

81-#4885-9266

GEOLOGICAL AND GEOCHEMICAL REPORT

LC 1-4 MINERAL CLAIMS  
LAT 56°28' North, LONG 125°51' West  
N.T.S. 94-C-5W  
OMINECA MINING DIVISION

for  
GOLDEN RULE RESOURCES LTD.  
Calgary, Alberta

by  
Michael Fox, P.Geol.  
TAIGA CONSULTANTS LTD.  
Calgary, Alberta

March, 1981

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
9266  
NO.

TABLE OF CONTENTS

Certificate

INTRODUCTION . . . . .	1
Figure 1 General Location Map. . . . .	2
Figure 2 Claims Location Map . . . . .	3
1980 EXPLORATION . . . . .	5
GEOLOGY AND MINERAL DEPOSITS . . . . .	6
Figure 3 Regional Geology. . . . .	7
Figure 4 Regional Aeromagnetics. . . . .	8
GEOCHEMISTRY . . . . .	15
CONCLUSIONS AND RECOMMENDATIONS. . . . .	17
STATEMENT OF EXPLORATION EXPENDITURES. . . . .	19

APPENDIX I Analytical Procedures

APPENDIX II Geochemical Analyses

C E R T I F I C A T E

I, the undersigned, of the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a Consulting Geologist with an office at #100, 1300 - 8th St. S.W., Calgary, Alberta;
2. I am a graduate of the University of British Columbia with a B.Sc. in Geology (1974);
3. I have worked in the field of mineral exploration since 1965;
4. I am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta; and
5. I personally worked on the claims and supervised exploration work carried out there and described in this report.

Respectfully submitted;



---

Michael Fox, P.Geol.

1981

INTRODUCTION

Location and Access

The LC 1, 2, 3, and 4 mineral claims form a contiguous group of claims, located in N.T.S. map-area 94-C-5W, approximately 350 km northwest of Prince George, British Columbia (Figure 1). The approximate geographic coordinates of the centre of the claim block are 56°28' North latitude and 125°51' West longitude (Figure 2). Access to the claims is provided by the Omineca development road which follows the west side of Lay Creek. Approximately 1km northeast of the LC claims, a four-wheel-drive trail leaves the Omineca road and runs west for approximately 3km into the Granite Basin area, in the central part of the LC claim group.

Property and Ownership

The LC 1-4 mineral claims are located in the Omineca Mining Division and are entirely owned by Golden Rule Resources Ltd. of Calgary, Alberta. The claims are described more specifically as follows:

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record Number</u>	<u>Date of Record</u>
LC 1	20	2675	April 3, 1980
LC 2	10	2676	April 3, 1980
LC 3	10	2677	April 3, 1980
LC 4	4	2678	April 3, 1980

For purposes of applying assessment work, the above claims have been registered as a single group.

Physiography and Glaciation

The claims lie within the Omineca Mountains subdivision of the Interior Plateau. The region is entirely glaciated and is characterized by wide U-shaped major valleys filled with glacial deposits and alluvium. Mountain peaks in the area average 1980m (6500') ASL in elevation and rise fairly

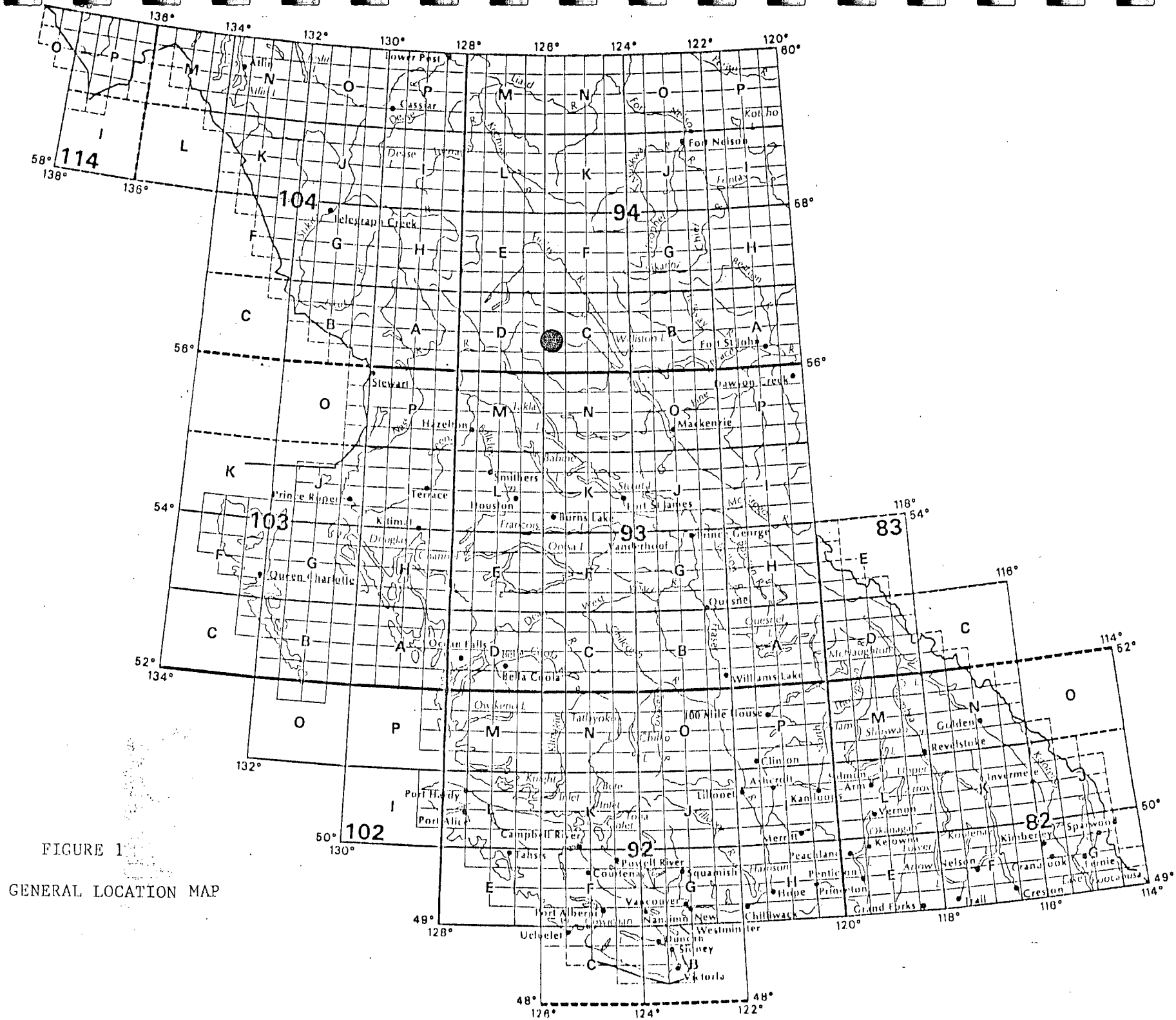
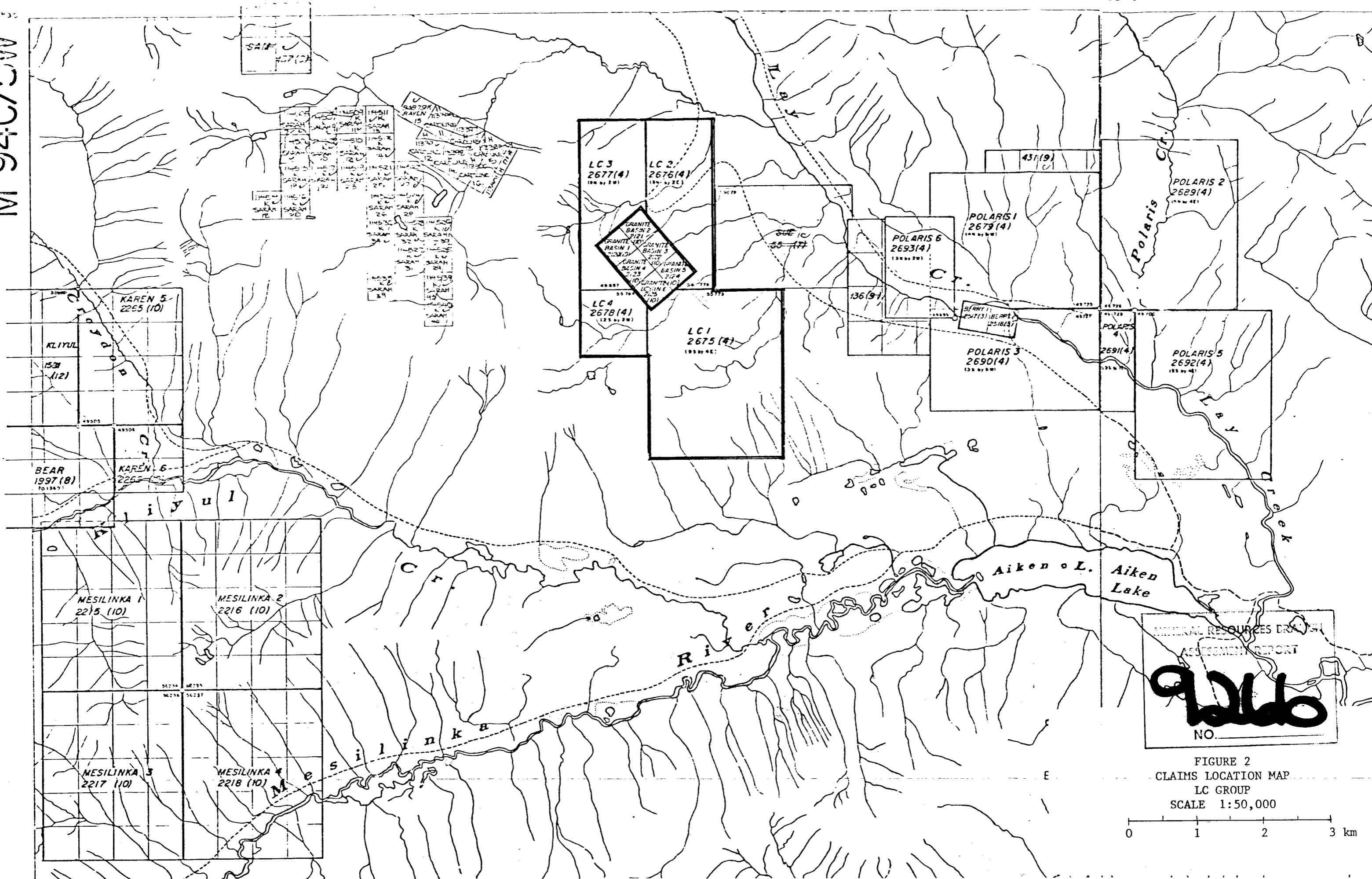


