COMINCO LTD.

093735

EXPLORATION WESTERN CANADA

NTS: 105G-9

ASSESSMENT REPORT

HLEM, MAGNETIC AND GRAVITY SURVEYS

ON THE

ARM PROPERTY

LATITUDE: 61° 32' N

LONGITUDE: 130° 26' W

WATSON LAKE M. D., YUKON TERRITORY

CLAIMS COVERED : ARM 1-12

TIME PERIOD: JUNE 6-10, 1996

AUG. 1997

DAVID HALL

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 8113.00.

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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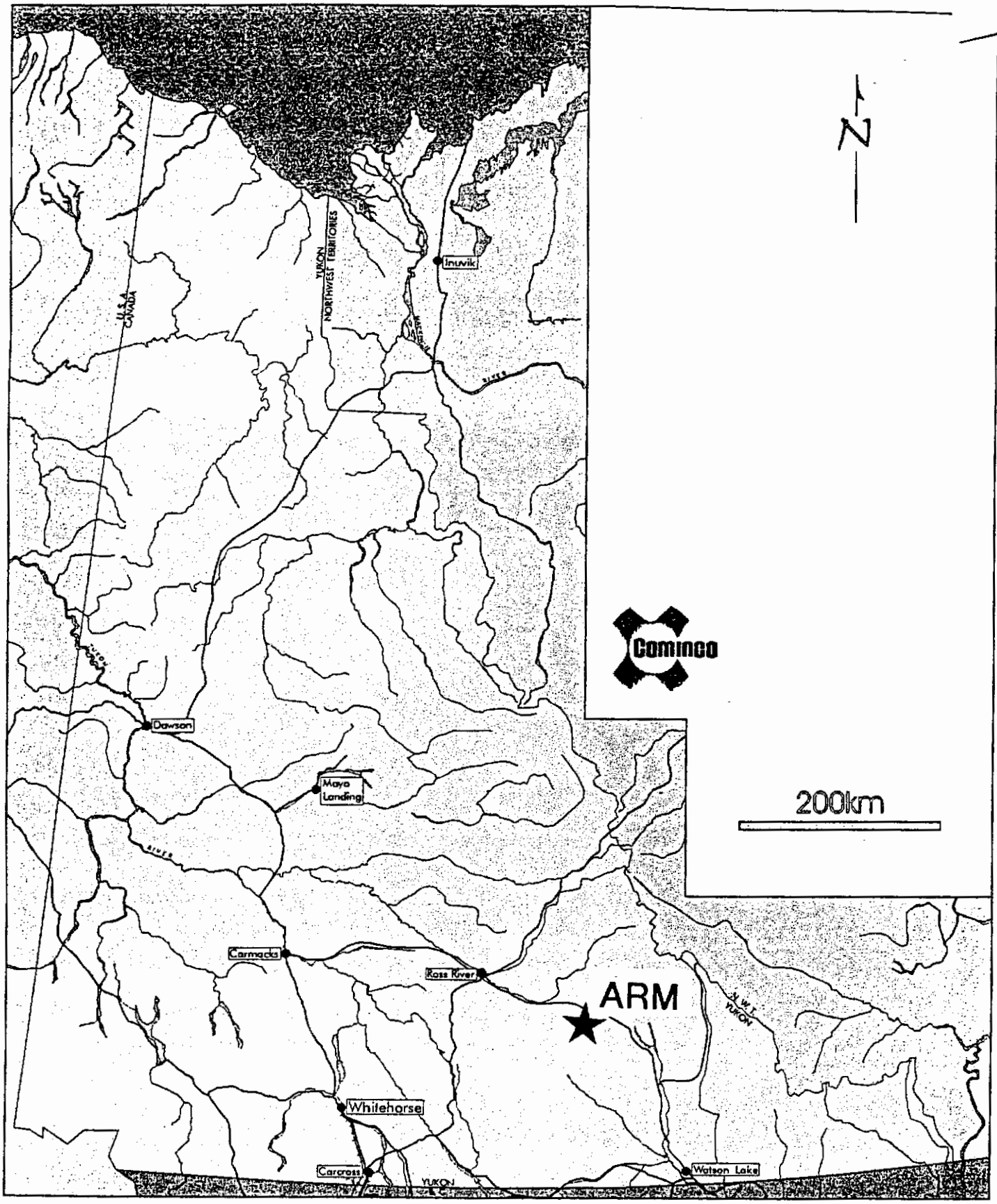
LIST OF PLATES



