

W.A. NO.

NAME

Geol Rpt-

SUBJECT

ARLINGTON

82FNW152-07
PROPERTY FILE

002406

THE SEARCH FOR DISSEMINATED SILVER DEPOSIT - SLOCAN AREA

INTRODUCTION

A detailed description of the Slocan Area will not be given at this stage. The subject is well covered in the literature, particularly in Memoir 308 (G.S.C.) on the Nelson Map Area (West 1/2), Bulletin 29 by Hedley (B.C.D.M.) on the Sandon Area and papers by Ambrose (p.88, Vol. II), Cairnes (p.200, Vol. I) and Hedley (p.205, Vol. I) in "Structural Geology of Canadian Ore Deposits" (C.I.M.). In addition, there are hundreds of descriptions of the various Slocan mines in the annual reports of the B.C.D.M.

Because of the numerous silver mines and showings, the area has been selected as one which might contain a disseminated silver deposit amenable to low-cost open pitting. The basic premise of this investigation would be that the old work was concentrated in the search for high grade vein deposits and that low grade silver values, invisible to the naked eye, might have been overlooked. The occurrence of a disseminated deposit would not necessarily coincide with one of the known high grade zones. The latter are found either in fault fissures or wider and longer shear zones with a maximum width of 100 feet. A disseminated deposit would more likely occur in zones of wide-scale brecciation of a brittle host rock accompanied by complex quartz veining (stock work) and/or pervasive alteration (sericitisation, etc.).

It is theorized that a favourable environment such as that described would probably occur at the intersection of two or more major faults. As a first step, therefore, an air-photo study is proposed in the hope that favourable structural targets could be found. Prior to this stage, a preliminary examination of the area has been made to get a feel for the geology, physical conditions, etc. and to carry out some random rock sampling to see if there is any indication of silver in rocks apart from the known veins.

GENERAL GEOLOGY (See Fig. "B")

The area of interest is underlain by Slocan Series and part of the Nelson batholith. The Slocan Series is composed of strongly folded, faulted and sheared quartzites, phyllites, black schists, argillites and some limestone.

The series has been intruded by many small granite and porphyritic stocks, sills and dykes.

Deposits occur in both the Slocan Series and the Nelson porphyritic granite. In the former, the deposits are fissure veins and composite veins and lodes in or near faults and shears generally having a northeast strike and a southeast dip. The deposits in the granite are veins with northeast and northwest strikes either in a granite host or metamorphosed enclaves of schist or quartzite.

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In the Slocan Series, the principal primary ore minerals are argentiferous galena, freibergite, pyrite, chalcopyrite and sphalerite in a gangue of manganiferous siderite, quartz and some calcite locally.

In the granite the ore minerals are freibergite, native silver, pyrargyrite, argentite, stephanite, argentiferous galena and sphalerite in a quartz gangue usually.

Oxidation of the veins ranges from 50 to 200 feet in depth with the production of limonite, wad, anglesite, cerussite, malachite, etc.

GENERAL IMPRESSIONS OF THE AREA

The topography is quite rugged, overburden extensive and the forest cover is dense. Many of the known showings have been found by driving adits several hundred feet into the hills to intersect a main structure projected from along strike, hence there is usually not much to see at the adit portal except dump material. Since many of the adits are now caved in, a detailed study of the area would have to rely on previous records of development.

Road access is not too bad although many of the routes are so seldom used that one should be prepared to do some road-clearing and due caution should be exercised on some of the narrower trails which were originally intended for horse-drawn carts. A short wheel-base Land Rover would be preferable to our Wagoneer which I found difficult to manage on some of the hairpin bends.

The largest operation in the area is being managed by Violamac on behalf of silmonac. After some 25 years of work in the area a new lode has been found south of sandon on the major Carnation-Richmond fault. The old Violomac Mill is being rehabilitated and a 250 tpd operation planned for the near future. In view of the intense work carried out in this part of the camp it seems highly unlikely that a large disseminated deposit could have been overlooked.

