

LOG NO: NOV 20 1991	RD.
ACTION:	
FILE NO:	

COMINCO LTD  
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EXPLORATION  
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WESTERN CANADA  
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NTS: 94C2,3

GEOPHYSICAL SURVEY ON THE  
PAR PROPERTY, 1991.

\*\*\* ASSESSMENT REPORT \*\*\*

Latitude: 56°07'N

Longitude: 125°00'W

Work Performed by: Jules J. Lajoie

Claim Owner and Operator: Cominco Ltd.

**RECEIVED**  
NOV 13 1991  
Gold Commissioner's Office  
VANCOUVER, B.C.

NOVEMBER 1991

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

JULES J. LAJOIE

~~2022~~  
**21,809**

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## COMINCO LTD

EXPLORATION

WESTERN CANADA

NTS: 94 C/2,3

GEOPHYSICAL SURVEY  
ON THE PAR PROPERTY, 1991.INTRODUCTION

Magnetic, VLF, Horizontal Loop EM, and Induced Polarization geophysical surveys were performed at the Par property during the late summer of 1991.

The property is located 35 km north of Germansen Landing, 45 km west of Williston Lake, and more particularly south and east of the junction of Wasi Creek and the Osilinka River (Plate 393-91-1). Access is by logging road mainline from Mackenzie or Fort St James. Accommodation was available at the Osilinka logging camp, about one hour's drive from the property. At a local scale, the geophysics grid is shown in Plate 393-91-12, with the claim boundaries of the area.

The geology consists of Silurian - Devonian limestones and dolomites of the Sandpile and McDame group conformably overlain by Upper Devonian shales of the Earn group.

FIELD WORK

A field crew consisting of J. Lajoie, geophysicist, D. Stenstrom, data technician, both of Cominco Ltd., and temporary geophysical assistants D. Nitsche and F. Dyment, left Vancouver on August 27, arriving at the Osilinka logging camp on the afternoon of the 28th. On August 29, D. Stenstrom had to be medivaced out due to multiple wasp stings. He was replaced by assistant Ann Quarterman. From Sept. 2 to 6, the crew was supplemented by two extra assistants under the employ of R. Rierson, a local contractor.

From Aug. 29 to Sept. 6, the following work was completed:

a) 5.5 km of linecutting and chaining: slope chainage was used to facilitate the geophysical work. Chainage was started at baseline 9600E.

b) 4.5 km of magnetic data and 2.4 km of VLF data: an EDA Omni Plus magnetometer-VLF system was used with an EDA Omni 4 magnetic base station recorder located at 9440E, 10965N on the grid. All magnetic data were drift corrected.

c) 5 km of horizontal loop EM (HLEM): An Apex Parametrics Max-Min 1 horizontal loop EM system was used. The coil separation was 100 meters and three frequencies were used: 440 Hz, 3550 Hz, and 14,080 Hz. The previously acquired chainage data were used to calculate distance corrections and coil tilts for each station in order to ensure the transmitter and receiver were exactly 100 meters apart and coplanar.

d) 3.75 km of induced polarization (IP): a Huntex Mk 4 IP receiver with solid state memory recorder was used in conjunction with a Huntex 2.5 km transmitter. The pole-dipole array was used with a spacing of 50 meters and 3 separations were measured. The current electrode was to the west. Cycle time was 8 seconds (2 ON; 2 OFF). Delay was 120 msec. and total integration time was 900 msec.

#### INTERPRETATION

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Plates 393-91-2 to 4 show the HLEM data at the three frequencies, 440 Hz, 3520 Hz, and 14080 Hz, respectively. The 3520 Hz data in Plate 393-91-3 were used for presenting the interpretation. Six conductive zones (A to F) are identified. Conductors C and D are very weak horizons. For the remainder, conductance in mhos and depth to top in meters are interpreted using a simple infinite half plane interpretation model. A fault is also interpreted in the NE corner of the grid.

Plate 393-91-5 shows the magnetic data. Two magnetic patterns are identified.

Plate 393-91-6 shows the VLF data acquired on Lines 10,800N and 11,000N. The HLEM interpretation is superimposed onto the data from the Seattle (Jim Creek, Washington) VLF transmitter. Anomalies are identified by a positive field strength and a crossover anomaly in the field tilt. A field tilt anomaly is defined as positive to negative going from west to east. The interpreted anomalies are shown by arrows and most of these lie within the HLEM anomalies.

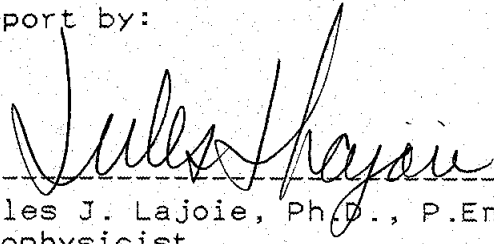
Plates 393-91-07 to 11 show the IP data acquired on the grid. The IP anomalies are identified as well as the location

of the HLEM anomalies, for comparison. There is good correspondence between the two. On line 11,000N, the resistivities were extremely low over conductor F, resulting in primary voltages of less than 1 mvolt, thus making it impossible to acquire chargeability data at many stations.

CONCLUSIONS  
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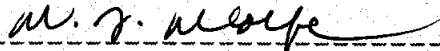
5 km of HLEM, 4.5 km of MAG, 3.75 km of IP, and 2.4 km of VLF were completed in the geophysical survey on the PAR property in 1991, as well as the required linecutting and chainage. Six anomalous conductive zones with IP response were found.

Report by:



-----  
Jules J. Lajoie, Ph.D., P.Eng.,  
Geophysicist,  
Cominco Ltd.

Approved for release by:



-----  
W.J. Wolfe, Ph.D., P.Eng.,  
Manager, Exploration,  
Western Canada  
Cominco Ltd.

Distribution:

Mining Recorder	(2)	—
Western District Files	(1)	
Geophysics Files	(1)	

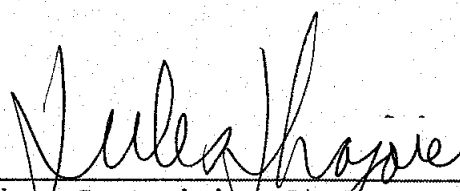
APPENDIX I  
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IN THE MATTER OF THE B.C. MINERAL ACT  
AND THE MATTER OF A GEOPHYSICAL PROGRAMME  
CARRIED OUT ON THE PAR CLAIMS  
LOCATED 35 KM N OF GERMANSEN LANDING, B.C.  
IN THE OMENICA MINING DIVISION OF THE  
PROVINCE OF BRITISH COLUMBIA, MORE PARTICULARLY  
N.T.S. 94C2,3

A F F I D A V I T  
-----

I, Jules J. Lajoie, of the City of West 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 PAR claims;
3. THAT the said expenditures were incurred between Aug 26 and Sept 7, 1991, for the purpose of mineral exploration of the above-noted claims.

  
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Jules J. Lajoie, Ph.D., P.Eng.  
Geophysicist, Cominco Ltd.

