



32D12SE9347 2.5284 HOLLOWAY

010

REPORT ON
VLF-EM (SEATTLE) SURVEY
PERFORMED ON
101 CLAIM GROUP
HOLLOWAY TOWNSHIP
LARDER LAKE MINING DIVISION
MATHESON AREA, ONTARIO

FOR

H. E. NEAL

BY

PETER G. ATHERTON B.Sc.

H. E. NEAL & ASSOCIATES LTD.

TORONTO - CANADA

November 1982



32D12SE9347 2.5284 HOLLOWAY

010C

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1.0 SUMMARY:

H.E. Neal & Associates Ltd. were contracted to conduct ground magnetometer and VLF-EM surveys over the 101 group of claims held by H.E. Neal in Holloway Township. The VLF-EM (Seattle) survey was initially started in late March 1982 but poor weather and ground conditions prevented completion of the survey until August 1982.

Nine conductors were located during the survey. All of these conductors were the same as or part of conductors located in the VLF-EM (Cutler) survey. No new conductors were located.

Conductor N-1 is located on the possible extension of the Ghostmount Fault on line 0+00. Conductor N-5 is associated with a large magnetic high located on line 72+00E and a sharp magnetic low located on line 68+00E. The western portion of N-5 is located on a possible north-east trending fault.

Further work is recommended on conductors N-1 and N-5. This work should include more sophisticated geophysical surveys to better define the conductors to be followed-up by diamond drilling.

2.0 INTRODUCTION:

The VLF-EM (Seattle) survey was started in March 1982 but due to weather and snow conditions it had to be completed in August 1982. The survey was conducted over the same grid as the previous VLF-EM (Cutler) survey and magnetometer survey. The grid was cut by the Jean Alix Co. Ltd. with cross lines every 400 feet for a total mileage of 10.4 miles.

The purpose of the survey was to more closely define possible conductors from the VLF-EM (Cutler) survey as well as pick up any new conductors due to the slightly different orientation of the survey.

The results are shown in this report and the assessment credits are to be applied to all 10 claims held by Mr. H.E. Neal.

3.0 THE PROPERTY:

The property consists of 10 contiguous claims in Holloway Township. The claims are held by H.E. Neal, 124 Roxborough Drive, Toronto, Ontario.

The claims are listed below:

L598637 to L598646.

4.0 LOCATION AND ACCESS:

The 10 claims are located on Holloway Township, District of Cochrane, in the Larder Lake Mining Division.

The west side of the claim group is located 26 miles north-east of the town of Holtyre.

Access to the property is east along Highway 101 to Holloway Lake in Holloway Township. The claims are located 700 feet south of the Highway at this point and are accessible by foot.

5.0 PREVIOUS WORK:

1949 - Lobanor Gold Mines Limited drilled 5 diamond drill holes totalling 5,129 feet. Four were drilled on claims held by H.E. Neal.

1960 - Revere Mining Corporation Ltd. conducted ground magnetic and electrical resistivity surveys over claims held by them. Work also included 7 drill holes totalling 3,121 feet. This work also included claims now held by H.E. Neal.

1952 - J. Satterly from the Ontario Department of Mines mapped the northern part of Holloway Township which also includes the H.E. Neal claims.

6.0 GENERAL GEOLOGY:

The rocks in Holloway Township are Archean in age and belong to the Abitibi Sub-Province of the Superior Province. The rocks are mainly Keewatin andesite and basalt with some interflow sediment. A wide band of sediments occurs roughly parallel to Highway 101 across the township. The northwestern part of the township is underlain by mafic to ultramafic intrusives that make up part of the Ghost Range Syncline.

The rocks face south and dip south at 80° or steeper. The rocks generally trend east north-east.

The major structural feature in the township is the Destor-Porcupine Fault Zone which is roughly parallel to and in the vicinity of Highway 101. Some cross faulting does occur in the township but is usually obscured by extensive overburden.

The overburden covers approximately 80% of the township and has reported thickness up to 150 feet.

A table of formations from Satterly (1953) is shown on the following page.

Table of Formations

CENOZOIC	
RECENT:	Peat; stream deposits.
PLEISTOCENE:	Sand, gravel, boulders; varved clay
<i>Great unconformity</i>	
PRECAMBRIAN	
KEWEEFNAWAN:	Quartz diabase.
	<i>Intrusive contact</i>
MATACHEWAN:	Quartz diabase, diabase.
	<i>Intrusive contact</i>
ALGOMAN:	Feldspar porphyry; felsite; lamprophyre.
	<i>Intrusive contact</i>
PRE-ALGOMAN:	Diabase, gabbro; peridotite and dunite (serpentinized); pyroxenite.
	<i>Intrusive contact</i>
KEEWATIN:	Rhyolite; rhyolite agglomerate and tuff.
Volcanics:	Andesite, basalt; pillow lava; diabasic lava; spherulitic lava; fragmental lava (flow breccia or agglomerate); tuff and chert; talc-chlorite schist; carbonate-chlorite schist.
	<i>Faulted contact</i>
Sediments:	Greywacke; slate; conglomerate; iron formation.

J. Satterly (1953).

7.0 ELECTROMAGNETIC SURVEY:

7.1 Instrument and Sensitivity

The instrument used in the survey was a Geonics EM16 VLF-EM. The sensitivity of the In-phase is $\pm 150\%$ and Quad-phase is $\pm 40\%$. The instrument has a resolution of $\pm 1\%$. The Geonics EM16 has an operating range of 15 to 25 KHz VLF operating band.

The EM16 is a sensitive receiver which measures the vertical field components of secondary magnetic fields caused in the following manner:

The VLF transmitting stations have a vertical antenna with a vertical antenna current. This creates a concentric-horizontal magnetic field around each station. When the magnetic fields come in contact with conductive bodies in the ground a secondary magnetic field radiates from these bodies.

The receiver has two receiving coils with one coil having a vertical axis and the other a horizontal axis. The signal from the vertical axis coil is minimized by tilting the instrument which measures the vertical real component as a percentage. The remaining signal is balanced out by a measured percentage of a signal from the horizontal coil which gives an accurate measure of the quadrature vertical signal. The measured values are relative only. The results of a survey when plotted as a profile show the location of various conductors in the ground.

7.2 The Survey

The VLF-EM survey was carried out by C. Curry during March and August 1982. This was part of the overall exploration program conducted by H.E. Neal & Associates Ltd. in Holloway Township. The survey was conducted over the same grid system as the previous VLF-EM (Cutler) and magnetometer survey. Readings were recorded at 50 foot intervals along the crosslines and recorded as facing north. No readings were systematically taken along the baseline other than those that coincided with the junction of the baseline and cross over lines. The VLF transmitting station used was N.L.K. Seattle, Washington which has a transmitting frequency of 24.8 KHz.

8.0 RESULTS:

8.1 Electromagnetic Survey

The VLF-EM survey outlined 9 conductors which were assigned numbers N-1 to N-9.

Conductors N-1 and N-2 are located on lines 0+00 and 4+00E respectively. They occur in the same places as conductor H-1 from the VLF-EM (Cutler) survey. The characteristics of conductor N-2 suggest a buried bedrock ridge. Conductor N-1 is indicative of changes in conductivity between rock types and may be associated with the north-east trending Ghostmount Fault.

Conductor N-2 was detected on lines 36+00E and 40+00E. The conductor occurs north of a long north-west trending outcrop of andesite. The conductor could be caused by this outcrop. Conductor N-2 also shows characteristics of being caused by a buried bedrock valley on line 36+00E and could be the result of the two influences.

Conductors N-4, 6, 7 and 8 are probably caused by the outcrop ridges that occur on their respective lines.

Conductor N-5 is of interest because the eastern part is associated with a small magnetic high and the western end on line 68+00E is associated with a sharp northern extension of a magnetic low. This

conductor could be associated with a small mafic intrusive at the east end as well as a fault contact at the west end.

Conductor N-9 is associated with the bedrock overburden interface of a large outcrop area south of the claim block.

9.0 CONCLUSIONS:

The survey located 9 possible VLF-EM conductors. Conductor N-1 located on line 0+00 in claim L598641 and conductor N-5 located on lines 68+00E and 72+00E in claim L598645 are of possible interest. Conductor N-1 is located on the possible extension of the Ghostmount Fault which has scattered gold values reported along the strike length. Conductor N-5 is associated with a possible north-east striking fault as well as a possible small mafic intrusive. These conductors are the only conductors not associated with buried bedrock topography or outcrop ridges. These conductors warrant further geophysical work and/or diamond drilling to test for gold mineralization.

Peter G. Atherton B.Sc.

Peter G. Atherton B.Sc.

H.E. Neal & Associates Ltd.

CERTIFICATE

I, Peter G. Atherton of 5425 Croydon Road, Burlington, Ontario, do hereby certify:

- 1) That I graduated from Brock University in 1975 and have practised my profession since that time.
- 2) That I have no interest directly or indirectly nor do I expect to have any interest in the properties held by H. E. Neal.
- 3) My report is based on personal examination of the property and supervision of the surveys being conducted on the property.

Toronto, Ontario

November, 1982

Peter G. Atherton B.Sc.

Peter G. Atherton B.Sc.



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

2.52



32D12SE9347 2.5284 HOLLOWAY

#384

File # 598637

The Mining

900

Type of Survey(s) _____

Claim Holder(s) H.E. NEAL Prospector's Licence No. A 445.3

Address 410 H.E. NEAL ASSOC. LTD. 55 QUEEN ST. E. TORONTO, ONTARIO

Survey Company H.E. NEAL ASSOC. LTD. Date of Survey (from & to) 25 03 82 to 11 08 82 Total Miles of line Cut _____

Name and Address of Author (of Geo-Technical report) PETER ATHERTON 76 H.E. NEAL ASSOC. LTD. 55 QUEEN ST. E. SUITE 606 TORONTO ONT. M5C 1R6

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	
	- Other	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits	Electromagnetic	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
L	598637				
	598638				
	598639				
	598640				
	598641				
	598642				
	598643				
	598644				
	598645				
	598646				

RECEIVED
NOV 19 1982
MINING LANDS SECTION

LARDELL LAKES MINING DIV.
RECEIVED
NOV 14 1982
AM 7 18 19 10 11 12 1 2 3 4 5 6 PM

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. 10

For Office Use Only

Total Days Cr. Recorded 300 Date Recorded NOV 12 1982 Mining Recorder _____

Date Approved as Recorded 83.07.20

Date Nov 12 1982 Recorded Holder or Agent (Signature) Peter Atherton

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/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying _____

Date Certified _____ Certified by (Signature) _____

1/6/83

Mining Lands Comments

To: Geophysics *W.A. Barlow*

Comments

<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date <i>Feb 28/83</i>	Signature <i>W.A. Barlow</i>
--	---	-----------------------	------------------------------

To: Geology - Expenditures

Comments

<input type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date	Signature
-----------------------------------	---	------	-----------

To: Geochemistry

Comments

<input type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date	Signature
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To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

384

1982 12 29

2.5284

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

We have received reports and maps for a Geophysical
(Electromagnetic) Survey submitted under special Provisions
(credit for Performance and Coverage) on mining claims
L 598637 et al in the Township of Holloway.

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

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

DW:sc

cc: H.E. Neal & Associates
Toronto, Ontario
Attn: Peter G. Atherton.



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) VLF-EM
Township or Area Holloway Township
Claim Holder(s) H.E. Neal

Survey Company H.E. Neal & Associates Ltd.
Author of Report Peter G. Atherton
Address of Author c/o H.E. Neal & Associates Ltd.
606-55 Queen St. East, Toronto, Ont.
Covering Dates of Survey March 25, 1982 November 8, 1982
(linecutting to office)
Total Miles of Line Cut _____

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

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

DATE: November 8, 1982 SIGNATURE: *Peter G. Atherton*
Author of Report or Agent

Res. Geol. _____ Qualifications 2.3665

<u>Previous Surveys</u>			
File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED List numerically	
L	598637
(prefix) L	(number) 598638
L	598639
L	598640
L	598641
L	598642
L	598643
L	598644
L	598645
L	598646
TOTAL CLAIMS <u> 10 </u>	

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 905 Number of Readings 905
Station interval 50 feet Line spacing 400 feet
Profile scale 1" 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 VLF-EM
Coil configuration 2 coils 1 vertical 1 horizontal
Coil separation NA
Accuracy Resolution +/-1%
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency NLK Seattle Washington 24.8 KHz
Parameters measured Inphase and Quadrature

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 _____

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 _____

H. E. NEAL & ASSOCIATES LTD.

Mineral Consultants

604
Ste. 607, 55 Queen Street East, Toronto, Canada M5C 1R6 Telephone: (416) 368-0166

November 17, 1982

Mr. E. F. Anderson
Director
Lands Management Branch
Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3

Dear Sir:

Enclosed please find the following property reports submitted for assessment work credits by H. E. Neal & Associates Ltd. on behalf of Mr. H.E. Neal.

2 copies - Report on VLF-EM (Seattle) Survey performed on 101 Claim Group, Holloway Township, Larder Lake Mining Division, Matheson Area, Ontario (2 VLF-EM maps - scale 1" to 200' accompany each report).

Respectfully submitted,

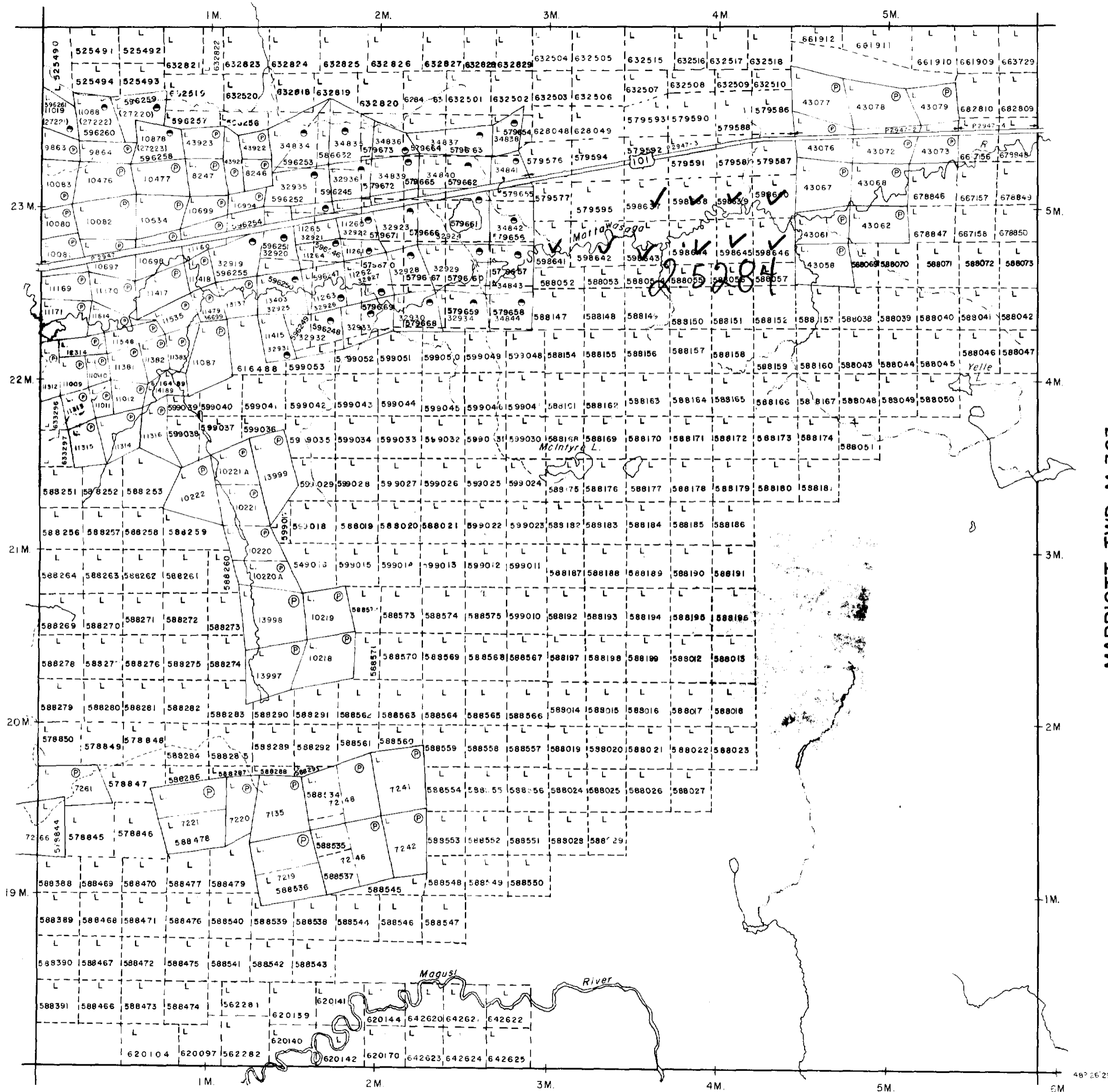
Peter G. Atherton B.Sc.

Peter G. Atherton B.Sc.
H. E. Neal & Associates Ltd.

FRECHEVILLE TWP. M.348

NOTES

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



DATE OF ISSUE
 JUL 12 1983
 Ministry of Natural Resources
 TORONTO

LEGEND

- PATENTED LAND (P or ●)
 - PATENTED FOR SURFACE RIGHTS ONLY (●)
 - LEASE (L)
 - LICENSE OF OCCUPATION (L.O.)
 - CROWN LAND SALES (C.S.)
 - LOCATED LAND (Loc.)
 - CANCELLED (C.)
 - MINING RIGHTS ONLY (M.R.O.)
 - SURFACE RIGHTS ONLY (S.R.O.)
 - HIGHWAY & ROUTE NO. (17)
 - ROADS (—)
 - TRAILS (---)
 - RAILWAYS (—+—)
 - POWER LINES (—+—+—)
 - MARSH OR MUSKIEG (—+—+—)
 - MINES (X)
- * Used only with summer resort locations or when space is limited

TOWNSHIP OF
HOLLOWAY
 DISTRICT OF
 COCHRANE
 LARDER LAKE
 MINING DIVISION
 SCALE : 1 INCH = 40 CHAINS (1/2 MILE)

DR. K.K.I. PLANNED **M.356**
 DATE: MARCH 72

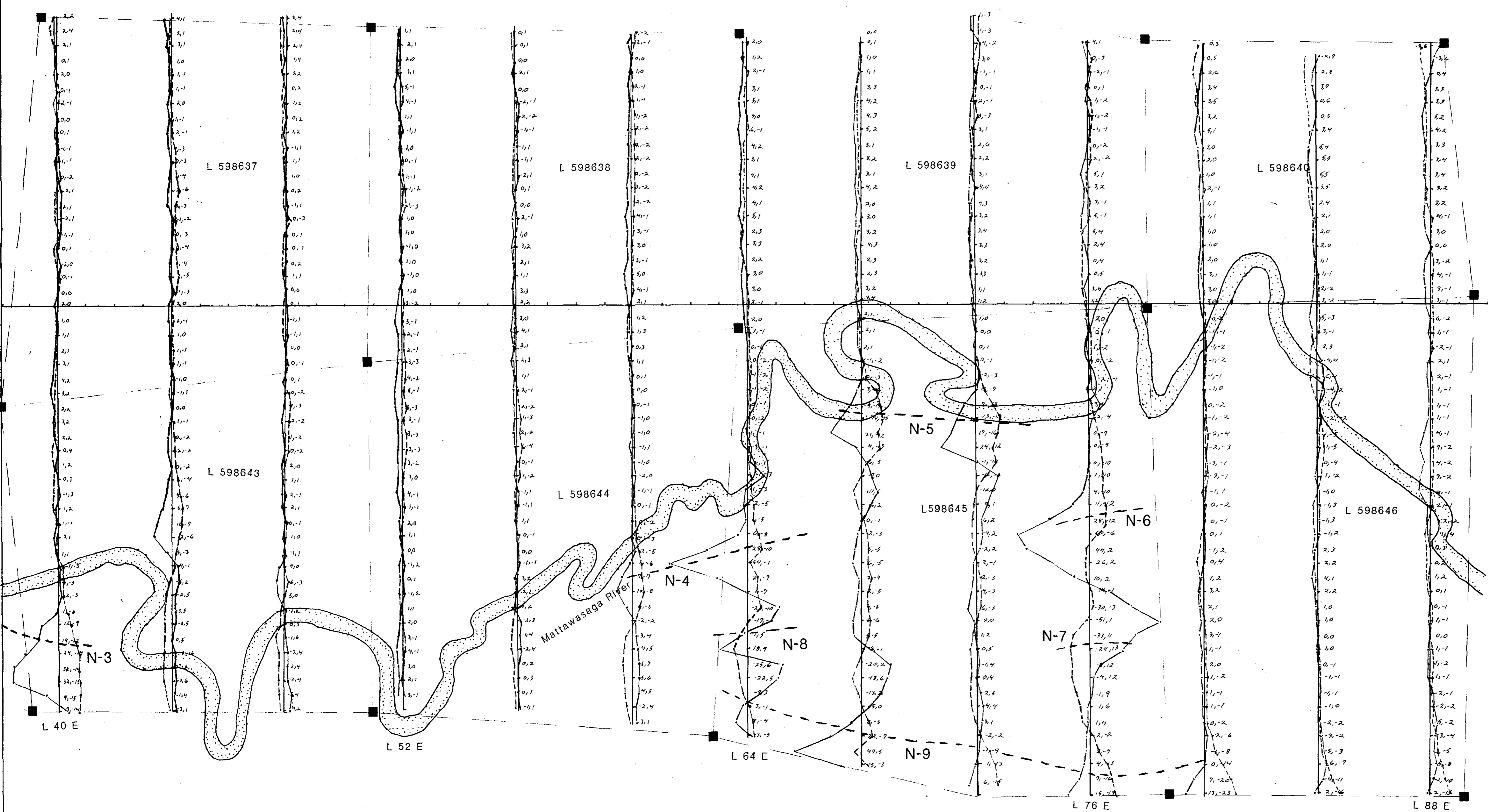
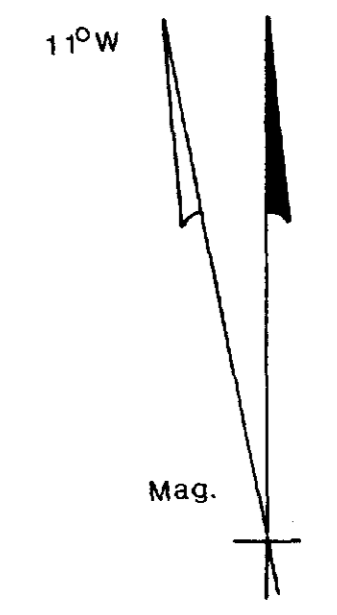
HARKER TWP. M. 353

MARRIOTT TWP. M. 363

TANNAHILL TWP. M. 390



HIGHWAY #101



SYMBOLS

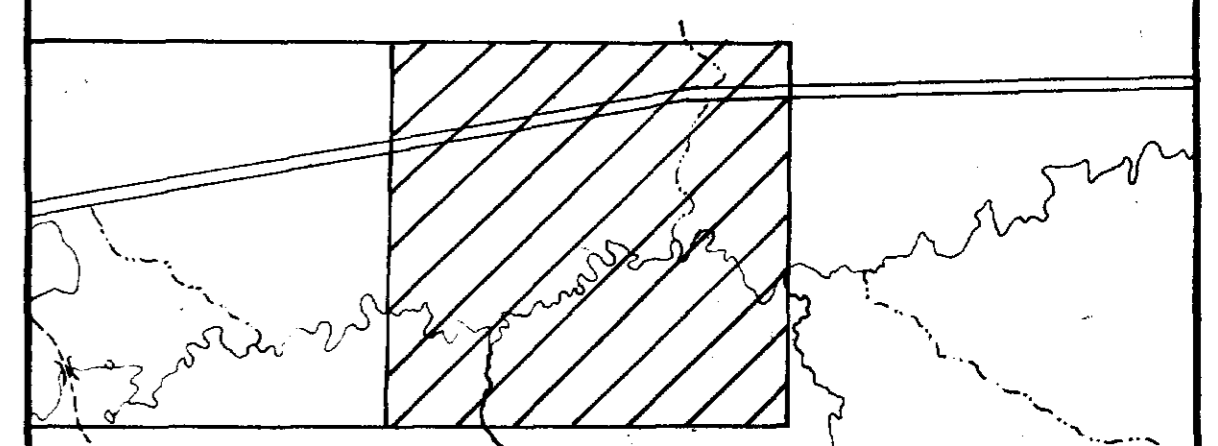
- In-phase
- - - Quadrature
- Vertical Scale: 1 inch = 40%

INSTRUMENT

GEONICS EM16 VLF-EM
 STATION: NLK Seattle, Washington
 Frequency 24.8 kHz

VLF CONDUCTOR: - - -

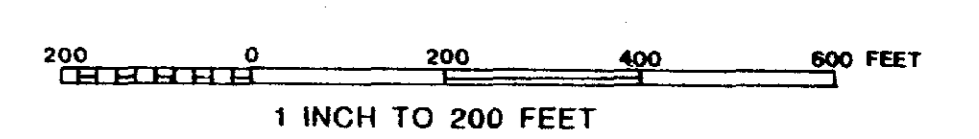
KEY MAP



Bob G. Gehlert B.Sc.

**101 GROUP
 OF
 H.E. NEAL
 SEATTLE
 GROUND VLF - EM SURVEY**

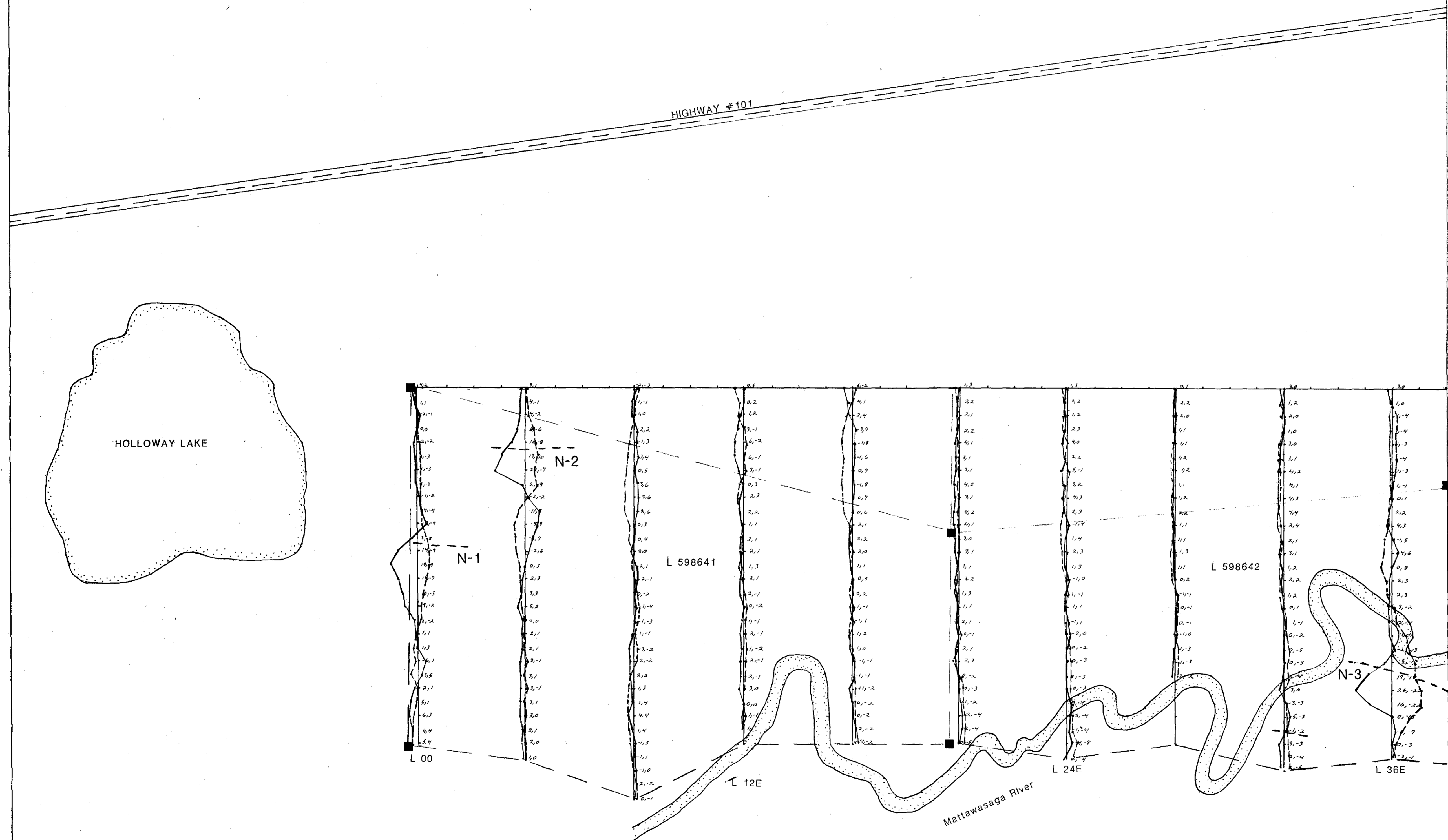
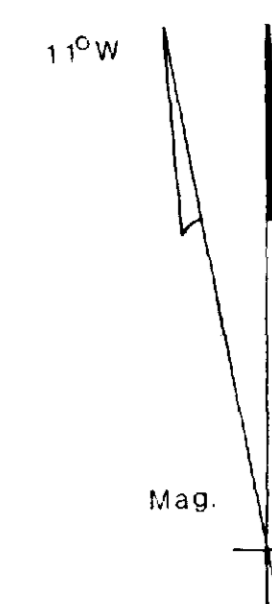
LOT CONC.
 HOLLOWAY TOWNSHIP
 DISTRICT OF COCHRANE



H.E. NEAL & ASSOCIATES LTD.
 TORONTO CANADA

DRAWN BY: P.G.A. DRAWING No. 82-04-08 DATE: OCTOBER 1982
 APPROVED BY: H.E.N.





SYMBOLS

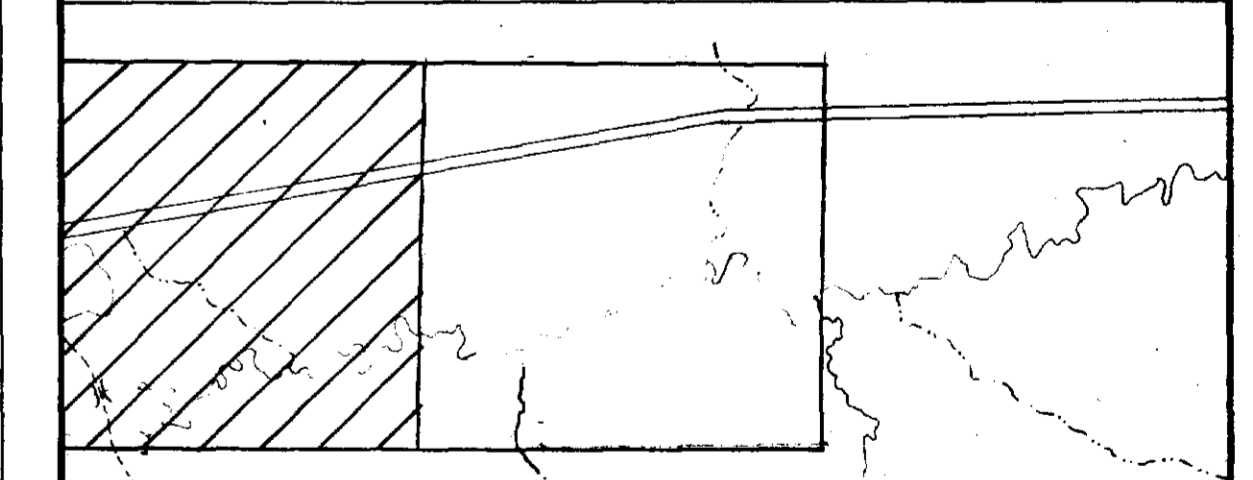
- In-phase
- Quadrature
- Vertical Scale: 1 inch = 240'

INSTRUMENT

GEONICS EM16 VLF-EM
 STATION: NLK Seattle, Washington
 Frequency 24.8 kHz

VLF CONDUCTOR: ---

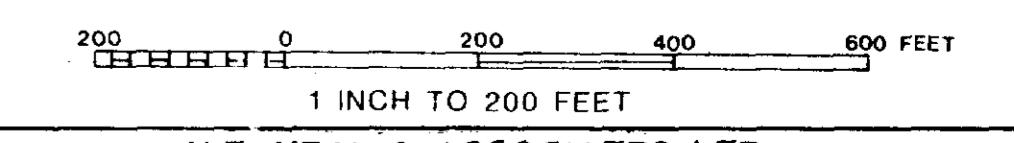
KEY MAP



Pete G. Smith B.Sc.

**101 GROUP
 OF
 H.E. NEAL
 SEATTLE
 GROUND VLF - EM SURVEY**

LOT CONG.
 HOLLOWAY TOWNSHIP
 DISTRICT OF COCHRANE



H.E. NEAL & ASSOCIATES LTD.
 TORONTO CANADA

DRAWN BY: P.G.A. DRAWING No. 82-04-07 DATE: OCTOBER 1982
 APPROVED BY: H.E.N.

