

20045W0007 2.9116 MCVITTIE

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REPORT ON

VLF-EM SURVEY

GAUTHIER AND MCVITTIE TOWNSHIPS, ONTARIO

by

R.A. MacGregor, P. Eng.

May 7, 1986

RECEIVED

MAY, 1 & 1986

MINING LANDS SECTION

I. INTRODUCTION

A VLF-EM survey was carried out over cut lines on a group of claims in Gauthier and McVittie Townships, Ontario. The results are shown on the plans in the back pocket.

II. LOCATION, ACCESS AND OWNERSHIP

The claims are located in the south-east part of Gauthier township along the east boundary with one claim in McVittie Township. There are eight claims numbered L736729 to 736732; L821910 and L821927 to 821928 recorded in the name of Lucien Lacasse, Box 231, Larder Lake, Ontario and L760496 recorded in the name of Daniel Lacasse, Larder Lake, Ontario.

Access to the property is by a road from Highway 66 about two miles west of Larder Lake which runs north along the east side of the Misema River crossing the one claim in McVittie Township. Acess to the claims in Gauthier Township is obtained by crossing the river from this road.

III. PREVIOUS EXPLORATION

A number of pits and trenches were noted on the claims attesting to previous work. This work includes two old small size shafts or deep pits. Most of this work appears quite old, and there are no known records of it. Some diamond drilling and geophysical work is recorded for the northerly claims in the assessment files.

PAGE NO. 2

IV. TOPOGRAPHY

The property consists of low rocky rises with swampy and drift covered areas between. The most easterly claims consists of a high gravel ridge on the east side of the Misema River. The swampy and drift covered areas are covered by black spruce, black ash and poplar, while the higher areas are covered by white spruce, hazel bushes and scrubby poplars.

V. SURVEY PROCEDURE

Lines were cut along the boundary lines of the claims, chained and picketed at 100-foot intervals. Lines were then run every 400 feet east and west and flagged.

A VLF-EM survey was carried out using a Phoenix VLF-2 instrument set to the signal from Annapolis, Maryland (21.4 KHz). Readings were taken at 100-foot intervals using the procedure outlined in Appendix 1. The looping method was used for control of variation. In this method a base station is selected, and readings taken along lines describing a loop, arriving back at the starting base station in less than two hours. A second loop is then started using either the same base station or another which is tied to the previous loop. Readings are then corrected for diurnal variation by assuming the time between readings is the same and distributing any variation equally among the intervening readings. No correction was applied less than the accuracy of the base station readings.

VI. GEOLOGY

McVittie Township was previously mapped by Jas. E. Thomson and a geological map published as Map No. 50 b.

Geology (Continued)

The general geology of Gauthier Township has been described by J.E. Thomson and Q.T. Griffis and published as Map No. 50 c. both by the Ontario Department of Mines. These maps show the claims underlain by sediments and volcanics of the Temiskaming Series.

The south claims are underlain by fine grained sediments and the north claims by trachyte.

The fine grained sediments consist almost entirely of greywacke, with several conglomerate bands. It is intruded by diabase dykes in two places. Outcrop is sparce with much of the claims covered by swamp. The greywacke is sheared and contains much crenulated bedding. It also contains inclusions of narrow beds of trachytic material.

The trachyte is pinkish in colour and brecciated in a number of places. A grab sample of trachyte breccia just west of the Misema River containing no visible mineralization was slightly anomalous in gold (160 ppb - check 130 ppb).

The Misema River Fault is projected to follow approximately along the Misema River and would approximately follow the Township line.

Two old shafts or deep pits were located on the south claims, but grab samples did not show any anomalous gold. The dumps showed greywacke with highly crenulated bedding and narrow bands or inclusions of trachytic material. Some quartz was noted in the most easterly shaft. A narrow quartz vein had also

Geology (Continued)

previously been trenched on the east shore of a small dried-up pond in the south-east part of the claims. A few quartz stringers were also noted in the trachytes.

VII. DISCUSSION OF RESULTS

The only significant cross-over on the claims runs from the south-west corner of claim L760496 to the central part of claim L736729. It is in a low lying area believed underlain by sediments. It is unexplained but may represent a fault or shear zone. It should be further tested by soil sampling or a more detailed geophysical method.

Respectfully submitted

Mag

May 7, 1986

Robert A. MacGregor, P. Eng.

R. A. MACGREGOR, P.ENG.

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PAGE NO.

