A REPORT

ON

A TURAM ELECTROMAGNETIC SURVEY

Ski Hill Area,
Anvil, Yukon Territory

FOR

ANVIL MINING CORPORATION LIMITED

Faro, Yukon Territory

BY

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ACCOMPANYING MAPS - Scale 1" = 400 feet — MAP POCKET

PROFILES OF FIELD STRENGTH & PHASE DIFFERENCE	f = 400 Hz....	W-149-5
" " " " " "	f = 800 Hz....	W-149-6
" " " " " "	f = 200 Hz....	W-149-7

INTRODUCTION

Between June 7th and 23rd, 1972, Peter E. Walcott & Associate Limited carried out a Turam survey over the Ski Hill property of Anvil Mining Corporation Limited.

The survey was carried out over compass lines 800 feet apart that were flagged thro' buckbrush 5 feet tall.

Measurements of field strength and phase difference were made every 100 feet along the lines with a S.E. 700 electromagnetic unit operating at a frequency of 400 Hz. and using a coil separation of 100 feet during the reconnaissance phase of the survey.

Additional measurements were carried out using frequencies of 800 and 200 Hz. over anomalous areas.

The data are presented in profile form on Maps W-149-5 to 7 that accompany this report.

PURPOSE

The purpose of the survey was to locate and define several isolated airborne electromagnetic conductors.

PREVIOUS WORK

Previous work done in the area includes airborne magnetic and electromagnetic surveys and ground magnetic surveys.

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SURVEY SPECIFICATIONS

The basic principle of any electromagnetic survey is that when conductors are subjected to primary alternating fields secondary magnetic fields are induced in them. Measurements of these secondary fields give indications as to the size, shape and conductivity of conductors. In the absence of conductors no secondary fields are obtained.

The electromagnetic survey was carried out using a Scintrex S.E. 700 electromagnetic unit. The primary field was set up by closed inductive loops laid on the ground. Two receiver coils connected by a lightweight shielded cable to a compensator amplifier are used to measure the distortions in the electromagnetic field. The quantities measured are:

1. the ratio of the field strengths at each coil and

2. the phase difference in the fields at the two coils.

Four rectangular loops of varying size (4800' long, 2000 to 3000' deep) were used on the survey, with the loops always to the north of the area surveyed.

Readings were taken every 100 feet along the picket lines perpendicular to the long side of the loops with a 100 foot coil separation.

The equipment was operated at 400 c.p.s. during the reconnaissance part of the survey, and at 200 and 800 c.p.s. respectively during various parts of the detail investigation.

DISCUSSION OF RESULTS

The Turam survey located the presence of several conductors as can be seen from Maps W-149-5 to 7.

The axes of these conductors are difficult to define as the lines are 800 feet apart and the conductors are complex.

They appear to lie south of the airborne magnetic high that appears to correspond to amphibolites.

The conductors exhibit poor to medium conductivity as can be seen from the ratios of the 200 to 800 Hz. field strengths, as shown on Map W-149-5.

Depth estimates to conductor axes, ⓐ, were made from the profiles assuming dyke like shapes and using halfwidth methods (accuracy ± 20%), and are shown on Map W-149-5.

No detail work such as isolating conductors with smaller loops for better definition was carried out with the result that axes could be somewhat mislocated, particularly when part of a conductor was obtained from one loop and part from another.

Inaccuracies in chaining also caused inaccuracies in the reduced field strength particularly within 600 feet of the wire (readil apparent as front wire for example varies between 19 + 30 and 20 + 40 N

As a result no complex values of the field calculated due to the above reasons as depth determinations, locations of conductor axes and estimates of conductivity thickness would necessarily be approximat

Conductor axes might probably shift towards the source in some cases if complex components calculated.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Between June 7th and 23rd, 1972, Peter E. Walcott & Associate Limited carried out a Turam survey over the Ski Hill property of Anvil Mining Corporation.

The survey was carried out over flagged compass lines in buckbrush in an effort to properly define several airborne E.M. anomali

The results of the survey showed the presence of several anom alies of poor to moderate conductivity whose axes are difficult to properly define due to conductor complexity.

However depth estimates to conductor axes were attempted assuming dyke like structures.

As a result the writer concludes that the conductors are most formational and consist of graphitic and/or sulphide bands.

He however recommends that two gravity profiles be run over the grid to see if the conductors are massive sulphides (assuming that the area has been thoroughly examined geologically first).

Respectfully submitted,

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