2.4253

010

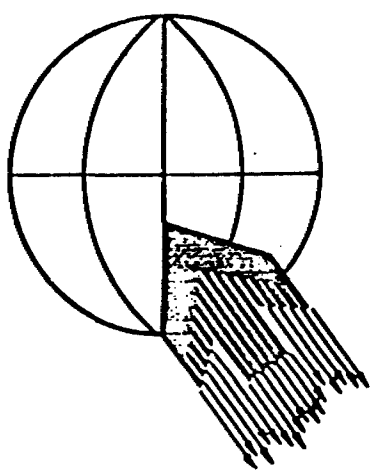
AIRBORNE MAGNETIC SURVEY

HUDBAY MINING LIMITED

FOLEYET, ONTARIO

PROJECT #22082 FEBRUARY, 1981

Karl Seibelt M Sc.
Senior Geologist
Hudbay Mining Ltd.



Questor Surveys Limited, 6380 Viscount Road, Mississauga, Ontario L4V 1H3

INTRODUCTION

This report contains our interpretation of the results of an airborne magnetic survey flown in the Foleyet area of Ontario in November, 1980.

A brief description of the survey procedure is included.

The survey totalled 410 line kilometres and was performed by Questor Surveys Limited. The survey aircraft was a Britten Norman Trislander C-GNKW and the operating base was Timmins and Sudbury, Ontario.

The area outline is shown on the map at the end of this report.

MAP COMPILATION

The base maps are uncontrolled mosaics constructed from National Air Photo Library 1:60 000 scale photograpgs. The mosaics were reproduced at a scale of 1:10 000 on stable transparent film from which white prints can be made.

Flight path recovery was accomplished by comparison of the 35 mm film with the mosaic in order to locate the fiducial points. These points are approximately 1142 metres apart.

SURVEY PROCEDURE

Terrain clearance was maintained as close to 122 metres as possible, with the E.M. bird at approximately 50 metres above the ground. Lines were flown consecutively in opposite directions, and tight keyhole turns were used. The equipment operator logged the flight details and monitored the instruments.

A line spacing of 200 metres was used.

GEOPHYSICAL TECHNICAL DATA

AIRBORNE SURVEY:	Questor
TYPE OF SURVEY:	Airborne Magnetic
INSTRUMENTS:	Sonotek P.M.H. 5010 Proton Magnetometer
ACCURACY:	Total field, sensitivity of 1 gamma, range 20 000-100 000 gammas
AIRCRAFT USED:	Britten Norman Trislander C-GNKW
SENSOR ALTITUDE:	122 m
NAVIGATION & FLIGHT RECOVERY METHOD:	Airphoto mosaics, comparison of 35 mm film with mosiac to locate fidicial point
AIRCRAFT ALTITUDE:	122 m Line Spacing 200 m
KILOMETRES FLOWN OVER TOTAL AREA:	410 ln.km
KILOMETRES FLOWN OVER CLAIMS ONLY:	20.7 ln.km