PROPERTIES AND AREAS VISITED (See Fig. A)

NORTH OF CARPENTER CREEK

The properties in this area seem to be mainly fissure-lodes. Reco Mountain is a pronounced feature and is riddled with old workings from which substantial silver production resulted. The host rocks are Slocan sediments, mainly argillites and quartzites. Reco Silver Mines have put together a large sized block of old claims but have really done little development work in recent years except retimbering several portals and putting in some new access roads. This company has under option the old Chambers deposit which was supposed to contain dissemination of the ore minerals in the wall rock. The Chambers adit was examined at the portal. Greenish and rusty quartzite was sampled at the portal and 100' west, 200' west, 550' west and 1,000 feet west, respectively. These five samples all returned assays of less than .05 ozs/ton silver (the detection limit of the assaying method) and therefore no dissemination away from the vein could be shown.

The vein material is quartz with galena, sphalerite, pyrite and tetrahedrite. The host rocks were moderately dipping thickly bedded quartzite and crumpled argillite and schist, limonitic staining is widespread through oxidation of pyrite in the black argillites but this feature is common throughout the region and does not seem related to specific ore zones.

One sample of heavily iron stained argillite 500 feet downhill from the Reco 5310 adit returned 0.09 ozs/ton silver showing at least that some anomalous silver values can be found in the host rocks.

SOUTH OF CARPENTER CREEK

Many of the old mines in this area and the new Silmonac find are in or adjacent to a major fault/shear zone striking east-northeast for three miles. It is generally known as the Carnation fault since at the Carnation property it is 100 feet wide. At the east end is the Richmond property which was visited. A quartz vein, deeply weathered and corroded, is still exposed on this property and a surface sample over 10 feet assayed 1.13 ozs/ton silver. Quartzite and black argillite sampled in five locations adjacent to the vein returned .05 ozs/ton silver or less so that no dissemination could be detected.

BOSUN MINE (South of New Denver)

The lowest adit, practically at the Slocan Lake level was visited. New timbering and a locked adit door showed that recent work has been carried out here. The Bosun was quite a profitable producer in the past - some 1.9 million ozs. of silver are recorded. Material on the dump was largely dark quartzitic argillite and grey quartzite. A sample of apparently barren quartzite returned 1.49 ozs/ton silver while a sample of black argillite assayed 0.10 ozs/ton. The quartzite should be sampled again as this could represent a dissemination of silver in rocks probably not systematically sampled in the past.

COMSTOCK

This property was visited because old reports indicated dissemination of silver in a crushed zone in granite. The zone was found to be very narrow - only five feet wide which assayed 0.11 ozs/ton silver at surface where sampled. On the dump, however, a sample of intensely sericitised granite with green carbonate spots returned 3.22 ozs/ton silver and a sample of fresh granite gave 0.09 ozs/ton. A sample of altered granite with brown biotite flakes on the same dump gave only less than .05 ozs/ton silver.

1,000 feet downhill from the main adit two samples of greenish altered and rusty granite assayed less than .05 ozs/ton silver but one other sample of essentially the same material assayed 0.36 ozs/ton. The limited sampling showed that while silver is not extensively disseminated in the granite host, samples of apparently barren rock can contain anomalous values. The Comstock lies off the main silver zones in an apparently later granite (Valhalla) intrusive into Nelson granite.

On the dump the ore-zone is represented by quartz vein material apparently in stockwork form - grab samples assayed 1.63 ozs/ton silver and 2.00 ozs/ton, respectively. Two samples of rusty quartzite, one from the dump and the other from the portal, both assayed less than .05 ozs/ton as did a sample of brecciated quartzite 50 feet from the portal. No dissemination of silver into the wall rocks could, therefore, be shown.

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This is still an active property though the success of the operation is somewhat in doubt.

The high grade ore occurs as quartz veining with native silver in a crush zone in granite. The crush zone is 10 to 20 feet wide and within it the granite is intensely altered by sericitisation, chloritization and by green carbonates. The unaltered wall rock is a porphyritic granite with feldspar phenocrysts up to 1" long.

