ARMSTRONG MOUNTAIN GOLD CORP.
GEOPHYSICAL REPORT ON AN
AIRBORNE MAGNETIC DATA ENHANCEMENT PROJECT
DIANE 1-2, LACY 1-4, SHELBY 1-4,
AND HEATHER 1-4 CLAIMS
CARIBOO MINING DIVISION
LATITUDE: 52 04'N LONGITUDE: 121 25'W
NTS: 93A/3W
AUTHOR: Markus B. Seyward, B.Sc.
DATE OF WORK: April 3 - September 24, 1989
DATE OF REPORT: November 5, 1989

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ILLUSTRATIONS

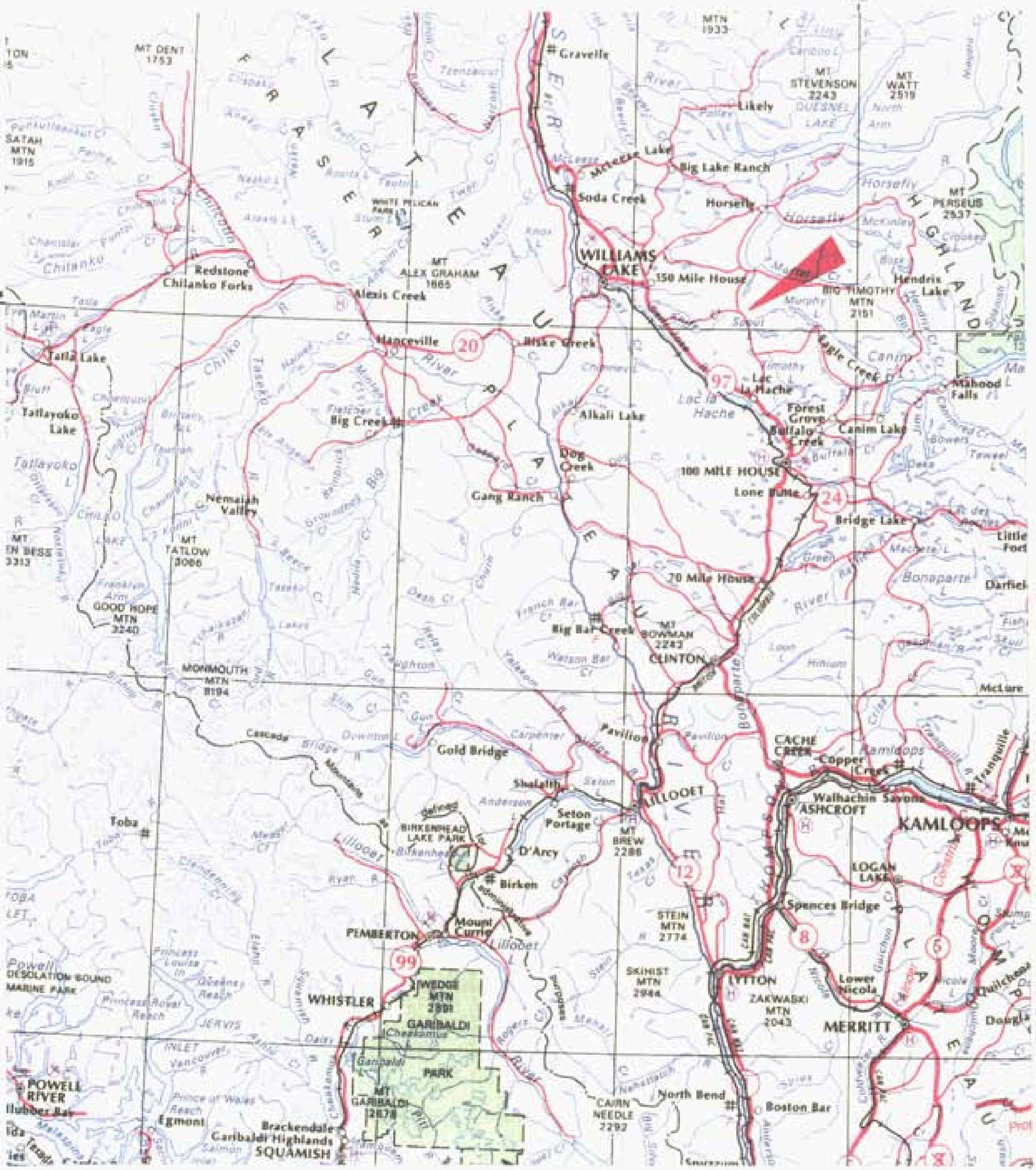
INTRODUCTION:

During the period 21 - 24 September 1988, an airborne reconnaissance magnetic and VLF-EM survey was conducted over the **Diane 1-2, Lacy 1-4, Shelby 1-4**, and **Heather 1-4** claims in the central interior of British Columbia by Western Geophysical Aero Data Ltd. for **Tide Resources Ltd.** The survey area is about 30 kilometers north of Lac La Hache and 50 km east of Williams Lake (Figure 1).

During the period 3 April 1989 - 25 September 25 1989, Western Geophysical Areo Data was commissioned by **Armstrong Mountain Gold Corp.** to reprocess the 1988 airborne magnetometer data in an attempt to more narrowly define areas for follow-up work and to attempt a better delineation of the structural systems governing the area mineralization.

The most serious problem with the presentation of the original data is associated with the distortion of the air photos used to recover the flight paths. Several photos were used and at photo boundaries the distortion was up to 1.5 kilometres. A method was devised and implemented to correct the flight paths to the match accurately the topographical series for the area. (UTM co-ordinates)

The second stage of data enhancement consisted of applying a series of filters and real time imaging techniques to the data set. Some of these techniques were very successful in delineating structures hidden within the gross data set and are presented here.



ARMSTRONG MOUNTAIN GOLD CORP.

SHELBY, LACY, DIANE & HEATHER CLAIMS

LOCATION MAP

N.T.S. 93A/3W

SCALE = 1 : 2 000 000

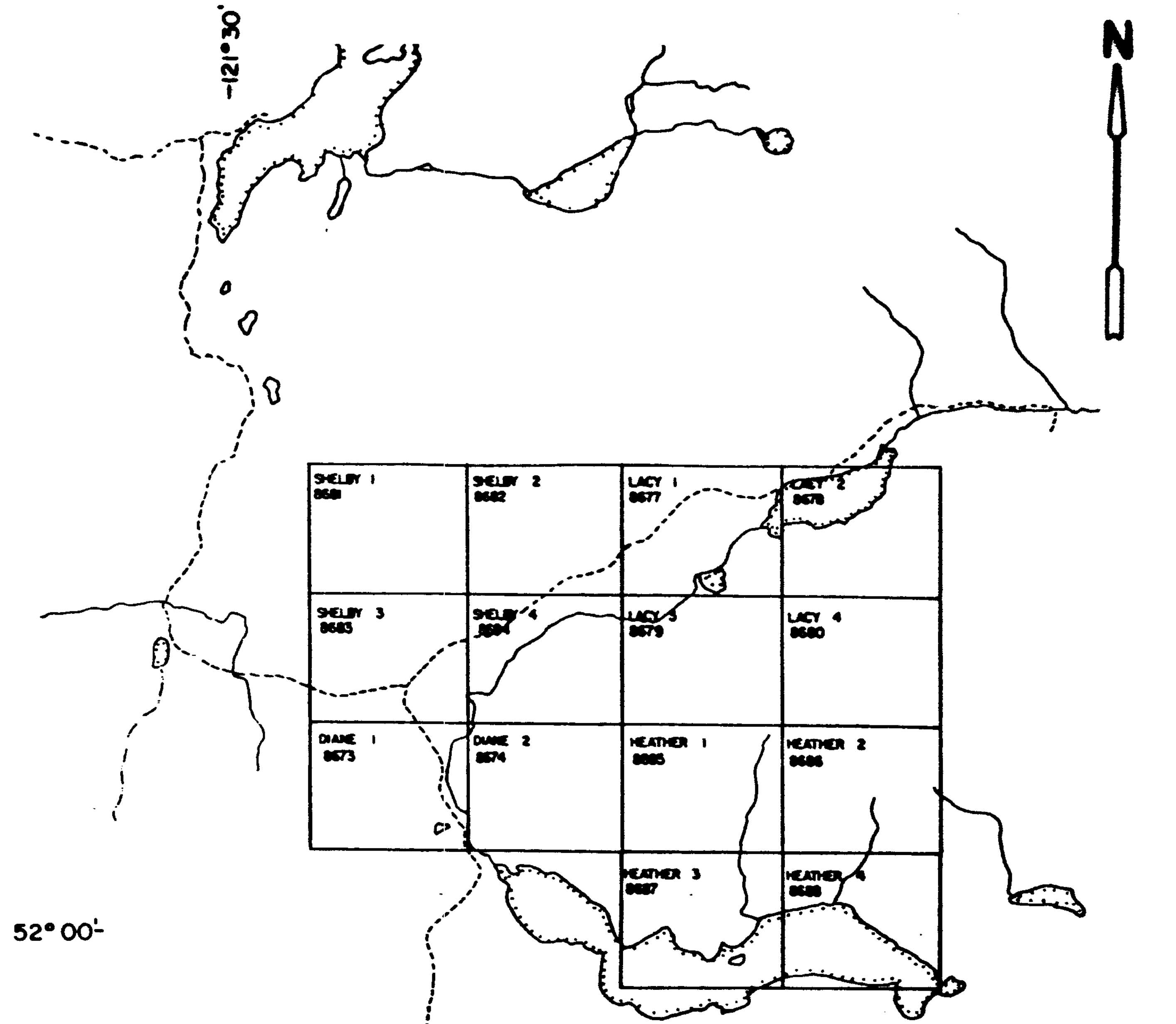
FIG. 1

PROPERTY:

The **Diane 1-2**, **Lacy 1-4**, **Shelby 1-4**, and **Heather 1-4** claims are described in the table below and illustrated in Figure 2.

Claim Name	Units	Record No.	Record Date
Diane 1	20	8673	September 25, 1987
Diane 2	20	8674	September 25, 1987
Lacy 1	20	8677	September 25, 1987
Lacy 2	20	8678	September 25, 1987
Lacy 3	20	8679	September 25, 1987
Lacy 4	20	8680	September 25, 1987
Shelby 1	20	8681	September 25, 1987
Shelby 2	20	8682	September 25, 1987
Shelby 3	20	8683	September 25, 1987
Shelby 4	20	8684	September 25, 1987
Heather 1	20	8685	September 25, 1987
Heather 2	20	8686	September 25, 1987
Heather 3	20	8687	September 25, 1987
Heather 4	20	8688	September 25, 1987

The mineral claims were recorded in the Cariboo Mining Division at the village of Quesnel, B.C. and are in good standing through to 1990.



ARMSTRONG MOUNTAIN GOLD CORP.

SHELBY, LACY, DIANE & HEATHER CLAIMS

CLAIMS MAP

N.T.S. 93A/3W

SCALE = 1:100 000

FIG. 2

LOCATION AND ACCESS:

The claims are located about 30 kilometers north of the village of Lac La Hache, in the Cariboo region of British Columbia. Excellent gravel roads lead into the claim block from Highway 97: from the south at Lac La Hache and from the west at 150 Mile House. The Spout Lake, Murphy Lake and McIntosh Lake roads provide year around access to the south, central and west portions of the property. Secondary logging roads provide limited access to the remainder of the property.

The NTS coordinates of the claim block are 93A/3W. The approximate geographical coordinates are 52 04'N latitude and 121 25'W longitude.

PHYSIOGRAPHY:

The claim group is located in the Interior Plateau of British Columbia: an area of relatively low relief at approximately 3500 feet elevation. The northern and southwestern portions of the property consists of low, flat ground almost totally covered by glacial drift. Two, gently sloping mountains rise to 4500 feet elevation in the center and southeastern corner of the property.

Ridge pole pine, spruce and fir with a minimum of underbrush and clean logging slashes give facile working conditions except in swampy areas in the northeast and southwest corners of the property.

REGIONAL GEOLOGY:

The **Diane 1-2, Lacy 1-4, Shelby 1-4,** and **Heather 1-4** claims are situated within the eastern margin of the Intermontaine belt within the Quesnel Trough of central B.C. (Figure 3). The Quesnel Trough is a northwesterly trending structural basin composed of Upper Triassic-Lower Jurassic volcanic and sedimentary rocks intruded by comagmatic syenitic and dioritic stocks and dykes. This belt of rocks, comprising units of the Nicola, Takla and Stuhini Groups, overlays early Paleozoic and Precambrian metamorphic rocks of the Omineca Crystalline Belt to the east, and is fault bounded by late Paleozoic sedimentary rocks of the Cache Creek Group to the west.

As discussed by Saleken and Simpson (1984), the Quesnel Trough is believed to be an island arc assemblage of alkalic volcanic, volcanoclastic and sedimentary rocks formed at an easterly-dipping subducting plate margin and obducted eastward onto the existing continental terrain during the middle Jurassic. Several volcanic centers within the trough are evident from subaerial flows and the presence of coarser clastic sediments. The volcanic centers and their related intrusives appear to be controlled by northwest trending, primary fault structures which were active into the late Mesozoic.

A linear band of alkalic stocks composed of diorite, monzonite and syenite intruded the volcanic/sedimentary strata at these volcanic centers. These intrusives are hosts for alkalic suite copper-gold porphyry mineral deposits such as Copper Mountain, Afton, Cariboo-Bell and the recently discovered QR gold mine. The Cariboo-Bell and QR deposits near Likely are located about 70 kms north of the claim block. Both deposits are presently undergoing further exploration. The QR deposit is reported to have reserves of 950,000 tons grading 0.21 oz/ton gold and the Cariboo-Bell, 117 million tons grading 0.31% copper and 0.012 oz/ton gold (Saleken and Simpson, 1984)

Figure 4 is a diagrammatic cross section through the Quesnel Trough from Saleken and Simpson (1984), showing relative stratigraphic positions of the known mineral deposits and their relationship to an alkalic intrusive complex. There are three main exploration targets:

1) Semi-conformable, stratabound gold mineralization hosted by permeable volcaniclastic or sedimentary rocks and associated with comagmatic feeder stocks or dykes (e.g. QR and Frasergold). According to Saleken and Simpson (1984), these deposits are believed to be products of marine exhalative activity which resulted in gold-pyrite deposition in permeable horizons on, or slightly below, the sea floor. Strong carbonate alteration consisting of quartz, ankerite and epidote may be present directly below mineralized horizons.

2) Copper-gold porphyry deposits hosted in brecciated stockwork zones within magnetite-rich alkalic stock and dyke complexes (e.g. Cariboo-Bell and Megabuck). These deposits form large-tonnage orebodies amenable to open pit mining.

3) Vein-hosted gold deposits where the gold mineralization has been re-mobilized and concentrated in quartz veins in the vicinity of stratabound deposits. These deposits form small, high-grade orebodies which, because of previous discouraging results, have a low exploration priority.