APPENDIX

EQUIPMENT

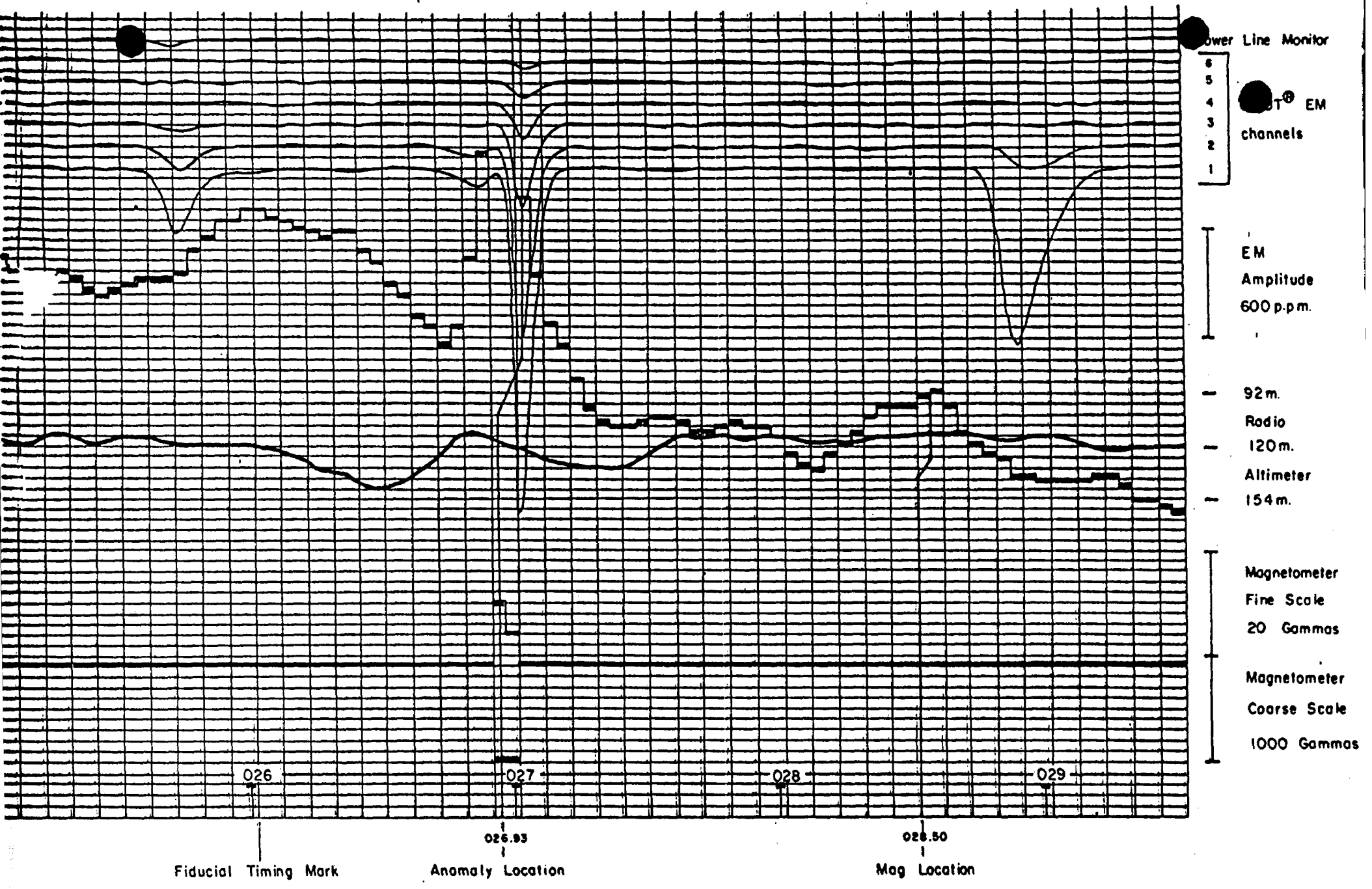
The aircraft is equipped with a Mark VI INPUT (R) airborne E.M. system and Sonotek P.M.H. 5010 Proton Magnetometer. Radar altimeters are used for vertical control. The outputs of these instruments together with fiducial timing marks are recorded by means of galvanometer type recorders using light sensitive paper. Thirty-five millimeter continuous strip cameras are used to record the actual flight path.

