BRITISH COLUMBIA

Ministry of Energy & Mines
Energy & Minerals Division
Geological Survey Branch

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VANCOUVER, B.C.

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TITLE OF REPORT [type of survey(s)]: DIGHEM SURVEY — TOTAL COST: $11,888,000.00

AUTHOR(S): PAUL A SMITH — SIGNATURE(S): [signature]

Fugro Airborne Surveys Corp.

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): n/a — YEAR OF WORK: 2007

STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S): 417413, 417360

PROPERTY NAME: Aspen Grove Property

CLAIM NAME(S) (on which work was done): Tenure Nos: 530397, 544821, 524872, 524873, 526115, 558835, 558836, 558837, 558839, 558839, 559067/68, 504332/33/34/35/36/37, 530401/02/07

COMMODITIES SOUGHT: Copper, Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 92HNE036, 92HNE 147, 92I SE 054

MINING DIVISION: Nicola — NTS: 92I/2 ; 92H/15

LATITUDE: 50° 00' ____" — LONGITUDE: 120° 28' ____" (at centre of work)

OWNER(S)

1) Richard Billingsley & Gaye Richards

MAILING ADDRESS
11114 - 147A Street
Surrey, B.C. V3R 3W2

2) Chris Dyakodaki

MAILING ADDRESS
3750 West 49th Avenue
Vancouver, B.C V6N 3T8

OPERATOR(S) [who paid for the work]

1) Dar Investments Inc

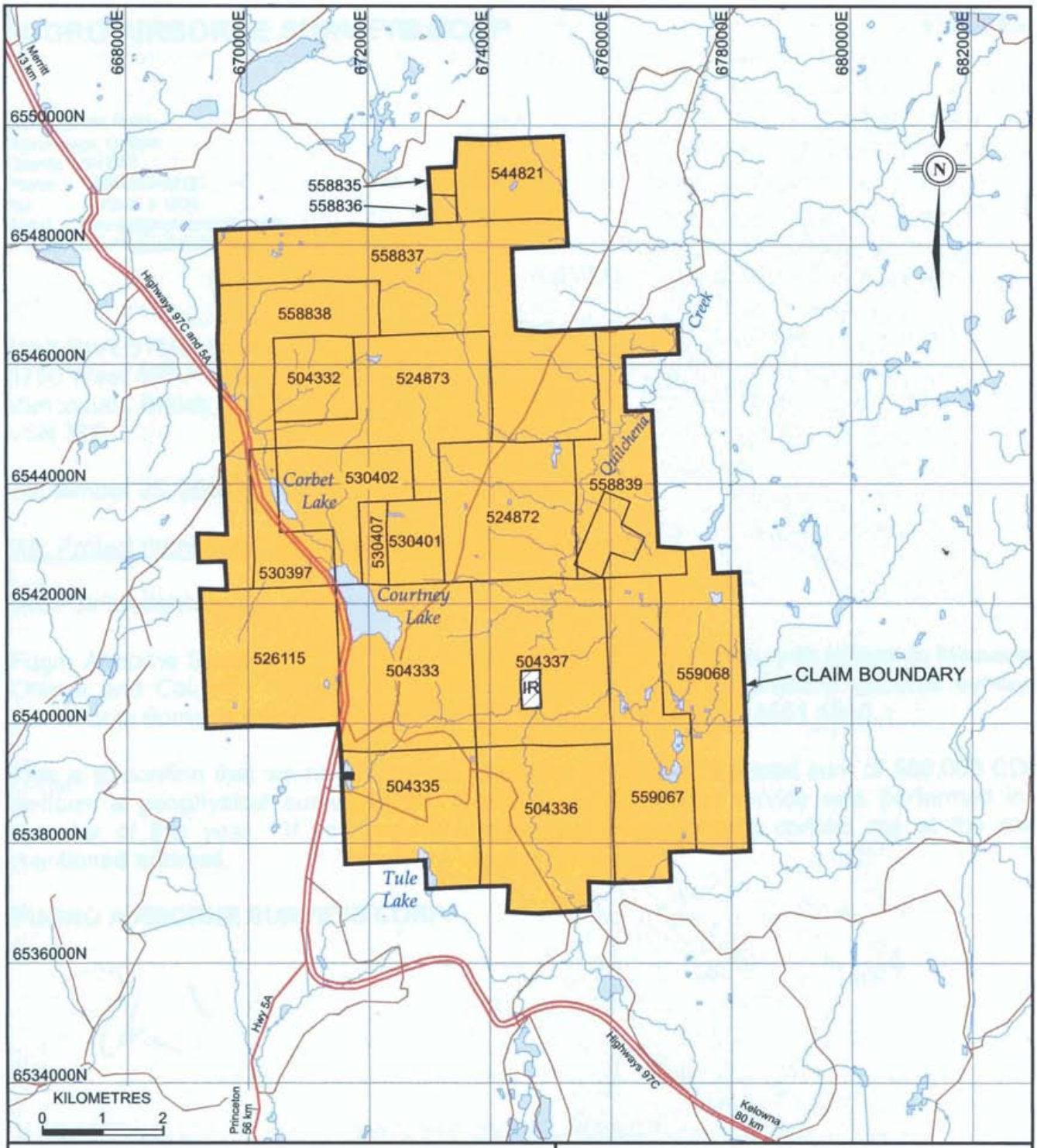
MAILING ADDRESS
3750 West 49th Avenue
Vancouver, B.C V6N 3T8

2)

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
Nicola Group of Volcanic rocks, dominantly middle facies, intruded by alkalic stocks of Jurassic age. Skarn & porphyry style mineral'n established on property, with propylitic & phyllic alteration. Minerals include chalcopyrite, pyrite, magnetite, bornite, chalcocite, molybdenite

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:
Numerous.

(OVER)



LEGEND

- 4 Lane Highway
- 2 Lane Highway
- Well maintained logging & farm gravel roads
- 504333 Mineral Claim Tenure Numbers
- Indian Reserve

ETNA RESOURCES INC.

ASPEN GROVE PROPERTY

MERRITT, BRITISH COLUMBIA

CLAIM MAP

DRAWN BY: JOHN R. KERR	DATE: SEPTEMBER, 2007
SCALE: AS SHOWN	FIGURE NO. 3

FUGRO AIRBORNE SURVEYS CORP.

2270 Argentia Road
Mississauga, Ontario
Canada L5N 6A6
Phone : 1-905-812-0212
Fax : 1-905-812-1504
E-mail : toronto@fugroairborne.com
Website : www.fugroairborne.com

MAX INVESTMENTS INC.
3750 West 49th Avenue
Vancouver, British Columbia
V6N 3T8

September 25, 2007

RE: Project number 07078 – Merritt Area, British Columbia

Dear Sir/Madam:

Fugro Airborne Surveys Corp is a Canadian registered corporation, with offices in Mississauga Ottawa and Calgary. We are in the business of providing geophysical airborne surveys to clients both domestics and international. Our business number is 13551 1210.

This is to confirm that we have received from Max Investments a total sum of $88,000 CDN to perform a geophysical survey in the Merritt area, BC. The service was performed in the summer of this year. If you require further information, please contact me at the above-mentioned address.

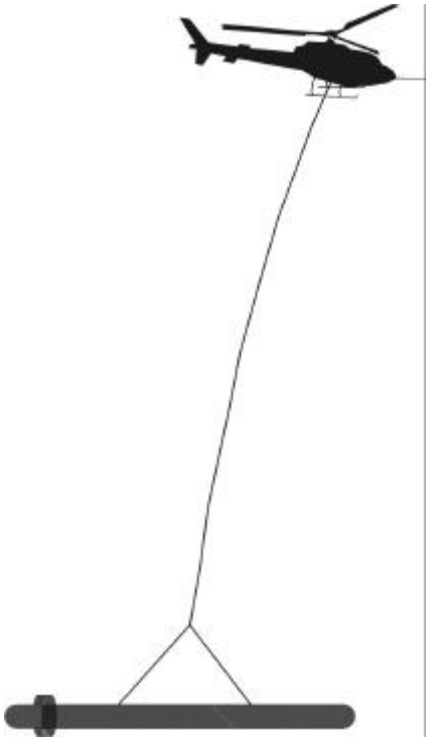
FUGRO AIRBORNE SURVEYS CORP.

Hai Pham, CGA
Controller.

Report # 07078

DIGHEM SURVEY
for
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, B.C.

NTS: 92I/2, 92H/15



Fugro Airborne Surveys Corp.
Mississauga, Ontario

August 24, 2007

Fugro Airborne Surveys, 2270 Argentia Road, Unit 2, Mississauga, Ontario, Canada, L5N 6A6
Phone: 1 905 812 0212, Fax: 1 905 812 1504

SUMMARY

This report describes the logistics, data acquisition, processing and presentation of results of a DIGHEM airborne geophysical survey carried out for Max Investments Inc. on behalf of Etna Resources Inc., over the Aspen Grove Property, British Columbia. Total coverage of the survey block amounted to 366 km. The survey was flown from June 24 to July 1, 2007.

The purpose of the survey was to determine the geophysical signatures over known mineralized zones, to detect other zones of conductive mineralization, to locate areas of potassic alteration, and to provide information that could be used to map the geology and structure of the survey area. This was accomplished by using a DIGHEM multi-coil, multi-frequency electromagnetic system, supplemented by a high sensitivity cesium magnetometer and a 256-channel spectrometer. The information from these sensors was processed to produce maps that display the magnetic, radiometric, and conductive properties of the survey areas. A GPS electronic navigation system ensured accurate positioning of the geophysical data with respect to the base maps.

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.

The survey property contains several anomalous features, a few of which are considered to be of moderate to high priority as exploration targets. Many of the inferred bedrock conductors warrant further investigation using appropriate surface exploration techniques. Areas of interest may be assigned priorities on the basis of supporting geophysical, geochemical and/or geological information. After initial investigations have been carried out, it may be necessary to re-evaluate the remaining anomalies based on information acquired from the follow-up program.

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1. INTRODUCTION

A DIGHEM electromagnetic/resistivity/magnetic/radiometric survey was flown for Max Investments Inc. on behalf of Etna Resources Inc., from June 24 to July 1, 2007, over a survey block located near Merritt, British Columbia. The survey area can be located on NTS map sheets 92I/2 and 92H/15 (Figure 2).

Survey coverage consisted of approximately 366 line-km, including 38 line-km of tie lines. Flight lines for the survey block were flown in an azimuthal direction of 90°/270° with a line separation of 200 metres. Tie lines were flown orthogonal to the traverse lines with a line separation of 2000 meters.

The survey employed the DIGHEM electromagnetic system. Ancillary equipment consisted of a magnetometer, radar and barometric altimeters, a video camera, a digital recorder, a 256-channel spectrometer and an electronic navigation system. The instrumentation was installed in an AS350B3 turbine helicopter (Registration C-FQDA) that was provided by Great Slave Helicopters Ltd. The helicopter flew at an average airspeed of 118 km/h with an EM sensor height of approximately 30 metres. The spectrometer crystal package was housed within the helicopter, with a nominal terrain clearance of 60 metres.

In some portions of the survey area, the steep topography forced the pilot to exceed normal terrain clearance for safety reasons. It is possible that some weak conductors may

have escaped detection in areas where the bird height exceeded 120 m. In difficult areas where near-vertical climbs were necessary, the forward speed of the helicopter was reduced to a level that permitted excessive bird swinging. This problem, combined with the severe stresses to which the bird was subjected, gave rise to aerodynamic noise levels that are slightly higher than normal on some lines. Where warranted, reflights were carried out to minimize these adverse effects.



Figure 1: Fugro Airborne Surveys RESOLVE EM bird with AS350-B3

2. SURVEY OPERATIONS

The base of operations for the survey was established at Merritt, British Columbia.

The survey area can be located on NTS map sheets 92I/2 and 92H/15.

Table 2-1 lists the corner coordinates of the survey area in NAD83, UTM Zone 10 North, central meridian 123° West.

Table 2-1

Nad83 Utm zone 10N

Block	Corners	X-UTM (E)	Y-UTM (N)
07078-1	1	669507	5546159
	2	676660	5546159
	3	676794	5542474
	4	678153	5542526
	5	678298	5537350
	6	671559	5537350
	7	671500	5539977
	8	669676	5539891

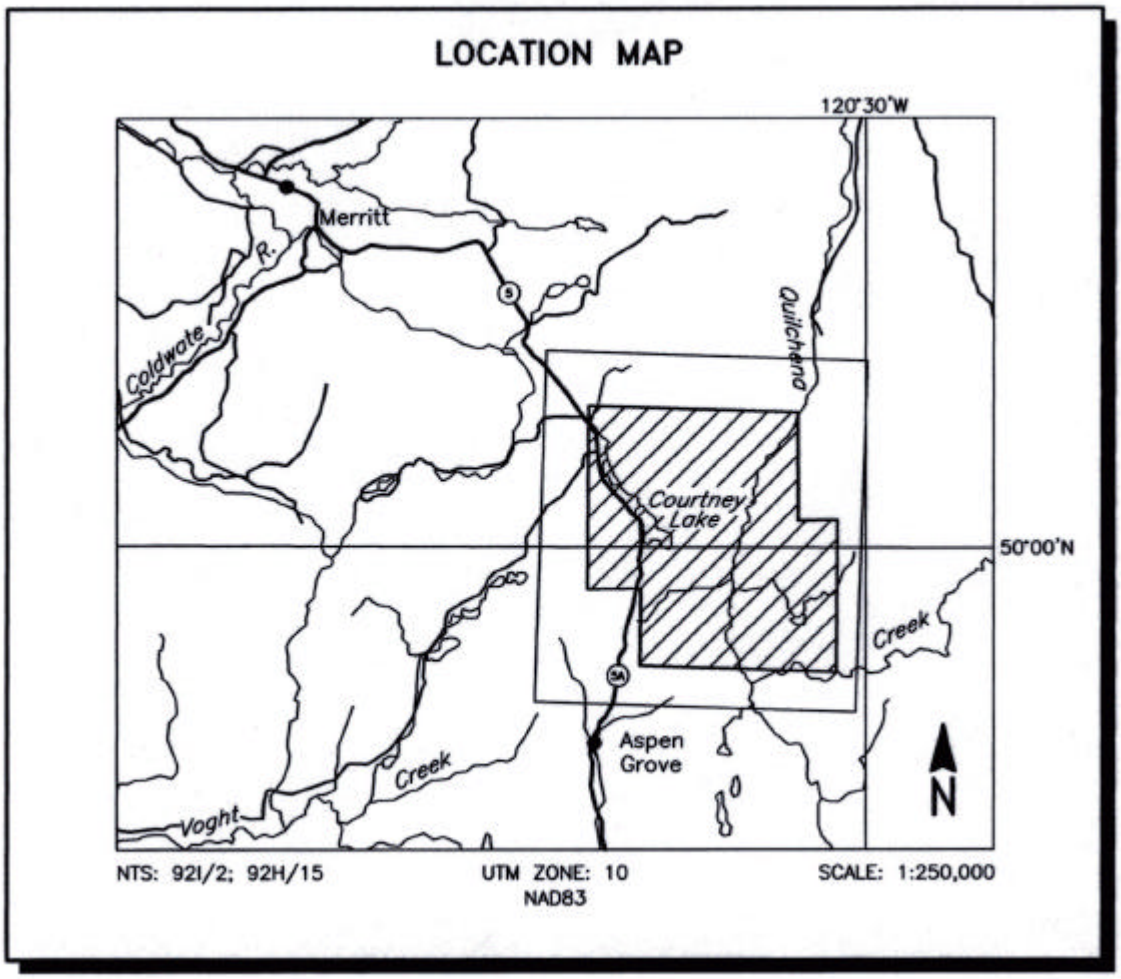

Figure 2
Location Map and Sheet Layout
Aspen Grove Project
Job # 07078

The survey specifications were as follows:

Parameter	Specifications
Traverse line direction	90°/270°
Traverse line spacing	200m
Tie line direction	0°/180°,
Tie line spacing	2000 m
Sample interval	10 Hz, 3.3 m @ 120 km/h
Aircraft mean terrain clearance	58 m
EM sensor mean terrain clearance	30 m
Mag sensor mean terrain clearance	30 m
Average speed	118 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 AS350B3 helicopter. This aircraft provides a safe and efficient platform for surveys of this type.

Electromagnetic System

Model: DIGHEM V – BKS54

Type: Towed bird, symmetric dipole configuration operated at a nominal survey altitude of 30 metres. Coil separation is 8 metres for 900 Hz, 1000 Hz, 5500 Hz and 7200 Hz, and 6.3 metres for the 56,000 Hz coil-pair.

Coil orientations, frequencies and dipole moments

Atm^2	orientation		nominal	actual
211	coaxial	/	1000 Hz	1125 Hz
211	coplanar	/	900 Hz	875 Hz
67	coaxial	/	5500 Hz	5454 Hz
56	coplanar	/	7200 Hz	7153 Hz
15	coplanar	/	56,000 Hz	55,640 Hz

Channels recorded:
5 in-phase channels
5 quadrature channels
2 monitor channels

Sensitivity:
0.06 ppm at 1000 Hz Cx
0.12 ppm at 900 Hz Cp
0.12 ppm at 5,500 Hz Cx
0.24 ppm at 7,200 Hz Cp
0.60 ppm at 56,000 Hz Cp

Sample rate:	10 per second, equivalent to 1 sample every 3.3 m, at a survey speed of 120 km/h.

The electromagnetic system utilizes a multi-coil coaxial/coplanar technique to energize conductors in different directions. The coaxial coils are vertical with their axes in the flight direction. The coplanar coils are horizontal. The secondary fields are sensed simultaneously by means of receiver coils that are maximum coupled to their respective transmitter coils. The system yields an in-phase and a quadrature channel from each transmitter-receiver coil-pair.

In-Flight EM System Calibration

Calibration of the system during the survey uses the Fugro AutoCal automatic, internal calibration process. At the beginning and end of each flight, and at intervals during the flight, the system is flown up to high altitude to remove it from any “ground effect” (response from the earth). Any remaining signal from the receiver coils (base level) is measured as the zero level, and is removed from the data collected until the time of the next calibration. Following the zero level setting, internal calibration coils, for which the response phase and amplitude have been determined at the factory, are automatically triggered – one for each frequency. The on-time of the coils is sufficient to determine an accurate response through any ambient noise. The receiver response to each calibration coil “event” is compared to the expected response (from the factory calibration) for both phase angle and amplitude, and any phase and gain corrections are automatically applied to bring the data to the correct value.

In addition, the outputs of the transmitter coils are continuously monitored during the survey, and the gains are adjusted to correct for any change in transmitter output.
Because the internal calibration coils are calibrated at the factory (on a resistive halfspace) ground calibrations using external calibration coils on-site are not necessary for system calibration. A check calibration may be carried out on-site to ensure all systems are working correctly. All system calibrations will be carried out in the air, at sufficient altitude that there will be no measurable response from the ground.

The internal calibration coils are rigidly positioned and mounted in the system relative to the transmitter and receiver coils. In addition, when the internal calibration coils are calibrated at the factory, a rigid jig is employed to ensure accurate response from the external coils.

Using real time Fast Fourier Transforms and the calibration procedures outlined above, the data are processed in real time, from measured total field at a high sampling rate, to in-phase and quadrature values at 10 samples per second.

Airborne Magnetometer

Model: Fugro D1344 processor with Scintrex CS3 sensor

Type: Optically pumped cesium vapour

Sensitivity: 0.01 nT

Sample rate: 10 per second

The magnetometer sensor was mounted on the tail of the EM bird, 28 m below the helicopter.

Magnetic Base Station

Primary

Model: Fugro CF1 base station with timing provided by integrated GPS

Sensor type: Scintrex CS3 sensor

Counter specifications:
- Accuracy: ±0.1 nT
- Resolution: 0.01 nT
- Sample rate 1 Hz

GPS specifications:
- Model: Marconi Allstar
- Type: 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

Environmental Monitor specifications:

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

Barometric pressure:
- Model: Motorola MPXA4115A
- Accuracy: ±3.0º kPa max (-20ºC to 105ºC 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. It was located in Merritt, B.C., latitude 50° 07' 30.755" N, longitude 120° 44' 39.949" W, at an elevation of 619.5 metres above the ellipsoid.



Figure 2-8: Fugro CF1

Navigation (Global Positioning System)

Airborne Receiver for Real-time Navigation & Guidance

Model:	Novatel OEM IV-GL2.
Type:	Code and carrier tracking of L1-C/A code at 1575.42 MHz and L2-P code at 1227.0 MHz. Dual frequency, 12-channel. (WAAS enabled)
Sample rate:	10 Hz update.
Accuracy:	Better than 1 metre in differential mode.
Antenna:	Aero AT1675 mounted on tail of aircraft

Primary Base Station for Post-Survey Differential Correction

Model:	Novatel OEM IV
Type:	Code and carrier tracking of L1-C/A code at 1575.42 MHz and L2-P code at 1227.0 MHz. Dual frequency, 24-channel.
Sample rate:	10 Hz update.
Accuracy:	Better than 1 metre in differential mode.

Secondary GPS Base Station

Model:	Marconi Allstar OEM, CMT-1200
Type:	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 Novatel OEM IV 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. 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 in Merritt, B.C. latitude 50° 07' 30.033"N, longitude 120° 44' 39.687"W, at an elevation of 620.1 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 NAD83 UTM system displayed on the maps.

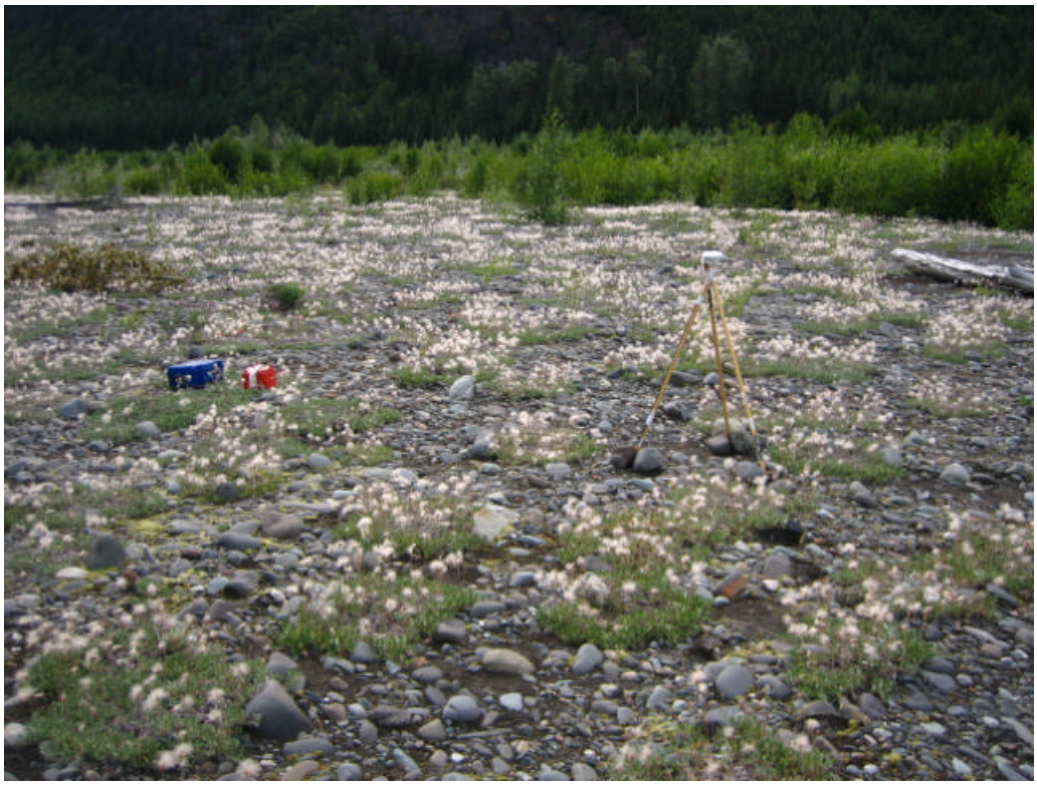

Figure 2-9: Fugro Primary GPS base station

Radar Altimeter

Manufacturer:	Sperry
Model:	RT220
Type:	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. This information is used in the processing algorithm that determines conductor depth.

Barometric Pressure and Temperature Sensors

Model:	DIGHEM D 1300	
Type:	Motorola MPX4115AP analog pressure sensor AD592AN high-impedance remote temperature sensors	
Sensitivity:	Pressure:	150 mV/kPa
	Temperature:	100 mV/°C or 10 mV/°C (selectable)
Sample rate:	10 per second	

The D1300 circuit is used in conjunction with one barometric sensor and up to three temperature sensors. Two sensors (baro and temp) are installed in the EM console in the aircraft, to monitor pressure (KPA), and internal (TEMP_INT) operating temperature. A third sensor is installed in the bird to monitor the external (TEMP_EXT) temperature.

Digital Data Acquisition System

Manufacturer:	Fugro
Model:	HeliDAS
Recorder:	Ultra II Compact Flash Memory 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:	Sony DXC-101 Colour Video Camera
Recorder:	Axis 241S Video Server and Tablet Computer
Format:	*.BIN / *.BDX (Digital)

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.

Spectrometer

Manufacturer:	Exploranium
Model:	GR-820
Type:	256 Multichannel, Potassium stabilized
Accuracy:	1 count/sec.
Update:	1 integrated sample/sec.

The GR-820 Airborne Spectrometer employs two downward looking crystals (1024 cu.in.- 16.8 L) and one upward looking crystal (256 cu.in.- 4.2 L). The downward crystal records the radiometric spectrum from 410 KeV to 3 MeV over 256 discrete energy windows, as well as a cosmic ray channel which detects photons with energy levels above 3.0 MeV. From these 256 channels, the standard Total Count, Potassium, Uranium and Thorium channels are extracted. The upward crystal is used to measure and correct for Radon.

The shock-protected Sodium Iodide (Thallium) crystal package is unheated, and is automatically stabilized with respect to the Potassium peak. The GR-820 provides raw or Compton stripped data that has been automatically corrected for gain, base level, ADC offset and dead time.

The system is calibrated before and after each flight using three accurately positioned hand-held sources. Additionally, fixed-site test lines are flown to determine if there are any differences in background. This procedure allows corrections to be applied to each survey flight, to eliminate any differences that might result from changes in temperature or humidity.

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, verification of EM calibrations, drift correction of the raw airborne EM data, spike rejection and filtering of all geophysical and ancillary data, verification of flight videos, calculation of preliminary resistivity data, 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% 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, ±10 m, except where precluded by safety considerations, e.g., restricted or populated areas, severe topography, obstructions, tree canopy, aerodynamic limitations, etc.

Airborne Mag - The non-normalized 4th difference will not exceed 1.6 nT over a continuous distance of 1 kilometre excluding areas where this specification is exceeded due to natural anomalies.

Base Mag - Diurnal variations not to exceed 10 nT over a straight line time chord of 1 minute.

EM - Spheric pulses may occur having strong peaks but narrow widths. The EM data area considered acceptable when their occurrence is less than 10 spheric events exceeding the stated noise specification for a given frequency per 100 samples continuously over a distance of 2,000 metres.

Frequency	Coil Orientation	Peak to Peak Noise Envelope (ppm)
900 Hz	horizontal coplanar	10.0
1000 Hz	vertical coaxial	5.0
5500 Hz	vertical coaxial	10.0
7200 Hz	horizontal coplanar	20.0
56,000 Hz	horizontal coplanar	40.0

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 UTM coordinate system used on the final maps. Images or plots are then created to provide a visual check of the flight path.

Electromagnetic Data

EM data are processed at the recorded sample rate of 10 samples/second. Sferic rejection median and Hanning filters are then applied to reduce noise to acceptable levels.

EM test profiles are then created to allow the interpreter to select the most appropriate EM anomaly picking controls for a given survey area. The EM picking parameters depend on several factors but are primarily based on the dynamic range of the resistivities within the

survey area, and the types and expected geophysical responses of the targets being sought.

Anomalous electromagnetic responses are selected and analysed by computer to provide a preliminary electromagnetic anomaly map. The automatic selection algorithm is intentionally oversensitive to assure that no meaningful responses are missed. Using the preliminary map in conjunction with the multi-parameter stacked profiles, the interpreter then classifies the anomalies according to their source and eliminates those that are not substantiated by the data. The final interpreted EM anomaly map includes bedrock, surficial and cultural conductors. A map containing only bedrock conductors can be generated, if desired.

Apparent Resistivity

The apparent resistivities in ohm-m are generated from the in-phase and quadrature EM components for all of the coplanar frequencies, using a pseudo-layer half-space model. The inputs to the resistivity algorithm are the in-phase and quadrature amplitudes of the secondary field. The algorithm calculates the apparent resistivity in ohm-m, and the apparent height of the bird above the conductive source. Any difference between the apparent height and the true height, as measured by the radar altimeter, is called the pseudo-layer and reflects the difference between the real geology and a homogeneous halfspace. This difference is often attributed to the presence of a highly resistive upper layer. Any errors in the altimeter reading, caused by heavy tree cover, are included in the

pseudo-layer and do not affect the resistivity calculation. The apparent depth estimates, however, will reflect the altimeter errors. Apparent resistivities calculated in this manner may differ from those calculated using other models.

In areas where the effects of magnetic permeability or dielectric permittivity have suppressed the in-phase responses, the calculated resistivities will be erroneously high. Various algorithms and inversion techniques can be used to partially correct for the effects of permeability and permittivity.

Apparent resistivity maps portray all of the information for a given frequency over the entire survey area. This full coverage contrasts with the electromagnetic anomaly map, which provides information only over interpreted conductors. The large dynamic range afforded by the multiple frequencies makes the apparent resistivity parameter an excellent mapping tool.

The preliminary apparent resistivity maps and images are carefully inspected to identify any lines or line segments that might require base level adjustments. Subtle changes between in-flight calibrations of the system can result in line-to-line differences that are more recognizable in resistive (low signal amplitude) areas. If required, manual level adjustments are carried out to eliminate or minimize resistivity differences that can be attributed, in part, to changes in operating temperatures. These leveling adjustments are usually very subtle, and do not result in the degradation of discrete anomalies.

After the manual leveling process is complete, revised resistivity grids are created. The resulting grids can be subjected to a microleveling technique in order to smooth the data for contouring. The coplanar resistivity parameter has a broad 'footprint' that requires very little filtering.

The calculated resistivities for the 900 Hz, 7200 Hz and 56000 Hz coplanar frequencies are included in the XYZ and grid archives. Values are in ohm-metres on all final products.

Dielectric Permittivity and Magnetic Permeability Corrections[1]

In resistive areas having magnetic rocks, the magnetic and dielectric effects will both generally be present in high-frequency EM data, whereas only the magnetic effect will exist in low-frequency data.

The magnetic permeability is first obtained from the EM data at the lowest frequency, because the ratio of the magnetic response to conductive response is maximized and because displacement currents are negligible. The homogeneous half-space model is used. The computed magnetic permeability is then used along with the in-phase and quadrature response at the highest frequency to obtain the relative dielectric permittivity, again using the homogeneous half-space model. The highest frequency is used because the ratio of dielectric response to conductive response is maximized. The resistivity can

[1] Huang, H. and Fraser, D.C., 2001 Mapping of the Resistivity, Susceptibility, and Permittivity of the Earth Using a Helicopter-borne Electromagnetic System: Geophysics 106 pg 148-157.

then be determined from the measured in-phase and quadrature components of each frequency, given the relative magnetic permeability and relative dielectric permittivity.

Resistivity-depth Sections (optional)

The apparent resistivities for all frequencies can be displayed simultaneously as coloured resistivity-depth sections. Usually, only the coplanar data are displayed as the close frequency separation between the coplanar and adjacent coaxial data tends to distort the section. The sections can be plotted using the topographic elevation profile as the surface. The digital terrain values, in metres a.m.s.l., can be calculated from the GPS Z-value or barometric altimeter, minus the aircraft radar altimeter.

Resistivity-depth sections can be generated in three formats:

(1) Sengpiel resistivity sections, where the apparent resistivity for each frequency is plotted at the depth of the centroid of the in-phase current flow[2]; and,

(2) Differential resistivity sections, where the differential resistivity is plotted at the differential depth[3].

(3) Occam[4] or Multi-layer[5] inversion.

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[2] Sengpiel, K.P., 1988, Approximate Inversion of Airborne EM Data from Multilayered Ground: Geophysical Prospecting 36, 446-459.

[3] Huang, H. and Fraser, D.C., 1993, Differential Resistivity Method for Multi-frequency Airborne EM Sounding: presented at Intern. Airb. EM Workshop, Tucson, Ariz.

Both the Sengpiel and differential methods are derived from the pseudo-layer half-space model. Both yield a coloured resistivity-depth section that attempts to portray a smoothed approximation of the true resistivity distribution with depth. Resistivity-depth sections are most useful in conductive layered situations, but may be unreliable in areas of moderate to high resistivity where signal amplitudes are weak. In areas where in-phase responses have been suppressed by the effects of magnetite, or adversely affected by cultural features, the computed resistivities shown on the sections may be unreliable.

Both the Occam and multi-layer inversions compute the layered earth resistivity model that would best match the measured EM data. The Occam inversion uses a series of thin, fixed layers (usually 20 x 5m and 10 x 10m layers) and computes resistivities to fit the EM data. The multi-layer inversion computes the resistivity and thickness for each of a defined number of layers (typically 3-5 layers) to best fit the data.

Total Magnetic Field

A fourth difference editing routine was applied to the magnetic data to remove any spikes. The aeromagnetic data were corrected for diurnal variation using the magnetic base station data. The results were then leveled using tie and traverse line intercepts. Manual adjustments were applied to any lines that required leveling, as indicated by shadowed

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[4] Constable et al, 1987, Occam's inversion: a practical algorithm for generating smooth models from electromagnetic sounding data: Geophysics, 52, 289-300.

[5] Huang H., and Palacky, G.J., 1991, Damped least-squares inversion of time domain airborne EM data based on singular value decomposition: Geophysical Prospecting, 39, 827-844.

images of the gridded magnetic data. The manually leveled data were then subjected to a microleveling filter.

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.

EM Magnetite (optional)

The apparent percent magnetite by weight is computed wherever magnetite produces a negative in-phase EM response. This calculation is more meaningful in resistive areas.

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:

enhanced magnetics

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 and adjusted to mean sea level. 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 ±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, THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.

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.

Multi-channel Stacked Profiles

Distance-based profiles of the digitally recorded geophysical data are generated and plotted at an appropriate scale. These profiles also contain the calculated parameters that are used in the interpretation process. These are produced as worksheets prior to interpretation, and are also presented in the final corrected form after interpretation. The profiles display electromagnetic anomalies with their respective interpretive symbols. Table 5-1 shows the parameters and scales for the multi-channel stacked profiles.

In Table 5-1, the log resistivity scale of 0.06 decade/mm means that the resistivity changes by an order of magnitude in 16.6 mm. The resistivities at 0, 33 and 67 mm up from the bottom of the digital profile are respectively 1, 100 and 10,000 ohm-m.

Table 5-1. Multi-channel Stacked Profiles

Channel Name (Freq)	Observed Parameters	Scale Units/mm
MAGF	total magnetic field (fine)	25 nT
MAGC	total magnetic field (coarse)	100 nT
ALTBIRDM	EM sensor height above ground	6 m
TC	Total Counts	50 cps
K	Potassium counts	10 cps
TH	Thorium counts	2 cps
U	Uranium counts	2 cps
CXI1000	vertical coaxial coil-pair in-phase (1000 Hz)	5 ppm
CXQ1000	vertical coaxial coil-pair quadrature (1000 Hz)	5 ppm
CPI900	horizontal coplanar coil-pair in-phase (900 Hz)	10 ppm
CPQ900	horizontal coplanar coil-pair quadrature (900 Hz)	10 ppm
CXI5500	vertical coaxial coil-pair in-phase (5500 Hz)	10 ppm
CXQ5500	vertical coaxial coil-pair quadrature (5500 Hz)	10 ppm
CPI7200	horizontal coplanar coil-pair in-phase (7200 Hz)	20 ppm
CPQ7200	horizontal coplanar coil-pair quadrature (7200 Hz)	20 ppm
CPI56K	horizontal coplanar coil-pair in-phase (56,000 Hz)	40 ppm
CPQ56K	horizontal coplanar coil-pair quadrature (56,000 Hz)	40 ppm
CPSP	Coplanar sferics monitor	
CPPL	Coplanar powerline monitor	
	Computed Parameters	
DIFI (mid freq.)	difference function in-phase from CXI and CPI	10 ppm
DIFQ (mid freq.)	difference function quadrature from CXQ and CPQ	10 ppm
RES900	log resistivity	.06 decade
RES7200	log resistivity	.06 decade
RES56K	log resistivity	.06 decade
DEP900	apparent depth	6 m
DEP7200	apparent depth	6 m
DEP56K	apparent depth	6 m

Radiometrics

All radiometric data reductions performed by Fugro rigorously follow the procedures described in the IAEA Technical Report[6].

All processing of radiometric data was undertaken at the natural sampling rate of the spectrometer, i.e., one second. The data were not interpolated to match the fundamental 0.1 second interval of the EM and magnetic data.

The following sections describe each step in the process.

Pre-filtering

The radar altimeter data were processed with a 15-point median filter to remove spikes.

Reduction to Standard Temperature and Pressure

The radar altimeter data were converted to effective height (h_e) in feet using the acquired temperature and pressure data, according to the following formula:

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[6] Exploranium, I.A.E.A. Report, Airborne Gamma-Ray Spectrometer Surveying, Technical Report No. 323, 1991.

$$h_e = h * \frac{273.15}{T + 273.15} * \frac{P}{1013.25}$$

where: *h* is the observed crystal to ground distance in feet

T is the measured air temperature in degrees Celsius

P is the barometric pressure in millibars

Live Time Correction

The spectrometer, an Exploranium GR-820, uses the notion of "live time" to express the relative period of time the instrument was able to register new pulses per sample interval. This is the opposite of the traditional "dead time", which is an expression of the relative period of time the system was unable to register new pulses per sample interval.

The GR-820 measures the live time electronically, and outputs the value in milliseconds. The live time correction is applied to the total count, potassium, uranium, thorium, upward uranium and cosmic channels. The formula used to apply the correction is as follows:

$$C_{lt} = C_{raw} * \frac{1000.0}{L}$$

where: C_{lt} is the live time corrected channel in counts per second

C_{raw} is the raw channel data in counts per second

L is the live time in milliseconds

Intermediate Filtering

Two parameters were filtered, but not returned to the database:

- Radar altimeter was smoothed with a 3-point Hanning filter (h_{ef}).
- The Cosmic window was smoothed with a 9-point Hanning filter (Cos_f).

Aircraft and Cosmic Background

Aircraft background and cosmic stripping corrections were applied to the total count, potassium, uranium, thorium and upward uranium channels using the following formula:

$$C_{ac} = C_{lt} - (a_c + b_c * \mathrm{Cos}_f)$$

where: C_{ac} is the background and cosmic corrected channel

C_{lt} is the live time corrected channel

a_c is the aircraft background for this channel

b_c is the cosmic stripping coefficient for this channel

Cos_f is the filtered Cosmic channel

Compton Stripping

Following the radon correction, the potassium, uranium and thorium are corrected for spectral overlap. First, α,β and γ the stripping ratios, are modified according to altitude. Then an adjustment factor based on a, the reversed stripping ratio, uranium into thorium, is calculated. (Note: the stripping ratio altitude correction constants are expressed in change per metre. A constant of 0.3048 is required to conform to the internal usage of height in feet):

$$a_h = a + h_{ef} * 0.00049$$

$$a_r = \frac{1.0}{1.0 - a * a_h}$$

$$b_h = b + h_{ef} * 0.00065$$

$$g_h = g + h_{ef} * 0.00069$$

where: α, β, γ are the Compton stripping coefficients

α_h, β_h, γ_h are the height corrected Compton stripping coefficients

h_{ef} is the height above ground in metres

α_r is the scaling factor correcting for back scatter

a is the reverse stripping ratio

The stripping corrections are then carried out using the following formulas:

$$Th_c = (Th_{rc} - a * U_{rc}) * a_r$$

$$K_c = K_{rc} - g_h * U_c - b_h * Th_c$$

$$U_c = (U_{rc} - a_h * Th_{rc}) * a_r$$

where: U_c, Th_c and K_c are corrected uranium, thorium and potassium

$\alpha_h, \beta_h, \gamma_h$ are the height corrected Compton stripping coefficients

U_{rc}, Th_{rc} and K_{rc} are radon-corrected uranium, thorium and potassium

α_r is the backscatter correction

Attenuation Corrections

The total count, potassium, uranium and thorium data are then corrected to a nominal survey altitude, in this case 200 feet. This is done according to the equation:

$$C_a = C * e^{m(h_{ef} - ho)}$$

where: C_a is the output altitude corrected channel

C is the input channel

e^{μ} is the attenuation correction for that channel

h_{ef} is the effective altitude

h_0 is the nominal survey altitude to correct to

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. These include magnetic enhancements or derivatives, percent magnetite, resistivities corrected for magnetic permeability and/or dielectric permittivity, digital terrain, resistivity-depth sections, inversions, and overburden thickness. Most parameters can be displayed as contours, profiles, or in colour.

Base Maps

Base maps of the survey area were produced by scanning published topographic maps to a bitmap (.bmp) format. 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:	NAD 83
Ellipsoid:	GRS80
Projection:	UTM (Zone: 10 North)
Central Meridian:	123° West
False Northing:	0
False Easting:	500000
Scale Factor:	0.9996
WGS84 to Local Conversion:	Molodensky
Datum Shifts:	DX: 0 DY: 0 DZ: 0

The following parameters are presented on one map sheet, at a scale of 1:20000. All maps include flight lines and topography, unless otherwise indicated. The page-size maps included in the report do not have topography or flight line information.

Final Products

	No. of Map Sets=2		
	Page Size	Blackline	Colour
EM Anomalies	1X2	1X2	1x2
Total Magnetic Field	1X2		1x2
Calculated Vertical Magnetic Gradient	1X2		1x2
Apparent Resistivity 7200 Hz	1X2		1x2
Apparent Resistivity 56,000 Hz	1X2		1x2
Radiometrics - Total Count	1X2		1x2
- Potassium	1X2		1x2
- Uranium	1X2		1x2
- Thorium	1X2		1x2
- Thorium/ Potassium Ratio	1X2		1x2

Additional Products

Digital Archive (see Archive Description)	1 CD-ROM
Survey Report	2 copies
Multi-channel Stacked Profiles	All lines
Flight Path Video (.BIN/.BDX format)	1 DVD

7. SURVEY RESULTS

General Discussion

Table 7-1 summarizes the EM responses in the survey area, with respect to conductance grade and interpretation. The apparent conductance and depth values shown in the EM Anomaly list appended to this report have been calculated from “local” in-phase and quadrature amplitudes of the Coaxial 5500 Hz frequency. The picking and interpretation procedure relies on several parameters and calculated functions. For this survey, the Coaxial 5500 Hz responses and the mid-frequency difference channels were used as two of the main picking criteria. The 7200 Hz coplanar results were also weighted to provide picks over wider or flat-dipping sources. The quadrature channels provided picks in areas where the in-phase responses might have been suppressed by magnetite.

The anomalies shown on the electromagnetic anomaly maps are based on a near-vertical, half plane model. This model best reflects "discrete" bedrock conductors. Wide bedrock conductors or flat-lying conductive units, whether from surficial or bedrock sources, may give rise to very broad anomalous responses on the EM profiles. These may not appear on the electromagnetic anomaly map if they have a regional character rather than a locally anomalous character.

TABLE 7-1 EM ANOMALY STATISTICS

EDEN GROVE PROJECT

CONDUCTOR GRADE	CONDUCTANCE RANGE SIEMENS (MHOS)	NUMBER OF RESPONSES
7	>100	0
6	50 - 1000	0
5	20 - 50	1
4	10 - 20	4
3	5 - 10	19
2	1 - 5	303
1	<1	491
*	INDETERMINATE	48
TOTAL		866

CONDUCTOR MODEL	MOST LIKELY SOURCE	NUMBER OF RESPONSES
D	DISCRETE BEDROCK CONDUCTOR	2
B	DISCRETE BEDROCK CONDUCTOR	10
S	CONDUCTIVE COVER	677
H	ROCK UNIT OR THICK COVER	44
E	EDGE OF WIDE CONDUCTOR	69
L	CULTURE	64
TOTAL		866

(SEE EM MAP LEGEND FOR EXPLANATIONS)

These broad conductors, which more closely approximate a half-space model, will be maximum coupled to the horizontal (coplanar) coil-pair and should be more evident on the resistivity parameter. Resistivity maps, therefore, may be more valuable than the electromagnetic anomaly maps, in areas where broad or flat-lying conductors are considered to be of importance. Contoured resistivity maps, based on the 7200 Hz and 56kHz coplanar data are included with this report.

Excellent resolution and discrimination of conductors was accomplished by using a fast sampling rate of 0.1 sec and by employing a “common” frequency (5500/7200 Hz) on two orthogonal coil-pairs (coaxial and coplanar). The resulting difference channel parameters often permit differentiation of bedrock and surficial conductors, even though they may exhibit similar conductance values.

Anomalies that occur near the ends of the survey lines (i.e., outside the survey area), should be viewed with caution. Some of the weaker anomalies could be due to aerodynamic noise, i.e., bird bending, which is created by abnormal stresses to which the bird is subjected during the climb and turn of the aircraft between lines. Such aerodynamic noise is usually manifested by an anomaly on the coaxial in-phase channel only, although severe stresses can affect the coplanar in-phase channels as well.

Magnetics

A Fugro CF-1 cesium vapour magnetometer was operated at the survey base to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to permit subsequent removal of diurnal drift.

The total magnetic field data have been presented as contours on the base map using a contour interval of 5 nT where gradients permit. The map shows the magnetic properties of the rock units underlying the survey.

