LOG NO: 0728 RD.
ACTION:
FILE NO:

ASSESSMENT REPORT

ON THE

MAXWELL SMART CLAIM

AIRBORNE GEOPHYSICAL PROGRAM

Skeena Mining Division
NTS 104B/7E
Latitude 56°25'N
Longitude 130°~~40~~'W 32
British Columbia

SUB-RECORDER
RECEIVED
JUL 26 1989
M.R. # .... $ ....
VANCOUVER B.C.

July 25, 1989

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,931

by

D.W. Mallo
Prime Explorations Ltd.

Owner:

J.V. FOERSTER
103-1741 West 10th Avenue
Vancouver, British Columbia
V6J 2A5

Operator:

GOODGOLD RESOURCES LIMITED.
PRIME CAPITAL PLACE
11th Floor, Box 10
808 West Hastings Street
Vancouver, British Columbia
V6C 2X4

MAXWELL SMART CLAIM

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

SUMMARY

This report describes an airborne geophysical survey Magnetic, Electromagnetic and VLF-EM, flown on the Maxwell Smart Claim on behalf of Goodgold Resources Limited, April 17, 1989. The geophysical report also covers a separate property, the Virginia Lake Property of Consolidated Regal Resources Ltd. which is filed in a separate assessment report. The survey covered 130 line-kilometres (of a total 520 line-kms) on this claim. This work is submitted for assessment credit.

The claim is owned by Johann V. Foerster and is under option to Goodgold Resources Limited. The Maxwell Smart lies on the south side of the Unuk River, approximately 65 kilometres northwest of Stewart, British Columbia and 40 kilometres southeast of the Cominco Limited SNIP Deposit.

The Maxwell Smart claim covers the Max deposit which was discovered by an airborne survey in 1960, and explored by diamond drilling from 1960-1962. The deposit contains about 12 million tons of 45% Fe and 0.75% Cu. Further geological and geophysical surveys were conducted in the 1970's.

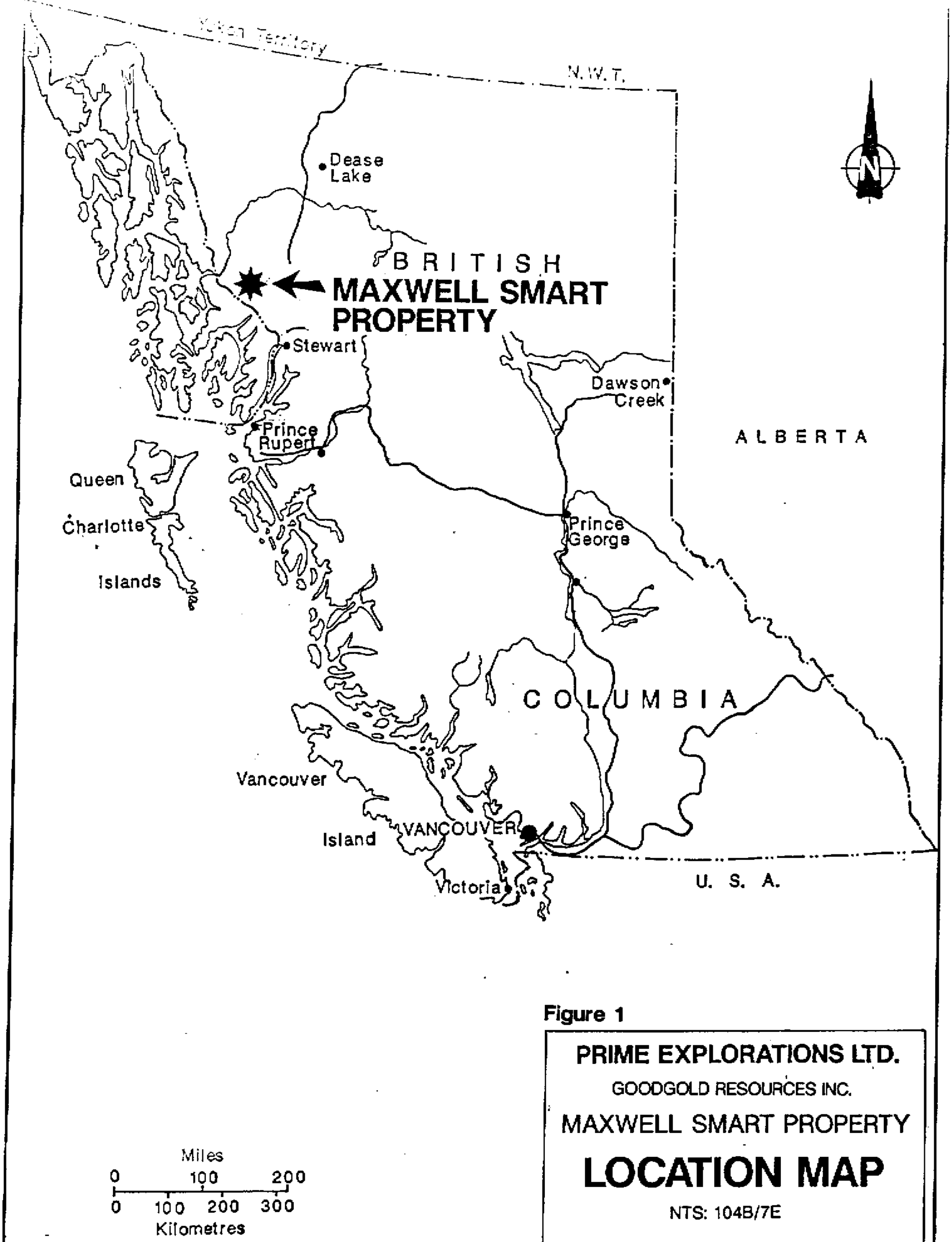

Figure 1

PRIME EXPLORATIONS LTD.

GOODGOLD RESOURCES INC.

MAXWELL SMART PROPERTY

LOCATION MAP

NTS: 104B/7E

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, so that further exploration on the property will have a data base. The geophysical report and maps are included as an Appendix I in this report.

Location and Access

The Maxwell Smart Claim is located immediately south of the Unuk River straddling Cebuck Creek, between the active gold camps of the Iskut River and Sulphurets in northwestern British Columbia. The property is approximately 65 kilometres northwest of Stewart, British Columbia and lies at Latitude 56° 25'N and Longitude 130° 40'W, NTS Reference Map 104B/7E. (Figure 1)

Access is by helicopter only, either from the Skyline or Bronson Creek airstrips, 40 kilometres to the northwest, which are serviced by frequent scheduled and charter flights from Smithers and Terrace.

Property Description

The Maxwell Smart Claim has 20 units, situated within the Skeena Mining Division. (Figure 2) The recorded owner is Johann V. Foerster. Pertinent claim information is as follows:

Table 1
LIST OF CLAIMS

Claim Name	Record No.	No. of Units	Record Date	Expiry Date *
MAXWELL SMART	5268	20	April 1, 1986	April 1, 1993

* Based on this assessment report - 3 years is to be applied to the claim.

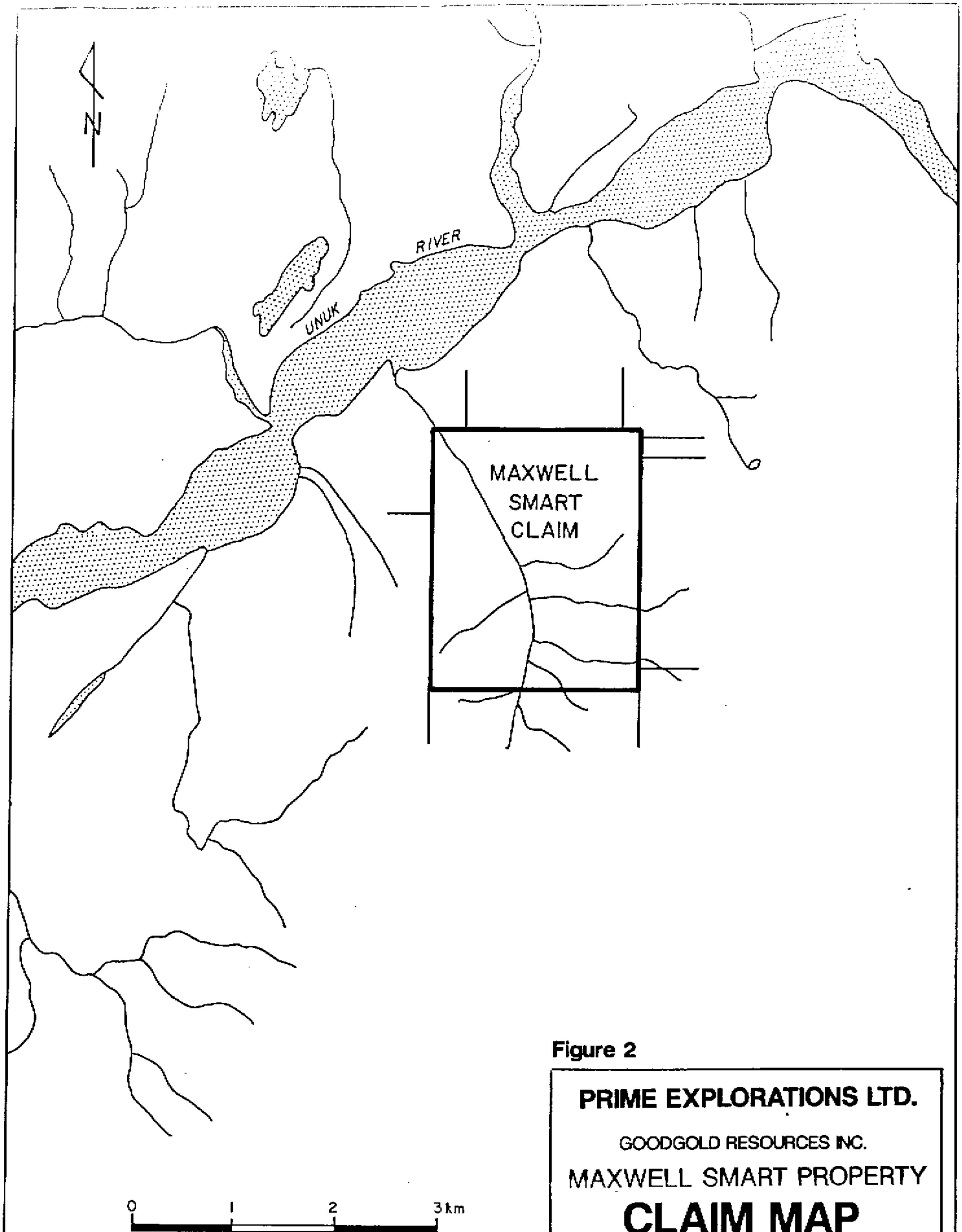

Figure 2

PRIME EXPLORATIONS LTD.

