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**CANADIAN EXPLORATION SERVICES LTD**

**BATTERY MINERAL RESOURCES  
LIMITED**

**Q2406c – Gowganda Project  
Magnetometer Survey**

**C Jason Ploeger, P.Geo. – August 23, 2017**



### **Abstract**

CXS was contracted by Battery Mineral Resources Limited to perform a magnetometer survey over a portion of the Gowganda Project. Approximately 2 line kilometers of magnetic traverse were performed.

The magnetic survey indicates the presence of two magnetic units. Within these units two magnetic anomalies of note were identified.

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## 1. SURVEY DETAILS

### 1.1 PROJECT NAME

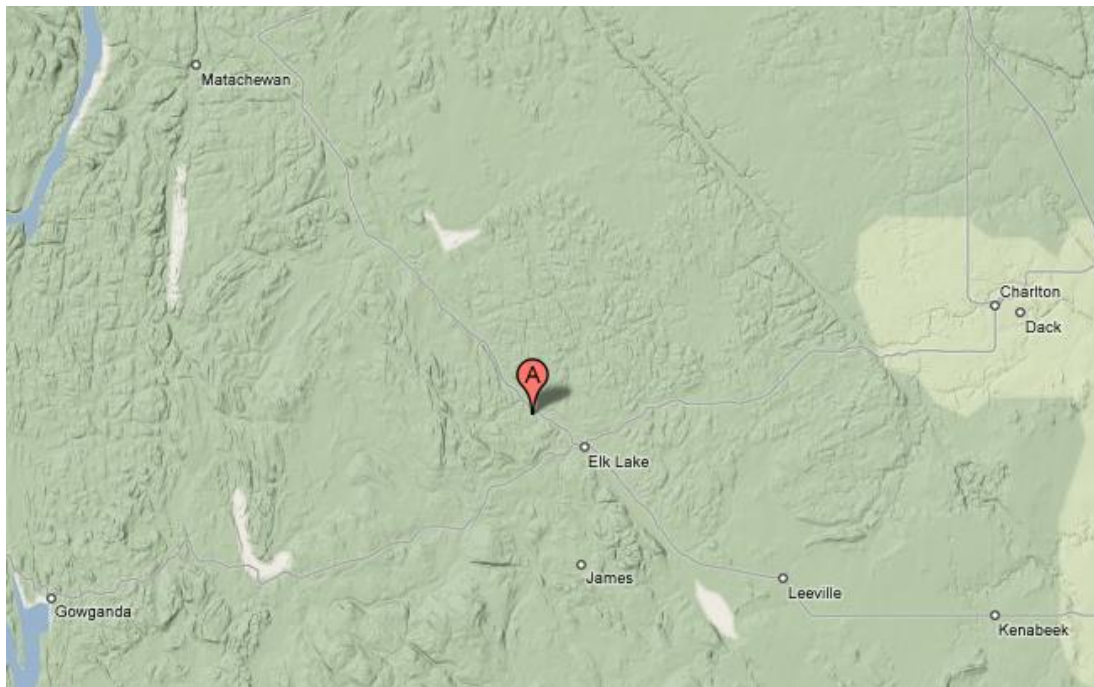
This project is known as the Gowganda Project - Nicol.

### 1.2 CLIENT

Battery Mineral Resources Limited  
Level 36  
Governor Phillip Tower  
1 Farer Place  
Sydney  
Australia

### 1.3 LOCATION

The Gowganda Property is, located in Nicol Township approximately 4 km east of Gowganda, Ontario. The survey area covers part of claim numbered 4227308 located in Nicol Township, within the Larder Lake Mining Division.



**Figure 1: Location of the Gowganda Property**

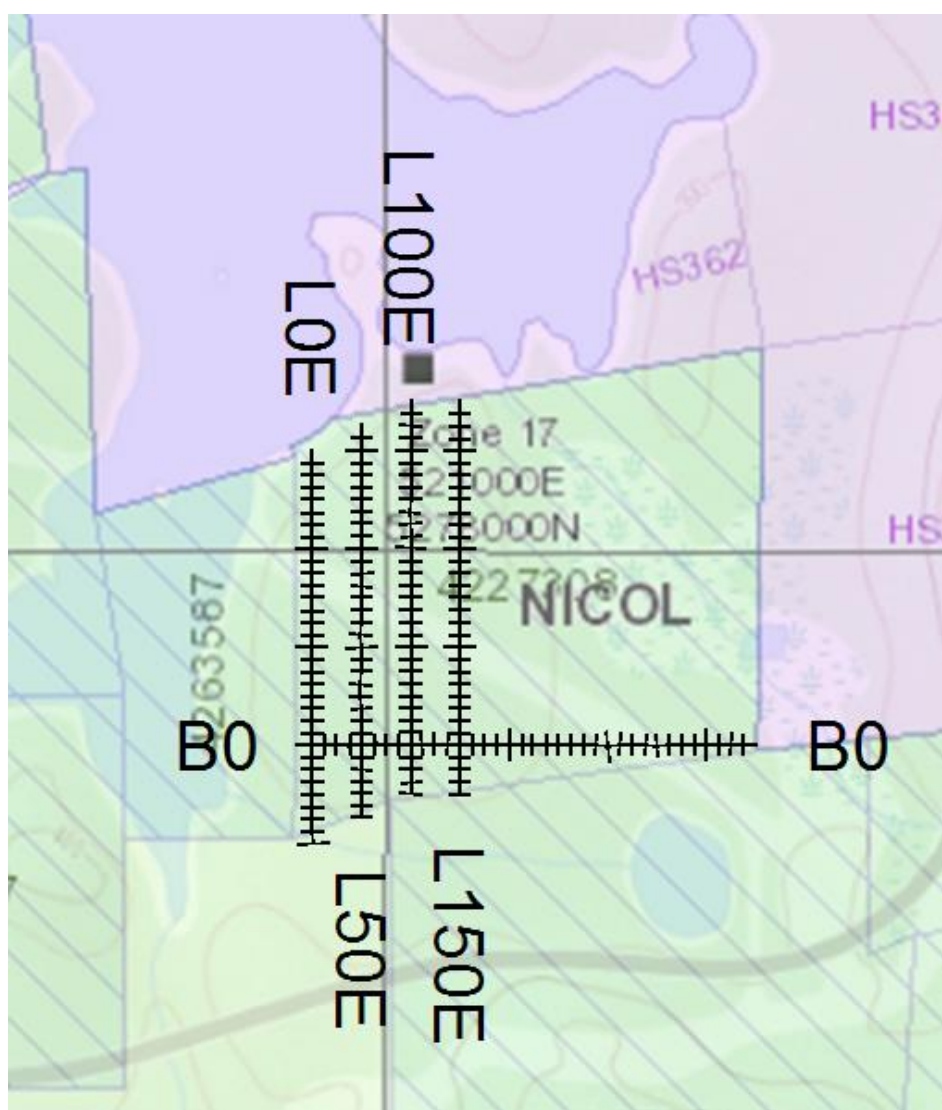
### 1.4 ACCESS

Access to the property was attained with a 4x4 truck along highway 65. The truck

was parked on the highway 4 kilometers east of Gowganda. The final 150 meters to the property was traversed by foot.

### 1.5 SURVEY GRID

The traversed lines were established using a GPS in conjunction with the execution of the survey. The GPS operator would establish sample locations while remaining approximately 12.5m in front of the magnetometer operator. GPS waypoints, magnetic samples were taken every 12.5m along these controlled traverses. The GPS used was a Garmin GPSMAP 62s with an external antenna for added accuracy.



**Figure 2: Claim Map with Gowganda Traverses**

## 2. SURVEY WORK UNDERTAKEN

### 2.1 SURVEY LOG

Date	Description	Line	Min Extent	Max Extent	Total Survey (m)
August 17, 2017	Locate survey area and begin magnetometer survey.	0	100S	300N	400
		50E	75S	325N	400
		100E	50S	350N	400
		150E	50S	350N	400
		0N	0	450E	450

**Table 1: Survey Log**

### 2.2 PERSONNEL

Patrick McGuinty of Pickering, Ontario conducted all the magnetic data collection while Claudia Moraga of Britt, Ontario was responsible for the GPS control and GPS waypoint collection.