The total magnetic field data have been subjected to a processing algorithm to produce maps of the calculated vertical gradient. This procedure enhances near-surface magnetic units and suppresses regional gradients. It also provides better definition and resolution of magnetic units and displays weak magnetic features that may not be clearly evident on the total field maps.

There is some evidence on the magnetic maps that suggests that the survey area has been subjected to deformation and/or alteration. These structural complexities are evident on the contour maps as variations in magnetic intensity, irregular patterns, and as offsets or changes in strike direction.

If a specific magnetic intensity can be assigned to the rock type that is believed to host the target mineralization, it may be possible to select areas of higher priority on the basis of the total field magnetic data. This is based on the assumption that the magnetite content of the host rocks will give rise to a limited range of contour values that will permit differentiation of various lithological units.

Magnetic relief in the area ranges from a low of about 54,930 nT to a high of more than 58,480 nT, with the more magnetic units generally underlying the southern portion of the property. The vertical gradient map shows a moderately complex structure north of line 10310. The inferred NE- to NNE–trending units are intersected by subtle NNW linear breaks. A possible east-west break is also evident, sub-parallel to line 10310. South of this line, in the southwestern quadrant of the property, the geological strike appears to be more SSE,

The magnetic results, in conjunction with the other geophysical parameters, have provided valuable information that can be used to map the geology and structure in the survey area.

Apparent Resistivity

Apparent resistivity maps, which display the conductive properties of the survey area, were produced from the 7200 Hz and 56,000 Hz coplanar data. The maximum resistivity values, which are calculated for each frequency, are 8,280 and 27,008 ohm-m respectively.

These cutoffs eliminate the erratic higher resistivities that would result from unstable ratios of very small EM amplitudes.

In general, the resistivity patterns show only moderate agreement with the magnetic trends. In a few areas, the moderately strong resistivity lows tend to follow the topographic lows, often crossing the local geological trend. This suggests that many of the resistivity lows are probably related to conductive cover, rather than bedrock sources. Both of the major valleys (Quilchena Creek and Logans Creek) correlate with resistivity lows. Conversely, there are a few resistivity highs that coincide with magnetic highs. In some cases these are likely due to resistive rock units; in others, the resistivities are overstated because of the effects of magnetite. Skarn mineralization would fall into the latter category.

In addition to the near surface conductivity evident at the higher frequencies, the 900Hz resistivity shows a strong, broad, valley-hosted conductive zone in the northeastern quadrant of the property. In some areas this zone is moderately deep, or is overlain by more resistive alluvial cover. Values of less than 15 ohm-m are common, suggesting the presence of highly conductive clays, graphitic shales or argillaceous sediments.

The property is intersected by two major powerlines that follow the two main valleys. The strong 60Hz fields have saturated the highly sensitive EM sensors, yielding wide swaths of unreliable resistivity data. The powerline effects are most evident on the lower (900Hz)

frequency. Any conductors within 250m of these powerlines might have escaped detection, particularly if they are quite weak.

Electromagnetic Anomalies

The EM anomalies resulting from this survey appear to fall within one of four general categories. The first type consists of discrete, well-defined anomalies that yield marked inflections on the difference channels. These anomalies are usually attributed to conductive shears, sulphides, or graphite, and are generally given a "B", "T" or "D" interpretive symbol, denoting a bedrock source. There are very few anomalies of this type.

The second class of anomalies comprises moderately broad responses that exhibit the characteristics of a half-space and do not yield well-defined inflections on the difference channels. Anomalies in this category are usually given an "S" or "H" interpretive symbol. The lack of a difference channel response usually implies a broad or flat-lying conductive source such as overburden. Some of these anomalies could reflect conductive rock units, zones of deep weathering, the weathered tops of plugs or pipes, or broad alteration zones, all of which can yield “non-discrete” signatures.

The effects of conductive overburden are evident over portions of the survey area. Although the difference channels (DIFI and DIFQ) are extremely valuable in detecting

bedrock conductors that are partially masked by conductive overburden, sharp undulations in the bedrock/overburden interface can yield anomalies in the difference channels which may be interpreted as possible bedrock conductors. Such anomalies usually fall into the "S?" or "B?" classification but may also be given an "E" interpretive symbol, denoting a resistivity contrast at the edge of a conductive unit.

The "?" symbol does not question the validity of an anomaly, but instead indicates some degree of uncertainty as to which is the most appropriate EM source model. This ambiguity results from the combination of effects from two or more conductive sources, such as overburden and bedrock, gradational changes, or moderately shallow dips. The presence of a conductive upper layer has a tendency to mask or alter the characteristics of bedrock conductors, making interpretation difficult. This problem is further exacerbated in the presence of magnetite.

The third anomaly category includes responses that are associated with magnetite. Magnetite can cause suppression or polarity reversals of the in-phase components, particularly at the lower frequencies in resistive areas. The effects of magnetite-rich rock units are usually evident on the multi-parameter geophysical data profiles as negative excursions of the lower frequency in-phase channels. These are evident on most survey lines.

In areas where EM responses are evident primarily on the quadrature components, zones of poor conductivity are indicated. Where these responses are coincident with magnetic

anomalies, it is possible that the in-phase component amplitudes have been suppressed by the effects of magnetite. Poorly-conductive magnetic features can give rise to resistivity anomalies that are only slightly below or slightly above background. If it is expected that poorly-conductive economic mineralization could be associated with magnetite-rich units, most of these weakly anomalous features will be of interest. In areas where magnetite causes the in-phase components to become negative, the apparent conductance and depth of EM anomalies will be unreliable. Magnetite effects usually give rise to overstated (higher) resistivity values and understated (shallow) depth calculations.

The fourth anomaly category includes those that are due to cultural sources. These include telephone or power lines, fences, pipes, railway lines, bridges, buildings, metallic objects or mining equipment. Such anomalies are usually given an “L” or “L?” symbol.

As potential targets within the area may be associated with massive to weakly disseminated sulphides, which may or may not be hosted by magnetite-rich rocks, it is impractical to assess the relative merits of EM anomalies on the basis of conductance. It is recommended that an attempt be made to compile a suite of geophysical "signatures" over any known areas of interest. Anomaly characteristics are clearly defined on the multi-parameter geophysical data profiles that are supplied as one of the survey products.

Potential Targets in the Survey Area

The electromagnetic anomaly maps show the anomaly locations with the interpreted conductor type, dip, conductance and depth being indicated by symbols. Direct magnetic correlation is also shown if it exists. The strike direction and length of the conductors are indicated only where anomalies can be correlated from line to line with a reasonable degree of confidence.

An attempt was made to determine the geophysical signatures over three known mineralized zones on the property. The NAD83, Zone 12 UTM coordinates for the three zones are as follows:

Porcupine:	5545142N, 671374E	minfile #0921SE054
Copper Star:	5541267N, 671996E	minfile #092HNE036
Court 1:	5540130N, 675062E	minfile #092HNE147

The Porcupine occurrence is a disseminated sulphide zone associated with a basaltic flow that hosts more than 450,000 tonnes of 1.9% Cu. It is located in close proximity to fiducial 3469 on line 10060 (Figure 7-1). The data show that this location is associated with a SW-trending magnetic unit. The slight increase in magnetite content gives rise to a weak resistivity high, so the magnetite effects appear to have negated any positive conductive responses from the sulphides. There is no appreciable increase in radioelement concentrations, although there is a very weak, north-trending potassium high through this location. The clearly-defined NE-trending linear magnetic low observed on the vertical gradient map suggests this contact is fault-controlled.

Apart from the weak magnetic high and the corresponding resistivity high, this zone does not yield a distinctive signature that could be used to directly locate similar mineralization in the immediate area. However, any subtle anomalies that are associated with the inferred NE-trending fault, could be of interest.

The Copper Star Cu-Ag occurrence hosts several showings and old workings. The copper mineralization is generally hosted in shears or brecciated fracture zones and also as disseminated sulphides in volcanic tuffs and breccias. The centre of the area that hosts the showings is located near fiducial 1074 on line 10250, at the intersection with tie line 19020 (Figure 7-2).

This location occurs at the northern edge of an ovate resistivity high, and on the western contact of a NE to NNE-trending magnetic unit. The vertical gradient data suggest that this unit has been intersected and offset by at least three NW-trending (325° ±10°) structural breaks and two or more north-trending linears.

There is a broad, moderately strong conductive zone that strikes NNW from line 10250. This resistivity low transects the NE-trending magnetic low and correlates with a similarly-shaped radiometric low. This conductive radiometric low has been attributed to Courtney Lake. Subtle topographic/resistivity lows extend south, flanking the ovate resistivity high to the south of the lake. These weakly conductive zones have also been attributed to

conductive cover, although a bedrock conductor is indicated from 10320B to 10370A, near the western property boundary.

The Court 1 Cu-Mo showing occurs on the eastern contact of a V-shaped unit of low magnetic susceptibility, on the eastern side of the Quilchena Creek. The vertical gradient patterns show that the north-south magnetic units have been deformed or offset in the vicinity of the showing, near fiducial 3322 on line 10310 (Figure 7-3). Anomaly 10310N has been attributed to an edge effect (contact) between the magnetic unit to the east and a moderately conductive unit to the west.

Anomalies 10310L and 10320M have both been attributed to probable conductive cover associated with the Quilchena Creek valley. This conductive zone strikes SSW and then south, from the northeastern corner of the survey area. However, the central axis of the conductive zone correlates quite well with the magnetic trends, suggesting that at least some of the conductive material could be bedrock hosted. Unfortunately, this SSW-trending feature is nearly parallel, and in close proximity to the major powerline that crosses the eastern half of the property. The resistivity patterns have been distorted by the powerline interference, and to a lesser degree, by the change in flying height over the line.

The magnetic unit to the east of the Court 1 showing yields a magnetite-induced negative inphase response, but the positive quadrature indicates an increase in conductivity that is not reflected in the resistivity parameter. This signature is common to some skarn

deposits. The geophysical signature over the Court 1 showing has been masked by magnetite effects to the east, and thick conductive overburden to the west. Magnetic results suggest the presence of a faulted north-trending contact, with a slight increase in potassium values to the south and NNW.

Although the resistivity and radiometric signatures are somewhat ambiguous over the three known areas of mineralization, the lack of strong, distinctive responses does not preclude the presence of other similar zones of economic mineralization within the survey block.

The 900 Hz resistivity parameter outlines a broad, deep, highly conductive zone in the northeastern corner, north of line 10140. The eastern limits of this zone are obscured by powerline interference, buth the conductor is about 2.5 km wide on line 10040. Resistivity values of less than 20 ohm-m generally coincide with units of lower magnetic susceptibility. The high conductivity-low susceptibility combination is often observed over varved clays or over non-magnetic units containing some graphite. Although the stronger zones might not be contained within the bedrock, additional work is probably warranted to check the causative source of anomalies such as 10020K and 10110G, or the similarly conductive, but more magnetic sources at 10120L and 10120N.

Possible thin bedrock sources have been interpreted on tie line 19030, at 19030P and 19030Q. The former is located on the southern edge of the previously described resistivity low, and is likely due to a mineralized contact. The anomaly at 19030Q, however, exhibits similar characteristics, but coincides with a fence. Culture, therefore, is

considered to be a probable cause. These should be checked. They are not clearly defined on the traverse lines, probably because of the shallow angle (E-W) of coupling.

Anomalies 10180L and 10200P are part of a south-trending (172°) conductive zone that follows the eastern edge of a large magnetic and resistive unit, east of the Quilchena Creek valley. Magnetic correlation varies along strike, but is moderately strong along the topographic ridge near 10190L. The conductor segment between 10180L and 10200P is associated with a subtle topographic saddle that also correlates with a distinct south-trending magnetic low. These anomalies probably reflect an increase in conductivity along a faulted contact and should therefore be subjected to further investigation. The rock unit west of 10200P indicates a magnetite content of roughly 4%.

Anomaly 10220I correlates with a weak magnetic anomaly at the eastern edge of a resistivity low on the 900 Hz map. However, the flight path video confirms that this anomaly correlates with a fence, and is probably due to culture.

Anomaly 10320R is a single-line response with a very weak magnetic correlation. The anomaly characteristics indicate a thin source, or possibly a line. There is no visible culture evident on the video, but there is a trail that runs parallel to the survey line. Fences are evident at fiducials 3325 and 3349 on the same line, but they do not give rise to anomalous responses. Anomaly 10320R is about 900 m ESE of the Court 1 showing. This tends to enhance its significance, even though it does not appear to be related to the

same geological unit. The north-trending magnetic host, however, exhibits the same sinistral offset that is associated with the Court 1 showing.

Anomalies 10330A-10360A and 10390B are all contained within the same SSE-trending resistivity low in the southwestern portion of the survey area. Although there is a powerline just west of the property boundary, and several fences nearby, this very attractive response does not appear to be related to culture. The conductive zone is close to surface, but the 900 Hz suggests a thick (half-space) unit near 10380B. Both the magnetic and resistivity data suggest a probable ENE break near 10360A, where north-trending and NE-trending valleys meet.

Although a few of the anomalies comprising this zone yield magnetic correlation (10300B-10340A), the correlation is probably coincidental, rather than direct. South of anomaly 10350A, the conductive zone diverges slightly from the magnetic unit to the east, following the western flank of the strong double-lobed magnetic anomaly. The magnetite content of the unit east of 10390B is about 4%.

Although this broad conductive zone could be partially due to thick conductive overburden, the conductive source at 10390B is considered to be an interesting target that should be checked. This conductor is in close proximity to the western contact of a magnetic/resistive unit, and could be a southern continuation of the same contact that hosts the Copper Star mineralization.

There are several other anomalous responses on the property that are also considered to be potential areas of interest. At least some of the magnetite-hosted responses could reflect skarn-type mineralization. A few examples might include anomalies 10220S, 10250C, 10350G and 10370I. Most of these do not yield resistivity anomalies.

Some of the stronger “S” or “S?” anomalies might also be of interest, particularly those with magnetic correlation, or those such as 10200D, 10250K and 10300C, that are in close proximity to powerlines. Other non-magnetic sources, such as 10370K and 10410E, could also warrant follow-up.

As much of the mineralization in the area is weakly disseminated, and associated with shears or fractures, the areas of structural deformation inferred from the magnetic data may be of greater exploration significance than the changes in resistivity. Any anomalies that occur in close proximity to structural breaks are of potential interest, even though they could be extremely weak or poorly defined. Steep gradients (10310N) or sharp magnetic lows (10150E and 10220T) could reflect contacts or faults.

Potassium highs should help to locate zones of alteration in any areas where these effects are not masked by overburden, water cover, or mine waste from older workings.

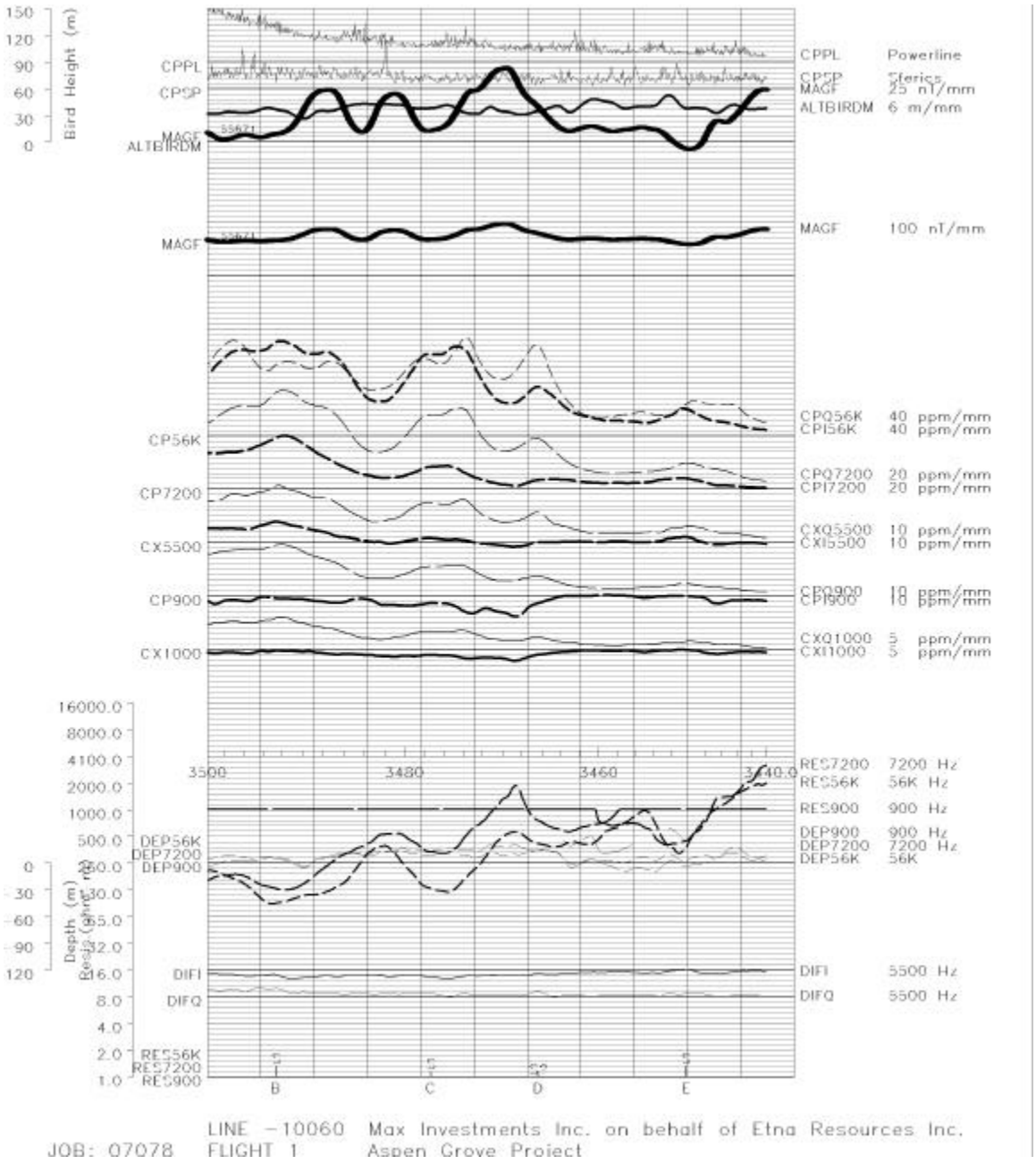


Figure 7-1 Porcupine

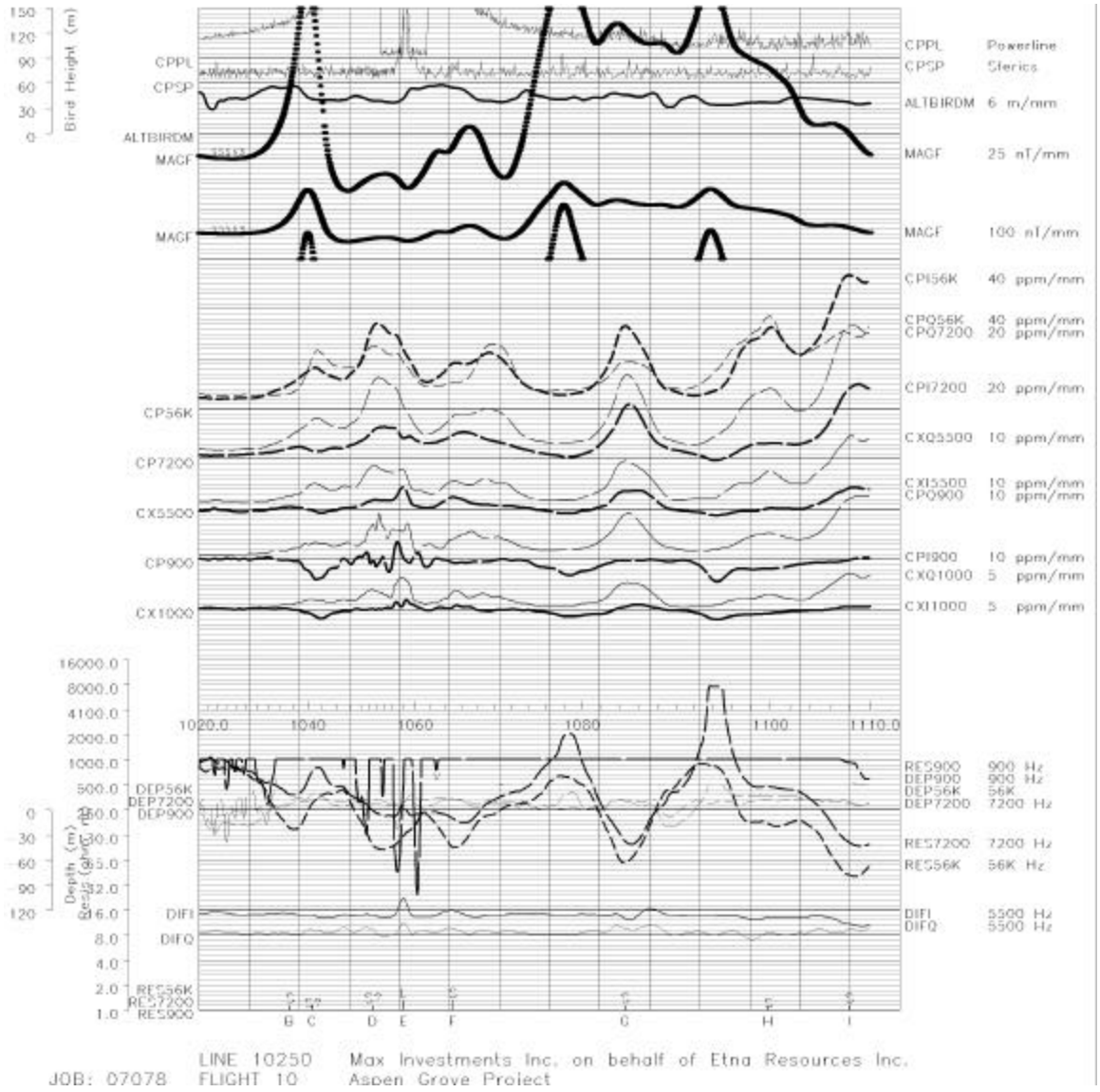


Figure 7-2 Copper Star

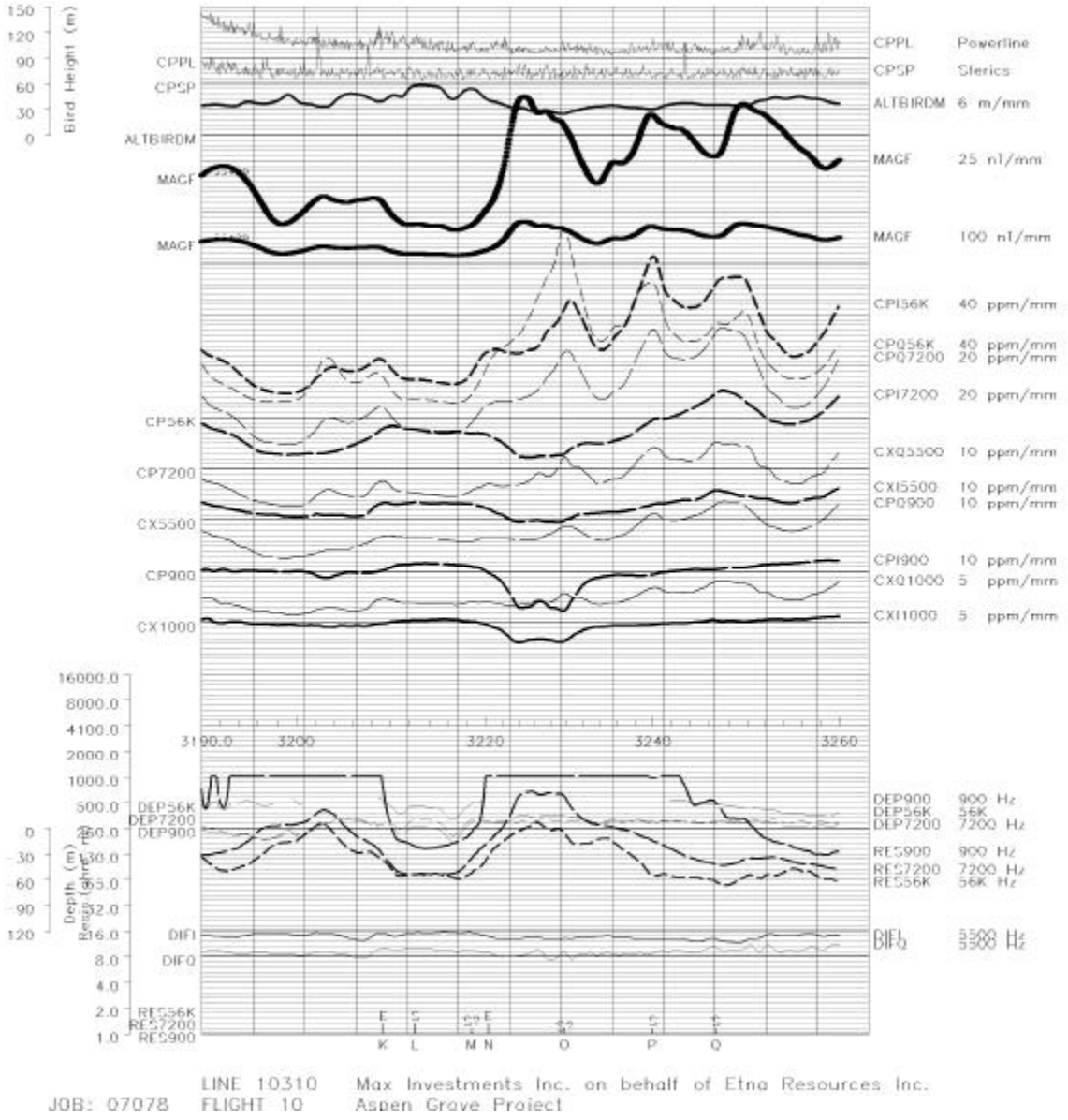


Figure 7-3 Court 1

8. CONCLUSIONS AND RECOMMENDATIONS

This report provides a very brief description of the survey results and describes the equipment, data processing procedures and logistics of the survey over the Aspen Grove Project, near Merritt, B.C.

There are at least 12 anomalies in the survey block that have been attributed to probable bedrock responses. The survey was also successful in locating several moderately weak or broad conductors that may also warrant additional work

Most anomalies in the area are moderately weak and poorly defined. Many have been attributed to conductive overburden or deep weathering, although several are associated with magnetite-rich rock units. Magnetite-associated responses can be important targets in the search for mineralized skarns. Others anomalies coincide with magnetic gradients that may reflect contacts, faults or shears. Such structural breaks are considered to be of particular interest as they may have influenced mineral deposition within the survey area.

The three known mineralized zones on the property did not yield distinctive resistivity lows due to their disseminated nature, and also because of the presence of magnetite in many areas. However, the magnetic results have delineated several structural breaks that could host mineralization. The radiometric data have outlined several subtle potassium highs that could reflect alteration zones or near-surface changes in rock type.

Powerline interference has yielded swaths of unreliable resistivity data within 250m of the lines. It is possible that some valid bedrock conductors might have escaped detection in these areas. Fences are also present in the area, with a few producing discrete EM responses. At least some of the anomalous responses detected by the survey could be due to cultural sources, so any follow-up program should take this into consideration.

The various maps included with this report display the magnetic, radiometric, and conductive properties of the survey area. It is recommended that a complete assessment and detailed evaluation of the survey results be carried out, in conjunction with all available geophysical, geological and geochemical information. Particular reference should be made to the multi-parameter data profiles that clearly define the characteristics of the individual anomalies.

The interpreted bedrock conductors and anomalous targets defined by the survey should be subjected to further investigation, using appropriate surface exploration techniques. Anomalies that are currently considered to be of moderately low priority may require upgrading if follow-up results are favourable.

It is also 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 contour and colour maps. These techniques can yield images that define subtle, but significant, structural details.

Respectfully submitted,

FUGRO AIRBORNE SURVEYS CORP.

R07078AUG.07

APPENDIX A

LIST OF PERSONNEL

The following personnel were involved in the acquisition, processing, interpretation and presentation of data, relating to a DIGHEM airborne geophysical survey carried out for Max Investments Inc. on behalf of Etna Resources Inc., over the Aspen Grove Project, near Merritt, British Columbia.

David Miles	Manager, Helicopter Operations
Emily Farquhar	Manager, Data Processing and Interpretation
Delvin Masilamani	Geophysical Operator
Darcy McGill	Field Geophysicist
Glen Charbonneau	Helicopter Pilot
Jacques Fournier	Helicopter Mechanic
Jeff Flemming	Geophysical Data Processor
Igor Sram	Geophysical Data Processor
Paul Smith	Interpretation Geophysicist
Lyn Vanderstarren	Drafting Supervisor
Susan Pothiah	Word Processing Operator
Albina Tonello	Secretary/Expeditor

The survey consisted of 366 km of coverage, flown from June 24 to July 1, 2007.

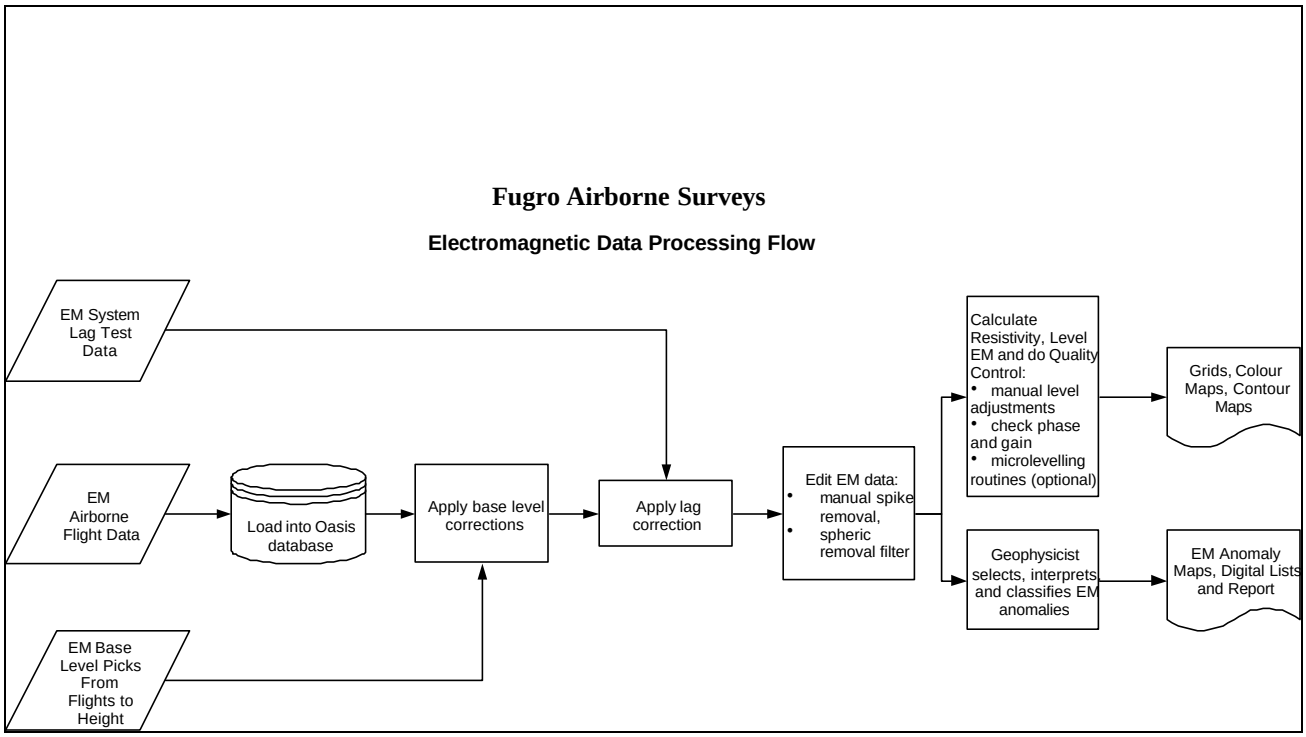
All personnel are employees of Fugro Airborne Surveys, except for the pilot and engineer who are employees of Great Slave Helicopters Ltd.

APPENDIX B

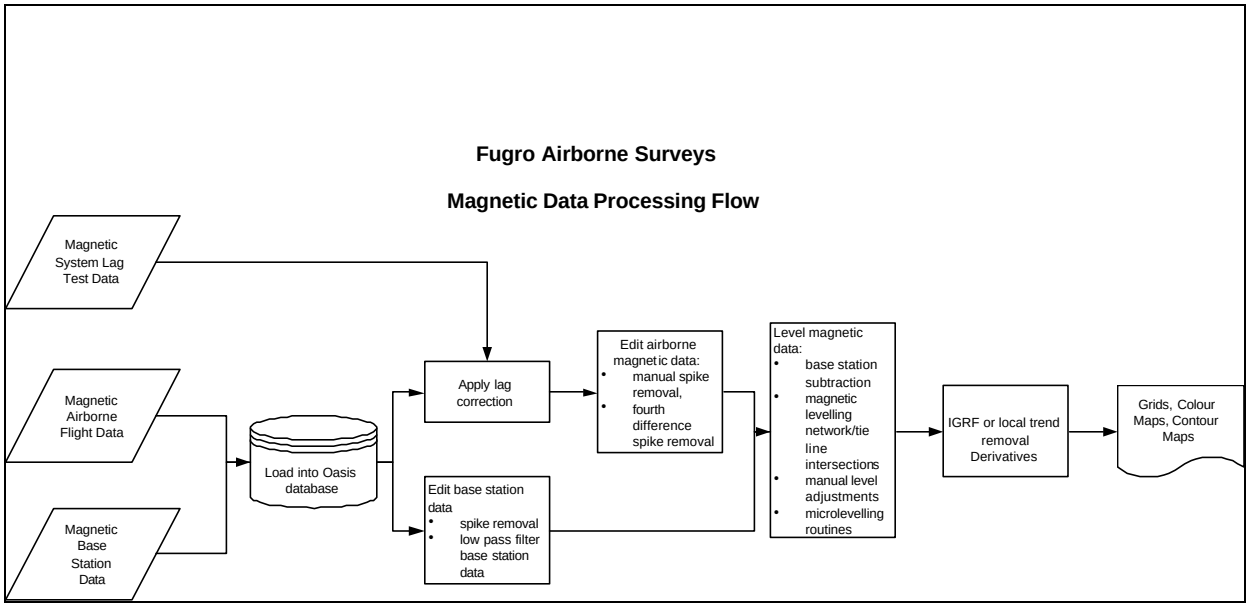
DATA PROCESSING FLOWCHARTS

APPENDIX B

Processing Flow Chart - Electromagnetic Data



Processing Flow Chart - Magnetic Data



APPENDIX C

BACKGROUND INFORMATION

- Appendix C.1 -

BACKGROUND INFORMATION

Electromagnetics

Fugro electromagnetic responses fall into two general classes, discrete and broad. The discrete class consists of sharp, well-defined anomalies from discrete conductors such as sulphide lenses and steeply dipping sheets of graphite and sulphides. The broad class consists of wide anomalies from conductors having a large horizontal surface such as flatly dipping graphite or sulphide sheets, saline water-saturated sedimentary formations, conductive overburden and rock, kimberlite pipes and geothermal zones. A vertical conductive slab with a width of 200 m would straddle these two classes.

The vertical sheet (half plane) is the most common model used for the analysis of discrete conductors. All anomalies plotted on the geophysical maps are analyzed according to this model. The following section entitled **Discrete Conductor Analysis** describes this model in detail, including the effect of using it on anomalies caused by broad conductors such as conductive overburden.

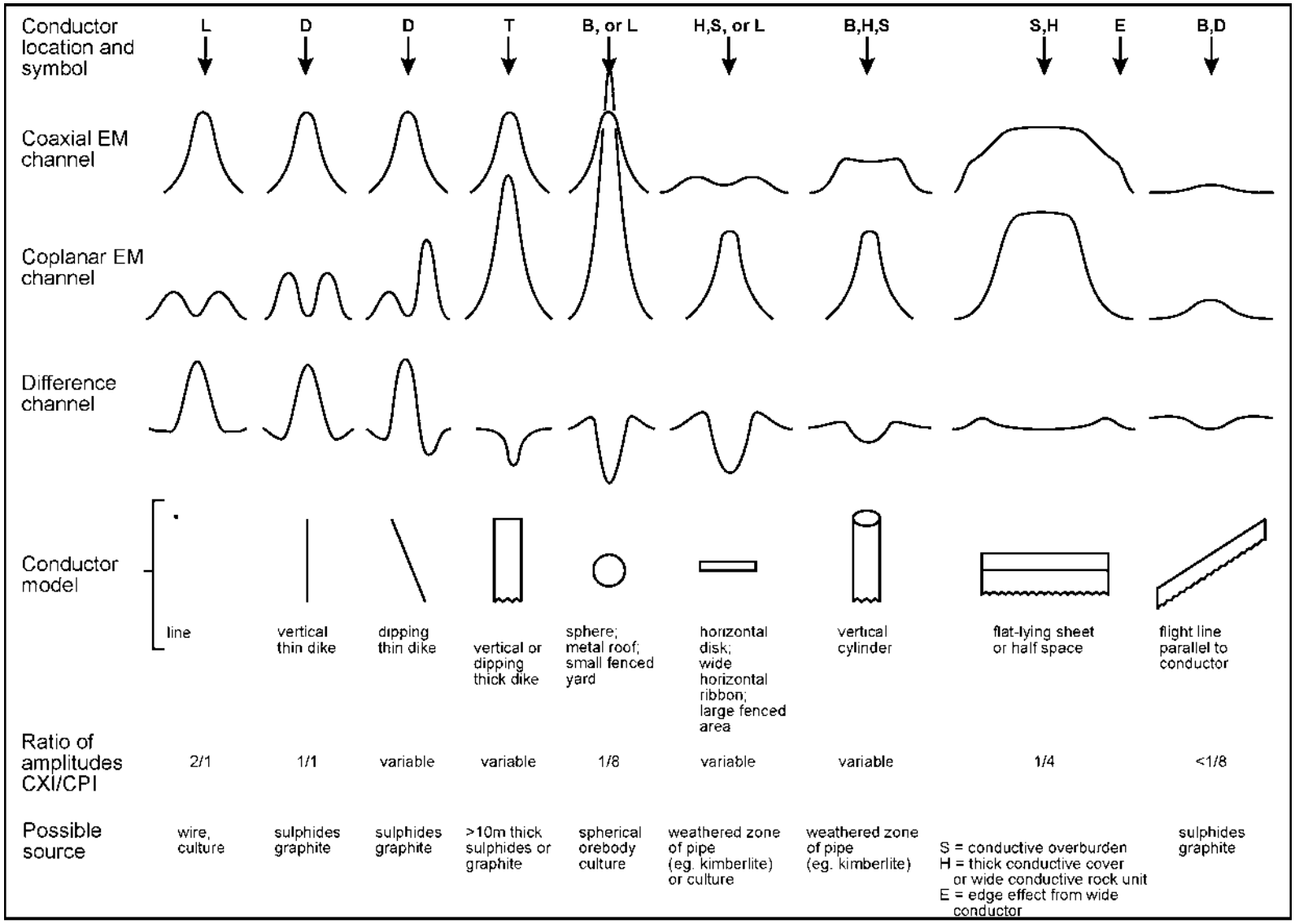
The conductive earth (half-space) model is suitable for broad conductors. Resistivity contour maps result from the use of this model. A later section entitled **Resistivity Mapping** describes the method further, including the effect of using it on anomalies caused by discrete conductors such as sulphide bodies.

Geometric Interpretation

The geophysical interpreter attempts to determine the geometric shape and dip of the conductor. Figure C-1 shows typical HEM anomaly shapes which are used to guide the geometric interpretation.

Discrete Conductor Analysis

The EM anomalies appearing on the electromagnetic map are analyzed by computer to give the conductance (i.e., conductivity-thickness product) in siemens (mhos) of a vertical sheet model. This is done regardless of the interpreted geometric shape of the conductor. This is not an unreasonable procedure, because the computed conductance increases as the electrical quality of the conductor increases, regardless of its true shape. DIGHEM anomalies are divided into seven grades of conductance, as shown in Table C-1. The conductance in siemens (mhos) is the reciprocal of resistance in ohms.



Typical HEM anomaly shapes

Figure C-1

The conductance value is a geological parameter because it is a characteristic of the conductor alone. It generally is independent of frequency, flying height or depth of burial, apart from the averaging over a greater portion of the conductor as height increases. Small anomalies from deeply buried strong conductors are not confused with small anomalies from shallow weak conductors because the former will have larger conductance values.

Table C-1. EM Anomaly Grades

Anomaly Grade	Siemens
7	> 100
6	50 - 100
5	20 - 50
4	10 - 20
3	5 - 10
2	1 - 5
1	< 1

Conductive overburden generally produces broad EM responses which may not be shown as anomalies on the geophysical maps. However, patchy conductive overburden in otherwise resistive areas can yield discrete anomalies with a conductance grade (cf. Table C-1) of 1, 2 or even 3 for conducting clays which have resistivities as low as 50 ohm-m. In areas where ground resistivities are below 10 ohm-m, anomalies caused by weathering variations and similar causes can have any conductance grade. The anomaly shapes from the multiple coils often allow such conductors to be recognized, and these are indicated by the letters S, H, and sometimes E on the geophysical maps (see EM legend on maps).

For bedrock conductors, the higher anomaly grades indicate increasingly higher conductances. Examples: the New Insco copper discovery (Noranda, Canada) yielded a grade 5 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Sturgeon Lake, Canada) and Whistle (nickel, Sudbury, Canada) gave grade 6; and the Montcalm nickel-copper discovery (Timmins, Canada) yielded a grade 7 anomaly. Graphite and sulphides can span all grades but, in any particular survey area, field work may show that the different grades indicate different types of conductors.

Strong conductors (i.e., grades 6 and 7) are characteristic of massive sulphides or graphite. Moderate conductors (grades 4 and 5) typically reflect graphite or sulphides of a less massive character, while weak bedrock conductors (grades 1 to 3) can signify poorly connected graphite or heavily disseminated sulphides. Grades 1 and 2 conductors may not respond to ground EM equipment using frequencies less than 2000 Hz.

The presence of sphalerite or gangue can result in ore deposits having weak to moderate conductances. As an example, the three million ton lead-zinc deposit of Restigouche Mining Corporation near Bathurst, Canada, yielded a well-defined grade 2 conductor. The 10 percent by volume of sphalerite occurs as a coating around the fine grained massive pyrite, thereby inhibiting electrical conduction. Faults, fractures and shear zones may produce anomalies that typically have low conductances (e.g., grades 1 to 3). Conductive rock formations can yield anomalies of any conductance grade. The conductive materials in such rock formations can be salt water, weathered products such as clays, original depositional clays, and carbonaceous material.

For each interpreted electromagnetic anomaly on the geophysical maps, a letter identifier and an interpretive symbol are plotted beside the EM grade symbol. The horizontal rows of dots, under the interpretive symbol, indicate the anomaly amplitude on the flight record. The vertical column of dots, under the anomaly letter, gives the estimated depth. In areas where anomalies are crowded, the letter identifiers, interpretive symbols and dots may be obliterated. The EM grade symbols, however, will always be discernible, and the obliterated information can be obtained from the anomaly listing appended to this report.

The purpose of indicating the anomaly amplitude by dots is to provide an estimate of the reliability of the conductance calculation. Thus, a conductance value obtained from a large ppm anomaly (3 or 4 dots) will tend to be accurate whereas one obtained from a small ppm anomaly (no dots) could be quite inaccurate. The absence of amplitude dots indicates that the anomaly from the coaxial coil-pair is 5 ppm or less on both the in-phase and quadrature channels. Such small anomalies could reflect a weak conductor at the surface or a stronger conductor at depth. The conductance grade and depth estimate illustrates which of these possibilities fits the recorded data best.

The conductance measurement is considered more reliable than the depth estimate. There are a number of factors that can produce an error in the depth estimate, including the averaging of topographic variations by the altimeter, overlying conductive overburden, and the location and attitude of the conductor relative to the flight line. Conductor location and attitude can provide an erroneous depth estimate because the stronger part of the conductor may be deeper or to one side of the flight line, or because it has a shallow dip. A heavy tree cover can also produce errors in depth estimates. This is because the depth estimate is computed as the distance of bird from conductor, minus the altimeter reading. The altimeter can lock onto the top of a dense forest canopy. This situation yields an erroneously large depth estimate but does not affect the conductance estimate.

Dip symbols are used to indicate the direction of dip of conductors. These symbols are used only when the anomaly shapes are unambiguous, which usually requires a fairly resistive environment.

A further interpretation is presented on the EM map by means of the line-to-line correlation of bedrock anomalies, which is based on a comparison of anomaly shapes on adjacent lines. This provides conductor axes that may define the geological structure over portions

of the survey area. The absence of conductor axes in an area implies that anomalies could not be correlated from line to line with reasonable confidence.

The electromagnetic anomalies are designed to provide a correct impression of conductor quality by means of the conductance grade symbols. The symbols can stand alone with geology when planning a follow-up program. The actual conductance values are printed in the attached anomaly list for those who wish quantitative data. The anomaly ppm and depth are indicated by inconspicuous dots that should not distract from the conductor patterns, while being helpful to those who wish this information. The map provides an interpretation of conductors in terms of length, strike and dip, geometric shape, conductance, depth, and thickness. The accuracy is comparable to an interpretation from a high quality ground EM survey having the same line spacing.

The appended EM anomaly list provides a tabulation of anomalies in ppm, conductance, and depth for the vertical sheet model. No conductance or depth estimates are shown for weak anomalous responses that are not of sufficient amplitude to yield reliable calculations.

Since discrete bodies normally are the targets of EM surveys, local base (or zero) levels are used to compute local anomaly amplitudes. This contrasts with the use of true zero levels, which are used to compute true EM amplitudes. Local anomaly amplitudes are shown in the EM anomaly list and these are used to compute the vertical sheet parameters of conductance and depth.

Questionable Anomalies

The EM maps may contain anomalous responses that are displayed as asterisks (*). These responses denote weak anomalies of indeterminate conductance, which may reflect one of the following: a weak conductor near the surface, a strong conductor at depth (e.g., 100 to 120 m below surface) or to one side of the flight line, or aerodynamic noise. Those responses that have the appearance of valid bedrock anomalies on the flight profiles are indicated by appropriate interpretive symbols (see EM legend on maps). The others probably do not warrant further investigation unless their locations are of considerable geological interest.

The Thickness Parameter

A comparison of coaxial and coplanar shapes can provide an indication of the thickness of a steeply dipping conductor. The amplitude of the coplanar anomaly (e.g., CPI channel) increases relative to the coaxial anomaly (e.g., CXI) as the apparent thickness increases, i.e., the thickness in the horizontal plane. (The thickness is equal to the conductor width if the conductor dips at 90 degrees and strikes at right angles to the flight line.) This report refers to a conductor as thin when the thickness is likely to be less than 3 m, and thick when in excess of 10 m. Thick conductors are indicated on the EM map by parentheses "(

)". For base metal exploration in steeply dipping geology, thick conductors can be high priority targets because many massive sulphide ore bodies are thick. The system cannot sense the thickness when the strike of the conductor is subparallel to the flight line, when the conductor has a shallow dip, when the anomaly amplitudes are small, or when the resistivity of the environment is below 100 ohm-m.

Resistivity Mapping

Resistivity mapping is useful in areas where broad or flat lying conductive units are of interest. One example of this is the clay alteration which is associated with Carlin-type deposits in the south west United States. The resistivity parameter was able to identify the clay alteration zone over the Cove deposit. The alteration zone appeared as a strong resistivity low on the 900 Hz resistivity parameter. The 7,200 Hz and 56,000 Hz resistivities showed more detail in the covering sediments, and delineated a range front fault. This is typical in many areas of the south west United States, where conductive near surface sediments, which may sometimes be alkalic, attenuate the higher frequencies.

Resistivity mapping has proven successful for locating diatremes in diamond exploration. Weathering products from relatively soft kimberlite pipes produce a resistivity contrast with the unaltered host rock. In many cases weathered kimberlite pipes were associated with thick conductive layers that contrasted with overlying or adjacent relatively thin layers of lake bottom sediments or overburden.

Areas of widespread conductivity are commonly encountered during surveys. These conductive zones may reflect alteration zones, shallow-dipping sulphide or graphite-rich units, saline ground water, or conductive overburden. In such areas, EM amplitude changes can be generated by decreases of only 5 m in survey altitude, as well as by increases in conductivity. The typical flight record in conductive areas is characterized by in-phase and quadrature channels that are continuously active. Local EM peaks reflect either increases in conductivity of the earth or decreases in survey altitude. For such conductive areas, apparent resistivity profiles and contour maps are necessary for the correct interpretation of the airborne data. The advantage of the resistivity parameter is that anomalies caused by altitude changes are virtually eliminated, so the resistivity data reflect only those anomalies caused by conductivity changes. The resistivity analysis also helps the interpreter to differentiate between conductive bedrock and conductive overburden. For example, discrete conductors will generally appear as narrow lows on the contour map and broad conductors (e.g., overburden) will appear as wide lows.

The apparent resistivity is calculated using the pseudo-layer (or buried) half-space model defined by Fraser (1978)[7]. This model consists of a resistive layer overlying a conductive

[7] Resistivity mapping with an airborne multicoil electromagnetic system: Geophysics, v. 43, p.144-172

half-space. The depth channels give the apparent depth below surface of the conductive material. The apparent depth is simply the apparent thickness of the overlying resistive layer. The apparent depth (or thickness) parameter will be positive when the upper layer is more resistive than the underlying material, in which case the apparent depth may be quite close to the true depth.

The apparent depth will be negative when the upper layer is more conductive than the underlying material, and will be zero when a homogeneous half-space exists. The apparent depth parameter must be interpreted cautiously because it will contain any errors that might exist in the measured altitude of the EM bird (e.g., as caused by a dense tree cover). The inputs to the resistivity algorithm are the in-phase and quadrature components of the coplanar coil-pair. The outputs are the apparent resistivity of the conductive half-space (the source) and the sensor-source distance. The flying height is not an input variable, and the output resistivity and sensor-source distance are independent of the flying height when the conductivity of the measured material is sufficient to yield significant in-phase as well as quadrature responses. The apparent depth, discussed above, is simply the sensor-source distance minus the measured altitude or flying height. Consequently, errors in the measured altitude will affect the apparent depth parameter but not the apparent resistivity parameter.

The apparent depth parameter is a useful indicator of simple layering in areas lacking a heavy tree cover. Depth information has been used for permafrost mapping, where positive apparent depths were used as a measure of permafrost thickness. However, little quantitative use has been made of negative apparent depths because the absolute value of the negative depth is not a measure of the thickness of the conductive upper layer and, therefore, is not meaningful physically. Qualitatively, a negative apparent depth estimate usually shows that the EM anomaly is caused by conductive overburden. Consequently, the apparent depth channel can be of significant help in distinguishing between overburden and bedrock conductors.

Interpretation in Conductive Environments

Environments having low background resistivities (e.g., below 30 ohm-m for a 900 Hz system) yield very large responses from the conductive ground. This usually prohibits the recognition of discrete bedrock conductors. However, Fugro data processing techniques produce three parameters that contribute significantly to the recognition of bedrock conductors in conductive environments. These are the in-phase and quadrature difference channels (DIFI and DIFQ, which are available only on systems with “common” frequencies on orthogonal coil pairs), and the resistivity and depth channels (RES and DEP) for each coplanar frequency.

The EM difference channels (DIFI and DIFQ) eliminate most of the responses from conductive ground, leaving responses from bedrock conductors, cultural features (e.g., telephone lines, fences, etc.) and edge effects. Edge effects often occur near the perimeter of broad conductive zones. This can be a source of geologic noise. While edge effects yield anomalies on the EM difference channels, they do not produce resistivity anomalies. Consequently, the resistivity channel aids in eliminating anomalies due to edge effects. On the other hand, resistivity anomalies will coincide with the most highly conductive sections of conductive ground, and this is another source of geologic noise. The recognition of a bedrock conductor in a conductive environment therefore is based on the anomalous responses of the two difference channels (DIFI and DIFQ) and the resistivity channels (RES). The most favourable situation is where anomalies coincide on all channels.

The DEP channels, which give the apparent depth to the conductive material, also help to determine whether a conductive response arises from surficial material or from a conductive zone in the bedrock. When these channels ride above the zero level on the depth profiles (i.e., depth is negative), it implies that the EM and resistivity profiles are responding primarily to a conductive upper layer, i.e., conductive overburden. If the DEP channels are below the zero level, it indicates that a resistive upper layer exists, and this usually implies the existence of a bedrock conductor. If the low frequency DEP channel is below the zero level and the high frequency DEP is above, this suggests that a bedrock conductor occurs beneath conductive cover.

Reduction of Geologic Noise

Geologic noise refers to unwanted geophysical responses. For purposes of airborne EM surveying, geologic noise refers to EM responses caused by conductive overburden and magnetic permeability. It was mentioned previously that the EM difference channels (i.e., channel DIFI for in-phase and DIFQ for quadrature) tend to eliminate the response of conductive overburden.

Magnetite produces a form of geological noise on the in-phase channels. Rocks containing less than 1% magnetite can yield negative in-phase anomalies caused by magnetic permeability. When magnetite is widely distributed throughout a survey area, the in-phase EM channels may continuously rise and fall, reflecting variations in the magnetite percentage, flying height, and overburden thickness. This can lead to difficulties in recognizing deeply buried bedrock conductors, particularly if conductive overburden also exists. However, the response of broadly distributed magnetite generally vanishes on the in-phase difference channel DIFI. This feature can be a significant aid in the recognition of conductors that occur in rocks containing accessory magnetite.

EM Magnetite Mapping

The information content of HEM data consists of a combination of conductive eddy current responses and magnetic permeability responses. The secondary field resulting from conductive eddy current flow is frequency-dependent and consists of both in-phase and quadrature components, which are positive in sign. On the other hand, the secondary field resulting from magnetic permeability is independent of frequency and consists of only an in-phase component which is negative in sign. When magnetic permeability manifests itself by decreasing the measured amount of positive in-phase, its presence may be difficult to recognize. However, when it manifests itself by yielding a negative in-phase anomaly (e.g., in the absence of eddy current flow), its presence is assured. In this latter case, the negative component can be used to estimate the percent magnetite content.

A magnetite mapping technique, based on the low frequency coplanar data, can be complementary to magnetometer mapping in certain cases. Compared to magnetometry, it is far less sensitive but is more able to resolve closely spaced magnetite zones, as well as providing an estimate of the amount of magnetite in the rock. The method is sensitive to 1/4% magnetite by weight when the EM sensor is at a height of 30 m above a magnetitic half-space. It can individually resolve steep dipping narrow magnetite-rich bands which are separated by 60 m. Unlike magnetometry, the EM magnetite method is unaffected by remanent magnetism or magnetic latitude.

The EM magnetite mapping technique provides estimates of magnetite content which are usually correct within a factor of 2 when the magnetite is fairly uniformly distributed. EM magnetite maps can be generated when magnetic permeability is evident as negative in-phase responses on the data profiles.

Like magnetometry, the EM magnetite method maps only bedrock features, provided that the overburden is characterized by a general lack of magnetite. This contrasts with resistivity mapping which portrays the combined effect of bedrock and overburden.

The Susceptibility Effect

When the host rock is conductive, the positive conductivity response will usually dominate the secondary field, and the susceptibility effect[8] will appear as a reduction in the in-phase, rather than as a negative value. The in-phase response will be lower than would be predicted by a model using zero susceptibility. At higher frequencies the in-phase conductivity response also gets larger, so a negative magnetite effect observed on the low frequency might not be observable on the higher frequencies, over the same body. The

[8] Magnetic susceptibility and permeability are two measures of the same physical property. Permeability is generally given as relative permeability, μ_r, which is the permeability of the substance divided by the permeability of free space ($4 \pi \times 10^{-7}$). Magnetic susceptibility k is related to permeability by $k=\mu^r-1$. Susceptibility is a unitless measurement, and is usually reported in units of 10^{-6}. The typical range of susceptibilities is –1 for quartz, 130 for pyrite, and up to 5×10^5 for magnetite, in 10^{-6} units (Telford et al, 1986).

susceptibility effect is most obvious over discrete magnetite-rich zones, but also occurs over uniform geology such as a homogeneous half-space.

High magnetic susceptibility will affect the calculated apparent resistivity, if only conductivity is considered. Standard apparent resistivity algorithms use a homogeneous half-space model, with zero susceptibility. For these algorithms, the reduced in-phase response will, in most cases, make the apparent resistivity higher than it should be. It is important to note that there is nothing wrong with the data, nor is there anything wrong with the processing algorithms. The apparent difference results from the fact that the simple geological model used in processing does not match the complex geology.

Measuring and Correcting the Magnetite Effect

Theoretically, it is possible to calculate (forward model) the combined effect of electrical conductivity and magnetic susceptibility on an EM response in all environments. The difficulty lies, however, in separating out the susceptibility effect from other geological effects when deriving resistivity and susceptibility from EM data.

Over a homogeneous half-space, there is a precise relationship between in-phase, quadrature, and altitude. These are often resolved as phase angle, amplitude, and altitude. Within a reasonable range, any two of these three parameters can be used to calculate the half space resistivity. If the rock has a positive magnetic susceptibility, the in-phase component will be reduced and this departure can be recognized by comparison to the other parameters.

The algorithm used to calculate apparent susceptibility and apparent resistivity from HEM data, uses a homogeneous half-space geological model. Non half-space geology, such as horizontal layers or dipping sources, can also distort the perfect half-space relationship of the three data parameters. While it may be possible to use more complex models to calculate both rock parameters, this procedure becomes very complex and time-consuming. For basic HEM data processing, it is most practical to stick to the simplest geological model.

Magnetite reversals (reversed in-phase anomalies) have been used for many years to calculate an “FeO” or magnetite response from HEM data (Fraser, 1981). However, this technique could only be applied to data where the in-phase was observed to be negative, which happens when susceptibility is high and conductivity is low.

Applying Susceptibility Corrections

Resistivity calculations done with susceptibility correction may change the apparent resistivity. High-susceptibility conductors, that were previously masked by the susceptibility effect in standard resistivity algorithms, may become evident. In this case the susceptibility corrected apparent resistivity is a better measure of the actual resistivity of

the earth. However, other geological variations, such as a deep resistive layer, can also reduce the in-phase by the same amount. In this case, susceptibility correction would not be the best method. Different geological models can apply in different areas of the same data set. The effects of susceptibility, and other effects that can create a similar response, must be considered when selecting the resistivity algorithm.

Susceptibility from EM vs Magnetic Field Data

The response of the EM system to magnetite may not match that from a magnetometer survey. First, HEM-derived susceptibility is a rock property measurement, like resistivity. Magnetic data show the total magnetic field, a measure of the potential field, not the rock property. Secondly, the shape of an anomaly depends on the shape and direction of the source magnetic field. The electromagnetic field of HEM is much different in shape from the earth's magnetic field. Total field magnetic anomalies are different at different magnetic latitudes; HEM susceptibility anomalies have the same shape regardless of their location on the earth.

In far northern latitudes, where the magnetic field is nearly vertical, the total magnetic field measurement over a thin vertical dike is very similar in shape to the anomaly from the HEM-derived susceptibility (a sharp peak over the body). The same vertical dike at the magnetic equator would yield a negative magnetic anomaly, but the HEM susceptibility anomaly would show a positive susceptibility peak.

Effects of Permeability and Dielectric Permittivity

Resistivity algorithms that assume free-space magnetic permeability and dielectric permittivity, do not yield reliable values in highly magnetic or highly resistive areas. Both magnetic polarization and displacement currents cause a decrease in the in-phase component, often resulting in negative values that yield erroneously high apparent resistivities. The effects of magnetite occur at all frequencies, but are most evident at the lowest frequency. Conversely, the negative effects of dielectric permittivity are most evident at the higher frequencies, in resistive areas.

The table below shows the effects of varying permittivity over a resistive (10,000 ohm-m) half space, at frequencies of 56,000 Hz (DIGHEM^V) and 102,000 Hz (RESOLVE).

Apparent Resistivity Calculations

Effects of Permittivity on In-phase/Quadrature/Resistivity

Freq (Hz)	Coil	Sep (m)	Thres (ppm)	Alt (m)	In Phase	Quad Phase	App Res	App Depth (m)	Permittivity
56,000	CP	6.3	0.1	30	7.3	35.3	10118	-1.0	1 Air

56,000	CP	6.3	0.1	30	3.6	36.6	19838	-13.2	5 Quartz
56,000	CP	6.3	0.1	30	-1.1	38.3	81832	-25.7	10 Epidote
56,000	CP	6.3	0.1	30	-10.4	42.3	76620	-25.8	20 Granite
56,000	CP	6.3	0.1	30	-19.7	46.9	71550	-26.0	30 Diabase
56,000	CP	6.3	0.1	30	-28.7	52.0	66787	-26.1	40 Gabbro
102,000	CP	7.86	0.1	30	32.5	117.2	9409	-0.3	1 Air
102,000	CP	7.86	0.1	30	11.7	127.2	25956	-16.8	5 Quartz
102,000	CP	7.86	0.1	30	-14.0	141.6	97064	-26.5	10 Epidote
102,000	CP	7.86	0.1	30	-62.9	176.0	83995	-26.8	20 Granite
102,000	CP	7.86	0.1	30	-107.5	215.8	73320	-27.0	30 Diabase
102,000	CP	7.86	0.1	30	-147.1	259.2	64875	-27.2	40 Gabbro

Methods have been developed (Huang and Fraser, 2000, 2001) to correct apparent resistivities for the effects of permittivity and permeability. The corrected resistivities yield more credible values than if the effects of permittivity and permeability are disregarded.

Recognition of Culture

Cultural responses include all EM anomalies caused by man-made metallic objects. Such anomalies may be caused by inductive coupling or current gathering. The concern of the interpreter is to recognize when an EM response is due to culture. Points of consideration used by the interpreter, when coaxial and coplanar coil-pairs are operated at a common frequency, are as follows:

1. Channels CXPL and CPPL monitor 60 Hz radiation. An anomaly on these channels shows that the conductor is radiating power. Such an indication is normally a guarantee that the conductor is cultural. However, care must be taken to ensure that the conductor is not a geologic body that strikes across a power line, carrying leakage currents.

2. A flight that crosses a "line" (e.g., fence, telephone line, etc.) yields a centre-peaked coaxial anomaly and an m-shaped coplanar anomaly.[9] When the flight crosses the cultural line at a high angle of intersection, the amplitude ratio of coaxial/coplanar response is 2. Such an EM anomaly can only be caused by a line. The geologic body that yields anomalies most closely resembling a line is the vertically dipping thin dike. Such a body, however, yields an amplitude ratio of 1 rather than 2. Consequently, an m-shaped coplanar anomaly with a CXI/CPI amplitude ratio of 2 is virtually a guarantee that the source is a cultural line.

3. A flight that crosses a sphere or horizontal disk yields centre-peaked coaxial and coplanar anomalies with a CXI/CPI amplitude ratio (i.e., coaxial/coplanar) of 1/8. In

[9] See Figure C-1 presented earlier.

the absence of geologic bodies of this geometry, the most likely conductor is a metal roof or small fenced yard.[10] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

4. A flight that crosses a horizontal rectangular body or wide ribbon yields an m-shaped coaxial anomaly and a centre-peaked coplanar anomaly. In the absence of geologic bodies of this geometry, the most likely conductor is a large fenced area.[5] Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.
5. EM anomalies that coincide with culture, as seen on the camera film or video display, are usually caused by culture. However, care is taken with such coincidences because a geologic conductor could occur beneath a fence, for example. In this example, the fence would be expected to yield an m-shaped coplanar anomaly as in case #2 above. If, instead, a centre-peaked coplanar anomaly occurred, there would be concern that a thick geologic conductor coincided with the cultural line.

6. The above description of anomaly shapes is valid when the culture is not conductively coupled to the environment. In this case, the anomalies arise from inductive coupling to the EM transmitter. However, when the environment is quite conductive (e.g., less than 100 ohm-m at 900 Hz), the cultural conductor may be conductively coupled to the environment. In this latter case, the anomaly shapes tend to be governed by current gathering. Current gathering can completely distort the anomaly shapes, thereby complicating the identification of cultural anomalies. In such circumstances, the interpreter can only rely on the radiation channels and on the camera film or video records.

Magnetic Responses

The measured total magnetic field provides information on the magnetic properties of the earth materials in the survey area. The information can be used to locate magnetic bodies of direct interest for exploration, and for structural and lithological mapping.

The total magnetic field response reflects the abundance of magnetic material in the source. Magnetite is the most common magnetic mineral. Other minerals such as ilmenite, pyrrhotite, franklinite, chromite, hematite, arsenopyrite, limonite and pyrite are also magnetic, but to a lesser extent than magnetite on average.

---

[10] It is a characteristic of EM that geometrically similar anomalies are obtained from: (1) a planar conductor, and (2) a wire which forms a loop having dimensions identical to the perimeter of the equivalent planar conductor.

In some geological environments, an EM anomaly with magnetic correlation has a greater likelihood of being produced by sulphides than one which is non-magnetic. However, sulphide ore bodies may be non-magnetic (e.g., the Kidd Creek deposit near Timmins, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Canada).

Iron ore deposits will be anomalously magnetic in comparison to surrounding rock due to the concentration of iron minerals such as magnetite, ilmenite and hematite.

Changes in magnetic susceptibility often allow rock units to be differentiated based on the total field magnetic response. Geophysical classifications may differ from geological classifications if various magnetite levels exist within one general geological classification. Geometric considerations of the source such as shape, dip and depth, inclination of the earth's field and remanent magnetization will complicate such an analysis.

In general, mafic lithologies contain more magnetite and are therefore more magnetic than many sediments which tend to be weakly magnetic. Metamorphism and alteration can also increase or decrease the magnetization of a rock unit.

Textural differences on a total field magnetic contour, colour or shadow map due to the frequency of activity of the magnetic parameter resulting from inhomogeneities in the distribution of magnetite within the rock, may define certain lithologies. For example, near surface volcanics may display highly complex contour patterns with little line-to-line correlation.

Rock units may be differentiated based on the plan shapes of their total field magnetic responses. Mafic intrusive plugs can appear as isolated "bulls-eye" anomalies. Granitic intrusives appear as sub-circular zones, and may have contrasting rings due to contact metamorphism. Generally, granitic terrain will lack a pronounced strike direction, although granite gneiss may display strike.

Linear north-south units are theoretically not well-defined on total field magnetic maps in equatorial regions due to the low inclination of the earth's magnetic field. However, most stratigraphic units will have variations in composition along strike that will cause the units to appear as a series of alternating magnetic highs and lows.

Faults and shear zones may be characterized by alteration that causes destruction of magnetite (e.g., weathering) that produces a contrast with surrounding rock. Structural breaks may be filled by magnetite-rich, fracture filling material as is the case with diabase dikes, or by non-magnetic felsic material.

Faulting can also be identified by patterns in the magnetic total field contours or colours. Faults and dikes tend to appear as lineaments and often have strike lengths of several kilometres. Offsets in narrow, magnetic, stratigraphic trends also delineate structure. Sharp contrasts in magnetic lithologies may arise due to large displacements along strike-slip or dip-slip faults.

Gamma Ray Spectrometry

Radioelement concentrations are measures of the abundance of radioactive elements in the rock. The original abundance of the radioelements in any rock can be altered by the subsequent processes of metamorphism and weathering.

Gamma radiation in the range that is measured in the thorium, potassium, uranium and total count windows is strongly attenuated by rock, overburden and water. Almost all of the total radiation measured from rock and overburden originates in the upper .5 metres. Moisture in soil and bodies of water will mask the radioactivity from underlying rock. Weathered rock materials that have been displaced by glacial, water or wind action will not reflect the general composition of the underlying bedrock. Where residual soils exist, they may reflect the composition of underlying rock except where equilibrium does not exist between the original radioelement and the products in its decay series.

Radioelement counts (expressed as counts per second) are the rates of detection of the gamma radiation from specific decaying particles corresponding to products in each radioelements decay series. The radiation source for uranium is bismuth (Bi-214), for thorium it is thallium (Tl-208) and for potassium it is potassium (K-40).

The uranium and thorium radioelement concentrations are dependent on a state of equilibrium between the parent and daughter products in the decay series. Some daughter products in the uranium decay are long lived and could be removed by processes such as leaching. One product in the series, radon (Rn-222), is a gas which can easily escape. Both of these factors can affect the degree to which the calculated uranium concentrations reflect the actual composition of the source rock. Because the daughter products of thorium are relatively short lived, there is more likelihood that the thorium decay series is in equilibrium.

Lithological discrimination can be based on the measured relative concentrations and total, combined, radioactivity of the radioelements. Feldspar and mica contain potassium. Zircon, sphene and apatite are accessory minerals in igneous rocks that are sources of uranium and thorium. Monazite, thorianite, thorite, uraninite and uranothorite are also sources of uranium and thorium which are found in granites and pegmatites.

In general, the abundance of uranium, thorium and potassium in igneous rock increases with acidity. Pegmatites commonly have elevated concentrations of uranium relative to thorium. Sedimentary rocks derived from igneous rocks may have characteristic signatures that are influenced by their parent rocks, but these will have been altered by subsequent weathering and alteration.

Metamorphism and alteration will cause variations in the abundance of certain radioelements relative to each other. For example, alterative processes may cause

uranium enrichment to the extent that a rock will be of economic interest. Uranium anomalies are more likely to be economically significant if they consist of an increase in the uranium relative to thorium and potassium, rather than a sympathetic increase in all three radioelements.

Faults can exhibit radioactive highs due to increased permeability which allows radon migration, or as lows due to structural control of drainage and fluvial sediments which attenuate gamma radiation from the underlying rocks. Faults can also be recognized by sharp contrasts in radiometric lithologies due to large strike-slip or dip-slip displacements. Changes in relative radioelement concentrations due to alteration will also define faults.

Similar to magnetics, certain rock types can be identified by their plan shapes if they also produce a radiometric contrast with surrounding rock. For example, granite intrusions will appear as sub-circular bodies, and may display concentric zonations. They will tend to lack a prominent strike direction. Offsets of narrow, continuous, stratigraphic units with contrasting radiometric signatures can identify faulting, and folding of stratigraphic trends will also be apparent.

APPENDIX D

DATA ARCHIVE DESCRIPTION

APPENDIX D

ARCHIVE DESCRIPTION

Reference: CCD02530
Disc 1 of 1
Archive Date: August 24, 2007

This archive contains FINAL DATA ARCHIVES of an airborne geophysical survey conducted by FUGRO AIRBORNE SURVEYS CORP. over the Aspen Grove Project, Merritt, British Columbia, for Max Investments Inc. on behalf of Etna Resources Inc., from June 24 to July 1, 2007.

Job # 07078

******* Disc 1 of 1 *******

\README.TXT - this file

GRIDS\

Grids in Geosoft binary (float) format

RES900.GRD	- Apparent Resistivity 900 Hz coplanar
RES7200.GRD	- Apparent Resistivity 7200 Hz coplanar
RES56K.GRD	- Apparent Resistivity 56000 Hz coplanar
MAG.GRD	- Total Magnetic Intensity (nT)
CVG.GRD	- Calculated Vertical gradient from TMI grid (nT/m)
K.GRD	- Potassium Counts (cps)
U.GRD	- Uranium Counts (cps)
TH.GRD	- Thorium Counts (cps)
TC.GRD	- Total Count (cps)
Th-K.GRD	- Thorium/ Potassium ratio

XYZ\

07078.XYZ	- ASCII line data archive in Geosoft XYZ format
An07078.XYZ	- Geosoft Anomaly ASCII data archive

REPORT\

R07078.pdf - logistical and interpretation report

All EM data in the archive is presented in the standard normalization convention for the coplanar coils. The ratio of coplanar to coaxial amplitudes for the same frequency is 4:1 over a layered earth.

Resistivity is calculated using a proprietary pseudo-layer half-space algorithm.

The coordinate system for all grids and XYZ files is projected as follows

Datum	NAD 83
Spheroid	GRS80
Projection	UTM 10N
Central meridian	123 West
False easting	500000
False northing	0
Scale factor	0.9996
Northern parallel	N/A
Base parallel	N/A
WGS84 to local conversion method	Molodensky
Delta X shift	+0
Delta Y shift	+0
Delta Z shift	+0

If you have any problems with this archive please contact

Processing Manager
FUGRO AIRBORNE SURVEYS CORP.
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Geosoft XYZ ARCHIVE SUMMARY

JOB TITLE: 07078

TYPE OF SURVEY :Fugro DIGHEM V EM, Magnetics, Resistivity, Radiometrics
AREA :Aspen Grove Project, Merrit, British Columbia
CLIENT :Max Investments Inc. on behalf of Etna Resources Inc.

