FUGRO AIRBORNE SURVEYS



Report #06003

2.32342

MIDAS HIGH RESOLUTION MAGNETIC **GEOPHYSICAL SURVEY** FOR TEMEX RESOURCES CORP. COBALT AREA ONTARIO

NTS: 31L/13, 31M/4,5,12, and 41P/8



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Fugro Airborne Surveys Corp. Mississauga, Ontario

May 9, 2006

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## SUMMARY

This report describes the logistics, data acquisition and processing of results of a MIDAS airborne geophysical survey carried out for Temex Resources Corp. over eight properties located near New Liskeard, Ontario. Total coverage of the survey blocks amounted to 6,148 km. The survey was flown from February 10<sup>th</sup> to March 6<sup>th</sup>, 2006.

The survey data were processed and compiled in the Fugro Airborne Surveys Toronto office. Map products and digital data were provided in accordance with the scales and formats specified in the Survey Agreement.

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#### **1. INTRODUCTION**

A MIDAS magnetic survey was flown for Temex Resources Corp., from February 10<sup>th</sup> to March 6<sup>th</sup>, over eight survey blocks located near New Liskeard, Ontario. The survey areas can be located on NTS map sheets 31L/13, 31M/4,5,12, and 41P/8.

Survey coverage consisted of approximately 6,148 line-km, including 434 line-km of tie lines. Flight lines were flown in an azimuthal direction of 0° with a line separation of 75 metres. Tie lines were flown orthogonal to the traverse lines with a line separation of 1000 metres.

The survey employed the MIDAS magnetic system. Ancillary equipment consisted of two magnetometers, radar, laser and barometric altimeter, digital video, digital recorder, and an electronic navigation system. The instrumentation was installed in an AS350B turbine helicopter (Registration C-FDYS) that was provided by Questral Helicopters Ltd. The helicopter flew at an average airspeed of 120 km/h with a sensor height of approximately 30 metres.

# 2. SURVEY OPERATIONS

The base of operations for the survey was established at New Liskeard, Ontario. The survey areas can be located on NTS map sheets 31L/13, 31M/4,5,12, and 41P/8 (Figure 1-4).

Table 2-1 lists the corner coordinates of the survey areas in NAD27, UTM Zone 17N, central meridian 81°W.

	Block	X-UTM (E)	Y-UTM (N)
1	06003-1	554600	5257709
2	Van Nostrand Property	557837	5257709
3		557837	5254472
4		554600	5254472
1	06003-2	572213	5253483
2	Mattawapika Property	572868	5252890
3		573338	5252808
4		573400	5252808
5		573397	5253751
6		573789	5253751
7		573789	5256255
8		574139	5256255
9		574135	5256663
10		574960	5256663
11		574960	5256261
12		575409	5256261
13		575409	5253001
14		574618	5253001
15		574618	5250996
16		573336	5250813
17		572854	5250895
18		572213	5251483

## Table 2-1

1	06003-3	586167	5261267
2	FB Property	587785	5261287
3		587799	5260487
4		589402	5260521
5		590266	5260521
6		590266	5257307
7		588678	5257295
8		588678	5256509
9		587799	5256509
10		587799	5259267
11		586167	5259267
		1	
1	06003-4	587900	5254078
2	FB Property	592739	5254125
3		592739	5252117
4		590350	5252120
5		590350	5251686
6		590000	5251686
7		590000	5250867
8		589593	5250866
9		589593	5250453
10		588732	5250453
11		588732	5252078
12		587900	5252078
1	06003-5	576648	5237941
2	KJD, Brigstocke, Brett,	580636	5237951
3	Snare Creek, BH, Ram,	580637	5242274
4	Caniptau, and Castle	576925	5242250
5	Properties	576925	5244250
6		578596	5244250
7		578596	5245437
8		579179	5245437
9		579179	5248642
10		582238	5248642
11		582238	5249151
12		583115	5249151
13		583115	5250821
14		585506	5250821
15		585506	5248821
16		584740	5248821
17		584740	5248096
18		584409	5248096