GOODGOLD RESOURCES INC.

MAXWELL SMART PROPERTY

CLAIM MAP

NTS: 104B/7E

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

Physiography, Vegetation and Climate

Elevations in the area vary from approximately 200 on the Unuk River to over 1,200 metres on the upper reaches of the claim. The claim spans Cebuck Creek on the northwest side of McQuillan Ridge. The terrain is rugged and much of the area is probably impassable without the assistance of mountaineering equipment.

Most of the property is below treeline and vegetation consists of dense undergrowth of slide alder, devils club, willows and mature conifers.

Snowfall is heavy in the area and remains generally until early July, creating a relatively short field season until mid-September.

Property History

Most of the activity to date in this area has centred around Bronson Creek on the Iskut River where the SNIP Deposit and the Johnny Mountain Mine are located. Discovery of these properties created a staking rush in the mid-1980's that spread south to the Unuk River.

An airborne survey in 1960 is credited with the discovery of the Max deposit, which was subsequently explored by 17,904 feet of diamond drilling, from 1960 to 1962. The deposit proved up contains approximately 12 million tons of 45% Fe and 0.75% Cu. In 1965, Granduc Mines Ltd. carried out an airborne electromagnetic and magnetic survey over a 50 square mile area around the claim. Geological and magnetic surveys were conducted on the property in the 1970's.

Property and Regional Geology

The Maxwell Smart claim is underlain by sedimentary rocks consisting of sandstone, limestone and argillite, intruded by a diorite plug. Adjacent to the Max deposit the sediments are altered to a medium grained skarn consisting of actinolite, diopside, epidote and garnet. The diorite is uniform and medium-fine grained. Other intrusive rocks on the property include feldspar porphyry dykes which are at times difficult to distinguish from medium grained sandstone.

The mineralization on the property is the Max deposit, which is a skarn consisting of massive magnetite mineralization with associated chalcopyrite, pyrrhotite and pyrite. A sample of pyritic, sheared sandstone from a pit blasted at the edge of Cebuck Creek, about one kilometre south of the Unuk River returned 0.042 oz/ton Au and 0.30 oz/ton Ag.

The regional geology has been identified as the Stewart Complex, which encompasses some late Paleozoics and a thick succession of Mesozoic strata. This is bounded by the Coast Plutonic Complex to the west, the Bowser Basin to the east, and geographic margins of Alice Arm to the south and the Iskut River to the north.

The oldest units in the 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 an 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.

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.

The technical conclusions of the survey are presented in the Aerodat report, Appendix I, Page 6-1.

Bibliography

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LEBEL, J.L.; 1989, Report on Del Norte Creek Property and Max Property, Stewart Area, Skeena M.D., British Columbia, for Sierra Madre Resources Inc., unpublished report.

OSTENSOE, E.; 1975, Report on Geological Mapping and Magnetometer Survey on Max Prospect, Unuk River Area, Skeena M.D. for Granduc Mines Ltd. MEMPR Assessment Report #5496.

AERODAT LIMITED
3883 NASHUA DRIVE • MISSISSAUGA • ONTARIO • CANADA • L4V 1R3
Telephone: (416) 671-2446 Telex: 06-968872 Fax: (416) 671-8160

Invoice No: 20-8901-0148
Date: April 28, 1989

Goodgold 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 - Iskut River Area, B.C.

Total cost of survey	$13,005.20
Less payment	$ 3,400.00
Amount Due	**$ 9,605.20**

MAX CLAIM
OK

AERODAT LIMITED

3883 NASHUA DRIVE • MISSISSAUGA • ONTARIO • CANADA • L4V 1R3
Telephone: (416) 671-2446 Telex: 06-968872 Fax: (416) 671-8160

June 9, 1989

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

Dear Sirs:

We would like to confirm that the following claims were surveyed by Aerodat during the time period listed below.

Claim Name	Record No.	Survey Dates
Maxwell Smart	5268	April 17, 1989

Preliminary estimated cost of the survey is calculated to be $10,000.00. 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

APPENDIX I

Airborne Geophysical Survey

REPORT ON A
COMBINED HELICOPTER-BORNE
MAGNETIC, ELECTROMAGNETIC AND VLF
SURVEY
UNUK RIVER - AREA 2
BRITISH COLUMBIA

FOR
CONSOLIDATED REGAL RESOURCES LTD.
AND
GOODGOLD RESOURCES LTD.
BY
AERODAT LIMITED
June 23, 1989

J8901-2 N/S

Z. Dvorak
Consulting Geophysicist

TABLE OF CONTENTS

LIST of MAPS
(Scale 1:10,000)

Basic Maps : (As described under Appendix "B" of Contract)

1. **PHOTOMOSAIC BASE MAP;**
   Showing registration crosses corresponding to NTS coordinates on survey maps, on stable Cronaflex film.

2. **FLIGHT LINES;**
   Photocombination of flight lines, anomalies and fiducials with base map.

3. **AIRBORNE ELECTROMAGNETIC SURVEY INTERPRETATION MAP;**
   showing conductor axes and anomaly peaks along with conductivity thickness values; on a Cronaflex base; Interpretation Report.

4. **TOTAL FIELD MAGNETIC CONTOURS;**
   showing magnetic values contoured at 2 nanoTesla intervals; on a Cronaflex base map.

5. **COMPUTED VERTICAL MAGNETIC GRADIENT CONTOURS;**
   showing vertical gradient values contoured at 0.05 nanoTesla per metre intervals showing flight lines and fiducials; on a Cronaflex base map.

6. **RESISTIVITIES CALCULATED FROM 4175 Hz COPLANAR COILS;**
   contoured data at logarithmic spaced resistivity intervals (in ohm.m.), on a base map.

7. **VLF-EM TOTAL FIELD CONTOURS;**
   of the VLF Total field from the Jim Creek, Washington transmitter; as a Cronaflex base map.

8. **ELECTROMAGNETIC ANOMALIES;**
   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 Prime Explorations Limited 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 and a video tracking camera. Electromagnetic, magnetic, and altimeter data were recorded both in digital and analog forms. Positioning data was encoded on VHS format video tape, as well as being marked on the flight path mosaic by the operator while in flight.

The survey area, comprising two claim group blocks in the Iskut-Unuk Rivers area, and situated approximately 80 kilometres northwest of Stewart, British Columbia, was flown during the period of February 12 to April 17, 1989. Data from eight 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 Prime Explorations Limited.

A total of 520 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 Prime Explorations Limited

2. SURVEY AREAS LOCATION AND CLAIMS COVERED

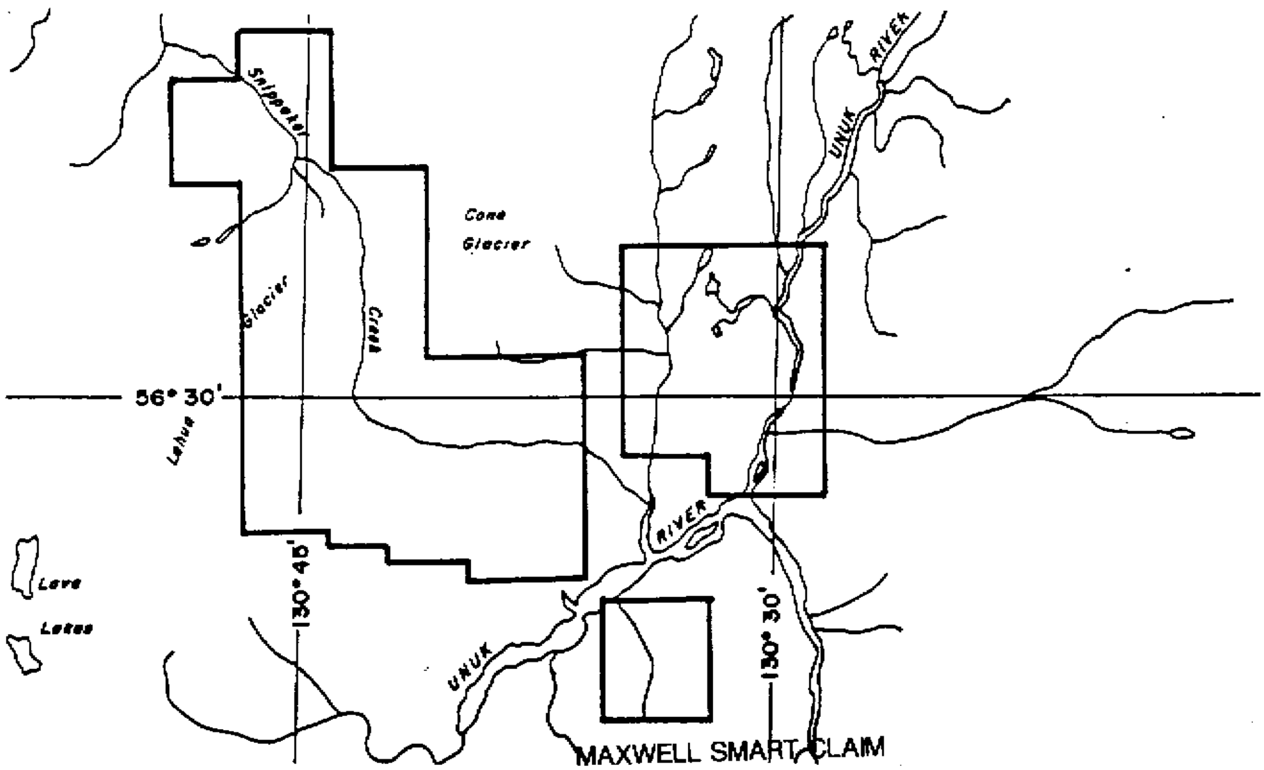
The survey areas are depicted on the index map shown. They are centred at approximate geographic latitude 56 degrees 29 minutes north, longitude 130 degrees 31 minutes west, approximately 80 kilometres northwest of the town of Stewart, British Columbia, and 35 kilometres east of the Bronson Creek (Snip) airstrip (NTS Reference Maps Nos. 104B and 104C). The areas are accessed by helicopter from Bronson, Stewart, or Bell II on the Cassiar-Stewart Highway.

