



Westmin Resources Limited  
Horizontal Loop Electromagnetic Survey  
Magnetometer Survey/Geological Mapping  
South Detour Claims  
Lower Detour Lake Area (G-1647)  
Porcupine Mining District

N.T.S. 32 E/13  
 Latitude 49 56'  
 Longitude 79 38'

**RECEIVED**

JAN 23 1986

MINING LANDS SECTION

by

C. J. Rockingham, B.Sc., M.Sc.  
 Project Geologist

January 21, 1986.



32E13NE0030 2.8831 LOWER DETOUR LAKE

010C

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### Introduction:

The following report pertains to Max-Min II (H.L.E.M.) and magnetometer survey data collected by D. J. Robinson, Ph.D. (claims P.837155 to P.837159) and to geological mapping by C. Rockingham, M.Sc. (claims P.837154 and 155, and P.779415 to 421, P.780736 to 739, and P.780744 to 746).

### Location and Access: (Figures 1 and 2)

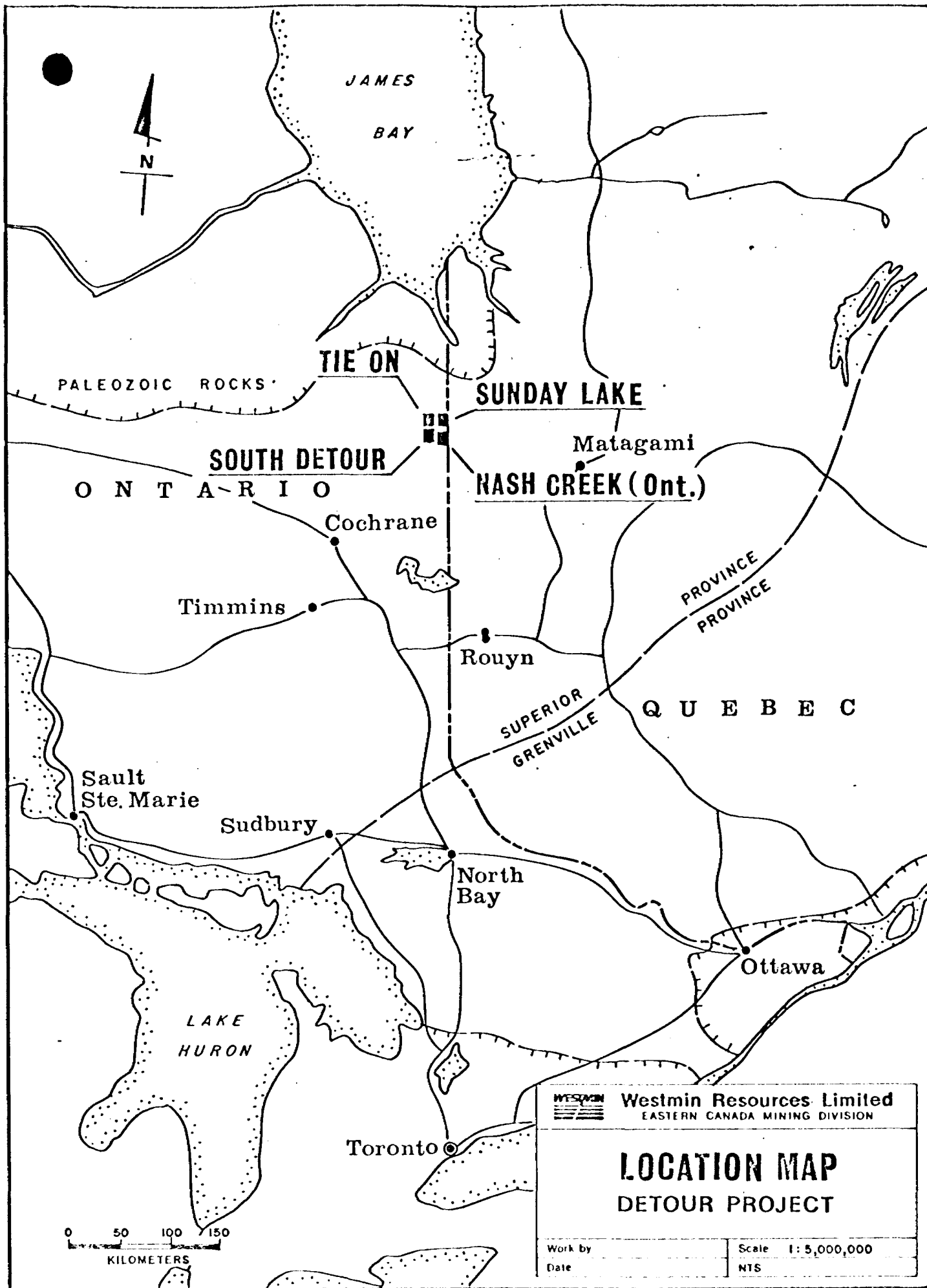
The claims pertaining to this report are located on Lower Detour Lake eight kilometres southeast of the Detour Lake gold mine. The Detour Lake mine is approximately 135 km N.N.E. of Cochrane and is accessible by an all-weather road. From the mine the claims can be reached by the winter road to La Sarre which crosses claim P.837154.

### Geophysical Surveys: (Maps in pocket)

In order to facilitate the geophysical surveys a picket line grid was established across the ice on Lower Detour Lake in March of 1985. A total of six km of grid was established with lines spaced at 100 m intervals and pickets at 25 m intervals along the line. An Apex Parametrics Max-Min II was used to measure in and out of phase components of the vertical electromagnetic field as a percentage of the horizontal primary field. The resolution of these components was  $\pm 1/2\%$ . All readings were collected using a 100 m coil separation with readings at 444 Hz and 1777 Hz. Magnetometer readings were collected on the same grid utilizing an EDA 300 total field magnetometer and an EDA 400 base station that was utilized to eliminate the effect of diurnal variations.

### Results and Interpretation:

No discrete bedrock conductors were detected although the out-of-phase profiles at 1777 Hz indicate poorly conductive overburden and variable bedrock topography. Contouring of the magnetic data indicates general east west trends consistent with the regional magnetic trends.




 <b>Westmin Resources Limited</b> EASTERN CANADA MINING DIVISION	
<h2>LOCATION MAP</h2> <h3>DETOUR PROJECT</h3>	
Work by Date	Scale 1: 5,000,000 NTS

