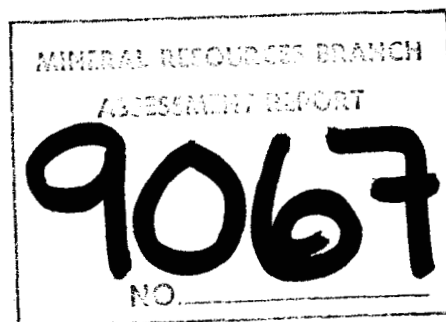


GEOLOGICAL REPORT
ON THE
DOLLY VARDEN PROPERTY
(117°16'W - 50°07'N)
SLOCAN MINING DIVISION
BRITISH COLUMBIA

82 K/3W

For

MIKE McCRORY
New Denver, B.C.



January 1981

James Snell, P.Eng.
Geological Engineer

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INTRODUCTION

The writer was requested by Mr. Mike McCray of New Denver, B.C. to complete a geological report on the Dolly Varden Property in the Slocan Mining Division of southeastern British Columbia. This property is owned by Mr. McCrory as to 50% and by ~~Mr.~~ Mr. McCrory in trust for the writer as to 50%.

The property is located 10 miles (16 km) northeast of the village of New Denver and two field trips were made to the location in September and again in October, 1980.

It is the opinion of Mr. McCrory that to his knowledge this is the first visit that a geologist has made to the property and almost nothing is mentioned in B.C. Government mining reports.

The property consists of two Crown granted mineral claims and one located mineral claim of 20 metric units.

The mineral zone cuts across the southwest flank of Mount Dolly Varden at a high elevation. The location was in the past completely isolated and inaccessible, however, a good logging road has been constructed into the area and across the claim block.

Accessibility is no longer a problem but prevented the development of the property in the past.

This report includes observations made during the field trips and recommendations for development of what appears to be a significant mineralized structure.

Only one small underground working was observed during the investigation which was a prospect crosscut 60 feet in length and a drift along a quartz vein approximately 60 feet in length.

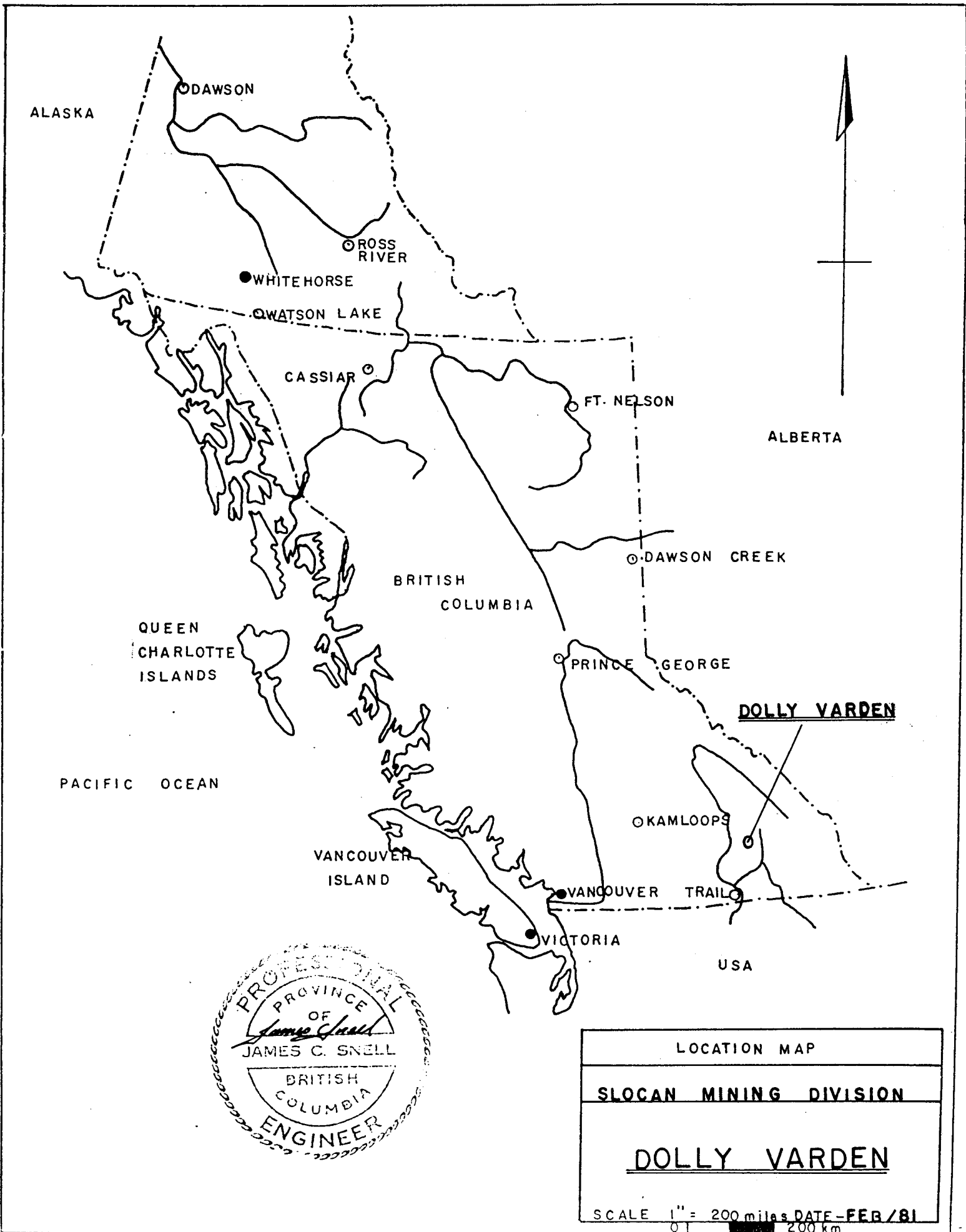
Four samples were taken for analysis.