The Consolidated Regal/Goodgold survey block contains the following claims:

Virginia Lake	Consolidated Regal
Del Norte	
(Maxwell Smart claims)	Goodgold

The Consolidated Regal claim block is slightly elongated in the north-south direction and irregular in shape. It is located approximately 9 km NNE from the smaller, rectangularly shaped southern Goodgold claim block.

Terrain in the Consolidated Regal/Goodgold survey blocks is very rugged, with altitudes varying from approximately 200 m a.s.l. to more than 1,175 m a.s.l.


Snippaker
Cone
Glacier
Glacier
Creek
56° 30'
Lehua
130° 45'
130° 30'
UNUK
RIVER
Lava
Lakes
MAXWELL SMART CLAIM

3. AIRCRAFT AND EQUIPMENT

3.1 Aircraft

An Aerospatiale SA 315B Lama helicopter, (C-GXYM), piloted by R. Hage and J. Kamphaus, owned and operated by Peace Helicopters Limited, was used for the survey. The Aerodat equipment operatosr and navigators were J. Huisman, K. McCart and V. Cole. 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 NLK, Jim Creek, Washington broadcasting at 24.8 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 for the Calpine Block. 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 NLK	25 %/cm
VLQ	VLF-EM Quadrature, Line NLK	25 %/cm
VOT	VLF-EM Total Field,Ortho NSS	25 %/cm
VOQ	VLF-EM Quadrature, Ortho NSS	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	0.1 seconds
Altimeter	0.5 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 for the survey area was recovered from the VHS video tracking tapes by transferring the time at which the helicopter passed over a recognizable feature onto the photomosaic. These coordinates were then digitized into the database and formed the basis of the flight path data.

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 NLK, Jim Creek, Washington, broadcasting at 24.8 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

Limited geological information was provided by the Prime Explorations Limited. Comments made in this paragraph are paraphrased from an internal geologic report prepared by J. Blackwell and liberally extrapolated to the general area geology. These comments are necessarily very general and incomplete and should be used only as a guide.

The survey area is located within the Intermontane Tectonic Belt which contains Stikine terrane rock assemblages. The Unuk River area 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, and Newmont Mining has produced selective areal map coverage. Government geologic reconnaissance mapping is continuing, and revisions and improvements to the current geologic understanding are expected.

Stihini Group rocks (Upper Triassic volcanics and sedimentary rocks) occur east of Unuk River and west of Harrymel Creek. They include deformed and metamorphosed siltstone, wackes, conglomerate, and limestone, overlain by basalt and andesite flows and breccias. Dacite pyroclastic tuffs and breccias are also present on a local scale.

Hazleton Group comprises Unuk River Formation, Betty Creek Formation, Mount Dilworth Formation, and Salmon River Formation.

The Lower Jurassic Unuk River Formation occurs at moderate elevations east of Unuk River and west of Harrymel Creek. Green andesite tuffs, flows and pyroclastic rocks intercalated with wackes, siltstone and minor conglomerate are dominant.

The Lower Jurassic Betty Creek Formation, outcropping throughout the Unuk River valley, overlies the Unuk River Formation. It comprises volcaniclastic conglomerate, andesite and dacite pyroclastic tuff and breccias with intercalated grit and arenaceous wackes.

Overlying the Betty Creek Formation is the Mount Dilworth Formation. It outcrops on the Prout Plateau, west of Harrymel Creek, at higher elevations, and east of

Unuk River. It comprises dacite to rhyolite pyroclastic breccias, bedded tuff and flow breccias.

The late Lower Jurassic Salmon River Formation comprises a sequence of grey siltstone, chert, and limestone. It outcrops north and west of the Prout Plateau.

Bowser Group - Ashman Formation Middle Jurassic units occur on the Prout Plateau in the vicinity of Tom McKay Lake. These rocks include chert pebble conglomerate, grey to black mudstone and wackes, and limestone and volcanic flows.

Cenozoic to Recent subareal olivine basalt flows occur frequently. Deposits are widespread in the major river valleys and in the Cone Glacier area. Numerous felsic and mafic dykes occur locally.

No intrusive rocks were located on the Prout Plateau. Elsewhere in the general area, a variety of intrusives were reported. Regional metamorphic grade is lower greenschist. The grade increases locally to lower amphibolite. Upright to slightly overturned vertical folds are documented with fold axes at 20 to 35 degrees north, plunging 0 to 15 degrees north. Documented faults and other structures are rare. A major 150 degree north trending shear zone cuts through the lower Unuk River valley. Further to the north, it bifurcates or joins a major north trending mylonite band in the Harrymel Creek valley and a major vertical fault in the Clouter and Argillite Creek valleys.

5.2 Consolidated Regal Block - Area 2N

5.2.1. 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. These general comments also apply for the Goodgold claim block data.

The total magnetic field in the Consolidated Regal block varies over a narrow range of values, from approximately 57,165 nT to in excess of 57,930 nT. It contains a prominent linear anomaly paralleling the western survey boundary, which most likely reflects a dike striking along the east slopes of Harrymel Creek. The anomaly is defined well on lines 510 to 720 but appears to terminate in the vicinity of line 500 by a fault or other structural feature. Although this structure is not particularly clearly defined, the magnetic and calculated vertical gradient data suggest that, if real, it would be of northwest-southeasterly orientation. Alternatively, the dike may have been interrupted by a 600 m to 1,700 m wide unit, widening in the southeasterly direction. The dike is recognized further north on lines 270 to 410. The vertical gradient anomaly seen on line 410 near the time mark 14:07:30 and on line 400 near the time mark 14:04:27, may also reflect the dike, but because of its poor definition (due to the proximity to the grid boundary), no definite conclusion can be made.

Linear magnetic anomalies also occur within the northwest-southeast oriented unit mentioned earlier. Because they occur close to the proposed unit boundaries, they may reflect magnetite concentration along the boundaries rather than dike-like features. The nature of the individual linear anomalies is not clear at this moment, mainly because it is not clear whether or not the area contains a structural feature (or features) or a wide unit. These linear anomalies may be related to the geologic unit boundaries, or they may reflect structural features of regional character (e.g., a north-southerly changing to northwest-southeasterly oriented fault proposed by the government geological mapping).

In addition, there are some weaker linear anomalies in the northeast part of the block which are located along a proposed contact or a thrust fault. This feature is inferred from the total field magnetic profiles. Though its nature is not known at this time with any certainty, the government release preliminary geology map suggests that it may reflect a major regional fault. It is not well defined north of line 150 and south of line 640. In the former case, it is the lack of magnetic relief, in the latter case it may be due to a nearly east-west oriented break in the magnetic patterns.

The west-central portion of lines 611 to 720 contains a well defined elongated anomaly which may reflect a separate unit located between the western dike and the central unit/fault.

Numerous terminations, interruptions, and offsets of the magnetic patterns are present which are interpreted to reflect structural features, e.g., faults. Their preferred orientation is to the northeast, except for the northwest-southeasterly oriented unit mentioned earlier and a single northwesterly oriented feature extending from the east end of line 330 toward the eastern third of line 230.

5.2.2 Apparent Resistivity

Flying in a rugged terrain encountered in the survey area resulted in frequent and severe changes of the flying altitude. This, in turn, results in extreme variations of the electromagnetic responses which then influence the resistivity calculation. The reader should therefore note that the apparent resistivity map may provide an incomplete picture. These general comments also apply for the Goodgold claim block data.

The apparent resistivity was calculated from the coplanar 4,175 Hz electromagnetic data. The resistivity values vary over a broad range of values, from less than 20 ohm-m to more than 8,000 ohm-m, the upper detection limit at this frequency. The resistivity map indicates that the ground in the survey area is generally highly resistive. Low values occur in a broad zone situated in the northeast part of the grid where they correlate with the Unuk River valley. The west zone boundary appears to parallel, but does not correlate with, the structural feature (fault or contact) inferred from the magnetics. Because the zone shows only a vague correlation with the valley further south, and because it appears to be related to, or governed by, the structures inferred from the magnetics, it is proposed that only a part of the low resistivity response is due to the conductive river sediments whereas (probably the major) portion of the response is due to conductive rock unit(s). The majority of the electromagnetic anomalies are associated with this conductive zone.

Two other low resistivity zones occur further south but only the southern, broader one correlates with the Unuk River valley. The other, smaller zone, located on lines 600 to 710, may reflect a swampy, low lying ground. It is adjacent to a secondary, but distinct magnetic anomaly. Whether or not this correlation is significant, cannot be assessed from the present data.

A well defined, narrow low resistivity zone occurs at the west end of lines 561 to 600. This zone has been produced by a well defined bedrock conductor of a westerly dip.

Several other zones of lower resistivity (typical values range from 1,200 ohm-to 2,500 ohm-m) exist which are associated with lakes (e.g., Virginia Lake and a lake north of Charlotte Lake, but not Charlotte Lake itself), or show relationship to topography (e.g., the central portion of lines 450 to 550 which occurs in a valley). They appear to be confined between the structures inferred from the magnetics. Edges of zones of lower resistivity as well as the terminations, offsets, and breaks of the resistivity patterns are considered to indicate structural features. The fact that such features show close correlation with similar features inferred from the magnetics is believed to be significant.

5.2.3 Total Field VLF-EM

The NLK, Jim Creek, Washington data is presented on the total VLF-EM field map. This transmitter, which operates at a frequency of 24.8 kHz, occurs at an azimuth of 144 degrees, and hence, will preferentially energize conductors striking within approximately +/-30 degrees of this azimuth. In contrast, directions perpendicular to the station azimuth will not be portrayed directly, although they may be indicated as the contour pattern interruptions and offsets. These general comments also apply for the Goodgold claim block data.

Weak VLF-EM anomalies occur in the northeast part of the grid, over the low resistivity zone. Amplitudes increase in the westerly direction, reaching the highest values in the southwest part of the area, and in the central portion of the northwest-southeasterly striking magnetic unit.

While there are no obvious, well defined breaks in the VLF-EM patterns which may suggest the presence of structural features (such as faults or contacts), there appears to exist a degree of correlation between the VLF-EM and the structures inferred from the magnetic/resistivity contour patterns. This vague correlation is considered to confirm interpretation of these magnetic and resistivity anomalies as structures.

5.2.4 Electromagnetics

The electromagnetic data was first checked by a line-to-line examination of the analog records. Record quality was generally very good with some noise on the 32,000 Hz coplanar traces which was the consequence of flying in rugged terrain. This noise was substantially reduced by a smoothing filter. Geologic noise, in the form of surficial conductors, is present at places, mainly on the higher frequency responses but it does not present any interpretation problems.

The electromagnetic anomalies were selected by the writer from the analog and digital profiles and the anomaly axes were assigned based on the similarity of the EM response taking into account the general magnetic trend.

Comments made in the Apparent Resistivity section regarding severe changes of the flying altitude and their effects on the electromagnetic response apply also for the electromagnetic anomalies. It is to be noted that in areas of excessive flying height there could be no steeply dipping thin sheet electromagnetic anomaly indicated on the anomaly map.

Practically all the electromagnetic anomalies within the Consolidated Regal claim group are weak and poorly defined on the 935 Hz channels. However, the intermediate frequency coaxial and coplanar channels show, in most cases, clearly defined conductors of vertical thin sheet type. In some instances the EM anomaly is defined only by the quadrature channels which indicates low conductance values.

The majority of the EM anomalies occur within the northeastern conductive unit. They reflect the combined effects of conductive river sediments and bedrock (or possible bedrock) conductors. For example, on line 210 to 490, the EM anomalies approximate the river valley but beyond these lines, the bedrock conductors follow an approximately NNW-SSE trend which parallels the inferred structural feature (fault or contact). Further north and south, the EM anomalies associated with the river are of the "edge" type, i.e., they are confined to the edges of broad conductive zones which are most likely due to conductive river sediments. Those EM anomalies which are not associated with the river, may be of bedrock origin. It should be noted, however, that many of these anomalies occur close to the proposed structural features and as such they may be indicative of either the structures, or reflect weak associated mineralization.

Occurrence of the EM anomalies along the proposed faults and contacts elsewhere throughout the survey area gives credence to the interpretation of the contour pattern breaks as structural features.

5.3 Goodgold Block - Area 2S

5.3.1 Magnetics

The total magnetic field in the Goodgold claim block shows distinct "zoning". Most of the eastern and northeastern portion of the grid display magnetic readings in excess of 57,500 nT. A relatively narrow, northeasterly oriented band of higher than 57,500 nT readings also occurs in the southwestern part of the grid and in a limited area situated in the northwestern corner of the area.

The complex internal structure of these individual zones is best portrayed by the calculated vertical gradient map. The northeastern zone contains an attractive, irregularly shaped anomaly located in the central portion of lines 930 to 1000 which may reflect an intrusive. A somewhat similar, but less pronounced anomaly is located in the eastern half of the grid on lines 5030 (time mark 11:13:20) to 5070 (time mark 11:39:20).

Approximately 800 metres east from the centre of this circular anomaly, is a series of linear magnetic anomalies. They extend from the time mark 12:37:00 on line 5180 toward the time mark 11:20:00 on line 1051. The anomalous trend may split at, or near, this location into a northerly striking and a northeasterly striking branch. (Note that a northwest oriented structure (fault?) may occur here.) Continuation of this anomaly further north is not clear at this time.

Similarly complex is the western magnetic zone. A number of nearly north-south oriented narrow magnetic anomalies are recognized, which, at places, appear to be terminated or offset by generally northeast oriented breaks (faults?). The northwest zone is seen to extend further south, toward the west end of lines 992 to 1030.

Some discrepancy appears to exist between the total field and the calculated vertical gradient data. Provided the volcanics occur in a relatively thin surface layer, the total field data would be strongly affected by the near surface magnetic features, so that the total field and the calculated vertical gradient data will provide information on both the deep as well as near surface magnetic features.

Similar to the Consolidated Regal area, numerous offsets, terminations, and breaks occur which are interpreted to reflect structural features, such as contacts and faults. These are indicated on the interpretation map appended to the report.

5.3.2 Apparent Resistivity

Apparent resistivities within the Goodgold claim grid are generally very high, in excess of 8,000 ohm-m (the upper detection limit at the used frequency of 4,175 Hz). Several low resistivity zones occur which are quite attractive.

The most distinct low resistivity zone is situated in the central portion of the area. It is approximately oval-shaped, measuring about 250 m x 400 m. This zone of less than 50 ohm-m occurs on the eastern slopes of a valley and, hence, does not reflect conductive sediments. It is caused by a conductive rock unit. It is immediately adjacent to the aforementioned irregularly shaped magnetic anomaly (possibly reflecting an intrusive), which makes it even more attractive.

A zone of a similar character occurs near the west end of lines 5070 and 5080. It is associated with a weak magnetic (gradient) anomaly and appears to be confined between two northeast-southwesterly oriented faults. Ground follow-up is recommended.

A large low resistivity zone located in the northwest corner of the grid is believed to be mostly or entirely due to conductive river sediments and, at this time, it is not recommended for follow-up.

5.3.3 Total Field VLF-EM

Almost all the VLF-EM anomalies within this survey area are weak. Several higher amplitude anomalies are located in the east-central part of the grid. The most distinct and continuous anomaly occurs in the northwest portion of the area. It follows a little creek discharging into the Unuk River near the west end of line 810 and as such, it is not considered significant. The present evaluation of the data does not indicate the presence of any exceptional VLF-EM targets.

No obvious, well defined breaks of VLF-EM patterns are apparent which would suggest the presence of structural features (such as faults or contacts). However, many poorly defined breaks, interruptions, and offsets of these patterns correlate closely with similar breaks inferred from the magnetics which is considered to confirm interpretation of the magnetic and resistivity features as structures.

5.3.4 Electromagnetics

Only fourteen electromagnetic anomalies occur in the Goodgold survey block. With only two exceptions, they are all confined to the two low resistivity zones discussed earlier.

Group I correlates with the central conductive zone which is adjacent to an irregularly shaped magnetic anomaly possibly reflecting an intrusive. Although the EM anomalies are not well defined, they are believed to reflect bedrock conductors, constituting an attractive target. They should be investigated on the ground.

Group II conductors are better defined than the group I conductors. They have produced an attractive low resistivity zone which occurs on the flank of a weak magnetic anomaly. Ground follow-up is recommended.

6. CONCLUSIONS AND RECOMMENDATIONS

Results of the present airborne geophysical survey indicate that the two survey areas are underlain by complex geology. A magnetically more active volcanics, which may occur in a relatively thin surface layer, have produced frequently varying magnetic patterns. In the northeast part of the Consolidated Regal block, their contact with sediments (possibly a thrust faulted contact?) is clearly indicated by a series of weaker linear gradient anomalies, and as a termination of a conductive zone. Well defined linear anomalies also occur along the west boundary of this block. They are interpreted to reflect a dike. The dike appears to be interrupted in the vicinity of line 500 by a northwest-southeast oriented trend or a unit. Elsewhere on the property, the preferred strike of the inferred structural features is to the northeast.

The geologic environment in the Consolidated Regal block is mostly highly resistive which provides ideal conditions for detecting bedrock conductors. However, practically all electromagnetic anomalies occur in the conductive zones directly or closely associated with the Unuk River valley and appear to be low to intermediate priority targets. A well defined bedrock conductor of westerly dip was located at the west end of lines 561 to 600. Ground follow-up is recommended.

The magnetic field in the Goodgold block shows the presence of several distinct magnetic highs which are interpreted as a highly magnetic unit of presumably large lateral extent occurring within the Halfway Lake Option area. It is believed to reflect a volcanic unit intermediate felsic?). A prominent narrow magnetic high extends through the Lucky Option area. It is believed to reflect a mafic(?) dike.

