

Tom Schroeter  
July '89

GREAT WESTERN STAR GOLD-COPPER PROJECT

883664  
82F/8W  
82FSW 171  
174

SUMMARY REPORT

NELSON MINING DIVISION  
BRITISH COLUMBIA  
NTS 82F/6W

LATITUDE 49° 27' N  
LONGITUDE 117° 22' E

FOR

PACIFIC SENTINEL GOLD CORP.  
1020 - 800 West Pender Street  
Vancouver, B.C.  
V6C 2V6

BY

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June 28, 1989

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## 1.0 SUMMARY

The Great Western Star Gold-Copper Project (NTS 82F/6W) is located in the heart of the historic Nelson Mining Camp, 5 miles southwest of Nelson in southeastern British Columbia. Mainline logging roads provide excellent access. This 11 square mile property hosts widespread gold, gold-copper and gold-copper-zinc mineralization in a variety of geological settings, with both large scale, open pit and underground mining potential indicated.

In the eastern portion of the claims, called the Giveout Creek area, a 5,000 foot long geophysical anomaly and coincident gold soil geochemical anomaly has been identified. Initial diamond drilling of this target has returned results of up to 0.15 oz Au/ton over 38 feet and 0.23 oz Au/ton over 21 feet.

In the western portion of the claims, a gold mineralized trend which includes the Toughnut, Gold Eagle, Alma N, Star, Eureka and Ron gold zones has been traced by a 7,500 foot long coincident geophysical and gold-copper soil anomaly. Gold mineralization at the Alma N and Gold Eagle zones is associated with sheared volcanic rocks, and highly fractured diorite intrusions. Initial drilling has confirmed the bulk mining potential of this area with intersections assaying up to 0.13 oz Au/ton over 155 feet and 0.09 oz Au/ton over 120 feet.

At the Star zone, the geophysical and gold soil anomaly expands greatly and coincides with the location of a highly fractured and altered diorite stock. Limited drilling at the margin of the stock has indicated the presence of significant porphyry gold-copper mineralization with drill intersections including 0.023 oz Au/ton and 0.19% Cu over 260 feet and 0.023 oz Au/ton and 0.16% Cu over 240 feet. This area has many geological similarities to the newly discovered Mt. Milligan gold-copper deposit near MacKenzie, B.C. being developed by Continental Gold Corp. and BP Resources Canada Limited.

A 1989 exploration program is planned for the Great Western Star Gold-Copper project which will include detailed soil sampling, trenching, prospecting, geological mapping and extensive diamond drilling. The budget for this programme is \$1,200,000.

## 2.0 INTRODUCTION

### 2.1 Location and Access

The Great Western Star Project (NTS 82F/6W) is located 5 miles southwest of Nelson, in southeastern British Columbia (Figures 1 and 2). The project is centered on the ridges between Giveout, Sandy and Eagle creeks at latitude 49° 27'N and longitude 117° 22' E. Access to the property is by mainline logging road off the Nelson-Salmo highway approximately 2.5 miles south of Nelson, or by forestry road from the Highway #6, 5 miles west of Nelson.

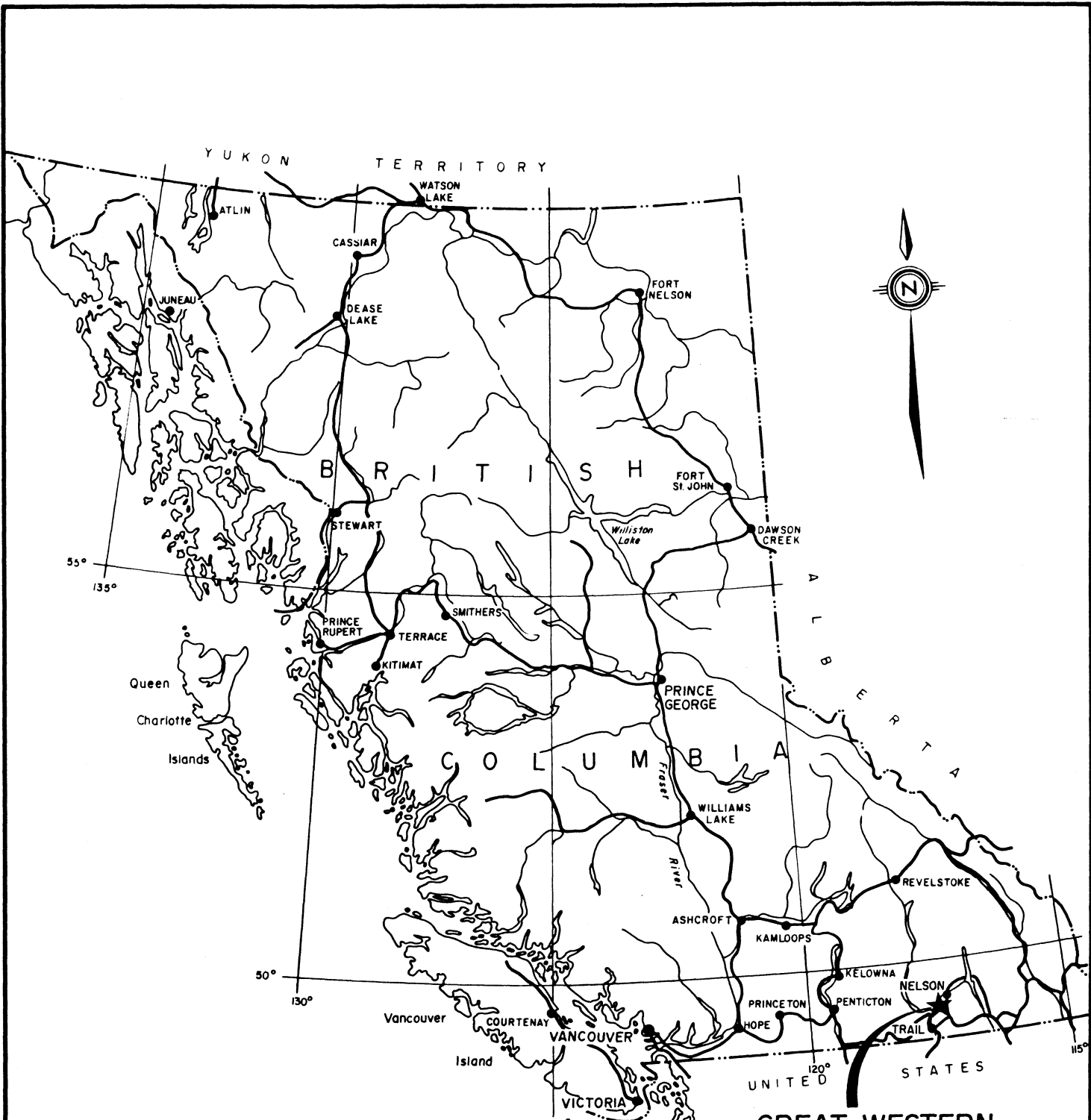
### 2.2 Topography and Vegetation

The topography in the project area is moderately steep, with elevations ranging from 2,000 to 6,000 feet. The central and western portions of the project area form a plateau, hidden from Nelson by Morning Mountain. The upper slopes of the property are covered by glacial clays and sands, which may be up to 20 feet thick on ridges, and 40 feet thick in valleys and on side hills.

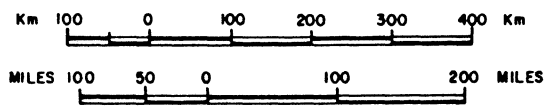
Mature second growth larch, douglas fir, hemlock and western red and white cedar covers much of the property, with recent clear cut logging having removed much of this growth near the Alma N and Star mineralized zones. Atco Ltd. has plans for continued clear-cut logging on the property during 1989.

### 2.3 Exploration History

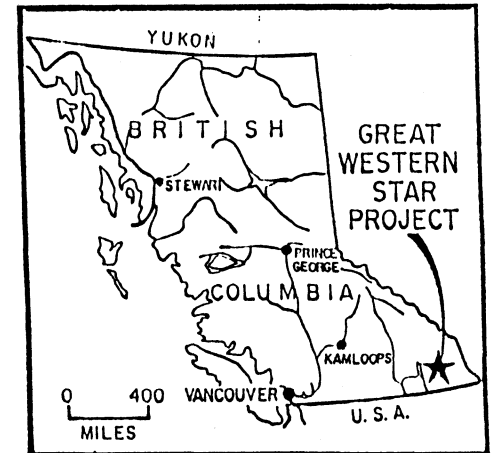
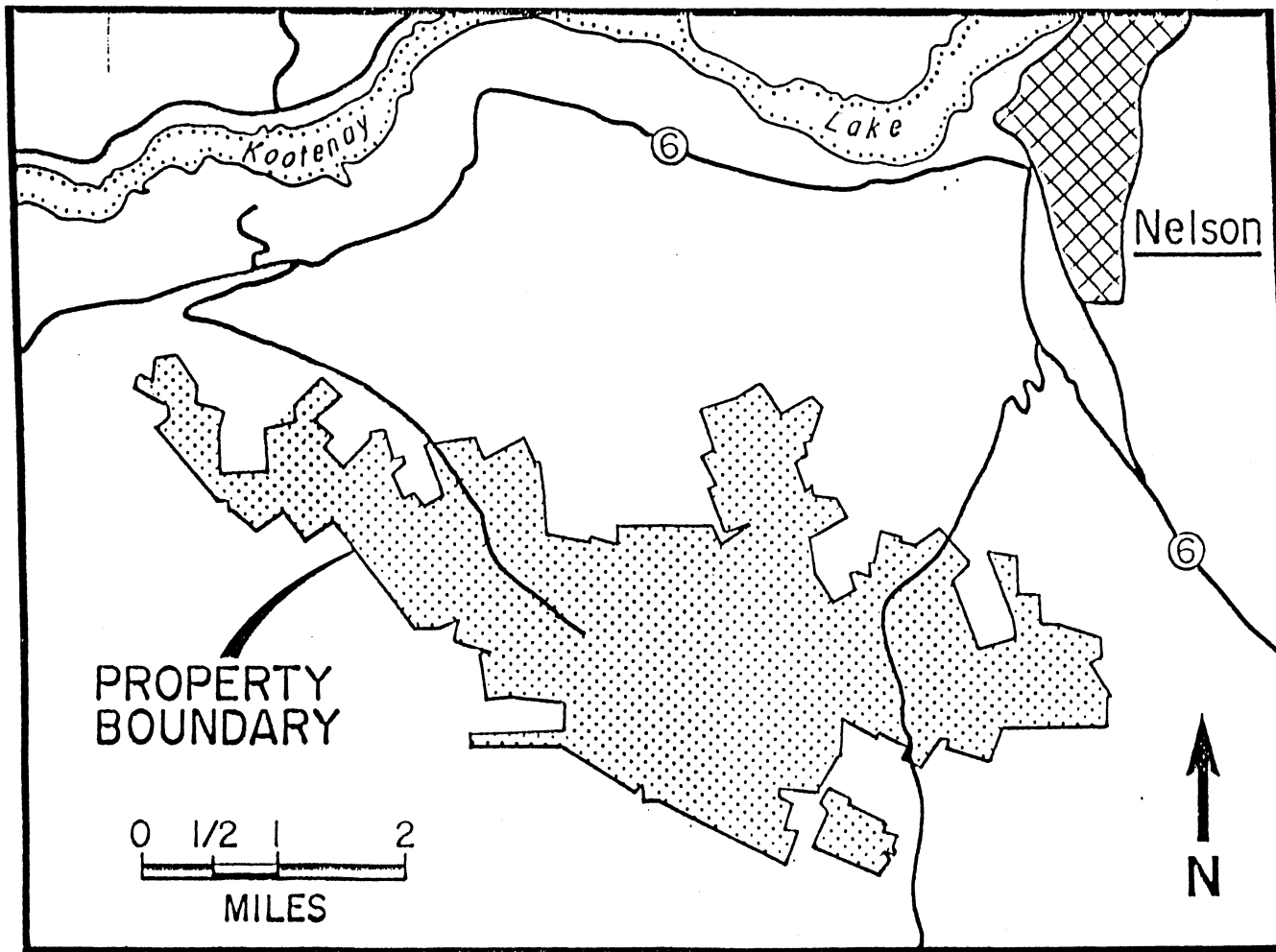
The Great Western Star property is situated in the historic Nelson Mining Camp, which has been prospected since before the turn of the century. This Camp is well known to host a variety of mineral deposits including gold-bearing quartz veins, silver-copper-lead lodes and veins, disseminated shear-hosted gold replacements, and porphyry copper-gold deposits. The Great Western Star property hosts a number of former workings and producers dating back to the late 1800's (Figure 3).



