42A01SE0064 2.12465 GRENFELL

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REPORT ON THE AIRBORNE GEOPHYSICAL SURVEY ON THE PROPERTY OF R & H EXPLORATIONS GRENFELL TOWNSHIP, ONTARIO

BY

H. FERDERBER GEOPHYSICS LTD.

May 3, 1989
Val d'Or, Quebec

R.A. Campbell, B.Sc.,
Geologist.

RECEIVED
MAY 12 1989
MINING LANDS SECTION

REPORT ON THE AIRBORNE GEOPHYSICAL SURVEY ON THE PROPERTY OF R & H EXPLORATIONS GRENFELL TOWNSHIP, ONTARIO

INTRODUCTION

On March 3, 1989 an airborne geophysical survey was carried out on the property of R & H Explorations in Grenfell Township, Ontario. Magnetic and VLF-electromagnetic data was collected by the airborne division of H. Ferderber Geophysics Ltd. The survey was flown from a base at Val d'Or, Quebec. A total of 12.6 miles of data was collected on north-south and east-west flight lines.

The magnetic survey provides information which helps define the underlying geological structures and identifies any potential economic concentrations which may contain variations in accessory magnetic minerals. The VLF-electromagnetic survey outlines conductive zones which may represent shear zones and/or metallic sulphide deposits containing gold mineralization.

PROPERTY DESCRIPTION, LOCATION AND ACCESS

The property is comprised of 1 claim covering approximately 16 hectares, in the western part of Grenfell Township, Larder Lake Mining Division, Ontario. The claim is registered with the

Office of the Mining Recorder in Kirkland Lake and is listed below:

L 982364

The property is located 10 km west of the town of Kirkland Lake and the village of Kenogami Lake is located 2.5 km to the southwest. Highway 11 lies within 1.5 km of the western boundary of the property. Highway 66 is situated 1.0 km to the south and a gravel road ends 0.4 km southwest of the claims. The O.N.R. is located along the western boundary. Most of the property is water covered by a bend in the Blanche River.

Supplies, services and qualifies manpower are readily available in the Kirkland Lake area.

GEOLOGY

The property is located in the western portion of the Abitibi Volcanic Belt of the Superior Province of the Canadian Shield. The Abitibi Volcanic Belt extends for nearly 350 miles in a west-east direction from Timmins to Chibougamau. It is host to a variety of precious and base metal deposits including the Timmins, Kirkland Lake, Noranda, Val d'Or and the Chibougamau mining camps.

The Abitibi Volcanic Belt is comprised of a complex assemblage of interbedded volcanic and sedimentary rocks intruded by a variety of intrusives, from ultra basic to granitic in composition. The rocks are Archean in age and have been metamorphosed to a greenschist facies. Numerous late Precambrian diabase dykes cut formations of the belt. The rocks generally strike east-west, have a near vertical dip, and are highly folded and faulted.

The Ontario Division Of Mines, Map 2205 - Geological Compilation Series, Timmins-Kirkland Lake Area, outlines the geology in the area. It appears that the northwestern half of the property is underlain by mafic metavolcanic flows and pyroclastic rocks. East of Blanche River a narrow unit of alkalic metavolcanic rocks (trachyte, leucitic trachyte, flow tuff and breccia) strikes west-southwest along the contact with the mafic metavolcanics. A diabase dyke is thought to trend west-southwest through the southeast corner of the claim.

The west-southwest striking Kirkland Lake Fault and a north-northeast trending fault end near the eastern and southeastern boundaries, respectively.

INSTRUMENTATION AND SURVEY METHODS

The survey was completed using a 1972 Cessna 172, fixed-wing aircraft, call letters CF-EWK, owned and operated by H. Ferderber Geophysics Ltd. The pilot and navigator/operator were Y. Saucier and D. Thai, respectively, of Val d'Or. Geophysical sensors were mounted in modified wing tips. The geophysical, navigation and data acquisition systems are described below.

Magnetometer

The magnetometer used was GEM Systems GSM-11, high sensitivity airborne proton (Overhauser) magnetometer. The instrument continuously measures the Earth's magnetic field at a 0.01 gamma sensitivity for 1 reading per second to 10 readings per second at a 0.1 gamma absolute accuracy. For this survey 4 readings per second were measured at a sensitivity of 0.04 gammas. The analog output is on 3 channels, from 1 to 10,000 gammas full scale.