One sample taken during the second trip weighing about 10-lb. was selected at random from the dump at the adit and from a surface trench 50 feet above the adit. This sample consisted of approximately a dozen pieces of quartz with minor disseminated tetrahedrite was assayed at Lakefield Research giving the following results.

Au (gold) = 1.30 g/t (~~0.1 oz/ton~~)
Ag (silver) = 1595.79 g/t (~~97.4 oz/ton~~)

The sample was not especially well mineralized, however, high silver values were obtained indicating the possible presence of native silver.

A similar sample taken from the dump on the first field trip ran 27. Ag oz/ton.



ALASKA

○ DAWSON

○ ROSS RIVER

● WHITE HORSE

○ WATSON LAKE

○ CASSIAR

○ FT. NELSON

ALBERTA

○ DAWSON CREEK

BRITISH COLUMBIA

QUEEN CHARLOTTE ISLANDS

○ PRINCE GEORGE

DOLLY VARDEN

PACIFIC OCEAN

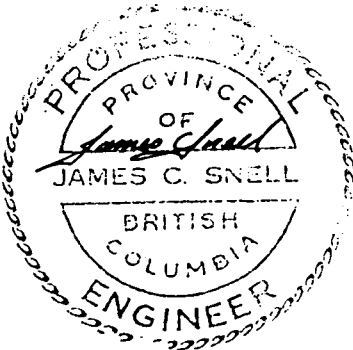
○ KAMLOOPS

VANCOUVER ISLAND

○ VANCOUVER TRAIL

● VICTORIA

USA



LOCATION MAP
SLOCAN MINING DIVISION
<u>DOLLY VARDEN</u>
SCALE 1" = 200 miles DATE - FEB/81 0.1 200 km

CONCLUSIONS

It can be concluded from the initial investigations of the Dolly Varden, that this property has production potential and that to this end systematic exploration and development should be carried out in the future.

It is apparent that the property has not been developed in the past due to high access costs, a result of the isolated location. Good gravel roads with moderate grades have been constructed through logging areas and cross the claim block. Approximately 2 km of access road will be required to tie in the present logging road to a proposed portal site.

The property exhibits strong structural controls being a faulted formational contact extending for at least a mile through the claim block.

A main quartz lode centered within a zone of alteration runs the entire length of the property approximately 1600 metres (5000 feet). The quartz lode is mineralized with pyrite, tetrahedrite and possibly native silver.

Due to the continuity and strength of the mineralized structure, underground development is proposed as a means to achieve exploration objectives.

The exploration objective will be to determine the extent of economic mineralization, to define economic grades and widths for mining purposes and to determine if ore grade material occurs in sufficient quantity to justify production.

It is doubtful that the entire length of the main quartz lode will be of ore grade and width. It is presumed that orebodies must be located and defined within the structure both on strike and on dip.

Topography is such that only a limited surface exploration program will be possible. Such a program would by no means adequately explore strike and dip dimensions but rather might define limited near surface exposures.

In summary it can be said that this property has some of the best potential of any property observed by the writer in the Slocan district. Present access roads make it possible to investigate and develop this potential.

RECOMMENDATIONS

PROGRAM & BUDGET

Phase I - Surface Access and Exploration

1. Access road construction, 2 km.	\$ 25,000.00
2. Surface trenching, investigation and sampling	15,000.00
3. Limited surface drilling 2000 feet @ \$25/ft.	50,000.00
4. Portal site preparation	<u>15,000.00</u>
	\$105,000.00
5. Contingencies, supervision, engineering, administration, 20%	<u>21,000.00</u>
Total Phase I	<u>\$126,000.00</u>

Phase II - Underground Development

1. Portal installation	\$ 25,000.00
2. Crosscut 1000 ft. @ \$200/ft. balance applied against Program 3.	200,000.00
3. Drifting on the lode with drill crosscuts, 2500 ft. @ \$200/ft.	500,000.00
4. Underground diamond drilling 5000 ft. @ \$20/ft.	<u>100,000.00</u>
	\$825,000.00
5. Contingencies, assays, engineering, supervision, administration, 20%	<u>165,000.00</u>
Total Phase II	<u>\$990,000.00</u>

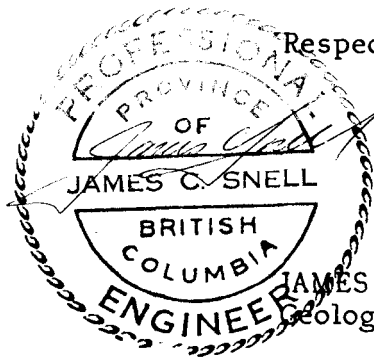
Phase III - Preproduction

1. Raise on ore blocks 1000 feet @ \$200/ft.	\$200,000.00
2. Contingencies, etc. 20%	<u>40,000.00</u>
	<u>\$240,000.00</u>
 Sub-Total Program	 \$1,356,000.00
Cost over-runs 10%	<u>135,600.00</u>
 TOTAL	 <u>\$1,491,600.00</u>

The continuation of a phased program as outlined will be dependent upon the results obtained during the previous phase.

