COMINCO LTD.

EXPLORATION

WESTERN CANADA

NTS: 93E/14

GEOPHYSICAL REPORT

COVERING COMBINED HELICOPTER-BORNE

MAGNETIC, ELECTROMAGNETIC

RADIOMETRIC AND VLF-EM SURVEY

ON THE DUAL PROPERTY

OMENICA M.D., B.C.

- ASSESSMENT REPORT -

Latitude : 53°57'N

Longitude : 127°07'W

Claims Covered : Dual 1 to 6

Time Period : July 2 to 7, 1993

DECEMBER 1993

J. KLEIN

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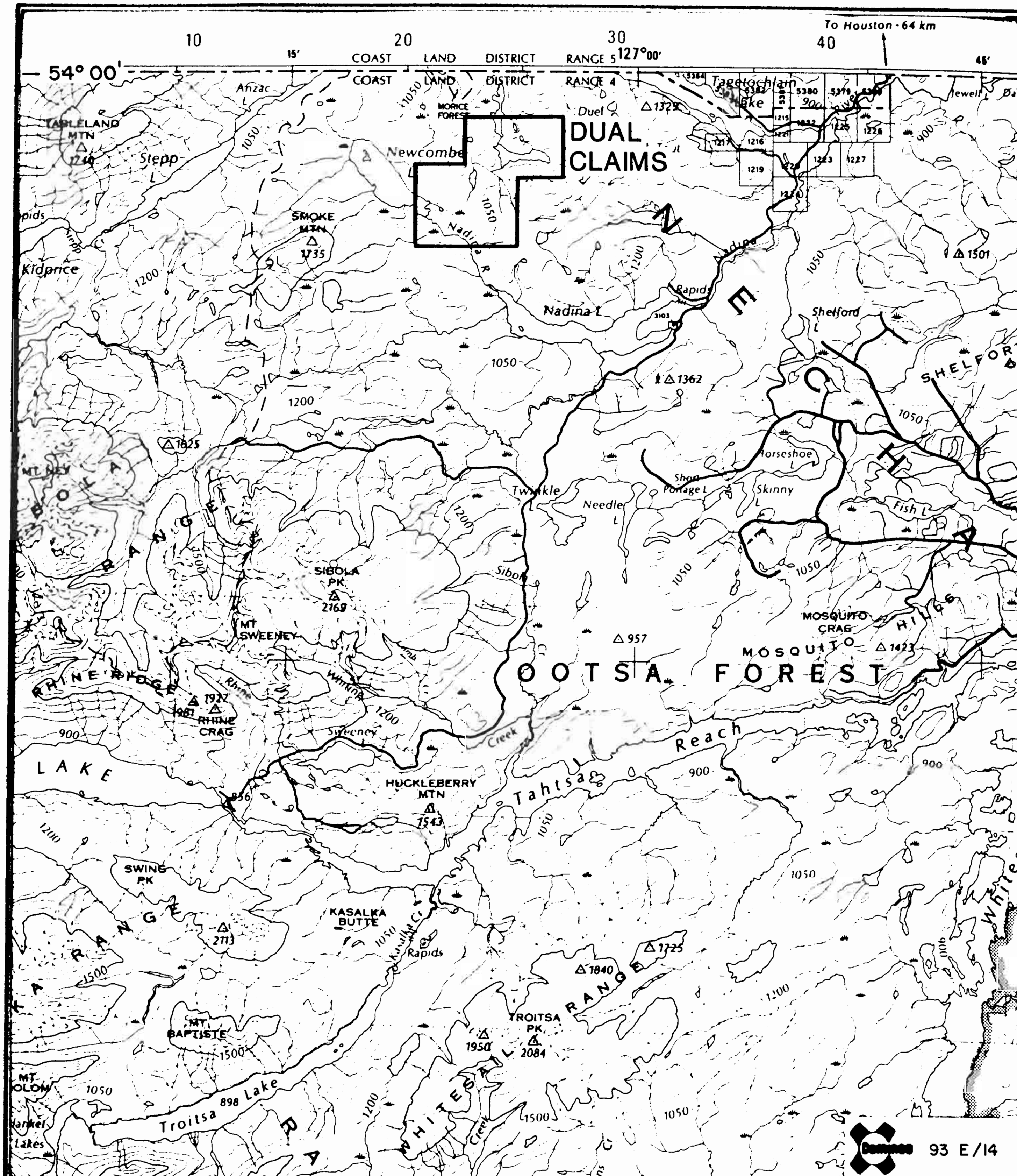

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Revised by	Date	Revised by	Date

DUAL PROPERTY LOCATION

Scale: 1 : 250,000	Date: Dec., '93	Plate: 1

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COMINCO LTD.

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INTRODUCTION

This report describes an airborne geophysical survey carried out on behalf of New Canamin Resources Limited by Geonex Aerodat Inc. under a contract dated June 11th, 1993. Principal geophysical sensors included a five-frequency electromagnetic system, a high sensitivity cesium vapour magnetometer, a radiometric system and a two-frequency VLF-EM system. Ancillary equipment included a colour video tracking camera, a radar altimeter, a power line monitor and a base station magnetometer.

The survey covers an area designated Huckleberry Mtn Area-B about 25 sq. km in size located between Prince Rupert and Prince George, about 50 kms SSW of Houston. Total survey coverage was approx. 122 line kms. The flight line spacing was 200 m. The Geonex Aerodat Job Number is J9355.

This report describes the survey, the data processing, data presentation and interpretation of the geophysical results.

SURVEY AREA

The survey area is located just east of Newcombe Lake, 50 kms SSW of Houston. Topography is shown on the 1:50,000 scale NTS Map Sheet 93E/14. Local relief is moderate. Elevations range from 3,100 feet to over 4,200 feet above mean sea level (amsl).

The survey area is shown in the attached Figure 1 on a scale of 1:250,000 which includes local topography and latitude - longitude coordinates. The flight line direction is north-south. Line spacing is 200 metres.

CLAIMS AND OWNERSHIP

The six Dual claims comprising 20 units each are owned by R. Hamblin, et al. Work on the claims is currently executed by COMINCO Ltd. under Agreement with the owners.

The claims are listed as follows:

Mineral Claims	Tenure Nos.	Recording Date
Dual 1	313680	Sept. 21, 1992
Dual 2	313681	Sept. 21, 1992
Dual 3	313682	Sept. 22, 1992
Dual 4	313683	Sept. 22, 1992
Dual 5	313693	March 22, 1993
Dual 6	313694	March 23, 1993

GEOLOGY

The geology within the Dual claims was established from 1:50,000 scale mapping conducted by L. Diakow, 1988. The Lower Jurassic Telkwa formation of the Hazelton Group is the oldest volcanic succession exposed on the property. Younger volcanic rocks, tentatively assigned to the Cretaceous Skeena and Kasalka groups, appear to rest unconformably on the Telkwas formation. Stocks of diorite, granodiorite and monzonite cut and locally altered rocks of the Lower Jurassic Telkwa formation.

SURVEY PROCEDURES

The survey was flown as part of a larger one in the period from July 2 to 7, 1993. Principal personnel are listed in Appendix II.

The aircraft ground speed was maintained at approx. 60 knots (30 metres per second). The nominal EM sensor height was 30 metres (100 feet), consistent with the safety of the aircraft and crew.

Following equipment installation and testing, the ground based transponders of the radar ranging navigation system were installed at sites near the survey area. The baselines (or line between transponders) were flown to determine their separation. The results are used to check the UTM coordinates assigned to each transponder based on published NTS maps.

The UTM coordinates of survey area corners were taken from the published NTS maps. These coordinates are used to program the navigation system. A test flight was used to confirm that area coveraged would be as required.

Thereafter the traverse lines are flown under the guidance of the navigation system. The operator also enters manual fiducials over prominent topographic features as seen on a topographic map. Survey lines which show excessive deviation were re-flown.

The magnetic tie lines were flown using visual navigation in areas of low topographic and magnetic relief. Aircraft position was taken from the navigation system.

Calibration lines were flown at the start, middle (if required) and end of every survey flight. These lines are flown outside of ground effects to record electromagnetic zero levels.

DATA PRESENTATION

The results of the survey are presented on maps at a scale of 1:10,000 as follows:

Plate 1	Topographic Map Showing Claims and Survey Outline
1.3	Total Field Magnetics, Contour Interval 2nT
1.4	Vertical Magnetic Gradient, Contour Interval 0.2 nT/m
1.5	Apparent Resistivity, 4,600 Hz Coaxial, Contour Interval 0.1 Log (ohmm)
1.6	Apparent Resistivity, 4,175 Hz Coplanar, Contour Interval 0.1 Log (ohmm)
1.7	Total Field VLF-EM, Contour Interval 1%
1.7a	K-Count Radiometrics, Contour Interval 2 cps
1.7b	Total Count Radiomatrics, Contour Interval 10 cps

1.7c Th-Count Radiometrics, Contour Interval 1 cps

1.7d U_3O_8 Count Radiometrics, Contour Interval 1 cps

AIRCRAFT AND EQUIPMENT

Aircraft

An ASTAR helicopter (C-FXHS), piloted by L. Stanley, owned and operated by Executive Helicopters Ltd., was used for the survey.

L. Moore of Geonex Aerodat acted as navigator and equipment operator. Installation of the geophysical and ancillary equipment was carried out by Geonex Aerodat. The survey aircraft was flown at a mean terrain clearance of 60 metres (200 feet).

Electromagnetic System

The electromagnetic system was an Aerodat 5-frequency system. Two vertical coaxial coil pairs were operated at 935 Hz and 4,600 Hz and three horizontal coplanar coil pairs at 800 Hz, 4,175 Hz and 32 kHz. The transmitter-receiver separation was 7 metres. In-phase and quadrature signals were measured simultaneously for the 6 frequencies with a time constant of 0.1 seconds. The HEM bird was towed 30 metres (100 feet below the helicopter).

VLF-EM System

The VLF-EM system was a Herz Totem 2A. This instrument measures the total field and vertical quadrature components of two selected frequencies. The sensor was towed in a bird 10 metres below the helicopter. The transmitter used was: NAA , Cutler, Maine broadcasting at 24.0 kHz (line).

Magnetometer

The magnetometer employed was a Scintrex H8 cesium, optically pumped magnetometer sensor. The sensitivity of this instrument is 0.001 nanoTesla (nT) at an 0.2 second sampling rate. The sensor was towed in a bird 15 metres (50 feet) below the helicopter (45 metres [150 feet] above the ground).

Gamma-Ray Spectrometer

An Exploranium GR-256 spectrometer coupled to 512 cubic inches of crystal sensor was used to record four channels of radiometric data. Spectrum stablization is based on the 662 KeV peak from Cesium sources planted on the crystals.

The four channels recorded and their energy windows were as follows:

Channel	Window
Total Count (TC)	0.40 to 2.81 MeV
Potassium (K)	1.37 to 1.57 MeV
Uranium (U)	1.66 to 1.86 MeV
Thorium (Th)	2.41 to 2.81 MeV

The four channels of radiometric data were recorded at a 1 second update rate (counts per second - cps). Digital recording resolution is 1 cps.

Ancillary Systems

Base Station Magnetometer

An IFG-2 proton precession magnetometer was operated at the base of operations 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 facilitate later correlation. Recording resolution was 1 nT. The update rate was 4 seconds.

External magnetic field variations were recorded on a 3" wide paper chart and in digital form. The analog record shows the magnetic field trace plotted on a grid. Each division of the grid (0.25") is equivalent to 1 minute (chart speed) or 5 nT (vertical sensitivity). The date, time and current total field magnetic value are printed every 10 minutes.

Radar Altimeter

A King KRA-10 radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude. The radar altimeter is checked after installation using a line marked off at intervals of 50 feet. A heavy weight is tied onto one end of the line. The helicopter moves up over the weight and the operator notes the radar altimeter reading at the 100, 150, 200 and 250 foot marks.

Tracking Camera

A Panasonic colour video camera was used to record flight path on VHS video tape. The camera was operated in continuous mode. The flight number, 24 hour clock time (to .01 second), and manual fiducial number are encoded on the video tape.

Radar Ranging Navigation System

A Motorola Miniranger Falcon 484 positioning system was used to guide the pilot over a programmed grid. The ranges to at least two ground stations were digitally recorded. The output sampling rate is 1 second. Ranges are recorded with a resolution of 0.1 m.

Recorders

An RMS dot matrix recorder was used to display the data during the survey.

A DGR-33 data system recorded the digital survey data on magnetic media. Contents and update rates were as follows:

DATA TYPE	RECORDING INTERVAL	RECORDING RESOLUTION
Magnetometer	0.2 s	0.001 nT
VLF-EM (4 Channels)	0.2 s	0.03%
HEM (8 Channels)	0.1 s	
coaxial		0.03 ppm
coplanar-800 Hz/4,175 Hz		0.06 ppm
coplanar-32 kHz		0.125 ppm
Radiometric	0.2 s	1 cps
Position (2 channels)	0.2 s	0.1 m
Altimeter	0.2 s	0.05 m
Power Line Monitor	0.2 s	-
Manual Fiducial		
Clock Time		

DATA PROCESSING AND PRESENTATION

Flight Path Map

Radar Ranging Navigation System

The digital flight path record consists of ranges to ground transponders and/or UTM coordinates. For the latter, UTM coordinates of the ground transponders are needed. Without better sources, these coordinates are taken off NTS topographic maps. Errors of several hundred metres are possible, particularly where the transponder is in an unmarked area. Flying the baseline (to determine the true distance between transponders) and checking registration using manual fiducials/video tape will reduce these errors to acceptable limits. The UTEM coordinates can also be checked using GPS.

Flight Path

The flight path is drawn using linear interpolation between x,y positions from the navigation system. These positions are updated every second (or about 3.0 mm at a scale of 1:10,000). These positions are expressed as UTM eastings (x) and UTM northings (y).

Occasional dropouts occur when ranges to the ground transponders are lost. Interpolation is used to cover short flight path gaps. The navigator's flight path and/or the flight path recovered from the video tape may be stitched in to cover larger gaps. Such gaps may be recognized by the distinct straight line character of the flight path.

The manual fiducials are shown as a small circle and labelled by fiducial number. The 24-hour clock time is shown as a small square, plotted every 30 seconds. Small tick marks are plotted every 2 seconds. Larger tick marks are plotted every 10 seconds. The line and flight numbers are given at the start and end of each survey line.

The flight path map is merged with the base map by matching UTM coordinates from the base maps and the flight path record. The match is confirmed by checking the position of prominent topographic features as recorded by manual fiducial marks or as seen on the flight path video record.

Electromagnetic Survey Data

The electromagnetic data were recorded digitally at a sample rate of 10 per second with a time constant of 0.1 seconds. A two-stage digital filtering process was carried out to reject major sferic events and to reduce system noise.

Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events. The signal to noise ratio was further enhanced by the application of a low pass digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring and it suppresses only variations with a wavelength less than about 0.25 seconds. This low effective time constant gives minimal profile distortion.

Following the filtering process, a base level correction was made using EM zero levels determined during high altitude calibration sequences. The correction applied is a linear function of time that ensures the corrected amplitude of the various in-phase and quadrature components is zero when no conductive or permeable source is present. The filtered and levelled data were used in the determination of apparent resistivity (see below).

Total Field Magnetics

The aeromagnetic data were corrected for diurnal variations by adjustment with the recorded base station magnetic values. No corrections for regional variations were applied. The corrected profile data were interpolated on to a regular grid using an Akima spline technique. The grid provided the basis for threading the presented contours. The minimal contour interval is 5 nT. A grid cell size of 25 m was used.

Vertical Magnetic Gradient

The vertical magnetic gradient was calculated from the gridded total field magnetic data. The calculation is based on a 17 x 17 point convolution in the space domain. The results are contoured using a minimum contour interval of 0.05 nT/m. Grid cell sizes are the same as those used in processing the total field data.

Apparent Resistivity

The apparent resistivity is calculated by assuming a 200 metre thick conductive layer over resistive bedrock. The computer determines the resistivity that would be consistent with the sensor elevation and recorded in-phase and quadrature response amplitudes at the selected frequency. The apparent resistivity profile data was re-interpolated onto a regular grid at a 25 metres true scale interval using an Akima spline technique and contoured using logarithmically arranged contour intervals. The minimum contour interval is 0.1 log (ohmm).

The highest measurable resistivity is approx. equal to the transmitter frequency. The lower limit on apparent resistivity is rarely reached.

VLF-EM

The VLF Total Field data from the Line Station is levelled such that a response of less than 0% is seen in non-anomalous regions. The corrected profile data are interpolated onto a regular grid using an Akima spline technique. The grid provided the basis for threading the presented contours. The minimum contour interval is 1%. Grid cell size is 25 m.

Radiometric Data

The four channels of radiometric data are subject to a four-stage data correction process.

The stages are:

- low pass filter (seven-point Hanning)
- background removal
- terrain clearance correction
- compton stripping correction

The Compton stripping factors used were:

alpha	0.271 (Th into U)
beta	0.405 (Th into K)
gamma	0.676 (U into K)
a	0.05 (U into Th)
b	-0.01 (K into Th)
g	0.001 (K into U)

where alpha, beta and gamma are the forward stripping coefficients, and a, b, g are the backward stripping coefficients. These co-efficients are taken in part from the from the sample checks done at the start of each flight.