At the lowest adit, a large sample of fresh granite on the dump assayed less than .05 ozs/ton silver and one of altered granite also ran less than .05 ozs/ton. At the #2 adit now disused, a 10 foot chip sample 0 - 10 feet north of the portal assayed 1.78 ozs/ton silver - the host was brecciated granite not well altered. Two samples from the south wall of the adit and a sample of fresh granite from the dump all returned less than .05 ozs/ton silver. The high assay only shows that values can be obtained in non-vein material but does not indicate widespread dissemination.

OTTAWA 82FNW155

This property is in an identical setting to the Arlington. Three samples of unaltered granite from the lowest adit dump returned less than .05 ozs/ton. The sample of altered granite was less than .05 ozs/ton but another returned 1.65 ozs/ton. Vein material assayed 2.14 ozs/ton. Again, the 1.65 ozs assay from altered granite shows that values can occur in non-vein material.

CONCLUSIONS

The main point of the trip was to gain familiarisation with local conditions. However, the random sampling did show that silver occurs in host rocks apart from quartz veining and might have been overlooked in this context.

I favour the granite as a host for a disseminated deposit. This rock type is more brittle and liable to brecciation which I consider necessary for wide-scale infusion of silver values.

I think an air photo study should now be carried out with a view to choosing structural targets where brecciation is likely to occur. As a preliminary, the photos could be examined at the photo library in Victoria to save the time and expense of purchasing a set.

R. A. Dujardin.

Vancouver, British Columbia.

16 July 1970.



GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

FIG. "A"

Location of Properties Visited

1" = 4 miles

SHEET 82F (v)