**A P P E N D I X II**

**E X H I B I T " A "**

**STATEMENT OF EXPENDITURES**

**PAR PROPERTY - August 16 to September 7, 1991**

**(1) STAFF TIME**

a) J.J. Lajoie - geophysicist		
15 days @ \$515/day	7,725.00	
b) D.R. Nitsche - field assistant		
13 days @ \$120/day	1,560.00	
c) F. Dymont - field assistant		
13 days @ \$109/day	1,417.00	\$ 10,702.00

**(2) OPERATING DAYS CHARGES (covers cost of data compilation  
drafting, report writing)**

7 days @ \$430/day \$ 3,010.00

**(3) EQUIPMENT RENTAL**

MaxMin	225.00	
I.P. Gear	1,000.00	
Mag./VLF	225.00	\$ 1,450.00

**(4) EXPENSE ACCOUNTS**

J.J. Lajoie	343.37	
D.R. Nitsche	674.39	
F. Dymont	47.17	\$ 1,064.93

**(5) MISCELLANEOUS**

Truck Rental Charges	1,980.38	
Telephone Calls	33.55	
Accommodation at Osilinka Logging Camp	2,080.00	4,093.93

**INVOICE TOTAL \$ 20,320.86**

**NOT INCLUDED IN THIS INVOICE:**

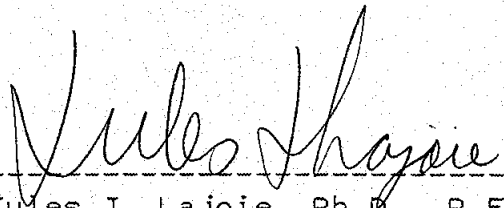
- D. Stenstrom Staff Time & Expense Account
- Medivac Flight for D. Stenstrom

APPENDIX III

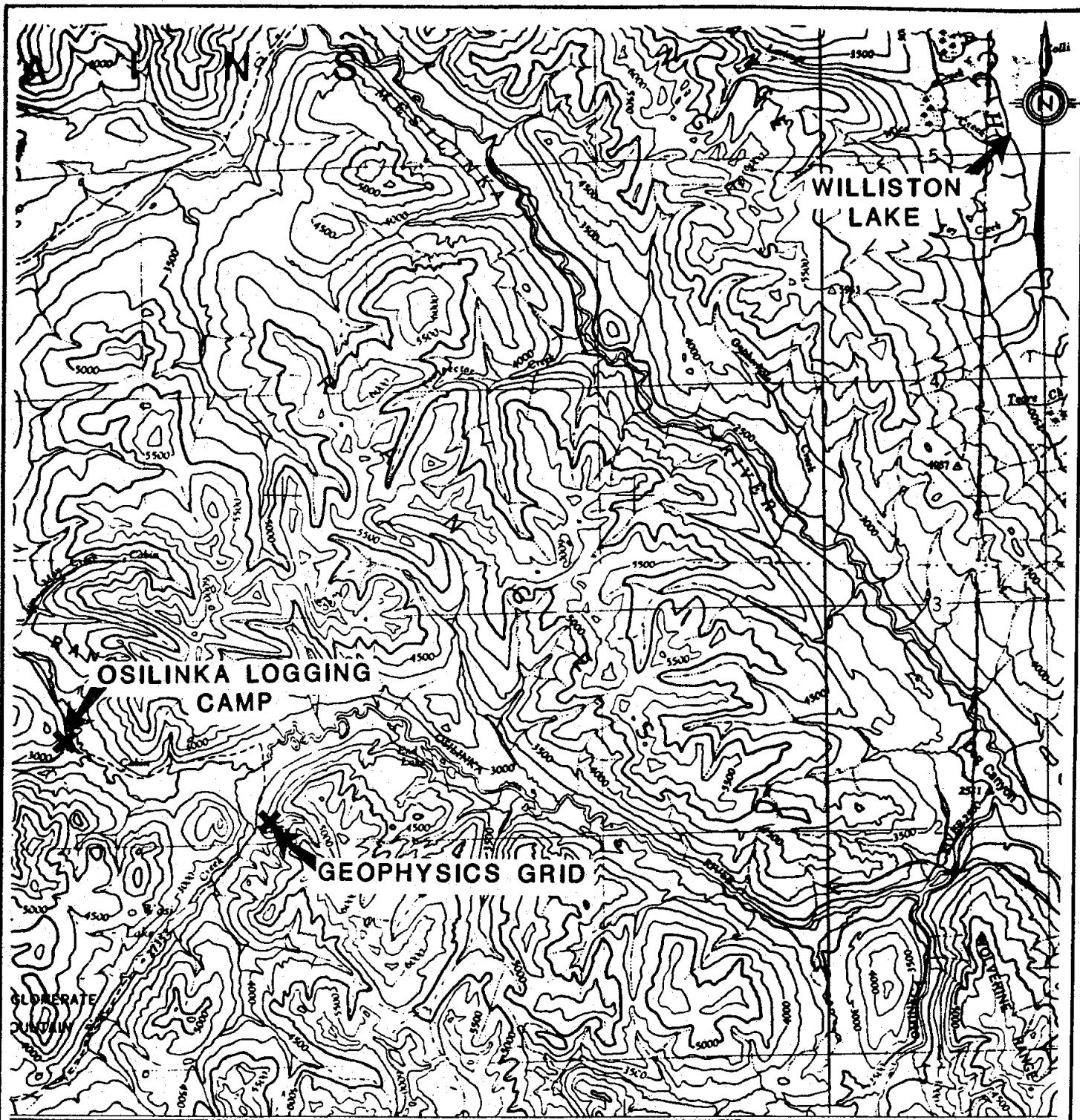
C E R T I F I C A T I O N

I, Jules J. Lajoie, of 5655 Keith Road, in the City of West Vancouver, in the Province of British Columbia, do hereby certify that:

1. I graduated from the University of Ottawa in 1968 with an Honours B.Sc. in Physics, from the University of British Columbia in 1970 with an M.Sc. in Geophysics, and from the University of Toronto in 1973 with a Ph.D. in Geophysics.
2. I am a registered member (#12077) of the Association of Professional Engineers of the Province of British Columbia, the Society of Exploration Geophysicists, and the British Columbia Geophysical Society.
3. I have been practicing my profession for the past seventeen years.

  
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Jules J. Lajoie, Ph.D., P.Eng.  
Geophysicist, Cominco Ltd.