Continued exploration programming can be adjusted to the results obtained.

Respectfully submitted,



JAMES C. SNELL, P.Eng.
Geological Engineer

PROPERTY AND LOCATION (117°16'W; 50°07'N)

<u>Claim Name</u>		<u>Number</u>
Dolly Varden	- reverted Crown grant	L4101
Archie Fr.	- reverted Crown grant	L3631A
Dolly	- located claim	2197
	20 metric units, Tag 40533	

The claims are located in the Slocan Mining Division of southeastern British Columbia on Mount Dolly Varden, 16 km northeast of the village of New Denver.

The Crown granted mineral claims have reverted to Mr. Mike McCrory of New Denver. The Dolly claim was located by Mr. McCrory and consists of 20 metric units, each unit being 500 metres square. The located mineral claim is centered over the original Crown grants, covering fractions as well as the lateral and down dip extensions.

ACCESS

Access is by paved road from the village of New Denver north to the Wilson Creek cutoff at Rosebery; (a distance of 5 kilometres); then by good gravel road along Wilson Creek for 5 kilometres; then by good gravel forestry access road to the claim group; a distance of approximately 15 kilometres. Total distance from New Denver is about 27 kilometres by road.

Approximately 2 km of access road construction will be required to reach the mineral showing and the proposed work area from the existing logging road.

New Denver can be reached by paved road either from Revelstoke in the north or Castlegar in the south. Castlegar is serviced daily by aircraft from Vancouver and Calgary.

TOPOGRAPHY

The property is located on the southwest flank of Mount Dolly Varden. The mineralized structure can be observed running across the flank of the mountain at an elevation of 6,500 feet. Topography is steep and mountainous; however, access roads follow contours and are well constructed with moderate grades.

CLIMATE AND VEGETATION

The claim area is within a relatively heavy snowfall belt and the property would be snow free for about 4 months. The heavy snowfall would not prevent underground operations, however, clearing access roads during December, January and February, periods of maximum snowfall, would be required.

Initial surface work such as establishing portal sites and completion of access roads would be accomplished during the summer months. Winters are generally short and mild, precipitation can be high and a significant snowpack generally accumulates in most of the district. Summers are generally long, warm and dry.

The claims are located where alpine vegetation conditions prevail. Timberline is at about 6500 feet. heavy timber conditions exist in most of the district. Such types as fir, hemlock and cedar prevail. At lower elevations fruit trees are common such as apple, cherry and plum.

TRANSPORTATION AND SUPPLIES

The highway from Trail to New Denver, a distance of approximately 130 kilometres, is paved and maintained throughout the year. Most supplies would be purchased in New Denver, Trail or Nelson. Castlegar, 32 km north of Trail, has daily airline service from Vancouver and Calgary. C.P. Rail services the district with a line extending from Rosberry to Nakusp. Rail cars are barged from Slocan City to Rosberry on Slocan Lake and offload at Rosberry.

HISTORY

The Slocan mining camp has been a producer of silver-lead-zinc ores for approximately ninety years. Production commenced about 1890 with the greatest activity being reached in the 1920's. Production declined during the ensuing depression period as metal markets declined. Presently, there is one producing mine in the area; Silvana Mines Ltd. at Sandon, B.C., milling at a rate of about 150 t.p.d.

Due to the present high metal prices there is a great deal of exploration activity in the district by individuals as well as by large companies such as ASARCO, Riocanex, AMOCO, British Petroleum and Anvil.

The Dolly Varden property was staked in 1900, and a small prospect tunnel was driven on a northwest exposure of the mineral zone. The only comments found in government publications are as follows:

B.C.M.M. 1901, p.827

"The season has been one of the best the division as seen as far as development and ore shipments are concerned. No less than 16 prospects have become shipping mines, including Sweetgrass, Turris and Pinto which are situated on Goat Mountain about one mile to the northeast of New Denver, and the Dolly Varden and Rolett situated on the north fork of Carpenter Creek. These two last run very high in silver values with about \$8.00 in gold per ton."

THE GEOLOGY OF DOLLY VARDEN

The property is unique to the district in that mineralization has been localized over a long strike length along a prominent formational contact. The Slocan Group of sediments and the Kaslo Series of volcanics form a northwesterly trending disconformable contact that runs through the property and extends for several miles to the southeast. In the claim area, this zone of weakness has been faulted and intruded by quartz and locally diorite. Silver bearing minerals occur within the quartz and in part, within the diorite.

The Kaslo volcanics are Permian to Triassic in age and consist of fine grain, grey to green andesite, flows, tuff and breccia.

The Slocan Group consists of a series of sediments of Triassic age. The sediments include grey to black, phyllite, argillite, slate, quartzite and minor interbedded limestone.

The oldest basal unit of the Slocan Group lies disconformably over the volcanics in much of the district. This unit consists of a thick section of black slates and shales with several narrow bands of interbedded gray limestone.

