ARCTURUS VENTURES INC.

ASSESSMENT REPORT OF THE

AIRBORNE MAGNETIC SURVEY OF DECEMBER 17-20 2011:

On MER Claims

Claim	Claim #	Grant Numbers	Claims	Owner
Mer	1-104	YD00001-YD00104	104	Arcturus Ventures Inc
Mer	123-170	YD00123-YD00170	48	Arcturus Ventures Inc
Mer	189-236	YD00189-YD00236	48	Arcturus Ventures Inc
Mer	251-282	YD00251-YD00282	32	Arcturus Ventures Inc
Mer	283-287	YE36991-YE36995	5	Blake Macdonald
		TOTAL	**237**	

Finlayson Lake District

NTS 105 G/10/11

UTM 6822300 N, 388000 E

NAD 83 ZONE 9

In the

Watson Lake Mining District

Yukon Territory

Prepared by

Brandon Macdonald, BSc.

March 19, 2013

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1 Summary and Conclusions

The Mer claim group is composed of 237 Quartz claims with an area of 4 710 hectares. The claim group is located in the Finlayson Lake Region on NTS Map Sheet 105 G/10/11 of the Watson Lake Mining District, Yukon. The property is 200 kilometres northwest of Watson Lake, Yukon. Access to the property is by Helicopter from the Robert Campbell Highway 50 kilometres north of the property.

The objective of the exploration program was to map the property area using a Airborne Magnetic survey. A total of 638 line kilometers of magnetic data were flown for this survey; this total includes tie lines and survey lines. The survey was performed by Precision GeoSurveys Inc. No additional analysis or interpretation has been done on the data.

An interpretation of the data by qualified geophysicist is recommended.

2 Introduction

This report outlines the survey operations and data processing actions taken during the airborne geophysical survey flown at the Mer block, located northwest of the Yukon Territory (Figure 1). The airborne geophysical survey was flown by Precision GeoSurveys Inc. for Arcturus Ventures Inc. The geophysical survey, carried out between December 17, 2011 to December 20, 2011, saw the acquisition of high resolution magnetic data.

3 Location and Access

The Property is accessible by helicopter from Ross River or the Finlayson Lake airstrip along the Campbell Highway 25 kilometres northeast of the property area. Figure 1 shows the location of the property within Yukon and its proximity to the highway network within.

4 Property

The Mer Property is comprised of 237 quartz claims with an area of 4 710 hectares as shown in Figure 2 and listed in Table I. The claims are located in the Watson Lake Mining District.

Claim Name	Claim Numbers	Grant Numbers	Claims
Mer	1-104	YD00001-YD00104	104
Mer	123-170	YD00123-YD00170	48
Mer	189-236	YD00189-YD00236	48
Mer	251-282	YD00251-YD00282	32
Mer	283-287	YE36991-YE36995	5
		TOTAL	**237**

Table I

5 History

The Mer claims were staked and recorded on October 19, 2011 to cover an area that regional reconnaissance stream sediment samples (OF 2008 – 3) occur over a significant number of drainages in the area. There are five samples greater than the 95th percentile of anomalous gold in stream sediment. The area streams also contain anomalous gold pathfinder elements of arsenic and antimony. The sample locations are included on Figure 3 with the Geology.

The mid-Paleozoic volcanic rocks of the Yukon-Tanana Terrane in the Finlayson Lake district have long been explored by numerous companies for the possibility of volcanogenic massive sulphide (VMS) deposits. Several VMS discoveries were made in the area in the 1990s including the Kudz ze Kayah deposit by Cominco in 1994, the Wolverine deposit by Westmin Resources Ltd. and Atna Resources Ltd. in 1995, the Ice deposit by Yukon Zinc Corporation in 1996, and the GP4F deposit by Cominco Ltd. in 1998. Both the age range and host rocks for the deposits are diverse within the Terrane (Murphy et. al., 2006).


BEAUFORT
SEA
ALASKA
YUKON
NORTHWEST
TERRITORIES
B. C.
ALASKA
YUKON
N. W. T.
CANADA
U. S. A.
MER PROPERTY
Dawson
Macmillan
Pass
Yukon
River
Robert
Faro
Canol
North
Carmacks
Ross River
ALASKA
HWY.
Campbell
Canol
South
Haines
Junction
WHITEHORSE
Hwy.
Johnsons
Crossing
Carcross
Teslin
Watson
Lake
Skagway
Haines
Atlin
Cassiar
KILOMETRES
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100
200
ARCTURUS VENTURES INC.
MER PROPERTY
YUKON TERRITORY
LOCATION MAP
DATE:
March, 2013
FIGURE:
1

The area around the claim blocks has a recorded history of exploration extending to the 1950's when increased access and interest was gained with the discovery of the Vangorda Creek deposit (Sevensma & Heard, 1967). A 1966 assessment report for Northlake Mines Ltd. Mentions the presence of several old cabins and placer workings in the area that were likely a product of placer miners at the turn of the 20th century (Sevensma & Heard, 1966).

Aside from Northlake Mines Ltd., a number of other companies and individuals have explored the general area over the last half of the 20th century including Newmont Exploration Ltd., Pelly River Exploration, Chevron Resources Ltd., Hudson Mining and Smelting Company Limited, Riviera Mines Ltd., Empire Metals Corporation Ltd., and Welcome North Mines Ltd. Since the discovery of the VMS deposits in the vicinity, companies that have explored the area include Expatriate Resources Ltd., Cominco, Pacific Bay Minerals, True North Gems and Arcturus Ventures Inc.

Four historical assessment reports (Potter, 1988, MacRobbie, 1995, Burgert, 1997, and Moyle & Wesa, 1998) cover historic claim blocks that are now covered by the current Rivier claims immediately south of the Mer claims. The assessment report by Potter (1998) for Welcome North Mines describes an exploration program including rock and soil sampling that indicated low grade pervasive gold associated with strong arsenic anomalies over listwanite. More work was recommended but the claims were allowed to lapse (Potter, 1988).

The program by Welcome North Mines Ltd. consisted of extensive soil sampling over and around the ultramafic body in 1988 in which 1 068 B-horizon and talus soil samples were collected along with 82 rock samples (Potter, 1988). Two anomalous zones were identified that were coincident with the ultramafic body and were labeled North zone and South zone. Hand trenching was also done. Samples were collected in two stages. Stage 1 identified the anomalous zones, had a line spacing of 300 metres and sample spacing of 50 metres on lines laid out by compass and hipchain at a mine grid orientation of 030°. Stage 2 had 100 metre line spacings and 20 metre sample spacings, and focused on the anomalous zones outlined by stage 1. Gold values ranging from below detection to 5300 ppb and arsenic values ranging from 10 ppm to 23 000 ppm were obtained.

MacRobbie reported (1995) work done on the INK claim block, staked to cover a geophysical target identified by Cominco in 1994. The claims occupied a portion of the northeast corner of the current property. 40 soil samples and one silt sample were found to have no favourable indications of mineralization and no further work was recommended. This report also mentioned the staking of Minfile 105G 022 as the OUR claims by D. Thrasher in 1969, for which no assessment work was filed (MacRobbie, 1995). Moyle & Wesa reported (1998) exploration by Pacific Bay Minerals Ltd. on the INK claims that followed up the work done there by Cominco. No further work was recommended and the claims lapsed (Moyle and Wesa, 1998).

