INDUCED POLARIZATION SURVEY
SUMMERS TOWNSHIP PROPERTY

for

Stratmin Inc.

by

Ageos Sciences Inc.

January 1989

TABLE OF CONTENT

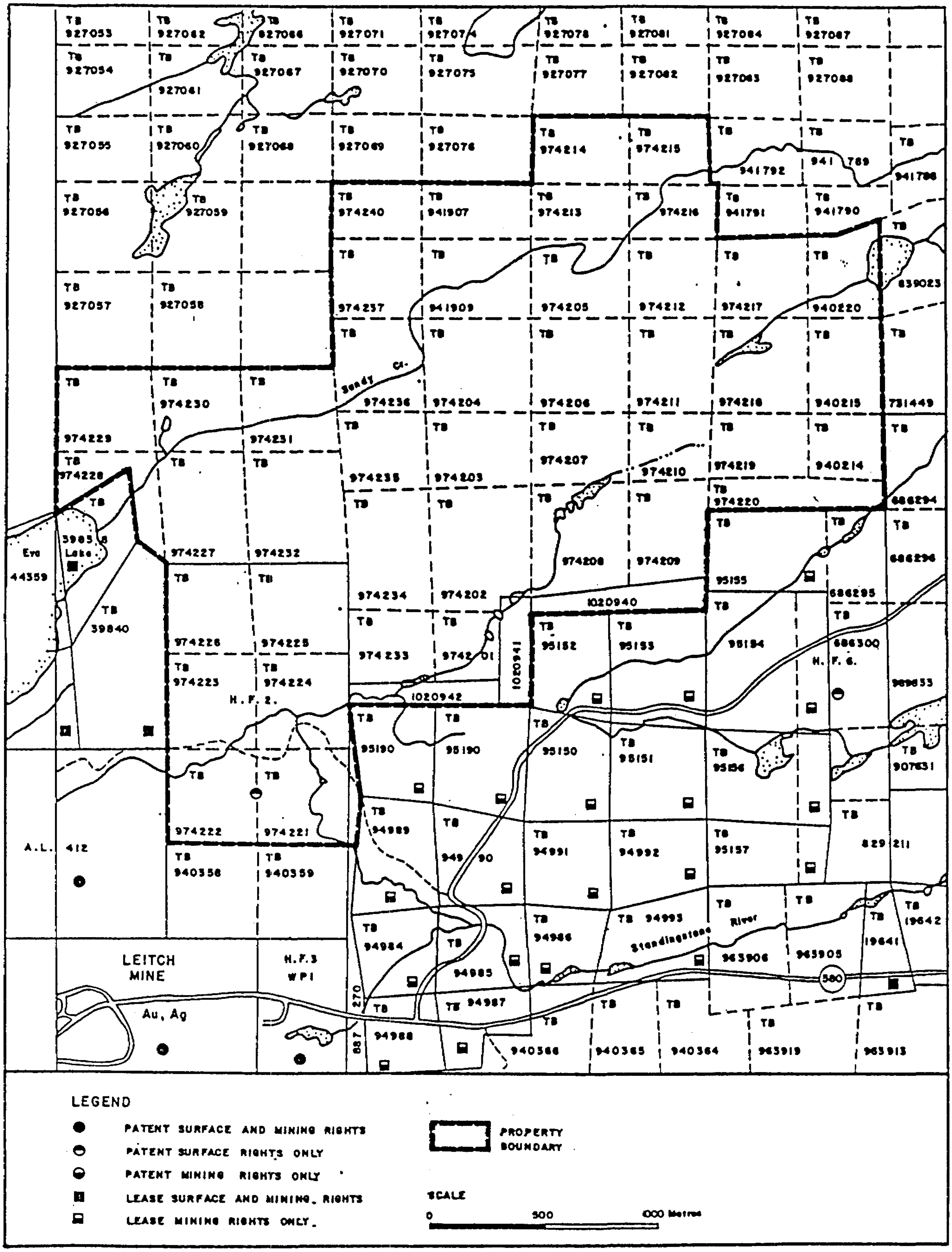

FIGURE 2: Summers Township Property - Claim map

1.0 INTRODUCTION

Ageos Sciences Inc., commissionned by Stratmin Inc., completed a geophysical induced polarization survey over their Summers Township property. The survey was carried out from November 1988 to January 1989.

The purpose of the survey was to locate sulphide zones, mainly to define pyritic chert breccias previously mapped by Minroc Management Ltd, on areas where gold and base metal concentrations were reported.

Location and access

The property is located in the Summers Township at about 8 kilometers northeast of Beardmore, mining district of Thunder Bay, Ontario. It is easily accessible from Beardmore by Highway 11 and road 580, and by old logging roads (figure 1).

A list of the claims covering an area of approximately 768 hectares (1920 acres) is found in Table 1.

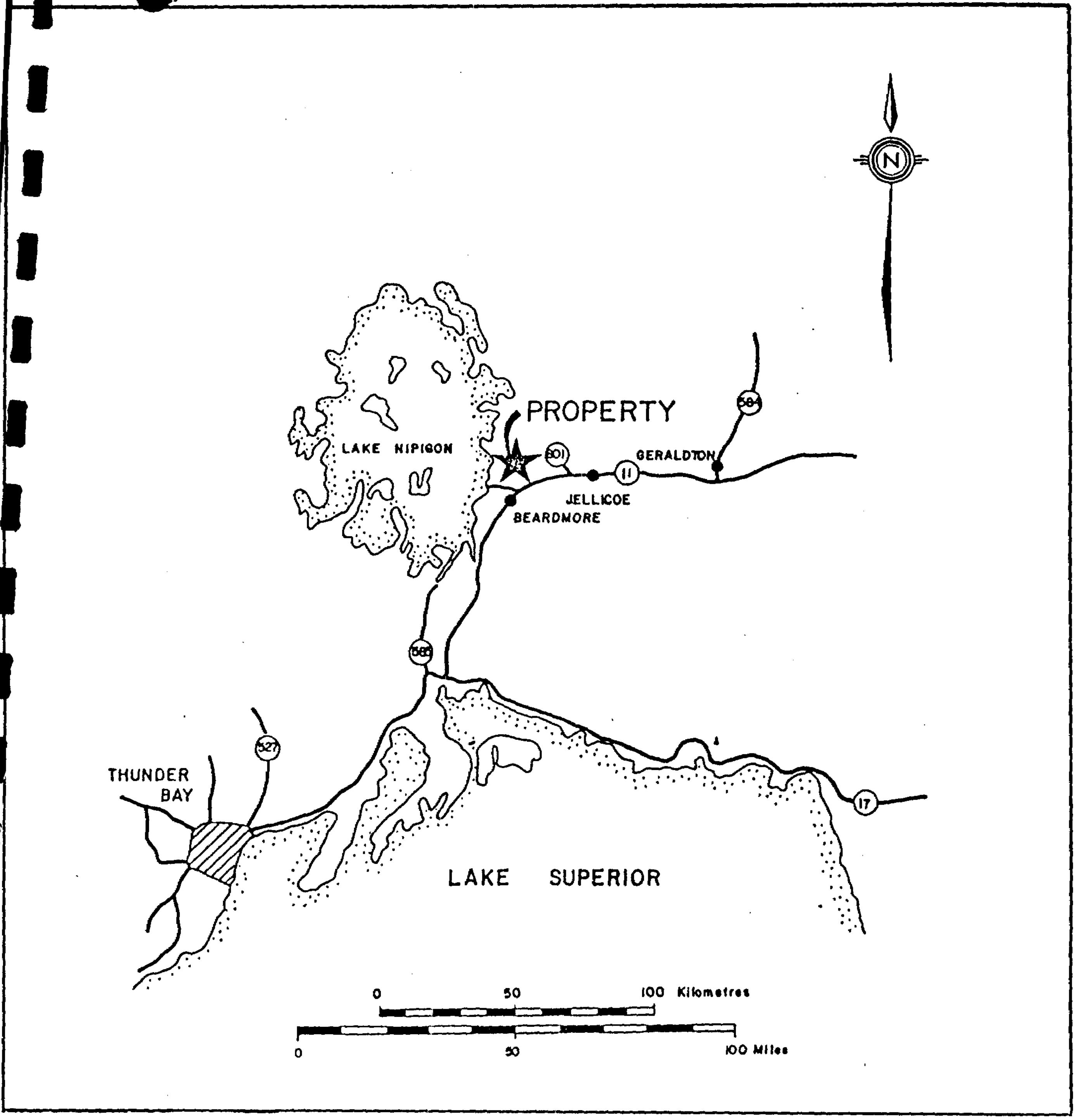

FIGURE 1: Summers Property - Location map

TABLE I

CLAIM NUMBER	DATE RECORDED	EXPIRY DATE
TB974201	26/02/87	26/02/88
TB974202	26/02/87	26/02/88
TB974203	26/02/87	26/02/88
TB974204	26/02/87	26/02/88
TB974205	26/02/87	26/02/88
TB974206	26/02/87	26/02/88
TB974207	26/02/87	26/02/88
TB974208	26/02/87	26/02/88
TB974209	26/02/87	26/02/88
TB974210	26/02/87	26/02/88
TB974211	26/02/87	26/02/88
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TB974220	26/02/87	26/02/88
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TB974237	26/02/87	26/02/88
TB974240	26/02/87	26/02/88
TB940214	26/02/87	26/02/88
TB940215	26/02/87	26/02/88
TB940220	26/02/87	26/02/88
TB941907	26/02/87	26/02/88
TB941909	26/02/87	26/02/88
TB1020940	01/10/87	01/10/88
TB1020941	01/10/87	01/10/88
TB1020942	01/10/87	01/10/88