The basal unit is well exposed at the Whitewater Mine near Retallack, east of New Denver.

All formations have been lifted and tilted during periods of plutonic activity and now dip moderately to the southeast at 50° and strike northwesterly and southeasterly. Variations in attitude are due to local folding and faulting.

Both the sedimentary and volcanic units have been invaded by intrusives related to the Kuskanax Batholith to the north. The intrusives include stocks, plugs and dykes of variable composition from diorite to feldspar porphyry.

The zone of mineralization is reported to be over three miles (4,873 metres) in length of which approximately one mile (1600 metres) is exposed within the claim boundaries and is under consideration in this report. Approximately 3000 feet (923 metres) of the mineral zone was observed by the writer and 2000 feet (609 metres) was inspected in greater detail.

The entire zone of alteration and mineralization exhibits a bleached and rusty colour and is generally about 100 feet (30 metres) in width. The rock type is a phyllitic schist (metamorphosed andesite) that has been altered by hydrothermal activity and invaded by quartz.

The mineral zone lies within the volcanics just on the contact and stratigraphically just below the sediments. The actual contact is marked by an abrupt change in topography as the sediments erode quite readily and provide a milder relief. The phyllitic schist and sheared volcanics strike at 110° and dip to the north at 80° .

A strong persistent quartz vein appears to be centered within the zone of alteration. The quartz vein is surrounded by quartz stringers that form a stockwork within the 100 feet width of alteration.

The quartz vein dips to the northeast at 55° and where observed is from 2 to 12 feet in width (0.6 metres to 3.6 metres). These observations were made over a strike length of 2000 feet (609 metres). The average width is probably between four and five feet ($1\frac{1}{2}$ metres).

The vein quartz carries disseminated argentiferous tetrahedrite, minor antimony (not observed) disseminated to massive pyrite and possible native silver (not observed).

Tetrahedrite (Cu, Fe, Zn, Ag) $12 \text{ Sb}_4 \text{ Si}_3$ is an antimonial sulphide that can carry copper, iron, zinc and silver in variable amounts. The mineral can run quite high in silver and on the property exhibits surface oxidation, blue and green copper stain is common denoting the presence of copper.

It is possible that some areas of the quartz stockwork in association with the main vein will provide large quantities of low grade ore.

The main vein appears to strike due east and west trending slightly to the north of the main formational contact as one progresses in an easterly direction. The surface trace of the vein rises in elevation towards the east.

1500 feet (460 metres) east of the prospect tunnel, the vein reaches a width of 10 to 12 feet (3 metres) and is at this location quite heavily mineralized with pyrite. At this location and adjacent to the vein an intrusive stock of fine grained diorite was observed to form the footwall. Heavy pyrite mineralization was noted in this area, however, no surface or underground work has been done. It is possible that this part of the lode may be gold bearing.

This location would be a good location for initial development.

The prospect adit crosscuts the mineral zone for 60 feet. The main quartz vein was intersected and drifted on for about 50 feet. The vein varies in width from 2 feet to 5 feet. Very little sulphide mineralization was noted in the back of the drift, however, good tetrahedrite was found in the floor. Samples taken across the back at this point were low in silver.

During the second field trip the mineral zone was inspected to the northwest of the prospect tunnel. Here the topography is lower and the zone becomes covered with overburden.

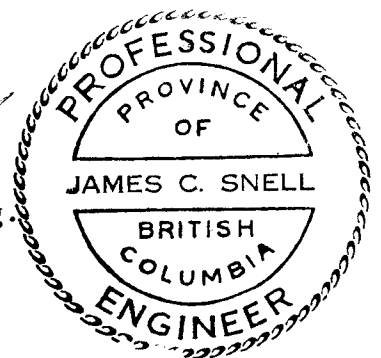
The main formational contact does continue in a westerly direction for several kilometres and the mineral zone is reported to outcrop on Dixey Creek, one mile (1600 metres) west of the prospect tunnel. This ground is held by P. Leontowicz of Hills, B.C.

CERTIFICATE

I, James C. Snell, with business and residential address in British Columbia, do hereby certify that:

1. I am a geological engineer.
2. I am a graduate of the University of Alaska, School of Earth Sces and Mineral Industry, Fairbanks, Alaska, U.S.A.
3. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario, Canada.
4. I have received a Bachelor of Science Degree in the Geological Sciences in 1964.
5. I am registered as a Professional Engineer in the Province of British Columbia.
6. I have examined the Dolly Varden property on two seperate occasions in the fall of 1980 and I have arrived at the conclusions and made the recommendations included in this report based upon field examinations.
7. I have a 50% carried interest in the Dolly Varden property.

James C. Snell
JAMES C. SNELL, P.Eng.



LAKEFIELD RESEARCH OF CANADA LIMITED
LAKEFIELD, ONTARIO
CANADA

Certificate of Analysis

Date: Nov. 14, 1980

Received: Oct. 31, 1980

From: C. Snell,
R.R. No. 1,
APSLEY, Ontario

Our Reference No. 8022508

Invoice No. 15355

Samples submitted to us show results as follows:

Rock Sample - Au = 1.30 g/t
Ag = 1595.79 g/t

To: Mr. C. Snell (2)

SIGNED

D.M. Wyslouzil

MANAGER

D.M. Wyslouzil, P. Eng.,

Analysis and Assaying - Mineral Processing Research - Pilot Plant Investigations

Mineral Act — Province of British Columbia
Form A

MAP NO. 82K/3W

RECORD OF MINERAL CLAIM

MINING RECEIPT NO. 88829-E



RECORD NO. 612

RECORDED AT KASLO, B.C., THIS 3rd DAY OF APRIL 1978.