FIGURE 1

GENERAL LOCATION MAP

M 94C/5W

125°45'

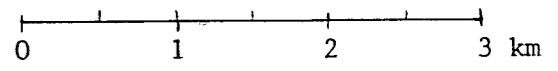


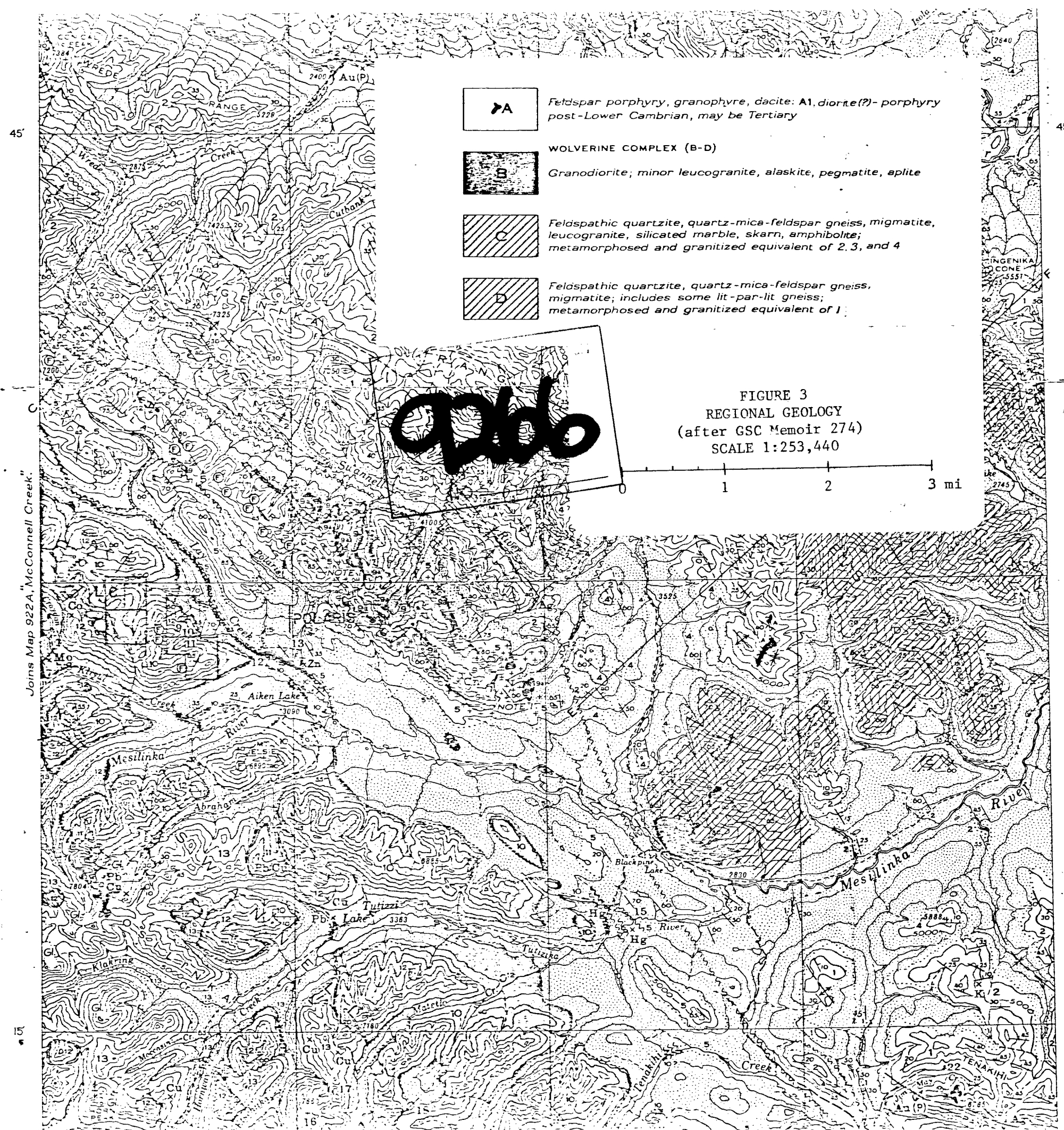
MINERAL RESOURCES DATA  
ASSESSMENT REPORT

**9266**

NO.

FIGURE 2  
CLAIMS LOCATION MAP  
LC GROUP  
SCALE 1:50,000





- A** Feldspar porphyry, granophyre, dacite; A1, diorite(?) - porphyry post-Lower Cambrian, may be Tertiary
- WOLVERINE COMPLEX (B-D)**
- B** Granodiorite; minor leucogranite, alaskite, pegmatite, aplite
- C** Feldspathic quartzite, quartz-mica-feldspar gneiss, migmatite, leucogranite, silicated marble, skarn, amphibolite; metamorphosed and granitized equivalent of 2, 3, and 4
- D** Feldspathic quartzite, quartz-mica-feldspar gneiss, migmatite; includes some lit-par-lit gneiss; metamorphosed and granitized equivalent of 1

FIGURE 3  
REGIONAL GEOLOGY  
(after GSC Memoir 274)  
SCALE 1:253,440

- CRETACEOUS**  
LOWER CRETACEOUS
- 14** USLIKA FORMATION: conglomerate, minor argillite
- JURASSIC OR CRETACEOUS**  
UPPER JURASSIC OR LOWER CRETACEOUS  
OMINECA INTRUSIONS (11-13)
- 13** Granodiorite, adamellite-granite; quartz diorite; minor syenite, syenodiorite, diorite, alaskite, pegmatite, aplite, lamprophyre, and feldspar porphyry. Represents undivided Omineca intrusions in a few less known, and in small, highly complex, parts of the Hogem batholith
- 12** Quartz diorite, diorite; minor syenodiorite, meladiorite, appinite, hornblendite, and uralite amphibolite
- 11** Hornblendite, feldspathic hornblendite, appinite, meladiorite, minor hornblende diorite, biotite peridotite, and uralite amphibolite
- TRIASSIC AND JURASSIC**  
UPPER TRIASSIC AND LATER  
TAKLA GROUP
- 10** Andesitic flows and breccias; basalt; tuff, agglomerate, shale, conglomerate, limestone
- PERMIAN (?) OR LATER**  
POST-MIDDLE PERMIAN, PRE-UPPER TRIASSIC (?)  
TREMBLEUR INTRUSIONS (?)
- 9** Peridotite; dunite, pyroxenite, serpentinite; 9a. includes hornblendite and related rocks
- PENNSYLVANIAN (?) AND PERMIAN**  
CACHE CREEK GROUP (6-8)
- 8** Limestone; minor argillite, chert, and andesite; may be partly or entirely older than 6 or 7
- 7** Argillite, slate, ribbon chert; greenstone; minor tuff and limestone; may be in part of same age as 6
- 6** Andesitic and basaltic flows, tuffs, breccias; agglomerate; minor argillite, slate, chert, limestone; may be in part of same age as 5 and 7
- MESOZOIC**
- PALÆOZOIC**
- MISSISSIPPIAN TO PERMIAN (Mainly or entirely)**
- 5** Tuff; andesitic and basaltic flows, agglomerate, greywacke; sandstone, grit, conglomerate; limestone, chert, shale, argillite; may be in part of same age as 6 and 7
- CAMBRIAN AND (?) EARLIER**  
LOWER CAMBRIAN (Partly or entirely)  
INGENIKA GROUP (2-4)
- 4** Limestone, in part micaceous; interbedded with 2
- 3** White quartzite; interbedded with 2
- 2** Quartz-chlorite schist, sericite schist, quartzite, slate, phyllite, quartzitic conglomerate; minor limestone, chloritoid schist, and tourmaline-zoisite schist
- PROTEROZOIC**
- TENAKIHI GROUP**  
Quartz-mica schist, garnetiferous schist; micaceous, garnetiferous, and feldspathic quartzite; minor kyanite schist, staurolite schist, quartz-mica-feldspar augen-gneiss
- 1**

abruptly from the valleys to form smooth, conical, very steep peaks or rugged ridges and ranges. The lower slopes of the mountains are heavily wooded. Treeline is at approximately 1525m (5000') ASL.