The altitude attenuation coefficients used were 0.0072 (TC), 0.0085 (K), 0.0082 (U) and 0.0067 (Th). The units are metres $^{-1}$. These co-efficients are taken from GSC publications for similar radiometric systems. Radiometric data were corrected to a mean terrain clearance of 60 m.

The corrected data were interpolated on a square grid (cell size 25 m) using an Akima spline technique. The grids provided the basis for threading the presented contours. The minimum contour intervals are 10 cps (TC), 2 cps (K), 1 cps (U) and 1 cps (Th).

INTERPRETATION

Magnetic Interpretation

The total field magnetic responses reflect major changes in the magnetite content of the underlying rock units. The amplitude of the magnetic responses relative to the regional background help to assist in identifying specific magnetic and non-magnetic units related to, for example, mafic flows or tuffs, mafic to ultramafic intrusives, felsic intrusives, felsic volcanics and/or sediments, etc. Obviously, several geological sources can produce the same magnetic response. These ambiguities can be reduced considerably if basic geological information on the area is available to the geophysical interpreter.

In addition to amplitude variations, magnetic patterns related to the geometry of the particular rock unit also help in determining the probable source of the magnetic response. For instance, long, narrow magnetic linears usually reflect mafic tuff or flow horizons, while semi-circular features with complex magnetic amplitudes may be produced by local plug-like intrusive sources such as pegmatites, carbonatites or kimberlites.

The calculated vertical magnetic gradient assists considerably in mapping weaker magnetic linears that are partially masked by nearby higher amplitude magnetic features. The broad zones of higher magnetic amplitude, however, are severely attenuated in the vertical magnetic gradient results. These higher amplitude zones reflect rock units having magnetic susceptibility signatures. For this reason, both the total and gradient magnetic datasets must be evaluated.

Theoretically, the zero contour of the magnetic gradient map marks the contacts or limits of large magnetic sources. This applies to wide sources, greater than 50 metres, having simple slab geometrics and shallow depth. (see discussion in Appendix I). Thus, the gradient map also aids in the more accurate delineation of contacts between differing magnetic rock units.

The cross-cutting structures shown on the interpretation map are based on interruptions and discontinuities in the magnetic trends. Generally, sharp folding of magnetic units will produce a magnetic pattern indistinguishable from a fault break. Thus, these structures have been designated as fold/fault features.

The magnetic background is interpreted to be approx. 57,050 nanoTesla (nT). Amplitudes range from about 550 nT above background to 250 nT below background. The anomaly patterns from high amplitude magnetic complexes producing a "U" shaped structure with superimposed east-west trends. Mafic volcanics or intrusives may be the source of these responses. The complex encloses local below background negative magnetic areas. These low amplitude areas probably relate to felsic or sedimentary rocks but may also indicate local areas of alteration. A local ring structure is present in the north central part of the survey block flanking the east side of the west arm of the "U" structure. This feature is coincident with a local topographic high and may be worth investigation.

Electromagnetic Anomaly Selection/Interpretation

It is difficult to differentiate between responses associated with the edge effects of flat-lying conductors and actual poor conductivity bedrock conductors on the edge of or overlain by flat-lying conductors. Poor conductivity bedrock conductors having low dips will also exhibit responses that may be interpreted as surficial overburden conductors. In such cases, where the source of the conductive response appears to be ambiguous, the anomaly is still selected for plotting. In some situations, the conductive response has line to line continuity and some magnetic association, thus providing possible evidence that the response is related to an actual bedrock source.

The calculation of the depth to the conductive source and its conductivity is based on the 4,600 Hz data using a thin vertical sheet model. The amplitude of the in-phase and quadrature responses are used for the calculations which are automatically determined by computer. Further detailed discussion and illustration of the determination of these values is contained in Appendix I.

The selected anomalies are automatically categorized according to their conductivity and amplitude. The calculation of the conductivity of low amplitude anomalies can be very inaccurate. Therefore, anomalies having amplitudes below a certain level and/or low conductivity value are given a zero rating with the category increasing for increasing conductivity values that are statistically reliable.

There are, unfortunately, very few conductive intercepts in this area that can be attributed to bedrock sources. Those seen have poor conductivity and are insignificant. Individual conductor intercepts are therefore absent on Plates 1.5 and 1.6.

VLF Electromagnetic Survey

This high frequency type of survey, utilizing fixed government communication transmitter stations, tends to detect long strike length and/or surficially poor conductivity sources such as swamps, creeks and rivers. Conductors that are optimum coupled with the primary field will usually predominate over those with other strike directions. In some instances, anomalies will be produced by variations in topographic relief. Unfortunately, the VLF station (NAA, Cutler) ceased operation and no data are available for this area.

Radiometric Interpretation

The ability to detect natural occurring radiation, whether on the ground or from an airborne platform, depends on a number of factors listed as follows:

Count Time

Measurements or count rate statistics are more reliable the longer the detector is in position over a particular location. Therefore, in airborne surveying, traverse speed is an important factor in detecting radiation sources. For this reason, STOL aircraft and helicopters are a favoured platform for radiometric surveys.

Detector Size

The detector crystal volume and thickness determine the sensitivity of the radiometric system to radiation. For accurate measurement and differentiation of higher energy levels of radiation, a large crystal volume is a pre-requisite.

Distance from Source (Altitude)

The attenuation or absorption of radiation in air, although not a significant factor in ground surveys, is a factor in airborne surveys. Normalization of the radiation amplitude data for altitude variations of the aircraft during the survey is necessary. The attenuation is not significant for large areal sources of radiation but is quite severe for localized point sources.

Overburden Cover

Radiation can be completely masked by one foot of rock or three feet of unconsolidated overburden.

Source Geometry

A large, exposed outcrop of slightly radioactive material, such as granite which usually has a high potassium count, will be easily detectable from the air. A small outcrop of highly radioactive material, containing an appreciable amount of pitchblende for instance, may not be detectable unless the sensor passes directly over the outcrop and/or is quite close to it.

Source Characteristics

The type and percentage concentration of radioactive minerals present in the rock will determine radiation amplitudes and therefore, the ability of the sensor to measure radiation.

The above factors must be taken into consideration when evaluating and interpreting radiometric surveys. Variations in radiation amplitudes may only be a factor of overburden cover. As a result, an outcrop map of the survey area is very useful for initial evaluation of radioactive element concentrations.

Shales and felsic intrusives tend to have high potassium and thorium levels. Mafic intrusives, sandstone and especially limestone have concentrations of one half to one tenth of the highest levels. Specific intrusive types, such as pegmatites, can have levels of potassium, uranium and thorium, in the order of three or four times the amounts normally present. Uranium ore can contain concentrations of radioactive minerals one to four orders of magnitude greater than normally encountered.

Thus, interpretation of the source of radioactive anomalies, even when the uranium, thorium and potassium thresholds are separated, can be difficult and ambiguous. In some geological environments, specific rock units have higher or lower uranium/thorium, uranium/potassium, or thorium/potassium ratios. Additional diagnostic information is sometimes available when such ratio maps are generated and compared to known geological parameters.

For this interpretation, amplitude characteristics for the various channels will be discussed relative to the featues mapped by the magnetic and electromagnetic results.

Most of the anomalies in this block are about 1-1/2 times background. There are a few local, higher amplitude anomalies but they do not appear to have any relationship to the other geophysical signatures and may be local outcrop exposures.

CONCLUSIONS AND RECOMMENDATIONS

The character of the combined geophysical responses, even though not very interesting on their own, could reflect a porphyry system hidden by overburden. It is recommended to execute detailed mapping, prospecting and geochemical surveying as a first phase ground follow-up.

Report by: __________________________

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APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat six frequency system utilized two different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at three widely separated frequencies. The horizontal coplanar coil configuration is similarly operated at three different frequencies where at least one pair is approximately aligned with one of the coaxial frequencies.

The electromagnetic response measured by the helicopter system is a function of the "electrical" and "geometrical" properties of the conductor. The "electrical" property of a conductor is determined largely by its electrical conductivity, magnetic susceptibility and its size and shape; the "geometrical" property of the response is largely a function of the conductor's shape and orientation with respect to the measuring transmitter and receiver.

