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B.C. GOLD RECONNAISSANCE 1985

LILLOOET PROJECT

FINAL REPORT

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INTRODUCTION

The Bridge River Terrane is an oceanic terrane, or microplate, located in the southeastern Coast Mts. near Lillooet, B.C. Attention was first drawn to it by its anomalous signature in arsenic in the National Geochemical Reconnaissance (see map sheets 92I, 92J, 920). A preliminary road reconnaissance of the area in fall of 1984 (Pautler and Grexton 1984) further indicated that arsenic and rarer Au anomalies occur preferentially near major fault zones within the terrane, notably in their study a NW-trending ultramafic belt in the Log Creek, Kwoiek Creek and Texas Creek drainages and the southern Marshall Creek Fault south of Seton Lake (Figure 1).

Follow-up in 1985 focussed on the major structures and areas of anomalous geochemistry outlined in 1984. The program extended from June 27 to July 29. Field personnel were J. Nelson and J. Mackay.

LOCATION, ACCESS AND PHYSIOGRAPHY

Figure 1 shows the entire Bridge River Terrane and the areas in it selected for detailed work in 1985. The area is covered by mapsheets 92I and 92J. Principal towns within it are Lillooet, Lytton, Boston Bar, Goldbridge and Bralorne. Lillooet is about 4 hours drive north of Vancouver, either via Highways 1 and 12 through Hope; or via the Duffy Lake road through Pemberton. In 1985 two helicopters were stationed at Lillooet. Helicopter service is also available out of Pemberton.

Logging road access is fairly extensive in 92I. (Figure 2, 4). All work in 1985 was done as day traverses from roads. Map area 92J includes large areas accessible only by boat or helicopter.

The lower parts of the area are forested, varying from open mature forest to dense bush. Timberline is at about 5500 feet. The highest ridges reach 7500-8500 feet. Reasonable day traverses in these conditions involved 1000-3000 feet elevation gain and 3-5 km distance.

BOSTON BAR AREA

Geology

Ultramafic rocks and associated gabbros occur in a belt that extends northwest from the Nahatlatch River through Pyramid Peak towards Antimony Mountain. (Figure 2) This fault-bounded basement complex forms the western boundary of Bridge River Terrane rocks - phyllite, greenschist, and metabasalt - against phyllites and greywacke-phyllite rythmites of the Jurassic clastic Relay Mountain Group. Schistosity throughout both sequences is generally concordant. It strikes northwest parallel to the contact. Dips are near-vertical to moderately NE. Second-phase folds in Relay Mt. phyllites in Log Creek verge SW. This folding may be related to thrusting of the Bridge River Terrane over the Jurassic sequence, along the ultramafic-gabbro belt. C and S surfaces indicate right-lateral shearing in a zone mapped within the Relay Mt. Group west of Kwoiek Lake.

Mineralization and Geochemical Results

Several small instances of gold mineralization are known along the ultramafic belt. They include:

1. Alpine-Bozo, now Rawhide Claims,
2. Randi Claims east of Pyramid Peak
3. Hanna Gold claims near Keefers, where Hudson Bay Exploration and Development intersected 5.5 m of .118 oz. Au in 1984.

Our geochemical sampling (Figure 3) returned arsenic and lesser Au anomalies from the two following types of materials:

1. quartz veins, in particular rusty-weathering, open-space types, e.g.

47790	150 Au, 110 As
47792	15 Au, 180 As
47794	165 Au, 450 As

2. listwanites in the ultramafic belt and in the right lateral shear zone west of Kwoiek Lake e.g.

47795	5 Au, 110 As
47800	<5 Au, 780 As
47803	<5 Au, 270 As
JNS37 (from listwanite zone)	<5 Au, 107 As

Lucy Claims

The highest Au anomaly obtained by Pautler and Grexton in 1984, came from a pyritic quartz veinlet stockwork in phyllite south of Log Creek. This material was resampled in 1985 to give 2485 ppb Au, 4000 ppm As. (Figure 3). The Lucy claim block, (Figure 3), ⁵⁰⁻⁴¹4WX5N, was staked on June 25, 1985 to cover the anomaly, and recorded in Kamloops on July 10. The claims were later transferred to the New Westminster Mining District.

Only limited follow-up work was done, because a return to the property was anticipated in the fall after fires in the area had subsided, and reduced water levels in Log Creek would permit creek traversing.

The quartz stockwork zone is about 5 m wide and strikes northeasterly. It is exposed in a short waterfall above a logging cut. Uphill to the southwest, it disappears under a till blanket that persists for at least 1 km. Downhill to the northeast it

may, at low water, be exposed in the beds of Log Creek and/or an unnamed tributary.

Further detailed sampling is required to determine the extent of the stockwork zone. Its buried, southwest extent could be explored by backhoe trenching through the till.

LILLOOET AREA

Geology

The zone of ultramafic rocks described above terminates against Cretaceous intrusive rocks of the Stein River drainage. (Figure 1). Its probable northwest extension lies in the headwaters of Texas and Molybdenite Creeks, (Figure 1,4) where ultramafic rocks mark a structural imbrication within the Bridge River Terrane (Monger and MacMillan 1984). This zone is given greater complexity by the presence of abundant later intrusive rocks, including granodiorite and swarms of andesite dykes (Figure 4).

The southeastern end of the Cadwallader Shear Zone - the suture between the Bridge River and Cadwallader Terranes; and the regional structure that controlled mineralization in the Bralorne Camp - is exposed in the ridges north of Duffy Lake (Figure 1,4). Near Duffy Lake the Cadwallader Shear is a series of imbrications between the two terranes, marked in part by basement gabbros, serpentinites, and talc-magnesite schists.

Mineralization and Geochemical Results

Texas Creek-Molybdenite Creek

Pautler and Grexton's work in 1984 showed that all streams draining the area around the ultramafite belt in the Texas Creek-Boulder Creek drainage are anomalous in arsenic, with values of 99, 125, 250, 295, and 165 ppm (Pautler 1984).

Reconnaissance traverses in 1985 outlined numerous quartz veins cutting both the Bridge River rocks and the later granodiorites, which are anomalous in arsenic and less commonly in gold (Figure 5 and Appendix 1). Arsenic ranges up to 1600 and 1800 ppm, and Au to 300, 350 ppb. The most extensive single vein mapped is 500 m long and 20 cm-50 cm wide. in the headwaters of Molybdenite Creek, with 1600 As, 300 Au in one grab sample (47824). This vein is covered at present by a 7-unit jade claim. ?

Duffy Lake

The "Hurley Silver Mine" (Moon Claims) is a series of gently-dipping quartz gash-veins in Cadwallader greywackes and phyllites north of the eastern end of Duffy Lake (Figure 4). Blobs of tetrahedrite account for sporadic high silver values. Our sampling indicated three geochemical anomalies outside of the main, trenched zone (Figure 5):

47831: 15 Au, 75 As, 29.0 Ag in vein quartz
47833: 5 Au, 29 As, 7.8 Ag in vein quartz with trace tetrahedrite
JNL57: 100 Au, 660 As, .2 Ag in silt from dry gully

Sample 47831 is on open ground. Further exploration could be carried out above Duffy Lake, using a boat for access.

Fyp and Yah Claims

Most of the anomalous veins sampled in the Texas Creek area are enclosed in the Fyp and Yah claims, (Figure 5), which we staked on July 27, 1985 and recorded in Vancouver on August 26.

These claims straddle the contact between the ultra-mafic belt and the granodiorite. The granodiorite contact roughly

follows the southwestern margin of the ultramafite, and probably was controlled by the fault along it (Figure 4). Most of the Au, As and Ag anomalies within the claims are in quartz veins hosted by granodiorite. A 2 m thick bull quartz vein containing coarse molybdenite and no gold (47816), is hosted by Bridge River rocks on the 1-unit, previously staked Beryl claim, in the northern part of the Fyp block (Figure 4,5).

OTHER TARGETS

Fur-Paystrip Claims (92J/16)

A one-day examination was made on July 29 of old showings on the Fur claims, part of a claim group owned by Randy Polischuk and T. Conway.

The claims are located north of Carpenter Lake (Figure 1). We reached them on foot from the Lillooet-Goldbridge road; helicopter access is also possible. The claims are transected by the Marshall Creek Fault, a major splay of the Fraser River Fault System with Eocene displacement. Eocene volcanic and intrusive bodies are elongate parallel to it. The showings are hosted by a rhyolite intrusion that does not appear on published maps (Figure 6). Pyrite-arsenopyrite concentrations form streaks along flow lamellae. Gold occurs in association with the sulfides, with the highest value, 2400 ppb, in a narrow shear zone (47851 in Figure 6). Gold values of 225, 250, 350 ppb were obtained from "average" sulfide-rich intervals in the rhyolite. Arsenic values up to and exceeding 10,000 ppm and strongly anomalous antimony (2.4-9.6)ppm occur in association with Au. The samples were taken 500 m apart along strike and 100 m apart across strike. A fairly large anomalous area is indicated, with an epithermal-type geochemical signature.

Further exploration of this property should use soil sampling and VLF surveys to locate possible wider recessive-weathering shear zones, with gold enrichment like that shown in 47851.

Triassic rhyolites in the Cadwallader Group

A prominent gossan occurs at the head of Cayoosh Creek. Traverses on July 17 showed it to be due to a pyritic rhyolite within the Cadwallader Group overlain by a layer 1-5 m thick of strongly pyritic exhalative chert (Figure 7). Samples of this chert are not notably anomalous (Figure 7); however, the presence of a volcanogenic exhalative environment within the Triassic Cadwallader island arc is worth noting for future programs.

A further instance of pyritic rhyolite in the Cadwallader Group is in the Owl Creek drainage (92J/7), traversed on July 16 (Figure 7).

Gold anomalies from B.C. Au 1979, 92/0

A number of strongly anomalous Au values, were obtained in panned concentrates taken during the 1979 Kerr Addison B.C. gold reconnaissance program.

Some of the recommended follow-up was carried out in 1985. The Big Creek-Bambrick Creek (920/11) area received the most attention, where two 1979 pan concentrates contained 4170 and 450 ppb Au (Figure 8). Visible gold was seen in two pans from Bambrick Creek, and another pan JMP33 contained 2100 ppb Au. With the exception of a few outcrops, the area is covered throughout by deep glacial outwash. It is most likely that the gold in modern creeks is derived from this outwash, which in turn may have originated in the Coast Mountains near Taseko Lakes, where a number of small gold occurrences are known. No further follow-up work in the Bambrick Creek area is recommended.

Limited pan sampling was also done in the French Bar Creek and Ward Creek drainages in 920/1, north of the Astonisher gold occurrence. Results were low, and did not indicate extensions of known mineralization.

SUMMARY AND CONCLUSIONS

Many significant gold deposits in British Columbia and elsewhere in North America occur in close proximity to major, transcrustal structures that border or transect oceanic terranes. Local examples include Carolin Mines and the Bralorne-Pioneer Mine, both hosted in rocks adjacent to the fault-bounded Bridge River oceanic terrane. This terrane, and specifically its major structures, formed the focus for part of the 1985 B.C. Gold Reconnaissance program, carried out during July by J. Nelson and J. Mackay by day-traverses from logging roads.

Two areas within the Bridge River Terrane were selected for reconnaissance in 1985, the Boston Bar and Lillooet areas. Two claim blocks were staked as a result of this work.

The Lucy Claims enclose a zone of pyritic quartz veinlets discovered in 1984, which on repeat sampling returned 2485 ppb Au, 4000 ppm As. This style of mineralization is similar to that at Carolin Mines. The FYP and YAH Claims cover an area of anomalous Au (to 350 ppb), As (to 1800 ppm) and Ag (to 40.0 ppm) in scattered vein grab samples. Neither of these properties have been investigated past the reconnaissance level.

Other anomalies in As, Ag and to a lesser extent Au were encountered repeatedly along the major structures, mainly from geologically restricted sources and/or on staked ground. Although not presenting immediate staking targets, they suggest that throughout their lengths these structures have provided pathways for hydrothermal fluids capable of generating precious metal deposits.

Only a small portion of the Bridge River Terrane was investigated in 1985, and only areas that were road-accessible. Further reconnaissance utilising boat and helicopter support is recommended, along with more detailed evaluation of the claims acquired; and work on options such as the Fur-Paystrip property.

J. Nelson

REFERENCES

- Monger, J.W.H. and MacMillan, W.J. 1984
Bedrock geology of Ashcroft (92 I) map
area, Geological Survey of Canada.
Pen File map 980, 1:125,000.
- Pautler, J. 1984 B.C. Regional Supplementary Report:
Boston Bar-Lillooet Untramafic Project.
(92 J 8,9; 92 I 4,5,12; 92 H/13)
Kerr Addison Mines Propriety Report, .
November 1984.

LILLOOET PROJECT, B.C., (B-08)

SUMMARY OF 1985

Program and Recommendations for 1986

Many significant gold deposits in British Columbia and elsewhere in North America occur in close proximity to major, trans-crustal structures that border or transect oceanic terranes. Local examples include Carolin Mines and the Bralorne-Pioneer Mine, both hosted in rocks adjacent to the fault-bounded Bridge River oceanic terrane. This terrane, and specifically its major structures, formed the focus for part of the 1985 B.C. Gold Reconnaissance program.