N.T.S.  
94C/2,3

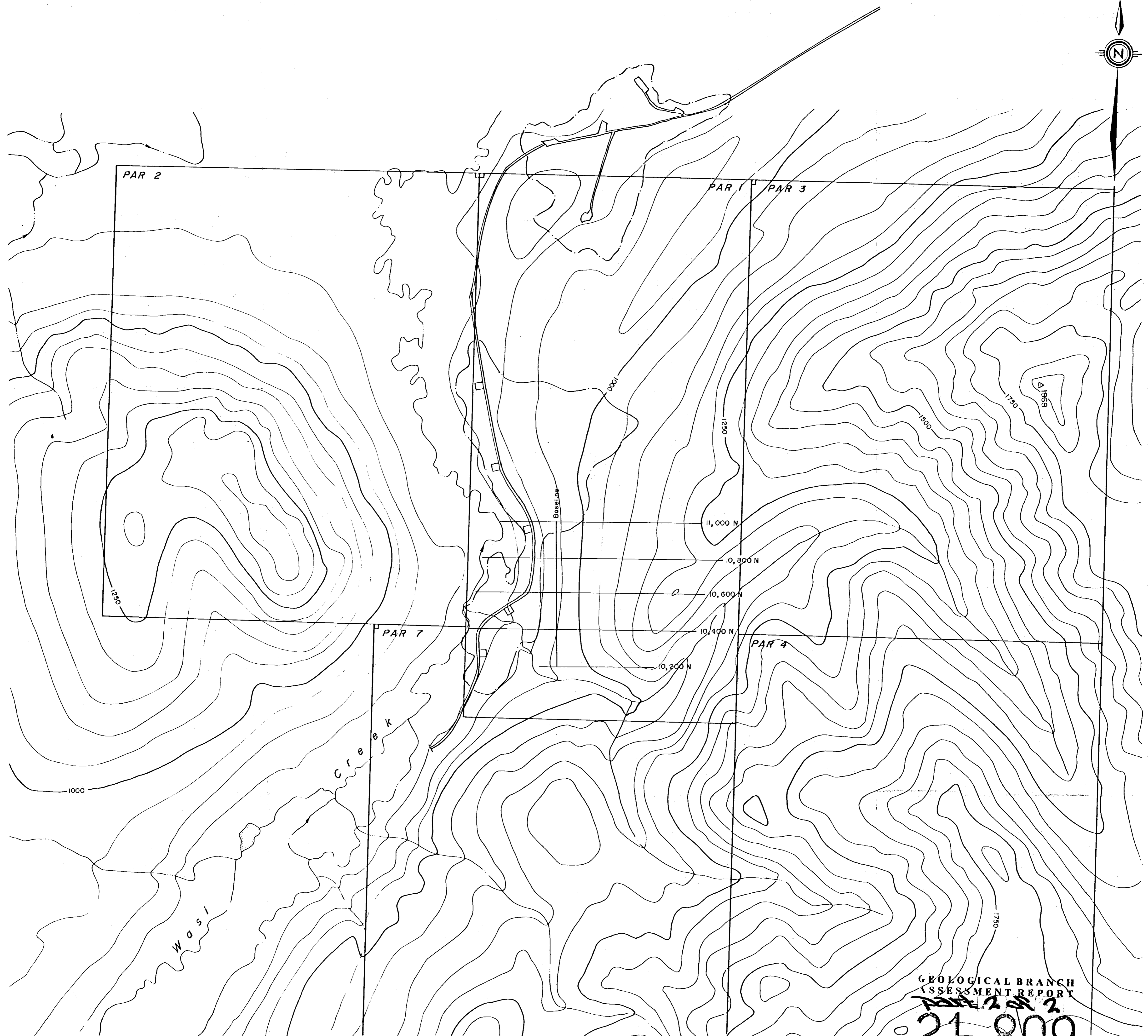
Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

PAR 1991  
LOCATION MAP

Scale: 1 : 250,000

Date: OCT. 1991

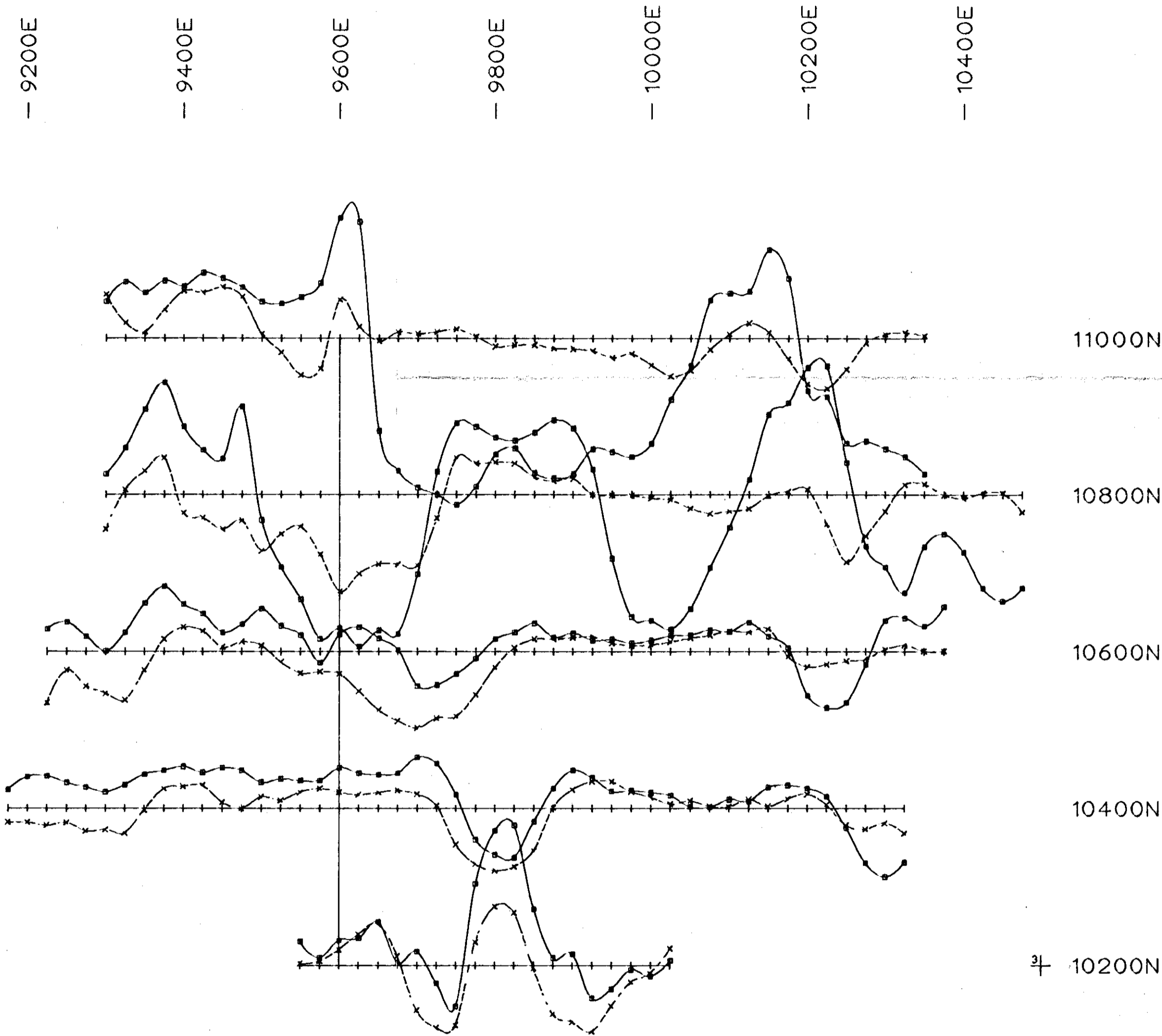
Plate: 393-91-01



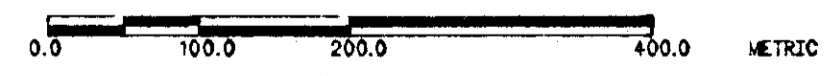
GEOLOGICAL BRANCH  
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**21,809**



<b>PAR PROPERTY</b>		NTS 94C/2,3
Drawn by:	Traced by:	
Revised by:    Date:	Revised by:    Date:	CLAIM MAP AND GEOPHYSICS GRID
Scale: 1:10,000		Date: OCT. 1991
		Plate: 393-91-12



INSTRUMENT: MAX-MIN I



20.00  
14.080 Hz IP  
20.00  
14.080 Hz OP

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PAR 1991 HLEM CS=100M

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PAR 1991

N.T.S.  
94C/2,3

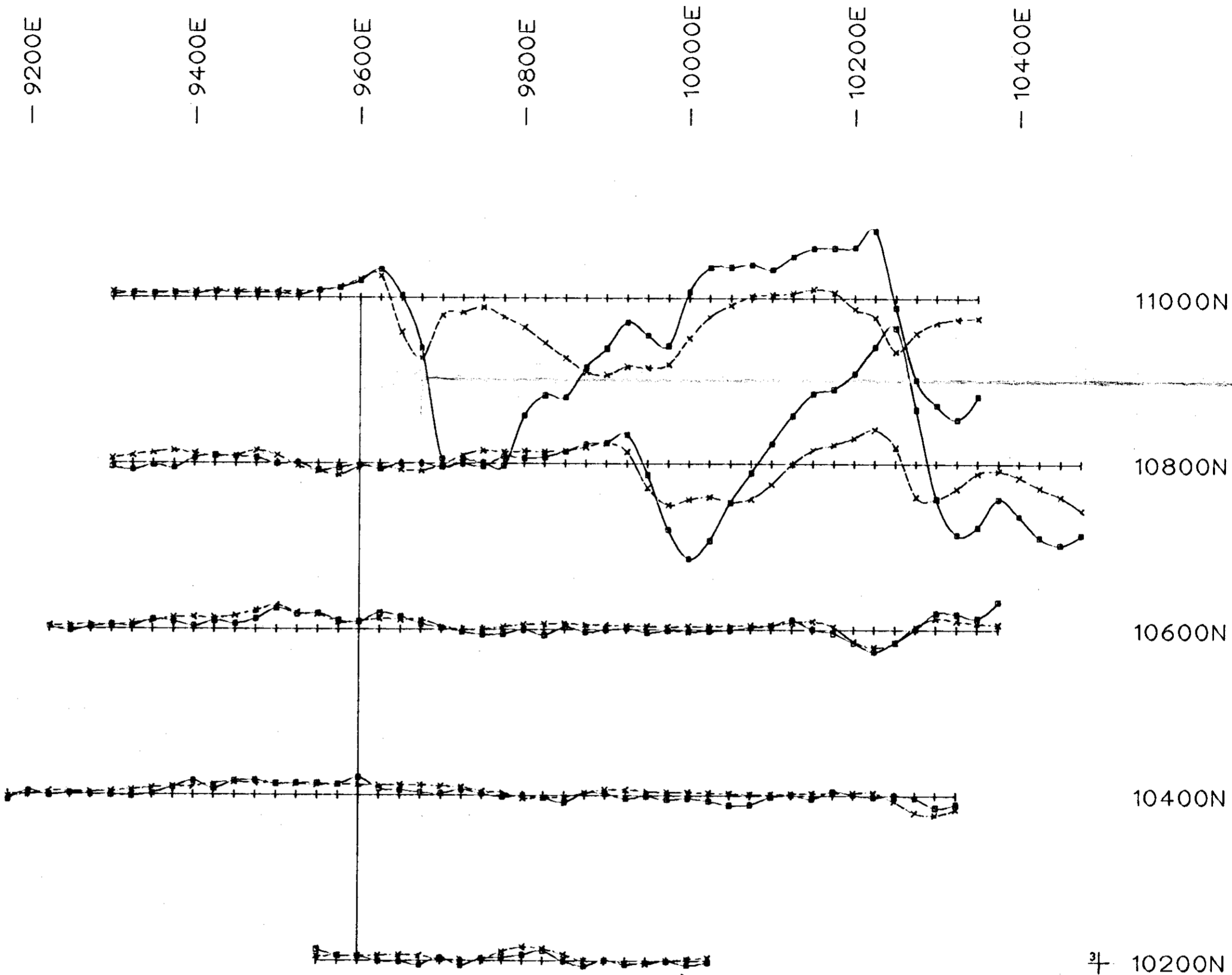
DRAWN BY:		TRACED BY:	
NO. OF	DATE	NO. OF	DATE

HLEM  
CS=100M      F=14,080Hz

SCALE: 1:5000

DATE: SEPT 91

PLATE: 393-91-04



INSTRUMENT: MAX-MIN I

0.0 100.0 200.0 400.0 METRIC

20.00  
440 Hz IP

20.00  
440 Hz OP

GEOLOGICAL BRANCH PAR 1991 HLEM CS=100M  
ASSESSMENT REPORT

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PAR 1991

N.T.S.  
94C/2,3

DRAWN BY:		TRACED BY:	
NO.	NAME	NO.	NAME

HLEM  
CS=100M

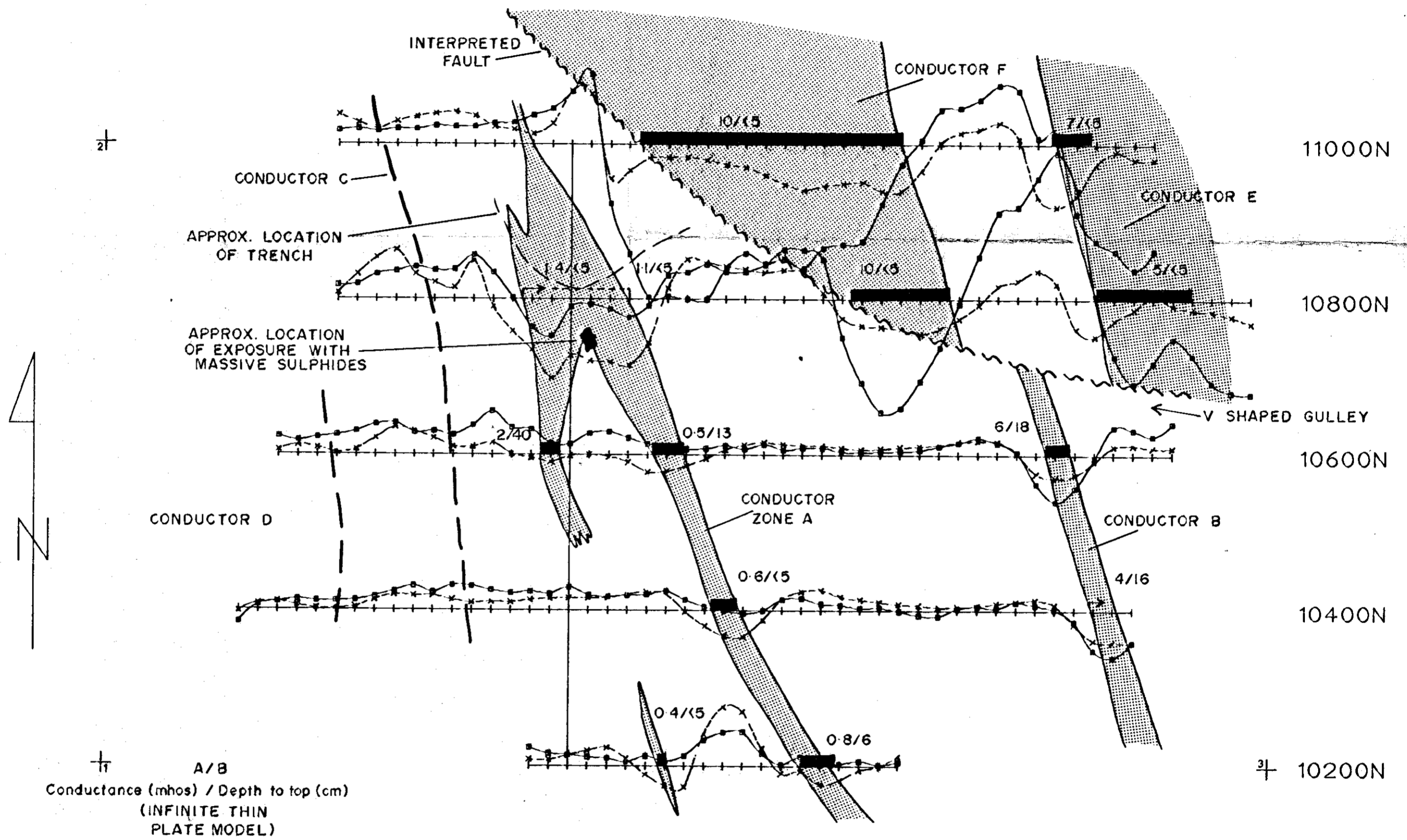
F=440Hz

SCALE: 1:5000

DATE: SEPT 91

PLATE:  
393-91-02

— 9200E — 9400E — 9600E — 9800E — 10000E — 10200E — 10400E



INSTRUMENT: MAX-MIN I



20.00  
3520 Hz IP

20.00  
3520 Hz OP

GEOLOGICAL BRANCH 1991 HLEM CS=100M  
ASSESSMENT REPORT

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PAR 1991

N.T.S.  
94C/2,3

DRAWN BY:		TRACED BY:	
NO.	DATE	NO.	DATE

HLEM  
CS=100M

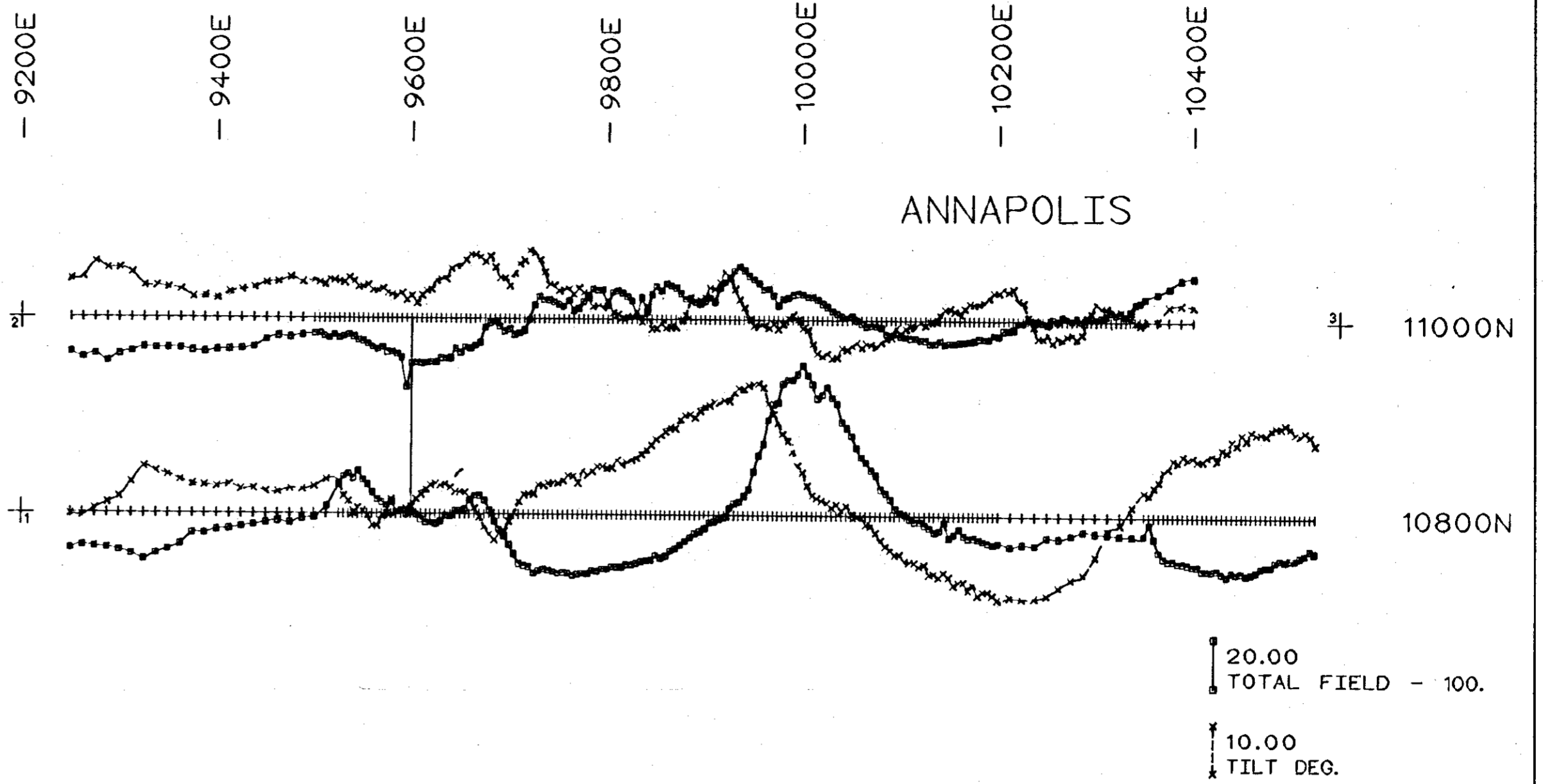
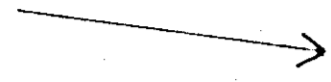
F = 3,520 Hz

SCALE: 1:5000

DATE: SEPT 91

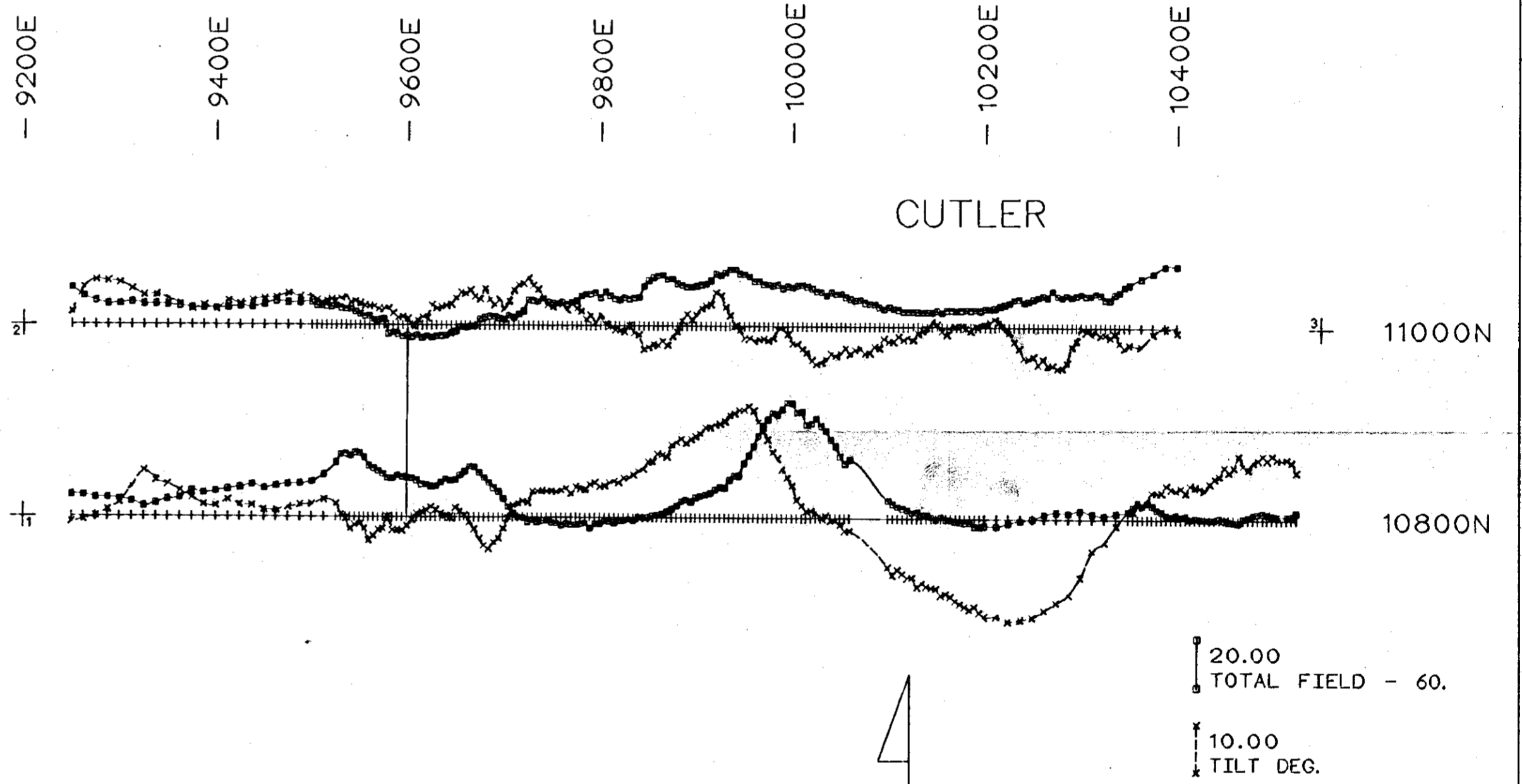
PLATE: 393-91-03

Direction to VLF station



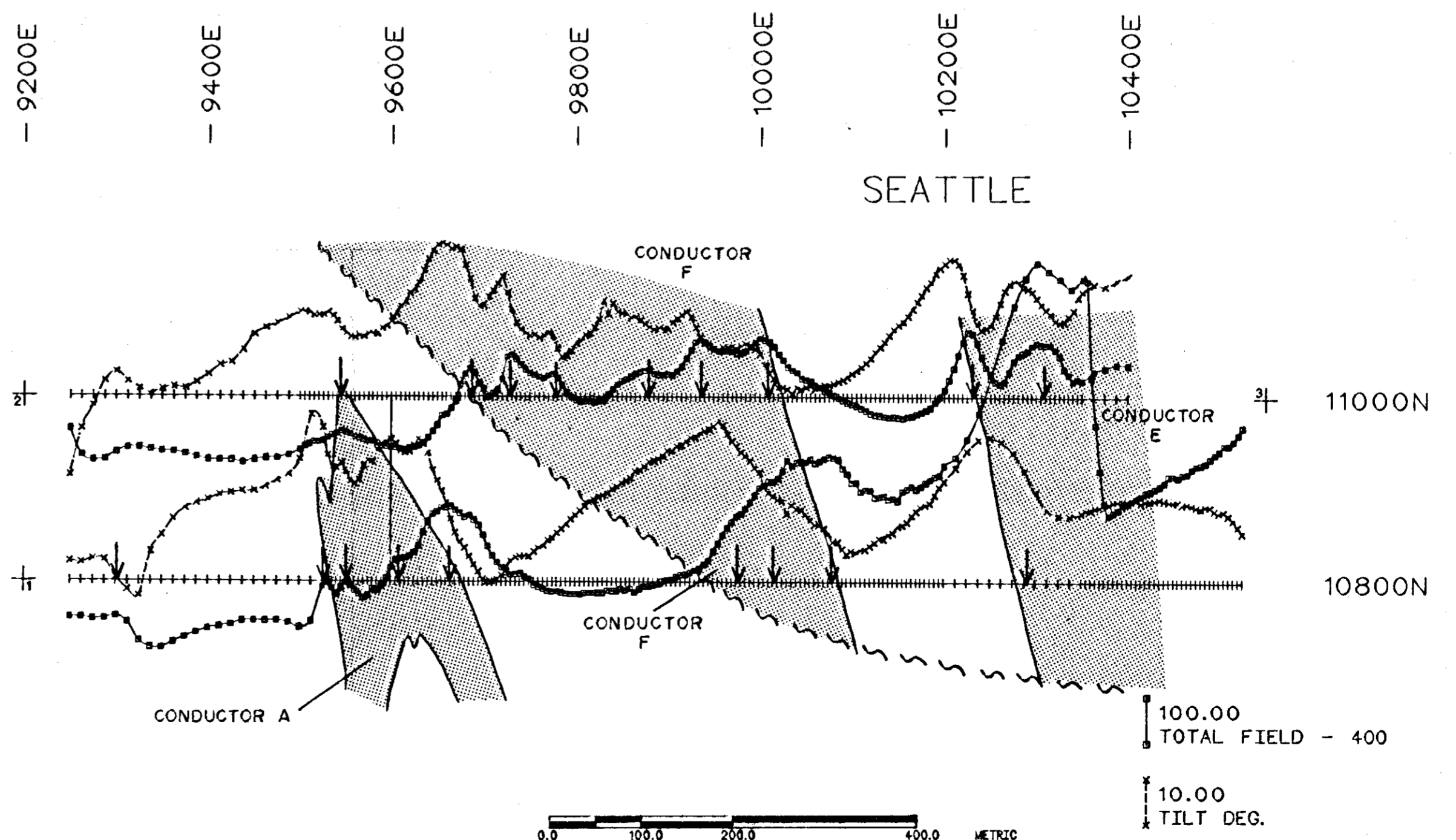
PAR 1991 VLF. ANNAPOLIS (21.4 KHz)

Direction to VLF station



PAR 1991 VLF. CUTLER (24.0 KHz)

Direction to VLF station



INSTRUMENT: OMNI PLUS

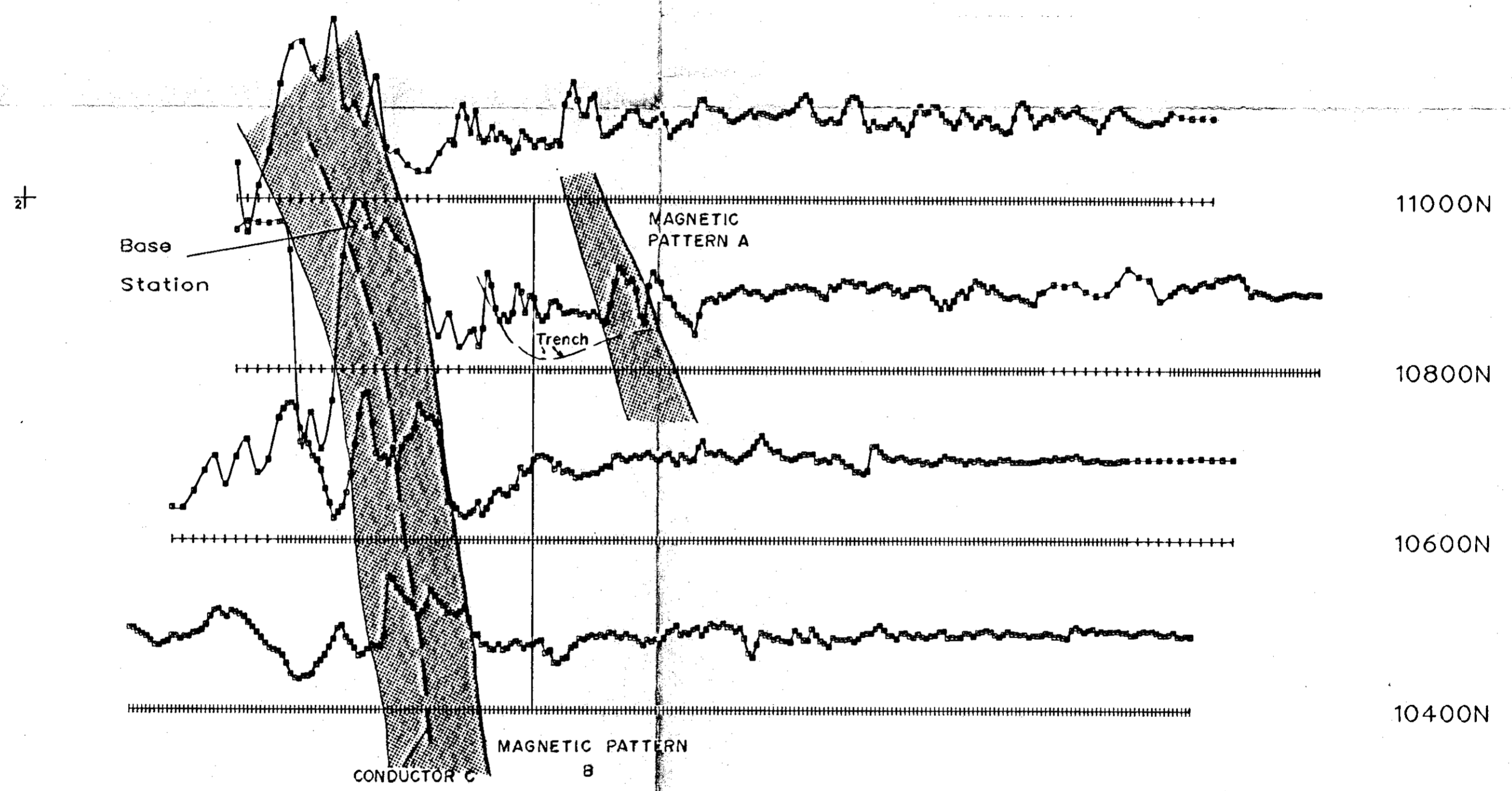
PAR 1991 VLF. SEATTLE (24.8 KHz)

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PAR 1991				N.T.S. 94C/2,3	
DRAWN BY:		TRACED BY:		VLF ANNAPOLIS, CUTLER, SEATTLE	
NO. OF	DATE	NO. OF	DATE	SCALE: 1:5000	DATE: SEPT 91
					PLATE: 393-91-06

- 9200E      - 9400E      - 9600E      - 9800E      - 10000E      - 10200E      - 10400E



50.00  
GAMMAS (- B. Stn.)

INSTRUMENT: OMNI IV

GEOLOGICAL BRANCH  
ASSESSMENT REPORT PAR 1991 MAG

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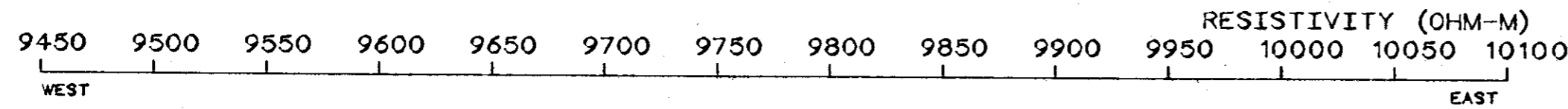
PAR 1991				N.T.S. 94C/2,3
DRAWN BY:		TRACED BY:		MAGNETICS Base Station Corrected
NO. OF	DATE	NO. OF	DATE	
SCALE: 1:5000			DATE: SEPT 91	PLATE: 393-91-05

INSTRUMENTS:

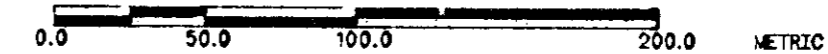
Receiver: Huntec Mk 4 (Td=120;Ti=900)

Transmitter: Huntec 2.5 kW

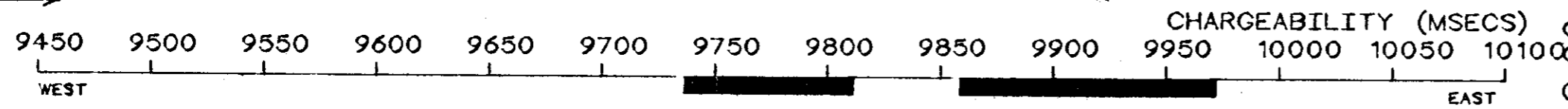
PAR 1991 LINE 10,200 N



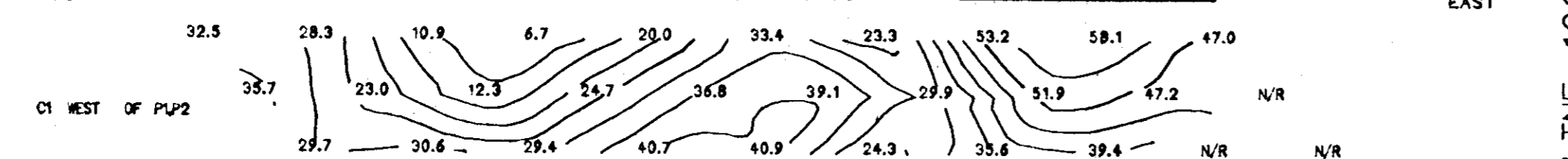
GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
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HLEM CONDUCTORS →



IP ANOMALIES →



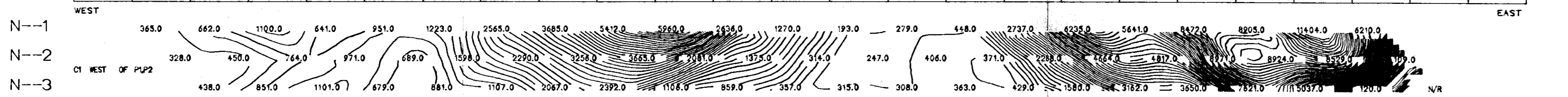
LINE 102.00

PAR 1991				N.T.S. 94C/2,3
DRAWN BY:		TRACED BY:		IP - LINE 10,200 N Pole Dipole (a=50M) C1 is WEST
NO. OF	DATE	NO. OF	DATE	
SCALE: 1:2500			DATE: SEPT 91	PLATE: 393-91-07



PAR 1991 IP TEST LINE 10400N

RESISTIVITY (OHM-M)  
 9100 9150 9200 9250 9300 9350 9400 9450 9500 9550 9600 9650 9700 9750 9800 9850 9900 9950 10000 10050 10100 10150 10200 10250 10300 10350

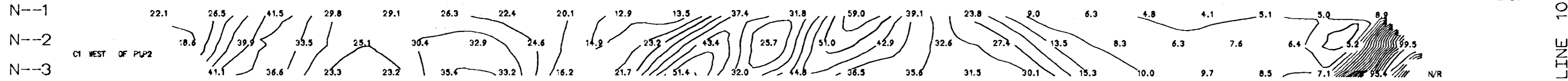


HLEM CONDUCTORS →

COND. D      COND. C      COND. A      COND. B

CHARGEABILITY (MSECS)  
 9100 9150 9200 9250 9300 9350 9400 9450 9500 9550 9600 9650 9700 9750 9800 9850 9900 9950 10000 10050 10100 10150 10200 10250 10300 10350

