ASSESSMENT REPORT
ON THE
DEL NORTE CREEK PROPERTY
AIRBORNE GEOPHYSICAL PROGRAM

CROESUS 1-4 and BOND 1-7 CLAIMS

Skeena Mining Division
NTS 104A/4E&3W
Latitude 56°00'N
Longitude 130°40'W
British Columbia

October 4, 1989

by

D.W. Mallo
Prime Explorations Ltd.
and
Z. Dvorak
Aerodat Limited

Operator:

GOODGOLD RESOURCES LTD.
808 West Hastings Street
Vancouver, British Columbia
V6C 2X4

Owners:

D. CREMONESE
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West Vancouver, B. C.
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DEL NORTE CREEK PROPERTY

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SUMMARY

This report describes an airborne geophysical survey - Magnetic, Electromagnetic and VLF-EM, flown on the Del Norte Creek Property on behalf of Goodgold Resources Ltd., July 17-23, 1989. The survey covered 292 line-kilometers over the claims. This work is submitted for assessment credit on the CROESUS 1 to 4 and BOND 1 to 7 claims.

The Del Norte Creek Property is comprised of eleven claims, recorded in the names of D. Cremonese and M. Royle. The property lies approximately 30 kilometers east of Stewart, British Columbia, on the eastern edge of the Cambria Icefield.

The Del Norte Creek Property has previously had only minor exploration in the last several years, by the present owners. The work consisted of reconnaissance rock and silt sampling, with several zones of anomalous gold and base metals delineated. Goodgold Resources acquired an option to earn a 60% interest in the claims in 1989.

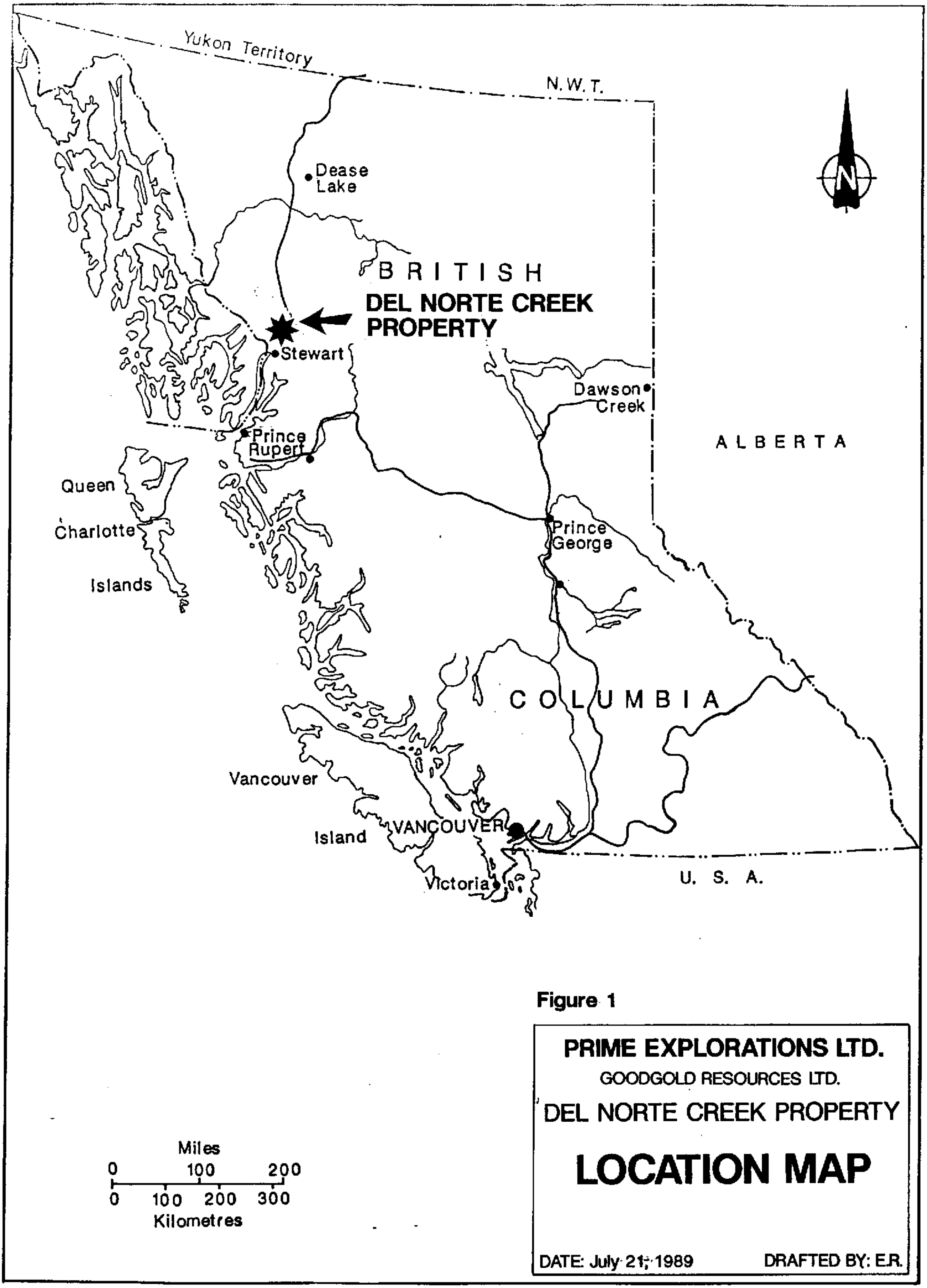

Figure 1

PRIME EXPLORATIONS LTD.

GOODGOLD RESOURCES LTD.

DEL NORTE CREEK PROPERTY

LOCATION MAP

DATE: July 21, 1989 DRAFTED BY: E.R.

INTRODUCTION

Objective

The objective of the 1989 airborne geophysical survey was to define areas of possible precious metal anomalies reflected by magnetic, electromagnetic and VLF-EM surveys. These anomalies will hopefully provide a data base for a surface exploration program on the property. The geophysical report and maps are included as Appendix I in this report.

Location and Access

The Del Norte Creek Property is located on the eastern edge of the Cambria Icefield, approximately 30 kilometers east of Stewart, British Columbia. It is centered around Latitude 56° 00'N and Longitude 130° 40'W, NTS Reference Maps 104A/4E,3W. (Figure 1)

Access is by helicopter either from Stewart or Meziadin Junction. The closest road to the property is the Stewart-Cassiar Highway, about 13 km to the north.

Property Description

The Del Norte Creek Property consists of 11 mineral claims (a total of 188 units), situated within the Skeena Mining Division. (Figure 2) The recorded owners are D. Cremonese and M. Royle. Goodgold Resources Ltd. has an option to earn 60% interest in the claims, from the owners. Pertinent claim information is as follows:

Table 1
LIST OF CLAIMS

Claim Name	Record No.	Units	Record Date	Expiry Date *
CROESUS 1	6129	15	May 04,1987	May 04,1990
CROESUS 2	6130	18	May 04,1987	May 04,1990
CROESUS 3	6131	20	May 04,1987	May 04,1990
CROESUS 4	6132	20	May 04,1987	May 04,1990
BOND 1	7007	10	Nov.05,1988	Nov.05,1989
BOND 2	7008	15	Nov.05,1988	Nov.05,1989
BOND 3	7020	18	Dec.05,1988	Dec.05,1989
BOND 4	7044	18	Dec.05,1988	Dec.05,1989
BOND 5	7045	18	Dec.05,1988	Dec.05,1989
BOND 6	7046	18	Dec.05,1988	Dec.05,1989
BOND 7	7047	18	Dec.05,1988	Dec.05,1989

* Based on this assessment report 1 year's work is to be applied to all the claims.

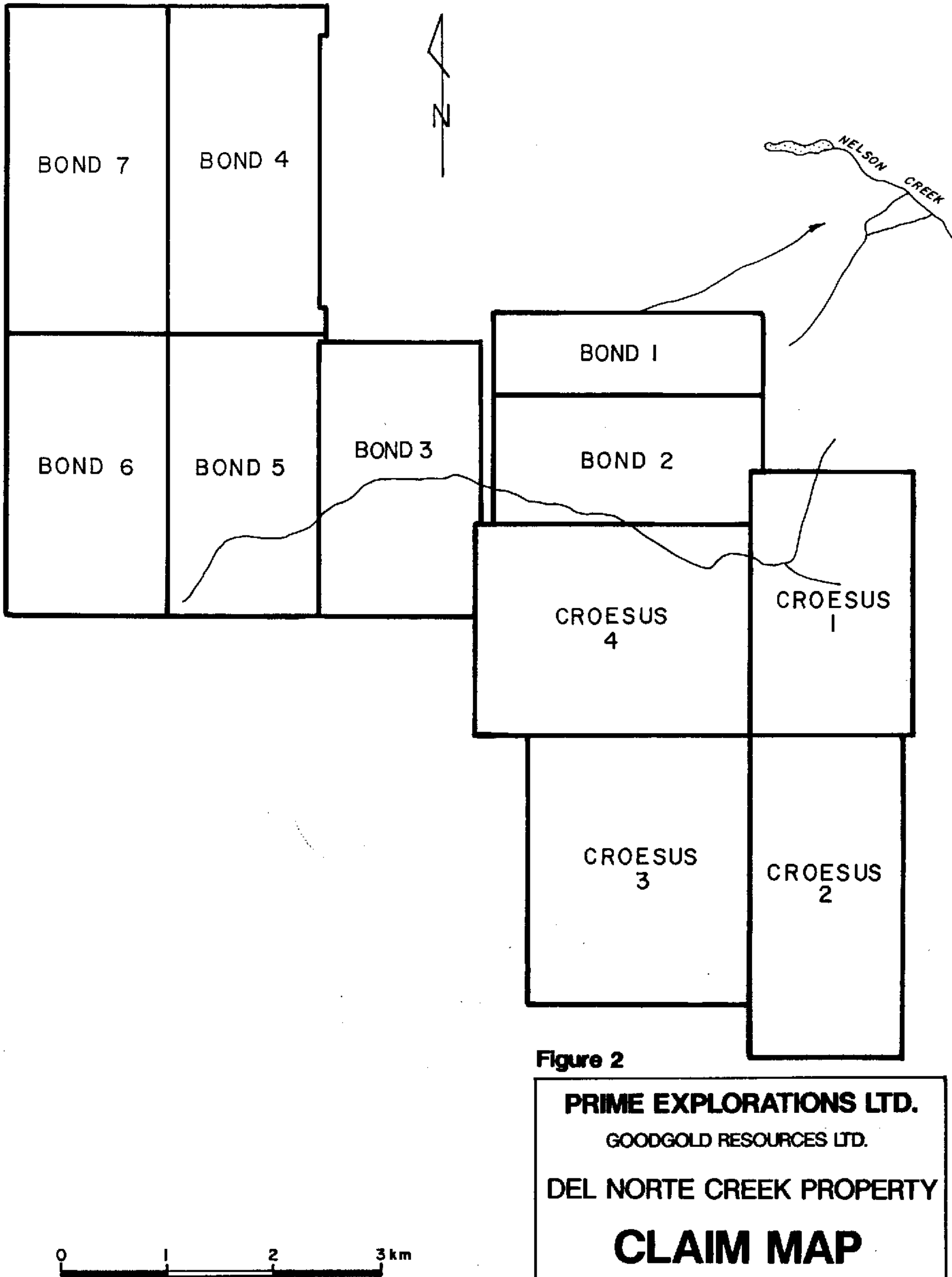

Figure 2

PRIME EXPLORATIONS LTD.

GOODGOLD RESOURCES LTD.

DEL NORTE CREEK PROPERTY

CLAIM MAP

NTS: 103 P/13,14, 104 A/3,4

DATE: July 21, 1989 DRAFTED BY: B.R.

Physiography, Vegetation and Climate

The Del Norte Creek property is situated on the eastern edge of the Cambria Icefield, with about 20% of the property area covered by permanent snow fields and glaciers. The BOND 5 and 6 claims are 100% covered by glacier. Slopes range from moderate to very precipitous. Elevations in the area of the property vary from approximately 1050 metres in the valleys on the east side of the property, up to 2500 metres on the peaks in the west.
Low lying regions are vegetated by mature mountain hemlock and balsam which changes to subalpine and alpine vegetation consisting of stunted shrubs and grasses above treeline.

Climate in the area is severe, particularly at the higher elevations. Annual precipitation is heavy, much of which falls as snow in January and February. Summer work conditions last from July until September and are generally mild and wet.

Property History

Most of the new activity in this area has centred around Bronson Creek on the Iskut River where the SNIP Deposit and the Johnny Mountain Mine are located. Increased activity on these deposits created a staking rush in the mid-1980's that spread south to the Unuk River, resulting in the current exploration program on Eskay Creek and surrounding properties. Closer to the Del Norte property, Sulphurets and the Premier Mine are also undergoing current exploration, development and mining.

On the Del Norte property, itself, the only previously recorded work was done by the present owners. A reconnaissance rock and silt geochemical survey produced samples from a pyritized tuff along Del Norte Creek with anomalous gold values up to a high of 19,000ppb. An old adit on this zone indicates it might be the old Bullion occurrence. Several other zones with copper and base metals were also discovered. An airborne survey in the area, in 1983, detected a few bedrock conductors, none of which appear to correlate with the known minerlization.

Regional and Property Geology

The Del Norte Creek property is underlain by the Stewart Complex, which encompasses some late Paleozoic and Mesozoic rocks confined by the Coast Plutonic Complex to the west, the Bowser Basin to the east and the Iskut River to the north.

The oldest units in the Stewart Complex are Upper Triassic epiclastic volcanics, marbles, sandstones and siltstones, overlain by sedimentary and volcanic rocks of the Jurassic Hazelton Group. The Unuk River Formation consists predominantly of volcanic rocks and sediments and forms and angular unconformity with the underlying late Triassic rocks. Betty Creek red and green volcaniclastic agglomerates unconformably overlie the Unuk River Formation, and the Salmon River Formation of siltstones and lithic wackes forms a conformable to disconformable contact with the underlying Betty Creek Formation. The Nass Formation of argillites overlies the Salmon River Formation. These volcanic and sedimentary successions were intruded by the Coast Plutonic Complex during the Cretaceous and Tertiary periods with a wide variety of intrusive phases, including granodiorite, quartz monzonite and diorite. Small satellite plugs from the main batholith can be important for localizing mineralization.

A cursory mapping of property geology around the head of Del Norte Creek and the toe of the Del Norte glacier, indicates massive, blocky Hazelton volcanic flows in contact with graphitic argillites of the Nass River Formation. A band of pyritized tuff, variable in width, which hosts the known mineralization occurs along the contact. The best mineralization on the property occurs in this zone on the south side of the creek.

Conclusions and Recommendations

The results of this survey will be used for delineating anomalous areas on the property where ground surveys will proceed to further define mineralized zones.

More detailed conclusions of the survey are presented in the Aerodat report, Appendix I, page 6-1.

References

LEBEL, J.L.
1989: Report on the Del Norte Creek Property and Max Property, Stewart area, British Columbia, for Sierra Madre Resources Inc. (Unpubl.)

AERODAT LIMITED

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Telephone: (416) 671-2446 Telex: 06-968872 Fax: (416) 671-8160

July 26, 1989

Good Gold Resources Ltd.
11th Floor - Box 10
808 West Hastings Street
Vancouver, British Columbia
V6C 2X6

Dear Sirs:

We would like to confirm that Aerodat surveyed the Del Norte Creek property southeast of Stewart, British Columbia from July 17, 1989 to July 23, 1989.

Preliminary estimated cost of the survey is calculated to be $34,976.00. Survey data is currently being compiled and interpreted, and Aerodat anticipates the delivery of a finished report, meeting claim assessment requirements, within about one month.

Thank you for choosing Aerodat, and should you require further information in regards to the survey, please do not hesitate to contact us.

Yours truly,

AERODAT LIMITED

Douglas H. Pitcher

Douglas H. Pitcher,
Vice President

DP/ml

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Telephone: (416) 671-2446 Telex: 06-968872 Fax: (416) 671-8160

Invoice No: 20-8933-0241
Date: June 30, 1989

Good Gold Resources Ltd.
c/o Prime Capital Place
10th floor, 808 West Hastings St.
Vancouver, B.C.

Attn: Mr. J. Foster

In Account With:

Aerodat Limited
3883 Nashua Drive
Mississauga, Ontario
L4V 1R3

Re: Airborne Geophysical Survey - Del Norte Creek, Iskut River

Pursuant to paragraph 10 of an Agreement between Good Gold Resources Ltd. and Aerodat Limited dated April 28, 1989

Mobilization/demobilization	$ 5,000.00
Survey charges 292 km @ $78.00	$22,776.00
Orthophotomosaics	$ 5,000.00
Transponder setups	$ 2,200.00
Amount Due	**$34,976.00**

APPENDIX I
Airborne Geophysical Report

REPORT ON
COMBINED HELICOPTERBORNE
MAGNETIC, ELECTROMAGNETIC AND VLF
SURVEY
DEL NORTE CREEK AREA
CAMBRIA RANGE
BRITISH COLUMBIA

FOR
GOOD GOLD RESOURCES LTD.
BY
AERODAT LIMITED
August 28, 1989

J8933

Zbynek Dvorak
Consulting Geophysicist

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(Scale 1:10,000)

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4. TOTAL FIELD MAGNETIC CONTOURS;
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   showing anomaly peaks along with conductivity thickness values on clear acetate film.

1. INTRODUCTION

This report describes an airborne geophysical survey carried out on behalf of Good Gold Resources Ltd. by Aerodat Limited. Equipment operated during the survey included a four frequency electromagnetic system, a high sensitivity cesium vapour magnetometer, a two frequency VLF-EM system, a video tracking camera, a radar altimeter, and an electronic navigation system. Electromagnetic, magnetic, and altimeter data were recorded both in digital and analog forms. Positioning data was stored in digital form, encoded on VHS format video tape and recorded at regular intervals in UTM coordinates, as well as being marked on the flight path mosaic by the operator while in flight.

The survey area, comprising a single survey block in the northeast part of the Cambria Range area, and situated approximately 30 kilometres northeast of Stewart, British Columbia, was flown during the period of July 20 to 23, 1989. Data from four flights were used to compile the survey results. The flight line orientation was east-west, and the nominal flight line spacing was 100 metres. Coverage and data quality were considered to be well within the specifications described in the service contract.

The purpose of the survey was to record airborne geophysical data over and around ground that is of interest to Good Gold Resources Ltd.

A total of 292 line kilometres of the recorded data were compiled in map form. The maps are presented as part of this report according to specifications laid out by Good Gold Resources Ltd.

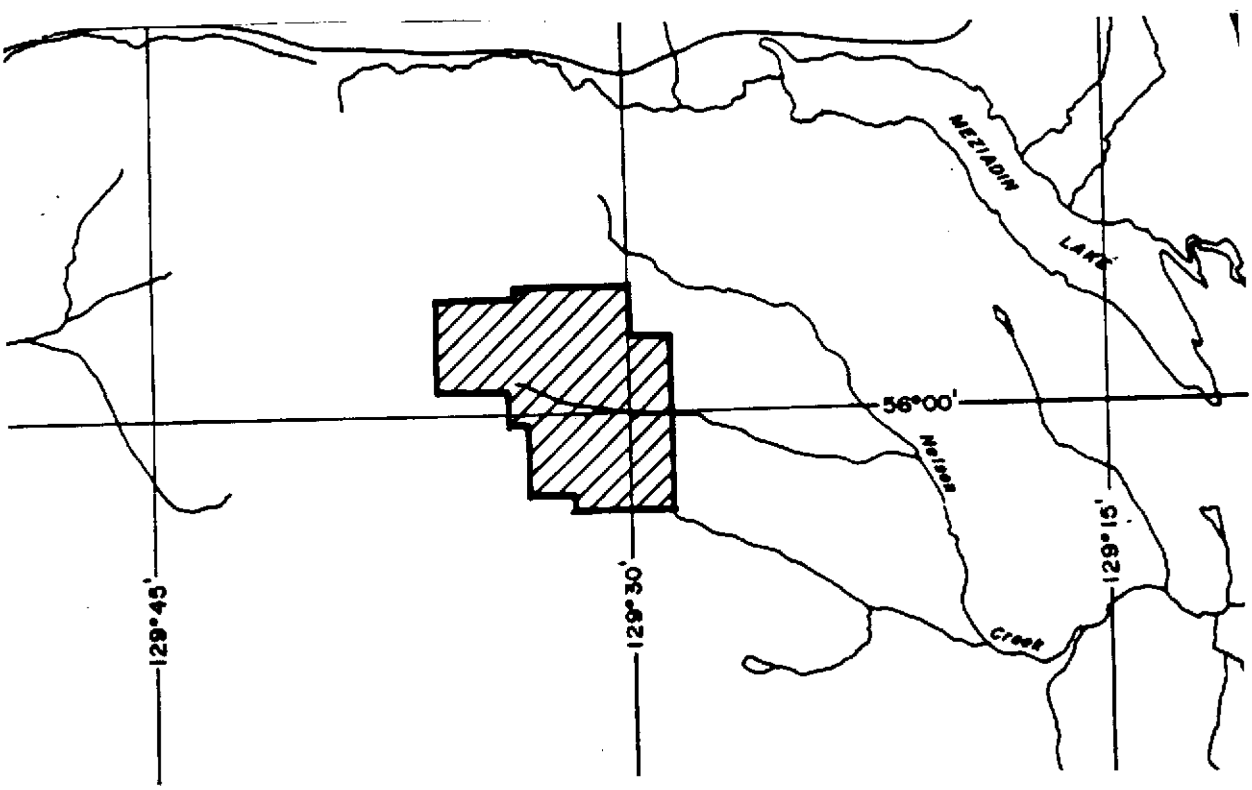
2. SURVEY AREA LOCATION AND CLAIMS COVERED

The Del Norte Creek survey area is depicted on the index map shown below. It is centred at approximate geographic latitude 56 degrees 37 minutes north, longitude 130 degrees 11 minutes west, approximately 30 kilometres northeast of the town of Stewart, British Columbia (NTS Reference Map Nos. 103 P/13 and 14, and 104 A/3 and 4).

The Del Norte claim group block consists of the following claim blocks:

Del Norte	Good Gold Resources

The terrain in the area is very rugged with elevation varying from approximately 800 m a.s.l. to in excess of 2,285 m a.s.l. Extensive areas are covered by icefields which may adversely affect the electromagnetic responses.



3. AIRCRAFT AND EQUIPMENT

3.1 Aircraft

An Aerospatiale SA 315B Lama helicopter, (C-GALD), piloted by H. McCrae, owned and operated by Peace Helicopters Limited, was used for the survey. The Aerodat equipment operator and navigator was S. Arstad. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey helicopter was flown at a mean terrain clearance of 60 metres, while the EM sensors have a ground clearance of 30 metres.

3.2 Equipment

3.2.1 Electromagnetic System

The electromagnetic system was an Aerodat 4 frequency system. Two vertical coaxial coil pairs are operated at 935 Hz and 4600 Hz and two horizontal coplanar coil pairs at 4175 Hz and 32 kHz. The transmitter-receiver separation was 7 metres. Inphase and quadrature signals were measured simultaneously for the 4 frequencies with a time constant of 0.1 seconds. The electromagnetic bird was towed 30 metres below the helicopter.

3.2.2 VLF-EM System

The VLF-EM System was a Herz Totem 2 A. This instrument measures the total field and quadrature component of the selected frequency. The sensor was towed in a bird 12 metres below the helicopter. The transmitting station used was NMP, Lualualei, Hawaii broadcasting at 23.4 kHz. This station is maximum coupled with E-W striking conductors and provides usable results for strikes +/- 30 degrees.

3.2.3 Magnetometer

The magnetometer employed a Scintrex Model VIW 2321 H8 cesium, optically pumped magnetometer sensor. The sensitivity of this instrument was 0.1 nanoTeslas at a 0.2 second sampling rate. The sensor was towed in a bird 12 metres below the helicopter.

3.2.4 Magnetic Base Station

An IFG (GEM 8) 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.

3.2.5 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 for maximum accuracy.

3.2.6 Tracking Camera

A Panasonic video flight path recording system was used to record the flight path on standard VHS format video tapes. The system was operated in continuous mode and the flight number, real time and manual fiducials were registered on the picture frame for cross-reference to the analog and digital data.

3.2.7 Analog Recorder

An RMS dot-Matrix recorder was used to display the data during the survey. In addition to manual and time fiducials, the following data was recorded:

Channel	**Input**	**Scale**
CXI1	Low Frequency Inphase Coaxial	25 ppm/cm
CXQ1	Low Frequency Quadrature Coaxial	25
CXI2	High Frequency Inphase Coaxial	25
CXQ2	High Frequency Quadrature Coaxial	25
CPI1	Mid Frequency Inphase Coplanar	100ppm/cm
CPQ1	Mid Frequency Quadrature Coplanar	100

Channel	Input	Scale
CPI2	High Frequency Inphase Coplanar	200
CPQ2	High Frequency Quadrature Coplanar	200
VLT	VLF-EM Total Field, Line NMP	25 %/cm
VLQ	VLF-EM Quadrature, Line NMP	25 %/cm
VOT	VLF-EM Total Field,Ortho NAA	25 %/cm
VOQ	VLF-EM Quadrature, Ortho NAA	25 %/cm
RALT	Radar Altimeter, (150 m. at top of chart)	100ft/cm
MAGF	Magnetometer, fine	25nT/cm
MAGC	Magnetometer, coarse	250nT/cm

3.2.8 Digital Recorder

A DGR 33:16 data system recorded the survey on magnetic tape. Information recorded was as follows:

Equipment	Recording Interval
EM System	0.1 seconds
VLF-EM	0.2 seconds
Magnetometer	0.2 seconds
Altimeter	0.2 seconds
Power Line Monitor	0.2 seconds

4. DATA PRESENTATION

4.1 Base Map

An orthophoto mosaic base at a scale of 1:10,000 was prepared as a base map for the project data. The final data is presented on an unscreened Cronaflex base. Recovery of a number of points ensures that the flight path is accurately registered to the base topography.

4.2 Electromagnetic Anomaly Map

4.2.1 Flight Path

The flight path map was derived from the Motorola Mini-Ranger IV radar positioning system. The distance from the helicopter to two established reference locations was measured several times per second and the position of the helicopter calculated by triangulation. It is estimated that the flight path is generally accurate to about 10 metres with respect to the topographic detail of the base map.

The flight lines have the flight number as an additional reference and the camera frame, time, and the navigator's manual fiducials for cross reference to both analog and digital data.

4.2.2 Electromagnetic Data Compilation

The electromagnetic data was 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 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 phenomenon. 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. It 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 permits maximum profile shape resolution.

Following the filtering process, a base level correction was made. The correction amplitude of the various inphase and quadrature components is zero when no conductive or permeable source is present. The filtered and levelled data was used in the interpretation of the EM data.

4.2.3 Airborne EM Interpretation

An interpretation of the electromagnetic data was prepared showing peak locations of anomalies and conductivity thickness ranges along with the inphase amplitudes (computed from the 4600 Hz coaxial response). The peak response symbols may be referenced by a sequential letter, progressing in the original flight direction. The EM response profiles are presented on a separate map with an expanded horizontal scale across the geological strike.

4.3 Total Field Magnetic Contours

The aeromagnetic data was corrected for diurnal variations by adjustment with the digitally recorded base station magnetic values. No correction for regional variation (IGRF) was applied. The corrected profile data was interpolated onto a regular grid at a 25 metre true scale interval using a cubic spline technique. The grid provided the basis for threading the presented contours at a 2 nanoTesla interval. The aeromagnetic data have been presented with flight path and electromagnetic information on a Cronaflex copy of the photomosaic base map.

4.4 VLF-EM Total Field

The VLF-EM signals from NPM, Lualualei, Hawaii, broadcasting at 23.4 kHz, were compiled as contours in map form and presented on a Cronaflex overlay of the photomosaic base map along with flight lines and anomaly information. The orthogonal VLF data was also recorded on the analog records and on digital tape.

4.5 EM Resistivity Contours

The apparent resistivity was calculated from the 4175 Hz coplanar coil pair and the resultant contours are presented on a base map. The calculations are based on a half space model. This is equivalent to a geological unit with more than 200 metres width and strike length. In practice, conductors, conductive lithologies and surficial conductors often have lesser dimensions, at least in one of the three dimensions. Apparent resistivities are usually underestimated for these sources.

5. INTERPRETATION

5.1. Geology

No geological information was provided by Good Gold Resources Ltd. Comments made in this paragraph are paraphrased from a geologic report prepared by J.Blackwell dealing with geology of the Eskay Creek area, situated approximately 90 km to the northwest. They are incomplete and intended to merely provide a comparison and regional picture. Detailed geology in the Cambria Range area will necessarily differ from the following description.

The survey area is located within the Intermontane Tectonic Belt which contains Stikine terrane rock assemblages. It is underlain by Upper Triassic to Lower Jurassic volcanic and sedimentary arc-related units. These thick, weakly metamorphosed units are overlain by Middle Jurassic successor basin sedimentary units. Large scale northeast plunging vertical folds and major north trending cataclystic and fault zones are believed to be related to late Jurassic to early Cretaceous plutons and orogenesis. There is also some evidence of late Triassic deformation.

Regional geologic mapping by the GSC, the British Columbia Ministry of Energy, Mines and Petroleum Resources has produced selective areal map coverage. Government geologic reconnaissance mapping is continuing, and revisions and improvements to the current geologic understanding are expected.

5.2. Magnetics

The magnetic data from the high sensitivity cesium magnetometer provided virtually continuous magnetic reading when recording at two-tenth second intervals. The system is also noise free for all practical purposes. The sensitivity of 0.1 nT allows for the mapping of very small inflections in the magnetic field, resulting in a contour map that is comparable in quality to ground data.

The total magnetic field in the survey area varies over a narrow range of values, from less than 57,320 nT to in excess of 57,930 nT. High magnetic values occur in an approximately 4,000 m wide zone of general northwesterly orientation. Whereas the eastern boundary of the zone is relatively well established, its western extent is unclear, partly because of poorer lateral coverage, or because the magnetic surface occurs at greater depth. The eastern extent of this zone is interpreted to define the extent of volcanic flows whereas the low magnetic field recorded in the northeast corner of the area may reflect non-magnetic sediments. Internally, the zone contains a number of relatively narrow anomalies which appear to be arranged in a zig-zag manner, as if the emplacement of magnetite rich flows(?) was controlled by, or occurred contemporaneously with, lateral movement along generally northeast-southwest oriented trends.

Prominent linear features occurring in the central zone of high magnetic field are particularly well portrayed on the calculated magnetic vertical gradient map. Numerous breaks, offsets, and terminations of the total field and vertical gradient contour patters are interpreted to reflect structural features, such as faults. Their preferred orientation is in the northeast direction. It is interesting to note that these structures can be readily recognized within the central, magnetically active zone but cannot be extended beyond its eastern boundary. The importance of this observation is not clear at this time.

The magnetic central zone is from the east paralleled by a weaker composite anomaly which extends approximately from the time mark 15:44:41 on line 130 toward the time mark 16:30:22 on line 260. Its isolation with respect to the central zone is intriguing and should be investigated in detail.

A linear magnetic anomaly of a similar character occurs on strike further to the southeast, extending from the time mark 18:47:30 on line 390 toward the east end of lines 470 and 480, where it changes the strike orientation to the north-south. The present data does not allow to make conclusions regarding the nature of this anomaly. For example, it is not clear whether the anomaly occurs outside the central magnetic zone, or, alternatively, defines the east zone boundary.

The present preliminary structural analysis is necessarily incomplete. More insight can be gained by further processing and anomaly enhancement, such as second vertical derivative, apparent susceptibility mapping, or shadow mapping by means of RTI system (Real Time Imaging). It is proposed to carry out detail structural analysis with the aim of improving the present structural knowledge and defining potential exploration targets areas (n.b., many gold deposits in the general area appear to be structurally controlled). Recent exploration success in the Calpine's Eskay Creek area, however, suggests that future exploration activity should not be confined only to investigating structures but also to defining stratigraphic horizons.

5.3 Apparent Resistivity

The apparent resistivity values were calculated from the 4,600 Hz coaxial electromagnetic data. The values range from approximately 50 ohm-m to more than 4,000 ohm-m, the upper detection limit at the given frequency. Flying in rugged terrain, such as the Del Norte Creek survey area, frequently results in severe changes of the flying altitude, which in turn, results in extreme variations of the electromagnetic responses affecting the resistivity calculation. Consequently, the apparent resistivity map may provide information which is incomplete or distorted in detail but generally correct.

The resistivity map indicates that the geologic environment in the survey area is generally highly resistive. This constitutes ideal surveying conditions because high ground resistivity facilitates recognition of even poor quality confined bedrock conductors.

Lower resistivity values were obtained in the eastern part of the survey block, east of the central magnetic zone. Topographically, this part of the block is no different than other parts of the area which would suggest that lower resistivities reflect geology rather than being a consequence of, for example, conductive sediments in the valleys. (In this respect, the wide conductive zone confined between the central magnetic zone and the weaker parallel magnetic anomaly (between the manual fiducial mark 77 on line 140 and the time mark 16:25:24 on line 250) may be an exception because it correlates with a gully and part of the conductive response may be due to conductive sediments. Alternatively, the conductive zone may reflect transported conductive material which was eroded from mineralization on the slopes of the gully, and as such be a significant exploration indicator.)

The low and intermediate resistivity values mostly occur in the form of narrow or elongated zones paralleling the contact of the central magnetic zone. With the above mentioned exception there is no correlation with topography.

One of the more interesting conductive trends is a narrow zone with values typically in the 1,000 to 3,000 ohm-m range, which extends from the east end of line 340 toward the time mark 19:06:55 on line 430. This conductive horizon extends across topography and in its south part, parallels a magnetic trend believed to identify the east boundary of the central magnetic zone. It should be investigated on the ground.

All the conductive zones are associated with magnetic anomalies being typically confined to the flanks of the magnetic activity. Also, as expected, practically all the electromagnetic anomalies detected in the survey area are confined to these zones.

Due to the high ground resistivity and the consequent scarcity of the resistivity contours patterns, structural analysis based on the recognition of breaks of the resistivity patterns was not attempted. Comparison with the structural features inferred from the magnetic data along the eastern boundary of the central magnetic zone, however, indicates general support for the magnetic interpretation.

5.4 Total Field VLF-EM

The NPM, Lualualei, Hawaii, transmitter which operates at a frequency of 23.4 kHz, and occurs at an azimuth of approximately 137 degrees, was monitored during the survey. Most of the anomalies are of low amplitude, directed toward the VLF transmitter. Such a directional bias is a standard phenomenon resulting in portrayal of conductive features oriented within approximately +/- 30 degrees of the transmitter azimuth. Other conductive features are usually recognized as breaks or terminations of the contour patterns.

Little correlation appears to exist between the present VLF-EM data and other geophysical parameters. There are very vague indications of a general (regional?) northwest-southeast oriented trend, more or less coincident with the orientation of the central magnetic zone. However, proper evaluation of the VLF-EM features should await later detail analysis.

5.5. Electromagnetics

The electromagnetic data was first checked by a line-to-line examination of the analog records. Record quality was good with minor noise due to the spheric activity. This was readily removed by digital filtering without any loss of EM sensitivity. The electromagnetic anomalies were selected by the writer from the analog and digital profiles according to the "vertical thin sheet" model. Other EM anomalies which do not conform with this model (e.g., wide conductive units) were not included in the selection. The anomaly axes were assigned wherever possible, based on the similarity of the EM response on adjacent lines and taking into account the general magnetic trends.

Those conductors which occur at the margins of wide conductive zones are mostly due to "edge effects". They may reflect abrupt resistivity change at the contacts (edges) of zones of different conductivity. They cannot be discarded because the contact zone may be mineralized. Consequently, these anomalies should be regarded as potential targets.

Comments made in the Apparent Resistivity section regarding severe changes of the flying altitude and their effects on the resistivity calculation apply also to the electromagnetic anomalies: in areas of excessive flying altitude, there could be no electromagnetic anomaly indicated on the map.

Group I. - Most of the EM anomalies within this grouping are confined to the flanks of magnetic anomaly interpreted to reflect the eastern extent of the central magnetic zone. They are not very well defined but they are believed to reflect weak bedrock conductors. Partial masking(?) in the area of the lower edge of an icefield may have occurred.

Group II. - The scattered EM anomalies of variable definition and quality define bedrock and possible bedrock conductors which are associated with a narrow, poorly conductive trend discussed earlier. These conductors are either associated with a contact of the central magnetic zone, or follow a zone of weakness, such as a fault. Their follow-up is recommended.

Group III. - This is an inextensive group situated along the southeast survey boundary. It occurs outside the central magnetic zone, presumably within sediments. The group is open to the east and contains several conductors of possible bedrock origin. Ground follow-up is not recommended at this time.

Group IV. - Conductors of this grouping occur on the eastern side of the secondary magnetic anomaly discussed earlier. They have produced a well defined low resistivity zone which extends across topography. Many of the EM anomalies are poorly defined and/or of edge effect type. Their ground follow-up may be considered on a lower priority basis.

Group V. - These generally poorly defined conductors of mostly possible bedrock origin have produced an attractive low resistivity zone which coincides with a gully. The main conductor of the group parallels a secondary magnetic horizon associated with, or located near, a proposed contact of the central magnetic zone. Ground follow-up is recommended.

Group VI. - A group of definite and possible bedrock conductors is indicated by these EM anomalies. The conductors have produced a distinct resistivity anomaly in an area of very low magnetic relief (sediments?). Their follow-up may be considered on a low priority basis.

6. CONCLUSIONS AND RECOMMENDATIONS

Results of the present airborne geophysical survey indicate that the area is underlain by a northwesterly striking geology. The northeast, and possibly northwest part of the survey block display slowly varying magnetic field which is interpreted to indicate non-magnetic sediments. In contrast, the central portion of the area contains a complex, northwesterly oriented band of higher, frequently varying magnetics which are believed to reflect volcanics. The central magnetic zone is from the east paralleled by a series of weaker, secondary magnetic anomalies the origin of which is not known at this time.

Preliminary structural analysis based on the recognition of breaks in the magnetic (and calculated magnetic vertical gradient contour patterns) suggests the presence of numerous northeast-southwest oriented structural features (faults?), possibly associated with lateral movement. These inferred structures are considered to be of prime exploration importance because of possibility of structurally controlled mineralized bodies. It is recommended to further process the magnetic data and to extract structural information by employing various anomaly enhancing techniques, such as shadow mapping by means of RTI system (Real Time Imaging), or apparent susceptibility mapping. Because of the proximity of the survey area to the Iskut-Unuk River area, where stratigraphically controlled mineralization exists, such a possibility has also been pursued.

A system of low resistivity zones has been identified along the eastern boundary of the central magnetic zone. These zones are laterally inextensive, and associated with groups of bedrock and possible bedrock conductors. Little topographic association is implied. A narrow, moderately-to-poorly conductive zone situated in the southeast portion of the area, immediately outside the central magnetic zone, appears to be an attractive target.

Six conductor groups containing conductors of variable origin and quality were identified in the survey area. Practically all conductors are non-magnetic but confined to the flanks of magnetic anomalies and trends. Specific recommendations for ground follow-up are included in the Electromagnetics section of this report. Because gold mineralization in the broader general area responds poorly or not at all to electromagnetic techniques, weak, poorly defined EM anomalies should not be overlooked because they may be indicative of disseminated, weakly conductive mineralization. They are considered to be important, particularly if they occur in the vicinity of the inferred structural features, such as faults (which may have served as conduits of hydrothermal fluids during the mineralization deposition process), provided mineralization is structurally controlled.

The survey results should be compiled on a common base containing all types of other information, including geology, geochemistry, and other geophysics. Target areas should be selected based on the mutual correlation of all the data and evaluation of the entire body of information, and correlation of the present results with a workable geologic model.

Respectfully submitted

Z. Dvorak

Zbynek Dvorak
Consulting Geophysicist
for
AERODAT LIMITED

J8933
August 28, 1989

APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat four frequency system utilizes two different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at two widely separated frequencies and the horizontal coplanar coil pair is operated at a frequency 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 a non-magnetic vertical half-plane model on the accompanying phasor diagram. 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 at selected anomalies. The results of this calculation are presented in table form in Appendix II and the conductance and inphase amplitude are presented in symbolized form on the map presentation.

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 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.

Most overburden will have an indicated conductance of less than 2 mhos; however, more conductive clays may have an apparent conductance of say 2 to 4 mhos. Also in the low conductance range will be electrolytic conductors in faults and shears.

The higher ranges of conductance, greater than 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 sulphide or graphite bearing rocks.

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 consideration in association with minor conductive sulphides, and the electromagnetic response 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, but minor accessory sulphide mineralization could 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; however, 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.

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. As the dip of the conductor decreased 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.

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible. 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 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*.

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.

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. In most cases, the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ration 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.

* 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.

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 elliptically polarized in the vicinity of electrical conductors. The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component of the polarization ellipse.

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 to 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 response is an indicator of the existence and position of a conductivity anomaly. 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.

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 amplitude of the quadrature response, as opposed to shape is function of target conductance and depth as well as the conductivity of the overburden and host rock. As the primary field travels down to the conductor through conductive material it is both attenuated and phase shifted in a negative sense. The secondary field produced by this altered field at the target also has an associated phase shift. This phase shift is positive and is larger for relatively poor conductors. This secondary field is attenuated and phase shifted in a negative sense during return travel to the surface. The net effect of these 3 phase shifts determine the phase of the secondary field sensed at the receiver.

A relatively poor conductor in resistive ground will yield a net positive phase shift. A relatively good conductor in more conductive ground will yield a net negative phase shift. A combination is possible whereby the net phase shift is zero and the response is purely in-phase with no quadrature component.

A net positive phase shift combined with the geometrical cross-over shape will lead to a positive quadrature response on the side of approach and a negative on the side of departure. A net negative phase shift would produce the reverse. A further sign reversal occurs with a 180 degree change in instrument orientation as occurs on reciprocal line headings. During digital processing of the quadrature data for map presentation this is corrected for by normalizing the sign to one of the flight line headings.

APPENDIX II

ANOMALY LIST

J8933 DEL NORTE CREEK AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
2	540	A	0	1.3	5.5	0.0	5	41
2	540	B	0	8.6	20.1	0.2	6	28
2	540	C	0	11.5	24.6	0.3	10	22
2	530	A	0	9.1	17.9	0.3	0	38
2	530	B	0	5.5	19.4	0.1	0	37
2	530	C	0	1.4	5.7	0.0	0	53
3	541	A	0	3.1	5.5	0.2	0	98
3	541	B	0	0.3	6.3	0.0	0	53
3	541	C	0	-1.1	8.5	0.0	0	35
2	520	A	0	12.9	35.1	0.2	1	26
3	511	A	0	3.6	4.8	0.4	18	47
3	511	B	0	2.7	32.7	0.0	0	24
3	511	C	0	1.3	13.0	0.0	0	34
2	500	A	0	6.1	5.9	0.8	18	45
2	500	B	0	9.3	10.3	0.8	15	36
2	480	A	0	5.8	10.5	0.3	0	56
2	470	A	0	4.5	17.3	0.1	0	33
2	470	B	0	1.7	10.1	0.0	0	45
2	470	C	0	-0.3	9.7	0.0	0	31
2	470	D	0	-7.0	8.0	0.0	0	17
2	460	A	0	4.7	11.5	0.2	9	32
2	460	B	0	6.4	9.9	0.4	3	45
2	460	C	1	8.5	8.1	1.0	18	38
2	450	A	0	2.2	10.0	0.0	0	51
2	450	B	0	0.4	11.8	0.0	0	28
2	450	C	0	30.4	51.7	0.7	0	37
2	450	D	0	2.8	5.1	0.2	13	47
2	440	A	0	3.8	7.8	0.2	8	42
2	440	B	1	20.5	21.6	1.2	0	40
2	440	C	0	33.6	54.0	0.8	1	25
2	440	D	0	4.6	20.5	0.0	0	30
2	430	A	0	0.8	9.6	0.0	0	40
2	430	B	0	6.0	10.0	0.3	0	50

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 overburden effects.

J8933 DEL NORTE CREEK AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
2	420	A	0	6.5	11.3	0.3	0	47
2	410	A	0	-1.4	11.4	0.0	0	27
2	390	A	0	1.7	11.5	0.0	0	46
2	390	B	0	4.0	10.4	0.1	0	48
2	380	A	0	-0.4	4.1	0.0	0	38
2	380	B	0	1.6	9.1	0.0	0	59
2	360	A	0	0.8	14.2	0.0	0	35
1	320	A	0	5.7	6.8	0.6	0	68
1	310	A	0	6.1	11.3	0.3	1	44
1	310	B	0	1.7	5.3	0.0	22	29
1	300	A	0	5.5	12.0	0.2	0	50
1	290	A	0	6.2	12.7	0.3	0	53
1	280	A	0	6.8	17.5	0.2	0	49
1	270	A	0	17.4	29.8	0.6	0	42
1	270	B	0	11.8	24.7	0.3	0	42
1	260	A	0	5.5	18.8	0.1	0	31
1	260	B	0	4.1	31.6	0.0	0	25
1	260	C	0	9.1	54.7	0.0	0	22
1	260	D	0	20.0	53.1	0.3	0	30
1	260	E	0	33.7	67.8	0.6	0	30
1	250	A	0	13.3	25.6	0.4	5	28
1	250	B	0	6.9	10.2	0.5	8	41
1	240	A	0	2.0	6.3	0.0	14	34
1	230	A	0	10.1	34.5	0.1	4	22
1	230	B	0	8.3	31.6	0.1	2	23
1	230	C	0	10.0	15.5	0.5	9	33
1	220	A	0	11.4	21.9	0.4	6	29
1	220	B	0	6.8	25.0	0.1	0	29
1	210	A	0	14.8	31.5	0.4	0	34

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 overburden effects.

J8933 DEL NORTE CREEK AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

				AMPLITUDE (PPM)		CONDUCTOR		BIRD
						CTP	DEPTH	HEIGHT
FLIGHT	LINE	ANOMALY	CATEGORY	INPHASE	QUAD.	MHOS	MTRS	MTRS
1	210	B	0	18.8	42.5	0.4	0	31
1	210	C	0	11.4	43.3	0.1	0	31
1	210	D	0	13.5	22.2	0.5	8	28
1	210	E	0	3.5	27.3	0.0	0	36
1	200	A	0	22.6	36.0	0.7	3	28
1	200	B	0	22.3	36.2	0.7	0	32
1	200	C	0	10.6	25.4	0.3	0	43
1	200	D	0	13.2	22.1	0.5	0	45
1	200	E	0	11.8	17.8	0.6	0	44
1	190	A	0	11.4	32.2	0.2	0	45
1	190	B	0	7.9	21.9	0.2	0	37
1	190	C	0	14.7	22.5	0.6	0	48
1	190	D	0	4.4	11.0	0.1	7	35
1	190	E	0	-0.3	5.5	0.0	0	34
1	180	A	0	8.0	11.7	0.5	0	57
1	180	B	0	9.9	25.2	0.2	0	44
1	170	A	0	4.5	19.2	0.0	0	35
1	170	B	0	2.7	10.9	0.0	0	42
1	160	A	0	7.7	30.5	0.1	0	29
1	160	B	0	-0.2	11.9	0.0	0	33
1	140	A	0	6.5	23.5	0.1	0	36
1	140	B	0	5.2	10.2	0.2	5	41
1	140	C	0	2.3	16.5	0.0	0	30
1	140	D	0	4.6	16.8	0.1	0	33
3	110	A	0	4.6	9.2	0.2	8	39
3	101	A	0	6.1	25.3	0.1	0	37
3	101	B	0	3.0	9.3	0.1	6	35
3	70	A	0	11.0	28.1	0.2	2	28
3	60	A	0	8.7	20.4	0.2	1	33
3	50	A	0	3.2	21.4	0.0	0	28
3	50	B	0	5.8	19.1	0.1	0	55
3	30	A	0	3.2	19.2	0.0	0	38
3	11	A	0	12.8	22.4	0.5	1	35

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 overburden effects.

APPENDIX III

CERTIFICATE OF QUALIFICATIONS

1. I hold a PhD in Geophysics from Charles University, Czechoslovakia having graduated in 1967.

2. I reside at 146 Three Valleys Drive, in the town of Don Mills, Ontario.

3. I have been continuously engaged in both professional and managerial roles in the minerals industry in Canada and abroad for the past 19 years.

4. I have been an active member of the Society of Exploration Geophysicists since 1978 and a member of KEGS since 1978.

5. The accompanying report was prepared from information published by government agencies, materials supplied by Good Gold Resources Ltd. and from a review of the proprietary airborne geophysical survey flown by Aerodat Limited for Good Gold Resources Ltd. I have not personally visited the property.

6. I have no interest, direct or indirect, in the property described nor do I hold securities in Good Gold Resources Ltd.

Signed

Z. Dvorak

Zbynek Dvorak
Consulting Geophysicist
for
AERODAT LIMITED

August 28, 1989

APPENDIX IV

PERSONNEL

FIELD

Flown	July, 1989
Pilot	H. McCrae
Operator	S. Arstad

OFFICE

Processing	A.E. Valentini George McDonald
Report	Z. Dvorak

APPENDIX II
Certificate of Qualifications

Certificate of Qualifications

I, David W. Mallo of 4475 Hermitage Drive, Vancouver, British Columbia hereby certify:

1. I am a graduate of Brandon University (1981) and hold a BSc (Spec) degree in geology.

2. I have been employed in my profession by various mining companies since graduation.

3. I am presently employed as a senior geologis with Prime Explorations Ltd., of 1000-808 West Hastings Street, Vancouver, British Columbia.

David W. Mallo

David W. Mallo
Senior Geologist

DATED at Vancouver, British Columbia, this 14th day of July, 1989.