



Geological Survey of Canada
Assessment Report (ARIS Summary)



[ARIS11A]

ARIS Summary Report

Regional Geologist, Vancouver

Date Approved: 1999.06.15

Off Confidential: 1999.12.10

ASSESSMENT REPORT: 25890

Mining Division(s): New Westminster

Property Name: Suka Creek

Location: NAD 27 Latitude: 49 33 00 Longitude: 121 22 00 UTM: 10 5489662 618146
NAD 83 Latitude: 49 32 59 Longitude: 121 22 05 UTM: 10 5489648 618043
NTS: 092H11W

Camp: 019 Coquihalla Gold Belt

Claim(s): Louise, Edgar, Bar-Gold, John Walters, Mike, Hillsbar 1

Operator(s): Hillsbar Gold Inc.

Author(s): Cardinal, Dan G.

Report Year: 1999

No. of Pages: 26 Pages

Commodities

Searched For: Gold

General

Work Categories: GEOL, GEOC

Work Done:

Geochemical

~~Rock~~ (3 sample(s);)

Elements Analyzed For : Multiement

SOIL Soil (10 sample(s);)

Elements Analyzed For : Multiement

Geological

GEOL Geological (775.0 ha;)

Keywords: Argillites, Cherty argillites, Coquihalla Serpentine Belt, Greenstones, Hozameen Group

Statement Nos.: 3129298, 3129296

MINFILE Nos.: 092HNW038

Related Reports: 05617, 05718, 06000, 06115, 06889, 07643, 08651, 09577, 11198, 11453, 13148, 20584, 22345, 22755, 23328, 24731, 25451

GEOLOGICAL ASSESSMENT REPORT

ON THE

HILLSBAR GROUP – WALTERS RIDGE GOLD ANOMALY
(Mike, Hillsbar 1, Hillsbar 2, Barb, Victor, Harry & Hillsbar 4 claims)

AND

SUKA CREEK GROUP – RECONNAISSANCE GEOLOGY
(Louise, Edgar, Bar-Gold & John Walters claims)

LOCATED IN THE

**HOPE AREA – COQUIHALLA GOLD BELT
NEW WESTMINSTER MINING DIVISION
LATITUDE: 49° 33'N; LONGITUDE: 121° 22'W
NTS: 92H/11W**

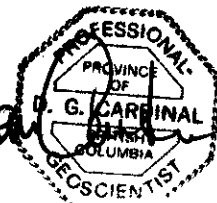
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**GEOLOGICAL SURVEY BRANCH
APRIL 20, 1999
ASSESSMENT REPORT**



25,890

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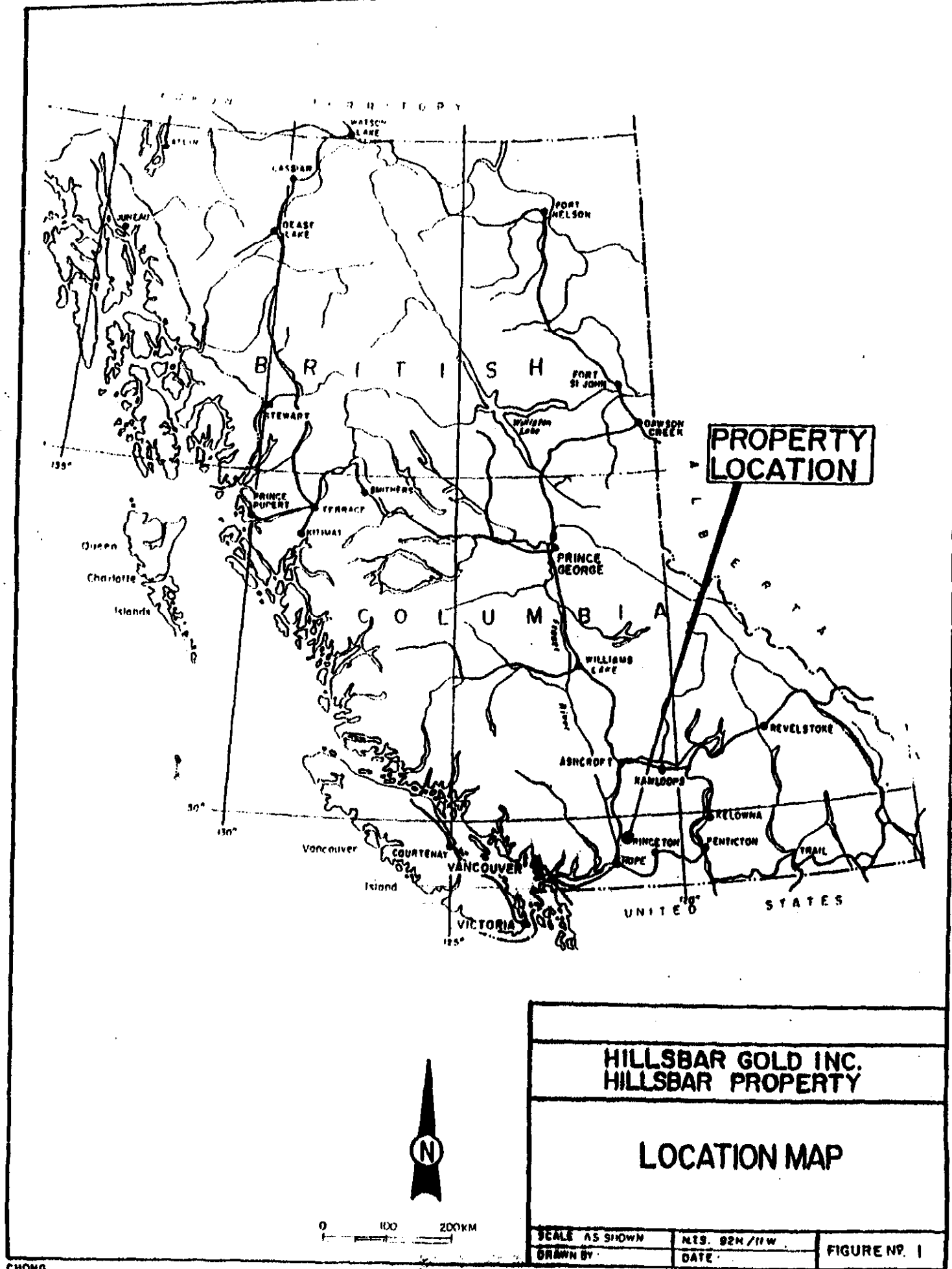
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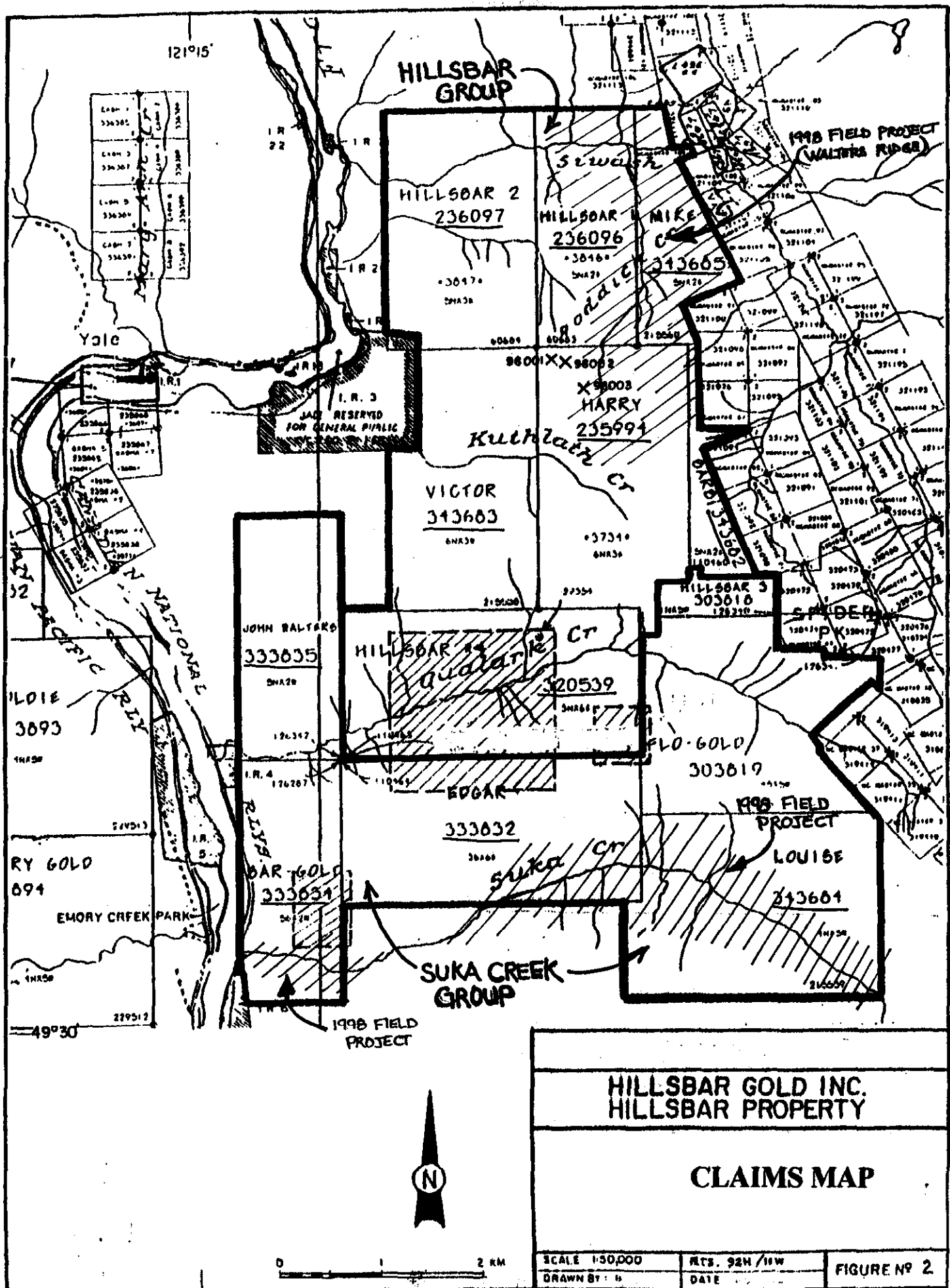
INTRODUCTION