CERTIFICATE

I, Robert A. MacGregor, certify:

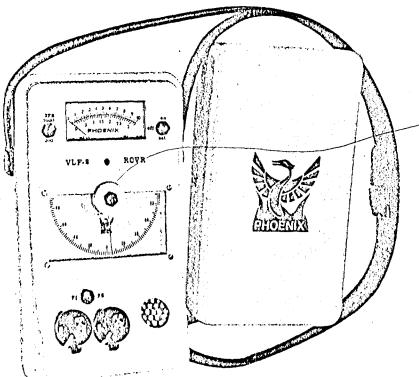
- 1. I am a Mining Engineer residing at 134 Palace Drive, Sault Ste. Marie, Ontario. I have worked as a mining engineer and geologist for the past 20 years.
- 2. I am a member of the Association of Professional Engineers of the Province of Ontario and a member of the Canadian Institute of Mining and Metallurgy.
- 3. I attended Queen's University for two years in the Mining-Geology course.
 - I personally supervised the field work covered by this report.

qor

Electromagnetic Unit



- Lightweight, low battery drain, rugged, simple to operate
- Two independent channels
- Each channel may select any station between 14.0 and 29.9 kHz
- Single crystal used for all frequencies
- Locking clinometer provides tilt-angle memory
- Superheterodyne detection and digital filtering provide extremely high selectivity and noise rejection





Military and time standard VLF transmitters are distributed over the world. These stations are used for geophysical EM surveying thus eliminating the need for a local transmitter and permitting one-man operation.

To ensure that a station excites the prospective conductor, two stations at approximately right angles are used during a survey (see data on back).

The choice of 160 frequencies in the range 14.0 to 29.9 kHz permits the use of a local EM transmitter when no suitable regular VLF station is available.



PHOENIX GEOPHYSICS LIMITED

Geophysical Consulting and Contracting, Instrument Manufacture, Sale and Lease.

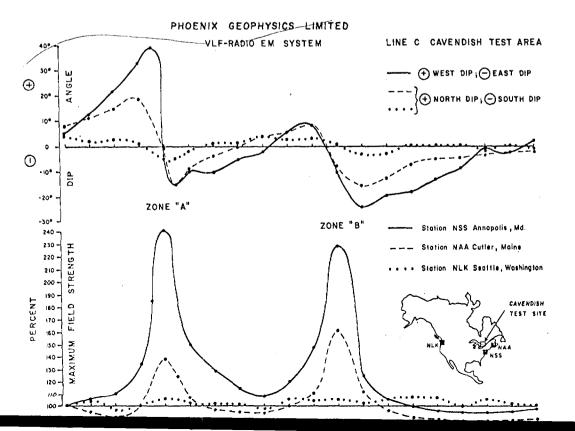
Head Office: 200 Yorkland Blvd. Willowdale, Ont., Canada, M2J 1R6. Tel: (416) 493-6350 1424 - 355 Burrard St. Vancouver, B.C., Canada, V6C 2G8. Tel: (604) 684-2285

Specifications

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Parameter	;	Orientation and magnitude of the major and minor axes of the ellipse of polarization.	19		
Frequency Selection, Front Panel	:	Dual channel, front panel selectable (F1 or F2) each with independent precision 10-turn dial gain control.			
Frequency Selection, Internal	:	F1 and F2 can be selected by internal switches within the range 14.0 to 29.9 kHz in 100 Hz increments.	All of the established stati be selected, or alternat local VLF transmitter may	ively, c	
Detection And Filtering		Superheterodyne detection and digital filtering provide a much narrower bandwidth and thus greater rejection of interfering stations and 60 cycle noise than conventional	which transmits at any freque in the range 14.0 to 29.9 kH		
		receivers.	VLF Station Fre	quency	
Motor Dio-low				(kHz)	
Meter Display	:	2 ranges: 0 to 300 or 0 to 1000. Background is typically set at 100, Meter is also used as dip angle null indicator and battery test,	Bordeaux, France Odessa (Black Sea)	15.1	
Audio	:	Crystal speaker, 2500 Hz used as null indicator,	Rugby, U.K. Moscow, U.S.S.R.	16.0 17.1	
			Yosamai, Japan	17,4	
Clinometer	;	+90°, +0.5° resolution. Normal locking, push button release.	Hegaland, Norway	17.6	
•		release,	Cutler, Maine Seattle, Washington	17,8 18,6	
Battery	:	One standard 9v transistor rodio battery. Average life	Malabar, Java	19.0	
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		expectancy - i to a manna (barrery brain to a mity	Paris, France	20.7	
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		· · · ·	Buenos Aires, Argentina	23,6	
Weight	:	850 grams (1.9 pounds).	Rome, Italy	27.2	

Field Data

The results below illustrate the need for using two orthogonal stations when the strike of the prospective conductor is not well-known. The dip angle and amplitude data measured using station NLK in Seattle, Washington, show only a very weak anomaly associated with the two conductive sulphide zones at Cavendish, Ontario. The results obtained using Cutler, Maine reveal a more prominent anomaly, but the best response was obtained using Annapolis, Maryland since the station lies almost due south and the transmitted electromagnetic field is thus maximum-coupled with the North-South trending conductors.



