FALCONBRIDGE LTD.

REPORT ON GEOPHYSICAL WORK WEST MACDIARMID

NTS: 42-A/12 PROJ. #8172

JANUARY 1988

S. TAYLOR
TIMMINS GEOPHYSICS LTD.

SUMMARY AND RECOMMENDATIONS

Magnetic and HLEM surveys were carried out on the West MacDiarmid property in November 1987.

The magnetic survey mapped a gabbro intrusive and north northwest trending diabase dikes.

The HLEM survey located nine conductors striking southeast on the west half of the property and east on the eastern half. Interpretation of the anomalies is difficult because of either a quadrature inversion due to conductive clay overburden or interference from closely spaced conductors. Anomalies B, D, G, H, and I have been previously tested by diamond drilling. Most offsets in the conductors coincide with the north northwest trending diabase dikes, indicating that there has been movement along these features.

The most interesting of the conductors is represented by Anomaly E. There is a very local magnetic feature of high relief associated with the conductor, indicating the presence of pyrrhotite. Anomalies A, B and G also have a magnetic response on the most easterly lines. Anomaly G has been previously tested in the area of interest. The other anomalies should not be overlooked as potential mineralized zones, but they do not represent the primary targets. The secondary drillholes should be located to test the greatest width within each zone.

It is therefore recommended that Anomaly E be tested between Lines 600 and 700 East, and Anomalies A and B be tested on Line 1800 East.

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INTRODUCTION

Magnetic and HLEM surveys were carried out for Falconbridge Ltd. on their West MacDiarmid property in November 1987.

The property consists of 33 claims located in MacDiarmid Township, approximately 25 kilometres northwest of the city of Timmins, in the Porcupine Mining Division. The claims are numbered as follows:

P 995387 - P 995404 inclusive
P 995447 - P 995461 inclusive
P 996042 - P 996051 inclusive

Part of the survey area is patented ground held by Canadian John Manville Co. Ltd. The survey lines were cut on the patented ground with permission of the owner for the purpose of providing a regular grid shape for the linecutters. The outline of the patented ground is shown on all maps.

The east edge of the property is accessible by boat along the Mattagami River.

The survey was carried out by B. Pigeon, S. Olink and J. Eull.

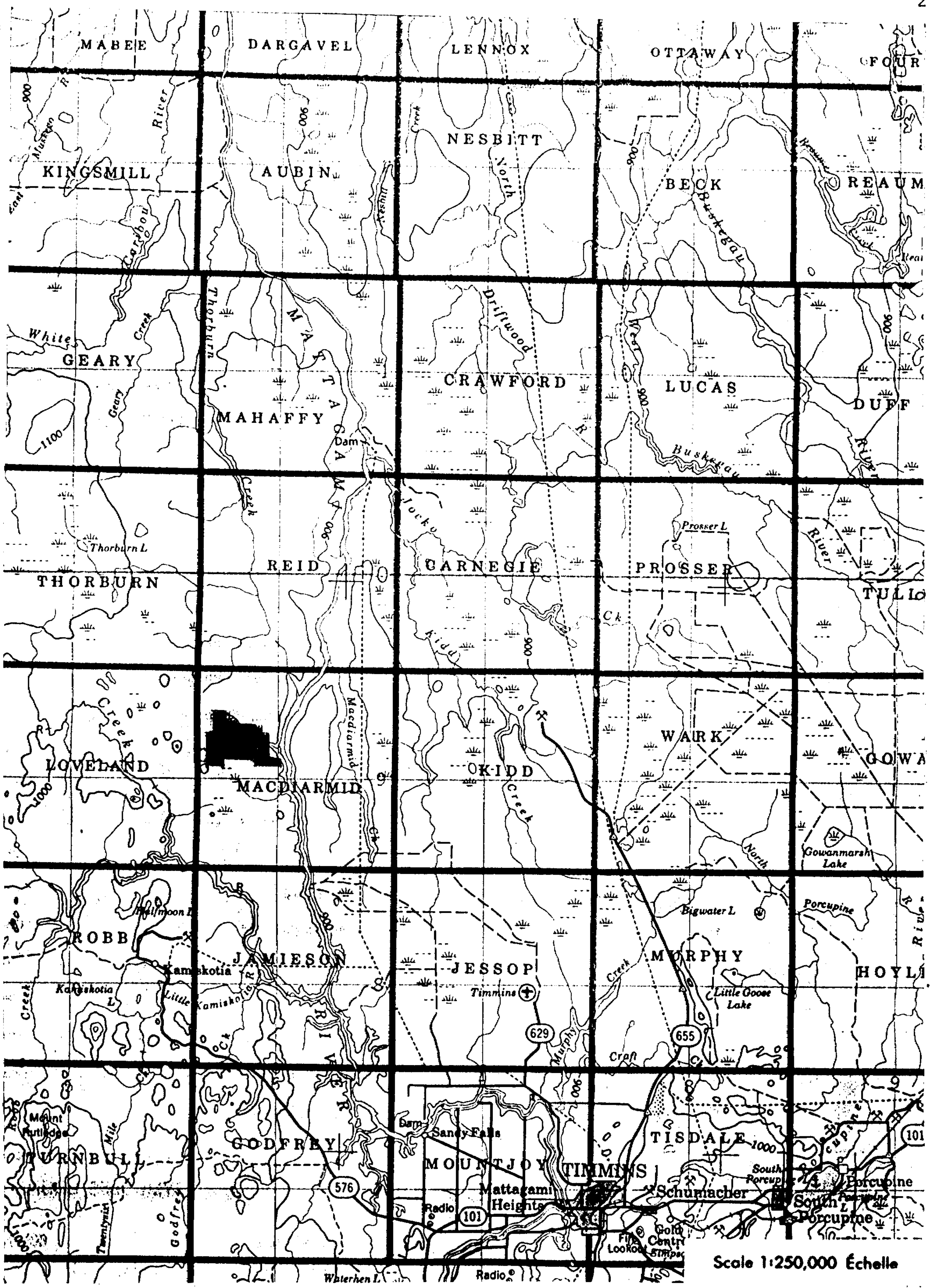


Figure 1: Location map

PREVIOUS WORK

The area covered by this survey has been active since 1947, when Inco drilled ten holes in search for asbestos within the gabbro intrusive. The next record of previous work occurs in 1964, when Silver Miller Mines, Mistango River Mines, North Rankin Nickel Mines and Silvertown carried out ground magnetic and horizontal loop EM surveys. The only record of diamond drilling is two holes drilled by North Rankin Mines and two holes drilled by Silvertown. The holes drilled by North Rankin Nickel Mines intersected graphite with some minor sulphides. Neither Silvertown hole intersected a conductor.

In 1969, Noranda conducted ground magnetic and HLEM surveys. No drilling was recorded.

In 1970, Hollinger carried out an airborne INPUT survey and followed up with ground magnetic and HLEM surveys. Two holes were drilled in 1973 to test EM anomalies. Altered gabbro and ultrabasics were intersected.

In 1975, Phelps Dodge conducted ground magnetic and HLEM surveys. No drilling was recorded.

In 1977, Geophysical Engineering Ltd. drilled two holes to test a Crone C.E.M. shootback anomaly. Hole P1-1 intersected 555 feet of gabbro. Hole P1-2 intersected rhyolite with some pyhrrotite, and graphite at 216 feet. Assays for base metals, gold and silver show no economic values.

In 1978, Amax filed geological mapping for a portion of the area covered by this survey.

All holes which tested a conductor are plotted on map 5. Locations are very approximate because most are plotted relative to old claim post locations.

SURVEY DESCRIPTIONS

An east-west base line was established and north-south grid lines were cut every 100 metres and picketed every 20 metres. Tie lines were cut every 400 metres. Both north-south and east-west lines were surveyed.

The magnetic readings were taken with the Scintrex IGS-2/MP-4. This instrument is a proton precession magnetometer which measures the earth's total magnetic field to an accuracy of .1 gammas. The diurnal drift was monitored every 30 seconds with the Scintrex MP-3 base station magnetometer.

The horizontal loop EM survey was carried out with an Apex Parametrics Max Min I. This instrument measures the in-phase and quadrature components of the secondary field as a percentage of the primary field. Accuracy is +/-1%. Readings were taken at 444 and 1777 Hz with a coil separation of 120m.