19	06003-5	584409	5244382
20	KJD, Brigstocke, Brett,	585131	5244382
21	Snare Creek, BH, Ram,	585131	5243640
22	Caniptau, and Castle	586088	5243640
23	Properties	586088	5238404
24		590872	5238388
25		590872	5236388
26		589815	5236388
27		589815	5235555
28		590617	5235555
29		590617	5234724
30		591410	5234742
31		591410	5236383
32		592609	5236383
33		592609	5235573
34		593029	5235573
35		593029	5234781
36		597763	5234889
37		597763	5232889
38		597494	5232889
39		597494	5231689
40		597069	5231683
41		597069	5229214
42		597376	5229223
43		597376	5227550
44		597659	5227550
45		597659	5225673
46		598876	5225673
47		598876	5223916
48		602191	5223916
49		602191	5218379
50		596584	5218307
51		596584	5221951
52		595261	5221951
53	····	595261	5222174
54		594442	5222174
55		594439	5222324
56		589178	5222308
5/		589166	5219958
58		583938	5219950
59		583938	5228/36
60		584329	5228736
61		584329	5230350
1 62	1	1 584511	5230350

- 2.4 -

63		584511	5235552
64		576648	5235512
65		576648	5237941
1	06003-6	587494	5206589
2	Wilson Lake Property	587494	5208589
3		588158	5208589
4		588158	5209809
5		588260	5209810
6		588260	5211290
7		589122	5211303
8		590415	5211679
9		591182	5211679
10		591987	5211842
11		594306	5211849
12		594306	5208736
13		594164	5208722
14		594164	5208057
15		590222	5208001
16		590222	5206684
17		589924	5206684
18		589924	5206651
19		589748	5206641
20		589748	5206847
21		589530	5206921
22		588792	5206955
23		588168	5206589
	-		
1	06003-7	597987	5202617
2	Lapin Property	601243	5202705
3		601243	5199395
4		597987	5199395
1	06003-8	610799	5203037
2	Hartle Lake Property	613955	5203013
3		613955	5198047
4		611586	5198047
5		611586	5199830
6		610799	5199830



Figure 1 Location Map and Sheet Layout Van Nostrand and Mattawapika Properties Job # 06003



Figure 2 Location Map and Sheet Layout FB Property Job # 06003



Figure 3 Location Map and Sheet Layout KJD, Brigstocke, Brett, Snare Creek, BH, Ram, Caniptau and Castle Properties Job # 06003



Figure 4 Location Map and Sheet Layout Wilson Lake, Lapin and Hartle Lake Properties Job # 06003

The survey specifications were as follows:

Parameter	Specifications
Traverse line direction	NS
Traverse line spacing	75 m
Tie line direction	EW
Tie line spacing	1000 m
Sample interval	10 Hz, 3.3 m @ 120 km/h
Aircraft mean terrain clearance	30 m
Mag sensor mean terrain clearance	30 m
Average speed	120 km/h
Navigation (guidance)	±5 m, Real-time GPS
Post-survey flight path	±2 m, Differential GPS

## 3. SURVEY EQUIPMENT

This section provides a brief description of the geophysical instruments used to acquire the survey data and the calibration procedures employed. The geophysical equipment was installed in an AS350B helicopter. This aircraft provides a safe and efficient platform for surveys of this type.

## **Airborne Magnetometer**

Model:	Fugro dual-sensor horizontal gradiometer with two Scintrex CS2 sensors and AM102 counters.
Туре:	Optically pumped cesium vapour
Sensitivity:	0.01 nT
Sample rate:	10 per second

The magnetometer sensors are housed in booms attached to the helicopter. The sensor separation is 13.2 m.



