REPORT ON

HORIZONTAL COIL ELECTROMAGNETIC SURVEY

LAKE PORTION

THE EVENLODE GOLD MINES LIMITED

AGNEW LAKE PROPERTY

BALDWIN TOWNSHIP

ONTARIO

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R. Bruce Graham and Associates Ltd.

Toronto, Ont.

April 2, 1960

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INTRODUCTION

The following report describes the results of a horizontal coil electromagnetic survey carried out over the lake portion of the Agnew Lake Property of Evenlode Gold Mines Limited. This survey was carried out following the recommendations set out in the report on the Evenlode Gold Mines Limited, Agnew Lake Property, dated October 1, 1959.

It was pointed out, in the above referred to report, that the Cameron Creek fault is the main structural feature of the area and that this fault where it passes through the property is obscured by the waters of Agnew Lake. It was also noted that copper values occur nearby this fault in the southeastern portion of the claim group.

LOCATION AND ACCESS

The property of Evenlode Gold Mines Limited is situated in the northeast part of Baldwin Township, Sudbury Mining Division, Ontario. The southwest corner of the property can be reached by gravel road, five and a half miles north from the Town of McKerrow on Highway 17, forty-two miles west of Sudbury.

AREA COVERED BY THE SURVEY

The following 22 claims were covered by the electromagnetic survey:

110661 X
S-110662 - All
S-110663 - Southeast corner
S-110664 - Northwest corner
110936 X S-110937 - Northeast portion
S-110938 - All
S-111382 - All
S-111130 - Northwest portion
111131 X S-111132 - All
S-111133 - All
S-111134 - Northwest portion
S-111501 - All
S-111502 - All
S-111503 - North half
S-111504 - All
S-111505 - All
S-111506 - All
S-111507 - All
S-111508 - All
S-111509 - All
S-111510 - All but the southeast corner
S-111512 - All but south quarter
S-111513 - All but southeast quarter

110939

GEOLOGY

The geological map of Baldwin Township shows the area to be underlain predominantly by a series of sedimentary rocks with minor volcanic formations intruded by large masses of gabbro. Cross-cutting the area are a series of strong regional faults which trend in an east to north-easterly direction. One of the faults, the Cameron Creek fault, is shown as occurring on the property of the Evenlode Gold Mines Limited.

In the vicinity of Espanola Bay, the sedimentary formations consist of greywacke and quartzite. Espanola Bay occurs in the southwest part of the Evenlode Gold Mine Claim Group.

Numerous small gabbroic intrusives occur on the property and for the most part these appear to be sills. The main structural feature of the area is the Cameron Creek fault, which for most of its length across the property is obscured by the waters of Agnew Lake and Espanola Bay. However, some shearing is evident along the shoreline and the sedimentary formations are usually contorted and show drag folding near the fault. Diamond drilling in the vicinity of the Cameron Creek fault at Espanola Bay in the southwest portion of the claim group intersected copper sulphide in five drill holes. These holes were drilled in 1955. The best section assayed 4.19% copper along 8 feet of core length. Other sections assayed 1.01% copper, 0.65% copper and 0.48% copper over core lengths of 2 to 4 feet.

RESULTS OF THE ELECTROMAGNETIC SURVEY

The results of the horizontal coil electromagnetic survey are shown on the plan accompanying this report. The area of interest based on the results of the electromagnetic survey lies in the southwest corner of the property.

Here there are three areas of conductivity. Two are indicated on the accompanying plan as electromagnetic conductor axes and the third is shown as a zone of shearing which has been encountered in the diamond drilling and probably represents part of the Cameron Creek fault.

The conductivity of these zones is represented by a change of the in phase component, but there is very little change shown by the out-of-phase component. This appears to indicate that the conductivity of the overburden is essentially neutral and that the quantity of sulphide material along the conductor axis is not large.

The most westerly conductor extends from 28W., 500N. to 32W., 600N. It has a length in the order of 600 feet and strikes northeast. The in phase component shows 1 to 5% of phase change along this conductor.

The second conductor extends from 16W., 280N. to 20W., 200N. This conductor strikes northeast and has a maximum of 5% of phase change for the in phase component. This conductor is believed to occur along the Cameron Creek fault, as indicated by diamond drilling. Branching from the west end of this conductor is a third zone of conductivity which extends to 16W., 50N. This conductor is

the weakest of the three and it is along this zone that the copper mineralization was encountered in previous diamond drilling. Copper values in three holes beneath this conductor are as follows:

4.19% copper across 8 feet
1.01% copper across 2.6 feet
0.48% copper across 4.1 feet

CONCLUSIONS

The conductivity in the areas described is the weakest where copper values were encountered and this is the only area that was tested by diamond drilling. The increased conductivity immediately to the west along the Agnew Lake fault and in the most southwesterly conductor could be due to an increased sulphide content. The drill holes that encountered the Cameron Creek fault collared along the southeast side of the zone of shearing and consequently these holes cannot be regarded as adequately testing this structure.

It is quite possible that a diamond drill hole through the main zone of the Cameron Creek fault in the vicinity of lines 18W and 20W would encounter more substantial copper mineralization than has been indicated in the drilling to date. A second hole at line 28W., 700N., drilling south at 45 degrees would test the strongest of the three conductors outlined by the survey.

INSTRUMENT DATA AND SURVEY METHOD

A Ronka Mark 4 unit (serial No. 4) with a frequency of 876 cycles per second was used for the electromagnetic survey. The length of cable between the transmitter and the receiver was 300 feet on the lake portion and 200 feet on the land portion of the area surveyed. The transmitter preceded the receiver in the direction of the line of traverse. The readings were plotted at the mid-point between the transmitter and the receiver.

The Ronka Mark 4 unit consists essentially of a transmitter coil and a receiving coil, both horizontal. A vacuum tube oscillator and battery supply alternating current to the transmitting coil at a frequency of 876 cycles per second. The receiving coil, compensator and battery measures two components (in-phase and out-of-phase) of the secondary field, which are expressed in percentage change from the normal electromagnetic field.

An ideal profile over the conductor would show a rise approaching the conductor, then a sharp drop to negative readings, then a rise to positive readings when the two coils have been moved out of the zone of conduction. When the receiving coil is directly over the conductor, the readings at this point should be zero. The same is true when the transmitter is over the conductor.

Better conductors are indicated when the "in-phase" component shows a greater deviation than the "out-of-phase" component; when the converse is true, a poor conductor is indicated. Uneven topography may, in effect, bring the coils closer together. This increases the effect of the primary field in the receiving coil resulting in positive "in-phase" readings. The equipment is zeroed with the coils lined up. If the coils are tilted an appreciable amount with respect to each other, a negative anomaly may be produced.

The instrument should detect good conductors to a minimum depth of 150 feet; the deeper the conductor, the better must be its conductivity to give useful reading. The size and shape of the conductor has considerable effect on the magnitude of the anomaly obtained.

SURVEY DATA

The base line was turned off from the southwest corner of the property at a bearing of 60 degrees and extended northeast to the northeast corner of the property. Picket lines were turned off at right angles to the base line at 400 foot intervals. These lines were confined to the lake portion of the property excepting in the extreme southwest corner where picket lines were extended on to the land in order to better follow the anomalous indications indicated by the electromagnetic survey. Between lines 12W. and 32W. picket lines were cut

northeast from the base line at 200 foot intervals.

Instrument readings were taken at 100 foot intervals and where anomalous conditions were indicated, check readings were made at 50 foot intervals. A total of 17 miles of line were picketed and a total of 13.3 miles of line were covered by the electromagnetic survey.

The number of 8-hour man days required to complete the survey is as follows:

	(8-Hour) Man Days	Attributable to Assessment Work
Line Cutting & Picketing		
February 17 to March 5, 1960- O. Maki - Contractor J. Kilgour - Cutter	33	33
Instrument Operator & Technical Assistant		
February 22, to March 15, 1960- J. Kilgour - Chief Operator	44 x 4	176
Consultants O. Maki, B. Graham	4 x 4	16
Office Work March 26 to March 30,1960 B. Graham	5 x 4	20
Draftsman March 16 to March 20,1960 R. Gunther	5 x 4	20
Typist March 30, April 1, 1960 N. Crawford	2 x 4	8
Total	93	273

Respectfully submitted,

R. Bruce Graham

R. Bruce Graham, Ph.D.P.Eng.
R. Bruce Graham and Associates Ltd.

Toronto, Ontario
April 2, 1960

273 ÷ 23 = 17 DAYS CLR

Porter Twp (M-1101)

Shakespeare Twp. (M-1104)

Nairn Twp. (M-883)

THE TOWNSHIP OF BALDWIN

DISTRICT OF SUDBURY

SUDBURY MINING DIVISION

SCALE 1 INCH = 40 CHAINS

LEGEND

PATENTED LAND

CROWN LAND SALE

LEASES

LOCATED LAND

LICENSE OF OCCUPATION

MINING RIGHTS ONLY

SURFACE RIGHTS ONLY

Hunter Lake

Lake of the Mountains

Agnew Lake

Spanish River

McKerrow

CANADIAN PACIFIC

VI

V

IV

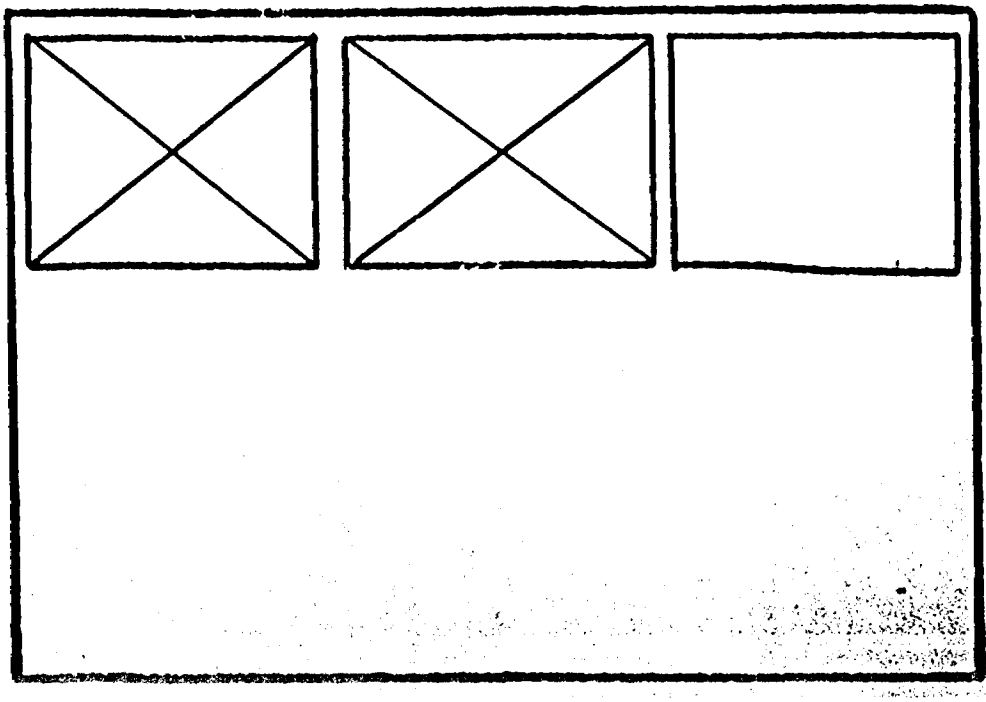
III

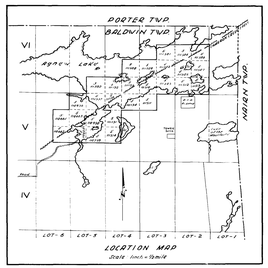
12 11 10 9 8 7 6 5 4

SEE ACCOMPANYING MAP(S) IDENTIFIED AS

BALDWIN-0036-A1, #1

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





LEGEND

- E.M. Profile - Inphase -
- E.M. Profile - Out-of-Phase -
- Negative Readings on N Side or Right Line
- Positive ——— on S ——— of
- Phase Change Scale: 20% = 1 inch
- Lake Readings 300' Cable
- Land Readings 200' Cable
- Readings Plotted - Mid Point of Cable
- Electromagnetic Conductor Axis
- Approximate Location of Drill Hole
- Claim Boundary Assumed

EVENLODE GOLD MINES LIMITED

AGNEW LAKE PROPERTY

BALDWIN TOWNSHIP

ONTARIO

HORIZONTAL LOOP ELECTROMAGNETIC SURVEY

SCALE 1" = 200' DATE: MARCH 1980.

BALDWIN-0036-A1, #1