### 2.3 SURVEY SPECIFICATIONS

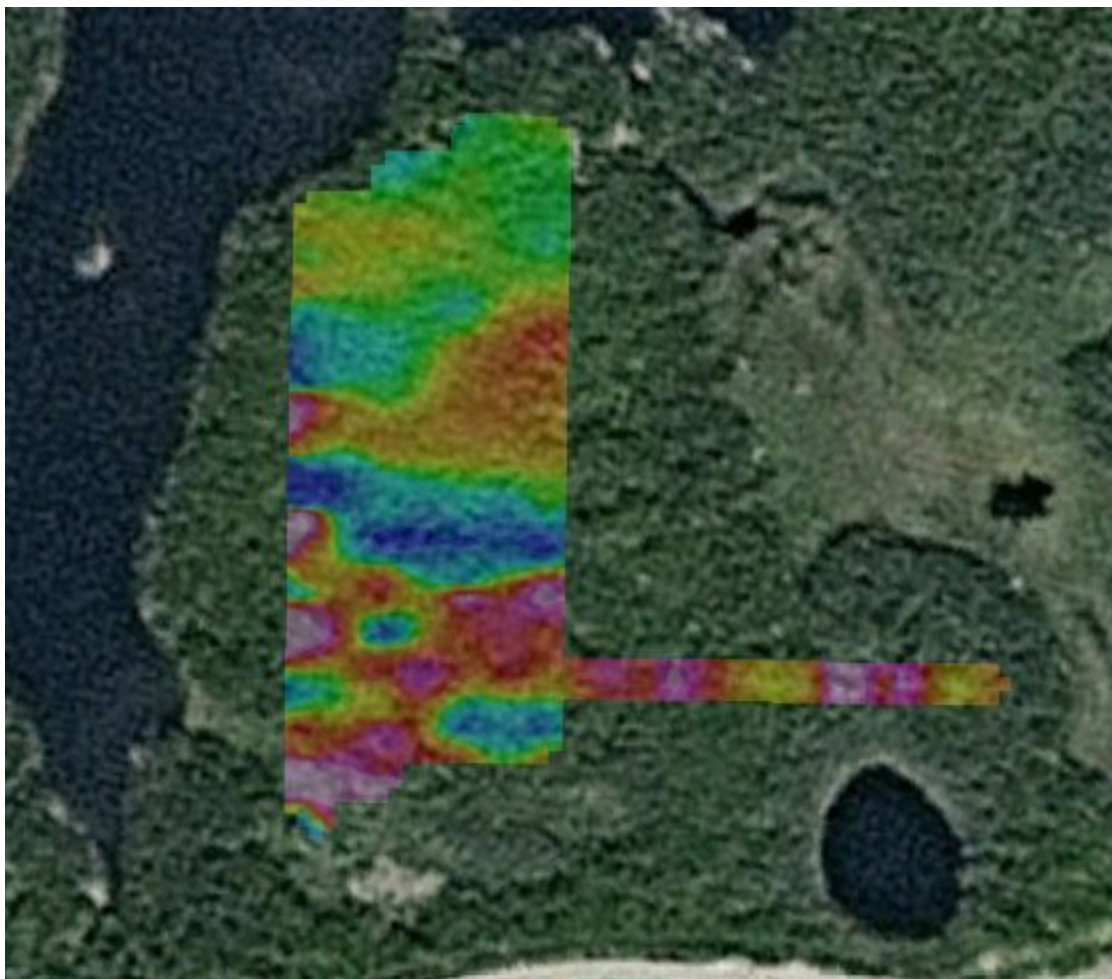
The survey was conducted with a GSM-19 v7 Overhauser magnetometer with a second GSM-19 magnetometer for a base station mode for diurnal correction.

A total of 2.05 line kilometers of magnetometer was read over the Gowganda Project on August 17, 2017. This consisted of 164 magnetometer samples taken at a 12.5 metre sample interval.



### 3. OVERVIEW OF SURVEY RESULTS

#### 3.1 SUMMARY



**Figure 3: Magnetometer Plan on Google Earth**

The survey covered a portion of claim number 4227308 which falls within the Gowganda Project. The magnetometer crew did not report any culture on the property.

The magnetic signature indicates the presence of two magnetic units with the southern magnetic signature dipping to the north below the northern unit.

The southern unit appears to have strong magnetic variations which is a similar signature to that of the Nipissing Diabase sills in the region. This magnetic signature appears to dip to the north below the northern magnetic signature near 100N across the survey area. At this location a magnetic low signature exists. This may represent an strong alteration system. Between lines 0E and 50E it appears that a north south offset occurs within the dataset. This indicates the presence of a structural feature crossing the survey area. The interaction between the possible east-west al-



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teration pattern and the structural feature may be an ideal target for additional exploration.