VLF-EM System

A Herz Totem 2A VLF-EM System was used to measure the changes in the total field and in the vertical quadrature field on two frequencies simultaneously, with an accuracy of 1%. The primary transmitting station (VLF-1) was Cutler, Maine (NAA) frequency 24.0 kHz and the ortho station (VLF-2) was Annapolis, Maryland (NSS), frequency 21.4 kHz.

Radar Altimeter

The ground clearance was measured with a King 10/10 A radar altimeter. The survey was flown at a mean clearance of 300 feet with the altimeter producing an accuracy of 5% (15 feet) at this altitude.

Tracking Camera and Video Centre

A RCA TC-200 colour video camera and Galaxy 200 video centre was used to record the flight path on standard VHS type video tapes. Manual fiducials were indicated on the picture frames for reference with digital printout. Flight path recovery was aided using a Panasonic Colour Video Monitor-S1300 and Video Cassette Recorder AG-2500.

Data Acquisition System

A Picodas Group Inc. PDAS 1100 data acquisition system featuring seven analog inputs with two frequency inputs and external interfacing was used. A Termiflex Corp. ST/32 Keyboard control unit and Sharp Corp. LCD display unit are connected to the data acquisition system. At present this system stores the altimeter VLF-1 inphase, VLF-1 quadrature, VLF-2 inphase, VLF-2 quadrature, magnetic field (coarse), magnetic field (fine), and the fourth difference (noise), and fiducials on 3.5 inch floppy disk drive. The data is then printed out in digital and profile form.

The survey was conducted on lines orientated at two different directions, north-south and east-west, at spacings of 328 feet, and at a speed of approximately 90 miles per hour. Navigation was visual using airphoto mosaics, at a scale of one inch to 1320 feet, manual fiducials and the flight path recovery system as references.

DATA PRESENTATION

Flight lines, fiducial points and geophysical responses were reproduced from the airphoto mosaics at a scale of one inch to 1320 feet (1:15,840). The outline of the claim block is shown on each map sheet.

The aeromagnetic data was corrected for diurnal variations by using flight lines at 90 degrees as references. The data was then reduced to a base level of 58,000 gammas and contoured at 25 and 100 gamma intervals. The results were presented on Maps MG-2 (north-south lines) and MG-1 (east-west lines).

A base value was determined for the VLF-EM data and the change in the total field strength as a percentage of the base value was calculated. The values were plotted on Maps EM-2 (Cutler, north-south lines) and EM-1 (Annapolis, east-west lines). The positive values were contoured at intervals of 2%. The conductor axes were determined and labelled 1, 2, 3, etc. No priority was attached to the labelling system.

SURVEY RESULTS AND INTERPRETATION

Magnetic Survey

The results of the magnetic surveys indicate that the claim is underlain by rocks of low magnetic susceptibility and relief, probably alkalic metavolcanics or metasediments. Highs striking south-southeast, east and south of the claim and southeast, to the west, could outline the position of diabase dykes or contacts between the mafic metavolcanics to the northeast and west.

The magnetic contours are folded and contorted indicating that a fault zone or fold may strike north-northeast through the centre of the claim block.

VLF-Electromagnetic Survey

The VLF-EM survey delineated 2 conductive zones on the property. Zone 1, picked up the north-south survey, strikes east-northeast across the northern part of the claim along the north shore of an oxbow in the Blanche River. It is probably caused by conductive overburden following a linear overburden trend.

Zone 2, outlined on the east-west survey lines, trends north across a peninsula into the Blanche River. This zone lies along a fold in the magnetic contour pattern and could define a fault zone in alkalic metavolcanic rocks.

CONCLUSIONS AND RECOMMENDATIONS

The claim appears to be underlain by rocks of low and relatively low magnetic content, probably alkalic metavolcanics. Changes in directions of the magnetic contour pattern and the position of conductive zone 2 indicate that a possible fault zone strikes north-northeast through the property.

Because of the position of the claim, with respect to the south-southwest striking Kirkland Lake Fault, and the possibility of a cross-cutting fault on the property, further work is recommended. The land-covered part of the claim should be mapped and sampled and ground geophysical survey, magnetic and horizontal loop-electromagnetic surveys should be completed, in winter, at north-south and east-west directions on the claim.