Geological and sampling surveys were carried out over portions of the Hillsbar and Suka Creek groups, which represent a contiguous group of eleven mineral claims.

Assessment work was filed on December 10, 1998 with Statement of Work Event No. 3129296 for Hillsbar group and Event No. 3129298 for Suka creek group. Majority of the exploration surveys were concentrated on the Hillsbar group (Mike and Hillsbar 1 claims) where an important anomalous siliceous gold-bearing structure was identified. Limited reconnaissance surveys were conducted on the Suka creek group, which consisted of geological surveys and portable sluice-pan concentrate sampling along Suka creek drainage to assess the gold potential in the area.

The Hillsbar project consisted of helicopter support and a 2-person fly camp. The project included 20 days of field work carried out between the months of August and September. The Suka creek project also consisted of 2-person survey crew. The crew was based in Hope with daily helicopter support to and from the project site. The project was conducted for 10 days during the month of July.





A. LOCATION AND ACCESS

The Hillsbar and Suka Creek project sites are located in southwestern BC and situated in the northern Cascade Mountain Range at moderate elevations ranging between 500-1130 metres. Suka Creek flows from east to west and drains into the Fraser River approximately 12 kilometres north of Hope. Former logging roads leading into the Suka Creek drainage system are now impassable, the area is only accessible by helicopter, some 15 minute ferry time from Hope.

The Hillsbar project is some 20 kilometres due north-northeast of Hope and some 7 kilometres due east of the small community of Yale. It overlooks Siwash Creek, which empties into the Fraser River, and is 2 kilometres south of Siwash forks, the site of a former small lode gold mining camp.

Access to the project site is currently by helicopter from Hope, about a 20 minute ferry time. A former logging road cuts through the mineral claims and project site, however parts of the road leading to the site are presently impassable due to slides. The logging road can be accessed from the Trans Canada Highway by turning right (east) some 500 metres north of Alexandra Bridge. The road then heads southerly for some 20 kilometres to Siwash Creek watershed. At this point the branch road leading to the project site is not passable.

B. CLAIMS INFORMATION

The Hillsbar and Suka Creek groups lie within the New Westminster Mining Division, on NTS map sheet 92/11W. The central co-ordinates for both groups is at Latitude 49° 33' and Longitude 121° 22'.

There are a total of 11 contiguous mineral claims divided into 2 groups: Hillsbar and Suka Creek, which represent 157 units. The claims are registered to Hillsbar Gold Inc. of Sechelt, BC.

The table below summarizes the pertinent information for each claim.

Table 1.

<u>Claim Name</u>	<u>Tenure Number</u>	<u>No. of Units</u>	<u>Current Expiry Date</u>
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Hillsbar Group:

Hillsbar 1	236096	10	January 18, 2000
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(Table 1. Cont'd.)

Hillsbar 2	236097	15	January 18, 2000
Hillsbar 4	320539	18	August 30, 2000
Victor	343683	18	February 13, 2000
Mike	343685	10	February 13, 2000
Barb	343682	10	February 13, 2000
Harry	235994	18	September 17, 2000
Suka Creek Group:			
John Walters	333835	10	January 28, 2000
Bar Gold	333834	10	January 28, 2000
Edgar	333832	18	January 28, 2000
Louise	343684	20	February 13, 2000

Total 157 units

C. BACKGROUND

The Hope-Yale and Fraser River canyon area has had an active mining history. In the late 1850s the area first received attention when a gold-bearing placer bar was discovered just south of Yale. The bar know as Hills Bar, named after one of the prospectors, became one of the richest gold producing bars along the Fraser River. This sparked a major but short-lived gold rush, which brought an influx of prospectors and miners to the Hope area. The subsequent opening of the Kettle Valley railway along the Coquihalla River valley in 1910, afforded the prospectors easier access to the more remote and rugged regions east of Hope. During this period a favorable geological belt was explored along which several promising lode gold veins were discovered, to day it is known as the Coquihalla gold belt. The belt geologically resembles that of the famous Mother Lode gold belt discovered in California by the gold seekers of 1849.