3.0 FIELD WORK

The field survey was carried out in three periods divided as following:

Nov. 13th to Nov. 24th 1988
Dec. 10th to Dec. 21th 1988
Jan. 12th to Jan. 19th 1989

The field work involved line cutting, magnetic and induced polarization surveys using the lateral pole-pole array. A short description of the "IP method" will be found in annex.

The IP survey, totalling 57 linear kilometers, was done using a Phoenix IPT-1 transmitter feeded by a MG-1 generator and one Scintrex IPR-8 receiver. Readings were taken at every 25 meters. Line spacing was generally 50m and occasionnally 100m.

The magnetic survey, totalling 5.2 kilometers, was done using a Geometrics G806 instrument. The data were corrected for diurnal variations with an automatic base station.

A total lenght of 17.1 kilometers of lines were cut. Old lines were cleaned and rechained.

Survey hang ups

The surface topography is very irregular and several steep cliffs were encountered, slowering the survey.

Field crew

The IP field crew was composed of 4 technicians, supervised by Gilles Fortin, eng., and Michel Bureau, eng., both senior geophysicists. The line cutting and magnetic survey were performed by Maurice Gagnon, assisted by three line cutters.

The time table involved for each one is described as following:

Gilles Fortin (I.P.) 5110 Bélanger St-Hubert (Québec) J3Y 7A2	24 days
Michel Bureau (I.P.) 3470 Croissant Olivier Brossard (Québec) J4Y 2J5	7 days
Claude Leclerc (I.P.) 2879 Amulet Rouyn-Noranda (Québec) J9X 5Y1	31 days
André Bureau (I.P.) 254 Perreault Est Rouyn-Noranda (Québec) J9X 3C6	31 days
Daniel Alain (I.P.) 140, Chemin Baie-des-Carrières Val d'Or (Québec) J9P 4M6	31 days
André Alain (I.P.) R.R. 3 LaSarre (Québec) J9Z 2X2	31 days
Maurice Gagnon (Mag) 20 est, rue Reilly Rouyn (Québec) J9X 3N9	5 days
Line cutting crew	10 days

6.0 DATA PRESENTATION

For the purpose of data presentation, the property was divided in two parts:

- East part, extending from L 5+00 W to L 21+00 W.
- West part, extending from L 21+50 W to L 44+00 W.

For each part of the property, results are presented as contour maps for apparent resistivity and chargeability. The contour interval is pseudo-logarithmic (1.0, 1.5, 2.0, 3.0, 5.0, 7.5 and multiples). An interpretation map summarizes the results analysis.

The results of the magnetic survey are also presented as a contour map using a 50 nT arithmetic interval. All maps are at a 1/5000 scale.

7.0 INTERPRETATION

7.1 Magnetic survey

The magnetic survey was confined in the north-east part of the property, between lines L 5+00 W to L 11+00 W and TL 4+00 N to TL 7+00 N.

There is no outstanding magnetic anomaly in the area. However, the results seem to indicate a geological contact along the line L 7+50 W, wich is confirmed by the resistivity survey.

The location of this geological contact, as interpreted from magnetic and IP survey analysis, is indicated on the interpretation map.

7.2 IP Survey

The east part of the property (L 5+00 W to L 21+50 W) is characterized by a high resistivity background (15K.Ohms-meter) associated with high topography-outcrops or shallow bedrock, covering about 80% of the area.

Two anomalous zones, identified as P1 and P2 on the interpretation map, were detected in that area. Those anomalous zones are characterized by high chargeability and low to medium resistivity readings.

The resistivity survey gives also evidences for a geological contact in the north-east part of the property, which confirms the results obtained from the magnetic survey.

In the west part of the property (L 21+50 W to L 44+00 W), about 50% of the area is characterized by a high resistivity background (>15K.Ohms-meter) associated with high topography-outcrops or shallow bedrock.

The remaining 50% is characterized by a low resistivity background (<1K.Ohms-meter) associated with low topography or deeper bedrock and swampy ground.

Anomalous zone P1, identified previously in the east part, extends across the whole western part. A third anomalous zone, P3, was detected to the south-west of the property.

Those anomalous zones are possibly the expression of mineralized fractured zones.

STRUCTURES ANALYSIS

Geological contact

A geological contact was interpreted from magnetic and IP surveys, and was positioned as shown on the interpretation map, in the north-east part of the property.

This contact is characterized by a sudden drop of magnetic susceptibility and resistivity along the line L 7+00 E and south of the line TL 4+00 N.

Zone P1

P1 axis defines a strong IP anomalous zone trending N50 in the east part of the property, and N60 in the west part. This zone is recognized over a lenght of 4 km across the whole property and seems to extend further out through the east and west sides.

The eastern part of P1 forms two layers associated with iron formations IF1 and IF2. Those branches are separated by a lower chargeability and higher resistivity zone, but they merge together near the station L 7+50 W/ 1+50 N, forming a nose-like structure.

The northern layer of P1 axis is associated to iron formation IF1. This structure was detected over a lenght of 4 km, across the whole property. It forms a major structure wich could be the expression of an important fractured and mineralized zone.

One can observe very high chargeability zones (over 50 mv/v) along the IF1 axis. These zones are believed to be related to massive sulfide mineralizations.

The southern layer of P1 axis is associated to IF2 iron formation. This structure extends from line L 20+50 W to line L 7+50 W where it joins with IF1 in a nose-like structure.

That southern layer is well defined on the chargeability map but is less evident on resistivity data. The structure IF2 seems to be discontinuous, generally narrower and less mineralized than IF1.

Zone P2

P2 is a medium IP anomalous zone (high chargeability, medium resistivity) associated with iron formation IF3. This zone, with a trend of N40, was recognized between lines L 14+00 W and L 7+00 W and extends further east through the property limits.

It is possible that the zone P2 joins with zone P1 further east of the property, forming an other fold-nose structure.

Zone P3

P3 is a very high IP anomalous zone (high chargeability, low resistivity) detected in the south-west part of the property. This zone, showing a trend of N67, was recognized between lines L 38+50 W and L 44+00 W; it extends further west and probably south of the property limits.

Just like zones P1 and P2, the P3 zone was associated to an interpreted iron formation IF4. There is no surficial evidence for that iron formation, the zone lying under a swampy area.

This anomaly shows a zone of very high chargeability extending from line L 41+50 W to the west border of the property. This zone is over 50 m wide and probably shows the presence of a massive mineralization.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The present IP survey did confirm the presence of iron formations IF1, IF2, IF3, helping to localize their axis and find their extension.

New structures like P3 were detected: a geological contact in the north-east part of the property and a probable nose-like structure, where IF1 and IF2 merge together.

It brought to evidence a few zones of very high chargeability wich are believed to be the expression of a massive mineralization.

Zone P1 was already checked by a few diamond drill holes but, exept for hole B3, those holes did not intersected maximum IP anomalies targets.

A diamond drill program is proposed to verify the new structures that were detected and zones of maximum IP anomalies. Seven proposed holes were plotted on the interpretation map: the technical characteristics of those holes are presented in the following table 2.

Only one hole (F1) was spotted onto the interpreted fold-nose structure formed by the jonction of IF1 and IF2. If the results are worthed, a few more holes should be drilled in that area.

Michel Bureau, eng.

