NEWMONT EXPLORATION OF CANADA LIMITED

GEOPHYSICAL SURVEYS

ON THE CYR CLAIM GROUP - NTS.105 G/6

61° 22'N/131° 18'W

AUGUST 14-19, 1979

by

H. Limion - Geophysicist

September 25th, 1979

090500

Pelly Project,

Yukon Territory

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ 4,800.00

J A Morin

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

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Introduction

The CYR claim group lies 92 kilometres southeast of Ross River, Yukon, in the Pelly Mountains. The location is shown in Figures 1a and 1b. Access is by helicopter.

A joint venture of Newmont Exploration of Canada Limited and Asamera Oil Corporation Limited discovered lead-zinc mineralization and staked the CYR claims in 1977. Geological, geochemical and geophysical work followed by diamond drilling have been done by the owners since that time. No record of any previous exploration work is known. A map showing the geology with respect to topography and location of the grid lines comprises Figure 2.

Published geological maps of this area are (a) G.S.C. Preliminary Map 8-1960, scale 1:253,440, and (b) G.S.C. Open File 486, scale 1:250,000, 1977.

Previous geophysical work had picked up graphitic horizons, but had failed to define the sulphide bearing horizon. It was decided to attempt a controlled horizontal loop survey with the MAXMIN instrument to see if different results could be obtained.

The claims covered by the geophysical survey are:

Name	Grant Number	Holder of Record
CYR 3, 4, 36	YA 25484 YA 25485 YA 35461	Newmont Exploration of Canada Limited

Grid Control Survey

Measurements were made to obtain the vertical and horizontal separations between stations. These were made with the use of a surveyor's chain & a pocket clinometer, which showed the straight line distance and the slope between measuring points. Pickets had been established at a nominal 40m spacing on the survey lines.

Electromagnetic Survey

The electromagnetic survey was performed with a Maxmin II F instrument, described in Appendix III. Readings were taken on lines 0, 0+50W, 1W and 2W. Electromagnetic frequencies of 222, 444, 888, 1777 and 3555 Hz were used.

The readings were taken at 40m intervals. Receiver-transmitter separations of approximately 40m and 120m were utilized.

The receiver and transmitter were kept coplanar by using the results of the topographic survey to calculate the slope between coil locations, and then tilting the plane of the coils to lie along that slope. The total distance between coils was calculated. In-Phase readings were corrected to compensate for any departures from the nominal coil separation. For example, if the expected in-phase readings at a nominal coil separation of N is 100%, then the correction to the in-phase reading at a coil separation of R will be:

$$C = \left[1 - \left(\frac{N}{R}\right)^3 \right] \times 100\%$$

where C is the correction to be applied in %

N is the nominal coil separation

R is the actual coil separation

Geophysical coverage is as listed:

	40 m Coil Separation			120 m Coil Separation		
Line	From	To	Total	From	To	Total
00	220S	540N	760M	180S	500N	680M
0+50W	220S	540N	760N	180S	500N	680M
1W	180S	540N	720M	140S	500N	640M
2W	100S	540N	640M	60S	500N	560M

Geophysical results can be seen on the profiles, Figures 3-10.

Discussion of Results

The Maxmin survey delineated two zones which are conductively anomalous. These are marked on each profile, and on the anomaly map (Figure 11). The two zones are coincident with a geologic unit that has been mapped as carbonaceous slate.

It is felt that the mapped sulphide horizon is not conductive enough on a macroscopic scale to provide a target for the horizontal loop method.

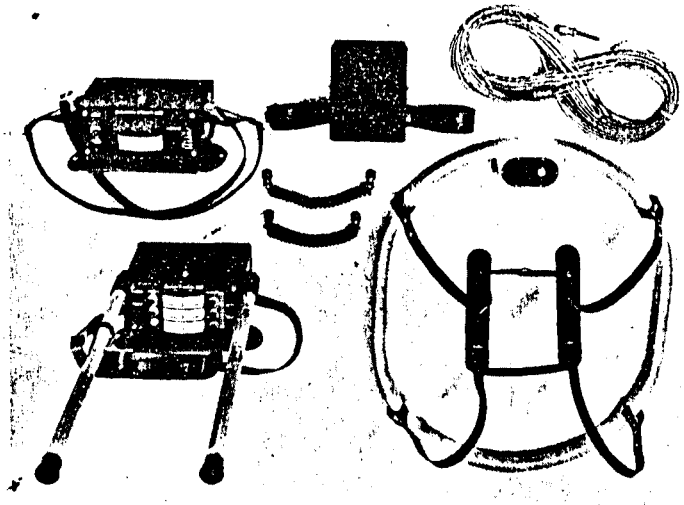
REGISTERED PROFESSIONAL ENGINEER H. LIMION PROVINCE OF ONTARIO

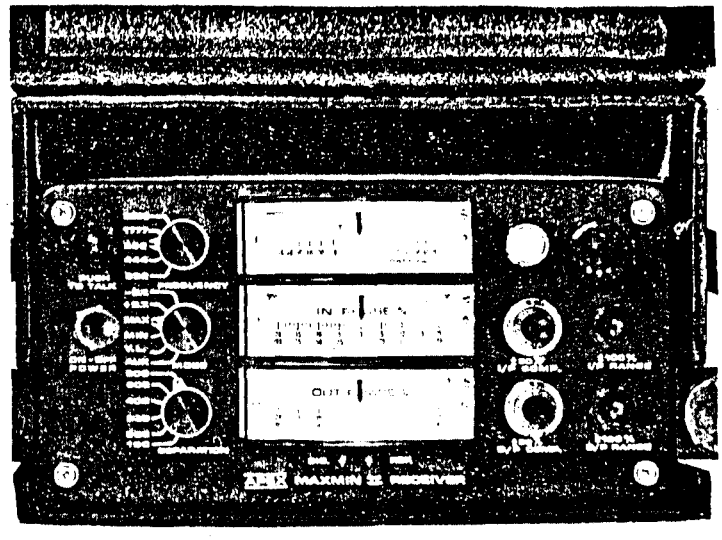
H. Limion
Geophysicist

HL/gdn
September 25th, 1979

APEX MAXMIN II PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.





SPECIFICATIONS :

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:
- MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer. cable.
- MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
- V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250 m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF). Coil separations in V.L. mode not restricted to fixed values.

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90 mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90 mm edgewise meters in V.L. mode.

Scale Ranges:
- In-Phase: ±20%, ±100% by push-button switch.
- Quadrature: ±20%, ±100% by push-button switch.
- Tilt: ±75% slope.
- Null (V.L.): Sensitivity adjustable by separation switch.

Readability: In-Phase and Quadrature: 0.5 %. Tilt: 1%

Repeatability: ± 0.5% to ±1% normally, depending on conditions, frequencies and coil separation used.

Transmitter Output:
- 222 Hz : 175 Atm^2
- 444 Hz : 160 Atm^2
- 888 Hz : 100 Atm^2
- 1777 Hz : 60 Atm^2
- 3555 Hz : 30 Atm^2

Receiver Batteries: 9V trans radio type batteries (4). Life: approx. 35 hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

Transmitter Batteries: 12V 7.5Ah Gel-Cell rechargeable batteries (2 × 6V in series).

Reference Cable: Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

Voice Link: Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Indicator Lights: Built-in signal and reference warning lights to indicate erroneous readings.

Temperature Range: -40°C to +60°C (-40°F to +140°F).