PROPERTY GEOLOGY:

As shown in Figure 5, most of the property is covered by Quaternary glacial deposits and alluvium in the east and Tertiary plateau basalts in the west. Nicola Group andesites, augite porphyries, argillites, conglomerates and limestones have been mapped in the vicinity of the **Vanna and Shelby** claims, and Takomkame batholith hornblende-biotite

LEGEND FOR FIGURE 3

QUATERNARY

PLEISTOCENE AND RECENT

22	*Glacial deposits and recent* alluvium; till, gravel, sand, silt, and clay; few if any bedrock exposures

TERTIARY

MIOCENE AND/OR LATER

20	Basaltic flows; minor tuff, conglomerate, and sandstone

JURASSIC AND/OR CRETACEOUS AND (?) EARLIER

17	17a, hornblende-biotite and biotite-quartz monzonite and granodiorite, minor hornblende-biotite syenite and monzonite; 17b, hornblende-biotite syenite and monzonite; 17c, hornblende diorite; 17d, muscovite granite and quartz monzonite including pegmatite; 17e, gneissose biotite granodiorite, altered and gneissose diorite, and augen granite (part of unit 17e may be Palaeozoic); 17f, trachyte porphyry (may be volcanic); 17g, green andesite and fine-grained diorite (may be volcanic)

TRIASSIC

UPPER TRIASSIC

10	10a, green and purplish brown pebble and cobble conglomerate and sandstone; 10b, green andesitic volcanic rocks, andesitic feldspar porphyry, argillite, limestone, and pebble conglomerate

QUATERNARY

PLEISTOCENE AND RECENT

28	*Till, gravel, clay, silt, alluvium, (few if any bedrock exposures)*

TERTIARY

MIOCENE AND/OR PLIOCENE

25	*Plateau lava; olivine basalt, basalt andesite, related ash and breccia beds; basaltic arenite; 25a, olivine gabbro plugs*

EOCENE AND (?) OLIGOCENE

KAMLOOPS GROUP (21, 22)

22	*SKULL HILL FORMATION: dacite, trachyte, basalt, andesite, rhyolite, related breccias*

TRIASSIC OR JURASSIC

RHAETIAN OR HETTANGIAN

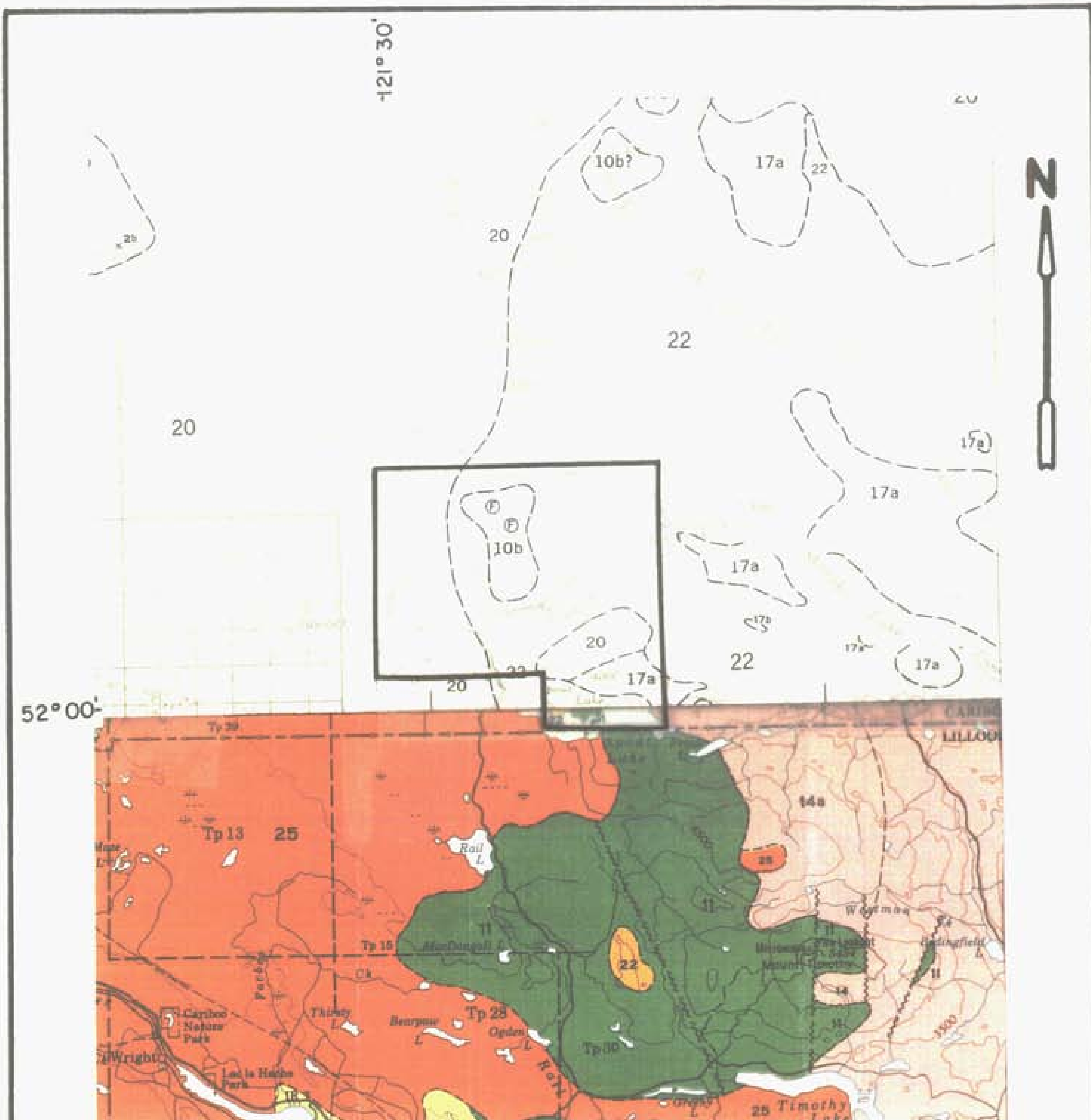
14	*THUYA AND TAKOMKANE BATHOLITHS AND SIMILAR GRANITIC ROCKS: hornblende-biotite quartz diorite and granodiorite, minor hornblende diorite, monzonite, gabbro, hornblendite; 14a, diorite and syenodiorite; 14b, leuco-quartz monzonite and granodiorite*

TRIASSIC

KARNIAN AND NORIAN

NICOLA GROUP

11	*Augite andesite flows and breccia, tuff, argillite, greywacke, grey limestone; 11a, includes minor 3 and 10*



ARMSTRONG MOUNTAIN GOLD CORP.

SHELBY, LACY, DIANE & HEATHER CLAIMS

REGIONAL GEOLOGY

SCALE = 1: 250 000

N.T.S. 93A/3W

FIG. 3

quartz monzonites and granodiorites are noted to the north of Spout Lake in the **Heather** claims (Campbell, 1961). Hodgson and DePaoli (1972) mapped these intrusives as hornblende monzonites and interpret them as part of a separate, marginal cupola phase of the Takomkame batholith.

From examination of the G.S.C. regional aeromagnetic maps reproduced in Figure 6, it is evident that most of the property is probably underlain by Nicola volcanics, sediments and related intrusives. A broad magnetic high arcs through the property from south to northeast. From previous geological investigations south of the claim block, this semi-circular feature is interpreted be due to a belt of magnetite-rich alkalic stocks and dikes within the Nicola volcanics and sediments (Hodgson and DePaoli, 1972). The magnetic low in the center of the arc on the east boundary of the property is due to Takomkame monzonitic intrusive. The magnetic low in the southwest corner of the property is probably due to Cache Creek sedimentary rocks southwest of the Pinichi Fault.

PREVIOUS WORK:

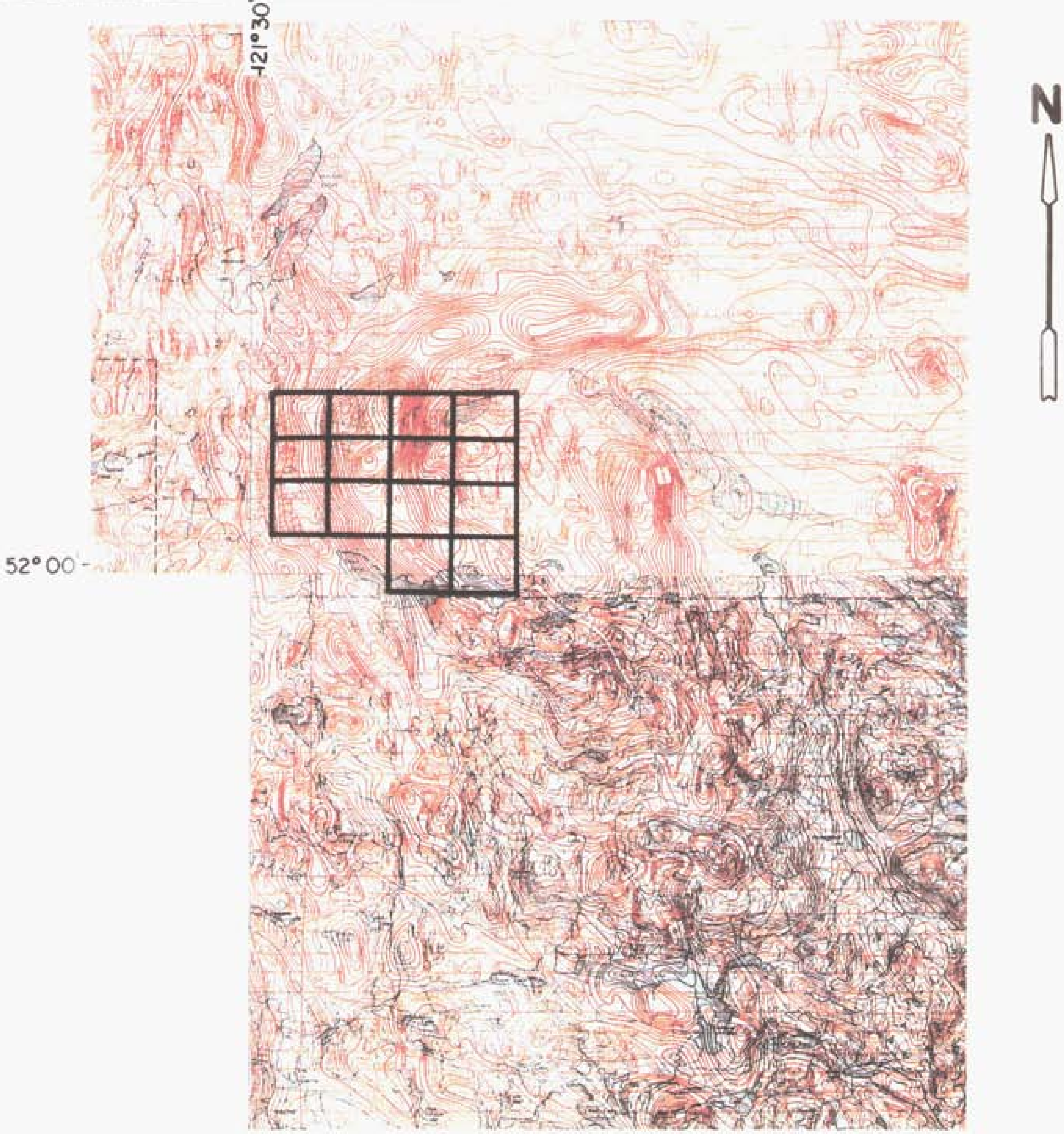
Although the Cariboo-Quesnel Gold Belt has a long history of placer gold exploration, there has been relatively little mineral exploration in the general vicinity of the claim group. Quartz vein gold occurrences where discovered in the 1930's at Frasergold and Spanish Mountain to the north and east (Figure 3), however it was not until the mid 1960's that significant exploration began in the region following the discovery of the Cariboo-Bell porphyry copper deposit.

A reconnaissance geochemical soil sampling program was conducted over most of the Spout Lake area by Coranex Limited (Janes, 1967). Holman kits with Biquinoline and colorimetric determinations were the order of the day. The results of this work precipitated the staking of claims immediately south of the property and the eventual discovery of the WC, Peach, Tim and Miracle showings.

Coranex carried out follow-up magnetic and IP surveys and defined a number of anomalous IP zones in the vicinity of Peach Lake. Amax Potash Limited outlined the Tim showings with follow-up geological mapping and discovered the WC magnetite-copper skarn deposit south of Spout Lake (Hodgson and DePaoli, 1972). Percussion drilling by Amax intersected 160 feet of 1.63% copper with one 80 foot section running 2.28% copper (Hodgson and DePaoli, 1973). Additional diamond drilling on the WC deposit by Craigmont Mines returned good copper values in a number of holes; the best giving 20 feet of 2.47% copper (Vollo, 1975). No assays were done for gold.

The low base metal prices and introduction of super-royalties in the mid 1970's resulted in the expiration of many of the mineral claims. Exploration began again in the early 1980's for gold. BP-Selco conducted a broad scale soil sampling program and located several strong copper-gold geochemical anomalies that were not explored (Gamble and Hoffman, 1984). The Tim showings were tested by Stallion Resources Ltd. in the fall of 1983, and a zone of 10.7 meters assayed 4.6% copper, 1.7 oz/ton silver and a 1.5 m section with 0.119 oz/ton gold (Butler, 1984).

Following earlier reconnaissance work by Guichon Explorco Limited (Gamble,1983), the Miracle showing was located by



ARMSTRONG MOUNTAIN GOLD CORP.

SHELBY, LACY, DIANE & HEATHER CLAIMS

G.S.C. REGIONAL AEROMAGNETICS

N.T.S. 93A/3W

SCALE=1:250 000

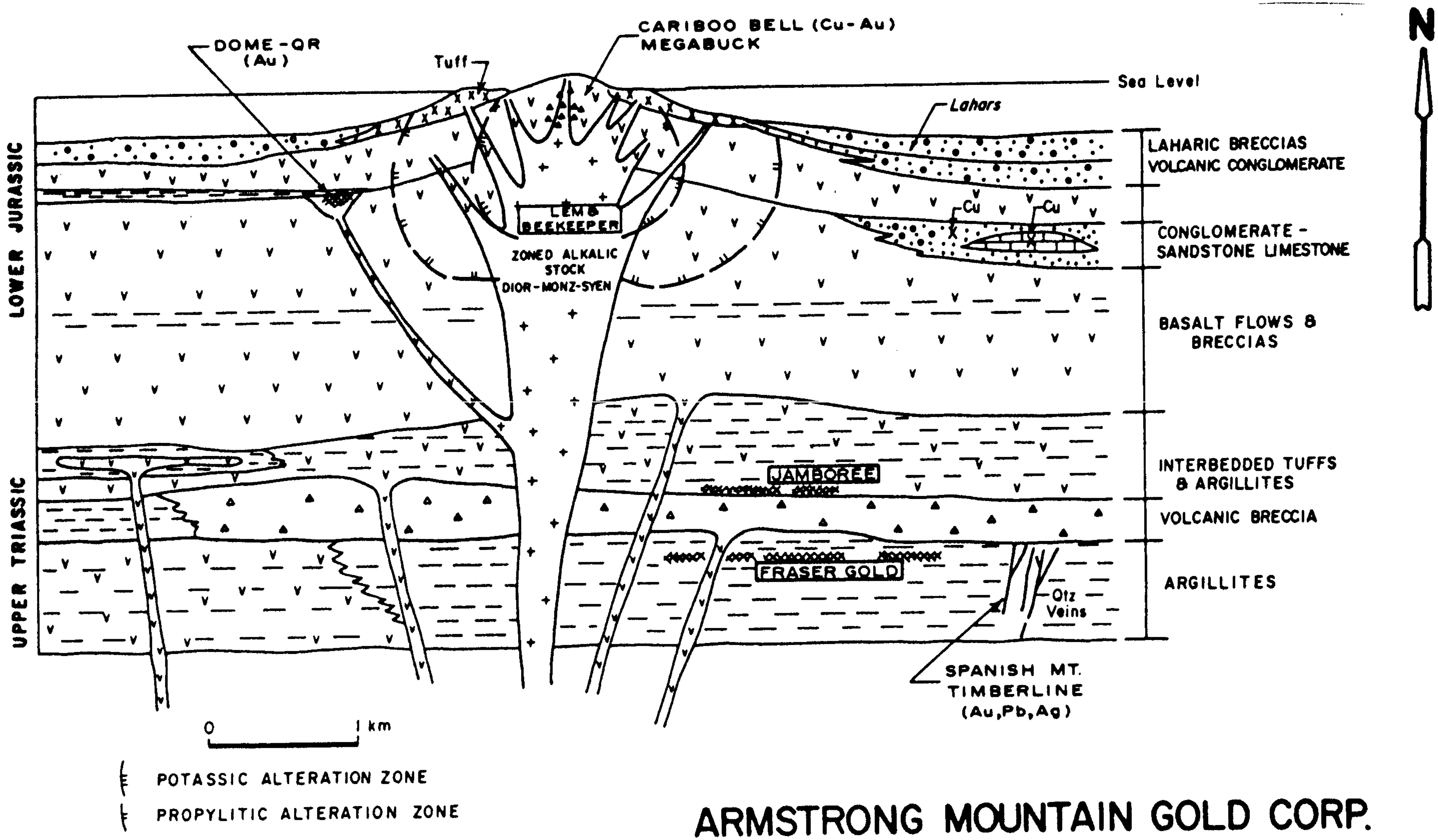
FIG. 4

prospectors Neils Kriberg and Don Fuller. Recent work by G W R Resources Inc. has outlined a zone of copper-gold mineralization coincident with a magnetic high and an strong IP anomaly (White, 1987). Grab samples from the trench on the showing yielded over 1.5 oz/ton gold.

AIRBORNE MAGNETIC AND VLF-EM SURVEY:

This geophysical survey simultaneously monitors and records the output signal from a Develco tri-axis ringcore magnetometer, a Barringer proton precession magnetometer, and a Herz dual-frequency VLF-EM receiver. The sensors are installed in an aerodynamically stable "bird" which is towed sixty metres below a helicopter. Fixed to the helicopter skid is a shock and gimbal-mounted, downward-facing video camera. A video signal is recorded and later reviewed and correlated with a recent air photograph in order determine the precise locations of the flight paths. The elevation of the helicopter above the ground is recorded by a radar altimeter and monitored by the pilot and navigator in order to maintain a constant ground clearance.

A computer records readings of the magnitude of the earth's magnetic field and of the fields induced by two powerful VLF-EM transmitters (located in Annapolis, Maryland and Seattle, Washington). This data, the time and date it was observed, radar altimeter values, and survey fiducial points are all superimposed on the video image and recorded on both video cassettes and 3.5 inch computer diskettes.



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Diagrammatic Cross-section Through the Quesnel Trough Volcanic Complex, Showing Relative Stratigraphic Positions of Known Mineral Deposits

From Saleken and Simpson (1981)

FIG. 5

Data quality is assured by the survey operator monitoring a real-time display of direct and unfiltered recordings of all the geophysical output signals while a navigator directs the helicopter pilot from an air photograph.

DATA PROCESSING:

The video image, with superimposed line-fiducial identification, recording times, and the recorded data, is correlated with both the navigator's and operator's field notes and topographic features observed from an air photograph. The "recovered" flight paths are digitized to obtain relative x and y positions which are then combined with the data. Subsequently, all geophysical data is filtered to remove spurious noise bursts and chatter, and then plotted as flight path profiles and contour maps for each of the sensors.

Both the total field magnetometer signal and the total field and quadrature components of VLF-EM signal are sensitive to topographic changes and bird oscillations. Short wavelength (less than 200 meters) oscillations, are attenuated by filtering the data with a digital low-pass filter. Long wavelength effects (anomalies greater than 2000 metres) attributed to topography, are also removed from the VLF-EM data by high-pass filtering.

AIRPHOTO DISTORTION CORRECTIONS:

After the initial data processing severe distortion in the photomosaic became apparent. This distortion manifested itself in "map-faults" apparent in the magnetic data. These lineaments which appeared as faults were sourced in data shifts. The problem was corrected by establishing several hundred control points on the photomosaic which could be correlated to the topographic maps of the area with a probability of 1.0. Delta x and delta y were calculated for each of these points. This data was used to generate two regular grids. These regular grids then formed a mesh by which the shift of any point on the photomosaic could be easily interpolated. Using this method the fiducial points marking the flight-lines were corrected to the topographic base and then the data reprocessed.

DATA ENHANCEMENT:

Data enhancement is used to improve the quality of the data and delineate the macro and micro structures. Two different approaches are used, passive and interactive filters. In this case passive filters were used to calculate regionals residuals and second derivatives as well as trend the data. Real time analysis (interactive filtering) was used to search the data set for hidden (subtle) structures using the shadow plotting technique. All of the techniques used operate on gridded data. A short description of each technique follows.

Trend Enhancement: With this technique a kernal is convolved with the data which positivily correlates structures with a given spatial frequency and direction. Various kenals are used to delineate various types of structures.

Shadow Plotting: With this technique the magnetic data is represented as a pseudo-landscape a dot product is then calculated between the tangent planes to this landscape, the sun and the viewers position and a refectivity assigned. These refectivities are then used to produce shadow plots in greyscale or pseudo-colour. This technique enhances subtle trends orthogonal to the sun declination chosen.

Regionals: To delineate underlying macro structures, a kernal with a very large omni-directional spatial frequency is convolved with the data removing the high frequency information and delineating the regional trends.

Residuals: There are two methods to emphasize local high frequency structures (Residuals). One can calculate the regional and subtract this surface from the original data. A second method is to convolve a residual kernel with the data.

Second Derivatives: The calculation of a second derivative of the data again enhances higher frequency structures. This is easily accomplished by convolving a specially designed kernal with the data. The second derivative kernal is omni-directional.

DISCUSSION OF RESULTS:

The **Diane 1-2, Lacy 1-4, Shelby 1-4,** and **Heather 1-4** claims were surveyed on 21 - 24 September 1988. Approximately 1400 line kilometers of airborne magnetic and VLF-EM survey data were recovered and evaluated at that time. Beginning in April of 1989 Western Geophysical Areo Data began the process of correcting the flight paths for photomosaic distortion and enhancing the data. Various techniques were used, trend enhancement, regional filters, residual filters, second derivative filters and shadow plotting.

Survey lines were flown east-west with an average line spacing of 200 metres. The geophysical survey data were recorded two times per second for an effective average sampling interval of 15 metres. The sensors were towed below the helicopter with an average terrain clearance of 30 metres.

Magnetic data are useful for mapping the position and extent of regional and local geological structures which have varying concentrations of magnetically susceptible minerals. Many lithological changes correlate with a change in magnetic signature. Faults and shear zones are interpreted from linear gradients and discontinuities of the magnetic contour pattern or from linear magnetic lows. These patterns which are often very subtle are what we are trying to enhance with this secondary processing.

The best results of the data enhancement and real time data analysis are presented as colour raster plots in figures 6-14 and as pen plots in figures 17-24. The interpretation of these results is presented in figures 15 and 25.

The general conclusions are as with the unenhanced data:

> The magnetic data can be subdivided in three distinct domains, each with a unique pattern of magnetic response:
>
> 1. The south-central region of the survey area, covering portions of **Diane 2, Heather** 1 and 3, **Shelby** 2 and 4, **Lacy** 1 and 3 claims, is dominated by a large magnetic high which is probably due to a concentration of magnetic-rich syenodioritic stocks and dikes within Nicola volcanics, similar to those mapped south of Spout Lake (Hodgson and DePaoli, 1972), underlying the Tertiary plateau basalts.
>
> 2. Regions of low magnetic intensity in the southeast and northeast corners of the survey area, covering portions of **Heather** 2 and 4, and **Lacy** 2 and 4, claims, are interpreted to be monzonitic intrusives as mapped by Hodgson and DePaoli (1972).
>
> 3. Regions of low magnetic intensity in the southwest corner of the survey area, covering portions of the **Diane** 1, and **Shelby** 1 and 3 claims, are composed of either Nicola volcanics with much thicker Tertiary basalt cover than other areas, or Cache Creek sedimentary rocks southwest of a major fault-lineament which may be a local expression of the Pinichi Fault. A sinuous magnetic low traversing this region from north to south may be due to plateau basalts filling a paleo-valley.

The data enhancement has delineated many interesting structural details which present four areas of interest. This is not to say that these are the only areas of interest but these are the five best targets based on the known geology and airborne geophysics. In addition to these areas of interest the regional structure was determined.

The most prominent regional structure is the Pinchi Fault which forms the Quesnel Trough. This fault, traversing a large portion of the province is the major tectonic feature in the area and is closely associated with many mineral deposits in the province. These deposits include the Cariboo Bell, Mega Buck, QR, Lem, Beekeeper, Jamboree, Mt. Milligan and Fraser Gold. The Quesnel Trough traverses the **Diane** 1 and 2 and **Shelby** 1 and 3 claims. In the northwest region of the survey area the magnetic expression indicates the filling of a portion of the trough by recent volcanic flows.

Areas of Interest:

Area I: This region, centered on the **Heather 3** claim, is located to the immediate northwest of the WC deposit by Spout Lake. The WC deposit consists of approximately 500,000 tons of copper ore which contains up to 40% magnetite. The deposits magnetic signature is that of a long thin magnetic high. In Figure 11 this high can be seen extending to the northwest onto the **Heather 3** claim. Which leads to the conclusion that the magnetite and its associated breccia extend onto the **Heather 3** claim. This is a prime exploration target.

Area II: This region is centered on the **Shelby 4** claim which is traversed by the strongest cross-structure in the survey area. Bounded on the north by this cross structure is an intense oval shaped magnetic high which is likely an mafic rich alkalic stock. This postulated stock is surrounded by a ring of lower magnetic values possibly associated with an alteration zone. Again this area makes an excellent exploration target.

Area III: Area III straddles the **Heather I** and **Lucy III** claims. It is a larger area encompassing a heavily faulted region interlaced with mafic rich intrusives. The area has a generally high magnetic relief with the exception of two circular lows. These lows magnetic signature is very similar to the signature of the monzonite stock on **Ann 1 and 2** claims. On the Ann claims the region peripheral to this stock is associated with rich copper-gold mineralization.

Area three is a excellent region in which the same type of mineralization could be found.

Area IV: Situated on the northern flank of the **Shelby 2** and **Lacy 1** claims is the most heavily faulted region within the survey area. Three faults intersect in the center of this region. This region also marks the northern extent of a region permiated by mafic intrusives. This heavy faulting activity leads to many conduits for hydrothermal fluids and thus an excellent region to search for mineralization similar to the QR or Fraser Gold deposits.

CONCLUSIONS AND RECOMMENDATIONS:

An airborne magnetic data enhancement project has been carried out on the **Diane 1-2, Lacy 1-4, Shelby 1-4,** and **Heather 1-4** claims on behalf of **Armstrong Mountain Gold Corp.** Approximately 1400 line kilometres of magnetic data have been corrected for photomosaic distortion and the subjected to a variety of passive and interactive analysis techniques to evaluate these claims.

The data indicate that most of the property is underlain by Nicola volcanics and volcaniclastic rocks. High magnetic intensities in the south-central area of the property indicate the presence of magnetite-rich alkalic intrusives within the Nicola volcanics which are known to host copper-gold porphyry deposits in surrounding regions. Fault structures have been interpreted from the magnetic data. Theses fault structures are important since they wood facilitate mineral deposition.

Four areas have been targeted for a concentrated exploration effort. Two of these areas have magnetic features which have signatures very similar to known zones of mineralization within the regional geological setting. Area I appears similar to the WC deposit and Area III to the mineralization on the Ann Claims. Areas II and IV abound with evidence of tectonic activity combined with major intrusive structure and possible hydothermal alteration making these excellent targets as well.

All of these areas should be systematically mapped geologically, geochemically and geophysically. (Initially ground VLF-EM and total field magnetics). Areas which are then deemed most favorable should be surveyed utilizing an induced polarization technique to establish concrete drill targets.

Respectfully Submitted

Markus B. Seyward, B.Sc.
Geophysicist

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COST BREAKDOWN:

CORRECTION TO UTM COORDINATES

Personnel	Dates	Cost Per Diem	Total
D. Woods	April 3-7, 1989	$ 500.00	$ 2500.00
M. Seyward	April 3-4, 1989	$ 450.00	900.00
E. Jong	April 10-14, 1989	$ 450.00	2250.00
J. Murton	April 17-19, 1989	$ 450.00	1800.00

REPROCESSING OLD DATA ON NEW FLIGHTLINES

Personnel	Dates	Cost Per Diem	Total
J. Murton	September 1,2,3 10-14	$ 450.00	$ 3600.00
M. Seyward	September 1-8	$ 450.00	$ 3600.00

DATA FILTERING AND REAL TIME ANALYSIS

Personnel	Dates	Cost Per Diem	Total
M. Seyward	September 9-21	$ 450.00	$ 6300.00
G. White	September 9-15	$ 450.00	$ 2700.00

Report Writing	$ 2500.00
Plotting	$ 2500.00
Reproduction and Drafting	$ 1500.00
TOTAL	$ 31150.00

STATEMENT OF QUALIFICATIONS

NAME: SEYWERD, MARKUS B., B.Sc.

PROFESSION: Geophysicist

EDUCATION: University of British Columbia - B.Sc., Mathematics

EXPERIENCE: Three years of summer field work with Noranda Exploration Company Ltd. in British Columbia, Northwest Territories, and Yukon Territories.

Four year Geophysicist with White Geophysical Inc. with work in British Columbia, Saskatchewan, and Yukon Territories.

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.

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

HERZ TOTEM - 2A VLF-EM SYSTEM

Source of Primary Field:	-Global network of VLF "OMEGA" radio stations in the frequency range of 14 KHz to 30 KHz
Number of Channels:	Two; Field selectable by 100 Hz steps. Ex: Seattle, Washington at 24.8 KHz Annapolis, Maryland at 21.4 KHz
Type of Measurement:	Total Field Strength (Location of Conductors) Vertical Quadrature (useful in interpreting the quality and depth to a conductor) Horizontal Quadrature (orientation of field & structures)
Type of Sensor:	Ferrite antennae array of 3 orthoganal coils mounted in a fiberglass bird with preamp.
Output:	-0 to ± 1000 mV displayed on two switch selectable analogue meters. -noise monitoring light. - audio monitor speaker.

Filters:	**Noise blanking spherics (lightning)** **Anti Aliasing filters (Adjacent Stations)** **Crystal Controlled Phase Lock loop digital tuning.** 1 sec. output Time Constant.
Sensitivity:	130 micro V/m at 20 kHz.

INSTRUMENT SPECIFICATIONS

BARRINGER AIRBORNE MAGNETOMETER

MODEL:		M 1041
TYPE:		Proton Precession
RANGE:		20,000 to 100,000 gammas
ACCURACY:		+ 1 gamma at 24 V d.c.
SENSITIVITY:		1 gamma throughout range
CYCLE RATES:		
Manual	-	Pushbutton single cycle
External	-	Actuated by a contact closure (short) longer than 10 microseconds
Continuous	-	1.114 seconds with external pins shorted
Internal	-	1 second to 3 minutes in 1 second steps
OUTPUTS:		
Analogue	-	2 channels, 0 to 99 gammas or 0 TO 990 gammas at 1 m.a. or 100 mV full scale deflection.
Digital	-	Parallel output 5 figure 1248 BCD, TTL compatible
Visual	-	5 digit numeric display directly in gammas
SIZE:		Instrument set in console 19" x 3.5" x 10"
WEIGHT:		10.6 lbs.
POWER REQUIREMENTS:		28 ± 5 volts dc, @ 1.5 amps - polarizing 4 amps
DETECTOR:		Noise cancelling torroidal coil installed in air foil.

INSTRUMENT SPECIFICATIONS

FLIGHT PATH RECOVERY SYSTEM

i) T.V. Camera:

Model:	RCA TC2055 Vidicon
Power Supply:	12 volt DC
Lens:	variable, selected on basis of expected terrain clearance.
Mounting:	Gimbal and shock mounted in housing, mounted on helicopter skid.

ii) Video Recorder:

Model:	Sony SLO-340
Power Supply:	12 volt DC / 120 volt AC (60Hz)
Tape:	Betamax 1/2" video cassette - optional length.
Dimensions:	30 cm X 13 cm X 35 cm
Weight:	8.8 Kg
Audio Input:	Microphone in - 60 db low impedance microphone
Video Input:	1.0 volt P-P, 75Ω unbalanced, sync negative from camera.

iii) Altimeter:

Model:	King KRA-10A Radar Altimeter
Power Supply:	0-25 volt (1 volt/1000 feet) DC signal to analogue meter, 0-10 v (4mv/ft) analogue signal to data acquisition unit
Mounting:	fixed to T.V. camera housing, attached to helicopter skid.

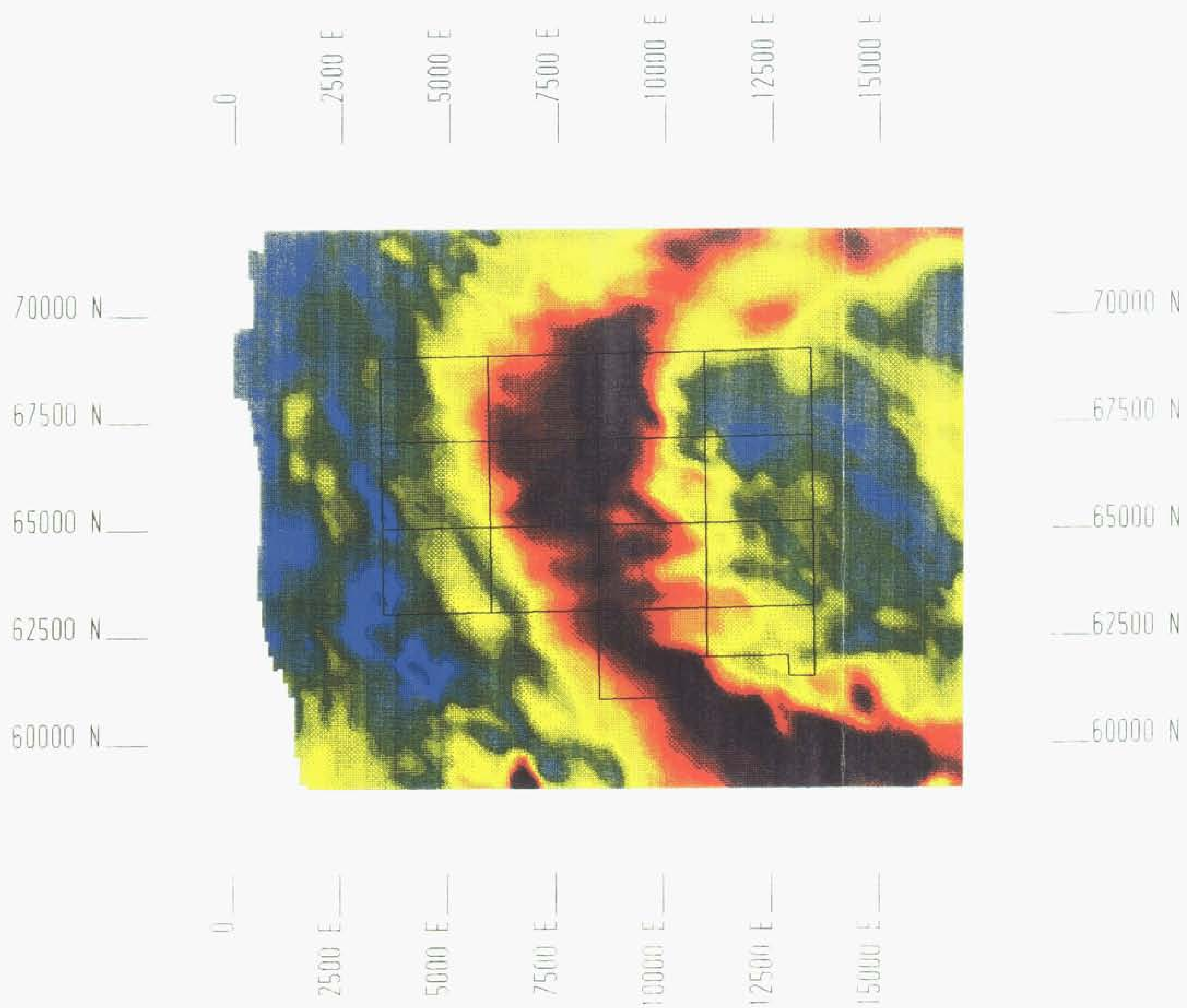
LEGEND FOR FIGURES 6-14

——— CLAIM BOUNDARY

/\/\/\ INFERRED FAULT

------- FLOW BOUNDARY

— — MAFIC RICH ALKALIC INTRUSIVES



N

INCLINATION: 75 DEG
DECLINATION: 24 DEG E

Scale 1:100000
1000 0 1000 2000 3000 4000 5000
(metres)

