Prospecting Report

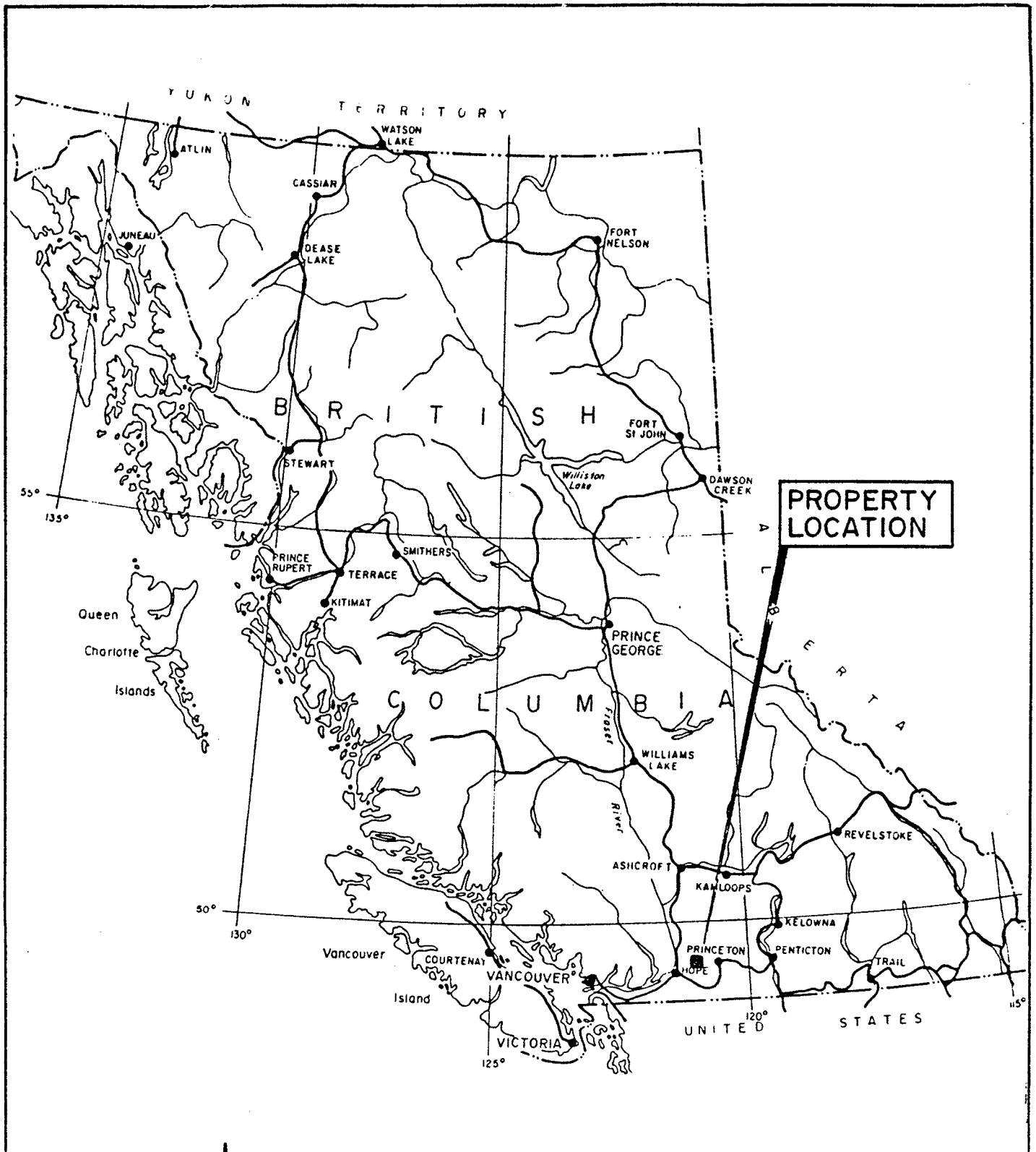
on the

Venus Silver Claim

NTS 92H 6E Lat. 49°26'30"N Long. 121°05'W

Similkameen Mining Division

James W. Laird
Prospector
Feb. 1988



Venus Silver Claim

N.T.S. 92H - 6E SIMILKAMEEN M.D., B.C.

LOCATION MAP

0 100 200 300 MILES

0 100 200 300 400 500 KM.

SCALE AS SHOWN | FIGURE 1

CHONG

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Introduction

This report details the results of a prospecting program on the Venus Silver claim, totaling 15 metric units, situated in the historic Summit Mining Camp at the headwaters of the Tulameen River, in the Similkameen Mining Division. The prospecting program was initiated on August 28, 1987, and was completed on September 12. Exploration work was done by the author, James Laird, and was financed by E.M.P.R. Prospector's Assistance Grant # 10961-P257.

Summary

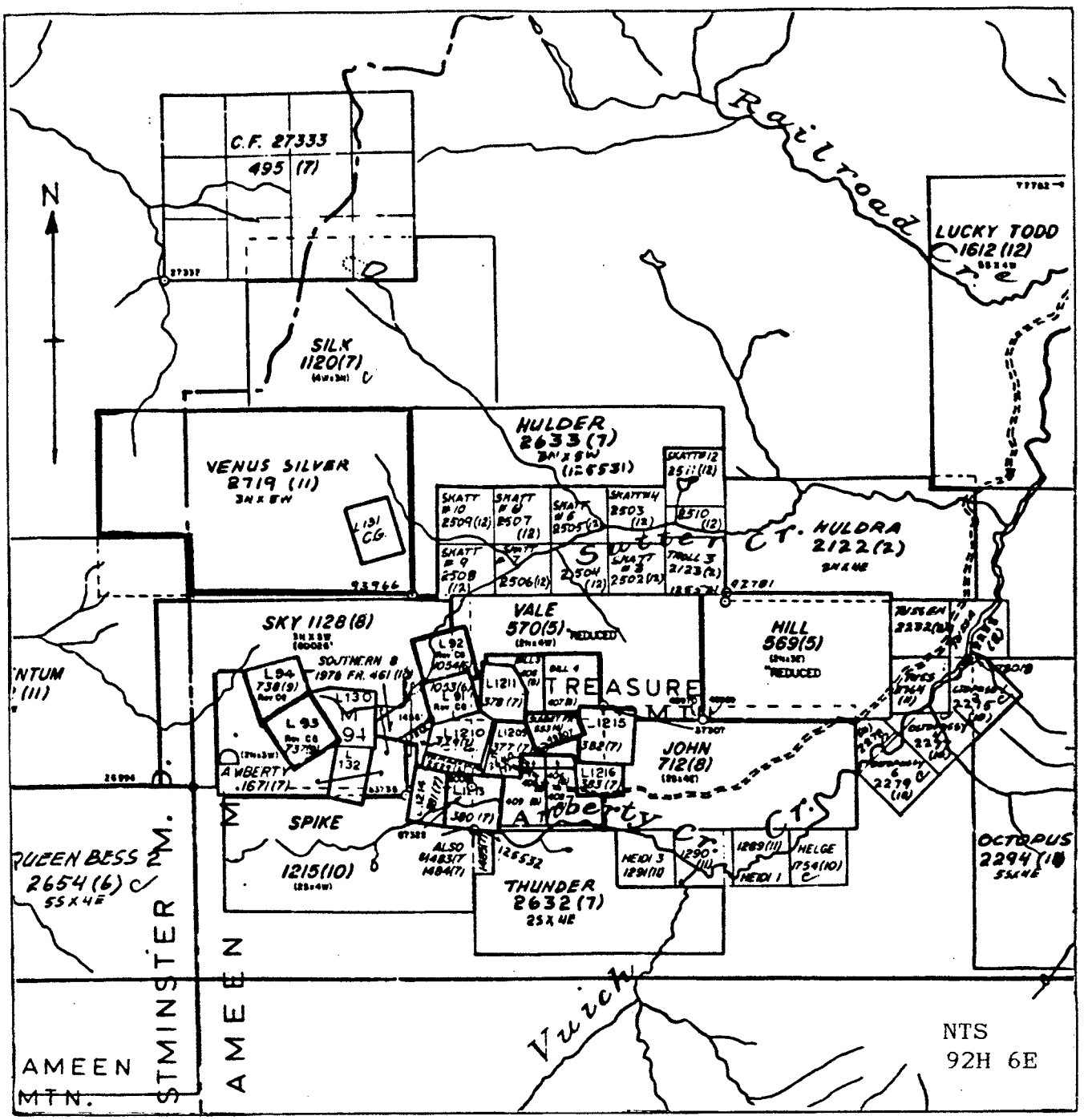
The objective of the program was to investigate a large pyritic alteration zone around a Tertiary quartz diorite intrusive for precious metals, and to search for Summit Camp type of high grade silver-lead-zinc veins in related Tertiary faults and fracture zones.

9 character samples were taken for assay from the Venus Silver claim, and a high grade grab sample from the old Morning Star C.G. adit dump. An old horse trail from the Summit Camp to the claim area was brushed out and re-marked, and the general area was mapped on a 1:5000 scale.

Location and Access

The property is located 25 km. east/northeast of Hope, B.C., covering the area around 6400' Mount Sutter, on the divide between Dewdney, Cedarflat, and Sutter creeks. Access to the claim area is by 44 km. of unpaved road from a turnoff on the Coquihalla Highway near the toll booths to the end of the Summit Camp road, and then by hiking up the old Summit Ridge horse trail for 2.5 km. to the central claim area.

Access to the southeastern part of the claim may be gained from an overgrown logging road along Sutter Creek, which passes within several hundred meters of the Legal Corner Post.



Summit Camp Claims Map

0 500 1000 1500 2000 2500

meters

1:50,000

Environment

The climate of the Summit Camp is typical of the Cascade Mountains, namely a mixture of Coastal rain forest and the Interior dry-belt, depending on the season and the prevailing winds. Snow covers the area from November to late May, and may persist in shadowed valleys until mid-summer. The summer is usually warm and dry, but rain and snowstorms can occur at any time.

The claim area is mostly above timberline, with scrub trees and low brush persisting on the upper mountain ridges. Below the alpine areas, usable timber grows on the northern facing sidehills and in the valley bottoms.

Wildlife noted in the area include; mule deer, black bear, moose, elk, mountain goat, wolf, cougar, and a variety of small rodents. Common birds include; peregrine falcon, golden eagle, red-tailed hawk, several types of grouse, and many different types of seasonal migratory birds.

Summit Camp History

The Summit Camp was first discovered in the late 1800's by prospectors searching for the source of the Tulameen River placer deposits, and several short adits and surface pits were dug on some high grade silver-lead-zinc veins. Most of the known showings were discovered before 1910, and the lack of an access road until the late 1920's slowed down the development of the camp.

A small underground mining operation was carried out on the Treasure Mountain properties in the late 1920's and early 1930's, but low metal prices and the beginning of the Depression caused it to shut down. Little exploration work was done until the formation of Silver Hill Mines Ltd. in the 1950's, who attempted to re-open the Treasure Mountain mine and built a 50 TPD mill.

The Silver Hill operation never achieved full production due to financial problems, and again the Summit Camp fell into quiescence. Some minor exploration work was done in the 1960's and 70's but nothing of note until prospector Magnus Bratlien acquired the Treasure Mountain Mine and formed Huldra Silver Inc. in 1980 to explore the property.

Huldra Silver began systematically examining the area around the old workings, and in 1985 succeeded in uncovering the bonanza-grade "C" vein, the largest and highest grade ore deposit found to date in the Summit Camp. In 1986, the author was employed by Huldra Silver to trench and sample the "C" vein and explore other workings on Treasure Mountain.

Results of the sampling program indicated a potentially mineable orebody of excellent grade, and in early 1987 Huldra Silver applied for a listing on the Vancouver Stock Exchange. The primary financing was used to open-pit mine the "C" vein on surface, and about 2400 tons of ore was produced. 407 tons of hand-cobbed ore was shipped to the smelter, returning about 100 oz/t in silver and substantial base metal values.

In the fall of 1987, Huldra Silver drove a 300 meter long drift 50 meters below the "C" vein, finding that the vein was continuous to this depth and had increased in width. Reserves were estimated to be 36,000 tons grading 30 oz/t in silver, 10.2% Pb, and 4.7% Zn. Currently, drifting is in progress on the #2 level, about 137 meters on the dip of the vein below the #1 level, and if successful will probably result in a production decision and construction of a mill in the near future.

The Summit Ridge area was explored in the early 1980's by Unicorn Resources Ltd. using a variety of exploration techniques, but no mineable ore zones were deliniated, and the company optioned the holdings to Silver Saddle Mines Ltd.

Silver Saddle Mines succeeded in discovering a new showing, and a bulk sample of the ore was sent to the Trail smelter, but the returns were uneconomic and the option was dropped.

In the fall of 1987, Harrisburg-Dayton Resources Ltd., owners of the Southern No.8 claim on Treasure Mountain, optioned the Unicorn Resources property. An exploration program was planned on the Southern No.8 and the adjoining Vigo claim (L91), and the author was retained to trench and sample the poorly exposed showings. The program was highly successful, resulting in the discovery of several new massive sulphide veins up to 1.6 meters wide, within a mineralized stockwork system which is at least 175 meters long and up to 25 meters in width. The vein structures, mineralogy, and assay grades are very similar to the Huldra Silver Mine, and are open to depth and along strike.

Venus Silver Claim History

The Venus Silver claim covers the ground around the Morning Star Crown-granted claim, one of the first showings discovered in the Summit Camp. About 100 meters of drifting and crosscutting was done on the Morning Star vein systems prior to 1920, with only minor surface exploration done since then. The veins are very high-grade, with reported assays in excess of 600 oz/t in silver.

The Venus Silver ground around the Morning Star has been roughly described in several old government reports, but no definite showings or workings are recorded. During the prospecting program, several small pits on gossanous and pyritized sediments were found, but a large part of the claim area is covered in talus, ferricrete, vegetation, and shallow glacial overburden, so is literally unexplored. More detailed historical reports on the Venus Silver area and the Morning Star C.G. are compiled in Appendices A and B.

Geology and Mineral Deposits of the Summit Camp

The Summit Camp area is part of the regional Pasayten Trough, a northwest trending Mesozoic marine sedimentary basin which extends from south of the International Boundary Line and north to the Bridge River - Taseko Lakes country. The local sedimentary and volcanic formations have been previously named the Dewdney Creek Group and the Pasayten Group, but have been re-interpreted in this report to more accurately describe the local formations.

Mineralization in the Summit Camp is contained in east-west to northeast trending transcurrent cross-faults and fracture zones, commonly arranged in an en-echelon pattern joined by conjugate shears, forming rhombohedral or prismatic fault blocks. The veins are mostly open space fillings in dilated fault zones, and vein size is probably related to the magnitude of the fault. Large "plums" of ore are often found in the "Y" shaped junctions between mineralized vein faults and conjugate shears.

Ore, gangue, and alteration minerals identified in the Summit Camp veins include: Ore; galena, sphalerite, pyrite, pyrrhotite, chalcopyrite, tetrahedrite, marcasite, arseno-pyrite, magnetite, boulangerite, jamesonite, zinkenite, hematite, bournonite, stibnite, argentite, and microscopic native silver: Gangue; quartz, siderite-ankerite, calcite, rhodochrosite, jasper, chlorite, serecite, and wallrock fragments: Alteration minerals; limonite, jarosite, wad, pyrolusite, psilomelane, cerussite, malachite, azurite, greenockite, bindheimite, kermesite, and covellite.

The vein faults commonly weather recessively, forming shallow overburden filled gullies and creek bottoms, and do not react well to standard exploration techniques, such as poor drill core recovery, weak geophysical conductors, and scattered geochemistry; the preferred method is mapping and prospecting followed by backhoe trenching.

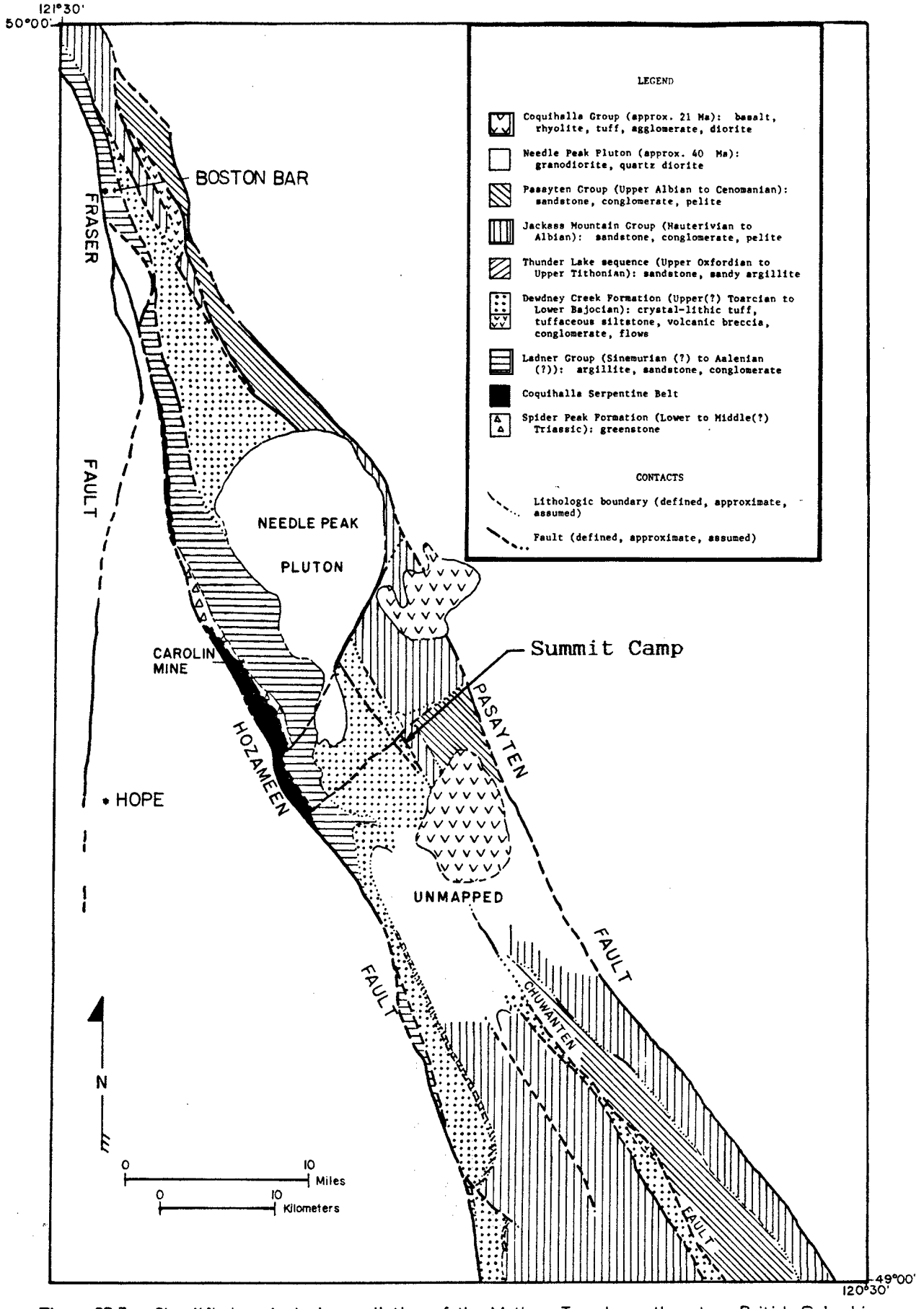


Figure 80.3. Simplified geological compilation of the Methow Trough, southwestern British Columbia. Compiled by author from field work and Monger (1970) and Coates (1974).

Modified after Jennifer O'Brien, GSC Paper 86-1b

Map Unit Descriptions

Units 1, 1a, 1b - Dewdney Creek Group

The Dewdney Creek Group covers most of the Summit Ridge area and extends westward, striking northwest and usually dipping steeply to the southwest. Sedimentary lithologies include; pebble conglomerate, sandstone, greywacke, and argillite. Unit 1a; fossiliferous pebble conglomerate with Belemnites and rare shell imprints, argillite, and sandstone. Unit 1b; strongly pyritized (up to 50%) and highly silicified metasediments adjacent to Tertiary Intrusions. The Dewdney Creek Group is commonly cut by sills, dykes, and plugs of gabbro/diorite.

Unit 2 - Jensen Formation

The Jensen Formation is a newly recognized volcanic package named for an important pioneer prospector in the Summit Camp, Andy Jensen, who discovered the Silver Chief vein on Treasure Mountain and contributed several decades to the early development of the Summit Camp. This package contains green and maroon andesitic flows, tuffs, breccias, porphyriticintrusives, and volcanic conglomerate; sandstone, greywacke, and argillite. Quartz-epidote-chlorite veins are a common alteration.

Genesis of this package is a bit of a mystery, as it appears to be nearly conformable in dip and strike, but is in fault contact with the Dewdney Creek Group and the Jackass Mountain Group. No fossils have been found as yet and the widespread gabbro/diorite intrusives do not seem to occur in this unit. The regional Chuwanten Fault zone has been previously mapped as following this package, and similar volcanics occur along it south of the map area.

The Jensen Formation may have erupted in a shallow marine island-arc type environment along a major fracture zone at the edge of the sedimentary basin; or it may have been emplaced as a tectonic fault slice.

Unit 3 - Jackass Mountain Group

The Jackass Mountain Group has been previously mapped on Treasure Mountain as the non-marine Pasayten Group, but newly discovered Belemnite fossils and shell imprints found in a pebble conglomerate bed near Troll Lake on the top of Treasure Mountain, and similar lithologies, indicate that this area is underlain by Lower Cretaceous Jackass Mountain Group.

The Jackass Mountain Group is composed of; boulder conglomerate, arkosic sandstone, and thin-bedded argillaceous siltstones (turbidite). The thin-bedded units commonly show soft sediment deformation and slump brecciation accompanied by widespread pyritization; this unit partially hosts the Huldra Silver "C" vein and also occurs on the northeast corner of the Venus Silver claim.

The sedimentary package was probably derived by erosion from the Eagle Granodiorite Complex to the east, in a near shore deltaic environment. The group is broadly folded towards the east, and appears to grade into finer, non-marine argillite and sandstone. On Treasure Mountain, the Jackass Mountain Group strikes northwest and dips steeply to the southwest, conforming with Units 1 and 2. Irregular WNW trending dykes and plugs of gabbro/diorite intrude the sediments. Other intrusives noted include; feldspar porphyry sills and strongly magnetic green andesitic feldspar porphyry dykes, probably related to the Miocene Coquihalla Volcanics, which intrude the Treasure Mountain fault zone and thermally metamorphose the ore deposits.

Unit 4 - Needle Peak Intrusions

The quartz diorite stock intruding the Venus Silver claim has been correlated with the Tertiary Needle Peak Intrusions of the Coquihalla area. The quartz diorite grades into a hornblende-feldspar porphyry phase occasionally, and is sometimes accompanied by a small amount of chalcopyrite and malachite staining.

Unit 5 - Ferricrete

The large ferricrete gossan proximal to the quartz diorite intrusion is residual in nature, being derived from the breakdown of widespread iron minerals around the stock. The gossan is over 2 meters thick and contains limonite cemented glacial and locally derived sedimentary debris. Several large float boulders of ultramafic rock indicate that the last glacial movement was westerly, as the floats are identical with the Tulameen Ultramafic Complex to the east.

Conclusions and Recommendations

The Venus Silver claim covers an area which has not been thoroughly explored in the past, and the occurrence of the high grade Morning Star vein within the boundaries, along with the geological and structural similarities to the Summit Camp and Treasure Mountain areas, indicate a good potential for further discoveries.

The massive sulphide zinc-iron occurrence on Mt. Sutter (87 VS-6) is a type of mineralization not previously seen, and may be replacement or metamorphosed syngenetic in origin. The apparent lack of precious metal values within and around the Tertiary stock may indicate a zoning feature, and perhaps prospecting outside of the thermal halo will prove more profitable.

Widespread pyrite and a small amount of sphalerite was found in the slump-brecciated turbidite unit near the northeast corner of the claim, and several major fault zones are projected to cross this favorable unit in the meadow below the Morning Star Mine, which may contain ore zones detectable using soil geochemistry.

Air photo linear interpretation would assist in defining the fracture and fault zones. The 1988 exploration program should include detailed mapping, prospecting, soil geochem, and a possible purchase of the Morning Star Crown-grant.

Sample Descriptions

87 VS-1 10 cm. character sample

Limonite stained, vuggy quartz stockwork with pyrite and minor chalcopyrite. Chlorite-serecite alteration around the veins. The stockwork is in east-west trending fracture zones crossing the Tertiary quartz diorite intrusion.

87 VS-2 50 cm. character sample

Strongly silicified limonite stained metasediments with 10 to 20% massive and disseminated pyrite.

87 VS-3 Grab sample across 2 meters

Very extensive ferricrete gossan, more than 1 km. long and up to several hundred meters wide, averaging perhaps 2 meters thick. The gossan contains angular felsic fragments, pyritic metasediments, and regional glacial debris cemented with limonite.

87 VS-4 Grab sample across 2 meters

Strongly silicified and densely fractured metasediments with 10 to 20% massive and disseminated pyrite.

87 VS-5 50 cm. character sample

Limonite stained, strongly silicified metasediments with quartz sweats and scattered pyrite; an altered contact zone between a rhyolitic plagioclase porphyry sill and bedded siliceous metasediments.

87 VS-6 50 cm. character sample

Massive, fine grained pyrrhotite, marcasite, magnetite, and black sphalerite with 20% pyrite in irregular blebs and disseminations. Massive lenses and disseminations in a 10 m. x 10 m. limonite stained area following bedding planes and fracture zones in siliceous metasediments.

87 VS-7 30 cm. character sample

Magnetite, actinolite, and minor specular hematite in limonite stained, east-west trending silicified fracture zones crossing the Tertiary quartz diorite intrusion.

87 VS-8 30 cm. character sample

Vuggy quartz veins with 25% pyrite in east-west trending fault zones, crossing chlorite-serecite-epidote altered green volcaniclastic sediments.

87 VS-9 Grab sample across 1 meter

Fault-hosted quartz veins with 50% pyrite in northeast to east-west trending zones, crossing fine grained silicified metasediments.

87 MS-1 High-grade dump sample

Morning Star Mine (L 131) - Several narrow massive sulphide veins hosted in fractured, chlorite-serecite-epidote altered green volcaniclastic sediments. The vein mineralogy includes; galena, sphalerite, tetrahedrite, chalcopyrite, pyrite, and minor sulphosalts in a gangue of clear quartz crystals (many with double terminations), and brown siderite. The galena is often sheared, forming "steely galena". The alteration minerals include; limonite, manganese oxides (psilomelane, pyrolusite, wad), cerrusite, antimony oxides (bindheimite), malachite, and azurite.

ACME ANALYTICAL LABORATORIES 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE 253-3158 DATA LINE 251-1011

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE CA P LA CR MG BA TI B W AND LIMITED FOR NA AND K. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: Rock Chips AU* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

DATE RECEIVED: SEPT 21 1987 DATE REPORT MAILED: Oct 6/87 ASSAYER. D. Toye ...DEAN TOYE, CERTIFIED B.C. ASSAYER

JAMES W. LAIRD PROJECT-VENUS SILVER File # 87-4361

SAMPLE#	MO PPM	CU PPM	PB PPM	ZN PPM	AG PPM	NI PPM	CO PPM	MN PPM	FE %	AS PPM	U PPM	AU PPM	TH PPM	SR PPM	CD PPM	SB PPM	BI PPM	V PPM	CA %	P %	LA PPM	CR PPM	MG %	BA PPM	TI %	B PPM	AL %	NA %	K %	W PPM	AU* PPB
87-VS-1	233	281	127	79	4.8	2	2	315	2.11	11	5	ND	2	3	1	2	2	18	.19	.092	5	4	.23	5	.01	4	.41	.03	.03	1	53
87-VS-2	9	295	16	23	.2	93	26	71	11.45	2	5	ND	4	114	1	2	2	71	3.00	.054	2	71	1.15	5	.07	10	6.42	.47	.03	1	84
87-VS-3	7	247	17	32	.2	2	4	31	29.41	9	5	ND	4	3	1	2	4	25	.01	.046	2	28	.31	10	.01	7	1.27	.01	.05	1	1
87-VS-4	4	24	7	12	.1	5	10	43	8.49	41	5	ND	1	23	1	4	2	7	.16	.047	2	6	.71	9	.01	2	.87	.04	.07	1	29
87-VS-5	2	28	22	21	.1	1	1	41	3.42	19	5	ND	2	1	1	2	2	3	.01	.020	2	5	.01	8	.01	7	.21	.01	.08	1	35
87-VS-7	106	205	20	60	.1	2	8	422	22.81	5	5	ND	12	5	1	2	16	157	.08	.013	2	1	.32	9	.11	3	.81	.02	.06	1	9
87-VS-8	3	277	31	107	.9	25	30	597	10.29	94	5	ND	1	5	1	3	8	61	.12	.009	2	41	1.10	4	.02	13	1.27	.01	.04	1	51
87-VS-9	3	38	13	42	.5	2	52	4904	17.16	16	5	ND	1	4	2	2	6	4	.23	.001	2	1	.12	14	.01	13	.22	.01	.08	1	20
STD C/AU-R	18	61	41	132	7.3	70	28	1068	4.03	40	20	8	42	51	17	17	23	60	.45	.093	38	62	.90	179	.08	38	1.87	.06	.13	12	495

ACME ANALYTICAL LABORATORIES 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE 253-3158 DATA LINE 251-1011

ASSAY CERTIFICATE

- SAMPLE TYPE: Rock Chips

DATE RECEIVED: SEPT 21 1987 DATE REPORT MAILED: Oct 6/87 ASSAYER. D. Toye...DEAN TOYE. CERTIFIED B.C. ASSAYER

JAMES W. LAIRD PROJECT-VENUS SILVER File # 87-4361A

SAMPLE#	MO %	CU %	PB %	ZN %	AG OZ/T	NI %	CO %	MN %	FE %	AS %	U %	TH %	CD %	SB %	BI %	AU OZ/T
87-MS-1	.010	.29	68.15	8.53	136.94	.01	.01	1.03	3.31	.02	.002	.01	.07	.72	.02	.006
87-VS-6	.004	.09	.09	3.92	.37	.01	.01	.05	34.01	.02	.002	.01	.03	.01	.01	.001

Statement of Expenses - Venus Silver Claim

Funding for this prospecting program was provided by Prospector's Assistance Grant # 10961-P257.

Expenses

Gas		186.00
Highway Toll		20.00
Food		179.18
Misc. Supplies and Hardware		159.46
Maps, Photocopying, Photography		61.70
Assays		157.00
	Subtotal	763.34

4x4 Truck Rental - Aug. 28 to Sept 12, 1987
16 days @ 30.00 pd. 480.00

Prospecting Services - James Laird
Aug. 28 to Sept. 12, 1987
16 days @ 125.00 pd. 2000.00

Total 3243.34

James W. Laird
Prospector

James W. Laird

SELKIRK COLLEGE

CASTLEGAR, B. C., CANADA

COMMUNITY EDUCATION SERVICES

THIS IS TO CERTIFY THAT

JIM LAIRD

HAS PARTICIPATED IN

"MINERAL EXPLORATION FOR PROSPECTORS"

144 HOUR COURSE

Co-sponsored by the Ministry of Energy, Mines and Petroleum Resources,
the Ministry of Education,
and Continuing Education, Selkirk College

INSTRUCTOR/PROGRAM COORDINATOR

COMMUNITY EDUCATION

JAMES W. LAIRD
107 - 912 Berkley Road.
North Vancouver, B.C. V7H 1Y2
Telephone: (604) 929-8552

James W. Laird

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	Total	3243.34

James W. Laird
Prospector
Nov. 2, 1987

James W Laird

Exploration History

of the

Venus Silver Claim

Venus Silver Claim - General History

The following excerpts are taken from early geological reports of the G.S.C. and the B.C. Dept. of Mines, which contain references to the general area of the Venus Silver claim.

G.S.C. S.R. 1922

"The ore deposits at the Summit Camp occur at a number of widely separate points and under a variety of geological associations. There is, however, a rather remarkable uniformity in the character of the ore-bodies at the different showings, a uniformity embracing not only their physical but also their mineralogical characteristics. At each property the ore occurs in veins rarely over a few inches wide but which may fall within a wider and more sparsely mineralized zone containing other such veins. The entire zone of mineralization constitutes the potential ore-body. It may have a width of several feet, and the whole of it, at least certain cases, constitutes concentrating ore. On examination, it is found that the mineralized veins are following either lines of fracture or of movement and that, depending upon the character of the rock traversed, there is some replacement of the wall-rock by mineralizing solutions. The most abundant ore minerals are galena and sphalerite. They commonly occur in nearly equal proportions, but either may be present almost to the exclusion of the other. The galena is commonly coarsely crystalline and assays of the pure sulphide run between 150 and 600 ounces in silver. Polished specimens of the galena show that the silver values occur as argentite minutely disseminated through the lead sulphide. No argentite or other silver mineral was observed in the sphalerite. This zinc sulphide is dark, lustrous, and either coarsely crystalline or massive and, underground, is sometimes difficult to distinguish from the lead sulphide. Following these minerals, pyrite is probably the most abundant metallic constituent and with it may be associated small gold values, usually under a dollar to the ton.

cont'd

G.S.C. S.R. 1922 cont'd

The ore veins extend indifferently across the strike of both Lower Cretaceous and the Dewdney series. They also follow lines of fracturing or faulting involving the basic hornblende lamprophyre sills that intersect the Dewdney rocks, and consequently belong to a later period than these intrusives - a deduction which supports the view that these sills are pre-Lower Cretaceous, for they have nowhere been observed to intersect those sediments assigned to this period. The ore-bearing fissures, however, do not appear to cross the feldspar porphyry dykes which intrude the Lower Cretaceous rocks, but may, as in the case of the ore showings on the Silver Chief claim, follow either wall of these dykes. The dykes appear, in certain cases at least, either to follow lines of weakness in the sediments they intrude or to be themselves the immediate cause of the fracturing of the rocks in their vicinity. The ore is regarded as being derived either from the great body of Eagle granodiorite to the east of Treasure Mountain or from the smaller bodies of quartz diorite occurring near the main divide at the head of Amberty and Sutter creeks and also near the headwaters of Dewdney creek on the western slope of this divide. The greater abundance of ore veins in the direction of this divide, rather than towards the east, favors this quartz diorite as being the principal source of the ore, a theory strengthened by observation of the very noticeable pyritic mineralization of the older formations almost everywhere in the vicinity of this intrusive.

The order of deposition of the ore and gangue minerals is to some extent variable. The gangue is commonly composed of quartz and calcite, but ankerite and stilbite have been observed. These gangue minerals tend to form along the walls of the fissures, leaving the more central portion to be filled, subsequently, chiefly by the ore minerals, of which the most important are galena and sphalerite. Chalcopyrite is sometimes a conspicuous vein mineral and appears to have been the last sulphide precipitated. Pyrrhotite and pyrite, also, are locally abundant, and not only occur within the fissure deposits but commonly impregnate the wall-rock on either side or may be found disseminated through the rock formation far from any fissure deposit. Both of these iron sulphides precede the galena and chalcopyrite, but in one instance at least the zinc blende was observed to be intersected by veinlets of pyrite.

cont'd

G.S.C. S.R. 1922 cont'd

Arsenopyrite is noticeably abundant in certain of the properties, and appears to precede the lead and copper sulphides. Its order with respect to the iron sulphides is less certain. There is, probably, however, much overlapping of all the ore minerals, but the order in which they each begin to precipitate seems to be pyrrhotite, pyrite, sphalerite, arsenopyrite, tetrahedrite, galena, chalcopyrite.

The association of ore and gangue minerals at Summit Camp, and the character of the ore deposits suggest that the solutions from which these minerals were precipitated were of intermediate or in the case of some of the properties possibly of high temperature and that, consequently, the source of these solutions was at no great distance from the ore-bodies. It has been shown that the quartz diorite intrusive bodies near the main divide afford the most likely source for the mineralizing solutions and, in this connexion, it is of interest to note that near these intrusives, and within the zone of contact metamorphism, the older formation is heavily impregnated with pyrite and, to a lesser extent, pyrrhotite and magnetite, but does not include the other ore minerals so common in the fissure veins at a greater distance from the intrusive." (by C.E. Cairnes, 1922)

G.S.C. Memoir 139, 1924

Page 5 - "The search for the source of the gold and platinum of the placers in Tulameen district led to the discovery in 1895, and the year following, of the silver-lead ores at Summit Camp on the headwaters of Tulameen river and in the adjoining sections of Coquihalla area in the upper basins of Dewdney and Cedar creeks."

Page 64 - " The strata (Dewdney Creek series) have been in part brecciated by the intrusives, the fractures filled with pyrite, and the rock heavily impregnated with the sulphide and with reddish biotite. Similar heavy mineralization was observed on the divide to the north of the East fork of Dewdney creek, where the rocks are intruded by a similar quartz diorite."

cont'd

G.S.C. Memoir 139, 1924, cont'd

Page 105 - "The only formation of the district contiguous to this quartz diorite is the older Dewdney Creek series, which has been metamorphosed and impregnated with pyrite and, to a smaller extent, magnetite, to a distance of several hundred feet from the contact. It is considered as highly probable that these intrusives have an important bearing on the origin of the silver-lead ores of the Summit Camp and beyond the eastern limits of the map-area."

Page 132 - "In the years succeeding the discovery of silver-lead ores in 1895 at Summit Camp east of Coquihalla area, some claims were staked and some ore discovered in the upper basins of Cedar and Dewdney creeks, but little development work has yet been done on these properties."

Page 151 - "Formations identical with those of Summit Camp occur on the headwaters of Dewdney and Cedar creeks, but prospecting on this side of the Coquihalla divide has proceded in a very desultory fashion. Sufficient has, however, been done to reveal mineral deposits similar to those in the Summit Camp, but the difficulty of access has handicapped development. The trail up Dewdney creek has fallen into disuse and is at present passable for horses for 8 miles only."

Page 172 - "To the east of the Coquihalla river it is equally desirable that the trail up Dewdney creek be improved. The writer had this trail cleared for pack horse tranportation for 8 miles from the Coquihalla, but even in this distance it is still poor, and in part even dangerous. The grade over this first 8 miles is uniform and averages 4 per cent. Beyond, to the summit, a distance of over 2 ½ miles, the trail rises rapidly and averages nearly 20 per cent. It could be cleared, however, at comparatively small cost and its continuation over the divide would not only afford a more convenient route from the silver-lead properties of Summit Camp on the eastern or Tulameen side of the divide, but would encourage prospecting around the head of Dewdney and Cedar creeks where, in the writers opinion, a favorable area is still comparatively unexplored.

cont'd

G.S.C. Memoir 139, 1924, cont'd

Page 172, cont'd - It was observed that the formations in this section are commonly heavily impregnated with sulphides, chiefly pyrite, near the quartz diorite intrusive at the head of Dewdney and Cedar creeks. The formations are also intersected by numerous acid and basic dykes near which mineralization is in many places unusually heavy. Several silver-lead prospects were staked in this section in the late nineties. Some of these were Crown-granted and practically no work done on any of them for years. It might repay the prospector to give this section his special attention and for this purpose a good pack trail up Dewdney creek would be of great assistance." (C.E. Cairnes, 1924)

Venus Silver Claim - Mining History

Several mineralized showings in the Summit Camp area have not been relocated as yet; the following reports are of showings and workings thought to be located on, or near to, the Venus Silver claim.

M.M.A.R. 1913

The Hope Side of the Summit

"It was learned that George Cook and Ernest Rice were working on the Hope side, so a trip was made to their camp to see their showings. They were camped at the head of Dewdney creek, at what is known as Shannon flats; this place was conspicuous for having fairly good feed for the horses, which is decidedly scarce everywhere else.

U.S. Rambler - This property, which was staked two years ago by Ernest Rice, is situated above Dewdney creek at an elevation of 5,400 feet. The vein is a mineralized seam from 2 to 4 feet wide, striking N. 10° E. (mag.) and paralleling the strike of the altered sedimentary rocks in which it occurs. The vein filling is, for the most part, altered country-rock carrying a little iron-pyrites and, in places, traces of galena and zinc-blende. It is developed by several open-cuts and a tunnel driven 50 feet on the vein. A sample taken near the face of the tunnel across 2.5 feet assayed : Gold, trace ; silver, 0.5 oz.

Blackjack Group - These claims are owned by George Cook, Ernest Rice, and others. The main showing on the Blackjack is in an open-cut 20 feet from the bed of Dewdney creek, exposing a mineralized seam paralleling the strike of the sedimentary rocks in which it occurs. Small amounts of iron-pyrites and traces of galena and zinc-blende occur in the seam, which is from 10 to 12 inches wide, and consists of crushed and altered wall-rock. A sample taken across 12 inches only returned traces of gold and silver.

cont'd

M.M.A.R. 1913, cont'd

Blackjack Group, cont'd - George Cook is working on a small showing of ore at the lower end of the claim, down the creek ; at this place a black coarse-grained dyke running up and down the creek cuts the quartzite nearly at right angles. On both walls of this dyke, which is about 20 feet wide, some mineralization has taken place. Traces of zinc and galena occur, but so far the showing is of very slight value.

Ranger Basin

A number of claims have been staked in what is known as Ranger Basin, two or three miles from Cook's camp. From a description by Ernest Rice the showings are very similar to those just described, with practically no work done on them. It was not considered that the camp was sufficiently developed to warrant taking the time to see it."

M.M.A.R. 1926

Little Gem - "A group of claims of this name has been located at the head of the East fork of Dewdney creek, just over the summit of the divide from the Tulameen valley. A number of seams of zinc ore have been exposed in open-cuts and a 90 foot tunnel has shown a considerable impregnation of zinc minerals throughout the conglomerate formation. The property is close to the contact of this formation with a diorite stock."

M.M.A.R. 1952

Summit Camp

Page A133 - North Slope of Sutter Basin - "Within about 100 feet of the projected extension of the fault on the north slope of Sutter basin there are three mineral occurrences on which work has been done. The ground is now open and at one time may have been part of the Morning Star property that extends along the ridge north of Sutter basin.

cont'd

M.M.A.R. 1952, cont'd

The work was probably done about 1910. At the most westerly occurrence, at 5,330 feet elevation, a shaft has been sunk 15 feet. Thin-bedded argillite and tuff that are slightly contorted strike southeastward and dip steeply northeastward or southwestward. Some bedded quartz stringers form a zone about 3 feet wide, but no sulphides were seen in them.

At the central occurrence, at 5,070 feet elevation, an opencut exposes a shear zone crossing agglomerate and tuff. The shear zone is about 2 feet wide, strikes northeastward and dips steeply southeastward. In it are numerous quartz stringers, each about one-eighth of an inch wide. These contain pyrite and minor amounts of galena and sphalerite.

At the most easterly of the three occurrences, at 4600 feet elevation, two trenches expose a curving shear zone. The area is underlain by arkose. The shear zone in one trench strikes north 65 degrees east and dips steeply southward, but farther east at the second trench it strikes eastward and dips southward. The shear zone is about 2 feet wide and contains several veinlets. These consist largely of pyrite, sphalerite, and galena, but together they form only a minor part of the shear zone."

Exploration History

of the

Morning Star Mine

History of the Morning Star Mine

M.M.A.R. 1898

" The Morning Star, A.D. Ross, of Granite Creek, proprietor. A tunnel has been run a distance of 30 feet. The vein is 6 feet wide. The assays show silver, lead, and a trace of copper. Some thirty feet above this lode a deposit of ore shows values in gold and silver. "

M.M.A.R. 1904

On June 21, 1904, the Morning Star claim, owned by Alex. D Ross, was Crown-Granted. The surveyed claim contained 39.27 acres and was designated Lot # 131.

M.M.A.R. 1913

" Morning Star - Well-defined vein, traceable for 300 feet; fissure angles the formation and cuts through porphyry, black lime, conglomerate, etc. Solid ore in places from 2 up to 6 inches in width. "

M.M.A.R. 1915

" Morning Star - This is an old Crown-granted mineral claim owned by the Estate of Dan Ross, an old timer in the camp, and has been bonded by Andy Jensen, who had a force of miners working on the property in 1914 and 1915, and had driven 246 feet of crosscuts and drifts, starting about 60 feet vertically below some old working performed by Ross, the original owner, previous to his application for a Crown grant.

cont'd

M.M.A.R. 1915 cont'd

The camp buildings are located in a basin surrounded by precipitous cliffs, near the summit of one of which, about half a mile distant from the camp, there occurs the outcropping of a gash-vein exposed for about 15 feet in length, and from a few inches to about 18 inches in width, filled with galena, zinc-blende, calcite and quartz. The line of strike of this vein is N. 75° E. (mag.) and the dip at an angle of 45 degrees towards the south-east. A typical sample of the solid ore chipped from the vein assayed Gold, 0.03 oz. ; silver, 55 oz. ; lead, 24.2 per cent.; zinc, 13 per cent.

The country-rock in which this outcropping occurs is apparently a very much altered igneous rock, containing such a large percentage of green chlorite as to give it the appearance of a greenstone. In the vicinity of the vein later referred to as No. 1, this rock is fissured and fractured to a considerable extent; most of the narrow crevices are filled entirely with calcite, while the wider ones carry more or less galena, zinc-blende, calcite, and iron pyrite in a quartz gangue. The outcrop of the so-called gash-vein just described is an illustration of one of the wider fissures.

Another vein, later referred to as No. 2, outcrops about 75 feet distant in a south-westerly direction from the outcropping that was sampled, the assay of which has already been referred to. This last-mentioned vein has its line of strike N. 45° E. (mag.) and dips at an angle of about 80 degrees towards the south-east (mag.). If these veins maintain persistency along their line of strike, they should intersect each other at some point not very far from the outcropping of the No. 1 vein, but no evidence of this was noted.

The No. 2 vein at the point where it outcrops is about 2 feet wide, filled at that point mainly with quartz and calcite, but having some mineral scattered through the gangue rock. There has been a short adit driven under this outcrop and the vein crosscut by it. No sample was taken of the vein-filler in the adit, because the mineralization appeared insufficient where the vein was crosscut to show values of commercial importance, and no drifting has been done along the line of strike.

cont'd

M.M.A.R. 1915 cont'd

The main work on the property is that performed by Jensen during 1914 and 1915. This consists of a crosscut adit driven 75 feet in length, from which a drift about 108 feet in length has been driven; also another crosscut 38 feet in length made from the face of the drift; and a winze sunk 10 feet deep at the end of the second crosscut. He also cruised and cut out a winter sleigh-road between the mine and Holmes's ranch, situated at the end of the wagon road, six miles from Tulameen village. This work was done to facilitate transportation of ore from the mine to the railway. The route, though, is not available for a summer road, because it crosses to many marshes that are impassable during that season.

The crosscut adit referred to is located at about 60 feet lower in elevation than the open-cut, and trenching on the outcrop of the No. 1 vein, and nearly directly under that outcropping, where the sample already mentioned was taken. The adit is driven in a southeasterly direction with the expectation of crosscutting the No. 1 vein on its dip. At a point 45 feet from the portal a narrow fissure was intersected, but no further attention was paid to this at the time, and the work of driving the crosscut was continued for a further distance of 30 feet; but as no other fissure was encountered the miners started to drift on the fissure already crosscut. This drift was driven in a S. 75° W. (mag.) direction for a distance of 108 feet, but the results were unsatisfactory, because, except for 10 feet of this distance, the fissure is very narrow and carries no mineral. The 10 foot section, where the fissure is 2 feet wide, is mineralized to some extent with particles of galena, zinc-blende, iron pyrite and marcasite in a gangue composed of soft talcose material and silicified, brecciated, altered, country-rock. Beyond this point the fissure pinches out in the roof of the drift entirely, but shows in the floor with indications that it may be found wider below the floor. Regardless of these conditions, the drift was driven for about 30 feet farther in solid country-rock.

cont'd

M.M.A.R. 1915 cont'd

At the face of the drift a crosscut was made towards the north-west for the purpose of prospecting the ground, and after driving about 13 feet a well-defined fissure zone was exposed. The crosscut was continued through this for 25 feet farther, and showed that the zone is about 25 feet wide, and made up of three mineralized fissures, each about 2 feet wide, separated by bands of altered greenstone. The vein farthest from the drift appeared to give the most promise, and contained the most mineral, chiefly zinc-blende, with some kidneys of galena and iron pyrites in a gangue made up principally of brecciated country-rock. The greenstone walls are not very well defined, but sufficiently so to segregate the vein-filler from the wall-rock. A winze was sunk on this vein to a depth of 10 feet, and an average sample taken across 2 feet at the bottom of the winze assayed: Gold, trace; silver, 8 oz.; copper, 2 per cent.; zinc, 20.2 per cent.

From a rough survey made by the writer with a brunton compass, it would appear as though the fissure on which the long drift has been driven may be a continuation of the No. 1 vein at depth, but that it has pinched on the level where it is exposed by the crosscut, as well as (except in the 10 foot section) in the drift, and that beyond that point the miners lost it, but by crosscutting to the north-west had again exposed it at the point where it has widened out. Further prospecting along the strike may possibly lead to opening up a lens in the vein sufficiently wide and filled with mineral of a commercial grade, if a satisfactory method of concentration is applied."

G.S.C. S.R. 1922

" Morning Star - The showings on the Morning Star claim are located near the head of the Middle fork of Sutter creek, in a massive andesite and tuffaceous members of the Dewdney series. At an elevation of 5,200 feet an adit has been run to the south for 60 feet, where it intersects an ore vein running east and west and dipping at 40 degrees to the south.

cont'd

G.S.C. S.R. 1922 cont'd

Along this vein, whose width varies up to 3 or 4 inches, a drift has been run to the west for 80 feet, whence a crosscut to the north 27 feet long cuts a mineralized fracture zone about 5 feet wide. This zone is exposed at the surface by the portal of the main adit and cuts north 60 degrees across the hillside. The ore occurs as small stringers in this fracture zone and is reported to be exceptionally high-grade. Galena is the most important and abundant mineral. Assays of the solid sulphide were stated to run as high as 613 ounces in silver. A small percentage of grey copper, or tetrahedrite, is associated with the lead sulphide, and a little chalcopyrite is also present. Gold values up to $2.50 a ton are reported from this showing. Quartz is the chief gangue mineral."

M.M.A.R. 1927

" Morning Star - This claim, owned by Hugh Hunter, of Princeton, and located about a mile from Treasure Mountain, near the headwaters of Sutter creek, has been bonded by Alec. Robinson, of Tulameen. There are no payments to be made except current taxes and 10 per cent. on any shipments made. At the time of examination new work consisted of an open-cut 12 feet by 8 feet on a faulted and oxidized mineralized zone showing two quartz stringers containing sphalerite, oxidized pyrite, and manganese. A sample of this vein matter assayed: Gold, trace; silver, trace; zinc, 1 per cent.

Farther to the south-west and on the strike of the vein, development-work done many years ago consisted of an open-cut 25 feet long which uncovered a quartz vein containing galena, pyrite, and sphalerite varying from 2 to 6 inches in width, and a crosscut tunnel driven 25 feet lower in elevation for a distance of 75 feet. A drift has been driven from this tunnel for 93 feet on the downward extension of the vein found above and another tunnel 28 feet long from the south end of the drift.

cont'd

M.M.A.R. 1927 cont'd

A shaft, supposed to be 28 feet deep, has been sunk on a quartz vein 14 inches wide at the end of the south crosscut. In the main drift the vein varies from a stringer to 6 inches in width in the back. On the floor under the loose filling there is about 10 inches of galena, which seems to be widening in depth. A picked sample of the ore from the open-cut above the tunnel assayed: Gold, 0.04 oz. to the ton; silver, 75 oz. to the ton; lead, 42 per cent.; zinc, 8 per cent. The persistence of the vein material over a distance of 500 feet in the sedimentary rocks, and the possibility of being able to develope this vein on its strike at a depth of about 400 feet, seems to warrant further exploration."

September, 1987

The Morning Star has not been reported on since 1927, and is currently in good standing. The registered owner is:

Estate of Lorne Hansen
c/o Sophia Hansen
809-706 Queens Avenue,
New Westminster, B.C.
V3M-1L5

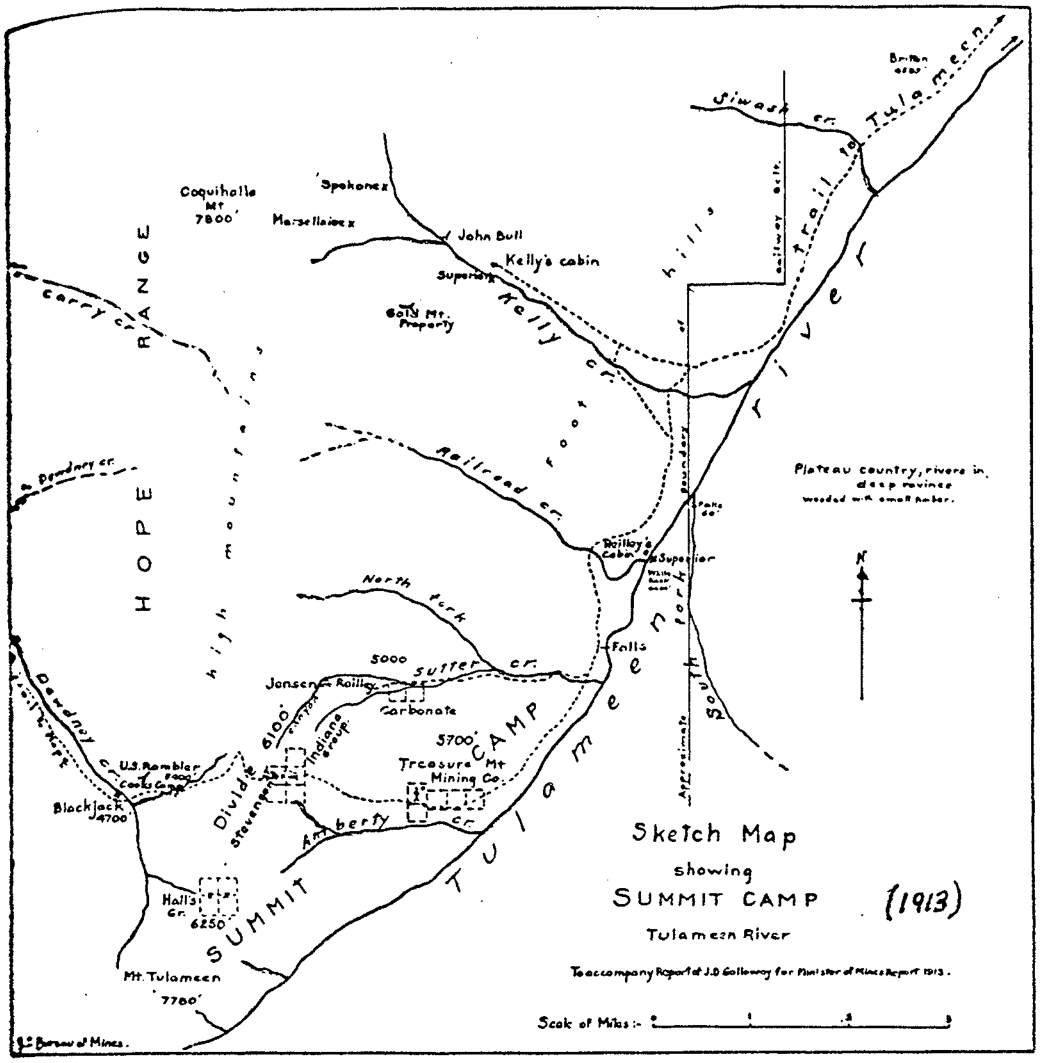
* M.M.A.R. - Minister of Mines Annual Report

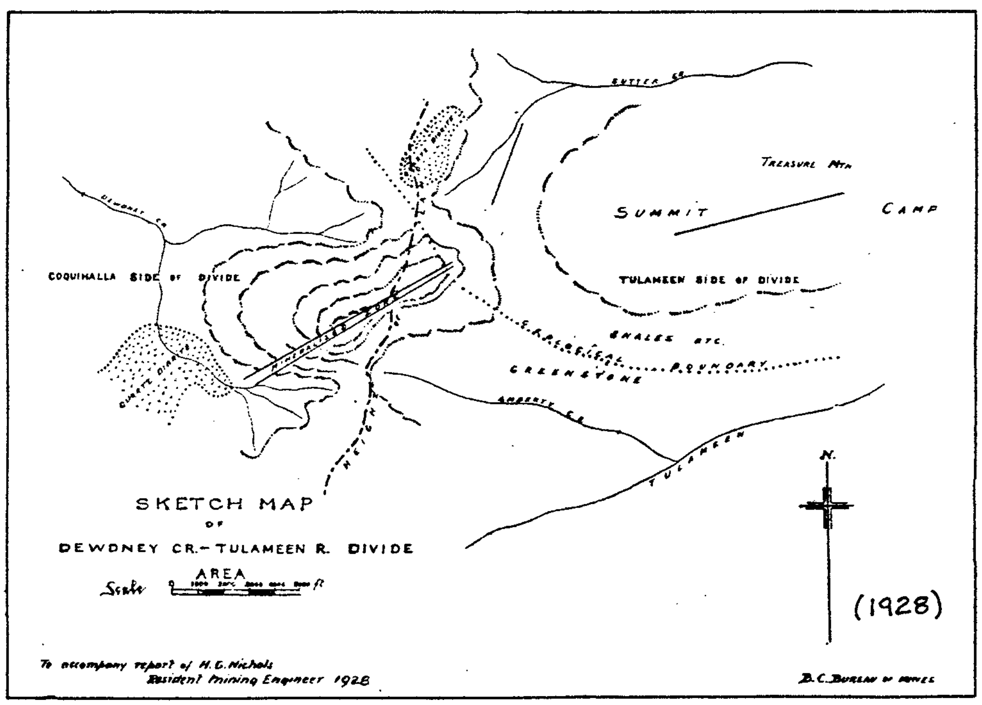
G.S.C. S.R. - Geological Survey of Canada Summary Report

Historical Maps

of the

Summit Camp Area


Sketch Map
showing
SUMMIT CAMP
(1913)
Tulameen River
To accompany Report of J.D. Galloway for Minister of Mines Report 1913.
Scale of Miles :-
B.C. Bureau of Mines.
HOPE RANGE
high mountains
foot hills
Plateau country, rivers in deep ravines
N
Coquihalla Mt 7800'
Marsellaise x
Spokane x
John Bull
Kelly's cabin
Superior
Gold Mt. Property
Kelly cr.
Siwash cr.
trail to Tulameen
railway belt
Approximate boundary
Carry cr.
Dewdney cr.
Railroad cr.
North fork
Reilley's cabin
Superior
Falls
Sutter cr.
5000
Jonsen
Reilley
Carbonate
Indiana group
Divide 6100'
Stevenson
5700'
CAMP
Treasure Mt Mining Co.
Amberty cr.
U.S. Rambler
Cook's Camp
Blackjack 4700'
Dewdney trail
Halls cr.
6250'
SUMMIT
Mt. Tulameen 7780'
Tulameen River
South fork


SKETCH MAP
OF
DEWDNEY CR. - TULAMEEN R. DIVIDE
AREA
Scale
(1928)
To accompany report of H.E. Nichols
Resident Mining Engineer 1928
B.C. Bureau of Mines
N.
SUTTER CR.
TREASURE MTN
SUMMIT
CAMP
DEWDNEY CR.
COQUIHALLA SIDE OF DIVIDE
TULAMEEN SIDE OF DIVIDE
SHALES ETC.
GEOLOGICAL BOUNDARY
GREENSTONE
AMBERTY CR.
TULAMEEN

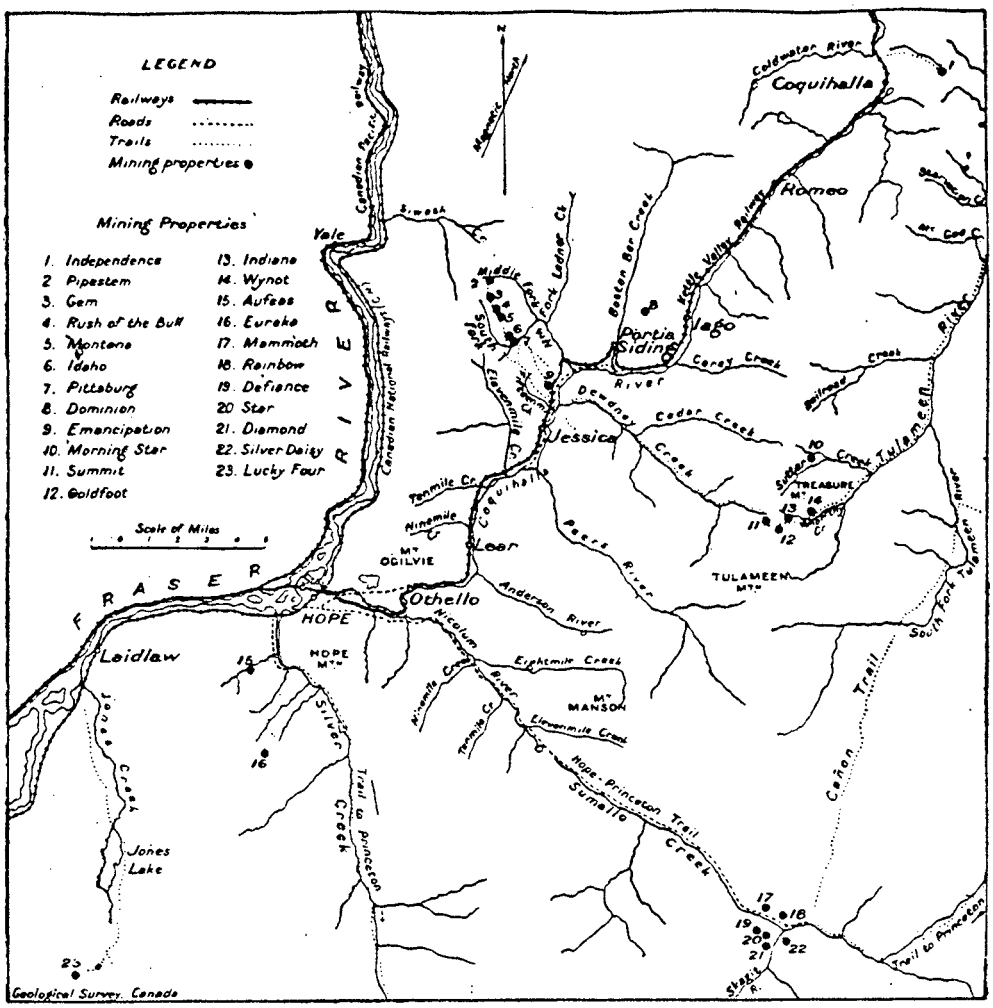


Figure 3. Diagram of Coquihalla River area and adjacent areas, Yale district, British Columbia, showing location of certain mining properties. (1920)

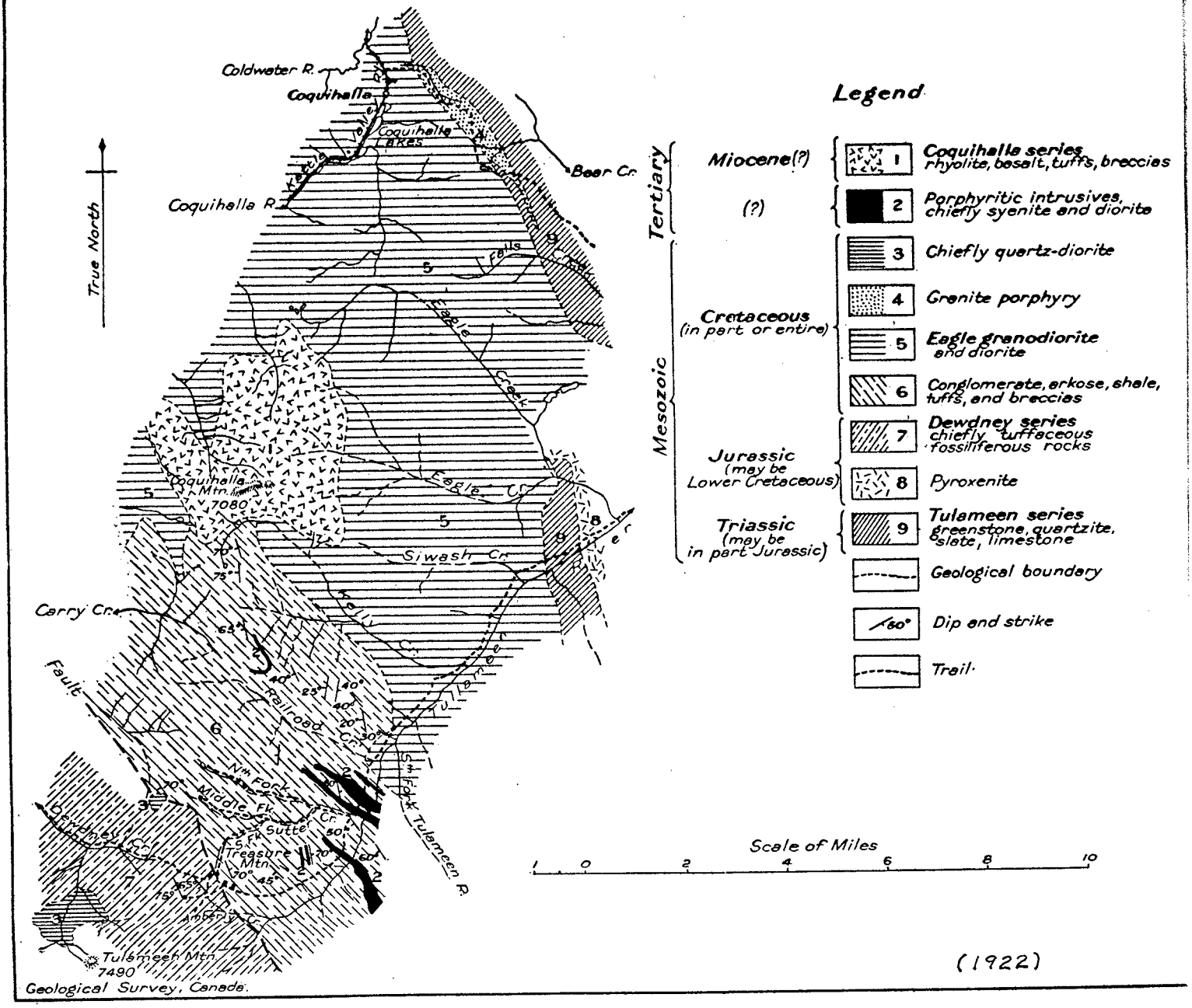


FIGURE 10. Geology of Hope mountains between Coquihalla (Kettle Valley railway) and Tulameen mountain (Area B).

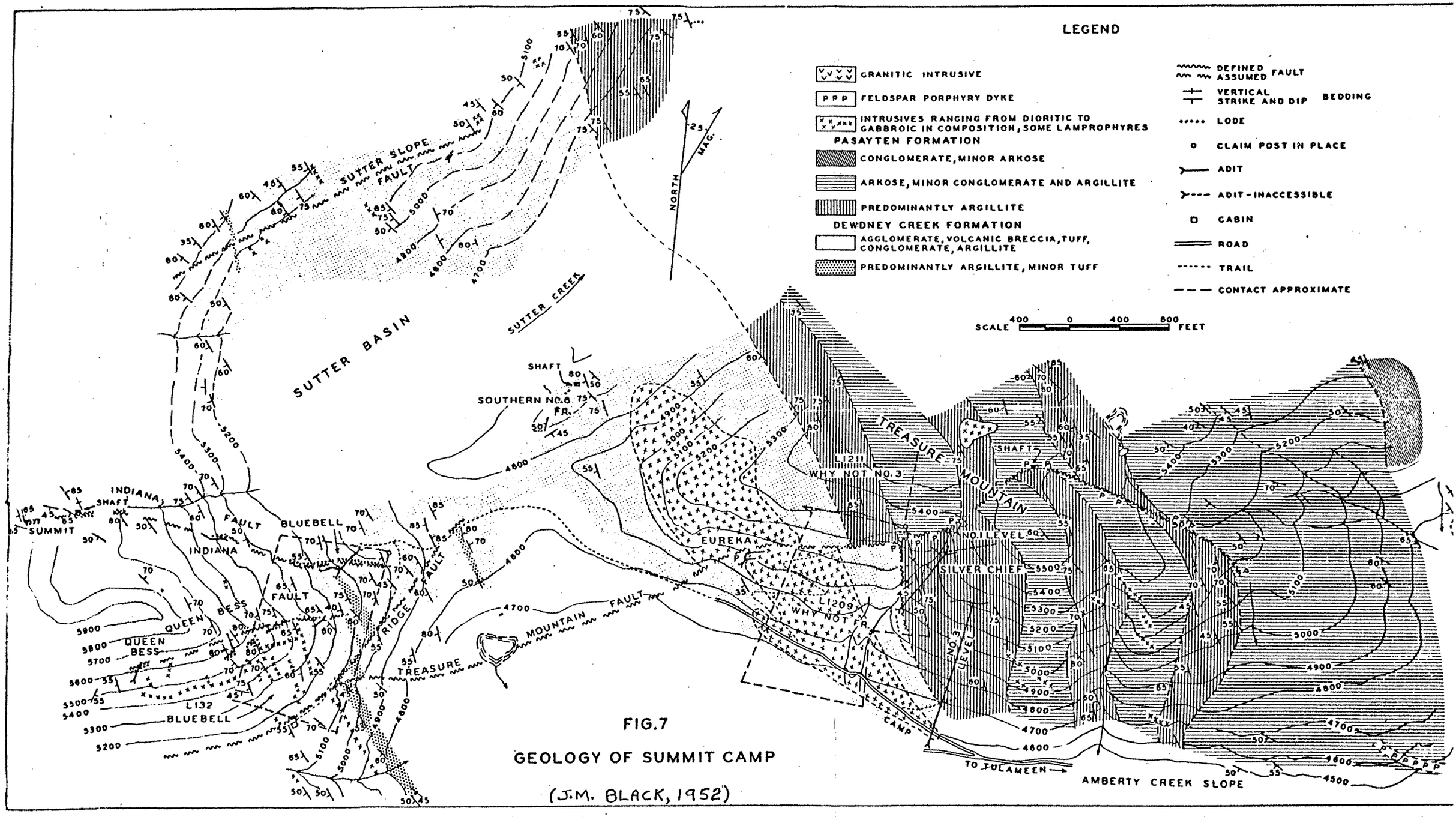


FIG.7

GEOLOGY OF SUMMIT CAMP

(J.M. BLACK, 1952)

Legend

Recent

5 Ferricrete - limonite cemented glacial and recent sediments.

Tertiary

4 Needle Peak Intrusions - quartz diorite

Jurassic - Cretaceous

3 Jackass Mountain Group - boulder conglomerate, arkosic sandstone, thin-bedded argillite (turbidite); gabbro/diorite dykes and plugs.

2 Jensen Formation - green and maroon andesitic flows, porphyritic intrusives, tuffs, breccias, and volcanic conglomerate; sandstone, greywacke, argillite.

1 Dewdney Creek Group - pebble conglomerate, sandstone, greywacke, argillite; gabbro/diorite sills, dykes, and plugs. 1a - fossiliferous pebble conglomerate, argillite, sandstone. 1b - strongly pyritized and silicified metasediments adjacent to Tertiary Intrusions.

Geological contact

Vein fault

Adit, shaft

VS-1 Assay sample

N

Mount Sutter

Morning Star Adit

Carbonate Adit

Venus Silver Claim

Southern No.8 Shaft and Trenches

Sutter Basin Adit

Silver Saddle Trench

Summit Shaft

Indiana Adit

Bluebell Adits

Mountain View Adits

Eureka-Jensen Adits

Huldra Silver Mine 1Km.

Queen Bess Adit

Trail

L. 91 L. 92 L. 93 L. 94 L. 113 L. 114 L. 115 L. 130 L. 132 L. 1210 L. 1217 L. 1214 L. 1113

MS-1 VS-1 VS-2 VS-3 VS-4 VS-5 VS-6 VS-7 VS-8 VS-9

RECONNAISSANCE MAPPING
COMPILED BY
NADIR MAPPING CORPORATION
FROM PHOTO TAKEN JUNE 1979

SCALE 1:5000
CONT. INT. 10 m

100 0 100 200 300 400 500 metres

Geology and Mineral Deposits of the Summit Camp and Venus Silver Claim

NTS 92H 6E Similkameen Mining Division By: James W. Laird Feb. 1988