Receiver Weight: 6kg (13 lbs.)

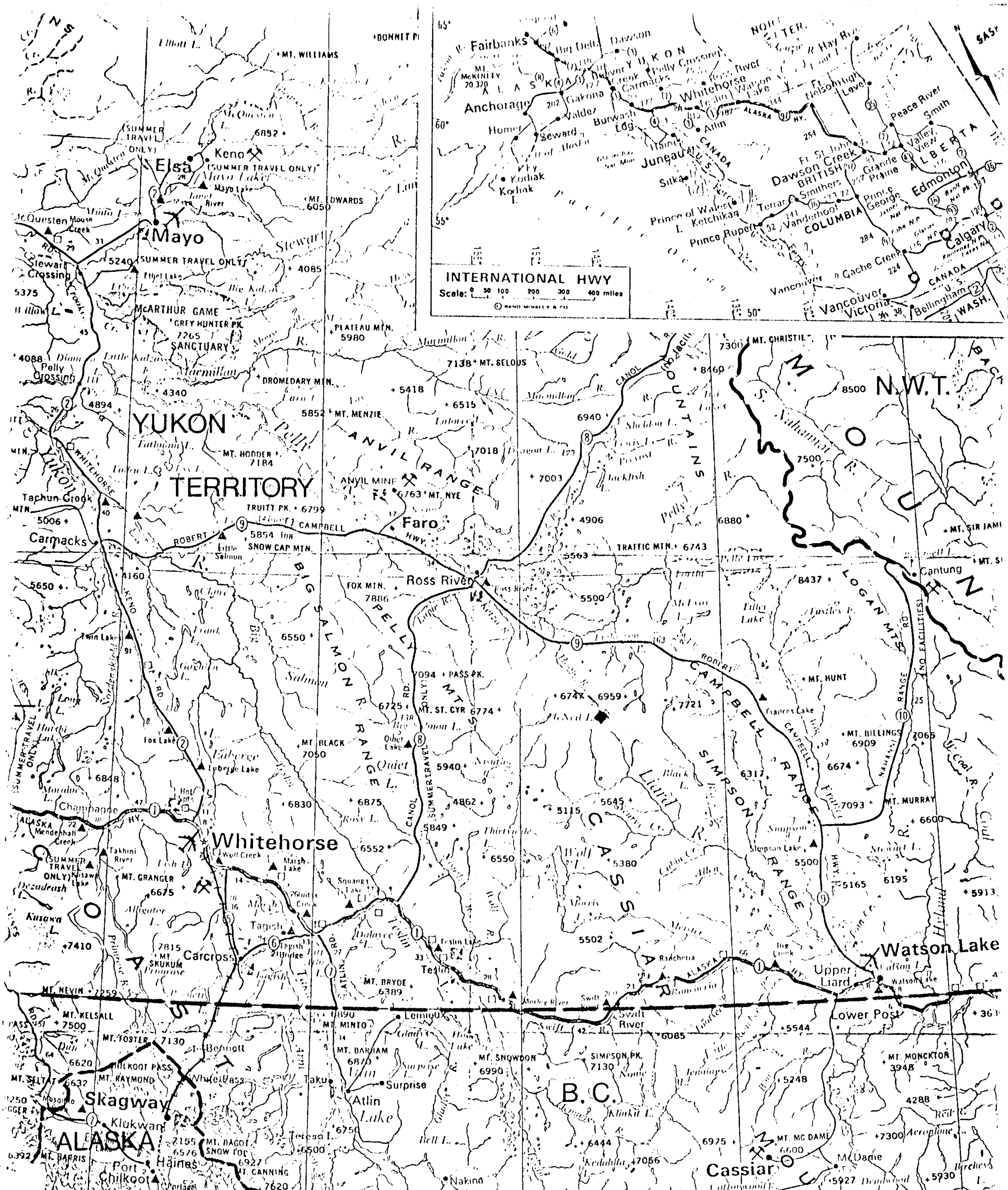
Transmitter Weight: 13kg (29 lbs.)

Shipping Weight: Typically 60kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notification.

APEX PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: 06-966773 NORDVIK TOR



