



52N04NE0021 2.10950 BATEMAN

010

LOGISTICS REPORT ON  
COMBINED HELICOPTER-BORNE  
MAGNETIC AND VLF-EM  
SURVEY  
RED LAKE,  
ONTARIO

for  
BIRON BAY RESOURCES LTD.  
by  
AERODAT LIMITED  
September, 1987

J8758

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MAR 22 1988

MINING LANDS SECTION



52N04NE0021 2.10950 BATEMAN

010C

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LIST OF MAPS

(Scale 1:10,000)

Maps

1. Photomosaic base
2. Total Field Magnetic Contours
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4. VLF-EM Total Field Contours

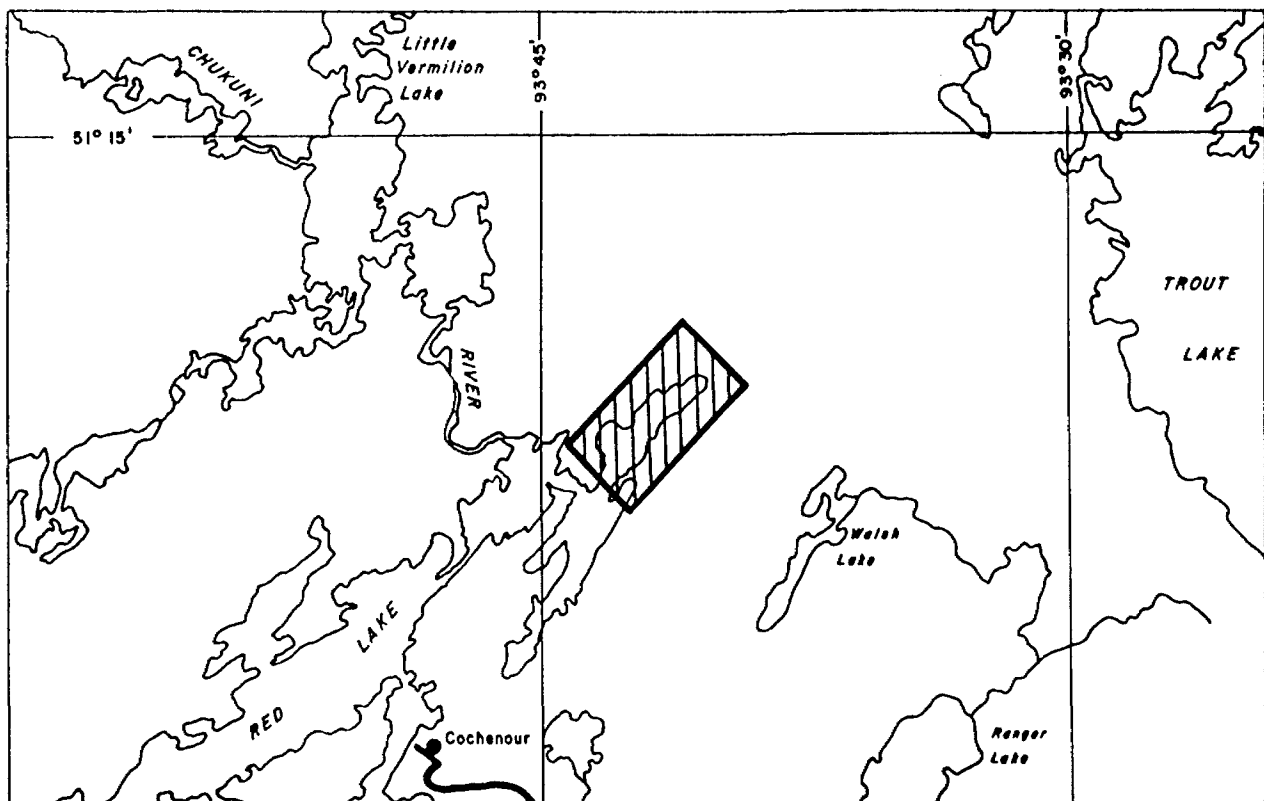
1. INTRODUCTION

This report describes an airborne geophysical survey carried out on behalf of Biron Bay Resources Ltd. by Aerodat Limited. Equipment operated included a proton precession magnetometer, a VLF-EM system, a tracking camera, and a radar altimeter.

The survey area, identified as being on East Bay of Red Lake Ontario was located about 17 kilometres north-northeast of the town of Red Lake, Ontario. The survey was flown in two flights on July 30, 1987. At a nominal line spacing of 100 metres, 60 transverse lines of approximately 3.0 kilometres length totalling 175 line kilometres were flown to provide coverage of the survey block. The quality of the recorded geophysical data was considered to be within the specifications described in the contract.

2. SURVEY AREA LOCATION

The survey area is depicted on the index map shown below. The flight line direction was 45 degrees west of north. The area is accessible by float plane to Red Lake and by road to either side of the East Bay.



### 3. AIRCRAFT AND EQUIPMENT

#### 3.1 Aircraft

The helicopter used for the survey was an Bell Jet-Ranger 206-B operated by Ranger Helicopters Limited, with registration CF-AJR. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey aircraft was flown at a mean terrain clearance of 55 metres.

#### 3.2 Equipment

##### 3.2.1 VLF-EM System

The VLF-EM system was a Herz Totem 2A. This instrument measured the total field and quadrature components from two transmitting stations, providing two channels of both line and orthogonal information.

