



41P15NE8702 2.15058 CAIRO

010

PROTON MAGNETOMETER
and
VLF ELECTROMAGNETIC SURVEYS

for
Biralger Resources Ltd.
CAIRO TWP. PROPERTY

2. 150 58

Qual. # 2.3742.

by
R.A. Bernatchez, P.Eng.,
Consulting Geologist

April 11, 1992

RECEIVED

JUN 15 1993

MINING LANDS BRANCH

INTRODUCTION

Biralger Resources Ltd. contracted R.A. Bernatchez, P.Eng., Consulting Geologist to conduct a magnetic and VLF electromagnetic survey over a 15 km cut grid on their Cairo Twp. Property from February 20 to March 7, 1991.

LOCATION, ACCESS and GRID

The surveyed area is located 10 km east of the community of Matachewan, Ontario and in the Townships of Cairo and Flavelle, north of Highway 66 from Matachewan to Kirkland Lake.

The surveyed area is accessible by logging road north of Hwy 66. The surveyed area covered claims portions or all of claims L 373405, 859204, 859205, 859206, 859207, 859208, 859209, 1048585, 1048586, 1048591, 1048592, 1179845, 1179846, 1132183, 1132184, 1132187, 1132188.

The grid was established with a N60°E baseline from 6+00E to 12+00W with the 0+00 located 40 metres northwest of post 4 of claim L373405. Grid lines were established at 200 metre intervals except on lines 3+00E and 3+00W. Pickets were established at 25 metre intervals along the base line and grid lines. A total of 15,075 metres of base and grid lines were cut and surveyed.

PERSONNEL

The day to day and over-all supervision of the geophysical survey program was under R.A. Bernatchez, P.Eng. The magnetic readings were taken by G.H. Bernatchez of Matachewan.

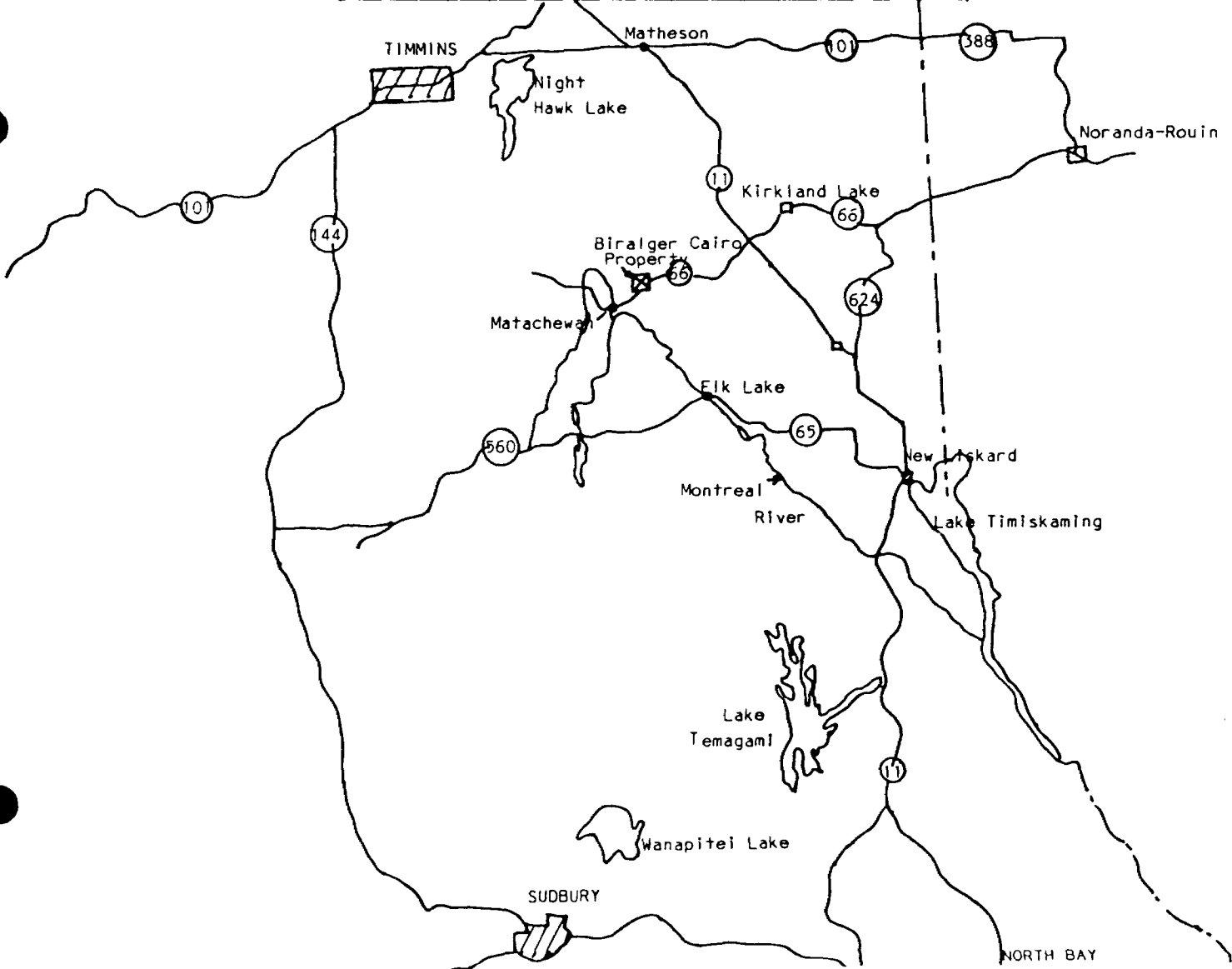
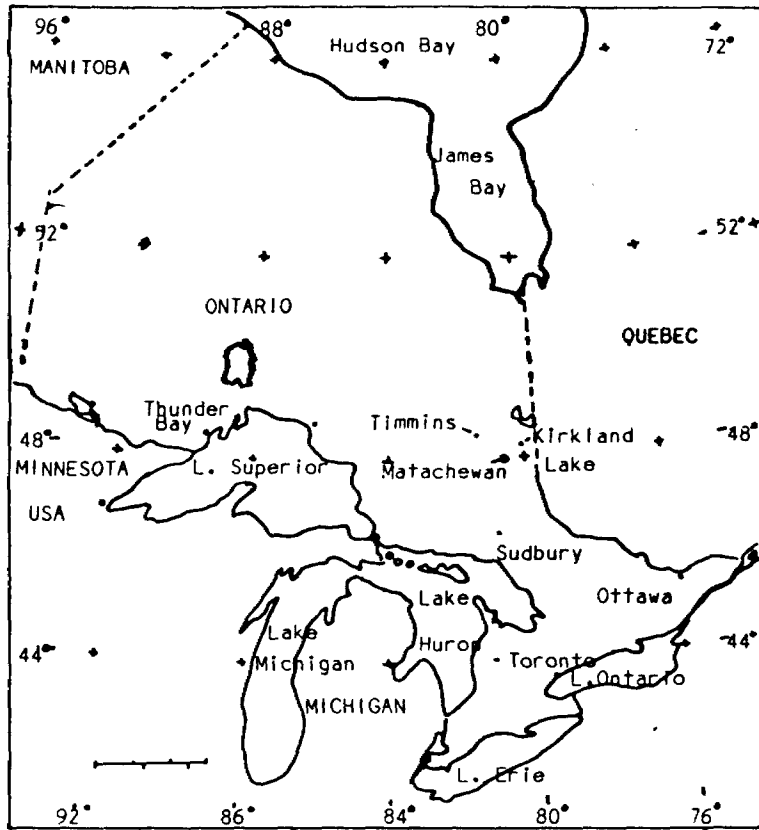
INSTRUMENTATION