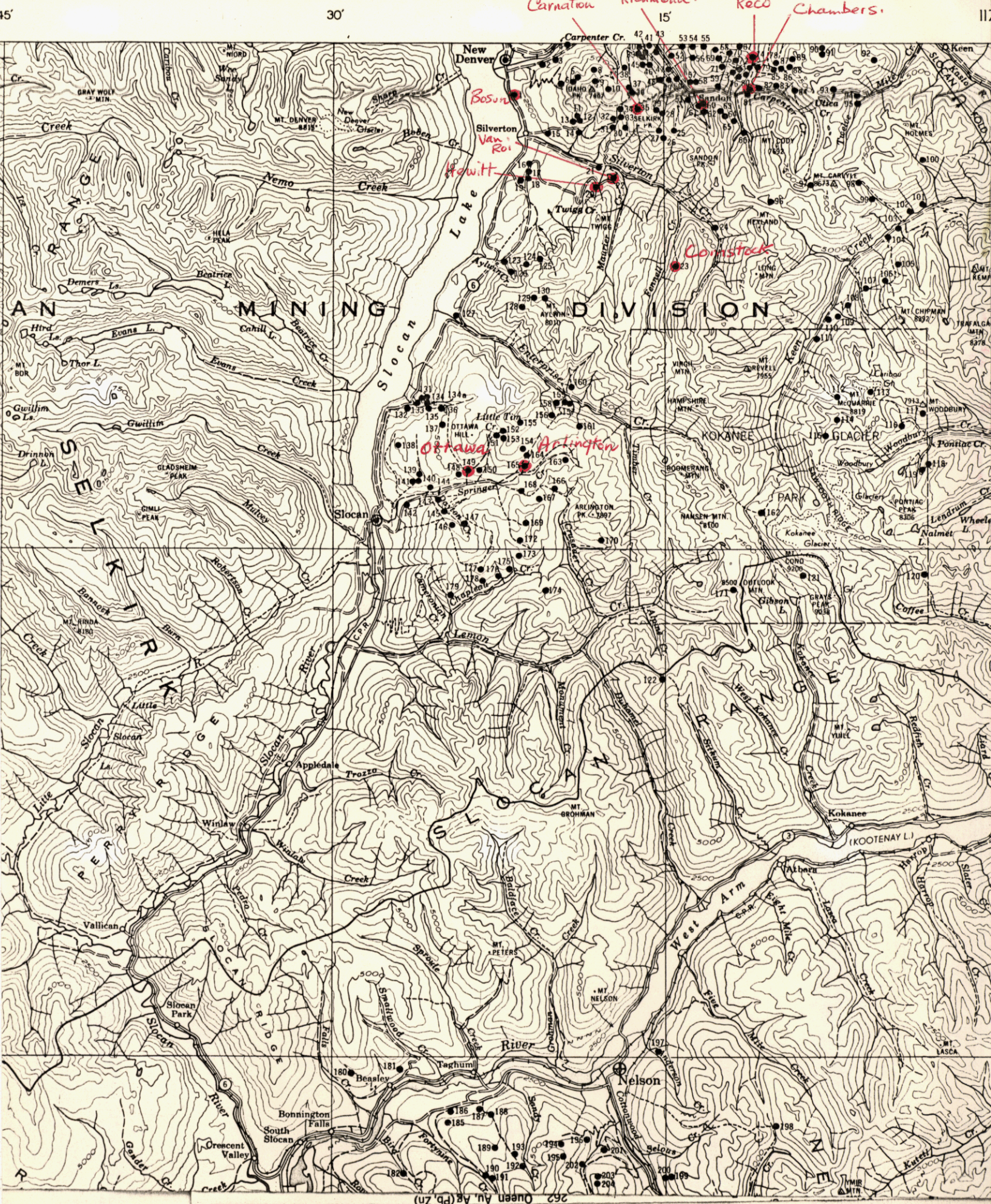


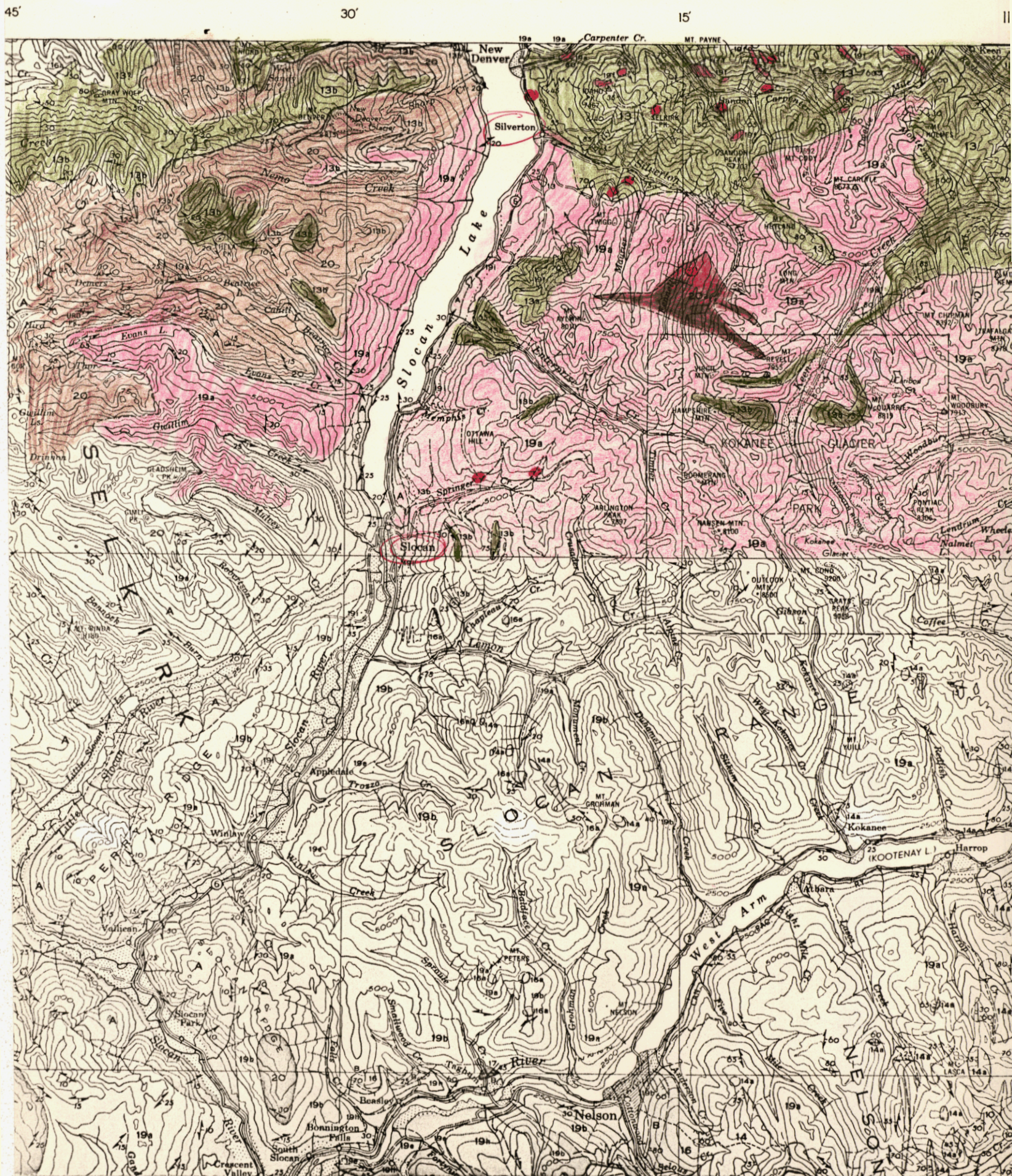
FIG. B,
Geology - Slokan Area





1" = 4 miles



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SHEET 82F (1)



-  L. Cretaceous - Vakholla Plutonic Rocks (granite)
-  Triassic - Slokan Group (sediments)
-  L. Cretaceous - Nelson Plutonic Rocks (granite)
-  properties visited

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Laboratories Limited

325 HOWE STREET - VANCOUVER 1, B.C.

TELEPHONE 688-3504

ASSAYERS
CHEMISTS
GEOCHEMISTS

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM

CANADIAN SUPERIOR EXPLORATIONS LTD.

REPORT NO.

V-7827

SAMPLE(S) OF

ROCK

1oz/T = 33ppm
1 = 33
.05 = 1.6

	Sample No.	Silver (Ag) oz:ton	
82FNW064 → Van Roi	51 ✓	1.03	Comp. grab of Qtz breccia on dump
Van Roi	52 ✓	<.05	" " " rusty qtz at portal
Van Roi	53 ✓	<.05	" " " Qtz breccia 50' from portal
82FNW152 → <u>Arlington</u>	54	1.78	Chips/10', 0-10' N of #2 adit portal;
"	55 ✓	<.05	grab of crushed granite S. wall of #2 adit
"	56 ✓	<.05	fresh porph. granite 10'S of #2 adit.