One of the earliest (circa early 1900s) lode gold deposits to be discovered in the region, which occurs along the northern portion of the Coquihalla gold belt, was located at Siwash Creek forks, about 7 kilometres due east of Yale. Siwash empties into the Fraser 2.5 kilometres north of Yale. By 1907, 2 small stamp mills had been erected at the forks but operated for only a brief period. During this period a number other gold discoveries were made near the headwaters of Ladner Creek, several kilometres north of the newly constructed Kelly Valley railway. In 1915, the Idaho zone was discovered, which was eventually put into production in 1981 by Carolin mines. In 1916, a rich, gold-bearing quartz vein was discovered 2.5 kilometres southeast of the Idaho zone. The gold vein was put into production by Emancipation mine and became one of the first significant gold producers along the Coquihalla gold belt. Other gold veins were subsequently discovered

along the belt including the Aurum in 1926 and Pipestem in 1922. Carolin mines operated the Idaho deposit for a brief period between 1981-84. The mine closed due number of factors including gold recovery problems and questionable management operations. Over the years various other gold properties have been discovered along the belt. To date, at least 30 gold properties and occurrences have been documented.

The Hillsbar property and 'Walters Ridge' gold anomaly located along the northern portion of the Coquihalla gold belt, just south of Siwash forks, is considered to be a new discovery, where the 1998 field surveys outlined an anomalous gold-bearing structure. There is evidence of old workings along Walters Ridge that the author believes to date back to the early 1900s during the time Siwash creek forks was been explored. An extensive exploration program including exploratory diamond drilling is been proposed for the 1999 field season, in order to properly define the newly discovered anomalous structure.

D. REGIONAL GEOLOGY AND THE COQUIHALLA-SERPENTINE BELT

Regionally, the geological setting is marked by a major northwest-southeast trending break known as the Hozameen fault. The fault is identified by semi-continuous belt of serpentine, which is fault-bounded by the East and West Hozameen faults. This structural break can be traced along strike for at least 100 kilometres in southwestern BC and extends into the northern state of Washington. The faults are separated by the serpentine, which varies in width along strike, it's widest been at least one kilometre in the Serpentine Lake area several kilometres southeast of former Carolin mines. They converge to the northwest north of Siwash Creek where the serpentine begins to pinch out, as well as to the southeast along the headwaters of Sowaqua Creek-Ghost Pass Lake area to form one continuous fault sytem.

The Hozameen fault and related serpentine belt separate two distinct crustal units. To the northeast, in fault-contact with the serpentine, is a volcanic greenstone unit identified as the Spider Peak formation of Early Triassic age. The fault-contact forms a suture zone that marks the East Hozameen fault. The greenstone volcanics act as a basement to the unconformable, overlying Pasayten Trough sediments, which include Jurassic to Cretaceous turbidite and successor basin deposits. To the southwest, the serpentine is in fault-contact with the Permian to Jurassic age Hozameen Group, comprised of dismembered ophiolite succession, which includes ultramafic rocks of the Petch Creek serpentine belt, in turn, overlain by thick sequence of chert and cherty volcanics and sediments. The fault-contact represents the West Hozameen fault.

The oldest sedimentary rocks in the Pasayten Trough make up the Ladner Group, a turbidite sequence consisting of basal conglomerate with successor greywacke, siltstone,

slate and argillite units. The basal members such as the conglomeratic and greywacke units, adjacent to the greenstone and East Hozameen fault, are favourable for hosting gold mineralization. Gold deposits such as the Idaho zone (Carolin mine), Pipestem and the McMaster are hosted in the basal units of the Ladner Group. Highgrade gold has also been found within the East Hozameen hosted in serpentine-talc fault shears, such as the old Aurum mine. As well, gold-bearing quartz veins are known to occur in the greenstone which were mined at the Emancipation.

The above-noted former producing mines as well as the Ward at Siwash Creek forks, along with at least 25 other minor gold occurrences form the Coquihalla gold belt. The belt shows similarities in geological and structural setting, and mineralogy and alteration assemblages to the Bridge River gold camp in BC and Mother Lode gold district of California.

Gold-bearing quartz veins have also been found in granodiorite intruding the Hozameen Group cherts, which occur west of the Hozameen fault system. The old Hillsbar workings along Qualark Creek tested a series quartz-fissure veins that carried minor gold values in granodioritic rock.

The source and age of the gold mineralization along the Coquihalla gold belt is unknown. The Hozameen fault system probably played an important role as a conduit for ore-forming fluids; most of the occurrences are hosted by the Ladner Group and lie close to the Hozameen fault. However some gold mineralization is hosted in greenstone volcanics, the Spider Peak Formation (eg. Emancipation) or associated with a suite of small sodic felsic porphyry (eg. Ward).

There is potential for the discovery of more auriferous mineralization along the belt. This has been proven by the recent discovery of Walters Ridge gold anomaly. The reported placer gold workings around Serpentine Lake may be locally derived possibly from greenstone volcanics that occur in the area, similar to the geological setting as the Emancipation mine. As well as the reported occurrence of placer platinum in Sowaqua Creek and the gold-platinum showing (eg. St. Patrick) raises intriguing possibilities that the Coquihalla serpentine belt represents an exploration target for platinum-group elements.

