ARIS SUMMARY SHEET

District Geologist, Smithers — Off Confidential: 89.04.25

ASSESSMENT REPORT 17607 — MINING DIVISION: Skeena

PROPERTY: Kelly Girl
LOCATION: LAT 56 12 00 LONG 129 55 00
UTM 09 6228503 443123
NTS 104A04W
CLAIM(S): Kelly Girl 1-4
OPERATOR(S): Cremonese, D.M.
AUTHOR(S): Woods, D.V.;Hermary, R.G.
REPORT YEAR: 1988, 29 Pages

GEOLOGICAL SUMMARY: The Kelly Girl 1-4 claims straddle the axis of the American Creek anticline: an open, slightly inclined regional fold of Unuk River, Hazelton assemblage, and Betty Creek, Bowser assemblage, volcanic, volcaniclastic and sedimentary rocks. The property is almost entirely underlain by Lower Jurassic, red and green volcanic conglomerates and sandstones of the Unuk River Formation. Middle Jurassic volcanic conglomerates, breccias, and crystal and lithic tuffs of the Betty Creek Formation unconformably overlie the Unuk River rocks along the west boundary of the property. A series of normal faults are aligned with the axial plane of the American Creek anticline. A major splay of these faults occurs near the north edge of the property from which a cross-cutting fault trends to the east.

WORK DONE: Geophysical
EMAB 120.0 km; VLF
Map(s) - 2; Scale(s) - 1:10 000
MAGA 120.0 km
Map(s) - 1; Scale(s) - 1:10 000

MINFILE: 104A 076

DINO M. CREMONESE
GEOPHYSICAL REPORT ON AN
AIRBORNE MAGNETIC AND VLF-EM SURVEY
KELLY GIRL 1-4 CLAIMS
SKEENA MINING DIVISION
LATITUDE: 56° 12'N LONGITUDE: 129° 55'W
NTS: 104A/4W

AUTHORS: Richard G. Hermary, B.Sc.,
Geophysicist
Dennis V. Woods, Ph.D., P.Eng.
Consulting Geophysicist

DATE OF WORK: 18, 19 and 20 of April 1988
DATE OF REPORT: 15 July 1988

WESTERN GEOPHYSICAL AERO DATA LTD.

TABLE OF CONTENTS **PAGE**

ILLUSTRATIONS

INTRODUCTION

On the 18, 19 and 20 of April 1988 an airborne magnetic and VLF-EM survey was conducted over the **Kelly Girl 1-4** claims for **Dino M. Cremonese.** The claims are situated 30 kilometers north and slightly east of Stewart, B.C.

The intention of this survey is to direct further exploration to any favorable anomalous zones for specific ground targets and assist in the geological mapping of the area. Approximately 120 line kilometres of magnetic and VLF-EM data was gathered over the claims. The airborne magnetic and VLF-EM data has been examined in detail to evaluate the subject property.

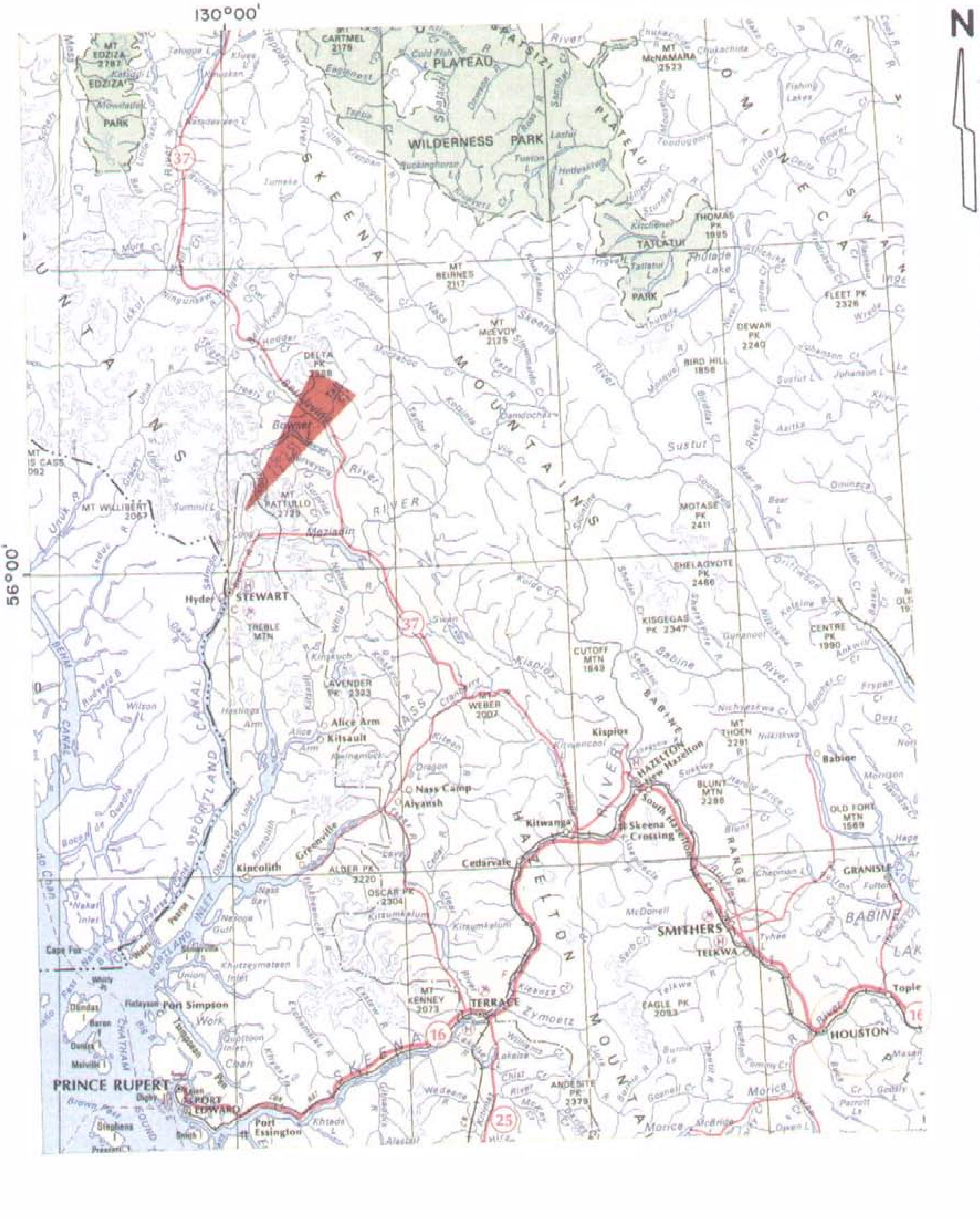
PROPERTY

The **Kelly Girl 1-4** claims are owned by **Chris Pepperdine** and operated by **Dino M. Cremonese.** The claims are described in the table below and illustrated in Figure 2.

Claim Name	Units	Record No.	Expiry Date
Kelly Girl 1	18	6090	April 23, 1989
Kelly Girl 2	18	6091	April 23, 1989
Kelly Girl 3	18	6092	April 23, 1989
Kelly Girl 4	18	6093	April 23, 1989

LOCATION AND ACCESS

The **Kelly Girl 1-4** claims are located in the Stewart area approximately 850 kilometers north-northwest of Vancouver, B.C. The claims lie 30 kilometers north of Stewart and 16 kilometers northeast of the Premier mine. The claims are situated along American Creek just 5.5 kilometers north of the confluence of the Basin Creek and the American Creek, and 5 kilometers northwest of Mount Johnson. The claims are located within the Skeena Mining



