

823027

FINAL REPORT
1987 B.C. REGIONAL PROJECT

KERR ADDISON MINES LIMITED

F. Daley
L. Grexton
L. Lyons
J. Pautler

December 1987

1987 B.C. Regional Project

----- . Final Report .-----

SUMMARY

Emphasis in the 1987 Regional Project centered on structurally controlled gold mineralization associated with;

- i. Major hydrothermal systems (porphyries, skarns)
- ii. Mesozoic syenite stocks
- iii. Volcanic centres
- iv. Regional scale normal and thrust faulting along major unconformities.

Specific areas of evaluation related to the above models were;

- i. Guichon and Pennask Batholiths
- ii. Coryell Intrusions
- iii. Rossland Volcanic Formation
- iv. Creston-Kitchener-Cranbrook Formations in southeastern B.C.

These areas are shown on Figure 1.

Field programs were directed at confirming geological potential using regional and property scale mapping, rock geochemistry and pan concentrate (stream) sampling.

Specific property evaluations were conducted in several areas where new showings, recent government surveys or established exploration/drilling programs were on-going.

Three claim groups were staked as a result of the 1987 field work;

- i. LAMB (1-6) Claims; (120 units) Located 40 km northwest of Kelowna. Staked to cover a geological setting with potential for Hedley type Au-skarn mineralization.
- ii. WART (1-4) Claims; (76 units) Located 45 km east of Merritt along the newly constructed Okanagan Connector of the Coquihalla Highway system. Anomalous As, Sb & Hg values, low level Au enrichment, a major fault zone and enveloping alteration halo, and airborne Mag anomalies are located near the contact of the Pennask Batholith with Nicola Volcanics.

- iii. CLAPPER (1-4) Claims; (68 units). Located 25 km north of Merritt on the newly opened phase of the Coquihalla Highway. A silicified, pyritic zone within intensely epidote-chlorite-carbonate altered Nicola Volcanics is anomalous in Au, As and Sb. Known gold showings of both vein and skarn type occur within 10 km.

Additional follow-up work is warranted in the Cranbrook-Creston area, Rosslund, Fennel and Merritt areas.

New areas of interest for 1988 will be:

- i. Whitesail Lake
- ii. Tyaughton Trough
- iii. Johanson Lake.

TABLE OF CONTENTS

	<u>Page</u>
i. INTRODUCTION	
a. Exploration models and 1987 areas of investigation	1
ii. DESCRIPTIONS OF REGIONAL INVESTIGATIONS	
a. Ashcroft - Spences Bridge	4
b. Merritt Regional	9
1. Clapper Claims	13
2. Wart Claims	15
c. Okanagan Regional	18
1. Lamb Claims	19
d. Rossland Regional	24
1. Triumph Ck area	25
e. Salmo Nelson Regional	27
1. Aaron Hill Mine	33
2. Second Relief Mine	35
f. Creston Regional	38
g. Cranbrook Regional	42
h. Silverthrone Mtn.	46
iii. RECOMMENDATIONS FOR 1988	
a. Follow-up to 1987 program	48
b. New target areas for 1988.	51

LIST OF FIGURES

		<u>Page</u>
Figure 1.	Location Map, B.C. Regional Program, 1987	3
Figure 2.	Regional Geology & Anomalous Geochemistry; Ashcroft-Spences Bridge Area.	7
2a.	Legend to accompany Figure 2.	8
Figure 3.	Regional Geology & Anomalous Geochemistry; Merritt Area.	11
3a.	Legend to accompany Figure 3.	12
Figure 4.	CLAPPER CLAIMS, Regional Setting	14
Figure 5.	WART CLAIMS, Regional Setting	17
Figure 6.	Regional Geology & Anomalous Geochemistry; North Okanagan Area.	21
Figure 7.	Regional Geology & Anomalous Geochemistry; South Okanagan Area.	22
Figure 8.	LAMB CLAIMS; Geology & Rock Chemistry.	23
Figure 9.	Regional Geology & Anomalous Geochemistry; Rossland Area.	26
Figure 10.	Regional Geology & Anomalous Geochemistry; Salmo Area.	29
10a.	Legend to accompany Figure 10.	30
Figure 11.	Regional Geology & Anomalous Geochemistry; Nelson Area.	31
11a.	Legend to accompany Figure 11.	32
Figure 12.	Aaron Hill Mine; Geology & Rock Geochemistry.	34

List of Figures Cont'd.		<u>Page</u>
Figure 13.	Second Relief Mine; Geology & Rock Geochemistry.	37
Figure 14.	Regional Geology; Creston Area.	40
14a.	Anomalous Geochemistry; Creston Area.	41
Figure 15.	Regional Geology & Anomalous Geochemistry; Cranbrook (Perry Creek) Area.	45
Figure 16.	Regional Geology & Anomalous Geochemistry; Silverthrone Mtn. Area.	47

LIST OF TABLES

Table 1.	Exploration Models Used in 1987 Project.	2
----------	--	---

INTRODUCTION

The 1987 B.C. Regional Program evaluated specific areas in the Canadian Cordillera with potential for hosting economic gold mineralization. Emphasis was given to those areas, or properties, which exhibited a strong structural control to mineralization and which had similarities to known producing gold deposits in either the U.S. or Canadian Cordillera (eg. Hedley, Battle Mtn.).

A crew of 4 (Daley, Lyons, Pautler, Grexton) spent 4 1/2 months on a dominantly truck-supported program of regional and detailed (property) mapping and prospecting, rock geochemistry, and pan concentrate (stream) sampling.

Parameters used in prioritizing target areas were:

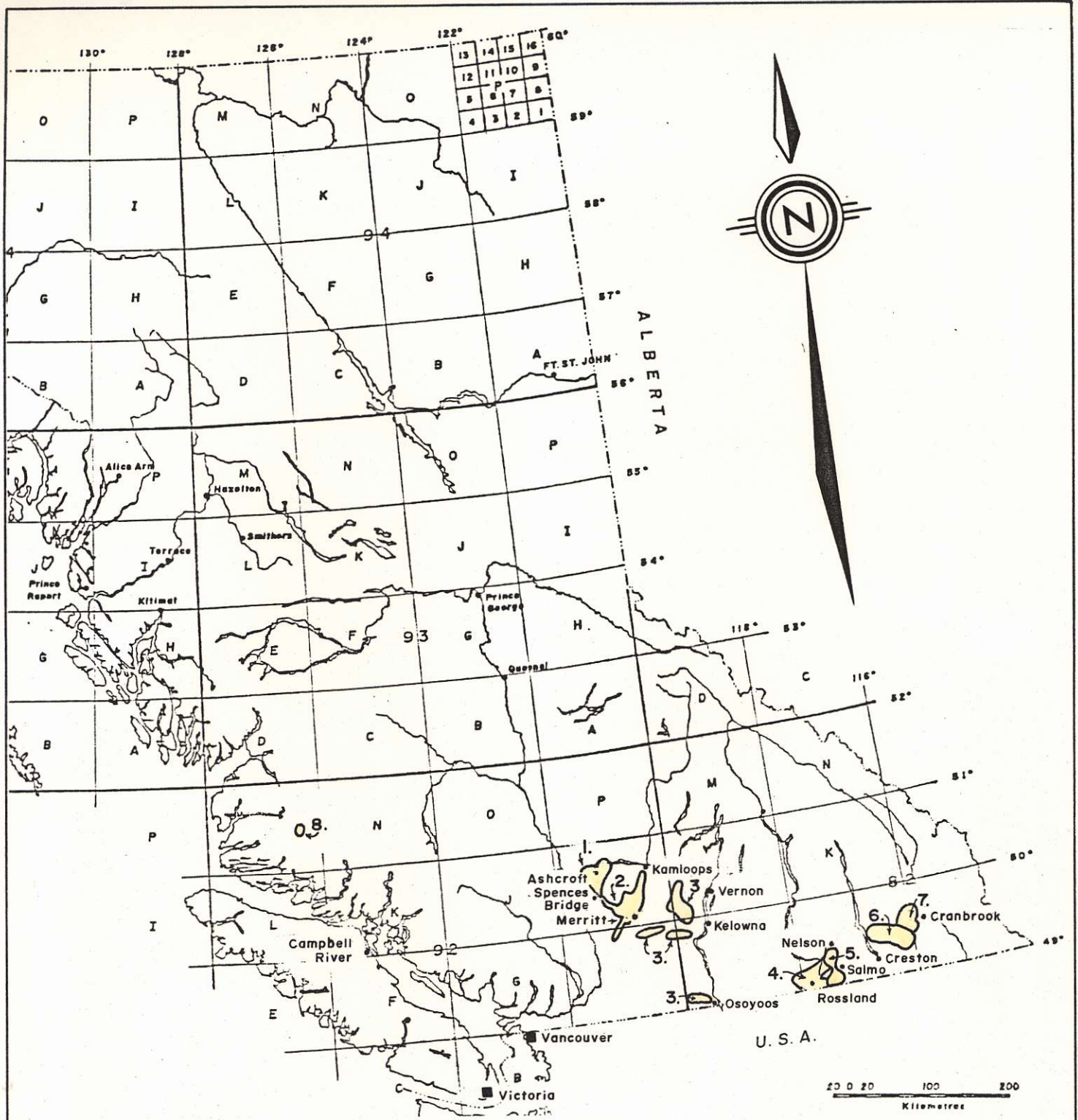
- i. Proximity to known gold occurrences, although not necessarily major showings.
- ii. Evidence of structural control to gold mineralization; inferring larger tonnage potential.
- iii. Evidence of well developed alteration assemblages; inferring substantial strength +/- duration to the hydrothermal system.
- iv. The presence of chemical environments, in addition to physical traps, for gold deposition (eg "roll front type" mechanism, volcanic-sediment contacts, etc)
- v. New bedrock exposures (highway and logging road construction) and recent government mapping in new areas.
- vi. Access; priority was given to those areas with established infrastructure, seen as a significant positive factor in the development of new properties.

a. Exploration Models and 1987 Areas of Investigation

Economic gold mineralization in the Canadian Cordillera is associated in many cases with major hydrothermal systems and their attendant environments. Table 1 lists examples of several significant deposit types, their grades and tonnages, and specific areas of B.C. that were examined in 1987 corresponding to each type. In addition to these targets, an initial evaluation was made of gold bearing quartz veins associated with major faulting and thrusting in an area of south-eastern B.C.

TABLE I

<u>Environment</u>	<u>Example(s)</u>	<u>Grade/Tonnage</u>	<u>1987 Exploration Targets</u>
Porphyry(Magmatic)	i. Afton	11.3 MT @ .03 OPT	i. Guichon Batholith
	ii. Sulphurets (Snowfield)	22 MT @ .08 OPT	ii. Okanagan Syenites
Mesothermal Veins	Bridge River Camp	8 MT @ .45 OPT	Rossland Volcanics
Epithermal Veins	Blackdome	.3 MT @ .8 OPT	Silverthrone Mtn.
	Lawyers	2 MT @ .2 OPT	
Breccia	Willa	~ 5 MT @ .13 OPT	Rossland Volcanics
Skarn	Hedley	10 MT @ .14 OPT	Nicola Volcanics



Areas Examined In 1987

1. ASHCROFT
2. MERRITT
3. OKANAGAN
4. ROSSLAND
5. SALMO-NELSON
6. CRESTON
7. PERRY CREEK
8. SILVERTHRONE MTN.

FIG. I

KERR ADDISON MINES LTD	
B.C. REGIONAL PROGRAM 1987	
SCALE - 1 :	DATE - OCT. , 1987
DRAWN BY - L.G.	DATA - L.G.
NTS -	REVISED -

11. DESCRIPTIONS OF REGIONAL INVESTIGATIONS

a. Ashcroft - Spences Bridge (Fig. 2)

The Ashcroft-Spences Bridge area is geologically complex as it lies along the Thompson River Fault System along the western margin of the Guichon Batholith. The batholith intrudes Triassic Nicola Group and Permo-Triassic Cache Creek Group lithologies. Jurassic sediments of the Ashcroft Fm., and Eocene Kamloops Group basalts overlie the northwest section of the batholith and dominantly volcanic rocks of the Cretaceous Spences Bridge Group overlie the southwestern portion.

The Guichon Batholith hosts the Cu-Mo porphyry deposits of the Highland Valley. The potential for Au vein and skarn deposits along the margins of the batholith were explored especially within favourable lithologies such as the volcanic-sedimentary packages of the Nicola and Cache Creek Groups. Numerous gossans are evident in the area some of which occur along known faults and geological contacts. It was hoped that the gossans could be related to hydrothermal alteration associated with major structures adjacent to the Guichon Creek Batholith.

Several Au showings occur in the Ashcroft-Spences Bridge area, although no significant Au assays have been reported. Limited production from the Martel Au Mine averaged only 0.51 g/t Au from narrow (<30 cm) discontinuous quartz veins. The only other Au reported includes a vague reference to visible Au across the Thompson River from the Burr Property and free Au in pans from the Ashcroft Au showing. Examination of the showings in 1987 did not locate the free Au showing and results were discouraging. A synopsis of the showings follows:

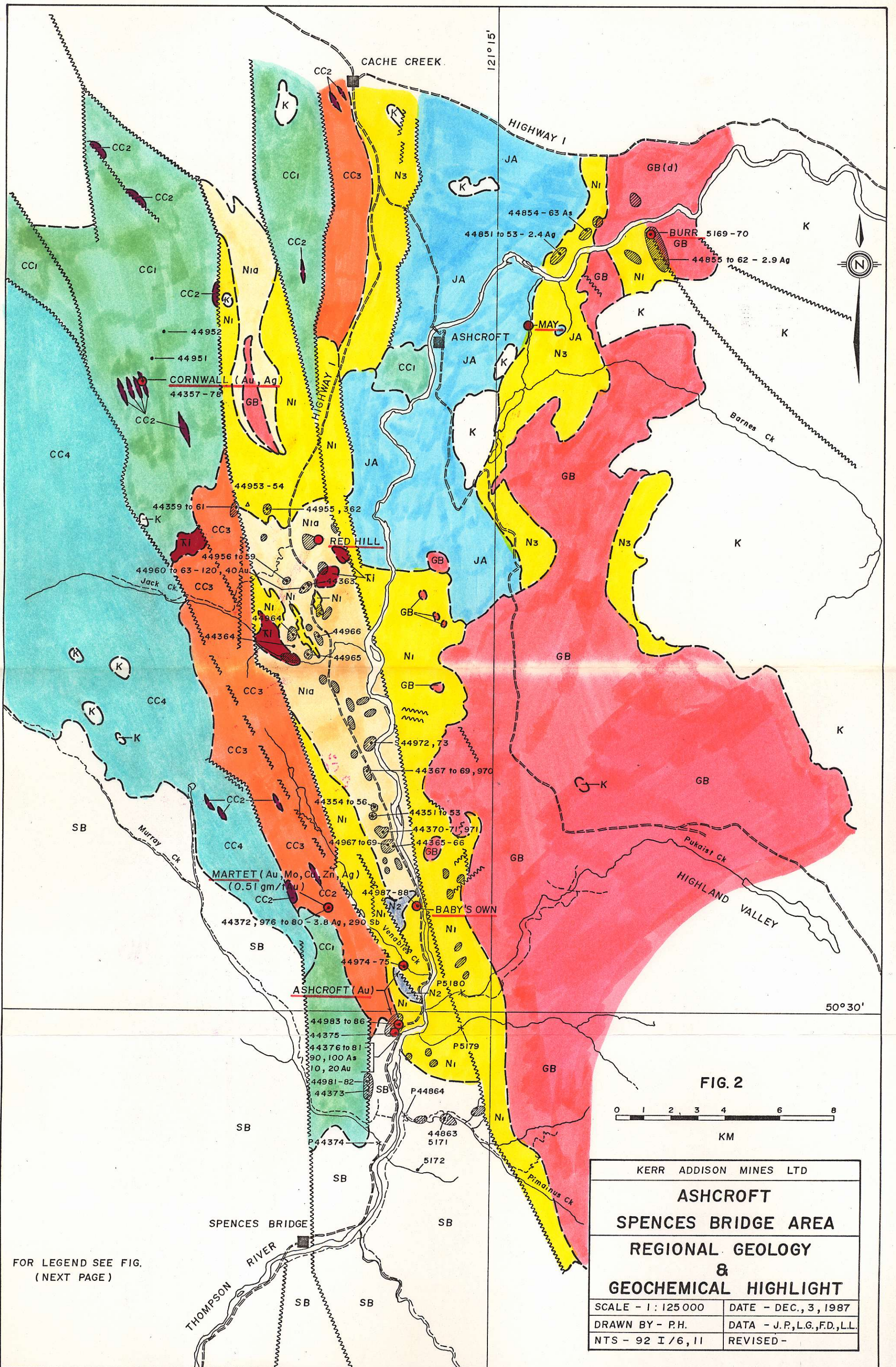
Cornwall - Au, Ag - Cache Creek greenstone, limestone cut by diorite which is later serpentized.

- minor sulfides in diorite
- minor quartz veins in diorite
- fault zones with no major alteration, mineralization.

- Martel - Au, Mo,
Cu, Zn, Ag
- Cache Creek greenstone, argillite, chert
 - discontinuous, narrow quartz veins (max 30 cm x 20 m)
 - crosscutting faults
 - limited production - graded 0.015 oz/t Au
0.04 " " Ag
1.48% Mo
0.11% Cu
 - 1987 anomalous values - 290 ppm Sb, 3.8 ppm Ag
- Baby's Own -
Cu, Fe, Au
- limestone and marble, greenstone with minor skarn and sulfide pods.
 - sulfide pods essentially 'mined out'
- Ashcroft - Au
- Cache Creek or Nicola volcanics and schists, minor sediments
 - series of very lensoid quartz veins
 - narrow altered fault zones with pyrite
 - 1987 anomalous values - 90-100 ppm As with 15-20 ppb Au from altered fault zone.
- Burr - Cu, Ag, Au
- fault contact between Nicola Volcanics and fresh Guichon diorite
 - well developed alteration assemblage in volcanics (sericite, kaolinite, minor chlorite)
 - very little quartz veining
 - series of unmineralized feldspar porphyry dykes subparallel to fault
 - 1987 anomalous values - 2.9 ppm Ag
 - similar gossans north of Burr - 1987 values
 - 63 ppm As
 - 2.4 ppm Ag
- Red Hill - Cu
- chlorite schists with quartz sericite schists along fault (?) planes
 - local quartz veins to 10 cm at contacts of above and within quartz sericite schists
 - major trenching, drilling in area.

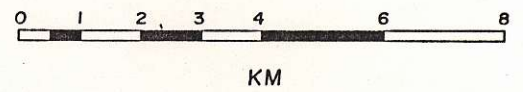
Many of the gossans investigated were related to the presence of minor pyrite along foliation planes, and weak carbonate alteration of the greenstones. The gossans in the central part of the Ashcroft-Spences Bridge area, (in the wedge between Venables Valley and the Thompson River), are more highly altered and exhibit characteristics of hydrothermal alteration - propylitic, argillic and phyllic. In the most highly altered zones massive kaolinite and gypsum occur. The area is predominantly underlain by rhyolite quartz feldspar porphyry which may explain the degree of alteration observed in that felsic volcanics appear to be more susceptible to alteration). Furthermore the alteration zones seem to be related, at least in part, to westerly trending faults which appear to be limited in extent. The gossans through this area could not be related to any major NNW structure and the Au, Ag As and Sb values were all insignificant. Only one gossan contained low anomalous Au in small quartz veins hosted by the rhyolites, (120 ppb and 40 ppb Au). This area has been trenched and drilled as have many of the gossans in this more highly altered area.

Despite the favourable geology, structure and alteration in the Ashcroft-Spences Bridge area, our initial investigation has yielded discouraging results. This was somewhat expected due to the 'high level' characteristics of the gossans, but the lack of a major connecting structure in the central highly altered area and the negligible trace element values is not encouraging. If a more thorough investigation is proposed in the future, previous geological and drill hole data from assessment records should be examined.



FOR LEGEND SEE FIG. (NEXT PAGE)

FIG. 2



KERR ADDISON MINES LTD	
ASHCROFT SPENCES BRIDGE AREA REGIONAL GEOLOGY & GEOCHEMICAL HIGHLIGHT	
SCALE - 1 : 125 000	DATE - DEC., 3, 1987
DRAWN BY - P.H.	DATA - J.P., L.G., F.D., L.L.
NTS - 92 I / 6, 11	REVISED -

LEGEND FOR ASHCROFT - SPENCES BRIDGE

TERTIARY

K

Kamloops Group : Basalt - Rhyolite , minor sediments

MESOZOIC

SB

Spences Bridge Group : Andesite - Rhyolite , minor sediments

JA

Ashcroft Formation : Sediments

GB(d)

Guichon Creek Batholith : Quartz Monzonite to Quartz Diorite , (d) Diorite.

Ti

Triassic intrusions

Nicola Group:

N1

Volcanics , Volcaniclastics

N1a

Acidic

N2

Carbonate

N3

Andesite porphyry , pyroclastics , local sediments

MESOZOIC - PALEOZOIC

Cache Creek Group:

CC1

Mafic volcanics

CC2

Ultramafic

CC3

Sediments including Limestone.

CC4

Marble



Gossans



Showings with Au



Rock samples



Pan samples



Fault

Au (ppb) , Ag (ppm) , As (ppm) , Sb (ppm) , Hg (ppb)

FIG. 2A

b. MERRITT REGIONAL (Figure 3)

In the Merritt area, the margins of the Jurassic to Triassic Guichon Creek and early Jurassic Nicola Batholiths were examined with particular emphasis on volcanic/batholith contacts. The Guichon Batholith hosts the porphyry deposits of the Highland Valley and Au bearing quartz veins, hosted by Nicola volcanics along a major fault zone, have been mined at Mineral Hill (Stump Lake).

Significant Au grades have also been recovered from sulfide bearing quartz veins related to skarn development at Swakum Mtn. in the Nicola volcanics. Consequently the 1987 program in the Merritt area concentrated on the discovery of Au vein type deposits peripheral to Cu-Mo porphyries, Au-sulfide fault controlled quartz veins, and skarn deposits along batholith contacts.

New exposures of the Nicola, as well as younger volcanic assemblages, have recently been uncovered by the Coquihalla Highway. These exposures, particularly in the vicinity of gossans, faults and geological contacts were investigated in 1987. This led to the discovery of several showings, the 2 most interesting of which were staked as the "CLAPPER", and "WART" claims. The Coquihalla North showing (now the "Clapper" claims) is located along Highway 5 north. The showing is hosted by Nicola volcanics near the contact with a dioritic stock. The Iron Mask Batholith which hosts sulfide-Au deposits, just south of Kamloops, is of similar diorite composition.

The Clapper Claims are described in more detail later in this report.

Anomalous values to 345 ppb Au, 150 ppm As, 85 ppm Sb and 900 ppb Hg were obtained from gossans along the Coquihalla Highway, south of Merritt. All but one of the anomalies were associated with fault zones (1-15 m wide) that could not be traced due to overburden cover. The other anomaly was hosted by rhyolite scoria beds that were of limited extent.

Several Cu porphyry prospects were investigated near the eastern edge of the Guichon Batholith. The most significant results were recorded from the VIMY showing with 3200 ppb Au, 7100 ppm Ag, 910 ppm As and 140 ppm Sb. Unfortunately these values are restricted to a narrow (10cm wide), Cu rich section of a small shear zone. The property has previously been extensively trenched and drilled. The Manchester Au showing in this vicinity was not located.

The south margin of the Guichon was explored in a geologically complex area of faulted Nicola volcanics and sediments, Tertiary and Cretaceous volcanics and Tertiary intrusions. No major alteration or veining was noted along the faults or workings and significant mineralization was found in the vicinity of the Mickie Cu-Au showing. The Len/Law Au Ag Cu Pb showing was not reached, but a pan sample draining the area was not anomalous.

A number of Cu vein prospects north from Nicola Lake to the Peacock Property were investigated. At the Peacock, a 2.0 m wide quartz vein carries 3-5% combined chalcopryrite and bornite but little Au (0.82 g/t across 1.5 m.) Only remnant blocks of the vein are exposed due to post vein faulting.

The Nicola Lake Cu showing to the southeast contains 1% chalcopryrite and 9.33 g/Au over 40cm. The vein is shear related but is discontinuously exposed along the shear due to cross-faulting. The above Au value is not continuous along strike, nor representative of the area (<1 g/t). Other similar lensoid Cu bearing quartz veins are reported in the area between Nicola Lake and the Peacock, all with limited extent.

The Mt. Henning Cu-Au-Mo showing is located east of the Coquihalla Highway, about 60 km south of Merritt. Despite favourable alteration, quartz stringer stockworks and sulfide mineralization, results were disappointing. Extensive trenching and minor underground exploration has been undertaken without significant Au values being recorded.

In synopsis, our investigation of the Merritt area revealed significant alteration zones along the Coquihalla North Highway and less major, altered fault zones along the Coquihalla South Highway, all hosted by the Nicola volcanics.

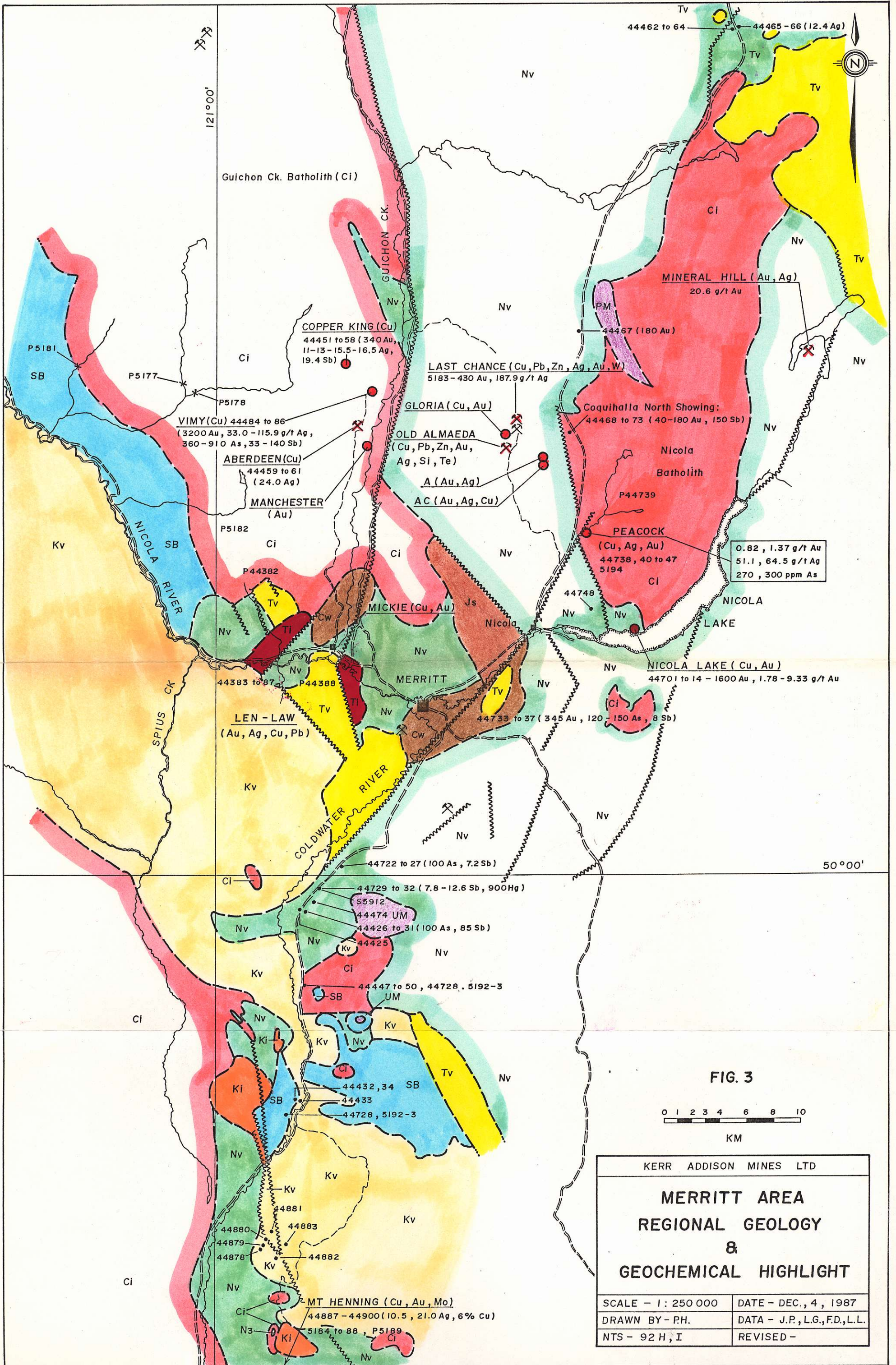
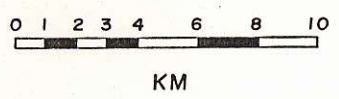





FIG. 3










KERR ADDISON MINES LTD	
MERRITT AREA REGIONAL GEOLOGY & GEOCHEMICAL HIGHLIGHT	
SCALE - 1 : 250 000	DATE - DEC., 4, 1987
DRAWN BY - P.H.	DATA - J.P., L.G., F.D., L.L.
NTS - 92 H, I	REVISED -

LEGEND FOR MERRITT AREA

TERTIARY

	Intrusions
	Volcanics
	Coldwater beds : Sediments , local coal seems

MESOZOIC

	Cretaceous intrusions
	Kingsvale Group : Volcanics and Sediments
	Spences Bridge Group : Volcanics and Sediments
	Coast intrusions
	Jurassic Sediments
	Ultramafic rocks
	Nicola Group : Volcanics and sediments

Paleozoic

	Metamorphic rocks
---	-------------------

O Showings with Au

• Rock samples

X Pan samples

Au (ppb) , Ag (ppm) , As (ppm) , Sb (ppm) , Hg (ppb)

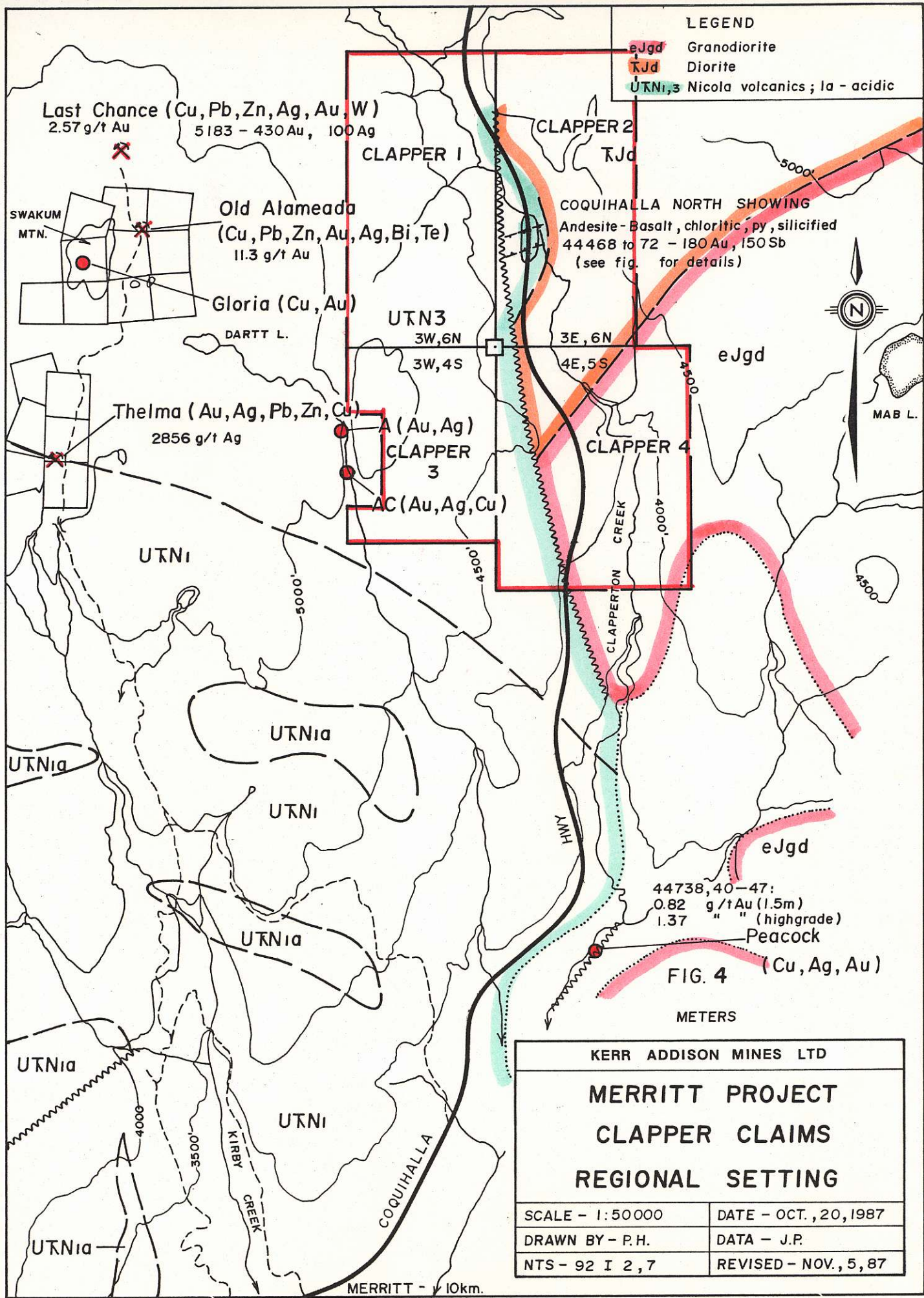
b.1 CLAPPER CLAIMS (Coquihall North showing, Fig.4)

The Clapper Claims, totalling 68 units cover a pronounced gossan on both sides of Highway 5, 22 km north of Merritt. The gossan consists of a 200 m wide 070° trending zone of pyritic, silicified and locally clay altered andesite to basalt. The alteration may be related to a nearby north trending regional fault which separates Jurassic-Triassic diorite from the Triassic Nicola Volcanics. Minor quartz pods and small veins occur within the gossan zone. The north half of the silicified zone encompasses a 50-60m wide, more highly pyritized and silicified zone and a sub-parallel, intense clay altered section to the northeast of the major zone, along a narrow drainage ditch. Enveloping the core of the showing, the volcanics are chloritic with variable fine pyrite. A concentration of epidote is evident immediately south of the zone. Occasional weak malachite and carbonate was observed in the more highly altered areas.

Six rock samples were collected from the showing and all contained Au values between 40 and 180 ppb Au. The highest sample was a 100 m long composite across the approximate central area of the zone. The intense clay section with weak malachite contained 130 ppb Au. A 1.5 cm quartz vein with weak malachite from the highly pyritized and silicified section carried 150.0 ppm Sb.

A four mile long north trending airborne magnetic anomaly occurs between Kirby and Clapperton Creeks; along the central and western portions of the Clapper Claims.

Regionally the claims lie 4 km east of the Swakum Mountain., Cu, Pb, Zn, Au, Ag skarn deposits, 18 km west of the Stump Lake - Mineral Hill Au, Ag vein deposits and 7.5 km north of the Peacock Cu vein prospect. Minor Au production from the old Alameda Mine at Swakum Mtn. graded 11.3 g/t Au and minor production from the Thelma Mine graded 2856 g/t Ag. Au production from Mineral Hill graded 20.6 g/t from quartz veins with sulfides hosted by bleached, pyritized and carbonate altered Nicola Volcanics.



KERR ADDISON MINES LTD	
MERRITT PROJECT CLAPPER CLAIMS REGIONAL SETTING	
SCALE - 1:50000	DATE - OCT., 20, 1987
DRAWN BY - P.H.	DATA - J.P.
NTS - 92 I 2, 7	REVISED - NOV., 5, 87

b. 2 WART CLAIMS (Okanagan Connector Fig. 5)

The Okanagan Connector Highway is currently under construction and will eventually join Merritt, via Aspen Grove to Peachland. The eastern half of the proposed highway, except for a small section near Trepanier, had not been cleared as of late July this year. The purpose of our investigation was to examine the new road exposures in an area of Triassic Nicola Volcanics and Jurassic Coast Intrusions. The former host known Au prospects such as Swakum Mtn. and Mineral Hill-Stump Lake (see Merritt area map). The latter host Cu-Mo porphyry deposits, specifically at Brenda Mine which is located further east along the Okanagan Connector adjacent to the volcanic contact. Investigation along the highway uncovered a 100m wide clay altered, pyritic fault zone 22 km west of Brenda Mine.

The main showing on the Wart Claims is hosted by andesite tuffs and porphyries of the Nicola Group, adjacent to granitic rocks of the Jurassic Coast Intrusions. The fault was traced for 1.8 km along the bed and walls of the unfinished highway. Outcrop off the road is scarce. Local silicification, brecciation, quartz-calcite stringers, and carbonate veining and altered zones are evident towards the south end of the exposure. No major silicified zones or quartz veining was observed. Granitic dykes were also noted at the south end. The andesites contain epidote and are pyritic peripheral to the fault zone. Although the fault generally appears to trend about 330° , smaller scale clay altered zones and calcite veins trend $290^{\circ}/NE$.

Geochemically, Au and Ag values are low-order except for one 280 ppb Au value from intense clay altered and pyritic zones near the south exposure of the fault. Values up to 1000 ppb Hg, 2300 ppm As and 75.0 ppm Sb were also obtained from a 400 m x 100 m area in this vicinity and seem to be restricted to pyritic and clay altered or incompetent zones. A cluster of aeromagnetic highs occur to the north of the showing possibly indicating a buried intrusive, or skarn development.

Also of particular interest is the Elk Property owned by Fairfield Minerals Ltd. which lies south of the Wart Claims. Two significant Au showings have been outlined on the property. These include quartz vein and stringer stockwork zones hosted by clay altered granite and a diabase dyke. On the Elk Claims, an east trending quartz vein at the "North Showing", with minor pyrite chalcopyrite and tetrahedrite, returned values of 59.7 g/t Au, 290 g/t Ag over 0.24 m and 20.6 g/t Au, 195 g/t Ag over 0.95 m. The silicified clay altered, pyritic zone with narrow quartz stringers at the South Showing, (with rare arsenopyrite and galena), produced Au values from 4.87 g/t over 1.0 m to 36.3 g/t over 0.85 m. Several >50 ppb Au in soil anomalies occur in the vicinity of the showings with a prominent 400 x 600 m anomaly just south of the "South Showing".

In the vicinity of Trepanier, (east end of the Okanagan Connector), clay altered pyritic granitic rocks of the Coast Intrusions host narrow quartz veins, one of which contained 575 ppb Au across 10 cm (Fig 4). This mode of occurrence is quite similar to the South Showing on the Elk Property and although it is not significant in itself, the remainder of the Okanagan Connector should be investigated upon accessibility or completion, especially in the vicinity of Brenda Mine.

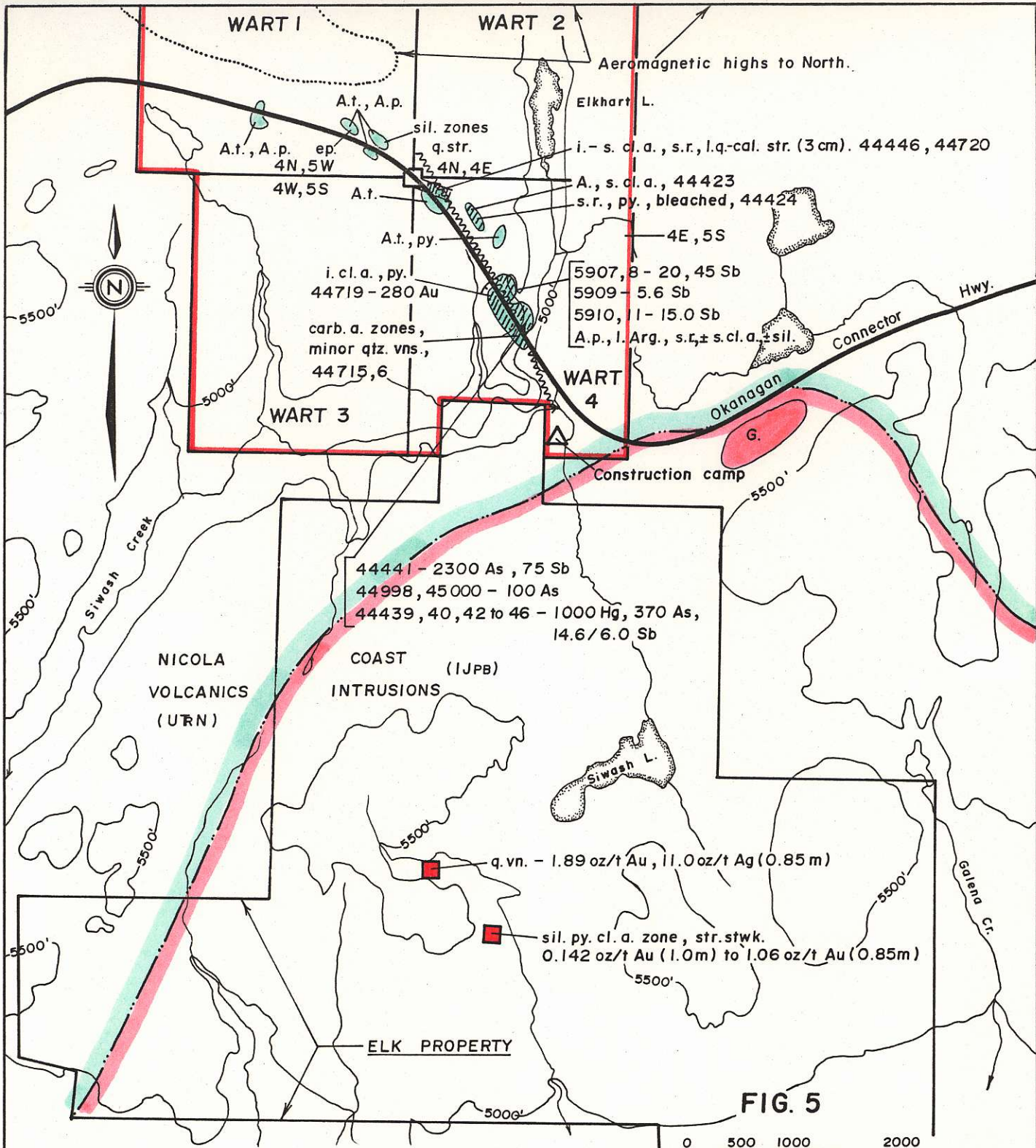


FIG. 5

0 500 1000 2000
METERS

- | | |
|-------------------|-------------------------|
| A Andesite | i Intense |
| p Porphyry | s Strong |
| t Tuff | l Local |
| G Granite | py Pyrite |
| q Quartz | vn. Vein |
| cal Calcite | stn. Stringer |
| ep Epidote | stwk. Stockwork |
| a Altered | Clay altered zone |
| sil Silicified | Intense clay alteration |
| carb Carbonate | |
| cl Clay | |
| r Rusty | |

Au(ppb), Ag(ppm), As(ppm), Sb(ppm),
Hg(ppm).

KERR ADDISON MINES LTD	
MERRITT PROJECT	
WART CLAIMS	
SCALE - 1: 50 000	DATE - NOV. , 1987
DRAWN BY - P.H.	DATA - J.P., L.G.
NTS - 92 H/16	REVISED -

11. c. OKANAGAN REGIONAL (Fig's 6,7)

In 1987, two areas were investigated in the North Okanagan; the previously described Okanagan Connector Highway under construction between Aspen Grove and Trepanier, and Paleozoic to Triassic sedimentary and volcanic rocks occurring west of Okanagan Lake where they occur in an arcuate belt extending from the Douglas Ranch area south to Kelowna. These rocks include a shallow marine sequence of limestone, siltstone, conglomerate and water lain tuffs. Intruded into these units are local ultramafic plugs and dykes. Nicola Volcanics and sediments lie west of Peachland in a local pendant within more regionally extensive Jurassic intrusions. Syenite plugs occur locally and Tertiary volcanics cap much of the area.

The geological setting of interest in 1987 was the Upper Paleozoic and Triassic, sediment and volcanic assemblages thought to be a possible host for a Hedley type skarn deposit. In an area north of Lambly Lake the similarities to the Hedley setting include a sequence of shallow marine siltstones, calcareous siltstones and limestones, as well as conglomerate beds and dioritic plugs and dykes, possibly related to a reactivation and deformation of a basement flexure through the area. Calc silicate development and quartz veins containing anomalous arsenic, antimony, bismuth and tellurium were found and the Lamb Claims were staked over favourable ground between several existing claim blocks. (See detailed description of Lamb Claims).

West of Peachland within Upper Triassic Nicola sediments are three gold bearing skarn showings. Two of these showings were looked at and sulphide skarn samples taken from the Bluebell returned values up to 6.45 g/t Au. The area is staked and currently being worked for Fairfield Minerals Ltd. and it's reports suggest that the setting is similar to that of the Hedley Camp. The area immediately to the north was explored with no encouraging results.

SOUTH OKANAGAN

In 1987 a short regional program was carried out southwest of Oliver. Much of this area is underlain by Upper Paleozoic to Upper Triassic sediments metasediments and volcanics. Intruded into these are Jurassic Okanagan Intrusions, which include local syenite plugs. The areas around these syenites were explored for gold occurrences similar to those on the Brett Property west of Vernon where gold occurs within linear, silicified and brecciated shear zones radiating from a syenite plug.

Two of the areas looked at returned samples anomalous in gold. The first was the King Edward Showing located on Susap Creek. This showing is within a syenite body and consists of a small, fracture controlled mineralization zone containing molybdenite, chalcopyrite and up to 810 ppb Au. No extensions to the small zone were found. The second area of anomalous sampling was on Snowy Mountain where small quartz veins were found peripheral to a syenite plug. Two samples from separate veins contained 127.9 g/t Ag and 970 ppb Au but these veins were of limited size and extent. A third sample was taken from a small quartz veinlet stockwork zone within granite and returned 12.9 g/t Au. Follow-up work is necessary in this area to determine the extent of the mineralization.

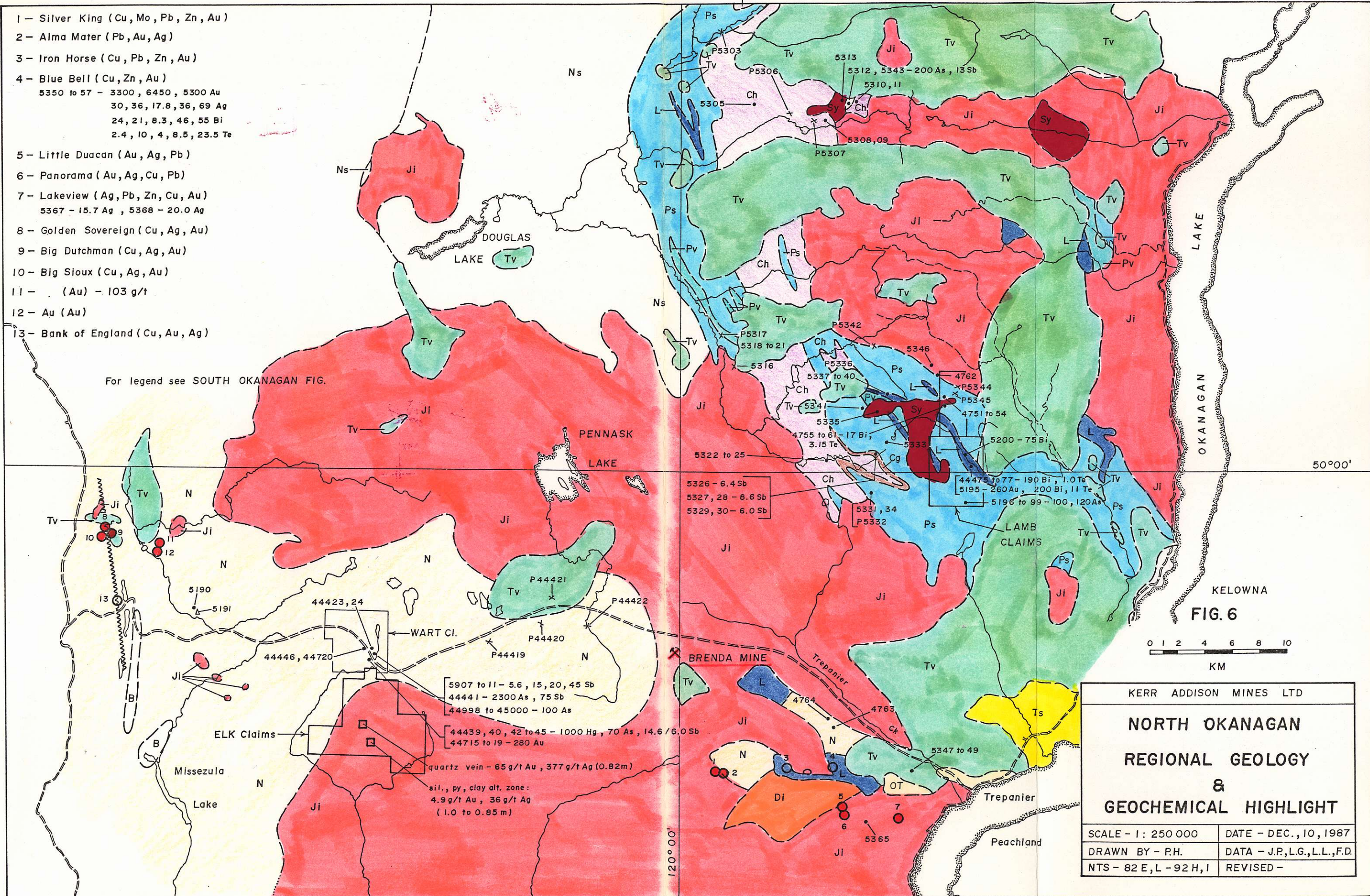
1. LAMB CLAIMS (Fig. 8)

The Lamb Claims consist of 120 units, two kilometers north of Lambly Lake and approximately 20 kilometers northwest of Kelowna. Other claim blocks adjoin them to the south, east and west. Logging roads provide access to most of the claim block.

The Lamb Claims are predominantly underlain by a sedimentary sequence which includes siltstone, limestone, and conglomerate, with shale just off the claims to the southwest. Portions of these units have been hornfelsed by the intrusion of a syenite plug into the western part of the claims, a pluton of granite-granodiorite in the north and several diorite plugs and dykes throughout the central claim area. Calc-silicate development was found in two localities. Weak to moderate calc silicate development within

calcareous siltstone contains local, small scale pyrite stockwork which returned 100 and 120 ppm arsenic. A diorite dyke containing malachite is nearby. Well developed calc-silicates are found in limestone north of Sandberg Creek near the boundary between Lamb 5 and 6. These garnet-diopside skarns contain pyrite as do lenses and stringers parallel to bedding in the limestone nearby. Diorite and lesser porphyry dykes (?) are common in this area and small quartz veins within these dykes ran 17 ppm Bi and 3.15 ppm Te. Quartz veining was also observed near the centre of Lamb 1 where four veins to 40 cm wide crosscut silty limestone and carry up to >200 ppm Bi, 11 ppm Te and 260 ppb Au.

The geology of the Lamb Claims bears many similarities to the Hedley geological setting where gold bearing sulphide skarn zones and veins within limestones and calcareous siltstones are spatially related to diorite dykeing.



- 1 - Silver King (Cu, Mo, Pb, Zn, Au)
- 2 - Alma Mater (Pb, Au, Ag)
- 3 - Iron Horse (Cu, Pb, Zn, Au)
- 4 - Blue Bell (Cu, Zn, Au)
 5350 to 57 - 3300, 6450, 5300 Au
 30, 36, 17.8, 36, 69 Ag
 24, 21, 8.3, 46, 55 Bi
 2.4, 10, 4, 8.5, 23.5 Te
- 5 - Little Duacan (Au, Ag, Pb)
- 6 - Panorama (Au, Ag, Cu, Pb)
- 7 - Lakeview (Ag, Pb, Zn, Cu, Au)
 5367 - 15.7 Ag, 5368 - 20.0 Ag
- 8 - Golden Sovereign (Cu, Ag, Au)
- 9 - Big Dutchman (Cu, Ag, Au)
- 10 - Big Sioux (Cu, Ag, Au)
- 11 - (Au) - 103 g/t
- 12 - Au (Au)
- 13 - Bank of England (Cu, Au, Ag)

For legend see SOUTH OKANAGAN FIG.

FIG. 6



KERR ADDISON MINES LTD	
NORTH OKANAGAN REGIONAL GEOLOGY & GEOCHEMICAL HIGHLIGHT	
SCALE - 1 : 250 000	DATE - DEC., 10, 1987
DRAWN BY - P.H.	DATA - J.P., L.G., L.L., F.D.
NTS - 82 E, L - 92 H, 1	REVISED -

5907 to 11 - 5.6, 15, 20, 45 Sb
 44441 - 2300 As, 75 Sb
 44998 to 45000 - 100 As

44439, 40, 42 to 45 - 1000 Hg, 70 As, 14.6/6.0 Sb
 44715 to 19 - 280 Au

quartz vein - 65 g/t Au, 377 g/t Ag (0.82m)

sil., py, clay alt. zone:
 4.9 g/t Au, 36 g/t Ag
 (1.0 to 0.85 m)

LEGEND FOR OKANAGAN NORTH AND SOUTH

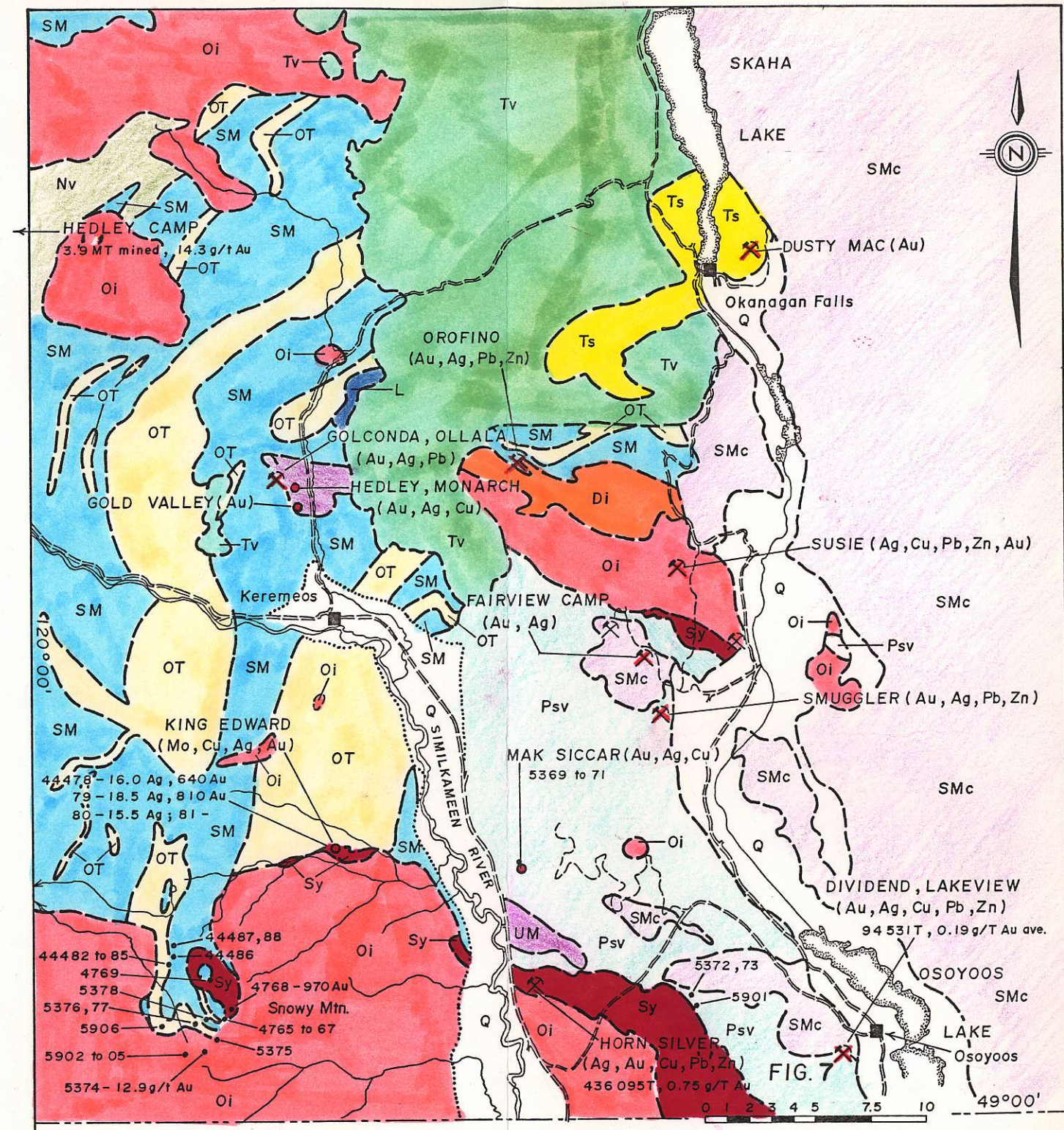
- B Basalt
- Ti Tertiary intrusions
- Tv Tertiary volcanics
- Ts Tertiary sediments
- Cw Coldwater beds
- Sy Syenite intrusions
- Ku Kingsvale volcanics
- SB Spences Bridge volcanics
- Ji Jurassic intrusions
- Di Diorite intrusions
- N,v,s Nicola Group: volcanics and sediments
- P,v,s Paleozoic volcanics and sediments
- L Limestone
- Cg Conglomerate
- OT Old Tom Formation: sediments
- SM Shoemaker Formation: volcanics
- UM Ultramafic intrusions
- Ch Chapperon Group: metasediments and metavolcanics

Oi Okanagan intrusions

SMc Shuswap metamorphic complex

- Rock sample location
- X Pan " "
- ✕ Au bearing mine
- Au bearing showing

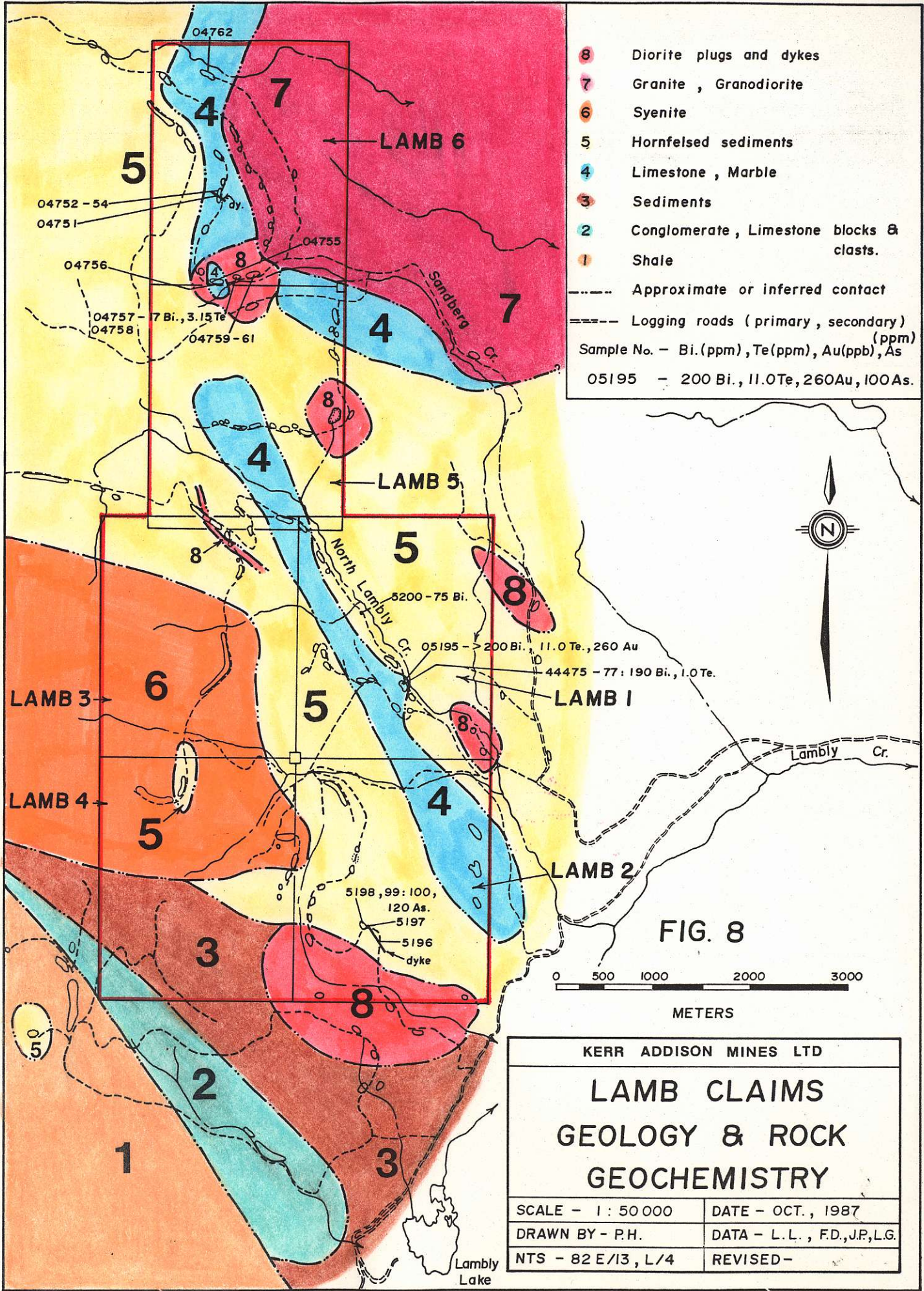
Sample No. - Ag(ppm), Au(ppb), As(ppm), Sb(ppm), Bi(ppm), Te(ppb), Hg(ppb).
 44528 - 18.5 Ag, 960 Au, 100 As, 6.0 Sb, 55 Bi, 6.5 Te, 1000 Hg.



KERR ADDISON MINES LTD

**SOUTH OKANAGAN
REGIONAL GEOLOGY
&
GEOCHEMICAL HIGHLIGHT**

SCALE - 1: 250 000	DATE - OCT., 1987
DRAWN BY -	DATA -
NTS -	REVISED -



- 8 Diorite plugs and dykes
 - 7 Granite , Granodiorite
 - 6 Syenite
 - 5 Hornfelsed sediments
 - 4 Limestone , Marble
 - 3 Sediments
 - 2 Conglomerate , Limestone blocks & clasts.
 - 1 Shale
 - Approximate or inferred contact
 - Logging roads (primary , secondary)
- Sample No. - Bi.(ppm), Te(ppm), Au(ppb), As (ppm)
- 05195 - 200 Bi., 11.0Te., 260Au, 100As.

FIG. 8

0 500 1000 2000 3000
METERS

KERR ADDISON MINES LTD	
LAMB CLAIMS GEOLOGY & ROCK GEOCHEMISTRY	
SCALE - 1 : 50 000	DATE - OCT., 1987
DRAWN BY - P.H.	DATA - L.L., F.D., J.P., L.G.
NTS - 82 E/13, L/4	REVISED -

ii. d. ROSSLAND REGIONAL (Fig 9).

Regional work around Rossland-Castlegar encompassed an area lying between the southwestern part of the Kootenay Arc, composed of an assemblage of Upper Paleozoic miogeosynclinal rocks, and the highly metamorphosed rocks of the Shuswap Metamorphic Complex. Gneisses occur south of Castlegar along the Columbia River while Mt. Roberts Formation sediments and meta-sediments of Pennsylvanian age lie to the west and Jurassic Rossland Group volcanics and minor sediments occur in a broad band covering much of the southeastern portion of the area. Intruded into these units are Jurassic Nelson Intrusions to the north and east, Tertiary Coryell Intrusions to the west, and Tertiary Sheppard Intrusions to the south. Major structures in the area include the Champion Lake Fault extending from Champion Lakes north to Slocan Lake, and the "Rossland Break" which runs from the U.S. border, southwest of Rossland, to the Columbia River east of Rossland. Along this latter structure are ultramafic intrusions, porphyry intrusions and the Rossland Monzonite.

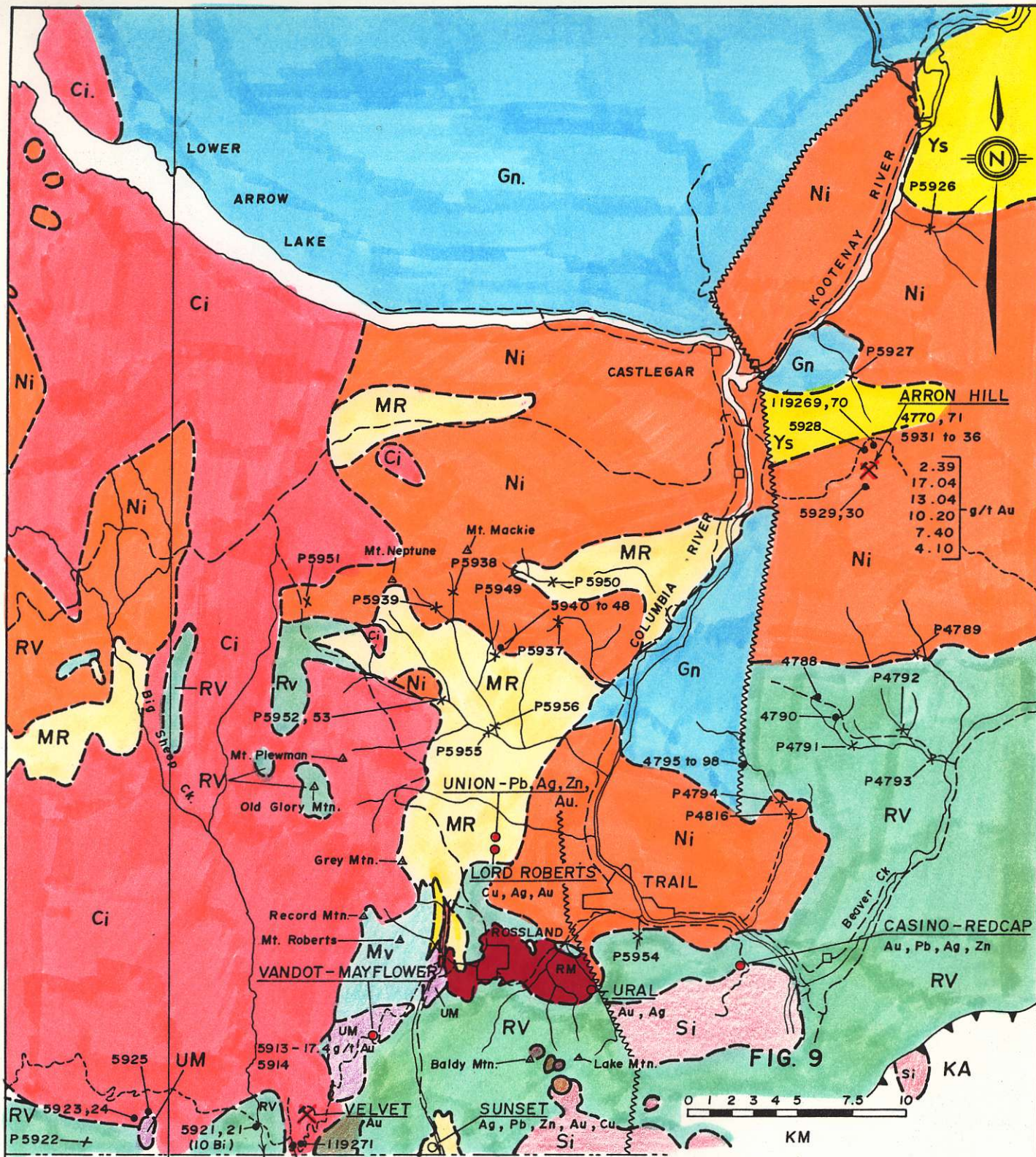
In 1987, three geologic settings were investigated. Firstly, the Rossland Group and Mt. Roberts Formation host several gold-vein type occurrences including the Rossland Camp from which 2.7 million ounces of gold has been produced. No anomalous rock or pan samples were received from regional sampling in these units. The second area studied was along the Champion Lakes fault zone where, further to the north along Slocan Lake, the Willa Property is located. The Willa is a hydrothermal, intrusive breccia system containing gold, copper, molybdenum and silver. It occurs in a pendant of Rossland Group volcanics and sediments within the Nelson Batholith. Exploration along this fault zone within the Nelson Batholith to the south led to the examination of an abandoned minesite near Aaron Hill where several anomalous gold values from quartz veins were received. (see detail).

The third area investigated was southwest of Rossland where rock units quite unique to the map sheet are concentrated. A grab sample from the Velvet Mine near Triumph Creek returned 17.4 g/t Au. (see detail).

TRIUMPH CREEK

The Triumph Creek area southwest of Rossland was examined specifically because of the Velvet Mine (~89,000 T at 7.0 g/T) which sits within a pendant of ultramafics in the Coryell Batholith. From the mine dumps four types of mineralization were observed; chalcopyrite-pyrite-malachite veins, massive magnetite-hematite, garnet-epidote skarn and bull white quartz vein material with minor sulphides. The latter was sampled and returned 17.4 g/t Au. The Velvet pendant lies on the "Rossland Break", a zone of weakness and dislocation that extends approximately 20 kms from the U.S. boundary northeast through Rossland to the Columbia River east of Trail. Along this break is an anomalous variety of geologic units including ultramafic intrusions, quartz-feldspar porphyry, coarse conglomerate, Coryell Intrusions and Rossland Monzonite. Also on this break is the Rossland Camp where economic mineralization is of three types. Cu-Au bearing quartz veins containing chalcopyrite, pyrrhotite, and pyrite within Rossland Group augite porphyry and Rossland Monzonite were the largest gold producers. Au bearing veins containing irregular pockets of free gold and few sulphides occur in Rossland Volcanics near the contact with an ultramafic body. These veins are separated from the main camp by north trending faulting and are possibly high level extensions of the Cu-Au veins. The third type of mineralization lies immediately west of the main "Rossland" zone where molybdenum has been mined from a breccia zone within hornfelsed siltstone and quartz diorite dykes. At deeper levels molybdenite occurs in stringers in a quartz diorite body and may be part of a porphyry system. Total production from the Rossland Camp was 6.2 Mt @ .45 oz/t.

The wide variety of lithologies, styles of mineralization types and repeated structural movements in the "Rossland Break" area are encouraging for the discovery of additional mineralization. The mineralized systems present in this area may represent the higher levels of a hydrothermal, intrusive breccia system similar to that of the Willa Property near Slocan Lake (Heather 1985). A large zone of mineralization associated with this root system may not as yet be exposed along the Rossland Break.



- Ci** Coryell intrusions
- Si** Sheppard intrusions
- Mv** Marron volcanics
- Cg** Sophie Mtn. Conglomerate.
- Qp** Quartz feldspar porphyry
- Ni** Nelson intrusions
- RM** Rosland Monzonite
- Rv** Rosland volcanics
- Ys** Ymir Group: Sediments
- UM** Ultramafic intrusions
- MR** Mt. Roberts Formation: Sediments, Metasediments
- KA** Kootenay Arc Sediments
- Gn** Gneisses
- Rock sample location
- X Pan " "
- Sample No. Bi (ppm), Sb (ppm)
- 119271 10 Bi, 13.4 Sb
- ⚡ Au bearing mine
- Au bearing showing

KERR ADDISON MINES LTD

**ROSSLAND AREA
REGIONAL GEOLOGY
&
GEOCHEMICAL HIGHLIGHT**

SCALE - 1 : 250 000	DATE - NOV., 23, 1987
DRAWN BY - P.H.	DATA - L.G., J.P., F.D., J.L.
NTS - 82 E & K	REVISED -

11. e. SALMO-NELSON REGIONAL (Figures 10,11)

The Elise, Archibald and Hall Formations of the Rossland Volcanic Group extend in a broad arcuate belt from the Pend d'Oreille River northwards to Nelson. The sequence is intruded by stocks and plugs of the Nelson Batholith and Tertiary diorite to syenite plugs. There are many small gold prospects within the Rossland Volcanics, several of which are related to intrusive - volcanic contacts and one in particular which was a modest producer; Second Relief, 200,000 t @ 15 g/t Au. (see detailed description following).

The area southwest of Salmo is underlain by volcanics and sediments of the Elise and Archibald Formations respectively, while the area north from Salmo to Nelson is dominated by the Elise Volcanics and Hall Fm sediments. Broad open folding has produced antiformal structures in the Archibald sediments and synformal features in the Hall sediments. Both sediments and volcanics have been hornfelsed adjacent to major intrusions.

There are no significant precious metal showings south west of Salmo. The best result of our sampling was from the Hellroaring Creek drainage where one sample ran 2250 ppb Au others had consistently anomalous Sb (7.2-14.6 ppm). The creek drains an area of poorly exposed, locally silicified acid to intermediate volcanics intruded by a small diorite body and cut by basaltic dykes. The area is being actively worked by Minnova, presumably for the massive sulphide potential within the volcanic pile.

Anomalous but sporadic anomalous Sb was found in narrow shear zones, with quartz veins and lenses, hosted by Rossland volcanics west of Tillicum Creek. The lack of similar shear zones to the north suggests a possible Sb enrichment in the vicinity of the Waneta Thrust Fault in the south.

Numerous known gold prospects north of Salmo appear to be related to 2 main environments;

- i. Narrow but very continuous fracture controlled veins within 1 km of intrusive - volcanic contacts
- ii. Sediment-volcanic contacts along the synformal limbs of the Hall Fm. Fissure filling veins are generally narrow and discontinuous.

Examples of the first style of mineralization evaluated in 1987 are; Whitewater, Red Mtn., Mammoth, Porto Rico, and Second Relief properties. The general impression is that at each property the best developed vein systems follow fractures that are roughly tangential to the intrusive-volcanic contact. Two possible explanations would be

- i. Ring fracture systems developed prior to intrusion,
- ii. Fracture pattern developed from cooling adjacent to the intrusion.

The fracture controlled veins vary from .1 m in width to 1.5 m. They can be continuous along strike (up to 250 m) and with depth (11 levels of development at the Second Relief Mine). Grades are erratic, <.05 oz/t to 10 oz/t Au. The veins are mainly quartz, pyrite, pyrrhotite, and arsenopyrite. Individually the properties did not present significant exploration targets. However, the strength of the fracture systems and style of mineralization warrant additional work in 1988 to look for more structurally or more chemically amenable hosts along the intrusive margins (eg. fault intersections, carbonate beds, fold axes). The use of air photo interpretation, airborne mag and pan concentrate sampling is recommended.

Numerous showings and underground workings exist throughout the area immediately southwest of Nelson. Gold bearing quartz veins, usually with pyrite and minor other sulfides (chalcopyrite, galena, sphalerite, tetrahedrite), follow narrow shear zones. Scheelite reportedly occurs in some Au showings within the Silver King porphyry. Reported grades for mines producing >1000 tonnes range from 11.3 to 48.0 g/t Au (average 23.1 g/t Au), and <1 to 84.3 g/t Ag (average 22.9 f/t Agl, most <10 g/t)

Of the areas around Nelson covered in in 1987, 2 warrant additional work in 1988. The first area covers the old "Athabasca" showing. Examination of dump material shows a considerable amount of well mineralized quartz vein material (pyrite, pyrrhotite, chalcopyrite) within both intrusive and volcanic lithologies. The second area covers Copper Mtn. and Mt. Connor where there is evidence of a widespread hydrothermal halo of epidote and carbonate alteration, fracturing-stockwork-brecciation, and minor copper mineralization. Both areas returned samples with anomalous Au values of .2 oz/t.

TERTIARY

- Ci, Si Syenite, Granite (Eocene)
- Ti Diorite porphyry

MESOZOIC

NELSON PLUTONIC ROCKS

- Ni Granite, Granodiorite
- Skp Pseudo Diorite

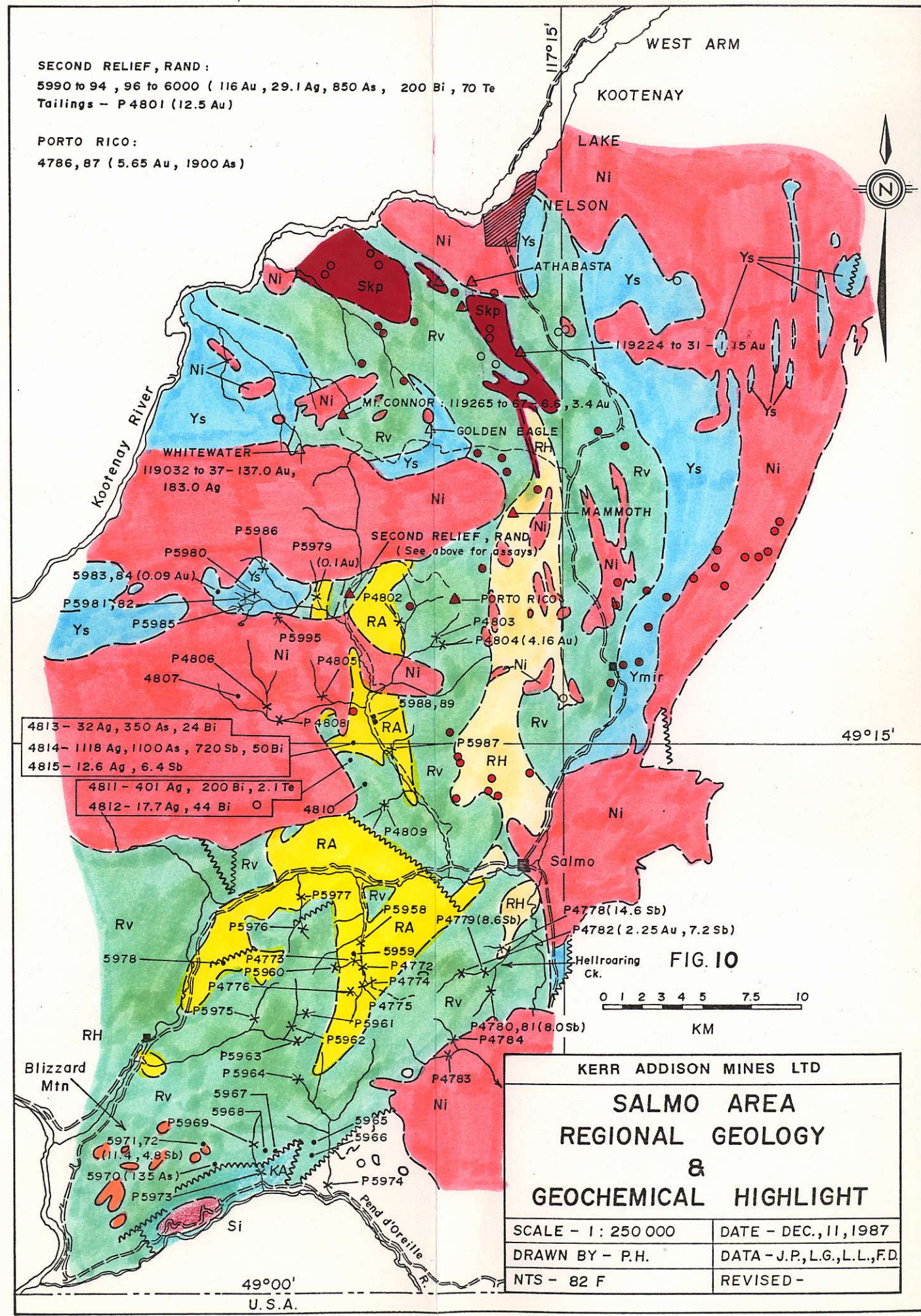
ROSSLAND GROUP

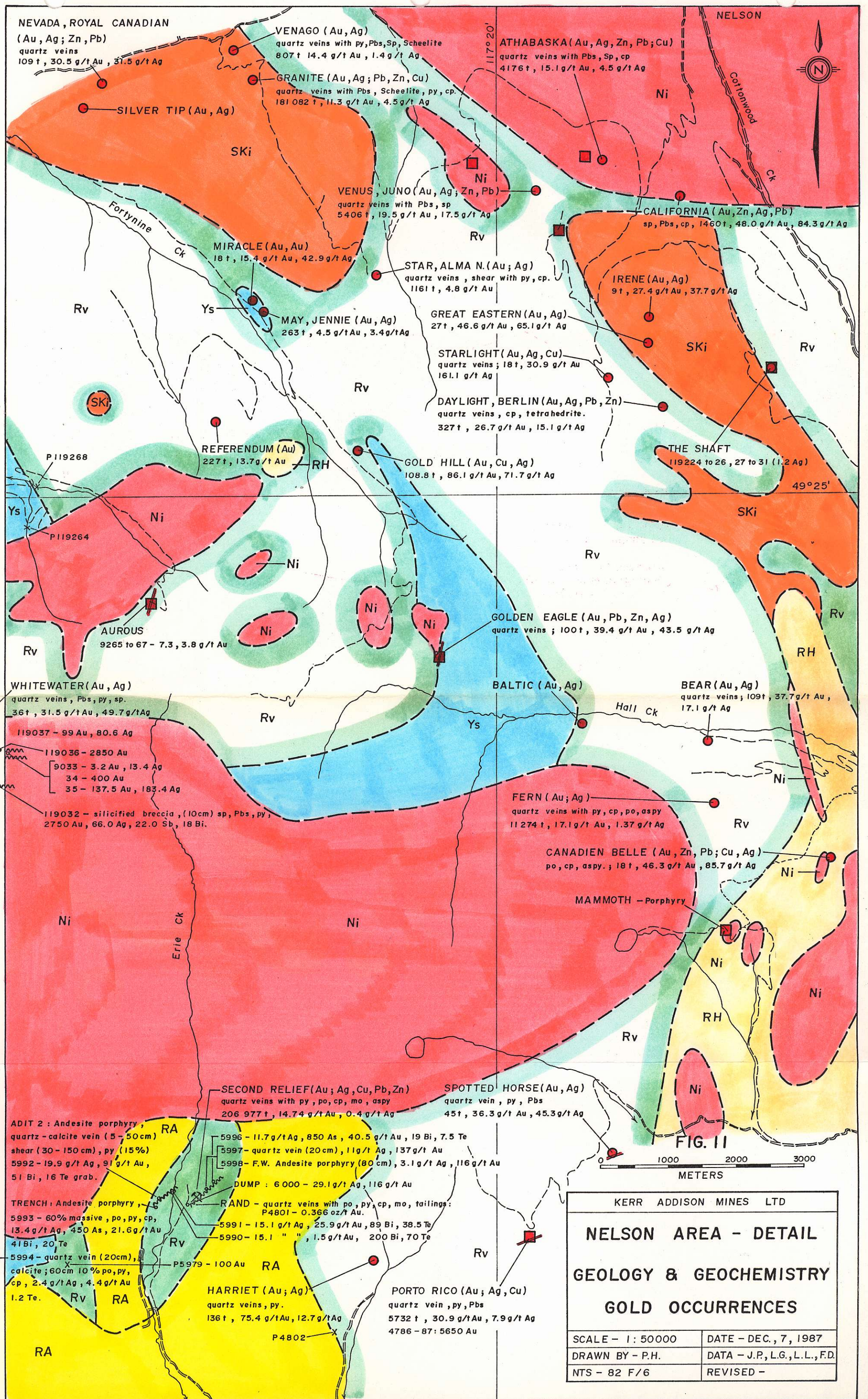
- RH Hall Formation: Argillite, Shale
- Rv Rossland Formation: Andesite, Basalt
- RA Archibald Formation: Siltstone, Argillite, Quartzite, (Tuff).
- Ys Ymir Group: Quartzite, Argillite, (Limestone)

PALEOZOIC

- KA Pend d'Oreille Group: Argillite, Limestone, Greenstone, (Chert)

- Gold occurrences
- Showings or properties examined in 1988
- All geochemical values in gm/t.
- Roads (paved, gravel)
- Rock sample
- Silt sample





LEGEND FOR NELSON AREA DETAIL MAP

JURASSIC



Nelson intrusions



Silver King porphyry

Rossland Group:



Hall Formation: Sediments



Elise Formation: Andesites, Basalt



Archibald Formation: Sediments

TRIASSIC () AND EARLIER



Ymir Group: Sediments, Hornfels



Gold occurrences



Gold occurrences or property examined in 1987



Quartz vein, strike known.



Fault



Geological contact



Rock sample



Silt sample

FIG. IIA

11. e. NELSON-SALMO AREA

1. Aaron Hill Mine Detail (Figure 12).

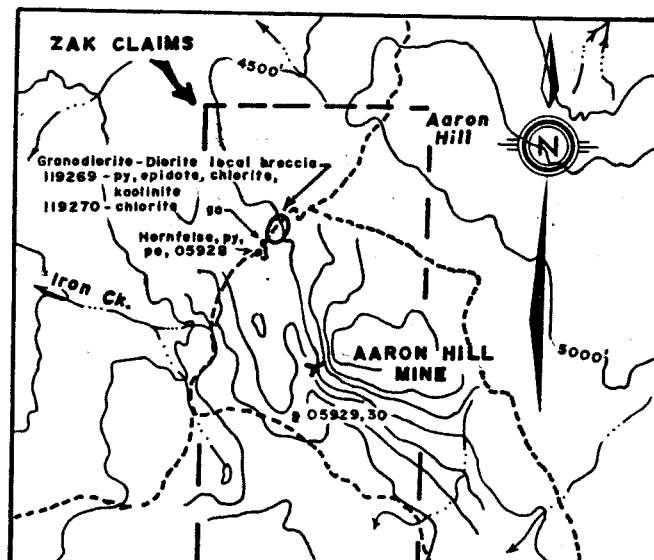
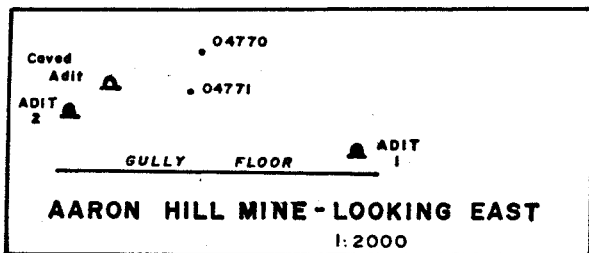
Highway 3B gives access to Aaron Hill Mine, located roughly 8 km southeast of Castlegar. Government documentation of previous work and production could not be located. The area is staked (ZAK, 18 units) and is under active investigation.

Mine workings consist of three adits (one caved) and several small pits near the base of a prominent cliff and above a NW-trending gully, 1.4 km SW of the summit of Aaron Hill. The workings follow a 135-158° quartz fissure-filling dipping 35-40° SW within medium grained granodiorite of the lower Cretaceous Bonnington Pluton. The 30 cm wide vein consists of weakly fractured, white, cryptocrystalline to massive quartz with weak, spotty pyrite and/or limonite. Minor diverging and converging splays occur along strike, individual widths vary from 20 cm up to 1.0 m in a 1.5 m wide vein (Adit 2). Weak sericitization may occur along vein margins for a few centimeters before grading into fresh intrusive. Underground vein samples averaged 11.5 ppm Ag, 204 ppm As, 12.5 ppm Sb and 8.5 g/t Au.

Drusy quartz float (8cm wide) in talus above the adits was particularly anomalous with 134.05 g/t Ag and 239.6 g/t Au (Sample No.04770). Detailed follow-up failed to locate these veins in-place. They would appear to be narrow, discontinuous with little apparent alteration and likely have been subjected to surface enrichment. Rare galena occurs in occasional quartz stringers in talus above Adit 2.

Diorite-granodiorite breccia outcrops roughly 1 km north along strike of the Aaron Hill vein. Hornfelsed sediments and occasional quartz veinlet float with rare galena occur nearby. The breccia/hornfelsed zone is within a NW-trending aeromagnetic low which corresponds in part to the NW-trending gully at the mine site. A genetic relationship between the breccia and Aaron Hill quartz vein is possible.

The Aaron Hill Mine quartz vein system is dry and restricted to a narrow fracture zone with no indications of significant stockwork development. There is no indication of good tonnage potential at the mine site itself. Evaluation of the potential fault/fracture zone along the NW gully would require major excavation or drilling which can't be justified at this time. Further prospecting is warranted N-NW of the breccia zone where more intense alteration or more suitable host structures may occur.



LOCATION MAP 1:50,000

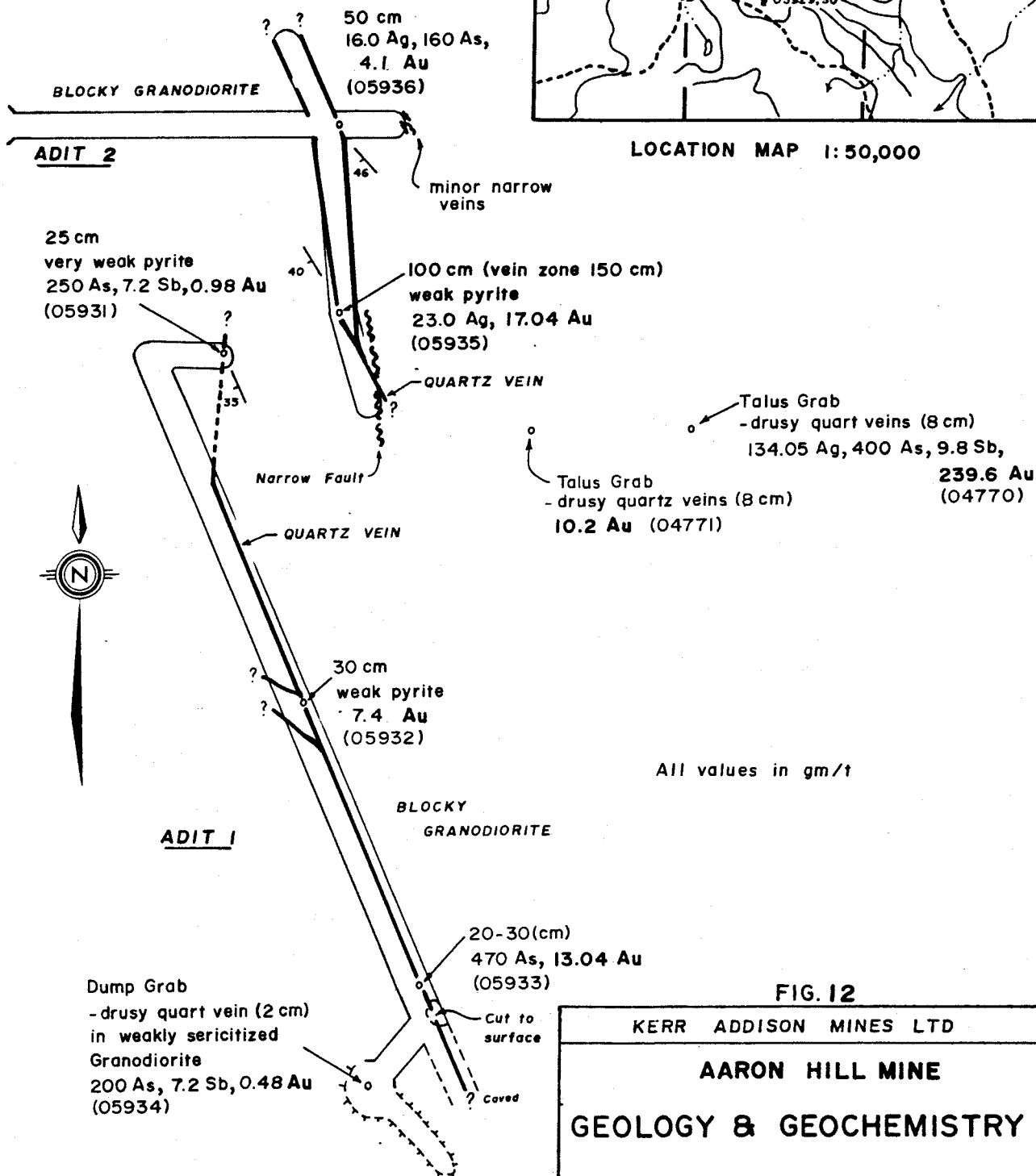


FIG. 12

KERR ADDISON MINES LTD	
AARON HILL MINE	
GEOLOGY & GEOCHEMISTRY	
SCALE - 1:500	DATE - NOV., 1987
DRAWN BY - L.G.	DATA - L.G., L.L.
NTS - 82 F/5	REVISED -

11. e. NELSON-SALMO AREA

2. Erie Creek Detail (Figure 13).

The Second Relief and Rand gold veins at Erie Creek also occur in rocks of the lower Jurassic Rosslund Formation, 20 km SW of Nelson. Best access is via the Second Relief Road from Salmo. Vein structures lie within a northeast trending aeromagnetic high and paralleling an intrusive contact further West. They are within 1.5 km of a small embayment in the Nelson Batholith contact where a large tongue of the intrusion protrudes eastward. Contrasting aeromagnetic response of the main intrusive body compared to that of the protruding lobe suggests they are different phases.

SECOND RELIEF:

Eleven levels of underground workings were developed primarily along one structure, east of Erie Creek. Several other parallel veins are reported. Between 1900 and 1948, 206,977 tonnes of ore were produced averaging 14.74 g/t Au and 0.4 g/t Ag.

A 20 cm wide quartz vein through andesite porphyry, followed on surface for 300 m, occurs within a narrow (80 cm) shear zone striking 45-70°, dipping 60°-steep NW. The porphyry is weak to moderately well fractured along the shear. Intense silicification and/or weak pyrite and pyrrhotite occurs sporadically. Vein material is white (smokey) crypto to coarsely crystalline quartz with 0-8% sulfides. Pyrite and pyrrhotite are usually <5%, chalcopyrite is rare (<1%) while arsenopyrite, more common at the NE end of the vein averages 0-5% with pods of up to 15%.

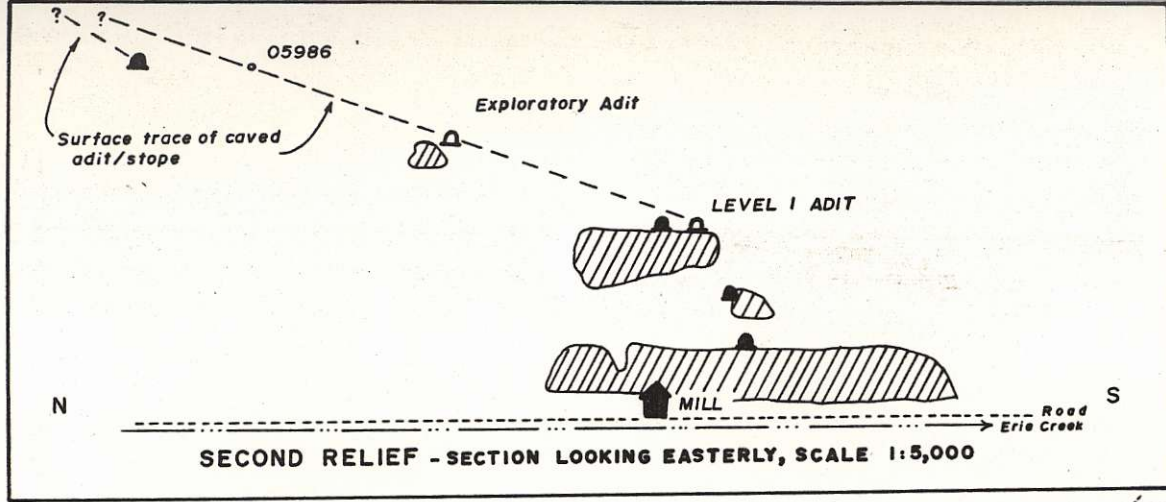
Samples of vein and shear (80 cm) ran 40.5 g/t Au, 11.7 g/t Ag with anomalous Bi,Te (05996); and 14.2 g/t Au (05997,98). Picked vein material yielded 37 g/t Au and 11 g/t Ag. Quartz-sulfide veins (max. 10% po,py,cp) in altered andesite from the dump ran 116 g/t Au with 29.1 g/t Ag. One hundred meters below Level 1 vein and wall rock reportedly assayed 13.7 g/t Au across 1.8 m (1915 B.C. Minister of Mines Annual Report).

Rand: Tonnage, grade and mining data is not available for the Rand vein which occurs on the west side of Erie Creek. Tonnages may (?) have been included with those for the Second Relief. Field observation indicates fairly extensive underground development.

Quartz veining within a 20 - 150 cm wide shear zone trending 40-60° and dipping steeply NW was followed for 200 m. Vein widths vary from 5 to 50 cm partly due to converging and diverging veins. Veins are white, coarsely to cryptocrystalline quartz with local calcite masses, pyrite (1-15%), spotty weak chalcopyrite and/or malachite and rare molybdenite. A grab of quartz from Adit 2 ran 21.63 g/t Au with 19.89 g/t Ag. Samples across a 20-30 cm quartz and shear zone ran 1.47 g/t Au and 25.92 g/t Au with 15.08 g/t Ag. A 20 cm wide quartz vein with 4-15% sulfides (po,py,cp) exposed in a trench SW of the main workings assayed 4.42 g/t Au. The intensely replaced andesite footwall, with 60% massive sulfides, yielded 13.37 g/t Ag, 21.63 g/t Au over 60 cm. The zone was traced for 100 m southwest. Bi and Te are very anomalous in all except the trench quartz vein. Values ranged from 41.0 - >200 ppm Bi and 16.0 to 70 ppm Te.

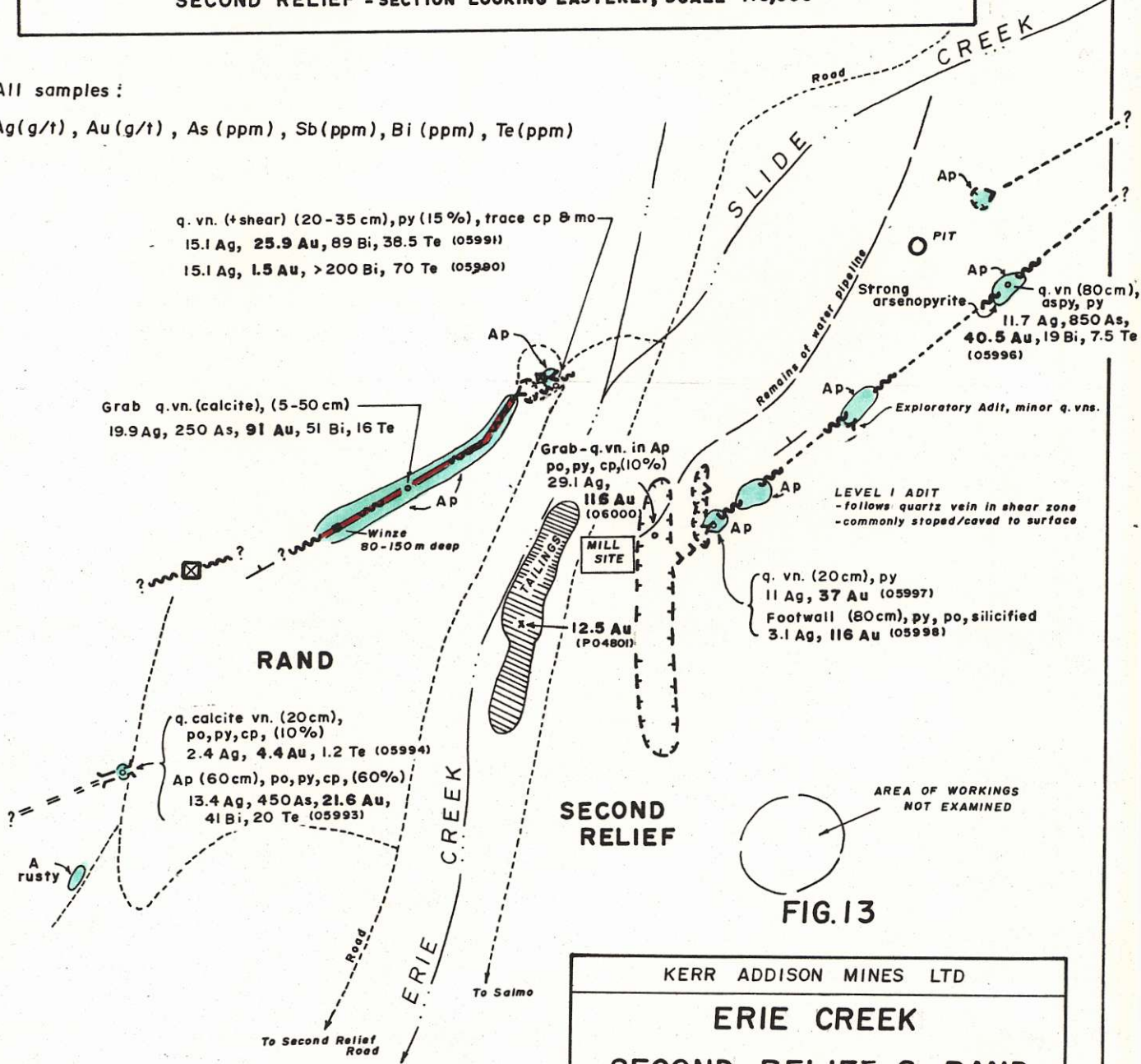
Although the Second Relief and Rand structures are narrow and appear to have been extensively mined, they remain positive indicators of an excellent fluid system capable of producing high grade gold deposits of good depth potential.

Detailed prospecting is required west of the Rand vein between the Second Relief and Harriet Showing. (See Fig. "Nelson Showings 1:50;000") and west of Mt. Verde where a similar embayment occurs in the intrusive contact.



All samples :

Ag (g/t), Au (g/t), As (ppm), Sb (ppm), Bi (ppm), Te (ppm)



LEGEND

	Andesite, Andesite feldspar porphyry
	Quartz vein
	Shear zone
	Shaft, Trench
	Adit - Caved, Accessible
	Dump
	Samples - Rock, Silt

KERR ADDISON MINES LTD	
ERIE CREEK SECOND RELIEF & RAND GEOLOGY & GEOCHEMISTRY	
SCALE - 1 : 5000	DATE - NOV., 1987
DRAWN BY - L.G.	DATA - L.G., J.P.
NTS - 82 F/6	REVISED -

11. f. CRESTON REGIONAL (Figure 14).

The main objective in the Creston area was to investigate the southwestern extent of strong regional northeast trending faults that host Au showings along strike in the Perry Creek area. The faults cut the Proterozoic Aldridge, Creston and Kitchener-Siyeh sedimentary formations, as in the Perry Creek area. (For a more thorough description refer to the Perry Creek Area, Sec. ii g). More northerly trending faults transect the Paleozoic Earl and Cranbrook sedimentary formations, as well as the above units. Moyie diorite sills and dykes intrude the Aldridge Fm.

In the West Creston area the margins of the Cretaceous Bayonne batholith were investigated. Within the target area the batholith intrudes Creston, Kitchener-Siyeh and Dutch Creek sedimentary formations. The Bayonne batholith hosts Au Ag mineralization in sulfide bearing quartz veins at the Bayonne Mine on the west side of Kootenay Lake. On the east side of the lake, a similar setting is seen at the Valparaiso, Sarah Second, and Gold Basin showings. All occur near the margin of the batholith. Gold from the Valparaiso reportedly graded 11.7 g/t Au and the Sarah, 14 g/t Au.

The Gold Basin showing was investigated in 1987. Pegmatitic quartz veins from 0.4 to 1.5 m wide were found to contain galena, +/- pyrite and a maximum of >100 g/t Ag, 0.56 g/t Au across 1.5 m. Sericitized granodiorite of the Bayonne batholith hosts the veins. Trends range from 010° - 025°. Although this showing does not appear to be very interesting, anomalous values were returned from quartz float within the intrusion 2.5 km to the south (not along strike). Values of 0.81 g/t Au, 7.4 g/t As were obtained from quartz float with spotty pyrite, arsenopyrite and scorodite (?) just north of Sanca Ck. The eastern margin of the Bayonne batholith did not yield anomalous results.

Within the regional northeast trending fault setting, only one area of interest was delineated. It is located north of Kamma Creek, specifically on Mt. Armitage. Faults throughout the Kamma Creek area are characterized by major alteration zones. More significantly, pan samples draining Mt. Armitage, where several major quartz veins had been spotted, contained 2.44 g/t and 0.50 g/t Au. The veins, samples during a 1 day follow up, consist of bull quartz 0.5 to 5 m wide and traceable for 250 m along strike. No sulfides, oxides or alteration was noted. The strike of the veins crosscuts the regional foliation of the hosting sediments. Unfortunately, results were not anomalous. The Au may be related to some of the fault zones as opposed to the vein material that was sampled. As of mid October the ground was open.

Other quartz veins were observed within the regional fault setting but pans or rocks were not anomalous. The veins ranged up to 2-3 m wide, some with brecciation and sericite alteration of the sedimentary host rock. Unfortunately major alteration zones were not evident along the faults proximal to the veins and the veins themselves did not contain sulfides. These two features seem to be important within this environment.

The more northerly trending faults hosted some quartz veins but were generally narrow, (<20cm) discontinuous and contained no sulfides. The faults themselves did not have associated alteration zones. Geochemically, pan samples draining the faults were slightly elevated in Sb, (4-18 pm). In one area draining a fault system (just east of Mt. Bohan) 3 pan samples contained anomalous As and Sb values up to 340 ppm As and 106 ppm Sb. Follow up of this fault system, though of low priority, should be considered.

In conclusion, the most significant 'discovery' in this area are the high pan samples (2.44 g/t Au) draining the Mt. Armitage area. As the area is not staked, a high priority exists for follow up of altered fault zones in the area in an attempt to find the source of the Au. Lower priority follow up should include tracing the sulfide bearing quartz float north of Sanca Creek which carried values of 0.81 g/t Au, 7.4 g/t As in an environment similar to the Bayonne Mine. The anomalous As (340 ppm) and Sb (106 ppm) from pans draining the Mt. Bohan area is of lower priority. All of the above ground is open for staking.

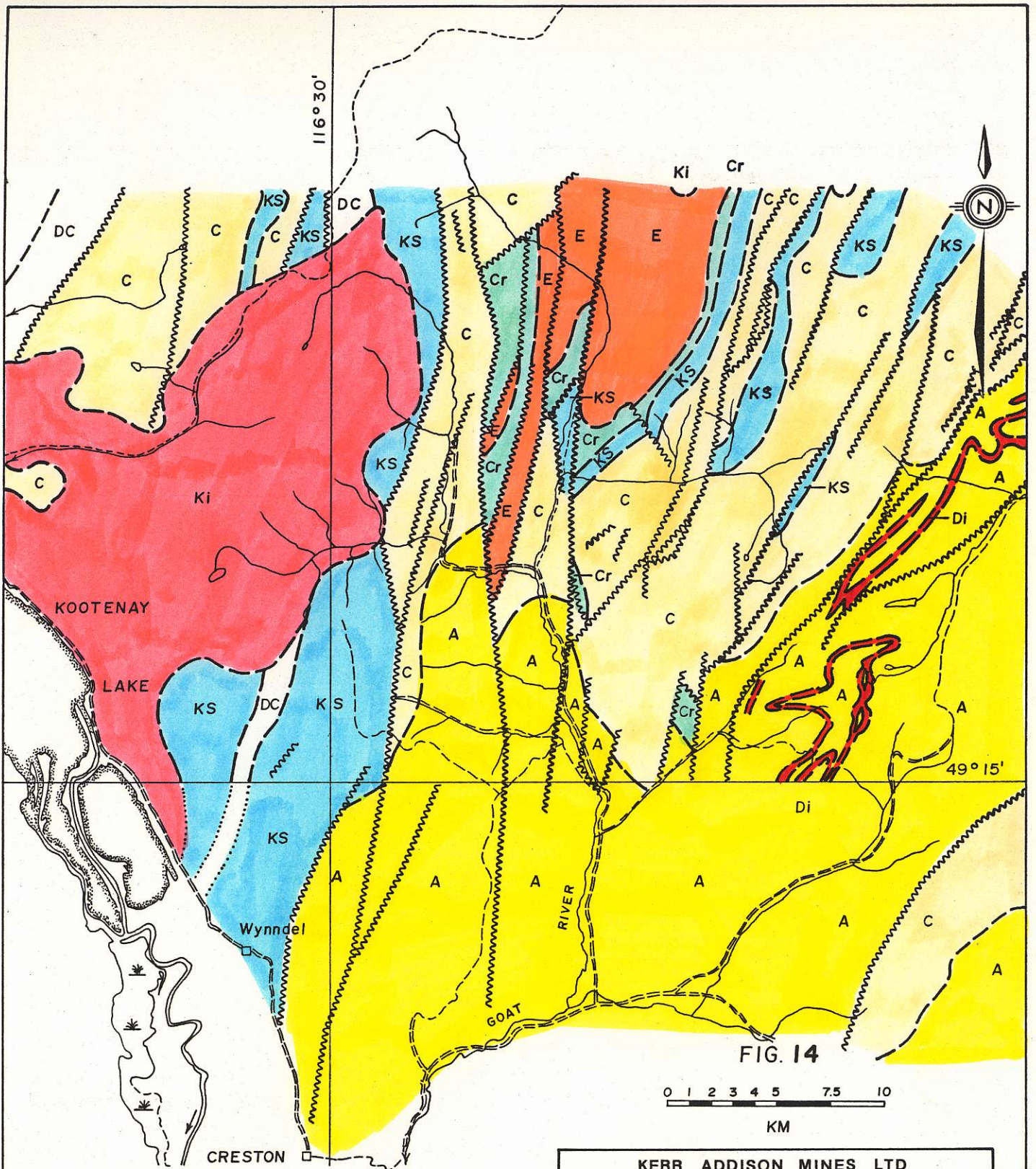


FIG. 14

Ki	Cretaceous intrusions
E	Paleozoic - Eager Formation : Shale
Cr	Paleozoic - Cranbrook Fm. : Quartzite , Conglomerate
Di	Diorite sills , dykes
DC	Dutch Ck Fm. : Argillite , Siltstone
KS	Kitchener - Siyeh Fm. : Limestone , Argillite , Qtzite
C	Creston Fm. : Quartzite , Argillite
A	Aldridrige Fm. : Quartzite , Argillite

KERR ADDISON MINES LTD	
CRESTON AREA	
REGIONAL GEOLOGY	
SCALE - 1 : 250 000	DATE - DEC. , 2 , 1987
DRAWN BY - P.H.	DATA - L.G. , J.P.
NTS - 82 F	REVISED -

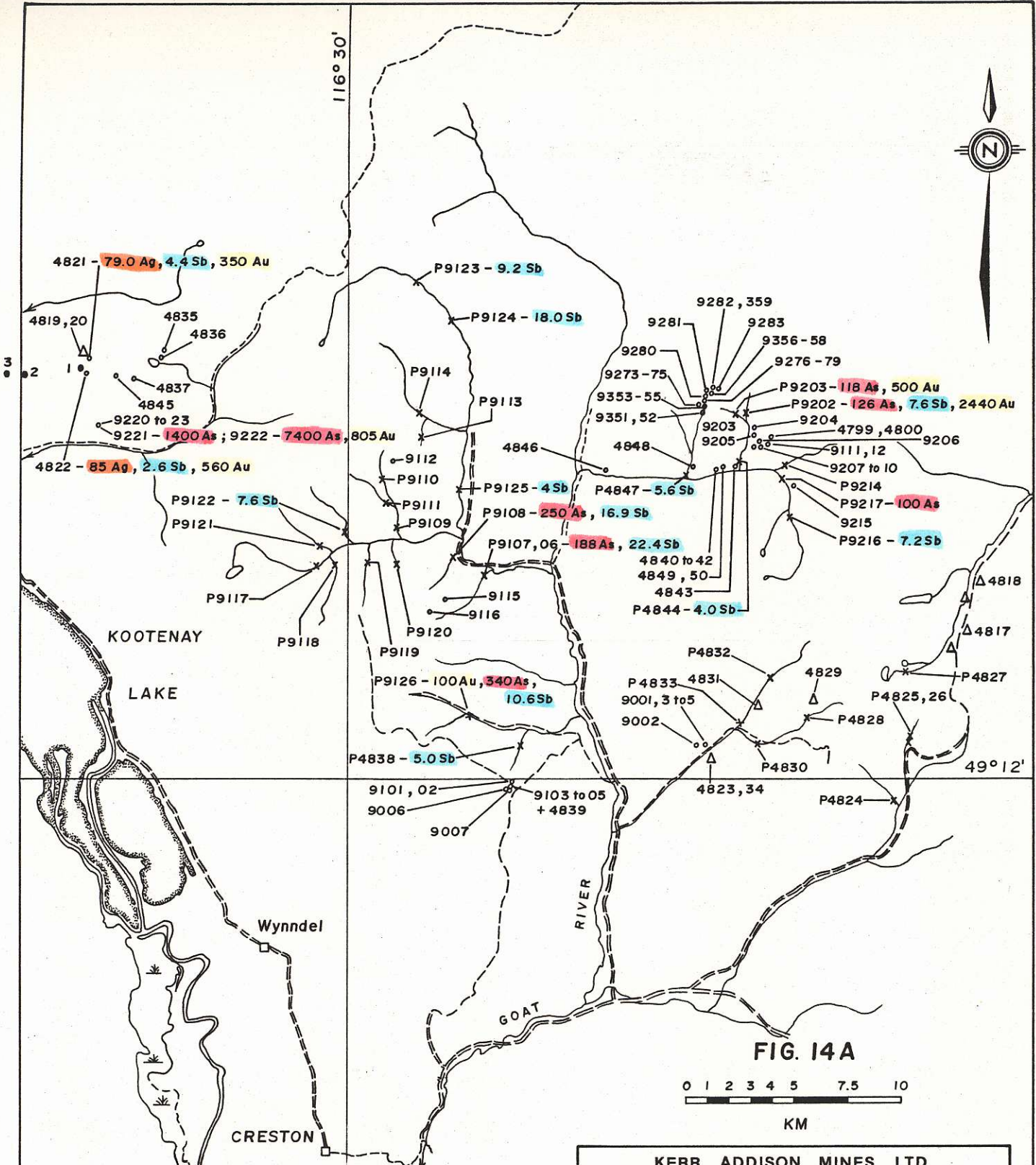
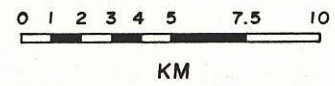


FIG. 14A



- 1 - Gold Basin: Au, Ag, Cu, Pb, Zn, W.
- 2 - Sarah 2nd: Au, Ag, Pb, Cu, W.
- 3 - Valparaiso: Au, Ag, Cu, As, Zn, Pb, W.

Values shown with sample number:
 ≥ 100 ppb Au, ≥ 10 ppm Ag, ≥ 100 ppm As
 ≥ 5 ppm Sb,

KERR ADDISON MINES LTD	
CRESTON AREA	
GEOCHEMICAL HIGHLIGHT	
SCALE - 1 : 250 000	DATE - DEC. , 2 , 1987
DRAWN BY - P.H.	DATA - L.G.,J.P.,F.D.,L.L.
NTS - 82 F	REVISED-

ii. g. CRANBROOK REGIONAL

Perry Creek Area (Fig. 15).

This target area is located west of Cranbrook in a region characterized by strong regional northeast trending normal and thrust faults that dissect the Proterozoic Aldridge, Creston and Kitchener-Siyeh sedimentary formations. Moyie diorite sills and dykes intrude the Aldridge Fm.

A number of old Au showings occur throughout the area. The showings are mineralized quartz veins associated with the regional faults. The known showings were examined in 1987 and their potential along strike tested. Other regional faults were examined with emphasis on fault intersections and associated alteration zones.

The quartz veins examined occur within or proximal to major fault zones and are either parallel to the regional strike or, less commonly, perpendicular to it within cross fault-shear zones. Many of the veins are of significant widths (1-5 m) but tend to pinch and swell along strike or occur as short lenses or blocks that have resulted from local faulting and folding. However, the veins are commonly persistent, though not continuous over strike lengths of 300 m. Mineralization includes pyrite, galena, arsenopyrite, chalcopyrite and rare molybdenite. Sulphides occur in patches or more rarely as narrow bands along the vein walls. Strong clay alteration is commonly associated with the north eastern faulting.

At Prospector's Dream and Palmer Bar showings, quartz veins are associated with the contact between the Aldridge sediments and Moyie diorite sills. Other quartz veins found in the Aldridge (though not anomalous) were also associated with this contact.

Prospector's Dream:

The Prospector's Dream showing consists of several narrow NW to NNE trending pyritic quartz veins. Although one, 1-2 m wide, quartz vein hosted by sheared diorite was discontinuously exposed over 1 km distance, it was not anomalous. However a second sub-parallel vein to the west, near the diorite/sediment contact, carried 0.99 g/t Au across a 40 cm width. This vein contained rare chalcopyrite and scorodite (?) or pyromorphite (?) in addition to pyrite and appeared to be related to a shear zone.

Further to the north, narrower quartz veins hosted by the sediments, but proximal to the diorite contact, contained up to 4.5 g/t Au. The veins are exposed for 200 m along a 1 m wide shear zone. The 4.5 g/t sample was collected from 3 veins totalling 45 cm in width across the 1.0 m wide shear. Thirty metres to the NNE brecciated quartz from the shear ran 1.72 g/t Au.

The veins at the Prospector's Dream showing are exposed by trenching. Otherwise outcrop is rather limited. Consequently, potential may exist in this area for the discovery of buried veins of significant widths and grades.

Palmer Bar Area:

The Palmar Bar showing 1.5 km north along the same fault zone as "Prospector's Dream", is hosted by Aldridge sediments and diorite sills at the intersection of 2 faults. It consists of a westerly trending 0.5 - 1.0 m wide quartz vein with patchy pyrite, galena, pyromorphite and possibly arsenopyrite. Smaller north to northwest trending veins also occur. A chip sample across the main sulfide bearing vein ran 2.67 g/t Au, 58 g/t Ag. The foliated siltstone footwall contained 0.53 g/t Au across 20 cm. Approximately 30 m to the west the same (?) vein, with only weak pyrite, ran 1.8 g/t Au across 50 cm. The same sulfide bearing main vein appears to continue 150 - 200 m to the east where it carries 0.48 g/t Au, 102 g/t Ag across 1.0 m. The vein is folded and cut by crossfaults in this locality. It appears that extensive disruption of the vein, and its somewhat lensoid character, are the main drawbacks. Furthermore, current work is being undertaken by Fenway Resources (in conjunction with others). However, potential along this same fault, especially towards the Prospector's Dream, is favourable. As, Bi and Te seem to be useful indicator elements in the area.

In the Alki Creek area north of St. Mary River, a fault controlled quartz vein is discontinuously exposed over a 300 m strike length. Although the vein is somewhat lensoid in character and low in Au, anomalous values up to 50 g/t Ag, >100 g/t As, 12.4 g/t Sb and 47 g/t Bi were obtained. The same fault extends southward and may have potential along strike.

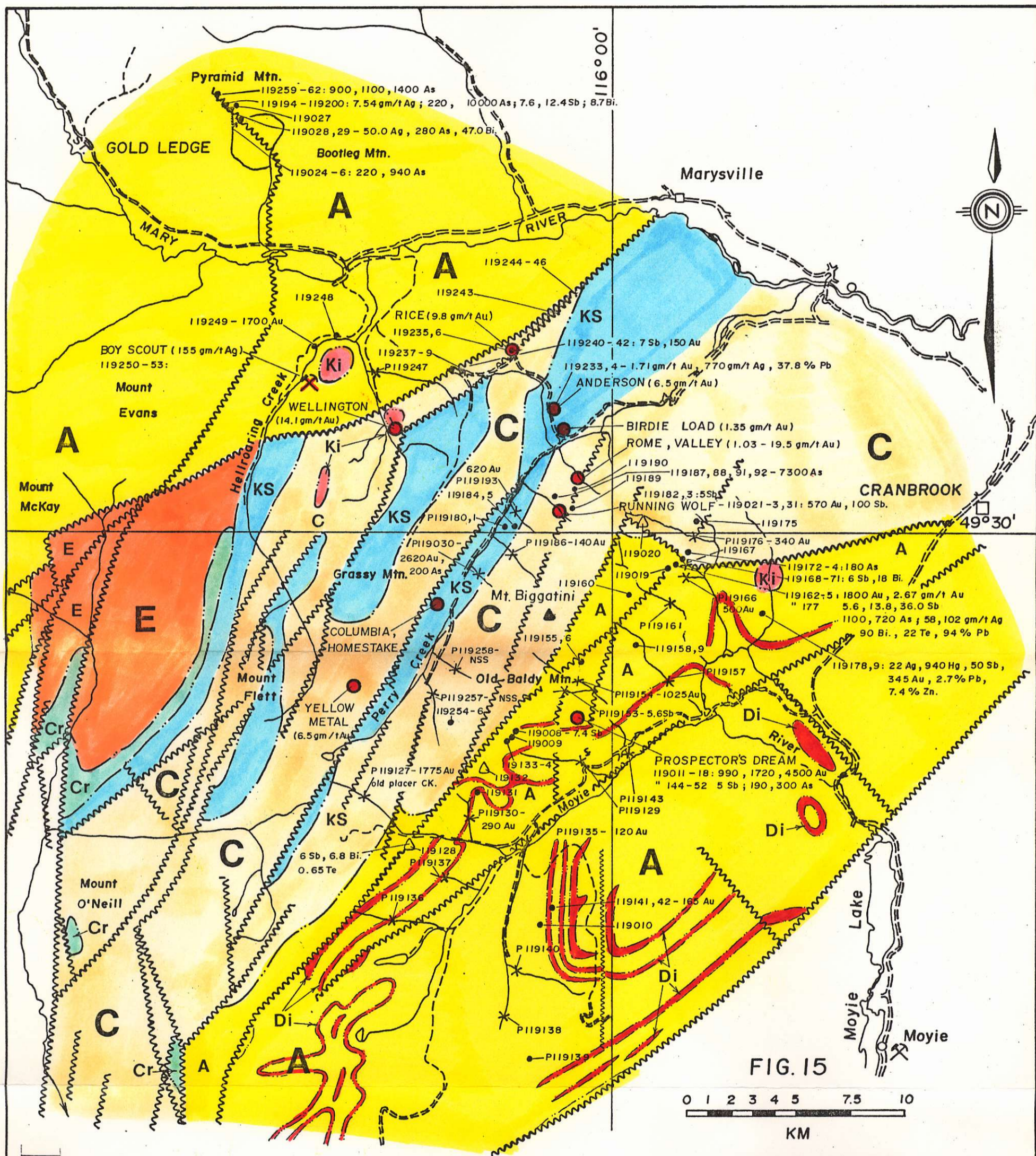
Quartz veins are reported on old Baldy Mtn but were not investigated this year. However, pan samples from creeks draining the Old Baldy - Mt. Biggatini ridge contained 2.62 and 1.03 g/t Au. A concentration of regional faults is also evident through this area.

One of the faults through Old Baldy Mtn. continues to the north through several Au showings on the east side of Perry Creek. Values up to 19.5 g/t Au have been reported from the Rome and Valley showing which could not be located this year. The Running Wolf showing is located along the same fault and possibly the same quartz vein system as the Rome and Valley. Although the adits here were caved, quartz veins in the vicinity contained 0.57 g/t Au over 30 cm. A pan sample draining this area carried 0.62 g/t Au. Furthermore high As (7.3 g/t) and Sb (100 g/t) were obtained from samples along this fault.

North of the Boy Scout Pb Zn Ag deposit, a 0.7 - 1.0 m wide quartz vein with tourmaline ran 1.7 g/t Au. The vein was hosted by diorite, proximal to a Cretaceous pegmatite plug.

Unfortunately the entire Cranbrook target area is almost solidly staked. However, some claim blocks have lapsed and other owners are willing to negotiate. An extensive regional program including property examinations, and possible land acquisition is warranted.

The Buck claims (Fenway Resources - Chapleau Resources) in the Old Baldy - Bigatinni area would be a prime target for further regional exploration as well as the Prospector's Dream - Palmer Bar fault system. Extensions of the Alki Creek and old Baldy faults should also be investigated based on anomalous Ag, As, Sb and Bi values, alteration, and major structures. A follow up of the anomalous quartz tourmaline vein in the vicinity of the Boy Scout deposit should be undertaken as well.



- Ki Cretaceous intrusions
 - E Eager Formation: Shale
 - Cr. Cranbrook Formation: Quartzite, Conglomerate.
 - Di. Diorite dykes and sills.
 - KS Kitchener - Slyeh Formation: Limestone, Argillite, Quartzite.
 - C Creston Formation: Quartzite, Argillite.
 - A Aldridge Formation: Quartzite, Argillite.
 - Au showings
 - Rock sample
 - X
 Pan sample
- All values: ≥ 1000 ppb Au, ≥ 10 ppm Ag, ≥ 100 ppm As, ≥ 5 ppm Sb, ≥ 1000 ppb Hg, ≥ 5 ppm Bi, ≥ 0.5 ppm Te SHOWN

KERR ADDISON MINES LTD	
PERRY CREEK AREA	
REGIONAL GEOLOGY &	
GEOCHEMISTRY HIGHLIGHT	
SCALE \approx 1 : 200000	DATE - OCT., 1987
DRAWN BY \approx P.H.	DATA - J.P., L.G., LL., F.D.
NTS - 82 F, G	REVISED -

ii. h. Silverthrone Mtn. (Fig. 16).

The Silverthrone Mtn. area is one of spectacular scenery. Glaciers creep along the valleys and cap ridges of volcanic flows while creek plunge over cliffs of columnar basalts and flows to the valley floors up to several hundred feet below.

Silverthrone basalts and intermediate breccias, flows and pyroclastic rocks of Quaternary age occupy a 2.5 km² area along ridges and valleys south of Pashleth Creek. They are in contact with granodiorite, quartz diorite and diorite intrusions of unknown age. Numerous basaltic dykes and a few rhyolite dykes intrude the volcanics. Vivid colour anomalies attributed to breakdown of iron-rich mafics occur within various dykes and flows. There were no significant structures found.

Geochemically the area is very flat. Pans from surrounding creeks were not anomalous in Au, Ag, As or Sb. Samples of rhyolite breccia with or without quartz stringers, and bleached basaltic flow with weak pyrite along fine fractures were also not enriched in precious metals.

There is no evidence to indicate the presence of anomalous gold or silver in the Silverthrone Mtn. area. No further work is recommended.

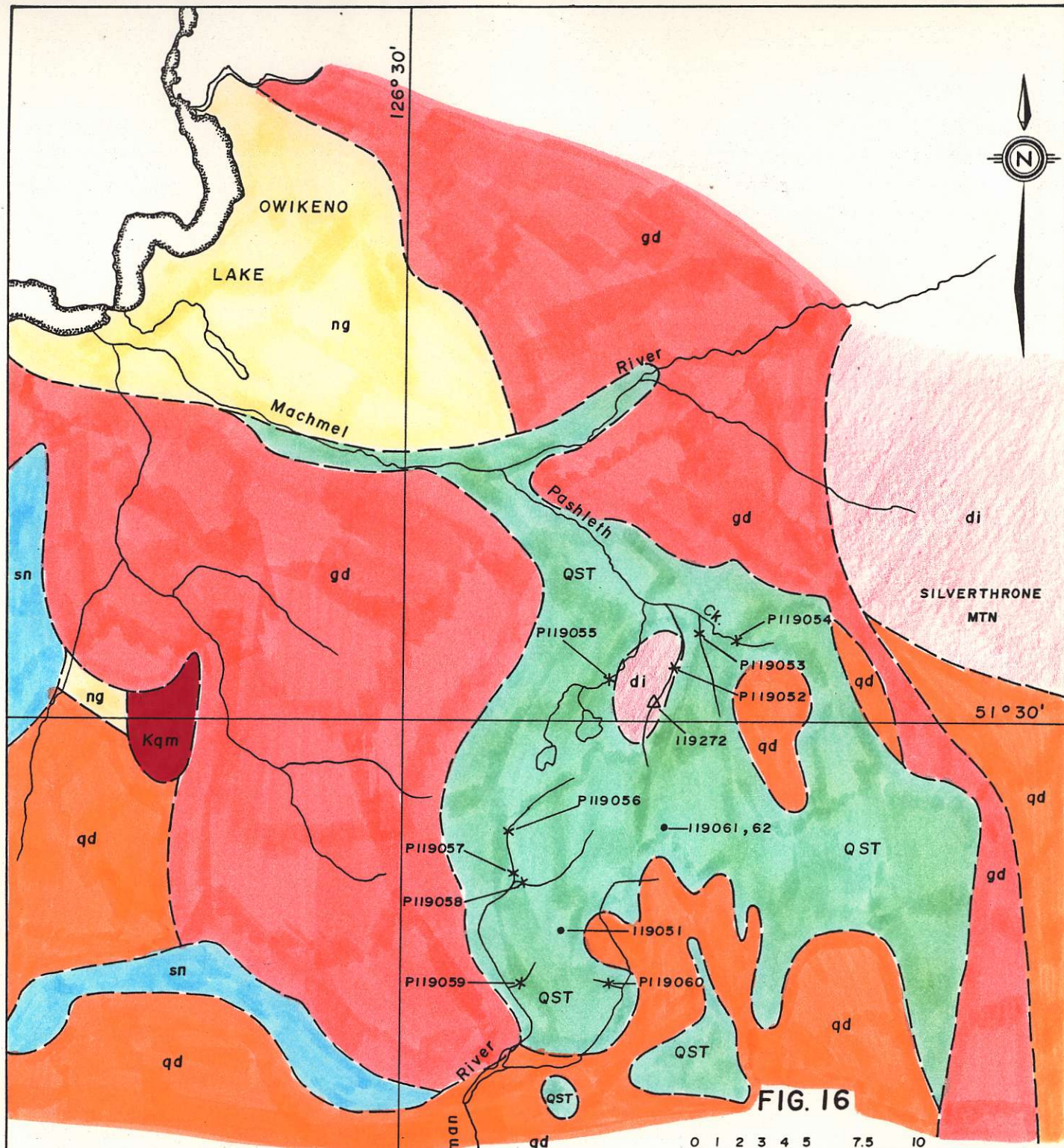


FIG. 16

- QUATERNAY**
- QST** Silverthron Group: Breccia, Basalt, Rhyolite.
- CRETACEOUS**
- Kqm** Quartz Monzonite
- (AGE UNKNOWN)**
- gd** Granodiorite
 - qd** Quartz Diorite
 - di** Diorite
 - ng** Migmatite (Amphibolite grade)
 - sn** Schist, Gneiss (Amphibolite Grade)
- Rock sample
 - X Pan sample

KERR ADDISON MINES LTD	
SILVERTHRONE MTN	
GEOLOGY	
&	
GEOCHEMISTRY	
SCALE - 1 : 250 000	DATE - DEC., 15, 1987
DRAWN BY - P.H.	DATA - L.G., L.L., F.D.
NTS - 92 M/East	REVISED -

iii RECOMMENDATIONS FOR 1988

a. Follow-up to 1987 Program.

The 1987 regional program was successful in outlining several areas warranting follow-up exploration programs in 1988. These include both property and regional programs.

Property Programs

1. CLAPPER CLAIMS. Priority should be given to determining the gold potential of the major fault exposed in the highway cuts as intense alteration zones. Because exposure is very poor in the area, the follow-up program should include:

- A. Detailed prospecting and mapping along the northwest fault trace.
- B. Selective soil surveys and ground mag surveys.
- C. Limited stripping/trenching in anomalous areas.
- D. Local geological "synthesis" between Swakum Mtn skarns, major structures, Cu-Au vein prospects and airborne mag anomalies.

2. WART CLAIMS. A follow-up program similar to that proposed for the CLAPPER CLAIMS is recommended for the Wart Claims and of added interest is the significance of localized airborne mag high anomalies along the contact of the Pennask Batholith with the Nicola Volcanics.

3. LAMB CLAIMS. The property program on the Lamb Claims should be preceded by a visit to the Hedley Deposit to clarify significant exploration parameters specific to Au skarns. The field program will most likely involve;

- A. Detailed rock geochemical programs, specifically to determine calc-silicate development.
- B. Detailed prospecting, mapping and sampling near diorite-limestone contacts.
- C. Selective soil surveys and ground mag surveys along diorite-limestone contacts.
- D. Trenching of significant coincident anomalies.
- E. Outlining 1988 drill targets.

REGIONAL PROGRAMS

On a declining priority scale, follow-up programs for 1988 should be in:

A. MERRITT AREA

Regional work should continue to evaluate the gold potential along intrusive-volcanic contacts; specifically the eastern margin of the Guichon Batholith and the northern boundaries of the Pennask Batholith. Airborne magnetics (and VLF?) could be utilized to outline priority targets. Two approaches are being studied; a re-interpretation of old mag data (Government, company assessment reports, etc.) or flying new surveys in 1988 (approximate cost \$50 per line km).

Construction of the Coquihalla Highways has provided new access to previously inaccessible areas. Work should continue along these new highways.

B. ROSSLAND AREA

Excellent exploration potential exists in the Rossland Camp for further discoveries. The immediate concern is the land status, with virtually all areas of interest under present claim ownership (Crown and reverted Crown Grants, modified grid claims).

Follow-up programs in the Rossland Camp should evaluate the possibilities of other styles of Au mineralization, specifically;

1. An Aylwin Creek ("Willa") style root or feeder zone
2. Porphyry style mineralization associated with brecciation (eg Red Mtn.)
3. Intersections of the "Rossland Break" with later north-trending faults.
4. Mineralization associated with the Sophie Mtn. conglomerate. If the coarse conglomerate with exotic clasts represents a tectonic event of some nature (down-dropping & chaotic, high energy deposition; "basement" re-activation along major faults, etc), mineralization may be remobilized into new vein systems. There is, in fact, just such an occurrence in the Sophie Mtn. conglomerate south of the Velvet Mine, along the Canada - U.S. border.
5. Extensions of the "Rossland Break" and settings analogous to the "Rossland Camp" across the border in Washington State.

C. SALMO-NELSON AREA

1988 follow-up programs in the Nelson area should concentrate on the margins of the Nelson Batholith where numerous, narrow high-grade vein showings are known. More productive settings should be considered. An area around Mt. Connor -Copper Mtn. shows evidence of a hydrothermal setting with low order Au enrichment.

1987 mapping within the Rossland Volcanics by the B.C. Department of Mines will be released in January 1988. Re-mapping projects by the Dept. of Mines have traditionally re-juvenated local exploration interest and provided targets for possible land acquisition.

D. CRANBROOK (PERRY CREEK) AREA

Two specific areas that should be followed-up in 1988 are;

1. Kamma Creek-Mt. Armitage; Pan con samples anomalous in Au (2500 ppb, 250 ppb) drain an area cut by regional strike slip faulting with moderate to intense alteration
2. Mt. Biggatini-Old Baldy Mtn; Anomalous pan con samples cover a large area encompassing several known vein showings with Au values to 9 g/t. Extensions of these major structures should be investigated as well as the intervening ground between known showings.

iii. b.

New Target Areas for 1988

In addition to follow-up programs on 1987 targets, 4 "new" areas are proposed for 1988. Each of these 4 areas has a specific environment or deposit type that is known to host economic Au mineralization in other parts of the North American Cordillera. In a declining order of priority, these are:

1. WHITESAIL LAKE

Evaluation of epithermal deposits will concentrate in the Whitesail Lake area 550 km north west of Vancouver (NTS 93E). Recent studies by the B.C. Geological Survey and exploration companies have outlined an area greater than 2500 km² of caldera subsidence with Tertiary and Cretaceous acid volcanics including rhyolite to dacite domes, flows and breccias, extensive block faulting, large hydrothermal alteration zones (silica, clay, pyrite, barite), and evidence of precious metal mineralization. All of these point to a well developed, large-scale epithermal district.

2. TYAUGHTON TROUGH

In outlining targets for volcanic and sediment hosted Au prospects emphasis will be placed on areas exhibiting;

- a. Regional scale "bounding faults" with evidence of repeated reactivation.
- b. Evidence of crustal thinning (eg: Tertiary volcanics sitting on major unconformities).
- c. Volcanic or hydrothermal centres.
- d. Extensive block faulting and thrusting ("detachment faults").

The initial area of investigation for this type of deposit will be in west central B.C. (NTS 92N), where all 4 parameters are present in an area northwest of Chilko Lake called the Tyaughton Trough.

3. JOHANSON LAKE

Stockwork-hydrothermal mineralization will be specifically examined in the Johanson Lake area of north central B.C. (NTS 94D). This will be a follow up to the 1986 Regional Project around the Hogem Batholith where several samples of 10-25 cm wide quartz veins in talus returned values of 1-3 oz/t Au. Larger (.5 m - 2 m wide) quartz veins in outcrop carry 500 - 1500 ppb Au. The area is cut by major structures (splays of the Pinchi Fault) and exhibits widespread hydrothermal mineralization (Cu-Mo-Au) and alteration.

4. "CARBONATE TERRANES"

Carbonate hosted gold deposits have not been extensively evaluated in the Cordillera, yet 2 of the "newest" gold deposits to be developed and put into production are both related to carbonate stratigraphy. The "Ketz River" deposit in the Yukon and Giant Mascot at Hedley both have significant tonnage potential. (.5 MT @ .45 oz/t Au and > 10 MT @ .14 oz/t respectively). Priority will be given to areas of

- a. Fault bounded basin margins in the Intermontane Belt that are overlain by shallow marine carbonates.
- b. Proximal basic volcanics, intrusives; evidence of basement source.
- c. Anomalous precious metal and lithophile geochemistry
- d. Karsting, brecciation, oxidation, fluctuating meteoric-magmatic groundwater regimes, thermal springs, etc.

Specific carbonate horizons will be selected over the next few months.