Figure 5: FUGRO MIDAS system layout

# Fluxgate

Manufacturer:	Billingsley
Model:	TMF100 Triaxial Fluxgate Magnetometer
Axial Alignment:	Orthogonality better than ±1 degree
Sensitivity:	100 μV per nT
Sample rate:	10 per second

A three-axis fluxgate magnetometer measures the orientation and rates of change of the aircraft's magnetic field with respect to the earth's magnetic field. A compensation algorithm is applied to generate a correction factor to compensate for permanent, induced and eddy current magnetic noise generated by the aircraft.

# **Magnetic Base Station**

#### <u>Primary</u>

Model:	Fugro CF1 base station with timing provided by integrated GPS	
Sensor type:	Scintrex CS-2	
Counter specifications:	Accuracy: Resolution: Sample rate	±0.1 nT 0.01 nT 1 Hz
GPS specifications:	Model: Type: Sensitivity: Accuracy:	Marconi Allstar Code and carrier tracking of L1 band, 12-channel, C/A code at 1575.42 MHz -90 dBm, 1.0 second update Manufacturer's stated accuracy for differential corrected GPS is 2 metres

Environmental Monitor specifications: Temperature:

- Accuracy: ±1.5°C max
- Resolution: 0.0305°C
- Sample rate: 1 Hz
- Range: -40°C to +75°C

Barometric pressure:

- Model: Motorola MPXA4115A
- Accuracy: ±3.0° kPa max (-20°C to 105°C temp. ranges)
- Resolution: 0.013 kPa
- Sample rate: 1 Hz
- Range: 55 kPa to 108 kPa

A digital recorder is operated in conjunction with the base station magnetometer to record the diurnal variations of the earth's magnetic field. The clock of the base station is synchronized with that of the airborne system, using GPS time, to permit subsequent removal of diurnal drift. The Fugro CF1 was the primary magnetic base station.

# **Navigation (Global Positioning System)**

Airborne Receiver for Real-time Navigation & Guidance		
Model:	Ashtech Glonass GG24 with PNAV 2100 interface	
Туре:	SPS (L1 band), 24-channel, C/A code at 1575.42 MHz,	
	S code at 0.5625 MHz, Real-time differential.	
Sensitivity:	-132 dBm, 0.5 second update	
Accuracy:	Manufacturer's stated accuracy is better than 5 metres real-time	
Antenna:	Mounted on tail of aircraft	

Airborne Receiver for Flight Path Recovery

Model:	Aero Antenna AT2775
Туре:	Code and carrier tracking of L1 band, 24-channel, dual frequency C/A code at 1575.2 MHz, and L2 P-code 1227 MHz.
Sample rate:	0.5 second update.
Accuracy:	Manufacturer's stated accuracy for differential corrected GPS is better than 1 metre.
Antenna:	Mounted on starboard and port booms.
Primary Base Station for	Post-Survey Differential Correction
Model:	Aero Antenna AT2775
Туре:	Code and carrier tracking of L1 band, 12-channel, dual frequency C/A code at 1575.2 MHz, and L2 P-code 1227 MHz
Sample rate:	0.5 second update
Accuracy:	Manufacturer's stated accuracy for differential corrected GPS is better than 1 metre
Secondary GPS Base St	ation
Model:	Marconi Allstar OEM, CMT-1200
Туре:	Code and carrier tracking of L1 band, 12-channel, C/A code at 1575.42 MHz
Sensitivity:	-90 dBm, 1.0 second update
Accuracy:	Manufacturer's stated accuracy for differential corrected GPS is 2 metres.

The Ashtech GG24 is a line of sight, satellite navigation system that utilizes time-coded signals from at least four of forty-eight available satellites. Both Russian GLONASS and

American NAVSTAR satellite constellations are used to calculate the position and to provide real time guidance to the helicopter. For flight path processing two Aero Antenna AT2775 were used as the mobile receivers. A similar system was used as the primary base station receiver. The mobile and base station raw XYZ data were recorded, thereby permitting post-survey differential corrections for theoretical accuracies of better than 2 metres. A Marconi Allstar GPS unit, part of the CF-1, was used as a secondary (back-up) base station.

