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GEOLOGICAL REPORT  
ON THE  
GOVERNMENT CREEK, YARDLEY LAKE  
AND ABHAU PROPERTIES  
Cariboo Mining Division  
British Columbia

FOR  
GABRIEL RESOURCES INC.

BY  
N.C. CARTER, Ph.D. P.Eng.

AUGUST 17, 1985

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*Registered under no III*

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SUMMARY

Gabriel Resources Inc. holds an option on 44 mineral claims between Quesnel and Prince George in central British Columbia. Access to most of the claims area is by secondary roads.

The claims were located in 1981 following a heavy mineral concentrate sampling program of tributary drainages east of Fraser River. Exploratory work by Gabriel Resources Inc. has been directed to three principal properties which from north to south are Government Creek, Yardley Lake and Abhau.

The properties are underlain principally by Mesozoic volcanic and sedimentary rocks which are intruded by early Cretaceous granitic rocks. The Government Creek property covers drainages with anomalous gold values in heavy mineral concentrate samples. The Yardley Lake claims include a large area within which airborne conductors are partially coincident with zones of higher magnetic intensity and copper-zinc anomalies in soils. A massive sulfide zone on the Abhau property carries significant precious and base metals values and a strong airborne conductor has been identified in the northwest part of the property.

All three properties warrant further exploratory work. Geological mapping and lithogeochemistry is recommended for the Government Creek property at an estimated cost of \$25,000. The Yardley Lake property should be tested by electromagnetic, magnetometer and geochemical surveys, estimated to cost \$120,000.

The massive sulfide zone on the Abhau Creek claims should be

further defined by Induced Polarization surveys and by 2,000 feet of diamond drilling. The airborne conductor in the northwest part of the property should also be tested by IP surveys, coupled with soil and/or rock geochemistry. Estimated costs for the proposed program are \$205,000.

Recommended programs for the three properties have a total estimated cost of \$350,000.

## INTRODUCTION

Gabriel Resources Inc. holds, by way of an option agreement, 44 claims comprising 844 units between Prince George and Quesnel in central British Columbia.

This report, prepared at the request of Gabriel Resources Inc., is based on numerous unpublished reports and maps detailing exploratory work carried out on behalf of the Company over the past four years. References to much of this information are listed in the appropriate section at the end of this report.

The writer also examined parts of the large property holdings in the company of Mr. A.G. Troup, P.Eng. on August 7, 1985.

## LOCATION AND ACCESS

The subject mineral claims are situated east of the Fraser River and cover an 80 square mile area extending from 30 miles south of Prince George to 15 miles north of Quesnel (Figure 1). The claims are within an area between 53°06' and 53°30' North latitude and 122°17' and 122°33' West longitude.

Access to most parts of the claims is by way of numerous logging roads east off highway 97 (Figure 2). The British Columbia Railway parallels highway 97.

## MINERAL PROPERTY

The property holdings include 44 Modified Grid mineral claims comprising a total of 844 units. The claims are contained in 10

groups and for ease of reference have been divided into three principal properties. From north to south these are Government Creek, Yardley Lake and Abhau Creek (Figure 2). The first two are contiguous; a distance of 5 miles separates Yardley Lake from the Abhau claims.

Disposition of the claims is shown on Figures 3,4 and 5 and details are as follows:

Government Creek

<u>Name of Claim</u>	<u>Units</u>	<u>Record Number</u>	<u>Expiry Date</u>
G 37	20	3798	June 29,1986
G 42	20	4081	August 19,1986
G 43	20	4082	" "
G 44	6	4083	August 24,1986
G 47	2	4021	September 23,1986
G 48	16	4022	" "
G 40	6	4079	August 19,1987
G 41	12	4080	" "

Yardley Lake

G SOUTH	20	3196	March 12,1986
G 1	20	3195	" "
G 3	20	3210	March 13,1986
G 4	20	3211	" "
G 7	20	3214	March 16,1986
G 2	20	3209	March 13,1986
G 5	20	3212	March 16,1987
G 6	20	3213	March 16,1986
G 8	20	3215	March 16,1987
G 39	20	3853	July 23,1986
G 12	20	3219	March 16,1986
G 15	20	3222	" "
G 17	10	3224	" "
G 46	18	4020	September 23,1986
G 9	20	3216	March 16,1987
G 10	20	3217	" "
G 36	14	3637	June 15,1986
G 38	20	3852	July 23,1986
G 11	20	3218	March 16,1987
G 13	20	3220	March 13,1986
G 14	20	3221	March 16,1986
G 16	20	3223	March 13,1986
G 35	20	3636	June 15,1986