Respectfully submitted,

H. Ferderber Geophysics Ltd.

R A Campbell

May 3, 1989
Val d'Or, Quebec

R.A. Campbell, B.Sc.,
Geologist.

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

Mining Lands 94

42A01SE0064 2.12465 GRENFELL

900

Type of Survey(s)
Airborne Magnetic and VLF - Electromagnetic

GRENFELL TWP.

Claim Holder(s)
Glenn J. Mullan

2.12465

Prospector's Licence No.
K - 20009

Address
c/o H. Ferderber Geophysics LTD 169 Perreault Ave Val D'Or Que J9P - 2H1

Survey Company
H. Ferderber Geophysics LTD

Date of Survey (from & to): 03 03 89 (Day Mo. Yr.) 03 03 89 (Day Mo. Yr.)

Total Miles of line Cut
12

Name and Address of Author (of Geo-Technical report)
R.A. Campbell, 169 Perreault Ave, Val D'Or Que, J9P 2H1

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical - Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete and attach Statement of Costs, Form 0212	Geophysical - Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

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MAR 9 1989
9.45

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

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures: S ÷ 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)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
KL	982364				

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APR 5 1989
MINING LANDS SECTION

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES OFFICE
JUN 6 1989
RECEIVED

Total number of mining claims covered by this report of work: 1

For Office Use Only

Total Days Cr. Recorded: 80 LP.

Date Recorded: Mar 9/89

Mining Recorder: M.C. Wellin

Date Approved as Recorded: 31 May 89

Director: A. Allan

Date: March 3, 1989

Recorded Holder or Agent (Signature): RA Campbell

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
Harry Ferderber 169 Perreault Ave Val D'Or Que, J9P 2H1

Date Certified: March 3, 1989

Certified by (Signature): Harry Ferderber

1362 (85/12)

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) Airborne Magnetic and VLF-Electromagnetic

Township or Area Grenfell Township

Claim Holder(s) Glenn Mullan

Survey Company H. Ferderber Geophysics Ltd.

Author of Report R.A. Campbell

Address of Author 169 Perreault Avenue Val d'Or, Quebec

Covering Dates of Survey March 3, 1989 (linecutting to office)

Total Miles of Line ~~Cut~~ Flown 12.6

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 40 Electromagnetic 40 Radiometric _____
(enter days per claim)

DATE: May 2/89 SIGNATURE: RACam
Author of Report or Agent

Res. Geol. _____ Qualifications 2.6609

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	982364

If space insufficient, attach list

TOTAL CLAIMS 1

OFFICE USE ONLY

837 (85/12)

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) Total field magnetic and VLF-electromagnetic

Instrument(s) GEM GSM-11 proton magnetometer and Herz Totem 2A VLF-EM

(specify for each type of survey)

Accuracy 0.04 gamma absolute and 1%

(specify for each type of survey)

Aircraft used Cessna 172 Fixed Wing

Sensor altitude 300 feet

Navigation and flight path recovery method RCA TC-2 Colour Video Camera, Panasonic Colour Video Monitor S1300 and Video Cassette Recorder AG2500

Aircraft altitude 300 feet Line Spacing 328 feet

Miles flown over total area 12.6 Over claims only 2.5

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

~~RFACE AND MINING RIGHTS WITHDRAWN FROM~~
~~AKING, SECTION 46/80 ORDER NO. W87/86~~

IL OPENS PART OF W87/86

ND AND GRAVEL

RAVEL FILE 127536
RAVEL FILE 127784
.T.C. GRAVEL PIT
RAVEL FILE 64647

ISLANDS IN SESEKINIKA LAKE ARE WITHDRAWN
STAKING BY ORDER-IN-COUNCIL DATED DEC. 7, 1921

DISPOSITION OF CROWN LAND

PENDING APPLICATION UNDER PUBLIC LANDS ACT

DATE OF ISSUE
APR 17 1989
LARDER LAKE
MINING RECORDER'S OFFICE

42A01SE0064 2.12465 GRENFELL

200

MAISONVILLE TWP.

BOMPAS TWP.

TECK TWP.

EBY TWP.

Sesekinika Lake

Kenogami Lake

Grenfell Lake

Groves L.

