## **GEOPHYSICAL REPORT FOR**

## INTERNATIONAL EXPLORERS AND PROSPECTORS INC.

ON THE

## LOVELAND PROPERTY

LOVELAND TOWNSHIP PORCUPINE MINING DIVISION NORTHEASTERN, ONTARIO

2.54194

Prepared by: J. C. Grant,

July 2013

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## **INTRODUCTION:**

The services of Exsics Exploration Limited were retained by Mr. Bonhomme, on behalf of the Company, International Explorers and Prospectors Inc., to complete a total field magnetic survey that was done in conjunction with a VLF-EM survey over a compass paced and flagged grid that was first established over a portion of their claim holdings in Loveland Township, The Loveland Property.

## **PROPERTY LOCATION AND ACCESS:**

The Loveland Property is situated approximately 32 kilometers northwest of the City of Timmins. The entire claim block is situated in the southeast section of Loveland Township and the Kamiskotia River runs north to northwest across the central section of the claim block. The Abitibi access road lies about 1.0 kilometers to the west of the claim block. Loveland Township is part of the Porcupine Mining Division in Northeastern, Ontario. Refer to Figures 1 and 2 of this report.

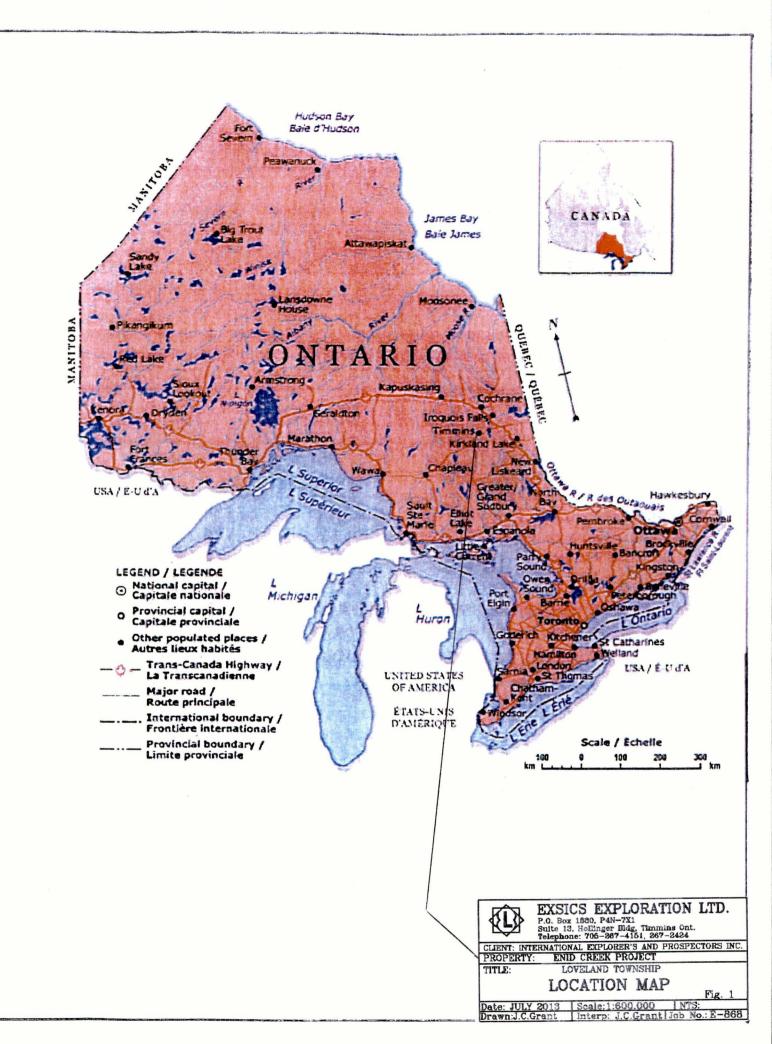
Access to the grid during the survey period was ideal. Highway 101 travels west from Timmins and crosses the south end of the Kamiskotia highway about 6 kilometers to the west of the City core. The Kamiskotia highway runs northwest from 101 to the community of Kamiskotia that is about 22 kilometers off of 101. There is a good gravel road locally called the Abitibi access road that runs north off of this highway just to the north of Kamiskotia and cuts through Robb and continues to the north and through Loveland Township. About 9.0 kilometers along this gravel road there is a second gravel road that runs east to southeast for 1.22 kilometers to one ATV trail that cuts across the northwest and central west section of the grid area. Continuing for an additional 1.0 kilometers along this secondary gravel road will bring one to a second ATV trail that cuts across the southwest and southern section of the grid area. Traveling time from Timmins to the grid is about 70 minutes.