DINO M. CREMONESE

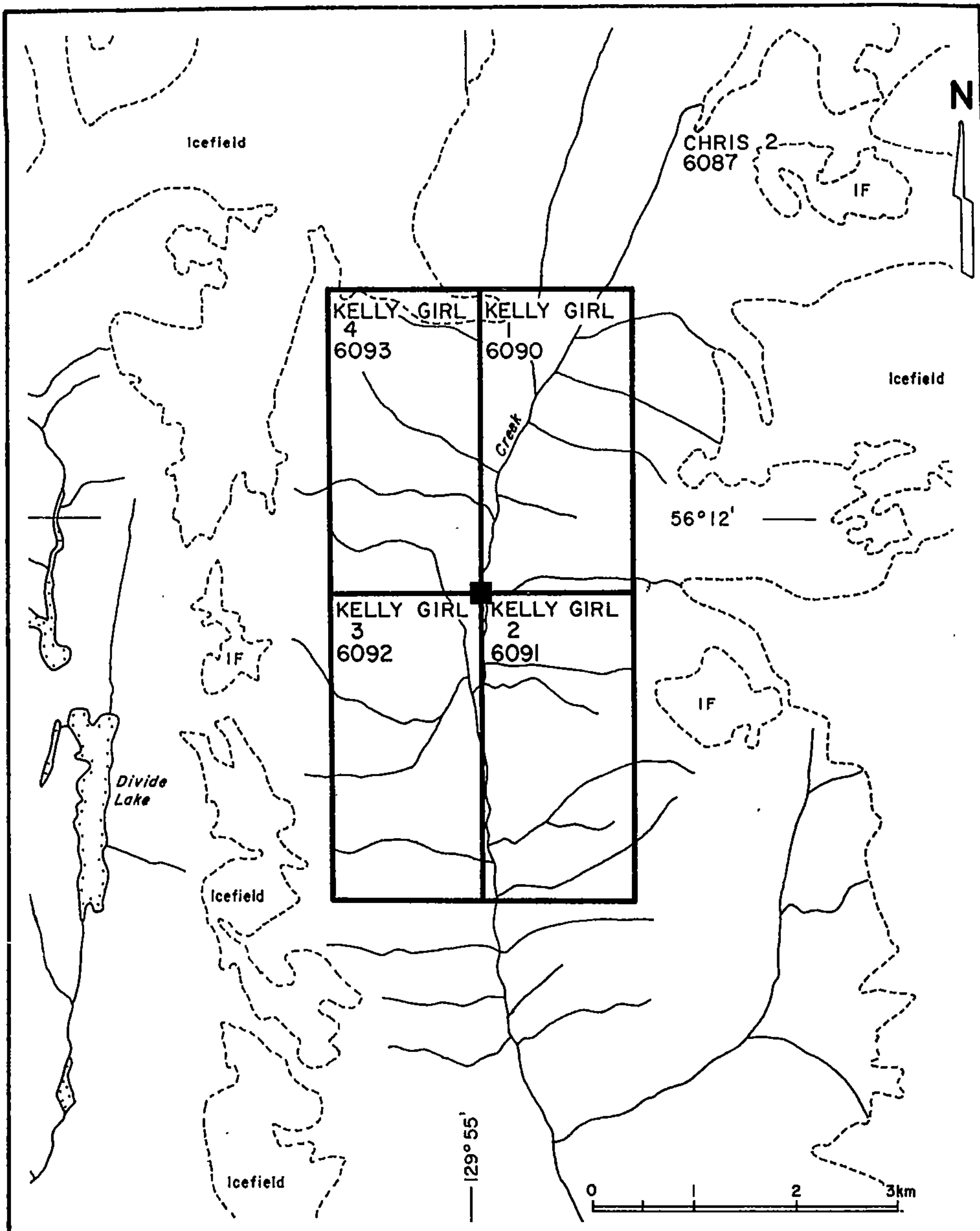
KELLY GIRL 1 - 4

LOCATION MAP

N.T.S. 104A/4W

Scale = 1:2000000

FIG. 1



DINO M. CREMONESE

KELLY GIRL 1 - 4

CLAIM MAP

N.T.S. 104A/4W

FIG. 2

Division of B.C. The NTS map co-ordinates of the **Kelly Girl 1-4** claims is 104A/4W. The approximate geographical coordinates are a latitude of 56° 12'N and a longitude of 129° 55'W.

Access to the area is usually achieved by air or road to Stewart, B.C. The road access to Stewart is via B.C.'s Cassiar Highway 37 and then west at the Meziadin Junction on the Stewart highway. The access to the **Kelly Girl 1-4** claims is via helicopter from Stewart or a 11 kilometer hike along a trail up American Creek from the Stewart highway, 20 kilometers north of Stewart.

HISTORY AND PREVIOUS WORK

Mineral exploration in the Stewart-Unuk River area began in the early 1890's when placer miners on their way out of the Cariboo prospected the Unuk River and its tributaries. In 1898, an expedition of placer miners landed at the head of Portland Canal and proceed to explore the Bear River and Salmon River valleys. The discovery of mineralized float and vein material led to an influx of "hard-rock" prospectors. The townsite of Stewart was established (named after the prospecting family of "Pop", John and Bob Stewart), and by 1910 most of known mineral occurrences in the Stewart area, including the future Silbak Premier mine, had been discovered.

Mine development over the next three decades resulted in slow but steady growth of the Stewart area. In particular, the discovery of high-grade silver and gold ore at Premier in 1918 led to the development of one of the richest mineral deposits in British Columbia and the incentive for intensive exploration and development in the Salmon River basin.

Most of the small mines in the Stewart region were worked out by the 1940's except for the Silbak Premier mine which continued through to the 1970's. Total production of the Premier group consisted of 4 million ounces of gold, 41 million ounces of silver, 4 million pounds of copper, 52 million pounds of lead and 19 million pounds of zinc, making it the second largest silver producer (after Sullivan) and the third largest gold producer (after Bralorne-Pioneer and Rossland) in B.C. The development of the Granduc massive sulphide orebody in the Unuk River area northeast of Stewart and construction of the Cassiar-Stewart-Terrace highway maintained the growth and exploration activity of the Stewart area during the 1960's and 1970's. Significant discoveries in the Iskut River - Stikine River areas north of Stewart have led to an increased intensity of mineral exploration activity in recent years.

Almost all of the early mineral discoveries in the Stewart-Unuk River area have been found by prospecting gossans sighted from accessible stream or river valleys in areas of negligible vegetation. Recent discoveries have results from prospecting mineralized showings revealed by ablating glaciers (i.e. Granduc Mine). Exploration is hampered by a dense vegetation at low elevations and snow cover at high elevations. Soil geochemistry is impractical in most areas due to a lack of suitable soil cover. Hence, the best approach to mineral exploration in the Stewart-Unuk River area is a combination of geological and geophysical surveying to discover unknown hidden deposits, and detailed reappraisal of known showings using geophysical and geochemical techniques together with modern geologic concepts of ore genesis.

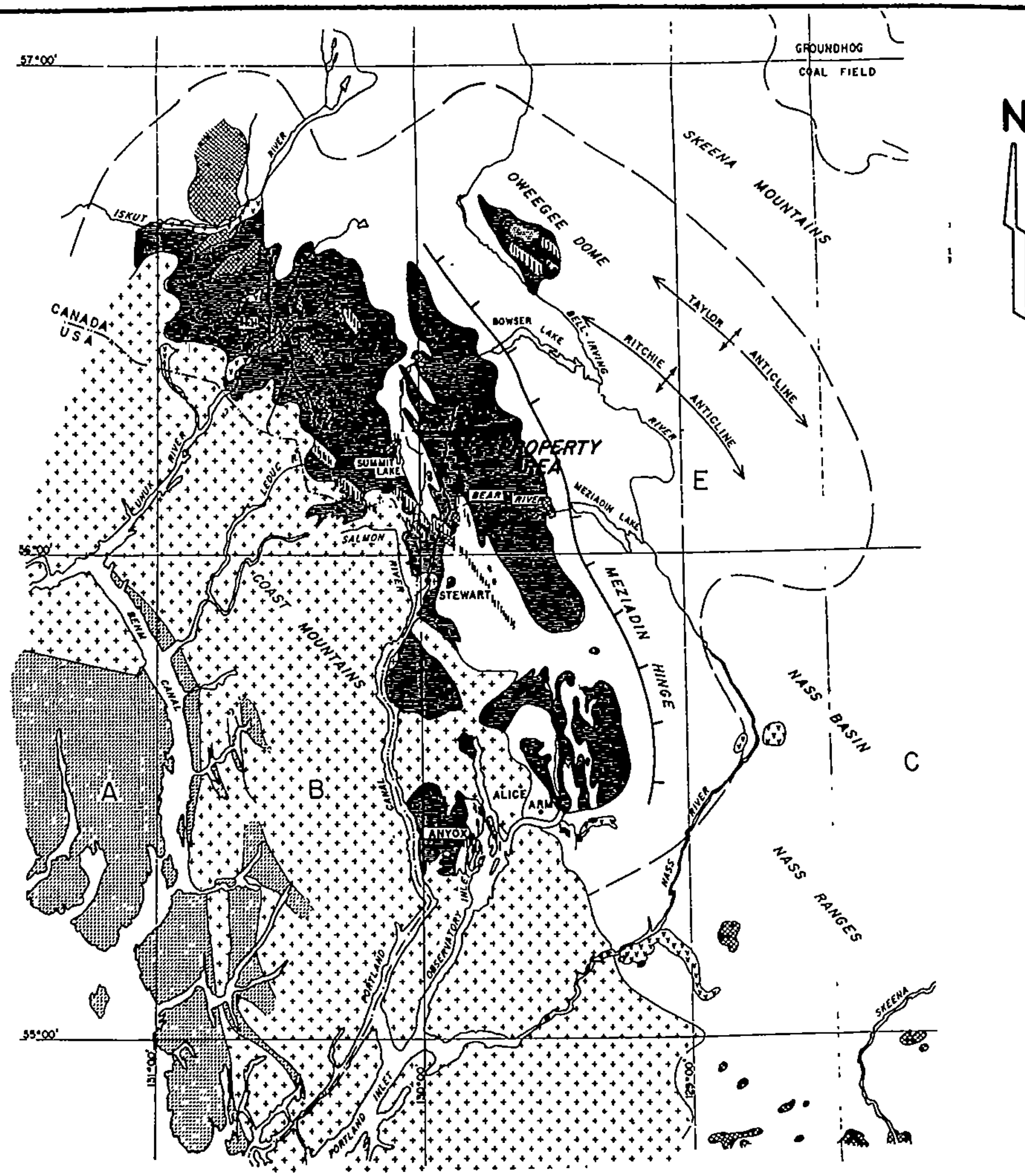
Grove (1971, 1986) located a few prospects in the vicinity of the **Kelly Girl** claim block, however they all appear to have been plotted incorrectly too far north. No previous workings are known on mineral showings in the **Kelly Girl** claim group.

REGIONAL GEOLOGY

The Stewart-Unuk River area is composed of three distinct tectonic zones of Mesozoic to Cenozoic age along the western margin of the Cordilleran (Figure 3). From west to east they are: the Coast Plutonic Complex or Crystalline Belt, the Stewart Complex and the Bowser Basin. The Stewart Complex is a deformed belt of volcanic, volcaniclastic and sedimentary rocks of Upper Triassic to Middle Jurassic age which extend from Alice Arm in the south to the Iskut River in the north. These rocks are in intruded contact with Middle Jurassic to Eocene felsic plutonic rocks of the Coast Plutonic Complex to the west, and unconformably underlay the Upper Jurassic to Cretaceous marine clastic sedimentary rocks of the Bowser Basin to the east. The Stewart Complex is one of the most important metallogenic regions in British Columbia.

Stratigraphic nomenclature of the Stewart Complex and Bowser Basin has been adopted from Grove (1986) following modifications from Grove (1971). The oldest rocks of the Stewart-Unuk River area are the Upper Triassic volcanic conglomerates, sandstones and siltstones comprising the Takla Group near Unuk River. In the absence of correlatable fossil evidence, the distinction between these Takla Group volcaniclastics and the overlying Hazelton Group volcaniclastics in not conclusive.

The lowest member of the Jurassic Hazelton Group is the Lower Jurassic Unuk River Formation consisting of green, red and purple volcanic breccia, conglomerate, sandstone and siltstone, pillowed lava and volcanic flows, and minor crystal tuff, limestone and chert. The Unuk River Formation is unconformably overlain by the Middle Jurassic Betty Creek Formation of predominantly volcanic breccia, conglomerate, sandstone and siltstone, which, in turn, is unconformably overlain by siltstone, greywacke, sandstone and



SEDIMENTS - VOLCANICS

Stewart Complex - Triassic and Jurassic (undivided)

Palaeozoic

Tertiary and Recent Volcanics

Bowser Assemblage – Middle Jurassic to Upper Jurassic (undivided)

INTRUSIVES

Coast – undivided

Skeena – undivided

Dyke swarms – undivided

MAJOR FEATURES

A Wrangell - Revillagigedo Belt

B Coast Crystalline Belt

C Bowser Basin

E Bear River Uplift

Wrangell - Revillagigedo Metamorphics

SCALE 0 8 16 24 32 MILES

DINO M. CREMONESE
KELLY GIRL 1 - 4
REGIONAL GEOLOGY
N.T.S. 104A/4W

FIG. 3

argillite of the Salmon River Formation. Grove (1971) referred to the Unuk River Formation as the Hazelton assemblage, and the Betty Creek and Salmon River Formations as the Bowser assemblage.

The Upper Jurassic Nass Formation overlies the Salmon River Formation to form the uppermost constituent of the Bowser Basin. The Nass Formation consists of a thick sequence of marine clastic sedimentary rocks (siltstones, greywackes, sandstones).

In addition to the volcanic epiclastic and sedimentary rocks of the Unuk River, Betty Creek and Salmon River Formations, the Stewart Complex is also partially composed of their cataclastic and metamorphic equivalents. Cataclasite and mylonite are found near the intruded contact of the Late Jurassic Texas Creek granodiorite. Phyllites, schists and gneisses are confined to the intruded contact areas with the Tertiary Hyder quartz monzonite and Boundary granodiorite.

The Coast Plutonic Complex is composed of multiple phases of intrusion from Upper Triassic quartz diorite in the Unuk River area to Middle Jurassic granodiorites and Tertiary quartz monzonites in the Stewart area. Plutonic satellites of quartz monzonite, quartz diorite and granodiorite are also found toward the centre of the Stewart Complex. Dykes and sills of similar composition are found throughout the Stewart Complex but particularly in well defined zones cutting across the regional geologic trends.

Mineralization in the Stewart area is confined primarily to the Lower and Middle Jurassic Stewart Complex: Unuk River, Betty Creek and Salmon River Formations. Grove (1986) recognizes four classes of mineral deposits in the Stewart Complex: fissure and replacement vein deposits such as the Silbak Premier Mines, stratiform massive sulphide deposits such as the Hidden Creek Mine in the Anyox area, discordant massive sulphide deposits such as the Granduc Mine, and Tertiary porphyry copper-molybdenum deposits such as the Mitchell-Sulphurets property. The most important of these, in terms of number of deposits and quantity of ore, are the fissure and replacement vein deposits. However, in terms of exploration potential, all types of deposits have equal importance.

LOCAL GEOLOGY

The **Kelly Girl 1-4** claims straddles the axis of the American Creek anticline: an open slightly inclined regional fold of Unuk River (Hazelton assemblage) and Betty Creek (Bowser assemblage) volcanic, volcaniclastic and sedimentary rocks. The property is almost entirely underlain by Lower Jurassic, red and green volcanic conglomerates and sandstones of the Unuk River Formation. Middle Jurassic volcanic conglomerates, breccias, and crystal and lithic tuffs of the Betty Creek Formation unconformably overlay the Unuk River rocks along the west boundary of the property.

The **Kelly Girl 1-4** claims is bisected by a series of normal faults aligned parallel to the axial plane of the American Creek anticline. A major splay of these faults occurs near the north edge of the property from which a cross-cutting fault trends in an easterly direction.