HOLE	D.D.H. TECHNICAL CHARACTERISTICS				ANOMALIES			REMARKS
	localization	Direction	Dip	Length	line	station	depth	
F1	7+25W/2+50N	128°	45°	300m	7+25W	0+50N to 2+00N	150m	Check nose-like structures.
F2	11+75W/0+75N	330°	55°	350m	11+50W	2+00N	175m	Strong IP anomaly, at depth.
F3	12+25W/0+50S	110°	45°	175m	12+00W	1+00S	70m	Wide anomaly, zone P2.
F4	31+00W/7+75N	150°	45°	150m	31+25W	7+25N	50m	Zone P1.
F5	36+00W/7+75N	315°	55°	175m	36+00W	8+25N	70m	If good results with F4.
F6	41+50W/5+00N	155°	45°	300m	41+75W	4+00N	100m	New structure P3.
F7	42+50W/6+00N	165°	55°	400m	43+00W	4+50N	200m	If good results with F6.

Table # 2: Suggested D.D.H. targets.

ANNEX

INDUCED POLARIZATION SURVEYS

THE INDUCED POLARIZATION METHOD

1.0 DEFINITION OF THE PHENOMENON

Let "A" and "B" be two electrodes by which we are able to inject a current "I" in the ground. Let "M" and "N" be two other electrodes enabling us to mesure a potential difference "V" between them (see Fig.1). If the electrical current that was injected in A-B is interrupted after a certain time "t", the potential difference in M-N will not drop immediately but will decay from an initial value to zero after a few seconds (sometimes a few minutes). This phenomenon is called "Induced Polarization" (I.P.) and its observation enables us to estimate the dielectric constant of the substratum. The dielectric constant of a material is a physical constant related to the polarization quality in an electrical field. In the case of rocks, this dielectric constant is directly related to the quantity of mineralization they contain.

2.0 THE USE OF I.P. IN PROSPECTING

Induced polarization is frequently used to detect disseminated (a few percent) mineralized zones or even massive mineralizations. It has been frequently observed that disseminated mineralizations not responding with an electromagnetic method would give a very strong I.P. anomaly. Large disseminated mineralization zones can be detected up to depths of 200 meters or more. The mineralized zones are most often made up of sulfide minerals (pyrite, chalcopyrite) or graphite.

Induced polarization can therefore be used to detect base metals (copper, lead), but these days it is mostly used to detect gold. Gold is often associated with sulfide mineralizations and as we have seen, the latter are easily detected with I.P., even in disseminated form. We must note that gold cannot be directly detected with I.P., because it is only present in small quantities in the rock. Therefore, for I.P. to be efficient in gold prospecting, we detect it indirectly by means of the associated minerals.

3.0 ELECTRODE ARRAY

An electrode array is the geometrical array given to the four electrodes (A, M, N and B) to carry out the I.P. measurements. The choice of electrode array can be made amongst many arrays or one's own electrode array can be used.

However, the final choice must take into consideration some geological and practical physical considerations, such as:

- access to the property to be prospected
- surface topography of the property
- data resolution wanted
- anticipated overburden depth
- depth of mineralized targets
- dimensions of mineralized targets

Once one has taken in account all these factors, the choice of electrode array narrows down to 4 or 5 arrays and amongst these, there are some popular ones:

- dipole-dipole
- lateral pole-pole
- gradient

3.2 The lateral pole-pole array

This array has only been recently used and has rapidly gained the favor of many geophysicists. As its name (pole-pole) indicates, it is made up of two active electrodes that are moved simultaneously and laterally with respect to the geology (see Fig.4). The active electrodes consist of a current injection electrode "A" and a potential electrode "M". The two other electrodes are located very far from the prospected grid. The distance between these electrodes and the grid border must be at least 10 times the distance "a" between the lines. These electrodes are considered to be at infinity.

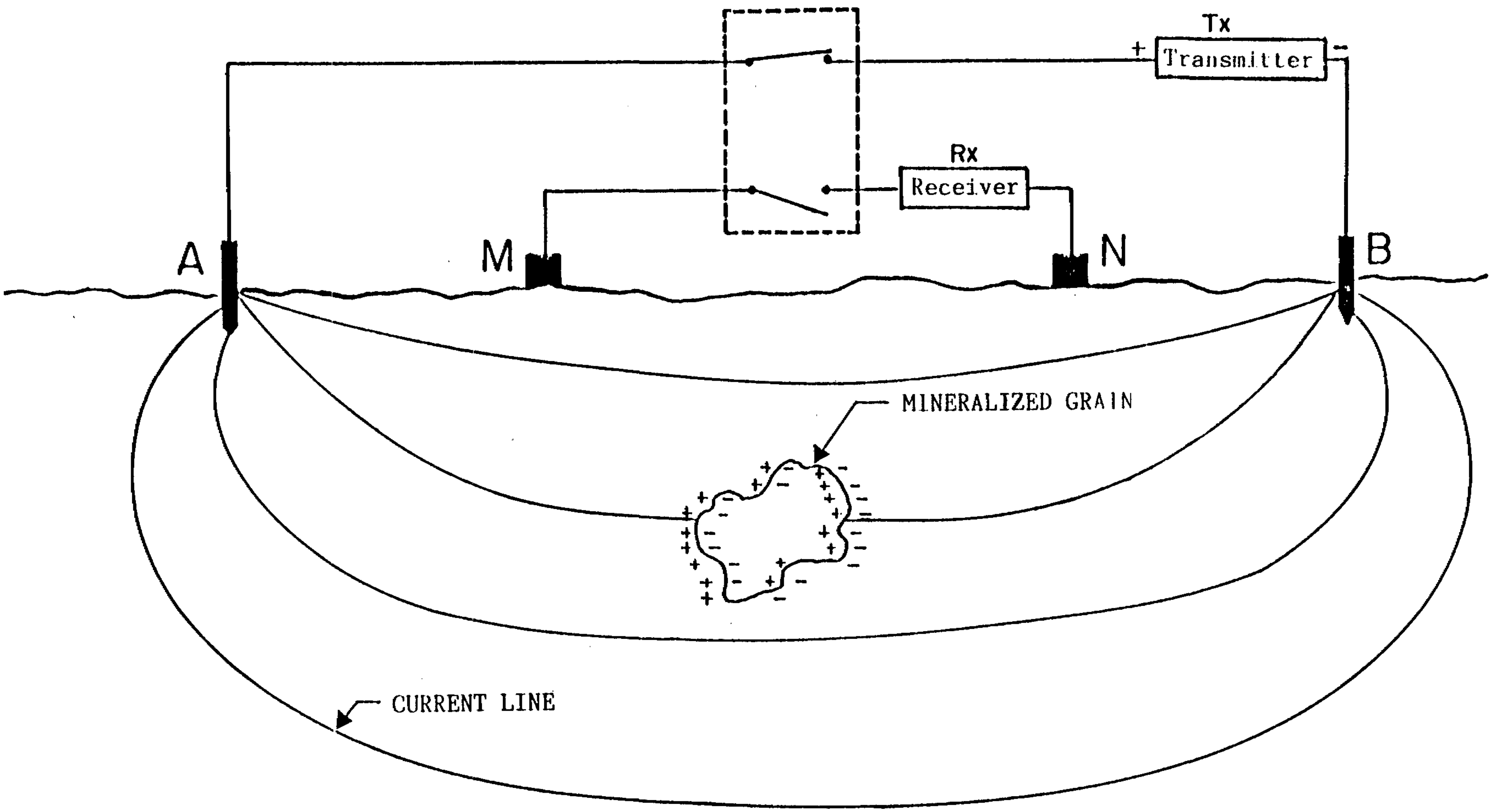
The investigation depth is controlled by the distance "a" between "A" and "M", the active electrodes. This distance is most often equal to the distance between the lines because the electrodes are moved simultaneously along two different lines. Like all electrode arrays using electrodes at infinity, this one has a much greater depth of investigation that that of the dipole-dipole array, for instance.

The geological noise is also much lower than that obtained with the dipole-dipole array. The electrodes go from one geological layer to another and the edge effect is almost non-existent.

However, this array is very sensitive to the value "a". A 10% error in "a" will give the same error in the apparent resistivity.

The readings are plotted midway between the active electrodes; profiles or contours are drawn thereafter.