**GREAT WESTERN  
STAR PROJECT**



PACIFIC SENTINEL GOLD CORP.		
GREAT WESTERN STAR GOLD-COPPER PROJECT PROPERTY LOCATION		
NELSON MINING DIVISION SOUTHEASTERN BRITISH COLUMBIA		
Date: June 1989	N.T.S.	FIGURE: 1.
Drawn: by J.W.	82F/6W	



PACIFIC SENTINEL GOLD CORP.

Great Western Star  
Gold-Copper Project

Location Map

NELSON MINING DIVISION , S.E. B.C.

Date:  
Drawn by: B. Augsten      NTS: 82F/6W      FIG. 2

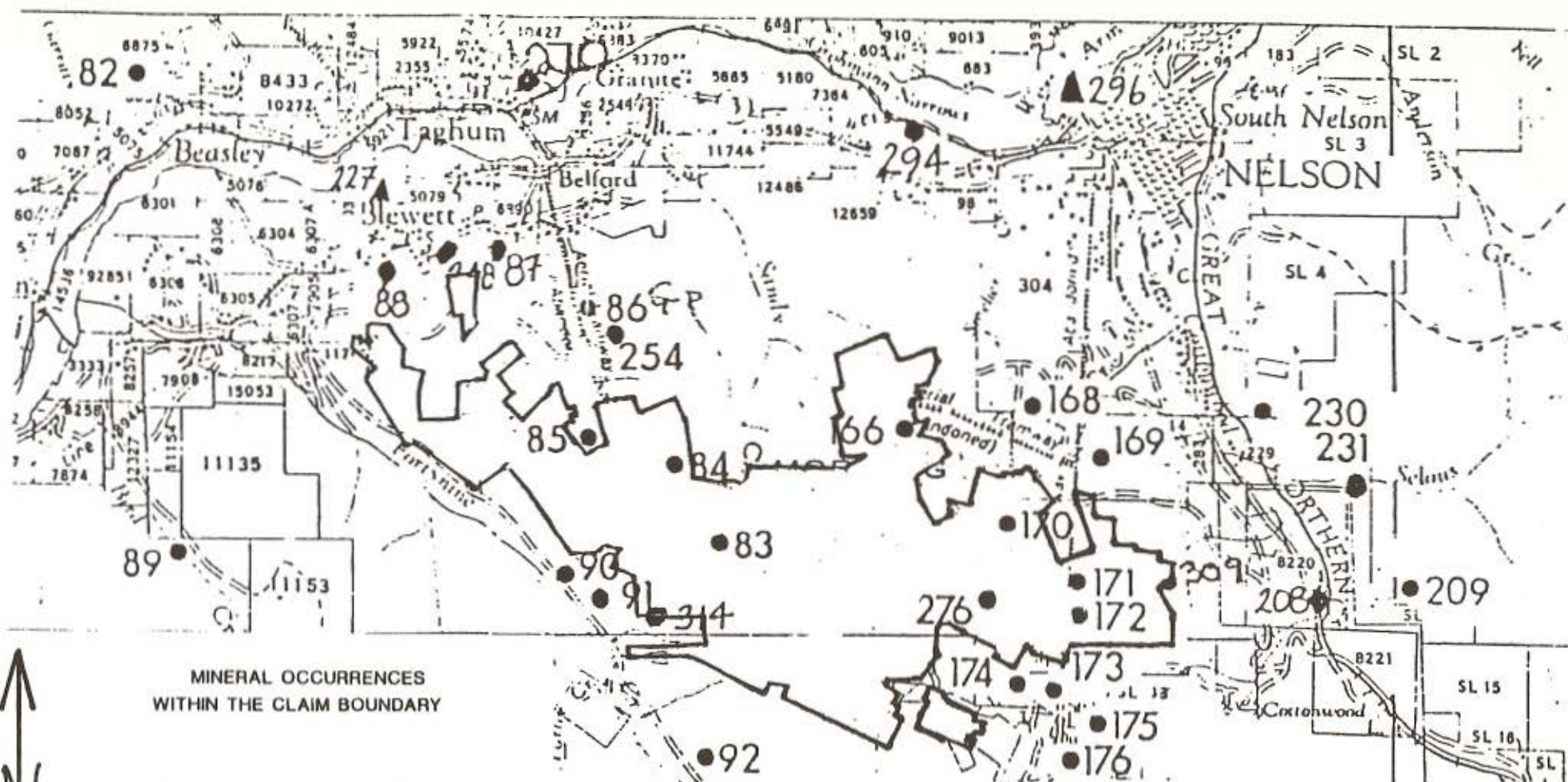
The Eureka workings are located in the northwest portion of the property, with two adits being developed to access a northwesterly trending vein system hosted in Bonnington Complex diorite. Production from the Eureka workings during the 1930's was 9900 tons of copper-gold-silver ore, which yielded 617 oz gold, 36,160 oz silver and 350,911 lbs of copper (Dasler, 1987). Production records and stope plans indicate that significant low grade gold (0.02 to 0.05 oz Au/ton) and copper values occur over significant distances in the host diorite. This target area has not been explored since the 1930's.

The Star, Alma N and Gold Eagle workings are developed on similar northwest trending vein systems to the south of the Eureka. Minor shaft development at the Alma N and Star zones during the early 1900's resulted in the mining of 1,280 tons of ore producing 180 ozs of gold. Between 1984 and 1988, U.S. Borax explored this region of the property under an option agreement with Reymont Gold Mines Ltd. U.S. Borax conducted grid soil surveys, I.P. geophysics and reverse circulation and diamond drilling. At the Alma N and Gold Eagle zones, drilling intersected gold mineralization associated with sheared volcanic rocks and highly fractured diorite. This initial drilling confirmed the bulk mining potential of this area with intersections assaying up to 0.13 oz Au/ton over 155 feet and 0.09 oz Au/ton over 120 feet.

At the Star zone, U.S. Borax began testing a large coincident I.P./ gold-copper geochem soil anomaly which coincides with a highly fractured and altered diorite stock. Limited drilling at the margin of the stock has indicated the presence of significant porphyry gold-copper mineralization with drill intersections including 0.023 oz Au/ton and 0.19% Cu over 260 feet and 0.023 oz Au/ton and 0.16% Cu over 240 feet. This area has many geological similarities to the newly discovered Mt. Milligan gold-copper deposit near MacKenzie, B.C. being developed by Continental Gold Corp. and BP Resources Canada Limited.

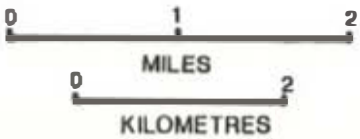
U.S. Borax was searching for high-grade, vein-hosted gold mineralization and therefore was not targeting their drilling on bulk tonnage gold and gold copper targets.





MINERAL OCCURRENCES  
WITHIN THE CLAIM BOUNDARY

83	Star	Au
84	Eureka	Cu,Au,Ag
166	Venus	Au,Ag
170	Shamrock	Ag,Pb,Zn,Au
171	Irene	Au,Ag
172	Great Eastern	Au,Ag
276	Northstar	Au



PACIFIC SENTINEL GOLD CORP.

Great Western Star  
Gold-Copper Project

MINERAL OCCURRENCE  
LOCATION MAP

NELSON MINING DIVISION S. B.C.

DATE: \_\_\_\_\_  
DRAWN BY: B.E.K.A. NTS 62F/6W FIG. 3

In the Giveout Creek area in the eastern portion of the property, there are numerous small tunnels and pits dating back to the early 1900's, but no significant tonnages were mined. A tunnel crossing a highly sheared band of pyritic volcanics adjacent to the Silver King porphyry stock reportedly returned assays of up to 0.148 oz Au/ton over 148 feet (1886 B.C. Dept. of Mines Report).

The first major exploration effort in this region of the property was conducted by Asarco Exploration in the late 1970's. Asarco completed grid soil sampling, magnetometer and I.P. surveys and minor geological mapping and diamond drilling. Asarco defined a 5000 foot long coincident I.P. chargeability and gold soil anomaly in the Giveout Creek area.

In 1984, Lectus Developments Ltd. explored the Giveout Creek region and completed additional soil sampling and conducted an extensive diamond drilling program. Diamond drilling by Lectus in 1987 intersected wide zones of silicified and sheared volcanics which assayed up to 0.15 oz Au/ton over 38 feet and 0.23 oz Au/ton over 21 feet (Dasler, 1987).

Lectus' drilling tested a 1,500 foot portion of the 5,000 foot-long I.P. anomaly.

In June of 1989, Pacific Sentinel Gold Corp. negotiated an option and joint venture agreement with Reymont and Lectus to earn a 70% interest in the 11 square mile Great Western Star gold-copper property.

#### **2.4 Property Status**

The Great Western Star property is comprised of modified grid and 2 post claims as well as crown grants and reverted crown grants. The property contains 117 British Columbia claim units or 11.5 square miles, and is operated by Pacific Sentinel Gold Corp., under an option and joint venture agreement with Lectus Developments Ltd. and Reymont Gold Mines Ltd. Pacific Sentinel can earn a 70% direct interest in all claims comprising the project area except for the Asarco option claims in which Pacific Sentinel is earning a 35% interest.

Pertinent claim information is outlined in Appendix I. Nine separate property vendors own underlying interests in the claims which range from a 1% to 5% NSR. The location of the project claims is depicted in Figure 4.

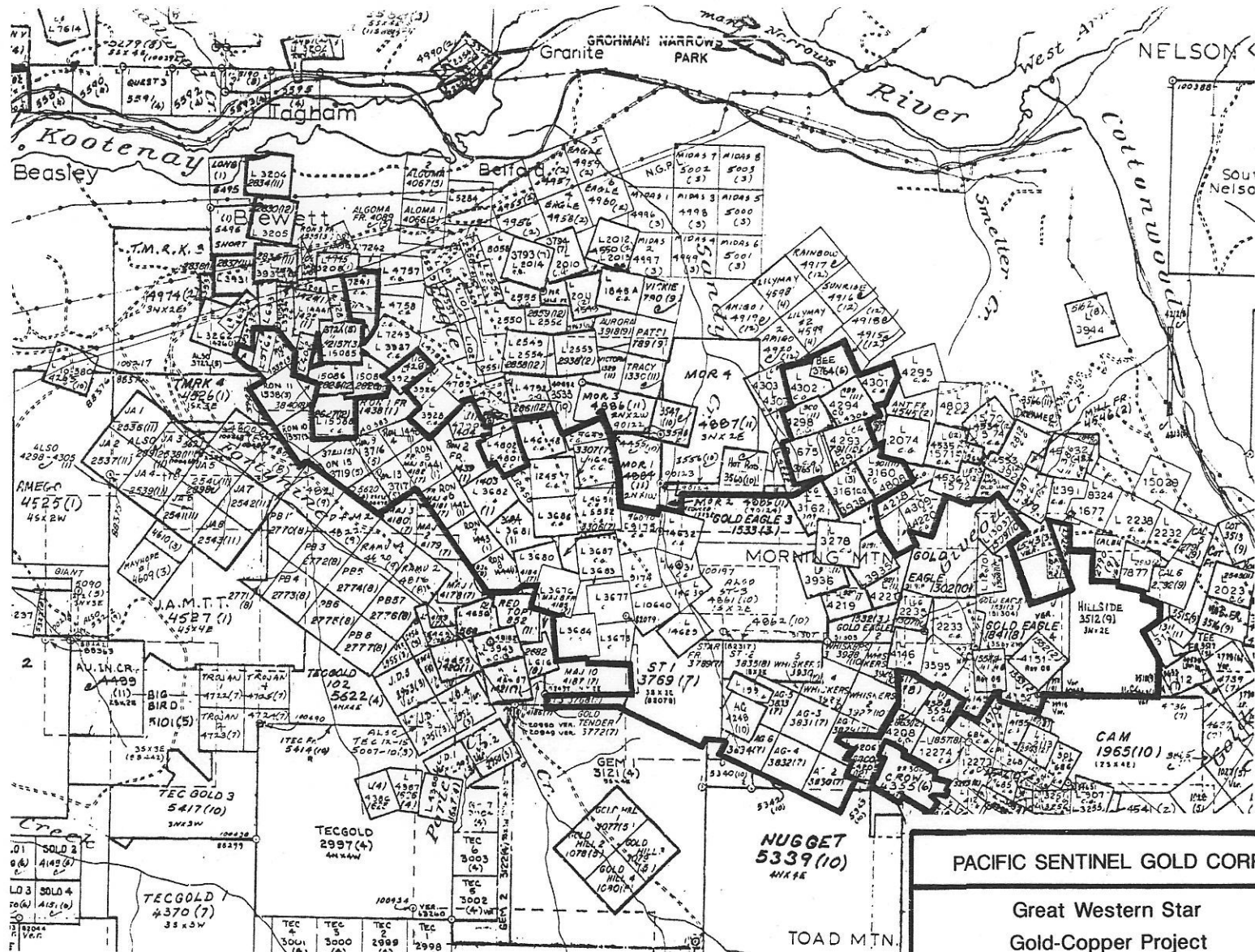
### 3.0 REGIONAL AND PROPERTY GEOLOGY

The region southwest of Nelson is underlain by Lower Jurassic Rosslund Group andesite flows, agglomerates and tuffs. This Jurassic sequence of alkaline, sub-aerial intermediate volcanic rocks is intruded by numerous small stocks that are probably correlative with the mid-Jurassic Nelson Batholith, by Tertiary rhyolite and lamprophyre dykes, by Eocene Coryell alkalic intrusions, and by Jurassic Bonnington complex diorite (Figure 5).

