



42H03SW0009 2.7970 LENNOX

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### REPORT OF A VERTICAL GRADIENT MAGNETOMETER SURVEY

### CARRIED OUT OVER

THE

CHEVRON MINERALS LTD PROPERTY

# RECEIVED

LENNOX TOWNSHIP

# APR U († **1985**

PORCUPINE MINING DIVISION

MINING LANDS SECTION

BY

STEWART L. FUMERTON CHEVRON CANADA RESOURCES LIMITED 167B WILSON AVENUE TIMMINS, ONTARIO

APRIL 12, 1985



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INTRODUCTION LOCATION AND ACCESS PROPERTY SURVEY STATISTICS GEOLOGY EXPLORATION WORK VERTICAL GRADIENT SURVEY CONCLUSIONS BREAKDOWN OF GEOPHYSICAL COVERAGE CERTIFICATION

#### 1. RODUCTION

An Airborne Vertical Gradient Magnetic Survey was carried out over parts of nine townships in the fall of 1983 including part of Lennox Township in which 4 claims held by Chevron Minerals Ltd are situated. Flight lines were flown in a northeast direction nominally 200m apart with double control lines flown in a northwesterly direction 4km apart.

#### LOCATION

The property is located some 50km north of Timmins, Ontario. Ground access is possible only in winter via disused winter roads extending from Camp 40 and hence highway 655. Summer access is only practical via helicopter.

#### PROPERTY

The property consists of 4 unpatented mining claims in one block (fig 1) which are recorded in the name of Chevron Minerals Ltd. These are:

P750413
750436
750437
750438

#### SURVEY STATISTICS

This Vertical Gradient Magnetic survey in conjunction with a high resolution total field magnetic survey was flown by Kenting Barth Sciences Limited for Chevron Minerals between 27th of October 1983 and 7th November 1983.

A total of 2418.1km of line were flown with two Varian Cesium Vapour Magnetometers both with a sensitivity of 0.005nT mounted on a Piper Navajo. These magnetometers are separated by 1.83m vertically and the difference in the recorded values on the magnetometers gives the vertical gradient or a very close approximation to it. This difference was recorded. During the course of the survey readings were made every  $\frac{1}{4}$  second which translates to about every 18m on the ground.

Flight line control was achieved using a 35mm strip camera with fiducial points plotted on a 1:20 000 uncontrolled photo mosaic. Mean terrain clearance was 150m.

#### GEOLOGY

The underlying geology of these claims largely deduced from this survey and the limited lithological control available for this area consists of a sequence of metavolcanics trending 120°. These include tholeiitic mafic metavolcanics with some intercalated intermediate tuffs and water lain tuffs plus some metasedimentary units.



ikm

2Km

#### LAPLORATION WORK

Work to date on these claims has consisted of airborne work, firstly an Input Mk VI and aeromagnetic survey was flown by Questor for Chevron in November 1983 and this work has already been submitted for assessment. Secondly the same area was flown by Kenting using high resolution magnetometers to produce the Vertical Gradient survey reported here.

### VERTICAL GRADIENT SURVEY

The greater resolution of this survey shows that there is a main magnetic trend bearing 120° (fig 2) and a minor break in this trend and the break trends northeast.

#### CONCLUSIONS

This survey has been of considerable importance in the re-interpretation of the bedrock geology in this northwestern part of the Abitibi Greenstone Belt.



### LEGEND

Traverse interval : 200 m Control line interval : 4 Km

 FIG 2
 VERTICAL GRADIENT MAGNETOMETER SURVEY
 0.5 gammas/metre

 WEST CENTRAL PART OF LENNOX TOWNSHIP
 0.1 gammas/metre

 1:20 000
 (1 gammas/metre)

 I gammas/metre
 (1 gammas/metre)

 Flight altitude:
 150m above ground level

### BREAKDOWN OF GEOPHYSICAL COVERAGE

CLAIM	APPROX.	Km of	CONTINUOUS	RECORDING
750413			.74	
750436			.78	
750437			1.54	
750438			.83	
			<u> </u>	
			3.89 days=	96 days

<del>-</del> .

#### CERTIFICATION

I, Ste	wart Fumerton of Timmins, Ontario certify that:
1)	I am a member in good standing of the Geological Association of Canada (FGAC).
2)	I am a geology graduate of the University of Witwat ersrand with a BSc (1972), BSc Hons (1973) and MSc (1975). I am also a geology graduate of the University of Saskatchewan with a PhD (1979).
3)	I have been practising my profession in Canada and South Africa continuously since 1973.
4)	The attached report is a product of:

- a) Report prepared by John Irvine of Kenting Barth Sciences Ltd for the whole survey.
- b) My work using the results of this survey plus other information sources.

