REPORT ON
GEOPHYSICAL WORK

G-22
GODFREY TOWNSHIP

NTS: 42-A/5 PROJ #

FOR
FALCONBRIDGE LIMITED

NOVEMBER 2004

D. LONDRY
TIMMINS GEOPHYSICS LTD

SUMMARY AND RECOMMENDATIONS

Magnetic and HLEM surveys were carried out over the G- 22 property for Falconbridge Limited in June 2004.

The magnetic survey mapped a number of north-south striking diabase dikes. The HLEM survey detected one zone of very good conductivity which represents a good drill target. Four other zones detected in the survey have very poor conductivity and are most likely surficial.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF MAPS

1. Magnetic Results (BACK POCKET)
2. HLEM Results, 200 m Coil Separation, 222 Hz (BACK POCKET)
3. HLEM Results, 200 m Coil Separation, 444 Hz (BACK POCKET)
4. HLEM Results, 200 m Coil Separation, 1777 Hz (BACK POCKET)

INTRODUCTION

Magnetic and horizontal loop electromagnetic (HLEM) surveys were carried out on the G-22 property for Falconbridge Limited in June 2004. This work was part of an exploration program carried out on grids in Godfrey, Carscallen, Turnbull and Whitesides Townships.

The grid is located approximately 15 kilometres west of the city of Timmins (Figure 1(a)) in the southwest quadrant of Godfrey Township, Porcupine Mining Division. It was accessed by ATV along a bush road which runs north from the Mallette haulage road.

The G-22 grid covers part of one mining claim which is comprised of nine, 40 acre claim units (Table 1) in Lots 8 and 9, Concessions I and II (Figure 1(b)).

The magnetic survey was run by the author of this report and the HLEM survey was carried out by J.Derweduwen and B. Pigeon.

CLAIM #	# of UNITS	RECORDING DATE	RECORDED HOLDER	DESCRIPTION	TOWNSHIP
P 3010159	9	May 20, 2003	J. Huot	S1/2 Lot 9 Con II N1/2 of N1/2Lot 9 Con I W1/2 of S1/2 Lot 8 Con II NW1/4 N1/2 Lot 8 Con I	Godfrey

Table 1 : Property Description

GENERAL GEOLOGY

The geology of Godfrey Township, together with Turnbull Township, is presented on map P2330 (Middleton, 1976) at a scale of 1:31680 and on map P3396 at a scale of 1:50,000, as part of a study of the Kamiskotia area (Barrie, 2000). It is also presented more regionally on map 2205 at a scale of 1:253,440 (Pyke, 1973) and on map P3379 at a scale of 1:100,000 (Ayer etal, 1998).