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Revised by:	Date:	Revised by:	Date:

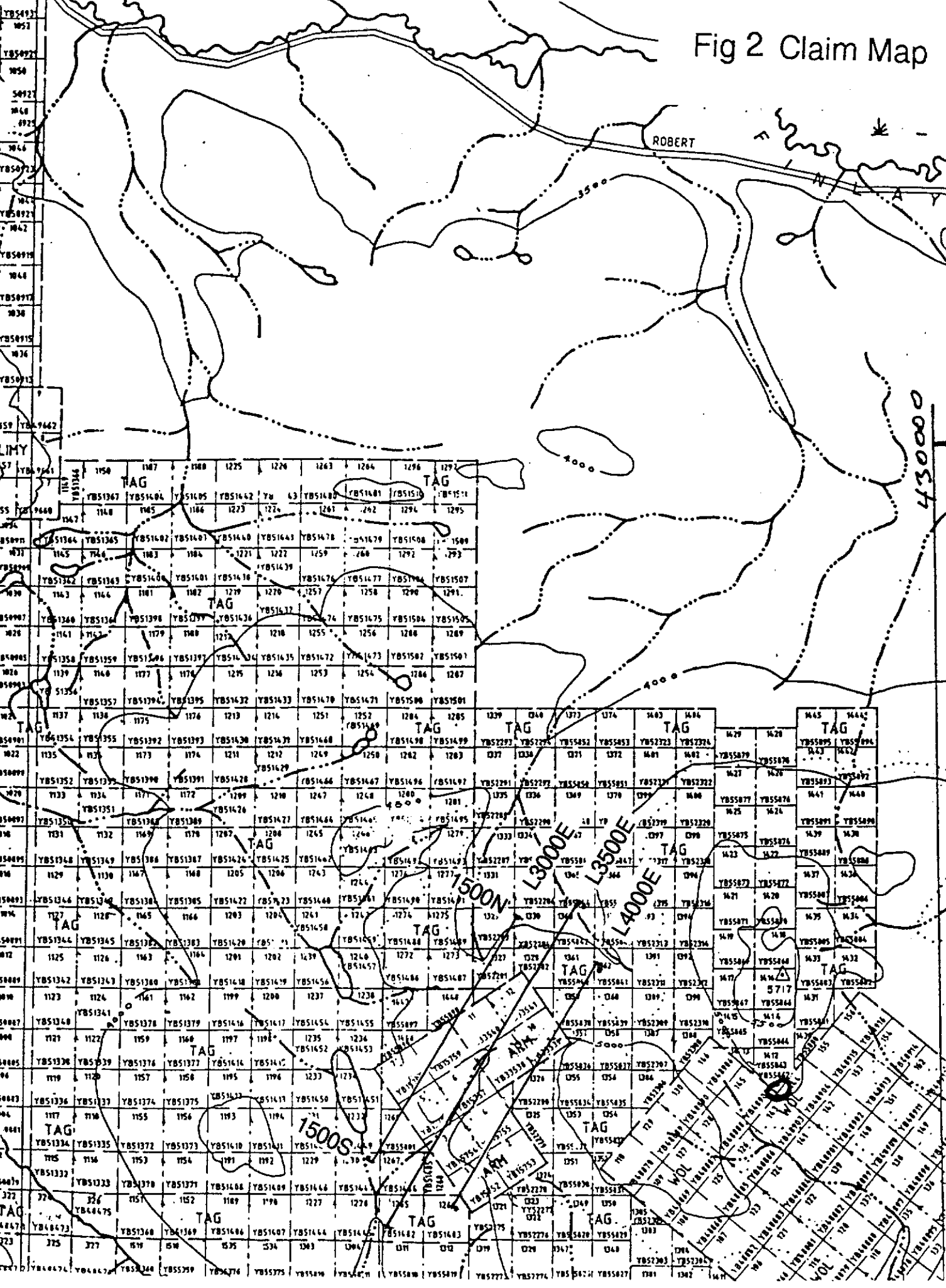
Property Location Map

Scale:

Date:

Plate: 1

Fig 2 Claim Map



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HLEM, MAGNETIC AND GRAVITY SURVEYS

ON THE ARM PROPERTY

I INTRODUCTION

The Arm claims were staked in 1989 to cover a drainage yielding a highly anomalous silt sample, identified in the 1988 release of a GSC stream sediment survey. In 1994, as a result of Cominco's nearby discovery of the ABM zone, these claims were optioned by Cominco. Additional work in that year consisted of airborne geophysics, soil and silt sampling and prospecting. In 1996 a 10 km grid was established and ground geophysical surveys were conducted along with geological mapping and additional soil and silt sampling.

An in-house Cominco Ltd. crew led by Cominco geophysicist D. C. Hall carried out the geophysical work during the time period June 6 to 10, 1996. This consisted of 10.0 kms of horizontal loop electromagnetic and magnetic surveys and 4.0 kms of gravity survey to further define anomalous zones.

This report discusses the geophysical equipment and procedures, then presents and interprets the results.

TENURE AND OWNERSHIP

The Arm claims are owned by Warren Arnholtz and Jan Martensson of Ampex Mining. Claim information is as follows:

Claim	Tag No.	Date of Record	Due Date
Arm 1-8	YB15752-15759	July 31, 1989	July 31,2001
Arm 9-12	YB33538-33541	Aug. 31, 1990	Aug. 31,2001

GEOLOGY

The claims are underlain by Devono-Mississippian aged black shales, slates and phyllites characterized by a strong foliation striking NW-SE and dipping moderately to the NE. Bedding generally parallels the main foliation. At the northeast corner of the property minor rhyolitic volcanics and a dacitic feldspar porphyry are evident. A highly visible Tertiary-Recent ferricrete deposit up to 50 metres wide occurs in the creek bottom. Tertiary black shale conglomerates are present on an intermittent basis on the valley floor and adjacent slopes . Outcrop exposure is generally poor however in the northeast corner a prominent, resistant, highly siliceous rhyolite flow breccia is preserved.

Faulting is not obvious at surface but is thought to manifest itself with steeply dipping NE-SW trending structures. Evidence exists for a large, brittle fault underlying the main creek.

LOCATION AND ACCESS

The property is located at latitude 61° 32' N and longitude 130° 26' W within the Watson Lake Mining District of the southeast Yukon. The town of Watson Lake lies roughly 200 km to the southeast and the claims are midway between the Robert Campbell highway and Cominco's Kudz Ze Kayah (KZK) exploration camp. Access to the claim block was by helicopter from the KZK camp, a distance of 13 kilometres.

II GEOPHYSICAL SURVEYS

GEOPHYSICAL EQUIPMENT AND PROCEDURES

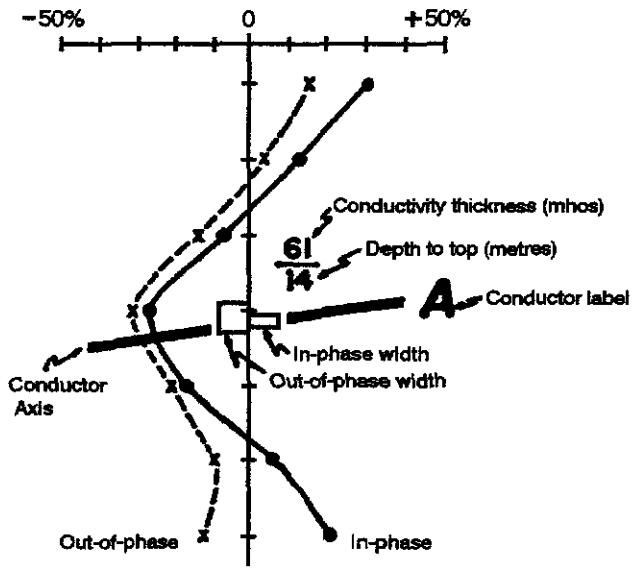
HORIZONTAL LOOP ELECTROMAGNETIC SURVEY

The HLEM system used was a Max-Min I-10 and a MMC data logger, manufactured by Apex Parametrics Ltd. The survey employed a 100 metre coil spacing. Three frequencies: 440, 1760, and 3520 Hz, were read at a 25 metre station interval.