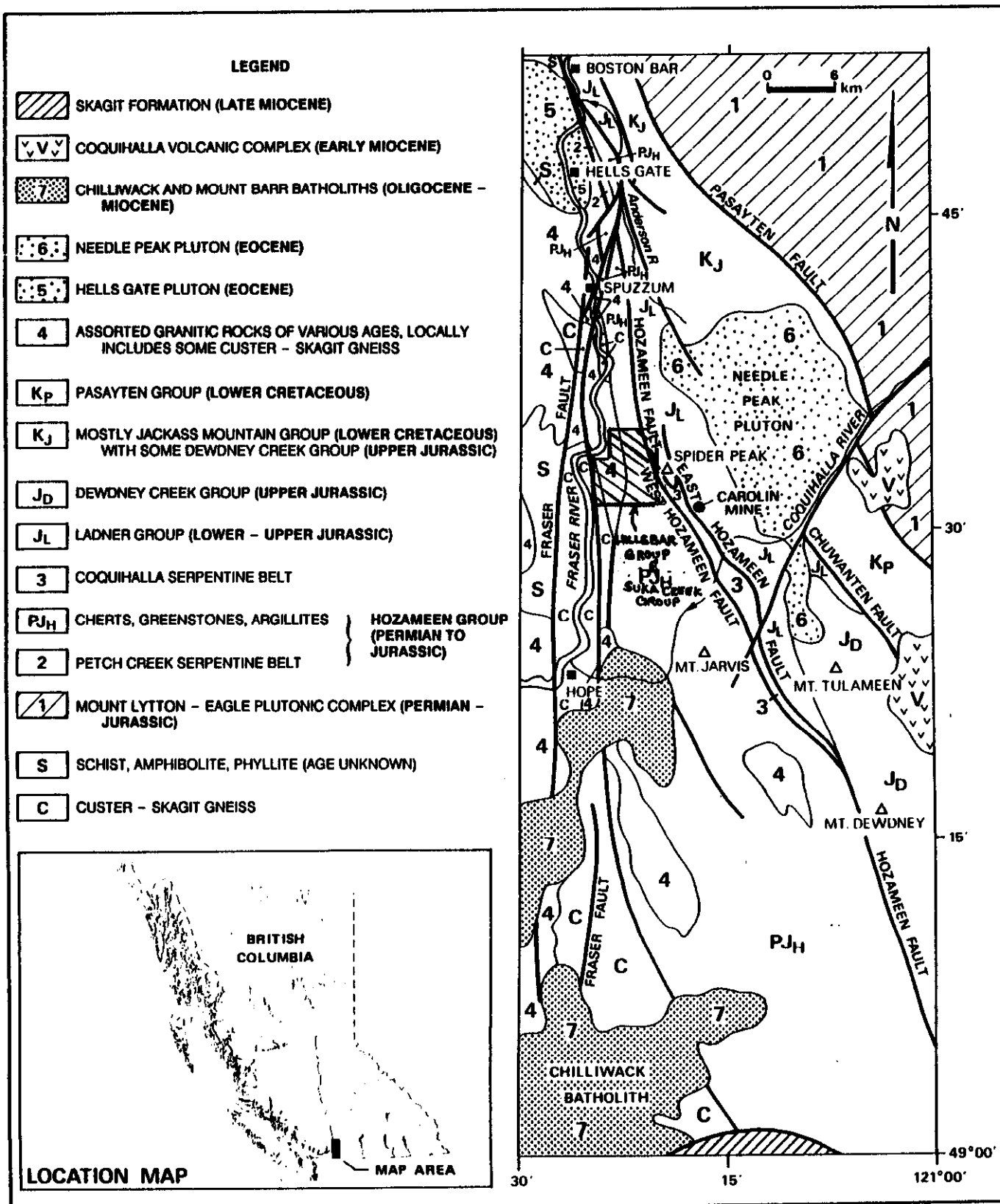


Figure 3 Regional geology of the Hope-Boston Bar area (adapted from Monger, 1970; Ray, 1986b).

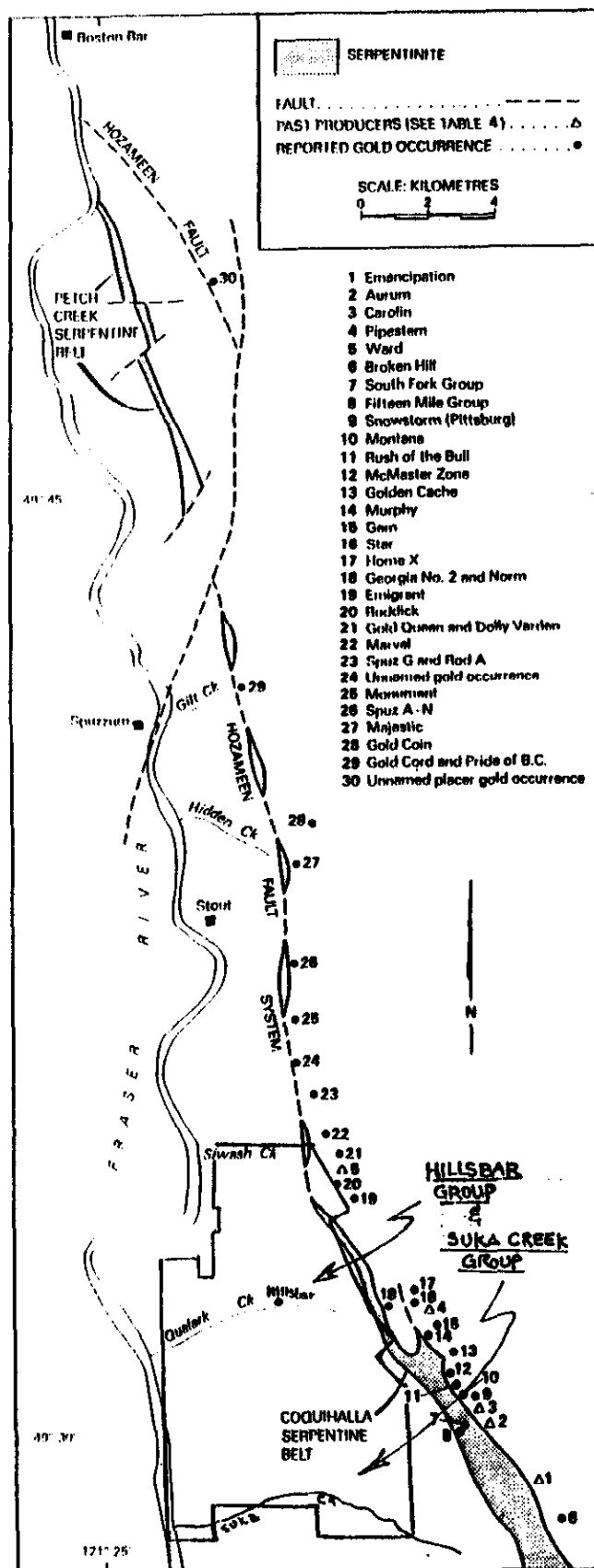


Figure 4. Location of the past-producing mines and minor occurrences comprising the Coquihalla gold belt.

E. GENERAL PROPERTY GEOLOGY

The Hillsbar-Suka Creek group claims encompass an area covering roughly 5 kilometres wide by 9 kilometres long. Contained within this area are at least 3 main rock types and 2 major fault structures. Approximately 75% of the area is underlain by the Hozameen Group consisting predominately of intensely foliated and steeply dipping chert and cherty argillite. This unit is intruded by granodiorite of the northern Cascade Range. The granodiorite is locally cut by late stage quartz fissure veins. The veins are usually barren of mineralization. However, quartz stringers hosted in the granodiorite found in the old Hillsbar workings, are reported to carry minor gold values. Along the western part of the Suka Creek group and paralleling the east side of the Fraser River, is a major north-south trending fault. This fault forms part of main the Hope fault system, which runs along the western side of the Fraser. The western part of the Suka Creek group is also underlain by intensely sheared Custer gneiss in irregular contact with the Hozameen Group.

