



42A05NE8470 2.12440 BRISTOL

010

AIRBORNE MAGNETIC SURVEY OVER NINE CLAIMS

BRISTOL TOWNSHIP

RECEIVED

MAY 4 1989

INTRODUCTION

MINING LANDS SECTION

An aeromagnetic and VLF-EM survey was flown for Chevron Minerals Ltd. by Terraquest Ltd. of Toronto over a large part of Bristol Township on August 16, 1987. A part of that survey covered the following nine claims:

- | | |
|-----------|-----------|
| P752205 ✓ | P752198 ✓ |
| P752202 ✓ | P752199 ✓ |
| P871664 | P752200 ✓ |
| P779515 ✓ | P752195 ✓ |
| P752204 ✓ | |

The claims were optioned by Chevron Minerals Ltd. from Mr. R. Poirier of Timmins, Ontario.

The survey was flown to map structure and lithology in the area.

PROPERTY LOCATION

The nine claims form part of a larger group of staked and patented mineral claims held under various options by Chevron Minerals Ltd. The property and its location about 15 kilometres south-west of Timmins along Highway 101 is sketched in Figure 1. Various 4WD bush roads access the property including these nine claims.

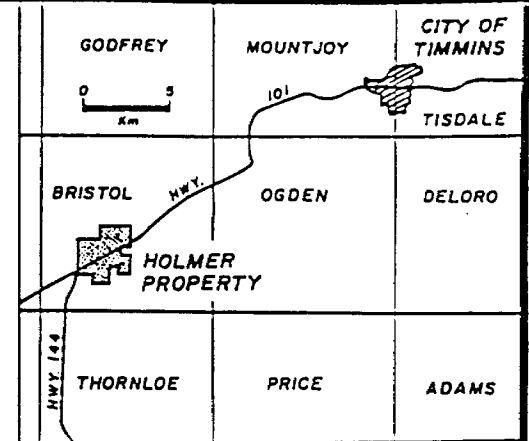
SURVEY SPECIFICATIONS

Instruments

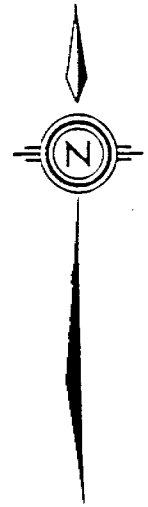
The survey was carried out using a Cessna 206 aircraft, registration C-GGLS, which carries a magnetometer and a VLF electromagnetic detector.

Chevron Holmer Project

NINE CLAIMS COVERED IN THIS REPORT



LOCATION MAP



The magnetometer is a high sensitivity airborne proton (Overhauser) type with the sensor element mounted in a towed bird at a distance of 14 metres below and 24 metres behind the aircraft. Its specifications are as follows:

Resolution:	0.01 gamma
Accuracy:	0.03 gamma for 2 readings per second
Cycle time:	0.5 second
Range:	20 000 - 100 000 gammas
Gradient tolerance:	Up to 5 000 gammas per metre
Model:	GSM-11
Manufacturer:	GEM Systems Inc., 105 Scarsdale Rd., Don Mills, Ontario, M3B 2R5

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 relationship between the vertical coil and both the "along line" coil (LINE) and the "cross-line" (ORTHO). The LINE coil is tuned to a transmitter station that is ideally positioned at right angles to the flight lines, while the ORTHO coil transmitter should be in line with the flight lines. Its specifications are:

- King KRA-10A Radar altimetre
- UDAS-100 data processor with Digidata nine track tape recorder, manufactured by Urtec Ltd., Markham, Ontario
- Geocam video camera and recorder for flight path recovery; manufactured by Geotech Ltd., Markham, Ontario

Lines and Data

- | | |
|--------------------------|--|
| a) Line spacing: | 100 metres |
| b) Line direction: | 360 degrees |
| c) Terrain clearance: | 100 metres |
| d) Average ground speed: | 193 km/hr |
| e) Data point interval: | Magnetic: 11 metres
VLF-EM: 11 metres |
| f) Tie Line interval: | 2 kilometres |
| g) Channel 1 (Line): | NAA Cutler, 24.0 kHz |
| h) Channel 2 (ORTHO): | NSS Annapolis, 21.4 kHz |

DATA PROCESSING

Flight path recovery was done daily in the field. Any gaps greater than twice the line spacing over a 1 kilometre line length were re-flown. The magnetic data were levelled using tie lines and gridded at a cell spacing of 1/10 inches at map scale.

The VLF data were normalized to 100 with zero quadrature in non-conductive areas. The vertical magnetic gradient was calculated from the total field data using an FFT algorithm. All processing and map contouring was done for Terraquest by

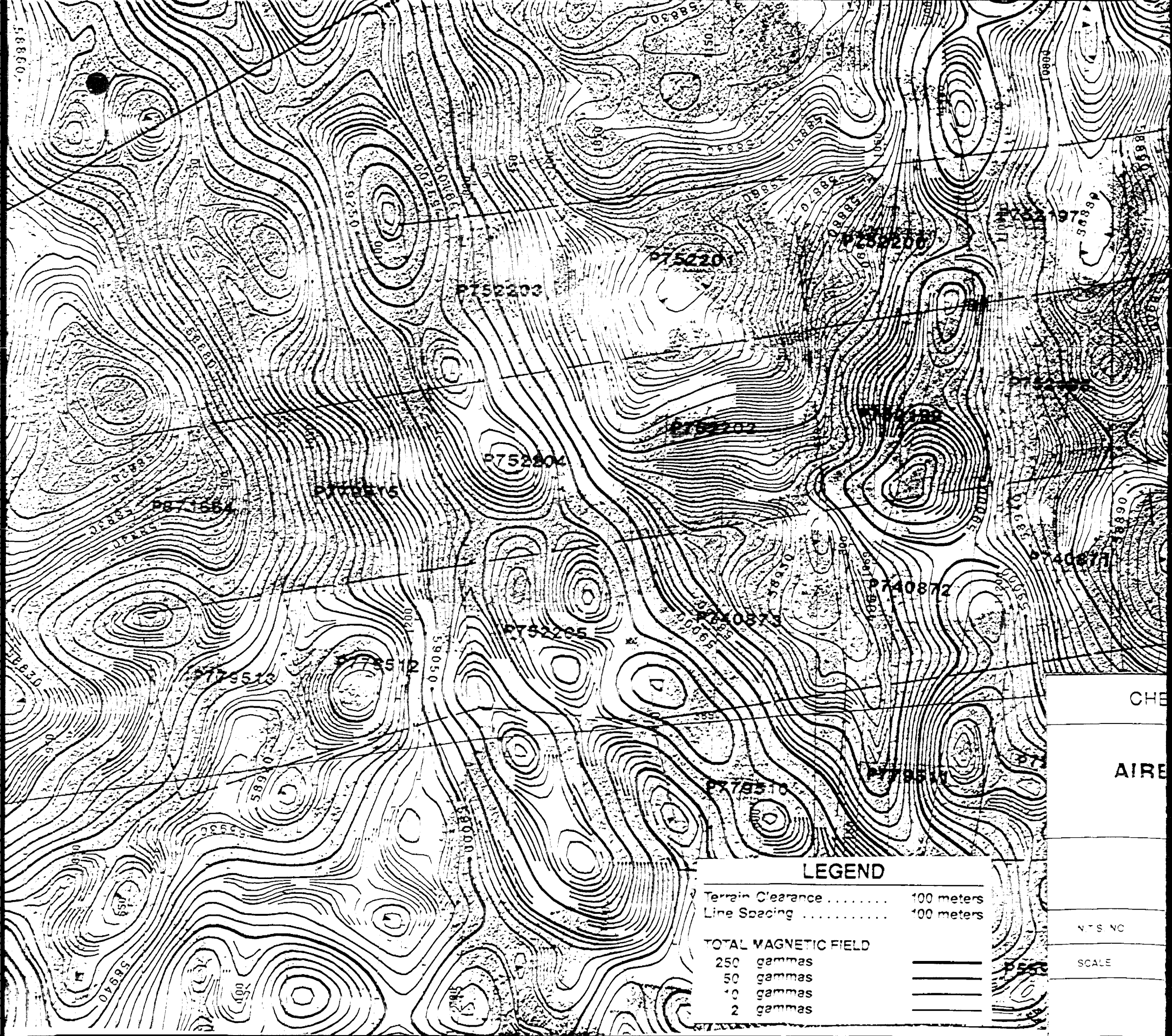
Dataplotting Services Inc. of Toronto.