"	57 ✓	<.05	fresh porph. granite #2 dump
"	58 ✓	<.05	altered ^{porph} granite #1 dump
"	59 ✓	<.05	fresh porph. granite #1 dump
82FNW155 <u>Ottawa</u>	60 ✓	<.05	" " " lowest adit dump
"	61 ✓	<.05	" " " " " "
"	62 ✓	<.05	" " " " " "
"	63	1.05	altered granite lowest adit dump
"	64	<.05	" " " " " "
"	65	2.14	Vein Q with PbS, Cp, + ?Tetra.
	70	---	lowest adit dump
82FNW35 <u>Reco (Chambers)</u>	71 ✓	<.05	green qtz W. wall adit portal
	78 ✓	<.05	" " 100'W of " "
	79 ✓	<.05	" " 200'W " " "
	80 ✓	<.05	Rusty qtz 550'W " " "

oz:ton - Troy ounces per 2,000 lbs.

DATE July 10, 1970.

SIGNED R. B. Ditcher

PULP AND REJECTS DISCARDED AFTER 3 MONTHS

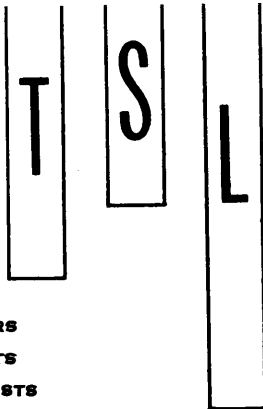
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82FNW152-01

PROPERTY FILE

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VAN RO1
82FNW064 (14W)



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TELEPHONE 688-3504

ASSAYERS
CHEMISTS
GEOCHEMISTS

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM CANADIAN SUPERIOR EXPLORATIONS LTD.