Figure 1: The induced polarization (I.P.) phenomenon



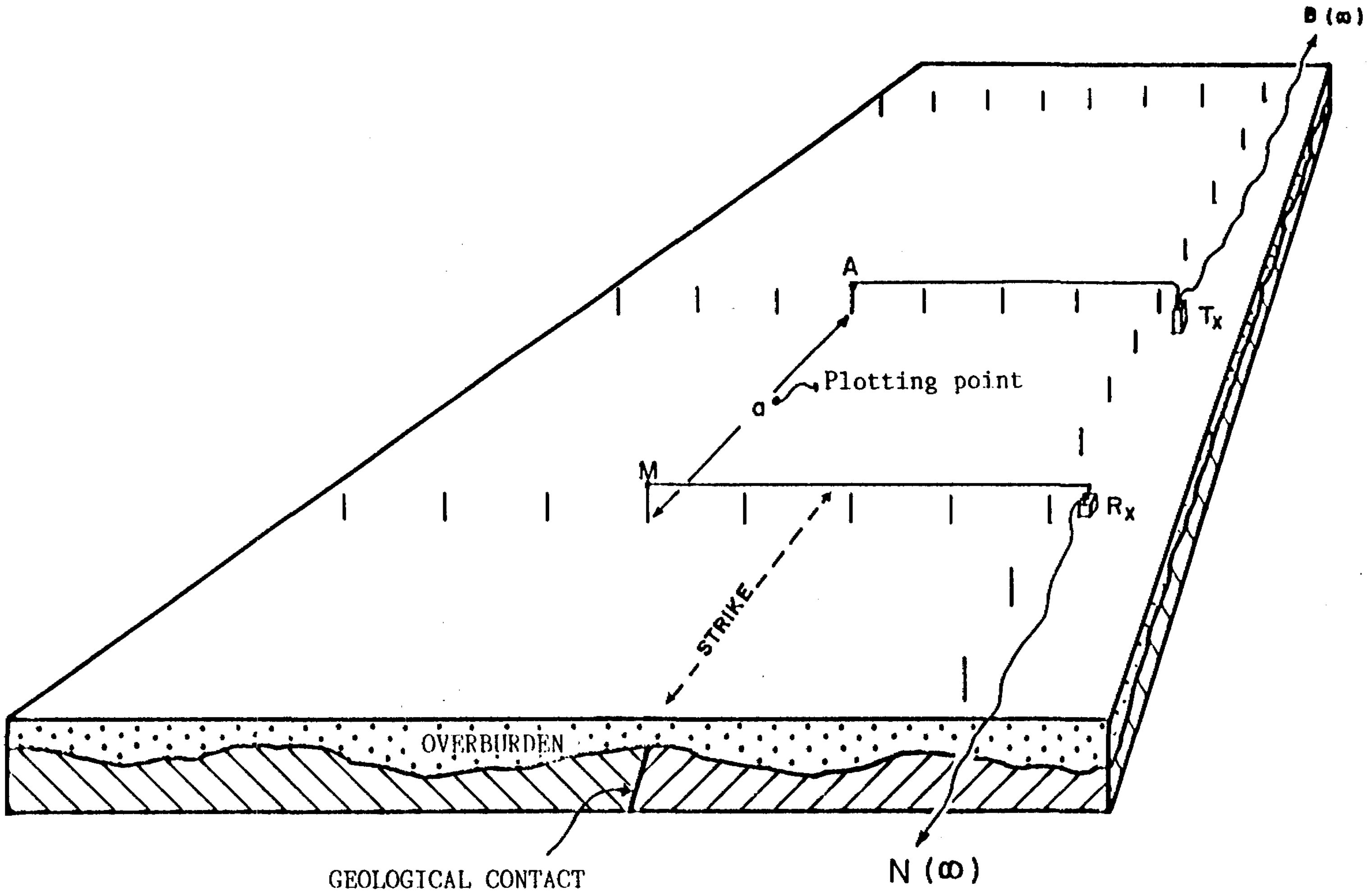


Figure 4: The lateral pole-pole electrode configuration

Aug 29

Ministry of Northern Development and Mines
Ontario

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

DOCUMENT No. W8904-293

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." ...

MINING LANDS — Mining A...

42E12SW0049 2.12546 SUMMERS

900

Type of Survey(s): GEOPHYSICAL — 2.1254

Claim Holder(s): STRATMIN INC.

Address: 630 DORCHESTER AVE. ... 1130-545

Survey Company: AGEOS SCIENCES INC.

Date of Survey (from & to): 03 | 11 | 88 — 19 | 01 | 89 (Day | Mo. | Yr.)

Total Miles of line Cut: 35.6

Name and Address of Author (of Geo-Technical report): MICHEL BUREAU 254 RUE PERRAULT EST, ROUYN, QUEBEC J9X 3C6

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	
	- Magnetometer	
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	47.6
	- 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.

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
	TB 974201			TB 1020942	
	TB 974202				
	TB 974208				
	TB 974210				
	TB 974211				
	TB 974214				
	TB 974215				
	TB 974218				
	TB 974219				
	TB 974220				
	TB 974221				
	TB 974222				
	TB 974223				
	TB 974224				
	TB 974225				
	TB 974226				
	TB 974233				
	TB 974234				
	TB 974235				
	TB 940220				
	TB 1020940				
	TB 1020941				

RECEIVED JUL 21 1989 MINING LANDS SECTION

89 JUL 10 AM 11 39 MINING DIVISION

ONTARIO GEOLOGICAL SURVEY ASSESSMENT FILES OFFICE ... 01 1989 RECEIVED

Total number of mining claims covered by this report of work: 23

For Office Use Only		
Total Days Cr. Recorded: 1094.80	Date Recorded: July 10/89	Mining Recorder: [signature]
	Date Approved as Recorded: Oct 26/89	Branch Director: [signature]

Date: May 10/89 — Recorded Holder or Agent (Signature): [signature]

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: BRIAN H. NEWTON 239 JONES ST. OAKVILLE, ONTARIO ~~L6L 2G5~~ L6L-3G5

Date Certified: MAY 10/89 — Certified by (Signature): [signature]

1362 (85/12)

Assessment Work Breakdown

Man Days are based on eight (8) hour Technical or Line-cutting days. Technical days include work performed by consultants, draftsmen, etc..

Type of Survey												
Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
155	X	7	=	1085	+	10	=	1095	÷	23	=	47.6

Type of Survey												
Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X	7	=		+		=		÷		=	

Type of Survey												
Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X	7	=		+		=		÷		=	

Type of Survey												
Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X	7	=		+		=		÷		=	

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 SUMMERS TWP
Claim Holder(s) STRATMIN INC.

Survey Company AGEOS SCIENCES INC.
Author of Report MICHEL BUREAU
Address of Author 254 RUE PERRAULT, ROUYN, P.Q. J9X 3C6
Covering Dates of Survey NOV 13, 1988 / JAN 19, 1989
(linecutting to office)
Total Miles of Line Cut 35.6

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	
—Magnetometer	
—Radiometric	
—Other	
Geological	
Geochemical	

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

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

DATE: May 16/89 SIGNATURE: Brian H. Newton
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
TB 974201	
" 974202	" 1020941
" 974208	" 1020942
" 974210	
" 974211	
" 974214	
" 974215	
" 974218	
" 974219	
" 974220	
" 974221	
" 974222	
" 974223	
" 974224	
" 974225	
" 974226	
" 974233	
" 974234	
" 974235	
" 940220	
" 1020940	

TOTAL CLAIMS 23

If space insufficient, attach list

OFFICE USE ONLY

Res. Geol. ______ Qualifications This report

Previous Surveys

File No.	Type	Date	Claim Holder

RECEIVED JUN 10 '89 THUNDER BAY

837 (85/12)

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations ______ Number of Readings ______

Station interval ______ Line spacing ______

Profile scale ______

Contour interval ______

MAGNETIC

Instrument ______

Accuracy – Scale constant ______

Diurnal correction method ______

Base Station check-in interval (hours) ______

Base Station location and value ______

ELECTROMAGNETIC

Instrument ______

Coil configuration ______

Coil separation ______

Accuracy ______

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

Frequency ______ (specify V.L.F. station)

Parameters measured ______

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 ______________________________

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MINROC MANAGEMENT LIMITED
Mining and Geological Consultants
22 FRONT ST. WEST, SUITE 400, TORONTO, ONTARIO M5J 1C4
TELEPHONE (416) 361-1139 • FAX (416) 361-0914

June 7, 1989

Mr. W.R. Cowan, Manager
Mining Lands Section
Mines and Minerals Division
880 Bay Street
Third Floor
Toronto, Ontario
M5S 1Z8

Dear Sir:

Accompanying this letter, please find two (2) copies of a geophysical report by AGEOS Sciences Inc. on an induced polarization survey to substantiate a report of work filed with the Thunder Bay Mining Recorder, a copy of which accompanies each report.

Yours truly,

J.E. Steers

JES/cd
Encls.

