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## AMADOR GOLD CORP.

## Magnetometer and VLF Surveys Over the 2.32752

# **KEITH-SEWELL PROJECT Keith Township, Ontario**



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#### 1. SURVEY DETAILS

#### 1.1 PROJECT NAME

This project is known as the KEITH-SEWELL PROJECT.

#### 1.2 CLIENT

AMADOR GOLD CORP.

711-675 West Hastings Street. Vancouver, British Columbia V6B 1N2

#### 1.3 LOCATION

The KEITH-SEWELL PROJECT is located approximately 77km southwest of Timmins, Ontario. The grid is located within Keith Township.



Figure 1: Location of Keith-Sewell Project





Figure 2: Keith Township Claim Map with Keith-Sewell Grid

### 1.4 ACCESS

Access to the property was attained with a 4x4 truck via a highway 101. The grid is located 20km east of Foleyet and an additional 4km southward down the Horwood Lake Road.

### 1.5 SURVEY GRID

The grid consisted of 5.5 kilometers of recently established grid lines. This grid had 100 meter line spacing with stations picketed at 25m intervals. The baseline ran at 28°N.



#### 2. SURVEY WORK UNDERTAKEN

#### 2.1 SURVEY LOG

Date	Description	Line	Min Extent	Max Extent	Total Survey (m)
22 July 2006	Locate grid and begin survey. Complete survey, recover base station and demob to Larder Lake.	9500N	650W	325E	975
		9400N	600W	300E	900
		9300N	575W	300E	875
		9200N	550W	350E	900
		9100N	475W	250E	725
		9000N	475W	200E	675
		BL0	9000N	9500N	500

#### Table 1: Survey log

#### 2.2 PERSONNEL

Jason Ploeger of Larder Lake, ON, conducted all the data collection.

#### 2.3 SURVEY SPECIFICATIONS

The survey was conducted with a GSM-19 v5 Overhauser magnetometer/VLF in base station mode for diurnal correction. A magnetic datum of 57450nT was used for this survey and was chosen based on sample readings taken in the vicinity of the base station at Line 9100N and station 115W.

A total of 5.5 line kilometers of mag/VLF was read on July 22, 2006. This consisted of 440 simultaneous magnetometer/VLF(NAA and NLK) samples. Lines 9300N, from 100W to 350E had to be repeated numerous times due to extreme magnetic gradients.

#### 2.4 ACCURACY AND REPEATABILITY

High magnetic gradients were noted on this grid. Generally baseline repeatability was within 3nT in low gradient areas. The VLF repeat within 3% on baseline crossovers.



#### 3. OVERVIEW OF SURVEY RESULTS

#### 3.1 SUMMARY INTERPRETATION

An extremely high magnetic gradient is observed on line 9300N starting at 100W to the eastern end of the line. This indicates an east-west magnetic trend that tends to follow the base of the hill. This may indicate the outcropping of an iron formation unit along the base of the hill or an extremely magnetic east west dyke or rock unit.

Over this area magnetic gradients are so large (>15%/reading) that the magnetometer was unable to read the magnetic field. This resulted in suspected erroneous data, showing on the maps as an extreme low. Multiple attempts were made to collect valid data through this section, including altering the sample interval to 5m, but the gradient is so great all attempts failed.

An interesting observation is made with the NAA frequency. On lines 9400N and 9500N, the IP reading reverses the IP reading of NLK. This may indicate the presence of a strong conductor between the source directions of the two frequencies. This can also be seen in the data with an east west conductor trending down line 9500N.

I have chosen not to show station NAA until this reversal is verified.





#### APPENDIX A

#### STATEMENT OF QUALIFICATIONS

- I, C. Jason Ploeger, hereby declare that:
- 1. I am a geophysicist (non-professional) with residence in Larder Lake, Ontario and am presently employed as president of Larder Geophysics Ltd. of Larder Lake, Ontario.
- I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.
- 3. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.
- 4. I am a member of the Ontario Prospectors Association.
- 5. I have an interest in the properties and securities of AMADOR GOLD CORP.
- 6. I am responsible all the data collection and 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.

Larder Lake, ON July 2006

C. Jason Ploeger, B.Sc. (geophysics) President of Larder Geophysics Ltd.



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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 sferic) 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.

#### VLF Electromagnetic

The frequency domain VLF electromagnetic survey is designed to measure both the vertical and horizontal inphase (IP) and Quadrature (OP) components of the anomalous field from electrically conductive zones. The sources for VLF EM surveys are several powerful radio transmitters located around the world which generate EM radiation in the low frequency band of 15-25kHZ. The signals created by these long-range communications and navigational systems may be used for surveying up to several thousand kilometres away from the transmitter. The quality of the incoming VLF signal can be monitored using the field strength. A field strength above 5pT will produce excellent quality results. Anything lower indicates a weak signal strength, and possibly lower data quality. A very low signal strength (<1pT) may indicate the radio station is down.

The EM field is planar and horizontal at large distances from the EM source. The two components, electric (E) and magnetic (H), created by the source field are orthogonal to each other. E lies in a vertical plane while H lies at right angles to the direction of propagation in a horizontal plane. In order to ensure good coupling, the strike of possible conductors should lie in the direction of the transmitter to allow the H vector to pass through the anomaly, in turn, creating a secondary EM field.

The VLF EM receiver has two orthogonal aerials which are tuned to the frequency of the transmitting station. The direction of the source station is locate by rotating the sensor around a vertical axis until a null position is found. The VLF EM survey procedure consists of taking measurements at stations along each line on the grid. The receiver is rotated about a horizontal axis, right angles to the traverse and the tilt recorded at the null position.



#### 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.

#### **Omnidirectional VLF**

Performance Parameters: Resolution 0.5% and range to ±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 orderof 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.

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#### APPENDIX D

#### LIST OF MAPS (IN MAP POCKET)

Posted profiled TFM plan map (1:2000)

1) #06-015-AMADOR-KEITH\_SEWELL-MAG-CONT

Posted contoured TFM plan map (1:2000)

2) #06-015-AMADOR-KEITH\_SEWELL-MAG-CONT

Posted profiled/fraser filtered contoured VLF plan maps (1:2000)

3) #06-015-AMADOR-KEITH\_SEWELL -VLF-NLK

TOTAL MAPS=3





Provincial Mining Recorders' Office of the Ministry of Northern Development and Mines for additional to is not intended for navigational, survey, or lend title determination purposes as the information (sanka) and accuracy are not guaranteed. Additional information may also be obtained through the Resources. General Information: Toli Free Map Datum: NAD 83 Control Information: Toli Free Map Datum: NAD 83 Provincial Miner Report office Tel: 1 (088) 4 15.9645 ant 57@blection: UTM (6 degrees Wilet Green Miler Centre 933 Ramsey Lake Road Fax: 1 (07?) 870-1444 Topographic Data Source: Subbury ON P32 685 Home Page: www.mndm.gov.on.co/MNDM/MINES/LANDS/mismopge.htm

The Province! Mining Recorders' Office at the time of downloading from the Ministry of Northern



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## AMADOR GOLD CORP.

LARDER GEOPHYSICS LTD.

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