OPERATING MINES ⚒	LOCATION OF CYR PROPERTY ■
FIGURE 1a	0 50 100 150 MILES 0 50 100 150 KILOMETERS

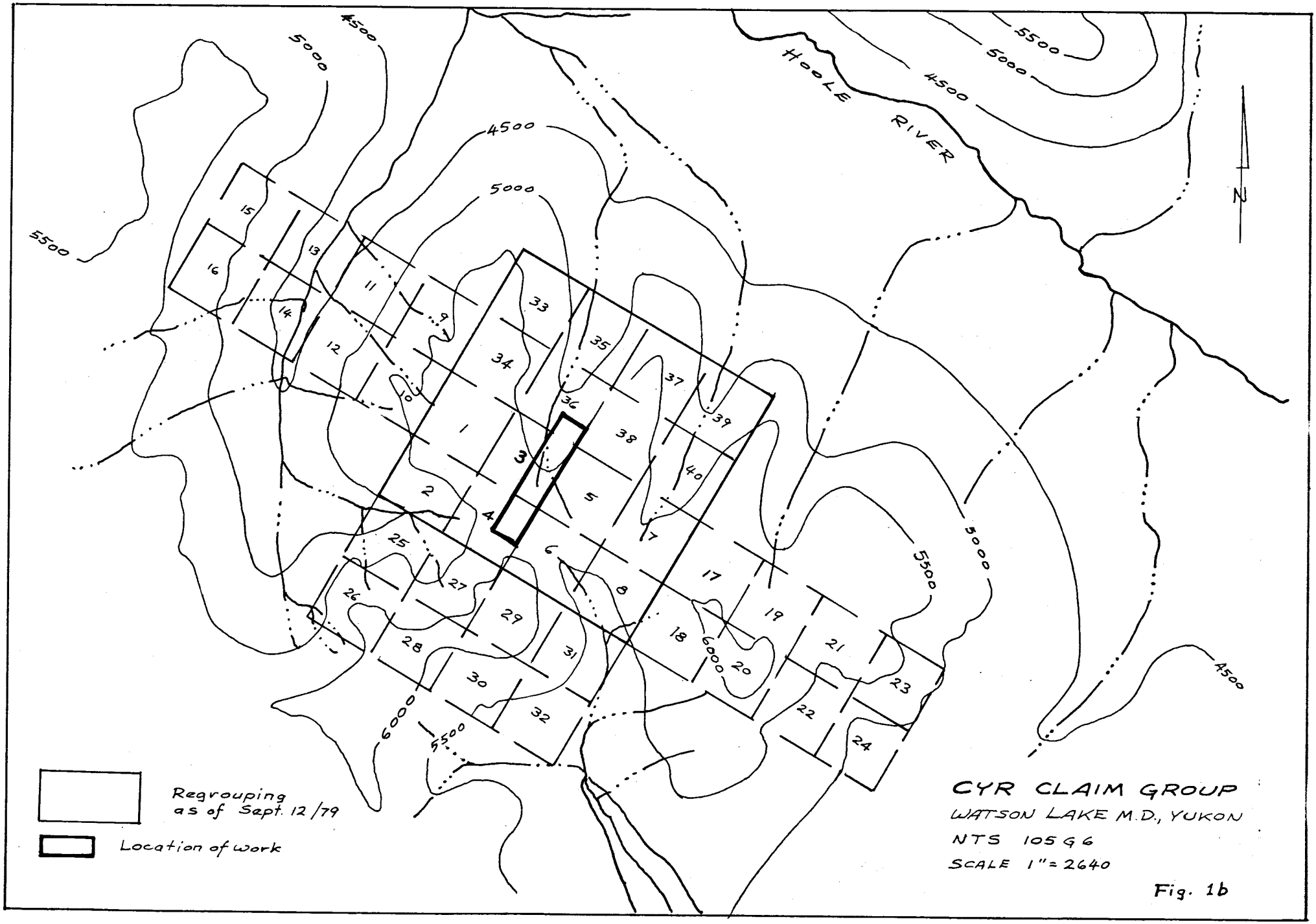
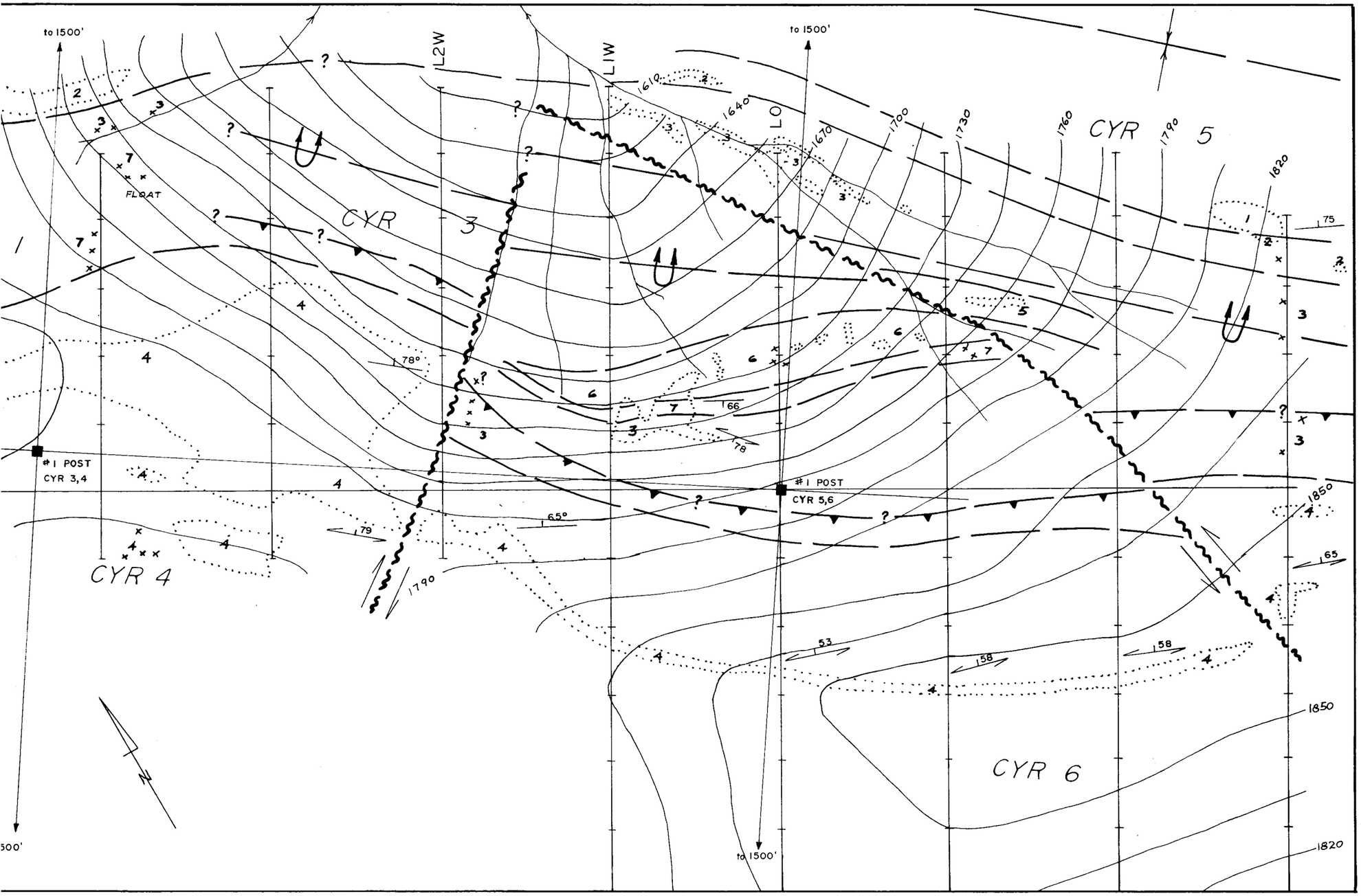

HOOLE RIVER
N
4500
5000
5500
6000
Regrouping as of Sept. 12/79
Location of work
CYR CLAIM GROUP
WATSON LAKE M.D., YUKON
NTS 105 G 6
SCALE 1" = 2640

Fig. 1b



LEGEND

1	SILTSTONE: Grey, thinly-laminated to thin-bedded, calcareous siltstone and interlayered fine-grained sandstone.
2	LIMESTONE: Gray, fossiliferous limestone. Irregular cleavage.
3	SHALE: Black, graphitic and locally sericitic shale. Weakly calcareous near limestone contact. Moderately sheared.
4	PHYLLITE: Brown-weathering calcareous phyllite, minor grey-weathering sericitic phyllite.
5	LIMESTONE: Grey, thin-bedded to massive limestone. Veined with calcite.
6	QUARTZITE: Fine-grained, brown-weathering quartzite. Pyritized and possibly resilicified. Sporadically mineralized with galena and locally with sphalerite.
7	QUARTZITE: Greyish-black, thin to thickly-bedded quartzite. Unmineralized except for minor galena associated with quartz veins. Irregular cleavage.

Outcrop

x Float

NEWMONT EXPLORATION OF CANADA LTD.

GRID, TOPOGRAPHY & GEOLOGY

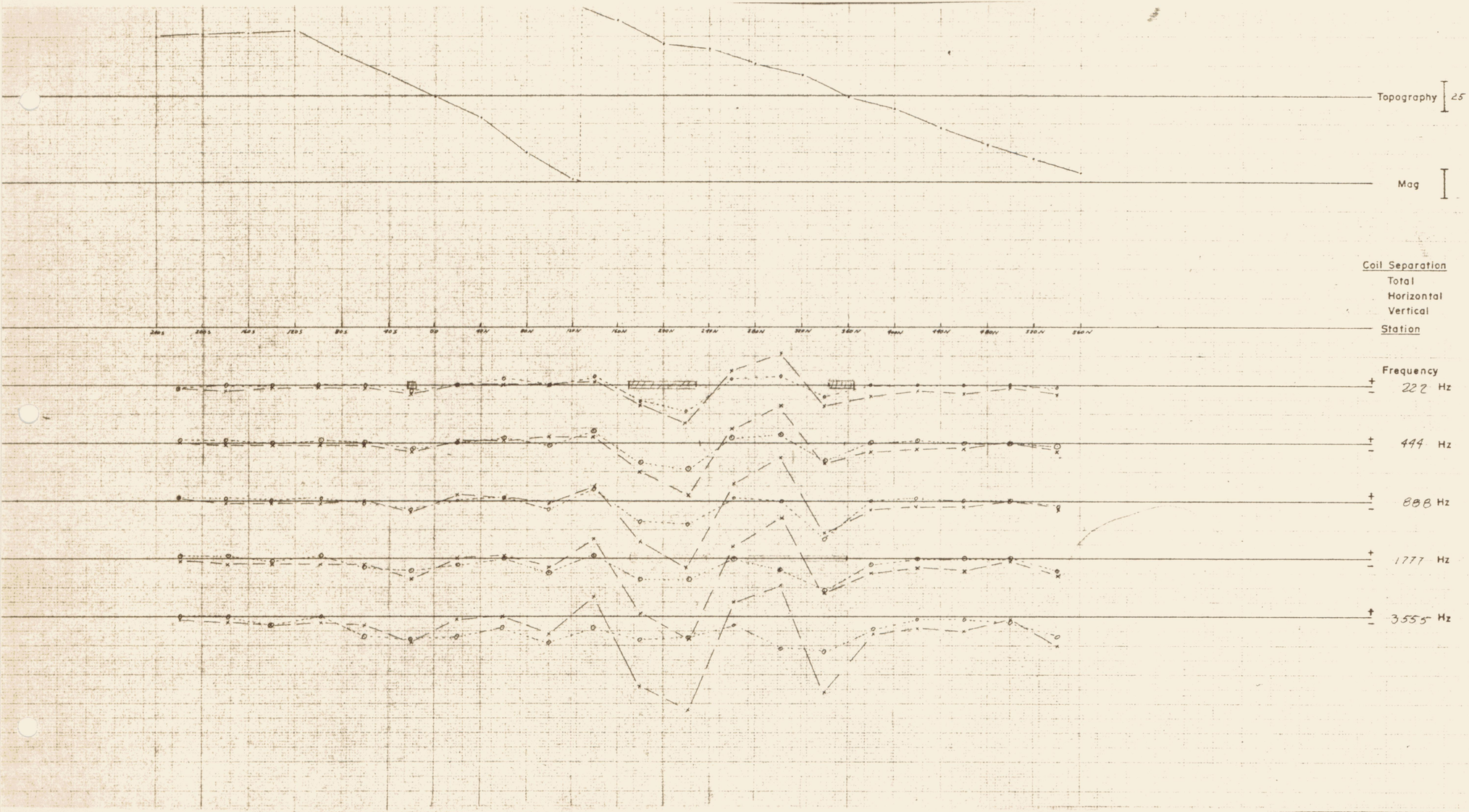
CYR CLAIMS

NTS: 105 G6

0 200' 400' 600'

0 100 m

Fig. 2



Scale: 1:2500

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area
Project CYR
NTS 105 G 6

Line 00
File

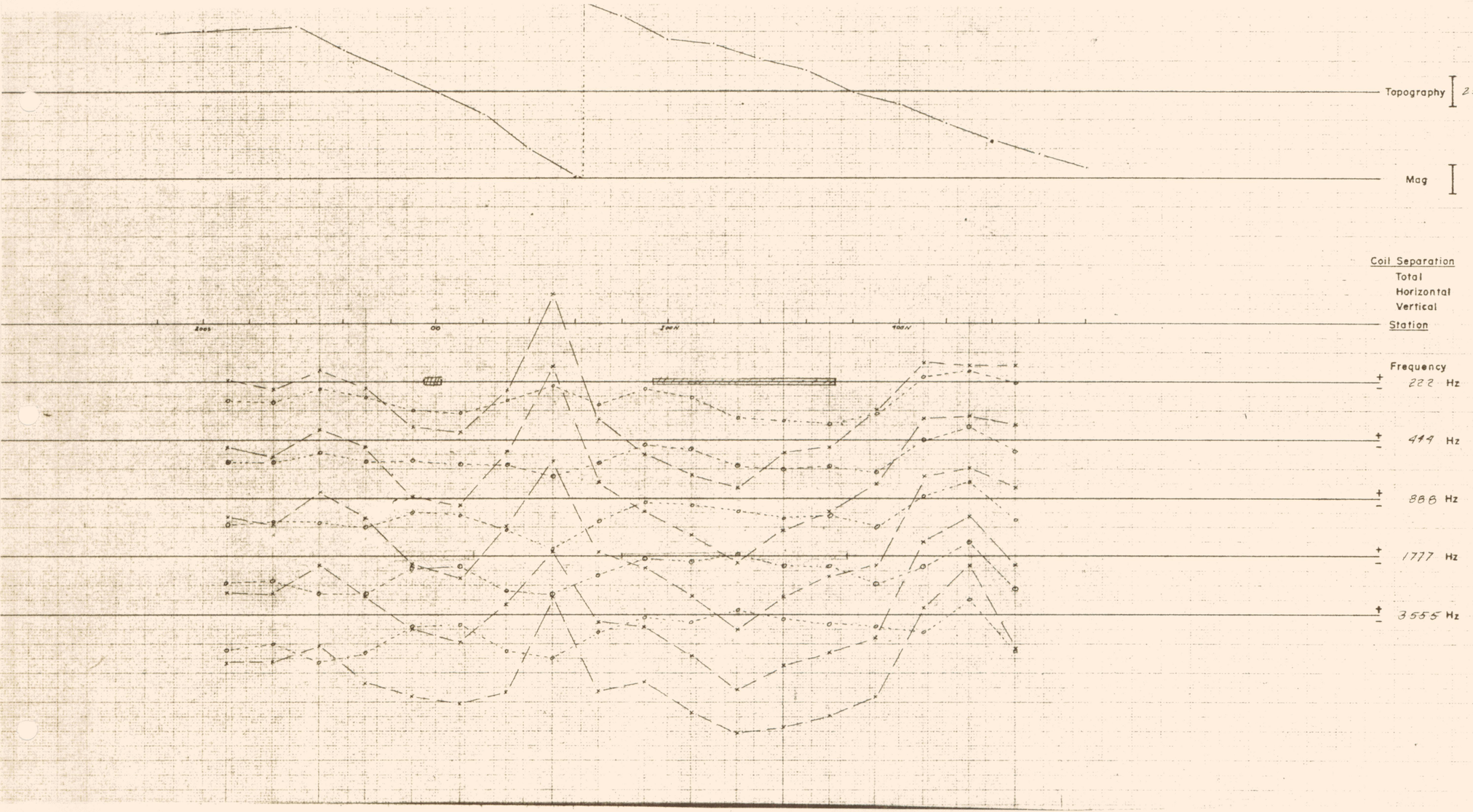
Unit Serial No MM II/F 1060
Coil Spacing 40 m nominal

x——x In-Phase Signal
o-----o Quadrature Signal

Plot Scale
1 cm = 10 %

Surveyed by: G Bibby, M Holmes, C Lalonde, H Limon
Drafted by: H Limon
Date: Aug 79

Figure 3



Scale: 1:2500

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area
Project CYR
N.T.S. 105 G 6
Line 00
File

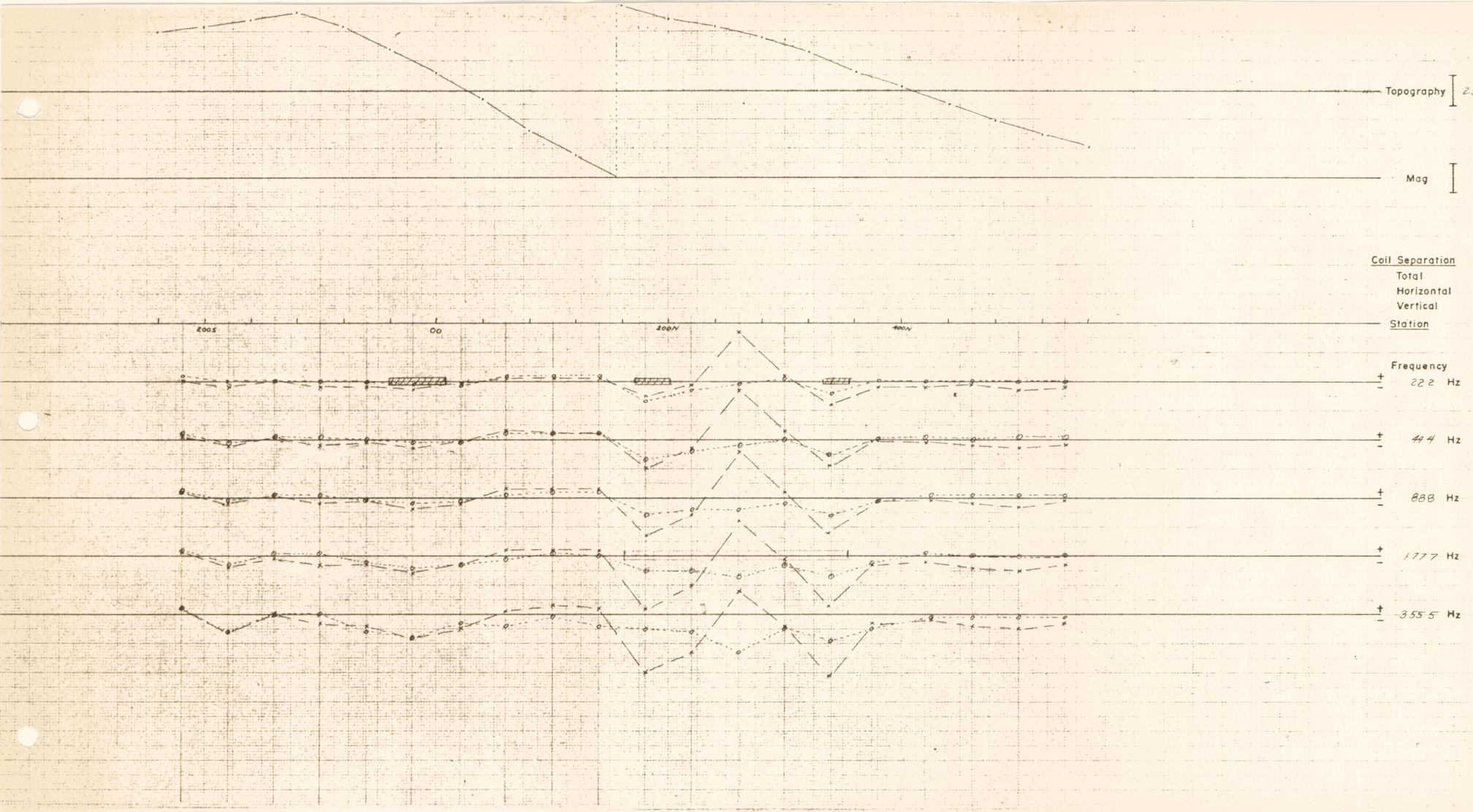
Unit Serial No HM II/F 1060
Coil Spacing 120 m nominal

x——x In-Phase Signal
o- - - -o Quadrature Signal

Plot Scale
1 cm = 20 %

Surveyed by: G. Bibby, M. Holmes, C. Lalonde, H. Linton
Drafted by: H. Linton
Date: Aug 79

Figure 4



Scale: 1:2500

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area
Project CYR
N.T.S. 105 G 6

Line 0+50W
File

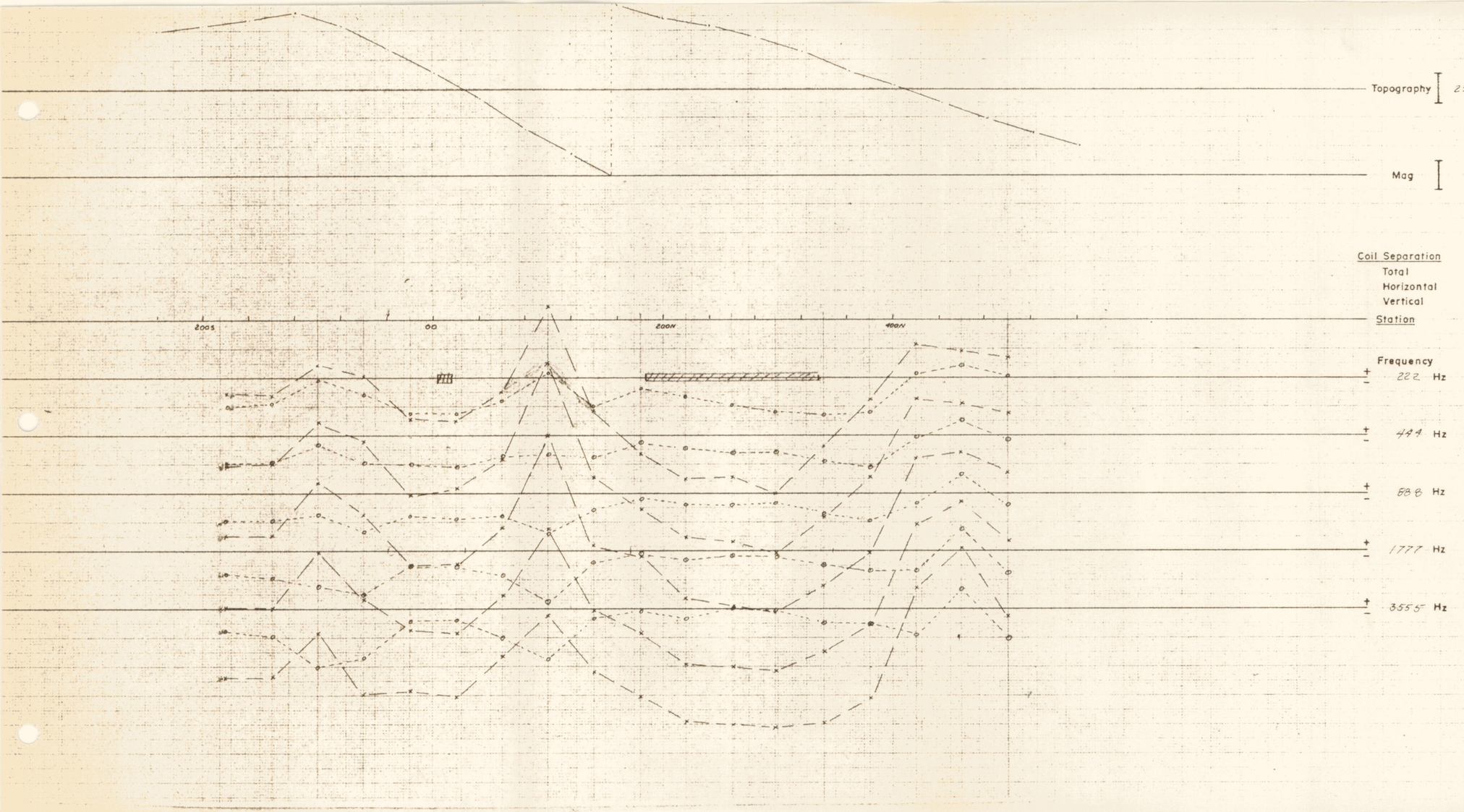
Unit Serial No MM II/F 1060
Coil Spacing 40m (Nominal)

x—— ——x In-Phase Signal
o- - - - -o Quadrature Signal

Plot Scale
1 cm = 10 %

Surveyed by: G. Bibby, M. Holmes, C. Labonté, H. Limon
Drafted by: H. Limon
Date: Aug '79

Figure 5



Scale: 1:2500

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area
Project CYR
N.T.S. 105 G 6

Line 0+50W
File

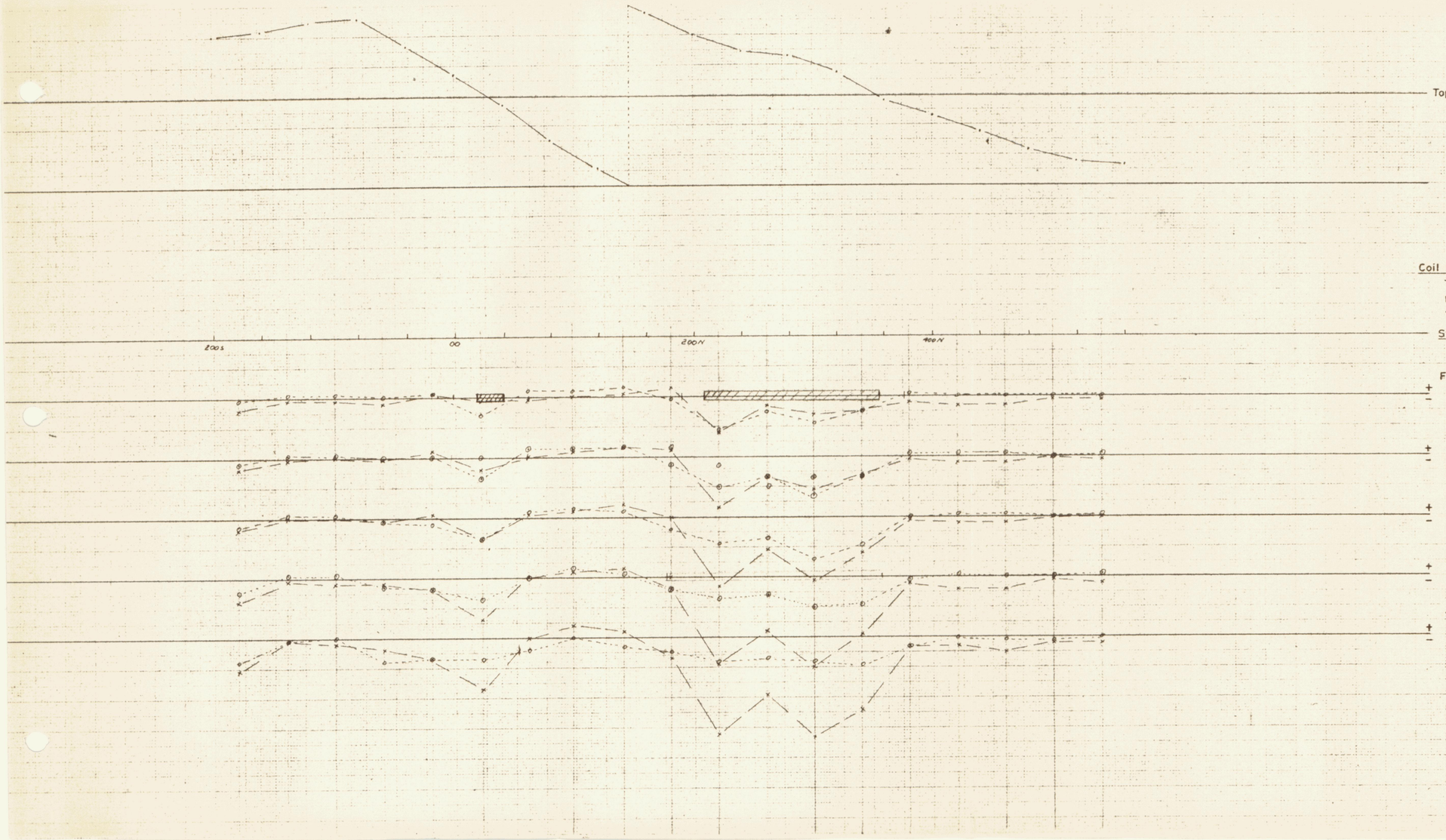
Unit Serial No MMII/F 1060
Coil Spacing 100 m nominal

x——x In-Phase Signal
o-----o Quadrature Signal

Plot Scale
1 cm = 20 %

Surveyed by: G. Bibby, M. Holmes, C. Lalonde, H. Limion
Drafted by: H. Limion
Date: Aug 79

Figure 6



Scale: 1:2500

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area
Project CYR
N.T.S. 105 G.6

Line 1W
File

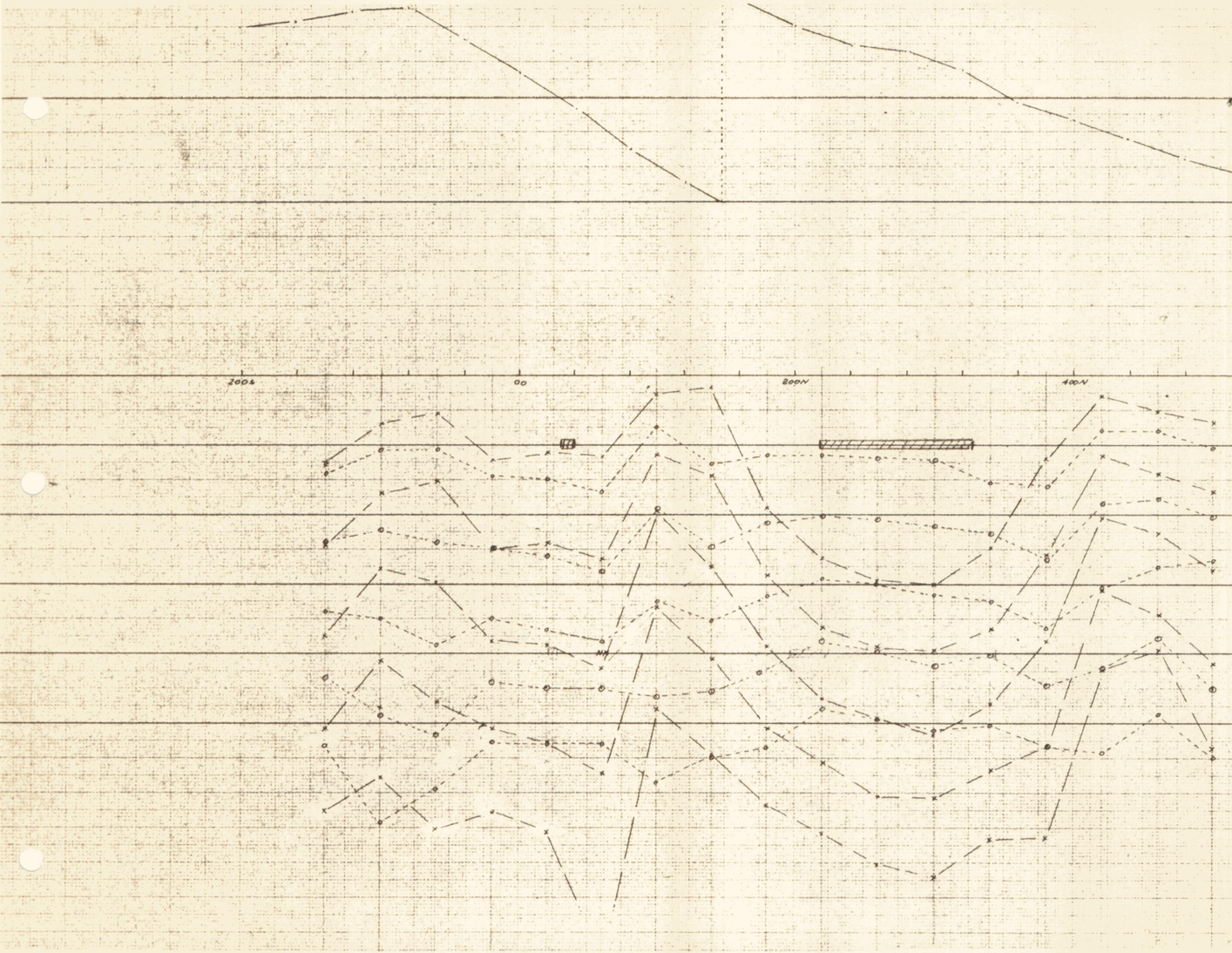
Unit Serial No MM III/IE 1060
Coil Spacing 40 m Nominal