CURRICULUM VITAE

MICHEL BUREAU, ingénieur géophysicien

CURRICULUM VITAE

MICHEL BUREAU, ingénieur géophysicien

DONNES PERSONNELLES

DATE DE NAISSANCE	:	3 octobre 1947
ETAT CIVIL	:	marié, 2 enfants
NATIONALITE	:	canadienne
LANGUES	:	français et anglais

FORMATION ACADÉMIQUE

1973	:	Université de Montréal, Ecole Polytechnique, Diplôme d'ingénieur Génie Géologique
1971	:	Université de Montréal, Ecole Polytechnique, B.Sc.A., Génie Physique

RESUME DE CARRIERE

Gradué en génie physique de l'Ecole Polytechnique de Montréal en 1971, il y obtint en 1973 un baccalauréat en génie géologique option géophysique.

Dès le début de sa carrière, monsieur Bureau s'est spécialisé dans l'exécution de levés géophysiques appliqués à l'exploration minière. Il a travaillé respectivement entre 1973 et 1977, pour Kerr Addison Mines Ltd, McPhar Geophysics Ltd et Phoenix Geophysics Ltd où il était responsable des levés géophysiques pour l'exploration des gîtes minéraux.

En 1977, il oeuvrait dans le domaine de la géotechnique. Il a occupé le poste de responsable de la prospection géophysique par méthode sismique pour les Laboratoires Ville-Marie Inc.

De 1978 à 1986, à l'emploi de Géomines Ltée, il a été responsable pendant sept ans de la section de géophysique de la Direction Centrale de l'Hydraulique de la République de la Côte d'Ivoire. Ses efforts ont été concentrés sur la mise au point et l'application de méthodes géophysiques pour la recherche d'eau souterraine ainsi que sur la formation du personnel technique ivoirien devant assurer la continuité du service.

De 1985 à 1986, il était chef du département de géophysique pour la même firme. A ce titre, il a été responsable de la planification, de la réalisation et de la supervision de nombreux projets en exploration minière, en environnement (caractérisation et contrôle de sites d'enfouissement sanitaire) et en hydrogéologie, et ce, tant au Canada qu'à l'étranger.

Depuis 1987, il occupe les fonctions de vice-président régional pour la firme AGEOS SCIENCES INC. Il dirige et coordonne les opérations de la compagnie dans le nord-ouest québécois et le nord-est ontarien dans les secteurs de l'exploration minière, de l'environnement (étude de parcs à résidus miniers) et de l'hydrogéologie. Il est présentement affecté à notre succursale de Rouyn-Noranda.

CARRIERE PROFESIONNELLE

DEPUIS 1987: Vice-président régional pour la compagnie AGEOS SCIENCES INC. Les principaux projets qu'il a menés ont été:

- Mission d'évaluation de projets en hydraulique villageoise au Sénégal, en Côte d'Ivoire et au Cameroun.
- levés de polarisation provoquée (PPL et DD) appliqués à l'exploration de terrains aurifères;

- études géophysiques pour caractérisation de sites de parcs à résidus miniers par méthode électrique (sondages électriques, traînées électriques);

- recherche d'eau par méthodes électriques en milieux fracturés;

- préparation de devis pour caractérisation de sites (parc à résidu minier, enfouissement sanitaire);

- exécution de levés expérimentaux de polarisation provoquée;

- gérance et exécution de programmes d'exploration géologique, géochimique et géophysique.

<u>1978 à 1986: Ingénieur géophysicien à la Compagnie Géomines Ltée.</u>

<u>1985-1986</u>: Chef du département de géophysique.

A ce titre, il a réalisé plusieurs projets en exploration minérale et en prospection hydrogéologique dont les principaux ont été:

- levés géophysiques pour l'implantation de forages d'eau en milieu cristallin pour le compte d'une société d'embouteillage d'eau au Québec;

- levés géophysiques appliqués à la recherche d'eau souterraine en milieu cristallin dans le cadre du programme d'hydraulique villageoise réalisé par CUSO en République Togolaise;

- levés géophysiques P.P.L., magnétométrie, sismique réfraction, polarisation provoquée et gravimétrie dans le cadre de la réalisation de projets en exploration minérale au Canada;

- planification d'un levé magnétométrique au sol portant sur 10,000 km linéaires au Maroc;

- étude de sites potentiels d'enfouissement sanitaire dans la région de St-Jean au Québec;

- levés géophysiques dans le cadre de projets de caractérisation des sites d'enfouissement sanitaire domestiques et industriels.

<u>1978-1985</u>: Responsable de la section de géophysique de la Direction Centrale de l'Hydraulique de Côte d'Ivoire. Ses principales tâches et responsabilités ont été:

- prospection géophysique (méthode électrique, électromagnétique et sismique) appliquée à la recherche d'eau souterraine en milieu cristallin et sédimentaire, dans le cadre de programmes d'alimentation en eau potable de centres urbains secondaires et de villages. M. Bureau est intervenu dans près de 700 villes et villages;

- délimitation par levés géophysiques du front eau salée-eau douce dans le cadre de projets d'alimentation en eau potable des villages côtiers de Côte d'Ivoire;

- recherche d'eau souterraine par levés géophysiques dans des unités hydrogéologiques dites " biseau sec";

- levés géophysiques dans le cadre de projets de construction de petits barrages pour l'adduction d'eau de villes secondaires;

- formation de personnel ivoirien dont quatre ingénieurs dans l'emploi des techniques géophysiques appliquées à la prospection hydrogéologique;

- rédaction d'un cours sur les techniques géophysiques utilisées en recherche d'eau souterraine;

- organisation de stages en électronique pour l'entraînement du personnel ivoirien à la réparation et à l'entretien du matériel géophysique.

1977: Ingénieur géophysicien, à la firme Les Laboratoires Ville-Marie Inc.

- Prospection géophysique par méthode sismique pour des travaux de génie civil. Interprétation des résultats et rédaction des rapports de fin de mission.

1975-1977: Ingénieur géophysicien à la firme Phoenix Geophysics Ltd.

- Responsable de levés géophysiques pour l'exploration de gîtes minéraux: polarisation provoquée, magnétométrie, électromagnétisme et résistivité électrique (gradient et mise à la masse). Interprétation et analyse des résultats.

1975: Ingénieur géophysicien à la firme McPhar Geophysics Ltd.

- Expérimentation d'un système de sondage électromagnétique dans les trous de forage;
- relevés géophysiques: polarisation provoquée (fréquence), gravimétrie, électromagnétisme (VHEM, Vertical Loop, Geoprobe EMR 14) et électrique (résistivité, mise à la masse).

1973-1974: Géophysicien à la firme Kerr Addison Mines Ltd.

- Cartographie, surveillance de foreuse;
- relevés géophysiques: VHEM, mise à la masse.

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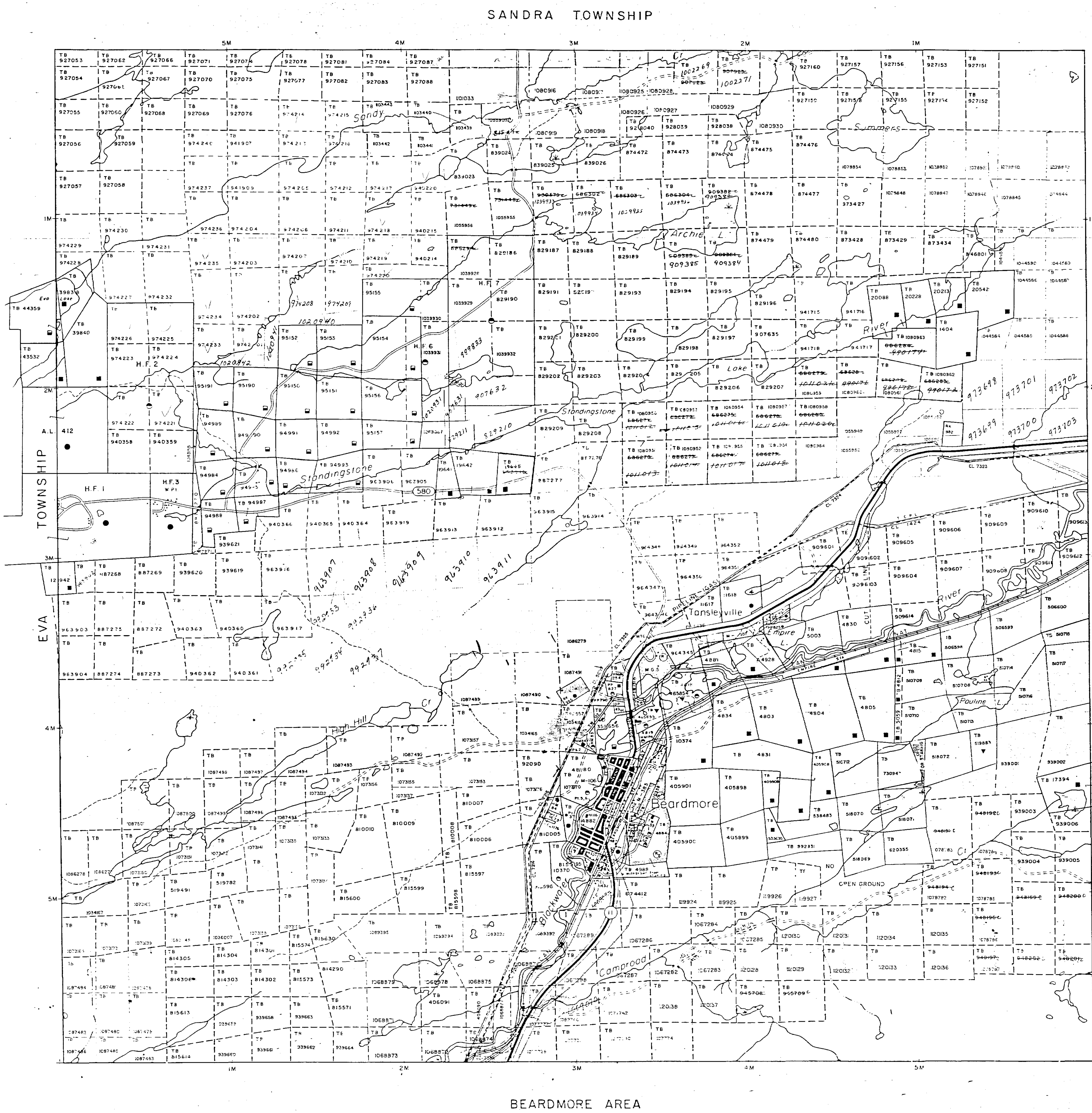

LEGEND

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TOWNSHIP
SUMMERS

M.N.R. ADMINISTRATIVE DISTRICT
NIPIGON
MINING DIVISION
THUNDER BAY
LAND TITLES / REGISTRY DIVISION
THUNDER BAY

Ontario Ministry of Natural Resources | Ministry of Northern Development and Mines

Date SEPTEMBER, 1986

Number G-165

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STRATMIN INC.
BEARDMORE PROPERTY
MAGNETIC SURVEY
LOCATION MAP
LAKE SUPERIOR
SCALE 1:2500
SURVEY: G. FORTIN
INTERPRETATION: M. BUREAU
DATE: DECEMBER 1988
REF.: 88-74
AGEOS Sciences inc.
Contours: 400,600,800 and multiples
Base value: 58 000 gammas
Instrument: G-816
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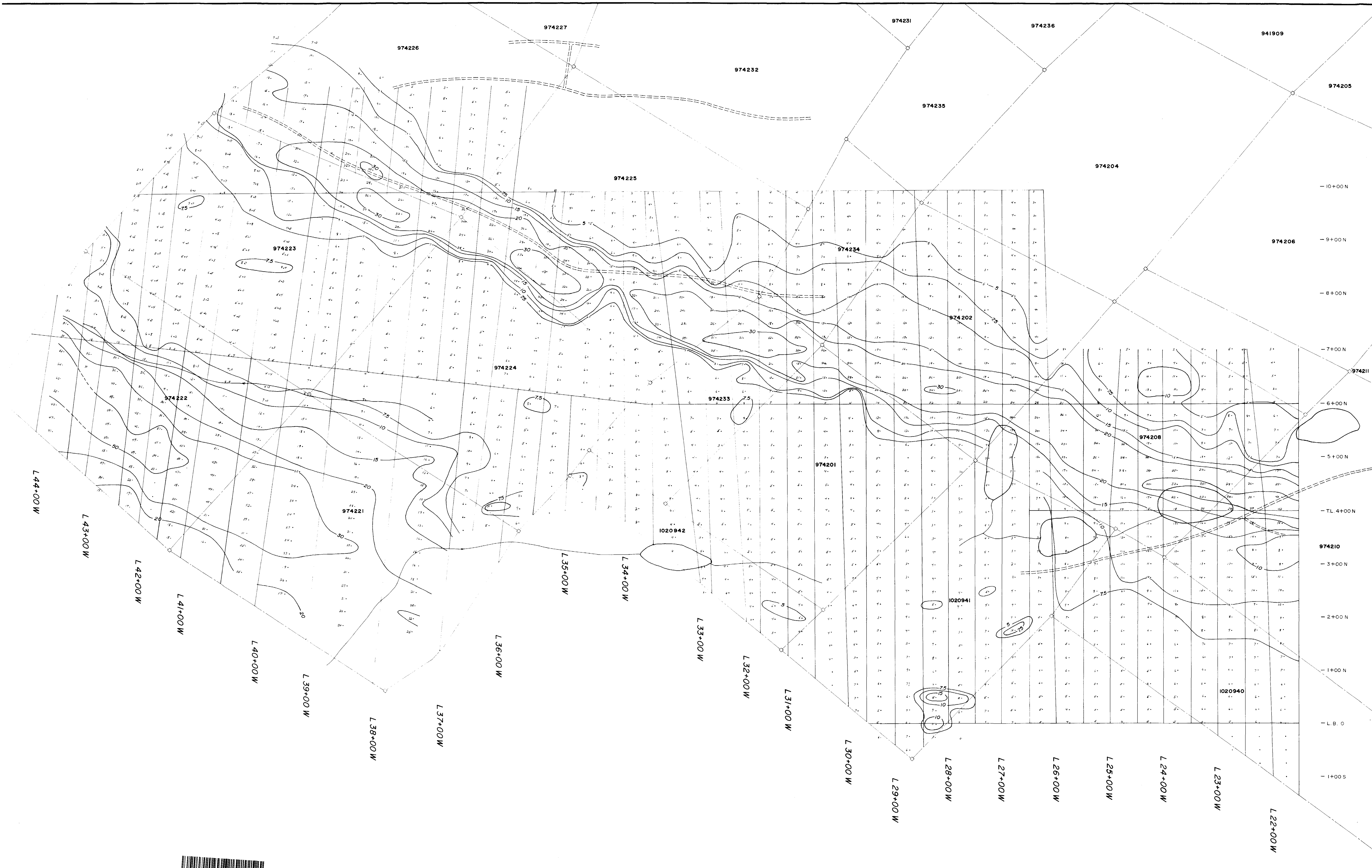


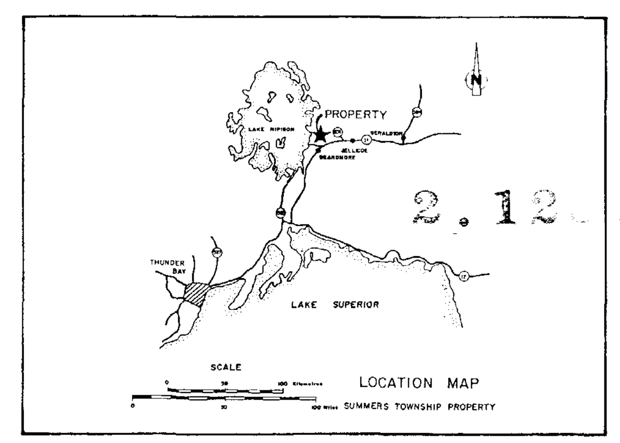
"PÔLE PÔLE LATERAL" ARRAY

Contours: 1, 1.5, 2, 3, 5, 7.5 and multiples
Chargeability: mV/v

Instruments:
– Phoenix IPT-1
– Scintrex IPR-8

STRATMIN INC.
BEARDMORE PROPERTY

INDUCED POLARISATION SURVEY
CHARGEABILITY



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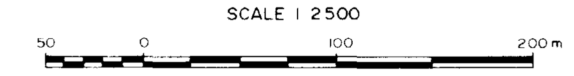

SURVEY G. FORTIN, M. BUREAU
INTERPRETATION M. BUREAU
DATE DECEMBER 1988
RÉF. 88174

AGEOS Sciences Inc.

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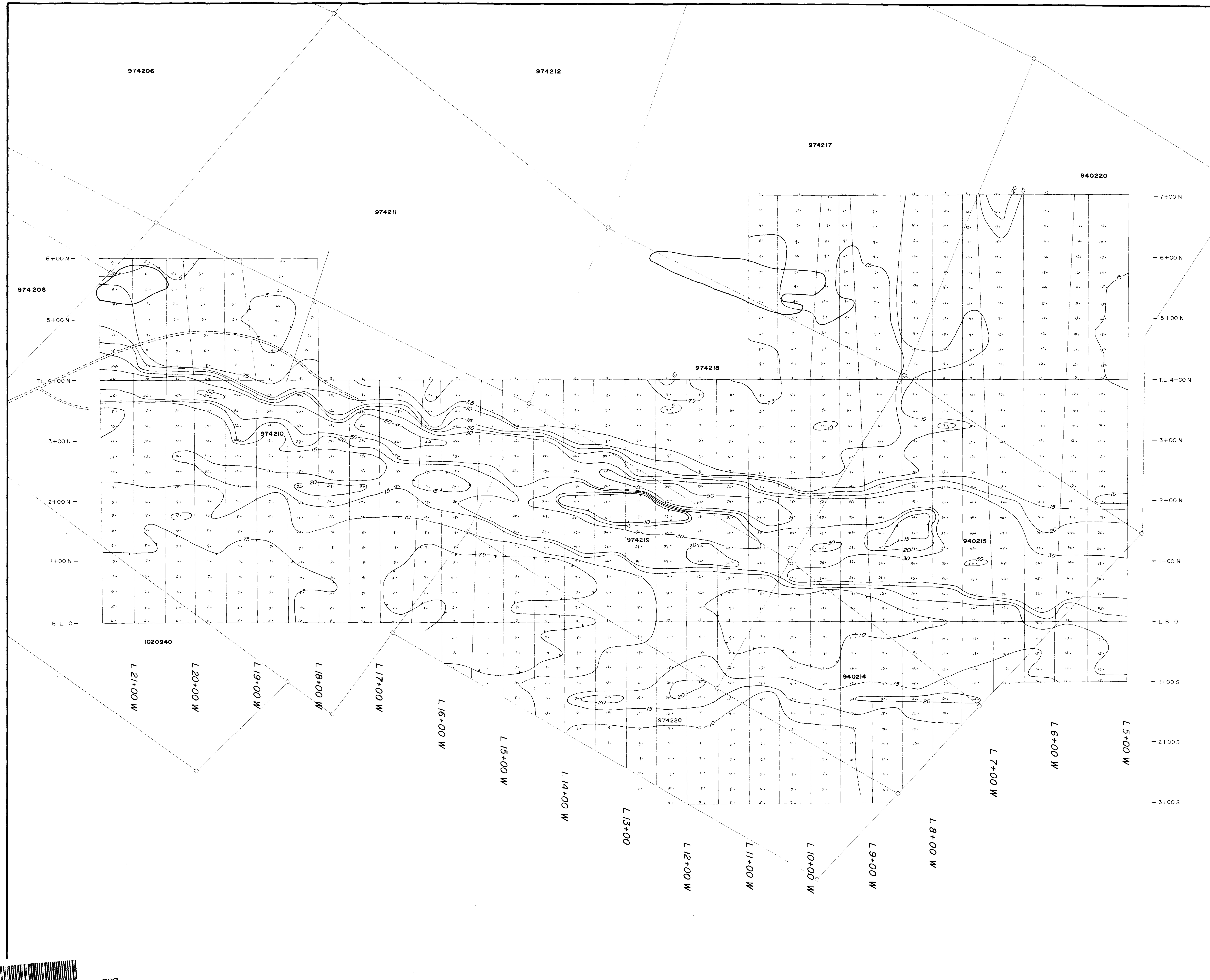

"PÔLE PÔLE LATERAL" ARRAY

Contours: 1, 1.5, 2, 3, 5, 7.5 and multiples

Chargeability: mV/V

Instruments:
- Phoenix IPT-1
- Scintrex IPR-8

STRATMIN INC.

BEARDMORE PROPERTY

INDUCED POLARISATION SURVEY

CHARGEABILITY

LOCATION MAP

LAKE SUPERIOR

SCALE 1:2500

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SURVEY: G. FORTIN, M. BUREAU

INTERPRETATION: M. BUREAU

DATE: DECEMBER 1988

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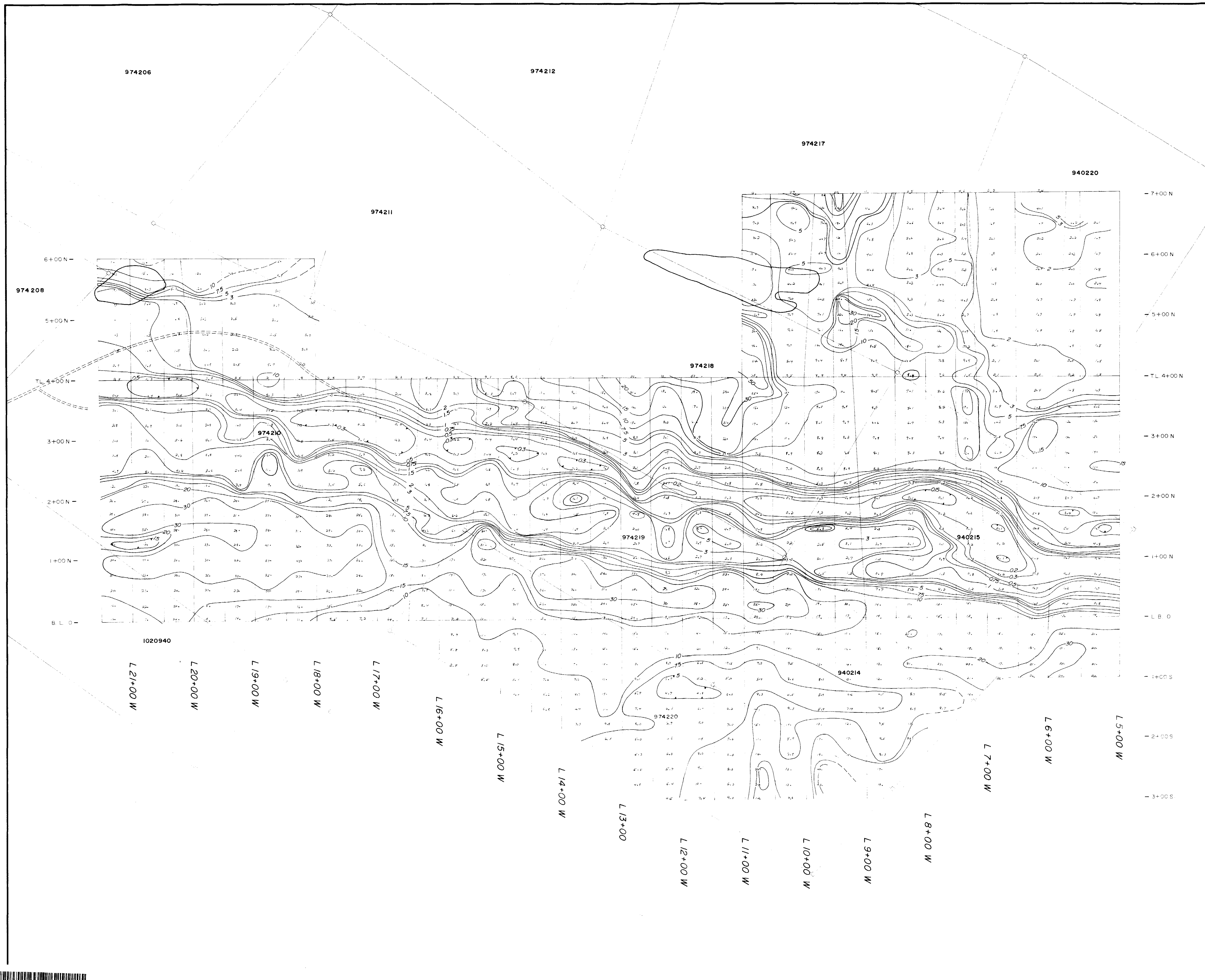

"PÔLE PÔLE LATERAL" ARRAY

Contours: 1, 1.5, 2, 3, 5, 7.5 and multiples
Resistivity: KΩ.m

Instruments: – Phoenix IPT-1
– Scintrex IPR-8

STRATMIN INC.