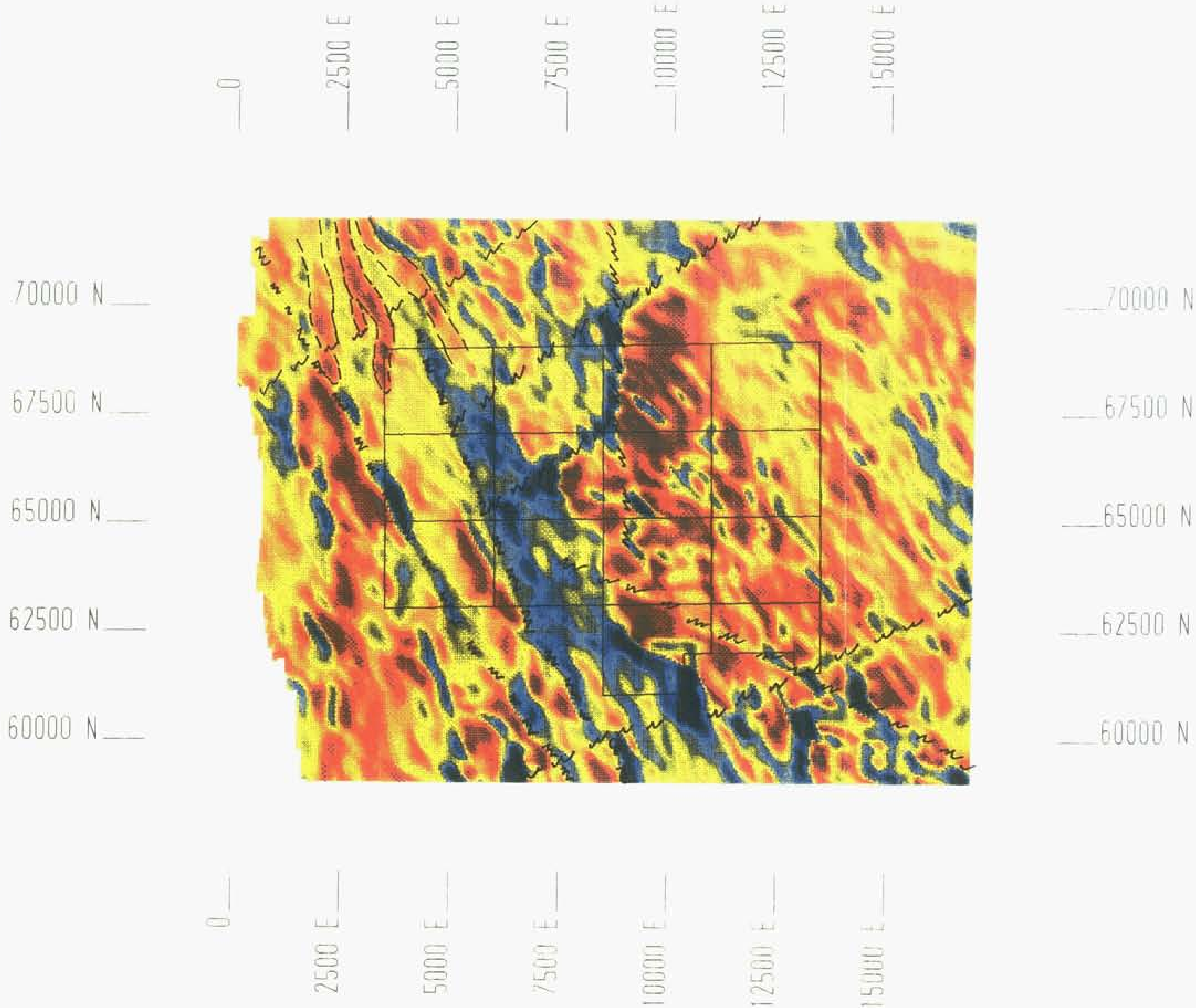
ARMSTRONG MOUNTAIN GOLD CORP.

DIAN HEATHER LACY SHELBY GROUP

TOTAL FIELD MAGNETICS
BARRINGER MAGNETOMETER

92P/14
SEPTEMBER 15. 1989 FIG.6

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS

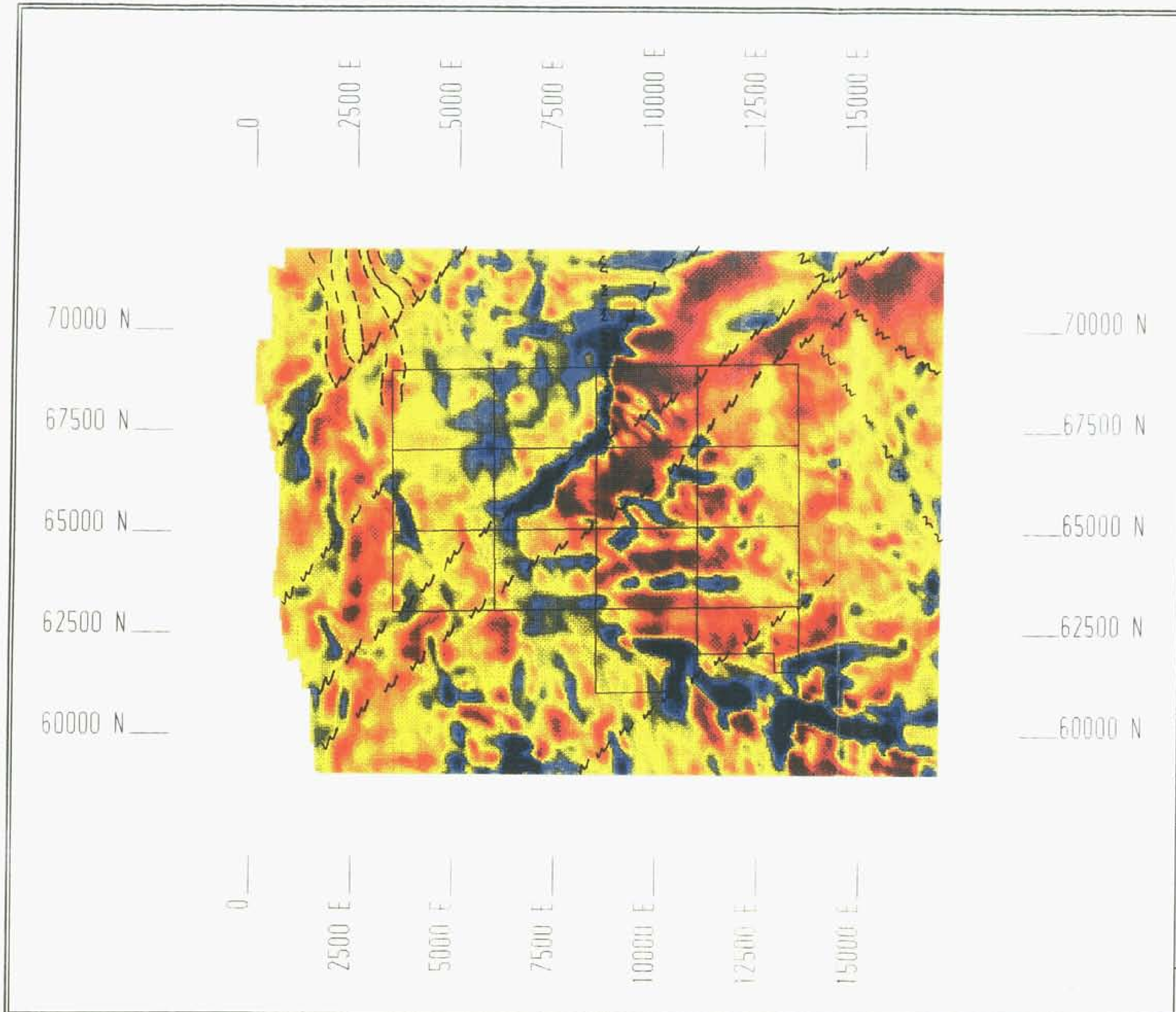
SHADOW PLOT

SUN: INCL 55. DEC 80. SCALE .35. BRIGHT 6

92P/14

SEPT 15, 1989 FIG.7

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

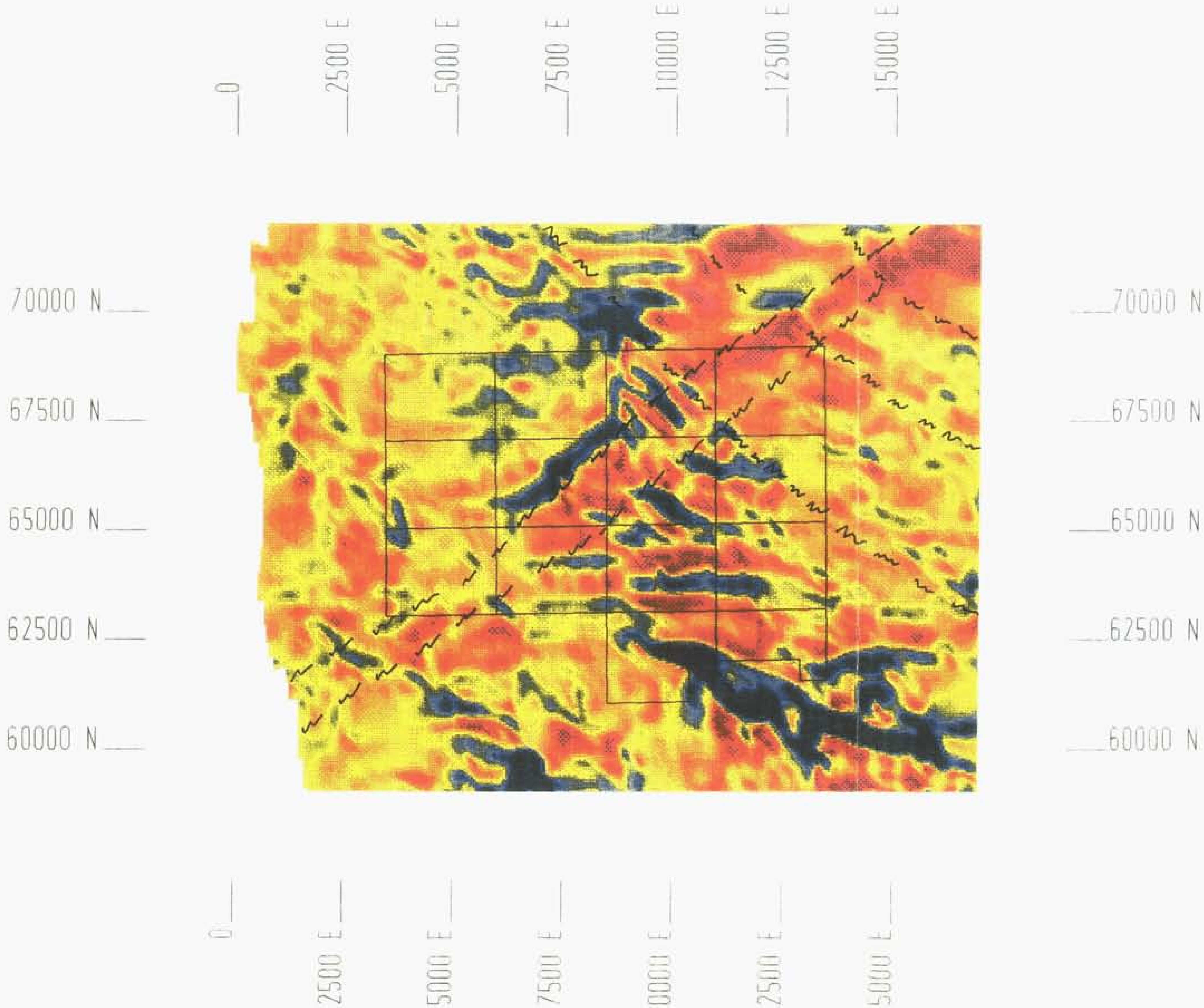
Scale 1:100000
1000 0 1000 2000 3000 4000 5000
(metres)

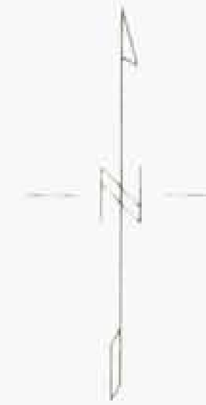
ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 55, DEC 130, SCALE .29, BRIGHT .6
92P/14
SEPT 15, 1989 FIG.8

WESTERN GEOPHYSICAL AREO DATA





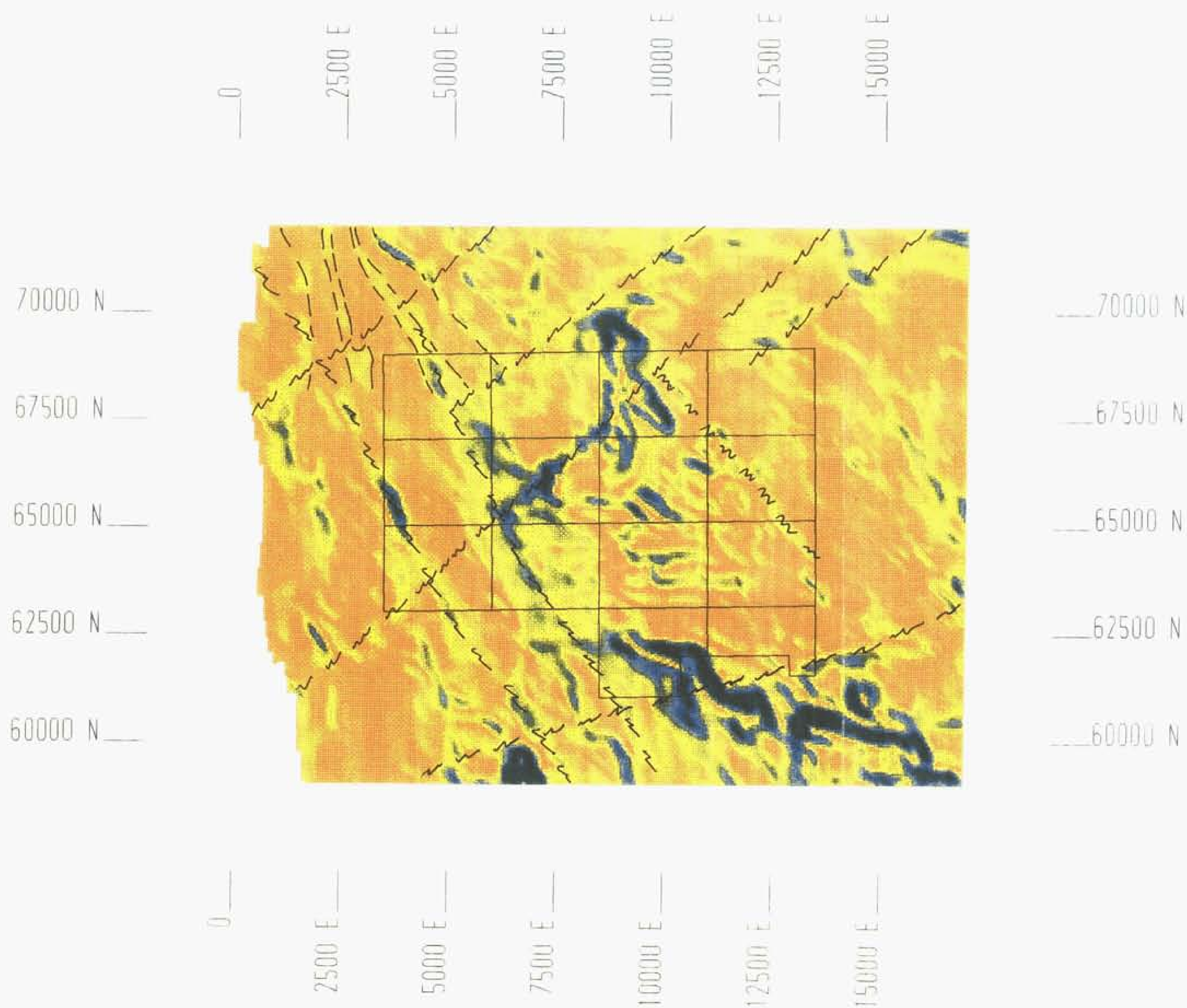
INCLINATION: 75 DEG
DECLINATION: 24 DEG E

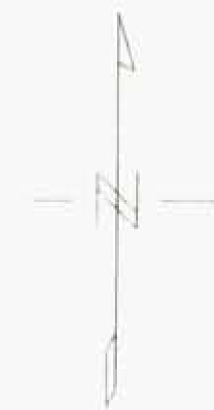
ARMSTRONG MOUNTAIN GOLD CORP

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 65. DEC 160. SCALE .2. BRIGHT 1.0
92P/14
SEPT 15, 1989 FIG. 9

WESTERN GEOPHYSICAL AREO DATA





INCLINATION: 75 DEG
DECLINATION: 24 DEG E

ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS

SHADOW PLOT

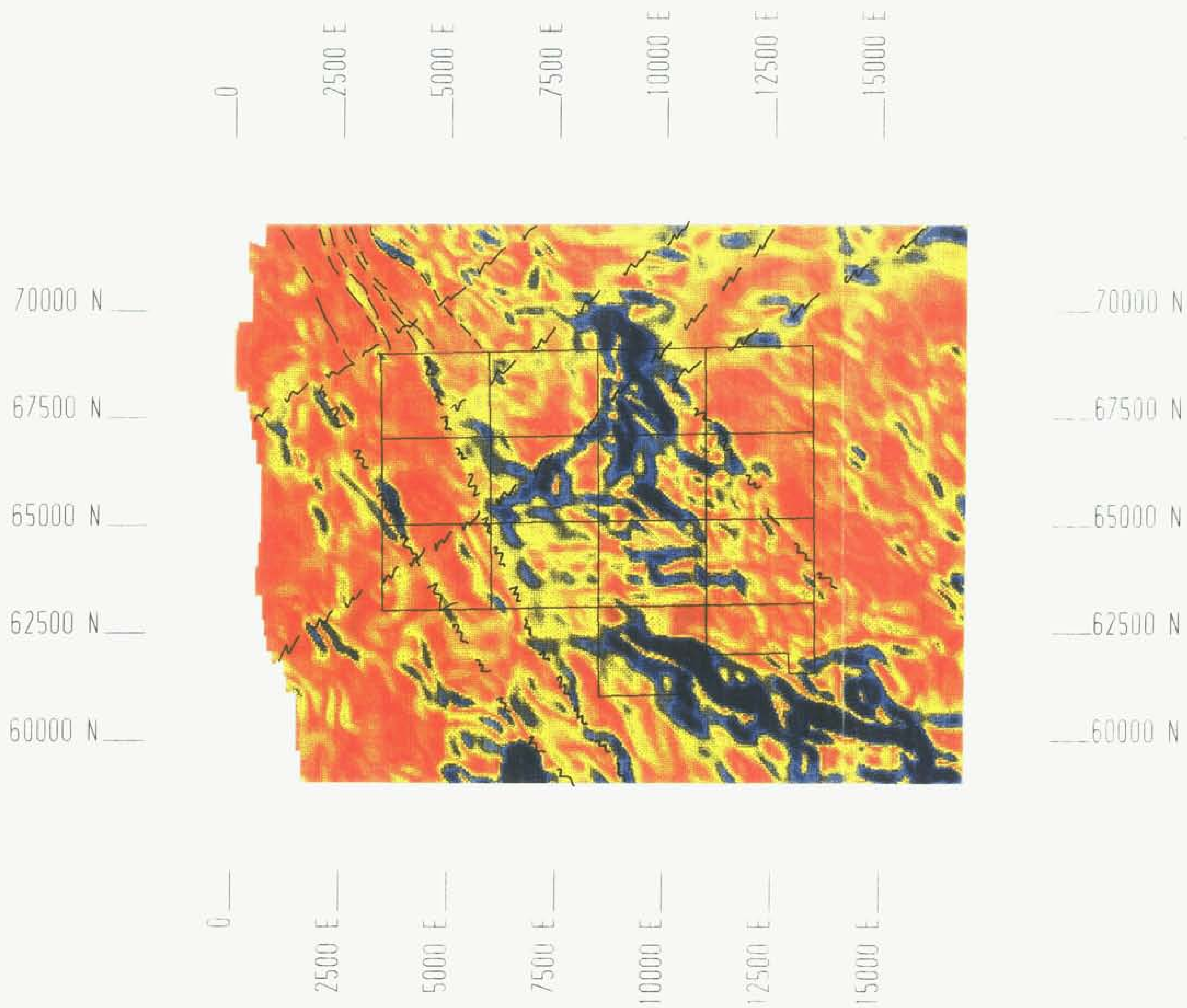
SUN: INCL 85, DEC 80, SCALE .18, BRIGHT .57

92P/14

SEPT 15, 1989

FIG.10

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

Scale 1:100000

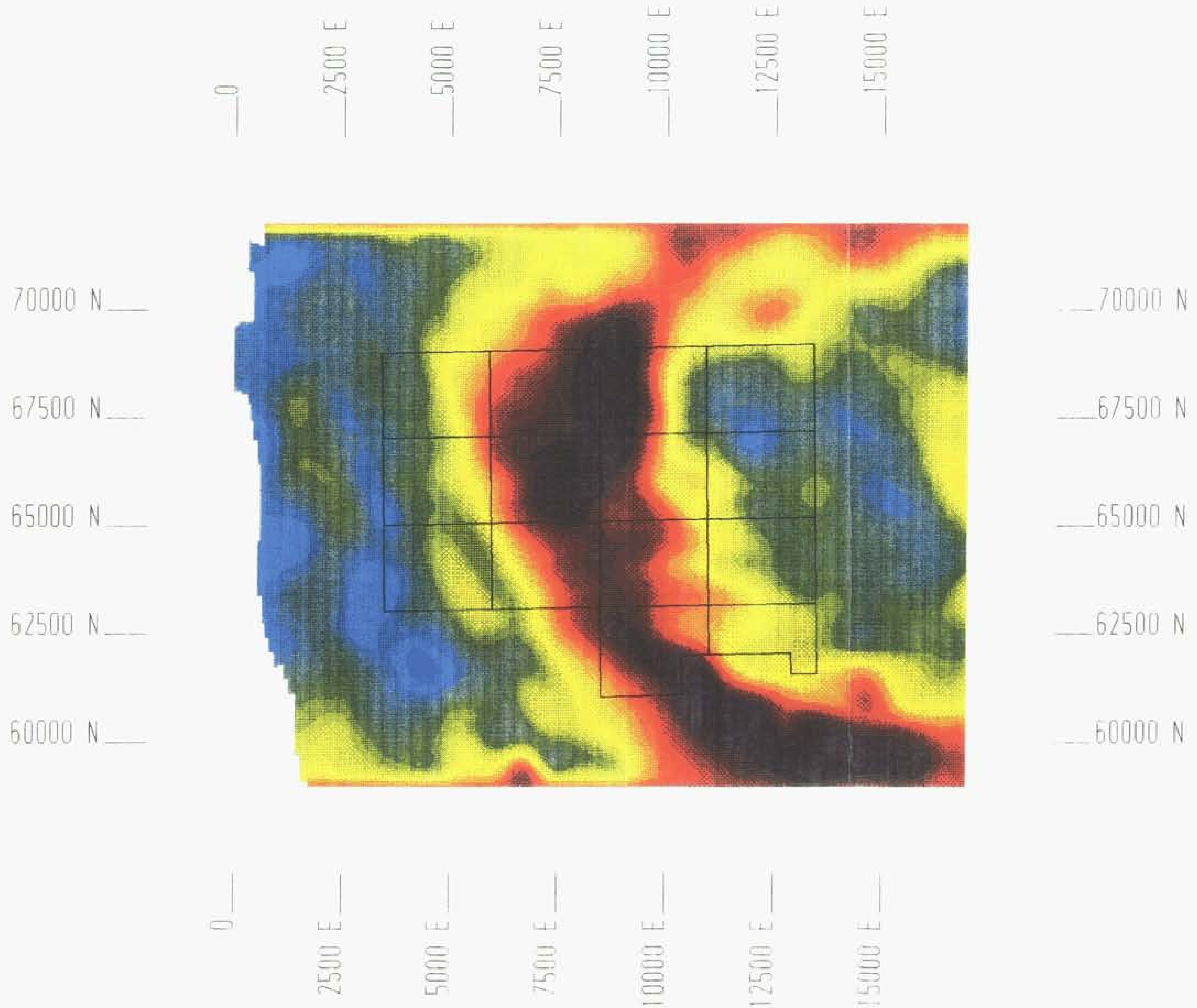
1000 0 1000 2000 3000 4000 5000
(metres)

ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 85, DEC 130, SCALE .45, BRIGHT 1.0
92P/14
SEPT 15, 1989 FIG.11

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

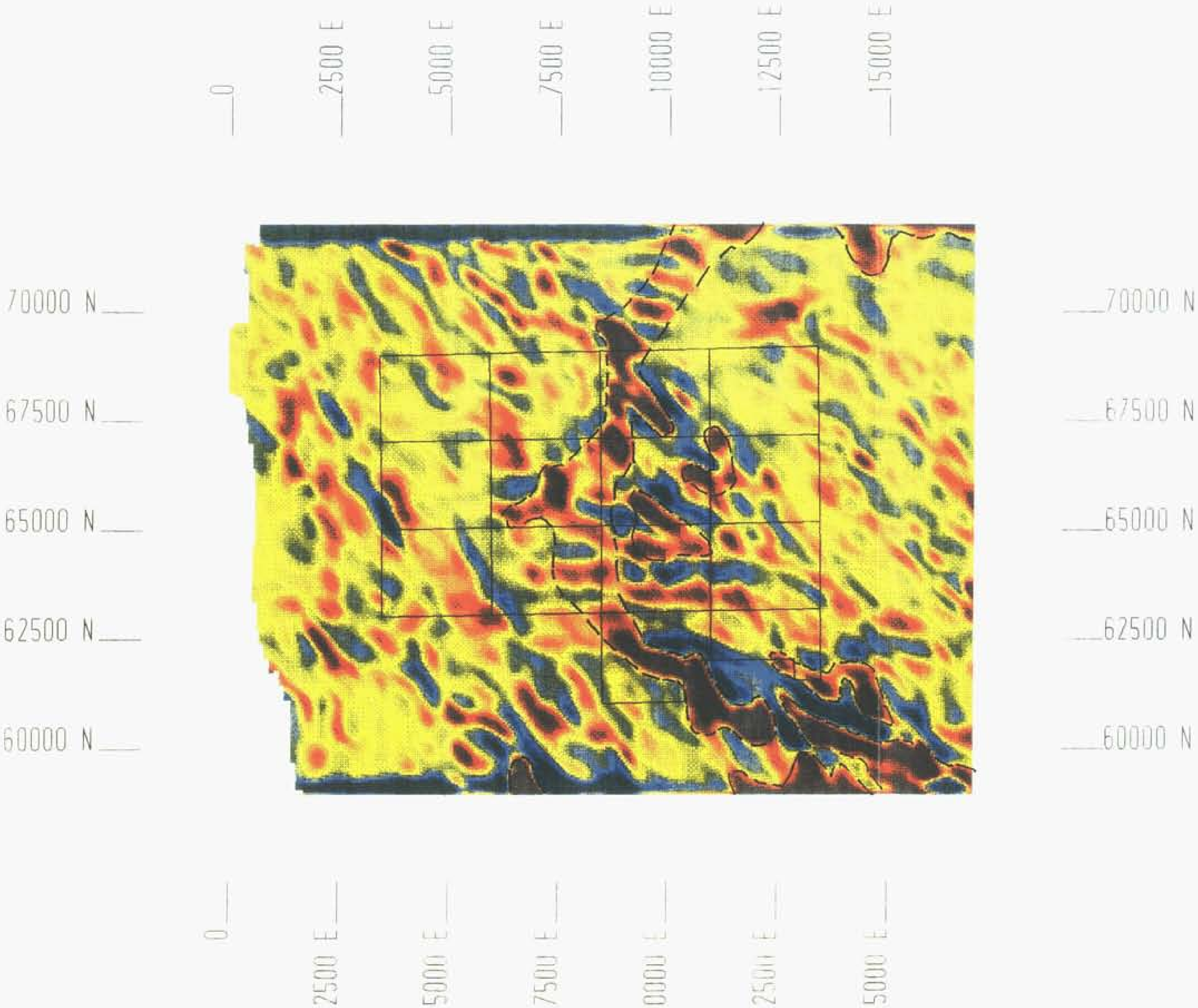
Scale 1:100000
1000 0 1000 2000 3000 4000 5000
(metres)

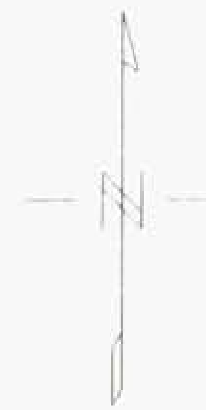
ARMSTRONG MOUNTAIN GOLD CORP.

DIAN HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
BARRINGER MAGNETOMETER
LOW PASS FILTERED
92P/14
SEPTEMBER 15, 1989 FIG.12

WESTERN GEOPHYSICAL AREO DATA





INCLINATION: 75 DEG
DECLINATION: 24 DEG E

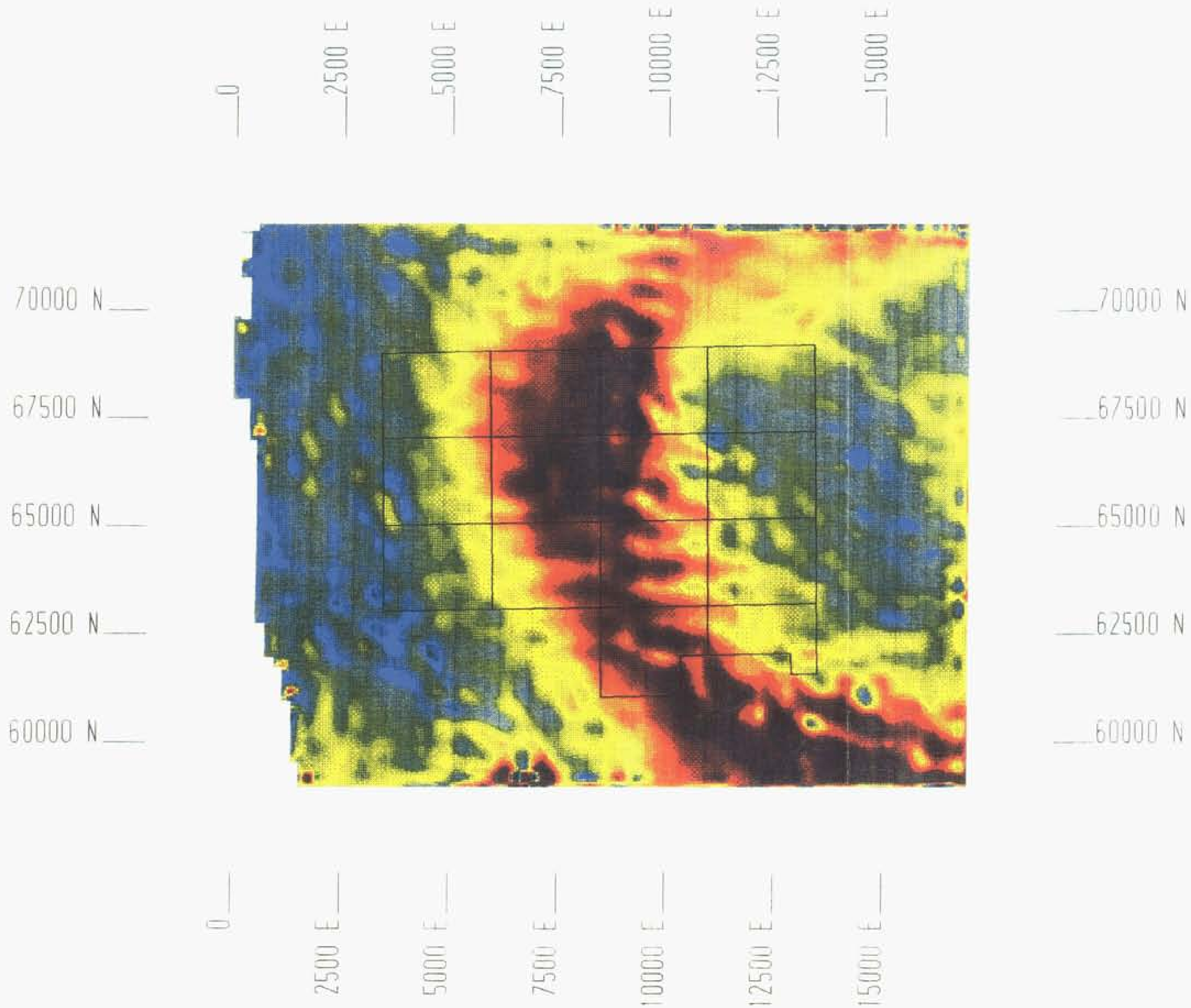
ARMSTRONG MOUNTAIN GOLD CORP.