FIGURE: 1

SOUTH DETOUR PROJECT  
Claim Map

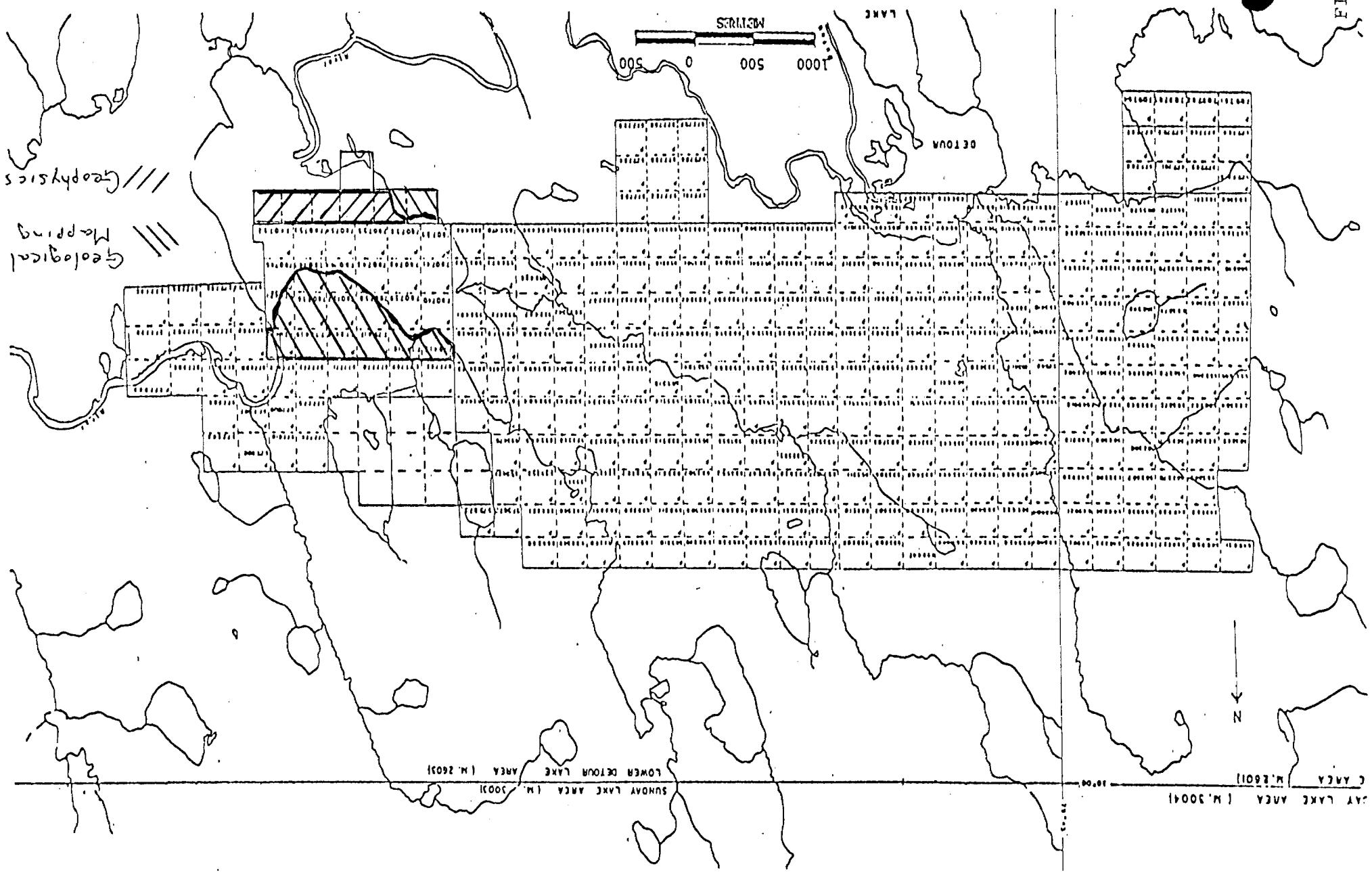


FIGURE: 2

Geological Mapping: (Map in pocket)P.837154 and P.837155

Geological mapping was carried out on lines cut immediately prior to the mapping. Three outcrops were encountered, on lines 103E, 105E, and 109E. All three outcrops are gabbros typical of those elsewhere in the Detour Lake area. The rock is coarse-grained dark green hornblende in a plagioclase matrix with a massive texture. There are minor quartz veins, usually less than 1 cm thick, with no sulfides present. Fracturing occurs in several sets the most consistent being at 50 degrees with a 80-90 degrees N dip. There are also some narrow shear zones (50-100 cm thick) that are parallel to the dominant fracture set but have no sulfides or quartz veining.

Claims P.779415 to 421, P.780736 to 738,  
and P.780744 to 746

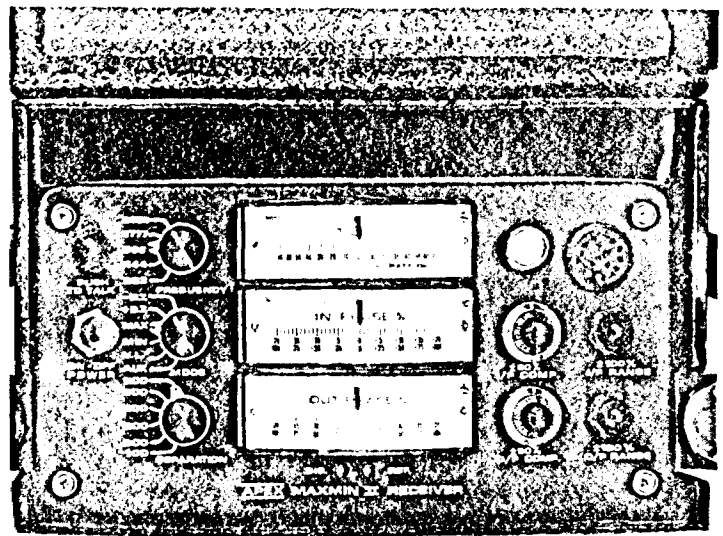
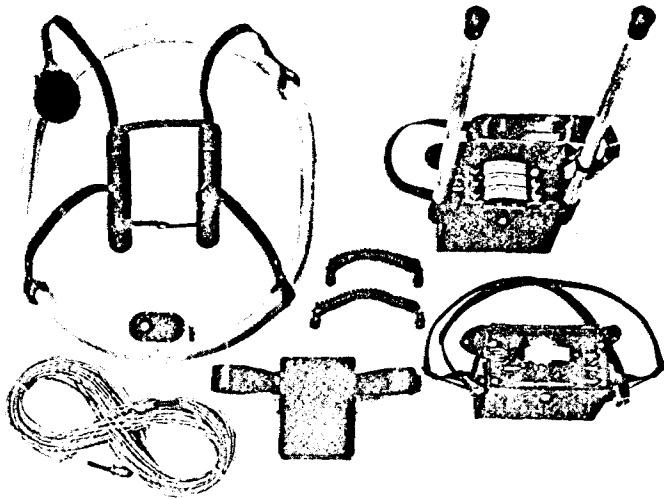
Mapping was carried out on a picket line grid established in 1984 for geophysical surveys. Lines 100E to 123E were mapped from 12+00N south to the lakeshore. A series of outcrops was encountered between 113E and 114E at 3+00N, on line 119E at 1+75N, and in the lake at approximately 125E, 0+75S. In each case the outcrop is a polymictic volcanic derived conglomerate. The clasts are up to 15-20 cm in diameter with an elliptical shape parallel to the foliation in the matrix. Clasts consists of five compositional types that are, in order of abundance, quartz feldspar porphyry, felsic to intermediate volcanic with quartz eyes, felsic to intermediate volcanic without quartz eyes, mafic volcanic clasts, and pyrite-pyrrhotite clasts. The matrix is a dark green chloritic material with fine sand sized particles of quartz and feldspar. The foliation is consistently parallel to bedding (110 degrees) as defined by interbeds of greywacke up to one metre thick. Lination of pebbles indicate a plunge of 75 to 90 degrees at 290 degrees.

# APEX

# MAXMIN II PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.





## SPECIFICATIONS :

**Frequencies:** 222, 444, 888, 1777 and 3555Hz.

**Modes of Operation:** MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer. cable.

MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.

V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

**Coil Separations:** 25, 50, 100, 150, 200 & 250m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF). Coil separations in V.L. mode not restricted to fixed values.

**Parameters Read:** - In-Phase and Quadrature components of the secondary field in MAX and MIN modes.  
- Tilt-angle of the total field in V.L. mode.

**Readouts:** - Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.  
- Tilt angle and null in 90mm edgewise meters in V.L. mode.

**Scale Ranges:** In-Phase:  $\pm 20\%$ ,  $\pm 100\%$  by push-button switch.  
Quadrature:  $\pm 20\%$ ,  $\pm 100\%$  by push-button switch.  
Tilt:  $\pm 75\%$  slope.  
Null (V.L.): Sensitivity adjustable by separation switch.

**Readability:** In-Phase and Quadrature: 0.25 % to 0.5 % ; Tilt: 1% .

**Repeatability:**  $\pm 0.25\%$  to  $\pm 1\%$  normally, depending on conditions, frequencies and coil separation used.