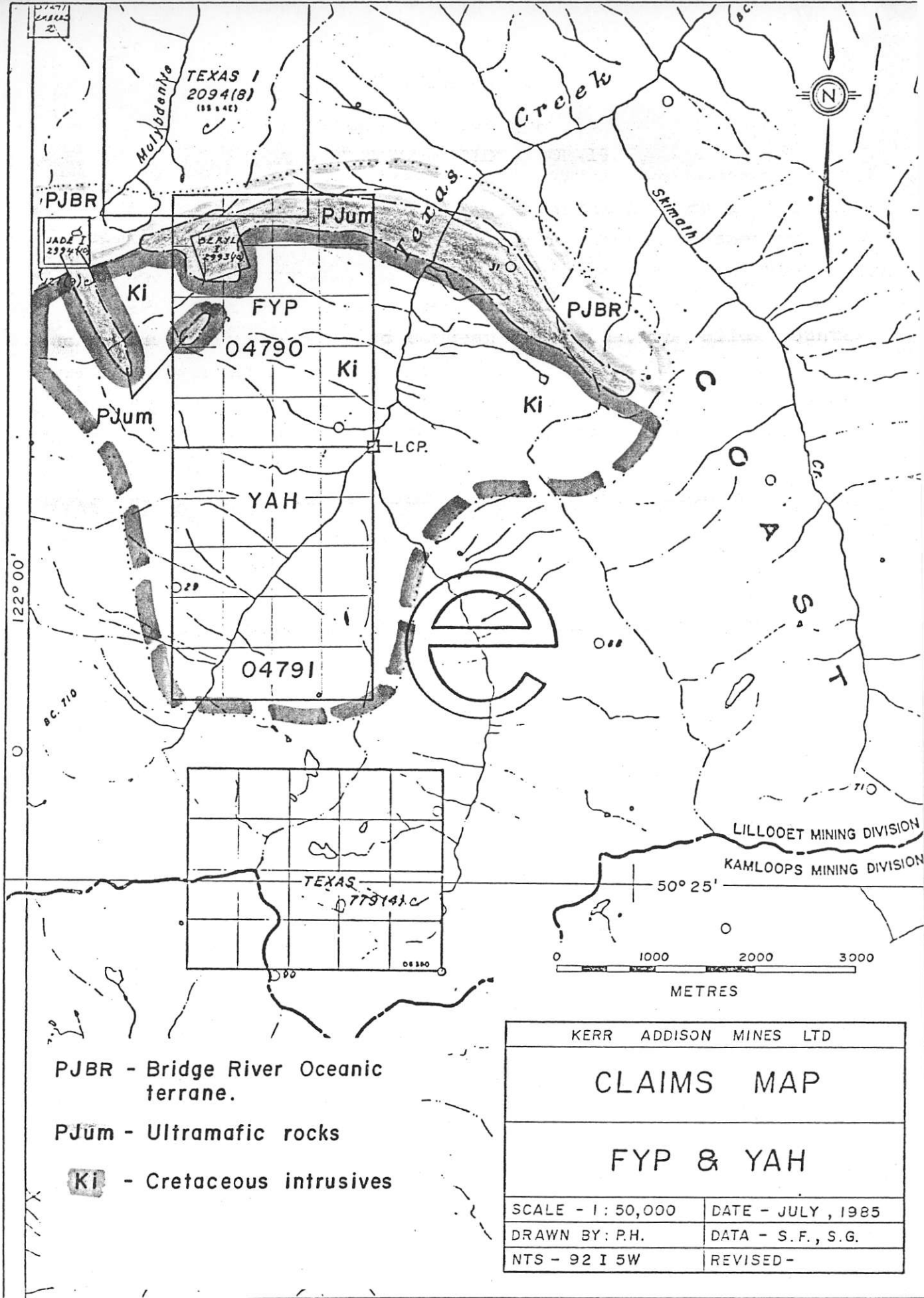
Figure 1 shows the areas within the BRT selected for detailed work in 1985, along with the locations of the two claim blocks staked as a result. The Lucy Claims enclose a zone of pyritic quartz veinlets discovered in 1984, which on repeat sampling returned 2485 ppb Au, 4000 ppm As. The FYP and YAH Claims cover an area of anomalous Au (to 350 ppb), As (to 1800 ppm) and Ag (to 40.0 ppm) in scattered reconnaissance grab samples. Neither of these properties have been investigated past the reconnaissance level.

Other anomalies in As, Ag and to a lesser extent Au were encountered repeatedly along the major structures, mainly from geologically restricted sources and/or on staked ground. Although not presenting immediate staking targets, they suggest that throughout their lengths these structures have provided pathways for hydrothermal fluids capable of generating precious metal deposits.

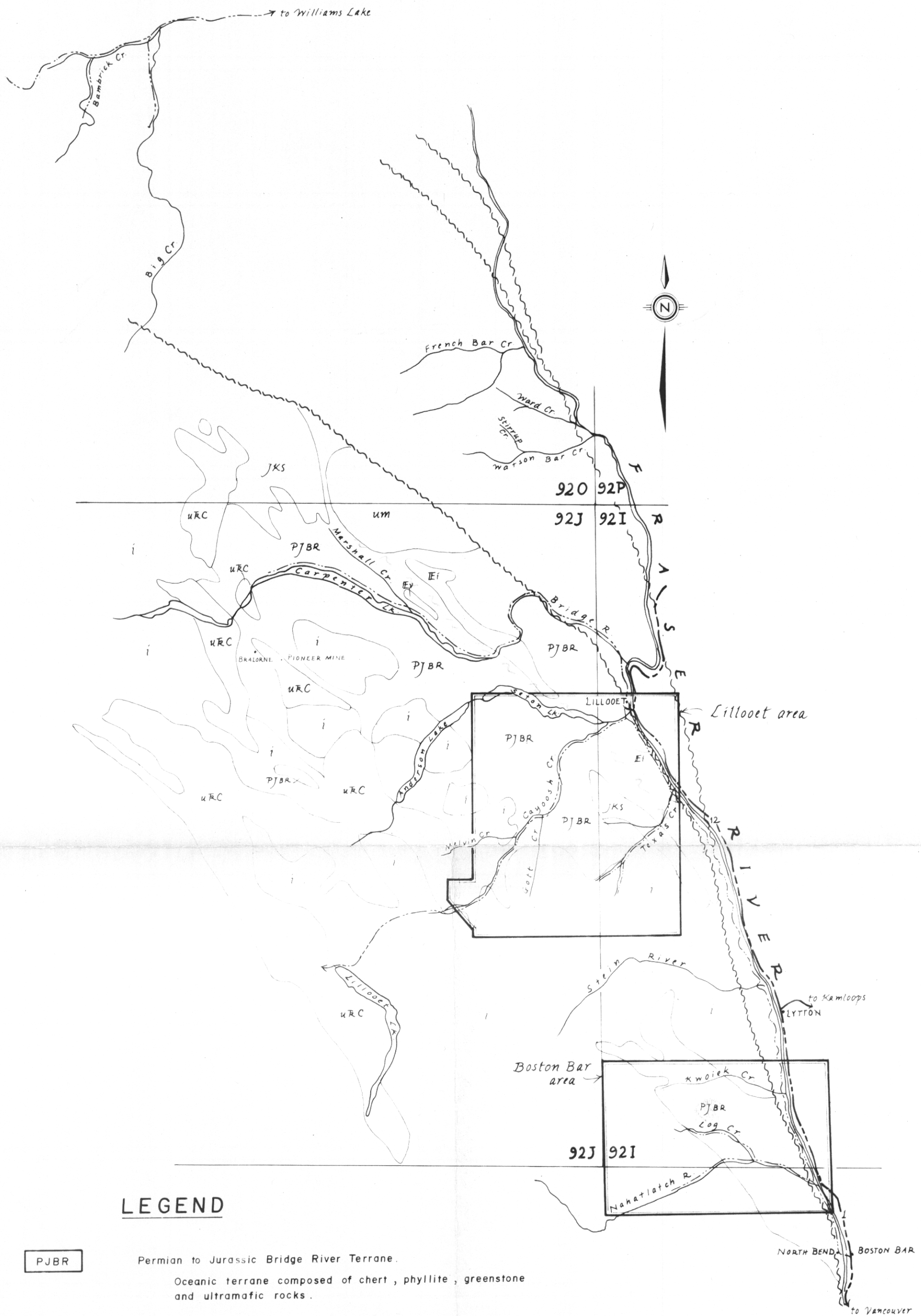
A recommended program for 1986 will include examination of the acquired ground; further reconnaissance; and detailed work on the FUR and the SPRAY Claims, two claim blocks now held by other parties.

The FUR Claims (R. Polischuk) overlie part of a high-level rhyolite intrusion with pyrite-arsenopyrite streaks along flow laminations. Sulfide-rich rhyolite commonly contains 200-300 ppb Au; one sample returned 2500 ppb Au. The SPRAY Claims (Geostar Mining Corp) include an area of sheared quartz diorite drilled by Duval in 1981. One of their holes encountered 3670 ppb Au/7m (true width). This correlates with a zone of quartz veinlets and silicification on surface; also strongly anomalous in Au and As. Mineralisation on both of these properties can be related to their proximity to the Marshall Creek Fault.

In summary, the hypothesis that major structures in the Bridge River Terrane have controlled precious metal mineralisation has received encouraging support by 1985 findings; this work should continue in 1986.



KERR ADDISON MINES LTD	
CLAIMS MAP	
FYP & YAH	
SCALE - 1 : 50,000	DATE - JULY , 1985
DRAWN BY: P.H.	DATA - S.F., S.G.
NTS - 92 I 5W	REVISED -

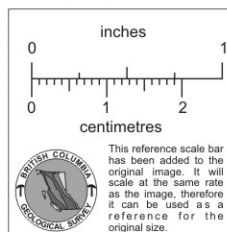


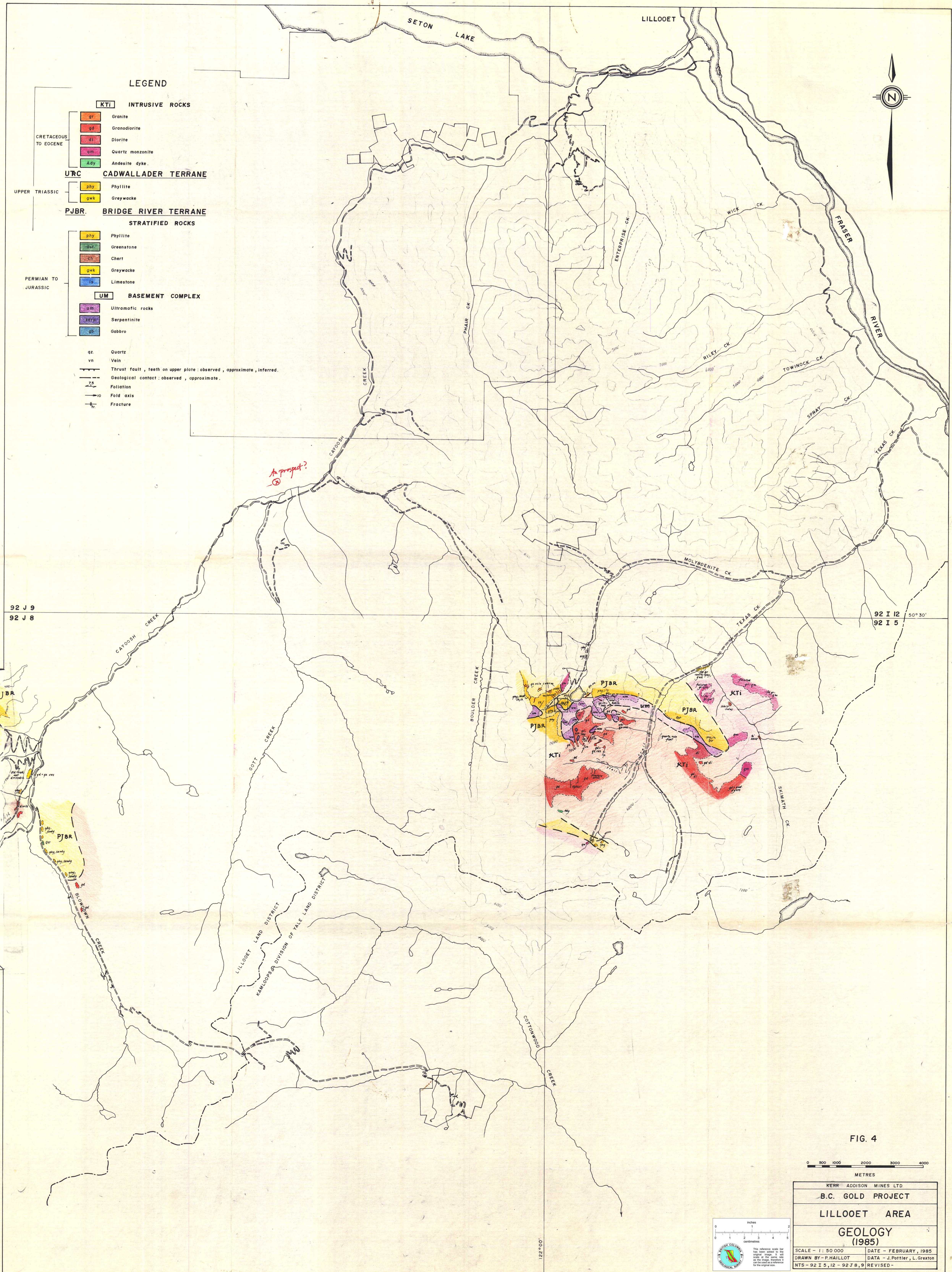
LEGEND

- PJBR Permian to Jurassic Bridge River Terrane.
Oceanic terrane composed of chert, phyllite, greenstone and ultramafic rocks.
- URC Upper Triassic Cadwallader Terrane:
Island arc terrane composed of andesitic greenstone, epiclastic sediments, phyllite, greywacke and minor rhyolite.
- um Shulaps Range Ultramafite.
- i Mesozoic to Eocene intrusive rocks.
- Ei Eocene intrusive rocks.
- Ev Eocene volcanic rocks.
- JKs Jurassic to Cretaceous marine clastic sediments.
- Fault
- Road

FIG. 1

KERR ADDISON MINES LTD	
GOLD REGIONAL 1985	
LILLOOET PROJECT	
INDEX MAP	
SCALE - 1 : 600 000	DATE - SEPTEMBER, 1985
DRAWN BY - J.N., P.H.	DATA - J.N.
NTS - 92 I, J, O, P.	REVISED -





LEGEND

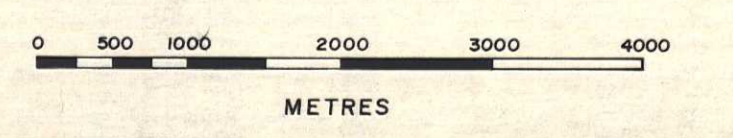
- KTI INTRUSIVE ROCKS**
- gr Granite
 - gp Grandiorite
 - di Diorite
 - qm Quartz monzonite
 - ady Andesite dyke
- URC CADWALLADER TERRANE**
- UPPER TRIASSIC
- phy Phyllite
 - gwk Greywacke
- PJBR BRIDGE RIVER TERRANE**
- STRATIFIED ROCKS
- phy Phyllite
 - gs Greenstone
 - ch Chert
 - gwk Greywacke
 - ls Limestone
- PERMIAN TO JURASSIC
- UM BASEMENT COMPLEX**
- um Ultramafic rocks
 - st Serpentinite
 - gb Gabbro
- qz Quartz
- vn Vein
- Thrust fault, teeth on upper plate: observed, approximate, inferred.
- Geological contact: observed, approximate.
- Foliation
- Fold axis
- Fracture



92 J 9
92 J 8

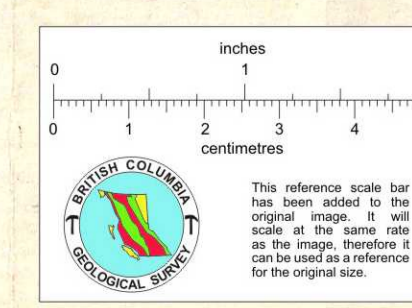
92 I 12
92 I 5

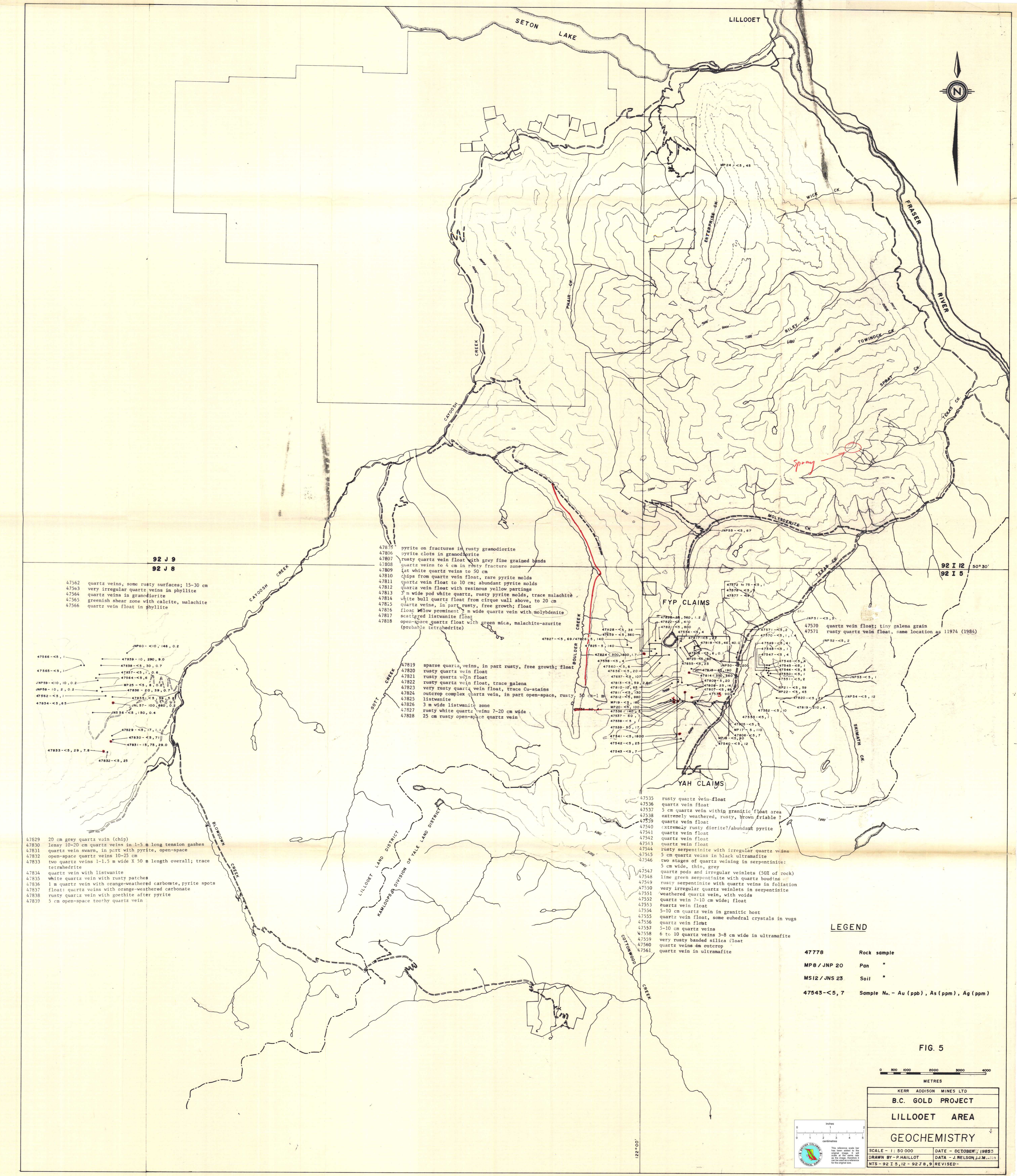
FIG. 4



KERR ADDISON MINES LTD.
B.C. GOLD PROJECT
LILLOOET AREA
GEOLOGY
(1985)

SCALE - 1 : 50 000 DATE - FEBRUARY, 1985
 DRAWN BY - P. HAILLOT DATA - J. Pottler, L. Greston
 NTS - 92 I 5, 12 - 92 J 8, 9 REVISED -





92 J 9
92 J 8

92 I 12 50° 30'
92 I 5

47562 quartz veins, some rusty surfaces; 15-30 cm
47563 very irregular quartz veins in phyllite
47564 quartz veins in granodiorite
47565 greenish shear zone with calcite, malachite
47566 quartz vein float in phyllite

47806 pyrite on fractures in rusty granodiorite
47807 pyrite clots in granodiorite
47808 rusty quartz vein float with grey fine grained bands
47809 quartz veins to 4 cm in rusty fracture zone
47810 flat white quartz veins to 50 cm
47811 chips from quartz vein float, rare pyrite molds
47812 quartz vein float to 10 cm; abundant pyrite molds
47813 quartz vein float with resinous yellow partings
47814 3 m wide pod white quartz, rusty pyrite molds, trace malachite
47815 white bull quartz float from cirque wall above, to 20 cm
47816 quartz veins, in part rusty, free growth; float
47817 float below prominent 2 m wide quartz vein with molybdenite
47818 scattered listwanite float
47819 open-space quartz float with green mica, malachite-azurite (probable tetrahedrite)

47819 sparse quartz veins, in part rusty, free growth; float
47820 rusty quartz vein float
47821 rusty quartz vein float
47822 rusty quartz vein float, trace galena
47823 very rusty quartz vein float, trace Cu-stains
47824 outcrop complex quartz vein, in part open-space, rusty, 50 cm-1 m
47825 listwanite
47826 3 m wide listwanite zone
47827 rusty white quartz veins 7-20 cm wide
47828 25 cm rusty open-space quartz vein

FYP CLAIMS

YAH CLAIMS

Spray

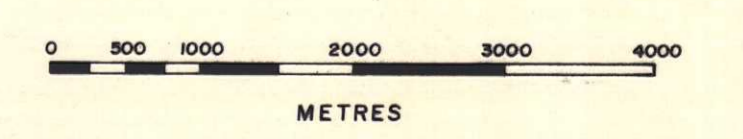
47829 20 cm grey quartz vein (chip)
47830 lensey 10-20 cm quartz veins in 1-5 m long tension gashes
47831 quartz vein swarm, in part with pyrite, open-space
47832 open-space quartz veins 10-25 cm
47833 two quartz veins 1-1.5 m wide X 50 m length overall; trace tetrahedrite
47834 quartz vein with listwanite
47835 white quartz vein with rusty patches
47836 1 m quartz vein with orange-weathered carbonate, pyrite spots
47837 float: quartz veins with orange-weathered carbonate
47838 rusty quartz vein with goethite after pyrite
47839 5 cm open-space toothy quartz vein

47535 rusty quartz vein float
47536 quartz vein float
47537 5 cm quartz vein within granitic float area
47538 extremely weathered, rusty, brown friable
47539 quartz vein float
47540 extremely rusty diorite?/abundant pyrite
47541 quartz vein float
47542 quartz vein float
47543 quartz vein float
47544 rusty serpentinite with irregular quartz veins
47545 5 cm quartz veins in black ultramafite
47546 two stages of quartz veining in serpentinite:
5 cm wide, thin, grey
47547 quartz pods and irregular veinlets (50% of rock)
47548 lime green serpentinite with quartz boudins
47549 rusty serpentinite with quartz veins in foliation
47550 very irregular quartz veinlets in serpentinite
47551 weathered quartz vein, with voids
47552 quartz vein 7-10 cm wide; float
47553 quartz vein float
47554 3-10 cm quartz vein in granitic host
47555 quartz vein float, some euhedral crystals in vugs
47556 quartz vein float
47557 5-10 cm quartz veins
47558 6 to 10 quartz veins 3-8 cm wide in ultramafite
47559 very rusty banded silica float
47560 quartz veins in outcrop
47561 quartz vein in ultramafite

LEGEND

- 47778 Rock sample
- MP8 / JNP 20 Pan "
- MS12 / JNS 23 Soil "
- 47543-47547 Sample No. - Au (ppb), As (ppm), Ag (ppm)

FIG. 5



KERR ADDISON MINES LTD	
B.C. GOLD PROJECT	
LILLOOET AREA	
GEOCHEMISTRY	
SCALE - 1 : 50 000	DATE - OCTOBER, 1985
DRAWN BY - P.HAILLOT	DATA - J.NELSON, J.M.
NTS - 92 I 5, 12 - 92 J 8, 9 REVISED	