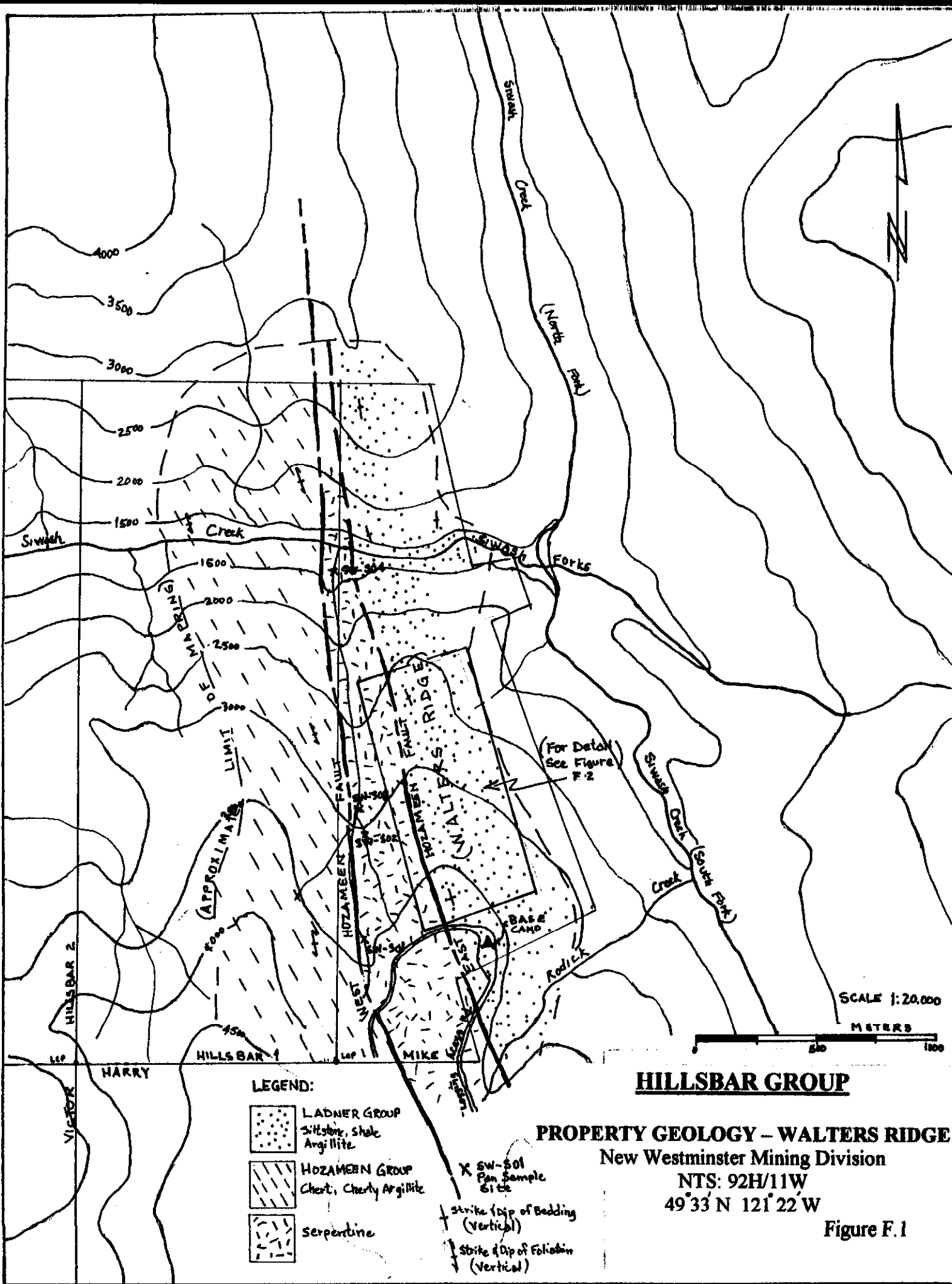
Northeastern part of the Hillsbar group (i.e. Hillsbar 1, Mike and Barb) is underlain by both Hozameen and Ladner groups and the Coquihalla serpentine belt-Hozameen fault systems. The serpentine belt separates the Hozameen and Ladner groups. The Hozameen rocks, which consists predominately of northwest trending, light colored, banded chert, occur along the western side of the serpentine and mark the West Hozameen fault. The Ladner rocks, comprised mainly of northwest trending, steeply dipping siltstone, slate, occur along the east side of the serpentine and define the East Hozameen fault.

F. HILLSBAR GROUP

F.1 Walters Ridge Gold Anomaly

Walters Ridge is a prominent north trending ridge, which overlooks the forks of Siwash Creek. It is flanked on the west by a small incised, north flowing stream that also partly follows the West Hozameen fault, and on the east by the north fork Siwash Creek valley. The ridge starts at 1,128 metre elevation along a small logged-off plateau and descends down to the creek to elevation 457 metres for a distance of some 1.5 kilometres.

The author's geological reconnaissance surveys during the 1998 field season were primarily confined to the upper sections of Walters Ridge from the plateau to an elevation of about 975 metres, a distance of 300-350 metres. The ridge has very limited bedrock exposure however, due to a thin veneer of soil cover numerous rock sub-outcroppings can be observed. Parts of the east side of the ridge have escarpments that appear to be fault related and expose sections of bedrock that is associated with quartz veining and finely



1:2000



EAST
HOLMEEN
FAULT

Approximate Limit
Quartz-Silica
Alteration Zone

Anomalous Gold (ppb)
Quartz Breccia
Zone
(Fine Pyrite & Arsenopyrite)
D. SW-208
SW-209 X 20
SW-207 X 20
SW-206 X 20
SW-205 X 20
SW-204 X 20
SW-203 X 20
SW-202 X 20
SW-201 X 20
SW-200 X 20
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SW-6 X 20
SW-5 X 20
SW-4 X 20
SW-3 X 20
SW-2 X 20
SW-1 X 20

100M

100M

100M

SERPENTINE BELT

(Former Logging Access Road)

Rock Grab Sample
X SW-208 329 (ppb Au)

LADNER GROUP
SEDIMENTS

Steeply Dipping
Fault System

(Site of
Base Camp)

HILLSBAR GROUP

LEGEND:

- 1 Alteration Zone
Silicification, Quartz Veins & Minor Sulphides
- 2 Weakly Altered, Shale & Siltstone
- Mossy, Dark Green Serpentine
- 1 Bed Rock Outcrop
- Strike/dip
Bedding
(Vertical)
- Strike/dip
Foliation
(Vertical)

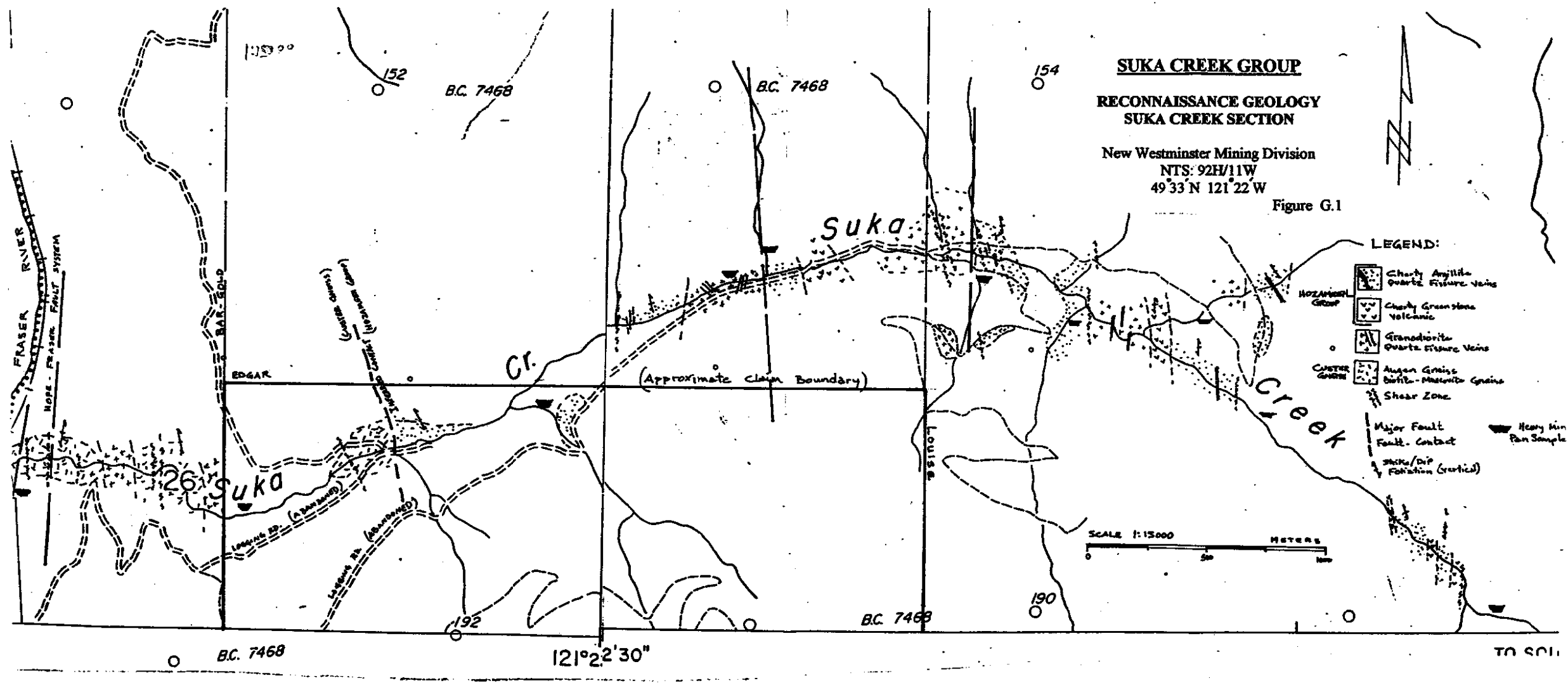
SCALE 1:2000
METERS
0 25 50 100

WALTERS RIDGE - GOLD ANOMALY

New Westminster Mining Division

NTS: 92H/11W
49°33' N 121°22' W

Figure F.2



mineralized, silica-rich alteration. During the surveys several old, moss covered pits, trenches and a small caved-in adit was noted. These workings appear to date back to the early 1900s when Siwash Creek forks was been explored for gold. It is evident by the number of workings that the old timers were testing the quartz veins and silica reach zones for visible gold-bearing potentials.

A preliminary grid was surveyed and established over the area in order to tie-in the old workings, sample sites, bedrock geology and mineralized alterations. A former logging access road cuts a section of bedrock at the point where the ridge begins. A baseline grid with station L0+00 was established from this point having an azimuth of 340° and surveyed for a length of 200 metres (L2+00N) along the spine of the ridge. The road cut exposes a section of the East Hozmeen fault, which is marked by a 5-8 metre wide northwest trending, steeply dipping, fuchsite-bearing listwanite alteration zone. West of the listwanite zone is a thick section of dark green serpentine, which forms part of the Coquihalla serpentine belt. East of the fault is an exposed section of the Ladner Group sediments consisting mainly of steeply dipping, northwest trending shale and siltstone.

The East Hozameen fault-listwanite alteration flanks the west side of Walters Ridge and can be traced from the road cut striking 320° . Reconnaissance mapping and sampling surveys conducted over the grid and along the ridge have traced a strong quartz-siliceous alteration zone carrying finely disseminated sulphides hosted in sheared siltstone and tuffaceous siltstone breccia. The alteration zone appears to range from 25-100 metres wide and is open to the northwest along strike and parallels the fault. It appears to be structurally controlled occurring as replacement within sheared and brecciated tuffaceous siltstone. Approximately 300 metres north of station 0+00, descending along the spine of the ridge, is a steep escarpment exposing a section of quartz and silicified mineralization. Abundant quartz veins and siliceous tuffaceous-siltstone-breccia carrying very fine disseminated sulphides can be observed. The sulphides consist mainly of fine pyrite and arsenopyrite.

F.2 Brief Discussion of Results

Eight rock samples collected along the escarpment for geochemical analysis were anomalous in gold, ranging from 85 parts per billion to 2,875 ppb Au.

A limited number of 10 soils were collected over the grid. However the soil profile is very poorly developed and good representative soil samples were difficult to obtain. This may partly explain the reason for the low geochemical gold values majority which range between <1 ppb to 29 ppb Au. Two soil samples collected over the East Hozameen fault-listwanite alteration are anomalous in gold with values of 96 and 602 ppb.

The 8 anomalous rock samples were collected approximately 100 metres northeast of the grid, which indicates that the main siliceous-gold anomalous zone lies just off the grid.

F.3 Conclusions and Recommendations

- The siliceous-gold anomalous zone is structurally controlled and hosted in steeply dipping thrust-faulted and brecciated tuffaceous siltstone of the Ladner Group, which occurs adjacent to the East Hozameen fault.
- The East Hozameen fault probably played a role in the introduction of the mineralization and indicates a potentially deep-seated mineralized replacement system within the siltstone.
- The anomalous gold zone is marked by silica-rich alteration in places hosting a sulphide assemblage consisting mainly of very fine disseminated arsenopyrite and pyrite as replacement in silicified tuffaceous siltstone breccia fragments.
- The fuchsite-bearing listwanite alteration represents the East Hozameen fault contact between the serpentine belt and the Ladner sediments. Two soil samples collected over the fault contact are anomalous in gold. Potential exists for the fault to host an auriferous-bearing system.
- Recommendations include: expand the grid; conduct detail rock sampling and geological mapping along Walters Ridge; and follow-up with exploratory drilling program to test the silica-rich anomalous gold zone.

F.4 Field Procedures

A 3-person fly camp was erected at the summit of Walter Ridge. A geologist with 2 assistants, one hired for duration of the project (20 days) the other on a part-time basis (10 days), conducted geological, prospecting and sampling surveys in the area.

A grid was established over the upper section of the ridge and a limited number of soil and rock samples collected. The grid was used tie-in all the old workings and geology. Several geological reconnaissance traverses were also conducted along the main the branch of Siwash creek and along the south fork of Siwash, assisted by helicopter support. The small stream, which flanks the west side of the ridge was also prospected down to its confluence with Siwash.

Several days were also spent examining various rock types that are well exposed on the property cut by logging access roads.

G. SUKA CREEK GROUP

G.1 Reconnaissance Geology

Suka creek is a small tributary located 15 kilometres north of Hope and empties into the Fraser River. It is some 10-12 kilometres long and originates from the east along the western edge of the Coquihalla serpentine belt and flows westerly. It cut through 3 basic rock types including granodiorite, which form part of the northern Cascade Range, the Hozameen Group and western edge of Custer gneiss.

Reconnaissance geological surveys and heavy mineral pan sampling was conducted along parts of the creek from near the headwaters to its confluence with the Fraser. It cuts a thick section of northwest striking, steeply dipping cherty argillites associated with occasional bands of concordant cherty greenstone volcanics. The argillite exposed along sections of the creek bed typically displays carbonaceous material associated with abundant narrow graphitic slickensides. Parts of the argillite also host numerous milky white quartz fissure veins, generally barren of mineralization. Granodiorite intrudes sections of the argillite. Quartz veins cutting parts the granodiorite were also noted but usually contained little to no mineralization. Minor disseminated pyrite and pyrrhotite typically occur near the argillite-granodiorite contact.

This Hozameen package represented by the argillite with minor greenstone and isolated intrusions of granodiorite, can be traced from near the headwaters of the creek for at least three-quarters of its length to within 3-4 kilometres of the Fraser. From this point the cherty argillite is in fault contact with intensely sheared, mylonitic, granitic-gneissic rocks of the Custer gneiss series. Exposed sections of the gneiss along the creek bed is usually light gray to whitish in color and consists of porphyroblastic-augen-like texture of sodic-albite feldspar in a mylonitic ground mass with disseminated muscovite-biotite. In macroscopic scale the rock displays a gneissic texture. Approximately one kilometre east of the confluence of the Fraser and along the creek valley, a prominent north trending fault structure can be observed. The fault is believed to be the eastern part of the Hope-Fraser fault system.

A number of heavy mineral pan concentrate samples were obtained along sections of the creek and some of its smaller tributaries in conjunction with the reconnaissance mapping surveys.

G.2 Field Procedures

The reconnaissance surveys were conducted by a 2-person field crew, which was based out of Hope. A helicopter was utilized for daily drop-off and pick-up, as former logging access roads along Suka creek are now impassible with slides and heavy growth of willow and alder.

Mapping was conducted a scale of 1:15,000. Control was by airphotos as well as topographic maps at 1:50,000 scale. Both hip chain and brunton was used for control to map exposed bedrock sections along the creek bed. Heavy metal pan sample concentrates were collected along sections of the creek. This usually consisted of shovelling 2-3 kilograms of creek bed material into portable sluice and eventually panning down to several grams of concentrate heavys. The heavys were then returned to Hope where they examined in more detail under a binocular microscope to note for possible gold colors.

G.3 Conclusion

- The Suka Creek Group is underlain predominately by northwest trending, steeply dipping cherty argillite and minor cherty greenstone volcanics of the Hozameen Group.
- Intensely sheared to mylonitic, porphyroblastic-augen albite feldspar gneiss of the Custer Gneiss series occurs along the western portion of the claim group.
- Both the Custer gneiss and the Hozameen group are intruded by Cretaceous granodiorite.
- Only minor mineralization was noted mostly along contacts and shear zones consisting of disseminated pyrite and pyrrhotite.
- A heavy mineral pan sampling program was also conducted along Suka Creek as a method of determining the potential for gold in the area.
- Majority of the heavy mineral pan sample concentrates, when examined in detail under a binocular microscope did not contain any gold colors. Any gold that was observed is believed to have derived from the east, more likely from the Coquihilla serpentine belt.
- Both the Hozameen argillites and the Custer gneiss rocks observed along Suka creek, showed little potential for hosting gold mineralization.

H. COST BREAKDOWN

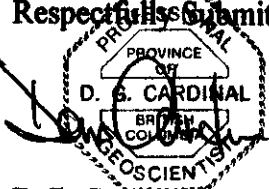
HILLS BAR GROUP:

Field Crew:	Cost
Geologist, 20 days @ \$350 per day	\$ 7,000
Assistant (full-time), 20 days @ \$150 per day	3,000
Assistant (part-time), 10 days @ \$100 per day	1,000
Field Support:	
3-man Camp, 18 days @ \$70 per day	1,260
Helicopter, 6 hours @ \$750 per hour	4,500
Truck-4x4, 15 days @ \$65 per day	975
Geochemical Analysis (ICP - 23 samples)	490
Report: plotting, compilation, writing & word processing	1,825
Total Costs Incurred:	<u>\$ 20,050</u>

SUKA CREEK GROUP:

Field Crew:	
Geologist, 14 days @ \$350 per day	\$ 4,900
Assistant, 14 days @ \$150 per day	2,100
Field Support:	
Accommodations, 15 days @ \$80 per day	1,200
Helicopter, 4 hours @ \$750 per hour	3,000
Report: mapping & word processing	625
Total Costs Incurred	<u>\$ 11,825</u>

Respectfully Submitted;

A circular professional seal for D.G. Cardinal, a geoscientist. The seal features the text "PROVINCE OF" at the top, "D. G. CARDINAL" in the center, and "BRITISH COLUMBIA" and "GEOSCIENTIST" at the bottom. A signature is written across the seal.

D.G. Cardinal, P. Geo.

I. PROFESSIONAL CERTIFICATE

I, Daniel G. Cardinal, residence at 65661 Birch Trees Drive, P.O. Box 594, Hope, BC, VOX 1L0, do hereby certify:

I am a Professional Geoscientist and member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (#18455); Association of Professional Engineers, Geologists and Geophysicists of Alberta (M#29405); and a Fellow of the Geological Association of Canada (#F4891).

I am a graduate of University of Alberta (Edmonton) with a BSc. degree in Geology, 1978, and from the Northern Alberta Institute of Technology (Edmonton) with a Geological Technologist diploma, 1972.

I have been practicing my profession for the past 20 years for various major and junior resource companies, and I have been employed by Cardinal Geoconsulting Ltd. since 1984 as an independent consulting geologist.

I have supervised and conducted the geological and sampling surveys documented in this report and that I am the author of this geological assessment report on the Hillsbar Group and Suka Creek Group of mineral properties.

I have no direct or indirect interests in the company Hillsbar Gold Inc. or in the properties described in this report.

Dated at Hope, British Columbia, this 20th day of April, 1999.



The seal is a circular emblem. The outer ring contains the text "PROFESSIONAL" at the top and "BRITISH COLUMBIA" at the bottom. Inside the ring, the text "PROVINCE OF" is at the top, "D. G. CARDINAL" is in the center, and "GEOSCIENTIST" is at the bottom. A handwritten signature is written across the seal.

D.G. Cardinal, BSc., P. Geo.

J. REFERENCES

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APPENDIX I
CHEMICAL ANALYSIS



GEOCHEMICAL ANALYSIS CERTIFICATE



Cardinal Geoconsulting Ltd. PROJECT SIWASH File # 9804485

P.O. Box 594, Hope BC V0X 1L0 Submitted by: D. Cardinal

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**	Pt**	Pd**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppb	ppb
PAN SAMPLES SW-S01	2	26	9	113	<.3	27	15	1706	3.07	29	<8	<2	<2	21	.6	<3	<3	42	.28	.057	5	18	.56	95	.03	3	1.78	.01	.06	<2	4	6	1
SW-S02	3	44	10	140	<.3	50	17	1242	3.67	127	<8	<2	<2	16	.5	<3	<3	80	.23	.038	6	61	1.00	75	.06	<3	1.81	.02	.14	<2	37	6	3
SW-S03	1	18	5	85	<.3	121	18	789	3.59	40	<8	<2	<2	8	.2	6	<3	44	.12	.029	4	114	1.26	67	.02	4	1.61	.02	.04	6	74	<1	<1
SW-S04	2	51	<3	119	<.3	378	34	1099	4.62	68	<8	<2	<2	15	.9	<3	<3	72	.30	.034	4	271	3.99	56	.08	10	1.69	.02	.12	<2	12	<1	1

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 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 SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AL.

- SAMPLE TYPE: SILT AU** PT** PD** BY FIRE ASSAY & ANALYSIS BY ULTRA/ICP. (30 gm)

DATE RECEIVED: OCT 9 1998 DATE REPORT MAILED: Oct 16/98 SIGNED BY: C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE



Cardinal Geoconsulting Ltd. PROJECT WALTERS RIDGE File # 9804483

P.O. Box 594, Hope BC V0X 1L0 Submitted by: D. Cardinal

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
SW-R03	2	7	9	17	<.3	2	<1	48	1.50	1181	<8	<2	<2	10	.2	9	<3	3	.01	.032	8	8	<.01	18	<.01	<3	.19	.07	.02	2	85
SW-R04	5	12	9	19	<.3	3	<1	19	1.51	243	<8	<2	<2	4	<.2	8	<3	3	.01	.029	5	9	<.01	9	<.01	<3	.24	.08	.01	2	210
SW-R05	4	10	11	19	1.1	2	1	20	1.93	582	<8	<2	<2	13	<.2	9	<3	20	<.01	.024	11	8	.01	123	<.01	<3	.20	.06	.13	<2	2875
SW-R06	3	9	7	20	.7	3	4	20	1.47	850	<8	<2	<2	6	.2	8	<3	17	.03	.041	6	5	.02	153	<.01	4	.28	.04	.20	<2	980
SW-R07	7	7	7	20	<.3	2	1	39	1.36	204	<8	<2	<2	8	<.2	7	<3	6	.02	.049	7	9	.01	42	<.01	<3	.19	.06	.06	2	343
SW-R08	3	10	11	39	.5	4	2	33	2.34	102	<8	<2	<2	5	.4	8	<3	9	.01	.046	7	5	.01	87	<.01	<3	.27	.06	.13	<2	190
RE SW-R08	3	10	11	38	.5	4	2	27	2.29	100	<8	<2	<2	5	.3	8	<3	8	.01	.045	6	4	.01	83	<.01	<3	.26	.06	.13	2	329
SW-R09	2	4	5	21	<.3	1	<1	20	1.04	92	<8	<2	<2	9	<.2	<3	<3	1	.01	.029	7	7	<.01	12	<.01	<3	.16	.08	.01	<2	391
SW-R09A	3	10	8	25	.7	2	1	39	1.62	121	<8	<2	<2	9	.3	10	<3	8	<.01	.032	6	7	<.01	39	<.01	<3	.27	.07	.05	<2	246
STANDARD C3/AU-R	26	64	34	159	6.0	36	12	753	3.28	58	26	2	20	28	23.8	22	25	79	.56	.091	16	165	.61	152	.08	20	1.83	.04	.17	20	450
STANDARD G-2	1	3	<3	39	<.3	8	4	494	1.88	<2	<8	<2	3	69	<.2	4	<3	39	.61	.096	7	70	.57	224	.12	<3	.92	.08	.48	3	2

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 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 SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AL.

ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB

- SAMPLE TYPE: ROCK AU* - IGNITED, AQUA-REGIA/MTBK EXTRACT, GF/AA FINISHED.(10 GM)

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: OCT 9 1998

DATE REPORT MAILED:

Oct 19/98

SIGNED BY: D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

GEOCHEMICAL ANALYSIS CERTIFICATE

Cardinal Geoconsulting Ltd. PROJECT SIWASH File # 9804486

P.O. Box 594, Hope BC V0K 1L0 Submitted by: O. Cardinal

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 ^a ppb
BL 0+25N (GRD)	1	17	<3	41	<.3	123	14	142	5.02	288	<8	<2	<2	4	.5	12	5	157	.04	.019	3	278	1.28	49	.01	4	2.79	.02	.02	4	96
BL 0+50N	1	12	5	35	<.3	16	4	146	3.31	22	<8	<2	<2	3	.2	<3	<3	145	.05	.025	4	40	.46	15	.25	4	1.47	.02	.01	2	2
BL 0+75N	2	23	8	89	<.3	10	8	282	5.87	34	<8	<2	<2	6	.6	<3	<3	149	.06	.049	4	34	.74	45	.21	3	3.17	.02	.03	5	5
BL 1+00N	1	13	8	45	<.3	2	4	212	4.36	22	<8	<2	<2	6	.9	<3	3	133	.06	.065	4	18	.40	29	.23	<3	1.85	.02	.02	5	<1
LO+50N 0+50W	1	5	6	16	<.3	44	5	79	2.47	29	<8	<2	<2	4	.3	4	<3	84	.05	.023	6	148	.17	11	.08	4	.75	.01	.01	<2	17
LO+50N 0+25W	<1	25	<3	75	<.3	2195	112	540	9.29	668	15	<2	<2	7	.5	74	3	125	.02	.025	2	2477	3.79	39	.01	4	2.59	.02	.03	5	29
LO+50N 0+25E	1	25	6	81	<.3	18	6	219	2.67	58	<8	<2	<2	8	.4	<3	<3	41	.09	.035	7	22	.42	96	.03	5	1.93	.01	.05	2	22
RE LO+50N 0+25E	2	25	4	86	<.3	20	8	237	2.85	61	<8	<2	<2	8	.6	<3	<3	44	.10	.038	6	23	.44	89	.03	3	2.09	.01	.05	2	-
L1+50N 0+50W	1	26	<3	48	<.3	1244	61	334	7.59	361	<8	<2	<2	1	1.0	36	3	66	.01	.041	2	1885	1.43	19	.02	<3	1.38	.01	.01	3	602
L1+50N 0+25W	1	35	5	96	<.3	29	8	278	4.03	35	<8	<2	2	6	.7	<3	<3	93	.07	.037	6	45	.69	65	.10	<3	3.29	.02	.03	3	8
L1+50N 0+25E	1	13	4	66	<.3	4	3	142	2.46	35	<8	<2	<2	4	.2	<3	3	59	.04	.025	6	18	.30	65	.01	<3	2.63	.01	.04	2	-

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MM FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AU.
- SAMPLE TYPE: SOIL AU^a - IGNITED, AQUA-REGIA/NIBK EXTRACT, GF/AA FINISHED. (10 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: OCT 9 1998

DATE REPORT MAILED: OCT 14/98

SIGNED BY: C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS