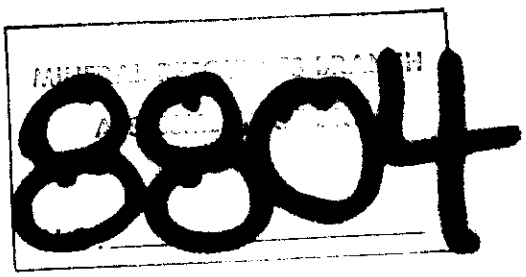
1980 ASSESSMENT REPORT

TITLE	Bridge River Property
CLAIMS	BR 1-8, AG, AG 1-4
COMMODITY	Mo
LOCATED	95 km northwest of Whistler, B.C. Latitude 50°54'N Longitude 123°30'W Lillooet Mining Division 92 J 13E/14W
BY	S.G. Enns and J.L. LeBel
FOR	AMAX of Canada Limited
WORK PERIOD	July 21 - August 23, 1980



AMAX VANCOUVER OFFICE

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SUMMARY

This report presents results of geological mapping, soil and rock chip sampling and magnetometer and induced polarization surveys undertaken on the Bridge River Cu-Mo property between July 21 and August 23, 1980. The property, consisting of thirteen claims (AG, BR) totalling 65 units was optioned from Esperanza Exploration Ltd. of Vancouver, B.C. in early 1980. It is located on the north headwaters of Bridge River, 180 km north-northwest of Vancouver in Lillooet Mining Division.

The property lies within the Coast Crystalline Belt and is underlain peripherally by coarse grained quartz monzonite of probable early Tertiary age which hosts fracture-controlled chalcopyrite-molybdenite mineralization in the northern portion of the property, north of Bridge River. Post-mineral quartz monzonite breccia pipes in the vicinity of the showings, and a quartz monzonite porphyry stock south of Bridge River, may be closely related in age to the mineralized quartz monzonite. Younger volcanic dykes, flows and plugs of basalt to rhyodacite composition, ranging in age from Miocene to Recent, are widespread on the property. In particular, Miocene flows partially cap the mineralized quartz monzonite; however, the presence of a preserved supergene copper enrichment blanket beneath these basalt flows is considered unlikely.

Significant mineralization on the property is restricted to the "Main Showing", where minor chalcopyrite, and copper oxides occur on fractures and in narrow quartz veinlets over an area of 1700 m by 500 m along a prominent escarpment north of Bridge River. Mineralized fractures and quartz veins range up to three per metre. Fracture-controlled chlorite, epidote, K-feldspar and sericite occur as alteration products.

Assay samples of visually better copper mineralized material from previous trenches over the Main Showing ranged from 0.08% Cu to 0.19% Cu with insignificant associated Mo, Pb, Zn, Ag and Au. A sample of visually best molybdenite mineralization from one of four previous drill holes in the Main Showing returned 0.05% MoS_2 with 0.13% Cu, again with negligible associated Pb, Zn, Ag and Au. Although bedrock on the property is deeply oxidized in places, surface limonite textures as well as the low pyrite content of the system both argue for minimal supergene copper transport.

Grid soil sampling over the Main Showing outlined a broad copper geochemical anomaly with a peak value of 1000 ppm Cu. The anomaly coincides with mapped surface mineralization and does not indicate any unexposed extension of the Main Showing.

A magnetometer survey conducted on an 8.5 km grid over the main area of interest produced uniformly flat results except for an intense magnetic high associated with a small basalt core located west of the Main Showing.

A 7.4 km induced polarization survey over the main area of interest indicated only weakly anomalous frequency effects which may reflect intrinsic response of the quartz monzonite rather than trace amounts of sulphides. Due to the thickness of the basalts, the survey was unable to test induced polarization response beneath the basalt cap.

Total cost of the program was $32,000.00, of which $28,400.00 has been applied as assessment towards the claims.

INTRODUCTION

General Statement

This report presents results of 1980 exploration on the Bridge River property, optioned by AMAX from Esperanza Explorations Ltd. in March 1980, as a Cu-Mo prophyry target.

Work consisted of detailed geological mapping (1:5,000 scale) soil and rock sampling, assay sampling of previous trenches and an induced polarization survey, conducted during the period July 25 to August 23, 1980. A metric contoured 1:5,000 orthophoto was used as a base map. Geological mapping and geochemical sampling was conducted on a flagged grid by two geologists (S. Enns and S. Gentleman) and an assistant (G. Skok). Geophysics was conducted by Phoenix Geophysics Ltd. of Vancouver, and was monitored by a staff geophysicist (L. LeBel) of AMAX.

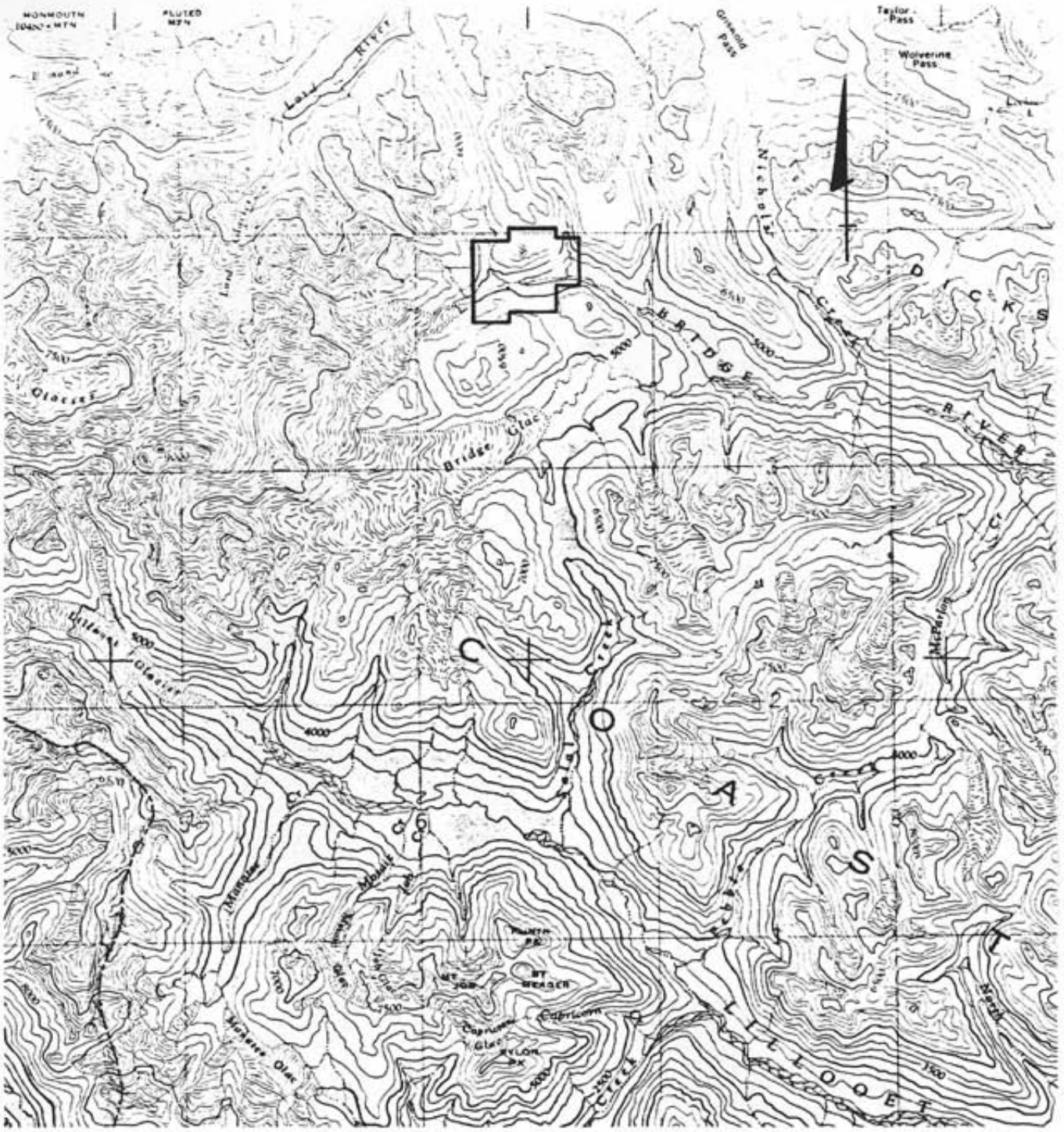
Location and Topography

The property is situated on the east flank of the south Coast Mountains on the north headwater of Bridge River (Figure 1) approximately 95 km northwest of Whistler and 180 km north-northwest of Vancouver, British Columbia. The main area of interest lies along a south-facing escarpment 1 km north of Bridge River.

Elevations range from 1,300 m to 2,000 m on the property, and the tree line is at 1,650 m. Most of the bush below tree line is relatively open pine and spruce except for local avalanche chutes of dense alder growth. Two south-flowing tributaries of Bridge River form deeply incised canyons which are hazardous in places.

Logistics

Access to the property is by helicopter, available from Vancouver, Whistler or Pemberton.



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION — BRITISH COLUMBIA

LOCATION MAP

SCALE 5 0 5 KILOMETRES
3 0 3 MILES

1:250,000

N.T.S. Ref. 92 J 13, 14

FIG. 1

The nearest and most direct road link (30 km) lies to the south through Salal Creek. Here existing logging roads on the Lillooet River extend as far up as Pebble Creek. Several logged-off clearings in the Pebble Creek - Meager Creek region serve as staging areas for slinging heavy field gear into the property.

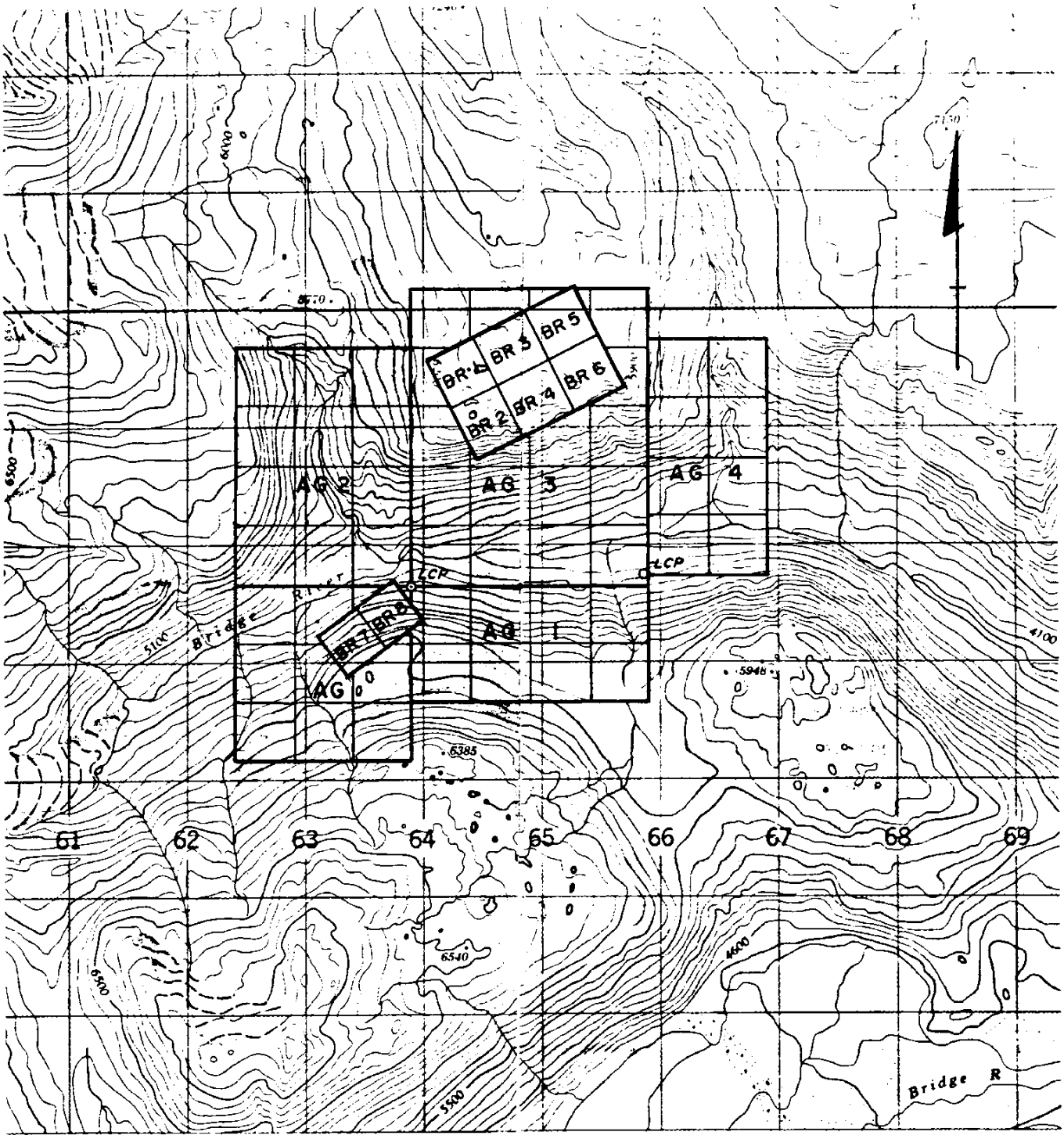
A plywood cabin on the property was used by AMAX as a base for exploration north of the Bridge River. Helicopter transport south of Bridge River was provided by Okanagan Helicopters from Whistler. Single sideband radio communications was established for weekly grocery trips and as an emergency precaution.

Claims Data

Claims location is shown on Figure 2 and pertinent claims data are tabulated on Table I.

SCOPE OF PREVIOUS WORK

1961	Discovered and staked by Phelps Dodge. They conducted hand-trenching and sampling. Samples ranged from 15 m of 0.15% Cu to 7.6 m of 0.57% Cu. No molybdenum or precious metals were run.
1969	Restaked by Canex Placer.
1970	Canex conducted geological mapping (1"=200'), soil sampling and two line-miles of IP survey. Mineralized zone on cliff face 100 to 200' wide by 3,000' long defined. IP survey concluded that mineralization was present beneath volcanic cap.
1971	Canex drilled four holes totalling 2,658 feet. The bottom of DDH 1 ran 9 m of 0.134% Cu. No molybdenum was analyzed.
1979	Restaked by Specific Natural Resources (now Esperanza) and optioned to AMAX.



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION — BRITISH COLUMBIA

CLAIM MAP

SCALE 1000 500 0 1000 METRES

3000 0 3000 FEET

1:50,000

N.T.S. Ref. 92 J 13, 14

FIG. 2

TABLE I - CLAIMS DATA

Claim (Units)	Record No.	Claim Type	Location Date	Recording Date	Expiry * Date
BR 1 (1)	755	2 Post	Feb.21/79	Feb.27/79	Feb.27/86
BR 2 (1)	756	2 Post	Feb.21/79	Feb.27/79	Feb.27/86
BR 3 (1)	757	2 Post	Feb.21/79	Feb.27/79	Feb.27/86
BR 4 (1)	758	2 Post	Feb.21/79	Feb.27/79	Feb.27/86
BR 5 (1)	759	2 Post	Feb.21/79	Feb.27/79	Feb.27/86
BR 6 (1)	760	2 Post	Feb.21/79	Feb.27/79	Feb.27/86
BR 7 (1)	855	2 Post	July19/79	July24/79	July24/82
BR 8 (1)	856	2 Post	July19/79	July24/79	July24/82
AG (9)	955	MGS	Sept.2/79	Sept.19/79	Sept.19/82
AG 1 (8)	1067	MGS	Nov.19/79	Nov.28/79	Nov.28/81
AG 2 (12)	1068	MGS	Nov.19/79	Nov.28/79	Nov.28/81
AG 3 (20)	1069	MGS	Nov.19/79	Nov.28/79	Nov.28/85
AG 4 (8)	1070	MGS	Nov.20/79	Nov.28/79	Nov.28/85
Total = (65)					

Claims have been grouped as follows:

Group No. 1: BR 7, BR 8, AG, AG 1, AG 2

Group No. 2: BR 1, BR 2, BR 3, BR 4, BR 5, BR 6, AG 3, AG 4

* Pending approval of application of assessment work.

REGIONAL GEOLOGY

The property lies within the 55 m.y. Lord Pluton which forms the eastern part of the Coast Plutonic Complex, whose eastern boundary is 20 km to the northeast. The younger (8 m.y.) Salal Creek Pluton lies approximately 10 km southeast.

The properties lies near the northern margin of the Pliocene to Recent Garibaldi volcanic belt of basalt to rhyodacite flows and pyroclastics.

PROPERTY GEOLOGY

General Statement

Field mapping was conducted using a 1:5,000 contoured orthophoto for ground control. Bedrock exposure is good along the incised stream beds and steep slopes but poor on the upper plateau, north of the camp.

Previous trenches were examined, and mapped in detail. Existing drill core stored on the property was also examined.

Figure 3 shows the property geology on a scale of 1:5,000. Geology of the trenches in a scale of 1:100 is shown in Figures 3a to 3f.

Rock Units

Thirteen mappable units are described in order of apparent decreasing age.

Plutonic Rocks

Unit 1 - Medium to coarse grained biotite granodiorite is found in the southwest corner of the property. It is strongly foliated in the west where it grades into quartz diorite, gabbro and hornblendite. To the east, granodiorite grades into quartz monzonite; the contact as shown on Figure 3 is arbitrary. According to G.S.C. Map, plutonic rocks in this vicinity are part of the Lord Pluton, dated at 55 m.y.

Unit 2 - Quartz monzonite, the dominant lithology, is best exposed along a steep south-facing escarpment. Leucocratic, medium to coarse grained, biotite quartz monzonite contains 3 to 6% biotite, 50 to 60% euhedral plagioclase, 20 to 25% subhedral pink K-feldspar, 20% anhedral smokey quartz, and up to 2% accessory sphene. This unit is the most important host for copper mineralization.

Although mapped as Miocene in age on the G.S.C. Map it is this writer's opinion that quartz monzonite probably forms part of the older Lord Pluton.

Unit 2a - A pink quartz monzonite considered to be a minor variant of Unit 2 was mapped at several localities. It is generally subporphyritic, displays distinctively abundant pink K-feldspar phenocrysts and has gradational contacts to Unit 2. It is variable in composition, locally attaining an alkali granite composition. Pegmatitic segregations are common.

Unit 2b - This is a coarsely porphyritic quartz monzonite porphyry found mainly south of Bridge River. Its age relationship to Units 2 and 2a is unknown. At another locality 700 metres north of the AG 3 claim, Unit 2b exhibits a dyke-like form suggesting intrusion into Unit 2, though no contact is visible. This unit is characterized by large euhedral quartz crystals (15 mm), euhedral plagioclase crystals (5 mm), and rare K-feldspar crystals (15 mm) in a fine grained groundmass. A few miarolitic cavities were noted suggesting high level emplacement.