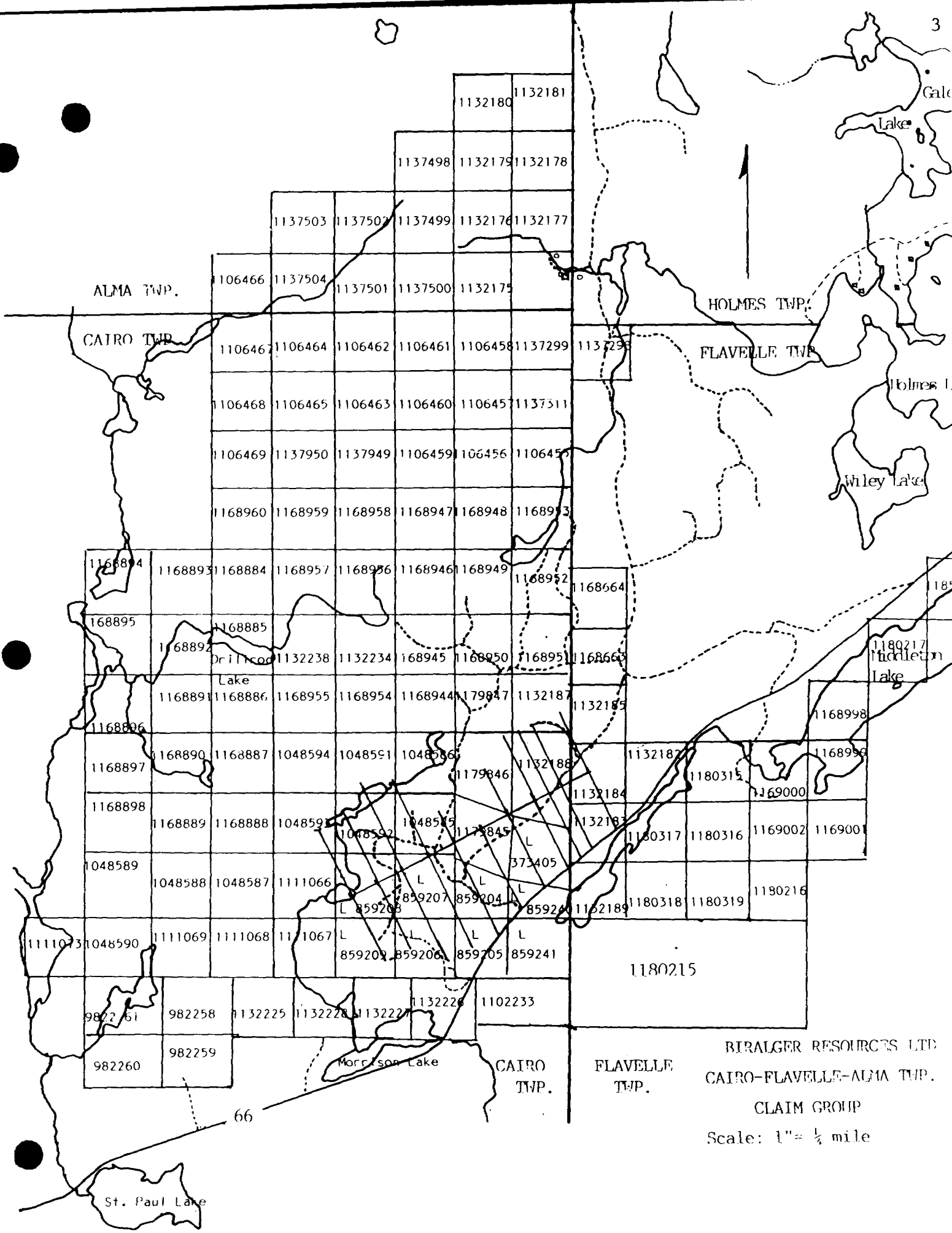
Magnetic

A proton precession geometic portable magnetometer model G-816 was used for this survey. A total field measurement was read with a resolution of one gamma and all values were corrected for diurnal variations using a closed loop method of adjustment. Readings were recorded at 12.5 metre intervals on the base and grid lines except lines 0+00 from 3+00S to 5+25S and line 2+00E from 2+75S to 5+25S. The datum selected was 59,000 gamma.

Electromagnetic

A VLF-EM-16 unit manufactured by Geonics Ltd. of Mississauga, Ontario was used for this survey. Both in and out of phase readings were taken at 25 metre intervals along all grid lines. The transmitter station used was Seattle, Washington with a frequency of 21.8 KHz.





BIRALGER RESOURCES LTD
 CAIRO-FLAVELLE-ALMA TWP.
 CLAIM GROUP
 Scale: 1" = 1/4 mile

DISCUSSION OF RESULTS

MAGNETIC

The surveyed area is presented in plan form at a scale of 1:2500. The corrected magnetic data is plotted on this map and it contours at 100, 250 and 1000 gamma intervals.

This data indicates a heterogeneous sequence of rocks that exhibit 2 strong regional trends of approximately 60-70° Azimuth. Two strong magnetic trends were detected in the southeast and west portion of the grid with a magnetic gradient of 7000 gammas; in the southeast anomaly from 62000 to 69000 gammas and a 6200 gamma gradient in the west anomaly from 59000 to 65200 gammas. These two magnetic highs coincide with underlying volcanic rocks of the trachytic variety.

A generally flat and lineal magnetic gradient was detected over the remainder of the grid. The magnetic readings ranged from 58,158 gammas to 60,000 gammas. These readings tend to coincide with underlying syenitic rocks.

Several northeast trending lineal magnetic lows were detected predominantly over the syenites with some known to coincide with areas of fracturing, alteration and mineralization.

These areas of lineal magnetic lows appear to indicate areas of silicification due to alteration.

The area between the magnetic highs and lows shows a sharp gradient which indicates the contacts between the volcanics and the syenite intrusion of the Cairo Stock.

The southeast magnetic gradient shows wide fluctuations in magnetic readings from lines L3+00E to 6+00E south of the base line. This magnetic fluctuation is due to the intrusion of syenite dykes within the volcanic and sedimentary rocks located immediately north of Hwy. 66.

