GM 66153

LOGISTICS AND INTERPRETATION REPORT FOR THE HIGH RESOLUTION HELICOPTER MAGNETIC AIRBORNE GEOPHYSICAL SURVEY

Logistics and Interpretation Report

For the

High Resolution Helicopter Magnetic Airborne Geophysical Survey

Flown over

Val-d'Or Block, Quebec, Canada

From

Val-d'Or, Quebec, Canada

Carried out on behalf of

ALEXANDRIA MINERALS CORP.

By

New-Sense Geophysics Limited

Toronto, Canada
October 12th, 2011
(HM110622-report)

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AMENDMENT RECORD

Rev	Date	Description	Report Section	Prepared by

DOCUMENT RECORD

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1. INTRODUCTION

A high sensitivity helicopter airborne survey was carried out for Alexandria Minerals Corp. (Client) over the project area known as Val-d'Or block, located approximately south east of Val-d'Or, QC, Canada.

New-Sense Geophysics (NSG) flew the survey under the terms of an agreement with Client dated June 22nd, 2011 (Appendix E).

The survey was flown from July 13th to 30th, 2011. A total of 4811 line kilometers of field magnetic data was flown, collected, processed and plotted.

The geophysical equipment was comprised of 1 high-sensitivity Cesium-3 magnetometer mounted in a fixed stinger assemble. Airborne ancillary equipment included; digital recorders, fluxgate magnetometer, radar altimeter, and global positioning system (GPS) receiver. The GPS receiver provided accurate real-time navigation and subsequent flight path recovery. Surface equipment included a magnetic base station with GPS time synchronization, and a PC-based field workstation which was used to check the data quality and completeness on a daily basis.

The technical objective of the survey was to provide high-resolution total field magnetic maps suitable for anomaly delineation, detailed structural evaluation, and identification of lithologic trends. Fully corrected magnetic maps were prepared by New-Sense Geophysics Limited, in their Toronto office, after the completion of survey activities.

This report describes the acquisition, processing, and presentation of data for the Alexandria Minerals Corp. airborne survey over Val-d'Or Block flown from Val-d'Or, QC, Canada (Table 2.1 and Figure 2.1).

2. SURVEY LOCATION

Datum: NAD83
Projection: MTM Zone 9
Local Datum Transform: North America – Canada, USA

Table 2.1: Val-d'Or Block Coordinates

UTM Zone 18N		MTM Zone 9	
WGS84_X	**WGS84_Y**	**NAD83_X**	**NAD83_Y**
293018	5328776	209505	5327429
296542	5328708	213029	5327430
296608	5328219	213105	5326942
314153	5327764	230654	5326829
314161	5328177	230654	5327242
316298	5328135	232791	5327242
316301	5326372	232828	5325480
328861	5326127	245390	5325479
328775	5323654	245352	5323005
327236	5323609	243815	5322930
327098	5320348	243740	5319667
325486	5320380	242128	5319668
325473	5319705	242128	5318993
320225	5319882	236878	5319068
320254	5321382	236877	5320568
292697	5321956	209317	5320605
293017	5328739	209504	5327392

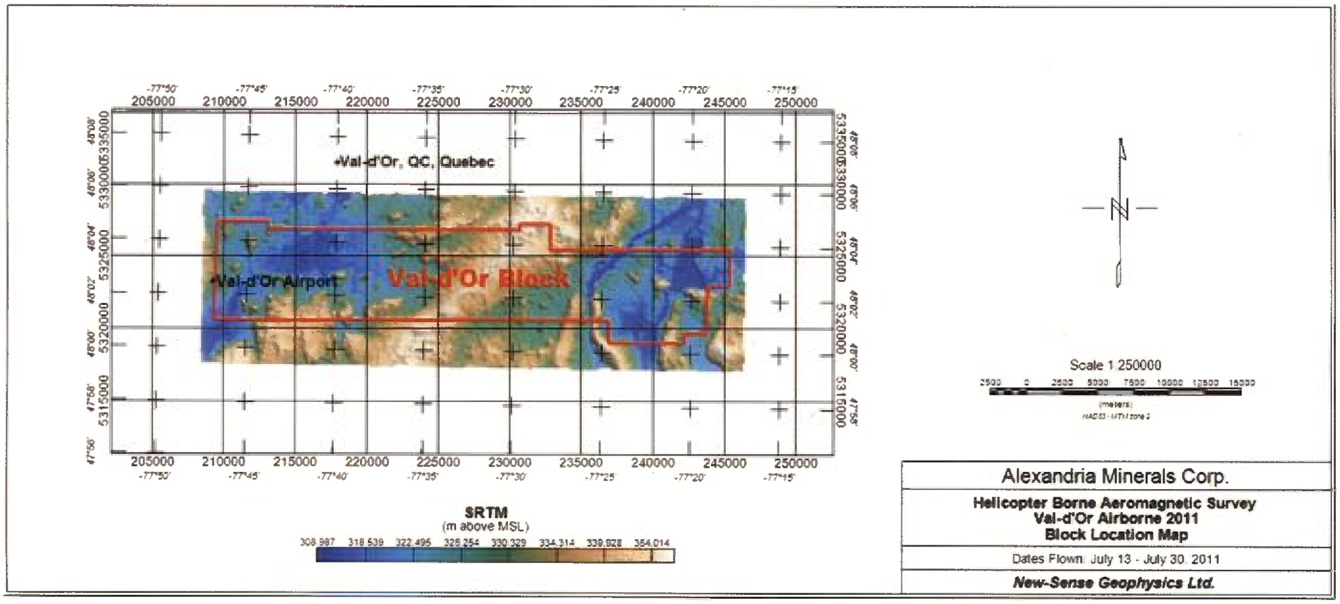


Figure 2.1 Map depicting outlines of the Val-d'Or block (Red) which was flown from Val-d'Or Regional Airport. Coordinate system, NAD83, North America, MTM Zone 9. UTM grid cell size 5km. Map is displayed over 90m SRTM World Elevation grid.

3. PERSONNEL

3.1 FIELD OPERATIONS

New-Sense Geophysics Ltd., Geophysicist:	Andrei Yakovenko William Urquhart
Capitale Hélicoptère, Pilot:	Nelson Bolduc

3.2 OFFICE DATA PROCESSING AND OFFSITE QA/QC

QA/QC (NSG):	Andrei Yakovenko
Data Processing and Grids (NSG):	Andrei Yakovenko
Maps (NSG):	Andrei Yakovenko
Logistics Report (NSG):	Chris Evans
Geophysical Interpretation:	Sean Scrivens (GEMTEC Ltd.)

3.3 PROJECT MANAGEMENT

New-Sense Geophysics Ltd.:	Andrei Yakovenko, Vice President, Operations
Alexandria Minerals Corp.	Peter Legein Vice President of Exploration

4. SURVEY PARAMETERS

Traverse Line spacing:	50 m
Control Line spacing:	500 m
Average Terrain clearance:	25.0 m
Navigation:	GPS
Traverse Line direction:	0^0, 180^0
Control Line direction:	90^0, 270^0
Measurement interval:	0.02/0.1 sec for magnetic; 0.1 sec for GPS
Groundspeed (average):	140.7 km/hr
Measurement spacing (average):	3.91 m/0.1 sec for magnetic & 39.1 GPS
Airborne Digital Record:	Line Number Flight Number Radar Altimeter Total Field Magnetics Time (System and GPS) Raw Global Positioning System (GPS) data Magnetic compensation parameters (fluxgate mag.)
Base Station Record:	Ambient Total Field Magnetics Raw Global Positioning System (GPS) data Time (System and GPS)

5. AIRCRAFT AND EQUIPMENT

5.1 AIRCRAFT

The aircraft used was a Robinson R44 helicopter (C-GMDP) equipped with a Cesium magnetometer mounted in a fixed stinger assembly. The aviation company providing the aircraft service was Capitale Helicoptere, Quebec, QC, Canada.

5.2 AIRBORNE GEOPHYSICAL SYSTEM

5.2.1 MAGNETOMETER

One Scintrex CS-3 optically pumped Cesium split beam sensor was mounted in a fixed stinger assembly. The magnetometer's Larmor frequency output was processed by a KMAG-4 magnetometer counter, which provides a resolution of 0.15 ppm (in a magnetic field of 50,000 nT, resolution equivalent to 0.0075 nT). The raw magnetic data was recorded at 50 Hz, anti-aliased with 51 point COSINE filter and resampled at 10 Hz.

5.2.2 MAGNETIC COMPENSATION

The proximity of the aircraft to the magnetic sensor creates a measurable anomalous response as a result of the aircrafts movement. The orientation of the aircraft with respect to the sensor and the motion of the aircraft through the earth's magnetic field are contributing factors to the strength of this response. A special calibration flight, Figure of Merit (i.e., FOM), was flown to record the information necessary to compensate for these effects.

The FOM maneuvers consist of a series of calibration lines flown at high altitude to gain information in each of the required line directions. During this procedure, pitch, roll and yaw maneuvers are performed on the aircraft (typical angle ranges are 10° pitch, 10° roll, and 10° yaw). Each variation is conducted three times in succession (first pitch, then roll, then yaw), providing a complete picture of the aircraft's effects at designated headings in all orientations.

A three-axis Bartington fluxgate magnetometer (recorded at 50 Hz) was used to measure the orientation and rates of change of the magnetic field of the aircraft, away from localized terrestrial magnetic anomalies. The QC Tools digital compensation algorithm was then applied to generate a correction factor to compensate for permanent, induced, and eddy current magnetic responses generated by the aircrafts movements.

5.2.4 GPS NAVIGATION

A NovAtel state of the art OEM628 GPS board was used for navigation and flight path recovery. The OEM628 is designed with NovAtel's new 120 channel ASIC, which tracks all current and upcoming GNSS constellations and satellite signals including GPS, GLONASS, Galileo and Compass.

The channels were configured for GPS: L1 band.

5.2.4 ALTIMETER

A TRA 3500 radar altimeter was mounted inside the stinger. This instrument operates with a linear performance over the range of 0 to 2,500 feet and records the terrain clearance of the sensors. The raw radar altimeter data was recorded at 50 Hz, anti-aliased with a 21 point COSINE filter and re-sampled at 10 Hz.

5.2.5 GEOPHYSICAL FLIGHT CONTROL SYSTEM

New-Sense's iNAV V4 geophysical flight control system monitored and recorded magnetometer, altimeter, and GPS equipment performance. Input from the various sensors was monitored every 0.005 seconds for the precise coordination of geophysical and positional measurements. The input was recorded fifty times per second (one time per second in the case of GPS data).

GPS positional coordinates and terrain clearance were presented to the pilot by means of a panel mounted LCD indicator display. The magnetometer response, fluxgate profiles, and altimeter profiles were also available via a netbook computer via Ethernet cable, for real-time monitoring of equipment performance.

5.2.6 IDAS DIGITAL RECORDING

The output of the CS-3 magnetometer, fluxgate magnetometer, altimeter, GPS coordinates, and time (system and GPS), were recorded digitally on a solid state drive (SSD) at a sample rate of fifty times per second (ten times per second for GPS) by the NSG iNAV system.

5.3 GROUND MONITORING SYSTEM

5.3.1 BASE STATION MAGNETOMETER

A Scintrex CS-3 optically pumped cesium split beam sensor was used at the base of operations within the airport boundaries, in an area of low magnetic gradient and low/free from cultural electric & magnetic noise sources. The sensitivity and absolute accuracy of the ground magnetometer is +/- 0.01 nT. Data was recorded continuously at least every one second throughout all survey operations in digital form on an iDAS V3 data acquisition system. Both the ground and airborne magnetic readings were synchronized based on the GPS clock.

5.3.2 RECORDING

The output of the magnetic and GPS monitors was recorded digitally on an iDAS V3 data acquisition system. A visual record of the last three hours was graphically maintained on the computer screen to provide an up to date appraisal of magnetic activity. At the conclusion of each production flight, the raw GPS and magnetic data were transferred to the main field compilation computer via Compact Flash disk drive.

5.4 FIELD COMPILATION SYSTEM

A field laptop computer was used for field data processing and presentation. The raw data was imported to Geosoft Oasis montaj for QA/QC and processing purposes. After the data was checked for quality control, the database with uncompensated magnetic readings was exported to QC Tools software package for magnetic compensation and base station data merging purposes. The compensated database was then imported back to Oasis for the subsequent and final processing.

6. OPERATIONS AND PROCEDURES

6.1 FLIGHT PLANNING AND FLIGHT PATH

The block outline coordinates (section 2.0) were used to generate pre-calculated navigation files. The navigation files were used to plan flights at the designated traverse line spacing of 50 meters and control lines of 500.

Preliminary flight path maps and magnetic maps were plotted and updated, to monitor coverage of the survey area.

6.2 BASE STATION

The magnetic base station was established in magnetically quiet area at the camp site at latitude: 48.041103; Longitude: -77.781577.

The base station readings were monitored to ensure that the diurnal variation were within the peak-to-peak envelope of 20 nT from a long chord distance equivalent to a period of two minutes.

6.3 AIRBORNE MAGNETOMETERS

Two FOM tests of the performance of the CS-3 and fluxgate magnetometers was completed, the first on July 13th, 2011, and the second on July 18th, 2011, in order to monitor the ability of the system to remove the effects of aircraft motion on the magnetic measurement.

The FOM's maneuvers consisted of a series of calibration lines flown at high altitude (8,000+ ft above sea level) to gain information in each of the required line directions. During this procedure, pitch, roll, and yaw maneuvers were performed on the aircraft.

