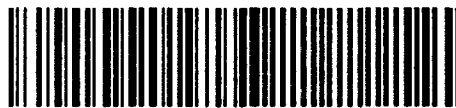


A-756



41009SE0002 2.11518 HUFFMAN

010

OPERATIONS REPORT ON AN

**AIRBORNE MAGNETIC
AND VLF-EM SURVEY**

HUFFMAN TOWNSHIP, SWAYZE GOLD BELT

PORCUPINE MINING DIVISION, ONTARIO

for

BLUE FLACON MINES LTD.

by: **TERRAQUEST LTD.**

Toronto, Canada

July 7, 1988

RECEIVED

AUG 16 1988

MINING LANDS SECTION



41009SE0002 2.11518 HUFFMAN

010C

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Figure 1 ~ General Location Map

Figure 2 ~ Survey Area Map

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LIST OF MAPS IN JACKET

No. A-756-1 ~ Total Magnetic Field

No. A-756-2~ Vertical Magnetic Gradient

1. Introduction

This report describes the specifications and results of a geophysical survey carried out for Blue Falcon Mines Ltd. of 20 Advance Blvd., Brampton, Ontario, L6T 4R7 by Terraquest Ltd., 240 Adelaide Street West, Toronto, Canada. The field work was performed between April 11 and 20, 1988 and the data processing, interpretation and reporting from April 21 to July 7, 1988.

The purpose of a survey of this type is two-fold. First to prospect directly for anomalously conductive and magnetic areas in the earth's crust which may be caused by, or at least related to, mineral deposits. A second is to use the magnetic and conductivity patterns derived from the survey results to assist in mapping geology, and to indicate the presence of faults, shear zones, folding, alteration zones and other structures potentially favourable to the presence of gold and base-metal concentration. To achieve this purpose the survey area was systematically traversed by an aircraft carrying geophysical instruments along parallel flight lines spaced at even intervals, 100 metres above the terrain surface, and aligned so as to intersect the regional geology in a way to provide the optimum contour patterns of geophysical data.

2. The Property

The survey area covers 10 claim block areas within Huffman township in the Porcupine Mining Division of Ontario approximately 100 kilometres southwest of the town of Timmins. Most of the properties can be accessed by water from the Jerome Mine road which is approximately 1 kilometre west of Huffman township.

The latitude and longitude are 47 degrees 38 minutes, and 82 degrees 10 minutes respectively, and the N.T.S. reference is 41O/9.

The survey covers 130 claims in nine non-contiguous claim blocks as shown in figure 2.

3. Geology

Map References

1. Map 2352: Chapleau
Scale 1:250,000.
O.D.M. 1976.

2. Map P2370: Jerome Area, East
Scale 1:15,840
O.G.S. 1980

The survey area is underlain predominantly by a northwest trending belt of mafic to intermediate metavolcanics with minor associated metasediments. It is bounded to the southwest by clastic metasediments and to the northeast by felsic intrusive and metamorphic rocks. Diabase dykes and structures trend to the north-northwest.

4. Survey Specifications

4.1 Instruments

The survey was carried out using a Cessna 182 aircraft, registration C-FAKK, which carries a magnetometer and a VLF electromagnetic detector.

The magnetometer is a proton precession type based on the Overhauser effect. The Overhauser effect allows for polarization of a proton rich liquid of the sensor by adding a "free radical" to it and irradiating it by RF magnetic field. Strong precession signals are generated with modest RF power. The sensor element is mounted in an extension of the right wing tip. Its specifications are as follows:

Model: GSM-9BA

Manufacturer: GEM Systems Inc.
105 Scarsdale Road
Don Mills, Ontario

Resolution: 0.5 gamma

Accuracy: 0.5 gamma

Cycle time: 0.5 second

Range: 20,000-100,000 gammas in 23
overlapping steps

Gradient tolerance: Up to 5,000 gammas/m

The VLF-EM unit uses three orthogonal detector coils to measure (a) the total field strength of the time-varying EM field and (b) the phase between the vertical coil and both the "along line" coil (LINE) and the "cross-line" coil (ORTHO). The LINE coil is tuned to a transmitter station (Channel 1) that is ideally positioned at right angles to the flight lines, while the ORTHO coil transmitter (Channel 2) should be in line with the flight lines. Its specifications are:

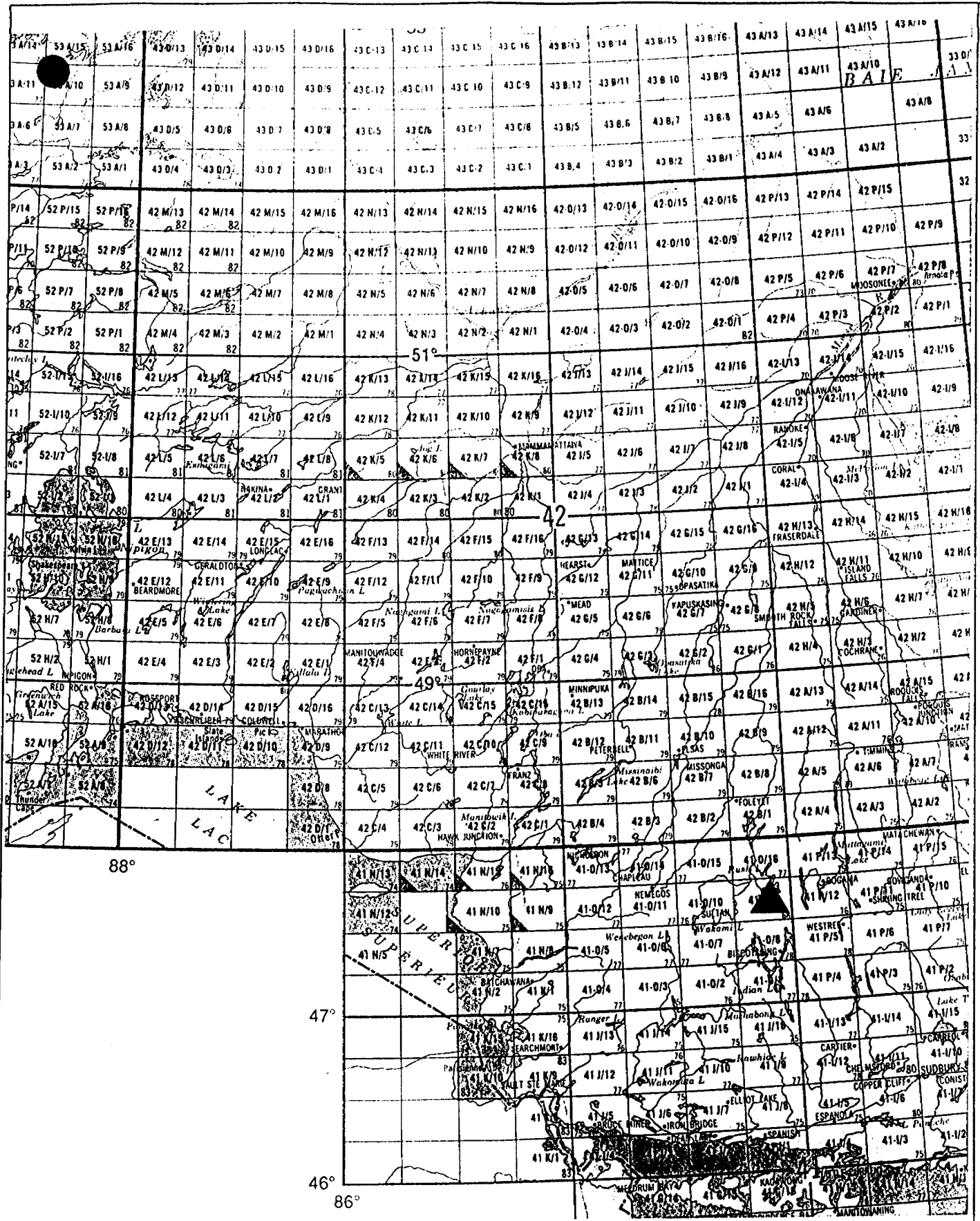


FIGURE 1. General Location



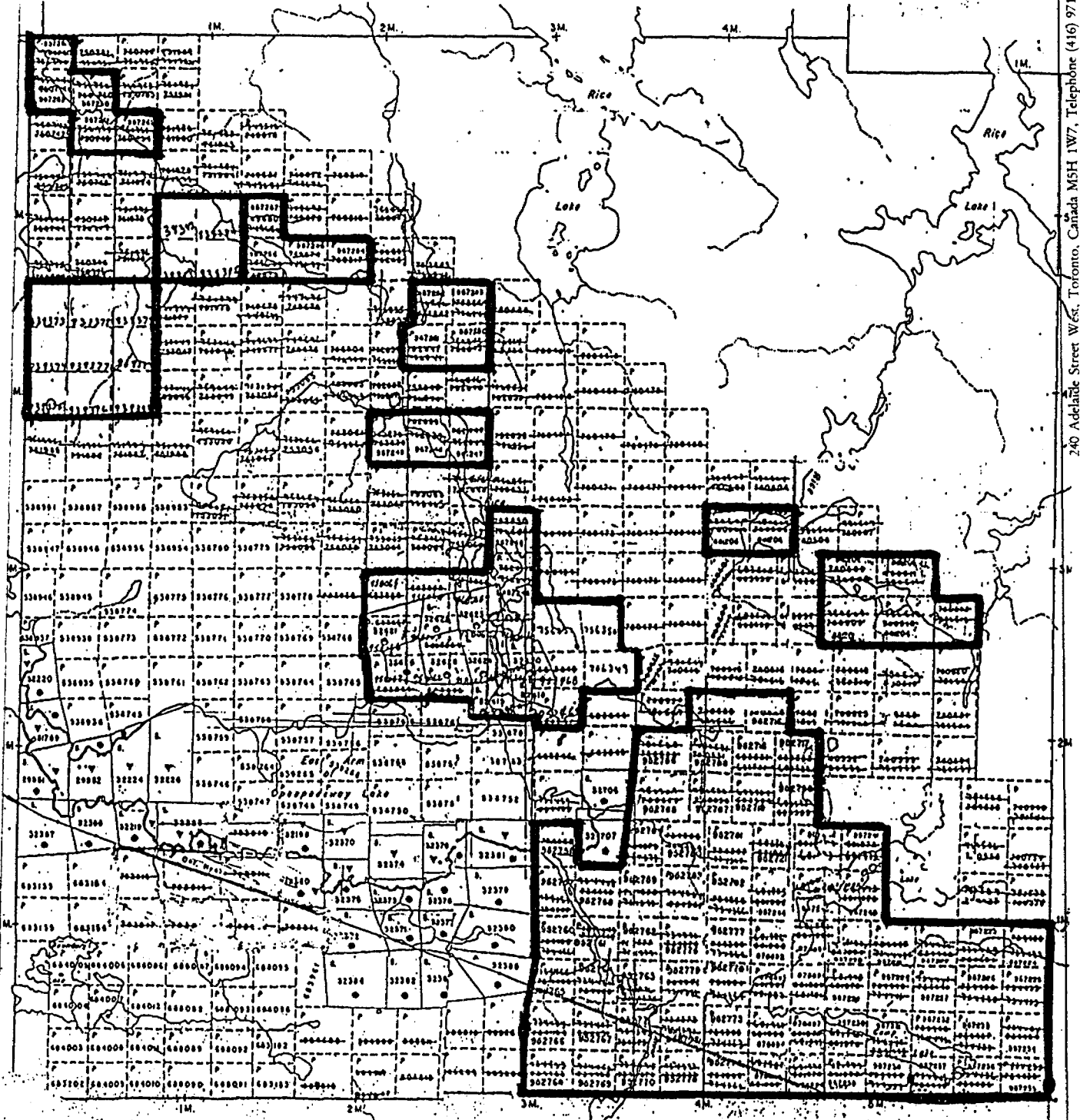


FIGURE 2. Claim Location Map
(exact locations not certified)



Model: TOTEM 2A
Manufacturer: Herz Industries
Toronto, Canada

Accuracy: 1%

Reading interval: 0.5 second

The VLF sensor is mounted in the left wing tip extension.

Other instruments are:

- King KRA-10A radar altimeter
- PDAS-1100 data acquisition system with two 3.5" floppy disk drives manufactured by Picodas Group Inc., Richmond Hill, Ontario
- Geocam video camera and recorder for flight path recovery, manufactured by Geotech Ltd., Markham, Ontario.
- PBAS-9000 portable field base station with a 3.5" floppy disk drive and an analog print out manufactured by Picodas Group Inc., Richmond Hill, Ontario, coupled with a GSM-8 proton magnetometer manufactured by Gem Systems Inc., Toronto, Ontario.

4.2 Lines and Data

Line spacing: 100 metres

Line direction: 360 degrees

Terrain clearance: 100 m

Average ground speed: 156 km/hr

Data point interval:

Magnetic: 27 metres

VLF-EM: 27 metres

Tie Line interval: 2 km

Channel 1 (LINE): NAA Cutler, 24.0 kHz

Channel 2 (ORTHO): NSS Annapolis, 21.4 kHz

Line km over total survey area including overrun: 525 line km

Line km over claim groups:

Magnetic survey totals: 290 line km

VLF-EM survey totals: 290 line km

4.3 Tolerances

Line spacing: Any gaps wider than twice the line spacing and longer than 10 times the line spacing were filled in by a new line.

Terrain clearance: Portions of line which were flown above 125 metres for more than one km were reflight if safety considerations were acceptable.

Diurnal magnetic variation: Less than twenty gammas deviation from a smooth background over a period of two minutes or less as seen on the base station analogue record.

Manoeuvre noise: Approximately +/- 5 gammas.

4.4 Photomosaics

For navigating the aircraft and recovering the flight path, semi-controlled mosaics of aerial photographs were made from existing air photos. Each photograph forming the mosaic was adjusted to conform to the NTS map system before the mosaic was assembled.

5. Data Processing

Flight path recovery was carried out in the field using a video tape viewer to observe the flight path as recorded by the Geocam video camera system. The flight path recovery was completed daily to enable reflights to be selected where needed for the following day.

The magnetic data was levelled in the standard manner by tying survey lines to the tie lines. The IGRF has not been removed. The total field was contoured by computer using a program provided by Dataplotting Services Inc. To do this the final levelled data set is gridded at a grid cell spacing of 1/10th of an inch at map scale.

The VLF data was treated automatically so as to normalize the non conductive background areas to 100 (total field strength) and zero (quadrature). The algorithms to do this were developed by Terraquest and will be provided to anyone interested by application to the company.

All of these dataprocessing calculations and map contouring were carried out by Dataplotting Services Inc. of Toronto.

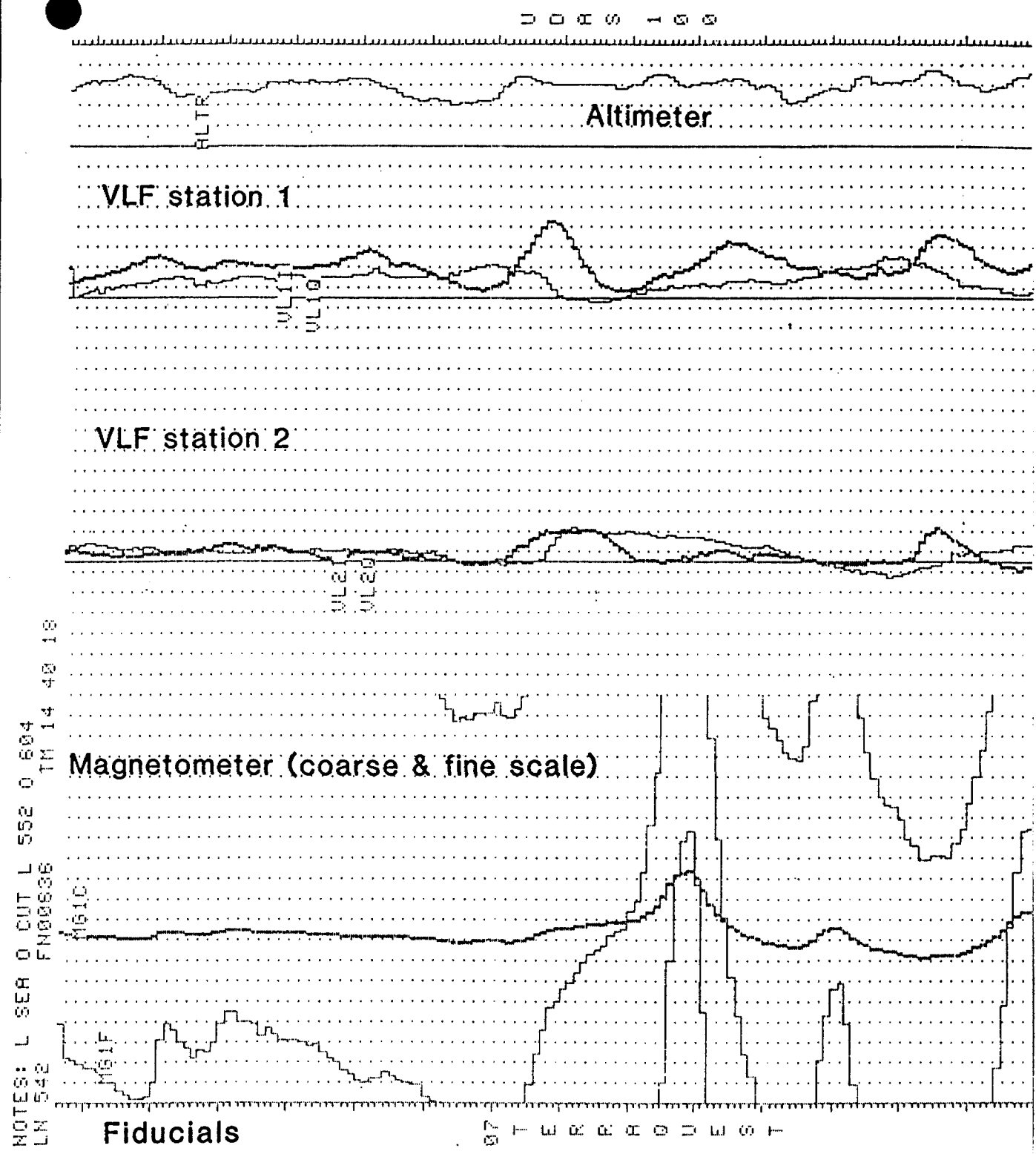


FIGURE 3. Sample of analogue data



ant, F.S. and Spector A., 1970: Statistical Models for Interpreting Aeromagnetic Data; Geophysics, Vol 35

Grant, F.S., 1972: Review of Data Processing and Interpretation Methods in Gravity and Magnetism; Geophysics Vol 37-4

Spector, A., 1968: Spectral Analysis of Aeromagnetic maps; unpublished thesis; University of Toronto.

6. Summary

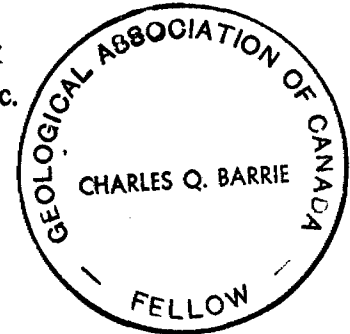
An airborne combined magnetic and VLF-EM survey has been done on the property at line intervals of 100 metres. The total magnetic field and the VLF-EM data are produced at a scale of 1:10,000.

TERRAQUEST LTD.



Charles Q. Barrie, M.Sc.

Geologist



Deal

28305

W8806-50018 Mining Act PAGE 1 OF 2

Type of Survey(s) Airborne Magnetometer, Electromagnetic Township or Area Huffman
 Claim Holder(s) Blue Falcon Mines Ltd. Prospector's Licence No. T1441
 Address 20 Advance Blvd. Brampton, Ontario L6T 4R7
 Survey Company Terraquest Ltd. Date of Survey (from & to) 20 04 88 | 20 04 88 Total Miles of line Cut
 Name and Address of Author (of Geo-Technical report) CHARLES BARRIE 240 ADELAIDE ST. W. TORONTO ONT. M5H1W7

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

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

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
P-	952466		P-	952769	
	952467			952770	
	952468			952771	
	952469			952772	
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	952763			952786	
	952764			952787	
	952765			952788	
	952766			952789	
	952767				
	952768				

Airborne Credits	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys	40
	40

Expenditures (excluding power standards)
 Type of Work Performed
 Performed on Claim(s)

Calculation of Expenditures - Days Credits

Total Expenditures \$ ÷ 15 = Total Days Credits

Instructions
 Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date June 16, 1988 Recorded Holder or Agent (Signature) [Signature]

For Office Use Only

Total Days Cr. Recorded 8800 Date Recorded JUNE 23, 1988 Mining Recorder [Signature]
 Date Approved at Recorded 14 Jan 1989 Branch Director [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
NEIL NOUAK BLUE FALCON MINES LTD. 20 ADVANCE BLD. BRAMPTON ONT.

Date Certified June 16 Certified by (Signature) [Signature]

1362 (85/12)

ONTARIO GEOLOGICAL SURVEY
 ASSESSMENT FILES
 OFFICE
 JAN 6 1989
 RECEIVED

RECORDED
 JUN 23 1988

RECEIVED
 JUN 28 1988

RECEIVED
 JUN 28 1988

REFUSED

Flagged

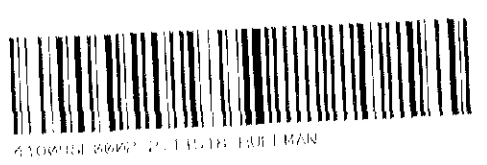
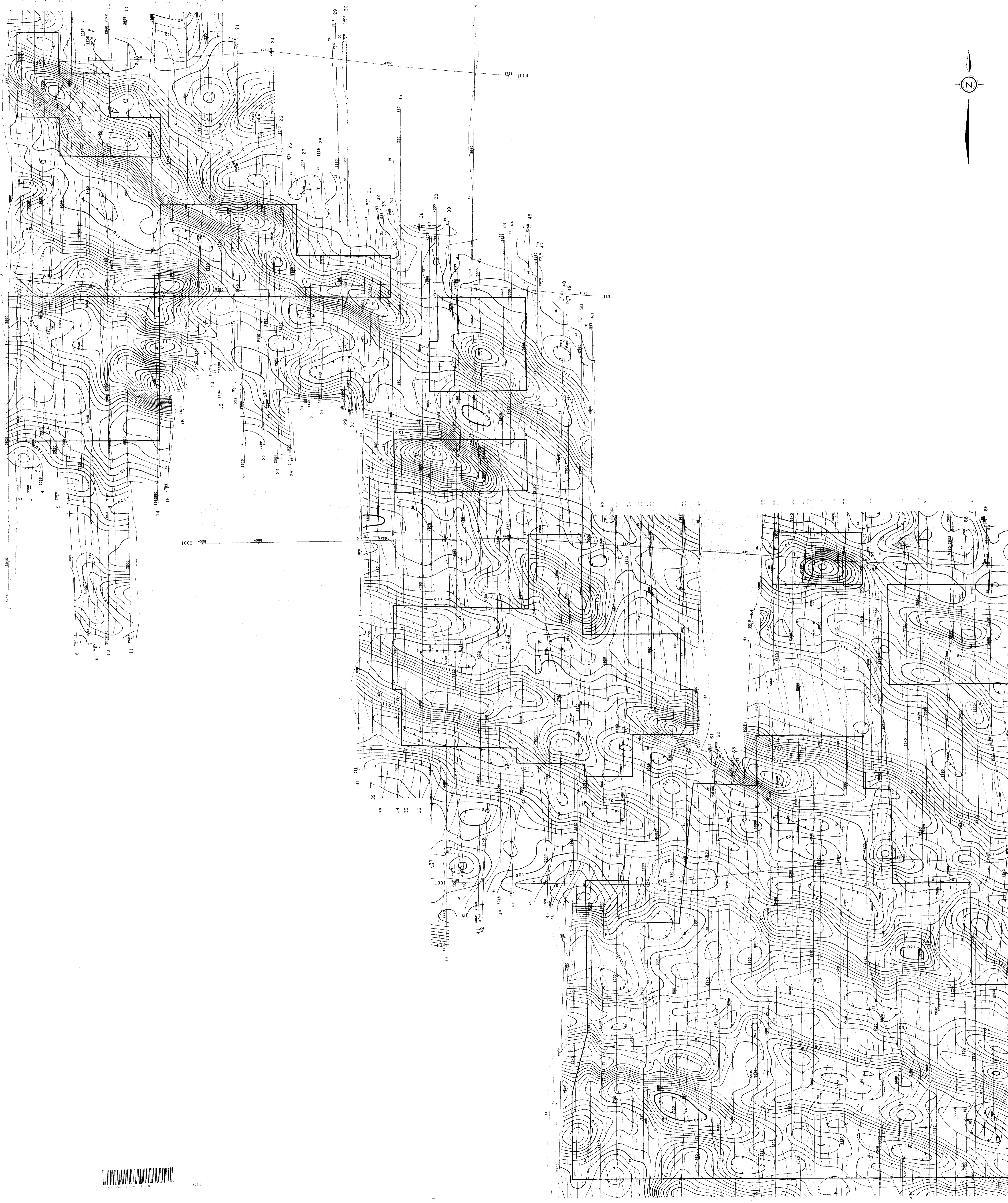
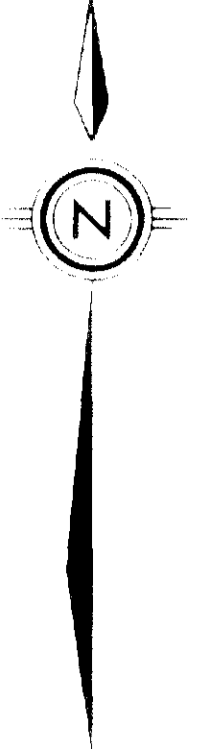
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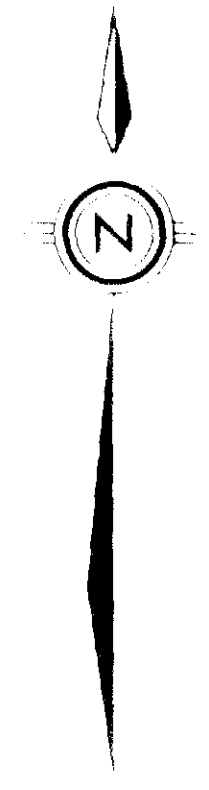
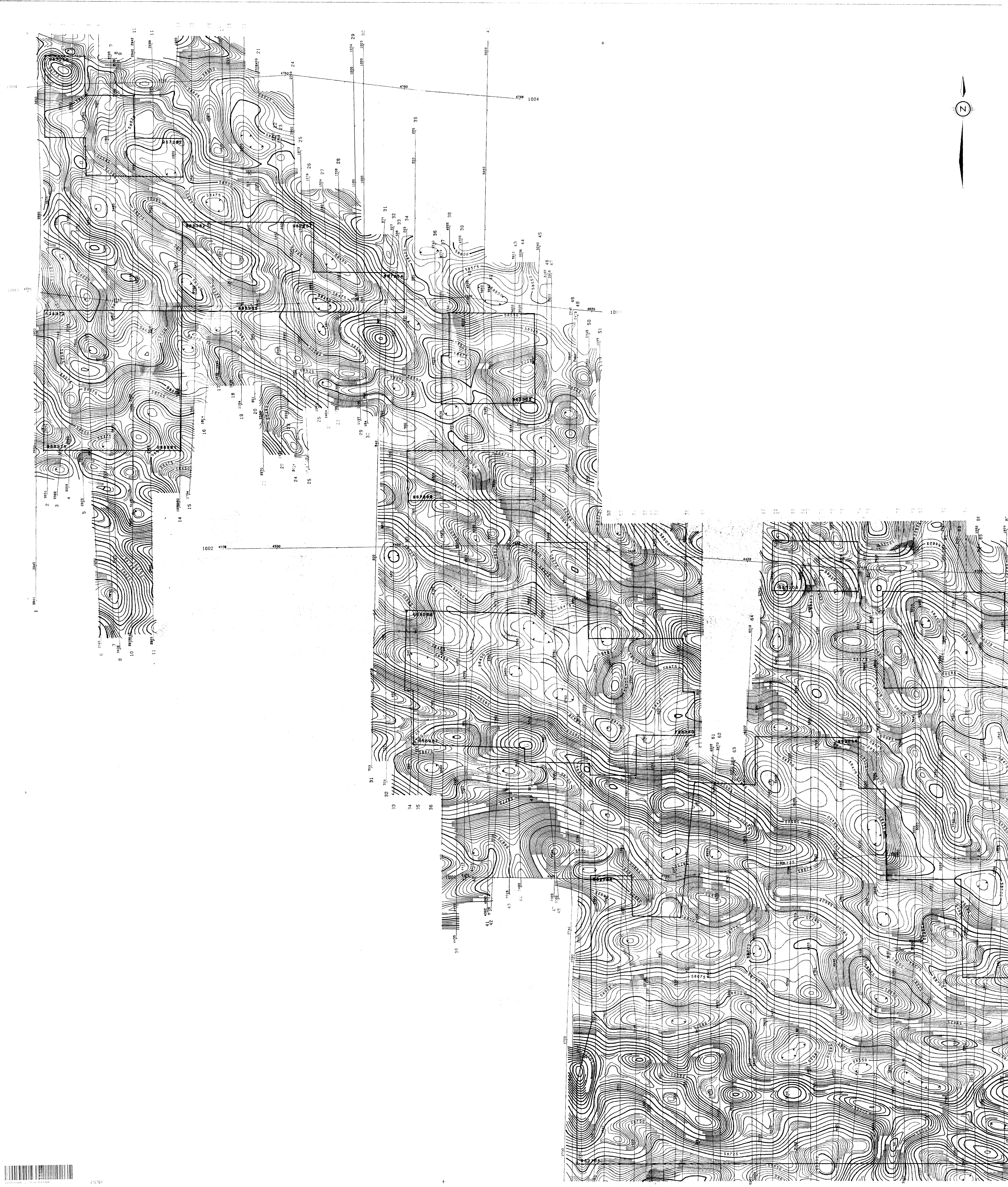
PAGE 2 OF 2.

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878897	80		
878898	80		
878899	80		
881201	80		

TOTAL NUMBER OF MINING CLAIMS COVERED BY THIS REPORT OF WORK =

REFUSED *R/S Sunday*
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 JUN 28 1964





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2 3851
3 3856
4 3861
5 3866
6 3871
7 3876
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10 3891
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30 3991
31 3996
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35 4016
36 4021
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41 4046
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44 4061
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82 4251
83 4256
84 4261
85 4266
86 4271
87 4276

BLUE FALCON MINES LTD.

AIRDORNE VLF-EM SURVEY
CONTOURS OF TOTAL FIELD STRENGTH
PROFILES OF QUADRATURE

HUFFMAN TWP., ONTARIO

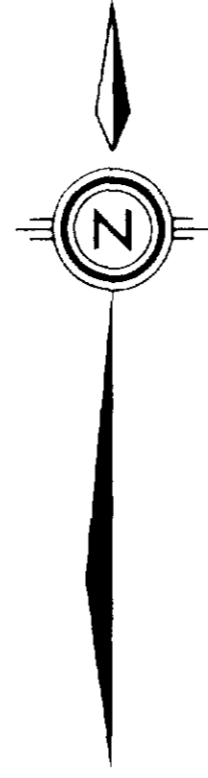
N.T.S. NO. 410/9

(DRAWING NO.) A 756 2

SCALE 1:10,000

DATE July 1988

TERRAQUEST LTD.
TORONTO, CANADA

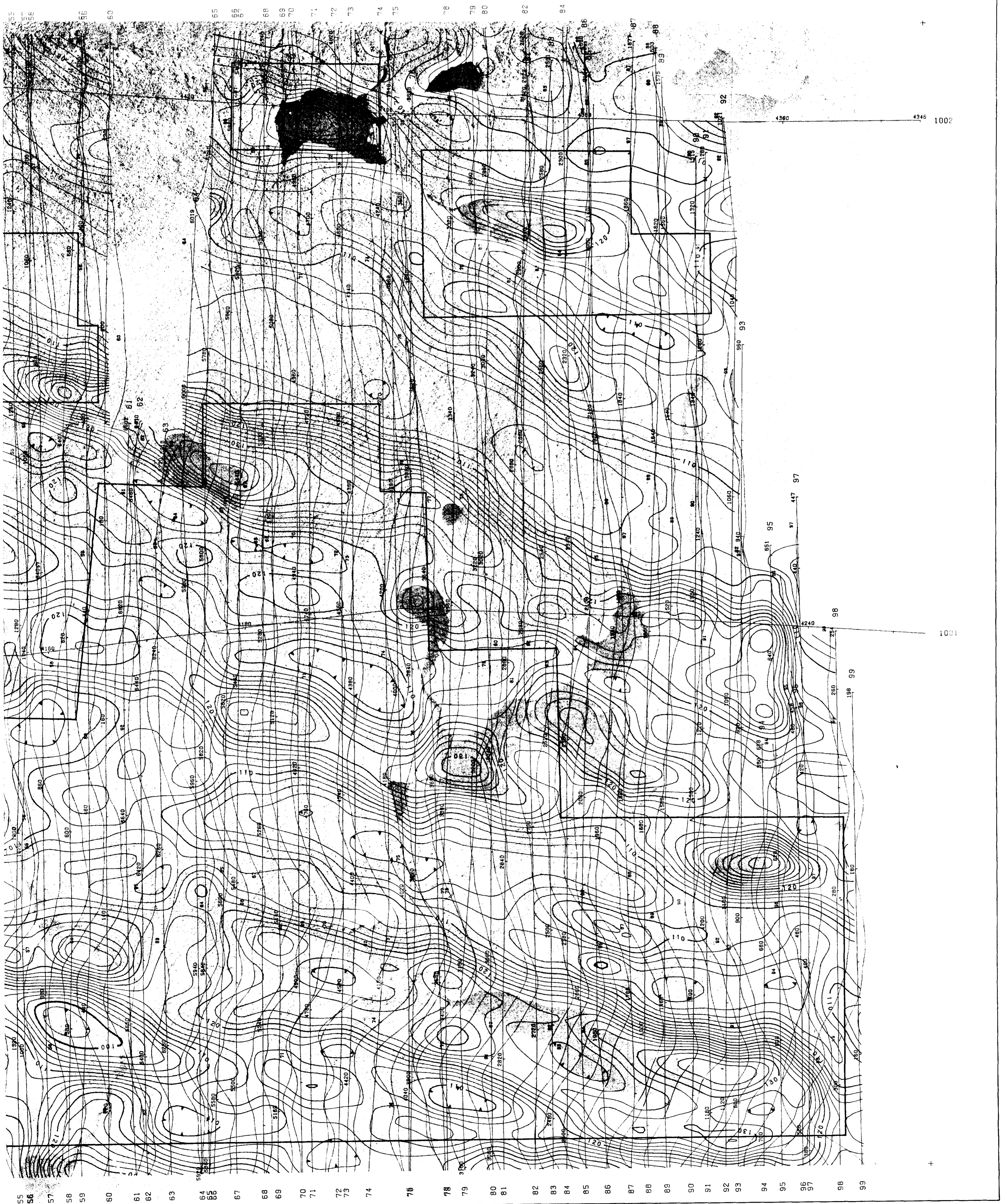
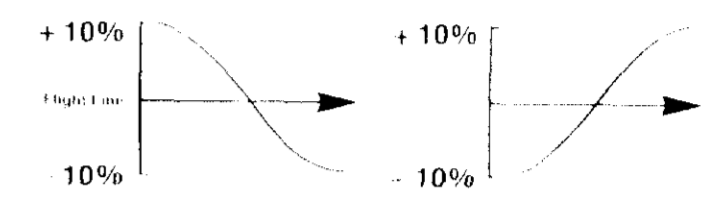


LEGEND

Terrain Clearance 100 metres
Line Spacing 100 metres
Property Boundary _____

TOTAL FIELD STRENGTH (Contours)
50% _____
10% _____
2% _____

QUADRATURE (Profiles Along Flight Lines)
Normal Slope _____
Reverse Slope _____



BLUE FALCON MINES LTD.

**AIRBORNE MAGNETIC SURVEY
TOTAL MAGNETIC FIELD**

HUFFMAN TWP., ONTARIO

NTS NO. 410/9

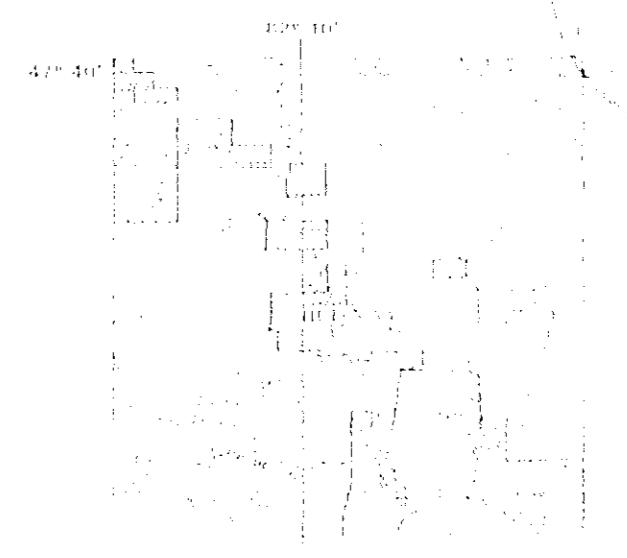
DRAWING NO. A-756-1

SCALE 1:10,000

DATE July 1988

TERRAQUEST LTD.

4000 100 AVE. S.W.
CALGARY, ALBERTA T2C 1A5
CANADA

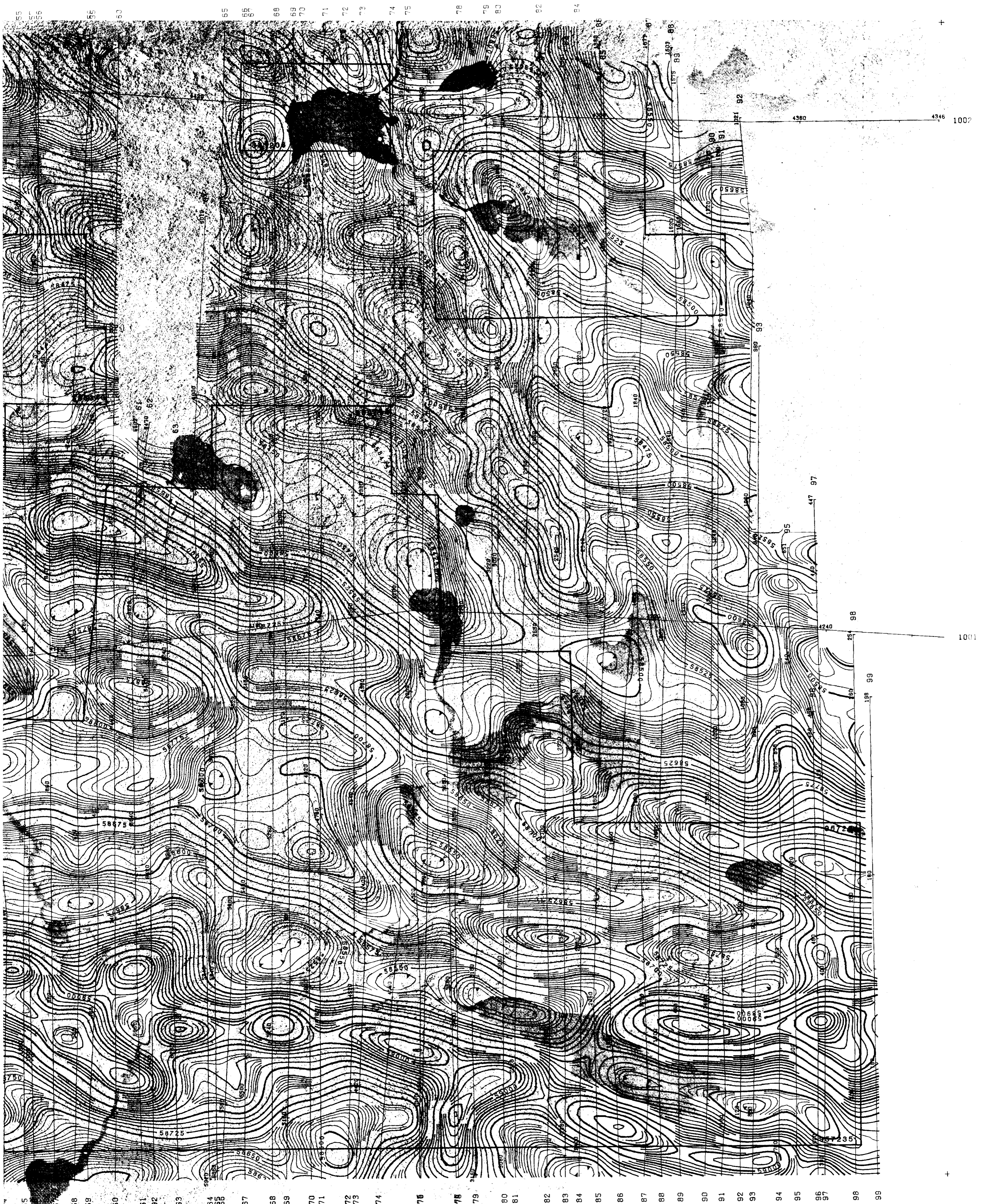


LEGEND

Terrain Clearance 100 meters
Line Spacing 100 meters

TOTAL MAGNETIC FIELD

500 gammas
100 gammas
25 gammas
5 gammas





2.11518

W8806-50018 Mining A

Type of Survey(s) Airborne Magnetometer, Electromagnetic Township or Area Huffman
 Claim Holder(s) Blue Falcon Mines Ltd. Prospector's Licence No. T1441
 Address 20 Advance Blvd. Brampton, Ontario L6T 4R7
 Survey Company Terraquest Ltd. Date of Survey (from & to) 20 04 88 Total Miles of line Cut
 Name and Address of Author (of Geo-Technical report) CHARLES BARRIE 240 ADELAIDE ST. W. TORONTO ONT. M5H 1W7

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

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

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
P-	952466		P	952769	
	952467			952770	
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	952763			952786	
	952764			952787	
	952765			952788	
	952766			952789	
	952767				
	952768				

Expenditures (excludes power & transport)
 Type of Work Performed
 Performed on Claim(s)
 Calculation of Expenditure Days Credits
 Total Expenditures \$ ÷ 15 = Total Days Credits

Total number of mining claims covered by this report of work. **110**

Instructions
 Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.
 Date June 16, 1988 Recorded Holder or Agent Signature [Signature]

For Office Use Only
 Total Days Cr. Recorded 8800 Date Recorded JUNE 23, 1988 Mining Recorder [Signature]
 Date Approved as Recorded 14 June 1989 Branch Director [Signature]

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
NEIL NOVAK BLUE FALCON MINES LTD. 20 ADVANCE BLVD. BRAMPTON ONT.
 Date Certified June 16 Certified by (Signature) [Signature]

ONTARIO GEOLOGICAL SURVEY
 ASSESSMENT FILES
 OFFICE
 JAN 6 1989
 RECEIVED

RECEIVED JUN 23 1988

RECORDED JUN 23 1988

RECEIVED DEC 28 1988 MINING LANDS SECTION

REFUSED

Flagged

ATTACHED LIST OF AIRBORNE SURVEY WORK

PAGE 2 OF 2.

<u>CLAIM #</u>	<u>DAYS PER CLAIM</u>	<u>CLAIM #</u>	<u>DAYS PER CLAIM</u>
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TOTAL NUMBER OF MINING CLAIMS COVERED BY THIS REPORT OF WORK =

REFUSED
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 RECEIVED
 JUN 29 1964