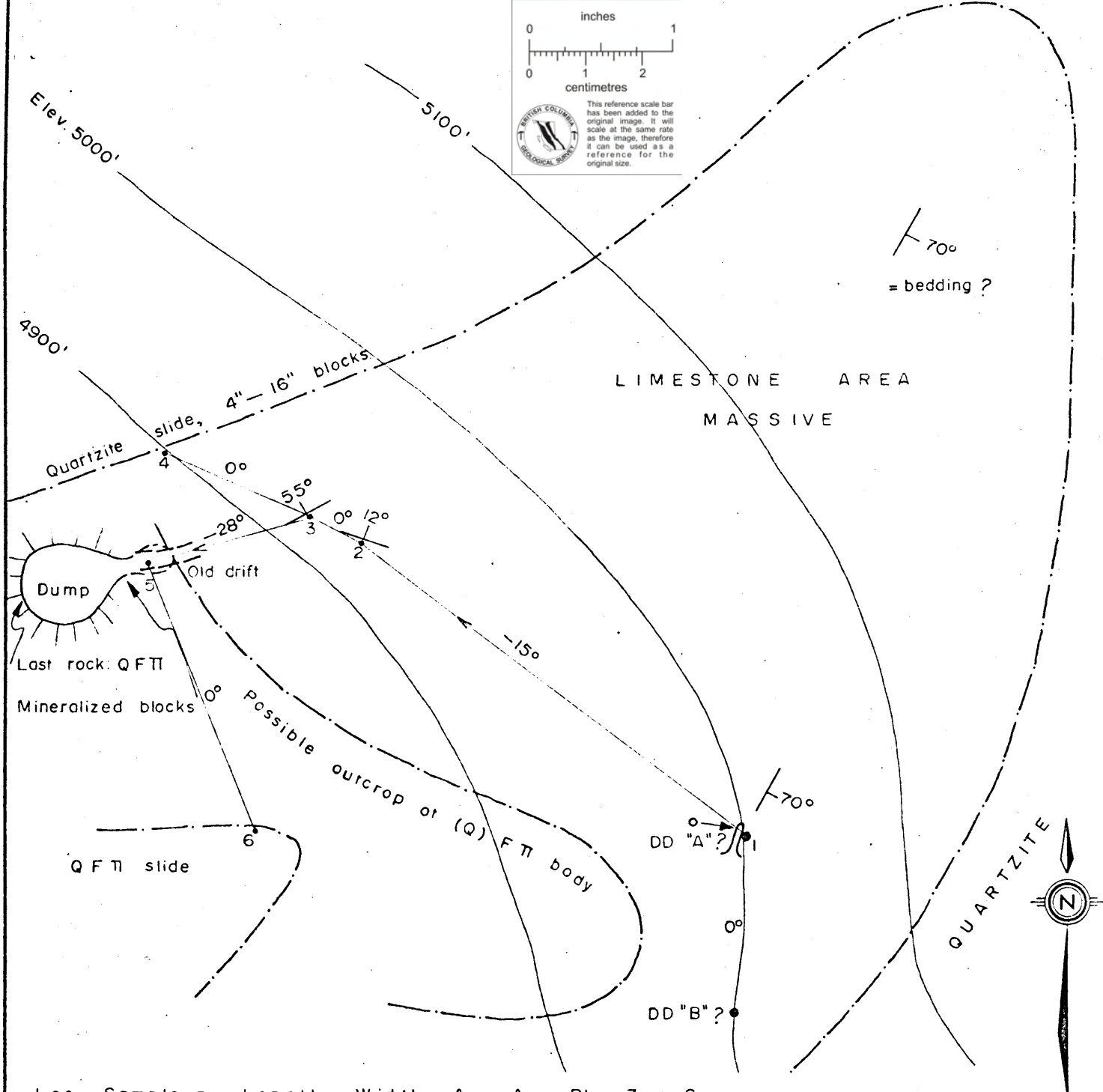
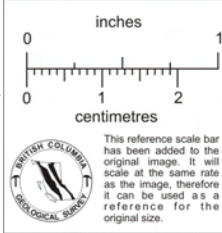
**CONSOLATION CREEK, ATLIN M.D. B.C.
LOCATION MAP**

P. H. Sevensma Consultants Ltd—Vancouver B.C.

July 1967 104—N—14

SCALE 4 Miles

FIG. 1



| Loc | Sample n | Length | Width | Au. | Ag. | Pb. | Zn. | Cu. | |
|-----|----------|-------------------|-------|------|------|------|------|------|---|
| 5 | 202 | Dump, skarn type | | tr | 3.34 | 1.7 | 7.6 | tr | } P. H. SEVENSMA samples Assays by Whitehorse Assay Office July 1967. |
| 5 | 203 | Dump, dissem type | | tr | 2.32 | tr | 0.1 | 1.32 | |
| 1 | 204 | ± 10'? | 10' | .005 | 4.56 | 9.5 | 6.0 | .48 | |
| 1 | Cominco | ? | 4' | tr | 6.26 | 10.3 | 10.3 | 2.2 | } Sampled by A. B. MAWR, 1964. |
| | Cominco | | 5' | tr | 3.3 | 8.6 | 7.6 | 0.6 | |

Tunnel 5, DD "A" and DD "B": All stopped in (quartz) felspar porphyry (QFT)

P. H. Sevensma

FIG. 2

| |
|---|
| CONSOLATION CREEK, ATLIN MD. BC. |
| Sunrise, Noon and Sunset claims. Field sketch 104-N-14 |
| P. H. Sevensma Consultants Ltd. - Vancouver B.C. |
| July 1967 |