AIRBORNE VLF-ELECTROMAGNETIC AND MAGNETIC SURVEY

This survey simultaneously monitors and records the output signal from a Delvco tri-axis ringcore magnetometer and a Herz Totem 2A dual frequency VLF-EM receiver. The sensors are installed in an aerodynamically stable bird which is towed thirty metres below a helicopter. A shock and gimbal mounted TV camera, fixed to the helicopter skid, provides an input signal to a video cassette recorder allowing for accurate flight path recovery by

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC

PLEISTOCENE AND RECENT

- Unconsolidated deposits: River flood plain, estuarine deposits, river channel and stream-cut terraces, alluvial fans, deltas and beaches, outwash, glacial lake sediments

MESOZOIC

MIDDLE TO UPPER JURASSIC

Bowser assemblage

- B1 — Siltstones, greywacke, argillite, minor chert pebble conglomerate, minor limestone (including equivalent phyllites)
- B2 — Lithic wacke, feldspathic wacke, siltstone, pebble conglomerate (including equivalent phyllites)
- B3 — Rhyolite, Rhyolite breccia
- B4 — Green, red, and buff volcanic sandstone, conglomerate, minor breccia
- B5 — Red and black volcanic sandstones, conglomerates minor breccia
- B6 — Red, green, and black volcanic breccia (with purple phases)

LOWER TO MIDDLE JURASSIC

Hazelton assemblage

- H1 — Red and green volcanic conglomerates and sandstones, crystal and lithic tuffs
- H2 — Green massive volcanic conglomerates, sandstones, minor breccia with minor intercalated siltstones
- H3 — Red and purple massive volcanic conglomerate, breccia, and sandstone with minor intercalated siltstones
- H4 — Green volcanic breccia, with sandstone and conglomerate

PLUTONIC ROCKS

Coast Crystalline Belt

CENOZOIC

TERTIARY

- bcm — Bitter Creek quartz monzonite, granodiorite
- gcd — Glacier Creek augite diorite (and equivalent)
- sld — Summit Lake diorite
- bgd — Boundary granodiorite
- hqm — Hyder quartz monzonite (and equivalent)

MESOZOIC

MIDDLE JURASSIC ?

- tcg — Texas Creek granodiorite (and equivalent)
- H — Hornblende is the predominant mafic mineral
- B — Biotite is the predominant mafic mineral
- Inclusions of country rocks
- h — Metasomatic hornblende
- po — Porphyry phase

METAMORPHIC ROCKS

JURASSIC-CRETACEOUS ?

Hazelton equivalents

- M1 — Green cataclasites, mylonites, schists
- M2 — Black (bl), purple (pu), red (r), and green (gn), mylonite (predominant colour)
- M3 — Buff and green schists (including phyllonite)

ALTERATION

- P — Pyritization
- S — Silicification
- K — Feldspathization
- h — Metasomatic hornblende prominent

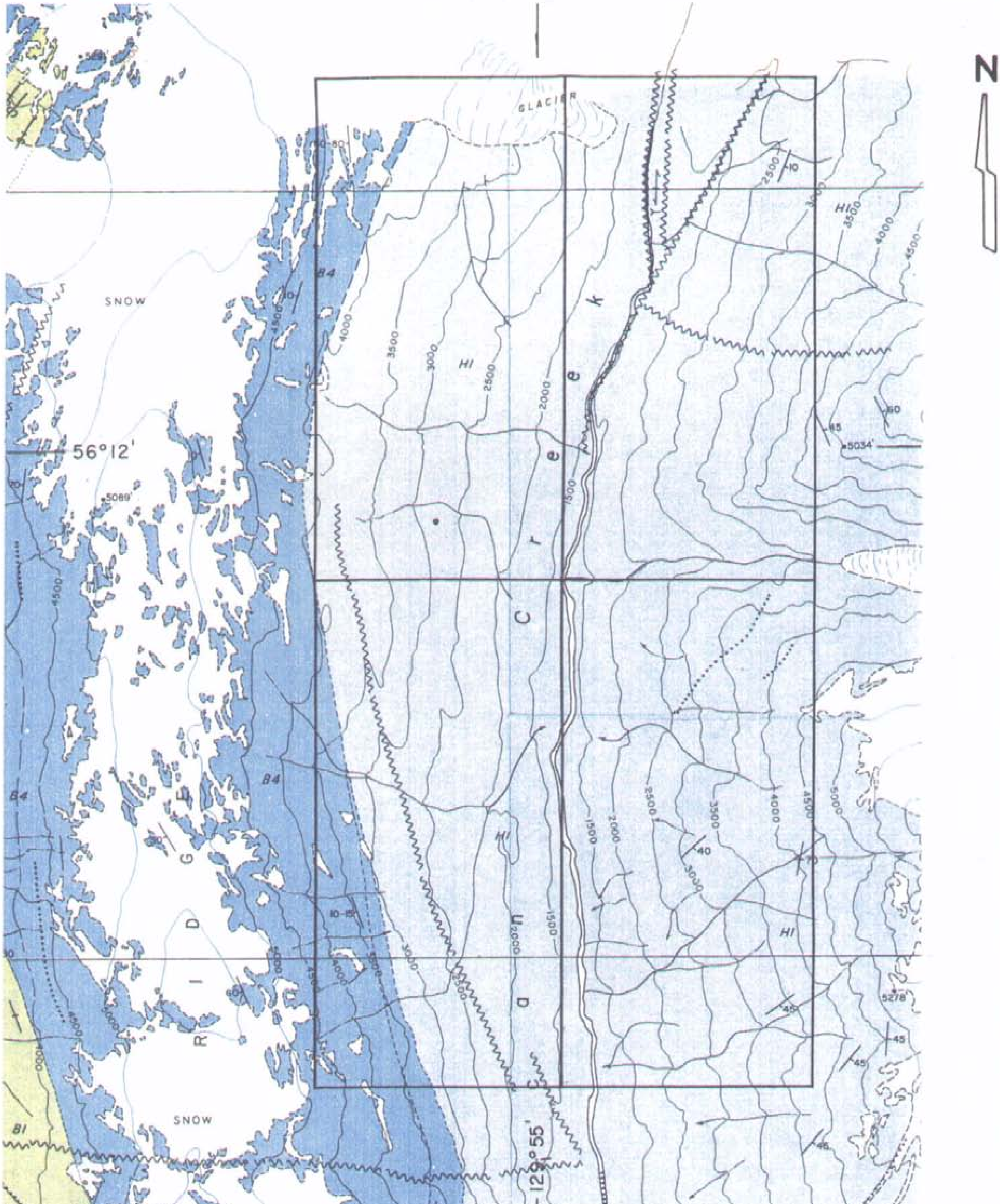
DYKE ROCKS

CENOZOIC

TERTIARY

- Hornblende diorite, quartz diorite (lamprophyre everywhere)
- Diorite, hornblende diorite (mainly Bear Pass area)
- Quartz monzonite, granodiorite and quartz diorite commonly porphyritic (belt of dykes) (mainly Portland Canal dyke swarm)
- Granodiorite porphyry (in Premier area) (includes Premier dyke swarm)

- Geologic contact (defined, approximate, assumed)
- Bedding (horizontal, inclined, vertical, contorted)
- Flow layers (volcanics) (inclined, vertical)
- Schistosity (horizontal, inclined, vertical)
- Joint system (inclined, vertical)
- Fault (defined, approximate, assumed)
- Fault movement (apparent)
- Lineament (air photograph feature)
- Anticline (normal, overturned)
- Syncline
- Fold axes, mineral lineation (horizontal, inclined)
- Fossil locality — Ⓕ
- Mining property
- Adit
- Tunnel
- Quarry
- Dyke swarms (one line represents 10 to 15 dykes)
- Dyke swarm limit
- Bore hole — BH •
- Road, all weather (other)
- Trails
- Tram line
- Bridge
- Building
- Boundary monument
- Glacier
- Debris-covered ice
- Gravel, sand or mud
- Moraine
- Marsh
- Lake
- Intermittent stream
- Lake or stream, indefinite
- Contours (interval 500 feet) — 3000
- Height in feet above mean sea level — •6548
- International boundary
- War memorial
- Ice boundary location (year) — 1957
- Horizontal control point — △
- Mine waste dump
- Mine glory hole



DINO M. CREMONESE

KELLY GIRL 1 - 4

LOCAL GEOLOGY

0 0.5 1.0 mile

N.T.S. 104A/4W

FIG. 4

correlation between the flight path video cassette and air photographs of the survey area. A KING KRA-10A radar altimeter allows the pilot to continually monitor and control terrain clearance along any flight path.

Continuous measurements are made of the earth's magnetic field and of two VLF-EM fields of two different frequencies. These measurements provide the magnitude of the earth's total magnetic field, the magnitude of the two VLF-EM fields, and the quadrature component of the two VLF-EM fields. This data and other pertinent survey information are recorded in three independent modes: as printed text or profiles, on three and a half inch magnetic diskettes in ASCII format, and superimposed on the video image and recorded on video cassettes.

Control of data quality is maintained by the operator scanning a printed output of direct and unfiltered recordings of all the geophysical instrumentation output signals. A portable Compaq computer acts as a system controller for a Hewllet-Packard 3852A data acquisition unit. The computer also processes all the incoming data and survey information and records it on three and a half inch diskettes. Furthermore, the magnetic and very low frequency electromagnetic data is superimposed along with the flight line number, fiducial number, date, time and terrain clearance upon the actual flight path video recording to allow exact correlation between geophysical data and ground location. The input signals are continuously updated on the video display twice a second.

Correlation between the printed output, the ASCII data diskettes and the video flight path recovery tape is controlled via fiducial marks common to all systems. Line identification, flight direction and pertinent survey information are also recorded on the audio track of the video recording tape and in the operator's field notes.

DATA PROCESSING

Field data is digitally recorded, with the line number, fiducial number, date, time and the data, on magnetic diskettes in a format compatible with the Compaq Portable II computer. The recovered flight path locations are digitized and the field data is processed to produce plan maps of each of the parameters. A variety of formats are available in which to display the data. All the survey data is routinely edited for spurious noise spikes. The total field intensity magnetic information is also corrected for any diurnal variations recorded on a base magnetometer located in the survey area.

Both the total field and quadrature components of the VLF-EM signal are sensitive to topographic changes and sensor oscillation. Oscillation effects are reduced by filters tuned to the dominant period. Long period effects attributable to topography can be removed by high pass filtering of the planimetric data.

All pertinent geophysical data is processed and plotted by computers. The processing and plotting is done in such a manner as to maximize the amount of information and detail allowed by the original data.

DISCUSSION OF RESULTS

The **Kelly Girl 1-4** claims were surveyed on the 18,19 and 20 of April 1988. Approximately 120 line kilometers of airborne magnetic and VLF-EM survey data has been recovered and examined in detail to evaluate the **Kelly Girl 1-4** claims.

Survey lines were flown north-south on 300 meter centres with data being digitally recorded at half second intervals, providing an average sample spacing of 15 metres. The sensors were towed beneath the helicopter and maintained a terrain clearance of approximately 60 meters. The magnetic data is presented in contour form on a photomosaic base map of the area as Figure 5. The total field VLF-EM data is presented in contour form along with the quadrature VLF-EM data in profile form as Figures 6 and 7 representing the Cutler and Hawaii frequency information respectively.

The magnetic data is a useful tool for mapping both regional and local geological structures. Many localized magnetic variations are observed which are attributed to lithological changes.

The VLF-EM data is useful for mapping conductive zones. These conductive zones usually consist of argillaceous graphitic horizons, conductive clays, water saturated fault and shear zones, or massive conductive mineralized bodies.

There are three distinctive magnetic features observed across the survey area. Firstly, the geologically mapped volcanic rocks appear as magnetic highs; typically with a relative intensity of greater than 100 to 500 nT than the surrounding magnetic data. Secondly, major faults, fractures and shear zones appear as steep magnetic gradients. Finally, hydrothermal alteration along the faults appear as low magnetic responses. The combination of these three signatures are observed on the **Kelly Girl 1-4** claims. The magnetic response is interpreted as reflecting only the general geological environment of the area and does not map any mineralization directly.

The magnetic data indicates two large areas of unaltered volcanic rocks, some major faults and possible hydrothermal alteration. Two large areas of magnetic highs are found in the east and west portions of the survey area. The high amplitude magnetic response may reflect possible iron or pyrite enrichment of the volcanic rocks or possible dykes and plugs for two different feeder systems for the east and west portions of the survey area. In the western portion, the dykes and plugs would be a feeder system for the Middle Jurassic Betty Creek Formation of green, red and buff volcanics of crystal and lithic tuff with siltstone. In the eastern portion, the dykes and plugs would form a feeder system for the Lower to Middle Jurassic Unuk River Formation of red and green volcanics of crystal and lithic tuff, conglomerates and sandstone.

Several faults are interpreted from the magnetic data, the known geology and the aerial photographs as illustrated on Figure 5. Two major faults, probably normal, trend north-south, paralleling and coinciding with the geologically mapped normal faults. Several other faults are inferred and appear to be splay or cross cutting faults form the major normal fault following the American Creek.

The low magnetic response, found in the central portion of the survey area along the valley bottom and paralleling the inferred American Creek fault, probably reflects hydrothermal alteration. Hydrothermal alteration causes the magnetic low because of the low magnetic susceptibilty and leaching associated with faulting and alteration. Furthermore, the presence of faulting and volcanic rocks provides the necessary geological setting for hydrothermal alteration.

The VLF-EM data is presented on Figures 6 and 7 representing the Cutler and Hawaii frequency information respectively. Anomalous conductive responses have been marked on the appropriate maps.

Long wavelength VLF-EM anomalies have been indicated on the maps as being caused by topographic features like ridges and hill tops. The VLF-EM conductive zones generally trend northwest-southeast and parallels the geology. One VLF-EM conductive zone, found near the centre of the **Kelly Girl** 3 claim, coincides with a magnetically and geologically inferred fault and produces an anomalous VLF-EM response form both transmitting VLF-EM frequencies and directions, indicating the presences of a strong conductive medium. The conductive medium may consist of pyrite and galena mineralization which is fairly common in both the Betty Creek and Unuk River Formations through out the Stewart area.

SUMMARY AND CONCLUSIONS

On the 18, 19 and 20 of April 1988 an airborne magnetic and VLF-EM survey was conducted over the **Kelly Girl 1-4** claims. Approximately 120 line kilometres of geophysical data was gathered and processed to evaluate the **Kelly Girl 1-4** claims.

The magnetic data indicates two large areas of unaltered volcanic rocks, some major faults and possible hydrothermal alteration. Two large areas of magnetic highs are found in the east and west portions of the survey area. The high amplitude magnetic response may reflect possible iron or pyrite enrichment of the volcanic rocks or possible dykes and plugs for feeder systems for the Middle Jurassic Betty Creek Formation in the west and the Lower Jurassic Unuk River Formation in the east. Several major faults are interpreted from the magnetic data, the known geology and the aerial photographs. The faults trend north-south and east-west. The north-south faulting parallels and coincides with the mapped geology, whereas, the east-west faults are probably splay or cross cutting faults. The low magnetic response, found in the central portion of the survey area along the valley bottom and paralleling the American Creek fault, probably reflects hydrothermal alteration because of the low magnetic susceptibilty and leaching associated with faulting and alteration. Furthermore, the presence of faulting and volcanic rocks provides the necessary geological setting for hydrothermal alteration.

Several conductive lineations are mapped in the survey area. They trend in an northwest direction. One strong VLF-EM conductive zone coincides with a magnetically and geologically inferred fault and is probably caused by pyrite or galena mineralization which is fairly common throughout the Stewart area.

The interpretation of the magnetic data and VLF-EM data confirms the geological mapping by E. W. Grove, (1986). However, the airborne geophysical survey has indicated further faulting and potential pyrite or galena mineralization. In this geological setting, the presences of VLF-EM conductors, faulting and possible hydrothermal alteration this property has an excellent potential for fracture or fissure filling silver-gold vein mineralization.

RECOMMENDATIONS

The airborne survey has delineated areas where mineralization may occur on the **Kelly Girl 1-4** claims. Specifically along the VLF-EM conductors associated with faulting or in areas of likely hydrothermal alteration. However, it should be noted that the geology runs parallel to the flight lines, therefore, any future work should be perpendicular to these flight lines or as dictated by the geology.

The initial follow-up work should be a detailed ground magnetic and VLF-EM survey to precisely locate the ground targets. Following the ground magnetics and VLF-EM, an extensive and detailed geological mapping, rock and soil sampling program along with geochemical analysis for silver, gold, precious and base metals should be carried out. Contingent upon encouraging results from the geochemistry and preliminary ground geophysics, advanced geophysical programs utilizing induced polarization, resistivity, and conventional EM techniques would assist in delineating anomalous zones. Eventually trenching and drilling may be justified.

Respectfully submitted,

Richard G. Hermary, B.Sc.
Geophysicist

Dennis V. Woods, Ph.D., P.Eng.
Consulting Geophysicist

REFERENCES

Grove, Edward W.,1971 — Geology and Mineral Deposits of the Stewart Area Northwestern B.C., Bull. 58, BCMEMPR

Grove, Edward W.,1986 — Geology and Mineral Deposits of the Unuk River-Salmon River-Anyox Area B.C., Bull. 63, BCMEMPR

INSTRUMENT SPECIFICATIONS

DELVCO RINGCORE MAGNETOMETER

Model:	1210
Sensor:	3-axis ringcore fluxgate
Orthogonality:	±1° degree with respect to other axes and reference surface
Sensitivity:	0.0025 Milligauss (0.25 gamma)
Range:	±1000, ±300, ±100, ±30, ±10, ±3 mG
Analog Output:	±5V dc for above ranges
Output Impedance:	600 ohms
Zero Field Offset:	< ±7 mG absolute
Linearity:	±0.5%
Noise:	0.1 to 1 Hz, 0.0025 mG peak-to-peak 1.0 to 10 Hz, 0.0025 mG peak-to-peak 1.0 to 100 Hz, 0.01 mG peak-to-peak
Gain Stability:	±3%, 0 to +60° C
Field Nulling:	±0.04 mG to full scale
Low-Pass Filtering:	Switch selectable 1, 10, 100 and 500 Hz (-3 dB with -18 dB/octave roll-off, Butterworth response)
High-Pass Filtering:	Dc, 0.1, and 1Hz (-3 dB with -18 dB/octave roll-off, Butterworth response)
Notch Filter:	40-dB notch at 60 Hz, switch selectable, in or out
Battery Life:	25-hour minimum, rechargeable
AC Power:	115-230V; 1/4 A
Size:	Sensor: 3.2 cm x 3.5 cm x 10.16 cm Control Unit: 43 cm x 13 cm x 41 cm
Weight:	Sensor Probe: 0.62 kg Control Unit: 13.6 kg

INSTRUMENT SPECIFICATIONS

CONTROLLER AND RECORDING SYSTEM

Type:	Compaq Portable II
	An 80286 microprocessor
	640 Kbytes of RAM
	2 three and a half inch 720 Kbyte drives
	one 20-Megabyte fixed disk drive
	Monochrome, dual-mode, 9-inch internal monitor
	Asynchronous communications interface
	Parallel interface
	Composite-video monitor interface
	RGB monitor interface
	RF modulator interface
	Two expansion slots
	Real-time clock
	An 80287 coprocessor
	A HPIB Interface Card
Data Storage:	3 1/2 inch diskettes in ASCII
	Roland 1012 printer for printed output
	Beta I video cassettes
Power Requirements:	115 Volt AC at 60 Hz
Weight:	11 kg
Dimensions:	45 cm x 25 cm x 30 cm

INSTRUMENT SPECIFICATIONS

DATA ACQUIISITION UNIT

Model:	HP-3852A
Mainframe Supports:	Eight function module slots Data acquisition operating system System timer Measurement pacer Full alphanumeric keyboard, command and result displays
Number of Channels:	20 channel relay multiplexer HP44708A/H
Voltmeter:	5 1/2 to 3 1/2 digit intergrating voltmeter HP44701A measures: DC voltage resistance AC voltage Range ±30V, ±0.008%, +300uV Intergration Time 16.7 msec Number of converted digits 6 1/2

Reading rate (readings/ sec)	57
Min-Noise rejection (dB) Normal Mode Rejection at 60 Hz ±0.09%	60
DC Common Mode Rejection with 1 KΩ in low lead	120
Effective Common Mode Rejection at 60 Hz ±0.09% with 1 KΩ in low lead	150

Communication:	HPIB interface with Compaq
Power Requirements:	110/220 Volts AC at 60/50 Hz
Dimensions:	45.7 cm x 25.4 cm x 61.0 cm
Weight:	9.5 kg.

STATEMENT OF QUALIFICATIONS:

NAME: HERMARY, Richard G.

PROFESSION: Geophysicist

EDUCATION: University of British Columbia -
B.Sc. - Major Geophysics

PROFESSIONAL
ASSOCIATIONS: B.C. Society of Exploration Geophysicist

EXPERIENCE: Six months as field geophysicist,
A & M Exploration Ltd.

One year with Western Geophysical Aero Data Ltd.

STATEMENT OF QUALIFICATIONS

NAME: WOODS, Dennis V.

PROFESSION: Geophysicist

EDUCATION:

B.Sc. Applied Geology
Queen's University

M.Sc. Applied Geophysics
Queen's University

Ph.D. Geophysics
Australian National University

PROFESSIONAL ASSOCIATIONS:

Registered Professional Engineer
Province of British Columbia

Society of Exploration Geophysicists

Canadian Society of Exploration Geophysicists

Australian Society of Exploration Geophysicists

President, B.C. Geophysical Society

EXPERIENCE:

1971-79 - Field Geologist with St. Joe Mineral Corp. and Selco Mining Corp. (summers).
- Teaching assistant at Queen's University and the Australian National University.

1979-86 - Professor of Applied Geophysics at Queen's University.
- Geophysical consultant with Paterson Grant & Watson Ltd., M.P.H. Consulting Ltd., James Neilson and Assoc. Ltd., Foundex Geophysics Ltd.
- Visiting research scientist at Geological Survey of Canada and the University of Washington.

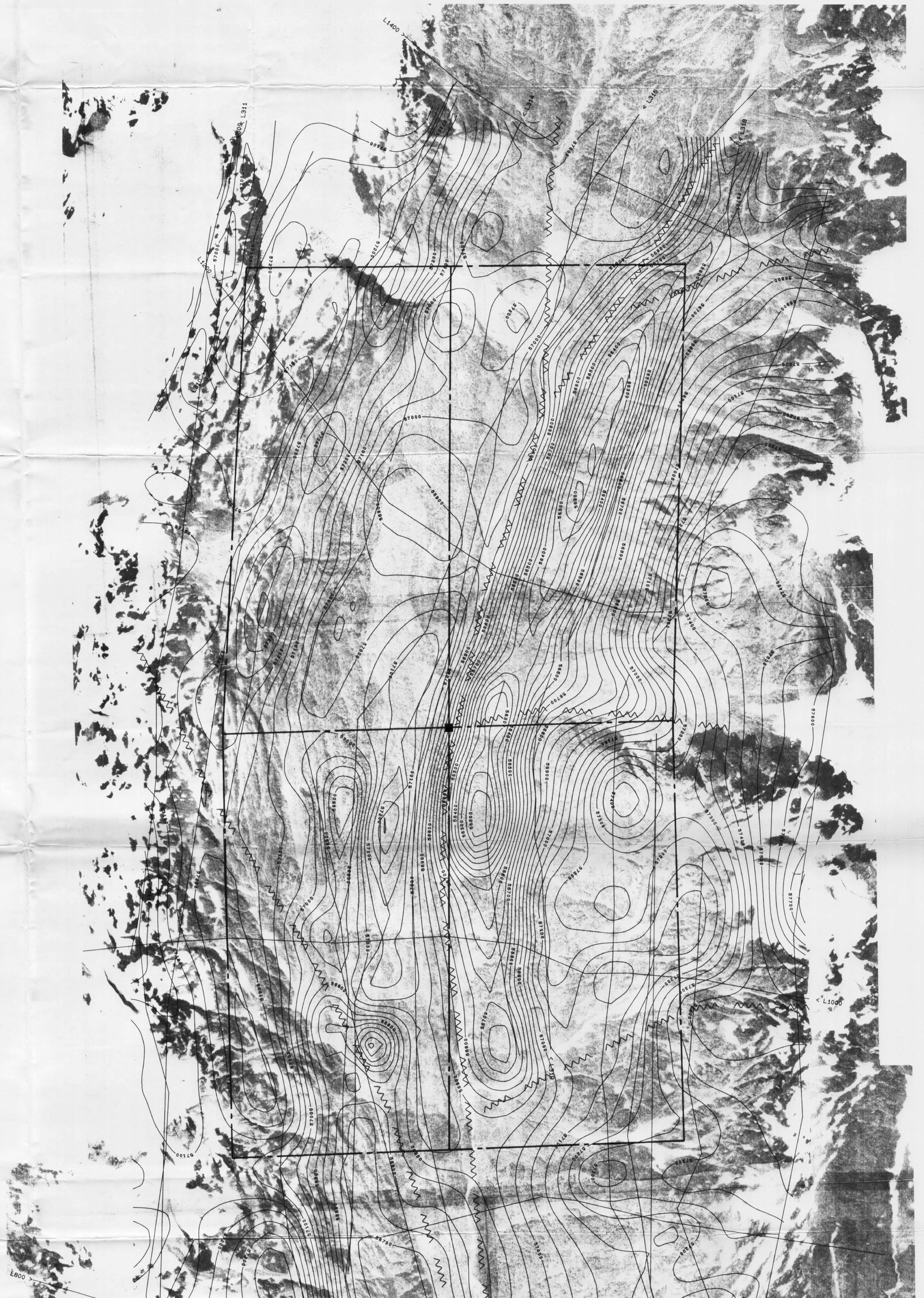
1986-88 - Project Geophysicist with Inverse Theory and Applications Inc.
- Chief Geophysicist with White Geophysical Inc.

COST BREAKDOWN

The geophysical data was analyzed, geological information researched and compiled, and this report prepared for an all inclusive fee of $7,140.00. This total is based on a cost of $47/km for total field magnetic data and two stations of VLF-EM data. The survey was carried out by Ian Briadek and Bob Acheson.

Mob/Demob - truck rental,helicopter ferry	$ 500.00
Survey - 120 km of magnetics and 2 stations of VLF-EM data at $47/km	$5,640.00
Report/Interpretation	$1,000.00
TOTAL	**$7,140.00**

TOTAL ASSESSMENT VALUE OF THIS REPORT $7,140.00



GEOLOGICAL BRANCH
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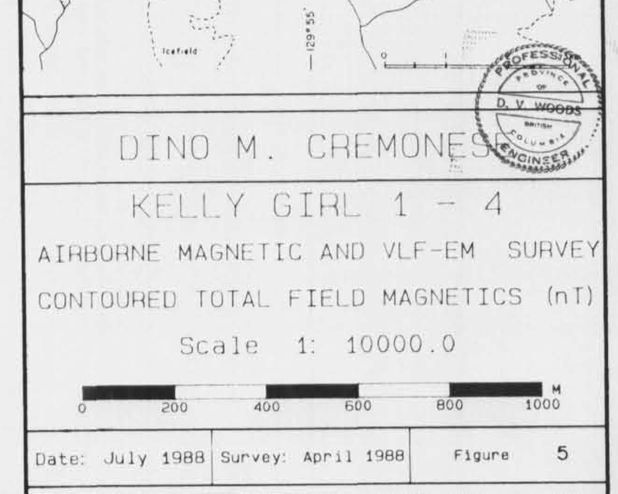


PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. V. WOODS

DINO M. CREMONESE

KELLY GIRL 1 - 4

AIRBORNE MAGNETIC AND VLF-EM SURVEY

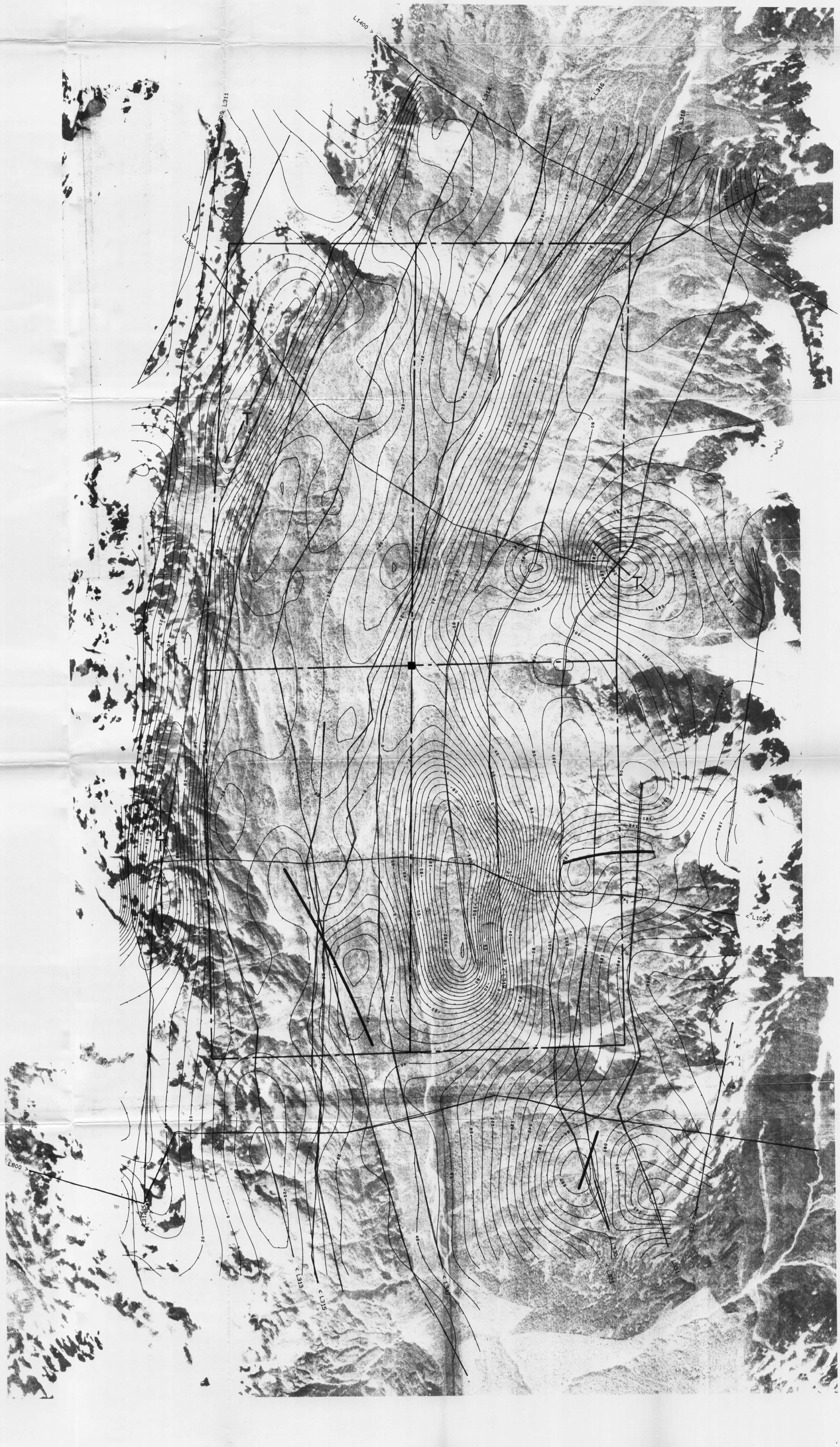
CONTOURED TOTAL FIELD MAGNETICS (nT)

Scale 1: 10000.0

0 200 400 600 800 1000 M

Date: July 1988	Survey: April 1988	Figure 5

WESTERN GEOPHYSICAL AERO DATA LTD.



N

LEGEND :

- VLF - EM conductor caused by topographic features —T—
- VLF - EM conductor
- VLF - EM quadrature profile Scale = 20% / cm

GEOLOGICAL BRANCH
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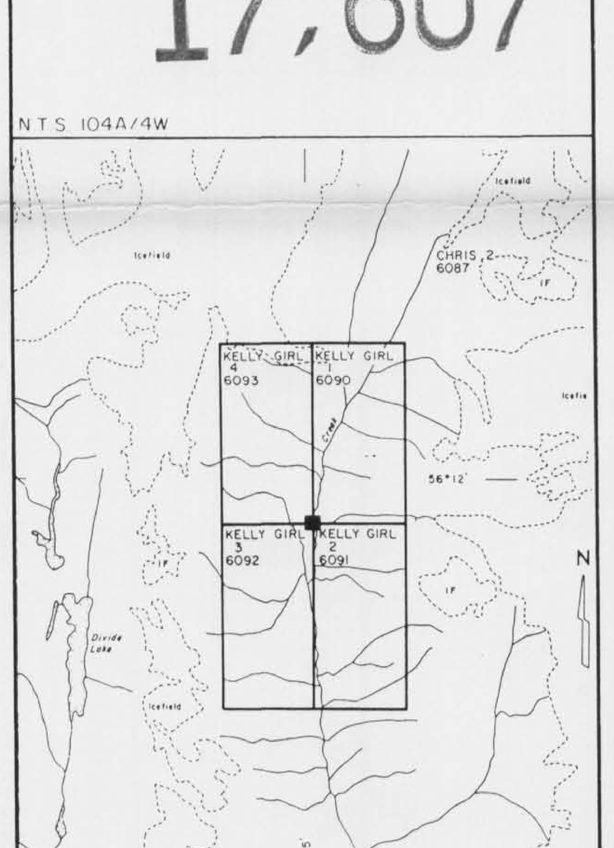


DINO M. CREMONESE

KELLY GIRL 1-4

AIRBORNE MAGNETIC AND VLF-EM SURVEY

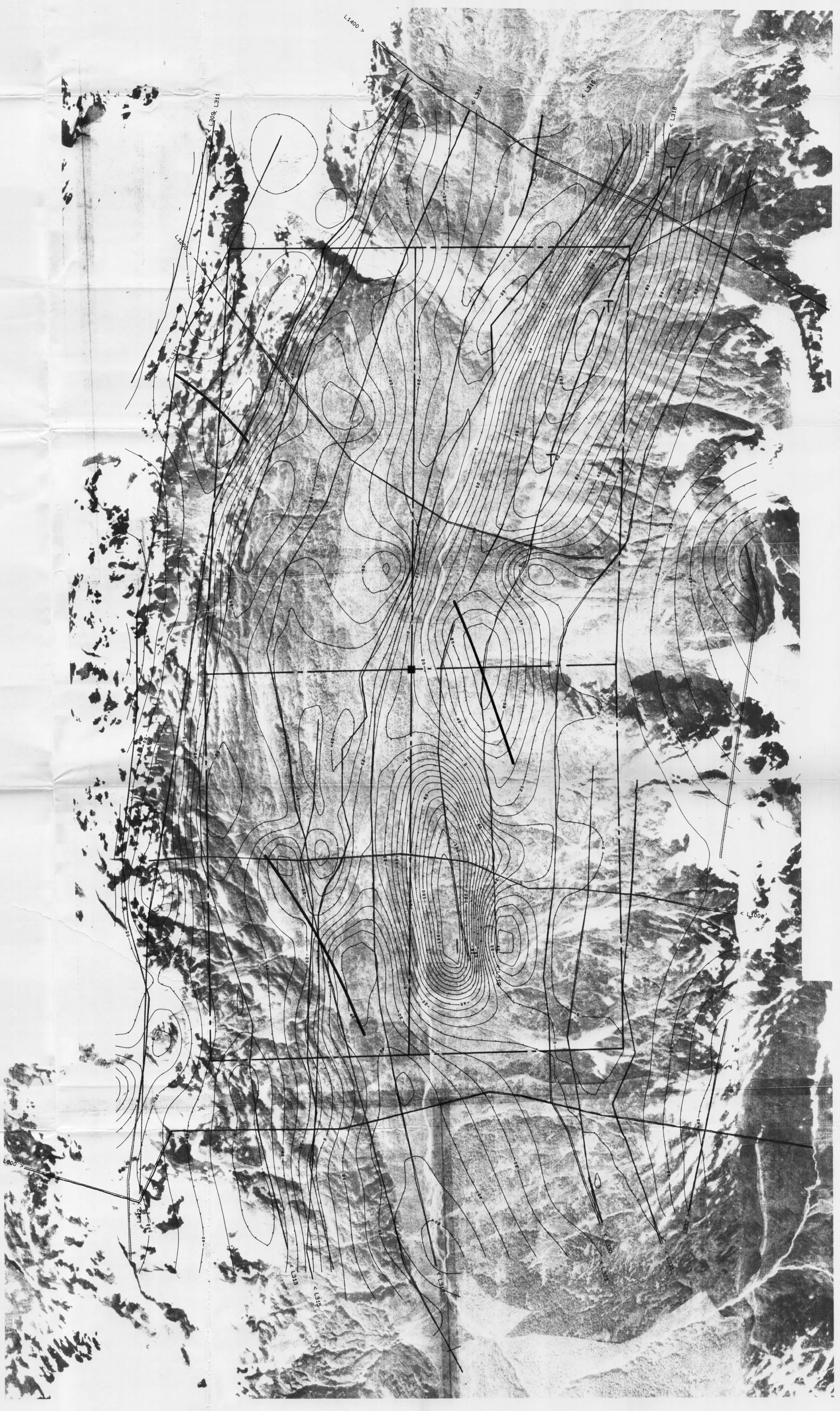
CONTOURED VLF-EM TOTAL FIELD (TRANSMITTER - HAWAII)

Scale 1: 10000.0

0 200 400 600 800 1000 M

Date: July 1988	Survey: April 1988	Figure 7

WESTERN GEOPHYSICAL AERO DATA LTD.



N

LEGEND :

VLF - EM conductor caused by topographic features —T—

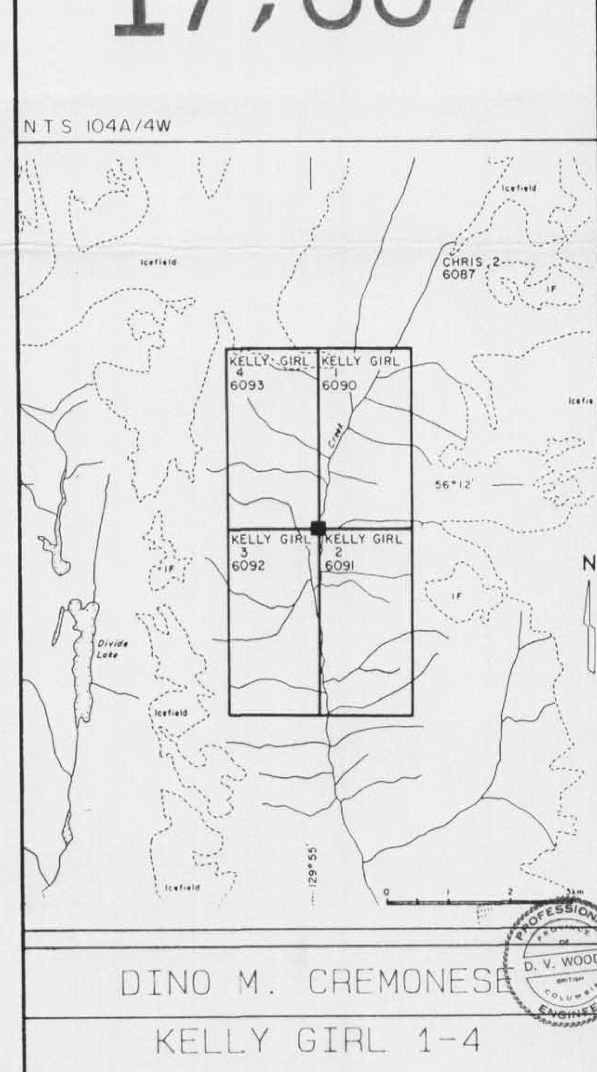
VLF - EM conductor

VLF - EM quadrature profile Scale = 100% /cm

GEOLOGICAL BRANCH
ASSESSMENT REPORT

17,607

NTS 104A/4W



DINO M. CREMONESE

KELLY GIRL 1-4

AIRBORNE MAGNETIC AND VLF-EM SURVEY

CONTOURED VLF-EM TOTAL FIELD (TRANSMITTER CUTLER)

Scale 1: 10000.0

0 200 400 600 800 1000 M

Date: July 1988	Survey: April 1988	Figure 6

WESTERN GEOPHYSICAL AERO DATA LTD.

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