Most of the claims area lies above treeline astride a rugged range which occupies the area between Kliyul Creek and Lay Creek. Elevations on the property range up to in excess of 2135m (7000') ASL, and the topography of the property is characterized by razorback ridges, nearly sheer cirque faces, and deeply cut V-shaped stream valleys.



1980 EXPLORATION

Work carried out on the claims in 1980 consisted of helicopter-supported prospecting, reconnaissance geological mapping, and reconnaissance rock geochemical sampling. The results of this work are presented on Map 1, which is appended to this report.

## GEOLOGY AND MINERAL DEPOSITS

### Geology

The claims are underlain by a thick sequence of rocks described as andesitic flows, breccias, tuffs, and intercalated agglomerate, shale, and limestone of the Upper Triassic Takla Group. In the claims area, fine-grained to micro-porphyrific hornblende porphyry flows of andesitic composition predominate in the section. Only minor intercalated strata of volcanoclastics and graphitic shale were observed. The hornblende porphyry flows contain varying visible percentages of micro-porphyrific feldspar crystals which are considerably less abundant than the hornblende phenocrysts. On the whole, the geologic section consists of a massive, monotonous series of northeasterly striking, northwesterly dipping hornblende porphyry flows. Regional strike and dip is  $030^{\circ}/48^{\circ}$  NW.

In the vicinity of Granite Basin, the hornblende porphyry flows are intruded by a series of feldspar porphyry sills. The feldspar porphyry bodies are characterized by abundant light grey feldspar phenocrysts 0.5 to 3.0mm in diameter set in a light grey to dark green groundmass. Hornblende is usually absent (or not visible) and when present, constitutes less than 15% of the rock. Dark green hornblende porphyry dykes can be seen, cutting the feldspar porphyry bodies at near-vertical dips. These dykes are probably feeders for the hornblende porphyry flows higher in the section.

The contacts of the feldspar porphyry bodies are generally characterized by the development of siliceous to glassy, well-pyritized zones. At several locations, sediments in contact with the feldspar porphyry bodies exhibit hornfelsic recrystallization.

### Mineral Deposits

The LC claims were located to cover an apparent trend of mineralization along which three occurrences were reported, known as the Granite

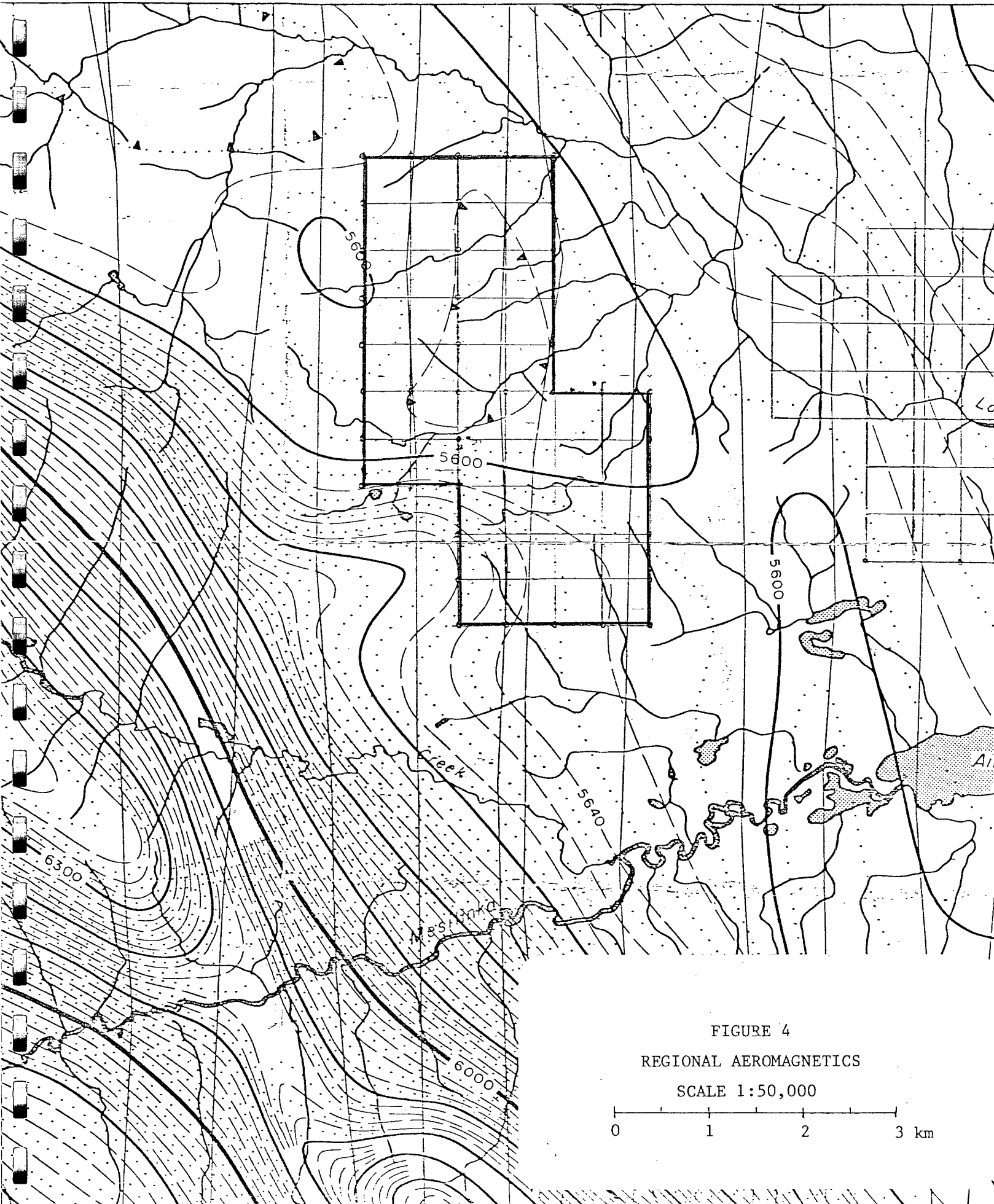
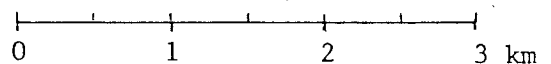


FIGURE 4  
 REGIONAL AEROMAGNETICS  
 SCALE 1:50,000



Basin, the Halquinn, and the Red Dyke groups. Excerpts from GSC Memoir 274, describing the three groups, are included below:

### GRANITE BASIN GROUP (9)

*Reference:* Lay, Douglas: Aiken Lake Area, British Columbia; B. C. Department of Mines, Bull. No. 1, pp. 15-18 (1940).

The Granite Basin group of claims, owned by The Consolidated Mining and Smelting Company of Canada Limited, covers the south wall of a northeasterly facing cirque draining into Lay Creek, 6 miles by trail from the east end of Aiken Lake. The showings consist of broad, pyritized bands in Takla group andesite and intercalated sedimentary rocks invaded by small bodies of Omineca intrusions.

The predominant rock in the immediate vicinity of the main workings is a moderately dark, grey-green, porphyritic andesite, with small black hornblende and scattered grey feldspar phenocrysts. A few beds of tuff, argillite, and impure limestone are intercalated with the andesite. This rock is cut by a grey to greenish grey 'diorite porphyry', with hornblende phenocrysts up to  $\frac{1}{8}$  inch long in a fine-grained matrix. The porphyry closely resembles the andesite, and in places is difficult to distinguish from it. Contacts between the two rocks are in places sharp and definitely intrusive; in other places they appear to be gradational.

Both the andesite and the 'diorite porphyry' are intruded by a medium to light grey or buff-coloured, medium-grained to sugary, 'porphyritic diorite' with abundant feldspar phenocrysts and a few hornblende phenocrysts in a light grey, medium-grained matrix. Although individual bodies of this rock were never traced for more than 300 feet or so, the nature of their contacts and outcrop positions would indicate that they may be irregular sill-like bodies, 50 to 150 feet thick, in the andesites and bedded tufts.