For data collection, the receiver (Rx) and transmitter (Tx) were simultaneously tilted in a coplanar orientation paralleling the topographic slope (horizontal loop mode). The Rx-Tx separation of 100 metres was kept constant by using the interconnecting reference cable as a chain.

The HLEM results are presented in stacked profile form on 1:5000 plan maps, one map for each frequency. Data points are plotted half way between the Tx-Rx location. In-Phase (IP) data points are indicated by dots joined by a solid line; Out-of-Phase (OP) data is indicated by a dashed line. The conductor width, conductivity-thickness, and depth to top are indicated on all the plots, but are discussed below using the lowest frequency (usually 440 Hz) that adequately defines the conductor. An interpretation legend which describes these features is shown below.

A conductor will show a negative IP and/or OP trough of width (with respect to background values) equal to that of the conductor width plus the length of the coil separation. The IP and OP widths due to a conductive source are shown, respectively, above and below the zero line. The shallower a conductor is from the surface, the higher will be the amplitude of the IP and OP responses. Better conductors will respond on progressively lower frequencies whereas poor conductors are seen only on the higher frequencies. A higher IP/OP response amplitude ratio is also indicative of better conductance.



HLEM INTERPRETATION LEGEND

MAGNETIC SURVEY

The instrumentation for the magnetic survey consisted of a pair of OMNI PLUS magnetometres, one set up as a recording base station (taking readings every 15 sec.) and the other taking measurements at each point of the survey grid. Readings were taken every 12.5 metres, which was decreased to every 5 metres in locations where the magnetic response changed rapidly. At the end of a survey day the two units were connected to a computer and the day's data was transferred to the computer memory. Corrections for diurnal magnetic field variations were applied to each survey station value before plots were made. Reading accuracies of $\pm$5 nT were attained for the magnetics survey.

The total field magnetic data is presented in stacked profile form at a scale of 1:5000. HLEM conductor axes are traced on the magnetic profile map.

GRAVITY AND ELEVATION SURVEYS

Gravity readings were taken with a LaCoste Romberg gravity meter, Model "G", S/N 494. This unit is sealed, internally pressure compensated, and thermostatically controlled during operation to minimize drift from atmospheric pressure and temperature changes. A base station was established on the grid and by utilizing base station readings (at least 2 per day) all gravity readings were corrected for diurnal drift and levelled to this common base. Gravity readings were corrected for latitude and elevation (including both free-air and Bouguer corrections). The data has been processed for a Bouguer density of 2.67 g/cc.

The elevation survey was carried out with a Nikon D-50 theodolite and Nikon prism reflector. A base station was established near the middle of the gravity line and the gravity stations were surveyed to the end of the line. On the return trip stations were checked at 100 metre intervals finally tying in to the survey base station. Any minor errors were distributed throughout the stations of that loop, resulting in individual station accuracies in the order of 0.05 metres.

With reading variations due to gravity meter reading accuracy and drift, and elevation errors, the overall accuracy of the corrected gravity values is probably in the order of 0.05-0.10 mgals.

PRESENTATION OF RESULTS

Reduction and plotting of this data was carried out on Geosoft software . All data is presented in profile form at a scale of 1:5,000. HLEM conductor locations are plotted on the total field magnetic profiles and bouguer gravity profile.

III INTERPRETATION

Geophysical surveys on this grid were conducted during the period June 6-10, 1996 and consisted of 10.0 line kilometres of HLEM/MAG and 4.0 kms of Gravity. The purpose of these surveys was to attempt to find the source of anomalous stream geochemical samples in the centre of the grid area.

Airborne EM survey results indicated numerous conductors and little variation in the magnetic field values. Essentially this is what the ground surveys found. A conductive zone in excess of 2 kilometres wide is evident on all 3 lines. In most cases it is difficult to identify individual conductors and reference is made on plates 6, 7 and 8 to a "BROAD ZONE OF CONDUCTIVITY" through the central portion of the grid. Discrete conductors are identifiable on either side of this zone and conductivities vary from 10-100 siemens and depths from a few metres to over 20 metres. The lines are too far apart to identify continuity of individual conductors from line to line. The magnetic survey results indicate little variation in the magnetic field in areas where conductivity is found. The only magnetic features evident are on the north end of line 4000E in an area devoid of conductors.

