

41114NW2006 2.23339 TYRONE

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REPORT ON HELICOPTER-BORNE AEROTEM ELECTROMAGNETIC - MAGNETIC SURVEY

CONSOLIDATED VENTUREX HOLDINGS LTD. SANDCHERRY OPTION SUDBURY AREA NTS 41 I/14

FOR

CROWFLIGHT MINERALS INC.

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SAVARIA GEOPHYSICS INC.

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Francis L. Jagodits, P. Eng., P. Geo.

Consulting Geophysicist

May, 2001



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1. INTRODUCTION

Crowflight Minerals Inc. retained AeroQuest Limited, of Milton Ontario to conduct helicopter-borne magnetic-electromagnetic survey over the claims known as the Sandcherry Option, optioned from Consolidated Venturex Holdings Ltd. The options consists of 11 unpatented claims covering 1440 ha in Tyrone Township, Ontario. The purpose of the survey was to locate conductive bodies within the search depth of the system in particular and to aid to geological understanding of the property in general.

The AeroQuest's helicopter system employs the AeroTem, six channel time domain helicopter electromagnetic system and a high sensitivity cesium vapour magnetometer. The system and the ancillary equipment will be described in the following. The survey helicopter, an Eurocopter (Aerospecial) AS356BA "A-Star" helicopter, registration C-FHAK, was provided by Abitibi Helicopter Ltd., LaSarre, Quebec. The survey coverage consists of 182.2 line km of survey lines and tie-lines.

The survey was conducted between March 18 and 21, 2001. The crew and aircraft was based in Azilda, Ontario, while surveying. The personnel involved with the survey, data reduction and presentation and reporting is listed in Table II located in the Appendix.

The following report describes the instrumentation, data reduction procedures and, presents the results.

2. LOCATION

The Sandcherry Option is located about 50 km northwest of the Sudbury in Tyrone Township, Ontario. The option is centred about latitude 46° 49' N and longitude 81° 18 'W. The option is within the Sudbury Mining Division. The location of the property is described on Figure 1.

3. CLAIMS INFORMATION

The claims that are covered by this survey are listed below:

122 9649	123 0028	124 1369
122 9650	123 0029	124 1370
122 9651	123 0790	124 1741
122 9656	124 7344	

Claim 124 168? (the last digit is covered by a fiducial number) on the maps should read 124 1369. The option covers 90 units, 1440 ha.

4. SURVEY SPECIFICATIONS

4.1 General

The survey was conducted along lines that are 40 m apart. The flight line directions are N60°E, N170°E and N10°E.

The following is from Fiset, 2001:

"The nominal EM bird terrain clearance was 25 metres (75 ft). The magnetometer sensor was mounted in a smaller bird connected to the tow rope 21 metres above the EM bird and 17 metres below the helicopter. Nominal survey speed was 75 km/hr. Scan rates for data acquisition was 0.1 second for the magnetometer, electromagnetics and altimeter and 1.0 second for the GPS determined position. This translates to a geophysical reading about every 2 metres along flight track.

Navigation was assisted by a GPS receiver and the RMS data acquisition system which reports GPS co-ordinates as WGS-84 latitude/longitude and directs the pilot over a pre-programmed survey grid. The x-y-z position of the aircraft, as reported by the GPS, is recorded at one second intervals. The GPS positions were differentially corrected in real-time using the RACAL satellite based system.

Unlike frequency domain electromagnetic systems, the AeroTEM system has negligible drift due to thermal expansion and therefore high altitude zero calibration lines are not required. The inherent static offset is removed by identifying areas of no response and employing local leveling lines.

The operator was responsible for ensuring the instrument was properly warmed up prior to departure and that the instruments operated properly throughout the flight. He also maintained a detailed flight log during the survey noting the times of the flight as well as any unusual geophysical or topographic features.

On return of the aircrew to the base camp, the RMS acquisition system survey data on ZipDisk was downloaded to the data processing work station. The MDAS recorded data on JazzDisk was also downloaded to the processing station for back-up purposes. In-field processing included flight preparation, transfer of the RMS acquired data to Geosoft GDB database format and production of preliminary EM, magnetic contour, and flight path maps. Survey lines which showed excessive deviation after differential correction were reflown" (Fiset, 2001).

4.2 Instrumentation

The following is from Fiset, 2001

4.2.1 Electromagnetic System

The electromagnetic system employed was an AeroQuest AeroTEM Time Domain towed bird system. It is currently the only commercially available helicopter TDEM system using a coincident Tx-Rx loop combination. Six channels of the off-time EM decay are measured in two components , i.e. the x and z directions. Although both x and z components of the decay field were recorded, only the z component data is presented in the final maps (although x1 appears in the stacked profiles). The transmitted waveform is triangular with a base frequency of 150 Hz, yielding 300 decays per second. The Transmitter Dipole moment is 48,000 NIA. The AeroTEM bird was towed 38 metres (125 ft) below the helicopter. More technical details of the system may be found in the technical paper included in Fiset, 2001.

4.2.2 Magnetometer

The AeroQuest airborne survey system employed the Geometrics G-822A cesium vapour magnetometer sensor installed in a two metre towed bird airfoil attached to the main tow line, 17 metres below the helicopter. The sensitivity of the magnetometer is 0.001 nanoTesla at a 0.1 second sampling rate. The nominal ground clearance of the magnetometer bird was 51 metres (167 ft.).

4.2.3 Ancillary Systems

Magnetometer and GPS Base Stations

An integrated GPS and magnetometer base station was set up at the base of operations to monitor the static position GPS errors to permit differential post-processing and to record the diurnal variations of the earth's magnetic field. Each sensor, GPS and magnetic, receiver/signal processor was attached to a dedicated laptop computer for purposes of instrument control and/or data display and recording. The laptops were, in turn, linked together to provide a common recording time reference using the GPS clock.

The magnetometer was a GEM GSM-19 proton precession magnetometer configured to measure at 1 second intervals. The sensor was placed on a tripod away from potential noise sources. The clock of the base station was synchronized with GPS time in order to allow correlation with the airborne data. Digital recording resolution was 0.1 nT. A continuously updated profile plot of the base station values was available for viewing on the base station display.

The GPS base station employed a Magnavox 4200-6 channel GPS receiver with external antenna. The static location of the antenna was recorded at one second intervals to allow differential corrections to be made to the helicopter GPS recorded flight path. The GPS base station was only used for back-up as the RACAL real time differential receiver system was installed in the helicopter.

Radar Altimeter

A Terra TRA 3500/TRI-30 radar altimeter was used to record terrain clearance. The antenna was mounted on the outside of the helicopter beneath the cockpit. The recorded data represented height of the antenna, i.e. helicopter, above the ground. The recorded value of the helicopter clearance was in metres but it must be noted that it was reading (and recording) 3 metres too low. The bird height data in the digital database and in the plots has been corrected for this error. The Terra altimeter has an altitude accuracy of ± 1.5 metres.

Video Tracking and Recording System

A high resolution colour video camera was used to record the helicopter ground flight path along the survey lines. The video is digitally annotated with GPS position and time and can be used to verify ground positioning information and cultural causes of anomalous geophysical data.

GPS Navigation System

The navigation system consisted of a Picodas PNAV navigation system comprising a PC based acquisition system, navigation software, a deviation indicator in front of the aircraft pilot to direct the flight, a full screen display with controls in front of the operator, an Ashtech GPS receiver card mounted in the PNAV console, an Ashtech GPS antenna mounted on the magnetometer bird, and the RACAL MkIII DGPS data receiver.

Survey co-ordinates are set-up prior to survey and the information is fed into the airborne navigation system. The co-ordinate system employed in the survey design is NAD27 UTM. The real-time differentially corrected GPS positional data is recorded in WGS-84 latitude and longitude at one second intervals directly in the geophysical data file. The raw GPS data is also stored in a separate file by the acquisition system.

Digital Acquisition System

The RMS Instruments DGR33A data acquisition system was used to collect and record the geophysical and positional data. The data was recorded on 100 Mb capacity Zip disks. See the specification sheet in the appendices for more technical details on the acquisition system.

5. DATA PROCESSING

The following is from Fiset, 2001.

5.1 Base Map

The geophysical maps accompanying this report are based on positioning in the Canada Mean local datum of NAD27. The survey geodetic GPS positions have been map projected using the Universal Transverse Mercator projection in Zone 17 A summary of the map datum and projection specifications are as follows:

Ellipse: Clark 1866 Ellipse major axis: 6378206.4 m, eccentricity: 0.082271854 Datum: North American 1927 - Canada Mean Datum Shifts (x,y,z) : 10, -158, -187 metres Map Projection: Universal Transverse Mercator Zone 17 (Central Meridian 81°W) Central Scale Factor: 0.9996 False Easting, Northing: 500,000 m, 0 m

5.2 Flight Path Map

The position of the survey helicopter was directed by use of GPS satellites with the RACAL real-time differential correction. The recorded flight path was converted from WGS-84 datum latitude-longitude into the local UTM co-ordinate system using the NAD27 Canada Mean datum. The flight path is drawn using linear interpolation between x,y positions from the navigation system. Positions are updated every second and expressed as UTM eastings (x) and UTM northings (y). The time reference fiducials are drawn on the map at appropriate intervals and are

The time reference fiducials are drawn on the map at appropriate intervals and are used to reference the data file to the plan map.

5.3 Electromagnetic Data

A two stage digital filtering process was used to reject major spheric events and to reduce system noise.

Local spheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major spheric events. The filter used was a 0.8 sec non-linear filter.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength

less than about 2 seconds or 40 metres. This filter is referred to as a 2.0 sec linear filter.

The EM channels have been leveled to remove the residual zero offset."

The EM anomalies are normally picked manually from the analogue profiles. Each anomaly is given a letter label and is graded according to the channels in which the anomaly is discernible and the direction of the excursion, either positive or negative. Discernable EM anomalies were not detected from the collected data.

5.4 Magnetic Data

The aeromagnetic data were corrected for diurnal variations by adjustment using the magnetic base station and, where necessary, the intersections of the tie lines. No corrections for the regional reference field (IGRF) were applied. The corrected profile data were interpolated on to a grid using a random grid technique. The cell size was 10 metres for the 1:10 000 grid. Any leveling errors still apparent in the magnetic grid were removed by micro-leveling which involves the use of a frequency domain directional filter. The final leveled grid provided the basis for creating the presented data.

6. PRESENTATION OF RESULTS

6.1 General

The results of the survey are presented on copies of the base map at a scale of 10 000. The base map shows the claims, claim numbers, flight lines, UTM and geographical co-ordinates.

"The underlying topography was obtained from the digital topographic database series (OBM) published by the Ontario Ministry of Natural Resources and commercially available through DigiMap Data Services, Toronto.

The basic map coordinate/projection system used is NAD 27 (Canada Mean) Universal Transverse Mercator Zone 17. For reference, the NAD27 latitude and longitude are also noted on the maps (Fiset, 2001)".

6.2 Magnetic Survey

The magnetic survey results are presented as contours of the total magnetic

field, the basic contour interval 10 nT, with suitably larger intervals in areas of steep gradients; the map also shows the em anomalies.

The gridded total field data were used to calculate the vertical gradient of the total field. The vertical gradient data are presented as contours, the basic contour interval are 0.1, 0.5 and 2.5 nT/m. The em anomalies are also included on the vertical gradient contour map.

6.3 Electromagnetic Survey

The em results are given as offset profiles of the amplitudes of the vertical component in Channel 1 and 3 (AeroTEM Z1 and Z3).

6.4 Digital Data

"The digital profile data is archived on CD-ROM in a flat file Geosoft XYZ format. In addition, the geophysical maps in Geosoft format as well as the magnetic and AeroTEM Z2 grids are included. A description of the xyz file format may be found in Table I in the Appendix (Fiset, 2001)".

CD-ROM also includes stacked profiles of em, magnetic and altimeter traces for each survey line. The profiles can be viewed using Geosoft's Montaj Ver. 5.0 Free Interface, that can be down-loaded from the internet.

7. INTERPRETATION and RECOMMENDATIONS

A total of 195 line kilometers of survey were flown over the Sandcherry property. The magnetic survey identified the trace of the Quartz Diorite Dyke as the magnetic contrast with the host granitoids and genisses was sufficiently high. Several high "bulls-eye" target occur within the dyke. The survey also missed the dyke in over 30% of the area.

No AEROTEM anomalies were detected during the survey.

The magnetic target should be evaluated by prospecting and ground geophysical surveys prior to drill testing the targets.

Respectfully submitted

SAVARIA GEOPHYSICS INC.

11. **REFERENCES**

Fiset.N, 2001. Report on a Helicopter-borne Magnetic and Electromagnetic Survey, "featuring the AeroQuest AerTEM System, Airport, Post Creek, Hess 6 and Foy Properties, Sudbury Aerea, Northern Ontario, for Crowflight Minerals Inc.

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APPENDIX

Table I Description of Contents - xyz files Writer's Qualifications Table II List of Personnel

TABLE I

DESCRIPTION OF CONTENTS - XYZ FILES

Column	Description
X	Zone 17 UTM Easting in metres (NAD27)
у	Zone 17 UTM Northing in metres (NAD27)
lat	WGS84 Latitude in decimal degrees
long	WGS84 Longitude in decimal degrees
fid	Time reference fiducial in seconds
fltno	Flight number
rtctime	Local time as HH:MM:SS.SS
utctime	UTC time as HHMMSS.SS
date	Date in YY/MM/DD
z1flev to z6flev	Processed EM-Z component of channels 1 to 6 in ppb
xlflev	Processed EM-X component of channel 1 in ppb
(Direct	ion corrected)
rawmag	Raw total magnetic intensity in nanoTesla
basemagf	Smoothed magnetic base station in nanoTesla
magfinal	Final total magnetic intensity in nanoTesla
vertgradfinal	Vertical Magnetic Gradient in nT/m
galt	GPS elevation in metres
bheight	Terrain clearance of EM bird in feet

powerlinef

Powerline (60Hz monitor) I

QUALIFICATIONS

Francis L. Jagodits, Dipl. Eng., P. Eng., P. Geo.

This is to certify that I, Francis L. Jagodits,

- 1. am a Canadian citizen, residing at 353 Berkeley Street in the City of Toronto, Province of Ontario,
- 2. maintain a consulting office at 353 Berkeley Street, in Toronto,
- 3. graduated with a degree of Diploma Engineer in geophysical engineering from the Technical University of Sopron, Hungary in 1956,
- 4. have worked as a professional geoscientist for the past forty-five years and as an independent consulting geophysicist for the past twenty years,.
- 5. am registered as a Professional Engineer in the Provinces of Ontario and Newfoundland.
- 6. am registered as a Professional Geoscientist, in the Province of Newfoundland.
- 7. am a member of the Society of Exploration Geophysicist, the European Association of Exploration Geophysicist, the Canadian Geophysical Union, the Canadian Institute of Mining and Metallurgy, the Canadian Exploration Geophysical Society, the Prospectors and Developers Association of Canada and a Fellow of the Geological Association of Canada.
- 8. belong to the Toronto Branch of the Canadian Institute of Mining and Metallurgy and to the Toronto Geological Discussion Group.

Dated at Toronto

This the day of 10 th of May, 2001.

Francis L. Jagodits, Dipl. Eng., P.Eng., (ON, NF), P.Geo. (NF)

TABLE II

LIST OF PERSONNEL

Name	Address	Activity		
AeroQuest Limited	Milton, Ontario			
W. Boyko B. Simon J. Laviolette		Party Chief Operator Field Technician		
N. Fiset	Nepean, Ontario	Geophysicist, Data Processing and report		
Abitibi Helicopters Limited	LaSarre, Quebec			
J. Breton		Pilot		
F.L. Jagodits, P.Eng., P. Geo.	Savaria Geophysics Inc	Consulting		
	353 Berkeley Street, Toronto, ON	Geophysicist		



Work Report Summary

Transaction No:	W0270.00601	Status:	APPROVED
Recording Date:	2002-APR-22	Work Done from:	2001-MAR-18
Approval Date:	2002-JUL-12	to:	2001-MAR-21

Client(s):

106539	BEILHARTZ, DAVID E
202732	TRACANELLI, HAROLD JOSEPH

Survey Type(s):

AMAG

Work Report Details:

_	OIK REPORT	ctans.								
СІ	aim#	Perform	Perform Approve	Applied	Applied Approve	Assign	Assign Approve	Reserve	Reserve Approve	Due Date
s	1229649	\$2,293	\$2,293	\$6,400	\$6,400	\$0	0	\$0	\$0	2004-JUL-23
s	1229650	\$2,006	\$2,006	\$5,600	\$5,600	\$0	0	\$0	\$0	2004-SEP-13
s	1229651	\$2,579	\$2,579	\$7,200	\$7,200	\$0	0	\$0	\$0	2004-SEP-13
s	1229656	\$2,292	\$2,292	\$0	\$0	\$2,292	2,292	\$0	\$0	2002-JUL-30
s	1230028	\$1,720	\$1,720	\$0	\$0	\$1,720	1,720	\$0	\$0	2004-JUL-23
s	1230029	\$2,866	\$2,866	\$0	\$0	\$2,866	2,866	\$0	\$0	2004-JUL-23
s	1230790	\$2,293	\$2,293	\$0	\$0	\$2,293	2,293	\$0	\$0	2004-JUL-30
s	1241369	\$2,866	\$2,866	\$4,000	\$4,000	\$0	0	\$0	\$0	2003-MAY-09
s	1241370	\$2,866	\$2,866	\$0	\$0	\$2,866	2,866	\$0	\$0	2002-MAY-09
s	1241741	\$4,012	\$4,012	\$0	\$0	\$2,446	2,446	\$1,566	\$1,566	2004-APR-05
S	1247344	\$573	\$573	\$1,600	\$1,600	\$0	0	\$0	\$0	2004-JUL-07
		\$26,366	\$26,366	\$24,800	\$24,800	\$14,483	\$14,483	\$1,566	\$1,566	-

External Credits:

\$0

Reserve:

\$1,566 Reserve of Work Report#: W0270.00601

\$1,566 Total Remaining

Status of claim is based on information currently on record.



TYRONE

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Ministry of Northern Development and Mines

Date: 2002-JUL-12

Ministère du Développement du Nord et des Mines





GEOSCIENCE ASSESSMENT OFFICE 933 RAMSEY LAKE ROAD, 6th FLOOR SUDBURY, ONTARIO P3E 6B5

Tel: (888) 415-9845 Fax:(877) 670-1555

BOX 1, SITE 16 R.R. #1 WHITEFISH, ONTARIO P0M 3E0 CANADA

DAVID E BEILHARTZ

Submission Number: 2.23339 Transaction Number(s): W0270.00601

Dear Sir or Madam

Subject: Approval of Assessment Work

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

If you have any question regarding this correspondence, please contact LUCILLE JEROME by email at lucille.jerome@ndm.gov.on.ca or by phone at (705) 670-5858.

Yours Sincerely,

2mcchil.

Ron Gashinski Senior Manager, Mining Lands Section

Cc: Resident Geologist

David E Beilhartz (Claim Holder) Assessment File Library David E Beilhartz (Assessment Office)

Harold Joseph Tracanelli (Claim Holder)



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Plate 3



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Plate 4