The andesite, the 'diorite porphyry', and the 'porphyritic diorite' are all cut by well-defined dykes 10 to 100 feet wide of light grey feldspar porphyry.

The andesite and the 'diorite porphyry' are generally sparsely mineralized with fine-grained pyrite, but may be well mineralized where they are in contact with the 'porphyritic diorite', which is everywhere heavily, though somewhat irregularly, pyritized.

Four pyritized bands are exposed within a horizontal distance of about 2,000 feet, between elevations of 5,150 and 6,000 feet, on the east end of the precipitous south wall of the cirque (See Figure 15). They appear to consist mainly of sill-like bodies of 'porphyritic diorite' trending about parallel with the bedding of the tufts and argillites, which are well exposed farther west on the cirque wall, where they strike northeast and dip 40 to 60 degrees northwest. The most easterly of these bands is split by an unmineralized porphyry dyke about 60 feet wide, producing, at the crest of the ridge, five pyritized bands, which the owners have numbered 1 to 5 consecutively from east to west. The pyritized bands do not have definite margins, and are not uniformly mineralized. Some heavily pyritized areas, as evidenced by dark, rusty weathering patches on the cirque wall, are as much as 200 feet wide and 400 feet long.

Exploration, consisting of trenches, open-cuts, and two adits totalling 379 feet of underground workings, has been confined largely to the most easterly pyritized band. Most of the workings are in a rusty weathering, intensely fractured, friable rock containing much fine-grained, disseminated pyrite. Minute grains of chalcopyrite, and what appear to be bornite and tetrahedrite, were noted in one specimen, but copper mineralization has nowhere been sufficient to yield a conspicuous copper stain.

It is impossible to assign definite widths to the pyritized bands. Workings crossing the easternmost band are from 10 to 90 feet in length. Mr. E. Bronlund of The Consolidated Mining and Smelting Company of Canada Limited reported that encouraging assays had in places been obtained across widths of as much as 45 feet, and that the highest part of the zone carried up to  $\frac{3}{4}$  ounce gold a ton across 30 feet. A sample taken by Douglas Lay of the British Columbia Department of Mines across 40 feet in the upper underground working assayed: gold, 0.2 ounce a ton.

#### HALQUINN AND RED DYKE GROUPS (10, 11)

The Halquinn and Red Dyke groups were staked in the summer of 1947 by independent prospectors on the 'Granite Basin' mineral zone, immediately south of and adjoining the Granite Basin claims. No exploratory work has been done on them to date.

The Granite Basin prospect is currently covered by six two-post mineral claims located near the centre of the LC group. These claims are owned by an unrelated company. The Red Dyke and the Halquinn prospects were not located by the work carried out in 1980 and apparently lie in much closer proximity to the Granite Basin prospect than is suggested by GSC Map 1030 (see Figure 3). The LC 1 and 2 claims include a 100m wide fraction within the Granite Basin group.

An earlier assessment report (see B.C. Assessment Report 5423) includes a description by Mr. E. Bronlund of the mineralized zones in the Granite Basin area. Mr. Bronlund supervised the original work carried out on the prospects by the Consolidated Mining and Smelting Co. Ltd. in the 1930's. Due to its relevance to current exploration efforts on the LC claims, Mr. Bronlund's description is included below:

"I have now had a chance to re-locate and look thru reports, notes and other data relating to our initial work on the Granite Basin property from 1935 to 1938. Some data were lost in the Aiken Lake fire of 1938 but are not too important. I thought a summary of this information might be of some help to you.

"We took many hundreds of samples, most of which were moiled channel samples in 5 ft. sections across solid outcrops and were carefully taken. We found the assay results quite confusing in that there was no correlation of gold and silver values with apparent mineralization. Most of our samples showed only trace or very low gold values (.02 to .03) but there were certain areas of marginal values (.10 to .35) and it was decided to investigate one of these (No. 1 zone) by driving an adit tunnel to intersect the zone some 90 feet below the surface trench. This

was the No. 1 tunnel (upper adit) which was 158 feet long with two crosscuts 66 ft. and 10 ft. long, for a total underground footage of 234 feet, completed in October 1937. It cut a sheared zone containing pyrite and small amounts of chalcopyrite, tetrahedrite, and galena, and gave a weighted average assay of .117 oz. Au across a true width of 40 feet, with the best sections showing .335 oz. Au across 10 feet. (Douglas Lay sampled the tunnel in 1939 and reported .20 oz. across 40 feet). The surface trench some 90 feet directly above, gave a weighted average of .17 oz. Au across 60 feet with the best section showing .355 oz. across 20 feet. The surface trench cut across the zone at an angle and the widths therefore greater than true.

"We considered this a satisfactory check for this particular show but it did not account for the erratic results of our sampling elsewhere which had assumed that the gold and silver values were associated with the 4 or 5 pyritized bands of porphyritic diorite referred to in Root's reports (G.S.C. Memoir 274). These bands are from 50 to 150 feet thick and show a sub-parallel northwesterly strike from the crest of the mountain ridge down the steep slopes towards the basin valley. They are for the most part heavily pyritized and contain no other visible sulphides.

"Some years later I had the opportunity to visit the property a couple of times. A few check samples were taken and a number of specimens for petrographic work. Some detailed mapping of contacts, shears and other structures was also done. As a result of this work we came to a quite different interpretation of the geology. It appears the gold and silver values are associated with a pattern of shearing which cuts across all rock types and contacts and is later than the pyritic zones and probably the latest structural event. The zones of shearing are from 10 to 50 feet wide, have an east-west strike with steep, northerly dips and trend parallel to the Basin valley axis. There are 3 of these zones presently known and they look like gneissic bands and contain quartz, sericite, chlorite and carbonates. Sulphide content, mainly pyrite, is quite low. Being scantily mineralized in relation to the general country rock, these shear zones are easily overlooked and it is my feeling that sampling in recent years has missed this point and could account for the negative results reported.

"No. 1 Shear Zone is the most easterly and on which the tunnel was driven. Its width was about 40 feet in the tunnel, with the best values towards the footwall. Little is known of the length because of talus cover in both strike directions.

"No. 2 Shear Zone outcrops at a point 600 feet southwest (bearing 230°) from the upper tunnel portal and 280 feet higher elevation. It shows a width of about 40 feet of which the hanging wall section assayed .275 oz. Au and 12.83 oz. Ag across 10 feet, and the foot wall section .03 oz Au and 3.68 oz Ag across 15 feet. The 15 ft. intervening section showed only very low values. To the east of this outcrop are steep, inaccessible bluffs, to the west the zone is covered by talus for about 400 feet and then outcrops on a ridge where it crosses one of the pyritized bands of porphyritic diorite. It shows here a width of 10 feet assaying .22 oz. Au and 7.9 oz. Ag.

"No. 3 Shear Zone lies about 500 feet further southwest and at an elevation of about 600 feet above the tunnel. It is a broad zone which may actually comprise two or more shears. The area is steep and under constant bombardment from rockbluffs above. Our samples indicate one shear which was sampled at 50 ft. intervals or 150 feet along strike as follows: .30 oz. Au across 7 feet (top, east), .52 oz. Au across 5 feet, .16 oz. Au across 7 feet, and .18 oz. Au across 5 feet. Another parallel shear higher up, 100 feet slope distance, shows .18 oz. Au across 5 feet (top exp.), .15 oz. Au across 5 feet, .12 oz. Au across 15 feet, .152 oz. Au across 20 feet, and .063 oz. Au across 15 feet for a sampled length of 140 feet. Silver contents were less than one ounce but could have been leached out partially.

"Rock specimens from these 3 shear zones show a white to light blueish colored aphanitic groundmass with thin, closely spaced ribbon-like, wavy bands of pyrite, patches of carbonates, some vugs and crossfractures. Thin sections show a schistose, gneissic, banded aggregate of quartz, sericite chlorite and hydromicas with some carbonates. Mariposite is present. There are two generations of pyrite, an early fine-grained variety randomly dispersed in part as a film along shear planes. This is quite noticeable where the country rock is a pyritized diorite. The late pyrite is coarser grained, darker yellow and occurs as irregular pods, in small crossfractures and as beaded ribbons along the foliations, generally accompanied by very fine-grained chalcopyrite, tetrahedrite and galena which are the latest sulphides. Much of the gold is associated with the base metal sulphides but some can be seen as extremely fine, dust-like particles in the siliceous matrix. The silver values are all with tetrahedrite..."

Of particular interest in Mr. Bronlund's description above is the reported presence of chalcopyrite, tetrahedrite, and galena in the auriferous shear zones. Cu, Ag, and Pb should be important geochemical indicators of the gold-bearing zones.