The sensor was towed in a bird 30 metres below the helicopter, 25 metres above the terrain. The transmitting station used for the line channels was NSS (Annapolis, Maryland, 21.4 kHz). For the orthogonal direction, station NAA (Culter, Maine, 24.0 kHz) was received.

##### 3.2.2 Magnetometer

The magnetometer was a Geometrics G-803 proton

precession magnetometer. The sensitivity of the instrument was 0.5 nT at a 0.2 second sampling rate. The sensor was towed in a bird 30 metres below the helicopter.

3.2.3 Magnetic Base Station

An IFG proton precession magnetometer was operated at the base of operations to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to facilitate later correlation.

3.2.4 Radar Altimeter

A King Air radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude for maximum accuracy.

3.2.5 Tracking Camera

A Sony tracking camera was used to record flight path on 8mm video film. The fiducial numbers were imprinted on the margin of the film for cross-reference to the analog and digital data.

3.2.6 Analog Recorder

An RMS dot-matrix recorder was used to display the data during the survey. In addition to manual and time fiducials, the following data was recorded:

Channel	Input	Scale
ALT	Radar Altimeter	10 ft./mm
VLT	VLF-EM Total Field - Line	2.5%/mm
VLQ	VLF-EM Quadrature - Line	2.5%/mm
VOT	VLF-EM Total Field - Ortho	2.5%/mm
VOQ	VLF-EM Quadrature - Ortho	2.5%/mm
MAGC	Magnetometer Sensor - Coarse	20.0 nT/mm
MAGF	Magnetometer Sensor - Fine	2.0 nT/mm

3.2.7 Digital Recorder

An RMS DGR 33 digital acquisition system recorded the survey on magnetic tape. Information recorded was as follows:

<u>Equipment</u>	<u>Interval</u>
VLF-EM	0.5 seconds
Magnetometer	0.2 seconds
Altimeter	0.5 seconds



4. DATA PRESENTATION

4.1 Base Map

A photomosaic base at a scale of 1:10,000 was prepared by enlargement of aerial photographs of the survey area. This base was used for both the navigation and flight path recovery in conjunction with the 8 mm video tracking film.

4.2 Total Field Magnetic Contours

The aeromagnetic data was corrected for diurnal variations by subtraction of the digitally recorded base station magnetic profile. No correction for regional variation was applied.

The corrected profile data were interpolated onto a regular grid at a 25m true scale interval using a cubic spline technique. The grid provided the basis for threading the presented contours at a 5 nanoTesla interval.

The aeromagnetic data have been presented with flight path on the photo base map.

4.3 Vertical Magnetic Gradient Contours

The vertical magnetic gradient was calculated from the total

field magnetic data using a computer differential operator. This grid, also at a 25 metre interval and contoured at 0.5 nanoTeslas/metre were presented on the photo base with flight lines.

4.4 VLF-EM Total Field Contours

The line VLF-EM total field signals from NSS (Annapolis, Maryland) were also gridded at a 25 metre interval, and contoured at a 2% interval presented on the photo base map along with the flight lines.

5. GENERAL INTERPRETIVE CONSIDERATIONS

Total Field Magnetism

The total field magnetic map shows contours of the total field at a fine contour interval of five nanoTeslas.

The magnetic map is characterized by numerous magnetic features and should be carefully correlated with existing geologic maps of the area. Such correlations should prove extremely useful for updating the known geology of the area.

Vertical Magnetic Gradient

The vertical magnetic gradient is derived from the total magnetic field data using a computer differential operator, and is contoured at 0.5 nT/m.

This map accentuates the high frequency deviations in the magnetic field, bringing out the more subtle magnetic anomalies. The correlation of the magnetic data to the geology can easily be extended to the vertical gradient for more detailed work.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military

radio transmitters as the primary signals. The magnetic field associated with the primary field is elliptically polarized in the vicinity of electrical conductors. The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component of the polarization ellipse.

The relatively high frequency of VLF (20-25 kHz) provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measureable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground the depth of exploration is severely limited.

The total field response is an indicator of the existence and position of a conductivity anomaly. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

Respectfully submitted,  
AERODAT LIMITED



September, 1987

T. Jeffrey Gamey  
Projects Supervisor, Geophysicist



3883 NASHUA DRIVE • MISSISSAUGA • ONTARIO • CANADA • L4V 1R3  
Telephone: (416) 671-2446 Telex: 06-968872 Cable: Canaerodat Toronto

Invoice No: 18-8758-0445

Date: September 17, 1987

Biron Bay Resources Ltd.  
4th floor  
155 University Avenue  
Toronto, Ontario

In Account with:

Aerodat Limited  
3883 Nashua Drive  
Mississauga, Ontario  
L4V 1R3

---

Re: Airborne Geophysical Survey - Red Lake Area, Ontario

For a total of 175 line-km

Pursuant to paragraph 10 b (balance on delivery of  
final report and maps) of Agreement between  
Biron Bay Resources Ltd. and Aerodat Limited  
dated September 16, 1987

Total survey charges (175 km @ \$40.00) \$7,000.00

Less Invoice No. 18-8758-0359 \$4,000.00

AMOUNT DUE \$3,000.00



Ministry of Natural Resources

File \_\_\_\_\_

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL

TO B  
FAC  
TECHNICAL



52N04NE0021 2.10950 BATEMAN

900 ]

Type of Survey(s) Magnetic and VLF-EM (Airborne)  
 Township or Area Bateman Twp., Red Lake Area  
 Claim Holder(s) O'Brien Rivard  
P.O. Box 944, Red Lake, Ontario  
 Survey Company Aerodat Surveys Limited  
 Author of Report T. Jeffrey Gamey  
 Address of Author 3883 Nashua Drive, Mississauga, Ont.  
 Covering Dates of Survey July 30th, 1987  
(linecutting to office)  
 Total Miles of Line Cut 176 line kilometers flown

**MINING CLAIMS TRAVERSED**  
List numerically

- KRL 903753.....  
(prefix) (number)
- KRL 903755.....
- KRL 903754..... KRL 903735
- KRL 903756..... KRL 903740
- KRL 903757..... KRL 903741
- KRL 903758.....
- KRL 903759.....
- KRL 903760.....
- KRL 903761.....
- KRL 903762.....
- KRL 903861.....
- KRL 903862.....
- KRL 903863.....
- KRL 903864.....
- KRL 903865.....
- KRL 903866.....
- KRL 903867.....
- KRL 903868.....
- KRL 903869.....
- KRL 903870.....
- KRL 903871.....
- KRL 903734.....

If space insufficient, attach list

**SPECIAL PROVISIONS  
CREDITS REQUESTED**

**DAYS  
per claim**

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

ENTER 20 days for each  
additional survey using  
same grid.

- Geophysical
- Electromagnetic.....
- Magnetometer.....
- Radiometric.....
- Other.....
- Geological.....
- Geochemical.....

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

Magnetometer 40 Electromagnetic 40 Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: March 22, 1988

SIGNATURE: [Signature]  
(Author of Report or Agent)

Res. Geol. \_\_\_\_\_ Qualifications this file

**Previous Surveys**

File No.	Type	Date	Claim Holder

**TOTAL CLAIMS** 25

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) Magnetic and VLF-EM

Instrument(s) Geometrics G-803 and Herz Totem 2A  
(specify for each type of survey)

Accuracy Magnetometer; -0.5 nT  
(specify for each type of survey)

Aircraft used Bell Jet-Ranger 206-B

Sensor altitude Magnetometer (30 meters), VLF (25 meters)

Navigation and flight path recovery method King Air Radar Altimeter, Sony Tracking Camera on  
8 mm video film

Aircraft altitude 55 meters Line Spacing 100 meters

Miles flown over total area 176 line kilometers Over claims only survey block exceeding  
claim boundary

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 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



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

134-87  
2.10950  
Mining Act

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

Feb 12

18702-134  
MINING LANDS

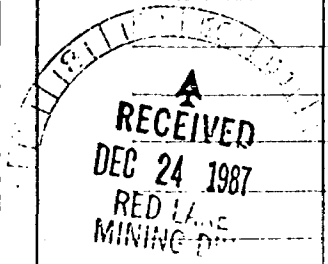
Type of Survey(s) <b>Airborne EM &amp; Magnetic Survey</b>		Township or Area <b>Bateman Township- M-2139</b>
Claim Holder(s) <b>O'Brien Rivard</b>		Prospector's Licence No. <b>P 10055</b>
Address <b>P.O. Box 944, Red Lake, Ontario- P0V 2M0</b>		
Survey Company <b>Aerodat Surveys</b>	Date of Survey (from & to) <b>30   07   87</b> Day   Mo.   Yr.	Total Miles of line Cut <b>175 ln. km</b>
Name and Address of Author (of Geo-Technical report) <b>Jeffrey Gamey, Project Supervisor</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	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
Man Days Complete reverse side and enter total(s) here <b>JAN 06 1988</b> <b>MINING LANDS SECTION</b>	Geological	
	Geochemical	
	Airborne Credits	
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	20
	Magnetometer	20
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
KRL	903753		KRL	903740	
	903754			903741	
	903755				
	903756				
	903757				
	903758				
	903759				
	903760				
	903761				
	903762				
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	903864				
	903865				
	903866				
	903867				
	903868				
	903869				
	903870				
	903871				
	903734				
	903735				



Total number of mining claims covered by this report of work. **25**

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.

For Office Use Only

Recorded **1000** Date Recorded **Dec 24/87** Branch Director **R. Meijer**

Date Approved **Dec 21/87** Date Recorded **Dec 21/87** Branch Director **See Bureau**

Date **Dec 21/87** Record Holder or Agent (Signature) **Nelson W. Baker**

Certification Verifying Report of Work **Nelson W. Baker, agent**

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. **KRL. 903753**

Name and Postal Address of Person Certifying  
**Nelson W. Baker, 42 Invermarge Drive, West Hill, Ontario- M1C 3M4**

Date Certified **Dec 21/87** Certified by (Signature) **Nelson W. Baker**



Ministry of  
Northern Development  
and Mines

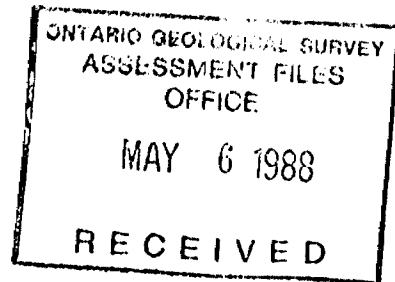
Ontario

Ministère du  
Développement du Nord  
et des Mines

April 29, 1988

Your File: #134-87  
Our File: 2.10950

Mining Recorder  
Ministry of Northern Development and Mines  
P.O. Box 324  
Red Lake, Ontario  
POV 2M0



