GEOPHYSICAL REPORT FOR AMADOQ COLDCORPORATION ON THE FRIPP PROPERTY FRIPP TOWNSHIPS PORCUPINE MINING DIVISION NORTHEASTERN, ONTARIO

# **2 · 3**7678



Prepared by: J. C. Grant, March, 2008



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# **INTRODUCTION:**

The services of Exsics Exploration Limited were retained by Mr. C. Hartley, on behalf of the Company, Andre Gold Corp., to complete a detailed total field magnetic survey that was done in conjunction with a VLF-EM survey over a cut grid, (the Fripp Property), that was cut across a portion of his claim holdings in Fripp Township. The cutting was completed by an independent line cutting contractor. Once the cutting was completed the grid was then covered by the magnetic and VLF-EM surveys that was completed by Exsics Exploration Limited.

# PROPERTY LOCATION AND ACCESS:

The Fripp Property is situated approximately 30 kilometers south-southwest of the City of Timmins. The entire claim block is situated in the central section of Fripp Township directly to the east of Bruce Lake. Fripp is part of the Porcupine Mining Division, Northeastern, Ontario. Refer to figures 1 and 2 of this report.

Access to the grid during the survey period is somewhat involved. Pine street runs south from the City of Timmins and continues south as an all weather gravel road that allows access to a number of lakes and cottages south of the City. One of these lakes is called Papakomeka Lake and just past the lake there is a gravel road that allows access to the center of Bruce Lake during the summer months. This same road allowed for good skidoo access to the center portion of the Fripp grid. Traveling time from Timmins to the grid is about 1.5 hours.

# CLAIM BLOCK:

The claim numbers that were covered by the geophysical survey are listed below.

# 4210218, 4210219, 4210220, 4210221, 4210222

Refer to figure 3 copied from MNDM Plan Map M-0281 of Fripp Township for the positioning of the grid and the claim number.







# PERSONNEL:

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

R. Bradshaw	Timmins, Ontario
E. Jaakkola	Timmins, Ontario

The work was completed under the direct supervision of J. C. Grant of Exsics.

# **GROUND PROGRAM**:

The ground program was completed in two phases. The first phase was to establish a detailed metric grid across the property. This was done by first establishing a base line from a point that was predetermined by the client that was the number 2 post of claim 4210219 and the number 3 post of claim 4210221. This point represented line 0+00 and the baseline. This baseline was then cut at an azimuth of 330 degrees to line 1400MN. Cross lines were then turned off perpendicular to this baseline at 100 meter intervals and all of the lines were cut to the creek that runs along the eastern edge of the grid. A tie line was also cut at 700ME parallel to the baseline to control the cross lines. All of these lines were chained with 25 meter picket intervals that had been metal tagged. Initially, 12.4 kilometers were cut with an additional 7.2 kilometers to be added as the surveys were in progress.

The initial 12.4 kilometers was then covered by a total field magnetic survey that was done in conjunction with a VLF-EM survey. The survey was completed using the Scintrex ENVI mag system. Specifications for this unit can be found as Appendix A of this report. The following parameters were kept constant throughout the survey.

Line spacing	100 meters
Station spacing	25 meters
Reading intervals	12.5 meters
Diurnal monitoring	base station recorder
Record interval	30 seconds
Reference field	57000 nT
Datum subtracted	56000 nT
VLF-EM transmitter	Cutler, Maine, 24.0kHZ
Parameters measured	Inphase and quadrature component, field strength and Tilt angle of
	the primary field
Parameters plotted	Inphase component

Once the surveys were completed the collected magnetic data was merged with the base station data, corrected and then plotted onto a base map at a scale of 1:2500. A datum of 56000nT has been removed from the readings for ease in plotting only. The plotted results were then contoured at 100 gamma intervals wherever possible. A copy of this colored contoured map is included in the back pocket of this report.

The VLF-EM data was plotted directly onto a base map at the same scale and the results were then profiled at 1cm=+/- 20%. Any and all conductor axis were then put on the map and will be correlated to the magnetic survey results. A copy of this profiled VLF map is also included in the back pocket of this report.

# MAGNETIC SURVEY RESULTS:

The magnetic survey was successful in outlining the geological characteristics of the grid area. The most predominant feature is a good broad magnetic high that generally strikes across the grid in a north to northeast direction from line 300MN at 300ME to at least line 1300MN at 500ME. The magnetic unit also appears to have been cut and or folded by at least three cross structures. The first cross structure pinches the zone on its' southern extension between line 300MN and 400MN and may have shifted the unit to the southwest.

The second cross structure may relate to a minor fault zone and or shear zone that has cut across the magnetic unit from line 700MN at 475ME to line 1000MN at 400ME. This structure may have faulted the main magnetic trend to the northeast.

