83-#435 - #11508

ASSESSMENT REPORT

GEOLOGICAL AND GEOCHEMICAL SURVEY

BARB CLAIMS 1, 3, 4

ATLIN MINING DIVISION

KING SALMON LAKE AREA, B. C.

N.T.S. 104K/10

132°53'W
58°45'N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,508

OWNER: RON DALE

OPERATOR: CHEVRON CANADA RESOURCES LIMITED

Author: Godfrey Walton

September, 1983

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BARB

INTRODUCTION

LOCATION AND ACCESS

The BARB claims are situated at 132°53'W and 58°45'N, approximately 2 km north of King Salmon Lake (Figure 1). Access to the property is by float-plane from Atlin, B. C, about 100 km to the north. Transportation for this program was provided by helicopter from a base camp at Trapper Lake, 30 km to the southeast.

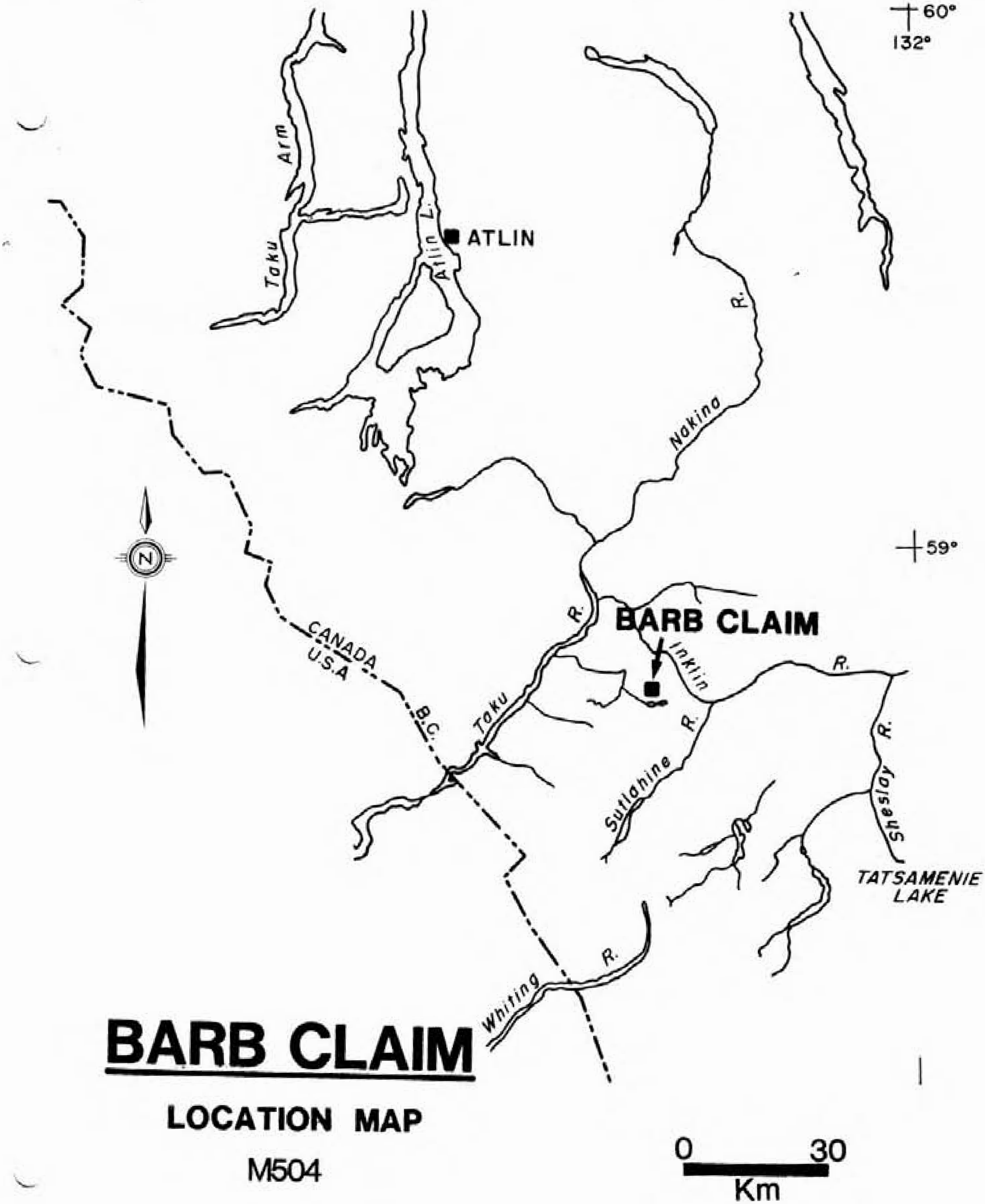
HISTORY

The original showing was called the "BWM" and was first discovered in the early 1930's by prospector, George Bacon who staked the property in 1947 for Cominco. After limited work by Cominco, the property was optioned to Hudson Bay Mining and Smelting in 1949. Further trenching and 943 feet of EX-size drilling were done during 1950 (described in B. C. Minister of Mines, Annual Report, 1950, A75-76). After termination of the Hudson Bay option in 1950 the ground was restaked several times. A small airborne and ground magnetometer survey was done by Newmont Mining Co. Ltd. in 1964.

In the summer of 1981 and 1982 geological mapping and geochemical sampling was done by Chevron Standard Limited of Vancouver, B. C.

PRESENT PROPERTY

In 1979, Ron Dale staked the new 20-unit BARB 1 claims in the same area as the previous 8-unit BARB 1-8 claims (Figure 2). Of the eight units in BARB 1-8 all have lapsed except BARB 3 and 4. The property is presently owned by Ron Dale and is under option to Chevron Canada Resources Limited.



60°
132°
Taku
Arm
Atlin L.
ATLIN
Nakina
R.
59°
N
BARB CLAIM
Inklin
R.
R.
Taku
CANADA
U.S.A
B.C.
Sutlahine
R.
Shesley
R.
TATSAMENIE
LAKE
Whiting
R.
BARB CLAIM
LOCATION MAP
M504
0
30
Km

FIGURE I

Claims	Record No.	Record Date	No. of Units
BARB 1	737	July, 1979	20
BARB 3	15430	August, 1970	1
BARB 4	15431	August, 1970	1

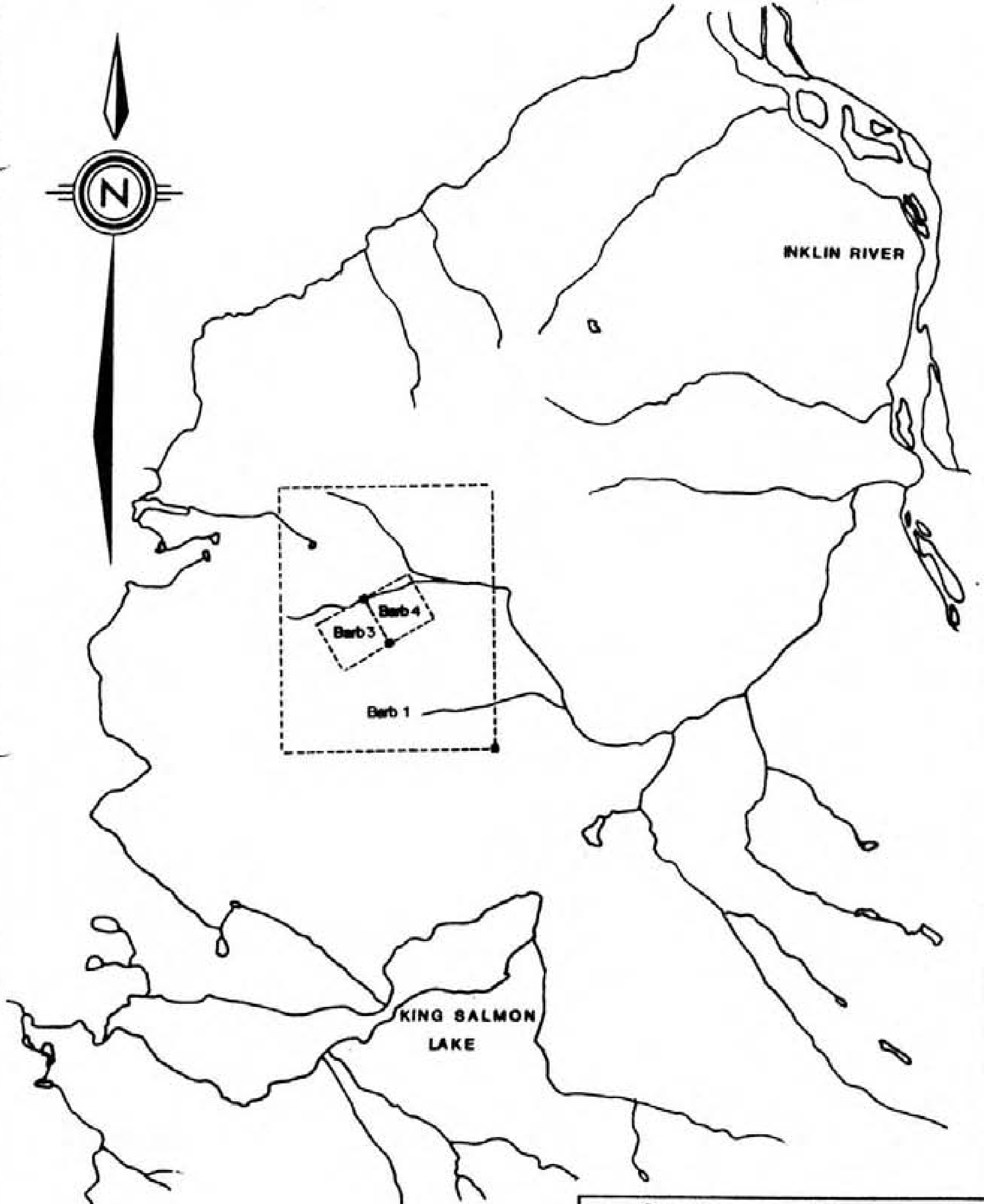
REGIONAL GEOLOGY

The BARB claims are situated on the east margin of the Coast Plutonic Complex as mapped by Souther, 1971. Most of the claims are underlain by the Upper Triassic King Salmon Formation which is a mixed assemblage of sediments, andesitic volcanic and volcaniclastic rocks and limestone. On the northeast part of the claims is the Upper Triassic Sinwa limestone which is found along the northeast dipping King Salmon thrust fault. These rocks are intruded by intermediate composition Jurassic plutons and porphyritic dykes that may be Jurassic or Teritiary in age.

Structure in the area is dominated by the NW-trending, NE-dipping King Salmon thrust fault and associated smaller faults. Perpendicular to these faults is another set which trends northeasterly.

DETAILED GEOLOGICAL MAPPING

A detailed grid was established (50 meter line spacing and 25 meter stations) to control detail geological mapping and soil sampling in the area of the King Salmon fault and a 10,000 ppb soil sample obtained late last summer.



meters
kilometers

1 : 50000

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FIG.2 APPROXIMATE LOCATION OF BARB 1,3,4 CLAIMS

FIGURE No		PROJECT No	
DATE	REVISIONS		SCALE

King Salmon Formation (Unit 1)

The Upper Triassic King Salmon Formation rocks, near the base of the Stuhini Group, are black to dark brown in outcrop, pale to medium green when fresh, calcareous siltstone and shale. Minor narrow tuff beds and dark carbonaceous limestones occur within this unit. Weak disseminated pyrite occurs throughout.