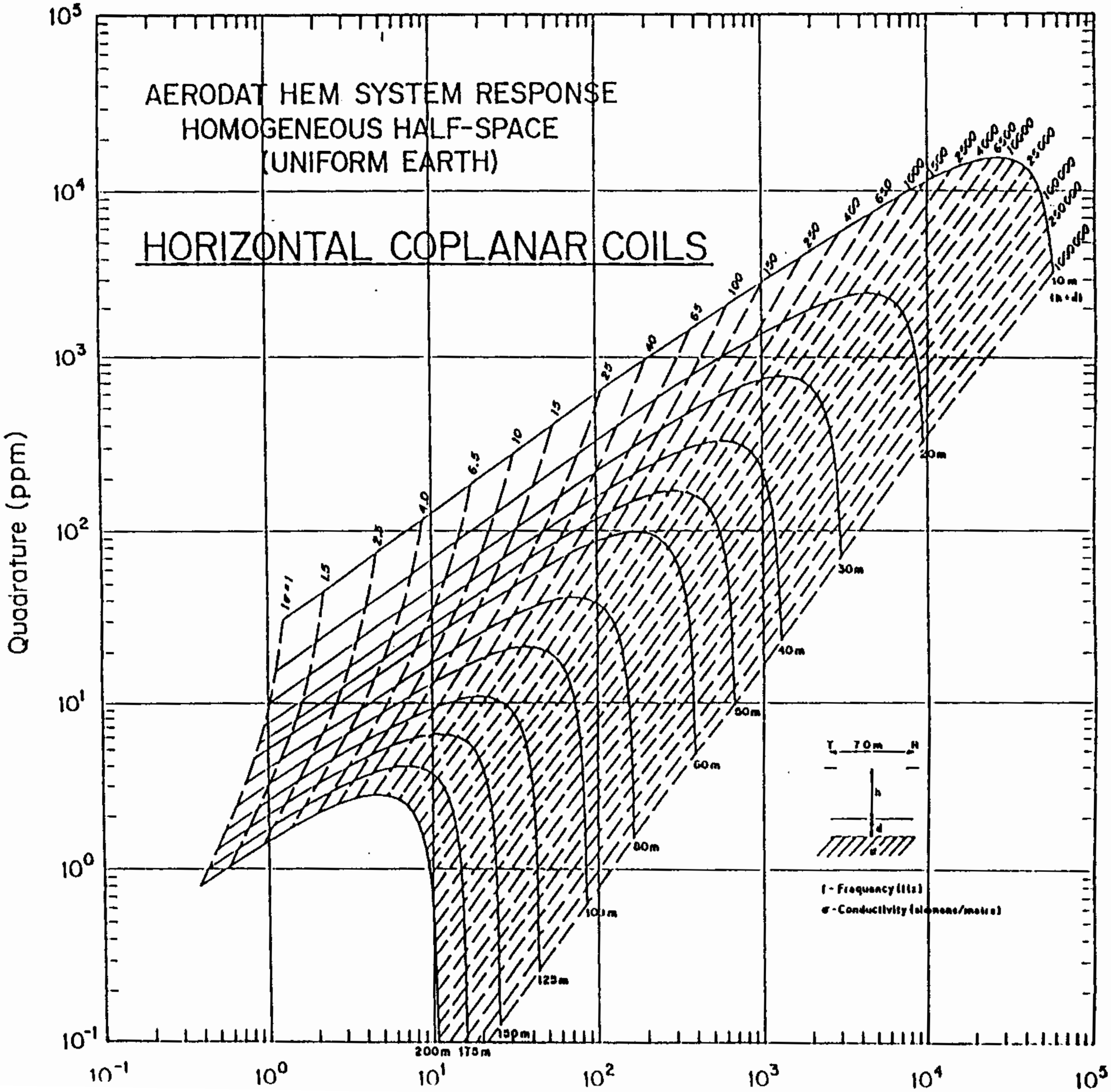
Electrical Considerations

For a given conductive body the measure of its conductivity or conductance is closely related to the measured phase shift between the received and transmitted electromagnetic field. A small phase shift indicates a relatively high conductance, a large phase shift lower conductance. A small phase shift results in a large inphase to quadrature ratio and a large phase shift a low ratio. This relationship is shown quantitatively for non-magnetic vertical half-plane and half-space models on the accompanying phasor diagrams. Other physical models will show the same trend but different quantitative relationships.

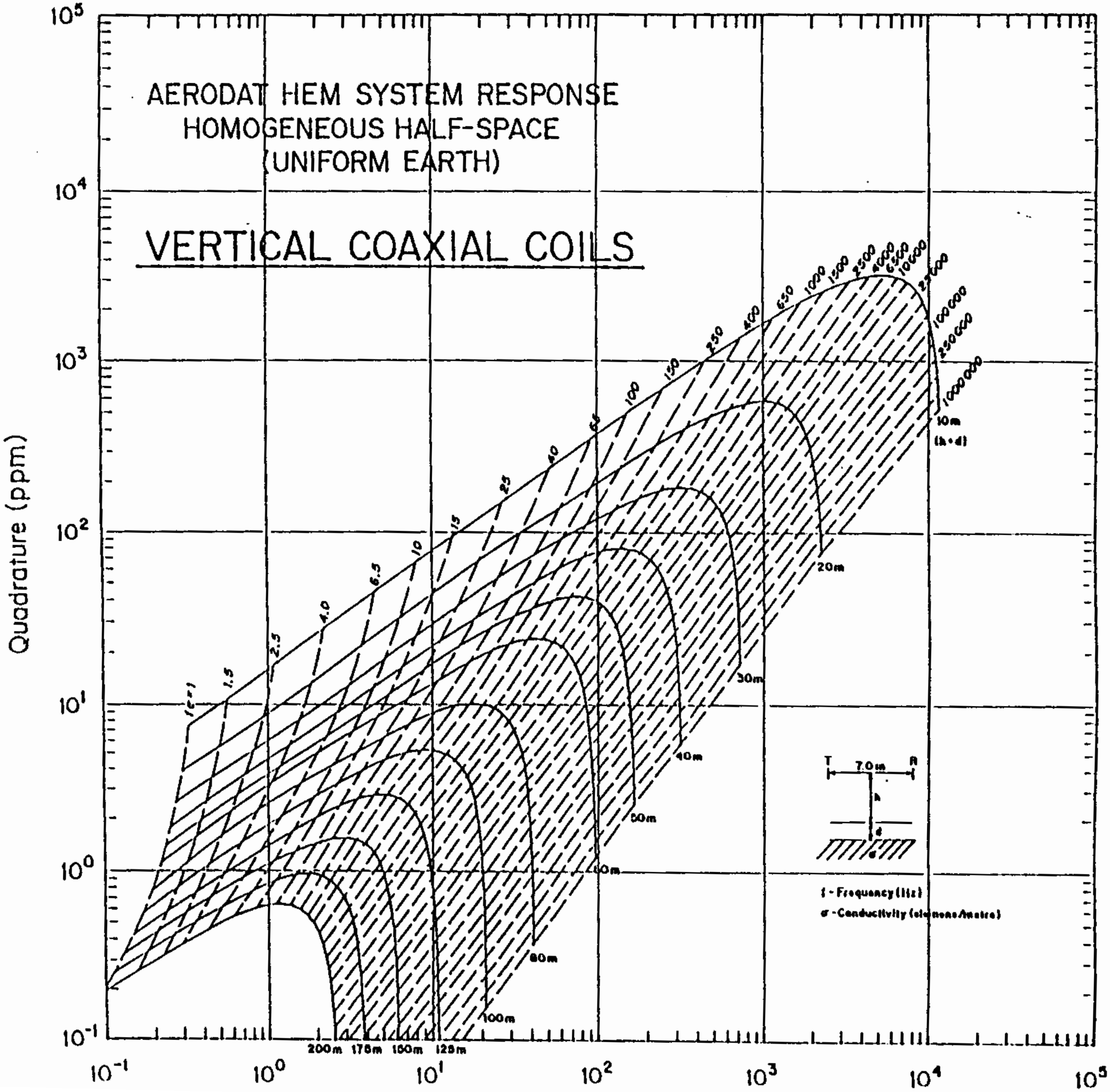
The phasor diagram for the vertical half-plane model, as presented, is for the coaxial coil configuration with the amplitudes in parts per million (ppm) of the primary field as measured at the response peak over the conductor. To assist the interpretation of the survey results the computer is used to identify the apparent conductance and depth of selected anomalies. The results of this calculation are presented in anomaly listings included in the survey report and the conductance and inphase amplitude are presented in symbolized form on the map presentation.

The conductance estimate is most reliable when anomaly amplitudes are large and background resistivities are high. Where the EM anomaly is of low amplitude and background resistivities are low, the conductance estimates are much less reliable. In such situations, the conductance estimate is often quite low regardless of the true nature of the conductor. This is due to the elevated background response levels in the quadrature channel. In an extreme case, the conductance estimate should be discounted and should not prejudice target selection.

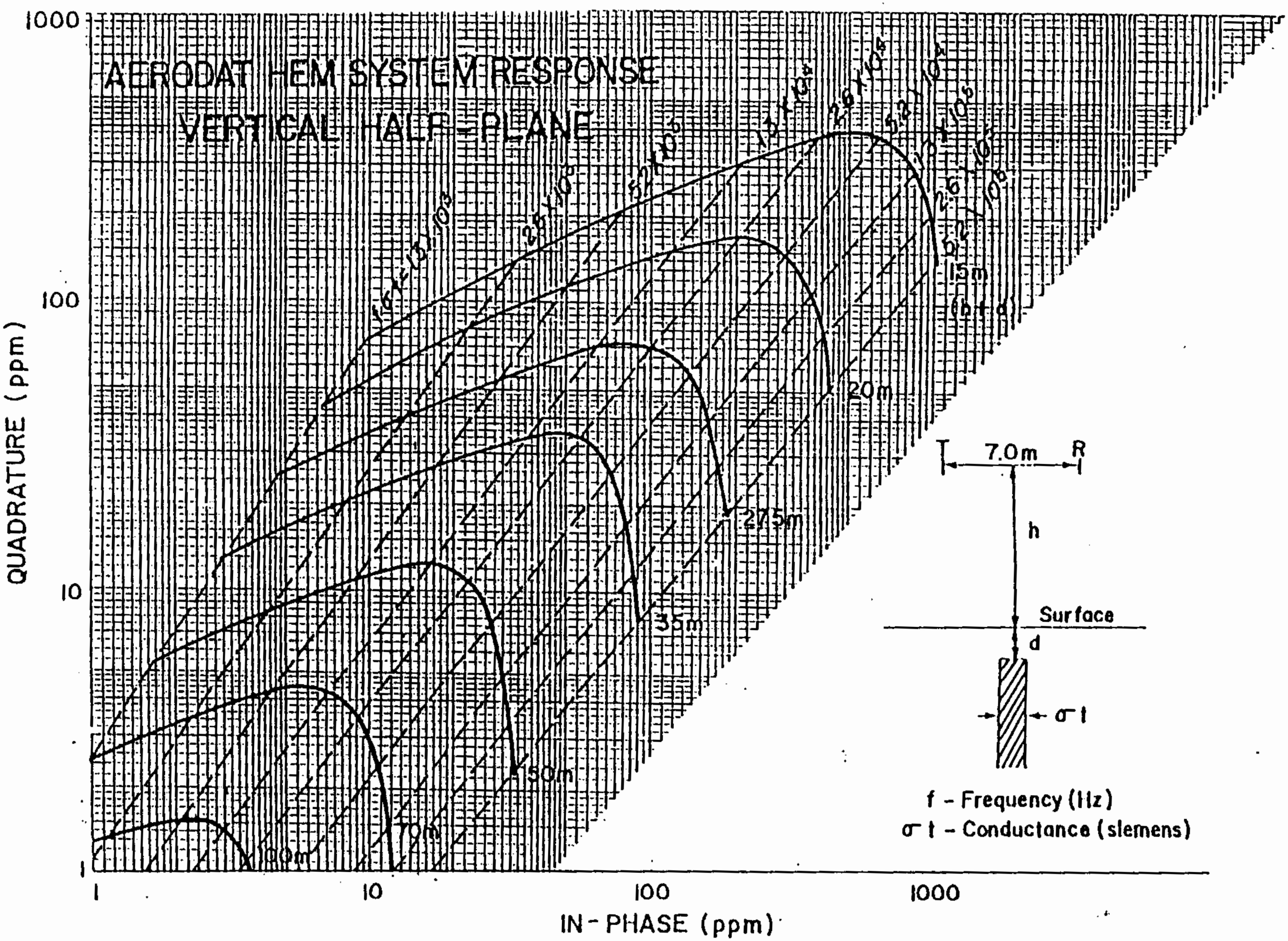
The conductance and depth values as presented are correct only as far as the model approximates the real geological situation. The actual geological source may be of limited length, have significant dip, may be strongly magnetic. Its conductivity and thickness may vary with depth



AERODAT HEM SYSTEM RESPONSE
HOMOGENEOUS HALF-SPACE
(UNIFORM EARTH)
HORIZONTAL COPLANAR COILS
Quadrature (ppm)
f - Frequency (Hz)
σ - Conductivity (siemens/metre)
70m
h
d
10m
(h+d)
20m
30m
40m
50m
60m
80m
100m
125m
150m
175m
200m



AERODAT HEM SYSTEM RESPONSE
HOMOGENEOUS HALF-SPACE
(UNIFORM EARTH)
VERTICAL COAXIAL COILS
Quadrature (ppm)
10m
(h+d)
20m
30m
40m
50m
60m
80m
100m
200m
175m
150m
125m
7.0m
f - Frequency (Hz)
σ - Conductivity (siemens/metre)


AERODAT HEM SYSTEM RESPONSE
VERTICAL HALF-PLANE
QUADRATURE (ppm)
IN-PHASE (ppm)
1000
100
10
1
1
10
100
1000
15m
(h+d)
20m
27.5m
35m
50m
70m
100m
T
7.0m
R
h
Surface
d
σ-t
f - Frequency (Hz)
σ-t - Conductance (siemens)

and/or strike and adjacent bodies and overburden may have modified the response. In general the conductance estimate is less affected by these limitations than is the depth estimate, but both should be considered as relative rather than absolute guides to the anomaly's properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab-like bodies is the product of electrical conductivity and thickness.

The higher ranges of conductance, greater than 2-4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater, are generally limited to massive sulphides or graphites.

Sulphide minerals, with the exception of such ore minerals as sphalerite, cinnabar and stibnite, are good conductors. Sulphides may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously underrate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant concentrations in association with minor conductive sulphides, and the electromagnetic response will only relate to the minor associated mineralization. Indicated conductance is also of little direct significance for the identification of gold mineralization. Although gold is highly conductive, it would not be expected to exist in sufficient quantity to create a recognizable anomaly. Minor accessory sulphide mineralization may however provide a useful indirect indication.

In summary, the estimated conductance of a conductor can provide a relatively positive identification of significant sulphide or graphite mineralization. A moderate to low conductance value does not rule out the possibility of significant economic mineralization.

Geometrical Considerations

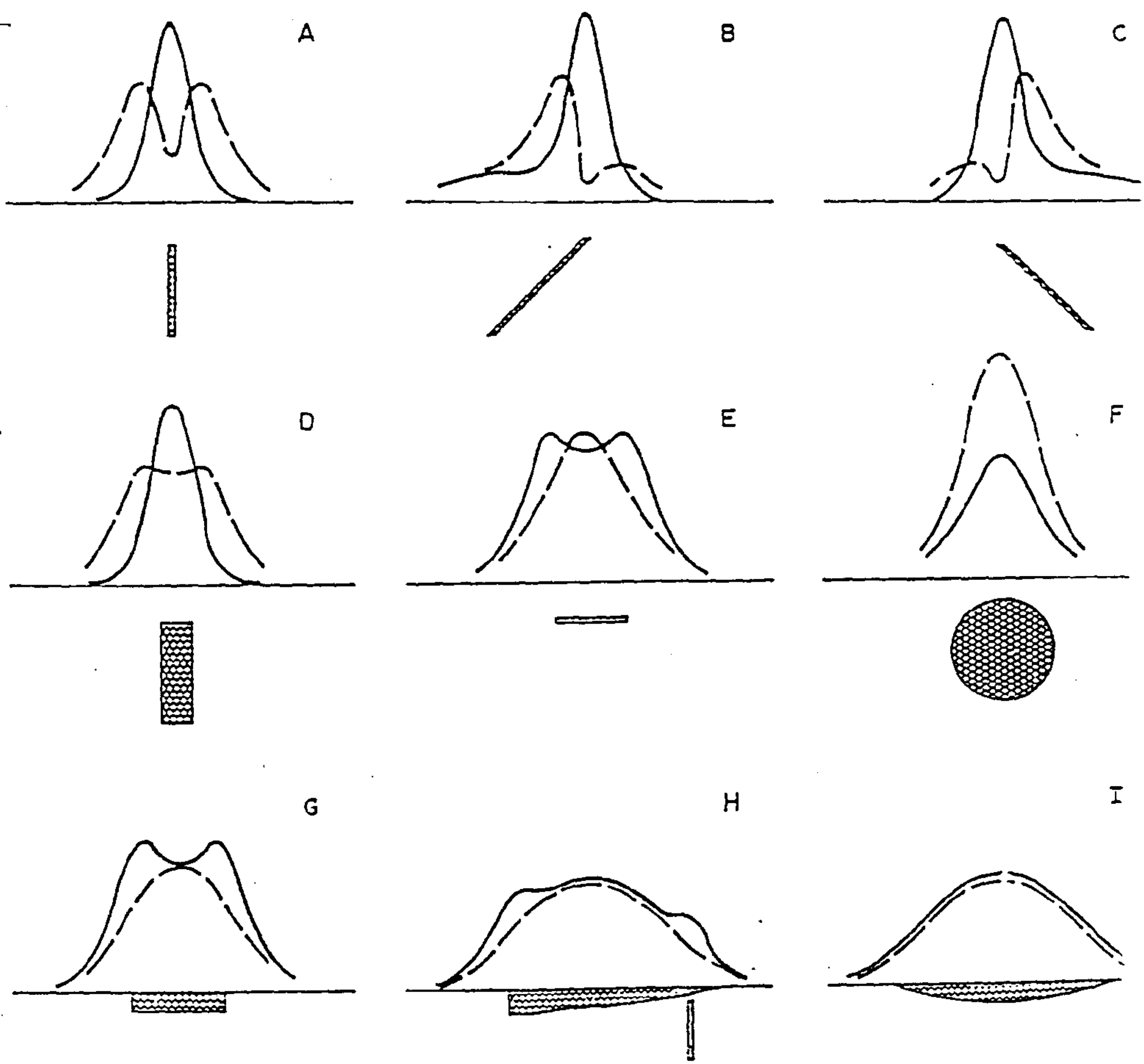
Geometrical information about the geologic conductor can often be interpreted from the profile shape of the anomaly. The change in shape is primarily related to the change in inductive coupling among the transmitter, the target, and the receiver. The accompanying figure shows a selection of HEM response profile shapes from nine idealized targets. Response profiles are labelled A through I. These labels are used in the discussion which follows.

In the case of a thin, steeply dipping, sheet-like conductor, the coaxial coil pair will yield a near symmetric peak over the conductor. On the other hand, the coplanar coil pair will pass through a null couple relationship and yield a minimum over the conductor, flanked by positive side lobes.(Profile A) As the dip of the conductor decrease from vertical, the coaxial anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side.(Profiles B and C).

As the thickness of the conductor increases, induced current flow across the thickness of the

HEM RESPONSE PROFILE SHAPE AS AN INDICATOR OF CONDUCTOR GEOMETRY

COAXIAL vertical scale 1 ppm/unit
COPLANAR vertical scale 4 ppm/unit



conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible.(Profile D) As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as a horizontal thin sheet or overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar:coaxial) of about 4:1*.(Profiles E and G).

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8* times greater than that of the coaxial pair.(Profile F)

In summary, a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor. A pronounced null indicates a relatively thin conductor. The dip of such a conductor can be inferred from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8*.

Overburden anomalies often produce broad poorly defined anomaly profiles.(Profile I) In most cases, the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ratio of 4*.

Occasionally, if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak.(Profile H)

* It should be noted at this point that Aerodat's definition of the measured ppm unit is related to the primary field sensed in the receiving coil without normalization to the maximum coupled (coaxial configuration). If such normalization were applied to the Aerodat units, the amplitude of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to a magnetic body. The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite. Conductive and magnetic bodies in close association can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

The interpretation of contoured aeromagnetic data is a subject on its own involving an array of methods and attitudes. The interpretation of source characteristics for example from total field results is often based on some numerical modelling scheme. The vertical gradient data is more legible in some aspects however and useful inferences about source characteristics can often be read off the contoured VG map.

The zero contour lines in contoured VG data are often sited as a good approximation to the outline of the top of the magnetic source. This only applies to wide (relative to depth of burial) near vertical sources at high magnetic latitudes. It will give an incorrect interpretation in most other cases.

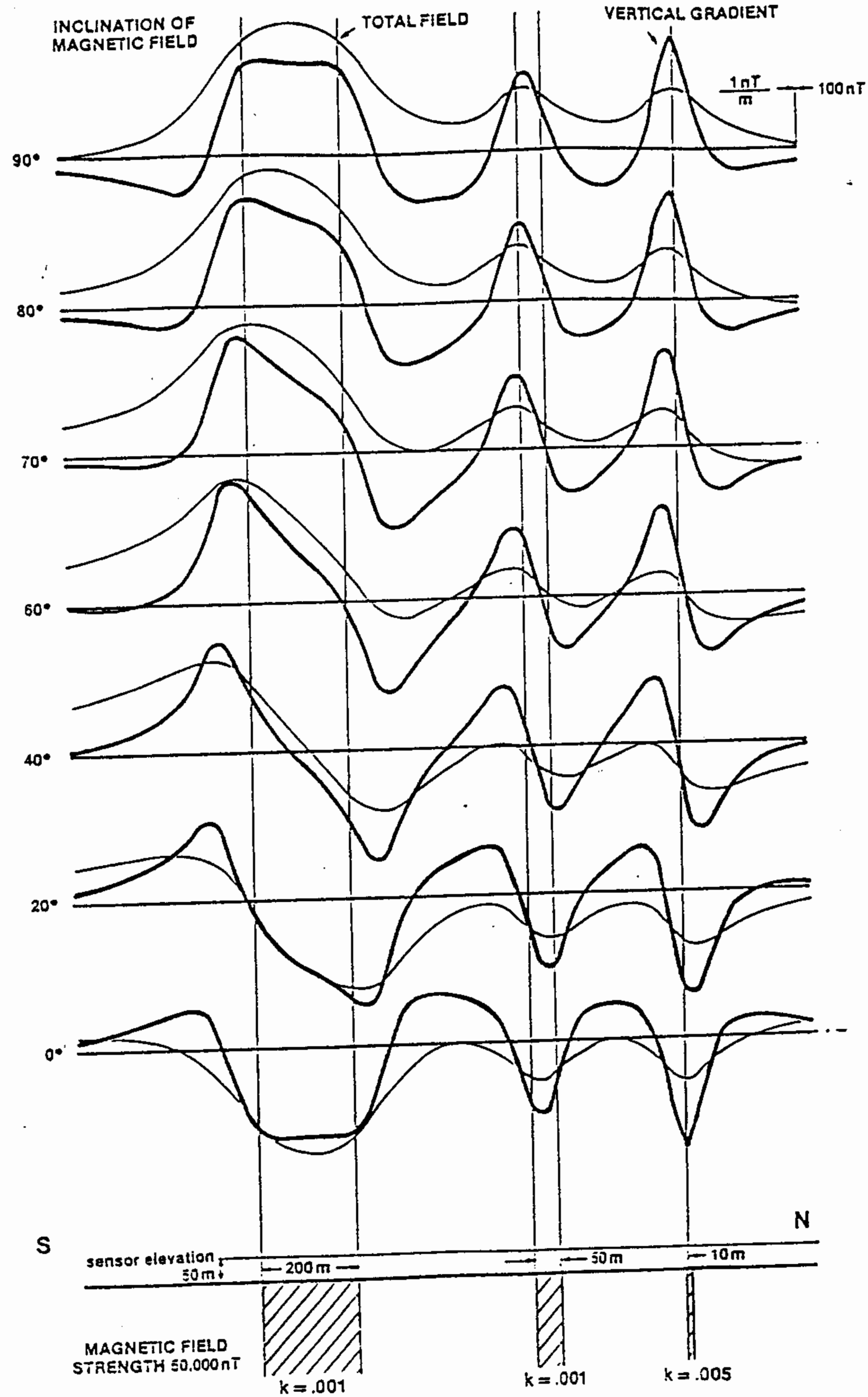
Theoretical profiles of total field and vertical gradient anomalies from tabular sources at a variety of magnetic inclinations are shown in the attached figure. Sources are 10, 50 and 200 m wide. The source-sensor separation is 50 m. The thin line is the total field profile. The thick line is the vertical gradient profile.

The following comments about source geometry apply to contoured vertical gradient data for magnetic inclinations of 70 to 80°.

Outline

Where the VG anomaly has a single sharp peak, the source may be a thin near-vertical tabular source. It may be represented as a magnetic axis or as a tabular source of measureable width - the choice is one of geological preference.

Where the VG anomaly has a broad, flat or inclined top, the source may be a thick tabular source. It may be represented as a thick body where the width is taken from the zero contour lines if the body dips to magnetic north. If the source appears to be dipping to the south (i.e. the VG anomaly is asymmetric), the zero contours are less reliable indicators of outline. The southern most zero contour line should be ignored and the outline taken from the northern zero contour line and the extent of the anomaly peak width.



INCLINATION OF MAGNETIC FIELD
TOTAL FIELD
VERTICAL GRADIENT
1nT/m
100nT
90°
80°
70°
60°
40°
20°
0°
S
N
sensor elevation 50m
200m
50m
10m
MAGNETIC FIELD STRENGTH 50,000nT
k = .001
k = .001
k = .005

Dip

A symmetrical vertical gradient response is produced by a body dipping to magnetic north. An asymmetrical response is produced by a body which is vertical or dipping to the south. For southern dips, the southern most zero contour line may be several hundred meters south of the source.

Depth of Burial

The source-sensor separation is about equal to half of the distance between the zero contour lines for thin near-vertical sources. The estimated depth of burial for such sources is this separation minus 50 m. If a variety of VG anomaly widths are seen in an area, use the narrowest width seen to estimate local depths.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is locally horizontal and normal to a line pointing at the transmitter.

The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component from two VLF stations. These stations are designated Line and Ortho. The line station is ideally in a direction from the survey area at right angles to the flight line direction. Conductors normal to the flight line direction point at the line station and are therefore optimally coupled to VLF magnetic fields and in the best situation to gather secondary VLF currents. The ortho station is ideally 90 degrees in azimuth from the line station.

The relatively high frequency of VLF (15-25) kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measurable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground the depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically, it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field anomaly is an indicator of the existence and position of a conductor. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

Conversely a negative total field anomaly is often seen over local resistivity highs. This is because the VLF field produces electrical currents which flow towards (or away from) the transmitter. These currents are gathered into a conductor and are taken from resistive bodies. The VLF system sees the currents gathered into the conductor as a total field high. It sees the relative absence of secondary currents in the resistor as a total field low.

As noted, VLF anomaly trends show a strong bias towards the VLF transmitter. Structure which is normal to this direction may have no associated VLF anomaly but may be seen as a break or interruption in VLF anomalies. If these structures are of particular interest, maps of the ortho station data may be worthwhile.

Conductive overburden will obscure VLF responses from bedrock sources and may produce low amplitude, broad anomalies which reflect variations in the resistivity or thickness of the overburden.

Extreme topographic relief will produce VLF anomalies which may bear no relationship to variations in electrical conductivity. Deep gullies which are too narrow to have been surveyed at a uniform sensor height often show up as VLF total field lows. Sharp ridges show up as total field highs.

The vertical quadrature component over steeply dipping sheet-like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.

The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The vertical quadrature component is rarely presented. Experience has shown the total field to be more sensitive to bedrock conductors and less affected by variations in conductive overburden.

AERODAT LIMITED
June, 1991.

APPENDIX II

PERSONNEL

FIELD

Flown	July 2 to 7, 1993
Pilot(s)	L. Stanley
Operator(s)	L. Moore

OFFICE

Processing	Pierre Marchand George McDonald
Report	R.W. Wollham

APPENDIX III

IN THE MATTER OF THE B.C. MINERAL ACT

AND THE MATTER OF A GEOPHYSICAL PROGRAMME

CARRIED OUT ON THE DUAL 1 TO 6 CLAIMS

AND LOCATED 50 KMS SSW OF HOUSTON, B.C.

IN THE OMINECA MINING DIVISION OF THE

PROVINCE OF BRITISH COLUMBIA,

MORE PARTICULARLY,

N.T.S. 93E/14

STATEMENT

I. JAN KLEIN, of the Municipality of Burnaby in the Province of British Columbia, make oath and say:

1. THAT I am employed as a geophysicist by Cominco Ltd., and, as such, have a personal knowledge of the facts to which I hereinafter depose;

2. THAT annexed hereto and marked as Appendix IV is true copy of expenditures incurred on the geophysical survey on the Dual 1 to 6 claims;

3. THAT the said expenditures were incurred between July 2 to July 7, 1993, for the purpose of mineral exploration of the above-noted claims.

J. Klein
Chief Geophysicist, Cominco Ltd.

December 1993

APPENDIX IV

STATEMENT OF EXPENDITURES

ON THE DUAL 1 TO 6 CLAIMS

JULY 2 TO 7, 1993

Combined Helicopter-Borne Magnetic, Electromagnetic, Radiometric and VLF-EM Survey Performed by Geonex Aerodat Inc., Mississauga, Ontario

1.	122 Line Kilometres @ $75/line km	$ 9,150.00
2.	50% of Mobilization/Demobilization	$ 2,500.00
3.	Report Writing by J. Klein	$ 350.00
		$ 12,000.00

APPENDIX V

CERTIFICATE OF QUALIFICATIONS

I, JAN KLEIN, of 7025 Dunblane Avenue, in the Municipality of Burnaby, in the Province of British Columbia, do hereby certify:

1. THAT I graduated from the Technological University of Delft, Netherlands in 1965 with a M.Sc. in Geophysics;

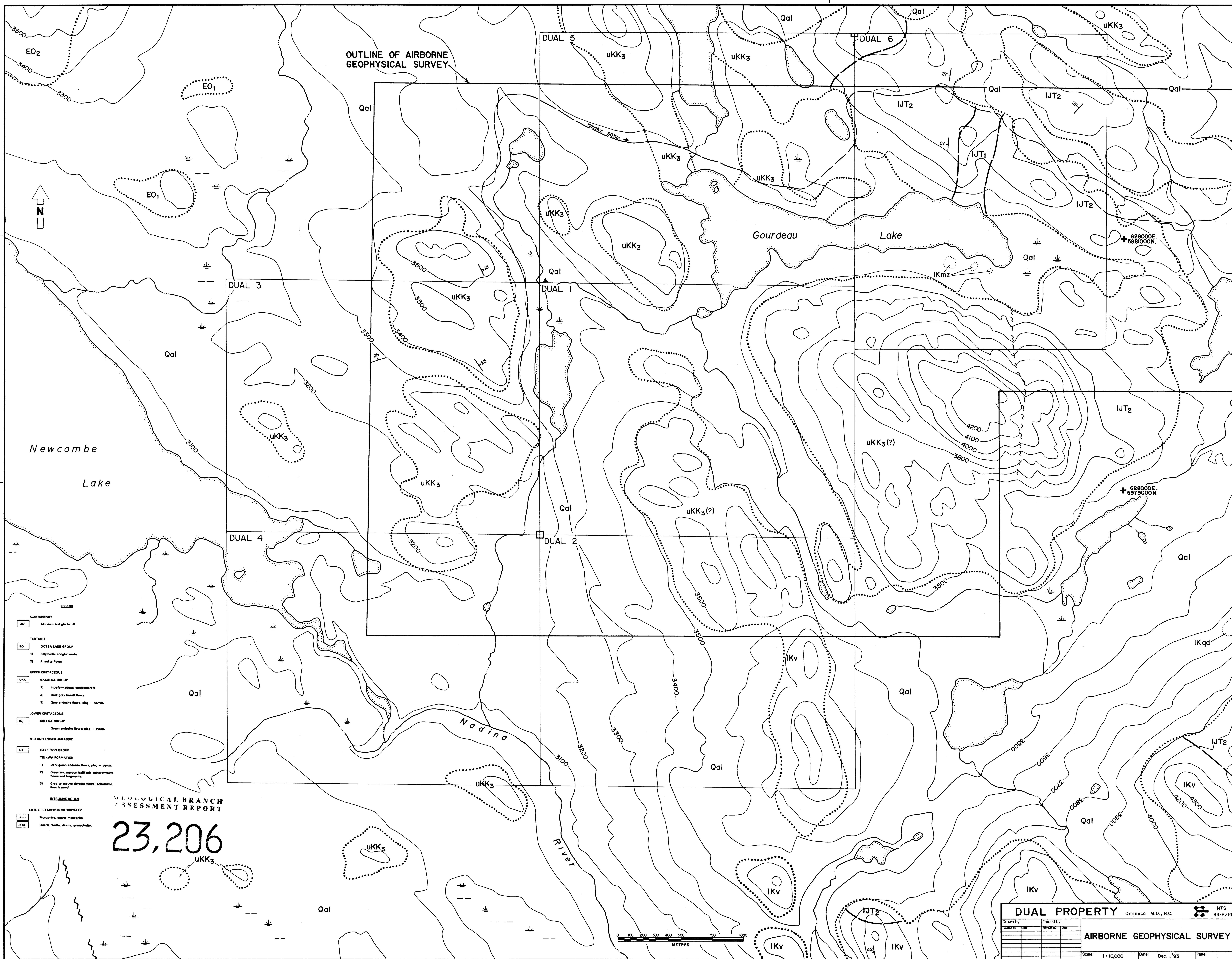
2. THAT I am a member of the Association of Professional Engineers of the Province of British Columbia, the Society of Exploration Geophysicists of America, and the British Columbia Geophysical Society;

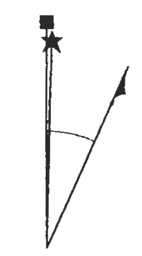
3. THAT I have been practising my profession for the past twenty-eight years.

4. THAT I have been employed by Cominco Ltd. since 1974.

J. Klein, P.Eng.
Chief Geophysicist
Cominco Ltd.

Dated this 9th day of December, 1993
at Vancouver, British Columbia


OUTLINE OF AIRBORNE GEOPHYSICAL SURVEY
DUAL 1
DUAL 2
DUAL 3
DUAL 4
DUAL 5
DUAL 6
Gourdeau Lake
Newcombe Lake
Nadina River
Houston 90Km.
N
628000E. 5981000N.
628000E. 5979000N.
Qal
EO1
EO2
uKK3
uKK3(?)
lJT1
lJT2
lKmz
lKqd
lKv
3100
3200
3300
3400
3500
3600
3700
3800
3900
4000
4100
4200
4300
METRES
0
100
200
300
400
500
750
1000
LEGEND
QUATERNARY
Qal Alluvium and glacial till
TERTIARY
EO OOTSA LAKE GROUP
1) Polymictic conglomerate
2) Rhyolite flows
UPPER CRETACEOUS
UKK KASALKA GROUP
1) Intraformational conglomerate
2) Dark grey basalt flows
3) Grey andesite flows; plag + hornbl.
LOWER CRETACEOUS
IKv SKEENA GROUP
Green andesite flows; plag + pyrox.
MID AND LOWER JURASSIC
IJT HAZELTON GROUP
TELKWA FORMATION
1) Dark green andesite flows; plag + pyrox.
2) Green and maroon lapilli tuff; minor rhyolite flows and fragments.
3) Grey to mauve rhyolite flows; spherulitic, flow layered.
INTRUSIVE ROCKS
LATE CRETACEOUS OR TERTIARY
IKmz Monzonite, quartz monzonite
IKqd Quartz diorite, diorite, granodiorite.
GEOLOGICAL BRANCH ASSESSMENT REPORT
23,206
DUAL PROPERTY Omineca M.D., B.C.
NTS 93·E/14
Drawn by:
Traced by:
Revised by
Date
AIRBORNE GEOPHYSICAL SURVEY
Scale: 1 : 10,000
Date: Dec., '93
Plate: 1
Form 210 - 0680



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

2 nT
10 nT
50 nT
250 nT
1000 nT

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

NEW CANAMIN RESOURCES LTD.

TOTAL FIELD MAGNETICS

HUCKLEBERRY MTN (AREA -B-)

BRITISH COLUMBIA

SCALE 1:10 000

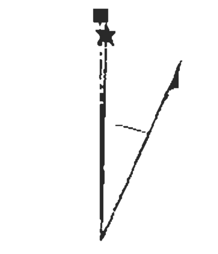
250 0 100 200 500 1000 metres

AERODAT LIMITED

Date Flown : JULY, 1993

NTS : 93 E/11

Project : J9355 Map Ref : 1 - 3



Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13'

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the gridded total field magnetics data by an FFT algorithm.

Map contours are in nanoTeslas/metre, and are multiples of those listed below:

- 0.2 nT/m
- 1 nT/m
- 5 nT/m
- 25 nT/m
- 100 nT/m

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter terrain clearance of 60m was monitored by radar and barometric altimeters.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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NEW CANAMIN RESOURCES LTD.

VERTICAL MAGNETIC GRADIENT

HUCKLEBERRY MTN (AREA -B-)

BRITISH COLUMBIA

SCALE 1:10 000

250 0 100 500 1000 metres

AERODAT LIMITED

Date Flown : JULY, 1993

NTS : 93 E/11

Project : J9355 Map Ref : 1 - 4

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

APPARENT RESISTIVITY

Apparent resistivity calculated from the measured 4600 Hz coaxial EM response, assuming a resistive half-space (200m) model. Average sensor elevation was 30m.

Map contours are in ohm·m, at logarithmic intervals, in multiples of those listed below:

- 0.1 log(ohm·m)
- 0.5 log(ohm·m)
- 2.0 log(ohm·m)

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

GEOLOGICAL BRANCH
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NEW CANAMIN RESOURCES LTD.

APPARENT RESISTIVITY

4600 Hz COAXIAL

HUCKLEBERRY MTN (AREA -B-)

BRITISH COLUMBIA

SCALE 1:10 000

250 0 100 200 500 1000 metres

AERODAT LIMITED	Date Flown : JULY, 1993
	NTS : 93 E/11
	Project : J9355 Map Ref : 1 - 5

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

APPARENT RESISTIVITY

Apparent resistivity calculated from the measured 4175 Hz coplanar EM response, assuming a resistive half-space (200m) model. Average sensor elevation was 30m.

Map contours are in ohm·m, at logarithmic intervals, in multiples of those listed below:

- 0.1 log(ohm·m)
- 0.5 log(ohm·m)
- 2.0 log(ohm·m)

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

NEW CANAMIN RESOURCES LTD.

APPARENT RESISTIVITY
4175 Hz COPLANAR

HUCKLEBERRY MTN (AREA -B-)
BRITISH COLUMBIA

SCALE 1:10 000

250 0 100 200 500 1000 metres

AERODAT LIMITED

Date Flown : JULY, 1993
NTS : 93 E/11
Project : J9355 Map Ref : 1 - 6

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

TOTAL FIELD VLF-EM

Total field VLF-EM contour data, measured by a Herz Totem 2A sensor at an average elevation of 45m.

All Flights utilized station: NAA, Cutler, Maine. 24.0 kHz.

Map contours are in percent, and are multiples of those listed below:

1 %
5 %
25 %

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

GEOLOGICAL BRANCH
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NEW CANAMIN RESOURCES LTD.

TOTAL FIELD VLF-EM

HUCKLEBERRY MTN (AREA -B-)

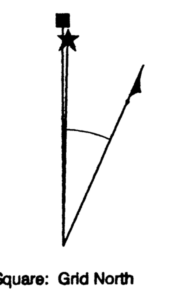
BRITISH COLUMBIA

SCALE 1:10 000

250 0 100 200 500 1000 metres

AERODAT LIMITED

Date Flown : JULY, 1993
NTS : 93 E/11
Project : J9355 Map Ref : 1 - 7



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

RADIOMETRICS

Potassium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

- 2 cps
- 10 cps
- 50 cps

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

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NEW CANAMIN RESOURCES LTD.

POTASSIUM COUNT RADIOMETRICS

HUCKLEBERRY MTN (AREA -B-)

BRITISH COLUMBIA

SCALE 1:10 000

250 0 100 200 500 1000 metres

GEONEX AERODAT

Date Flown : JULY, 1993

NTS : 93 E/11

Project : J9355 Map Ref : 1 - 7a

Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

RADIOMETRICS

Total count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

10 cps
50 cps
250 cps

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

NEW CANAMIN RESOURCES LTD.

TOTAL COUNT RADIOMETRICS

HUCKLEBERRY MTN (AREA -B-)

BRITISH COLUMBIA

SCALE 1:10 000

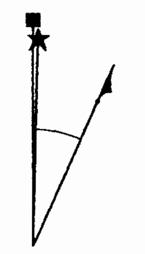
250 0 100 200 500 1000 metres

GEONEX AERODAT

Date Flown : JULY, 1993

NTS : 93 E/11

Project : J9355 Map Ref : 1 - 7b



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

RADIOMETRICS

Thorium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

——— 1 cps
——— 5 cps
——— 25 cps

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

GEOLOGICAL BRANCH ASSESSMENT REPORT

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NEW CANAMIN RESOURCES LTD.

THORIUM COUNT RADIOMETRICS

HUCKLEBERRY MTN (AREA -B-)

BRITISH COLUMBIA

SCALE 1:10 000

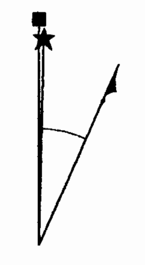
250 0 100 200 500 1000 metres

GEONEX AERODAT

Date Flown : JULY, 1993

NTS : 93 E/11

Project : J9355 Map Ref : 1 - 7c



Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : 1.4°
Grid North - Magnetic North : 24.2°
Annual change :-11.13°

RADIOMETRICS

Uranium count radiometric contour data measured by a 256 channel spectrometer system mounted in the helicopter at an average sensor elevation of 60m. Corrections were made for cosmic and background emissions, Compton scatter, and altitude variation.

Map contours are in counts/second, and are multiples of those listed below:

1 cps
5 cps
25 cps

FLIGHT PATH

Navigation and flight path recovery was conducted using a Mini-Ranger IV (Falcon) multi-transponder radar navigation system.

Lines were flown at an azimuth of 90 - 270°, with an average line spacing of 200m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

GEOLOGICAL BRANCH
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NEW CANAMIN RESOURCES LTD.

URANIUM COUNT RADIOMETRICS

HUCKLEBERRY MTN (AREA -B-)

BRITISH COLUMBIA

SCALE 1:10 000

250 0 100 200 500 1000 metres

GEONEX AERODAT

Date Flown : JULY, 1993
NTS : 93 E/11
Project : J9355 Map Ref : 1 - 7d