Rock geochemical sampling carried out in 1974 over the No.'s 1, 2, and 3 shear zones, described by Mr. Bronlund, yielded substantially different results to the earlier sampling. The results of the 1974 sampling have been excerpted from B.C. Assessment Report 5423 and are included for purposes of comparison with the earlier sampling, in the table below:

No. 1 Shear Zone

	Surface		Underground	
	Width	Au (oz/ton)	Width	Au (oz/ton)
E. Bronlund (1937)	60 ft	0.17 (wtd avg)	40' true	0.117 (wtd avg)
	20 ft	0.355	10'	0.335
Douglas Lay (1939)	-	-	40'	0.2

L. Saleken (1974); sampled in 5' intervals over 25':

	0'-5'	5'-10'	10'-15'	15'-20'	20'-25'
Au (oz/ton)	0.014	0.289	0.097	0.030	0.039
Ag (oz/ton)	0.16	0.69	0.35	0.23	0.30

No. 2 Shear Zone

	Width	Au (oz/ton)	Ag (oz/ton)
E. Bronlund (1937)			
Zone A Hanging Wall Section	10'	0.275	12.83
Middle Section	15'	"very low values"	
Footwall Section	15'	0.03	3.68
Zone B (ridge 400' to west)			
Hanging Wall Section	10'	0.22	7.9

L. Saleken (1974); sampled in 5' intervals over 20':

	0'-5'	5'-10'	10'-15'	15'-20'
Au (oz/ton)	(10 ppb)	0.001	0.008	(20 ppb)
Ag (oz/ton)	(1.3ppm)	0.05	0.08	(1.2ppm)

No. 3 Shear Zone

E. Bronlund (1937); sampled two zones across strike at 50' intervals along the shears:



Zone A	Width	Au (oz/ton)	
	7' (top, east)	0.30	} total distance along strike of 150'
	5'	0.52	
	7'	0.16	
	5'	0.18	

Zone B	(parallel shear 100' higher up slope)			
	Width	Au (oz/ton)	Ag (oz/ton)	
	5' (top, east)	0.18	<1	} total distance along strike of 140'
	5'	0.15	<1	
	15'	0.12	<1	
	20'	0.152	<1	
	15'	0.063	<1	

L. Saleken (1974); sampled in 5' and 10' intervals across strike:

	Au (oz/ton)	Ag (oz/ton)
0'-10'	(30 ppb)	(2.9ppm)
10'-15'	< 0.001	< 0.01
15'-20'	< 0.001	0.02
20'-25'	< 0.001	0.02
25'-35'	(40 ppb)	(1.0ppm)

Note: Values in ppb and ppm denote rock geochemical analyses; values in oz/ton indicate rock assay.

Although the three shear zones described above were not examined during the 1980 reconnaissance work on the LC group, careful plotting according to Mr. Bronlund's descriptions of their locations (and also Map 4 in Assessment Report No. 5423) indicates that No. 3 Shear Zone is situated on the LC 1 claim, just beyond the southwest boundary of the Granite Basin 4 mineral claim.

The discrepancies in sample results reported by Mr. Bronlund and the 1974 work are a cause for some concern. There are any number of factors which could explain the discrepancies, for example, inappropriate sampling or analytical methods, erratic distribution of Au values, contamination, etc. Obtaining consistent and reliable gold analyses is notoriously difficult. The high values reported by Mr. Bronlund seem to be the result of long experience and an intimate knowledge of the controls of mineralization at Granite Basin. The potentially economic widths and grades reported by Mr. Bronlund warrant a careful, detailed re-evaluation of the prospect.

## GEOCHEMISTRY

Analytical Procedures, Data Treatment

A total of 47 rock samples were collected at various locations along the reconnaissance traverses over the LC claims. The samples were pulverized and -100 mesh size fraction was analyzed for 26 elements by Acme Analytical Labs Ltd. of Vancouver, using an ICP (induction coupled plasma) analytical technique. The elements for which the samples were analyzed include: Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Th, Cd, Sb, Bi, V, Ca, P, La, In, Mg, Ba, Ti, B, Al, and W. An aqua regia digestion was used. The leach is only partial for Ca, P, Mg, Al, Ti, La, and W; very little Ba is taken into solution. A separate analytical technique was used for Au, consisting of an aqua regia leach, followed by extraction using an organic solvent (MIBK - methyl isobutyl ketone) and semi-quantitative determination by standard Atomic Absorption techniques. More detailed descriptions of analytical techniques are appended to this report.

The analytical results for Cu, Pb, Zn, Ag, Ni, Fe %, As, Sb, and Au-in-rocks have been tabulated and are included as an appendix in this report (ref. samples LC 1-47). Corresponding plots of the analytical results for these elements (except Fe %) have been prepared and are included in the map pocket.

Geochemical Results

Only two of the rock samples collected yielded gold values of interest. These results, 150 ppb and 225 ppb, for samples LC-1 and LC-2, respectively, were quite surprising since the samples consisted of microporphyrific hornblende porphyry (andesite) and there was no indication of veining or mineralization in hand specimen. At the time of writing this report, the samples have been re-submitted for check analyses. Weak enrichments of gold, not considered to be anomalous, occur in several of the feldspar porphyry zones sampled.

Although background values in Cu are generally high, due to the chalcophile nature of the volcanics being sampled, siliceous zones within the feldspar porphyry bodies exhibit significantly higher Cu values than the suite of hornblende porphyry samples (ref. samples LC 25-33). High Ag and Pb values also accompany the high Cu values in several of the samples. This is consistent with the reported association of chalcopyrite, tetrahedrite, and galena in the auriferous shears, and points to the importance of these elements as pathfinders for the mineralized zones. The reported presence of mariposite would also suggest the potential usefulness of Cr and possibly Ni as pathfinder elements. The coincidence of anomalous Cu and Ag values in samples LC-14, 25, and 27-32 warrants detailed mapping and prospecting for possible auriferous shear zones in these areas. The vicinity of sample LC-27 is particularly attractive as a follow-up target due to the added coincidence of a highly anomalous Pb value.

CONCLUSIONS AND RECOMMENDATIONS

1. Helicopter-supported reconnaissance prospecting, geological mapping, and rock geochemical sampling have identified several zones of interest that warrant more detailed evaluation.
2. The above zones are characterized by shearing, silicification, pyritization, and anomalous Cu, Pb, and Ag-in-rocks geochemical values. These zones occur in a comparable geologic setting to similar auriferous shear zones in the Granite Basin area, which have been explored intermittently by underground and surface exploration methods since the 1930's.
3. Work carried out in the 1930's in the Granite Basin area identified three auriferous shear systems. One of these, referred to as the No. 3 Shear Zone in the literature and in this report, is situated on the LC-1 mineral claim.
4. Potentially economic widths and grades were reported from sampling carried out over the three shear systems in the 1930's.
5. Encouraging exploration results to date justify further work, recommended as follows:

A program of detailed geological mapping and rock sampling should be undertaken to evaluate shear zones of interest identified to date. Careful attention should be paid to proper sampling and analytical procedures in this work, due to the (apparent) discrepancies between the results of sampling carried out in the 1930's by the Consolidated Mining and Smelting Co., and those results reported from sampling carried out in 1974. Some priority should be placed on determining the continuity of mineralized zones along strike since earlier work suggests that continuously mineralized strike lengths of at least 400' are present.

The above recommended program should proceed concurrently with grid-controlled mapping and geochemical sampling in areas adjacent to the presently known shear zones. Cu, Pb, and Ag should prove to be useful pathfinder elements, due to their established association with the auriferous shear systems.

A 20 line kilometre grid, with grid line spacings of 50m and 100m and sampling intervals of 25m, should be sufficient to evaluate the areas of interest. Any targets defined by this work in overburden-covered areas should be amenable to further evaluation by bulldozer trenching. On the rock faces in Granite Basin, however, trenching will have to be carried out by hand due to the severe topography.

TRAVEL EXPENSES

Invoice 80-189	288.65 (19.4%)	56.00	
Invoice 80-221	187.61 (19.4%)	36.40	
Invoice 80-253	49.55 (19.4%)	<u>9.61</u>	102.01

GEOCHEMICAL ANALYSES

48 rocks @ \$8.85			424.80
-------------------	--	--	--------

OFFICE

Report writing, data plotting		430.00	
Drafting		154.00	
Photocopying, reproductions		56.00	
Secretarial		<u>50.00</u>	<u>690.00</u>

TOTAL			<u>\$ 4,719.44</u>
-------	--	--	--------------------

A P P E N D I X I

Analytical Procedures



ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

Feb. 24, 1981

Golden Rule Resources Ltd.,  
150 - 1300 , 8th S.W.  
Calgary, Alberta,  
T2R 1P2

Geochemical Laboratory Methodology - 1981

Sample Preparation

1. Soil samples are dried at 60° and sieved to -80 mesh.
2. Rock samples are pulverized to -100 mesh.

Multi Element Analysis by ICP

Digestion of Sample

0.5 gram samples are digested with hot aqua regia for one hour and the sample is diluted to 10 ml. The diluted sample is aspirated by ICP and the analytical results are printed by Telex, either in percent or ppm as shown.