Timmins, Ontario April 1985

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Stewart Fumerton

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Claim Holder(s)	· _				•		Pros	pector	's Licence No.		
CHEVRON MI	NERALS LTD							<u>T16</u>	590		
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Certification Verifying Report of Work											
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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 Su	rvey(s)	AIRBORNE	MAGNETIC VERTICAL	<u>GRADI</u> ENT	·
Township o	or Area]	LENNOX T	OWNSHIP		MINING CLAIMS TRAVERSED
Claim Hold	ler(s)(	CHEVRON	MINERALS LTD		List numerically
		1 <u>67B WIL</u>	SON AVE, TIMMINS,	ONT	
Survey Con	npany	KENTING	EARTH SCIENCES LTD	<u></u> ]	P. 750413
Author of l	Report	S.L. FUM	ERTON		(prefix) (number)
Address of	Author	1 <u>678 WIL</u>	SON_AVE, TIMMINS,	<u>ONTARI</u> O	
Covering D	ates of Surv	rey2	7/10/83 7/11/83 (linecutting to office)	<u> </u>	
Total Miles	of Line Cu	t		"	7504.38
SPECIAI CREDIT	. PROVISIO S REQUES	DNS TED	D/ Geophysical Per	AYS claim	
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line cutti	ng) for first		-Magnetometric		
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additiona	20 days for Il survey usi	each ng	-Other		
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AIRBORN	E CREDITS	Special provi	sion credits do not apply to airborne	surveys)	
Magnetome	eter <u>24</u>	Electromag	tays per claim)		
DATE:	3/4/8	S SIGN/	TURE: St. Fumer		
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**OFFICE USE ONLY** 

# SELF POTENTIAL

Overburden\_\_\_\_

Instrument	Range
Survey Method	
Corrections made	
RADIOMETRIC	
Instrument	
Values measured	
Energy windows (levels)	
Height of instrument	Background CountBackground Count
Size of detector	

# OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey	
Instrument	
Accuracy	
Parameters measured	
Additional information (for understanding results)	

(type, depth - include outcrop map)

# AIRBORNE SURVEYS

Type of survey(s)	AIRBORNE MAGNETIC VERTICAL GE	ADIENT
Instrument(s)	VARIAN CESIUM VAPOUR MAGNETON	IETERS
	(specify for each type of survey)	
Accuracy	<u>.005nT</u>	
-	(specify for each type of survey)	
Aircraft used	PIPER NAVAJO	
Sensor altitude	150m	
Navigation and flight p	ath recovery method Visual, 35mm	<u>strip camera</u>
		······
Aircraft altitude	150m	_Line Spacing 200m
Miles flown over total	area2418 km	_Over claims only3.89_km

File No 2.7970

Mining Lands Section

Control Sheet

 TYPE OF SURVEY
 \_\_\_\_\_ GEOPHYSICAL

 \_\_\_\_\_ GEOLOGICAL
 \_\_\_\_\_ GEOCHEMICAL

 \_\_\_\_\_ GEOCHEMICAL
 \_\_\_\_\_ EXPENDITURE

lat.

MINING LANDS COMMENTS:

LD

1.50

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Signature of Assessor

15 \$ 185

Date

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1985 04 16

Mining Recorder Ministry of Natural Resources 60 Wilson Avenue Timmins, Ontario P4N 2S7

Dear Sir:

We received reports and maps on April 9, 1985 for an Airborne Geophysical (Magnetometer) on Mining Claims P 750413, et al, in the Township of Lennox.

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.

S.E. Yundt Director Land Management Branch

Whitney Block, Room 6643 Queen's Park Toronto, Ontario M7A 1W3 Phone:(416)965-4888

A. Barr:mc

cc: Chevron Canada Resources Limited 167B Wilson Avenue Timmins, Ontario P4N 2T2 Attention: Stewart Fumerton



Chevron Canada Resources Limited Minerals Staff 167B Wilson Ave., Timmins, Ontario P4N 2T2 Phone (705) 264-2291

April 3, 1985

LAND MANAGEMENT BRANCH Ministry of Natural Resources Whitney Block, Room 6643 Queen's Park Toronto, Ontario M7A 1W3

Dear Sir/Madam;

Please find enclosed two copies of our Gradient Magnetometer survey over 4 claims held by Chevron in Lennox Township. Also enclosed are two copies of our Total Field Magnetometer survey over 4 claims held by Chevron in Aubin Township.

Yours faithfully,

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Stewart Fumerton Geologist

RECEIVED

AFR U 1 1985

MINING LANDS SECTION