

GEOLOGICAL REPORT on the
COL CLAIM GROUP
DUCKLING CREEK AREA
OMINECA MINING DIVISION
55°57'N, 125°26'W
by: W.R. Bacon, Ph.D, P.Eng. *93N/14W*
Dec. 18, 1972

3995

3995

GEOLOGICAL REPORT

on the

COL CLAIM GROUP

DUCKLING CREEK AREA

OMINECA MINING DIVISION

55°57'N, 125°26'W

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. <u>3995</u> MAP _____
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by

W.R. BACON, Ph.D, P.Eng.

Vancouver, B.C.

December 18th, 1972

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INTRODUCTION

The COL claim group is centred one mile north of the Lorraine copper prospect in the Duckling Creek area, approximately 30 miles northwest of Germansen Landing. See Figure I.

The claims were staked in July 1971 and during that season the northwest portion of the claim group was covered by a geochemical survey. Geological mapping was conducted over the greater part of the claim group but for several reasons mapping was superficial or non-existent in the important south portion of the claim group closest to the Lorraine deposit.

This report describes the results of mapping the claims adjoining the Lorraine prospect. The considerable cooperation and assistance of the Granby Mining personnel is gratefully acknowledged.

The following is a list of claims for which assessment work credits are requested:

<u>Claim Group</u>	<u>Claim Names</u>	<u>Record Numbers</u>	<u>Record Date</u>
COL	COL 1-9	101240-248	July 12, 1972
	11-13	101250-252	
	15-21	101254-260	
	51-56	101272-277	

COL. GROUP



Lorraine

3995 M-1

LUC Syndicate
COL Claim Group
Index Map

1" - 4 miles

1972

FIGURE I

Department of
Mines and Petroleum Resources

ASSESSMENT REPORT

NO. **3995** MAP **#1**

GEOLOGICAL MAPPING

PURPOSE

This geological mapping program was carried out in the central and southern portions of the COL claim group to assess the mineral possibilities in an area which had previously received only superficial attention.

Previous geological mapping on the claim group had been directed primarily to a study of rock types in an effort to define zones favourable, in a broad sense, to possible mineral potential. It had been hampered by topography and uncertainty as to the ground held by COL claims due to conflicting staking. The 1972 program included a survey to establish ground control for use of the mapping geologist and to establish the actual ground held within the COL claims.

METHOD

The campsite for this program was located in the cirque immediately north of the Lorraine copper prospect and was actually on claims held by Granby Mining Co.

McElhanney Associates were retained to survey the COL claims and such other claim locations as necessary to define the area held by the COL claims. The choice of qualified B.C. Land Surveyors was considered necessary to resolve possible disputes among companies interested in the area which included Granby Mining Co. Ltd., Noranda Exploration Co. Ltd., Estey Agencies, et al, and LUC Syndicate.

The LUC Syndicate geologist used survey stations established by the surveyors in locating outcrop areas. The investigation

of mineralization was to include more or less development work depending on its location with regard to claim boundaries.

TOPOGRAPHY

Relief in the area ranges from 3500 to 6400 feet. Besides the north trending ridge generally along the location line of CUL 1-6, two easterly trending ridges give a horseshoe appearance to the broad flat valley north of the Lorraine prospect. Numerous small streams head in this valley among alpine meadows and scattered timber. In the south central portion of the map area a small cirque lake is surrounded by a steep and cone shaped ridge.

The northern slopes of the ridges are relatively steep, averaging about 33° and are commonly covered by scree. Southern slopes are somewhat more gentle but widely mantled with low brush and talus.



Fig. 2 - Looking north from Lorraine 1

Department of
Mines and Geophysical Resources
ALBERTA
NO. 3995 MAP #2

GEOLOGY

The geological formations observed in outcrop along the ridges can be divided into two major rock units:

- (1) Hogem granitoid
- (2) Duckling Creek syenite complex

Besides the two major units, numerous fine grained dykes and aplite intrusions occur.

Within Hogem granitoid rocks are quartz bearing monzodiorite and fine grained monzonite. Along the main north trending ridge the granitoids are generally coarse grained and are most abundant in outcrop near the north end of the ridge.

The west slope of this ridge is covered by abundant talus of quartz bearing monzodiorite and quartz monzonite.

Toward the southern end of the ridge there is a gradual change to finer grained rock with less quartz, changing ultimately to monzonite with alteration of biotite and hornblende to chlorite.

Duckling Creek syenite complex consists principally of K-feldspar syenite, porphyrite and pegmatite. This syenite complex is common in the centre of the map area. In the valley to the south pyroxenite and mafic micaceous rocks occur in relatively sparse outcrop associated with the complex.

Rock types in the map area show gradual change and contacts shown are generally arbitrary.

HOGEM GRANITOID ROCKS

Quartz-bearing Monzodiorite

Composition of these rocks is close to that of diorite. Outcrops on the ridge top show this formation to be generally massive, grey, medium-grained with feldspar phenocrysts. Composition is approximately potassium feldspar 20%, plagioclase 30-35%, quartz about 5%. Mafic minerals include pyroxene augite, biotite, magnetite and apatite.

The plagioclase content is dominant, in usually well shaped phenocrysts, and gives the rock a pinkish grey coloration.

Alkali feldspar is usually medium-grained with associated fine anhedral quartz.

These rocks show hydrothermal alteration with chloritization of hornblende and biotite.

Monzonite

Monzonite occupies an intermediate position between syenite and Hogem quartz monzodiorite. It may in places be classed as syenodiorite.

These rocks are characterized by approximately equal amounts of K-feldspar and plagioclase.

Quartz is usually present but in very small amount, apparently never exceeding 7% by volume.

The mafic minerals are augite, hornblende, biotite, apatite and sphene.

These rocks are generally pink and fine to medium-grained.

DUCKLING CREEK SYENITE COMPLEX

Syenite

Usually fine to medium-grained in which K-feldspars make up about two thirds of volume. Little or no plagioclase. Mafic minerals are commonly hornblende and biotite.

Pyroxenite

These are coarse granular rocks consisting mainly of pyroxene. They are found to occur as discrete bodies on the southern slope of the ridge and in the valley north of Lorraine.

Biotite pyroxenite occurs west of the cirque lake in the south portion of the map area. Half the volume of the rock is made up of biotite.

A basic dyke in the centre of the map area intrudes syenitic rocks. This dyke is an ultrabasic with porphyritic texture. Large well shaped phenocrysts of hornblende are set in a fine mafic groundmass consisting mainly of pyroxene. Mica, quartz crystals and feldspar phenocrysts also occur with some quartz crystals developed within the hornblende phenocrysts.

"Flow form" Monzonite

This monzonite is found along the ridge in the central part of the map area. The rocks show somewhat segregated K-feldspar, plagioclase and pyroxene producing a gneissic texture.

Fine-grained Porphyritic Dykes

The fine-grained dykes shown are exposed mainly along the ridge top. They are fine-grained, grey to pink in colour and intrude rocks of the Hogem granitoids. They occur in two swarms.

One swarm occurs near the northeast boundary of claim GK 17; the second swarm occurs in COL 2. Several isolated dykes occur in other areas.

The dykes of the first swarm are 50 to 70 feet wide but could be followed only a short distance across the ridge due to extensive scree and talus of both granitoid and dyke material.

The second dyke swarm near the north end of the ridge shows two types of texture alternating at more or less regular intervals. The first type is fine-grained, porphyritic, pinkish buff coloured, consisting mainly of K-feldspar, plagioclase and biotite. The rock is brittle and loose textured with many minute cavities. The second type shows very fine-grained, glassy texture with flow structure. There is a tendency to parallel or sub-parallel alignment of minute prismatic elements in a fabric of fine-grained plagioclase and K-feldspar. The rock is a light pinkish grey colour. Dykes are about 80 feet apart but can be traced only a few tens of feet due to scree and talus.

Aplite

This is a light cream to pink coloured fine-grained granitic rock with less than 5% mafic minerals. A good aplite showing is found on the south slope of the main ridge which is cut by a quartz vein. Monzonite around the aplite intrusion shows strong alteration of biotite to chlorite.

In other places aplite occurs as small veins or stringers.

Quartz Veins

Quartz veins are common in the map area although generally too small to be mapped. They cut most rock types, are of various dimensions and attitudes. Most are glassy but some show relatively good crystal development.

An unusually large vein is indicated in claim GK 19. This vein is approximately 135 feet long in outcrop with an average width of nearly 2 feet.

MINERALIZATION

Associated with the dykes in the northeast portion of GK 17 is a copper showing on the crest of the ridge. Mineralization occurs across a width of about 200 feet but can be traced only about 175 feet east-west across the ridge due to scree and talus.

Rocks in this area show significant amounts of malachite and chalcopryrite. Several small quartz veins are also mineralized. Grade is estimated visually at .3% Cu. Mineralized fragments can be traced some distance down the hillside but no other mineralized outcrop has been located to suggest the mineralization actually extends onto the COL group.

In the south corner of GK 17 the ultra basic dyke described above contains significant chalcopyrite and malachite mineralization within an area of about 120 x 50 feet.

At elevation about 5720' on the south facing slope on GK 19 a quartz vein contains malachite as well as lenses of massive chalcopyrite. The vein is about 135' x 2' in extent.

Relatively weak copper mineralization occurs, in talus on COL 7.

Fractures at No. 1 Post COL 11 and 12 contain up to one inch of bornite mineralization. Extent of the mineralization appears to be limited.

CONCLUSIONS

Surveying of claim locations served to confirm that all significant mineralization found in outcrop occurs on claims held by Granby Mining. It has not proved possible to trace mineralization onto the COL group due to scree and talus. The main showing in the northeast portion of GK 17 is, however, only 200 feet from COL 3. It may be necessary to conduct a program of IP surveying on the east side of the ridge to explore this area more fully.

Portions of claims COL 9 and 11 are located in close proximity to the original Lorraine showing due to open fractions in the original staking. This ground should be held pending developments on this mineral occurrence.

LIST OF EXPENDITURES

J. Talsania	Geologist	July 19 - Aug. 7	20 days	\$365.00
R. Lau	Assistant	July 19 - Aug. 7	20 days	315.00
J.C. Stephen	Supervision	July 20, 29 @ \$35/day		70.00
McElhanney Associates		July 21 - Aug. 6	34 mandays	
Professional services - Invoice 72-173 to July 31				1684.76
		Invoice 72-209 to Aug. 31		2224.94
Advance for camp supplies - 76 mandays @ \$4/day				304.00
4 x 4 rental rate - 3 weeks @ \$100				300.00
Helicopter support - July 22 (\$160) and Aug. 6 (\$173)				<u>333.00</u>
			Total	\$5596.70

Note - Costs do not include meals and cabins at Germansen Landing during mobilization and demobilization, nor use of helicopter July 20 and 29. Travel time to and from Germansen Landing as well as office time spent in compilation and drafting is not included.

Declared before me at the *City*
of *Nanaimo*, in the
Province of British Columbia, this *19th*
day of *Dec.* *1972*, A.D.

W.R. Bacon
W.R. Bacon, Ph.D, P.Eng.

G.P. Phillips
A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

SUB-MINING RECORDER



LOCATION LINE SURVEY
OF
COL GROUP MINERAL CLAIMS
VICINITY OF DUCKLING CREEK
OMINECA MINING DIVISION

SCALE --- 1 INCH = 400 FEET

LEGEND

- * IP DENOTES STANDARD B.C.L.S. IRON POST SET
- * IPC DENOTES STANDARD B.C.L.S. IRON POST SET IN CHAIN
- * IFC DENOTES STANDARD B.C.L.S. IRON POST SET IN LOCATION CHAIN
- O DENOTES LOCATION POST OR LOCATION CHAIN
- Δ I.I.V.O DENOTES TRANSIT HUB WITH NUMBERED ALUMINUM IDENTIFICATION TAG
- WT DENOTES WITNESS
- LOC. P. DENOTES LOCATION POST
- REC. N. DENOTES RECORD NUMBER

BEARINGS ARE ASTRONOMIC AND ARE DERIVED FROM SOLAR OBSERVATIONS

To accompany Geological Report
of
C.L. Chan Mining Duckling Creek Area
by S.B. Brown, Ph.D., P.Eng.
Omineca Mining Division
Date: December 15, 1972
W. B. Brown, P. Eng.

3995 M.L.

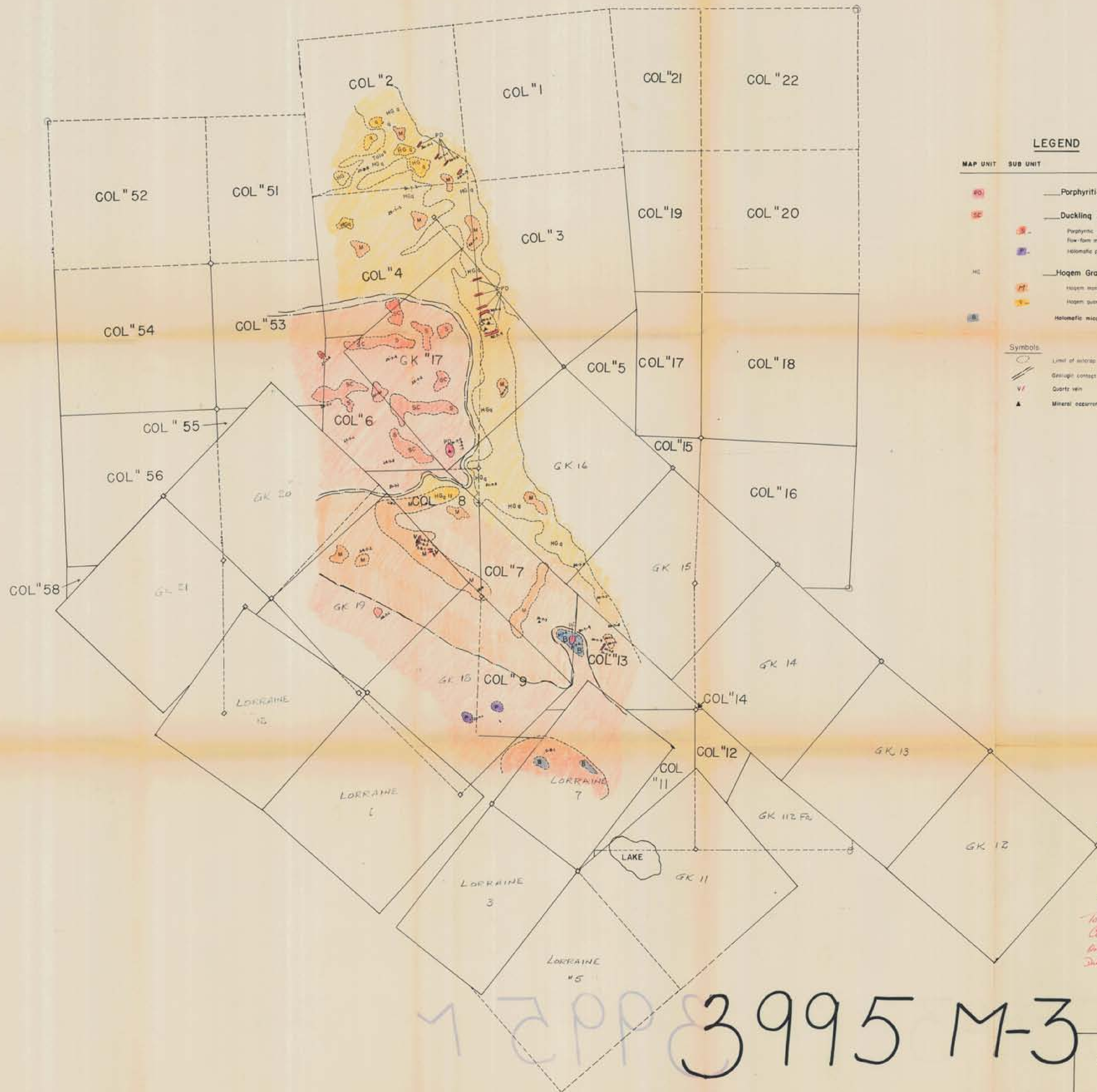
CERTIFIED CORRECT: *John P. McLaughlin*
AUGUST 1972 B.C.L.S.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
3995 M.L. MAP

APPOINTMENT ASSOCIATES
PROFESSIONAL LAND SURVEYORS
200-1200 WEST PENDER STREET
VANCOUVER, BRITISH COLUMBIA

JOB NO. 02656-0

PLAN - 1



LEGEND

MAP UNIT	SUB UNIT	LITHOLOGY
PO		Porphyritic fine grained dyke
SC		Duckling Creek Syenite Complex
SC		Porphyritic syenite, Undifferentiated syenite and flow form monzonite
SC		Idiomorphic pyroxene
HC		Hoqem Granitoid Rocks
HC		Hoqem monzonite
HC		Hoqem quartz monzonite
HC		Metamorphic micaceous phyllite

Symbols	
	Limit of outcrop
	Geologic contact
	Quartz vein
	Mineral occurrence

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3995 MAP #3

*To accompany Assessment Report
COL Claim Group, Duckling Creek Area
By W.R. Brown, P.E., D. P. 7/75
Omineca Mining Division
Dated December 15, 1972*

W.R. Brown, P.E.

3995 M-3

LUC SYNDICATE
COL CLAIM GROUP
OMINECA MINING DIVISION
93N/14W
GEOLOGY
(REVISED)
SCALE 1"=400' JULY 1972