The following ranges were used:

Pitch: 10-15°
Roll: 10-15°
Yaw: 10-15°

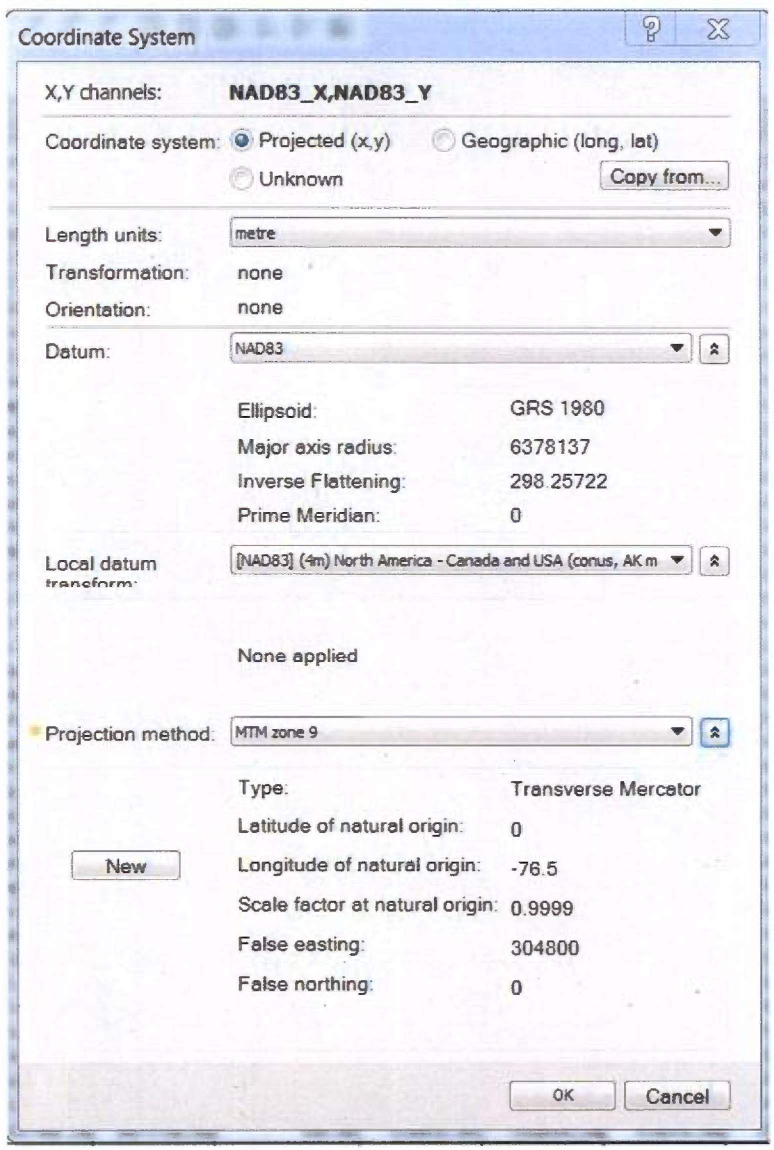
From the first FOM (on July 13th, 2011) noise was 1.83nT with an envelope of 0.23nT, and the second FOM (on July 18th, 2011) noise was 2.18nT with an envelope of 0.40nT (Appendix A).

6.4 DATA COMPILATION

Data recorded by the airborne and base station systems was transferred to the field compilation system. As each flight was completed, the following compilation operations were carried out:

6.4.1 FLIGHT PATH CORRECTIONS

The navigational correction process yields a flight path expressed in WGS84, World and transformed to correspond to NAD83, North America – Canada and USA, MTM Zone 9.



6.4.2 MAGNETIC CORRECTIONS

6.4.2.1 FILTERING AND COMPENSATION

The raw 50Hz magnetic data were filtered, along with the fluxgate magnetometer data, with a 51 cosine anti-aliasing algorithm and re-sampled at 10 Hz.

The filtered and re-sampled data were stored in the MAG_FILT channel.

Then the MAG_FILT data were compensated for permanent, induced, and eddy current magnetic noise generated by the aircraft using data from the fluxgate magnetometer error (see Appendix A).

The compensated magnetic data were then stored in the MAG_COMP channel.

6.4.2.2 DIURNAL CORRECTIONS

The compensated magnetic data were adjusted to account for diurnal variations. When the magnetic variations recorded at the base station recognized to be caused by man-made sources, (such as equipment, vehicles passing by the sensor), they were removed and gaps interpolated.

The diurnal data were recorded at 50Hz and filtered with a (31-point equivalent 1Hz) low pass filter. The filtered data were then subtracted directly from the aeromagnetic measurements to provide a first order diurnal correction.

After base station removal, the total magnetic field values become very small. To bring the total magnetic measurements back to 'normal' values, project averages (i.e., 55,801.67 nT) from the base station readings were added back to the magnetic data.

The resulting base station corrected data were stored in the MAG_DIURNAL_CORR channel.

6.4.2.3 HEADING CORRECTIONS

Optically pumped magnetic sensors have an inherent heading error, typically 1 to 2 nT peak-to-peak, as the sensor is rotated through 360 degrees. On flight line directions of the opposite heading, the affect is reasonably predictable.

For the Val-d'Or block, systematic heading errors were observed, and an empirically derived heading correction table was required for the project. A copy of the corrections table used is displayed below.

```
/ Geosoft Heading Correction Table
/= Direction:real:i
```

/= Correction:real
/ Direction Correction

0	2.6
90	0
180	-2.6
270	0
360	2.6

6.4.2.4 LAG CORRECTIONS

There are two potential types of Lag offsets when collecting airborne data: time lag and distance lag.

NSG insures that there is no time lag in the data acquisition system by recording unique markers every 1-second based on the GPS time stamp (associated with the EXACT change in GPS positioning). This information is used to realign (if necessary) the individual data records.

The distance lag is determined by dividing the distance from the GPS antenna to the sensor head by the averaged sample rate distance.

6.3 / 3.9 = 1.63 records

A lag correction of -2 records was applied to the MAG_DIURNAL_CORR channel and stored in the MAG_LAG_CORR channel.

6.4.2.5 IGRF CORRECTIONS

The total field strength of the International Geomagnetic Reference Field (IGRF, 2010 model) was calculated for every data point, based on the spot values of Latitude, Longitude and altitude. This IGRF was removed from the measured survey data on a point-by-point basis from the lag corrected channel.

After IGRF correction the total magnetic field values become negative. To bring the total magnetic measurements back to 'normal' values an average (i.e., 55,964.32 nT) of IGRF values based on the whole project were added back to the magnetic data.

The IGRF corrections were applied to the MAG_LAG_CORR channel and stored in the MAG_IGRF_CORR channel.

6.4.2.6 LEVELING CORRECTIONS

After the data were corrected for IGRF, a survey traverse/control line intercepts array/matrix (i.e., Simple Leveling) was created for determining differences in magnetic field at the intersection points. The somewhat rugged terrain of the survey blocks, resulted in some line-to-line difference in altitude, and relatively strong magnetic anomalies made magnetic signal at some Traverse/Control line intersection points quite different. As a result, some of those intersection points needed to be manually adjusted in order to reduce line-to-line magnetic differences.

The resulting simple leveled magnetic data were stored in MAG_SMPL_LVL channel.

Further it was decided to apply microlevelling techniques to the conventionally leveled magnetic data (see Appendix D for full description of the procedure).

The following key parameters were used:

Table 6.1 Magnetic data microlevelling parameters

Block Name	Line Spacing (m)	Line Direction (deg.)	Grid Cell Size (m)	Decorrugation Cutoff (m)	Amplitude Limit (nT)	Amplitude Limit Mode	Naudy Filter Limit
Val-d'Or Block	50	0	10	200	18	clip	0

The resulting microleveled magnetic data were stored in the TMI_FINAL channel.

6.4.3 VERTICAL DERIVATIVE

A 1-st Order Vertical Derivative (VDV) dataset was calculated using 2D FFT2 algorithm based on final TMI grid. The resulting VDV grid was filtered with a "soft" Hanning 3x3, with two passes, filter and sampled back to the database.

The VDV data were stored in the VDV channel.

6.4.4 SHUTTLE RADAR TOPOGRAPHY MISSION (SRTM)

In order to provide client with a digital topography model, a publicly available SRTM grid of the survey area (with 90m resolution) was sampled to the SRTM channel of the database.

6.4.5 GRIDDING

The final TMI, and VDV grids were produced from the TMI_FINAL, and VDV channels respectively.

The data were gridded using a bi-directional line gridding method with a grid cell size of 10 meters, Akima interpolation method for across and down line spline and trend angles perpendicular to those of traverse line directions (i.e., 90^0).

8. MAP PRODUCTS AND DIGITAL DATA DELIVERABLES

The following is the list of items delivered to **Alexandria Minerals Corp.**

1) **Hard Copy Maps for Val-d'Or Block @ 1:50,000 scale (x2)**:
   - Maps of Total Magnetic Intensity
   - Maps of 1st order Vertical Derivative

2) **Hard Copy Logistics Report (x3)**:

3) **Digital Copy (DVD) Maps for Val-d'Or Block @ 1:50,000 scale (x2)**:
   - Maps of Total Magnetic Intensity
   - Maps of 1st order Vertical Derivative

4) **Digital Copy Grids (DVD) for Val-d'Or Block @ 1:50,000 scale (x2)**:
   - Grid of Total Magnetic Intensity (nT)
   - Grid of 1^{st} order Vertical Derivative (nT/m)

5) **Digital Copy (DVD) Database for Val-d'Or Block (x2)**:
   - Database: Val-d'Or Airborne 2011.gdb (see Appendix C for details)

6) **Digital Copy (DVD) Logistics Report (x2)**

7) **Digital Copy (DVD) Weekly and Line Report (x2)**

9. INTERPRETATION

New-Sense Geophysics Ltd. has acquired high resolution total magnetic intensity data for Alexandria Minerals Corp. over the Cadillac Break properties in Val D'Or, Quebec. The stinger magnetic sensor configuration allows for improved terrain contouring and low altitude flying. This configuration results in higher precision datasets, higher definition of subtle near surface geology and higher quality derived products such as analytic signal, 1st vertical derivative, and tilt derivative.

9.1 DERIVED PRODUCTS

The first vertical derivative is generated by the derivative of the Z component of the total magnetic intensity grid. This product essentially removes magnetic response caused by regional trends and deeper targets thereby enhancing near surface features by emphasizing subtle characteristics in the data.

The analytic signal is calculated by the vector sum of the three magnetic components (X, Y and Z) generated in the total magnetic intensity grid product. The resulting grid produces peak responses directly over magnetic sources that are independent of the direction of the earth's magnetization vector and eliminates confusion when interpreting positive, negative and dipole responses.

9.2 GENERAL OVERVIEW

The Cadillac property is approximately 36 km in length and 7 km in width and extends East-West along a regional fault zone called the Cadillac Tectonic Zone (CTZ). The south side of the fault is predominately meta-sedimentary rocks of the Pontiac Group whereas the north side hosts volcanic and intrusive rocks. Mineralized structures of importance and a focus within this interpretation are shear-zones, massive sulphides and felsic intrusions.

The magnetic fabric of the survey area is complex and defines numerous features that appear related to structures such as geologic faults, fabric, trends as well as intrusive outlines. The magnetic field response across the property varies in both amplitude and character. Broad, low gradient features likely represent deeper seated bodies or extensions and the sharp, high gradient responses are related to near surface features.

Three Cadillac property claims contain mine sites located along the CTZ: the Orenada, Akasaba and Sleepy properties. The Orenada property contains shear zone related mineralization and is located on the west side of the property straddling the CTZ. The Akasaba property is located roughly in the center of the Cadillac property also directly above the CTZ and exhibits vein hosted mineralization in parallel sequences. The Sleepy property is located along the East edge of the Cadillac property slightly north of the CTZ and hosts a large, gold-bearing gabbro sill. The magnetic data around these mineralized zones will form a basis for comparison to prioritize additional areas along the CTZ for follow-up exploration.

9.3 GEOPHYSICS

The total magnetic intensity data (TMI) collected on the Cadillac property exhibits a fairly high gradient ranging from lows of ~55,000 nT (mostly in the north) and highs of ~63.000 nT predominantly located along the CTZ (identified within the dashed green-red line in Figure 9.1). A close look at the general fabric of the magnetic data reveals numerous east-west features (delineated in black) concentrated along the CTZ and extending across the entire property. Geologic evidence has shown that these structures may be related to magmatic events forced up along the CTZ which produced increased concentrations of magnetite. In addition to these features, several north-south structures are visible in the magnetic data, although they are far less abundant than in the east-west direction.

Geologic maps of the area show several sills and dykes crossing the property which are composed of non-magnetic bearing minerals and occurring post-formation of the structures along the CTZ. One such feature, extending across the survey area in an ENE-WSW direction, is clearly visible in the magnetic analytic signal data and identified in red in Figure 9.2. The portion of this feature located within the meta-sedimentary environment, south of the CTZ, is not thought to have any economic significance. However, it is possible that existing mineralization may have been concentrated during this sill formation where it intersects the CTZ between the coordinates 233,354 mE & 5,323,286 mN and 243,080 mE & 5,324,283 mN,

The magnetic analytic signal product provides a clear depiction of magnetic contacts across the property and is useful in delineating the edges of intrusive events. Three possible intrusions, varying in size and character, have been outlined with dashed yellow lines in Figure 9.2. Although there is no evidence to suggest that the intrusions themselves host economic mineralization, it is possible a concentration of mineralization is occurring along the outer shell of the intrusion as they cut into the CTZ. This appears to be the case for the Orenada and Akasaba properties. Additional exploration along the intrusive contact may be worthwhile in search for similar mineralized environments.