Offsets, disruptions, and terminations of both the total field and calculated vertical gradient contours are interpreted to be indicative of structural features, such as faults and/or shears. These inferred structures are deemed to be of prime exploration importance based on the occurrence of gold mineralization in the general area; a great many ore body formations are controlled by faults and other structures. It is, therefore, recommended to direct future exploration accordingly.

Conductors indicated on the interpretation maps are weak and poorly defined although they appear to be of bedrock origin. In some instances, weak bedrock conductors may have been masked by the conductive overburden. Possible bedrock conductors in the vicinity of the inferred faults are deemed important. Their follow-up should depend on the correlation of the results of the present survey with a workable geologic model. 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.

Respectfully submitted

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Consulting Geophysicist
for
AERODAT LIMITED
June 23, 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 chance 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

J8901 CONSOLIDATED REGAL NORTH AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
1	10	A	0	5.3	9.6	0.3	0	49
1	20	A	0	7.3	7.5	0.8	0	69
1	20	B	0	7.5	8.1	0.8	8	48
1	30	A	0	8.0	9.4	0.7	0	53
1	30	B	1	15.3	12.0	1.6	0	60
1	30	C	1	10.9	7.2	1.8	0	74
1	50	A	1	13.8	9.9	1.7	0	64
1	50	B	2	10.2	5.7	2.2	0	88
1	60	A	0	7.6	8.3	0.8	3	53
1	60	B	0	8.5	9.5	0.8	13	39
1	60	C	0	6.7	8.1	0.6	4	50
1	70	A	0	6.8	8.4	0.6	0	64
1	70	B	1	12.1	10.0	1.4	0	88
1	80	A	1	13.0	11.2	1.3	0	60
1	80	B	1	14.7	12.3	1.4	0	49
1	90	A	0	6.4	6.1	0.9	0	81
1	90	B	1	15.5	11.2	1.8	0	77
1	90	C	1	8.0	6.1	1.3	12	51
1	100	A	1	8.4	5.4	1.7	9	56
1	100	B	1	7.5	5.3	1.4	0	79
1	100	C	1	9.7	8.3	1.2	0	69
1	110	A	0	4.6	7.3	0.3	0	71
1	110	B	0	6.0	6.6	0.7	0	86
1	120	A	1	8.9	8.0	1.1	4	53
1	120	B	1	14.9	14.8	1.1	0	53
1	130	A	0	5.4	10.3	0.3	0	64
1	130	B	1	8.7	6.7	1.3	0	75
1	141	A	0	7.7	11.4	0.5	0	50
1	150	A	1	8.7	6.6	1.4	0	68
1	160	A	0	4.3	3.8	0.8	5	69

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.

J8901 CONSOLIDATED REGAL NORTH AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
1	160	B	1	7.7	6.9	1.0	16	44
1	160	C	1	10.6	10.2	1.0	0	59
1	171	A	0	5.6	9.2	0.3	0	68
1	171	B	0	4.4	8.5	0.2	0	75
1	171	C	0	6.3	7.2	0.6	0	59
1	180	A	0	6.8	9.9	0.5	0	50
1	191	A	0	2.3	6.9	0.1	0	66
1	200	A	0	5.2	6.7	0.5	6	52
1	210	A	0	5.2	5.9	0.6	0	68
1	210	B	1	5.9	4.9	1.0	21	47
1	220	A	0	6.8	6.8	0.8	0	66
1	220	B	0	2.8	5.5	0.2	2	55
1	230	A	0	1.5	6.4	0.0	0	71
2	240	A	0	7.1	10.2	0.5	4	45
2	250	A	0	4.1	5.3	0.4	13	50
2	260	A	0	8.8	9.3	0.8	0	56
2	260	B	1	14.4	16.0	1.0	0	61
2	270	A	1	7.6	6.4	1.1	7	54
2	270	B	2	8.1	3.9	2.5	0	85
2	280	A	1	9.0	8.1	1.1	0	60
2	280	B	1	12.6	12.4	1.1	9	39
2	290	A	1	10.5	8.6	1.3	7	48
2	290	B	1	10.3	6.7	1.8	17	43
2	300	A	0	6.6	8.9	0.5	0	70
2	300	B	0	4.5	8.1	0.3	9	42
2	300	C	0	6.7	7.2	0.7	12	46
2	300	D	1	7.8	6.9	1.0	17	43
2	300	E	0	0.0	3.9	0.0	0	77
2	310	A	0	2.0	4.9	0.1	0	78
2	310	B	1	7.8	7.2	1.0	0	81

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.

J8901 CONSOLIDATED REGAL NORTH 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	310	C	0	6.5	6.4	0.8	30	31
2	320	A	0	10.5	11.9	0.8	4	44
2	320	B	0	10.8	11.4	0.9	0	78
2	320	C	1	6.7	5.5	1.1	13	52
2	320	D	0	0.8	3.1	0.0	12	45
2	330	A	0	3.3	2.9	0.7	6	75
2	330	B	0	1.7	3.4	0.1	11	56
2	330	C	0	10.4	12.0	0.8	0	54
2	330	D	1	10.7	10.7	1.0	0	53
2	330	E	1	17.4	12.4	1.9	5	44
2	330	F	1	8.5	6.4	1.4	13	48
2	340	A	1	9.1	7.3	1.3	2	57
2	350	A	1	7.5	6.3	1.1	0	78
2	361	A	0	4.4	5.8	0.4	2	59
2	361	B	0	10.7	11.5	0.9	0	58
2	370	A	1	10.0	9.4	1.1	17	36
2	370	B	0	6.9	6.3	0.9	10	52
2	380	A	0	6.9	8.4	0.6	0	59
2	390	A	0	9.8	12.4	0.7	0	63
2	390	B	0	12.3	13.6	0.9	0	66
2	400	A	0	9.5	11.6	0.7	16	32
2	400	B	0	7.8	7.6	0.9	0	87
2	410	A	0	4.1	4.1	0.6	0	93
2	420	A	0	4.3	4.8	0.6	0	68
2	420	B	0	6.4	6.1	0.9	0	75
2	420	C	0	2.3	8.2	0.0	7	34
2	430	A	0	1.1	8.9	0.0	0	37
2	430	B	1	9.7	8.1	1.2	0	68
2	440	A	0	8.0	10.4	0.6	0	62
2	440	B	0	1.0	2.6	0.0	0	86
2	440	C	0	3.3	3.2	0.6	24	54
2	450	A	0	8.8	9.4	0.8	0	70

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.

J8901 CONSOLIDATED REGAL NORTH AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
3	460	A	0	4.5	10.6	0.2	7	36
3	460	B	0	1.5	8.6	0.0	0	36
3	460	C	0	3.7	4.0	0.5	21	50
3	470	A	0	7.5	9.5	0.6	0	69
3	470	B	0	8.2	8.9	0.8	0	56
3	490	A	0	5.1	4.8	0.8	0	77
3	500	A	0	4.0	3.5	0.8	24	52
3	510	A	0	4.5	7.9	0.3	0	85
3	520	A	0	0.5	5.4	0.0	0	94
3	520	B	0	3.2	8.0	0.1	0	51
3	550	A	0	3.1	6.8	0.1	12	39
3	550	B	0	3.4	9.2	0.1	0	64
3	550	C	0	1.6	4.9	0.0	17	36
4	561	A	0	1.8	3.3	0.1	9	60
4	561	B	0	4.6	6.6	0.4	0	63
4	570	A	0	2.9	3.8	0.4	3	67
4	570	B	0	2.9	8.5	0.1	0	67
4	580	A	0	7.6	10.1	0.6	0	51
4	590	A	0	4.2	5.1	0.5	5	59
4	600	A	0	8.1	10.8	0.6	0	62
4	650	A	0	6.7	10.0	0.4	0	87
4	660	A	0	1.2	5.5	0.0	0	107
4	670	A	0	11.2	17.9	0.5	0	64
5	680	A	0	5.6	10.6	0.3	0	78
5	680	B	0	2.9	7.9	0.1	0	66
5	691	A	0	6.4	10.0	0.4	0	74
5	691	B	0	6.2	11.8	0.3	0	61
5	720	A	1	5.6	3.9	1.3	25	49

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.

J8901 CONSOLIDATED REGAL NORTH AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
5	720	B	1	7.0	5.8	1.1	10	54
5	730	A	0	5.8	9.9	0.3	0	60
5	740	A	0	3.0	5.1	0.2	0	62
5	740	B	0	5.6	10.1	0.3	0	55
5	750	A	0	3.1	6.5	0.2	0	71
5	760	A	0	5.8	7.8	0.5	0	67
5	770	A	0	4.0	6.9	0.3	21	34
5	770	B	0	4.5	8.8	0.2	0	62
5	770	C	0	1.1	3.1	0.0	9	54
5	780	A	0	0.5	3.5	0.0	0	51
5	780	B	0	1.6	5.3	0.0	0	64
5	790	A	0	0.4	3.3	0.0	0	82
5	800	A	0	4.0	7.3	0.2	0	78
5	800	B	1	8.3	7.5	1.0	20	38
5	800	C	0	4.5	7.6	0.3	21	31

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.

J8901 GOODGOLD SOUTH AREA, ISKUT-UNUK RIVERS, B.C. - EM ANOMALIES

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS
5	940	A	1	5.1	3.0	1.6	12	67
5	960	A	2	7.8	3.1	3.2	0	90
5	960	B	2	13.2	5.9	3.3	2	58
24	5060	A	0	6.3	9.6	0.4	17	32
24	5070	A	0	2.8	4.3	0.3	31	35
24	5070	B	0	5.3	4.5	0.9	18	52
24	5070	C	1	5.6	3.7	1.4	34	40
24	5080	A	0	3.7	4.9	0.4	39	25
24	5080	B	0	4.1	4.5	0.6	48	21
24	5080	C	1	6.1	4.5	1.2	34	36
24	5080	D	0	8.8	9.9	0.8	22	29
24	5090	A	0	5.1	4.7	0.8	1	68
24	5100	A	0	5.2	5.9	0.6	0	1242
24	5130	A	0	2.6	3.5	0.3	8	65

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 Prime Explorations Limited and from a review of the proprietary airborne geophysical survey flown by Aerodat Limited for Prime Explorations Limited. 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 Prime Explorations Limited.