Magnetite is the main mineral which causes the high magnetic readings. Some pyrrhotite is found in an old pit near line 2+00E at about 4+00S.

The N60-70°E lineation coincides with the regional structure which extends southwest and northeast beyond the Property boundary. This lineal magnetic trend also coincides with a major deformation zone located south of the grid which has been recently mapped as being the west southwesterly extension of the Larder Lake-Cadillac Break.

ELECTROMAGNETIC

The surveyed area is represented in plan form at a scale of 1:2500 with the vertical profile scale set at 1" = 40°. All readings were taken facing grid north and using Seattle, Washington station at 21.8 KHz.

Numerous conductors were located within the surveyed area all having north-easterly strike direction.

Several of the conductors are known to coincide with zones of mineralization, both, within the syenites and volcanic-sedimentary rocks.

The following is a list of conductors and their interpreted and known cause:

- A - A¹ - mineralized syenite zone with py, cp, fl., q.v.
- B - B¹ - mineralized volcanics, tuffs with po, py, mag, cp
- C - C¹ - mineralized syenite at east end; py, cp
- D - D¹ - possibly mineralized volcanics
- E - E¹ - contact zone of fracturing, abundant diss cp in syenite & volcanics
- F - F¹ - mineralized & fractured syenite, cp, py, gn, q.v., fl
- G - G¹ - mineralized & fractured syenite at east end diss cp, py
- H - H¹ - unknown cause, possibly mineralized syenite
- I - I¹ - unknown - area covered by cobalt sediments
- J - J¹ - fault zone - may contain mineralization
- L - L¹ - unknown
- M - M¹ - unknown
- N - N¹ - mineralized syenite - volcanics near line 8W, 0+50N
- P - P¹ - unknown, possibly mineralized volcanics & syenite fracture zone
- Q - Q¹ - mineralized syenite fracture zone
- R - R¹ - unknown, possibly mineralized fracture zone in volcanics & syenites
- S - S¹ - unknown
- T - T¹ - fractured and mineralized syenite porphyry
- U - U¹ - unknown
- V - V¹ - unknown, possibly mineralized fault zone in syenite coincident mag low partially tested south side with Hole C-91-3
- W - W¹ - unknown, possible east extension of conductor R-R¹
- X - X¹ - unknown, possible east extension of W-W¹
- Y - Y¹ - unknown, possible extension of T-T¹ or U-U¹ conductor

Several other small weak conductors of unknown origin were also detected.

CONCLUSION AND RECOMMENDATIONS

The magnetic and VLF electromagnetic surveys were very useful in defining many of the areas of mineralization with economic interest. Areas of weak conductance not necessarily expressed as a crossover but as a quick change reading have been proven to be caused by a mineralized zone e.g. Conductor A-A¹ and many others (see map).

These surveys have been very useful in identifying the zones of disseminated chalcopyrite-gold-silver mineralization within fractured and altered syenites and volcanic rocks.

It is highly recommended that a program of detailed mapping be carried out over the grid.

The magnetic and electromagnetic VLF surveys should also be carried out over the remaining portion of the Property.

The VLF-EM reading should be plotted using the Fraser Filter method.

Subsequent anomalies should be tested by stripping, drilling and sampling.

Submitted by

R.A. Bernatchez, P.Eng.,
Consulting GEologist

APPENDIX

MAPS

Map A - Magnetometer Contour Survey Plan

Map B - VLF-EM Profile Survey Plan



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Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Section
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

Our File: 2.15058
Transaction #: W9380.00034

January 14, 1994

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

Dear Sir:

**RE: APPROVAL OF ASSESSMENT WORK SUBMITTED FOR GEOPHYSICS ON MINING
CLAIMS L859204 ET AL IN CAIRO AND FLAVELLE TOWNSHIPS**

A Notice of Deficiency was not issued on this Report of Work prior to the 90 day deemed approval date and as outlined in subsection 6(5) of the Mining Act Regulations this Report of Work is **deemed approved** as of **MAY 23, 1993**.

If you require further information please contact Lucille Jerome at (705) 670-5855.

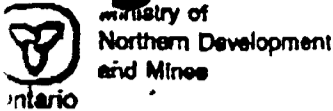
Yours sincerely

Ron C. Gashinski
Senior Manager, Mining Lands Section
Mining and Land Management Branch
Mines and Minerals Division

LJ/l

cc: Resident Geologist
Kirkland Lake, Ontario

✓ Assessment Files Library
Toronto, Ontario



Report of Work Conducted After Recording Claim

Mining Act

Transaction Number
W9390.00034

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about its collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

- Instructions:
- Please type or print and submit in duplicate.
 - Refer to the Mining Act and Regulations for requirements of filing assessment work or consult the Mining Recorder.
 - A separate copy of this form must be completed for each Work Group.
 - Technical reports and maps must accompany this form in duplicate.
 - A sketch, showing the claims the work is assigned to, must accompany this form.

2.15058

Recorded Holder(s) Biralger Resources Ltd	Client No. 108485
Address 126 Willow Rd, Atikokan, Ontario, P0T1C0	Telephone No. 807-597-4526
Mining Division Larder Lake	Township/Area Cairo - Flavelle
Date Work Performed From: Feb 20 1991 To: March 7/91	M or G Plan No. G 3209, M-220

Work Performed (Check One Work Group Only)

Work Group	Type
Geotechnical Survey	Ground Magnetic and VLF-EM Surveys @ \$125/km each
Physical Work, Including Drilling	
Rehabilitation	
Other Authorized Work	Line Cutting 15.975 km @ \$250.00/km
Assays	
Assignment from Reserve	

Total Assessment Work Claimed on the Attached Statement of Costs ~~\$255.00~~ **\$7155.00** ~~9255.00~~

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)

Name	Address
R.A. Bernatchez Pres.	126 Willow Rd Atikokan Ontario P0T1C0
	JUN 15 1993
	MINING LANDS

Attach a schedule if necessary)

Certification of Beneficial Interest * See Note No. 1 on reverse side

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.

