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PROGRESS REPORT TO CLEYO RESOURCES INC. ON GEOLOGICAL WORK CONDUCTED ON THEIR CARSCALLEN TOWNSHIP PROPERTIES, TIMMINS, ONTARIO

OM83-5-C-75

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1. INTRODUCTION

During the period July 7 - September 13, 1983, C. von Hessert and Associates conducted a field program of gold prospection on the properties of Cleyo Resources in Carscallen Township, Timmins, Ontario. These properties consist of two non-contiguous but closely related claim groups, the Mahoney Lake and Bigmarsh groups, totalling ten claims and encompassing approximately 400 acres. The work which has been carried out is comprised of line cutting (at a 200' line spacing), geologic mapping, prospecting, trenching, channel sampling, and geophysical surveying (total field magnetics, VLF and horizontal loop EM).

2. FIELD PROGRAM: A DESCRIPTION OF RESULTS

Mahoney Lake, Geologic Mapping: Results of geologic mapping on the Mahoney Lake group are depicted on Figure 1, 'A Preliminary Compilation Map of the Mahoney Lake Group' which accompanies this report. Rocks which underlie the Mahoney Lake group are almost entirely granodioritic in composition and are part of a regional granite intrusive. However, in at least two locations on this claim group, intermediate volcanics and intercalated quartz-feldspar porphyries outcrop. It is in these volcanics that gold mineralization occurs in accompanyment with pyrite in sheared porphyries. The best assay obtained to date is 0.27 ounces of gold per ton taken from rubble in the 'West' trench (see Figure 1). Channel samples collected from this trench show that this mineralization grades from 0.03 - 0.05 ounces of gold per ton over a distance of four feet in a trench which extends approximately fifty-two feet.

The 'East' trench, which has been sampled by earlier prospectors, has an irregular dimension of approximately eight by twenty feet and is four to five feet deep. Samples have been collected in

this trench from shattered quartz-feldspar porphyry set in volcanics, but assays have not been returned to date. Due to the limited areal extent of the hosting volcanics which appear to be roof pendants set in granodiorite the opportunity for extending the present zones of mineralization in both the east and west trenches is limited.

Approximately fifteen rock samples were collected from scattered locations over the granodiorite and sent for assay. These samples were taken to test the possible occurrence of gold in the granodiorite. Assays yielded results ranging from NIL to 0.002 ounces of gold per ton indicating that the granodiorite is essentially barren.

In addition to the two known areas of outcropping volcanics, volcanic rocks probably outcrop north of Mahoney Lake near the eastern property boundary. This conclusion is inferred from a 500 gamma magnetic anomaly encountered in this area.

Mahoney Lake, Geophysical Surveys (VLF and Mag): The Mahoney Lake group was surveyed with a total field precession magnetometer providing an estimated precision of five gammas. The magnetic topography of the claims is featureless reflecting the homogeneity of the underlying granodiorite. The single exception is the previously mentioned magnetic high north of Mahoney Lake (see Figure 1).

A VLF-EM survey conducted on the same grid shows four conductors, three of which trend northwest and one which trends northeast. All conductors are probably caused by surficial features such as clay horizons and water saturated soil.

Bigmarsh Group, Geophysics (VLF, HEM and Mag): The Bigmarsh group of claims, which are entirely drift covered, have been the subject of three geophysical surveys conducted on lines set two hundred

feet apart. The results of this work are the subject of an independent report by John Boniwell, Consulting Geophysicist.

Figure 2, 'A Geophysical Compilation of the Bigmarsh Claims', prepared by Boniwell and which accompanies this report, shows the axes of VLF, HEM, and magnetic anomalies as well as the position of inferred faults. There seems little doubt that the iron formations which outcrop to the south on adjacent claims and which are sporadically pyritized and carbonated with ankerite, siderite and calcite extend onto the Bigmarsh claims where they provide strong magnetic anomalies. These north-south striking iron formations appear to be truncated and disrupted by cross cutting faults which are evident in the magnetic profiles and confirmed in some instances by the EM. Coincident with and flanking the presumed iron formations are VLF and HEM conductors. The country rock on the Bigmarsh claims most likely consists of volcanics of intermediate composition. In addition to these rocks, Boniwell recognizes a diabase dyke which trends northerly along the base line completely transgressing the claim group and a small mafic intrusive centred at station 23E, line 98N. The EM conductors are inferred to dip to the northeast at approximately sixty degrees.

This entire geophysical scenario lends itself to interpretation as sulfide bearing iron formation consisting of individual lenses off-set by cross faults. A possible exception to this interpretation of the EM conducts is the presence of an exceptionally strong HEM anomaly on line 106N at the southern boundary. This response is probably due to graphitic tuffs which are known to occur within the volcanics in the Bigmarsh area.

Boniwell's interpretation, with which this writer concurs, is appended in its entirety.

3. CONCLUSIONS AND RECOMMENDATIONS

On the basis of the work completed to date, it can be concluded that on the Mahoney Lake group;

1) The opportunities for finding additional gold bearing zones are limited due to the predominance of barren granodiorite which is the prevalent rock type.

2) The likelihood of improving the tenor of known gold occurrences on the claims is poor because hosting porphyries and shears are narrow, limited in areal extent, and low in grade. Therefore no further work on the Mahoney Lake group is recommended, pending return of assays on the 'East' trench which are not presently available.

With regard to the Bigmarsh group, it can be concluded:

1) That the geology inferred by the geophysics reveals an encouraging picture for the occurrence of gold. Coincident VLF and HEM conductors may represent gold bearing sulfide zones hosted within iron formations. This is a common setting for gold. In addition, the probable cross fractures which transgress the iron formations may represent dilatent zones infilled with gold bearing quartz and carbonate. Such structures are known to host gold in the Timmins camp.

   A case in point is the nearby wire gold occurrence one mile to the south of the Bigmarsh claims. In this location spectacularly mineralized but limited quantities of gold have been recovered from quartz calcite veins cross-cutting sulfide bearing iron formation.

   Therefore, a program to test the gold potential of the Bigmarsh claims is warranted and recommended. This

additional work should consist of diamond drilling from four set-ups to test both EM and cross cutting (structural) anomalies. Two short holes should be drilled from each set, totalling an aggregate footage of approximately 2,000 feet. Such a program is estimated to cost $70,000 at an all inclusive price of $35/per foot drilled.

The recommended holes are located on Figure 2.

September 15, 1983

Christian von Hessert
Consulting Geologist

APPENDIX 1

GEOPHYSICS ON THE BIGMARSH CLAIMS

A. Horizontal Loop EM.

This surveying has been conducted with MaxMin II equipment at a coil separation of 600' employing the three frequencies 444 Hz, 1777 Hz, and 3555 Hz.

A series of short conductors has been defined trending north-west across the grid area. At least four separate events are involved within this context, (including incomplete responses at the ends of lines 120N, 124N) these so arranged as to give the appearance of either a single conductive horizon which has been broken up by interceding structure, or of a wide lithologic unit which is host to a set of lenses of conductive material therein.

The first alternative, it is to be noted, furnishes a potential marker horizon to the setting. While this may be invaluable to geologic projections through the area, it at the same time presumes a common cause to the observed conduction. Given a sulphide cause, this circumstance would be considered highly advantageous; unfortunately by report (Thomas Skimming, 1983), the reigning probability is that the strongest response of the survey on line 106N, the southerly bounding line of present coverage, relates to a graphite occurrence in tuffs. Further, there is no evidence that it carries gold.

Nevertheless, this relationship is yet to be proven, let alone shown to be persistent. The conductor anomalies as resolved in the survey indicate mediocre sources (no better than 10 mhos/m) of narrow width (less than 3 m (10')). Where dip can be discerned, it is to the east or north-east (circa 60°); cover is generally in the order of 30 m.

It must be said here that this kind of conductor valuation and behaviour lend themselves more to sulphide incidence than graphite on the odds. Thus

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despite the reservations about graphite, this system retains an appeal that merits further investigation. Most of all, the evident discontinuities imply cross-structural breaks, and these clearly are worth pursuit in any gold exploration where transgressive vein structures are sought.

The second alternative is not so interesting by comparison, as it rather gathers everything up under the wraps of a characteristic internal heterogeneity. It infers that the host unit otherwise extends across the area in good order and says nothing about interacting cross-faulting. Happily, it is believed this is the less likely of the two scenarios conceived.

B. V.L.F. (radio) Em.

V.L.F. coverage has been achieved with a Geonics Em-16 receiver tuned to the broadcast field of NAA (17.8 kHz), Cutler, Maine. The operator has faced north-northeast for all his observations.

In the main, obtained anomaly axes stream north-west across the area. In so doing, they show empathy with the horizontal loop conductors without necessarily producing one-to-one correlations with them. Indeed the V.L.F. axes display a sufficient independence of their own through their linearity, continuity and occasional spatial off-sets to suppose that they are shear structures which control to a marked degree the behaviour and positioning of the horizontal loop events. This is particularly true for the most southerly pair of horizontal loop conductors which are now seen to have been displaced en echelon by an inter-threading shear. The V.L.F. conduction through this section, it is to be noted, is of above-average quality, and is thus compatible with mineral development along its plane, whether those minerals be clay, graphite or sulphides.

The chief interruption to V.L.F. continuity exists on line 116N at

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approximately 36E. A cross-fault bearing ENE is presumed responsible, since it finds a ready accommodation with the other features of the area while it itself is expressed, albeit tentatively, in the V.L.F. data.

There is some additional evidence for a closely N-S striking conduction in a couple of places. These indications where they occur -- at the BL between 104N-106N, and through 16E/96N -- imply V.L.F. axes that are more likely to reflect intraformational causes than structural.

C. Magnetics

The magnetic measurements on the grid have been taken of the total terrestrial field with a proton precession magnetometer providing a 1 gamma sensitivity to an estimated 5 gamma accuracy.

The results are dominated by a compound anomaly system which straddles the BL up to line 118N beyond whence it is abruptly terminated -- except for a very weak extension of about 200 gamma relief. This latter is believed to be the on-going expression of a diabase dyke, Matachewan age, which completely transgresses the grid on a N-S heading. Superimposed upon it in the section of greatest magnetic activity, viz. from 94N to 118N, is a probable iron formation which according to report (Thomas Skimming, 1983) is made up of a cherty magnetite with minor attendant sulphides. At least from 106N northwards on the grid, its strike is north-westerly. Dip is indeterminate.

It is not clear from present evidence if more than one horizon is at issue here, although it seems likely, and whether folding is the root cause of the sharp termination at 120N, or faulting. It is to be pointed out that an E-W fault, should one exist, would have hardly been picked up by the V.L.F. survey from traverses practically parallel to it; on the other hand, there

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is no break to the flanking, throughgoing shear at this juncture as there is at 116N, where incidentally the postulated cross-fault is supported by the magnetics locally. Thus probabilities slightly favour folding as the prime explanation for the observed changes between 118N and 120N.

A relatively isolated high at 23E on line 98N is potentially due to a small mafic intrusive plug some 400' long and 100' wide. It presently falls outside the main grid considerations.

D. Recommendations

The conductors of the horizontal loop em. survey deserve to be tested, especially the system bordering the inferred iron formation setting and especially in the vicinity of the line 116N cross-structure and the 109N en echelon displacement. More than one hole ought to be laid out in these places to ensure an adequate sampling of the environmental possibilities. The third target in priority terms is the southern end of the central conductor on line 118N at approximately 41E.

It is also recommended that further survey investigations be directed to the magnetic cut-off at 120N. Cross-line traversing with V.L.F. (NLK) and magnetics might prove revealing in this rather intriguing locality.

JBB:sb

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Exploration Geophysical Consultant.

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THIS SUBMITTAL CONSISTED OF VARIOUS REPORTS, SOME OF WHICH HAVE BEEN CULLED FROM THIS FILE. THE CULLED MATERIAL HAD BEEN PREVIOUSLY SUBMITTED UNDER THE FOLLOWING RECORD SERIES (THE DOCUMENTS CAN BE VIEWED IN THESE SERIES):

① Summary of 1983 Drill Results, Holes BM-1 to BM-10, Big Marsh Property, Jan. 16/84 → See CARSCALLEN TP. DDR #27 Report of Work #30 for 1984

② Report on 1983 Summer Prospecting Program, R. Sproule + C. von Hessert, Nov. 4/83 → See Toronto #2.6137 Report of Work #371 for 1983

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CLEYO RESOURCES BIG MARSH PROPERTY
GEOPHYSICAL COMPILATION

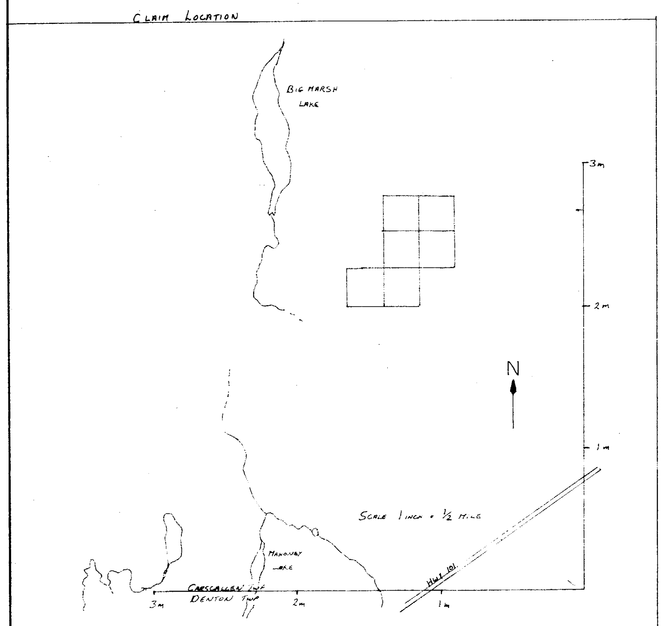
LEGEND

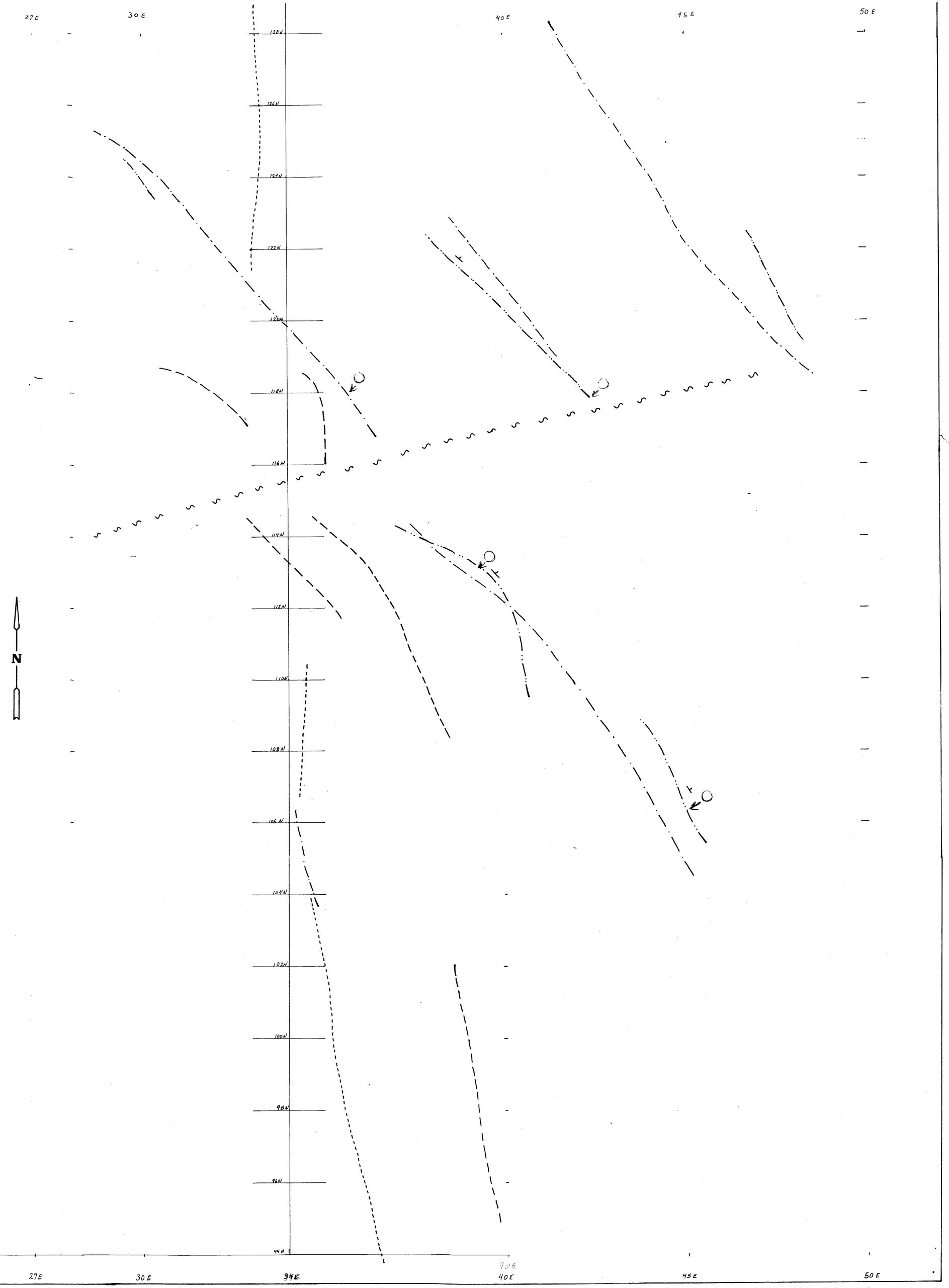
- H.L.E.M. CONDUCTOR AXIS WITH INDICATED DIP
- V.L.F. ANOMALY AXIS
- MAGNETIC IRON FORMATION
- DIABASE DYKE
- INTERPRETED FAULT.

SCALE 1:1200

DIAMOND DRILL HOLE (PROPOSED)

CLAIM LOCATION





PRELIMINAY GEOLOGICAL COMPILATION MAHONEY LAKE

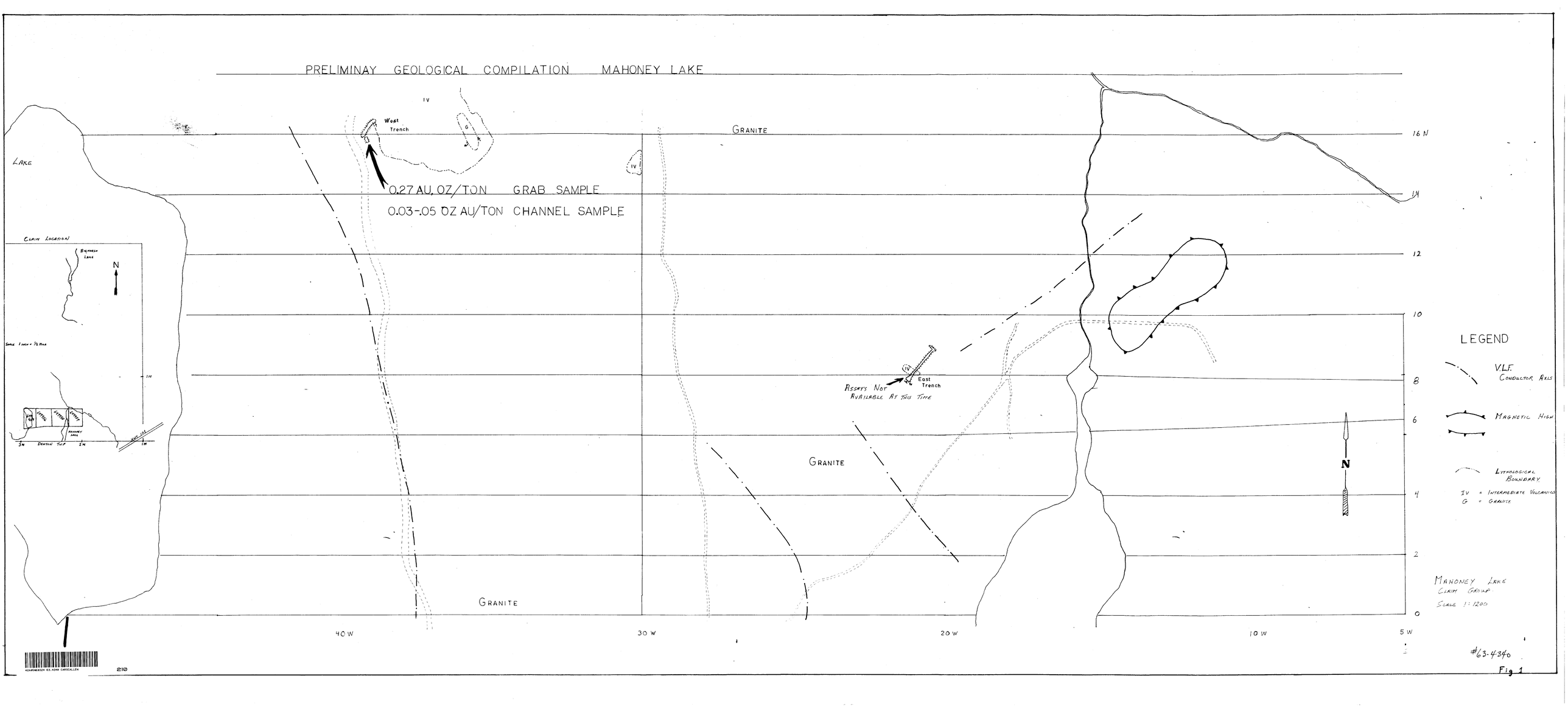


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Fig 1