Signed

Z. Dvorak

Zbynek Dvorak
Consulting Geophysicist

June 23, 1989

APPENDIX IV

PERSONNEL

FIELD

Flown	February - April, 1989
Pilot	R. Hage J. Kamphaus
Operator	J. Huisman K. McCart V. Cole

OFFICE

Processing	A. E. Valentini G. MacDonald
Report	Z. Dvorak

APPENDIX II

Certificate of Qualifications

Certificate of Qualifications

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

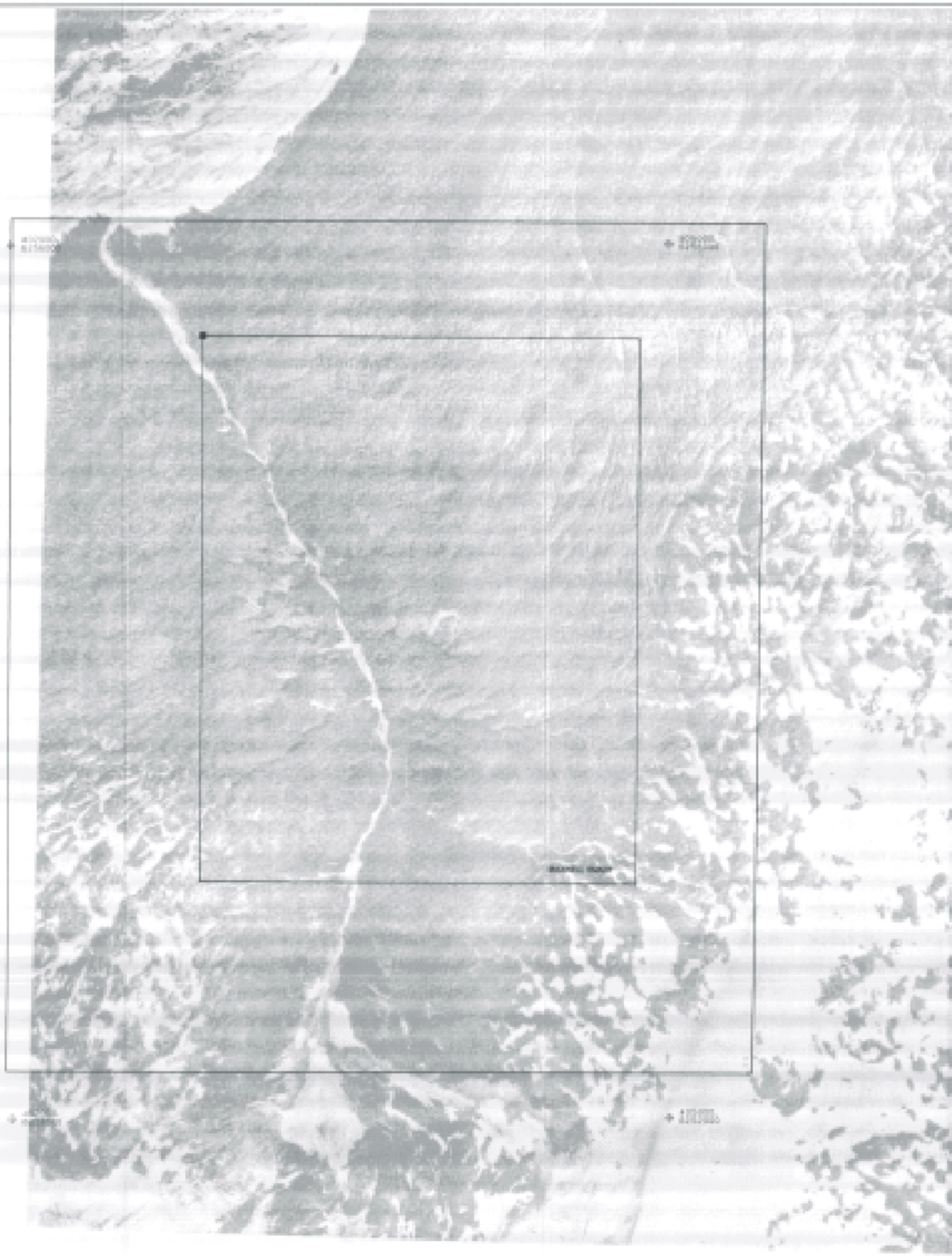
1. I am a graduate of Brandon University (1981) and hold a BSc (Spec) degree in geology.

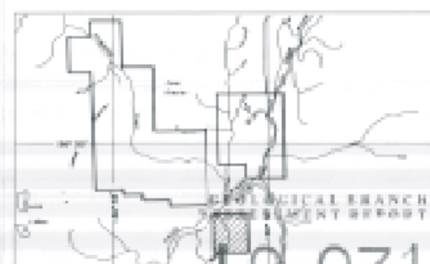
2. I have been employed in my profession by various mining companies since graduation.

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
Senior Geologist

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





18,931

PRIME EXPLORATIONS LTD.

BASE MAP

GOODGOLD RESOURCES LTD. - MAX PROJECT

ISKUT-UNUK RIVER

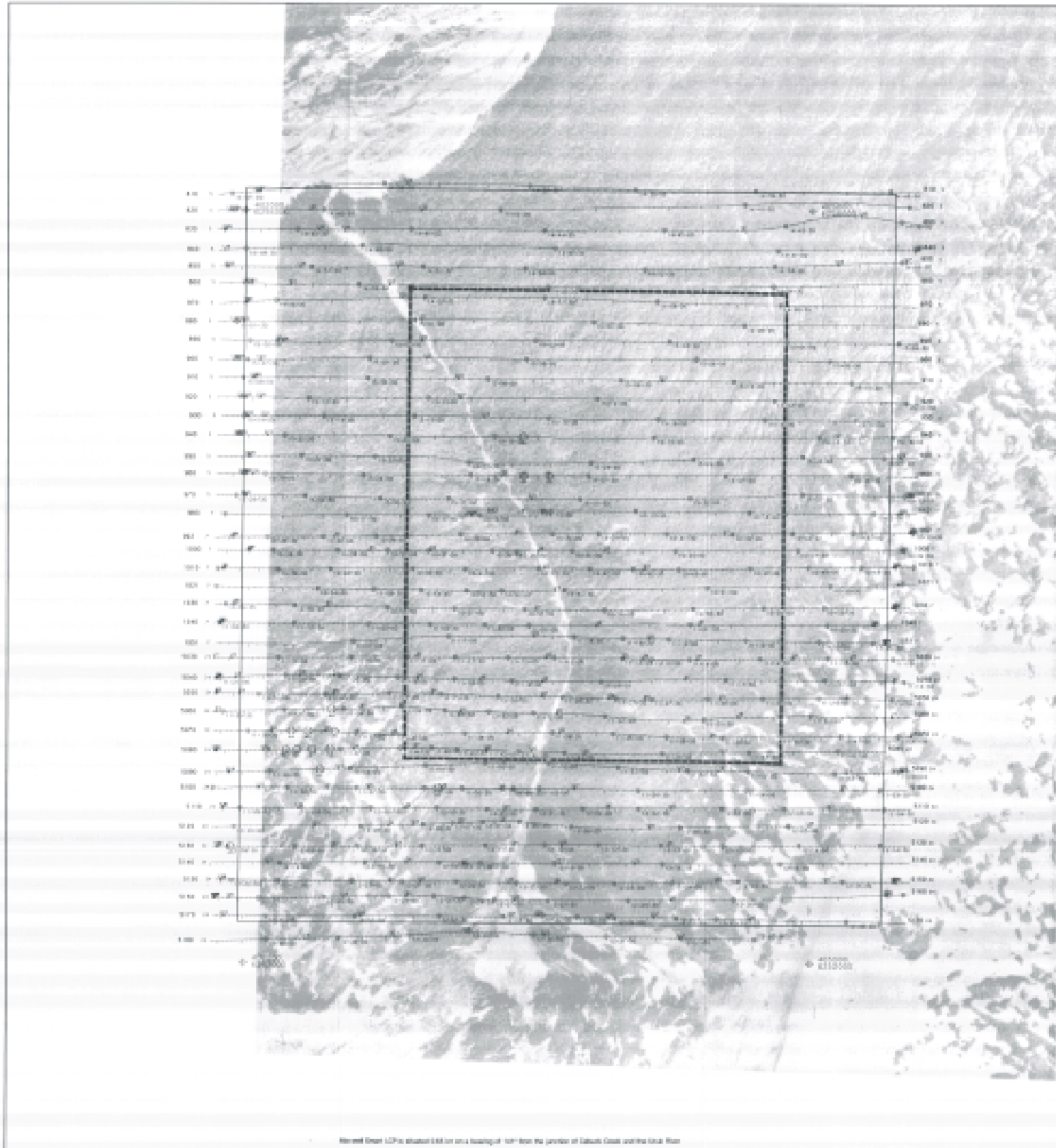
BRITISH COLUMBIA

AERODAT LIMITED

DATE: FEB 1989

NTS No: 104 B/7,8

MAP No: 1



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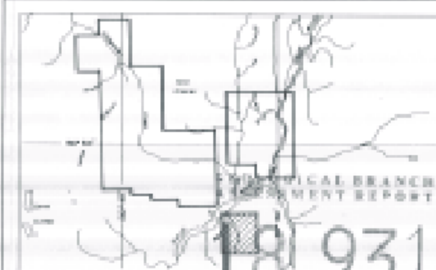
EM Anomalies