Dear Madam:

RE: Notice of Intent dated April 14, 1988  
Geophysical (Electromagnetic and Magnetometer) Survey  
submitted on Mining Claims KRL 903753 et al  
in Bateman Township

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,

W.R. Cowan, Manager  
Mining Lands Section  
Mines and Minerals Division

Whitney Block, Room 6610  
Queen's Park  
Toronto, Ontario  
M7A 1W3

Telephone: (416) 965-4888

DK:pl

Enclosure: Technical Assessment Work Credits

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

Resident Geologist  
Red Lake, Ontario

Mr. O'Brien Rivard  
P.O. Box 944  
Red Lake, Ontario  
POV 2M0



Recorded Holder **O'Brien Rivard**

Township ~~XXXX~~a **Bateman**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ 20 _____ days Magnetometer _____ 20 _____ 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 checked="" type="checkbox"/> Special provision <input type="checkbox"/> Ground <input 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.	KRL-903753 to 62 inclusive 903861 to 71 inclusive

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

KRL-903734-35  
903740-41

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.

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MAR 22 1988

MINING LANDS SECTION

March 21, 1988

Ministry of Northern Development and Mines  
Whitney Block, Room 6610  
Queen's Park  
Toronto, Ontario-M7A 1W3

Att'n: Mr. Denis Kinvig  
Mining Lands Section  
Mines and Minerals Division

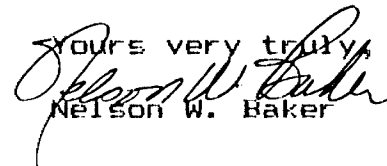
Dear Mr. Kinvig:

Re: Reports of Work 134-87  
Filing of Airborne Magnetometer and  
Electromagnetic Survey on Mining Claims  
KRL 903753 et al in Bateman lwp.

As per our conversation today, I enclose duplicate copies of the report and maps covering the above airborne surveys over a 25-claim block situated in Bateman lwp., in the Red Lake area.

Could you kindly acknowledge receipt of the said documents by signing the copy of this letter enclosed and return to me for my files.

I thank you sincerely for your assistance in this matter.

Yours very truly,  
  
Nelson W. Baker

Received by: \_\_\_\_\_  
Denis Kinvig

c.c. Armstrong, Schiralli & Dunne  
Suite 1400, 141 Adelaide Street West  
Toronto, M5H 3L5

Att'n: Mr. Michael Armstrong

# BATEMAN

DISTRICT OF  
KENORA  
PATRICIA PORTION  
  
RED LAKE  
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

### DISPOSITION OF CROWN LANDS

- PATENT, SURFACE AND MINING RIGHTS ●
- " SURFACE RIGHTS ONLY ○
- " MINING RIGHTS ONLY ◐
- LEASE, SURFACE AND MINING RIGHTS ■
- " SURFACE RIGHTS ONLY □
- " MINING RIGHTS ONLY ◑
- LICENCE OF OCCUPATION ▼
- ROADS ————
- IMPROVED ROADS ————
- KING'S HIGHWAYS ————
- RAILWAYS ————
- POWER LINES ————
- MARSH OR MUSKEG ————
- MINES ————
- CANCELLED ————

### NOTES

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

RED LAKE MINING DIVISION  
FFR 12 1988  
RED LAKE, ONTARIO

### SAND & GRAVEL

- ① MTC PIT NO 1E-13
- ② MTC " " 1E-11
- ③ MTC " " 1E-12
- ④ QUARRY PERMIT
- ⑤ MNR GRAVEL RESERVE 1E10
- ⑥ MNR GRAVEL RESERVE 1E11