A large Gabbro sill north of the CTZ in the east side of the property, hosts the Sleepy mineralization. Additional exploratory work should be considered along the Gabbro towards the east for similar mineralized occurrences. The Sleepy mineralization also occurs along one of many NE-SW faults which are visible throughout the CTZ across the Cadillac property. This shear zone style mineralization could exist in other areas along the CTZ where similar faulting occurs. Figure 9.2 shows numerous fault structures interpreted from the magnetic data which could provide a source for addition Sleepy style deposits.

10. CONCLUSION OF INTERPRETATION

The discussion above identifies numerous structures that have been proven to host economic mineralization in the past. A comparison of these structures to similar features along the CTZ may reveal previously unknown zones of interest. In particular, additional exploration should be considered along the contact of delineated intrusions, especially where the intrusion intersects the strong magnetic signature in the near vicinity of the CTZ. Two of the three deposits in the area are located along intrusive contact zones; therefore, similar regions in this type of environment should be considered higher priority for follow-up.

In addition, structures that crosscut the CTZ such as faults and sills should also be considered as exploration targets. This extends to the E-W sill which crosscuts the CTZ located near the east edge of the property (noted above) that may provide favourable conditions for shear zone style mineralization.

10.1 RECOMMENDATIONS

1) Intrusive contacts, especially along the CTZ, should be analyzed in more detail and potentially investigated on the ground where outcropping is more likely.

2) Cross-cutting features such as faults, sills and dykes along the CTZ should also be explored in more detail and ground truthed if possible.

3) Digital data provided in this interpretation should be combined with the project GIS and overlaid with known geology in order to locate and prioritize new zones of interest.

11. STATEMENT OF QUALIFICATION

Sean Scrivens
Professional Geoscientist
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Dunrobin, ON, K0A1T0
Telephone: 613-294-5937
Email: Sean.Scrivens@gemtec.ca

I, Sean Scrivens P.Geo. do hereby certify that:

I have reviewed all the items within the Report titled:

"Logistics and Interpretation Report For the High Resolution Helicopter Magnetic Airborne Geophysical Survey Flown over Val-d'Or Block, Quebec, Canada. Carried out on behalf of Alexandria Minerals Corp. By New-Sense Geophysics Limited (October 12, 2011)"

I am a graduate of the Carleton University and hold a BSc (with honors) in Computational Geophysics (2004).

I am a current member in good standing with the Association of Professional Geoscientists of Ontario (APGO), member # 1623;

I have obtained special authorization (# 207) to practice geophysics on behalf of Alexandria Minerals Corp. in the province of Quebec.

I have been a practicing geophysicist in the mineral exploration and environmental sectors for over 7 years and as a Professional Geoscientist for over 3 years.

I am currently a Technical Project Manager for Gemtec Ltd. based out of Ottawa, Ontario.

I currently own no common shares or share options with Alexandria Minerals Corp.

Dated December 8th, 2011.

12. SUMMARY

This report describes the logistics of the survey, equipment used, field procedures, data acquisition, presentation and interpretation of results.

The various maps included with this report display the magnetic properties of the survey area. It is recommended that the survey results be reviewed in detail, in conjunction with all available geophysical, geological and geochemical information.

Further processing of the data may enhance subtle features that can be of importance for exploration purposes.

Respectfully submitted,

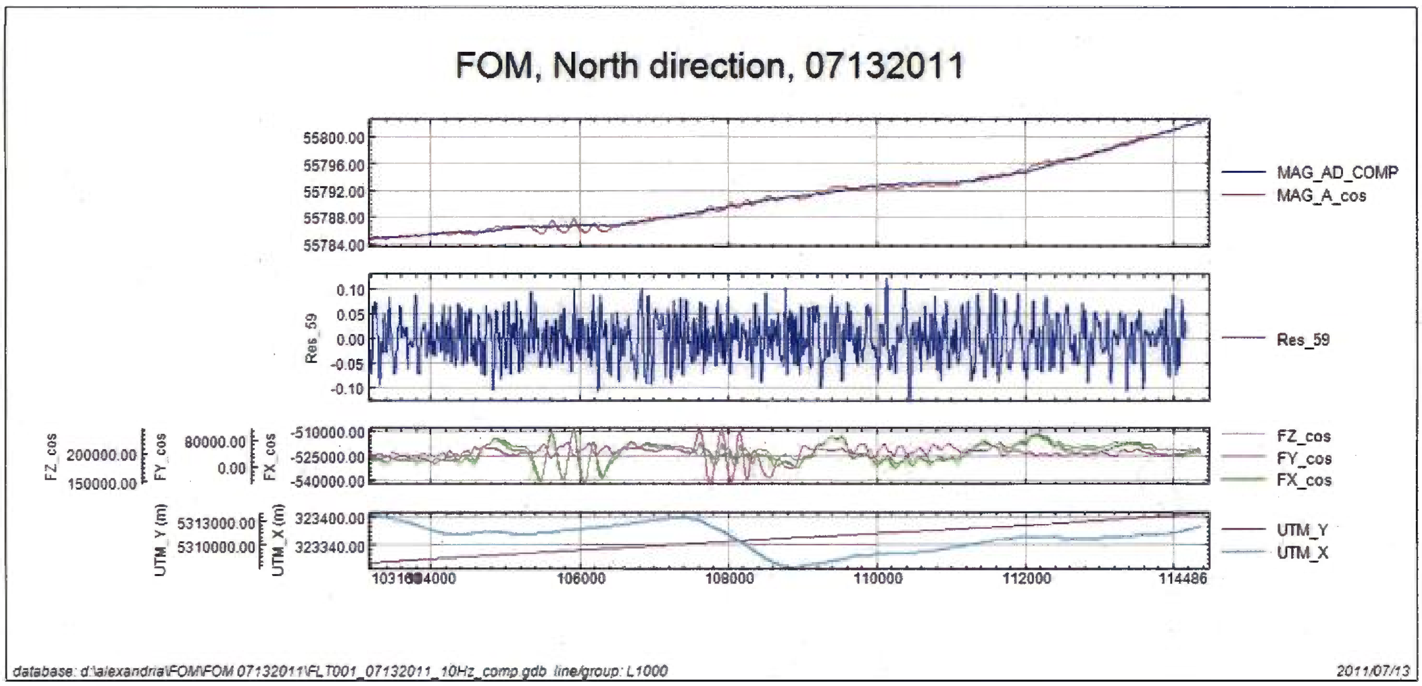
Andrei Yakovenko
New-Sense Geophysics Ltd.
Date: October 12th, 2011

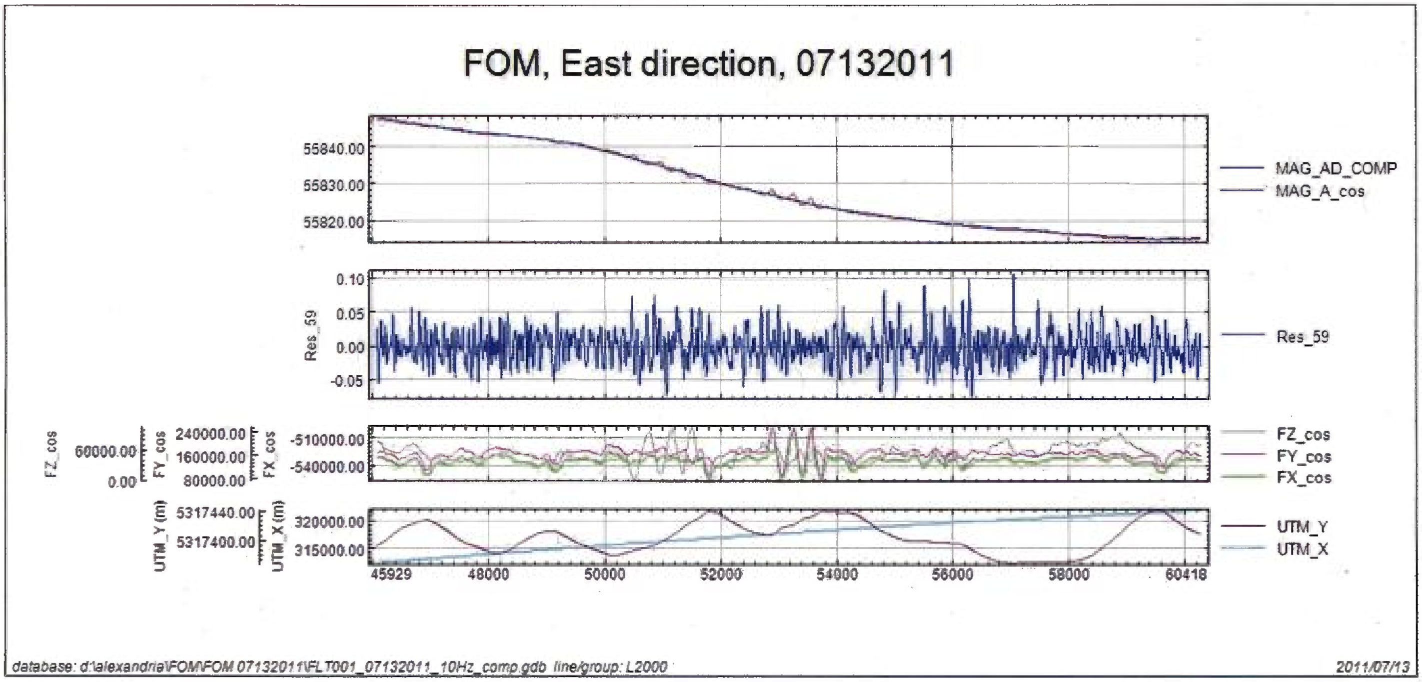
SIGNED AND SEALED

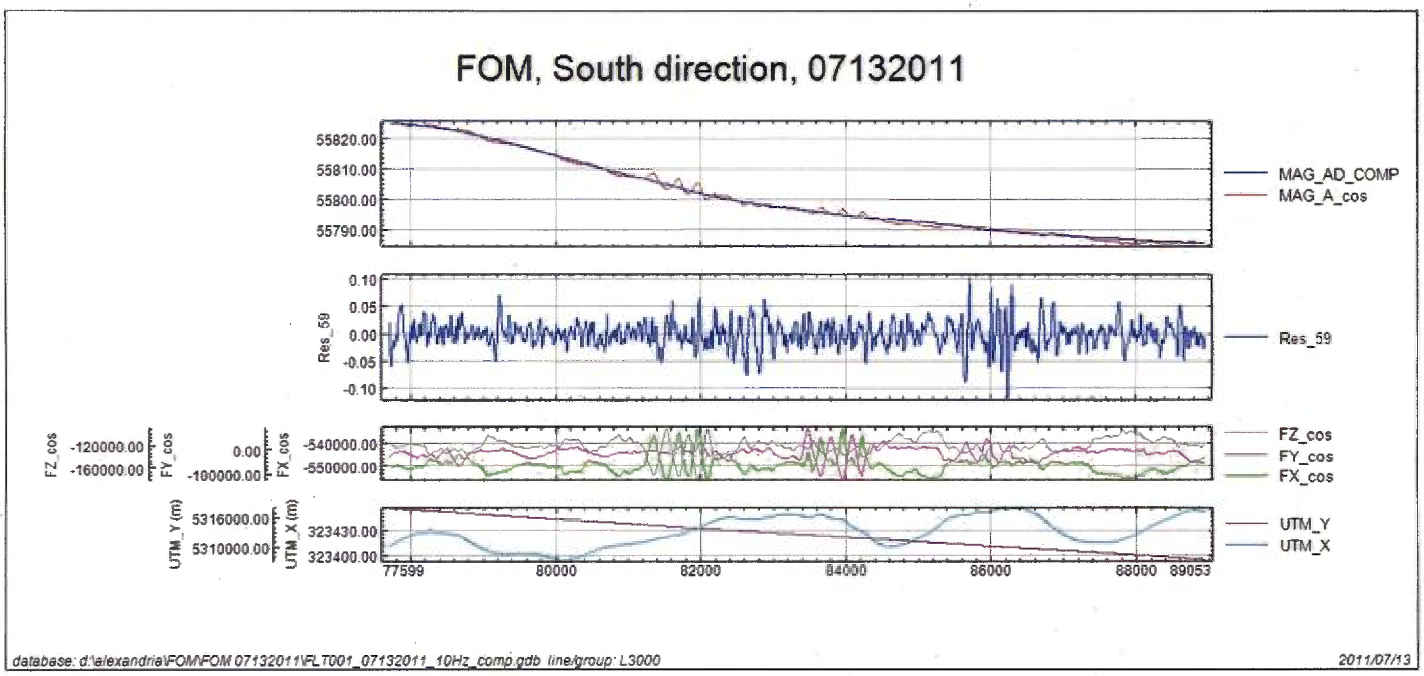
Sean Scrivens, B.Sc., P.Geo.
December 8, 2011
Ottawa, Ontario

APPENDIX A: FOM RESULTS

FOM July 13th, 2011					
line	direction	pitch	roll	yaw	total
1000	0	0.20	0.15	0.23	0.58
2000	90	0.10	0.10	0.18	0.38
3000	180	0.11	0.10	0.20	0.41
4000	270	0.15	0.15	0.18	0.48
	total	0.56	0.50	0.78	**1.83**