Flight Path

Average line spacing 100m

LEGAL CORNER POST

CLAIM BOUNDARY



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FLIGHT PATH

GOODGOLD RESOURCES LTD. - MAX PROJECT

ISKUT-UNUK RIVER

BRITISH COLUMBIA

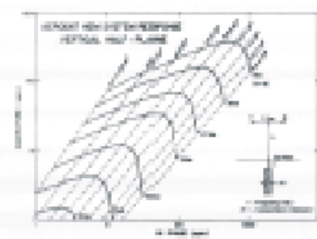
AERODAT LIMITED

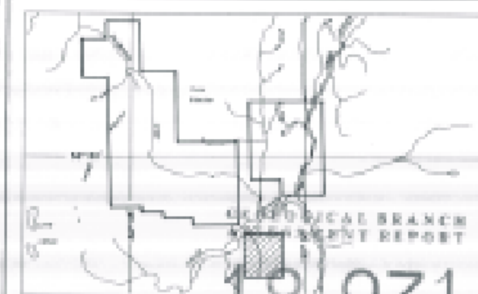
DATE:	FEB 1989
NTS No:	104 B/7,8
MAP No:	2

EM Anomalies

Flight Path

INTERPRETATION LEGEND





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INTERPRETATION

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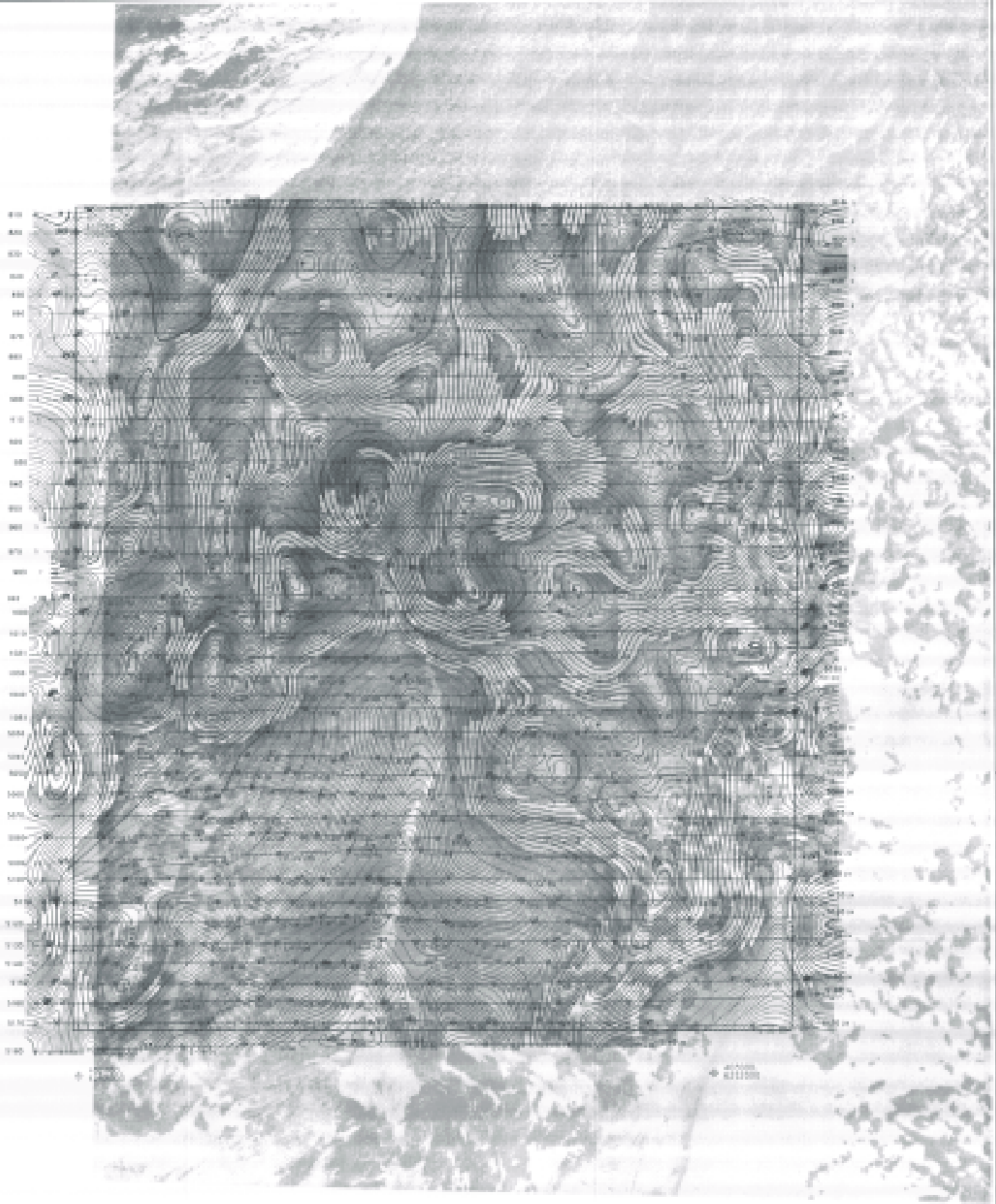
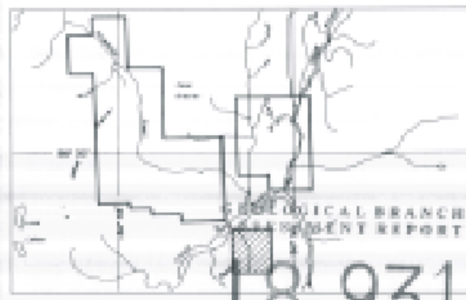


Magnetics

Flight Path



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TOTAL FIELD MAGNETIC CONTOURS

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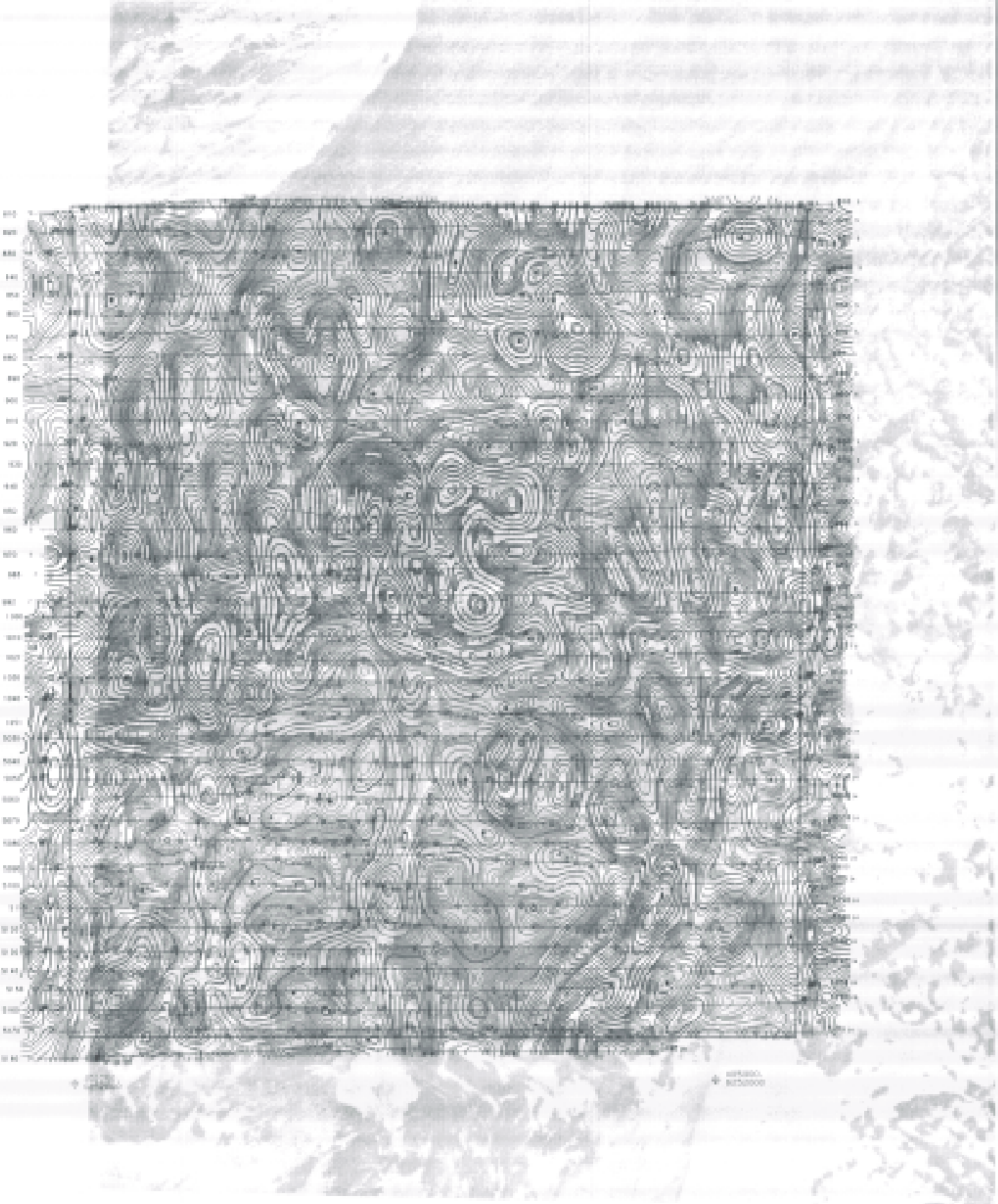
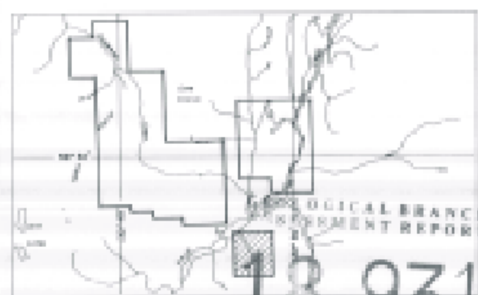
MAP No: 4