The northern magnetic signature resembles that of a volcanic unit. A magnetically elevated region can be seen over lines 0E and 50E near 300N. This area may indicate alteration with a magnetite enrichment. I would recommend prospecting this area to determine the source of this anomaly.

## APPENDIX A

### STATEMENT OF QUALIFICATIONS

I, C. Jason Ploeger, hereby declare that:

1. I am a professional geophysicist with residence in Larder Lake, Ontario and am presently employed as a Geophysicist and Geophysical Manager of Canadian Exploration Services Inc. of Larder Lake, Ontario.
2. I am a Practising Member of the Association of Professional Geoscientists, with membership number 2172.
3. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.
4. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.
5. I am a member of the Ontario Prospectors Association, a Director of the Northern Prospectors Association and a member of the Society of Exploration Geophysicists.
6. I do not have nor expect an interest in the properties and securities of **Battery Mineral Resources Limited**.
7. I am responsible for the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.



C. Jason Ploeger, P.Geo., B.Sc.  
Geophysical Manager  
Canadian Exploration Services Inc.

Larder Lake, ON  
August 23, 2017

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## APPENDIX B

### THEORETICAL BASIS AND SURVEY PROCEDURES

#### TOTAL FIELD MAGNETIC SURVEY

Base station corrected Total Field Magnetic surveying is conducted using at least two synchronized magnetometers of identical type. One magnetometer unit is set in a fixed position in a region of stable geomagnetic gradient, and away from possible cultural effects (i.e. moving vehicles) to monitor and correct for daily diurnal drift. This magnetometer, given the term 'base station', stores the time, date and total field measurement at fixed time intervals over the survey day. The second, remote mobile unit stores the coordinates, time, date, and the total field measurements simultaneously. The procedure consists of taking total magnetic measurements of the Earth's field at stations, along individual profiles, including Tie and Base lines. A 2 meter staff is used to mount the sensor, in order to optimally minimize localized near-surface geologic noise. At the end of a survey day, the mobile and base-station units are linked, via RS-232 ports, for diurnal drift and other magnetic activity (ionospheric and spheric) corrections using internal software.

For the gradiometer application, two identical sensors are mounted vertically at the ends of a rigid fiberglass tube. The centers of the coils are spaced a fixed distance apart (0.5 to 1.0m). The two coils are then read simultaneously, which alleviates the need to correct the gradient readings for diurnal variations, to measure the gradient of the total magnetic field.

## APPENDIX C

### GSM 19



### Specifications

#### Overhauser Performance

Resolution: 0.01 nT  
Relative Sensitivity: 0.02 nT  
Absolute Accuracy: 0.2nT  
Range: 20,000 to 120,000 nT  
Gradient Tolerance: Over 10,000nT/m  
Operating Temperature: -40°C to +60°C

#### Operation Modes

Manual: Coordinates, time, date and reading stored automatically at min. 3 second interval.  
Base Station: Time, date and reading stored at 3 to 60 second intervals.  
Walking Mag: Time, date and reading stored at coordinates of fiducial.  
Remote Control: Optional remote control using RS-232 interface.  
Input/Output: RS-232 or analog (optional) output using 6-pin weatherproof connector.

#### Operating Parameters

Power Consumption: Only 2Ws per reading. Operates continuously for 45 hours on standby.  
Power Source: 12V 2.6Ah sealed lead acid battery standard, other batteries available  
Operating Temperature: -50°C to +60°C

#### Storage Capacity

Manual Operation: 29,000 readings standard, with up to 116,000 optional.  
With 3 VLF stations: 12,000 standard and up to 48,000 optional.  
Base Station: 105,000 readings standard, with up to 419,000 optional (88 hours or 14 days uninterrupted operation with 3 sec. intervals)  
Gradiometer: 25,000 readings standard, with up to 100,000 optional. With 3 VLF stations: 12,000, with up to 45,000 optional.

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## Omnidirectional VLF

Performance Parameters: Resolution 0.5% and range to  $\pm 200\%$  of total field.  
Frequency 15 to 30 kHz.

Measured Parameters: Vertical in-phase & out-of-phase, 2 horizontal components, total field coordinates, date, and time.

Features: Up to 3 stations measured automatically, in-field data review, displays station field strength continuously, and tilt correction for up to  $\pm 10^\circ$  tilts.

Dimensions and Weights: 93 x 143 x 150mm and weighs only 1.0kg.

## Dimensions and Weights

Dimensions:

Console: 223 x 69 x 240mm

Sensor: 170 x 71mm diameter cylinder

Weight:

Console: 2.1kg

Sensor and Staff Assembly: 2.0kg

## Standard Components

GSM-19 magnetometer console, harness, battery charger, shipping case, sensor with cable, staff, instruction manual, data transfer cable and software.

## Taking Advantage of a “Quirk” of Physics

Overhauser effect magnetometers are essentially proton precession devices except that they produce an order-of magnitude greater sensitivity. These "supercharged" quantum magnetometers also deliver high absolute accuracy, rapid cycling (up to 5 readings / second), and exceptionally low power consumption.

The Overhauser effect occurs when a special liquid (with unpaired electrons) is combined with hydrogen atoms and then exposed to secondary polarization from a radio frequency (RF) magnetic field. The unpaired electrons transfer their stronger polarization to hydrogen atoms, thereby generating a strong precession signal-- that is ideal for very high-sensitivity total field measurement. In comparison with proton precession methods, RF signal generation also keeps power consumption to an absolute minimum and reduces noise (i.e. generating RF frequencies are well out of the bandwidth of the precession signal).

In addition, polarization and signal measurement can occur simultaneously - which enables faster, sequential measurements. This, in turn, facilitates advanced statistical averaging over the sampling period and/or increased cycling rates (i.e. sampling speeds).

- 
- The unique Overhauser unit blends physics, data quality, operational efficiency, system design and options into an instrumentation package that ... exceeds proton precession and matches costlier optically pumped cesium capabilities



## APPENDIX C

### GARMIN GPS MAP 62S



Physical & Performance:	
Unit dimensions, WxHxD:	2.4" x 6.3" x 1.4" (6.1 x 16.0 x 3.6 cm)
Display size, WxH:	1.43" x 2.15" (3.6 x 5.5 cm); 2.6" diag (6.6 cm)
Display resolution, WxH:	160 x 240 pixels
Display type:	transflective, 65-K color TFT
Weight:	9.2 oz (260.1 g) with batteries
Battery:	2 AA batteries (not included); NiMH or Lithium recommended
Battery life:	20 hours
Waterproof:	yes (IPX7)
Floats:	no
High-sensitivity receiver:	yes

Interface:	high-speed USB and NMEA 0183 compatible
<b>Maps &amp; Memory:</b>	
Basemap:	yes
Preloaded maps:	no
Ability to add maps:	yes
Built-in memory:	1.7 GB
Accepts data cards:	microSD™ card (not included)
Waypoints/favorites/locations:	2000
Routes:	200
Track log:	10,000 points, 200 saved tracks
<b>Features &amp; Benefits:</b>	
Automatic routing (turn by turn routing on roads):	yes (with optional mapping for detailed roads)
Electronic compass:	yes (tilt-compensated, 3-axis)
Touchscreen:	no
Barometric altimeter:	yes
Camera:	no
<u>Geocaching-friendly:</u>	yes (paperless)
<u>Custom maps compatible:</u>	yes
Photo navigation (navigate to geotagged photos):	yes
Outdoor GPS games:	no
Hunt/fish calendar:	yes
Sun and moon information:	yes

Tide tables:	yes
Area calculation:	yes
Custom POIs (ability to add additional points of interest):	yes
Unit-to-unit transfer (shares data wirelessly with similar units):	yes
Picture viewer:	yes
Garmin Connect™ compatible (online community where you analyze, categorize and share data):	yes

- *Specifications obtained from [www.garmin.com](http://www.garmin.com)*

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## APPENDIX D

### LIST OF MAPS (IN MAP POCKET)

Magnetometer Plan Map (1:2500)

1) Q2406c-Battery-Gowganda-Nicol-Mag-Cont

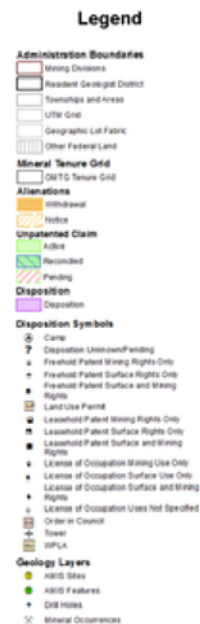
Traverse Plan Map (1:20000)

2) Q2406c-Battery-Gowganda-Nicol-Traverse

**TOTAL MAPS = 2**







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