**Transmitter Output:** 222Hz : 220 Atm<sup>2</sup>  
- 444Hz : 200 Atm<sup>2</sup>  
- 888Hz : 120 Atm<sup>2</sup>  
- 1777Hz : 60 Atm<sup>2</sup>  
- 3555Hz : 30 Atm<sup>2</sup>

**Receiver Batteries:** 9V trans. radio type batteries (4). Life: approx. 35hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

**Transmitter Batteries:** 12V 6Ah Gel-type rechargeable battery. (Charger supplied).

**Reference Cable:** Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

**Voice Link:** Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

**Indicator Lights:** Built-in signal and reference warning lights to indicate erroneous readings.

**Temperature Range:** -40°C to +60°C (-40°F to +140°F).

**Receiver Weight:** 6kg (13 lbs.)

**Transmitter Weight:** 13kg (29 lbs.)

**Shipping Weight:** Typically 60kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notification.

**APEX PARAMETRICS LIMITED**  
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612

Cables: APEXPARA TORONTO

Telex: 06-966775 NORBYK TOR  
**NOTE OUR NEW TELEX NUMBER:  
06-966775 APEXPARA MKHM**





32E13NE0030 2.8831 LOWER DETOUR LAKE

900

Mining Act

- Do not use shaded areas below.

Type of Survey(s) <b>Geophysical</b>		Township or Area <b>Lower Detour Area</b>	
Claim Holder(s) <b>Westmin Resources Limited</b>		Prospector's Licence No. <b>T-778</b>	
Address <b>25 Adelaide Street East, Suite 1400, Toronto, Ont. M5C 1Y2</b>			
Survey Company <b>Westmin Resources Limited</b>		Date of Survey (from & to) 28 3 85   28 4 85 Day   Mo.   Yr.   Day   Mo.   Yr.	Total <del>Miles</del> km of line Cut <b>6 km</b>
Name and Address of Author (of Geo-Technical report) <b>C.J. Rockingham, 25 Adelaide St. E., Suite 1400, Toronto, Ont. M5C 1Y2</b>			

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	20
	- Magnetometer	40
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	

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim			Mining Claim		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
P.	837155				
	837156				
	837157				
	837158				
	837159				

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 MINING LANDS SECTION

**RECORDED**  
 JAN 23 1986

Expenditures (excludes power stripping)

Type of Work Performed: \_\_\_\_\_

Performed on Claim(s): \_\_\_\_\_

Calculation of Expenditure Days Credits

Total Expenditure: \$ \_\_\_\_\_ ÷ 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.

Total number of mining claims covered by this report of work. **5**

For Office Use Only			
Total Days Cr. Recorded <b>300</b>	Date Recorded <b>Jan 23/86</b>	Mining Recorder <i>[Signature]</i>	
Date Approved as Recorded		Branch Director <i>[Signature]</i>	

Date: **21 January 86**

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: **C.J. Rockingham, 25 Adelaide Street East, Suite 1400, Toronto, Ontario M5C 1Y2**

Date Certified: **21 Jan. 1986**

Certified by (Signature): *[Signature]*



Ministry of  
Natural  
Resources  
Ontario

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

# 034/86

2.8831

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.

Mining Act

Type of Survey(s) <b>Geological</b>	Township or Area <b>Lower Detour Lake Area</b>
Claim Holder(s) <b>Westmin Resources Limited</b>	Prospector's Licence No. <b>T-778</b>
Address <b>25 Adelaide Street East, Suite 1400, Toronto, Ont. M5C 1Y2</b>	
Survey Company <b>Westmin Resources Limited</b>	Date of Survey (from & to) <b>16 9 85 3 10 85</b> Day   Mo.   Yr.   Day   Mo.   Yr.
Name and Address of Author (of Geo-Technical report) <b>C.J. Rockingham, 25 Adelaide St.E., Suite 1400, Toronto, Ontario M5C 1Y2</b>	

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	20
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	- Electromagnetic	
	- Magnetometer	
	- Radiometric	

Mining Claims Traversed (List in numerical sequence)			Mining Claims Traversed (List in numerical sequence)		
Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
P	837154				
	837155				
	779415				
	779416				
	779417				
	779418				
	779419				
	779420				
	779421				
	780736				
	780737				
	780738				

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FEB 04 1986

**MINING LANDS SECTION**

**RECORDED**  
JAN 23 1986

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.

Total number of mining claims covered by this report of work. **12**

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
240	Jan. 23/86	<i>Wanley</i>
	Date Approved as Recorded	Branch Director
		<i>See Revised Statement</i>

Date	Recorded Holder or Agent (Signature)
21 Jan. 1986	<i>Kuprejanov</i>

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 **C. J. Rockingham**

25 Adelaide Street East, Suite 1400, Toronto, Ontario M5C 1Y2

Date Certified	Certified by (Signature)
21 Jan. 1986	<i>C. J. Rockingham</i>

Mining Lands Section

File No 2.8831

Control Sheet

TYPE OF SURVEY  GEOPHYSICAL

GEOLOGICAL

GEOCHEMICAL

EXPENDITURE

MINING LANDS COMMENTS:

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*Agd*  
*L.D.*

*J. Hurst*

Signature of Assessor

*Feb 5/86*

Date

March 4, 1986

Your Files: 29/86 & 34/86  
Our File : 2.8831

Mining Recorder  
Ministry of Northern Development and Mines  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

RE: Notice of Intent dated February 13, 1986  
Geophysical (Electromagnetic & Magnetometer)  
and Geological Surveys on Mining Claims  
P 837155, et al, in the Lower Detour Lake  
Area

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The assessment work credits, as listed with the  
above-mentioned Notice of Intent, have been approved  
as of the above date.

Please inform the recorded holder of these mining  
claims and so indicate on your records.

Yours sincerely,

J.C. Smith, Supervisor  
Mining Lands Section

Whitney Block, 6th Floor  
Queen's Park  
Toronto, Ontario  
M7A 1W3

Telephone: (416) 965-4888

SH/mc

cc Westmin Resources Limited  
25 Adelaide Street East  
Suite 1400  
Toronto, Ontario  
M5C 1Y2  
Attention: C.J. Rockingham

Mr. G.H. Ferguson  
Mining & Lands Commissioner  
Toronto, Ontario

Resident Geologist  
Timmins, Ontario

Encl.



File	2.8831
Date	1986 02 13
Mining Recorder's Report of Work No.	29/86

Recorded Holder	WESTMIN RESOURCES LIMITED
Township or Area	LOWER DETOUR LAKE AREA

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	P 837155-56-57-58
Electromagnetic _____ 20 _____ days	
Magnetometer _____ 40 _____ days	
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ days	
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	
<input type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

<p>5 DAYS ELECTROMAGNETIC 10 DAYS MAGNETOMETER</p> <p>P 837159</p>
--

No credits have been allowed for the following mining claims

<input type="checkbox"/> not sufficiently covered by the survey <input type="checkbox"/> insufficient technical data filed
--

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Recorded Holder  
**WESTMIN RESOURCES LIMITED**

Township or Area  
**LOWER DETOUR LAKE AREA**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<p>Geophysical</p> <p>Electromagnetic _____ days</p> <p>Magnetometer _____ days</p> <p>Radiometric _____ days</p> <p>Induced polarization _____ days</p> <p>Other _____ days</p> <p>Section 77 (19) See "Mining Claims Assessed" column</p> <p>Geological _____ <b>18</b> _____ days</p> <p>Geochemical _____ days</p> <p>Man days <input type="checkbox"/> Airborne <input type="checkbox"/></p> <p>Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims.</p> <p><input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.</p>	<p>P 837154-55 779415 to 421 inclusive 780736-37-38</p>

Special credits under section 77 (16) for the following mining claims

[Empty box for special credits]

No credits have been allowed for the following mining claims

not sufficiently covered by the survey       insufficient technical data filed

[Empty box for no credits]

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Ontario

*Feb. 28/86*

Ministry of  
Northern Development  
and Mines

February 13, 1986

Your File: 29/86, 34/86  
Our File: 2.8831

Mining Recorder  
Ministry of Northern Development and Mines  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at (416) 965-4888.

Yours sincerely,

S.E. Yundt, Director  
Land Management Branch

Mining Lands Section  
Whitney Block, 6th Floor  
Queen's Park  
Toronto, Ontario  
M7A 1W3

*RP* SH/mc  
Encls.

cc: Westmin Resources Limited  
25 Adelaide Street East  
Suite 1400  
Toronto, Ontario  
M5C 1Y2  
Attention: C.J. Rockingham

Mr. G.H. Ferguson  
Mining & Lands Commissioner  
Toronto, Ontario



Ontario

Ministry of  
Northern Development  
and Mines

Notice of Intent  
for Technical Reports

1986 02 13

2.8831/29/85 34/86

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on the record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted directly to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.



