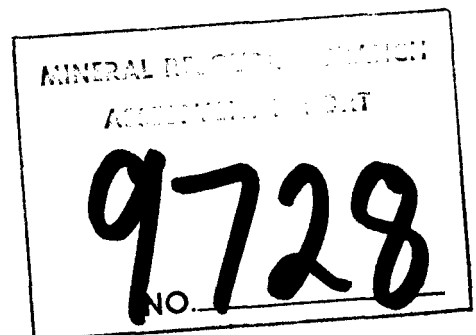
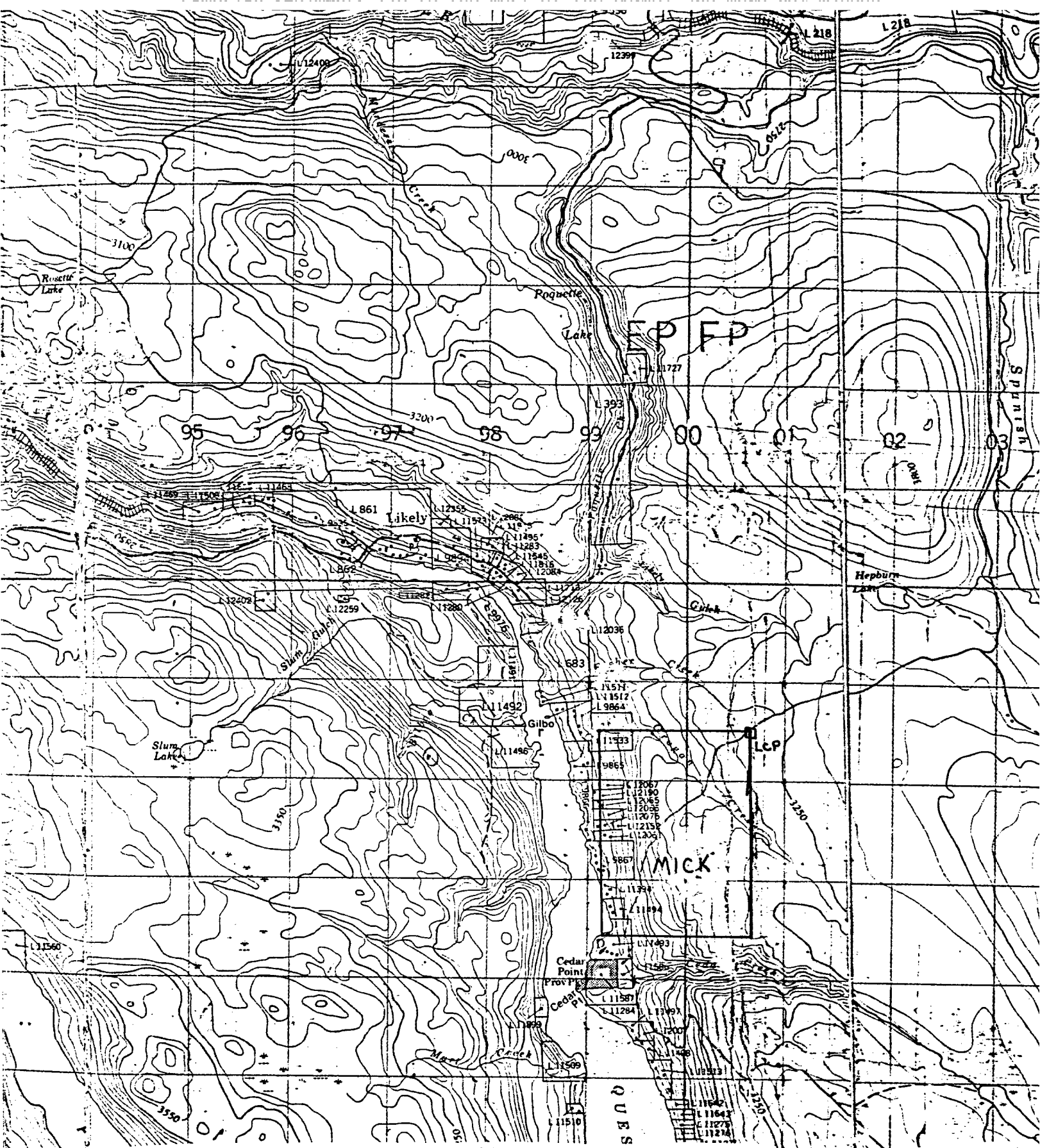


A Geological Report  
for the  
Mick Claims  
located in the  
Likely Area, Cariboo Mining Division  
Map 93A/12E  
Latitude 52°35.4' and Longitude 121°31.5'  
for  
Raymond A. Cook  
(owner and operator)  
by  
Raymond A. Cook B.Sc., M.Sc., Geology  
May 30, 1981



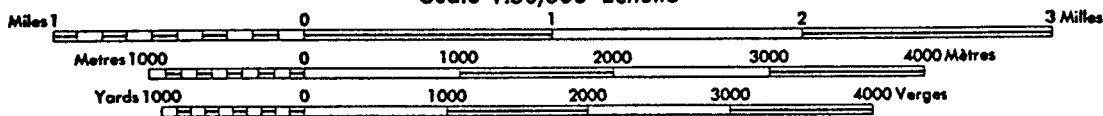
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CARIBOO LAND DISTRICT  
**BRITISH COLUMBIA**

Scale 1:50,000 Échelle



This Provisional Map is equivalent to a standard map in accuracy of content.

Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL 100 FEET  
 Elevations in Feet above Mean Sea Level  
 North American Datum 1927  
 Transverse Mercator Projection

## I. Introduction

A program of initial exploration was performed on the Mick claims to locate economic lode polymetallic mineralization.

### Property

The Mick claims are located in the Quesnel Lake area of the Cariboo Mining Division, British Columbia. The claims are held by Raymond A. Cook and have record number 1774.

### Location and Access

The claims are situated approximately 2 kilometres southeast of the town of Likely, British Columbia. Likely is some eighty-three kilometres from One Hundred and Fifty Mile House, by a good gravel road. The claims are accessible by the main road immediately east of Quesnel Lake and by the Grogan Creek road which runs diagonally across the property from the southwest to the northeast.

### Topography and Vegetation

The elevation of the property varies from 750 metres at Quesnel Lake to 1000 metres for the Grogan Creek headwater plateau. The topography is divided between the flat plateau on the east and the slope descending to the lake on the west. The vegetation cover is thick with several periods of regrowth composed of cedar, birch, hemlock, fir, pine and alder trees with a variety of shrubs.

### Performed Work

The property was geologically mapped and plotted at a scale of 1:5000. Geological interpretation was the result of prospecting, chip and grab sampling, geochemical assays, panning of creek beds and hand specimen examination. Work to date is only preliminary and all results will be directed to further exploration.

### General Regional Geology

Interest in lode gold deposits in the Quesnel Lake area was historically secondary to that of placer gold operations such as the Bullion pit until the

discoveries of vein gold which led to the Cariboo Gold Quartz mine, the Island Mountain mine, the Cariboo Hudson mine and several significant showings throughout the Cariboo. In the 1960's a resurgence of exploration interest resulted in the examination of the volcanics and intrusive stock complexes for massive sulphides and porphyry copper and molybdenum deposits. Resultant properties include the Cariboo Bell and Big Timothy Mountain deposits.

Current economic difficulties coupled with global troubles have markedly increased the value of precious and strategic metals such that once again renewed interest has entered the Cariboo region.

The influence to the east of the Shuswap Metamorphic Complex and several regional periods of folding and faulting has created significant difficulties in mapping and correlating stratigraphically equivalent rock-types throughout much of the Cariboo. The area encompassed by the Quesnel Lake geology map sheet 93A edition 2, basically shows an eastern anticlinorium bound to the west by a corresponding synclinorium both with their axis trending northwest-southeast. The rocks of the anticlinorium are dominantly those of the Cariboo Group, a sequence of lower Paleozoic phyllites, quartzites, carbonates and their metamorphic equivalents which are overlain by the Slide Mountain Group clastics, carbonates and basalts of Mississippian age. The western synclinorium is more structurally obscured by the dominant pile of Triassic to Tertiary intrusive and extrusive rocks overlying and crosscutting Pennsylvanian to lower Triassic sediments. Mapped between the two dominant fold axes is a major contact zone or thrust fault with younger rocks overthrust upon older Paleozoic rocks. Three phases of folding plus normal, thrust and reverse faulting with associated tension fractures occur

most strongly in the metamorphosed rocks of the eastern Quesnel Lake map area. The general homogeneity of the western located extrusives obscure the presence of such folds and structural stresses are evident as faults, shears, and numerous crosscutting quartz and carbonate filled veins and fractures.

The intrusive and extrusive rocks are mapped with a northwest to southeast lineament passing through the Morehead Lake, Bootjack Lake topographic areas. The rocks on either side of this lineament dip and young toward this central structure. Detailed mapping by D.G. Bailey of Queens University and R.B. Campbell of the Geological Survey of Canada, show the oldest and most distal rocks as calcareous argillites, sandstones, and conglomerates exposed on the eastern slopes of centrally located Spanish Mountain. This sequence becomes more volcaniclastic upsection and is believed Norian in age. Overlying the Norian clastics are green pyroxene-hornblende basalts and tuffs of early Hettangian age. The basalt flows are overlain by maroon pyroxene basalts which in turn are overlain by hornblende-pyroxene flows and breccias followed by polyolithic volcanic breccias and clastics. Lower Jurassic maroon trachybasalt flows overlie the Triassic volcanics and are most centrally located to the Morehead Lake and Bootjack Lake lineament.

Two basic trends of fault systems occur throughout the Quesnel Lake igneous units, a dominant northwest-southeast trend paralleling the tectonic lineament and a near rightangled northeast-southwest system of crosscutting normal faults. The normal fault system clearly shows offset up to several hundred meters while the northwest-southeast contact faults, because of their

position, do not as clearly show offset. Slickenside striae and fault-zone brecciation strongly suggest northwest-southeast movement but the amount of offset is obscured and difficult to estimate.

The entire sequence of igneous units of the Quesnel Lake area follow a clearly defined hingeline or tectonic trend which is believed to be a paleo-island arch complex over 200 kilometres on strike with the interarc basinal clastics and carbonates to the east of the arc. Successive sequences of intrusives show a shift of magma chambers from east to west with decreasing age.

## II. Property Geology

The Mick property was staked, mapped and sampled to examine lithologies considered important in the formation of economic metal deposits.

Outcroppings available for mapping are restricted to the Grogan Creek road and Grogan Creek canyon (Map-in pocket). The Grogan Creek road was widened and deepened in 1980, exposing several hundred metres of fractured bedrock. Grogan Creek canyon which bounds the claims to the north runs east-west for a distance of one kilometre. The canyon is up to 20 metres deep and outcrops of bedrock are frequently exposed in the Grogan Creek bed.

The lithologies of the two separate areas are entirely different. Grogan Creek road rocktypes are altered and replaced andesitic volcanics. The andesite is partially replaced by hornblende and silica with pyrite and pyrrhotite mineralization along fractures. The rocks fracture brittly and weather a yellowish brown due to the abundant limonite and hematite along the fracture surfaces. Fresh surfaces are greyish-green to greenish-grey due to the abundant phenocrysts of pyroxene in the lessor altered andesite. The fracturing and disaggregation of the outcrop by the overlying tree root system yields unreliable lithologic trends from the bedrock. Iron oxides and sulphides occur most abundantly at the northeastern end of the outcrop where geochemical values show anomalous

copper (560 ppm).

Grogan Creek canyon was reported by Cockfield and Walker (1934) in a Geological Survey Of Canada Special Paper to have a monzonite bedrock. Mapping for this report confirmed their findings for most of the canyons length. The monzonite weathers a greyish-green in colour and the fresh surface is the same. The rock is medium to coarsely crystalline with crystals commonly several millimetres in size. Plagioclase, quartz, biotite and to a lesser degree muscovite are the dominant minerals. The green colouration is believed the result of fuschite, a chromite bearing silicate although further examination of this minerals presence is required. The monzonite is massive and appears blocky. Several zones are highly fractured with chloritic and illitic alteration suggesting fault gouge. One faulted zone contains 5% pyrite but lacks visible economic sulphides.

Isolated stream and suboutcrop samples were collected on the west side of the property but additional bedrock outcroppings were undetected due to the dense forest cover.

#### Mineralization

No economic massive sulphides in either the Grogan Creek roadcut or Grogan Creek canyon have been discovered. Metal values contain two anomalously high copper values (560 ppm, 330 ppm) when compared to other samples and one monzonite sample from Grogan Creek canyon is anomalously high in lead (38 ppm). In general most of the samples contain very low base metal values, especially lead and silver values which are at their geochemical detection limits.

#### Conclusion

The limited exploration results from the Mick claims demonstrate two features; (1) two markedly different lithologies, altered andesite and monzonite, are separated in outcrop by only one and a half kilometres with a major lithologic contact concealed by overburden between the two outcrop localities, (2) anomalously high copper values occur with sulphides in the altered andesite and anomalously



high lead occurs in a sample of monzonite.

The contact between the two rocktypes is considered a good prospecting target for hydrothermally introduced polymetallic sulphides in fractured host rocks.

#### Recommendations

The limited exploration work to date requires a more extensive geochemical and geophysical examination of concealed areas. Trenching to bedrock of located metallic anomalies and exploration diamond drilling would more favourably delineate the economic potential of the Mick property.

*Raymond A. Cook*

## APPENDIX

## COST STATEMENT - MICK CLAIMS

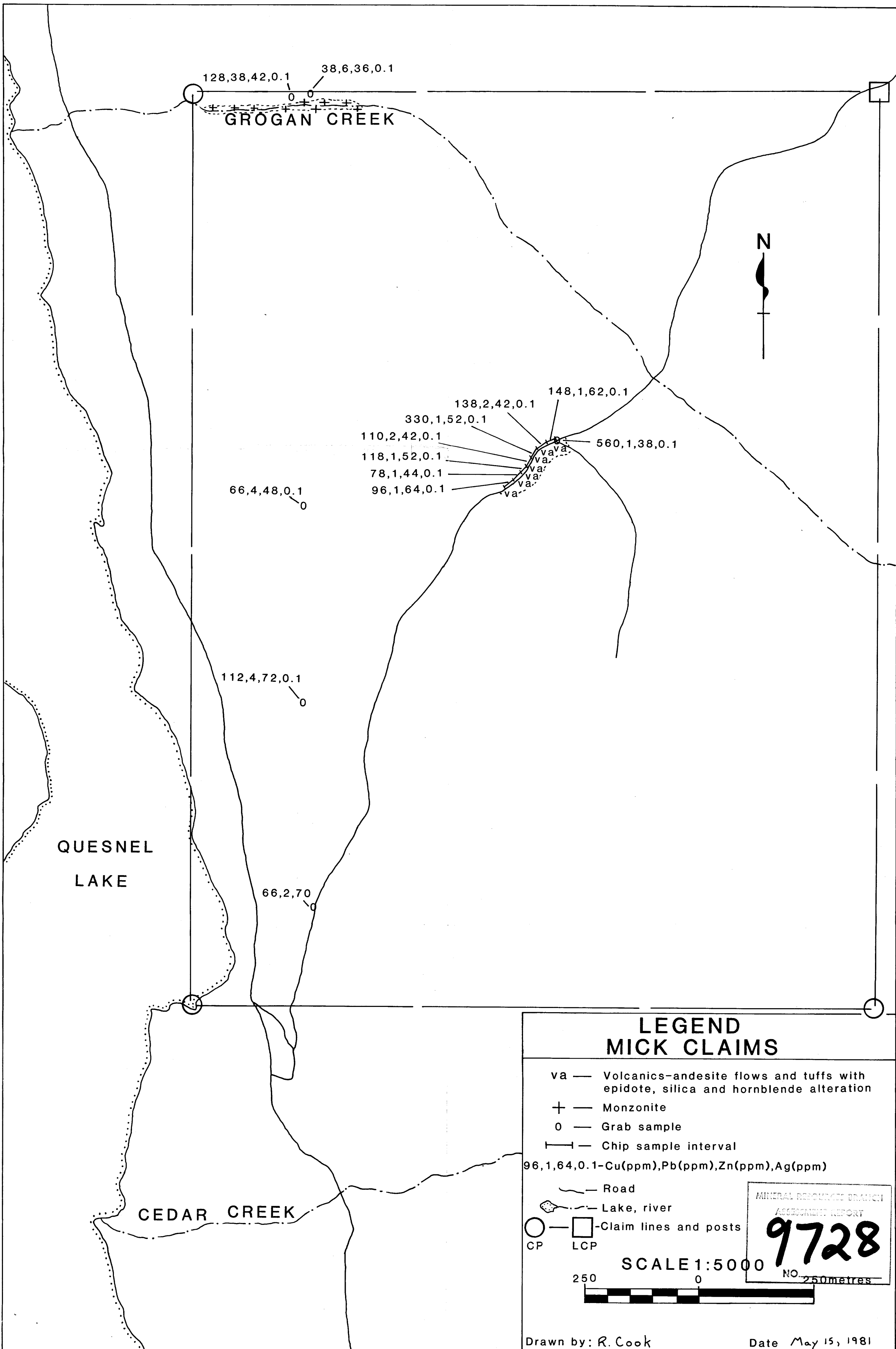
Exploration expenditures from Oct. 20 to 23, 1980.

<u>Name</u>	<u>Work</u>	<u>Dates Worked</u>	<u>No. of Days</u>	<u>Salary/Day</u>	<u>Value</u>
R. Cook	Supervising Geologist; map- ping; sampling; exploration	Oct. 20 to 23	3	200	600
R. Stonard	Prospecting; sampling	Oct. 20 to 23	3	125	375
				Subtotal	975

GENERAL EXPENSES

Car rental and Gasoline	160
Meals and Lodging	250
Report compilation and Assays	200
Subtotal	610

TOTAL COST: 1585



**LEGEND  
MICK CLAIMS**

- va — Volcanics—andesite flows and tuffs with epidote, silica and hornblende alteration
  - + — Monzonite
  - 0 — Grab sample
  - |— — Chip sample interval
  - 96,1,64,0.1—Cu(ppm),Pb(ppm),Zn(ppm),Ag(ppm)
  - — Road
  - — Lake, river
  - — CP — Claim lines and posts
  - — LCP
- MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**9728**  
NO. 250metres
- SCALE 1:5000
- 250 0 250metres

Drawn by: R. Cook  
Date May 15, 1981  
*Raymond A. Cook*