A third cross structure may cut across the northern tip of the zone and generally follows line 1200MN. This structure appears to have split the tip of the mag high and shifted it to the north.

Another area of magnetic activity is the narrow magnetic high that lies between lines 500MN and 200MN at the eastern edge of the grid and along tie line 700ME. This unit also appears to have been faulted along its' southern tip by some minor faulting and or shearing which would suggest the zone continues off of the grid to the southwest.

The spot magnetic highs that can be followed from line 900MN at the base line to line 1400MN at 300ME may relate to a north striking dike like unit.

# VLF-EM SURVEY RESULTS:

The VLF-EM survey was also successful at locating and outlining at least three major conductive horizons across the survey area. Generally the zones parallel one another and relate to the edges of the magnetic high unit. The folding and or faulting of the zones' strike directions would also suggest that there are cross structures cutting across the main magnetic and EM structures.

One of the stronger VLF zones lies along the 700ME tie line and can be traced from line 900MN to 0+00 and it appears to continue off of the grid to the south. This zone correlates to the magnetic high trend between 1100MN and 700MN as well as the narrow magnetic high situated between 500MN and 200MN. This zone is also coincidental with and airborne EM conductor which appears on the governments' 1989 airborne of Fripp Township.

The VLF zone that strikes across lines 1100MN to 1400MN just west of the 700ME tie line that also continues off of the grid to the north relates to a moderate airborne anomaly.

The last main VLF zone generally strikes from line 1400MN to and including 0+00 and may relate to the edge of the magnetic high units in the vicinity. The southern and central portion of this zone correlates to a weak airborne anomaly.

# CONCLUSIONS AND RECOMMENDATIONS:

The ground program was successful in outlining and defining the geological structures of the grid area.

At the time of this report, the grid is being extended to the creek to the east. This will represent an additional 7.2 kilometers of grid lines which will be covered by the two surveys as well as an Induced Polarization ,(IP survey).

The magnetic high and the VLF EM zone situated between 500MN and 200MN just to the west of tie line 700ME correlates directly with a good airborne target and should be followed up with a detailed geological and possible MMI survey.

The VLF zone paralleling the tie line between 1100MN and 1400MN should also be Considered in the same follow up program as it also correlates to an airborne target.

The planned IP survey will also help with determining the source of these VLF-EM zones.

Respectfully submitted



J. C. Grant March, 2008

# **CERTIFICATION**

I, John Charles Grant, of 108 Kay Crescent, in the City of Timmins, Province of Ontario, hereby certify that:

- I am a graduate of Cambrian College of Applied Arts and Technology, 1975, Sudbury Ontario Campus, with a 3 year Honors Diploma in Geological and Geophysical Technology.
- I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited, (5 years, 1975 to 1980), and currently as Exploration Manager and Chief Geophysicist for Exsics Exploration Limited, since May, 1980.
- 3). I am a member in good standing of the Certified Engineering Technologist Association, (CET), since 1984.
- 4). I am in good standing as a Fellow of the Geological Association of Canada, (FGAC), since 1986.
- 5). I have been actively engaged in my profession since the 15<sup>th</sup> day of May, 1975, in all aspects of ground exploration programs including the planning and execution of field programs, project supervision, data compilation, interpretations and reports.
- 6). I have no specific or special interest nor do I expect to receive any such interest in the herein described property. I have been retained by the property holders and or their Agents as a Geological and Geophysical Consultant and Contract Manager.

John Charles Grant, CET., FGAC.



APPENDIX A

# SCINTREX ENVI-MAG Environmental Magnetometer/Gradiometer

Stan Walt

# Locating Buried Drums and Tanks?

The ENVI-MAG is the solution to this environmental problem. ENVI-MAG is an inexpensive, lightweight, portable "WALKMAG" which enables you to survey large areas quickly and accurately. ENVI-MAG is a portable, proton precession magnetometer and/or gradiometer, for geotechnical, archaeological and environmental applications where high production, fast count rate and high sensitivity are required. It may also be used for other applications, such as mineral exploration, and may be configured as a total-field magnetometer, a vertical gradiometer or as a base station.

# The 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 (sometimes known as "Walking Mag") is user-selectable from the keyboard. In this mode, data is acquired and recorded at the rate of 2 readings per second as the operator walks at a steady pace along a line. At desired intervals, the operator "triggers" an event marker by a single key stroke, assigning coordinates to the recorded data.

# **True Simultaneous Gradiometer**

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

# Selectable Sampling Rates

0.5 second, 1 second and 2 second reading rates user selectable from the keyboard.

# 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 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

# 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

# Rechargeable Battery and Battery Charger

An "off-the-shelf" lead-acid battery and charger are provided as standard. The low-cost "Carncorder" 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

Supolied 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

# 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, Leadacid 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

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 dotmatrix 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

#### **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

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