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on Hankin

MARMOT GROUP CLAIMS

SLUMP BLOCK AREA

Department of

Mines and Petroleum Resources

ASSESSMENT REPORT

No 4831

MAP

#### GEOLAGICAL ASSESSMENT REPORT

ON

MARMOT GROUP CLAIMS SLIMP BLOCK AREA

FOR: MAHARAJA MINERALS LTD. (N.P.L.)

1107 - 207 W. Hastings St., Vancouver, B. C.

OWNER: MAHARAJA MINERALS LTD., (N.P.L.)

LOCATION: LATITUDE: 540 31 N.

LONGITUDE: 127º 07 W.

WORK PERIOD: July 1, 1973 to October 31, 1973

BY: J. McAndrew P. Eng.

R. Biss

L. Miskovic

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#### INTRODUCTION:

The geological assessment report herein concerns the Marmot Group of mineral claims. This group is a part of a larger grouping of claims generally termed the "Loring Creek Area" claims.

The Marmot group is composed of 34 claims. The grouping was made for assessment purposed only.

The names of the claims and their record numbers are as follows:

MARMOT	5 - 14	56643 - 56652
CRATER	9 - 12	128173 - 128176
HANKIN	17 - 24	128177 - 128184
WEBSTER	1 - 4	128206 - 128209
CRATER	13 - 18	128210 - 128215
HANKIN	25 - 26	128552 - 128553

This report concerns itself with about 4 claims (HANKIN 21, 23, 25, 26) in and around an area close to the head of Loring Creek known as the "Slump Block".

#### I. LOCATION AND ACCESS:

The Marmot claims are located in the Omineca Mining Division at latitude 54° 31° N and Longitude 127° 07° W. The "Slump Block", the subject of this report, is located on Hankin claims 23 - 24.

Access to the group is some 20 miles south of Telkwa, B. C. by helicopter or foot/horse trail, up Loring Creek from the Hunter Basin road "cut-off". See location map attached.

At the time of this writing a D-8 Bulldozer trail is being extended to the slump block area as it cuts trenches in mineralized zones along Loring Creeks. A four wheel drive vehicle is used to reach the trenching work area.

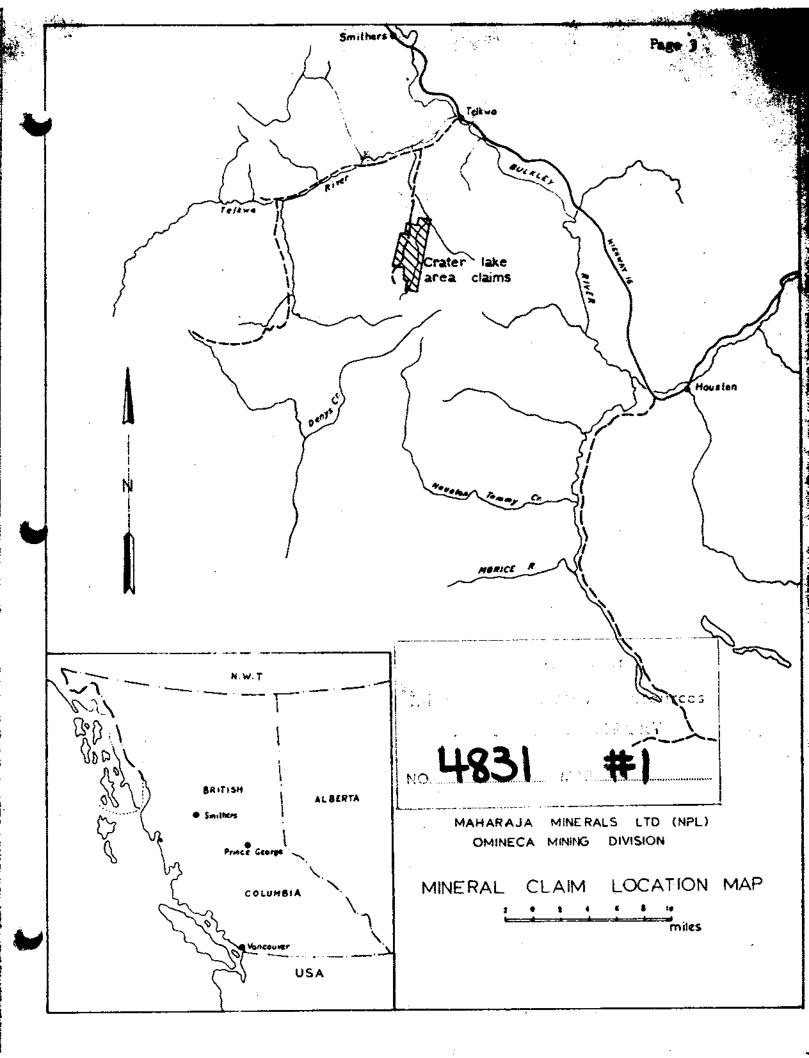
#### II. PURPOSE OF THE SURVEY:

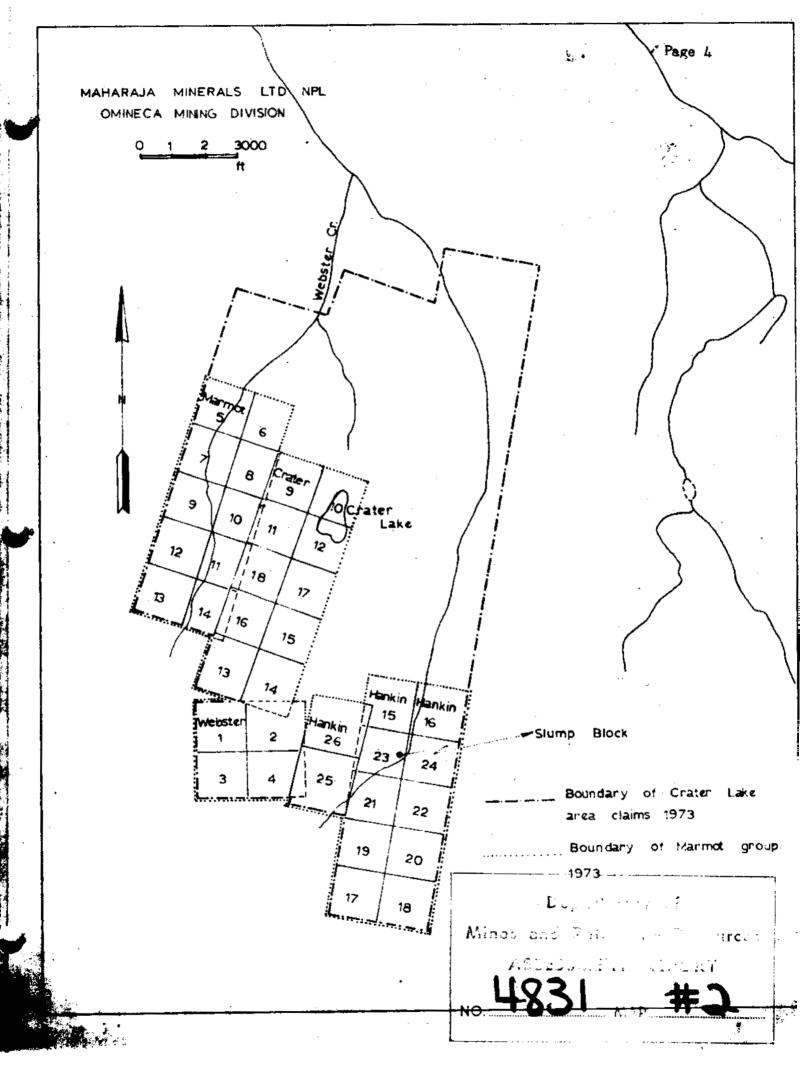
Geological investigations in the general slump block area were aimed at determining the scientific and economic significance of mineralized horizons exposed there. To these ends a program of detailed mapping and systematic chip sampling across selected mineralized zones to determine the grade of copper, lead, zinc, silver and gold was completed. See the "Slump Block" profile in pocket.

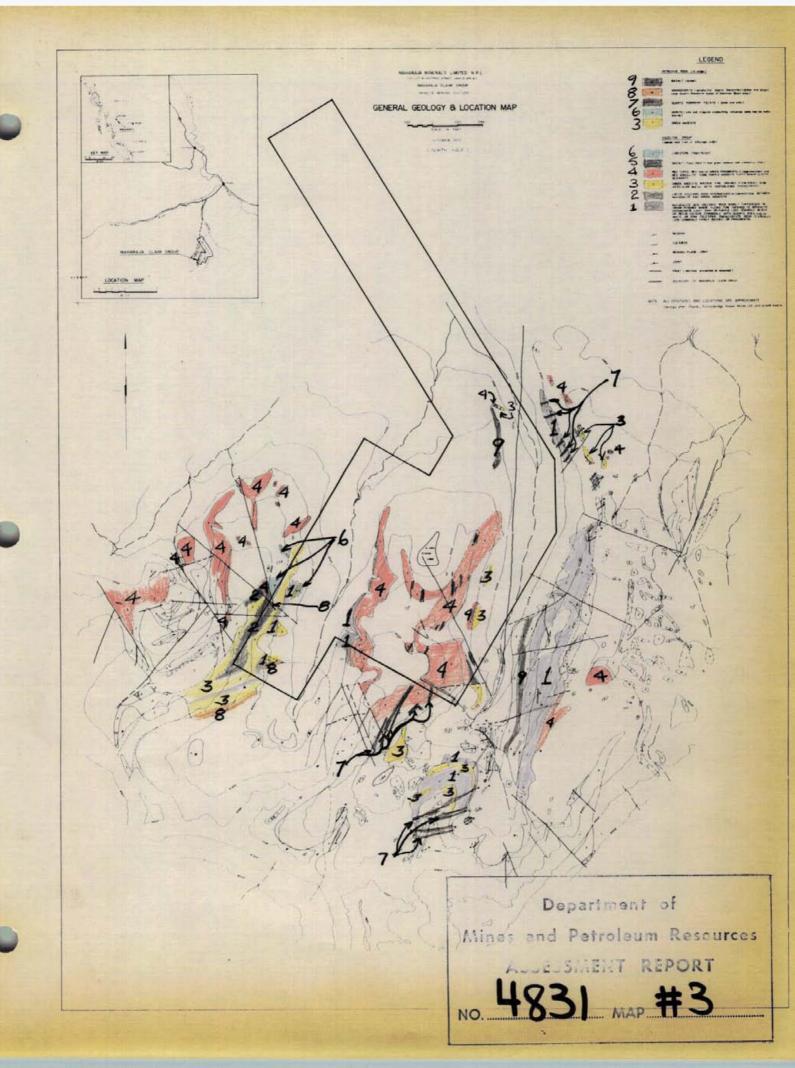
#### III. GEOLOGY:

The claim area is underlain by sedimentary and volcanic rocks of the Hazelton Group. The age of the group is estimated to be from Middle Jurassic to Lower Cretaceous.

In the claim area a series of "many-directioned" faults has broken the rocks giving rise to a very complex geological picture. Many of the







faults are filled by intrusions of masses of granodiorite and quartz-monsonite creating major and minor dykes and sills which in turn appear in places as felsite or rhyolite quartz porphyries.

A number of mineral occurrences found are in the proximity of volcanicintrusive contacts and they appear to be intimately associated with them.

Most mineralization related to porphyritic phases of the main intrusives is composed of pyrite and magnetite with minor chalcopyrite and molybdenite whereas away from these main intrusions the mineral assemblages change. Pyrite, chalcopyrite, specularite bornite and tetratredrite are found in association with smaller stock works and their related dykes and sites. Epidote alteration is found in all combination of metalliferous mineral assemblages associated with these lesser intrusives. The presence of epidote in quantity appears to be a "mineralogical marker" in the area and usually accompanies showings of copper, silver and other metals.

#### IV. DETAILS OF THE SURVEY:

The "Slump Block" area proper is located at a fork junction near the head of Loring Creek.

A detailed geological survey of the exposed mineralized horizons using a transit and chain was conducted in the best section with the highest number of zones out-cropping in the slump block region.

Systematic measurements of thickness of the mineralized horizons was made (in places ropes had to be used to take samples). Regularly spaced channel chip samples were taken. The samples were assayed for copper, lead, zinc, and gold.

#### v. RESULTS:

Details of survey and assay results are shown on the geological map at 1":20" scale located in the pocket.

Survey results show the "Slump Block", where studied, is an area with three distinct mineralized horizons (A, B, and C) in barren rhyodacite which run up to 5 feet in thickness. Other mineralized zones in the general vicinity of the "Slump Block" are not shown on the map.

The mineralization is composed of malachite, azurite, chalcopyrite, pyrite with some bornite, chalcocite and magnetite. The assays for copper range from 0.45% to 3.12%. The aritmetical mean is 1.6078%.

The mineralized horizons contain an average of 1.9 oz/ton of silver per ton, with a minimum of 0.29 oz/ton and a maximum 4.01 oz/ton.

Some lead, zinc and gold values are also present.

#### VI. CONCLUSIONS:

Mineralization of economic importance to a small mining company appears to exist in the slump block area pending adequate proof through diamond drilling that tonnage exists in lateral and/or depth extent at current metal prices. The eminent advent of four wheel drive access to the showings improves the economic viability of the exposures and should bring future exploration costs (whatever type used) down considerably.

Diamond drill holes put down by Falconbridge Nickle Mines Ltd., in 1968 at points approximately 100 feet back from the profile face along Loring Creek show that the mineralized horizons have lateral continuity in terms of thickness and grade. Their drill results show that there is at

. . . . . . . . . 4/

least one more horizon at depth (140 feet) carrying 0.65% Cu. and p.53 oz of As. per ton over about - 5 feet at the noint of drill intersection. There appears to be no good reason not to believe that more horizons, likely related to some common structure, will not be located at depth. It also seems reasonable to say that other similar horizons as aforementioned located near the slumr block proper will be shown to be related increasing the possibility of much wider combined lateral extent of the zones. Much more detailed peological work supported by selected close control geo-surveys, trenching and diamond drilling is needed to define and determine the economic significance of the Slump Block area mineral prospects.

#### APENDIX "A"

#### EVIDENCE OF EXPENDITURE INCURRED

NAME:	CATEGORY:	PATE:	DAYS PERIOD:	<u>wage</u> :	
World Mide General Contracting Ltd. (L. Miskovic & Adsiet.)	Geological		Sept.4/73 to Set. 15/73	\$1,388.	25% of Total invoice amount (\$5,550) allocated to Slump Block.
Rudolf Biss	Geologist	↑ 800/mo	15 days	\$ 400.	
Okanagan Helicopters	Mobilidation v. as attached		6 hrs (+) for season	\$1,5 <b>7</b> 2.	
J. McAndrew	Consulting Engineer	\$ 150/day	2 days	\$ 300.	
Men Maintenance		\$ 25 day (World Wide not included)	?5 men	\$ 625.	
Overhead  Webicles office  Assaying)		50% labor Mainenance)			
··· o. wasaying)		orld Wide inclu an days mainten	_	\$1,607	
-			TOTAL	\$5, <b>49</b> 2	

I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the

of , in the

Province of British Columbia, this
day of , A. D.

Jh h h Ah D ~ 20, 1973

#### CERTIFICATION OF LUDEVIT MISKOVIC

208 W. Braemar Road, North Vancouver, B. C. Phone: 985-0340

- 1) I, Eulevit Miskovic, do hereby certify that I attended the University of Prague; Faculty of Geology, 1955-57.
- 2) I am a Geologist-Assistant of Customer Mining Services Ltd., with offices at 1107 207 West Hastings St., Vancouver, B. C.
- I am not a registered Engineer in the Province of British Columbia or of any province.
- I have been engaged in mining with the following companies in the past 15 years.

Dionyz Stur Institute of Geology - Bratislava, Czechoslovakia Municipal Government of Czechoslovakia - Usti Nad Labem Gibralter Mines - Copper, Molybden Rio Tinto Exploration - Copper, Molybden Mieese Lake Copper Mines Ltd. - Copper Molybden Cream Silver Mines Ltd. - Copper, Silver Gunn Mines Ltd. - Copper, Molybdonum

5) I have no direct or indirect interest in this property.

DATED at Vancouver, British Columbia, this

day

of December, 1973.

GNED: <u>Ocuolen</u>

Indevit Miskovic

# CERTIFICATION OF RUDOLF BISS

#207 - 1120 German Street, Vancouver, B. C. Phone: 683-0664

1)	I am a graduate of Technical University, Department of Mines
	of Kosice - Czechoslovakea
2)	I am a graduate of Ecole Nationale Superieure de Geologie
	et de Prospection Miniere - Nancy (France)
3)	I am not a registered Engineer in the Province of British
	Columbia or of any province.
4)	I have been engaged in mining for two years in Czechoslovakia
	and for three years in France.
5)	I have no direct, or indirect interest in the properties
	of Maharaja Minerals Ltd.

Dated at Vancouver, British Columbia, this day of

, . ,

STONEO:

Rudolf Biss

#### CERTIFICATION OF JOHN M. MCANDREW

4212, 34040 + 305 Avenue, Surrey, P. C. Phone: 588-8072

- 1 Peristered as a Professional Engineer by the Association of Professional
  Engineers of B. C.
- 2 A fellow of the Meological Association of Canada.
- 3 B. Sc. in Geology from the University of Alberta, Edmonton, Alberta:
  post graduate courses in surveying, McGill University, Montreal, Quebec.
- 4 Prior to consulting the author spent seventeen years in exploration, property evaluation, mine geology, and production with the following companies.

Anaconda American Brass Limited - Copper, Molybdenum Silver Titan Mines - Silver, Lead, Zinc.

Columbia Iron Mining Co. - Coal

Newmont Exploration Ltd. - Nickel, Copper

Iron Ore Company of Canada Ltd. - Direct Shipping Iron Ore.

N. W. Byrne Company - Gold

Quebec Cartier Mining Comp. Ltd. - Concentrating Iron Ore.

Eldorado Mining and Refining Co. - Tranium

International Nickel Co. - Nickel, Copper

- 5 I have no direct or indirect interest in the properties covered by this report.
- 6 I inspected a portion of the work while the program was being carried out.

  I have read this report and personally endorse the facts and concepts

  contained in the text.

Dated this 28 day of Alexander

, 1973, in Vancouvers

SIGNED:

John McAndr W.



# MAHARAJA MINERALS LIMITED N.P.L.

1102-207 West Hastings Street Vancouver 3, B.C. TEL. (604) 684-0511

P.O. BOX 533 POSTAL STATION A VANCOUVER I. B.C.

March 11, 1974

Mr. J. E. Bowles Chief Gold Commissioner, Department of Mines & Petroleum Resources, Parliament Buildings, Victoria, B.C.



Dear Sir:

Re: File No. 166 - Omenica

AND PETROLEUM ACOUGROES

Please excuse us for not replying to your letters of January 30, 1974 (copies of the same are attached hereto) at an earlier date. Your March 4, 1974 letters to'us prompted us to effect an immediate reply upon Mr. J. A. Rutherford's return from Southern U.S.A. We would have preferred to wait a little longer for some additional data to come to our office but considered it best not to wait.

We are waiting for some reports to come from Dr. Soregaroli at U.B.C. He is doing some polished section work for us and re-examining some thin sections. We were not satisfied with Dr. D. L. Cooke's conclusions with regards to samples C-1 and C-2. The samples are not magnetic as he suggests and he has seemingly mistaken chalcocite for magnetite. The writer, although a geologist for many years quite able to see chalcocite and copper stain in the hand specimines of C-1 and 2, does not hold a P. Eng. so his opinion however correct is not adequate for assessment work recording purposes under your current regulations.

The Company's consultant, Mr. J. McAndrew, has been and is out of Town so a further "outside" opinion was solicited. Dr. Soregaroli's work should be done by the end of this week. A copy of his findings will be mailed to you as soon as available.

We would ask herein that our answers to your various queries be adjuducated on the basis that we felt that it was too late at this point in time to get all our rock identification work re-done by other "outside" consultants. Only samples C-1 and C-2 have been sent out to be done by Dr. Soregaroli. Many of Maharaja's maps have been completed in final form on the basis of work done in the past for us by Dr. Cooke. The finished work stands as prepared whether right or wrong.

We expect that you will appreciate our concern with regards to samples C 1 and 2 in view of your January 30, 1974 query regarding the "chimney." The writer had assays done on these samples in 1972. C - 1 went 10.95% Cu. and C - 2 went 2.96% Cu. and 3.4 oz Ag. The C - 1 sample came from the "chimney."

In the interests of saving time and confusion we are taking the liberty of answering all your January 30, 1974 letters to us herein. We trust that our actions are in order.

### Geological Report #4811

- 1) The mineralized showings have all been located above the red andesite to date. Maharaja sent crews in tempt the areas of interest on six separate occassions during the work season. All but one attempt which was the last one and was done by an alpine climber were unsuccessful because the men were not willing to take the risks involved to scale down the cliff faces. The helicopter bill alone in these attempts to get at the sampling sections came to over \$3,000 or about 40% of the \$8,134 you question us on. We concede that the areas in question might be considered "only small parts" but would suggest that even to properly map and chip sample the small crater area and do it correctly a 1974 budget of \$10,000 more will be needed.
- 2) The general geology and location map attached hereto was done by others as shown. We saw no reason to duplicate efforts. We would point out however that Falconbridge had 6 men mapping the general area over a period of 3 months and flew to work each day from Smithers via helicopter we understand. It probably cost them in the order of \$40,000 to prepare the Old Tom-Webster-Crater Lake map. We claim approximately 10% of their figure for each of the Slump Block and Crater Lake areas. We do not believe our costs are unrealistic in view of what we have uncovered or for any other reason in that particular area.
- 3) The writer spent some time discussing the geology of the area with Dr. Tipper of the G.S.C. You will be interested to learn that Dr. Tipper has a geological map soon to be published on the region. On the map he will likely have structural lineaments of import. On his work sheet Dr. Tipper has placed the intersection of three major structural lineaments at Crater Lake. His work was independent of ours. He came to our offices recentwith an associate to look at our "chimney" rocks. It is J. A. Rutherford's opinion that the "chimney" is the

surface expression of a major structure carrying copper and other minerals. The mineralized showing has been traced on either side of the "chimney" chip sample section for approximately 1,000 feet to the south. It has not been found to the north because of overburden but does extend westwards towards Webster Creek for a distance of about 200 feet at an angle from the "chimney" proper which suggests northerly extension. Copper showings have been located further south (see map attached). We do not know at this time whether the "horizons" are interconnected. It is the writers opinion that these other showings are separate structures but will likely show a configuration not unlike that of the "slump block." Mr. R. Allan Rutherford, the writer's brother, who originally discovered the Crater Lake chalcocite showings inside the Crater Lake cirque and at the "chimney" has found similar mineralization at separate points to the south of Crater Lake along the vertical walls separating the Crater Lake "plateau area" from Loring and Webster Creek. The structure of an anticline can be seen inside the Crater Lake cirque and the "chimney" could be the westerly limb of that anticline.

4) Two geological maps and Dr. Cooke's report are attached hereto in compliance with your requests. They are in duplicate.

# Geological Report #4813

- 2) The strikes and dips were taken on fractures which just happen to parallel a N.E. trending dyke suggesting time event parallels.
- 3) See maps attached (Dominion Basin Gelogical Map & S. Showing Map)
- 4) " " "
- 5) 11 11 11
- 1) Please refer to Dr. D. L. Cooke's sample D rock description. He calls it a copper-bearing skarn. We accept his observation that contrary to all other published data on this area the showing is definitely not little blebs, veinlets nor as is suggested in the 1969 Minister of Mines report "fissure veining and cavity filling."

Unfortunately Mr. Ralph Cullen, currently the Chief Engineer for Jordan River Mines (see recent letter to be attached to his Scallon certification data appended hereto on the Scallon revised report) seems to have used a bedding symbol on his original map to designate fractures. Our new map enclosed has been "corrected."

# Geological Report #4831

1) We have enclosed four maps of the "slump block" area among which

is the geological map that you requested.

2) It is this writers opinion that the "slump block" is the surface expression of a "friendly horizon" fault block. According to Dr. Tipper of the G.S.C. minor and major fault blocks are common in the regional map area, especially in the Loring Creek area which is apparently the shoreline of a cretaceous lake. Falconbridge found another mineralized horizon below the ones exposed on the surface. It is highly probable that more will be found in typical saddle reef-like section all relative to a major structural control which could be a fault plane parallel to the "block" or some other control. It is probably the latter and likely an intrusive related to an additional structural contol extant in premineralization times. When the writer first visited the area and knew little of the regional picture it did appear that a piece of "crater-like" rock came down from the Crater Lake area. We had found similar rocks with copper mineralization high up several hundred feet above the area.

## Geological Report #4812

We have tried to comply with your directives as set out. Our revised report has been placed "up front" of Mr. Cullen's original submission. Mr. Cullen's certification or extensive and quite impressive work resumé should have his recent letter of February 18, 1974 attached to it for a complete record to date. Mr. Cullen's employment with us terminated almost to the day (September 25, 1973) he submitted his reports (letters et al) to our office.

We trust that our revised effort is satisfactory.

As at date Mr. J. McAndrew is on vacation in Hawaii. As our consultant and pursuant to your departments edicts he normally places his P. Eng. seal on our reports. In his absense Mr. James A. Rutherford has placed his G.A.C. seal on the maps where needed. If it is necessary to have Mr. McAndrew's P. Eng. seal on the maps please send them back and we will have him stamp them on his return. Mr. McAndrew will likely be back in Vancouver on or about March 30, 1974.

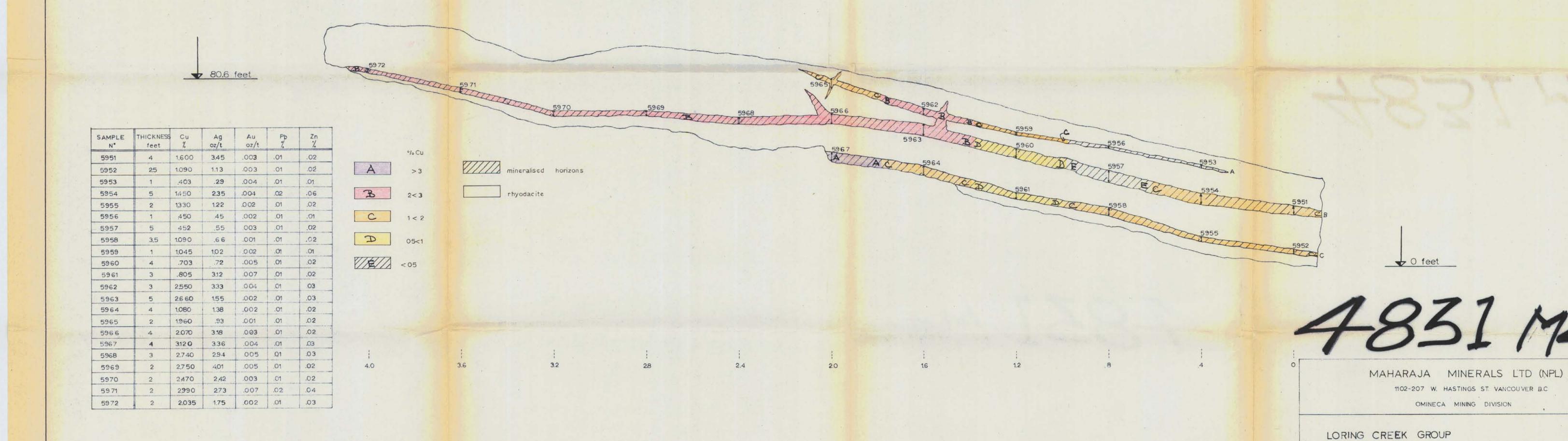
We trust that once Dr. Seregaroli's results are mailed to you our assessment file may be closed. We have done our best to comply under the circumstances. The circumstances which have involved field personnel have not been too happy as we are sure you are aware.

Yours very truly,
James A. Rutherford,
Prosident

President, Maharaja Minerals Ltd., (N.P.L.)

MAHARAJA MINERALS LIMITED N.P.L.

OMINECA MINING DIVISION



SLUMP BLOCK PROFILE

Department of

ASSESSMENT REPORT

SCALE: 1:20 ines and Petroleum Resources

To accompany a geological report by J. Mc Andrew P. Eng