FOM, East direction, 07132011
MAG_AD_COMP
MAG_A_cos
Res_59
FZ_cos
FY_cos
FX_cos
UTM_Y
UTM_X
database: d:\alexandria\FOM\FOM 07132011\FLT001_07132011_10Hz_comp.gdb line/group: L2000
2011/07/13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MAG_AD_COMP
MAG_A_cos
Res_59
FZ_cos
FY_cos
FX_cos
UTM_Y
UTM_X
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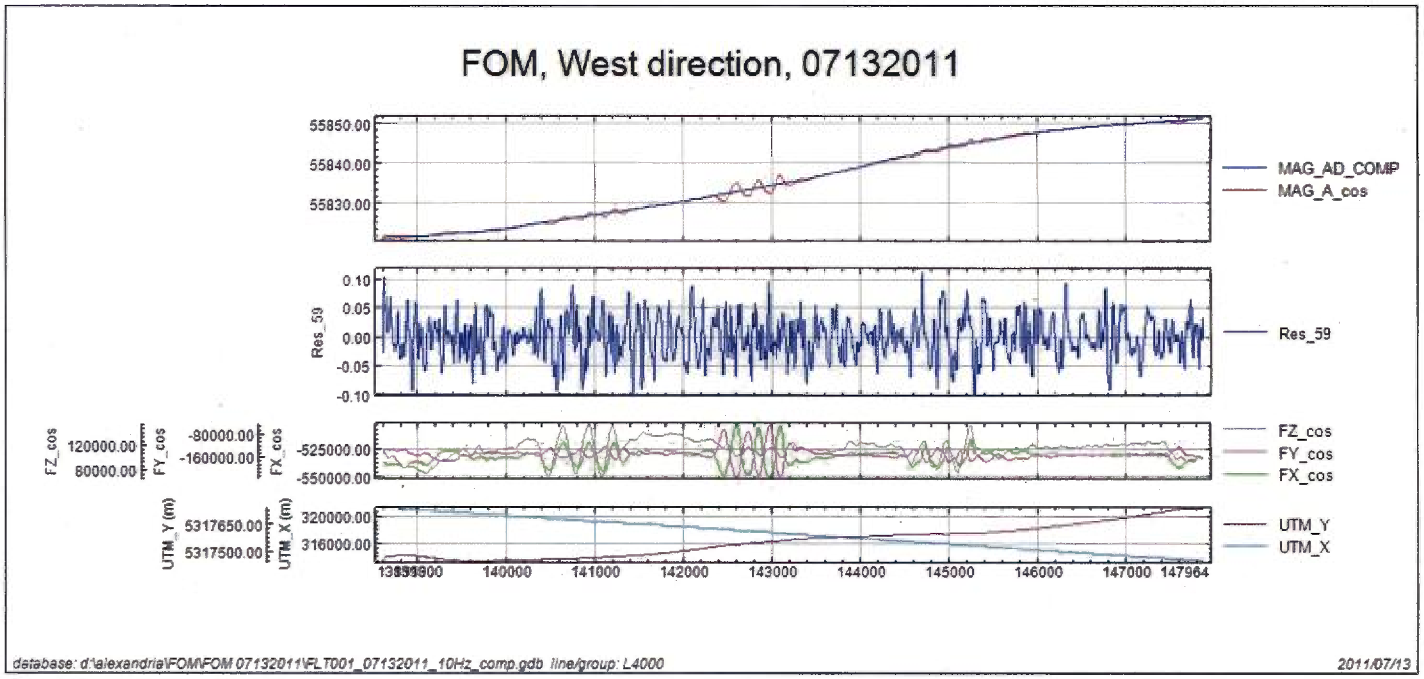
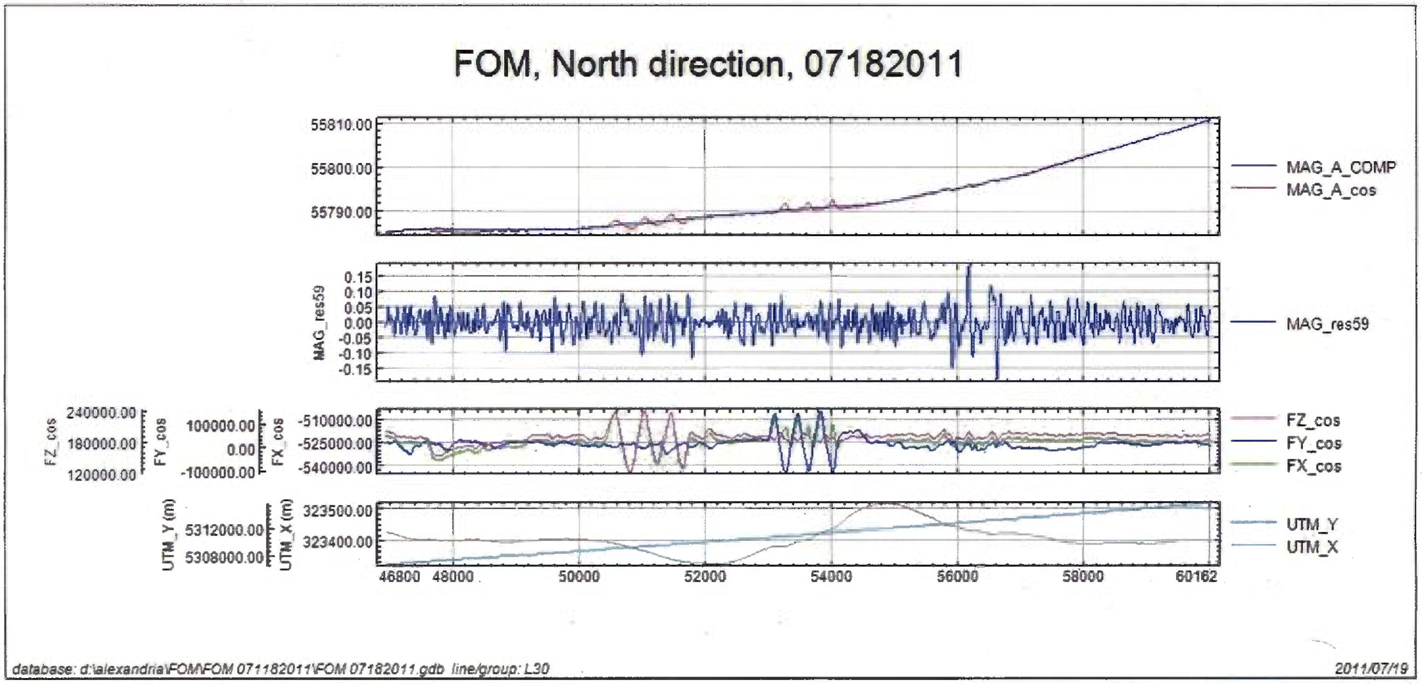
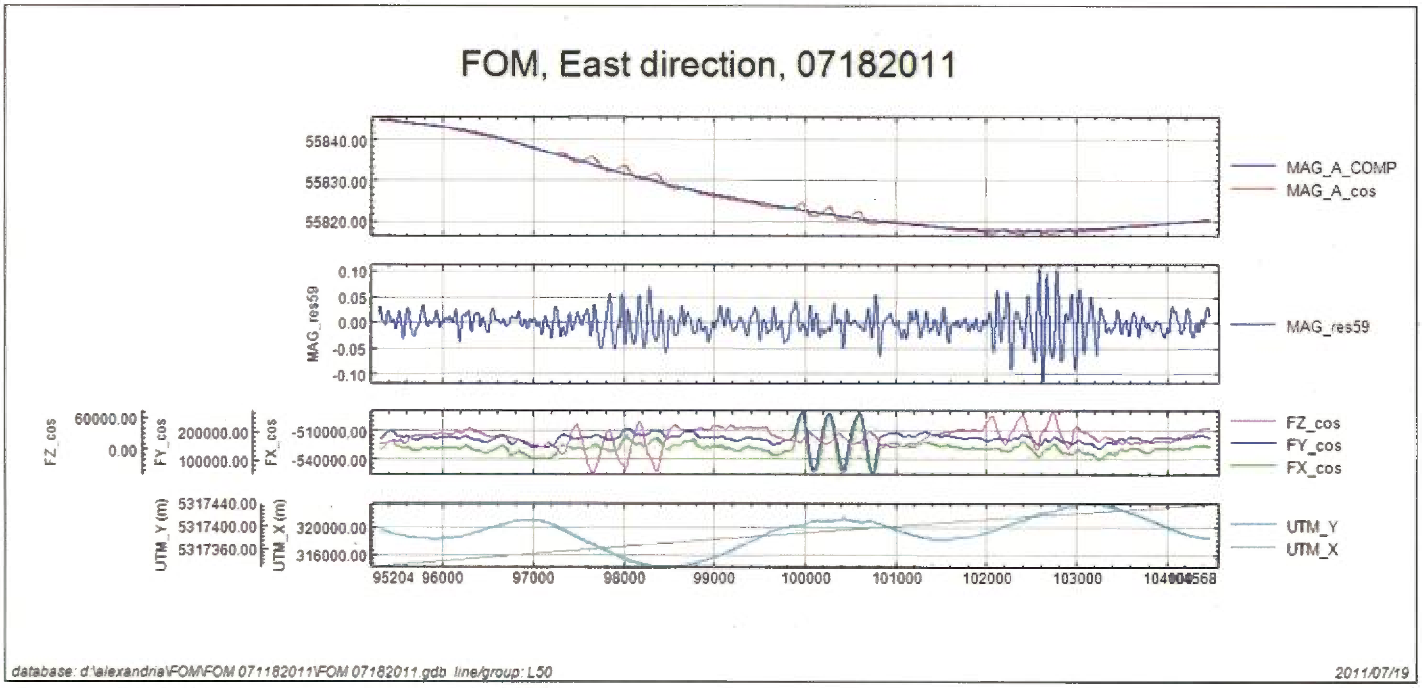
2011/07/13



FOM, West direction, 07132011
55850.00
55840.00
55830.00
MAG_AD_COMP
MAG_A_cos
0.10
0.05
0.00
-0.05
-0.10
Res_59
FZ_cos
120000.00
80000.00
FY_cos
-80000.00
-160000.00
FX_cos
-525000.00
-550000.00
FZ_cos
FY_cos
FX_cos
UTM_Y (m)
5317650.00
5317500.00
UTM_X (m)
320000.00
316000.00
UTM_Y
UTM_X
140000
141000
142000
143000
144000
145000
146000
147000
147964
database: d:\alexandria\FOM\FOM 07132011\FLT001_07132011_10Hz_comp.gdb line/group: L4000
2011/07/13

FOM July 18th, 2011					
line	**direction**	**pitch**	**roll**	**yaw**	**total**
30	0	0.23	0.17	0.40	**0.80**
50	90	0.13	0.12	0.21	**0.46**
20	180	0.12	0.08	0.22	**0.42**
40	270	0.15	0.14	0.21	**0.50**
	total	**0.63**	**0.51**	**1.04**	**2.18**