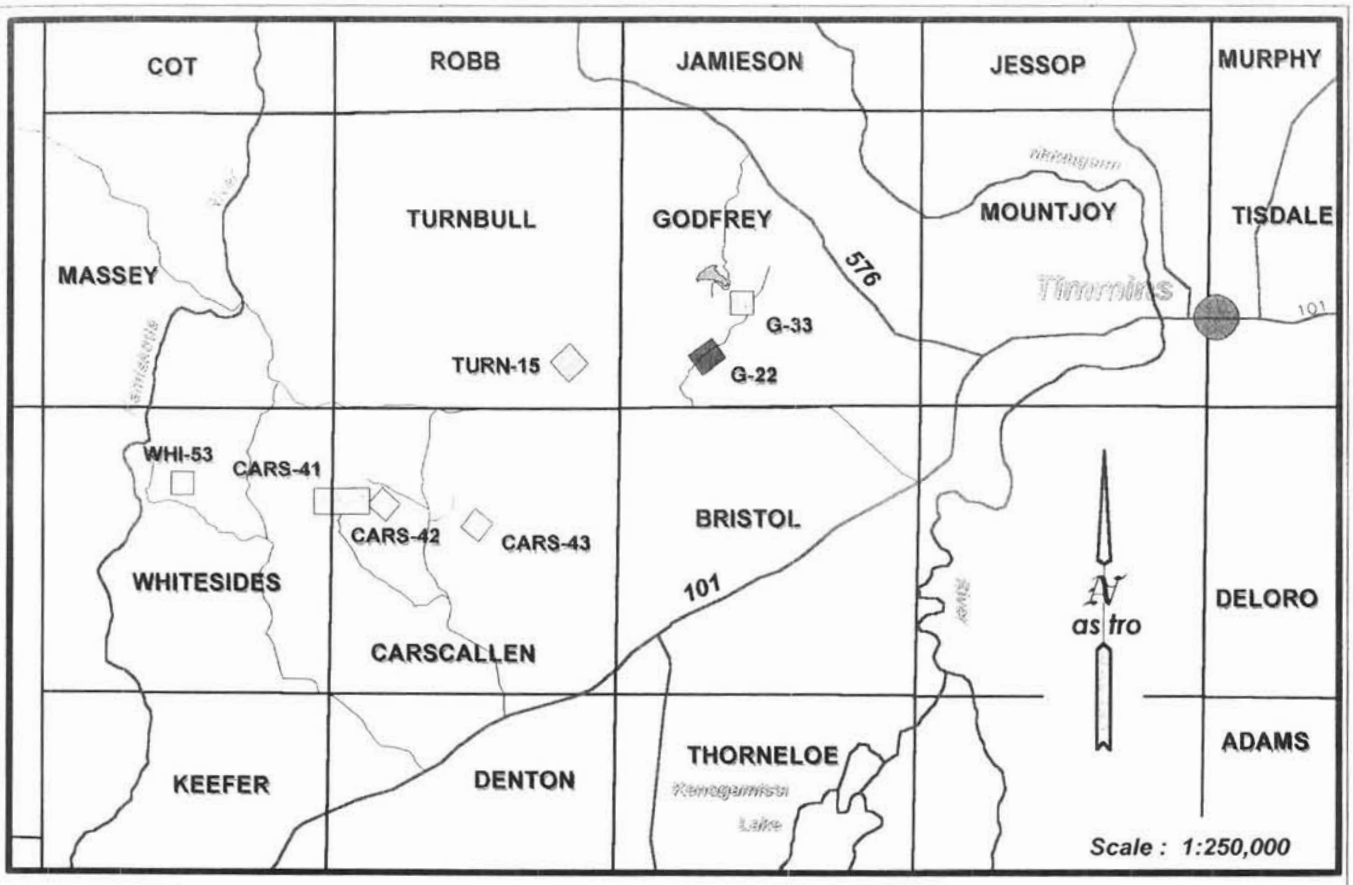


Figure 1(a) : Location Map

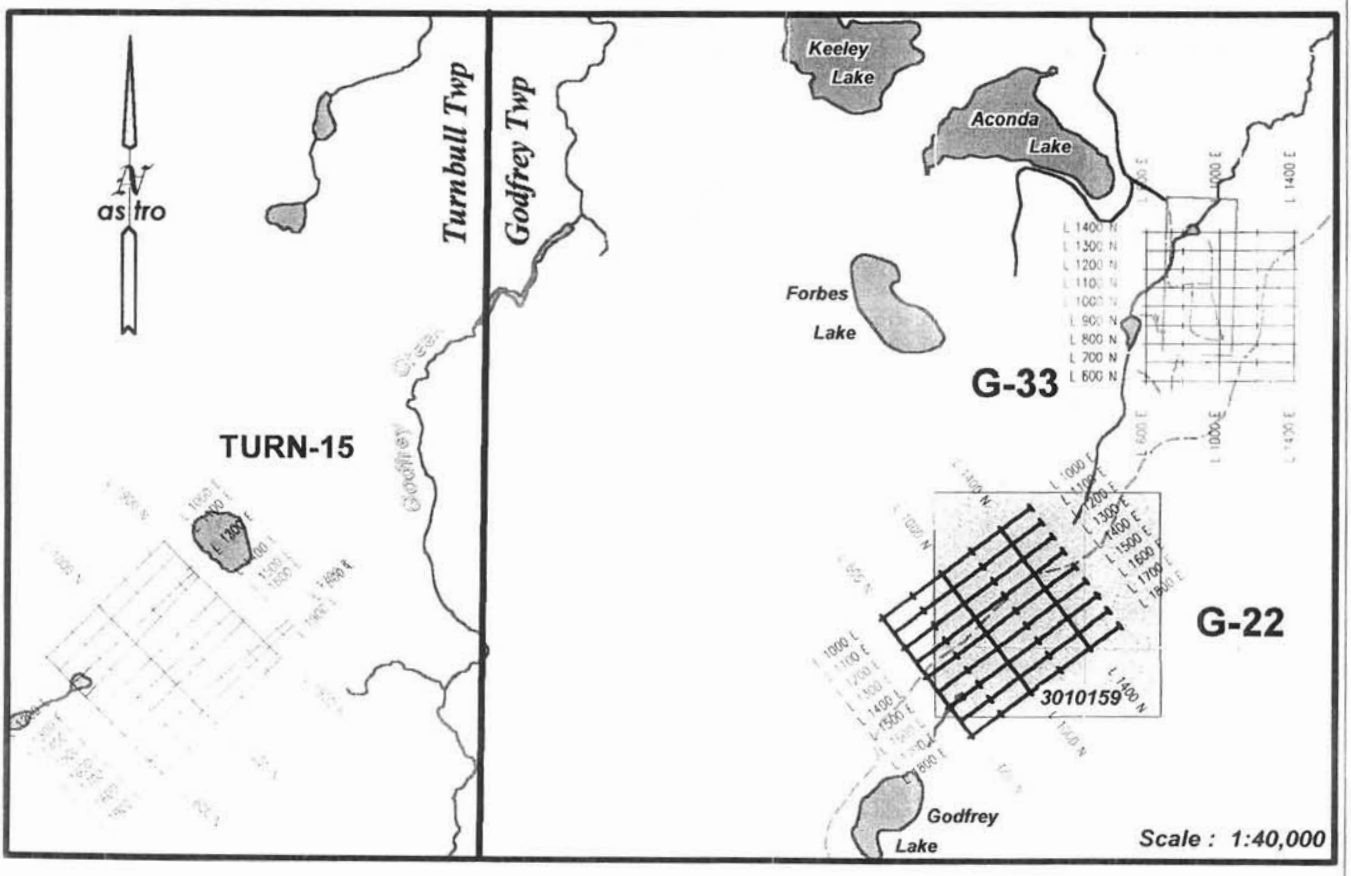


Figure 1(b) : Claim Map

Godfrey Township is underlain by mafic-ultramafic intrusions of the Kamiskotia Gabbroic Complex and surrounding mafic and felsic volcanics of the Kamiskotia Volcanic Complex. The Kam-Kotia, Jameland and Canadian Jamieson deposits are located within 13 kilometres to the north in Robb and Jamieson Townships. The Genex deposit is located within 1600 metres to the north of the God-22 grid.