x——x In-Phase Signal
o-----o Quadrature Signal

Plot Scale
1 cm : 10 %

Surveyed by: G. Bibby, H. Holmes, C. Lahaudy, H. Limion
Drafted by: H. Limion
Date: Aug '79

Figure 7



Topography | 25 metres

Mag | gammas

Coil Separation
Total
Horizontal
Vertical

Station

Frequency

± 222 Hz

± 444 Hz

± 888 Hz

± 1777 Hz

± 3555 Hz

Scale: 1:2500

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area — Line 1 W
Project CYR
N.T.S. 105 G 6 — File

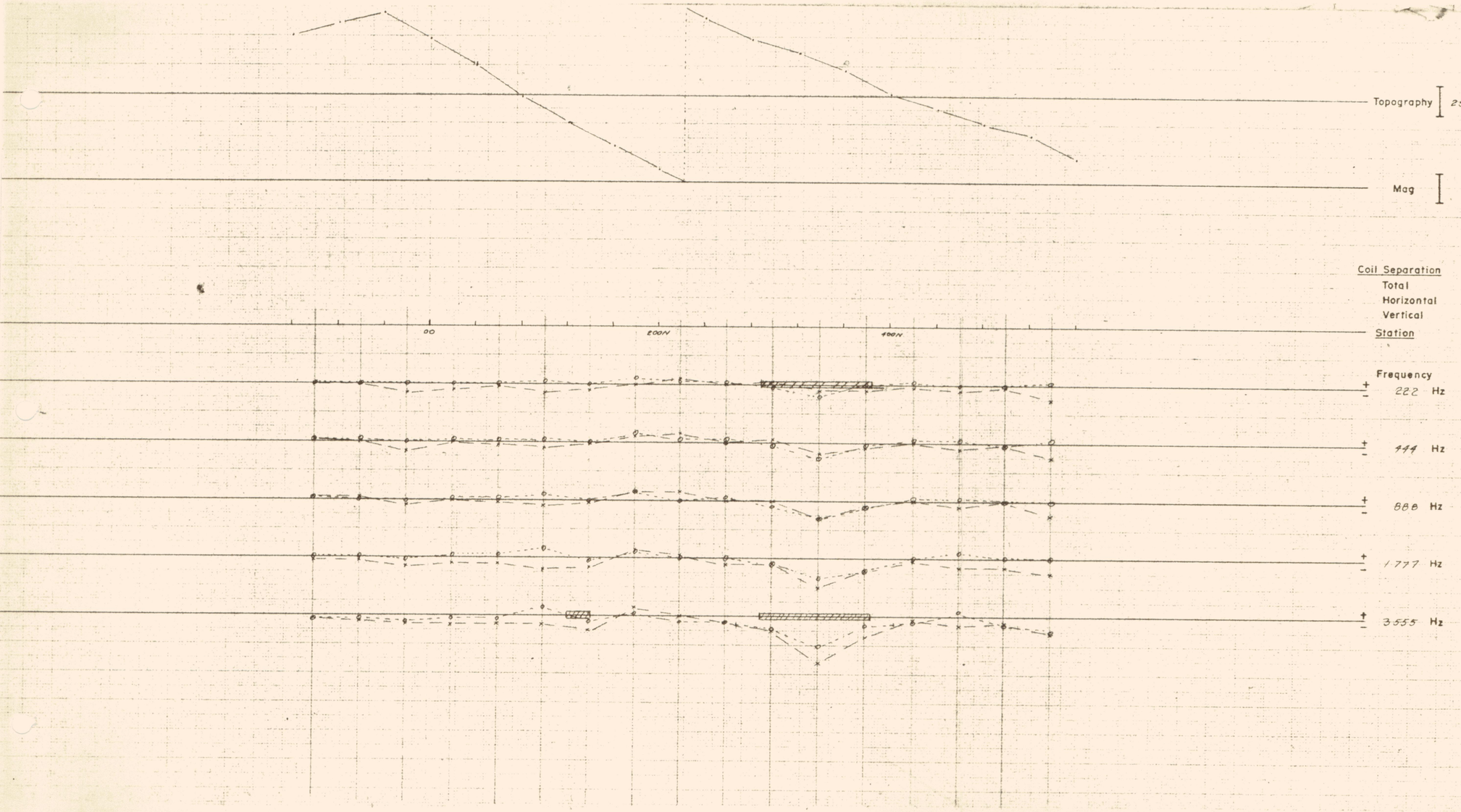
Unit Serial No. MMII/F — 1050
Coil Spacing 120 m nominal

x——x In-Phase Signal
o-----o Quadrature Signal

Plot Scale
1 cm : 20 %

Surveyed by: G. Eddy, M. Holmes, C. Lalonde, H. Limon
Drafted by: H. Limon
Date: Aug '79

Figure 8



Scale: 1:2500.

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area
Project CYR
N.T.S. 105 G 6

