To The President and Directors,
Kel-Glen Mines Ltd. (N.P.L.),
1614-1030 West Georgia Street,
Vancouver, B.C.

Dear Sirs,

Re: Mush Lake Property, Yukon

Herewith my report to supplement the report of your resident geologist, Mr. Wm. Dollery-Pardy B.A. on your Mush Lake Property, Yukon. His report covers geology, geochemical survey, prospecting, trenching and road bulldozing. My report covers in addition the geophysical work done to date, a summary and conclusions based on the work done and recommendations for further work.

The assays shown by Mr. Dollery-Pardy on the maps and in his report were mainly of grab samples.

Respectfully submitted,

E. J. Lees, Ph.D., P. Eng.
Geologist.

See report by Wm. Dollery-Pardy. [Aug 1 - Sept 1968]
ENGINEERING REPORT
(Including Geophysical Report)
Mush Lake Property, Yukon

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Appendix 1 - Profiles of Geophysical readings of Ronka E.M. 16 - General Survey
Appendix II - Profiles of Geophysical readings of Ronka E.M. 16 detailed survey.
Appendix III - Plan showing lines done by Ronka E.M. 16 Surveys.
INTRODUCTION

As your company geologist and a director, I submit hereewith an Engineering Report on the mineral holdings of Kel-Glen Mines Ltd. (N.P.L.) in the Mush Lake Area, Yukon. It is based upon general technical supervision and two personal examinations of the property one on July 25 and 26 and a second on September 8 and 9, 1968. During the two months of August and September the work was under the supervision of Wm. Dollery-Pardy, B.A. resident geologist for the company, and he has reported on the work carried out during that period.

SUMMARY AND CONCLUSIONS

In the fall of 1967 Kel-Glen acquired 24 claims, 6 miles north of Mush Lake. No work was done on these claims and they were subsequently dropped, after a group of 48 contiguous claims Kel #1 to #48 inclusive, which were considered more desirable, were acquired immediately north of Mush Lake.

Malachite staining is widespread at a number of places on the Kel group of claims. Grab samples contain the copper minerals, bornite, chalcopyrite, chalcocite and native copper and assay up to several percent copper. The few comprehensive chip samples taken to date assay under 1% copper. The mineralization is related to the contacts of
volcanic flows, more commonly spoken of as "flow tops." These are in part amygdaloidal. Glacial gravels, sands and clays from an extensive overburden. Rock outcrops sparsely.

RECOMMENDATIONS

My original recommendations for the Mush Lake property were to prospect, blast rock trenches on some of the better "finds" and carry out line cutting, geophysical and geochemical surveys. Three showings were blasted into, a minor amount of line cutting, geophysical and geochemical surveying was done. My present recommendations are to carry out my original recommendations.

PROPERTY

Kel-Glen's property in the Yukon, consists of 48 contiguous mineral claims Kel 1 to 48 inclusive in the Whitehorse Mining Division.

LOCATION AND ACCESS

The Kel group of claims lie immediately north of Mush Lake, Southwestern Yukon, latitude 60° 16' N., longitude 137° 20' W. They are twenty-five miles south of Haines Junction, on the Alaska Highway and twelve miles west of Dezedeash Lodge (Beloud Post) at the south end of Dezedeash Lake, on the Haines Road. Access is by way of Alder-Mush Lake
road, from the lodge. The road is passable by four wheel drive vehicles during summer months.

REPORTS

KINDLE, E.D., Deizedesh Map Area, Yukon Territory
G.S.C. Memoir 268, 1953, Canada Department of Mines and Technical Surveys.

CATHRO, R.J., P.Eng., Re: Mush Lake, Yukon Territory Property, P.O. Box 1708, Whitehorse, Yukon Territory.


TOPOGRAPHY

The property lies in the rugged Kluane Ranges. The group extends from an elevation of 2400 feet above sea-level at the junction of Alder and Frazer Creeks across the west end of a hill between Dalton and Little Dalton creeks and up to an elevation of 5600 feet on the south end of a mountain lying north of the east end of Mush Lake.

Alder, buck brush and poplar cover much of the property. The higher portions are above timber line.
GEOLOGY

Geological map 1019A, G.S.C. Dezedeash Map Area, shows that volcanics (andesites) of the Triassic and Jurassic, Mush Lake group forms the terrain on the property. The general strike is N. 30° W. and dip east. A few light coloured feldspar porphyry dykes cut the volcanics.

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<th>Age</th>
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<tr>
<td>Recent &amp; Pleistocene</td>
<td>Overburden</td>
<td>Clay, sand, gravel.</td>
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<td>Tertiary or Mesozoic</td>
<td>Feldspar porphyry Intrusive Contact</td>
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<tr>
<td>Jura-Triassic</td>
<td>Mush Lake Group Andesite</td>
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MINERALIZATION

Mineralization consists of the copper minerals, bornite, with subordinate chalcopyrite, chalcocite, native copper and malachite. The minerals were seen in pods of disseminated minerals and blebs and in fine disseminations.

STRUCTURE

The copper mineralization is related to the contacts of andesite flows or "flow tops", many of which are amygdaloidal with calcite and chlorite amygdules and blebs or amygdules of copper minerals. Such conditions have
formed the structure controlling some large ore bodies throughout the world (e.g. Keweenawa Peninsula on the south shore of Lake Superior).

**SHOWINGS**

There are several "showings" on the claim group.

**Road Showing**

Copper stained rock fragments are present on the adjacent southern corners of claims Kel 1 and Kel 2 and at three other spots on claim Kel 1. All these are on the hillside 50 to 100 feet in elevation above the road along Alder creek.

The showing on the adjacent corners of claims Kel 1 and Kel 2 form a steep outcrop of andesite. Some jointing is present. Malachite staining and some blebs of bornite were noted before blasting. After blasting, little mineralization was seen and no structure was ascertained to which the mineralization appeared to be related.

**Canyon Showing**

One of the showings on Little Dalton Creek is situated on the north wall of the Canyon a few feet to 25 feet above the creek on claim Kel 14. An estimated 200 cubic feet of rock was blasted from it. The mineralization is located along a "flow top" along which there has been some
shearing. The strike, not clearly revealed, appears to be 285° and dip 66° N. Shearing and brecciation are about 5 feet wide and some calcite lenses are contained in it. The sheared brecciated section is mottled dark brown with iron oxide and green with chlorite and malachite. There is a green stained lens as large as a football with a fair quantity of bornite. There is also some disseminated bornite. The foot and hanging walls are of fine grained greenish andesite, which was noted to have a medium grained texture farther south in the canyon wall.

A chip sample across a width of three feet of the sheared rock taken by R.J. Cathro, an independent consultant, is reported by him to assay 0.87% copper. Chip samples taken by him over widths of six feet of the hanging wall and six feet of the footwall of this structure are reported to assay 0.16% copper and 0.15% copper respectively.

There are other showings farther down the canyon not yet blasted into.

Mountain Showing

Talus and rock outcrops show copper staining and bornite mineralization high on the south end of the mountain near the staking line of claims Kel 21, 22, 23, 24 and 25, and elsewhere. I examined some of these but was unable to climb to a showing where some blasting is reported to have been done
with the aid of a helicopter for transportation. The helicopter was available locally at the time the work was done.

ROADS

Some bull dozing was done to improve the twelve mile access road from Dezedeash lodge to Mush Lake. Two and one half miles of road were bulldozed north from the access road towards the Canyon showing but has not reached it to date. This bulldozed road is not yet passable for four wheel drive vehicles beyond the first quarter mile. It does however serve as a trail.

A chain and Brunton compass survey has been made of these two roads within the limits of the property.

GEOPHYSICAL SURVEY

A geophysical survey of the property was started but a limited amount of work, only, was done before operations closed due to winter conditions setting in.

Three lines at 750 foot intervals for a total of 13,500 feet were chained in the southern portion of the property. One line, noted as 100N approximated the staking line of claims Kel 1 to 8, and the other two parallel ones 92.5N and 85N crossed claims Kel 2, 4 and 6. These lines trended 300°.
Readings were taken on them at 100 foot intervals with a Ronka E.M. 16 instrument and plotted as profiles. Signals came in on the crystal tuned to Maine, U.S.A. of sufficient strength for satisfactory use. Strangely enough, they came from the southwest. It is thought that this direction resulted from reflection. In a few days they faded each day in the early morning, and this portion of the survey was discontinued. No usable signals were obtained in this locality with the crystal tuned to Seattle.

One "cross-over" only was obtained. This was in the general vicinity of the Road Showing.

A detailed survey was started adjacent to the Canyon Showing extending southeasterly from it and covered a small section of claims Kel 13, 14, 15. A base line was extended from the common corner posts of these three claims and 8 parallel cross-lines, each 250 feet long were run at 50 foot intervals for a total of 2000 feet in a northeasterly direction. Readings were taken at 50 foot intervals on these lines with a Ronka E.M.16 instrument. Signals were received on the crystal tuned to Seattle, Washington. These were plotted as profiles.

No "cross-overs" were obtained in this detailed survey.
It is concluded that the surveys are too limited in scope to indicate whether ore is present or not. Detailed work would be required around the cross-over in the southern part of the property near the "Road Showings", and the detailed work at the Canyon showing should be extended to the north.

Recommendations are that the property be covered by the Ronka E.M. survey with lines at 750 foot intervals and readings on them every 100 feet. This recommendation is contingent on obtaining satisfactory signals. Detailed surveys should be carried out in the vicinity of all known copper showings and all favourable "cross-overs" obtained by the general Ronka E.M.16 survey. Should the E.M. survey not prove to be feasible possibly an I.P. survey should be substituted.

Mr. Don Apps acted as instrument operator and plotted the profiles of E.M. 16 readings. E. J. Lees, Ph.D., P. Eng. was in general supervision and interpreted the results.

GEOCHEMICAL SURVEY

A geochemical (soil sampling) survey was carried out on the southern part of the property on claims Kel 3, 5 and 7. Two lines were run, Nos. 107.5N and 115N at 300° 750 feet apart. They are parallel to and north of the three lines at the same interval used for geophysical work. A total
of 8400 feet of lines were soil sampled at 100 foot intervals and 84 samples taken. The samples were cold tested with a trail kit from T.S.L. laboratories with xylene and copper capsules.

Two samples gave positive assays. These were on line 107.5N - 105 W and 107.5N - 108W.

Some detailed chemical sampling, and also some detailed Ronka E.M.16 geophysical surveying should be carried out in the vicinity of the two positive geochemical determinations.

The geochemical survey should be continued.

Respectfully submitted,

                                     Everett J. Lees, Ph.D., P.Eng.
                                     Geologist.
QUALIFICATIONS

of

DONALD APPS GEOPHYSICAL INSTRUMENT OPERATOR

Mr. Donald Apps of Comox, B.C. was the instrument operator on the geophysical survey of the Mush Lake Property, Yukon of Kel-Glen Mines Ltd. (N.P.L.).

He was trained by E.J. Lees to operate the Ronka E.M. 16 instrument in the Spring of 1968 on another property. Lees spent two days in constant attendance with him on that property, supervising his every move. A check of his work was made by having him cover several lines unknown to him previously covered by another similarly trained operator, and a reasonable agreement in readings was registered.

The interpretation of the survey was made by Lees.

Qualifications of E. J. Lees are:


Ph.D., U. of Toronto 1931 Geology.


Course Kirkland Lake Collegiate 1950? Electronics


Over 20 years as mine, field and exploration geologist, with general use of geophysical reports.

Yours truly,

KEL-GLEN MINES LTD. (N.P.L.)

Per:

Everett J. Lees
Geologist and Director.