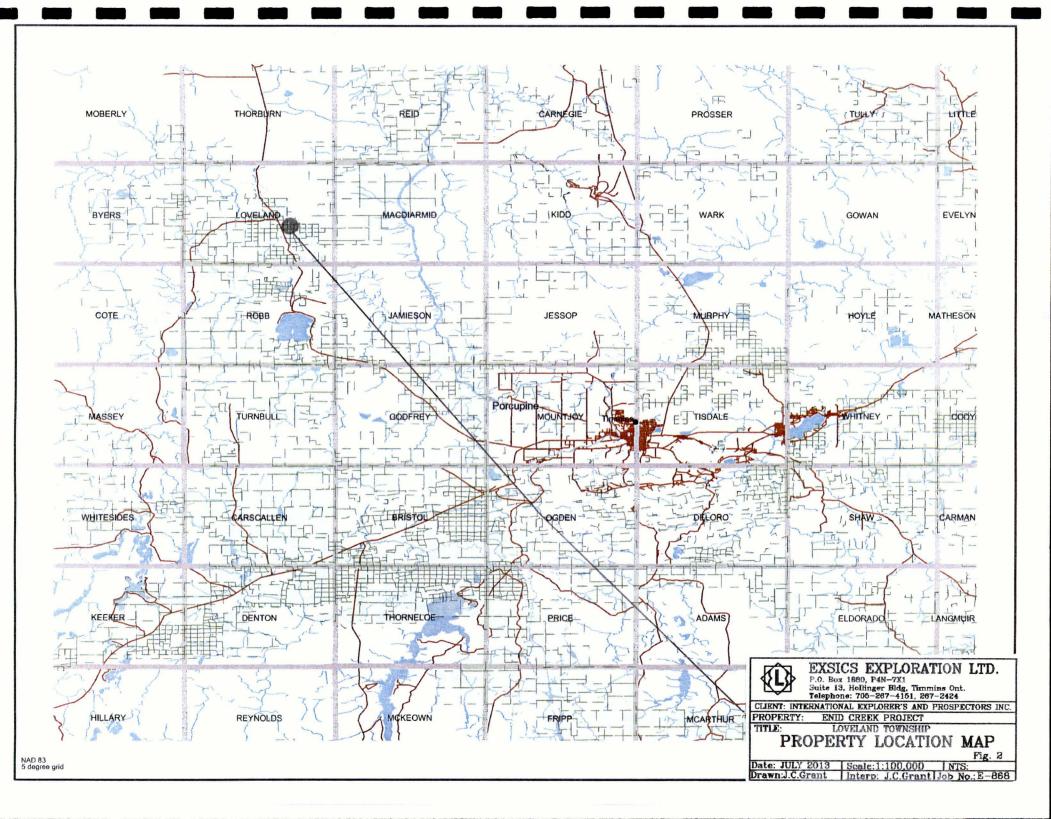
## **CLAIM BLOCK:**

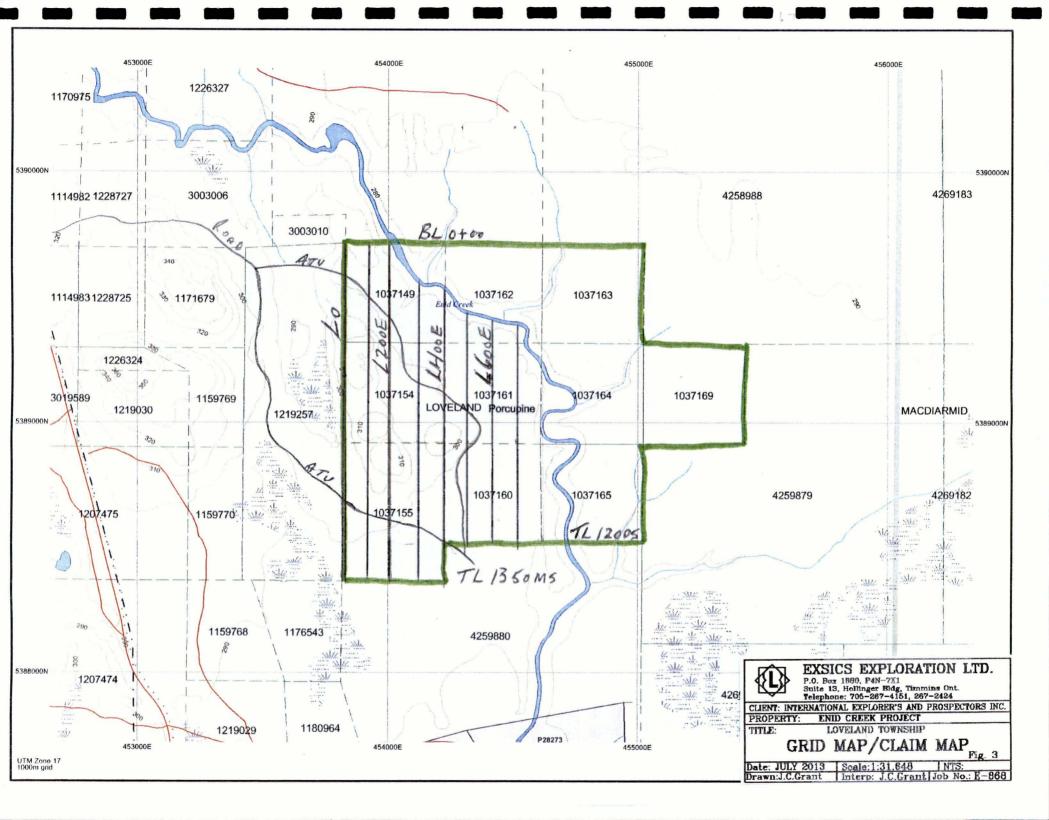
The claim numbers that were covered by the present geophysical survey are listed below. All of the claims represent single units.

1037149, 1037154, 1037155, 1037160, 1037161, 1037162, 1037162, 1037163, 1037164, 1037165, 1037169

Refer to Figure 3 copied from MNDM Plan Map, M-0293 of Loveland Townships for the positioning of the grid and the claim number within the Township.







## **PERSONNEL:**

The field crew directly responsible for the collection of all the raw survey data was R. Bradshaw and J. Francoeur of Timmins, Ontario. The plotting, interpretation and report was completed by J. C. Grant of Exsics Exploration Limited.

## **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 using a hand held GPS unit to control the compass and paced flagged grid that was to be completed across the claim block. The grid was started at the number four post of 1037149 and was called line 0+00, base line. The base line was flagged east to the river and then lines 0, 100ME and 200ME were compassed paced and flagged to tie line 1350MS that represented the southern boundary of the claim block. Lines 300ME and 400ME were then turned off of the 1350MS tie line and were flagged north to the river edge. Lines 500ME to 700ME were then turned off of a second flagged tie line at 1200MS and they too were flagged to the river edge.

All of the cross lines and tie line were then chained with 25 meter flags. In all, a total of 9.1 kilometers of grid lines were compassed, paced and flagged across the western section of the claim block and 8.2 kilometers of cross lines were covered by the magnetic and VLF-EM surveys between July 3<sup>rd</sup> and the 6<sup>th</sup> of 2013.

The total field magnetic and VLF-EM surveys were 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.

### **MAGNETIC 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 56500 nT

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 1:5000. A datum of 56000nT has been removed from the readings for ease in plotting only. The plotted results were then contoured at 50 gamma intervals wherever possible. A copy of this colored contoured map is included in the back pocket of this report.

### **VLF-EM SURVEY:**

Line spacing 100 meters
Station spacing 25 meters
Reading intervals 12.5 meters

Transmitting station Cutler, Maine at 24.0Khz
Transmitting direction 115 degrees to the grid.

Parameters measured In Phase and Quadrature components of the secondary field

Once the surveys were completed the collected data was then plotted onto a base map at a scale of 1:5000. The data was then profiled at 1cm=+/- 30% and any and all conductor axis were then placed on the map. A copy of this profiled map is included in the back pocket of this report.

## **PROPERTY GEOLOGY:**

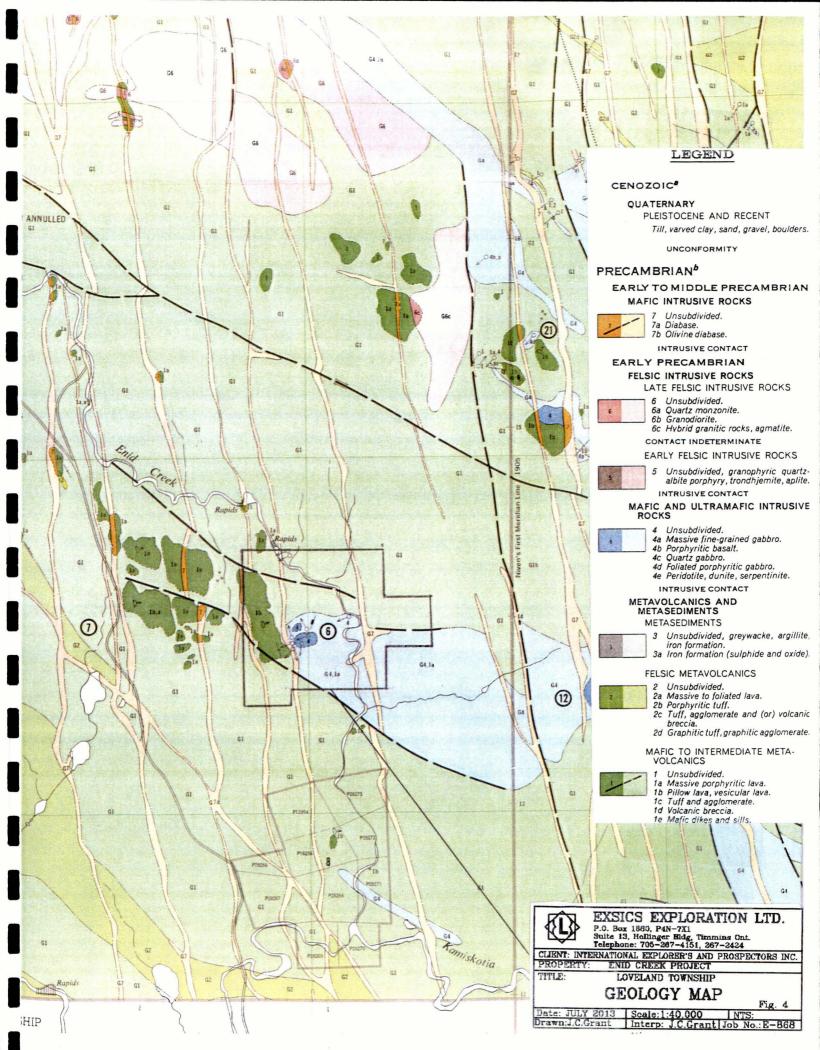
Generally the property is underlain by mafic to intermediate metavolcanics that has been intruded by northwest to southeast striking ultramafic intrusives that appears to be fault controlled. That is there appears to be two northwest striking faults that cut across the grid and they also seem to define the north and southern limits of the intrusive as well. These two faults also seem to have offset a series of north-south striking diabase dikes that cut across the grid area also. Refer to Figure 4 copied from Map 2288 of Loveland and MacDiarmid Townships for the location of these cross structures and geology.

## **MAGNETIC SURVEY RESULTS:**

The magnetic survey was successful in locating and outlining the geological characteristics of the grid area. The most predominant features on the grid are the two parallel narrow magnetic highs that generally strike north to slightly northwest across the western and central section of the grid between lines 300ME and 0+00. These structures correlate to mapped diabase dike like units that are readily visible on the geology map, Figure 4. Both of the dikes in turn have been cross cut by two northwest striking faults that have offset the strike of the dikes. The southern fault is easily visible as a narrow magnetic low cross cutting the eastern dike between lines 200ME and 300ME at 700MS to 800MS. This fault can be followed to the northwest and seems to cross the western dike at line 0+00/450MS and then continues off of the grid to the northwest. The southeast extension of the fault can be followed from 300ME to 700ME at the southern end of the line. This southern fault is thought to represent the southern contact of the ultramafic intrusive unit that is pushing into the grid from the southeast.

The second fault strikes across the northern section of the grid and generally parallels the strike of Enid Creek. This fault has offset the northern tip of the eastern dike and was noted at the northern tip of line 200ME. The fault continues off of the grid in both directions.

The narrow magnetic high that strikes into the grid from the east can be followed as far as line 450ME where it seems to have been cut off by the southern fault. This magnetic high may represent a splay off of the dike that runs north-south just to the east of Enid Creek, Figure 4.



## **VLF-EM SURVEY RESULTS:**

The VLF-EM survey outlined at least three good strong conductive trends across the survey area. The first is a strong, east to slightly northeast zone that can be followed from line 100ME at 1200MS to line 500ME 975MS at which point it seems to terminate at the southern fault. The zone cross cuts the eastern dike at its southern tip. This zone appears to dip to the north-northwest.

Another zone lies between 200ME at 575MS and 500ME at 500MS. This zone also cross cuts the eastern dike on its western tip but then correlates to a modest low along its central and eastern extension. The zone may correlate to the northern contact of the ultramafic intrusive unit.

The last of the strong zones can be followed from line 200ME at 300MS to 700ME at 500MS and seems to parallel the strike of the northern fault. This zone appears to dip near vertical.

The sharp one line zone located at line 0 at 100MS appears to correlate to the northern fault as it cuts across the grid and off of the property to the northwest.

## **CONCLUSIONS AND RECOMMENDATIONS:**

The ground surveys were successful in locating and outlining the geological characteristics of the grid. The dike are the most predominant features as well as the two northwest striking faults that have offset both dikes.

The property has been worked in the past and has been drilled tested by a number of holes that were positioned generally along the eastern edge of the eastern dike where the ultramafic comes in contact with the dike. Hollinger Consolidated Gold Mines Ltd. Completed geophysical surveys and about 9000 feet, (2740 meters) of drilling over their Enid Creek Prospect between 1957 and 1966. One of the drill holes returned nickel and copper assays ranging from 1.144% nickel and 0.5% copper to 0.207% nickel and 0.25% copper of 10 feet, (3.04 meters). A second hole 200 feet south-southwest of the above hole averaged 0.36% nickel and 0.43 copper over 22 feet, (6.7 meters) and 1.12% nickel and 0.5% copper over 2 feet, (0.61 meters), ODM Files, T-640 and T-794, Timmins. Refer to Figure 4 for the drill hole locations.

A follow up program of deeper penetrating surveys would help in better defining the VLF-EM conductors in the event diamond drilling is to be considered in the future.

Respectfully submitted

J. C. Grant July 2013.

## **CERTIFICATION**

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

- 1). 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.
- 2). 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

# ENVI-MAG Environmental Magnetometer/Gradiometer

## 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

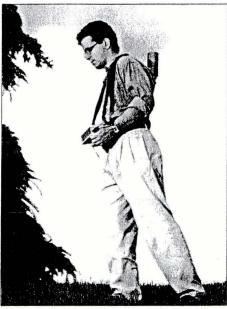
- easily detects buried drums to depths of 10 feet or more
- more sensitive to the steel of a buried drum than EM or radar
- · much less expensive than EM or radar
- survey productivity much higher than with EM or radar

#### 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.

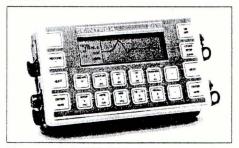
## True Simultaneous Gradiometer

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

## 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
- 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

## 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, 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

#### 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)

## EGMISIN

#### 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

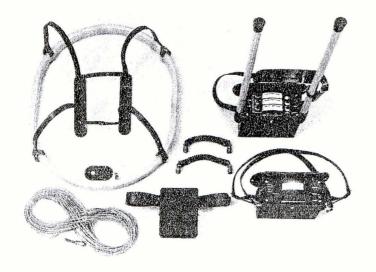
(716) 298-1219 (x: (716) 298-1317



## MAXMIN II PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- © Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.







#### SPECIFICATIONS:

Fraguencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation: MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer cable.

> MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.

> V.L.: Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coll Separations: 25,50,100,150,200 & 250m (MMI) or 100, 200, 300, 400,600 and

800 ft. (MMIF).

Coil separations in V.L. mode not restricted to fixed values.

Parameters Read: - In-Phase and Quadrature components of the secondary field in MAX and MIN modes.

> - Tilt-angle of the total field in V.L. mode.

Headouts:

- Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.

- Tilt angle and null in 90 mm edgewise meters in V.L.mode.

Scale Hanges:

±20%, ±100% by push-In-Phase:

button switch.

Quadrature: #20%, #100% by push-

button switch.

±75% slope.

Null (V.L.): Sensitivity adjustable

by separation switch.

Headability:

In-Phase and Quadrature: 0.25 % to 0.5%; Tilt: 1%.

Repeatability:

±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

Transmitter Output: -

222Hz : 220 Atm<sup>2</sup> 444Hz : 200 Atm<sup>2</sup> 888 Hz: 120 Atm<sup>2</sup> - 1777Hz : 60 Atm<sup>2</sup> - 3555Hz : 30 Atm<sup>2</sup>

Placeiver Battaries: 9V trans. radio type batteries (4) Life: approx. 35 hrs. continuous du ty (alkaline, 0.5 Ah), less in cold weather.

Transmirrer

Satteries:

12V 6Ah Gel-type rechargeable battery. (Charger supplied)

Meference Cable:

Light weight 2-conductor teflor cable for minimum friction. Unshield ed. All reference cables optional at extra cost. Please specify

Voice Link:

Built-in intercom system for voice communication between re ceiver and transmitter operators in MAX and MIN modes, via re ference cable.

Indicator Lights:

Built-in signal and reference warn ing lights to indicate erroneous

readings.

Temperature Mange: -40°C to +60°C (-40°F to +140°F)

Maceiver Weight: 6kg (13 lbs.)

Transmitter Weight: 13kg (29 lbs.)

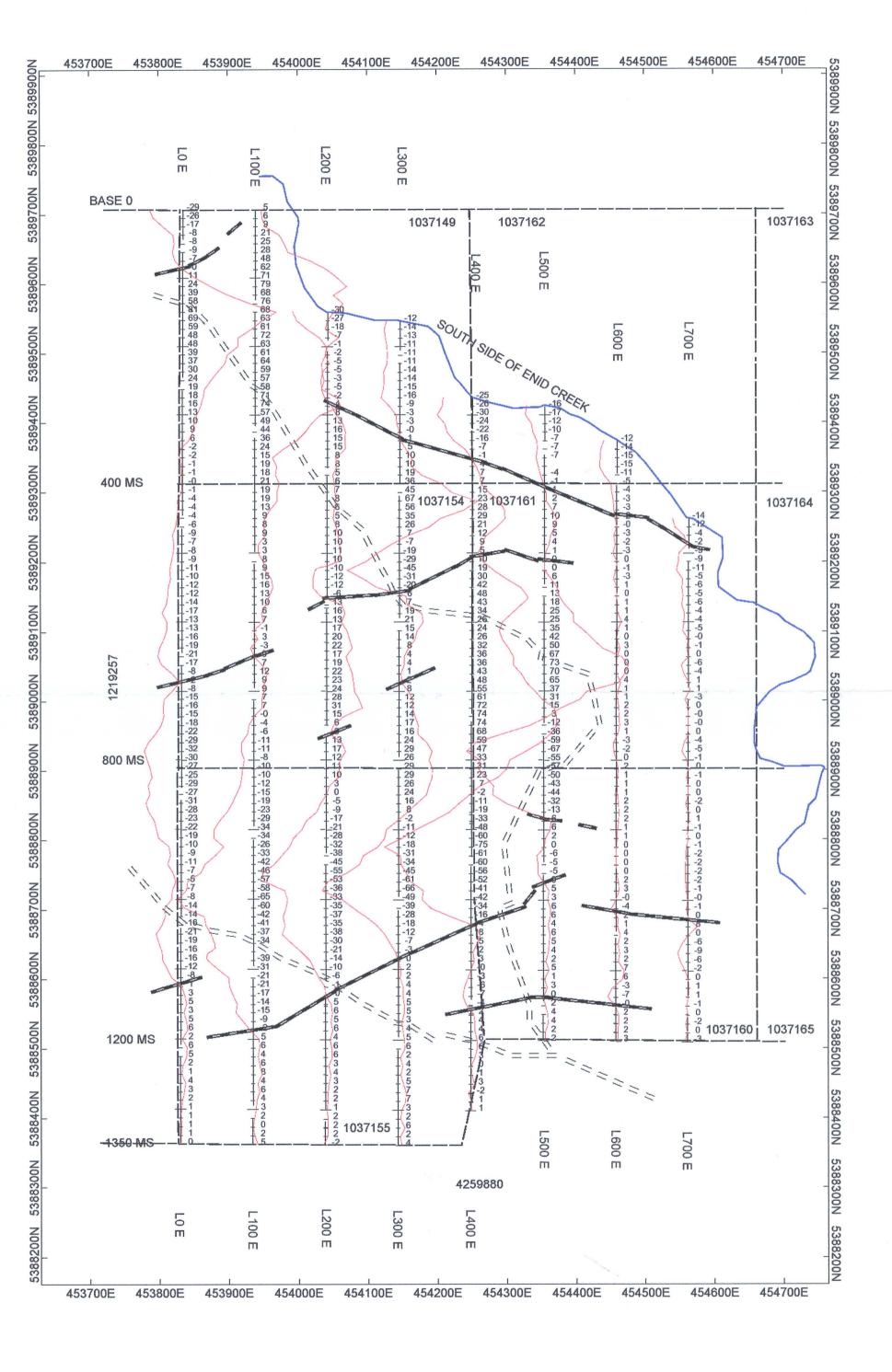
Weight: Typically 60kg (135 lbs.), depend ing on quantities of reference cable and batteries included Shipped in two field/shipping cases

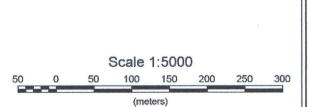
Specifications subject to change without notification



PAFANETRICS As IVI I for Land 200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: 06-966773 NORDVIK TOR





NAD83 / UTM zone 17N

# INTERNATIONAL EXPLORERS & PROPSPECTORS INC LOVELAND PROJECT, ENID CREEK GRID

VLF-EM SURVEY, CUTLER, MAINE, 24.0kHZ SCINTREX ENVI MAG SYSTEM PROFILED: 1CM=+/- 30%

JULY 2013 EXSICS EXPLORATION LIMITED E-868