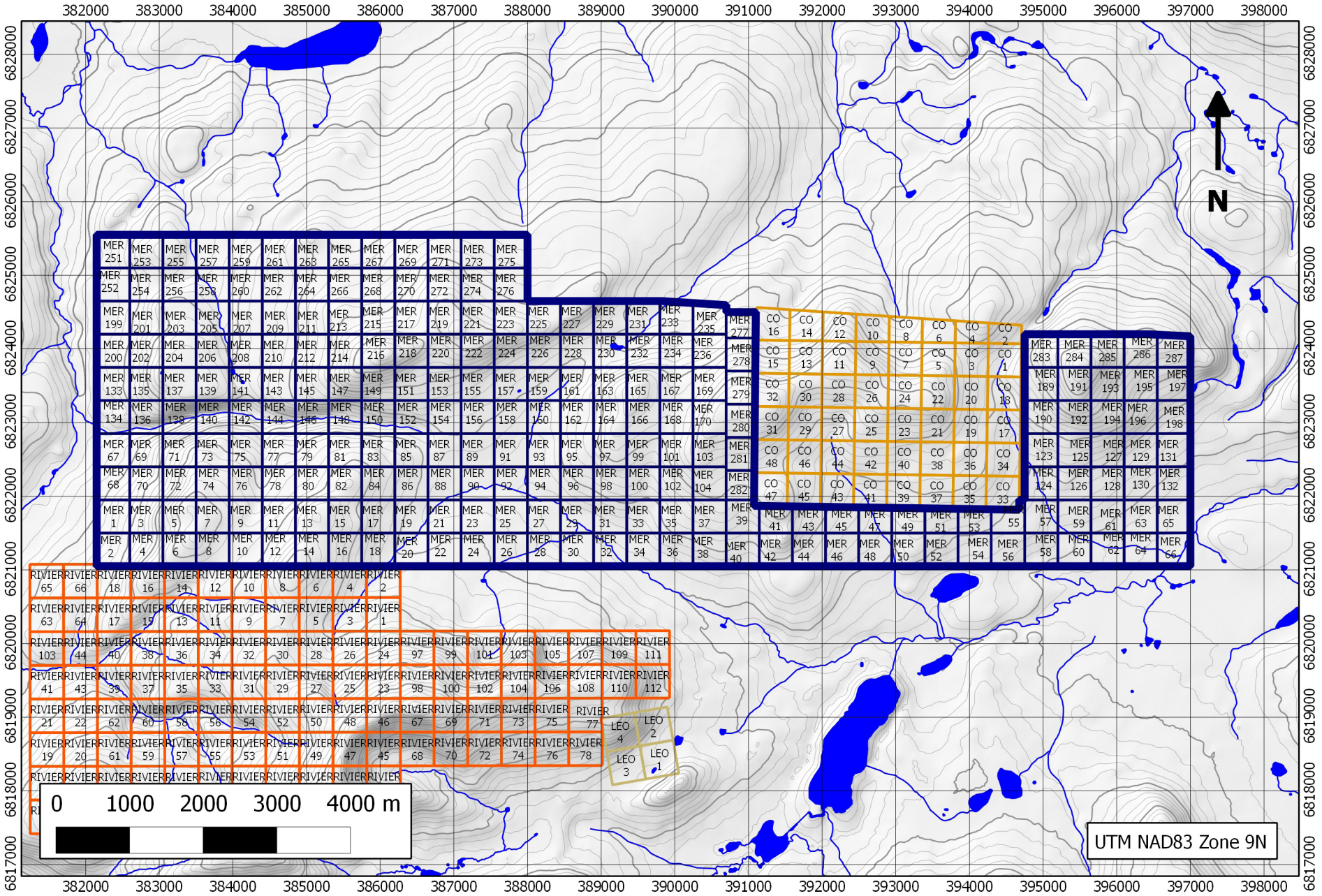
Burgert reported (1997) a 1996 mapping, prospecting and geochemistry program undertaken over the east extension of the current claims by Expatriate Resources Ltd. The exploration was focused on massive sulfides in a geographic area that corresponds to the eastern part of the current Rivier Property. A total of 78 samples were collected over 100 metre spacings on claim lines and two contour lines. Approximate sample locations were obtained by georeferencing a map from the assessment report (Burgert, 1997). No noteworthy anomalies were obtained; however, Expatriate did not analyze their samples for gold. The claims were allowed to lapse (Burgert, 1997).

Radius Gold Inc. on the adjacent Rivier claims in 2010 included a 10-day reconnaissance geochemistry program. Anomalous Gold-silver-arsenic-antimony and nickel was found in and around the ultramafic body, with anomalous values extending to the south of the geologic unit. Values ranged from detection limits to 427 ppb gold, 8 042 ppb silver, 3 390.5 ppm arsenic, and 124.6 ppm antimony were acquired (MacGearailt, 2010). There are no historical mineral resources and mineral estimates reported on the Rivier Property itself, and no records of previous mineral production.

In 2011 Arcturus Ventures Inc. conducted geologic mapping, prospecting and stream sediment and soil sampling on the Mer Property. A total of 32 man days were spent in the field with additional preparation time and expediting between June 16 and July 8, 2011 as well as August 25 to 27, 2011. Field crews were flown daily by helicopter from Inconnu Lodge in June and July by Outbound Aviation and from Ross River in August by Trans North Helicopters.

A total of 552 soil samples were collected from reconnaissance lines in June-July and the follow up grid lines in August. The reconnaissance lines were along the claim staking lines and two 400 metre by 400 metre east-west/north-south grids were sampled on 50 metre centers over two high gold-in-soil samples located on the claim lines during the reconnaissance sampling. In the central portion of the property on Grid One a gold-in-soil value of 839 ppb was detected in an area underlain by Cretaceous aged granodiorite. In the northeastern area of the Property on Grid two a gold-in-soil value of 2430 ppb was detected in an area underlain by ultramafic rocks of the over thrust Anvil Assemblage. There are a few scattered gold-in-soil anomalous sample sites on the northwestern sample lines all less than 50 ppb that have not been examined in the field.

FIGURE 2 - CLAIM MAP



6 Geologic Setting

The claims are underlain by Paleozoic metamorphic of volcanic and sedimentary affinities that have been intruded by intermediate-felsic plutonic rocks of Mesozoic to Cretaceous age. The Finlayson Lake region hosts volcanogenic massive sulphide deposits at Wolverine, Kudz Ze Kayah and Fire Lake.

The claims cover rocks of four plutonic suites that include; metamorphic granitic rocks of Mississippian Age; Jurrassic aged hornblende biotite granite; Cretaceous biotite muscovite granite and Ultra-mafic rocks of the over thrust Slide Mountain Terrane. Regional scale thrust faults juxtapose CPA Anvil assemblage rocks (Slide Mountain Terrane) over the layered metamorphic suite of paleozoic aged rocks that include the Pelly Gneiss Suite and Nasina Assemblagle and older rocks of the Nisling Assemblage. The units are poly deformed during multiple episodes of regional deformation. Descriptions of the individual units are included in the Geologial Legend accompanying Figure 3.

The area has most recently been mapped by Murphy and Piercey, 1999. The geology of the Mer Claims area is presented in Figure 3.

7 Mineralization

There is no known mineralization on the Mer property.

8 Program Details, Sampling Methods and Approach

For details of the Program, Sampling Methods and Approach, please consult Appendix 1, the Airborne Geophysical Survey Report prepared by Precision GeoSurveys Inc.

9 Discussion of Results, Interpretation and Conclusions

No analysis has been performed on the data gathered in the course of this survey.

10 Recommendations

It is recommended that a qualified Geophysicist is retained to analyze and interpret the results to elucidate lithologies, structures and potential zones of alteration on the property.

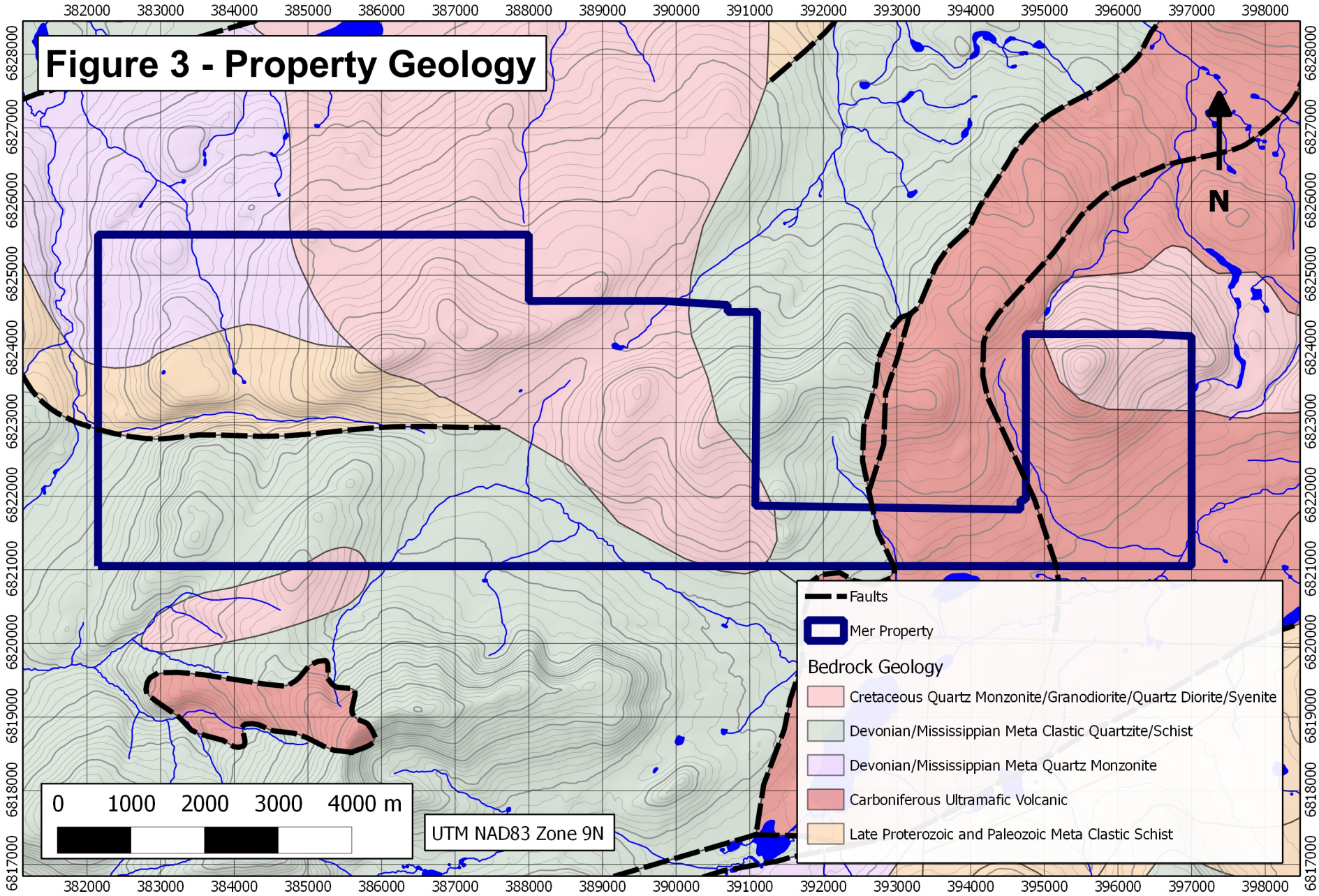


Figure 3 - Property Geology
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N
Faults
Mer Property
Bedrock Geology
Cretaceous Quartz Monzonite/Granodiorite/Quartz Diorite/Syenite
Devonian/Mississippian Meta Clastic Quartzite/Schist
Devonian/Mississippian Meta Quartz Monzonite
Carboniferous Ultramafic Volcanic
Late Proterozoic and Paleozoic Meta Clastic Schist
0
1000
2000
3000
4000 m
UTM NAD83 Zone 9N

11 References

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Annual Report Paper, Finlayson Lake Targeted Geoscience Initiative (southeastern Yukon), Part 2: Quaternary geology and till geochemistry, Jeffrey D. Bond (Yukon Geology Program) and Alain Plouffe (Geological Survey of Canada), 2002, YGS/DIAND. In: Yukon Exploration and Geology 2001

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Open File, 2008-3. Regional Stream Sediment and Water Geochemical data, Finlayson Lake Area, Southeastern Yukon Territory (NTS) 105G), P.W.B. Fiske, M.W. McCurdy, S.J.A. Day and R.J. McNeil, 2008, YGS/DIAND

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Yukon MINFILE – A database of mineral occurrences.

Appendix 1 – Statement of Qualifications

I, Brandon Macdonald, do hereby certify that:

1. I am currently employed by Arcturus Ventures Inc with an office at:
   P.O. Box 696
   141 – 757 Hastings St. W.
   Vancouver, B.C.
   V6C 1A1, Canada
2. I graduated with a BSc in Geological Sciences from the University of British Columbia in 2000
3. I have worked as an exploration geologist for a total of 4 years since graduation
4. I am familiar with the Finlayson Lake District and have worked in the region since 1994. I have conducted geochemical surveys, geological mapping and diamond drilling on multiple properties within the region including the RB Property, 1st Base Property and Mer Property.
5. I arranged with Precision GeoSurveys Inc the details of the Airborne survey including line orientation, spacing and survey limits.

