2.18365

GEOPHYSICAL REPORT
FOR
OUTOKUMPU MINES LIMITED
ON THE
BANNOCKBURN PROPERTY
BANNOCKBURN AND MONTROSE TOWNSHIPS
LARDER LAKE MINING DIVISION
NORTHEASTERN, ONTARIO

Prepared by: J.C.Grant, CET, FGAC
February, 1998

TABLE OF CONTENTS

INTRODUCTION

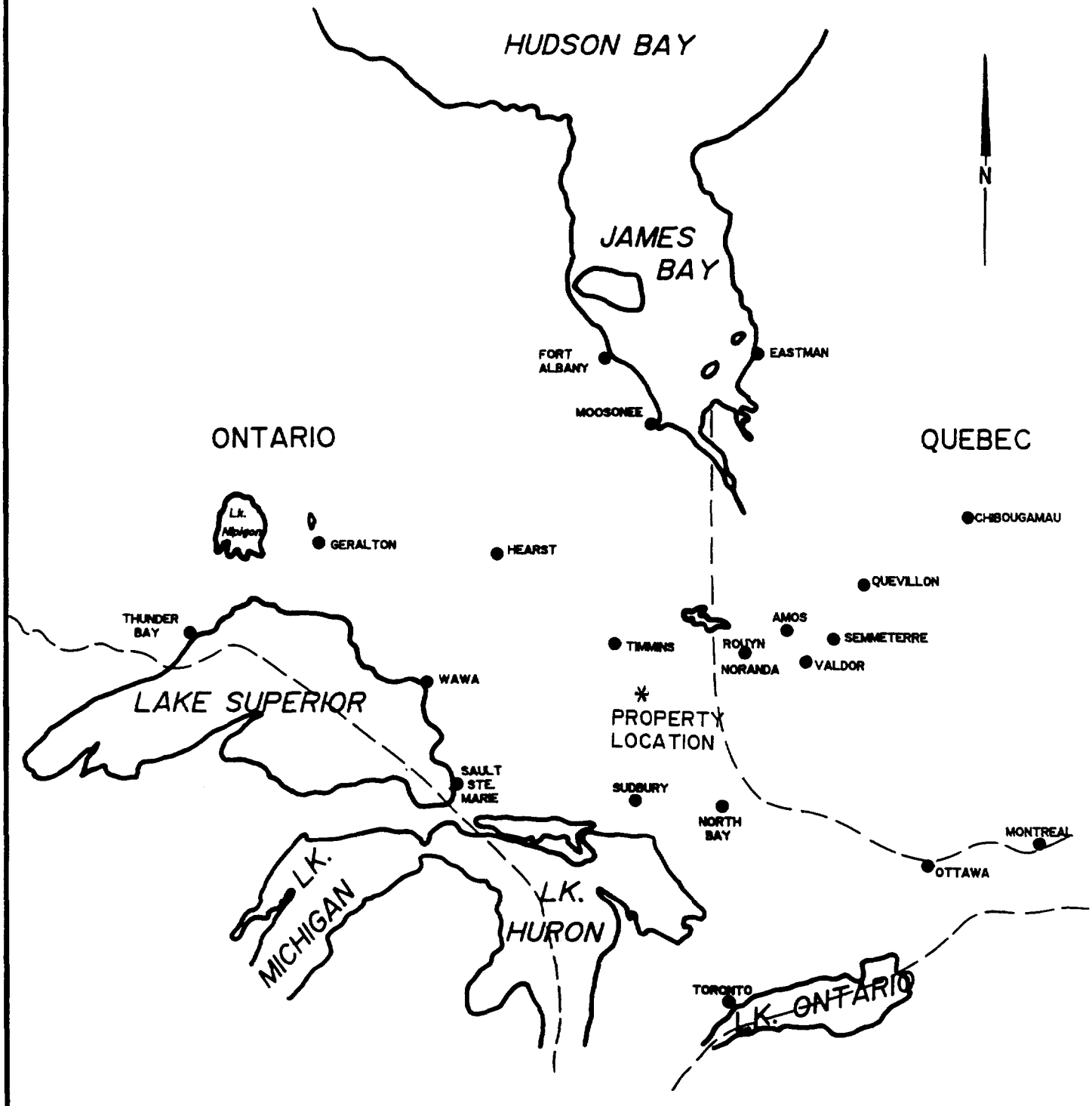
The services of Exsics Exploration Limited were retained by Outokumpu Mines Limited to complete a fill-in, linecutting and geophysical program on a group of their claims located in Bannockburn and Montrose Townships of the Larder Lake Mining Division of Northeastern, Ontario.

The purpose of this fill-in program was to better define a good magnetic high unit that was situated between lines 12600MN and 11500MN that had first been outlined by a magnetic survey completed earlier during a summer program. The linecutting program for the fill-in survey commenced at the end of November and was completed by the 5th of December, 1997. The detailed magnetics commenced on the 9th of December and was completed on the 10th of December, 1997. A total of 12.5 kilometers of grid lines were cut and surveyed on the property during this period. This report will deal with the results of this recent ground program.

PROPERTY LOCATION AND ACCESS

The Bannockburn property is located in the west central section of Bannockburn Township and the east central section of Montrose Township of the Larder Lake Mining Division of Northeastern, Ontario. Figure 1. More specifically it is situated between Bannockburn and Charlewood Lakes, to the south, Zurbigg Lake to the east and Rahn Lake covers a portion of the north central section of the grid. The entire property is located approximately 16 kilometers northwest of the Town of Matchewan which in turn is serviced by highway 66. This highway travels southwest off of Highway 11 south which services the Town of Kirkland Lake. Figure 2.

Access to the grid during the survey period was ideal. A local outfitter maintains a good gravel road from highway 566 which leads northwest from Matachewan to a cabin located on the claim group. The linecutters and geophysical crew used skidoos to access this cabin. This gravel road continues from the cabin and crosses the grid in a north-south direction and provided good skidoo acess to the survey area.



EXSICS EXPLORATION LTD.
P.O. Box 1990, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