IP ANOMALIES →



LINE 104.00

INSTRUMENTS

Receiver: Huntec Mk 4 (Td=120;Ti=900)  
 Transmitter: Huntec 2.5 kW

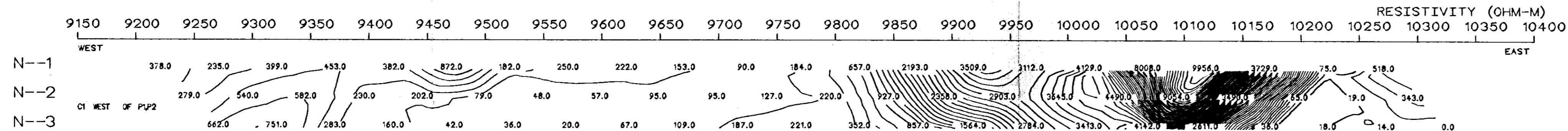
GEOLOGICAL BRANCH  
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*Sheet 2 of 2*  
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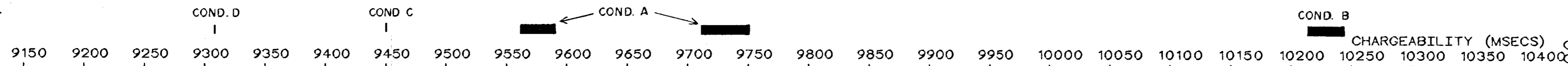


DRAWN BY:				TRACED BY:				PAR 1991		N.T.S. 94C/2,3	
DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	IP - LINE 10,400 N Pole Dipole (α=50M) C1 is WEST			
SCALE: 1:2500								DATE: SEPT 91		PLATE: 393-91-08	

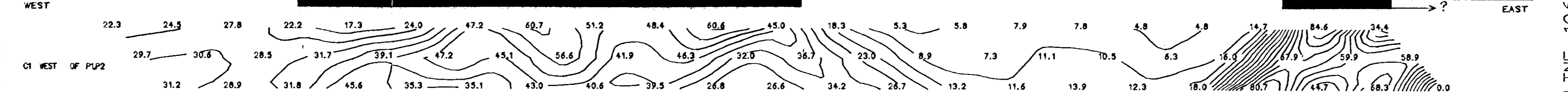
PAR 1991 LINE 10,600 N



HLEM CONDUCTORS →



IP ANOMALIES →



INSTRUMENTS:

Receiver: Huntac Mk 4 (Td=120;Ti=900)

Transmitter: Huntac 2.5 kW

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

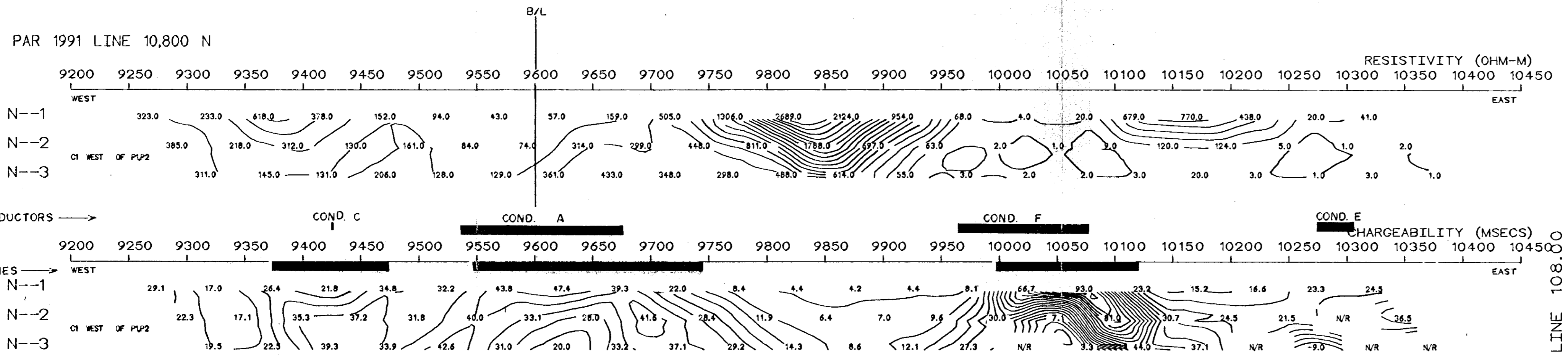
2052  
**21,809**



PAR 1991				N.T.S. 94C/2,3	
DRAWN BY:		TRACED BY:		IP - LINE 10,600 N Pole Dipole (a=50M) C1 is WEST	
REVISION	DATE	REVISION	DATE		
SCALE: 1:2500				DATE: SEPT 91	
				PLATE: 393-91-09	

LINE 106.00

INSTRUMENTS:  
 Receiver: Hunttec Mk 4 (Td=120;Ti=-900)  
 Transmitter: Hunttec 2.5 kW



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PAR 1991				N.T.S.
DRAWN BY:		TRACED BY:		IP - LINE 10,800 N Pole Dipole (a=50M) C1 is WEST
RECORD #	DATE	RECORD #	DATE	
SCALE: 1:2500		DATE: OCT. 1991		PLATE: 393-91-10

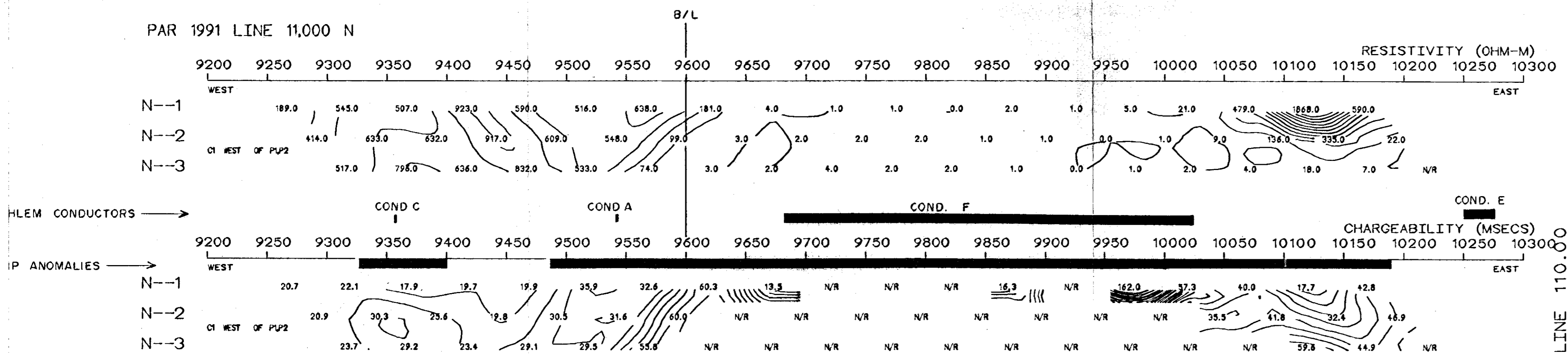
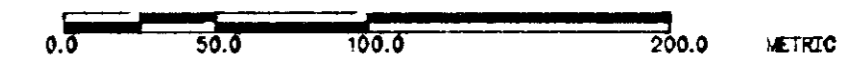
INSTRUMENTS:

Receiver: Hunttec Mk 4 (Td=120;Ti=900)

Transmitter: Hunttec 2.5 kW

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

*Part 2 of 2*  
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<b>PAR 1991</b>				N.T.S. 94C/2,3
DRAWN BY:		TRACED BY:		IP - LINE 11,000 N Pole Dipole (a=50M) C1 is WEST
REVISION #	DATE	REVISION #	DATE	
SCALE: 1:2500			DATE: SEPT 91	PLATE: 393-91-11