Unit 3 - Aplite dykes and pods occur as small bodies over most of the property. Most are too small and numerous to be shown on the map and they are believed to represent late crystallization injections closely related to Unit 2. In drill core, aplite and pegmatite segregations, graphic pegmatite intergrowths, as well as injections into quartz monzonite were observed.

Breccias

It was previously thought that the cliff face was underlain by a large breccia zone as indicated by aerial observations of the jointing pattern during a reconnaissance visit in late 1979. Field mapping indicates that at least six individual small breccia bodies are present; the largest measures 100 metres across. The breccias have subangular to subrounded clasts of unaltered quartz monzonite in a variably altered matrix of comminuted quartz monzonite. In places the body grade into a crackle breccia and finally into massive rock. The bodies north of DDH 4 appears to be weakly hydrothermal at surface, with quartz-chlorite lined vugs. At depths of between 137 m and 190 m in DDH 4 drill core alternates between weak crackle breccia and definite breccia, suggesting that the drill hole grazed the edge of the body. The body at DDH 2 appears to be small, and has a pipe-like shape.

Older Dykes

Unit 4 - Medium grained grey gabbro dykes are present at two localities, at East Tributary and 200 metres northwest of camp.

Unit 5 - Grey and greenish grey andesite and feldspar quartz porphyry dykes up to 5 m wide are present throughout the property. Most of these dykes are northerly trending with subvertical dips.

Unit 6 - Pink and grey feldspar porphyry dykes up to 100 metres wide and with steeply dipping, northerly attitudes are restricted mainly to the western portion of the property. Outcrops are highly fractured and sporadic patches of limonite stain zones are present. Extensive shearing of the adjacent granodiorite country rock appears to have accompanied their intrusion.

Younger Dykes

Unit 7 - Dykes of latite, rhyodacite, felsite and fine grained feldspar porphyry up to 20 m wide dykes are abundant from the West Tributary to East Gully. Feldspar flow structure is visible locally. This dyke cuts an older Unit 5 dyke at one locality and the unit may be related to the Pliocene to Recent Garabaldi Group.

Unit 8 - Although lithologically similar to Unit 7, this composite dyke contains in addition, cream coloured quartz latite, red to maroon, banded dacite, a 0.1 to 0.5 m wide band of glassy black obsidian and a core pebble dyke. It has been traced over a strike distance of 850 m from the upper cliff face, west-northwest to the north side of a volcanic neck which forms a prominent landmark near camp. Pebbles are generally well rounded to subangular and consist of 1 cm to 5 cm quartz monzonite, fine grained andesite, grey latite, maroon rhyodacite and rare quartz latite. Strong flow structure is present and the glassy black obsidian forms a diagnostic marker in tracing the dyke across outcrop-poor terrain. The dyke is estimated to be 30 to 40 metres wide and dips 60° south at the cliff face.

Unit 9 - Abundant, massive black and brown fine grained basalt dykes cut across Units 7 and 8. They are less than 1 m to greater than 30 m wide and generally subvertical. Adjacent country rock is commonly brecciated for a few metres suggesting forceful intrusion. These dykes are considered to be related to the youngest episode of basaltic volcanism although they have not been observed to cut the older basalt flows.

Volcanic Cover

Unit 10 - An older sequence of basalt flows mapped by the G.S.C. as Miocene or older, unconformably overlies mineralized quartz monzonite (Unit 2) and as such poses an

obstacle to exploration. The flows are gently northwest dipping at approximately 10^{o} and form the plateau upland north and east of camp. Interbedded with the basalt flows are basalt agglomerate and lahar beds. DDH 3 penetrated approximately 80 m of Unit 10 but was abandoned due to difficulty in getting through the unconsolidated debris at the base of the flow sequence.

Unit 10A - A basalt neck west of the camp forms a narrow 110 metre high conical hill, about 250 metres in diameter with a small alpine lake occupying the vent. The olivine basalt flows display columnar jointing, and flows have been pushed out of the neck at steep angles in places. It probably is of Pleistocene age and younger than the flows of Unit 10.

MINERALIZATION

Mineralization on the property consists of the Main Showing, the upper Bridge River Showing and four other minor occurrences at scattered localities.

Main Showing

Copper mineralization is exposed along south facing cliffs immediately north of the Bridge River over an area of 1,700 by 500 m as shown in Figure 3. Within this area, a core area approximately 1,450 m long by 150 to 300 m wide defines better mineralization consisting of one to two (and locally more than three) copper-bearing fractures per metre.

Mineralization is predominantly fracture controlled and weak. Listed in order of abundance, fractures contain chalcopyrite, cupriferous limonite, less abundant chrysocolla and malachite, minor azurite, tenorite, bornite, chalcocite and magnetite, and trace molybdenite. Pyrite appears to be rare. Fractures commonly contain coarse sericite and enough quartz to produce distinct 1 to 2 mm quartz veins. The most persistent fracture and vein orientation is 170 to 190°/50 to 70°E, paralleling a dominant joint set. Two east-trending highly mineralized 0.2 to 0.3 m wide chalcopyrite-quartz veins are present, one at the collar of DDH-2, the other north of DDH-4. A similar 1 m wide mineralized quartz vein is situated in East Gully. It is spectacularly mineralized by chalcopyrite and molybdenite and is believed to be the source of mineralized molybdenite-bearing float found by Esperanza's prospector. A chip sample (61901, Appendix I) across this 1 m vein ran 1.08% Cu, 0.050% MoS_2 and 0.46 oz/t Ag.

On visual examination, mineralization in the vicinity of West Gully is judged overall to represent better grades over substantial widths. Previously blasted trenches in this region were remapped and carefully chip sampled in three metre intervals. These data are shown in Figures 3a to 3f in Appendix I with trench locations shown on Figure 3.

Results of the trench sampling as calculated arithmetic average values are given by the following table:

Trench	Cu %	True Width
2W	0.14	17 m
2E	0.19	6
3	0.10	12
4	0.12	7
5	0.08	9
6	0.03	3
7	0.09	2

The molybdenite, lead, zinc, silver and gold assays are uniformly low.

A sample of split core representing the strongest molybdenite mineralization was taken from DDH-1 between 470 and 480 feet (143.5 m and 146.4 m), this sample (61921) ran 0.13% Cu, 0.050% MoS_2 and was low in lead, zinc, silver and gold. Previous sampling by Canex reported the interval between 143.5 and 152.5 of this hole ran 0.134% Cu. No MoS_2 was analysed.

Close inspection of the common supergene mineralization found in the trenches of the upper West Gully indicates that oxidation of chalcopyrite occurred in the absence of pyrite within a weakly neutralizing host, suggesting that there has been little if any loss or enrichment of copper by supergene solution transport. The most abundant supergene mineral consists of very dark brown to black indigenous, coarse, cellular, glassy and compact limonite and chalcopyrite pitch with minor fringing limonite. In all cases an HCl-Cu spot test gave a positive reaction with the limonite. Often residual chalcopyrite is still visible. Chrysocolla, malachite and black tenorite are present but less abundant. In DDH-1 limonite and malachite can be found to a depth of 300 feet (91.5 m) and in DDH-4 it was noted at a depth of 600 feet (183 m). By calculation, the arithmetic average surface grade from all the trenches is 0.12% Cu which compares closely to

the value obtained from the fresh sample 61921 taken at a depth well below oxidation in DDH-1. Thus, if the trenches are representative of supergene mineralization, it appears that little copper was added or depleted on surface and that 0.1% is a good approximation of the copper content of the mineralized zone.

Minor mineralization in the form of thin malachite seams is present in the breccia at DDH-2. Inspection indicates that mineralization occurs in fragments and is truncated by matrix suggesting a pre-breccia age for the mineralizaiton. However, the breccia body located north of DDH-4 is more "hydrothermal looking" than the other bodies. Minor amounts of malachite and chrysocolla accompany chlorite in several drusy quartz cavities suggesting post-breccia mineralization.

Upper Bridge River Showing

This showing is located on BR 7 claim. Granodiorite host rock is strongly sheared and chlorite-epidote altered. Localized fractures and irregular blebs of chalcopyrite and malachite accompany the shearing. Several small and localized pods up to 0.5 m wide of quartz-pink K-feldspar contain minor chalcopyrite and malachite; they appear to be the source for widely scattered mineralized float.

This mineralization is deemed to be of no economic significance on account of its erratic distribution and low tenor.

Other Occurrences

Two minor occurrences of molybdenite are present in quartz shear veins found along East Tributary near the north end of AG 4 claim, and along West Tributary in a 50 m wide graphite-bearing shear zone.

A 1 to 2 cm wide galena-ankerite quartz vein occurs in quartz monzonite along West Tributary at the north end of AG 2 claim.

ALTERATION

Alteration at Bridge River is best described as weak propylitic which is largely controlled by fractures and may be in part deuteric in origin.

Chlorite and epidote along fractures are widespread and common within the Main Showing. Coarse grained sericite commonly accompanies chalcopyrite on fractures. Locally pink K-feldspar envelopes are associated with chalcopyrite-quartz veins.

Locally, in the vicinity of the small breccia bodies weak chlorite and epidote are present as pervasive alteration. Within some breccias (e.g. at DDH-2) strong clay alteration is present in the matrix, although fragments are largely unaltered. The breccia body north of DDH-4 displays minor silicification accompanied by chlorite.

A zone of pervasive strong clay and chlorite altered quartz monzonite has been identified on upper West Tributary and hosts a minor galena occurrence. Source and cause of this alteration zone is not known.

GEOCHEMICAL SURVEY

General Statement

Approximately 275 soil, stream sediment and rock samples were collected from the Bridge River property.

Soil samples were taken along grid lines spaced approximately 300 m apart with collection points at 50 m intervals. Samples were collected from the iron-rich B horizon of alpine tundra soils at depths ranging from 10 to 15 cm.

Stream sediment samples were collected from numerous small streams to determine whether or not anomalous metal content is present.

Rock chip samples were taken to determine anomalous metal content of the quartz monzonite and breccia bodies and to determine whether or not any metal enrichment trends are present within the copper mineralized zone.

All samples were submitted to Rossbacher Laboratory, Burnaby, B.C. Geochemical analysis was conducted by atomic absorption for Mo,Cu,Ag, Pb and Zn. The rocks were additionally analyzed for Au. Analytical methods are given in Appendix II.

Results

Analytical results are listed in Appendix II. Anomalous areas are outlined on Figure 4. The following anomalous thresholds used for both stream sediment and soil samples were determined by inspection:

Metal	Threshold (ppm)
Mo	+ 20
Cu	+100
Ag	+ 2
Pb	+ 50
Zn	+300

A broad, moderately intense soil copper anomaly with a peak value of 1000 ppm Cu is situated over the Main Showing. It is cut off to the east by the volcanic capping. No molybdenum or base metal anomaly is associated with it.

No apparent trends in Mo, Cu, Ag, Pb, Zn and Au are evident from rock chip samples collected over Main Showing. The four breccias sampled show no anomalous metal content.

A sample of sheared and altered granodiorite on the BR 8 claim contains 304 ppm Cu. One of three samples taken from two nearby hand-dug trenches on the BR 7 claim contains 370 ppm Cu. Small amounts of visible chalcopyrite and malachite were noted in these weakly anomalous rock samples.

No stream sediment anomalies are indicated.

GEOPHYSICAL SURVEYS

I.P. PHOENIX IPV-1 RECEIVER, IPT-1 TRANS
MAG. GEOMETRICS G816

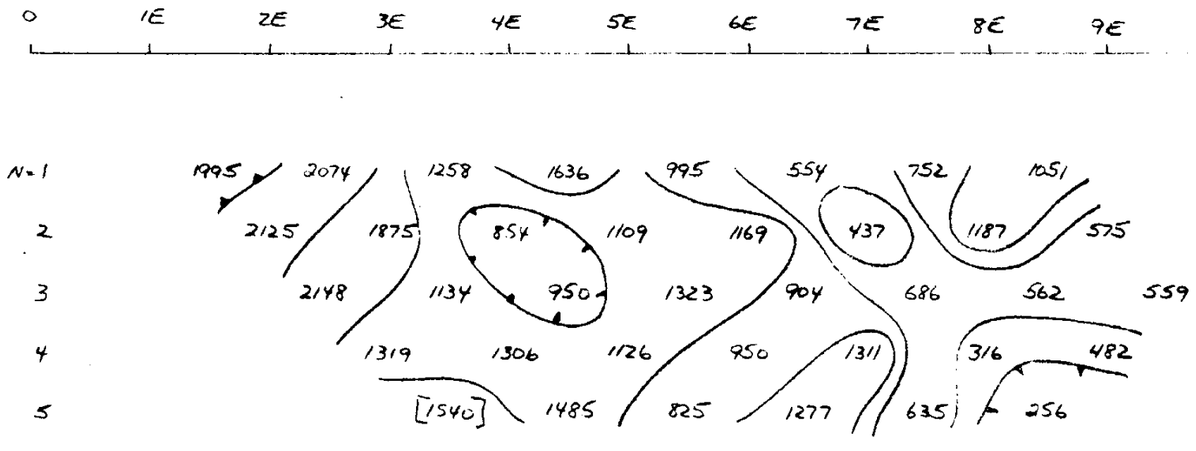
General Statement

Induced polarization/resistivity and ground magnetometer surveys were conducted between August 18-22, 1980. The objectives of the induced polarization/resistivity survey were to confirm and trace an induced polarization anomaly indicated by a previous survey to extend beneath flows of Tertiary volcanics. The magnetometer survey was conducted to help map lithologies in areas of poor outcrop exposure.

Results

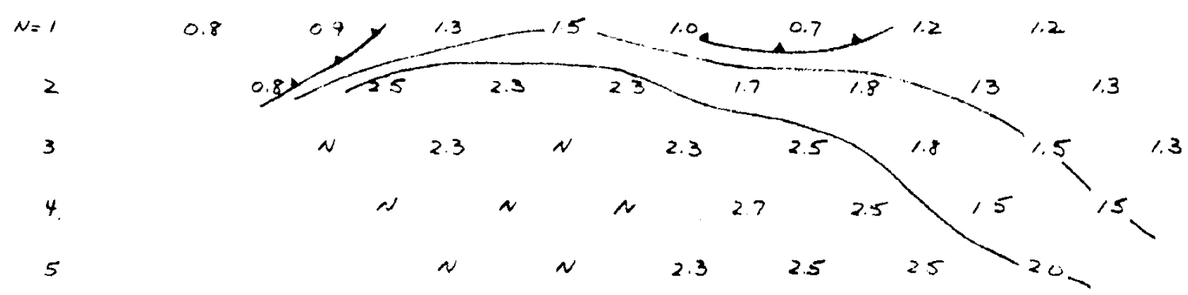
The results of the induced polarization/resistivity survey (resistivity in ohm-m and frequency effect in %) are shown in the standard pseudosection format (Figures 6a to 6g). Square brackets and the notation N indicate noisy readings and stations where no reading was possible, respectively. The results of the magnetometer survey are shown in plan contoured at 100 gamma intervals (Figure 5).

The frequency effects recorded by the induced polarization/resistivity survey vary from 0.5% to 3.6%. Values greater than 2% define a weak 200 to 500 metre wide anomaly centred at 4E to 5E on the base line which extends diagonally to the northeast across the property. The northern edge of the anomaly occurs at approximately 4N on Line 8E and 7N on Line 5E, but was not defined on Line 2E because the coverage did not extend far enough to the north. The west side of the anomaly is poorly defined because dry ground conditions and noisy electrodes on Line 0 prevented recording of reliable data. The east side of the anomaly between Lines 8E and 11E is formed by an increase in the thickness of a low frequency effect layer which seems to cover most of the anomaly. The low frequency effects on Line 11E also isolate the greater than 2% values recorded on Line 14E from the main anomaly. A zone of slightly higher than average frequency effects extends between 2E,6N and 5E,5N.



ρ_a (ohm-m)

8804



FE_a (%)

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

— BR AND AG CLAIMS —

LILLOOET MINING DIVISION — BRITISH COLUMBIA

I.P. / RESISTIVITY SURVEY

BASE LINE

SCALE 200 0 200 METRES FEET

500 0 500

1: 5,000

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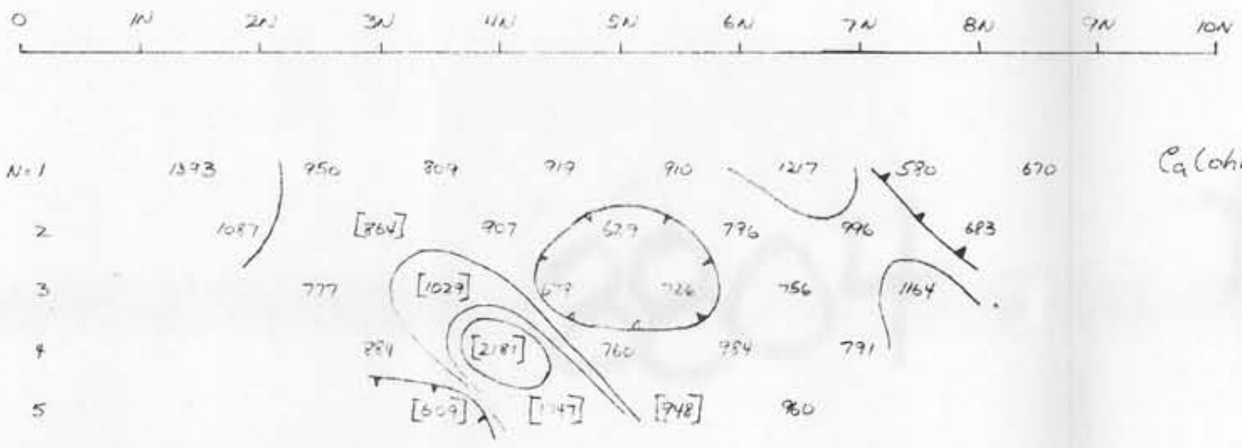
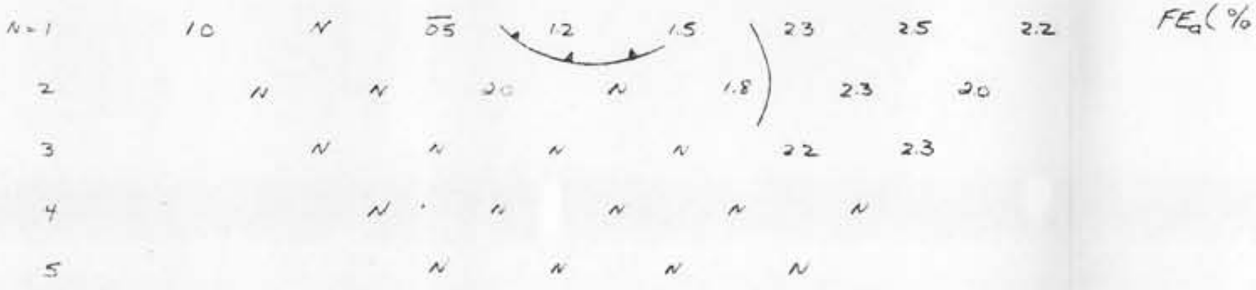
FIG. 6a



C_a (ohm-m)



FE_a (%)

8804

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

— BR AND AG CLAIMS —

LILLOOET MINING DIVISION — BRITISH COLUMBIA

I.P / RESISTIVITY SURVEY

L 0+00E

SCALE 200 0 200 METRES FEET

500 0 500

1: 5,000

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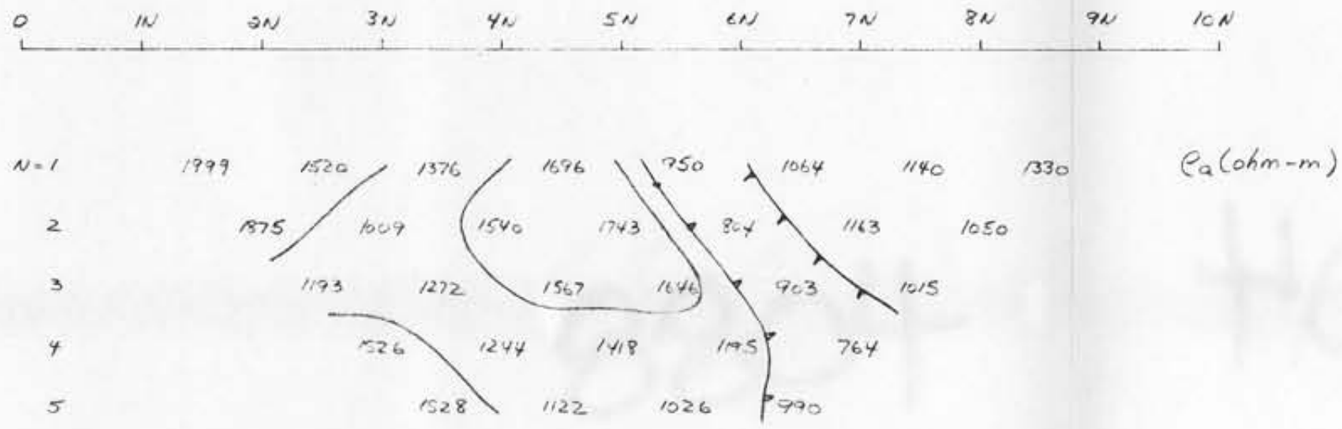
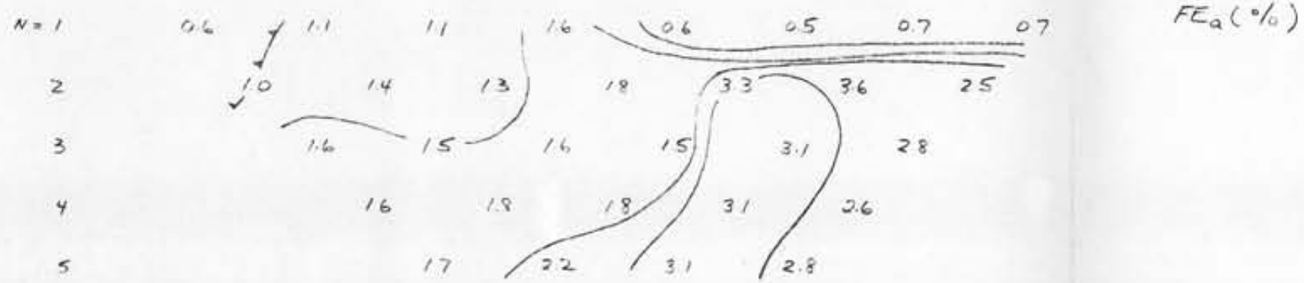
J.L. LeBel Nov 28/80

FIG. 6b



ρ_a (ohm-m)



FE_a (%)

8804

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

— BR AND AG CLAIMS —

LILLOOET MINING DIVISION — BRITISH COLUMBIA

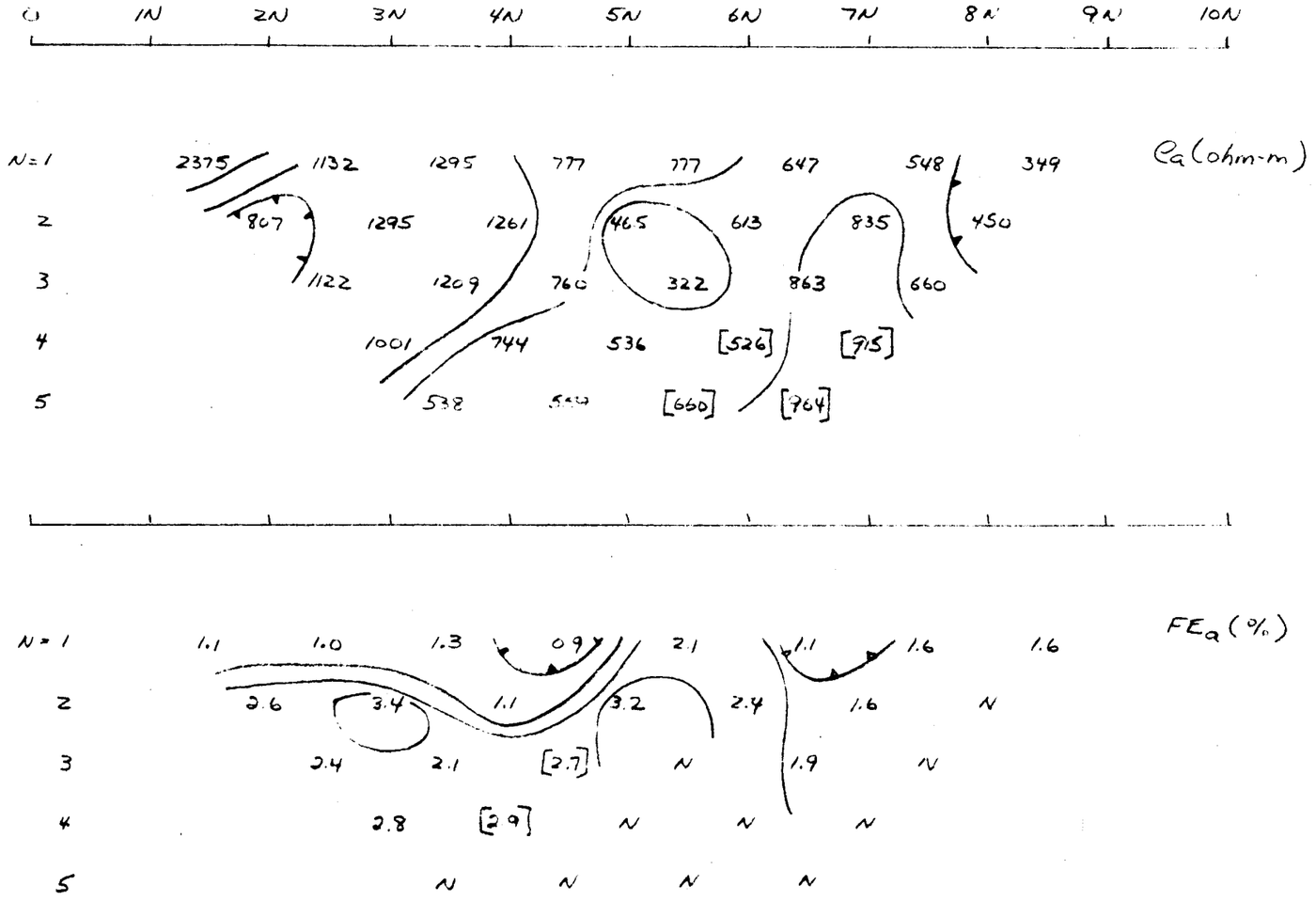
I.P / RESISTIVITY SURVEY

L 2+00E

SCALE 200 0 200 METRES FEET
500 0 500
1: 5,000

Vancouver N.T.S. Ref. 92 J 13, 14

J. L. LeBel Nov 28/80 FIG. 6c



8804

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

—— BR AND AG CLAIMS ——

LILLOOET MINING DIVISION—BRITISH COLUMBIA

I.P. / RESISTIVITY SURVEY

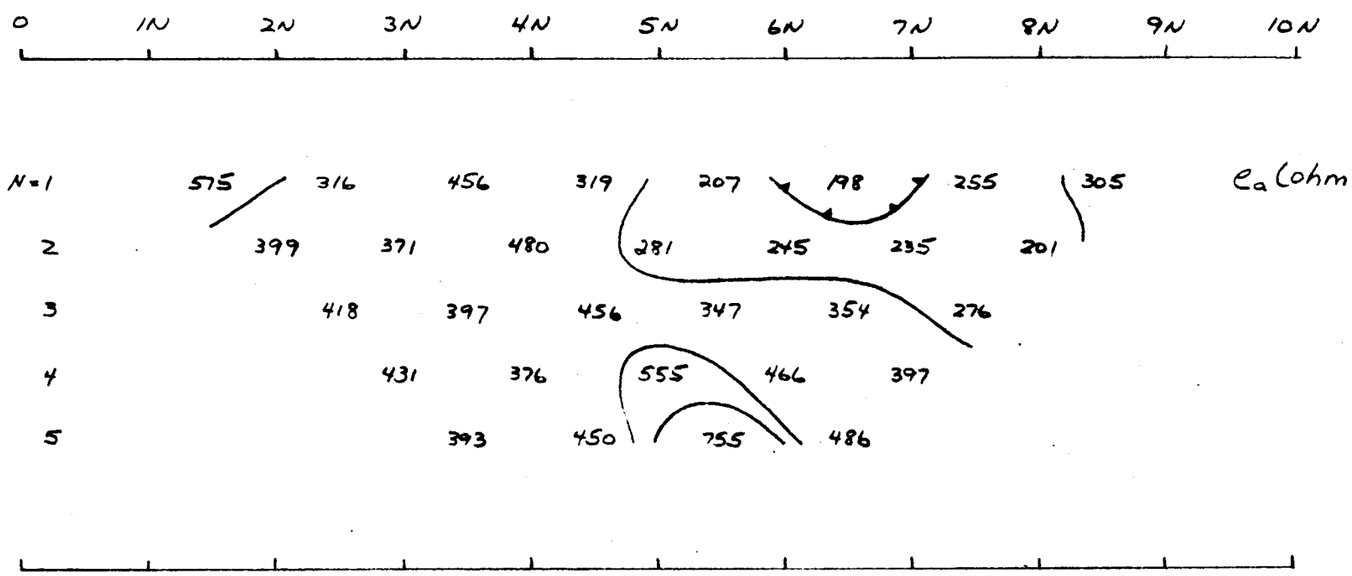
L 5+00E

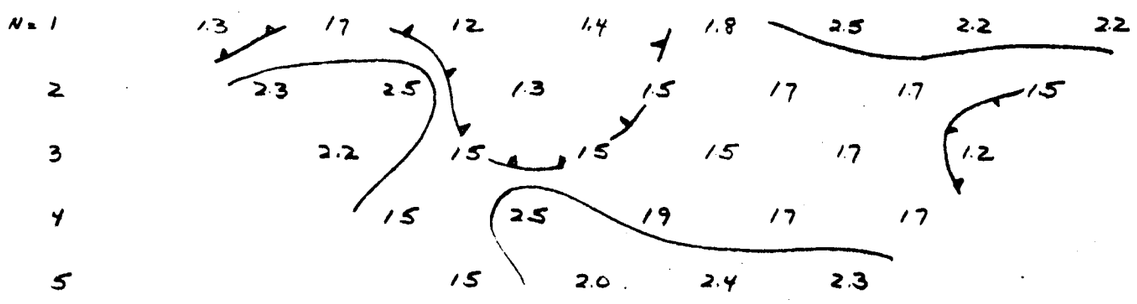
SCALE 200 0 200 METRES
500 0 500 FEET
1: 5,000

Vancouver N.T.S. Ref. 92 J 13, 14

J. A. LeBel Nov 28/80

FIG. 6d





8804

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

—— BR AND AG CLAIMS ——

LILLOOET MINING DIVISION — BRITISH COLUMBIA

I.P / RESISTIVITY SURVEY

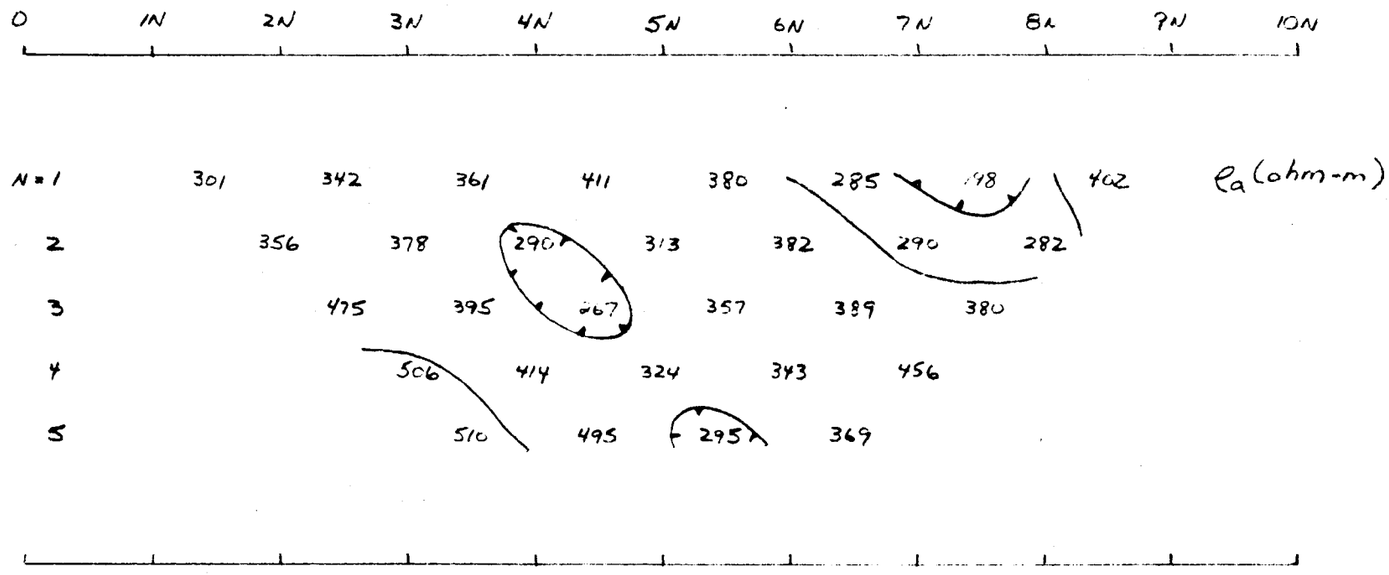
L 8 + 00E

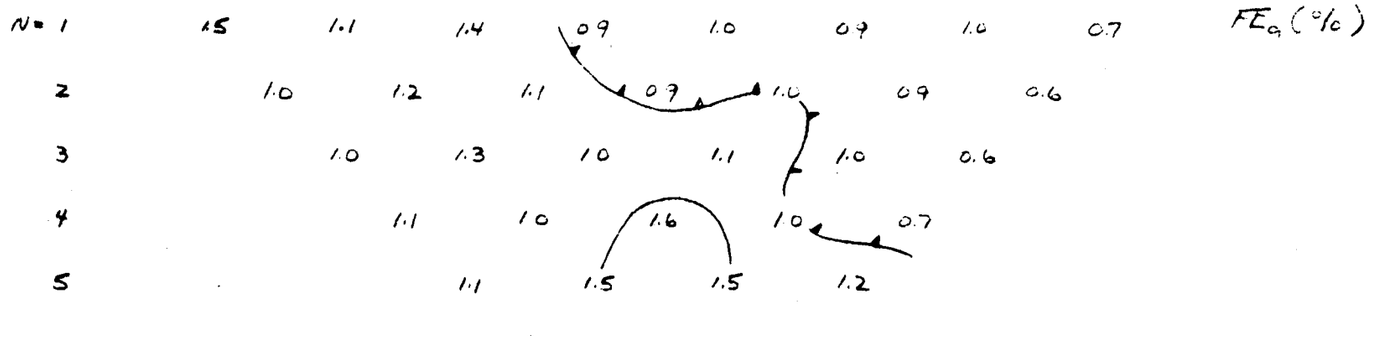
SCALE 200 0 200 METRES
500 0 500 FEET
1: 5,000

Vancouver N.T.S. Ref. 92 J 13, 14

J.L. LeBel Nov 28/80

FIG. 6e





AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

— BR AND AG CLAIMS —

LILLOOET MINING DIVISION — BRITISH COLUMBIA

I.P / RESISTIVITY SURVEY

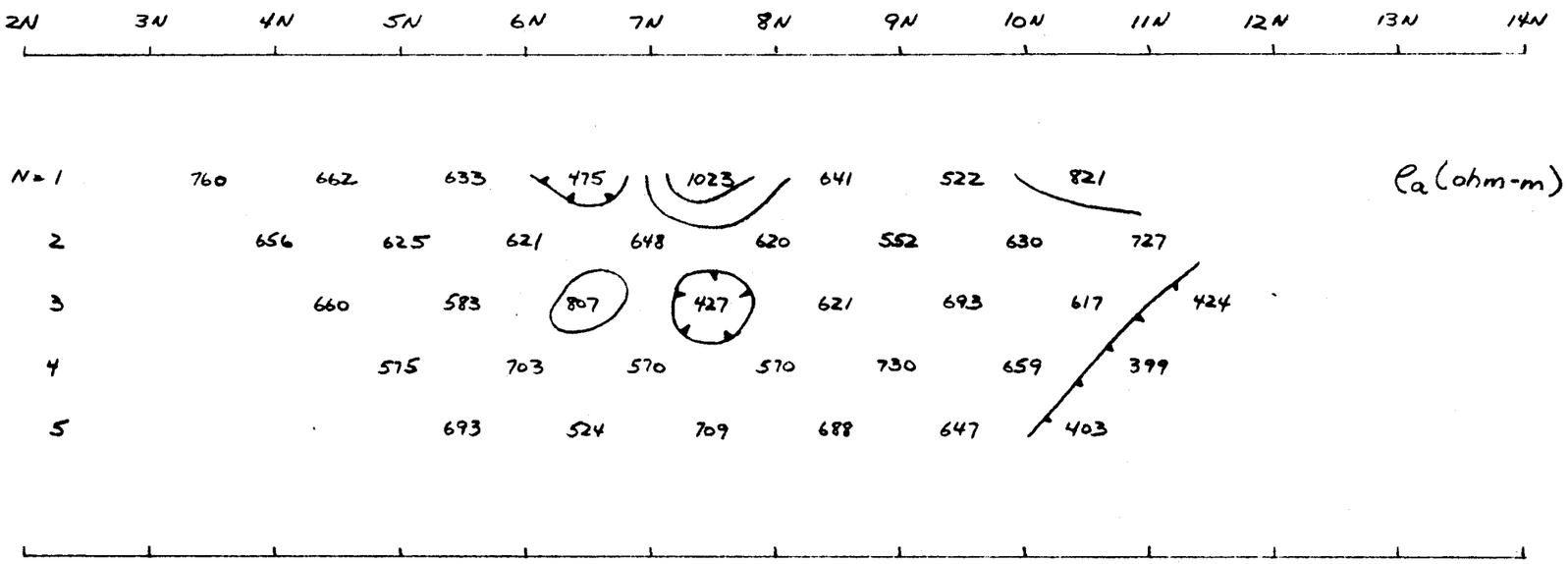
L 11+00E

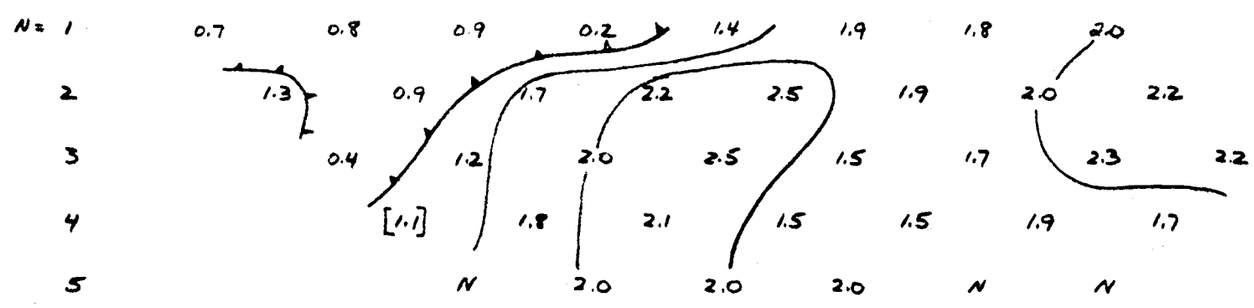
SCALE 200 0 200 METRES FEET
500 0 500
1: 5,000

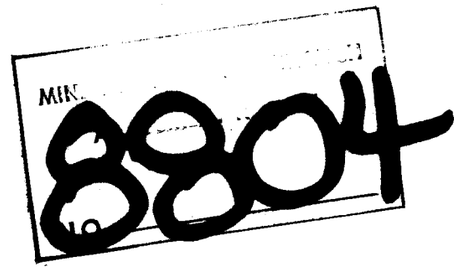
Vancouver N.T.S. Ref. 92 J 13, 14

J.L. LeBel Nov 28/80

FIG. 6f







AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

—— BR AND AG CLAIMS ——

LILLOOET MINING DIVISION—BRITISH COLUMBIA

I.P / RESISTIVITY SURVEY

L 14+00E

SCALE 200 0 200 METRES FEET
500 0 500
1: 5,000

Vancouver N.T.S. Ref. 92 J 13, 14

J.L. LeBel Nov 28/80

FIG. 6g

The main feature of the resistivities is a low, less than 500 ohm-m on Line 11E, 8E and the north end of Line 5E which coincides with the lowest frequency effects recorded on the property. In contrast, the higher resistivities recorded elsewhere on the property generally correlate with the higher frequency effects observed.

The magnetometer survey detected a 5000 gamma anomaly at the southwest corner of the grid. Because of the wide line spacing the shapeand size of the anomaly is not well defined. The anomaly is surrounded by a several hundred metre wide anomaly 200 to 500 gammas above background. The only other features of interest in the otherwise bland results, consist of several isolated anomalies of variable strength at the north end of Line 11E and near 8E on the base line.

Discussion of Results

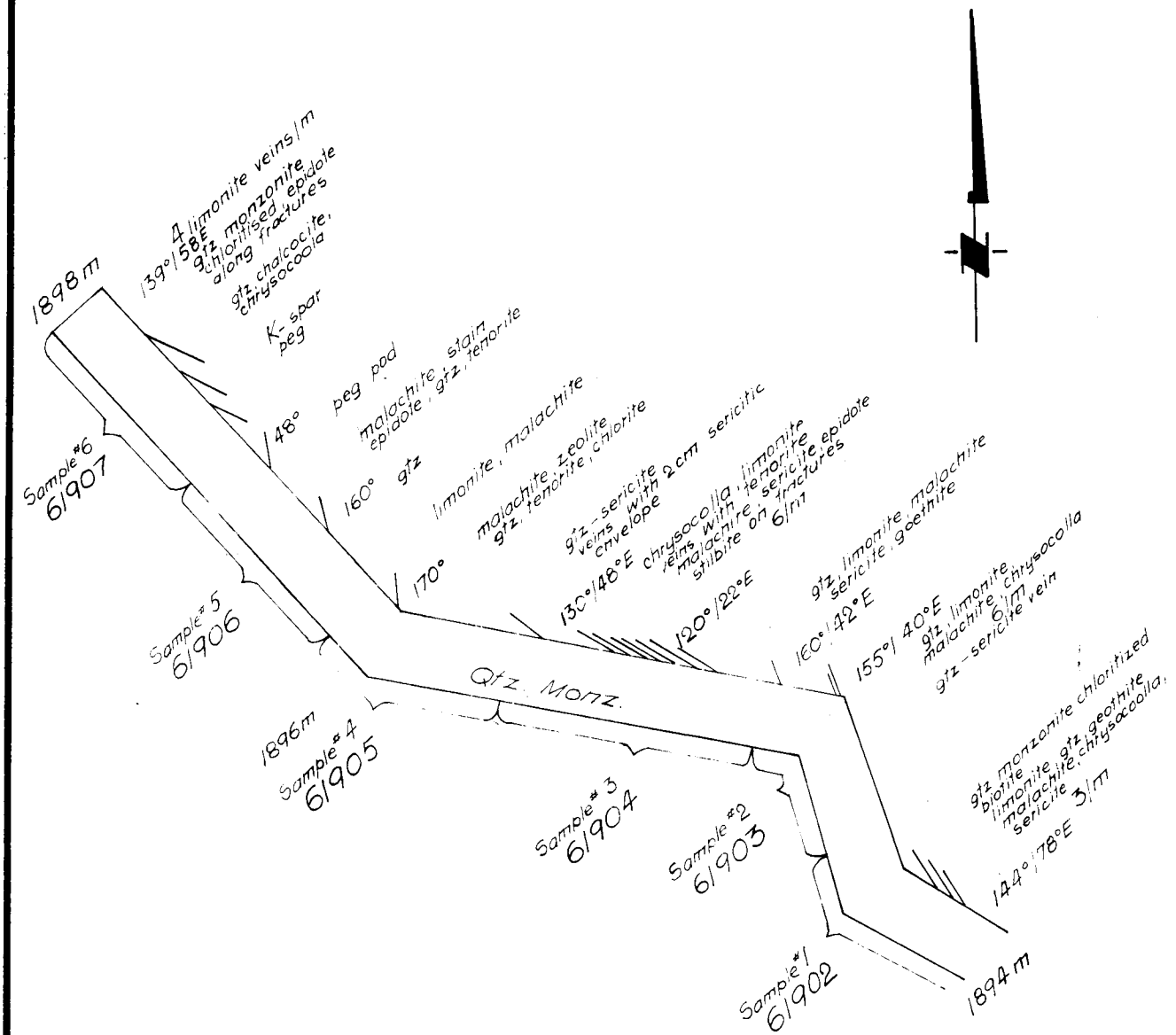
The weakly anomalous frequency effects recorded by the survey occur exclusively over the quartz monzonite intrusion. The anomaly reflects at best only trace amounts of sulphides or more likely is an intrinsic response of the rock. The anomaly is cut-off on the east by a zone of low frequency effect/low resistivity which correlates with flows of Tertiary volcanics. The survey was unable to investigate beneath the flows.

The small intense magnetic anomaly recorded coincides with a small basaltic neck on the property. The broad subtle positive magnetic anomaly which surrounds the neck is probably caused by a weak magnetite alteration. The other spot magnetic highs on the property probably also reflect lavas of basaltic composition. The non-basaltic lavas are not magnetic and cannot be distinguished from the quartz monzonite intrusion on the property.

S.G. Enns J.L. LeBel Nov 28/80

APPENDIX I

GEOLOGY OF TRENCHES, ASSAY LOCATION AND RESULTS



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION — BRITISH COLUMBIA

TRENCH 2W

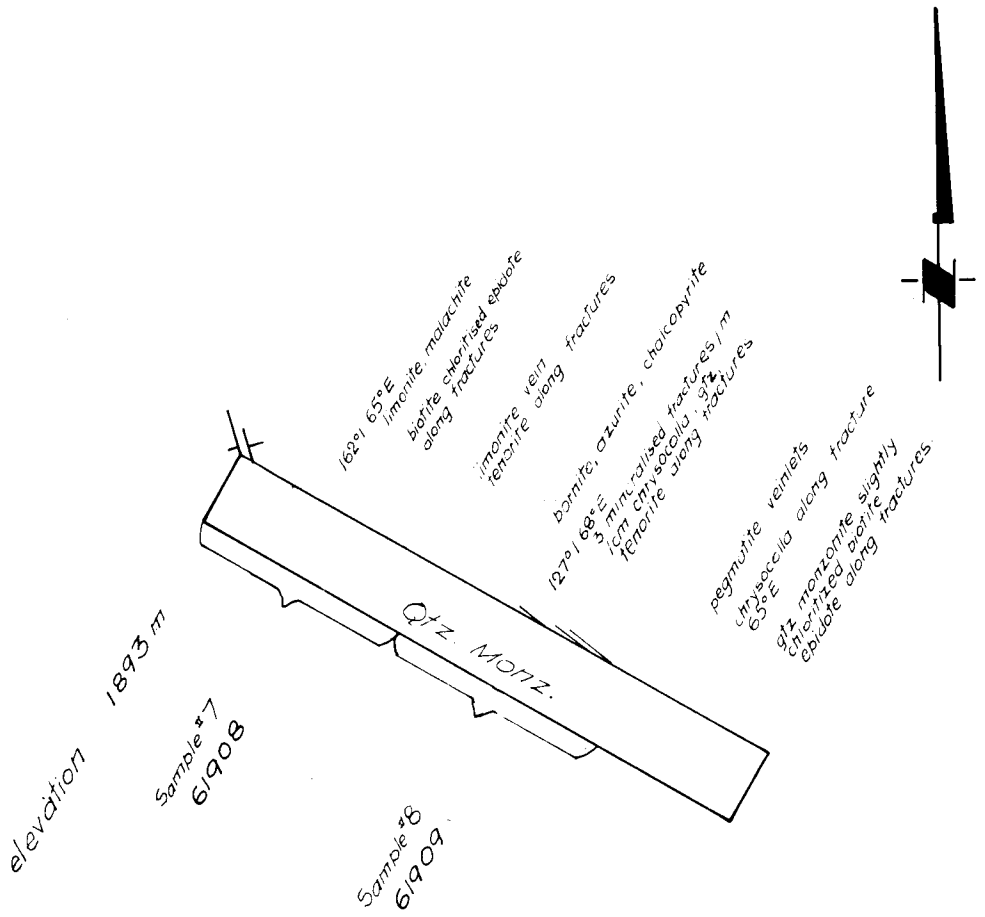
SCALE 4 0 4 METRES
10 0 10 FEET

1 : 100

Vancouver

N. T. S. Ref. 103 P 6

FIG. 3a



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION— BRITISH COLUMBIA

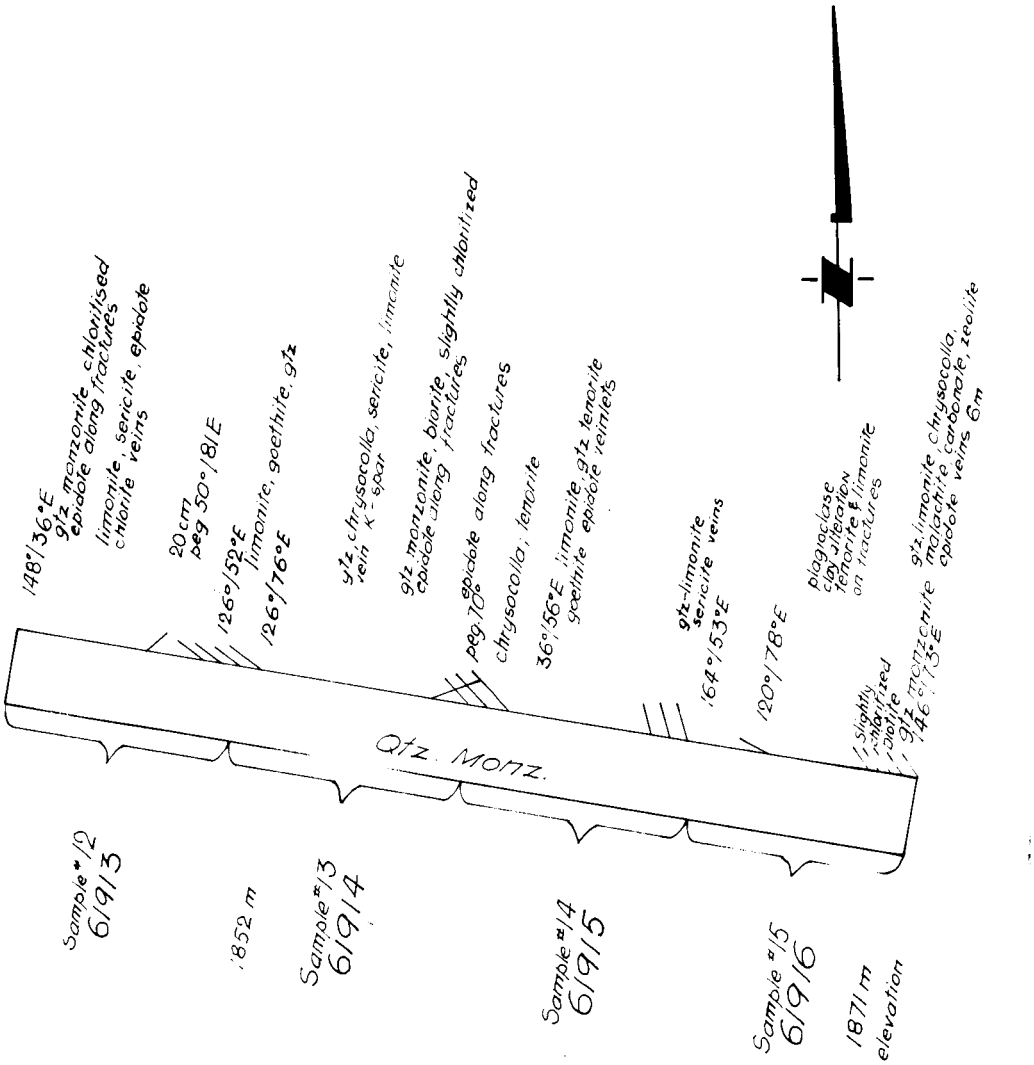
TRENCH 2E

SCALE 4 0 4 METRES
10 0 10 FEET
1 : 100

Vancouver——

N. T. S. Ref. 103 P 6

FIG. 3b



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION — BRITISH COLUMBIA

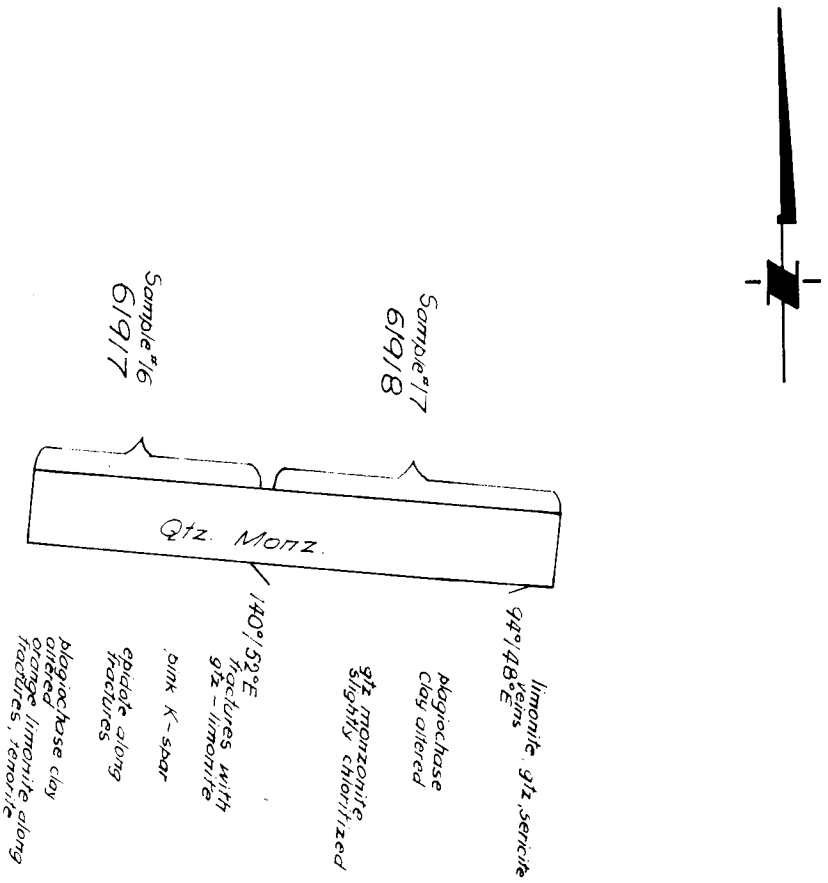
TRENCH 3

SCALE 4 0 4 METRES
10 0 10 FEET
1 : 100

Vancouver

N. T. S. Ref. 103 P 6

FIG. 3c



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION — BRITISH COLUMBIA

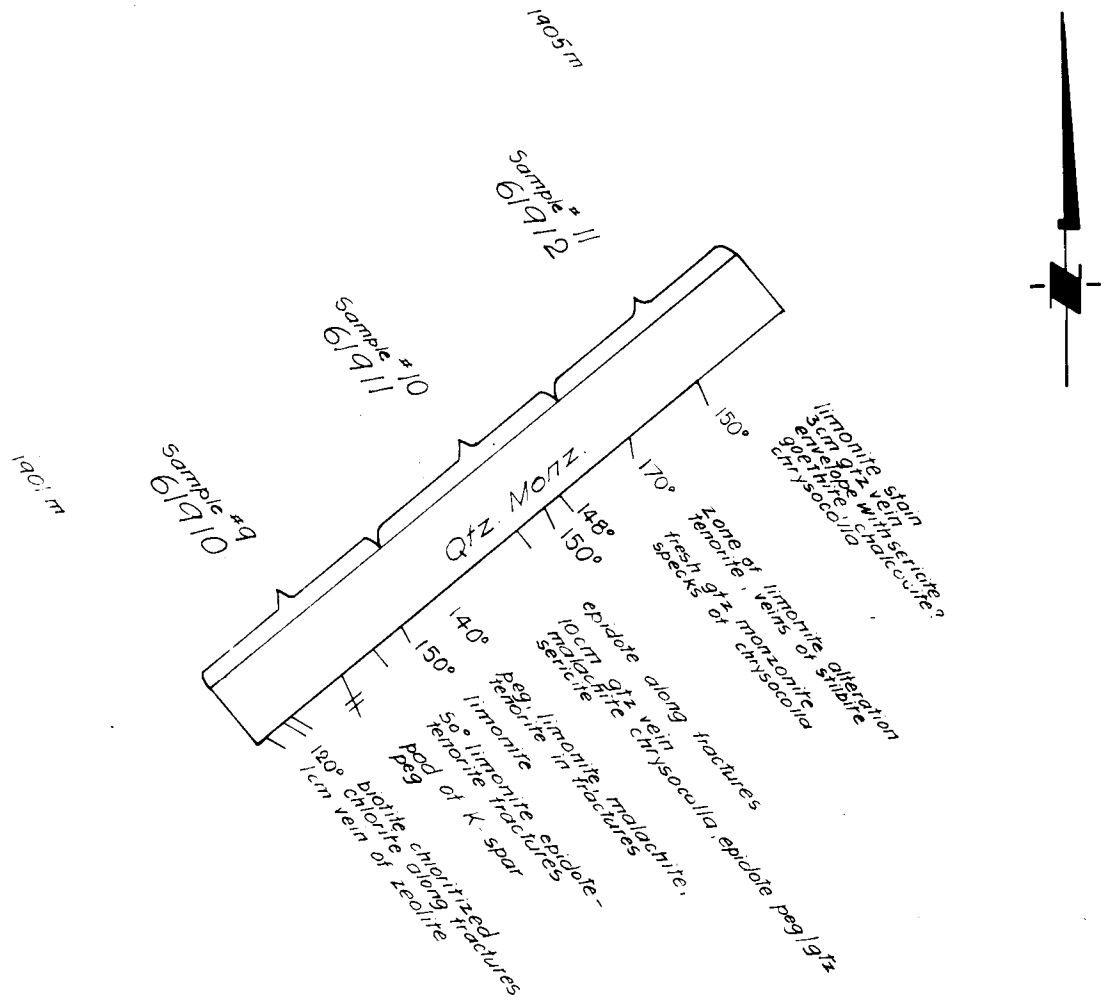
TRENCH 4

SCALE 4 0 4 METRES
10 0 10 FEET
1 : 100

Vancouver

N. T. S. Ref. 103 P 6

FIG. 3d



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION — BRITISH COLUMBIA

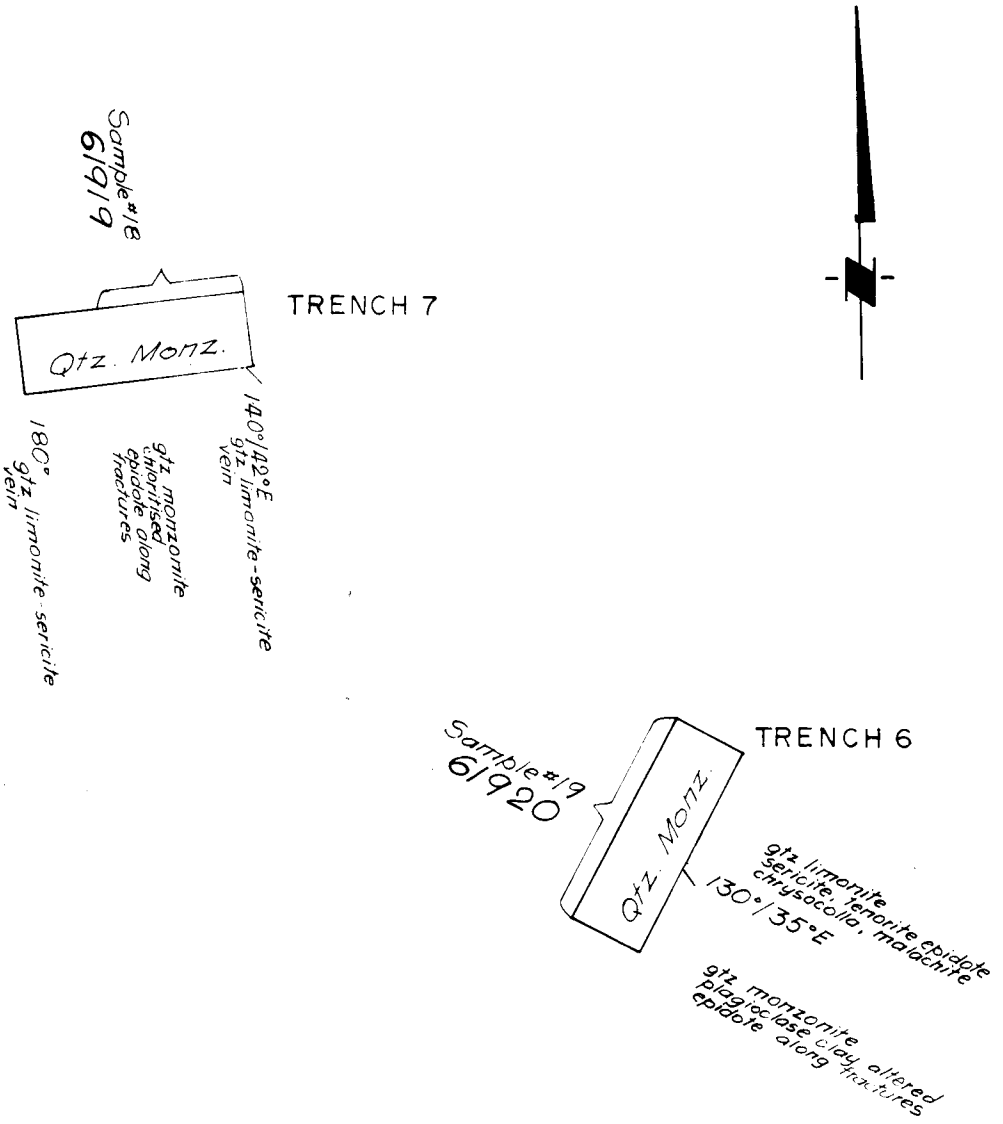
TRENCH 5

SCALE 4 0 4 METRES
10 0 10 FEET
1 : 100

Vancouver

N. T. S. Ref. 103 P 6

FIG. 3e



AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

LILLOOET MINING DIVISION — BRITISH COLUMBIA

TRENCHES 6, 7

SCALE 4 0 4 METRES
10 0 10 FEET
1 : 100

Vancouver

N. T. S. Ref. 103 P 6

FIG. 3f

Rossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE 299-6910
AREA CODE 604

AMAX EXPLORATION INC. RECEIVED SEP 9 1980 VANCOUVER OFFICE

ASSAY WORKSHEET

CLIENT : **AMAX MINERALS EXPLORATION**
601 - 535 THURLOW ST.
VANCOUVER, B.C. V6E 2L6

CERTIFICATE: 80447A
INVOICE NO. :
DATE RECEIVED:
DATE ANALYZED: AUG, 1980

PROJECT : 1061, SENNS

No.	Sample	Loc.	% Cu	% Tot Mo	MoS2	% Pb	% Zn	oz/t Au	oz/t Ag	Remarks	No.
01	61901	E GULLY	1.08	0.100		0.12	0.04	0.002	0.46	1m qtz vein w/ Gy-MoS2	01
02	02		0.15	0.003		0.02	0.02	0.001	0.02		02
03	03		0.17	0.002		0.02	0.02	0.001	0.06		03
04	04	Trench 1	0.11	0.001		0.02	0.02	0.001	0.02		04
05	05		0.05	0.001		0.02	0.02	0.001	0.02		05
06	06		0.15	0.001		0.02	0.02	0.001	0.06		06
07	07		0.23	0.001		0.02	0.02	0.001	0.06		07
08	08	Trench 2E	0.01	0.001		0.02	0.02	0.001	0.02		08
09	09		0.36	0.001		0.02	0.02	0.003	0.12		09
10	61910		0.05	0.001		0.02	0.02	0.001	0.04		10
11	11	Trench 5	0.08	0.001		0.02	0.02	0.001	0.04	Minor OM.	11
12	12		0.08	0.001		0.02	0.02	0.001	0.04	Gy, Lim, Chrys, Mal? Ten.	12
13	13		0.09	0.002		0.02	0.02	0.008	0.04		13
14	14		0.11	0.001		0.02	0.02	0.001	0.04		14
15	15	Trench 3	0.11	0.001		0.02	0.02	0.001	0.04		15
16	16		0.10	0.001		0.02	0.02	0.001	0.04		16
17	17	Trench 4	0.08	0.001		0.02	0.02	0.001	0.04		17
18	18		0.15	0.001		0.02	0.02	0.001	0.04		18
19	19	Trench 7	0.09	0.001		0.02	0.02	0.001	0.04		19
20	20	Trench 6	0.03	0.001		0.02	0.02	0.001	0.02		20
21	61921	DDH 470 to 470 ft	0.13	0.050		0.02	0.02	0.001	0.04	Gy - MoS2 in OM.	21
22											22
23											23
24	*										24
25	Note: Samples 61901 to 61920 are continuous chip samples										25
26	Sample 61921 is split core										26
27	all are assays										27
28											28
29											29
30											30
31											31
32											32
33											33
34											34
35											35
36											36
37											37
38											38
39											39
40											40

APPENDIX II

PROCEDURES FOR COLLECTION AND PROCESSING OF GEOCHEMICAL SAMPLES AND ANALYTICAL RESULTS

Rossbacher Laboratory

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

SEP 2 1980

CERTIFICATE NO. 80447 - 1

INVOICE NO.

DATE ANALYSED AUG, 1980

PROJECT 1061

CERTIFICATE OF ANALYSIS

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

No.	Sample	pH	Mo	Cu	Ag	Zn	Pb	No.
01	BONK81		2	260	0.2	32	16	01
02	2		2	374	0.2	30	8	02
03	3		2	184	0.2	30	2	03
04	4		4	50	0.2	28	4	04
05	5		2	46	0.2	46	4	05
06	6		2	66	0.2	44	10	06
07	7		2	190	0.2	30	8	07
08	8		1	16	0.2	46	2	08
09	9		1	12	0.2	32	4	09
10	BONK S10		1	14	0.2	28	6	10
11	11		2	16	0.2	32	4	11
12	12		1	18	0.2	30	6	12
13	13		2	26	0.2	18	2	13
14	14		1	16	0.2	44	2	14
15	15		1	32	0.2	46	6	15
16	16		1	36	0.2	96	2	16
17	17		1	104	0.4	64	8	17
18	18		1	14	0.2	40	2	18
19	19		2	12	0.2	28	2	19
20	STD A		7	24	0.2	36	18	20
21	BONK S20		1	40	0.2	84	2	21
22	21		1	6	0.2	20	2	22
23	22		1	14	0.2	30	2	23
24	23		1	12	0.2	32	4	24
25	24		1	10	0.2	26	2	25
26	25		1	40	0.2	34	6	26
27	26		1	66	0.2	38	6	27
28	27		1	54	0.2	70	2	28
29	28		2	22	0.2	42	4	29
30	BONK S29		1	12	0.2	24	2	30
31	30		2	14	0.2	24	4	31
32	31		1	16	0.2	24	4	32
33	32		1	14	0.2	28	4	33
34	33		1	16	0.2	30	4	34
35	34		1	16	0.2	32	2	35
36	35		1	14	0.2	28	6	36
37	36		1	20	0.2	30	2	37
38	37		2	22	0.2	30	8	38
39	BONK S38		1	50	0.2	30	2	39
40	STD A		1	22	0.2	38	20	40

* N.R. = Insufficient sample

Certified by D. Rossbach

Rossbacher Laboratory

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

SEP 2 1980

CERTIFICATE NO. 80447 - 2

INVOICE NO.

DATE ANALYSED AUG, 1980

PROJECT 1061

CERTIFICATE OF ANALYSIS

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

No.	Sample	pH	Mo	Cu	Ag	Zn	Pb	No.
01	BONK S39		1	34	0.2	42	10	01
02	40		1	44	0.2	52	6	02
03	41		1	118	0.2	96	4	03
04	42		2	76	0.2	100	2	04
05	43		2	90	0.2	96	2	05
06	44		2	96	0.2	106	2	06
07	45		1	50	0.2	80	2	07
08	46		1	58	0.2	104	2	08
09	47		1	40	0.2	96	2	09
10	BONK S48		1	34	0.2	62	4	10
11	49		1	30	0.2	64	2	11
12	50		1	46	0.2	94	2	12
13	51		1	42	0.2	84	2	13
14	52		2	48	0.2	96	2	14
15	53		2	38	0.2	70	2	15
16	54		2	52	0.2	112	2	16
17	55		1	52	0.2	100	2	17
18	56		1	40	0.2	72	2	18
19	57		2	34	0.2	70	2	19
20	STD E		9	90	0.2	148	16	20
21	BONK S58		1	44	0.2	79	2	21
22	59		1	18	0.2	50	2	22
23	60		1	28	0.2	66	2	23
24	61		1	20	0.2	56	2	24
25	62		1	10	0.2	30	2	25
26	63		1	40	0.2	34	2	26
27	64		1	12	0.2	40	2	27
28	65		1	14	0.2	42	4	28
29	66		1	14	0.2	40	2	29
30	BONK S67		1	22	0.2	42	6	30
31	68		2	14	0.2	28	4	31
32	69		2	30	0.2	66	8	32
33	70		3	32	0.2	58	8	33
34	71		2	16	0.2	30	8	34
35	72		1	44	0.2	66	4	35
36	73		1	108	0.2	66	6	36
37	74		1	198	0.2	38	8	37
38	75		1	90	0.2	44	10	38
39	BONK S76		1	316	0.2	40	6	39
40	STD E		6	92	0.2	154	16	40

Certified by D. Rossbach

Rossbacher Laboratory

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

AMAX EXPLORATION INC. SEP 2 1980 VANCOUVER OFFICE

CERTIFICATE NO. 80467-3
INVOICE NO.
DATE ANALYSED AUG, 1980
PROJECT 1061

CERTIFICATE OF ANALYSIS

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

No.	Sample	pH	Mo	Cu	Ag	Zn	Pb								No.
01	BONKS 77		2	186	0.2	50	10								01
02	78		2	138	0.2	78	10								02
03	79		2	280	0.2	38	8								03
04	80		1	86	0.2	46	16								04
05	81		1	30	0.2	46	4								05
06	82		2	28	0.2	64	2								06
07	83		1	28	0.2	70	2								07
08	84		2	32	0.2	62	2								08
09	85		2	48	0.2	100	2								09
10	BONKS 86		3	42	0.2	106	2								10
11	87		1	44	0.2	70	2								11
12	88		1	66	0.2	120	2								12
13	89		1	66	0.2	100	2								13
14	90		1	70	0.2	84	2								14
15	91		2	54	0.2	114	2								15
16	92		3	52	0.2	110	2								16
17	93		3	48	0.2	104	2								17
18	94		3	52	0.2	118	2								18
19	95		2	44	0.2	56	2								19
20	STD C		18	176	0.4	118	78								20
21	BONKS 96		3	52	0.2	102	2								21
22	97		2	60	0.2	72	2								22
23	98		2	64	0.2	110	2								23
24	99		2	70	0.2	94	2								24
25	100		2	58	0.2	106	2								25
26	101		2	46	0.2	60	2								26
27	102		2	42	0.2	72	2								27
28	103		1	36	0.2	60	2								28
29	104		2	58	0.2	90	2								29
30	BONKS 105		3	38	0.2	68	2								30
31	106		2	54	0.2	92	2								31
32	107		2	56	0.2	88	2								32
33	108		2	82	0.2	96	8								33
34	109		4	96	0.2	68	12								34
35	110		2	112	0.2	82	4								35
36	111		3	106	0.2	74	12								36
37	112		2	222	0.2	56	6								37
38	113		5	156	0.2	68	18								38
39	BONKS 114		2	134	0.2	60	16								39
40	STD C		14	178	0.4	120	86								40

Certified by C. Rossbacher

Rossbacher Laboratory

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

AMAX EXPLORATION INC. SEP 2 1980 VANCOUVER OFFICE

CERTIFICATE NO. 80467-4
INVOICE NO.
DATE ANALYSED AUG, 1980
PROJECT 1061

CERTIFICATE OF ANALYSIS

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

No.	Sample	pH	Mo	Cu	Ag	Zn	Pb	FIRE Au							No.
01	BONKS 115		1	112	0.2	70	26	↑							01
02	116		1	108	0.2	60	26								02
03	117		1	84	0.2	48	24								03
04	118		1	94	0.2	52	14								04
05	119		1	82	0.2	42	10								05
06	120		1	162	0.2	82	6								06
07	121		1	306	0.2	82	10								07
08	122		1	74	0.2	74	20								08
09	123		1	740	0.2	46	10								09
10	BONKS 124		1	1000	0.4	40	8								10
11	125		3	412	0.2	44	20								11
12	126		4	94	0.2	34	12								12
13	127		1	264	0.2	66	14								13
14	128		1	252	0.4	60	30								14
15	129		3	386	0.2	58	18								15
16	130		1	110	0.2	56	12								16
17	131		1	40	0.2	30	2								17
18	BONKS 132		1	50	0.2	46	10								18
19	BONKL 133		1	12	0.2	36	2								19
20	STD D		1	118	4.0	478	100								20
21	BONKL 134		1	12	0.2	52	8								21
22	135		1	10	0.4	28	6								22
23	136		1	4	0.2	18	2								23
24	137		1	10	0.2	42	8								24
25	138		1	40	0.4	66	4								25
26	139		1	18	0.2	28	4	↓							26
27	BONKT 143		1	100	0.2	28	8	10							27
28	144		16	176	0.2	124	96	10							28
29	145	(WEST GULLY)	1	70	0.2	52	4	10							29
30	146		1	182	0.4	34	4	10							30
31	147		1	66	0.2	76	42	10							31
32	148		1	52	0.2	48	6	10							32
33	149		1	16	0.2	16	2	10							33
34	BONKT 150		1	8	0.2	28	2	10							34
35	151		1	14	0.2	162	2	10							35
36	152	(EAST)	1	96	0.2	46	2	10							36
37	153	(EAST)	1	10	0.2	26	2	10							37
38	154	(EAST)	1	32	0.2	50	2	10							38
39	BONKT 155		1	22	0.2	54	2	10							39
40	STD D		1	132	42	512	114	-							40

SOIL SURVEY

ROCK CHIPS

all HX grc gtz monz (QM) unmin'zd

Certified by C. Rossbacher

Rossbacher Laboratory

GEOCHEMICAL ANALYSTS & ASSAYERS

2225 S. SPRINGER AVE.
BURNABY, B.C.
CANADA
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AREA CODE: 604

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CERTIFICATE NO. 80447-05

INVOICE NO.

DATE ANALYSED AUG, 1980

PROJECT 1061

CERTIFICATE OF ANALYSIS

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

No.	Sample	pH	Mo	Cu	Ag	Zn	Pb	Au		No.
01	BONKT156		1	54	0.2	94	12	10		01
02	157		1	96	0.2	122	14	10		02
03	158		1	20	0.2	66	8	10		03
04	159	CREEK GULLY	1	48	0.2	72	10	10		04
05	160		1	42	0.2	44	2	10		05
06	161		1	30	0.2	54	6	10		06
07	162		1	34	0.2	32	2	10		07
08	BONKT163		1	168	0.2	96	6	10		08
09	BONKS164		4	68	0.2	38	26	~	ROCK CHIPS	09
10	165		1	58	0.2	38	16		SOIL SURVEY	10
11	166		2	76	0.2	64	16			11
12	167		2	74	0.2	60	18			12
13	168		2	84	1.0	66	24			13
14	169		2	68	0.4	58	52			14
15	170		2	26	0.2	72	38			15
16	171		1	10	0.2	36	10			16
17	172		2	22	0.2	42	10			17
18	173		2	16	0.2	36	6			18
19	BONKS174		4	26	0.2	50	6			19
20	B STD B		29	142	0.8	140	98			20
21	BONKS175		2	12	0.2	16	6			21
22	176		3	16	0.2	34	6			22
23	177		6	368	0.2	102	10			23
24	178		9	116	0.2	56	6			24
25	179		4	18	0.2	64	6			25
26	180		3	16	0.2	46	6			26
27	181		4	14	0.2	40	4			27
28	182		2	10	0.2	28	4			28
29	183		2	10	0.2	34	4			29
30	BONKS184		4	12	0.2	20	4			30
31	185		3	16	0.2	34	8			31
32	186		2	22	0.2	46	4			32
33	187		2	24	0.2	58	2			33
34	188		2	22	0.2	66	2			34
35	189		1	16	0.2	40	2			35
36	190		3	22	0.2	48	2			36
37	191		6	32	0.2	68	2			37
38	192		2	24	0.2	32	2			38
39	BONKS193		2	18	0.2	26	8			39
40	C STD B		29	142	0.8	140	98	V		40

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CERTIFICATE NO. 80447-6

INVOICE NO.

DATE ANALYSED AUG, 1980

PROJECT 1061

CERTIFICATE OF ANALYSIS

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

No.	Sample	pH	Mo	Cu	Ag	Zn	Pb	Au		No.
01	BONKS194		3	14	0.2	36	6			01
02	195		1	6	0.2	16	4			02
03	196		1	18	0.2	58	2			03
04	197		1	12	0.2	54	2			04
05	198		14	26	0.2	32	8			05
06	199		4	40	0.2	80	6			06
07	200		2	26	0.2	66	6			07
08	201		3	34	0.2	82	6			08
09	202		4	52	0.2	86	2			09
10	BONKS203		4	30	0.2	76	8			10
11	204		3	50	0.2	100	4			11
12	205		3	50	0.2	100	2			12
13	206		3	44	0.2	102	2			13
14	207		2	40	0.2	114	2			14
15	208		3	38	0.2	118	2		SOIL SURVEY	15
16	209		2	38	0.2	108	2			16
17	BONKS210		1	60	0.2	86	2			17
18	BONKL211		1	8	0.2	30	2			18
19	BONKL212		1	10	0.2	16	2			19
20	STD A		9	22	0.2	36	22			20
21	BONKL213		1	6	0.2	20	4			21
22	214		1	22	0.2	46	2			22
23	215		1	52	0.2	50	10			23
24	216		2	32	0.2	42	4			24
25	217		2	52	0.2	92	2			25
26	218		1	42	0.2	98	2			26
27	219		1	34	0.2	80	2			27
28	220		1	38	0.2	74	2			28
29	221		1	2	0.2	20	2			29
30	BONKL222		1	10	0.2	49	8			30
31	223		1	6	0.2	30	6			31
32	224		1	8	0.2	42	4			32
33	225		1	10	0.2	66	8			33
34	226		1	6	0.2	46	4			34
35	BONKL227		1	6	0.2	36	2			35
36	STD A		6	24	0.2	34	18	—		36
37										37
38										38
39										39
40										40

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Rossbacher Laboratory

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CERTIFICATE NO. 80447-7

INVOICE NO.

DATE ANALYSED AUG, 1980

PROJECT 1061

AMAX

SEP 8 1980

VANCOUVER OFFICE

CERTIFICATE OF ANALYSIS

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C. Loc

No.	Sample	~~Mo~~	Mo	Cu	Ag	Zn	Pb	PPB Au		Remarks.			No.
01	80NST 1	E.A.S.	1	4	0.2	28	6	10	Qtz	Minor			01
02	2	1-FIG	1	69	0.2	42	4	10	"	"			02
03	80NSL 3		1	10	0.2	30	2	—					03
04													04
05													05
06													06
07													07
08													08
09													09
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39													39
40													40

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SEP 2 1980

VANCOUVER OFFICE

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 80447-8

INVOICE NO.

DATE ANALYSED AUG, 1980

PROJECT 1061

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

Lux

No.	Sample	pH	[illegible]	Cu	Pb	Zn	Ag	Au (ppb)	Remarks	No.
01	BONE T 65		1	12	10	86	0.2	10	Granodiorite (Gd)	01
02	66		2	18	4	56	0.2	10	"	02
03	67		1	12	4	54	0.2	10	Otz Mon. π	03
04	68		2	18	6	70	0.2	10	Same w/ [illegible]	04
05	69		2	4	6	68	0.2	10	Otz mon. π	05
06	70		1	24	8	50	0.2	10	" " "	06
07	BONE L 71		3	16	36	114	0.2	—		07
08	T 72		6	4	6	44	0.2	10	[illegible] dyke - rusty	08
09	73		4	4	4	28	0.2	10	Same - [illegible] Py [illegible]	09
10	74		4	304	52	94	0.4	10	[illegible] Sheared Gd	10
11	75		2	34	8	180	0.2	10	Same	11
12	76		2	58	8	114	0.2	10	Gouge of fault - Chl - Epid Sheared [illegible]	12
13	77		2	20	6	102	0.2	10	" " " " " "	13
14	78		15	370	8	142	0.4	10	Same - near fault - w Cpy + Mal	14
15	79		1	4	8	56	0.2	10	Altd (Chl'zd) Gd - sheared near felsp π dyke	15
16	80		1	62	4	74	0.2	10	fresh Gd	16
17	BONE L 81		1	6	2	23	0.2	—		17
18	82		2	26	4	62	0.2	—		18
19	BONE T 83		2	16	10	60	1.3	10	Sheared + clay altd QM w/ Gal - [illegible] Otz V	19
20	STD C		16	178	86	114	0.6	—		20
21	BONE L 84		1	16	4	20	0.2	—		21
22	85		1	36	10	70	0.2	—		22
23	86		2	8	4	32	0.2	—		23
24	87		1	14	6	56	0.2	—		24
25	BONE T 88		2	32	8	32	0.2	10	light rusty stained QM diss. Py weak	25
26	L 89		1	8	6	68	0.2	—		26
27	T 90		1	8	2	44	0.2	10	fresh QM	27
28	L 91		1	8	2	28	0.2	—		28
29	BONE T 95		4	4	6	68	0.2	10	Similar to T83	29
30	L 96		7	6	2	24	0.2	—		30
31	97		1	10	2	26	0.2	—		31
32	98		1	10	6	36	0.2	—		32
33	99		1	4	2	18	0.2	—		33
34	100		1	8	4	52	0.2	—		34
35	101		1	52	4	110	0.2	—		35
36	102		1	10	2	26	0.2	—		36
37	BONE L 103		1	22	2	34	0.2	—		37
38	BONE T 104		1	140	4	46	0.2	10	BX - [illegible] - DDH #2 [illegible]	38
39	BONE T 105		2	40	10	42	0.2	10	" " " " - DDH #4 [illegible]	39
40	STD C		18	192	90	122	0.6	—		40

* Note: T = Rock Chip Sample
L = Stream Sed Sample.

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Rossbacher Laboratory

GEOCHEMICAL ANALYSTS & ASSAYERS

AMAX

2225 S. SPRINGER AVE.,
BURNABY, B.C.
CANADA
TELEPHONE: 299-6910
AREA CODE: 604

SEP 2 1980

VANCOUVER OFFICE

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 80447-9

INVOICE NO.

DATE ANALYSED AUG, 1980

PROJECT 1061

TO: AMAX MINERALS EXPLORATION
601 - 535 THURLOW ST.
VANCOUVER, B.C.

No.	Sample	pH	[illegible]	Cu	Pb	Zn	Ag	Au (ppb)	Remarks	No.
01	BONE T 106		1	80	12	68	0.2	10	Bx - [illegible]	01
02	107		1	118	8	46	0.2	10	Bx - [illegible] DDH 2 similar to T104	02
03	108		1	42	14	98	0.2	10	Bx [illegible] similar to T106 - [illegible]	03
04	109		1	20	20	88	0.2	10	QM Bx - [illegible]	04
05	BONE T 110		1	48	46	202	0.2	10	" " " " "	05
06										06
07										07
08										08
09										09
10										10
11										11
12										12
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14										14
15										15
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37										37
38										38
39										39
40										40

Certified by [signature]

Kossbacher Laboratory
GEOCHEMICAL ANALYSTS & ASSAYERS

CANADA
TELEPHONE 299 6910
AREA CODE 604

April 30, 1974

SUMMARY OF SOME ANALYTICAL TECHNIQUES CURRENTLY IN USE AT ROSSBACHER LABORATORY

A ANALYTICAL TECHNIQUES FOR GEOCHEMICAL SAMPLES

SAMPLE PREPARATION

Packages of samples are opened as soon as they arrive at the laboratory and the bags placed in numerical sequence in an electrically heated sample drier (maximum temperature 70°C).

After drying soil and sediment samples they are lightly pounded with a wooden block to break up aggregates of fine particles and are then passed through a 35 mesh stainless steel sieve. The coarse material is discarded and the minus 35 mesh fraction replaced in the original bag providing that this is undamaged and not excessively dirty.

Rock samples are exposed to the air until the outside surfaces are dry; only if abnormally wet are rocks placed in the sample drier. Rock samples are processed in such manner that a fully representative 1/2 g. sample can be obtained for analysis. The entire amount of each sample is passed through a jaw crusher and thus reduced to fragments of 2 mm. size or less. A minimum of 1 kg. is then passed through a pulverizer with plates set such that 95% of the product will pass through a 100 mesh

Rock Chips

Composite rock chip samples generally consist of some ten small fragments broken from unweathered outcrop with a steel hammer. Each fragment weighs some 50 gms. Samples are placed in strong polythene bags and sealed with non-contaminating wire tabs. Samples are restricted to a single rock type and obvious mineralization is avoided.

Soil, sediment and rock samples are packed securely in cardboard boxes or canvas sacks and dispatched by road or air.

Procedures for Collection and Processing of Geochemical Samples

Analytical Methods for Ag, Mo, Cu, Pb, Zn, Fe, Mn, Ni, Co and U in sediments and soils; Mo, Cu, Zn, Ni and SO_4^{--} in waters.

Amax Exploration, Inc.
Vancouver Office.

September 1970

SAMPLE COLLECTION

Soils

B horizon material is sampled and thus organic rich topsoil and leached upper subsoil are avoided. Occasionally organic rich samples have to be taken in swampy depressions.

Samples are taken by hand from a small excavation made with a cast iron mattock. Approximately 200 gms of finer grained material is taken and placed in a numbered, high wet-strength, Kraft paper bag. The bags are closed by folding and do not have metal tabs.

Observations as to the nature of the sample and the environment of the sample site are made in the field.

Drainage Sediments

Active sediments are taken by hand from tributary drainages which are generally of five square miles catchment or less. Composite samples are taken of the finest material available from as near as possible to the centre of the drainage channel thus avoiding collapsed banks. More than one sample is taken if marked mineralogical or textural segregation of the sediments is evident.

Some 200 gm of finer material is collected unless the sediment is unusually coarse in which case the weight is increased to 1 kg. Samples are placed in the same type of Kraft paper bag as are employed in soil sampling. Water samples are taken at all appropriate sites. Approximately 100 mls are sampled and placed in a clean, screw sealed, polythene bottle. Observations are made at each site recording the environment and nature of the sample.

screen. Other samples are appreciably heavier than 2 kg the material is split after jaw crushing by means of a Jones splitter. After pulverizing the sample is mixed by rolling on paper and is then placed in a Kraft paper bag.

SAMPLE DIGESTION

Digestion tubes (100 x 16 mm) are marked at the 5 ml level with a diamond pencil. Tubes are cleaned with hot water and concentrated HCl. 0.5 g samples are weighed accurately, using a Fisher Dial-O-Gram balance, and placed in the appropriate tubes.

To each of the samples thus prepared are added 2 ml of an acid mixture comprising 15% nitric and 5% perchloric acids. Racks of tubes are then placed on an electrical hot plate, brought to a gentle boil (½ hour) and digested for 4½ hours. Samples unusually rich in organic material are first burned in a porcelain crucible heated by a bunsen burner before the acid mixture is added. Digestion is performed in a stainless steel fume hood.

After digestion tubes are removed from the hot plate and the volume is brought up to 5 ml with deionized water. The tubes are shaken to mix the solution and then centrifuged for one minute. The resulting clear upper layer is used for Cu, Mo, Pb, Zn, Ag, Fe, Mn, Ni and Co determination by a Perkin-Elmer 290 atomic absorption spectrophotometer. Analytical procedures are given on the following pages.

ANALYTICAL PROCEDURES

Silver

1. Scope - This procedure covers a range of silver in the sample from less than .5 to 1000 ppm
2. Summary of Method - The sample is treated with nitric and perchloric acid mixture to oxidize organics and sulphides. The silver then is present as perchlorate in aqueous solution. The concentration is determined by atomic absorption spectrophotometer.
3. Interferences - Silver below 1 gamma/ml is not very stable in solution. Maintaining the solution in 20% perchloric prevents silver being absorbed on the glass container. Determination must be completed on the same day as the digestion.

   Samples high in dissolved solids, especially calcium, cause high background absorbance. This background absorbance must be corrected using an adjacent Ag line.

Silver AA Settings P.E. 290

Lamp - Ag

Current 4 ma position 3

Slit 7 A

Wavelength 3231A Dial 287.4

Fuel - acetylene - flow - 14

Oxidant - air - flow - 14

Burner - techtron AB 51 in line

Maximum Conc. 3 to 4x

Calibration

1. Set 1 gamma/ml to read 40 equivalent to 20 gamma/gm

   Factor $\frac{1}{2}$ x meter reading

   Check standards

   4, 10, 20, 40 ppm Ag in sample

2. Set 15 gamma/ml to 100 equivalent to 100 ppm

   Check standards

   40, 100 ppm

   Factor directly in ppm Ag

3. Rotate burner to maximum angle

   Set 10.0 gamma/ml Ag to read 100

   Check standards

   100, 200, 400, 1000 ppm Ag

   Factor 10x scale reading

4. Samples higher than 1000 ppm should be re-analyzed by assay procedure

5. Background correction for sample reading between 1 to 5 ppm

   Calibrate AA in step 1

   Dial wavelength to 300 (peak)

   Read the samples again

   Subtract the background reading from the first reading

Standards

1. 1000 gamma/ml Ag - 0.720 gm Ag_2SO_4 dissolved in 20 mls $HxlO_3$ and dilute to 500 mls

2. 100 gamma/ml Ag - 10 mls of above + 20 mls $HClO_4$, dilute to 100 mls

3. Recovery spiked standard

   5 gamma/ml Ag - 5 mls 100 gamma/ml dilute to 100 mls with "mixed" acid

Working AA Standards

Pipette .2, .5, 1, 2, 5, 10 mls of 100 gamma/ml and 2, 5 mls 1000 gamma/ml dilute to 100 mls with 20% $HClO_4$. This equivalent to 4, 10, 20, 40, 100, 200, 400, and 1000 ppm Ag in the sample .50 g diluted to 10 mls.

Recovery Standard

Pipette 2 mls of 5 gamma/ml Ag in mix acids into a sample and carry through the digestion. This should give a reading of 20 ppm Ag + original sample content.

Follow the general geochemical procedure for sample preparation and digestion.

For low assay Ag, the same procedure is used. Ag is then calculated in oz/ton.

1 ppm = .0292 oz/ton

conversion factor

oz/ton = .0292 x ppm Ag

Ni Geochemical AA Setting

Lamp Multi element Ca, Ni, Co, Mn Cr

Current 10 #4 Slit 7A

Wave length 4030.8 Dial 425.2

Fuel - Acetylene Flow 14.0

Oxidant - Air Flow 14.0

Burner - P.E. short path (or AB 50)

Range

0 - 100 gamma/ml Factor 20x - 0 to 2000 ppm

0 - 200 gamma/ml Factor 40x - 0 to 4000 ppm

Burner 90°

0 - 1000 gamma/ml Factor 200x - 0 to 20,000 ppm

0 - 2000 gamma/ml Factor 400x - 0 to 40,000 ppm

EDTA Extraction - use AB 51 in line

0 - 20 gamma/ml Factor 4x - 0 to 400 ppm

Standards

Fisner 10,000 gamma/ml (ml)

10x Dilution 1000 gamma/ml

Pippette

.5, 1, 2, 3, 5, 8, 10, ml of 1000 gamma/ml

2, 3, 5, 8, 10, 15, 20 ml of 10,000 gamma/ml dilute to 100 mls with 20% $HClO_4$. This gives

5, 10, 20, 30, 50, 80, 100, 200, 300, 500, 800, 1000, 1500, 2000 gamma/ml.

Mo Geochemical AA Setting

Lamp ASL H/C Mo

Current 5 #5 Slit 7A

Wavelength 3133 Dial 260.2

Fuel - Acetylene Flow 12.0 to give 1" red feather

Oxidant - Nitrous oxide Flow 14.0

Burner - AB 50 in line

Caution read the operation using N_2O and acetylene flame at end of general AA procedure

Range

0 - 10 gamma/ml Factor 2x - 0 to 200 ppm

Rotate burner to max. angle

0 - 50 gamma/ml Factor 10 x 0 to 1000 ppm

0 - 100 gamma/ml Factor 20 x 0 to 2000 ppm

Standards 1000 gamma/ml

Dissolve .750 gms MoO_3 (acid molybdic) with 20 mls H_2O, 6 lumps NaOH, when all dissolved, add 20 mls HCl, dilute to 500 mls

100 gamma/ml - 10 x dilution

Pipette

.2, .5, 1, 2, 3, 5, 8, 10 mls of 100 gamma/ml

2, 3, 5, 8, 10 mls of 1000 gamma/ml add 5 mls 10% $AlCl_3$ and dilute to 100 mls with 20% $HClO_4$

This gives

.2, .5, 1, 2, 3, 5, 8, 10, 20, 30, 50, 80, 100 gamma/ml Mo

Zn Geochemical AA Setting

Lamp Zn

Current 3 #3 Slit 20A

Wave length 2133 Dial 84.9

Fuel - Acetylene Flow 14

Oxidant - Air Flow 14

Burner - P.E. short path 90°

Range

0 - 20 gamma/ml Factor 4x - 0 to 400 ppm

0 - 50 gamma/ml Factor 10x -0 to 1000 ppm

For Waters - Burner AB- 51 in line 1 gamma/ml read 100 to give 0 to 1000 ppb

High Zn Burner Boling in line. Wavelength 3075. Dial 250 Slit 7A

Fuel 14 Air 14.5

0 to 1000 gamma/ml read 0 to 20 Factor 400 x

Pure Standard 10,000 gamma/ml

1 gm Zn dissolved, H_2O, HCl, HNO_3, $HClO_4$, fumed to $HClO_4$ - make up to 100 mls H_2O

1000, 100 gamma/ml and 100 ml by dilution in 20 % $HClO_4$

0 to 200 gamma/ml Zn use combined Cu, Ni, Co, Pb, Zn standards

Pipette

1, 2, 3, 5, 8, 10 mls of 10,000 gamma/ml - dilute to 100 mls with 20% $HClO_4$ to give

100, 200, 300, 500, 800, 1000 gamma/ml Zn for high standards

Co Geochemical AA Setting

Lamp - 5 multi element

Current 10 #4 Slit 2A

Wavelength 2407 Dial 133.1

Fuel - Acetylene Flow 14

Oxidant - Air Flow 14

Burner - AB 51 in line

Range

0 - 10 gamma/ml read 100 Factor 2 x reading to 200 ppm

0 - 20 gamma ml read 100 Factor 4 x reading to 400 ppm

Burner at maximum angle

0 - 100 gamma/ml read 100 Factor 20 x reading to 2000 ppm

0 - 200 gamma/ml read 100 Factor 40 x reading to 4000 ppm

Standards - 1000 gamma/ml

1.000 gm cobalt metal dissolved in HCl, HNO, and fumed into $HClO_4$, dilute to 1 liter

Pipette

1, 2, 10, 20 mls into 100 ml vol flasks diluted to mark with 20% $HClO_4$

This gives

10, 20, 100, 200 gamma/ml Co

Mixed - combination standards of Cu, Ni, Co, Pb, Zn

of

1, 2, 5, 10, 20, 30, 50, 80, 100, 150, 200 gamma/ml are used for calibration

Cu Geochemical AA Setting

Lamp Single Cu **or**

5 multi element

Current 10 for multi element #4 Slit 7A

4 for single #3 Slit 7A

Wavelength 3247 Dial 280

Burner Techtron AB 51 (For Cu in natural waters)

P.E. Short Path (For geochem)

Fuel Acetylene Flow 14

Oxidant Air Flow 14

Range

0 - 5 gamma/ml Factor 1x to 100 ppm (for low Cu)

0 - 20 gamma/ml Factor 4x to 400 ppm

Burner 90°

0 - 200 gamma/ml Factor 40x to 4000 ppm

Wavelength 2492 Dial 147

Burner in line

Range

0 - 1000 gamma/ml Factor 200x to 20,000 ppm

0 - 2000 gamma/ml Factor 400x to 40,000 ppm

Higher range than 40,000 ppm requires 10x dilution

Standards

10,000 gamma/ml

1.000 gm metal powder, H_2O, HCl, HNO_3 until dissolved, add $HClO_4$, fume dilute to 100 mls

1000 gamma/ml 10x dilution above in 20% $HClO_4$

2000 gamma/ml 20 mls 10,000 gamma/ml - dilute to 100 mls in 20% $HClO_4$

100 gamma/ml 10x dilution 1000 gamma/ml dilute to 100 mls in 20% $HClO_4$

200 gamma/ml 10x dilution 2000 gamma/ml dilute to 100 mls in 20% $HClO_4$

Pipette

1, 2, 3, 5, 8, 10 mls 100 gamma/ml - dilute to 100 mls with 20% $HClO_4$ to give 1, 2, 3, 5, 8, 10 gamma/ml

Combined standards Cu, Ni, Co, Pb, Zn

1, 2, 5, 10, 20, 30, 50, 80, 100, 150, 200 gamma/ml

Fe Geochemical AA Setting

Lamp - Fe

- Do not use multi element Fe

Current 10 #4 Slit 2A

Wavelength 3440.6 Dial 317.5

Fuel - Acetylene Flow 14.0

Oxidant - Air Flow 14.0

Burner - PE Short Path 90°

Range

0 - 5000 gamma/ml 0.1 x % - 0 to 10.0%

0 - 10,000 gamma/ml 0.2 x % - 0 to 20.0%

Higher Fe - 10 x dilution

Standards 10,000 gamma/ml

Weigh 5.000 gms iron wires, into beaker, add H_2O, HCl, HNO_3, $HClO_4$, heat to $HClO_4$ fumes. Add $HClO_4$ to 100 mls + 100 mls H_2O, warm, dilute to 500 mls

Pipette

1, 5, 10, 20, 30, 50, 80 mls 10,000 gamma/ml dilute to 100 mls with 20% $HClO_4$ to give

100, 500, 1000, 2000, 3000, 5000, 8000 gamma/ml to be equivalent to .2, 1.0, 2.0, 4.0, 6.0, 10.0%, 16.0% Fe in geochem sample

Ni Geochemical AA Setting

Lamp P.E. H/C. Ni or multi element Cu, Ni, Co, Mn, Cr

Current 10 #4, Slit 2A

Wave length 3415 Dial 312.5

Fule - Acetylene Flow 14.0

Oxidant - Air Flow 14.0

Burner AB 51 in line

Range

0 - 20 gamma/ml Factor 4x - 0 - 400 ppm

0 - 100 gamma/ml Factor 20x - 0 - 2000 gamma

45° 0 - 200 gamma/ml Factor 40x - 0 - 4000 ppm

0 - 500 gamma/ml Factor 100x - 0 - 10,000 ppm

Ni in waters and very low ranges

Wave length 2320 Dial 113

Range 0 - 5 gamma/ml Factor 1x - 0 - 100 ppm

Standards 10,000 gamma/ml

1.000 gm pure Ni metal dissolved in HCl, HNO_3, $HClO_4$ to perchloric fumes, dilute to 100 ml H_2O

1000 gamma/ml and 100 gamma/ml Successive 10x dilutions in 20% $HClO_4$

1, 2, 5, 8, 10 mls of 100 gamma/ml

2, 5, 8, 10 mls 1000 gamma/ml

2, 5, 8, 10 mls 10,000 gamma/ml - dilute to 100 mls in 20% HClO4. This gives

1, 2, 5, 8, 10, 20, 50, 80, 100, 200, 500, 800, 1000 gamma/ml N

Combined Standards - Cu, Ni, Co, Pb, Zn is used as a working standard

2. Sinter in rotary for 2 to 3 minutes (Flux dull read for one minute)
3. Cool, add 10 mls H_2O, heat in sand bath to boiling, cool, let sit overnight
4. Stir, crush, and mix. Let settle
5. Take 2 ml aliquot into screw cap test tube
6. Add 7 mls $SnCl_2$, heat in hot water bath for 5 minutes (80°C)
7. Cool to less than 15°C
8. Add 1 ml 20% KSCN, mix (if lemmon yellow; compare color standard 10x)
9. Add ½ ml extractant, cap, shake vigorously 1 minute
10. Compare color

Molybdenum in Water Samples

1. Transfer 50 mls to 125 separatory funnel
2. Add 5 ml .2% ferric chloride in conc HCl
3. Add 5 mls of mixed KSCN and $SnCl_2$
4. Add 1.2 mls isopropyl ether, shake for 1 minute, and allow phases to separate
5. Drain off water
6. Compare the color of extractant

Standardization

Pipette 0, .2, .5, 1, 2, 3, 4, 5, mls of 1 gamma/ml and 1, 1.5, 2, mls of 10 gamma/ml dilute to 50 mls with demineralized H_2O, and continue step #2.

This is equivalent to

1, 4, 10, 20, 40, 60, 80, 100, 200, 300, 400 ppb Mo

Artificial color - Nabob orange extract dilute with 1:1 H_2O to methanol to match. Seal tightly

$SnCl_2$ - 15% in 15% HCl

300 gm $SnCl_2 \cdot 2H_2O$ + 300 mls HCl, until $SnCl_2$ dissolved dilute to 2 liters

KSCN - 5% in H_2O

Mixed $SnCl_2$ - KSCN

3 parts $SnCl_2$ to 2 parts KSCN

Pb Geochemical AA Setting

Lamp ASL H/c Pb

Current 5 ma Slit 7A

Wave length 2833 Dial 208

Fuel - acetylene Flow 14

Oxidant - air Flow 14

Burner AB 51 in line

Range

0 - 20 gamma/ml to read 0 to 80. Factor 5x 0 to 500 ppm

0 - 200 gamma/ml to read 0 to 80. Factor 50x 0 to 5000 ppm

Standards - 10,000 gamma/ml

1.000 pure metal, dissolved in HNO_3, fumed to $HClO_4$ make up to 100 mls in 20% $HClO_4$

1000 gamma/ml and 100 gamma/ml Successive 10x dilutions in 20% $HClO_4$

Pipette

1, 2, 5, 8, 10 mls 100 gamma/ml

2, 5, 8, 10, 20 mls 1000 gamma/ml dilute to 100 mls in 20% $HClO_4$ this gives

1, 2, 5, 8, 10, 20, 50, 80, 100, 200 gamma/ml

Combined Standards Cu, Ni, Co, Pb, Zn, are used as working standards

W in Soils and Silts

Reagents and apparatus

Test tubes - pyrex disposable

Test tubes - screw cap

Bunsen Burner

Flux - 5 parts Na_2CO_3

4 parts NaCl

1 part KNO_3 pulverized to -80 mesh

7% $SnCl_2$ in 70% HCl

20% KSCN in H_2O

Extractant - 1 part tri-n-butyl phosphate

9 parts carbon tetrachloride

Standards

1000 gamma/ml W

.18 gms Na_2WO_4 $2H_2O$ dissolved in H_2O, make up to 100 mls

100 gamma/ml, 10 gamma/ml by dilution

Standardization

Pipette .5, 1, 2, 3, 5, 8, 10 ml of 10 gamma/ml and 1.5, 2 mls of 100 gamma/ml - dilute to 10 mls continue from step #4

Artificial colors - Nabob pure Lemon Extract, dilute with 1:1 ethanol and water to match. Tightly seal these for permanent standards

Procedure

1. Weigh 1.0 gram sample, add 2 gm flux, mix

Water Samples Run for AA

1. Cu - 2 gamma/ml reads 80 scale therefore 1 unit = 25 ppb
2. Zn - 1 gamma/ml reads full scale therefore 1 unit = 10 ppb
3. Ni - 2.5 gamma/ml reads 50 scale therefore 1 unit = 50 ppb

Burner: long slot techtron burner in line

Sulphate in Natural Waters

1. Pipette 0.5 ml sulphate reagent mix into a colorimetric tube
2. Add 5 ml water sample and mix
3. Read at 343 mμ against a demineralized water blank
4. Read again at 400 mμ and subtract from sulphate reading
5. Calculate ppm sulphate from the graph

Reagent

Dissolve 54 grams red mercuric oxide (J.T. Baker 2620- Can Lab) in 185 ml 70% perchloric acid and 20 ml H_2O, shake for one hour. Add 46.3 grams ferric perchlorate [$Fe(ClO_4)_3 \cdot 6H_2O$] (GFS 39) and 47 grams aluminum perchlorate [$Al(ClO_4)_3 \cdot 3H_2O$] (GFS 2) Add 400 ml water to dissolve, let settle overnight, decant into bottle and make to 1 liter

pH MEASUREMENTS

Soil and drainage sediment samples are dampened with water in a glass beaker to a pasty consistency. Demineralized water is used for this purpose as it has a low buffer capacity and thus does not influence the pH of the sample. Measurement is made with a Fisher Acument pH meter. Electrodes are stored in buffer overnight. A 30 minute warm up time is allowed for the instrument each morning. A 10 ml aliquot is taken from water samples for pH measurement.

ROSSBACHER LABORATORY

P. Rossbacher

APPENDIX III - STATEMENT OF COSTS

Claims	BR 1 to 8 inclusive, AG, AG 1 to 4 inclusive (65 units)
Summary of Work	Geological Mapping, Geochemical and Geophysical Surveying
Period of Work	July 21 to August 23, 1980

Personnel

S.G. Enns - 601-535 Thurlow Street, Vancouver, B.C.		
Staff Geologist	22 days @ $158.40/day	3,484.80
S.M. Gentleman - 3400 Barclay Avenue, #14, Montreal, Quebec		
Geologist	22 days @ $ 63.12/day	1,388.64
G.O. Skok - 2279 Berkley Road, North Vancouver, B.C.		
Assistant	22 days @ $ 35.51/day	781.22
J.L. LeBel - 601-535 Thurlow Street, Vancouver, B.C.		
Geophysicist	2 days @ $139.20/day	278.40
Accommodation and Board	66 days @ $ 15.00/day	990.00
Vehicles	Two 4x4 pick-ups 22 days @ $ 30.00/day	1,320.00
Helicopter - Okanagan Helicopters Ltd. Inv. 16141,16142,15730,16573		
Geology/Geochemistry 14.3 hrs.		5,825.73
Induced Polarization/Magnetometer Survey 6.1 hrs.		2,524.45
Geochemical Analysis - Rossbacher Laboratory Ltd. Inv. 0278A,1067		
216 soil & stream sediment	for Cu,Mo,Ag,Pb,Zn	853.20
47 rock chip	for Cu,Mo,Ag,Pb,Zn,Au	246.75
21 assays	for Cu,Mo,Ag,Pb,Zn,Au	598.50
Induced Polarization Survey - Phoenix Geophysics Limited Inv. 2029		
7.4 line/km		3,675.64
Orthophoto Base Map - Pacific Survey Corporation Inv. 554,529,491		
Scale 1:5,000		3,768.36
Report Preparation		500.00
		$26,235.69

$7,400.00 was applied as assessment work to all the above claims on September 17, 1980.

A further $21,000.00 plus $2,100.00 PAC is being applied to assessment work as 4 years each to AG 3, AG 4, BR 1 to 6 inclusive.

APPENDIX IV

STATEMENT OF QUALIFICATIONS

NAME	S.G. Enns
ADDRESS	601-535 Thurlow Street Vancouver, B.C.
EDUCATION	4 year BSc (Honours Geology) 1967 University of Manitoba
	MSc (Ec. Geology) 1971 University of Manitoba
EXPERIENCE	Geol. Assistant Manitoba Mines Branch 1964(field season) Geol. Assistant Sherritt Gordon Mines 1965 " Geol. Assistant AMAX Exploration 1966-1970 " Staff Geologist Cerro Mining of Can. 1971 Staff Geologist Hudson's Bay Oil & Gas 1972 Staff Geologist BP Minerals of Canada 1973-1975 Staff Geologist BP Alaska Exploration 1975-1979 Staff Geologist AMAX of Canada 1979-

STATEMENT OF QUALIFICATIONS

NAME: J. LAURENCE LEBEL

EDUCATION: B.Sc. (1971) Queen's University - Geological Engineering - Geophysics Option

M.Sc (1973) University of Manitoba - Geophysics

EXPERIENCE:

5/70-9/70 - Amax Exploration, Inc. Vancouver, B.C.
- conducting and compiling magnetometer surveys

5/71-9/71 - Amax Exploration, Inc. Toronto, Ont.
- conducting and reporting on IP/resistivity surveys

5/72-12/72- Gulf Minerals, Toronto, Ont.
- senior geophysical operator
- conducting and reporting on magnetometer electromagnetic and scintillometer surveys

3/73-12/73- Scintrex Surveys, Concord, Ont.
- Junior Geophysicist
- conducting, supervising of and reporting on airborne magnetometer and electromagnetic surveys, ground electromagnetic and IP/resistivity surveys

4/74 - - AMAX of Canada Limited - Toronto & Vancouver
- Staff Geophysicist

STATEMENT OF QUALIFICATIONS

NAME	S.M. Gentleman
ADDRESS	3400 Barclay Avenue #14 Montreal, Quebec H3S 1K4
EDUCATION	University of Waterloo 1970-1974 B.Sc. Earth Sciences Univeristy of Toronto 1974-1975 Special Student
EXPERIENCE	Research Assistant - Department of Geology Univeristy of Toronto 1975-1978
	Geological Assistant AMAX Minerals Exploration, Toronto May 1978 - September 1978
	Geological Assistant Ontario Geological Survey, Toronto October 1978 - November 1979
	Senior Geological Assistant AMAX of Canada Limited, Vancouver May 1980 - August 1980

STATEMENT OF QUALIFICATIONS

NAME	G.O. Skok
ADDRESS	2279 Berkley Road North Vancouver, B.C. V7H 1Z6
EDUCATION	Windsor Secondary Vancouver, B.C.
EXPERIENCE	Laboratory Assistant Rossbacher Laboratory, Burnaby 1978-1979
	Lumberland Building Materials Burnaby 1979
	Junior Assistant AMAX of Canada Limited, Vancouver May 1980 - October, 1980

L E G E N D

PLIOCENE OR YOUNGER

- 10 — *Basalt flows, agglomerate and related lahar flows.* 10a *Basaltic volcanic neck.*
- 9 — *Brown and black basalt dykes.*
- 8 — *Composite dyke of latite, quartz latite and rhyodacite with pebble dyke lenses and obsidian bands.*
- 7 — *Latite and rhyodacite dykes*

MIOCENE OR OLDER

- 6 — *Pink and gray feldspar porphyry dykes.*
- 5 — *Gray and green andesitic dyke and feldspar quartz porphyry dyke.*
- 4 — *Medium grained gray gabbroic dyke.*
- 3 — *Aplite dyke.*
- 2 — *Medium to coarse grained biotite quartz monzonite.* 2a *Pink quartz monzonite.* 2b *Quartz monzonite porphyry.*
- 1 — *Medium to coarse grained biotite granodiorite*

S Y M B O L S

- x — *Mapped outcrop or bedrock limit, float.*
- *Geological contact.*
- *Quartz vein.*
- *Shear zone showing dip.*
- *Attitude (vertical, inclined).*
- *Breccia.*
- *Copper-limonite veins and fractures per metre.*
- *Outer limit of weak copper mineralization.*
- *Limit of better copper mineralization.*
- *Grid line.*
- *Diamond drill hole (Canex Aerial Exploration Ltd, 1971)*
- *Trench.*
- *Claim post, claim location line.*
- *Claim boundary.*
- *Legal corner post, claim boundary.*
- *Claim unit boundary.*
- *Stream.*
- *Topographic contour (contour interval 10 and 20 metres).*

ABBREVIATIONS

alt'd	altered	*lim*	limonite
Bo	bornite	*mag*	magnetite
chl	chlorite	*mal*	malachite
cpy	chalcopyrite	*Mo*	molybdenum
epid	epidote	*peg*	pegmatite
feld	feldspar	*qtz*	quartz
graph	graphite	*ser*	sericite
hem	hematite	*spec*	specularite

8804

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

— BR AND AG CLAIMS —

LILLOOET MINING DIVISION — BRITISH COLUMBIA

GEOLOGICAL MAP

SCALE 200 0 200 METRES / 500 0 500 FEET

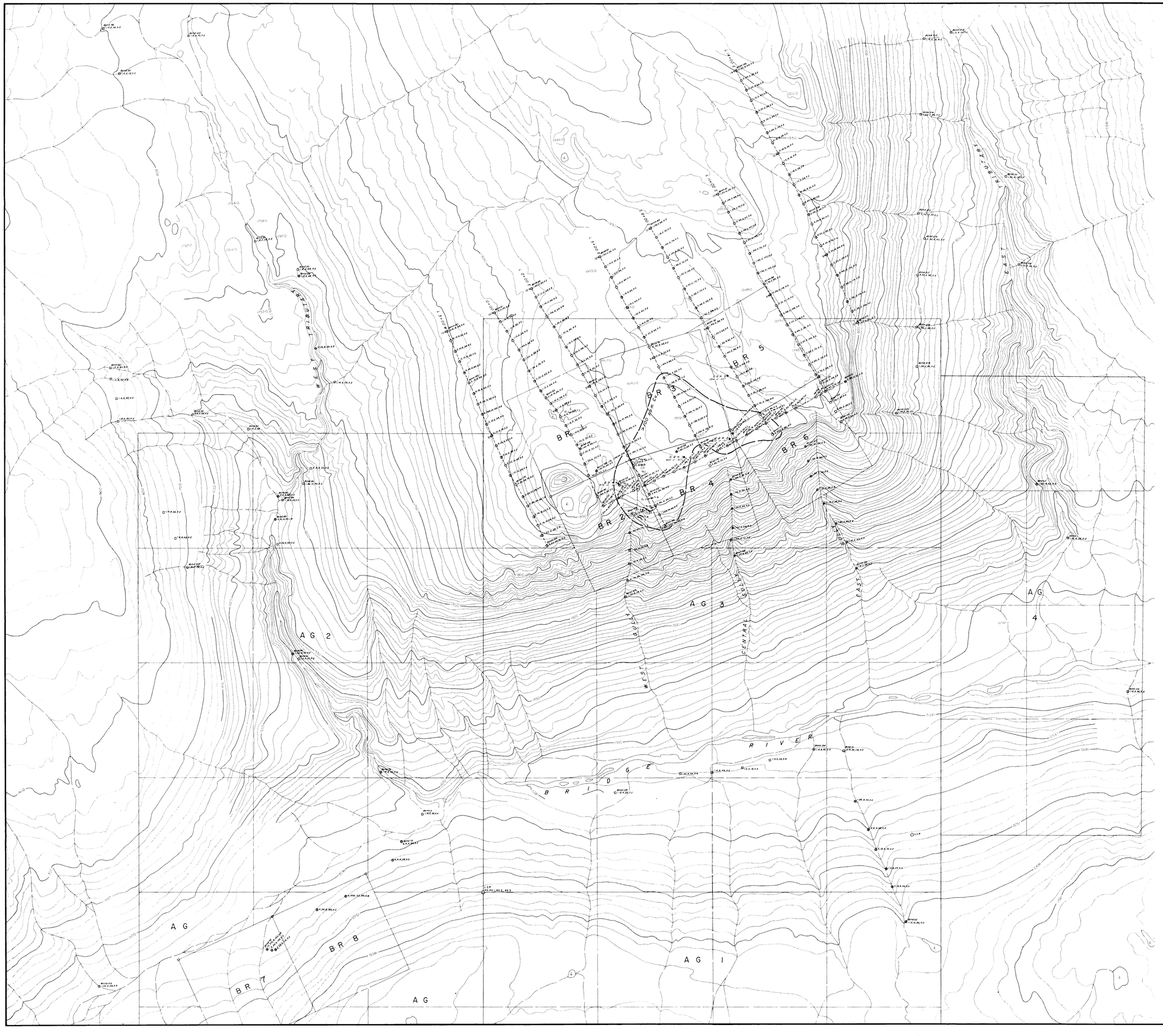
1 : 5,000

To accompany 1980 Property Report by: S.G. Enns and J.L. LeBel.

Vancouver, B.C. Nov. 28/80

N.T.S. Ref. 92 J/13, 14

FIG. 3



SYMBOLS

- Soil
- Silt
- Rock chip.

Sample site; sample number; p.p.m. Mo,Cu,Pb,Zn,Ag
See APPENDIX for results on other elements.

- Grid line.
- Diamond drill hole (Conex Aerial Exploration Ltd, 1971)
- Trench.
- Claim post, claim location line.
- Claim boundary.
- Legal corner post, claim boundary.
- Claim unit boundary.
- Stream.
- Topographic contour (contour interval 10 and 20 metres).

Assessment Report
8804

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

BR AND AG CLAIMS
LILLOOET MINING DIVISION — BRITISH COLUMBIA

GEOCHEMICAL MAP

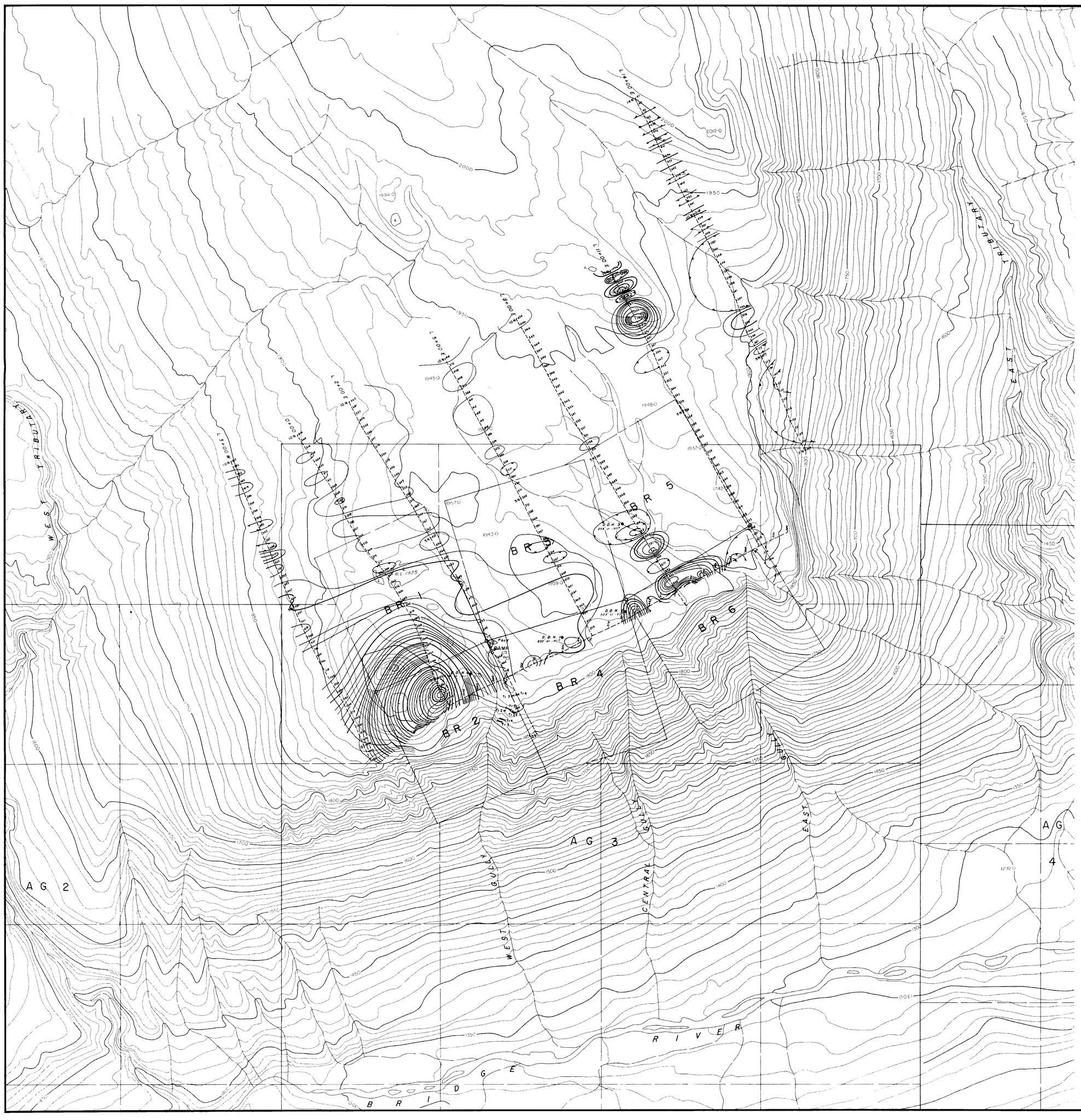
SCALE 200 0 200 METRES
500 0 500 FEET
1 : 5,000

S. Enns Nov 28/80

To accompany 1980 Property Report by: S.G.Enns and J.L.LeBel.

Vancouver — N.P.

N.T.S. Ref. 92 J/13, 14
FIG. 4



SYMBOLS

- 27h — Magnetometer survey readings.
- Grid line.
- D.D.H. 2 — Diamond drill hole (Canex Aerial Exploration Ltd, 1971)
- Tr 1 — Trench.
- Isomagnetic contour (contour interval 100 gammas).
- Magnetic low.
- Claim boundary.
- Claim unit boundary.
- Stream.
- 1500 — Topographic contour (contour interval 10 and 20 metres).

8804

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY

— BR AND AG CLAIMS —

LILLOOET MINING DIVISION — BRITISH COLUMBIA

MAGNETOMETER SURVEY

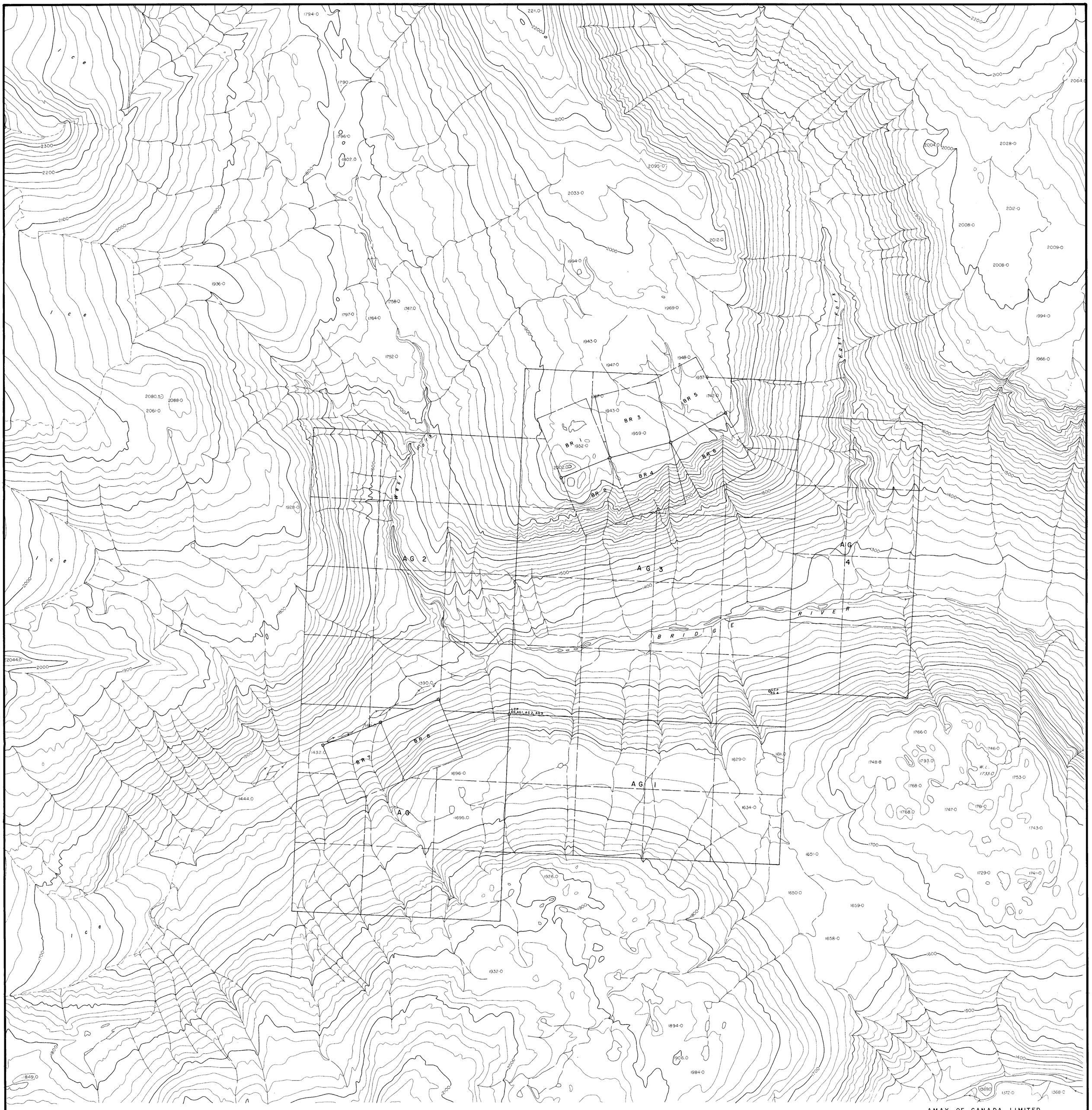
SCALE 200 0 200 METRES
500 0 500 FEET
1 : 5,000

To accompany 1980 Property Report by: S.G. Enns and J.L. LeBel.

J.L. LeBel Nov 28/80
Vancouver — H.P.

N.T.S. Ref. 92 J 13, 14

FIG. 5



SYMBOLS

- Topographic contour (contour interval 20 metres).
- Limit of ice.
- Stream.
- Legal corner post, claim boundary.
- Claim unit boundary.
- Claim post, claim location line.
- Claim boundary.

NOTE —
Map prepared by Pacific Survey Corporation from existing air photographs.

MINERAL RESOURCES BRANCH
8804

AMAX OF CANADA LIMITED

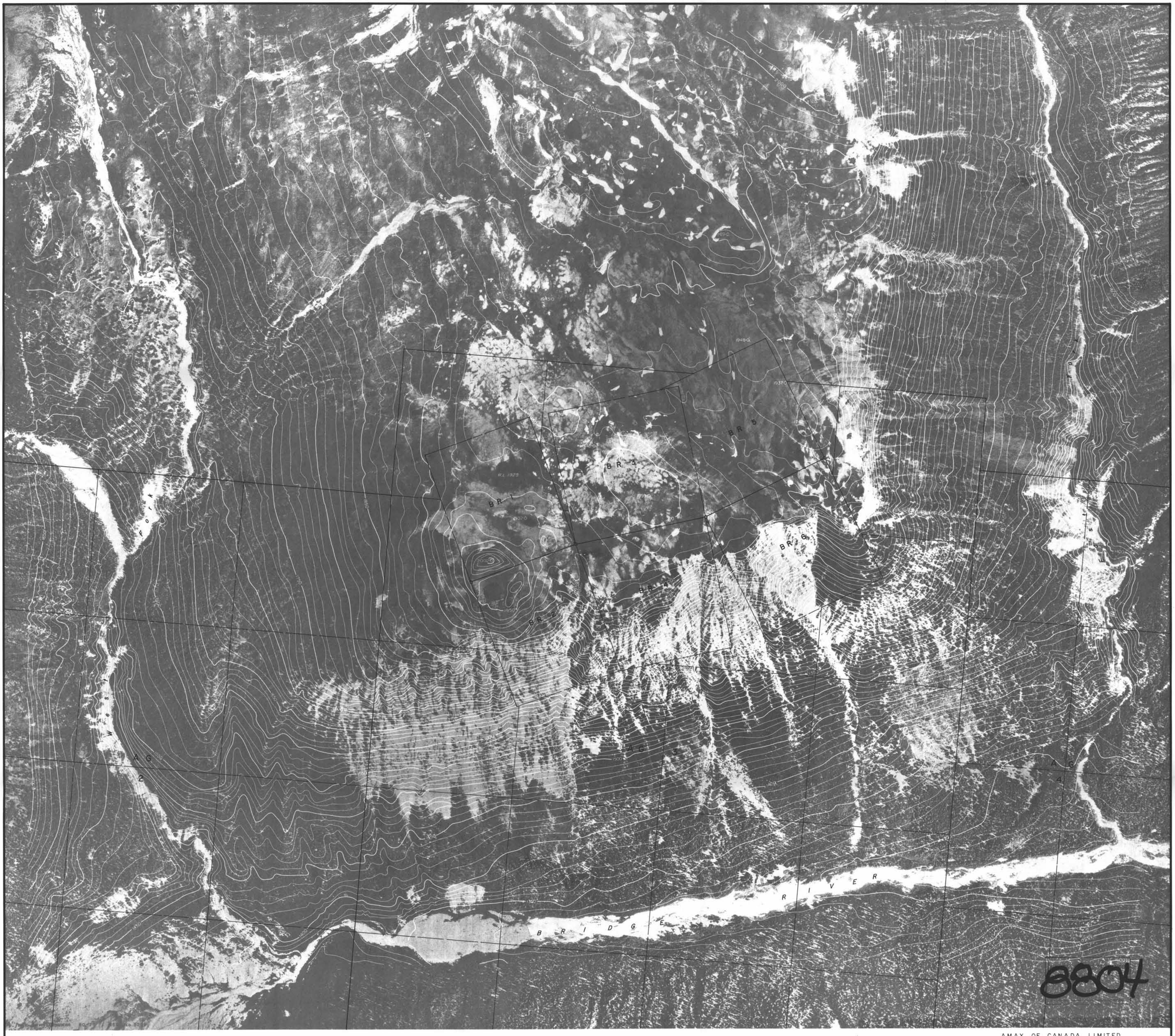
BRIDGE RIVER PROPERTY
— BR AND AG CLAIMS —
LILLOOET MINING DIVISION — BRITISH COLUMBIA

TOPOGRAPHIC MAP

SCALE 400 0 400 METRES / 1000 0 1000 FEET
1 : 10,000

To accompany 1980 Property Report by: S.G. Enns and J.L. LeBel.
S. Enns. Nov 22/80
Vancouver H.P.

N.T.S. Ref 92 J 13, 14
FIG. 7



8804

SYMBOLS

- Claim boundary.
- Claim post, claim location line.
- Claim unit boundary
- M.G.S. claim boundary.

NOTE —
Orthophoto and superimposed topographic contours (contour interval 10 metres) prepared by Pacific Survey Corporation.

AMAX OF CANADA LIMITED

BRIDGE RIVER PROPERTY
— BR AND AG CLAIMS —
LILLOOET MINING DIVISION — BRITISH COLUMBIA

ORTHOPHOTO

SCALE 200 0 200 METRES / 500 0 500 FEET
1 : 5,000

To accompany 1980 Property Report by: S.G. Enns and J.L. LeBel.
S.G. Enns Nov. 28/80.
Vancouver, B.C.

N.T.S. Ref. 92 J 13, 14
FIG. 8