A gravity survey on the central line of the grid (3500E) was carried out in an effort to delineate areas of higher density. Results of this survey are displayed on plate 10. The most noticeable feature is a broad low through the central portion of the line. This is largely due to effects of topography and surrounding terrain (gravity values were corrected for elevation differences but not terrain corrected). Discrete conductors are located on the gravity profile and it is apparent that these are found in areas of lower density (represented by "lows" in the profile).

IV CONCLUSIONS

An in-house Cominco geophysical crew completed 10 kms of HLEM/Mag surveys and 4 kms of gravity survey on the Arm property during the period June 6-10, 1996. The surveys defined an extensive area of conductivity with no associated magnetic anomalies. Where individual conductors are defined they appear to be in lower density material. These factors suggest the conductivity is likely due to graphitic sediments.

No evidence was found from the geophysical surveys of a near surface sulphide body of significant size. No further work is recommended on this property.

Report by : David C Hall
David C. Hall,
Geophysicist

Approved for Release by : David W Moore
David W. Moore,
Manager, Exploration
Western Canada

Distribution:

[2] Mining Recorder
[1] Western District, Central Files
[1] Warren Arnholtz, Property Owner

APPENDIX I

IN THE MATTER OF A GEOPHYSICAL PROGRAMME

CARRIED OUT ON THE ARM PROPERTY

LOCATED 190 KMS NNW OF WATSON LAKE, YUKON

IN THE WATSON LAKE MINING DISTRICT OF THE

YUKON TERRITORY,

MORE PARTICULARLY

N.T.S. 105G-9

STATEMENT

I, David C. Hall, of 3476 W. 22nd Avenue, in the City of Vancouver, in the Province of British Columbia, make oath and say:

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

2. That annexed hereto and marked as "Exhibit A" to this statement is a true copy of expenditures incurred on a geophysical survey on the Arm Property;

3. That the said expenditures were incurred from June 6-10, 1996 for the purpose of mineral exploration on the above noted property.

David C. Hall
Geophysicist
Cominco Ltd.

Dated this 29 day of August, 1997
at Vancouver, B.C.

APPENDIX II - EXHIBIT "A"

STATEMENT OF EXPENDITURES

ARM PROPERTY - JUNE, 1996

1. GEOPHYSICS		$4080.00
3. HELICOPTER		$1950.00
4. DOMICILE		$ 700.00
5. REPORT WRITING, DRAFTING		$1383.00
	TOTAL	**$8113.00**

APPENDIX III

CERTIFICATION OF QUALIFICATIONS

I, DAVID C. HALL, of 3476 W. 22nd Avenue, in the City of Vancouver, in the Province of British Columbia, do hereby certify:

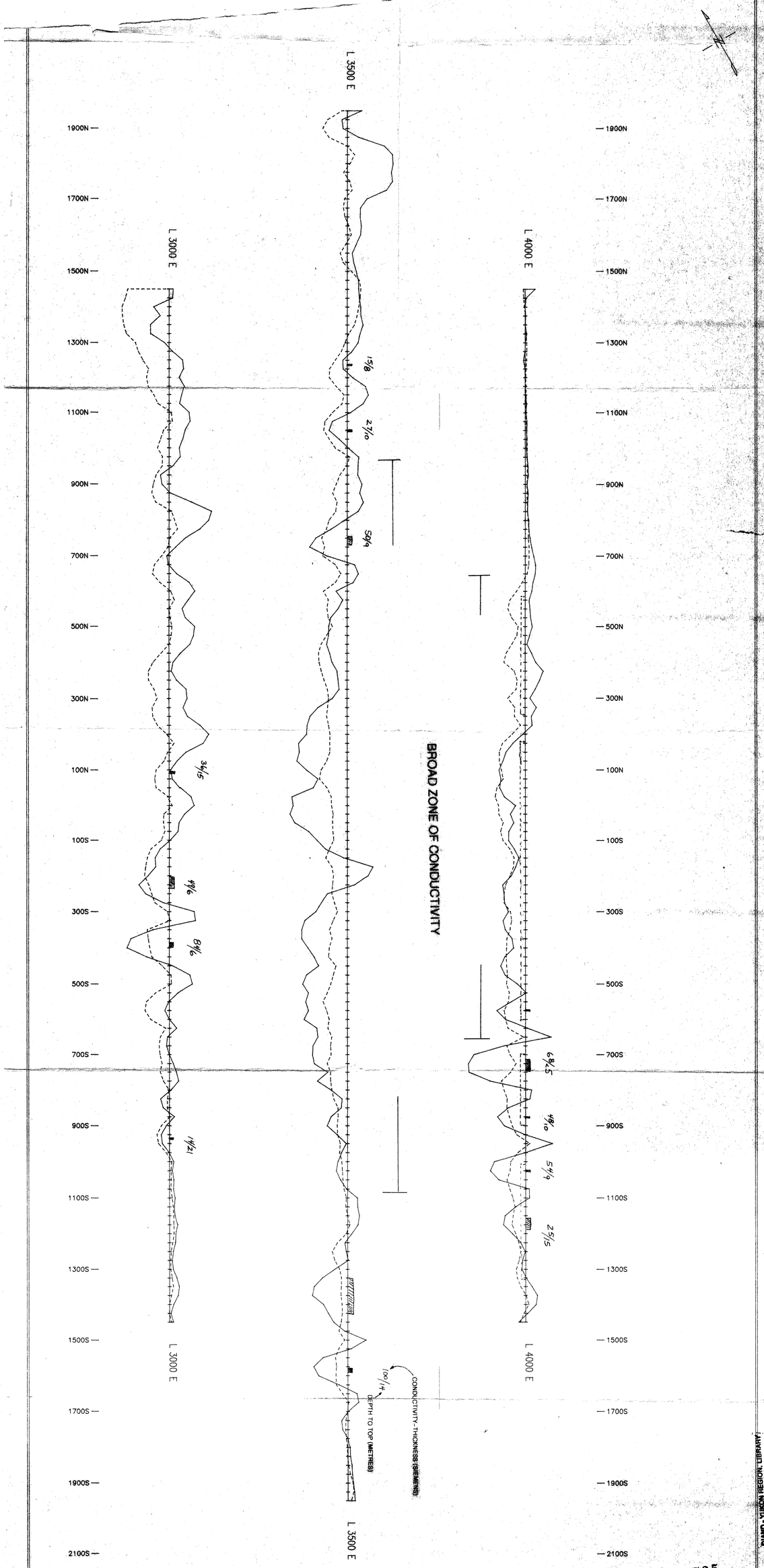
i. THAT I graduated with a B.Sc., Honours in Geophysics from the University of Manitoba in 1976.

ii. THAT I have been actively practising Geophysics from 1976 to 1997, and am presently an employee of Cominco Ltd.

David C. Hall

David C. Hall, B.Sc.
Geophysicist

August, 1997



VERTICAL SCALE
1cm = 20%

OUT OF PHASE ---------
IN PHASE———————

093735

Scale 1:5000
100 0 100 200 300
(metres)

DWG (1)

COMINCO EXPLORATION

Drawn by:		Traced by:	
Revised by:	Date:	Revised by:	Date:

PELLY MOUNTAIN PROPERTIES
ARM JOINT VENTURE
HORIZONTAL LOOP EM SURVEY: 440 HZ
(100 metre Coil Separation)

Scale: as shown | Date: JUNE 1996 | Plate: 96-8

NTS 1105

DIAND - YUKON REGION, LIBRARY

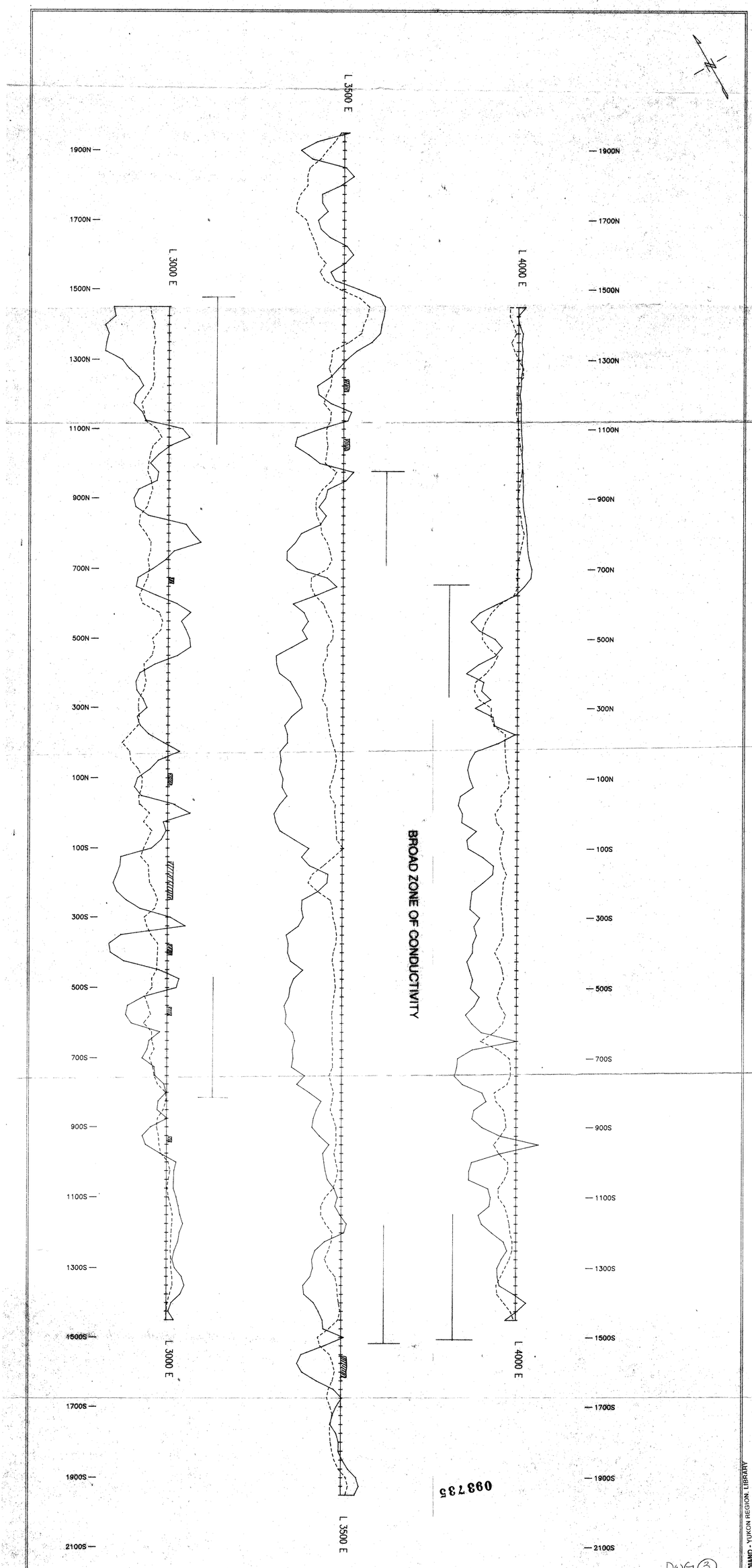
VERTICAL SCALE
1cm = 20%

OUT OF PHASE ---------
IN PHASE ———————

COMINCO EXPLORATION

Cominco NTS 105G

Drawn by:	Traced by:	PELLY MOUNTAIN PROPERTIES ARM JOINT VENTURE HORIZONTAL LOOP EM SURVEY:1760 HZ (100 metre Coil Separation)
Revised by: Date:	Revised by: Date:	
Scale: as shown	Date: JUNE 1996	Plate: 96-7



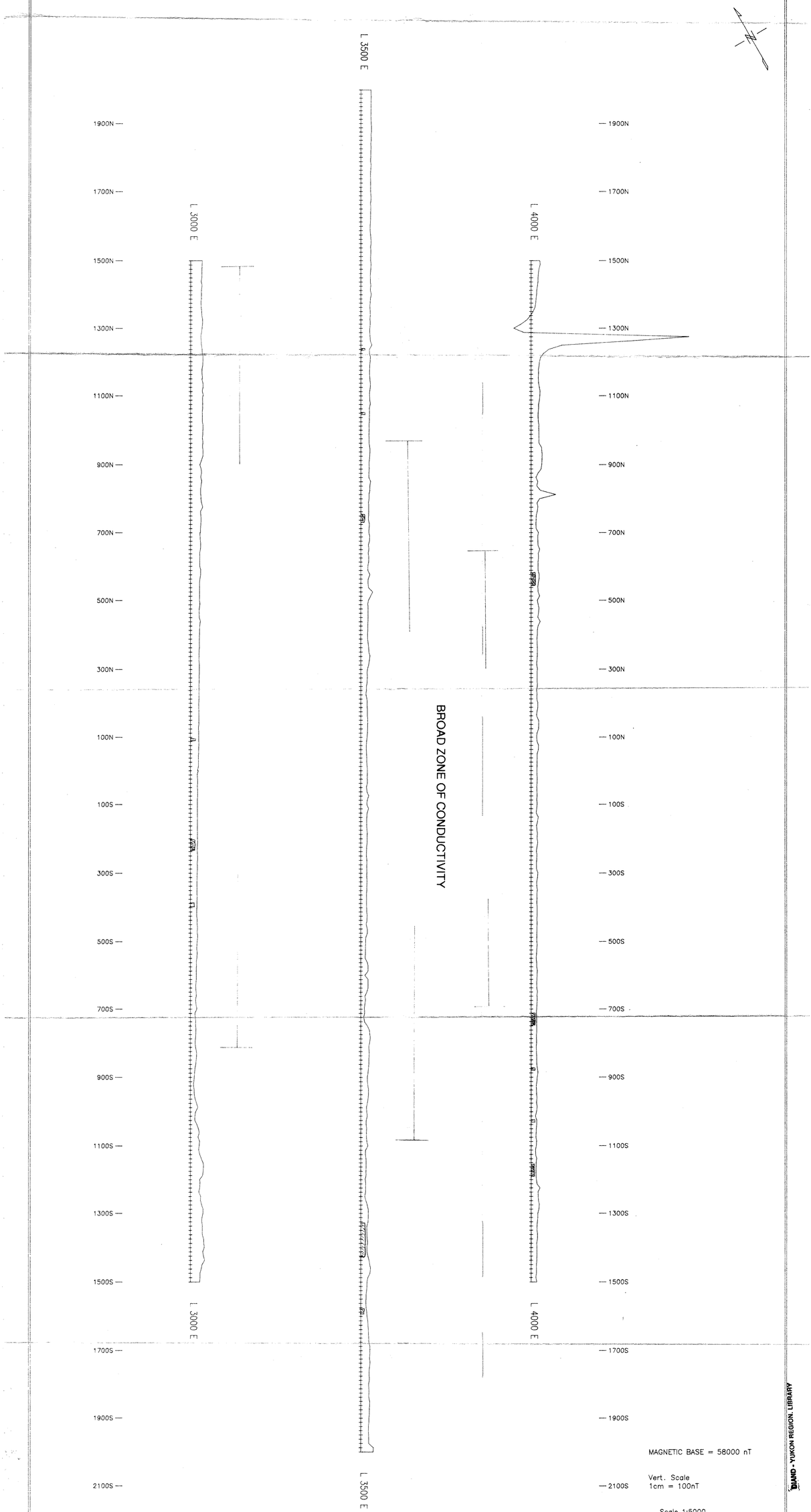
VERTICAL SCALE
1cm = 20%

OUT OF PHASE ---------
IN PHASE ———————

Scale 1:5000
100 0 100 200 300
(metres)

DWG (3)

COMINCO EXPLORATION				Cominco	NTS 105G
Drawn by:		Traced by:		PELLY MOUNTAIN PROPERTIES ARM JOINT VENTURE HORIZONTAL LOOP EM SURVEY:3520 HZ (100 metre Coil Separation)	
Revised by:	Date:	Revised by:	Date:		
Scale: as shown		Date: JUNE 1998		Plate: 98-6	



DISCRETE CONDUCTORS

MAGNETIC BASE = 58000 nT

Vert. Scale
1cm = 100nT

Scale 1:5000
100 0 100 200 300
(metres)

093735 Dwg (4)

COMINCO EXPLORATION

Drawn by:	Traced by:
Revised by: Date:	Revised by: Date:

PELLY MTN PROPERTY
ARM JOINT VENTURE
TOTAL FIELD MAGNETICS SURVEY

Scale: as shown | Date: JUN. 1996 | Plate: 96-9