The G-22 grid is underlain by northwest striking felsic and mafic volcanics which have been intruded by north to north northwest striking diabase dikes.

PREVIOUS WORK

The following is a description of previous exploration work carried out in the vicinity of the Godfrey 22 grid (Table 2).

In 1945, **Rual Porcupine Mines Limited** carried out a magnetic survey over 17 claims in southwest Godfrey Township, directly west of the present survey area. The vertical component of the earth's magnetic field was measured along grid lines spaced every 500 feet and oriented at N 45° E.

In 1964, **Magnet Consolidated Mines Limited** ran magnetic and VLEM surveys over 12 claims which covered most of the present survey area. The surveys were run on grid lines spaced every 300 feet and oriented northeast-southwest. The magnetic survey was run with a vertical component, fluxgate magnetometer.

In 1970, **Hollinger Mines Limited** carried out a magnetic survey over a large block directly to the south of the present survey area. The survey was conducted on grid lines spaced every 400 feet and oriented north-south in southwest Godfrey Township and east-west in northwest Bristol Township. The magnetic survey was run with a torsion wire magnetometer and fluxgate magnetometer.

YEAR	COMPANY	GEOPHYSICS	DRILL HOLES	AFRI FILE
1945	Rual Porcupine Mines Limited	Mag		42A050032
1964	Magnet Consolidated Mines Ltd	Mag,VLEM		42A05NE0026
1970	Hollinger Mines Ltd	Mag		42A05NE8433
1971	Tex-Sol Exploration	VLF		T-99
1974 1975	Conwest Exploration Company Ltd	Mag, Turam	DDH #1	42A05NE0113
1984	Kdd Creek Mines Ltd	Mag, HLEM, VLF		T-3085
1991	Falconbridge Limited	Mag, HLEM		T-3467

Table 2. Summary of previous assessment work.

In 1971, **Tex-Sol Exploration Ltd** carried out a very low frequency (VLF) electromagnetic survey over 15 contiguous claims in Concession II, Lots 7 to 10, inclusive. The survey was conducted on grid lines spaced every 400 feet and oriented northeast-southwest. Cutler Maine (17.8 kHz) was used as the transmitter station.

In 1974, **Conwest Exploration Company Limited** ran magnetic and Turam surveys over six claims which were centered to the northeast of the present survey area. The surveys were run on east-west grid lines spaced every 400 feet. The magnetic survey was run with a vertical component, fluxgate magnetometer. One hole, drilled to the northeast of the present survey area to test a Turam anomaly, intersected graphitic sediments.

In 1984, **Kidd Creek Mines Ltd** carried out magnetic, VLF and HLEM surveys over a block of 16 claims which included most of the present survey area. The grid on the property consisted of east-west lines spaced every 60 metres. The magnetic survey was run with a total field, proton precession magnetometer and the HLEM survey was run with a coil separation of 120 metres at frequencies of 444 and 1777 Hz. The transmitter station used in the VLF survey was Annapolis, Maryland which transmits at a

frequency of 21.4 kHz.

In 1991, **Falconbridge Limited** carried out magnetic and HLEM surveys over a block of 19 claims in Lots 8 and 9, Concessions I and II. Two grids were cut to cover the claims, one with lines spaced every 60 metres and oriented east-west, and the other with lines spaced every 50 metres and oriented N 45° E. The magnetic survey was run with a proton precession magnetometer and the HLEM survey was run with a coil separation of 200 metres at frequencies of 444 and 1777 Hz.

SURVEY DESCRIPTIONS

The grid on the Godfrey 22 property consists of lines oriented at 55°Az, spaced every 100 metres and picketed every 25 metres (Figure 1(b)).

The magnetic readings were taken every 12.5 metres with a Scintrex IGS-2/MP-4. This instrument is a proton precession magnetometer which measures the earth's total magnetic field to an accuracy of 0.1 nT. Diurnal variations were monitored every 10 seconds with a Scintrex MP-3 base station magnetometer, located off the grid. A total of 925 readings were taken along 11.4 kilometres of line.

The horizontal loop EM survey was carried out with the Apex Parametrics MaxMin I-5. This instrument measures the in-phase and quadrature components of the secondary field as a percentage of the primary field; the depth of penetration is approximately half of the coil separation. Readings were taken every 25 metres using a coil separation of 200 metres at frequencies of 222, 444 and 1777 Hertz. A total of 377 stations were sampled along 11.5 kilometres of line.

MAGNETIC RESULTS

The magnetic results are contoured every 25 nT on map 1 at a scale of 1:5000. They are also presented in Figure 2 at a scale of 1:10,000.