Date: **Feb 15/93** Recorded Holder or Agent (Signature): **R.A. Bernatchez**
 Date: **April 13/93** **R.A. Bernatchez, Pres.**

Certification of Work Report

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying: **Raymond A. Bernatchez**

Telephone No: **807-597-4526** Date: **February 16 1993** Certified By (Signature): **Raymond A. Bernatchez, Pres.**

For Office Use Only

Total Value of Record	Date Recorded Feb 22/93	Mining Recorder [Signature]	Received Stamp FEB 23 1993
Approved 7155.00	Final Approval Date May 23/93	Date Approved	
Approved 7155.00	Date Notice for Amendments Sent		

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JUN 15 1993



Statement of Costs for Assessment Credit

État des coûts aux fins du crédit d'évaluation

Mining Act/Loi sur les mines

Transaction No./N° de transaction

Amended / Révisé
100 350 0003

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, 4th Floor, 189 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adressez toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 189, rue Cedar, 4^e étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre		
	Field Supervision Supervision sur le terrain		
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-consult	Type Ground Mag & VLF-EM		
	Line Cutting	\$ 7713	\$ 7713
Supplies Used Fournitures utilisées	Type		
Equipment Rental Location de matériel	Type		
Total Direct Costs Total des coûts directs			7713

2. Indirect Costs/Coûts indirects

Note: When claiming Rehabilitation work Indirect costs are not allowable as assessment work. Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type		
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JUN 15 1993			
Food and Lodging Nourriture et hébergement		725	725
Mobilization and Demobilization Mobilisation et démoblisation		817	817
Sub Total of Indirect Costs Total partiel des coûts indirects			1542
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excedant pas 20 % des coûts directs)			1542
Total Value of Assessment Credit (Total of Direct and Allowable indirect costs) Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)			9255

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note: Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Filing Discounts

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
	x 0.50 =

Remises pour dépôt

1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Evaluation totale demandée
	x 0,50 =

Certification Verifying Statement of Costs

I hereby certify that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

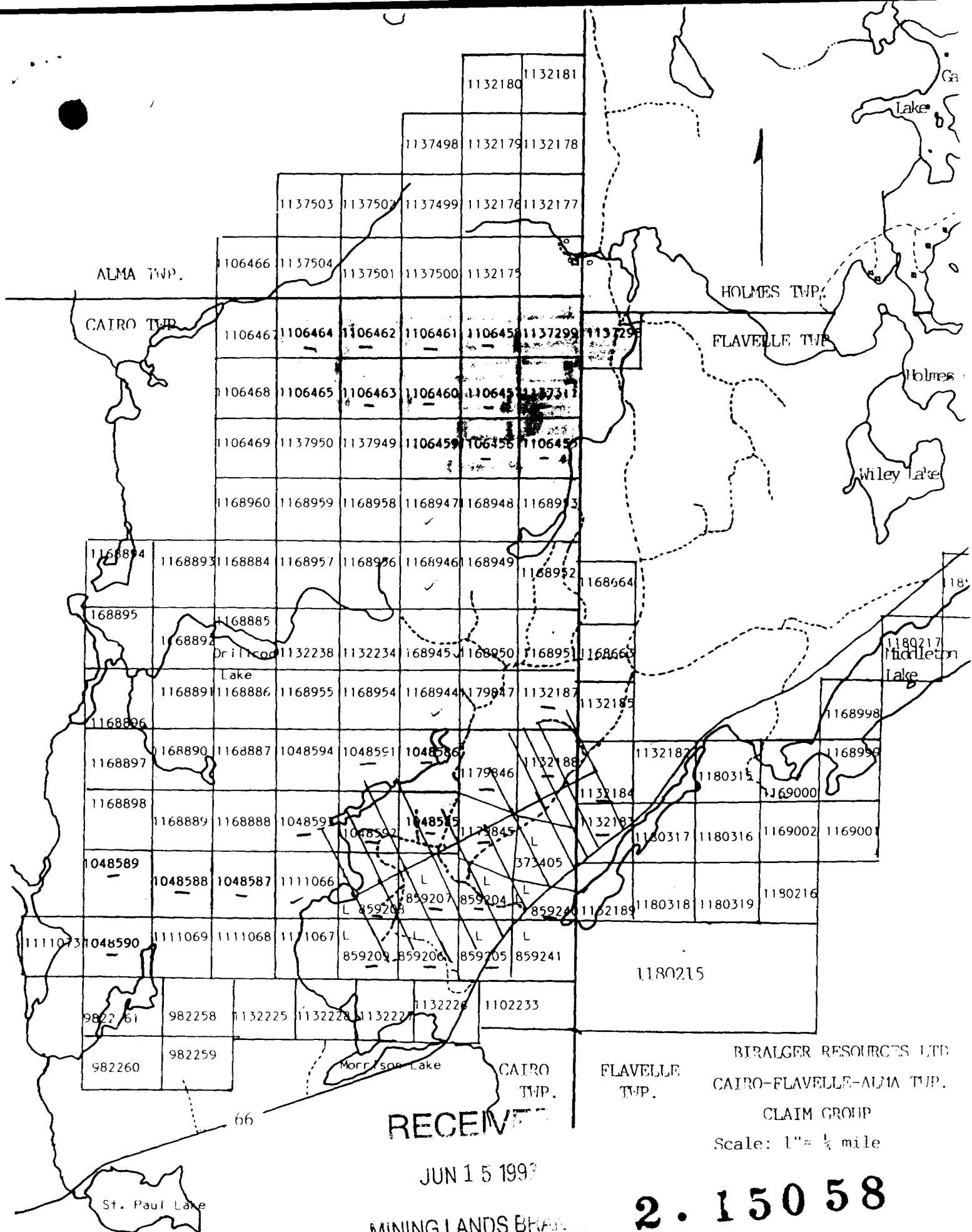
that as President of Bivalve Res. I am authorized (Recorded Holder, Agent, Position in Company) to make this certification

Attestation de l'état des coûts

J'atteste par la présente que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de _____ je suis autorisé (titulaire enregistré, représentant, poste occupé dans la compagnie) à faire cette attestation.

Signature: Richard H. Bernatchez Date: Feb 16 1993



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JUN 15 1993

MINING LANDS BRANCH

BIRALGER RESOURCES LTD.
 CAIRO-FLAVELLE-ALMA TWP.
 CLAIM GROUP
 Scale: 1" = 1/4 mile

2.15058

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

(R) MINING AND SURFACE RIGHTS NOT OPEN TO STAKING, APPLICATION UNDER SECTION 3(b) JUNE 12, 1987.

CL 4908 - PENDING APPLICATION UNDER PUBLIC LANDS ACT

LAND USE PERMIT

DATE OF ISSUE

APR 13 1983

**LARDER LAKE
MINING RECORDER'S OFFICE**

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

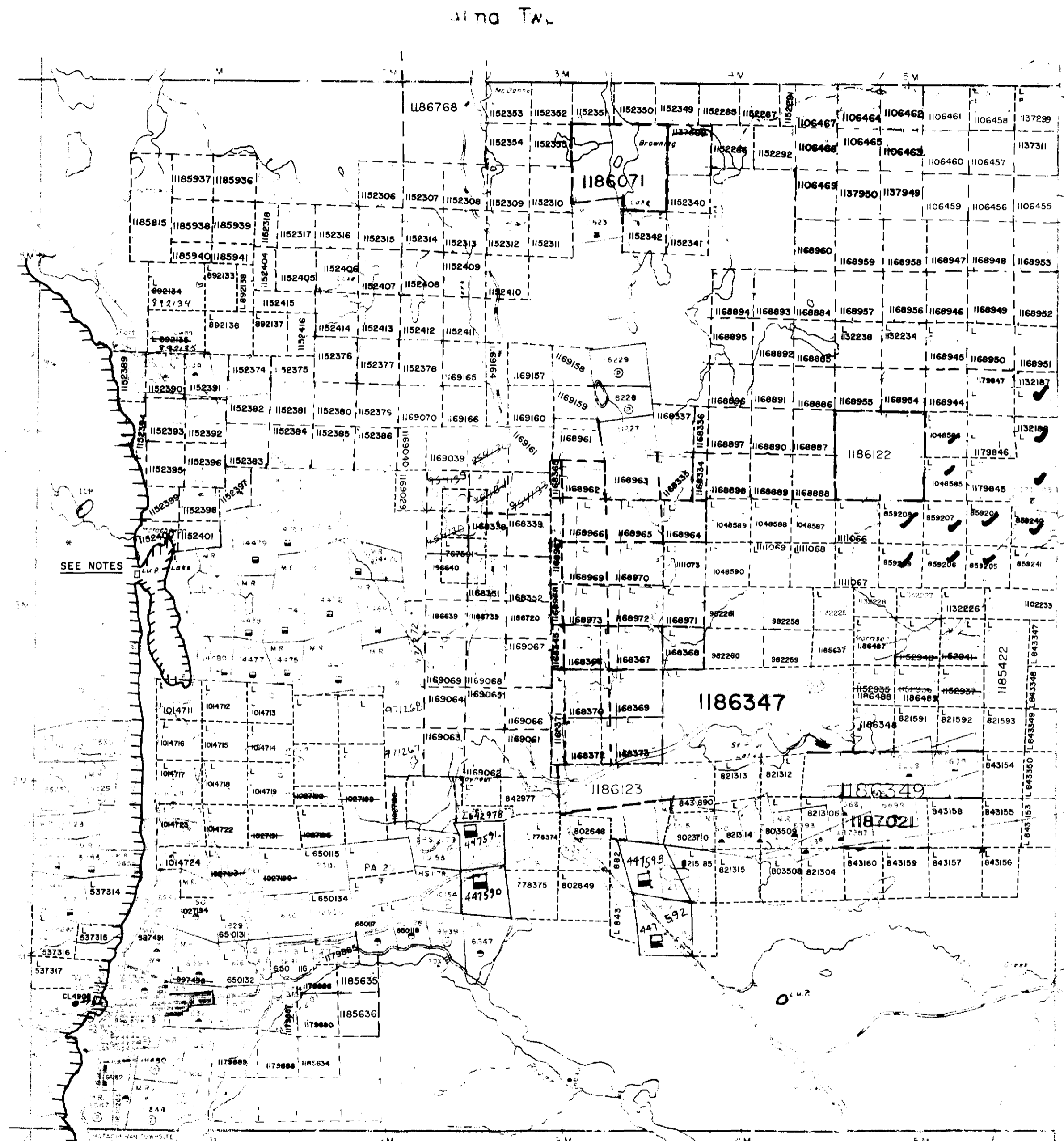
NOTES

AREA WEST OF WEST MONTREAL RIVER CLOSED TO STAKING SUBJECT TO SEC. 38(1) OF THE MINING ACT, 20 SEPT. 1978. W 65, 83

"THIS MAP SHOWS THE APPROXIMATE LOCATION OF THE BOUNDARIES OF THE AREA WHICH IS THE SUBJECT OF CURRENT LITIGATION. THE EXACT LOCATION WILL BE SHOWN FOLLOWING CONFIRMATION BY THE PARTIES TO THE ACTION."

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP / AREA FALLS WITHIN THE PLONSKI FOREST MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS. THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT: P.O. BOX 129 SWASTKA, ONT. POK ITO 705-642-3222



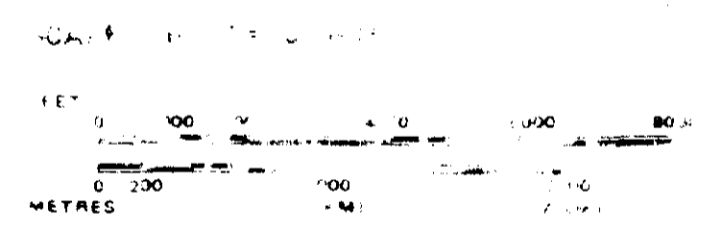
Kimberley Twp.

HIGHWAY ROUTE NO.	
OTHER ROADS	
RAILS	
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	
CONCRETE/PIPER STEAM	
FLOODING OR FLOODING RIGHTS	
SUBDIVISION OR COMPOSITE PLAN	
RESERVATIONS	
SIGNAL SHOP LINE	
MARSH OR MUSKOG	
MINES	
TRAVERSE INSTRUMENT	

DISPOSITION OF CROWN LANDS

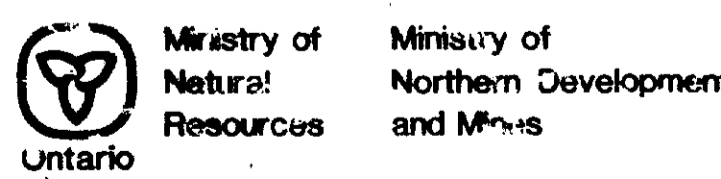
TYPE OF DOCUMENT	SYMBOL
PATENT SURFACE & MINING RIGHTS	
LEASE SURFACE & MINING RIGHTS	
LEASE SURFACE RIGHTS ONLY	
LEASE MINING RIGHTS ONLY	
LEASE OF OCCUPATION	
ORDER-IN-COUNCIL	
RESERVATION	
CANCELLED	
LAND & GRAVEL	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 12, 1913, VESTED IN ORIGINAL PATENTEE AT THE PUBLIC LANDS ACT, 1917, CHAP. 38, SECT. 63, S.I. 1917/18.



2. 15058

TOWNSHIP
CAIRO
M.N.R. ADMINISTRATIVE DISTRICT
KIRKLAND LAKE
MINING DIVISION
LARDER LAKE
LAND TITLES / REGISTRY DIVISION
TIMISKAMING



DATE: JULY 1978
G-3209

COPY OF THIS MYLAR ARCHIVED SEPT 6 1991



NOTES

400' surface rights reservation along the shores of all lakes and rivers.

The subdivision of this Township into lots and concessions is partially annulled, December 3rd 1963.