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55830.00
55820.00
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MAG_A_cos
MAG_res59
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0.05
0.00
-0.05
-0.10
FZ_cos
60000.00
0.00
FY_cos
200000.00
100000.00
FX_cos
-510000.00
-540000.00
FZ_cos
FY_cos
FX_cos
UTM_Y (m)
5317440.00
5317400.00
5317360.00
UTM_X (m)
320000.00
316000.00
95204 96000 97000 98000 99000 100000 101000 102000 103000
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UTM_X
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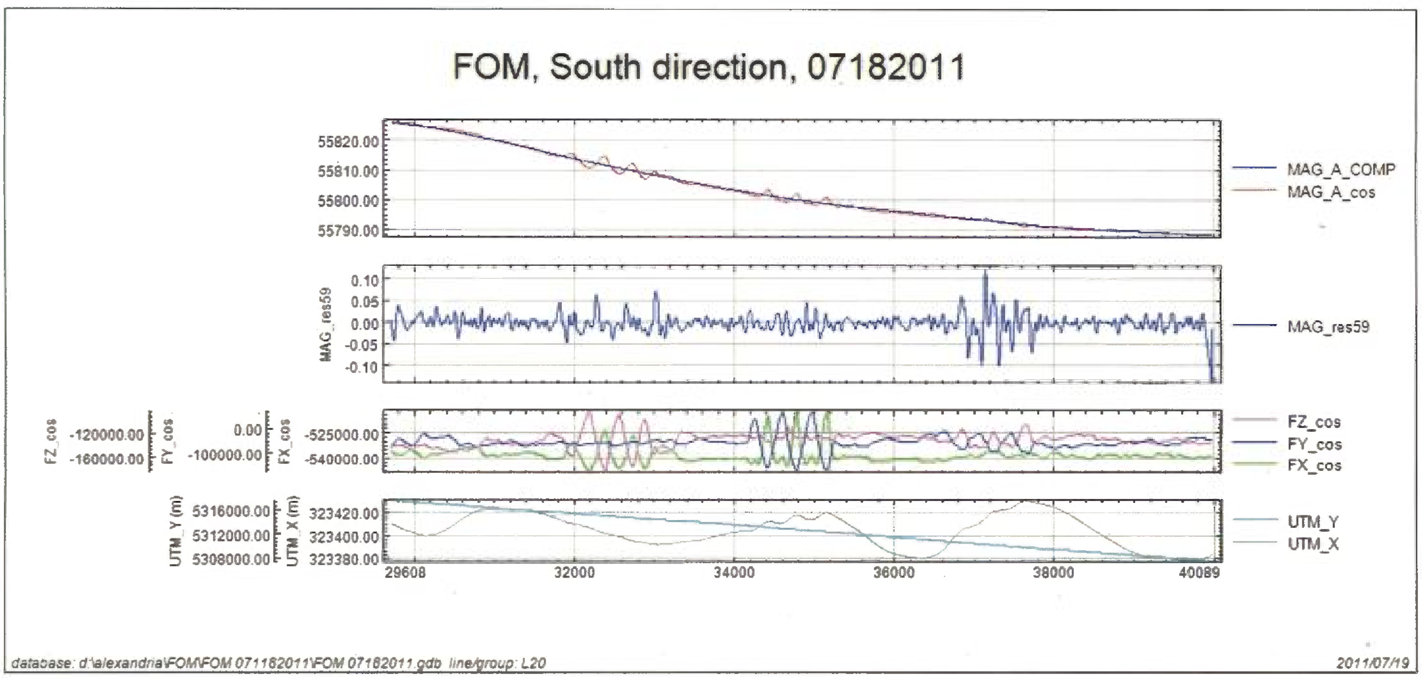
2011/07/19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55790.00
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MAG_A_cos
MAG_res59
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0.05
0.00
-0.05
-0.10
FZ_cos
-120000.00
-160000.00
FY_cos
0.00
-100000.00
FX_cos
-525000.00
-540000.00
FZ_cos
FY_cos
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5312000.00
5308000.00
UTM_X (m)
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323400.00
323380.00
29608 32000 34000 36000 38000 40089
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UTM_X
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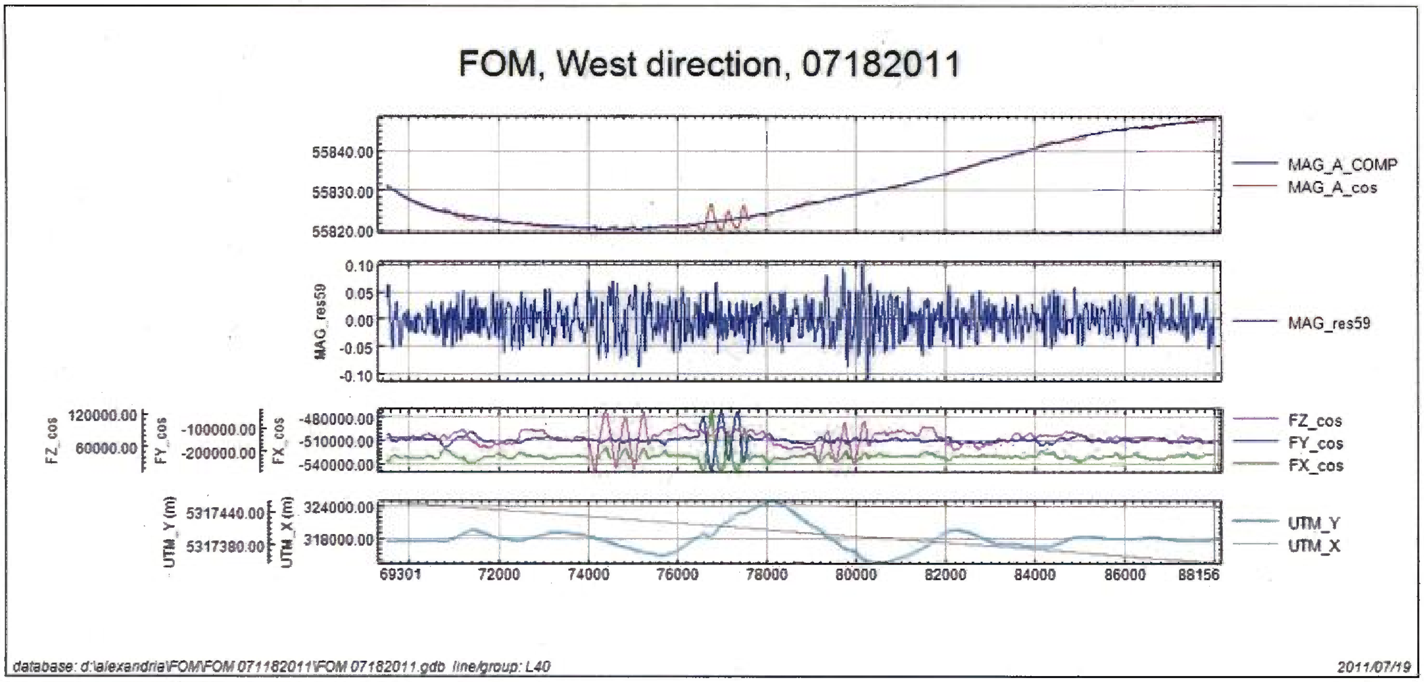
2011/07/19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55820.00
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MAG_A_cos
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0.05
0.00
-0.05
-0.10
MAG_res59
MAG_res59
FZ_cos
120000.00
60000.00
FY_cos
-100000.00
-200000.00
FX_cos
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-510000.00
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FZ_cos
FY_cos
FX_cos
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5317380.00
UTM_X (m)
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UTM_X
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86000
88156
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2011/07/19

APPENDIX B: DATABASE DESCRIPTIONS

Database for Val-d'Or Block

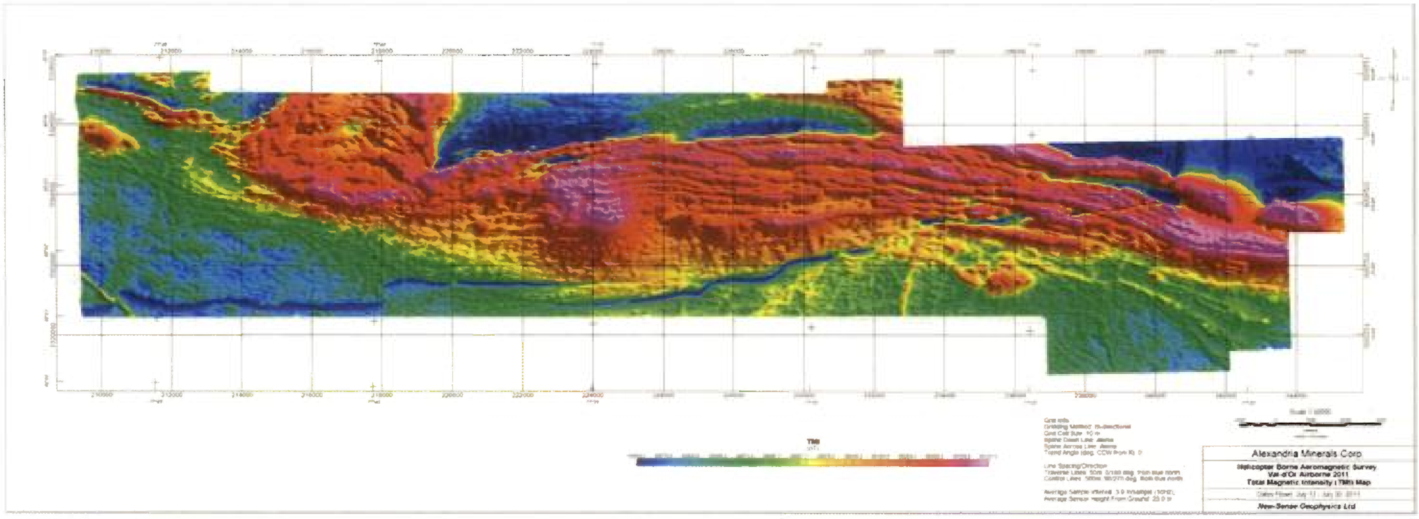
Database Name: Val-d'Or Airborne 2011.gdb
Format: Geosoft .gdb
Number of Channels: 28

Note: If the database is opened in Oasis montaj, please load included "*Database Channel Display.dbview*" file to insure that ALL the channels are displayed in the same order as listed below (Database menu -> Get Saved View).

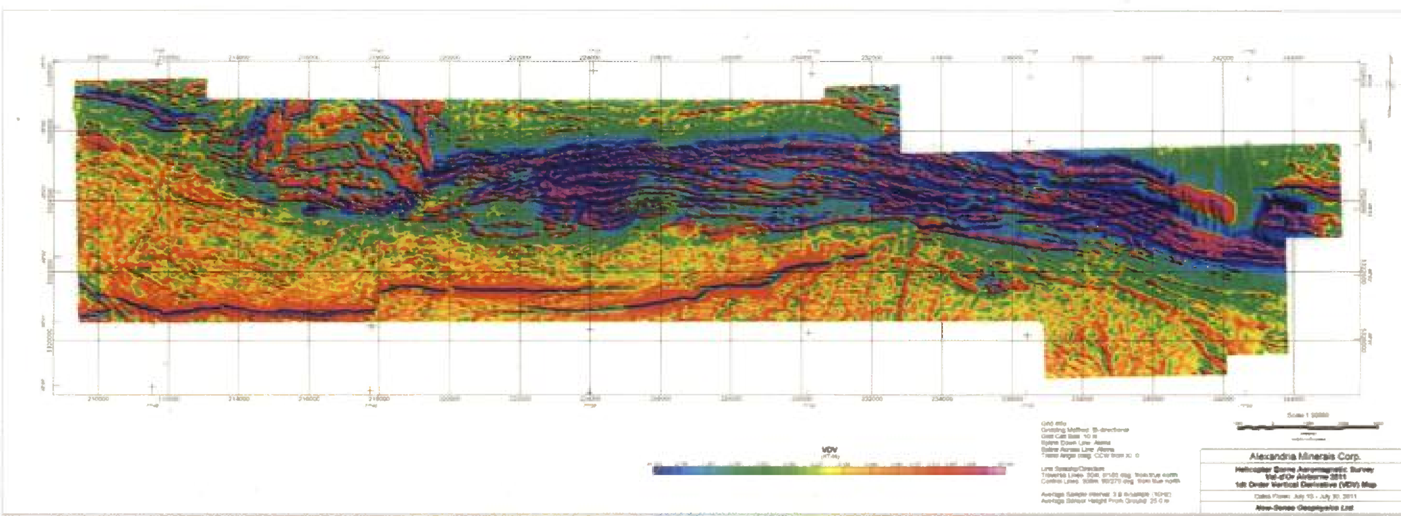
Channel Name	Units	Description
LINE	number	Line number
DATE	date	Date flown (YYMMDD)
FLIGHT	number	Flight number
FIDUCIAL	number	Fiducial count (flight specific)
SYSTEM_CLOCK	milsec	KANA8 (A/D converter) counter
NAD83_X	meters	NAD83 Easting, North America, MTM Zone9
NAD83_Y	meters	NAD83 Northing, North America, MTM Zone9
LATITUDE_WGS84	degrees	GPS latitude, WGS 84, World
LONGITUDE_WGS84	degrees	GPS longitude, WGS 84, World
GPS_HEIGHT_WGS84	meters	GPS height (orthometric) above MSL, WGS 84, World
UTC_DAYSEC	seconds	UTC daily second counter
FLUX_X	volts	Fluxgate x-axis
FLUX_Y	volts	Fluxgate y-axis
FLUX_Z	volts	Fluxgate z-axis
RAD_ALT_feet	feet	Radar altimeter, height above ground
MAG_RAW	nT	Raw magnetometer data
MAG_FILT	nT	Filtered raw magnetometer data
MAG_COMP	nT	Compensated magnetometer data
DIURNAL	nT	Base station magnetometer data
MAG_DIURNAL_CORR	nT	Base station (diurnal) corrected magnetometer data
MAG_HEADING_CORR	nT	Heading corrected magnetometer data
MAG_LAG_CORR	nT	Lag corrected magnetometer data
IGRF	nT	Calculated IGRF, using 2010 model
MAG_IGRF_CORR	nT	IGRF corrected magnetometer data
MAG_SMPL_LVL	nT	Conventionally (simple) leveled magnetometer data
TMI_FINAL	nT	Microleveled MAG_SMPL_LVL data
VDV	nT/m	1st order Vertical Derivative (VDV)
SRTM	m	SRTM data

APPENDIX C: IMAGES OF FINAL MAPS

Val-d'Or Block Image of TMI FINAL Map



Val-d'Or Block Image of VDV Map



APPENDIX D: MICROLEVELLING DESCRIPTION

As per PGW Microlevelling GX help file available through Geosoft Oasis montaj 7.2

```
DECORR.GX                Version 3.0
                         Paterson, Grant & Watson Limited
                         March 2003

PARAMETERS: (miclev group parameters are used, so that values set will be
             passed to MICLEV.GX)

   miclev.Xchan = x channel (default "x")
         .Ychan = y channel (default "y")
         .Ochan = original data channel (no default)
         .Nchan = decorrugation noise channel (default "dcor_noise")
         .Space = flight line spacing
         .Dir   = flight line direction in degrees azimuth (clockwise
                  from North)
         .Cell  = cell size to use for gridding (default = line spacing/5)
         .Wlen  = decorrugation high-pass wavelength (default = 4 * line
                  spacing)
         .Ogrid = original output grid, new or existing
         .Nnoise= decorrugation noise grid
         .XY    = Xmin,Ymin,Xmax,Ymax            (optional)
         .LOGOPT= Log option                     (optional)
         .LOGMIN= Log minimum                    (optional)
         .DSF   = Low-pass desampling factor     (optional)
         .BKD   = Blanking distance              (optional)
         .TOL   = Tolerance                      (optional)
         .PASTOL= % pass tolerance               (optional)
         .ITRMAX= Max. iterations                (optional)
         .ICGR  = Starting coarse grid           (optional)
         .SRD   = Starting search radius         (optional)
         .TENS  = Internal tension (0-1)         (optional)
         .EDGCLP= Cells to extend beyond data    (optional)
```

DESCRIPTION:

decorr.gx and miclev.gx implement a procedure called micro-levelling which removes any low-amplitude component of flight line noise still remaining in airborne survey data after tie line levelling. Micro-levelling calculates a correction channel and adds it to the profile database. This correction is subtracted from the original data to give a set of levelled profiles, from which a final levelled grid may then be generated. Microlevelling has the advantage over standard methods of decorrugation that it better distinguishes flight line noise from geological signal, and thus can remove the noise without causing a loss in resolution of the data.