Line 2W
File

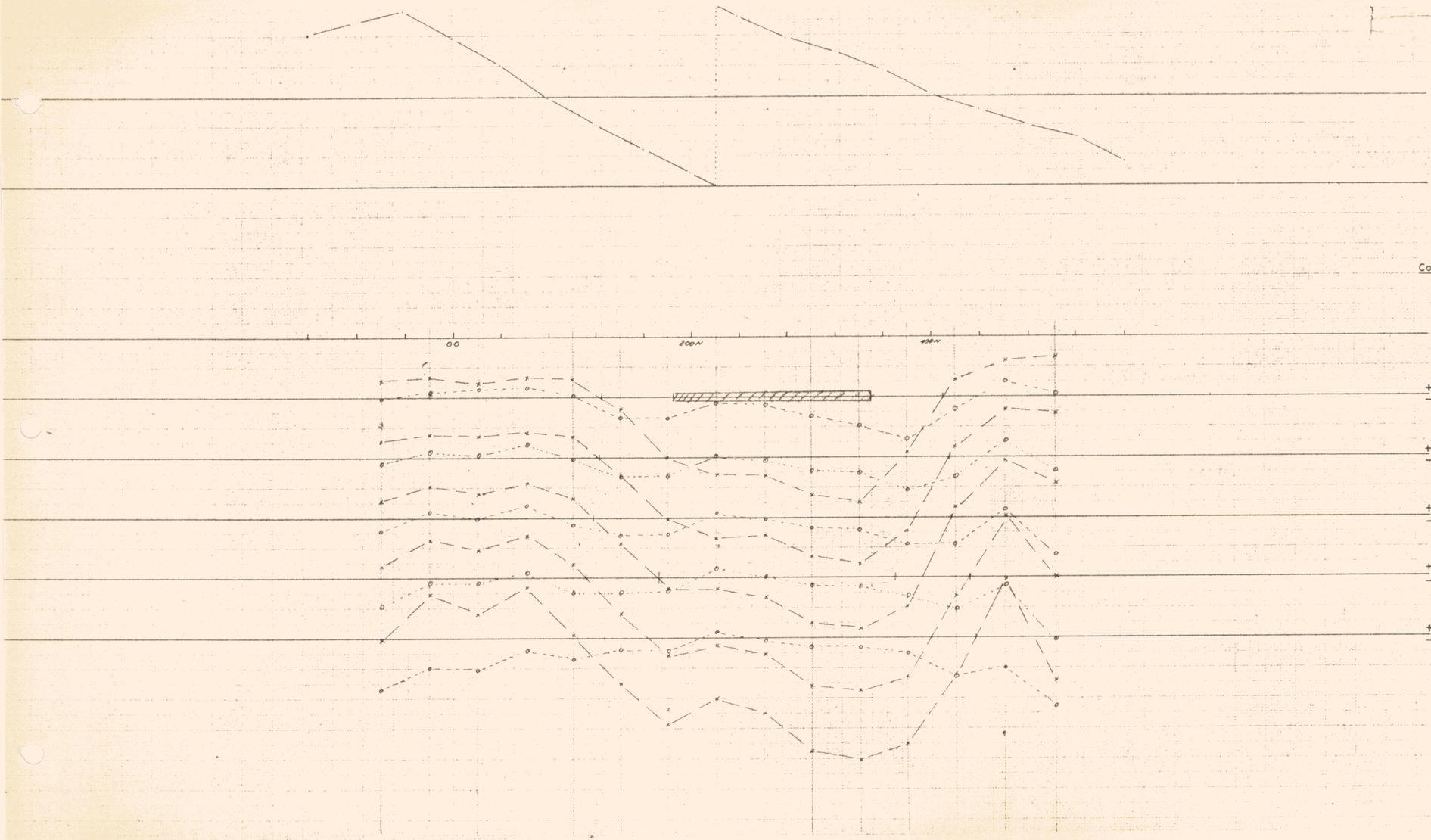
Unit Serial No MM II IF 1060
Coil Spacing 40 m Nominal

x—— ——x In-Phase Signal
o- - - - -o Quadrature Signal

Plot Scale
1 cm : 10 %

Surveyed by: G. Bibby, H. Holmes, C. Lalonde, H. Linton
Drafted by: H. Linton
Date: Aug. '79.

Figure 3



Scale: 1:2500

NEWMONT EXPLORATION OF CANADA LTD

MAXMIN SURVEY

Area
Project CYR
N.T.S. 105 G 6
Line 2 W
File

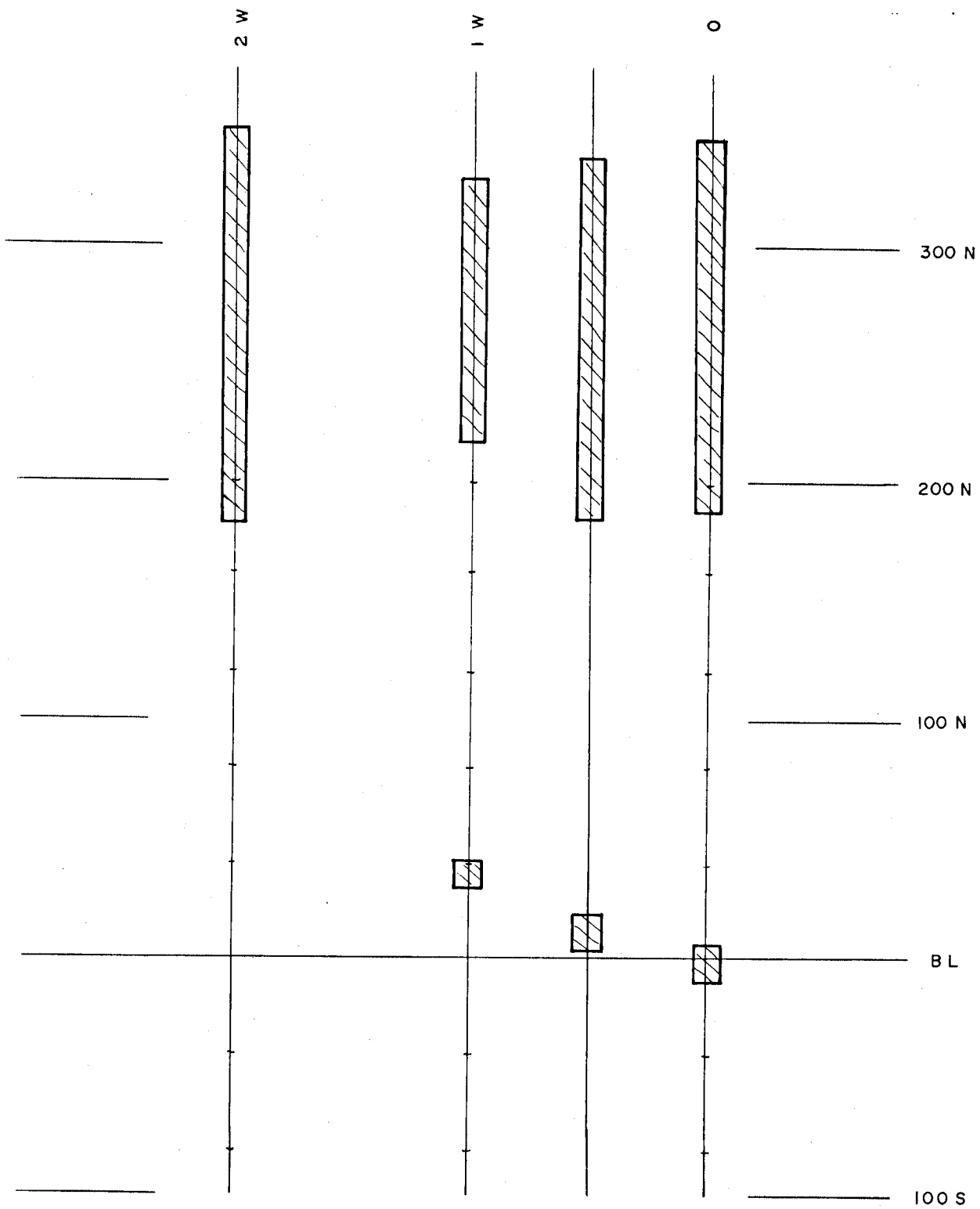
Unit Serial No. MM II/F 1060
Coil Spacing 120 m Nominal

x——x In-Phase Signal
o-----o Quadrature Signal

Plot Scale
1 cm : 20 %

Surveyed by: G. Bibby, M. Holmes, C. Lalonde, H. Limion
Drafted by: H. Limion
Date: Aug '79

Figure 10



Maxmin anomaly
at 120m coil spacing

GEOPHYSICAL ANOMALIES
CYR CLAIMS

Fig. 11