M.T.C. Gravel Pit 203

M.T.C. Pit 1394

Surface and Mining Rights Withdrawn From Staking, Section 36/80 Order No. W93789, 8/6/1987

Surface and Mining Rights Withdrawn From Staking, Section 31(B), Feb. 11, 1986 3:07 PM

Surface Rights Withdrawn From Staking, Section 31(B), Aug. 13, 1987

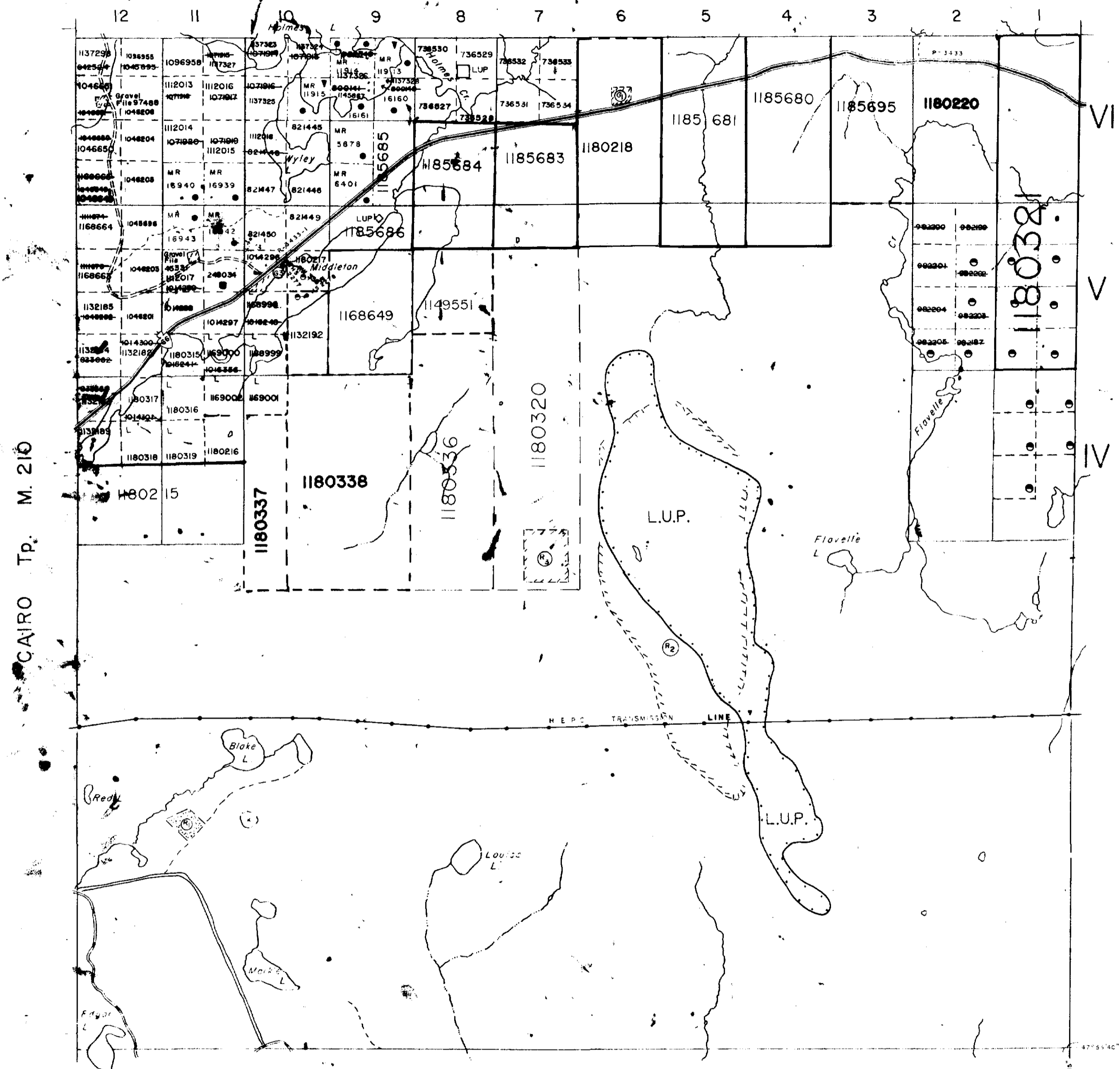
DATE OF ISSUE
APR 18 1983
LARDER LAKE
MINING RECORDERS OFFICE

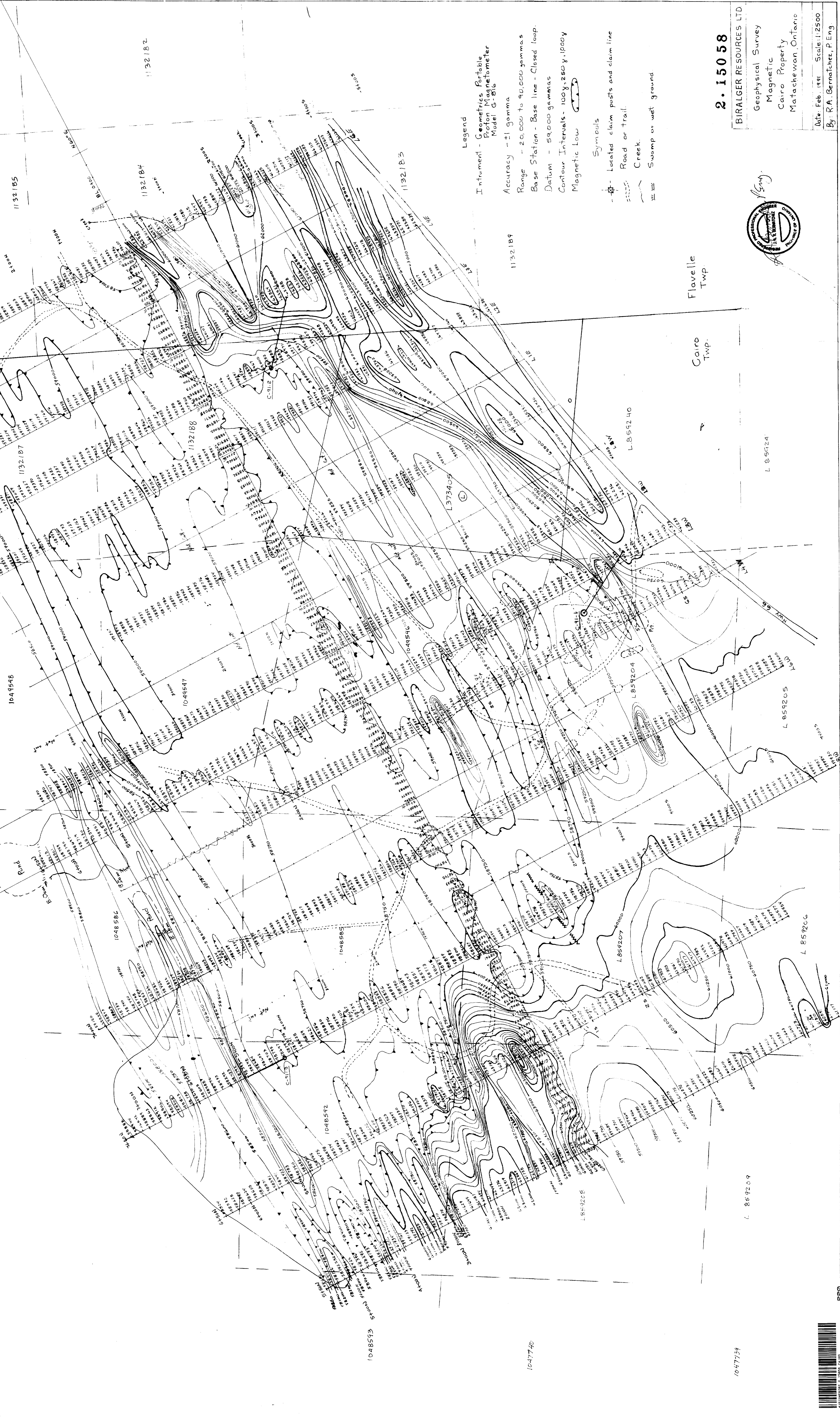
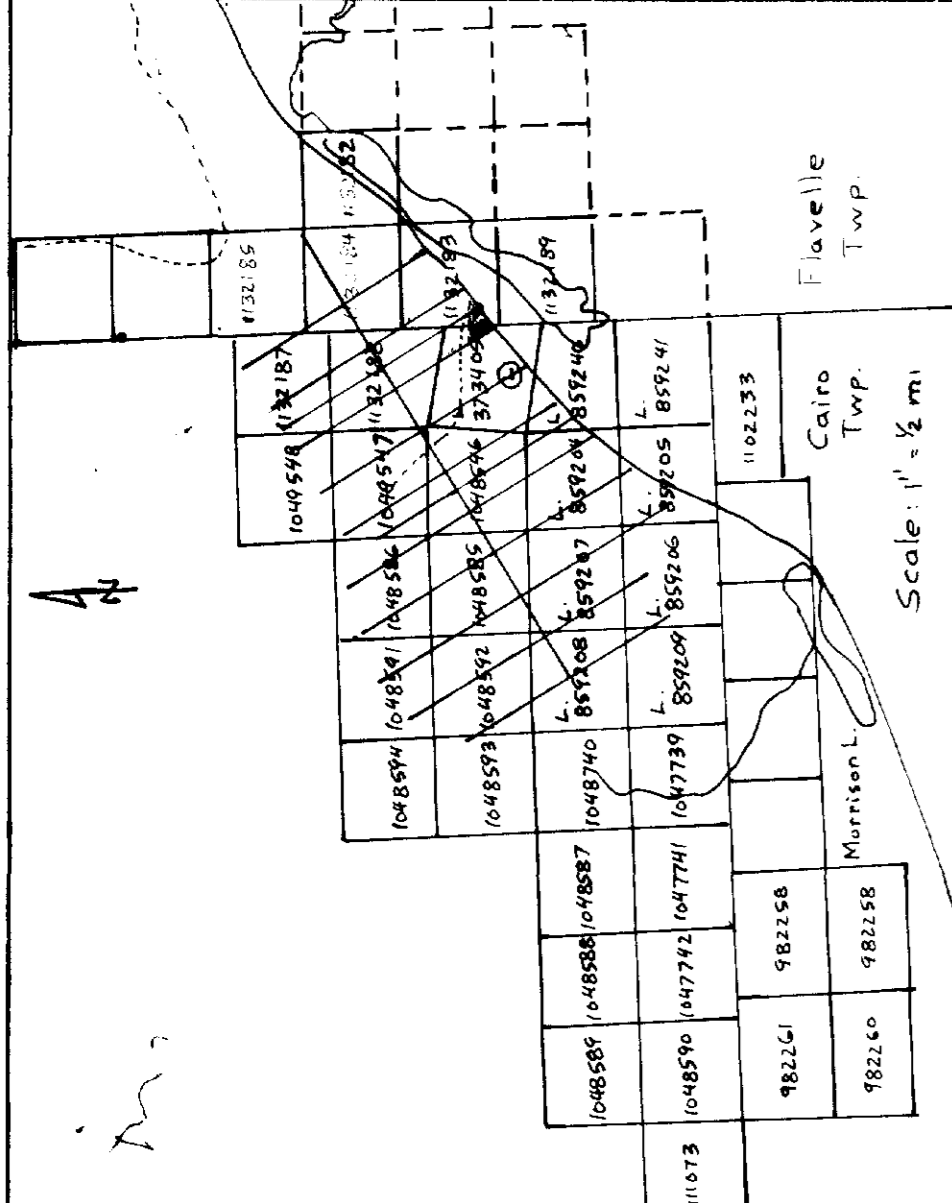
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NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP/AREA FALLS WITHIN THE _____ PLONSKI FOREST MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS. THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT: P.O. BOX 125, SWASTIKA, ONT. POK IT9, 705-642-3222

HOLMES Tp. M. 224





Legend

Instrument - Geometrics Portable Proton Magnetometer Model G-816

Accuracy - ±1 gamma

Range - 20,000 to 90,000 gammas

Base Station - Base line - Closed loop.

Datum - 59,000 gammas

Contour Intervals - 100, 200, 500, 1000

Magnetic Low

Symbols

- Located claim posts and claim line
- Road or trail
- Creek
- Swamp or wet ground