REPORT NO.
V-7827

SAMPLE(S) OF ROCK

Sample No.	Silver (Ag) oz:ton
51	1.63
52	<.05
53	<.05
54	1.78
55	<.05
56	<.05
57	<.05
58	<.05
59	<.05
60	<.05
61	<.05
62	<.05
63	1.65
64	<.05
65	214
76	---
77	<.05
78	<.05
79	<.05
80	<.05

oz:ton - Troy ounces per 2,000 lbs.

DATE July 10, 1970.

SIGNED R B Fletcher

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325 HOWE STREET - VANCOUVER 1, B.C.

TELEPHONE 688-3504

ASSAYERS
CHEMISTS
GEOCHEMISTS

CERTIFICATE OF ANALYSIS

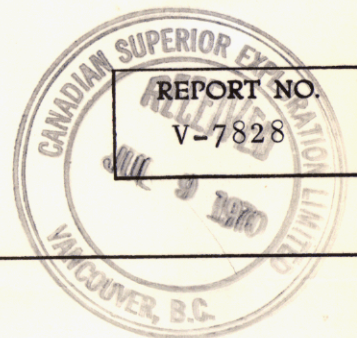
SAMPLE(S) FROM Canadian Superior

1oz/T = 33 ppm

.1 = 3.3 ppm

SAMPLE(S) OF

.05 = 1.6 ppm



	Sample No:		Silver (Ag) oz:ton	
50' E of small adit Reco Chambers	81 ✓	PPM	<.05	rusty stained qtz
500' downhill from Reco 5310 adit	82 ✓	2.97	.09	heavily rust stained argillite
100' N. of Richmond adit	83 ✓	1.65	.05	hard dark quartzite
" " " " "	84 ✓		<.05	black schist
0-10' S. of Richmond adit	85 ✓		<.05	black argillite
10-20' S " " "	86 ✓	37.29	1.13	weathered Q vein
30' S " " "	87 ✓		<.05	argillite
60' S " " "	88 ✓		<.05	"
Dump - lower Bosun adit	89 ✓	49.17	1.49	grey quartzite
" " " " "	90 ✓		<.05	black argillite
" " " " "	91 ✓	3.30	.10	" "
Portal of Comstock adit	92 ✓	3.63	.11	crushed granite / 3'
Wall of Comstock adit	93 ✓	2.97	.09	fresh granite
Dump Comstock	94 ✓	106.26	3.22	sericised granite with green carb. spots
" " "	95 ✓		<.05	altered granite with brown brookite flakes
1000' downhill from Comstock	96 ✓		<.05	greenish altered granite near Queen
75' downhill from #96	97 ✓	11.88	.36	greenish rusty granite
75' downhill from #97	98 ✓		<.05	" " "
Van Roi dump	99 ✓	66.00	2.00	Q veining with sphalerite
" " "	100 ✓		<.05	rusty quartzitic argillite

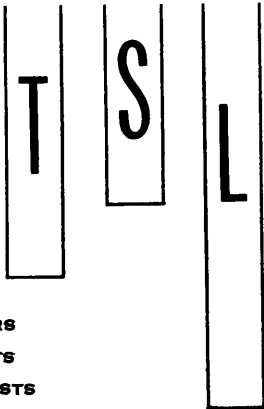
N.B. #99 read 2.00

DATE July 8, 1970

SIGNED R. B. Fletcher

PULP AND REJECTS DISCARDED AFTER 3 MONTHS

DIVISION OF TECHNICAL SERVICE LABORATORIES



Laboratories Limited

325 HOWE STREET - VANCOUVER 1, B.C.

TELEPHONE 688-3504

ASSAYERS
CHEMISTS
GEOCHEMISTS

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM **Canadian Superior**

REPORT NO.
V-7828

SAMPLE(S) OF

Sample No:	Silver (Ag) oz:ton
81	<.05
82	.09
83	.05
84	<.05
85	<.05
86	1.13
87	<.05
88	<.05
89	1.49
90	<.05
91	.10
92	.11
93	.09
94	3.22
95	<.05
96	<.05
97	.36
98	<.05
99	2.00
100	<.05

N.B. #99 read 2.00

DATE July 8, 1970

SIGNED _____



GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

Fig. A
Location of Properties Visited
1" = 4 miles

SHEET 82F (1)