File No 2.9/16

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Mining Lands Section

Control Sheet

TYPE OF SURVEN SO THYSICAL

_____ GEOLOGICAL

GEOCHEMICAL

_____ EXPENDITURE

MINING LANDS COMMENTS:

p. Hunt

Signature of Assessor

June 5/80

Date

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May 22, 1986

File: 2.9116

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

Dear Madam:

He received reports and maps on May 14, 1986 for a Geophysical (Electromagnetic) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims L 736729, et al, in the Townships of Gauthier and McVittie.

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

We do not have a copy of the report of work which is normally filed with your office prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

J.C. Smith, Supervisor Mining Lands Section

Whitney Block, 6th Floor Queen's Park Toronto, Ontario M7A 1W3

Telephone: (416) 965-4888

AB/mc

cc: Lucien Lacasse Dobie, Ontario POK 1BO Daniel Lacasse Larder Lake, Ont. POK 1LO R.A. MacGregor 134 Palace Drive Sault Ste. Marie, Ontario P6B 5H7



Geophysical-Geological-Geochemical Technical Data Statement

File_

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	Gauthian	& McVittie Twp	MINING CLARKET AND ADD					
Claim Holder(s)	Lucien La	Casse		MINING CLAIMS TRAVERSED List numerically				
	Daniel La	Casse		_				
Survey Company_	Colex Exp	loration Inc.		L 736729				
Author of Report	R.A. Maco	regor		(prefix) (number) 736730				
Address of Author		e Dr., S.S. Ma		736731				
Covering Dates of	Survey 22/04/	'86 - May 7/86 (linecutting to office)						
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OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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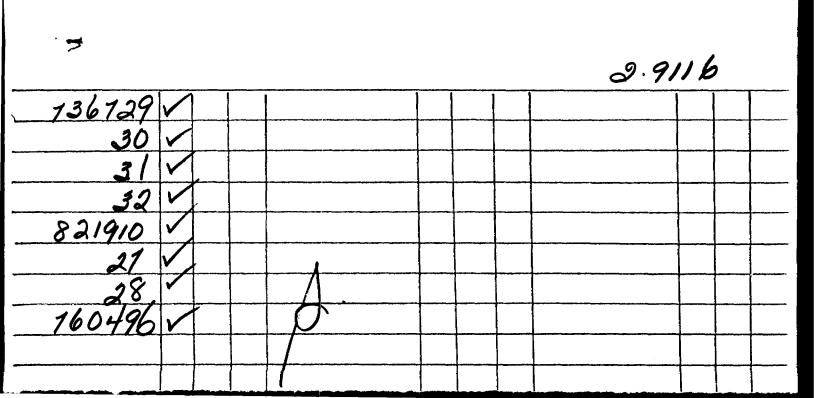
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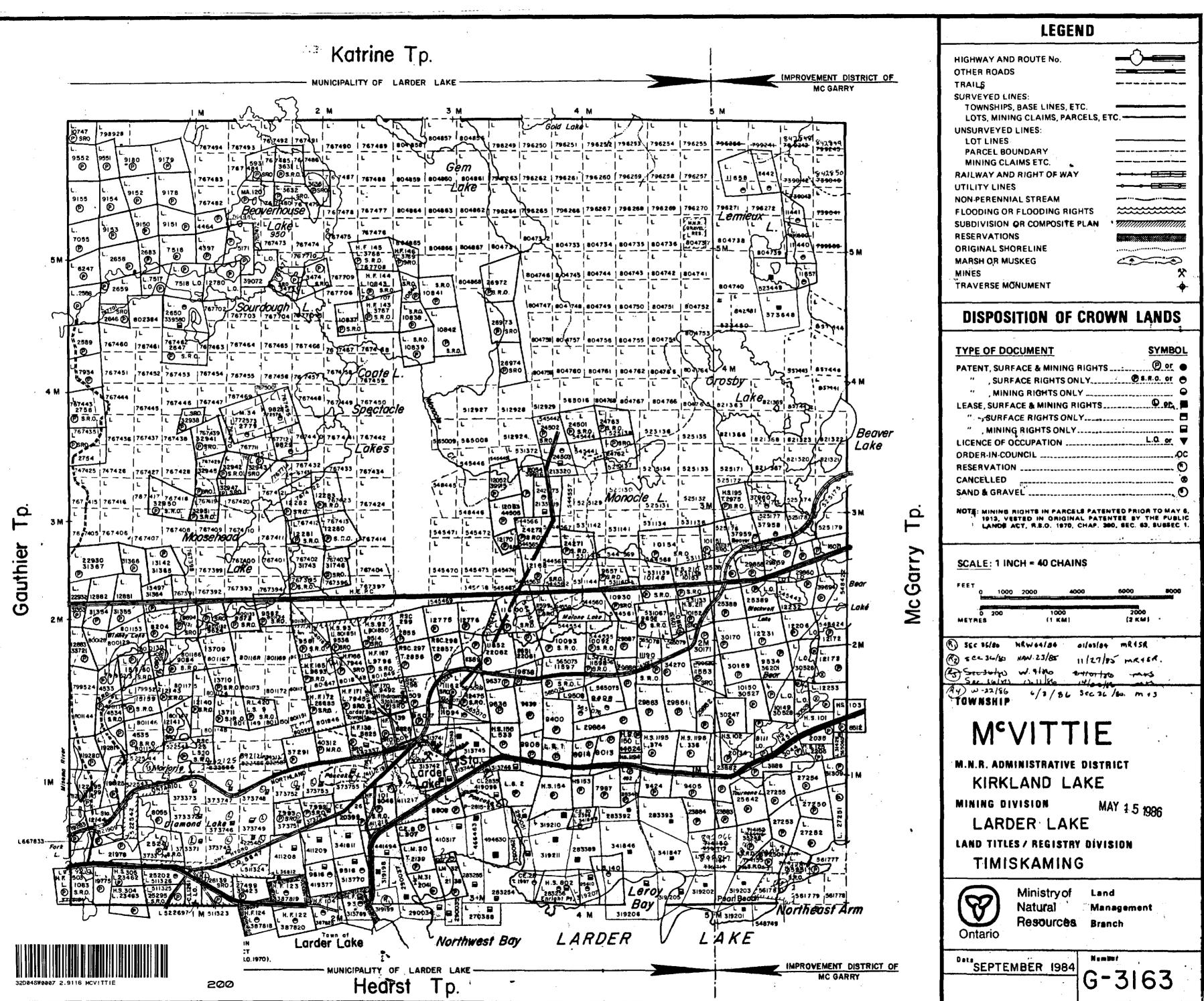
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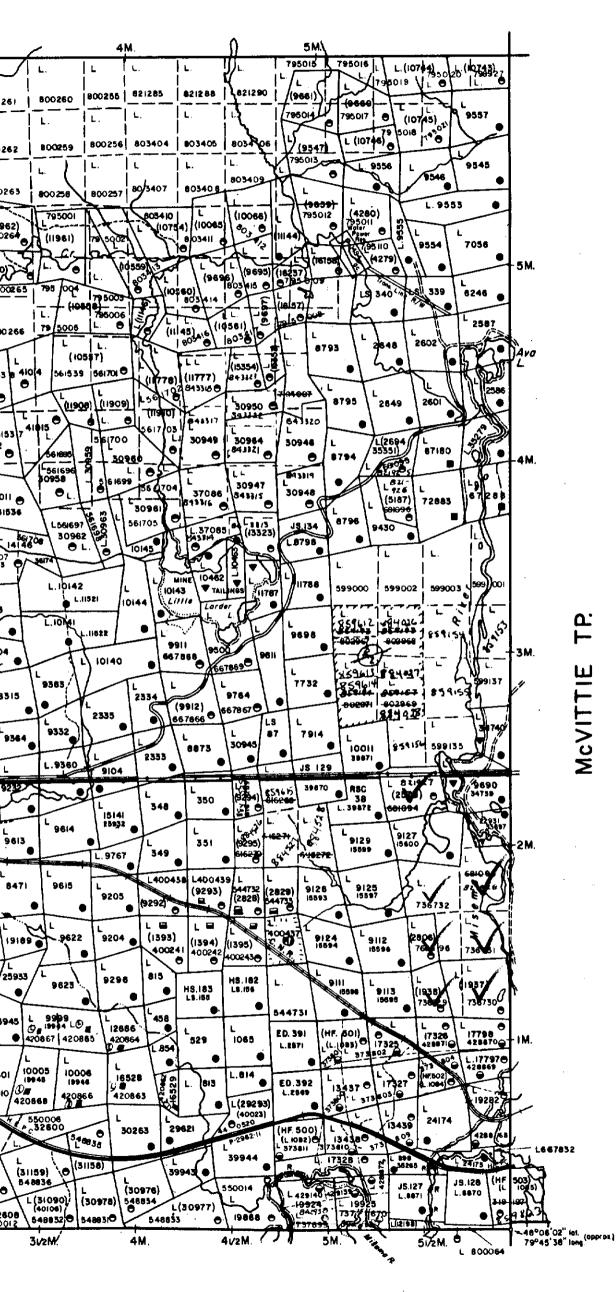








