



AURORA GEOSCIENCES

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MEMORANDUM

To: Jack Dennett
EBA Engineering Consultants Ltd

Date: October 6, 2011

From: Jay Watt

Re: 2011 Partridge Creek Magnetic & ELF Survey - Field Report

This memorandum is a field report describing the results of a total magnetic field and ELF survey conducted for EBA Engineering Consultants Ltd at Partridge Creek. Aurora Geosciences personnel were in Dawson City from Sept 2 to Sept 9. A broken ELF cable suspended the survey. On Sept 19 the survey resumed and the crew's camp location was on the southern end of the grid until completion on Oct 2, for a total of 22 days. 32.8 km of mag and 35.6 km of ELF was surveyed over the course of the survey.

Total magnetic relief over the entire survey was quite low, consequently signal to noise ratio was poor and magnetic survey data is noisy.

a. Crew and equipment.

The following personnel conducted the surveys:

Jay Watt	Crew chief	Sept 2 to Sept 9 & Sept 19 to Oct 2, 2011
Graeme Chan	Technician	Sept 2 to Sept 9
Josh Leblanc	Technician	Sept 19 to Oct 2
Dave Hildes	Project Manager	Sept 3 to Sept 6

The crew was equipped with the following instruments and equipment:

2 Gem GSM Overhauser
Magnetometer

1 proton magnetometer was used as a base station and 2 overhauser were used as rovers.

EBA-11565-YT Elf/Magnetics Field Report

2 Gem GSM-19T Proton
Magnetometer

2 NDGPS Map 76Csx

Non-differential handheld GPS

1 ELF System

Sensor unit and computer

1 Laptop Computer

1 Oasis Montag software

Data processing

1 Truck

Transportation while staying in Dawson

b. Survey Location

Partridge Creek is located approximately 120 km south east of Dawson, within NTS map sheet 115 P/11. The survey described in this memo took place on virtual GPS grids negating the need for pickets. All geophysical data collected were geo-referenced to UTM Zone 08N coordinates in the WGS 84 datum.

c. Survey specifications

Mag

The Mag survey was completed according to the following specifications

Grid: 23 N-S lines @ 50m Spacing totaling 23 km, 5 N-S lines @ 100m Spacing totaling 5 km and 3 E-W tie lines totaling 4.8 km.

Line spacing: 50 m & 100 m

Station spacing: 10 m

Base station: Installed on the grid at a fixed and marked location in a magnetically quiet area and cycle at a 5 s interval throughout the survey. All magnetometers were synchronized daily to GPS time.

Corrections: Temporal geomagnetic variation was removed by linear interpolation of drift from the base station magnetometer.

Leveling: Operator leveled over the same leveling grid before surveying every day.

Registration: Data was registered to UTM nad83 z8n coordinates using a non-differential GPS receiver mounted on the roving magnetometer

ELF

The ELF survey was completed according to the following specifications:

Grid: 33 N-S lines totaling 35.6 km

Line Spacing: 25m (infill), 50m and 100m

Station Spacing: 25m (infill), 50m and 100m

Frequencies: 11,22,45,90,180,360,720 and 1440 HZ (1440 was quite noisy)

Registration: Data was registered to wgs 84 z8n coordinates using a onboard gps receiver.

d. Data Processing.

Mag

Registration: Each data point data was registered to UTM coordinates by matching or interpolating locations in the track log to corresponding magnetic field readings based on their record times.

Geomagnetic variation: Base and rover magnetometers were synchronized to GPS time prior to each survey day. The base station was located at 393700E 6166200N. Temporal geomagnetic variation was removed by linear interpolation using the base station data. No base station data variation exceeded 10 nT / 10 seconds.

Filters Applied: All data was despiked then a lowpass filter was applied with a cutoff wavelength of 3 fiducials. After leveling, results were gridded at 12.5 m and upward continued 50 m to reduce high spatial frequency noise.

Leveling:

Tie lines were used to make an intersection table based on the lowpass_filter channel data. These intersects were used to level all lines based on an order 1 trend.

ELF

The data was visually examined and irregular readings were ejected from the data set. For each frequency a first order regional trend was removed from the data by subtracting a local mean; then the data was plotted as arrow plots and a second iteration of irregular data removal was effected.

The east and north data were then gridded, smoothed with a 5X5 Gaussian filter and the divergence was calculated and then displayed as a colour grid. Each grid is displayed with a linear colour scale from -0.003 to 0.003 m-1.

c. Products.

The following files are included in the digital version of this report:

<u>File / Folder name</u>	<u>Description</u>
\raw\	Contains the raw data dumps from GPS, magnetometers and ELF. Sorted by date
\data\	Contains the processed data in geosoft database format as well as ASCII format
\Map\	Contains a map of the data in PDF format
Crew Log.pdf	A crew log describing daily operations

Thank you for the opportunity to work with you on this project.

Respectfully submitted,
AURORA GEOSCIENCES LTD.
Jay Watt