HLEM RESULTS

The horizontal loop results are plotted on maps 1 and 2 at a scale of 1:5000. The tieline data are presented on maps 3 and 4. Nine conductive zones were outlined in the results. The strike of the conductors changes from southeast to east as one moves eastward. Dip is approximately sixty degrees north.

There is an important feature to note on map 2. The background values change drastically at conductor 'G'. The high background in the north indicates conductive overburden, and in this area, it is not possible to determine depth and conductivity thickness parameters for conductors because of the reversal of the quadrature component, even in the low frequency results.

Many of the following tables below list only the anomaly location on each line. This is due to the effect of conductive clays mentioned above or because of interference caused by closely spaced conductors.

Anomalous values at 800 and 1250 South on Line 1100 West are topographic effects due to hills. This effect is also present at the western edge of TL 1400 South.

Anomaly A is obvious only on Lines 1200 to 1400 East. It has been extended in both directions because of high positive values which extend too far north to be the shoulder of Anomaly B. Depth and conductivity thicknesses cannot be determined because Anomaly B, located 60m to the south, is much stronger and causes interference. Table 1 lists the approximate location of the anomaly on each line. Based on the strength of the two components, conductor 'A' probably has a moderate conductivity thickness; no depth estimate is possible.

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
1000 E	160 S					
1100 E	180 S					
1200 E	200 S					
1300 E	220 S	strong interference from 'B'				
1400 E	293 S					
1500 E	320 S	on all lines				
1600 E	335 S					
1700 E	340 S					
1800 E	355 S					
1900 E	360 S					
2000 E	320 S					

Table 1: HLEM anomaly A, 444 Hz, 120 m coil separation.

Anomaly B strikes southeast and is seen on Lines 200 West to 2000 East. Dip is steep northward on the most westerly lines and becomes shallower as one moves eastward. Width is variable, but averages 30m on most lines. This anomaly is not as well defined on the high frequency results; the positive shoulders are low to non-existent, and the conductor has no width. Calculations for depth and conductivity cannot be done because there is an inversion of the quadrature response caused by conductive clay overburden.

A lower frequency survey (i.e. 222 Hz) may eliminate the inversion and give a more accurate interpretation. Offsets in the position of the anomaly between Lines 0 and 100 West, 0 and 100 East, 200 and 300 East, and between 500 and 600 East coincide with diabase dikes. This indicates there has been movement along these planes.

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
200 W	1025 N	30	-6	-5		
100 W	960 N	40	-6	-1		
00 E	768 N	4	-5	-2		
100 E	630 N	60	-6	0	------------	------------
200 E	580 N	20	-6	+2		
300 E	360 N	20	-2	+2	inversion of	
400 E	280 N	20	-2	+1		
500 E	220 N	40	-4	+2	quadrature response	
600 E	47 N	46	-5	+3		
700 E	12 S	25	-9	+2		
800 E	83 S	34	-6	0	------------	------------
900 E	150 S	20	-4	-2		
1000 E	210 S	20	-3	-1		
1100 E	252 S	36	-2	-2		
1200 E	S edge 280 S		interference from 'A'			
1300 E	S edge 340 S		interference from 'A'			
1400 E	S edge 368 S		interference from 'A'			
1500 E	383 S	27	-16	-3		
1600 E	408 S	25	-14	-4		
1700 E	417 S	25	-12	-2		
1800 E	432 S	31	-13	-1		
1900 E	447 S	13	-15	-2		
2000 E	S edge 380 S		-13	-3		
TL 800 N	3 E	20	-7	-1		
TL 400 N	340 E	narrow	-3	+2		
BL 0	665 E	50	-3	+2		
TL 400 S	1600 E to 2000 E		conductor parallel to line			

Table 2: HLEM anomaly B, 444 Hz, 120 m coil separation.

Anomaly C is a very weak anomaly seen on Lines 100 and 200 East. It is located 240m south of Anomaly B, making width determinations difficult. Table 3 summarizes the anomaly location, but like Anomaly B, no calculations for depth and conductivity thickness are given due to the effect of conductive clays.

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
100 E	380 N	?	-3	-2	weak response	
200 E	250 N	?	-3	+1	quadrature inversion	

Table 3: HLEM anomaly C, 444 Hz, 120 m coil separation.

Anomaly D strikes southeast between Lines 500 West and 800 East. The strength and width of the anomaly varies considerably. The average depth of the conductor is 50m and conductivity is good (Table 4). The profile shape indicates there are two conductors on Lines 100 East and between 400 and 600 East. The depth and conductivity thickness calculations on Line 400 East reflect the north conductor. The source of this anomaly was determined to be graphite and pyrite based on drilling by North Rankin Nickel Mines.

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
500 W	550 N	20	-3	-5	36	7
400 W	445 N	50	-4	-2	78	47
300 W	340 N	3	-4	-2	78	47
200 W	205 N	30	-6	-8	36	9
100 W	85 N	10	-2	-6	12	2
00 E	40 S	narrow	-3	-6	22	5
100 E	130 S	47	-8	-6	47	24
200 E	180 S	narrow	-1	-2	36	6
300 E	225 S	narrow	-4	-4	60	19
400 E	340 S	80	-3	-3	66	19
500 E	375 S	30	-4	-4	60	19
600 E	398 S	23	-3	-4	48	19
700 E	410 S	narrow	-3	-3	60	19
800 E	440 S	narrow	-4	-4	60	19
TL 400 N	375 W	50	-4	-2	78	47
BL 0	35 W	10	-5	0	no quadrature	
TL 400 S	790 E	narrow	-1	-1	very weak	

Table 4: HLEM anomaly D, 444 Hz, 120 m coil separation.

Anomaly E reflects a twenty meter wide conductor on Lines 600 and 700 East. The conductor response is strong, but like anomalies B and C, the conductor appears to be extremely conductive due to the effect of conductive overburden.

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
600 E	540 S	20	-24	-6	max values not in center	
700 E	560 S	20	-15	-4		

Table 5: HLEM anomaly E, 444 Hz, 120 m coil separation.

Anomaly F occurs only on Lines 1200 and 1300 East; it is strong only on Line 1200 East. Depth and conductivity thickness calculations are not valid due to interference from from Anomaly G, located 80m to the south. The location of the anomaly source is given in Table 6.

LINE	N EDGE ANOMALY	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
1200 E	726 N	?	-7	-1	conductive clays	
1300 E	720 N	?	very weak		interference from 'G'	

Table 6: HLEM anomaly F, 444 Hz, 120 m coil separation.

Anomaly G strikes east-west between Lines 1200 and 2000 East. The width (up to 35m) indicates more than one conductor in the zone. The north conductor is the strongest. Large variations in the anomaly strength, position and width suggest faults are located between Lines 1400 and 1500 West, and between Lines 1700 and 1800 West; there is a dike located between Lines 1400 and 1500 West. A third fault between 1100 and 1200 East would explain the westward truncation. There is no high magnetic response at the other two offsets, but north-south survey lines may have failed to locate the north-south features. Calculations in Table 7 assume a dip of sixty degrees north. These calculations indicate a moderate to good conductor at various depths. The depth variation supports the theory of movement along the diabase dikes. Drilling by Geophysical Engineering Ltd. determined the source of this anomaly to be graphite and pyrrhotite with no ecomonic mineralization.

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
1200 E	810 S	20	?	?	interference from 'F'	
1300 E	808 S	16	-9	-7	42	24
1400 E	800 S	14	-8	-5	52	36
1500 E	863 S	6	-16	-5	42	71
1600 E	864 S	3	-10	-5	50	47
1700 E	860 S	narrow	-2	-5	14	2
1800 E	886 S	27	-5	-10	17	5
1900 E	882 S	35	-7	-7	42	17
2000 E	890 S	20	-2	-4	24	6

Table 2: HLEM anomaly G, 444 Hz, 120 m coil separation.

LINE	N EDGE ANOMALY	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
300 W	480 S	?	weak			
200 W	585 S	?	-6	-5	24	28
				(interference from I)		
100 W	636 S	?	-10	-7	43	28
00 E	747 S	?	?	?		
100 E	807 S	?	-21	-14	26	33
				(not peak values)		
TL 400 S	W edge 470 W		-22	-1	very shallow	extremely high

Table 8: HLEM anomaly H, 444 Hz, 120 m coil separation.

Anomaly H is a strong anomaly, second only to Anomaly I. It is located 150m north of I, making depth and conductivity calculations unreliable due to the interference from the south. The north edge of 'H' on each line is tabled below (Table 8). Most of this conductor lies outside the claim boundaries.