Interpretation

Lithology was interpreted from magnetic intensity. Faults and shear zones can be interpreted from displacements in magnetic trends and by location and displacement of VLF-EM conductor axes.

The contoured total magnetic field data are shown in Figure 2 and a geology map of the area of the nine claims is shown in Figure 3. The outcrops are all calc-alkaline volcanics with only very minor east, east north-east shears cutting them. However, outside the claim group several north, west north-west diabase dikes cut the volcanics. Two dikes cross the nine claims, one through claims P752205 and P752204 and one through claims P752199 and P752200. A third dike passes immediately east of the claim group. No other interpretation of geology can be made from these data.

W. F. Brown



P752202

P752201

P752200

P752202

P752204

P871554

P778515

P782205

P782051

P740872

P778513

P778512

P778510

P778511

LEGEND

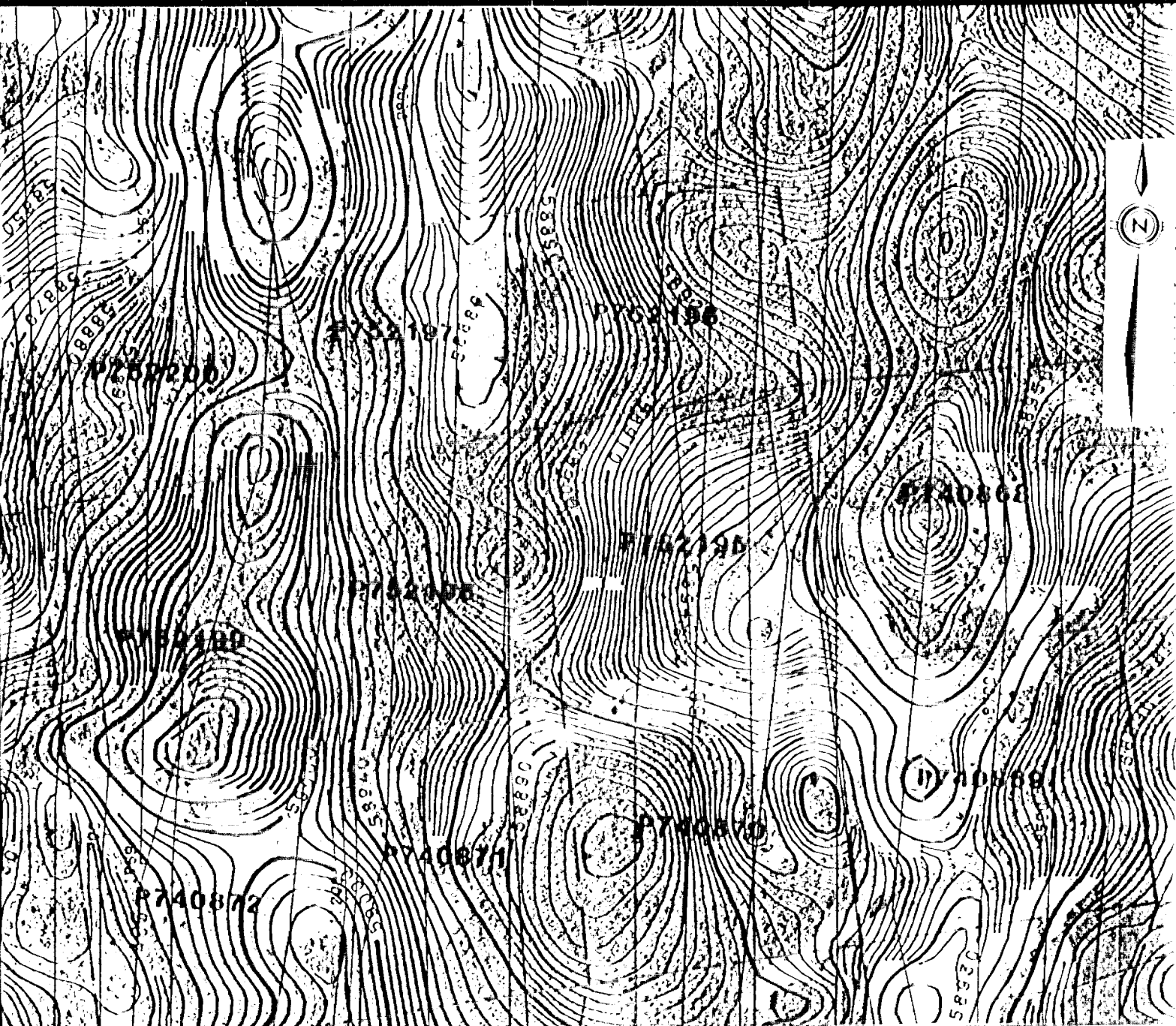
Terrain Clearance	100 meters
Line Spacing	100 meters
TOTAL MAGNETIC FIELD	
250 gammas	=====
50 gammas	=====
10 gammas	=====
2 gammas	=====

CHE

AIRE

N.T.S. NO

SCALE



CHEVRON CANADA RESOURCES LTD.

**AIRBORNE MAGNETIC SURVEY
TOTAL MAGNETIC FIELD**

FIGURE 2

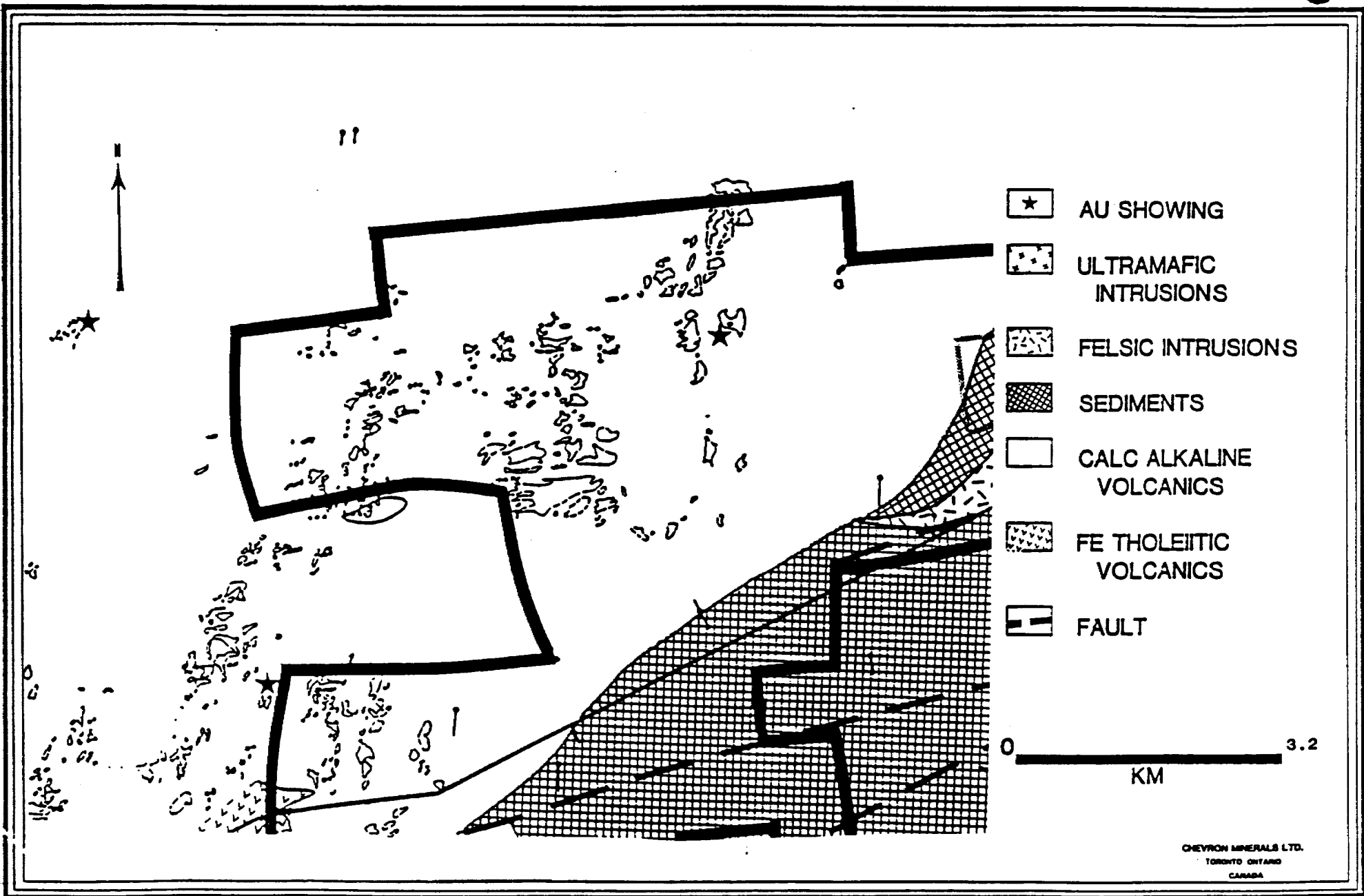
HOLMER PROJECT
ONTARIO

NTS NO 42A/5&6 DRAWING NO A-716.1N-1
SCALE 1:10,000 DATE October 1987

LEGEND

- Distance 100 meters
- Contour interval 100 meters
- Magnetic field
- 8000 mas
- 8000 mas
- 8000 mas
- 8000 mas

TERRAQUEST LTD. 
TORONTO, CANADA



OUTCROP MAP SHOWING GEOLOGY IN REPORT AREA

FIGURE 3

CERTIFICATION

I, William Edward Glenn of Toronto, Ontario, clarify that:

- 1) I hold a Ph.D. in Geophysics from the University of Utah, and
- 2) I have been practicing my profession since 1966, and
- 3) This report is based on work I supervised.

Toronto, Ontario
May 1989

A handwritten signature in cursive script, appearing to read 'W. E. Glenn', written in dark ink.

W.E. Glenn



W 8906-167

M

of Survey(s) **AIRBORNE MAG + EM 12440**

Claim Holder(s) **CHEVRON MINERALS LTD** Inspector's Licence No. **T-1690**

Address **#1714-390 BAY ST, TORONTO, ONTARIO**

Survey Company **TERRAQUEST** Date of Survey (from & to) **17 08 87 to 26 10 87** Total Miles of line Cut

Name and Address of Author (of Geo-Technical report) **S. W. S. GLENN, #1714-390 BAY ST, TORONTO.**

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	
	Geological	
	Geochemical	
Man Days RECEIVED	Geophysical	Days per Claim
Complete reverse side and enter total(s) here MAR 22 1989	- Electromagnetic	
MINING LANDS SECTION	- Magnetometer	
	- Other	
	Geological	
	Geochemical	
Airborne Credits	Electromagnetic	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Magnetometer	40
	Radiometric	

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
	P*752195				
	*752198				
	*752199				
	*152200				
	*752202				
	*752204				
	*752205				
	779515				
	871664				

RECORDED
MAR - 7 1989

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES OFFICE
MAY 11 1989
RECEIVED

Expenditures (excludes power stripping)

Type of Work Performed **PORTULYNE MAPPING OVERLAIN**

Performed **RECEIVED MAR 7 1989**

Calculation of Expenditure Days Credits
Total Expenditures **12.45** ÷ **15** = **0.83** 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.

*** MAX CREDITS REACHED 3 DAYS NOT ALLOWED.** Total number of mining claims covered by this report of work **9**

Date **MAR 6 1989** Recorder's Holder of Agent (Signature) *[Signature]*

For Office Use Only
Total Days Cr. Recorded **101** Date Recorded **MAR. 7/89** Mining Recorder's Signature *[Signature]*
Date Approved as Recorded **9 May 89** Branch Director's 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 **J. C. WILLIAMS, #1714-390 BAY ST, TORONTO.**

Date Certified **MAR 4 6 1989** Certified by (Signature) *[Signature]*



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 MAGNETOMETER

Township or Area BRISTOL TOWNSHIP

Claim Holder(s) CHEVRON MINERALS LTD

Survey Company TERRAQUEST

Author of Report W. E. GLENN

Address of Author #1714-390 BAY STREET, TORONTO

Covering Dates of Survey 17.08.87 to 26.10.87
(linecutting to office)

Total Miles of Line Cut n/a

MINING CLAIMS TRAVERSED
List numerically

P (prefix)	(number)
.....	752195
.....	752198
.....	752199
.....	752200
.....	752202
.....	752204
.....	752205
.....	779515
.....	871664

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 _____ Radiometric _____
(enter days per claim)

DATE: _____ SIGNATURE: _____

Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder
.....
.....
.....
.....
.....
.....
.....
.....

TOTAL CLAIMS 9

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 _____

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 _____

MAP SYMBOLOLOGY

Aerial Cableway	Pipeline (above ground)
Boundary	Railroad
International	Single Track
Interprovincial	Double Track
District, Township	Abandonment
Indian Reserve	Anticline
Asphalt	Road
Lot, Concession	Highway, County
Appraisal	Township
Part Boundary	Access (road of doubtful maintenance or right-of-way)
Bridge	"Oil, Gas Road"
Road, Bituminous	Double line road with multiple roads
Building	Double line road with multiple roads
Chimney	Reservoir
Cliff, Pit, Pile	River, Stream, Canal
Contours	Appraisal
Intersected	Setback
Approximate	Control Points
Disturbance	Horizontal
Control Points	Vertical
Horizontal	Culvert
Vertical	Falls
Culvert	Double line road
Falls	Fence, Hedge, Wall
Double line road	Feature Outline
Fence, Hedge, Wall	Construction Features
Feature Outline	Flooded Land
Construction Features	Lock
Flooded Land	Morsh or Swamp
Lock	Most
Morsh or Swamp	Mine Head Frame
Most	Outcrop
Mine Head Frame	
Outcrop	

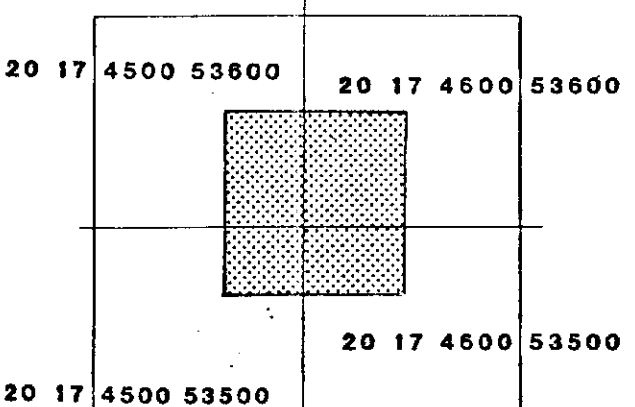
AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M.+S. - MINING AND SURFACE RIGHTS

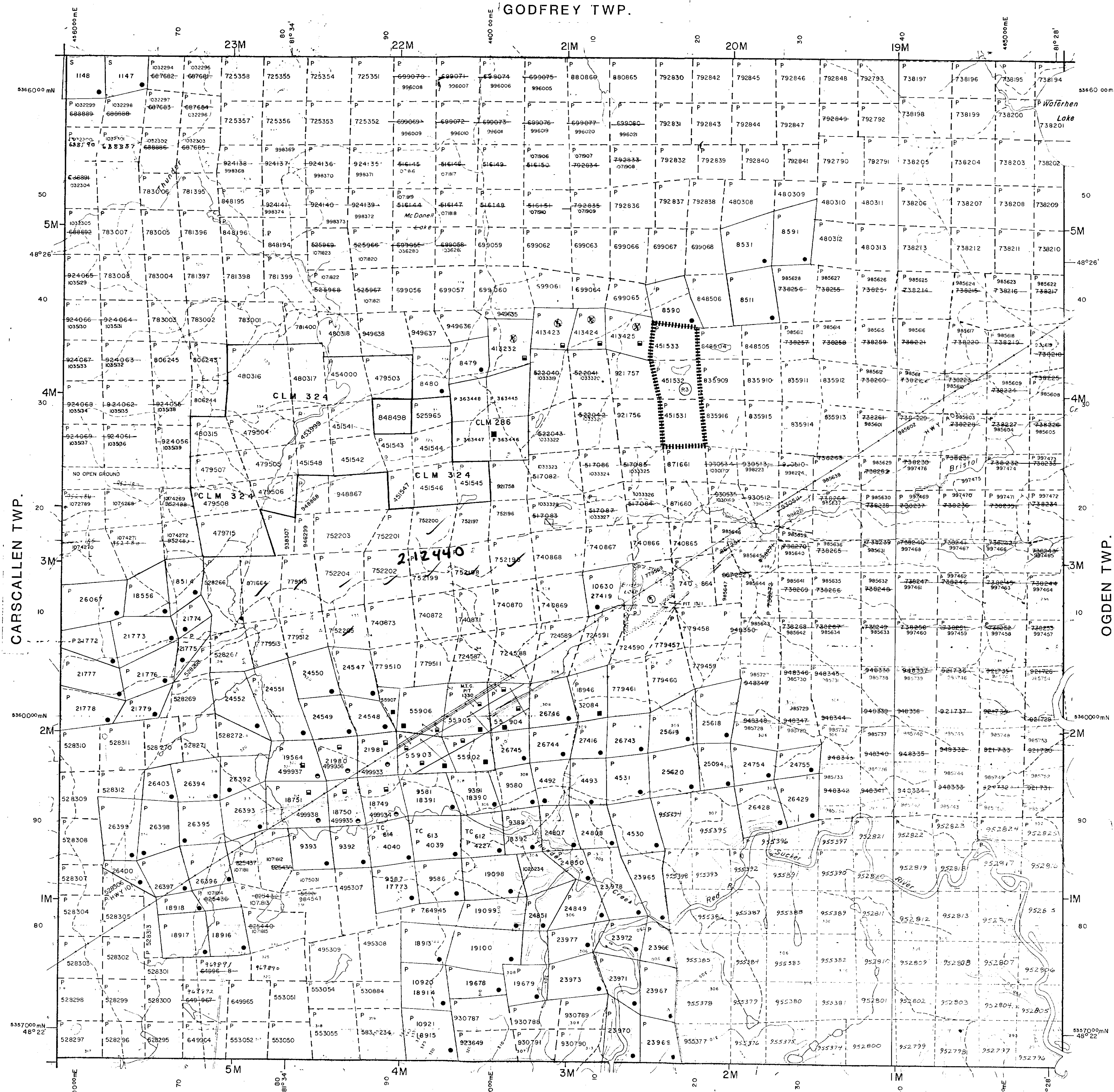
Description	Order No.	Date	Disposition	File
S.R.O.	164584			
REOPENED BY ORDER NRO 22/87 FEB. 1987				

MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING, SALE OR LEASE, SECTION 36 THE MINING ACT RSO 1980

KEY PLAN For O.B.M. Map



GODFREY TWP.



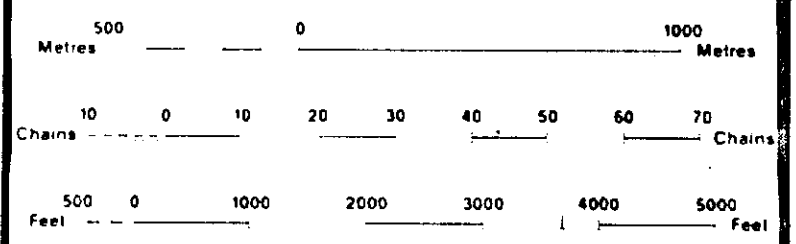
LEGEND

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 MUSKOG	
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	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913 VESTED IN ORIGINAL PATENTEES BY THE PUBLIC LANDS ACT, R.S.O. 1910, CHAP. 380, SEC. 63, SUBSEC. 1.



SCALE 1:20 000
ZONE 17

TOWNSHIP
BRISTOL
M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

Ministry of Natural Resources
Land Management Branch
Ontario

ORIGINAL COMPILATION JULY 1984
REVISED Feb 9/97
Number
3998

THORNELOE TWP.