BEARDMORE PROPERTY

INDUCED POLARISATION SURVEY

RESISTIVITY

LOCATION MAP

2.125

SCALE

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INTERPRETATION: M. BUREAU
DATE: DECEMBER 1988
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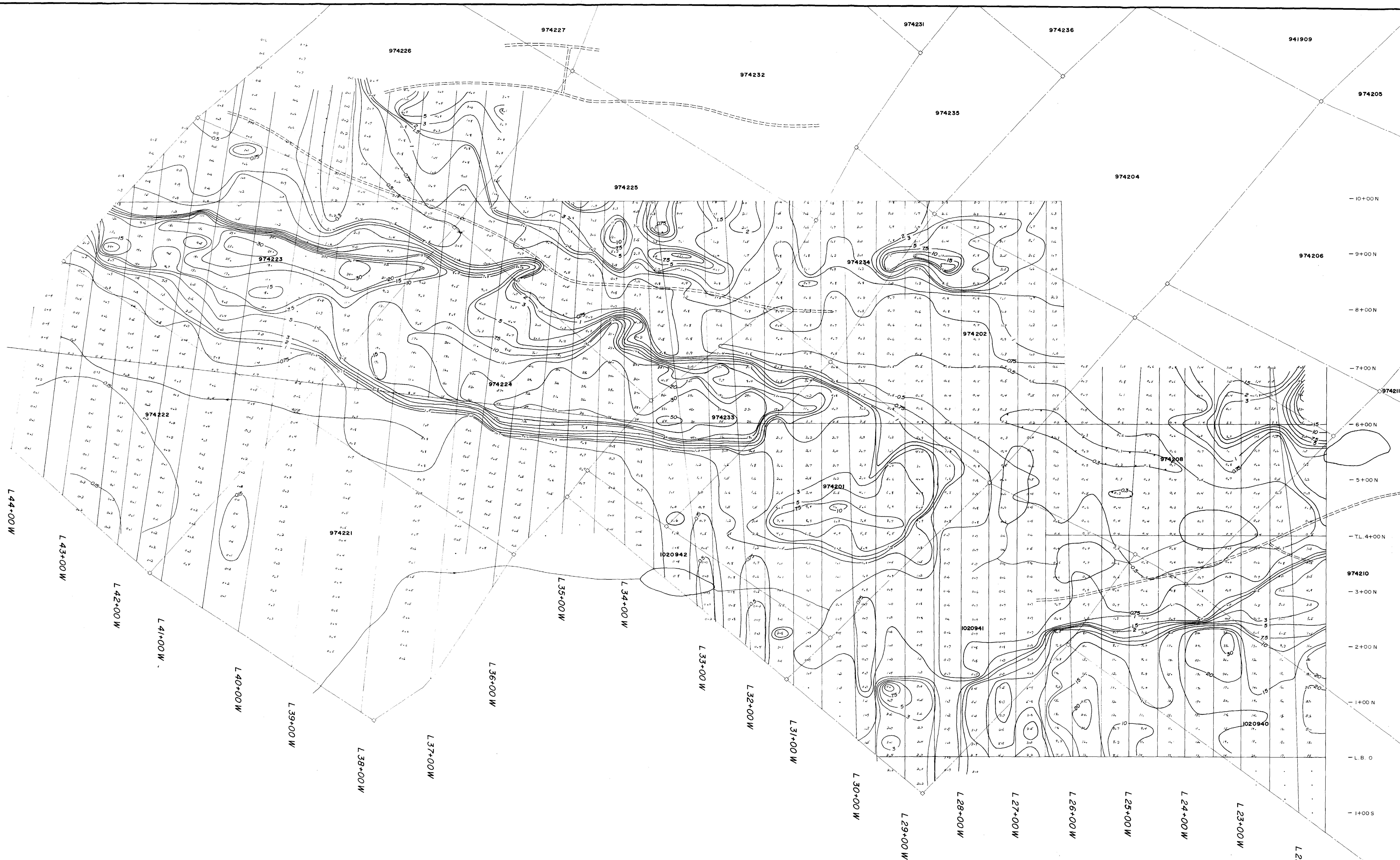

"PÔLE PÔLE LATERAL" ARRAY

Contours: 1, 1.5, 2, 3, 5, 7.5 and multiples

Resistivity: KΩ.m

Instruments:
- Phoenix IPT-1
- Scintrex IPR-8

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BEARDMORE PROPERTY

INDUCED POLARISATION SURVEY

RESISTIVITY

LOCATION MAP

2.125

SCALE 1:2500

SURVEY: G. FORTIN, M. BUREAU

INTERPRETATION: M. BUREAU

DATE: DECEMBER 1988

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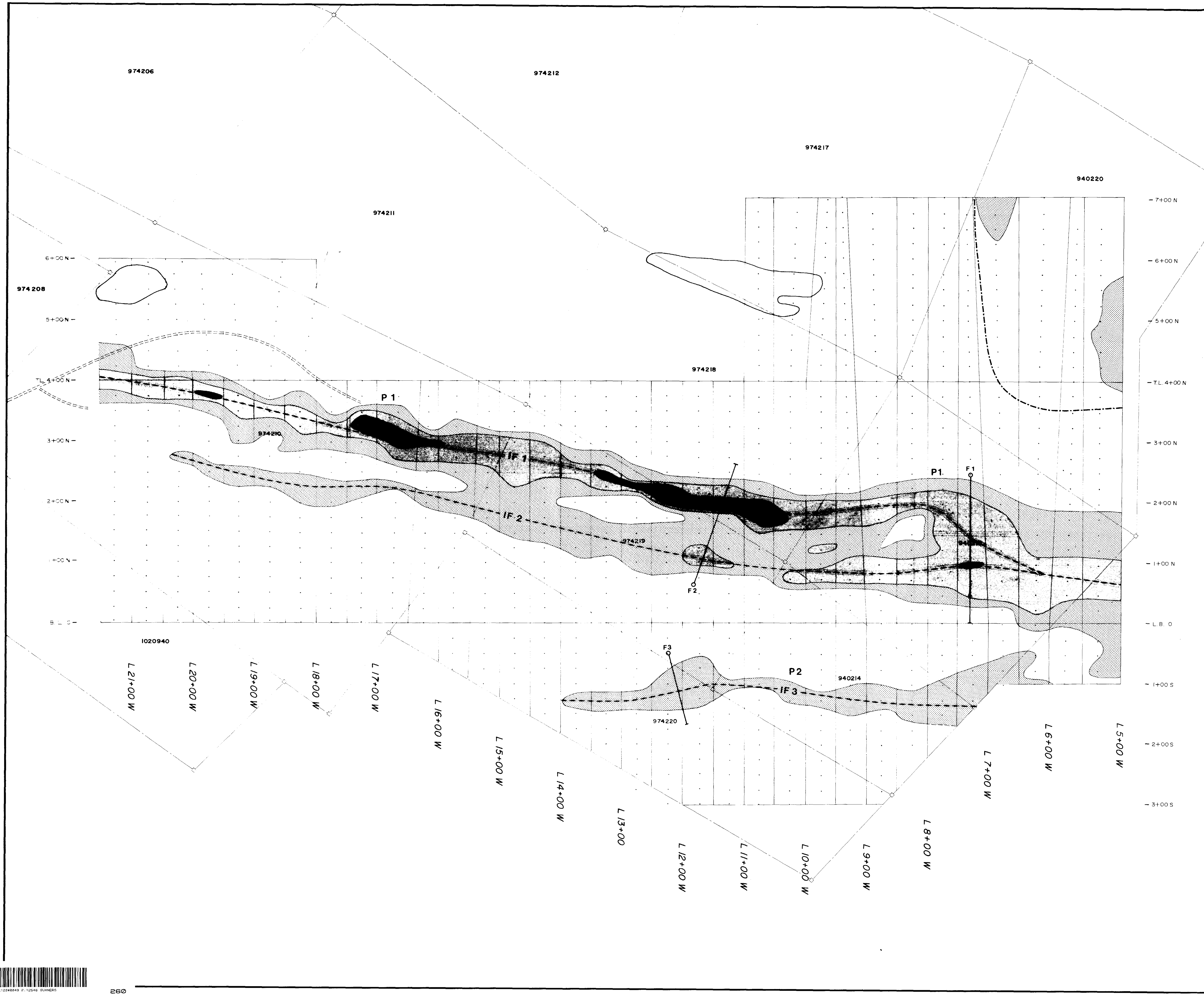

STRATMIN INC.

BEARDMORE PROPERTY

INDUCED POLARISATION SURVEY

INTERPRETATION

LOCATION MAP

SCALE 1:2500

50 0 100 200 m

SURVEY: G. FORTIN, M. BUREAU

INTERPRETATION: M. BUREAU

DATE: DECEMBER 1988

RÉF.: 88174

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260

STRATMIN INC.

BEARDMORE PROPERTY

INDUCED POLARISATION SURVEY

INTERPRETATION

SCALE 1 : 2500

50 0 100 200 m

SURVEY G. FORTIN, M. BUREAU

INTERPRETATION M. BUREAU

DATE DECEMBER 1988

RÉF. 88174

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