Anomaly I is the strongest response. It strikes southeast between Lines 500 West and 100 East. There is interference from Anomaly H to the north and anomaly width cannot be determined on Lines 200 West to 100 East. Depth and conductivity thickness calculations are not reliable because of interference from 'H' on the most easterly lines and conductive clays on the lines in the west (Table 9). There is record of a diamond drillhole into this zone, but no particulars were found except for the location.

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
500 W	635 S	5	-23	-2		
400 W	610 S	narrow	-18	-3		
300 W	687 S	narrow	-34	0	conductive	
200 W	S edge 884 S	?	-18	0	clays	
100 W	S edge 786 S	?	-36	-2		
00 E	S edge 914 S	?	-41	-8		
100 E	S edge 987 S	?	-43	-6		
TL 400 S	E edge 227 W		?	?	interference from 'H'	
TL 1000 S	284 N	8	-22	-8	conductive clays	

Table 9: HLEM anomaly I, 444 Hz, 120 m coil separation.

Anomaly J, located on Lines 2000 and 2100 East, is very weak, and may be a surficial anomaly. Depth and conductivity values indicate a poor conductor near surface (Table 10).

LINE	ANOMALY CENTER	ANOMALY WIDTH (M)	IP (%)	Q (%)	DEPTH (M)	CONDUCTIVITY THICKNESS (MHOS)
2000 E	1140 S	?	-2	-5	14	5
2100 E	1150 S	narrow	0	-3	<10	<1

Table 10: HLEM anomaly J, 444 Hz, 120 m coil separation.

MAGNETIC RESULTS

The magnetic results are plotted on map 5 at a scale of 1:5000. The tie line data is presented as profiles in map 6. The major feature is a large southeast trending feature of 5000 gamma relief. This maps a known gabbro intrusion. The profiles of the tieline data locate north northwest tending linear features which map diabase dikes. Most of the numerous discontinuities in the HLEM conductors correlate with the location of these dikes.

Except for Anomaly E, and the east end of Anomalies A, B and G, none of the conductors located by the HLEM survey have any obvious magnetic response. Anomalies D, H and I lie on the north and south flanks of the magnetic high which maps the gabbro intrusion. None of the other anomalies lie along magnetic trends.

Anomaly E has a very short strike extent and is associated with a very high magnetic feature with equally short strike extent. This probably indicates there is considerable pyrrhotite in the conductive zone.

The east end of anomalies A, B and C also have associated magnetic respones, although not as high as Anomaly E. These zones probably contain some pyrrhotite also.

The tie-line survey located the north-south trending diabase dikes much better than the survey along the north-south lines. Much of the previous work in the area oriented the survey lines northeast, and this survey direction located all diabase dikes. It is recommended that previous magnetic data be reviewed before any drillholes are located to ensure they do not intersect a dike. An east-west line across the proposed drillsite is recommended if previous data is not available.

Sharon Taylor
SHARON TAYLOR
TIMMINS GEOPHYSICS LTD.

APPENDIX A

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 3851 Number of Readings Mag 3851 HLEM 3575

Station interval 20M Line spacing 100M

Profile scale 1 cm = 20%

Contour interval Varies from 100 gammas to 1000 gammas

MAGNETIC

Instrument Scintrex 1GS-2 / MP-3

Accuracy – Scale constant ± 0.1 gammas

Diurnal correction method base station

Base Station check-in interval (hours) 30 seconds

Base Station location and value 1000s, 2800W

base value 58805

ELECTROMAGNETIC

Instrument Apex Parametics Max Min I

Coil configuration horizontal loop

Coil separation 120 m

Accuracy ± 1%

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency 444 Hz and 1777 Hz

(specify V.L.F. station)

Parameters measured in-phase and quadrature components of the secondary field measured as a percentage of the primary field.

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

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

Mining Act

Instructions: — Please type or print.
— If number of mining claims traversed exceeds space on this form, attach a list.

Note: — Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
— Do not use shaded areas below.

Type of Survey(s): Geophysical	Township or Area: MacDiarmid
Claim Holder(s): Kidd Creek Mines	Prospector's Licence No.: T-1848
Address: P.O. Box 1140, 571 Moneta Avnue, Timmins, Ontario P4N 7H9	
Survey Company: Timmins Geophysics Ltd.	Date of Survey (from & to): 25 10 87 (Day Mo. Yr.) 14 11 87 (Day Mo. Yr.) — Total Miles of line Cut: 79.2 Km
Name and Address of Author (of Geo-Technical report): Sharon Taylor P.O. Box 1783, 111 Bruce Avenue, South Porcupine, Ontario PON IHO	

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	40
	- Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

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.

Date	Recorded Holder or Agent (Signature)
Jan. 20/88	Sharon Taylor

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	996042			995452	
	996043			995453	
	996044			995454	
	996045			995455	
	996046			995456	
	996047			995457	
	996048			995458	
	996049			995459	
	996050			995460	
	996051			995461	
	995397				
	995398				
	995399				
	995400				
	995401				
	995402				
	995403				
	995404				
	995447				
	995448				
	995449				
	995450				
	995451				

Total number of mining claims covered by this report of work. 33

For Office Use Only		
Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

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

Sharon Taylor P.O. Box 1783 South Porcupine, Ontario PON IHO

Ministry of Northern Development and Mines

Ontario

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) Geophysical

Township or Area Mac Diarmid

Claim Holder(s) Kidd Creek Mines

P.O. Box 1140 571 Moneta Ave. Timmins, Ont.

Survey Company Timmins Geophysics

Author of Report Sharon Taylor

Address of Author P.O. Box 1783 South Porcupine, Ontario

Covering Dates of Survey 12/9/87 to 20/01/88 (linecutting to office)

Total Miles of Line Cut 79.2 Km.

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
—Electromagnetic	40
—Magnetometer	20
—Radiometric	
—Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: Jan. 20/88 SIGNATURE: Sharon Taylor
Author of Report or Agent

OFFICE USE ONLY

Res. Geol. ____________ Qualifications ____________

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)	(prefix)	(number)
P	996042	P	995450
	996043		995451
	996044		995452
	996045		995453
	996046		995454
	996047		995455
	996048		995456
	996049		995457
	996050		995458
	996051		995459
	995397		995460
	995398		995461
	995399		
	995400		
	995401		
	995402		
	995403		
	995404		
	995447		
	995448		
	995449		

If space insufficient, attach list

TOTAL CLAIMS 33

837 (85/12)

Ontario Ministry of Northern Development and Mines

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

#116.

Instructions: — Please type or print.

42A12NE0509 2.10774 MACDIARMID

900

Type of Survey(s)	Geophysical
Claim Holder(s)	Falconbridge Limited
Prospector's Licence No.	A 21647
Address	P.O. Box 1140, 571 Moneta Avenue, Timmins, Ontario, P4N 7H9
Survey Company	Timmins Geophysics Ltd.
Date of Survey (from & to)	25 10 87 – 14 11 87 (Day Mo. Yr.)
Total Miles of line Cut	
Name and Address of Author (of Geo-Technical report)	Sharon Taylor P.O. Box 1783, 111 Bruce Avenue, South Porcupine, Ontario PON 1HO

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	· Electromagnetic	40
	· Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	· Radiometric	
	· Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	· Electromagnetic	
	· Magnetometer	
	· Radiometric	
	· Other	
	Geological	
	Geochemical	

RECEIVED MAY 24 1988 MINING LANDS SECTION

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

RECEIVED MAY 13 1988

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.

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Expend. Days Cr.
P	995462	

Supplement to work report #9806020.

RECORDED MAY 13 1988

Total number of mining claims covered by this report of work: 1

For Office Use Only		
Total Days Cr. Recorded: 60	Date Recorded: May 13/88	Mining Recorder: S White
	Date Approved as Recorded: 26 May 88	Branch Director: [signature]

Date: May 12/88 — Recorded Holder or Agent (Signature): W. Paul Benney

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: Original signed by Douglas Landry P.O. Box 1783 South Porcupine, Ontario PON 1HO

Date Certified: | Certified by (Signature):

1362 (85/12)

Ministry of Northern Development and Mines
Ontario

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

DOCUMENT No. W8806·020

2.10774

Mining Act

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): Geophysical	Township or Area: MacDiarmid
Claim Holder(s): Kidd Creek Mines	Prospector's Licence No.: T-1848
Address: P.O. Box 1140, 571 Moneta Avnue, Timmins, Ontario P4N 7H9	
Survey Company: Timmins Geophysics Ltd.	Date of Survey (from & to): 25 10 87 – 14 11 87 (Day Mo. Yr.)
Total Miles of line Cut: 79.2 Km	
Name and Address of Author (of Geo-Technical report): Sharon Taylor P.O. Box 1783, 111 Bruce Avenue, South Porcupine, Ontario PON IHO	

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	40
	Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	Radiometric	
	Other	
	Geological	
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	Electromagnetic	
	Magnetometer	
	Radiometric	
	Other	
	Geological	
	Geochemical	

RECEIVED
MAR 07 1988
MINING LANDS SECTION

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

PORCUPINE MINING DIVISION
RECEIVED
JAN 26 1988

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.