Vertical Gradient

Flight Path



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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CALCULATED VERTICAL MAGNETIC GRADIENT

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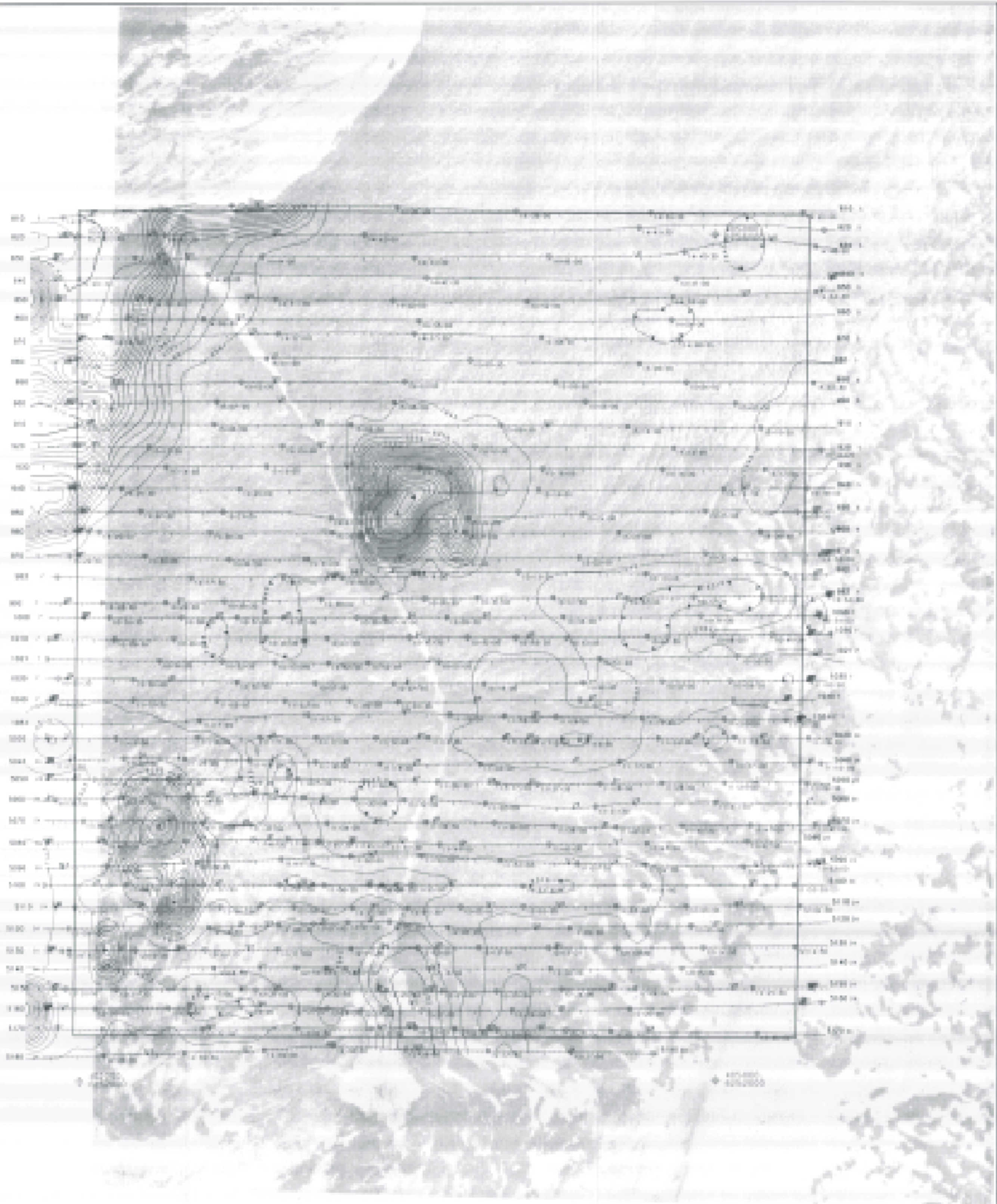
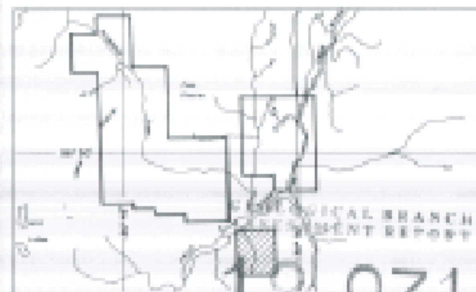


Apparent Resistivity

Flight Path



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APPARENT RESISTIVITY CONTOURS

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BRITISH COLUMBIA

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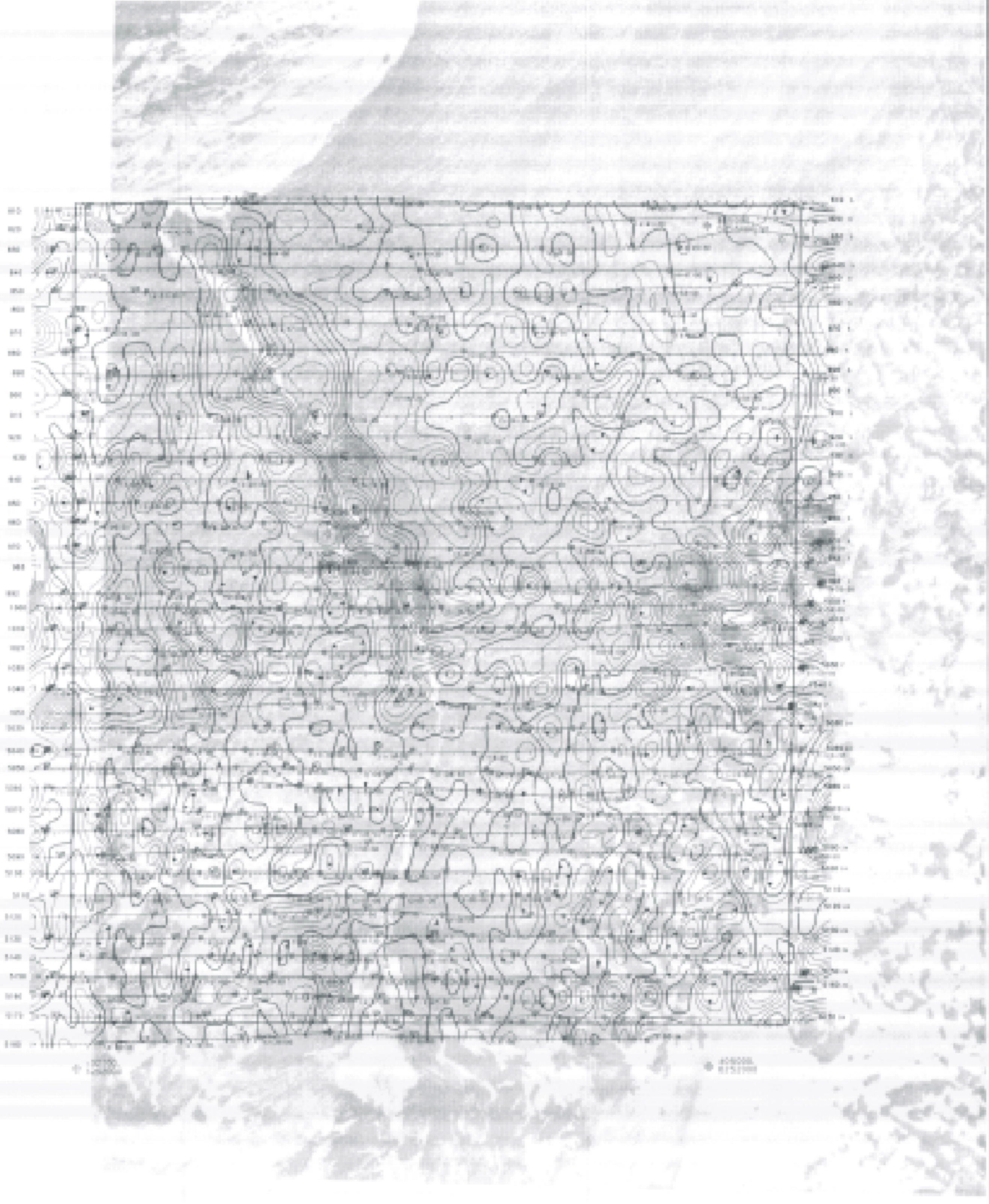
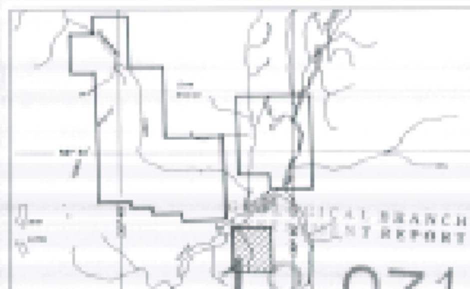
104 B/7,8

MAP NO: 6



VLF-EM

Flight Path



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PRIME EXPLORATIONS LTD.

VLF-EM TOTAL FIELD CONTOURS

GOODGOLD RESOURCES LTD. - MAX PROJECT

ISKUT-UNUK RIVER

BRITISH COLUMBIA

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FEB 1989

104 B/7,8