To microlevel data, first run decorr.gx, then miclev.gx. decorr.gx offers two options for the grid of the channel to be microlevelled. If a grid prepared from this channel already exists, it may be specified, and when prompted to overwrite, the user should answer no. If the user wishes to prepare a new grid of the channel to be microlevelled, the minimum curvature gridding algorithm (rangrid.gx) is applied. The advanced button provides access to the standard minimum curvature gridding parameters. Once the gridding is completed, decorr.gx applies a directional high-pass filter (see end note) perpendicular to the flight line direction, in order to produce a decorrugation noise grid. (The default grid cell size is 1/5 of the line spacing. The user may specify a different cell size if desired. A smaller cell size will give a more accurate result, but a larger cell size will make the gx run faster and use less disk space.) The noise grid is then extracted as a new channel in the database (default name is "dcor_noise"). This channel contains the line level drift component of the data, but it also contains some residual high-frequency components of the geological signal. miclev.gx applies amplitude limiting and low-pass filtering to the noise channel in order to remove this residual geological signal and leave only the component of line level drift, which is then subtracted from the original data to produce a levelled output channel named "miclev".

decorr.gx calculates default amplitude limit and filter length values for use in miclev.gx, but the skilled user may be able to set better values for these parameters based on an inspection of the noise grid. (The micro-levelling process is broken up into two separate GXes in order to allow the user to do this.) Flight line noise should appear in the decorrugation noise grid as long stripes in the flight-line direction, wheras geological anomalies should appear as small spots and cross-cutting lineaments, generally with a higher amplitude than the flight line noise, but with a shorter wavelength in the flight-line direction. The user can estimate the maximum amplitude of the flight line noise, and set the noise amplitude limit value accordingly. Similarly the user can estimate the minimum wavelength of the level drift along the flight lines, and set the low-pass Naudy filter width to half this wavelength. The defaults are to set the amplitude limit equal to the standard deviation of the noise grid, and to set the filter width equal to five times the flight line spacing.

There is an option of using either of two kinds of amplitude limiting. In "clip" mode any value outside the limit is set equal to the limit value. In "zero" mode any value outside the limit is set equal to zero. The clip mode makes more sense intuitively, but it has been found in practise that the zero mode may reject geologic signal better, depending on the particular data set. As a rule the zero mode works better on datasets in which the noise grid contains a lot of high-amplitude geological signals (e.g. shallow basement areas). For datasets in which the noise grid contains mainly flight line noise (e.g. sedimentary basins), the clip mode works better.

Microlevelling applies a level correction to the traverse lines only. If it is desired to grid the tie lines together with the micro-levelled traverse lines, then it may be necessary to also apply a level correction to the tie lines so that their values agree with the micro-levelled traverse lines at the intersections. This may be done as follows:

1) Copy the tie line values to the microlevelled channel.

2) Use intersct.gx to find cross-difference values for the microlevelled data.

3) Use xlevel.gx to load these cross-difference values to the tie lines.

4) Apply fulllev.gx to the tie lines. The output will be a set of tie lines that matches the microlevelled traverse lines at all intersections.

5) Copy the microlevelled traverse line values into the same channel as the corrected tie line values.

Decorrugation Filter:

The decorrugation noise filter is a sixth-order high-pass Butterworth filter with a default cutoff wavelength of four times the flight line spacing, combined with a directional filter. The directional filter coefficient as a function of angle is F=(sin(a))^2, where a is the angle between the direction of propagation of a wave and the flight line direction,i.e. F=0 for a wave travelling along the flight lines, and F=1 for a wave travelling perpendicular to them. (Note this is the exact opposite of what is usually called a decorrugation filter, since the intention here is to pass the noise only, rather than reject it.)

The default cutoff wavelength (4 * line spacing) gives good results if the data is already fairly well levelled to start with. In cases where many lines are badly mis-levelled, it may be necessary to set a longer cutoff wavelength, at the risk of removing more geological signal.

APPENDIX E: COPY OF THE CONTRACT

New-Sense
Geophysics Limited

CONTRACT
FOR
A HELICOPTERBORNE AEROMAGNETIC SURVEY FOR ALEXANDIRA MINERALS CPRP. PROPERTY LOCATED EAST OF VAL-D'OR, QUEBEC, CANADA.

NEW-SENSE GEOPHYSICS LTD. ("NSG"), with its corporate offices at

195 Clayton Drive, Unit 11
Markham, ON, Canada
L3R 7P3

Telephone: (905) 480-1107/ (905) 480-9989
Fax: (905) 480-1207

Offers to carry out airborne geophysical services on behalf of

ALEXANDRIA MINERALS CORP. ("Client"), with offices at:

100 Adelaide St. W.
Suite 405
Toronto, On, Canada
M5H 1S3

Telephone: (416) 363-9372
Fax: (416) 363-6872

Contact: Peter Legein, Vice President of Exploration

in accordance with the following description, terms and conditions.

TABLE OF CONTESTS

1. COMPANY DESCRIPTION

New-Sense Geophysics (NSG) traces its history through its current founder and president Dr. W.E.S. (Ted) Urquhart. First as Urquhart-Dvorak, which specialized in processing airborne geophysical data, to High-Sense Geophysics, which became one of the largest airborne survey companies in the world, until it was purchased by Fugro of Holland in 2000, and then to Geoexplo Limitada., which specialized in airborne geophysical consulting and quality control. This sequence spans over 30 years and leads us to NSG, continuing on in the tradition of airborne survey innovation and quality airborne data acquisition.

NSG has established its HQ office in Markham, Ontario where it operates out of a new purpose-designed and constructed 3000 square foot facility. Here it designs and manufactures its own operator-less systems made 'field-bullet-proof' by engineer Glenn Slover.

The facility itself is more advanced than what may be found in leading high tech companies anywhere. It is completely wired for production with any processing station able to share information on the internal network and processors and field people in direct voice and data communication anywhere in the world. Highly secure firewall features prevent unauthorized access and fail-safe systems prevent any potential data loss through accident, intent or act of God. Clients with authorization can view the progress of their survey on a 24/7 basis.

The company has five data processing workstations with capacity to expand to twice that. A large inventory of systems and components provides for rapid remediation of field problems with the hardware should any occur. All this equipment is rigorously tested, using the built-in network and permanently installed sensors including GPS antenna signals available to each workbench.

The company works world-wide and presently has a second office of operation in Santiago Chile where equipment is maintained and processing takes place.

The company and its personnel through its many years in airborne surveying, airborne software and hardware development, and airborne survey data processing, has dealt with literally millions of kilometres of airborne data acquired in perhaps 80 countries. NSG itself has flown, processed and interpreted more than three quarters of a million line kilometres since 2005. These have been for multi-national companies (like Rio Tinto, Barrick, Teck, and BHP), to junior mining exploration companies, to governments. All have received their data on time and to their satisfaction. And in all of its history dating back 30 years, the companies owned and run by Dr. Urquhart, who developed the concept and practice of operatorless surveying, have not had a single accident ...a perfect safety record.

2. *SURVEY AREA*

A helicopter borne magnetic survey is to be carried out on the Client's project area located directly south-east of Val-d'Or, Quebec, Canada. The survey is to be flown from the Val-d'Or airport (see Tables 2.1 and Figure 2.1 for the block's coordinates and its location).

Table 2.1: Block Coordinates

UTM Zone 18N	
WGS84_X	**WGS84_Y**
293018	5328776
296542	5328708
296608	5328219
314153	5327764
314161	5328177
316298	5328135
316301	5326372
328861	5326127
328775	5323654
327236	5323609
327098	5320348
325486	5320380
325473	5319705
320225	5319882
320254	5321382
292697	5321956
293017	5328739

Note: The data will be collected in WGS84, World and converted to NAD83 MTM Zone 9 upon delivery of the final products.

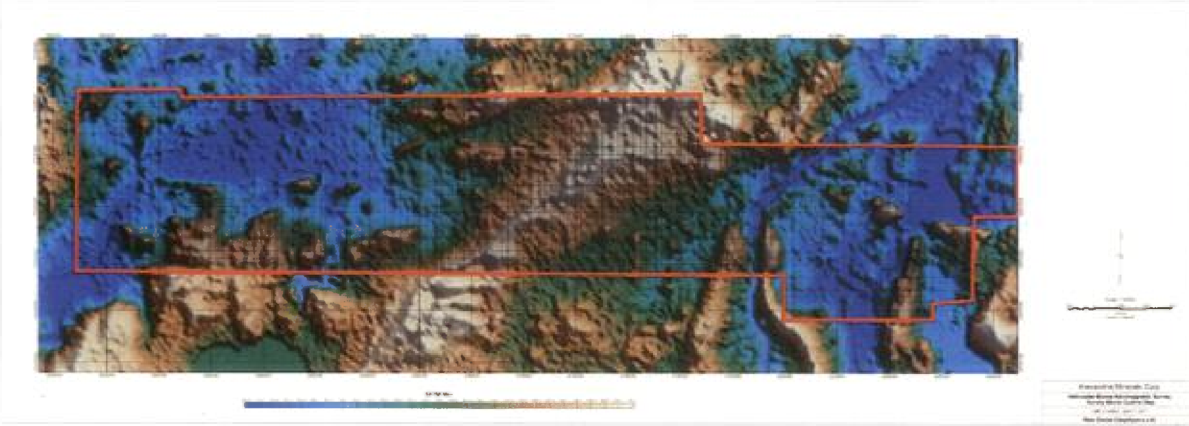


Figure 2.1. Map showing the survey area outline (red) and ideal line path (black). Depicted over Shuttle Radar Topography Mission (SRTM) 90 m grid. Coordinate System: WGS84, UTM Zone 18N.

3. *TECHNICAL SPECIFICATIONS FOR AIRBORNE SURVEY*

3.1 Traverse and Control Lines Statistics

Traverse Line Direction:	$0^0/180^0$ from true North
Traverse Line Interval:	50m
Control Line Direction:	$90^0/270^0$ from true North
Control Line Interval:	500m
Estimated Traverse Line KM*:	4,640 L/Km
Estimated Control Line KM*:	480 L/Km
Estimated Total Line KM*:	5,120 L/Km
Mean Terrain Clearance**:	30m nominal
Sampling Interval:	Magnetics 50 Hz/10Hz
Minimum Line Length:	3 Km

*Note: The estimated Line Km distances mentioned above are estimates based on preliminary specifications provided by the client. The actual number of Line Km may vary and will be presented to the client for an approval.

**Note: The 30 meter flight height will be subject to an on-sight safety audit. In any event, the flight height will be subject to pilot safety concerns.

3.5 Tolerances

3.5.1 Traverse line separation

The pilot will fly to the best of his ability to stay within no more the 50% on either side of the theoretical flight path for a distance of 2000 meters unless obstructions or topography require greater deviations for reasons of safety. If flight-line path deviations are the result of safety concerns, local aviation authority regulations, or military requirements, NSG will not be required to fly fill-in lines.

3.5.2 Control line spacing

Control lines will be surveyed at an average interval as specified, but may be located to avoid, where possible, areas of strong magnetic gradient.

3.5.3 Flight Height

The terrain clearance will be maintained at the planned altitude of 30 meters, subject to the safety requirements, local aviation authority regulations, and/or military requirements.

3.5.4 Missing or Substandard Data

Data will be recorded digitally in the aircraft and at the ground station. Isolated errors, spikes, and short non-sequential gaps consisting of a few points, will be corrected by interpolation.

3.5.5 GPS

GPS will be used for navigation.

3.5.6 Diurnal

Magnetic diurnal activity will be monitored at the base station. If the magnetic activity exceeds 20 nT per 2 minute period, a flight will not depart until the activity has returned to levels below this rate. Once a flight has started it will not be aborted due to diurnal activity.

3.5.7 Speed

The aircraft will maintain a constant airspeed during the survey, with the exceptions where wind direction and/or intensity, or topography will make it impossible to do, while keeping the aircraft safely on line.

3.5. 8 Re-flights

Any flight lines or parts of flight lines with data outside the above tolerances will be considered for re-flights. All re-flown lines or portions of lines will be tied to the closest control lines at both ends.

4. *PAST PERFORMANCE OR EXPERIENCE AND QUALIFICATIONS*

4.1 Organizational experience

NSG provides high quality airborne magnetic/gradiometer and spectrometer surveys using fixed-wing and helicopter platforms. The company is owned and operated by W. E. S (Ted) Urquhart Ph.D. who was the founder and President of High-Sense Geophysics Limited that was sold to Fugro in 2000. After a five-year non-compete period, NSG was inaugurated to re-enter the airborne survey industry to carry on the tradition of providing innovative technologies focusing on collecting the highest quality airborne geophysical data in the safest possible manner.