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P	996042			995452	
	996043			995453	
	996044			995454	
	996045			995455	
	996046			995456	
	996047			995457	
	996048			995458	
	996049			995459	
	996050			995460	
	996051			995461	
	995397				
	995398				
	995399				
	995400				
	995401				
	995402				
	995403				
	995404				
	995447				
	995448				
	995449				
	995450				
	995451				

RECORDED
JAN 26 1988

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
MAR 18 1988

Total number of mining claims covered by this report of work: 33

For Office Use Only		
Total Days Cr. Recorded: 1980	Date Recorded: RECEIVED Jan 26/88	Mining Recorder: [signature]
	Date Approved as Recorded: 9 March 88	Branch Director: [signature]

Date	Recorded Holder or Agent (Signature)
Jan. 20/88	Sharon Taylor

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: DOUGLAS LONDRY P.O. Box 1783 South Porcupine, Ontario PON IHO

Date Certified:

Certified by (Signature): Douglas Londry

1362 (85/12)

Ontario

Ministry of Northern Development and Mines

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) Geophysical

Township or Area Mac Diarmid

Claim Holder(s) Kidd Creek Mines

P.O. Box 1140 571 Moneta Ave. Timmins, Ont.

Survey Company Timmins Geophysics

Author of Report Sharon Taylor

Address of Author P.O. Box 1783 South Porcupine, Ontario

Covering Dates of Survey 12/9/87 to 20/01/88 (linecutting to office)

Total Miles of Line Cut 79.2 Km.

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	40
–Magnetometer	20
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: Jan. 20/88 SIGNATURE: Sharon Taylor
Author of Report or Agent

Res. Geol. ______ Qualifications 2.8510

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P 996042	P 995450
996043	995451
996044	995452
996045	995453
996046	995454
996047	995455
996048	995456
996049	995457
996050	995458
996051	995459
995397	995460
995398	995461
995399	
995400	
995401	
995402	
995403	
995404	
995447	
995448	
995449	

If space insufficient, attach list

TOTAL CLAIMS 33

837 (85/12)

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations: 3851
Number of Readings: Mag 3851, HLEM 3575
Station interval: 20M
Line spacing: 100M
Profile scale: 1 cm = 20%
Contour interval: Varies from 100 gammas to 1000 gammas

MAGNETIC

Instrument: Scintrex 1GS-2 / MP-3
Accuracy – Scale constant: ± 0.1 gammas
Diurnal correction method: base station
Base Station check-in interval (hours): 30 seconds
Base Station location and value: 1000s, 2800W
base value 58805

ELECTROMAGNETIC

Instrument: Apex Parametics Max Min I
Coil configuration: horizontal loop
Coil separation: 120 m
Accuracy: ± 1%
Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line
Frequency: 444 Hz and 1777 Hz
(specify V.L.F. station)
Parameters measured: in-phase and quadrature components of the secondary field measured as a percentage of the primary field.

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 ____________________

____

____

____

____

____

____

____

____

____

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+ S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File

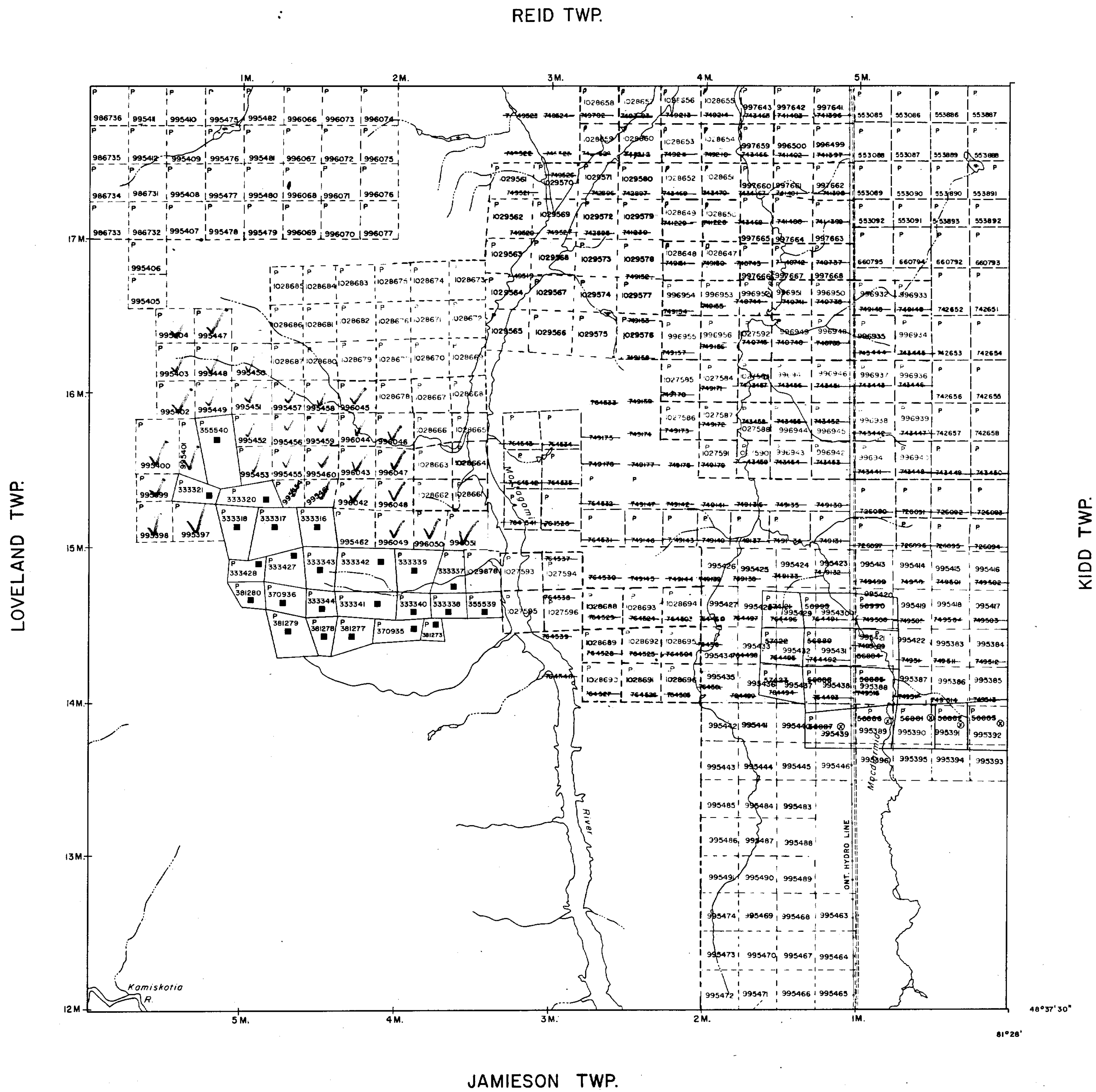
NOTES

THIS TOWNSHIP LIES WITHIN THE MUNICIPALITY OF THE CITY OF TIMMINS.

FLOODING RIGHTS ALONG MATTAGAMI RIVER RESERVED TO ONT HYDRO, L.O.7085

42A12NE0509 2.10774 MACDIARMID

200



LEGEND

- 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
- 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	⊗
SAND & GRAVEL	Ⓢ

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

RECEIVED FEB 10 1988 PORCUPINE MINING DIVISION

TOWNSHIP
MACDIARMID

M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS

MINING DIVISION
PORCUPINE

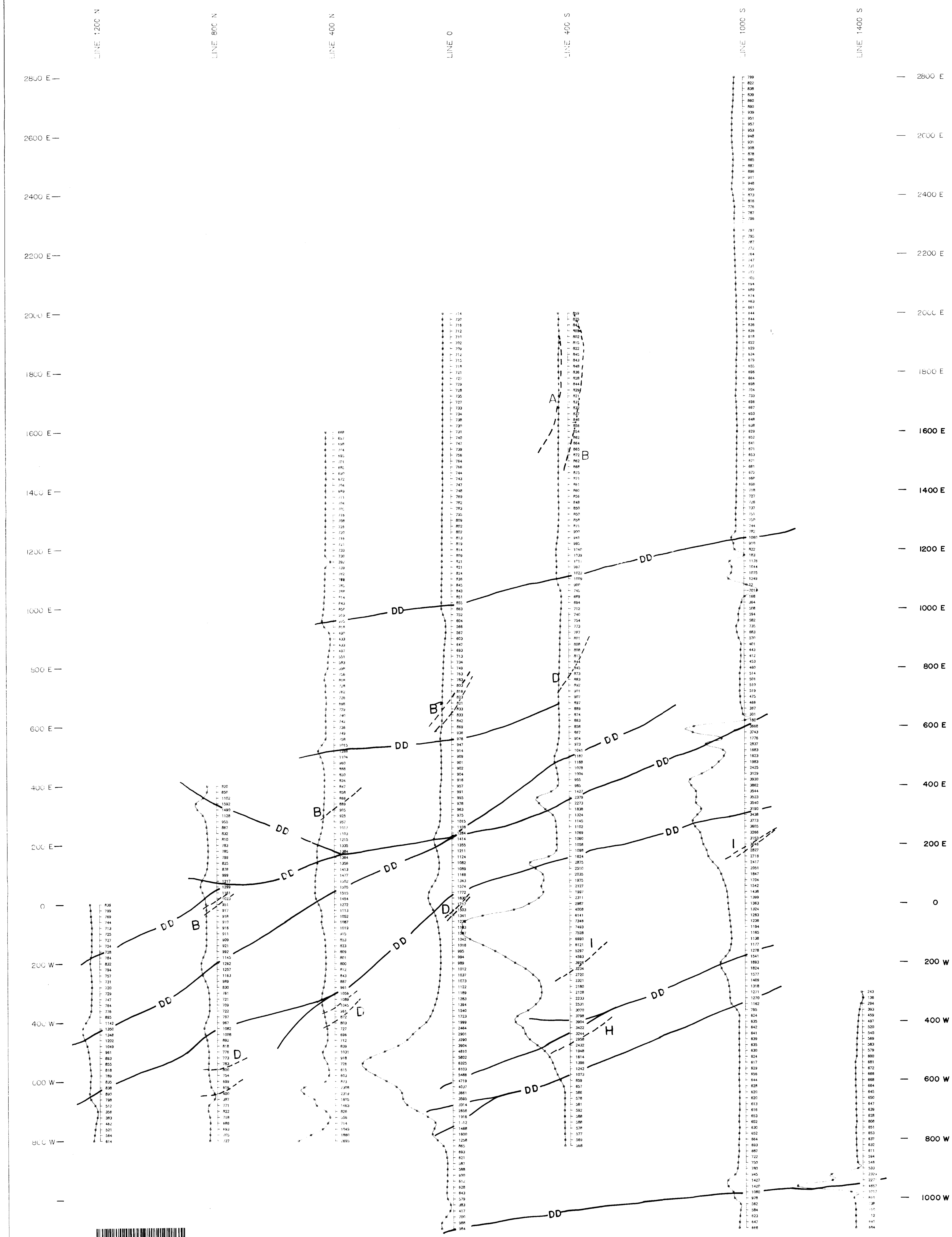
LAND TITLES / REGISTRY DIVISION
COCHRANE

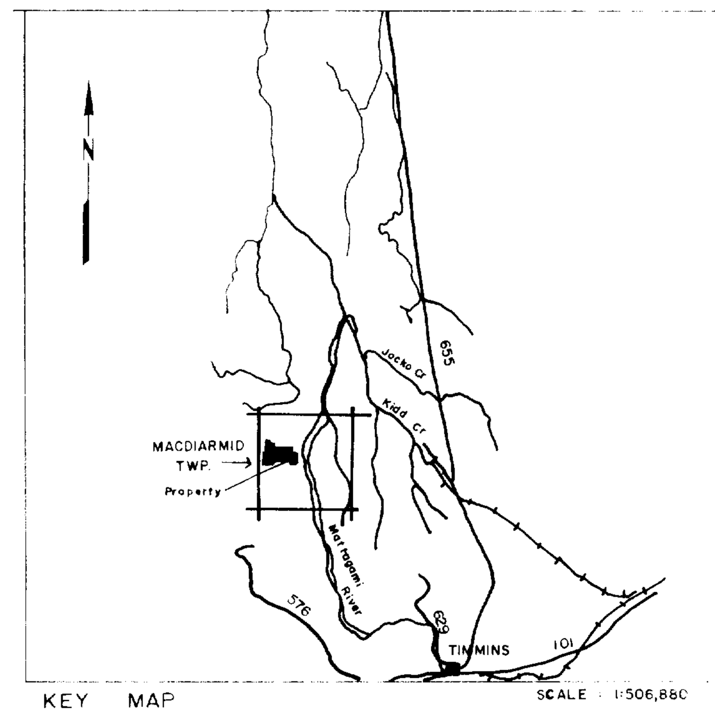
Ontario — Ministry of Natural Resources — Land Management Branch

Date MARCH, 1985

Number **G-3242**

Checked L.P. L.H. June 6/85





Instrument : Scintrex IGS-2/MP-4

Type : Total Field Proton Precession

Profile Scale : 1cm = 1000 Gammas

Datum Line : 58200 Gammas

—DD— Diabase Dyke

- - - Conductor 444 Hz

2-10774

FALCONBRIDGE LTD.

MAGNETIC SURVEY
(TIE LINES)

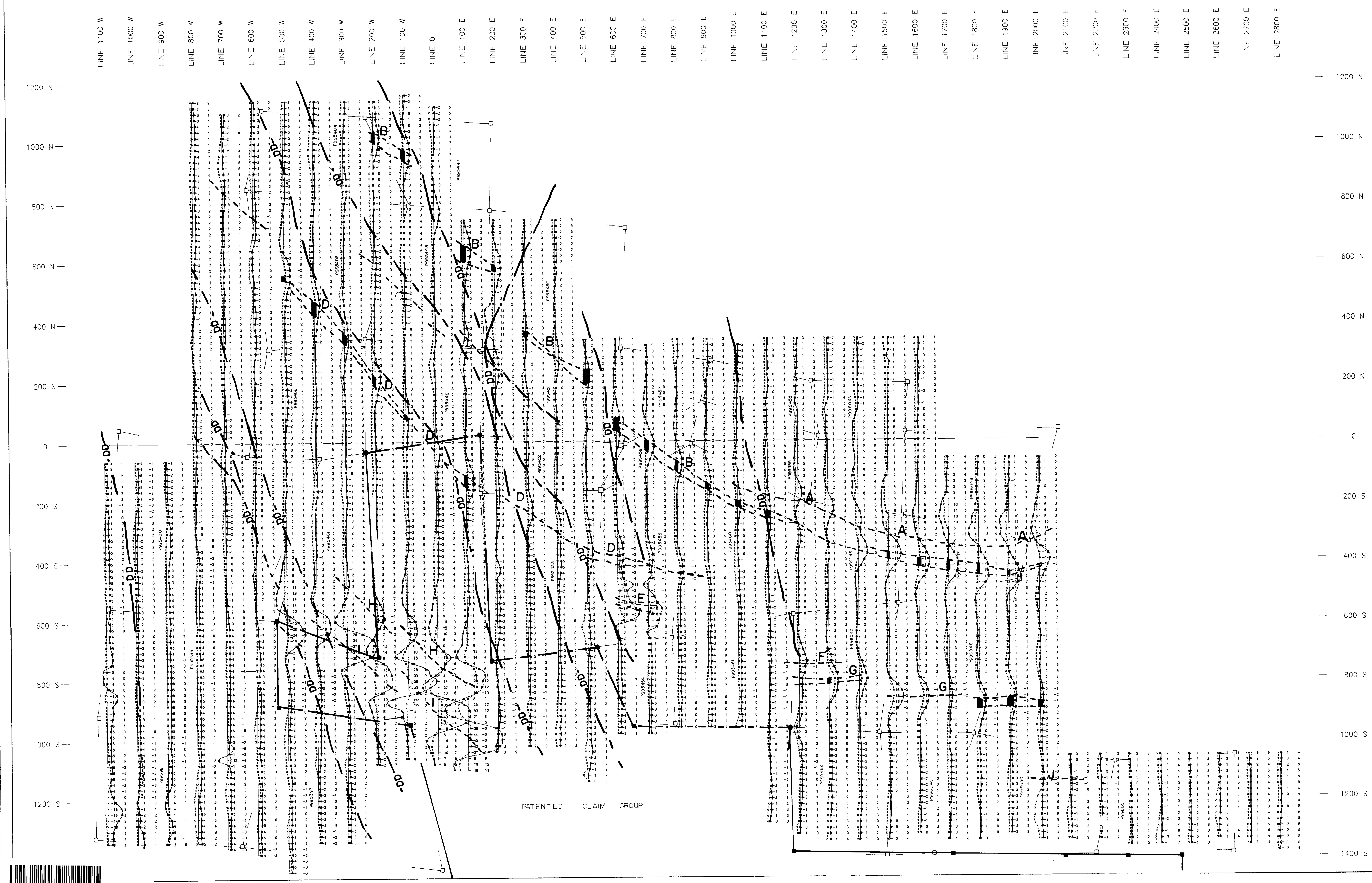
WEST MACDIARMID

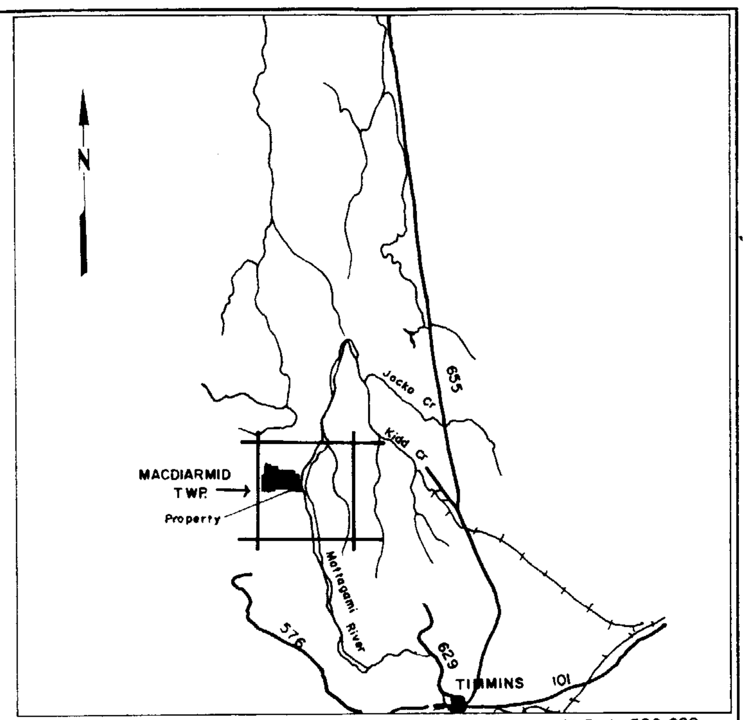
NTS 42-A/12	PROJ NO 8172
SCALE : 1: 5000	DATE : NOVEMBER 1987
FILE : TIEL.MAG	Shaun Taylor
WORK BY :	Timmins Geophysics Ltd.

42A12NE0589 2.10774 MACDIARMID

210

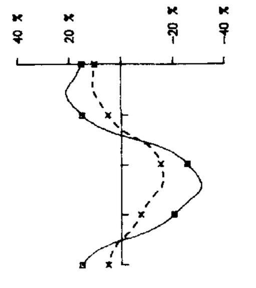
FALCONBRIDGE LTD.
MAGNETIC SURVEY
WEST MACDIARMID
NTS:42-A/12
PROJ NO: 8172
SCALE : 1: 5000
DATE : NOVEMBER 1987
FILE : MMAC.MAG
WORK BY : Timmins Geophysics Ltd.
Instrument : Scintrex IGS-2/MP-4
Type : Total Field Proton Precession
Contour Interval : 100 Gammas
Datum Line : 58000 Gammas
Conductor 444 Hz
Diabase Dyke DD
approx claim post
Base Station
Diamond Drill Holes
KEY MAP
SCALE 1:506,880
MACDIARMID TWP. Property
TIMMINS
BASELINE
PATENTED CLAIM GROUP
2.10774
220
LINE 1100 W
LINE 1000 W
LINE 900 W
LINE 800 W
LINE 700 W
LINE 600 W
LINE 500 W
LINE 400 W
LINE 300 W
LINE 200 W
LINE 100 W
LINE 0
LINE 100 E
LINE 200 E
LINE 300 E
LINE 400 E
LINE 500 E
LINE 600 E
LINE 700 E
LINE 800 E
LINE 900 E
LINE 1000 E
LINE 1100 E
LINE 1200 E
LINE 1300 E
LINE 1400 E
LINE 1500 E
LINE 1600 E
LINE 1700 E
LINE 1800 E
LINE 1900 E
LINE 2000 E
LINE 2100 E
LINE 2200 E
LINE 2300 E
LINE 2400 E
LINE 2500 E
LINE 2600 E
LINE 2700 E
LINE 2800 E
1200 N
1000 N
800 N
600 N
400 N
200 N
0 B.L.
200 S
400 S
600 S
800 S
1000 S
1200 S
1400 S





KEY MAP SCALE 1: 506,880

Instrument : Apex Parametrics MaxMin I
Coil Separation : 120 m
Frequency: 444 Hz
Profile Scale : 1cm = 20%



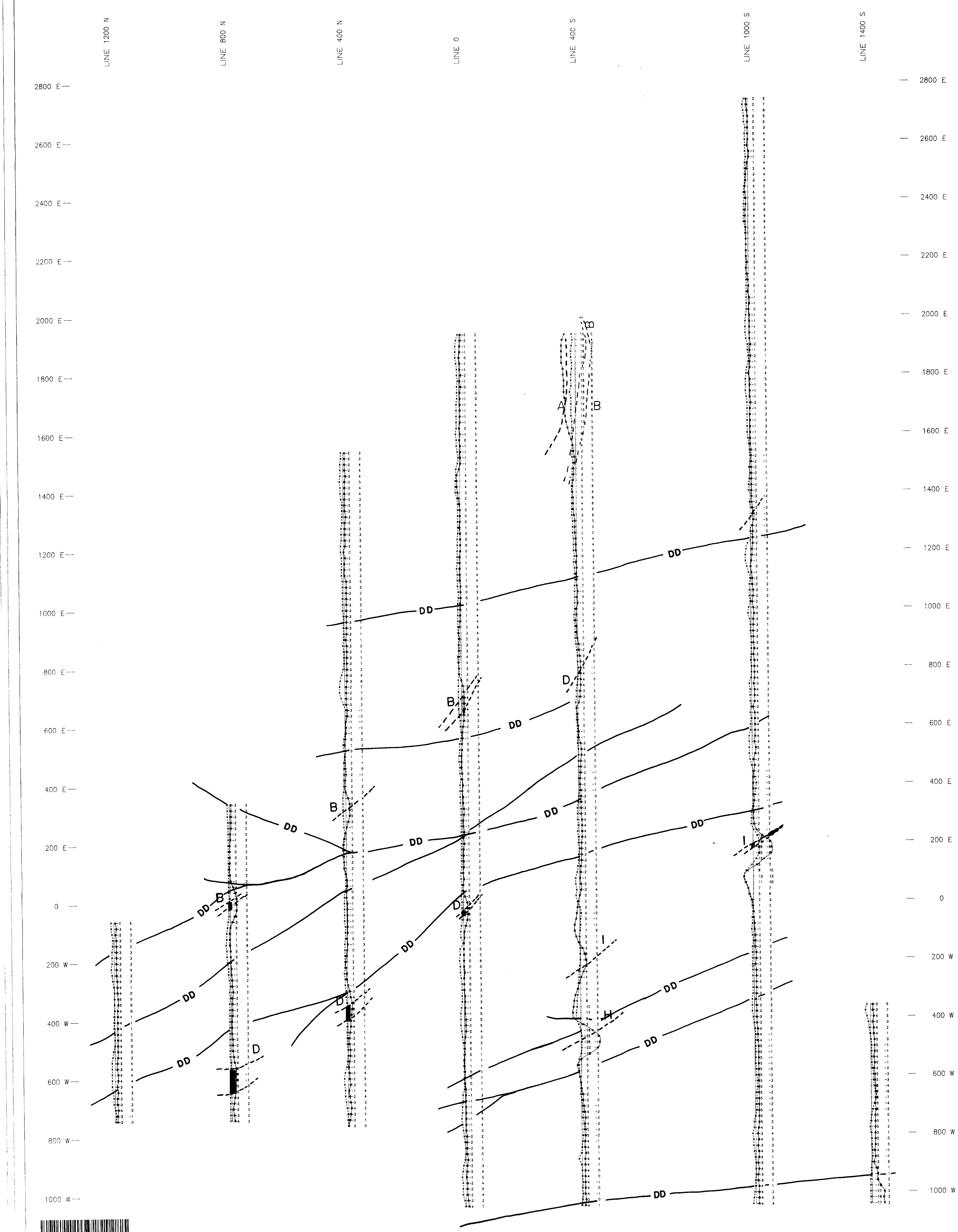
In-phase
Quadrature
Anomaly
Diabase Dyke — DD —

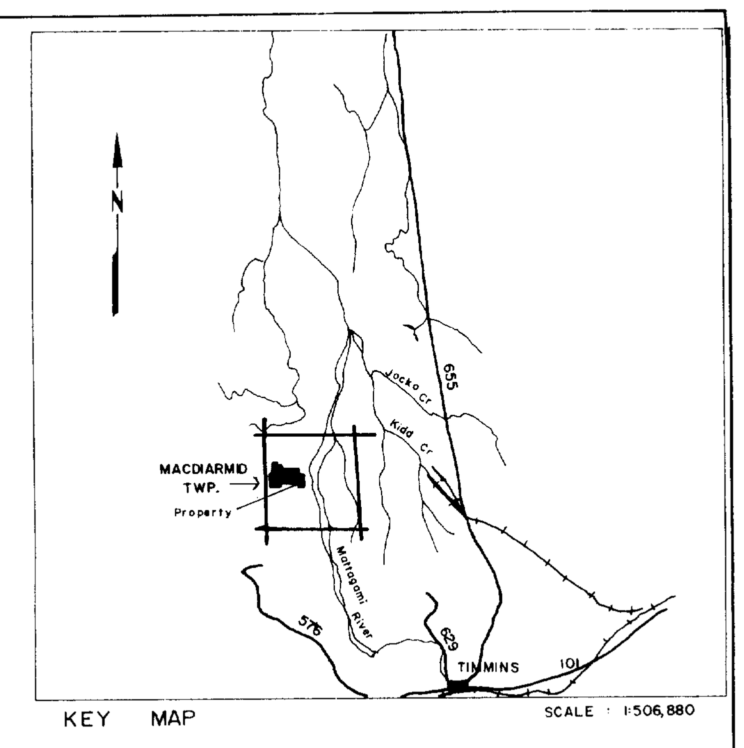
2.10774

FALCONBRIDGE LTD.
HLEM SURVEY
WEST MACDIARMID

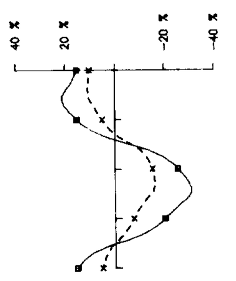
NTS 42-A/12	PROJ NO 8172
SCALE : 1: 5000	DATE : NOVEMBER 1987
FILE : MAC.HL	Sharon Taylor
WORK BY :	Timmins Geophysics Ltd.

230





Instrument : Apex Parametrics MaxMin I
Coil Separation : 120 m
Frequency: 444 Hz
Profile Scale : 1cm = 20%



In-phase
Quadrature

Anomaly
Diabase Dyke —DD—

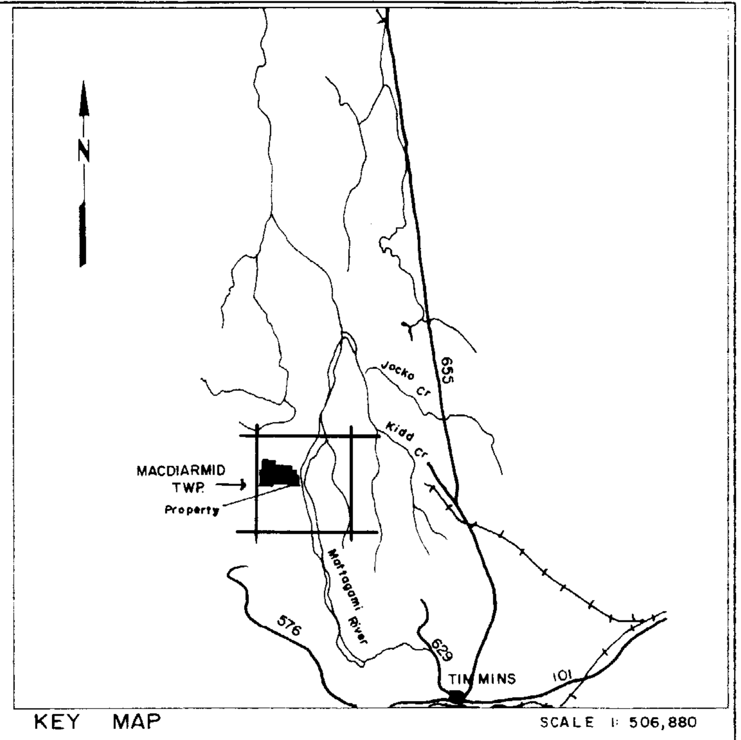
FALCONBRIDGE LTD.

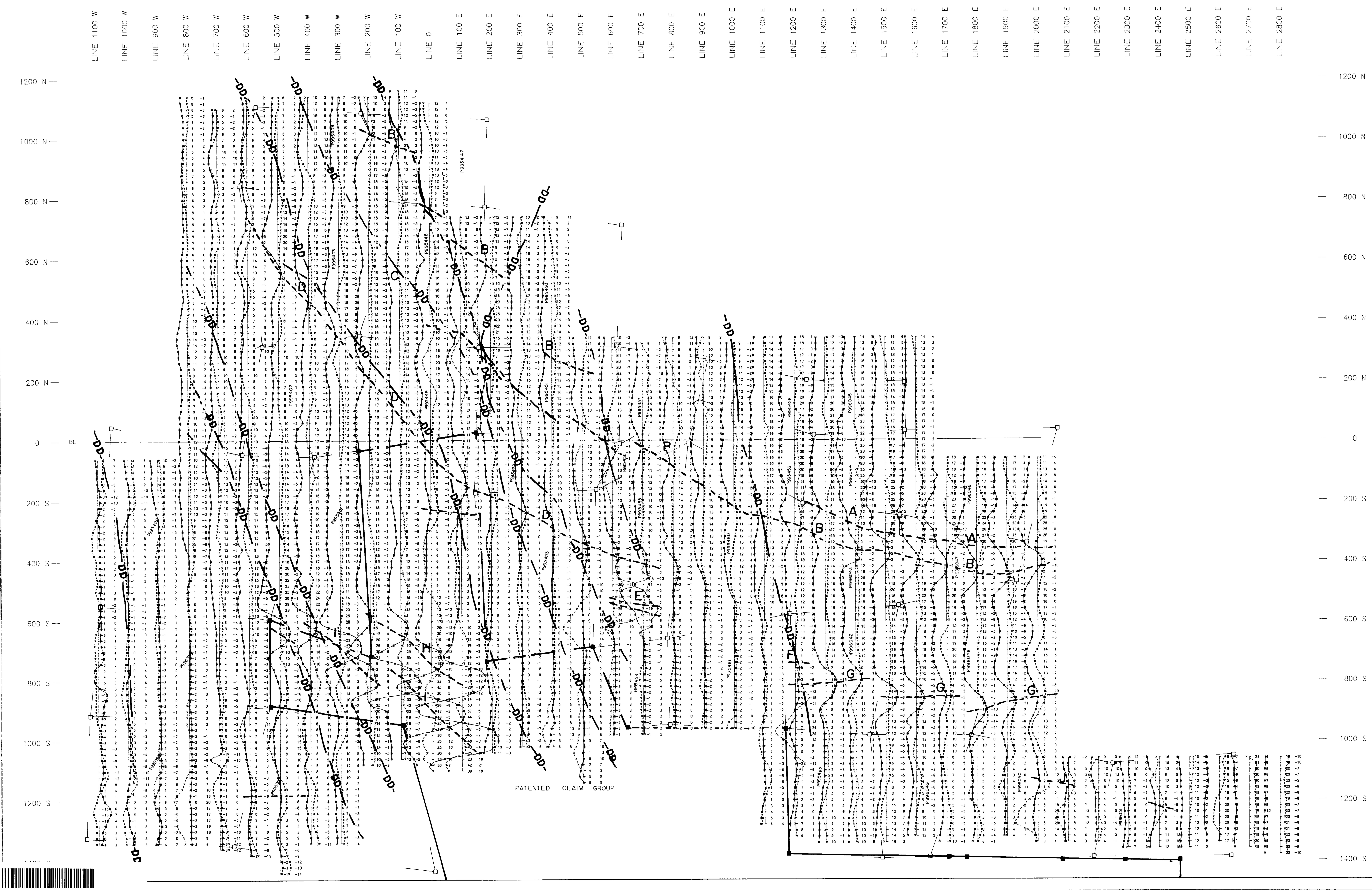
HLEM SURVEY
TIE LINES
WEST MACDIARMID

NTS: 42-A/12 PROJ NO: 8172

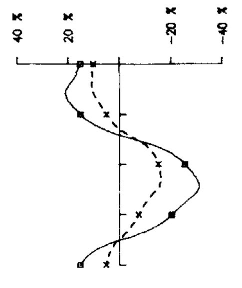
SCALE : 1: 5000	DATE : NOVEMBER 1987
FILE : tie.hl	
WORK BY : *Timmins Geophysics Ltd.*	

240





Instrument : Apex Parametrics MaxMin I
Coil Separation : 120 m
Frequency: 1777 Hz
Profile Scale : 1cm = 20%



In-phase
Quadrature
Anomaly
Diabase Dyke DD

2.1074

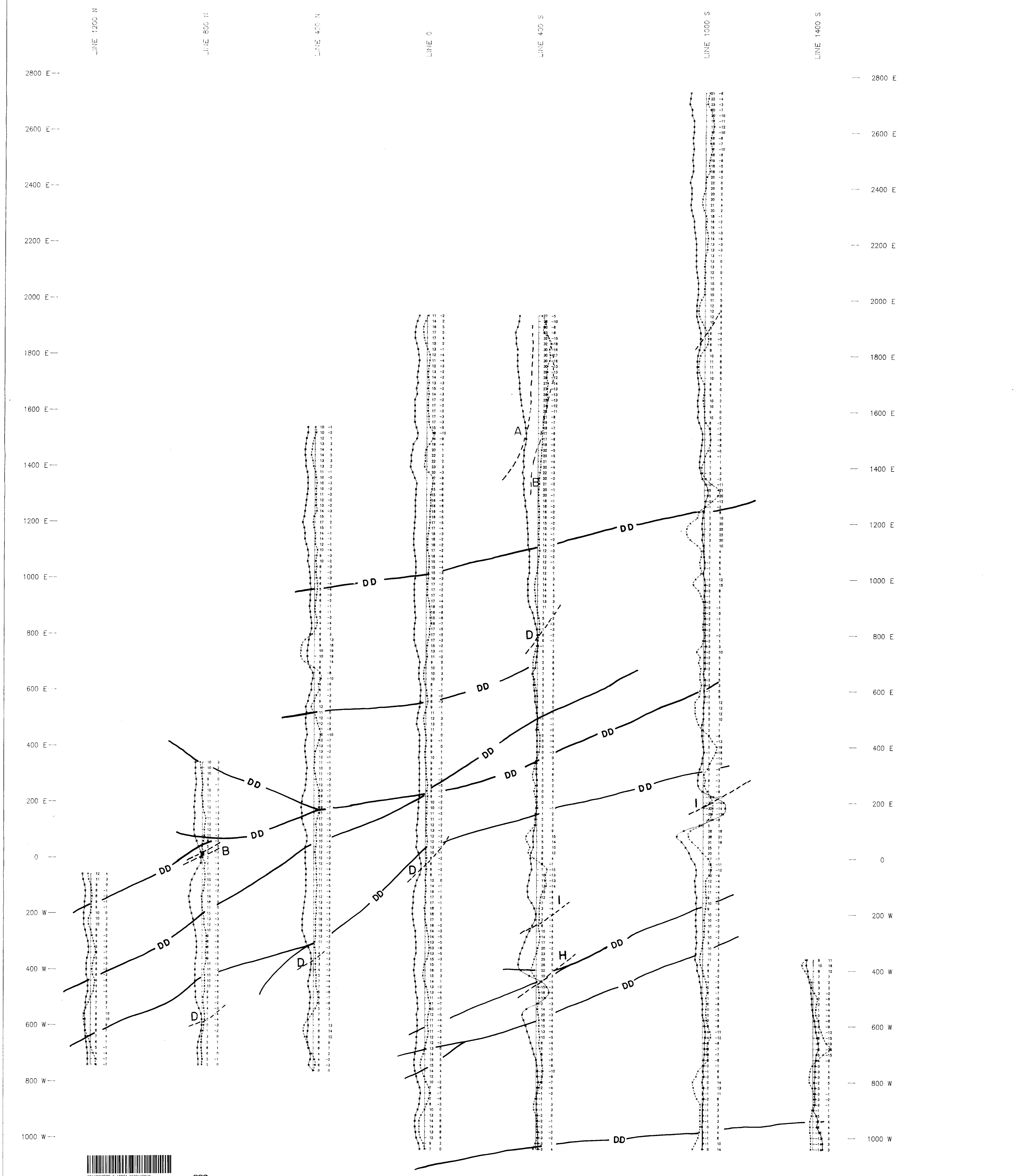
FALCONBRIDGE LTD.

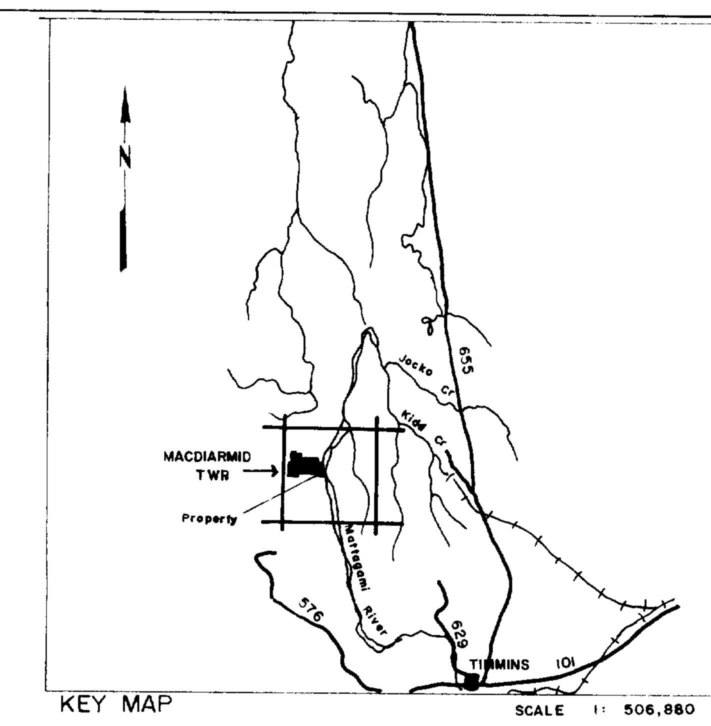
HLEM SURVEY

WEST MACDIARMID

NTS: 42-A/12	PROJ NO: 8172
SCALE : 1: 5000	DATE : NOVEMBER 1987
FILE : MAC.HL	Shaun Taylor
WORK BY :	Timmins Geophysics Ltd.

250



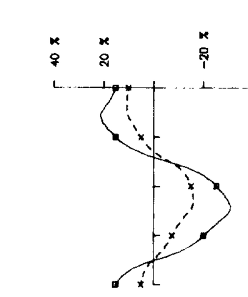


KEY MAP

SCALE 1: 506,880

N

Instrument : Apex Parametrics MaxMin I
Coil Separation : 120 m
Frequency: 1777 Hz
Profile Scale : 1cm = 20%



In-phase
Quadrature

Anomaly
DD : Diabase Dyke

2.10774

FALCONBRIDGE LTD.

HLEM SURVEY
TIELINES
WEST MACDIARMID

NTS: 42-A/12	PROJ NO: 8172
SCALE : 1: 5000	DATE : NOVEMBER 1987
FILE : tie.hl	Shawn Taylor
WORK BY :	*Timmins Geophysics Ltd.*

42A12NE8589 2.10774 MACDIARMID

260