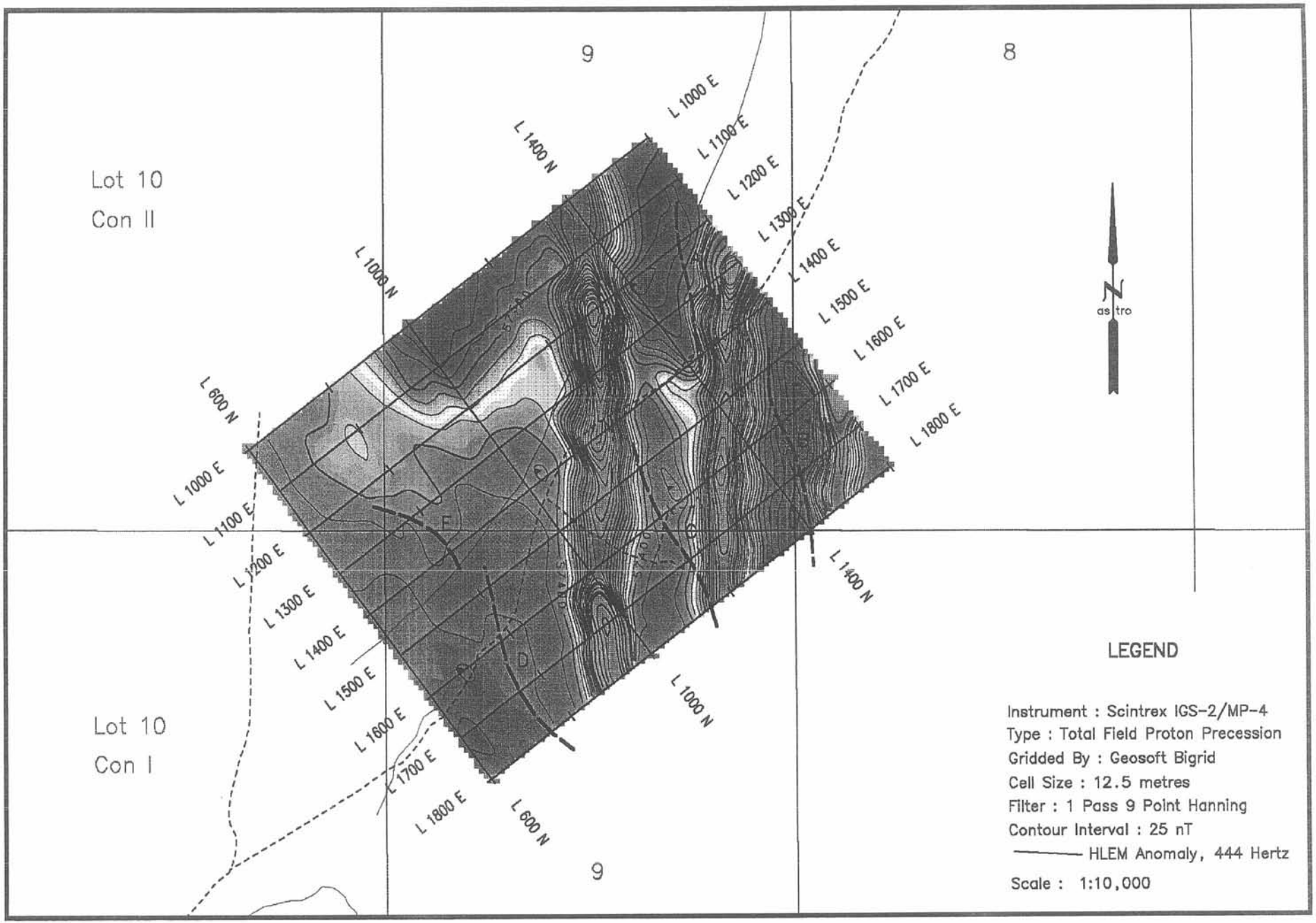


Figure 2 : Total Magnetic Field, G-22 Property

Three linear, high amplitude magnetic anomalies which strikes north-south through the east half of the survey area represent diabase dikes. The symmetry of the anomalies indicates a near vertical dip. The amplitude of the anomalies is up to 800 nT above background. A narrow, linear magnetic high anomaly strikes west northwest between 1400 North on Line 1500 East and approximately 1250 North on Line 1300 East. It strikes almost perpendicular to EM anomaly 'A' and may also represent a diabase dike between the two north-south striking dikes.

A broad area of high magnetic field, which may reflect mafic volcanics, extends from approximately 900 North to 1400 North along the west edge of the grid. The amplitude of the field in this area is up to 250 nT above background.

HLEM RESULTS

The results of the HLEM survey are profiled on maps 2, 3 and 4 at a scale of 1:5000; the profile scale used is 1 cm = 20 % for all of the frequencies. The 444 Hertz results are also presented in Figure 7 at a scale of 1:10,000.

Anomaly 'A' strikes north northwest between 1425 North on Line 1400 East and 1525 North on Line 1200 East. The source of the anomaly is good conductivity at a depth which ranges from 70 metres on Line 1300 East and 100 metres on Line 1200 East (Table 3). The width and dip can not be determined on Lines

LINE	ANOMALY CENTER	ANOMALY WIDTH (m)	IP (%)	Q (%)	DEPTH (m)	CONDUCTIVITY THICKNESS (mhos)	COMMENTS
1200 E	1525 N	?	4	3	100	17	
1300 E	1480 N	narrow	13	7	70	26	
1400 E	1425 N	?	3	3	80	10	

Table 3: Anomaly 'A' Interpretation, 444 Hz, 200 metre coil separation.

