

830045

GEOLOGICAL REPORT

on the

LOUISE COPPER PROSPECT

**Smithers Area
Omineca Mining Division
British Columbia**

**Latitude: 54°51' North
Longitude: 127°41' West
NTS: 93L/13E**

for

GLOBAL MINERAL AND CHEMICAL LTD.

by

**N.C. CARTER, PH.D. P.ENG.
March 21, 1997**

TABLE OF CONTENTS

	Page
SUMMARY	1
INTRODUCTION	3
LOCATION AND ACCESS	3
MINERAL PROPERTY	4
PHYSICAL SETTING	5
PREVIOUS WORK	5
REGIONAL GEOLOGICAL SETTING	8
PROPERTY GEOLOGY, GEOPHYSICS, GEOCHEMICAL SIGNATURES AND MINERALIZATION	10
DIAMOND DRILLING RESULTS	15
CONCLUSIONS AND RECOMMENDATIONS	20
COST ESTIMATE	23
REFERENCES	24
CERTIFICATE	26

List of Figures

	Following Page
Figure 1 - Location	2
Figure 2 - Location - Louise Lake Property	3
Figure 3 - Mineral Claims	4
Figure 4 - Geological Setting	10
Figure 5 - Geophysical Response - IP	12
Figure 6 - Drill Hole Plan	15

SUMMARY

Global Mineral and Chemical Ltd. holds an option agreement on the Louise Copper porphyry copper-gold prospect which is situated 35 km west of Smithers in west-central British Columbia.

The property, originally located in 1968, was partially tested by geological, geophysical and geochemical surveys and by trenching and 5588.6 metres of diamond drilling. Work by Global Mineral and Chemical Ltd. in 1995 and 1996 has included IP geophysical surveys and 1128 metres of diamond drilling.

Work to date has identified geological features and geochemical and geophysical signatures similar to those associated with significant porphyry deposits elsewhere in west-central British Columbia and the presence of copper-arsenic sulphide minerals suggests that at least some of the mineralization may be transitional between high-level porphyry copper and near-surface epithermal precious metals deposits.

Diamond drilling to date has partially delineated a tabular zone of copper-gold-molybdenum mineralization estimated to contain a possible resource of 50 million tonnes grading 0.30% copper and 0.31 g/t gold. This zone is central to a much broader zone of high chargeabilities as defined by

recent IP surveys. A second zone of high chargeabilities to the northeast has been partially tested by one hole near the margin of the anomaly. This hole contained appreciably higher base and precious metals grades.

The Louise Copper prospect merits additional drilling to test extensions of main zone mineralization to the southwest and to determine the cause of the northeastern IP anomaly. A six hole program is recommended at an estimated cost of \$135,125.00.

INTRODUCTION

Global Mineral and Chemical Ltd. holds title to the Louise Copper porphyry copper-gold prospect which consists of four mineral claims centred on Louise Lake in west-central British Columbia.

This geological report on the Louise Copper prospect, prepared at the request of Global Mineral and Chemical Ltd., provides information pertaining to exploratory programs conducted on the property since the preparation of an earlier report dated January 16, 1995.

This report is based on information provided by the company and on the writer's extensive background in the general area which includes several examinations of the Louise Copper prospect between 1969 and 1995. The writer also examined drill cores from the 1996 program on September 14, 1996.

The writer prepared four previous reports on the property between 1991 and 1995; references to these and other published and unpublished reports are listed in the References section of this report.

LOCATION AND ACCESS

The Louise Copper prospect is situated at Louise Lake which is 35 km west-northwest of Smithers in west-central

British Columbia (Figure 1). The geographic centre of the property is at latitude $54^{\circ}51'$ North and longitude $127^{\circ}41'$ West in NTS map-area 93L/13E.

Conventional access to the property is afforded by a recently constructed logging road extending up Coal Creek (Figure 2). Road distance from Smithers is approximately 60 kilometres.

MINERAL PROPERTY

The Louise Copper property consists of four 4-post mineral claims (64 mineral claim units) located in the Omineca Mining Division. The mineral claims are shown on Figure 3 and details are as follows:

<u>Claim Name</u>	<u>Record Number</u>	<u>Units</u>	<u>Expiry Date</u>
TENN	239324	20	October 23, 2003
TENN(2)	239530	20	July 20, 2003
TENN(3)	239531	20	July 20, 2003
TROUT	240168	4	October 12, 2002

The foregoing mineral claims are believed to have been located in accordance with procedures as specified by the Mineral Tenure Act Regulations for the Province of British Columbia. No claim posts or lines have been examined by the writer.

The mineral claims comprising the property were purchased by 402774 B.C. Ltd. March 27, 1991 and are subject to an option agreement with Global Mineral and Chemical Ltd.

PHYSICAL SETTING

The Louise Copper property (formerly known as the Louise Lake property) is situated in an area of relatively subdued topography within the Bulkley Ranges near the headwaters of Zymoetz River, a major tributary of Skeena River. Louise Lake is at the headwaters of Coal Creek which flows southwesterly into the Zymoetz River.

Elevations range from 915 metres above sea level along Coal Creek in the southwestern property area to more than 1100 metres north of Louise Lake (Figure 3 - note that contours are in Imperial units). Much of the claim area is tree-covered, broken by open, swampy areas east and west of Louise Lake.

Bedrock exposures are mainly restricted to steeper slopes north and south of Louise Lake and along Coal Creek, the shores of Louise Lake and the trenched areas west of the lake.

PREVIOUS WORK

Copper mineralization was discovered immediately west of Louise Lake by Mastodon-Highland Bell Mines Ltd. in 1968. Work by this company and partner Leitch Gold Mines Ltd. included geological, geochemical and geophysical surveys and 220 metres of bulldozer trenching prior to negotiating an

option agreement with Canadian Superior Exploration Limited in late 1969. This company carried out additional geological and geochemical surveys, 42 line-km of Induced Polarization surveys and completed 17 diamond drill holes totalling 2021 metres prior to terminating the agreement in 1971.

The claims lapsed and were re-staked by Granby Mining Corporation in 1975. Work by Granby included a re-assessment of previous survey results and additional soil geochemistry. Granby's interests were acquired by Noranda Exploration Company, Limited in 1979 and this company carried out an airborne VLF-EM and magnetometer survey and some rock and soil geochemistry before abandoning the property in 1985.

The property was staked by L.B. Warren and E.A. Shaede in 1986. A re-sampling of some of the original drill cores was undertaken and an option agreement was entered into with Lacana Mining Corporation (latterly Corona Corporation) in 1987. Work by Corona through 1989 included detailed re-sampling of Canadian Superior 1970 drill core, soil and rock geochemistry, geological mapping, geophysical surveys and 485 metres of backhoe trenching adjacent to the previously trenched areas. Five inclined diamond drill holes totalling 916 metres were also completed prior to Corona relinquishing the option agreement.

The Louise Lake mineral claims were acquired by 402274

B.C. Ltd. in early 1991 and an option agreement was negotiated with New Canamin Resources Ltd. in October of that year. New Canamin subsequently entered into an agreement with Equity Silver Mines Limited whereby Equity could earn a 70% interest in the underlying option agreement by undertaking a minimum \$250,000 exploration program in 1992 and assuming New Canamin's obligations pursuant to the option agreement with 402774 B.C. Ltd.

Equity's 1992 program included a re-evaluation of the results of previous exploration work and the completion of a two-phase diamond drilling program consisting of 7 holes in March and 6 holes in June for a cumulative total of 2651.6 metres. Reclamation work included revegetation of access roads and drill sites and clean-up of the old camp site at the western end of Louise Lake. Expenditures incurred by Equity Silver Mines Limited on amounted to \$277,025.89 (Hanson,1992).