2. 15058

BIRALGER RESOURCES LTD

Geophysical Survey
Magnetic
Cairo Property
Matachewan, Ontario

Date: Feb. 1991 Scale: 1:2500

By: R.A. Bernatchez, P. Eng

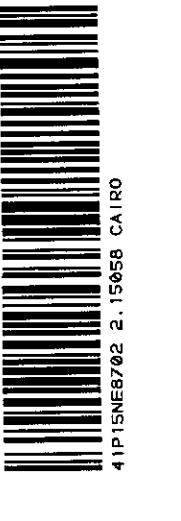


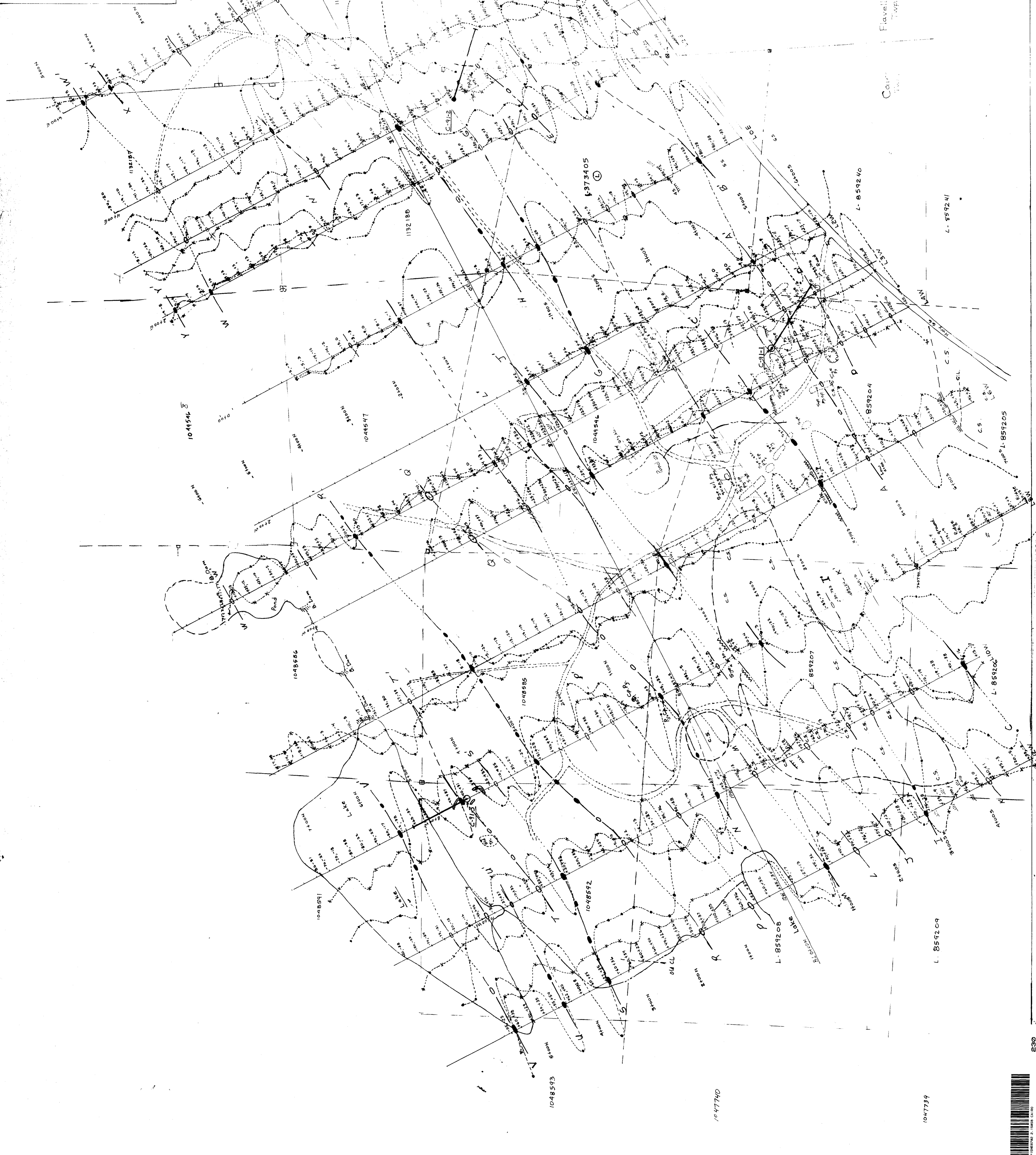
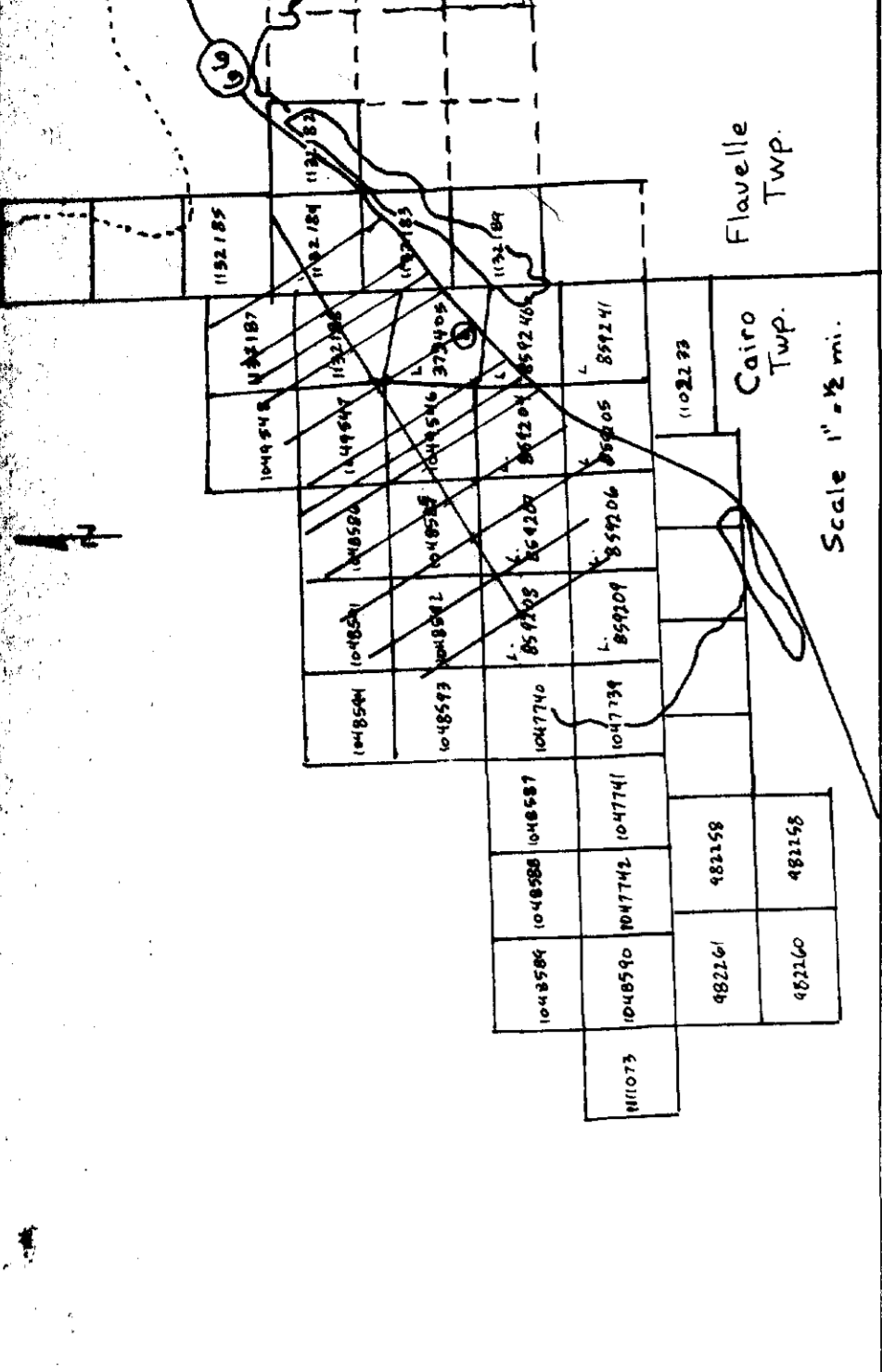
Flavelle Twp.

Cairo Twp.

104734

104734





LEGEND

Instrument - Geonics EM-16
 Station - Seattle Wash
 Frequency - 21 KHz
 In-Phase Readings
 Quadrature Readings x
 Profile Scale 1" = 40'
 All Readings Facing North
 Strong Conductors - With Cross-overs
 Weak Conductors - No Cross-overs
 Projected conductor axis

Symbols

--- Located claim post and lines
 CS - Cobalt Sediments
 Sye - Syenite
 P3 - Pyrite
 P4 - Pyrite
 QD - quartz vein

2. 15058

BIRALGER RESOURCES LTD.
 Geophysical Survey
 VLF-EM Profile
 Cairo Property
 Matchewan, Ontario
 Date Feb. 1981 Scale 1:2500
 By: R.A. Bernatchez, P.Eng.