Mo Cu Pb Zn Ag Ni Co Mn Fe% As U Th Cd Sb Bi V Ca% P% La In  
Mg% Ba% Ti% B Al% W

Please Note : This digestion is partial for Al, Ca, La, Mg, P, Ti, W and very little Ba is dissolved.

Geochemical Analysis for Au

10.0 gram samples that have been ignited overnight at 600°C are digested with hot dilute aqua regia, and the clear solution obtained is extracted with Methyl Isobutyl Ketone.

Au is determined in the MIBK extract by Atomic Absorption using background correction ( Detection Limit = 5 ppb direct AA and 1 ppb graphite AA.)



A P P E N D I X   I I

Geochemical Analyses



To: Golden Rule Resources Ltd.,  
150 - 1300, 8th S.W.  
Calgary, Alberta,  
T2R 1P2

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B. C. V6A 1R6

phone: 253 - 3158

File No. 81-0092

Type of Samples Rock

Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
P 3	111	185	718	2.0	19	6.0	178	7	.035		1
4	54	71	191	.9	14	1.9	32	3	.005		2
5	63	45	140	.9	16	6.6	99	5	.075		3
6	230	22	73	1.5	1	3.5	30	6	.095		4
7	201	25	48	1.6	2	4.0	18	7	.020		5
8	475	23	37	.7	9	8.1	22	6	.005		6
9	1489	17	30	.6	25	23.6	61	43	.005		7
10	1353	15	19	.4	24	19.0	44	31	.005		8
11	950	15	27	.7	49	13.9	36	15	.005		9
12	712	17	25	.2	71	14.0	36	12	.005		10
13	191	12	25	.4	15	4.5	15	3	.005		11
14	28	13	75	.3	11	3.3	12	1	.005		12
15	78	14	64	.8	16	3.9	14	1	.005		13
P 16	674	30	93	1.5	13	20.9	50	36	+5.500		14
											15
LC 1	133	15	76	.3	15	4.7	22	1	.150		16
2	89	13	85	.2	7	5.4	19	1	.250		17
3	93	16	286	.6	17	6.2	26	2	.005		18
4	64	14	285	1.1	40	5.0	31	1	.005		19
5	76	16	79	.3	12	4.3	15	1	.005		20
6	98	12	81	.4	11	4.5	18	1	.005		21
7	25	11	65	.2	6	2.3	10	1	.005		22
8	73	10	68	.4	11	4.6	26	1	.005		23
9	115	8	41	.2	51	2.8	11	1	.005		24
10	75	9	47	.3	45	2.7	16	1	.005		25
11	94	9	47	.2	29	3.6	9	1	.005		26
12	19	11	42	.2	96	3.2	7	1	.005		27
13	38	4	23	.1	10	1.4	5	1	.005		28
14	112	12	327	.6	14	4.3	17	1	.005		29
15	79	14	73	.3	15	5.1	24	1	.005		30
16	89	11	73	.3	18	4.3	15	1	.005		31
17	92	9	61	.2	11	3.6	14	1	.005		32
18	92	10	58	.2	12	4.1	16	1	.005		33
19	83	9	56	.2	37	4.1	16	1	.005		34
20	102	11	70	.3	22	4.3	18	1	.005		35
21	101	11	78	.2	27	4.1	11	2	.005		36
22	72	11	59	.2	9	3.7	13	1	.005		37
LC 23	24	11	65	.3	5	2.2	9	1	.005		38
											39
											40

All reports are the confidential property of clients  
All results are in PPM.

DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Feb. 5, 1981

DATE REPORTS MAILED Feb. 13, 1981

ASSAYER

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

File No. 81-0092

Type of Samples Rock

## GEOCHEMICAL ASSAY CERTIFICATE

Disposition

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
LC 24	14	6	54	.2	3	2.7	8	2	.005		1
25	110	24	126	.5	25	5.5	12	4	.020		2
26	62	11	50	.1	10	3.6	7	1	.010		3
27	123	153	76	.7	8	3.6	7	3	.005		4
28	137	13	46	.5	34	3.5	4	1	.005		5
29	112	12	34	.3	18	3.0	8	1	.005		6
30	337	12	26	1.5	12	2.4	8	2	.005		7
31	202	8	33	.7	4	1.9	7	1	.005		8
32	355	14	26	1.1	17	2.8	7	1	.005		9
33	164	8	40	.1	13	2.8	7	1	.005		10
34	8	9	49	.1	4	1.8	4	1	.005		11
35	96	7	44	.2	16	3.0	6	1	.005		12
36	31	6	29	.2	2	2.5	6	1	.005		13
37	10	6	18	.3	16	2.1	11	1	.005		14
38	20	11	61	.2	17	2.8	6	1	.005		15
39	39	7	56	.1	4	2.2	4	2	.005		16
40	24	15	47	.3	32	4.0	22	1	.040		17
41	19	13	79	.2	34	4.1	14	2	.045		18
42	19	12	60	.1	37	5.0	17	1	.050		19
43	107	4	12	.2	16	1.9	3	1	.005		20
44	122	5	38	.2	25	3.2	8	1	.005		21
45	96	6	45	.4	24	3.8	12	2	.030		22
46	87	8	28	.2	25	3.4	8	2	.005		23
47	23	7	58	.2	4	2.2	3	1	.005		24
LC 48	126	16	97	.3	31	3.9	11	2	.040		25
											26
SF 1	15	6	6	.7	2	3.1	7	1	.010		27
2	7	1	3	.1	5	.4	1	1	.005		28
3	6	1	1	.1	7	.5	1	1	.005		29
4	5	7	10	.3	6	6.6	9	4	.005		30
5	4	2	5	.1	3	1.3	5	1	.005		31
6	9	5	11	.1	1	4.0	9	2	.005		32
7	12	4	12	.1	1	4.2	8	2	.005		33
8	45	7	11	.1	1	3.7	5	1	.005		34
9	1	4	12	.1	3	2.5	7	1	.005		35
10	220	9	27	.1	5	5.4	13	3	.005		36
SF 11	2	8	56	.1	21	2.9	6	2	.005		37
											38
											39
											40

All reports are the confidential property of clients  
All results are in PPM.

DIGESTION:.....

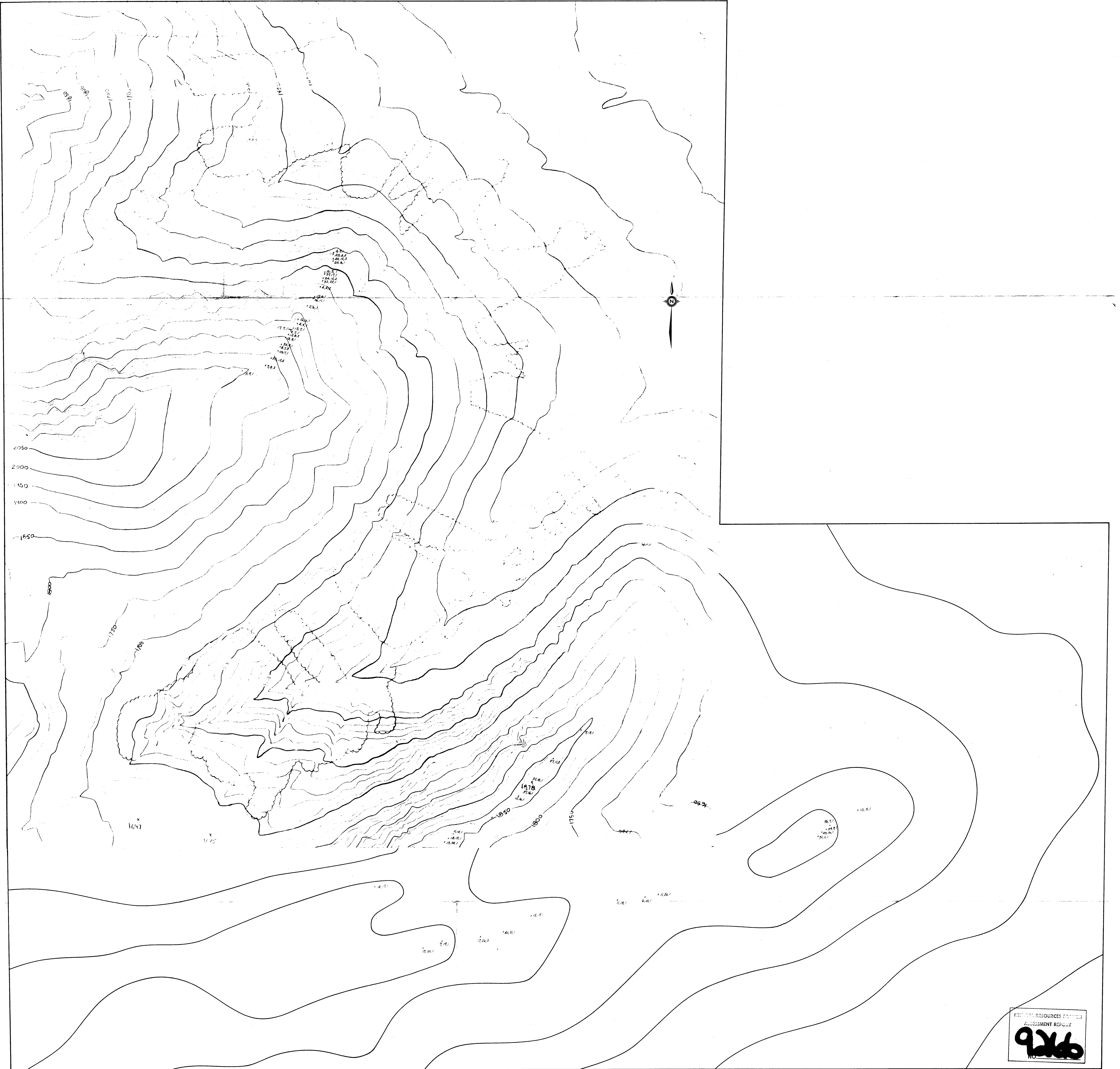
DETERMINATION:.....