(II) SONOTEK P.M.H. 5010 PROTON MAGNETOMETER

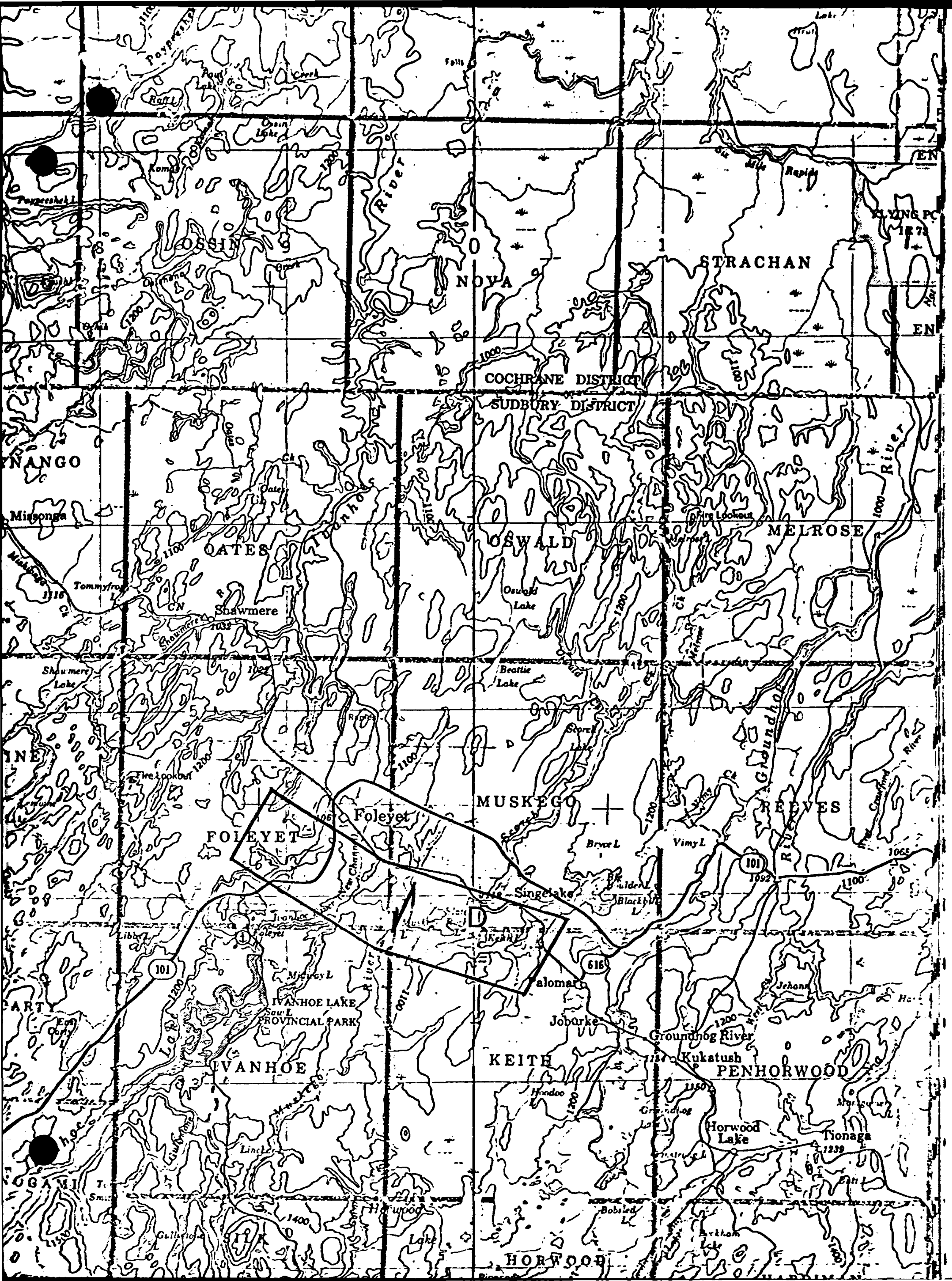
The magnetometers which measure the total magnetic field have a sensitivity of 1 gamma and a range from 20 000 gammas to 100 000 gammas.

Because of the high intensity field produced by the INPUT transmitter, the magnetometer results are recorded on a time-sharing basis. The magnetometer head is energized while the transmitter is on, but the read-out is obtained during a short period when the transmitter is off. Using this technique, the frequency is being recorded and converted to gammas. Thus a magnetic reading is taken every 1.13 second.

For this survey, a lag factor has been applied to the data. Magnetic data recorded on the analogue records at fiducial 10.00 for example would be plotted at fifucial 9.95 on the mosaics.



Representative INPUT®, Magnetometer and Altimeter Recording



OSSIN
NOVA
STRACHAN
COCHRANE DISTRICT
SUDBURY DISTRICT
Missonga
OATES
OSWALD
MELROSE
Shawmere
Shawmere Lake
Oswald Lake
Beattie Lake
Fire Lookout
MUSKEGO
REEVES
Foleyet
FOLEYET
Bryce L
Vimy L
Singlake
Palomar
Joburke
Groundhog River
Kukatush
IVANHOE LAKE
PROVINCIAL PARK
IVANHOE
KEITH
PENHORWOOD
Horwood Lake
Tionaga
HORWOOD
Six Mile Rapids
River
Groundhog
101
616
1000
1100
1200
1400

HUDBAY MINING LTD

CLAIM SUMMARY SHEET

CLAIM GROUP NAME	TWP.	NO. OF CLAIMS	CLAIM NOS.	RECORDING DATE
Road Group	Foleyet	7	603811-817 ·	81-09-15
Muskego Lake Group	Ivanhoe Keith	4	626279-281 · W8	81-08-10
Boundary Group	Keith	6	626289-294 ·	81-08-10
Mag Group	Foleyet Ivanhoe	8	626295-300 · 626282-283 ·	81-08-10

81-10-30

SPECIAL NOTE

TO: Mr. Mathews:

The reports and maps which I am submitting for an Airborne Geophysical Certificate covering certain claims near Foleyet, Ontario, come from a larger Questor Report covering other areas and including EM data. Retyping of Questors original report was necessary.

As geologist in charge of this Project I take responsibility for the contents of this report and plans and have signed them. I trust this will be acceptable.

Sincerely,

Karl O. Giesbrecht

KOG/nb

1982-07-22

INTERPRETATION OF AIRBORNE MAG
PROJECT 22082

The airborne mag survey has been utilized to roughly outline 4 broad geological environments. The sketchy existing geological information has been incorporated into this interpretation: The following divisions have been made: (see map attached).

A) basic & ultra basic intrusives

B) felsic to basic volcanics with minor sediements and tuffs

C) basic sediments, tuffs & schists

D) iron formation

NOTE: The 1982 exploration program on our claim blocks will include ground EM, ground mag and diamond drilling.

M.951

ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH

PLAN OF IVANHOE TWP.

PORCUPINE MINING DIVISION.

DISTRICT OF SUDBURY.

Scale, 40 chains to an inch.

NOTES:

400' Surface Rights Reservation around all Lakes and Rivers.

Surface Rights Only withdrawn from staking Sec 34(d) Mg Act shown thus [43] File 163003

(G) QUARRY PERMIT

Areas withdrawn from staking under Section 43 of the Mining Act (R S O - 70)

	File	Date	Disposition
(43)	163002	30/7/71	Mining & Surface Rights
(43 a)	163002	15/2/72	mining & surface rights
(43 b)	163002	27/7/72	mining & surface rights
(43 c)	163002	4/10/72	S.R.O.
(43)	163002	9/10/79	

North

S.

E

W

FOLEYET T'WP.

28 27 26 25 24 23 22 21 20 19 18 17½ 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

48M 47M 46M 45M 44M 43M

Libby L. DAM Logging Camp

Reg Plan M841

Subst. Cable

GRAVEL PIT

Gravel Pit

New Gate

Hydro Line

S.R.O. Res.1 Public Use File: 163003

IVANHOE LAKE

Midway

Midway River

IVANHOE LAKE PROVINCIAL PARK

WITHDRAWN FROM STAKING SEC. 43 b OF THE MINING ACT. FILE: 101360.

Quarry Permit

Twin L.

Hwy 101

Pinehaven Rd

CARTY TWP.

S 121278

P 826282 P 626283

P 626281 P 626280

MUSKEGO LAKE 12

River

Rap Por. Ich.

Por Ich

Por Rap

Dam

Higgins Lake

Linehar Lake

KEITH T'WP.

11 10 9 8 7 6½ M 5 M 4½ M 1½ M

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Muskego Twp. (M-881)

Ivanhoe Twp. (M-951)

Penhorwood Twp. (M-1055)

Horwood Twp. (M-936)

THE TOWNSHIP OF

KEITH

DISTRICT OF SUDBURY

PORCUPINE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	● or (P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.
PATENTED S.R.O.	

NOTES

400' Surface Rights Reservation along the shores of all lakes and rivers.

Survey lines marked thus: _ _ — — _ _ — — for control only. Claims classified as being in unsubdivided territory - March 7, 1947.—

Surveyor General.

Flooding

Flooded areas along Groundhog River and tributaries to contour elev. 1117' under L.O. 7746. File 75166.

Areas withdrawn from staking under Section 43 of the Mining Act, R.S.O. 1970 (Sec. 42, R.S.O. 1960).

Order No.	File	Date	Disposition
(R1)	135263		S. R. O.
(R2)	188509	18 SEPT '81	Waste Disposal Site
(R3) NR.W. 58/80	188543	7/2/80	S.R.O.

SAND AND GRAVEL

(G) QUARRY PERMIT

(G1) M.T.C. PIT Nº 3A-16

DATE OF ISSUE
JUL 21 1982
Ministry of Natural Resources
TORONTO

2.4253

PLAN NO.- M-962

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

OATES TWP.

LEMOINE TWP.

MUSKEGO TWP.

N

XII
XI
X
IX
VIII
VII
VI
V
IV
III
II
I

28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Ivanhoe L.

IVANHOE TWP.

Sand L.

Green L.

Portage L.

Beaver L.

ANNULLED

SUBDIVISION

River

Ivanhoe R.

FOLEYET

DAM

Foleyet

Chapleau

M.T.C. GRAVEL RESERVE

M.T.C. Gravel Pit 1308

M.T.C. Gravel Pit No. 1292

PIT No. 1293

GRAVEL PIT 525

P.222-20

L.O. 340

L.O. 348

THE TOWNSHIP OF

FOLEYET

DISTRICT of SUDBURY

PORCUPINE MINING DIVISION

SCALE: 1 INCH TO 40 CHAINS

LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	(S)
LOCATED LAND	Loc.
LICENSE of OCCUPATION	L.O.
IMPROVED ROADS	═══
RAILWAYS	+++++

NOTES

Surface Rights Only withdrawn from staking Sec. 34(d) Mg Act part of Lot 21 Con.1 shown thus ▨ File 163003

400' Surface Rights Reservation around all Lakes and Rivers.

Areas withdrawn from staking under Section 42 of The Mining Act, R.S.O.1960 (Sec.43, R.S.O.1970).

	File	Date	Disposition	Order No.
43(a)	163002	25/8/70	S.R.O.	
43(a)	188509	17/9/75	S.R.O.	W.51/75

SAND AND GRAVEL

(S) QUARRY PERMIT

DATE OF ISSUE
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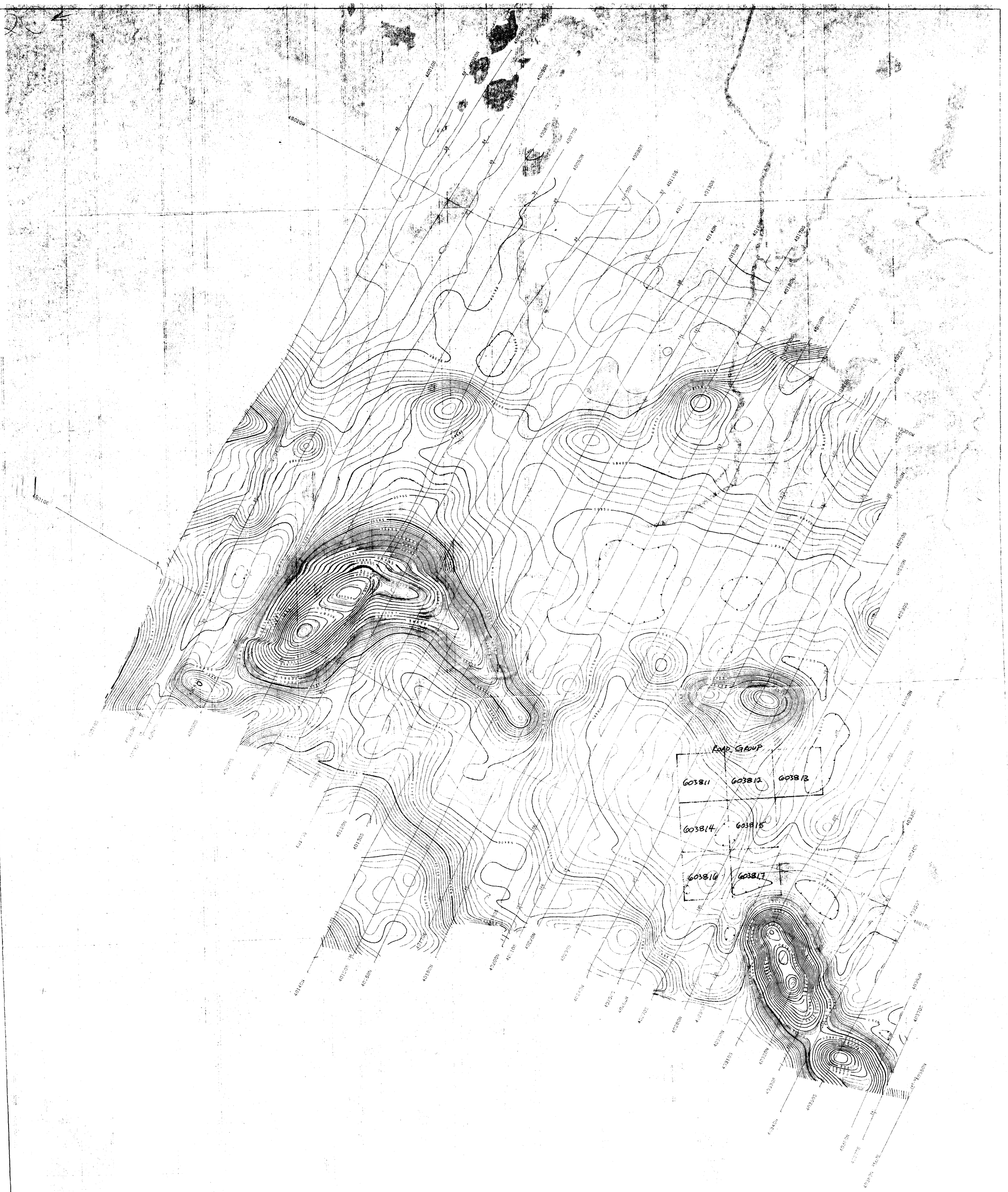
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



FOLEYET PROJECT

ISOMAGNETIC INTERVAL

(TOTAL FIELD)