No OPEN GROUND SEPT. 22/86

PLAN NO. **M.2139**

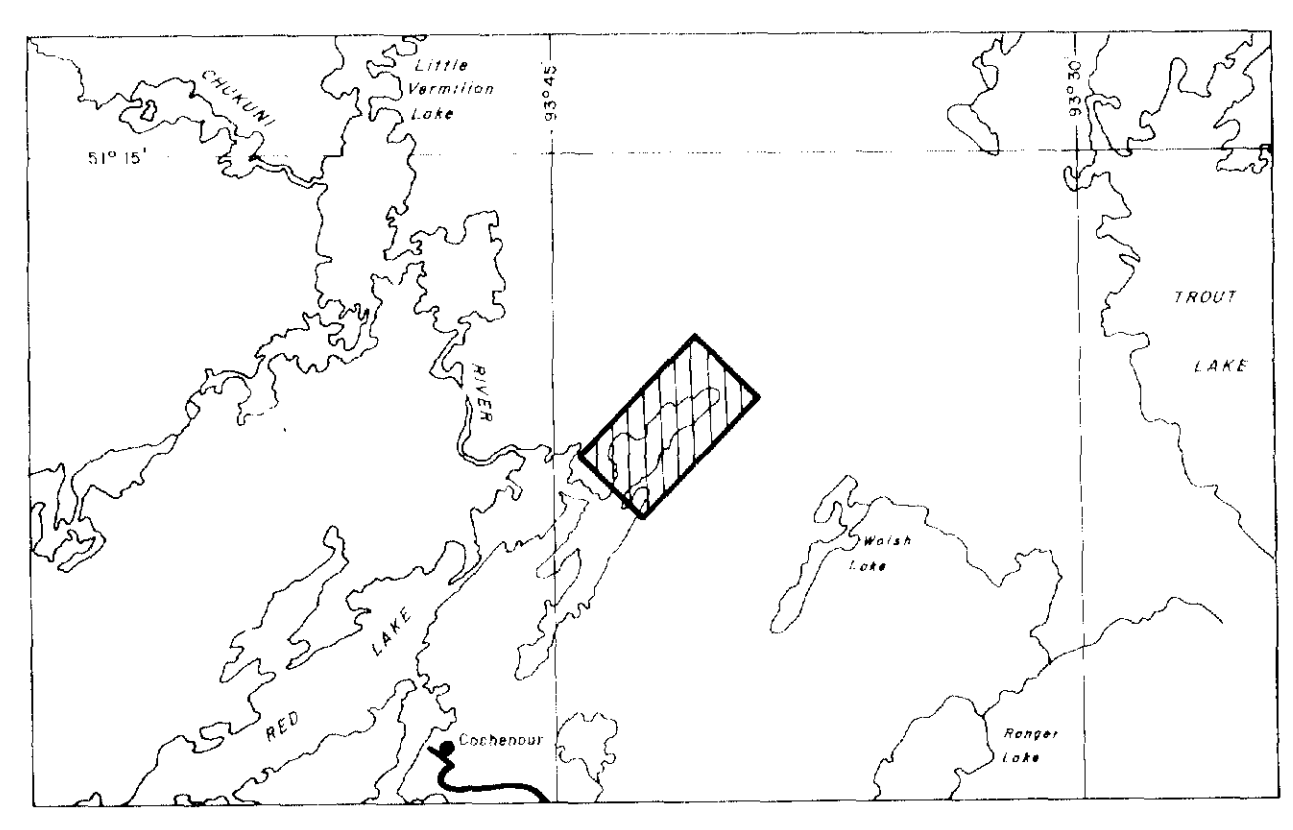
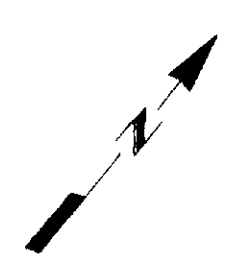
ONTARIO  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH

McDonough Twp. M.2182

Shaver Twp. M.2202

Balmer Twp. M.2137

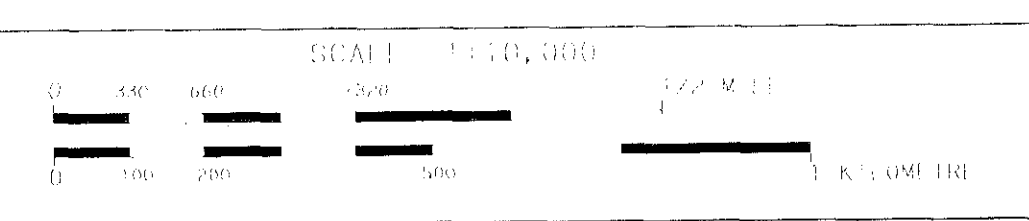




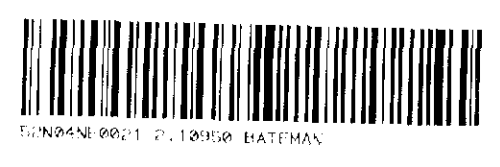
BIRON BAY RESOURCES LTD.

BASE MAP

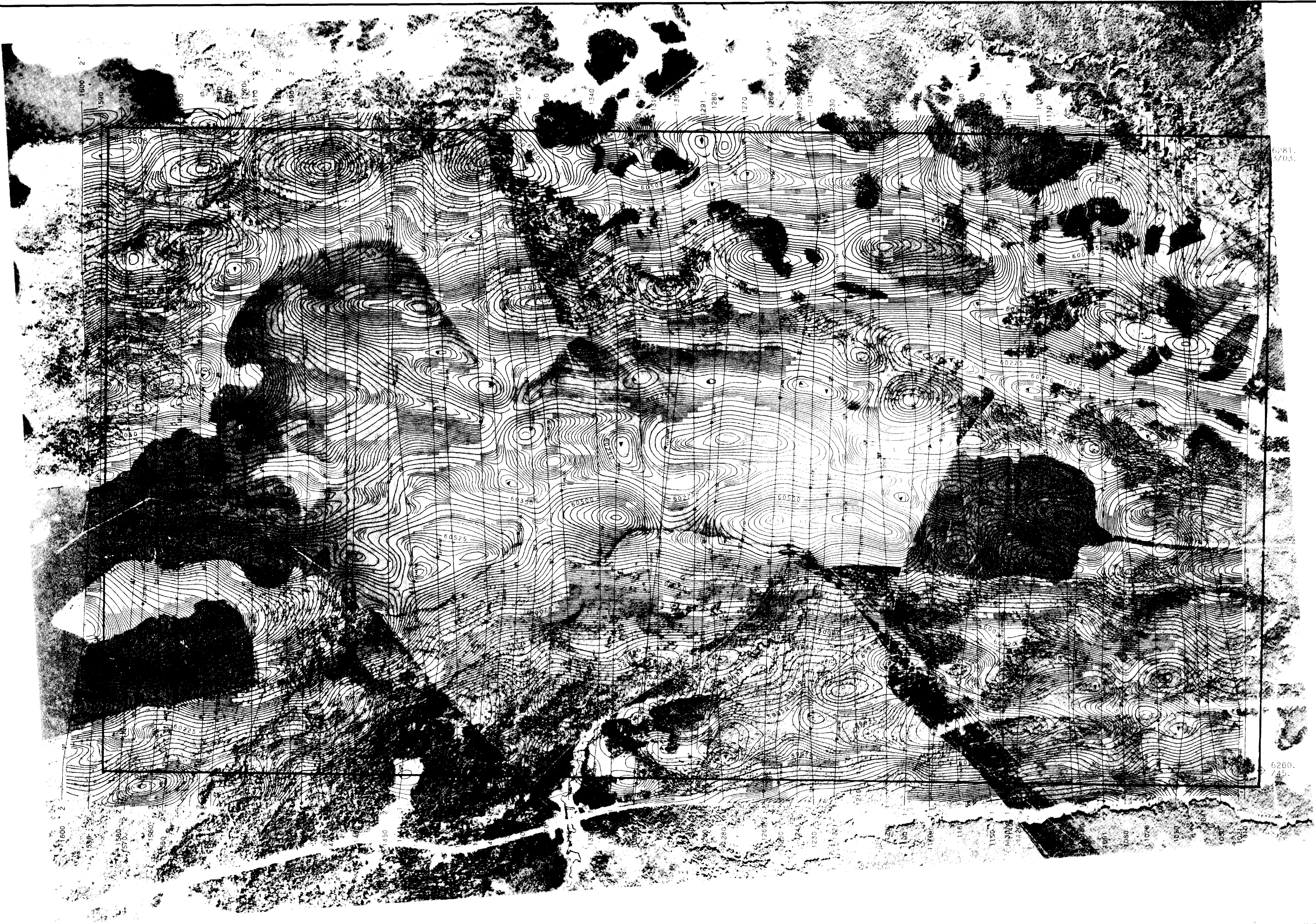
RED LAKE  
ONTARIO



<b>AERODAT LIMITED</b>	DATE: JULY 30, 1987
	NIS No: 52 N/04
	MAP No: 1 <span style="float: right;">J8758</span>

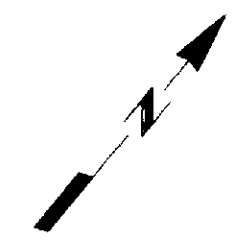






6281.  
7/03.

6260.  
7/45.



Flight Path

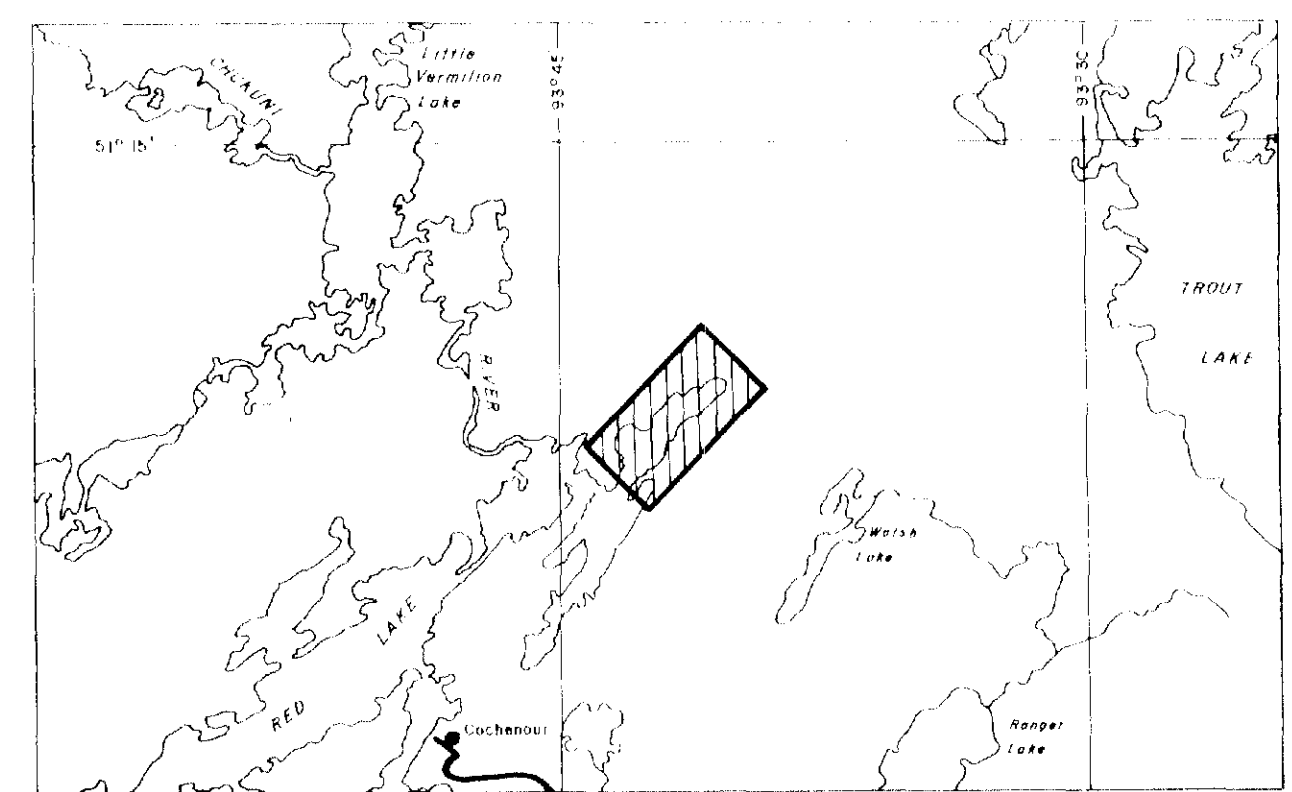
Flight path derived from VIB video tape.

Average terrain clearance 60m  
Line spacing = 100m

Magnetics

Geonics high sensitivity magnetometer  
Sensor elevation 4m

Total Field Magnetic Intensity  
(Gauss, nT)



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**TOTAL FIELD MAGNETIC CONTOURS**

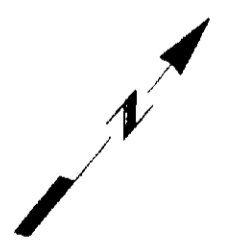
**RED LAKE**  
ONTARIO



**AERODAT LIMITED**

DATE: JULY 30, 1987  
 NIS No: 52 N/04  
 MAP No: ? J8758



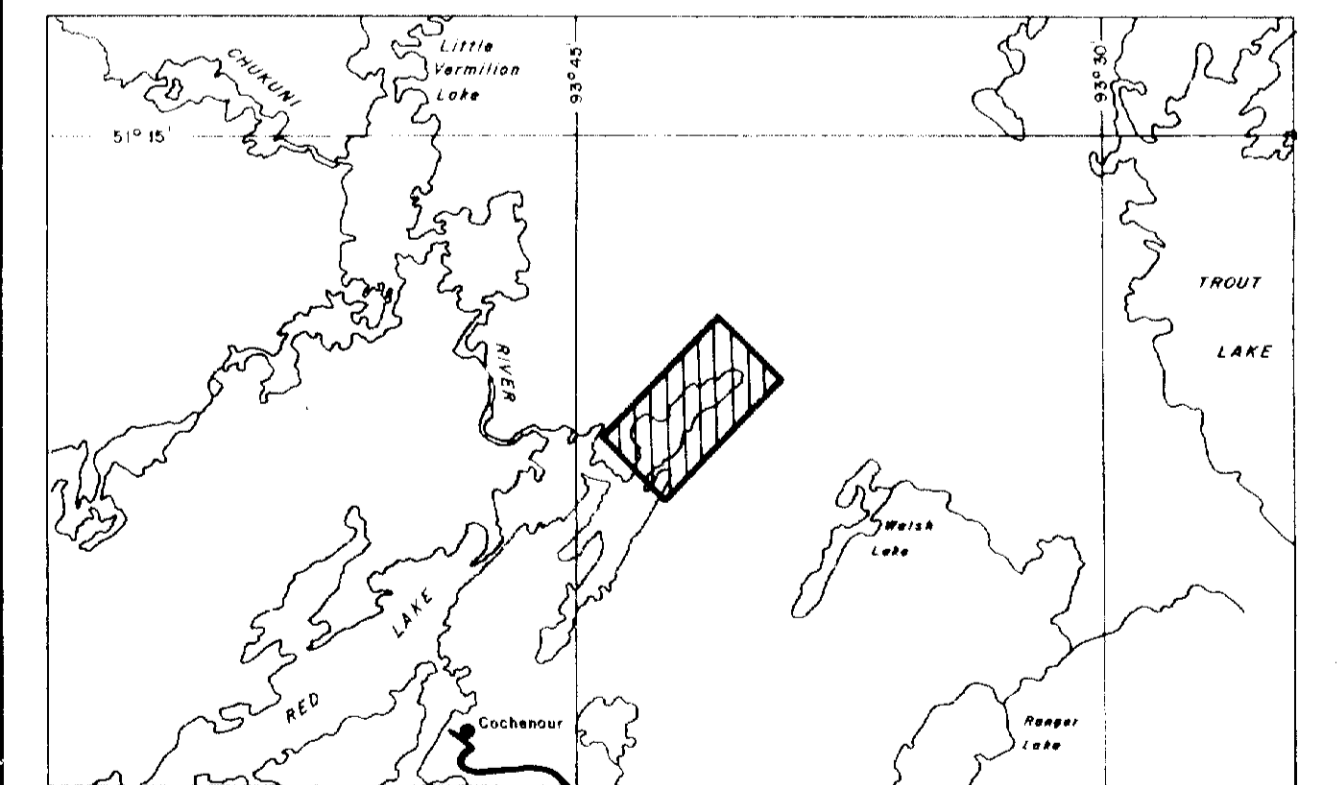


Flight Path

Flight path derived from VEC video tape.  
Average terrain clearance 60m  
Line spacing = 100m

Vertical Gradient

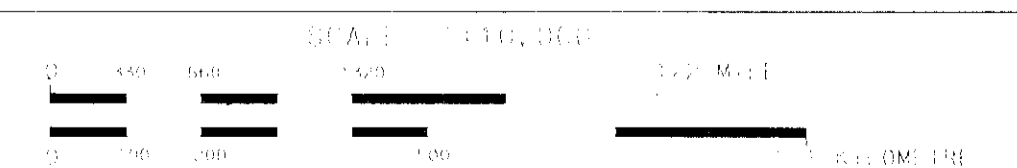
Vertical magnetic gradient calculated from the total field magnetic intensity.  
Constant = 0.12m  
Cesium total sensitivity magnetometer  
Sensor elevation 45m



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**CALCULATED VERTICAL MAGNETIC GRADIENT**

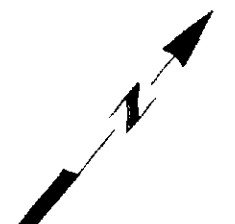
**RED LAKE**  
ONTARIO



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MAP No: 3 J8758



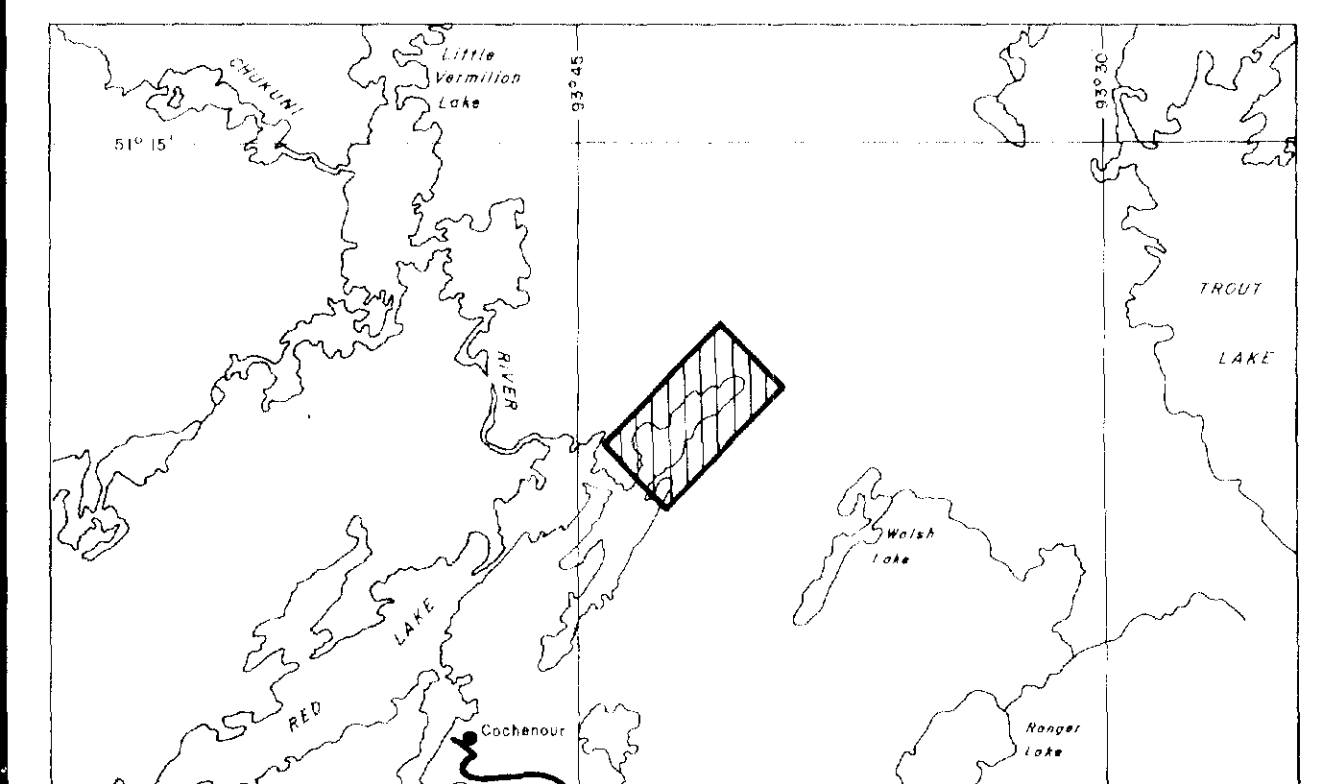


Flight Path

Flight path derived from VHS video tape.  
 Average terrain clearance 60m  
 Line spacing 100m

VLF-EM

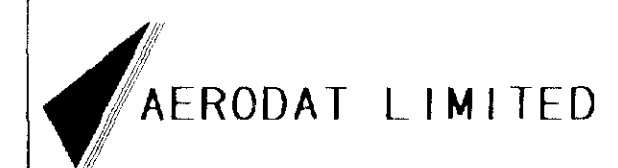
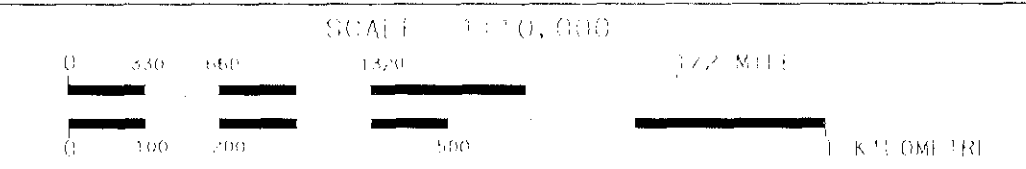
VLF-EM total field intensity in percent  
 Station: NSS (Annapolis, Md.) 21.4 kHz  
 Sensor elevation 4m



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**VLF-EM TOTAL FIELD CONTOURS**

**RED LAKE**  
 ONTARIO



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 MAP No: 4 J8758