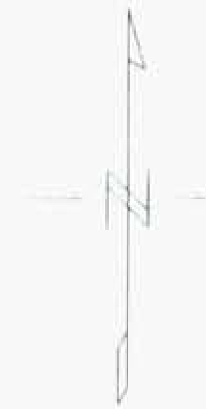
DIAN HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS

BARRINGER MAGNETOMETER
RESIDUAL PLOT
92P/14
SEPTEMBER 15, 1989 FIG.13

WESTERN GEOPHYSICAL AREO DATA





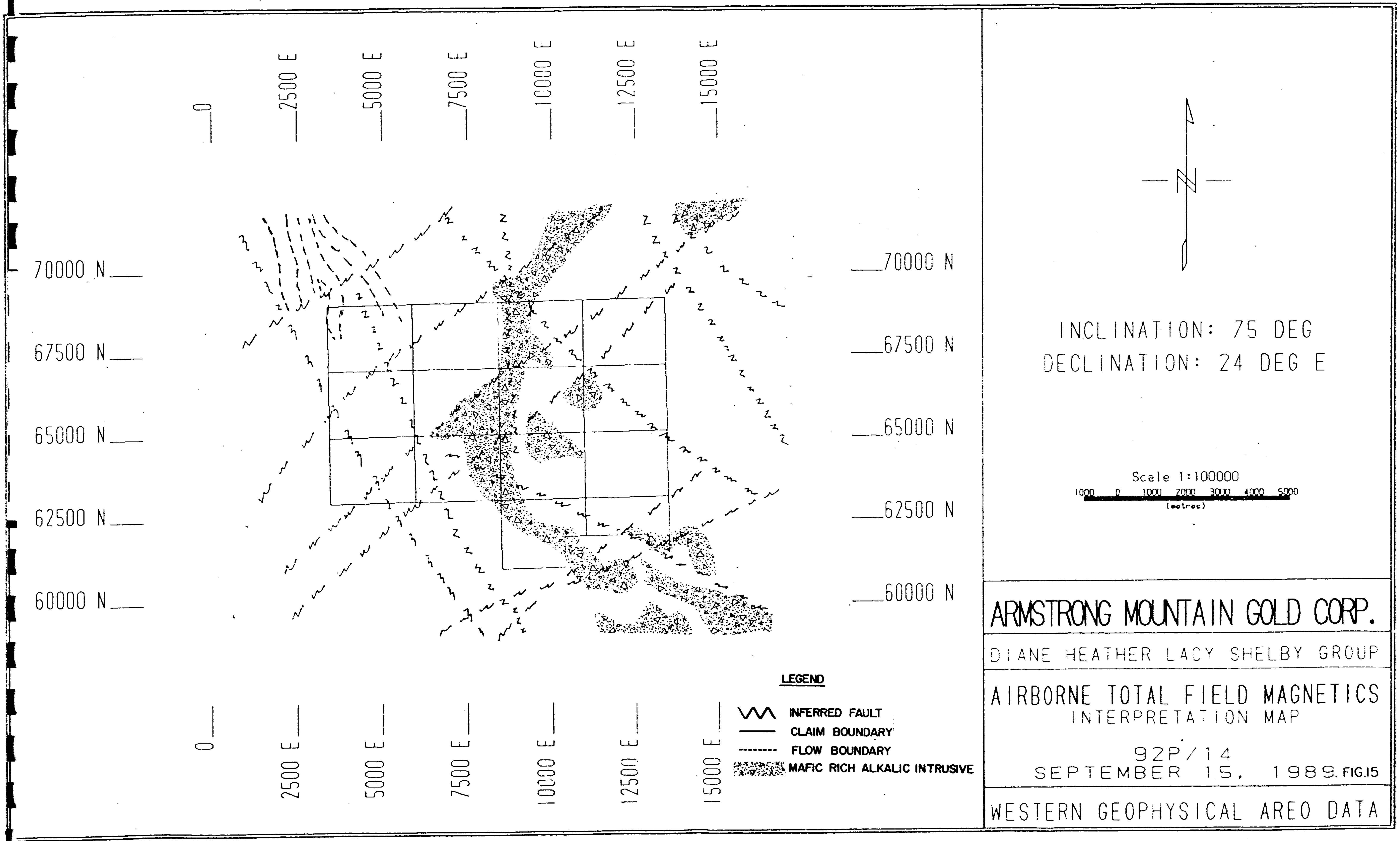
INCLINATION: 75 DEG
DECLINATION: 24 DEG E

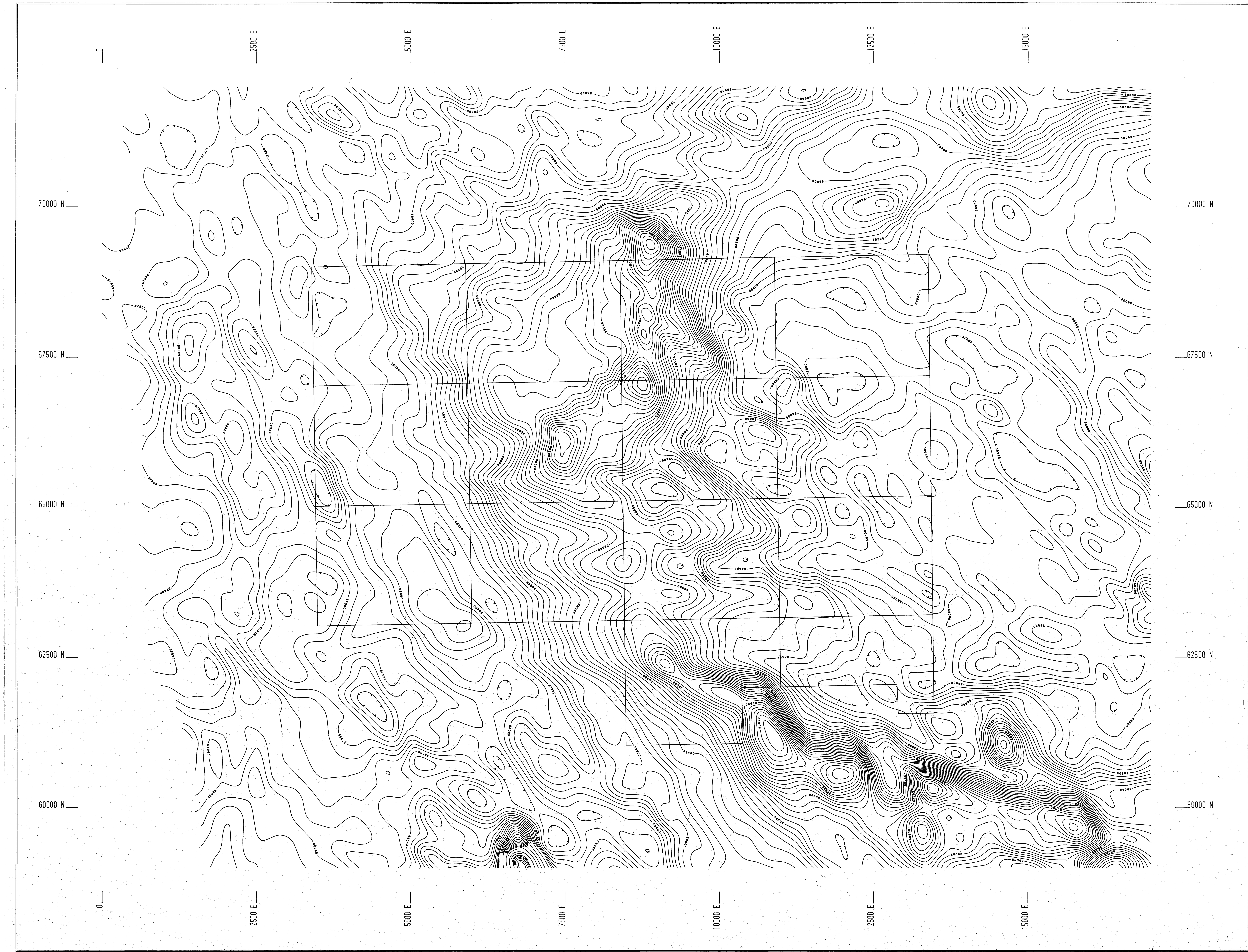
ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
BARRINGER MAGNETOMETER
SECOND DERIVATIVE PLOT
92P/14
SEPTEMBER 15, 1989. FIG.14

WESTERN GEOPHYSICAL AREO DATA


0
2500 E
5000 E
7500 E
10000 E
12500 E
15000 E
70000 N
67500 N
65000 N
62500 N
60000 N
INCLINATION: 75 DEG
DECLINATION: 24 DEG E
Scale 1:100000
1000 0 1000 2000 3000 4000 5000
(metres)
LEGEND
INFERRED FAULT
CLAIM BOUNDARY
FLOW BOUNDARY
MAFIC RICH ALKALIC INTRUSIVE
ARMSTRONG MOUNTAIN GOLD CORP.
DIANE HEATHER LACY SHELBY GROUP
AIRBORNE TOTAL FIELD MAGNETICS
INTERPRETATION MAP
92P/14
SEPTEMBER 15, 1989 FIG.15
WESTERN GEOPHYSICAL AREO DATA



N

INCLINATION: 75 DEG
DECLINATION: 24 DEG E

Scale 1:20000

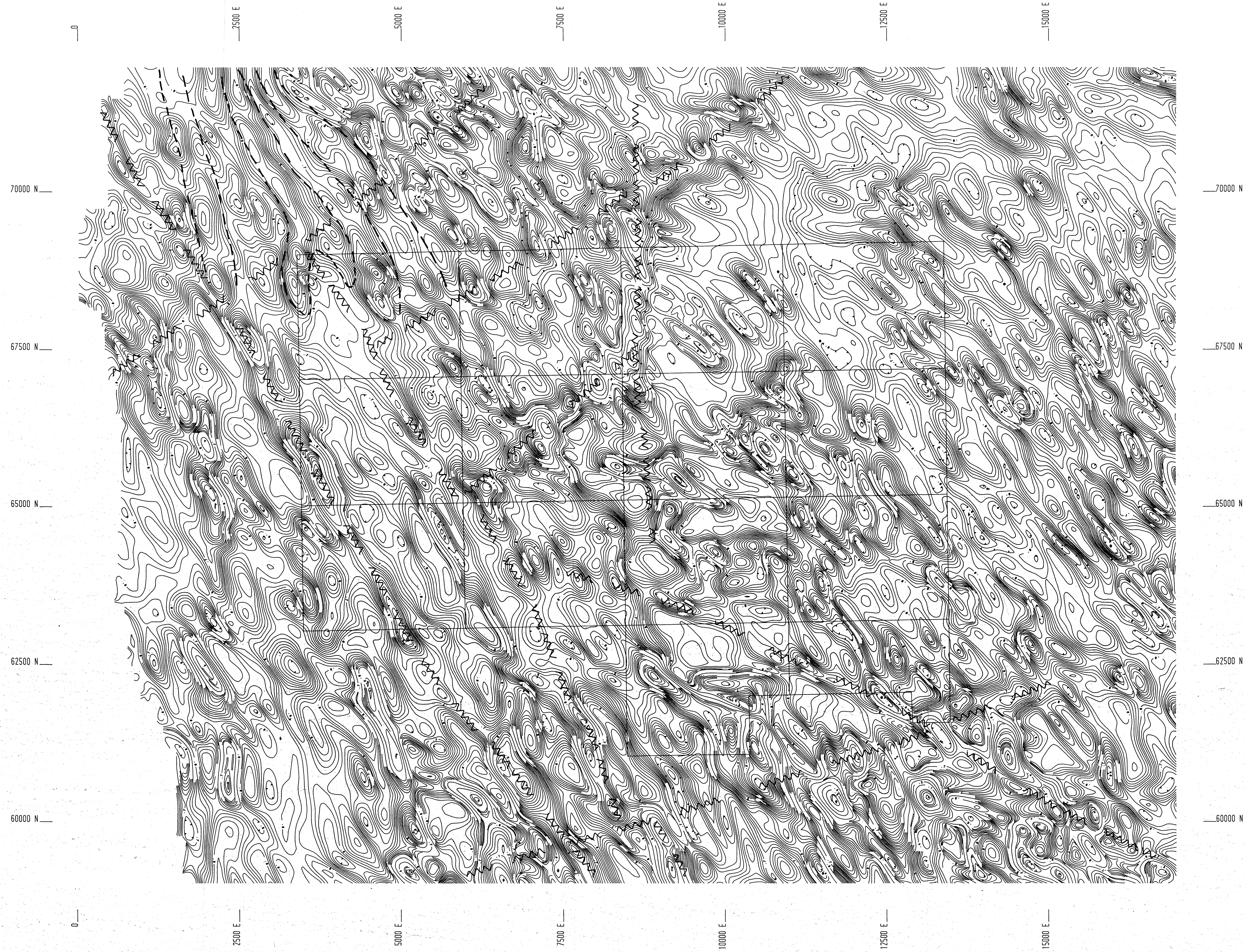
ARMSTRONG MOUNTAIN GOLD CORP.

DIAN HEATHER LACY SHELBY GROUP

TOTAL FIELD MAGNETICS
BARRINGER MAGNETOMETER

92P/14
SEPTEMBER 15, 1989
FIG.16

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

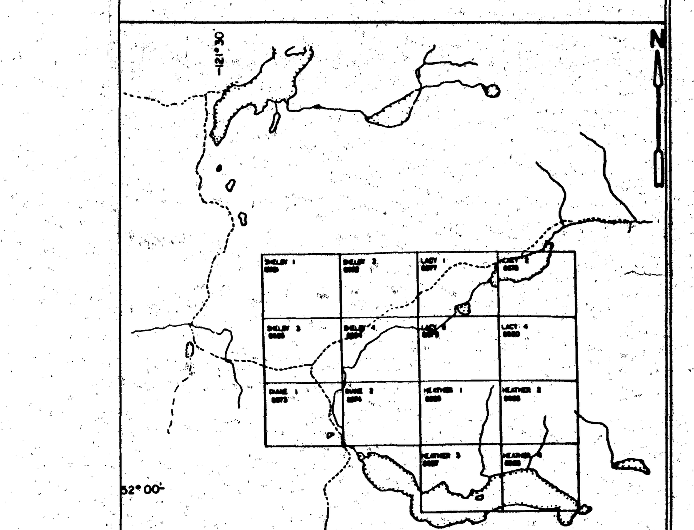
LEGEND

INFERRED FAULT
CLAIM BOUNDARY
FLOW BOUNDARY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,515

Scale 1:20000
250 0 250 500 750 1000 1250
(metres)

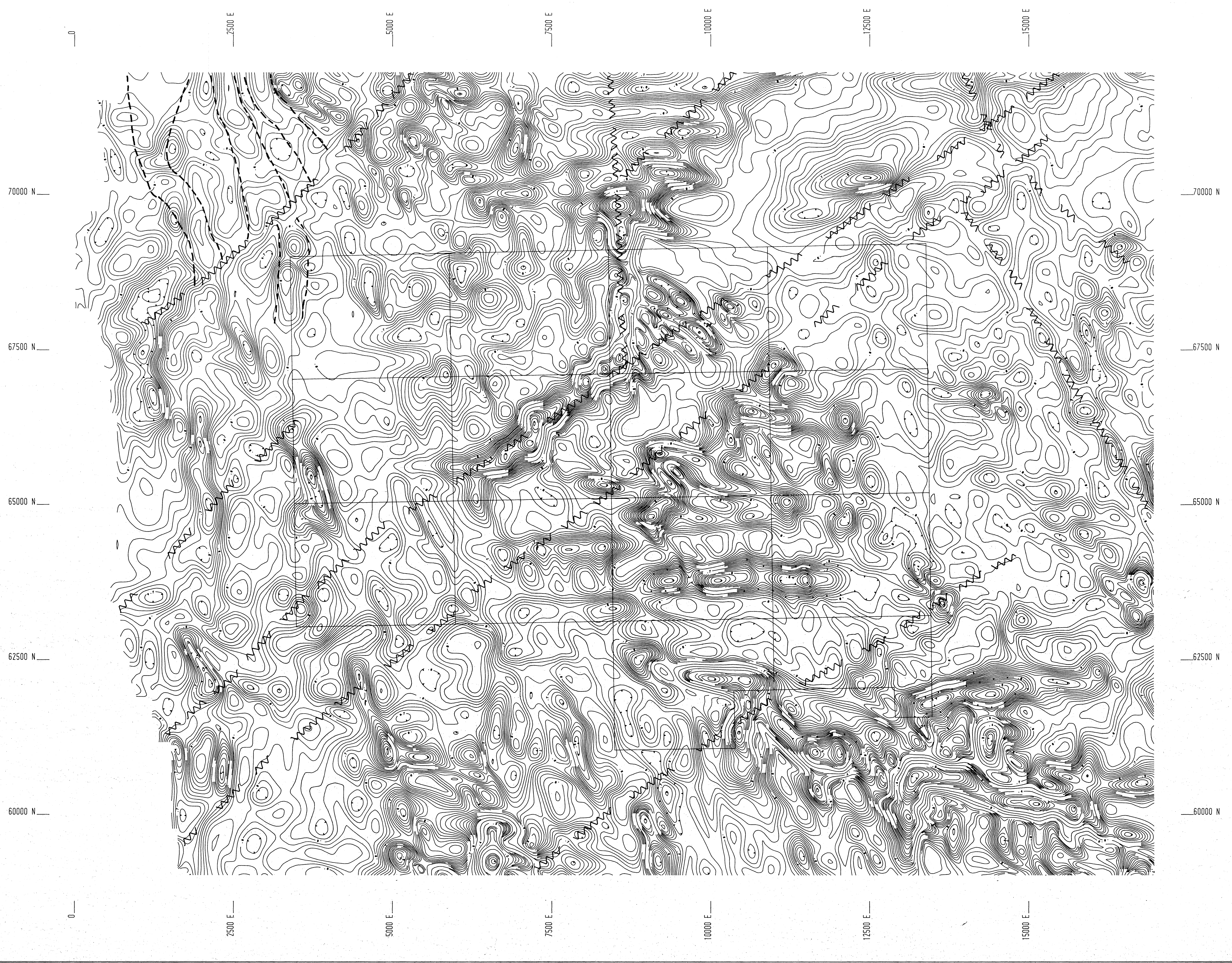


ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 55, DEC 80, SCALE .35, BRIGHT .6
92P/14
SEPT 15, 1989 FIG.17

WESTERN GEOPHYSICAL AREO DATA

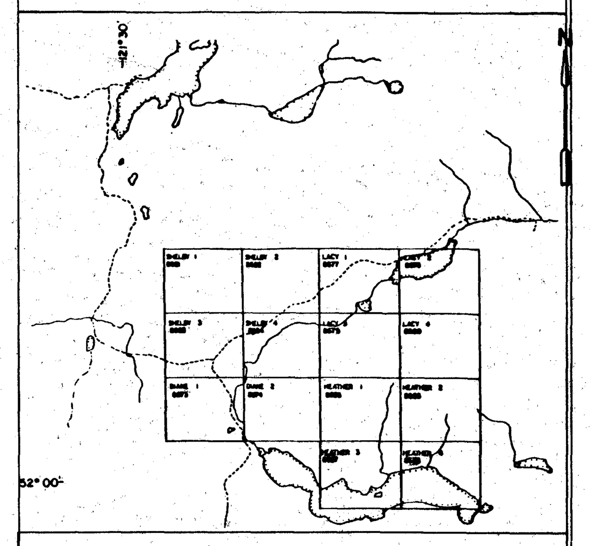


INCLINATION: 75 DEG
DECLINATION: 24 DEG E

LEGEND

INFERRED FAULT
CLAIM BOUNDARY
FLOW BOUNDARY

Scale 1:20000
250 0 250 500 750 1000 1250
(metres)

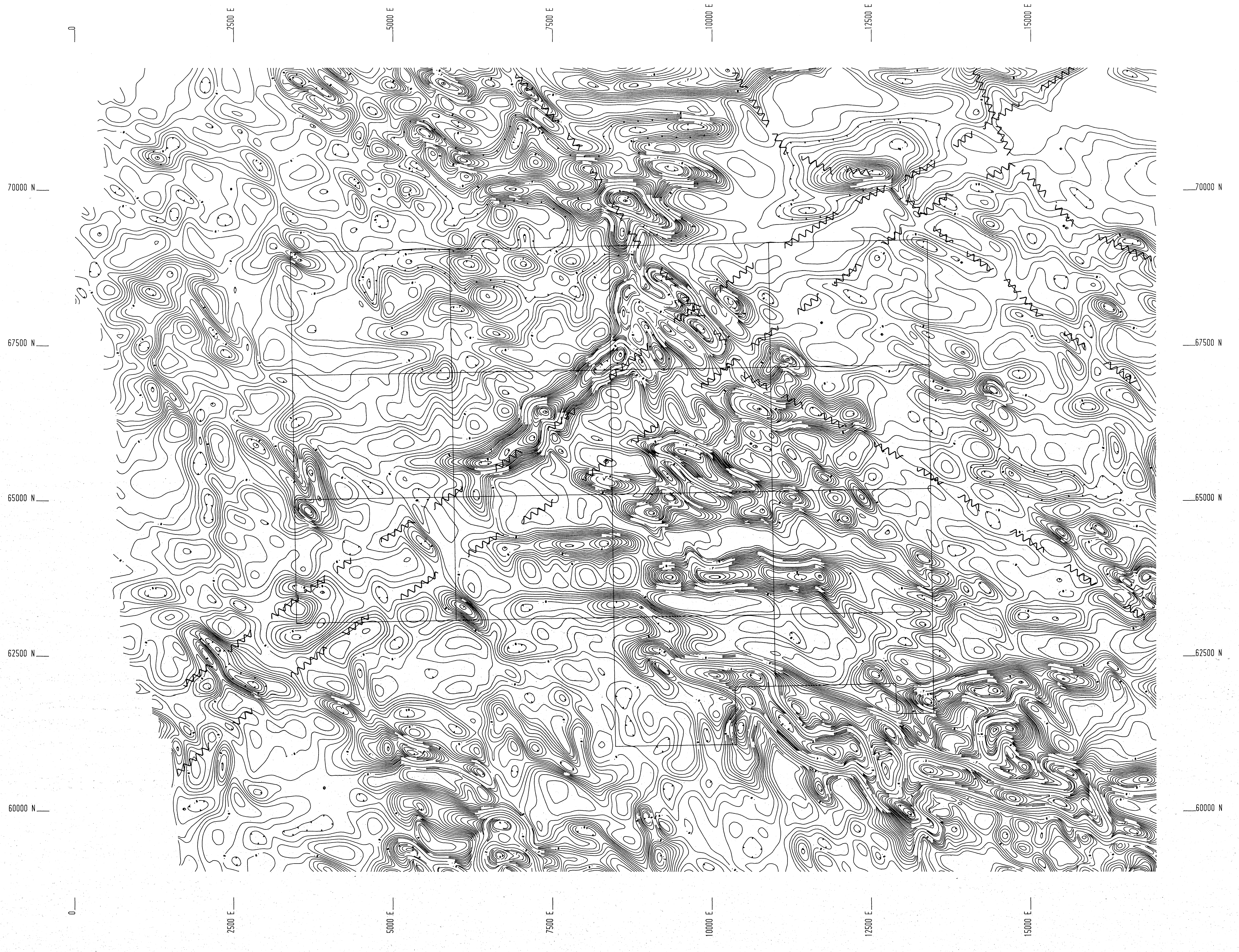


ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 55, DEC 130, SCALE .29, BRIGHT .6
92P/14
SEPT 15, 1989 FIG.18

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

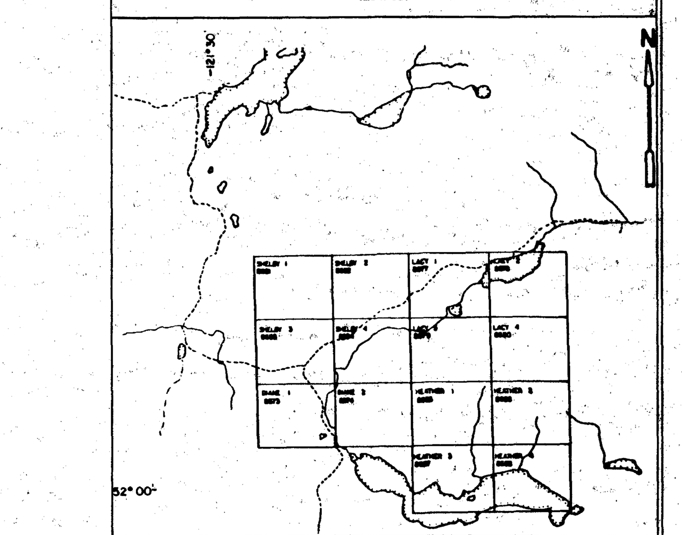
LEGEND

INFERRED FAULT

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,515

Scale 1:20000

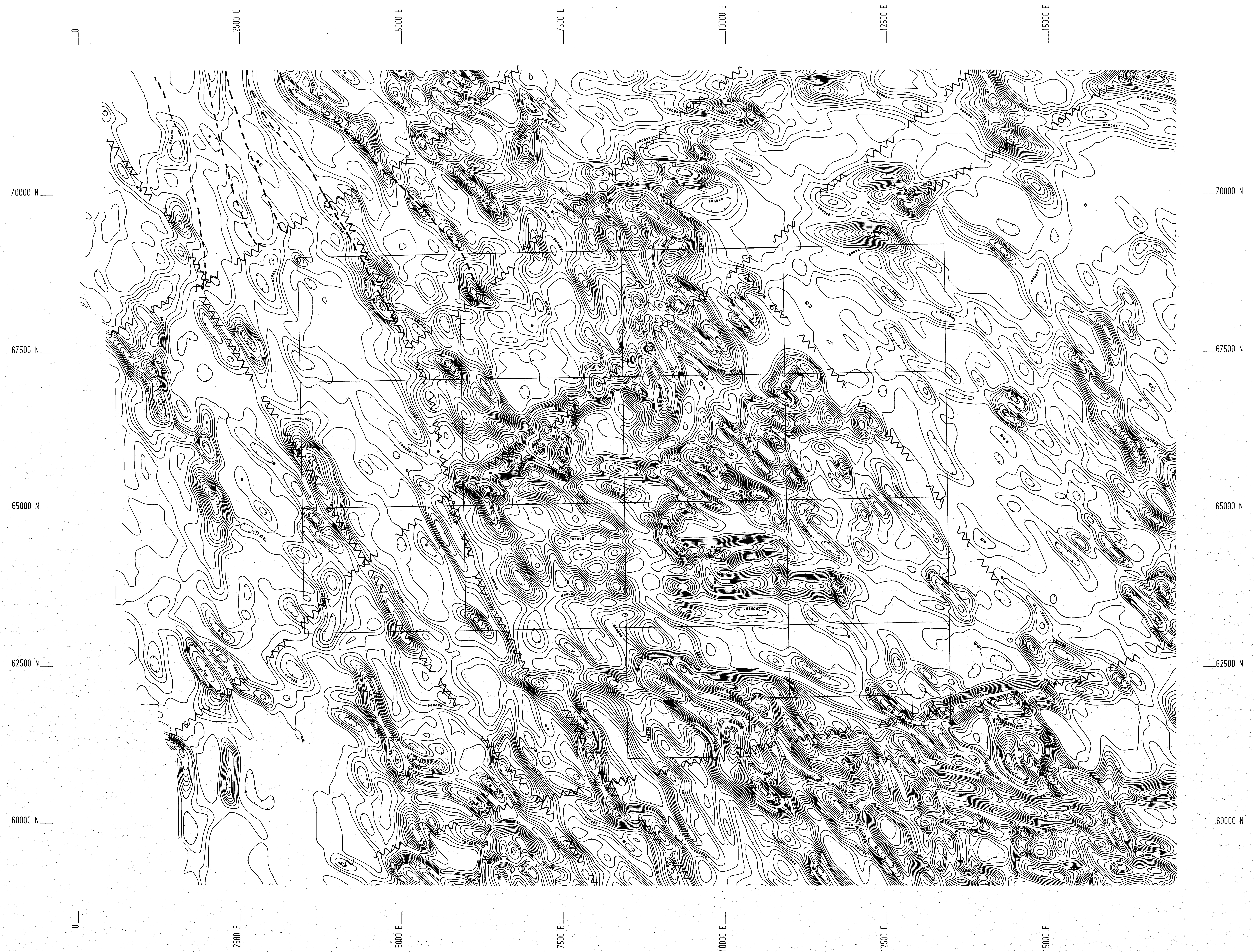


ARMSTRONG MOUNTAIN GOLD CORP

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 65, DEC 160, SCALE .2, BRIGHT 1.0
92P/14
SEPT 15, 1989 FIG.19

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

LEGEND

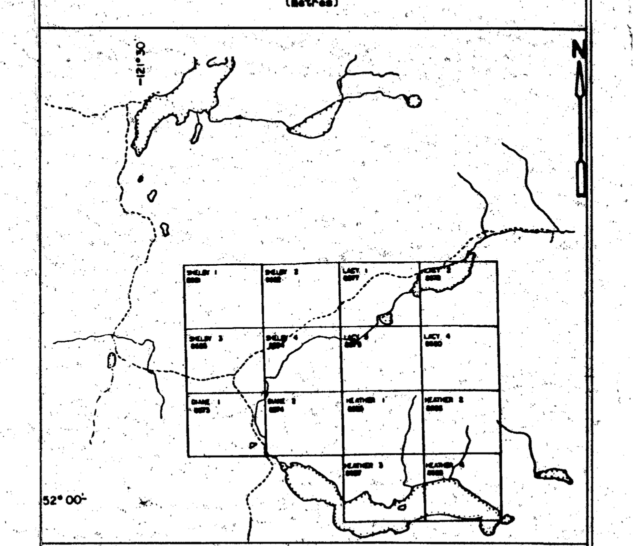
INFERRED FAULT
CLAIM BOUNDARY
FLOW BOUNDARY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,515

Scale 1:20000

250 0 250 500 750 1000 1250 (metres)

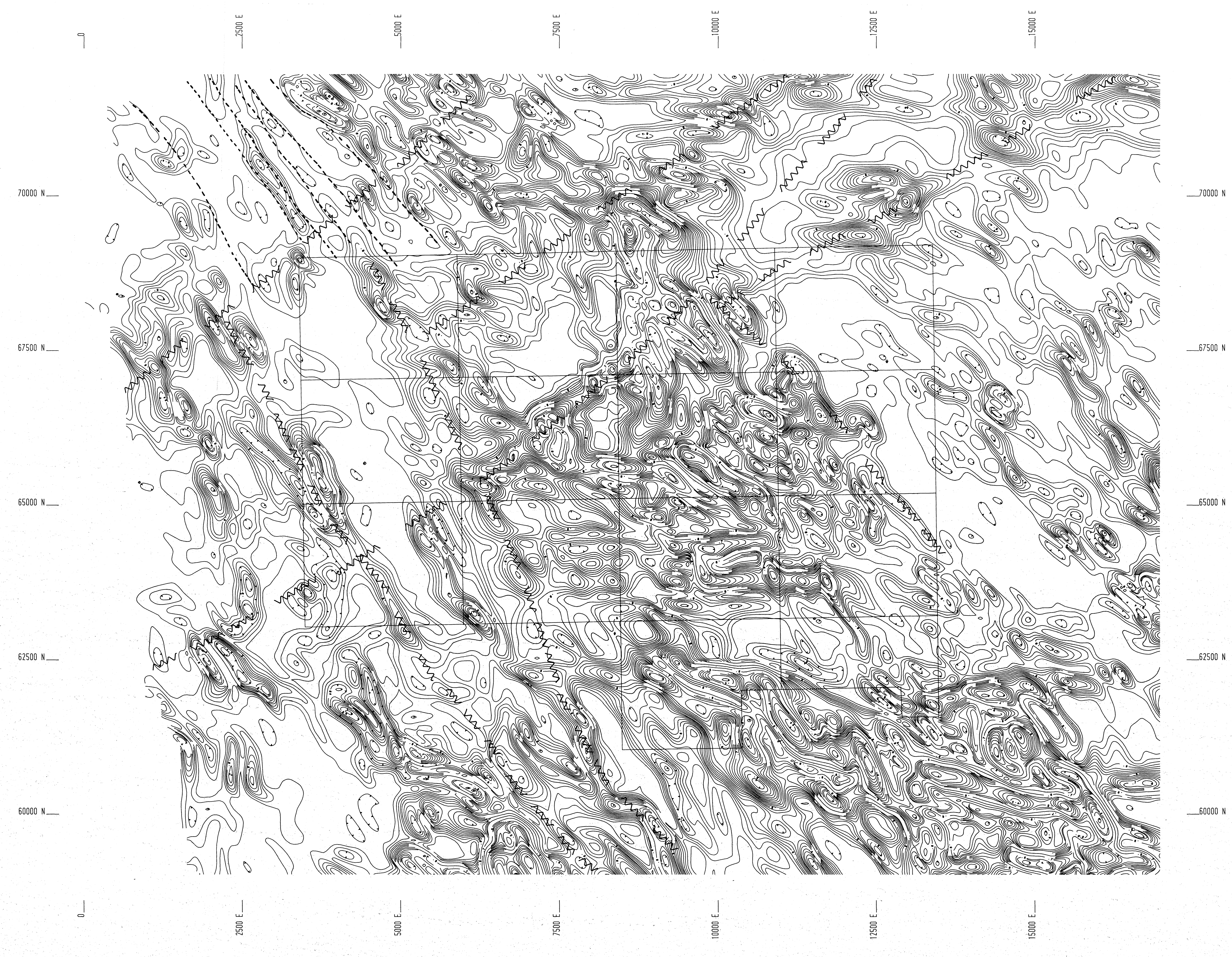


ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 85, DEC 80, SCALE .18, BRIGHT .57
92P/14
SEPT 15, 1989 FIG.20

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

LEGEND

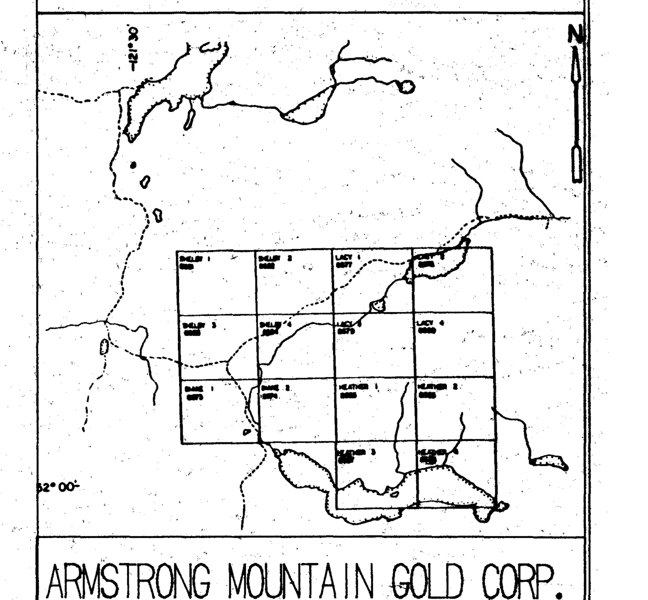
- INFERRED FAULT
- CLAIM BOUNDARY
- FLOW BOUNDARY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,515

Scale 1:20000

(metres)

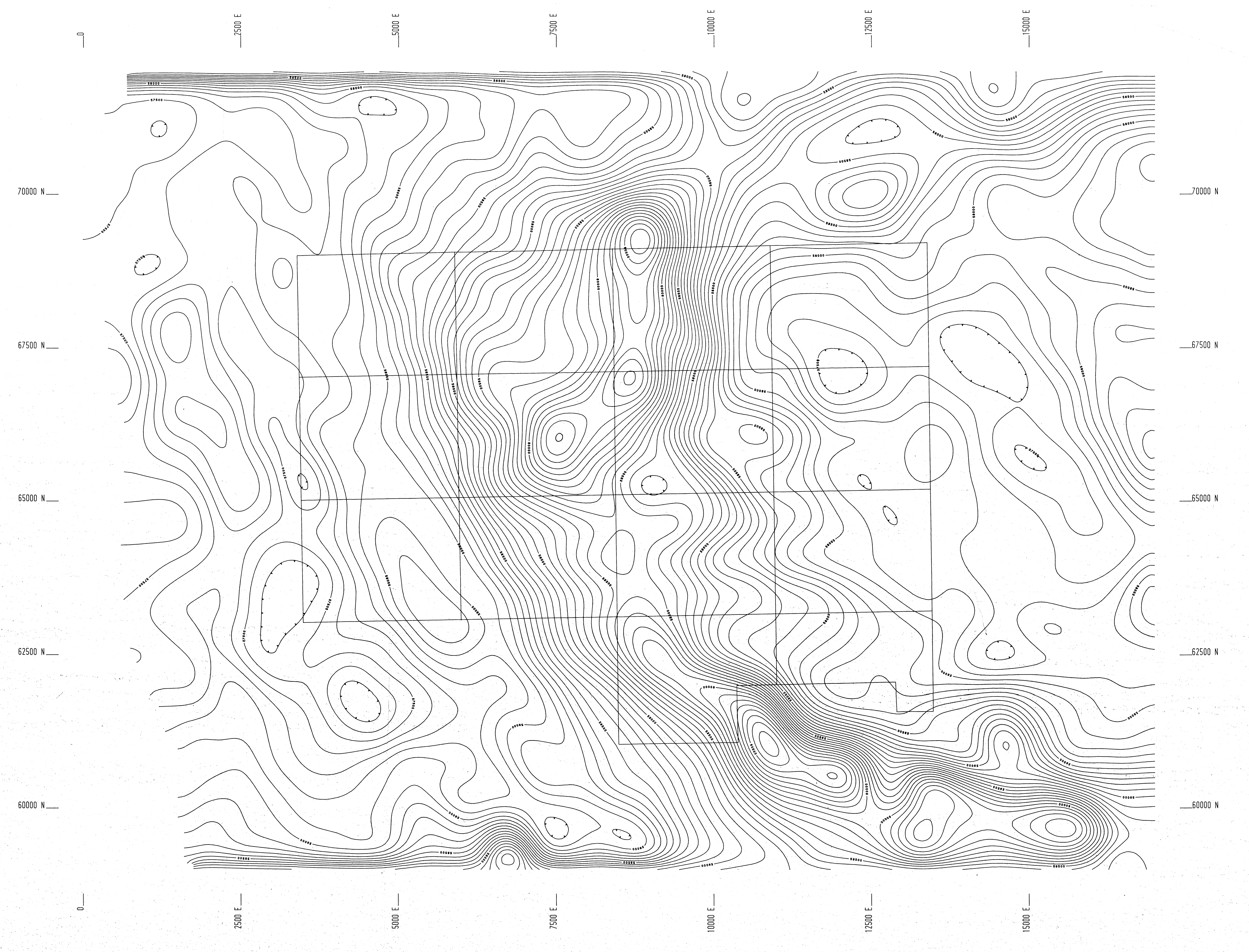


ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
SHADOW PLOT
SUN: INCL 85, DEC 130, SCALE .45, BRIGHT 1.0
92P/14
SEPT 15, 1989 FIG.21

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,515

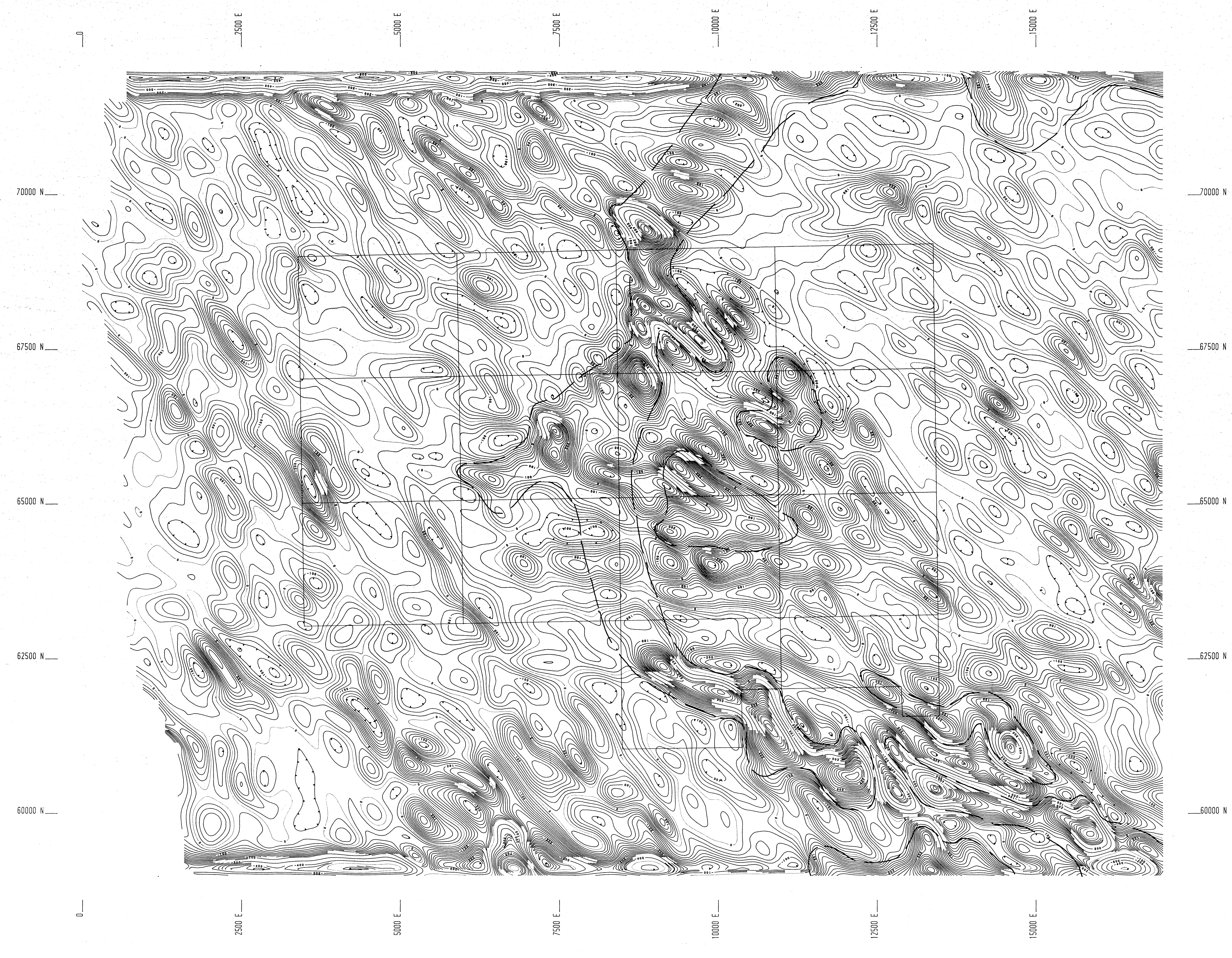
Scale 1:20000

ARMSTRONG MOUNTAIN GOLD CORP.

DIAN HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
BARRINGER MAGNETOMETER
LOW PASS FILTERED
92P/14
FIG.22
SEPTEMBER 15, 1989

WESTERN GEOPHYSICAL AREO DATA



N

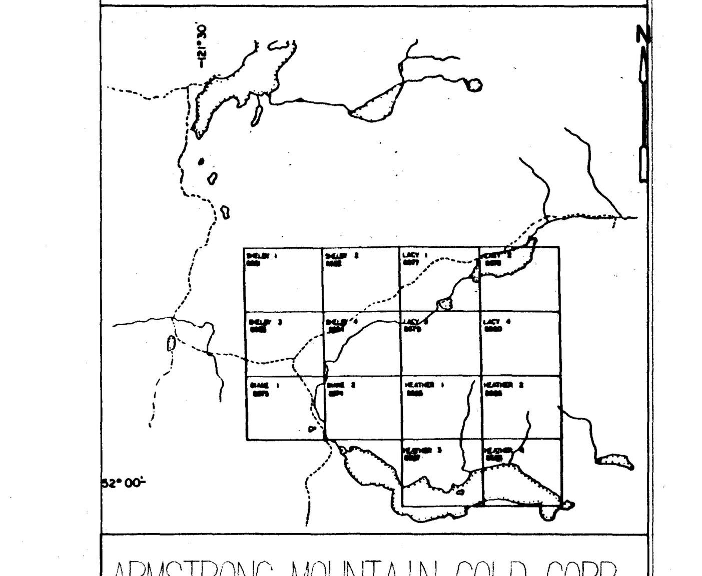
INCLINATION: 75 DEG
DECLINATION: 24 DEG E

MAFIC RICH ALKALIC INTRUSIVE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,515

Scale 1:20000
(metres)



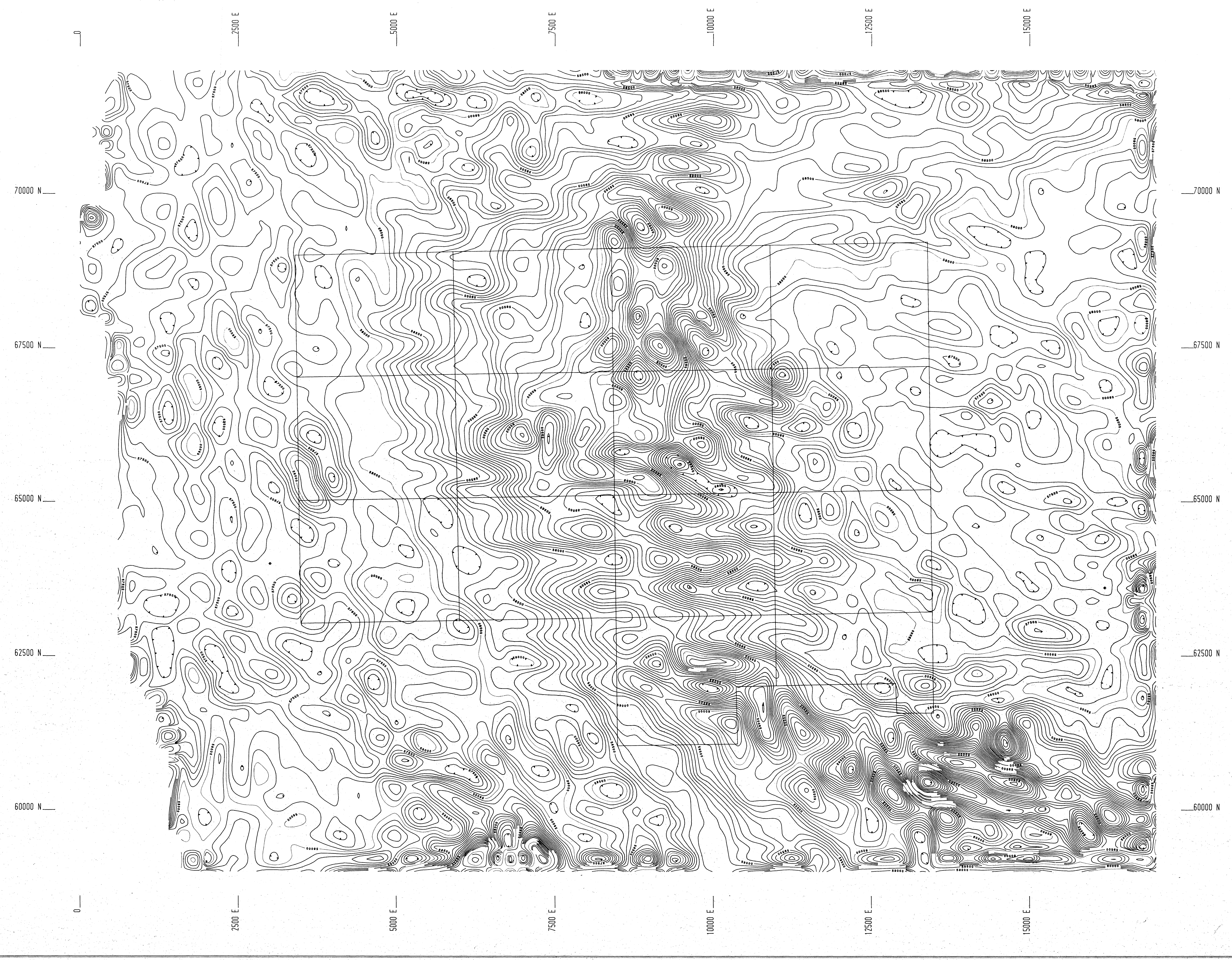
ARMSTRONG MOUNTAIN GOLD CORP.

DIAN HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
BARRINGER MAGNETOMETER
RESIDUAL PLOT
92P/14
SEPTEMBER 15, 1989

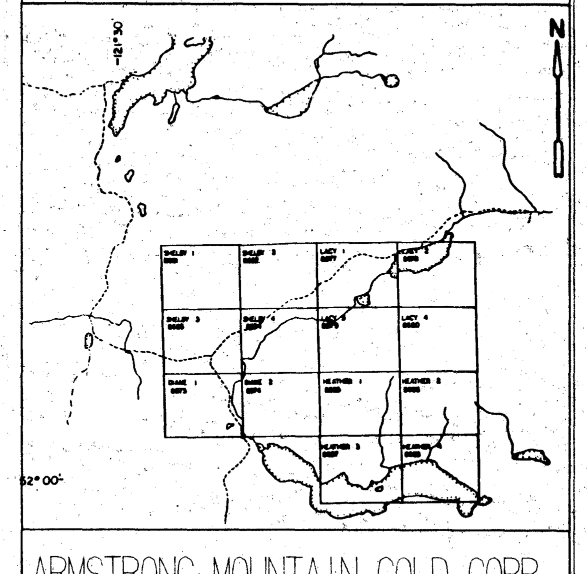
FIG.23

WESTERN GEOPHYSICAL AREO DATA



INCLINATION: 75 DEG
DECLINATION: 24 DEG E

Scale 1:20000
250 0 250 500 750 1000 1250
(metres)



ARMSTRONG MOUNTAIN GOLD CORP.

DIANE HEATHER LACY SHELBY GROUP

AIRBORNE TOTAL FIELD MAGNETICS
BARRINGER MAGNETOMETER
SECOND DERIVATIVE PLOT
92P/14
FIG.24
SEPTEMBER 15, 1989

WESTERN GEOPHYSICAL AREO DATA


0
2500 E
5000 E
7500 E
10000 E
12500 E
15000 E
70000 N
67500 N
65000 N
62500 N
60000 N
AREA IV
AREA II
AREA III
AREA I
SHELBY 1
SHELBY 2
SHELBY 3
SHELBY 4
LACY 1
LACY 2
LACY 3
LACY 4
DIANE 1
DIANE 2
HEATHER 1
HEATHER 2
HEATHER 3
HEATHER 4
N
INCLINATION: 75 DEG
DECLINATION: 24 DEG E
LEGEND
INFERRED FAULT
CLAIM BOUNDARY
FLOW BOUNDARY
MAFIC RICH ALKALIC INTRUSIVE
GEOLOGICAL BRANCH
ASSESSMENT REPORT
19,515
Scale 1:20000
ARMSTRONG MOUNTAIN GOLD CORP.
DIAN HEATHER LACY SHELBY GROUP
INTERPRETATION MAP
92P/14
SEPTEMBER 15, 1989
FIG.25
WESTERN GEOPHYSICAL AREO DATA