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REPORT ON GEOLOGICAL SURVEY

OF

THE EMERALD LAKE PROPERTY

INTRODUCTION

Geological mapping was carried out in June and July of 1951 of twenty-five unpatented claims in Afton and Scholes Townships, Ontario. This work was done to supplement the preliminary mapping done in November 1950.

The claims mapped in this survey include TRS -54707 - 715 inclusive in Afton Township, and Claims TRT 6915 -21 inclusive and TRT 6928 -39 inclusive in Scholes Township, Ontario.

LOCATION AND ACCESS

The property is located in Afton and Scholes Townships and extends between Emerald and Eagle Rock Lakes. A motor road crosses the western end of the property and makes this section readily accessible from the town of Field. Aircraft may land on Eagle Rock and Emerald Lakes, which lie on the eastern and western boundaries of the property.

CHARACTER OF THE REGION

Much of the area is characterized by fairly rugged topography. Hills and ridges, which frequently have almost precipitous slopes, are formed by resistant silicified zones in the volcanics, chert-iron formation bands, or remnants of the diabase sill.

Overburden is shallow over much of the property, but good rock exposures are rare.

PREVIOUS WORK

Extensive trenching and stripping was done in the eastern section of the property about 10 to 15 years ago by Consolidated Mining and

Smelting Company, Records for this work are not available at the present time.

A magnetometer survey together with a limited amount of geological mapping was completed in November and December 1950 by Mining Geophysics Corporation, Toronto. In June and July 1951 an electrical self-potential survey was made of a magnetic anomaly zone extending east from the Afton-Scholes boundary.

GENERAL GEOLOGY

The rocks of Emerald Lake area include younger Precambrian sediments and remnants of the Nipissing diabase sill which have been relatively little disturbed which overlie steeply dipping older Precambrian greenstones and sediments which have been intruded by feldspar porphyry.

Table of Formations:

Pleistocene	Glacial drift
Precambrian	
Upper Huronian (?)	Nipissing diabase
Middle Huronian	Cobalt and Gowganda formations -conglomerate and arkose
Pre Huronian	Intrusives - feldspar porphyry Sediments - greywacke quartzite, arkose Volcanics (?) greenstone, chert, iron formation, chlorite amphibolite schist.

Pre Huronian Rocks:

Volcanic Series(?) - A belt of fine-grained, highly metamorphosed chloritic rocks, termed greenstones was mapped over a width of about 800 feet in the central portion of the property. No structures were noted in the field which could aid in determining the origin of these rocks. It is believed,

however, from thin section study that they are metamorphosed basic volcanics.

Within this greenstone belt are chert and iron formation bands. Because of their resistance to weathering these rocks form prominent ridges. This series varies from almost pure chert to almost pure magnetite in composition. Only small amounts of hematite were noted. Locally, considerable pyrite is evident.

Associated with the iron formation and chert is a fine-grained, black rock having almost a slate-like appearance. This rock is composed largely of fine-grained quartz and iron-rich amphibole with some magnetite and pyrite.

A highly silicified breccia zone is exposed on claim TRT 6918 about 700 feet north of the baseline and 200 feet east of line 20 east. This breccia has, locally, a nodular appearance on the weathered surface due to replacement quartz which resists weathering. Pyrrhotite, pyrite, chalcopyrite, sphalerite and galena occur as replacements in this zone.

Sedimentary Series - Impure quartzite and greywacke outcrop on the north side of the ridge formed by the iron formation. Both the volcanic and sedimentary series are dipping, but there is no indication of the relative ages.

Pre Cobalt Intrusives - A large mass of syenite porphyry underlies much of the southern portion of the property. This intrusive varies from a pink fairly coarse-grained feldspar porphyry in the centre of the intrusives to a grey, medium-grained feldspar and quartz feldspar porphyry near the margins. Locally, near the contact with the greenstones amphibolite and diorite have been developed over narrow widths. A small porphyry body is exposed on the cliff between Eagle Rock and Greenrod Lakes.

Huronian:

Cobalt Series - Conglomerate and quartzite believed to be of Cobalt age outcrops near Greenrod and Krud Lakes. Outcrops are not numerous, but further exposures north of the property indicate that these rocks extend some distance to the north.

Nipissing Diabase - Remnants of the diabase sill occur near the western and eastern ends of the property. Topography in these sections is typically rugged.

Between Greenrod and Eagle Rock Lakes an occurrence of diabase breccia was noted along the face of a steep cliff. This breccia consists of diabase fragments with small amounts of fine-grained acidic material forming the matrix or cutting the diabase as dikes.

STRUCTURAL GEOLOGY

The Pre-Huronian sediments and greenstones exposed on the property have a steep to vertical dip, and strike in a general northeast direction. There is a fairly sharp flexure in these formations northeast of Conglomerate Lake and also south of the west end of Krud Lake. The iron formation in the latter section is highly contorted.

Strong shearing, along which chlorite schist and some graphite have been developed was noted on the west side of Eagle Rock creek. Linears suggest a strong fault trending in a north-northwest direction through Eagle Rock Lake.

Several narrow graphitic shears have been traced by an electrical survey and exposed in places by stripping and trenching. These shears follow, in a general way, the strike of the older formations.

Flat lying to gently dipping Cobalt sediments and remnants of

the Nipissing diabase sill overlies the Pre-Huronian rocks in certain sections of the property.

ECONOMIC GEOLOGY

Gold:

The only production from the area has been from the New Golden Rose Mine which was located about 1/4 mile from the west boundary of the property. This mine was operated by Consolidated Mining and Smelting Company who are reported to have recovered about 1-1/2 million dollars worth of gold up to 1941 when the mine was closed down. The gold occurred with pyrite in quartz stringers in iron formation. Localization of ore shoots was apparently controlled by a small flexure in the iron formation where the quartz stringers were sufficiently numerous to make ore.

Considerable trenching and stripping has been done in the past years on the chert-iron formation south of Krud Lake. Locally the chert-iron formation is well mineralized with fine pyrite. A quartz vein about three feet wide and fairly well mineralized with pyrite was noted near the north contact of this iron formation.

Two old pits on the side of the cliff between Eagle Rock and Greenrod Lakes reveal quartz stringers and heavy pyrite mineralization along a north-northwest trending shear zone over a width of 10 feet. Twelve hundred feet east of the township line and two hundred and fifty feet north of the baseline trenching has exposed pyrite mineralization associated with a quartz vein and silicified porphyry which border a strong graphite shear.

Locations of samples are shown on the map accompanying this report but assay results have not been received at the time of writing.

Base Metals:

Several base metal showings are known in the area to the south and southwest of the property. These showings give good copper and cobalt values over narrow widths.

Near the centre of the property on claim TRT 6918 a northeast trending zone of mineralization has been uncovered. Pyrrhotite, chalcopyrite, pyrite, galena and sphalerite occur in a silicified breccia over a width of 50 feet. Surface samples across this zone indicate low assays in lead, zinc and copper. No samples have been obtained below the oxidized portion. Refer to Mining Geophysics Corporation Report No. 288 for assay results.

Stripping in the vicinity of magnetic and electrical self-potential anomalies about 2100 feet north of the 3 mile post on the Afton-Scholes boundary has indicated a silicified zone well mineralized with pyrrhotite over a width of 4 feet. Minor chalcopyrite is present. No assays have been made to date.

CONCLUSIONS AND RECOMMENDATIONS

Judging from the old trenches on the property, considerable work has been done during the past in the search for gold. The results of this work are not known, but it is not probable that good gold values were obtained. If samples already taken from these old workings give encouraging values a more thorough sampling job should be done and possibly a limited amount of drilling or blasting in the old trenches.

Only surface samples have been obtained from the two showings which offer base metal possibilities. In order to adequately sample these showings it would be necessary to use a gasoline plugger drill to do rock excavation or drill short holes with a diamond drill. It is recommended

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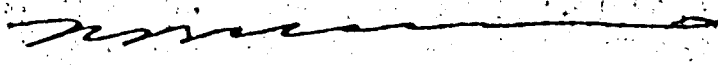
that either a Hassop gasoline plugger or an X-Ray diamond drill be used
to test these two zones.

Respectfully submitted,

MINING GEOPHYSICS CORPORATION LIMITED



J. O. Frantz



N. B. Keovil

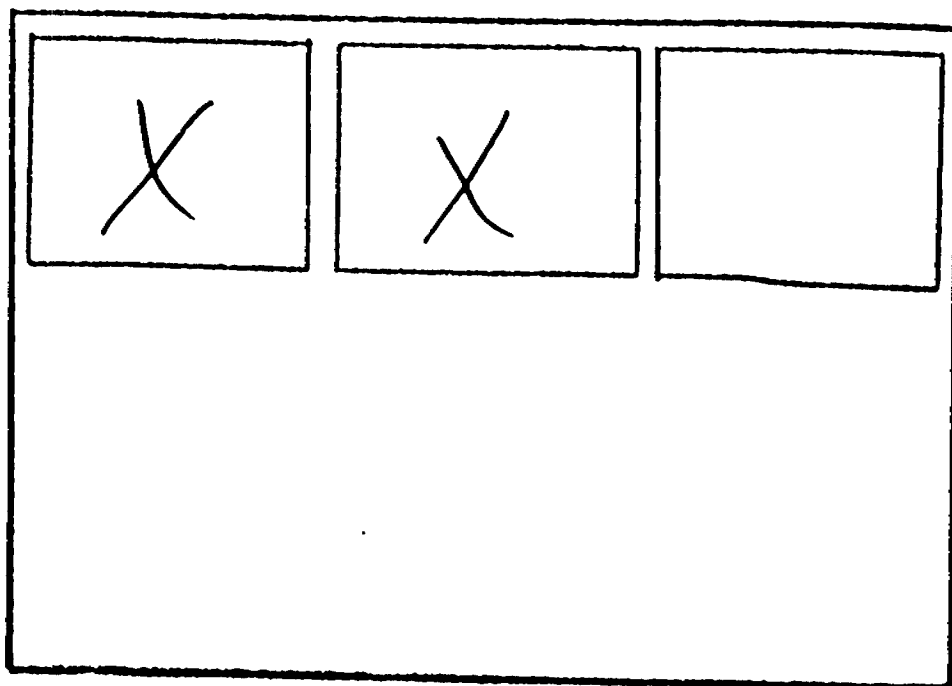
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August 9, 1951.

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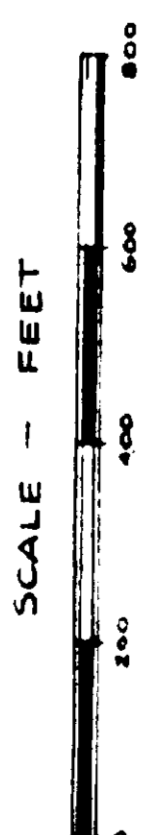
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LOCATED IN THE MAP
CHANNEL IN THE FOLLOWING
SEQUENCE (X)

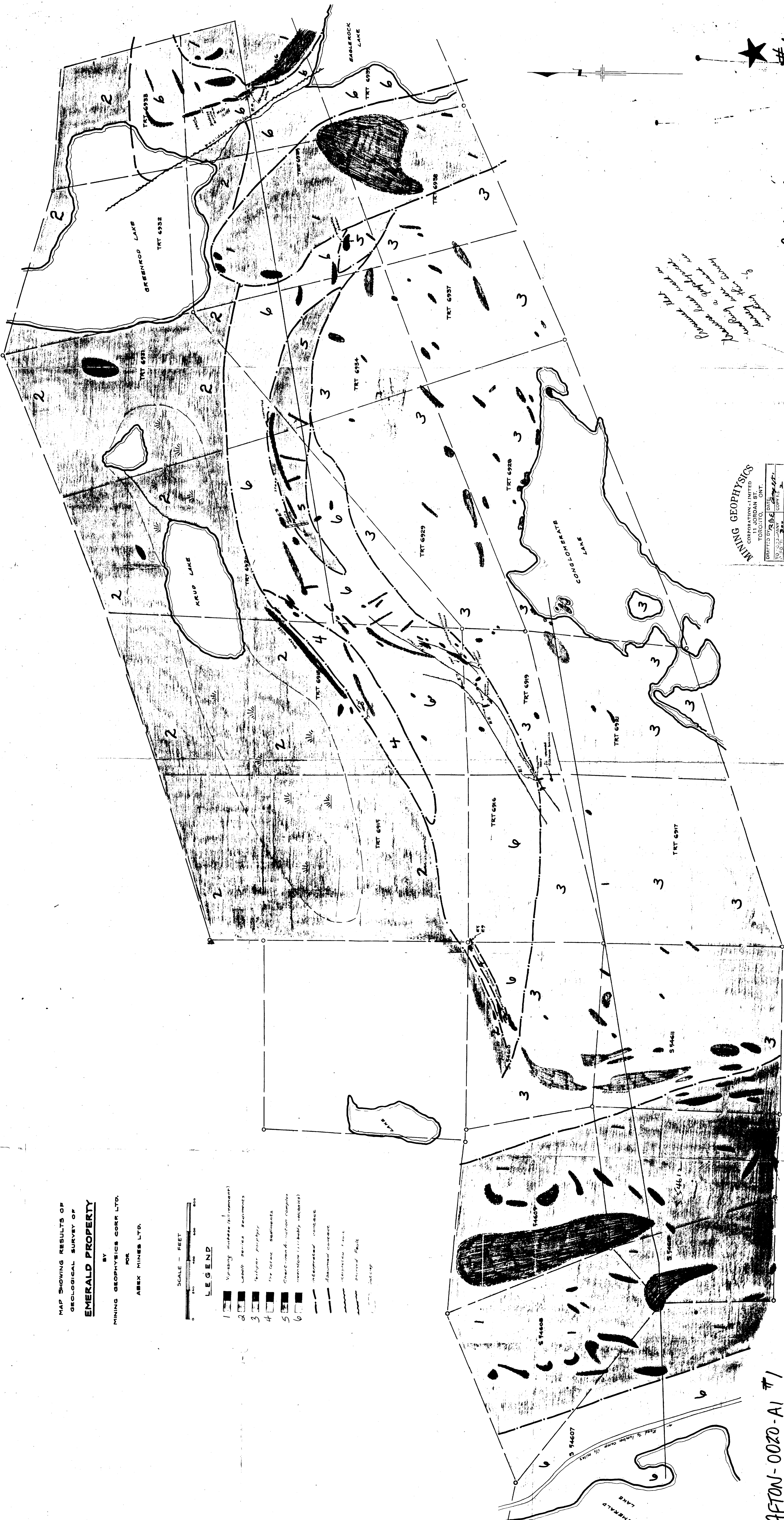


MAP SHOWING RESULTS OF
GEOLOGICAL SURVEY OF
EMERALD PROPERTY
BY
MINING GEOPHYSICS CORP. LTD.
FOR
ABEX MINES LTD.



LEGEND

- 1 Varying thickness (irregular)
- 2 Local series sediments
- 3 Higher porphyry
- 4 Ice Glacial sediments
- 5 Chert (main & section complex)
- 6 Ironstone (irregularly volcanic)
- Interpreted contact
- Assumed contact
- Geomorphologic
- Ground Fault
- Intrap



Because this work is
being done in
preparation of a
report for the
Government of
Canada

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