DO NOT WRITE IN
SHADED AREAS
FOR OFFICE USE ONLY

[Signature]
MINING RECORDER MINING DIVISION SLOCAN

APPLICATION FOR REVERTED CROWN-GRANTED MINERAL CLAIM
(Mineral Act)

Douglas McCree
(NAME)
Box 301, New Denver B.C.
(ADDRESS)

AGENT FOR _____ (NAME)

(ADDRESS)

VALID SUBSISTING F.M.C. No. 163977 VALID SUBSISTING F.M.C. No. _____

make application for a record of a mineral claim of the following reverted Crown-granted mineral claim(s).

If more than one claim appears in this application, the applicant(s) hereby certifies (certify) that the claims all adjoin and do not collectively exceed 40 acres.

Name of Claim	Lot No.	Mining Division	Land District	Acreage
<u>Dolly Varden</u>	<u>4101</u>	<u>Slocan</u>	<u>Kootenay</u>	<u>51.65</u>

The prescribed fee, in the amount of \$ 25.00, is submitted herewith. Total 51.65

[Signature]
Signature

Time A.M. 11:00
P.M. _____

OFFICE USE ONLY

Gold Commissioner
RECEIVED
APR 3 1978
M.R. # 88829-E s. 50.00
MR STAMPKASLO, B.C.

Work No.'s	Recorded	M.R.	Year of Expiry	Transfers
				(Bills of Sale, Assignments, Conveyances)
<u>2790</u>	<u>Mar. 26/79.</u>	<u>129430-E</u>	<u>Apr. 3/80.</u>	
<u>4555</u>	<u>Mar 28/80</u>	<u>143587-E</u>	<u>Apr 3/81</u>	

Mineral Act - Province of British Columbia
Form A

MAP NO 82K/3W

RECORD OF MINERAL CLAIM

MINING RECEIPT NO. 88829-E



RECORD NO. 611

RECORDED AT KASLO, B.C., THIS 3rd DAY OF APRIL 19 78.

DO NOT WRITE IN
SHADED AREAS
FOR OFFICE USE ONLY

[Signature]
MINING RECORDER SLOKAN
MINING DIVISION

APPLICATION FOR REVERTED CROWN-GRANTED MINERAL CLAIM
(Mineral Act)

MICHAEL McCREY
(NAME)
Box 301, New Dundee BC
(ADDRESS)

AGENT FOR _____
(NAME)

(ADDRESS)

VALID SUBSISTING F.M.C. No. 163977 VALID SUBSISTING F.M.C. No. _____

make application for a record of a mineral claim of the following reverted Crown-granted mineral claim(s).

If more than one claim appears in this application, the applicant(s) hereby certifies (certify) that the claims all adjoin and do not collectively exceed 40 acres.

Name of Claim	Lot No.	Mining Division	Land District	Acreage
ARCHIE FR.	3631A	Slocan	Kootenay	48.34

The prescribed fee, in the amount of \$ 25.00, is submitted herewith. Total 48.34

[Signature]
Signature

Time A.M. 11:00
P.M. _____

OFFICE
USE
ONLY

Gold Commissioner
RECEIVED
APR 3 1978
M.R. # 88829-E \$50.00
MR STAMP KASLO, B.C.

Work No.'s	Recorded	M.R.	Year of Expiry	Transfers (Bills of Sale, Assignments, Conveyances)
2789	Mar. 26/79.	129130-E	Apr. 3/80.	
4556	Mar 28/80	143587-E	Apr. 3/81	

LAKEFIELD RESEARCH OF CANADA LIMITED
LAKEFIELD, ONTARIO
CANADA

Certificate of Analysis

Date: Nov. 14, 1980

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From: C. Snell,
R.R. No. 1,
APSLEY, Ontario

Our Reference No. 8022508

Invoice No. 15355

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Ag = 1595.79 g/t

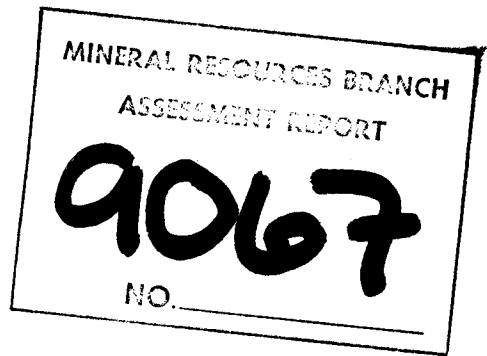
To: Mr. C. Snell (2)

SIGNED

D.M. Wyslouzil

MANAGER

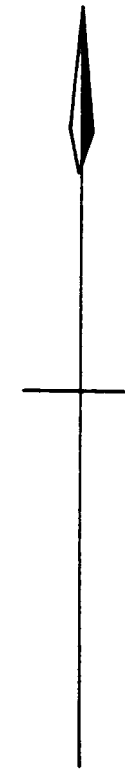
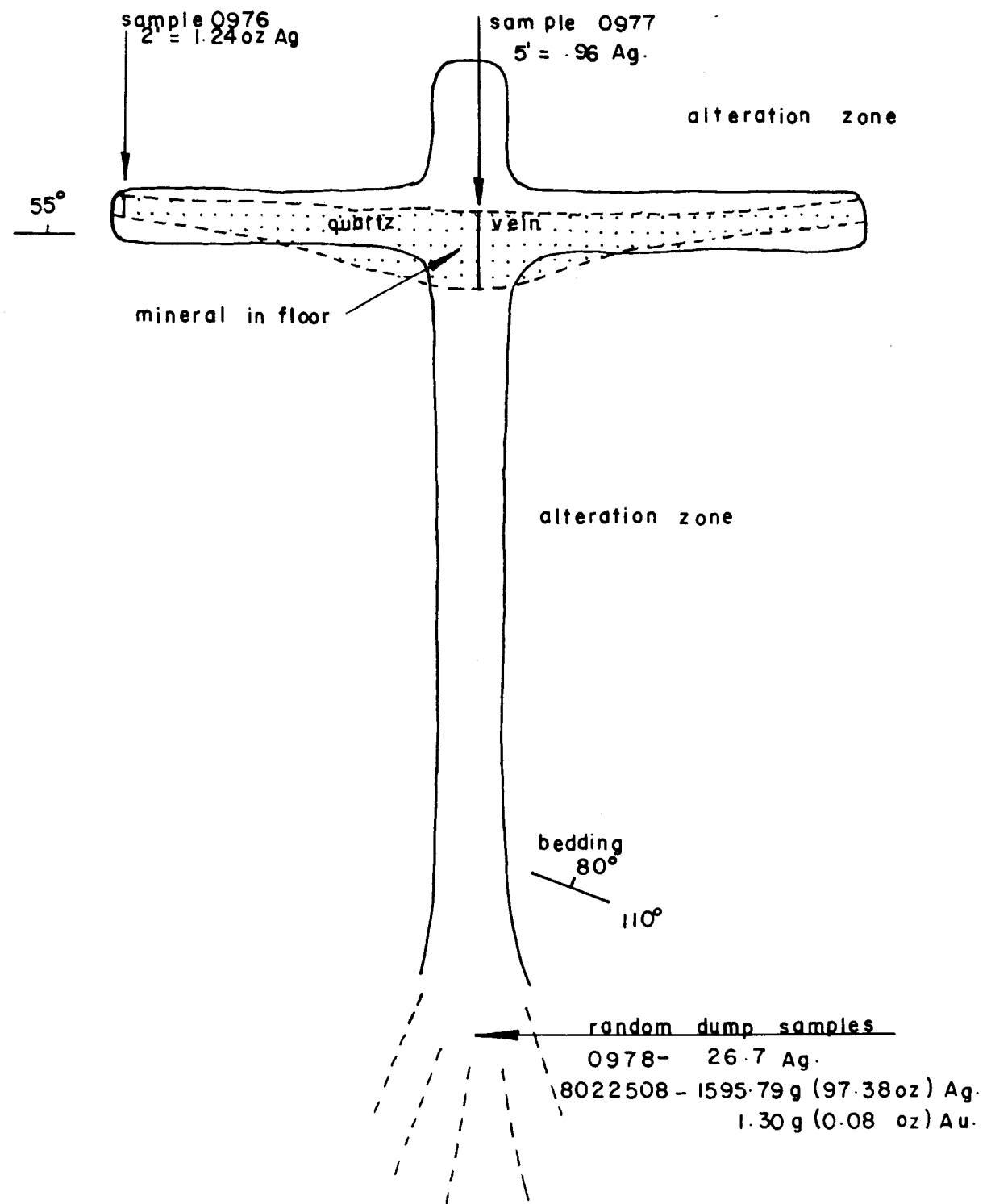
D.M. Wyslouzil, P. Eng.,



STATEMENT OF COST
DOLLEY VARDEN PROPERTY
NEW DENVER, B.C.

(1) Field trip. Sept. 1980	\$ 200.00
mapping, samples taken	
vehicle 4 x 4 plus mileage	
and fuel.	50.00
(2) Field trip. Oct. 1980	200.00
investigation of westerly	
part of vein system	
vehicle 4 x 4 plus mileage, fuel	50.00
(3) Geological Research	200.00
(4) Drafting and Map preparation	300.00
(5) Geological Report, preliminary	1,200.00
report and final report	
TOTAL	<hr/> \$2,200.00

A handwritten signature in black ink, appearing to read "J. Smith" or similar, written in a cursive style.



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9067
NO. _____

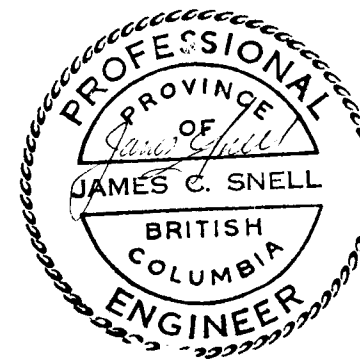


Fig.3
UNDERGROUND PROSPECT TUNNEL
DOLLY VARDEN PROPERTY
Slocan District, B.C.

scale - 1" = 10' date - January 1981
drawn by - J.C. Snell P. Eng.

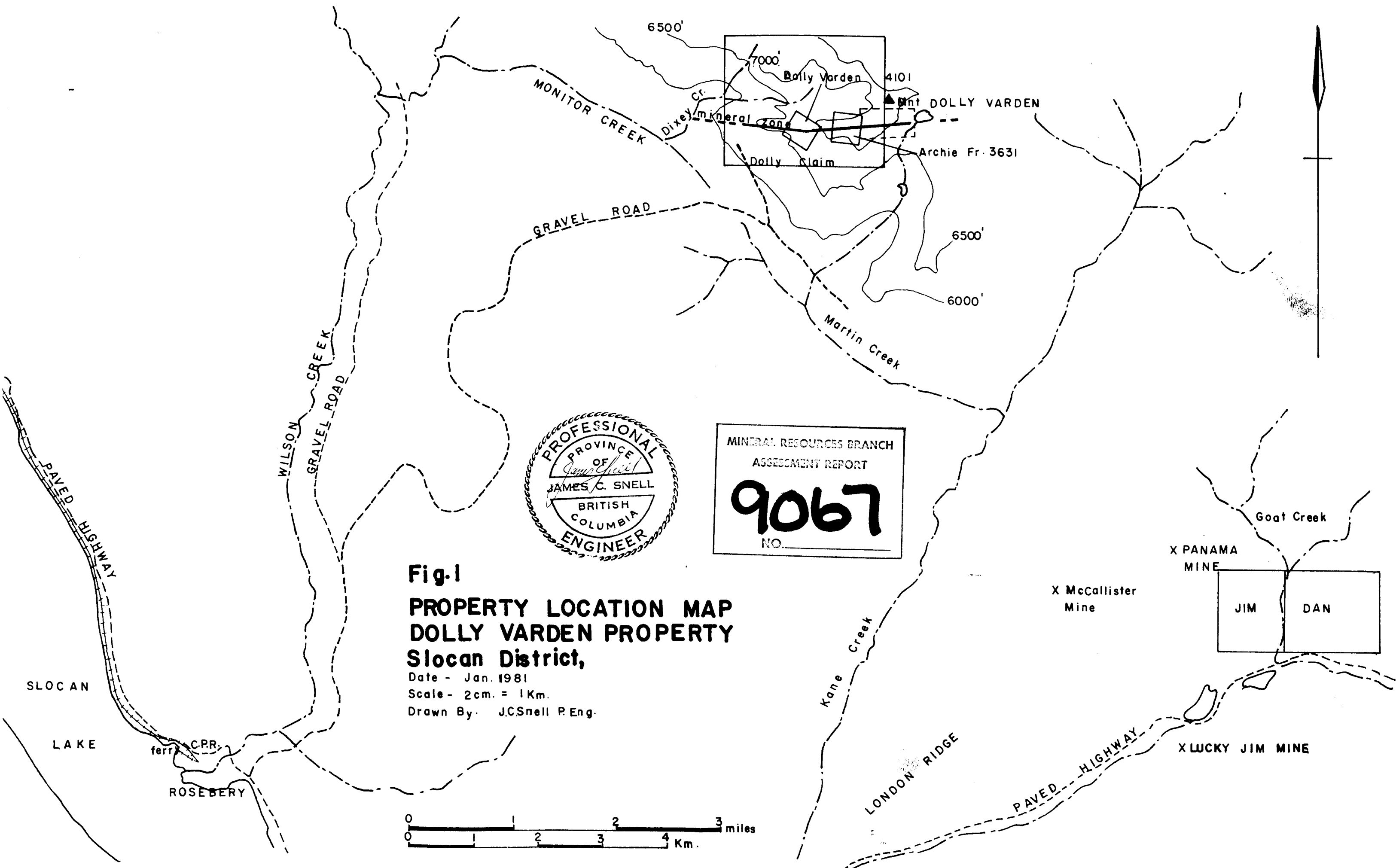
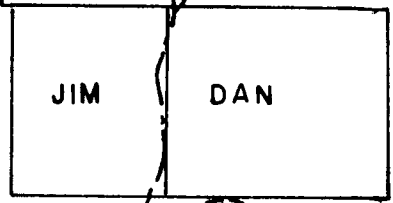
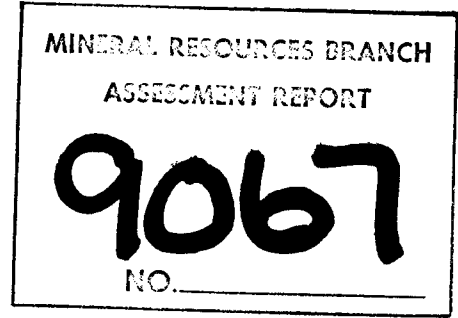
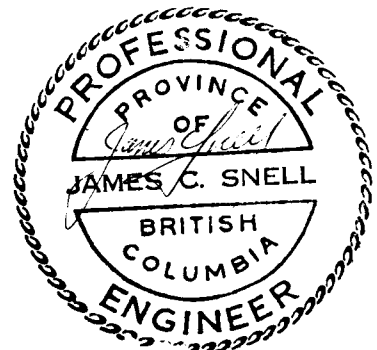
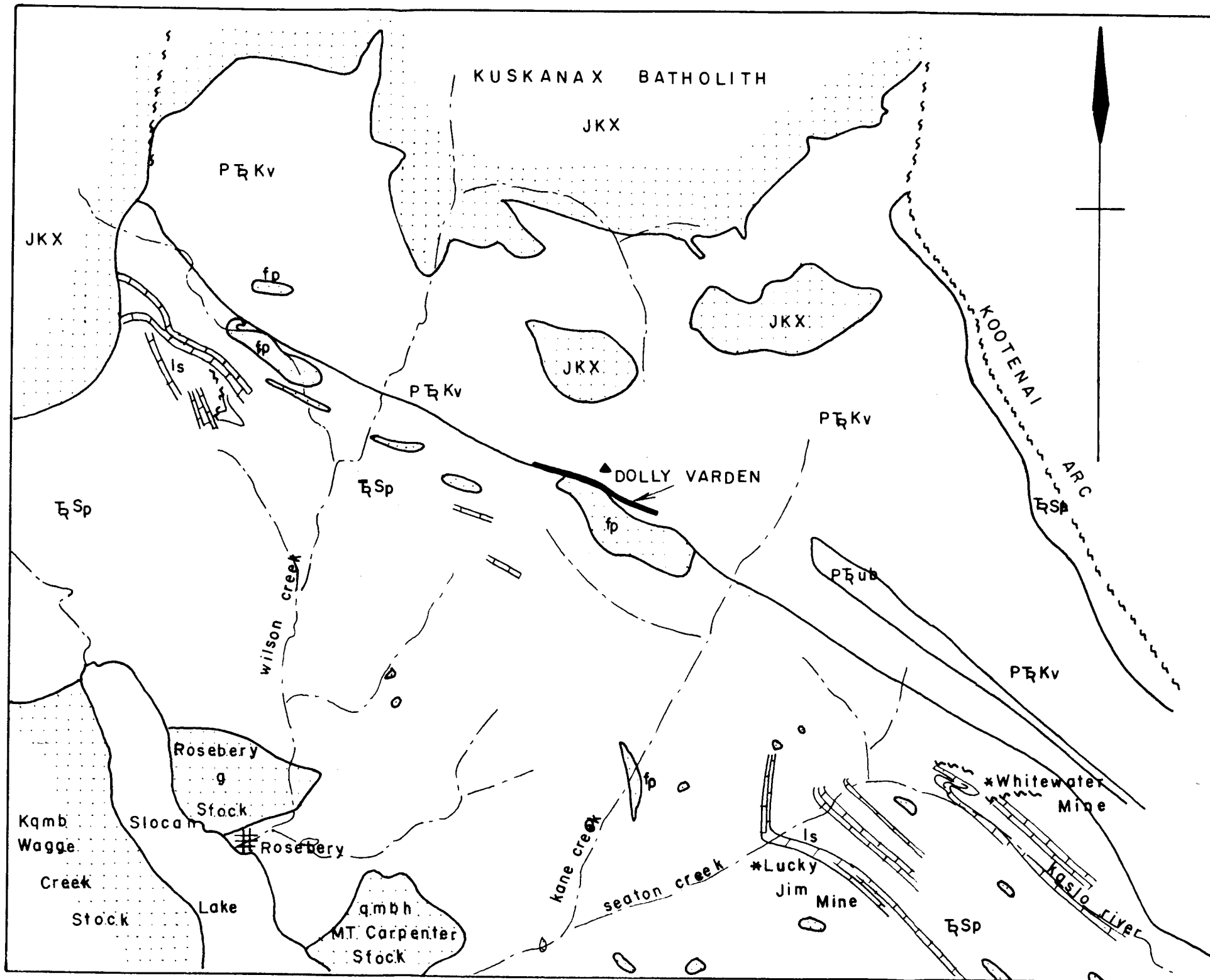


Fig.1
PROPERTY LOCATION MAP
DOLLY VARDEN PROPERTY
Slocan District,

Date - Jan. 1981
 Scale - 2cm. = 1Km.
 Drawn By: J.C. Snell P. Eng.





LEGEND

JURASSIC INTRUSIVES

- g granite, quartz monzonite
- JKX leuco quartz monzonite
- qmbh biotite hornblend quartz monzonite
- Kqmb biotite hornblend quartz monzonite

TRIASSIC

- E Sp SLOCAN GROUP
gray to black phyllite, argillite
quartzite, limestone ls

PERMIAN

- P E Kb serpentine
- P E Kv KASLO GROUP
gray green meta-andesite, flows, tuff
- fp FELDSPAR PORPHYRY

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

9067

NO. _____

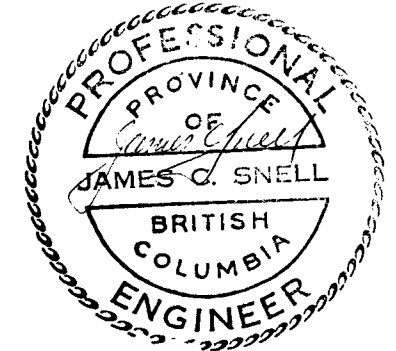


Fig-2

GEOLOGICAL MAP, NORTH SLOCAN DISTRICT B.C

scale - 1" = 2 mi 2.5 cm = 1 Km
date - January 1981
drawn by - JC Snell P.Eng.