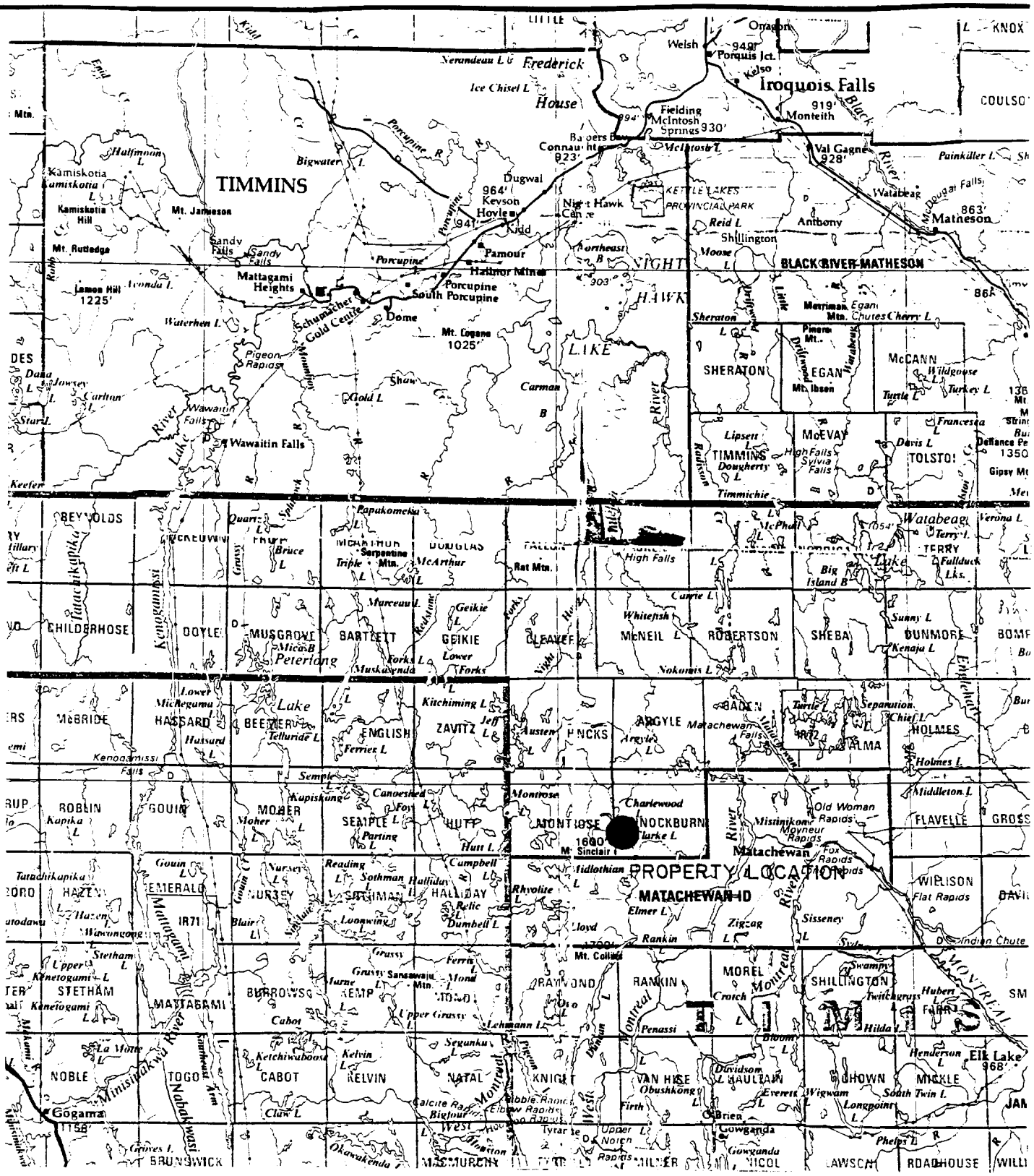
CLIENT: OUTOKUMPU MINES LTD.

PROPERTY: BANNOCKBURN PROPERTY

TITLE: BANNOCKBURN TWP.
LOCATION MAP

Fig. 1

Date: June 1997	Scale: 1"=125miles	MNDM Plan#:
Drawn: P. Gauthier	Interp: J.C. Grant	Job No. E-286



EXSICS EXPLORATION LTD.
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Telephone: 705-267-4151

CLIENT: OUTOKUMPU MINES LTD.

PROPERTY: BANNOCKBURN PROPERTY

TITLE: BANNOCKBURN TWP.

PROPERTY LOCATION

Fig. 2

Date: June 1997	Scale: 1:600,000	MNDM Plan#: 22-6
Drawn:	Interp: J.C. Grant	Job No. E-286

CLAIM GROUP

The claim numbers which form the Bannockburn property are as follows:

L-1218727	7 units
L-1218725	7 unit
L-1218721	11 units
L-1218723	1 unit
L-1218724	1 unit
L-1218736	1 unit
L-1218720	1 unit
L-1218728	1 unit
L-1218722	6 units
L-1218730	1 unit
L-1218731	1 unit
L-1218729	2 units
L-1207453	1 unit
L-1189913	1 unit
L-1218732	11 units
L-1198912	4 units

Refer to figure 3, copied from the MNDM Plan Maps of Bannockburn and Montrose townships.

PERSONNEL

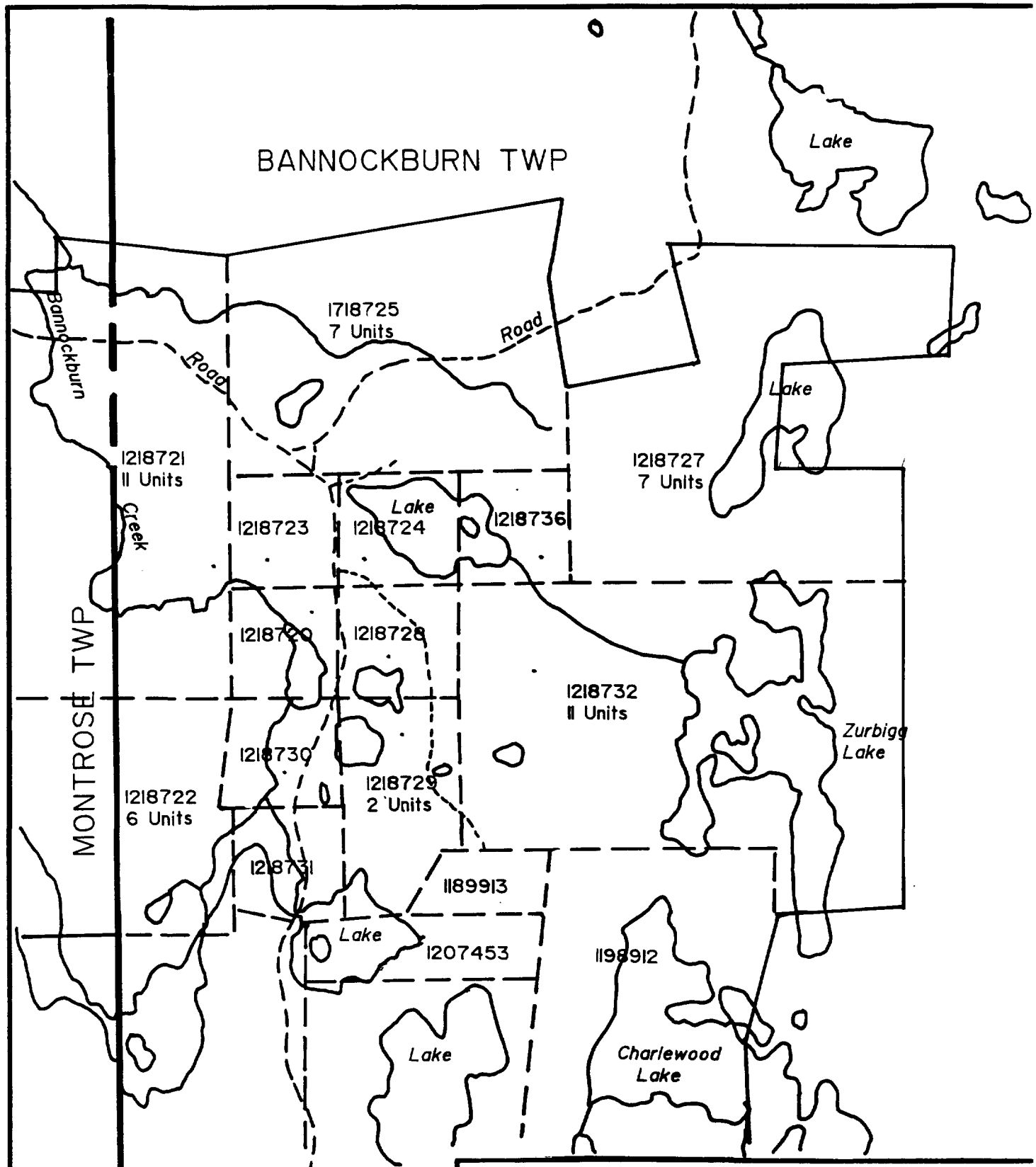
The field crew directly responsible for the collection of all raw data were as follows:

Eric Jaakkola	Timmins, Ontario
John DerWeduwen	South Porcupine, Ontario

The work was completed under the direct supervision of J.C. Grant and all of the plotting and computor compilation was completed by P. Gauthier of Exsics Exploration Limited.

GROUND PROGRAM

The new ground program was completed in two phases. The first phase of the program was to cut lines at 50 meter intervals between existing lines 12600MN to 11500MN from tieline 6500ME to tieline 7500ME. These new lines were then chained and metal tagged with 20 meter pickets.



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Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT: OUTOKUMPU MINES LTD.

PROPERTY: BANNOCKBURN PROPERTY

TITLE: BANNOCKBURN TWP.

CLAIM SKETCH

Fig. 3

Date: June 1997	Scale: 1:20,000	MNDM Plan#:
Drawn: P. Gauthier	Interp: J.C. Grant	Job No. E-286

Phase two of the program was to complete a Total Field Magnetic survey across the new cut lines. The Magnetic survey was completed using the BRGM, OMNI IV Base station system and the Scintrex Envi Mag field system. Specifications for these systems can be found as Appendix A of this report.

The following parameters were kept constant for each survey method throughout the survey period.

Magnetic Survey:

Line spacing	50 meters
Station spacing	20 meters
Reading interval	10 meters
Diurnal monitoring	base station recorder
Record interval	30 seconds
Reference field	57400 gammas
Datum subtract	57500 gammas
Unit accuract	+/- 0.1 gammas
Parameters measured	Earth's total magnetic field

The collected, corrected and levelled magnetic data was then plotted diectly onto a base map at a scale of 1:5000 and then contoured at 50 gamma intervals where possible. The new data was incorporated into the existing data and the entire grid was contoured in whole. A copy of this contoured base map is included in the back pocket of this report.

SURVEY RESULTS:

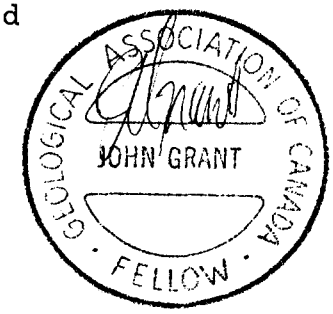
The magnetic survey outlined an area of activity situated between the 6500ME and 7500ME tielines. The magnetic high units probably relate to ultramafic flows comprised of basalts and or varying amount of iron rich materials. The generally strike of the underlaying geology is north-northwest with several east-northeast cross structures. The magnetic signature of the intrusives is about 3500 to 5000 gammas above the background.

This magnetic unit situated between the detailed grid is a somewhat elongated football shaped unit which appears to have been crosscut by at least two minor fault and or shear zones paralleling the strike of the grid lines.

CONCLUSIONS AND RECOMMENDATIONS:

The detailed magnetics was successful in enhancing the magnetic high unit situated between lines 12600MN and 11500MN from 6500ME to 7500ME. The unit has been crosscut by at least two minor faults and or shear zones which parallel the grid lines. Follow-up geological, geochemical and or drilling should be considered in this detailed area.

Respectfully submitted



J.C.Grant, CET, FGAC
February, 1998.

CERTIFICATE

I, John C. Grant, hereby certify that:

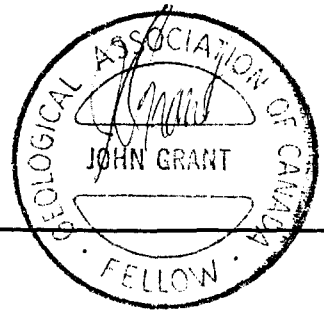
1) I am a graduate technologist, (1975) of the three year program in Geological Technology at Cambrian College of Applied Arts and Technology, Sudbury Campus. I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited, (5 years), North Bay office and currently as Exploration Manager and Geophysicist for Exsics Exploration Limited since 1980.

2) I am a member in good standing of the Certified Engineering Technologist Association,(CET), since 1984

3) I am a Fellow of the Geological Association of Canada, (FGAC), since 1986.

4) I have been actively engaged in my profession since May of 1975, including all aspects of exploration studies, surveys and interpretation.

5) I have no specific or special interest in the described property. I have been retained as a Consulting Geophysicist by the Property holders.



John Charles Grant, CET, FGAC.

APPENDIX A

OMNI IV "Tie-Line" Magnetometer

Four Magnetometers in One

Self Correcting for Diurnal Variations

Reduced Instrumentation Requirements

25% Weight Reduction

User Friendly Keypad Operation

Universal Computer Interface

Comprehensive Software Packages

Specifications

Dynamic Range	18,000 to 110,000 gammas. Roll-over display feature suppresses first significant digit upon exceeding 100,000 gammas.
Tuning Method	Tuning value is calculated accurately utilizing a specially developed tuning algorithm
Automatic Fine Tuning	± 15% relative to ambient field strength of last stored value
Display Resolution	0.1 gamma
Processing Sensitivity	± 0.02 gamma
Statistical Error Resolution	0.01 gamma
Absolute Accuracy	± 1 gamma at 50,000 gammas at 23°C ± 2 gamma over total temperature range
Standard Memory Capacity	
Total Field or Gradient	1,200 data blocks or sets of readings
Tie-Line Points	100 data blocks or sets of readings
Base Station	5,000 data blocks or sets of readings
Display	Custom-designed, ruggedized liquid crystal display with an operating temperature range from −40°C to +55°C. The display contains six numeric digits, decimal point, battery status monitor, signal decay rate and signal amplitude monitor and function descriptors.
RS 232 Serial I/O Interface	2400 baud, 8 data bits, 2 stop bits, no parity
Gradient Tolerance	6,000 gammas per meter (field proven)
Test Mode	A. Diagnostic testing (data and programmable memory) B. Self Test (hardware)
Sensor	Optimized miniature design. Magnetic cleanliness is consistent with the specified absolute accuracy.
Gradient Sensors	0.5 meter sensor separation (standard), normalized to gammas/meter. Optional 1.0 meter sensor separation available. Horizontal sensors optional.
Sensor Cable	Remains flexible in temperature range specified, includes strain-relief connector
Cycling Time (Base Station Mode)	Programmable from 5 seconds up to 60 minutes in 1 second increments
Operating Environmental Range	−40°C to +55°C; 0–100% relative humidity; weatherproof
Power Supply	Non-magnetic rechargeable sealed lead-acid battery cartridge or belt; rechargeable NiCad or Disposable battery cartridge or belt; or 12V DC power source option for base station operation.
Battery Cartridge/Belt Life	2,000 to 5,000 readings, for sealed lead acid power supply, depending upon ambient temperature and rate of readings
Weights and Dimensions	
Instrument Console Only	2.8 kg, 238 x 150 x 250mm
NiCad or Alkaline Battery Cartridge	1.2 kg, 235 x 105 x 90mm
NiCad or Alkaline Battery Belt	1.2 kg, 540 x 100 x 40mm
Lead-Acid Battery Cartridge	1.8 kg, 235 x 105 x 90mm
Lead-Acid Battery Belt	1.8 kg, 540 x 100 x 40mm
Sensor	1.2 kg, 56mm diameter x 200mm
Gradient Sensor (0.5 m separation - standard)	2.1 kg, 56mm diameter x 790mm
Gradient Sensor (1.0 m separation - optional)	2.2 kg, 56mm diameter x 1300mm
Standard System Complement	Instrument console; sensor; 3-meter cable, aluminum sectional sensor staff, power supply, harness assembly, operations manual.
Base Station Option	Standard system plus 30 meter cable
Gradiometer Option	Standard system plus 0.5 meter sensor

E D A Instruments Inc.
4 Thorncliffe Park Drive
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR
Cable: Instruments Toronto
(416) 425 7800

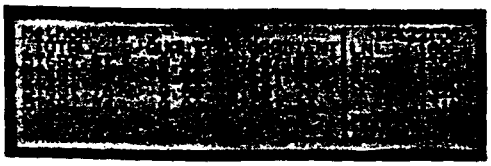
In U.S.A.
E D A Instruments Inc.
5151 Ward Road
Wheat Ridge, Colorado
U.S.A. 80033
(303) 422 9112

Printed in Canada

allows the user to note the magnetic relief (anomaly) on the line.

Large Screen Display

"Super-Twist" 64 x 240 dot (8 lines x 40 characters), LCD graphic screen provides good visibility in all light conditions. A display heater is optionally available for low-temperature operations below 0°C.



Close-up of the ENVI-MAG screen showing data presented after each reading

Interactive Menus

The set-up of ENVI-MAG is menu-driven, and minimizes the operator's learning time, and on-going tasks.

Close-up of display of ENVI-MAG showing interactive set-up menu

Rechargeable Battery and Battery Charger

An "off-the-shelf" lead-acid battery and charger are provided as standard. The low-cost "Camcorder" type battery is available from electronic parts distributors everywhere.

HELP-Line Available

Purchasers of ENVI-MAG are provided with a HELP-Line telephone number to call in the event assistance is needed with an application or instrumentation problem.

ENVIMAP Processing and Mapping Software

Supplied with ENVI-MAG, and custom designed for this purpose, is easy-to-use, very user-friendly, menu driven data processing and mapping software called ENVIMAP. This unique software appears to the user to be a single program, but is in fact a sequence of separate programs, each performing a specific task. Under the menu system, there are separate programs to do the following:

a) read the ENVI-MAG data and reformat it into a standard compatible with the ENVIMAP software
b) grid the data into a standard grid format
c) create a vector file of posted values with line and baseline identification that allows the user to add some title information and build a suitable surround
d) contour the gridded data
e) autoscale the combined results of the posting/surround step and the contouring step to fit on a standard 8.5 ins. wide dot-matrix printer
f) rasterize and output the results of step e) to the printer

ENVIMAP is designed to be as simple as possible. The user is required to answer a few basic questions asked by ENVIMAP, and then simply toggles "GO" to let ENVIMAP provide default parameters for the making of the contour map. The user can modify certain characteristics of the output plot. ENVIMAP'S menu system is both keyboard and mouse operable. HELP screens are integrated with the menu system so that HELP is displayed whenever the user requests it.

Options Available

- True simultaneous gradiometer upgrade
- Base station upgrade
- Display heater for low temperature operations
- External battery pouch

Specifications

Total Field Operating Range
20,000 to 100,000 nT (gammas)

Total Field Absolute Accuracy
+/- 1nT

Sensitivity
0.1 nT at 2 second sampling rate

Tuning
Fully solid state. Manual or automatic, keyboard selectable

Cycling (Reading) Rates
0.5, 1 or 2 seconds, up to 9999 seconds for base station applications, keyboard selectable

Gradiometer Option
Includes a second sensor, 20 inch (½m) staff extender and processor module

"WALKMAG" Mode
0.5 second for walking surveys, variable rates for hilly terrain

Digital Display
LCD "Super Twist", 240 x 64 dots graphics, 8 line x 40 characters alphanumerics

Display Heater
Thermostatically controlled, for cold weather operations

Keyboard Input
17 keys, dual function, membrane type

Notebook Function
32 characters, 5 user-defined MACRO's for quick entry

Standard Memory

Total Field Measurements:	28,000 readings
Gradiometer Measurements:	21,000 readings
Base Station Measurements:	151,000 readings

Expanded Memory

Total Field Measurements:	140,000 readings
Gradiometer Measurements:	109,000 readings
Base Station Measurements:	750,000 readings

Real-Time Clock
Records full date, hours, minutes and seconds with 1 second resolution, +/- 1 second stability over 12 hours

Digital Data Output
RS-232C interface, 600 to 57,600 Baud, 7 or 8 data bits, 1 start, 1 stop bit, no parity format. Selectable carriage return delay (0-999 ms) to accommodate slow peripherals. Handshaking is done by X-on/X-off

Analog Output
0 - 999 mV full scale output voltage with keyboard selectable range of 1, 10, 100, 1,000 or 10,000 nT full scale

Power Supply
Rechargeable "Camcorder" type, 2.3 Ah, Lead-acid battery.

12 Volts at 0.65 Amp for magnetometer, 1.2 Amp for gradiometer,

External 12 Volt input for base station operations

Optional external battery pouch for cold weather operations

Battery Charger
110 Volt - 230 Volt, 50/60 Hz

Operating Temperature Range
Standard 0° to 60°C
Optional -40°C to 60°C

Dimensions
Console - 10 x 6 x 2.25 inches (250 mm x 152 mm x 55 mm)
T.F. sensor - 2.75 inches dia. x 7 inches (70 mm x 175 mm)
Grad. sensor and staff extender - 2.75 inches dia. x 26.5 inches (70 mm x 675 mm)
T.F. staff - 1 inch dia. x 76 inches (25 mm x 2 m)

Weight
Console - 5.4 lbs (2.45 kg) with rechargeable battery
T. F. sensor - 2.2 lbs (1.15 kg)
Grad. sensor - 2.5 lbs (1.15 kg)
Staff - 1.75 lbs (0.8 kg)

SCINTREX

Head Office
222 Snidercroft Road
Concord, Ontario, Canada L4K 1B5
Telephone: (905) 669-2280
Fax: (905) 669-6403 or 669-5132
Telex: 06-964570

In the USA:
Scintrex Inc.
85 River Rock Drive
Unit 202
Buffalo, NY 14207
Telephone: (716) 298-1219
Fax: (716) 298-1317

SCINTREX

ENVI-MAG Environmental Magnetometer/Gradiometer

ocating Buried Drums and Tanks?

he ENVI-MAG is the solution to this nvironmental problem. ENVI-MAG is an nexpensive, lightweight, portable "WALKMAG" which enables you to survey arge areas quickly and accurately.

NVI-MAG is a portable, proton precession magnetometer and/or gradiometer, for eotechnical, archaeological and environ- nental applications where high production, fast count rate and high sensitivity re required. It may also be used for other pplications, such as mineral exploration, nd may be configured as a total-field magnetometer, a vertical gradiometer or s a base station.

he ENVI-MAG

- easily detects buried drums to depths of 10 feet or more
  more sensitive to the steel of a buried drum than EM or radar
  much less expensive than EM or radar
  survey productivity much higher than with EM or radar

Main features include:

- select sampling rates as fast as 2 times per second
- "WALKMAG" mode for rapid acquisition of data
- large internal, expandable memory
- easy to read, large LCD screen displays data both numerically and graphically
- ENVIMAP software for processing and mapping data

ENVI-MAG comprises several basic modules; a lightweight console with a large screen alphanumeric display and high capacity memory, a staff mounted sensor and sensor cable, rechargeable battery and battery charger, RS-232 cable and ENVIMAP processing and mapping software.

For gradiometry applications an upgrade kit is available, comprising an additional processor module for installation in the console, and a second sensor with a staff extender.

ENVI-MAG Proton Magnetometer in operation

For base station applications a Base Station Accessory Kit is available so that the sensor and staff may be converted into a base station sensor.

Features and Benefits

WALKMAG" Magnetometer/Gradiometer

The "WALKMAG" mode of operation ometimes known as "Walking Mag") is ıser-selectable from the keyboard. In this mode, data is acquired and recorded at e rate of 2 readings per second as the ɔerator walks at a steady pace along a line. At desired intervals, the operator "riggers" an event marker by a single key roke, assigning coordinates to the ecorded data.

True Simultaneous Gradiometer

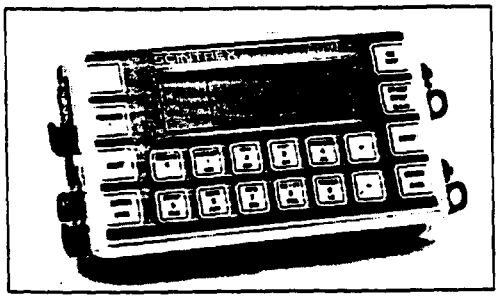
ı optional upgrade kit is available to configure ENVI-MAG as a gradiometer to make true, simultaneous gradiometer easurements. Gradiometry is useful for otechnical and archaeological surveys where small near surface magnetic rgets are the object of the survey.

lectable Sampling Rates

0.5 second, 1 second and 2 second ading rates user selectable from the yboard.

Large-Key Keypad

The large-key keypad allows easy access for gloved-hands in cold-weather operations. Each key has a multi-purpose function.



Front panel of ENVI-MAG showing a graphic profile of data and large-key keypad

Large Capacity Memory

ENVI-MAG with standard memory stores up to 28,000 readings of total field measurements, 21,000 readings of gradiometry data or 151,000 readings as a base station. An expanded memory option is available which increases this standard capacity by a factor of 5.

Easy Review of Data

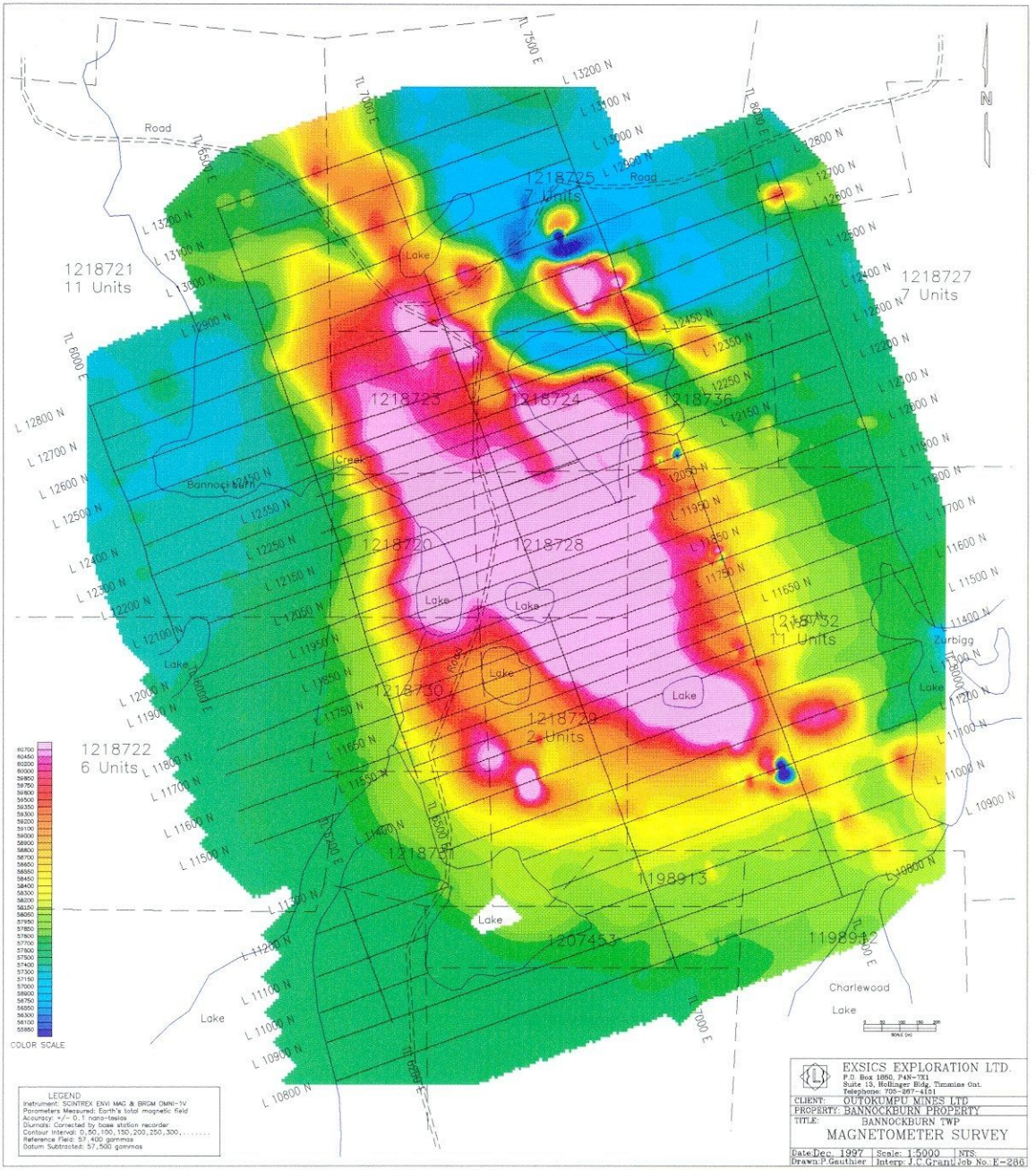
For quality of data and for a rapid analysis of the magnetic characteristics of the survey line, several modes of review are possible. These include the measurements at the last four stations, the ability to scroll through any or all previous readings in memory, and a graphic display of the previous data as profiles, line by line. This feature is very useful for environmental and archaeological surveys.

Highly Productive

The "WALKMAG" mode of operation acquires data rapidly at close station intervals, ensuring high-definition results. This increases survey productivity by a factor of 5 when compared to a conventional magnetometer survey.

"Datacheck" Quality Control of Data

"Datacheck" provides a feature wherein at the end of each survey line, data may be reviewed as a profile on ENVI-MAG's screen. Datacheck confirms that the instrument is functioning correctly and


1218721
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1218720
1218728
1218730
1218729
2 Units
1218732
11 Units
1218731
1198913
1207453
1198912
Road
Lake
Creek
Bannockburn
Zurbigg
Charlewood
COLOR SCALE
LEGEND
Instrument: SCINTREX EXVII MAG & BRGM OMNI-IV
Parameters Measured: Earth's total magnetic field
Accuracy: +/- 0.1 nano-teslas
Diurnals: Corrected by base station recorder
Contour Interval: 0,50,100,150,200,250,300,.....
Reference Field: 57,400 gammas
Datum Subtracted: 57,500 gammas
N
EXSICS EXPLORATION LTD.
P.O. Box 1660, P4N-7R1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone 705-267-4151
CLIENT: OUTOKUMPU MINES LTD
PROPERTY: BANNOCKBURN PROPERTY
TITLE: BANNOCKBURN TWP
MAGNETOMETER SURVEY
Date:Dec. 1997 | Scale: 1:5000 | NTS.
Drawn:P.Gauthier | Interp: J.C.Grant | Job No.: E-286

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use)
W9880.00245
Assessment Files Research Imaging

41P15NW2004 2.18365 BANNOCKBURN 900

y of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the to review the assessment work and correspond with the mining land holder. ıg Recorder, Ministry of Northern Development and Mines, 6th Floor,

Instructions: - For work performed on Crown Lands before **recording** a claim, use form 0240.
- Please type or print in ink.

2.18365

1. Recorded holder(s) (Attach a list if necessary)

Name	Client Number
Outokumpu Mines Ltd	178525
Address	Telephone Number
P.O. Box 1123	(705) 264-5024
Timmins, ON, P4N 7H9	Fax Number (705) 264-5067
Name	Client Number
Address	Telephone Number
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

☒ Geotechnical: prospecting, surveys, assays and work under section 18 (regs) ☐ Physical: drilling, stripping, trenching and associated assays ☐ Rehabilitation

Work Type	Office Use
Line Cutting Magnetic Survey	Commodity
	Total $ Value of Work Claimed 4,703
Dates Work Performed From 30 (Day) 11 (Month) 97 (Year) To 10 (Day) 12 (Month) 97 (Year) ✓	NTS Reference
Global Positioning System Data (if available) Township/Area: Bannockburn	Mining Division Larder Lake
M or G-Plan Number: M-207	Resident Geologist District Kirkland Lake

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	Telephone Number
John Grant, Exsics Exploration Ltd.	(705) 267-4151
Address	Fax Number
P.O. Box 1880, Timmins, ON P4N 7X1	
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

RECEIVED
APR 03 1998
GEOSCIENCE ASSESSMENT OFFICE

4. Certification by Recorded Holder or Agent

I, Paul Davis (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent		Date
Paul		April 1/98
Agent's Address	Telephone Number	Fax Number
P.O. Box 1123 Timmins, ON, P4N 7H9	(705) 264-5024	(705) 264-5067

0241 (02/96)

Deemed July 2/98

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous mining land must accompany this form.

2.18365

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
eg	TB 7827	16 ha	$26, 825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8, 892	$ 4,000	0	$4,892
1	1218720	1	658	1200 ✓	0	0
2	1218721	11	94	0	94 ✓	0
3	1218723	1	283	0	283 ✓	0
4	1218724	1	941	800	141 ✓	0
5	1218728	1	894	800	94 ✓	0
6	1218729	2	564	1600 ✓	0	0
7	1218730	1	470	0	470 ✓	0
8	1218732	11	423	0	423 ✓	0
9	1218736	1	376	0	73 ✓	303
10						
11						
12						
13						
14						
15						
		Column Totals	4703	4400	4400	303

I, Paul Davis (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
Paul	April 1/98

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- ☒ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp: RECEIVED APR 03 1998 GEOSCIENCE ASSESSMENT OFFICE

Deemed Approved Date	Date Notification Sent
Date Approved	Total Value of Credit Approved
Approved for Recording by Mining Recorder (Signature)	

0241 (02/96)

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use)
W9880.00245

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

2.18365

Work Type	Units of Work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Line Cutting	12.39 km	$265.00	3,283.00
Magnetic Survey	14.2 km	100.00	1,420.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
		Total Value of Assessment Work	4,703.00

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK × 0.50 = Total $ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, Paul Davis (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Project Geologist (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

RECEIVED
APR 13 1998
GEOSCIENCE ASSESSMENT OFFICE

Signature	Date
Paul	April 1, 1998

0212 (02/96)

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (705) 670-5881

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

June 16, 1998

Paul Davis
OUTOKUMPU MINES LTD.
PO box 1123
TIMMINS, ONTARIO
P4N 7H9

Dear Sir or Madam:

Submission Number: 2.18365

Status

Subject: Transaction Number(s): W9880.00245 Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at benetest@epo.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 12436

Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.18365

Date Correspondence Sent: June 16, 1998 **Assessor:** Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9880.00245	1218720	BANNOCKBURN	Approval	June 15, 1998

Section:
14 Geophysical MAG

Note, in subsequent submissions of this nature, please plot contours and raw data on separate maps. Otherwise, contours make raw data unreadable in anomalous areas.

Correspondence to:
Resident Geologist
Kirkland Lake, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):
Paul Davis
OUTOKUMPU MINES LTD.
TIMMINS, ONTARIO

Correspondence ID: 12436

TRIM LINE

TOS.M

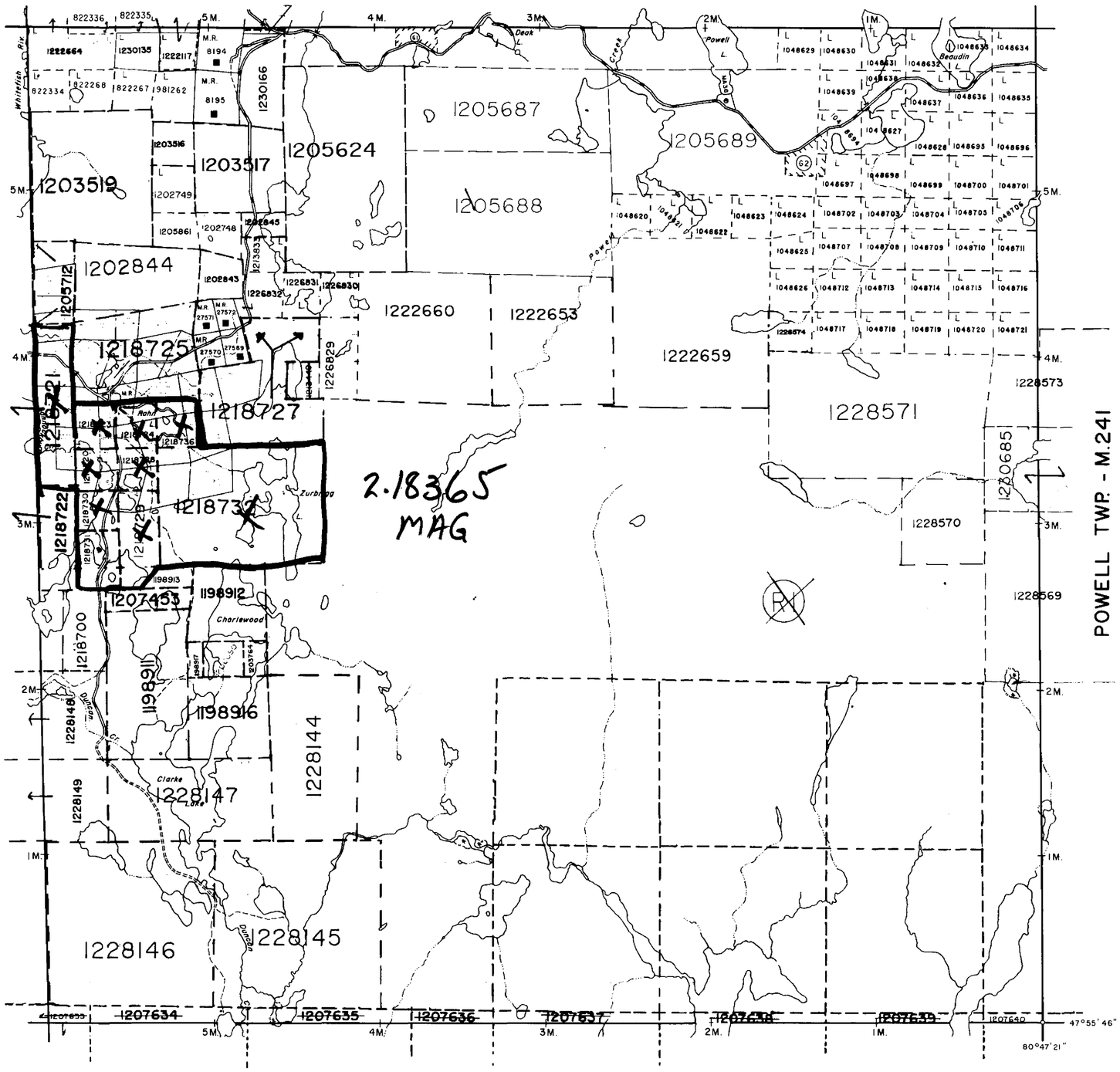
BANNOCKBURN

ARGYLE TWP. - M.203

MONTROSE TWP. - M.237

POWELL TWP. - M.241

DOON TWP. - M.217



THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

THE TOWNSHIP OF

BANNOCKBURN

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

DISPOSITION OF CROWN LANDS

PATENT, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LEASE, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LICENCE OF OCCUPATION

ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED C.

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

SAND AND GRAVEL

(G1) M.T.C. GRAVEL PIT 3F-25

(G2) M.T.C. GRAVEL PIT 1374

(R) ~~SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING, SECTION 36/80 ORDER NO. W-65/83~~

(RI) Mining & Surface Rights Reopened to prospecting, sale or lease. Order O-L-10195, previously withdrawn under Order W-65/83

NOTICE OF FORESTRY ACTIVITY

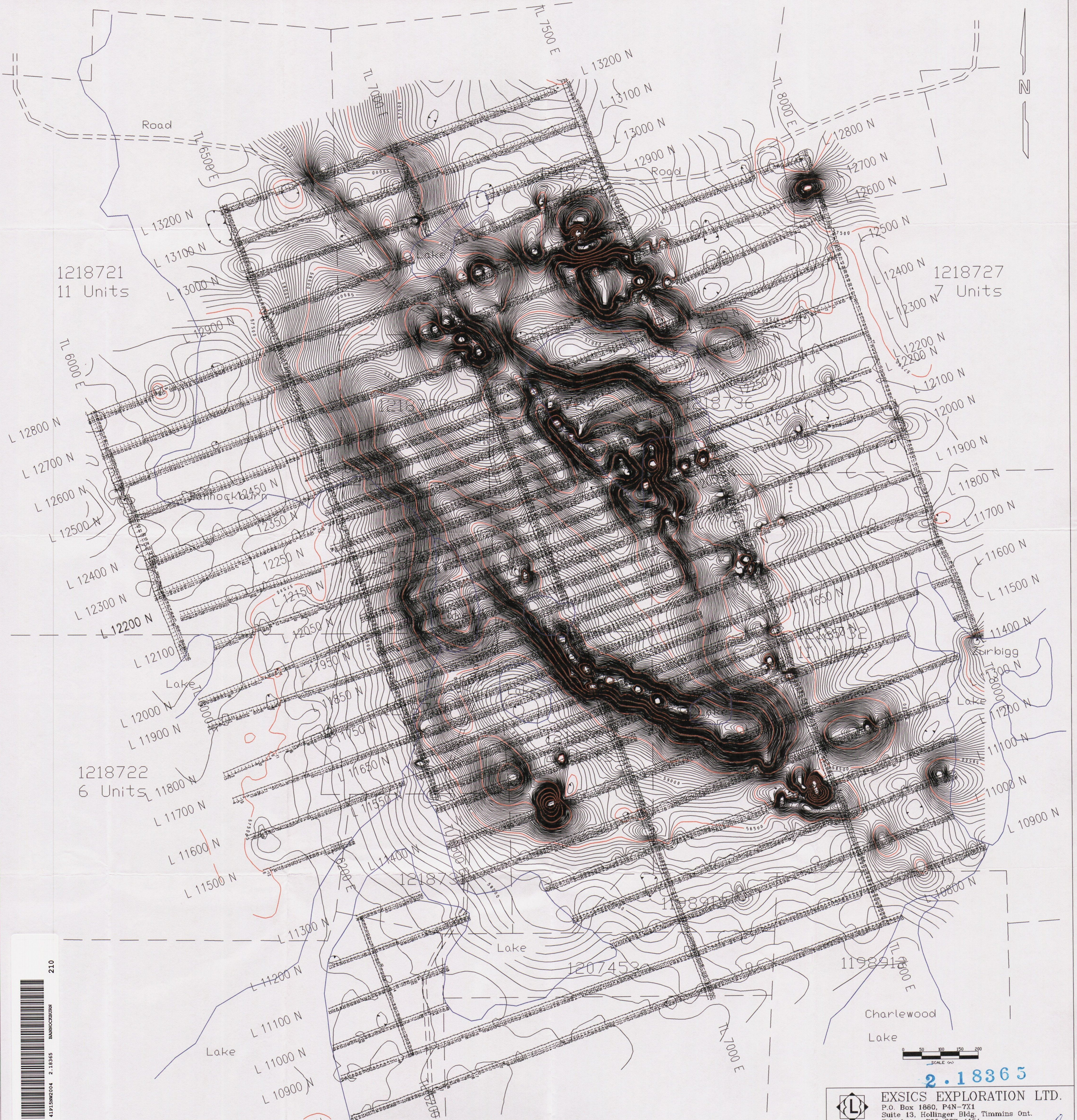
THIS TOWNSHIP / AREA FALLS WITHIN THE [illegible] FOREST
ELK LAKE MANAGEMENT UNIT

AND MAY BE SUBJECT TO FORESTRY OPERATIONS
THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT P.O. BOX 129
SWASTIKA, ONT.
P0K 1T0
705-642-3222

PLAN NO. M.207

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

ARCHIVED MARCH 24/95
CIRCULATED JANUARY 27, 1995



2.18365

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT:	OUTOKUMPU MINES LTD
PROPERTY:	BANNOCKBURN PROPERTY
TITLE:	BANNOCKBURN TWP MAGNETOMETER SURVEY

Date: Dec. 1997	Scale: 1:5000	NTS:
Drawn: P.Gauthier	Interp: J.C.Grant	Job No.: E-286