GAMMA CONTOUR LINE

GAMMA CONTOUR LINE

GAMMA CONTOUR LINE

MAGNETIC DEPRESSION

FLIGHT ALTITUDE 300' ABOVE TERRAIN

Karl Weikart
81-11-01

MAG. GROUP

626295 626300

626296 626299

626297 626298

626282 626283

MUSKEGO LAKE GROUP

626281 626278

626280 626279

BOUNDARY GROUP

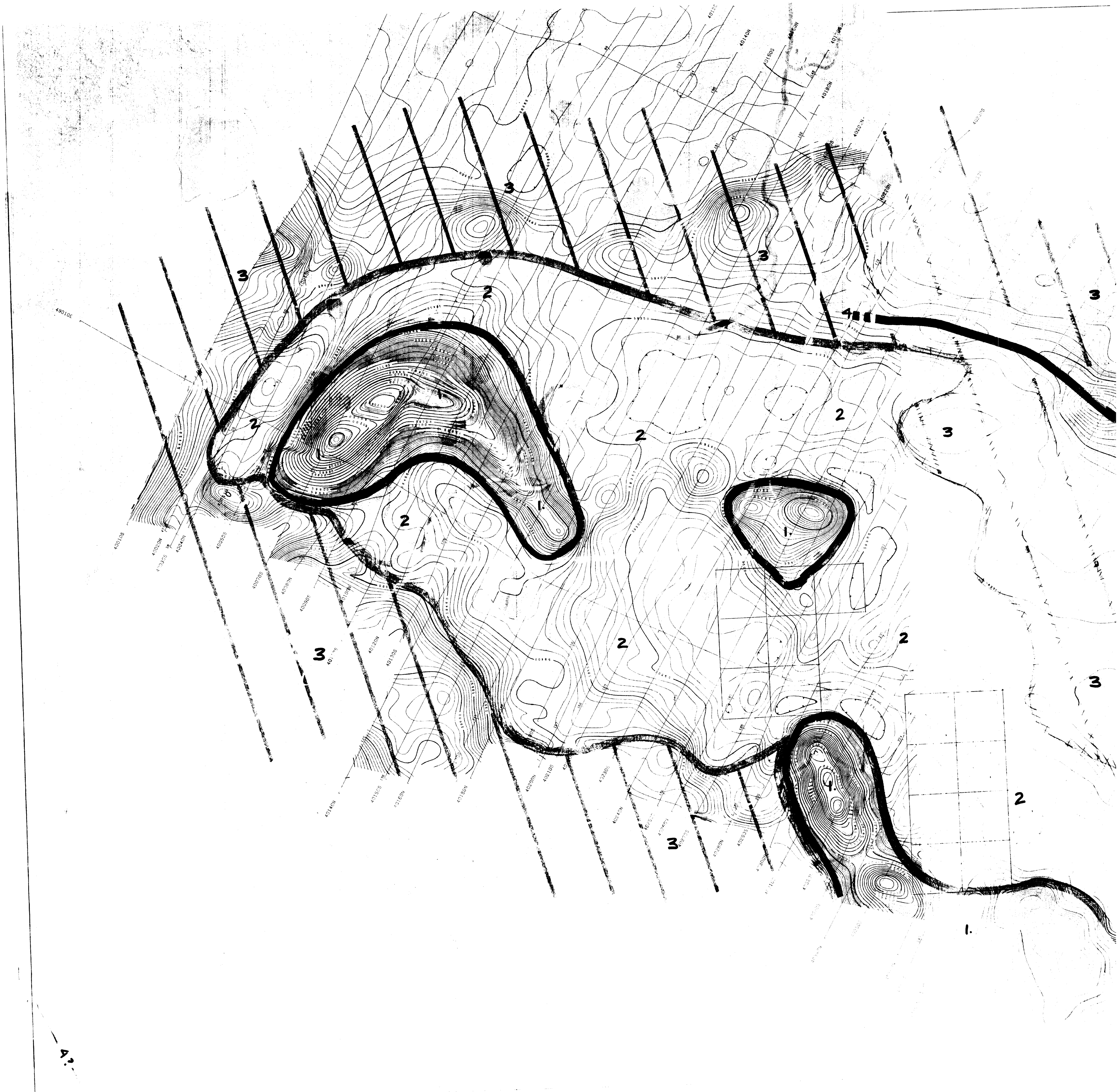
626293 626292 626289

626294 626291 626290

FOLEYET PROJECT

ISOMAGNETIC INTERVAL

Roal Nesbeth
81-11-01



INTERPRETED LITHOLOGY

4 Iron Formation

3 Basic Sediments Tuffs and Schists

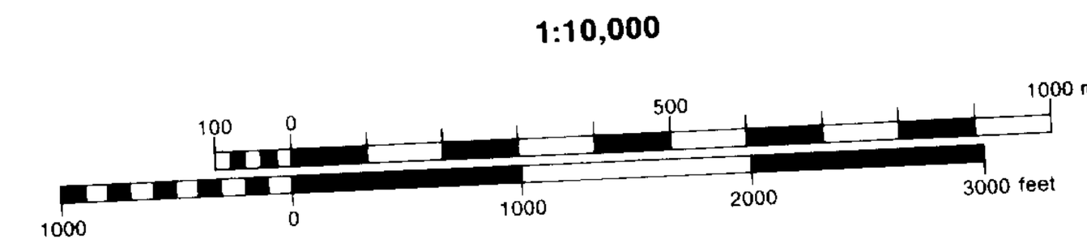
2 Felsic-Basic Volcanics with Minor Sediments and Tuffs

1. Basic and Ultra Basic Intrusives

[illegible] is highly interpretive

250

1:10,000



1 cm = 100 metres

1 inch = 833 feet


N
1
2
3
4
1:10,000
100 0 500 1000 metres
1000 0 1000 2000 3000 feet
1 cm = 100 metres
1 inch = 833 feet
FOLEYET PROJECT
Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited
INTERPRETIVE MAG
MAP 1
DATE 82-09-28
BY G. T.
SCALE 1:10000
N.T.S. 42 B/1