On the 11 square mile Great Western Star Project outcrop is limited to trenches and near old workings. The central portion of the claim group is underlain by brecciated flows, tuffs and minor epiclastic deposits described by Hoy (1989) as being part of the Jurassic Elise formation of the Rosslund Group volcanics (Figure 5). In the claim region the Rosslund volcanics are cut by a one kilometre wide northwest-trending zone of intense shearing. This major tectonic and mineralizing structure named the Silver King Shear System, has intensely altered the flows and tuffs in the claim region to chlorite, pyrite, iron-carbonate schists. Disseminated pyrite is ubiquitous within this zone of shearing, with auriferous quartz veins and quartz-carbonate stockworks occurring throughout this major ductile shear. In addition, wide zones of disseminated shear-hosted gold mineralization (Alma N, Gold Eagle Zones) have been discovered within the Silver King Shear System on the property (see Section 4.1).

In the western portion of the claim group, the Silver King Shear Zone is truncated by Jurassic Bonnington Complex diorite.

In the claim region Bonnington Complex diorite is intensely fractured and has undergone extensive potassic alteration characterized by the presence of K-feldspar replacing plagioclase, and the original ferromagnesium minerals being replaced by fine grained biotite (Mulligan, 1952). Porphyry gold-copper



PACIFIC SENTINEL GOLD CORP.

Great Western Star  
Gold-Copper Project

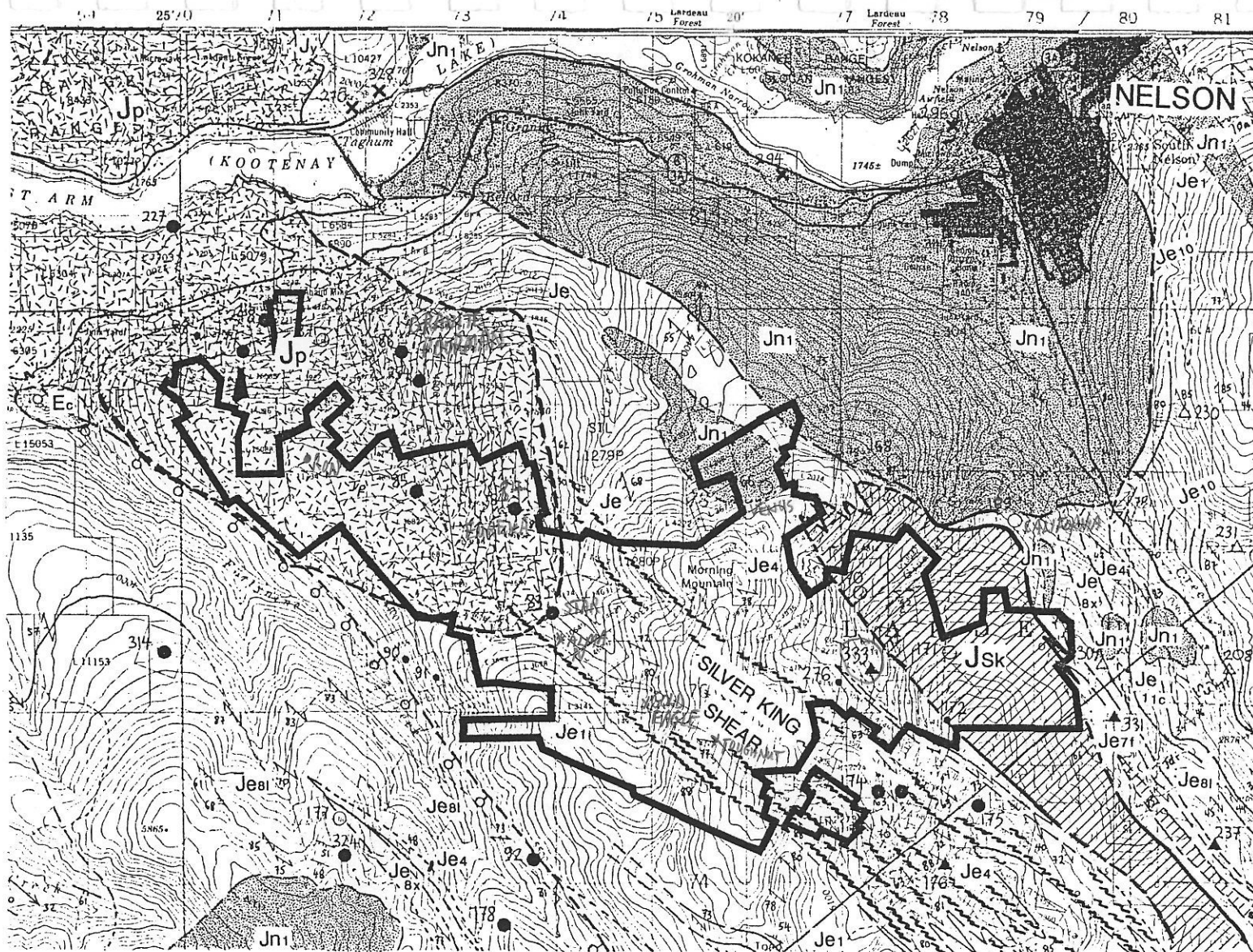
# CLAIM MAP

NELSON MINING DIVISION SOUTHEASTERN B.C.

DATE: June, 1989  
DRAWN BY: S.M.H.

NTS: 82F/6W

FIGURE: 4



### LEGEND

#### EOCENE

**Ec** CORYELL INTRUSIONS (syenite, quartz monzonite)

#### JURASSIC

**Jn1** NELSON INTRUSIONS (granodiorite, quartz monzonite)

**Jp** PSEUDIORITE, PYROXENITE

**Jsk** SILVER KING INTRUSIONS (plagioclase porphyry)

**Je1, Je4, Je7f, Je8l, Je8x, Je10, Je11c** ROSSLAND GROUP VOLCANICS, Elise Fm.  
(mafic to intermed. flow, epiclastic & pyroclastic units)

**Jy** YMIR GROUP METASEDIMENTS (argillite, siltstone, grit)

SHEAR ZONE

GEOLOGIC CONTACT

Au +/- Cu MINERALIZATION

PACIFIC SENTINEL GOLD CORP.

Great Western Star Gold-Copper Project

Geology and Claim Boundary

(Geology after T.Hoy, 1988)

NELSON MINING DIVISION Southeastern British Columbia

DATE: June, 1989  
DRAWN BY: S.M.H.

NTS: 82F/6W

FIGURE: 5

0 km 1

mineralization is widespread within the intrusive and within the Rossland volcanics near the intrusive contact (ie. Star and Eureka, and Ron zones, see Section 4.1).

On the east side of the Great Western Star project area, the Rossland volcanics are intruded by the Jurassic Silver King porphyry (Figure 5). The Silver King stock is a plagioclase porphyry intrusion, which is associated with the emplacement of gold and base metal mineralization throughout the Nelson Mining Camp. In the Giveout Creek region of the Great Western Star project area, a 5,000 foot long zone of strongly schistose Rossland Group andesitic flows occurs at the contact of the Silver King porphyry. Disseminated and vein-controlled gold mineralization is widespread along this contact zone (see Section 5.1).

