

R E P O R T  
ON PROPERTY OF  
MERRELL MINES LTD.  
QUILCHENA CREEK, B.C.  
MAY 15, 1968

Revised

by

J.A. Mitchell, P.Eng.,

November 15, 1968

I N D E X

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Appended: Claim Map

Certification

## INTRODUCTION

The writer accompanied Mr. H. Merrell to the property of Merrell Mines Ltd., Quilchena Creek, B.C., on Tuesday, May 7th, for the express purpose of investigating rocks exposed in a canyon which cuts across the property on the east side of Quilchena Creek. He had previously in 1967, examined a 1600 foot trench along the bottom of the slope, north of the canyon, and on the east side of Quilchena Creek. He also located on the ground, the I.P. anomalies obtained by Amax Exploration Inc. and noted their positioning relative to the rock exposures examined.

## SUMMARY

The property described herein is owned by Merrell Mines Ltd. and is located on rolling grasslands astride Quilchena Creek about 13 air miles southeast of Merritt, B.C.

Low grade copper and molybdenum mineralization has been found by trenching parallel to Quilchena Creek and in a canyon at right angles to the trench in both intensely altered and well conditioned granodiorite and in andesitic volcanics. This mineralization appears to be widespread and several I.P. anomalies have been located.

SUMMARY (cont'd.)

It is recommended that these anomalies be drilled by rotary or percussion drills to a depth of at least 300 feet and at 60° to the west, preferably after some detailing of the I.P. work has been done. A program to cost up to \$55,000.00 has been outlined.

PROPERTY

The property presently consists of the following 96 claims, all held by right of location in the names indicated:

<u>Claim Name</u>	<u>In Name Of</u>	<u>Record No.</u>
Mint #1 to #60	H.D. Merrell Box 399, Merritt, B.C.	36199-36258
Mint #63 to #66	H.D. Merrell, Box 399, Merritt, B.C.	36835-36838
Mint #67 to #86	K.I. Merrell, Box 399, Merritt, B.C.	37150-37169
Land #1 to #12	J.J. England, c/o Box 399, Merritt, B.C.	36187-36198

The above claims are shown on attached map, which also illustrated the position of the anomalies obtained from the above mentioned I.P. survey. It should be noted here that the boundary of the Indian Reservation is not precisely located.

### LOCATION AND ACCESSIBILITY

The property is approximately 13 air miles southeast of Merritt, B.C. and straddles Quilchena Creek about 8 miles south of its mouth at Nicola Lake, adjacent to Indian Reservation #7, which lies to the north and east. It can be reached by a number of dirt roads, which traverse the rolling grasslands of the area, either south along Quilchena Creek or westerly from the Merritt-Princeton Highway, from the vicinity of Courtenay Lake. A four-wheel drive vehicle is not necessary to reach the property.

### PHYSIOGRAPHY

The claims cover undulating grasslands on which Douglas Lake Ranch Co. has the grazing rights. The east slope of Quilchena Creek is about the steepest part of the area and would not be over  $30^{\circ}$  to  $35^{\circ}$ . One wide and deep canyon cuts across the claims along line 24S of the geophysical survey from the baseline at least as far as station 1600 east. The lowest point of the claims would be in Quilchena Creek at about 2500 feet elevation. The highest point would be on the eastern limits at about 3800 feet.

The claims are in the interior dry belt, the temperature ranges from 30 to 40 degrees below zero to about 100 degrees above zero, rarely lower or higher. The claims

PHYSIOGRAPHY (cont'd.)

are covered by grasslands with sparse timber as in the valley of Quilchena Creek and in scattered clumps on the higher slopes. Overburden ranges from nil to about 200 feet, according to previous observers. Rock outcrops are few and are scattered mainly along the east side of the valley.

PREVIOUS WORK (as reported to writer)

In 1966, the property was optioned to Aden Mines and this company did the following work:-

1. Cleaned out and extended for 500 feet the trench adjacent to Quilchena Creek.
2. Built a road up the east wall of Quilchena Valley.
3. Surveyed the claims as they then existed.
4. Did an I.P. survey along seven easterly trending lines 800 feet apart for 4000 feet on either side of a baseline along Quilchena Creek.
5. Drilled two AX drill holes, 34 feet and 86 feet long, both abandoned because of poor (15%) core recovery.

RESULTS OF PREVIOUS WORK

Assays taken along the main trench running north and south along the valley bottom averaged about 0.04% Cu and 0.01% Mo. This area was missed by the I.P. survey. Three I.P. lines cut across it but except at the southern extremity no readings are mapped over the trenched area or for some distance on either side of it. Therefore it cannot be used as a guide to the evaluation of the I.P. results.

The I.P. results were particularly interesting, but were not completed. Areas of considered anomalous value are: on line 24S above the canyon, on line 0S at 17 to 30W and 16 to 23E and 36-39E, on line 8S at 20 to 34W, 13 to 18E and 33 to 35E, on line 16S at 31W at 9E to 11E and at 19E to 25E, on line 24S at 37W and 38W at 9E to 15E and at 19E to 21E, (9E to 15E would be partly in the canyon), on line 32S at 37W, on line 40S at 1E to 5E.

The geophysicist recommended in his report the use of high powered equipment for electrode spacings greater than 200 feet because of the low resistivity and the usually dry surface conditions. Further geophysical work to probe deeper would be desirable to do this work before the ground dried out and while there are no cattle ranging in the area.

In the anomalous areas, a sulphide content of one to three percent was indicated by the results, according to

## RESULTS OF PREVIOUS WORK (cont'd.)

the geophysical report. Pyrite may be in greater amount than chalcopyrite and other copper bearing minerals, but this remains to be proved. About 1% chalcopyrite and 0.25% bornite with a very little recoverable molybdenite could be ore if it occurred over a sufficiently large area. Hence any area where the sulphide content is indicated to be 2% or better should be investigated by drilling.

## GEOLOGY

The claims are underlain for the most part by granitic intrusions of Jurassic age, which, on the eastern and western margins of the claims are intrusive into Nicola rocks, which from the float appear to be andesites.

The intrusive rocks have been described as granodiorite of porphyritic texture with phenocrysts of quartz and biotite in a matrix of light grey felspar and a fine grained biotite.

These rocks are intensely fractured and closely jointed, are practically all altered and contain secondary potash felspar to a considerable degree. Mineralization consists of pyrite, chalcopyrite and bornite in that order of abundance and occasional flecks of molybdenite. This mineralization is usually found in steeply dipping quartz veins,



GEOLOGY (cont'd.)

but is also disseminated in potash feldspar areas. Sampling, other than by bulk sampling, or by drilling with almost complete recovery, is liable to be misleading.

Mineralization consisting of pyrite and chalcoppyrite was also found in float andesitic material in the canyon. This apparently came from the region of the eastern contact of the granodiorite. Some of the volcanics show fractures healed by veinlets of pink granitic material mineralized with chalcoppyrite. These volcanics should be investigated carefully, especially close to the granitic contact.

CONCLUSION AND RECOMMENDATION

It is very evident that mineralization is widespread. The rocks are generally well conditioned to receive mineralization and the results of I.P. surveys should be evaluated by drilling. This survey should also be expanded to cover the entire claim group, and particular attention should be paid to the contacts with the volcanics. It should be supplemented by soil sampling in the anomalous areas.

Diamond drilling with AX rods, proved unsatisfactory because of poor core recovery. In this type of low

CONCLUSION AND RECOMMENDATION (cont'd.)

grade mineralization, good recovery is essential. This might be achieved by the use of larger diameter equipment or it may be done by the use of some other method of drilling, such as percussion or rotary drilling. It has been found, however, that these methods can also give unsatisfactory results, particularly in ground that caves readily.

A comparatively new principle in drilling is that embodied in the "Becker" type of drill which uses a double walled drill stem and discharges the cuttings through a central pipe. In this way full recovery of cuttings is obtained and there is no contamination.

As long as the rock is not so hard that the rotary bit requires changing too frequently, this is a very satisfactory drill which should work well in the shattered and altered granodiorite on this property.

Otherwise, a standard percussion drill may be used and will be satisfactory provided the work is done carefully and strict control, preferably by a responsible engineer, is maintained over the sampling.

Because the veining appears to dip more to the east than any other direction, it is recommended that the drill holes be drilled at say 60 degrees to the west from the

CONCLUSION AND RECOMMENDATION (cont'd.)

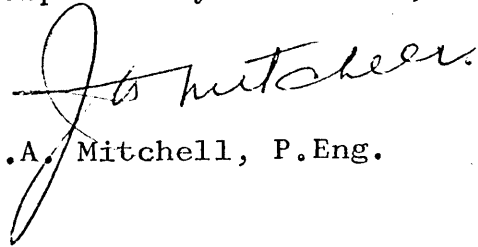
eastern edge of the anomaly being drilled and that they be drilled to 500 feet, or failing that, to whatever depth it is possible to drill with this equipment. A minimum of 3000 feet should be drilled on presently outlined anomalous areas.

Drill holes can be spotted on the basis of the present I.P. work, but intermediate I.P. lines should be run with 7.5 Kilowatt equipment, as recommended in the geophysical report and detailing of anomalous areas should first be completed before the drilling program commences. It would also be desirable to extend the I.P. survey.

ESTIMATED COST OF PROPOSED PROGRAM

1.	Bulldozing, roads and trenches, allow	\$ 5,000.00
2.	Drilling anomalies, allow	20,000.00
3.	Flagging, 20 miles at \$25 per mile	1,000.00
4.	I.P. Survey, 20 miles at \$500 per mile	10,000.00
5.	Soil and rock sampling, 2000 samples	8,000.00
6.	Engineering	3,000.00
7.	Transportation, telephone, etc.	3,000.00
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		\$ 50,000.00
	Contingencies at 10%	<hr/>
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		\$ 55,000.00
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Respectfully submitted,



J.A. Mitchell, P.Eng.

C E R T I F I C A T E

I, James Alexander Mitchell of 2991 Mathers Ave., West Vancouver, B.C., do hereby certify that:-

I am a Consulting Mining Engineer with office at 813, 837 West Hastings St., Vancouver, B.C.

I am a Registered Professional Engineer in the Province of British Columbia.

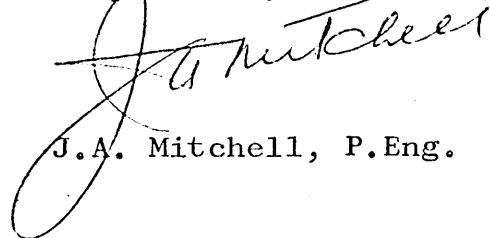
I am a graduate of the University of British Columbia in Mining Engineering (B.A.Sc. 1932) and have practiced my profession for 36 years.

I have no interest, direct or indirect, in the properties or securities of Merrell Mines Ltd., nor do I expect to have any such interest.

The foregoing report is based on an examination made of the property described therein and data obtained from other reports, specifically the Geophysical Report.

I consent to the inclusion of this report, in its entirety, in any prospectus prepared on the property for Merrell Mines Ltd.

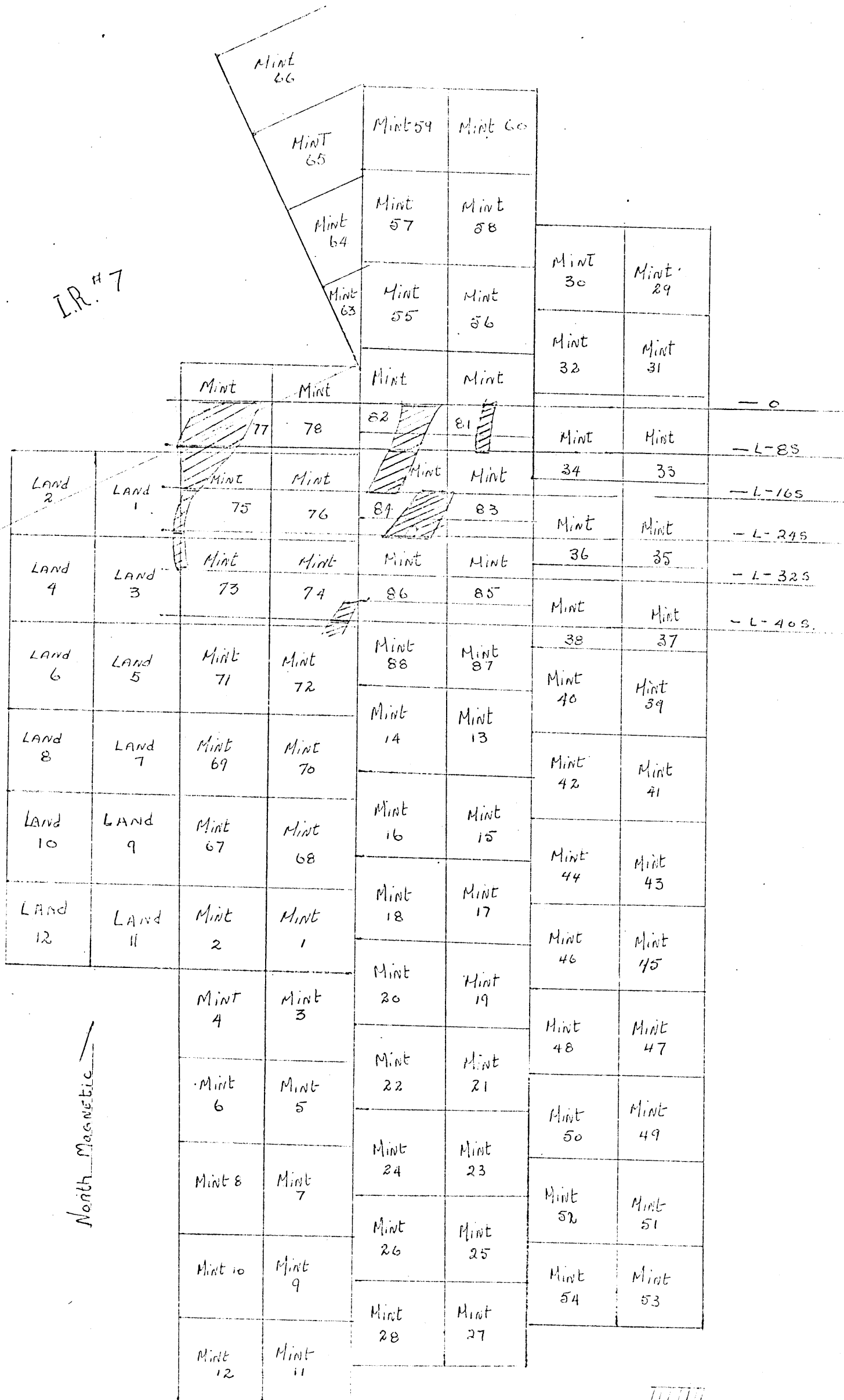
Respectfully submitted,

A handwritten signature in cursive script, appearing to read 'J.A. Mitchell', written over a large, stylized flourish that loops around the text below.

J.A. Mitchell, P.Eng.

November 15, 1968.

IR # 7



North Magnetic



I.P. AERIALS