Each base station receiver is able to calculate its own latitude and longitude. For this survey, the primary GPS station was located at latitude 47° 32' 17.72090", longitude -79 ° 40' 39.02594" at an elevation of 169.820 metres above the ellipsoid. The GPS records data relative to the WGS84 ellipsoid, which is the basis of the revised North American Datum (NAD83). Conversion software is used to transform the WGS84 coordinates to the NAD27 UTM system displayed on the maps.

#### **Radar Altimeter**

Manufacturer:	Honeywell/Sperry
Model:	AA 330 or RT220
Туре:	Short pulse modulation, 4.3 GHz
Sensitivity:	0.3 m
Sample rate:	2 per second

The radar altimeter measures the vertical distance between the helicopter and the ground.

# **Barometric Pressure and Temperature Sensors**

Model:	DIGHEM D 1300	0	2			ا مەر مەر
Туре:	Motorola MPX4 <sup>2</sup> AD592AN high-i	115AP analog pressure sensor impedance remote temperature s	sensors	s		
Sensitivity:	Pressure: Temperature:	150 mV/kPa 100 mV/°C or 10 mV/°C (select	able)			
Sample rate:	10 per second					

The D1300 circuit is used in conjunction with one barometric sensor and up to three temperature sensors. Two sensors are installed in the console in the aircraft, to monitor pressure and internal operating temperatures.

# Laser Altimeter

Manufacturer:	Optech
Model:	ADMGPA100
Туре:	Fixed pulse repetition rate of 2 kHz
Sensitivity:	±5 cm from 10°C to 30°C ±10 cm from -20°C to +50°C
Sample rate:	2 per second

The laser altimeter measures the distance from the helicopter to ground, except in areas of dense tree cover.

## **Digital Data Acquisition System**

Manufacturer:	Fugro
Model:	HELIDAS
Recorder:	Compact Flash Card

The stored data are downloaded to the field workstation PC at the survey base, for verification, backup and preparation of in-field products.

# Video Flight Path Recording System

Type: Axis 2420 Digital

Recorder: Tablet Computer

Fiducial numbers are recorded continuously and are displayed on the margin of each image. This procedure ensures accurate correlation of data with respect to visible features on the ground.

#### 4. QUALITY CONTROL AND IN-FIELD PROCESSING

Digital data for each flight were transferred to the field workstation, in order to verify data quality and completeness. A database was created and updated using Geosoft Oasis Montaj and proprietary Fugro Atlas software. This allowed the field personnel to calculate, display and verify both the positional (flight path) and geophysical data on a screen or printer. Records were examined as a preliminary assessment of the data acquired for each flight.

In-field processing of Fugro survey data consists of differential corrections to the airborne GPS data, spike rejection and filtering of all geophysical and ancillary data, verification of flight videos, diurnal correction, and preliminary leveling of magnetic data.

All data, including base station records, were checked on a daily basis, to ensure compliance with the survey contract specifications. Reflights were required if any of the following specifications were not met.

Navigation - Positional (x,y) accuracy of better than 10 m, with a CEP (circular error of probability) of 95%.

Flight Path - No lines to exceed 25 m departure from nominal line spacing over a continuous distance of more than 1 km, except for reasons of safety.

- Clearance Mean terrain sensor clearance of 30 m, except where precluded by safety considerations, e.g., restricted or populated areas, severe topography, obstructions, tree canopy, aerodynamic limitations, etc.
- Airborne Mag Figure of Merit for the magnetometers will be no greater than 2.0 nT. The non-normalized 4<sup>th</sup> dfference will not exceed 1.6 nT over a continuous distance of 1 km excluding areas where this specification is exceeded due to natural anomalies.

