

# 457 - 1578

REPORT ON THE  
KIT & KOK MINERAL CLAIM GROUP  
NELSON MINING DIVISION, B. C.  
FOR  
HOGAN MINES LTD.

**Cordilleran Engineering Limited**

MINERAL EXPLORATION MANAGEMENT AND  
ENGINEERING CONSULTANTS

400-837 W. HASTINGS ST.  
VANCOUVER 1, B.C.

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R E P O R T

O.N.

THE KIT & KOK

MINERAL CLAIM GROUP -

NELSON MINING DIVISION

BRITISH COLUMBIA

FOR

HOGAN MINES LTD.



by: Albert F. Reeve, P.Eng.,  
Cordilleran Engineering Limited

March 18, 1968.

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INTRODUCTION

This report has been prepared for Hogan Mines Ltd. at the request of G.A. Bleiler, president. It describes a number of mineral occurrences on the Kit and Kok claims with respect to their exploration potential.

It is based on a visit to the property, March 11, 1968, and examination of published literature and private reports.

Three descriptive sketches and the writer's certificate of qualification are appended.

PROPERTY

(see fig. 2)

<u>Claim Name</u>	<u>Record Number</u>	<u>Record Date</u>
Kok #1 to #6	9817 to 22	February 20, 1967
Kok #7 to #9	10032 to 34	May 8, 1967
Kok #10 to #12	10047 to 49	May 23, 1967
Kok #13 to #16	10650 to 53	November 27, 1967
Kit #1 to #3	10050 to 52	May 23, 1967
Kit #4 to #12	10654 to 62	November 27, 1967

- Total number of claims - 38

- Registered owner - Milton F. MacDougall,  
R.R. #1, Nelson, B.C.

All claims will be conveyed to Hogan Mines Ltd. by an  
option - purchase agreement.

The above information was obtained from  
documents supplied by the owner.

The writer observed 5 claim posts marking  
the location of the property.

LOCATION

49° 38' North latitude  
117° 08' West longitude  
2400' to 5500' above sea level

- Approximately 11 miles NE of Nelson,  
B.C. on the east side of Kokanee Creek.

ACCESS

The property can be reached by driving 13 miles NE from Nelson, B.C. on Highway #3, then 2 miles northwestward along Kokanee Creek on a logging road.

CLIMATE

The climate is moderate continental with average annual precipitation of 30" and a snow pack of up to 4 feet. On March 11th there were scattered patches of snow below 4000'.

PHYSIOGRAPHY

The property occupies a steep (20° - 35°) west facing slope, timbered with open stands of conifers and light deciduous underbrush. The area is drained by Busk Creek which flows southwestward into Kokanee Creek. There is sufficient water available for the purposes of exploration.

### BACKGROUND

Prospecting and mining activities in the Nelson area began in the 1880s. The principle metallic commodities of the region are silver, lead, zinc and gold. The Nelson map area (west half) contains numerous mineralized locations which have produced some ore.

There are no available records of early work done in the area presently occupied by the Kok and Kit claims. Two old prospect adits, on Kok #5 and on Kok #9, and several small pits on Kok #6 are the only evidence of previous activity.

The present owner, Milt MacDougall of Nelson, has discovered a number of new zinc - lead silver showings by prospecting, trenching and geophysical surveys.

The property was examined for the owner by A.G. Hodgson, P.Eng., in the fall of 1967.

On March 11, 1968, the writer made an examination for Hogan Mines Ltd.

### REGIONAL GEOLOGY

The principal geological feature of the region is the Nelson batholith. It is estimated to be of early Cretaceous age. Sedimentary rocks and lesser volcanic units ranging in age from Proterozoic to late Mesozoic, and post-Nelson plutonic masses are also present.

The regional geology is described on G.S.C. Map #1090A, Nelson west half (1" = 4 miles). Within this map area, seven properties have produced important amounts of zinc lead ore with silver, gold and cadmium as secondary commodities.

In the Slecan area NW of Nelson, these deposits consist of sulphide bearing quartz carbonate veins in sedimentary rocks.

South of Nelson in the vicinity of Salmo, sulphide replacement masses occur in limy sedimentary rocks.



LOCAL GEOLOGY

Outcrop on the Kok and Kit claims is sparse, however the average thickness of overburden is estimated to be not more than 5 feet.

The property occupies a roof pendant (about 1/4 mi. x 1/2 mi. - G.S.C.) of siliceous metasedimentary rocks (Yair group) enclosed by granite porphyry of the Nelson batholith. The sediments consist of gneiss variably composed of biotite quartz and feldspar, with bands of impure quartzite. These rocks are complexly folded and have a general NNE trend. Pyrrhotite, sphalerite, pyrite galena and minor chalcopyrite occur as coarse disseminations, irregular masses, and veinlets in quartzite bands. Sulphide mineralization is marked by bright red colouration of the soil.

MINERALIZATION (see fig. )

Six mineralized locations are known to occur on the property as follows.

1. "M-1 zone" (Claim Kok #11, 4200' A.S.L.)

Six rock trenches cut a mineralized micaceous quartzite band along a strike length of 175' and across an average width of 8'. It is inclined 50° to 60° NW and strikes N. 30° E.

A typical section is described as follows: The hanging wall is weakly mineralized and consists of foliated sugary quartzite. The centre of the zone contains bands and veinlets of sulphide and the footwall portion carries sub massive sulphides in a dense grey siliceous matrix.

Five chip samples, averaging 6.5' in length were taken from the M-1 trenches by Hodgson (Nov. 1967).

The numerical average of the results is as follows:

<u>Gold</u>	<u>Silver</u>	<u>Lead</u>	<u>Zinc</u>	<u>Copper</u>
tr.	.88 oz/T	2%	2.6%	.01%

Some electromagnetic work (vert loop 1000 cps) on the M-1 zone showed good response over mineralized exposures and suggests extensions or repetitions of the

Mineralization (cont'd.)

zone to the southwest.

The EM traverses were short and the response was generally "noisy". (see fig. 3)

2. "M-2 zone" (Claim Kok #10 - 3500' A.S.L.)

A trench at this location exposes a band of massive grey quartzite 7 feet wide containing coarse disseminations and veinlets of sphalerite and pyrrhotite. It has a steep dip, strikes southwest and is enclosed by rusty schistose material and quartz biotite gneiss. Significant amounts of a fluorescent mineral were also observed as irregular disseminations. It is suspected that this is scheelite.

3. "M zone" (Claim Kok #10 - 3500' A.S.L. - on the west rim of Busk Creek Canyon.)

A band of submassive sphalerite and pyrrhotite 2' to 18" thick enclosed by oxidized biotite - quartz schist and grey quartzite is exposed in a single rock cut. It is steeply inclined to the NW and has an apparent NE strike.

Mineralization (cont'd.)

4. "Bear zone" (Claim Kit #3)

This area was not examined. The owner reports occurrences of pyrrhotite and considerable red coloured soil.

5. "Marg zone" (Claim Kok #4 - 3200' A.S.L.)

Mineralization is exposed in a group of trenches that occupy an area of 40' x 20'. Irregular masses of sphalerite and pyrrhotite occur in a siliceous zone that is steeply inclined and trends NNE. The apparent thickness is about 10'. On the NW side of the zone a quartz vein cuts fractured dense garnet - dropside skarn. The owner reports local EM response in an area 75' x 150'.

A composite sample taken by Hodgson (Nov. 1967) assayed 3% zinc and .44 oz. Ag/T.

6. "Road zone" (Claims Kok #5 and #6, 2800' A.S.L.)

Three small pits above the access road, 2 of which were excavated by earlier prospectors, expose minor zinc and iron sulphides.

No significant mineralization is reported from 3 old prospect adits (Kok #9 and Kok #3).

## SUMMARY AND CONCLUSIONS

The Kok and Kit claim group is located about 11 miles NE of Nelson, B.C. in a district where many properties have produced zinc, lead and silver. In general, ores in which zinc and lead are the principal commodities occur in metasedimentary rocks.

1. A number of "new" zinc-lead showings have been discovered in metasedimentary rocks on the Kok and Kit claims, by detailed prospecting during the past year.
2. The "M-1" showing is the most promising discovery made to date. A quartzite band about 8' thick is consistently mineralized with zinc and lead sulphides for a distance of 175' along strike. Preliminary sampling indicates average values of about 4-1/2% combined Pb - Zn and 1 oz./T. Ag. These are not strong assay results; however the zone is open along strike and has not been exposed over its full width in every trench.
3. The character of the mineralization suggests strata-form replacement, with quartzite beds being the principal control. However, additional geological detail should be obtained before completely committing additional work on this basis.

Summary and Conclusions (cont'd.)

4. The presence of five Zn - Pb showings in addition to the M-1 suggests possible extensions and repetitions of mineralized quartzite bands. In addition to zinc, lead and silver, significant values in tungsten, cadmium, copper and bismuth are also possible.
5. Exploration potential appears to be restricted somewhat by the limited extent of metasedimentary rocks. However, zinc and lead sulphide veins occur in rocks of the Nelson batholith in other areas (Slocan). This possibility should not be overlooked.
6. Further exploration work is justified to:
  - a) Systematically explore the entire property on a reconnaissance basis to outline all possible targets for detailed investigation.
  - b) Investigate in detail targets indicated by preliminary prospecting, particularly the M-1 showing.
7. E.M. and magnetic survey methods would be effective for tracing mineralized beds in detail. Conductivity and magnetic variations are caused by pyrrhotite.

Summary and Conclusions (cont'd.)

Magnetic response in such cases is usually narrow and irregular. Reconnaissance E.M. work is subject to orientation problems on steep terrain, and to barren conductions.

Soil sampling would be a useful direct reconnaissance method because the overburden is generally shallow and steep well-drained slopes in the area of interest should be conducive to effective chemical and mechanical dispersion of zinc and lead traces.

RECOMMENDATION

The following exploration programme is suggested.

Phase I

1. Carry out reconnaissance soil and stream sediment sampling and analyse all samples for zinc:

Sample the contours at 400' (vert.) intervals with sample points 100' apart and in the bottom of each gully. Reconnaissance geological mapping could be done in conjunction with geochemical work.

Control for this work could be economically obtained from existing air photos and 1:50,000 topographic maps.

2. Establish access for 4-wheel drive vehicles to the upper part of the property and prospect possible extensions of the M-1 zone using a D-8, or equal, bulldozer. This work should be accompanied by detailed geological mapping and sampling.



Recommendation (cont'd.)

Phase II

Additional stripping and drilling would be required contingent upon the success of Phase I.

Respectfully submitted,

CORDILLERAN ENGINEERING LIMITED



A handwritten signature in cursive script that reads "A. F. Reeve".

Albert F. Reeve, P.Eng.

March, 1968.

A P P E N D I X   A

ESTIMATED COST OF

RECOMMENDED EXPLORATION PROGRAMME

ESTIMATED COST OF THE RECOMMENDED EXPLORATION PROGRAMMEPHASE ISalaries & Fees

Geologist 1 month .....	\$ 1,500.00	
Sampling crew @ \$50/day .....	1,000.00	
Labour 15 days @ \$30 .....	450.00	
Supervision .....	<u>500.00</u>	\$ 3,450.00

Equipment

4 x 4 Truck 3000 miles @ 15¢ .....	\$ 450.00	
Plugger 1 mo. ....	100.00	
Bulldozer 100 hrs. @ \$30 .....	3,000.00	
+ mobilization .....	<u>500.00</u>	4,050.00

Assaying .....		2,000.00
Geochemical analysis .....		1,000.00
Travelling expenses .....		500.00
Food and Accommodation - Nelson .....		2,000.00
Miscellaneous supplies and tools .....		300.00
Office supplies, maps, air photos, etc. ....		200.00
Report preparation, drafting and miscellaneous office expense .....		500.00
Contingency allowance .....		<u>1,000.00</u>

Total estimated cost of Phase I . . . . . \$ 15,000.00

PHASE II

Contingent upon the success of Phase I, at least \$30,000 would be required to carry out a follow-up programme of drilling and stripping.

A P P E N D I X   B

REFERENCES

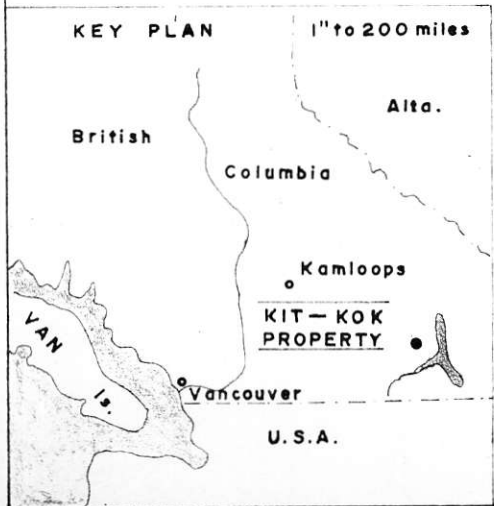
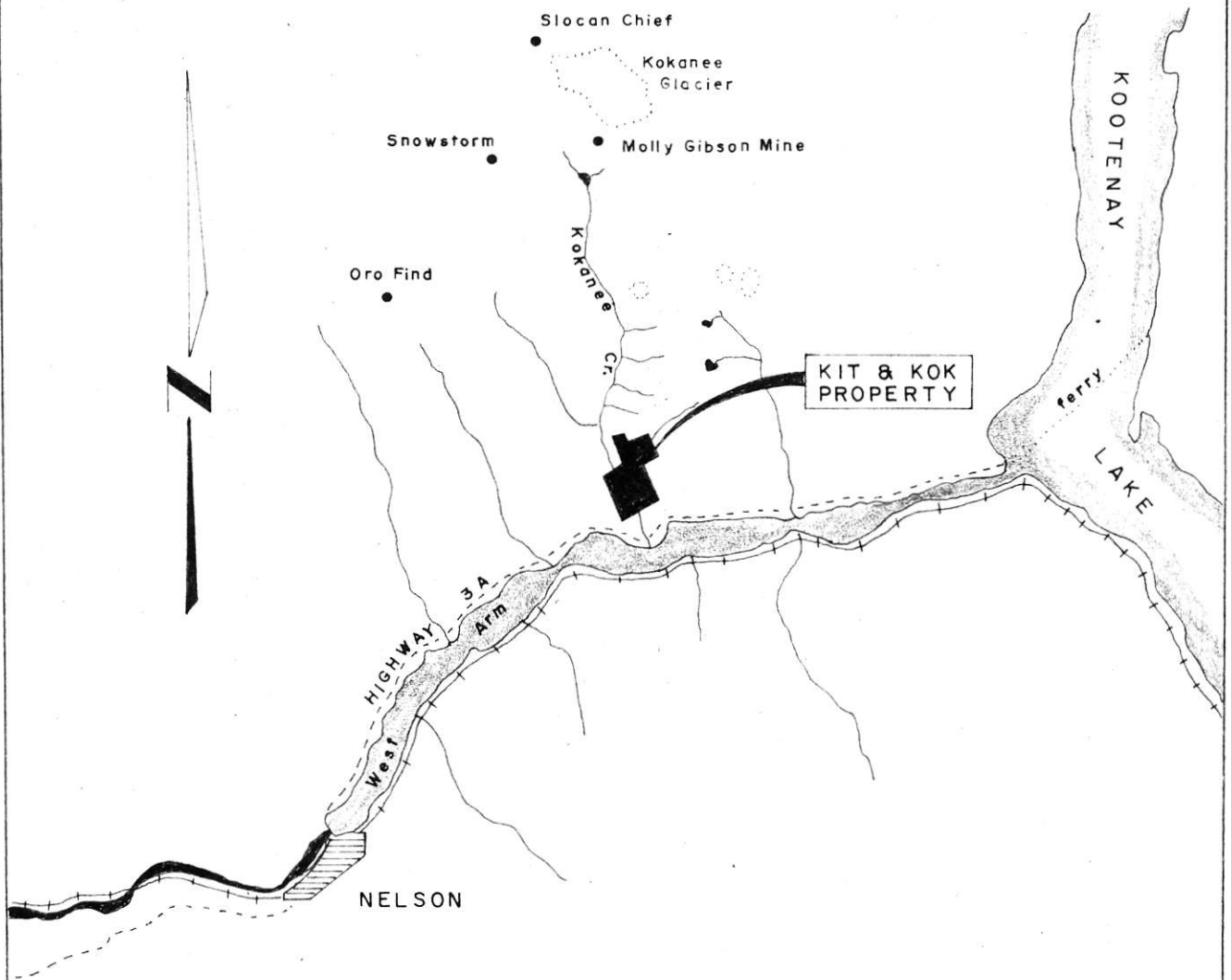
REFERENCES

- Geology Map 1" = 4 mi. G.S.C. #1090A.
- Mineral Map 1" = 4 mi. G.S.C. #1091A.
- G.S.C. Memoir #308 - H.W. Little
- Report on the Kek property  
by A.G. Hodgson, P.Eng. Dec. 5, 1967.
- Personal communication - Milt MacDougall,  
R.R. #1, Nelson, B.C.

APPENDIX C

MAPS

Figure 1



HOGAN MINES LTD  
LOCATION MAP  
KIT & KOK CLAIM GROUPS

Nelson Mining Division British Columbia

Scale 1" to 4 miles

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400-837 WEST HASTINGS ST.,  
VANCOUVER 1, B.C.

MARCH 1968

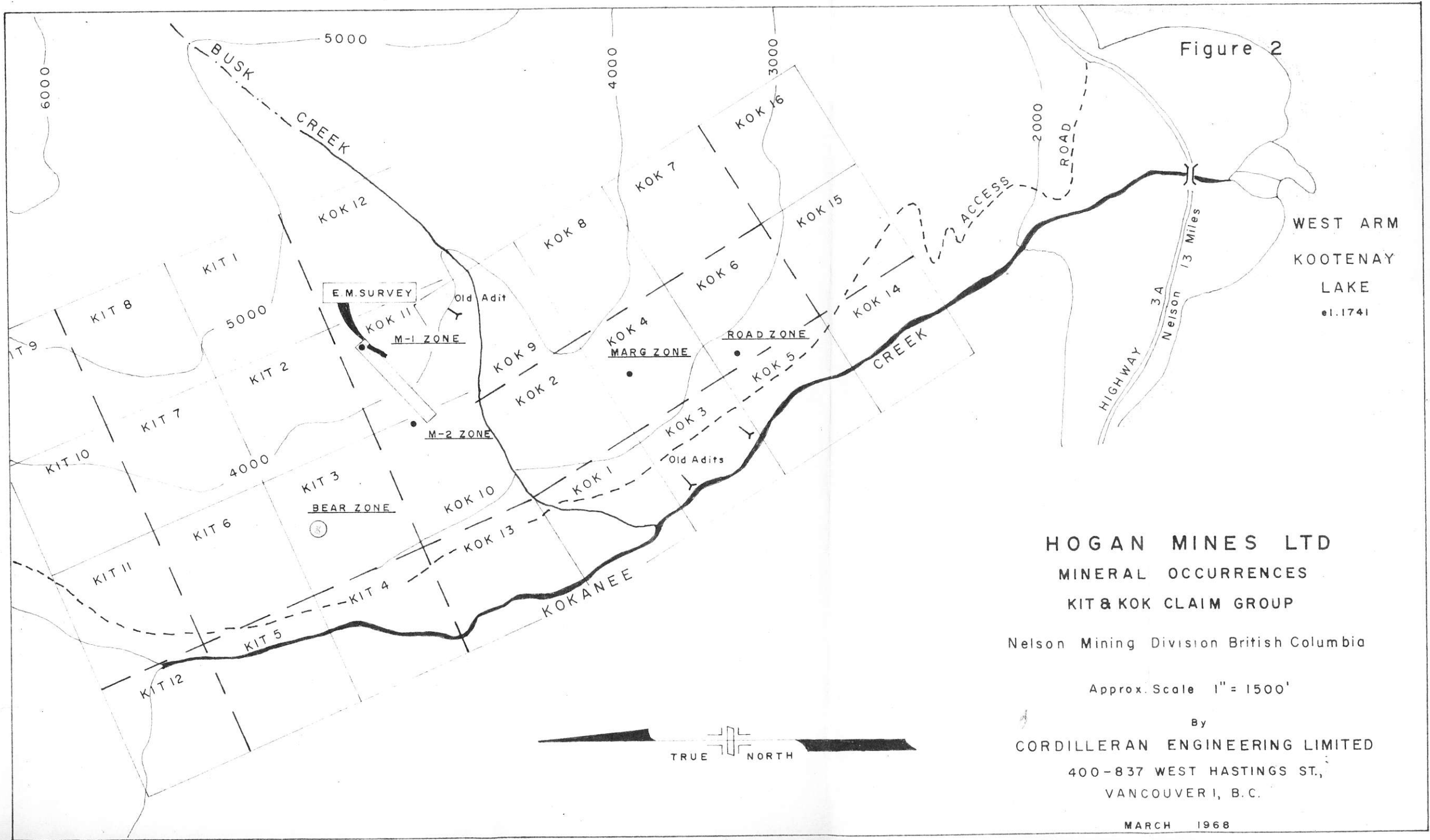


Figure 2

WEST ARM  
KOOTENAY  
LAKE  
el. 1741

**HOGAN MINES LTD**  
MINERAL OCCURRENCES  
KIT & KOK CLAIM GROUP

Nelson Mining Division British Columbia

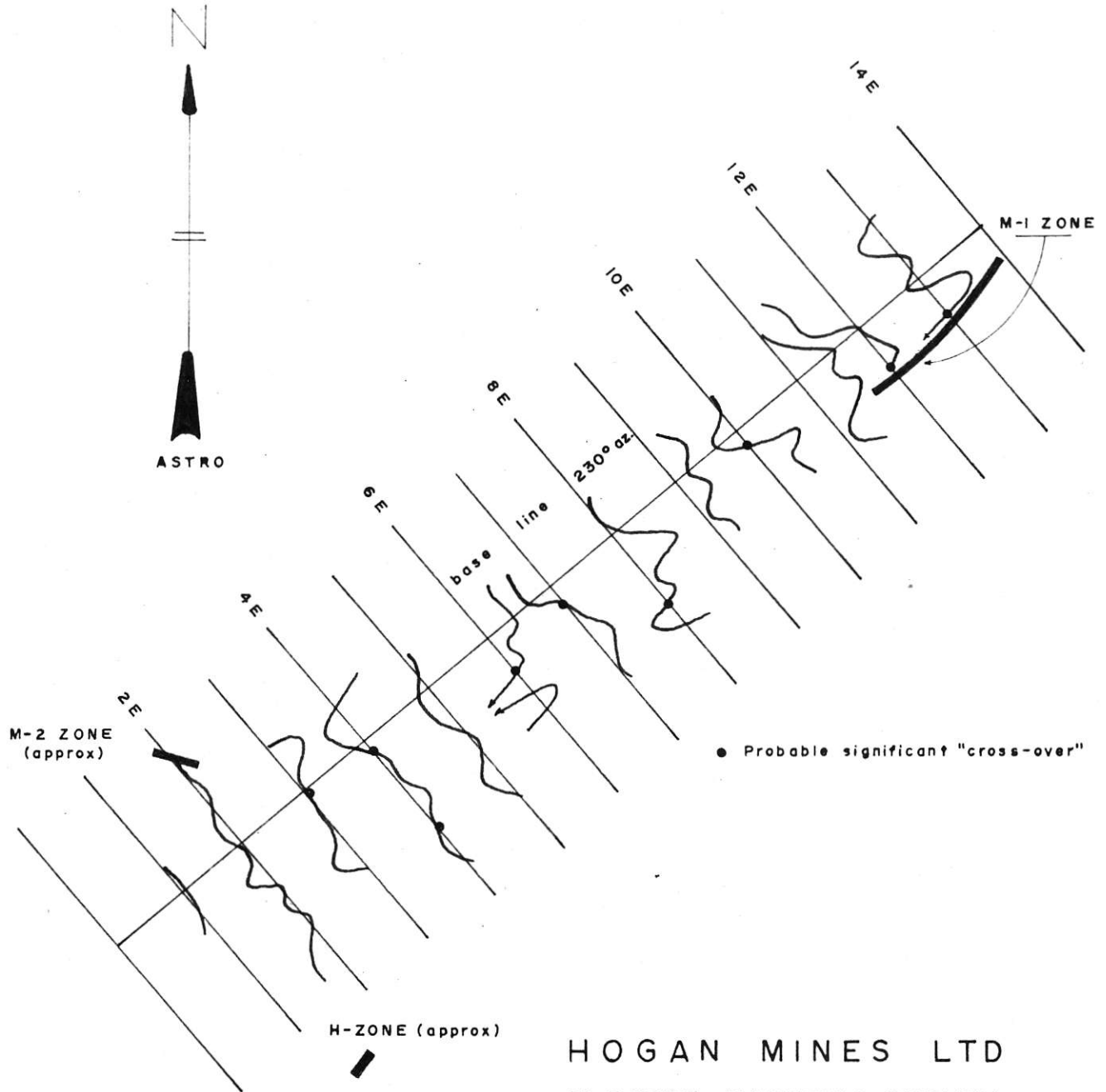
Approx. Scale 1" = 1500'

By  
**CORDILLERAN ENGINEERING LIMITED**  
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MARCH 1968



Figure 3



HOGAN MINES LTD  
ELECTRO-MAGNETIC SURVEY  
KIT-KOK MINERAL CLAIMS

Nelson Mining Division British Columbia

Scale 1" = 200'

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400-837 WEST HASTINGS ST.,  
VANCOUVER 1, B.C.

CROSS-LINE PROFILES

Horizontal Scale 1 inch to 200 ft.  
Vertical Scale 1 inch to 50 deg.

Survey by M. P. McDOUGALL

Inst. Doolan Vert. Loop E.M.  
1000 c.p.s.

From sketch by A. G. HODGSON P. Eng.

MARCH 18 1968

A P P E N D I X D

WRITER'S CERTIFICATE OF QUALIFICATION

# CORDILLERAN ENGINEERING LIMITED

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MINERAL EXPLORATION  
MANAGEMENT AND  
ENGINEERING CONSULTANTS

— ASSOCIATES —  
BONDAR-CLEGG & COMPANY LTD.  
GEOCHEMISTS

## CERTIFICATE

I, Albert F. Reeve, of Vancouver, B.C.,  
hereby certify:

1. I am a geological engineer employed by Cordilleran Engineering Limited of 400, 837 W. Hastings Street.
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario, and received a Bachelor of Science degree in Geological Engineering from Michigan College of Mining & Technology, Houghton, Michigan, in 1961.
3. I am a certified member of the Association of Professional Engineers in the provinces of Ontario and British Columbia.
4. I do not have any direct or indirect interest in Hogan Mines Ltd. or the Kok and Kit mineral claim group, nor do I expect to receive any.
5. This report is based on a personal visit to the property March 11, 1968, and research of geological literature.



A handwritten signature in cursive script that reads "A. Reeve".

Albert F. Reeve, P.Eng.

March 18, 1968.