NUMBER OF DATA FIELDS : 44

#	CHANNAME	TIME	UNITS	DESCRIPTION
1	X	0.1	m	UTME-NAD83 (ZONE-10N)
2	Y	0.1	m	UTMN-NAD83 (ZONE-10N)
3	LAT	0.1	deg.m	Latitude NAD83
4	LON	0.1	deg.m	Longitude NAD83
5	ALTBIRDM	0.1	m	Bird height above ground
6	ALTHELIM	0.1	m	Heli height above ground
7	FID	0.1	s	Fiducial
8	DIURNAL	0.1	nT	Diurnal correction
9	MAGR	0.1	nT	Lagged and diurnal corrected Total Magnetic Field
10	MAGF	0.1	nT	Final Total Magnetic Field
11	CPI900	0.1	ppm	INPHASE-COPLANAR 900 HZ
12	CPQ900	0.1	ppm	QUADRATURE- COPLANAR 900 HZ
13	CXI1000	0.1	ppm	INPHASE-COAXIAL 1000 HZ
14	CXQ1000	0.1	ppm	QUAD- COAXIAL 1000 HZ
15	CXI5500	0.1	ppm	INPHASE -COAXIAL 5500 HZ
16	CXQ5500	0.1	ppm	QUAD -COAXIAL 5500 HZ
17	CPI7200	0.1	ppm	INPHASE -COPLANAR 7200 HZ
18	CPQ7200	0.1	ppm	QUAD -COPLANAR 7200 HZ
19	CPI56K	0.1	ppm	INPHASE-COPLANAR 56000 HZ
20	CPQ56K	0.1	ppm	QUAD-COPLANAR 56000 HZ
21	RES900	0.1	ohm-m	APPARENT RESISTIVITY - 900 Hz
22	RES7200	0.1	ohm-m	APPARENT RESISTIVITY - 7200 Hz
23	RES56K	0.1	ohm-m	APPARENT RESISTIVITY - 56000 Hz
24	DEP900	0.1	m	APPARENT DEPTH - 900 Hz
25	DEP7200	0.1	m	APPARENT DEPTH - 7200 Hz
26	DEP56K	0.1	m	APPARENT DEPTH - 56000 Hz
27	COSMIC	1.0	counts/s	Cosmic counts
28	LIVE_TIME	1.0	ms	Spectrometer live time
29	URANUP	1.0	counts/s	Upward Uranium window
30	TC_RAW	1.0	counts/s	Total Count window - raw
31	TH_RAW	1.0	counts/s	Thorium window - raw
32	U_RAW	1.0	counts/s	Uranium window - raw
33	K_RAW	1.0	counts/s	Potassium window - raw
34	TC	1.0	counts/s	Total Count window - corrected
35	TH	1.0	counts/s	Thorium window - corrected
36	U	1.0	counts/s	Uranium window - corrected
37	K	1.0	counts/s	Potassium window – corrected

```
 38 TH_K_RATIO  1.0                Thorium/ Potassium ratio
 39 PRESSURE    0.1    kpa         Air pressure
 40 TEMPERATURE 0.1    Celsius     Outside air temperature
 41 Z           0.1    m           Helicopter height above mean sea level
 42 DTM         0.1    m           Digital Terrain Model
 43 FLT         0.1                Survey flight number
 44 DATE        0.1    Y/M/D       Date of the survey line
*****************************************************************
ISSUE DATE          :August 24, 2007
FOR WHOM            :MAX INVESTMENTS INC. on behalf of ETNA RESOURCES INC.
BY  WHOM            :FUGRO AIRBORNE SURVEYS
                     2270 ARGENTIA ROAD, UNIT 2
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```

APPENDIX E

EM ANOMALY LIST

EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10010			FLIGHT 1										
A	1857.7	S	669636	5546040	6.6	11.9	88.1	187.2	6.7	34.9	0.6	15	0
B	1872.9	S	670123	5546037	7.2	26.8	74.0	136.5	79.9	18.7	0.4	0	0
C	1900.4	S?	670953	5546035	10.5	45.2	132.1	329.8	0.0	67.6	0.4	0	89
D	1927.7	S	671802	5546036	6.8	25.7	92.6	165.8	44.1	31.2	0.4	0	0
E	1938.4	S	672168	5546050	5.5	16.4	41.7	120.3	16.1	23.4	0.4	0	52
F	1963.8	S	673059	5546033	9.5	14.5	61.3	135.2	5.5	31.6	0.8	9	0
G	1970.2	S	673298	5546032	10.0	34.6	17.7	65.3	2.4	8.0	0.4	0	98
H	1977.0	S?	673549	5546033	7.7	28.1	1.6	117.0	18.3	20.8	0.4	0	0
I	1982.2	E	673744	5546033	20.7	26.2	195.9	165.4	43.0	70.6	1.3	4	0
J	1984.8	S	673842	5546035	10.5	36.6	187.4	303.3	5.9	70.2	0.4	0	0
K	1989.5	S	674020	5546041	19.0	33.5	178.7	265.6	4.3	62.1	0.9	2	0
L	1996.0	S	674273	5546049	20.1	50.3	119.2	240.6	0.6	50.5	0.7	0	0
M	2006.7	H	674711	5546052	15.7	20.9	82.7	108.3	53.6	40.9	---	---	0
N	2010.0	S?	674848	5546049	45.2	146.7	382.0	822.6	53.6	185.4	0.7	0	65
O	2017.7	S	675165	5546039	24.0	49.8	170.8	242.4	15.5	77.6	0.9	0	0
P	2024.4	E	675432	5546031	14.0	41.9	141.0	300.2	0.2	60.9	0.5	0	303
Q	2037.0	H?	675927	5546027	31.4	9.4	255.7	131.1	118.3	117.9	9.4	18	0
R	2038.3	L	675978	5546028	18.9	12.5	255.7	131.1	118.3	117.9	2.7	19	43
S	2041.6	E	676107	5546031	33.2	26.6	143.5	187.8	46.0	138.9	2.6	12	0
T	2051.0	S?	676469	5546041	25.4	33.6	124.2	164.0	56.1	53.5	1.4	2	0
LINE 10020			FLIGHT 1										
A	2369.8	S	669430	5545849	15.8	33.1	82.9	127.6	15.3	32.3	0.8	0	0

CX = COAXIAL
CP = COPLANAR

Note:EM values shown above are local amplitudes

*Estimated Depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or magnetite/overburden effects

EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10020			FLIGHT 1										
B	2349.9	S	670125	5545850	2.6	29.7	54.8	215.0	15.6	37.5	0.1	0	0
C	2340.1	S	670444	5545846	4.2	23.3	19.7	113.5	2.6	16.7	---	---	197
D	2325.0	S	670938	5545852	3.6	20.7	52.5	118.1	10.2	20.9	0.2	0	0
E	2269.0	S	672705	5545861	4.5	18.3	37.0	159.3	0.0	25.1	0.3	0	0
F	2257.2	S	673073	5545853	11.9	17.4	21.8	53.8	5.3	13.1	1.0	16	0
G	2246.4	S	673373	5545847	14.3	40.6	35.3	225.7	14.7	34.0	0.6	0	0
H	2232.3	S	673805	5545843	18.4	35.2	109.9	181.7	18.8	53.7	0.8	1	0
I	2222.2	S?	674098	5545848	40.8	97.9	287.2	562.5	33.2	115.0	0.9	0	138
J	2210.9	E	674429	5545859	12.6	16.7	136.3	117.2	95.3	58.8	1.1	14	0
K	2206.0	H	674596	5545861	11.1	22.9	31.8	46.6	68.7	28.9	---	---	0
L	2202.8	S	674707	5545864	17.7	55.1	147.4	337.2	68.7	57.6	0.6	0	0
M	2193.6	S	675025	5545870	33.8	65.0	326.9	447.5	18.0	125.5	1.0	0	0
N	2171.9	H	675753	5545877	9.2	8.7	163.7	64.6	68.5	99.5	1.4	19	0
O	2169.2	L	675846	5545875	9.1	31.8	163.7	203.1	68.5	99.5	0.4	0	44
P	2147.3	S?	676554	5545854	20.6	19.3	224.0	192.2	133.3	102.3	1.8	12	40
Q	2141.7	S	676739	5545856	25.6	47.5	118.1	218.4	10.2	33.9	1.0	0	59
LINE 10030			FLIGHT 1										
A	2455.7	S	669735	5545644	1.9	7.9	44.8	113.9	7.3	31.9	0.2	0	61
B	2485.1	S?	670717	5545639	7.5	22.0	35.6	91.8	30.2	14.9	0.4	2	166
C	2492.7	S	670951	5545646	12.7	35.3	71.7	241.3	24.0	39.8	0.6	0	0
D	2502.0	S	671243	5545649	14.0	32.3	82.6	185.6	1.3	40.3	0.7	0	0
E	2550.8	E	673006	5545632	42.6	86.5	368.6	519.2	1.8	141.6	1.1	0	0
F	2553.2	S	673097	5545631	45.9	75.5	368.6	519.2	1.8	141.6	1.3	0	165

CX = COAXIAL
CP = COPLANAR

Note:EM values shown above are local amplitudes

*Estimated Depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or magnetite/overburden effects

EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10030			FLIGHT 1										
G	2554.1	E	673130	5545631	45.9	75.5	368.6	519.2	6.1	141.6	1.3	0	164
H	2571.0	S	673783	5545638	19.3	22.0	112.5	165.2	17.2	41.3	1.5	8	0
I	2577.8	S	674053	5545648	16.9	30.6	228.6	384.2	17.6	95.0	0.9	1	0
J	2590.0	H	674539	5545641	33.9	79.0	317.5	561.1	92.7	159.4	0.9	0	186
K	2596.0	S	674789	5545636	47.0	112.5	106.6	263.4	0.0	43.4	1.0	0	5
L	2601.8	S	675020	5545639	49.6	84.6	355.5	535.3	16.1	151.4	1.3	0	0
M	2620.2	H	675728	5545657	13.1	4.1	157.9	6.7	64.0	56.0	6.5	20	0
N	2626.4	L	675964	5545660	8.9	14.6	94.7	39.2	75.7	23.8	0.8	0	0
O	2635.1	S?	676284	5545659	24.7	29.4	66.6	117.0	28.1	32.8	1.5	4	79
P	2646.0	S	676682	5545648	20.9	37.2	127.3	189.3	16.8	57.3	0.9	0	169
LINE 10040			FLIGHT 1										
A	2913.6	S	669755	5545462	12.4	23.4	94.5	258.2	15.2	49.1	0.8	0	0
B	2884.7	S	670606	5545434	6.2	10.4	56.6	104.4	13.1	23.2	0.7	13	87
C	2865.5	S	671264	5545441	11.9	46.6	126.7	313.1	33.1	61.5	0.4	0	47
D	2812.1	S	673006	5545437	12.4	26.0	88.1	173.2	3.9	39.1	0.7	0	60
E	2807.4	S	673155	5545439	19.6	32.7	63.5	114.4	3.9	25.1	1.0	2	66
F	2789.1	E	673726	5545462	36.6	64.4	233.0	336.0	19.0	87.0	1.2	0	28
G	2765.8	H	674451	5545459	21.7	46.4	256.0	374.5	106.1	126.9	0.8	0	174
H	2757.3	S	674761	5545463	21.6	40.5	133.2	102.7	21.5	43.9	0.9	0	40
I	2732.5	H	675625	5545451	35.8	39.8	224.6	157.1	114.6	101.1	1.8	0	0
J	2729.8	S?	675719	5545451	25.6	42.9	224.6	183.8	114.6	101.1	1.1	0	84
K	2724.3	L	675911	5545453	15.6	31.7	56.0	145.0	86.2	23.0	0.8	0	150
L	2704.5	S	676613	5545475	15.5	35.4	175.2	240.3	17.3	81.3	0.7	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10050			FLIGHT 1										
A	2951.2	S	670211	5545270	7.0	17.2	81.9	141.3	5.4	43.1	0.5	9	0
B	2963.1	S	670623	5545236	9.2	10.4	99.3	96.7	9.7	32.4	1.1	5	0
C	2973.0	S?	670966	5545233	6.2	9.8	29.6	137.2	3.4	20.7	0.7	21	0
D	2983.3	E	671282	5545240	7.8	38.1	68.4	162.4	13.1	31.9	0.3	0	0
E	3006.4	S	672099	5545240	5.4	10.4	37.4	70.0	9.2	16.0	0.6	19	0
F	3028.9	S	672797	5545244	9.7	24.4	95.3	141.3	16.8	33.7	0.6	0	0
G	3037.9	S	673122	5545242	15.5	45.6	136.0	297.5	13.0	57.5	0.6	0	0
H	3061.0	S	673968	5545248	26.6	44.9	93.1	155.5	17.7	36.1	1.1	0	28
I	3074.5	H	674431	5545249	24.5	64.5	246.1	120.1	67.4	63.1	0.7	0	267
J	3077.9	S	674563	5545249	22.1	111.3	255.3	676.0	7.7	125.9	0.4	0	0
K	3081.2	S	674690	5545252	23.0	70.0	102.6	346.1	7.6	52.3	0.6	0	95
L	3084.2	S?	674805	5545254	20.9	48.7	102.6	23.3	4.6	52.3	0.8	0	14
M	3093.1	S	675141	5545255	12.5	42.5	130.5	244.6	0.1	48.1	0.5	0	0
N	3103.1	H	675494	5545260	31.7	4.4	125.8	103.6	80.0	43.3	29.4	16	0
O	3113.8	L	675855	5545274	12.4	28.1	34.6	112.9	35.7	75.1	0.6	0	18
P	3127.3	S	676336	5545261	11.8	20.5	108.2	147.0	4.7	43.4	0.8	7	159
Q	3135.9	S	676654	5545251	10.5	17.6	143.6	125.4	16.8	68.3	0.8	0	20
LINE 10060			FLIGHT 1										
A	3503.3	S	670152	5545051	14.0	2.7	56.0	22.3	30.6	13.8	13.5	41	0
B	3492.6	S	670507	5545053	11.5	14.6	117.4	119.6	10.2	39.0	1.1	14	0
C	3477.3	S	671086	5545058	5.9	14.5	70.6	138.7	19.4	28.9	0.5	4	0
D	3466.3	S?	671489	5545057	6.5	24.1	15.3	124.3	34.5	20.9	---	---	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10060			FLIGHT 1										
E	3450.2	S	672043	5545064	9.9	8.2	28.7	40.8	14.3	8.8	1.7	25	0
F	3420.8	S	672878	5545059	8.1	40.3	103.7	264.8	6.6	59.7	0.3	0	162
G	3411.7	S	673152	5545056	16.9	40.7	133.4	243.9	11.9	54.9	0.7	0	0
H	3398.5	S	673552	5545052	11.7	35.1	43.7	157.8	5.6	26.6	0.5	0	551
I	3392.3	S	673763	5545046	9.9	74.1	63.4	407.4	11.9	62.1	0.2	0	0
J	3379.9	S	674162	5545055	31.3	48.2	208.3	266.3	70.8	91.3	1.2	0	156
K	3371.4	H	674403	5545059	17.2	16.6	57.3	121.7	28.3	30.4	1.7	14	0
L	3363.2	S	674680	5545064	17.0	41.5	122.1	212.4	0.0	46.1	0.7	0	0
M	3357.8	S	674876	5545066	13.0	30.3	94.5	191.5	4.3	40.9	0.6	2	88
N	3341.7	H	675435	5545052	43.9	41.0	307.4	357.9	125.1	154.2	2.4	2	0
O	3322.7	S	676106	5545050	17.2	46.4	167.5	290.8	7.9	78.4	0.6	0	157
P	3311.6	S	676518	5545055	8.6	14.4	105.4	74.4	17.2	31.7	0.7	0	56
LINE 10070			FLIGHT 1										
A	3564.6	S?	671117	5544840	11.0	19.1	38.9	43.7	51.7	7.0	0.8	12	278
B	3574.4	S	671383	5544840	9.1	42.3	77.1	342.7	0.5	61.1	0.3	0	21
C	3591.7	S	671922	5544844	4.9	7.9	23.4	41.1	6.3	5.9	0.6	20	0
D	3612.5	S?	672549	5544846	9.8	17.5	65.9	121.7	24.3	31.3	0.7	0	0
E	3622.3	S?	672905	5544838	5.2	47.0	12.4	277.5	26.6	46.6	0.2	0	0
F	3626.7	S	673055	5544838	27.3	44.6	126.0	207.0	15.0	45.6	1.1	2	0
G	3649.9	S?	673860	5544838	29.7	51.0	277.5	172.5	82.6	126.2	1.1	1	0
H	3661.9	H	674284	5544846	42.1	97.8	301.1	470.7	62.1	150.6	1.0	0	0
I	3670.7	S?	674592	5544848	24.1	87.7	191.5	309.9	19.0	72.7	0.6	0	0
J	3675.9	S	674781	5544851	20.5	49.0	159.6	320.7	7.7	72.4	0.7	0	124

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10070			FLIGHT 1										
K	3693.1	H	675415	5544849	5.7	7.8	184.2	156.9	58.1	11.3	0.8	35	0
L	3698.9	L	675609	5544845	24.5	19.4	0.0	0.0	15.7	19.4	2.4	0	0
M	3723.8	S	676452	5544862	13.4	33.1	94.4	136.6	4.9	39.8	0.6	0	122
LINE 10080			FLIGHT 1										
A	3984.5	S	670454	5544652	11.4	19.2	111.6	93.2	14.4	37.6	0.8	17	0
B	3964.2	S	671124	5544660	5.0	17.7	55.6	145.7	22.0	25.1	0.3	0	19
C	3948.5	S?	671620	5544669	3.6	31.0	34.7	111.5	4.8	19.0	0.1	0	93
D	3914.9	S	672642	5544668	7.0	11.7	26.1	61.8	23.2	12.7	0.7	8	27
E	3902.3	S	673065	5544647	16.9	23.6	145.9	81.9	20.6	38.0	1.1	7	0
F	3897.5	S	673205	5544644	12.1	48.6	128.3	268.5	12.1	68.0	0.4	0	432
G	3881.4	S	673659	5544653	20.8	121.4	183.2	510.5	31.8	103.5	0.4	0	0
H	3875.6	S	673849	5544657	52.2	100.3	244.7	436.4	74.8	95.9	1.2	0	81
I	3867.4	S?	674149	5544657	20.8	44.4	145.4	395.1	0.0	58.9	0.8	0	0
J	3862.7	H	674323	5544654	19.0	6.9	175.7	1.0	83.5	92.2	6.0	30	56
K	3853.0	S?	674685	5544654	40.3	116.1	301.9	712.0	6.6	134.7	0.8	0	279
L	3838.6	H	675208	5544652	41.6	77.5	286.7	370.5	63.2	135.4	1.1	0	61
M	3827.0	L	675578	5544649	16.6	5.3	38.6	0.0	44.6	16.1	6.9	13	0
N	3815.3	S	675944	5544653	26.4	34.7	117.6	126.4	16.1	53.1	1.4	0	0
O	3808.8	S	676184	5544653	18.4	30.3	124.7	139.2	2.3	49.1	1.0	0	10
P	3791.1	S	676677	5544664	16.1	62.6	86.4	298.7	0.0	51.9	0.5	0	23
LINE 10090			FLIGHT 1										
A	4029.6	S	670592	5544457	20.5	24.5	162.2	166.0	39.3	45.4	1.4	7	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10090			FLIGHT 1										
B	4040.2	S	670929	5544453	7.4	18.7	44.3	115.2	32.2	16.3	0.5	3	0
C	4060.2	S	671534	5544441	3.4	9.5	68.7	107.1	10.8	20.8	0.4	1	0
D	4070.9	S	671894	5544436	8.3	31.5	15.1	89.9	8.4	13.3	0.4	0	61
E	4080.5	S	672191	5544437	8.3	19.1	128.0	154.5	17.6	40.9	0.6	0	9
F	4095.3	S?	672699	5544444	4.6	52.3	0.0	176.3	0.0	26.5	0.1	0	198
G	4103.6	S?	672974	5544444	37.7	71.5	168.3	351.1	33.5	75.9	1.1	2	3
H	4108.7	S	673131	5544446	15.2	41.0	58.7	177.4	66.6	40.6	0.6	0	417
I	4127.2	H	673712	5544436	39.7	99.1	446.4	776.7	81.2	202.2	0.9	0	0
J	4130.0	S?	673806	5544435	52.1	70.3	446.4	776.7	81.2	202.2	1.7	0	0
K	4141.1	H	674190	5544430	7.1	0.9	66.2	124.3	45.4	27.3	---	---	21
L	4163.7	S?	674990	5544443	56.2	145.2	414.8	646.1	33.9	173.6	1.0	0	141
M	4170.7	E	675231	5544448	14.5	88.2	187.0	471.7	26.0	88.5	0.3	0	227
N	4177.3	L	675439	5544453	18.1	18.2	0.0	11.8	78.9	66.8	1.6	3	0
O	4187.2	S?	675737	5544449	17.4	11.6	56.6	64.0	40.6	60.2	2.7	11	135
P	4192.3	S	675908	5544443	12.2	8.8	98.8	62.2	11.1	35.0	2.1	7	0
Q	4199.2	E	676134	5544447	19.1	24.0	67.1	51.7	18.5	15.1	1.3	0	0
R	4209.1	S	676426	5544447	7.9	14.1	61.1	141.2	2.8	19.6	0.7	14	15
LINE 10100			FLIGHT 1										
A	4464.6	S	670448	5544258	10.3	21.1	56.0	112.7	10.3	35.8	0.7	4	0
B	4461.2	S?	670558	5544261	5.8	41.6	55.5	168.3	10.3	34.5	0.2	0	122
C	4436.8	S	671418	5544251	7.0	43.8	98.5	272.6	0.4	53.2	0.2	0	0
D	4424.7	S	671847	5544241	10.6	37.2	70.0	214.3	11.2	38.4	0.4	0	0
E	4413.7	S	672204	5544255	15.7	31.6	166.5	209.4	5.7	59.5	0.8	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10100			FLIGHT 1										
F	4401.8	S	672620	5544251	8.9	30.7	17.1	182.7	26.2	25.6	0.4	0	0
G	4394.5	S?	672879	5544249	19.5	74.5	153.0	331.2	29.2	67.3	0.5	0	0
H	4376.0	E	673475	5544252	17.5	79.7	120.6	232.5	8.3	64.5	0.4	0	96
I	4370.1	H	673669	5544253	28.6	33.6	143.5	91.8	99.0	53.9	1.6	6	0
J	4333.1	S?	675014	5544254	66.7	127.2	468.4	640.4	41.9	180.1	1.3	0	0
K	4323.1	L	675350	5544256	8.5	10.1	0.5	0.0	109.9	58.4	1.1	0	0
L	4311.7	S?	675661	5544264	15.9	37.1	104.7	157.5	23.4	28.8	0.7	0	111
M	4304.0	E	675893	5544272	24.5	18.9	193.4	101.6	64.4	40.6	2.5	0	0
N	4285.7	S	676429	5544277	5.2	57.8	46.1	345.1	21.6	54.3	0.1	0	20
LINE 10110			FLIGHT 1										
A	4524.1	S	671395	5544060	7.0	29.9	17.7	146.1	0.0	25.0	0.3	0	6
B	4541.1	S	672046	5544049	2.7	0.0	143.0	216.6	11.7	59.6	---	---	0
C	4554.6	S	672545	5544046	14.1	70.1	125.6	334.5	9.0	53.1	0.4	0	0
D	4560.2	S?	672748	5544041	13.8	67.9	28.5	168.4	17.3	28.0	0.4	0	72
E	4564.4	E	672899	5544041	25.2	58.9	169.9	285.6	19.9	70.1	0.8	0	317
F	4570.0	S	673101	5544043	11.3	25.1	67.6	141.5	36.8	35.9	0.6	9	0
G	4586.4	H	673718	5544040	19.0	10.1	199.0	77.4	79.0	111.6	3.6	25	0
H	4590.6	H	673884	5544038	16.0	21.2	53.3	117.4	79.0	64.5	1.2	12	0
I	4593.8	S?	674010	5544037	15.9	76.0	325.3	583.5	22.8	181.0	0.4	0	0
J	4599.5	H	674231	5544035	15.0	0.0	0.0	0.0	31.4	0.0	---	---	0
K	4606.0	S	674480	5544035	10.1	54.2	137.7	440.0	4.1	76.7	0.3	0	10
L	4614.1	S	674783	5544034	15.8	40.1	90.8	320.2	43.4	51.6	0.6	0	85
M	4627.8	L	675259	5544039	24.8	8.5	44.6	2.1	74.1	71.2	7.2	4	0

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LINE 10110			FLIGHT 1										
N	4633.6	S?	675447	5544043	11.5	0.7	122.2	155.4	25.3	118.8	---	---	139
O	4643.1	S	675790	5544044	3.7	2.9	72.2	57.7	18.7	18.7	1.3	44	0
P	4660.2	S	676351	5544042	17.8	32.6	238.4	270.7	15.7	81.0	0.9	6	0
Q	4674.0	S	676757	5544040	19.8	30.1	44.1	79.2	3.7	17.2	1.1	6	0
LINE 10120			FLIGHT 1										
A	5037.7	L	670070	5543856	15.4	8.8	5.7	0.0	55.2	10.2	3.1	10	0
B	5029.2	S	670331	5543862	66.5	111.3	843.4	1054.8	53.5	315.9	1.5	0	0
C	4999.1	S	671342	5543872	6.0	36.6	78.3	237.5	13.3	44.6	0.2	0	32
D	4984.4	S	671820	5543856	10.4	46.7	200.0	456.3	17.4	104.0	0.4	0	0
E	4977.2	S	672053	5543851	7.0	26.5	138.8	298.1	0.0	69.6	0.4	0	100
F	4967.7	S	672353	5543841	13.6	10.5	55.9	83.8	14.2	8.6	2.0	16	0
G	4961.2	S	672575	5543834	1.9	22.0	9.1	68.6	11.4	10.2	0.1	0	0
H	4954.0	S?	672808	5543830	18.3	63.0	117.3	250.7	4.1	55.3	0.5	0	195
I	4946.6	E	673042	5543826	3.9	21.8	74.3	260.3	21.2	35.3	0.2	0	0
J	4934.4	S	673424	5543849	35.4	22.1	139.5	153.3	20.0	69.8	3.6	15	0
K	4926.5	E	673692	5543863	53.3	25.3	280.5	189.9	152.3	242.1	5.9	12	0
L	4923.7	H	673793	5543867	21.1	73.3	454.0	615.4	152.3	248.7	0.6	0	127
M	4922.2	E	673848	5543869	84.6	131.7	454.0	615.4	152.3	248.7	1.7	0	122
N	4910.5	H	674282	5543872	10.6	9.3	16.3	2.0	63.8	12.4	1.6	23	74
O	4905.5	S?	674466	5543872	22.7	57.4	67.2	216.7	7.6	37.1	0.7	0	70
P	4896.6	S	674788	5543869	17.6	45.5	141.3	223.3	51.4	41.0	0.7	0	0
Q	4882.9	L	675215	5543852	14.8	17.5	0.0	0.0	68.0	43.0	1.3	0	0
R	4874.0	S?	675428	5543857	16.9	34.2	169.2	194.1	19.7	74.8	0.8	3	0

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LINE 10120			FLIGHT 1										
S	4867.7	E	675610	5543859	25.3	17.6	125.2	33.0	38.1	20.2	2.8	0	0
T	4864.3	S?	675715	5543856	3.5	34.1	32.9	79.6	31.0	18.1	0.1	0	204
U	4844.8	S?	676289	5543854	48.5	43.9	305.7	418.5	50.5	89.2	2.6	1	0
V	4830.7	S	676736	5543864	21.2	59.3	182.6	515.6	11.6	97.1	0.7	0	46
LINE 10130			FLIGHT 1										
A	5124.8	L	670126	5543658	18.2	8.7	27.6	13.1	30.5	24.2	4.1	6	0
B	5134.6	S	670478	5543652	75.4	127.1	845.5	947.8	48.6	295.2	1.5	0	0
C	5161.0	S	671333	5543637	18.0	25.3	147.9	287.7	17.6	52.4	1.1	2	0
D	5169.6	S	671644	5543626	17.9	35.3	149.0	289.0	21.4	60.5	0.8	6	0
E	5185.6	S?	672203	5543630	11.4	69.2	206.2	549.1	0.0	108.6	0.3	0	202
F	5214.1	S	673198	5543649	16.1	67.4	185.2	438.5	10.7	94.8	0.4	0	78
G	5224.9	E	673588	5543644	80.4	170.3	533.8	787.1	12.9	218.6	1.3	0	123
H	5226.9	S?	673659	5543645	42.5	82.5	533.8	787.1	39.9	218.6	1.1	0	129
I	5234.3	S	673926	5543639	22.4	48.9	40.9	171.9	0.0	14.0	0.8	0	108
J	5240.0	S	674131	5543638	32.4	51.1	360.6	449.2	67.8	152.9	1.2	0	150
K	5248.4	H	674430	5543636	19.2	44.9	80.1	204.3	66.2	32.3	0.7	0	0
L	5252.4	S?	674572	5543634	43.4	159.2	440.4	770.3	104.9	146.5	0.7	0	36
M	5256.1	S?	674702	5543632	50.1	95.0	440.4	823.5	107.0	254.6	1.2	0	0
N	5267.9	L	675112	5543625	1.9	25.7	16.1	8.7	42.0	47.1	0.1	0	253
O	5274.1	S?	675326	5543630	8.2	28.5	71.5	221.7	28.9	70.7	0.4	0	170
P	5278.7	S	675493	5543631	6.0	15.1	112.4	108.2	37.1	41.8	0.5	0	0
Q	5288.8	S	675836	5543640	5.7	12.1	10.0	97.3	9.3	11.4	0.5	14	0
R	5300.9	E	676203	5543650	13.4	39.4	56.0	200.7	42.7	44.1	0.5	0	168

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10130			FLIGHT 1										
S	5305.4	S?	676350	5543644	63.9	86.7	395.9	575.4	15.9	150.6	1.8	0	67
T	5312.0	S	676571	5543642	12.9	15.7	69.5	117.4	9.0	34.5	1.2	13	0
LINE 10140			FLIGHT 1										
A	5567.4	L	670205	5543446	7.8	2.6	0.0	7.9	19.0	13.4	5.1	12	0
B	5554.6	S	670626	5543449	29.2	71.3	492.8	598.4	32.1	195.5	0.8	0	16
C	5534.8	S	671297	5543462	9.6	11.0	221.5	268.4	20.3	74.9	1.2	20	23
D	5518.6	S	671871	5543457	6.4	23.5	68.4	193.2	4.2	37.6	0.4	0	94
E	5509.8	S	672186	5543462	7.0	38.5	34.9	194.3	17.3	17.5	0.3	0	232
F	5506.4	S	672311	5543461	20.6	27.1	62.7	143.2	27.8	24.0	1.3	8	0
G	5484.2	S	673106	5543457	8.2	51.7	77.8	300.7	20.8	46.8	0.2	0	0
H	5477.5	S	673337	5543455	16.1	65.0	62.4	264.5	10.1	39.9	0.4	0	59
I	5472.0	E	673536	5543458	16.9	42.8	188.0	221.3	6.9	77.1	0.7	0	0
J	5467.3	S	673713	5543460	9.6	24.9	254.5	289.3	16.4	80.1	0.5	0	0
K	5458.9	S?	674020	5543464	26.7	54.6	33.6	161.2	3.8	27.3	0.9	0	80
L	5449.8	S	674339	5543467	15.3	20.2	251.6	251.0	93.8	121.0	1.2	9	0
M	5446.2	H	674461	5543465	22.7	13.3	116.2	124.0	93.8	89.9	3.4	20	0
N	5439.8	S?	674682	5543454	56.2	87.2	352.4	412.8	50.9	150.4	1.5	0	14
O	5429.7	L	675022	5543444	37.6	0.0	14.7	0.6	69.1	27.3	---	---	59
P	5423.6	S?	675202	5543444	8.9	63.5	138.4	414.4	27.8	30.4	0.2	0	293
Q	5420.2	S	675300	5543448	4.1	46.0	138.4	414.4	10.0	83.2	0.1	0	0
R	5416.2	S?	675430	5543452	24.0	36.0	177.8	257.9	28.8	61.9	1.2	0	0
S	5404.3	S	675811	5543455	0.8	8.2	20.1	125.1	5.2	16.5	---	---	242
T	5387.1	S?	676367	5543458	67.7	58.6	217.8	350.4	14.7	86.7	3.0	0	93

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10140			FLIGHT 1										
U	5381.5	S	676556	5543461	13.9	33.1	15.0	89.2	21.1	14.9	0.6	0	242
V	5377.6	S?	676687	5543464	22.4	46.5	10.0	119.0	24.9	2.1	0.8	0	0
LINE 10150			FLIGHT 1										
A	5667.3	L	670303	5543284	11.5	5.8	18.6	27.9	25.4	69.2	3.3	24	40
B	5680.0	S	670725	5543298	42.9	71.8	385.2	567.4	27.5	131.3	1.3	0	0
C	5693.3	S	671187	5543274	12.3	9.9	166.3	69.1	28.9	40.8	1.9	23	25
D	5699.6	S?	671406	5543265	25.1	23.0	58.8	0.0	63.4	7.3	2.0	11	0
E	5710.4	S?	671780	5543258	11.2	4.1	89.2	156.8	57.6	30.3	5.1	43	0
F	5716.8	S	671993	5543250	12.7	22.9	32.4	267.8	73.8	42.4	0.8	10	391
G	5727.2	S	672327	5543243	10.9	10.0	37.6	61.1	11.5	14.4	1.5	21	0
H	5740.0	S	672775	5543235	7.7	11.5	59.6	75.3	7.6	21.6	0.8	24	128
I	5762.7	S	673545	5543239	19.9	27.2	599.1	892.9	15.5	206.5	1.2	11	99
J	5778.6	S	674080	5543247	36.8	100.3	160.6	280.7	5.5	47.2	0.8	0	79
K	5782.3	S	674199	5543248	42.2	93.0	86.0	301.9	7.6	51.2	1.0	0	123
L	5787.5	S	674367	5543248	22.5	56.7	55.1	196.0	12.8	37.5	0.7	0	169
M	5793.4	S	674560	5543246	31.2	132.1	315.8	649.7	17.9	143.8	0.5	0	15
N	5804.0	L	674910	5543247	22.3	27.9	3.2	0.0	36.3	25.2	1.4	0	349
O	5810.9	S	675140	5543249	18.9	45.3	91.1	285.0	79.3	65.5	0.7	0	0
P	5819.5	S?	675432	5543245	21.8	7.3	91.4	7.2	23.5	20.4	7.0	7	0
Q	5822.1	S	675523	5543245	11.9	14.7	91.4	0.0	23.5	19.7	1.1	0	0
R	5852.5	S?	676365	5543247	60.7	92.5	354.3	555.6	15.3	144.1	1.6	0	47
S	5859.8	S?	676611	5543245	9.0	18.1	0.0	17.0	22.2	0.0	0.6	10	210

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10160			FLIGHT 1										
A	6081.3	S	671229	5543058	2.2	8.8	179.9	186.1	33.0	76.0	0.2	10	0
B	6067.0	S	671752	5543069	12.6	28.0	71.3	350.0	77.2	62.3	0.7	4	0
C	6051.7	S	672306	5543063	5.2	5.5	55.6	60.7	8.5	15.4	1.0	36	0
D	6041.9	S	672659	5543053	3.9	2.5	37.3	1.9	12.4	4.7	1.7	58	0
E	6037.2	S	672824	5543047	13.7	15.6	97.8	59.6	88.1	15.6	1.3	20	0
F	6017.7	S	673478	5543061	32.6	46.5	473.6	534.4	47.2	148.5	1.4	0	107
G	6010.5	S	673749	5543066	61.5	72.1	200.5	263.2	12.4	63.8	2.1	0	112
H	6003.1	S	674027	5543069	19.6	56.3	126.7	313.7	4.0	61.2	0.6	0	168
I	5987.5	S	674605	5543058	11.2	20.6	125.8	171.9	38.2	83.0	0.7	7	0
J	5980.1	L	674855	5543049	35.8	34.4	24.5	4.9	48.8	18.1	2.2	0	0
K	5961.7	S	675440	5543052	15.2	17.9	92.5	49.8	16.6	37.1	1.3	3	41
L	5927.2	S?	676399	5543075	64.5	65.9	357.1	411.6	21.9	135.9	2.5	0	0
M	5919.3	S	676661	5543076	13.7	53.7	18.0	198.4	6.7	29.8	0.4	0	228
LINE 10170			FLIGHT 1										
A	6181.9	S	669593	5542862	9.8	31.5	41.5	116.1	2.3	21.4	0.5	0	44
B	6211.4	S?	670452	5542857	3.0	15.3	34.4	105.1	14.7	33.6	0.2	6	21
C	6220.7	L	670740	5542847	17.0	20.8	123.4	125.8	73.8	98.3	1.3	13	0
D	6230.7	S	671083	5542857	5.4	34.5	53.6	239.5	10.5	40.4	0.2	0	61
E	6242.7	S	671506	5542849	15.8	26.0	187.7	171.7	17.2	52.4	0.9	4	0
F	6271.2	S	672472	5542838	8.4	13.9	47.5	125.6	4.4	24.7	0.8	19	48
G	6290.9	S?	673213	5542841	7.9	17.8	75.5	131.0	50.4	23.9	0.6	5	297
H	6298.9	S	673511	5542843	54.1	99.2	281.3	427.6	25.5	98.0	1.3	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10170			FLIGHT 1										
I	6305.1	S	673742	5542844	27.9	34.1	56.8	87.0	8.2	21.3	1.5	0	64
J	6313.9	S	674069	5542844	17.8	38.0	67.1	242.9	9.1	33.7	0.8	0	33
K	6320.7	S	674317	5542847	10.4	26.9	36.7	99.7	6.4	22.4	0.6	4	0
L	6334.9	L	674775	5542854	29.8	34.5	3.1	3.8	120.0	72.4	1.7	0	43
M	6346.1	S	675115	5542851	27.3	24.0	235.9	257.6	14.4	94.0	2.2	11	28
N	6352.9	S	675364	5542852	19.0	30.8	165.2	162.1	16.7	71.3	1.0	0	44
O	6392.0	S?	676426	5542836	37.7	58.0	199.4	295.8	18.1	83.8	1.3	0	0
P	6395.1	S	676543	5542839	24.6	39.5	199.4	295.8	14.7	83.8	1.1	0	118
Q	6401.8	S	676804	5542851	18.4	42.9	41.0	160.9	15.1	25.1	0.7	0	133
LINE 10180			FLIGHT 1										
A	6974.0	L	671090	5542657	2.9	9.0	106.3	121.6	64.8	47.7	0.3	0	0
B	6960.1	S	671390	5542658	17.6	39.6	123.7	257.8	22.3	70.8	0.7	2	0
C	6954.2	S	671581	5542662	19.3	48.4	263.5	440.8	30.8	111.9	0.7	0	114
D	6930.2	S	672393	5542660	9.3	9.3	50.1	82.1	6.2	19.8	1.3	23	61
E	6907.7	S	673200	5542662	16.5	51.2	161.0	259.9	12.2	61.0	0.6	0	207
F	6902.8	S	673375	5542664	6.9	48.0	22.2	159.8	12.2	24.6	0.2	0	181
G	6897.3	S	673574	5542666	20.2	32.1	104.7	221.0	5.4	50.4	1.0	5	0
H	6867.7	L	674668	5542662	15.2	27.8	5.1	7.5	29.2	48.7	0.8	0	39
I	6852.6	S	675131	5542654	20.0	15.1	172.3	121.9	18.0	64.2	2.4	0	50
J	6847.8	S	675313	5542649	14.4	25.3	137.8	120.7	24.4	59.3	0.8	1	9
K	6835.6	S?	675709	5542647	12.2	33.2	29.8	210.7	19.9	30.3	---	---	0
L	6809.0	B?	676422	5542648	70.3	75.6	227.1	247.8	52.9	77.8	2.4	0	91
M	6803.7	S	676588	5542645	33.6	73.0	113.2	312.3	68.0	81.4	0.9	0	379

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10180			FLIGHT 1										
N	6798.4	S	676762	5542648	44.0	41.8	183.1	180.1	130.5	35.0	2.3	4	0
LINE 10190			FLIGHT 1										
A	7099.4	S	670341	5542457	3.4	12.5	30.4	73.2	1.0	12.9	0.3	5	53
B	7145.0	S	671541	5542446	30.1	120.3	753.0	942.3	54.5	282.8	0.6	0	160
C	7166.8	H	672302	5542446	7.4	7.6	83.2	71.5	7.9	23.1	1.2	26	0
D	7185.9	S	673019	5542444	26.5	71.5	236.7	459.6	0.8	101.0	0.7	0	235
E	7201.7	S	673606	5542446	32.9	59.8	325.8	367.8	13.1	109.2	1.1	0	0
F	7213.4	S	674045	5542449	55.7	111.5	317.2	530.8	11.5	126.1	1.2	0	28
G	7216.3	S	674150	5542449	29.8	72.1	343.9	435.6	18.2	126.1	0.8	0	0
H	7228.5	L	674578	5542445	51.1	52.5	7.0	25.1	114.1	78.4	2.3	0	0
I	7243.6	S	675101	5542442	31.4	42.9	229.4	181.1	25.8	95.9	1.4	0	66
J	7252.4	S	675422	5542442	12.4	27.7	189.1	194.7	2.7	77.9	0.7	3	90
K	7289.2	E	676432	5542451	38.9	40.5	162.7	206.6	34.4	57.9	2.0	0	0
L	7292.8	S	676575	5542446	38.1	66.7	253.3	436.6	26.9	115.2	1.2	0	169
M	7295.7	S?	676692	5542444	43.9	53.0	253.3	436.6	21.0	115.2	1.8	0	171
N	7303.0	S	676983	5542448	19.0	33.0	104.0	164.8	24.4	34.9	0.9	0	0
O	7319.2	S	677628	5542452	15.8	38.6	110.1	125.7	14.9	34.3	0.7	0	2
LINE 10200			FLIGHT 1										
A	7647.0	S	670742	5542246	2.9	15.5	56.6	97.1	7.1	21.9	0.2	0	16
B	7626.9	E	671334	5542257	29.1	33.0	172.6	237.8	55.5	35.7	1.7	0	42
C	7616.7	L	671464	5542259	13.3	6.9	116.1	190.3	47.9	30.7	3.3	22	16
D	7580.2	S?	671683	5542268	55.1	74.2	1043.0	1609.1	84.3	405.6	1.7	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10200			FLIGHT 1										
E	7563.3	S	672206	5542263	16.2	74.1	218.3	357.3	24.6	90.3	0.4	0	0
F	7552.4	S	672586	5542255	4.7	25.2	28.5	168.0	2.5	23.4	0.2	0	0
G	7539.0	S	673057	5542253	6.5	20.5	118.1	252.0	46.6	59.7	0.4	0	0
H	7534.1	S	673223	5542260	27.2	43.8	68.6	138.4	40.1	24.2	1.1	3	609
I	7526.1	S	673506	5542268	36.2	77.2	310.6	413.4	54.1	100.0	1.0	0	0
J	7521.5	S	673676	5542268	21.1	50.5	144.9	248.1	10.7	63.0	0.7	0	92
K	7510.1	S	674102	5542267	19.0	16.3	323.2	337.3	12.2	88.7	2.0	13	104
L	7507.0	E	674218	5542266	58.0	78.7	323.2	337.3	47.9	88.7	1.7	0	0
M	7499.0	L	674500	5542262	98.3	51.4	31.5	75.9	122.9	110.4	6.4	0	0
N	7483.1	S	674997	5542262	9.2	11.8	128.5	59.2	4.5	48.3	1.0	4	65
O	7472.2	S	675410	5542261	12.6	11.6	164.8	147.5	25.7	65.5	1.6	15	37
P	7435.9	B?	676437	5542262	66.0	54.2	247.6	230.2	106.1	74.7	3.2	0	0
Q	7430.3	S	676631	5542259	19.6	37.1	165.6	172.2	54.1	58.4	0.9	1	0
R	7423.8	S	676854	5542258	34.2	53.3	172.6	256.3	27.4	61.1	1.3	0	76
S	7413.9	S	677185	5542252	19.0	57.3	50.9	162.8	27.3	35.5	0.6	0	0
T	7397.0	S	677757	5542272	40.4	73.6	310.8	454.6	18.1	121.4	1.1	0	43
LINE 10210			FLIGHT 4										
A	928.1	S?	671076	5542038	6.1	23.1	47.9	135.2	6.7	29.8	0.3	0	132
B	971.0	S	671735	5542015	56.8	98.0	632.8	872.8	63.6	314.5	1.4	0	12
C	974.8	S	671872	5542008	22.4	31.8	632.8	750.1	55.1	234.7	1.2	9	0
D	978.5	S	672009	5542000	54.9	110.5	607.7	848.0	75.0	245.4	1.2	0	0
E	986.5	E	672305	5542014	35.6	59.6	265.6	366.9	0.0	137.0	1.2	0	0
F	1003.1	S	672957	5542064	18.5	63.5	140.6	280.4	10.1	77.0	0.5	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10210			FLIGHT 4										
G	1008.4	S	673173	5542057	22.2	14.0	88.2	20.3	15.8	26.9	3.0	12	0
H	1016.9	S	673522	5542050	10.7	21.9	116.2	160.2	24.0	34.9	0.7	0	0
I	1029.1	S?	674007	5542046	22.1	20.4	233.3	322.6	4.6	75.4	1.9	10	0
J	1031.8	E	674110	5542048	33.5	54.1	233.3	252.9	34.0	75.4	1.2	0	0
K	1040.3	L	674427	5542055	23.0	34.0	70.4	138.5	52.8	44.9	1.2	0	0
L	1054.5	S	674944	5542049	8.2	4.5	81.0	35.0	8.4	35.1	2.6	1	45
M	1064.8	S?	675337	5542035	5.8	7.9	89.7	56.9	13.4	35.4	0.8	10	0
N	1081.9	S	675786	5542028	2.5	23.1	15.4	133.7	3.8	21.2	---	---	0
O	1095.2	S?	676078	5542024	12.3	33.6	29.3	138.8	58.9	25.6	0.6	1	0
P	1101.6	S?	676278	5542023	30.2	30.5	177.3	165.7	58.6	54.4	1.9	6	67
Q	1106.7	S?	676464	5542026	77.1	81.1	414.9	373.2	87.9	137.9	2.5	0	7
R	1110.5	S	676609	5542028	29.6	35.7	521.4	547.7	110.8	186.7	1.6	4	0
S	1114.8	E	676778	5542030	54.8	81.3	402.3	547.7	4.6	180.0	1.6	0	170
T	1119.6	S	676967	5542035	13.6	19.3	25.6	54.0	20.9	5.6	1.0	13	0
U	1126.7	S	677251	5542045	20.2	37.2	96.2	80.7	29.6	28.7	0.9	0	0
V	1141.9	S	677856	5542053	32.0	71.3	298.4	381.6	18.8	110.2	0.9	0	10
LINE 10220			FLIGHT 4										
A	1438.3	S	670979	5541839	3.4	13.0	64.3	96.6	10.7	23.0	0.3	0	0
B	1418.7	L?	671475	5541866	33.0	40.3	86.0	173.3	7.6	29.3	1.6	0	0
C	1404.1	S	671835	5541864	51.8	50.4	780.8	605.9	68.6	286.4	2.4	1	0
D	1394.7	S	672072	5541856	86.5	137.8	528.8	772.0	58.4	213.6	1.7	0	0
E	1384.6	H	672412	5541848	23.8	28.4	159.3	245.8	28.6	64.7	1.5	0	4
F	1375.0	S	672724	5541862	17.5	89.0	94.1	477.4	0.0	77.3	0.4	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10220			FLIGHT 4										
G	1365.5	S	673013	5541865	21.5	61.2	151.0	376.1	19.1	91.0	0.7	0	0
H	1350.9	S	673464	5541875	15.5	39.0	73.3	214.2	13.3	41.0	0.6	0	0
I	1345.1	B?	673651	5541865	20.9	39.9	127.0	219.4	5.2	52.7	0.9	0	81
J	1339.5	E	673830	5541854	16.4	49.3	51.2	131.9	6.8	25.2	0.6	0	0
K	1335.4	E	673958	5541849	21.6	29.7	77.6	13.6	12.1	1.9	1.2	4	0
L	1332.9	S	674036	5541848	5.5	26.2	85.4	42.2	20.7	184.9	0.3	0	62
M	1328.4	S?	674175	5541850	24.6	129.0	324.1	841.0	14.5	184.9	0.4	0	19
N	1323.5	L	674322	5541850	49.0	21.2	49.6	38.9	80.1	29.4	6.5	0	14
O	1301.9	S	674899	5541851	16.2	10.8	182.9	123.2	14.7	54.1	2.6	11	64
P	1291.0	S?	675287	5541863	22.5	19.0	216.0	192.1	37.1	82.9	2.2	4	0
Q	1274.0	S	675810	5541863	7.4	24.8	21.5	90.1	32.2	14.1	0.4	0	0
R	1259.8	S	676228	5541858	19.5	20.6	115.6	197.0	60.8	32.6	1.6	14	0
S	1256.1	S?	676340	5541859	12.0	63.2	64.2	197.0	1.8	32.6	0.3	0	423
T	1250.6	E	676508	5541860	106.9	78.8	467.1	128.8	113.9	130.2	4.3	0	0
U	1249.0	S?	676558	5541861	37.8	33.4	467.1	128.8	113.9	130.2	2.4	6	0
V	1244.2	S	676712	5541860	25.4	51.1	194.8	377.1	72.5	89.3	0.9	0	71
W	1240.8	E	676824	5541859	22.1	65.4	116.1	377.1	7.5	88.0	0.6	0	39
X	1228.6	S	677227	5541858	17.3	29.5	200.7	205.1	24.2	82.4	0.9	6	110
Y	1221.3	S	677459	5541870	37.8	47.1	153.0	147.6	28.8	63.3	1.7	5	18
Z	1202.9	S	678056	5541914	3.2	16.4	87.8	260.5	5.9	48.9	0.2	0	63
LINE 10230			FLIGHT 10										
A	332.4	S?	670200	5541641	6.6	10.0	64.6	107.6	4.6	25.9	0.8	9	1
B	388.3	L	671508	5541655	8.9	9.9	4.1	9.0	139.0	174.4	1.1	4	13

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10230			FLIGHT 10										
C	400.7	S	671866	5541637	73.6	81.3	1253.7	1504.2	124.2	452.2	2.3	2	0
D	412.9	S	672293	5541641	54.0	42.9	569.3	676.3	46.3	243.4	3.1	1	584
E	432.7	S	672984	5541636	12.4	31.7	126.5	254.2	3.7	56.3	0.6	0	30
F	441.9	S?	673332	5541652	12.2	15.3	80.9	52.6	28.0	54.7	1.1	10	68
G	458.7	S?	673967	5541658	32.0	100.9	229.7	511.0	5.9	107.3	0.7	0	131
H	466.9	L	674268	5541654	43.2	26.8	33.0	11.6	29.9	53.7	3.9	0	0
I	481.8	S?	674812	5541628	23.1	21.2	219.9	154.3	17.4	76.0	2.0	10	127
J	491.9	S?	675203	5541637	13.3	16.7	121.9	148.6	14.3	34.7	1.2	11	140
K	523.1	S	676134	5541650	15.0	15.4	77.2	108.2	2.5	33.4	1.5	15	0
L	529.4	S	676331	5541650	9.7	11.4	60.9	124.5	23.3	22.4	1.1	19	0
M	538.4	S	676647	5541647	15.6	52.0	108.7	200.9	10.6	53.6	0.5	0	0
N	543.1	S	676823	5541645	28.5	55.0	83.2	72.4	5.3	17.5	1.0	0	95
O	553.7	S	677220	5541648	20.1	28.0	97.6	137.2	12.3	38.8	1.2	3	13
P	561.7	S	677524	5541654	23.0	26.5	116.9	147.6	8.1	50.3	1.5	0	0
Q	573.2	S	677957	5541656	13.6	43.0	121.7	351.6	18.6	66.8	0.5	0	0
R	579.5	S	678186	5541656	26.5	81.9	119.9	336.2	12.4	63.9	0.7	0	0
LINE 10240			FLIGHT 10										
A	915.8	S?	670060	5541465	3.2	5.9	49.0	35.7	25.9	13.5	0.5	25	0
B	869.5	S?	671060	5541460	6.3	11.9	36.4	63.5	62.2	45.4	0.6	6	0
C	852.1	L	671525	5541461	28.1	5.2	54.3	114.7	241.5	318.4	18.2	12	0
D	827.4	S	671848	5541460	23.6	70.5	870.9	698.8	52.8	92.2	0.6	0	0
E	818.9	S?	672087	5541461	21.8	5.7	254.8	38.5	54.9	49.3	10.0	26	0
F	809.3	S?	672388	5541455	106.4	176.5	1351.5	1716.0	79.2	570.3	1.7	0	621

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10240			FLIGHT 10										
G	791.2	S	672956	5541458	21.5	60.4	130.4	338.4	31.0	60.1	0.7	0	0
H	780.9	E	673291	5541457	44.9	58.9	282.3	307.9	53.6	81.2	1.7	0	63
I	774.9	S	673502	5541455	19.6	49.7	146.8	161.0	19.4	46.1	0.7	0	147
J	768.7	S?	673721	5541456	12.2	18.4	117.5	139.8	28.0	88.0	0.9	9	70
K	756.9	L	674123	5541456	69.7	23.3	55.9	87.9	53.9	95.5	10.4	0	0
L	735.3	S	674762	5541464	9.1	12.4	240.5	249.7	22.3	87.3	0.9	10	0
M	726.9	S	675064	5541454	12.1	14.6	40.8	29.2	13.2	4.3	1.2	0	0
N	721.1	S	675259	5541445	23.6	43.8	80.2	153.6	6.8	30.1	0.9	0	61
O	710.4	S?	675582	5541448	12.2	80.4	269.7	576.4	0.0	133.4	0.3	0	31
P	706.4	S?	675720	5541451	16.9	82.8	269.7	576.4	12.8	133.4	0.4	0	49
Q	697.9	S?	676035	5541452	8.8	13.9	53.9	80.8	15.4	16.8	0.8	13	0
R	687.2	S	676411	5541452	22.5	55.7	116.9	232.9	4.7	53.6	0.7	0	0
S	678.3	S	676722	5541455	11.7	59.9	146.1	337.0	39.1	89.5	0.3	0	0
T	675.4	S	676823	5541456	18.5	33.6	146.1	337.0	39.1	89.5	0.9	0	33
U	667.2	S	677111	5541456	19.5	42.6	49.0	257.0	5.2	37.8	0.8	0	0
V	660.2	S	677344	5541458	13.8	40.1	66.0	276.4	11.8	48.7	0.6	0	0
W	647.7	S	677768	5541456	15.1	15.3	65.0	50.5	27.5	18.3	1.5	16	0
X	641.3	S	677999	5541451	21.6	65.8	109.1	347.2	21.6	67.5	0.6	0	83
LINE 10250			FLIGHT 10										
A	990.2	S	669874	5541250	11.6	8.9	59.6	46.0	29.1	14.0	1.9	24	0
B	1037.4	S	671042	5541239	4.1	6.8	27.0	50.7	25.5	19.1	0.6	6	0
C	1040.7	S?	671134	5541236	3.5	20.4	27.0	102.1	5.0	18.8	---	---	1039
D	1050.9	S?	671374	5541238	7.7	20.8	58.5	183.9	8.9	43.8	0.5	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10250			FLIGHT 10										
E	1058.1	L	671496	5541250	38.9	41.8	61.1	196.0	60.2	32.7	2.0	0	0
F	1065.0	S	671693	5541238	19.6	23.7	58.0	80.3	17.5	34.3	1.4	0	22
G	1084.6	S	672382	5541231	28.5	55.5	210.2	274.9	30.3	73.7	1.0	0	104
H	1099.8	S	672954	5541251	5.4	23.6	67.6	197.0	27.9	33.2	---	---	72
I	1107.9	S	673277	5541254	21.1	54.9	239.7	341.4	11.9	87.1	0.7	0	17
J	1114.7	S	673544	5541254	42.5	77.9	228.7	450.2	18.5	74.8	1.2	0	52
K	1123.4	S?	673869	5541254	5.0	26.7	73.3	136.4	12.6	107.0	0.2	0	12
L	1129.0	L	674065	5541253	40.7	40.9	107.8	136.4	164.4	39.8	2.1	0	0
M	1147.0	S	674648	5541236	24.5	42.2	227.5	168.3	27.1	86.9	1.0	0	110
N	1156.9	E	675013	5541231	19.7	24.5	139.2	74.9	14.1	42.9	1.3	2	0
O	1164.2	S?	675229	5541244	15.7	89.3	95.4	507.3	0.0	81.0	0.3	0	0
P	1173.7	S?	675493	5541256	25.5	66.0	202.5	415.8	0.0	97.7	0.7	0	35
Q	1184.7	S	675883	5541255	20.2	32.8	167.5	301.3	17.0	57.4	1.0	4	0
R	1195.8	S	676268	5541247	13.1	33.9	58.8	163.9	16.9	42.6	0.6	0	299
S	1207.1	S	676666	5541239	9.2	23.2	124.7	238.4	8.8	64.8	0.5	5	33
T	1215.4	S?	676964	5541241	20.7	96.8	48.0	365.9	22.9	47.5	0.4	0	0
U	1224.0	S?	677264	5541255	21.7	55.2	128.2	253.3	24.8	57.6	0.7	0	98
V	1232.0	S?	677543	5541261	8.0	62.5	52.4	208.1	15.8	34.2	0.2	0	23
W	1236.9	S	677716	5541260	28.9	65.6	154.1	379.9	17.2	81.1	0.9	0	21
LINE 10260			FLIGHT 10										
A	1605.9	S	669830	5541060	9.7	8.6	49.5	39.9	31.3	11.2	1.5	21	0
B	1555.6	S?	671050	5541061	6.2	9.8	26.2	64.8	41.3	47.5	0.7	0	0
C	1541.3	L	671467	5541059	50.0	50.5	24.8	75.8	507.5	387.3	2.3	0	0

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EM Anomaly List

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LINE 10260			FLIGHT 10										
D	1484.1	S?	672446	5541047	18.1	32.1	160.7	285.1	88.2	60.1	0.9	0	0
E	1470.4	S?	672867	5541063	8.6	33.3	35.9	152.4	62.7	24.3	---	---	48
F	1458.7	E	673201	5541073	26.6	80.3	217.0	496.8	56.7	92.0	0.7	0	52
G	1456.0	S	673287	5541070	4.5	21.6	217.0	496.8	46.4	92.0	---	---	0
H	1445.7	S	673635	5541063	21.7	42.5	322.0	340.0	40.5	116.3	0.9	1	77
I	1441.4	S?	673778	5541059	36.4	62.1	312.7	354.5	74.3	160.5	1.2	0	0
J	1434.4	L	673989	5541055	100.2	73.2	51.2	42.9	65.4	48.6	4.2	0	132
K	1414.2	S	674585	5541052	25.8	45.6	306.9	367.5	22.3	121.5	1.0	0	66
L	1389.8	S	675422	5541053	14.3	48.2	209.3	417.7	4.2	91.7	0.5	0	21
M	1382.9	S	675672	5541056	1.8	30.9	62.3	261.7	6.8	30.3	0.1	0	8
N	1379.0	S	675819	5541059	21.1	96.7	132.1	412.3	0.0	70.9	0.4	0	0
O	1377.4	E	675879	5541059	20.2	88.2	132.1	412.3	17.1	70.9	0.5	0	0
P	1355.0	S	676688	5541066	19.5	54.7	200.3	430.6	35.2	119.7	0.6	0	21
Q	1345.7	S	677000	5541063	43.2	134.3	123.0	382.7	5.8	61.9	0.8	0	0
R	1337.4	S?	677267	5541062	23.3	146.6	319.7	593.3	23.1	149.9	0.4	0	163
S	1324.4	S	677695	5541064	26.4	82.9	120.8	354.3	40.4	76.7	0.6	0	0
T	1321.3	S?	677798	5541063	13.8	7.9	120.8	354.3	40.4	76.7	---	---	0
LINE 10270			FLIGHT 10										
A	1669.8	S	669794	5540851	13.4	15.8	59.4	66.1	16.7	17.4	1.2	14	0
B	1728.6	S?	671314	5540829	8.5	23.0	44.7	96.0	19.6	27.1	0.5	0	0
C	1730.9	L	671395	5540830	20.6	6.5	30.3	96.0	12.9	47.5	7.6	18	0
D	1735.6	S?	671568	5540836	20.5	19.6	176.9	285.7	19.4	94.2	1.8	5	0
E	1761.7	E	672488	5540843	20.5	33.3	155.3	211.2	19.9	55.6	1.0	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10270			FLIGHT 10										
F	1763.7	S	672561	5540843	15.9	41.9	155.3	211.2	19.9	55.6	0.6	0	0
G	1765.4	E	672622	5540845	23.7	41.9	155.3	211.2	0.0	55.6	1.0	0	0
H	1778.3	S	673082	5540852	10.9	25.1	76.8	156.6	4.6	32.2	0.6	0	75
I	1789.9	E	673498	5540845	40.0	85.7	217.7	354.3	21.7	73.3	1.0	0	0
J	1791.2	S	673544	5540845	34.3	85.7	217.7	354.3	21.7	73.3	0.8	0	0
K	1795.2	S?	673686	5540846	15.0	40.5	144.3	297.5	25.2	29.3	0.6	0	29
L	1802.0	L	673922	5540855	2.5	33.3	54.7	0.1	33.8	45.5	0.1	0	0
M	1807.4	E	674089	5540860	13.2	15.3	70.9	76.1	33.9	25.3	1.3	13	214
N	1815.8	S	674340	5540859	12.2	7.8	85.6	63.2	11.3	31.6	2.5	12	0
O	1825.1	S?	674680	5540847	14.1	33.7	93.1	157.3	13.9	55.2	0.6	2	0
P	1842.4	E	675192	5540857	7.1	35.2	19.3	300.9	3.3	54.3	0.3	0	0
Q	1850.0	S?	675415	5540859	10.7	9.2	80.1	222.5	5.9	43.7	1.6	26	39
R	1858.5	S	675691	5540861	10.6	12.9	28.8	67.8	4.5	14.3	1.1	18	0
S	1863.8	S	675878	5540858	8.0	25.0	69.7	68.1	6.7	27.7	0.4	0	0
T	1889.3	S	676824	5540847	7.9	9.8	32.2	53.6	21.8	13.2	1.0	22	0
U	1903.2	S	677337	5540852	30.8	37.5	132.5	169.7	25.7	54.7	1.6	3	110
V	1906.8	S	677463	5540854	18.5	30.9	135.5	180.9	16.4	64.9	1.0	6	166
W	1914.3	S	677722	5540864	24.1	49.5	82.3	160.2	13.8	36.9	0.9	0	0
X	1918.0	S	677850	5540865	10.1	11.4	88.5	73.9	15.5	19.2	1.2	19	0
Y	1927.7	S	678178	5540867	3.9	32.3	44.2	167.5	0.0	27.7	0.2	0	50
LINE 10280			FLIGHT 10										
A	2355.9	S	670123	5540665	10.2	18.6	56.8	74.8	2.5	19.1	0.7	0	0
B	2309.1	S?	671293	5540644	11.1	22.7	90.3	187.6	36.0	52.8	0.7	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10280			FLIGHT 10										
C	2307.5	L	671352	5540645	20.8	19.8	85.1	173.6	36.0	46.7	1.8	4	0
D	2302.6	S?	671534	5540654	18.0	17.6	212.4	53.0	54.8	52.6	1.7	0	0
E	2300.1	S?	671626	5540656	25.7	76.0	212.4	332.2	54.8	80.3	0.7	0	0
F	2273.3	E	672457	5540658	24.3	39.1	208.0	225.2	23.3	78.0	1.1	0	0
G	2269.5	E	672588	5540660	36.3	22.4	208.0	225.2	31.0	78.0	3.7	12	0
H	2262.0	S	672854	5540665	16.4	46.6	248.2	317.4	27.1	77.6	0.6	0	0
I	2254.5	S	673131	5540665	12.3	45.3	39.2	157.4	8.3	20.1	0.4	0	18
J	2250.5	S	673283	5540664	7.9	28.1	89.5	204.2	5.4	45.3	0.4	0	119
K	2239.1	S?	673706	5540649	14.0	36.5	56.6	192.0	48.8	56.1	0.6	0	66
L	2235.7	L	673822	5540646	37.9	49.0	60.9	86.1	48.8	74.5	1.6	0	0
M	2215.0	S	674423	5540645	13.5	14.9	121.7	88.1	19.4	50.0	1.3	11	239
N	2201.7	S	674885	5540654	14.7	26.2	187.6	184.9	14.0	79.3	0.8	4	87
O	2188.7	S?	675246	5540647	2.4	27.3	55.6	349.9	0.2	59.2	0.1	0	0
P	2179.9	S?	675515	5540657	8.9	149.0	184.3	741.2	41.4	136.0	0.2	0	129
Q	2177.0	S?	675615	5540660	20.0	100.0	184.3	741.2	46.7	136.0	0.4	0	0
R	2173.6	S	675738	5540661	13.1	45.4	37.2	168.8	38.1	16.6	0.5	0	0
S	2169.0	S	675905	5540664	15.0	47.1	69.4	167.4	11.0	20.7	0.5	0	66
T	2164.8	S	676052	5540668	13.9	46.5	83.0	235.2	11.3	36.1	0.5	0	121
U	2140.4	S	676876	5540671	5.7	16.1	12.7	0.0	17.5	2.7	0.4	3	0
V	2128.4	S	677290	5540660	45.3	103.1	318.9	482.4	29.2	164.8	1.0	0	212
W	2120.7	S	677554	5540657	22.6	47.6	215.0	403.8	31.8	82.5	0.8	2	0
X	2115.5	S?	677733	5540654	12.5	88.0	49.4	288.6	30.7	47.5	0.3	0	0
Y	2110.7	S?	677902	5540652	17.5	59.4	144.1	377.8	30.7	77.0	0.5	0	76

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10290			FLIGHT 10										
A	2429.7	S	669944	5540447	6.0	43.0	76.2	234.8	0.2	47.6	0.2	0	0
B	2436.6	S	670165	5540439	9.9	26.9	113.4	227.3	4.1	54.6	0.5	0	0
C	2448.0	E	670540	5540437	13.2	11.8	85.5	87.9	3.5	27.7	1.7	14	0
D	2482.9	L	671331	5540443	61.0	53.4	219.9	311.0	22.7	103.4	2.9	0	0
E	2487.6	S?	671487	5540442	21.6	22.3	199.4	311.0	24.4	88.9	1.7	6	0
F	2495.0	S	671742	5540443	11.8	20.0	122.1	186.3	15.1	46.2	0.8	4	0
G	2520.2	S	672617	5540434	21.2	19.7	250.8	255.8	16.1	102.1	1.9	9	29
H	2526.3	S	672829	5540441	11.6	35.3	129.6	238.6	26.3	86.1	0.5	0	170
I	2535.2	S?	673137	5540446	22.5	65.7	182.5	343.3	2.5	92.9	0.6	0	6
J	2545.5	S?	673487	5540452	13.0	22.4	139.9	196.9	15.3	80.9	0.8	1	0
K	2552.1	L	673713	5540458	5.7	41.4	2.4	0.0	39.1	25.8	0.2	0	82
L	2576.3	S	674542	5540458	13.0	24.7	121.6	137.8	10.0	61.3	0.8	4	0
M	2586.6	E	674911	5540453	11.7	4.8	160.8	51.7	17.9	47.7	4.3	34	0
N	2604.8	S	675391	5540445	11.9	11.3	109.6	362.7	10.4	68.9	1.5	25	0
O	2613.5	S	675697	5540442	14.7	51.4	83.0	186.4	6.0	29.8	0.5	0	0
P	2622.1	S	676022	5540436	10.8	24.6	61.3	151.1	6.2	21.1	0.6	3	0
Q	2641.6	S	676747	5540432	16.4	25.0	172.7	178.4	26.7	68.6	1.0	6	0
R	2654.3	S	677197	5540449	17.0	47.8	189.2	234.8	25.7	82.8	0.6	0	0
S	2659.0	S	677377	5540448	26.0	6.2	165.3	17.9	63.9	60.3	---	---	0
T	2663.3	S	677537	5540447	26.2	68.6	132.6	168.8	18.8	58.7	0.7	0	0
U	2673.5	S?	677910	5540449	16.9	73.0	95.9	243.1	71.3	52.4	0.4	0	108

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10300			FLIGHT 10										
A	2980.0	H	670447	5540253	2.8	3.0	46.5	14.9	4.0	11.1	---	---	0
B	2946.3	L	671342	5540239	31.5	15.0	124.1	81.3	66.8	98.7	5.0	0	0
C	2940.1	S?	671504	5540251	8.0	18.3	111.6	157.4	66.5	49.7	0.6	3	0
D	2930.9	S?	671719	5540259	13.9	19.4	133.6	164.0	46.4	33.1	1.0	16	0
E	2927.0	E	671822	5540258	14.0	27.0	140.4	185.8	47.6	48.3	0.8	1	0
F	2907.9	E	672444	5540272	26.5	49.6	230.5	285.9	0.1	93.2	1.0	0	31
G	2904.6	S	672563	5540274	14.1	28.4	231.8	285.9	34.4	93.9	0.7	0	17
H	2891.2	S	673053	5540263	7.3	20.9	86.8	148.1	17.3	48.8	0.4	0	0
I	2882.5	S?	673376	5540251	13.9	2.9	80.1	57.6	9.0	75.9	---	---	0
J	2875.2	L	673628	5540251	83.5	81.0	18.1	9.6	74.0	55.5	2.8	0	0
K	2864.4	S?	673974	5540255	23.6	45.6	137.4	298.7	30.3	56.2	0.9	3	42
L	2856.3	S	674224	5540246	10.6	21.7	150.6	260.5	8.8	55.8	0.7	6	0
M	2846.7	E	674530	5540247	20.8	42.0	121.2	86.7	8.8	34.1	0.8	0	52
N	2843.1	S?	674647	5540250	10.3	15.4	120.6	86.7	16.4	39.3	0.9	18	0
O	2835.9	E	674874	5540253	23.1	7.7	107.9	9.8	38.2	18.5	7.2	11	0
P	2811.6	S	675573	5540246	8.4	24.1	101.1	230.0	7.3	48.6	0.5	2	194
Q	2808.4	S	675685	5540247	11.3	45.5	95.2	172.7	7.3	40.4	0.4	0	0
R	2794.3	S?	676180	5540247	27.9	137.2	251.1	638.6	10.1	140.9	0.5	0	45
S	2783.5	S	676549	5540252	21.6	64.7	287.7	526.5	18.8	121.8	0.6	0	62
T	2781.2	S?	676627	5540251	36.7	71.3	287.7	526.5	28.3	121.8	1.0	0	0
U	2767.9	S	677069	5540247	16.5	57.0	191.7	219.9	64.8	77.1	0.5	0	0
V	2764.1	S	677198	5540248	14.1	21.4	259.8	18.5	64.8	101.3	1.0	6	0
W	2761.0	E	677306	5540249	57.2	85.3	259.8	287.4	62.7	101.3	1.6	0	8

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10300			FLIGHT 10										
X	2752.9	S?	677586	5540253	35.5	114.6	291.7	679.1	24.7	141.7	0.7	0	0
Y	2750.2	S?	677680	5540255	18.9	99.5	291.7	679.1	24.7	141.7	0.4	0	0
Z	2741.3	S	677997	5540261	11.7	32.5	175.8	303.5	34.9	66.4	0.5	0	17
AA	2738.9	E	678083	5540261	23.1	48.0	174.4	303.5	31.9	66.4	0.9	0	0
LINE 10310			FLIGHT 10										
A	3064.8	S	669825	5540059	7.0	13.0	58.6	92.9	4.0	20.3	0.6	0	0
B	3085.0	H	670451	5540047	2.7	6.0	28.9	46.2	1.8	9.7	---	---	28
C	3120.3	L	671375	5540061	45.9	24.7	276.4	175.5	98.0	150.8	4.8	0	0
D	3122.6	S?	671452	5540056	48.5	33.3	276.4	175.5	75.9	135.5	3.6	0	0
E	3130.4	S	671725	5540046	22.5	24.8	218.2	88.5	42.1	95.9	1.6	6	0
F	3147.3	S	672347	5540041	8.1	19.5	38.0	76.9	9.6	14.6	0.5	0	0
G	3160.7	S	672851	5540053	31.6	23.9	237.3	66.5	87.7	136.6	2.7	5	16
H	3173.6	S?	673317	5540054	20.6	72.5	223.2	428.0	19.9	129.3	0.5	0	162
I	3181.4	L	673587	5540065	8.4	0.0	0.0	0.0	49.2	49.0	---	---	0
J	3188.7	S?	673846	5540065	7.1	23.1	61.8	187.2	53.6	44.5	0.4	0	0
K	3209.3	E	674601	5540040	23.6	30.5	92.0	103.9	15.6	26.2	1.4	0	98
L	3212.6	S	674725	5540038	4.2	4.2	92.0	0.0	17.7	14.0	1.0	21	0
M	3218.5	S?	674946	5540042	8.0	16.8	54.0	125.7	27.1	8.1	0.6	0	0
N	3220.4	E	675012	5540045	14.1	14.1	93.1	126.9	66.4	8.1	1.5	11	0
O	3229.7	S?	675308	5540051	6.6	37.9	50.9	186.9	0.5	26.5	---	---	0
P	3240.0	S	675651	5540054	7.8	31.6	94.8	271.4	10.2	53.1	0.3	0	174
Q	3246.7	S	675898	5540051	17.1	34.3	121.3	260.8	4.7	51.7	0.8	0	0
R	3262.7	S	676479	5540047	23.7	36.6	245.2	355.5	10.4	100.2	1.1	2	121

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10310			FLIGHT 10										
S	3268.7	S?	676698	5540045	5.9	0.0	64.8	0.0	22.5	5.7	---	---	0
T	3281.8	S	677171	5540052	21.1	39.6	202.8	156.1	41.8	95.9	0.9	0	0
U	3286.4	S	677350	5540057	29.0	26.3	220.7	197.7	43.2	99.2	2.1	11	0
LINE 10320			FLIGHT 10										
A	3574.3	L	671379	5539858	42.8	23.3	142.4	62.1	56.4	139.8	4.6	0	6
B	3570.4	H	671507	5539853	39.5	13.6	234.0	144.1	106.4	50.9	8.3	5	295
C	3560.5	S	671805	5539862	8.6	42.8	112.4	429.6	10.0	99.0	0.3	0	0
D	3534.1	S	672611	5539868	16.5	20.1	186.6	212.7	13.5	64.7	1.3	6	9
E	3529.1	S	672778	5539868	15.0	30.8	211.6	215.6	11.1	56.7	0.7	6	0
F	3516.0	S	673203	5539867	20.9	35.3	150.8	265.2	9.3	57.8	1.0	3	0
G	3511.3	S?	673352	5539866	14.9	67.9	148.2	267.4	53.5	90.3	0.4	0	0
H	3507.5	L	673470	5539867	11.1	34.5	2.5	1.4	63.8	53.7	0.5	0	11
I	3493.4	S	673913	5539858	23.2	61.6	278.5	446.6	54.8	105.1	0.7	0	44
J	3482.0	S?	674249	5539855	0.0	27.0	0.0	133.7	52.1	19.2	---	---	0
K	3478.1	S	674369	5539853	9.1	4.2	117.0	108.2	76.4	12.6	3.4	37	0
L	3473.6	S?	674518	5539852	2.4	35.6	15.2	103.8	110.0	18.0	0.1	0	142
M	3469.2	E	674674	5539850	20.0	10.2	98.4	29.2	31.3	22.0	3.9	22	0
N	3465.2	S?	674826	5539849	1.6	4.3	62.9	21.2	10.8	25.3	---	---	0
O	3458.0	E	675088	5539851	15.2	29.0	48.6	198.5	17.8	19.8	0.8	0	248
P	3451.9	S	675306	5539852	7.1	22.7	65.7	121.1	1.7	25.6	0.4	0	0
Q	3441.7	S?	675685	5539857	14.1	45.0	92.5	226.6	4.4	44.7	0.5	0	269
R	3436.7	B?	675877	5539853	16.9	34.8	120.8	46.2	12.8	25.8	0.8	0	0
S	3429.8	E	676136	5539851	12.7	51.3	89.0	274.9	5.4	50.6	0.4	0	127

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10320			FLIGHT 10										
T	3416.0	S	676616	5539851	24.5	36.4	254.0	203.8	27.7	98.6	1.2	1	90
U	3402.7	S	677028	5539858	29.2	68.3	229.1	385.9	20.7	122.2	0.8	0	0
V	3392.8	S?	677341	5539863	30.5	35.2	180.6	130.8	37.2	58.7	1.7	6	41
W	3381.1	S	677729	5539858	14.1	22.2	82.2	73.1	27.2	19.1	0.9	9	0
X	3376.1	S?	677901	5539855	4.4	31.9	28.7	133.8	10.8	22.3	0.2	0	0
LINE 10330			FLIGHT 10										
A	3629.4	B?	671535	5539639	38.5	33.5	296.4	148.4	114.4	275.2	2.5	0	123
B	3652.3	S?	672433	5539629	16.9	11.2	130.8	123.4	19.9	35.6	2.6	19	0
C	3677.4	L	673382	5539659	36.2	13.4	38.0	114.3	48.2	96.4	7.3	0	0
D	3685.2	S	673696	5539658	10.7	33.9	112.1	130.0	23.0	42.4	0.5	0	115
E	3688.1	S	673809	5539659	13.1	17.3	121.1	131.8	14.9	41.7	1.1	2	0
F	3713.1	S?	674542	5539655	12.0	4.7	80.3	38.8	19.9	14.7	4.6	9	0
G	3723.7	S?	674916	5539654	4.8	4.6	62.7	39.8	19.9	21.9	1.1	35	0
H	3732.6	S	675220	5539652	15.0	11.6	145.2	246.4	25.5	53.2	2.1	26	120
I	3750.9	S	675838	5539637	15.5	56.2	91.1	249.8	9.1	44.2	0.5	0	0
J	3777.4	S	676786	5539639	19.6	40.7	173.3	176.3	21.7	79.7	0.8	0	150
K	3787.3	S	677141	5539640	24.1	45.6	230.9	175.3	31.5	80.8	0.9	0	0
L	3798.0	S	677540	5539637	24.5	40.8	97.2	222.8	1.9	41.5	1.1	0	0
M	3802.1	S	677694	5539639	13.6	23.5	95.4	130.9	8.9	27.1	0.8	5	0
LINE 10340			FLIGHT 10										
A	4208.3	B?	671615	5539449	33.7	17.5	193.1	131.2	66.5	68.5	4.5	19	231
B	4190.3	S	672207	5539443	5.6	18.4	62.3	114.9	22.7	24.8	0.4	2	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10340			FLIGHT 10										
C	4161.8	S?	673128	5539461	9.9	9.9	37.4	96.8	28.5	14.3	1.4	23	0
D	4156.0	L	673289	5539462	20.6	12.3	16.1	12.7	40.6	40.9	---	---	0
E	4151.5	S?	673413	5539460	2.6	12.4	36.9	140.3	27.2	80.2	0.2	0	0
F	4141.6	S	673695	5539452	6.0	2.9	154.8	153.9	39.5	47.9	2.8	47	0
G	4121.3	S?	674206	5539445	3.0	30.8	28.5	214.5	23.9	35.8	---	---	0
H	4108.4	E	674542	5539449	23.0	8.0	164.2	0.0	88.2	8.6	6.8	12	0
I	4105.0	S	674654	5539452	14.3	23.4	164.1	78.9	26.1	49.4	0.9	0	69
J	4100.4	S?	674818	5539456	9.1	2.3	84.4	82.7	17.1	46.6	7.9	39	117
K	4088.3	S	675241	5539464	12.8	24.9	55.3	149.9	19.7	11.4	0.7	0	0
L	4079.2	S	675553	5539465	6.5	45.4	59.8	292.5	10.2	41.5	0.2	0	57
M	4067.7	S	675936	5539471	10.8	27.4	62.3	118.9	11.0	25.4	0.6	0	145
N	4061.5	S?	676144	5539467	7.9	38.6	34.1	74.3	9.2	7.6	0.3	0	123
O	4046.1	S	676646	5539466	19.5	52.8	303.6	350.3	12.9	113.6	0.7	0	107
P	4037.3	S?	676937	5539467	64.2	78.3	426.8	352.3	17.5	187.8	2.0	0	55
Q	4034.8	S?	677020	5539468	66.7	102.2	426.8	352.3	17.5	187.8	1.6	0	58
R	4026.2	S	677317	5539459	37.7	82.9	177.9	341.1	7.6	83.5	1.0	0	0
S	4020.0	S?	677536	5539458	58.4	105.6	285.1	650.4	0.0	124.1	1.3	0	366
LINE 10350			FLIGHT 10										
A	4277.4	B?	671647	5539216	50.5	67.0	605.6	598.3	137.6	317.0	1.7	0	0
B	4316.8	S?	673072	5539245	9.5	14.7	38.8	80.0	47.1	30.8	0.8	0	0
C	4320.5	L	673199	5539246	28.5	37.7	56.2	41.8	64.1	41.4	1.4	0	129
D	4329.5	S	673511	5539247	16.5	24.8	177.4	195.6	38.0	37.5	1.0	0	29
E	4335.8	S	673729	5539249	28.0	25.9	172.3	52.9	21.2	55.9	2.1	4	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10350			FLIGHT 10										
F	4346.4	S	674089	5539250	4.5	1.7	90.7	41.5	40.6	3.3	3.5	57	0
G	4353.2	S?	674312	5539245	0.0	37.4	0.0	137.8	0.4	23.6	---	---	785
H	4359.6	E	674489	5539252	10.4	11.6	73.9	60.0	48.7	14.4	1.2	19	0
I	4363.3	S	674595	5539255	8.9	0.0	85.2	5.2	29.9	17.2	---	---	0
J	4366.7	S?	674703	5539254	2.9	3.4	68.3	6.0	19.9	24.2	---	---	0
K	4371.2	B?	674853	5539251	10.6	17.7	59.2	95.3	6.1	30.8	0.8	12	29
L	4378.8	S?	675092	5539253	13.2	31.7	52.3	107.9	23.2	19.6	0.6	0	222
M	4384.3	S?	675266	5539252	14.2	39.3	65.1	187.1	23.2	27.8	0.6	0	0
N	4392.4	S?	675552	5539251	2.8	27.2	81.0	277.1	18.9	48.1	0.1	0	0
O	4409.1	S	676128	5539240	10.8	23.1	73.2	179.6	0.5	38.6	0.6	0	0
P	4426.6	S	676716	5539230	24.4	52.0	423.3	615.6	14.0	174.7	0.9	0	0
Q	4435.7	S?	677028	5539233	35.9	101.6	256.8	619.2	0.6	126.3	0.8	0	34
R	4438.6	S	677131	5539235	22.5	19.2	94.9	274.4	13.5	47.5	2.1	12	0
S	4443.9	S	677318	5539240	15.5	41.5	94.8	302.5	7.2	60.1	0.6	0	0
T	4449.9	S?	677526	5539251	13.7	39.9	110.7	186.2	6.5	43.1	0.5	0	0
LINE 10360			FLIGHT 10										
A	4743.8	B?	671618	5539051	55.6	71.5	513.2	513.9	235.1	260.5	1.8	0	0
B	4698.3	L	673139	5539036	27.8	1.7	37.9	39.0	84.5	76.9	---	---	0
C	4677.5	S?	673771	5539059	21.1	15.8	168.0	63.0	17.0	47.3	2.4	14	0
D	4669.4	S	674021	5539056	13.6	14.6	11.0	71.2	5.6	3.4	1.4	15	150
E	4660.3	S?	674258	5539053	19.8	40.0	308.3	311.0	32.6	94.5	0.8	2	44
F	4648.0	S?	674533	5539058	29.5	35.3	83.5	194.7	85.3	18.5	1.6	9	0
G	4643.7	S	674639	5539059	6.7	12.3	92.7	0.0	84.6	0.0	0.6	1	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10360			FLIGHT 10										
H	4639.9	S?	674743	5539056	13.7	29.9	97.0	150.4	44.1	30.8	0.7	0	0
I	4631.4	S?	674965	5539056	11.9	42.8	11.4	149.6	0.0	24.3	0.4	0	479
J	4619.1	S	675297	5539062	7.9	32.1	50.4	141.4	14.0	28.3	0.3	0	0
K	4607.8	S	675659	5539060	10.0	39.8	108.8	325.8	11.3	60.2	0.4	0	38
L	4596.7	S	676043	5539061	4.9	28.1	55.1	255.5	3.0	42.4	0.2	0	0
M	4579.5	S	676620	5539059	16.4	32.9	290.6	513.9	12.9	131.0	0.8	3	43
N	4570.9	S	676866	5539056	12.4	31.8	22.3	103.4	8.2	9.8	0.6	1	0
O	4561.4	S?	677145	5539063	56.1	139.5	441.2	694.2	17.2	168.6	1.0	0	0
P	4555.5	S?	677327	5539064	3.3	37.8	0.4	143.6	18.0	9.7	0.1	0	0
Q	4549.8	S?	677507	5539065	19.4	48.0	114.5	197.7	21.6	41.2	0.7	0	190
LINE 10370			FLIGHT 23										
A	7903.2	H	671722	5538847	43.0	46.7	282.1	306.6	111.2	159.5	2.0	0	0
B	7897.7	H	671913	5538847	36.5	22.5	272.2	85.3	139.8	157.4	3.7	10	0
C	7892.1	E	672103	5538848	21.3	15.3	297.5	171.8	25.6	66.0	2.6	8	661
D	7863.3	S?	672994	5538861	16.9	21.1	50.0	126.0	26.7	92.5	1.3	6	0
E	7859.7	L	673102	5538861	58.1	40.3	18.2	50.1	38.5	70.1	3.7	0	52
F	7850.5	S	673386	5538859	7.8	26.5	71.9	254.1	15.0	31.8	0.4	0	44
G	7844.2	S	673603	5538859	9.9	32.1	31.2	203.9	7.4	35.4	0.5	0	0
H	7830.1	S	674091	5538843	0.0	0.0	143.2	0.0	15.4	32.2	---	---	0
I	7817.4	S?	674416	5538839	24.6	51.8	117.8	158.8	128.1	24.0	0.9	3	634
J	7811.2	E	674549	5538847	38.3	19.6	261.8	37.5	155.5	0.0	4.8	14	0
K	7805.9	S	674695	5538846	11.1	29.3	163.5	112.4	23.3	49.1	0.6	0	0
L	7796.1	S?	674996	5538845	17.5	53.8	56.9	197.5	0.0	25.4	0.6	0	372

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10370			FLIGHT 23										
M	7785.6	S?	675342	5538850	11.5	41.9	29.3	70.9	11.7	12.1	0.4	0	0
N	7776.6	S?	675669	5538850	36.8	61.2	154.4	261.4	8.5	60.3	1.2	0	82
O	7766.1	S?	676048	5538862	4.7	31.5	25.8	231.7	15.3	37.0	0.2	0	0
P	7747.1	S	676689	5538867	20.6	33.8	146.1	169.7	10.5	63.9	1.0	3	10
Q	7734.2	S	677162	5538863	26.6	41.9	184.6	315.2	11.6	75.8	1.2	0	0
R	7722.8	S	677591	5538857	14.5	25.4	61.3	167.4	18.2	50.7	0.8	5	0
S	7716.0	S	677833	5538867	11.2	22.7	95.2	162.9	24.6	43.7	0.7	7	212
T	7704.4	S	678254	5538866	23.3	23.6	53.9	55.0	7.0	6.3	1.8	6	0
LINE 10380			FLIGHT 23										
A	7443.8	E	671677	5538646	40.1	51.2	138.5	232.0	25.1	76.7	1.6	0	0
B	7448.6	H	671849	5538654	36.7	28.6	339.2	184.6	81.3	125.2	2.8	2	0
C	7453.1	H	672013	5538655	23.8	39.0	305.3	265.3	81.3	172.0	1.1	0	0
D	7456.6	S	672140	5538651	38.7	25.1	353.8	212.7	116.2	176.5	3.5	0	0
E	7483.2	L	673058	5538639	32.5	13.2	69.6	51.9	93.4	187.1	6.2	4	0
F	7497.1	S	673527	5538644	8.2	31.4	38.0	129.8	16.0	23.6	0.4	0	0
G	7516.4	S	674164	5538659	34.3	46.4	395.2	541.6	13.4	139.7	1.5	0	0
H	7534.5	S?	674735	5538654	0.7	0.2	58.6	23.1	12.7	25.3	---	---	0
I	7555.7	S	675400	5538644	11.6	14.0	101.3	62.7	5.6	10.4	1.2	7	0
J	7561.3	S	675583	5538640	20.9	44.5	139.2	243.1	14.3	58.1	0.8	0	0
K	7575.2	S	676036	5538631	6.4	18.5	37.5	118.5	6.2	19.6	0.4	1	41
L	7611.4	S	677256	5538658	13.3	39.9	45.4	223.4	25.6	41.8	0.5	0	169
M	7620.4	S	677546	5538664	7.8	8.8	106.4	144.2	20.9	53.7	1.1	30	0
N	7627.1	S	677768	5538655	14.4	34.8	92.2	155.6	15.9	44.2	0.6	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10390			FLIGHT 23										
A	7355.3	S	671827	5538462	24.5	41.6	531.4	516.3	40.6	188.3	1.0	0	0
B	7347.0	B?	672098	5538453	50.5	57.4	696.9	499.5	170.6	295.7	2.0	0	0
C	7343.0	E	672237	5538450	24.5	89.5	689.6	499.5	47.5	60.9	0.6	0	1258
D	7323.5	S?	672893	5538454	4.9	4.1	61.7	49.6	116.0	51.1	1.3	35	0
E	7320.0	L	673007	5538459	56.5	68.8	35.6	49.6	116.0	119.7	1.9	0	0
F	7279.8	S	674165	5538466	7.1	11.5	29.0	102.8	9.5	15.7	0.7	13	0
G	7261.7	S?	674629	5538464	14.0	38.3	201.3	304.5	13.6	99.3	0.6	0	0
H	7245.8	S	675122	5538458	4.5	30.8	16.9	115.9	0.0	25.2	0.2	0	272
I	7231.8	S?	675630	5538463	13.8	18.6	107.5	146.1	11.5	39.7	1.1	10	0
J	7222.4	S	675963	5538458	6.4	15.6	44.3	113.0	5.7	10.0	0.5	5	63
K	7199.4	S	676804	5538451	5.3	10.7	92.1	86.9	16.8	54.7	0.5	16	71
L	7183.4	S	677399	5538460	12.5	31.0	93.9	152.3	25.8	66.3	0.6	0	155
M	7166.2	S	678048	5538471	5.6	2.6	45.7	41.7	3.8	12.0	3.0	45	0
LINE 10400			FLIGHT 23										
A	6885.3	S	671692	5538212	4.7	21.6	149.6	224.1	20.4	53.4	0.3	0	0
B	6895.8	S	672092	5538232	21.7	26.6	137.7	180.9	58.7	38.2	1.4	0	0
C	6919.9	L	672952	5538243	33.6	140.7	61.7	53.9	103.4	33.2	---	---	0
D	6943.5	S?	673731	5538242	6.9	40.7	25.3	154.0	23.2	27.0	0.2	0	0
E	6955.2	S	674094	5538244	3.1	11.9	13.5	118.3	2.6	19.1	0.3	3	0
F	6973.1	S	674590	5538250	5.0	13.0	96.4	53.8	14.0	41.3	0.4	0	5
G	6986.5	S?	674987	5538254	18.1	32.3	56.9	268.3	66.3	41.4	0.9	4	0
H	6998.3	S?	675345	5538242	10.1	45.5	58.6	278.9	0.0	44.9	0.3	0	388

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LINE 10400			FLIGHT 23										
I	7009.9	S?	675707	5538238	7.7	4.8	57.6	35.7	6.7	25.1	2.2	37	0
J	7025.6	S	676193	5538248	9.1	20.1	62.9	112.9	11.4	22.6	0.6	2	0
K	7052.9	S	677087	5538250	9.7	10.5	59.9	91.9	11.8	31.4	1.2	19	0
L	7062.7	S	677407	5538238	21.4	38.7	147.6	231.2	30.0	49.4	0.9	2	236
M	7084.2	S	678114	5538245	10.1	22.7	60.1	128.1	5.5	33.8	0.6	6	54
LINE 10410			FLIGHT 23										
A	6801.0	S	671639	5538059	36.6	98.5	240.3	645.5	26.0	114.4	0.8	0	0
B	6760.6	L	672916	5538073	88.5	57.2	106.5	180.6	70.2	162.8	4.7	0	0
C	6740.1	S	673555	5538068	5.6	13.0	16.3	58.1	13.0	11.0	0.5	0	0
D	6708.1	S?	674390	5538056	0.0	2.1	0.0	61.5	1.3	11.4	---	---	307
E	6698.5	S	674605	5538064	16.5	39.2	223.4	231.8	20.2	86.2	0.7	0	0
F	6695.2	S	674698	5538062	21.3	34.5	223.4	231.8	20.2	86.2	1.0	0	0
G	6686.4	E	674929	5538063	12.0	26.0	0.0	86.6	6.9	9.3	0.7	0	469
H	6680.1	S	675123	5538056	9.5	7.9	68.6	89.9	12.8	18.1	1.6	21	0
I	6671.0	S	675456	5538055	22.7	14.1	77.6	90.7	12.0	20.6	3.1	8	331
J	6663.2	S	675742	5538056	8.9	14.0	40.2	47.2	11.2	20.9	0.8	9	0
K	6649.8	S	676223	5538056	8.7	17.7	70.9	124.1	10.5	32.3	0.6	4	0
L	6620.9	S	677178	5538053	27.7	17.8	160.2	164.1	18.6	64.5	3.2	5	0
M	6615.4	S	677372	5538050	16.6	27.0	176.3	160.7	16.4	59.8	1.0	0	217
N	6599.9	S	677930	5538063	9.0	16.3	29.2	95.9	5.8	14.5	0.7	7	0
LINE 10420			FLIGHT 23										
A	6189.4	S?	671676	5537812	3.5	17.5	30.2	83.4	36.2	11.9	---	---	0

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CP = COPLANAR

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10420			FLIGHT 23										
B	6203.3	S?	672125	5537855	9.9	43.0	66.3	153.5	69.9	25.9	---	---	0
C	6226.4	L	672869	5537841	17.2	53.6	133.3	131.9	169.6	102.0	0.6	0	0
D	6242.8	S?	673387	5537837	9.9	55.8	39.8	277.2	37.7	48.3	0.3	0	0
E	6262.3	S	674017	5537845	6.7	10.6	67.1	132.1	9.5	27.0	0.7	18	0
F	6292.1	S	674827	5537853	11.8	14.4	104.4	150.9	13.9	49.3	1.1	2	0
G	6302.4	S?	675126	5537861	25.3	77.4	47.1	276.3	8.4	39.4	0.6	0	96
H	6315.7	S	675494	5537843	4.3	0.0	130.8	166.5	22.9	41.1	---	---	0
I	6321.6	S	675665	5537835	15.9	37.4	104.6	227.6	21.2	44.4	0.7	0	29
J	6339.0	S	676176	5537837	7.3	31.8	91.6	248.4	7.8	48.4	0.3	0	0
K	6346.6	S	676406	5537842	10.9	41.4	134.1	254.3	1.6	59.9	0.4	0	109
L	6369.5	S	677135	5537848	16.9	20.3	154.1	130.4	8.4	49.9	1.3	2	241
M	6381.5	S	677518	5537848	8.9	18.1	29.8	0.0	9.1	0.7	0.6	0	0
N	6398.6	S	678068	5537846	7.1	32.9	42.0	154.2	15.0	28.0	0.3	0	46
LINE 10430			FLIGHT 23										
A	6107.3	S	672152	5537648	6.6	3.9	8.5	3.8	13.5	6.1	2.2	39	0
B	6084.1	L	672820	5537651	99.7	91.5	103.8	62.5	74.7	62.0	3.2	0	0
C	6061.6	S?	673517	5537642	3.8	19.8	22.3	46.8	35.5	7.2	---	---	0
D	6044.4	S	674065	5537641	7.2	28.0	75.5	228.4	0.0	42.8	0.4	0	16
E	6019.3	S	674738	5537633	10.0	8.1	66.1	31.2	11.1	24.2	1.7	0	0
F	6005.1	S	675214	5537647	8.5	27.4	61.5	179.6	11.7	31.3	0.4	0	0
G	5991.0	S?	675703	5537650	12.2	13.6	56.0	83.8	25.9	15.7	1.3	16	0
H	5951.1	S?	677079	5537645	7.8	10.7	43.2	94.8	16.7	28.7	0.9	13	0
I	5921.8	S	678090	5537645	3.1	19.7	52.3	138.8	7.0	26.6	0.2	0	53

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 10440			FLIGHT 23										
A	5667.4	L	672805	5537446	15.5	37.1	12.8	21.2	44.8	92.5	0.7	0	0
B	5674.3	S?	673024	5537454	22.0	62.3	128.7	306.7	63.0	71.1	0.7	0	0
C	5702.5	S	673920	5537451	14.2	0.0	36.0	49.9	83.2	4.6	---	---	0
D	5712.9	S?	674255	5537445	6.8	24.7	98.3	153.3	108.1	25.5	---	---	191
E	5737.0	S	674939	5537458	6.9	5.5	66.2	59.1	14.0	22.9	1.6	12	0
F	5748.7	S?	675288	5537475	5.2	26.7	55.1	230.7	3.9	44.9	0.3	0	0
G	5770.8	S	675906	5537449	8.4	12.1	62.9	49.1	13.5	25.3	0.9	18	0
H	5789.8	S?	676444	5537459	7.3	7.4	51.2	70.4	8.9	18.7	1.2	36	94
I	5817.6	S	677303	5537452	8.2	14.8	24.8	52.6	18.3	5.0	0.7	11	0
J	5821.5	S?	677417	5537453	6.8	25.8	24.8	132.9	18.3	18.0	0.3	2	47
K	5832.5	S	677743	5537451	3.0	16.8	73.0	221.6	4.2	40.6	0.2	0	33
L	5845.7	S	678155	5537460	14.7	42.7	96.5	155.5	2.7	32.6	0.6	0	15
LINE 19010			FLIGHT 4										
A	1934.3	S	670627	5540247	9.3	12.7	103.0	147.5	4.4	37.4	0.9	16	12
B	1877.8	S	670993	5541852	4.1	10.7	59.0	97.6	6.5	25.2	0.4	16	0
C	1850.9	L?	670960	5542709	14.7	8.7	58.9	43.0	4.3	64.8	2.9	0	41
D	1830.4	S	670723	5543386	14.6	18.5	226.6	312.5	9.8	89.7	1.2	4	0
E	1826.6	S	670659	5543507	12.8	16.1	144.2	138.7	9.6	56.2	1.1	10	0
F	1814.1	S	670475	5543904	22.9	39.3	390.9	480.5	25.1	137.4	1.0	0	0
G	1786.4	S	670238	5544814	18.3	20.3	94.1	141.7	9.8	35.9	1.5	3	60
H	1767.8	S	670114	5545471	7.5	7.9	73.4	44.2	7.4	25.8	1.2	34	7
I	1758.7	E	670069	5545813	6.8	12.0	71.2	121.3	6.5	26.2	0.7	14	42

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 19020			FLIGHT 4										
A	2109.1	E	672001	5538273	49.6	96.7	410.5	512.4	32.6	160.7	1.2	0	0
B	2112.5	S?	672000	5538409	65.6	44.0	572.3	512.4	89.4	244.9	4.1	2	115
C	2118.2	H	671999	5538632	11.0	33.7	227.0	439.2	43.4	86.6	0.5	0	0
D	2125.2	H	671998	5538900	13.6	9.0	251.2	102.6	75.1	105.7	2.5	21	0
E	2127.7	E	671999	5538996	36.5	19.5	251.2	102.6	2.1	104.5	4.5	3	0
F	2149.0	E	672000	5539816	19.6	48.5	219.8	283.6	21.5	60.4	0.7	0	0
G	2152.8	S	672003	5539961	21.8	16.4	243.5	301.8	21.5	79.5	2.4	15	0
H	2194.5	S	671997	5541564	42.5	41.3	1208.0	888.8	93.6	449.0	2.3	6	82
I	2206.3	S	672007	5542027	23.7	29.8	601.6	494.3	54.4	234.4	1.4	7	0
J	2210.6	E	672003	5542191	60.2	85.3	100.7	609.4	14.1	50.4	1.7	0	0
K	2215.6	S	671999	5542372	8.6	17.4	52.7	129.5	1.1	27.0	0.6	5	60
L	2240.0	S?	672004	5543315	0.7	25.9	46.2	247.1	0.0	50.1	0.1	0	0
M	2245.5	S	672005	5543541	13.5	21.6	118.2	123.7	17.9	36.5	0.9	7	0
N	2250.7	S?	672003	5543742	13.2	38.6	81.9	173.1	1.4	44.1	0.5	0	0
O	2258.6	S	672003	5544032	10.5	22.2	208.4	319.2	21.6	95.9	0.7	10	22
LINE 19030			FLIGHT 4										
A	2659.2	S	673989	5537738	6.3	23.1	147.8	289.1	12.3	58.4	0.4	0	93
B	2625.0	S	673997	5538907	2.5	7.5	111.8	193.7	6.8	39.6	0.3	15	205
C	2620.6	S	673995	5539072	6.9	32.4	113.6	280.2	5.3	81.7	0.3	0	0
D	2594.0	S	673990	5539963	8.7	13.1	107.9	103.1	13.1	33.4	0.8	17	0
E	2583.3	S	674000	5540340	15.5	18.0	204.9	248.7	20.3	81.7	1.3	11	0
F	2569.2	S?	674010	5540837	6.7	0.0	90.2	135.4	76.7	48.6	---	---	11

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 19030			FLIGHT 4										
G	2563.1	L	674027	5541055	19.7	23.7	45.1	69.7	63.7	67.4	1.4	0	0
H	2558.2	L	674032	5541225	15.8	4.5	14.4	0.0	110.6	17.2	7.9	18	261
I	2544.5	S?	674090	5541683	13.2	23.2	39.7	120.6	31.4	35.2	0.8	0	125
J	2525.0	S?	674000	5542348	26.4	56.9	222.6	309.6	10.6	83.1	0.9	0	0
K	2520.8	E	674000	5542495	29.3	65.0	229.3	337.5	9.1	70.6	0.9	0	0
L	2512.7	S	673992	5542780	21.4	39.6	19.5	73.2	4.7	10.5	0.9	0	65
M	2507.7	E	673989	5542952	38.0	73.6	151.4	141.7	10.9	47.1	1.1	0	170
N	2503.8	S	673989	5543085	26.2	57.6	151.4	302.0	10.9	59.9	0.9	0	127
O	2498.6	S	673987	5543263	23.1	42.6	48.4	175.8	11.2	28.8	0.9	0	0
P	2490.8	D	673985	5543535	27.2	45.8	108.5	113.3	13.1	30.1	1.1	0	32
Q	2487.2	D	673984	5543659	53.6	69.4	108.5	148.6	17.8	30.1	1.8	0	49
R	2473.4	H	673979	5544126	7.6	18.2	0.4	6.4	67.3	19.8	0.5	4	126
S	2464.3	H	673982	5544435	20.2	47.4	89.2	203.1	0.4	36.6	0.7	0	0
T	2459.4	H	673987	5544603	10.4	25.8	29.5	75.9	25.1	24.4	0.6	0	157
U	2438.3	S	673984	5545333	12.9	28.9	195.5	309.4	5.4	85.8	0.7	4	0
V	2425.6	S	673987	5545758	8.2	19.8	93.5	150.7	7.4	41.2	0.5	7	30
W	2418.7	S	673993	5546000	13.9	28.7	155.9	248.4	4.0	59.9	0.7	3	0
LINE 19040			FLIGHT 4										
A	2771.1	H	676005	5537890	9.3	10.6	133.0	100.8	21.2	51.9	1.1	23	0
B	2791.7	S	675996	5538701	4.1	15.7	23.2	86.5	0.0	14.0	0.3	0	30
C	2798.8	S	675994	5538992	3.1	29.3	106.9	370.8	0.0	72.2	0.1	0	0
D	2810.5	S	675994	5539478	4.1	4.7	71.6	145.0	1.9	31.6	0.9	34	0
E	2821.9	S?	675998	5539956	13.7	31.9	74.8	160.6	4.6	33.4	0.7	0	0

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EM Anomaly List

Label	Fid	Interp	XUTM m	YUTM m	CX 5500 HZ Real ppm	CX 5500 HZ Quad ppm	CP 7200 HZ Real ppm	CP 7200 HZ Quad ppm	CP 900 HZ Real ppm	CP 900 HZ Quad ppm	Vertical Dike COND siemens	Vertical Dike DEPTH* m	Mag. Corr NT
LINE 19040			FLIGHT 4										
F	2824.8	S	675998	5540078	10.4	28.0	74.8	196.4	5.1	33.4	0.5	2	218
G	2837.9	S	676003	5540625	16.2	33.8	88.5	112.3	9.4	31.3	0.8	3	0
H	2840.2	S?	676003	5540720	8.7	40.8	88.5	88.5	9.4	31.3	0.3	0	191
I	2845.7	S	676000	5540947	13.0	33.7	63.6	158.6	4.5	35.5	0.6	0	12
J	2855.5	H	676006	5541352	2.7	0.0	11.8	0.0	35.9	3.6	---	---	0
K	2860.3	E	676006	5541554	35.6	34.0	164.4	205.6	0.2	55.4	2.2	9	0
L	2862.4	S	676006	5541640	6.6	17.8	135.6	205.6	4.2	59.3	0.5	6	0
M	2879.0	S?	676006	5542310	9.1	10.8	45.4	41.9	59.5	7.5	---	---	0
N	2902.7	S	676019	5543262	0.0	2.3	27.4	41.9	35.6	11.4	---	---	0
O	2914.0	S?	676033	5543758	5.5	10.9	29.8	20.0	32.0	4.2	---	---	160
P	2923.0	S	676039	5544130	10.9	10.3	86.5	103.3	29.1	19.0	1.5	17	0
Q	2938.8	S?	676025	5544786	15.1	26.1	71.7	106.7	18.9	43.5	0.9	3	128
R	2947.1	S?	676007	5545129	4.0	1.7	85.0	126.9	15.1	48.7	2.9	70	228
S	2969.3	H	675981	5546052	21.5	77.7	245.2	390.8	53.6	134.5	0.5	0	105
LINE 19050			FLIGHT 4										
A	3305.4	S?	677999	5537418	8.1	23.7	34.4	105.8	1.1	16.4	0.5	4	101
B	3286.7	S	677997	5538080	7.8	13.0	6.6	89.2	2.7	11.9	0.7	16	66
C	3278.3	S	677990	5538375	6.3	35.1	63.6	216.3	8.3	47.3	0.2	0	0
D	3249.7	H	677993	5539411	7.1	0.0	48.5	65.4	16.7	22.7	---	---	0
E	3245.0	S	677998	5539577	9.5	4.9	60.3	98.4	12.6	26.2	3.0	41	0
F	3228.1	S	677998	5540209	2.8	3.2	64.0	80.8	3.1	20.1	0.8	48	80
G	3189.9	S	677994	5541615	4.8	12.6	67.4	164.3	0.1	35.8	0.4	10	97
H	3175.2	S	677991	5542114	7.2	23.5	112.8	178.6	24.6	51.4	0.4	0	0

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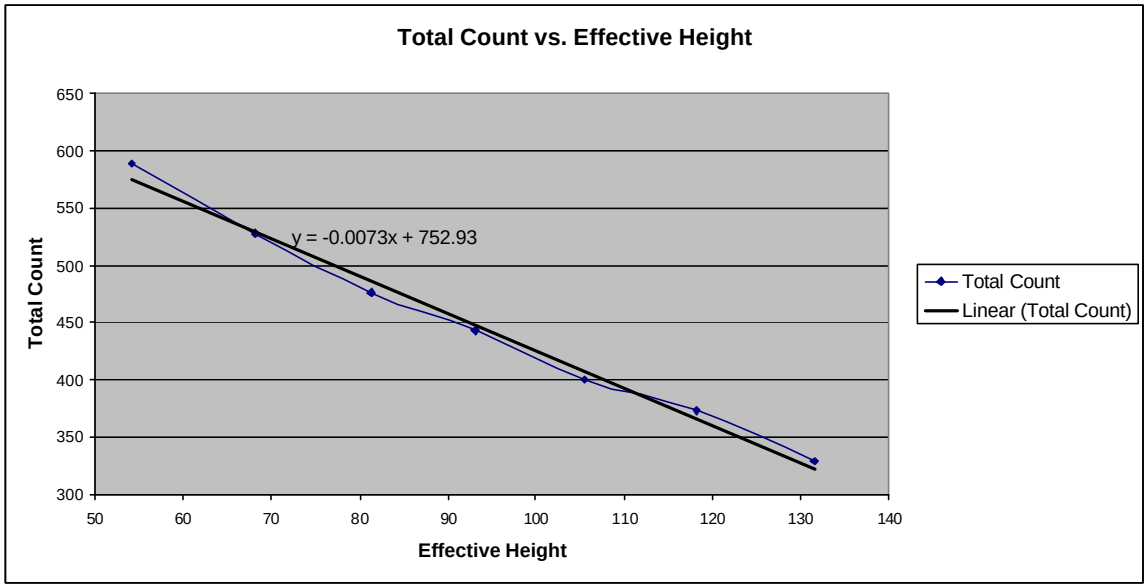
APPENDIX F

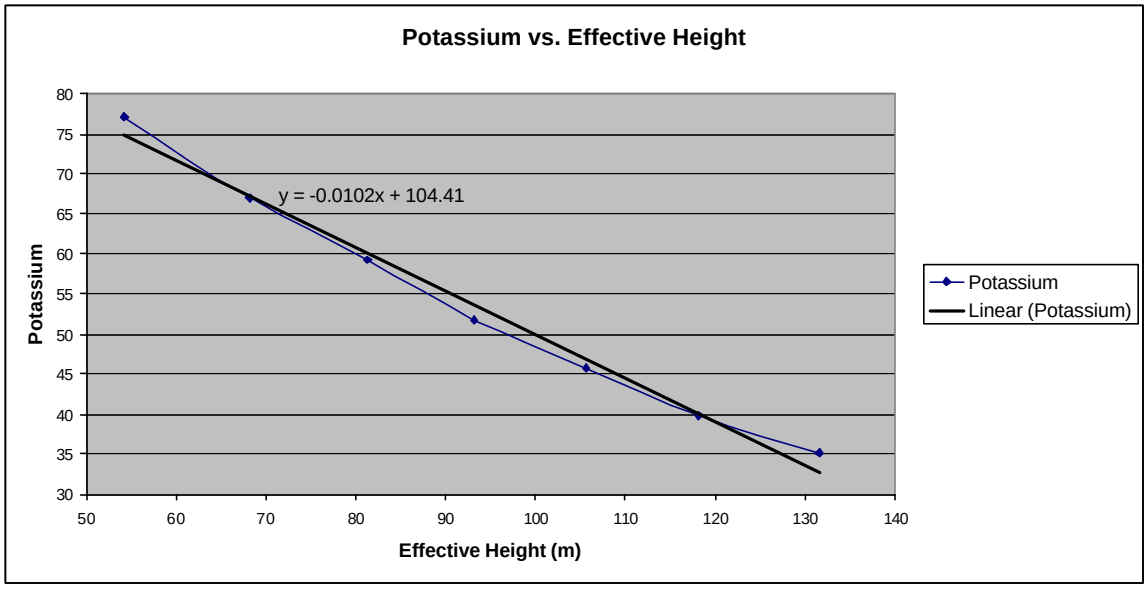
TESTS AND CALIBRATIONS

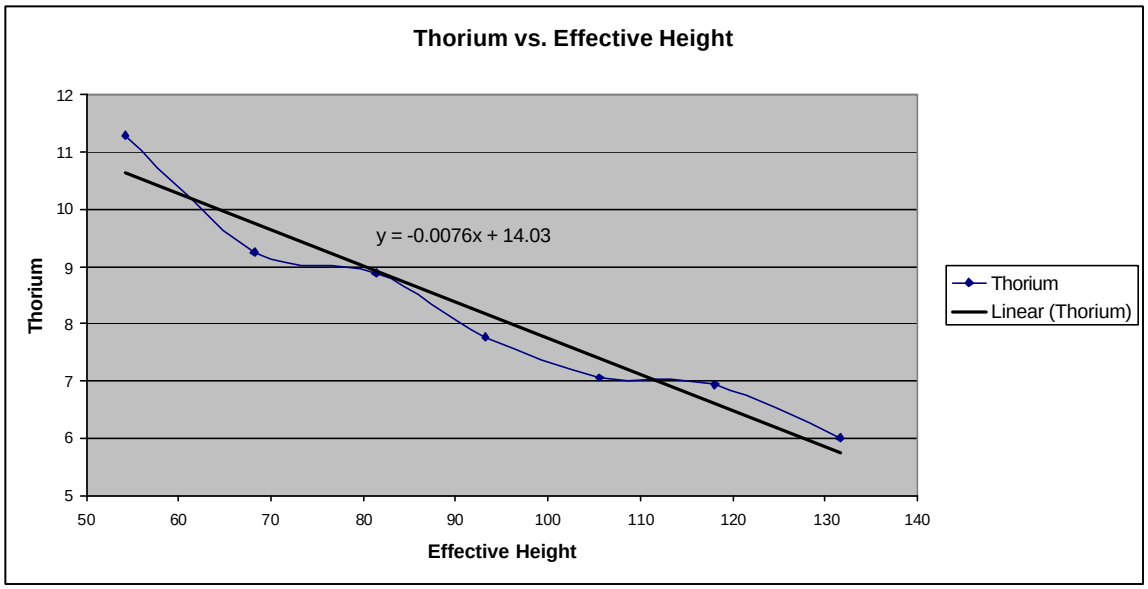
APPENDIX F

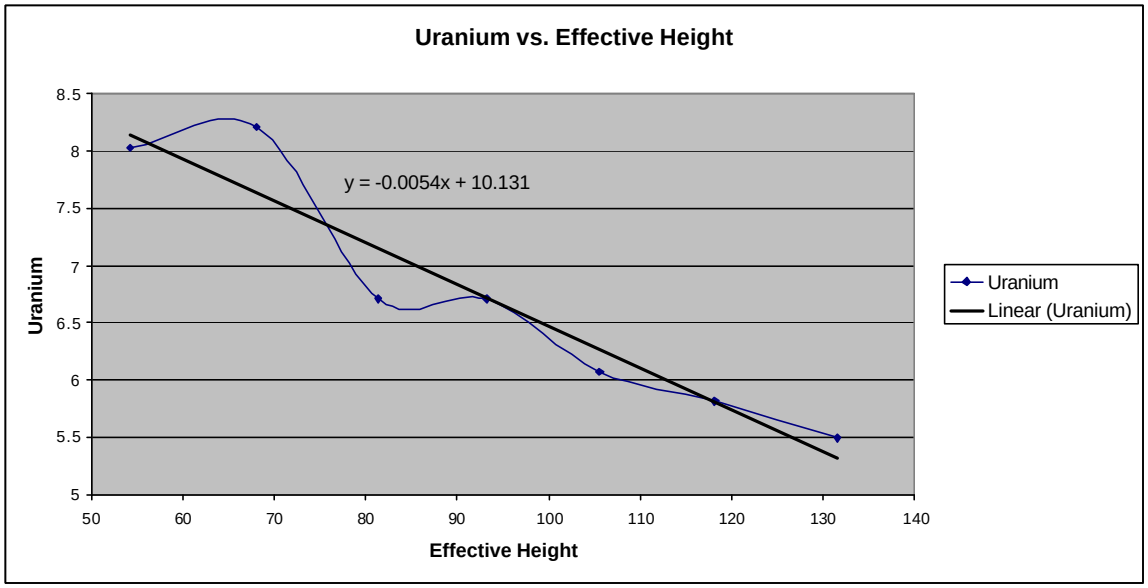
TESTS AND CALIBRATIONS

ALTITUDE ATTENUATION TESTS

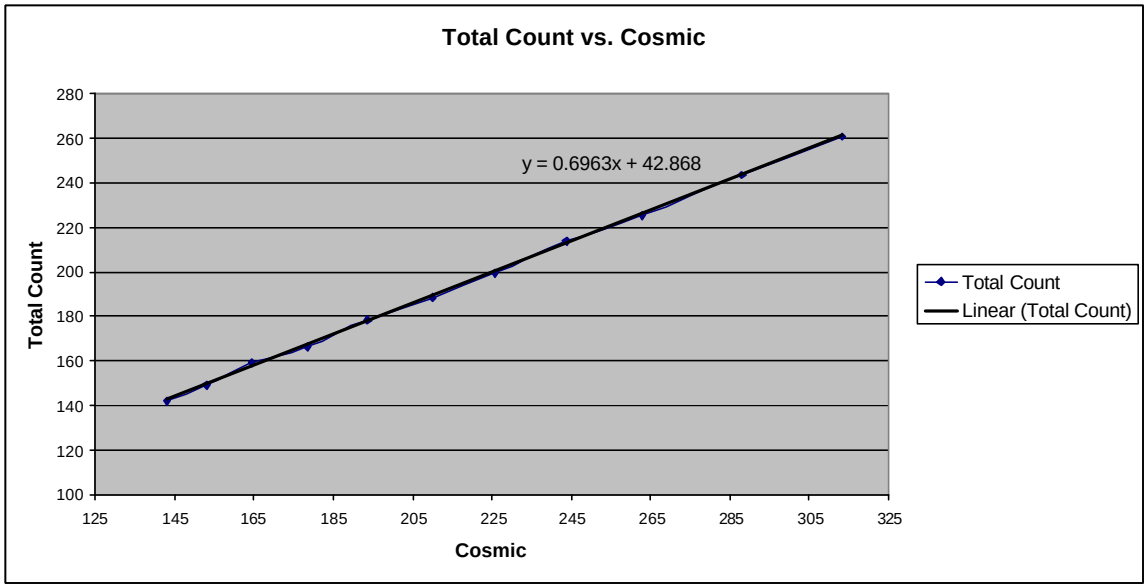


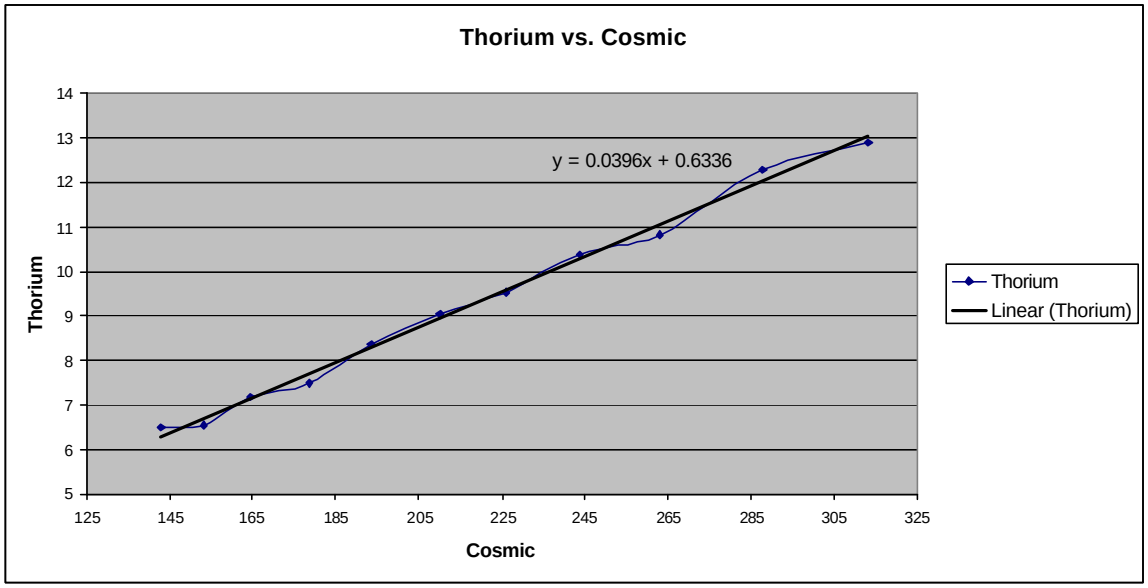

Potassium vs. Effective Height
y = -0.0102x + 104.41
Potassium
Effective Height (m)
Potassium
Linear (Potassium)

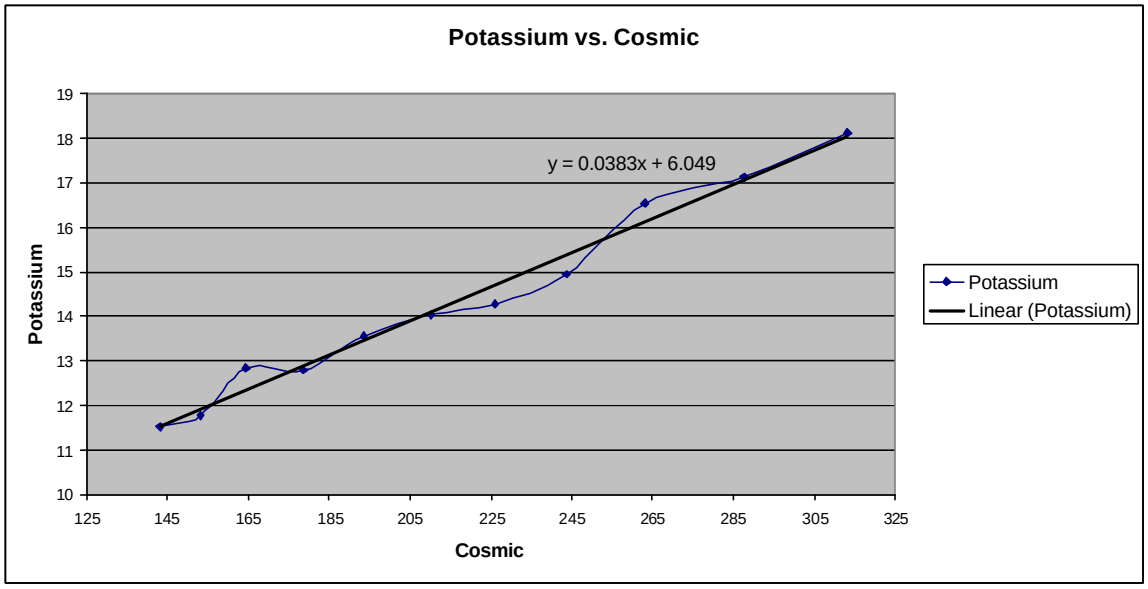

Thorium vs. Effective Height
y = -0.0076x + 14.03
Thorium
Effective Height
Thorium
Linear (Thorium)

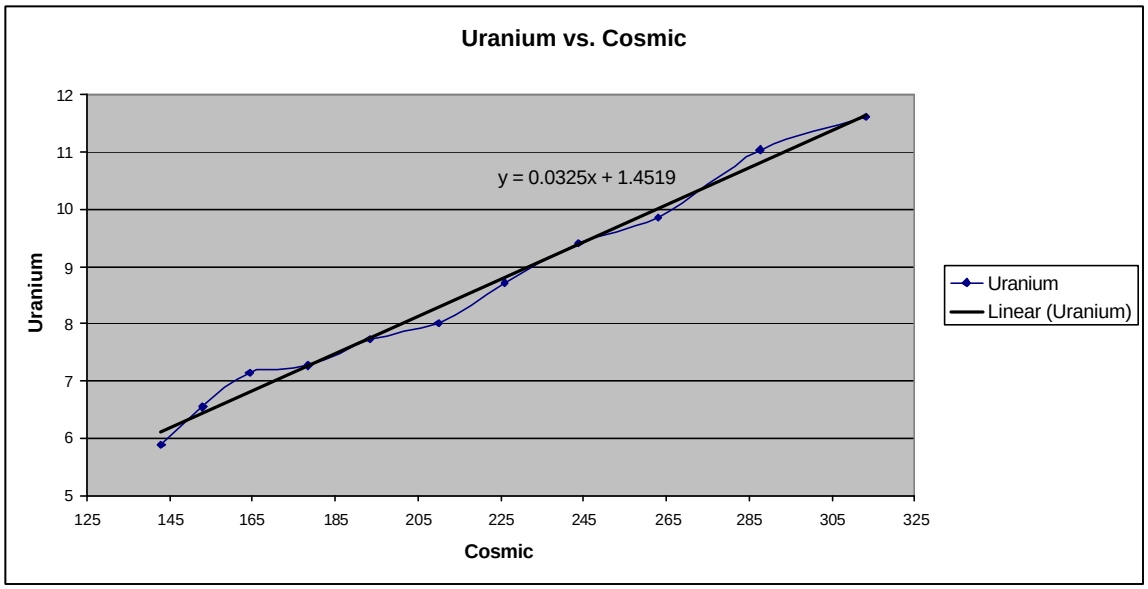


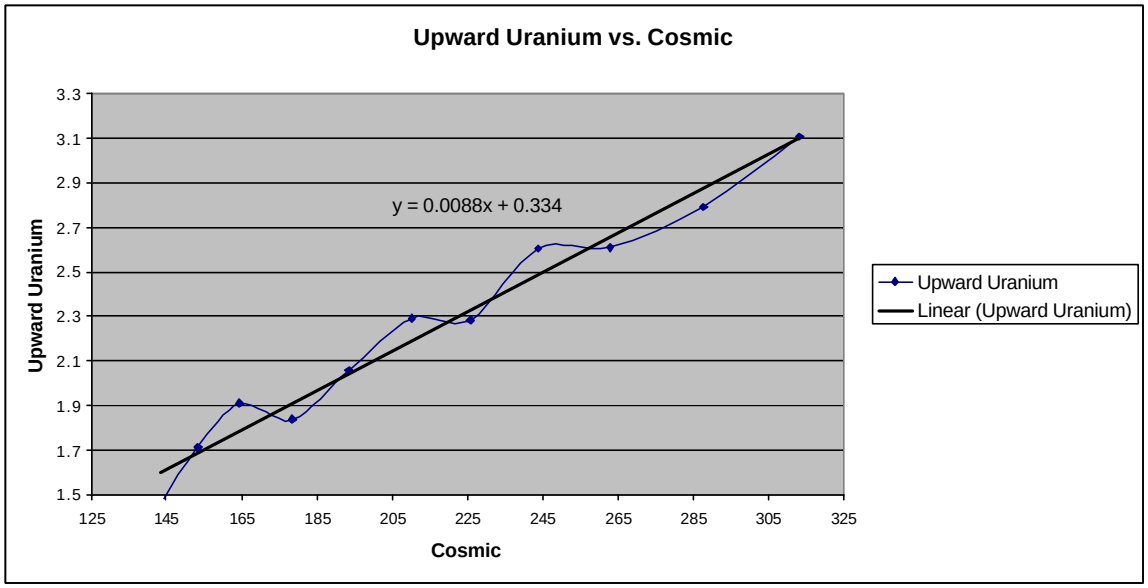
COSMIC TESTS


Total Count vs. Cosmic
y = 0.6963x + 42.868
Total Count
Cosmic
280
260
240
220
200
180
160
140
120
100
125
145
165
185
205
225
245
265
285
305
325
Total Count
Linear (Total Count)


Thorium vs. Cosmic
y = 0.0396x + 0.6336
Thorium
Cosmic
14
13
12
11
10
9
8
7
6
5
125
145
165
185
205
225
245
265
285
305
325
Thorium
Linear (Thorium)


Potassium vs. Cosmic
y = 0.0383x + 6.049
Potassium
Cosmic
Potassium
Linear (Potassium)
19
18
17
16
15
14
13
12
11
10
125
145
165
185
205
225
245
265
285
305
325


Uranium vs. Cosmic
y = 0.0325x + 1.4519
Uranium
Cosmic
Uranium
Linear (Uranium)
12
11
10
9
8
7
6
5
125
145
165
185
205
225
245
265
285
305
325


Upward Uranium vs. Cosmic
y = 0.0088x + 0.334
Upward Uranium
Cosmic
3.3
3.1
2.9
2.7
2.5
2.3
2.1
1.9
1.7
1.5
125
145
165
185
205
225
245
265
285
305
325
Upward Uranium
Linear (Upward Uranium)

APPENDIX G

RADIOMETRIC PROCESSING CONTROL FILE

APPENDIX G

RADIOMETRIC PROCESSING CONTROL FILE

```
////////////////////////////////////////////////
// Atlas Control/Workspace File
// # or // for commment
////////////////////////////////////////////////

CONTROL_BEGIN

  PROGRAM  = AGSCorrection
  VERSION  = 1.4.0

   ### Corrections to apply ###
       CorrectionType = Yes  Filtering
       CorrectionType = Yes  LiveTimeCorrection
       CorrectionType = Yes  CosmicAircraftBGRemove
       CorrectionType = Yes  CalcEffectiveHeight
       CorrectionType = No   RadonBGRemove
       CorrectionType = Yes  ComptonStripping
       CorrectionType = Yes  HeightCorrection
       CorrectionType = Yes  ConvertToConcentration


   ### Main I/O settings ###
       MainChannelIO|TC       = GR820_TC_DOWN --> TC_DOWN_COR
       MainChannelIO|K        = GR820_K_DOWN --> K_DOWN_COR
       MainChannelIO|U        = GR820_U_DOWN --> U_DOWN_COR
       MainChannelIO|Th       = GR820_TH_DOWN --> TH_DOWN_COR
       MainChannelIO|UpU      = GR820_U_UP --> U_UP_COR
       MainChannelIO|Cosmic   = GR820_COSMIC --> COSMIC_COR
       MainChannelIO|Spectrum = GR820_DOWN --> DOWN_COR

   ### Control Channel I/O settings ###
       ControlChannel|RadarAltimeter     = ALTRAD_MT   [metres]
       ControlChannel|Pressure/Barometer = KPA         [kPa]
       ControlChannel|Temperature        = TEMP_EXT


   ### Input for correction ###
       InputForCorrection    = ROIs


   ### Pre-filtering settings ###
       Filtering|TC      = 0
       Filtering|K       = 0
       Filtering|U       = 0
       Filtering|Th      = 0
```

```
    Filtering|UpU     = 0
    Filtering|Cosmic  = 9
    Filtering|RadarAltimeter     = 3
    Filtering|Pressure/Barometer = 3
    Filtering|Temperature        = 3

### Live-time correction settings ###
    LiveTimeChannel             = GR820_LIVE_TIME
    LiveTimeUnits               = milli-seconds
    ApplyLiveTimeCorrToUpU      = Yes

### Cosmic correction settings ###
    CosmicCorrParam|TC      = 0.696350,  42.868000
    CosmicCorrParam|K       = 0.038285,  6.049010
    CosmicCorrParam|U       = 0.032501,  1.451860
    CosmicCorrParam|Th      = 0.039573,  0.633575
    CosmicCorrParam|UpU     = 0.008828,  0.333958
    CosmicCorrParam|SpectrumBackgroundFile    =

### Effective-Height settings ###
    EffectiveHeightOutputChannel = EffectiveHeight
    EffectiveHeightOutputUnits   = metres

### Special Stripping (Compton Stripping) ###
    ComptonCorrParam_Stripping_Alpha     = 0.224000
    ComptonCorrParam_Stripping_Beta      = 0.393000
    ComptonCorrParam_Stripping_Gamma     = 0.717000
    ComptonCorrParam_AlphaPerMetre       = 0.000490
    ComptonCorrParam_BetaPerMetre        = 0.000650
    ComptonCorrParam_GammaPerMetre       = 0.000690
    ComptonCorrParam_GrastyBackscatter_a = 0.051000
    ComptonCorrParam_GrastyBackscatter_b = 0.004000
    ComptonCorrParam_GrastyBackscatter_g = 0.001000

### Height Correction settings ###
    SurveyHeightDatum     = 60.000000
    AttenuationCorrControl = 0
    HeightCorrParam|TC      = -0.007341, 300.000000
    HeightCorrParam|K       = -0.010257, 300.000000
    HeightCorrParam|U       = -0.005414, 300.000000
    HeightCorrParam|Th      = -0.007608, 300.000000

### Concentration settings ###
   ConcentrationParam|K       = Conc_K,  58.200000
   ConcentrationParam|U       = Conc_U,  6.480000
   ConcentrationParam|Th      = Conc_Th,  3.780000
   AirAbsorbedDoseRateParam   = DoseRate,  19.600000
```

```
      NaturalAirAbsorbedDoseRateParam = NaturalDoseRate,  13.100000,
5.670000, 2.490000