Base Mag - Non-linear variations not to exceed 10 nT over a time of 1 minute.

#### 5. DATA PROCESSING

#### Flight Path Recovery

The raw range data from at least four satellites are simultaneously recorded by both the base and mobile GPS units. The geographic positions of both units, relative to the model ellipsoid, are calculated from this information. Differential corrections, which are obtained from the base station, are applied to the mobile unit data to provide a post-flight track of the aircraft, accurate to within 2 m. Speed checks of the flight path are also carried out to determine if there are any spikes or gaps in the data.

The corrected WGS84 latitude/longitude coordinates are transformed to the coordinate system used on the final maps. Images or plots are then created to provide a visual check of the flight path.

#### **Total Magnetic Field**

A fourth difference was calculated from the raw total magnetic intensity data (TMI). The raw TMI was examined in profile form along with the fourth difference. Spikes were manually defaulted and interpolated with an Akima spline. The lag in the magnetic data was determined empirically by analysis of the grids and applied to the survey data. A lag of 1.8 seconds for the port and starboard magnetometers was applied. The diurnal variations recorded by the base station were edited for any cultural contamination and filtered to remove high-frequency noise. This diurnal magnetic data was then subtracted

from the despiked, lagged TMI to provide a first order diurnal correction. The diurnal removed magnetic field data were then gridded and compared to a grid of the despiked, lagged magnetic data to ensure that the data quality was improved by diurnal removal.

The lagged, diurnal corrected magnetic data for the two sensors were averaged to create a data set centered on the flight path. Tie line leveling corrections were calculated using tie and traverse line intercepts. Manual adjustments were applied to any lines that required leveling, as indicated by shadowed images of the gridded magnetic data. To remove any short wavelength residual line-to-line discrepancies in the total field magnetics, a microleveling technique was used to remove errors of less than 5.0 nT striking parallel to the line direction to produce the final total magnetic field.

#### **Measured Magnetic Gradient**

The diurnally-corrected total magnetic field data for the two magnetic sensors were used to calculate the transverse measured magnetic gradient. The transverse gradient is calculated with respect to the flight line direction. The median was removed from the gradient on a line-by-line basis. To remove any short wavelength residual line-to-line discrepancies in horizontal gradient, a microleveling technique was used to remove errors of less than 0.05 nT/m striking parallel to the line direction to produce the final transverse horizontal magnetic gradient.

## **Enhanced Total Magnetic Field**

Bidirectional gridding with the transverse gradient should produce a surface that correctly renders both the measured data and the measured horizontal gradient at each survey line. This can be an advantage when gridding data that include features approaching the line-separation in size and also for rendering features that are not perpendicular to the line direction, particularly those which are sub-parallel to the line direction. Direct results of the application of Horizontal Gradient Enhanced (HGE) gridding are:

- Increased resolution and continuity of magnetic features parallel or sub-parallel to the flight line direction
- Correct spatial positioning of finite source magnetic bodies between lines.
- Improved resolution of analytical signal and enhanced analytic signal products.

Final transverse magnetic gradient data were used in conjunction with the total magnetic field to create a Horizontal Gradient Enhanced grid of the total magnetic field. This grid was created using the enhanced bi-directional gridding tool in proprietary Fugro Atlas software.

## **Calculated Vertical Magnetic Gradient**

The diurnally-corrected total magnetic field data were subjected to a processing algorithm that enhances the response of magnetic bodies in the upper 500 m and attenuates the response of deeper bodies. The resulting vertical gradient map provides better definition and resolution of near-surface magnetic units. It also identifies weak magnetic features that may not be evident on the total field map. However, regional magnetic variations and changes in lithology may be better defined on the total magnetic field map.

## **Magnetic Derivatives (optional)**

The total magnetic field data can be subjected to a variety of filtering techniques to yield maps or images of the following:

second vertical derivative reduction to the pole/equator magnetic susceptibility with reduction to the pole upward/downward continuations analytic signal All of these filtering techniques improve the recognition of near-surface magnetic bodies, with the exception of upward continuation. Any of these parameters can be produced on request.

## **Digital Elevation (optional)**

The radar altimeter values (ALTR – aircraft to ground clearance) are subtracted from the differentially corrected and de-spiked GPS-Z values to produce profiles of the height above the ellipsoid along the survey lines. These values are gridded to produce contour maps showing approximate elevations within the survey area. The calculated digital terrain data are then tie-line leveled. Any remaining subtle line-to-line discrepancies are manually removed. After the manual corrections are applied, the digital terrain data are filtered with a microleveling algorithm.

The accuracy of the elevation calculation is directly dependent on the accuracy of the two input parameters, ALTR and GPS-Z. The ALTR value may be erroneous in areas of heavy tree cover, where the altimeter reflects the distance to the tree canopy rather than the ground. The GPS-Z value is primarily dependent on the number of available satellites. Although post-processing of GPS data will yield X and Y accuracies in the order of 1-2 metres, the accuracy of the Z value is usually much less, sometimes in the  $\pm 10$  metre range. Further inaccuracies may be introduced during the interpolation and gridding process.

Because of the inherent inaccuracies of this method, no guarantee is made or implied that the information displayed is a true representation of the height above sea level. Although this product may be of some use as a general reference, <u>THIS PRODUCT</u> <u>MUST NOT BE USED FOR NAVIGATION PURPOSES.</u>

#### **Contour, Colour and Shadow Map Displays**

The geophysical data are interpolated onto a regular grid using a modified Akima spline technique. The resulting grid is suitable for image processing and generation of contour maps. The grid cell size is 20% of the line interval.

Colour maps are produced by interpolating the grid down to the pixel size. The parameter is then incremented with respect to specific amplitude ranges to provide colour "contour" maps.

Monochromatic shadow maps or images are generated by employing an artificial sun to cast shadows on a surface defined by the geophysical grid. There are many variations in the shadowing technique. These techniques can be applied to total field or enhanced magnetic data, magnetic derivatives, resistivity, etc. The shadowing technique is also used as a quality control method to detect subtle changes between lines.

#### 6. PRODUCTS

This section lists the final maps and products that have been provided under the terms of the survey agreement. Other products can be prepared from the existing dataset, if requested. Most parameters can be displayed as contours, profiles, or in colour.

#### **Base Maps**

Base maps of the survey area were produced from digital topography (.dxf files) supplied by Temex Resources Corp. This process provides a relatively accurate, distortion-free base that facilitates correlation of the navigation data to the map coordinate system. The topographic files were combined with geophysical data for plotting the final maps. All maps were created using the following parameters:

#### Projection Description:

Datum: Ellipsoid: Projection:	NAD 27 Ma Clarke 186 UTM (Zone	anitoba & Ont 6 e: 17)	ario
Central Meridian:	81° W		
False Northing: False Easting: Scale Factor: WGS84 to Local Conversion: Datum Shifts:	0 500000 0.9996 Molodensk DX: 9	y DY: -157	DZ: -184

The following parameters are presented at a scale of 1:10,000. All maps include flight lines and topography, unless otherwise indicated. Preliminary products are not listed.

# **Final Products**

	No. of Map Sets		
	Mylar Blackline Colour		
Total Magnetic Field			6
Horizontal Gradient Enhanced TMF			6
Calculated Vertical Magnetic Gradient			6
Transverse Horizontal Gradient			6

## Additional Products

Digital Archive (see Archive Description) Survey Report

1 CD-ROM 6 copies

## 7. CONCLUSION

This report describes the equipment, data processing procedures and logistics of the survey over the eight blocks.

It is recommended that additional processing of existing geophysical data be considered, in order to extract the maximum amount of information from the survey results. Current software and imaging techniques often provide valuable information on structure and lithology, which may not be clearly evident on the current colour maps. These techniques can yield images that define subtle, but significant, structural details.

Respectfully submitted,

FUGRO AIRBORNE SURVEYS CORP.

Elizabeth Bowslaugh Geophysicist

## **APPENDIX A**

### LIST OF PERSONNEL

The following personnel were involved in the acquisition, processing, interpretation and presentation of data, relating to a MIDAS airborne geophysical survey carried out for Temex Resources Corp., near New Liskeard, Ontario.

David Miles Emily Farquhar Jazz Bola Amir Soltanzadeh Mark Cusack Elizabeth Bowslaugh Lyn Vanderstarren Susan Pothiah Albina Tonello Manager, Helicopter Operations Manager, Data Processing and Interpretation Senior Geophysical Operator Field Geophysicist Pilot (Questral Helicopters Ltd.) Geophysical Data Processor Drafting Supervisor Word Processing Operator Secretary/Expeditor

The survey consisted of 6,148 km of coverage, flown from February  $10^{th}$  to March  $6^{th}$ , 2006.

All personnel are employees of Fugro Airborne Surveys, except for the pilot who is an employee of Questral Helicopters Ltd.

**APPENDIX B** 

# DATA ARCHIVE DESCRIPTION

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#### APPENDIX B

### **ARCHIVE DESCRIPTION**

2,32342

Reference: CDVD00129 to CDVD00132 # of DVD's: 4 Archive Date: 2006-May-09

This archive contains final data archives and grids of an airborne geophysical survey conducted by FUGRO AIRBORNE SURVEYS CORP. on behalf of Temex Resources Corp. during February and March, 2006.

Job # 06003

This DVD set consists of 206 files contained in 5 directories

\*\*\*\*\*\*\* CDVD00129 \*\*\*\*\*\*\*

#### \GRIDS

Grids in Geosoft binary float (.GRD) format

CVG_HGE_BLK*	<ul> <li>Calculated Vertical Magnetic Gradient</li> </ul>
MAG_BLK*	- Total Magnetic Field
MAG_HGE_BLK*	- Horizontal Gradient Enhanced Total Magnetic Field
MHG_BLK*	- Measured Horizontal Magnetic Gradient

where \* is block number 1-8

#### **\LINEDATA**

06003\_BLK\*.XYZ - Final linedata archive in Geosoft XYZ format TEMEX\_COBALT.TXT - Documentation for linedata archive file

where \* is block number 1-8

#### \PDF

files created with PDF995 Creator v5.2

CVG_HGE_*.PDF	- Calculated Vertical Magnetic Gradient at 1:10,000
MAG *.PDF	- Total Magnetic Field at 1:10.000
MAG_HGE_*.PDF MHG_*.PDF	<ul> <li>Horizontal Gradient Enhanced Total Magnetic Field at 1:10,000</li> <li>Measured Horizontal Magnetic Gradient at 1:10,000</li> </ul>

where \* is block number 1-8, block 5 is further named by sheet number 1-9

#### **\REPORT**

TEMEX\_COBALT.PDF - Logistics and Interpretation Report

#### **VIDEO**

Binary collection of JPEG's (.BIN and .BDX)

FLT\*\_0 - Digital Video

where \* is the flight number 1-12

#### - Appendix C.1 -

\*\*\*\*\*\*\* CDVD00130 \*\*\*\*\*\*\*

**\VIDEO** 

Binary collection of JPEG's (.BIN and .BDX)

FLT\*\_0 - Digital Video

where \* is the flight number 13-26

\*\*\*\*\*\*\* CDVD00131 \*\*\*\*\*\*\*

**VIDEO** 

Binary collection of JPEG's (.BIN and .BDX)

FLT\*\_0 - Digital Video

where \* is the flight number 27-41

\*\*\*\*\*\*\* CDVD00132 \*\*\*\*\*\*\*

**VIDEO** 

Binary collection of JPEG's (.BIN and .BDX)

