42A01SE0013 2.10097 OTTO

010

GEOPHYSICAL STUDY

MAGNETIC SURVEY

AND

HORIZONTAL LOOP ELECTROMAGNETIC SURVEY (HEM)

DISTRICT OF OTTO AND TECK

ONTARIO

RECEIVED
MAY 28 1987
MINING LANDS SECTION

MADE FOR: HSK MINERALS LTD.

BY: DENIS BOIS
CONSULTANT GEOLOGIST

APRIL 1987

42A01SE0013 2.10097 OTTO

010C

TABLE OF CONTENTS

	Page
INTRODUCTION	1
LOCATION AND ACCESS	1
DESCRIPTION OF PROPERTY	2
- List of claims	2
GEOLOGY OF PROPERTY AND SURROUNDINGS	3
DESCRIPTION OF SURVEY	4
INTERPRETATION OF RESULTS	4
- Magnetic survey	4
- Electromagnetic survey	7
CONCLUSION	8
RECOMMENDATIONS	10
BIBLIOGRAPHY	12

INTRODUCTION:

This document comments the results of a magnetic and horizontal loop electromagnetic survey (HEM), done by MAGMA EXPLORATION, for HSK MINERALS LTD., during the month of February 1987, on a property located in the Kirkland Lake district, Ontario.

LOCATION AND ACCESS:

The property under study in this report is located in the central-southern part of the district of Teck and the northern part of the district of Otto, at approximately five (5) miles south-west of Kirkland Lake, Ontario. The property is easily accessible by Highway 66, which goes through its northern part.

Reference: map 1:50 000 #

GEOLOGY OF PROPERTY AND SURROUNDINGS:

The property is located in the central-southern part of the Abitibi Belt. In this area, volcanic, sedimentary and associated intrusive rocks are enclosed in a syncline going down towards the east. Two main groups of rocks make up this area, they are:

The Temiscamink Group in the north, made up of mafic and felsic breccia, flow breccia, tufs and arkosic sedimentary formation. Many syenitic intrusives are associated with it.

In the southern part, we find the Larder Lake Group, made of ultramafic and basaltic komateites, calcoalcaline andesites, conglomerates, argilites and iron formations. Sills and stock of ultramafic to mafic composition may also be observed deeper south. The Temiskamink and Larder Lake groups are separated in the northern part of the property by the Cadillac-Larder Lake break, oriented east-north-east in this area. Numerous gold showings have been found in this zone. More than 23 million ounces of gold have been extracted from the immediate area of Kirkland Lake located less than five (5) miles from the property under survey.

DESCRIPTION OF SURVEY:

The geophysical surveys have been made on a grid comprising 24 lines spaced at 300 feet and oriented 355 N. This grid totals more than 14.7 mi. in length.

The magnetic survey has been carried out with an instrument called OMNI IV from EDA. The readings have been taken every 50 feet, following the grid lines, on a total surveyed distance of approximately 14.2 mi.

The horizontal loop electromagnetic survey (HEM) has been carried out with an instrument called Max-Min II, from APEX. The readings have been taken every 50 feet. A separation of 100 meters between the coils has been used. The 444 Hz, 1777 Hz and 3555 Hz frequencies have been used for this work. A total of 9.2 mi. of line has been covered during this survey.

INTERPRETATION OF RESULTS:

- Magnetic survey:

The property is caracterized by the presence of magnetic axes oriented 90 N to 100 N. The central-southern part of the property shows the presence of a series of basic units cut by a structure of direction 325 N.

Only the magnetic axis M-9 shows an association with an electromagnetic conductor. The coincidence of these anomalies could be associated to the presence of sulfurs.

We observe in the northern part of the property, an important magnetic depression cutting the basic formation in this area. Striking in a 320 N direction this signature does not show electromagnetic association.

The M1 and M4 axes are oriented towards 90 N and are separated by a directionnal structure 325 N. These axes may reach 1,000 feet in length and close to 1,500 nT of amplitude at the position of line 15+00E to 1+50S. With a wavelength inferior to 150 feet, these axes could be the indication of this basic units or of magnetic sulfides horizons located less than 50 feet under the surface.

The M2 and M3 axes reach 3,000 feet in length and are also separated by the same directionnal structure 325 N.

These axes are found in a sector with stronger magnetic expression than the previous ones. These axes show amplitudes reaching 800 nT at the line 9+00E at position 8+50S. These two axes are moved up for a few tens of feet along a plan axis of direction 325 N, and are separated by a magnetic depression due to the dipole effect, generated at the extremity of M2 and M3 axes. These axes tend to show variations in the contents of magnetic minerals of the underlying basic units.

The axis shows the southern limit of an area whose average magnetic expression is 200 to 300 nT superior to the background. This axis of more than 2,000 feet in length is bordered on its southern part by the EM1 and EM2 conductors. This axis could indicate the presence of basic breccia.

The M6 axis indicates the northern limit of this area. The latter is not associated with any conductor, and may reach 1,000 nT. This axis longer than 2,500 feet, could indicate the presence of a basic unit.

The M4A, M5 and M8 axes are punctual anomalies found respectively at lines 9+00E and 48+00E. These anomalies may reach 1,000 nT. The dipolar character of these anomalies suggests the presence of concentrations of magnetic minerals, and this, at a depth inferior to 30 feet below the surface.

The M7, M10 and M11 axes are axes of more than 1,500 feet in length found in the northern part of the property. These axes could indicate the presence of basic units.

The M9 anomaly is a punctual anomaly found at line 48+00E at position 21+00S. This anomaly of 1,000 nT, corresponding to an electromagnetic conductor, suggests the presence of a concentration of sulfides, and this, at less than 50 feet below the surface.

- Electromagnetic survey:

We observe the presence of five (5) conductor axes which clearly indicate the presence of slight disconnections following an axis of 325 N. The conductor axes EM1, EM2 and EM3 follow, at a 300 foot distance, the shape of the magnetic contours, these axes, together with the EM 4 axis compose angles varying from 55 to 70 degrees among themselves, and suggest the presence of a conjugated fractured system.

We note in the northern part a few effects of "short cables" at line 63+00E level 12+00N. We also notice that the shores of Lake Vigras are well underlined by the results of the in-phase and out-of-phase compounds at frequencies 1777 and 3555 Hz.

We have kept during this interpretation, only the anomalies which showed significant variations of the in-phase and out-of-phase results at frequency 444 Hz. In relation to a more thorough study of the geological structure which existing on this property, certain signatures could eventually be reevaluated.

CONCLUSION:

Eleven (11) magnetic axes and five (5) conductor zones have been defined during the recent survey. Based upon the work done to this day, the sector of magnetic anomaly M9 and conductor EM5 as well as the disconnection zones along the axes EM1, EM2, EM3 and EM4 warrant further investigation. These anomalies show interesting characteristics; it is thus recommended to continue the investigations on this property.

Denis Bois
Consultant Geologist

April 1987

HEM ANOMALIES

AXE #	LOCALISATION	WIDTH (feet)	LENGTH (feet)	CONDUCTIVITY (Mhos)	DEEP (feet)	DIRECTION	DIP
EM1	12+00E 17+50S	120	1800	50	60	90N	90
	15+00E 17+50S	20	1800	35	30	90N	90
EM2	18+00E 14+50S	10	600	25	60	70N	50S
	21+00E 13+50S	45	600	25	50	70N	50S
EM3	24+00E 15+50S	20	1400	45	30	125N	60N
	27+00E 17+90S	50	1400	50	20	125N	90
EM4	39+00E 19+70S	30	1600	35	60	55N	?
	45+00E 14+50S	2	1600	20	120	55N	?
		* Cut the trend of mag. axes * Sheared Zone ?					
EM5	48+00E 21+50S	30	150	20	60	?	90
		* Magnetic coincidence. * Sulfides occurence.					