1986 01 29

File: 2.8831

Mining Recorder  
Ministry of Northern Development and Mines  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

We received reports and maps on January 23, 1986 for Geophysical (Magnetometer and Electromagnetic) and Geological Surveys submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 837154, et al, in the Area of Lower Detour Lake.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with your office prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

S.E. Yundt, Director  
Land Management Branch

Mining Lands Section  
Whitney Block, 6th Floor  
Queen's Park  
Toronto, Ontario  
M7A 1W3

AB/mc

cc: Westmin Resources Limited  
Suite 1400  
25 Adelaide Street East  
Toronto, Ontario  
M5C 1Y2  
Attention: C.J. Rockingham



**Westmin Resources Limited**  
Suite 1400, 25 Adelaide Street East  
Toronto, Ontario, Canada  
M5C 1Y2  
416 364-8116      Telex: 06-22072

**Ressources Westmin Limitée**  
Bureau 1400, 25, rue Adelaide est  
Toronto (Ontario), Canada  
M5C 1Y2  
(416) 364-8116      Telex n° 06-22072

Registered Mail

January 22, 1986.

Ministry of Natural Resources,  
Land Management Branch,  
Mining Land Section,  
Whitney Block, Room 6643,  
Queen's Park,  
Toronto, Ontario.  
M7A 1W3.

Dear Sirs:            Re: Electromagnetic, Magnetometer and Geological  
Survey, Lower Detour Lake Area.

Please find in duplicate the above mentioned report as well as  
a form Technical Data Statement for Geophysical and Geological Survey.

I hope you will find everything in order.

Thank you.

Yours truly,

WESTMIN RESOURCES LIMITED

A handwritten signature in cursive script, appearing to read "S. Kuprejanov".

(Mrs.) S. Kuprejanov,  
Administrative Geologist.

SK/hmc  
Encls.



**GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL  
TECHNICAL DATA STATEMENT**

**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) Geological  
Township or Area Lower Detour Lake Area  
Claim Holder(s) Westmin Resources Limited  
  
Survey Company Westmin Resources Limited  
Author of Report C. J. Rockingham  
Address of Author 25 Adelaide Street East, Suite 1400  
Toronto, Ontario M5C 1Y2  
Covering Dates of Survey 16 Sept. 1985 to 3 Oct. 1985  
(linecutting to office)  
Total Miles of Line Cut \_\_\_\_\_

**MINING CLAIMS TRAVERSED  
List numerically**

(prefix)	(number)
P.	837154
P.	837155
P.	779415
P.	779416
P.	779417
P.	779418
P.	779419
P.	779420
P.	779421
P.	780736
P.	780737
P.	780738

If space insufficient, attach list

<u>SPECIAL PROVISIONS CREDITS REQUESTED</u>	DAYS per claim.
ENTER 40 days (includes line cutting) for first survey.	Geophysical --Electromagnetic _____ --Magnetometer _____ --Radiometric _____ --Other _____
ENTER 20 days for each additional survey using same grid.	Geological <u>20</u> Geochemical _____

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

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: 21 Jan. 1986 SIGNATURE: *C. J. Rockingham*  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications 2.3164

<u>Previous Surveys</u>			
File No.	Type	Date	Claim Holder

**TOTAL CLAIMS** 12

OFFICE USE ONLY

**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 \_\_\_\_\_  
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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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**GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL  
TECHNICAL DATA STATEMENT**

**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 Lower Detour Lake Area

Claim Holder(s) Westmin Resources Limited

Survey Company Westmin Resources Limited

Author of Report C. J. Rockingham

Address of Author 25 Adelaide St.E., Suite 1400,  
Toronto, Ontario M5C 1Y2

Covering Dates of Survey 28 March 1985-28 April 1985  
(linecutting to office)

Total Miles of Line Cut 6 km

**MINING CLAIMS TRAVERSED  
List numerically**

(prefix)	(number)
P.	837155
P.	837156
P.	837157
P.	837158
P.	837159

<u>SPECIAL PROVISIONS CREDITS REQUESTED</u>	<u>Geophysical</u>	<u>DAYS per claim.</u>
ENTER 40 days (includes line cutting) for first survey.	-Electromagnetic	<u>20</u>
	-Magnetometer	<u>40</u>
	-Radiometric	_____
ENTER 20 days for each additional survey using same grid.	-Other	_____
	Geological	_____
	Geochemical	_____

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

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: 21 Jan. 1986 SIGNATURE: [Signature]  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications \_\_\_\_\_

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 5

If space insufficient, attach list

OFFICE USE ONLY

# GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 255 Number of Readings 1,267  
Station interval 25 m Line spacing 100 m  
Profile scale 1 cm = 5%  
Contour interval 59,200  $\gamma$  to 60,000  $\gamma$  (200  $\gamma$ ), 60,000  $\gamma$  to 61,000  $\gamma$  (500  $\gamma$ )

## MAGNETIC

Instrument EDA 300 & 400 PPM Total Field Magnetometer  
Accuracy - Scale constant  $\pm$  5%  
Diurnal correction method Linear interpretation algorithm  
Base Station check-in interval (hours) 20 sec  
Base Station location and value Core shack, 100 m west of Lower Detour Lake  
Claim P.553472, Value 58,150  $\gamma$

## ELECTROMAGNETIC

Instrument Apex Parametrics Max-Min II  
Coil configuration Horizontal Loop  
Coil separation 100 m & 150 m  
Accuracy  $\pm$  0.5%  
Method:  Fixed transmitter  Shoot back  In line  Parallel line  
Frequency 444 Hz & 1777 Hz  
(specify V.L.F. station)  
Parameters measured In phase, out of phase

## 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 \_\_\_\_\_  
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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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\_\_\_\_\_

2.8831

GL

m EM

837154 1/4  
55 1/4  
779415 1/4  
16 1/4  
17 ✓  
18 ✓  
19 ✓  
20 ✓  
21 1/4  
780736 ✓  
37 ✓  
38 1/4

837155 ✓ ✓  
56 ✓ ✓  
57 ✓ ✓  
58 ✓ ✓  
59 3/4 3/4

15NC

$$20 \times 2 = 240$$
$$240 \div 13.5 = 17.7$$
$$= 18$$

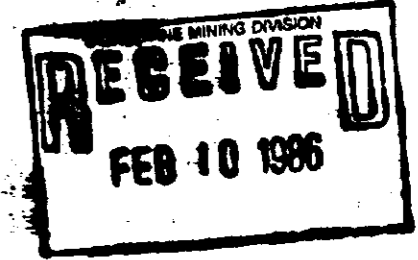
SUNDAY LAKE G-1677

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
(1) N.R.W/81		15/81	S.R.O.	188511
(2) NRO 27/85		21/7/85	S.R.O.	



LEGEND

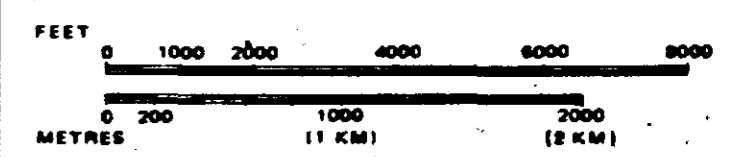
- HIGHWAY AND ROUTE NO.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSREG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

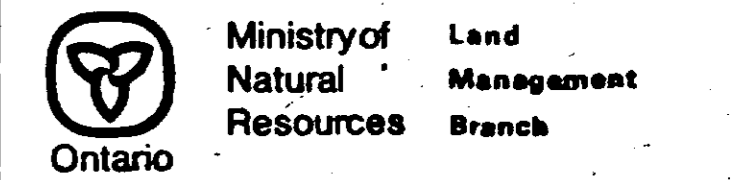
TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	○
" MINING RIGHTS ONLY	◐
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	□
" MINING RIGHTS ONLY	◑
LICENCE OF OCCUPATION	▽
ORDER-IN-COUNCIL	OC
RESERVATION	○
CANCELLED	○
SAND & GRAVEL	○