FLT\*\_0 - Digital Video

where \* is the flight number 42-45

The coordinate system for all grids and the data archive is projected as follows

Datum	NAD27 (Man & Ont)
Spheroid	Clarke 1866
Projection	UTM
Central meridian	81 West (Z17N)
False easting	500000
False northing	0
Scale factor	0.9996
Northern parallel	N/A
Base parallel	N/A
WGS84 to local conversion	on method Molodensky
Delta X shift	9
Delta Y shift	-157
Delta Z shift	-184

If you have any problems with this archive please contact

Processing Manager FUGRO AIRBORNE SURVEYS CORP. 2270 Argentia Road, Unit 2 Mississauga, Ontario Canada L5N 6A6 Tel (905) 812-0212 Fax (905) 812-1504 E-mail toronto@fugroairborne.com

## - Appendix C.1 -

Geosoft XYZ ARCHIVE SUMMARY

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| JOB # ; 06003<br>TYPE OF SURVEY ; Magnetics<br>AREA : Temex Resource<br>CLIENT : Cobalt Area, On | es Corp.<br>tario |
|--------------------------------------------------------------------------------------------------|-------------------|
|--------------------------------------------------------------------------------------------------|-------------------|

#### NUMBER OF DATA FIELDS: 18

| # CHANNAME     | TIME   | UNITS           | DESCRIPTION                                                     |
|----------------|--------|-----------------|-----------------------------------------------------------------|
| 1 X            | 0.10   | m               | UTME NAD27 Zone 17                                              |
| 2 Y            | 0.10   | m               | UTMN NAD27 Zone 17                                              |
| 3 FID          | 1.00   | n/a             | Synchronization Counter                                         |
| 4 DATE         | 1.00   | YYYY/MM/DD      | Flight Date                                                     |
| 5 FLIGHT       | 1.00   | n/a             | Flight Number                                                   |
| 6 ALTLASER     | 0.10   | m               | Helicopter to Earth-Surface, Laser Altimeter                    |
| 7 ALTM         | 0.10   | m               | Helicopter to Earth-Surface, Radar Altimeter                    |
| 8 GALT         | 0.10   | m               | Height above ellipsoid                                          |
| 19 BARO        | 0.10   | m               | Barometric Altitude                                             |
| 10 DTM         | 0.10   | m               | Digital Terrain Model                                           |
| 11 MAG2C       | 0.1    | nT              | Compensated Total Magnetic Field, Starboard Sensor              |
| 12 MAG3C       | 0.1    | nT              | Compensated Total Magnetic Field, Port Sensor                   |
| 13 DIURNAL_COR | 0.1    | nT              | Daily Variations of Magnetic Field, Base Value Removed          |
| 14 MAG2CLD     | 0.1    | nT              | Total Magnetic Field, Lagged and Diurnal Corrected, Starboard   |
|                |        |                 | Sensor                                                          |
| 15 MAG3CLD     | 0.1    | nT              | Total Magnetic Field, Lagged and Diurnal Corrected, Port Sensor |
| 16 MAG_AVG     | 0.1    | nT              | (MAG2CLD+MAG3CLD)/2 average TMI at center of helicopter         |
| 17 MAG         | 0.1 r  | ٦T              | Final Leveled Total Magnetic Field                              |
| 18 MHG         | 0.1 i  | nT I            | Measured Horizontal Gradient                                    |
|                |        |                 |                                                                 |
| *********      | ****** | *************** | ******************                                              |
| ISSUE DATE :   | May 9  | 9, 2006         |                                                                 |
| FOR WHOM :     | Teme   | ex Resources Co | orp.                                                            |

BY WHOM : Fugro Airborne Surveys Corp. 2270 Argentia Road, Unit 2 Mississauga, Ontario, Canada L5N 6A6 TEL. (905) 812-0212 FAX (905) 812-1504