This unit is usually fractured and bleached at and near intrusive contacts. Often a pale green very fine grained calc-silicate skarn is commonly developed within the intrusive aureoles.

Sinwa Formation (Unit 2)

The Upper Triassic Sinwa Formation is a cliff forming thick bedded white to light grey fine grained clean marble. Within it are narrow beds of dark blue grey carbonaceous limestone and narrow, less than 2 cm, white and grey chert beds. Beds of interformational breccia, less than 0.5 meters, composed of up to 5 cm angular white and black chert clasts are rare.

At and near the intrusive contacts the Sinwa Formation may be unaffected or altered to a brown weathering dolomite containing dolomite veinlets. In some places a weak pale green skarn containing epidote diopside and calcite with minor disseminated and lesser veinlet pyrite is developed. The clean nature of the marble results in poor skarn development. Massive magnetite zones up to 25 metres are located in the limestone at instrusive contacts. Within the magnetite zones fine needles of black and rarely white tremolite are common. Blebs up to 1 cm of fine crystalline pyrite are most common in the magnetite zones near the intrusive contacts.

Jurassic Intrusives (Unit 3 and 4)

The post middle Jurassic and/or Cretaceous intrusives have been subdivided into two units - hornblende-biotite quartz diorite and quartz diorite porphyry. The relationship between the two units was not seen on the grid, but they appear to be coeval.

The writer interprets the equigranular quartz diorite as a high level stock with an irregular porphyritic shell and irregular dykes. The mapping by Souther shows that this unit at higher elevations forms small acid to intermediate stocks. Where erosion has exposed a deeper section of the intrusive at lower elevations the stocks are larger and intermediate to basic in composition.

The possibility exists that the quartz diorite unit is the high level hypabyssal equivalent of the Triassic Stuhini Group volcanics.

The Unit 4 quartz diorite, located on the southeast edge of the grid, is a light to medium grey colored equigranular medium grained rock. Its mafic content varies from 10 - 20% with the hornblende content greater than the biotite. Most of the mafic minerals have been altered to chlorite. Pyrite content is generally low.

The Unit 3 quartz diorite porphyry appears to form a shell around the Unit 4 quartz diorite as well as occurring as narrow, generally less than 10 metre dykes, and in one case a 100 metre wide dyke. The contact between the two units was not seen. The medium green porphyry Unit 3 contains up to 40%

medium grained, euhedral to subhedral, feldspar phenocrysts and 10 - 15% subhedral to anhedral hornblende and biotite phenocrysts. Quartz phenocrysts are not common.

The matrix is microcrystalline to very fine grained and its dark color imparts the greenish color to the rock. Disseminated pyrite, replacing the mafics, is low. Fine disseminated magnetite rarely occurs in the dykes but can occur in amounts up to 4% near the outer contact of the porphyry shell.

Within the Unit 3 quartz diorite porphyry are two sub-units - 3a quartz-feldspar and 3b quartz feldspar biotite. The two sub-units occur as separate narrow dykes and narrow zones within the quartz diorite porphyry. The quartz-feldspar porphyry is a light colored rock with crowded, fine to medium grained euhedral-feldspar phenocrysts in a matrix ranging from aphanitic to very fine grained. Normally quartz phenocrysts up to 5% are subordinate to feldspar phenocrysts. At its contacts with the country rock and sometimes within the unit the rock is chilled, sheared and brecciated. Hydrothermal alteration accompanied by copper lead and magnetite mineralization is associated with this sub-unit. The quartz-feldspar-biotite sub-unit is not common or well developed. Where seen euhedral thin book biotite and fine biotite partially replacing hornblende is present. This biotite may result from potassic hydrothermal alteration.

STRUCTURE

The King Salmon Formation beds, believed to be upright, strike north-south and dip steeply to the east. The Sinwa Formation limestone, separated from the underlying King Salmon Formation by the northwest trending easterly dipping King Salmon thrust fault, trend east and dip moderate to steeply to the north. The quartz diorite porphyry dykes trend northeast to easterly and contacts appear to be near vertical. Topographic lineaments, probably representing faults, have an orientation ranging from north to easterly.

ALTERATION

Alteration zoning associated with porphyry and lode gold occurrences usually shows increasing alteration grades towards mineralization.

The fresh rock grades into propylitic, then through argillic and finally to the alunite-quartz or silica gold bearing facies. Occasionally where copper and molybdenum-mineralization is present phyllic or sericite alteration grades to the potassic facies at the center of the alteration system. Not all facies are always well developed or present.

On the BARB claims the quartz diorite porphyry, Unit 3, is the only rock that exhibits hydrothermal alteration. Alteration ranges from weak to strong propylitic with minor weak quartz-alunite alteration possibly present at the copper breccia zone.

Weak propylitic alteration is developed where the hornblende is altered to chlorite, montmorillonite calcite and pyrite. The plagioclase remains fresh or only weakly altered. This type of alteration imparts a medium to dark green color to the rock. With increasing propylitic alteration, the plagioclase alters to a soft pale green clay (montmorillonite) calcite and increasing amounts of pyrite. This alteration, present mainly in Unit 3d quartz feldspar porphyry, imparts a pale bleached appearance to the rock.

Pervasive and veinlet silicification is associated with strong propylitic alteration and late stage carbonate (ankerite) veining at the copper breccia zone on the west side of the grid and may be indicative of incipient quartz-alunite alteration.

MINERALIZATION

Copper mineralization is present in a circular, 140 metric wide breccia located on the west side of the grid. This showing has in the past been explored with hand trenching and diamond drilling. The breccia occurs in King Salmon Formation thick bedded siltstone and shale where it is cut by a quartz feldspar porphyry dyke estimated to be about 30 metres wide. The quartz-feldspar porphyry exhibits strong propylitic alteration and, in a few places, strong pervasive silicification. Traces of tourmaline may be present. In the vicinity of the hand trench veinlet silicification occurs with coarse crystalline quartz lining breccia cavities. These have later been filled with a brown weathering carbonate believed to be ankerite. Copper mineralization, as coarse crystals of chalcopyrite and fracture coating malacite, is associated with the strong pervasive and veinlet silicification. The porphyry dyke does not appear to be brecciated; however, the bleached and gossany siltstone-shale country rock exhibits strong crackle brecciation. None of the fragments appear to be rotated or rounded. Quartz and carbonate occur as veinlets and coatings along open crackle fractures. Minor specularite, now weathered to earthy hematite, is occasionally present in the carbonate veinlets. A late stage, white mineral believed to be a zeolite, sometimes coats the open carbonate lined fractures.

Both east and west along strike, outside the breccia, the quartz-feldspar dykes grade into a fresh to weakly altered diorite porphyry.

Fracture filling galena mineralization is located on crossline 23+50N at 3+50W. It occurs in a brecciated, less than 0.5 metre wide, northeast trending, weakly pyritic quartz feldspar porphyry dyke which exhibits strong propylitic alteration. A selected hand specimen, with about 20% galena, assayed 115 ppb Au.

Massive pyrrhotite and pyrite float, in lenses up to one metre wide, was found below a strong northeasterly structure located on crossline 22+00N at 5+50W. These lenses appear to have been blasted from the structure by previous workers. The structure cuts the King Salmon Formation beds a short distance southwest of the strong propylitic altered 100 metre wide quartz feldspar porphyry dyke. About 25 metres south of this structure is a parallel trending, less than 0.5 metres wide, pyritic, strong propylitic brecciated quartz feldspar dyke. Along strike 50 metres to the southwest, a five metre diameter zone contains veinlet magnetite in a crackle brecciated and carbonate veining bleached siltstone.

Magnetite occurs as fine disseminations and massive pods. Fine disseminated magnetite (up to 5%) is present in the quartz diorite porphyry; most commonly occurring at the contacts of the quartz diorite porphyry intrusive shell. Disseminated magnetite is rare in the quartz diorite porphyry dykes. However, where the dykes cut the Sinwa Formation limestone, massive magnetite in irregular pods and lenses up to 25 metres wide occurs in the contact zones.

There the magnetite varies from strongly disseminated in a brown marble matrix to massive with abundant fine, black or rarely white, acicular tremolite. The magnetite pods and lenses are occasionally pyritized although in most cases the pyrite content is less than 2%. In the magnetite pods and lenses near the porphyry dykes there is an increase in fine crystalline pyrite where it is present in 1 cm blebs. The porphyry dykes near the magnetite occurrences exhibit weak to strong propylitic alteration. In general the largest pods and lenses of magnetite are associated with the strongest propylitic alteration and more intense pyritization.

A crude porphyry-like mineral zoning is present on the grid. Chalcopyrite occurs in the breccia zone within the highest alteration facies. About 600 metres northeast of the copper breccia is fracture filling galena in a narrow, strongly propylitic altered quartz feldspar porphyry dyke. Northeast of the galena showing and immediately west of the baseline is the 1982 >10,000 ppb gold geochemical soil anomaly.

GEOCHEMISTRY fine material from B horizon, field dried

The rocks and soil samples were sent to Chemex Labs, North Vancouver to be analyzed for Au, Ag, As and Sb. The following procedures were utilized:

Soils were further dried, then sieved, with the -80 mesh portion retained for analysis. The entire rock sample was crushed and then pulverized in a ring grinder to -100 mesh. Au was done using fire assay and atomic absorption techniques with the fire assay bead dissolved in HCl and HNO_3 then analysed by conventional atomic absorption techniques. For Ag, a mixture of $HClO_4$ and HNO_3 was used to digest the sample, followed by atomic absorption spectrophotometry. As was done by standard colorometric techniques following an $HClO_4$ and HNO_3 digestion. For Sb, the sample was digested in HCl, potassium iodide was added, extracting with TOPO-MIBK and then analysing by atomic absorption spectrophotometry. Location of samples and corresponding geochemical results can be seen on Figures 5, 6.

Au, Ag - Some minor anomalies up to 1700 ppb Au were located but no repeats of the previously obtained >10,000 ppb Au despite the very detailed soil grid. Only samples above 100 ppb Au have been contoured. Some Ag values have also been located and correspond to some of the gold anomalies.

As, Sb - The arsenic and antimony correlate quite well and provide slightly larger geochemical halos than the gold geochemical anomalies. However, they are still not incredibly anomalous.

There is some correlation between all of the elements and some of the silicate skarn shown on the geological map.

The best rocks collected during the mapping have been sent in for geochemical analysis and are primarily not above background. The best rock value was 415 ppb Au in a slightly skarnified rock with up to 10% pyrite.

CONCLUSIONS

Geological mapping around the 1982 gold soil geochemical anomaly has shown that chalcopyrite, galena and magnetite mineralization and weak gold soil geochemical anomaly is related to a Jurassic and/or Cretaceous propylitic altered quartz diorite porphyry which occurs as an intrusive shell and as narrow north to easterly trending dykes.

The work in 1983 has indicated the soil geochemical anomaly (>10,000 ppb Au) was related to organic enrichment and, therefore, constitutes a false anomaly.

RECOMMENDATION

Due to the low geochemical values in the soils and the rocks, no further work is recommended on the BARB claims.

REFERENCES

Souther, J.C. (1971). Geology and mineral deposits of Tulsequah map-area, British Columbia. Geological Survey of Canada, Memoir 362, 84 p.

1983 EXPLORATION PROGRAM

BARB CLAIMS

KING SALMON LAKE AREA, B. C.

COST STATEMENT

PERIOD: June 28 to July 11, 1983

1. LABOUR:

NAME	POSITION	FIELD DAYS	OFFICE DAYS
G. Walton	Geologist	1	1
M. Phillips	Geologist	12	1
M. Thicke	Geologist	2	-
B. Daniel	Line cutter	12	-
J. Armstrong	Sampler	12	-
G. Wober	Sampler	12	-
D. Hodge	Sampler	2	-
W. Hewgill	Sampler	2	-
	TOTAL	55	2

AVERAGE COST PER FIELD MAN DAY: $100. x 55 =	$ 5,500.00
AVERAGE COST PER OFFICE MAN DAY: $150. x 2 =	300.00

2. ANALYSES:

Rock (Au, As, Ag, Sb) 28 @$17.65	494.20
Soil (Au, As, Ag, Sb) 229 @$16.15	3,698.35

3. CAMP COSTS:

Total man days: 55 @ $60.	3,300.00

4. HELICOPTER:

12 hrs. @$500/hr. incl. fuel	6,000.00

5. DRAFTING:

2 man days @$100.	200.00
	$19,192.55

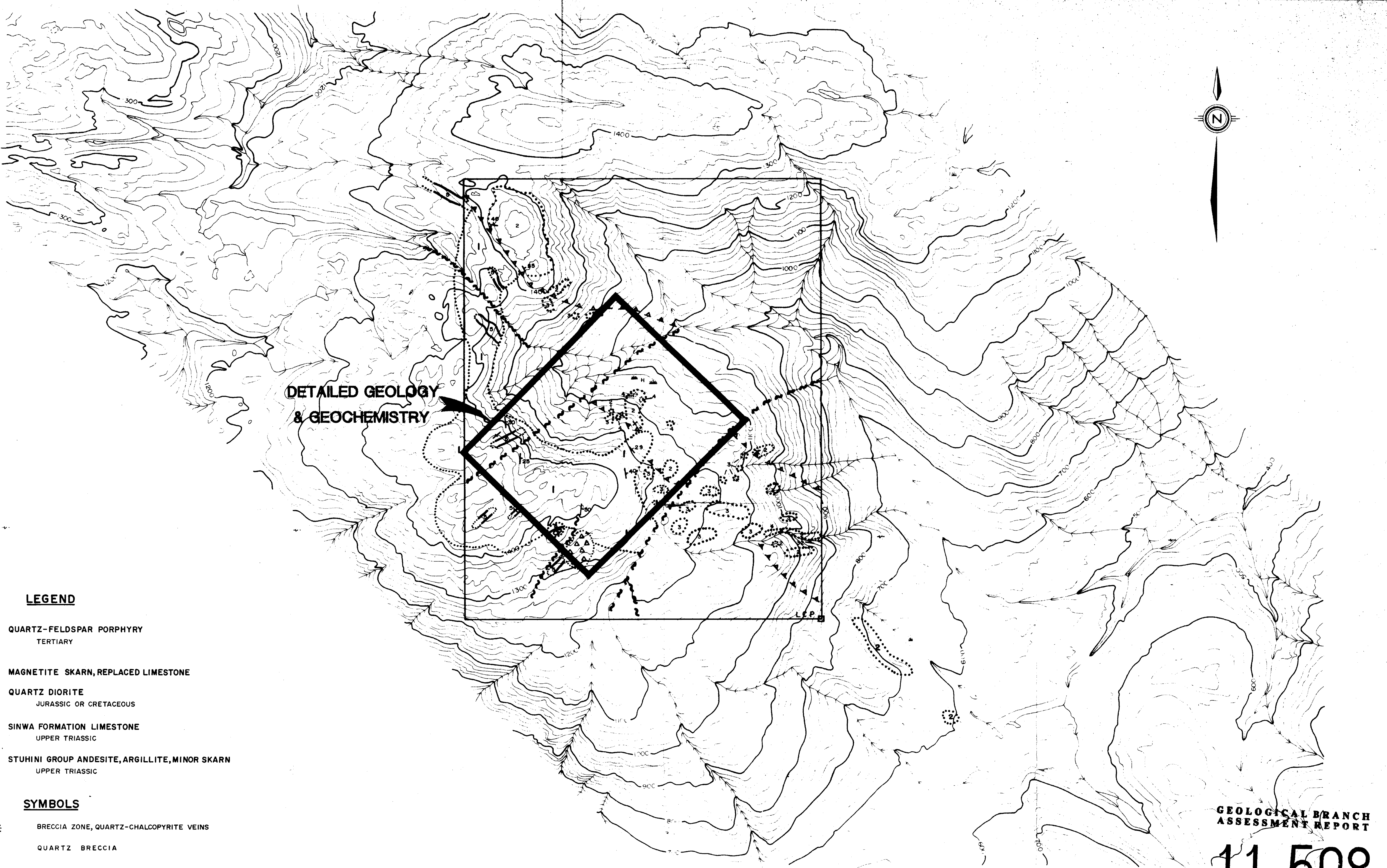
STATEMENT OF QUALIFICATIONS

I, Godfrey Walton, have worked as a geologist in British Columbia, Yukon, Northwest Territories, Alberta and Ontario since 1973. A B.Sc. (Hons. Geology) was received in 1974 from the University of Alberta and followed by a M.Sc. degree in geology from Queen's University in 1978. I am currently employed as a geologist with Chevron Canada Resources Limited of Vancouver, B. C.

I am a member of the Canadian Institute of Mining and Metallurgy, Exploration Geochemists and Mineralogical Association of Canada.

The work on the BARB claims was carried out under my supervision.

GODFREY WALTON



LEGEND

- [5] QUARTZ-FELDSPAR PORPHYRY
  TERTIARY
- [4] MAGNETITE SKARN, REPLACED LIMESTONE
- [3] QUARTZ DIORITE
  JURASSIC OR CRETACEOUS
- [2] SINWA FORMATION LIMESTONE
  UPPER TRIASSIC
- [1] STUHINI GROUP ANDESITE, ARGILLITE, MINOR SKARN
  UPPER TRIASSIC

SYMBOLS

- BRECCIA ZONE, QUARTZ-CHALCOPYRITE VEINS
- × QUARTZ BRECCIA
- ▲▲▲ KING SALMON THRUST FAULT
- ---,— CONTACT APPROXIMATE, DEFINED
- (2) OUTCROP
- 29 BEDDING SHOWING DIP
- PHOTO LINEARS
- SWAMP
- H HELICOPTER LANDING

0 200 400m

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BARB CLAIMS

GEOLOGY

FIGURE 3		PROJECT M514	
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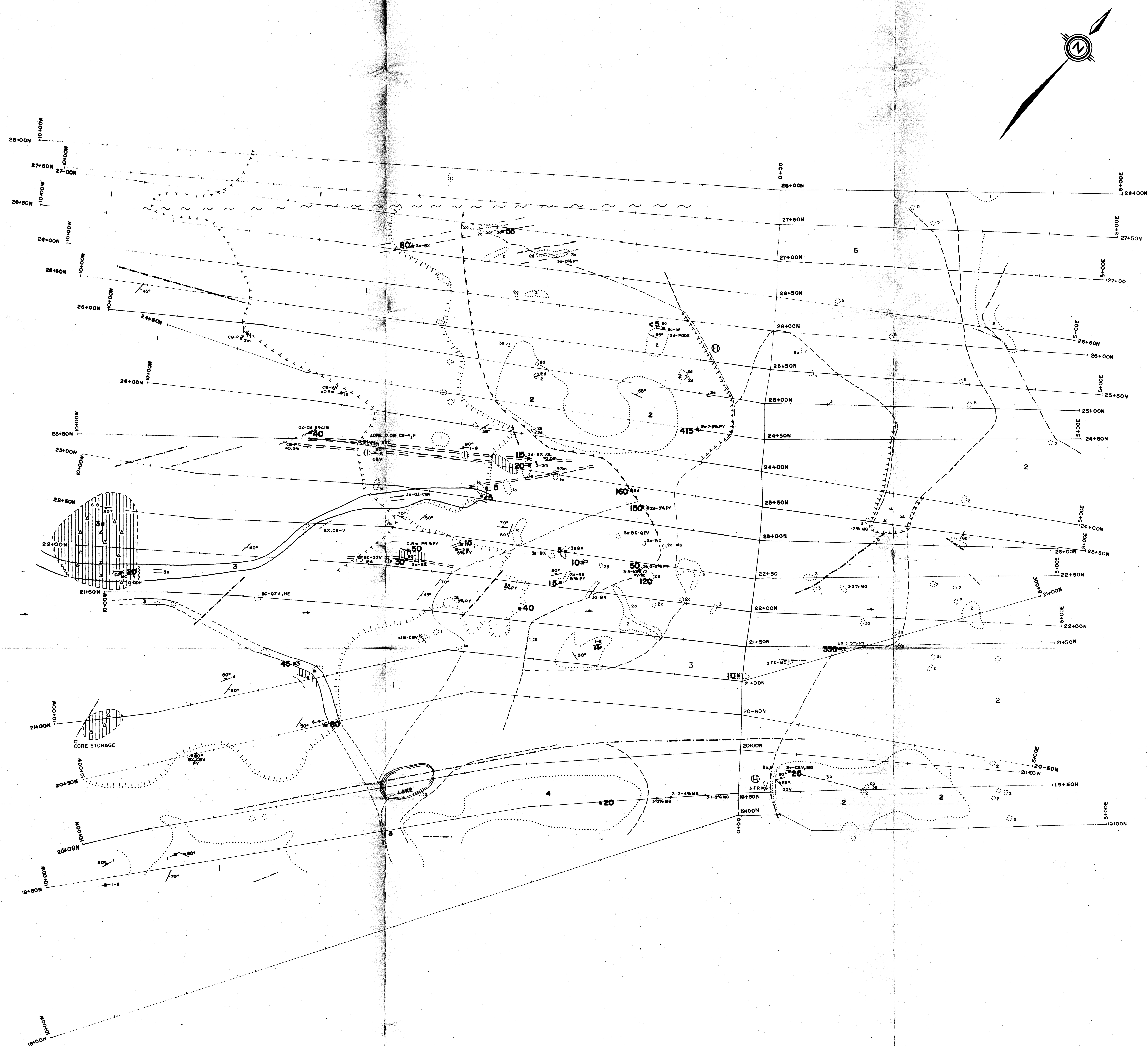
K.S.			G-3



LEGEND

CENOZOIC PLEISTOCENE

5 GLACIAL TI

MESOZOIC JURASSIC AND/OR ETACEOUS

POST MIDDLE JURA SIC

4 QUARTZ DIO TE - LIGHT GRAY, INEQUIGRANULAR, MEDIUM GRAINED WITH 15-20% HORNBLENDE-BIOTITE

3 QUARTZ DIORITE PORPHYRY - FINE TO MEDIUM GRAINED FELDSPAR, HORNBLENDE-BIOTITE, MINOR QUARTZ PHENOCRYSTS

3a QUARTZ ELDSPAR PORPHYRY

3b QUARTZ ELDSPAR BIOTITE PORPHYRY

TRIASSIC

UPPER TRIASSIC

SINWA FORMATION

2 LIMESTONE - WHITE, LIGHT GRAY, WEATHERING THICK BEDDED, MINOR NARROW CH RT BEDS, RARE INTERFORMATIONAL BRECCIA

2a STRONG RVASIVE BROWN DOLOMITIZATION

2b INTERFOR ATIONAL BRECCIA - NARROW BEDS, UP TO 10cm WHITE & BLACK CHERT CLASTS

2c SKARN - EPIDOTE, DIOPSIDE, TREMOLITE IN CALCITE MATRIX, TREMOLITE OFTEN ASSOCIATED WITH MASSIVE MAGNETITE

2d MAGNETIT - MASSIVE ZONES OFTEN ASSOCIATED WITH TREMOLITE, MINOR BLEBBY YRITE NEAR CONTACTS

STUHINI GROUP

KING SALMON FORMATION

1 CALCAR S SILTSTONE AND SHALE - BROWN WEATHERING THICK BEDDED CALC-SILICATE SKARN NEAR INTRUSIVES, MINOR NARROW BEDS TUFFS, MINOR LIMESTONE

1a SKARN LE GREEN, FINE GRAINED CALC-SILICATE, MINOR EPIDOTE IN FRACTURES

1b SKARN E GRAINED, DARK GREEN DIOPSIDE AND EPIDOTE

1c LIMESTON - DARK GRAY, THIN BEDS

SYMBOLS

CONTACTS - APPROXIMATE, ED

FAULT - ASSUMED, DEFINED

TOPOGRAPHIC LINEAMENT - SUMED FAULT

BEDDING - STRIKE & DIP - IN ED AND VERTICAL

JOINTS, FRACTURES, STRIKE IP - INCLINED AND VERTICAL A DENSITY PER FOOT

OUTCROP

OUTCROP - AREA WITH >50% OUTCROP AND NEAR BEDROCK FLOAT

BRECCIA - GOSSAN IN BRECCIA WITH QUARTZ-CARBONATE

GOSSAN - FRACTURED QUARTZ-CARBONATE VEINING

BREAK IN SLOPE

HELICOPTER PAD

CREEK

KING SALMON CREEK THRU FAULT APPROX. DEFINED

ROCK SAMPLE GEOCHEMIS (ppb Au)

PY - PYRITE
MG - MAGNETITE
BX - BRECCIATED
CP - CHALCOPYRITE
PR - PYRRHOTITE
HE - HEMATITE
LI - LIMONITE
MS - SPECULARITE
MC - MALACHITE
QZ - QUARTZ
CB - CARBONATE
V - VEINLETS
BC - BRECCIATED-CRACKLED
BL - BLEACHED
P - PERVASIVE
X - FLOAT
TR - TRACE

0 50 100m

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BARB CLAIMS

GEOLOGY & ROCK GEOCHEM.

FIGURE No. 4		PROJECT No. M-514	
DATE SEPT. 1983	REVISIONS		SCALE 1:2,500
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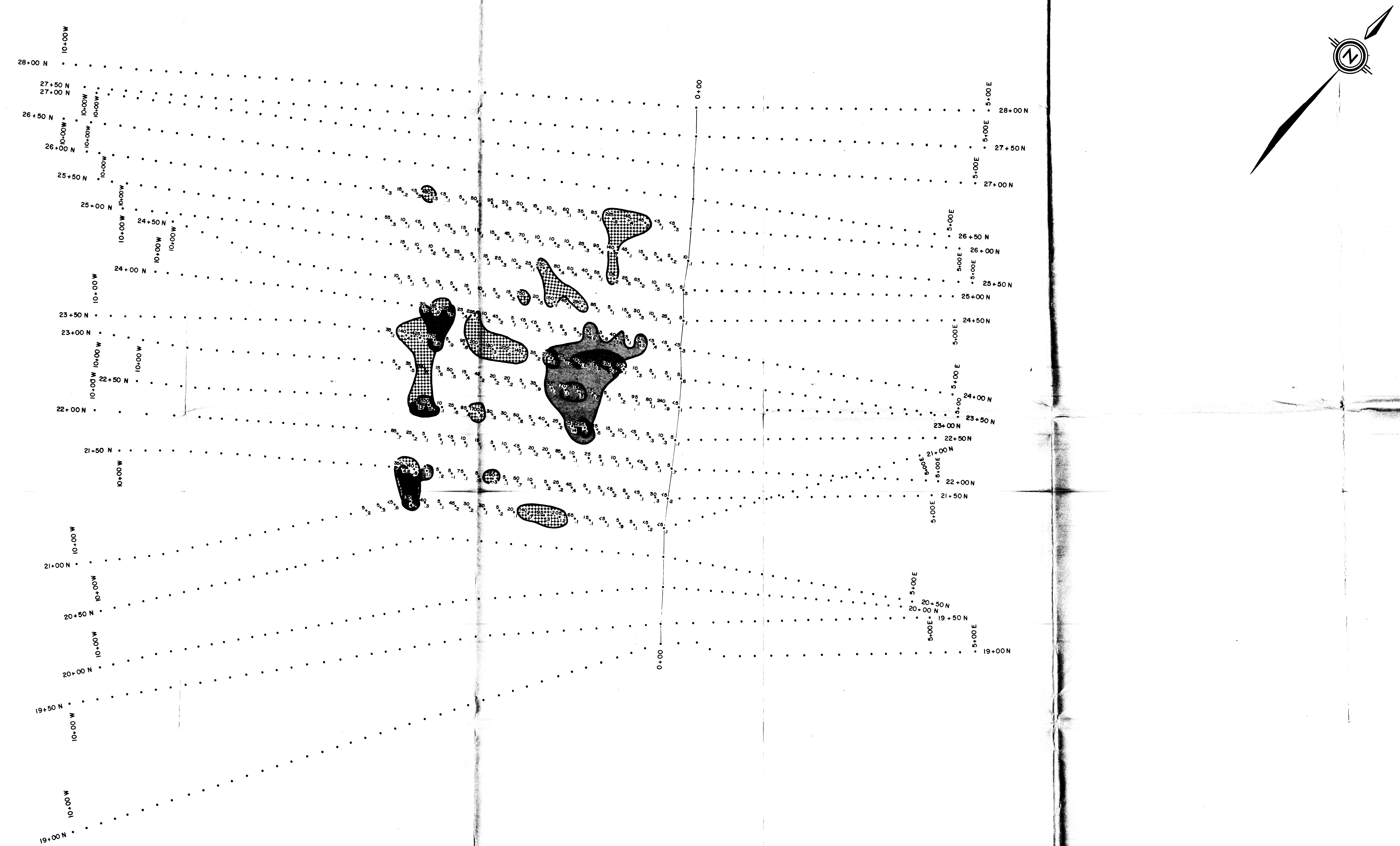
COMPILED BY			



LEGEND

Au (ppb) • Ag (ppm)

Au >100 ppb

Ag >1 ppm

0 50 100 m

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BARB CLAIMS
SOIL GEOCHEMISTRY
Au-ppb , Ag-ppm

FIGURE No. 5		PROJECT No. M-514	
DATE SEPT. 1983	REVISIONS		SCALE 1:25,000
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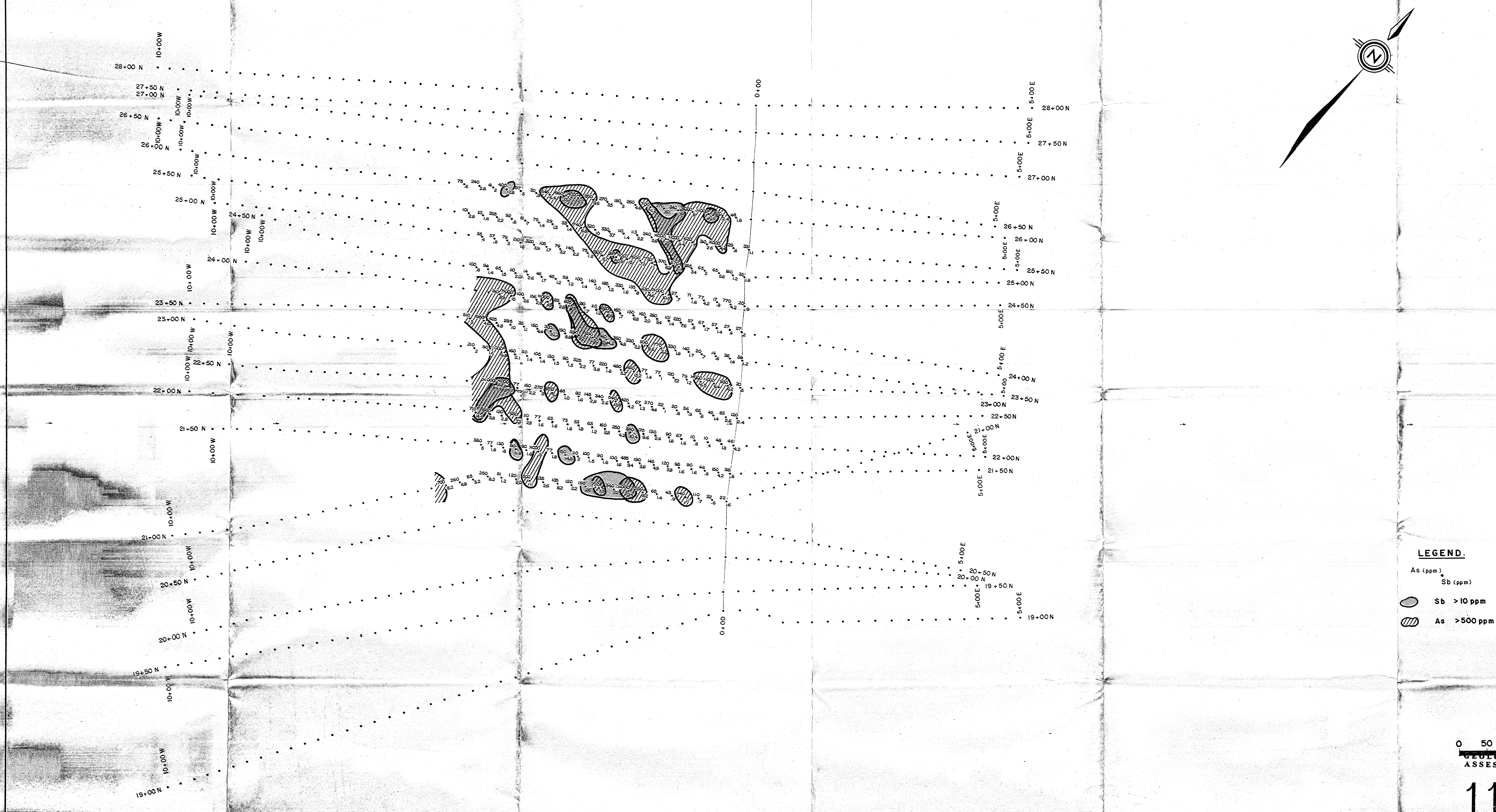

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BARB CLAIMS
SOIL GEOCHEMISTRY
As-ppm Sb-ppm

FIGURE No. 6		PROJECT No. M-514	
DATE SEPT. 1983	REVISIONS		SCALE 1:25,000
NTS No.			FILE No.
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