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1912, VESTED IN ORIGINAL PATENTEES BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 300, SEC. 43, SUBSEC. 1

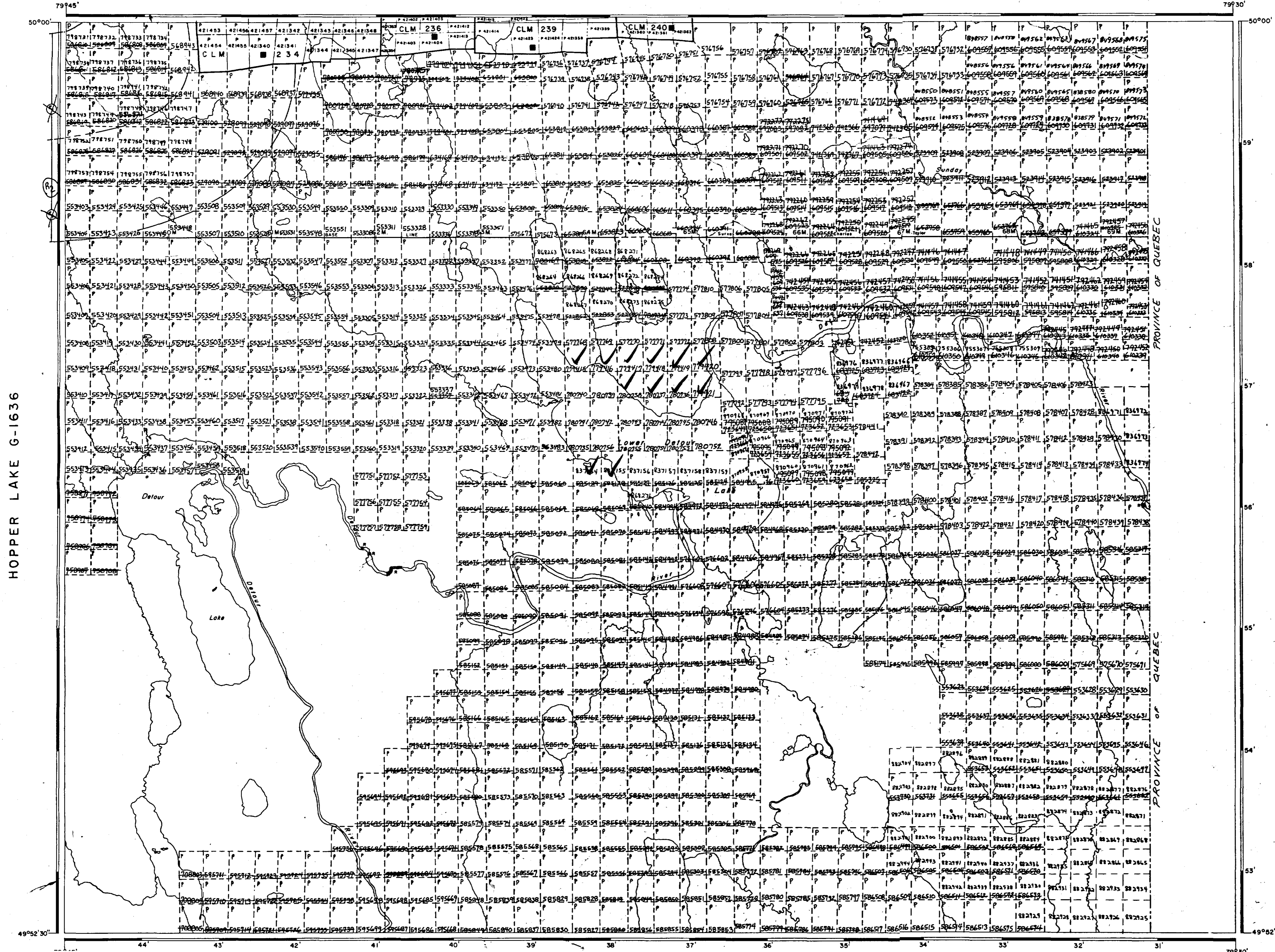
SCALE: 1 INCH = 40 CHAINS



AREA  
**LOWER DETOUR LAKE**  
 M.N.R. ADMINISTRATIVE DISTRICT  
**COCHRANE**  
 MINING DIVISION  
**PORCUPINE**  
 LAND TITLES / REGISTRY DIVISION  
**COCHRANE**

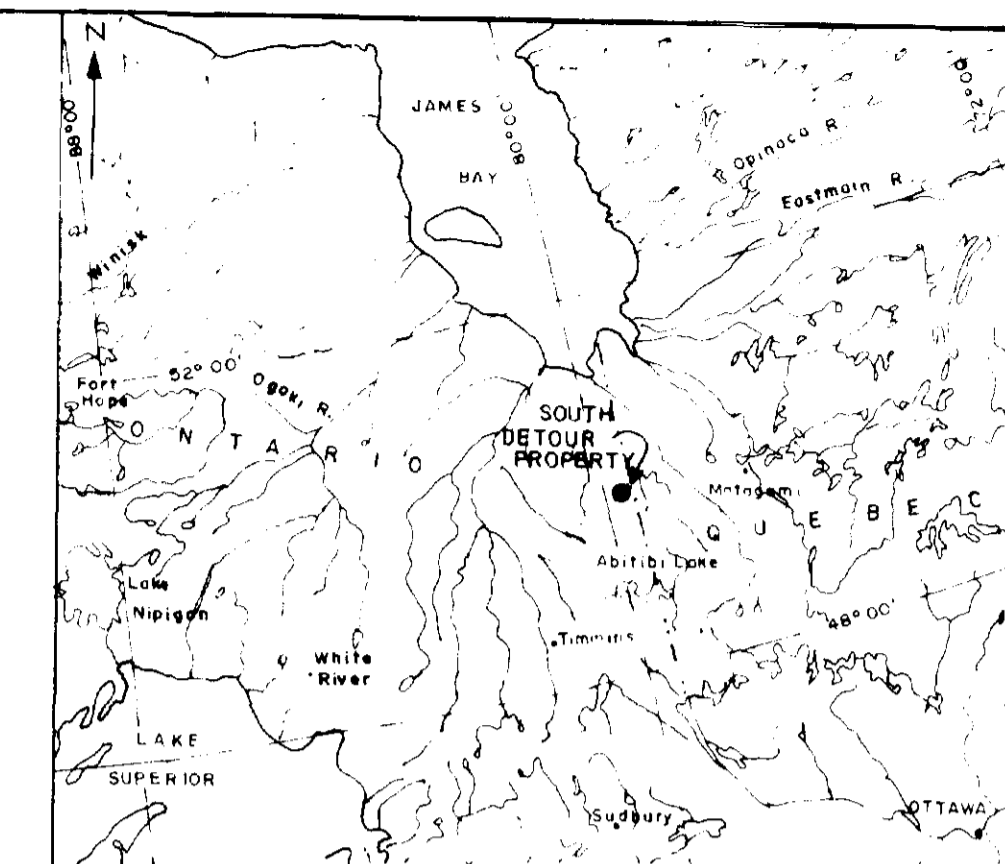
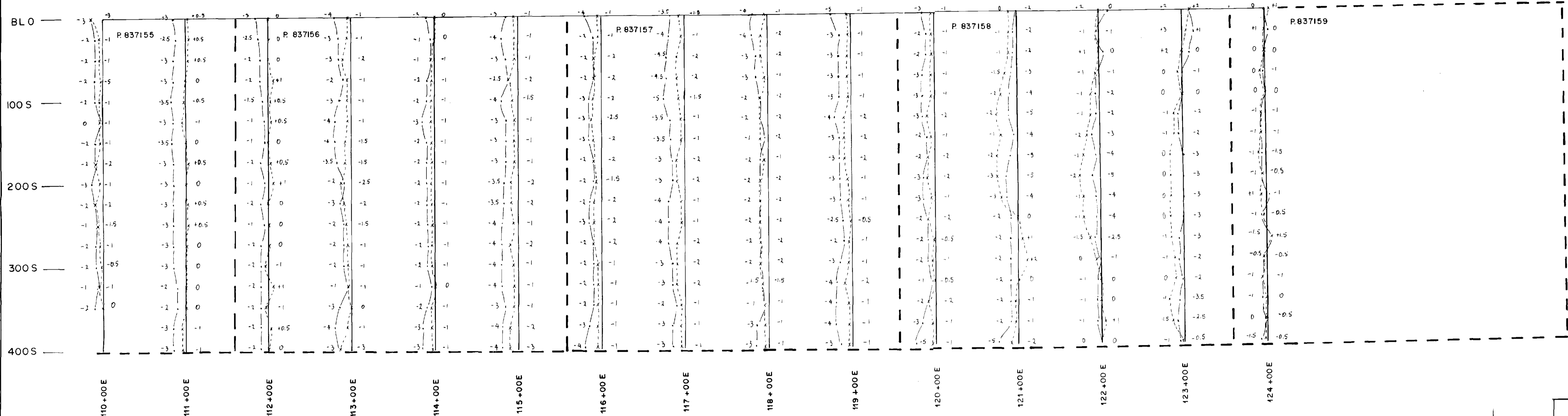
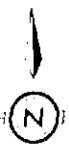


Date: DECEMBER 1982  
 Number: **G-1647**



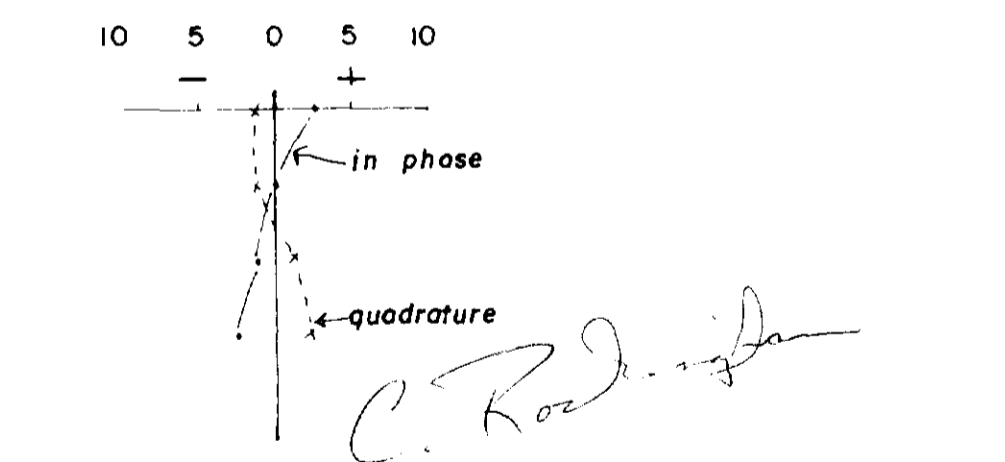
ATKINSON LAKE G-1626



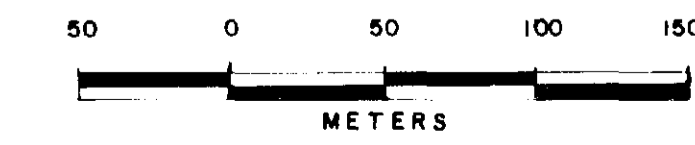



INDEX MAP

**LEGEND**  
 Instrument ..... Apex Parametrics Max-Min II  
 Coil separation..... 100 m , 150m  
 Profile scale..... 1 cm = 5%

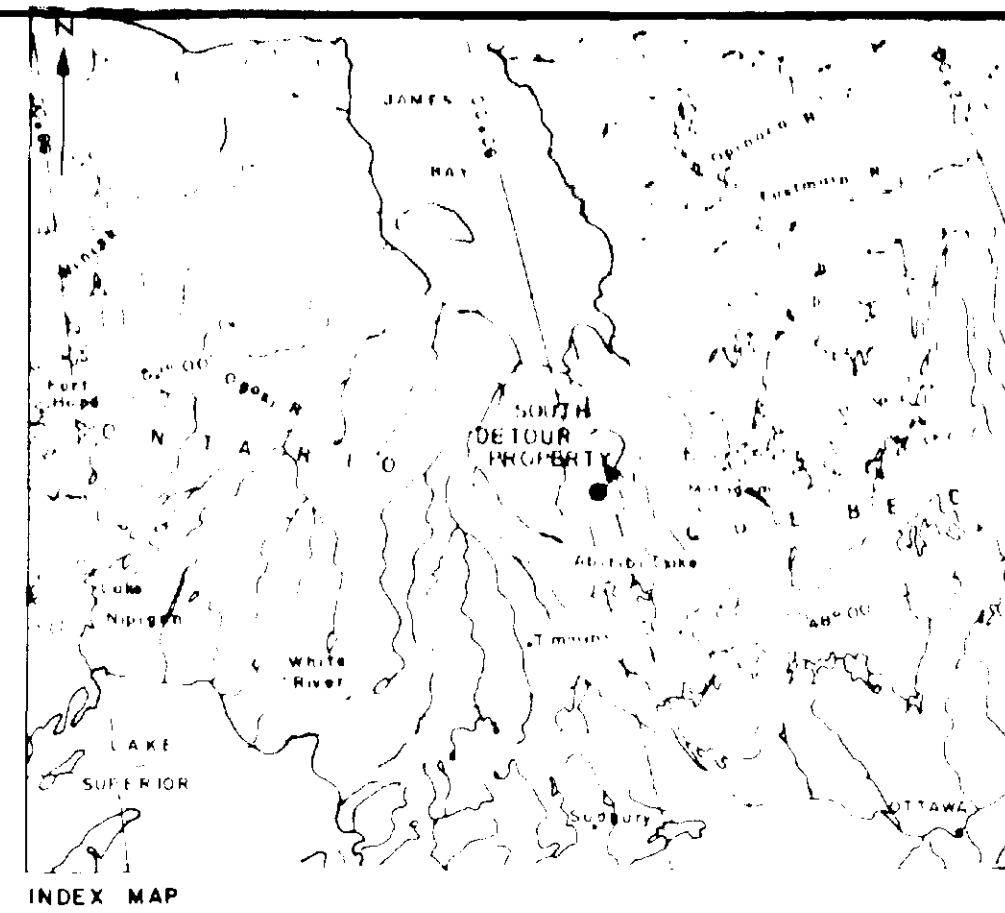
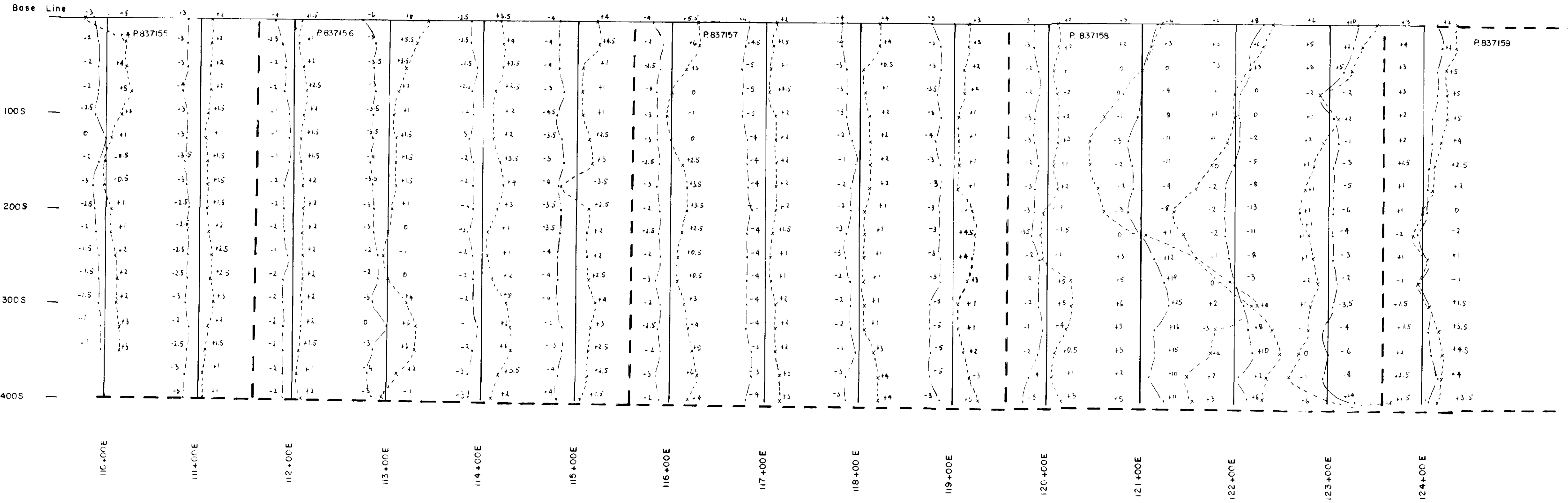


28831



 <b>Westmin Resources Limited</b> EASTERN CANADA MINING DIVISION	
SOUTH DETOUR PROJECT MAX-MIN II. SURVEY , 1985 FREQUENCY 444 Hz	
Work by D. J. Robinson	Scale 1:2,500
Date May 1985	NTS 32-E-13



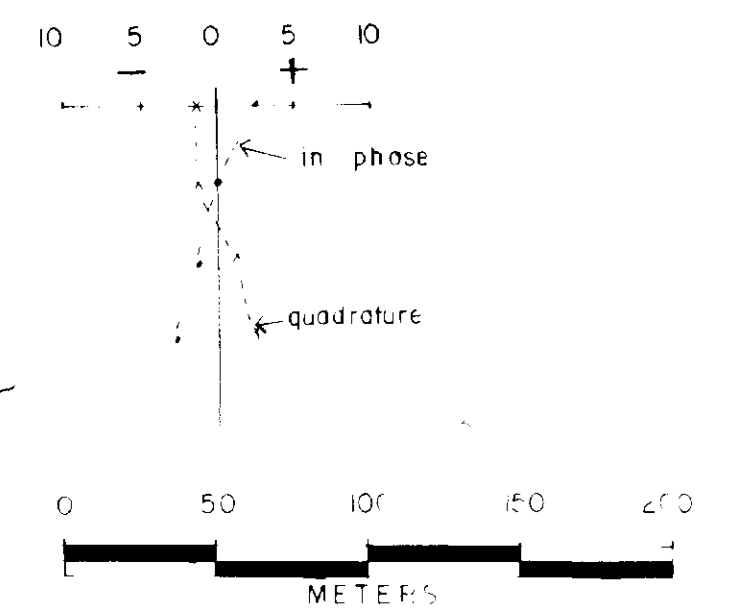


**LEGEND**

Instrument..... Apex Enrametrics Max-Min II.

Coil separation..... 100m, 150m

Profile scale..... 1 m = 5 %

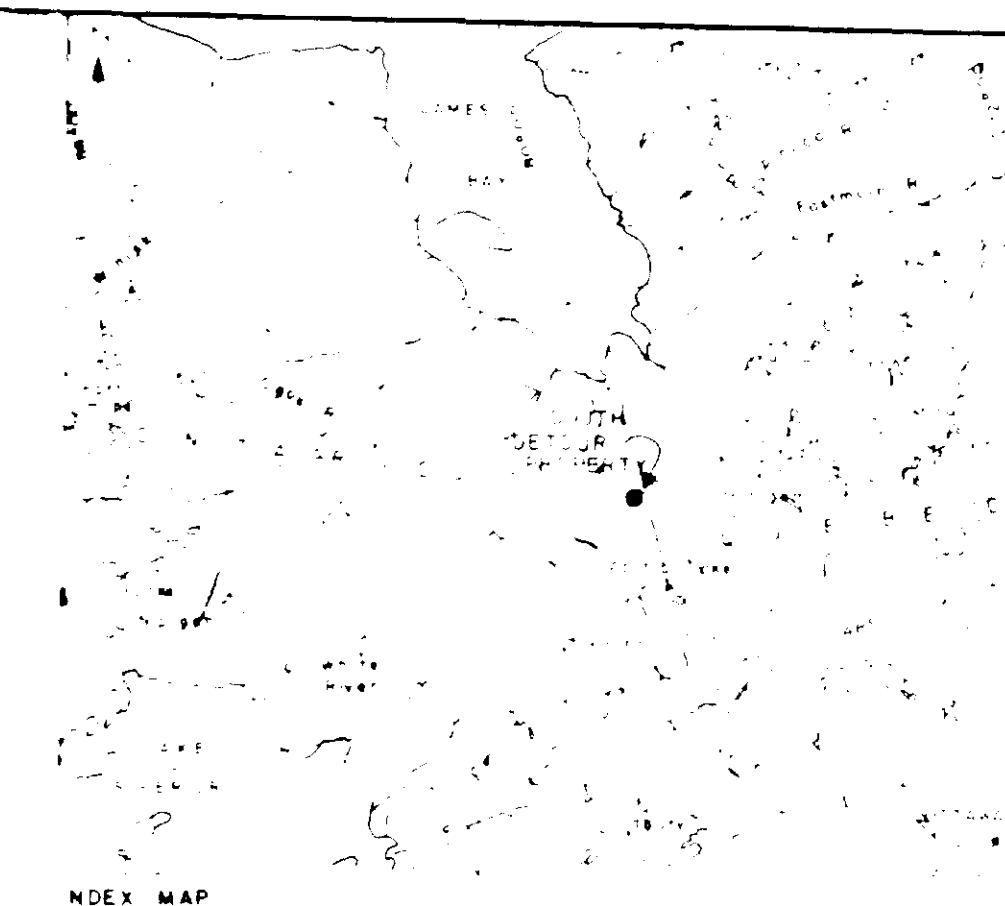
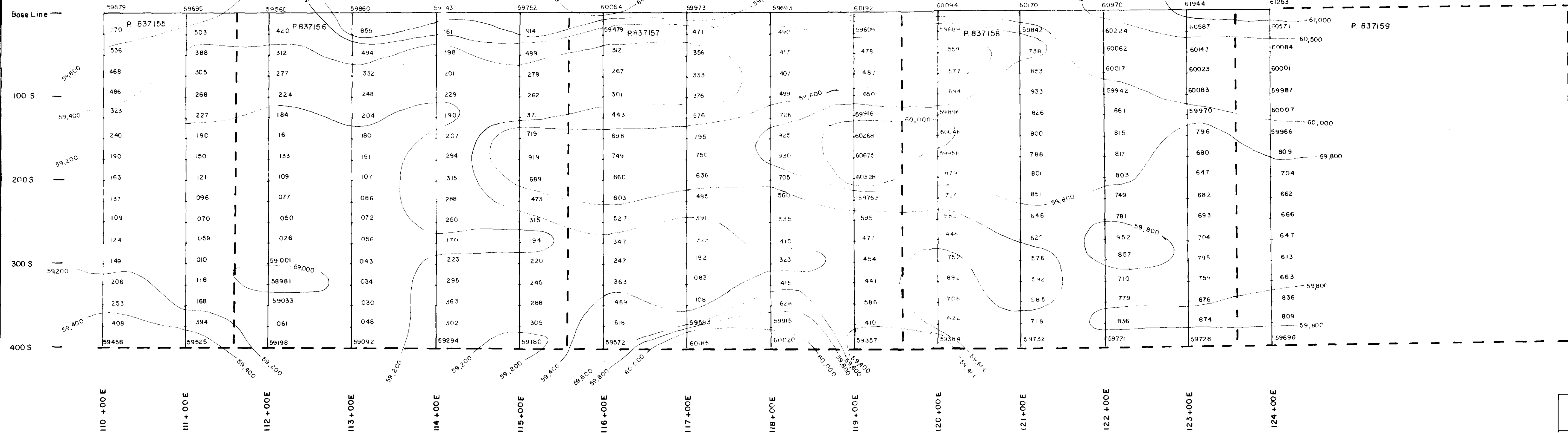


*C. Robinson*

28831

<b>Westmin Resources Limited</b> EASTERN CANADA MINING DIVISION	
SOUTH DETOUR PROJECT 1985	
MAX-MIN II. SURVEY, 1777 Hz	
Work by D.J. Robinson	Scale 1:2,500
Date May, 1985	NTS 32-E-13





LEGEND

- 59,200 gammas
  - 59,400 gammas
  - 59,600 gammas
  - 59,800 gammas
  - 60,000 gammas
  - 60,500 gammas
  - 61,000 gammas
- 59940 MAGNETOMETER READING GAMMAS
- 59,800 ISOMAGNETIC CENTOUR GAMMAS



**WESTMIN** Westmin Resources Limited  
EASTERN CANADA MINING DIVISION

SOUTH DETOUR PROJECT  
1985

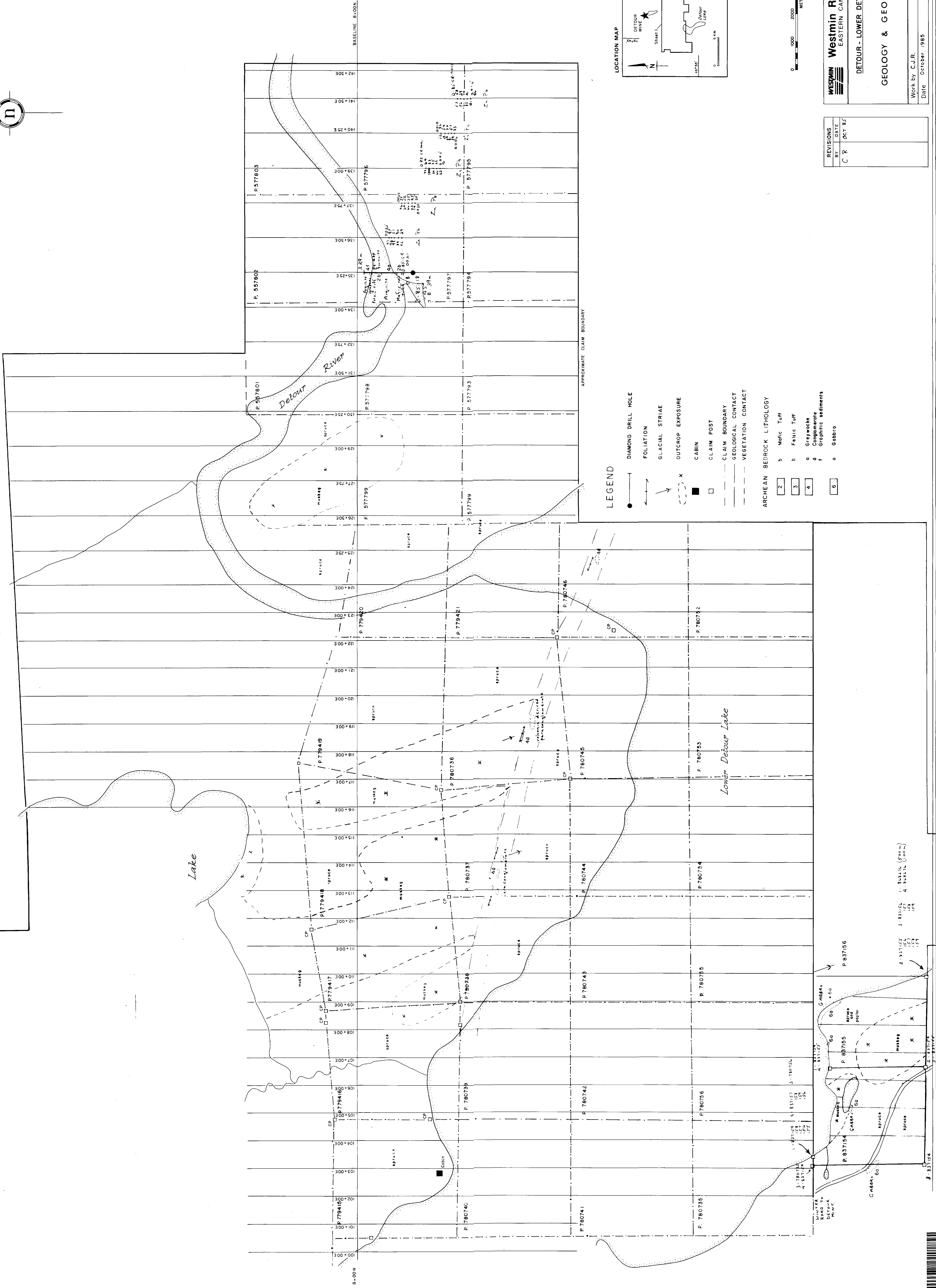
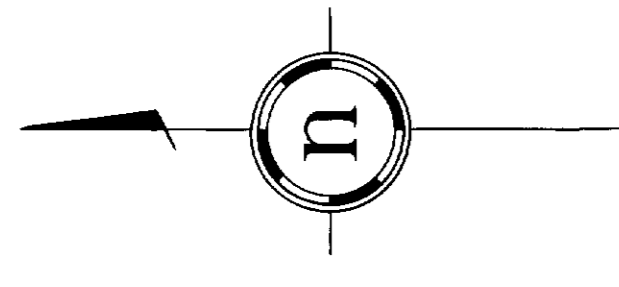
MAGNETOMETER SURVEY

Work by D.J. Robinson      Scale 1:2,500

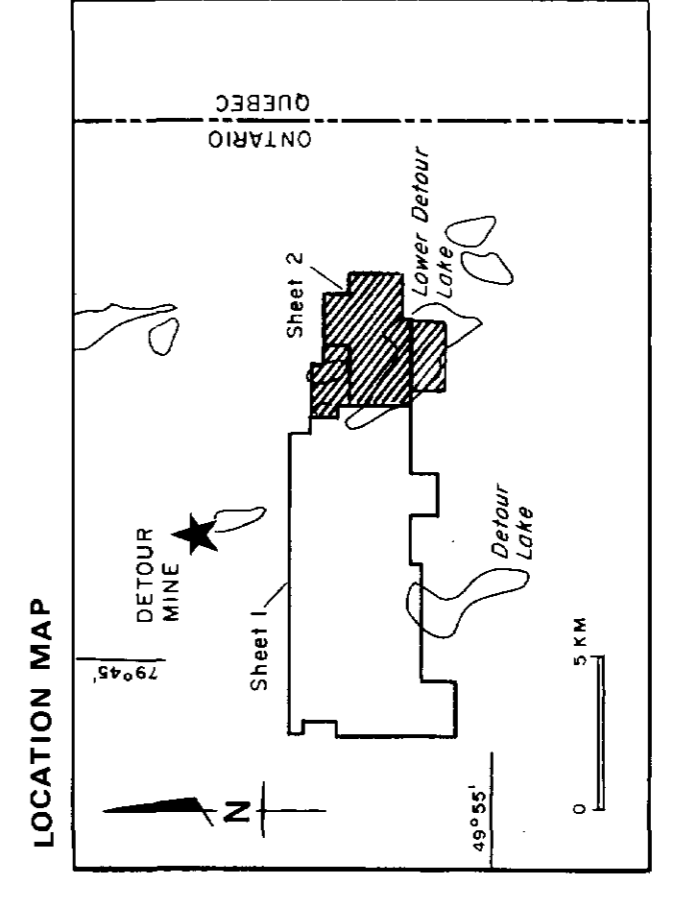
Date May, 1985              NTS 32-E-13

20031





- LEGEND**
- DIAMOND DRILL HOLE
  - FOLIATION
  - GLACIAL STRIAE
  - OUTCROP EXPOSURE
  - CABIN
  - CLAIM POST
  - CLAIM BOUNDARY
  - GEOLOGICAL CONTACT
  - VEGETATION CONTACT
- ARCHEAN BEDROCK LITHOLOGY**
- 2 a Mafic Tuff
  - 3 b Felsic Tuff
  - 4 c Greywacke
  - 5 d Graphitic sediments
  - 6 e Gabbro



C. Rowland

REVISIONS	BY	DATE
	C.R.	OCT 87

**Westmin Resources Limited**  
 EASTERN CANADA MINING DIVISION

DETOUR - LOWER DETOUR LAKE CLAIMS

**GEOLOGY & GEOCHEMISTRY**

Work by C.J.R. Scale 1:5,000  
 Date October, 1985 NTS 32E/13