

82F/4

802645

PRELIMINARY REPORT ON GEOLOGY  
FOR  
FEDERATED MINING CORPORATION LTD.  
ON THE  
ART 1 - 72 INCL. CLAIM GROUP  
ROSSLAND AREA, BRITISH COLUMBIA

BY

W. G. TIMMINS, P. ENG.

REPORT NO. 208  
VANCOUVER, B.C.

June 20, 1969

A. C. A. HOWE INTERNATIONAL LIMITED

FILE COPY

A. C. A. HOWE INTERNATIONAL LIMITED  
A. C. A. HOWE INTERNATIONAL LIMITED

## CONTENTS

	<u>PAGE NO.</u>
SUMMARY	1
INTRODUCTION	2
PROPERTY	2
LOCATION AND ACCESS	2
TOPOGRAPHY AND CLIMATE	3
HISTORY	3
GENERAL GEOLOGY	4
GEOLOGY OF THE PROPERTY	5
ECONOMIC GEOLOGY	5
CONCLUSIONS AND RECOMMENDATIONS	6
CERTIFICATE	8
GEOLOGY AND LOCATION MAP	At Rear

A. C. A. HOWE INTERNATIONAL LIMITED  
FILE COPY

## SUMMARY

This report covers a staked area southwest of Rossland, British Columbia, namely the Art 1 - 72 claim group.

The property is underlain by the Rossland Group of rocks intruded by ultra-basic rocks mainly serpentinite.

Showings containing copper, gold, silver, lead and zinc occur in the general area. One diamond drill hole southwest of the property has intersected nickel values up to 0.4% in the ultra-basic rocks, and an adit to the northeast has been sampled and averages 0.23% Ni. across 90 feet. The dimensions of the ultrabasic rock formation exposed on the Art Group are 4 miles long northeast to southwest and 3,000 feet wide. Hence the ultrabasics represent a large body containing areas of known nickel values, and should be investigated for the possibility of a large tonnage - low grade open pit-type deposit.

An initial exploration program to test the ultra-basic intrusives and intrusive contacts is recommended at an estimated cost of \$52,250.00.

A. C. A. HOWE INTERNATIONAL LIMITED  
FILE COPY

## INTRODUCTION

This report is written for Federated Mining Corporation Ltd. on an area near Rossland, B.C. The purpose is to assess the area and in particular, the portion covered by located mineral claims Art 1 - 72 inclusive. First hand knowledge is known to the writer gained from numerous visits to the area and from supervision of work done in the past.

## PROPERTY

The property consists of 72 claims known as the claims Art 1 - 72 inclusive.

## LOCATION AND ACCESS

Approximate co-ordinates: 49° 03' N  
117° 53' W

The city of Rossland is located on the B.C. Highway 3B, about 8 miles north of the United States border, and 7 miles south of the city of Trail, B.C. The road distance from Vancouver is 400 miles. Castlegar airport, a distance of 40 miles from Rossland, is served 3 times daily by B.C. Air Lines from Vancouver.

A. C. A. HOWE INTERNATIONAL LIMITED  
FILE COPY

## TOPOGRAPHY AND CLIMATE

The topography in general is steep with elevations ranging from 2,300 feet A.M.S.L. to 6,500 feet A.M.S.L., however the area is easily negotiable as it is not precipitous and rugged. The area is heavily timbered. The climate is typical of the interior of B.C. with temperatures commonly in the 80° level in summer, and below freezing temperatures in winter. Snow fall is heavy and frequently exceeds 6 feet.

## HISTORY

The Rossland area has a history of gold production during the years 1891 to 1928. Production was attained mainly from the Le Roi, Centre Star, Josie, and War Eagle claims. Approximately 6 million tons was mined, grading 0.45 oz./ton Au., 0.6 oz./ton Ag., and 1.0% Cu. The only recent production in the area has come from Red Mountain Mines Ltd., who are producing molybdenite <sup>and are milling</sup> and are milling at the rate of 650 tons/day. The adjoining Cascade Molybdenum property owned by Scurry-Rainbow Oils Ltd. has been the scene of an aggressive exploration program, consisting of more than 100,000 feet of diamond drilling since 1964. Other work completed on this property has consisted of detailed geology, thin section work and geophysics.

Exploratory work has also recently been carried out by numerous companies, including McKinney Gold Mines Ltd., Cinola Mines Ltd., Cicada Mines Ltd., Royal Canadian Ventures Ltd., Scurry-Rainbow Oil Ltd. and Falaise Lake Mines Ltd.,

### GENERAL GEOLOGY

(References: G.S.C. Memoir 308;  
G.S.C. Paper 63-13, H.W. Little)

The oldest rocks in the region surrounding Rossland are sediments belonging to the Carboniferous Mount Roberts Formation. The Mount Roberts Formation is unconformably overlain by the Jurassic Rossland group, consisting of interbedded volcanic flows, sills and minor sediments. Rocks included in the Rossland group are andesite, basalt, agglomerate, augite porphyry, minor interbedded silt-stone, argillite and shale. These rocks have been intruded by ultra-basic rocks mainly serpentinite, which form a southwest trending belt, west of Rossland, and by large stocks, dykes and bodies of Nelson plutonic rocks. The Nelson rocks consist of quartz diorite, diorite and granodiorite. An irregular quartz-feldspar porphyry intrusive is mapped by Little on the east side of Big Sheep Creek. The Sophie Mountain conglomerates occur mainly on Mt. Sophia about 6 miles to the southwest of Rossland. The latest intrusive in the region excluding the Sheppard intrusions in the extreme

southeast portion of the area, is the Coryell Batholith. Numerous small satelitic bodies of Coryell occur throughout the area surrounding the city of Rossland. The Rossland group of rocks has a general northerly strike and gentle westerly dip. Few Major faults are noted in the area.

### GEOLOGY OF THE PROPERTY

The area of prime concern for purposes of this report is bordered to the west by the Coryell Batholith with some satelitic bodies of Coryell to the east. The Art Group of claims is mainly underlain by rocks of the Rossland Group intruded by ultra-basic rocks mainly serpentinite.

### ECONOMIC GEOLOGY

Cinola Mines Ltd., a property being explored for gold has driven an adit through a number of veins in both serpentinite (a mass outcropping to the northeast of the Art claims) and volcanics. Some gold values such as 19 oz./ton across 1 ft. and 0.5 oz. across 15 ft. and nickel values such as 0.213% Ni across 122 ft. have been obtained from sampling the walls of the adit where it cuts through the serpentinite mass. In addition three surface drill holes which intersected the serpentinite indicated assays in the order of 0.2 to 0.25% Ni. across the entire length of serpentinite intersected, (276' in Hole S-1).

In 1966 Cicada Mines Ltd. carried out an exploration program for copper, silver, lead, zinc to the south and east of what are now the Art 64 and Art 67 claims. A diamond drill hole intersected ultra-basic rocks and values of approximately 0.40% Ni. are present over a 30 foot section, and 0.2% Ni. across a 100 foot section.

The Velvet Mine adjacent to the claims has been worked intermittently for over 60 years, and a 100 ton per day concentrator was operated in 1963. Copper-gold-silver mineralization occurs in the quartz-feldspar porphyry.

#### CONCLUSIONS AND RECOMMENDATIONS

The area is basically unexplored using the modern systematic and sophisticated methods available today. The area contains copper, gold and silver-lead-zinc mineralization as well as nickel, gold and silver related to the ultra-basics.

These ultra-basic intrusives represent an interesting target for exploration. Although the presence of nickel in the serpentinites has been known in the past, and pyrrhotite, pyrite and gersdorffite identified in the rocks, no exploration work for nickel has ever been attempted. In view of the current trend to low cost, large tonnage operations in open pit mines in the industry today, and the potential size of the ultra-basic body exposed on the property (4 miles by 3,000 feet) and the known values of nickel, gold and silver at the northeast and southwest sections of it, this body of ultra-basics should be carefully explored.

An initial exploration program designed to test the ultra-basic intrusives and intrusive contacts for possible concentrations of nickel or related base metals and gold/silver values should consist of the following:

1. Photogeological study, est.	2,500.00
2. Line-cutting or flagging, est. 75 miles @ \$125.00/mile	9,375.00
3. Geological survey	7,500.00
4. Geochemical soil sampling survey	7,500.00
5. Magnetometer survey	5,625.00
6. Prospecting, sampling and testing	3,000.00
7. Accommodation, food, transportation, etc.	6,000.00
8. Engineering, supervision, etc.	6,000.00
9. Contingency @ 10%	<u>4,750.00</u>
TOTAL ESTIMATED COST	<u>\$52,250.00</u>

Further work consisting of diamond drilling would be dependent on results of the above program.

Respectfully submitted,

W. G. Timmins, P. Eng.

DATED AT VANCOUVER, B.C. THIS 20th DAY OF JUNE, 1969.

CERTIFICATE

I, W. G. Timmins, of the City of North Vancouver in the Province of British Columbia, hereby certify that: -

1. I am a resident of British Columbia and my address is No. 17, 2554 Whiteley Court, North Vancouver, B.C.
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario.
3. I am a member of the Association of Professional Engineers of British Columbia.
4. I have no interest, direct or indirect, in the property or securities of Federated Mining Corporation Limited, nor do I expect to receive any such interest.
5. This report is based on government and private reports and personal knowledge of the area.

W. G. Timmins, P. Eng.

DATED AT VANCOUVER, B. C. THIS 20th DAY OF JUNE, 1969.