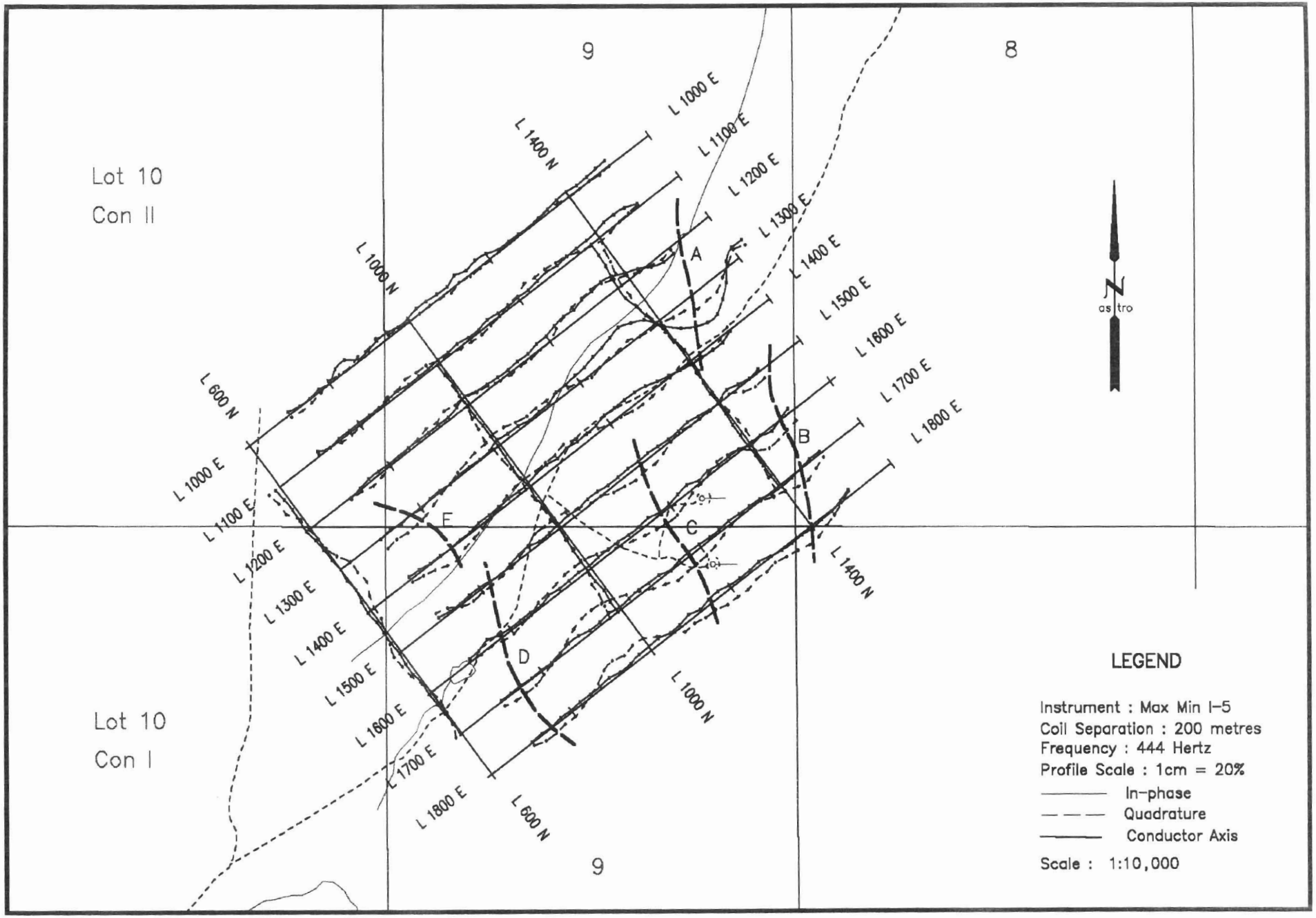


Figure 3 : HLEM Results, 444 Hertz, G-22 Property

1200 and 1400 East because the north end of the anomaly is incomplete. The source on Line 1300 East is a narrow zone which dips to the south.

Anomalies 'B', 'C', 'D' and 'E' are low amplitude, mainly quadrature responses along the east and south halves of the survey area. The source of these anomalies are narrow zones of very poor conductivity at a shallow depth (Tables 4 to 7). The poor conductivity and shallow depths suggest that the sources are surficial.

LINE	ANOMALY CENTER	ANOMALY WIDTH (m)	IP (%)	Q (%)	DEPTH (m)	CONDUCTIVITY THICKNESS (mhos)	COMMENTS
1500 E	1525 N	?	1	4	<20	1	
1600 E	1475 N	?	1	6	<20	1	
1700 E	1450 N	?	1	5	<20	1	
1800 E	1400 N	narrow	1	5	<20	1	

Table 4: Anomaly 'B' Interpretation, 444 Hz, 200 metre coil separation.

LINE	ANOMALY CENTER	ANOMALY WIDTH (m)	IP (%)	Q (%)	DEPTH (m)	CONDUCTIVITY THICKNESS (mhos)	COMMENTS
1500 E	1200 N	narrow	0	3	<20	<1	
1600 E	1175 N	narrow	0	4	<20	<1	
1700 E	1165 N	narrow	0	4	<20	<1	
1800 E	1150 N	narrow	0	4	<20	<1	

Table 5: Anomaly 'C' Interpretation, 444 Hz, 200 metre coil separation.

LINE	ANOMALY CENTER	ANOMALY WIDTH (m)	IP (%)	Q (%)	DEPTH (m)	CONDUCTIVITY THICKNESS (mhos)	COMMENTS
1500 E	825 N	narrow	1	2	20	1	
1600 E	775 N	?	1	2	20	1	
1700 E	740 N	?	1	3	20	1	
1800 E	750 N	?	1	3	20	1	

Table 6: Anomaly 'D' Interpretation, 444 Hz, 200 metre coil separation.

LINE	ANOMALY CENTER	ANOMALY WIDTH (m)	IP (%)	Q (%)	DEPTH (m)	CONDUCTIVITY THICKNESS (mhos)	COMMENTS
1300 E	775 N	?	1	5	<20	1	
1400 E	800 N	?	1	5	<20	1	

Table 7: Anomaly 'E' Interpretation, 444 Hz, 200 metre coil separation.

Nov. 27, 2004
Date

D. Londry
Timmins Geophysics Limited

REFERENCES

Ayer, J.A. and Trowell, N.F.
1998: Geological Compilation of the Timmins Area, Abitibi Greenstone Belt; Ontario Geological Survey, Preliminary **Map P.3379**, scale 1:100,000.

Barrie, C.T.
2000: Geology of the Kamiskotia area; Ontario Geological Survey, Preliminary **Map P.3396**, scale 1:50,000.

Middleton, R.S.
1976: Turnbull and Godfrey townships, District of Cochrane; Ontario Department of Mines, **Map2330,** scale 1:31680.

Ontario Geological Survey
1988: Airborne Electromagnetic and Total Intensity Survey, Timmins Area, **Godfrey Township**, Districts of Cochrane and Timiskaming Ontario; by Geoterrex Limited, for Ontario Geological Survey. Geophysical/Geochemical Series **Map 81077.** Scale 1:20,000. Survey and compilation from March 1987 to October 1987.

Pyke, D.R., Ayres, L.D. and Innes, D.
1973: Timmins-Kirkland Lake Sheet; Ontario Division of Mines, Geological Compilation Series, **Map 2205**, scale 1" = 4 miles.

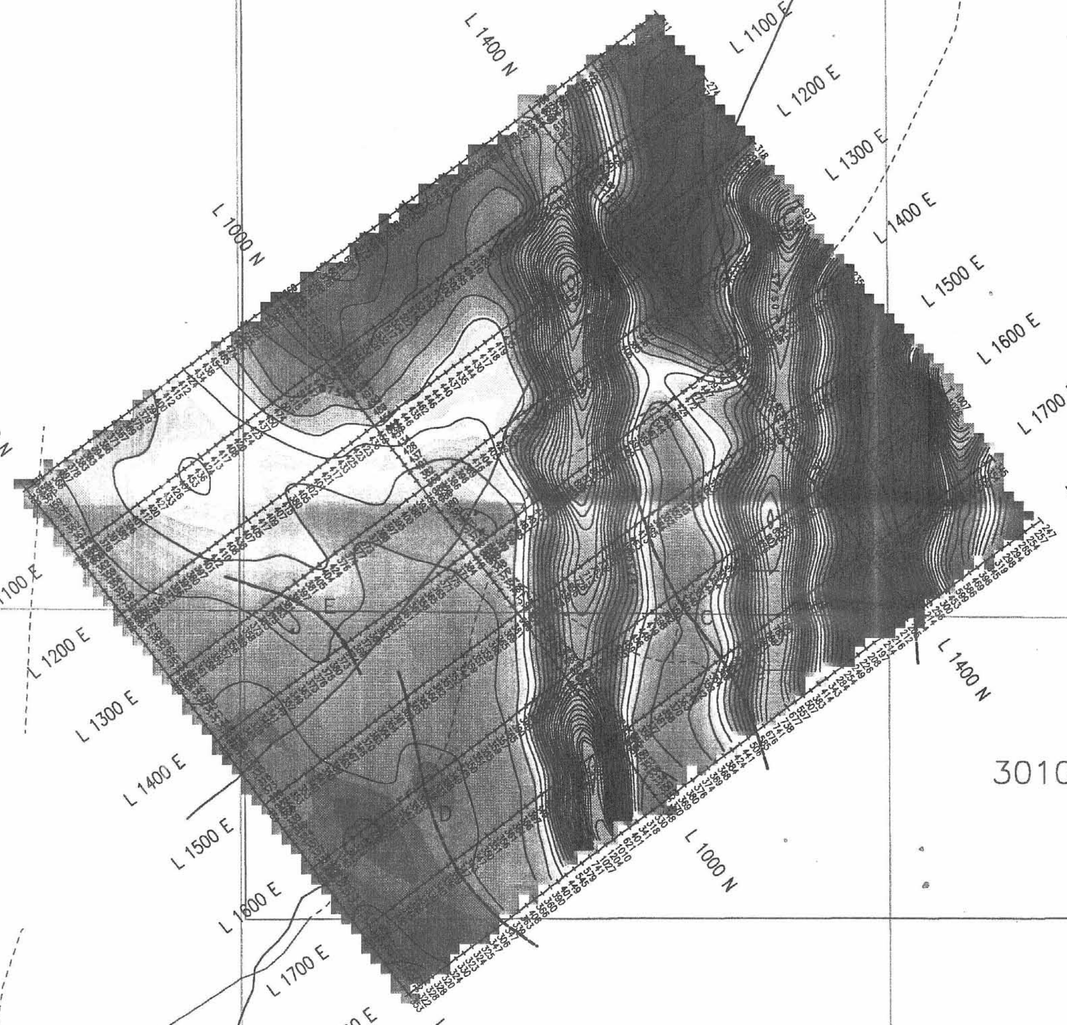
Lot 10
Con II

9

1236940

8

3001149

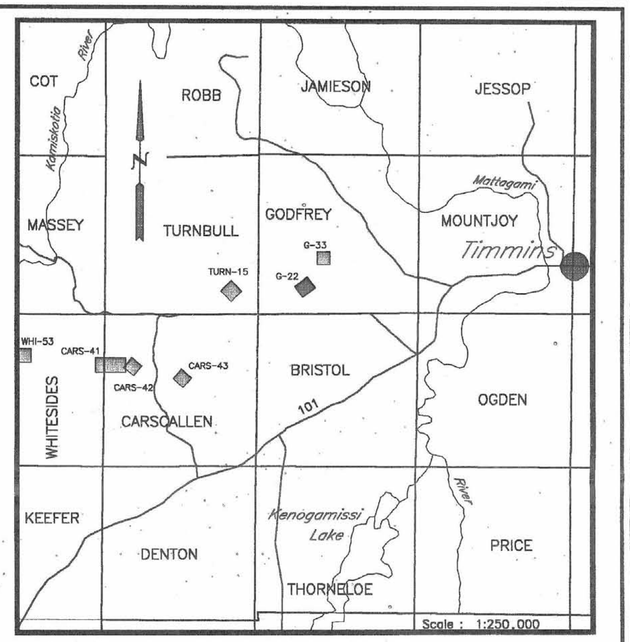


3010159

10

Lot 9
Con I

8



INDEX MAP

N
astro

LEGEND

Instrument : Scintrex IGS-2/MP-4
Type : Total Field Proton Precession
Datum Level : 57000 nT
Contour Interval : 25 nT
Gridded By : Geosoft Bigrid
Cell Size : 12.5 metres
Filter : 1 Pass 9 Point Hanning
— — — EM Anomaly, 444 Hertz

0 100 m 200 m 300 m 400 m 500 m
Scale : 1:5000

FALCONBRIDGE LIMITED

MAGNETIC SURVEY

G-22

GODFREY TOWNSHIP

File : G22.XYZ	Date : June, 2004
NTS : 42-A/05	Proj# :
WORK BY : *Timmins Geophysics Ltd.*	

Lot 10
Con II

9

8

3001149

1236940

3010159

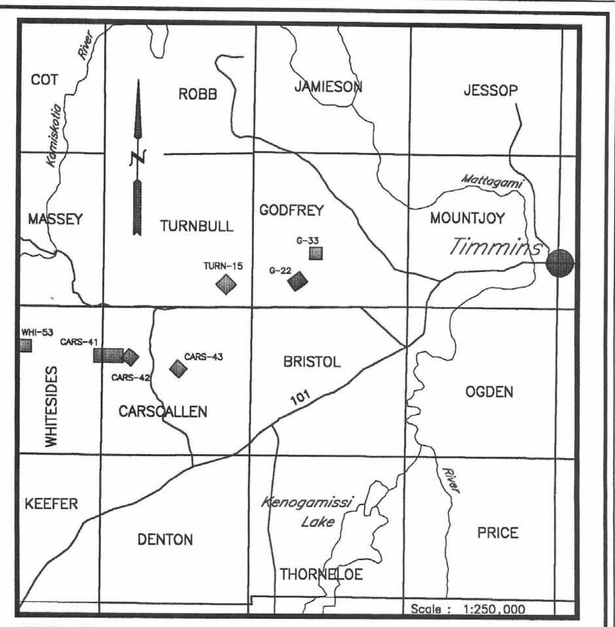
Lot 9
Con I

10

8

L 1000 E
L 1100 E
L 1200 E
L 1300 E
L 1400 E
L 1500 E
L 1600 E
L 1700 E
L 1800 E
L 1400 N
L 1000 N
L 600 N

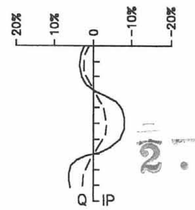
A
B
C
D
E



INDEX MAP

LEGEND

Instrument : Apex Parametrics MaxMin I-5
Coil Separation : 200 metres
Frequency : 222 Hertz
Profile Scale : 1cm = 10%



In-phase ——————
Quadrature — — — —

0 100 m 200 m 300 m 400 m 500 m
Scale : 1:5000

2.29888

FALCONBRIDGE LIMITED

HLEM SURVEY (222 Hz)

G-22
GODFREY TOWNSHIP

File : G22HL.XYZ	Date : June, 2004
NTS : 42-A/05	Proj# :
WORK BY : *Timmins Geophysics Ltd.*	

Lot 10
Con II

9

8

3001149

1236940

3010159

Lot 9
Con I

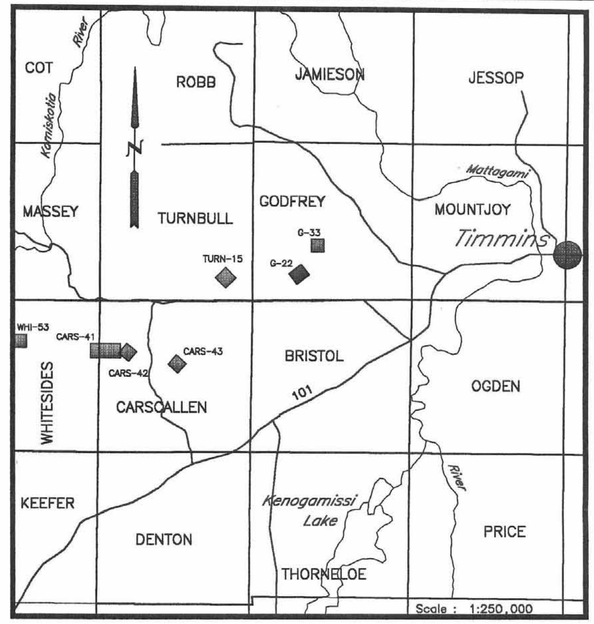
10

8

L 1000 E
L 1100 E
L 1200 E
L 1300 E
L 1400 E
L 1500 E
L 1600 E
L 1700 E
L 1800 E

L 1400 N
L 1000 N
L 600 N

A
B
C
D
E

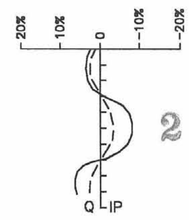


INDEX MAP

N
astro

LEGEND

Instrument : Apex Parametrics MaxMin I-5
Coil Separation : 200 metres
Frequency : 444 Hertz
Profile Scale : 1cm = 10%



2.29888

In-phase ————
Quadrature — — — —

0 100 m 200 m 300 m 400 m 500 m
Scale : 1:5000

FALCONBRIDGE LIMITED

HLEM SURVEY (444 Hz)

G-22
GODFREY TOWNSHIP

File : G22HL.XYZ	Date : June, 2004
NTS : 42-A/05	Proj# :
WORK BY : *Timmins Geophysics Ltd.*	

Lot 10
Con II

9

1236940

3001149

8

3010159

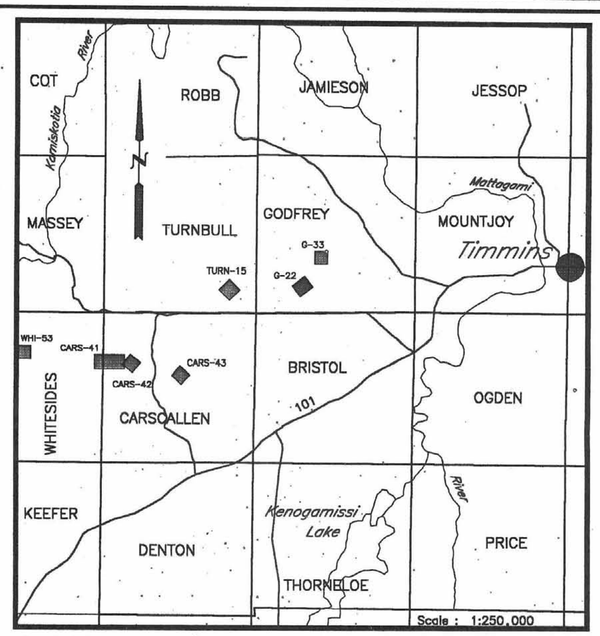
Lot 9
Con I

10

8

L 1000 E
L 1100 E
L 1200 E
L 1300 E
L 1400 E
L 1500 E
L 1600 E
L 1700 E
L 1800 E
L 1400 N
L 1000 N
L 600 N

A
B
C
D
E

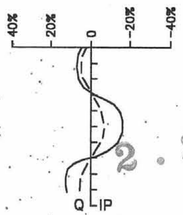


INDEX MAP

N
astro

LEGEND

Instrument : Apex Parametrics MaxMin I-5
Coil Separation : 200 metres
Frequency : 1777 Hertz
Profile Scale : 1cm = 20%



In-phase
Quadrature

0 100 m 200 m 300 m 400 m 500 m
Scale : 1:5000

FALCONBRIDGE LIMITED

HLEM SURVEY (1777 Hz)

G-22

GODFREY TOWNSHIP

File : G22HL.XYZ	Date : June, 2004
NTS : 42-A/05	Proj# :
WORK BY : *Timmins Geophysics Ltd.*	