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GEOLOGICAL REPORT
on

THE 92 I/6 ROYAL GROUP

at Calling Lake, Highland Valley, B.C.
by N.B. Vollo, Nov. 17th, 1966

Geological Report

on

the Royal Group

of

ROYAL CANADIAN VENTURES LTD.

at Calling Lake, Highland Valley, $50^{\circ} 121^{\circ}$ SE

by

N.B. Vollo, P.Eng.

November 17th, 1966

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Geological Map, 92 I/6 Royal, Cana, Rc in pocket

GEOLOGICAL REPORT ON THE 92 I/6 ROYAL GROUP

Location

The Royal group is located at Calling Lake, in the Highland Valley area of B.C, N.T.S. designation 92 I/6. The east boundary of the group is located one mile due west of the Lornex copper deposit.

Access

The Highland Valley can be reached by paved road from Ashcroft. The claim group can be reached by either of two roads starting at Quiltanton Lake. One, a jeep road, runs along the east boundary of the property; the other, the old OK mine road, passable by car, reaches the west end of Calling Lake.

Field Work

The group was mapped by the writer during July and August, 1966. Traverses were made along chained picket lines spaced at 400 foot intervals. Outcrops between lines were located by pace and compass.

Topography

The area is one of rather subdued relief, rising to a maximum of 600 feet above Calling Lake at 5100 feet above sea level. A broad valley trends southeasterly from Calling Lake, crosses the group diagonally, and forms

part of a lineament that can be traced for several miles on aerial photographs.

Rock outcrops are abundant in the upland areas but very sparse in the broad central valley. Overburden is mostly boulder till with a high proportion of boulders to clay.

The area is covered with an open, mature lodgepole pine forest which becomes more dense, with a little spruce, on north slopes.

Geology

The group lies completely within the Guichon batholith and all exposures are of intrusive rocks.

Petrology

The granodiorite forms more than 90% of the outcrop on the group. It is a white, coarse grained, massive rock with composition visually estimated to be approximately:

plagioclase	-----	50%
Orthoclase	-----	10%
quartz	-----	20%
biotite	-----	20%

Quartz tends to occur as rounded phenocrysts 2 to 10 mm in diameter. Biotite occurs as euhedral equidimensional prisms up to 15 mm in diameter and is the most distinctive feature of this rock.

Quartz porphyry is pinkish in colour with abundant phenocrysts of clear quartz, up to 10 mm in diameter, in a fine grained matrix of orthoclase, quartz, minor biotite and very sparse pyrite. Quartz forms 40% to 50% of the rock. Quartz porphyry was not seen in actual contact with the granodiorite, but is probably intrusive into it. The only exposures were found on the Cana 9 claim.

One outcrop of biotite granite occurs immediately south of the base line at about 55 + 00E (see map). It is medium grained, massive, composed mostly of feldspar and quartz, with 20% flaky black biotite. This outcrop is isolated in a large drift covered area and could be a very large erratic. It could also, however, represent in part the rock underlying the broad central valley.

Aplite dikes are pink, fine grained, sugary, composed of roughly equal amounts of orthoclase, plagioclase and quartz. They are commonly less than six inches wide and were observed only in the granodiorite. Most strike northerly, dip steeply west, and are too small to show on the accompanying map.

Structure

A pronounced topographic lineation strikes about N 40° W and is clearly defined on aerial photographs. The central valley is probably the topographic expression of an underlying fault zone, but due to the complete lack of outcrop in this area no evidence for this was observed in the field.

The long trench on the Cana 9 claim (see map) exposes a series of weak shear zones trending N 40° W and dipping steeply, separated by bands of unaltered massive granodiorite. The material in the shear zones is oxidized to a depth of at least ten feet below the suboutcrop.

Alteration and mineralization

Strong sericitization is associated with the shear zones exposed on the Cana 9 mineral claim. Minor malachite, chalcopyrite and bornite were also noted.

An old pit north of the above trench exposes abundant malachite, some chalcopyrite and bornite, in a strongly silicified zone. The pit is too badly caved to determine the trend of the mineralization.

Minor brick red oxidation and alteration were noted in a few outcrops in the extreme northeast corner of the property.

Recommendations

In view of the close proximity to the Lornex copper deposit, the royal group should be thoroughly tested:

1. On the basis of field mapping a geochemical soil survey for copper and molybdenum was recommended over the drift covered areas, particularly the central valley. This has been completed.

2. An induced polarization survey was recommended over the drift covered area, guided to some extent by results of the geochemical soil survey. This has been completed.

3. A trench should be bulldozed and ripped into rock in a northeasterly direction, starting approximately at the mid point of the trench on the Cana 9 claim, across the old pit, for a total distance of about 600 feet.



N.B. Vollo, P.Eng.

Kamloops, B.C.
Nov. 17th, 1966



ASSESSMENT DATA

Personnel

N.B. Vollo, P.Eng, Geologist.

Field mapping -----	July 18 - 22, 1966	
	Aug. 1 - 5,	"
	Aug. 17 - 20,	"
Report preparation	Nov. 15, 16	"

R. Zimmerman,

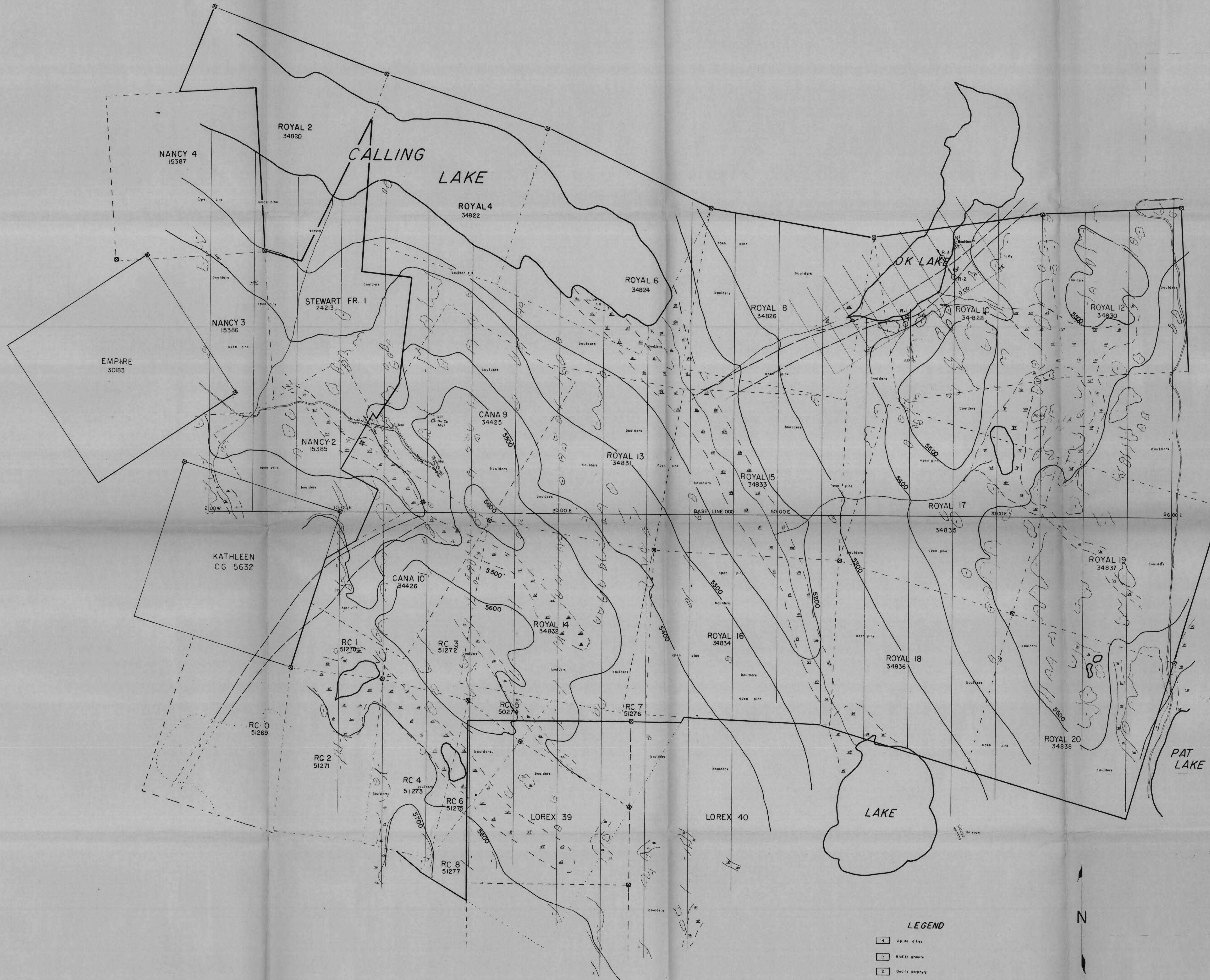
Field assistance -----	Aug. 4, 16-18,	"
	Oct. 25, 26,	"
Draughting -----	Oct. 2,4,	"
	Nov. 15,	"

Transporation

Company owned truck, rented personal car.

Accomodation

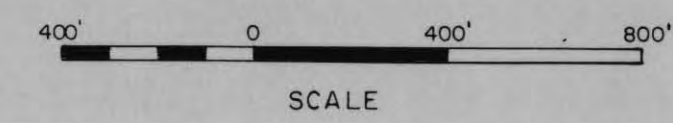
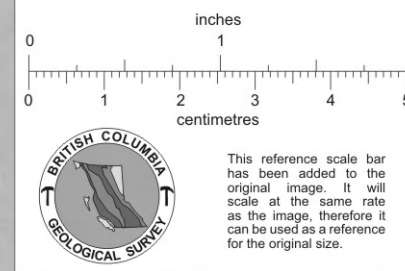
Camp on Calling Lake.



Royal 21
Royal 23
Royal 22
Royal 24
Royal 27
Royal 26
Royal 28
Royal 31
Royal 32
Royal 35
Royal 30

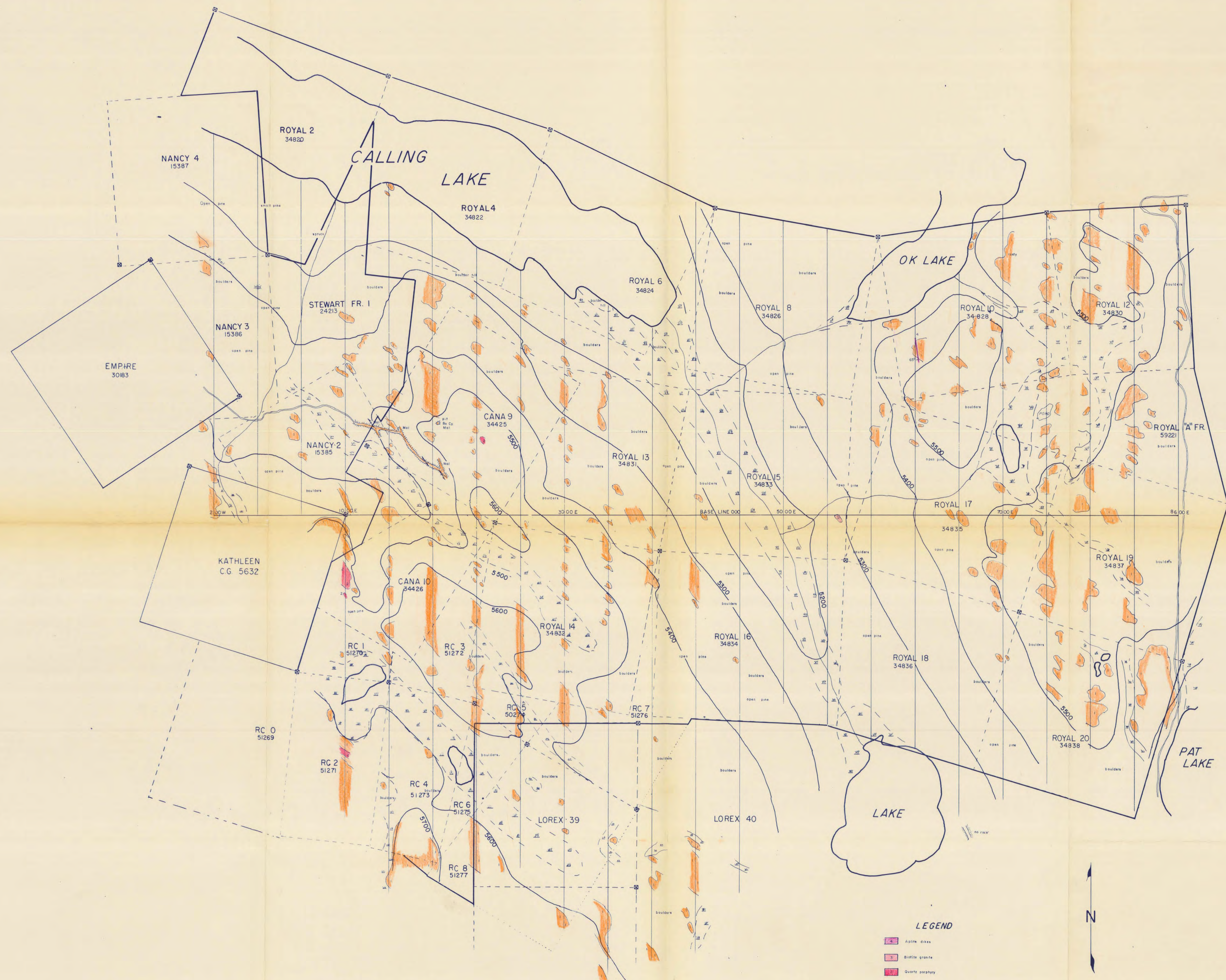
LEGEND

- 4 Alpine dike
- 3 Biotite granite
- 2 Quartz porphyry
- 1 Gneiss
- Trench
- Jeep road
- Trail
- Muskeg



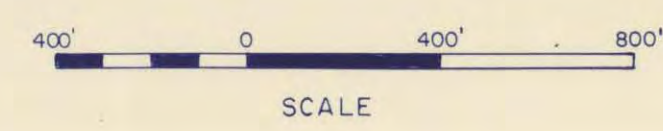
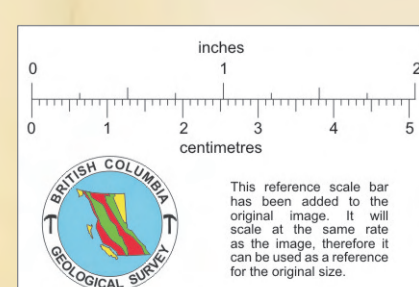
ROYAL CANADIAN VENTURES LTD.
92 1/6 ROYAL, CANA, RC
GEOLOGICAL PLAN

DRAWN BY *AK* DATE: 16-9-66 APPROVED BY *AK*



LEGEND

- Alpine clays
- Biotite granite
- Quartz porphyry
- Gneiss
- Tranch
- Jeep road
- Trail
- Muskog



ROYAL CANADIAN VENTURES LTD.
 92 1/6 ROYAL, CANA, RC
 GEOLOGICAL PLAN

DRAWN BY *NK* DATE 16-9-66 APPROVED BY *NK*

to accompany Geological Report on
 the ROYAL GROUP, at Calling Lake,
 Kamloops M.D., by N.B. Vollo, P.Eng.
 Dated November 17th, 1966