# GROUND MAGNETOMETER SURVEY CLAIM L1249491 Lundy Township Larder Lake Mining Division

Prepared For Dr. John Pollock Settlement Surveys Ltd.



Fudge & Associates 160 Bryan Road North Bay, Ontario P1C 1C2

January 2, 2004

2 Location (NAD 83) 269 5 I UTM: Zone 17,

581100m E, 5263777m N

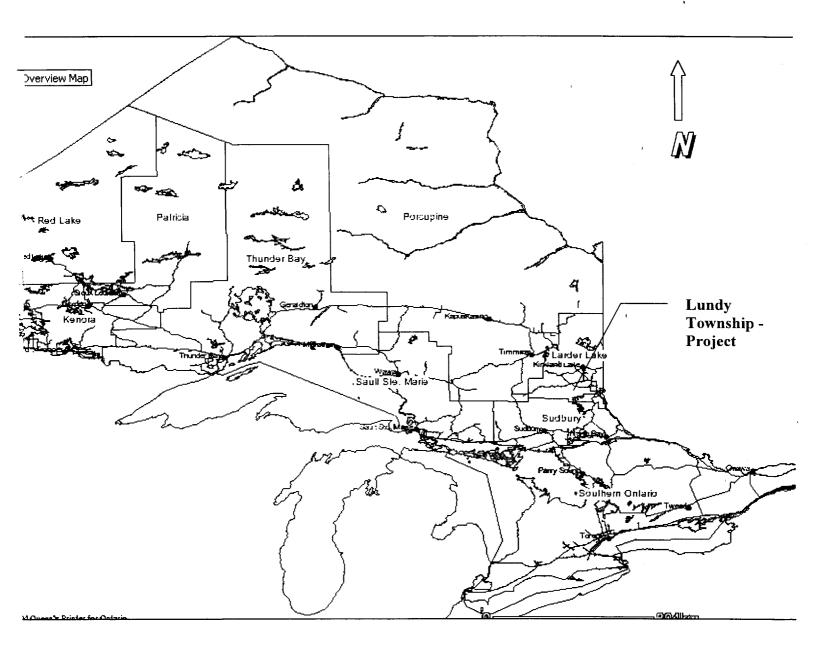


31M12SW2022 2.26951

LUNDY

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# Province of Ontario Figure 1 - Location Map

Scale: 1: 50 miles

#### 1.0 Introduction

This report deals with the logistics and results of a Magnetometer Survey carried out on the eastern section of Mining Claim L 1249491 in Lot IV, Concession II, Lundy Township in the Larder Lake Mining Division.

The Diamond Property is comprised of one- 16 unit unpatented mining claim, L 1249491 in Lots IV and V, Concession II Lundy Township. The claim is recorded 100% in the name of Dr. John Pollock. Fudge & Associates of North Bay, Ontario carried out the magnetometer survey, which is the subject of this report for Dr. Pollock.

The purpose of the survey was to identify potential diamond bearing intrusives within the Lake Temiskaming Kimberlite Field and follows an earlier airborne magnetic -survey in 1997 that identified several potential high-value anomalies on the property.

## 2.0 Location and Access

The property is accessible from New Liskeard, Ontario, via Highway 65 to the Hudson/ Lundy Townships (Twin Lakes) area, then by an existing ATC-Argo trail to the property. Access is also possible from a new all-season logging road built in the winter of 1997-98 through the central part of Lundy Township. During the winter, all areas are accessible by snow machine (see Figure 2).

## 3.0 Claim Status

The property is comprised of one active -16 unit unpatented mining claim L 1249491.

#### 4.0 Personnel

Fudge & Associates supervised the line cutting, sub-contracted to Norm McBride Claim Staking and Line Cutting of Notra Dame Du Nord, Quebec between December 12<sup>th</sup> and 19<sup>th</sup>, 2003. The magnetometer survey fieldwork was completed during the period December 20 - 24, 2003. Fudge & Associates geophysical survey personnel were:

R. Meikle North Bay, Ontario

B. Meikle North Bay, Ontario

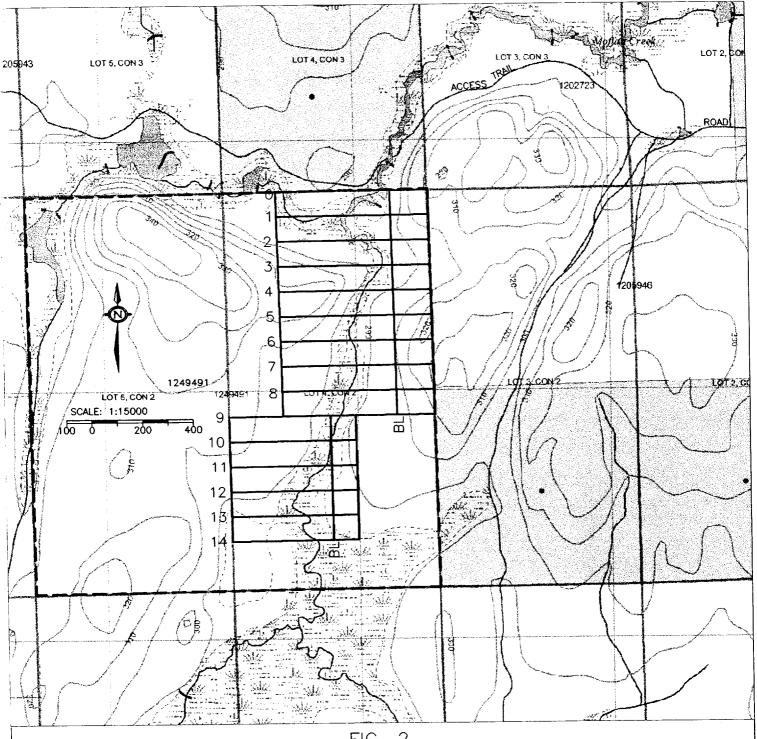


FIG. 2

# GENERAL NOTES:

- 1. CUT LINES ARE 100m APART WITH FLAG LINES AT 50m BETWEEN CUT LINES.
- 2. UNITS ARE IN METRES UNLESS OTHERWISE NOTED.

LEGEND:

**CUT LINES** 

CLAIM BOUNDARY

BL

BASE LINE

FUDGE & Associates 160 Bryan Road, North Bay, Untario

Owner:

JOHN POLLOCK

Title:

LOCATION MAP
MAGNETOMETR SURVEY
MINING CLAIM L 1249491 LUNDY TOWNSHIP

Drawn by: D. Cornick	Checked by: D. T. Fudge
Date: Jan 05 2004	Scale: 1:15000

#### 5.0 Previous Work

Other than for relatively recent work, (Pollock OPAP 96-101, Pollock assessment reports 1998, and 2000, and the November 2000 Canabrava ground magnetic survey) which consisted of prospecting, till samples, airborne geophysics, and limited ground magnetics, little work had been done on claim L 1249491 in the past. In the early 1900' prospecting located a15cm wide quartz vein near Moffatt falls that is said to contain chalcopyrite.

Sudbury Contact Mines Limited carried out extensive work in Lundy Township adjacent to the Pollock Diamond Property summarised following:

Upon completion of a large-scale reconnaissance till and esker pit-sampling program for diamond and gold in 1993, an airborne geophysical survey was flown over a large area including most of Lundy Township. In December 1994, four claims totalling 42 units or 672 hectares were staked in Lundy Township to cover interesting magnetic and geochemical results. This claim group represents a portion of the Sudbury Contact Mines Ltd. Montreal River "A" project area. In the winter of 1995 and 1996, a program consisting of line cutting, followed by magnetic and VLF EM ground geophysical surveys, was conducted to cover the more promising airborne anomalies. In March of 1995, a reverse circulation (RC) drill program was completed to test anomalies on grids 95-1, 95-2 and 95-3. This resulted in the discovery of two kimberlite pipes, one on grid 95-1 and the other on grid 95-2. Subsequently, the RC program in March of 1996 resulted in the discovery of a third kimberlite pipe on grid 96-1 (from assessment files: Sudbury Contact 1996b: 1).

Sudbury Contacts recent discovery is located approximately 2-km north-east of the property.

# 6.0 General Geology

Burrows and Hopkins noted very general information regarding the geology of Lundy in their 1922 Ontario Bureau of Mines Report. Detailed mapping was completed by Leo Owsiacki and assistants in 1981 and 1982 and published as Ontario Geological Survey Map P.2733 in 1985. The following description is taken from Owsiacki's marginal notes:

"The map area (Lundy Twp) is underlain by Early Proterozoic Lorrain and Gowganda Formation Sedimentary Rocks of the Cobalt Group of the Huronian Super group. The rocks were subsequently intruded by a moderately dipping diabase sill and steep-dipping diabase dikes and plugs of Nipissing age. Middle Proterozoic diabase and olivine diabase dikes intrude all older rocks" (Owsiacki 1985).

A good summary of the regional geology is available from Sudbury Contact Mines Limited:

The bedrock of the region is part of the Cobalt Embayment of the Huronian Supergroup, which is in the Southern Structural Province of the Canadian Shield. Middle Precambrian Huronian sedimentary rocks of the Cobalt Group unconformably overlie Early Precambrian metavolcanic and metasedimentary rocks (Johns, 1985). The Early and Middle Precambrian rocks have both been intruded by Nippissing Diabase dike and sill complexes, which occur as a series of cone or arc-shaped intrusions that produce circular to oval outcrop patterns. There are several different varieties of diabase.

The Cobalt Group is divided into two formations; the Lorrain and Gowganda. The Lorrain Formation is comprised of arkose, quartz arenites, metamorphosed arenite, and a basal maroon wacke. The Gowganda Formation is further subdivided into the Coleman Member and the overlying Firstbrook Member. The Coleman Member consists of pebblywacke, argillite, arkose and conglomerate. The Firstbrook Member is made up of black and grey argillite, red argillite and siltstone, and red siltstone and wacke (Johns, 1985).

The dominant structural feature in the immediate region of interest is the Cross Lake Fault. This fault dips 65' to the north-east and is an important feature of the Timskaming Rift Valley proposed by Lovell and Caine (1970), (adapted from Sudbury Contact 1996c: 1).

# 7.0 Magnetometer Survey

A total of 18 km of magnetometer survey was carried out on a cut & picketed grid as shown in Figure 2. East-west lines were established every 100 meters along the north-south baseline with intermediate flagged lines at 50-meter intervals between the cut lines. Flagged lines were established using a Garmin G.P.S. 12, Global Positioning System. The North-South (AZ 360 degrees) picketed base line was established in the east central portion of the claim (see figure 2) with an offset base line at 900 meters south. A GSM – 19T magnetometer was used to survey along the cut and flagged lines. Total field magnetic data were recorded at 12.5-meter intervals, and diurnal fluctuations were recorded with a base station for use in post processing of data.

The following parameters were employed for the survey.

Instrument:

G.S.M. – 19T Magnetometer

Station Interval:

12.5 meters

Line Interval:

50 meters

Data Presentation:

Plan Contour Map Scale: 1:2500

Contour Interval:

10 nano-TESLAS

#### 8.0 Magnetic Survey Results and Recommendations

The ground magnetometer survey outlined several anomalous features, some of which are thought to be significant and worthy of follow-up work. Following is a summary of the more prominent magnetic features. Interpretation and recommendations are based solely on the magnetic survey results.

The magnetic survey shows a broad area of higher magnetic susceptibility in the central and northeast part of the surveyed grid. This anomaly is close to 300 nanoteslas above background and has an apparent northeast strike direction. Information supplied by the client suggests that this anomaly is coincident with a Nippising Diabase sill and possible diabase dikes within and around it. A narrow linear magnetic high, striking northeast from L500s/600w to L50s/0w appears to be a dike on or near the northwest sill contact with a magnetic susceptibility of up to 1000 nano-teslas above the sill background, and is open in strike on both ends.

An isolated distinct magnetic low centered at 525s/350w is approximately 300-400 nano-teslas below background of the proposed diabase sill and lies directly southeast of the linear dike feature described above. It appears to be distinct rather than a "shadow", or "dipole-effect" of the dyke.

There are several magnetic highs in the area of 750s/300w-600w; the most prominent centered at 775s/550w, which is approximately 300 nT above the proposed sill background. This anomaly may be coincident with the other highs in the survey area that would suggest an east-west strike direction, however without further detail magnetic survey data; they appear as isolated highs.

Finally, there are two parallel linear magnetic lows, one immediately north of and the second approximately 100m north of the proposed sill.

In conclusion, we recommended that a comprehensive compilation of all-available area geological and geophysical data be undertaken to assist in evaluating and assessing various magnetic anomalies.

Known Kimberlite pipes in the area are reported to have highly varying magnetic signatures, ranging from highs to lows, some exhibiting both within the same pipe. Based upon the survey results several anomalies are worthy of further work and possible diamond drilling.

## **CERTIFICATION**

- I, Donald Thomas Fudge of North Bay, Ontario hereby certify that:
- 1. I hold a three-year Business Administration Diploma from Cambrian College of Applied Arts, North Bay, Ontario obtained in 1969 and a Bachelor of Arts from Carleton University, Ottawa, Ontario obtained in 1973.
- 2. That I am a Prospector and have been practicing my profession since 1975 in Ontario, Quebec, Newfoundland, Manitoba, Alberta, British Columbia, The United States of America, Jamaica and China.
- 3. That I have been employed directly by Teck Corporation,
  Metallgessellshaft Canada Limited, and the Ontario Ministry of Natural
  Resources and have been self-employed with Fudge & Associates since
  1984.
- 4. I have based my conclusions and recommendations contained in this report on knowledge of the area, my previous experience and on the results of the fieldwork conducted on the property.
- 5. That I hold no interest in the property either directly or indirectly.

Dated this 5<sup>th</sup> day of January 2004 At North Bay Ontario

Don T. Fadge

Appendix "A"

# 2. INSTRUMENT SPECIFICATIONS

# 2.1 Magnetometer/Gradiometer

Resolution:

0.01 nT (gamma), magnetic field and gradient

Accuracy:

0.2 nT over operating range

Range:

18,000 to 150,000 nT, 80 overlapping steps automatic tuning,

requiring initial set-up.

Gradient Tolerance:

Over 10,000 nT/meter

Operating interval:

3 seconds minimum, faster optional. Readings initiated by keyboard depression, external trigger or F, or carriage return

via RS-232-C.

Input/Output:

6 pin weatherproof connector, RS-232C, and (optional) analog

output.

Power Requirements: 12v 200 mA peak (during polarization), 30 mA standby.

400mA peak in gradiometer mode.

**Power Source:** 

Internal 12v, 1.9 Ah sealed lead-acid battery standard, others optional. An External 12V power source can also be used.

**Battery Charger:** 

Input: 110/220 VAC, 50/60 Hz and/or 12VDC (optional).

Output: 12V dual level charging.

**Operating Ranges:** 

Temperature: -40  $^{\circ}$ C to +60  $^{\circ}$ C.

Battery Voltage: 10.0 V minimum to 15V maximum. Humidity: up to 90% relative, non condensing.

Storage Temperature: -50°C to +65°C

Dimensions:

Console: 223 x 69 x 240mm Sensor staff: 4 x 450mm sections

Sensor: 170 x 71mm dia

Weight: Console 2.1kg, Staff 0.9kg, Sensors 1.1kg each.

# 2.2 VLF

Frequency Range:

15 - 30.0 kHz

Parameters Measured: Vertical In-phase and Out-of-phase components as

percentage of total field.

2 components of horizontal field.

Absolute amplitude of total field

Resolution:

0.1%

Number of Stations:

Up to 3 at a time.

Storage:

Automatic with: time, coordinates, magnetic field/gradient, slope, EM field, frequency, in- and out-of-phase vertical, and both horizontal components for each selected station.

Terrain Slope Range:

 $0^{\circ}$  -  $90^{\circ}$  (entered manually)

Sensor Dimensions:

14 x 15 x 9 cm. (5.5 x 6 x 3 inches)

Sensor Weight:

1.0 kg (2.2 lb)



# **Work Report Summary**

Transaction No:

W0480.00036

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Status: APPROVED

Recording Date:

2004-JAN-09

Work Done from: 2003-DEC-12

Approval Date:

2004-JAN-16

to: 2003-DEC-24

Client(s):

301410

POLLOCK, JOHN W.

Survey Type(s):

LC

MAG

Work Report D	etails:								
Claim#	Perform	Perform Approve	Applied	Applied Approve	Assign	Assign Approve	Reserve	Reserve Approve	Due Date
L 1249491	\$8,889	\$8,889	\$8,889	\$8,889	\$0	0	\$0	\$0	2005-JAN-18
	\$8,889	\$8,889	\$8,889	\$8,889	\$0	\$0	\$0	\$0	

**External Credits:** 

\$0

Reserve:

\$0 Reserve of Work Report#: W0480.00036

\$0

Total Remaining

Status of claim is based on information currently on record.

Ministry of Northern Development and Mines Ministère du Développement du Nord et des Mines

Date: 2004-JAN-22



GEOSCIENCE ASSESSMENT OFFICE 933 RAMSEY LAKE ROAD, 6th FLOOR SUDBURY, ONTARIO P3E 6B5

Tel: (888) 415-9845 Fax:(877) 670-1555

JOHN W. POLLOCK 17 WELLINGTON STREET NORTH NEW LISKEARD, ONTARIO POJ 1P0 CANADA

Dear Sir or Madam

# Submission Number: 2.26951 Transaction Number(s): W0480.00036

## **Subject: Approval of Assessment Work**

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

If you have any question regarding this correspondence, please contact STEVEN BENETEAU by email at steve.beneteau@ndm.gov.on.ca or by phone at (705) 670-5855.

Yours Sincerely,

Ron C Gashinshi

Senior Manager, Mining Lands Section

Cc: Resident Geologist

John W. Pollock (Claim Holder)

Assessment File Library

John W. Pollock (Assessment Office)



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ONTARIO CANADA

Mining Land Tenure Мар

2.1km

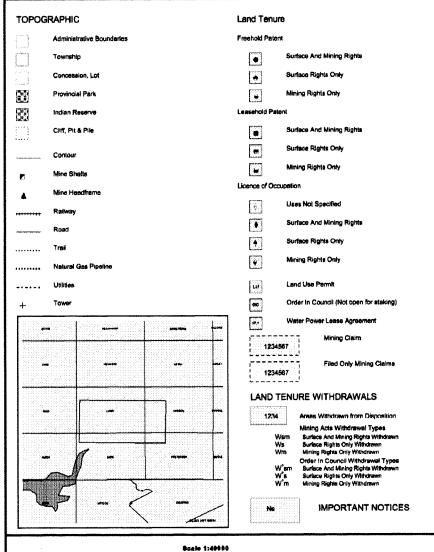
Date / Time of Issue: Tue Jan 20 09:15:08 EST 2004

TOWNSHIP / AREA LUNDY

**PLAN** G-3439

# **ADMINISTRATIVE DISTRICTS / DIVISIONS**

Larder Lake Mining Division Land Titles/Registry Division **TIMISKAMING** Ministry of Natural Resources District NORTH BAY



LAND TENURE WITHDRAWAL DESCRIPTIONS

Jan 1, 2001 PUBLIC RESERVE JUNE 17/69 160707 VOL.2
Jan 1, 2001 AP
Jan 22, 2002 Sec. 35 M & S January 22, 2002 195150 4553 4555 W-L-57-01

IMPORTANT NOTICES

700 m

Please either a description for this ferm.
THIS AREA IS SUBJECT TO ONTARIO REGULATION SHEED OF THE PUBLIC LANDS ACT, YOUR EXPLORATION WORK MAY
REQUIRE A WORK PERSAT, FOR INFORMATION CONTACT THE REGIONAL GEOLOGIST AT (705) 83-5842.

0 LOTY CON4 LOT 4, CON LOT 12, CON LOT 11 CON 4 166952 LOT B, CON 4 LOT 3, CON 4 1205951 B 100) LOT 12 00H 3 L1205652 1206 LOT 3, CON 3 LOT 2 DON 8 LOT 11.00N 3 2000 1166949 LOT 9, CON 3 COTA: CON 37 LOT 6, CON 3 120 LOT 8, OON 3 1169918 LOT 7, COM 3 121410 LOT7. CON 2 LOT 8, CON 2 LOT 10 CON 2 1249106 LOT 9 CON 2 1249102 1248896 LOT 10, CON 1 LOT 12, CON LOT & CON 1 LOT 8, COM LOT 4, CON LOT 11, CON Pite Lake 330 LOT 12 CON 6 LOT 4. CON COT & CON 6 300 LOTO CON 8 1211480 LOT 1. CON 5

Those wishing to stake mining claims should consult with the Provincial Mining Recorders' Office of the Ministry of Northern Development and Mines for additional information on the status of the lands shown hereon. This map is not intended for navigational, survey, or land title determination purposes as the information shown on this map is compiled from various sources. Completeness and accuracy are not guaranteed. Additional information may also be obtained through the local Land Titles or Registry Office, or the Ministry of Natural Resources.

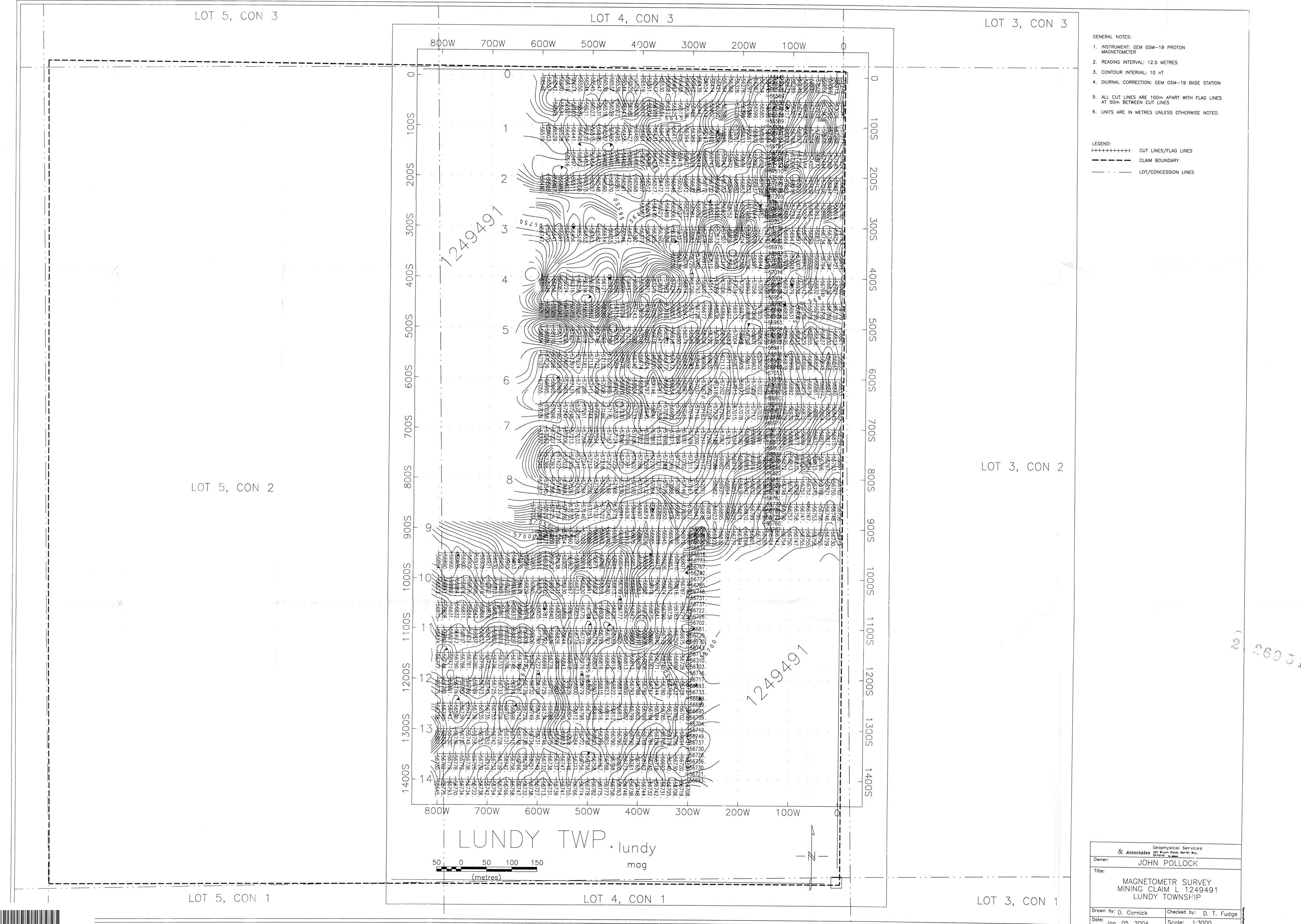
The information shown is derived from digital data available in the Provincial Mining Recorders' Office at the time of downloading from the Ministry of Northern Development and Mines web site.

General Information and Limitation Contact Information: Provincial Mining Recorders' Office

Contact Information:
Provincial Mining Recorders' Office
Willet Green Miller Centre 933 Ramsey Lake Road
Sudbury ON P3E 885
Tol. 1 (879) 570-1444
Sudbury ON P3E 885

Tol. 1 (879) 570-1444
Map Detum: NAD 83
Tol. 1 (888) 415-9845 ext 57#Bjection: UTM (6 degree)
Topographic Data Source: Land Information Ontario
Mining Land Tenure Source: Provincial Mining Recorders' Office Home Page: www.mndm.gov.on.ca/MNDM/MINES/LANDS/mismnpge.htm

This map may not show unregistered land tenure and interests in land including certain patents, leases, easements, right of ways, flooding rights, licences, or other forms of disposition of rights and interest from the Crown. Also certain land tenure and land uses that restrict or prohibit free entry to stake mining claims may not be littlesteaded.



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