CONTROL_END
```

APPENDIX H

GLOSSARY

APPENDIX H

GLOSSARY OF AIRBORNE GEOPHYSICAL TERMS

Note: The definitions given in this glossary refer to the common terminology as used in airborne geophysics.

altitude attenuation: the absorption of gamma rays by the atmosphere between the earth and the detector. The number of gamma rays detected by a system decreases as the altitude increases.

apparent- : the ***physical parameters*** of the earth measured by a geophysical system are normally expressed as apparent, as in "apparent ***resistivity*****"**. This means that the measurement is limited by assumptions made about the geology in calculating the response measured by the geophysical system. Apparent resistivity calculated with ***HEM***, for example, generally assumes that the earth is a ***homogeneous half-space*** – not layered.

amplitude: The strength of the total electromagnetic field. In ***frequency domain*** it is most often the sum of the squares of ***in-phase*** and ***quadrature*** components. In multi-component electromagnetic surveys it is generally the sum of the squares of all three directional components.

analytic signal: The total amplitude of all the directions of magnetic ***gradient***. Calculated as the sum of the squares.

anisotropy: Having different ***physical parameters*** in different directions. This can be caused by layering or fabric in the geology. Note that a unit can be anisotropic, but still **homogeneous**.

anomaly: A localized change in the geophysical data characteristic of a discrete source, such as a conductive or magnetic body: something locally different from the **background**.

B-field: In time-domain **electromagnetic** surveys, the magnetic field component of the (electromagnetic) **field**. This can be measured directly, although more commonly it is calculated by integrating the time rate of change of the magnetic field **dB/dt**, as measured with a receiver coil.

background: The "normal" response in the geophysical data – that response observed over most of the survey area. **Anomalies** are usually measured relative to the background. In airborne gamma-ray spectrometric surveys the term defines the **cosmic**, radon, and aircraft responses in the absence of a signal from the ground.

base-level: The measured values in a geophysical system in the absence of any outside signal. All geophysical data are measured relative to the system base level.

base frequency: The frequency of the pulse repetition for a ***time-domain electromagnetic*** system. Measured between subsequent positive pulses.

bird: A common name for the pod towed beneath or behind an aircraft, carrying the geophysical sensor array.

bucking: The process of removing the strong ***signal*** from the ***primary field*** at the ***receiver*** from the data, to measure the ***secondary field***. It can be done electronically or mathematically. This is done in ***frequency-domain EM***, and to measure ***on-time*** in ***time-domain EM***.

calibration coil: A wire coil of known size and dipole moment, which is used to generate a field of known ***amplitude*** and ***phase*** in the receiver, for system calibration. Calibration coils can be external, or internal to the system. Internal coils may be called Q-coils.

coaxial coils: **[CX]** Coaxial coils in an HEM system are in the vertical plane, with their axes horizontal and collinear in the flight direction. These are most sensitive to vertical conductive objects in the ground, such as thin, steeply dipping conductors perpendicular to the flight direction. Coaxial coils generally give the sharpest anomalies over localized conductors. (See also ***coplanar coils***)

coil: A multi-turn wire loop used to transmit or detect electromagnetic fields. Time varying ***electromagnetic*** fields through a coil induce a voltage proportional to the strength of the field and the rate of change over time.

compensation: Correction of airborne geophysical data for the changing effect of the aircraft. This process is generally used to correct data in ***fixed-wing time-domain electromagnetic*** surveys (where the transmitter is on the aircraft and the receiver is moving), and magnetic surveys (where the sensor is on the aircraft, turning in the earth's magnetic field.

component: In ***frequency domain electromagnetic*** surveys this is one of the two **phase** measurements – ***in-phase or quadrature***. In "multi-component" electromagnetic surveys it is also used to define the measurement in one geometric direction (vertical, horizontal in-line and horizontal transverse – the Z, X and Y components).

Compton scattering: gamma ray photons will bounce off electrons as they pass through the earth and atmosphere, reducing their energy and then being detected by ***radiometric*** sensors at lower energy levels. See also ***stripping***.

conductance: See ***conductivity thickness***

conductivity: [s] The facility with which the earth or a geological formation conducts electricity. Conductivity is usually measured in milli-Siemens per metre (mS/m). It is the reciprocal of ***resistivity***.

conductivity-depth imaging: see ***conductivity-depth transform***.

conductivity-depth transform: A process for converting electromagnetic measurements to an approximation of the conductivity distribution vertically in the earth, assuming a ***layered earth***. (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)

conductivity thickness: [s **t**] The product of the ***conductivity***, and thickness of a large, tabular body. (It is also called the "conductivity-thickness product") In electromagnetic geophysics, the response of a thin plate-like conductor is proportional to the conductivity multiplied by thickness. For example a 10 metre thickness of 20 Siemens/m mineralization will be equivalent to 5 metres of 40 S/m; both have 200 S conductivity thickness. Sometimes referred to as conductance.

conductor: Used to describe anything in the ground more conductive than the surrounding geology. Conductors are most often clays or graphite, or hopefully some type of mineralization, but may also be man-made objects, such as fences or pipelines.

coplanar coils: **[CP]** In HEM, the coplanar coils lie in the horizontal plane with their axes vertical, and parallel. These coils are most sensitive to massive conductive bodies, horizontal layers, and the ***halfspace***.

cosmic ray: High energy sub-atomic particles from outer space that collide with the earth's atmosphere to produce a shower of gamma rays (and other particles) at high energies.

counts (per second): The number of ***gamma-rays*** detected by a gamma-ray ***spectrometer*.** The rate depends on the geology, but also on the size and sensitivity of the detector.

culture: A term commonly used to denote any man-made object that creates a geophysical anomaly. Includes, but not limited to, power lines, pipelines, fences, and buildings.

current channelling: See current gathering.

current gathering: The tendency of electrical currents in the ground to channel into a conductive formation. This is particularly noticeable at higher frequencies or early time channels when the formation is long and parallel to the direction of current flow. This tends to enhance anomalies relative to inductive currents (see also ***induction***). Also known as current channelling.

daughter products: The radioactive natural sources of gamma-rays decay from the original "parent" element (commonly potassium, uranium, and thorium) to one or more lower-energy "daughter" elements. Some of these lower energy elements are also

radioactive and decay further. ***Gamma-ray spectrometry*** surveys may measure the gamma rays given off by the original element or by the decay of the daughter products.

dB/dt: As the ***secondary electromagnetic field*** changes with time, the magnetic field [**B**] component induces a voltage in the receiving ***coil***, which is proportional to the rate of change of the magnetic field over time.

decay: In ***time-domain electromagnetic*** theory, the weakening over time of the ***eddy currents*** in the ground, and hence the ***secondary field*** after the ***primary field*** electromagnetic pulse is turned off. In ***gamma-ray spectrometry***, the radioactive breakdown of an element, generally potassium, uranium, thorium, or one of their ***daughter*** products.

decay constant: see time constant.

decay series: In ***gamma-ray spectrometry***, a series of progressively lower energy ***daughter products*** produced by the radioactive breakdown of uranium or thorium.

depth of exploration: The maximum depth at which the geophysical system can detect the target. The depth of exploration depends very strongly on the type and size of the target, the contrast of the target with the surrounding geology, the homogeneity of the surrounding geology, and the type of geophysical system. One measure of the maximum depth of exploration for an electromagnetic system is the depth at which it can detect the strongest conductive target – generally a highly conductive horizontal layer.

differential resistivity: A process of transforming ***apparent resistivity*** to an approximation of layer resistivity at each depth. The method uses multi-frequency HEM data and approximates the effect of shallow layer ***conductance*** determined from higher frequencies to estimate the deeper conductivities (Huang and Fraser, 1996)

dipole moment: [NIA] For a transmitter, the product of the area of a ***coil***, the number of turns of wire, and the current flowing in the coil. At a distance significantly larger than the size of the coil, the magnetic field from a coil will be the same if the dipole moment product is the same. For a receiver coil, this is the product of the area and the number of turns. The sensitivity to a magnetic field (assuming the source is far away) will be the same if the dipole moment is the same.

diurnal: The daily variation in a natural field, normally used to describe the natural fluctuations (over hours and days) of the earth's magnetic field.

dielectric permittivity: **[e]** The capacity of a material to store electrical charge, this is most often measured as the relative permittivity [ε_r], or ratio of the material dielectric to that of free space. The effect of high permittivity may be seen in HEM data at high frequencies over highly resistive geology as a reduced or negative ***in-phase***, and higher ***quadrature*** data.

drape: To fly a survey following the terrain contours, maintaining a constant altitude above the local ground surface. Also applied to re-processing data collected at varying altitudes above ground to simulate a survey flown at constant altitude.

drift: Long-time variations in the base-level or calibration of an instrument.

eddy currents: The electrical currents induced in the ground, or other conductors, by a time-varying ***electromagnetic field*** (usually the ***primary field***). Eddy currents are also induced in the aircraft's metal frame and skin; a source of ***noise*** in EM surveys.

electromagnetic: **[EM]** Comprised of a time-varying electrical and magnetic field. Radio waves are common electromagnetic fields. In geophysics, an electromagnetic system is one which transmits a time-varying ***primary field*** to induce ***eddy currents*** in the ground, and then measures the ***secondary field*** emitted by those eddy currents.

energy window: A broad spectrum of ***gamma-ray*** energies measured by a spectrometric survey. The energy of each gamma-ray is measured and divided up into numerous discrete energy levels, called windows.

equivalent (thorium or uranium): The amount of radioelement calculated to be present, based on the gamma-rays measured from a **daughter** element. This assumes that the ***decay series*** is in equilibrium – progressing normally.

exposure rate: in radiometric surveys, a calculation of the total exposure rate due to gamma rays at the ground surface. It is used as a measurement of the concentration of all the **radioelements** at the surface. See also: **natural exposure rate**.

fiducial, or fid: Timing mark on a survey record. Originally these were timing marks on a profile or film; now the term is generally used to describe 1-second interval timing records in digital data, and on maps or profiles.

Figure of Merit: **(FOM)** A sum of the 12 distinct magnetic noise variations measured by each of four flight directions, and executing three aircraft attitude variations (yaw, pitch, and roll) for each direction. The flight directions are generally parallel and perpendicular to planned survey flight directions. The FOM is used as a measure of the **manoeuvre noise** before and after **compensation.**

fixed-wing: Aircraft with wings, as opposed to "rotary wing" helicopters.

footprint: This is a measure of the area of sensitivity under the aircraft of an airborne geophysical system. The footprint of an ***electromagnetic*** system is dependent on the altitude of the system, the orientation of the transmitter and receiver and the separation between the receiver and transmitter, and the conductivity of the ground. The footprint of

a ***gamma-ray spectrometer*** depends mostly on the altitude. For all geophysical systems, the footprint also depends on the strength of the contrasting ***anomaly***.

frequency domain: An ***electromagnetic*** system which transmits a ***primary field*** that oscillates smoothly over time (sinusoidal), inducing a similarly varying electrical current in the ground. These systems generally measure the changes in the ***amplitude*** and ***phase*** of the ***secondary field*** from the ground at different frequencies by measuring the **in-phase** and **quadrature** phase components. See also ***time-domain***.

full-stream data: Data collected and recorded continuously at the highest possible sampling rate. Normal data are stacked (see ***stacking***) over some time interval before recording.

gamma-ray: A very high-energy photon, emitted from the nucleus of an atom as it undergoes a change in energy levels.

gamma-ray spectrometry: Measurement of the number and energy of natural (and sometimes man-made) gamma-rays across a range of photon energies.

gradient: In magnetic surveys, the gradient is the change of the magnetic field over a distance, either vertically or horizontally in either of two directions. Gradient data is often measured, or calculated from the total magnetic field data because it changes more quickly over distance than the ***total magnetic field***, and so may provide a more precise measure of the location of a source. See also ***analytic signal***.

ground effect: The response from the earth. A common calibration procedure in many geophysical surveys is to fly to altitude high enough to be beyond any measurable response from the ground, and there establish ***base levels*** or ***backgrounds***.

half-space: A mathematical model used to describe the earth – as infinite in width, length, and depth below the surface. The most common halfspace models are ***homogeneous*** and ***layered earth***.

heading error: A slight change in the magnetic field measured when flying in opposite directions.

HEM: Helicopter ElectroMagnetic, This designation is most commonly used for helicopter-borne, ***frequency-domain*** electromagnetic systems. At present, the transmitter and receivers are normally mounted in a ***bird*** carried on a sling line beneath the helicopter.

herringbone pattern: A pattern created in geophysical data by an asymmetric system, where the **anomaly** may be extended to either side of the source, in the direction of flight. Appears like fish bones, or like the teeth of a comb, extending either side of centre, each tooth an alternate flight line.

homogeneous: This is a geological unit that has the same ***physical parameters*** throughout its volume. This unit will create the same response to an HEM system anywhere, and the HEM system will measure the same apparent ***resistivity*** anywhere. The response may change with system direction (see ***anisotropy***).

HTEM: Helicopter Time-domain ElectroMagnetic, This designation is used for the new generation of helicopter-borne, ***time-domain*** electromagnetic systems.

in-phase: the component of the measured ***secondary field*** that has the same phase as the transmitter and the ***primary field***. The in-phase component is stronger than the ***quadrature*** phase over relatively higher ***conductivity***.

induction: Any time-varying electromagnetic field will induce (cause) electrical currents to flow in any object with non-zero ***conductivity***. (see ***eddy currents***)

induction number: also called the "response parameter", this number combines many of the most significant parameters affecting the ***EM*** response into one parameter against which to compare responses. For a ***layered earth*** the response parameter is $\mu\omega\sigma h^2$ and for a large, flat, ***conductor*** it is $\mu\omega\sigma$**th**, where μ is the ***magnetic permeability***, ω is the angular ***frequency***, σ is the **conductivity**, t is the thickness (for the flat conductor) and h is the height of the system above the conductor.

inductive limit: When the frequency of an EM system is very high, or the **conductivity** of the target is very high, the response measured will be entirely **in-phase** with no **quadrature** (**phase** angle =0). The in-phase response will remain constant with further increase in conductivity or frequency. The system can no longer detect changes in conductivity of the target.

infinite: In geophysical terms, an "infinite' dimension is one much greater than the ***footprint*** of the system, so that the system does not detect changes at the edges of the object.

International Geomagnetic Reference Field: **[IGRF]** An approximation of the smooth magnetic field of the earth, in the absence of variations due to local geology. Once the IGRF is subtracted from the measured magnetic total field data, any remaining variations are assumed to be due to local geology. The IGRF also predicts the slow changes of the field up to five years in the future.

inversion, or **inverse modeling**: A process of converting geophysical data to an earth model, which compares theoretical models of the response of the earth to the data measured, and refines the model until the response closely fits the measured data (Huang and Palacky, 1991)

layered earth: A common geophysical model which assumes that the earth is horizontally layered – the ***physical parameters*** are constant to ***infinite*** distance horizontally, but change vertically.

magnetic permeability: **[μ]** This is defined as the ratio of magnetic induction to the inducing magnetic field. The relative magnetic permeability [μ_r] is often quoted, which is the ratio of the rock permeability to the permeability of free space. In geology and geophysics, the ***magnetic susceptibility*** is more commonly used to describe rocks.

magnetic susceptibility: **[k]** A measure of the degree to which a body is magnetized. In SI units this is related to relative ***magnetic permeability*** by $k=\mu_r-1$, and is a dimensionless unit. For most geological material, susceptibility is influenced primarily by the percentage of magnetite. It is most often quoted in units of 10^{-6}. In HEM data this is most often apparent as a negative ***in-phase*** component over high susceptibility, high ***resistivity*** geology such as diabase dikes.

manoeuvre noise: variations in the magnetic field measured caused by changes in the relative positions of the magnetic sensor and magnetic objects or electrical currents in the aircraft. This type of noise is generally corrected by magnetic **compensation**.

model: Geophysical theory and applications generally have to assume that the geology of the earth has a form that can be easily defined mathematically, called the model. For example steeply dipping **conductor**s are generally modeled as being **infinite** in horizontal and depth extent, and very thin. The earth is generally modeled as horizontally layered, each layer infinite in extent and uniform in characteristic. These models make the mathematics to describe the response of the (normally very complex) earth practical. As theory advances, and computers become more powerful, the useful models can become more complex.

natural exposure rate: in radiometric surveys, a calculation of the total exposure rate due to natural-source gamma rays at the ground surface. It is used as a measurement of the concentration of all the natural **radioelements** at the surface. See also: **exposure rate**.

noise: That part of a geophysical measurement that the user does not want. Typically this includes electronic interference from the system, the atmosphere (***sferics***), and man-made sources. This can be a subjective judgment, as it may include the response from geology other than the target of interest. Commonly the term is used to refer to high frequency (short period) interference. See also ***drift***.

Occam's inversion: an ***inversion*** process that matches the measured ***electromagnetic*** data to a theoretical model of many, thin layers with constant thickness and varying resistivity (Constable et al, 1987).

off-time: In a ***time-domain electromagnetic*** survey, the time after the end of the ***primary field pulse***, and before the start of the next pulse.

on-time: In a ***time-domain electromagnetic*** survey, the time during the ***primary field pulse***.

overburden: In engineering and mineral exploration terms, this most often means the soil on top of the unweathered bedrock. It may be sand, glacial till, or weathered rock.

Phase, phase angle: The angular difference in time between a measured sinusoidal electromagnetic field and a reference – normally the primary field. The phase is calculated from $\tan^{-1}$(***in-phase*** / ***quadrature***).

physical parameters: These are the characteristics of a geological unit. For electromagnetic surveys, the important parameters are ***conductivity***, ***magnetic permeability*** (or ***susceptibility***) and ***dielectric permittivity***; for magnetic surveys the parameter is magnetic susceptibility, and for gamma ray spectrometric surveys it is the concentration of the major radioactive elements: potassium, uranium, and thorium.

permittivity: see ***dielectric permittivity***.

permeability: see ***magnetic permeability***.

primary field: the EM field emitted by a transmitter. This field induces ***eddy currents*** in (energizes) the conductors in the ground, which then create their own ***secondary* fields**.

pulse: In time-domain EM surveys, the short period of intense ***primary*** field transmission. Most measurements (the ***off-time***) are measured after the pulse. **On-time** measurements may be made during the pulse.

quadrature: that component of the measured ***secondary field*** that is phase-shifted 90° from the ***primary field***. The quadrature component tends to be stronger than the ***in-phase*** over relatively weaker ***conductivity***.

Q-coils: see ***calibration coil***.

radioelements: This normally refers to the common, naturally-occurring radioactive elements: potassium (K), uranium (U), and thorium (Th). It can also refer to man-made radioelements, most often cobalt (Co) and cesium (Cs)

radiometric: Commonly used to refer to ***gamma ray*** spectrometry.

radon: A radioactive daughter product of uranium and thorium, radon is a gas which can leak into the atmosphere, adding to the non-geological background of a gamma-ray spectrometric survey.

receiver: the ***signal*** detector of a geophysical system. This term is most often used in active geophysical systems – systems that transmit some kind of signal. In airborne ***electromagnetic*** surveys it is most often a ***coil***. (see also, ***transmitter***)

resistivity: **[**r**]** The strength with which the earth or a geological formation resists the flow of electricity, typically the flow induced by the ***primary field*** of the electromagnetic transmitter. Normally expressed in ohm-metres, it is the reciprocal of ***conductivity***.

resistivity-depth transforms: similar to ***conductivity depth transforms***, but the calculated ***conductivity*** has been converted to ***resistivity***.

resistivity section: an approximate vertical section of the resistivity of the layers in the earth. The resistivities can be derived from the ***apparent resistivity***, the ***differential resistivities***, ***resistivity-depth transforms***, or ***inversions***.

Response parameter: another name for the **induction number**.

secondary field: The field created by conductors in the ground, as a result of electrical currents induced by the ***primary field*** from the ***electromagnetic*** transmitter. Airborne ***electromagnetic*** systems are designed to create and measure a secondary field.

Sengpiel section: a ***resistivity section*** derived using the ***apparent resistivity*** and an approximation of the depth of maximum sensitivity for each frequency.

sferic: Lightning, or the ***electromagnetic*** signal from lightning, it is an abbreviation of "atmospheric discharge". These appear to magnetic and electromagnetic sensors as sharp "spikes" in the data. Under some conditions lightning storms can be detected from hundreds of kilometres away. (see ***noise***)

signal: That component of a measurement that the user wants to see – the response from the targets, from the earth, etc. (See also ***noise***)

skin depth: A measure of the depth of penetration of an electromagnetic field into a material. It is defined as the depth at which the primary field decreases to 1/e of the field at the surface. It is calculated by approximately 503 x $\sqrt{}$(resistivity/frequency). Note that depth of penetration is greater at higher ***resistivity*** and/or lower ***frequency***.

spectrometry: Measurement across a range of energies, where ***amplitude*** and energy are defined for each measurement. In gamma-ray spectrometry, the number of gamma rays are measured for each energy ***window***, to define the ***spectrum***.

spectrum: In ***gamma ray spectrometry***, the continuous range of energy over which gamma rays are measured. In ***time-domain electromagnetic*** surveys, the spectrum is the energy of the **pulse** distributed across an equivalent, continuous range of frequencies.

spheric: see ***sferic***.

stacking: Summing repeat measurements over time to enhance the repeating ***signal***, and minimize the random ***noise***.

stripping: Estimation and correction for the gamma ray photons of higher and lower energy that are observed in a particular ***energy window***. See also ***Compton scattering***.

susceptibility: See ***magnetic susceptibility***.

tau: [t] Often used as a name for the ***time constant***.

TDEM: ***time domain electromagnetic***.

thin sheet: A standard model for electromagnetic geophysical theory. It is usually defined as a thin, flat-lying conductive sheet, ***infinite*** in both horizontal directions. (see also ***vertical plate***)

tie-line: A survey line flown across most of the ***traverse lines***, generally perpendicular to them, to assist in measuring ***drift*** and ***diurnal*** variation. In the short time required to fly a tie-line it is assumed that the drift and/or diurnal will be minimal, or at least changing at a constant rate.

time constant: The time required for an ***electromagnetic*** field to decay to a value of 1/e of the original value. In ***time-domain*** electromagnetic data, the time constant is proportional to the size and ***conductance*** of a tabular conductive body. Also called the decay constant.

Time channel: In ***time-domain electromagnetic*** surveys the decaying ***secondary field*** is measured over a period of time, and the divided up into a series of consecutive discrete measurements over that time.

time-domain: ***Electromagnetic*** system which transmits a pulsed, or stepped ***electromagnetic*** field. These systems induce an electrical current (***eddy current***) in the ground that persists after the ***primary field*** is turned off, and measure the change over time of the ***secondary field*** created as the currents ***decay***. See also ***frequency-domain***.

total energy envelope: The sum of the squares of the three ***components*** of the ***time-domain electromagnetic secondary field***. Equivalent to the ***amplitude*** of the secondary field.

transient: Time-varying. Usually used to describe a very short period pulse of ***electromagnetic*** field.

transmitter: The source of the ***signa***l to be measured in a geophysical survey. In airborne ***EM*** it is most often a **coil** carrying a time-varying electrical current, transmitting the ***primary field***. (see also ***receiver***)

traverse line: A normal geophysical survey line. Normally parallel traverse lines are flown across the property in spacing of 50 m to 500 m, and generally perpendicular to the target geology.

vertical plate: A standard model for electromagnetic geophysical theory. It is usually defined as thin conductive sheet, ***infinite*** in horizontal dimension and depth extent. (see also ***thin shee***t)

waveform: The shape of the ***electromagnetic pulse*** from a ***time-domain*** electromagnetic transmitter.

window: A discrete portion of a ***gamma-ray spectrum*** or ***time-domain electromagnetic decay***. The continuous energy spectrum or ***full-stream*** data are grouped into windows to reduce the number of samples, and reduce ***noise***.

Version 1.5, November 29, 2005
Greg Hodges,
Chief Geophysicist
Fugro Airborne Surveys, Toronto

Common Symbols and Acronyms

k Magnetic susceptibility
e Dielectric permittivity
m, m_r Magnetic permeability, relative permeability
r, r_a Resistivity, apparent resistivity
s, s_a Conductivity, apparent conductivity
s**t** Conductivity thickness
t Tau, or time constant
W**m** ohm-metres, units of resistivity
AGS Airborne gamma ray spectrometry.
CDT Conductivity-depth transform, conductivity-depth imaging (Macnae and Lamontagne, 1987; Wolfgram and Karlik, 1995)
CPI, CPQ Coplanar in-phase, quadrature
CPS Counts per second
CTP Conductivity thickness product
CXI, CXQ Coaxial, in-phase, quadrature
FOM Figure of Merit
fT femtoteslas, normal unit for measurement of B-Field
EM Electromagnetic
keV kilo electron volts – a measure of gamma-ray energy
MeV mega electron volts – a measure of gamma-ray energy 1MeV = 1000keV
NIA dipole moment: turns x current x Area
nT nanotesla, a measure of the strength of a magnetic field
nG/h nanoGreys/hour – gamma ray dose rate at ground level
ppm parts per million – a measure of secondary field or noise relative to the primary or radioelement concentration.
pT/s picoteslas per second: Units of decay of secondary field, dB/dt
S siemens – a unit of conductance
x: the horizontal component of an EM field parallel to the direction of flight.
y: the horizontal component of an EM field perpendicular to the direction of flight.
z: the vertical component of an EM field.

References:

Constable, S.C., Parker, R.L., And Constable, C.G., 1987, Occam's inversion: a practical algorithm for generating smooth models from electromagnetic sounding data: Geophysics, 52, 289-300

Huang, H. and Fraser, D.C, 1996. The differential parameter method for muiltifrequency airborne resistivity mapping. Geophysics, 55, 1327-1337

Huang, H. and Palacky, G.J., 1991, Damped least-squares inversion of time-domain airborne EM data based on singular value decomposition: Geophysical Prospecting, v.39, 827-844

Macnae, J. and Lamontagne, Y., 1987, Imaging quasi-layered conductive structures by simple processing of transient electromagnetic data: Geophysics, v52, 4, 545-554.

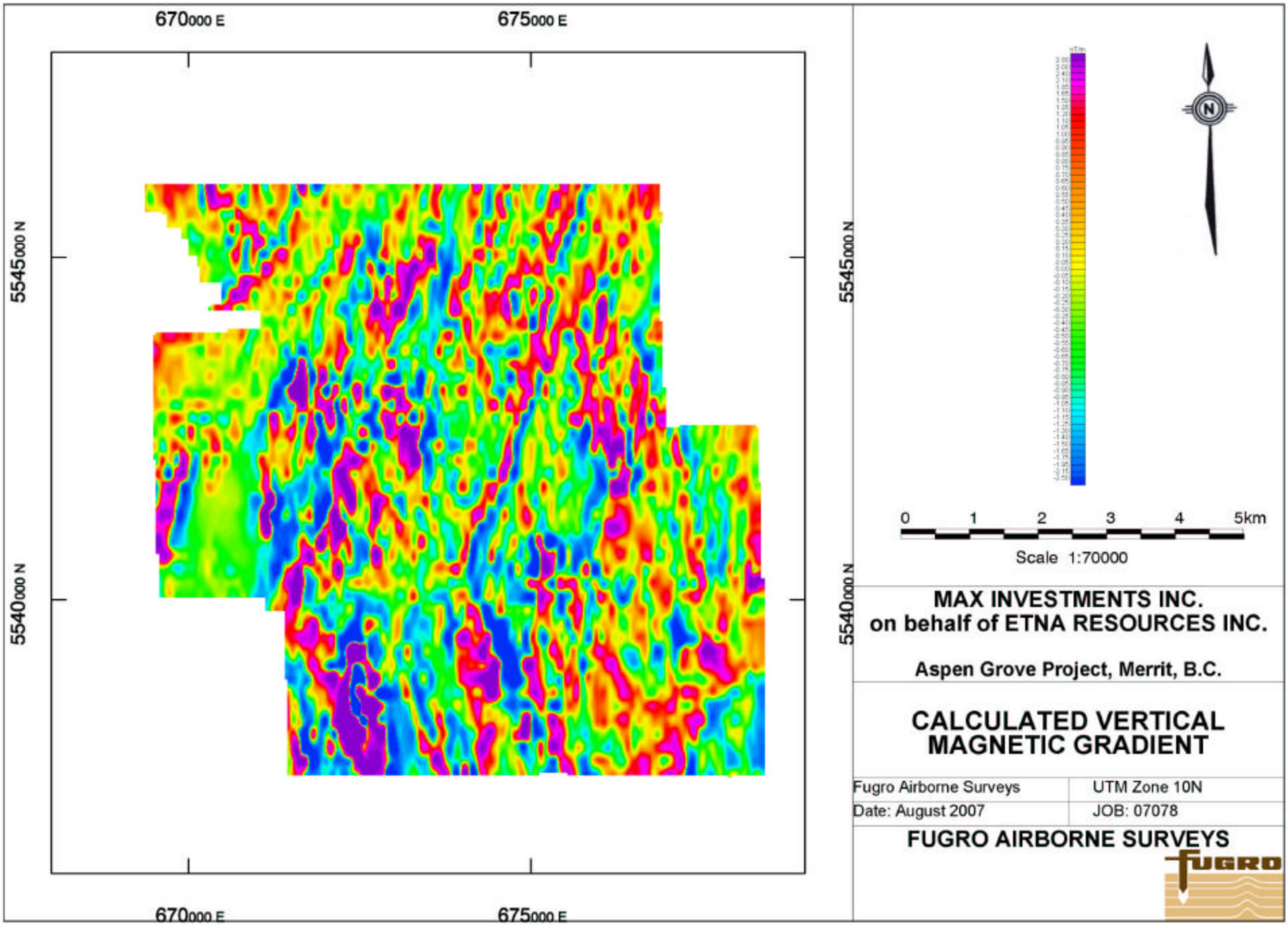
Sengpiel, K-P. 1988, Approximate inversion of airborne EM data from a multi-layered ground. Geophysical Prospecting, 36, 446-459

Wolfgram, P. and Karlik, G., 1995, Conductivity-depth transform of GEOTEM data: Exploration Geophysics, 26, 179-185.

Yin, C. and Fraser, D.C. (2002), The effect of the electrical anisotropy on the responses of helicopter-borne frequency domain electromagnetic systems, Submitted to *Geophysical Prospecting*

APPENDIX I

DATA MAPS



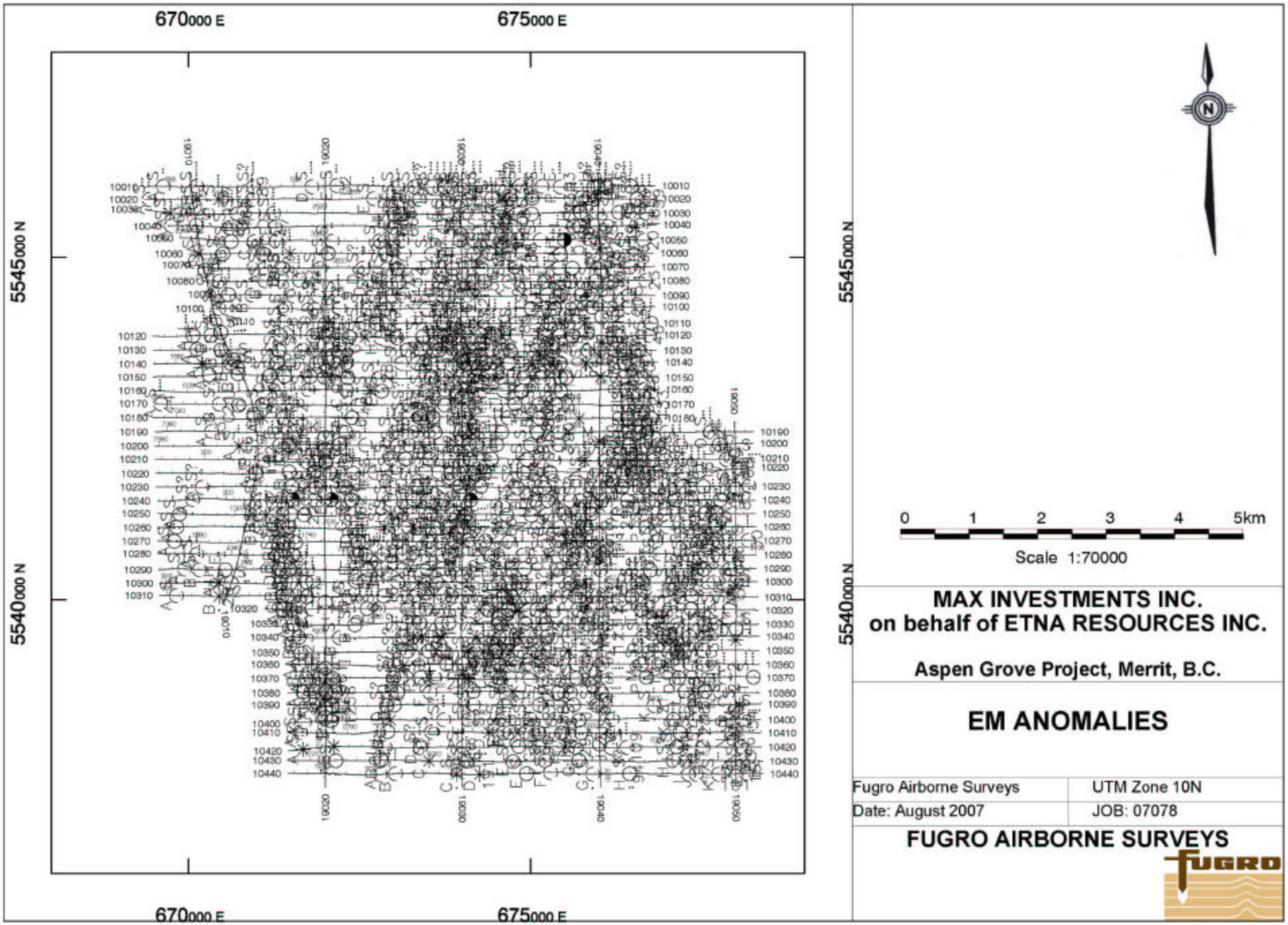
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

CALCULATED VERTICAL MAGNETIC GRADIENT

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



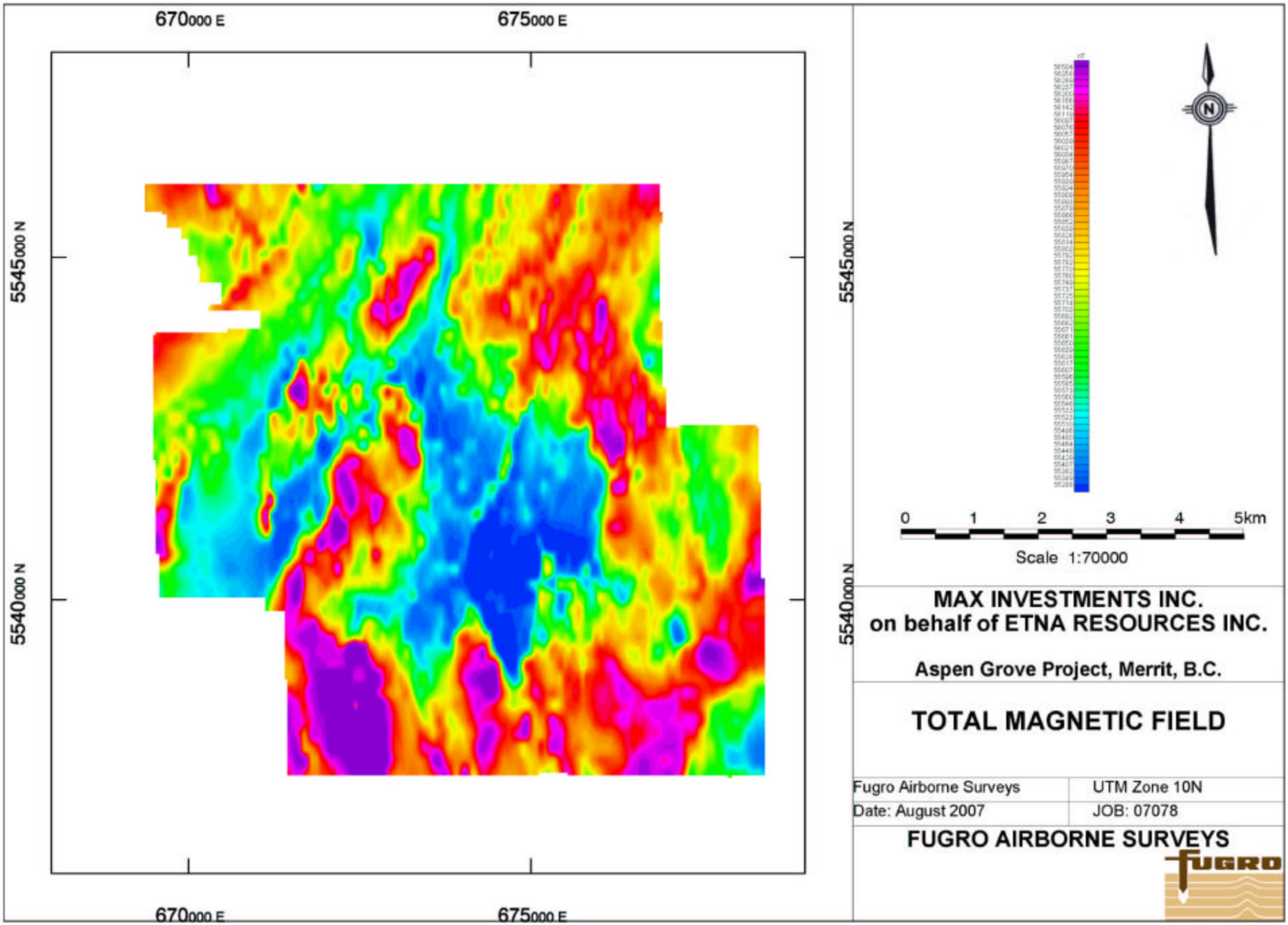
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

EM ANOMALIES

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



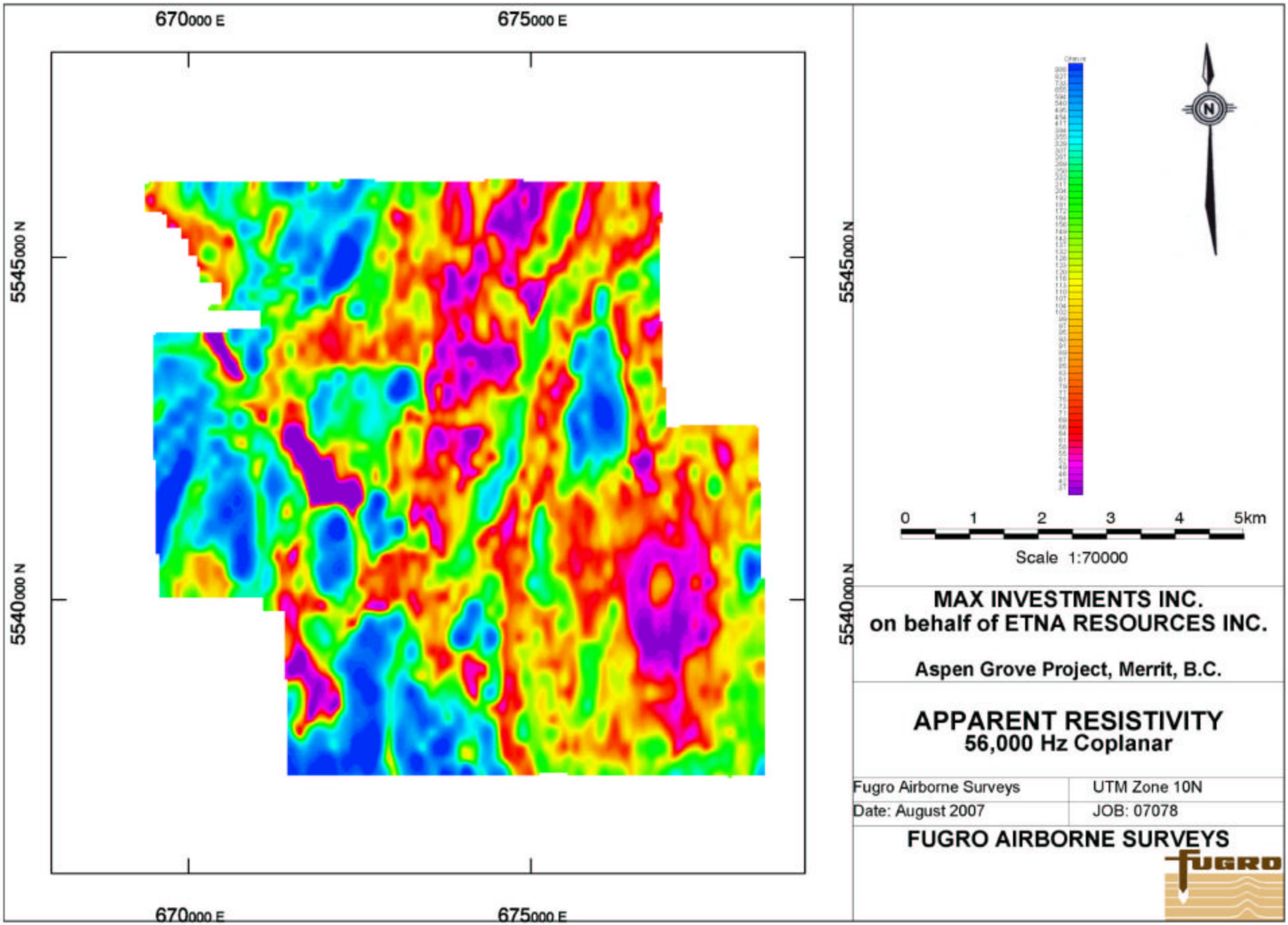
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

TOTAL MAGNETIC FIELD

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



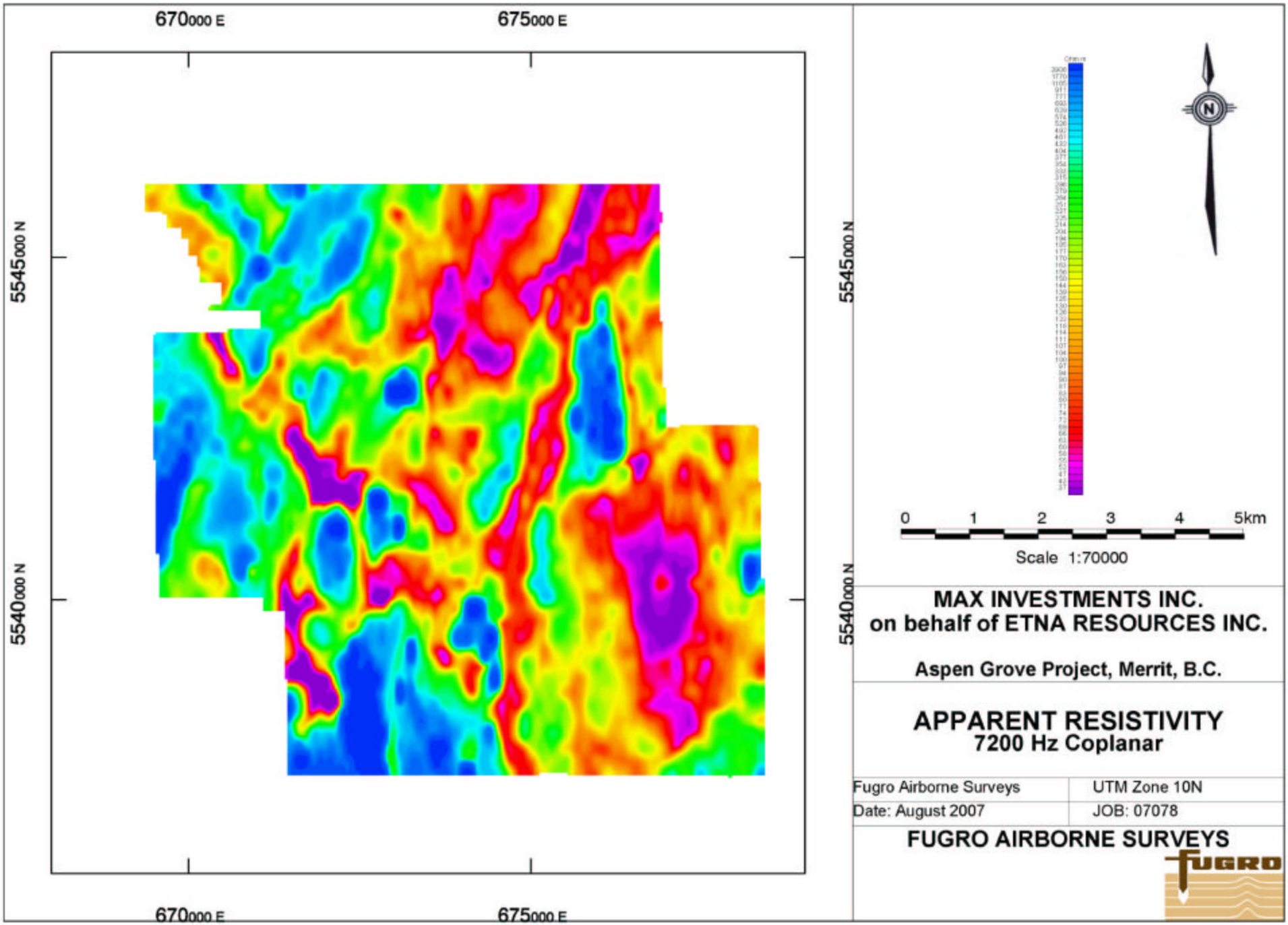
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

APPARENT RESISTIVITY
56,000 Hz Coplanar

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



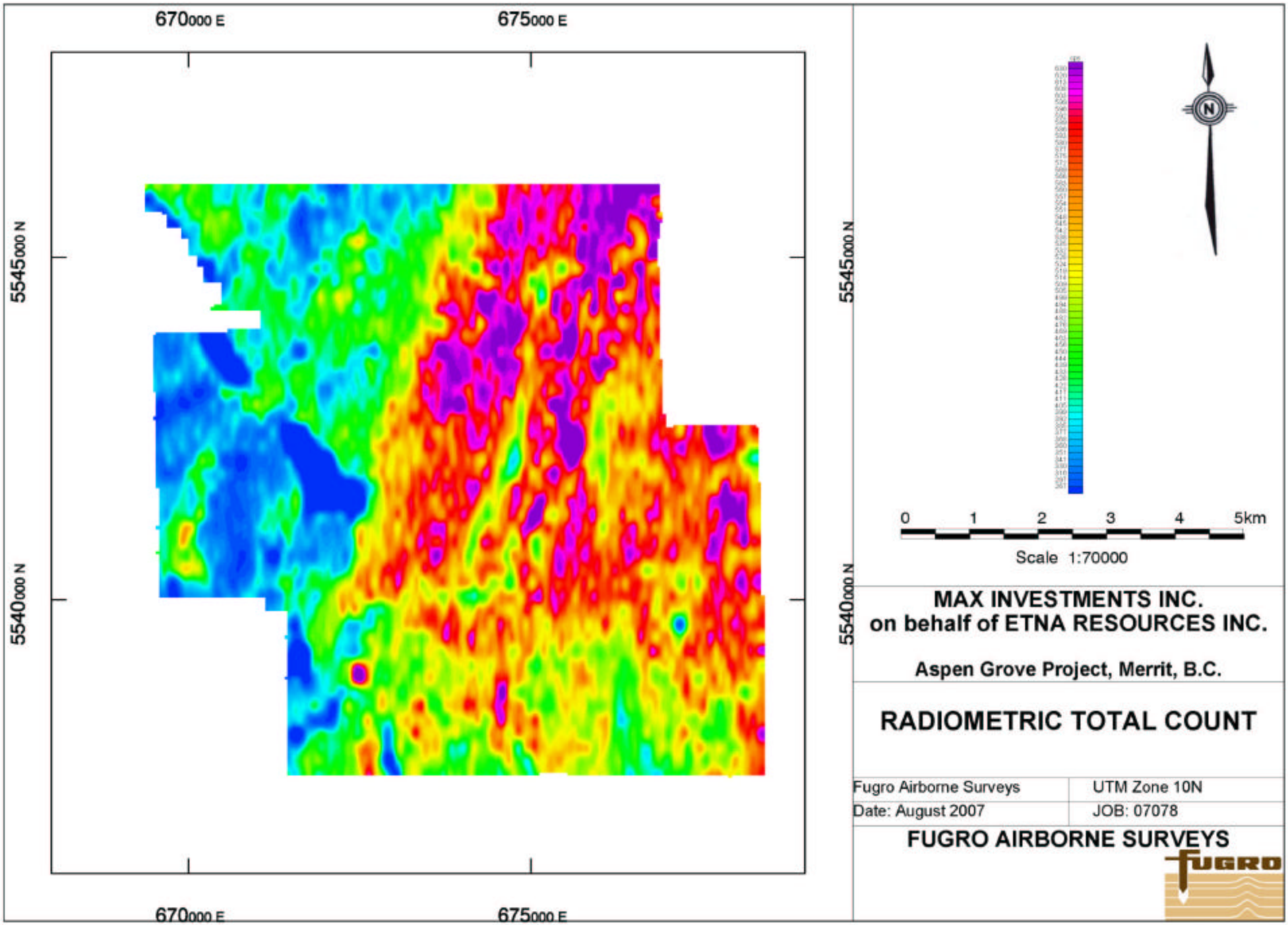
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

APPARENT RESISTIVITY
7200 Hz Coplanar

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



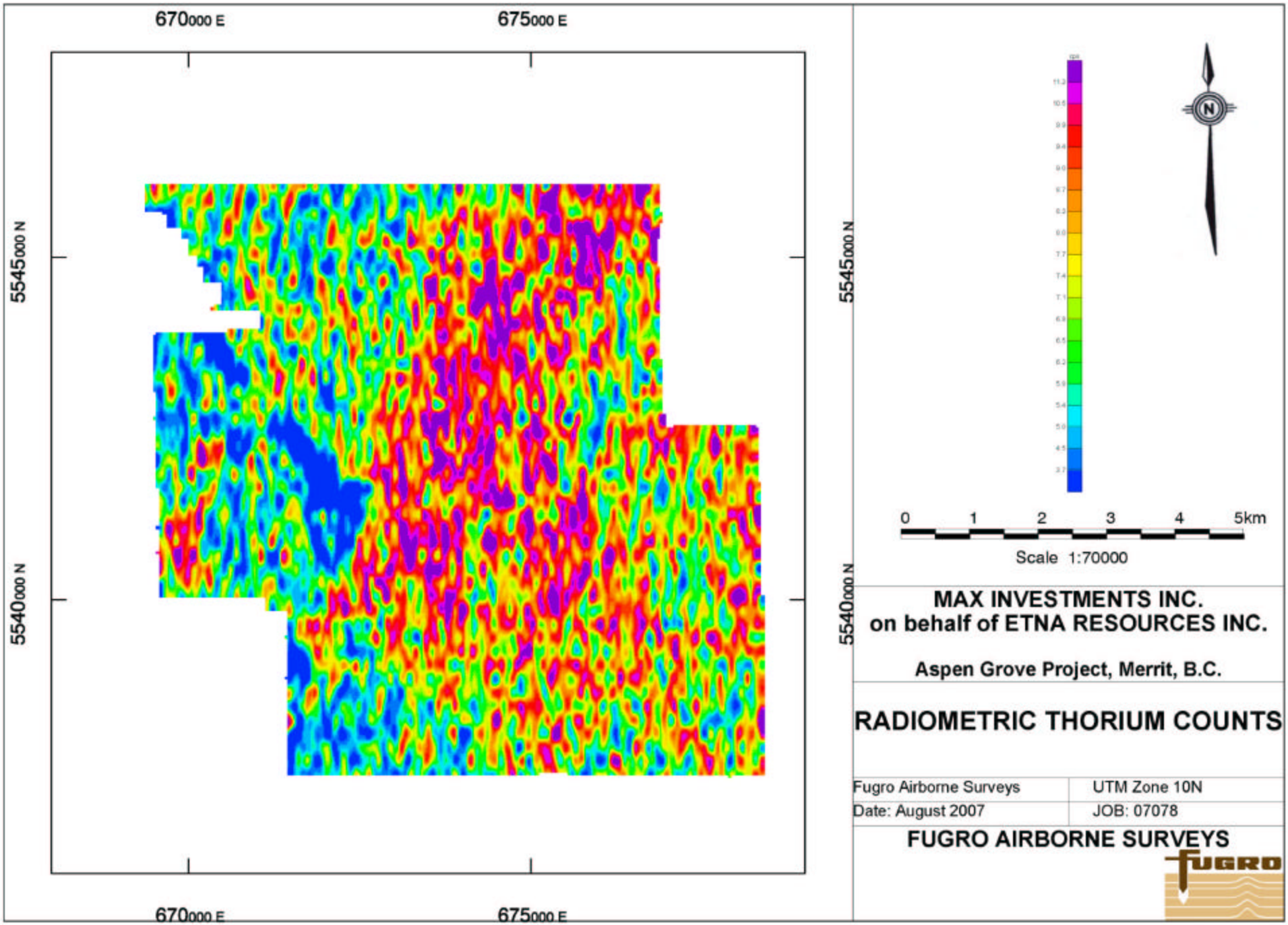
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

RADIOMETRIC TOTAL COUNT

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



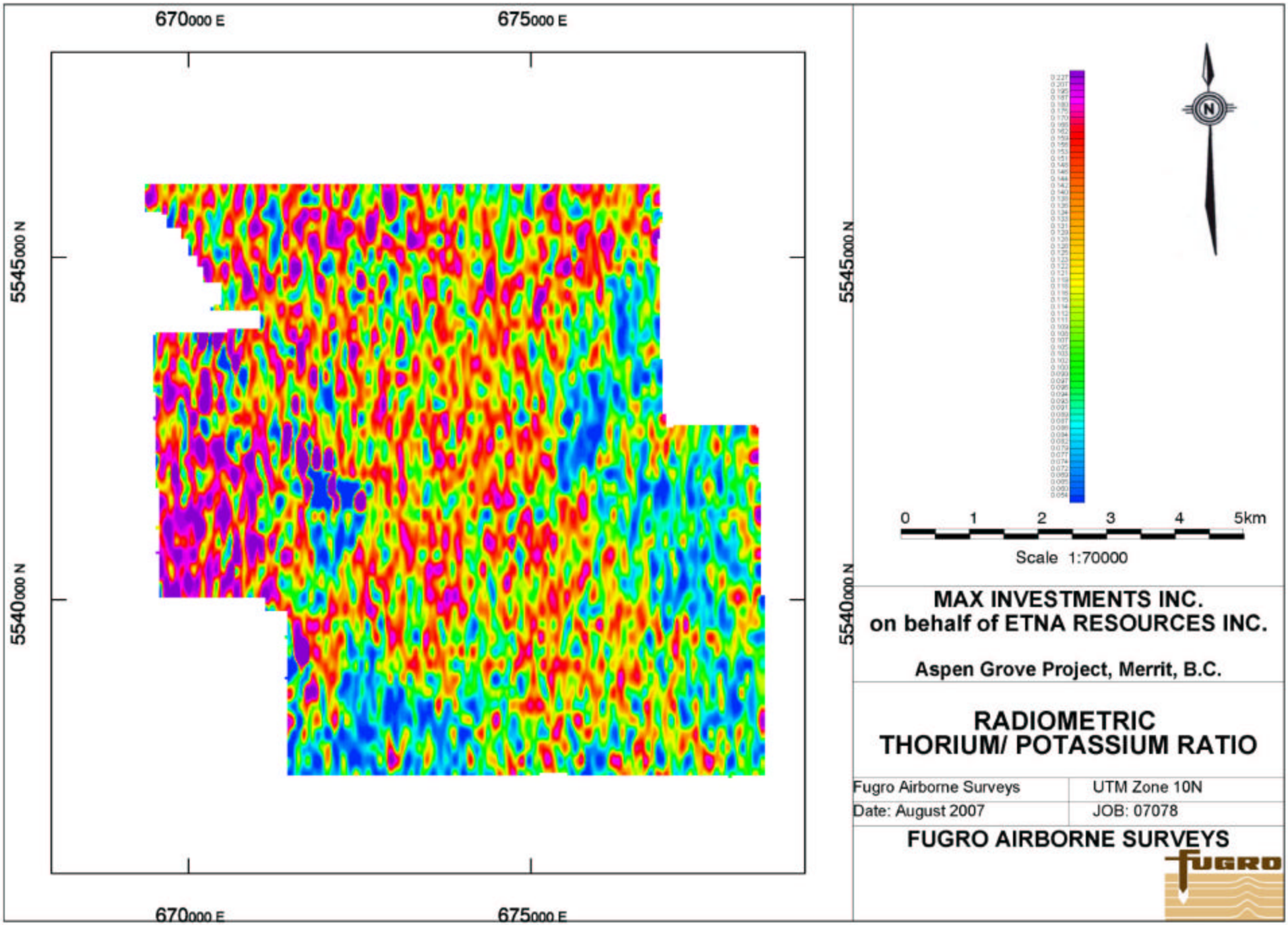
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

RADIOMETRIC THORIUM COUNTS

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



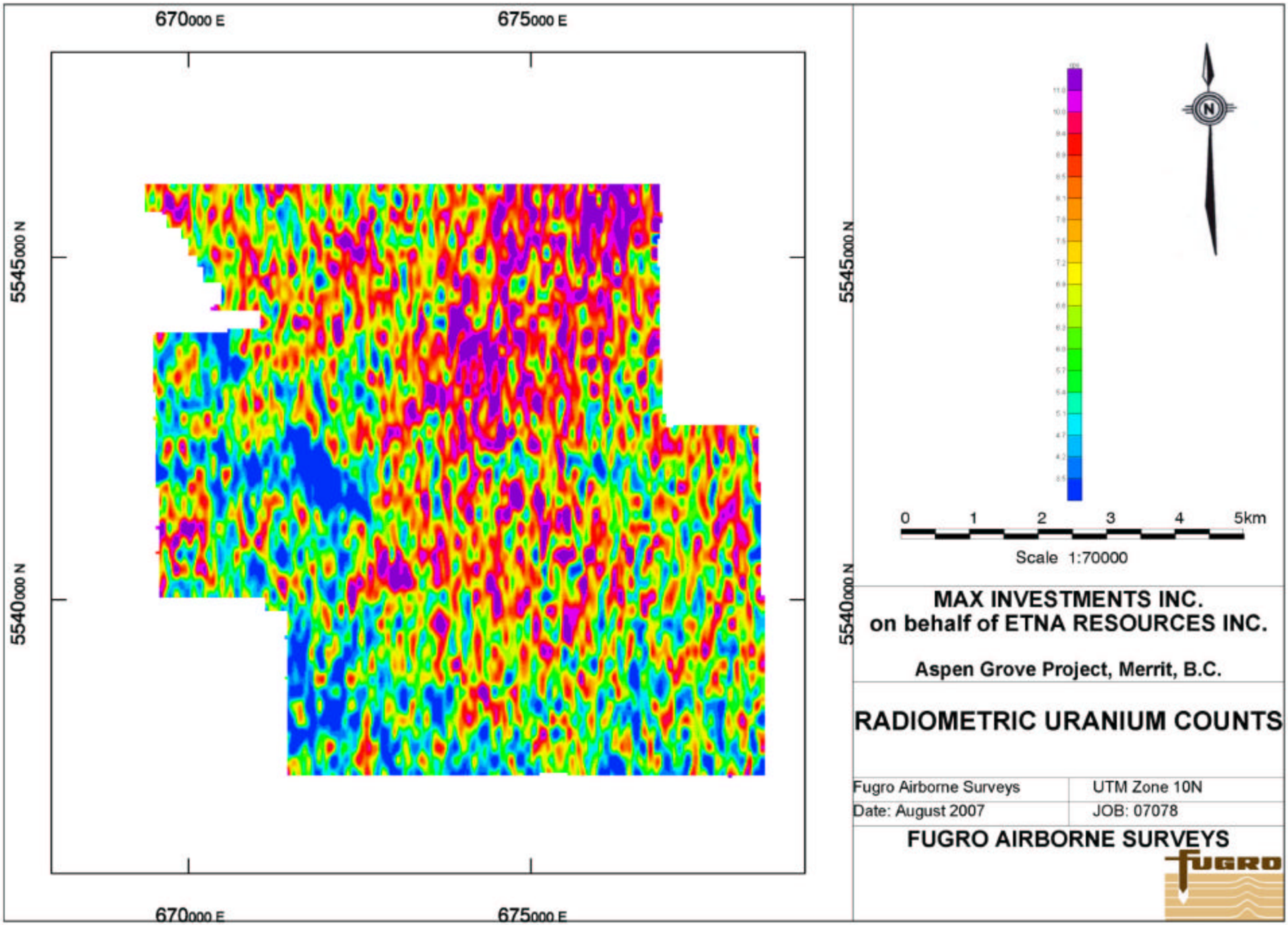
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

RADIOMETRIC THORIUM/ POTASSIUM RATIO

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



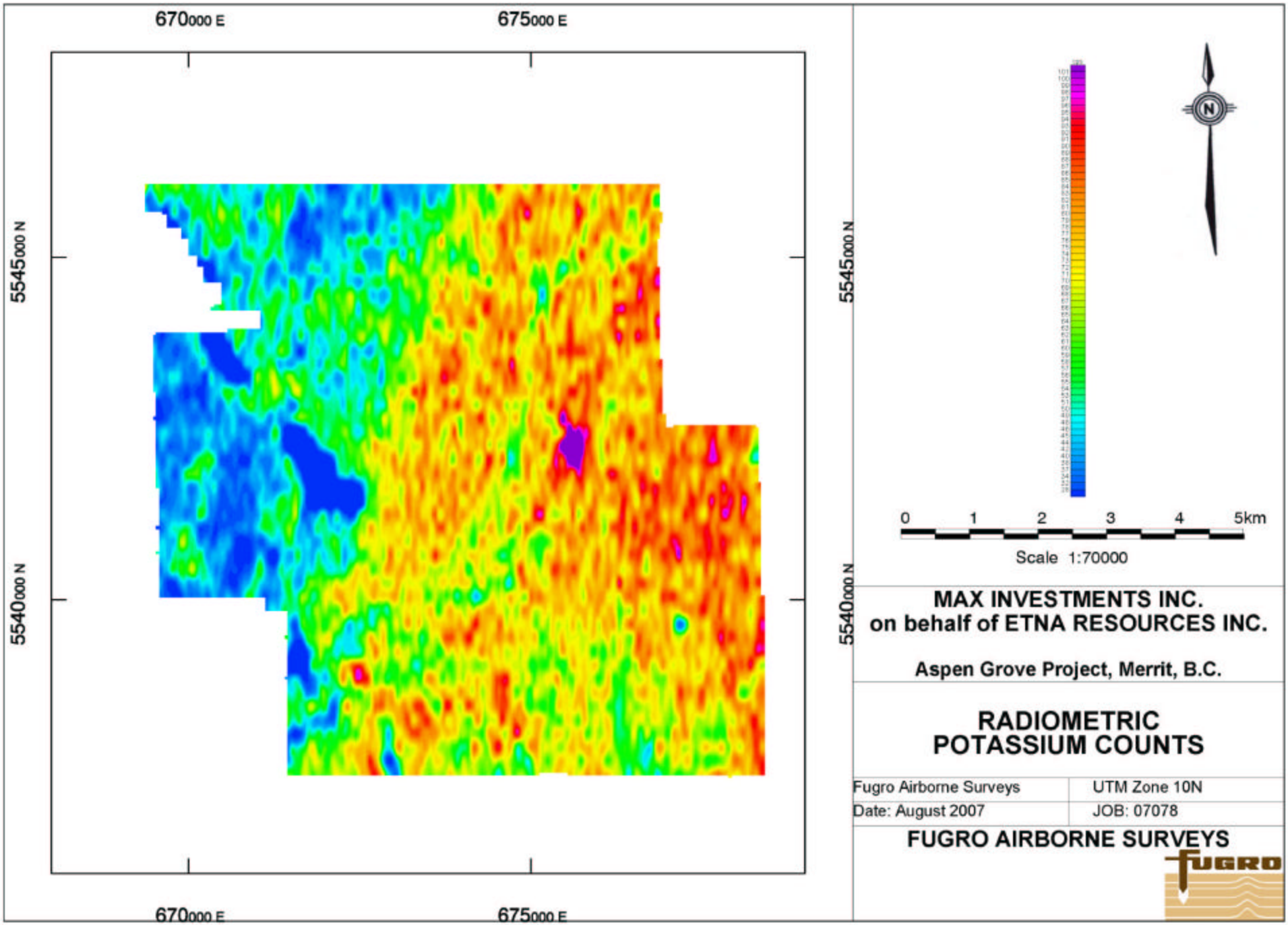
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

RADIOMETRIC URANIUM COUNTS

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS



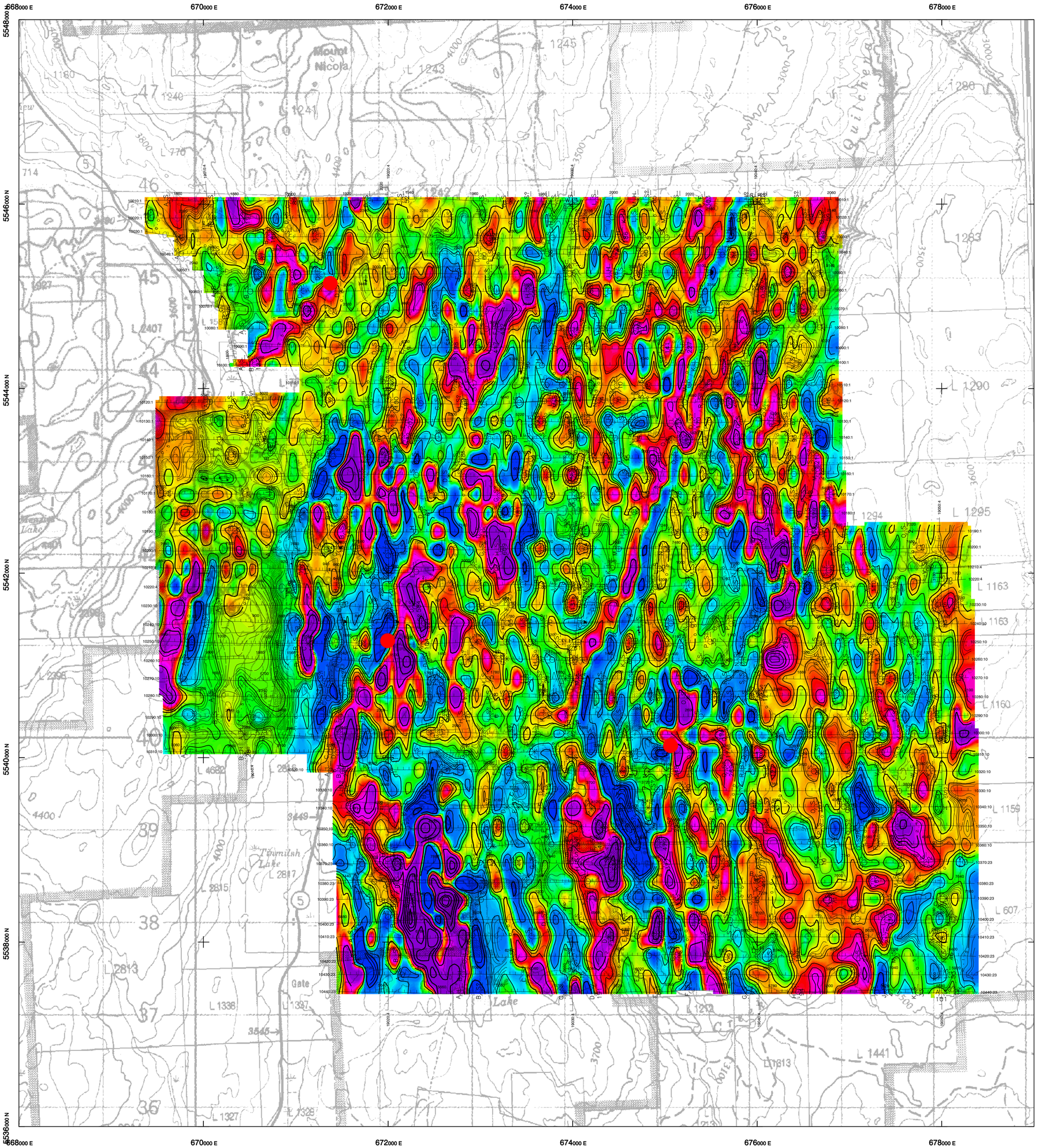
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.

Aspen Grove Project, Merrit, B.C.

RADIOMETRIC POTASSIUM COUNTS

Fugro Airborne Surveys	UTM Zone 10N
Date: August 2007	JOB: 07078

FUGRO AIRBORNE SURVEYS


668000 E
670000 E
672000 E
674000 E
676000 E
678000 N
5548000 N
5546000 N
5544000 N
5542000 N
5540000 N
5538000 N
5536000 N
Mount Nicola
Quilchena
Lake
Tunnilah Lake
Gate
L 1245
L 1243
L 1241
L 1240
L 1180
L 1283
L 1290
L 1295
L 1294
L 1163
L 1160
L 1159
L 607
L 4682
L 2815
L 2817
L 2813
L 1336
L 1397
L 1327
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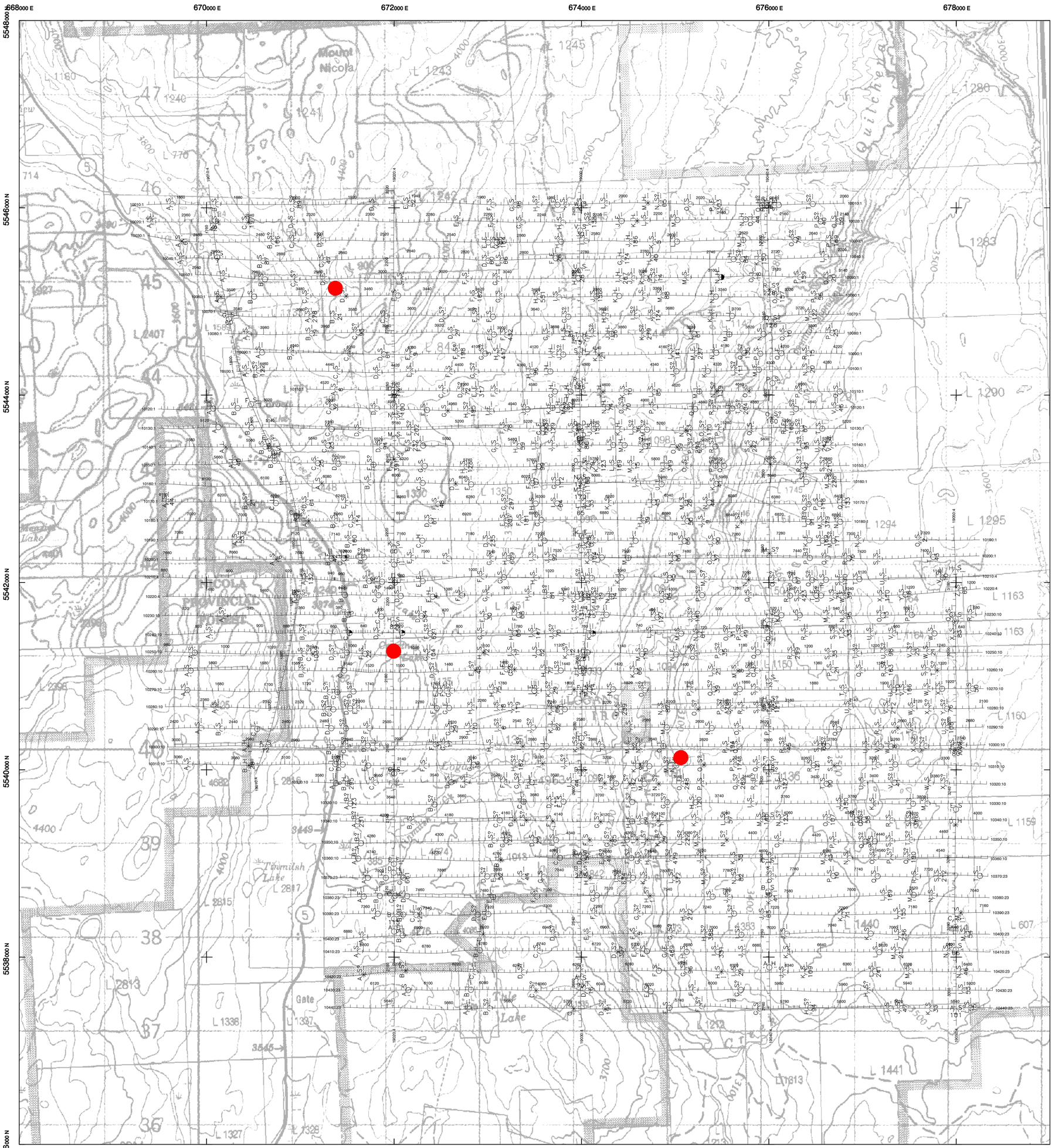
L 1813
L 1272
L 1101
L 2295
L 2407
L 1280
L 1503
L 1503
L 1503



TECHNICAL SUMMARY

Navigation	Differentially–corrected GPS
Data reduction grid interval	40 metres
Terrain clearance	Helicopter, Spectrometer 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V
Spectrometer	GR820

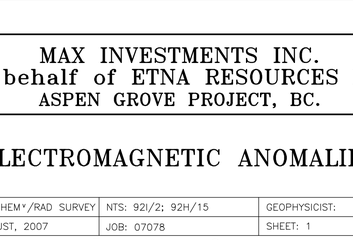
Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

ELECTROMAGNETIC ANOMALIES

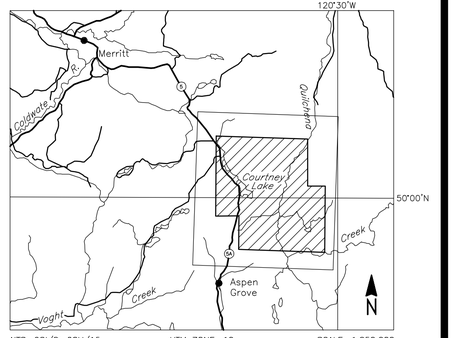
Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
D	Narrow bedrock conductor ("thin dike")
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

FLIGHT LINES WITH EM ANOMALIES



LOCATION MAP



NTS: 92I/2; 92H/15 UTM ZONE: 10 NAD83 SCALE: 1:250,000

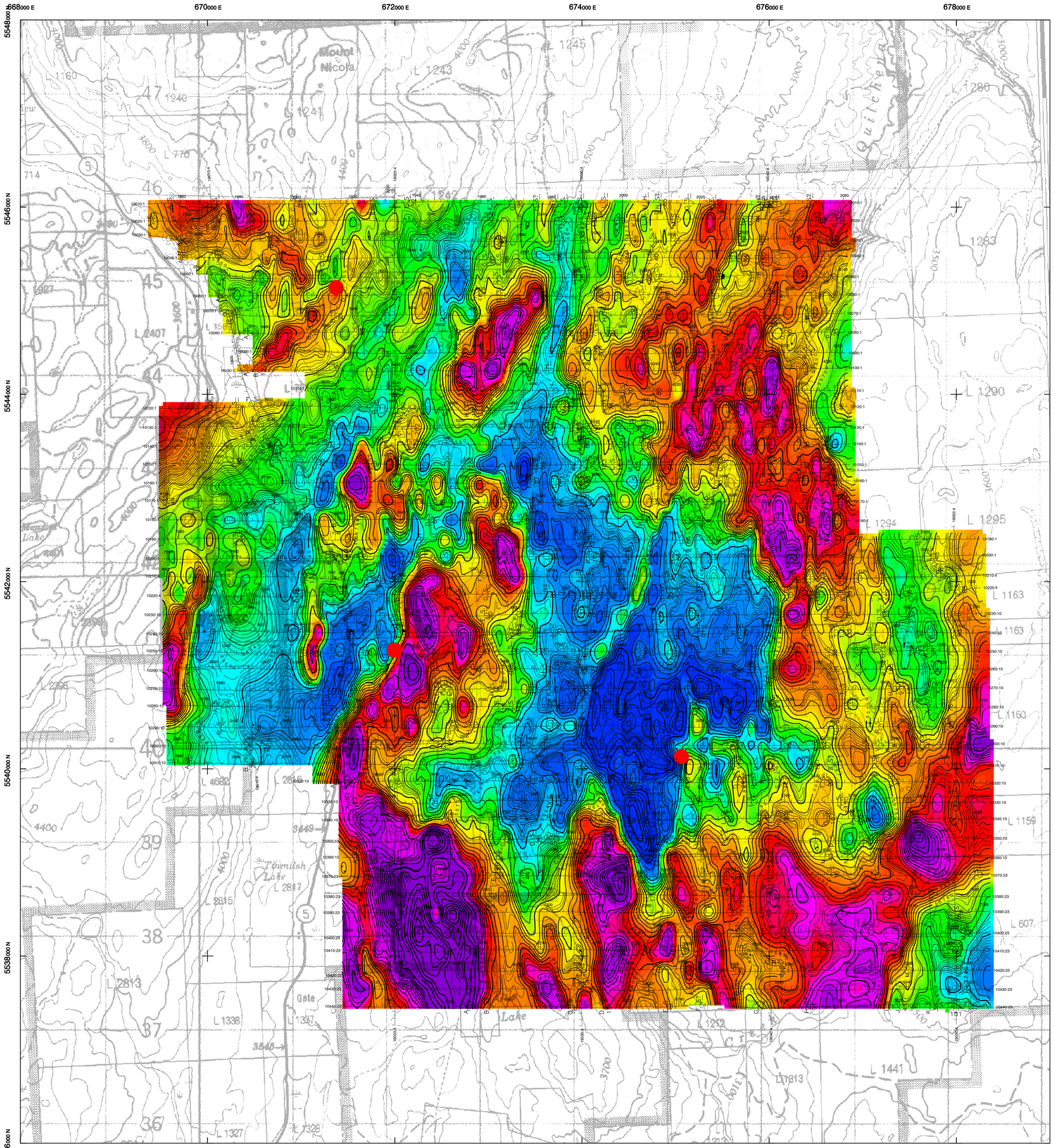
MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

ELECTROMAGNETIC ANOMALIES

FUGRO DIGHEM^V/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1
Fugro Airborne Surveys		

0 1 2 Km
0 1 Mi
Scale 1:20 000

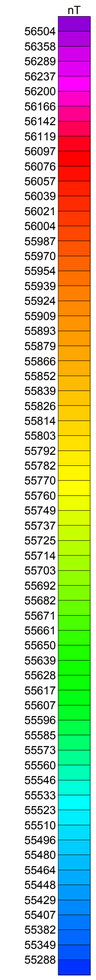
FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

Navigation . . . . . Differentially-corrected GPS
Data reduction grid interval . . . . 40 metres
Terrain clearance . . . . . Helicopter, Spectrometer 57 m
Electromagnetic sensor 30 m
Magnetometer 30 m
Data sampling interval . . . . . 0.1 second
Magnetometer / sensitivity . . . . . Cesium / 0.01 nT
Electromagnetic system . . . . . DIGHEM^{V}
Spectrometer GR820

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar



ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◑	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Anomaly identifier — Interpretive symbol — Depth is greater than: 15 m, 30 m, 45 m, 60 m — Inphase and Quadrature of coaxial coil is greater than: 5 ppm, 10 ppm, 15 ppm, 20 ppm

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
D	Narrow bedrock conductor ("thin dike")
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

FLIGHT LINES WITH EM ANOMALIES

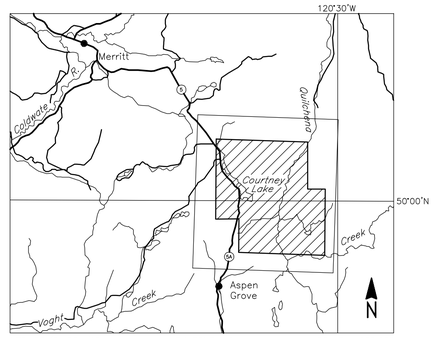
Flight number
Flight direction
Flight line number
11020 — Reflight Number, Line Number, Area Number
Fiducials identified on profiles
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

TOTAL MAGNETIC FIELD CONTOURS

. . . . . 250 nT
. . . . . 50 nT
. . . . . 10 nT
. . . . . 5 nT
. . . . . magnetic low

Magnetic inclination within the survey area: 71 degrees N
Magnetic declination within the survey area: 19 degrees E

LOCATION MAP



NTS: 92I/2; 92H/15 UTM ZONE: 10 NAD83 SCALE: 1:250,000

MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

TOTAL MAGNETIC FIELD

FUGRO DIGHEM^{V}/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1

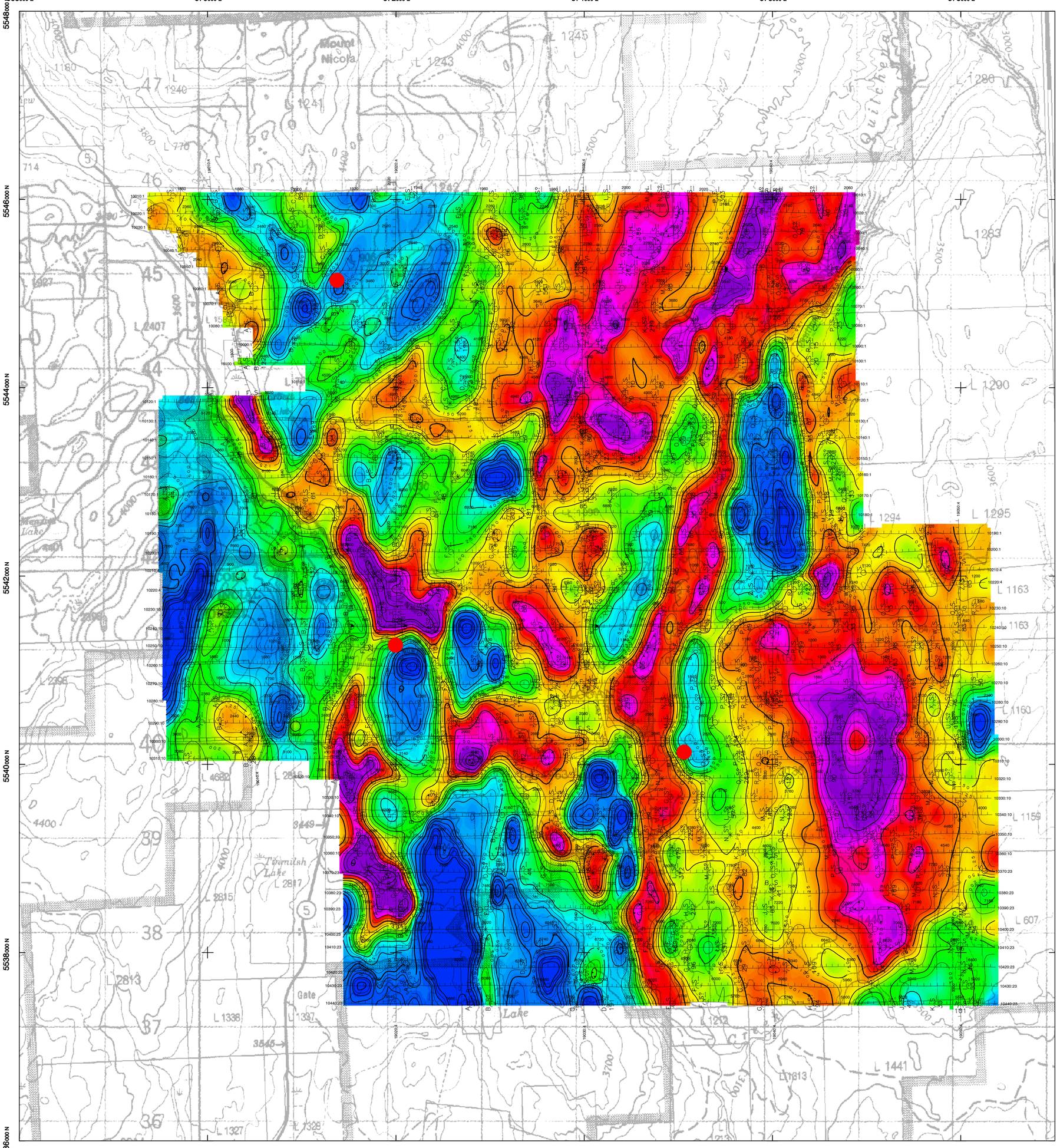
Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS

668000 E 670000 E 672000 E 674000 E 676000 E 678000 E

5548000 N 5546000 N 5544000 N 5542000 N 5540000 N 5538000 N 5536000 N



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900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

Ohm·m
3906
1770
1165
911
777
693
629
574
526
492
461
432
404
377
354
333
315
296
279
264
251
237
225
214
204
194
185
177
170
163
156
150
144
139
135
130
126
122
118
114
111
107
104
100
97
94
90
87
83
80
77
74
72
69
66
63
60
58
55
52
47
43
37

N

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Anomaly identifier
Interpretive symbol
Depth is greater than
· 15 m
: 30 m
⋮ 45 m
⋮ 60 m
Inphase and Quadrature of coaxial coil is greater than
. 5 ppm
.. 10 ppm
... 15 ppm
.... 20 ppm

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
D	Narrow bedrock conductor ("thin dike")
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

FLIGHT LINES WITH EM ANOMALIES

Flight number
Flight direction
Flight line number
11020
Reflight Number
Line Number
Area Number
Fiducials identified on profiles
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

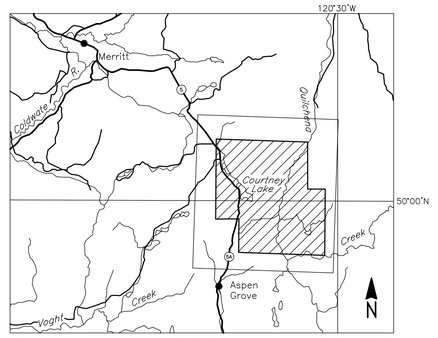
13010
13020
120
100

RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm–m at 10 intervals per decade. Apparent resistivity calculated using a pseudo–layer half–space model (Fraser 1978).

LOCATION MAP



MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

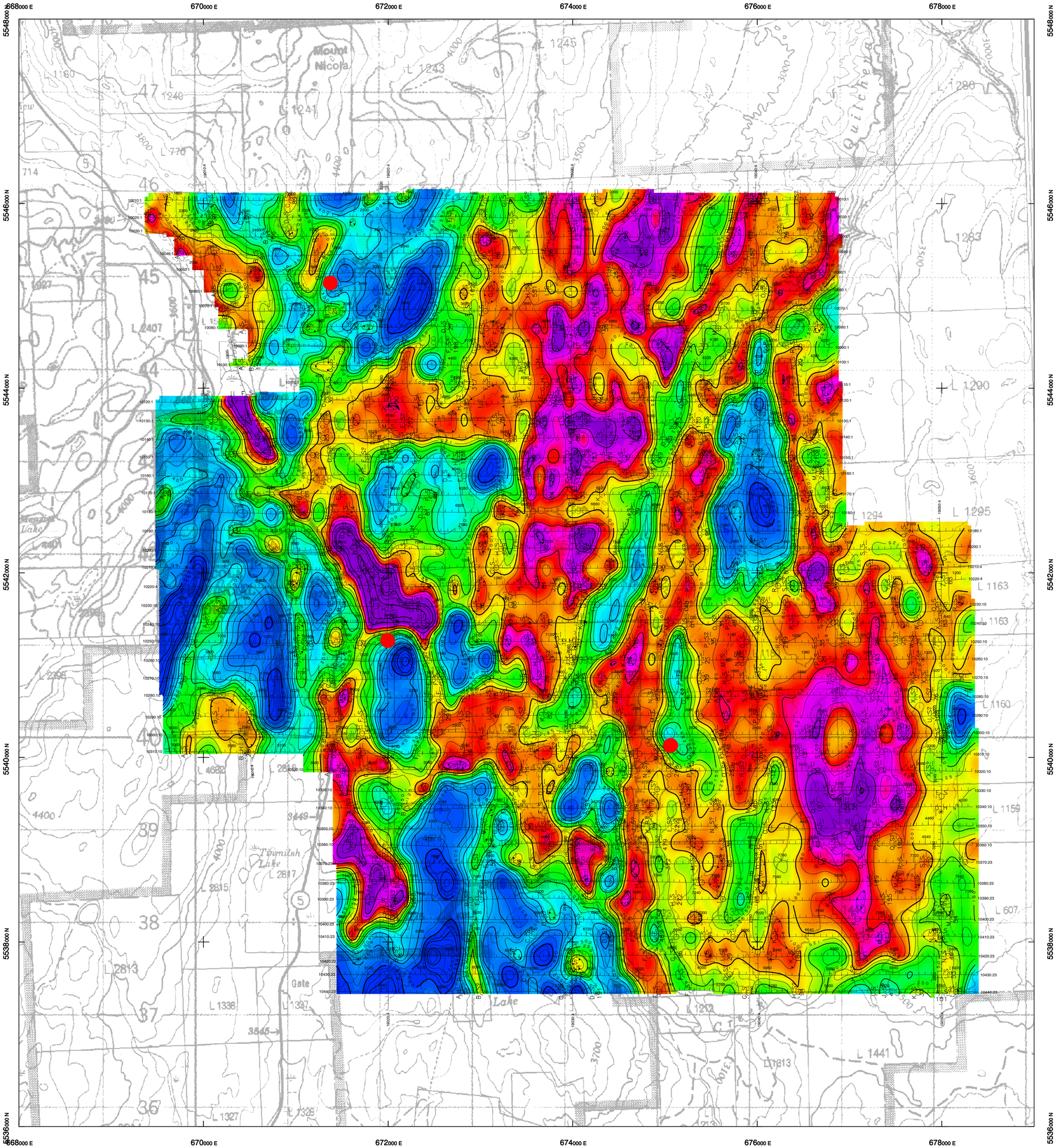
APPARENT RESISTIVITY
7200 Hz COPLANAR

FUGRO DIGHEM^V/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

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Electromagnetic sensor 30 m
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Data sampling interval . . . . . 0.1 second
Magnetometer / sensitivity . . . . . Cesium / 0.01 nT
Electromagnetic system . . . . . DIGHEM^{V}
Spectrometer GR820

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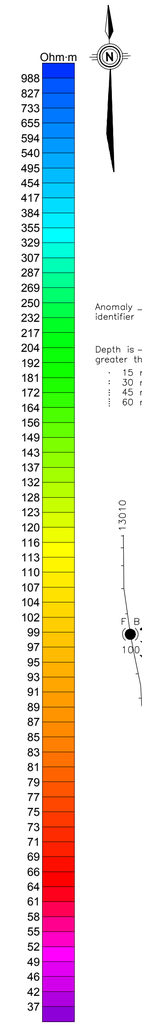
56000 Hz	.60 ppm	Horizontal coplanar



ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
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5	◒	20–50 siemens
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2	○	1–5 siemens
1	◌	< 1 siemens
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Anomaly identifier — Interpretive symbol — Depth is greater than: 15 m, 30 m, 45 m, 60 m — Inphase and Quadrature of coaxial coil is greater than: 5 ppm, 10 ppm, 15 ppm, 20 ppm

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Flight number
Flight direction
Flight line number
11020 — Reflight Number, Line Number, Area Number
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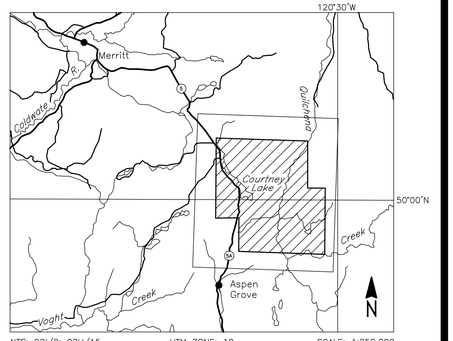
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



NTS: 92I/2; 92H/15 UTM ZONE: 10 NAD83 SCALE: 1:250,000

MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

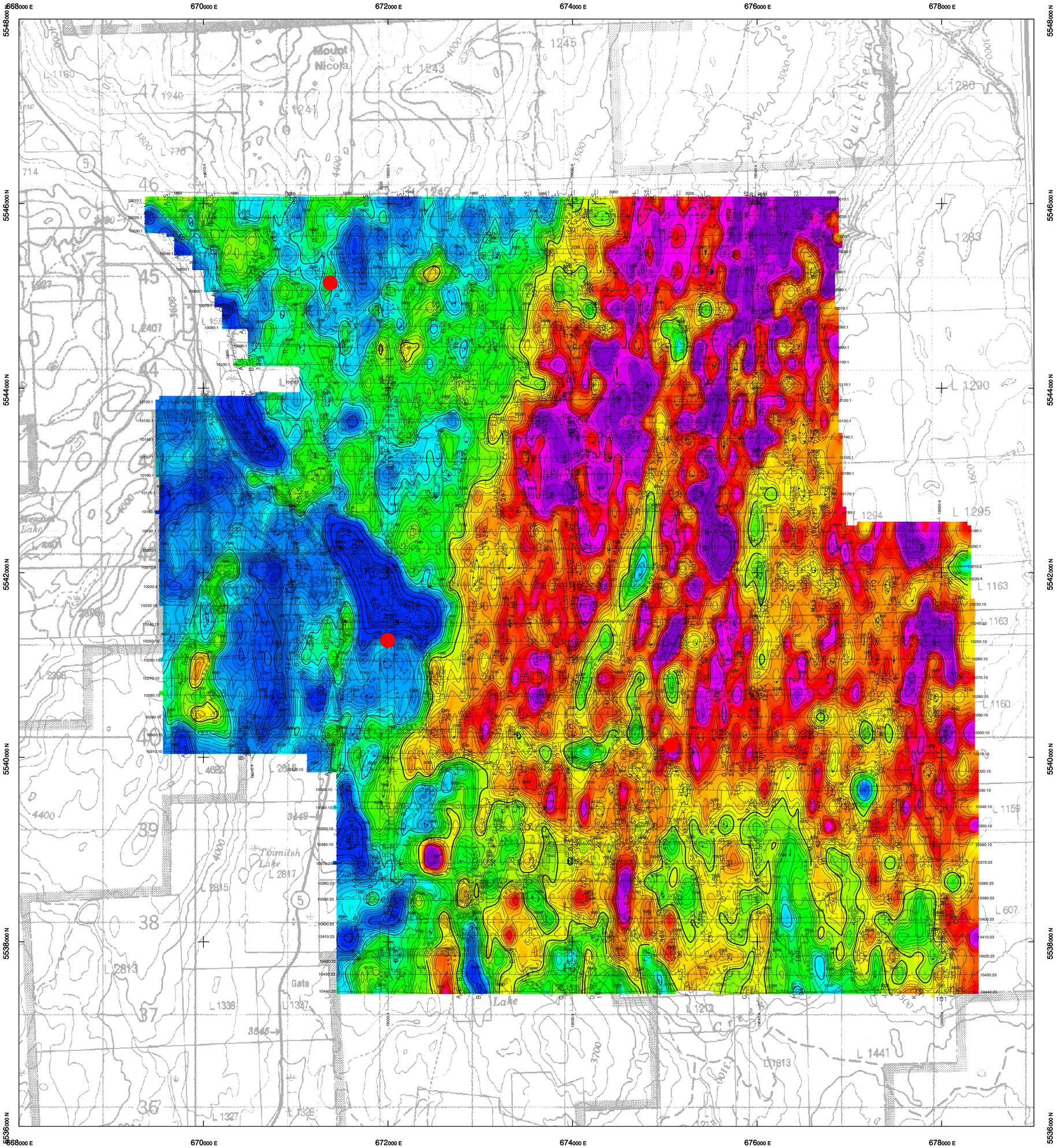
APPARENT RESISTIVITY
56,000 Hz COPLANAR

FUGRO DIGHEM^{V}/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

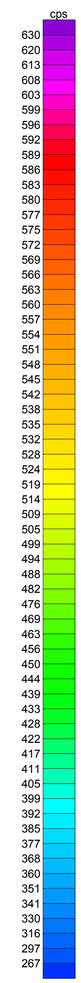
FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	40 metres
Terrain clearance	Helicopter, Spectrometer 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^{V}
Spectrometer	GR820

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar



ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Anomaly identifier — Interpretive symbol — Depth is greater than: 15 m, 30 m, 45 m, 60 m — Inphase and Quadrature of coaxial coil is greater than: 5 ppm, 10 ppm, 15 ppm, 20 ppm

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
D	Narrow bedrock conductor ("thin dike")
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

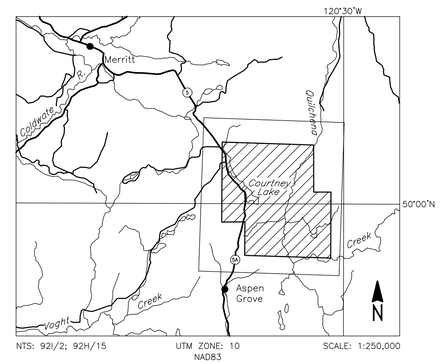
FLIGHT LINES WITH EM ANOMALIES

Flight number
Flight direction
Flight line number
11020 — Reflight Number, Line Number, Area Number
Fiducials identified on profiles
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

CONTOUR INTERVALS

500 cps
100 cps
20 cps
10 cps
low

LOCATION MAP



NTS: 92I/2; 92H/15 UTM ZONE: 10 NAD83 SCALE: 1:250,000

MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

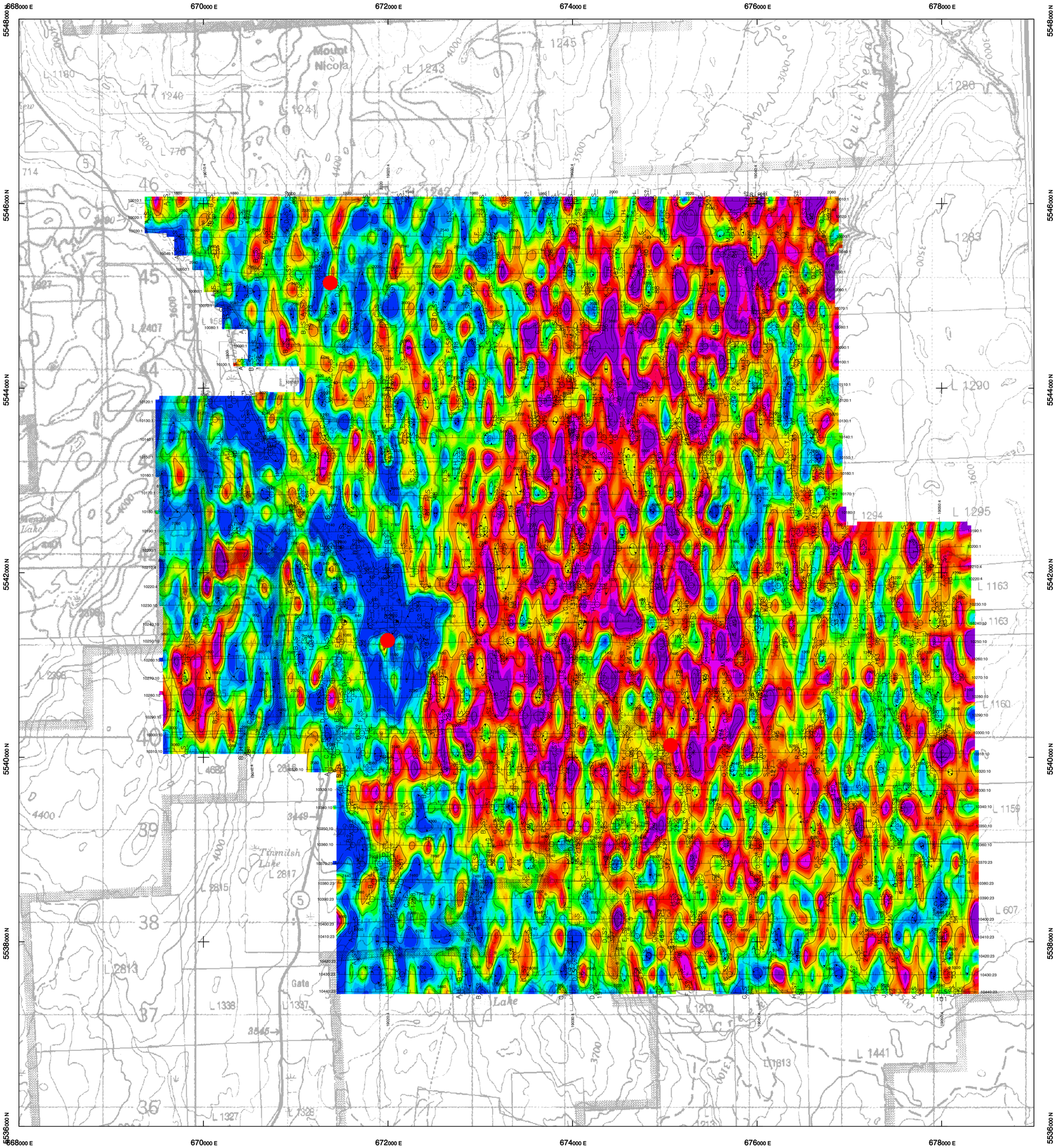
RADIOMETRIC TOTAL COUNT

FUGRO DIGHEM^{V}/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

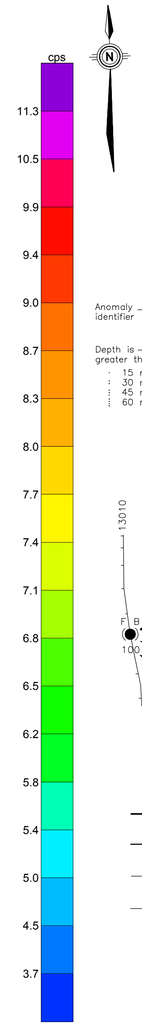
FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	40 metres
Terrain clearance	Helicopter, Spectrometer 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^{V}
Spectrometer	GR820

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar



ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Anomaly identifier — Interpretive symbol — Depth is greater than: 15 m, 30 m, 45 m, 60 m — Inphase and Quadrature of coaxial coil is greater than: 5 ppm, 10 ppm, 15 ppm, 20 ppm

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
D	Narrow bedrock conductor ("thin dike")
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

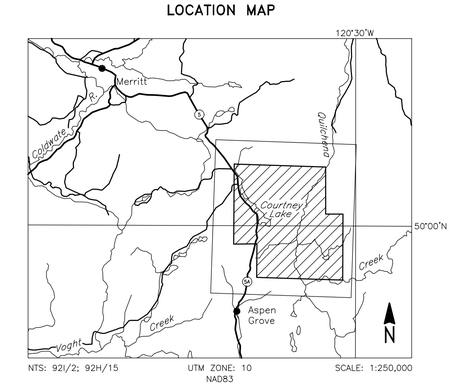
FLIGHT LINES WITH EM ANOMALIES

Flight number
Flight direction
Flight line number
11020 — Reflight Number, Line Number, Area Number
Fiducials identified on profiles
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

CONTOUR INTERVALS

100 cps
20 cps
4 cps
2 cps
low

LOCATION MAP



NTS: 92I/2; 92H/15 UTM ZONE: 10 NAD83 SCALE: 1:250,000

MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

RADIOMETRIC THORIUM COUNTS

FUGRO DIGHEM^{V}/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS

668000 E 670000 E 672000 E 674000 E 676000 E 678000 E

5548000 N 5546000 N 5544000 N 5542000 N 5540000 N 5538000 N 5536000 N

Mount Nicola

Lake

Tennish Lake

Gate

Quilchena

Creek

L 1180 L 1243 L 1245 L 1280 L 1283 L 1290 L 1294 L 1295 L 1163 L 1160 L 1159 L 607 L 1441 L 1327 L 1328 L 1338 L 2407 L 2815 L 2817 L 2813 L 2816 L 2806 L 770

TECHNICAL SUMMARY

Navigation	Differentially–corrected GPS
Data reduction grid interval	40 metres
Terrain clearance	Helicopter, Spectrometer 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V
Spectrometer	GR820

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

0.227 0.207 0.195 0.187 0.180 0.175 0.170 0.166 0.162 0.159 0.156 0.153 0.151 0.148 0.146 0.144 0.142 0.140 0.138 0.136 0.134 0.133 0.131 0.129 0.128 0.126 0.125 0.123 0.122 0.121 0.119 0.118 0.116 0.115 0.114 0.112 0.111 0.109 0.108 0.107 0.105 0.103 0.102 0.100 0.099 0.097 0.096 0.094 0.093 0.091 0.089 0.087 0.086 0.084 0.082 0.079 0.077 0.074 0.072 0.069 0.065 0.060 0.054

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Anomaly identifier; Interpretive symbol; Depth is greater than: . 15 m, : 30 m, ⁝ 45 m, ⁞ 60 m; Inphase and Quadrature of coaxial coil is greater than: . 5 ppm, .. 10 ppm, ... 15 ppm, ... 20 ppm

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
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E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

FLIGHT LINES WITH EM ANOMALIES

Flight number; Flight direction; Flight line number; 11020: Reflight Number, Line Number, Area Number; Fiducials identified on profiles; Dip direction; EM anomaly (see EM legend); Conductor axis (on EM maps only); Arcs indicate the conductor has a thickness > 10m; Magnetic correlation in nT (gammas)

CONTOUR INTERVALS

. . . . . 0.50

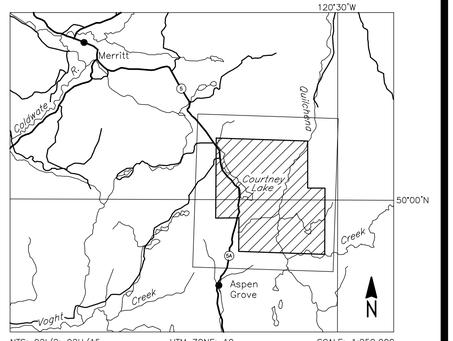
. . . . . 0.10

. . . . . 0.02

. . . . . 0.01

. . . . . low

LOCATION MAP



NTS: 92I/2; 92H/15 UTM ZONE: 10 NAD83 SCALE: 1:250,000

MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

RADIOMETRIC THORIUM/POTASSIUM RATIO

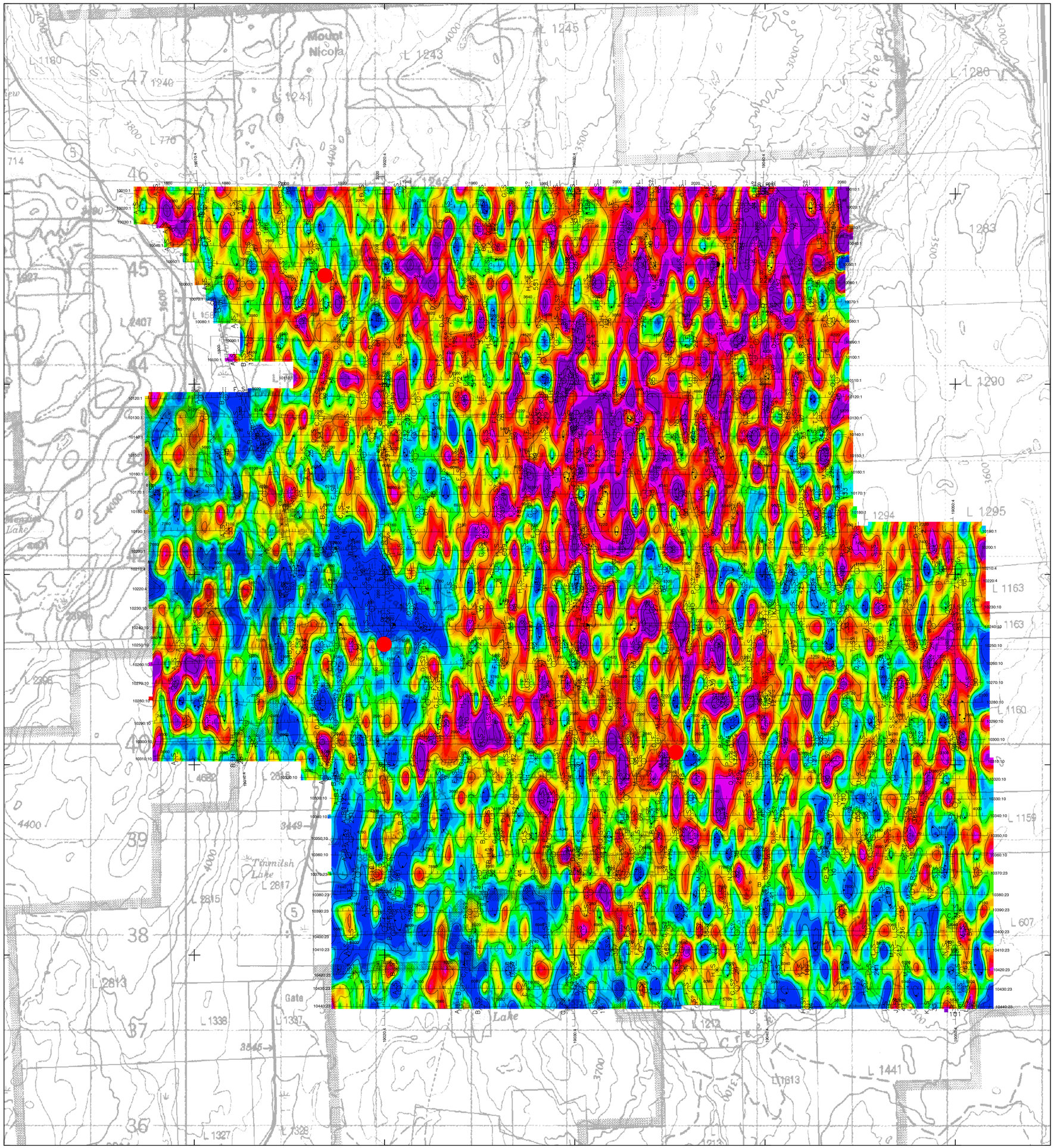
FUGRO DIGHEM^V/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1
Fugro Airborne Surveys		

0 1 2 Km

0 1 Mi

Scale 1:20 000

FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	40 metres
Terrain clearance	Helicopter, Spectrometer 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^{V}
Spectrometer	GR820

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
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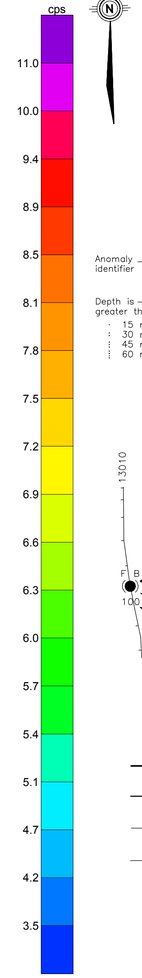
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar



ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◓	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Anomaly identifier — Interpretive symbol — Depth is greater than: 15 m, 30 m, 45 m, 60 m — Inphase and Quadrature of coaxial coil is greater than: 5 ppm, 10 ppm, 15 ppm, 20 ppm

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L	Culture, e.g. power line, metal building or fence

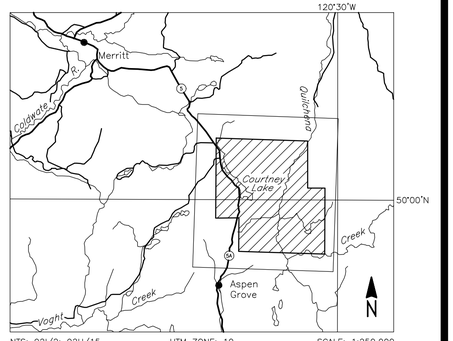
FLIGHT LINES WITH EM ANOMALIES

Flight number
Flight direction
Flight line number
11020 — Reflight Number, Line Number, Area Number
Fiducials identified on profiles
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

CONTOUR INTERVALS

100 cps
20 cps
4 cps
2 cps
low

LOCATION MAP



NTS: 92I/2; 92H/15 — UTM ZONE: 10 NAD83 — SCALE: 1:250,000

MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

RADIOMETRIC URANIUM COUNTS

FUGRO DIGHEM^{V}/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS

668000 E | 670000 E | 672000 E | 674000 E | 676000 E | 678000 E

5548000 N | 5546000 N | 5544000 N | 5542000 N | 5540000 N | 5538000 N | 5536000 N

Mount Nicola | Lake | Tennish Lake | Gate

TECHNICAL SUMMARY

Navigation	Differentially–corrected GPS
Data reduction grid interval	40 metres
Terrain clearance	Helicopter, Spectrometer 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V
Spectrometer	GR820

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

cps: 101 100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 51 50 49 48 46 45 44 42 40 38 37 34 32 28

N

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

Anomaly identifier — Interpretive symbol — Depth is greater than: · 15 m, : 30 m, ⁝ 45 m, ⋮ 60 m — Inphase and Quadrature of coaxial coil is greater than: . 5 ppm, .. 10 ppm, ... 15 ppm, ... 20 ppm

Interpretive symbol	Conductor ("model")
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E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

FLIGHT LINES WITH EM ANOMALIES

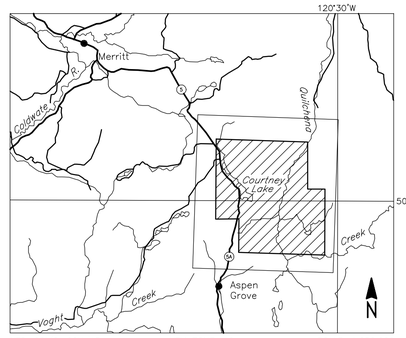
Flight number
Flight direction
Flight line number
11020 — Reflight Number / Line Number / Area Number
Fiducials identified on profiles
Dip direction
EM anomaly (see EM legend)
Conductor axis (on EM maps only)
Arcs indicate the conductor has a thickness > 10m
Magnetic correlation in nT (gammas)

13010 | 13020 < 2 | 120 | A | D | F | B | 100

CONTOUR INTERVALS

100 cps
20 cps
4 cps
2 cps
low

LOCATION MAP



NTS: 92I/2; 92H/15 | UTM ZONE: 10 NAD83 | SCALE: 1:250,000

MAX INVESTMENTS INC.
on behalf of ETNA RESOURCES INC.
ASPEN GROVE PROJECT, BC.

RADIOMETRIC POTASSIUM COUNTS

FUGRO DIGHEM^V/RAD SURVEY	NTS: 92I/2; 92H/15	GEOPHYSICIST:
DATE: AUGUST, 2007	JOB: 07078	SHEET: 1
Fugro Airborne Surveys		

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS