

5474

PROSPECTOR'S REPORT

FOR

GREAT CENTRAL MINES, LTD. MINING PROPERTY

New Westminster Mining Division, British Columbia

49° 07' North Latitude

121° 06' West Longitude

92 H / 3 E

For

GREAT CENTRAL MINES, LTD.

Herbert F. Buchholtz, P.E.

August 21, 1974

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. 5474 MAP	MAP ASSESSMENT REPORT Mines and Petroleum Resources Department of
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INTRODUCTION

On August 11, 1974, in the company of Messrs. Charles Nolan and Walter P. Lucich, I performed an examination of Charles Nolan's block of mineral claims located in the New Westminster mining division, located in the South-western portion of the Province of British Columbia.

To facilitate movement in this highly precipitous country, a helicopter was rented and used to transport us to, and around the deposits.

Based upon my examination, my review of the literature available and the included sample results (see appendix 5), it is my professional opinion that this property be developed to its fullest potential with special emphasis on the South-west faulted segment of the vein.

II

STATUS RECORD DATA

Charles Nolan holds title to a block of 41 contiguous mineral claims and to two adjoining mineral leases.

The records in the British Columbia Department of Mines Office in Vancouver show the following claims in the name of Charles Nolan:

PI 1-10 Record numbers 29062-29071
PI 11-35 Record numbers 27840-27864
PI 36-41 Record numbers 27905-27910

Mineral lease numbers 1807 and 1808 have record numbers 29060 and 29061, respectively (see appendix 3).

The claims PI 11-41 were staked in June, 1972, and the claims PI 1-10 were staked in February, 1974. All claims have been validated by certificates of work to June 1975. None of the claim posts used to stake these claims were examined by me in the field.

III

PHYSICAL FEATURES

The mineral claims are located in the south-western portion of the Province of British Columbia in division number four. They are 31 air miles south of the city of Hope and 45 air miles south-east of the city of Chilliwack. They are positioned on the north side of Shawatum Creek, east of the Skagit River. Their latitude is 49°07' north and longitude is 121°06' west. (see appendix 1)

The property can be reached from Hope by traveling west along Provincial Highway #1 for a distance of 1½ miles to a logging road, then along the logging road for a distance of 31 miles to the access road to the property which follows Shawatum, (formerly Ten Mile), Creek. (see appendix 2)

The country in which the claims are located is extremely precipitous. The claims themselves are located on the slope of Shawatum mountain from 3,000' to 5,000' in elevation. The slope is covered with dense vegetation consisting of large timber stands and thick undergrowth of brush. The winter snows come in about October and last until April.

IV

Physical Features continued.

There is little activity in the area, the main one being logging, and some minor amount of prospecting. However, the property is but one mile from the border of Manning Provincial Park, where there is recreational activity.

GEOLOGY AND HISTORY OF THE AREA:

The property lies basically on the eastern edge of the Coast Crystalline belt of the Canadian Cordillera. This belt is a complex of metavolcanics, granitoid rocks and gneisses which were formed mainly starting at late Jurassic time and ending during the early Tertiary, with a few late paleozoic metavolcanics near the eastern border. A large portion of the area is underlain by plutonic rocks consisting mainly of quartz diorite and granodiorite. Plastic deformation and attenuated faulting are characteristic of the structures of the area. The eastern boundary of the belt is characterized by the Fraser-Yalakom transcurrent fault zone.

The first written note of the property is in the British Columbia Minister of Mines Report for 1898. The Minister of

Geology and History continued.

Mines reports for the ensuing years, until 1961, periodically mentioned the area.

In 1924 until the present there have been mineral claims covering this property and/or the general surrounding area.

Several hundred feet of diamond drilling was done in 1950 to determine the vertical extension of the surfact outcrops. The results of this drilling are not at present available.

In 1958 the property was optioned to Noranda Mines, Ltd. and in 1961 it was optioned to Earlecrest Resources, Ltd. Both companies did prospecting work on the property in the form of magnetometer surveys, trenching, diamond drilling and geological mapping. The results of this work were not encouraging and the options and the claims were dropped.

In 1972, Mr. Charles Nolan staked the PI mineral claims. From then until the present they have trenched the main vein and shipped some of the ore to Vancouver. In July, 1973, Nolan engaged the firm, AERO ENGINEERING, INC. to perform a

VI

Geology and History continued.

geophysical survey of the area. The results were very encouraging. AERO ENGINEERING, INC. delineated the main vein of the area and staked the trace of the vein on the surface.

GEOLOGY AND MINERALIZATION OF THE PROPERTY:

The geology of the area is that of the Coast Crystalline belt of the Canadian Cordillera. The country rock of the area consists of metamorphosed and deformed hard cherty sediments and fine grained andesite flows of the Carboniferous Hozameen series. The regional deformation has resulted in an anticlinal structure on the south slope on which the property is located. The structure trends north-west. In addition, the claim area is highly fractured and faulted with numerous north-west trending fractures.

Throughout the area there is a series of nearly parallel veins or stringers, as well as less regular lens shaped sulphide bodies. The veins are coincident with a series of joint planes or fractures which strike N 30° W and dip 75° NE. This trend closely parallels the trend of deformation of the Hozameen series as a whole. The veins thus formed are an admixture of sulphides of

VII

Geology and Mineralization continued, (see appendix 4).

of which pyrrhotite is most abundant. Other minerals present are sphalerite, pyrite, chalcopyrite, arsenopyrite and stibnite.

The vein of most interest is a north-west striking vein (N 82° W) and dipping 75° to the SE. The vein is composed mainly of dark bronze-colored pyrrhotite, intersected by a number of narrow veinlets and stringers of pyrite and arsenopyrite. Associated with the pyrrhotite as irregular inclusions are small bodies of magnetite. The magnetite shows inclusions of ^{apatite} apatite and is often bordered by small crystals of greenish spinel. The hanging wall of the vein, andesite, has been intersected by veinlets of quartz, many of which are relatively rich in pyrrhotite and magnetite. Close to the vein there are interlocking crystals of quartz and magnetite with some altered feldspars. The vein is capped by a reddish, decomposed, porous material composed largely of granular quartz stained with iron oxide. Some of the gossan contains a whitish deposit of iron sulphate. The gangue mineral of the vein is predominately crystalline quartz with small inclusions of country rock.

VIII

Geology and Mineralization continued.

There is in close proximity to the property a coarse grained diorite porphyry containing crystals of magnetite and secondary limonite. This intrusion undoubtedly has an important bearing on the ore genesis of the area.

The ore is somewhat microlitic suggesting that gaseous activity may have been pronounced during the period of ore emplacement. This would be responsible for the heavy impregnation of the country rock on the hanging wall of the vein. There appears to have been at least two periods of mineralization with the emplacement of the magnetite being the later one.

The high values of the platinum group metals is accounted for by the nature of pyrrhotite which commonly forms solid solutions with precious metals. It is felt that this is also true of the mineral magnetite. This could also account for the high gold and silver values, however, recently this engineer has seen several samples of a gold silicate which is a yellow translucent mineral often appearing as stained quartz granules, not unlike the quartz granules prevalent in the examined vein.

IX

TONNAGE AND GRADE.

From the examination of the Great Central Mines, Ltd. deposit in the field it was determined that the vein has been faulted into four segments. The largest and most easily accessible segment is the one which this engineer feels is most prudent to mine. Therefore the tonnage and grade calculations of the deposit will be limited to this segment of the vein.

The vein segment has a horizontal extension of 6,700' and the average width is 35'. From the vein's western contact with the Giant Creek fault to its eastern contact with the Shawatum Creek fault there is a difference of elevation of 700'. The vein is considered as triangular in shape for the purpose of calculating probable ore reserves. The tonnage factor used in this calculation is 12 cubic feet of ore, therefore, the deposit contains 7,000,000 tons of probable ore.

The vein in question is a strong and persistent one, therefore, it is felt that a conservative estimate of the vertical extension of the vein for the determination of possible ore would be 200'. Using this depth, there is a reserve of 4,000,000 tons of possible ore. This gives a total reserve of probable and possible ore of 11,000,000 tons.

X

Tonnage and Grade continued.

Four samples have been taken of the vein and analyzed by AERO ENGINEERING, INC. of Seattle, Washington, U.S.A. (see appendix 5). The results of this assay are:

Gold	1167 oz/ton	2129 oz/ton	1175 oz/ton	4725 oz/ton	2299 oz/t
Palladium	3383 "	3412 "	4783 "	5279 "	4214 "
Platinum	989 "	706 "	437 "	3004 "	1284 "
Silver	671 "	1487 "	134 "	3354 "	1411 "
Copper	0.5%	0.2%	0.1%	0.2%	0.25%

Using conservative figures, as follows, a value per ton was determined:

Gold @ \$100.00 per troy ounce-----	\$229,900.00
Palladium @ \$190.00 per troy ounce----	800,660.00
Platinum @ \$190.00 per troy ounce-----	243,960.00
Silver @ \$4.00 per troy ounce-----	5,644.00
Per ton of ore, approximate value---	\$1,280,164.00

A value for copper is not included in the above estimate.

CONCLUSIONS

From the value of the ore of the Great Central Mines, Ltd. vein (\$1,280,164.00 per ton) and the tonnage available (probable ore: 7,000,000 tons, possible ore: 4,000,000 tons) it is obvious that this deposit warrants development.

In view of the average width of the vein (35') and the very steep slope of the mountain side on which the vein is located, it is recommended that the vein be mined by underground methods. The actual mining method to be determined at a later date.

Although the main access to the property is through the afore mentioned logging road, it is recommended that an access road be built from Provincial Highway #3, starting at 21 miles southeast of Hope and following the valley of the Skagit River to the property. This road will be about 10 miles in length and will greatly facilitate access to the property.

There is ample water available to support a mining operation. It is recommended that a well be driven in the valley of the Skagit River in the fluvial material just below the mine and that the water be pumped to the property for industrial and

XII

Conclusions continued.

what ever domestic use will be required. Water obtained from a gravel packed well, in this type of material, will be useable without the use of chlorination.

Power for the operation will have to be supplied by the use of deisel generaters. Two units are recommended, one being a standby power source. The size recommended will be specified at a later date.

The development should progress in various logical stages.

STAGE ONE

ESTIMATED COST

- | | |
|---|-------------|
| a. Prepare a complete geological and topographical survey of the deposit. | \$ 8,000.00 |
| b. Establish a base camp of permanent buildings for the development so as to allow for the expansion and eventual exploitation of the property. | 15,000.00 |
| c. Construct an access road from the logging road to the camp and the proposed mining and mill sites. | 17,000.00 |

XIII

Conclusions continued.

Stage One continued.

d. Establish a mill site.	\$ 2,000.00
e. Trench and further sample the deposit.	5,000.00
f. Collect and send samples of ore for mill tests.	1,000.00
g. Develop the water supply for the operation.	<u>10,000.00</u>
Cost of Stage One--Estimated TOTAL	\$ 58,000.00

STAGE TWO

ESTIMATED COST

a. Expand campsite for the development and exploitation crew.	\$ 20,000.00
b. Purchase and erect a mill of approximately 7 tons per day capacity.	15,000.00
c. Purchase mining equipment sufficient for a small underground mine.	25,000.00
d. Construct adequate portal protection structure and start adit and construct mine plant.	12,000.00

XIV

Conclusions Continued-

Stage Two Continued.

e. Block out a minimum of 2,100 tons of ore.	\$ 6,000.00
f. Locate and obtain refinery site.	10,000.00
g. Construct ore and material storage bins.	11,000.00
h. Design the proposed refinery.	<u>40,000.00</u>
Cost of Stage Two--Estimated TOTAL	\$139,000.00

STAGE THREE

The mining of ore and construction of mill and refinery.

CLEARTYPE
TRADE MARK REG. U.S. PAT. OFF.
 REGISTERED TRADE MARK CANADA
COUNTY-TOWN
BRITISH COLUMBIA

Scale of Miles
 0 50 100 150

MAP NO. 342

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LEGEND

⊕ Province Capital

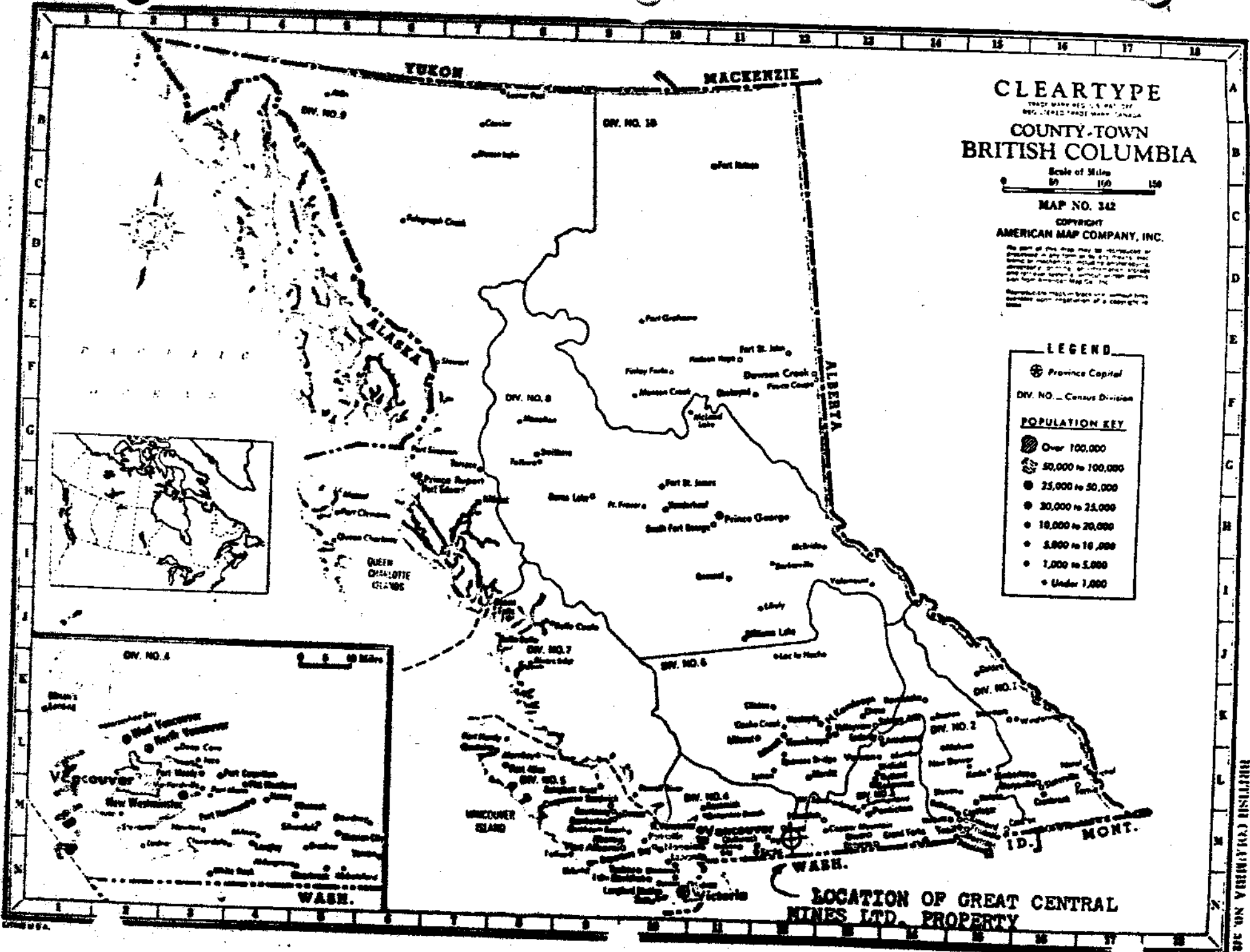
Div. NO. — Census Division

POPULATION KEY

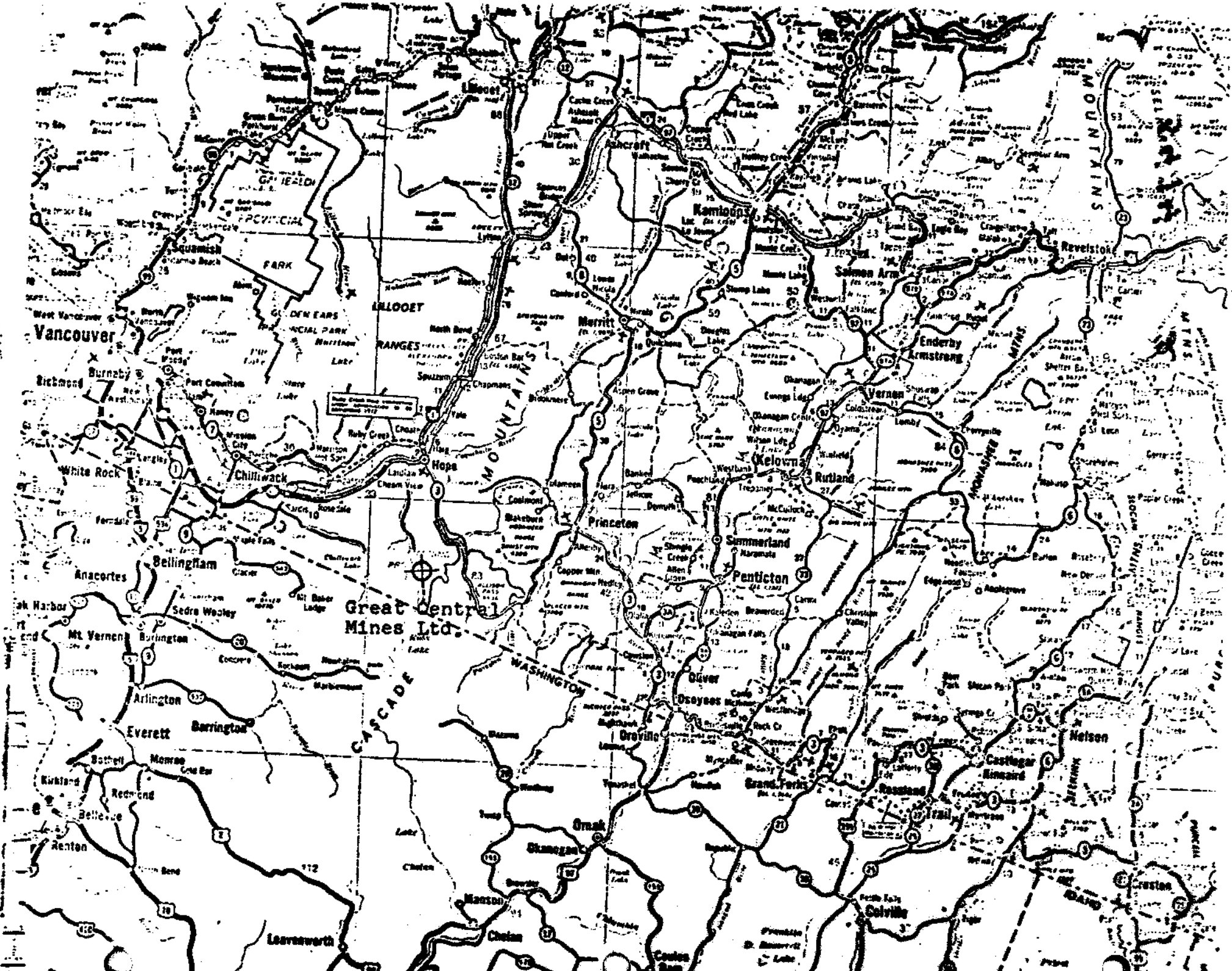
- Over 100,000
- 50,000 to 100,000
- 25,000 to 50,000
- 20,000 to 25,000
- 10,000 to 20,000
- 5,000 to 10,000
- 1,000 to 5,000
- Under 1,000

LOCATION MAP

APPENDIX 1
 BRITISH COLUMBIA NO. 342



**LOCATION OF GREAT CENTRAL
 MINES LTD. PROPERTY**



Great Central
Mines Ltd.

ACCESS MAP

June 23, 1973

Great Central Mines, Ltd.
3370 Coast Meridian Road
Port Coquitlam, B. C.
Canada

Certified
Geophysical Survey and Nuclear Affinity Analysis

Your Skagit Valley Claims, Hope, B. C. - Surveyed and Sampled by
AERO ENGINEERING, INC. on June 18, 19, 20 and 21, 1973

Subject: Nolan-Skagit Valley Claims

The geologic reconnaissance of the major arseno-pyrite veins reveals them to be in an andesite series of dikes and sills. Further to the NE are outcroppings of peridotites which are narrow lenses adjacent to the small copper showings on the NE. For the purpose of this report, reference point #0 is considered to be at the junction of the bulldozed road and the excavated portion of Vein #1, at an elevation of 3100 feet on Mining Claim Pi #8. This vein extends for a distance of approximately 1230 ft. easterly, with a strike line of N 65° E with very little faulting. It also extends approximately 370 feet in a westerly direction from Point #0 (S 65° W) with a width of 35 feet. This width appears to be maintained for the full length of the vein. Instrumentation at this point shows the depth to be approximately 3740 feet. At the east end of the #1 zone, faulting occurred; one section being offset 150 feet directly up the hill. This offset section is approximately 170 feet long, 30 feet wide and 3100 feet deep. There is a second offset section due to the Giant Creek fault, which fault follows the direction of the canyon. The faulted segment has been moved a distance of 920 feet to the SE. This #1 vein should easily produce 5,000,000 tons of ore. Total tonnage will depend upon the mining methods employed.

The vein designated #2 is to the NE of vein #1. Vein #2 is badly faulted in large blocks, some of which have been moved to the NE, and others to the SW. One segment is located 50 feet NE of Vein #1 and roughly parallels it 200 feet from Point #0. This segment is 145 feet long, 45 feet wide and 3400-3500 feet deep. There are at least 3 other known segments of the #2 deposit, varying in width from 40 feet to 70 feet, with average lengths of 100 feet and depths in excess of 2000 feet. One of these is 300 feet directly NE of the easterly end of Vein #1 and parallels #1. The host rock of the #2 material is andesite, with the west walls showing some small stringers of peridotite which could be more conducive to Copper.

The lower end of Vein #3 is located 940 feet in a northerly direction from Point #0. This vein has a strike of N 25° E for a length of 930 feet. It has an average width of 15 feet and a depth of 4000 feet. There were Copper showings apparent at this point.



Great Central Mines, Ltd.

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6/23/73

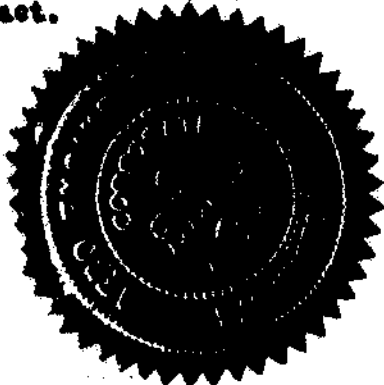
A large "granite-like" porphyry (#4 for future identification) was noted at the "Y" in the road upon which was located the B. C. Control Survey Marker 9606, Control #359, placed in 1971. This zone extends several thousand feet in both northeasterly and southwesterly directions. Instrumentation shows this to be 360 feet in width, with a depth of 370 feet with a strike line of N 17° E. This #4 zone warrants a more exhaustive study at a later date.

The ore Vein #1 currently has an average material content as follows, as determined by a series of nuclear affinity readings at several points along the vein. These readings were taken for depths at 100 foot intervals for the first 500 feet, and then every 500 feet to a total depth of 3000 feet. The overall average content for the #1 ore at each of three points is as follows:

<u>Point #0</u>		<u>Point #5</u>		<u>Point #6</u>	
Gold	4.0%	Gold	7.35%	Gold	4.03%
Palladium	11.6%	Palladium	11.7%	Palladium	16.4%
Copper	0.5%	Copper	0.2%	Copper	0.1%
Platinum	3.39%	Platinum	2.42%	Platinum	1.5%
Silver	2.3%	Silver	5.1%	Silver	0.46%

No attempt was made to identify the presence of other elements at this time, nor to evaluate the ore bodies identified as #2 and #3. A single analysis of near surface material on Vein #4 showed 5% Gold and 0.5% Platinum. From this brief perusal of the #4 vein, we would recommend further exploration at a future date.

The above percentages reflect the spectrum of the isotopes present of each element. The recoverable percentages in stable metallic form will vary according to the disparate methods applied. Any of these methods, however, must include a system of stabilization designed and programmed for the isotopic configuration of each material. Delivery of this certificate shall not impose any obligation on behalf of AERO ENGINEERING, INC. to extract the metallic values, or to disclose any or all of its methods or procedures except under separate contract.



AERO ENGINEERING, INC.

Troy E. Becker, Analyst
R. P. Washington State
License #262-03-34338
Lloyd's of London Insured
Policy #92000

AeroEngineering, Inc.



11748 Sandpoint Way, Seattle, Washington 98125, 206-362-5360

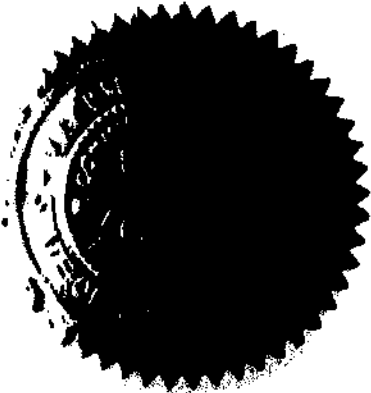
Great Central Mines, Ltd.

-3-

6/23/73

State of Washington
County of KING

On this 25th day of June, 1973, before me personally appeared Troy E. Becker to me known to be the President of the corporation that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.



IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year first above written.

M. [Signature]
Notary Public in and for the State of Washington, residing at Seattle

Aero Engineering, Inc.



11748 Sandpoint Way, Seattle, Washington 98125, U.S.A.

Mr. Charles Nolan
Vancouver, B. C.

January 18, 1973

Certified Report on Nuclear Affinity Analysis

Subject: Hand Sample--Labelled "J. Bird-#133" C. Nolan's Canadian Ross Lake Ore
(Weight of Sample: 8#7 oz.)

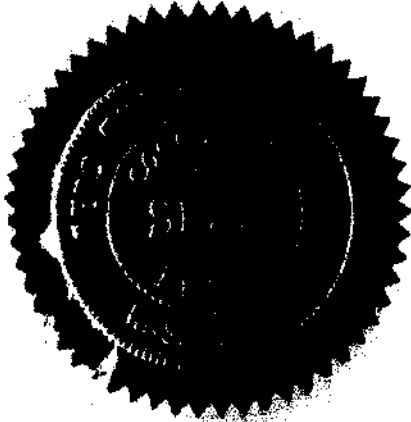
Results of Nuclear Affinity Analysis:

Gold	16.2%	Indium	0.0%	Nickel	3.0%	Zinc	0.0%	Titanium	0.1%
Silver	11.5%	Tellurium	5.1%	Chromium	0.0%	Antimony	0.0%	Lithium	0.0%
Platinum	10.3%	Selenium	1.1%	Cobalt	0.0%	Lead	0.0%	Thallium	1.1%
Palladium	18.1%	Arsenic	6.2%	Tungsten	0.0%	Bismuth	0.0%	Rhenium	0.0%
Iridium	0.0%	Sulfur	8.3%	Molybdenum	0.0%	Mercury	2.1%	Carbon	1.1%
Osmium	2.2%	Copper	0.2%	Manganese	0.0%	Aluminum	1.1%	Gallium	0.0%
Ruthenium	1.0%	Iron	5.6%	Tin	0.0%	Magnesium	1.3%	Germanium	0.0%
Rhodium	0.0%	Tantalum	1.1%	Cadmium	0.0%	Beryllium	0.0%	Silicon	1.3%
								Calcium	0.0%

The above percentages reflect the spectrum of the isotopes present of any given element (these being stable, metastable and unstable forms). The recoverable percentages in stable metallic form will vary widely according to the disparate methods applied. Any of these methods, however, must include a system of stabilization designed and programmed for the particular isotopic configuration of each material. Delivery of this certificate shall not impose any obligation on behalf of AERO ENGINEERING, INC. to extract the metallic values, or to disclose any or all of its systems or procedures.

AERO ENGINEERING, INC.

Troy E. Becker, Analyst
R. P. Washington State
License #262-03-32338
Lloyds of London Insured
Policy #92000



State of Washington
County of *King*

On this 20th day of January, 1973, before me personally appeared Troy E. Becker to me known to be the President of the corporation that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my official seal the day and year first above written.

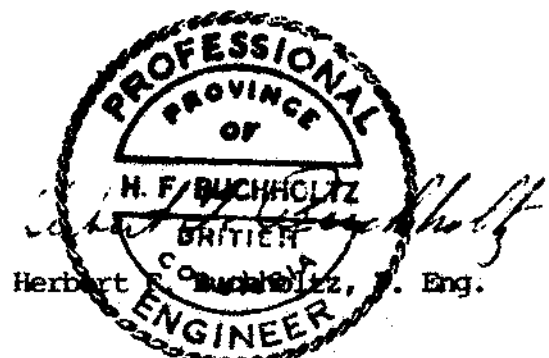
Notary Public in and for the State of Washington, residing at *Seattle*

C E R T I F I C A T E

I, Herbert F. Buchholtz, DO HEREBY CERTIFY:

1. That I am a consulting mining engineer with offices at Henniker, New Hampshire, San Jose, Costa Rica and Reno, Nevada.
2. That I am a graduate of the University of Kansas, in 1950, with a Bachelor of Science Degree in Mining Engineering, and the Claremont Graduate School, in 1960, with a Masters of Arts degree in Geology.
3. That I am a registered Professional Engineer in the States of Nevada, Kansas and New Hampshire and the Canadian Province of British Columbia.
4. That I have practiced my profession for twenty-four years.
5. That I have no direct, indirect or contingent interest in the PI mineral claims or in the securities of Great Central Mines, Ltd., nor do I intend to receive any such interest.
6. That this report dated November 11, 1974, is based on a study of published maps and reports, and from an examination I made of the mineral claims on August 11, 1974.

Dated at Reno, Nevada this eleventh day of November, 1974.



Expiry Date: November 6, 1975

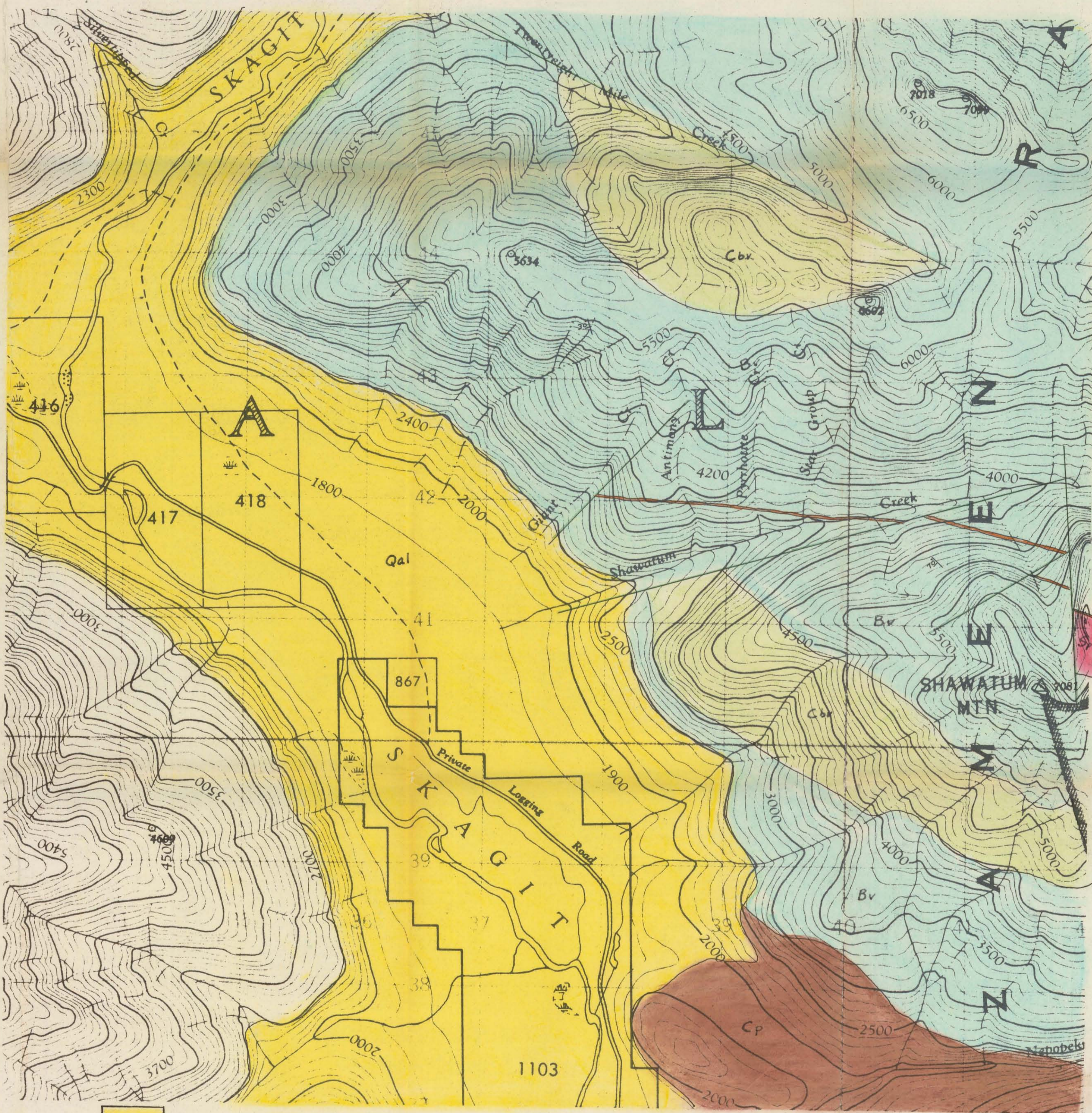
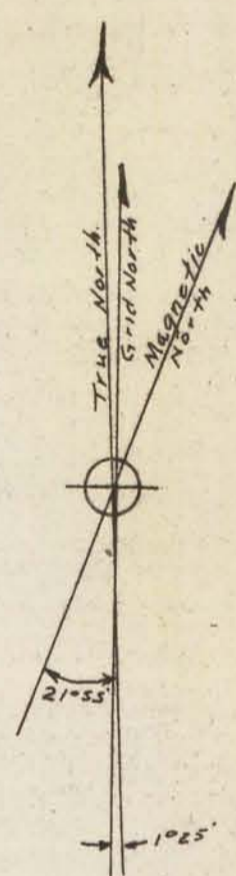


5474

Area of interest

INDEX MAP
 SKAGIT Valley CLAIMS
 Copied from
 Chilliwack Lake, B.C. Map 92 H/SW
 Scale 1:125,000 (1"=2 Miles)

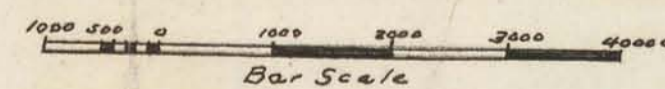
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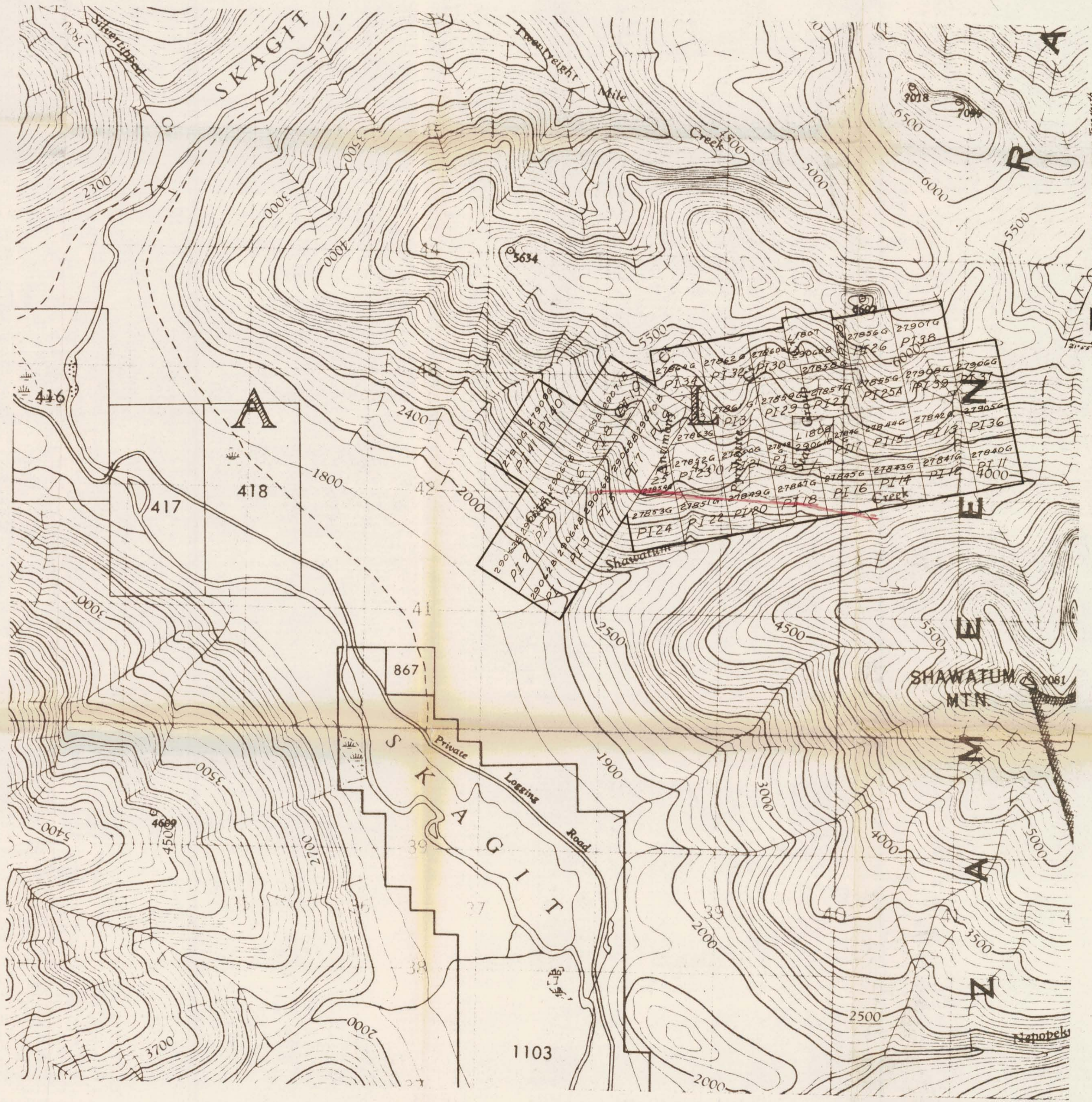


- Qal *Glacial, Glaciofluvial, & Fluvial Gravel*
- Cbv *Chert, Basic Volcanic Rock*
- Bv *Basic Volcanic Rock*
- Cp *Chert, Pelit*
- Sp *Serpentine, Serpentinized Peridotite*

GEOLOGICAL MAP
SKAGIT VALLEY CLAIMS & AREA
GREAT CENTRAL MINES LTD.
Scale 1:20,000

- Vein
- Fault
- Fold Axis





CLAIM MAP: PI, CLAIMS
 GREAT CENTRAL MINES LTD
 Skagit Valley, British Columbia
 scale 1:20000

M-3

#1 VEN
 5474

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 5474 MAP 3