Abhau

<u>Name of Claim</u>	<u>Units</u>	<u>Record Number</u>	<u>Expiry Date</u>
G 23	20	3230	March 16,1986
G 24	20	3231	March 13,1986
G 27	20	3234	March 16,1987
G 30	20	3237	" "
G 31	20	3238	March 13,1987
G 25	20	3232	" "
G 28	20	3235	" "
G 29	20	3236	March 16,1987
G 33	20	3240	" "
G 34	20	3241	March 16,1986
G 22	20	3229	" "
G 26	20	3233	March 13,1986
G 36	20	3239	" "

PHYSICAL FEATURES

The claims feature gently rolling topography, typical of the Interior Plateau, and elevations generally do not exceed 3,000 feet above sea level. The area is tree covered, except for logged areas, and major drainages flow west to Fraser River. Deeply incised canyons are prevalent along some of the major drainages.

Glacial deposits of gravel, sand and clay obscure bedrock over much of the area covered by the claims, and best exposures are confined to low hills and areas adjacent to major drainages.

HISTORY

Earliest work in the area of the present claims was directed to placer gold. Most of the major creeks have been worked by placer operations; Hixon Creek was originally tested in the 1860's coincident with the Cariboo gold rush.

Gold-bearing quartz veins along Hixon Creek 4 miles northeast of the settlement of Hixon have been sporadically explored since the early 1900's. Limited production in the 1930's included 2250 tons yielding 206 ounces gold and 224 ounces silver.

In more recent years, exploration for porphyry copper and molybdenum has been conducted within and adjacent to some of the granitic intrusions in the present claims area.

In the late 1960's, claims were located north of Abhau Creek in an area now covered by the present Abhau property. Massive sulfide mineralization was explored by Cariboo Minelands Ltd. (later Equatorial Resources Ltd.) in 1968 and 1969. Work done included bulldozer trenching, soil geochemistry and geophysical surveys and 8 diamond drill holes totalling 3,000 feet. Texas Gulf Sulphur Company acquired the property in 1971 and completed geological mapping, magnetic and electromagnetic surveys and soil geochemistry prior to relinquishing the option. Equatorial Resources drilled 5 percussion holes totalling 1,530 feet in 1972.

The A.T. Syndicate conducted heavy mineral concentrate sampling of major drainages east of Fraser River between Prince George and Quesnel in 1980. Results of the survey led to staking of the present properties which were optioned from the Syndicate by Gabriel Resources Inc. in 1981.

Since that time, Gabriel has carried out additional heavy mineral concentrate sampling, soil and rock geochemistry, VLF-EM



and magnetometer surveys, geological mapping, limited backhoe trenching and airborne INPUT EM and magnetic surveys over all claims. Exploration expenditures to date approximate \$600,000.

#### REGIONAL GEOLOGICAL SETTING AND MINERAL DEPOSITS

The three properties included in the Gabriel Resources Inc. holdings are situated within the Quesnel Trough, a subdivision of the Intermontane tectonic belt. Quesnel Trough, a northwest trending belt extending from north of Kamloops to north-central British Columbia, is comprised principally of late Triassic-early Jurassic Takla Group basic to intermediate volcanic flows and pyroclastic rocks and argillaceous sedimentary rocks.

In the Prince George-Quesnel area, Quesnel Trough Mesozoic rocks are in fault contact on the east and west with late Precambrian metasedimentary rocks and Paleozoic sediments and volcanics respectively. Early Tertiary sediments and volcanics overlie older rocks along Fraser River and its major tributaries.

Takla Group layered rocks are intruded by coeval alkalic stocks and plugs and by early Cretaceous (Naver Intrusions) quartz monzonites and diorites which also intrude older layered rocks to the east.

Northwest block-faulting is the dominant structural style of the region.

Several styles of economic mineralization are recognized in the Quesnel Trough, including copper (gold) porphyry deposits

developed in alkalic intrusive complexes, and apparently strata-bound gold deposits hosted by propylitically altered sedimentary and fragmental volcanic rocks marginal to small alkalic intrusions.

Limited production has come from gold-bearing quartz veins in schistose Takla rocks near Hixon and molybdenum and tungsten mineralization occurs near the margins of early Cretaceous Naver Intrusions.

Massive sulfide mineralization, with base and precious metals values, is known in the lower Abhau Creek area within the present claims.

#### PROPERTY GEOLOGY AND MINERALIZATION

The Government Creek, Yardley Lake and Abhau properties are underlain principally by early Mesozoic Takla Group volcanic and sedimentary rocks, intruded by early Cretaceous granitic dykes and stocks. Early Tertiary sediments overlie Takla rocks in the southwest parts of the Yardley Lake and Abhau properties, and possible late Precambrian metasedimentary rocks occur marginal to a large granitic intrusion east of Yardley Lake.

#### Government Creek

The Government Creek property (Figure 3) is underlain by north to northwest striking Takla Group interlayered volcanic and sedimentary rocks, locally intruded by Naver granodiorites. Best exposures are in Government Creek and tributaries along the west margin of the property and adjacent to Buckley Creek in the south central claims area.

Heavy mineral concentrate samples from Buckley and Government Creeks yielded a number of anomalous gold values (+6400 ppb). Quartz veins, up to 2 feet wide, were noted in Government Creek in carbonatized granodiorite. Rock samples yielded minor gold values but soil samples in the general area of the quartz veins had values of up to 300 ppb.

A number of north-south VLF-EM conductors were identified on the two claims comprising the southwest part of the property south of Hixon Creek (Figure 3). Soil sampling over a number of these conductors failed to indicate anomalous gold values, possibly due to deep overburden. Similar results were obtained over VLF-EM conductors immediately east of Government Creek.

#### Yardley Lake

Northwest striking Takla Group andesitic to basaltic flows, tuffs and breccias and minor interlayered argillaceous sedimentary rocks occupy the central part of the Yardley Lake property (Figure 4). These overly a slightly older phyllitic sequence in the east-central claims area, while mica schists, possibly of late Precambrian age, occupy a contact zone between the phyllites and a large early Cretaceous Naver granitic body underlying the eastern part of the property. A northwest trending sill or dyke-like body of acid to basic intrusive rocks, several hundred feet wide and over a several mile length, cuts Takla volcanic rocks in the central part of the property. The volcanic rocks have been locally converted to chlorite schist adjacent to this intrusive.

Tertiary sediments overlie older rocks along Terry Creek in the northwest part of the property.

Heavy mineral concentrate samples from major drainages yielded a number of anomalous gold values in the 10,000 to 46,000 ppb range. Some anomalous tungsten values were noted adjacent to Navar granitic intrusions.

Pyritized Takla Group volcanics were found to contain up to 0.10 oz/ton silver and quartz veins along Terry Creek in the northern part of the claims area had values of up to 0.13 oz/ton gold.

A recent airborne INPUT EM survey indicates a number of conductors, coincident with, and marginal to northwest trending zones of increased total magnetic intensity over an 8 mile distance between Terry Creek and Yardley Lake in the southern part of the property. Soil sampling over parts of this large area shows copper-zinc anomalies to be coincident with some of the airborne conductors.

#### Abhau

The Abhau property (Figure 5) is underlain by Takla Group andesite and basalt flows and tuffs with some intercalated argillaceous sedimentary rocks. These layered rocks are intruded by an early Cretaceous granitic body along the north boundary of the claims and by three small granitic stocks along Abhau Creek in the central part of the property. Tertiary sedimentary rocks overlie older rocks along Cottonwood River in the southwest

part of the property.

Work to date has identified two principal areas of interest. One of these, the original showings area on the Thunder Creek grid in the north-central part of the property (Figure 5) is a zone of locally oxidized massive sulfides which has been traced by trenching over a northeast strike length of 200 feet (65 metres) (Figure 6). The zone, which consists of pyrite, pyrrhotite, chalcopyrite, sphalerite and galena, dips northwest at 45°-55° and ranges in width from 3 to 8 feet. Stringer to massive sulfides are contained in a cherty argillite within an augite porphyry flow unit. Hangingwall rocks are silicified and pyritized while footwall augite porphyry is relatively unaltered. The sulfide horizon is generally conformable with enclosing rocks although some cross-cutting relationships are evident.

Sampling of the trenches by Gabriel Resources indicates significant gold and silver assays in addition to copper, lead and zinc values. Results are as follows:

	SAMPLE N <sup>o</sup> .	% Cu	% Pb	% Zn	Ag	Au	SAMPLE WIDTH (m)
TRENCH 1	47193	0.03	<0.01			0.003	3
	47194	0.13	<0.01	0.01	0.11	0.032	3
	47195	0.93	<0.01	0.01	1.02	0.278	0.07
	47196	0.05	<0.01	0.02	0.06	0.010	1
	47197	0.07	1.81	5.20	1.36	0.114	0.16
	47198	<0.01	0.02			<0.003	1.84
	47199	0.01	<0.01			<0.003	3
	47200	<0.01	<0.01			<0.003	2
TRENCH 2	83069	0.02	<0.01			<0.003	3
	83068	0.03	0.01	0.02	0.14	0.010	2.7
	83067	0.36	0.34	0.23	3.99	0.430	0.6
	83066	0.46	0.03	0.29	0.70	0.068	0.7
	83065	1.40	0.05	0.07	2.03	0.334	1.9
	83064	0.12	0.02	0.04	0.16	0.090	3
	83063	<0.01	<0.01			<0.003	3

TRENCH 3	{	83055	0.01	<0.01			<0.003	3
		83054	0.01	<0.01			<0.003	3
		83056	0.02	<0.01			<0.003	3
		83052	0.01	<0.01			<0.003	3
		83053	0.01	<0.01			<0.003	3
		83051	0.04	<0.01			<0.003	3
		83058	0.08	<0.01			<0.003	0.2
TRENCH 9	{	83088	0.16	0.04	0.17	0.29	0.140	1.9
		83086	0.68	0.13	0.76	1.57	0.094	1.1
		83087	0.08	<0.01	0.03	0.17	0.032	1
		83089	0.31	<0.01	0.01	0.45	1.842	0.2
		83090	<0.01	<0.01			0.003	0.8
		83091	0.01	<0.01			0.005	0.7
		83085	0.02	<0.01			0.005	3
TRENCH 10	{	83093	0.07	<0.01			0.003	2
		83092	3.36	0.06	1.48	6.46	0.182	1.2
		83451	0.04	<0.01			0.003	1.8

Soil geochemistry indicates anomalous copper and zinc values extending for 1500 feet southwest of the showings area, and other linear zones of anomalous copper and zinc north and northeast of the trenches area.

Several northeast trending subparallel conductive zones were detected by VLF-EM surveys in the vicinity of the trenches; many of these are discontinuous and may reflect faulting in this area. Only weak magnetic response was found over the main showing.

The second area of interest was detected by an airborne INPUT survey which disclosed a strong southeast trending conductive zone in the northwest part of the property. Subsequent VLF-EM surveys further defined the zone as being up to 700 feet wide.

Numerous other airborne conductors were interpreted as surficial responses, including one over the main showings area where

outcrop is fairly abundant.

#### CONCLUSIONS

The Government Creek, Yardley Lake and Abhau properties cover large areas which have been only partially covered by exploratory work to date.

Only selected parts of the Government Creek claims have been systematically covered and the anomalous gold values obtained from initial heavy mineral concentrate sampling require further investigation.

The Yardley Lake property includes a large area of airborne conductors which are partially coincident with zones of higher total magnetic intensity and copper-zinc anomalies in soils. Additional definition of these zones is warranted.

The massive sulfide zone, partially exposed in trenches in the central part of the Abhau property, has been tested by only one previous drill hole. Results are unavailable. Surface samples yielded significant precious and base metal values and extensions to this zone are suggested by geochemical and geophysical surveys. The airborne conductor in the northwest part of the property represents a second target area.

#### RECOMMENDED PROGRAM

A program of geological mapping and rock geochemistry is recommended to evaluate the northern and eastern parts of the

of the Government Creek claims.

Airborne conductors on the Yardley Lake property should be further defined by vertical loop electromagnetic and magnetometer surveys, accompanied by soil and/or rock sampling.

It is proposed that a program of linecutting be undertaken over the present Thunder Creek grid on the Abhau property prior to an Induced Polarization survey which should yield better results than previous geophysical surveys in further defining the massive sulfide zone. The presently defined zone warrants a program of diamond drilling.

An IP survey is also recommended for the northwest property area to define the airborne conductive zone. Soil and/or rock sampling should also be carried out.



COST ESTIMATE

Government Creek

- Geological Mapping, Lithogeochemistry \$25,000.00

Yardley Lake

- Linecutting - 60 line miles @ \$480/mile \$28,800.00  
 - Vertical loop EM and Magnetometer  
 Surveys - 60 line miles @ \$520/mile \$31,200.00  
 - Geological Mapping \$10,000.00  
 - Soil sampling, rock sampling-  
 sample collection and analysis \$25,000.00  
 - Supervision, report preparation \$10,000.00-  
 - Contingencies \$15,000.00

\$120,000.00

Abhau

Thunder Creek Grid

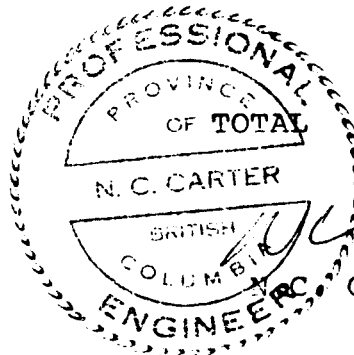
- Linecutting - 18 line miles @ \$480/mile \$8,640.00  
 - IP Survey - 18 line miles @ \$1900/mile \$34,200.00  
 - Diamond Drilling - 2000 ft. @ \$25/ft. \$50,000.00  
 - Analytical Costs \$5,000.00

Northwest Grid

- Linecutting - 15 line miles @ \$480/mile \$7,200.00  
 - IP Survey - 15 line miles @ \$1900/mile \$28,500.00  
 - Soil sampling, rock sampling-  
 sample collection and analysis \$17,500.00  
 - Supervision, report preparation \$25,000.00  
 - Contingencies \$28,960.00

\$205,000.00

\$350,000.00



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CERTIFICATE

I, NICHOLAS C. CARTER, do hereby certify that:

1. I am a Consulting Geologist resident at 1410 Wende Road, Victoria, British Columbia.
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 am a registered Professional Engineer in the Association of Professional Engineers of British Columbia.
4. I have practised my profession in eastern and western Canada and in parts of the United States over the past twenty-five years.
5. This report is based on a visit to parts of the Government Creek, Yardley Lake and Abhau properties August 7,1985, and on information pertaining to the properties provided on behalf of Gabriel Resources Inc. by Archean Engineering Ltd.
6. I have no direct or indirect interest in the Government Creek, Yardley Lake or Abhau properties, or in Gabriel Resources Inc.
7. Permission is hereby granted to Gabriel Resources Inc. to use this report in support of any Filing Statement, Statement of Material Fact or Prospectus to be filed with the Office of the Superintendent of Brokers for the Province of British Columbia and the Vancouver Stock Exchange.

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

Victoria, B.C.  
August 17, 1985

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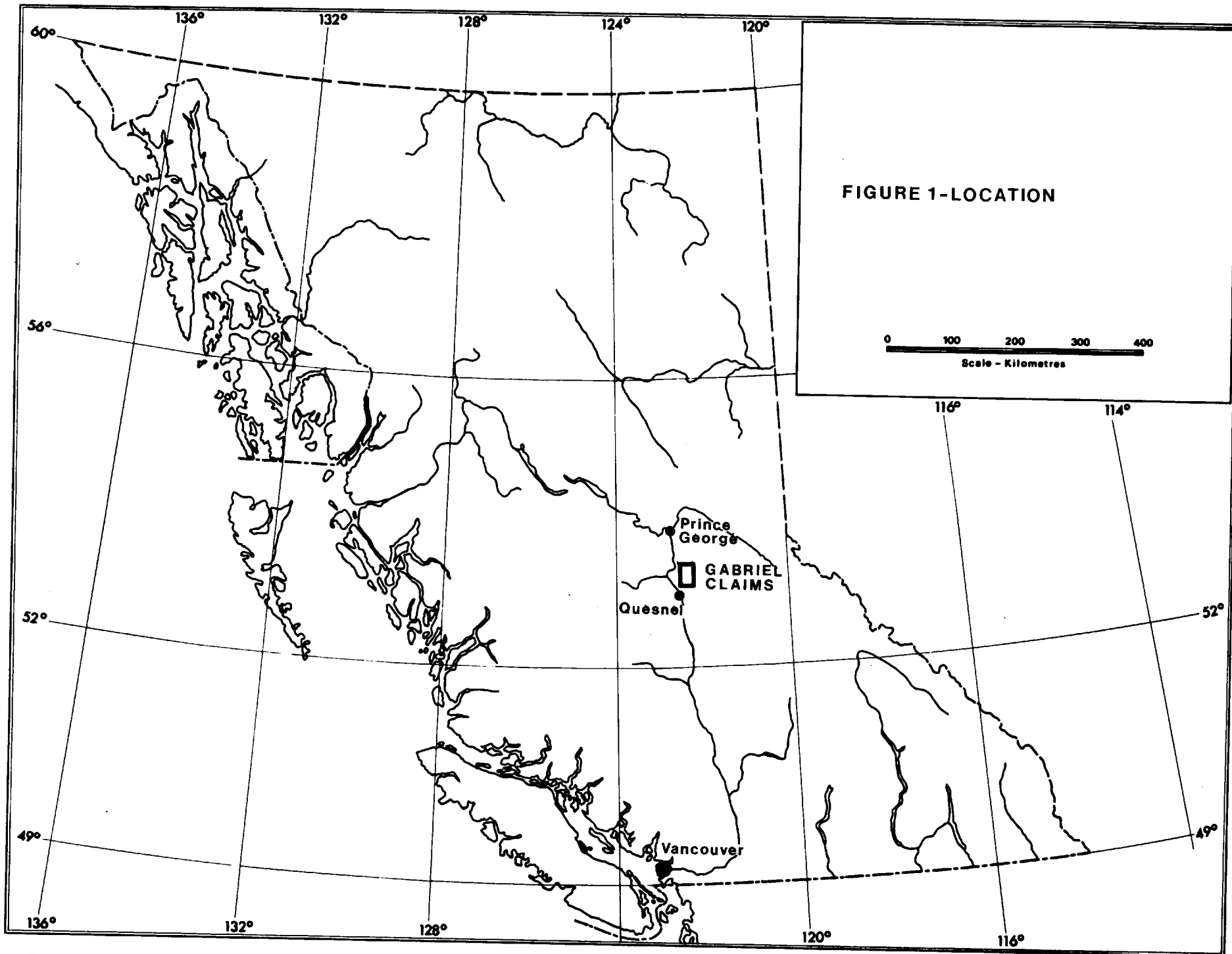


FIGURE 1-LOCATION

0 100 200 300 400  
Scale - Kilometres

116°

114°

52°

49°

60°

56°

52°

49°

136°

132°

128°

124°

120°

136°

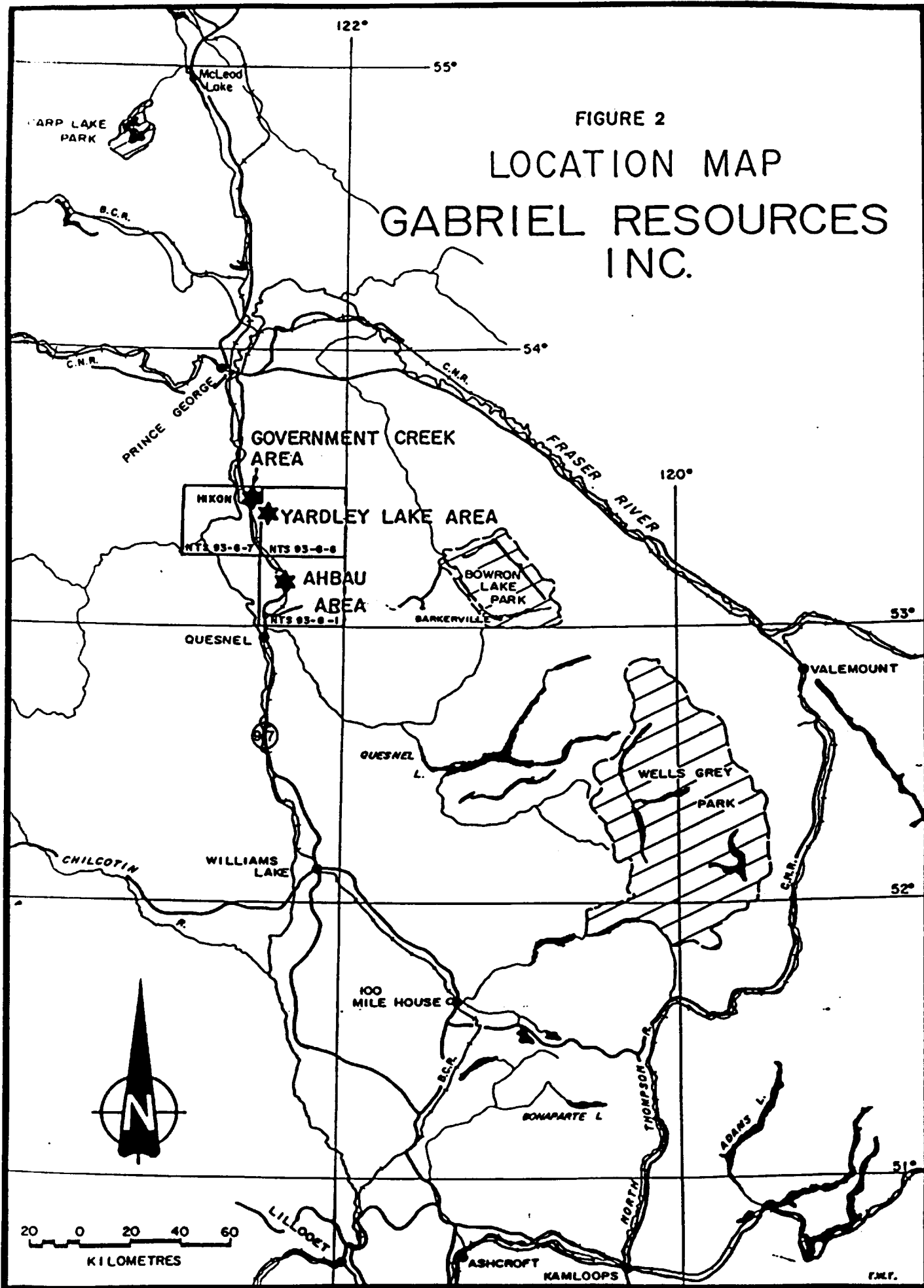
132°

128°

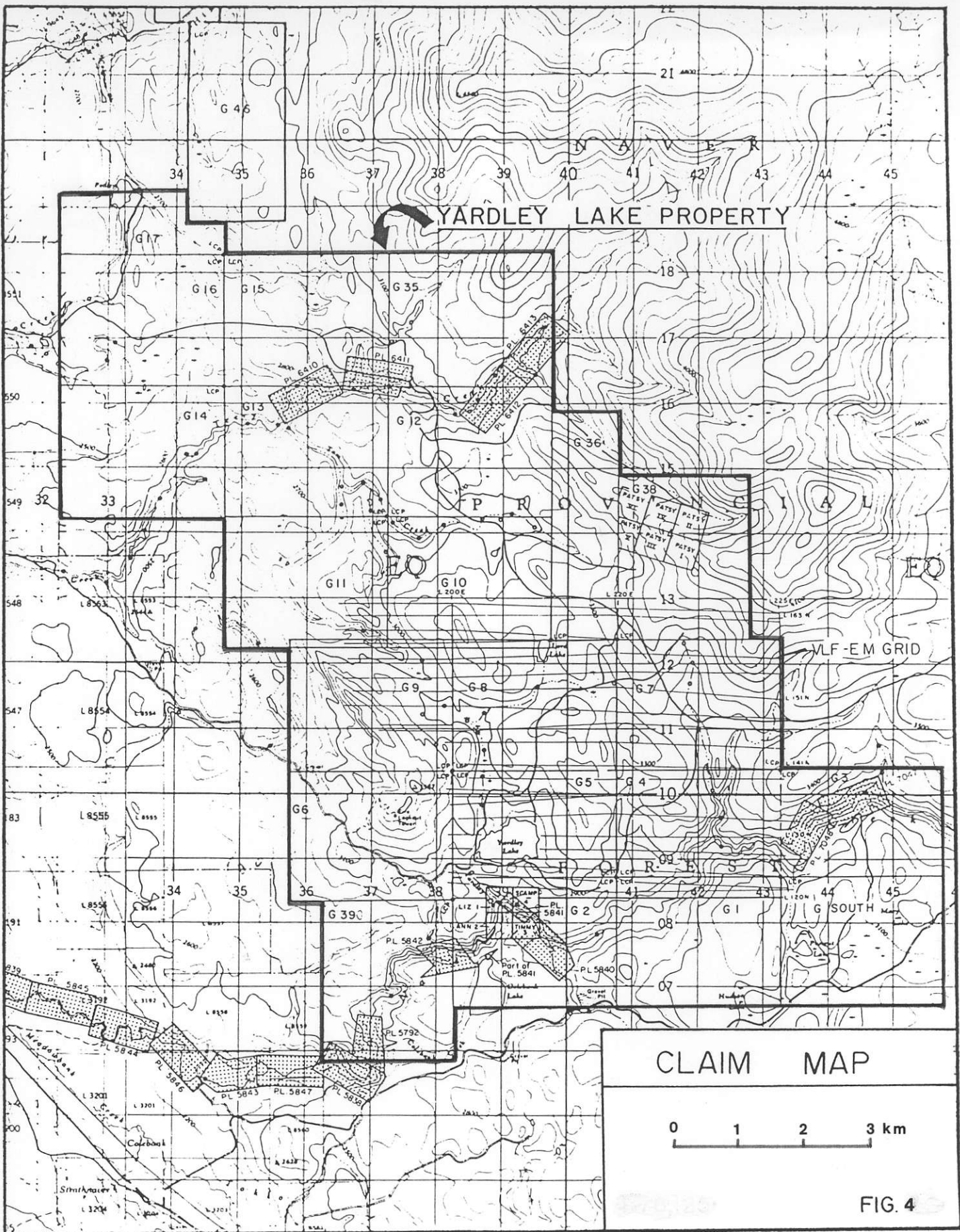
120°

116°

FIGURE 2  
LOCATION MAP  
GABRIEL RESOURCES  
INC.







CLAIM MAP

0 1 2 3 km

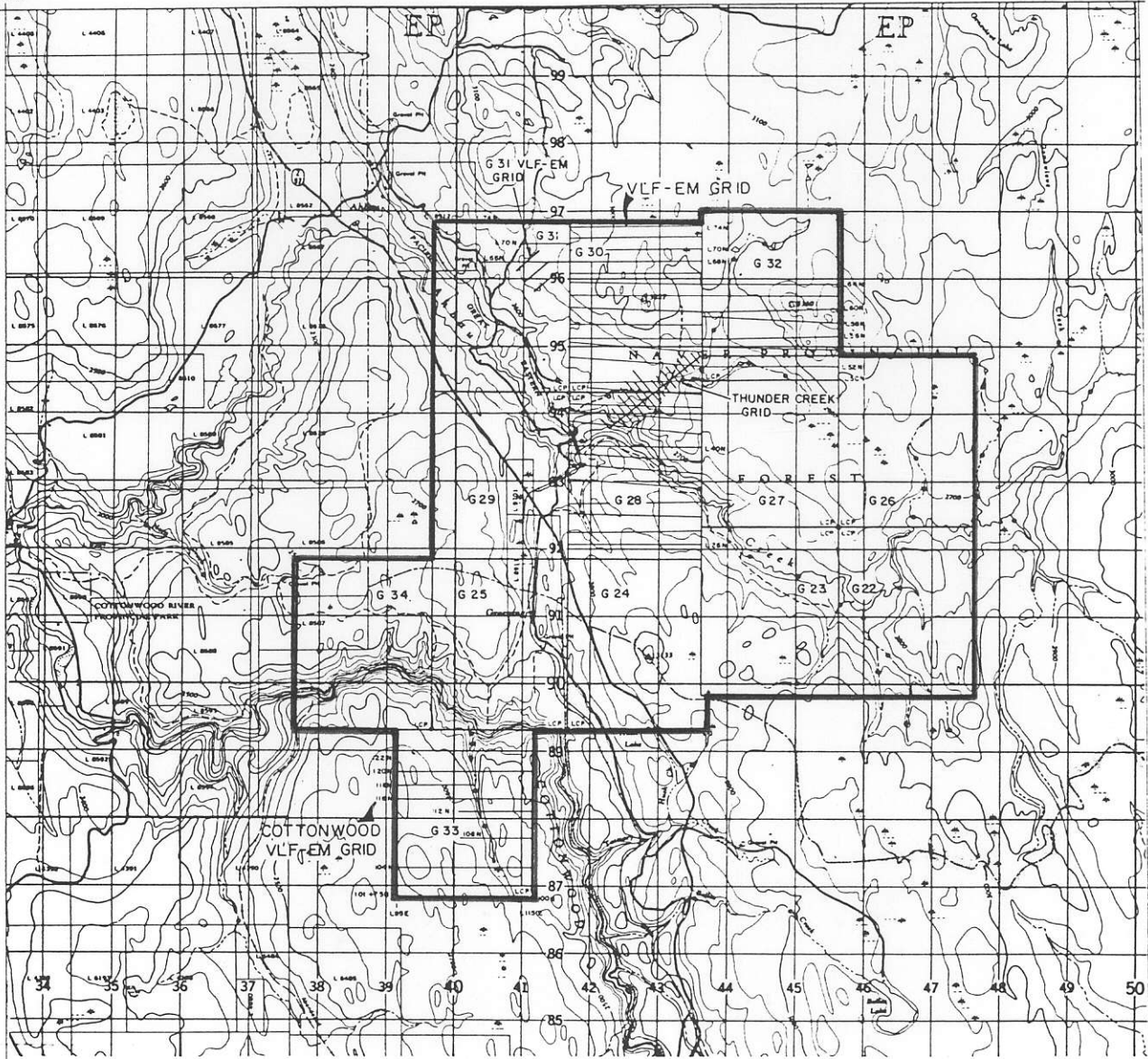
FIG. 4





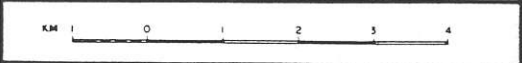
122°30'  
53°15'

122°15'  
53°15'



GABRIEL RESOURCES INC.  
A H B A U P R O P E R T Y  
G C L A I M S - C A R I B O O M D - B . C .

CLAIM MAP



NTS 93-G-1 FIG 5



