010



REPORT ON

## GEOPHYSICAL WORK

McCart Township Property Porcupine Mining Division

2.14117

May, 1991

K.M. Cunnison, Geologist

H.M. Cunum

#### SUMMARY AND RECOMMENDATIONS

During the summer and fall of 1990, magnetic and VLF electromagnetic surveys were carried out on four contiguous claims in McCart Township.

A moderately strong east-west trending VLF conductor traverses the centre of the property and likely is caused by a graphitic zone within the komatilitic metavolcanics. The western extension of the conductor, on Lines OE - 2E, however, appears to cross-cut the intrusive peridotite-volcanic contact and is problematical.

Several weaker, northwest trending VLF conductors traverse the northwest quarter of the property and appear to "merge" with the main conductor. These weaker conductors may represent cross-structures within the intrusive peridotite and should be examined thoroughily for potential sulphide mineralization.

Further prospecting and trenching along the northern intrusive ultramafic - volcanic contact appears warranted. Geological mapping and geophysical data suggest that this contact may be faulted; the contact zone locally displays intense shearing and carbonate-albite-pyrite alteration.





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### Introduction

During the summer and fall of 1990, a geophysics program was carried out on a property in McCart Township; the program consisted of magnetic and very low frequency (VLF) electromagnetic surveys.

The property is located approximately 30 miles northeast of Timmins and eight miles west of Iroquois Falls (Figurel). It consists of four contiguous claims in the north central part of McCart Township (Figure 2); the claims were staked in March of 1989 and are numbered as follows:

P-1090033 SE $\frac{1}{4}$ , S $\frac{1}{2}$ , Lot 7, Conc. 5 P-1090034 NE $\frac{1}{4}$ , S $\frac{1}{2}$ , Lot 7, Conc. 5 P-1090035 SW $\frac{1}{4}$ , S $\frac{1}{2}$ , Lot 6, Conc. 5 P-1090036 NW $\frac{1}{4}$ , N $\frac{1}{2}$ , Lot 6, Conc. 5

Highway 11 passes within 3.5 miles of the property, in Calvert Township, where an all weather gravel road extends west along the Concession 4-5 boundary, directly to the property.

All survey work and plotting were done by Kimberly M. Cunnison.

# Previous Work

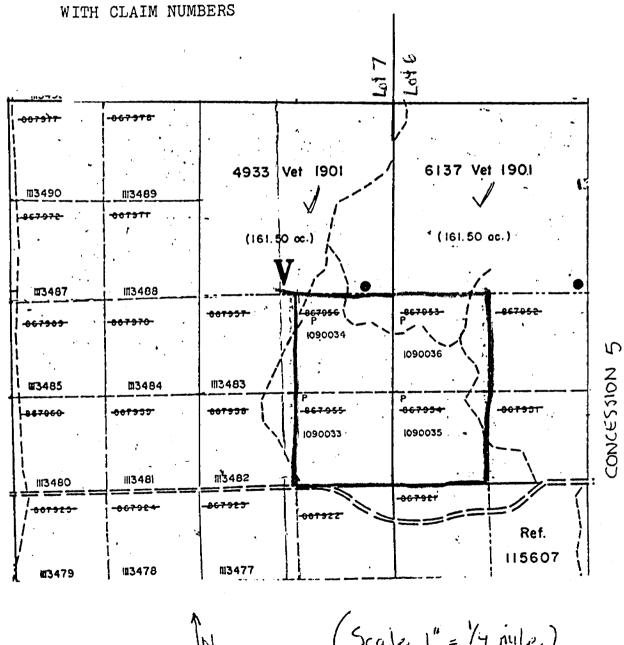
Other than regional compilation maps, the only published map of McCart Township is a preliminary map by Satterly (1953).

Nickel mineralization was known to occur on the property as early as 1916 (Baker, 1917), when samples from the Don

FIGURE 1 : LOCATION OF THE MCCART TOWNSHIP PROPERTY

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CLAIM SKETCH OF THE MCCART TOWNSHIP CLAIM GROUP, FIGURE 2.



(Scale 1" = 14 miles)

O'Connor property in Lot 7, Conc. 5 reportedly contained up to three percent nickel.

During the 1950's, asbestos fibre was extensively explored for in the ultramafics in Lots 6 and 7 of Concession 5.

Although a number of trenches were noted in the ultramafics on the current property, some of which contain minor fibre, the bulk of the exploration work appears to have been undertaken in the north half of Lots 6 and 7.

In 1957, Geotechnical Development Company Limited conducted magnetic and electrical resistivity surveys over the property. Although five drill holes were recommended to test various resistivity anomalies, there is no record of follow-up drilling.

In 1961, Union Mining Corporation drilled one hole (#U-2) for 763 feet to test the serpentinite-volcanic contact zone in the north part of the property along which nickel sulphide mineralization was known to occur. Only minor pyrrhotite and pyrite were reported, and most of this was confined to a graphitic argillite at the serpentinite-volcanic contact. No assays are reported.

In 1986, Ferderber Geophysics flew a magnetic-VLF survey over a large part of the northwest quarter of McCart Township, which included the present claims. No follow-up work was reported.

Recently. the Ontario Geological Survey (1988) flew a combined magnetic and INPUT survey over the north Timmins area, which included McCart Township.

In the fall of 1989, an aerial-photograph based geological survey was conducted on the claim group by D.R. Pyke. The area was found to be underlain centrally by pillowed to massive komatilitic metavolcanics and flanked both to the northwest and southeast by serpentinized ultramafic intrusive rocks.

Discontinuous "bockets" of disseminated pyrrhotitebyrite mineralization(3-5%) were noted as forming rusty weathering
gossan zones at the contact of the serpentinite-komatilitic
volcanics to the north, locally occurring up to 400 feet
north of the contact zone. A number of old pits and trenches
are evident along this zone which forms part of a long
recognized mineralized area locally assaying up to three
percent nickel (Baker, 1917).

## Survey Descriptions

An east-west baseline was established along the south property boundary between concessions 4 and 5. North-south grid lines were cut every 100 metres and picketed every 25 metres.

The VLF survey was carried out with a Phoenix VLF-2 instrument. Cutler, Maine (240kHz) was used as the transmitter station for all readings.

The magnetic readings were taken with a Barringer Proton magnetometer. This instrument is a proton precession magnetometer which measures the earth's total magnetic field to an accuracy of 1.0 gamma. Diurnal varioations were monitered every 200 seconds with a Scintrex MP-3 base

station magnetometer.

#### Survey Results

Plan mans of the results of the VLF and magnetic surveys at a scale of 1:2500 can be found in the pockets at the end of the report.

The very low frequency (VLF) data are profiled at a scale of 1 cm - 10%. The results have also been Fraser filtered with Fraser filter values being contoured at an interval of 10 units.

The magnetic data have been recalculated to a datum level of 57000 gammas and are contoured every 1000 gammas.

#### Magnetic Results

Two very broad areas of high magnetic susceptibility trend east-northeast accross the northern and southeastern portions of the property. These areas appear to delineate regions underlain by intrusive ultramafic serpentinite. The central, northeasterly trending zone of lower magnetics corresponds to an area underlain by massive to spinifex textured komatilitic metavolcanics and lesser tholeiltes.

Several northwesterly trending cross-faults (labelled F on the enclosed map) are interpretted from observed offsets in the magnetics. The most central of the three faults is strongly reflected in the distribution of steep parallel valleys in the outcrop and by the occurrence of more intense jointing and fracturing. The possible economic significance of these faults has not yet been determined.

A vague, broad zone of lower magnetic susceptibility, approximately 150 meters in width, trends northeasterly across the property from Line OE, 400N to Line 8E, 700N. The linear zone largely corresponds with the northern ultramafic intrusive-komatilitic volcanic contact, which may be a faulted contact. On line 4E, between 400 and 500 north along the southern flank of the magnetic low, a series of pits expose intrusive ultramafic rocks that are very highly veined and fractured and are altered to carbonate and albite, giving the originally dark green rock a pale cream coloration. Schistose to sheared graphitic metasediments bearing coarse nodular purite with large, quartz filled pressure shadows also occur, in contact with the altered intrusive rock.

It is not known whether this zone of low magnetic susceptibility is a dipole affect from the ultramafic intrusive body located to the north, or whether the feature is associated with strong, likely fault controlled carbonatization. Extensive carbonate alteration in this zone would lead to breakdown of magnetite and the substantial loss of magnetic susceptibility.

## VLF Results

A moderately strong VLF conductor trends westerly across the property from Line 300E to Line 800E at approximately 500 North. At 485N on Line 400E, corresponding to the axis of the conductor, several large bits in outcrop contain sheared graphitic material to several feet in width, thus explaining the conductor.

Offset of the main conductor in the vicinity of Line 200E, 500N suggests that a cross-fault structure traverses the property here; the existence of this structure is further supported by the magnetic data.

A set of northwest trending, much weaker anomalies occurin the northwest quarter of the property, which appear to "merge" with the main conductor. In outcrop, several moderately mineralized trenches (5-7% combined pyrrhotite and pyrite) occur within the serpentinite at the approximate confluence of the northwest conductor and the main eastwest conductor. The northwest anomalies may perhaps be mineralized structures cross-cutting the intrusive peridotite.

## References

Baker, MB.

1917: Ontario Bureau Mines, Vol XXVI, p.270-271

Ontario Geological Survey

1968: Airborne Electromagnetic and Magnetic Survey, Timmins Area,

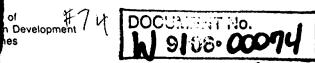
McCart Township, Map 81058, Scale 1:20,000.

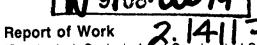
Satterly, J.

1953: McCart Township: Ontario Department Mines, Preliminary Map

P16, Scale 1"=1/4 mile.









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Report of Work

Mining Act

(Geophysical, Geological and Geochemical Surveys)

Instructions
- Picase type or print.

Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type.

. If number of mining claims traversed exceeds space on this form, attach a list.

Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch:

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Ministry of Northern Development and Mines

# Geophysical-Geological-Geochemical Technical Data Statement

File 2.14117

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Sur	rvev(s)	GEOPHY	rsics					
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# GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

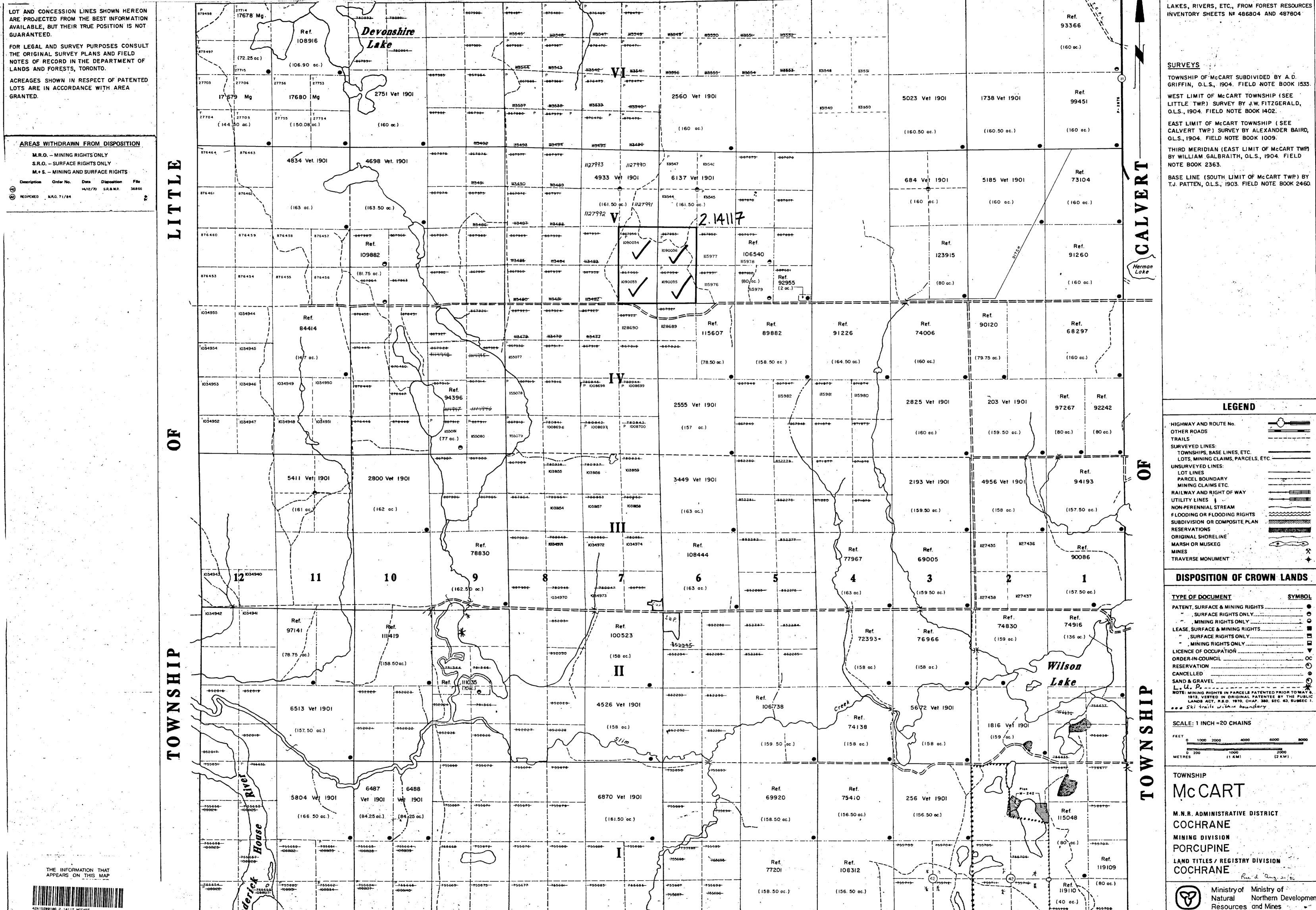
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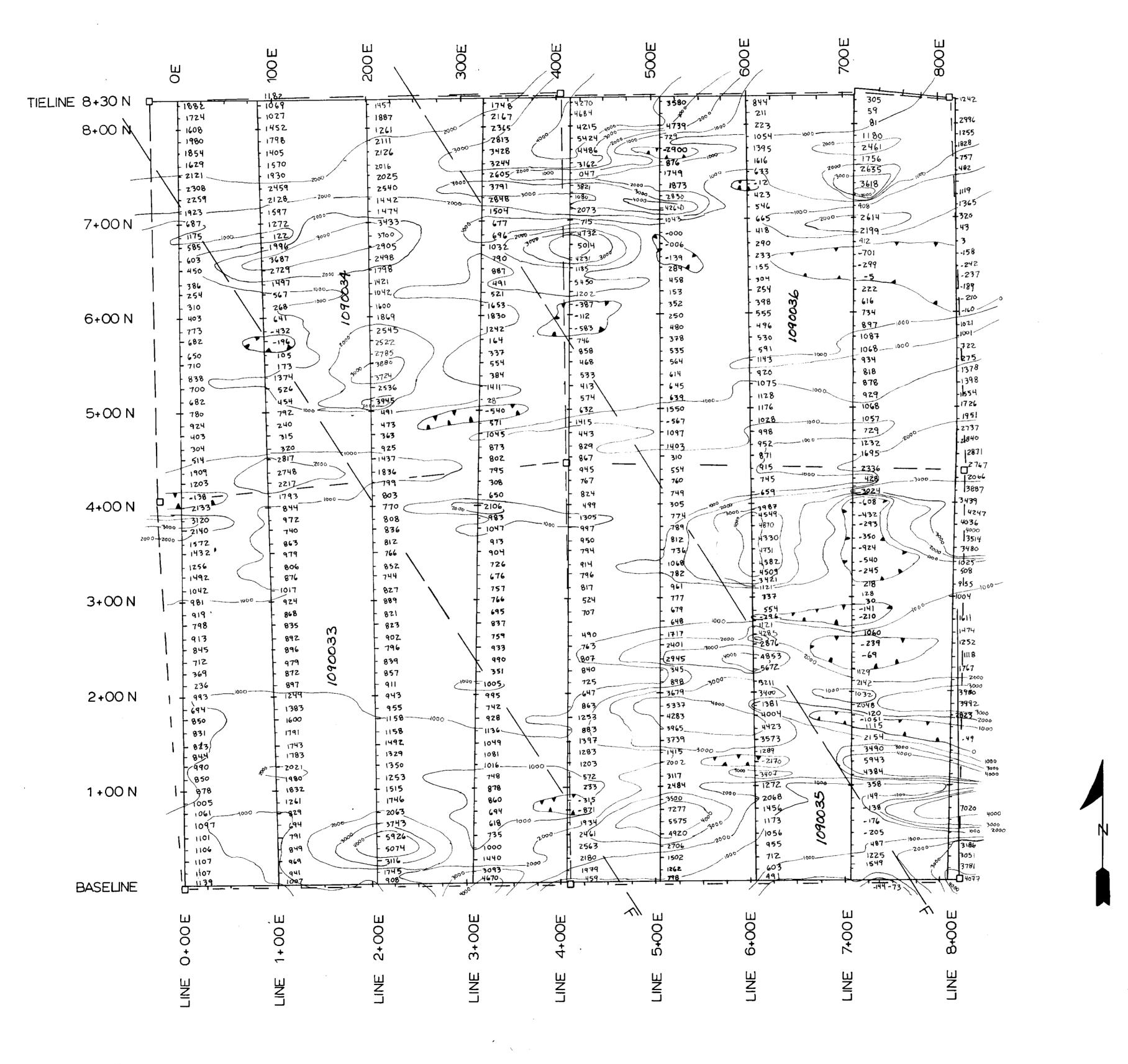
# GEOCHEMICAL SURVEY - PROCEDURE RECORD

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Ontario

Northern Development



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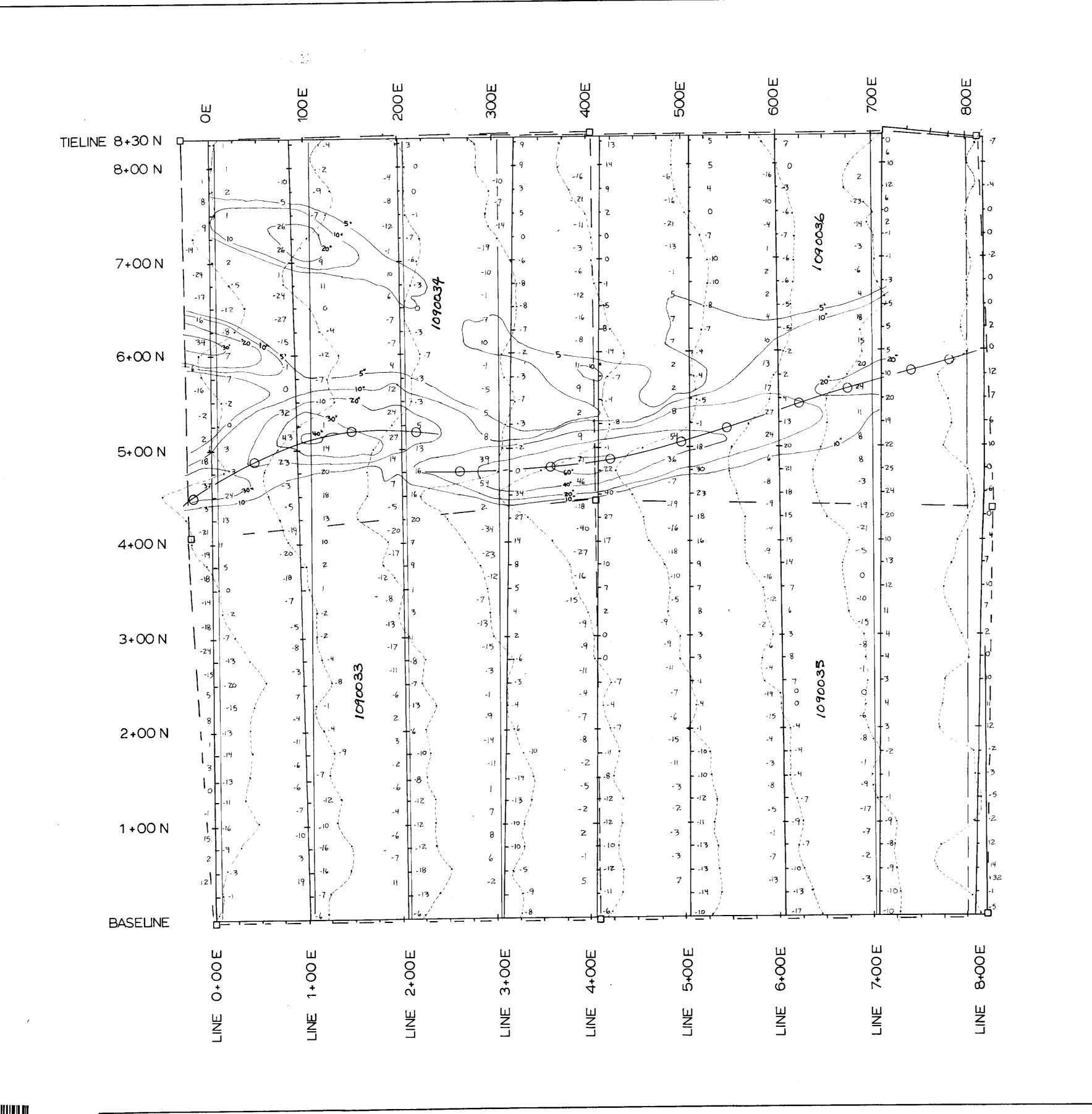
MAGNETIC SURVEY

McCart Township Property

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SURVEY BY: K. M. CUNNISON



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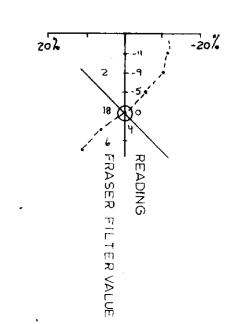
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2

VLF SURVEY

McCart Township Property

SCALE: 1:2500 DATE: DECEMBER, 1990

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SURVEY BY: K. M. CUNNISON