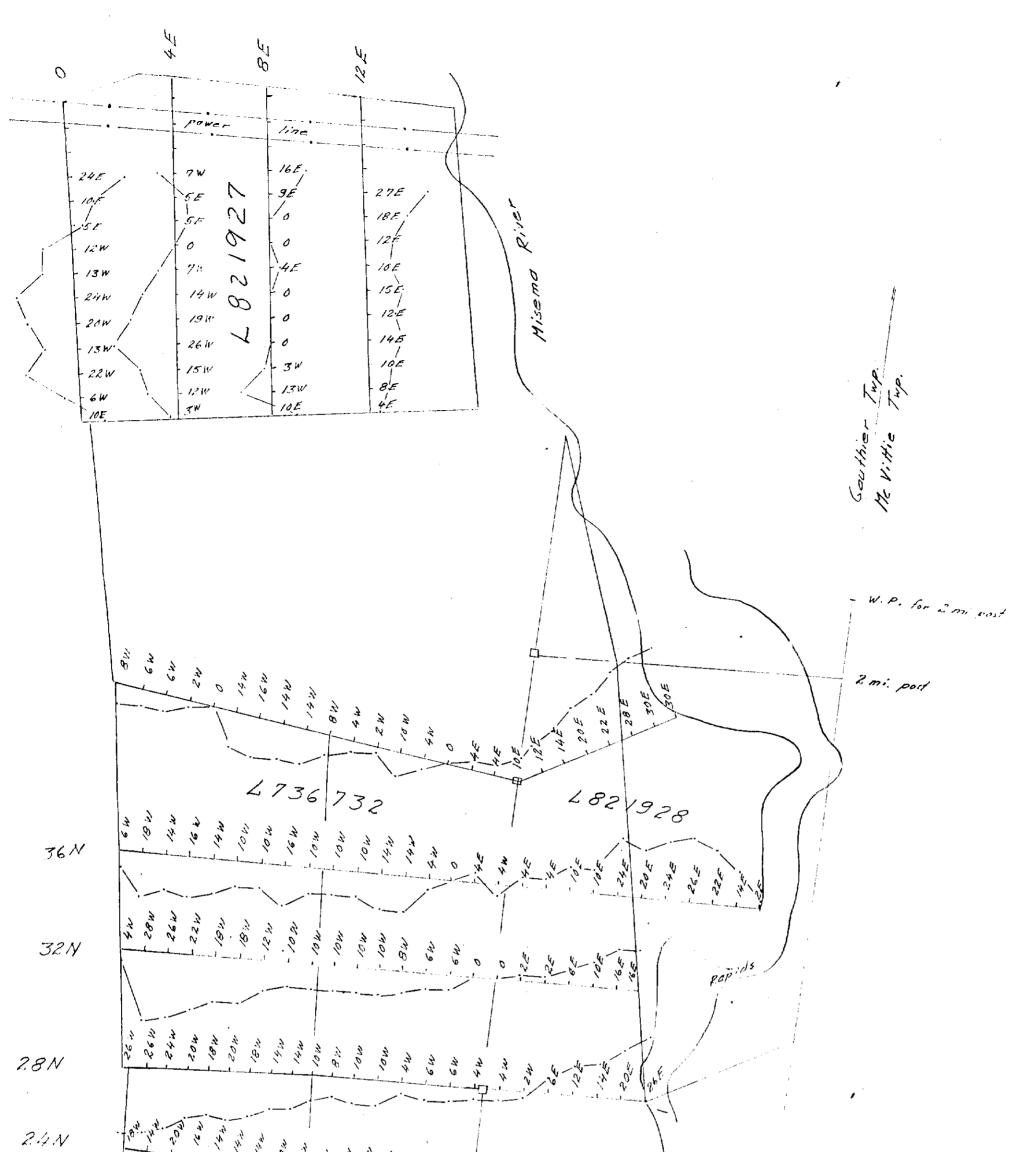
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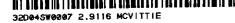
HIGHWAY AND ROUTE No. OTHER ROADS -TRAILS _____ SURVEYED LINES: TOWNSHIPS, BASE LINES, ETC. LOTS, MINING CLAIMS, PARCELS, ETC. UNSURVEYED LINES: LOT LINES PARCEL BOUNDARY MINING CLAIMS ETC. -----RAILWAY AND RIGHT OF WAY • - E . UTILITY LINES NON-PERENNIAL STREAM FLOODING OR FLOODING RIGHTS SUBDIVISION OR COMPOSITE PLAN RESERVATIONS ORIGINAL SHORELINE MARSH OR MUSKEG MINES × TRAVERSE MONUMENT **DISPOSITION OF CROWN LANDS** TYPE OF DOCUMENT SYMBOL PATENT, SURFACE & MINING RIGHTS " . SURFACE RIGHTS ONLY_____ • MINING RIGHTS ONLY LEASE, SURFACE & MINING RIGHTS. " , SURFACE RIGHTS ONLY. " MINING RIGHTS ONLY. LICENCE OF OCCUPATION ORDER-IN-COUNCIL . OC RESERVATION . 🕑 CANCELLED - CD SAND & GRAVEL NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6. 1813, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 300, SEC. 53, SUBSEC 1. SCALE: 1 INCH = 40 CHAINS FEET 0 1000 2000 6000 4000 8000 2000 1000 [1.KM] 0 200 METRES (2 KM) TOWNSHIP GAUTHIER M.N.R. ADMINISTRATIVE DISTRICT KIRKLAND LAKE MINING DIVISION LARDER LAKE LAND TITLES / REGISTRY DIVISION TIMISKAMING Ministry of Land (V) Natural Management Resources Branch Ontario Number Date JANUARY, 1985 G-3

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JUN 1 3 1986

REPORT ON

VLF-EM SURVEY

GAUTHIER AND MCVITTIE TOWNSHIPS, ONTARIO

by

R.A. MacGregor, P. Eng.

May 7, 1986

RECEIVED

MAY 1 4 1986

MINING LANDS SECTION

I. INTRODUCTION

A VLF-EM survey was carried out over cut lines on a group of claims in Gauthier and McVittie Townships, Ontario. The results are shown on the plans in the back pocket.

II. LOCATION, ACCESS AND OWNERSHIP

The claims are located in the south-east part of Gauthier township along the east boundary with one claim in McVittie Township. There are eight claims numbered L736729 to 736732; L821910 and L821927 to 821928 recorded in the name of Lucien Lacasse, Box 231, Larder Lake, Ontario and L760496 recorded in the name of Daniel Lacasse, Larder Lake, Ontario.

Access to the property is by a road from Highway 66 about two miles west of Larder Lake which runs north along the east side of the Misema River crossing the one claim in McVittie Township. Acess to the claims in Gauthier Township is obtained by crossing the river from this road.

III. PREVIOUS EXPLORATION

A number of pits and trenches were noted on the claims attesting to previous work. This work includes two old small size shafts or deep pits. Most of this work appears quite old, and there are no known records of it. Some diamond drilling and geophysical work is recorded for the northerly claims in the assessment files.

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PAGE NO. 2

IV. TOPOGRAPHY

The property consists of low rocky rises with swampy and drift covered areas between. The most easterly claims consists of a high gravel ridge on the east side of the Misema River. The swampy and drift covered areas are covered by black spruce, black ash and poplar, while the higher areas are covered by white spruce, hazel bushes and scrubby poplars.

V. SURVEY PROCEDURE

Lines were cut along the boundary lines of the claims, chained and picketed at 100-foot intervals. Lines were then run every 400 feet east and west and flagged.

A VLF-EM survey was carried out using a Phoenix VLF-2 instrument set to the signal from Annapolis, Maryland (21.4 KHz). Readings were taken at 100-foot intervals using the procedure outlined in Appendix 1. The looping method was used for control of variation. In this method a base station is selected, and readings taken along lines describing a loop, arriving back at the starting base station in less than two hours. A second loop is then started using either the same base station or another which is tied to the previous loop. Readings are then corrected for diurnal variation by assuming the time between readings is the same and distributing any variation equally among the intervening readings. No correction was applied less than the accuracy of the base station readings. KIRKLAND LAKE

VI. GEOLOGY

McVittie Township was previously mapped by JUN 1 3 1986 Jas. E. Thomson and a geological map published as Map No. 50 b.

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PAGE NO. 3

Geology (Continued)

The general geology of Gauthier Township has been described by J.E. Thomson and Q.T. Griffis and published as Map No. 50 c. both by the Ontario Department of Mines. These maps show the claims underlain by sediments and volcanics of the Temiskaming Series.

The south claims are underlain by fine grained sediments and the north claims by trachyte.

The fine grained sediments consist almost entirely of greywacke, with several conglomerate bands. It is intruded by diabase dykes in two places. Outcrop is sparce with much of the claims covered by swamp. The greywacke is sheared and contains much crenulated bedding. It also contains inclusions of narrow beds of trachytic material.

The trachyte is pinkish in colour and brecciated in a number of places. A grab sample of trachyte breccia just west of the Misema River containing no visible mineralization was slightly anomalous in gold (160 ppb - check 130 ppb).

The Misema River Fault is projected to follow approximately along the Misema River and would approximately follow the Township line.

Two old shafts or deep pits were located on the south claims, but grab samples did not show any anomalous gold. The dumps showed greywacke with highly crenulated bedding and narrow bands or inclusions of trachytic material. Some quartz was noted MINISTRY OF NORTHERN in the most easterly shaft. A narrow quartz vein had also GEOLOGIST OFFICE

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Geology (Continued)

previously been trenched on the east shore of a small dried-up pond in the south-east part of the claims. A few quartz stringers were also noted in the trachytes.

VII. DISCUSSION OF RESULTS

The only significant cross-over on the claims runs from the south-west corner of claim L760496 to the central part of claim L736729. It is in a low lying area believed underlain by sediments. It is unexplained but may represent a fault or shear zone. It should be further tested by soil sampling or a more detailed geophysical method.

Respectfully submitted

Robert A. MacGregor, P. Eng.

May 7, 1986

MING. EVELOP **KUPNDLAKE**

R. A. MACGREGOR, P.ENG.

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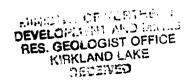
PAGE NO.

CERTIFICATE

- I, Robert A. MacGregor, certify:
- 1. I am a Mining Engineer residing at 134 Palace Drive, Sault Ste. Marie, Ontario. I have worked as a mining engineer and geologist for the past 20 years.
- 2. I am a member of the Association of Professional Engineers of the Province of Ontario and a member of the Canadian Institute of Mining and Metallurgy.
- 3. I attended Queen's University for two years in the Mining-Geology course.
 - I personally supervised the field work covered by this report.

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JUN 1 7 1886

Electromagnetic Unit

- Lightweight, low battery drain, rugged, simple to operate
- Two independent channels

- Each channel may select any station between 14.0 and 29.9 kHz
- Single crystal used for all frequencies
- Locking clinometer provides tilt-angle memory
- Superheterodyne detection and digital filtering provide extremely high selectivity and noise rejection



Military and time standard VLF transmitters are distributed over the world. These stations are used for geophysical EM surveying thus eliminating the need for a local transmitter and permitting one-man operation.

To ensure that a station excites the prospective conductor, two stations at approximately right angles are used during a survey (see data on back).

The choice of 160 frequencies in the range 14.0 OPMENT OF MINES 29.9 kHz permits the use of a local EM trans-GEOLOGIST CERODITET when no suitable regular VLF station is XIRKLAND LAKE available.

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PHOENIX GEOPHYSICS LIMITED

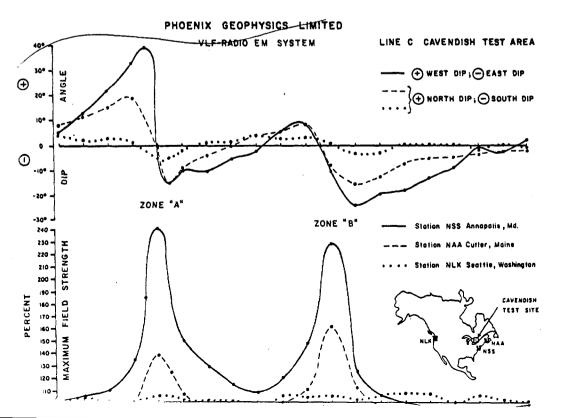
Geophysical Consulting and Contracting, Instrument Manufacture, Sale and Lease.

Head Office: 200 Yorkland Blvd. Willowdale, Ont., Canada, M2J 1R6. Tel: (416) 493-6350

Specifications			MISH	TRY OF NORTHESN SIMMENT AND MINE	l S	_
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Frequency Selection, Internal	:	F1 and F2 can be selected by internal switches within the range 14.0 to 29.9 kHz in 100 Hz increments.		All of the established to be selected, or alte local VLF transmitter (rnative	ly, a
Detection And Filtering	:	Superheterodyne detection and digital filtering provide a much narrower bandwidth and thus greater rejection of interfering stations and 60 cycle noise than conventional	•.	which controls at on in the	v raqu .9 k	
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Audio	:	Crystal speaker, 2500 Hz used as null indicator.		Rugby, U.K. Moscow, U.S.S.R.		16.0 17.1
Clinometer	:	\pm 90°, \pm 0.5° resolution. Normal locking, push button release.		Yasamai, Japan H egaland, Norway Cutler, Maine		17.4 17.6 17.8
Battery	:	One standard 9v transistor radio battery. Average life expectancy - 1 to 3 months (battery drain is 3 mA)		Seattle, Washington Malabar, Java Oxford, U.K.		18.6 19.0 19.6
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Field Data

The results below illustrate the need for using two orthogonal stations when the strike of the prospective conductor is not well-known. The dip angle and amplitude data measured using station NLK in Seattle, Washington, show only a very weak anomaly associated with the two conductive sulphide zones at Cavendish, Ontario. The results obtained using Cutler, Maine reveal a more prominent anomaly, but the best response was obtained using Annapolis, Maryland since the station lies almost due south and the transmitted electromagnetic field is thus maximum-coupled with the North-South trending conductors.



GEOPHYSICAL TECHNICAL DATA

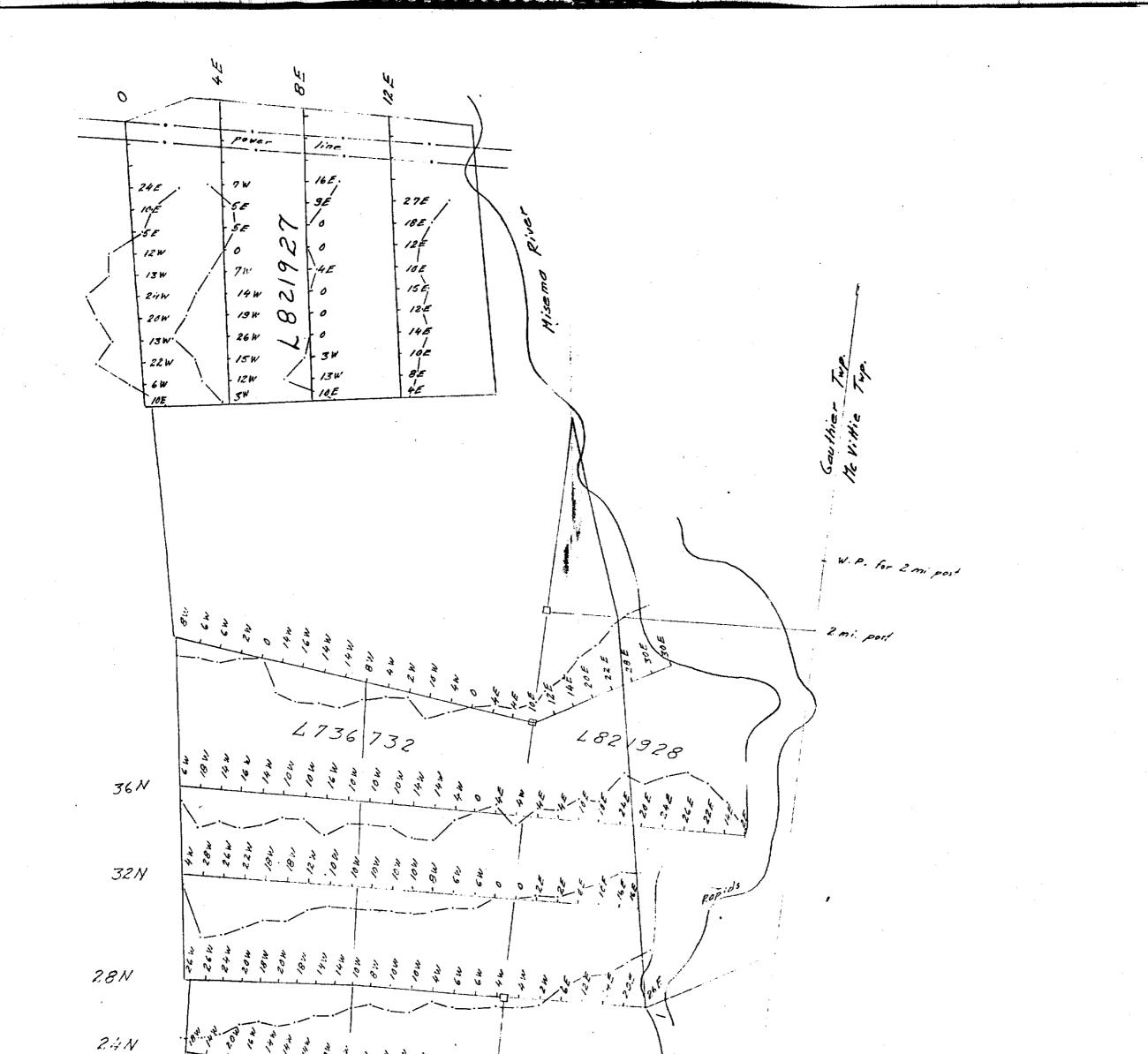
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