

**NAREX Ore Search Consultants Inc.**

4900 Sheppard Avenue East, Suite 208, Scarborough  
Ontario, Canada M1S 4A7 Tel. (416) 293-2990

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52B09NE0060 2.6786 HAGEY

010

NAREX ORE SEARCH CONSULTANTS INC.

ELECTROMAGNETIC SURVEY

HAGEY TOWNSHIP

**RECEIVED**

**MAY 25 1984**

**MINING LANDS SECTION**

Thunder Bay Mining Division  
District of Thunder Bay

April 1984



52B09NE0060 2.6786 HAGEY

010C

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Accompanying Maps

Drawing #3 - Electromagnetic (EM-16) Survey

Scale: 1 inch to 200 feet



#### A. INTRODUCTION

The Shebandowan-Hagey property consists of twelve (12) contiguous claims in Hagey Township, Thunder Bay Mining Division, District of Thunder Bay, Ontario. These claims which are held in the name of Narex Ore Search Consultants Inc. on behalf of Onitap Resources Inc. are TB645696, TB645697, TB645698, TB645699, TB645700, TB646001, TB646002, TB646024, TB646025, TB646026, TB646027 and TB646136.

During June 1983 a grid was cut over the property and subsequent magnetometer and electromagnetic (EM-16) surveys were conducted by Narex Ore Search Consultants Inc.

#### B. LOCATION AND ACCESS

The property is located about 65 miles west of Thunder Bay. The claim group is located in north-central Hagey Township, north of Highway 11, west of the village of Shebandowan, Ontario. Shafton Lake is partly located within the boundaries of the claim block. Both Mathe Lake and Pistol Lake are near the southern boundary.

Access to the property from Highway 11 is by means of a forestry access road which cuts across the southern part of the claim block.

#### C. SURVEY AND INSTRUMENT DATA

The surveys were conducted over previously-cut north-south lines which are spaced at 400 foot intervals across the property. A total of 10.5 miles of grid and base lines were cut and picketed



every 100 feet. The main baseline which is oriented east-west has a length approximately of 6000 feet across the middle of the property.

#### 1. Electromagnetic Survey

The electromagnetic survey was carried out using a "Geonics" EM-16 unit. The EM-16 is a sensitive receiver covering the frequency of the V.L.F. (very low frequency) transmitting stations, with a means of measuring the vertical field components. The VLF transmitting stations operating for communication with submarines have a vertical antenna. The antenna current is thus vertical, creating a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies in the ground, secondary fields are set up radiating from these bodies. The EM-16 equipment measures the vertical component of these secondary fields.

The receiver has two inputs with two receiving coils built into the instrument. One coil has a normally vertical axis and the other, a horizontal one. Secondary fields caused by conductive bodies are, therefore, measured by the EM-16 by the angle of dip on the instrument and by measured percentage of the quadrature component (out of phase component) to give a null signal. Any deviation from the zero null position is indicative of a secondary field and, therefore, of a possible conductive body.

The transmitting station used for this survey was station NAA (17.8 kHz) Cutler, Maine, U.S.A. Readings were taken every



50 feet along the picketed lines for a total of 1004 readings from 502 stations.

D. INTERPRETATION OF RESULTS

1. Electromagnetic Survey (Drawing #3)

The areas of extreme interference with off-scale readings, no nulls etc. correspond directly to hydro transmission lines across the middle of the property (baseline) and telegraph wires beside the railway along the southern shore of Shafton Lake. This has resulted in the huge cross-over and power-line conductor which is evident for 200 - 300 feet on either side of the baseline (hydro line).

In addition to the power-line conductor, a few other east-west trending EM-16 conductors were detected by the survey.

Conductor A is a weak east-west trending conductor traceable over 400 feet in Claim TB645699 on L12E and L16E. The quadrature component shows both a broad sympathetic relationship with the in-phase curve on L16E. These in-phase curves generally show a broad weak inflection indicating a weak, diffuse, overburden, drainage or surficial type conductor. On L12E, the in-phase component indicates an equal and opposite configuration to the quadrature which would suggest a bedrock conductor. The location of Conductor A coincides largely with a low-lying area to the east.

Conductor B is a weak east-west trending conductor traceable over 1600 feet on lines L0 to L16E in Claims TB645697, 645700 and 646136. The conductor generally shows a weak quadrature inflection



accompanied by a weak or moderate in-phase inflection. The cumulative effect of the strong nearby power-line conductor has resulted in profiles with sharp in-phase inflections which have been displaced by about 40% in the positive direction from the respective lines (L0 and L4E). Therefore, these cross-overs do not occur at the zero point in each line. The location of Conductor B largely corresponds to a low-lying, swampy area. This, together with the nature and relationships between in-phase and quadrature components, suggests that Conductor B represents a surficial effect not a bedrock source. This could be either an overburden, drainage or surficial type conductor.

#### E. CONCLUSIONS AND RECOMMENDATIONS

Results from both the magnetometer and electromagnetic (EM-16) surveys show several significant anomalies and conductors over the Shebandowan-Hagey property which consists of 12 contiguous claims.

Results from the magnetometer survey show a general flat magnetic gradient except for several high magnetic anomalies which largely correspond to areas underlain by gabbro. The general overall magnetic pattern is in an east-west direction corresponding with the regional strike of the geology which consists mostly of andesites and rhyolites.

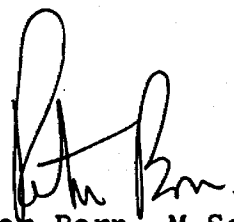
Results from the EM-16 survey outlined several power-line conductors in addition to Conductors A and B which are probably due to conductive overburden, drainage etc. However, there is some doubt since the EM-16 survey was not entirely reliable due to



large areas of interference and off-scale readings caused by a major hydro transmission line along the baseline, etc. It is, however, interesting that both Conductors A and B are underlain by rhyolite rock types which could easily contain some sulphides of a conductive nature.

There is no apparent correlation of EM-16 conductors to areas of magnetic high values or low anomalous regions.

Considering the restrictions and limitations placed by the hydro lines, it is, therefore, recommended that a program consisting of either a Self-Potential (S.P.) or Induced Polarization (I.P.) survey should be carried out over the entire property with particular emphasis on the areas underlain by rhyolites and both Conductors A and B.



Peter Born, M.Sc.  
Project Geologist.





52B09NE0060 2.6786 HAGEY

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Mining Lands Section

File No 2.6786

Control Sheet

TYPE OF SURVEY

- GEOPHYSICAL
- GEOLOGICAL
- GEOCHEMICAL
- EXPENDITURE

MINING LANDS COMMENTS:

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*L.D.*

*Dennis King*

Signature of Assessor

*July 13/84*

Date





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

# 208  
The Mining Act

*Field Management* June 17 1984  
Instructions: - Please type or print.  
- If number of mining claims traversed exceeds space on this form, attach a list.  
Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.  
- Do not use shaded areas below.

*File: 645696*

2-6786

Type of Survey(s) <b>Geophysical - Electromagnetic</b>	Township or Area <b>Hagey Township (6-661)</b>
Claim Holder(s) <b>Narex Ore Search Consultants Inc.</b>	Prospector's Licence No. <b>T1241</b>
Address <b>208 - 4900 Sheppard Avenue East, Scarborough, Ont. M1S 4A7</b>	
Survey Company <b>Narex Ore Search Consultants Inc.</b>	Date of Survey (from & to) 13 06 83   25 06 83 Day   Mo.   Yr.   Day   Mo.   Yr.
Name and Address of Author (of Geo-Technical report) <b>Peter Born, 165 Frederick Street, Bradford, Ont. L3Z 1K1</b>	
Total Miles of line Cut <b>10.5</b>	

Credits Requested per Each Claim in Columns at right

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

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

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
TB	645696				
	645697				
	645698				
	645699				
	645700				
	646001				
	646002				
	646024				
	646025				
	646026				
	646027				
	646136				

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.

Total number of mining claims covered by this report of work. **12**

Date *Apr 17/84* Recorder/Holder or Agent (Signature) *[Signature]*

For Office Use Only

Total Days Credits Recorded: *240*

Date Recorded: *Apr 18/84*

Mining Recorder: *[Signature]*

Certification Verifying Report of Work

I hereby certify that I have 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/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying  
**Peter Born, 165 Frederick Street, Bradford, Ont. L3Z 1K1**

Certified by (Signature) *[Signature]*

1984 05 31

Your File: 208  
Our File: 2.6786

Mrs. Audrey Hayes  
Mining Recorder  
Ministry of Natural Resources  
P.O. Box 5000  
Thunder Bay, Ontario  
P7C 5G6

Dear Madam:

We have received reports and maps for a Geophysical (Electromagnetic) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims TB 645696 et al in the Township of Hagey.

This material will be examined and assessed and a statement of assessment work credits will be issued.

Yours sincerely,

S.E. Yundt  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416) 965-6918

A. Barr:sc

cc: Narex Ore Search Consultants Inc  
208 - 4900 Sheppard Avenue East  
Scarborough, Ont  
M1S 4A7

cc: Peter Born  
165 Frederick Street  
Bradford, Ontario  
L3Z 1K1



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) Geophysical - Electromagnetic

Township or Area Hagey Township

Claim Holder(s) Narex Ore Search Consultants Inc.

Survey Company Narex Ore Search Consultants Inc.

Author of Report Peter Born

Address of Author 165 Frederick Street, Bradford, Ont. L3Z 1K1

Covering Dates of Survey June 1983 - April 1984  
(linecutting to office)

Total Miles of Line Cut 10.5

MINING CLAIMS TRAVERSED	
List numerically	
TB	645696
(prefix)	(number)
	645697
	645698
	645699
	645700
	646001
	646002
	646024
	646025
	646026
	646027
	646136
RECEIVED	
MAY 25 1984	
MINING LANDS SECTION	
TOTAL CLAIMS <u>12</u>	

If space insufficient, attach list

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

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: Apr. 17, 1984 SIGNATURE: Peter Born  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications 23004

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 502 Number of Readings 1004
Station interval 50 feet Line spacing 400 feet
Profile scale 1 inch to 40%
Contour interval

MAGNETIC

Instrument
Accuracy - Scale constant
Diurnal correction method
Base Station check-in interval (hours)
Base Station location and value

ELECTROMAGNETIC

Instrument Geonics EM-16
Coil configuration 2 coils perpendicular to each other
Coil separation
Accuracy +/- 1%
Method: [X] Fixed transmitter [ ] Shoot back [ ] In line [ ] Parallel line
Frequency NAA - 17.8 KHZ (specify V.L.F. station)
Parameters measured in-phase and quadrature dip angles

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 Frequency
- Off time Range
- Delay time
- Integration time
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 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**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 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
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**NAREX Ore Search Consultants Inc.**

4900 Sheppard Avenue East, Suite 208, Scarborough  
Ontario, Canada M1S 4A7 Tel. (416) 293-2990

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May 23, 1984

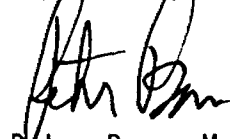
Ministry of Natural Resources  
Land Management Branch  
Whitney Block, Room 6643  
Queen's Park  
TORONTO, Ont.  
M7A 1W3

Dear Sirs:

PROJECT 21-15 Shebandowan

Please find enclosed Geophysical Technical Data Statement referring to Claims TB645696 et al in Hagey Township, together with Narex' Geophysical Report and map, in duplicate.

Yours truly,



Peter Born, M.Sc.,  
Project Geologist.

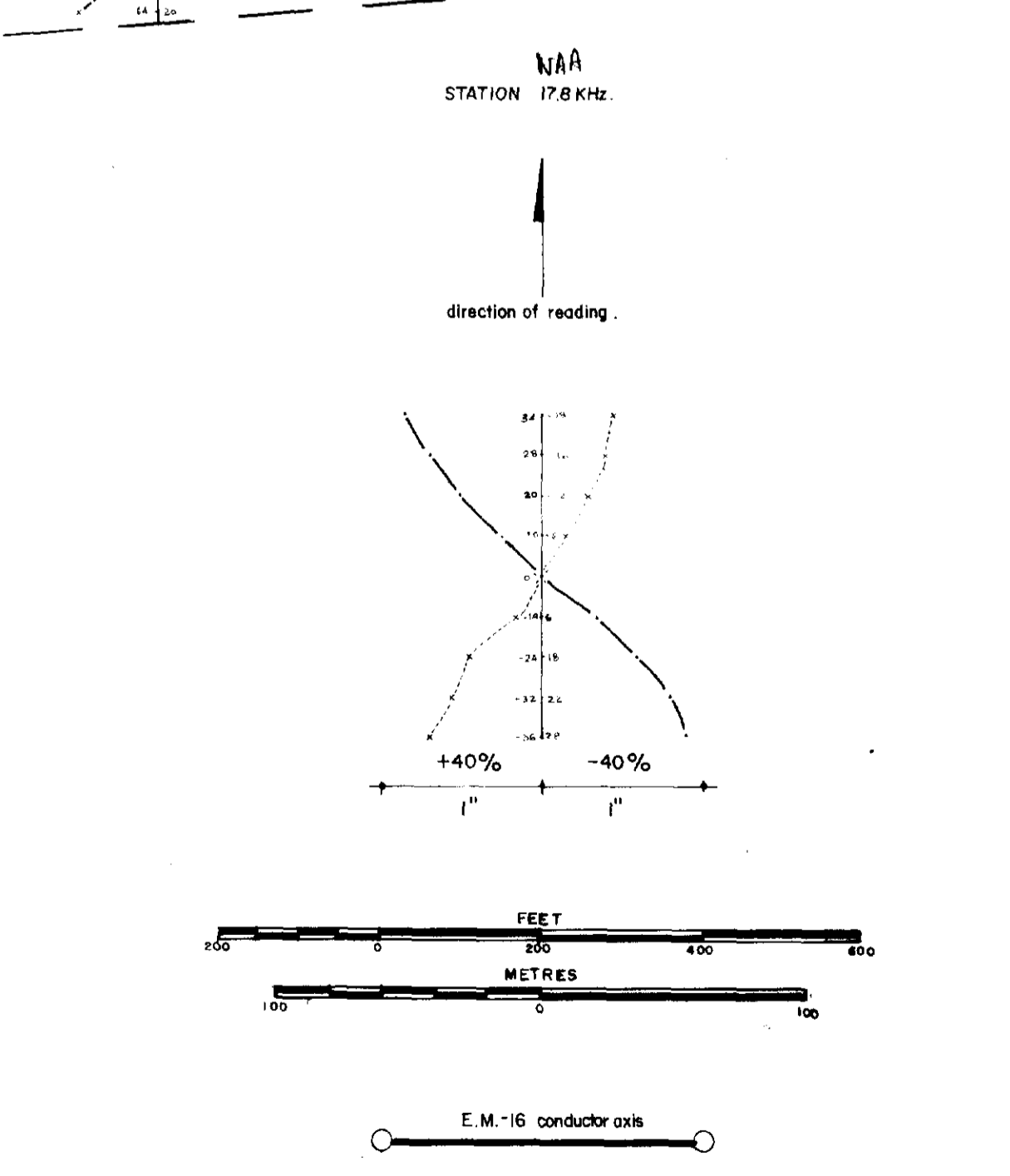
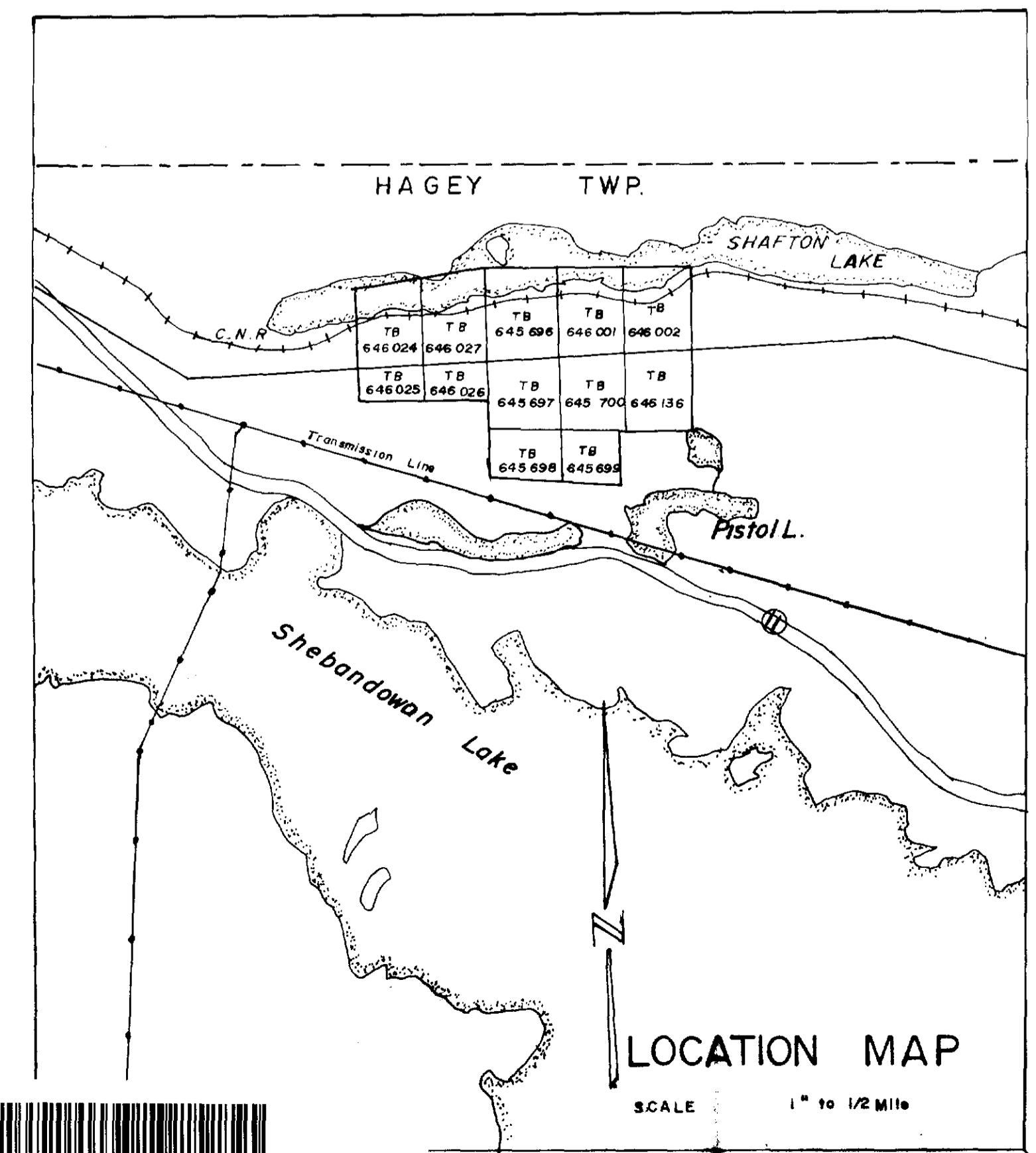
PB:SG  
Encls.

**RECEIVED**

**MAY 25 1984**

**MINING LANDS SECTION**

L 230 W L 224 W L 218 W L 212 W L 206 W L 200 W L 194 W L 188 W L 182 W L 176 W L 170 W L 164 W L 158 W L 152 W L 146 W L 140 W



SHEBANDOWAN - HAGEY PROPERTY  
ONTARIO  
**E.M.-16** 26786  
**SURVEY**

BY U.A. & P.B.	DATE JUNE '95	SCALE 1" to 200'	1:2400
BY P.B.	DATE DEC. '95	GEONICS E.M.-16	