REPORT ON

GEOPHYSICAL WORK

LACARTE OPTION

NORTH WILLIAMS TOWNSHIP

FOR FALCONBRIDGE LIMITED

NTS:41 P/6

PROJ # 8276







D. LONDRY TIMMINS GEOPHYSICS LTD.



1P06NE0028 2.16915 NORTH WILLIAMS

JULY 1996

#### SUMMARY AND RECOMMENDATIONS

Magnetic and induced polarization surveys were carried over the LaCarte Option in North Williams Township for Falconbridge Limited.

The magnetic survey mapped diabase dikes and sills and the IP survey outlined a chargeability anomaly which is on strike with a copper showing on the property.

It is recommended that further stripping is carried out on Lines 3400 to 4600 North to investigate the source of the chargeability anomalies before they are tested by drilling.

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#### INTRODUCTION

During May and June 1996, magnetic and induced polarization (IP) surveys were carried over the LaCarte Option in North Williams Township for Falconbridge Limited. The purpose of the IP survey was to try and determine the extent of copper mineralization which was found on the property and the purpose of the magnetic survey was to map any diabase which is present.

The property is located in the southwest portion of the township, approximately 25 kilometres southeast of the village of Shining Tree, Larder Lake Mining Division (Figure 1(a). It was accessed by travelling southwest from Shining Tree along Highway 560 for approximately 7 kilometres, east along the Sandy Lake Road and then south along lumber access roads.

The property consists of nine claims which are comprised of a total of thirty-one 40 acre claim units (Figure 1(b)). A description of the claims is given in Table 1.

CLAIM #	# OF UNITS	DESCRIPTION	
L1200377	1	Browning Twp.	
L1200378	1	Browning Twp.	
L1202767	3	Browning Twp.	
L1212028	1	Browning Twp.	
L1212029	1	Browning Twp.	
L1212030	2	Browning Twp.	
L1223244	16	Browning Twp.	
L1223266	4	Browning Twp.	
L1223267	2	Browning Twp.	

Table 1 : Property Description



Figure I(a) : Location Map



Figure I(b) : Claim Map

The author of this report carried out the magnetic survey and was assisted by B. LeRoy and M. Gauthier in the IP survey.

#### GENERAL GEOLOGY

The west half of North Williams Township was mapped by D. Long and A. Colvine (1986) in 1984 and 1985 at a scale of 1:50,000. The map shows the Falconbridge property to be underlain by Huronian sandstone of the Gowganda Formation which have been intruded by Proterozoic diabase dikes and sills.

#### PREVIOUS WORK

There has been no previous work filed for assessment credits on the property, however, a few companies have carried out work in the area.

In the 1920's Exploration Syndicate of Ontario held 16 claims to the west of Tracey Lake over a number of silver showings. Metron Exploration Limited held 10 claims to the east of Tracey Lake and in 1971, sank two diamond drill holes. In 1983, Golden Shield Resources Limited carried out a regional mapping program in eight townships including North Williams Township; this work was initiated after a gold occurrence was reported by the O.G.S., in Huronian quartz pebble conglomerate in North Williams Township. In 1973, Extender Minerals of Canada Ltd. staked a barite showing within a Proterozoic intrusive to the east of Tracey Lake and have intermittently carried out work on the property since 1972.

#### SURVEY DESCRIPTIONS

A north-south base line, designated 2500 East, was established through the east half of the claim block. Orthogonal grid lines were cut every 400 metres and picketed every 20 metres. The grid extends from Line 1800 North to Line 4600 North and from 1500 East to 3100 East.

The magnetic readings were taken every 10 metres along the survey lines and base line 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 gammas. Diurnal variations were monitored every 10 seconds with a Scintrex MP-3 base station magnetometer. The base station was located to the northwest of the property on the Sandy Lake Road at the same location as that used for the survey on the Asquith option.

The IP survey was carried out with the Scintrex IPR-11 time domain receiver and the Scintrex TSQ-3 3000 Watt transmitter. A gradient array was used with an 'a' spacing of 40 meters and a sample interval of 40 metres except on Lines 3800 and 3400 where readings were taken every 20 metres. The remote electrodes were located by compass and pacing at 0 East and 4600 East, 3200 North.

Line 3800 North was also surveyed using a pole dipole array and 'a' spacing of 40 metres; readings were taken for 'n' values of 1 and 2. The remote electrode used in this survey was located at 0 Fast, 3200 North.

The current on-off time is two seconds. With the IPR-11, integration takes place during ten time intervals or 'slices', after shut-off; Table 2 lists the delay and integration times for each slice.

SLICE	DELAY TIME (MS)	INTEGRATION TIME (MS)
0	30	30
1	60	30
2	90	30
3	120	30
4	150	180
5	330	180
6	510	180
7	690	360
8	1050	360
9	1410	360

Table 2: Delay and integration times of the Scintrex IPR-11 IP receiver.

#### MAGNETIC RESULTS

The magnetic results are plotted on three plan maps found in the pockets at the back of this report. The values are posted on Map 1, contoured on Map 2 and profiled on Map 3. A colour image of the total magnetic field is given in Figure 2 at a scale of 1:15000.

A linear north-south striking magnetic high between 1960 East on Line 3400 North and 1920 on Line 4200 North most likely represents a diabase dike. The source of the asymmetrical anomaly directly to the east of the dike may be a diabase sill which dips to the east. If this is the case, then the proximity and extent of these two anomalies supports the idea that the dykes are 'feeders' for the sills.

The small magnetic high along the base line at 2600 North coincides with a hill which has been mapped as diabase by Long (1986). This anomaly can be aligned with weaker anomalies to the south in a south southeast strike.



Figure 2 : Colour Image of Total Magnetic Field, Lacarte Option

# LEGEND

Instrument : Scintrex IGS-2/MP-4 Type : Total Field Proton Precession Gridded By : Geosoft Bigrid Cell Size : 10 metres Filter : 2 Pass 9 Point Hanning Contour Interval : 50 nT

Scale : 1:15,000

Magnetic high anomalies in the southwest corner and along the western edge of the survey area have been trended in a north northwest direction and anomalies in the southeast corner have been trended in a north northeast direction in Figure 2. Both of these areas are also likely underlain by diabase dikes or sills.

#### **IP RESULTS**

The M5 chargeability and IP resistivity from the gradient survey are plotted on maps 4 and 5 respectively, at a scale of 1:5000; the chargeability data are contoured every 1 ms and the resistivity data are contoured every 500 ohm-m. A colour image of the data is presented in Figures 3 and 4. The results from the pole dipole survey are plotted in pseudo-section form on map 6.

Two areas of anomalous chargeability were outlined in the IP survey. One is located in the southeast corner of the property and has a north-south to north northeast strike. This area corresponds with an area mapped as Proterozoic diabase by Long (1986), however, it has a negative correlation with the magnetic results.

The second anomalous area strikes north-south through the west half of the property. On Line 3800 North, it is located between 1980 and 2360 East and consists of three separate chargeability highs (Figure 5). The magnetic results suggest that it is related to a diabase sill or to the rocks overlying a sill. It also has a coincident resistivity high which is, no doubt, partly due to the shallower overburden. The copper showing, which is located between Lines 3400 and 3800 North, is on strike with the most easterly chargeability high. To the



# LEGEND

Instrument : Scintrex IPR-11 Type : Time Domain Spectral Transmitter : Scintrex TSQ-3 Array : Gradient 'A' Spacing : 40 metres On-Off Time : 2 seconds Delay Time : 330 ms Integration Time : 180 ms Gridded By : Geosoft Bigrid Cell Size : 20 metres Contour Interval : 1 ms Scale : 1:20,000



# LEGEND

Instrument : Scintrex IPR-11 Type : Time Domain Spectral Transmitter : Scintrex TSQ-3 Array : Gradient 'A' Spacing : 40 metres On-Off Time : 2 seconds Gridded By : Geosoft Bigrid Cell Size : 20 metres Contour Interval : 1000 ohm-m Scale : 1:20,000

# Figure 4 : Colour Image of IP Resistivity, Lacarte Option



# MAGNETIC SURVEY

Instrument : Scintrex IGS-2/MP-4 Type : Total Field Proton Precession

# IP SURVEY (Gradient Array)

--- Chargeability --- Resistivity

# IP SURVEY (Filtered Pole-Dipole)

--- Chargeability

# IP SURVEY

Receiver : Scintrex IPR-11 Type : Spectral Time Domain Transmitter : Scintrex TSQ-3 Configuration : Pole-Dipole 'A' Spacing : 40 metres Delay Time : 330 ms Integration Time : 180 ms

Scale : 1:10,000

# Figure 5 : Geophysics Compilation, Line 3800 North

south of Line 3400 North, over deeper overburden, there is only one chargeability anomaly. The amplitude of the anomaly is lower and there is no magnetic anomaly associated with it.

The results of the pole dipole survey along Line 3800 North are plotted with the results from the gradient survey in Figure 5. The signature from both IP surveys are very similar, however the anomalies in the pole dipole profile are 40 metres to the west of those in the gradient profile; the plotting point used in the pole dipole survey is half way between the moving current electrode and the nearest potential electrode.

August 13/96 DATE,

lan

TIMMINS GEOPHYSICS LTD.

#### REFERENCES

#### LONG, D.G.F. and COLVINE, A.C.

1986: Geology of the Huronian Strata in Part of the Northwestern Cobalt Plain, Including Sheard, Ogilvie, Amyot, Browning, Hodggets, Unwin, Lampman and Leask Townships and Parts of North Williams, Dufferin, Stull, Valin and Marshay Townships, Districts of Timiskaming and Sudbury; Ontario Geological Survey, Map P.3048. Geological Series Preliminary Map, scale 1:50,000. Geology 1984 and 1985.

#### ONTARIO GEOLOGICAL SURVEY

1991: North Williams Township, Geological Data Inventory Folio 570; compiled by the staff of the Resident Geologist's Office, Cobalt.



Ministry of Northern Development and Mines

# **Declaration of Assessment Work** Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Personal information Mining Act, the inform Questions about this 933 Ramsey Lake Ro



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66(3) of the Mining Act. Under section 8 of the vork and correspond with the mining land holder.

Transaction Number (office use) W9680.00593 Assessment Files Research Imaging

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Instructions: - For work performed on Crown Lands before recording a claim, use form 0240. - Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)	
Name	Client Number
FALCONIBRIDGE LIMMED	130679
Address	Telephone Number
P.O. Box 11to 571 MUNIETA ANE	(705) 267 - 1188
	Fax Number
TIMMINS, ONTARIO PUN 749	(705) 264-6080
Name	Client Number
Address	Telephone Number
	Fax Number

#### Type of work performed: Check ( ~ ) and report on only ONE of the following groups for this declaration. 2.

Geotec assays	chnical: pro and work	ospecting, si under secti	urveys, on 18 (regs)	Physical: dri trenching an	lling, stripping, d associated assays	Rehabilitation
Work Type	LINECU	TTING-,	MAG & 1.P.	SURVEYS	Off	ice Use
		•			Commodity	
					Total \$ Value of Work Claimed	1310
Dates Work Performed	From ,	15 MAY Day Month	96 To	15 July 96 Day Month Year	NTS Reference	RECEIVED
Global Positioni	ng System Da	ata (if available)	Township/Area NORTH U	DILLIAMS	Mining Division	rder rape
		·····	M or G-Plan Nun	nber	Resident Geologis	MINING LANDSCOBANCH

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required; - provide proper notice to surface rights holders before starting work; - complete and attach a Statement of Costs, form 0212; - provide a map showing contiguous mining lands that are linked for assigning work; - include two copies of your technical report.

ame Telephone Number	
COURS KONDICY IIMMINS DEOPTYSICS (COURS - J JI)	
547 LOALH'S ROAD, SUDBURY, P3E 2R3	
ame Telephone Number	
idress Fax Number	
Ime Telephone Number	
idress Fax Number	

# Certification by Recorded Holder or Agent

MIKE	Cochison	, do hereby certify	that I ha	ave personal	knowledge of the	a facts set
	(Print Name)					
h in this Decla	aration of Assessment	Work having caused the work	to be pe	erformed or w	vitnessed the sam	ne durina

1 ed the same during after its completion and, to the best of my knowledge, the annexed report is true.

hature of Recorded Holder or Agent		Date 28 Nov 96
nt's Address	P4N 7H elephone Number	Fax Number
0. BOX 1140, 571 MOWETA AV	E TIMMINS ON (705) 267-1188	(705) 264-6080
	and the second second second second	

i work ed on this other and.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of we to be distributed at a future date.
, 825	N/A	\$24,000	\$2,825
0	\$24,000	0	0
, 892	\$ 4,000	0	\$4,892
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.6			236
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,70			7370

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do hereby certify that the above work credits are eligible under 6/96 for assignment to contiguous claims or for application to

Date TTELChood

## ot approved.

e cut back. Please check ( - ) in the boxes below to show how

Bank first, followed by option 2 or 3 or 4 as indicated. with the claims listed last, working backwards; or over all claims listed in this declaration; or tized on the attached appendix or as follows (describe):

o be deleted, credits will be cut back from the Bank first,

Deemed Approved Date	TREby 7	Date Notification Sent
Date Approved		Total Value of Credit Approved
Approved for Recording by	y Mining Recorde	r (Signature)
· loc	sone?	

Ine of which	A Number. Or If one on other eligible and, show in this the location number if on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work easigned to other mining cielms.	Sank, Value of work to be distributed at a future date,
•0	TB 7827	16 ha	\$28, 825	N/A	\$24,000	\$2,825
eg	1234587	12	. 0	\$24,000	0	0
90	1234568	2	\$ 8, 892	\$ 4,000	0	\$4,892
1 -	1200377	1	236		· ·	236
21	1200375	1	236			236
3 -	1202767	3	708			708
4.1	1212028	1	236			236
5 -	1212029	1	236	2	160.	236
8 /	1212030	2	472		1091	0 472
-1	1223244	16	3830			3830
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MIKE LOLUSON	, do hereby certify	that the above we	ork credits are s	illaible under
(Print Full Name)	•			
subsection 7 (1) of the Assessment Work Regulation	6/98 for assignmen	nt to contiguous c	laims or for app	lication to
the claim where the work was done.				

· / · · · · · · · · · · · · · · · · · ·			
Signature of Recorded Holder all Autorized in Writing	Data		
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M. A. la	28	<b>MDIL</b>	In
			<u> </u>

# 6. instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check ( $\sim$ ) in the boxes below to show how you wish to prioritize the deletion of credits:

1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.

2. Credits are to be cut back starting with the claims listed last, working backwards; or

2 3. Credits are to be cut back equally over all claims listed in this declaration; or

4. Credits are to be cut back as prioritized on the attached appendix or as to Rev Eductive: V E D

DEC 3 - 1996

MINING LANDS BRANCH

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use C	niy the .		
Ascawad Stamp		Deamed Approved Date	Dets Notification Sent
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		Approved for Recording by Mining F	lecorder (Signalura)
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Ministry of Northern Development and Mines

# Statement of Costs for Assessment Credit

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 685.

Work Type	Units of Work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilo- metres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
LINECUTTING	16 km	\$240/ KM	3840
MAG SURVEY	16 Km	\$ 80/Km	1280
I.P. SURVEY	3 DAYS	\$600 /DAY	1800
FILLD SUPREVISION	3 DAYS	\$ 150 TOAY	450
Associated Costs (e.g. supplies	, mobilization and demobilization).		
		2.76	915
	(		~ 10
Trans	portation Costs		
		PECEIVER	57
- <u>A</u>		<b>NEVEIVE</b>	P]
Food	and Lodging Costs	DEC 3 - 1996	·
	`*•	MINING LANDS BRANCI	H
	· · · · · · · · · · · · · · · · · · ·		
	Total Value	of Assessment Work	7370

## **Calculations of Filing Discounts:**

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.

2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK	$\times 0.50 =$	Total \$ value of worked claimed.
	~ 0.00 =	

#### Note:

- Work older than 5 years is not eligible for credit.

- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

# Certification verifying costs:

I, <u>Mike</u> <u>(please print full name)</u>, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as <u>FIELD</u> <u>GEOLOGAST</u> I am authorized to make this certification.

Date 28 Nov 96 1. f. l.

Ministry of Northern Development and Mines	Ministère du Développement d et des Mines	u Nord		<b>V</b>	Ont	ario
February 4, 1997				Geoscience 933 Ramse 6th Floor Sudbury, (	e Assessmer ey Lake Roa Ontario	nt Office d
Roy Spooner Mining Recorder 4 Government Road East Kirkland Lake, ON P2N 1A2				Telephone: Fax:	(705) (705)	670-5853 670-5863
Dear Sir or Madam:				Submissio	n Number:	2.16915
Subject: Transaction	Number(s):	W9680.00593	<b>Status</b> Approva	I		

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

NOTE: This correspondence may affect the status of your mining lands. Please contact the Mining Recorder to determine the available options and the status of your claims.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at jerome\_I@torv05.ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

Paccal.

ORIGINAL SIGNED BY Ron C. Gashinski Senior Manager, Mining Lands Section Mines and Minerals Division

Correspondence ID: 10549 Copy for: Assessment Library

# Work Report Assessment Results

Submission N	umber: 2.16915	i de la constante d		
Date Correspondence Sent: February 04, 1997		Assessor: Lucille	Jerome	
Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9680.00593	1200377	NORTH WILLIAMS	Approval	February 03, 1997
14 Geophysical IF 14 Geophysical M	AG			
Correspondence	e to:		Recorded Hold	er(s) and/or Agent(s):
Mining Recorder Kirkland Lake, ON	N		Mike Collison FALCONBRIDGE LI	IMITED
Resident Geologis Kirkland Lake, ON	t N			
Assessment Files Sudbury, ON	Library			



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Scale : 1:5000

FALCONBRIDGE LIMITED		
MAGNETIC SURVEY		
LACARTE	OPTION	
NORTH WILLIA	MS TOWNSHIP	
PROJ # 8274	NTS : 41 P/6	
File : WILLM.XYZ	Date : June, 1996	
	Taglas / Day	
WORK BY : Timmins Geophys	ics Ltd.	