Holtham Lake

PENDING APPLICATION SURFACE RIGHTS

Public Road

A1 A2 A3 A5

12 11 10 9 8 7 6 5 4 3 2 1

5M 4M 3M 2M 1M

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 MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN L

TYPE OF DOCUMENT

- 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
- RESERVATION
- CANCELLED
- SAND & GRAVEL

NOTE MINING RIGHTS IN PARCELS PATENTED PRI... (1913 VESTED IN ORIGINAL PATENTEE BY... LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. ...

SCALE 1 INCH = 40 CHAINS

1000 0 1000 4000 6000

METRIC 500 0 500 1000 2000 (2 KM)

TOWNSHIP

GRENFELL

M N R ADMINISTRATIVE DISTRICT

KIRKLAND LAKE

MINING DIVISION

LARDER LAKE

LAND TITLES / REGISTRY DIVISION

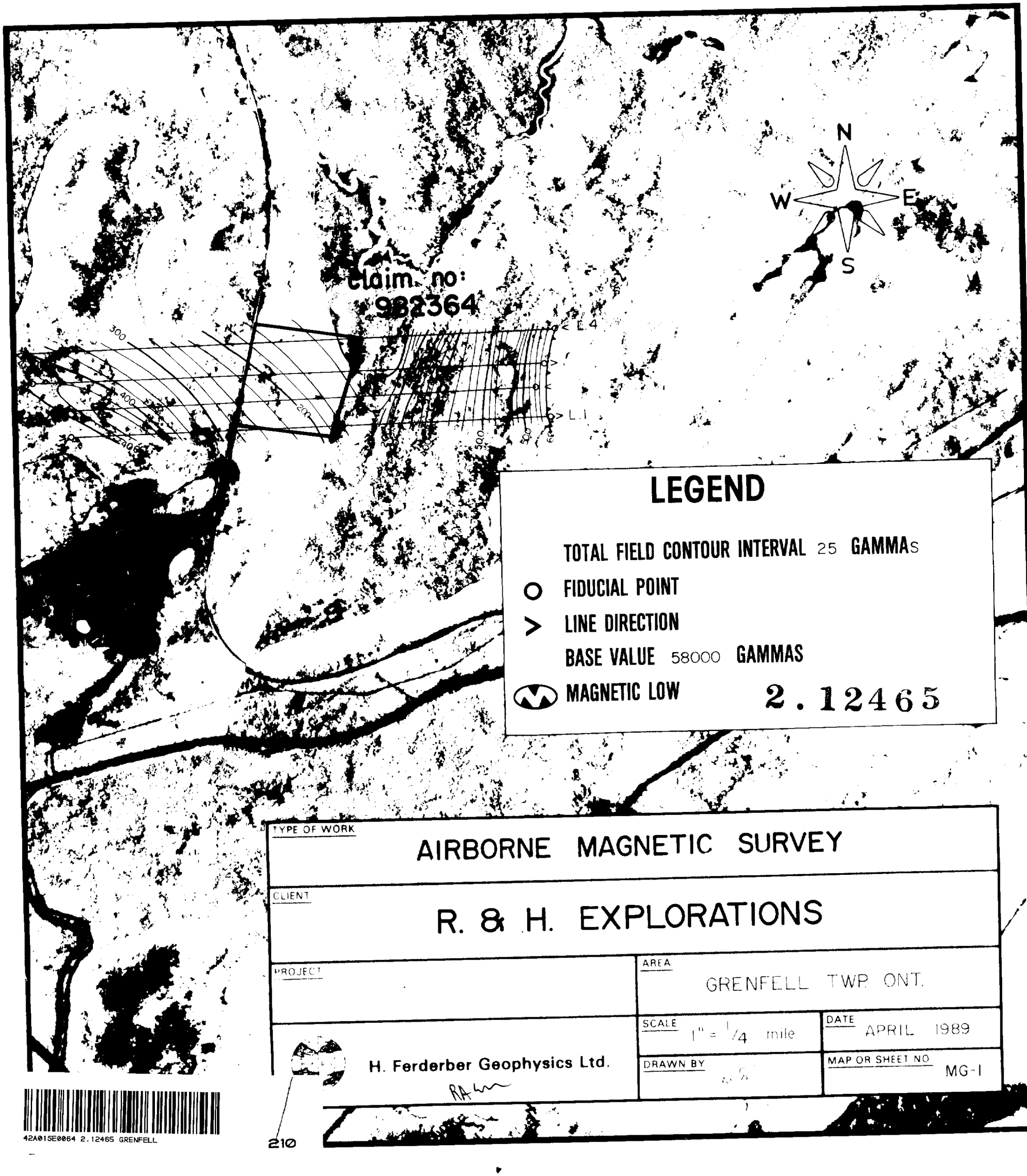
TIMISKAMING

Ontario

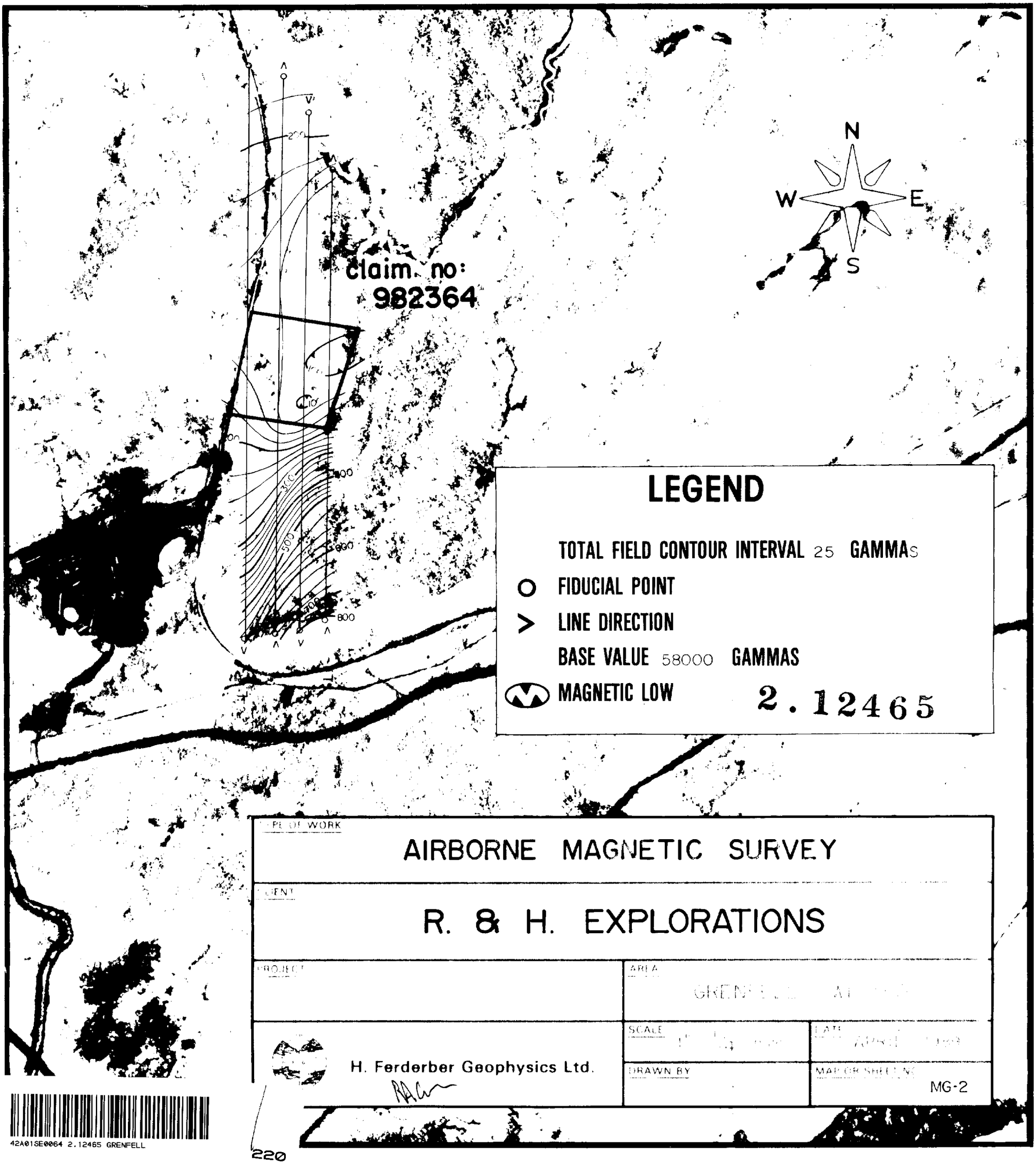
Ministry of Northern Development and Mines

Date JANUARY, 1985

Number G-3...



42A01SE0064 2.12465 GRENFELL



LEGEND

TOTAL FIELD CONTOUR INTERVAL 25 GAMMAS

FIDUCIAL POINT

LINE DIRECTION

BASE VALUE 58000 GAMMAS

MAGNETIC LOW

2.12465

TYPE OF WORK

AIRBORNE MAGNETIC SURVEY

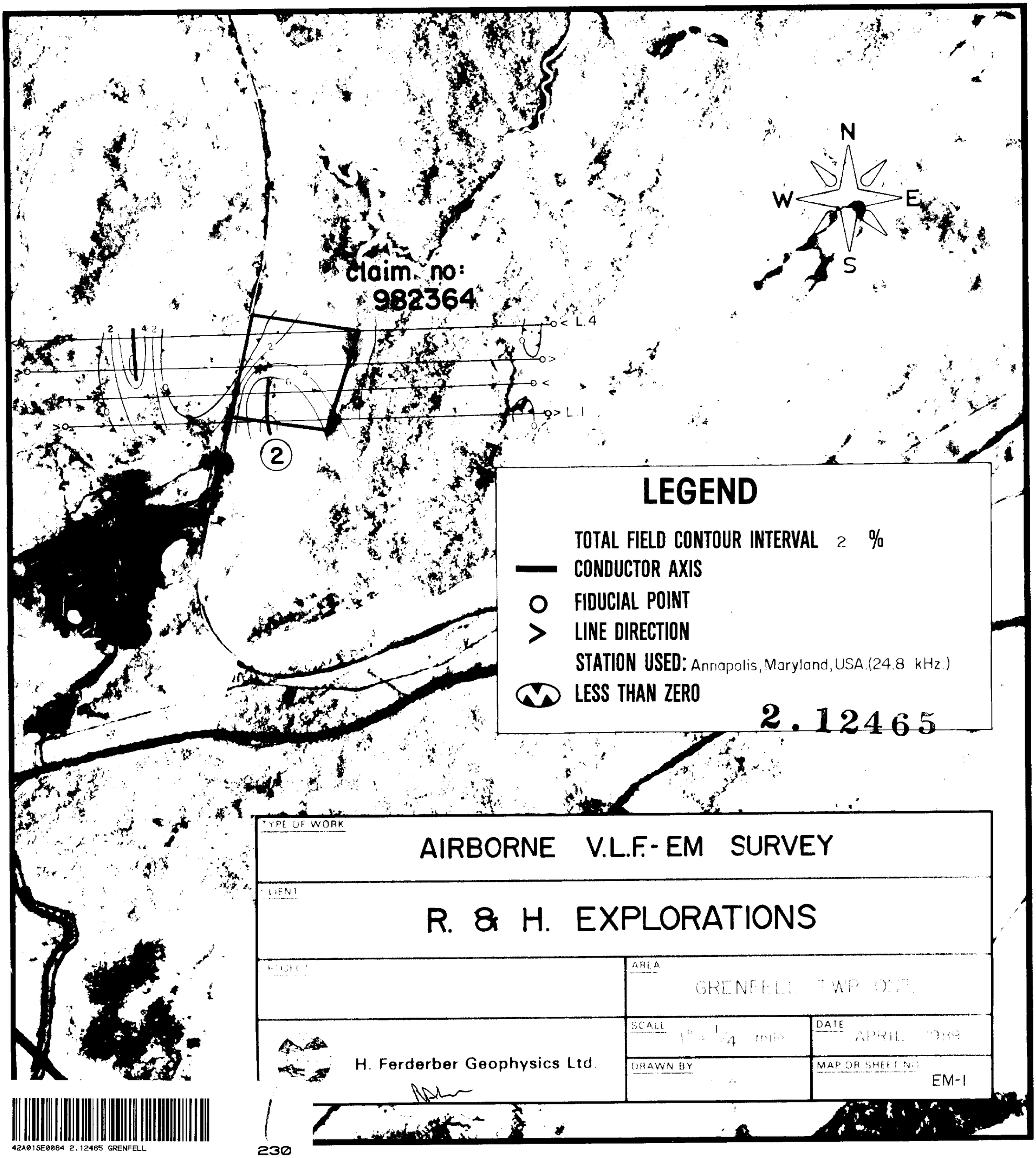
CLIENT

R. & H. EXPLORATIONS

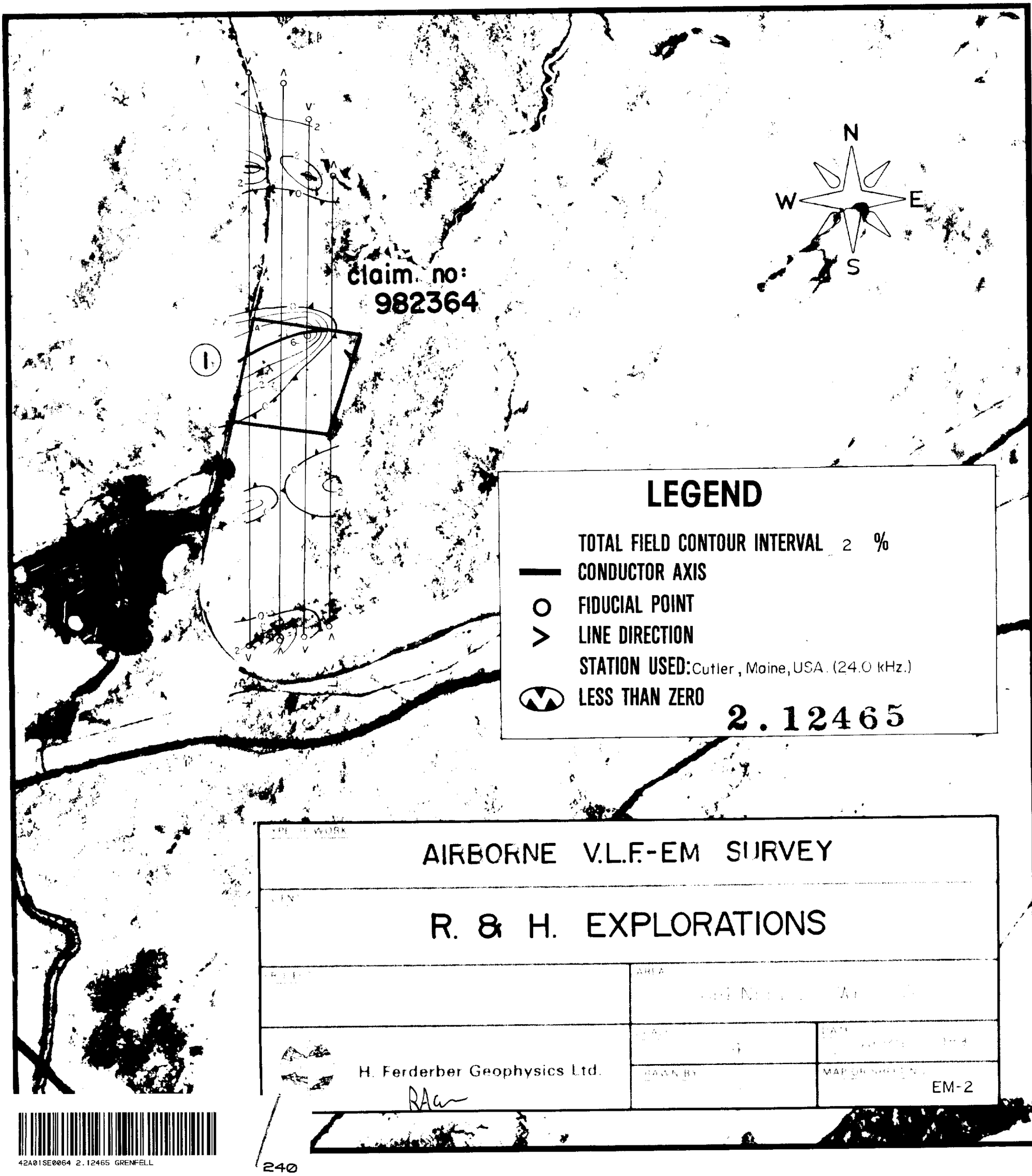
PROJECT	AREA
	GRENFELL AREA
H. Ferderber Geophysics Ltd.	SCALE 1" = 1/4 mile / DATE April 1982
	DRAWN BY / MAP OR SHEET NO. MG-2

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