DATE SAMPLES RECEIVED Feb. 5, 1981

DATE REPORTS MAILED Feb. 13, 1981

ASSAYER *SK*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER

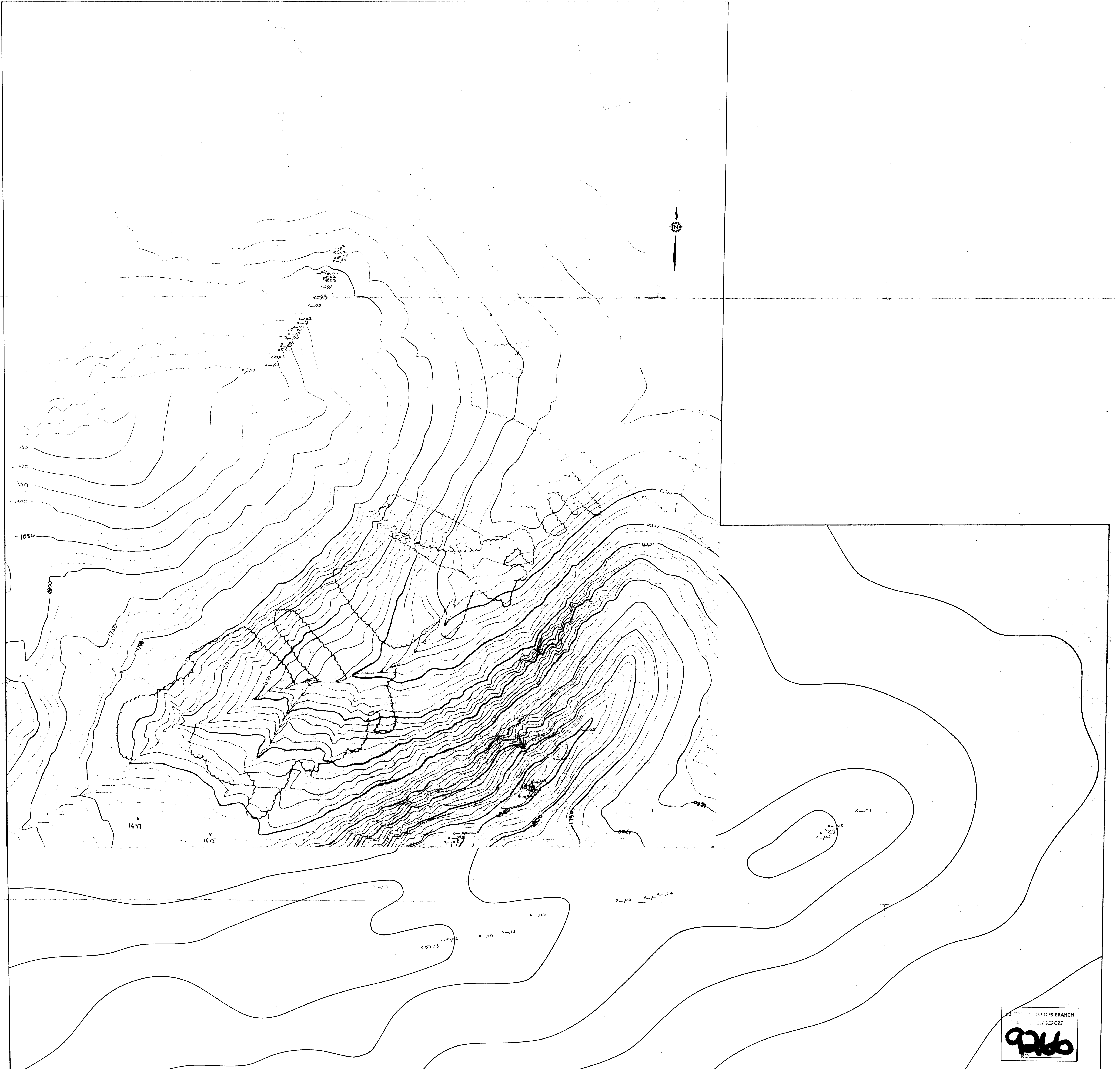


GOLDEN RULE RESOURCES LTD.  
 ASSESSMENT REPORT  
**9266**  
 NO.

x 96, 7, 1 Ni, As, Sb  
 Values in ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 4 - Ni, As, Sb in Rocks	LC CLAIMS
PROJECT GR-BC-7	MAP 94 C/5,12
SCALE 1:5000	0 50 100 150 200 250 METRES
TAIGA CONSULTANTS LTD.	

MARCH, 1981

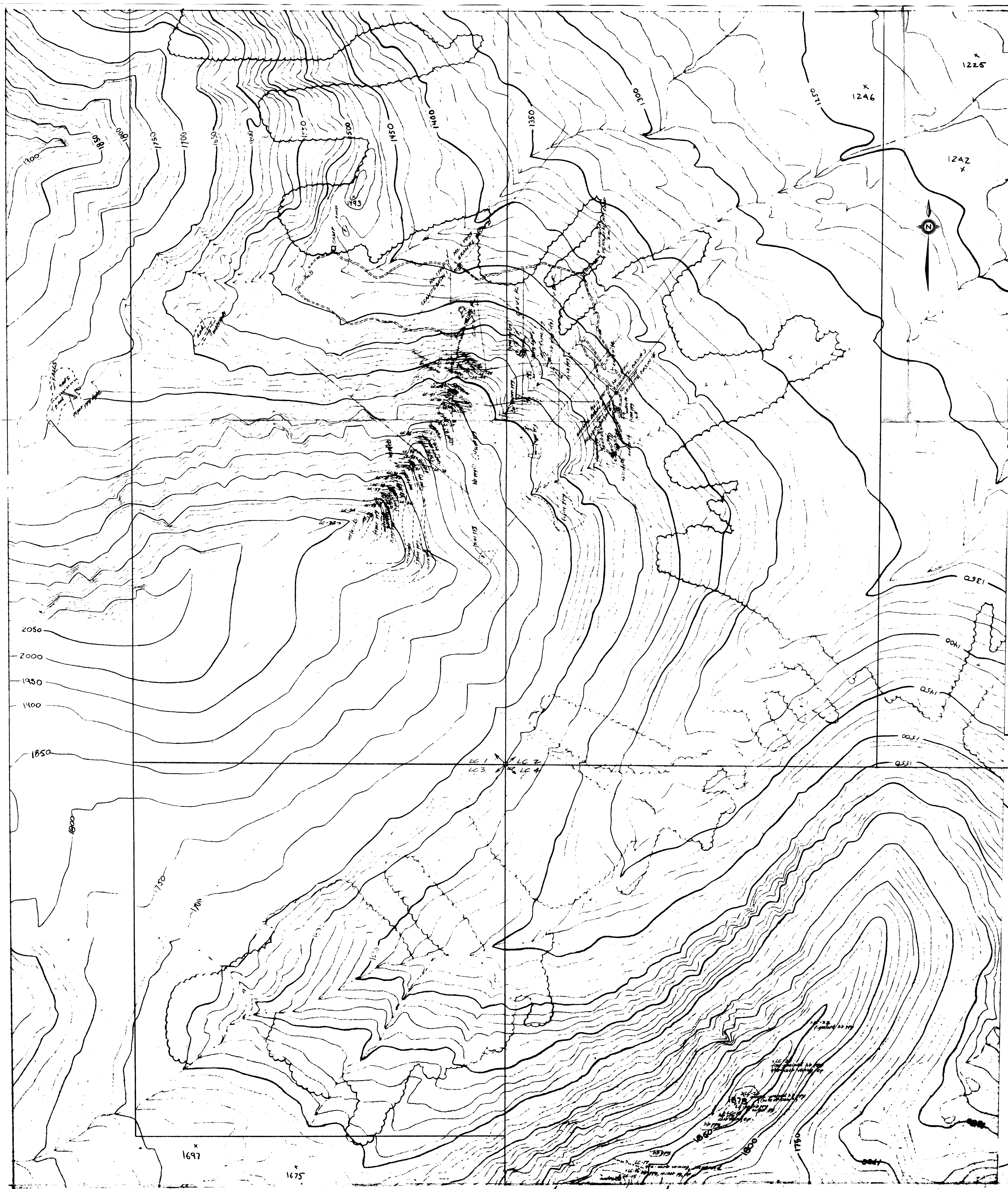


GOLDEN RULE RESOURCES BRANCH  
 ANNUAL REPORT  
 9266  
 NO.

x 50, 0.4 Au, Ag  
 Au values in ppb  
 Ag values in ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 2 - Au, Ag in Rocks	LC CLAIMS
PROJECT GR-BC-7	MAP 94 C/5, 12
SCALE 1:5000	0 50 100 150 200 250 METRES
TAIGA CONSULTANTS LTD.	