LEGEND
Instrument: SCINTREX ENVI MAG & BRGM OMNI-1V
Parameters Measured: Earth's total magnetic field
Accuracy: +/- 0.1 nano-teslas
Diurnals: Corrected by base station recorder
Contour Interval: 0,50,100,150,200,250,300,.......
Reference Field: 57,400 gammas
Datum Subtracted: 57,500 gammas

TL 7500 E
TL 7000 E ?
TL 8000 E
TL 6500 E
TL 6000 E
TL 5500 E
Road
L 13200 N
L 13100 N
L 13000 N
L 12900 N
L 12800 N
L 12700 N
L 12600 N
L 12500 N
L 12400 N
L 12300 N
L 12200 N
L 12100 N
L 12000 N
L 11900 N
L 11800 N
L 11700 N
L 11600 N
L 11500 N
L 11400 N
L 11300 N
L 11200 N
L 11100 N
L 11000 N
L 10900 N
L 10800 N
N
F
B
B
A
A
C
C
D
E
E
H
1218725
7 Units
1218721
11 Units
1218727
7 Units
1218726
1218724
1218736
1218720
1218728
1218730
1218732
11 Units
1218722
6 Units
1218729
2 Units
1218731
1198913
1207453
1198912
Lake
Creek
Bannockburn
Road
Zoarbigg
Charlewood
Lake
In-phase
Out-of-phase
Conductor Axis
MAX-MIN 11
0 50 100 150 200
SCALE (m)

LEGEND

Instrument: Apex Parametrics Max-Min 11
Mode: Maximum Coupled, Horizontal Loop Survey
Parameters Measured: Inphase (%)
Out of phase (%)
Frequency: 222 Hz
Coil Seperation: 120m
Operator: J. DerWeduwen
Profile Scale: 1cm=+/-20%

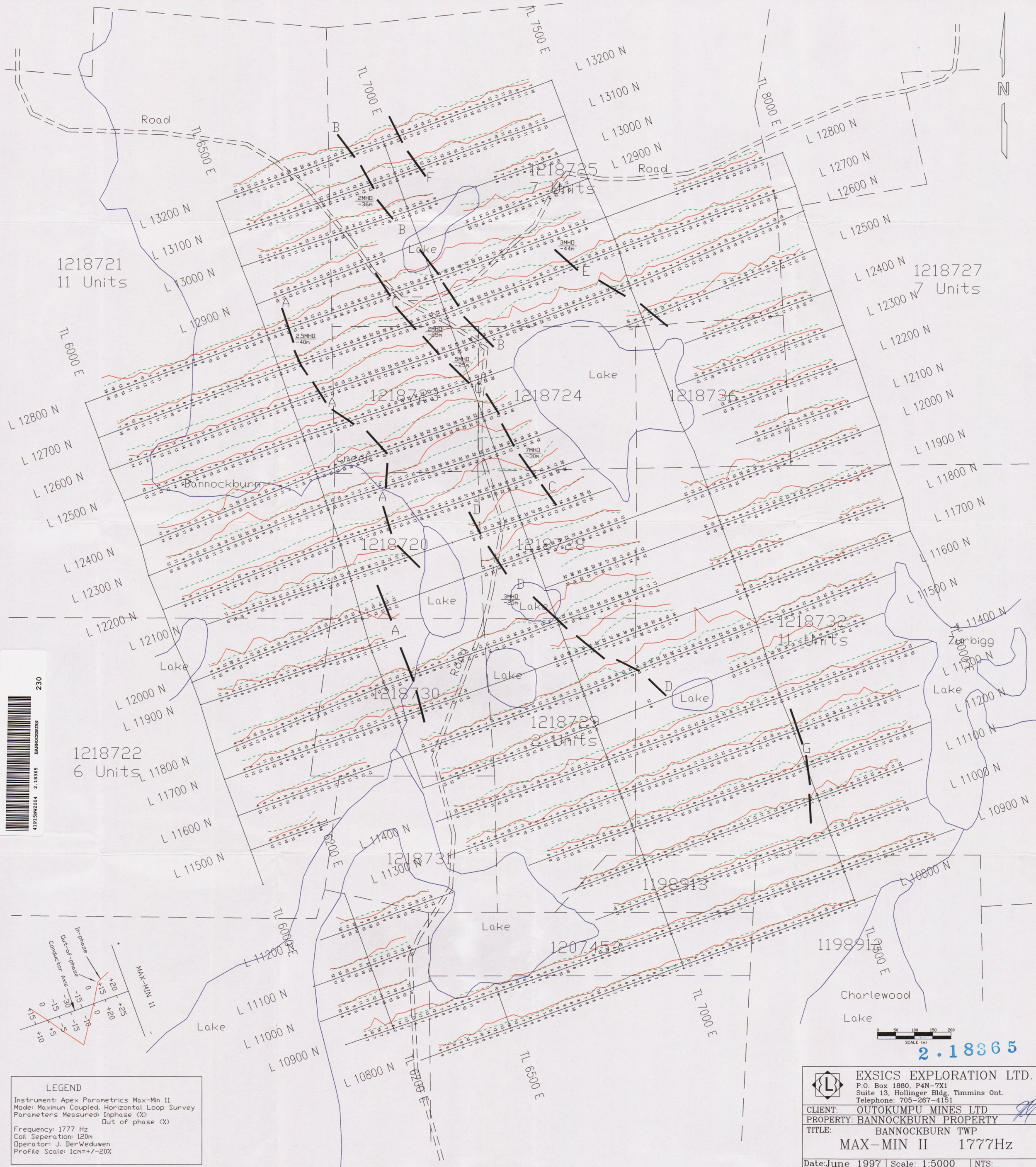
2.18365

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT: OUTOKUMPU MINES LTD
PROPERTY: BANNOCKBURN PROPERTY
TITLE: BANNOCKBURN TWP
MAX-MIN II 222Hz

Date:June 1997	Scale: 1:5000	NTS:
Drawn:P.Gauthier	Interp: J.C.Grant	Job No.:E-257

41P15NW2004 2.18365 BANNOCKBURN 220



LEGEND

Instrument: Apex Parametrics Max-Min 11
Mode: Maximum Coupled, Horizontal Loop Survey
Parameters Measured: Inphase (%)
Out of phase (%)
Frequency: 1777 Hz
Coil Seperation: 120m
Operator: J. DerWeduwen
Profile Scale: 1cm=+/-20%

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT: OUTOKUMPU MINES LTD
PROPERTY: BANNOCKBURN PROPERTY
TITLE: BANNOCKBURN TWP
MAX-MIN II 1777Hz

Date:June 1997	Scale: 1:5000	NTS:
Drawn:P.Gauthier	Interp: J.C.Grant	Job No.:E-257

2.18365

LEGEND

Instrument: Apex Parametrics Max-Min 11
Mode: Maximum Coupled, Horizontal Loop Survey
Parameters Measured: Inphase (%)
Out of phase (%)
Frequency: 3555 Hz
Coil Seperation: 120m
Operator: J. DerWeduwen
Profile Scale: 1cm=+/-20%

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT: OUTOKUMPU MINES LTD
PROPERTY: BANNOCKBURN PROPERTY
TITLE: BANNOCKBURN TWP
MAX-MIN II 3555Hz

Date: June 1997 | Scale: 1:5000 | NTS:
Drawn: P.Gauthier | Interp: J.C.Grant | Job No.: E-257