RECOMMENDATIONS:

It is important to identify the nature of the conductors. The coexistence of magnetic anomaly M9 and of conductor EM5 suggests the presence of an intraformational conductor associated to a concentration of sulfides. The existence of a conjugated fractured system close to the Cadillac-Larder Lake break, has been considered. This sector warrants a more thorough investigation.

It is thus be recommended:

1) Establish precise correlations between these anomalic axes, the surface cartography and the previous drilling data.

2) Carry out an inducted polarisation survey (I.P.) on the existing lines, between 12+00E and 51+00E, and this from the base line to the southern limit of the property, on a total distance of 5 miles.

   The actual orientation of the lines would allow the identification of a possible anomaly on the

conductor axes as well as on the disconnection plans. A configuration for N = 4 and A = 100 feet, would be advisable according to the depth estimates of the conductors as obtained so far.

3) Carry out a cross study of induced polarization for N = 4 and A = 100 feet, along the line 60+00E, and this, from the base line up to position 25+00N, in order to evaluate the potential in polarizable material of the magnetic depression previously reported in this sector.

BIBLIOGRAPHY :

DV-83-16 Lithostratigraphic Map of the Abitibi Subprovince. MERQ-OGS, 1:500,000, 1983

Kerrich R. & Watson C.P. The Macassa Mine, Archean Load Gold Deposit, Kirkland Lake Ontario Geology Patterns of Alteration and Hydrothermal Regimes. Economic Geology, Vol 79, 1984

Ploeger F.R. & Cracket J.H. Relationship of Gold to Syenitic Intrusive Rocks in Kirkland Lake CIMM S.V. 24, 1982.

FAX TRANSMITTAL

DATE: Oct. 9, 1987

TO: Arthur Baer FAX NO: 921-6926
MINING LANDS SECTION
MINERAL DEVELOPMENT & LANDS BRANCH

FROM: C. Page FAX NO: 416-364-5098
HSK Minerals
File. No. 2.10097
Re: Qualifications of Denis Bois
Your letter of Oct. 7, 1987

PROFESSIONNAL ASSESMENT

I declare :

I am Canadian citizen.

I got a B.sc. degree in Engineering Geology from Laval University in 1980.

I work in Abitibi since 1981 as exploration geologist and as teacher of Surveying, Hydrogeology and Geophysic at the Mineral Technology Departement of the Collège de l'Abitibi-Témiscamingue in Rouyn-Noranda.

I have no interest in the company for who I did the consulting work.

DENIS BOIS
20-06-87
Rouyn-Noranda, Québec

Ministry of Natural Resources

Land Management #220/8

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

Mining Act

42A01SE0013 2.10097 OTTO

900

Type of Survey(s)
Geophysical- Ground EM, MAG.

Township or Area
Teck, Otto

Name of Holder(s)
HSK Minerals Limited

Prospector's Licence No.
T-1391

Address
800-111 Richmond Street West, Toronto M5H 2G4

Survey Company
Magma Corporation

Date of Survey (from & to) 10 02 87 (Day, Mo., Yr.) 16 02 87 (Day, Mo., Yr.)

Total Miles of line Cut 15

Name and Address of Author (of Geo-Technical report)
Denis Bois, 20 Reilly ST. Rouyn, Quebec J9X-3N9

Credits Requested per Each Claim in Columns at right

Recent Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical - Electromagnetic	20
	- Magnetometer	40
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical - Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

MAY 19 10.20am

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date
May, 13, 1987

Recorded Holder, Agent, Signature
C.E. Page

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Expend. Days Cr.
L	894181	
L	891856	
L	891860	
L	842767	
L	842782	
L	842660	
L	843400	
L	843837	
L	843171	
L	544546	
L	544545	
L	544549	
L	544544	

Nota: Max credits of 80 days, have been recorded + approved on this group of claims

RECEIVED
JUN - 4 1987
MINING LANDS SECTION

Total number of mining claims covered by this report of work. 9

For Office Use Only

Total Days Cr. Recorded 540

Date Recorded MAY 19 1987

Mining Recorder M.C. Wiermier

Date Approved as Recorded

Branch Director

See revised statement

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
CHARLES E. PAGE, 1454 Westbury AVE., Burlington ONT. L7P-1M2

Date Certified
May 13/87

Certified by (Signature)
C.E. Page

Ontario

Ministry of Northern Development and Mines

Technical Assessment Work Credits

File: 2.10097

Date: October 26, 1987

Mining Recorder's Report of Work No.: 220

Recorded Holder: H.S.K. Minerals Limited

Township or Area: Teck & Otto

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	L 894181*
Electromagnetic 17 days	891856*
Magnetometer 40 days	891860*
Radiometric ____ days	842767*
Induced polarization ____ days	842782*
Other ____ days	842660*
Section 77 (19) See "Mining Claims Assessed" column	843400*
Geological ____ days	843837*
Geochemical ____ days	843171
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☒ Credits have been reduced because of partial coverage of claims.	
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.

Ontario

Ministry of Natural Resources

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

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 Survey(s) HEM, MAG.
Township or Area OTTO + TECK TWP.
Claim Holder(s) HSK MINERALS LIMITED

Survey Company MAGMA EXPLORATION
Author of Report DENIS BOIS
Address of Author 20 Reilly Est. Rouyn Que. J9X 3N9
Covering Dates of Survey FEB. 1987. (linecutting to office)
Total Miles of Line Cut 15 miles.

SPECIAL PROVISIONS CREDITS REQUESTED		DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	Geophysical –Electromagnetic	20
	–Magnetometer	40
ENTER 20 days for each additional survey using same grid.	–Radiometric	
	–Other	
	Geological	
	Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer _____ Electromagnetic _____ Radiometric _____ (enter days per claim)

DATE: May 25/87 SIGNATURE: C.E. Rose
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	894181
	891856
	891860
	842767
	842782
	842660
	843400
	843837
	843171
	544546
	544545
	544549
	544544

TOTAL CLAIMS 13

If space insufficient, attach list

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

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

	MAG	HEM
Number of Stations	(670) 1340	Number of Readings 1,294 975
Station interval	(50 feet) 100 feet	Line spacing 300 feet
Profile scale	N/A (MAG)	, 1" = 40% (HEM)
Contour interval	200 gammas (MAG)	

MAGNETIC

Instrument EDA - OMNI IV

Accuracy – Scale constant .1 GAMMA

Diurnal correction method BASE STATION METHOD

Base Station check-in interval (hours) AUTOMATIC

Base Station location and value LINE 9+00E, 5+00N

Value 58,500 gammas.

ELECTROMAGNETIC

Instrument APEX MAX-MIN II

Coil configuration HORIZONTAL

Coil separation 100 meters

Accuracy 1%

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency 444 HZ, 1777 HZ, 3555 Hz (specify V.L.F. station)

Parameters measured IN PHASE, OUT OF PHASE

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time

– Off time

– Delay time

– Integration time

Frequency

Range

Power

Electrode array

Electrode spacing

Type of electrode

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

_____

_____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

_____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

_____

Drainage Development _____

Estimated Range of Overburden Thickness _____

_____

_____

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

_____

_____

_____

General _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☐
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

_____

_____

_____

_____

_____

_____

_____

_____

HSK
MINERALS LIMITED

Suite 800, 111 Richmond Street West
Toronto, Ontario M5H 2G4
TEL. (416) 364-0001
FAX. (416) 364-5098

May 25, 1987

Mr. Gary L. Weatherson,
Mining Lands Section,
Mineral Development and Lands Branch,
Mines and Minerals Division,
Whitney Block, Room 6610,
Queen's Park,
Toronto, Ontario.
M7A 1W3

Dear Sir:

Re: HSK Minerals Limited
Technical Report for Geophysical Survey
Otto and Teck Townships

Enclosed please find a completed Technical Data Statement for geophysical surveys performed on the 13 claim HSK property in Otto and Teck Twp. The Work Report for this survey has already been filed with the mining recorders office, a copy is enclosed.

I trust this is satisfactory but if more information is required plerase contact at your earliest convenience.

Yours turly,
HSK MINERALS LIMITED

C. E. Page
Consulting Geologist

RECEIVED
MAY 28 1987
MINING LANDS SECTION

NOV 17 1987
RECEIVED

November 12, 1987

Your File: 220-
Our File: 2.10097

Mining Recorder
Ministry of Northern Development and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

RE: Notice of Intent dated October 26, 1987
Geophysical (Electromagnetic and Magnetometer)
Survey on Mining Claims L-894181 et al
in the Townships of Teck and Otto

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan, Manager
Mining Lands Section
Mines and Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

AB:pl
Enclosure: Technical Assessment Work Credits

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Resident Geologist
Kirkland Lake, Ontario

HSK Minerals Limited
Suite 800
111 Richmond Street West
Toronto, Ontario
M5H 2G4

TECK TP. - M.392

12 11 10 9 8 7 6 5 4 3 2 1

VI

V

IV

EBY TP. - M.345

BOSTON TP. - M.332

MARQUIS TP. - M.362

THE TOWNSHIP OF OTTO

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	● or Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒
CANCELLED	C.
PATENTED S.R.O.	⊖

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

(R1) Sec 24/80, W.9/80 24/01/80 M+S

* Applic. under the Public Lands Act - Sec 31(8) of The Mining Act.

DATE OF ISSUE
AUG 24 1987

PLAN NO. M-379

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

42A01SE0013 2.10097 OTTO

200

Bernhardt Twp. M.327

Grenfell Twp. M.351

Lebel Twp. M.359

Otto Twp. M379

THE TOWNSHIP OF

TECK

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 20 CHAINS

DISPOSITION OF CROWN LANDS

PATENT, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LEASE, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LICENCE OF OCCUPATION
ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

Areas shown thus for slime disposal.

Mining claim L.5779 – Mining Rights subject to Sec. 36 of the Mining Act (R.S.O. 1950)

AREAS WITHDRAWN FROM STAKING

S.R.	SURFACE RIGHTS SECTION	ORDER No.	DATE	DISPOSITION	M.R. – MINING RIGHTS FILE
R1	43M.SO 19701	W.76/80	7-2-80	S.R.	17469
R2	36M.SO 16801	W.108/82	3-12-82	S.R. & M.R.	15478
R3	36/80	W. 8/86	2-01-86	S.R. & M.R.	

Mineral rights withdrawn from prospecting staking and sale - see lease NEW 6778 in 36 SO mining Act Sept 19/29 R.S.O. Proposed NRO 101184 Sept 24/84

R4 Jan 31/80 W.9/80 2-01-86 S.R.
R5 Jan 31/80 W.11/86 2-01-86 S.R.

AREAS WITHDRAWN FROM STAKING

R1 SURFACE RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W.76/80

R2 SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W.108/82

R3 SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W.8/86

R4 SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W.9/86

R5 SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W.18/86

R6 MINING RIGHTS WITHDRAWN FROM STAKING SECTION 36/80 ORDER NO. W 90/87 NR

Mines 348-3002 DISPOSITION OF CROWN LAND

DATE OF ISSUE
NOV 9 1987
LARDER LAKE MINING RECORDER'S OFFICE

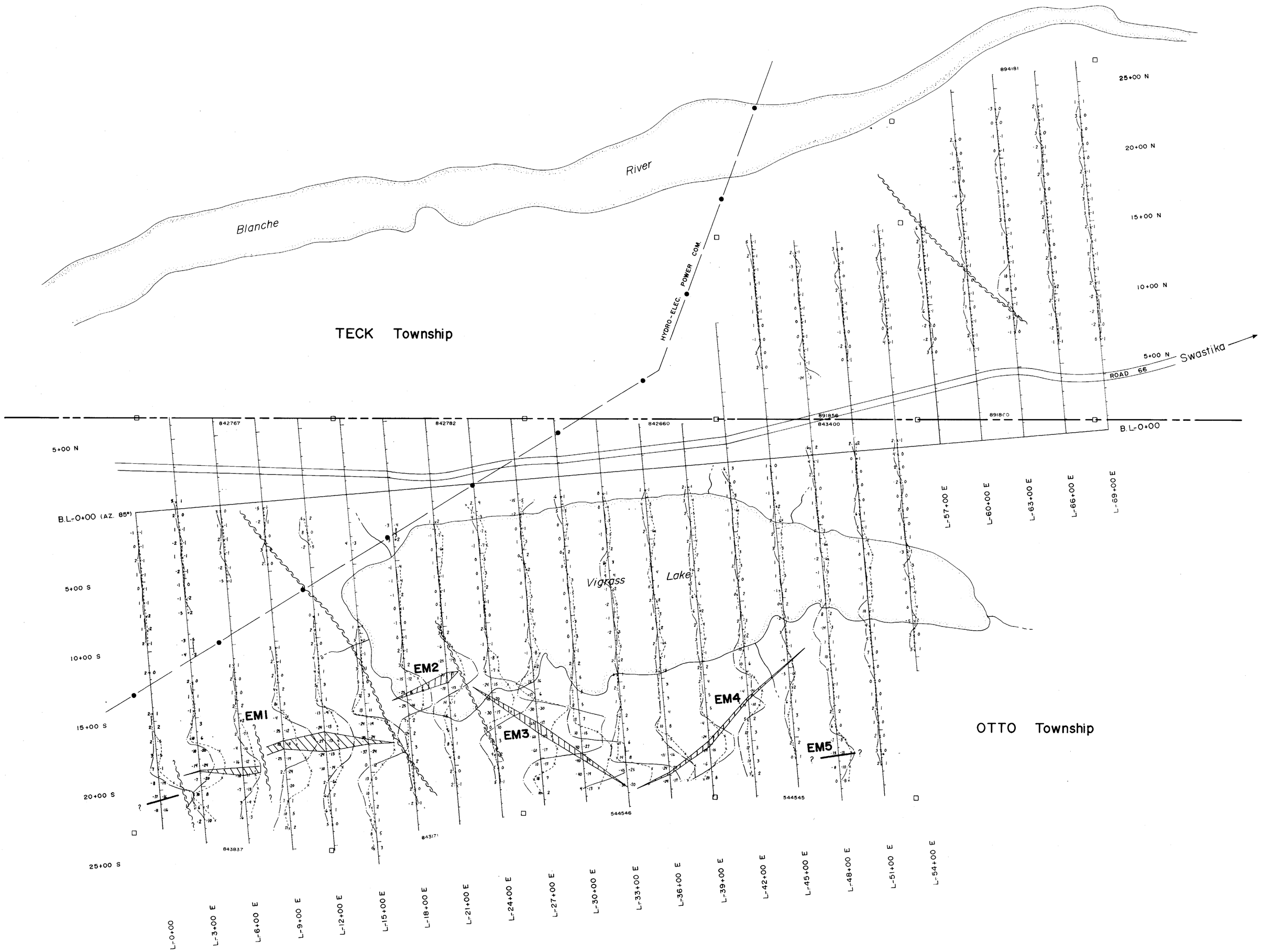
PLAN NO.- M. 392

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

42A01SE0013 2.10897 OTTO

210

J.P.V.K



OTTO Township

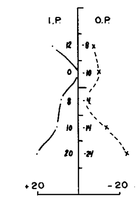
LEGEND

Instrument : MAXMIN II

Frequency : 444 Hz

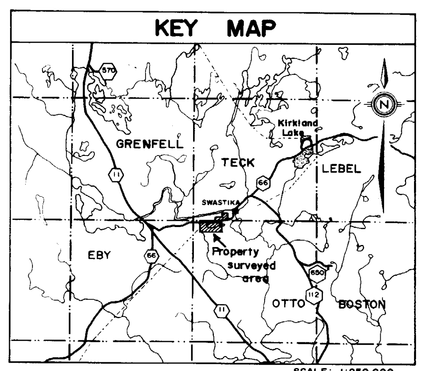
Separation : 100 m

Vertical scale : 1inch = 40 %



Conductor :

Fault :



210097

220

HSK Minerals Limited

(PROFILES)

H.E.M. SURVEY

MAGMA EXPLORATION

DATE March 1987
DRAWN BY D. Larivière, Y. Goulet
APPROVED BY:
SCALE: 1" = 300'
100 0 100 200 300 400 500
Feets



LEGEND

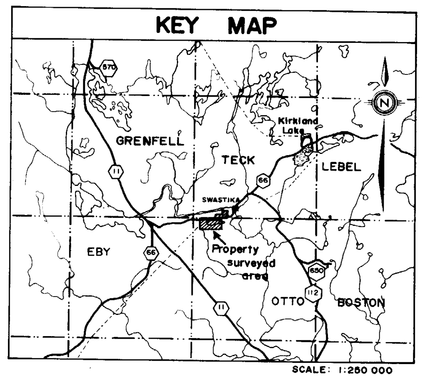
Instrument : MAXMIN II

Frequency : 1777 Hz

Separation : 100 m

Vertical scale : 1 inch = 40 %





210097

230

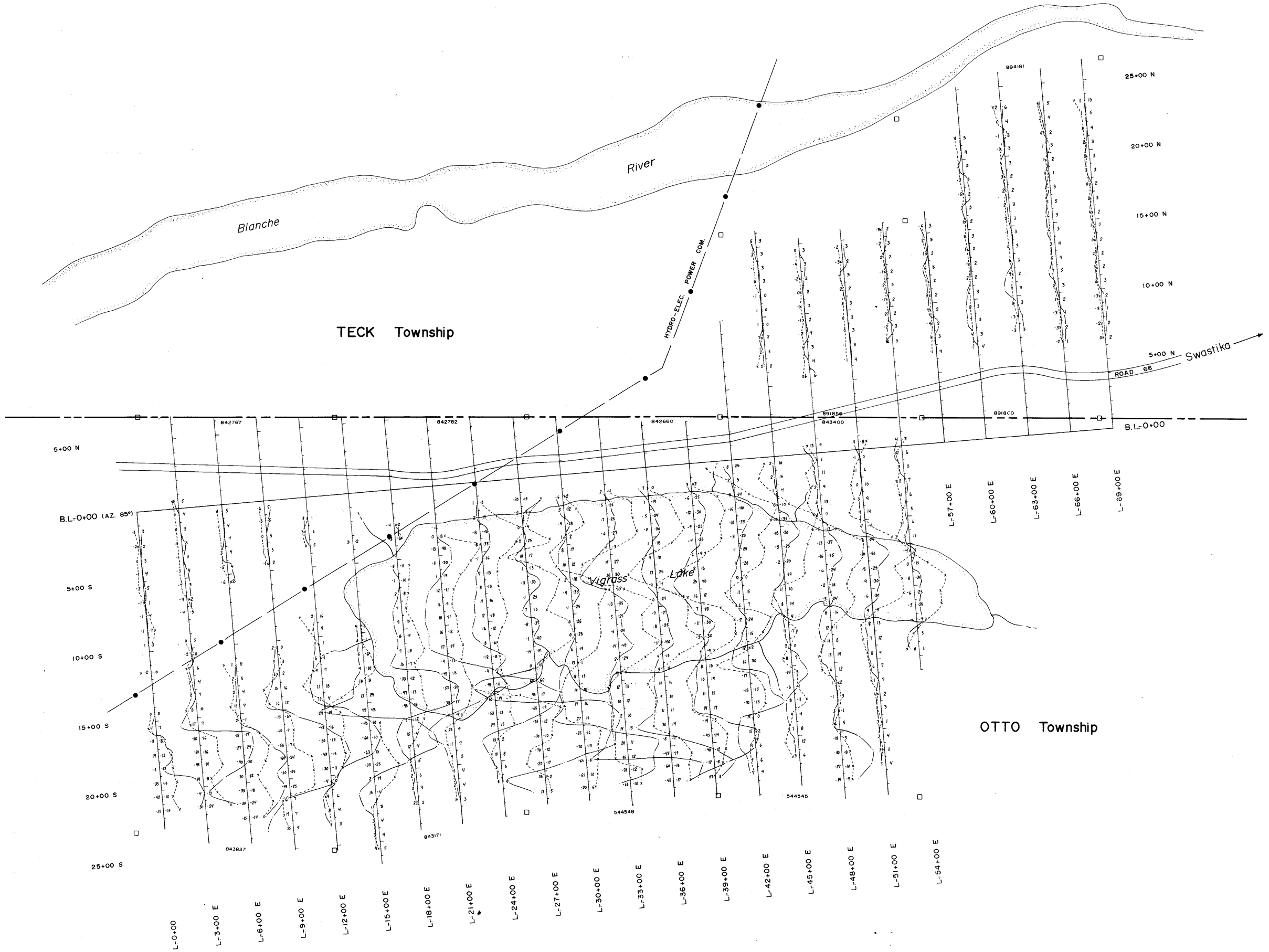
HSK Minerals Limited

(PROFILES)

H.E.M. SURVEY

MAGMA EXPLORATION

DATE: March 1987
DRAWN BY: D. Larivière, Y.G.
APPROVED BY:
SCALE: 1" = 300'
100 0 100 200 300 400 500 feets



OTTO Township

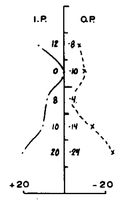
LEGEND

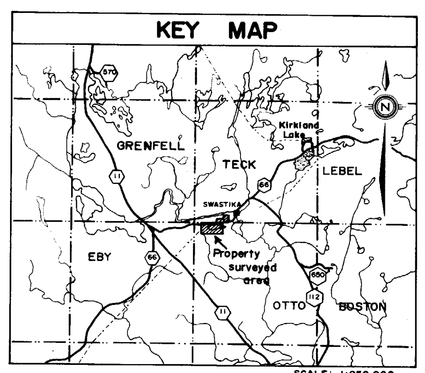
Instrument : MAXMIN II

Frequency : 3555 Hz

Separation : 100 m

Vertical scale : 1 inch = 40 %





2.10097

42A01SE0013 2.10097 OTTO	240	HSK Minerals Limited	(PROFILES) H.E.M. SURVEY MAGMA EXPLORATION

DATE March 1987
DRAWN BY D. Larivière, Y. Goulet
APPROVED BY
SCALE: 1" = 300'
100 0 100 200 300 400 500 feets



LEGEND

Instrument : EDA OMNI IV

Base value : 58 000 Gammas

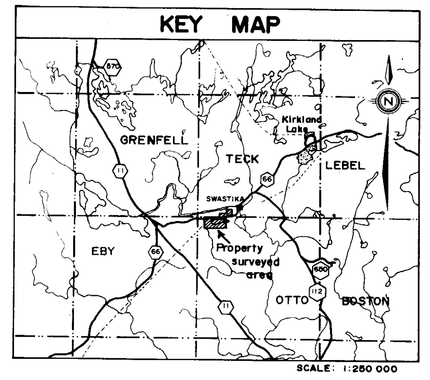
Magnetic contours:

400
600
800
1000
1200
1500
2000
3000

Magnetic depression:

Magnetic axis : ——

Fault : ~~~



2.10097

HSK Minerals Limited	(CONTOURS)	DATE: March 1987
	MAGNETIC SURVEY	DRAWN BY: D. Larivière
	MAGMA EXPLORATION	APPROVED BY:
		SCALE: 1" = 300'

42A01SE0013 2.10097 OTTO