MARCH, 1981



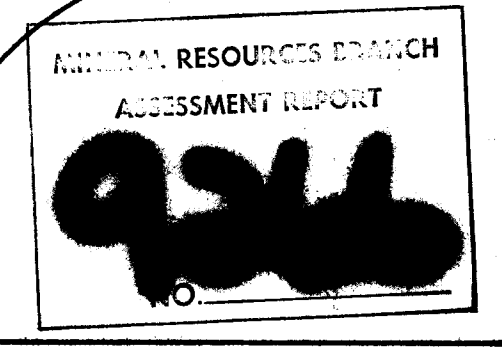
**LEGEND**

- SYMBOLS**
- ↖ ↘ strike and dip
  - ∩ ∪ jointing, foliation
  - ▨ Pyritized zone
  - ▩ Heavily pyritized zone
  - - - - - geologic contact; defined, inferred, assumed
  - === Access roads, trenches
  - ⊕ Claim post
  - ⊙ ADX

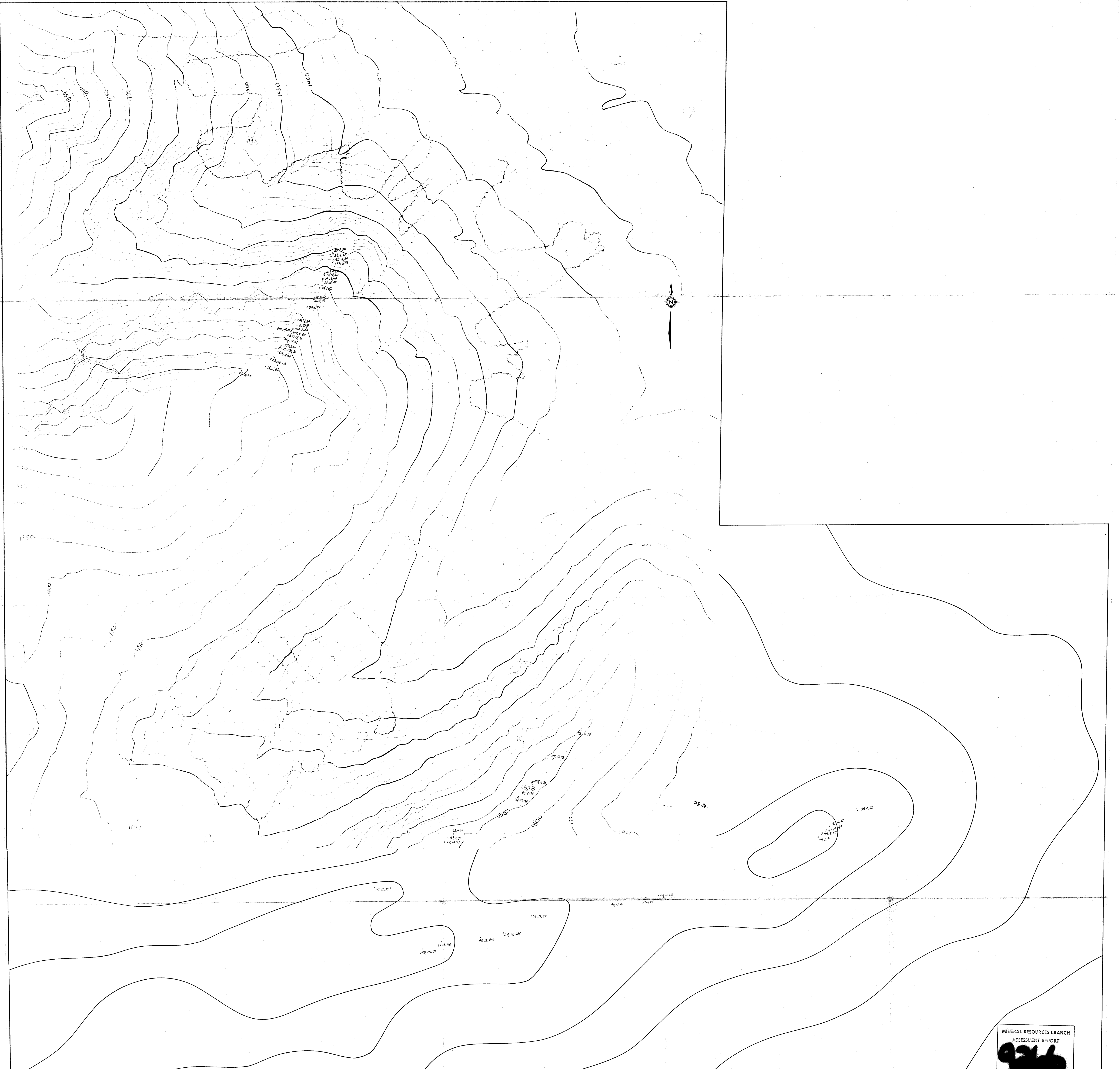
- ABBREVIATIONS**
- py pyrite
  - fsp feldspar
  - hb hornblende
  - PPY porphyry
  - me meconoids
  - ffv fine grained, very fine grained
  - ep epidote
  - qtz quartz
  - carb carbonate
  - wx weathered, weathering

LC-13 to 16 pp  
 LC-17 to 20 pp  
 LC-21 to 24 pp  
 LC-25 to 28 pp  
 LC-29 to 32 pp  
 LC-33 to 36 pp  
 LC-37 to 40 pp  
 LC-41 to 44 pp  
 LC-45 to 48 pp  
 LC-49 to 52 pp  
 LC-53 to 56 pp  
 LC-57 to 60 pp  
 LC-61 to 64 pp  
 LC-65 to 68 pp  
 LC-69 to 72 pp  
 LC-73 to 76 pp  
 LC-77 to 80 pp  
 LC-81 to 84 pp  
 LC-85 to 88 pp  
 LC-89 to 92 pp  
 LC-93 to 96 pp  
 LC-97 to 100 pp

LC-1 fine grained  
 hb pp  
 LC-2  
 LC-3  
 LC-4  
 LC-5  
 LC-6  
 LC-7  
 LC-8  
 LC-9  
 LC-10  
 LC-11  
 LC-12  
 LC-13  
 LC-14  
 LC-15  
 LC-16  
 LC-17  
 LC-18  
 LC-19  
 LC-20  
 LC-21  
 LC-22  
 LC-23  
 LC-24  
 LC-25  
 LC-26  
 LC-27  
 LC-28  
 LC-29  
 LC-30  
 LC-31  
 LC-32  
 LC-33  
 LC-34  
 LC-35  
 LC-36  
 LC-37  
 LC-38  
 LC-39  
 LC-40  
 LC-41  
 LC-42  
 LC-43  
 LC-44  
 LC-45  
 LC-46  
 LC-47  
 LC-48  
 LC-49  
 LC-50  
 LC-51  
 LC-52  
 LC-53  
 LC-54  
 LC-55  
 LC-56  
 LC-57  
 LC-58  
 LC-59  
 LC-60  
 LC-61  
 LC-62  
 LC-63  
 LC-64  
 LC-65  
 LC-66  
 LC-67  
 LC-68  
 LC-69  
 LC-70  
 LC-71  
 LC-72  
 LC-73  
 LC-74  
 LC-75  
 LC-76  
 LC-77  
 LC-78  
 LC-79  
 LC-80  
 LC-81  
 LC-82  
 LC-83  
 LC-84  
 LC-85  
 LC-86  
 LC-87  
 LC-88  
 LC-89  
 LC-90  
 LC-91  
 LC-92  
 LC-93  
 LC-94  
 LC-95  
 LC-96  
 LC-97  
 LC-98  
 LC-99  
 LC-100



GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP I - GEOLOGY	LC CLAIMS
PROJECT GR-BC-7	MAP 94 C/5,12
SCALE 1:5000	0 50 100 150 200 250 METRES
TAIGA CONSULTANTS LTD.	
MARCH, 1991	



x 25, 11, 65 Cu, Pb, Zn  
Values in ppm

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**9216**  
NO.

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 3 - Cu, Pb, Zn in Rocks	LC CLAIMS
PROJECT GR-BC-7	MAP 94 C/5,12
SCALE 1:5000	0 50 100 150 200 250 METRES
TAIGA CONSULTANTS LTD.	

MARCH, 1991