Dated in Vancouver, British Columbia, March 19th, 2013

Brandon Macdonald, BSc

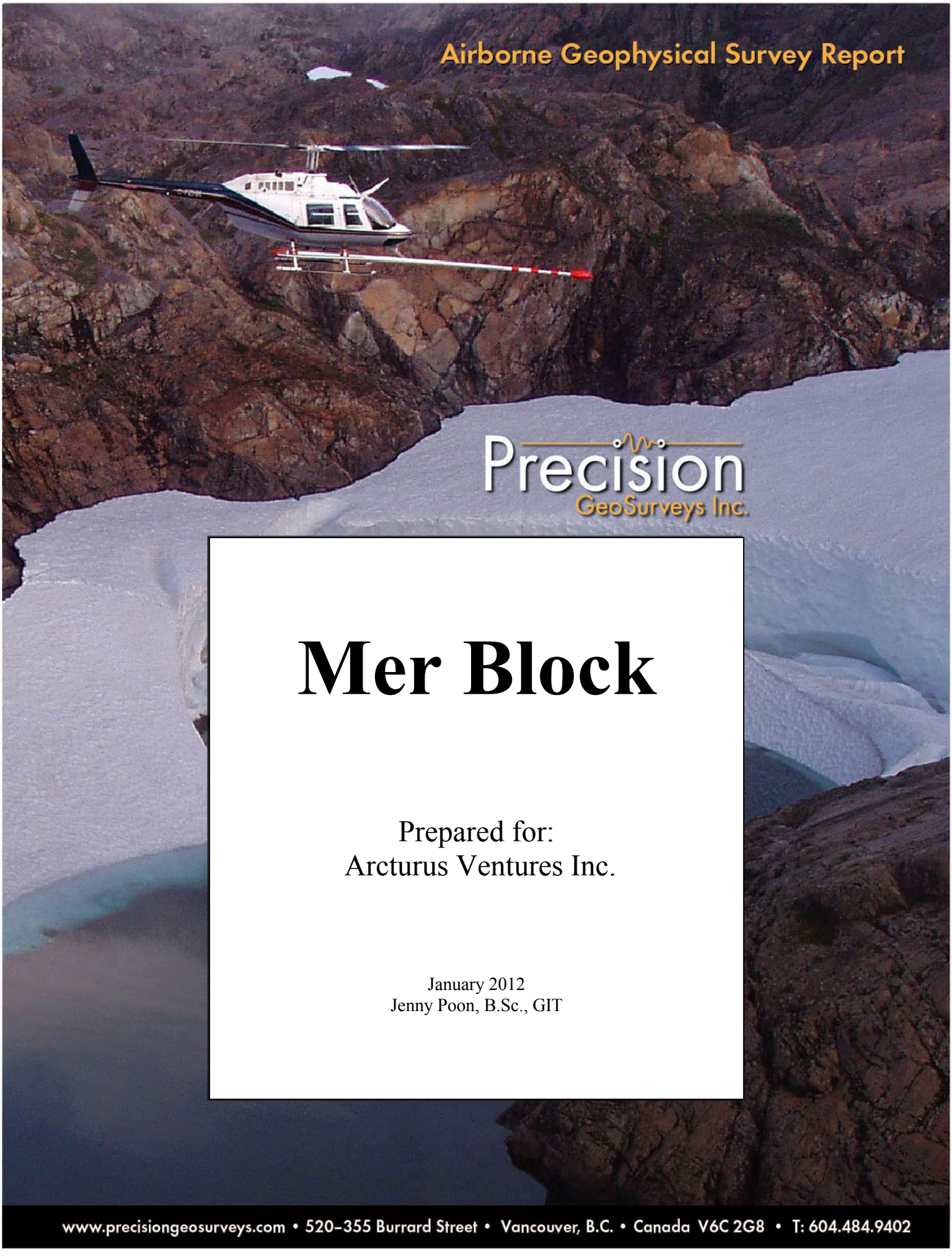
Appendix 2
Statement of Work and Costs – Mer Claims
105G10 & 105G11 - Watson Lake Mining District

Work Performed:
December 17-20 2011: 638 Line Km of Aeromagnetic Survey by Helicopter

Costs Allocation:
All invoices attached. Prices do not include taxes.

Precision Geosurveys Inc	$65,000.00
TOTAL:	**$65,000.00**

Appendix 3 – Geophysical Survey Report



Mer Block

Prepared for:
Arcturus Ventures Inc.

January 2012
Jenny Poon, B.Sc., GIT

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Introduction:

This report outlines the survey operations and data processing actions taken during the airborne geophysical survey flown at the Mer block, located northwest of the Yukon Territory (Figure 1). The airborne geophysical survey was flown by Precision GeoSurveys Inc. for Arcturus Ventures Inc. The geophysical survey, carried out between December 17, 2011 to December 20, 2011, saw the acquisition of high resolution magnetic data.

Figure 1: Mer block area location relative to Whitehorse, YT.

The Mer block is located approximately 231 kilometers north of Whitehorse, YT and is found south west of Finlayson Lake Region. The survey area of Mer block is approximately 15 km by 5 km (Figures 2 and 3). A total of 638 line kilometers of magnetic data were flown for this survey; this total includes tie lines and survey lines. The survey lines were flown at 100 meter spacings at a $000^{o}/180^{o}$ heading; the tie lines were flown at 1 km spacings at a heading of $090^{o}/270^{o}$ (Figure 4).

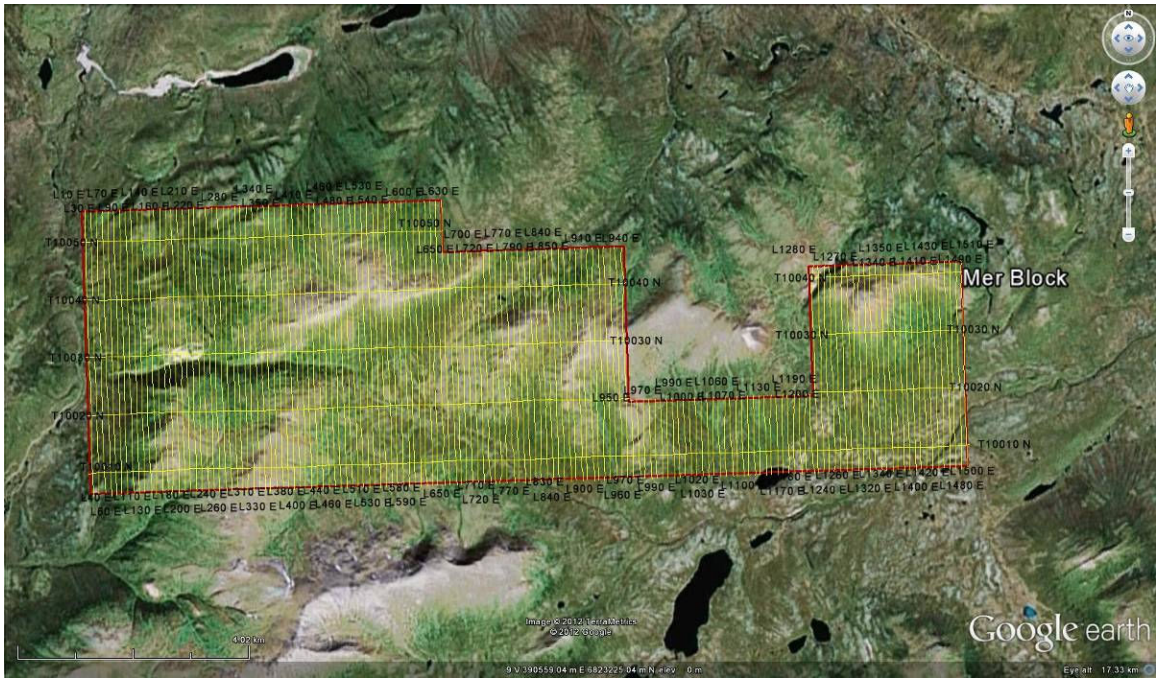


Figure 2: Plan View - Mer block with survey and tie lines outlined in yellow and the boundary in red.

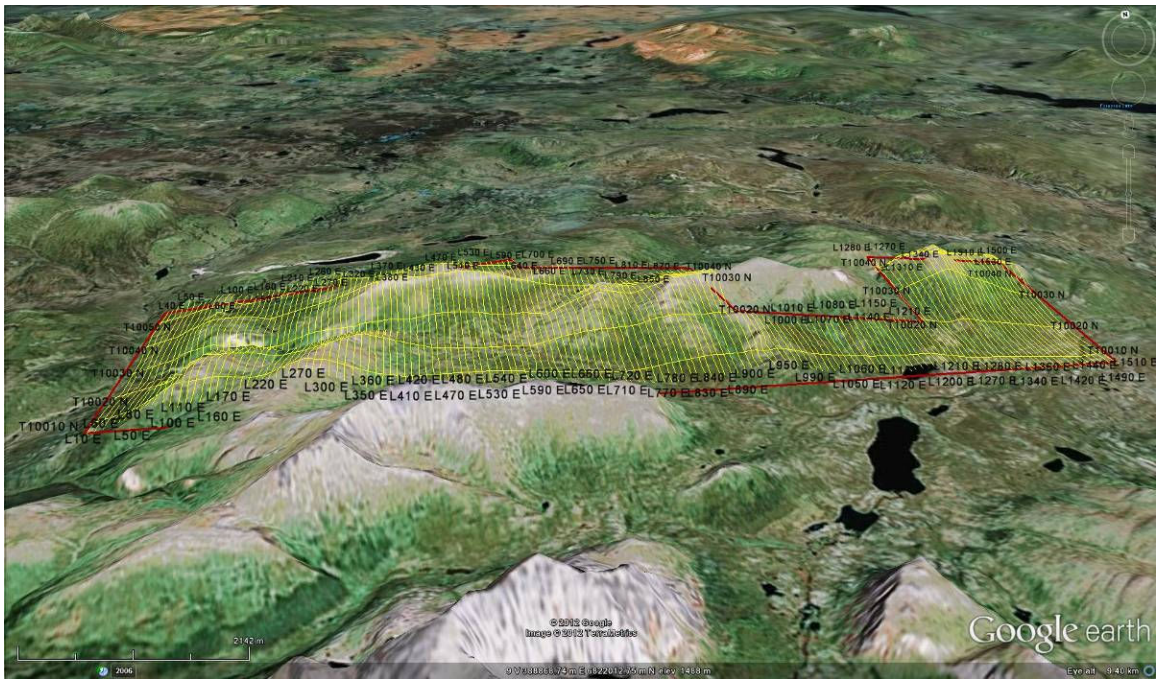


Figure 3: Terrain View - Mer block with survey and tie lines outlined in yellow and the boundary in red.

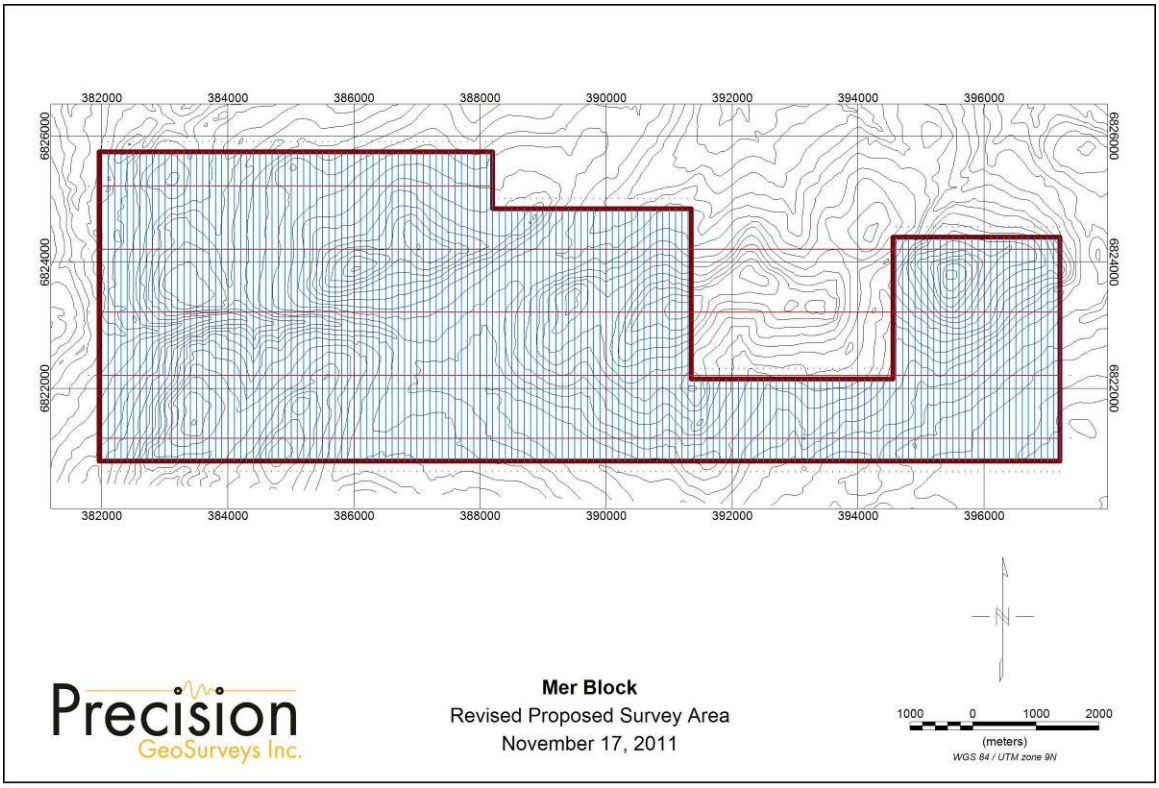


Figure 4: Proposed survey basemap of Mer block showing survey and tie lines and the boundary in red.

Survey Specifications:

The geodetic system used for this survey is WGS 84 and the area is contained in zone 9N. The survey data acquisition specifications and coordinates for Mer block are specified as followed (Tables 1 and 2).

Survey block	Line Spacing m	Survey Line km	Tie Line km	Total Line km	Survey Line Orientation	Nominal Survey Height m
Mer	100	580	58	638	$000^{o}/180^{o}$	35
Total				638		

Table 1: Mer block survey acquisition specifications.

Longitude	Latitude	Easting	Northing
131.1037468	61.54904613	388200	6825750
131.1032004	61.54097211	388200	6824850
131.0439873	61.54187166	391350	6824850
131.0423962	61.51764863	391350	6822150
130.9822859	61.51853529	394550	6822150
130.9835727	61.53872189	394550	6824400
130.9337588	61.53943672	397200	6824400
130.9317802	61.50758576	397200	6820850
131.2181153	61.50322940	381950	6820850
131.2212517	61.54718470	381950	6825750

Table 2: Mer block survey polygon coordinates using WGS 84 in zone 9N.

2.0 Geophysical Data:

Geophysical data are collected in a variety of ways and are used to aid in the exploration and determination of geology, mineral deposits, oil and gas deposits, contaminated land sites and UXO detection.

For the purposes of this survey, airborne magnetic data were collected to serve in the exploration of Mer block which contains rocks that are prospective for gold mineralization.

2.1 Magnetic Data:

Magnetic surveying is probably the most common airborne survey type to be conducted for both mineral and hydrocarbon exploration. The type of survey specifications, instrumentation, and interpretation procedures, depend on the objectives of the survey. Typically magnetic surveys are performed for:

1. Geological Mapping to aid in mapping lithology, structure and alteration in both hard rock environments and for mapping basement lithology, structure and alteration in sedimentary basins or for regional tectonic studies.
2. Depth to Basement mapping for exploration in sedimentary basins or mineralization associated with the basement surface.

3.0 Survey Operations:

Precision GeoSurveys flew the Mer block using a Bell 206 BIII Jet Ranger (Figure 5). The survey lines were flown at a nominal line spacing of one hundred (100) meters and the tie lines were flown at 1 km spacing for the magnetometer. The average survey elevation was 32 meters vertically above ground for the Mer block. The experience of the pilot helped to ensure that the data quality objectives were met and that the safety of the flight crew was never compromised given the potential risks involved in airborne surveying.

Figure 5: Bell 206 Jet Ranger equipped with mag stinger for magnetic data acquisition.

The base of operations for this survey was in Whitehorse, YT. The Precision crew consisted of three members:

Ola Vaage - Pilot
Stian Vaage - Operator
Jenny Poon - Geophysicist

The survey was started on December 17, 2011 and completed December 20, 2011. The survey encountered several delays due to poor weather conditions.

4.0 Equipment:

For this survey, a magnetometer, base station, laser altimeter, and a data acquisition system were required to carry out the survey and collect quality, high resolution data. The survey magnetometer is carried in an approved "stinger" configuration to enhance flight safety and improve data quality in this mountainous terrain.

4.1 AGIS:

The Airborne Geophysical Information System, AGIS, (Figure 6), is the main computer used in data recording, data synchronizing, displaying real-time QC data for the geophysical operator, and generation of navigation information for the pilot display system.

Figure 6: AGIS installed in the Bell 206.

The AGIS was manufactured by Pico Envirotec; therefore the system uses standardized Pico software and external sensors are connected to the system via RS-232 serial communication cables. The AGIS data format is easily converted into Geosoft or ASCII file formats by a supplied conversion program called PEIView. Additional Pico software allows for post real time magnetic compensation and survey quality control procedures.

4.3 Magnetometer:

The magnetometer used by Precision GeoSurveys is a Scintrex cesium vapor CS-3 magnetometer. The system was housed in a front mounted "stinger" (Figure 7). The CS-3 is a high sensitivity/low noise magnetometer with automatic hemisphere switching and a wide voltage range, the static noise rating for the unit is +/- 0.01 nT. On the AGIS screen the operator can view the raw magnetic response, the magnetic fourth difference and the survey altitude for immediate QC of the magnetic data. The magnetic data are recorded at 10 Hz. A magnetic compensator is also used to remove noise created by the movement of the helicopter as it pitches, rolls and yaws within the Earth's geomagnetic field.

Figure 7: View of the mag stinger.

4.4 Base Station:

For monitoring and recording of the Earth's diurnal magnetic field variation, Precision GeoSurveys operates two GEM GSM-19T magnetometer base stations continuously throughout the airborne data acquisition survey. Both base stations are mounted as close to the survey blocks and in an area with low magnetic gradient as possible to give accurate magnetic field data. It is also mounted in area away from electric transmission power lines and moving ferrous objects, such as aircrafts and motor vehicles.

The GEM GSM-19T magnetometer with GPS (Figure 8) uses the proton precession technology sampling at a rate of 0.5 Hz. The GSM-19T has an accuracy of +/- 0.2 nT at 1 Hz. Base station data recorded in the solid-state memory of the base station, are downloaded onto a field laptop using GEMLink 5.0 software. Profile plots of the base station readings are generated and updated at the end of each survey day.

Figure 8: GEM GSM-19T proton precession magnetometer.

4.5 Laser Altimeter:

The pilot is provided with terrain guidance and clearance with an Acuity AccuRange AR3000 laser altimeter (Figure 9). This is attached at the aft end of the magnetometer boom. The AR3000 sensor is a time-of-flight sensor that measures distance by a rapidly-modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 300 m off of natural surfaces with 90% reflectance and 3 km off special reflectors. Within the sensor unit, reflected signal light is collected by the lens and focused onto a photodiode. Through serial communications and analog outputs, the distance data are transmitted and collected by the AGIS at 10 Hz.

Figure 9: Acuity AccuRange AR3000 laser altimeter.

5.0 Data Processing:

After all the data are collected after a survey flight several procedures are undertaken to ensure that the data meet a high standard of quality. All data were processed using Pico Envirotec software and Geosoft Oasis Montaj geophysical processing software.

5.1 Magnetic Processing:

During aeromagnetic surveying noise is introduced to the magnetic data by the aircraft itself. Movement in the aircraft (roll, pitch and yaw) and the permanent magnetization of the aircraft parts (engine and other ferric objects) are large contributing factors to this noise. To remove this noise a process called magnetic compensation is implemented. The magnetic compensation process starts with a test flight at the beginning of the survey where the aircraft flies in the four orthogonal headings required for the survey ($000^o/180^o$ and $090^o/270^o$ in the case of this survey) at an altitude where there is no ground effect in the magnetic data. In each heading, three specified roll, pitch, and yaw maneuvers are performed by the pilot; these maneuvers provide the data that are required to calculate the

necessary parameters for compensating the magnetic data. A computer program called PEIComp is used to create a model for each survey to remove the noise induced by aircraft movement; this model is applied to each survey flight so the data can be further processed.

Followed by the compensation flight, a lag test is conducted. A lag correction of 1.0 seconds was applied to the total magnetic field data to compensate for the lag in the recording system as the magnetometer sensor flies 5.70 m ahead of the GPS antenna.

A magnetic base station is set up before every flight to ensure that diurnal activity is recorded during the survey flights. In this case, the base station was located in the bushes close to the Mer block. Base station readings were reviewed at regular intervals to ensure that no data were collected during periods with high diurnal activity (greater than 5 nT per minute). The base station was installed within the survey block at a magnetically noise-free area, away from metallic items such as steel objects, vehicles, or power lines. The magnetic variations recorded from the stationary base station are removed from the magnetic data recorded in flight to ensure that the anomalies seen are real and not due to solar activity.

Filtering is applied to the laser altimeter data as to remove vegetation clutter and to show the actual ground clearance. To remove vegetation clutter a Rolling Statistic filter was applied to the laser altimeter data and a low pass filter was used to smooth out the laser altimeter profile to remove isolated noise. As a result, filtering the data will yield a more uniform surface in close conformance with the actual terrain.

Some filtering of the magnetic data is also required. A Non Linear filter was used for spike removal. The 1D Non-Linear Filter is ideal for removing very short wavelength, but high amplitude features from data. It is often thought of as a noise spike-rejection filter, but it can also be effective for removing short wavelength geological features, such as signals from surficial features. The 1D Non-Linear Filter is used to locate and remove data that are recognized as noise. The algorithm is 'non- linear' because it looks at each data point and decides if that datum is noise or a valid signal. If the point is noise, it is simply removed and replaced by an estimate based on surrounding data points. Parts of the data that are not considered noise are not modified. The combination of a Non-Linear filter for noise removal and a low pass trend enhancement filter resulted in level data as indicated in the results section of this report. The low pass filters simply smoothes out the magnetic profile to remove isolated noise.

Two forms of levelling are applied to the corrected data: conventional levelling and micro-levelling. There are two components to conventional levelling; the first involves statistical levelling of magnetic data to correct miss ties (intersection errors) followed by specific patterns or trends. For the second component, tie lines are brought to a common regional base value using the mean value of the cross-level error. To obtain the best possible levelled data, individual corrections are edited at selected intersections. Lastly, micro-levelling is applied to the corrected conventional levelled data. This will remove any residual line-direction-related noise, and any low amplitude component of flight line noise, that still remains in the data after tie line levelling.

5.3 Final Data Format

Abbreviations used in the GDB and XYZ files are listed in the following table:

Channel	Units	Description
X	m	UTM Easting - WGS84 Zone 9 North
Y	m	UTM Northing - WGS84 Zone 9 North
Galt	m	GPS height - WGS84 Zone 9 North
DTM	m	Digital Terrain Model
Lalt	m	Laser Altimeter readings
GPStime	Hours:min:secs	GPStime
basemag	nT	Base station diurnal data
mag	nT	Total Magnetic Intensity

Table 3: Mer block survey channel abbreviations.

The file format will be provided in two (2) formats, the first will be a .GDB file for use in Geosoft Oasis Montaj, the second format will be a .XYZ file, this is text file. A complete file provided in each format will contain only magnetic data.

Appendix A

Equipment Specifications

GEM GSM-19T Proton Precession Magnetometer (Base Station)

Configuration Options	15
Cycle Time	999 to 0.5 sec
Environmental	-40 to +60 ° Celsius
Gradient Tolerance	7,000 nT/m
Magnetic Readings	299,593
Operating Range	10, 000 to 120,000 nT
Power	12 V @ 0.62 A
Sensitivity	0.1 nT @ 1 sec
Weight (Console/ Sensor)	3.2 Kg
Integrated GPS	Yes

Scintrex CS-3 Survey Magnetometer

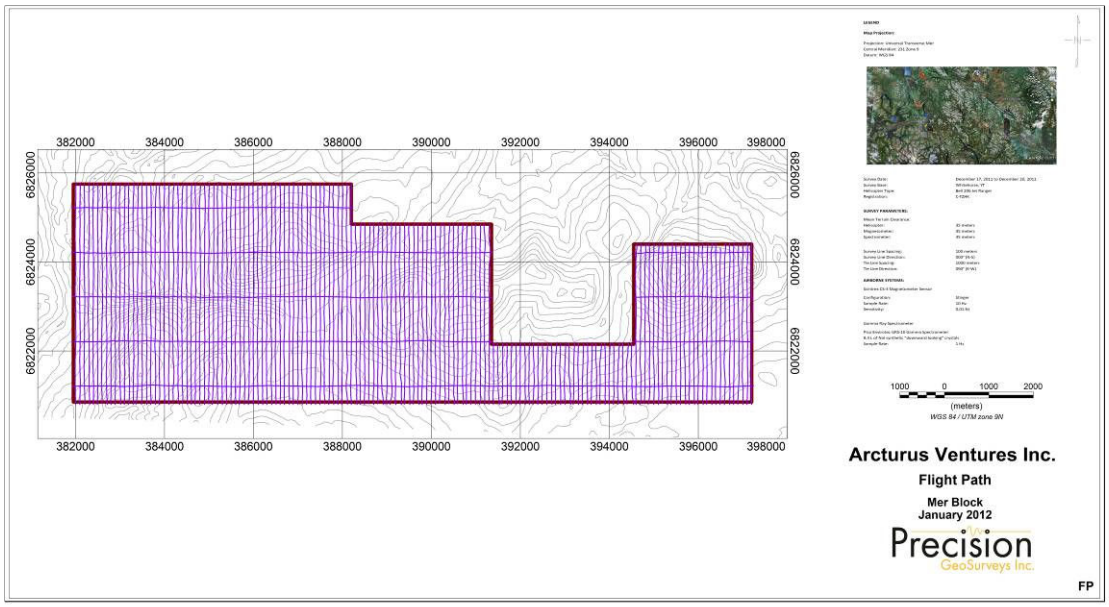
Operating Principal	Self-oscillation split-beam Cesium Vapor (non-radioactive Cs-133)
Operating Rage	15,000 to 105,000 nT
Gradient Tolerance	40,000 nT/metre
Operating Zones	10° to 85° and 95° to 170°
Hemisphere Switching	a) Automatic b) Electronic control actuated by the control voltage levels (TTL/CMOS) c) Manual
Sensitivity	0.0006 nT √Hz rms.
Noise Envelope	Typically 0.002 nT P-P, 0.1 to 1 Hz bandwidth
Heading Error	+/- 0.25 nT (inside the optical axis to the field direction angle range 15° to 75° and 105° to 165°)
Absolute Accuracy	<2.5 nT throughout range
Output	a) continuous signal at the Larmor frequency which is proportional to the magnetic field (proportionality constant 3.49857 Hz/nT) sine wave signal amplitude modulated on the power supply voltage b) square wave signal at the I/O connector, TTL/CMOS compatible
Information Bandwidth	Only limited by the magnetometer processor used
Sensor Head	Diameter: 63 mm (2.5”) Length: 160 mm (6.3”) Weight: 1.15 kg (2.6 lb)
Sensor Electronics	Diameter: 63 mm (2.5”) Length: 350 mm (13.8”) Weight: 1.5 kg (3.3 lb)
Cable, Sensor to Sensor Electronics	3m (9’ 8”), lengths up to 5m (16’ 4”) available
Operating Temperature	-40°C to +50°C
Humidity	Up to 100%, splash proof
Supply Power	24 to 35 Volts DC
Supply Current	Approx. 1.5A at start up, decreasing to 0.5A at 20°C
Power Up Time	Less than 15 minutes at -30°C

Pico Envirotec AGIS data recorder system
(for Navigation, Gamma spectrometer, VLF-EM and Magnetometer Data Acquisition)

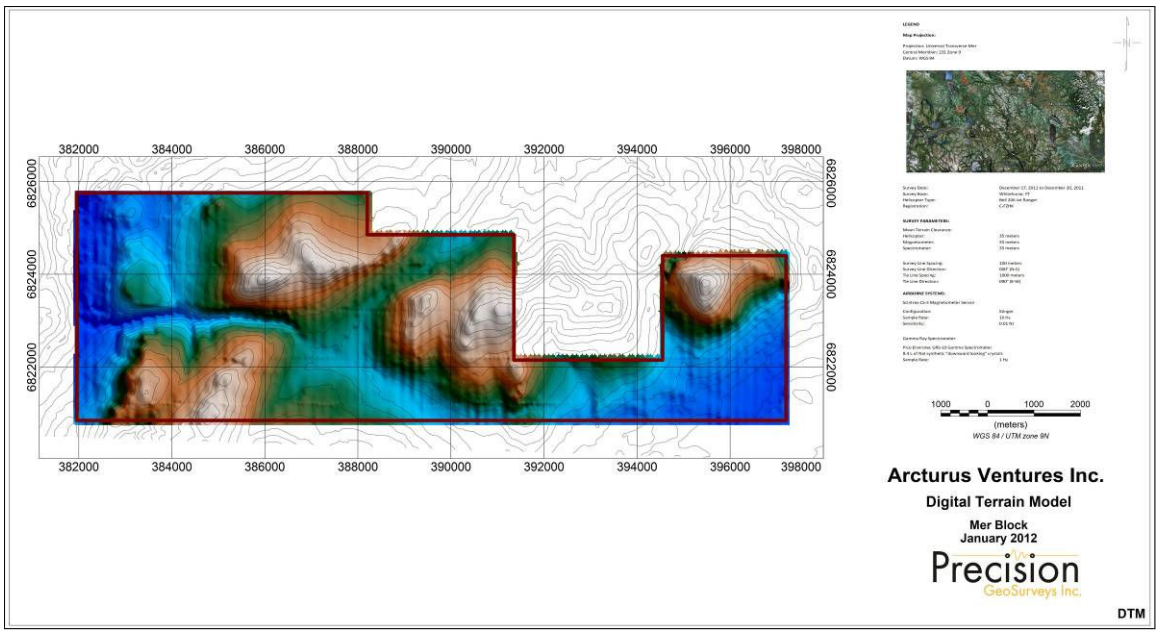
Functions	Airborne Geophysical Information System (AGIS) with integrated Global Positioning System Receiver (GPS) and all necessary navigation guidance software. Inputs for geophysical sensors - portable gamma ray spectrometer GRS-10, MMS4 Magnetometer, Totem 2A EM, A/D converter, temperature probe, humidity probe, Merometric pressure probe, and laser altimeter. Output for the 2 line Pilot Indicator
Display	Touch screen with display of 800 x 600 pixels; customized keypad and operator keyboard. Multi-screen options for real-time viewing of all data inputs, fiducial points, flight line tracking, and GPS channels by operator.
GPS Navigation	Garmin 12-channel, WAAS-enabled
Data Sampling	Sensor dependent
Data Synchronization	Synchronized to GPS position
Data File	PEI Binary data format
Storage	80 GB
Supplied Software	**PEIView:** Allows fast data Quality Control (QC) **Data Format:** Geosoft GBN and ASCII output **PEIConv**: For survey preparation and survey plot after data acquisition
Software	**Calibration:** High voltage adjustment, linearity correction coefficients calculation, and communication test support **Real Time Data Collection:** Automatic Gain real time control on natural isotopes and PC based test and calibration software suite
Power Requirements	24 to 32 VDC
Temperature	Operating:-10 to +55 deg C; storage:-20 to +70 deg C

Appendix B

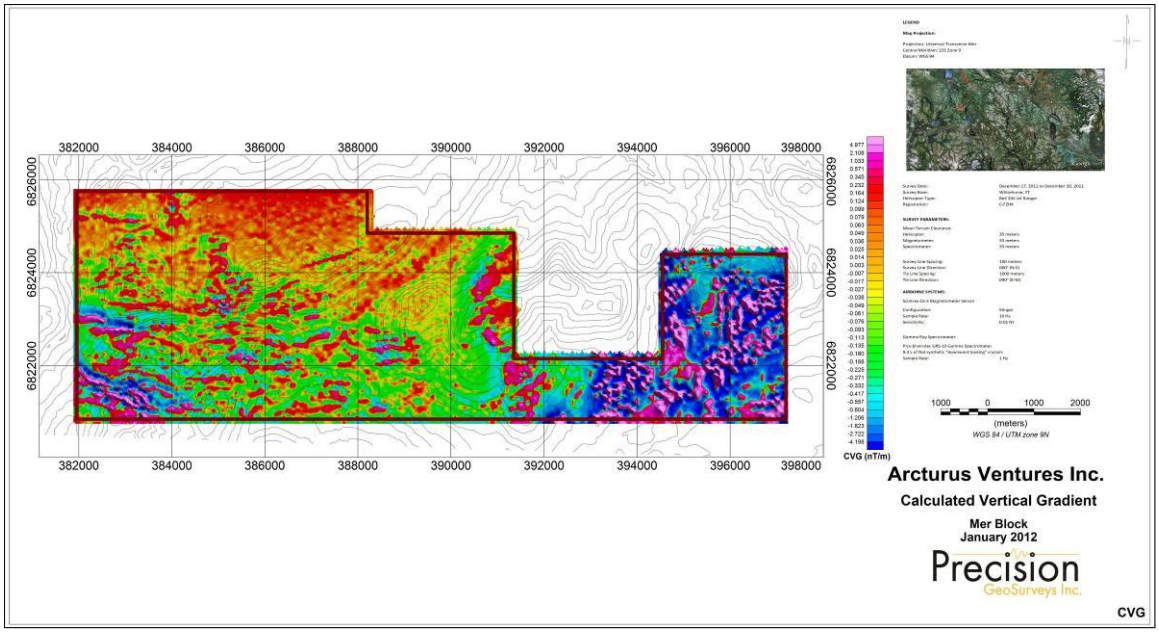
Maps



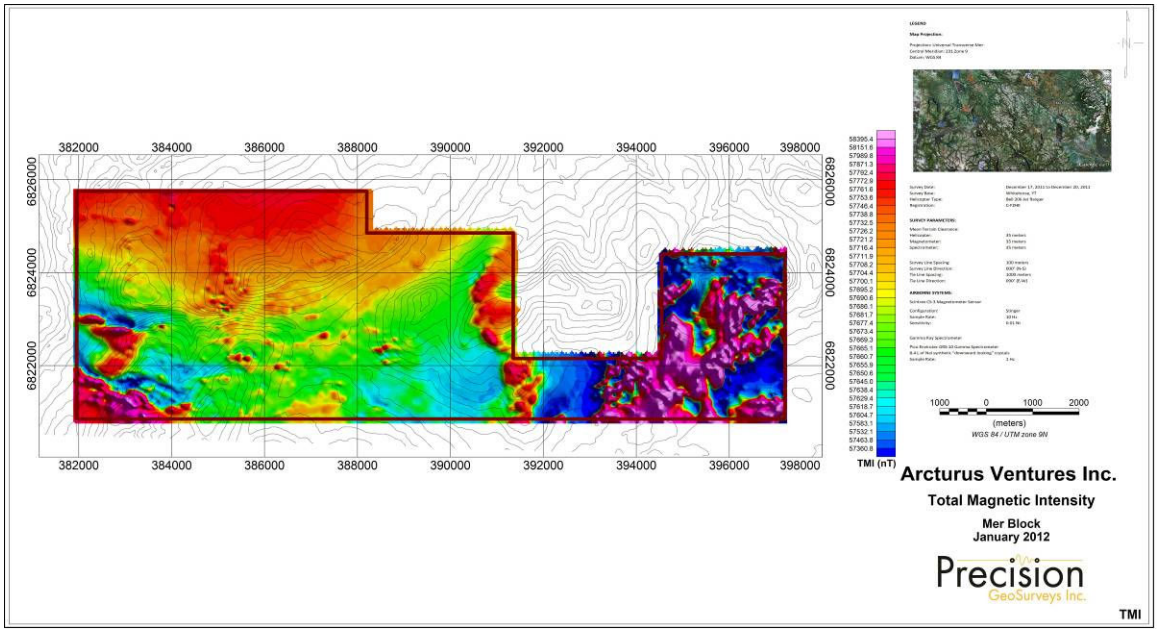
Map 1: Mer block flight path.



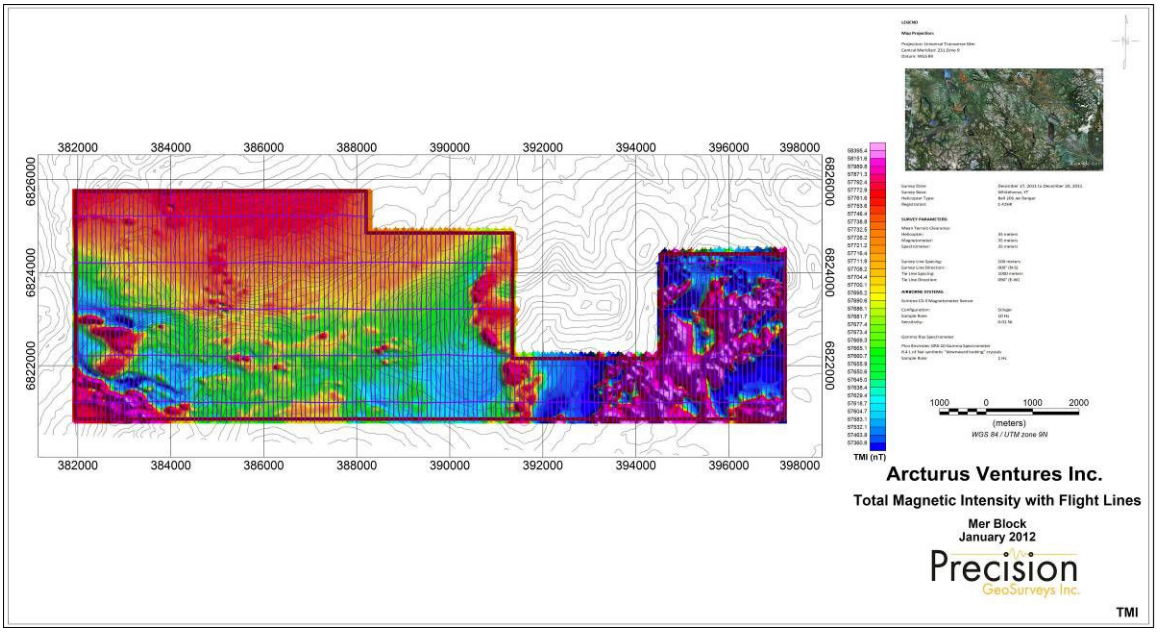
Map 2: Mer block digital terrain model.



Map 3: Mer block calculated vertical gradient.



Map 4: Mer block total magnetic intensity.



Map 5: Mer block total magnetic intensity with plotted flight lines.