The Louise Copper property was optioned from 402774 B.C. Ltd. by Global Mineral and Chemical Ltd. in late 1994. Exploratory work in 1995 and 1996 has included soil and rock geochemical programs, an 8 line-km Induced Polarization survey in 1995 and a further 30 line-km in 1996, and 1130 metres of diamond drilling in 5 holes in mid-1996.

recent IP surveys. A second zone of high chargeabilities to the northeast has been partially tested by one hole near the margin of the anomaly. This hole contained appreciably higher base and precious metals grades.

The Louise Copper prospect merits additional ^{drilling} to test extensions of main zone mineralization to the southwest and to determine the cause of the northeastern IP anomaly. A six hole program is recommended at an estimated cost of \$135,125.00.

REGIONAL GEOLOGICAL SETTING

The Louise Copper prospect is situated in west-central British Columbia, a region largely underlain by mid-to late Jurassic (Hazelton Group and Bowser Assemblage) and early to mid-Cretaceous volcanic and sedimentary rocks which together comprise Stikinia terrane of the Intermontane tectonic belt. Jurassic and older layered rocks are intruded by mainly coeval granitic rocks of the Topley intrusions and all volcanic and sedimentary sequences are cut by late Cretaceous and early Tertiary granitic rocks.

The older Topley intrusions occur along the axis of the Skeena Arch, a major northeast-trending transverse uplift structure which marks the southern limits of the Bowser Basin and its contained clastic sediments of late Jurassic and early Cretaceous age. Skeena Arch, the northern limits of which are 10 - 15 km south of Louise Copper, also marks the northern limits of areally extensive, early to mid-Tertiary continental volcanic rocks which overlie older Mesozoic assemblages.

The region is well known for its number and variety of mineral deposit types. Perhaps best known are porphyry copper and/or molybdenum deposits and prospects, some of which contain significant by-product gold. These porphyry deposits and prospects in west-central British Columbia are associated

with granitic plutons of late Cretaceous (Bulkley intrusions - 70-80 million years) and Tertiary (Babine and Nanika intrusions - 50 million years) age which intrude Mesozoic volcanic and sedimentary rocks. The porphyry intrusions take the form of small stocks, plugs, dykes and dyke swarms of about 1 km in diameter. The intrusions range in composition from quartz diorite to granite and several phases of intrusion are evident at most deposits and prospects.

Porphyry deposits in this part of British Columbia are typical of the classic or stock-related type. Potassic, phyllic and propylitic silicate mineral alteration phases are developed in annular shells around the porphyry intrusions. Sulphide minerals occur within and adjacent to intrusions as disseminations, fracture fillings and in quartz veinlets and display a lateral zoning with an inner, weakly mineralized zone surrounded successively by molybdenum and copper zones and a pyrite-rich halo or shell.

Secondary or supergene copper mineralization is known at several porphyry deposits in west-central British Columbia. Best known examples are Bell Copper and Berg where supergene effects are evident to depths of between 50 and 135 metres below present surface levels. In both cases, secondary chalcocite can enhance primary copper grades by 15 to 25%.

Porphyry deposits in the Babine Lake area, some 100 km

east of Louise Copper, have been significant contributors to the local economy in the recent past. More than 125 million tonnes milled from the Granisle and Bell open pit mines between 1966 and 1991 had recovered grades of 0.40% copper and 0.15 - 0.20 g/t (0.004 - 0.006 oz/ton) gold.

This deposit type in west-central British Columbia has attracted renewed attention in response to imminent production from the Huckleberry deposit situated immediately north of Tahtsa Reach and 135 km south-southeast of the Louise Copper prospect. Drill-indicated and inferred reserves in two zones at Huckleberry total 55 million tonnes grading 0.60% copper at a 0.40% copper cut-off grade.

PROPERTY GEOLOGY, GEOPHYSICS, GEOCHEMICAL SIGNATURES AND MINERALIZATION

Geology

The Louise Lake area is underlain by Mesozoic volcanic and sedimentary rocks which are intruded by several granitic plutons of varying composition (Figure 4). An east-northeast striking fault zone of regional extent, which follows Coal Creek and the north shore of Louise Lake, separates Middle Jurassic (Hazelton Group and Bowser Assemblage?) volcanics and sediments on the south from mid-Cretaceous (Skeena Group) rocks on the north.

Hazelton Group (and Bowser Assemblage?) rocks consist

mainly of massive andesitic flows, tuffs and poorly sorted sediments. Skeena Group rocks north of the regional fault are comprised of more acidic tuffs, breccias and flow rocks with some interbedded sediments.

Granitic plutons include intensely altered feldspar porphyries in the main mineralized zone north of the regional fault, relatively unaltered quartz-eye feldspar porphyries along Coal Creek and south of Louise Lake, porphyritic granodiorites east of the lake and small diorite-gabbro bodies in the northern property area (Figure 4). A zircon radiometric age determination of 87.5 million years (A. Panteleyev, personal communication) from feldspar porphyry in the main mineralized area suggests that intrusions at Louise Lake area are part of the Bulkley intrusions suite.

A small breccia pipe with rotated and rounded fragments in a fine-grained sericite-pyrite matrix was reported by Mastodon-Highland Bell immediately west of Louise Lake. Similar breccias have been noted in surface exposures and in drill core within the trenched area. Some of the volcanic rocks in the area of the exposed mineralized zone may be extrusive equivalents of the high level feldspar porphyry pluton.

Intense quartz-sericite-clay minerals alteration within the main area of mineralization southwest of Louise Lake

makes it difficult to distinguish between intrusive phases, possible extrusive equivalents and older country rocks (Hanson,1992).

Geophysics

Previous surveys indicate that the main area of interest west of Louise Lake occupies an area of lower magnetic susceptibility and is partly coincident with an east-northeast trending zone of high IP (chargeability) response (Figure 5) as further defined by an early 1996 survey (Klit and Lloyd,1996).

Two distinct zones of increased chargeability are evident. The larger of these, centred on the area of previous work west of Louise Lake, is oval in shape and measures 2,000 x 1,000 metres. Chargeability values range from 15 to more than 50 milliseconds (msec) in contrast to background values of 7 msec or less (Klit and Lloyd,1996). Central to this is a zone of low (less than 100 ohm-metres) resistivity. An 800 x 400 metres eastern "lobe" paralleling the north shore of Louise Lake (Figure 5) and possibly separated from the main zone of high chargeability by a northerly trending fault, constitutes the second anomalous zone. Chargeabilities within this area range from 15 to 30 msec.

Geochemical Signatures

Results of soil geochemistry within and adjacent to the

main zone tested by drilling to date (Figure 6) indicate that better copper values (+100 ppm - range up to 3800 ppm) are most prevalent between the southern limits of the area of trenching and Coal Creek. Two holes (LL-02,-03 -Figure 6) drilled by Equity Silver, indicate that this feature is due to downslope migration. The copper in soils anomaly, however, is open to the southwest reflecting the trend of the main mineralized zone in this direction.

Better gold values in soils (+50 ppb - range up to 720 ppb) are more widespread and include part of the trenched area (Figure 6) but are also coincident with higher copper values toward Coal Creek, which as noted, are due to downslope migration.

Higher zinc values in soils (+200 ppm - range up to 1030 ppm) border the copper and gold anomalies on the west (Figure 6).

Reconnaissance soil sampling (95 samples), carried out in 1995 south of Coal Creek and Louise Lake in the southern part of the TENN and TENN(2) claims, returned low copper values and weakly anomalous zinc, a characteristic signature of areas marginal to porphyry copper systems.

Mineralization

The principal, or main known mineralized zone on the property underlies a low hill 800 metres west of Louise Lake (Figures 4 and 6). Several trenches expose intensely altered feldspar porphyry and possibly related acidic volcanic rocks. As previously noted, the intensity of quartz-sericite-clay minerals alteration makes it difficult to differentiate between intrusive and extrusive phases throughout much of this area.

Sulphide mineralization, developed within and adjacent to the southern margin of the feldspar porphyry intrusion, consists principally of pyrite (5-10% by volume) which occurs as disseminations, fracture fillings and in 2-4 mm wide quartz veinlets. Minor molybdenite is present and copper minerals include tennantite and lesser chalcopyrite. Tennantite is the arsenic end-member of tetrahedrite and its presence is reflected by higher arsenic values associated with most of the better grade copper sections in drill cores.

The presence of tennantite has also been confirmed by mineralogical work by the Geological Survey of Canada (L.B. Warren, personal communication). A well-mineralized sample from drill hole C-18 (Figure 6) was also found to contain some enargite, which like tennantite is a copper-arsenic sulphide mineral.

Where exposed in trenches and in drill cores, density of fractures and quartz veinlets averages one per 2.5 cm. Fractures and quartz veinlets are nearly vertical and have preferred orientations of north, east-northeast and northwest. Some true stockworks are present, particularly marginal to an apparent east-west, moderately north-dipping fault zone which extends through the southern trenched area.

Better copper and gold grades obtained from sampling trenches and drill cores are near the southern limits of the trenched and drilled area. A good example is Corona drill hole C-18 in which the last 26.4 metres returned values of 0.41% copper and 0.41 g/t (0.012 oz/ton) gold. An examination of drill core from this section disclosed the presence of locally abundant secondary or supergene chalcocite as coatings on pyrite.

A compilation of copper and gold values obtained from trench and pre-1992 drill core sampling indicates that both copper and gold values increase toward the southern limits of the area tested to date.

DIAMOND DRILLING RESULTS

Locations of drill holes completed by Canadian Superior (1970), Corona Corporation (1989), Equity Silver Mines Limited (1992) and Global Mineral and Chemical Ltd. (1996)

within and adjacent to the main mineralized zone are shown on Figure 6. Collectively, drilling to date on the Louise Lake property totals 6716.6 metres which includes the 1128 metres completed by Global in 1996. Results obtained from pre-1996 drilling programs include Significant intersections (those containing more than 0.20% copper) as follows:

Table 1

<u>Hole</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Cu(%)</u>	<u>Au(g/t)</u>	<u>Mo(%)</u>	<u>As(%)</u>
CS-1	12.5 - 53.9	41.4	0.30	0.16		
CS-2	19.4 - 55.0	35.6	0.30	0.15		
CS-3	49.1 - 139.6	59.2	0.35	0.42		
CS-4	18.9 - 37.8	18.9	0.27	0.27		
CS-5	20.4 - 79.6	59.2	0.47	0.52		
incl.	41.9 - 55.1	13.2	1.18	1.17		
CS-6	9.8 - 36.5	26.7	0.29	0.22		
	57.3 - 75.6	18.3	0.26	0.20		
C-18	3.7 - 121.0	117.3	0.25	0.27		
incl.	94.6 - 121.0	26.4	0.41	0.41		
C-19	3.7 - 182.0	178.3	0.24	0.27		
incl.	121.1 - 170.8	49.7	0.34	0.38		
C-20	33.2 - 55.9	22.7	0.26	0.34		
C-21	95.4 - 109.5	14.1	0.32	0.41		
C-22	9.1 - 306.9	297.8	0.20	0.24		
incl.	86.0 - 110.6	24.6	0.29	0.38		
	117.7 - 183.0	65.3	0.29	0.38		
LL-06	201.2 - 268.2	67.0	0.27	0.28	0.01	0.09
incl.	231.6 - 265.2	33.6	0.34	0.37	0.01	0.11
LL-07	112.8 - 173.7	60.9	0.36	0.34	0.02	0.08
incl.	149.3 - 173.7	24.4	0.46	0.42	0.03	0.08
(Note - hole stopped in mineralization due to adverse drilling conditions)						
LL-08	112.8 - 201.2	88.4	0.26	0.32	0.02	0.09
incl.	146.3 - 182.9	36.6	0.29	0.51	0.01	0.09

Hole LL-10, drilled north of Louise Lake, returned the following results:

<u>Hole</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Cu(%)</u>	<u>Au(g/t)</u>	<u>Mo(%)</u>	<u>As(%)</u>
LL-10	67.1 -112.8	45.7	0.12	0.20	NA	0.07
			(plus 0.52% Zn; 12.5 g/t Ag)			
incl.	97.5 -100.6	2.9	1.46	1.92	NA	0.53
			(plus 1.15% Zn; 121.7 g/t Ag)			

Note: Cu, Mo, As and Zn values in percent in the foregoing table are calculated from geochemical values expressed in parts per million (ppm); Au and Ag values in g/t (grams/tonne) calculated from geochemical values expressed in parts per billion (ppb) and parts per million (ppm) respectively.

As noted in Table 1, best results from initial Canadian Superior drilling were obtained from an area within and adjacent to previous trenching. Corona Corporation's 5 hole drilling program in 1989 was designed to confirm results of earlier work and to test for higher grade copper and gold values.

A compilation of the results of these two drilling programs coupled with soil and rock geochemical survey results, carried out in 1991 (Carter, 1991), suggested two target areas within the main zone for additional investigation. One of these was south of the trenched area marginal to both the Coal Creek fault zone and the southern limits of the IP anomaly. Drilling and surface sampling results indicated an increase in both copper and gold grades in this direction but two 1992 Equity Silver drill holes (LL-02, -03 - Figure 6) intersected sheared volcanic and

sedimentary rocks containing only low metal values.

The second target was stockwork mineralization within and adjacent to an apparent north-dipping fault zone exposed in the trenches which would not have been intersected by shallow vertical holes drilled by Canadian Superior in 1970. This second target was investigated by 1992 Equity Silver drilling with some degree of success. Sample results from holes LL-06,-07 and-08, combined with results from earlier drilling, established the presence of an east-west tabular zone of +0.20% copper plus associated gold and molybdenum values. The zone, which dips gently to moderately (20 -30 degrees) north and plunges 20 degrees to the west, has an apparent thickness of between 70 and 130 metres, a strike length of 850 metres and a lateral or down-dip extent of 330 metres. The zone is open both down-dip and along strike to the west.

This interpretation suggests that a number of previous holes were not drilled deep enough to intersect the zone. To the west, only Equity hole LL-08 adequately tested the zone. Hole LL-07 was terminated midway through the mineralized zone due to adverse drilling conditions and holes LL-11, -12 and -13, drilled with a smaller, portable drill rig, failed to reach the zone for similar reasons.

Better copper and gold grades within the overall

zone grading +0.20% copper appear to be concentrated in the lower or footwall portion of the tabular zone (Table 1). This concurs with the better grades encountered earlier in both trenching and Corona drilling near the southern limits or footwall of the zone.

Using a 0.20% copper cut-off grade, a possible resource of 50 million tonnes grading 0.30% copper and 0.31 g/t (0.009 oz/ton) gold plus some molybdenum was calculated for the main zone by Equity Silver Mines Limited personnel in 1992 (Hanson,1992).

The 1992 drill hole (LL-10), drilled southerly from the northwestern shore of Louise Lake to test the flanks of an apparent IP anomaly, intersected a sequence of volcanic tuffs intruded by feldspar porphyry dykes. Quartz-sericite alteration, noted to a hole depth of 180 metres (Hanson,1992), was accompanied by variable amounts of pyrite, chalcopyrite (+ tennantite?) plus sphalerite, galena and arsenopyrite, or a different mineralogy than that prevalent within the main zone southwest of Louise Lake. A 2.9 metre section, within a broader zone of lower grade mineralization (Table 1), yielded much higher grades than encountered elsewhere including 1.46% copper, 1.9 g/t (0.06 oz/ton) gold, 121.7 g/t (3.5 oz/ton) silver and 1.15% zinc.

The objective of the 1996 drilling program, which consisted of 3 vertical and 2 inclined holes within the previously trenched and drilled area (Figure 6), was to test for continuity of mineralization to depth. Previous holes tested the zone to vertical depths of between 60 and 90 metres; the 1992 holes encountered copper mineralization throughout hole depths of 229 metres. Intervals containing better copper and gold grades are as follows:

Table 2

<u>Hole</u>	<u>Dip</u>	<u>Azimuth</u>	<u>Interval(m)</u>	<u>Length(m)</u>	<u>Cu(%)</u>	<u>Au(g/t)</u>
GM-1	-90	-	137.2-210.3	73.1	0.36	0.35
GM-2	-55	268	61.0-106.0 185.9-228.0	45.0 42.1	0.26 0.26	0.29 0.29
GM-3	-90	-	36.6-164.6	128.0	0.32	0.49
GM-4	-55	182	18.0-73.0	55.0	0.28	0.47
GM-5	-90	-	24.0-76.0	52.0	0.23	0.29

Highest copper values were in hole GM-1 in which a 3 metre section graded 0.81%; highest gold values included a 6.2 metres interval in hole GM-3 grading 1.53 g/t.

CONCLUSIONS AND RECOMMENDATIONS

Exploratory work programs to date on the Louise Copper prospect have identified a tabular zone of copper-gold-molybdenum mineralization for which a possible resource of 50 million tonnes grading 0.30% copper and 0.31 g/t gold has been postulated. This gently dipping mineralized zone is open both down-dip and along strike to the west. Recent

drilling indicates that mineralization extends to depths of at least 230 metres.

The presence of most copper mineralization in the form of tennantite plus the identification of enargite, both copper-arsenic sulphide minerals, suggests that Louise Copper mineralization may be transitional between high-level subvolcanic porphyry copper and near-surface epithermal precious metals deposits. Such "transitional" deposit types (Panteleyev, 1992) are characterized by abundant pyrite and lesser chalcopyrite, chalcocite plus arsenic and antimony minerals including tetrahedrite-tennantite and enargite. Alteration mineral assemblages include abundant silica and argillic or clay minerals.

Worldwide examples of these deposit types include the Lepanto, Philippines enargite-type copper-gold-silver deposits and the high grade El Indio gold deposits in Chile. British Columbia examples include the recently closed Island Copper and Equity silver-copper-gold mine south of Houston and 120 km southeast of Louise Copper.

The indications of a "transitional" style of mineralization on the Louise Lake property may be significant. Higher precious metals grades associated with this deposit type are well documented and the one hole (LL-10) drilled from the north shore of Louise Lake northeast of

the main zone, which returned relatively high copper, gold, silver and zinc grades, may be indicative of this feature.

The Louise Copper prospect is worthy of additional exploratory work directed to further investigation of two areas of the property. The main area of known mineralization southwest of Louise Lake occupies only a small part of the area of highest IP (chargeability) response which extends several hundred metres west of the limits of previous drilling. Two inclined drill holes are recommended to test the extension of the main zone in this direction.

The eastern extension of high IP chargeabilities, along the north shore of Louise Lake, has been tested by only one hole near the eastern flank of the anomaly which returned some locally high copper, gold and silver grades. Four inclined holes are proposed to further test this IP anomaly.

COST ESTIMATE

Diamond Drilling - 1000 metres @ \$100/metre (all-inclusive)	\$100,000.00
Sample analyses	\$7,500.00
Supervision, reporting	\$10,000.00
Contingencies @15%	\$17,625.00
Total	\$135,125.00

N.C. Carter, Ph.D. P.Eng.

REFERENCES

- Carter, N.C. (1970): LOU in Geology Exploration and Mining in British Columbia 1969, p.80, B.C. Dept of Mines and Petroleum Resources
- _____ (1976): Regional Setting of Porphyry Deposits in West-Central British Columbia in Porphyry Deposits of the Canadian Cordillera, CIM Special Volume 15, pp. 227-238
- _____ (1981): Porphyry Copper and Molybdenum Deposits, West-Central British Columbia, BCMEMPR Bulletin 64
- _____ (1991): Summary Report on the Louise Lake Copper-Gold Prospect, Smithers Area, Omineca Mining Division, British Columbia, private report for 402774 B.C. Ltd.
- _____ (1991): Geological Report on the Louise Lake Porphyry Copper-Gold Prospect, Smithers Area, Omineca Mining Division, British Columbia, private report for New Canamin Resources Ltd.
- _____ (1994): Geological Report on the Louise Lake Porphyry Copper-Gold Prospect, Smithers Area, Omineca Mining Division, British Columbia, private report for Conquest Exploration Ltd.
- _____ (1995): Geological Report on the Louise Lake Porphyry Copper-Gold Prospect, Smithers Area, Omineca Mining Division, British Columbia, private report for Global Mineral and Chemical Ltd.
- Hanson, D.J. (1992): 1992 Diamond Drilling Assessment Report on the Louise Lake Mineral Property, Omineca Mining Division, British Columbia, BCMEMPR Assessment Report 22563
- Johnson, R.J. (1987): Assessment Report on 1987 Work, TENN Claims, Louise Lake, BCMEMPR Assessment Report 16869

- Klassen, R.W. (1989): Geology, Geophysics, Geochemistry and Diamond Drilling, TENN Claims, Louise Lake, BCMEMPR Assessment Report 18971
- Klit, Daniel A. and Lloyd, John (1996): A Geophysical Report on an Induced Polarization Survey on the Louise Copper Project near Smithers, British Columbia, Omineca Mining Division, private report for Global Mineral and Chemical Ltd.
- McMillan, W.J. and Panteleyev, A. (1980): Porphyry Copper Deposits, Geoscience Canada Vol.7, No.2
- Mastodon-Highland Bell Mines Ltd. (1969): Line-cutting, BCMEMPR Assessment Report 1999
- _____ (1969): Plan of Trenches, Louise Lake, private report
- Morris, A. (1980): Geochemical and IP Survey, Rob Claims BCMEMPR Assessment Report 7961
- Myers, D.E. (1983): Geology, Rock Geochemistry, Petrography and Soil Profiles Report, Louise Lake Claim, BCMEMPR Assessment Report 11772
- Overstall, R.J. and Murphy, J.D. (1970): Geological Report, LOU 163-172 Claims, BCMEMPR Assessment Report 2697
- Overstall, R.J. (1970): Geochemical Report, LOU 163-172 Claims, BCMEMPR Assessment Report 2698
- Panteleyev, Andre (1992): Copper-Gold-Silver Deposits Transitional between Subvolcanic Porphyry and Epithermal Environment in Geological Fieldwork 1991, BCMEMPR Paper 1992-1, pp.231-234
- Rainboth, W. (1970): Geochemical Report, Louise Lake Property, BCMEMPR Assessment Report 2278
- Wilkinson, W.J. (1976): Geochemical Report, Louise Lake Mineral Claims, BCMEMPR Assessment Report 6105

CERTIFICATE

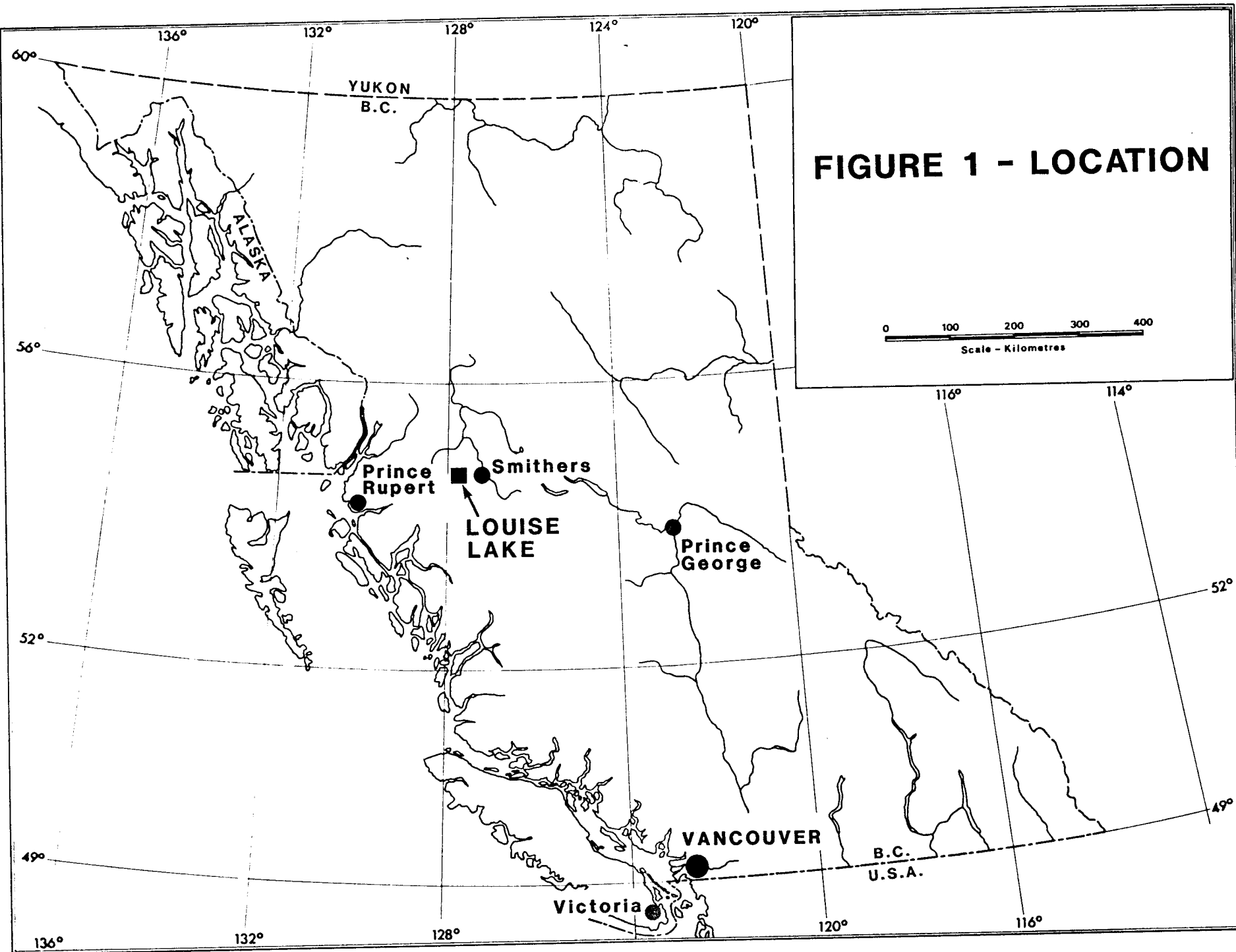
I, NICHOLAS C. CARTER of 1410 Wende Road, Victoria, British Columbia, do hereby certify that:

1. I am a Consulting Geologist registered with the Association of Professional Engineers and Geoscientists of British Columbia since 1966.
2. I am a graduate of the University of New Brunswick with B.Sc.(1960), Michigan Technological University with M.S.(1962) and the University of British Columbia with Ph.D.(1974).
3. I have practised my profession in eastern and western Canada and in parts of the United States for more than 30 years.
4. I am the author of the foregoing Geological Report on the Louise Copper Prospect, Omineca Mining Division, B.C., which is based on four previous reports prepared by me between 1991 and 1995 which incorporate results of previous exploration work on the subject property.
5. I hold no interest, directly or indirectly, in the mineral claims comprising the Louise Copper property or in the securities of Global Mineral and Chemical Ltd. nor do I expect to receive any such interest.
6. Permission is hereby granted to Global Mineral and Chemical Ltd. to use the foregoing report in support of any filings with the Alberta Securities Commission and the Alberta Stock Exchange.

N.C. Carter, Ph.D. P.Eng.

Victoria, B.C.
March 21, 1997

N.C. CARTER, Ph.D., P.Eng.
CONSULTING GEOLOGIST



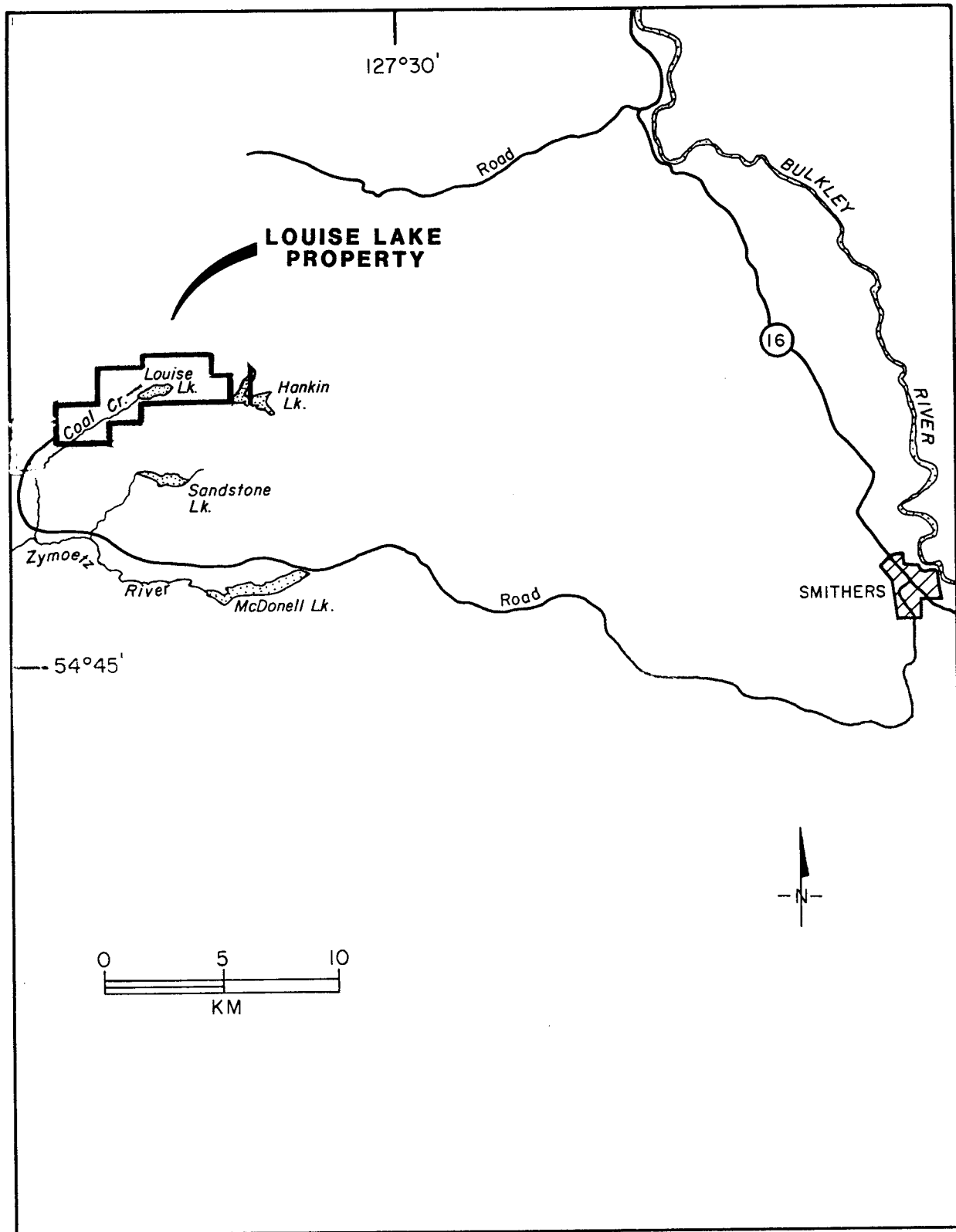


FIGURE 2 - LOCATION - LOUISE LAKE PROPERTY

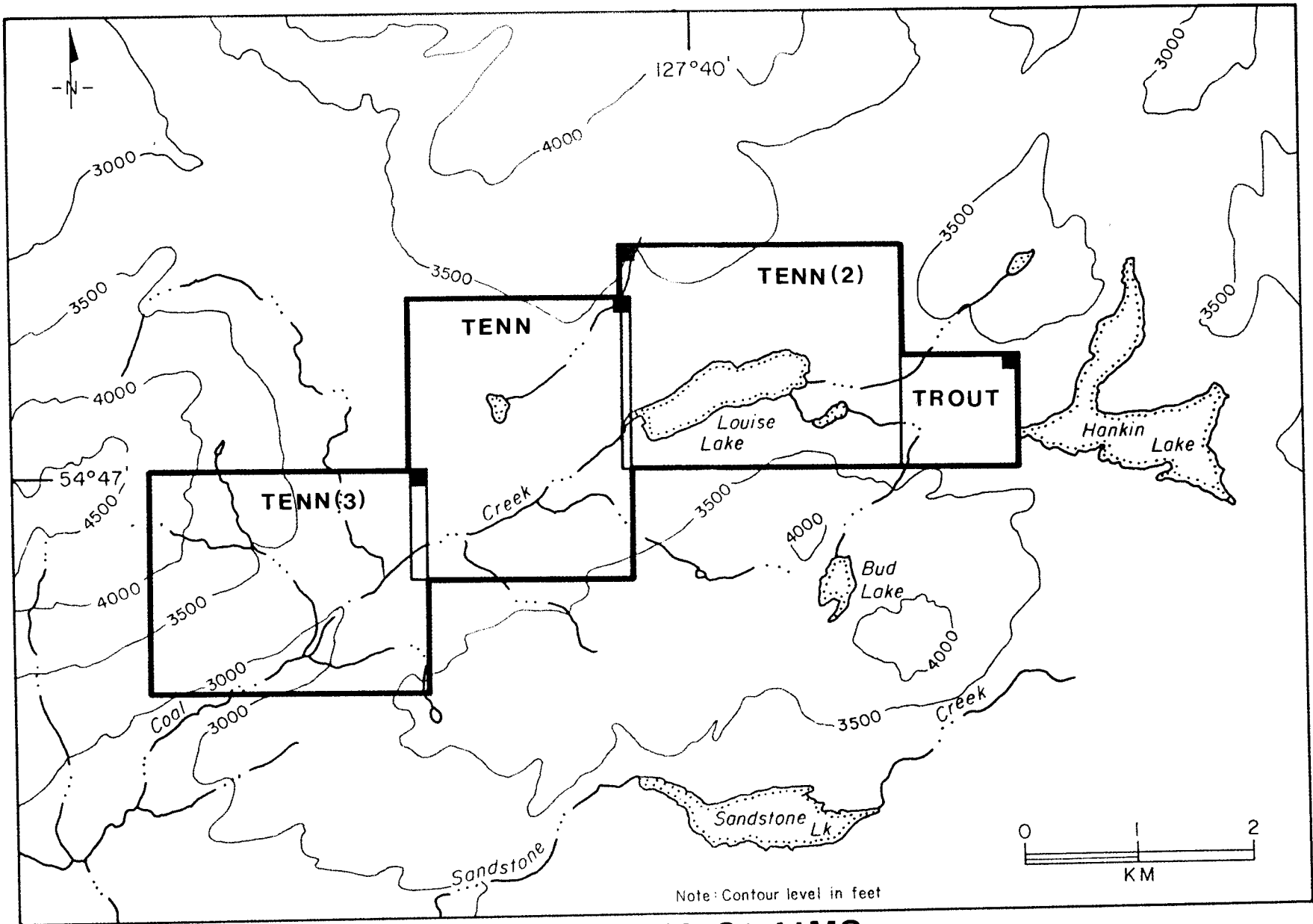


FIGURE 3-MINERAL CLAIMS

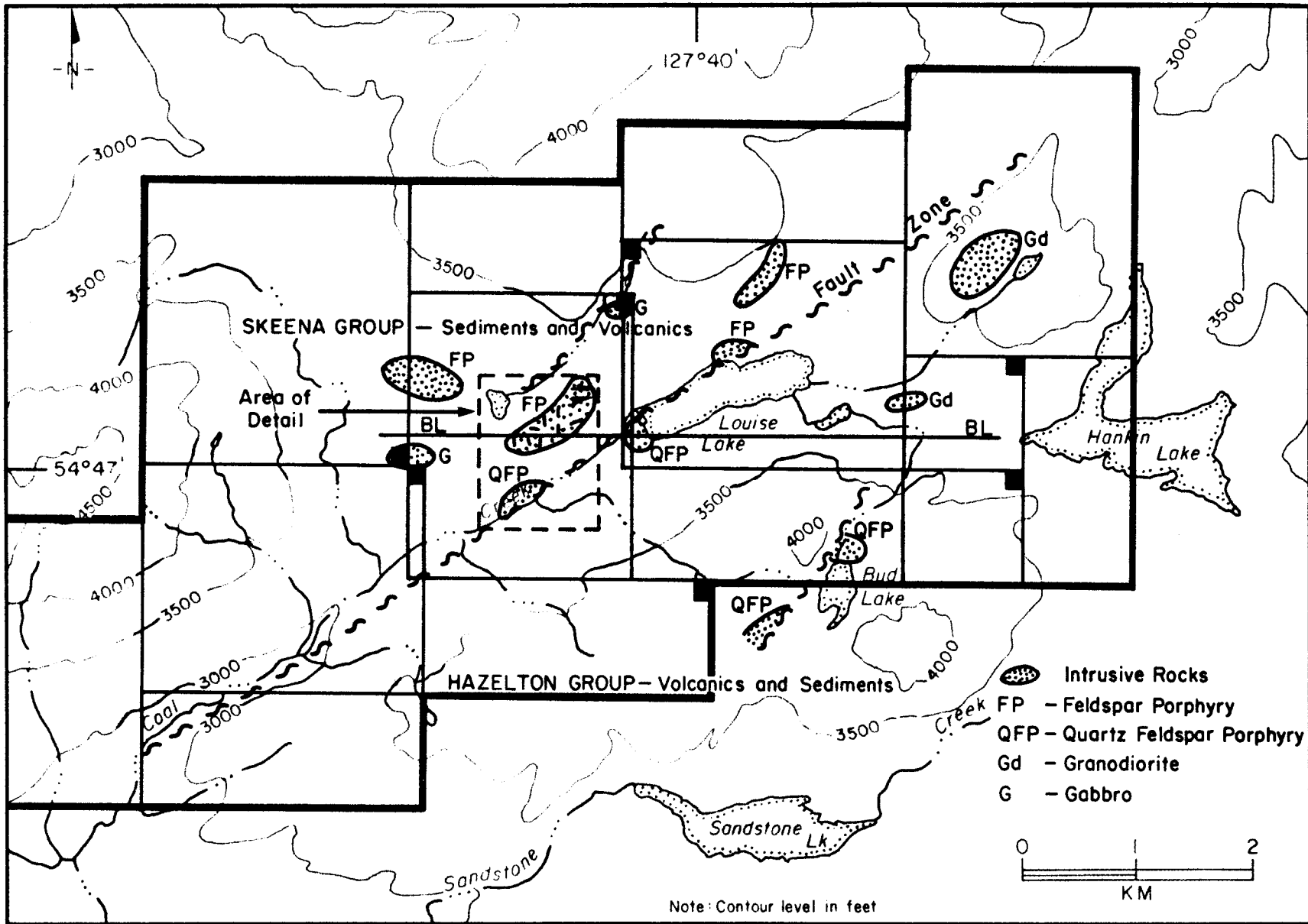


FIGURE 4 - GEOLOGICAL SETTING

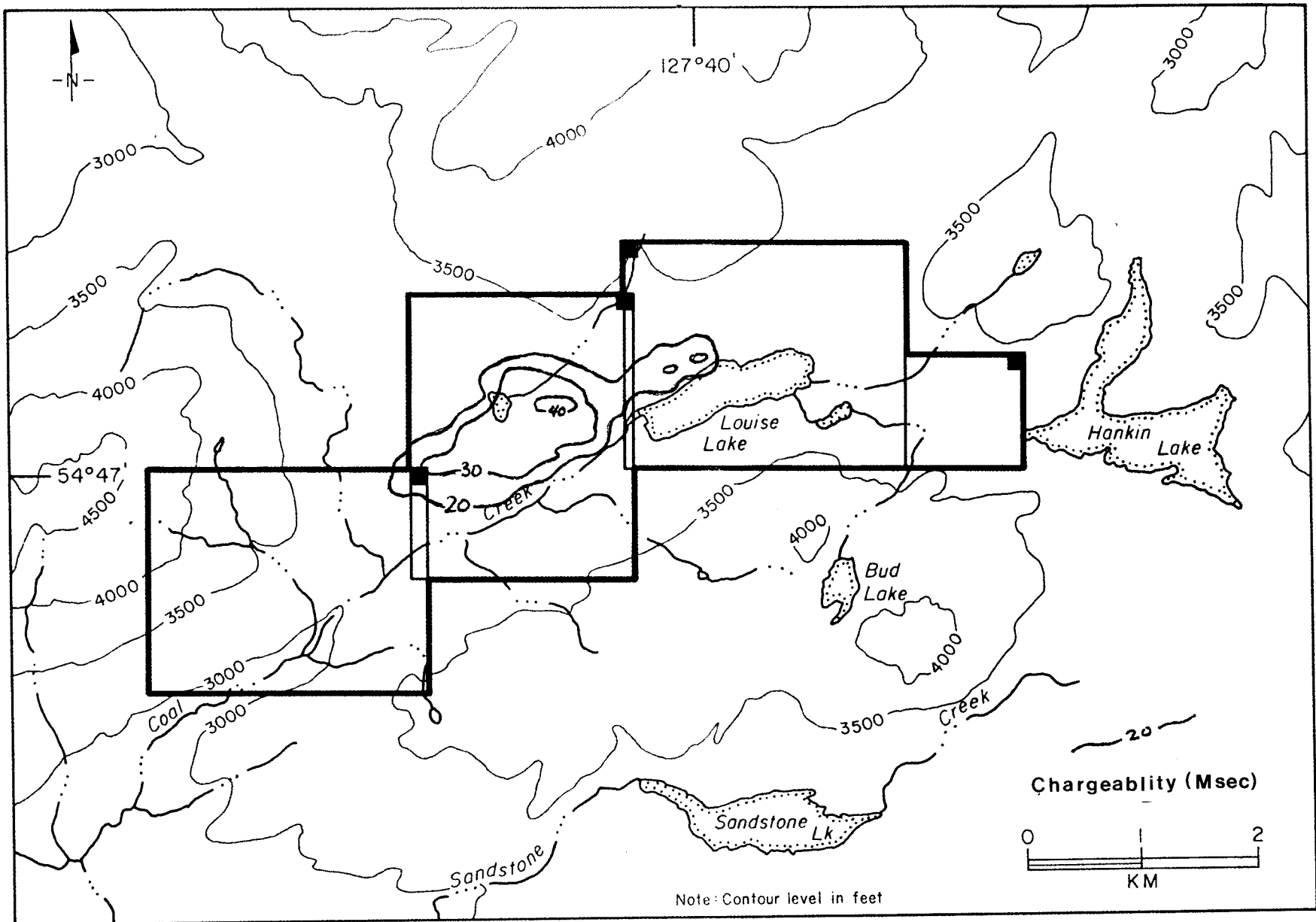


FIGURE 5 - GEOPHYSICAL RESPONSE -IP

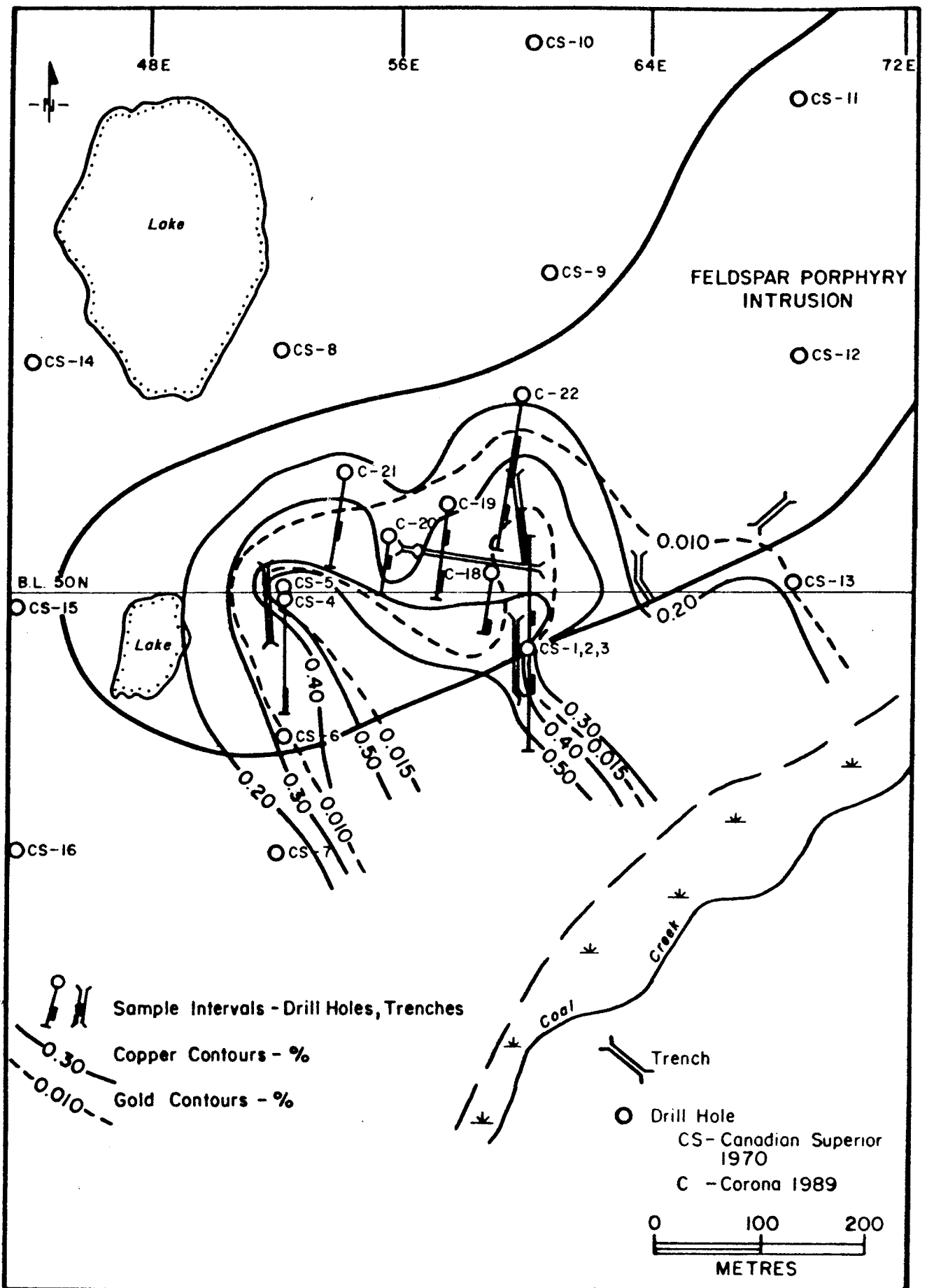


FIGURE 6 - COPPER AND GOLD IN BEDROCK

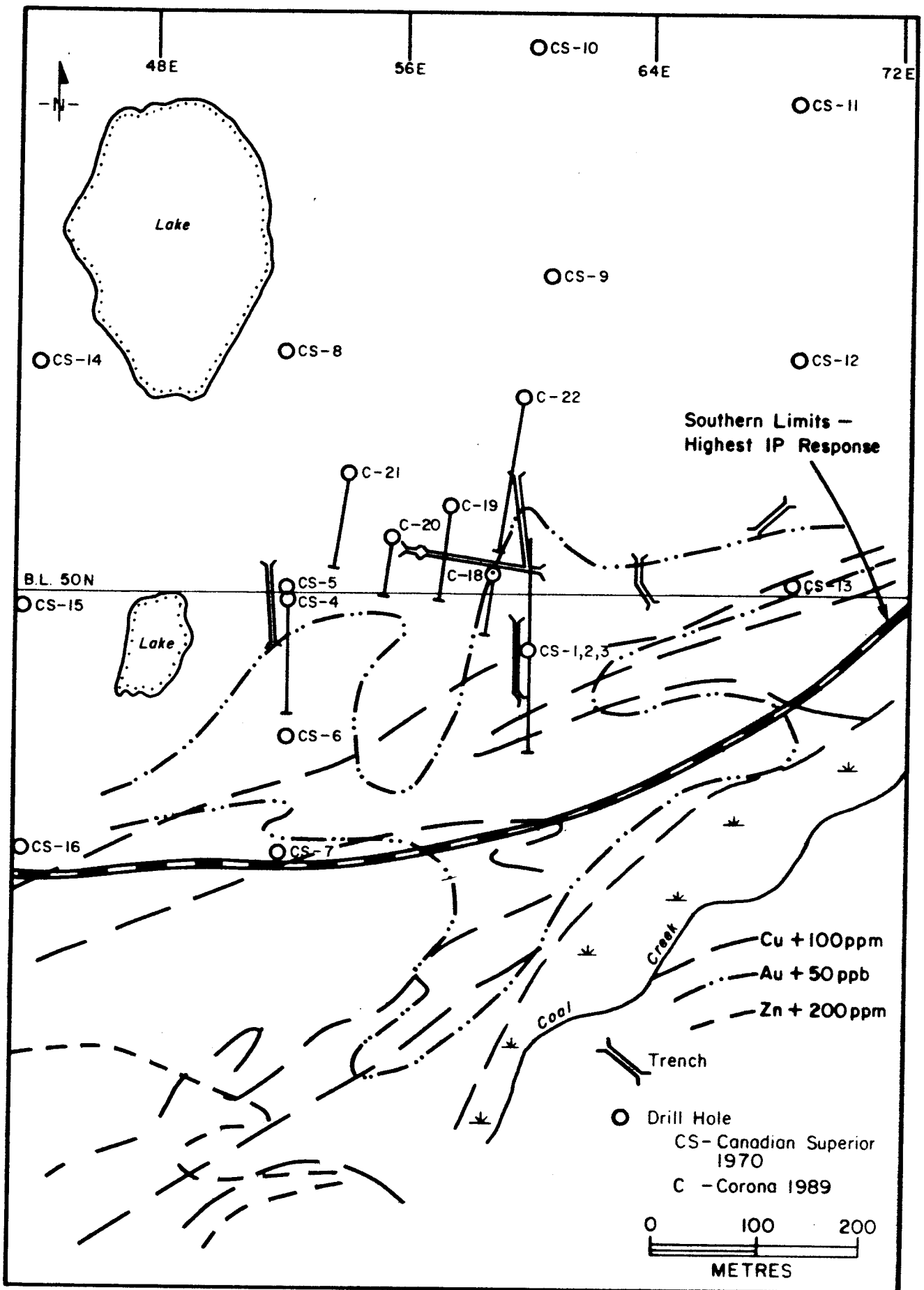


FIGURE 7 - SOIL GEOCHEMISTRY

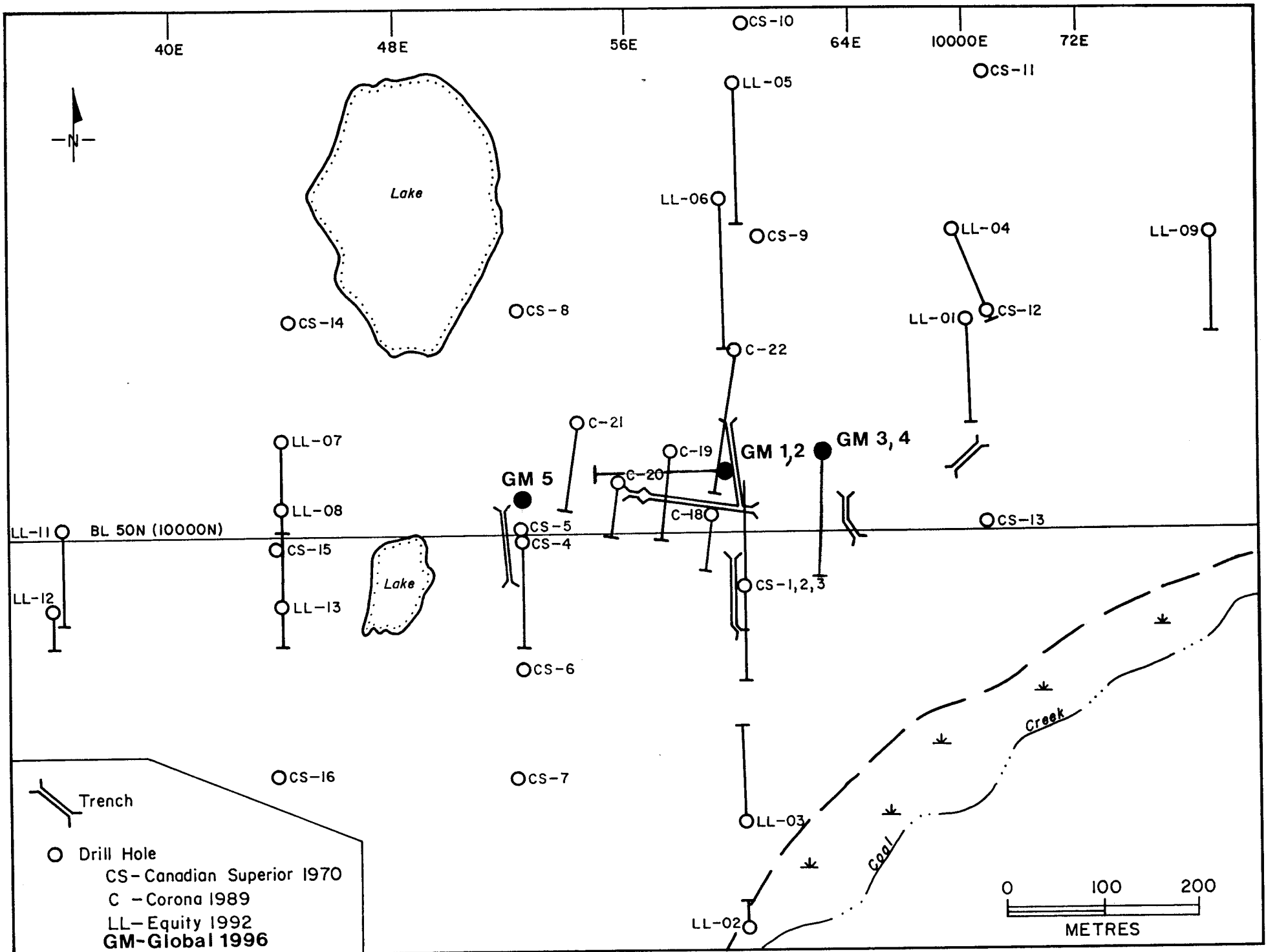


FIGURE 7 - DRILL HOLE PLAN