NSG operates from two offices, one in Markham, Canada where its equipment is manufactured, tested and dispatched throughout the world; the other is in Santiago, Chile where NSG offers airborne geophysical services in Spanish to its South American clients.

NSG has performed airborne geophysical surveys in Africa, North America, Europe, the Middle East and South America. NSG has flown in excess of 700,000 line km in the last 3 years for clients such as major companies like: USGS, BHP Billiton, PG&E, Kennecott, Teck Cominco, Barrick Gold, Kinross, Gold Field, etc.

4.2 References of previous surveys

Dr. V. J. S. (Tien) Grauch, Scientist in charge, *U.S. Geological Survey*
Phone: +1 (303) 236-1393
Email: tien@usgs.gov

Donald Hinks, Project Geophysicist, *Kennecott Exploration Company*
Tel +1 (801) 204 3404
Cell +1 (801) 638 8528
Email: donald.hinks@riotinto.com

Peter Mills, BHP Billiton Ltd.
Tel: + (976) 11 323033 x103
Email: peter.j.mills@bhpbilliton.com

4.3 Qualifications of the personnel and pilots

4.3.1 NSG representative

NSG conducts surveys with an operatorless system and as a result typically sends only one field geophysicist on the job site who possesses good knowledge in not only QC/QA, data processing but in the equipment maintenance as well. At this stage it is planed that NSG representative on the job site would be Mr. Sean Plener with Mr. Andrei Yakovenko being the general project manager under the oversight of Dr. William E. S. (Ted) Urquhart

Field:

Mr. Sean Plener is detail oriented specialist with international and domestic survey and mapping experience and a background in Physical Geography and Earth and Atmospheric Science. Sean has been working with New-Sense since 2007 on both airborne FW and Helicopter total field magnetic and radiometric surveys in different parts of North America and South America.

Geophysicist:

Mr. Yakovenko, Andrei, has been responsible for fixed wing and helicopter airborne operations including permanent, contract, and air crew supervision, logistics, data QA/QC, data processing, and reporting.

He is a tri-lingual, solutions oriented specialist with international and domestic survey and mapping experience, with a background in geology, underwater, land-based archaeology, and geophysics. Currently a Masters candidate in geophysics at McMaster University, Andrei obtained his B.Sc. (Honors) from the University of Toronto. He is skilled in geophysical data processing using Oasis Montaj and coordinating multiple airborne projects. Andrei has authored multiple scientific publications.

Office supervision:

Dr. Urquhart has over 40 years of experience in geophysics, during which time he has been involved in field surveys, operations, management, data quality, safety, data enhancement, compilation and interpretation for various projects throughout the world. Ted was an owner and president of High-Sense Geophysics Ltd. (the third largest geophysical airborne survey company in the world). He has participated in projects as diverse as oil basin studies, mineral and diamond exploration and radioactive satellite fragment recovery. Academically, Ted has conducted research (M.Sc., Ph.D., and professionally) into the correlation of magnetic anomalies with geological factors on both a large and small scale.

5. NSG'S QUALITY CONTROL

During data acquisition, the system will be monitored by the field QA/QC personnel to ensure that the equipment is secure and unchanged. If equipment has been noted to shift or a mechanical part of the aircraft has changed, another FOM will be flown.

Base station and survey flight data is collected immediately after each flight and duplicate copies made. Field staff verify completeness of flown lines, note and log any deviations from the flight path, identify (manual & 4th difference algorithm) and remove noise spikes (note: raw data is maintained), magnetic compensated channels created, daily progress report updated and posted for client, complete data set sent to NSG.

The iNAV V3 system, used for both flight and base station systems, store real time data on two independent storage media (hard disk, and a flash memory device). In the event that one of the devices fails or data were corrupted, a backup remains intact.

Post field production is done on a day-by-day basis. After the field data QA/QC process described in sections 7.4.1 and section 7.4.2, the data is sent to NSG's secure FTP. The post field QA/QC and leveling will be done by either Andrei Yakovenko or Dr. Ted Urquhart. The field staff is in contact with the in-house processor every evening to ensure data was received and to discuss previous flights. If there is an issue, the field staff can be reached by cell or satellite phone to make the necessary corrections before production continues. This immediate processing of the data to pre-final stages, benefits the client in three very important ways: First, there are multiple levels of personnel monitoring the survey data in a short period. If something is missed by the field staff, it will be caught by our in-house personnel before the survey progresses much further; second, we can update the client with current pre-final maps so areas of interest can be discussed and in-fills or re-flights can be planned before the survey lines are completed, thereby minimizing standby days; finally, the pre-final maps are ready the day after flying is completed and can be submitted for the clients approval.

The final products will be prepared as to the contract's obligations, section 8, and with Client's consent on all the data processing steps and procedures. A first version of the final products will be delivered to Client or other client representative for a review and approval.

For additional Data Processing and QA/QC information refer to the following sections regarding:

- Procedures including measures for aircraft's aeromagnetic system calibration (refer to sections 7.2.)
- Inflight data acquisition (sections 7.1 (except 7.1.4, 7.1.9, 7.1.10), 7.2, and 7.3)
- Flight path location (section 7.1.7)

- Ground magnetometer data acquisition (section 7.1.4)
- Data processing and map preparation (sections 7.4 and 8)

6. *EQUIPMENT SUITABILITY AND CONTINGENCY PLAN*

6.1 Availability and quality of proposed data acquisition and processing equipment

Aircraft:

A Robinson 44 helicopter provided by Hélicoptères Hélicarrier inc. based in Quebec City will be used*.

*Note: the helicopter operator may be changed depending on helicopter availability, costs and other considerations.

The aircraft/s with its field crew will operate from the town of Val-d'Or (see section 2) and be using a certified jet fuel for refueling.

The aircraft will be limited to VFR flying conditions. All other conditions will be left to the discretion of the pilot in command.

Data Acquisition:

NSG builds and maintains its own proprietary data acquisition systems known as iDAS. The iDAS system features the KroumVS Instraments KMAG4 magnetometer counter and the KANA8 analog to digital converter. The systems are built with a wide range voltage input (9V to 36V) to accommodate a variety of aircraft power supplies.

The iDAS system uses sophisticated software to provide an autonomous "Operatorless" system resulting in a SAFER survey environments by removing the need for an operator on board the aircraft.

The systems will be available within two weeks of the signing of the contract.

For the data processing NSG is using Geosoft Oasis montaj with a number of build in GX scripts.

6.2 Electronic navigation

Pilot Friendly Navigation display (PI) delivers all the navigation and control features necessary for the pilot to safely maintain the highest quality flight line specifications without additional safety risk of having an operator on board the aircraft (see also section 7.1.7).

6.3 Safety Plan

Safety is the number one priority at NSG. NSG is an active member of the International Airborne Geophysics Safety Association (IAGSA)

Prior to mobilizing to the job site, IAGSA Risk Analysis and NSG Job Safety Plan will be prepared in the Markham office. There are areas of the report that require a physical presence on the job site (i.e. reconnaissance flight, identifying local hazards, etc.). At the job site, before each departure, the pilot will contact the local air traffic controller.

Prior to flying the first production line, a safety meeting is held by a NSG representative where each of the reports is explained to all members of the survey crew. A reconnaissance flight will then take place and the IAGSA Risk Analysis and NSG Job Safety Plan will be completed.

Every Sunday, a weekly safety meeting takes place where any and all the safety concerns and issues during the past week are brought to attention and logged to a weekly safety report.

Pilot safety is enhanced by the use of a flight following system that provides updates at 2-minute intervals on the GPS location of the aircraft. This information is monitored in real time on the internet by authorized personnel. In case of an emergency the pilot could press a "Panic Button" connected to the Flight Following and the signal will be transmitted at around 10 sec. intervals or less, which would drastically reduce the search area in a case of emergency landing.

The client will be provided with a login for real time monitoring of aircraft activities through this Flight Following System.

In addition, the Flight Following has an integrated satellite phone that is connected directly to the pilot's headset. This minimizes any distraction to the pilot when sending or answering a call.

Prior to the flight's departure, a NSG representative records all the information regarding the aircraft status, such as time of departure, endurance, fuel level, etc.

Once in the air, NSG representative monitors the aircraft at least once every half hour. In case of internet problems, a call will be given right away to the satellite phone integrated to the pilot's headset and once every hour.

If the flight following signal is lost and the pilot cannot be reached by satellite phone, then NSG's emergency response procedure is initiated (detailed in the NSG Job Safety Plan).

The aviation company will adhere to all the standards and requirements for local approved air operators.

In summary:

- NSG is active members of International Airborne Geophysics Safety association (IAGSA)
- On each job NSG completes both IAGSA Risk Analysis and NSGs Job Safety Plan forms.
- NSG conducts daily safety meetings with the crew before any flying takes place.
- A Flight Following system will accompany NSG iDAS system that provides updates on every 2 minute intervals, which could be monitored through internet access.

- In addition, the Flight Following has an integrated satellite phone that is connected directly to pilot's headset. Thus minimizing any distraction if pilot decides to send or receive a call.
- The client will be provided with a login for real time monitoring of the helicopter activities through the flight following system.

6.4 Safety Record

No accidents or near accidents have ever occurred at NSG. Since its inception, the company has flown over 45 magnetic and/or radiometric surveys totaling well over half a million line kilometers without an accident.

In addition, High-Sense Geophysics formed in 1993, owned by NSG president Dr. Ted Urquhart, also had an accident-free history. High-Sense rose to become one of the world's largest airborne survey contractors and had met and exceeded the rigorous safety standards of BHP, Shell, and Phillips, among others. It had performed surveys without incident or accident in difficult areas including Vietnam, China, Mongolia, Mauritania, Democratic Republic of the Congo, Brazil, and Sudan.

7. TECHNICAL APPROACH

7.1 AIRBORNE AND GROUND INSTRUMENTATION

7.1.1 Aircraft Type

The aircraft/s allocated to conduct this survey is a Jet Ranger Bell 206B helicopter (or different see Section 6.1) with a fix mount stinger assembly with a Cesium magnetometer mounted in it.

7.1.2 Geophysical Flight Control System

A geophysical flight control system, designed and built by NSG will be provided. This system will control, monitor and record the operation of all the geophysical and ancillary sensors.

7.1.3 Airborne Magnetometer

The magnetometers will be cesium sensors, operated in strap down stinger mount. The orientation of the sensor is adjustable, to provide optimum coupling with the earth's field on reciprocal headings. The magnetometer has a sensitivity of better than 0.01 nT at a sampling interval of 0.1 s. The magnetometer has the capability to measure ambient magnetic fields in the range of about 100 to more than 100,000 nT.

The airborne magnetometer is supplemented with an 18-term digital compensation system that uses the input from a 3-axis fluxgate to determine the aircraft's attitude and rate of change with respect to the earth's magnetic field. The compensation system identifies the permanent, induced and eddy current magnetic contributions of the aircraft and provides a correction to be applied to the raw magnetic data to remove the maneuver noise.

A FOM will be calculated by summing the absolute errors of each of the 12 maneuvers and will be less than 3 nT.

7.1.4 Ground Magnetometer

Scintrex Cesium CS3 or GSM19 Overhauser magnetometers will be operated at the base of operations within or near the survey area in an area of low magnetic gradient and free from cultural noise. The sensitivity of the ground magnetometer will be equal to better than 0.1 nT. Data will be recorded continuously every 1 second (or a rate defined by the client) throughout the survey operations in digital form. Both the ground and airborne magnetic readings are automatically time stamped with GPS time to within 0.005 seconds ensuring a very high degree of correlation based on broadcast GPS satellite time.

7.1.5 Radar Altimeter

A Terra 3500 radar altimeter will be operated in the aircraft throughout the survey to provide ground clearance information. The altitude will be recorded every 0.1 second or better. This instrument has a linear performance over the range of 0 to 2500 feet.

7.1.6 Fluxgate Magnetometer

To achieve quality compensation NSG uses a Bartington Mag-03 Three Axis Magnetic Field Sensors. These compact, high performance fluxgate magnetometers with integral electronics provide reliable precision measurements of static and non-static magnetic fields in three orthogonal axes. The magnetometer is mounted inside the stinger assembly.

7.1.7 GPS Navigation

A 16-channel GPS navigation system will be used for navigation and flight path recovery. The Ublox RCB-LJ GPS receiver board is powered by the ANTARIS® positioning engine.

The leading ANTARIS® GPS Engine provides excellent navigation performance under dynamic conditions in areas with limited sky view like urban canyons, high sensitivity for weak signal operation without compromising accuracy, and support of DGPS and multiple SBAS systems like WAAS and EGNOS. The 16 parallel channels and 8192 search bins provide fast start-up times. The aiding functionality accelerates start-up times even further. The low power consumption and FixNow™ power saving mode make this product suitable for handheld and battery-operated devices.

7.1.8 Field Data Verification System

NSG will provide a complete PC based magnetic map compilation facility, to serve as a field verification system The PC computer based system is equipped with all the software necessary to produce preliminary data images in the field. Data will be provided to the client in a Geosoft format.

The digital data records will be verified at the project site to confirm that data recording has taken place within specifications. All raw digital data recorded in flight and on the ground station magnetometer will be duplicated on site to prevent loss, and stored in separate locations.

In the base where there is e-mail connection, data will be sent on a daily basis for further examination in the head office where areas of infill will be chosen.

7.1.9 Flight Following System

NSG places the highest priority on safety and uses satellite tracking and communication technology to monitor all its survey flights. The aircraft will be equipped with Latitude Technologies Skynode S200, a system that includes satellite phone, flight tracking, and messaging transceiver. This system uses the Iridium satellite network, which provides both voice and data communications between the aircraft and ground stations.

The S200 system can be set up for different time frames; it now automatically updates its position at least once every 2 minutes allowing NSG's field or office staff to monitor the progress of the survey flights. All flight staff are trained in the use and the operation of the S200 system.

During the survey, if the pilot experiences any problems with operation of the survey equipment or encounters any other difficulties, he/she can call the field or office staff for support through the satellite phone, which is integrated into the pilots head set. In the event of flight operations problems, field staff can often troubleshoot and correct difficulties allowing survey flights to continue uninterrupted.

In the event of an emergency the pilot may press the "Panic Button" which will cause the system to immediately transmit the location and heading of the aircraft and will continue to transmit the current position of the aircraft continuously at around 10 sec. intervals until the emergency system is turned off.

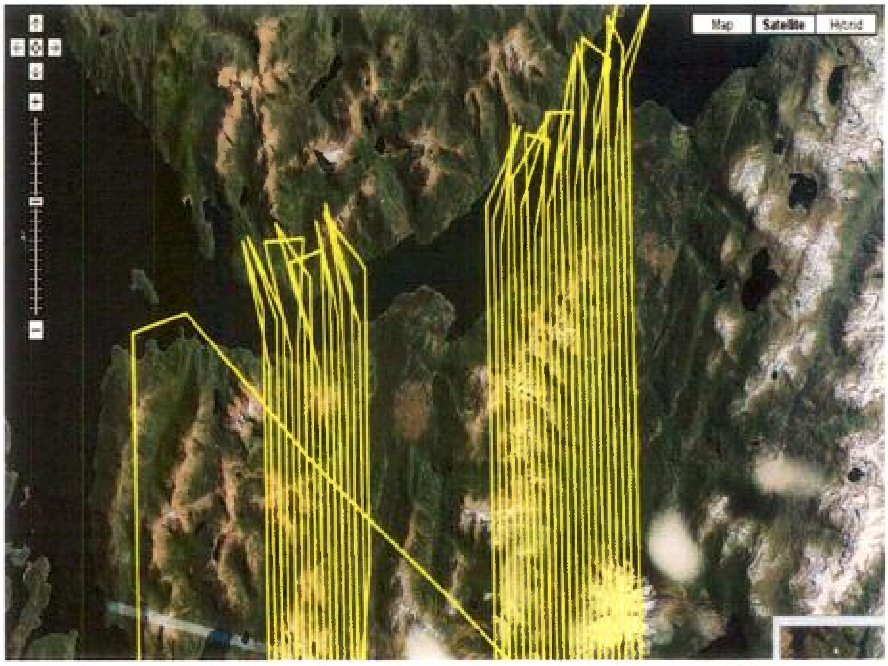


Figure 2. Screenshot of Flight Following Through Internet Web Browser

7.2 INSTRUMENT CHECKS AND CALIBRATIONS

Failure to meet the specifications in any check or calibration test will be cause for corrective action by NSG or approval of the Client before survey operations can be undertaken.

7.2.1 Magnetometer

Figure of Merit (FOM)

A test will be flown on-site prior to the survey to determine the FOM of the installed magnetometer. The system will be flown on the four cardinal headings doing a pitch, roll, and yaw, maneuver on each. The FOM will be calculated by summing the absolute errors of each of the 12 maneuvers and will be less than 3 nT.

7.2.2 Altimeter

Checks of the radar altimeter calibration will be undertaken above the base airstrip or some other suitable location with known elevation and flat terrain.

7.3 DATA RECORDS

7.3.1 Digital Records

The airborne data acquisition system will record the following information digitally in a format that enables the recording of each variable over its full dynamic range:

Fiducial count
GPS UTC time
GPS latitude, longitude, UTM easting, northing and elevation above ellipsoid
Raw magnetic total field
Calibrated radar altimeter output
Three Fluxgate channels

The base station will record the following information digitally in a format that enables the recording of each variable over its full dynamic range.

GPS time (used as fiducial number)
GPS raw satellite range information
Raw magnetic total field

All survey parameters including raw magnetic total field, electronic positioning, radar altimeter, and time and fiducial markers will be recorded digitally during data acquisition in flight. The magnetic base station will record total magnetic field and GPS time.

The data acquisition system organizes the data in a form directly suited to building the processing database. This digital file structure has for each traverse and control line a unique line number and segment number. The base station magnetic profile and GPS coordinates are added to the database using GPS time for alignment.

7.4 DATA COMPILATION AND MAP PRESENTATIONS

The NSG Field-Mapper PC based computer compilation system will be used to process the collected geophysical data on-site as the survey progresses. The 'on-site' processing will enable the Client to review the magnetic data to evaluate targets to make a qualified decision regarding any changes to the survey quantity and size. This will allow the selection of "in-fill" or area extensions. The preliminary data will be sent via FTP site (assuming reasonable speed internet connection is available) for the client's review at least once a week (more often should the client require).

7.4.1 Magnetic

7.4.1.1 Field Data Processing

After collecting flight and base station data, flight data will be imported to Oasis montaj using a NSG template that includes all project data channels. Next flight data will be windowed to only include flight path data within the survey block using custom NSG script that will be developed for the survey area.

Magnetic flight data be duplicated to ensure original raw data is not modified in any way. Profiles for the duplicated channels are then checked for visible noise spikes. Any noise spikes are then cleaned manually and interpolated. From there, field staff will run an automated script that will look for any missed noise spikes. This automated script employs a 4th difference algorithm to identify noise spikes in magnetic data. After other channels (radio altimeter, flux gate profiles etc.) are inspected for normal behavior that database is prepared for magnetic compensation. Using QC Tools, compensation coefficients are applied to the cleaned magnetometer channel and the database is saved.

From here, NSG staff will import base station data into Oasis montaj using a NSG template. Base station data is duplicated to maintain a raw channel and then checked for visible noise spikes. After noise spikes have been removed and interpolated, a 101 (or other job specific) low pass filter is applied to base station magnetic channel and the database is saved.

Next, the flight and base station databases are merged, synchronized (using the GPS clock channel recorded by both systems), compressed, encrypted and sent to NSG's secure server in Toronto, for in-office QA/QC and processing procedure.

NSG field staff from there will updated and complete all daily logs (weekly progress report, daily procedures checklist, weekly summary meeting etc.).

7.4.1.2 Post-Field

As the data being received from the field on day-to-day basis it is reviewed for QA/QC once again to insure that nothing got missed in the field. The data is checked for quality of magnetic signal from all sensors, including the base station magnetometer, fluxgate magnetometer, radar altimeter, line deviations etc. The profiles of the above data are plotted and checked on line-by-line basis. Algorithms like 4th-difference are used to check the CS3 signal.

After the data has been QA/QC checked it is merged with an ongoing master database. Where the following data processing steps take place:

1) Diurnal correction - subtracted directly from the aeromagnetic measurements to provide a first order diurnal correction. The mean of base station readings is added back to the data.
2) Heading error correction - using pre-constructed heading table.
3) Lag correction – to correct for sensor-to-GPS offset.
4) Simple Leveling - a survey line/control line network will be created in order to determine differences in magnetic field at the line intercepts. The differences will be calculated and tabulated, then used to guide subsequent manual leveling on any lines or line segments which required adjustments. See image below for an example of contour Total Magnetic Intensity (TMI) map produced after Simple Leveling was applied.
5) Microleveling – depending on the Simple Leveling results a Microleveling might be needed in order to further correct the data for linear line-to-line noise. The technique used will be the one developed by Paterson, Grant & Watson Limited and available through Geosoft Oasis montaj with the mutually accepted parameters.
6) IGRF correction - The total field strength of the International Geomagnetic Reference Field (IGRF) 2005 model will be calculated for every data point, based on the spot values of latitude, longitude and GPS altitude, using the 2005 model. This IGRF will be removed from the measured survey data on a point-by-point basis. The mean of IGRF readings is added back to the data.

7.4.1.3 Magnetic data filtering and gridding

An appropriate cosine filter (e.g., 21-51 points) will be applied to 50Hz raw data in order to anti-alias relatively constant frequency magnetic signal introduced by the helicopter (e.g., rotor blades). Such data will then be samples at 10Hz.

The TMI grid will be produced using bi-directional gridding technique, with 10 m cell size (or other suitable size depending on liner spacing) and Akima spline across and down lines.

7.4.1.4 Office Data Processing

All of the above calibration procedures, tests and corrections applied in the field will be reviewed for QA/QC by assigned office QA/QC and data processing person.

8. *FINAL PRODUCTS*

The following is the list of items that will be delivered to the Client for each block flown:

Hard copies (2 copies):

- Map of Total Magnetic Intensity (1:50,000 scale)
- Map of 1st Order Vertical Derivative (1:50,000 scale)
- Final Logistics Report

Soft copies (2 copies):

- Grid and map of Total Magnetic Intensity at 1:50,000 scale
- Grid and map of 1st Order Vertical Derivative at 1:50,000 scale
- Final Logistics Report
- Magnetics data database in Geosoft gdb format including raw data, base station, compensated, base station corrected, IGRF corrected, heading corrected, lag corrected, simple leveled, and microleveled (optional) total field.
- Weekly and Line Progress report

9. *TIME SCHEDULE*

The project is scheduled to start in the mid July 2011. In any event, NSG will require a three week notice after the signing of the contract in order to make equipment and people available to conduct the survey.

10. TERMINATION

In the event that the geophysical platform or equipment becomes inoperable, NSG will proceed with diligence to rectify the problem within a reasonable period of time. If within the aforementioned period of time NSG fails to rectify the problem, the Client may, at their discretion, terminate the work under this Proposal in full or in part. In the event of such termination, the Client shall be obliged to pay NSG for services rendered only up to the date of receipt of a written notice of such termination and for documented expenses incurred by NSG prior to the date of receipt of termination notice, and for reasonable cancellation and demobilization costs.

11. LOCAL LICENSES, PERMITS AND CUSTOMS

Client will take the responsibility for obtaining all local licenses and permits required to perform the services on Client's name. Out of pocket costs for permitting will be reimbursed by the client.

12. GENERAL CONDITIONS

NSG will carry out the agreed services in a proper and workmanlike manner with a high standard of safety and in accordance with the laws, rules and regulations applicable to the project location.

At all times during the term of this Proposal, the NSG or its subcontractors shall carry and maintain at its own expense, work insurance protection of the kinds and in the minimum amounts set forth below:

12.1 NSG Liability Insurance

- Employer's Liability and Workmen's Compensation insurance to cover employees furnished by NSG including:

    (a) Statutory Workmen's Compensation benefits in compliance with the laws of the state, province or country in which the aircraft operations under this Proposal will be performed;

    (b) Employer's Liability to have limits of not less than $5,000,000 per person, and $5,000,000 per accident;

    (c) Employer's Liability applicable to all provisions outlined above with limits not less than $5,000,000 each person, $5,000,000 each occurrence.

- Comprehensive General Liability Insurance. Such insurance shall cover all operations in all provinces, states and countries in which the aircraft operation or services may be performed by NSG hereunder and shall include the following:

    (a) Limits of liability: not less than $5,000,000 for death or injury of any one person, $5,000,000 in the aggregate for all persons injured or killed as the result of any one accident, and $5,000,000 for loss of or damage to property resulting from any one accident.

    (b) Contractual liability coverage for NSG's obligations hereunder;

13. *CHARGES AND PAYMENT TERMS*

Total estimated cost for Survey and Map Production

Block Name/s	Line Spacing (Traverse/Control)	Estimated Total Line Km*	Price per Line Km ($US)	Mob/Demob ($US)	Estimated Total**
Block 1	50m/500m	5,120	$38.67	$7,500.00	**$ 205,490.40**

Stand-by of US $2,200/day will be charged on those days where flying is not possible due to inclement weather, atmospheric conditions, labor unrest, government intervention or other stoppages beyond the control of the contractor.

*Note: The actual total Line Km distances may be slightly less or more than estimated.

**Note: These prices are net of all local (e.g., GST, HST). The quote is valid for 30 days.

Payment Schedule

An initial payment, due on signing:	**20% of selected survey Plan price**
A second payment, due on mobilization:	**30% of selected survey Plan price**
A third payment, due on completion of flying:	**40% of selected survey Plan price**
Final payment, due on delivery of final products:	**balance**

All invoices are due and payable upon submission at the Client's address indicated in Section 1 of this Survey Agreement. A service charge of 0.4 % per week on unpaid balance is payable on all overdue accounts.

The payment schedule is subject to negotiation should the proposed schedule not conform to the client's norms and regulations.

Funds will be paid by wire transfer to:

In CAD Funds

Beneficiary:	New-Sense Geophysics Limited
Bank:	The Bank of Nova Scotia
Account #:	02011
Transit #:	11452
Institution Code:	002
Swift:	NOSCCATT
ABA Routing:	026002532
Address:	880 Eglinton Avenue E. at Laird Drive Toronto, Ontario, M4G 2L2, Canada

NEW-SENSE GEOPHYSICS LTD.

Name (print): Andrei Yakovenko

Title: V.P. Operations

Date: June 22, 2011

Signature:

ALEXANDRIA MINERALS CORP.

Name (print): PETER LEGEIN

Title: V. P. EXPLORATION

Date: JUNE 23 /2011

Signature: