GOLDEN OPPORTUNITY MINING LTD.

REPORT ON

SEISMIC REFRACTION INVESTIGATION

PLACER GOLD EXPLORATION

CARIBOO MINING DIVISION

BRITISH COLUMBIA

Wells Area, B.C.

NTS 93 H/4

53° 10'N, 121° 41'W

OWNER AND OPERATOR

GOLDEN OPPORTUNITY MINING LTD.

#2505 - 1850 Comox Street

VANCOUVER, B.C. V6G 1R3

by

Russell A. Hillman, P. Eng.

January, 1989

1. INTRODUCTION

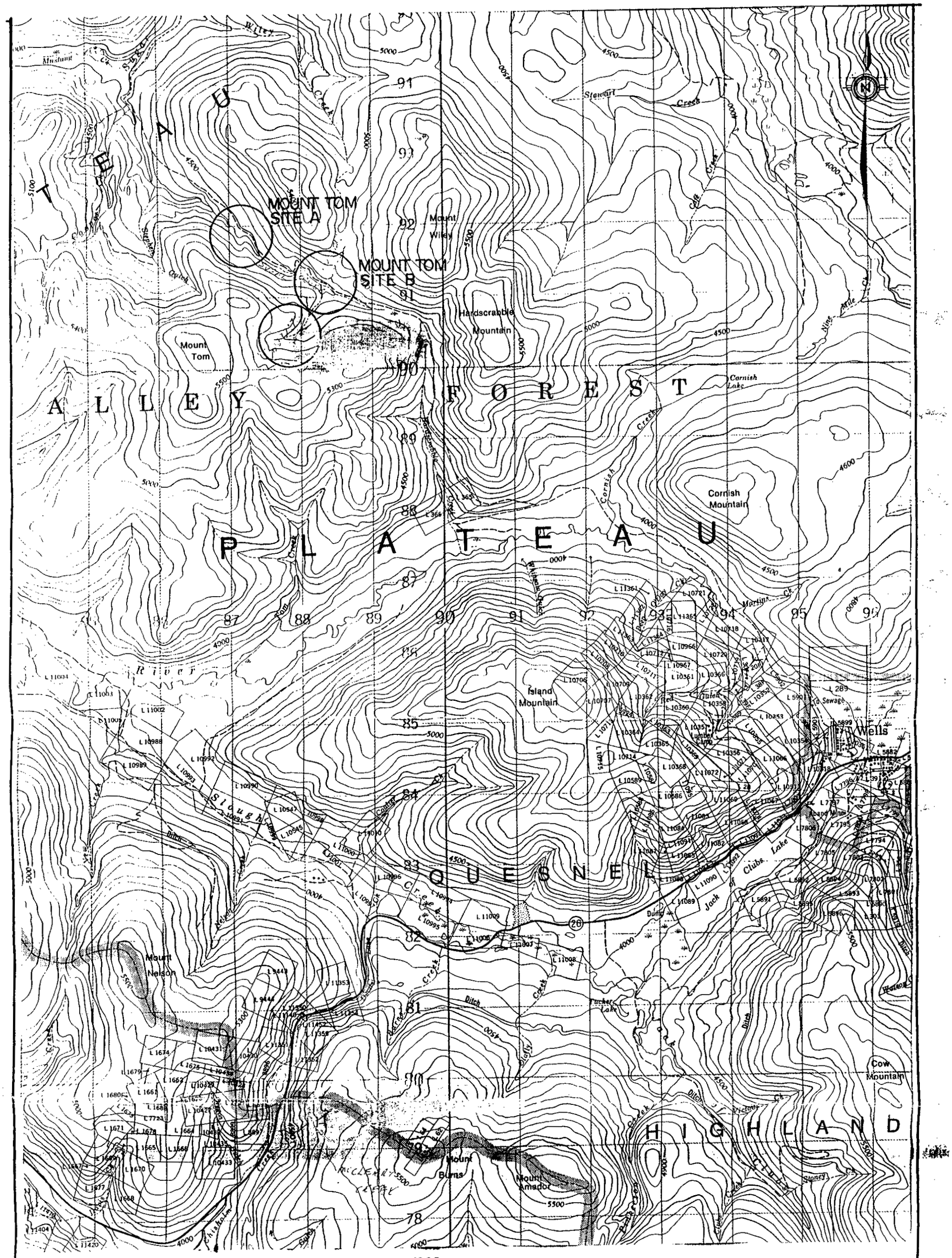
In the period August 8, to August 9, 1989, Frontier Geosciences carried out a seismic refraction survey in the Wells area of British Columbia for Golden Opportunity Mining Ltd. In all, a total of 850 m of survey work was carried out in two areas on Mt. Tom on placer claims 134, 135, and 137. A survey location plan at 1:50,00 scale is shown in Figure 1. Detailed site plans are presented in Figures 3 and 4 at a scale of 1:2000.

The purpose of the survey was to delineate bedrock depressions infilled with either alluvial sands, gravels, cobbles and boulders or glacial till which may contain anomalously high placer gold values.

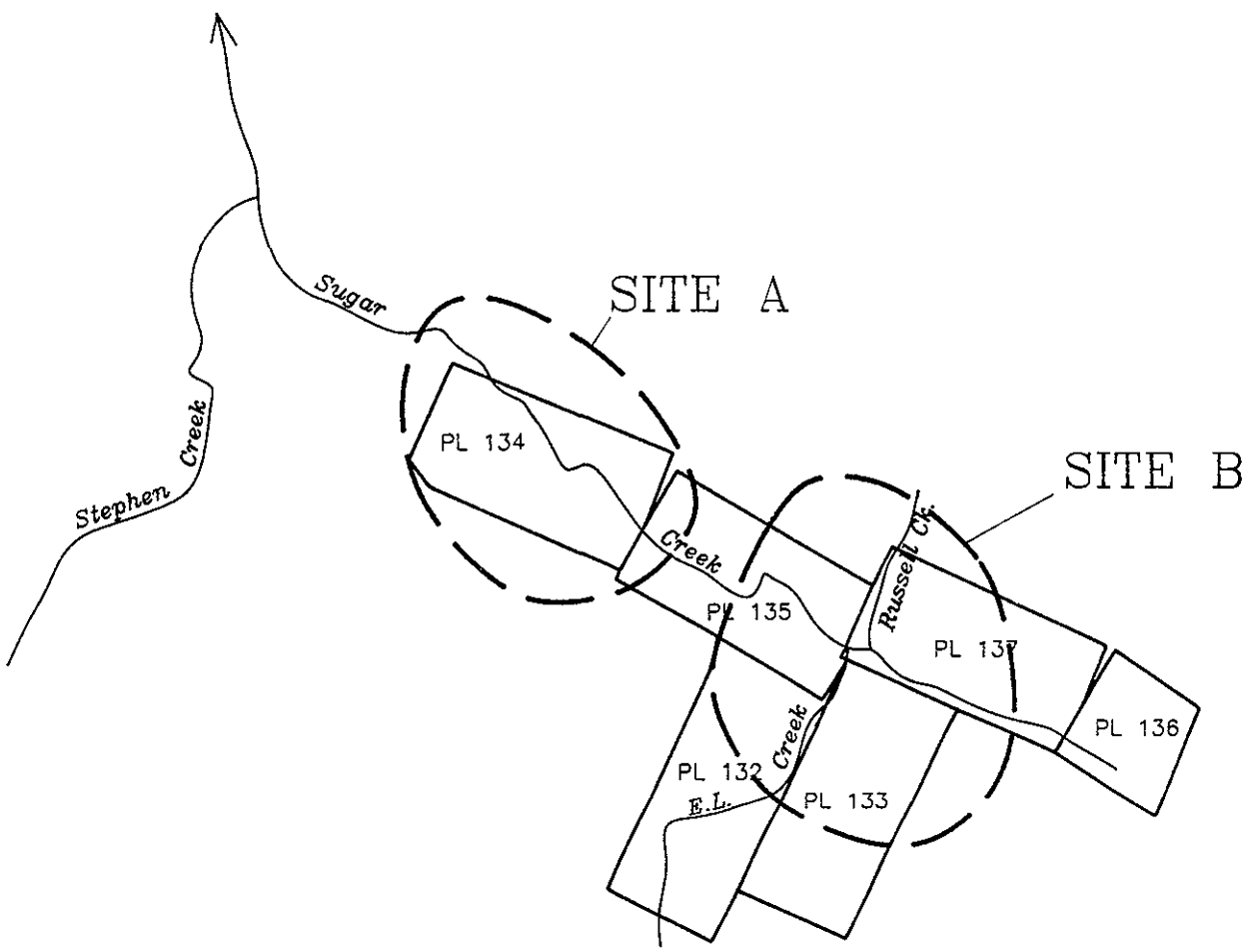
The claim outlines and more detailed topographic features are shown at 1:31630 scale in the claim location plan in Figure 2.

CONTENTS

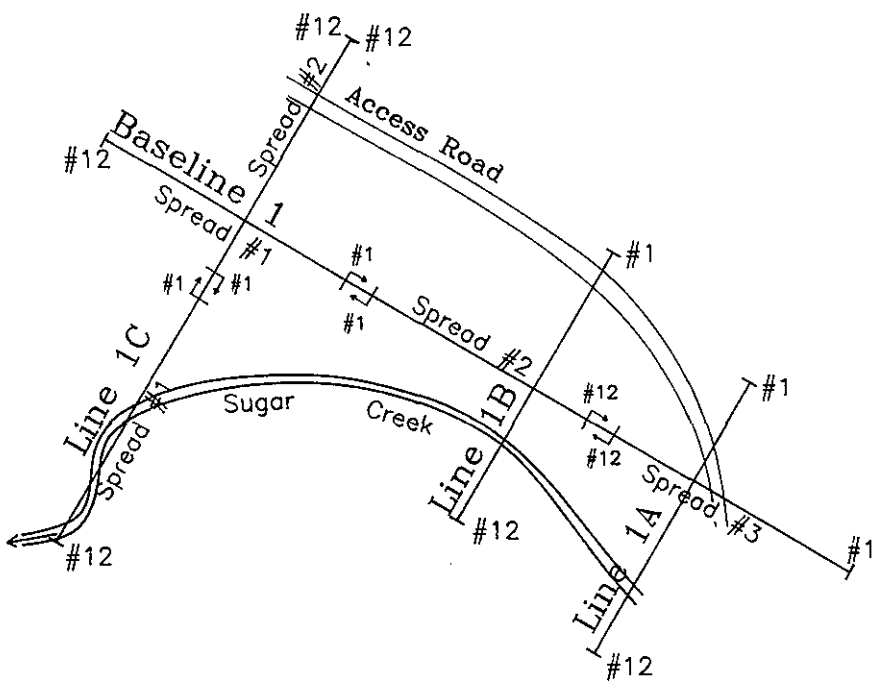
FIGURES



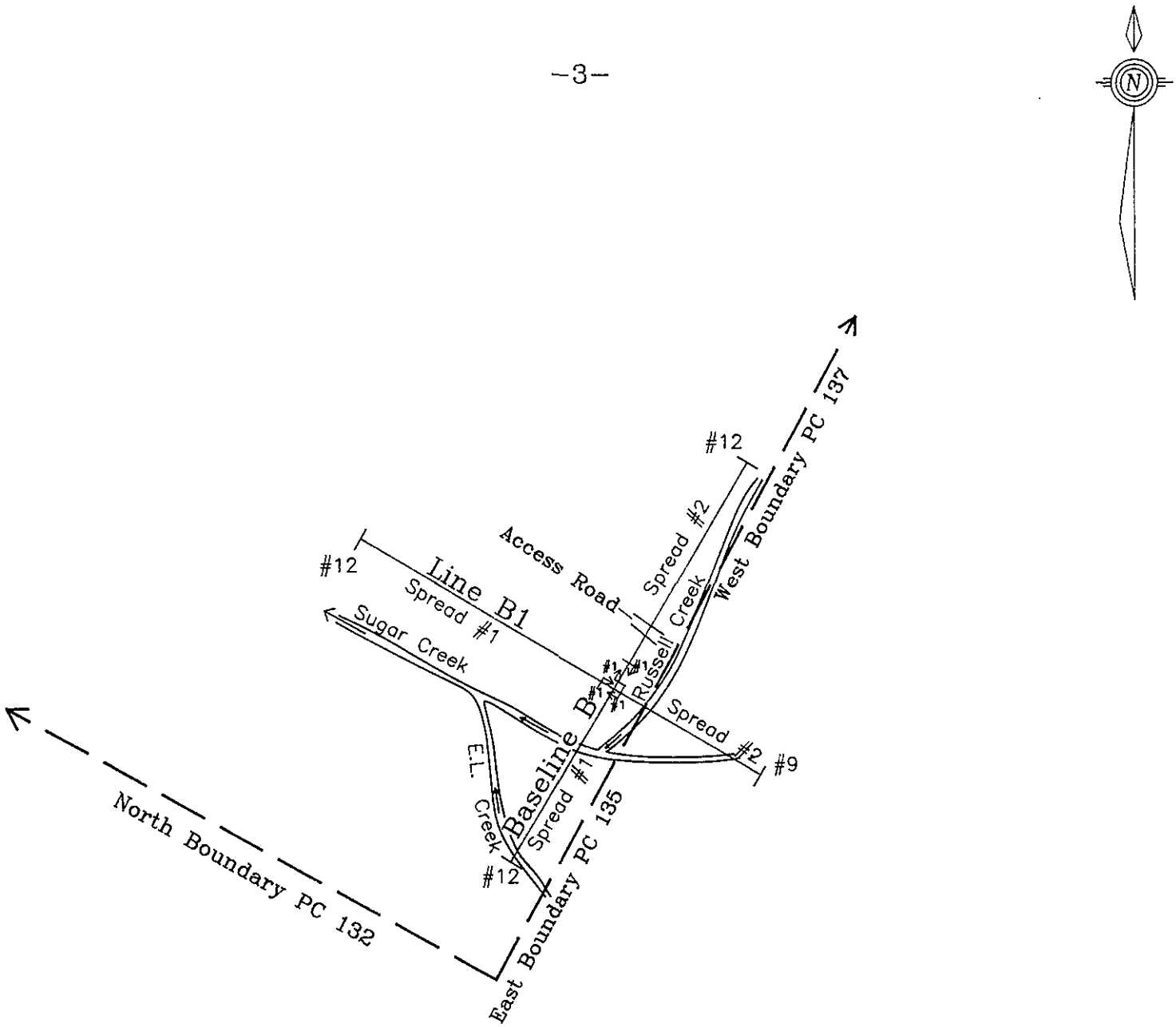
GOLDEN OPPORTUNITY MINING LTD. APPARENT RESISTIVITY SURVEY	FRONTIER GEOSCIENCES INC.	
NTS 93 H/4 "WELLS" SURVEY LOCATION PLAN	SEPTEMBER, 1988 FGI – 064	FIG. 1



GOLDEN OPPORTUNITY MINING LTD. MOUNT TOM PROJECT	FRONTIER GEOSCIENCES INC.	
SEISMIC REFRACTION SURVEY CLAIM LOCATION PLAN	August 1989 0 1 km	Fig. **2**



GOLDEN OPPORTUNITY MINING LTD. MOUNT TOM PROJECT	FRONTIER GEOSCIENCES INC.
SEISMIC REFRACTION SURVEY AREA "A" – SITE PLAN	August 1989 0 100 metres
	Fig. 3



GOLDEN OPPORTUNITY MINING LTD. MOUNT TOM PROJECT	FRONTIER GEOSCIENCES INC.	
SEISMIC REFRACTION SURVEY AREA "B" – SITE PLAN	August 1989 0 100 metres	Fig. 4

2. LOCATION AND ACCESS

The Mt. Tom areas are located at the headwaters of Sugar Creek approximately 10 km northwest of Wells. The area is reached from Wells along a competent gravel road for approximately 8 km. The remaining 2 kilometres are traversed by 4-wheel drive only.

3. TOPOGRAPHY AND CLIMATE

The region is characterized by rugged topography with local mountains rising to over 1675 m in elevation. The base of local creek valleys is at approximately 1220 m elevation. The areas surveyed are sub-alpine meadows with a forest cover of balsam and scrub spruce conifers.

Annual temperatures in the area range from -30°C in winter to highs of +25°C in the summer period. Precipitation in the area is high with the moisture falling as rain mainly in the spring and fall periods and snow throughout the winter.

4. HISTORY

The mining history of the Mt. Tom areas dates back to the 1870's. Considerable placer mining and limited lode mining has been carried out with moderate to good results. Portions of the G.O.M. Ltd. properties were worked by hand, drifting and hydraulic methods, but this work has been superficial.

In September 1989, Frontier Geosciences Inc. carried out a reconnaissance dipole-dipole resistivity investigation on the sites. Several bedrock depressions were interpreted from the data, possibly indicative of infilled stream channels.

Reference: Hillman, R.A., Report on Dipole-Dipole Resistivity Investigation, Golden Opportunity Mining Ltd., November, 1988.

5. GEOLOGY

The Downey Creek Succession composed of metamorphosed slates, phyllites, quartzites, carbonates, metatuffs and clastics is the most significant rock assemblage in the Barkerville/Wells area because of the good correlation between outcrops of these rocks and placer operations. These rocks form a belt trending south-east/northwest through the Cariboo Mining District.

Three types of placer deposits account for the gold production in the area. These deposits are (1) preglacial and inter-glacial gravels reworked from older glacial deposits; (2) lodgement tills containing reworked preglacial gravels deposited at the base of ice sheets and lee side boulder layers formed around bedrock highs, and; (3) modern reconcentrations of gold from older placers.* The areas investigated are largely valleyside benches which may hae been favourable environments for deposition of type (1) and (2) deposits.

*Gold placers in Pleistocene glacial deposits; Barkerville, British Columbia N. Eyles and S.P. Kocsis, CIM Bulletin, August 1988.

6. SEISMIC REFRACTION SURVEY METHOD

6.1 EQUIPMENT

The seismic refraction investigation was carried out using a Geometrics Model ES-1225, 12 Channel, signal enhancement seismograph. A 152 metre multicored cable was used for all seismic refraction lines. Geophone spacings along the seismic cable ranged from 3.8 metres to 15.2 metres. Explosive charges were detonated electrically using a Geometrics HVB-1 high voltage, capacitor-type blaster.

6.2 SURVEY PROCEDURE

For each spread, the seismic cable was stretched out in a straight line and the geophones implanted. Six different shot holes were then excavated: one at either end of the geophone cable, two at intermediate locations along the cable, and one off each end of the cable to ensure adequate coverage of the basal layer. Seventy-five percent Forcite was utilized as an energy source in the survey. Shots consisting generally of one to three sticks of Forcite were detonated individually and arrival times for each geophone were automatically recorded in the seismograph. Hard copy

records were made on electrically sensitive recording film. Data recorded during field surveying was generally of good to excellent quality. Copies of the field seismic records are reproduced in Appendix B.

Throughout the survey, notes were recorded regarding seismic line position in relation to topographic and geological features of the area. Elevation surveying was carried out utilizing a chain and inclinometer.

7. DISCUSSION AND RESULTS

7.1 GENERAL

The interpreted seismic sections for the two sites on Mt. Tom are presented at a scale of 1:500 in Appendix A (Figures 5 and 6). The Area "A" results reveal relatively shallow interpreted depths to bedrock whereas the Area "B" results indicate somewhat greater depths to bedrock. Interpreted thicknesses of overburden and hence depths to bedrock vary from a minimum of 0 metres to a maximum of 17 metres. The basal surface in Figure 5 and 6 is the interpreted bedrock surface which is represented by velocities ranging from 2430 m.p.s. to 3975 m.p.s.

The Area "A" site displays relatively plana bedrock features. A possible buried channel may be present on Line 1-C to the southwest of Baseline 1. This depression attains a depth of approximately 10 m.

The thin surficial layer at Area "A", represented by velocities ranging from 350 m.p.s. to 840 m.p.s. has been correlated with loose alluvial outwash and colluvium. The thicker intermediate layer underlying these surficial materials is represented by a narrow range of velocities of

1300 m.p.s. to 2000 m.p.s. These velocities are interpreted as saturated alluvium or colluvium.

The Area "B" site is characterized by greater interpreted depths to bedrock. The bedrock surface is represented by velocities varying from 2830 m.p.s. to 3975 m.p.s. Surficial overburden is represented by velocities of 450 m.p.s. to 550 m.p.s. This layer has also been correlated with loose alluvium or colluvium. The thicker intermediate layer with velocities of 1500 m.p.s. to 1730 m.p.s. is interpreted as saturated alluvium or colluvium.

FRONTIER GEOSCIENCES INC.

Russell A. Hillman, P.Eng.

8. ITEMIZED STATEMENT OF COST

PERSONNEL		
Senior Geophysicist 8.5 days @ $400.00 per day	$ 3,400.00	
Technician 6.0 days @ $175.00 per day	1,050.00	
Draftsman 3.0 hours @ $30.00 per hour	90.00	
Typist 3.0 hours @ $15.00 per hour	45.00	
Subtotal - Personnel		$ 4,585.00
EXPENSES		
Seismic System Rental 3.0 days @ $175.00 per day	$ 525.00	
Consumables - films, etc.	30.00	
Subtotal - expenses		555.00
TOTAL COST		$ 5,140.00

9. CERTIFICATE

I, RUSSELL ALEXANDER HILLMAN, resident of Vancouver, British Columbia, hereby certify as follows:

1. I am a Consulting Geophysicist with an office at #7 - 84 Lonsdale Avenue in North Vancouver, B.C.

2. I graduated with a degree of Bachelor of Science, Geophysics, from the University of British Columbia.

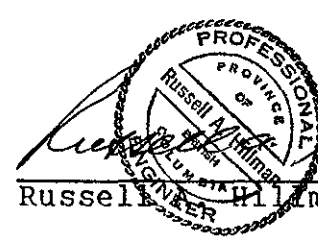
3. I have practised my profession for 19 years. I am a Professional Engineer in the Province of British Columbia.

4. I am a member of good standing with the European Society of Exploration Geophysicists.

5. I have an interest equivalent to fifteen percent of the claims and leases covered in this report.

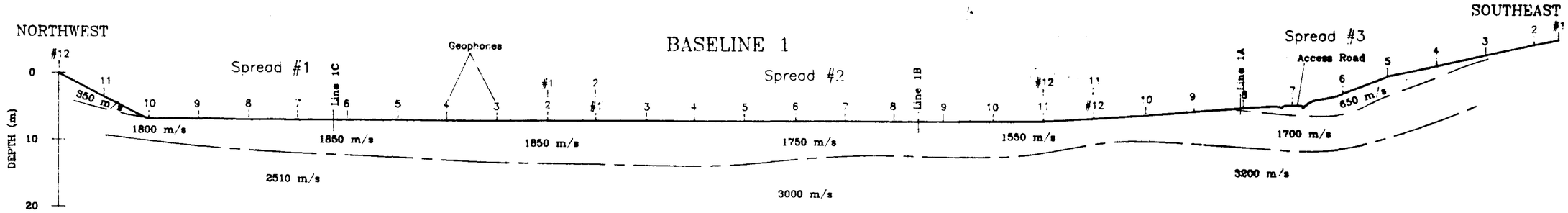
6. I supervised and interpreted the results of a Seismic Refraction Survey carried out on the property of Golden Opportunity Mining Ltd. near Wells, B.C. in the period August 8, to August 9, 1989.

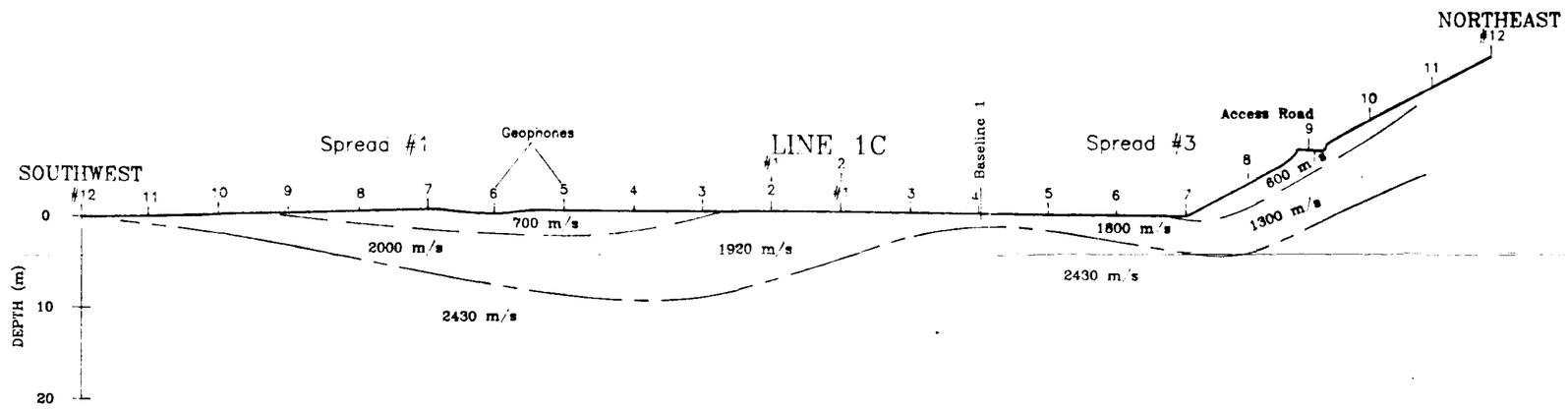
Dated at Vancouver, Province of British Columbia, this 29th day of December, 1989.

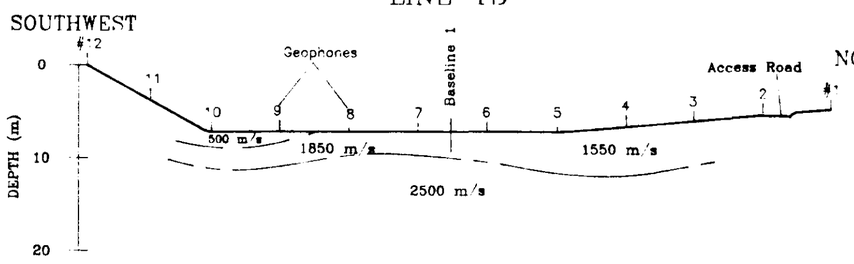


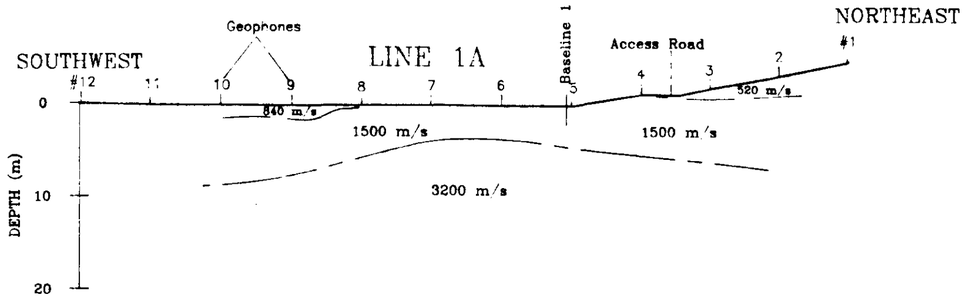
Russell Hillman, P.Eng.

APPENDIX A









GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,537

KEY

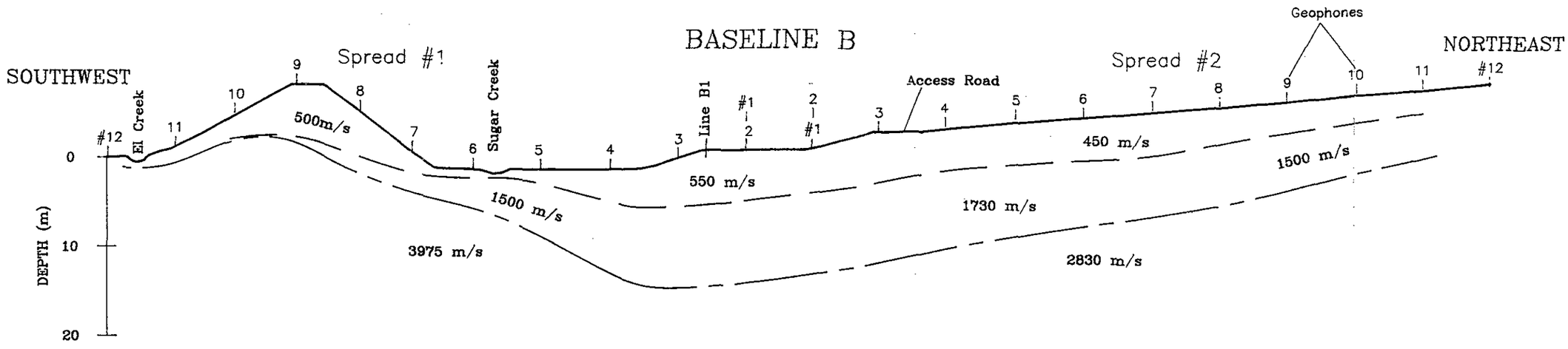
3700 m/s = 3700 metres/second

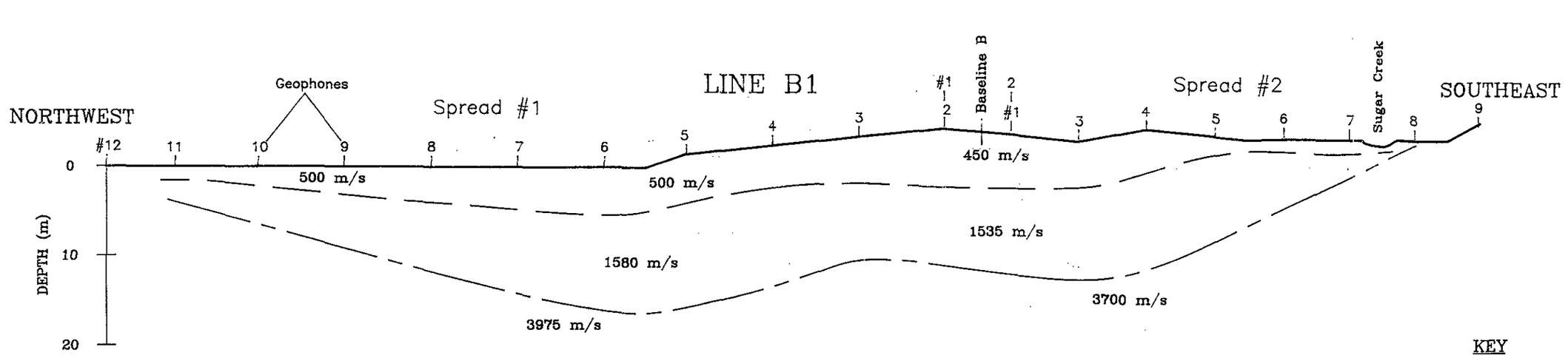
SCALE 1:500

0 50

metres

GOLDEN OPPORTUNITY MINING LTD. MOUNT TOM PROJECT	FRONTIER GEOSCIENCES INC.
SEISMIC REFRACTION SURVEY AREA "A" INTERPRETED SEISMIC SECTIONS	August 1989 Fig.5





KEY

3700 m/s = 3700 metres/second

SCALE 1:500

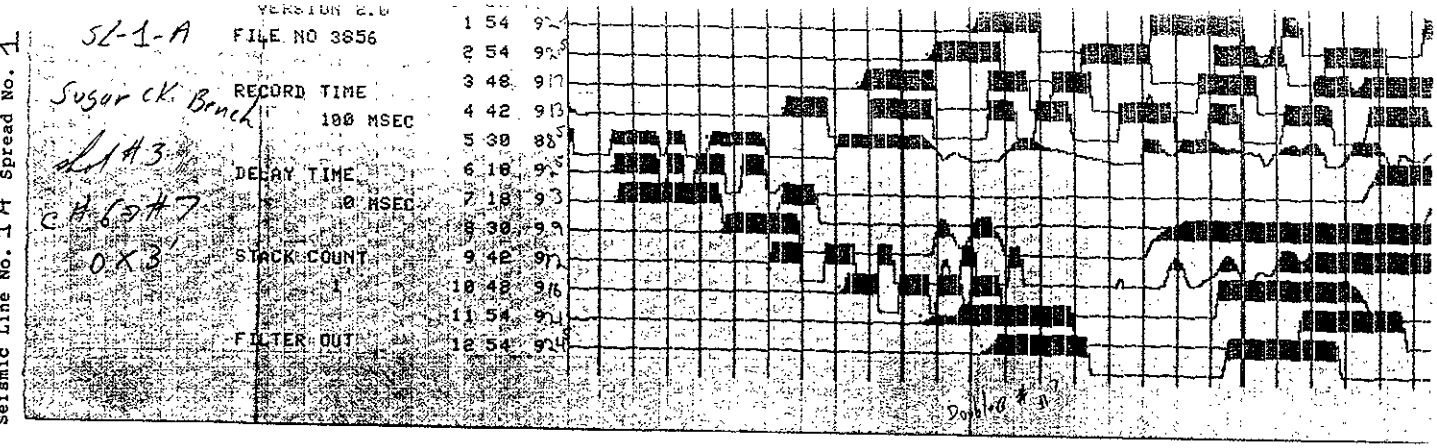
0 50

metres

GOLDEN OPPORTUNITY MINING LTD. MOUNT TOM PROJECT	FRONTIER GEOSCIENCES INC.
SEISMIC REFRACTION SURVEY AREA "B" INTERPRETED SEISMIC SECTIONS	August 1989 Fig.6

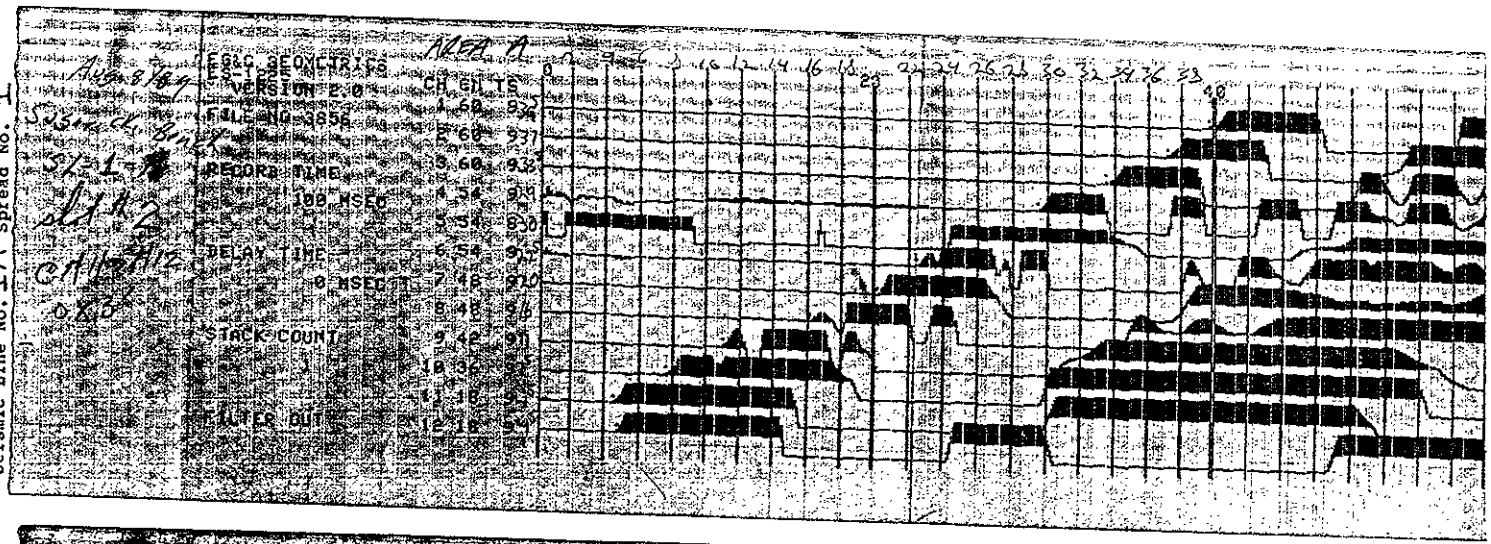
APPENDIX B

APPENDIX B
Seismic Line No. 1A Spread No. 1



AREA "A"

APPENDIX B
Seismic Line No. 1A Spread No. 1



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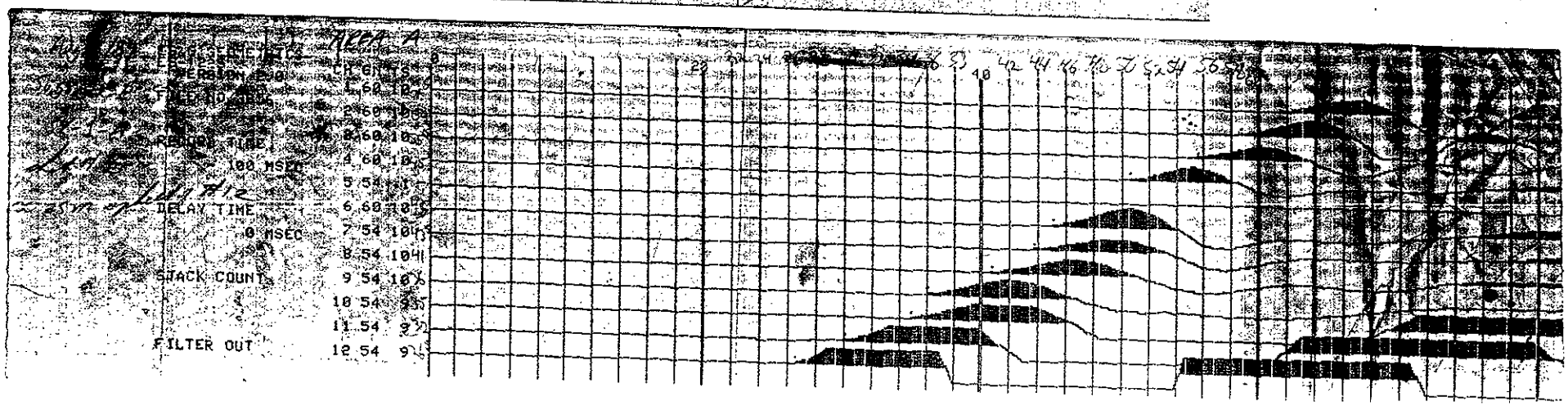

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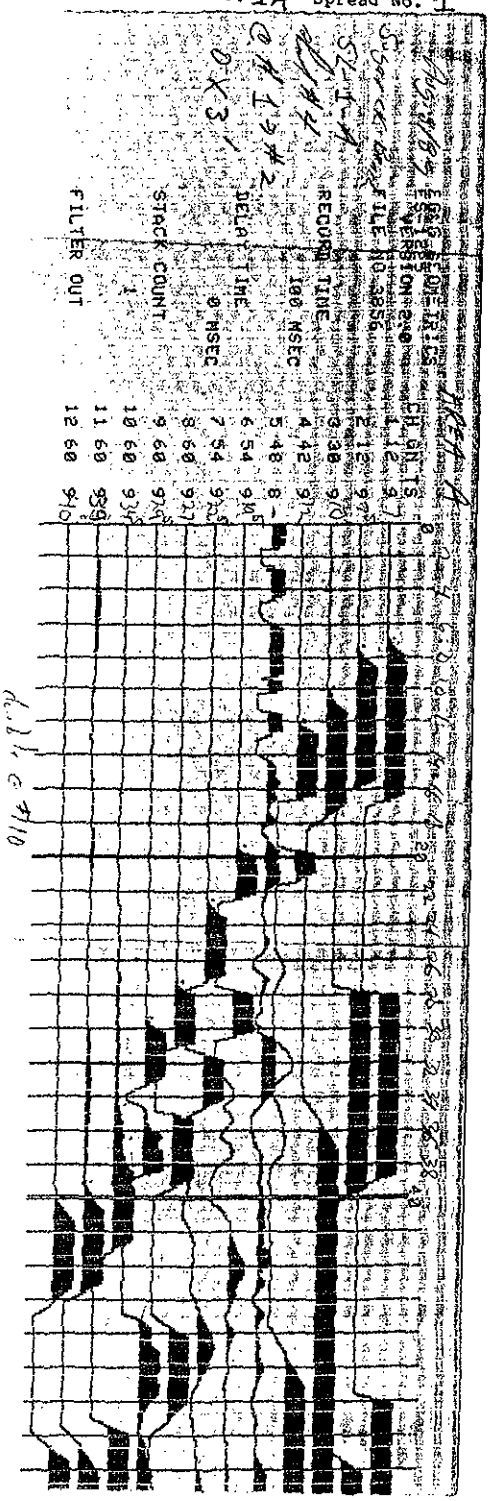

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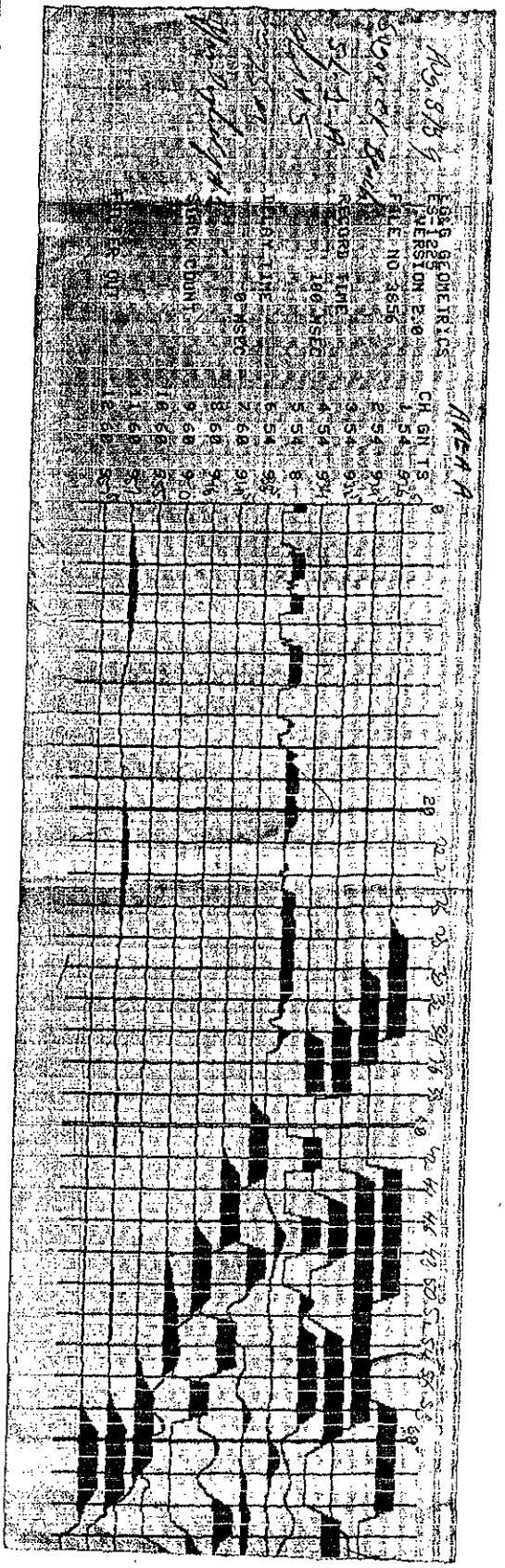
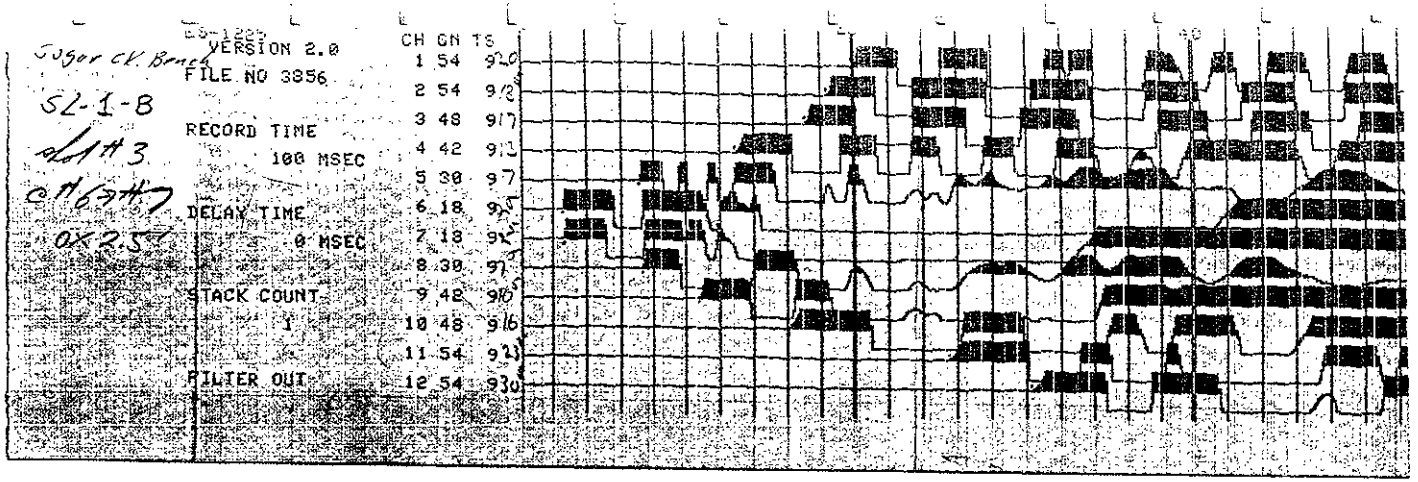


APPENDIX B
Seismic Line No. Spread No.

APPENDIX B
Seismic Line No. 18 Spread No. 1



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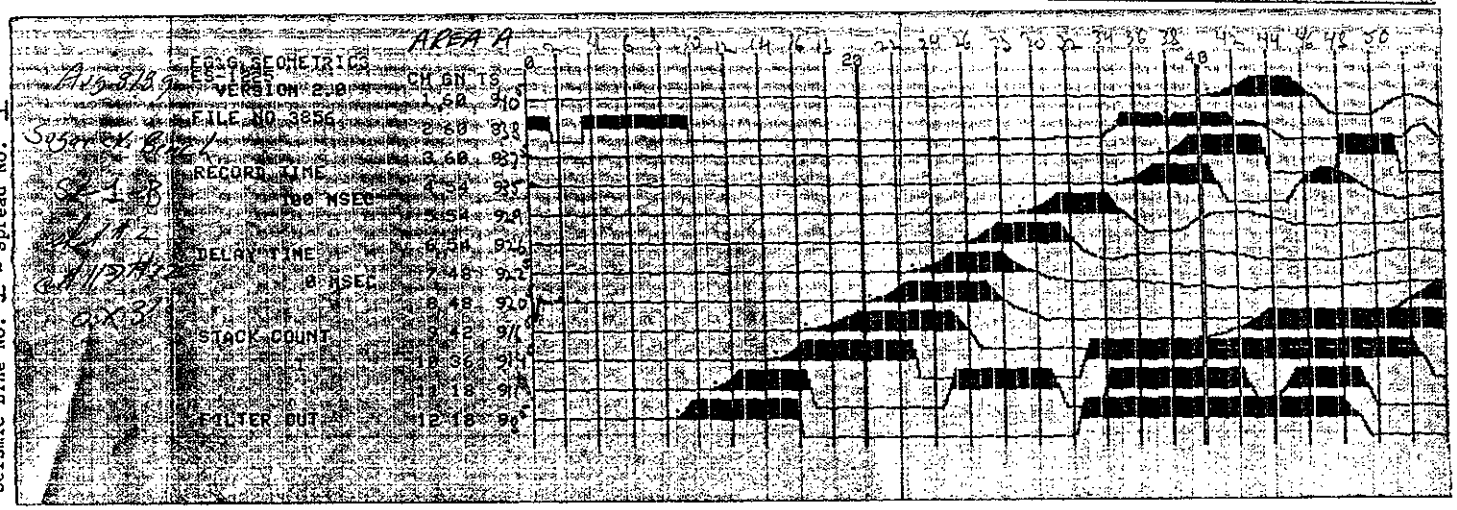

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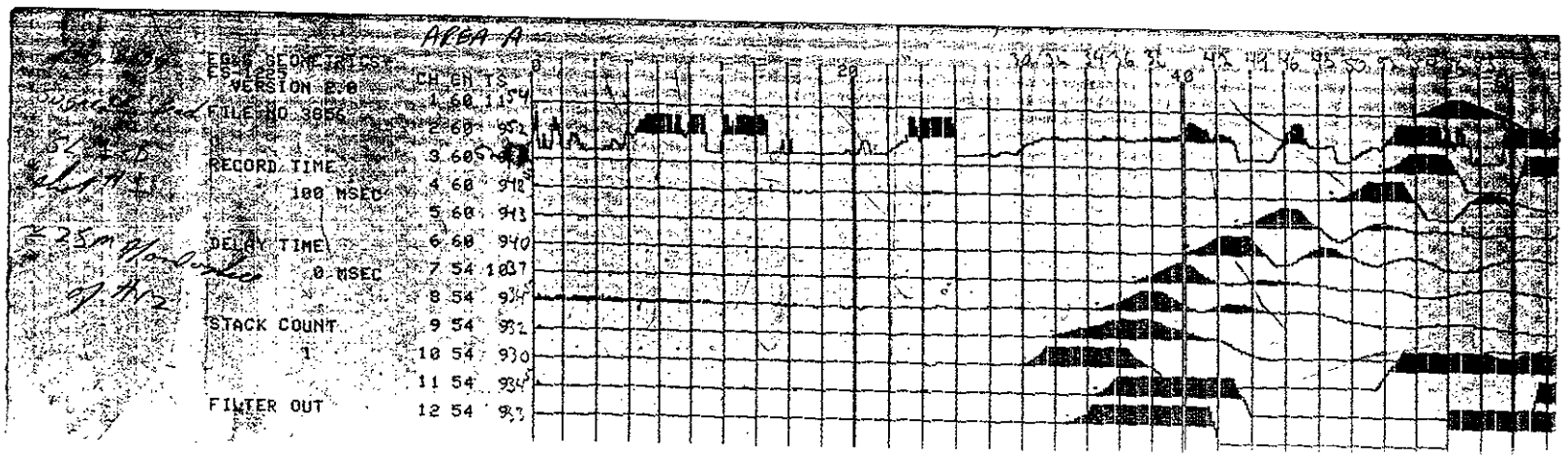
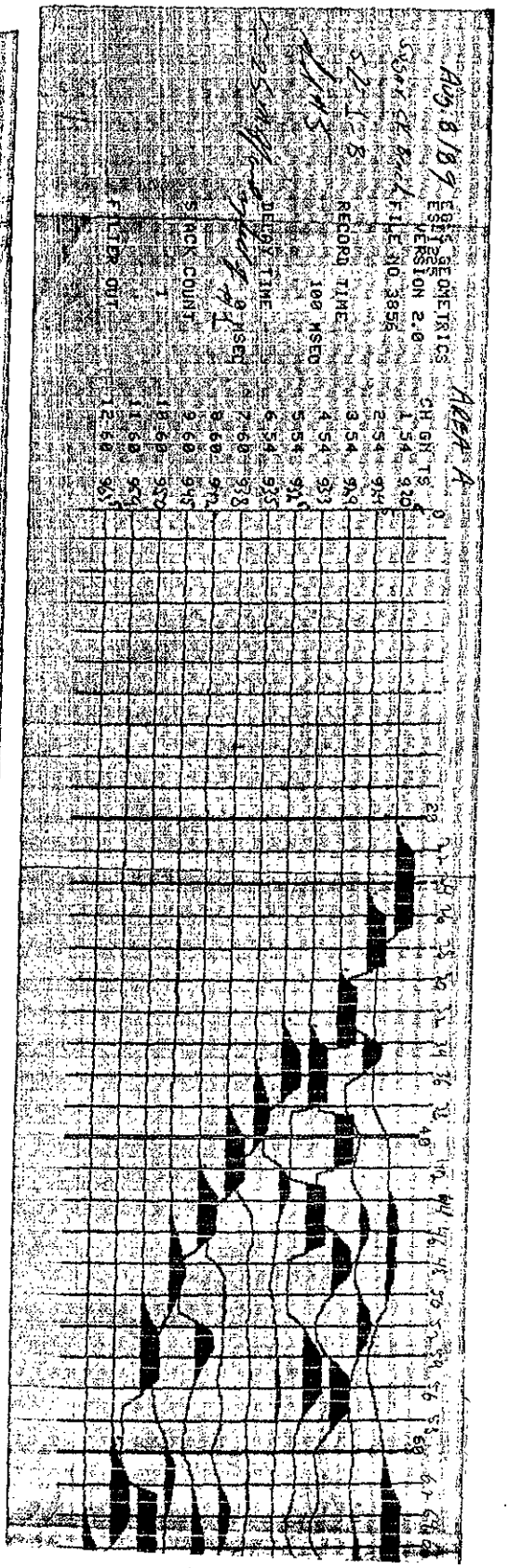


AREA A

APPENDIX B
Seismic Line No. 1B Spread No. 1



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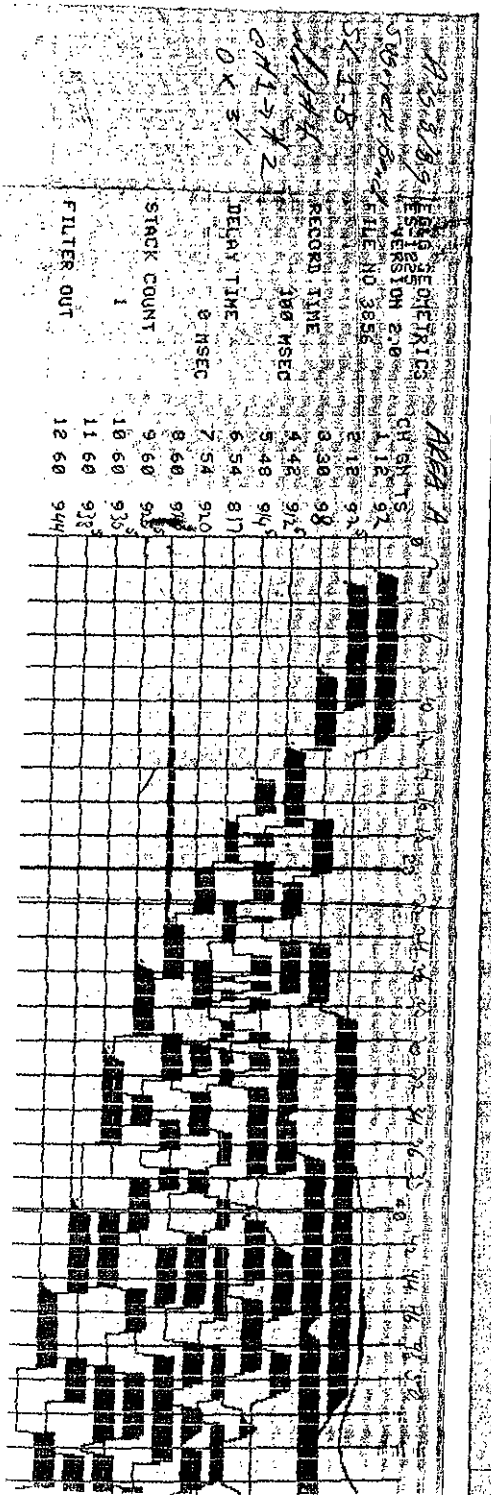

APPENDIX B
Seismic Line No. Spread No.

Area A

APPENDIX B
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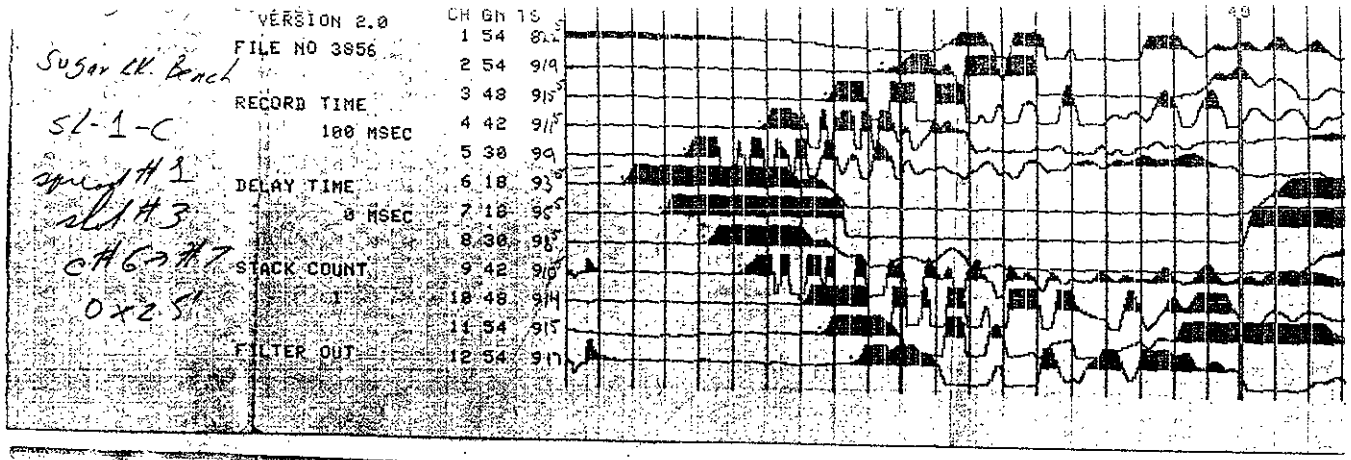

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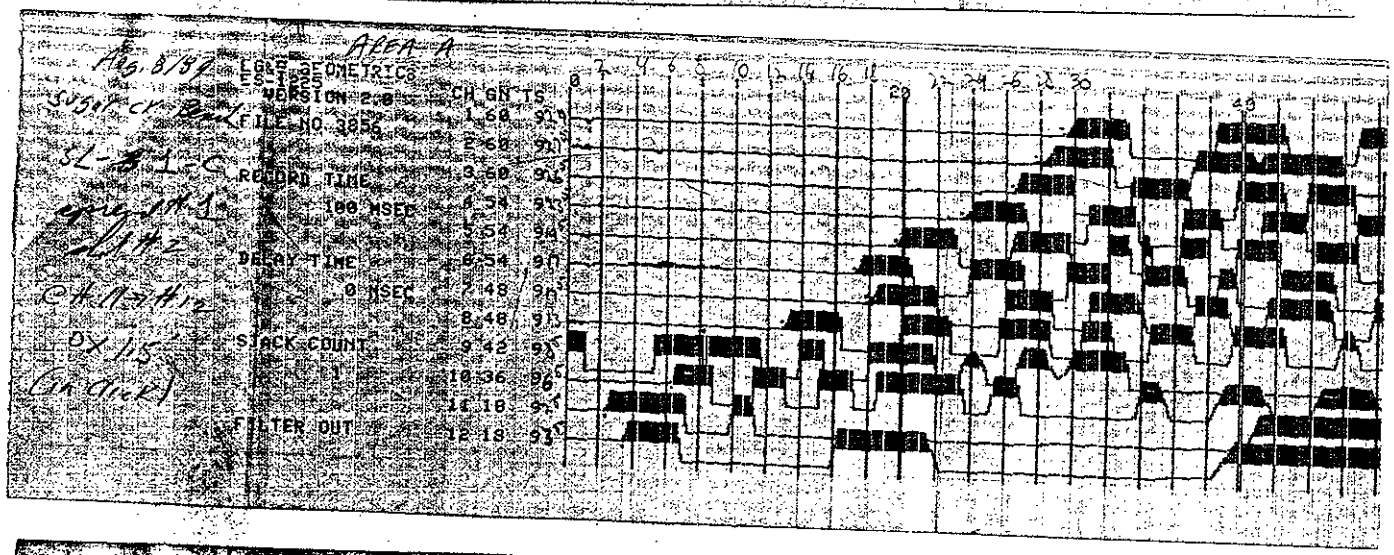

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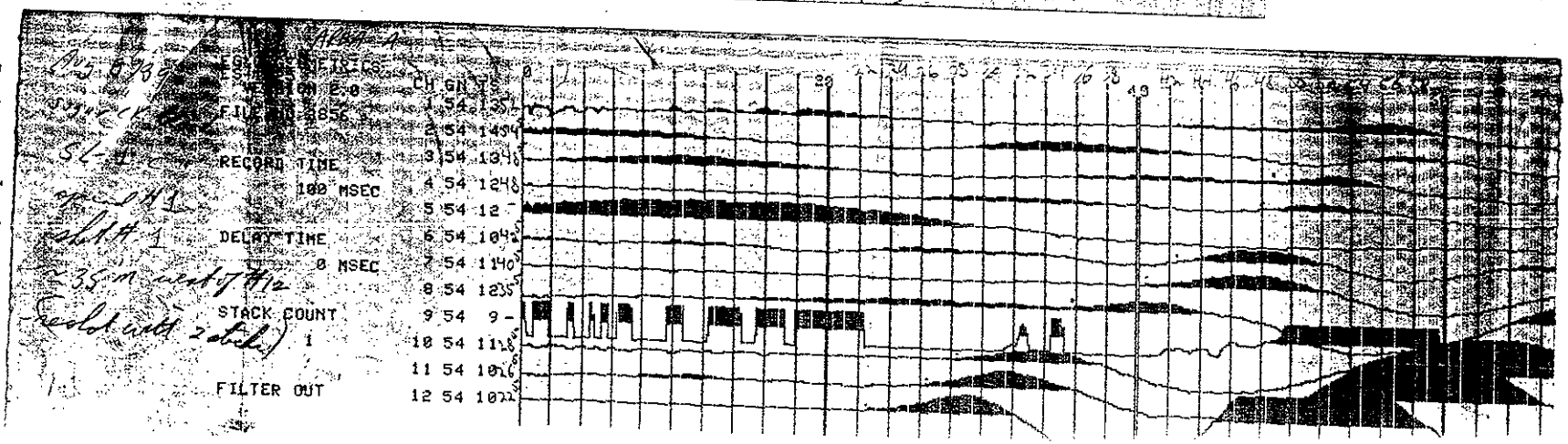

Area A

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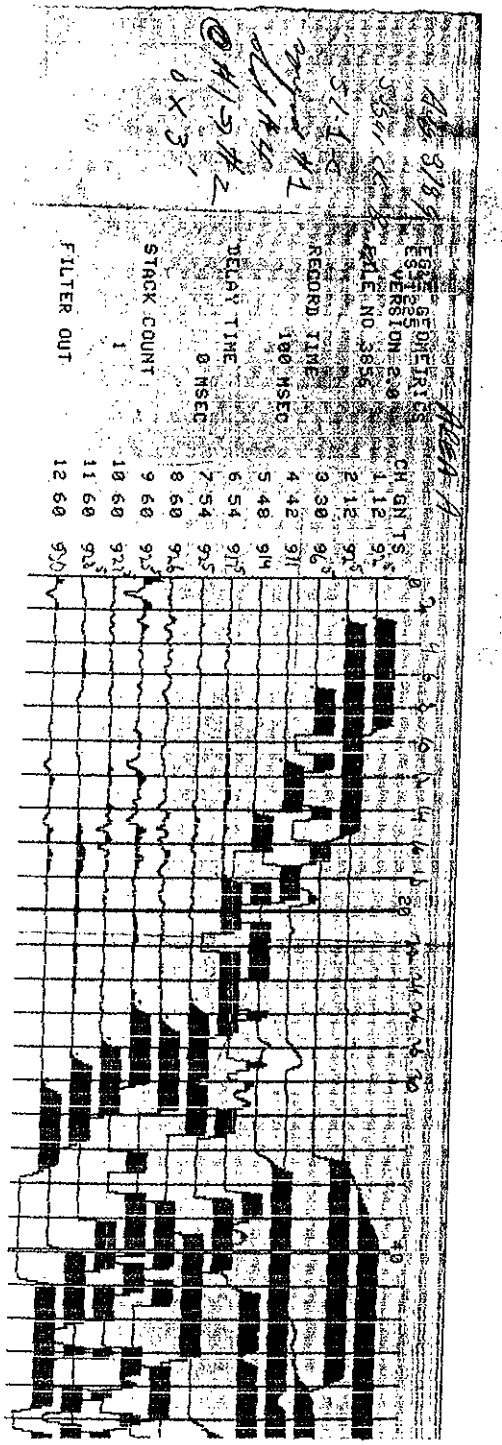

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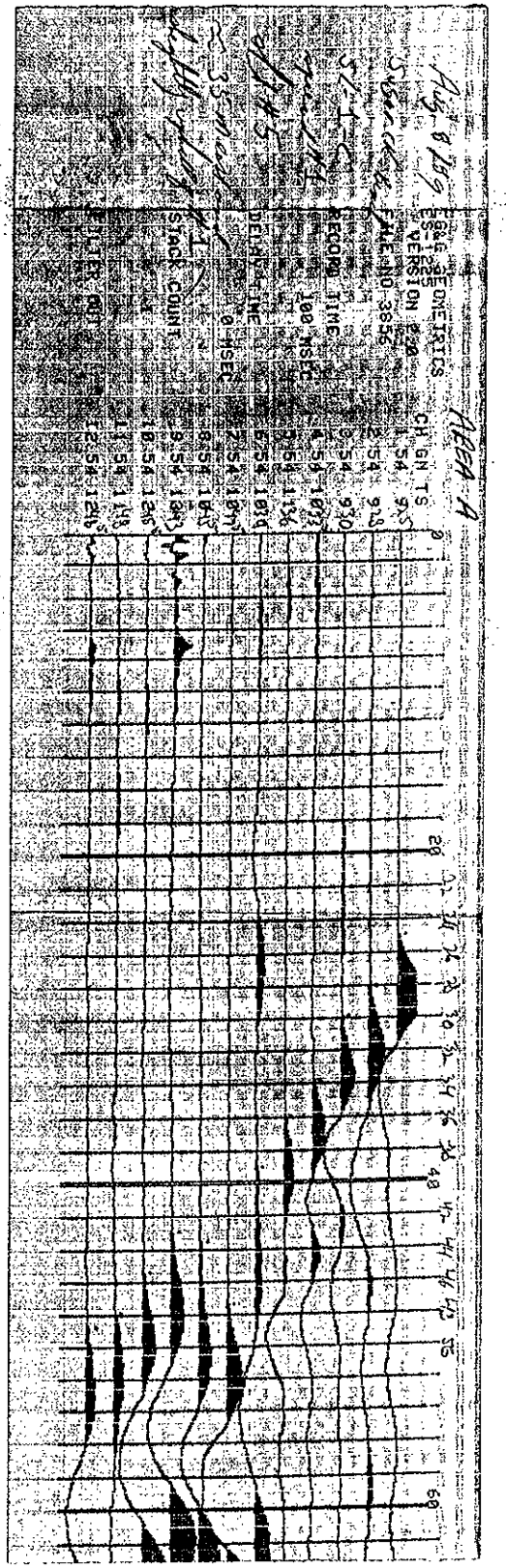
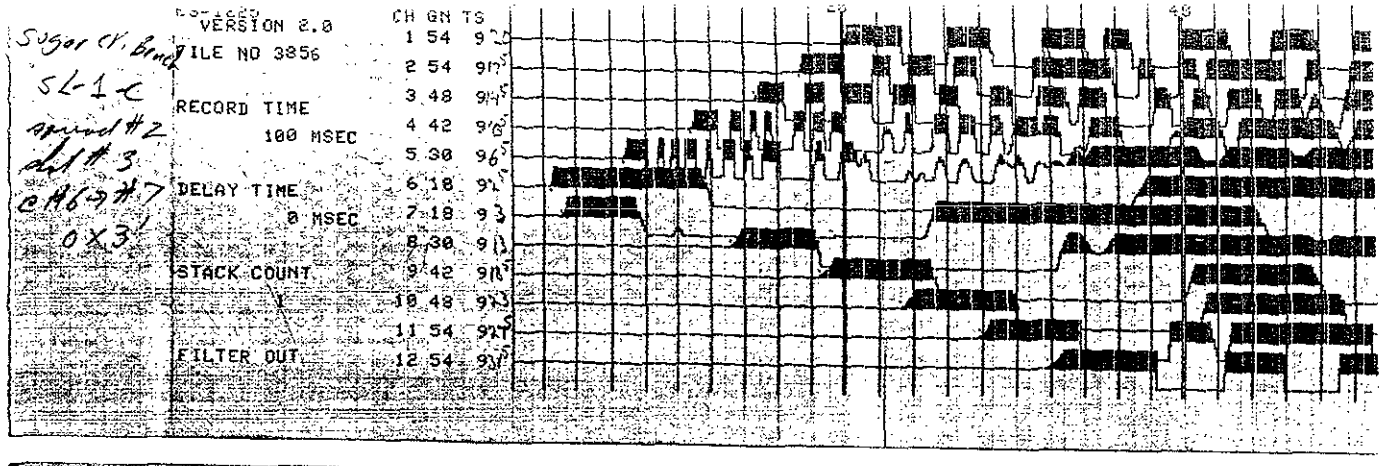


APPENDIX B
Seismic Line No. Spread No.

Area A

APPENDIX B
Seismic Line No. 1C Spread No. 2



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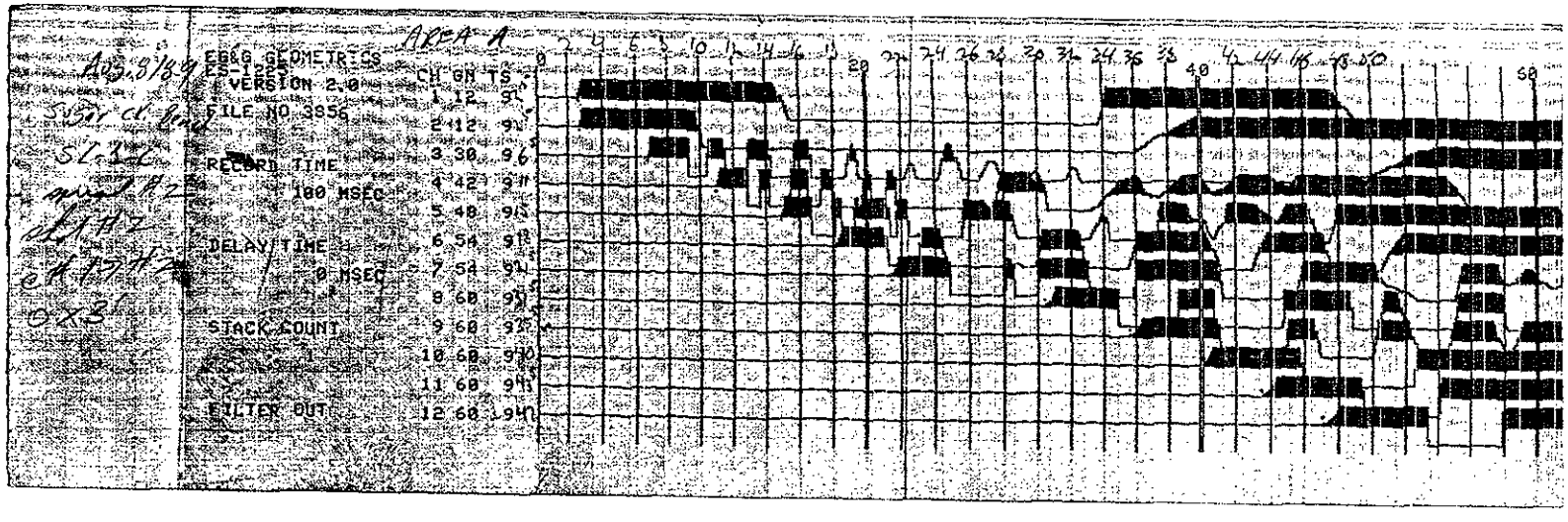

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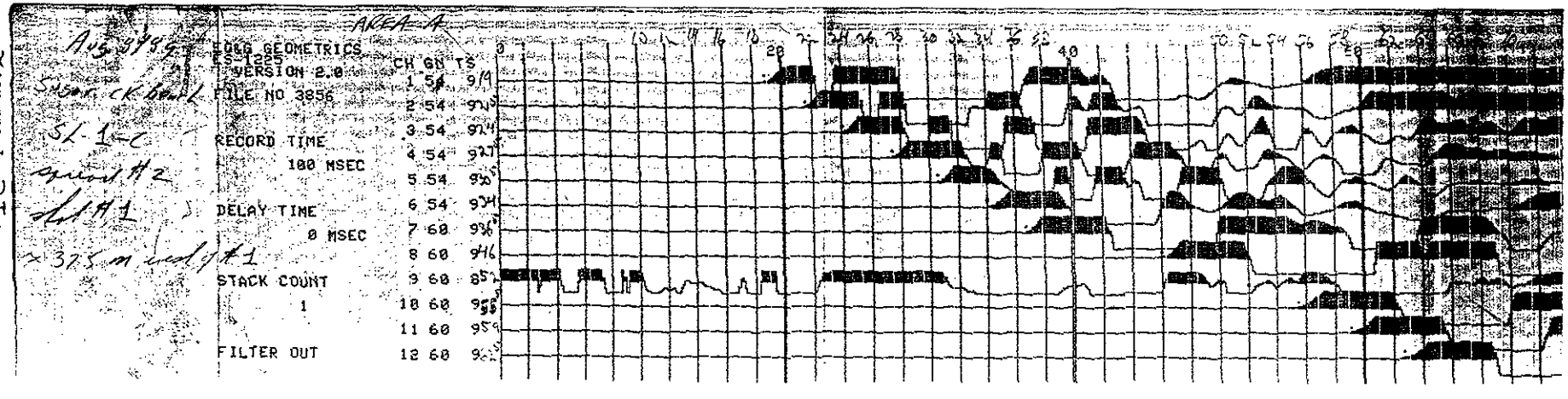

Area A

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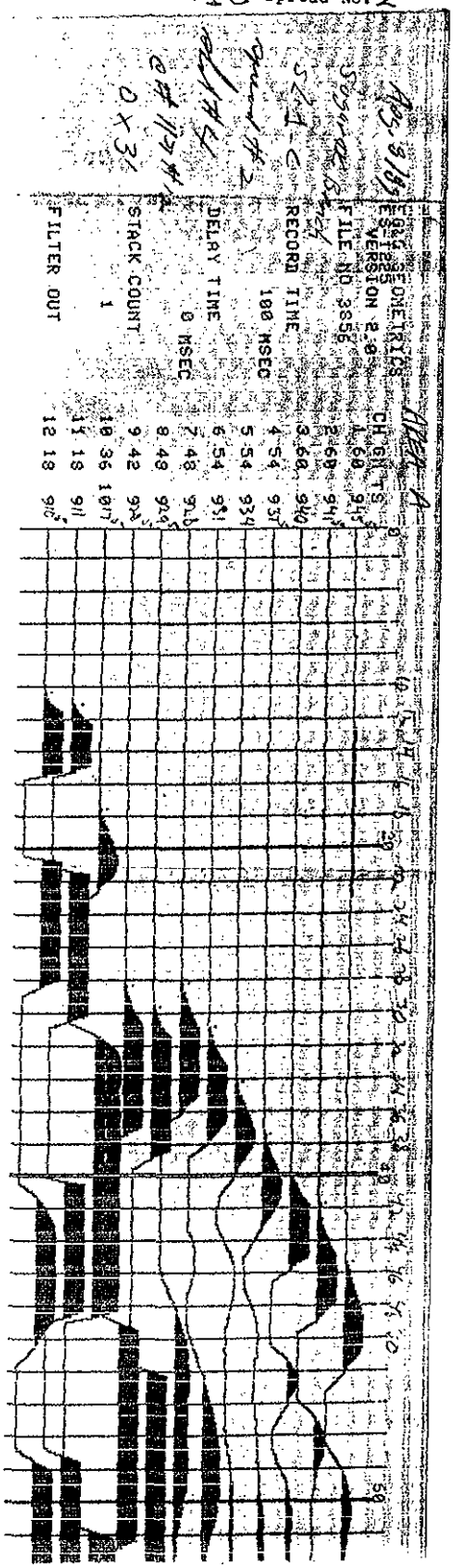

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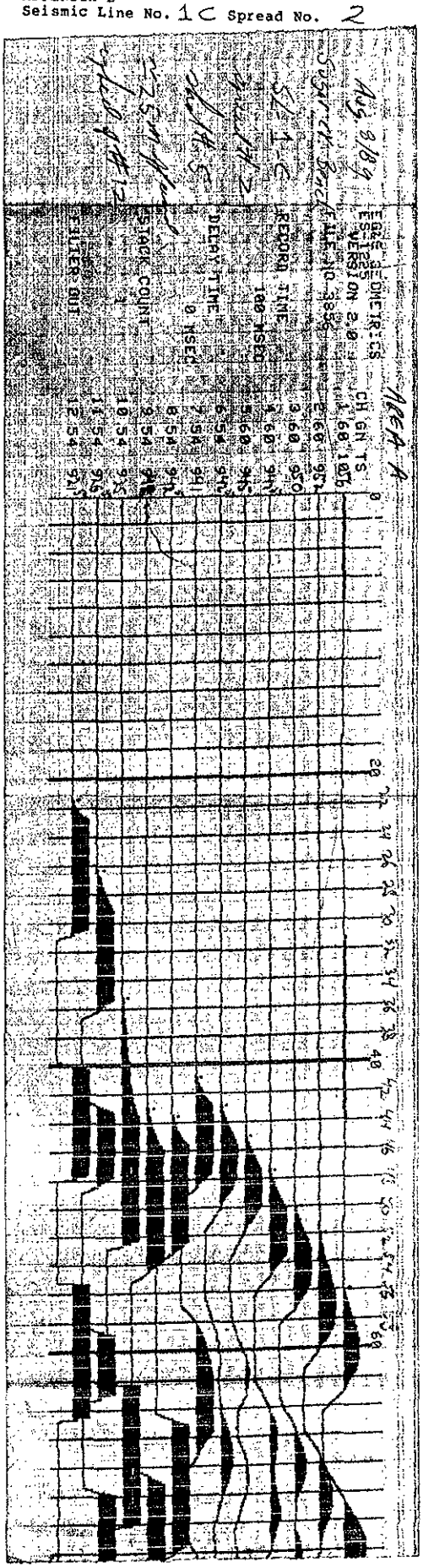

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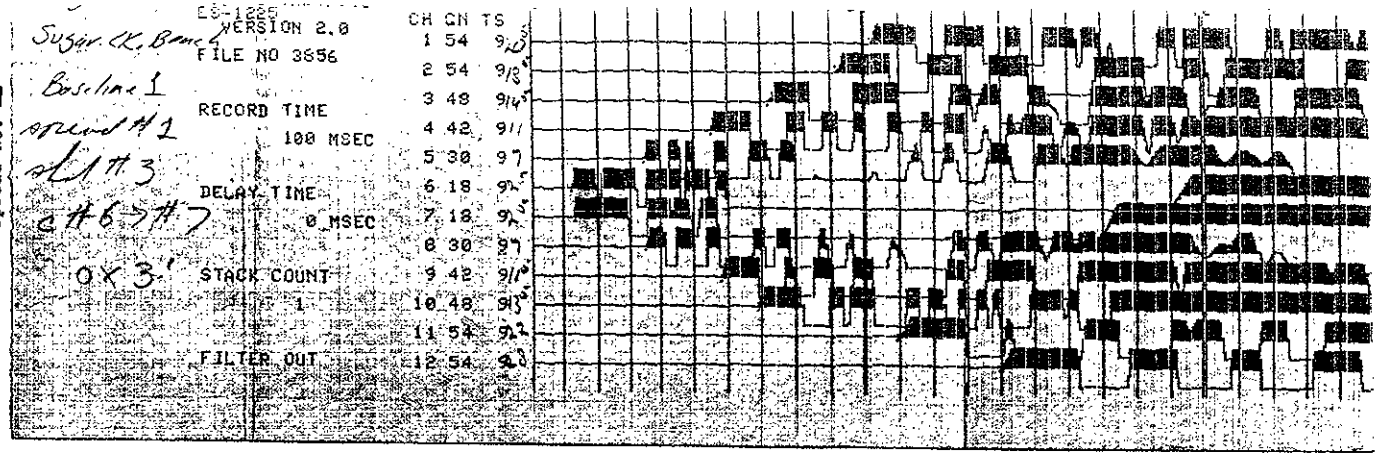
Area A



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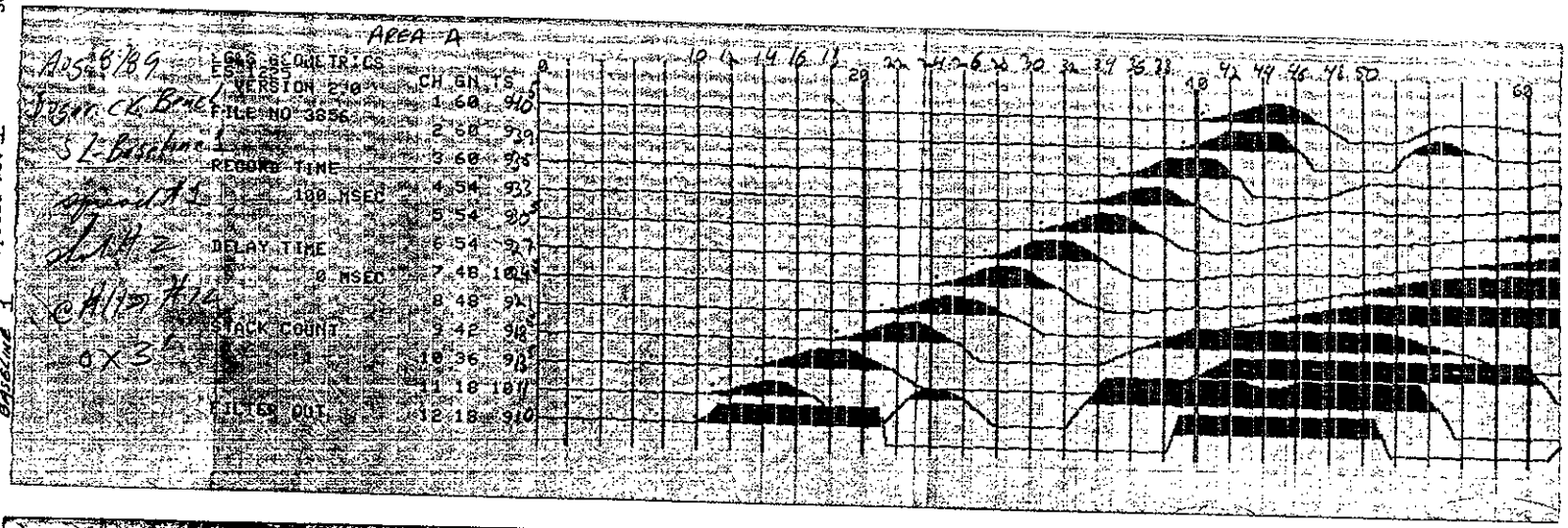

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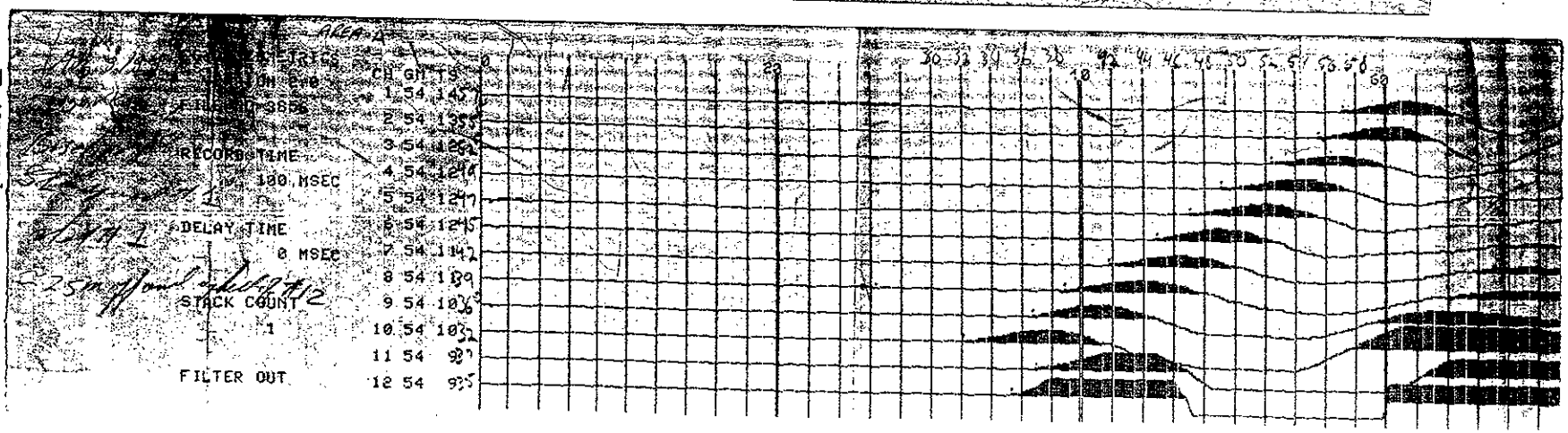
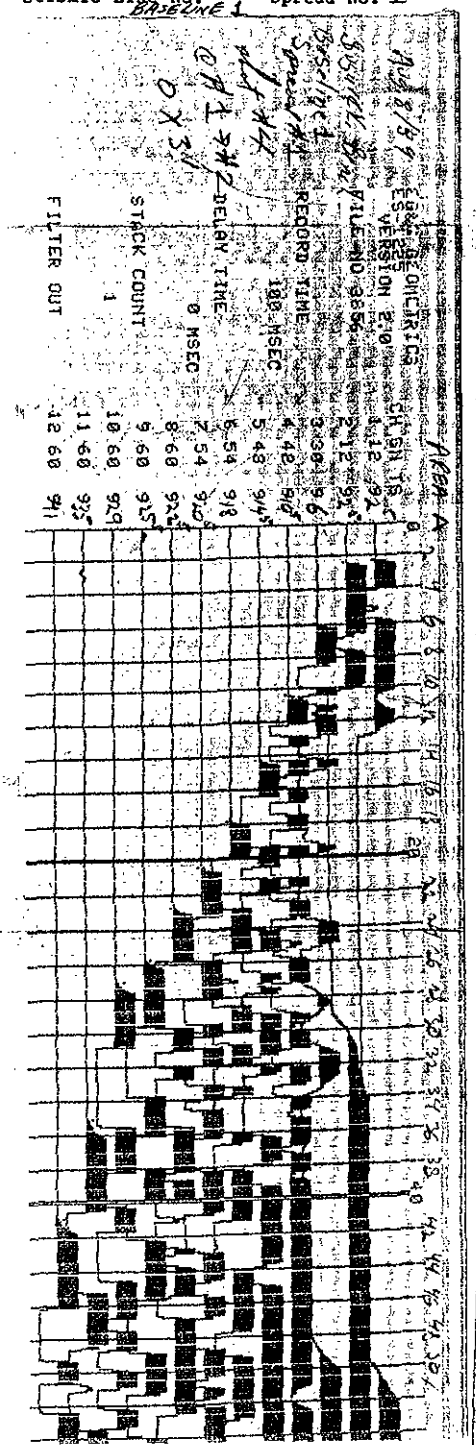


APPENDIX B Seismic Line No. BASELINE 1 Spread No. 1

Area A

APPENDIX B
Seismic Line No. BASELINE 1 Spread No. 1



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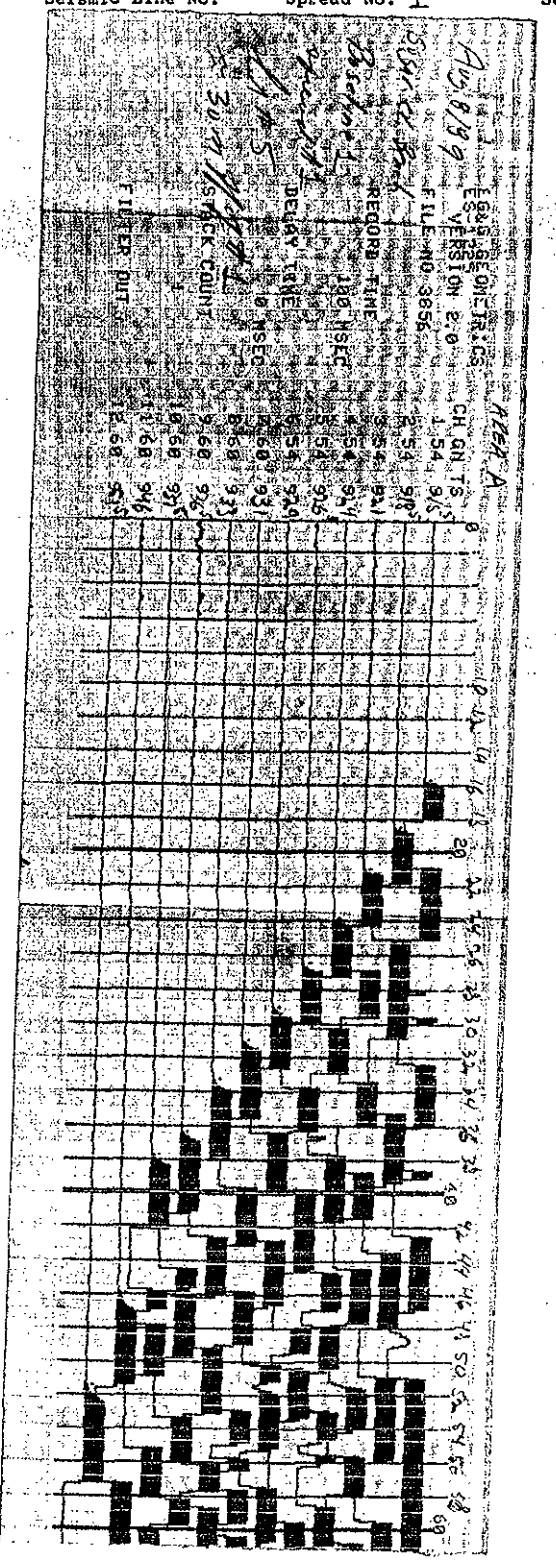
Seismic Line No. Spread No. 1



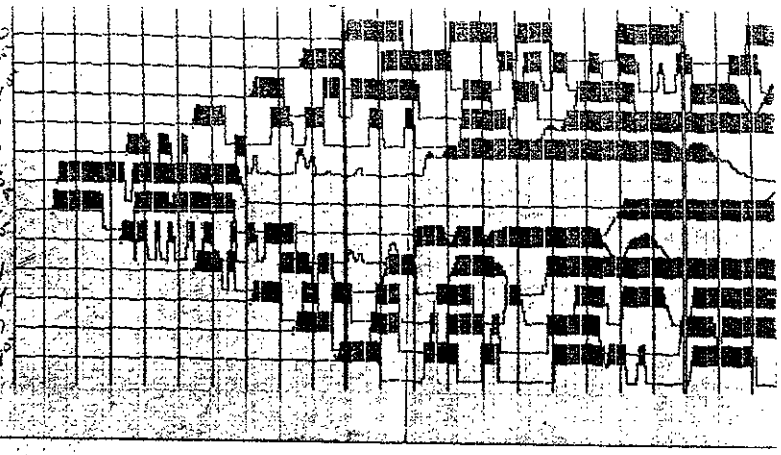
APPENDIX B
Seismic Line No. Spread No.

Area A

APPENDIX B
Seismic Line No. BASELINE 1
Spread No. 2

VERSION 2.0
Sugar Ck Branch FILE NO 3856
Baseline 1
spread #2
shot #3
ch 6 → #7
0 X 31
RECORD TIME
100 MSEC
DELAY TIME
0 MSEC
STACK COUNT
1
FILTER OUT

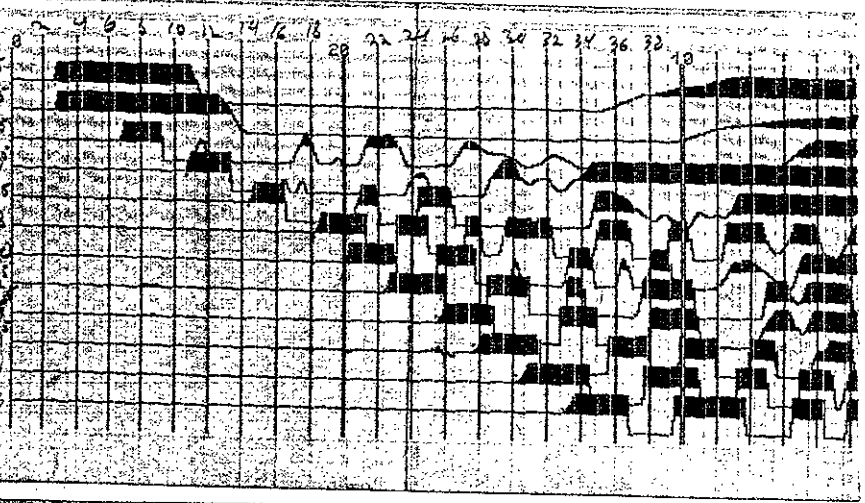
CH	GN	TS
1	54	9
2	54	91
3	48	94
4	42	91
5	30	97
6	18	93
7	18	91
8	30	86
9	42	91
10	48	91
11	54	91
12	54	94



APPENDIX B
Seismic Line No. BASELINE 1
Spread No. 2

AREA A
Aug 9 '89
Sugar Ck Branch
Baseline 1
spread #2
shot #1
ch 1 → #2
0 X 31
GEOMETRICS
VERSION 2.0
FILE NO 3856
RECORD TIME
100 MSEC
DELAY TIME
0 MSEC
STACK COUNT
1
FILTER OUT

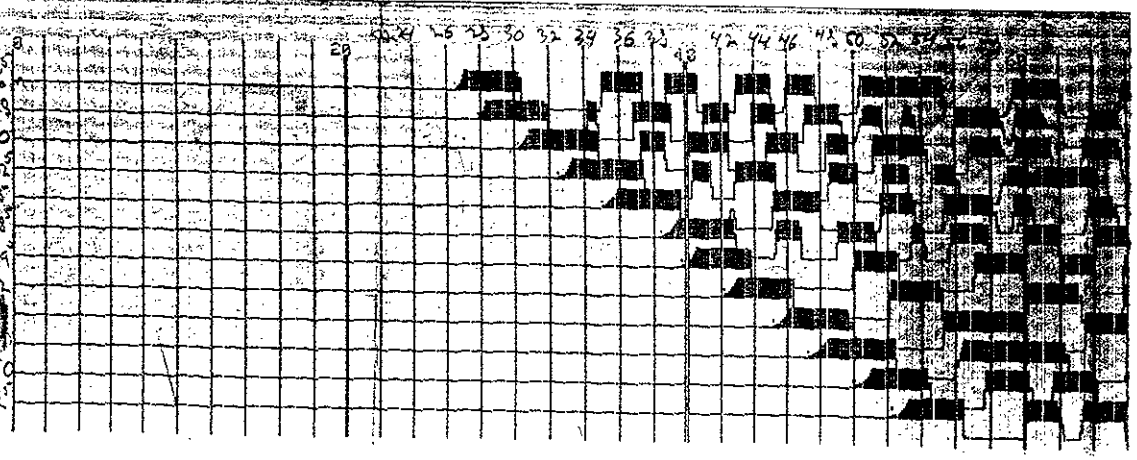
CH	GN	TS
1	12	94
2	12	93
3	30	96
4	42	96
5	48	94
6	54	94
7	54	94
8	60	93
9	60	92
10	60	94
11	60	94
12	60	93



APPENDIX B
Seismic Line No. BASELINE 1
Spread No. 2

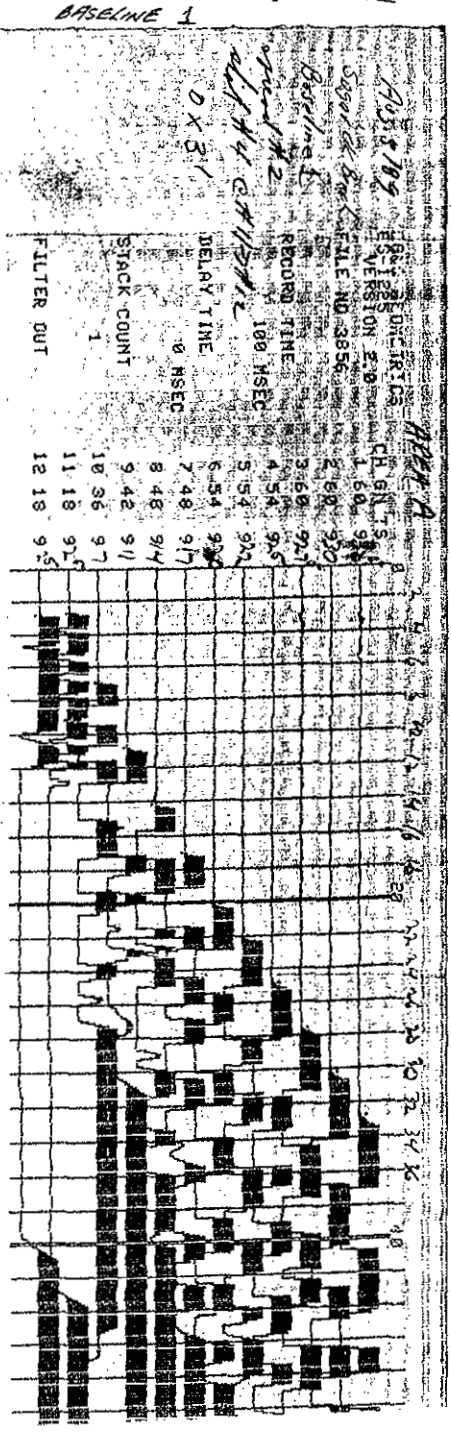
AREA A
Aug 9 '89
Sugar Ck Branch
Baseline 1
spread #2
shot #1
ch 35 → ch #1
0 X 31
GEOMETRICS
VERSION 2.0
FILE NO 3856
RECORD TIME
100 MSEC
DELAY TIME
0 MSEC
STACK COUNT
1
FILTER OUT

CH	GN	TS
1	54	96
2	54	94
3	54	93
4	54	93
5	54	93
6	54	93
7	60	93
8	60	94
9	60	94
10	60	95
11	60	95
12	60	95

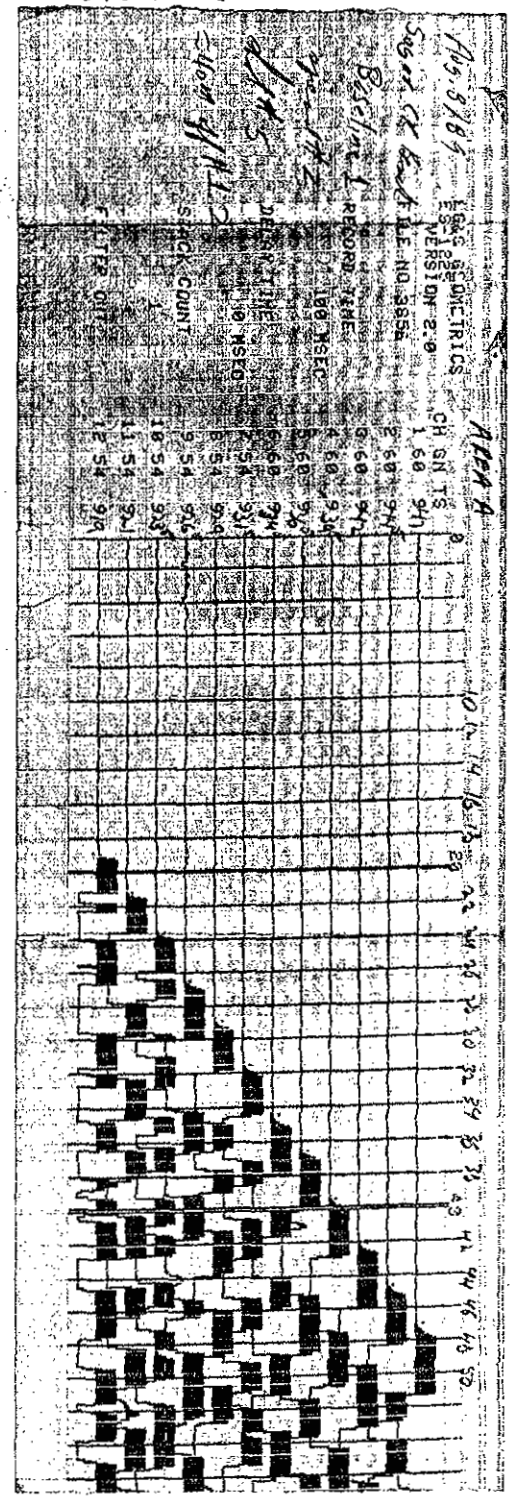


AREA A

APPENDIX B
Seismic Line No. BASELINE 1 Spread No. 2

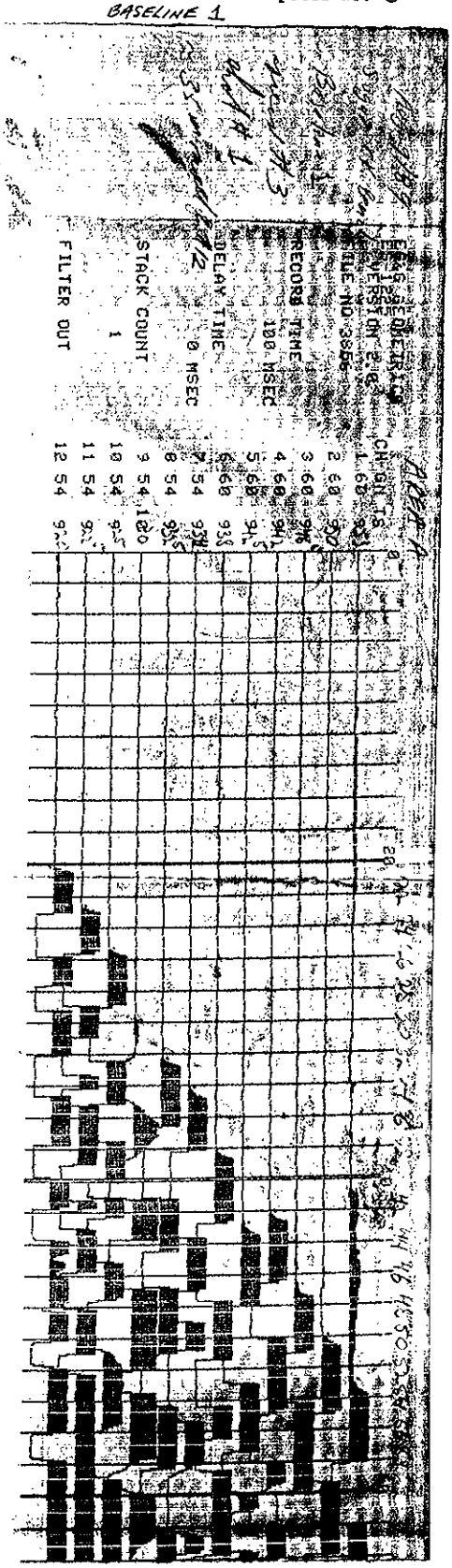


APPENDIX B
Seismic Line No. BASELINE 1 Spread No. 2

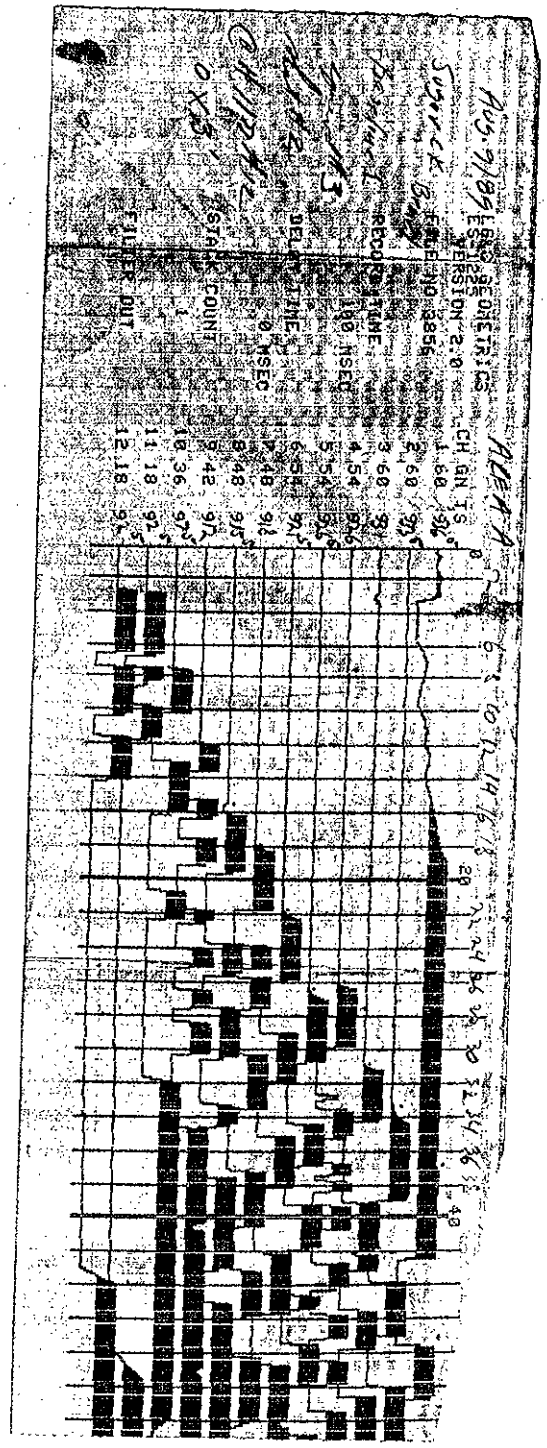


APPENDIX B
Seismic Line No. Spread No.

APPENDIX B
Seismic Line No. BASELINE 1 Spread No. 3

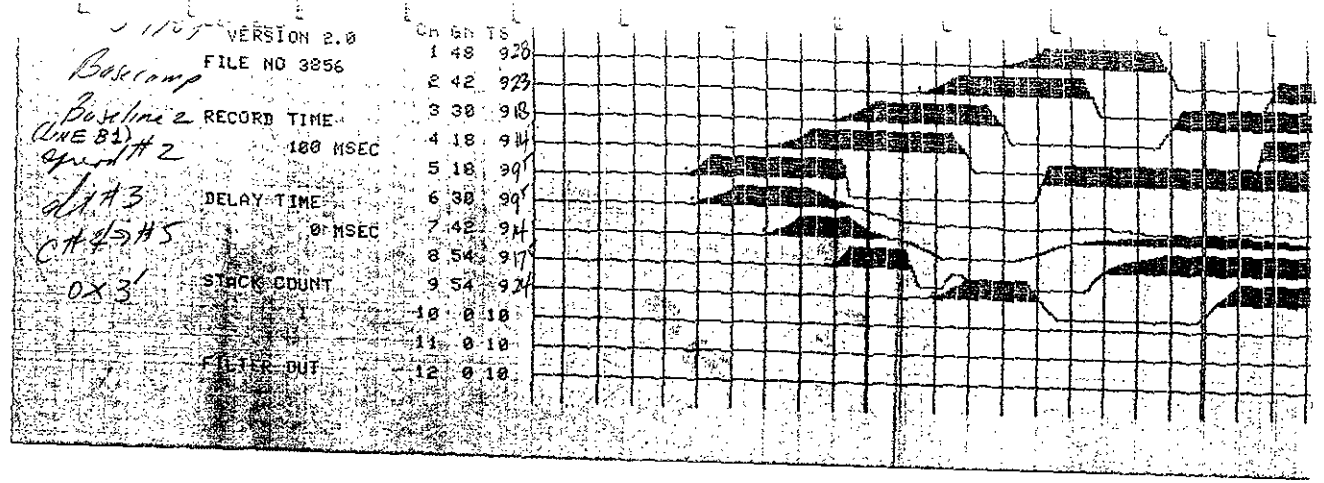


APPENDIX B BASELINE 1
Seismic Line No. Spread No. 3

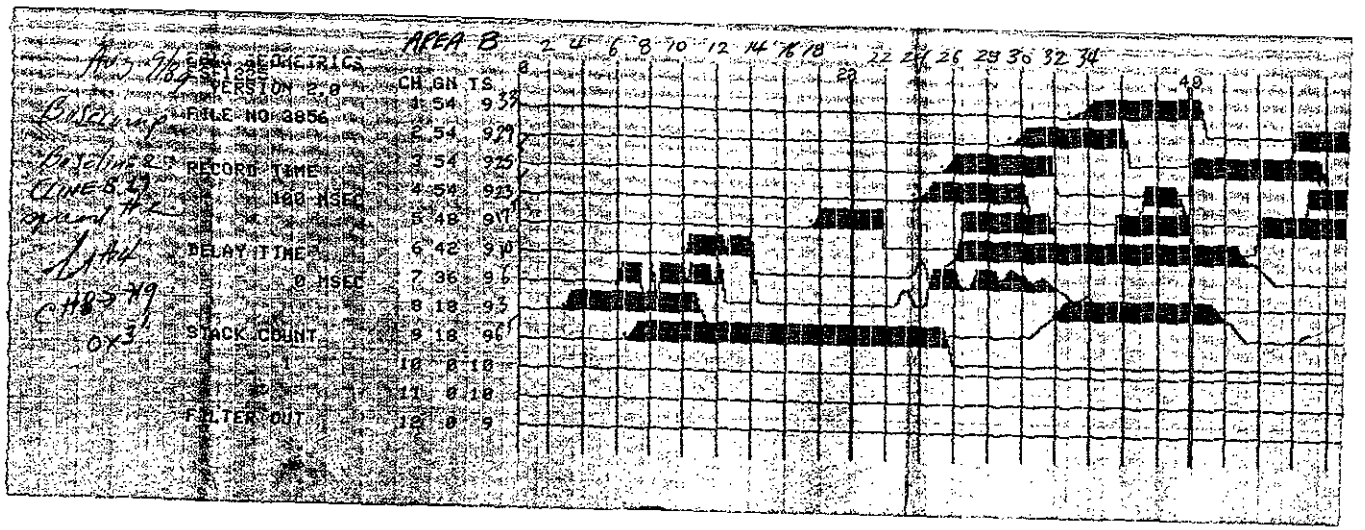


APPENDIX B
Seismic Line No. Spread No.

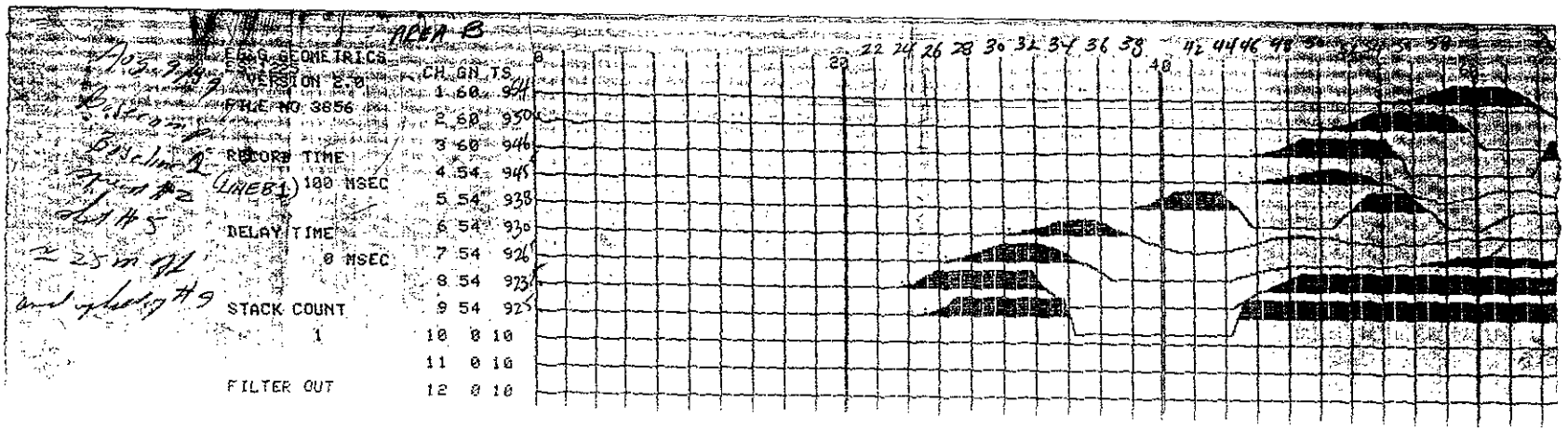
APPENDIX B
Seismic Line No. 81 Spread No. 2



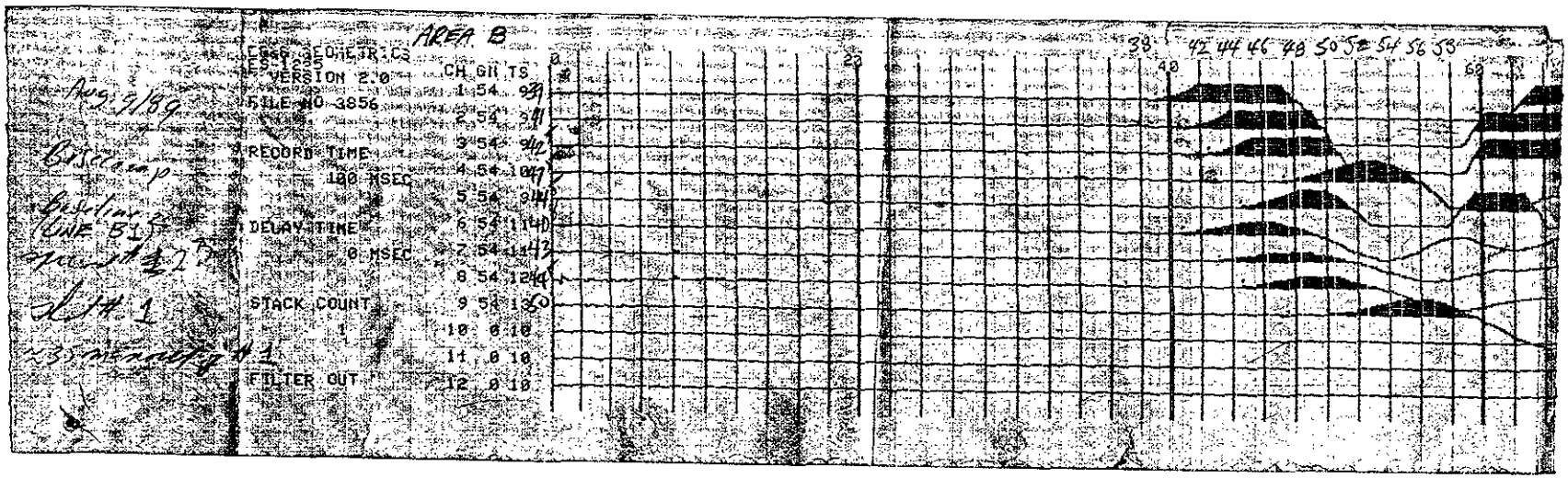
APPENDIX B
Seismic Line No. 81 Spread No. 2



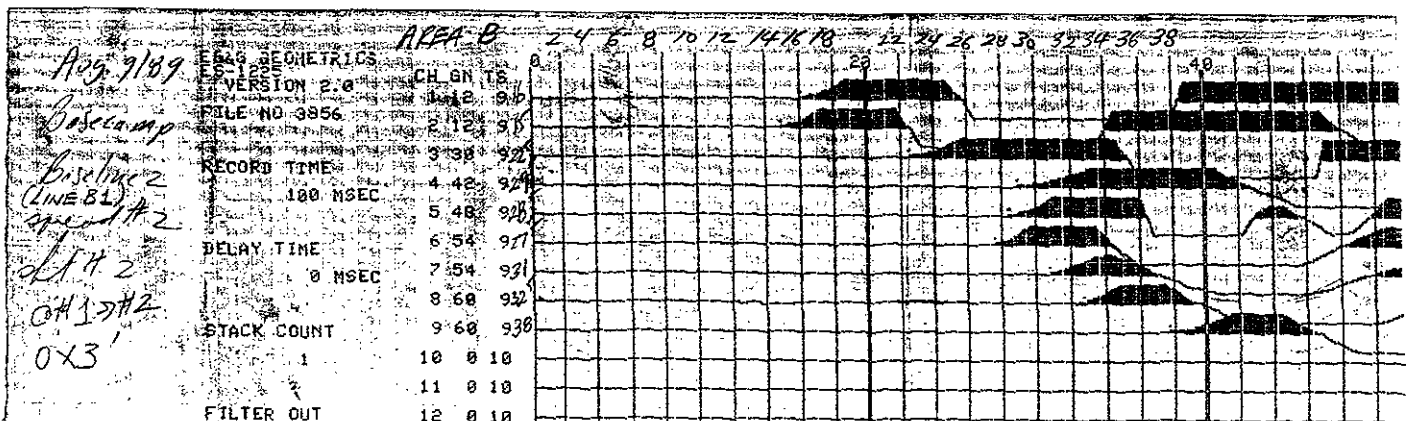
APPENDIX B
Seismic Line No. 81 Spread No. 2



APPENDIX B
Seismic Line No. B1 Spread No. 2

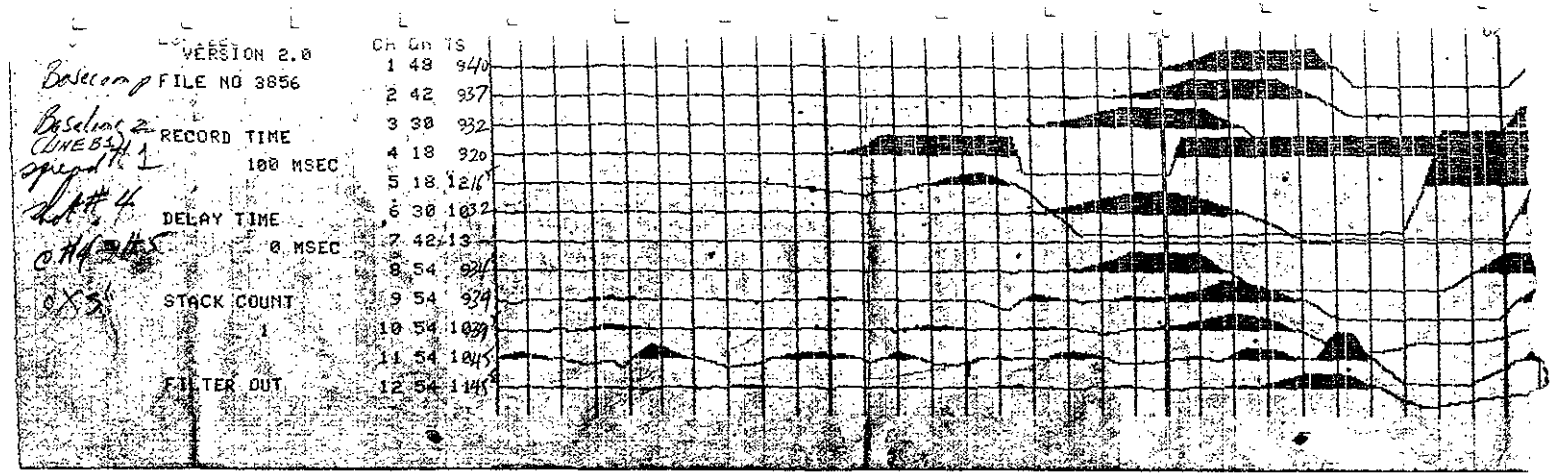


APPENDIX B
Seismic Line No. B1 Spread No. 2

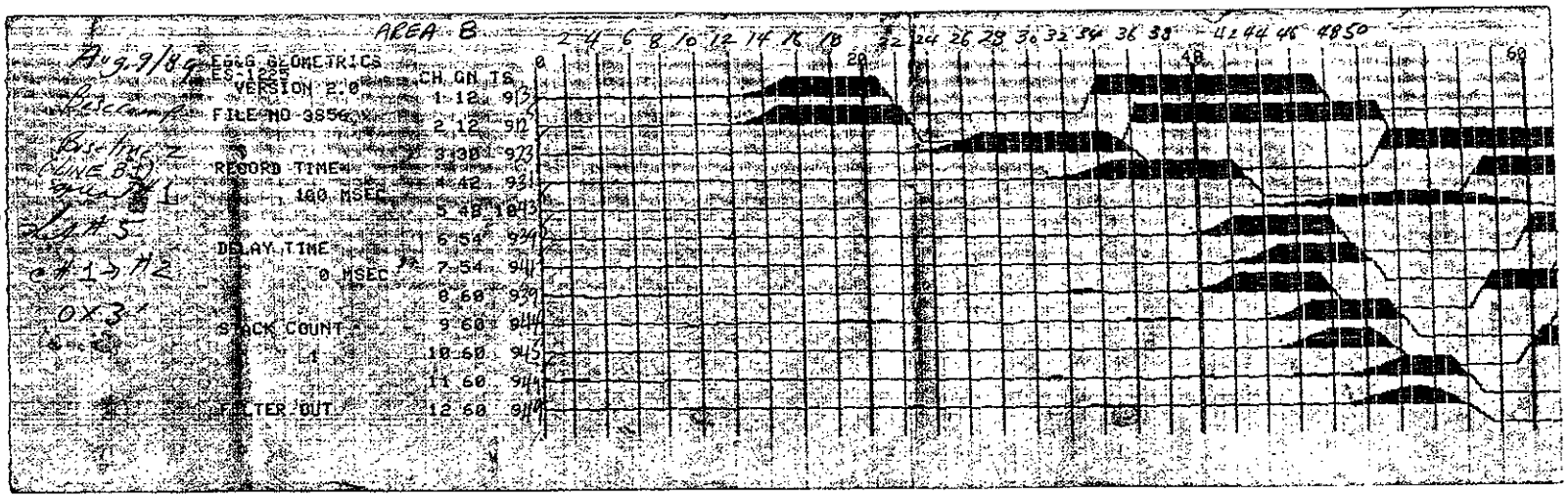


Area B

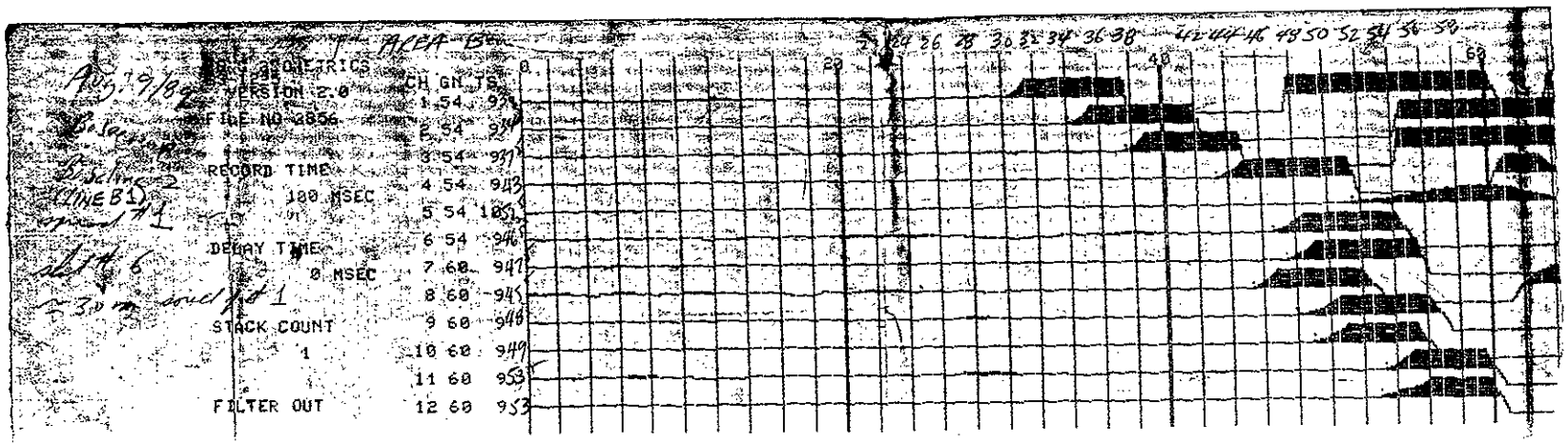
APPENDIX B
Seismic Line No. B1 Spread No. 1



APPENDIX B
Seismic Line No. B1 Spread No. 1

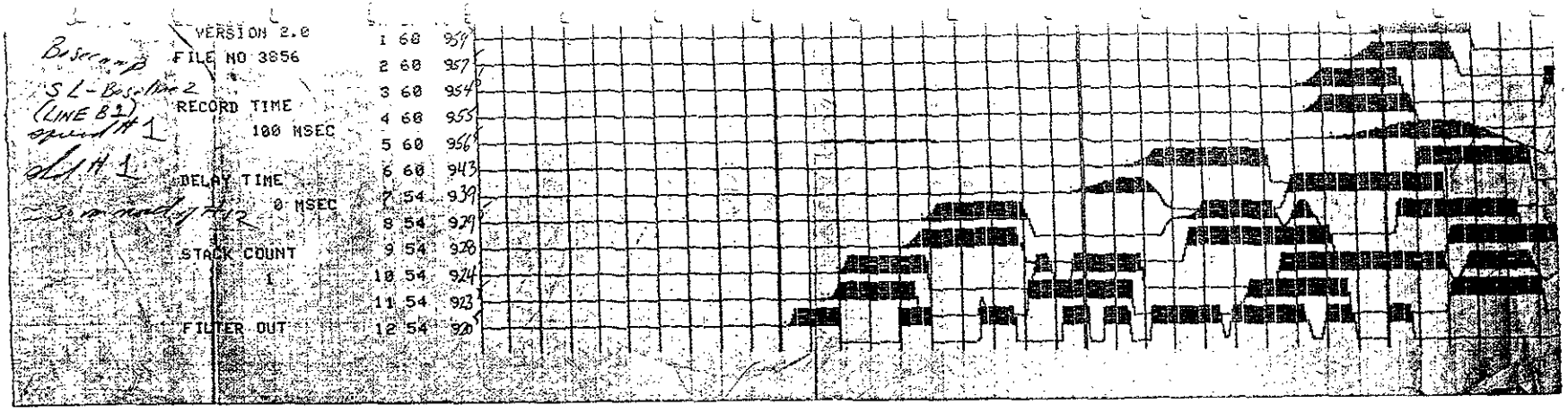


APPENDIX B
Seismic Line No. B1 Spread No. 1

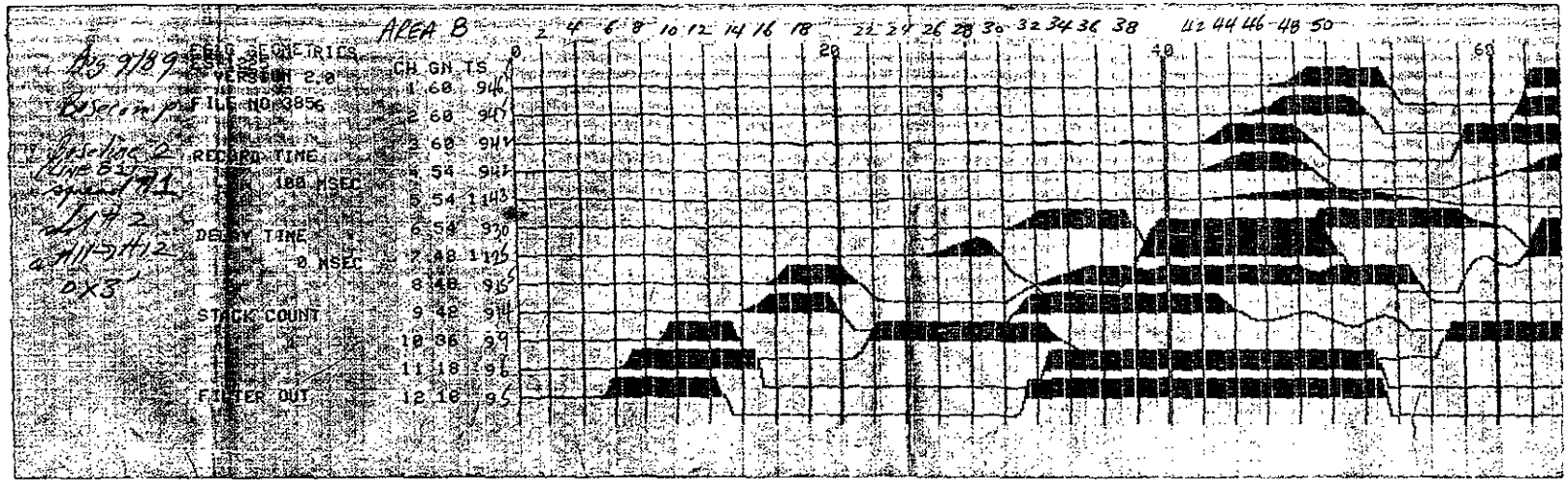


Area B

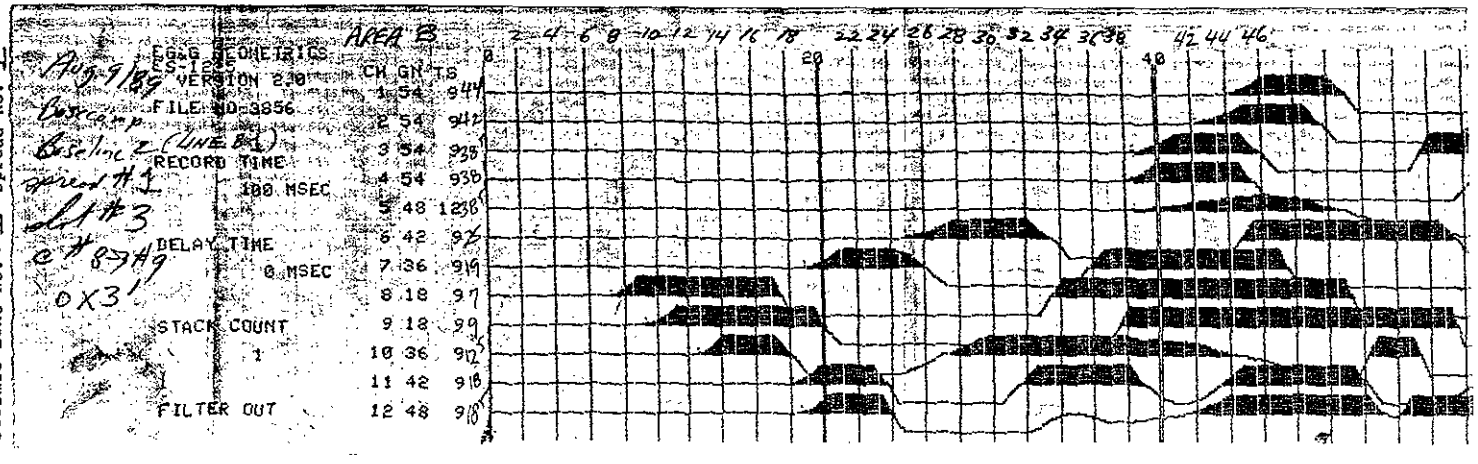
APPENDIX B
Seismic Line No. 81 Spread No. 1



APPENDIX B
Seismic Line No. 81 Spread No. 1



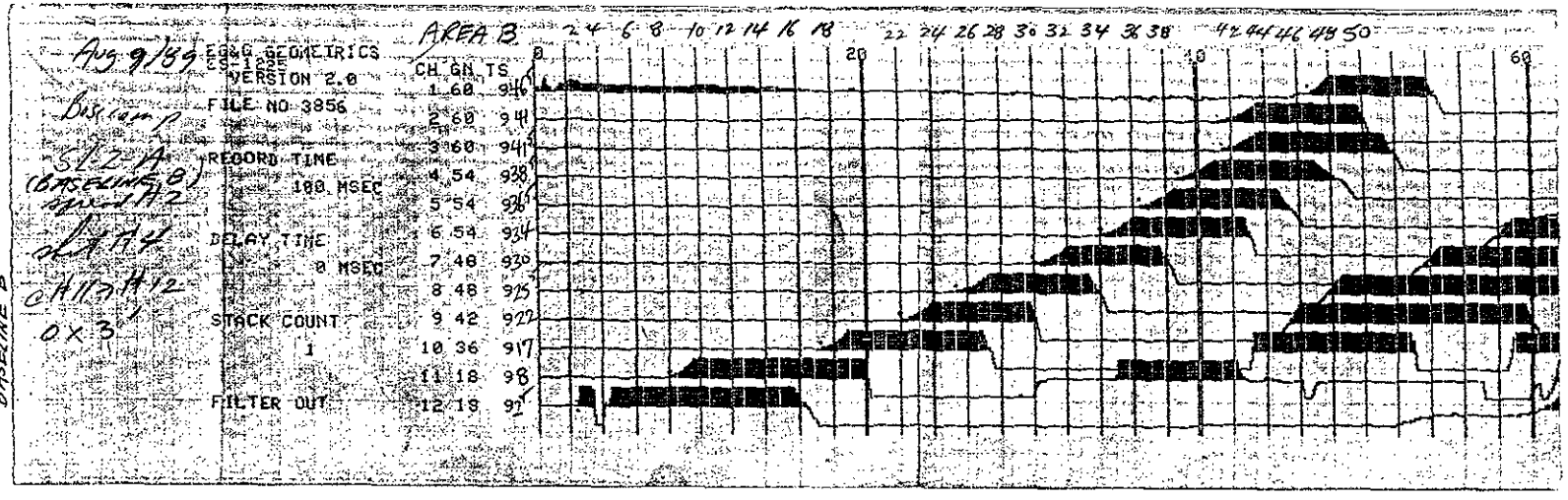
APPENDIX B
Seismic Line No. 81 Spread No. 1



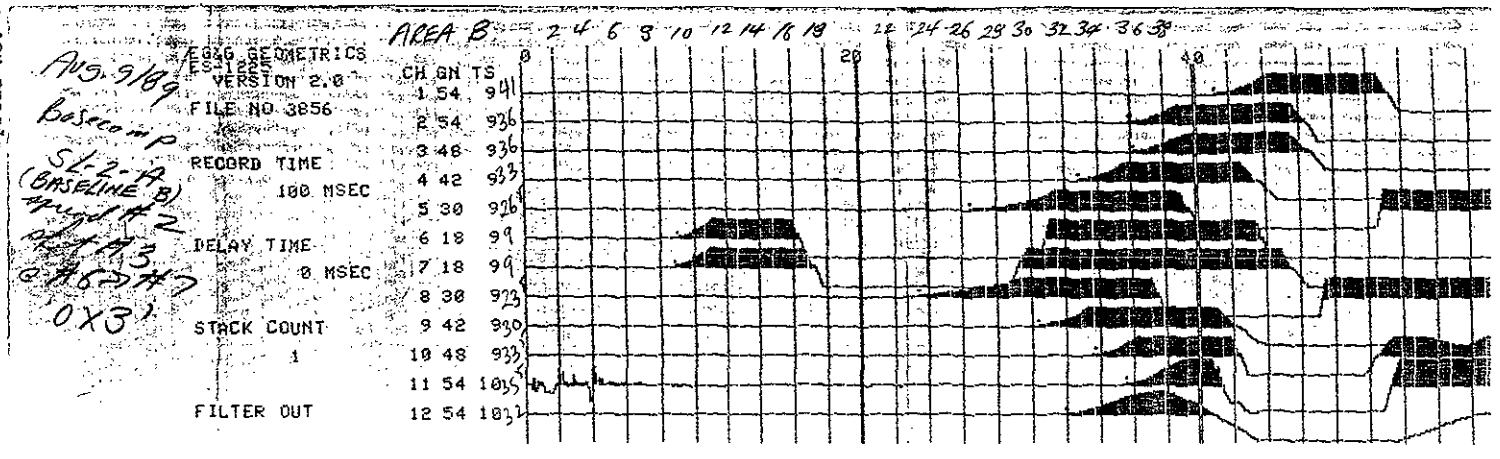
Area B

APPENDIX B
Seismic Line No. Sp.

APPENDIX B
Seismic Line No. BASELINE B Spread No. 2

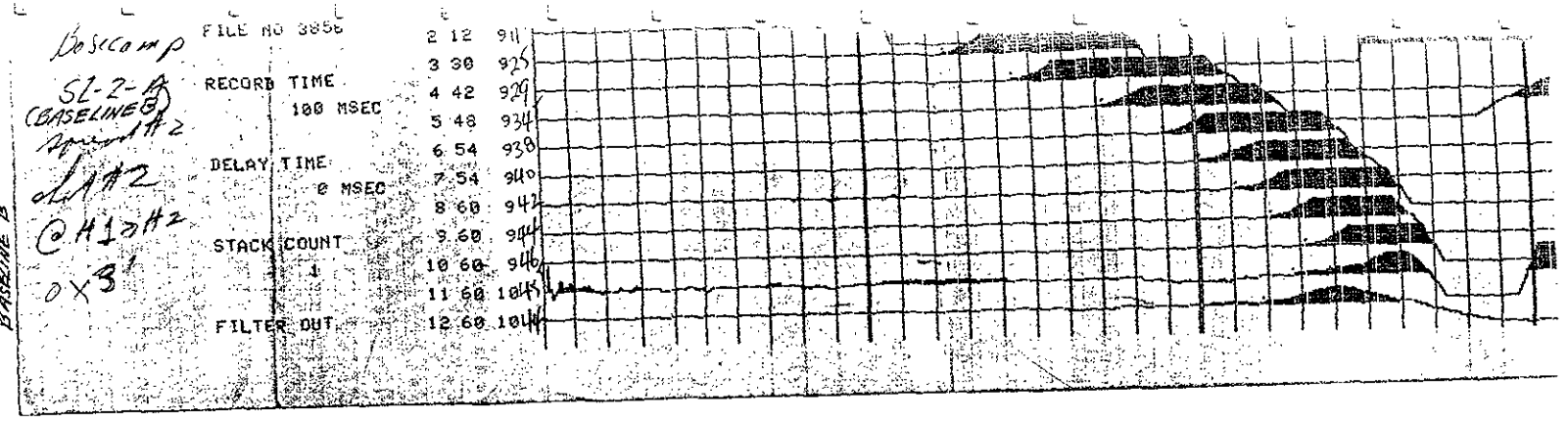


APPENDIX B
Seismic Line No. BASELINE B Spread No. 2

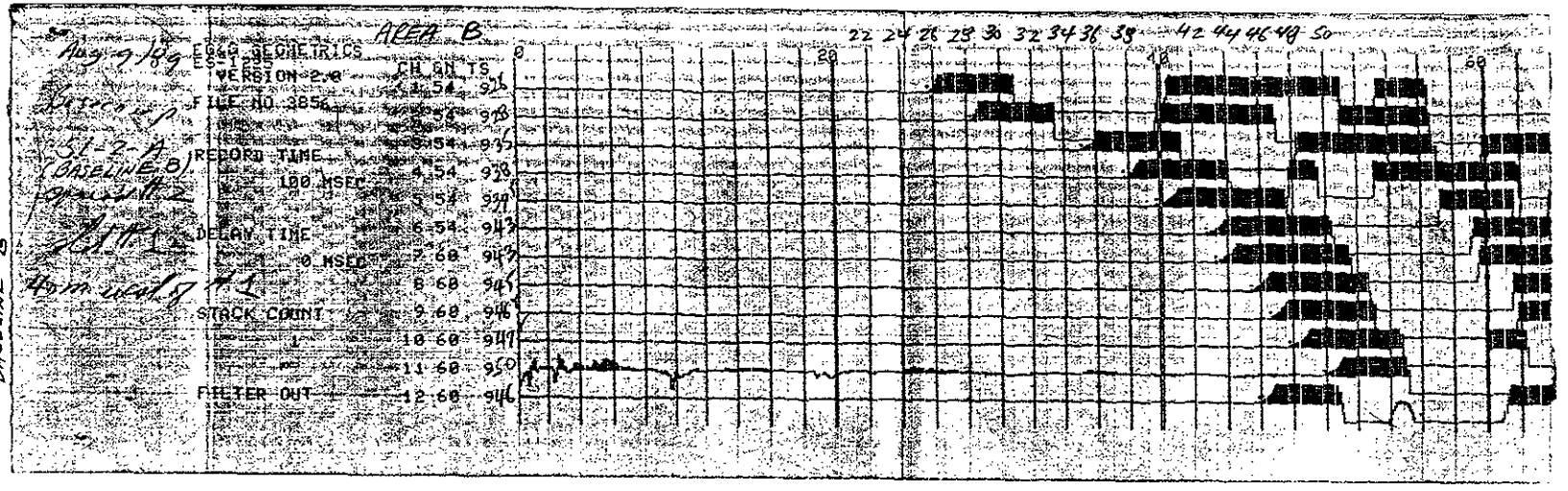


Area B

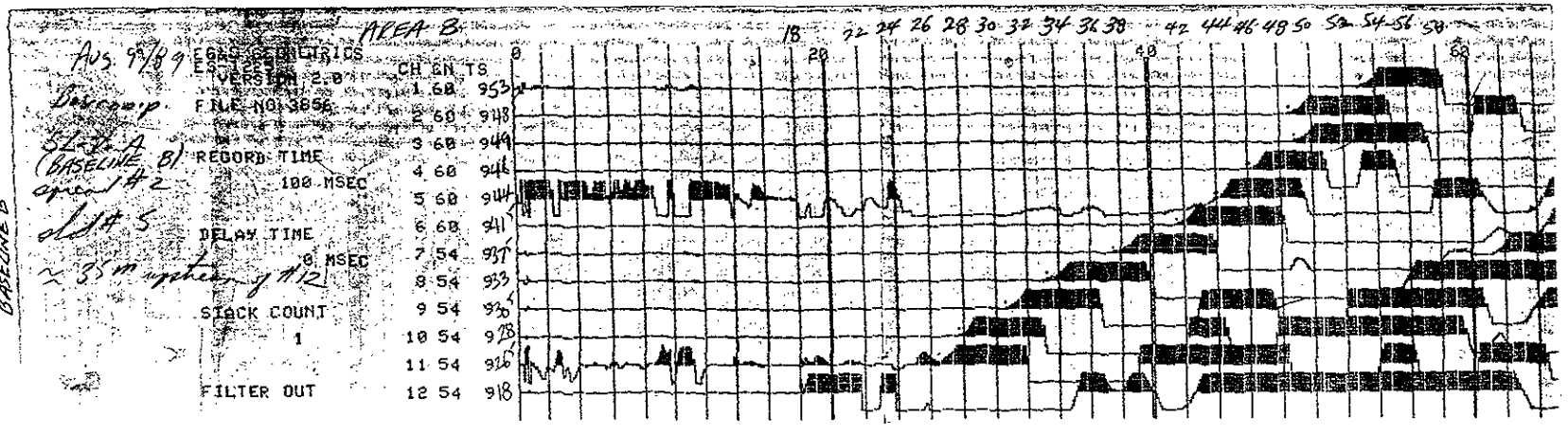
APPENDIX B
Seismic Line No. BASELINE B
Spread 2



APPENDIX B
Seismic Line No. BASELINE B
Spread No. 2

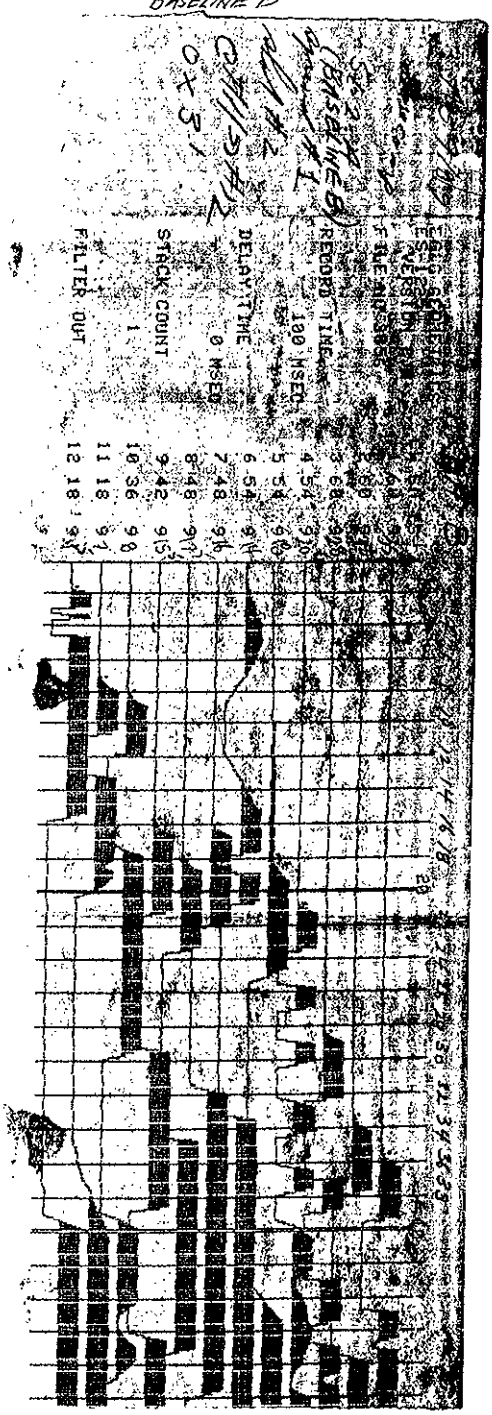


APPENDIX B
Seismic Line No. BASELINE B
Spread No. 2

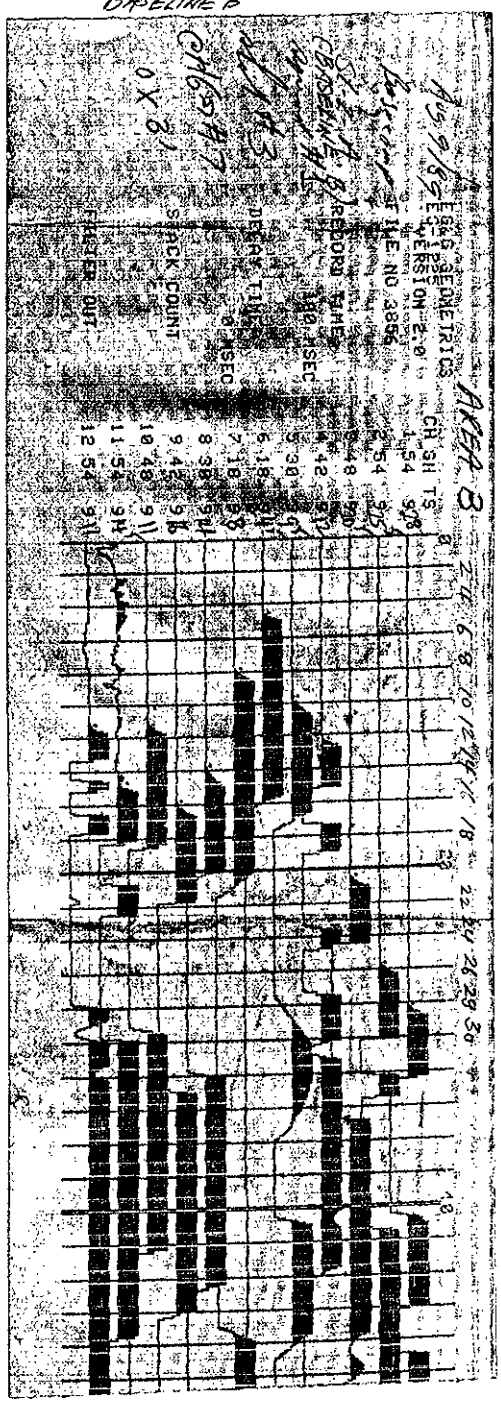


Area B

APPENDIX B
Seismic Line No. BASELINE B Spread No. 1



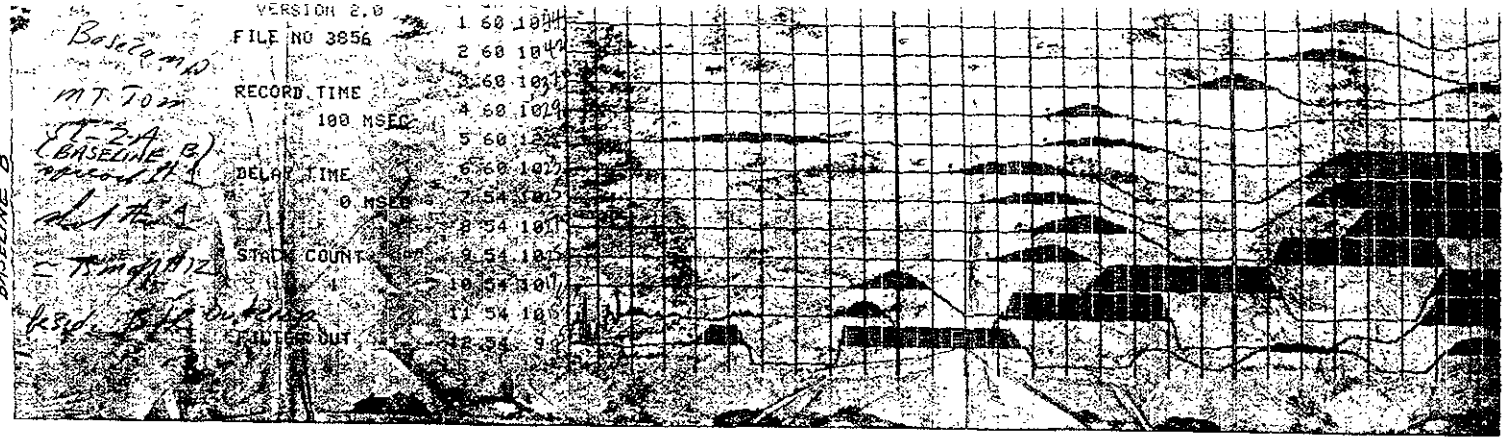
APPENDIX B
Seismic Line No. BASELINE B Spread No. 1



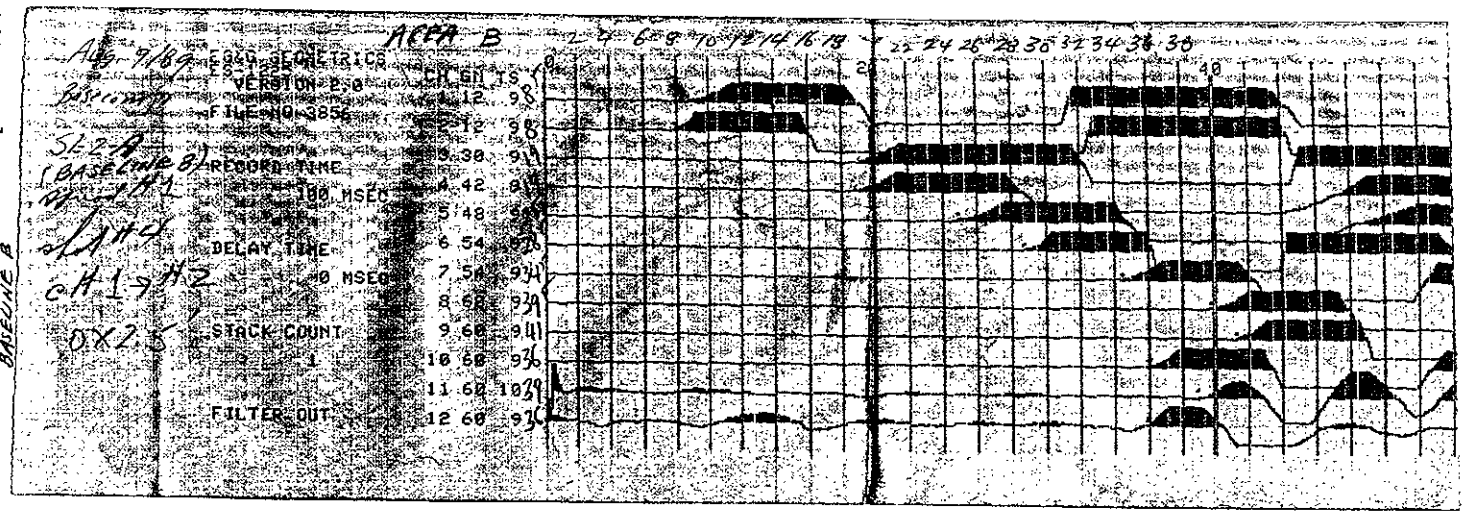
APPENDIX B
Seismic Line No. Spre

Blue B

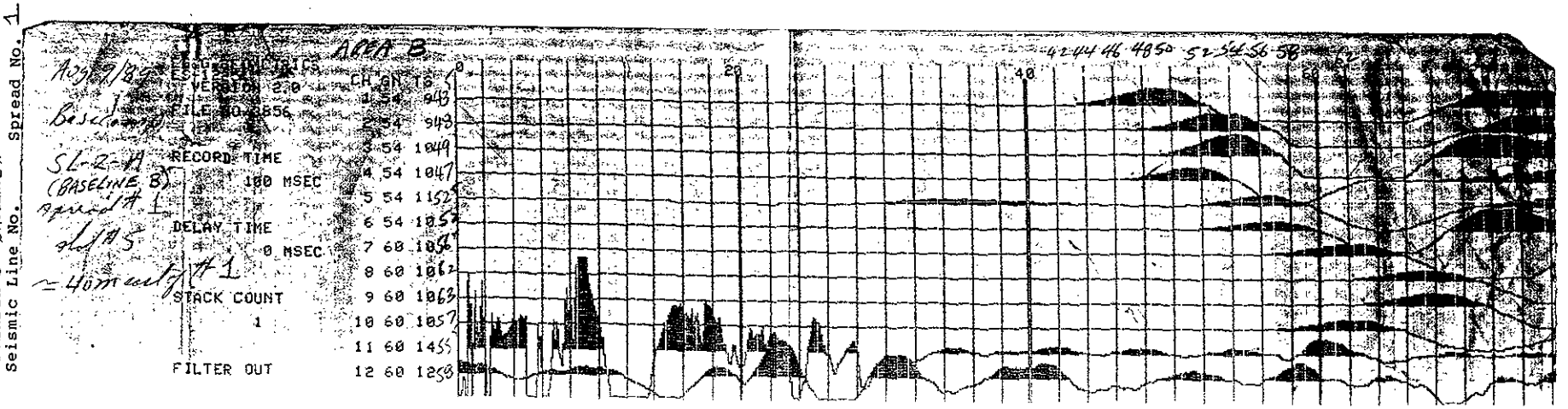
APPENDIX B
Seismic Line No. BASELINE B
Spread No. 1



APPENDIX B
Seismic Line No. BASELINE B
Spread No. 1

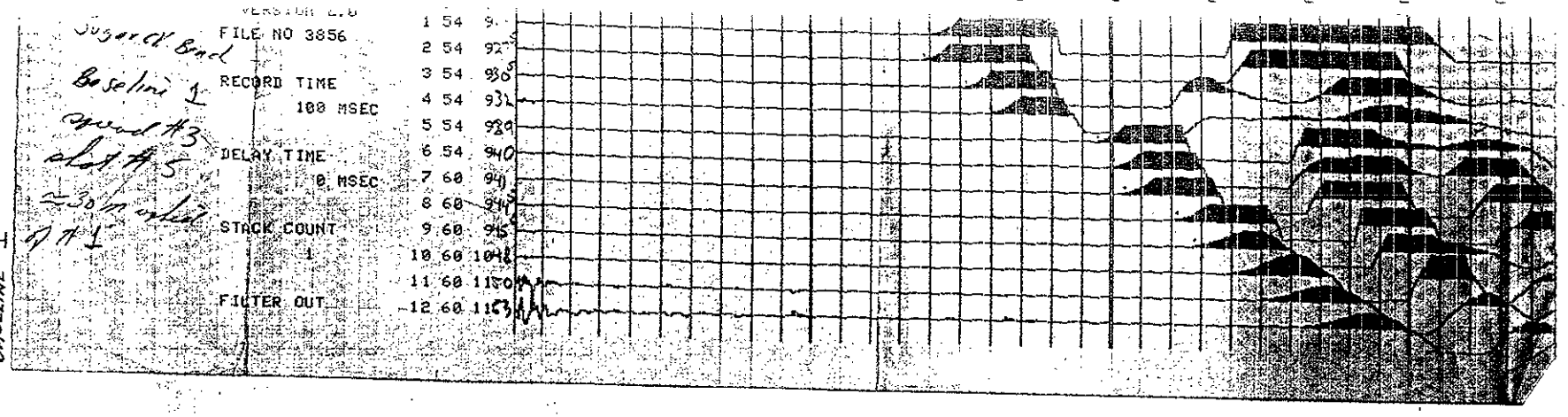


APPENDIX B
Seismic Line No. BASELINE A
Spread No. 1



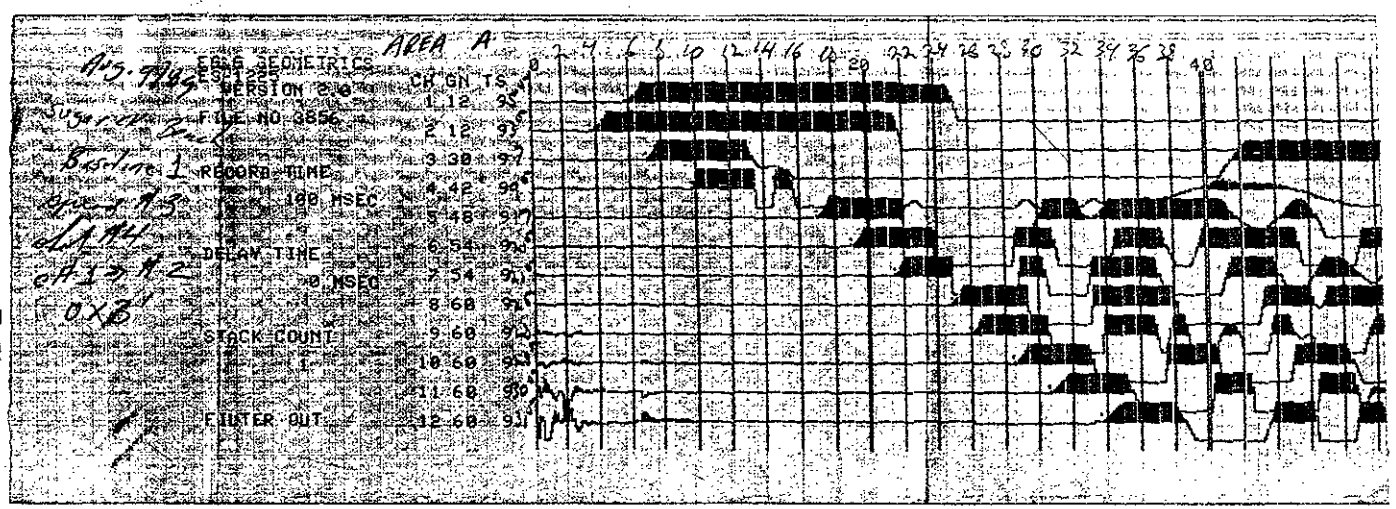
APPENDIX B
Seismic Line No. 1
BASELINE

Spread No. 3



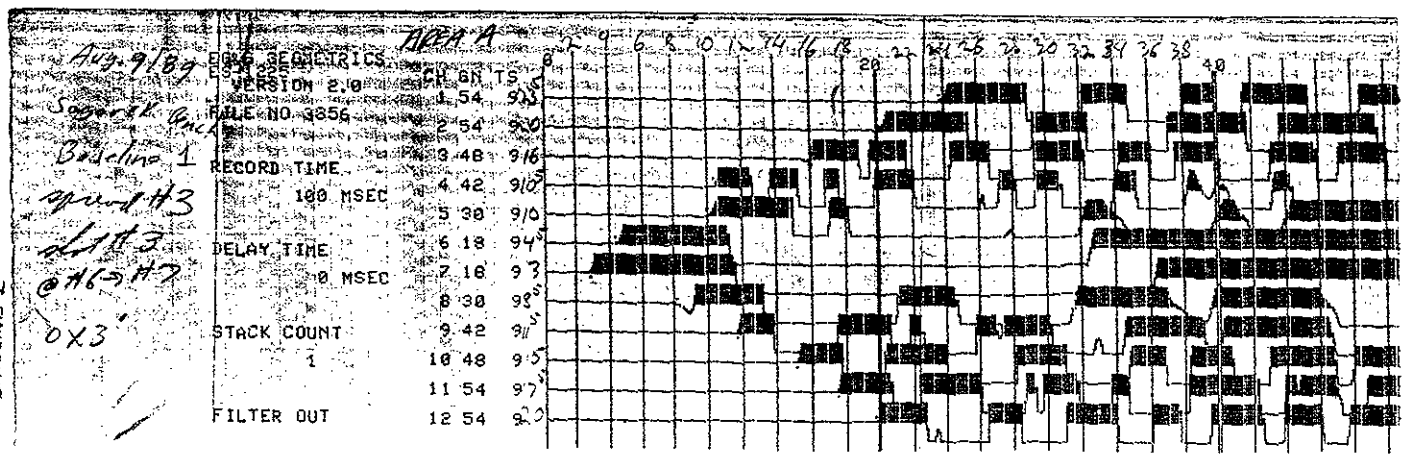
APPENDIX B
Seismic Line No. 1
BASELINE

Spread No. 3



APPENDIX B
Seismic Line No. 1
BASELINE

Spread No. 3



Area A