#### **4.0 STAR AND TOUGHNUT GRIDS**

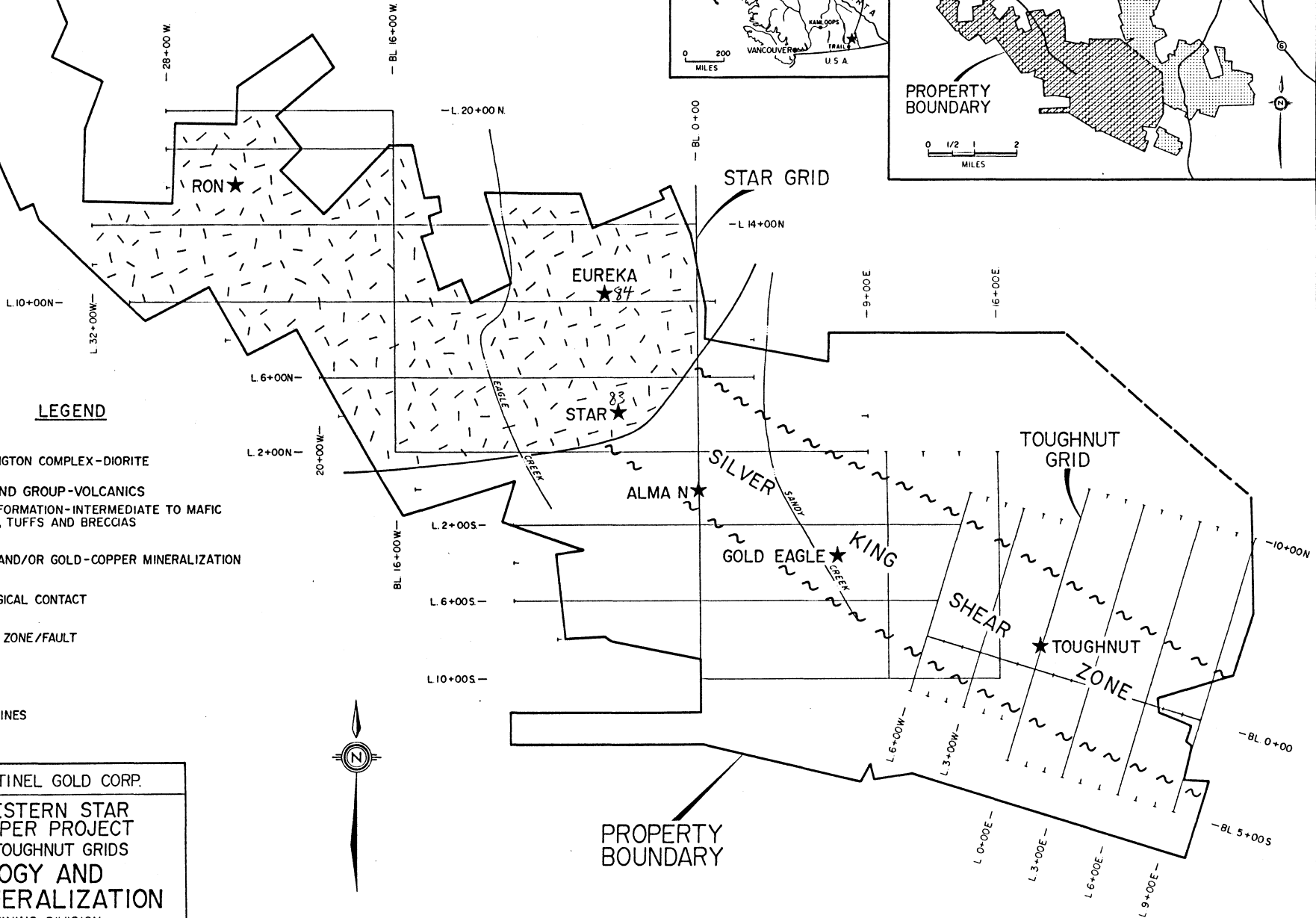
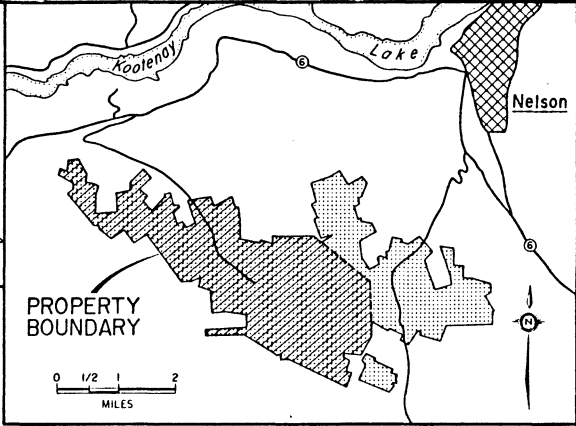
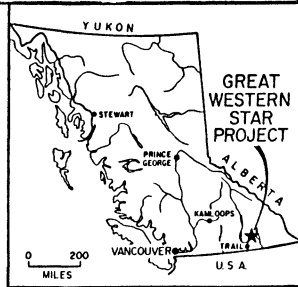
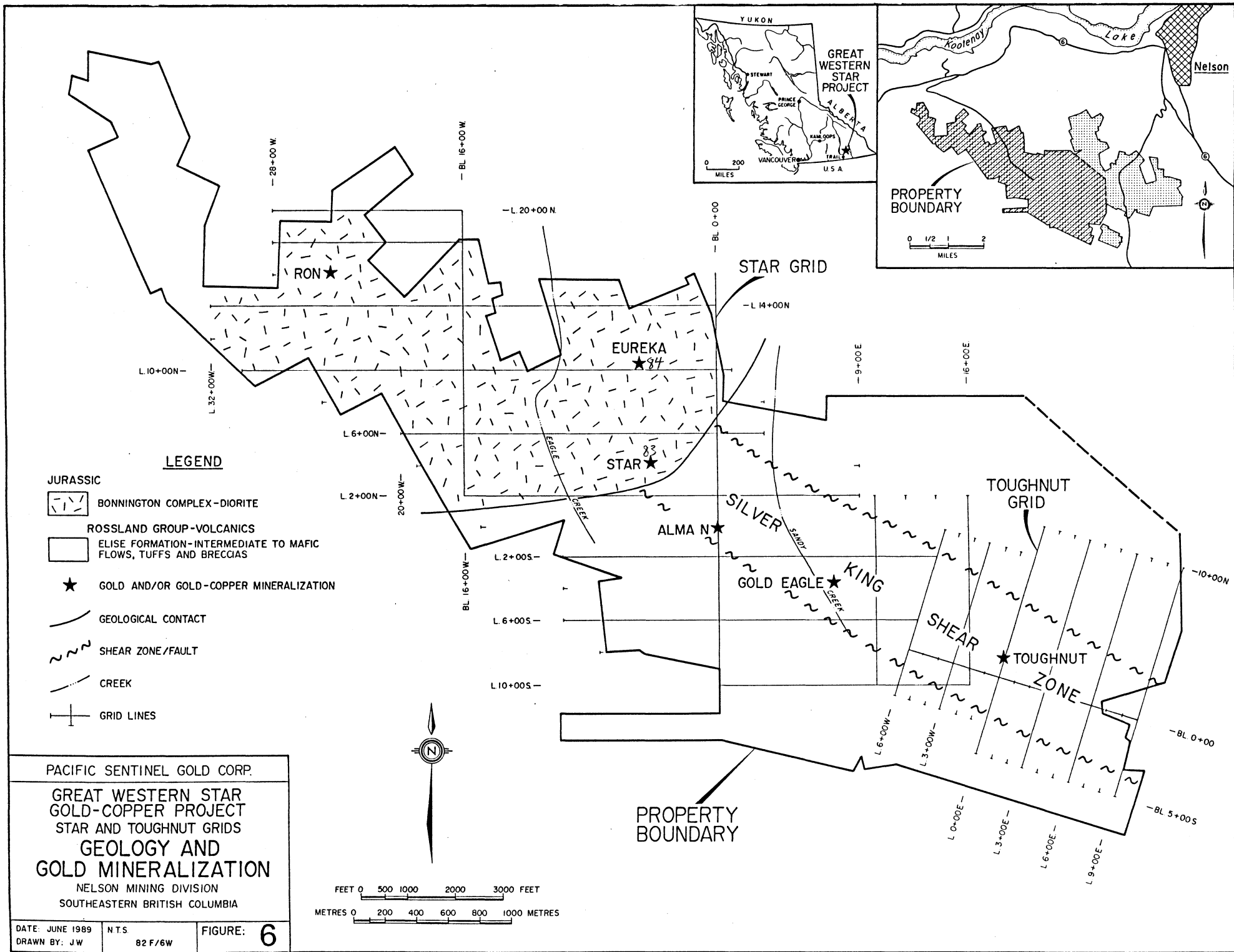
The Star and Toughnut control grids cover the western portion of the Great Western Star project area (Figures 6 through 11).

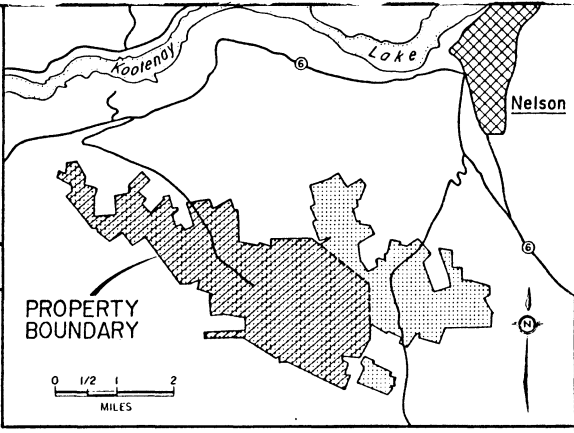
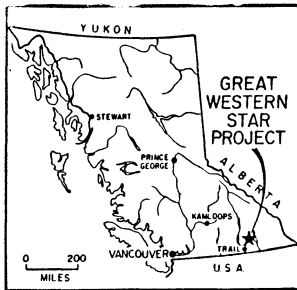
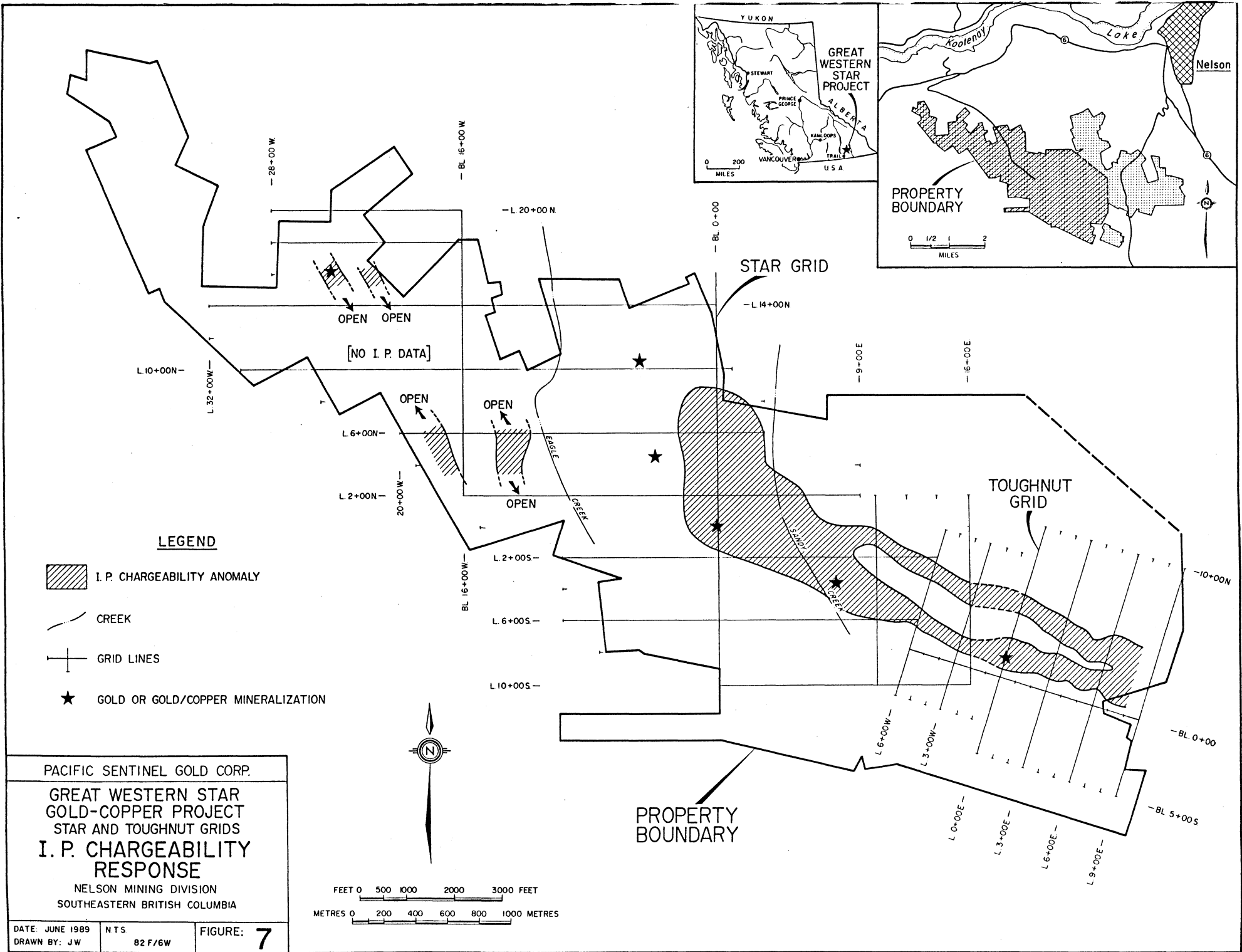
##### **4.1 Geology and Gold, Gold-Copper and Gold-Copper-Zinc Mineralization**

The Star and Toughnut grids are underlain by andesitic flows of the Rossland Group volcanics (Figure 6). The northwest trending Silver King shear zone has severely altered the volcanics to a chlorite, iron-carbonate, sericite, pyrite schist. In the northwest portion of the Star grid a dioritic intrusive truncates the Silver King shear zone.





##### **4.1.1 Star, Eureka, Ron Au-Cu Mineralization**

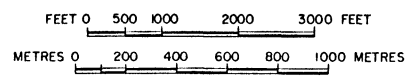
In the western portion of the project area porphyry gold-copper mineralization is associated with a highly fractured and altered diorite stock (Figure 6). At the Star zone, gold-copper mineralization hosted by diorite is characterized by the presence of the sulfides pyrite and chalcopyrite. The host diorite has undergone intense potassic alteration and weathering, with much of the near surface sulfides being oxidized to jarosite and goethite.





**LEGEND**

-  I. P. CHARGEABILITY ANOMALY
-  CREEK
-  GRID LINES
-  GOLD OR GOLD/COPPER MINERALIZATION

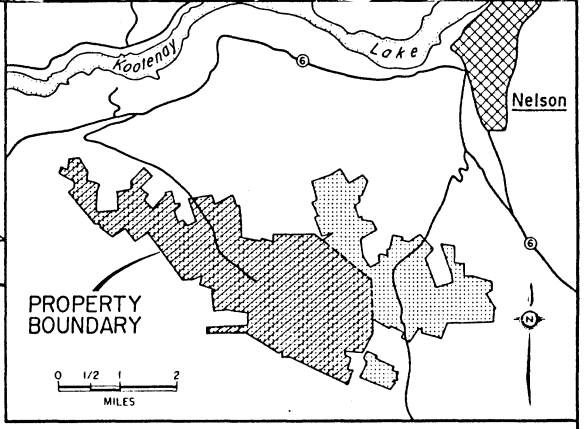
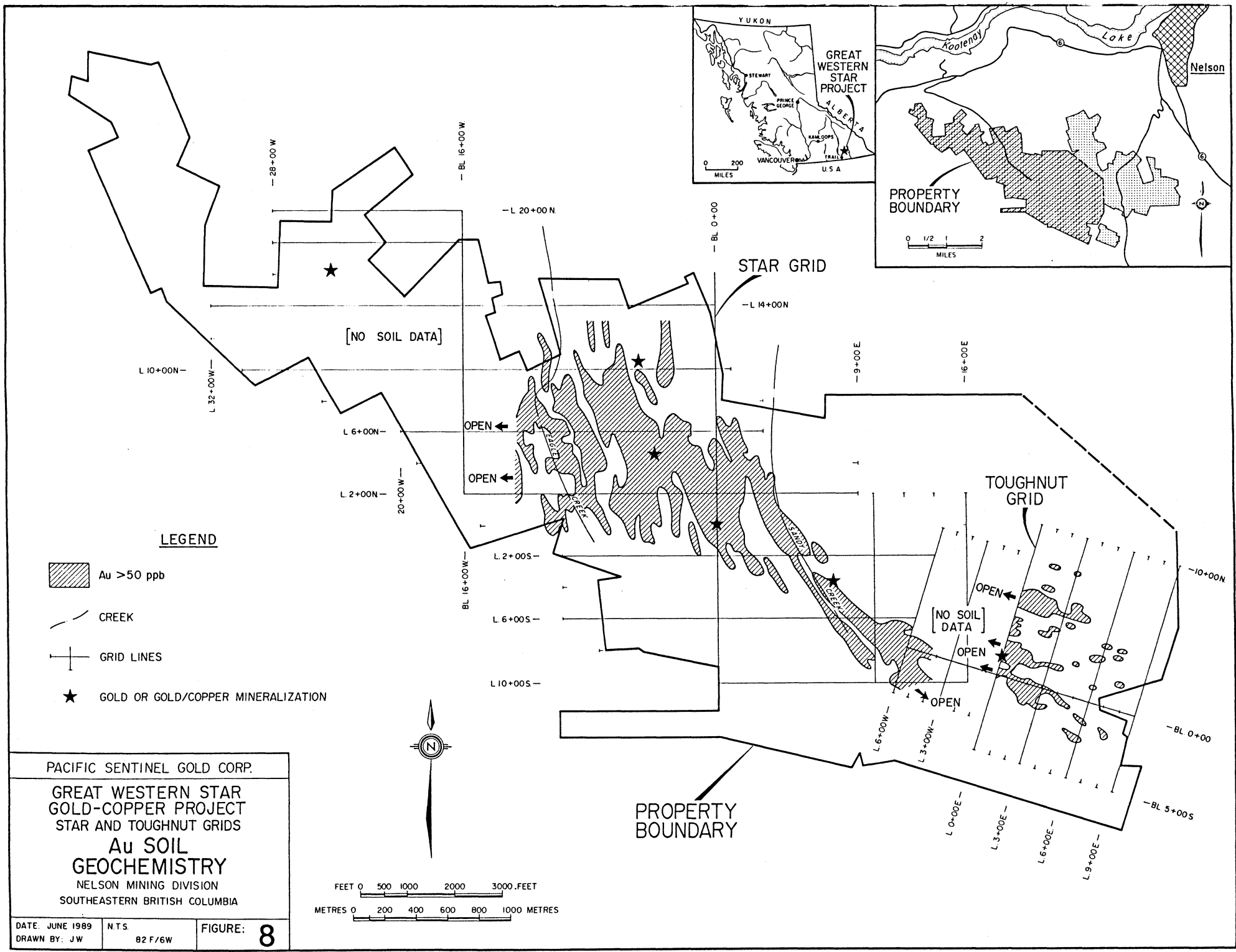


PACIFIC SENTINEL GOLD CORP.  
 GREAT WESTERN STAR  
 GOLD-COPPER PROJECT  
 STAR AND TOUGHNUT GRIDS  
**I. P. CHARGEABILITY  
 RESPONSE**  
 NELSON MINING DIVISION  
 SOUTHEASTERN BRITISH COLUMBIA





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FIGURE: **7**

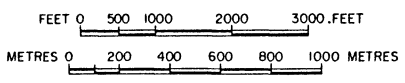


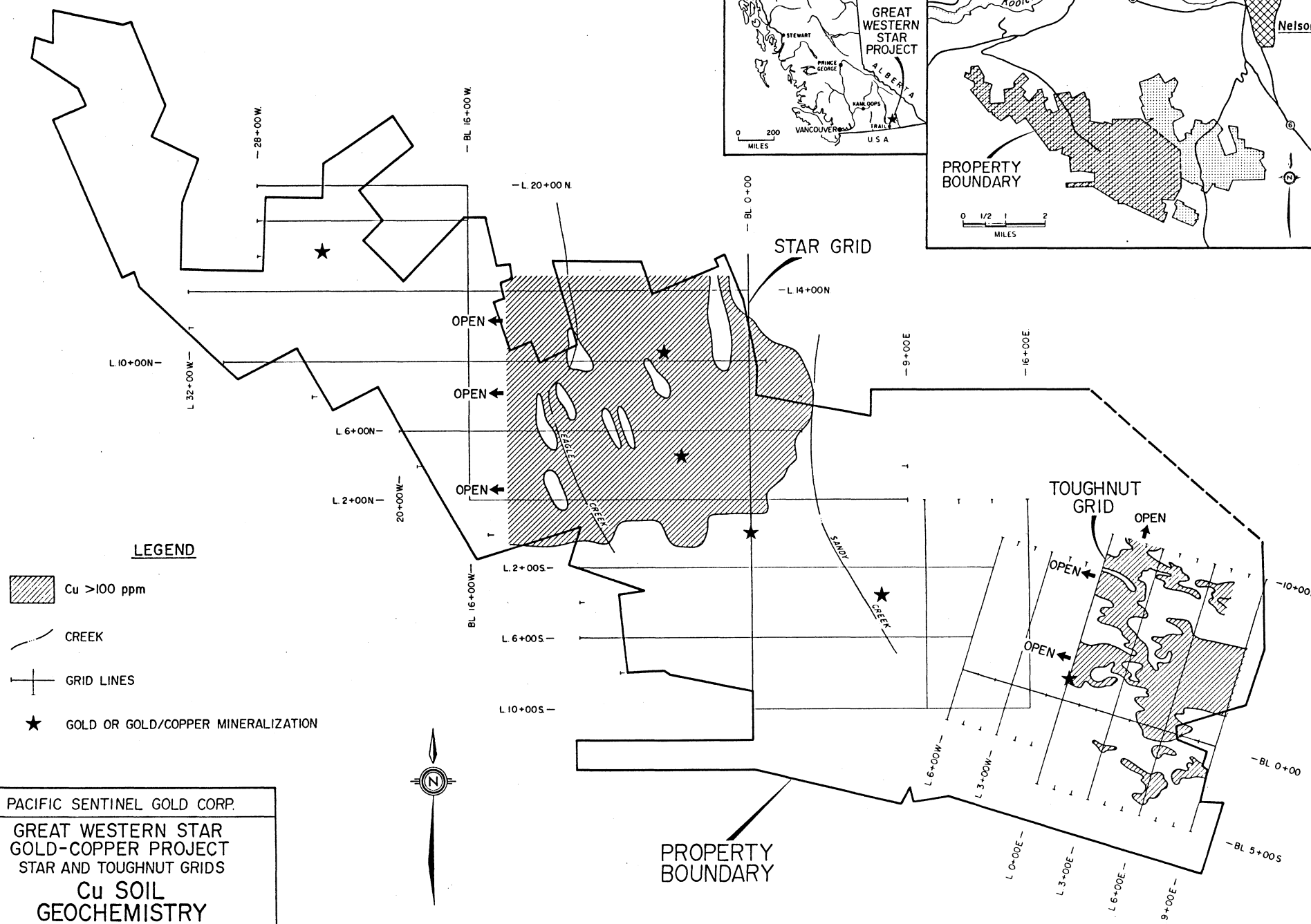
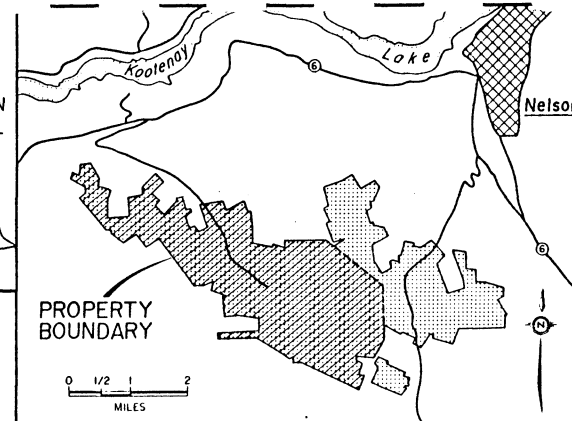
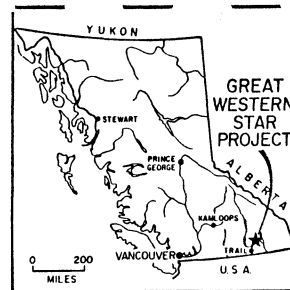


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

-  Au > 50 ppb
-  CREEK
-  GRID LINES
-  GOLD OR GOLD/COPPER MINERALIZATION

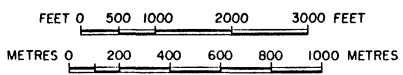
PACIFIC SENTINEL GOLD CORP.  
 GREAT WESTERN STAR  
 GOLD-COPPER PROJECT  
 STAR AND TOUGHNUT GRIDS  
**Au SOIL  
 GEOCHEMISTRY**  
 NELSON MINING DIVISION  
 SOUTHEASTERN BRITISH COLUMBIA





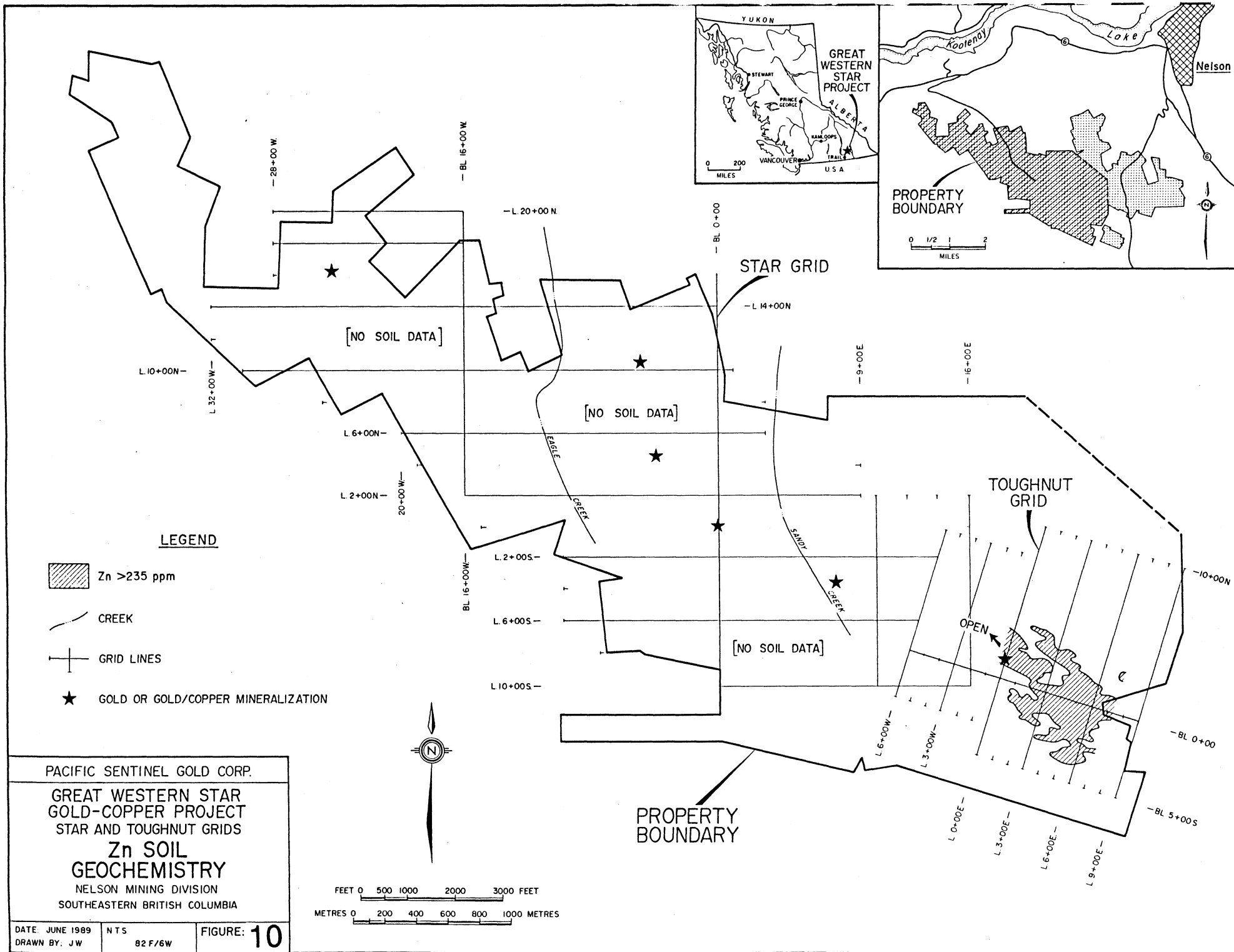
**LEGEND**

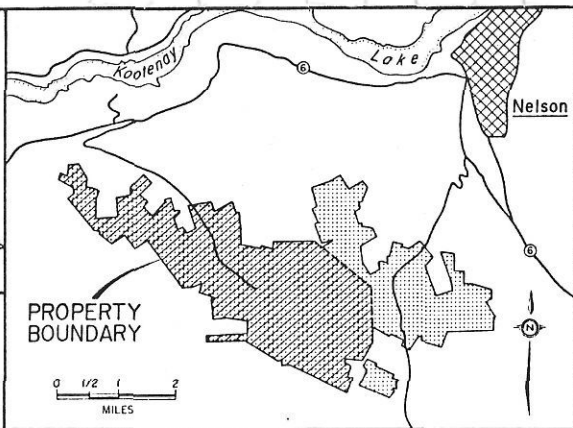
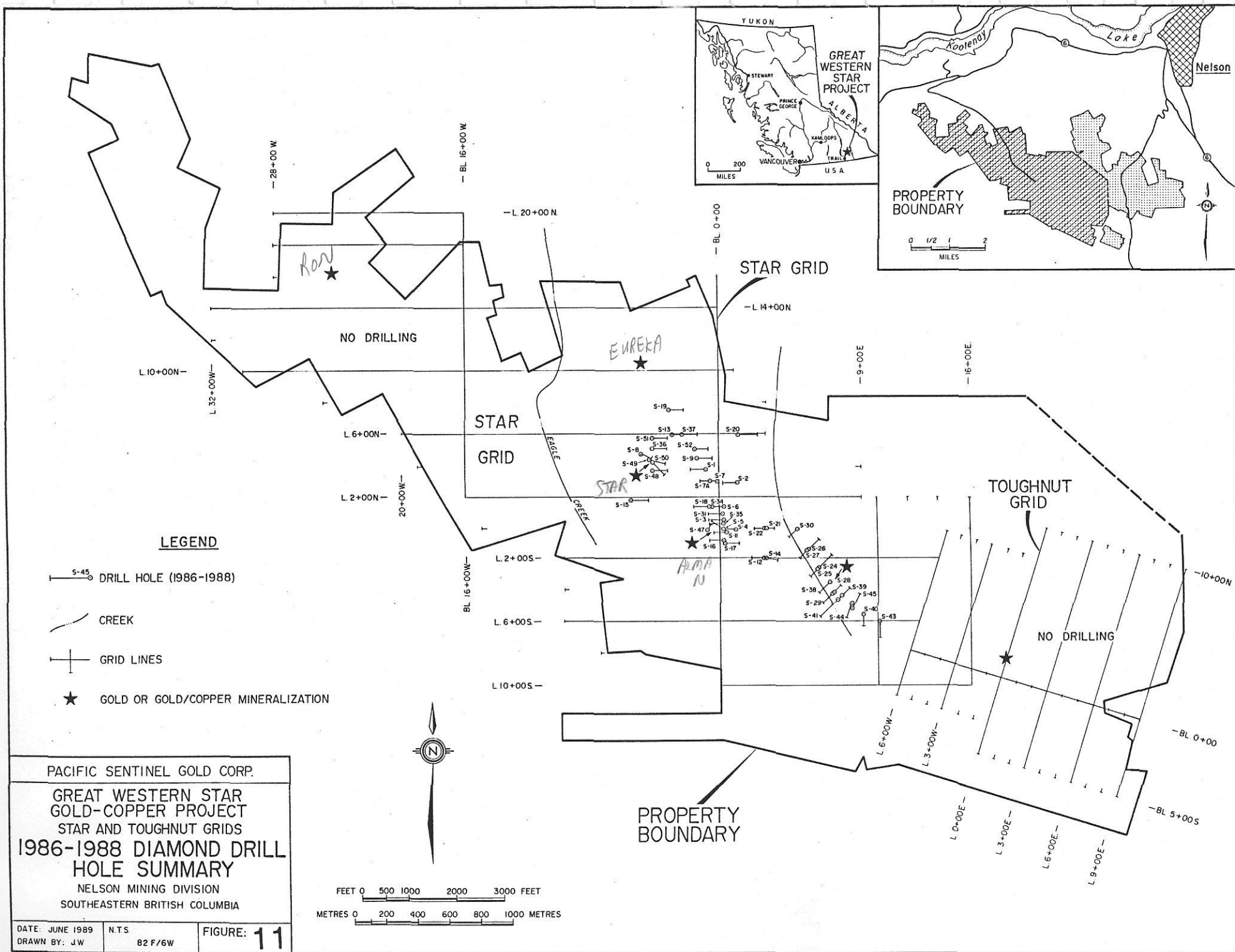
-  Cu > 100 ppm
-  CREEK
-  GRID LINES
-  GOLD OR GOLD/COPPER MINERALIZATION



PACIFIC SENTINEL GOLD CORP.  
 GREAT WESTERN STAR  
 GOLD-COPPER PROJECT  
 STAR AND TOUGHNUT GRIDS  
**Cu SOIL  
 GEOCHEMISTRY**  
 NELSON MINING DIVISION  
 SOUTHEASTERN BRITISH COLUMBIA

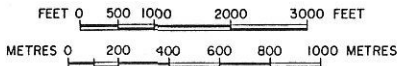
DATE: JUNE 1989    NTS  
 DRAWN BY: JW        82 F/6W        FIGURE: **9**





PACIFIC SENTINEL GOLD CORP.  
 GREAT WESTERN STAR  
 GOLD-COPPER PROJECT  
 STAR AND TOUGHNUT GRIDS  
 1986-1988 DIAMOND DRILL  
 HOLE SUMMARY  
 NELSON MINING DIVISION  
 SOUTHEASTERN BRITISH COLUMBIA

DATE: JUNE 1989 N.T.S. FIGURE: 11  
 DRAWN BY: J.W. 82 F/6W



PROPERTY BOUNDARY

NO DRILLING

STAR GRID

STAR GRID

TOUGHNUT GRID

NO DRILLING

EUREKA

STAR

ARMA N

ROX

-L 20+00 N

-BL 0+00

-L 14+00 N

-9+00 E

-16+00 E

L 10+00 N-

L 32+00 W-

L 6+00 N-

L 2+00 N-

20+00 W-

L 2+00 S-

L 6+00 S-

L 10+00 S-

BL 16+00 W-

-10+00 N

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L 6+00 E-

L 9+00 E-

Limited diamond drilling by U.S. Borax in the vicinity of the Star workings has intersected significant widths of gold-copper mineralization including 260 feet assaying 0.023 oz Au/ton and 0.16% Cu in drill hole S-51 and 115 feet assaying 0.025 oz Au/ton and 0.28% Cu in hole S-37 (Figure 11). Table 1 summarizes some of the pertinent drill intersections from this region.

The Eureka prospect is located two thousand feet north of the Star zone. During the late 1800's and early 1900's a total of 616 ozs of gold and 350,000 lbs of Cu was mined from high grade copper veins hosted within altered diorite. Average grade of the vein ore was 0.115 oz Au/ton and 1.26% Cu. Stope plans suggest that for ten's of feet from these veins the highly altered host diorite wall rocks assayed from 0.02 to 0.05 ozs Au/ton and 0.1 to 0.5% Cu. The low grade, bulk tonnage potential of the Eureka zone is as yet untested, as this region of the property has never been diamond drilled.

At the Ron showings, located 6,000 feet west of the Eureka mineralization (Figure 6) a high chargeability I.P. anomaly was trenched by U.S. Borax, exposing wide zones of fractured, malachite stained, limonitic diorite. A few grab samples of this copper-rich diorite assayed in the 0.025 to 0.045 oz Au/ton range (pers. Comm. M. Kaufman). Copper assays from this material ranged from 0.27 to 0.87 percent. No diamond drilling has been conducted in the Ron area.

At the Ron, Eureka and Star prospects, very limited trenching and diamond drilling has intersected highly altered gold and copper bearing diorite. Gold and copper soil geochemistry indicates that the diorite stock underlying the claims between these three mineralized localities is enriched in these metals (Figures 8 and 9). This entire target area is covered by a 3 to 25 foot veneer of overburden, thus, most of the 5,000 by 5,000 foot copper and gold soil anomaly remains untested for bulk tonnage porphyry gold-copper mineralization. The gold-copper soil anomaly remains open to the west in the vicinity of the Ron zone.

**TABLE 1**  
**STAR GRID**  
**1986 - 1988 Drilling Summary**  
**Selected Gold - Copper Assays**

<u>Zone</u>	<u>Drill* Hole</u>	<u>Dip (deg)</u>	<u>Interval (ft.)</u>		<u>Intercept (ft.)</u>	<u>Au (opt)</u>	<u>Cu (%)</u>
			<u>From</u>	<u>to</u>			
Star	RCS-8	-45	250	375	125	0.020	-
Star	RCS-9	-45	15	265	250	0.016	-
Star	RCS-10	-45	45	230	185	0.035	-
Star	RCS-36	-45	15	275	260	0.017	0.18
Star	RCS-35	-45	20	280	260	0.023	0.19
Star	DDH S-51	50	60	300	240	0.023	0.16
Alma N	RC S-3	-45	85	205	120	0.09	-
Alma N	RC S-5	-45	90	245	155	0.126	-
Alma N	RC S-6	-45	175	500	325	0.016	-
Alma N	RC S-18	-45	51	190	139	0.017	-
Alma N	RC S-33	-45	80	215	135	0.022	-
Alma N	RC S-31	-45	160	245	85	0.029	-
	DDH S-46	-50	80	285	205	0.045	-
Gold Eagle	RCS-28	-45	45	205	160	0.014	-
Gold Eagle	DDH S-41	-50	50	180	130	0.015	-
Gold Eagle	DDH S-42	-50	40	255	215	0.012	-
Gold Eagle	DDH S-43	-50	30	435	405	0.035	-

\*DDH Diamond Drill Hole  
\*RC Reverse Circulation Drill Hole

#### **4.1.2 Alma N and Gold Eagle Gold Mineralization**

Some 2,000 feet southeast of the Star mineralized zone, Alma N disseminated-style gold mineralization is hosted in chlorite quartz, sericite, iron-carbonate schists. Alma N gold mineralization is localized within the Silver King Shear zone, which has been traced for over 7,500 feet on the Great Western Star claims.

Initial diamond drilling in the vicinity of the Alma N shaft has confirmed the bulk mining potential of this target area, with intersections assaying up to 0.13 oz Au/ton over 155 feet, and 0.09 oz Au/ton over 120 feet.

At the Gold Eagle zone, located 3,000 feet southeast of the Alma N shaft, diamond drilling has confirmed the continuation of the Alma N style of disseminated gold mineralization with drill intersections of up to 405 feet assaying 0.035 ozs Au/ton being reported.

In this region of the project area the Silver King shear zone hosts widespread, low grade, bulk tonnage potential gold mineralization hosted in highly sheared volcanic flows. Gold soil geochemistry, and I.P. geophysics has defined a 5,000 foot long, 3,000 foot wide northwest trending, anomaly which coincides with the trace of the Silver King shear zone and with the newly discovered Alma N and Gold Eagle disseminated gold zones (Figures 8, 9 and 11). Diamond drilling has not delineated the full width of the high I.P. chargeability anomaly in this region. Drilling to date has focused on near surface mineralization. The depth continuity of these disseminated gold zones has not been tested.

#### **4.1.3 Toughnut Gold-Copper-Zinc Mineralization**

The Toughnut Au-Cu-Zn mineralization is located 4,000 feet southeast of the Gold Eagle zone. Very poorly exposed Au-Cu-Zn  $\pm$  Pb mineralization hosted within the Silver King shear is characterized by the presence of sphalerite, pyrite and chalcopryrite forming the matrix of a brecciated andesitic volcanic flow. Detailed I.P. geophysics and soil geochemistry survey on the Toughnut grid

indicate that a strong I.P. chargeability and Au, Cu, Zn soil geochemistry anomaly coincides with an outcropping auriferous zinc breccia (Figures 7 and 10). This coincident soil and I.P. chargeability anomaly has been traced for 2,500 feet on the Toughnut Grid. No soil data is available for the region west of section line 0+00E on the Toughnut grid, but the extremely strong I.P. chargeability anomaly continues for a further 2,000 feet northwest of the known Toughnut Au, Cu, Zn mineralization. The entire 5,500 foot long coincident I.P. - soil anomaly on the Toughnut grid remains untested by diamond drilling.

## **5.0 GIVEOUT CREEK GRID AREA**

### **5.1 Geology and Mineralization**

The eastern portion of the Great Western Star property is named the Giveout Creek area. Outcrop within Giveout Creek area is limited to exposures in creeks, roadcuts and the summit of Morning Mountain.

Drilling shows that the area around Giveout Creek is located in a northwest trending zone of strongly silicified, sericitized and sheared volcanic (pyroclastic and volcanoclastic sedimentary) rocks belonging to the upper portion of the Early Jurassic Rossland Group. Pervasive chlorite-epidote alteration and the regionally developed foliated nature of the volcanic rocks have resulted in strongly schistose andesite tuffs. Typical hornblende andesite porphyry Rossland Group volcanics, intruded by the foliated Silver King Stock, underly the sheared volcanic rocks. Lamprophyre dykes intrude all the above mentioned rock types.

Past exploration efforts by Asarco Exploration Company and Lectus Developments Ltd. in the Giveout Creek grid area include a total of more than 13,000 feet of drilling in 34 diamond drill holes. Mineralized intersections returned values such as 0.06 ozs. Au/ton over 202 feet (including 0.15 ozs. Au/ton over 38 feet) in DDH 87-3 and 0.23 ozs. Au/ton over 21 feet in DDH 87-10. Table 2 lists the most significant mineral intersections from these drilling programs.



Mineralization is confined to veins and stockwork, or replacement zones, composed of quartz, chalcedony and calcite. Pyrite, pyrrhotite, chalcopyrite and sphalerite occur as blebs, veinlets, stringers and disseminations in these mineralized environments. The scattered quartz-carbonate veins and veinlets occur in the schistose tuffaceous rocks and appear to be mesothermal fracture fillings. The sulfide-quartz stockwork occurs over a 164 foot wide zone in the highly altered and sheared volcanic rock sequence. In the Giveout Creek area, the stockwork mineralization has produced values in excess of 1 oz. Au/ton gold and it is open to depth as well as to the northwest and southeast. Disseminated pyrite (up to 5%) and pyrrhotite occur throughout the Rossland Group volcanic rocks in this region and have returned values of 300-500 ppb gold over extended intervals of drill core.

In summary, two types of mineralization occur in the Giveout Creek area: high grade shear zone veins and stockwork mineralization separated by lower grade disseminated sulfide mineralization in altered volcanics. Disseminated sulfides are probably due to contact metamorphism or replacement style mineralization related to the emplacement of the Silver King Stock. This style of mineralization was in turn overprinted by the high grade mineralization related to hydrothermal alteration in a shear zone.

Chemical alteration of the wall rock adjacent to mineralized veins and stockwork is reported by Salazar and Beauchamp (1988) as "mainly feldspathization" (likely potassic) in addition to manganese rich carbonatization.

## 5.2 Geochemistry and Geophysics

Several northwesterly trending gold geochemical anomalies in soils ( > 100 ppb Au) overly the zone of mineralized and deformed volcanic rocks in the Giveout Creek region (Figure 12). The background gold values in soils covering volcanic rocks are in the 30-70 ppb range and they are somewhat lower in areas overlying granitic rocks. Away from this immediate area, background gold values in soils are in the 0-65 ppb Au range.

Superimposed upon the geology and the gold soil anomalies along the western contact of the Silver King Stock in the Giveout Creek area are a 20 km long,

**TABLE 2**  
**Giveout Creek Grid**  
**Pertinent Mineral Intersections**

<u>DDH No.</u>	<u>Dip (degrees)</u>	<u>Hole Depth</u>		<u>Width (ft.)</u>	<u>Gold oz/ton</u>
		<u>From</u>	<u>To</u>		
80-1	-45	-	-	109.9	.025
80-2	-48	-	-	20.0	.034
86-1	-40	14.3	30.5	16.2	0.182
		415.8	422.0	6.2	0.138
87-1	-70	20.2	32.5	12.3	0.204
87-3	-45	15.0	217.1	202.1	0.055
including		←	54.9	92.9	38.0
87-4	-45	50.5	57.9	7.4	0.128
87-5	-60	102.9	105.3	2.4	0.140
87-9	-45	125.4	141.0	15.6	0.209
87-10	-45	111.0	132.2	21.2	0.229
87-15	-45	205.1	215.4	10.3	0.096
87-18	-45	212.3	233.9	21.6	0.195

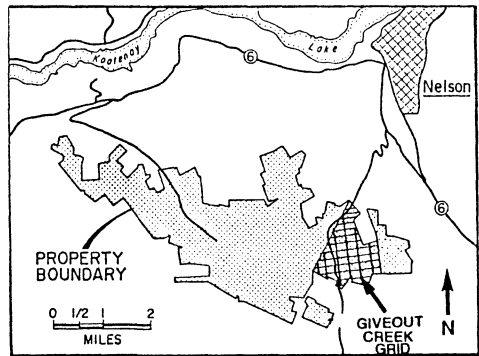
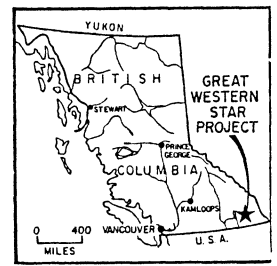
0.15

ROSSLAND VOLCANICS

SILVER KING PORPHYRY

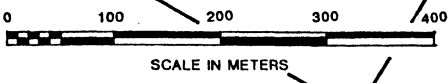
BL 89+00E

L 42+00N



LEGEND

- >100 ppb Au soil anomaly
- GEOLOGICAL CONTACT
- DRILL HOLE
- CLAIM BOUNDARY



DH87-12  
DH87-13

DH87-5

DH87-10

DH87-7

DH87-1 & 86-1

DH87-8

DH87-2

DH86-2

DH87-15,16,17

DH87-4

DH87-14

DH87-9

DH87-3

DH87-18,19

DH87-20,21

DH86-3

DH80-1

DH86-4

DH87-6

DH80-2

PACIFIC SENTINEL GOLD CORP.

Great Western Star  
Gold-Copper Project

(Giveout Creek Grid)

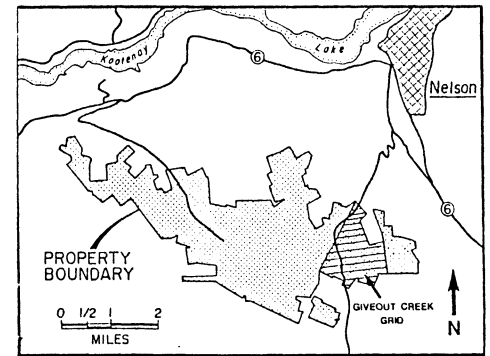
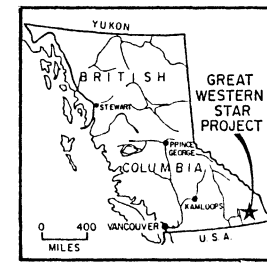
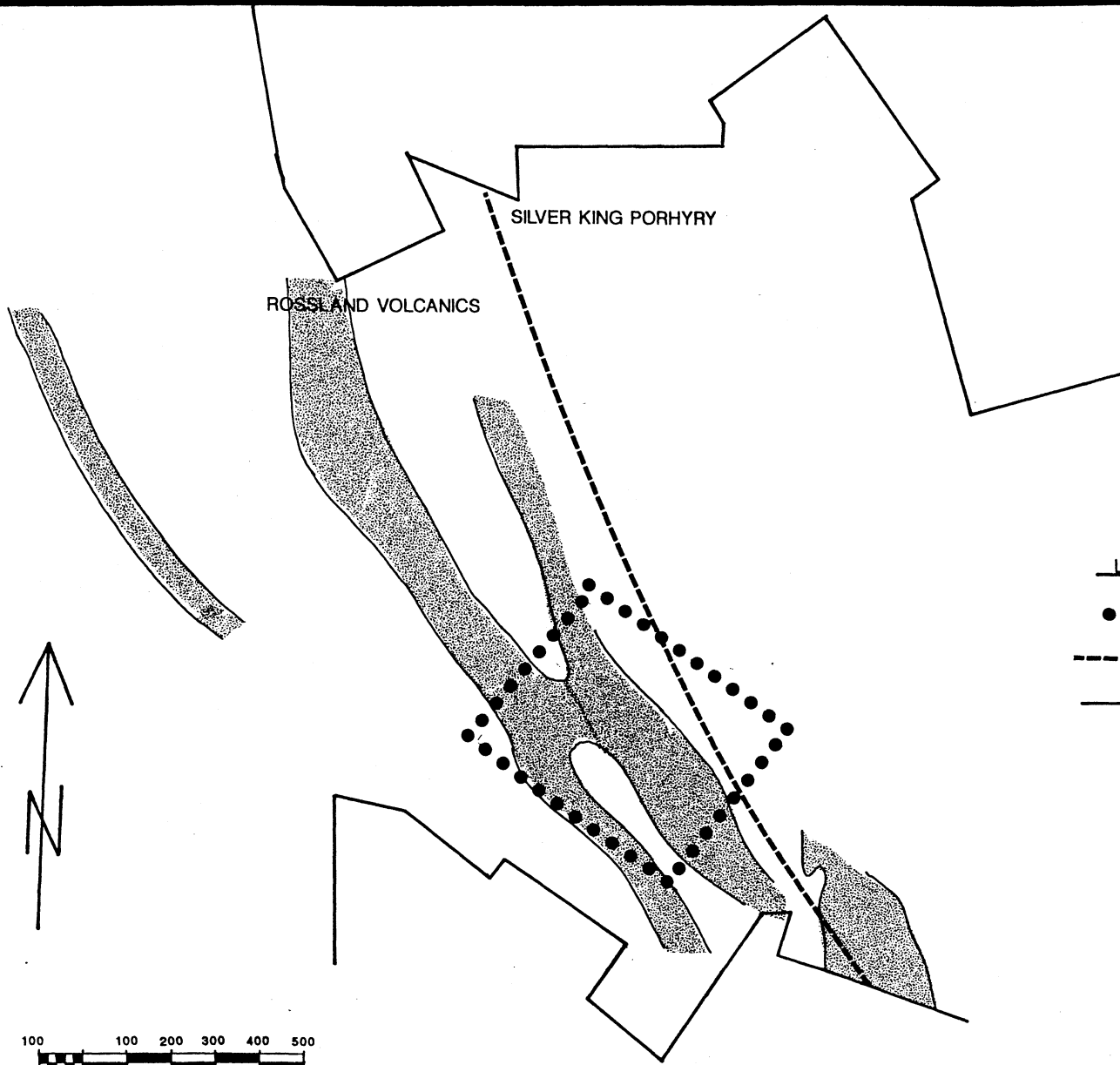
Drill hole Compilation & Au Soil Geochem

NELSON MINING DIVISION Southeastern British Columbia

DATE  
DRAWN BY: B.Augsten

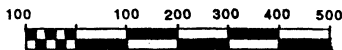
NTS 82F/6W

FIGURE: 12



**LEGEND**

- ● ● ● ● ● AREA DETAILED IN FIGURE 12
- GEOLOGICAL CONTACT
- CLAIM BOUNDARY
- ▨ CHARGEABILITY/IP ANOMALY



SCALE IN METERS  
1:10,000

<b>PACIFIC SENTINEL GOLD CORP.</b>		
Great Western Star Gold-Copper Project Giveout Creek Grid		
Chargeability/IP Anomaly		
NELSON MINING DIVISION Southeastern British Columbia		
Date: Drawn by: B. Augsten	NTS: 82F/6W	FIGURE: 13

northwest-trending aeromagnetic trough and a multiple Induced Polarization chargeability anomaly (Figure 13). The IP chargeability, and related apparent resistivity, anomalies are interpreted to be associated with auriferous pyrite mineralization in this zone of shearing and/or structurally-controlled hydrothermal alteration.

## 6.0 CONCLUSIONS

1. The 11 square mile Great Western Star property hosts wide-spread gold, gold-copper and gold-copper-zinc mineralization in a variety of geological settings, with both open pit and underground mining potential indicated.
2. At the Star, Eureka and Ron zones, porphyry gold-copper mineralization is hosted within highly fractured and potassically altered diorite. In this region, a 5,000 foot by 5,000 foot copper and gold soil anomaly coincides with the location of the gold and copper-bearing diorite. Very limited diamond drilling in the vicinity of the Star prospect has indicated the bulk mining potential of this region, with chalcopyrite and pyrite-rich zones assaying 0.023 oz Au/ton and 0.16% Cu over 240 feet.

This style of porphyry Au-Cu mineralization is similar to the newly discovered Mt. Milligan gold-copper deposit near McKenzie, B.C. which is being developed by joint venture partners Continental Gold Corp. and B.P. Resources Canada Limited.

3. A 5,000 foot long coincident gold soil and high chargeability I.P. anomaly coincides with the trace of the Silver King shear zone in the project area. The Alma N and Gold Eagle gold zones occur within this major, mineralizing, ductile shear system. Diamond drilling has confirmed the bulk mining potential of this shear zone, with intersections assaying up to 0.13 oz Au/ton over 155 feet and 0.09 oz Au/ton over 120 feet.

4. Very limited surface work on the Toughnut grid has identified Au-Cu-Zn bearing volcanic breccias enclosed within the strike extension of the Silver King shear zone. Geophysical and soil geochemical surveys indicate that a 5,000 foot long high chargeability I.P. anomaly and Au-Cu-Zn soil anomaly coincide with a newly discovered chalcopyrite, sphalerite, pyrite breccia. This 5,000 foot long Toughnut Cu-Zn-Au target zone has never been drill tested.
5. In the Giveout Creek target area, a 5,000 foot long I.P. chargeability anomaly and coincident gold soil geochemical anomaly have been identified adjacent to the Silver King stock. Initial diamond drilling indicates the potential for both underground and open pit gold targets, with recent drill intersections assaying 0.15 oz Au/ton over 38 feet and 0.23 oz Au/ton over 21 feet.
6. Prior exploration on the Great Western Star Au-Cu project has been focused on the identification of high-grade, vein controlled gold mineralization. Diamond drilling, and I.P. geophysics and soil sampling indicate that the project area has excellent potential for hosting bulk tonnage, open pit porphyry gold-copper deposits and disseminated shear zone Au mineralization. The bulk tonnage potential of the Great Western Star project is strongly indicated by prior operators.
7. Several other gold and gold-copper mineralized zones exist in the project area. Most have not been drill tested.

## 7.0 RECOMMENDATIONS

### Phase 1

1. Re-establish and extend the Star, Toughnut and Giveout Creek control grids.
2. Re-log all previously drilled cores from the Star, Alma N, Gold Eagle and Giveout Creek target areas documenting alteration mineralogy and structural controls of gold mineralization.
3. Geologically map the Toughnut grid-area at 1:2500 scale, and trench and sample the known I.P.-soil anomalies on the west side of the present grid. (Line 0+00E near the baseline).
4. Collect 'B' horizon soil samples at 25 m intervals along section lines not previously sampled on the Toughnut, Star and Giveout Creek grids. Assay these samples for Au, Cu and Zn  $\pm$  Pb.
5. Trench the I.P. and soil anomalies with an excavator in the vicinity of the Star, Eureka and Ron Au-Cu porphyry mineralization, and in other regions of high Au-Cu soil geochemistry throughout the diorite stock.

### Phase 2

1. Conduct approximately 10,000 feet of diamond drilling on bulk tonnage Au  $\pm$  Cu  $\pm$  Zn targets delineated during Phase 1 exploration.

## 8.0 PROPOSED BUDGET

Phase 1 - data compilation, line cutting, soil sampling, prospecting, geological mapping, trenching

Labour, 4 geologists @ \$175/day (360 man days)	\$66,240.00
2 geological assistants @ \$110/day, plus benefits	
Room and board, 240 man days @ \$30/man day	8,700.00
Truck rental, 2 months @ \$2,950/month	5,900.00
Fuel	1,600.00
Commercial air (Vancouver - Castlegar) @ \$300/trip	3,000.00
Freight	2,500.00
Communications	1,500.00
Trenching (all inclusive)	12,000.00
Geochemistry (1,000 rock, 600 soil samples)	20,225.00
Line cutting, 50 line kms @ \$420/km	21,000.00
Equipment	8,335.00
Office/secretarial	2,000.00
Property option payments to Sept 30, 1989	32,000.00



Sub-total Phase 1	\$ 185,000.00
8% Contingency	<u>15,000.00</u>
TOTAL EXPLORATION PHASE 1	\$ 200,000.00
 <b>Phase 2</b>	
Diamond drilling (all inclusive) 25,000 feet @ \$40/foot	<u>\$1,000,000.00</u>
TOTAL PHASE 1 and 2	<u><u>\$1,200,000.00</u></u>

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APPENDIX I

CLAIM SCHEDULE

CLAIM SCHEDULE

<u>Claim</u>	<u>Units</u>	<u>Record Number</u>	<u>Record Date</u>	<u>Expiry</u>
<b>1. <u>ADDIE</u></b>				
Royal Arthur	1	√3634	01/03/84	1994
Josie ✓	1	4281	10/29/85√	1990
<b>2. <u>FINLEY COMPANY</u></b>				
Champion CG	1	4648		07/31/89
Vicking Fr. CG	1	4649		07/31/89
Gold Leaf Fr. CG	1	12458		07/31/89
Gold Leaf #2 CG	1	12457		07/31/89
Toronto CG	1	4646		07/31/89
Alhambra Fr. CG	1	4651		07/31/89
Imperial CG	1	3686		07/31/89
Eureka CG	1	5552		07/31/89
Bellerophon CG	1	3680		07/31/89
Florence G. CG	1	3676		07/31/89
Star CG	1	3687		07/31/89
Gerald F. Fr. CG	1	3683		07/31/89
Elkhorn CG	1	9175		07/31/89
Bob CG	1	14632		07/31/89
Alma N CG	1	9174		07/31/89
Dot CG	1	14631		07/31/89
Mayflower CG	1	3684		07/31/89
Elk CG	1	3677		07/31/89
Silverstone CG	1	10640		07/31/89
Bee CG	1	14630		07/31/89
Gem CG	1	14629		07/31/89
Trumpet CG	1	3678		07/31/89
Toronto Fr CG	1	4301		07/31/89
Dundee CG	1	7241		07/31/89
MS CG	1	7243		07/31/89
<b>3. <u>STAR CLAIMS</u></b>				
Star #1 Fr.	1	3306	07/08/83	1995
Star #2 Fr.	1	3307	07/08/83	1995
Star #3 Fr.	1	3768	07/11/84	1995
Star #4 Fr.	1	3789	07/20/84	1995
ST 1	6	3769	07/11/84	1995
ST 2	2	3835	08/23/84	1995
ST #3	2	4861	10/14/87	1998
ST #6 Fr.	1	4862	10/14/87	1998

4. DENNY

Muldoon CG	1	976		
Majestic RCG	1	1398	01/10/80	<u>1991</u>
Invincible RCG	1	1403	01/10/80	<u>1991</u>
Vernamo RCG	1	1404	01/10/80	<u>1991</u>
Republic Fr. RCG	1	1424	01/17/80	<u>1991</u>
Mika Chahko RCG	1	1425	01/17/80	<u>1991</u>
Moken Bird Fr. RCG	1	1426	01/17/80	<u>1991</u>
Ron #1 Fr.	1	1438	01/24/80	<u>1992</u>
Ron #2 Fr.	1	1439	01/24/80	<u>1992</u>
Ron #3 Fr.	1	1535	03/10/80	<u>1991</u>
Ron #4	1	1440	01/24/80	<u>1992</u>
Ron #5	1	1441	01/24/80	<u>1991</u>
Ron #6	1	1442	01/24/80	<u>1991</u>
Ron #7	1	1443	01/24/80	<u>1991</u>
Ron #8	1	1444	01/24/80	<u>1991</u>
Ron #9	1	3716	05/14/84	<u>1991</u>
Ron #10	1	1537	03/10/80	<u>1991</u>
Ron #11	1	1538	03/10/80	<u>1991</u>
Ron #12	1	1539	03/10/80	<u>1991</u>
Ron #13	1	3717	05/14/84	1990
Ron #14	1	3719	05/14/84	1990
Ron #15	1	3720	05/14/84	1990
Ron #16	1	3840	08/28/84	1990
Ron #17 Fr.	1	3721	05/14/84	1990
Majestic Fr.	1	3722	08/28/84	1990
Muldoon Fr.				

5. GOLD EAGLE

Gold Eagle #3	9	1533	03/05/80	1990
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6. ASARCO

Birdseye	CG	L3278		<u>07/31/89</u>
Princeton Fr	CG	L3938		<u>07/31/89</u>
Gold Eagle	4	1302	10/16/79	1990
Gold Eagle #1 Fr	1	1531	03/05/80	1992
Gold Eagle #2	2	1532	03/05/80	1990
Gold Eagle #4	6	1841	08/05/80	1989
Gold Eagle #5 Fr	1	1856	08/13/80	1990
Gold Eagle #6 Fr	1	1857	08/13/80	1990
Lady Aberdeen	RCG	919	01/22/79	1992
Minto Fr.	RCG	920	01/22/79	1992
Inverness	RCG	918	01/22/79	1992
Haddo Fr.	RCG	921	01/22/79	1992
Horseshoe	RCG	1307	10/22/79	1992
Red Fr.	RCG	1308	10/22/79	1990
Tregarden Fr.	RCG	1309	10/22/79	1990

7. BOURDON

Hillside	6	3512	09/13/83	1997
Hilltop Fr.	1	3511	09/13/83/	1997
Great Western (ex.Lot 4148)	RCG	1551	02/19/80	1998
Irene (ex. Lot 4151)	RCG	1552	02/19/80	1998
Great Eastern (ex.Lot 4152)	RCG	1553	02/19/80	1998

8. PLANET PROPERTY

Juno	RCG	34	03/19/75	03/19/91
Venus	RCG	791	10/06/78	10/06/90
Orion	RCG	899	24/11/78	24/11/90
Jupiter	RCG	900	29/11/78	29/11/90
King of the Forest	RCG	901	29/11/78	29/11/90
Kirkwall	RCG	902	29/11/78	29/11/90

9. ADDIE, ADDIE, PALMER

Black Witch	CG	L4146	owe \$21.52	07/31/89
Tough Nut	CG	L199	owe \$59.50	07/31/89
AG	1	4248	10/09/85	10/09/90
AG 1	1	3829/	07/27/84	07/27/89
AG 2	1	3830	07/27/84	07/27/89
AG 3	1	3831	07/27/84	07/27/89
AG 4	1	3832	07/27/84	07/27/89
AG 5	1	3833	07/27/84	07/27/89
AG 6	1	3834	07/27/84	07/27/89
Crow	1	4355	06/19/86	06/19/90
Whiskers 1	1	3926	10/09/84	10/09/89
Whiskers 2	1	3927	10/09/84	10/09/90
Whiskers 3	1	3928	10/09/84	10/09/89
Whiskers 4	1	3929	10/09/84	10/09/89
Whiskers 5 Fr.	1	3930	10/09/84	10/09/89

10. WEIR

Thistle	CG	L2238	owe \$59.50	07/31/89
White Witch	CG	L3595		07/31/89
Great West Fr.	CG	L4773	owe \$55.55	07/31/89

11. LABELLE

North Star	CG	L4149		07/31/89
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APPENDIX II

STATEMENT OF QUALIFICATIONS

## STATEMENT OF QUALIFICATIONS

I, Douglas B. Forster of #313-1350 Comox Street of the City of Vancouver, British Columbia, do hereby certify that:

1. I graduated from the University of British Columbia in geology, having obtained my Bachelor of Science in 1981 and my Master of Science in 1984.
2. I have worked in the field of mineral exploration in B.C., Manitoba, Saskatchewan and the Yukon Territories since 1977.
3. I am an Associate of the Geological Association of Canada.
4. I am a Director of Pacific Sentinel Gold Corp., and hold securities of the aforementioned.
5. This report is based in part on my personal observations on the property, and a review of all pertinent data.

Vancouver, B.C.

  
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Douglas B. Forster, Msc.  
Director  
**Pacific Sentinel Gold Corp.**