START

0029534 1/6

JUL 16 1993 (11)

Station # 12

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 160851

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Environmental Engineering	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: ER	6. Cog. Engr.: K. A. Bergstrom	7. Purchase Order No.: N/A
8. Originator Remarks: Supporting Document for approval and release		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

JUL 1993 RECEIVED EDMC

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Impact Level	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-EN-DP-061		0	Data Package for Ground-Penetrating Radar Investigation for Riverland ERA	4	1/2	1	

16. KEY

Impact Level (F)	Reason for Transmittal (G)		Disposition (H) & (I)	
1, 2, 3, or 4 (see MRP 5.43)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment	4. Reviewed no comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
1 4	2	Cog.Eng. K. A. Bergstrom		6-23-93	G6-50	Geophysics Files (2)			G6-50	3	
1 4	2	Cog. Mgr. K. R. Fecht		6/23/93	H6-06	Central Files (2)			L8-04	3	
		QA				EDMC (2) 1			H6-08	3	
		Safety				IRA (2)			H4-17	3	
		Env.									
3		D. B. Blumenkranz			H6-04						
3		T. W. Spicer			N3-06						

18.	19.	20.	21. DOE APPROVAL (if required)
T. W. Tarasoff K. A. Bergstrom 6-2-93 Signature of EDT Originator / Date	Authorized Representative for Receiving Organization / Date	K. R. Fecht 6-29-93 Cognizant/Project Engineer's Manager / Date	Ltr. No. N/A [] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (07/91) GEF097

BD-7400-172-1 (07/9

9312975.0072

INSTRUCTIONS FOR COMPLETION OF THE ENGINEERING DATA TRANSMITTAL

(USE BLACK INK OR TYPE)

BLOCK	TITLE	
(1)*	EDT	• Pre-assigned EDT number.
(2)	To: (Receiving Organization)	• Enter the individual's name, title of the organization, or entity (e.g., Distribution) that the EDT is being transmitted to.
(3)	From: (Originating Organization)	• Enter the title of the organization originating and transmitting the EDT.
(4)	Related EDT No.	• Enter EDT numbers which relate to the data being transmitted.
(5)*	Proj./Prog./Dept./Div.	• Enter the Project/Program/Department/Division title or Project/Program acronym or Project Number, Work Order Number or Organization Code.
(6)*	Cognizant Engineer	• Enter the name of the individual identified as being responsible for coordinating disposition of the EDT.
(7)	Purchase Order No.	• Enter related Purchase Order (P.O.) Number, if available.
(8)*	Originator Remarks	• Enter special or additional comments concerning transmittal, or "Key" retrieval words may be entered.
(9)	Equipment/Component No.	• Enter equipment/component number of affected item, if appropriate.
(10)	System/Bldg./Facility	• Enter appropriate system, building or facility number, if appropriate.
(11)	Receiver Remarks	• Enter special or additional comments concerning transmittal.
(12)	Major Assm. Dwg. No.	• Enter applicable drawing number of major assembly, if appropriate.
(13)	Permit/Permit Application No.	• Enter applicable permit or permit application number, if appropriate.
(14)	Required Response Date	• Enter the date a response is required from individuals identified in Block 17 (Signature/Distribution).
(15)*	Data Transmitted	
	(A)* Item Number	• Enter sequential number, beginning with 1, of the information listed on EDT.
	(B)* Document/Drawing No.	• Enter the unique identification number assigned to the document or drawing being transmitted.
	(C)* Sheet No.	• Enter the sheet number of the information being transmitted. If no sheet number, leave blank.
	(D)* Rev. No.	• Enter the revision number of the information being transmitted. If no revision number, leave blank.
	(E) Title or Description of Data Transmitted	• Enter the title of the document or drawing or a brief description of the subject if no title is identified.
	(F)* Impact Level	• Enter the appropriate Impact Level (Block 15). Also, indicate the appropriate approvals for each item listed, i.e., SQ, ESQ, etc. Use NA for non-engineering documents.
	(G) Reason for Transmittal	• Enter the appropriate code to identify the purpose of the data transmittal (see Block 16).
	(H) Originator Disposition	• Enter the appropriate disposition code (see Block 16).
	(I) Receiver Disposition	• Enter the appropriate disposition code (see Block 16).
(16)	Key	• Number codes used in completion of Blocks 15 (G), (H), and (I), and 17 (G), (H) (Signature/Distribution).
(17)	Signature/Distribution	
	(G) Reason	• Enter the code of the reason for transmittal (Block 16).
	(H) Disposition	• Enter the code for the disposition (Block 16).
	(J) Name	• Enter the signature of the individual completing the Disposition 17 (H) and the Transmittal.
	(K)* Signature	• Obtain appropriate signature(s).
	(L)* Date	• Enter date signature is obtained.
	(M)* MSIN	• Enter MSIN. Note: If Distribution Sheet is used, show entire distribution (including that indicated on Page 1 of the EDT) on the Distribution Sheet.
(18)	Signature of EDT Originator	• Enter the signature and date of the individual originating the EDT (entered prior to transmittal to Receiving Organization). If the EDT originator is the cognizant engineer, sign both Blocks 17 and 18.
(19)	Authorized Representative for Receiving Organization	• Enter the signature and date of the individual identified by the Receiving Organization as authorized to approve disposition of the EDT and acceptance of the data transmitted, as applicable.
(20)*	Cognizant Manager	• Enter the signature and date of the cognizant manager. (This signature is authorization for release.)
(21)*	DOE Approval	• Enter DOE approval (if required) by letter number and indicate DOE action.

*Asterisk denote the required minimum items check by Configuration Documentation prior to release; these are the minimum release requirements.

SUPPORTING DOCUMENT

1. Total Pages 192

2. Title	3. Number	4. Rev No.
Data Package for Ground-Penetrating Radar Investigation for Riverland ERA	WHC-SD-EN-DP-061	0

5. Key Words

Geophysics, Locomotive House, Diesel Fuel Tank, Antiaircraft Artillery Sites 1, 2, and 3

APPROVED FOR PUBLIC RELEASE 6/8/93 N. Solis

6. Author

Name: T. H. Mitchell
K. A. Bergstrom

J.W. Fassett 5-7-93
Signature

Organization/Charge Code 81234/PB62K

7. Abstract

Mitchell, T. H., and K. A. Bergstrom, 1993, *Data Package for Ground-Penetrating Radar Investigation for Riverland ERA*, WHC-SD-EN-~~TI~~-~~117~~, DP-061 Rev. 0, Westinghouse Hanford Company, Richland, Washington.

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9. Impact Level 4

10. RELEASE STAMP

OFFICIAL RELEASE BY WHC (11)
DATE JUL 16 1993
Station # 12

A-6400-073 (11/91) (EF) WEF124

Date Received: 6/7/93 OS

INFORMATION RELEASE REQUEST

Reference: WHC-CM-3-4

Complete for all Types of Release

Purpose

[] Speech or Presentation
- [] Full Paper
- [] Summary
- [] Abstract
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[] Thesis or Dissertation
[] Manual
[] Brochure/Flier
[] Software/Database
[] Controlled Document
[] Other

ID Number (include revision, volume, etc.): WHC-SD-EN-DP-061, Rev.0

List attachments.

Date Release Required: 5/1/93

Title: Data Package for Ground-Penetrating Radar Investigation for Riverland ERA

Unclassified Category: UC-

Impact Level: 4

New or novel (patentable) subject matter? [X] No [] Yes
If "Yes", has disclosure been submitted by WHC or other company?
[] No [] Yes Disclosure No(s).

Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions?
[X] No [] Yes (Identify)

Copyrights? [X] No [] Yes
If "Yes", has written permission been granted?
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Trademarks?
[] No [X] Yes (Identify)

Complete for Speech or Presentation

Title of Conference or Meeting: N/A

Group or Society Sponsoring: N/A

Date(s) of Conference or Meeting

City/State

Will proceedings be published? [] Yes [] No
Will material be handed out? [] Yes [] No

Title of Journal

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval: Name (printed) / Signature / Date
Classification/Unclassified Controlled Nuclear Information	[]	[X]	
Patent - General Counsel	[X]	[]	[illegible]
Legal - General Counsel	[X]	[]	[illegible] letter 2-4-93
Applied Technology/Export Controlled Information or International Program	[]	[X]	
WHC Program/Project	[]	[X]	
Communications	[]	[X]	
RL Program/Project	[]	[X]	Telecon with T. Stone, M. Furman; this document does not require review 6/8/93 N. Sales
Publication Services	[X]	[]	L. Hermann T. Hermann 3/22/93
Other Program/Project	[]	[X]	

Information conforms to all applicable requirements. The above information is certified to be correct.

	Yes	No
References Available to Intended Audience	[X]	[]
Transmit to DOE-HQ/Office of Scientific and Technical Information	[X]	[]

Author/Requestor (Printed/Signature) Date
K. A. Bergstrom [signature] 3-17-93

Intended Audience
[] Internal [] Sponsor [X] External

Responsible Manager (Printed/Signature) Date
K. R. Fecht [signature] 3/24/93

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP

Stamp is required before release. Release is contingent upon resolution of mandatory comments.

APPROVED FOR RELEASE — OFFICIAL DOCUMENT — NS — Date 6/8/93

Date Cancelled

Date Disapproved

9312072.0715

3D-7600-062 (08/91) WEF074

Part 1

The data contained in this data package were collected for the Ground-Penetrating Radar (GPR) investigation conducted in support of the Riverland Expedited Response Action (ERA). The results of the study are in *Bergstrom and Mitchell, 1993, Ground-Penetrating Radar Investigation for Riverland ERA, WHC-SD-EN-TI-117, Rev.0.*

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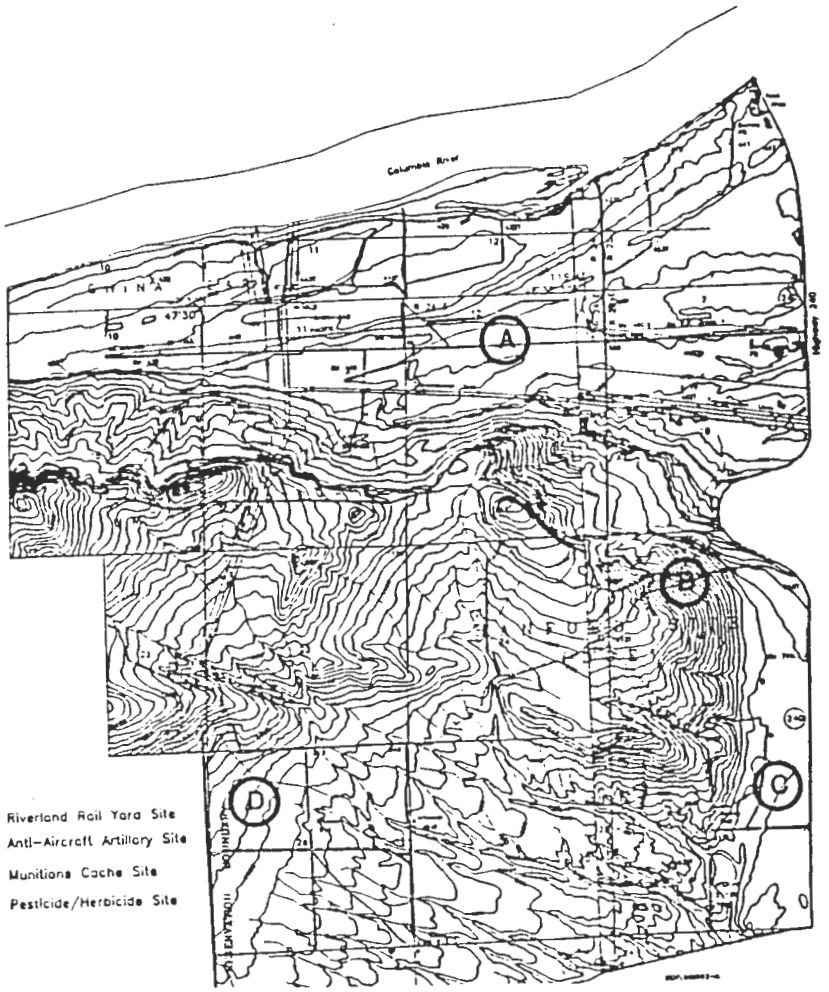
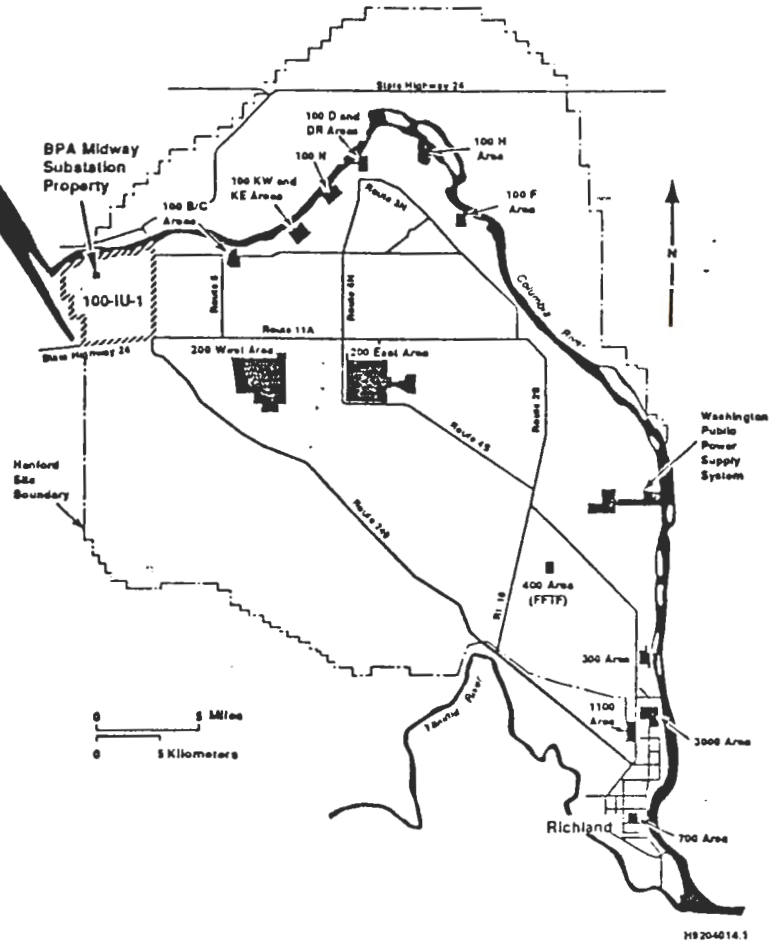
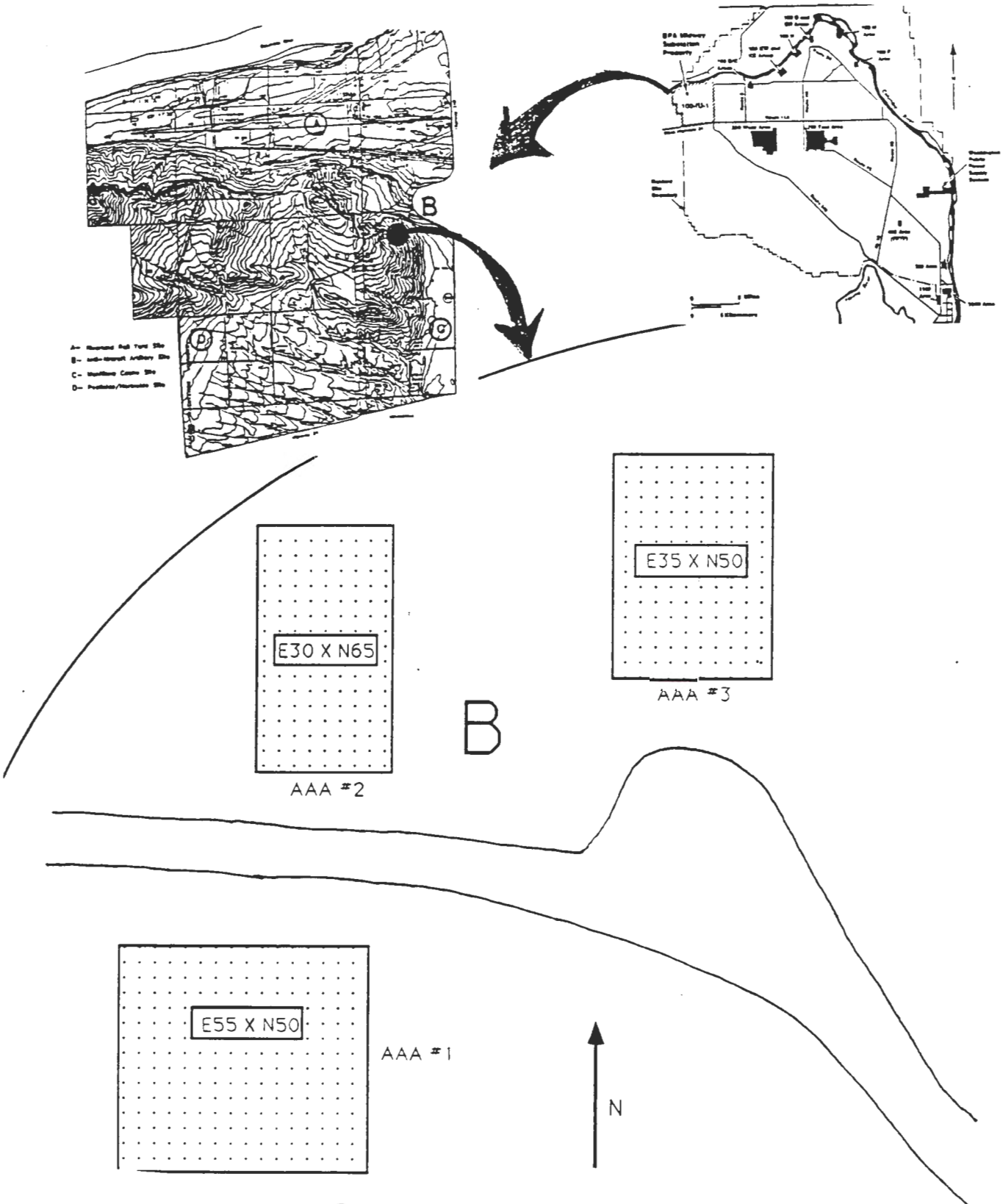




Location Map for River~~side~~land ERA

A- Riverland ERA Railroad Site
B- Anti-Aircraft Artillary Site



Riverland ERA Anti-Aircraft Site Grids.

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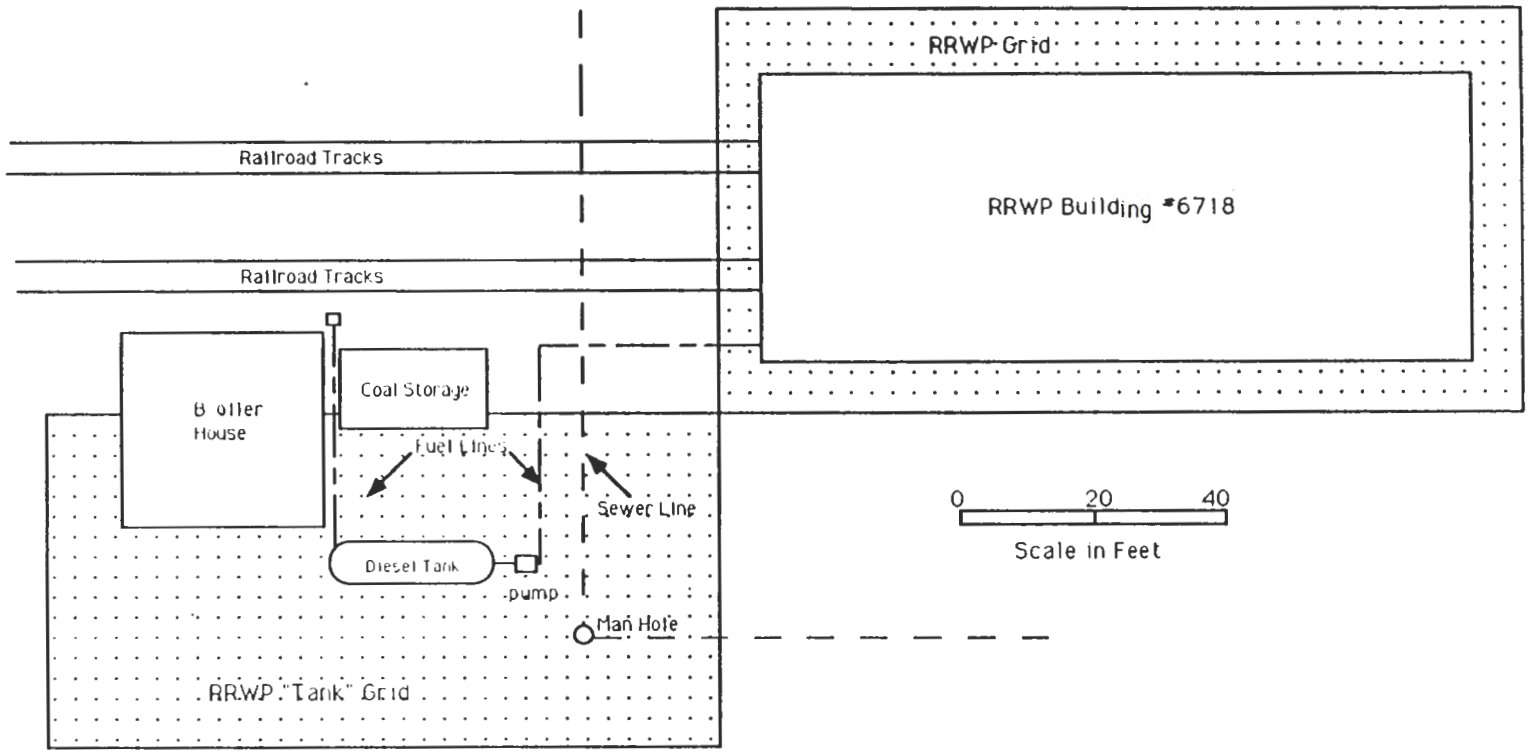
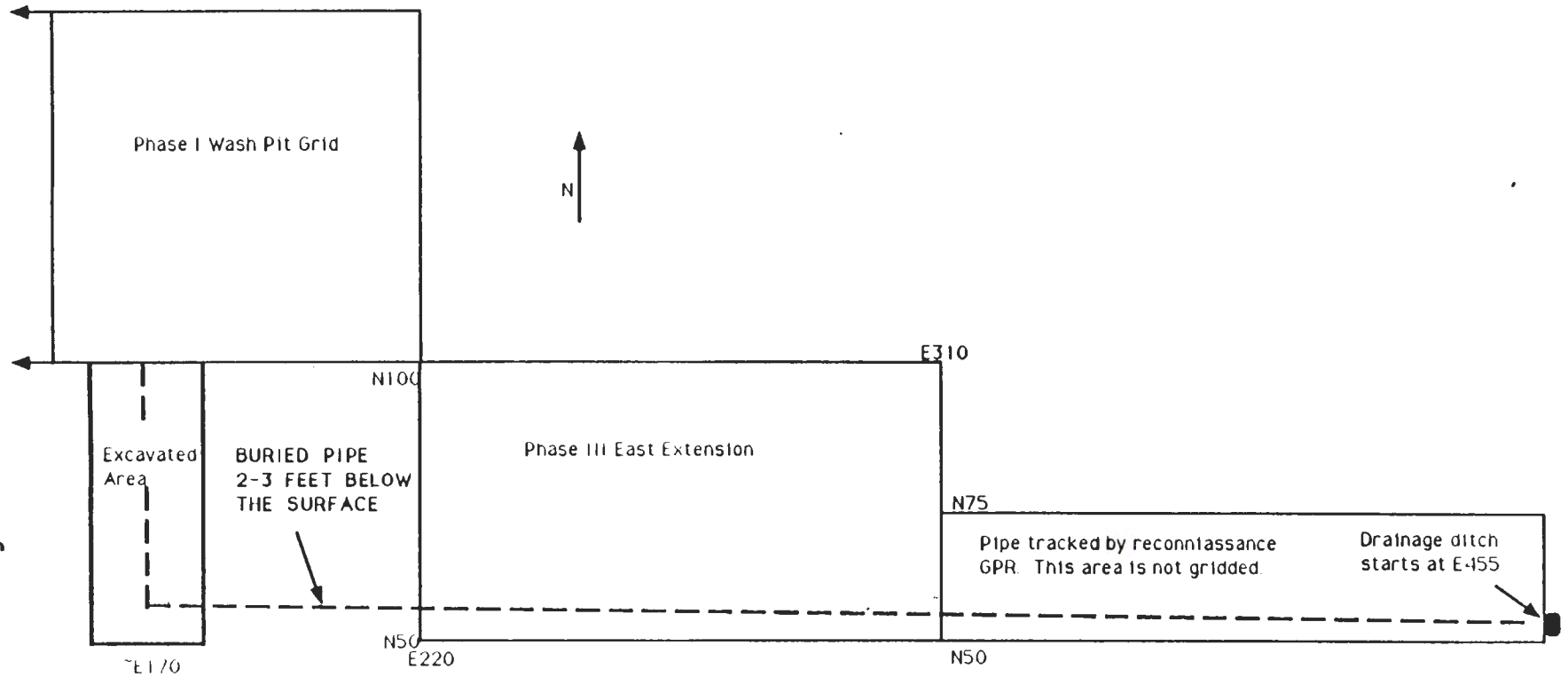


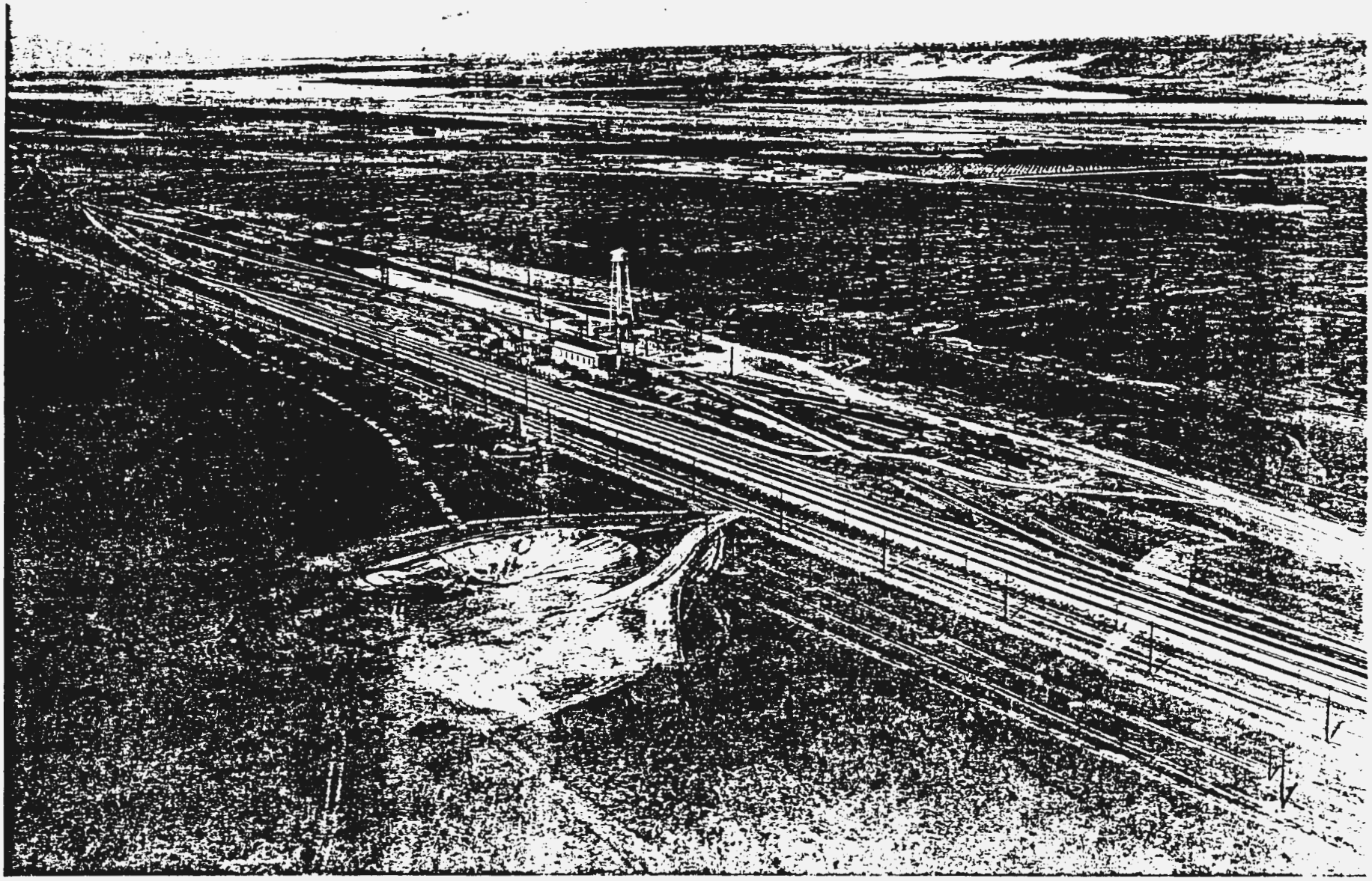
Diesel Fuel Tank and Surrounding Facilities.
From a Compilation of Drawings and Aerial Photographs.



Tracking of Pipe from Railroad Wash Pit

Photo taken [illegible]
Midway R.R. Depot

9312975x0721



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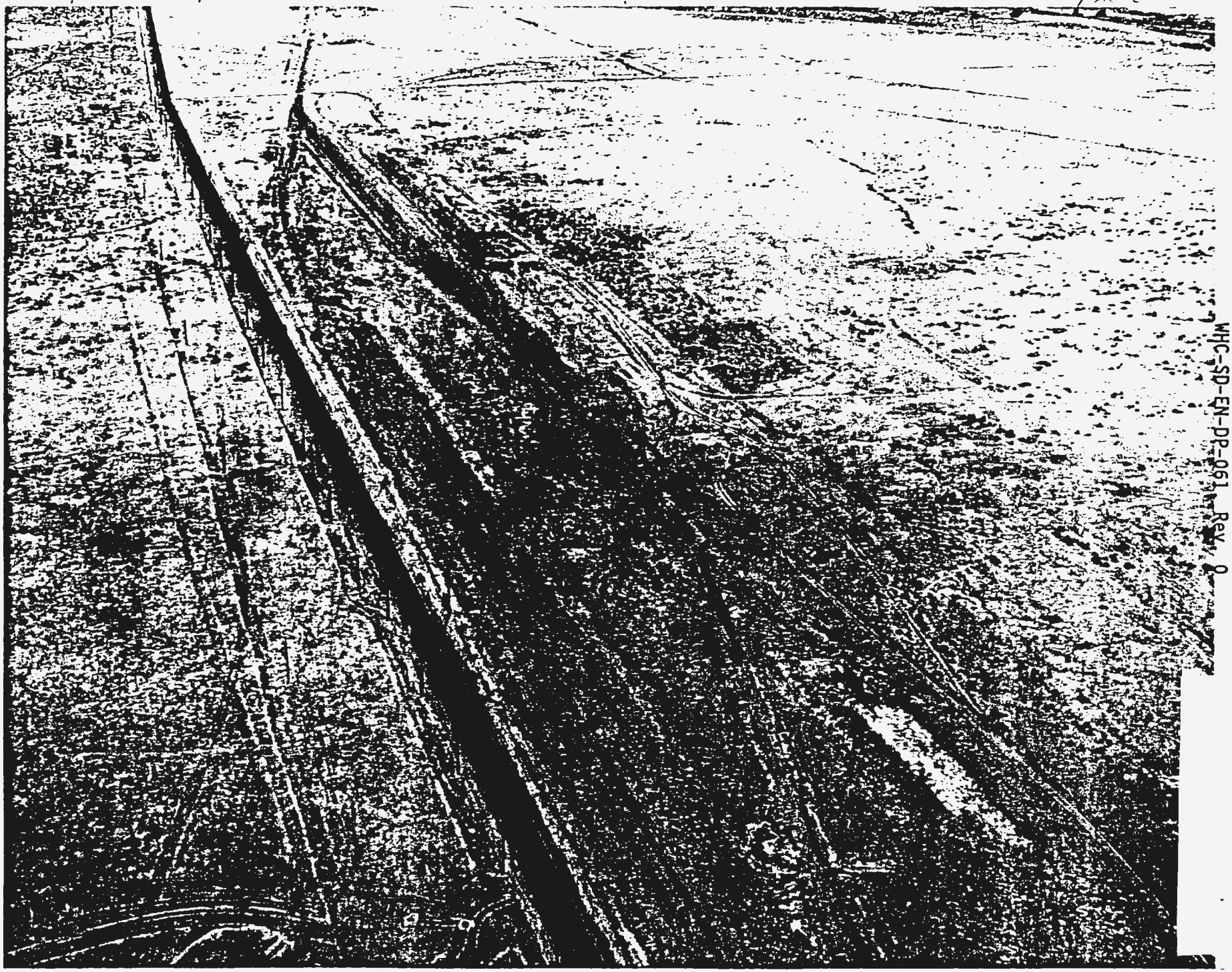
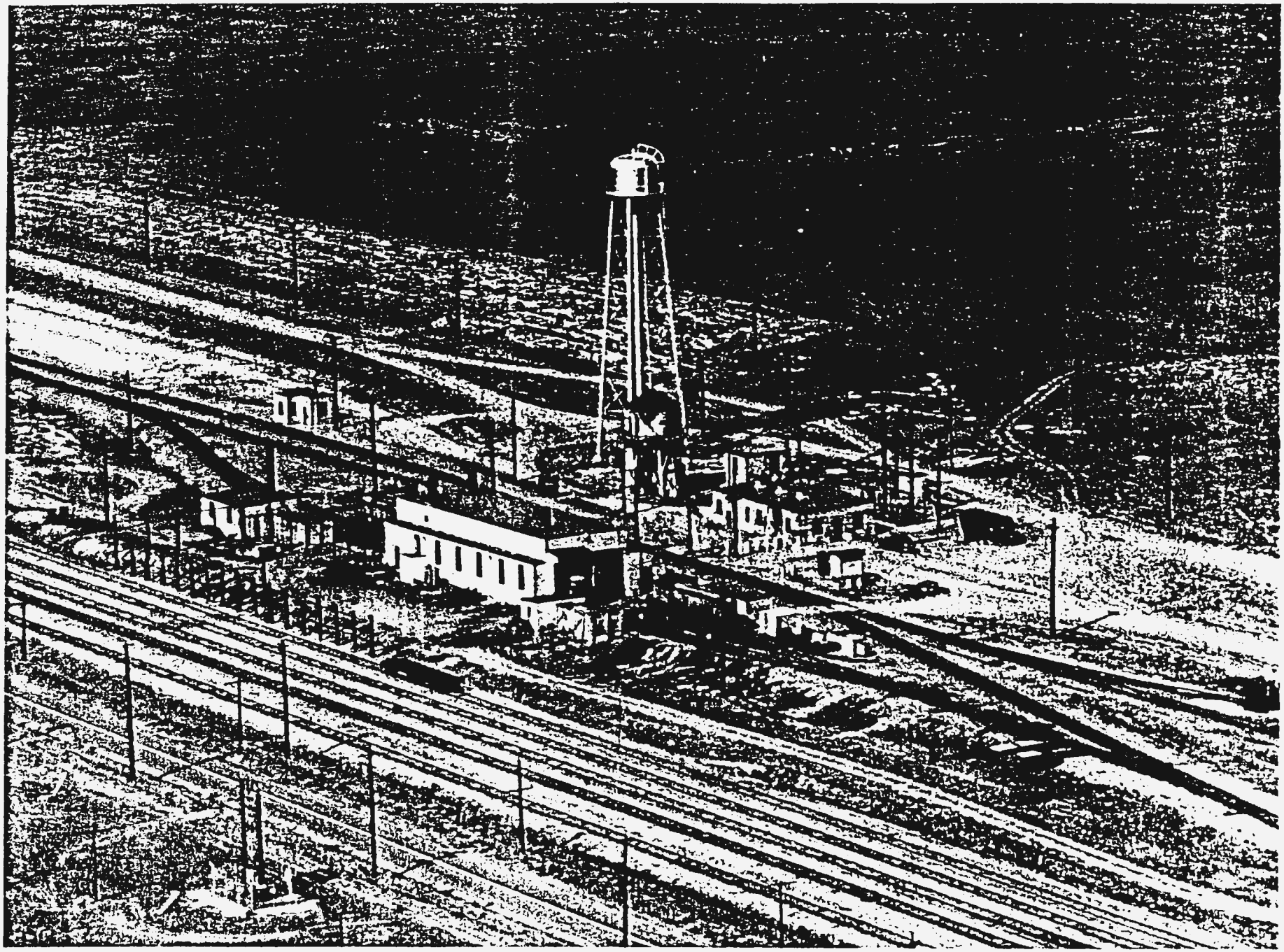
Midway RR Depot Riverland ERH

1942 Photo



Midway RR Depo 8312975.0723



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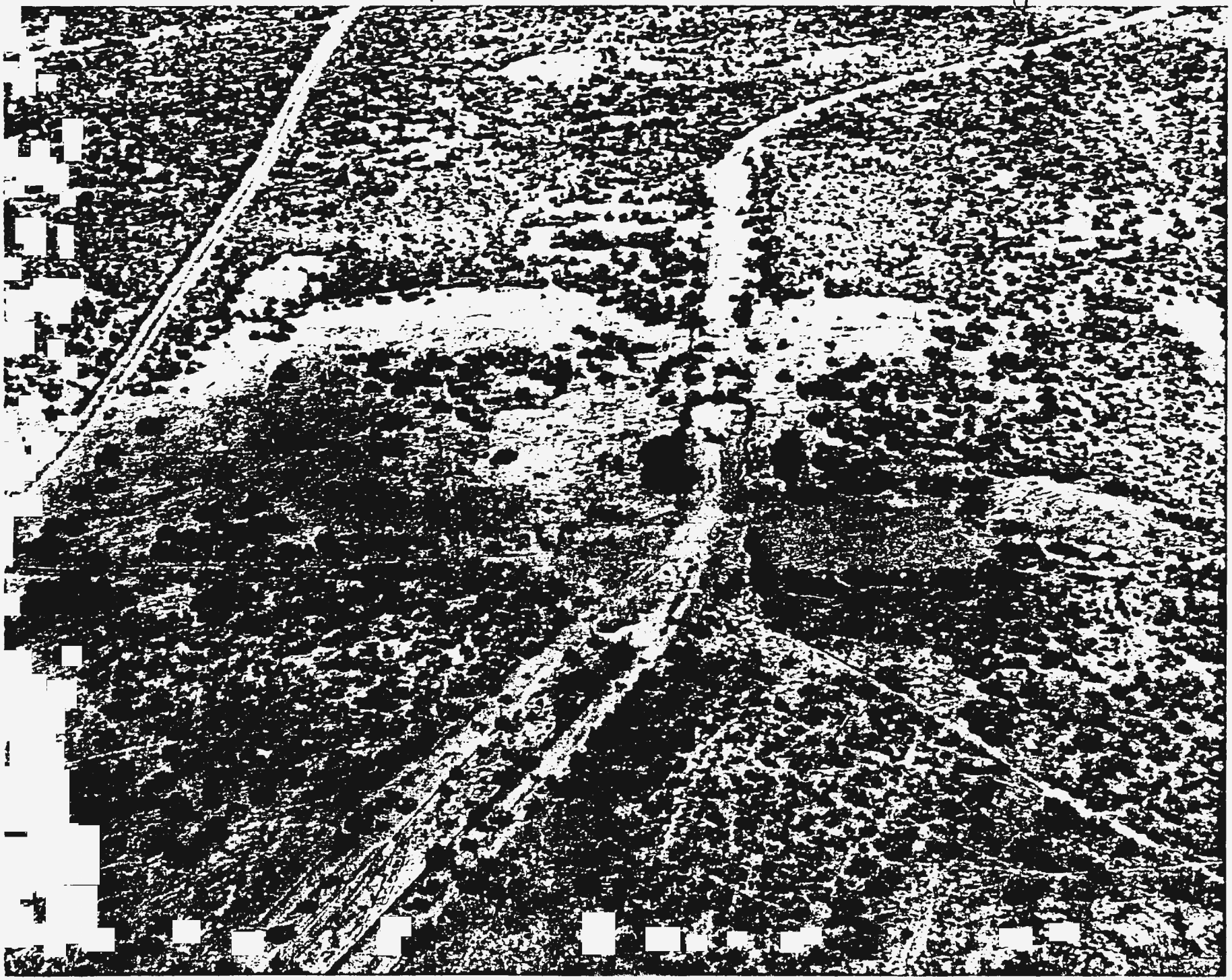
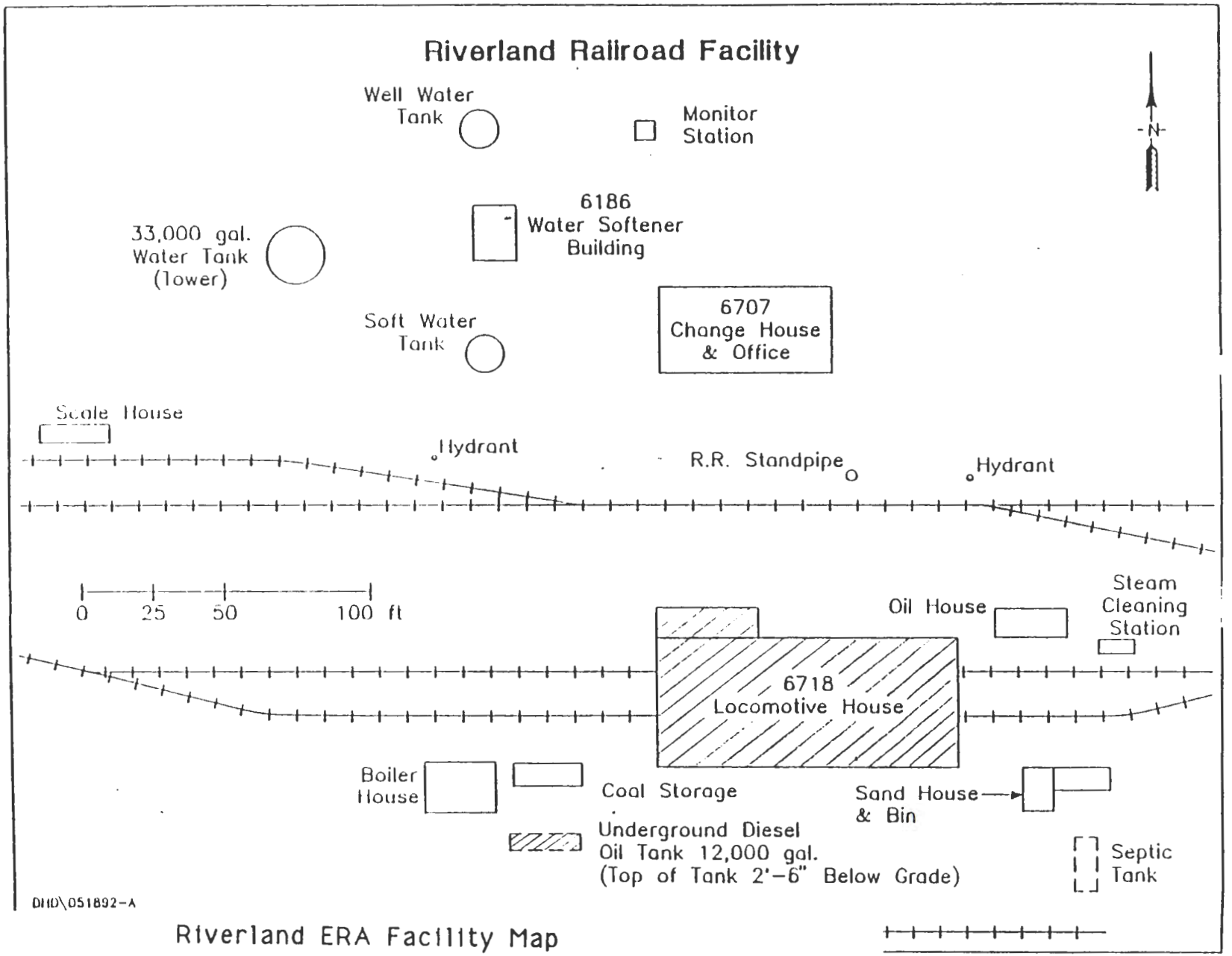
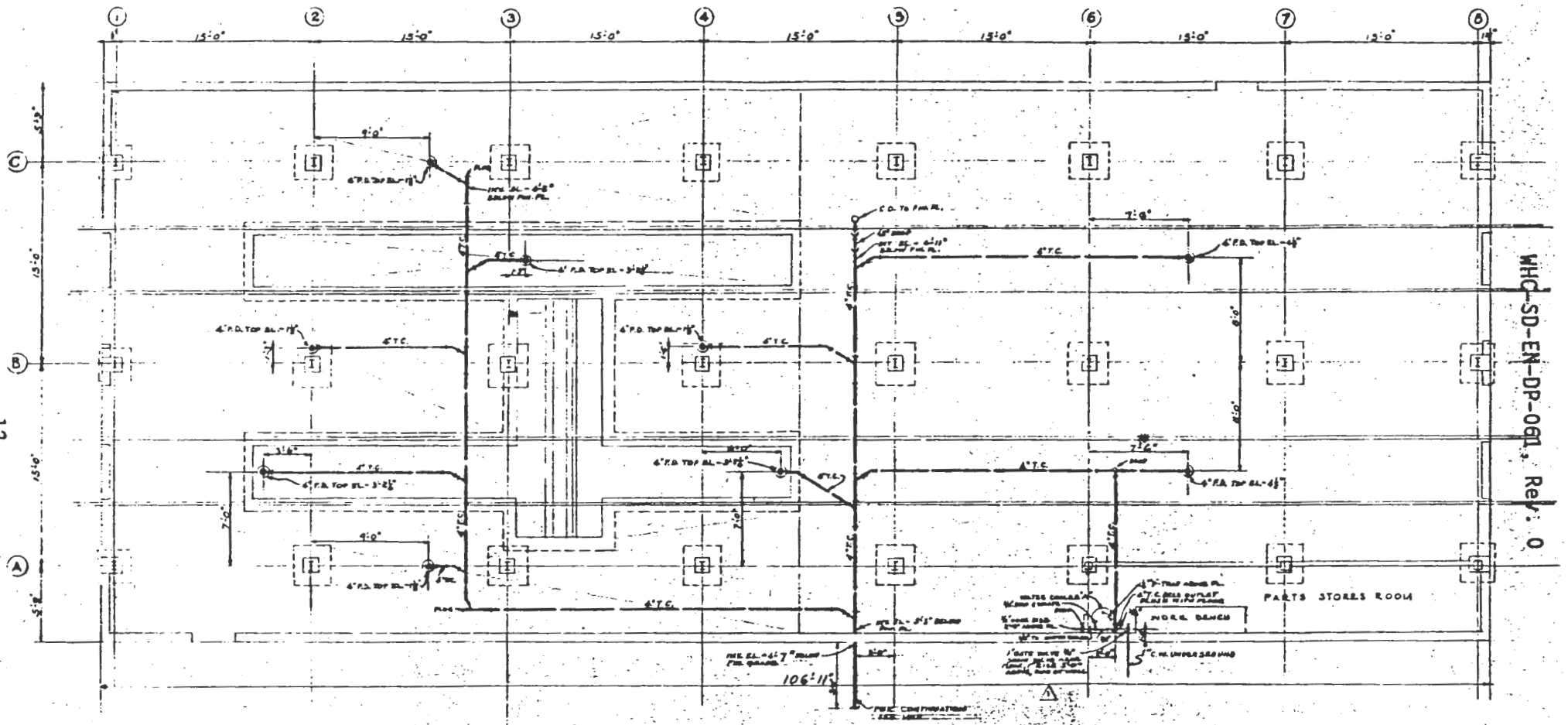
AAA Riverland ERA / Gun site Umtanum Ridge





Riverland ERA Facility Map
Locomotive House and Diesel Oil Tank primary targets.

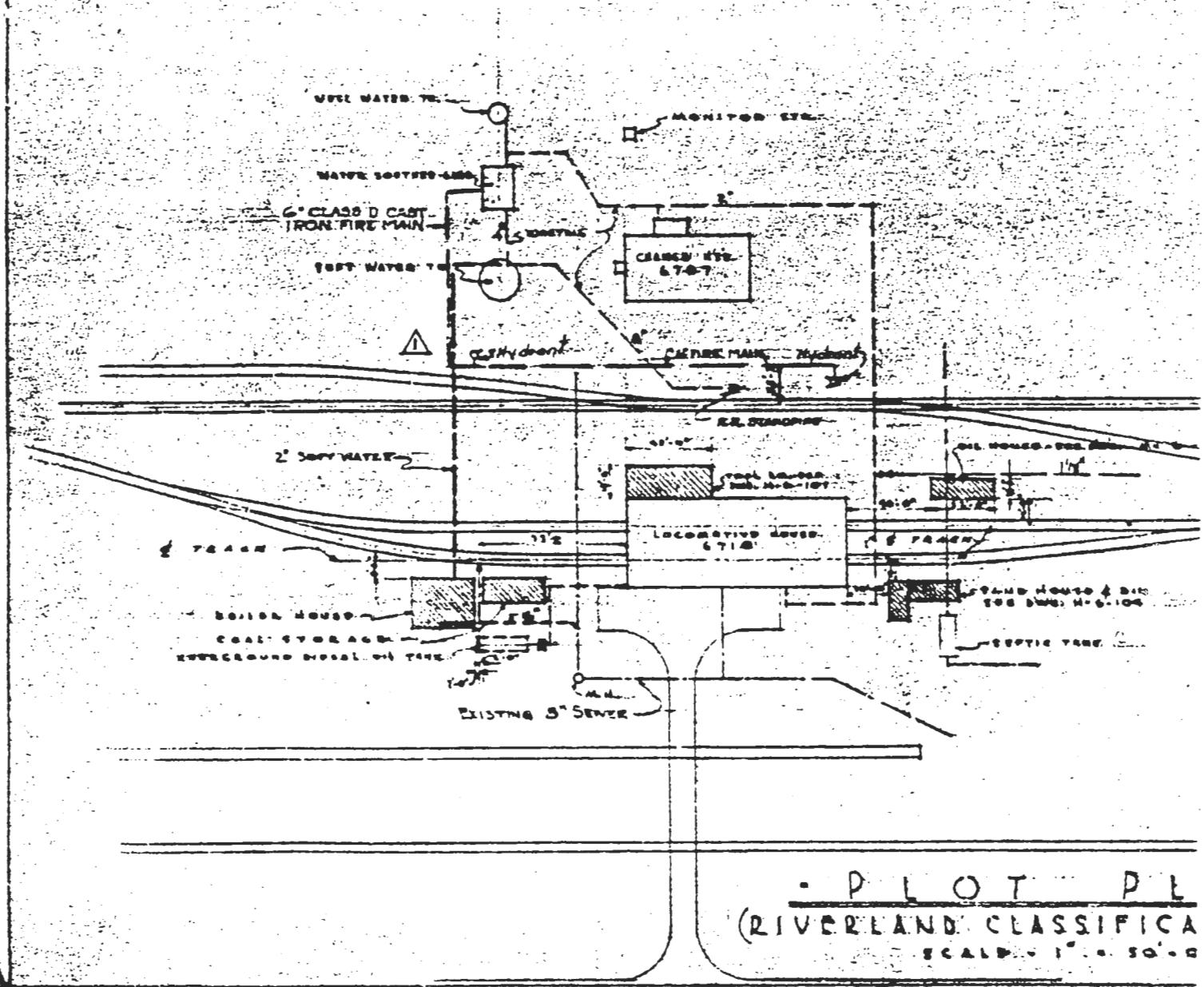


FOUNDATION PLAN

NOTE: AIR RECEIVER AND PIPING FROM HANFORD

BOILER HOUSE & COAL BIN FLO

SCALE 1/4" = 1'

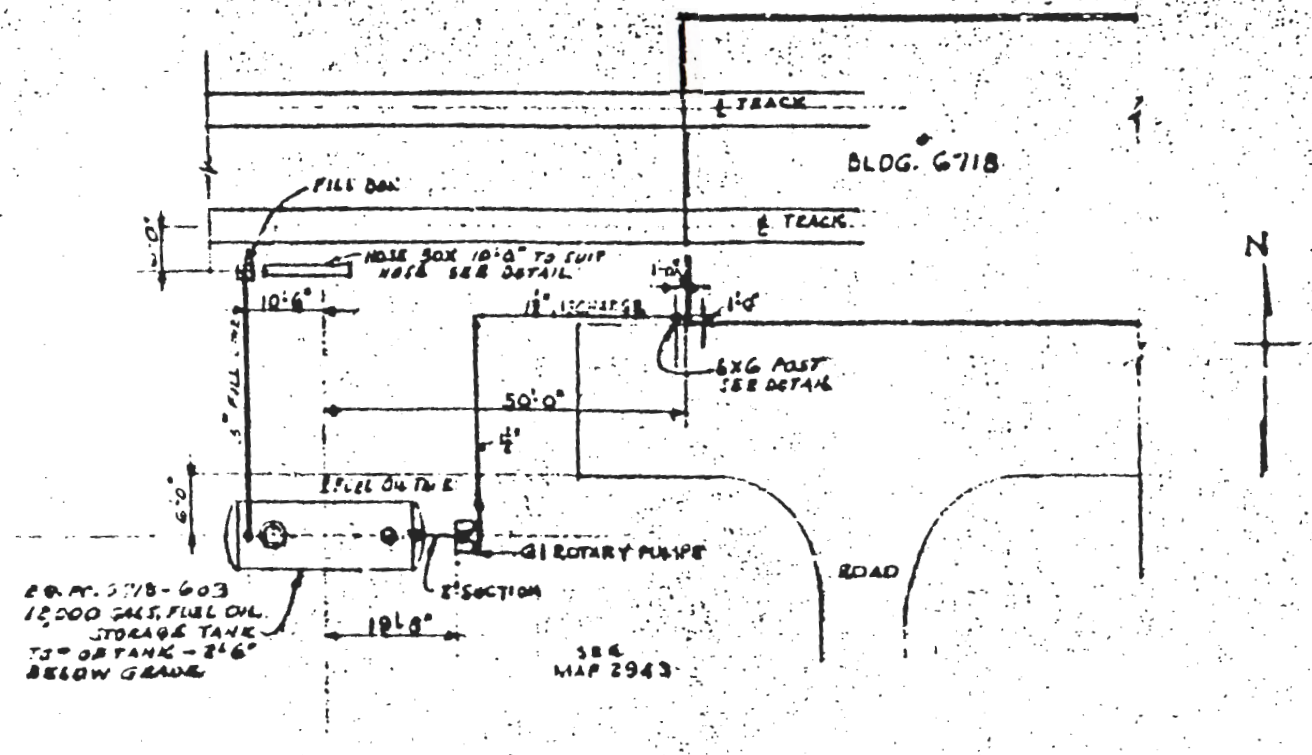


PLOT PL

(RIVERLAND CLASSIFICA

SCALE 1" = 50'-0

9312975.0727



LOCATION PLAN

SCALE: 1" = 20'-0"

PROTECT ASBOL FILL PIPING WITH 6188-S SCREEN

EQ. PC. 603
G1 ROTARY PUMPS

GROUND PENETRATING RADAR (GPR) SURVEY

Team Geophysics, Westinghouse Hanford Operations

TITLE: Riverland ERA, PHASE I	DATE: 8-4-92
LOCATION: Midway railroad decontamination station.	
CLIENT: Paul Valcich	DATA COLLECTED BY K.A. Bergstrom, T.H. Mitchell
EQUIPMENT USED: GSSI System 8, model 4800 Calibrator Model P731 Digital Tape Recoder DT6000A	ANTENNA(S) USED: 100 ____ 300 XX 100 BISTATIC ____
	LOG BOOK: EFL 1029
	TIME WINDOW (NS): 100
PROCEDURES FOLLOWED: WHC-CM-7-7 EII 11.2, REV. 3	
GRID : 60X120' NO. OF PROFILES: 39 TOTAL FOOTAGE COLLECTED: 2940	
PARAMETERS: Two sets of perpendicular profiles; five feet between profiles.	
DATA TAPE NO.: ERA #1 RECORDS LOCATION: Geophysical files	
TAPE ADDRESS : 0-30745 CALIBRATION ADDRESS: 30486-30745	
INTERPRETED BY : K. A. Bergstrom REVIEWED BY : T.H. Mitchell	
INTERPRETATION DELIVERED TO draft to P. Valcich DATE : 9-92	
OBJECTIVE(S): To locate wash pits within railroad maintenance facility.	
NOTES: Antenna pulled by hand at 1-2 mph. 50 meter cable. Pulled on south and east side o survey marks.	

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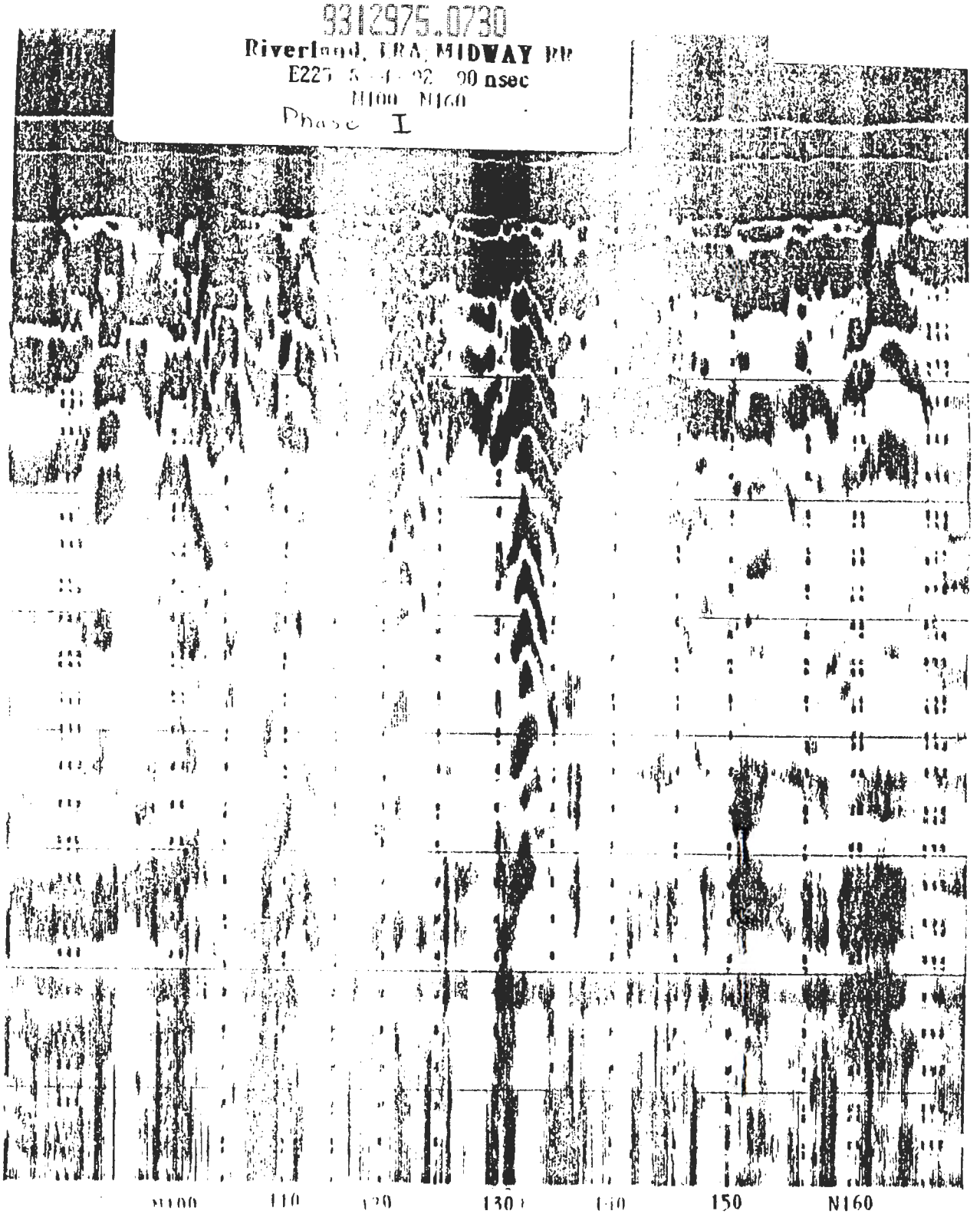
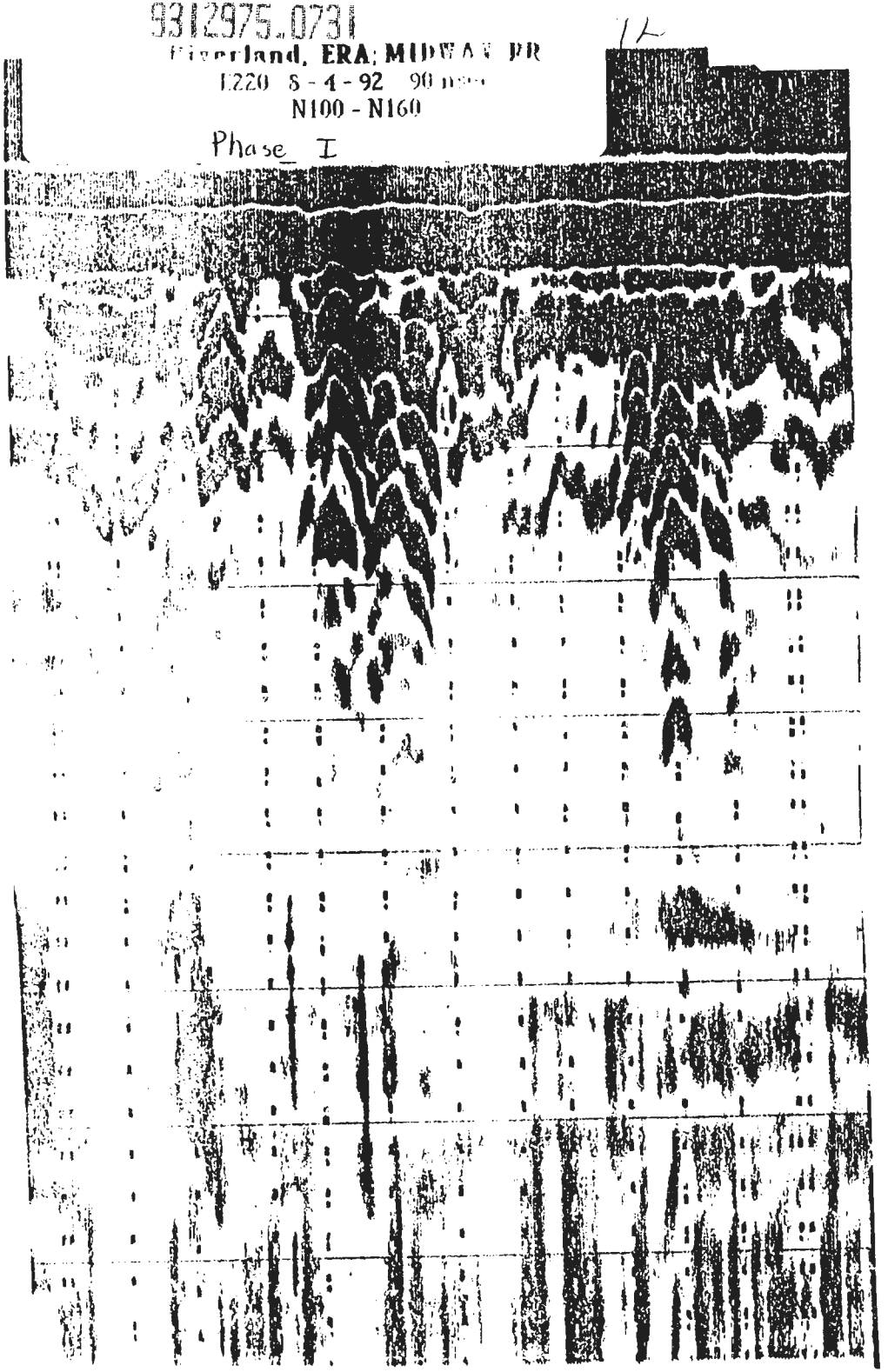

9312975.0730
Riverland, IRA, MIDWAY RR
E225 5-4-92 90 nsec
N100 N160
Phase I
N100
110
120
130
140
150
N160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Fiserland, ERA; MIDWAY PR
1220 8-4-92 90 nsec
N100 - N160
Phase I
12

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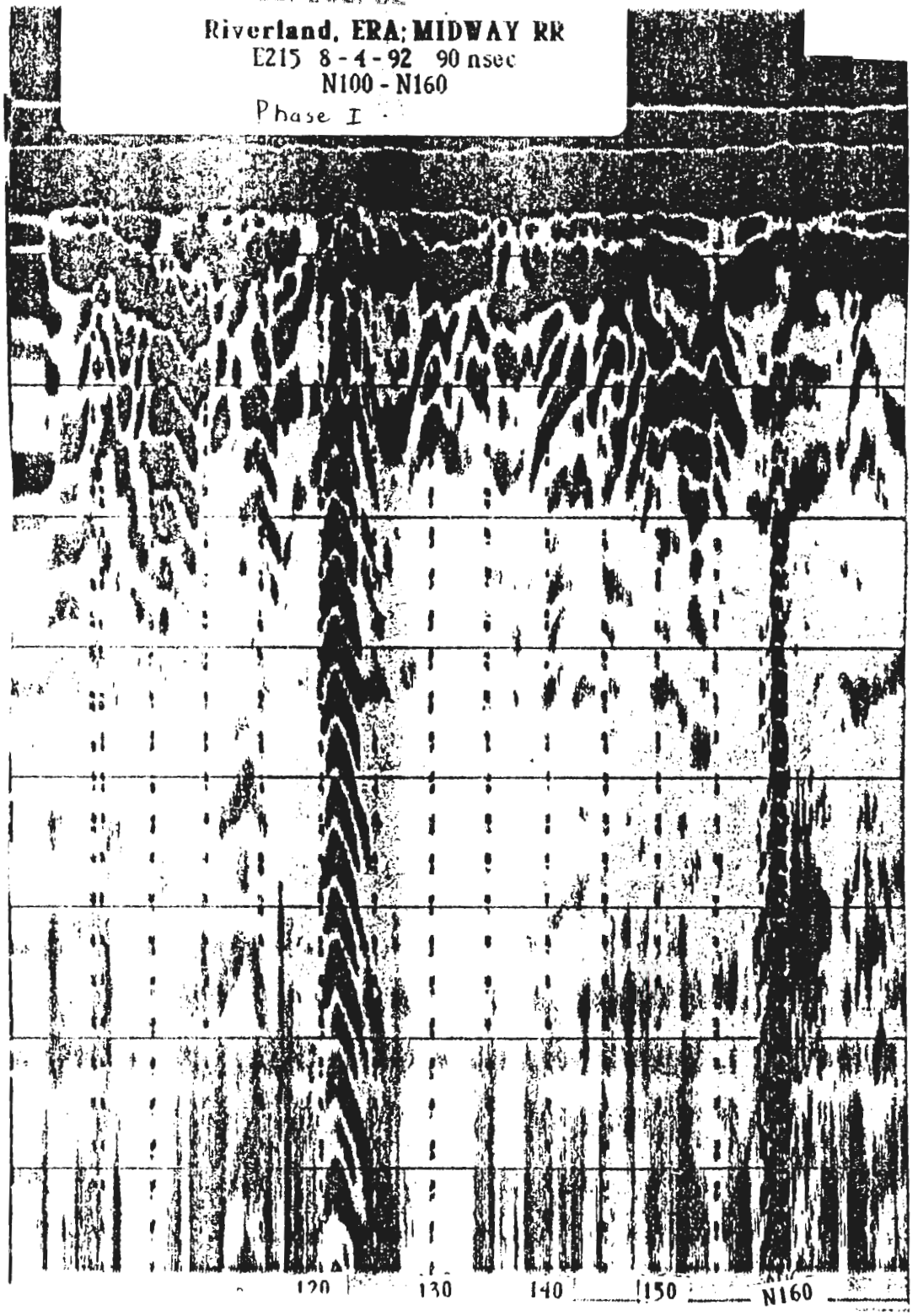

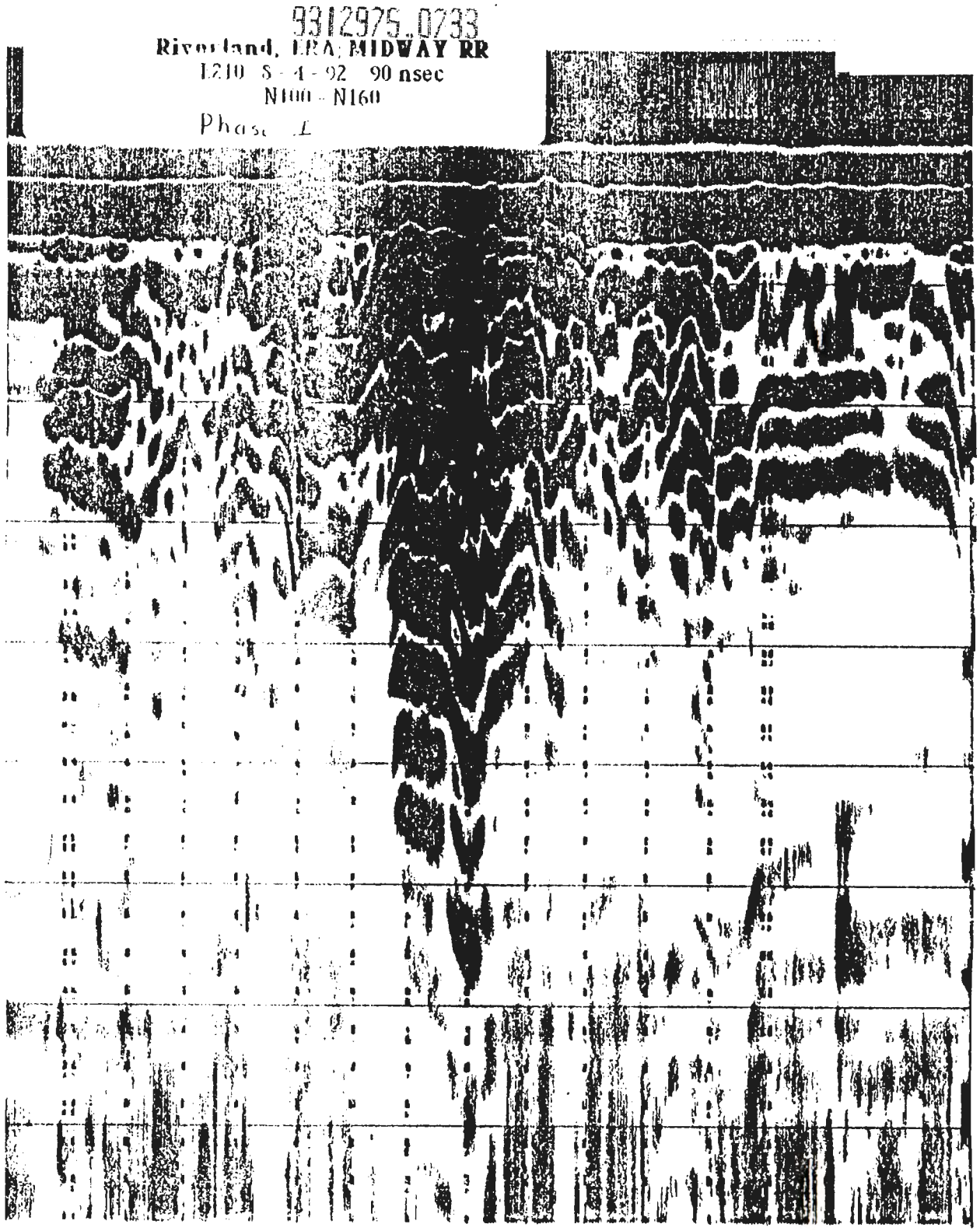
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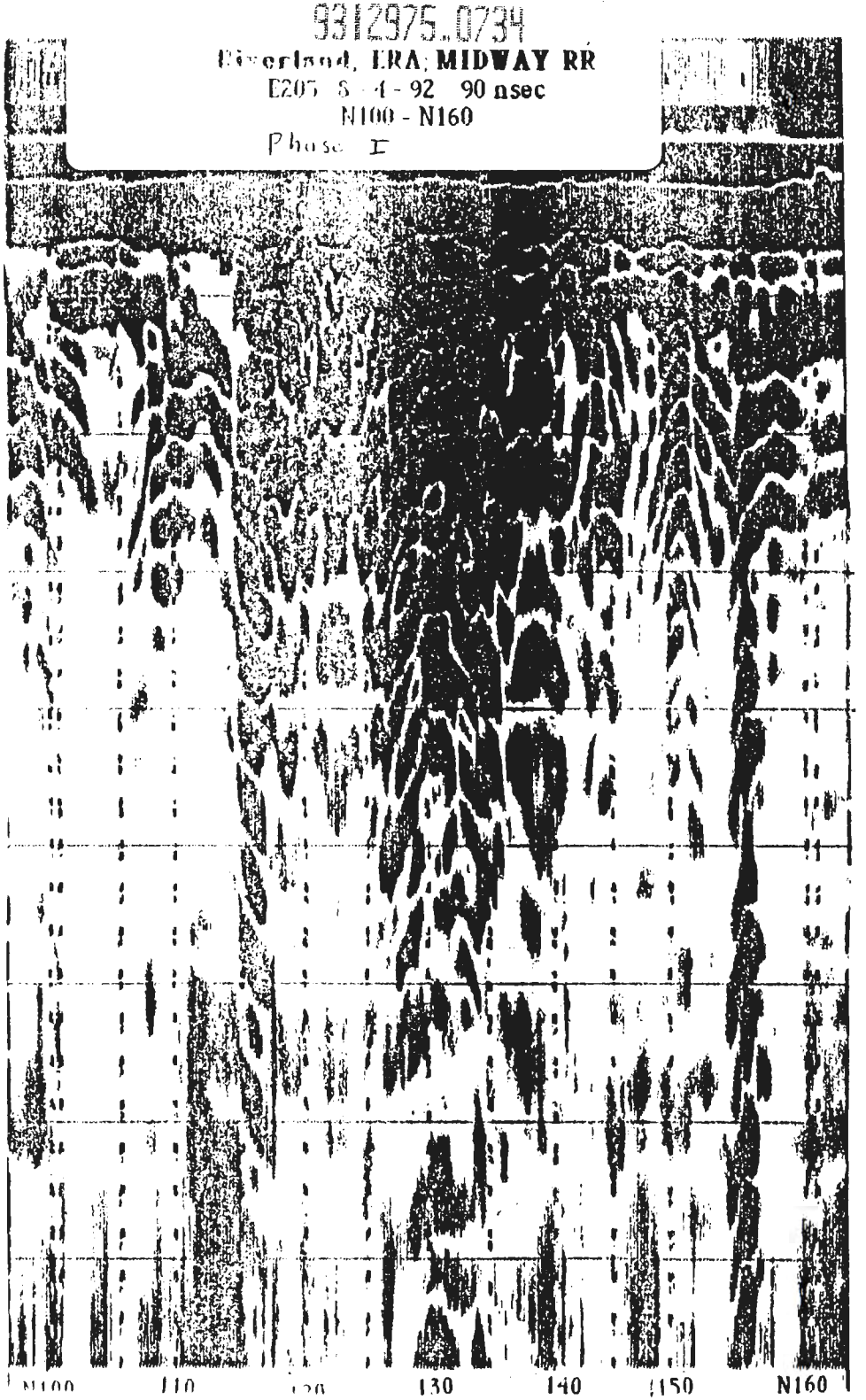
Riverland, IRA, MIDWAY RR
1210 S - 4 - 92 90 nsec
N100 - N160
Phase 1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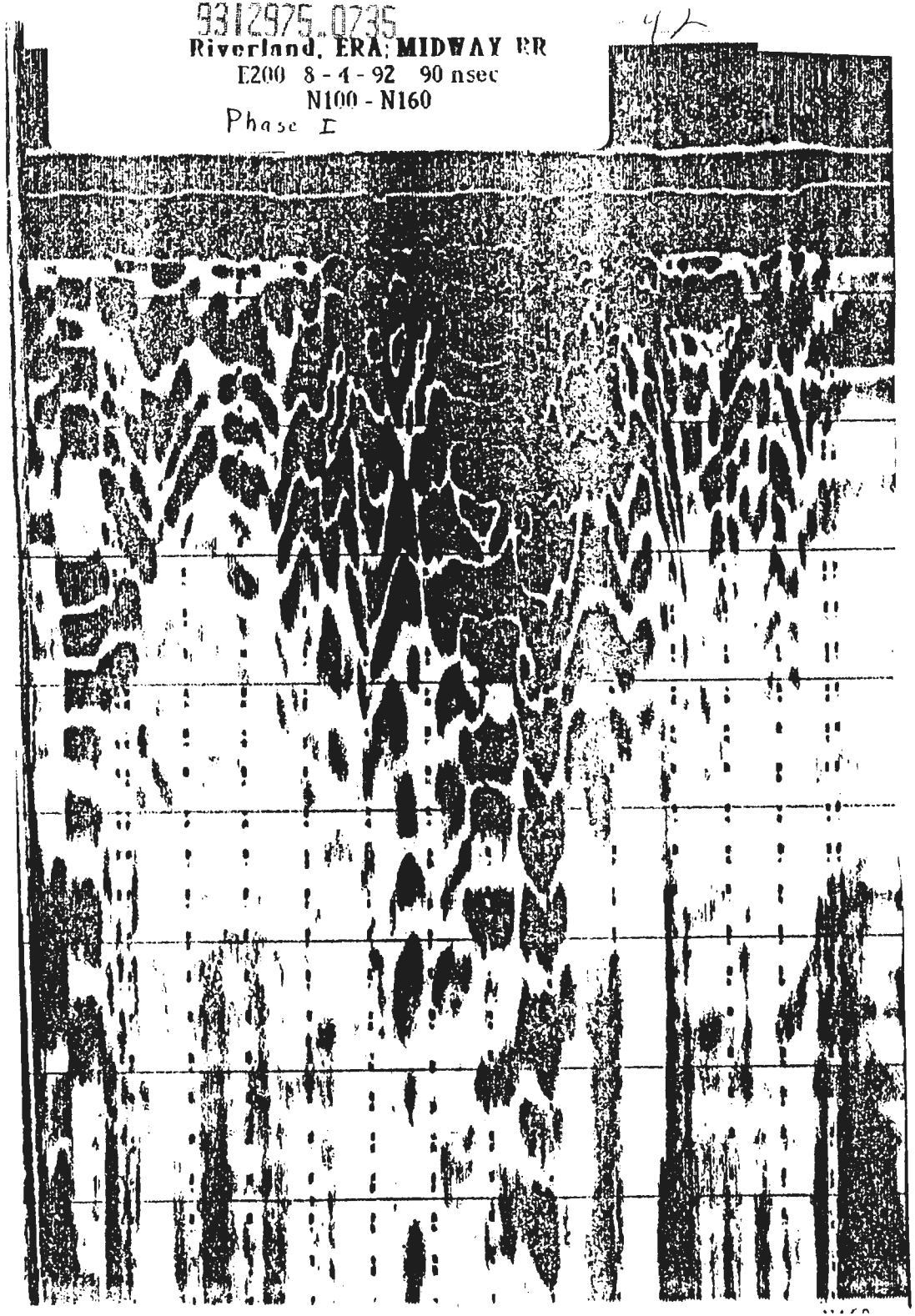
Riverland, ERA, MIDWAY RR
E205 8-4-92 90 nsec
N100 - N160
Phase I
N100
110
130
140
150
N160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Riverland, ERA; MIDWAY RR
E200 8 - 4 - 92 90 nsec
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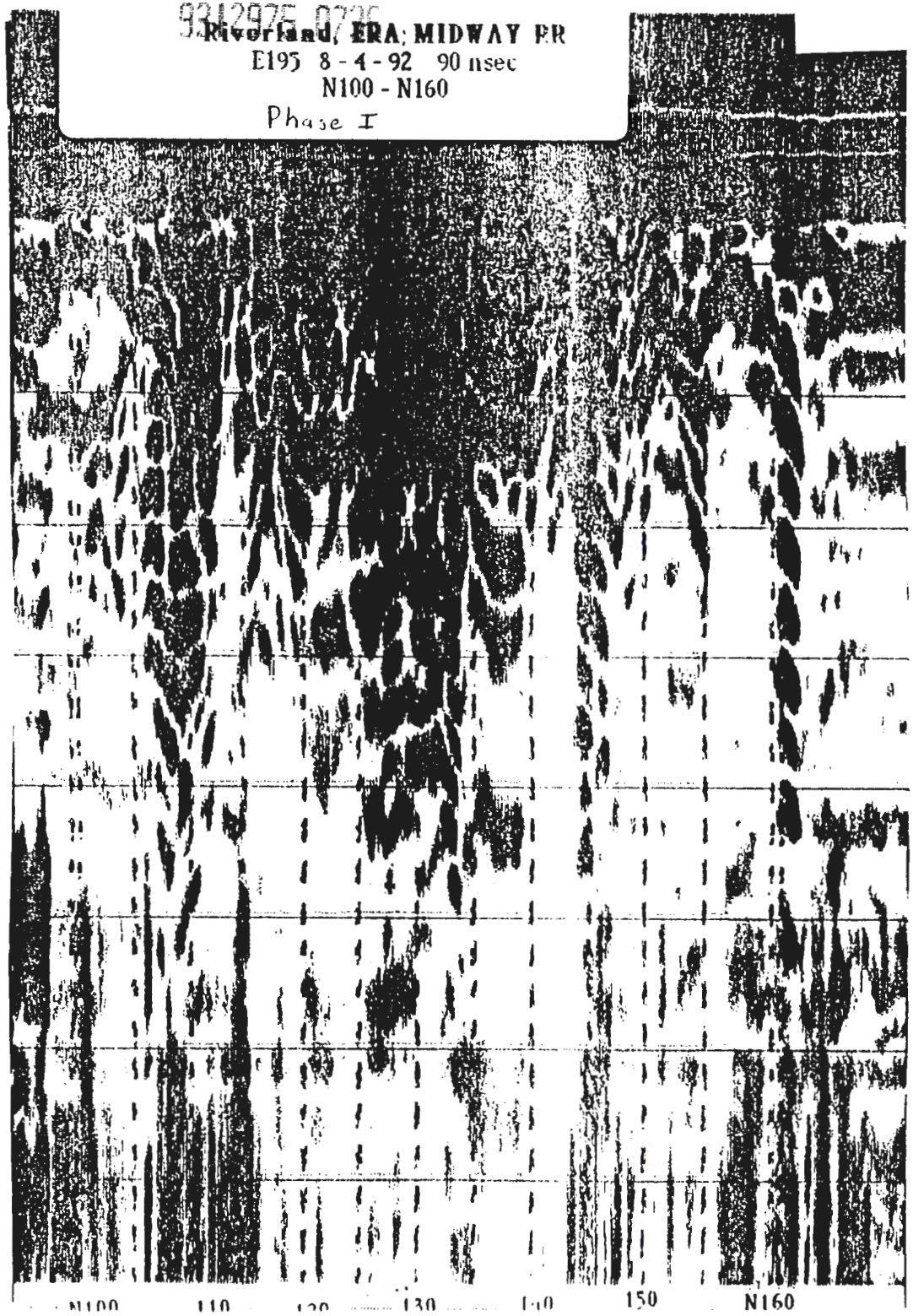
Phase I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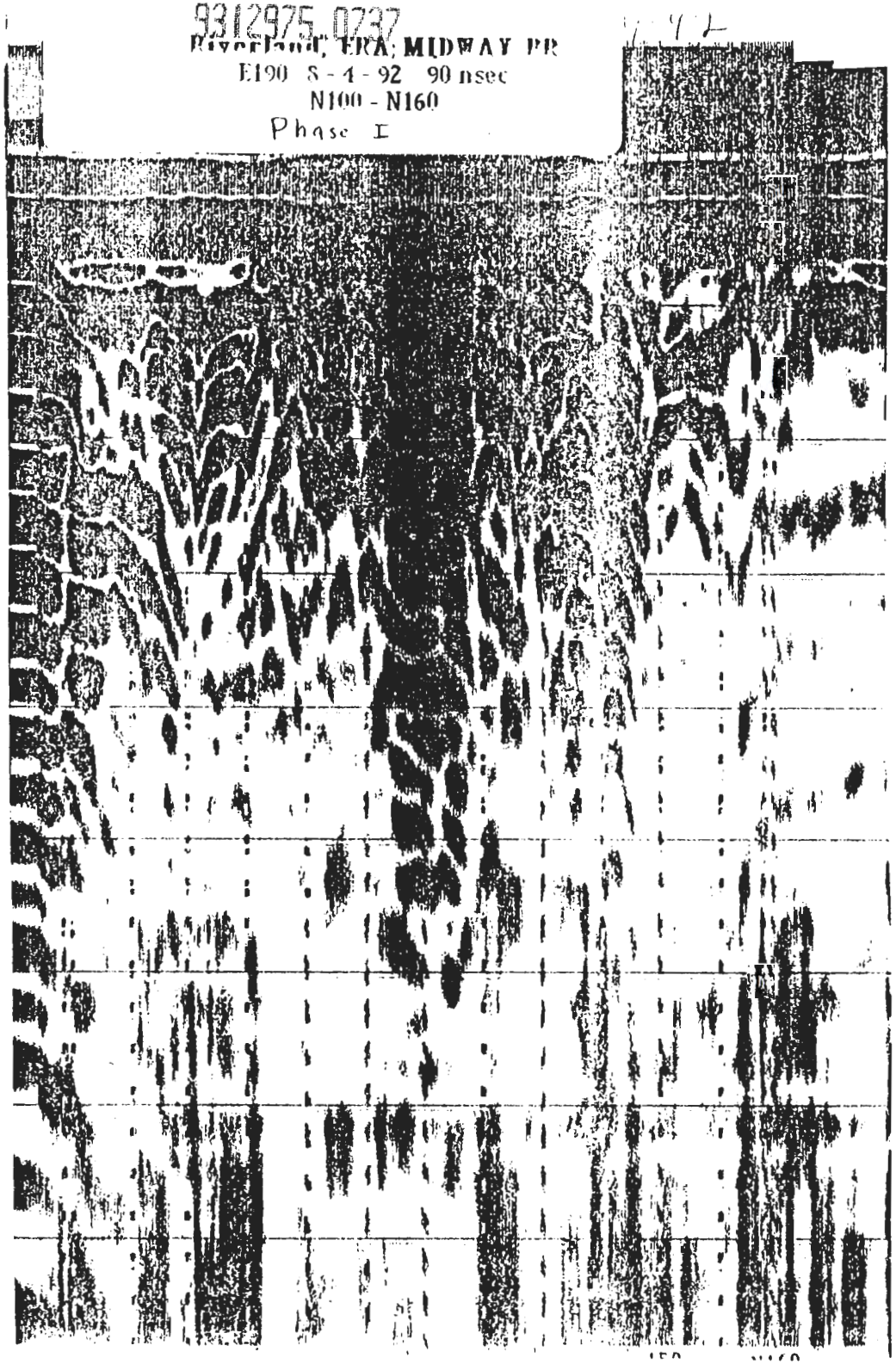
Riverland, ERA; MIDWAY PR
E195 8-4-92 90 nsec
N100 - N160
Phase I
N100
110
120
130
140
150
N160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Rieverland, ERA; MIDWAY PR
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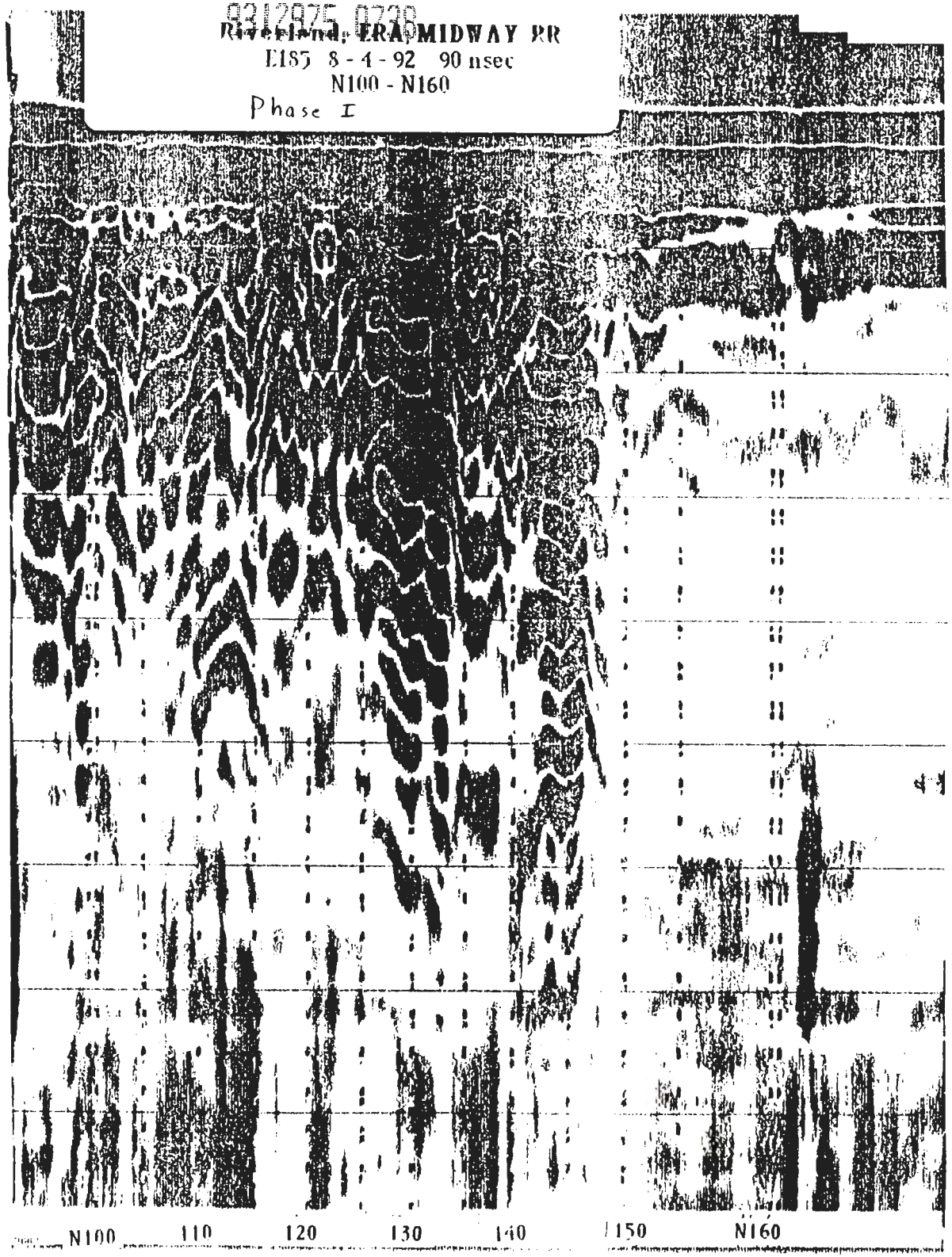
N100 - N160
Phase I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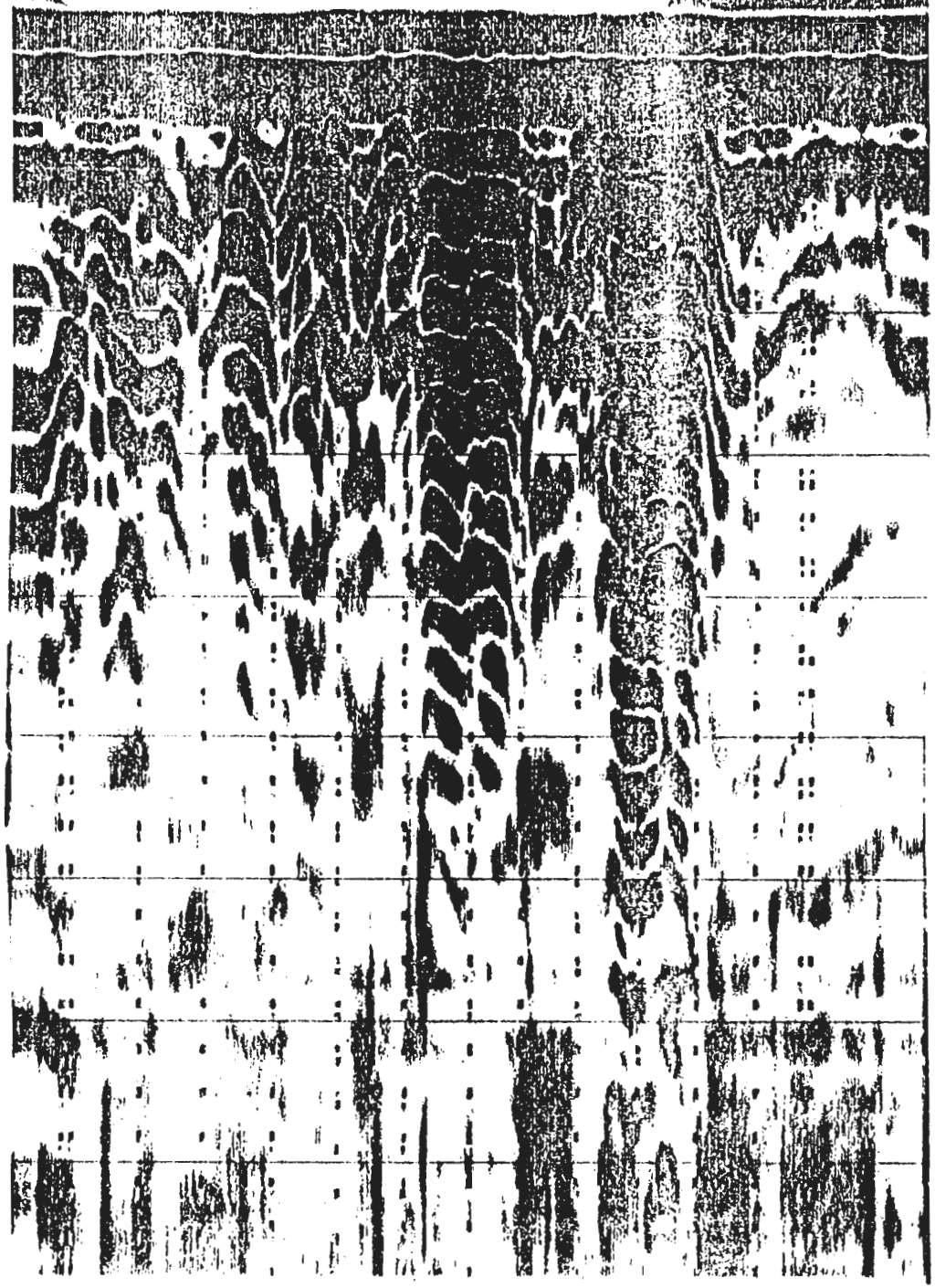
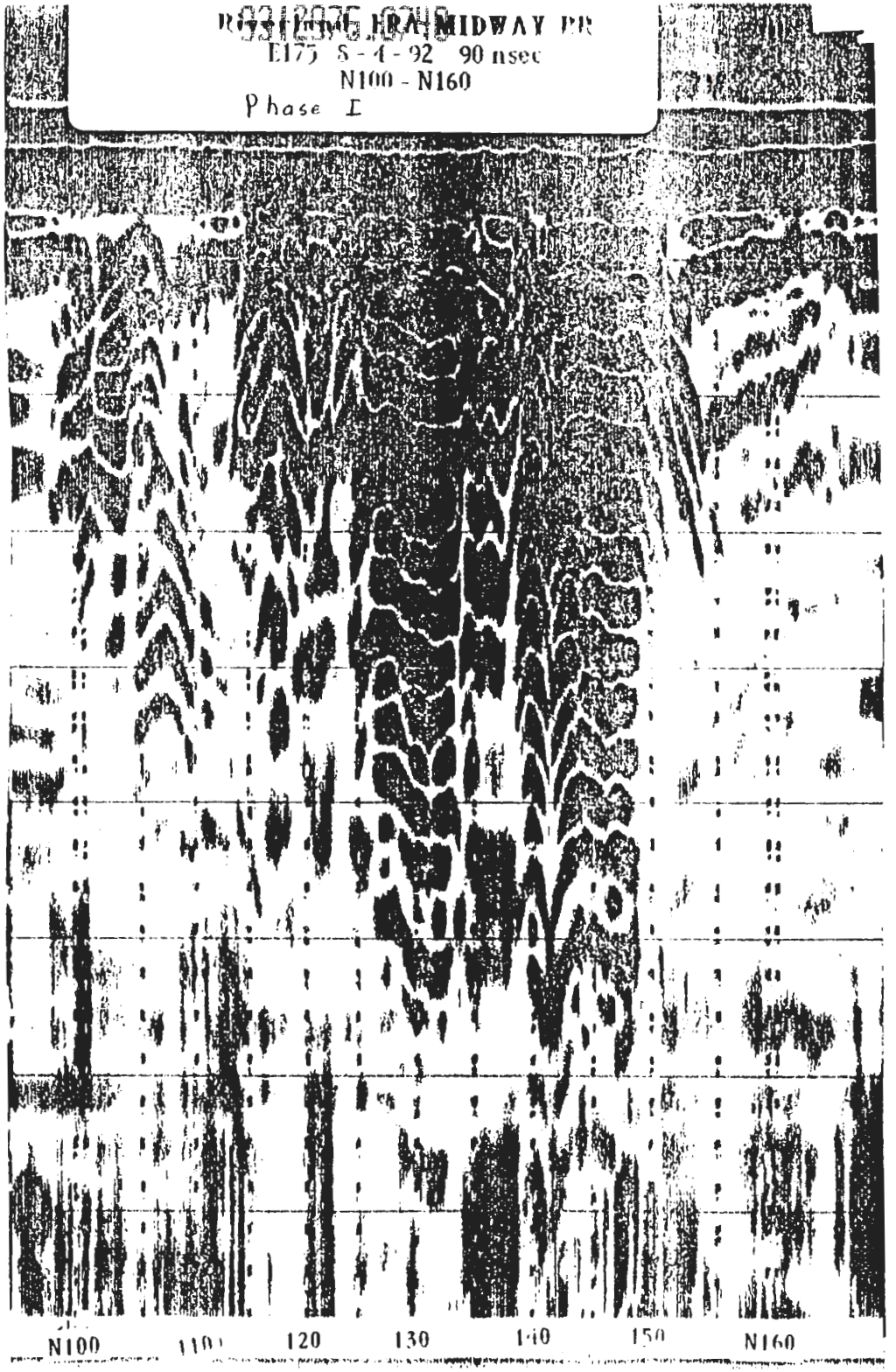
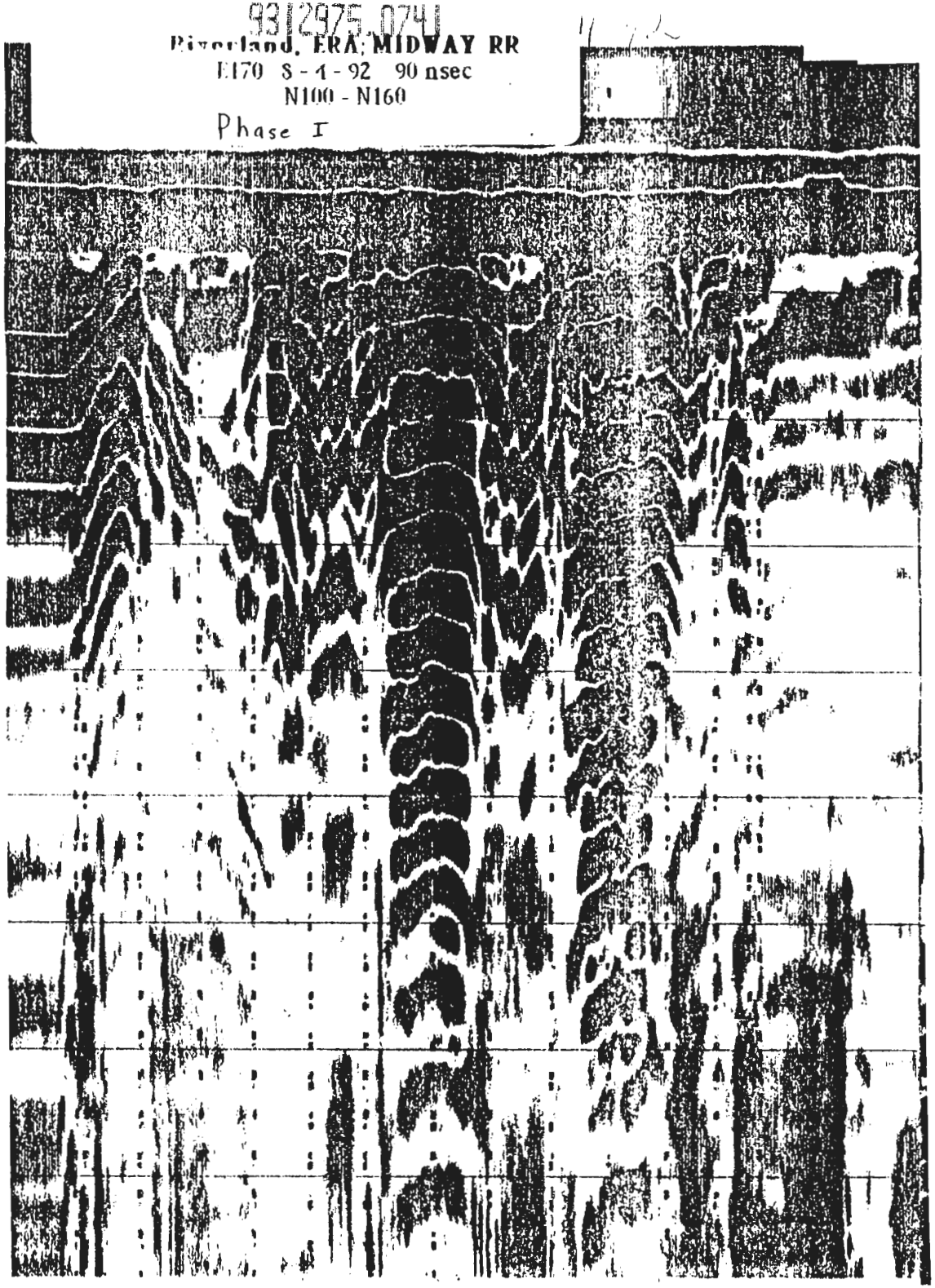
Riverland, TRA MIDWAY RR
E185 8-4-92 90 nsec
N100 - N160
Phase I
N100
110
120
130
140
150
N160

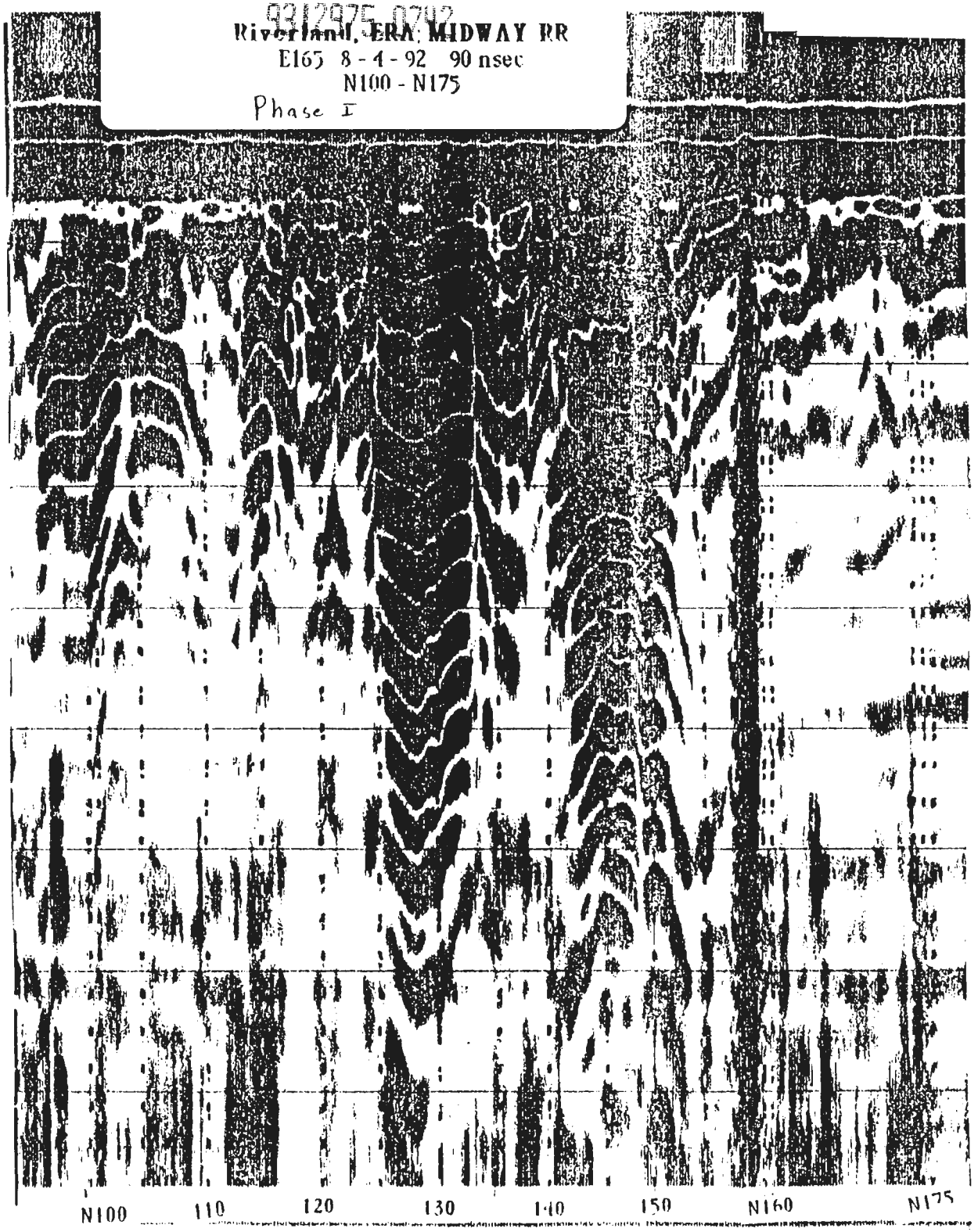
9312975.0739

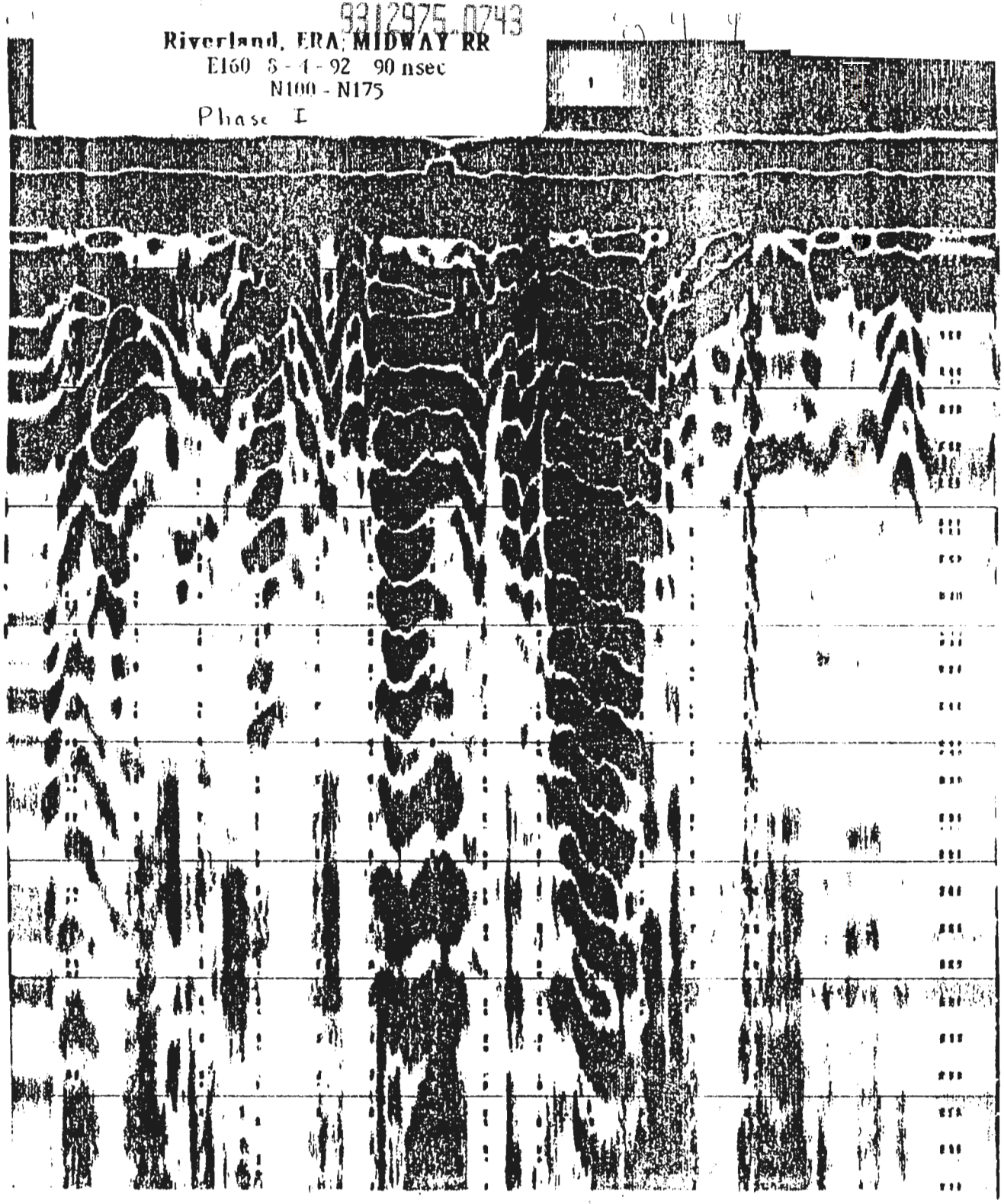
Riverland, ERA MIDWAY DR
E180 8-4-92 90 nsec
N100 - N160
Phase I



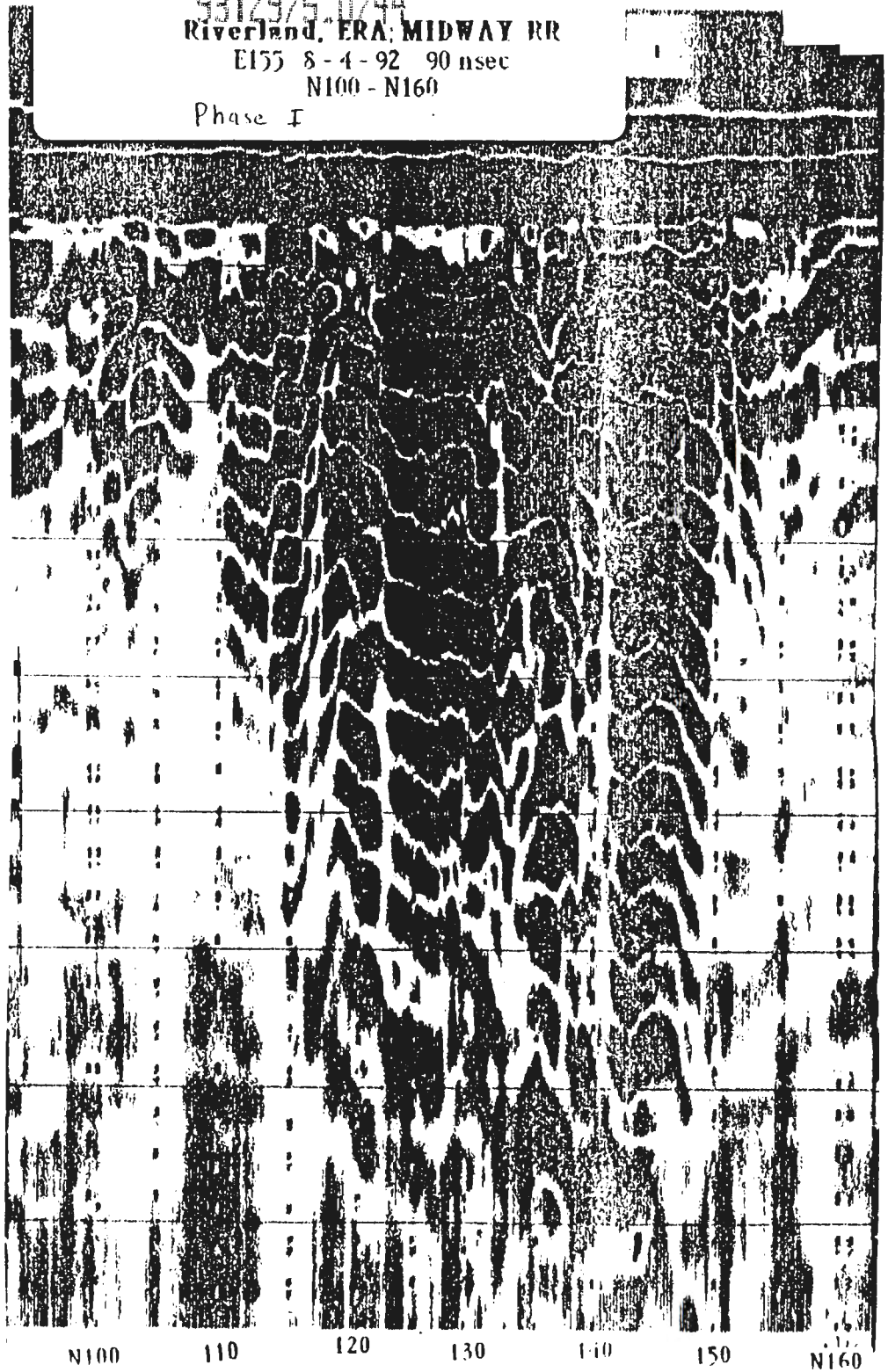

E175 S-4-92 90 nsec
N100 - N160
Phase I
N100
120
130
150
N160

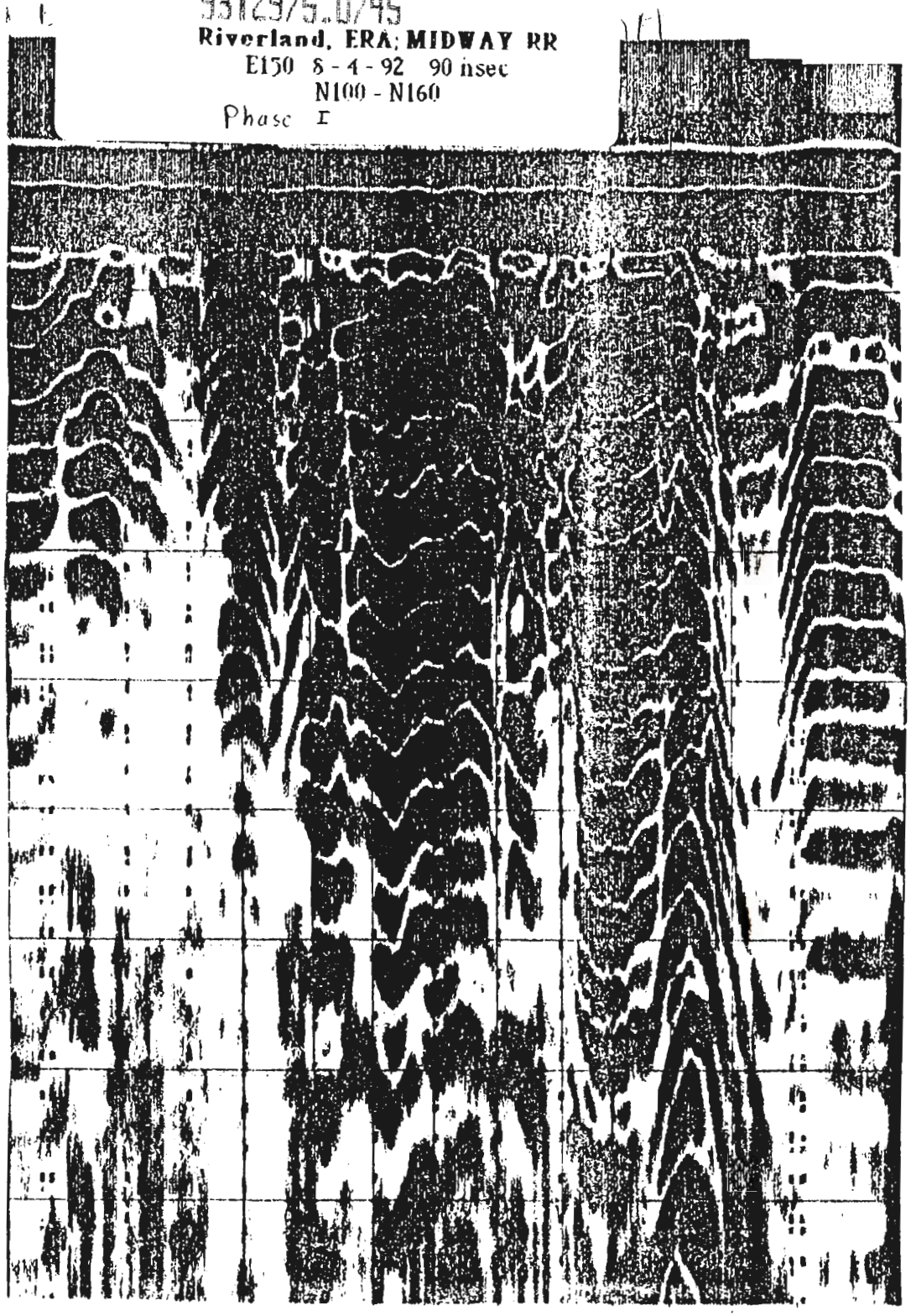

9312975.0740
Riverland, ERA, MIDWAY RR
E170 S - 1 - 92 90 nsec
N100 - N160
Phase I


9312975.0702
Riverland, ERA, MIDWAY RR
E165 8-4-92 90 nsec
N100 - N175
Phase I
N100
110
120
130
140
150
N160
N175


9312975.0743
Riverland, ERA, MIDWAY RR
E160 S - 1 - 92 90 nsec
N100 - N175
Phase I

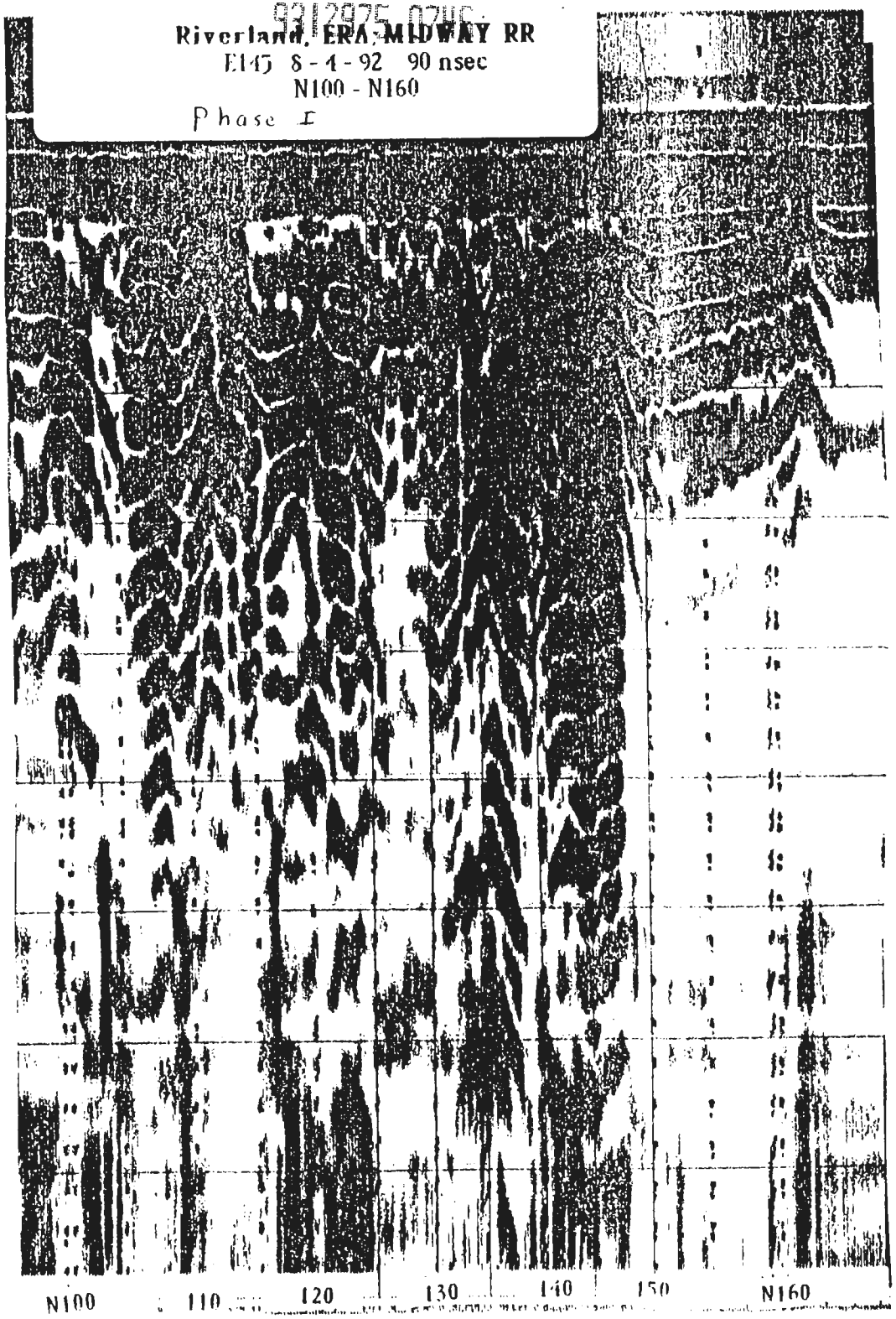
9312975.0244




9312975.0745
Riverland, ERA; MIDWAY RR
E150 8-4-92 90 nsec
N100 - N160
Phase I

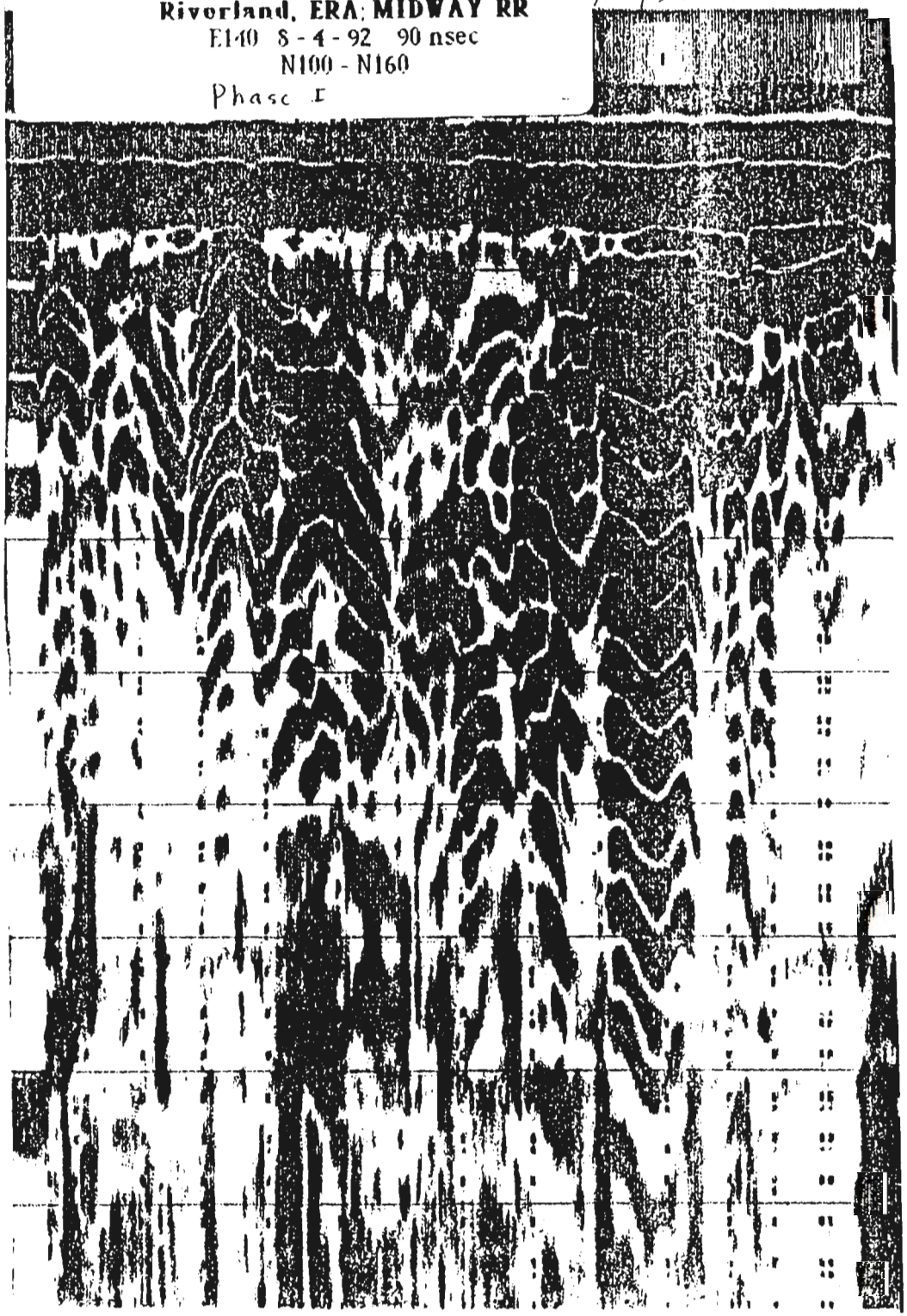
9312075.0706

Riverland, ERA, MIDWAY RR
E145 8-4-92 90 nsec
N100 - N160
Phase I

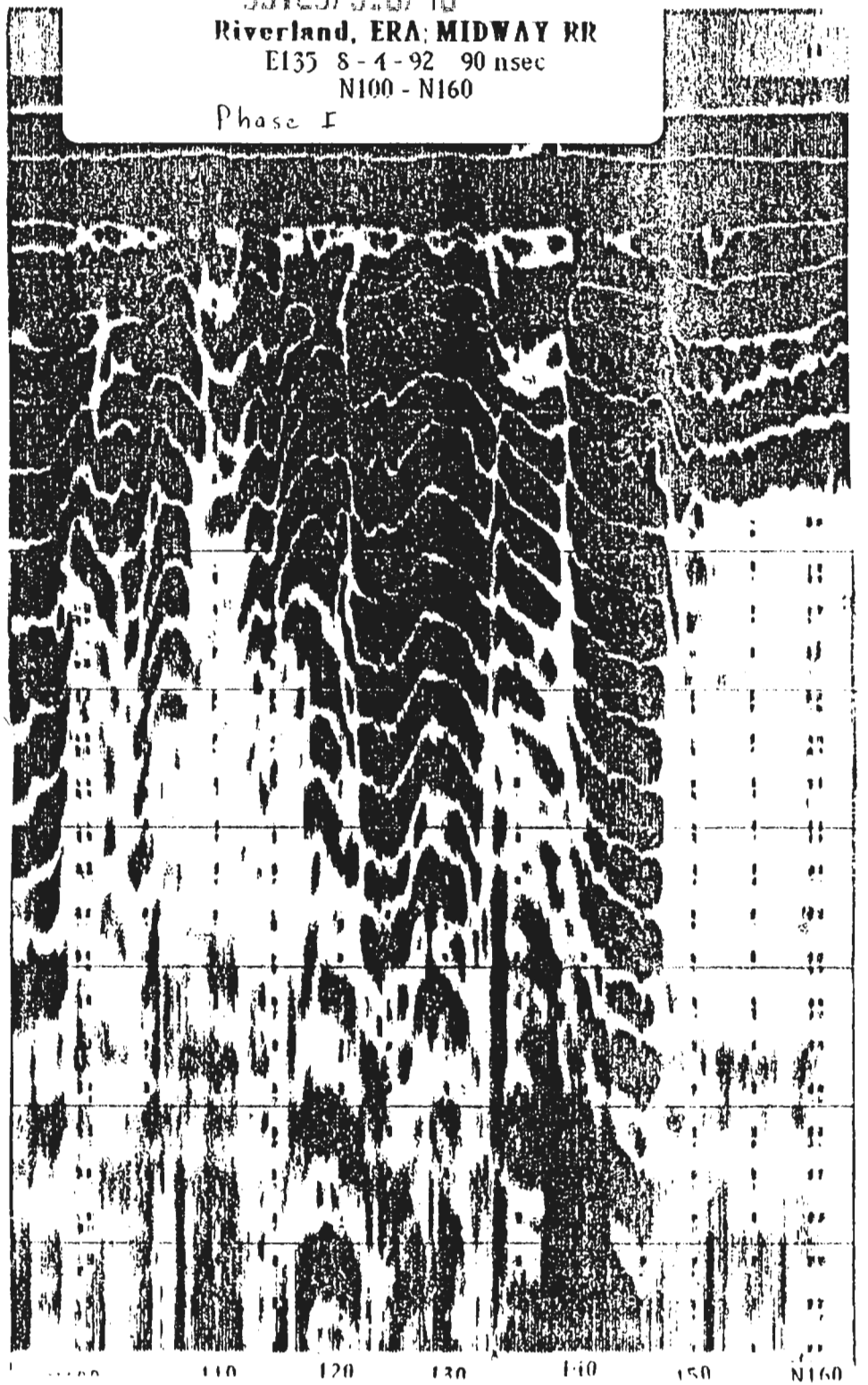


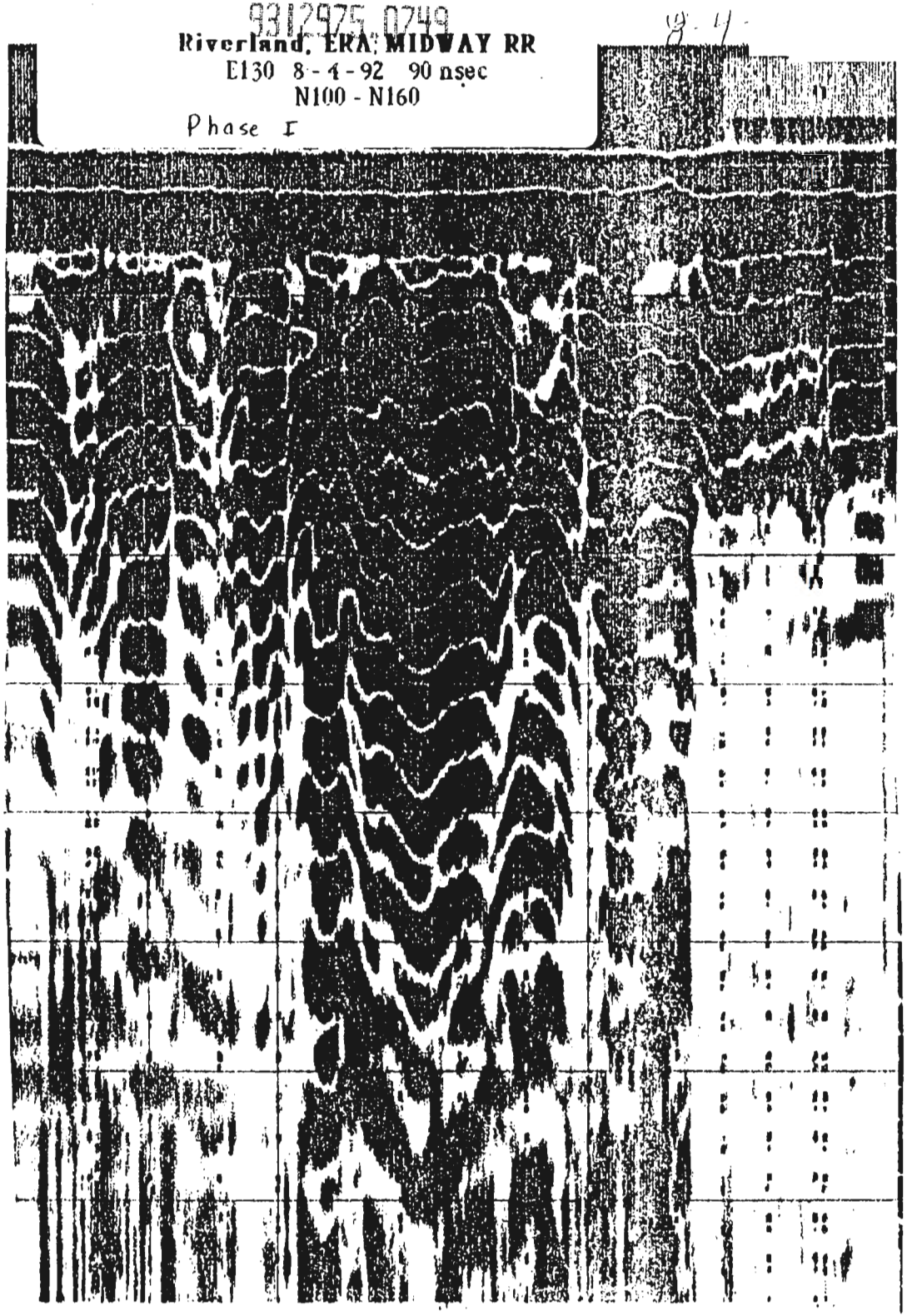
9312975.0747

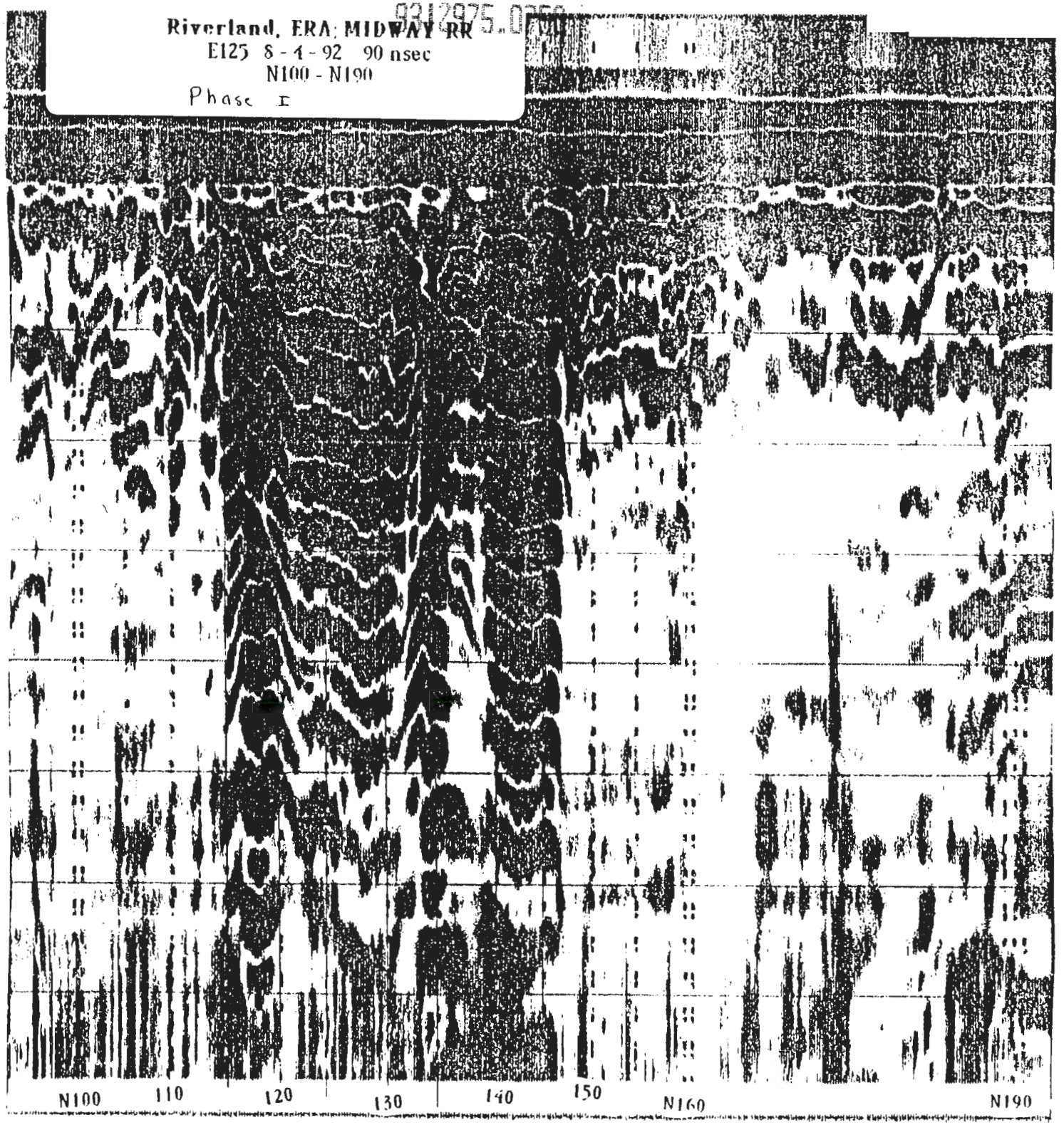
Riverland, ERA; MIDWAY RR
E140 8-4-92 90 nsec
N100 - N160
Phase I



9312975.0748



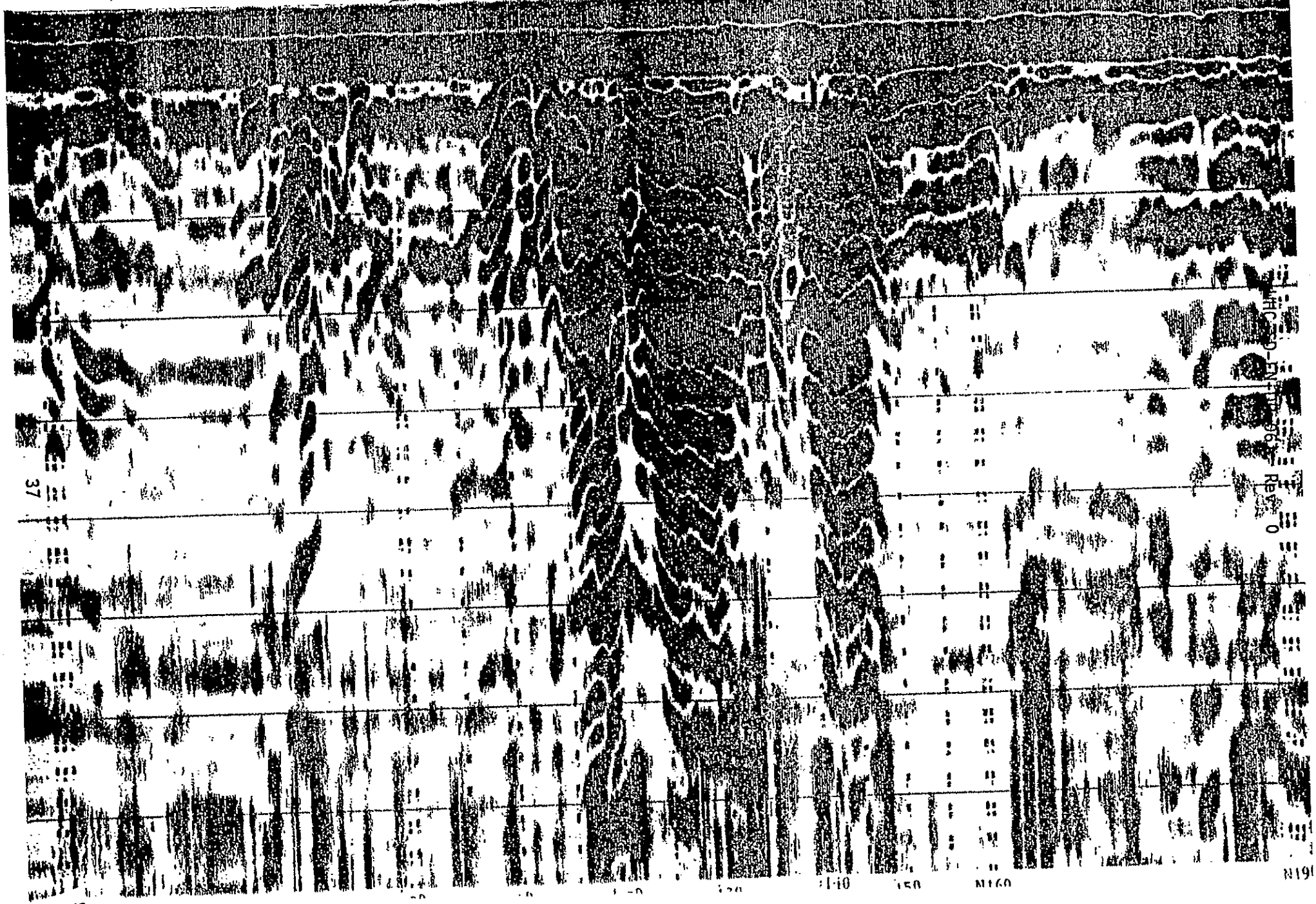

9312975.0749
Riverland, ERA, MIDWAY RR
E130 8-4-92 90 nsec
N100 - N160
Phase I


9312975.0250
Riverland, ERA; MIDWAY RR
E125 8 - 4 - 92 90 nsec
N100 - N190
Phase I
N100
110
120
130
140
150
N160
N190

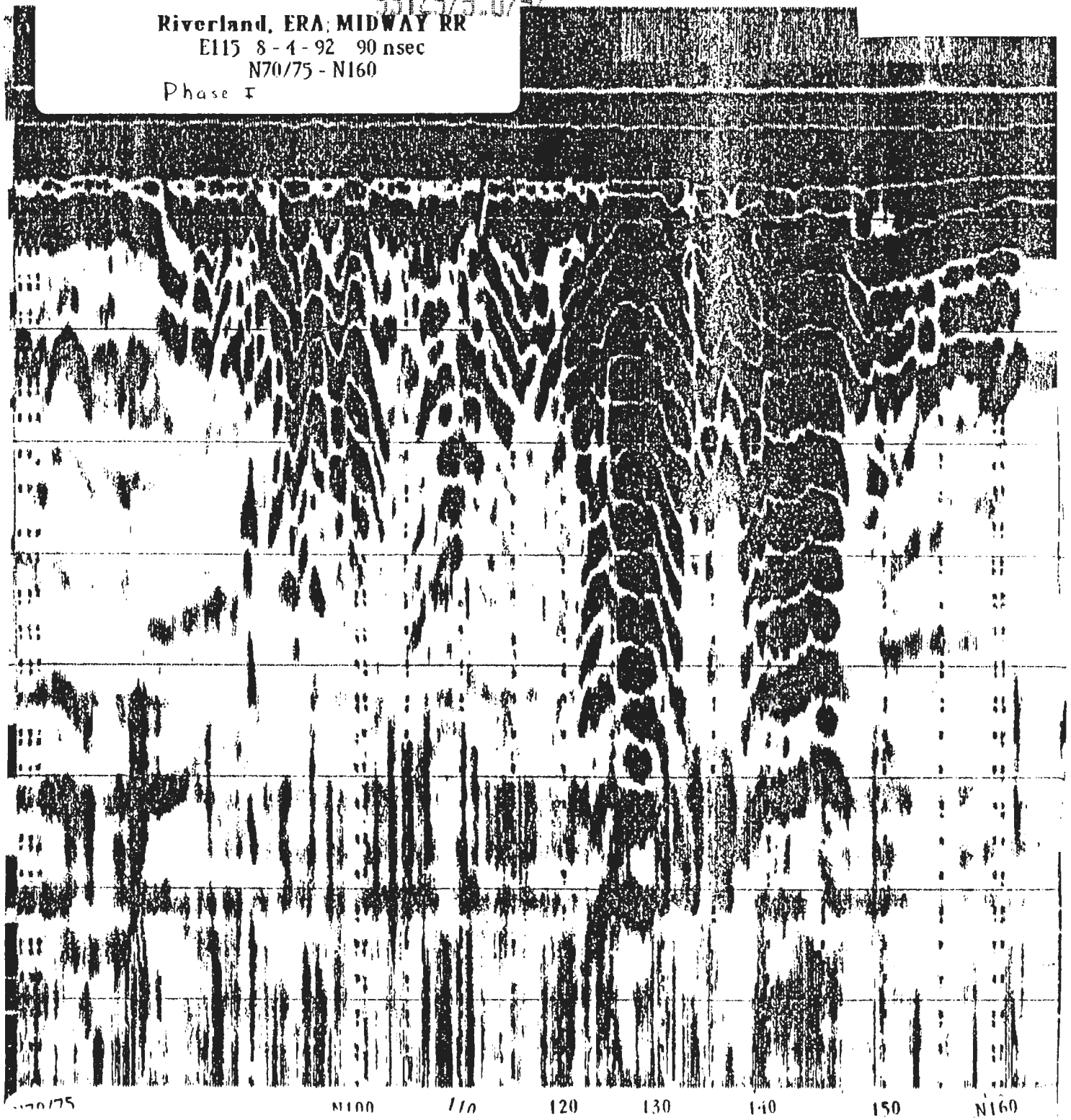
9312975.075K

Riverland, ERA; MIDWAY RR
E120 8-4-92 90 nsec
N70/75 - N190

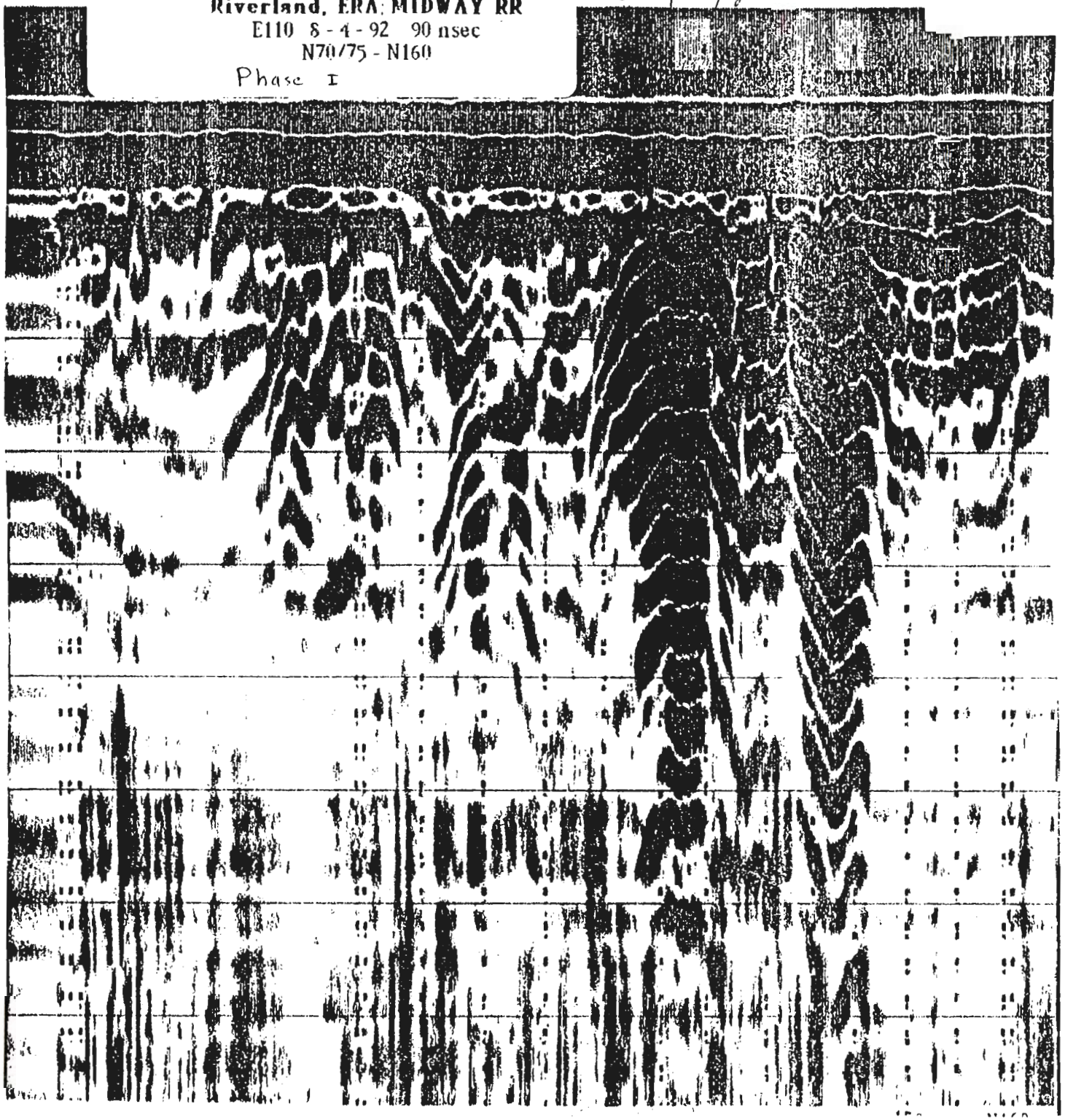
Phase I



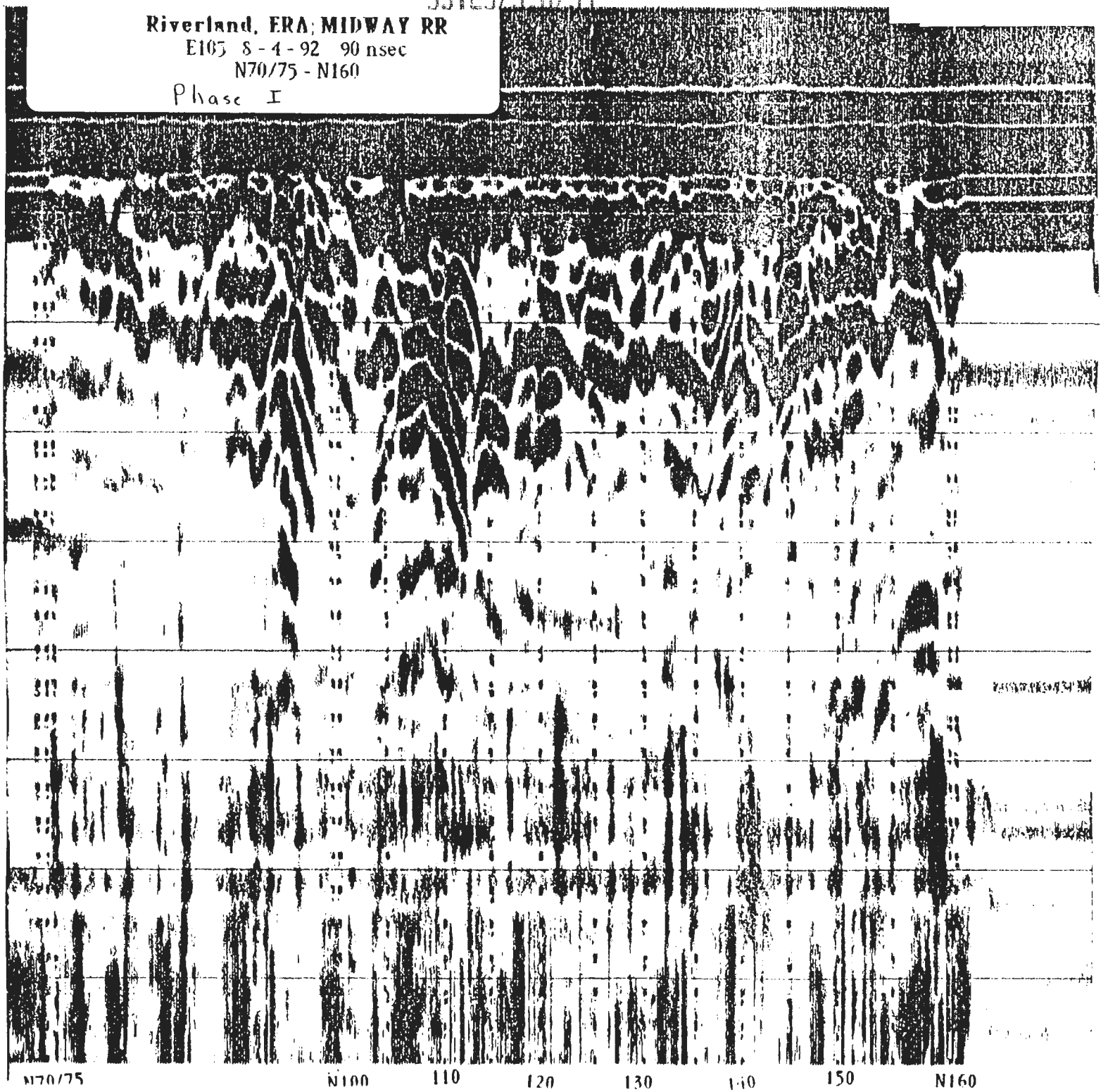
9312975.0752



9312975.0753 8-4-12



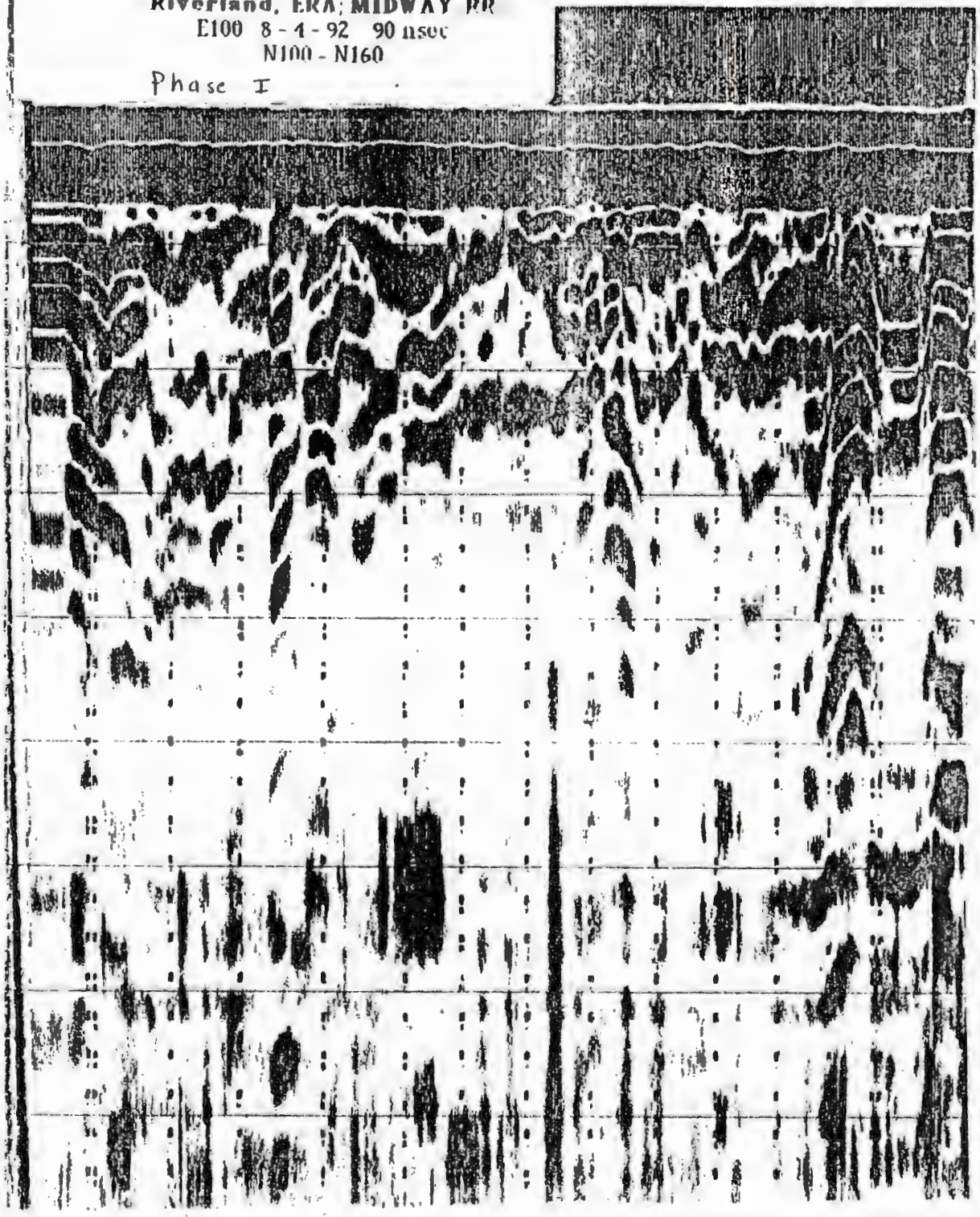
9312925.0254

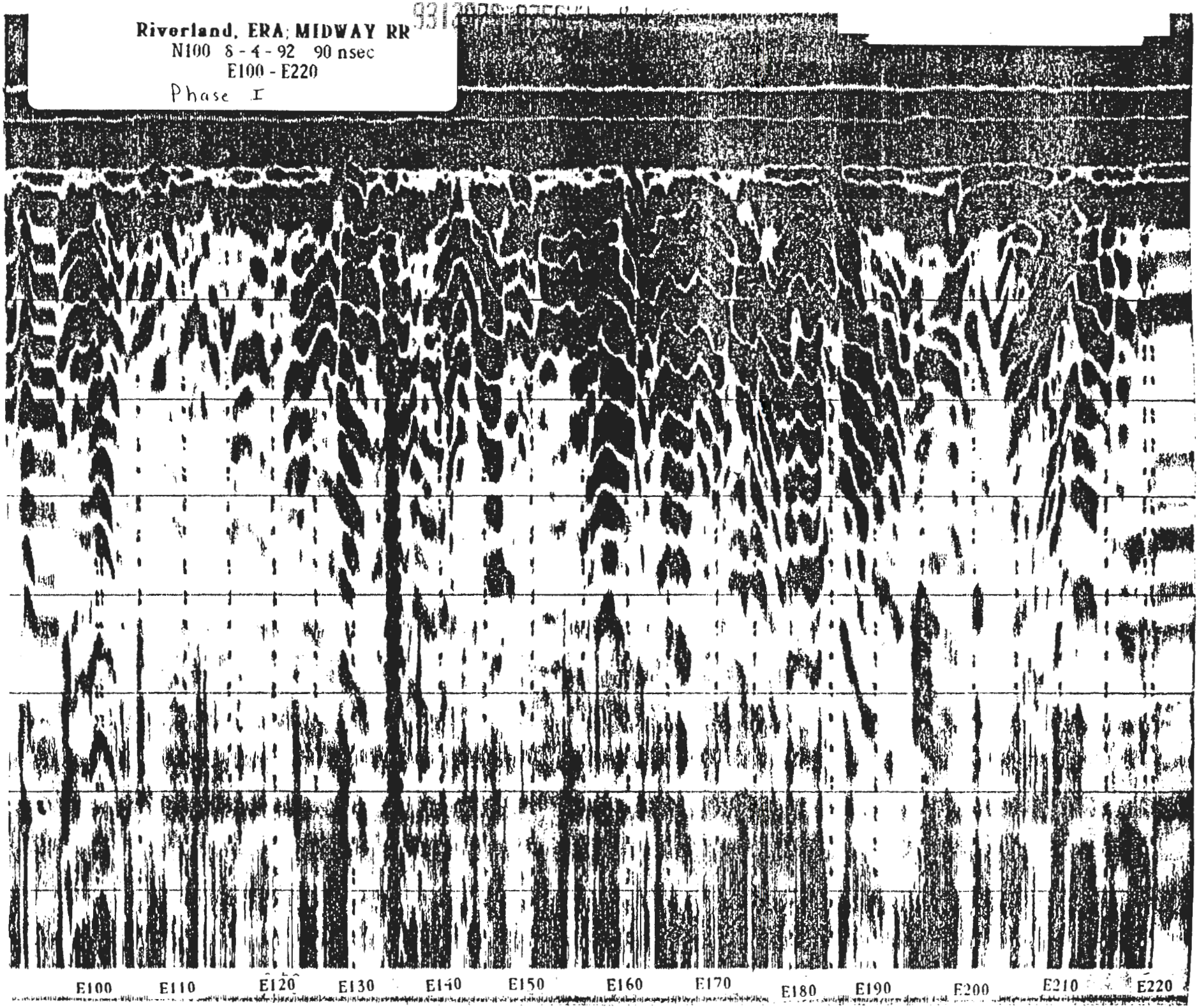


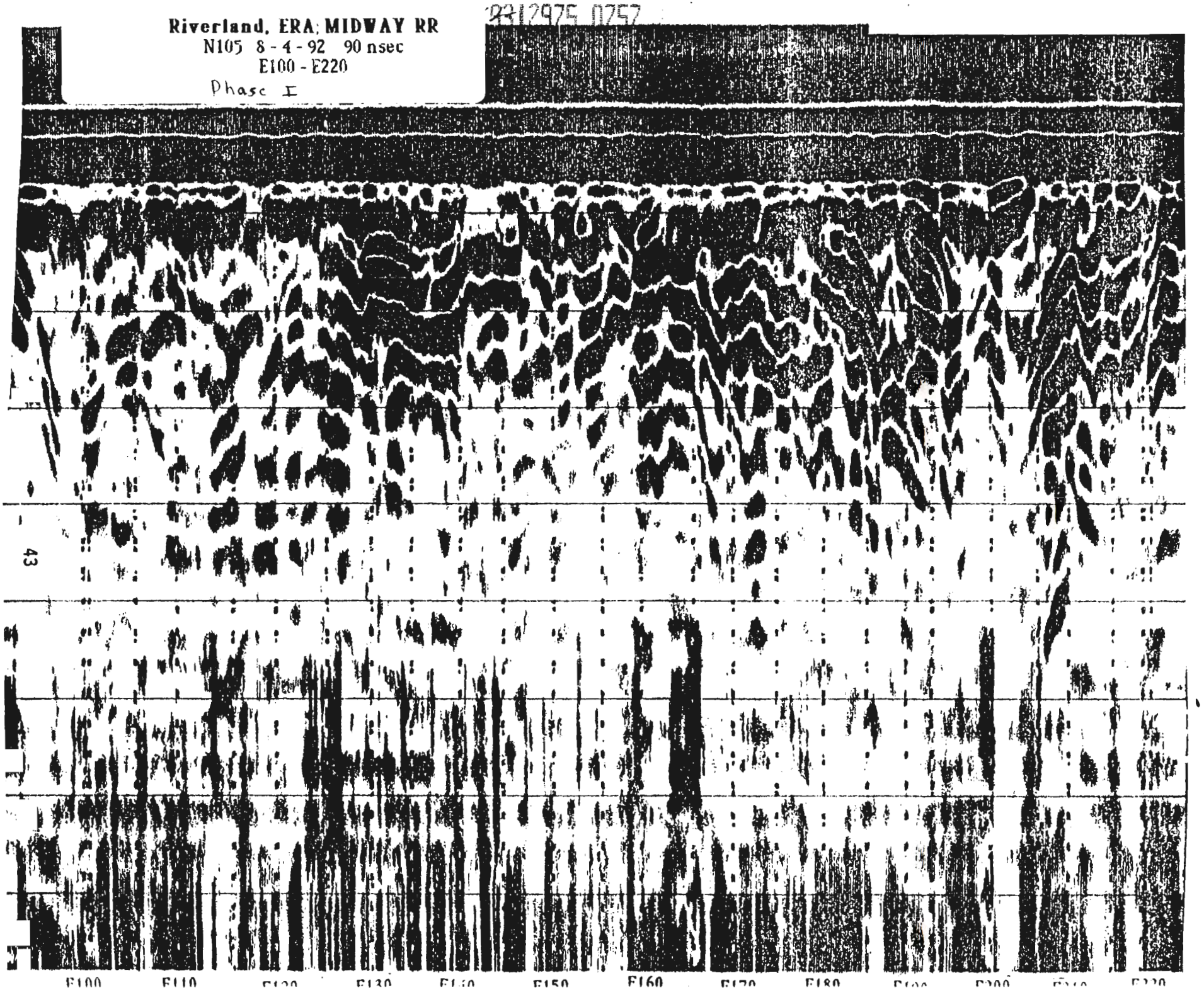
9312975.0755

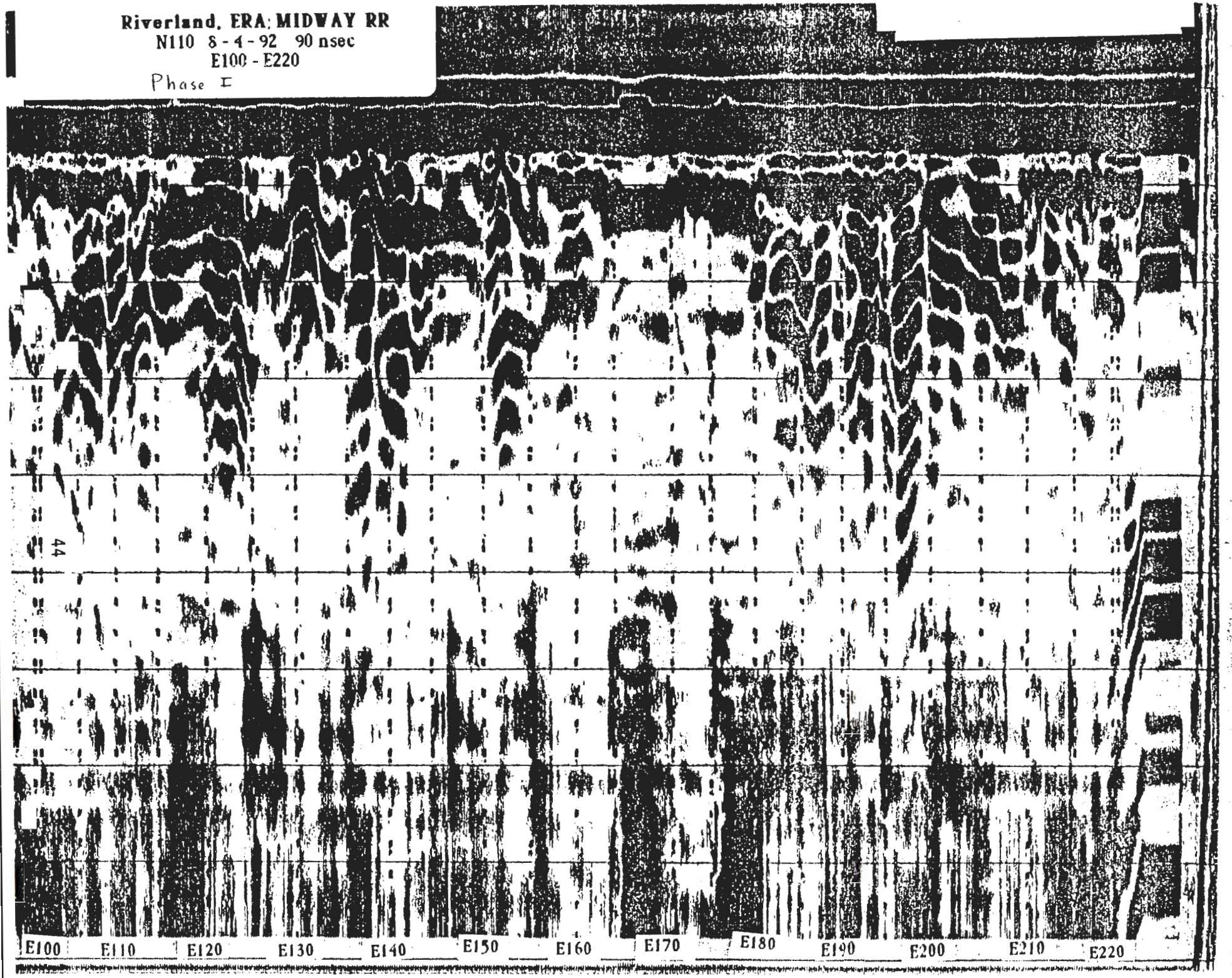
Riverland, ERA; MIDWAY RR
E100 8 - 4 - 92 90 nsec
N100 - N160

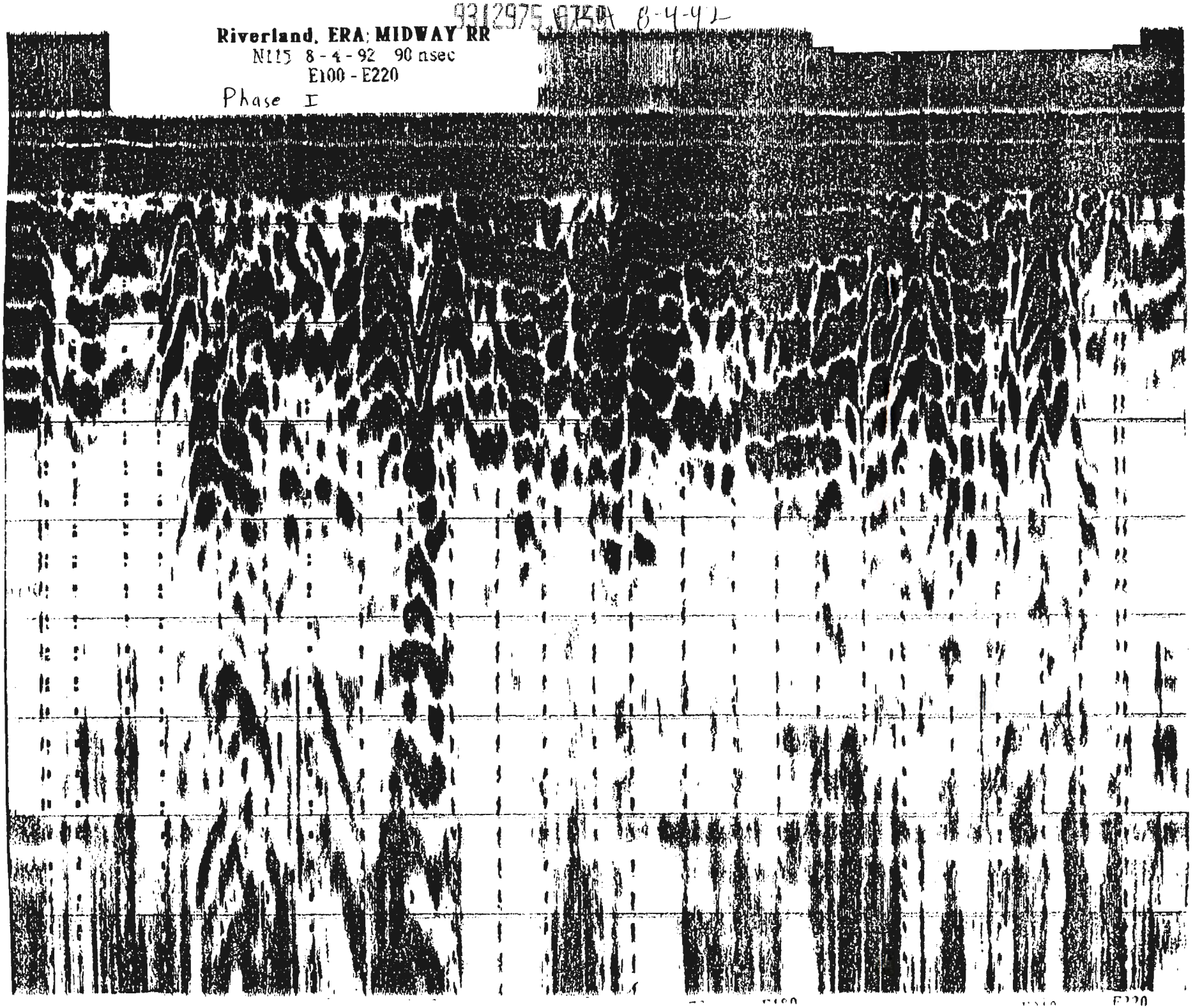
Phase I

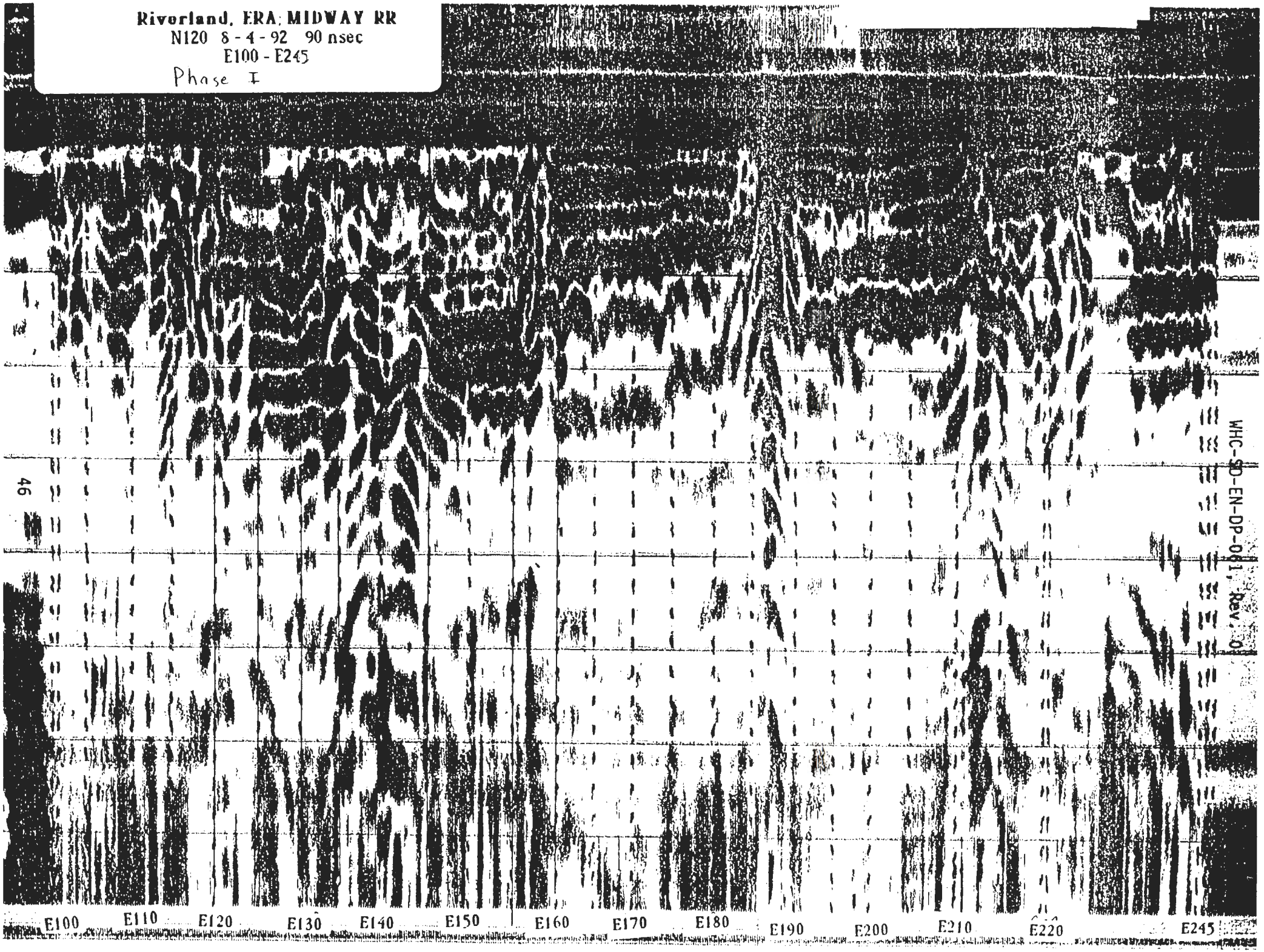


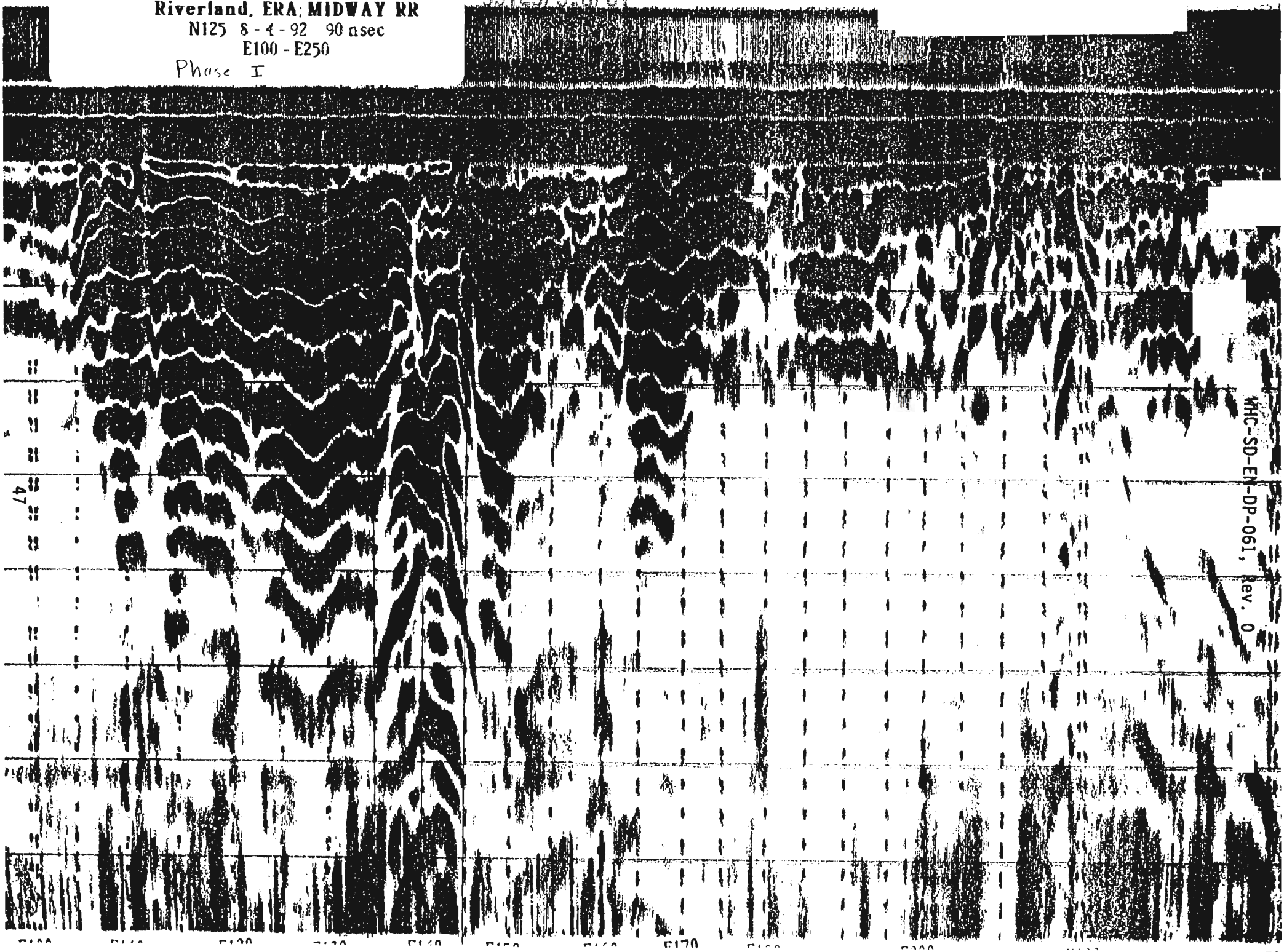

Riverland, ERA; MIDWAY RR
N100 8-4-92 90 nsec
E100 - E220
Phase I
E100
E110
E120
E130
E140
E150
E160
E170
E180
E190
E200
E210
E220

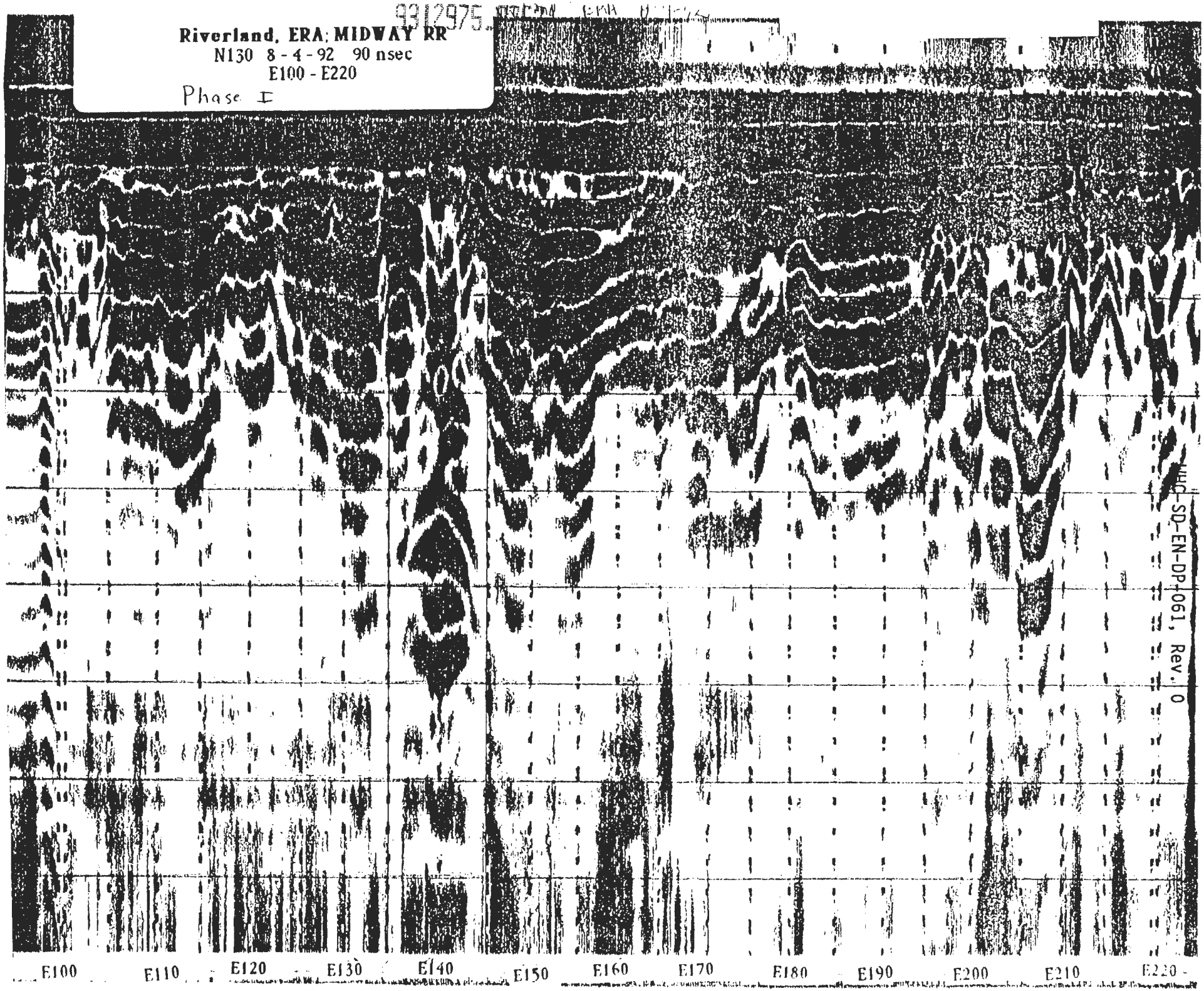

Riverland, ERA; MIDWAY RR
N105 8 - 4 - 92 90 nsec
E100 - E220
Phase I
E100
E110
E130
E150
E160
E180


Riverland, ERA; MIDWAY RR
N110 8-4-92 90 nsec
E100 - E220
Phase I
E100
E110
E120
E130
E140
E150
E160
E170
E180
E190
E200
E210
E220


9312975.0750 8-4-92
Riverland, ERA: MIDWAY RR
N115 8-4-92 90 nsec
E100 - E220
Phase I
E220

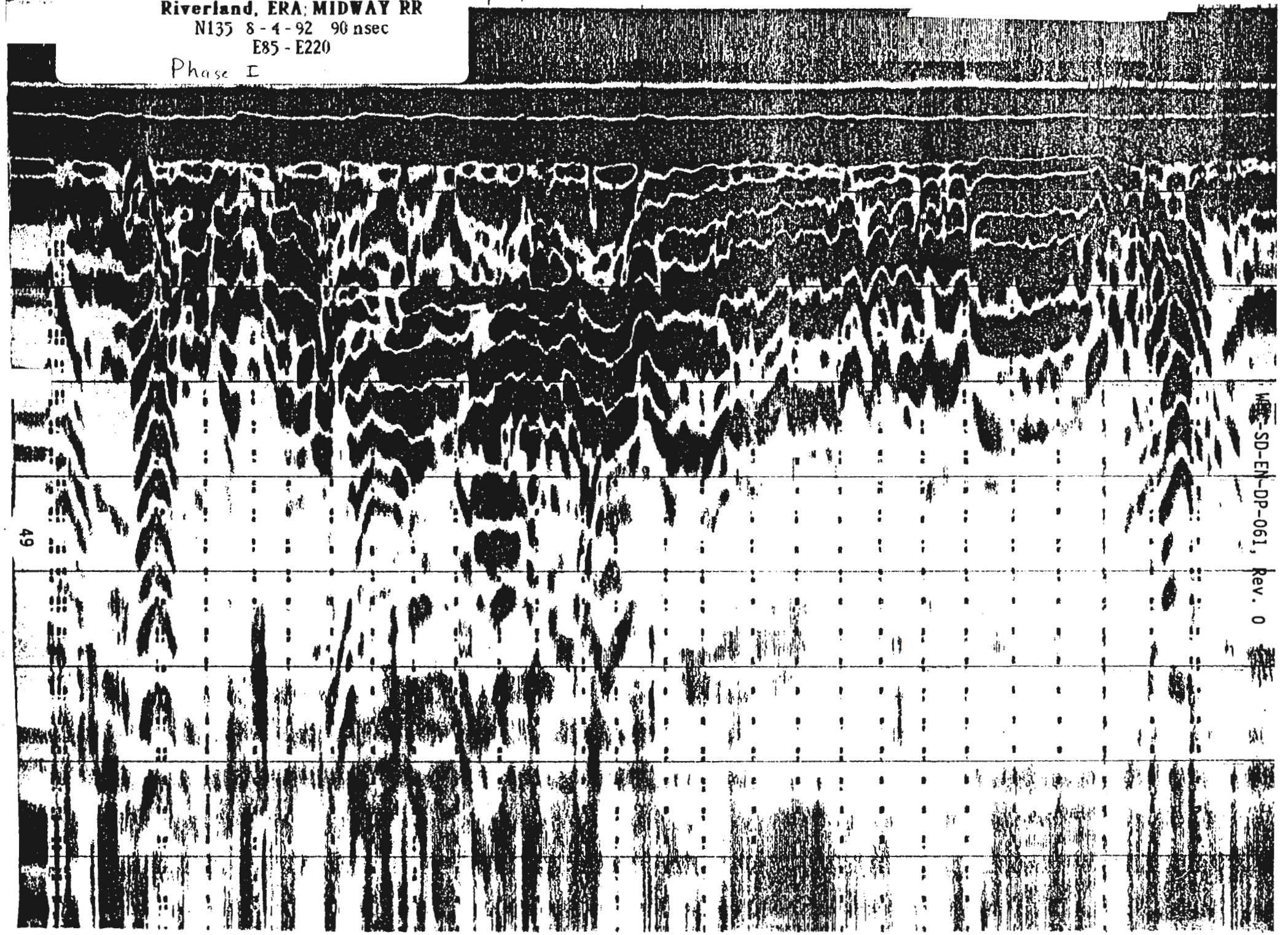

Riverland, ERA; MIDWAY RR
N120 8-4-92 90 nsec
E100 - E245
Phase I
E100
E110
E120
E130
E140
E150
E160
E170
E180
E190
E200
E210
E220
E245


Riverland, ERA; MIDWAY RR
N125 8-4-92 90 nsec
E100 - E250
Phase I
E170

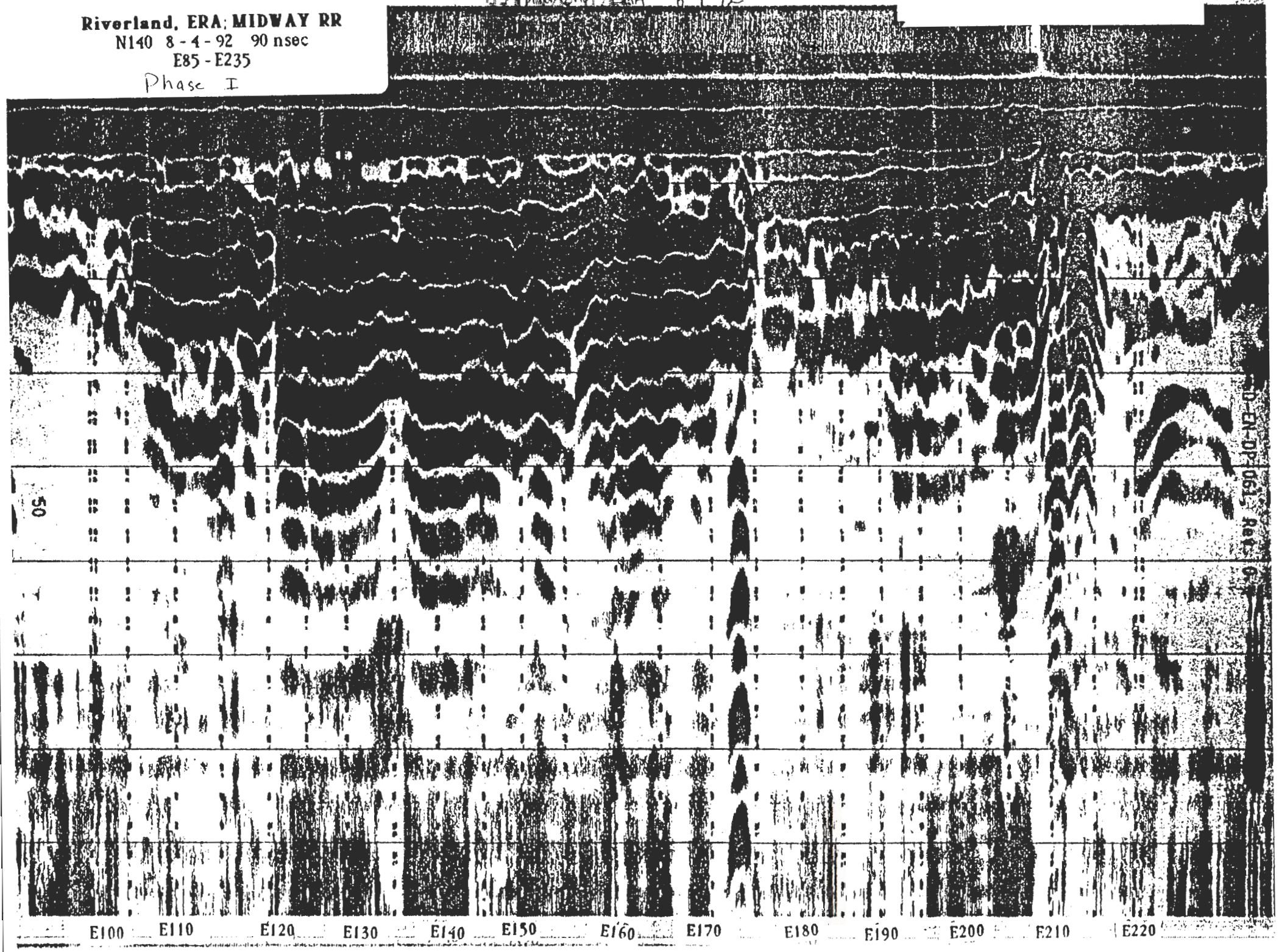

9312975
Riverland, ERA; MIDWAY RR
N130 8 - 4 - 92 90 nsec
E100 - E220
Phase I
E100
E110
E120
E130
E140
E150
E160
E170
E180
E190
E200
E210
E220

9312925.0763

Riverland, ERA; MIDWAY RR
N135 8-4-92 90 nsec
E85 - E220
Phase I



Riverland, ERA; MIDWAY RR
N140 8 - 4 - 92 90 nsec
E85 - E235
Phase I



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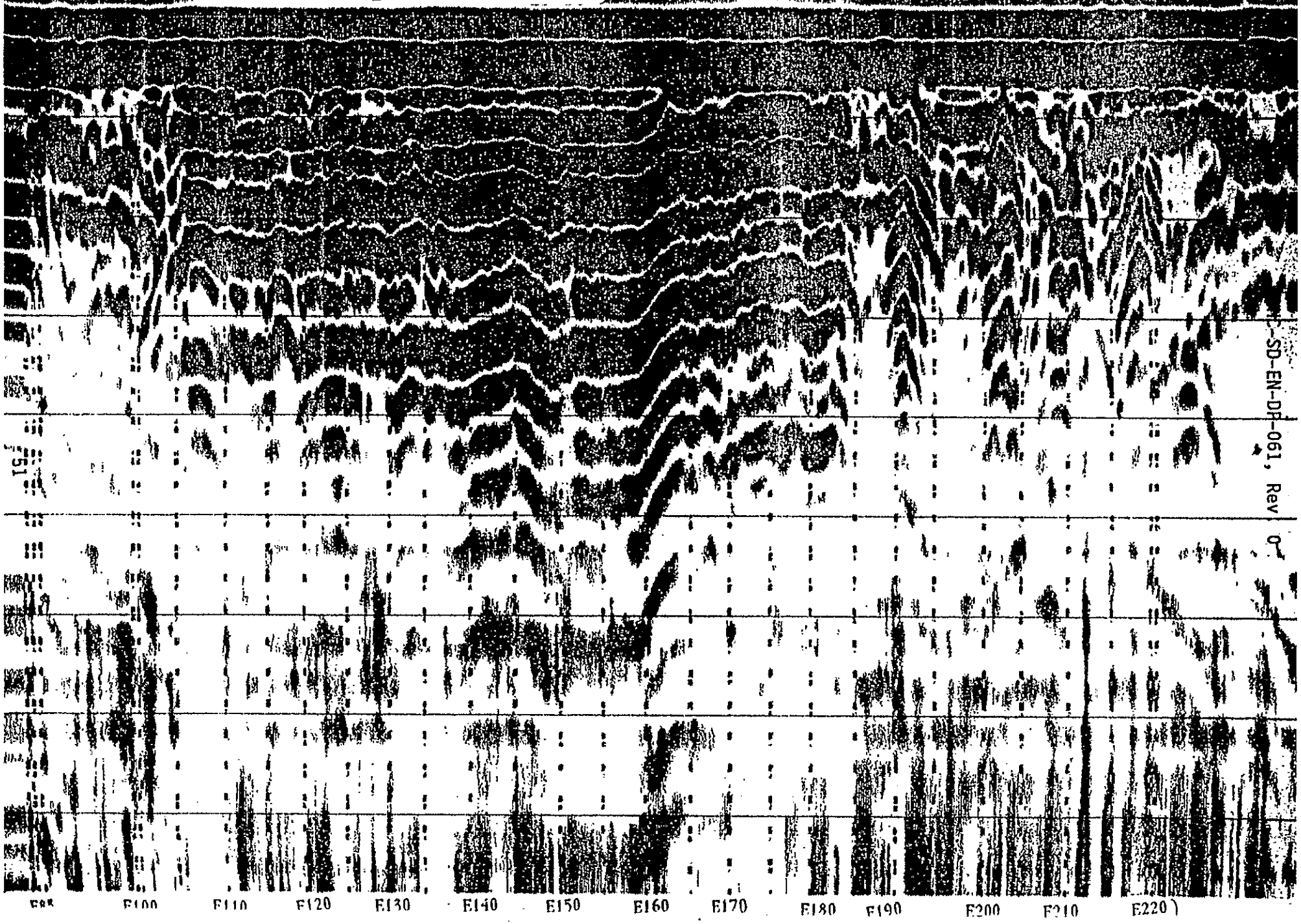
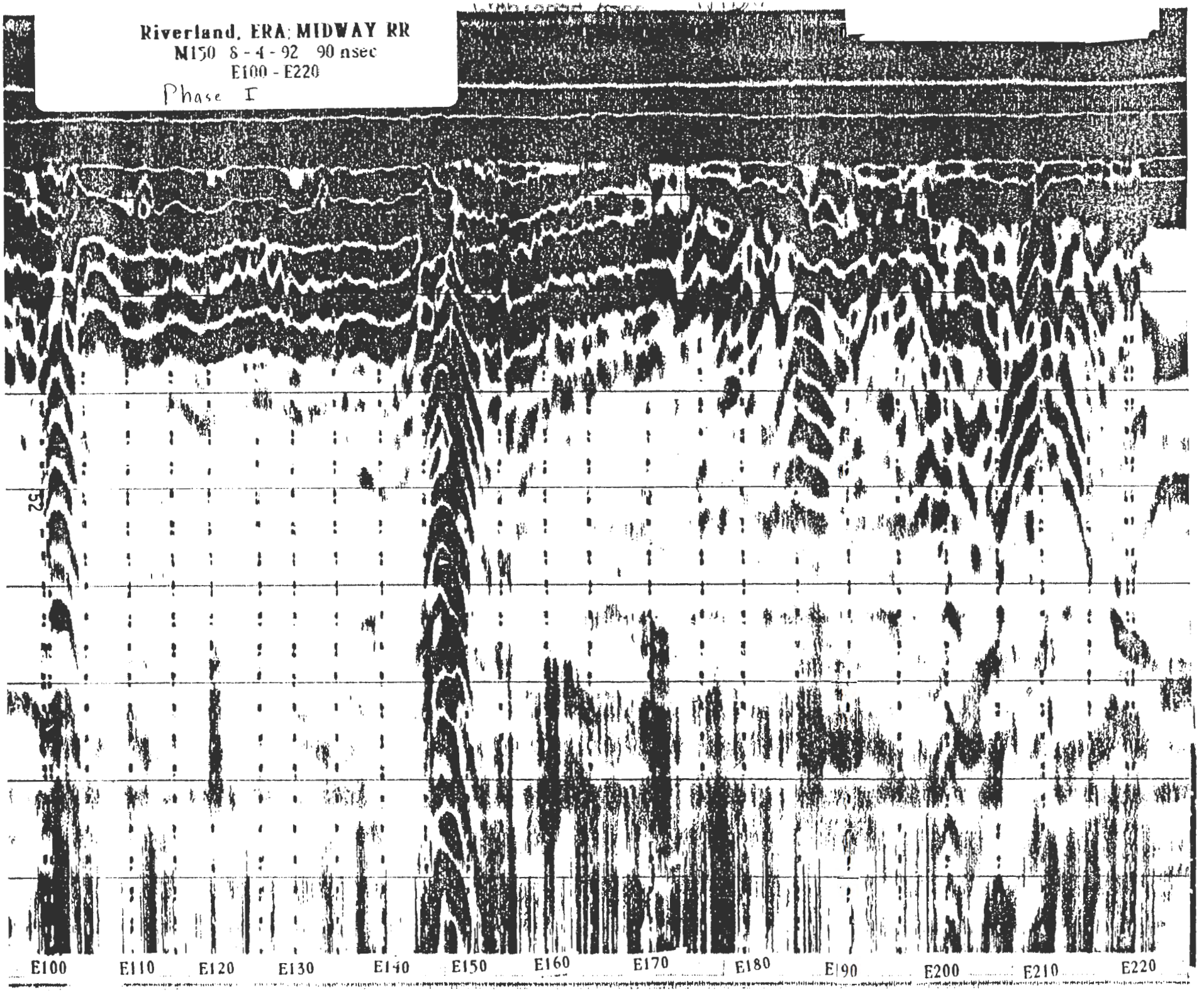
Riverland, ERA; MIDWAY-RR5

N145 8-4-92 90 nsec

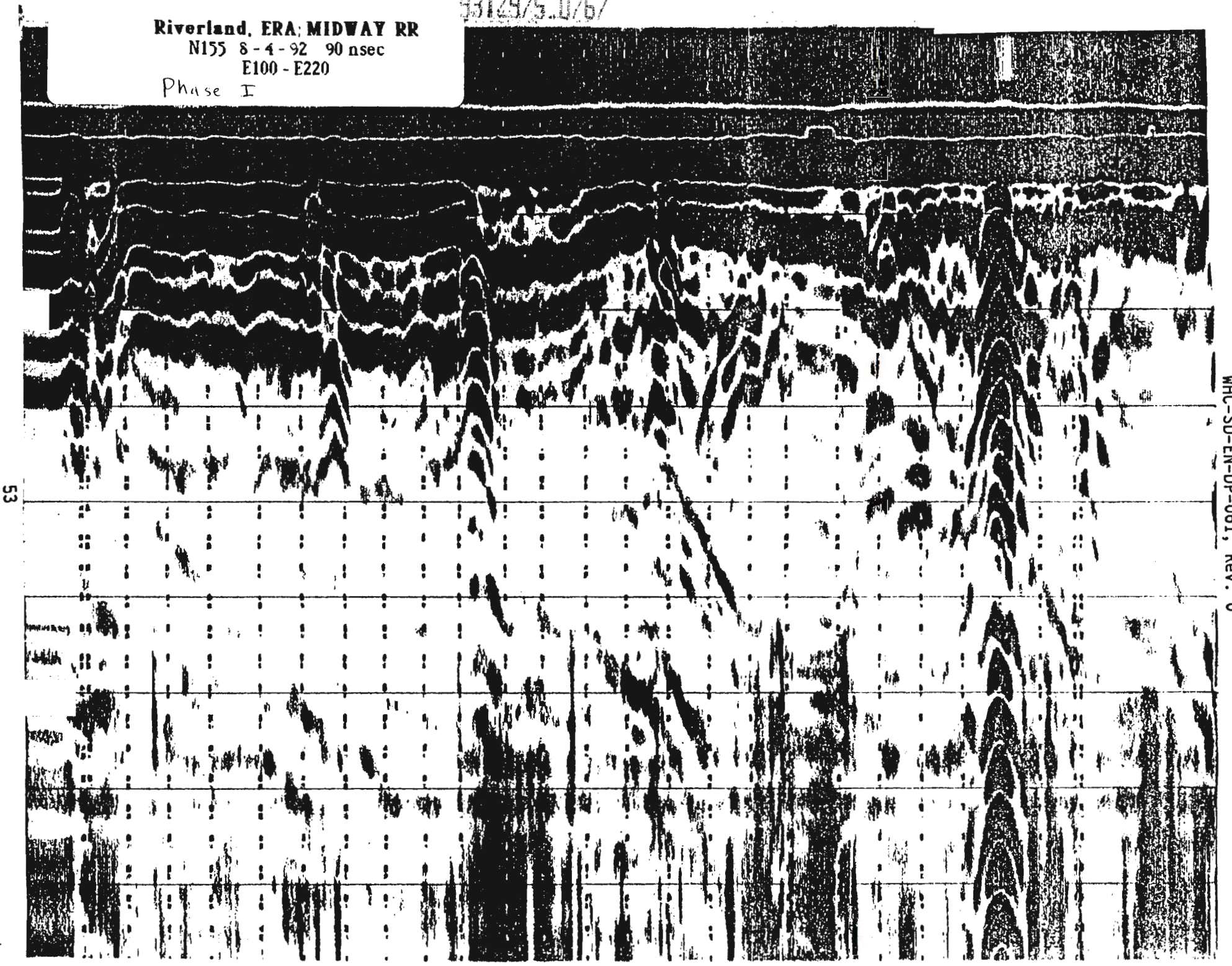
E85-E220

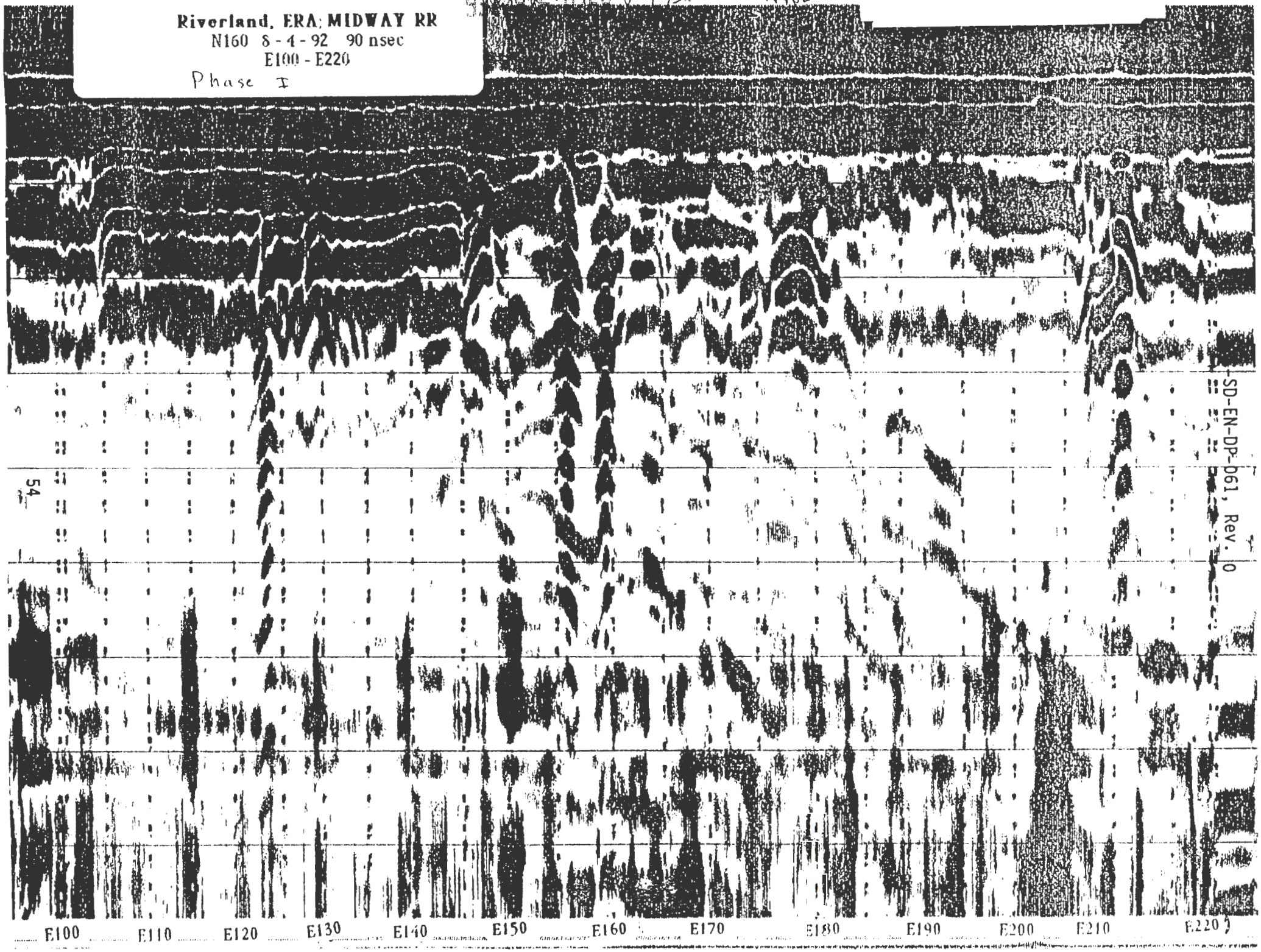
Phase I




Riverland, ERA; MIDWAY RR
M150 8 - 4 - 92 90 nsec
E100 - E220
Phase I
E100
E110
E120
E130
E140
E150
E160
E170
E180
E190
E200
E210
E220

9312975.0767




Riverland, ERA; MIDWAY RR
N160 8-4-92 90 nsec
E100 - E220
Phase I
E100
E110
E120
E130
E140
E150
E160
E170
E180
E190
E200
E210
E220

GROUND PENETRATING RADAR (GPR) SURVEY

Team Geophysics, Westinghouse Hanford Operations

TITLE: Riverland ERA, PHASE II	DATE: 8-17-92
LOCATION: Midway railroad decontamination station.	
CLIENT: Paul Valcich	DATA COLLECTED BY K.A. Bergstrom, T.H. Mitchell
EQUIPMENT USED: GSSI System 8, model 4800 Calibrator Model P731 Digital Tape Recoder DT6000A	ANTENNA(S) USED: 100 ____ 300 XX 100 BISTATIC ____
	LOG BOOK: EFL 1029
	TIME WINDOW (NS): 100

PROCEDURES FOLLOWED: WHC-CM-7-7 EII 11.2, REV. 3

GRID : 50x70' NO. OF PROFILES: 26 TOTAL FOOTAGE COLLECTED: 1520

PARAMETERS:

Two sets of perpendicular profiles; five feet between profiles.

DATA TAPE NO.: ERA #2 RECORDS LOCATION: Geophysical files

TAPE ADDRESS : 0-24135 ____ CALIBRATION ADDRESS: 23976-24135

INTERPRETED BY : K. A. Bergstrom REVIEWED BY : T.H. Mitchell

INTERPRETATION DELIVERED TO draft to P. Valcich DATE : 9-92

OBJECTIVE(S):

To determine whether buried diesel fuel tank had been removed from the ground.

NOTES:

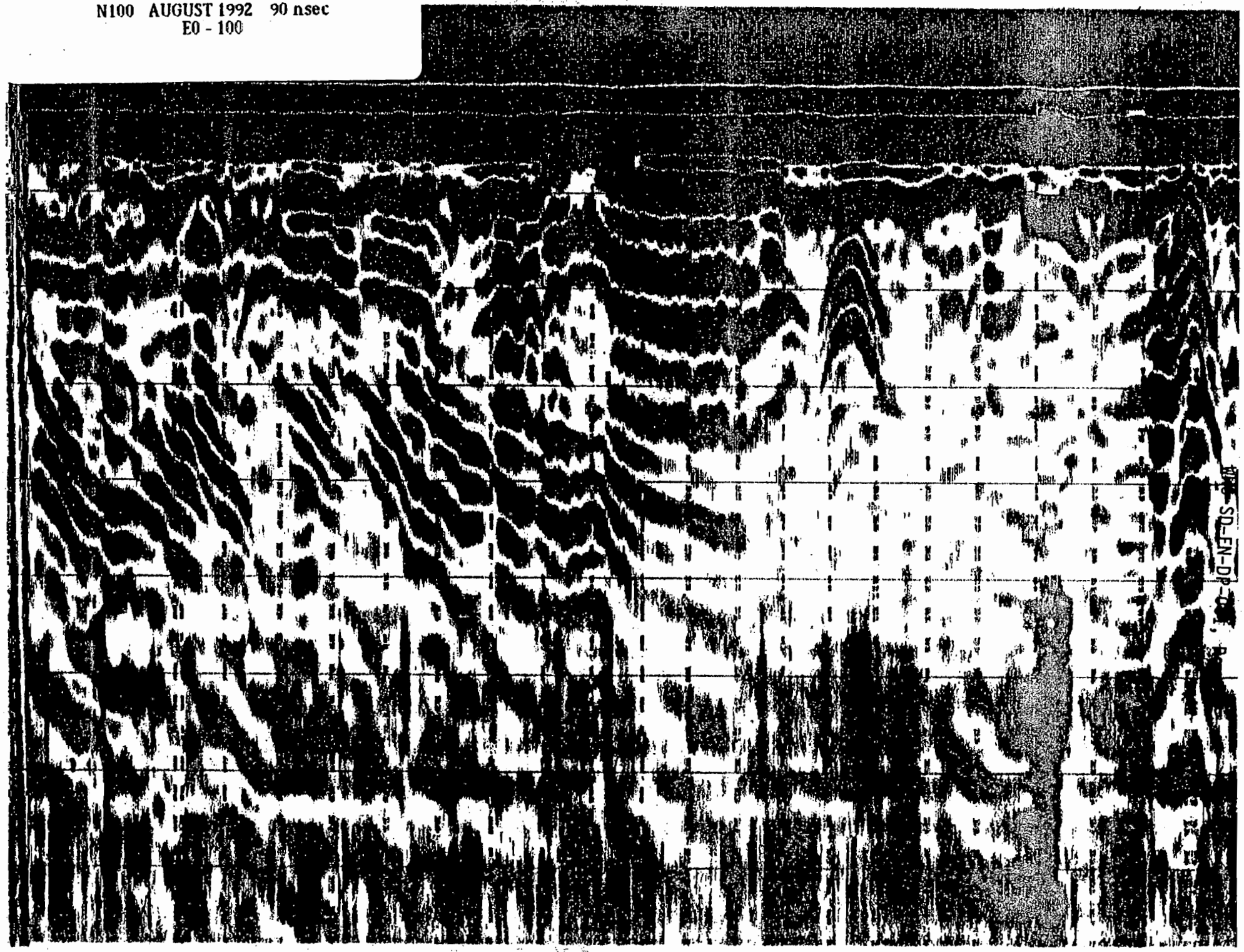
Antenna pulled by hand at 1-2 mph. 50 meter cable. Pulled on south and east side of survey marks.

E100/N100 is a common grid point between phase I and phase II surveys.

9312975.0769

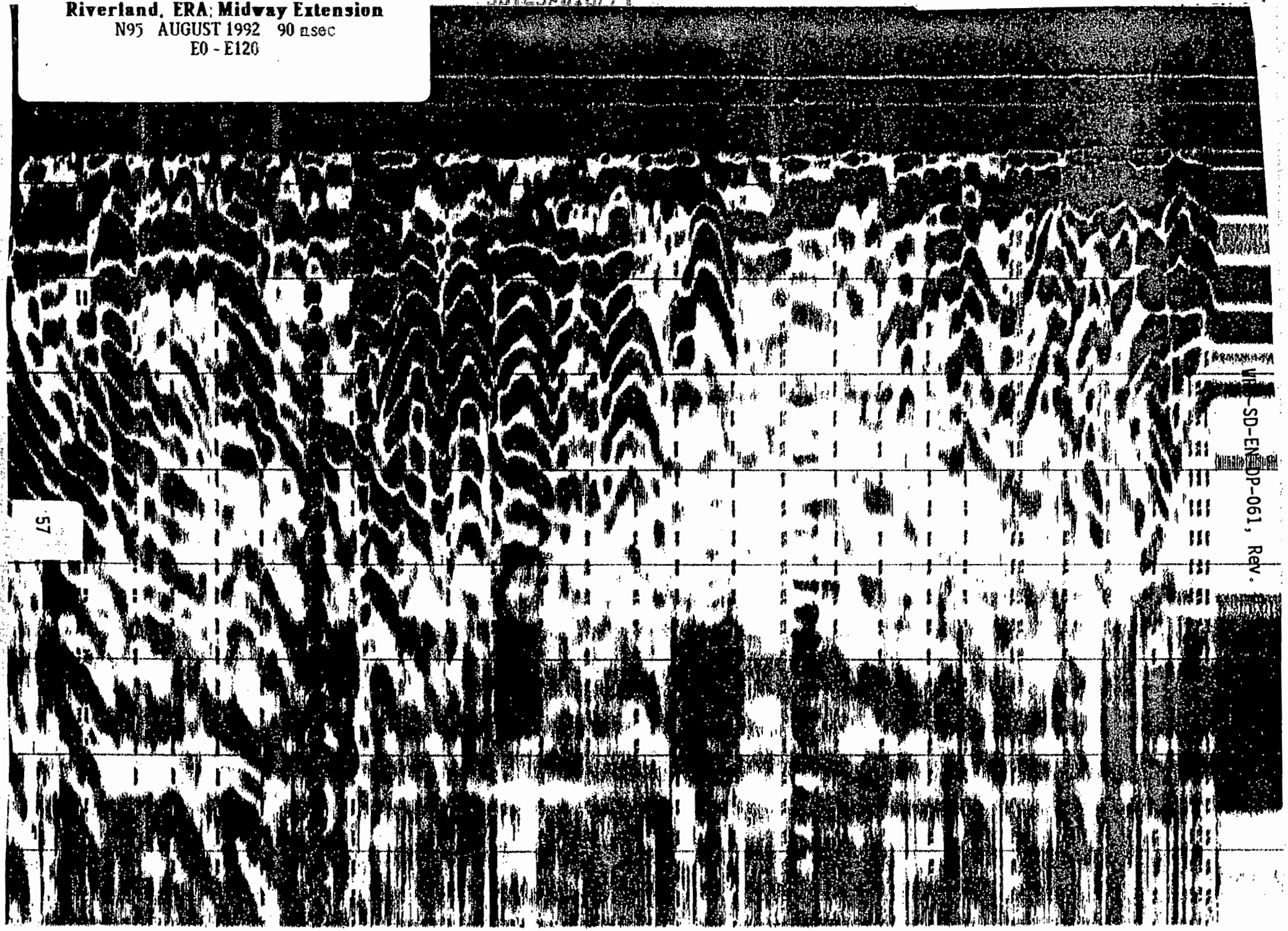
Riverland, ERA; Midway Extension
N100 AUGUST 1992 90 nsec
E0 - 100

9312975.0770



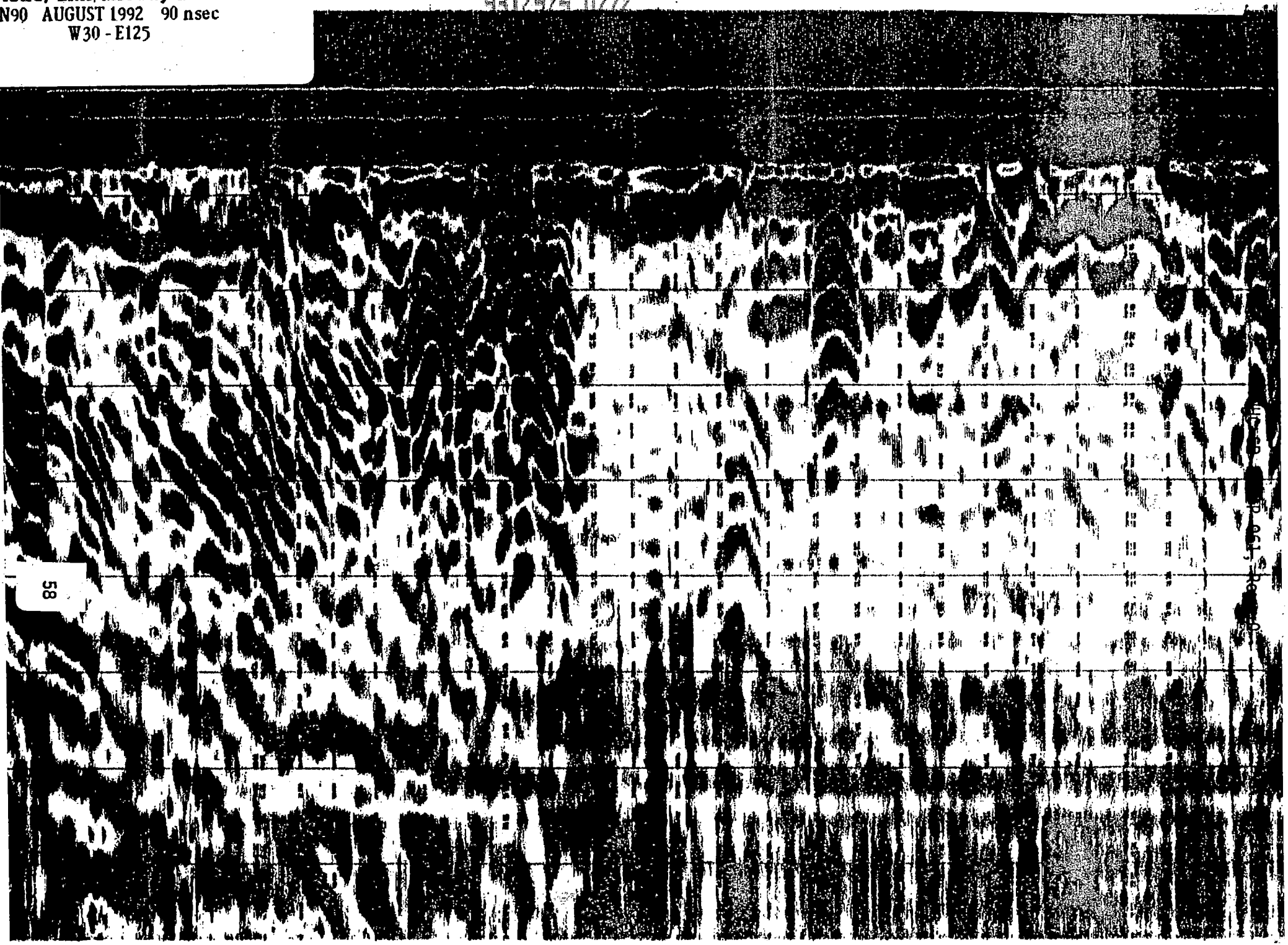
9312935.0771

Riverland, ERA; Midway Extension
N95 AUGUST 1992 90 msec
E0 - E120

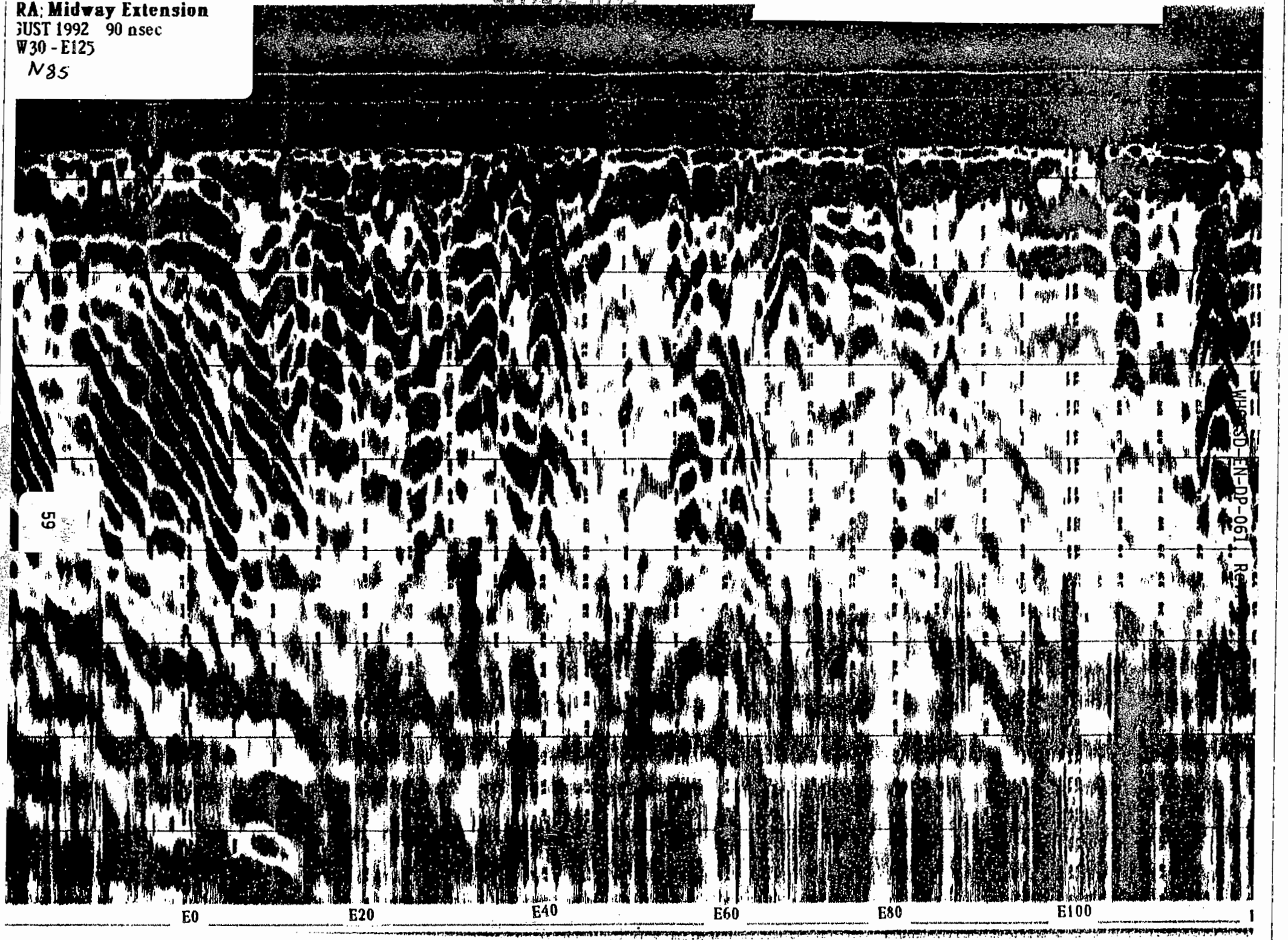


931287E 0772

ibau, ERA, Midway Extension
N90 AUGUST 1992 90 nsec
W30 - E125

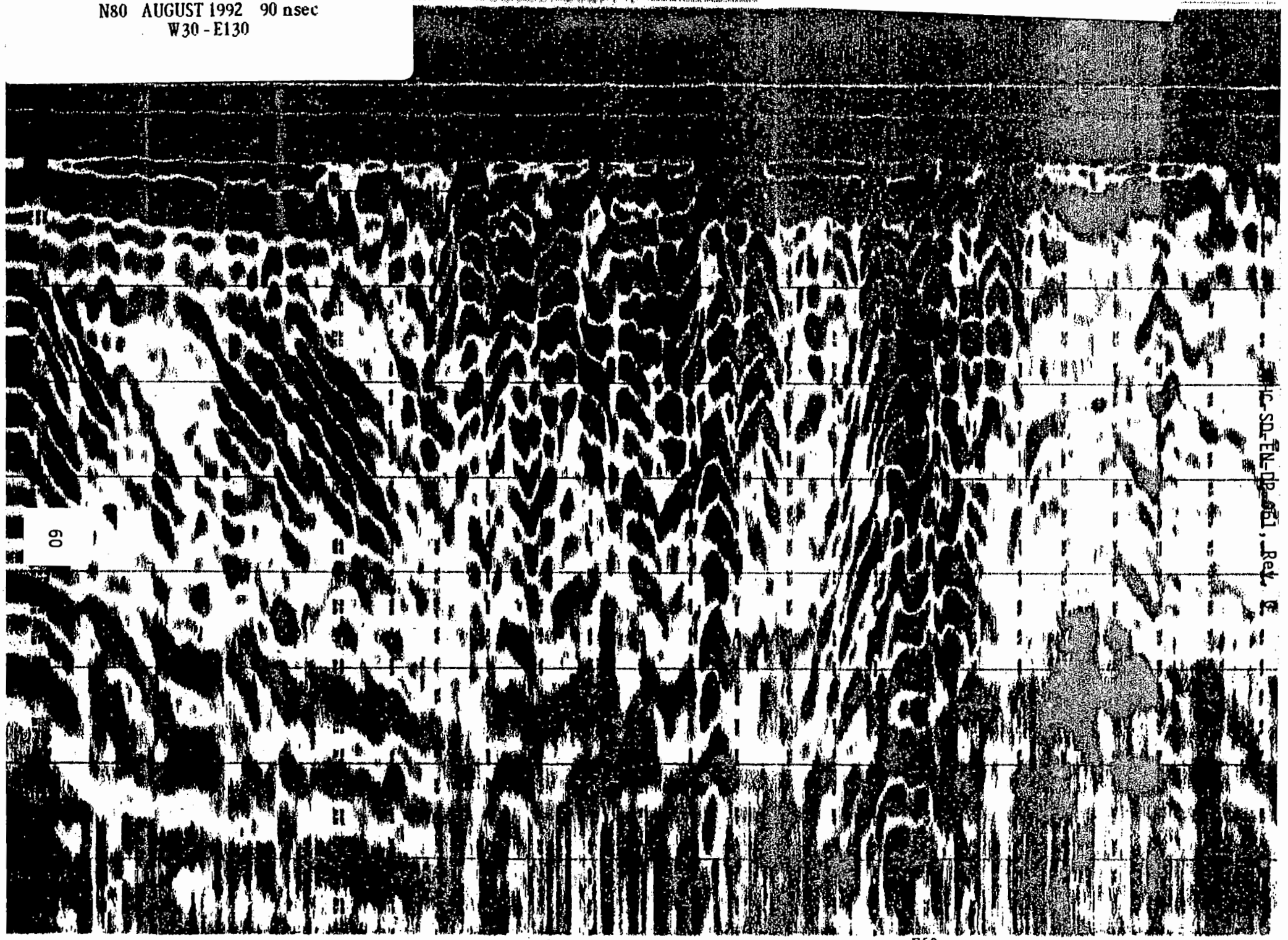


RA; Midway Extension
GUST 1992 90 nsec
W30 - E125
N85



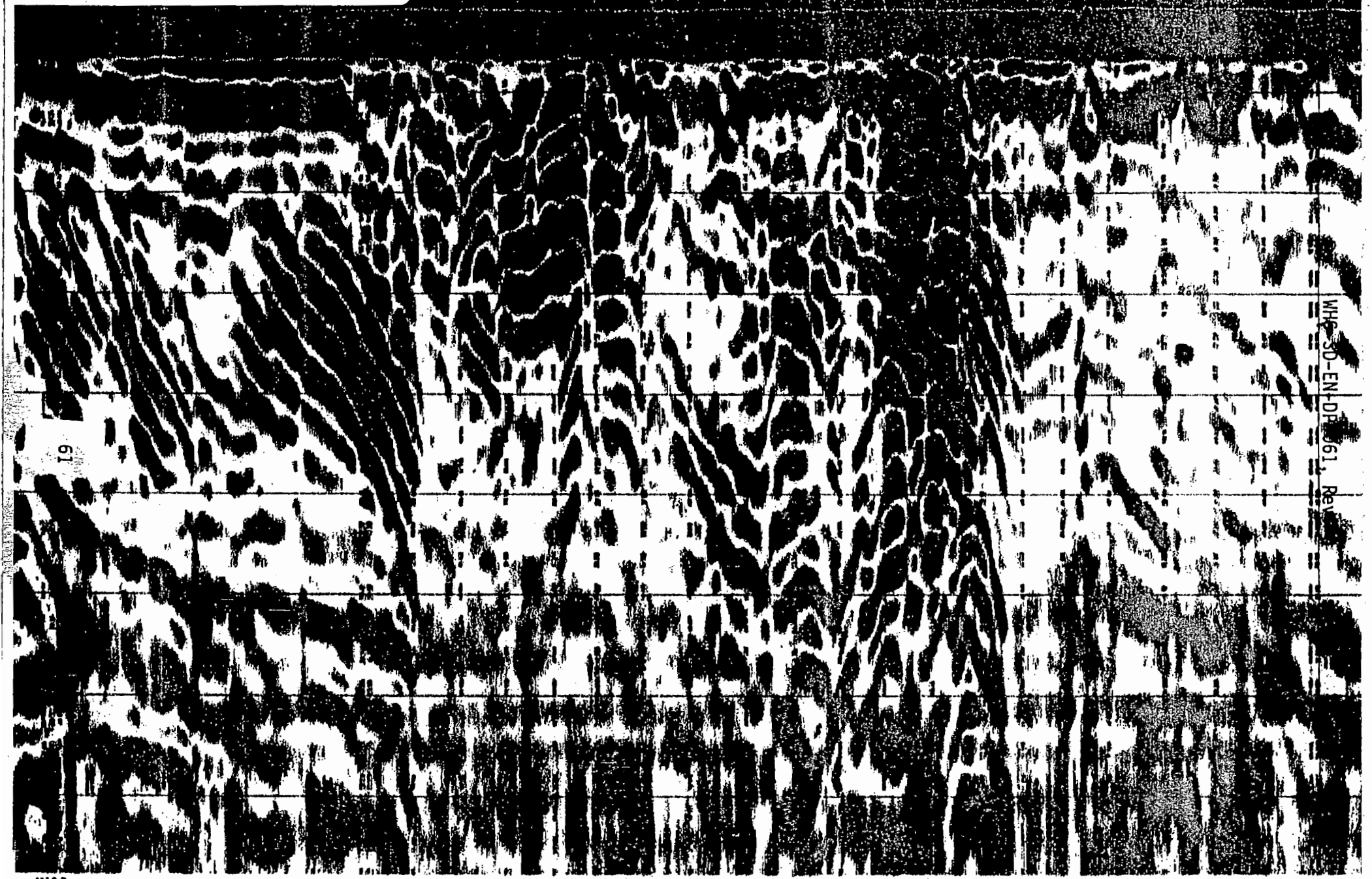
Riverland, ERA; Midway Extension
N80 AUGUST 1992 90 nsec
W30 - E130

9312975.0774



9312975.0775

Riverland, ERA; Midway Extension
N75 AUGUST 1992 90 msec
W30 - E125



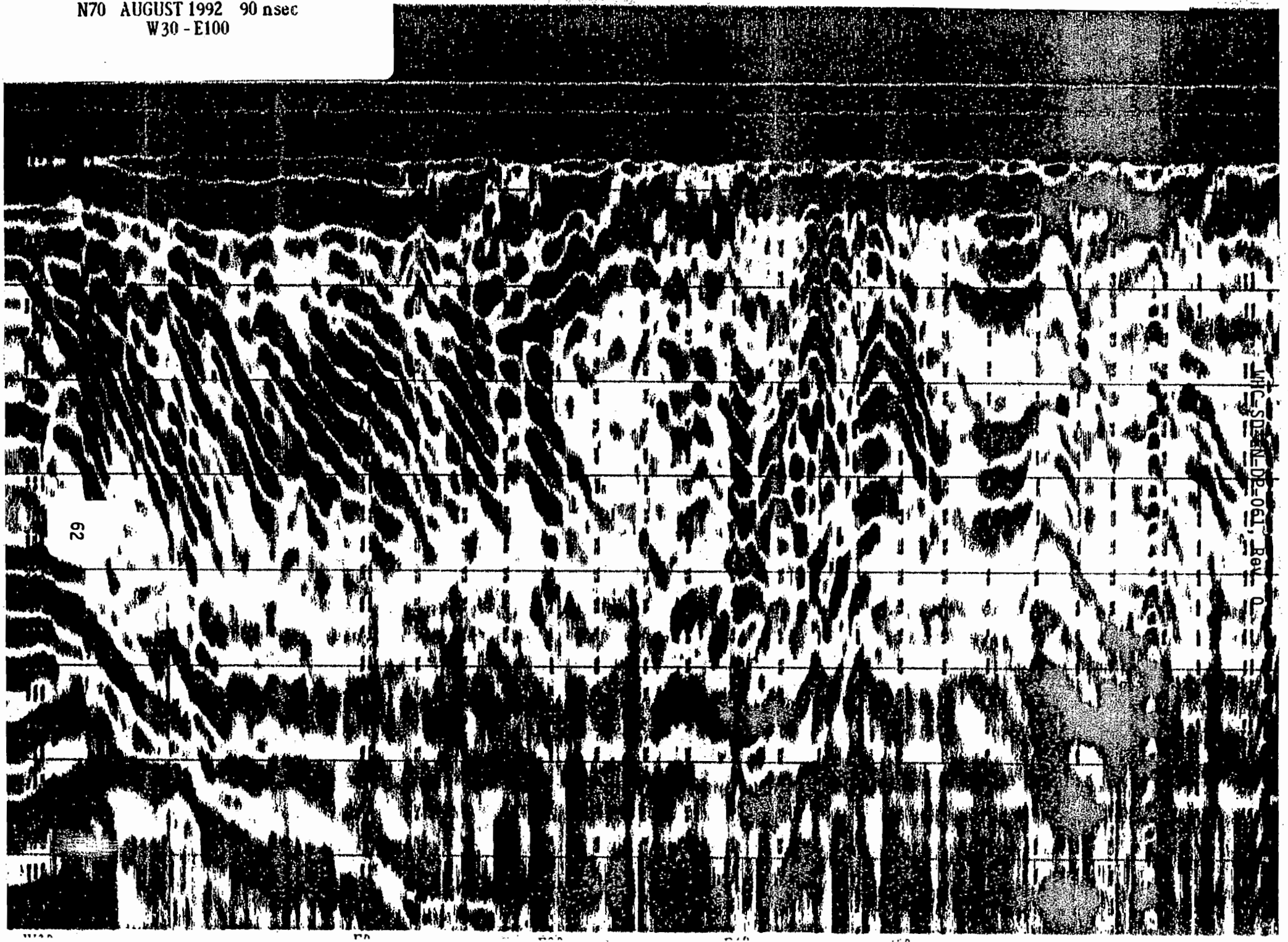
W30 E0 E20 E40 E60 E80 E100

WHC-SD-EN-DR-061, Rev.

61

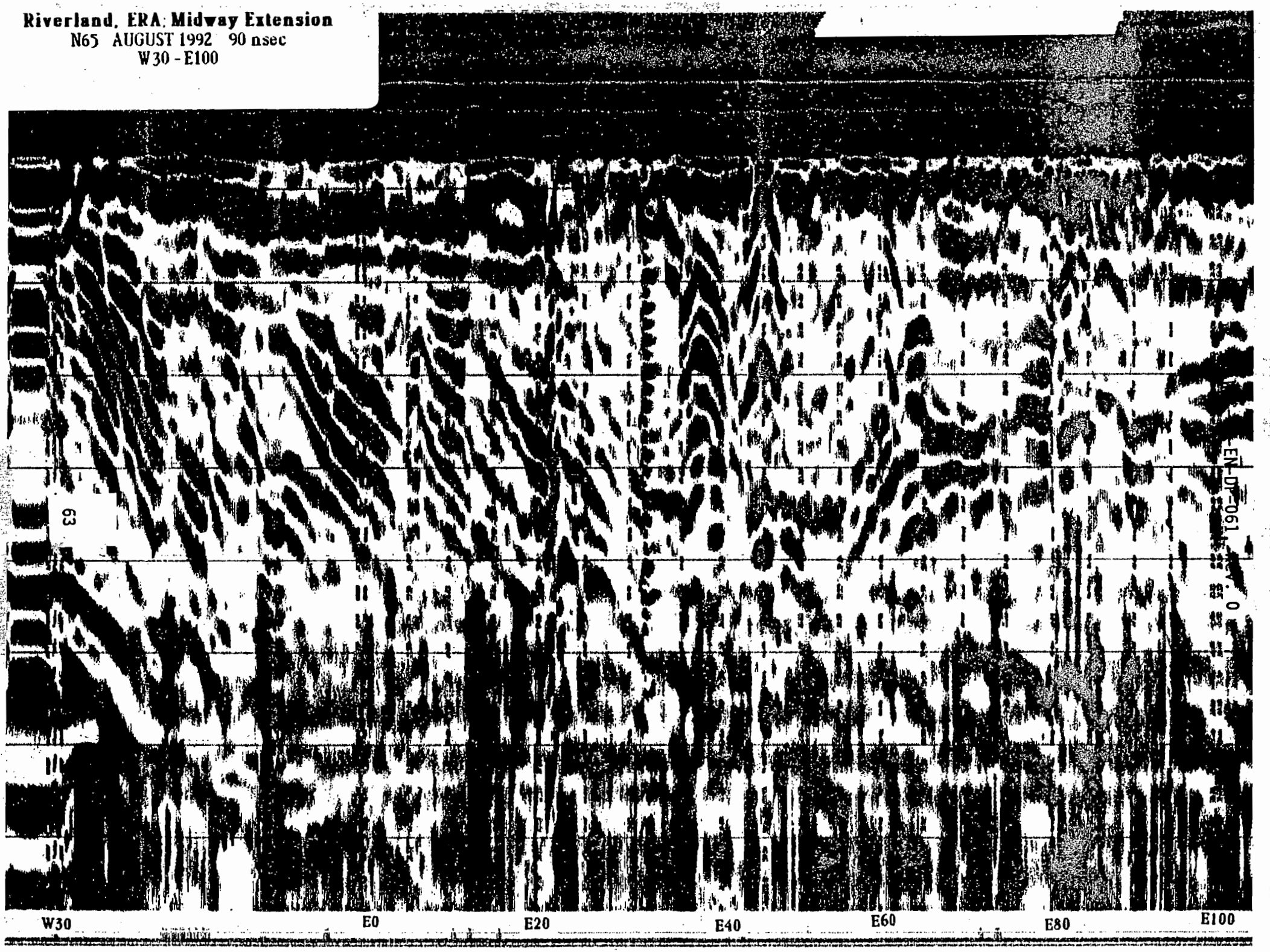
Riverland, ERA; Midway Extension
N70 AUGUST 1992 90 nsec
W30 - E100

9312975.0776



WHC-SD-EN-DP-061, Rev. 0

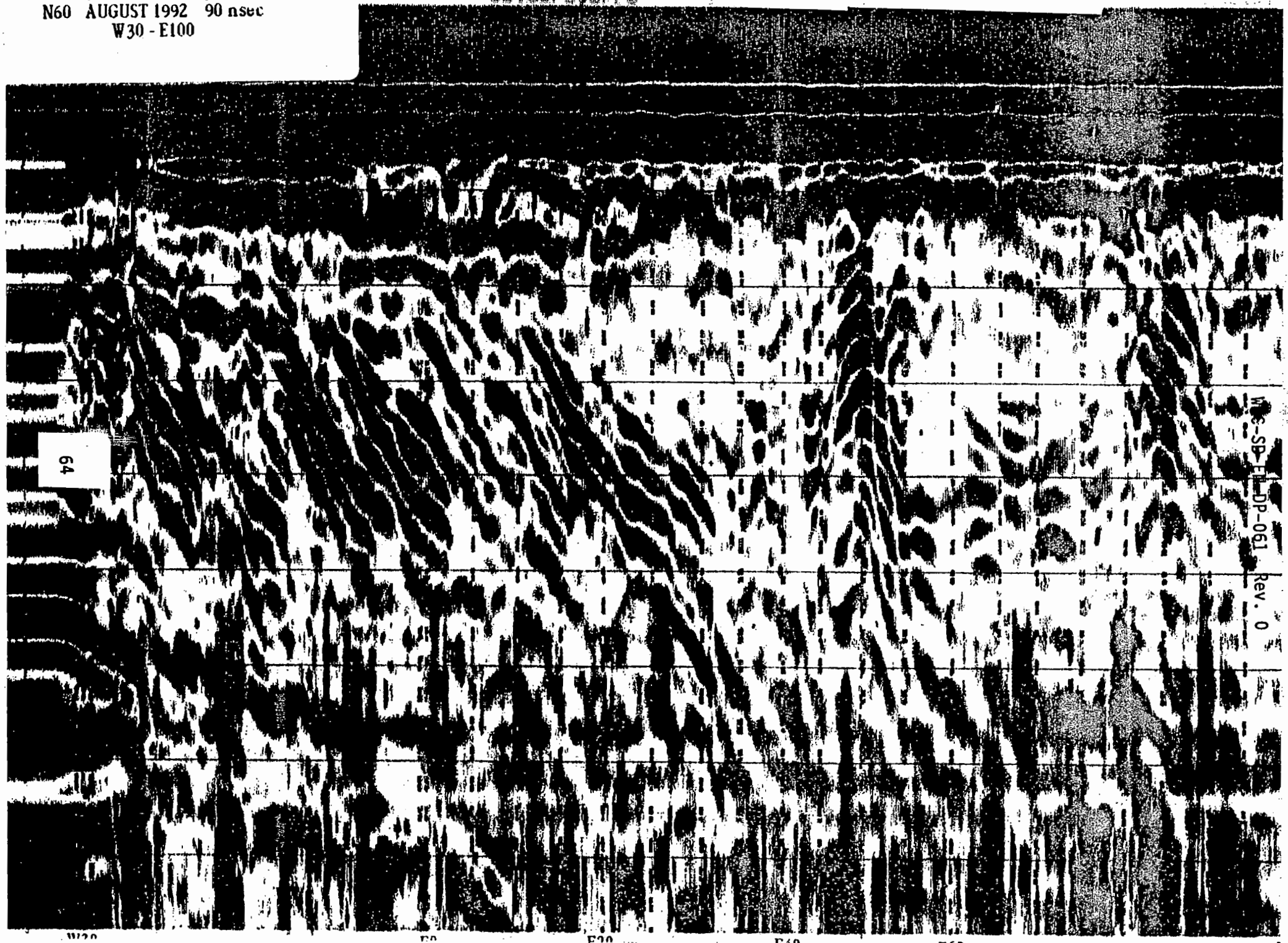
Riverland, ERA: Midway Extension
N65 AUGUST 1992 90 nsec
W30 - E100



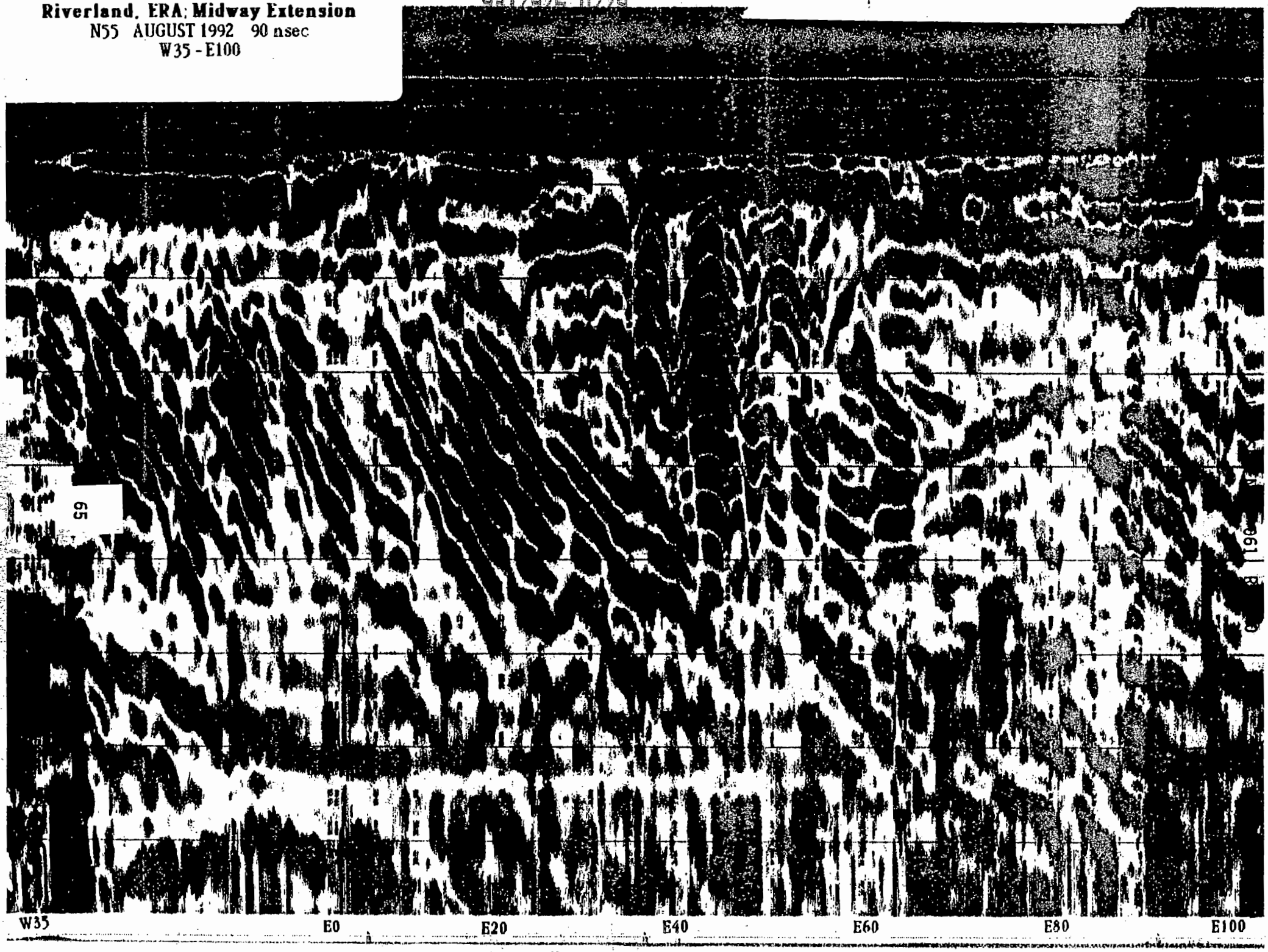
EN-DP-061, Rev. 0

iverland, ERA: Midway Extension
N60 AUGUST 1992 90 nsec
W30 - E100

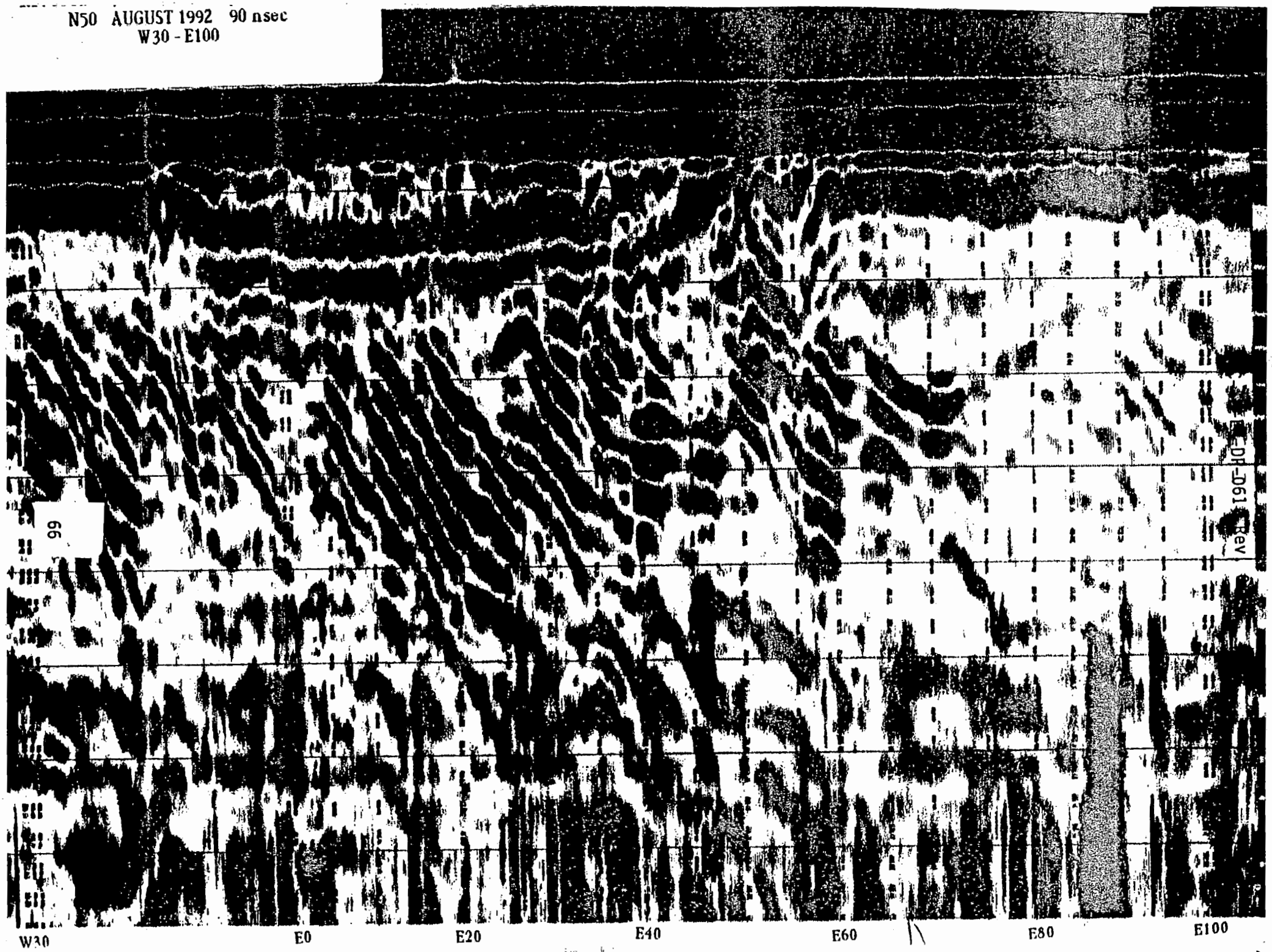
9312975.0778



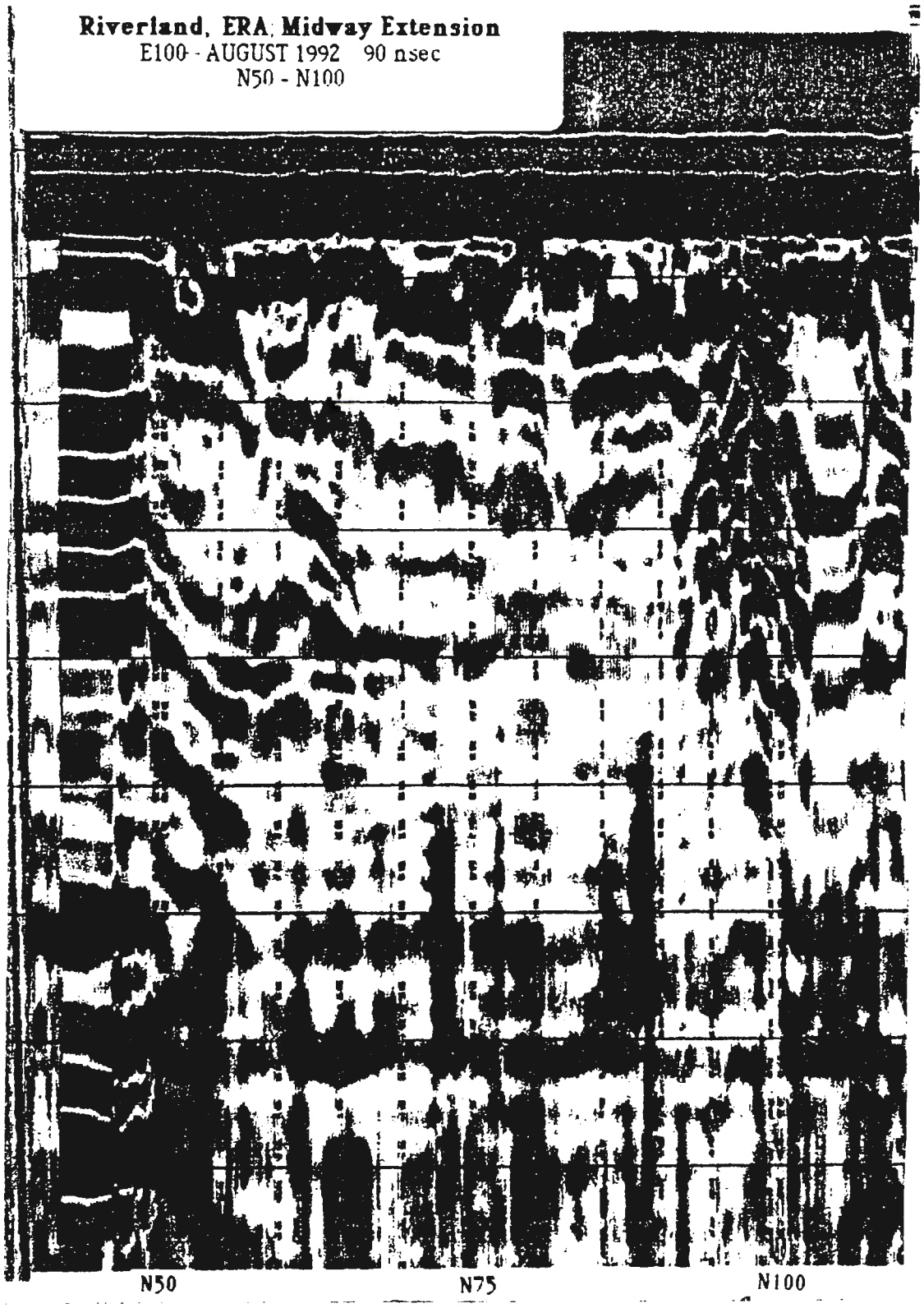
Riverland, ERA; Midway Extension
N55 AUGUST 1992 90 nsec
W35 - E100



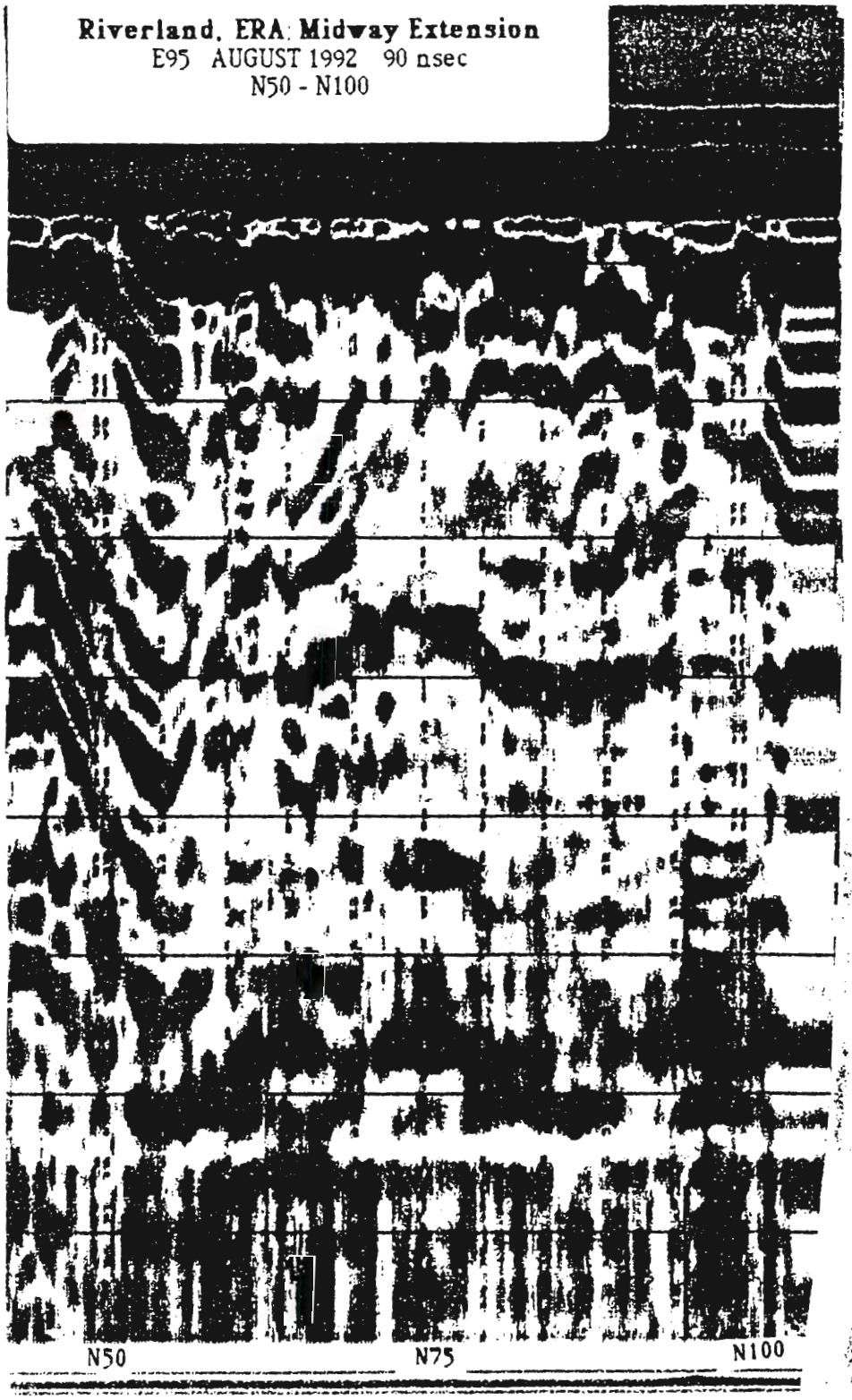
N50 AUGUST 1992 90 nsec
W30 - E100



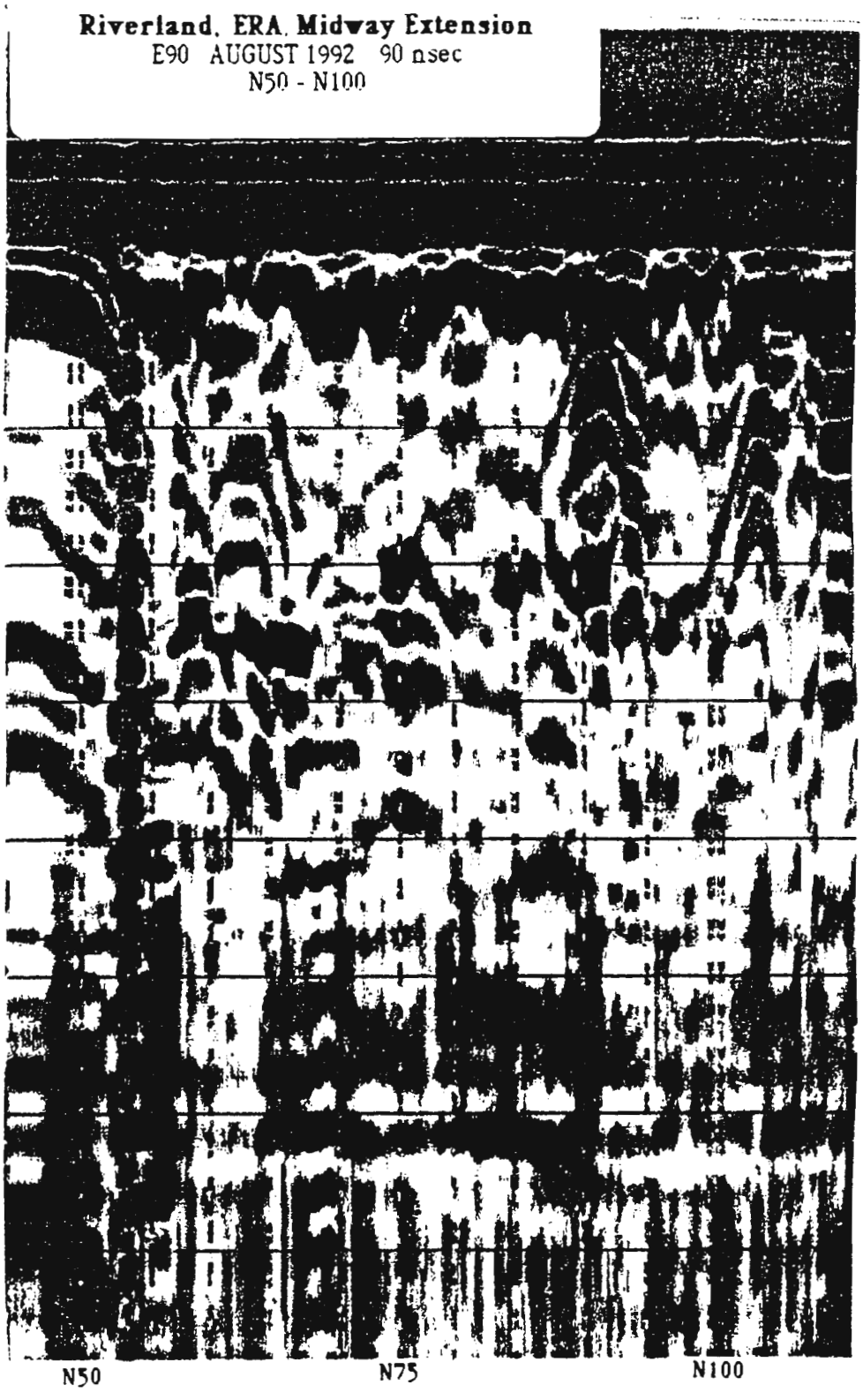
EDR-D61 Rev



9312975.0781



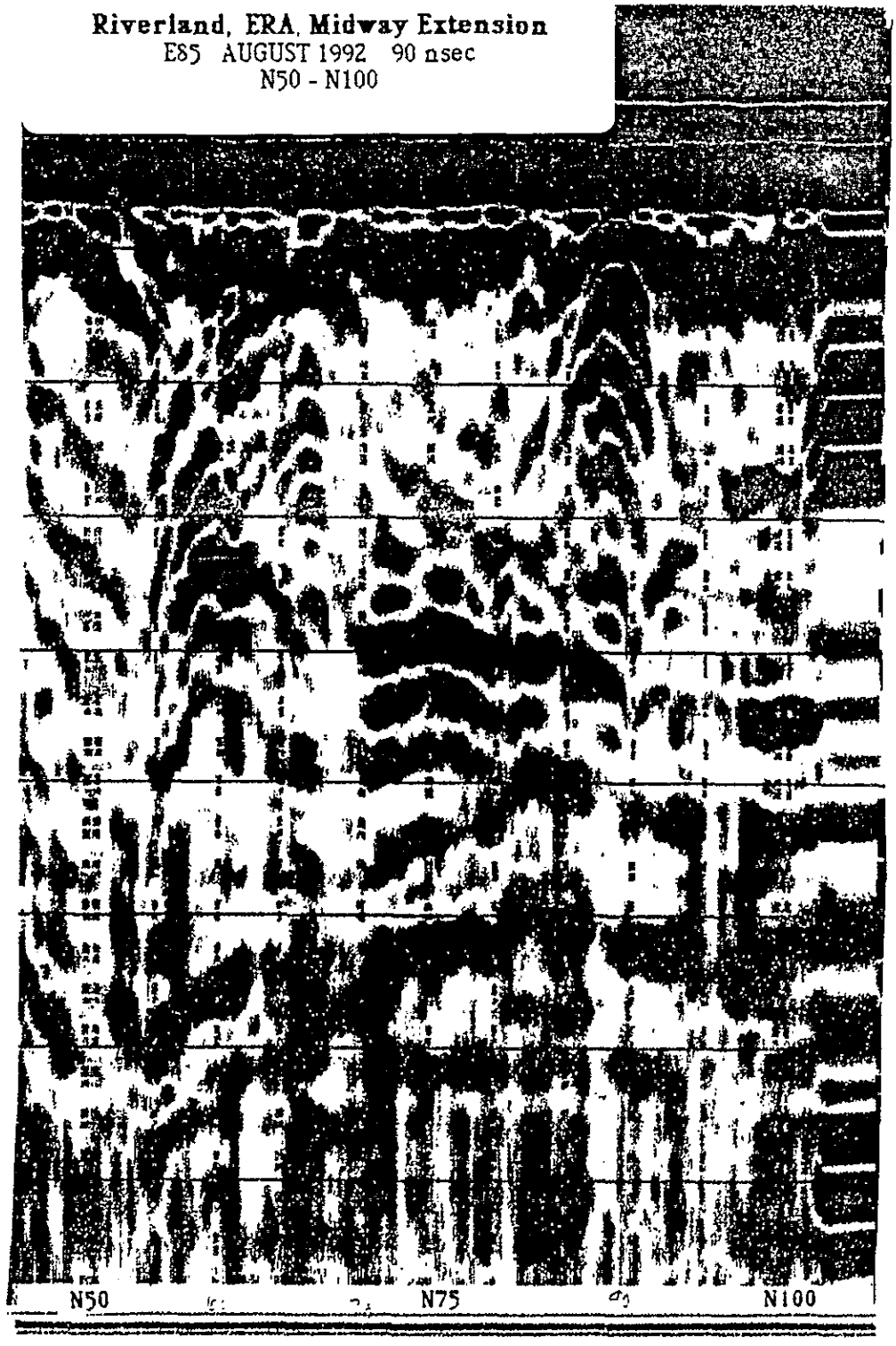
9312975.0782

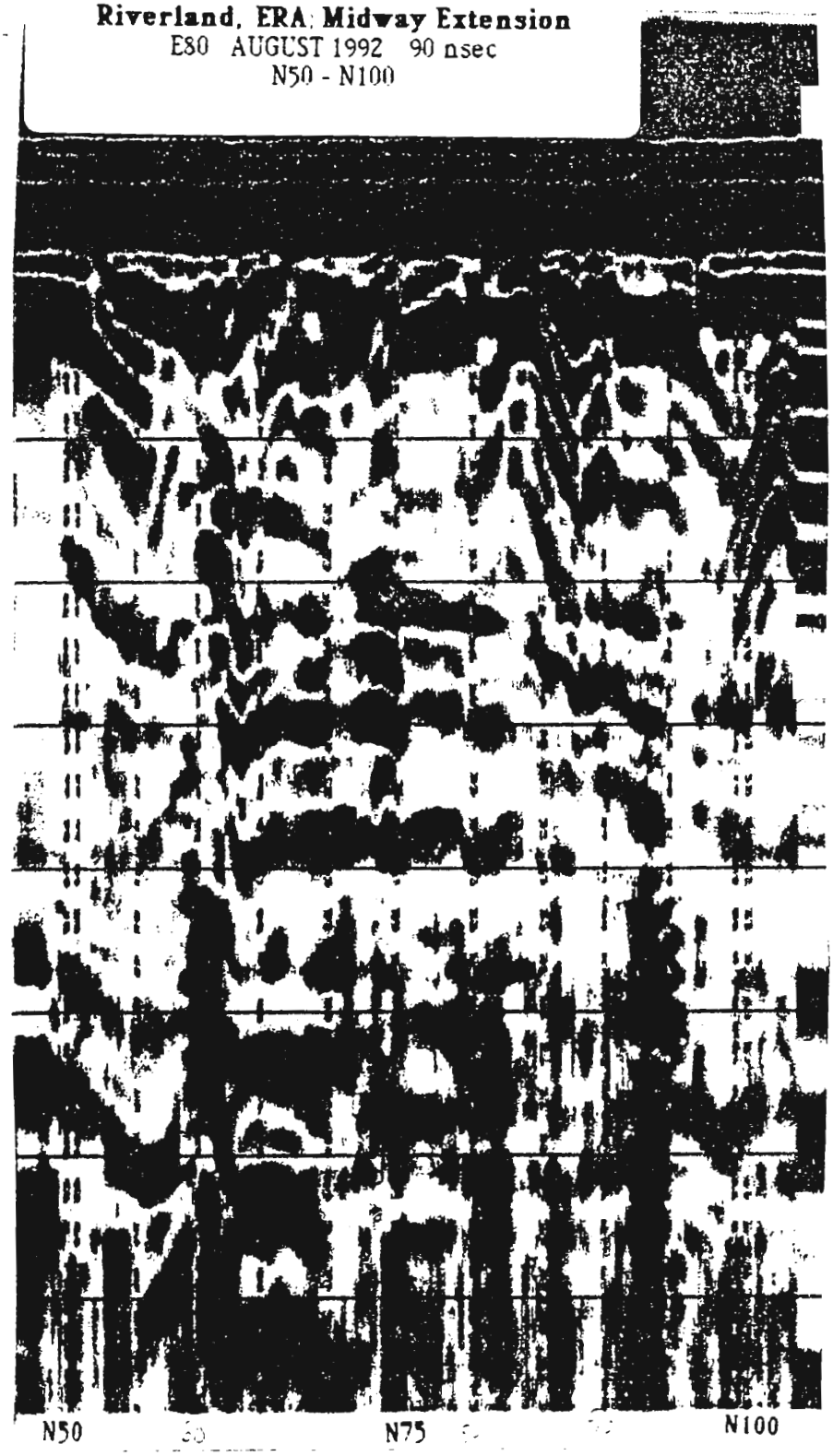


9312975.0783

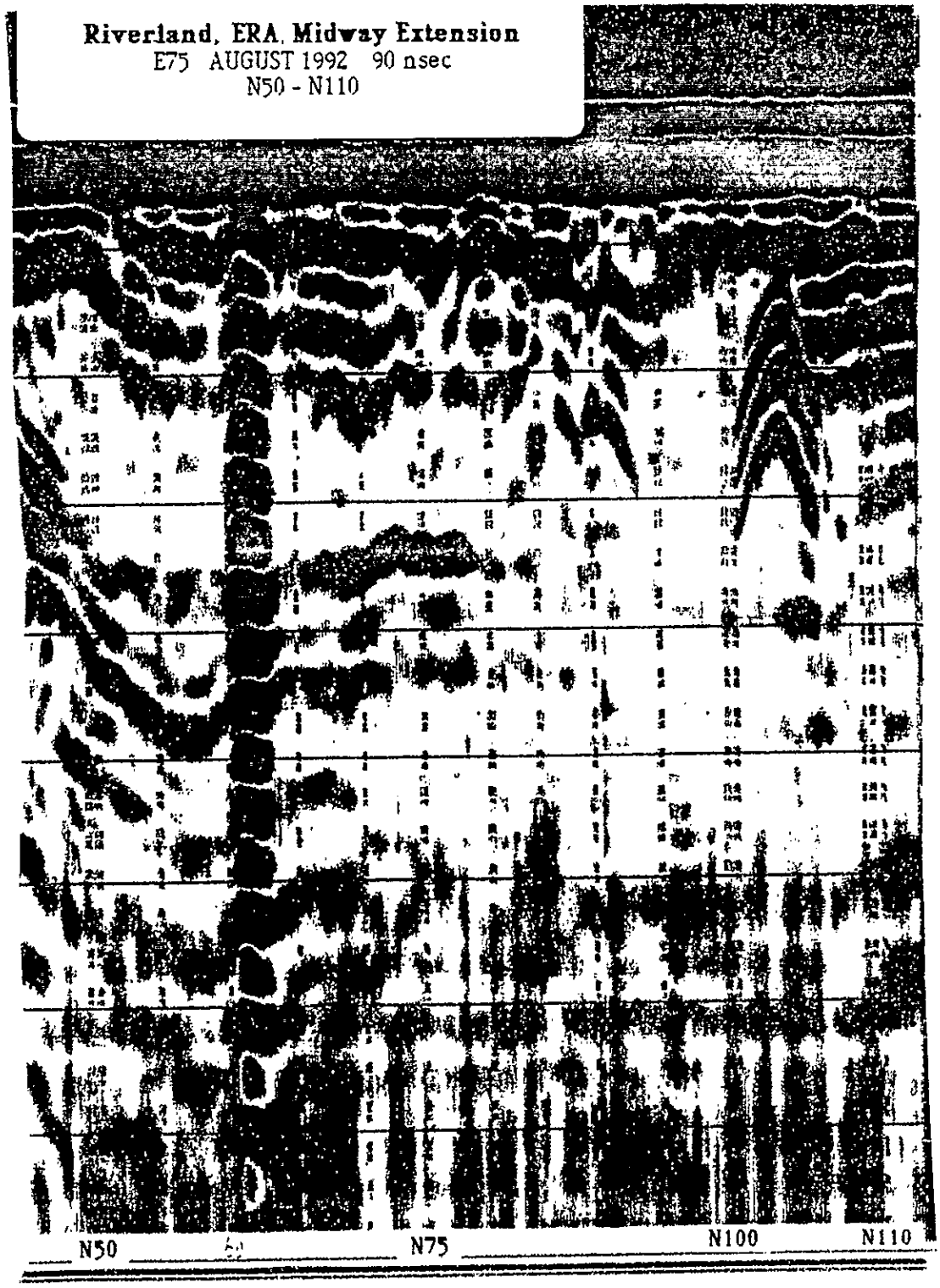
9312975.0794

Riverland, ERA, Midway Extension
E85 AUGUST 1992 90 nsec
N50 - N100

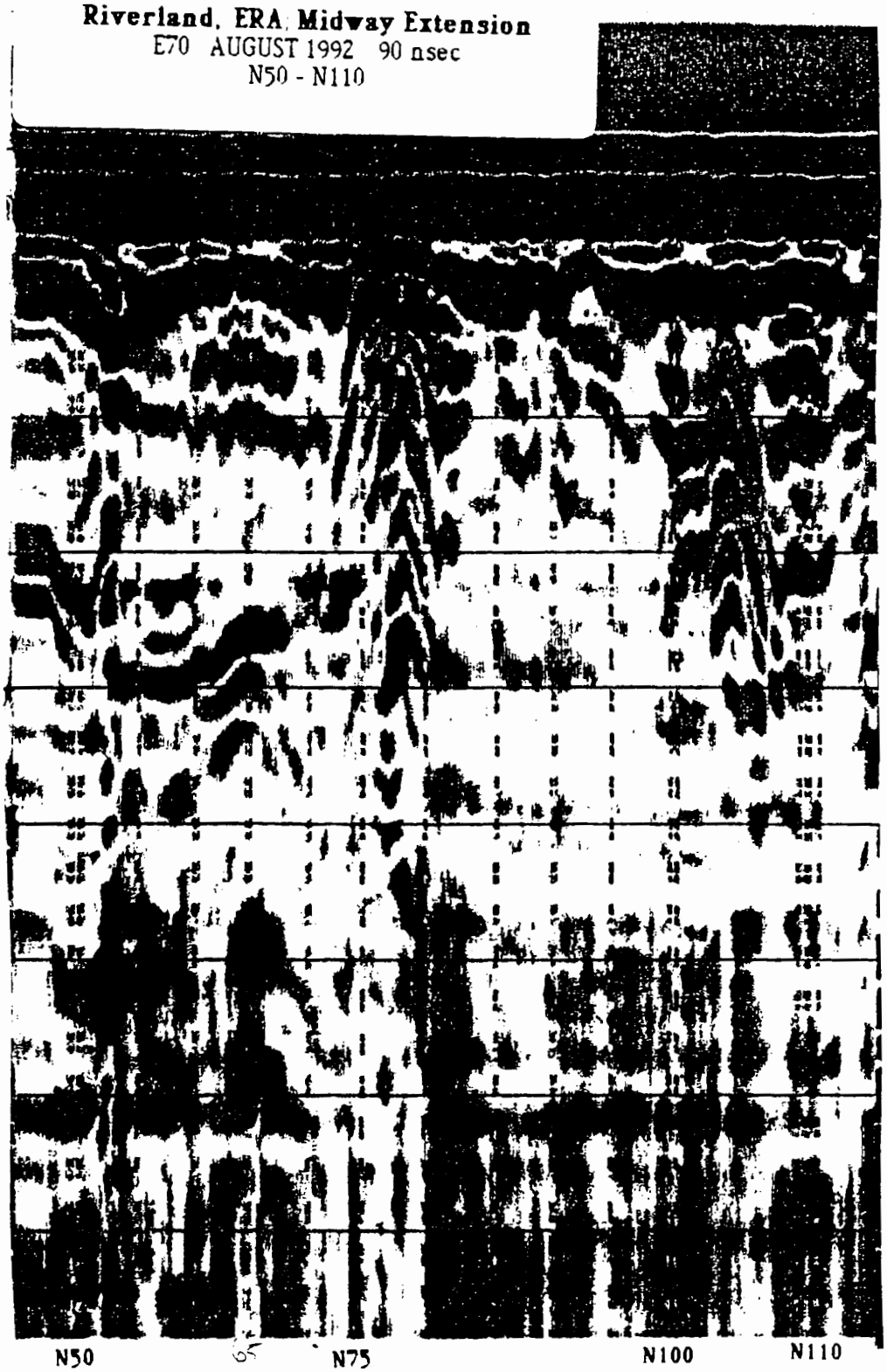




9312975.0785



9312975.0796



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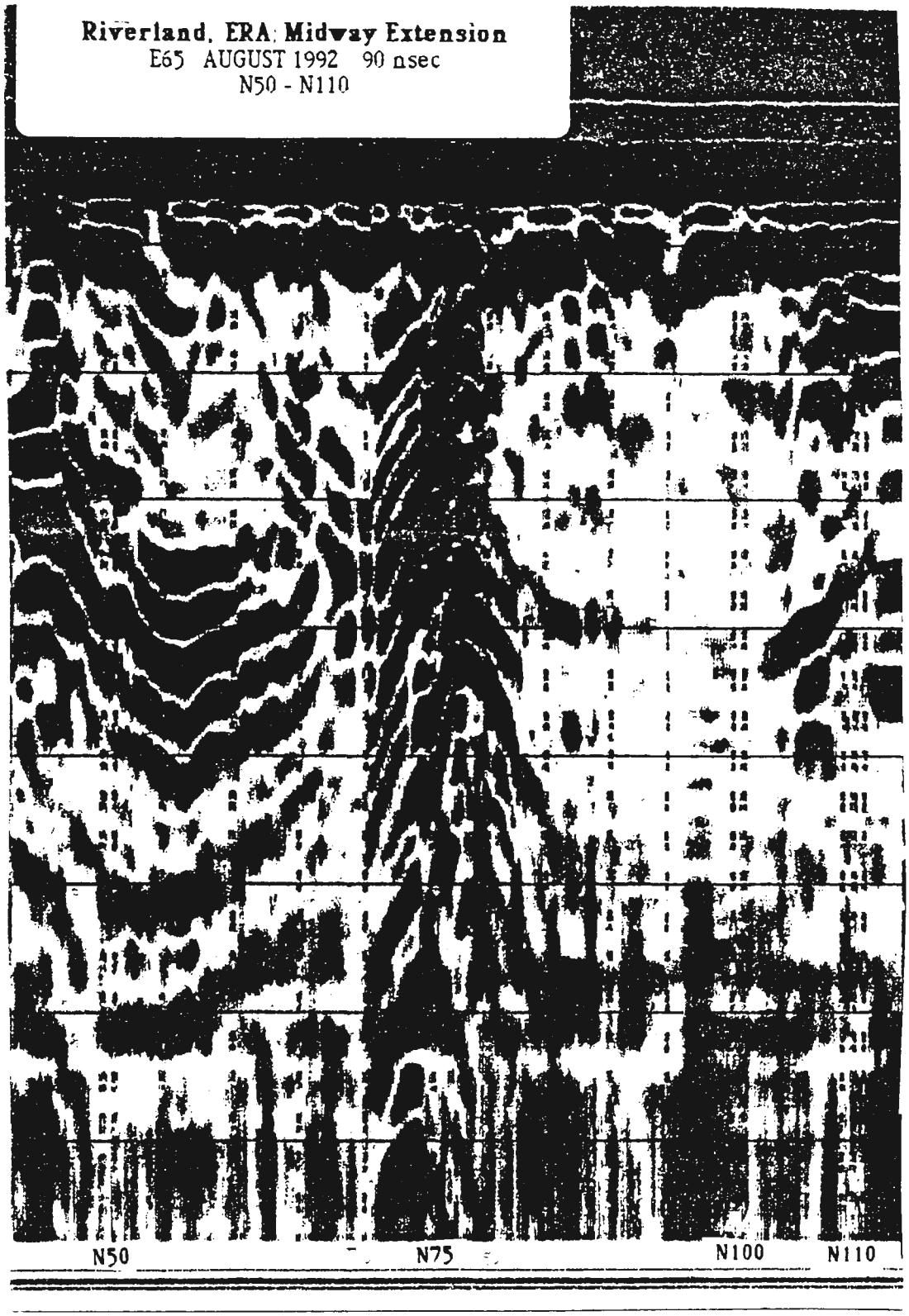
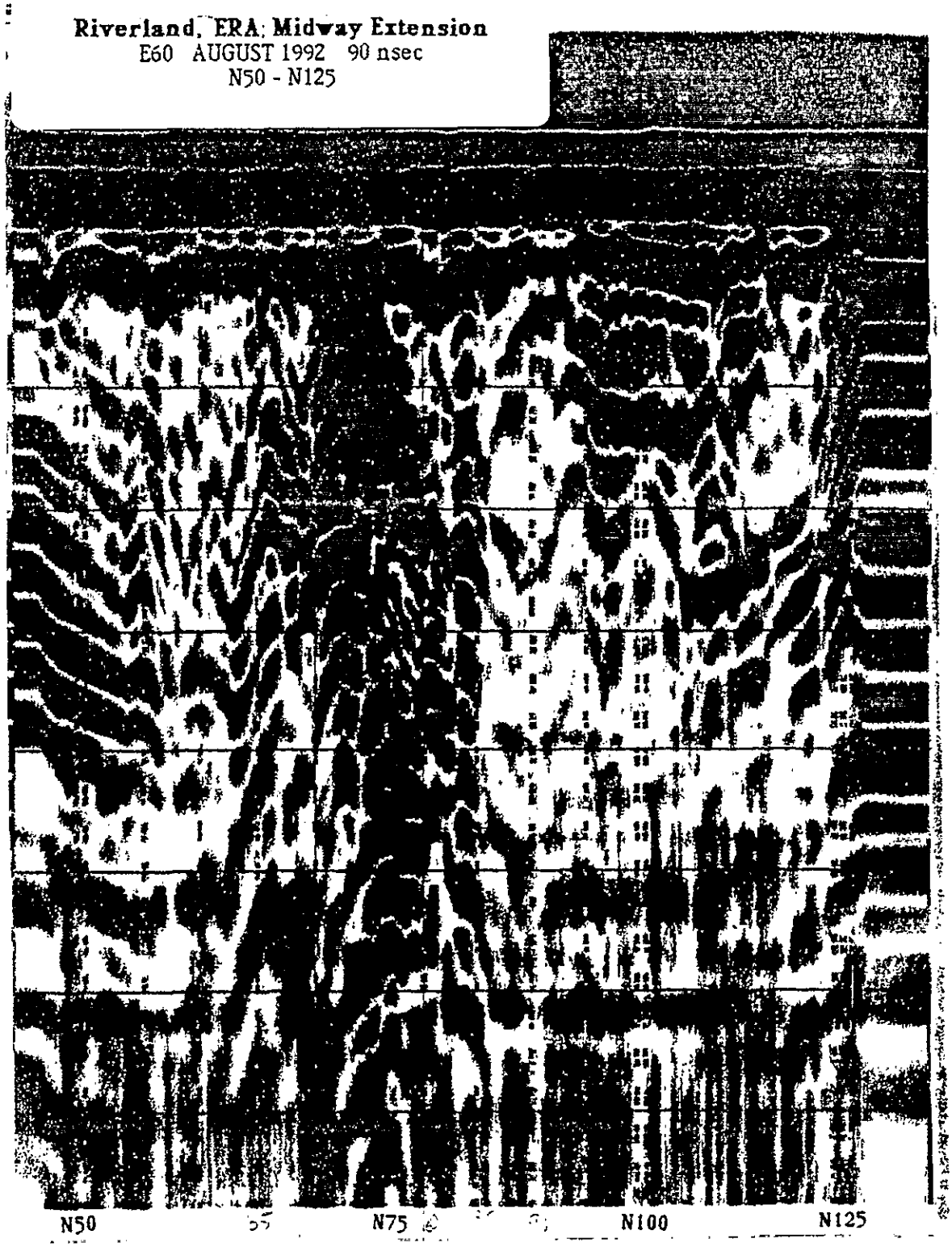

Riverland, ERA; Midway Extension
E65 AUGUST 1992 90 nsec
N50 - N110
N50
N75
N100
N110

931275.0788



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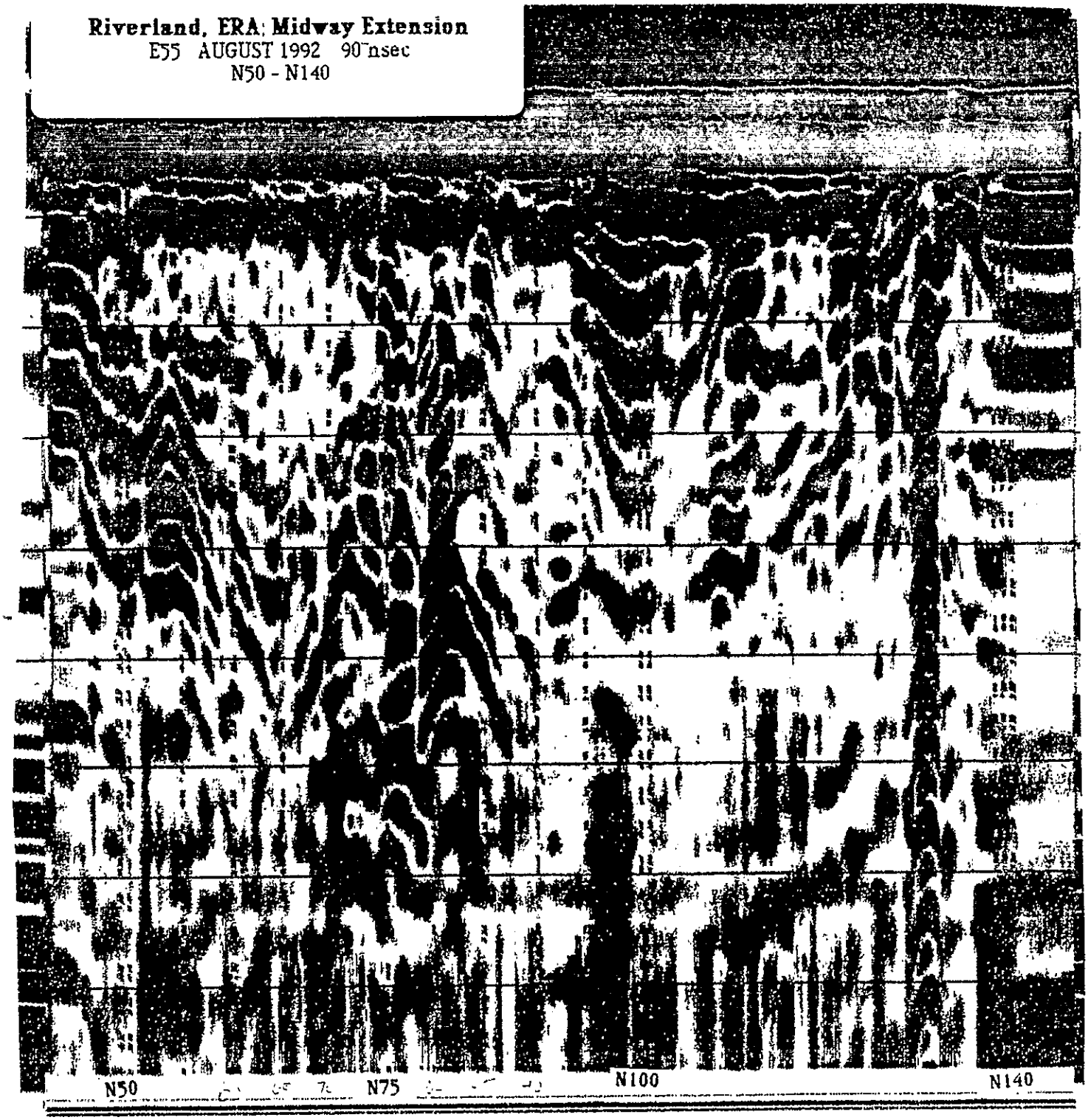

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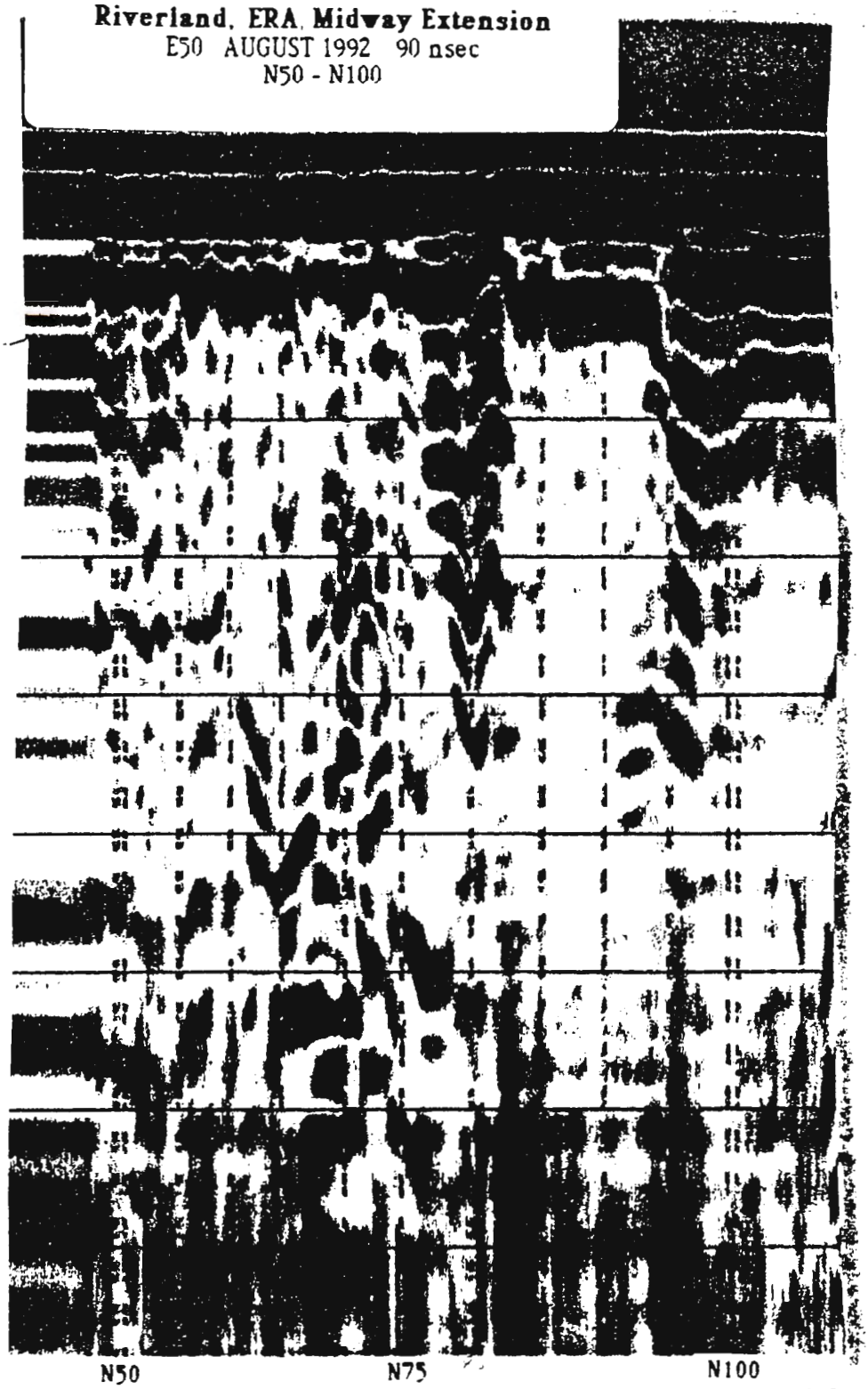

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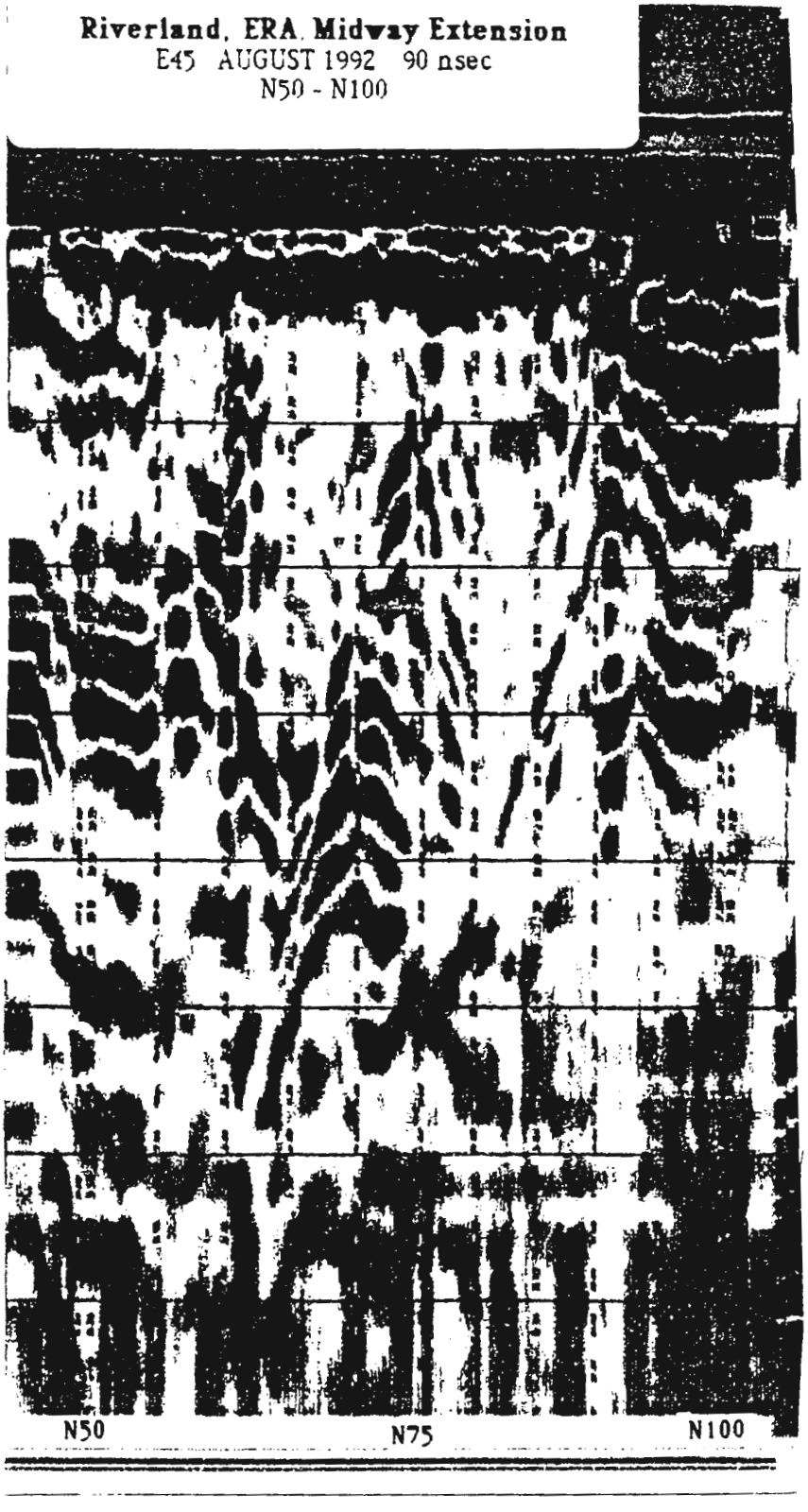

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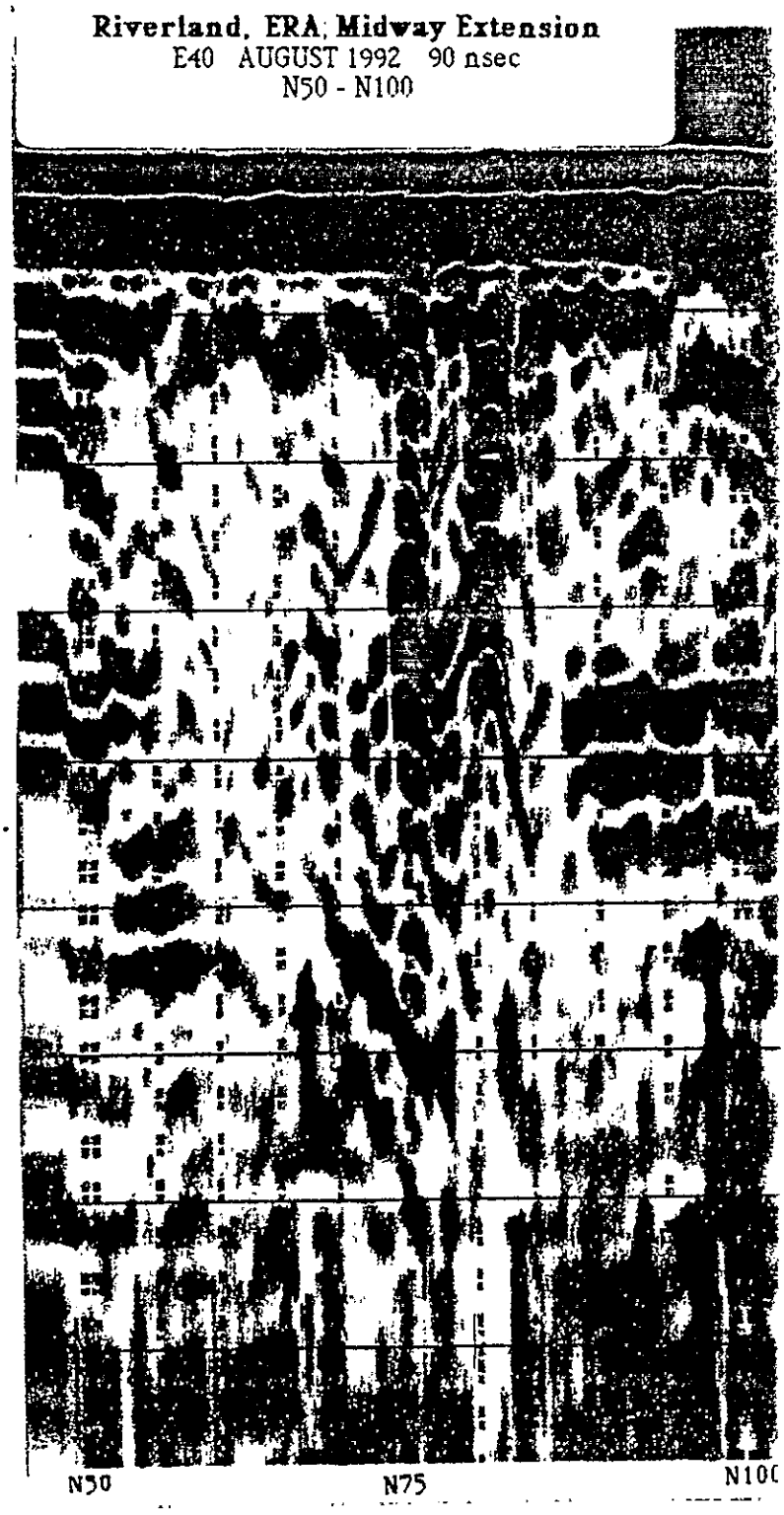
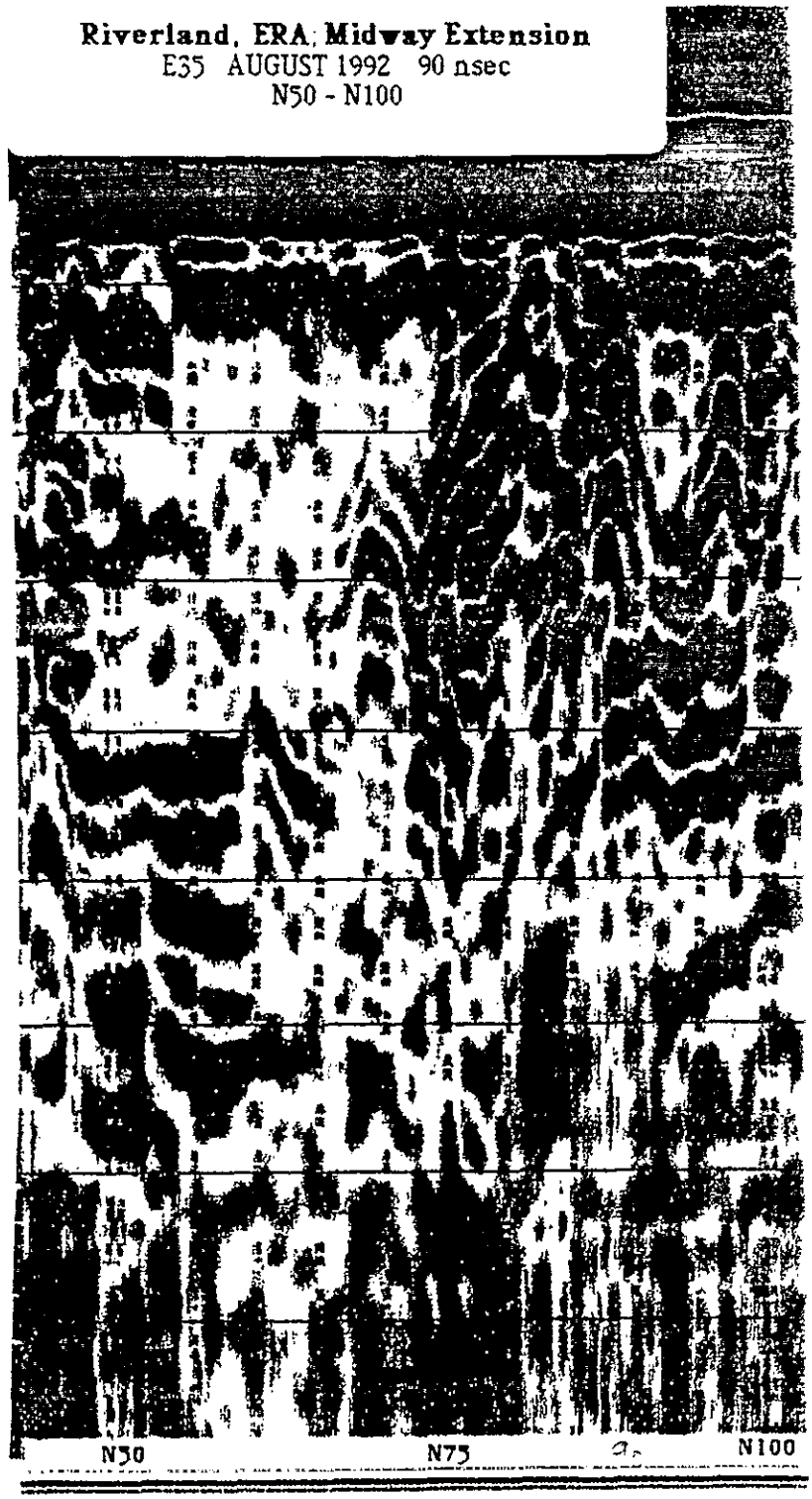


9312975.0793

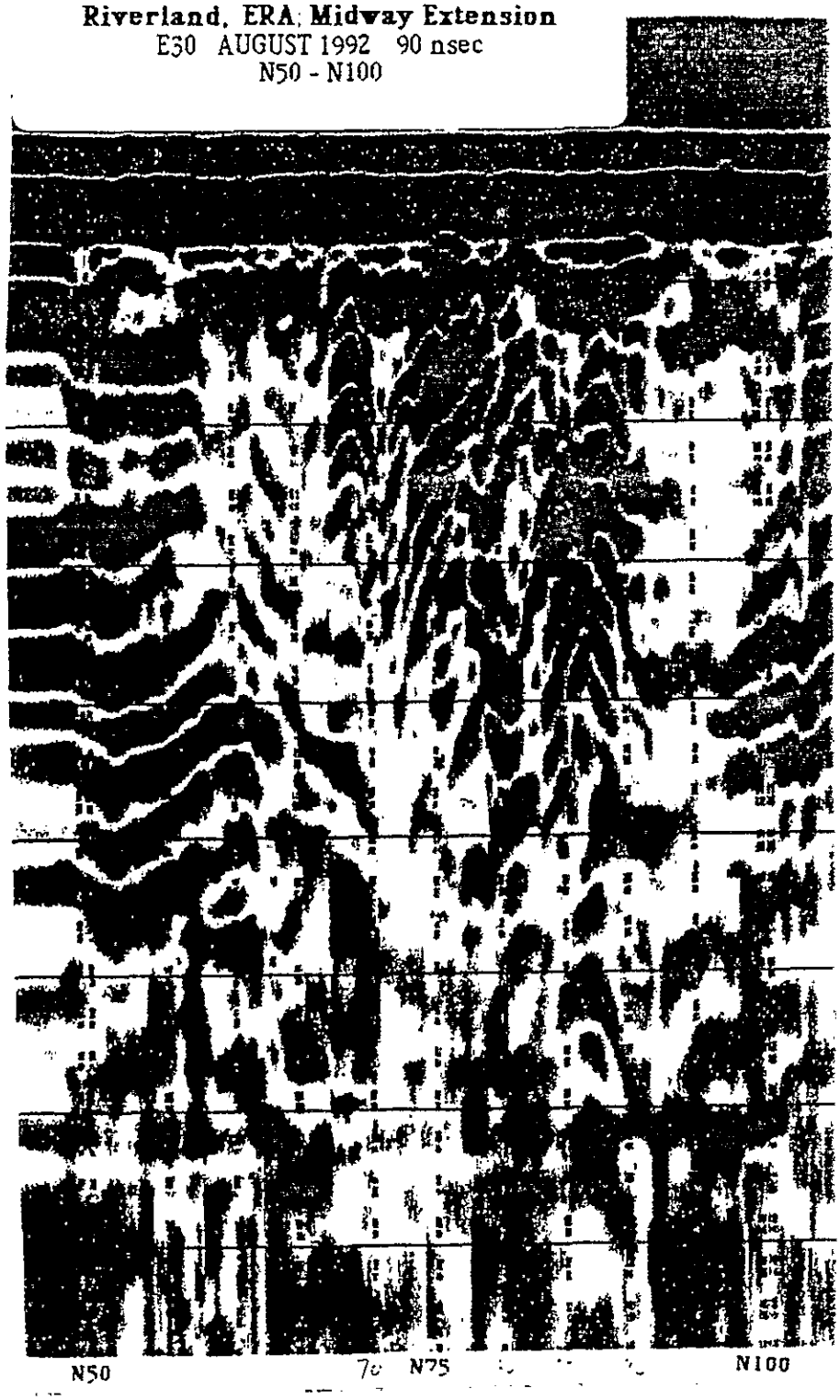
Riverland, ERA; Midway Extension
E35 AUGUST 1992 90 nsec
N50 - N100



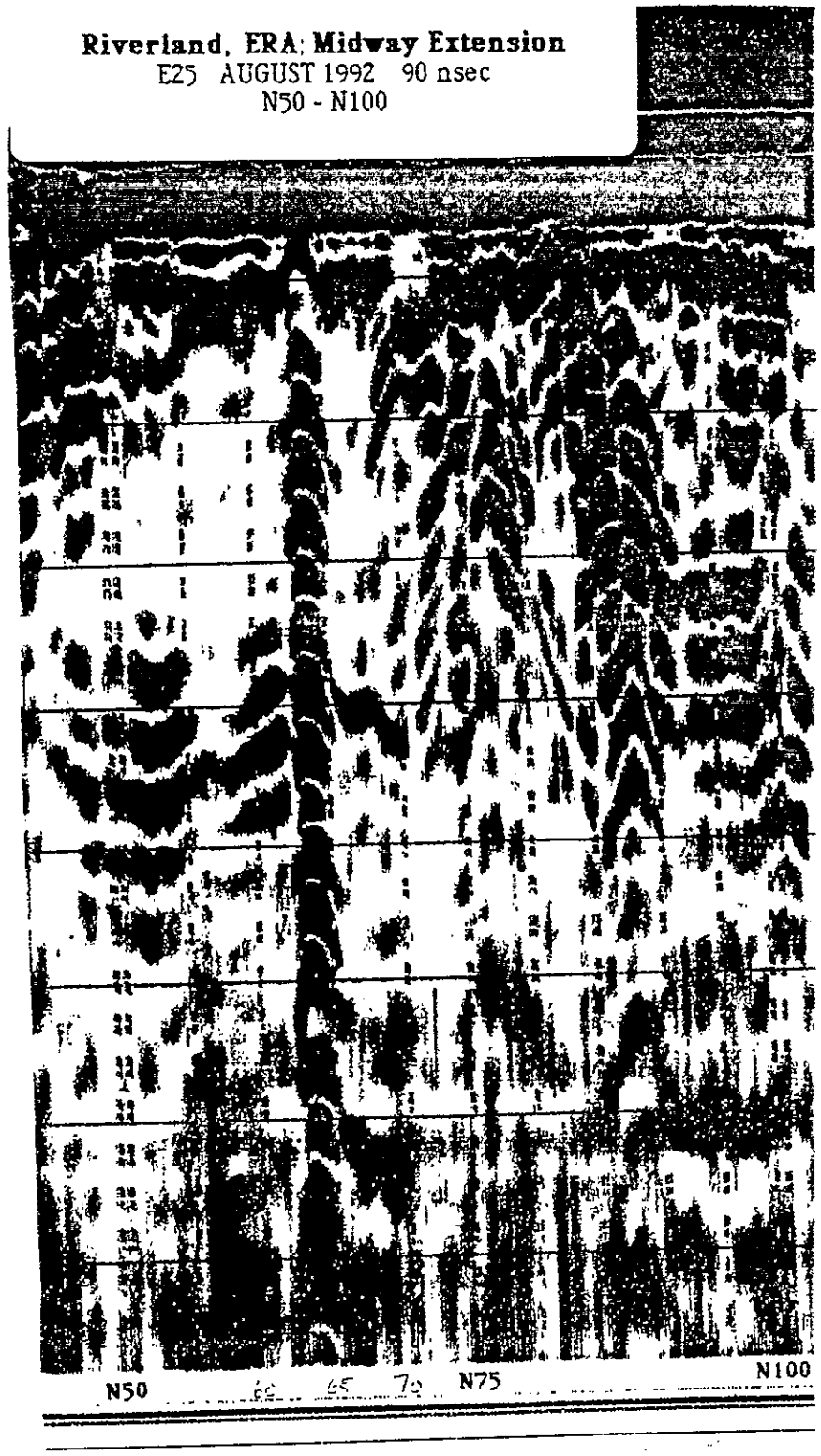
9312975.0754

9312975.0755

Riverland, ERA; Midway Extension
E30 AUGUST 1992 90 nsec
N50 - N100



Riverland, ERA; Midway Extension
E25 AUGUST 1992 90 nsec
N50 - N100



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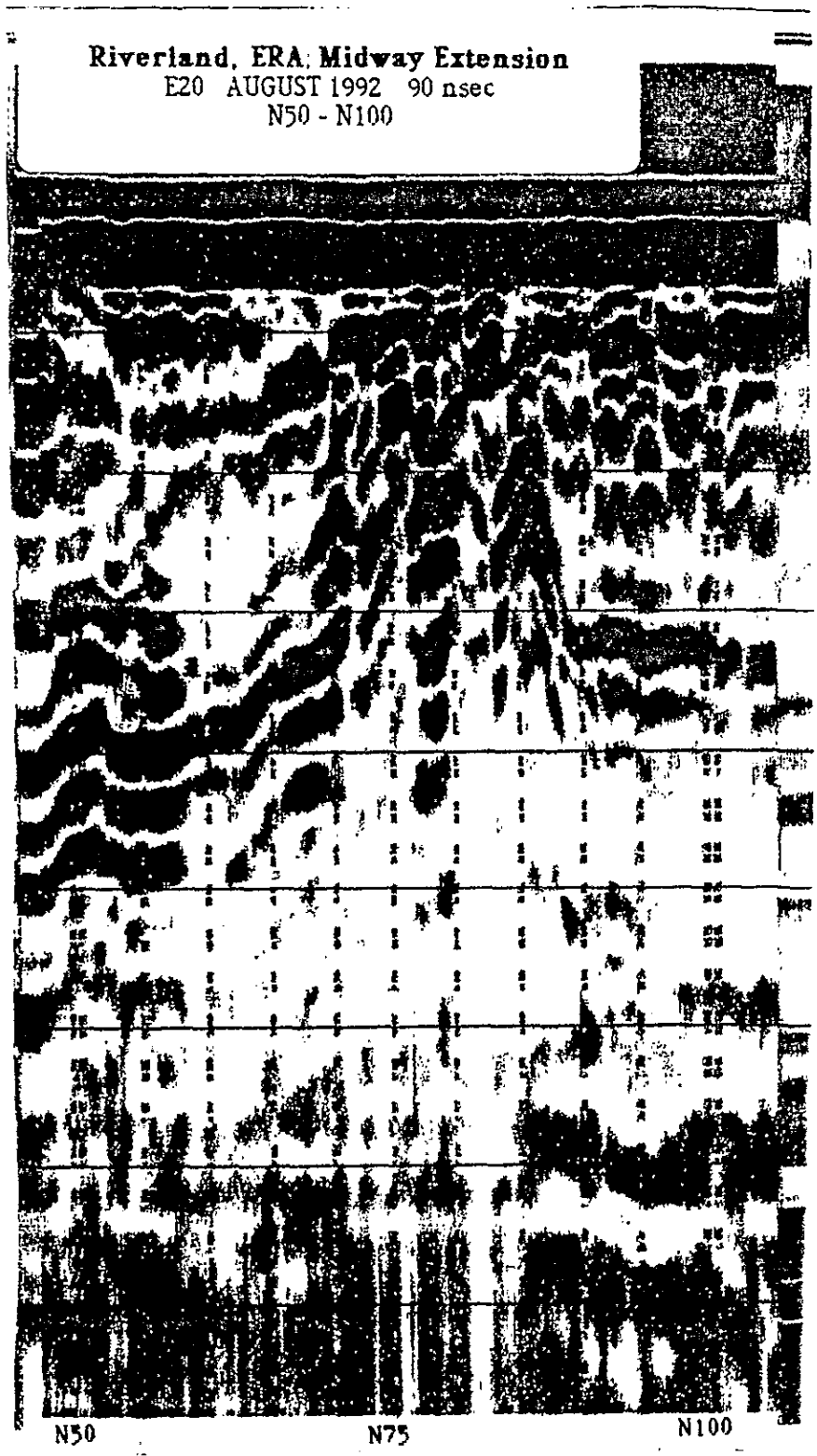
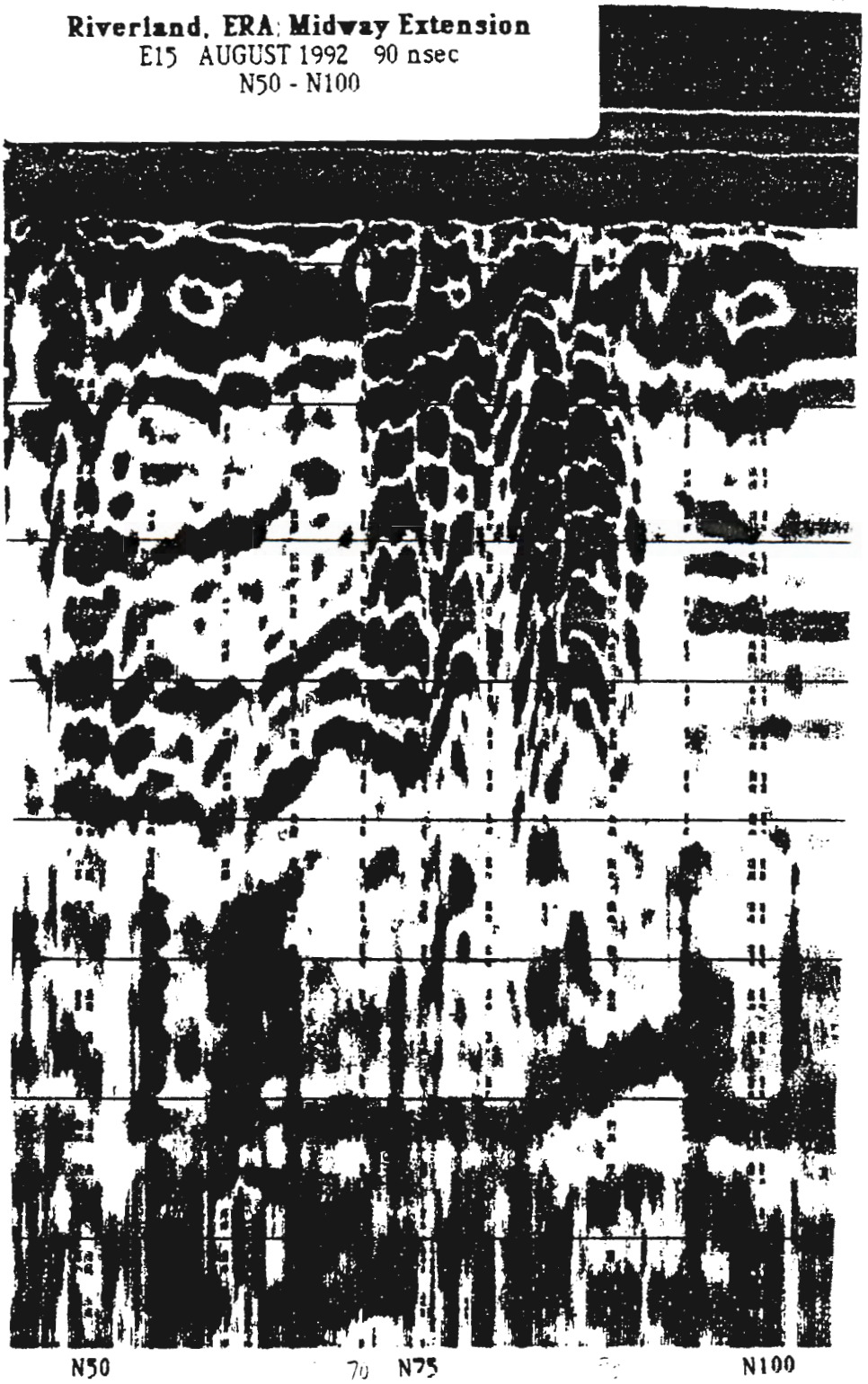


9312975.0797

Riverland, ERA: Midway Extension
E15 AUGUST 1992 90 nsec
N50 - N100



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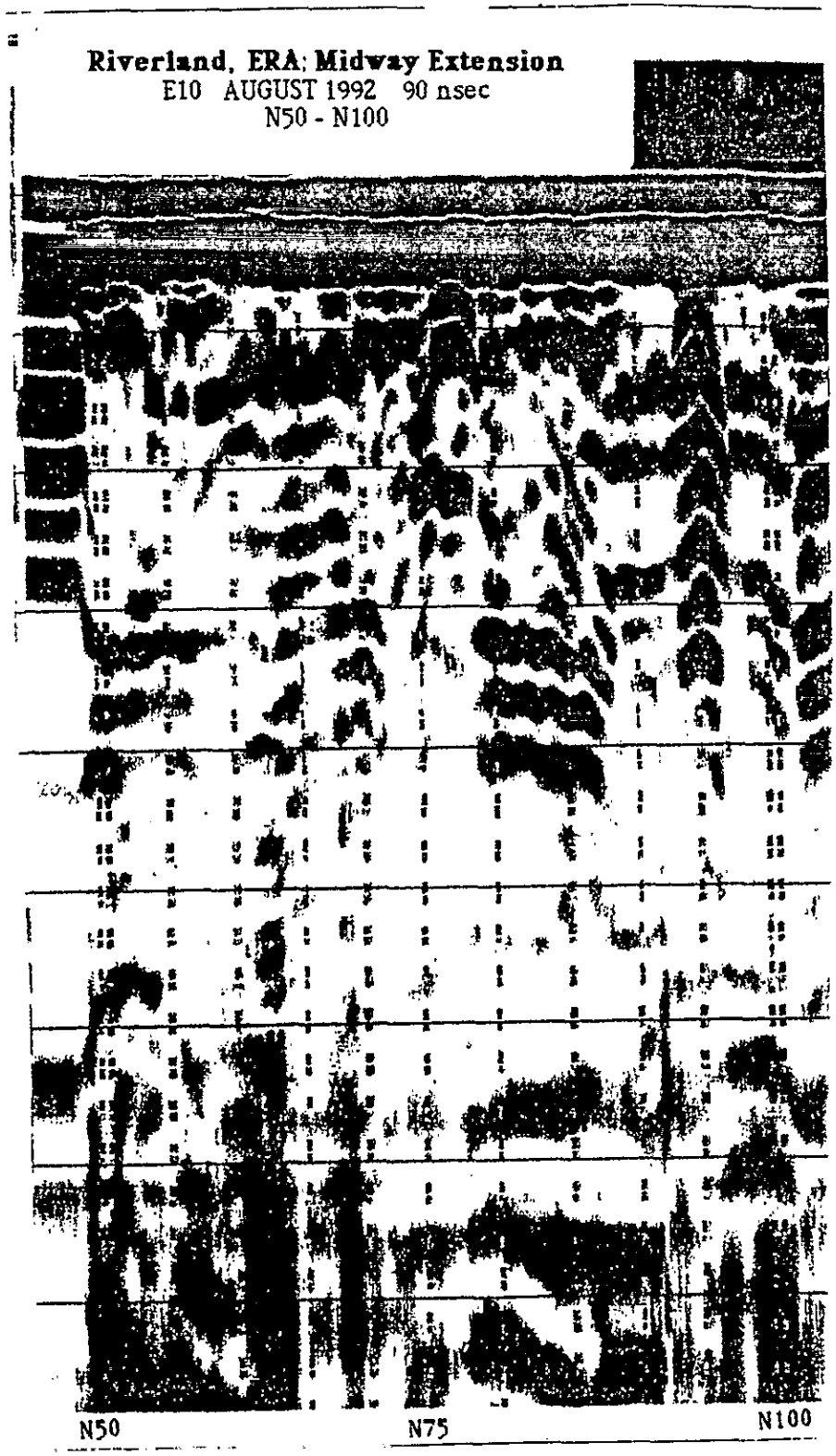

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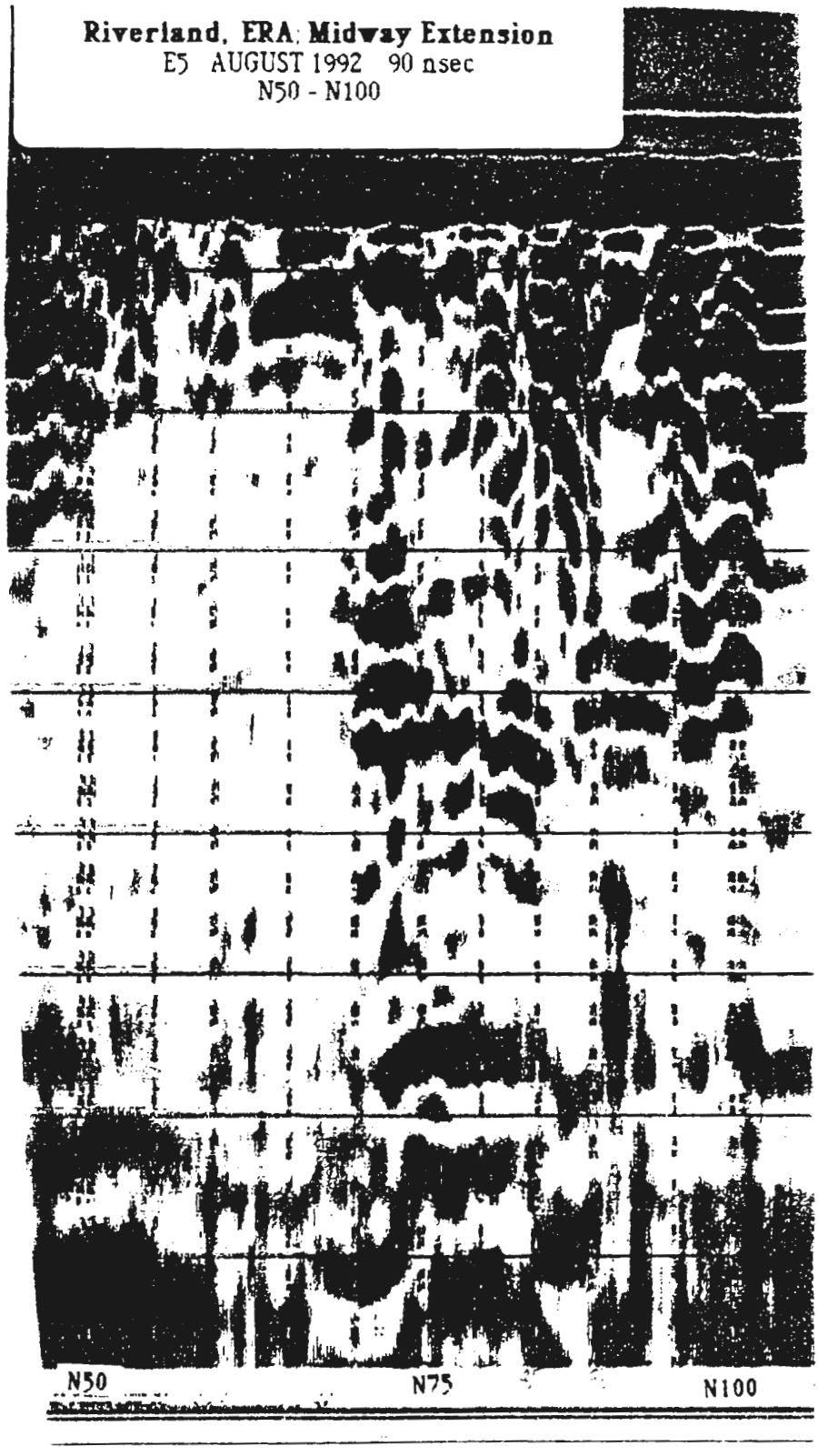
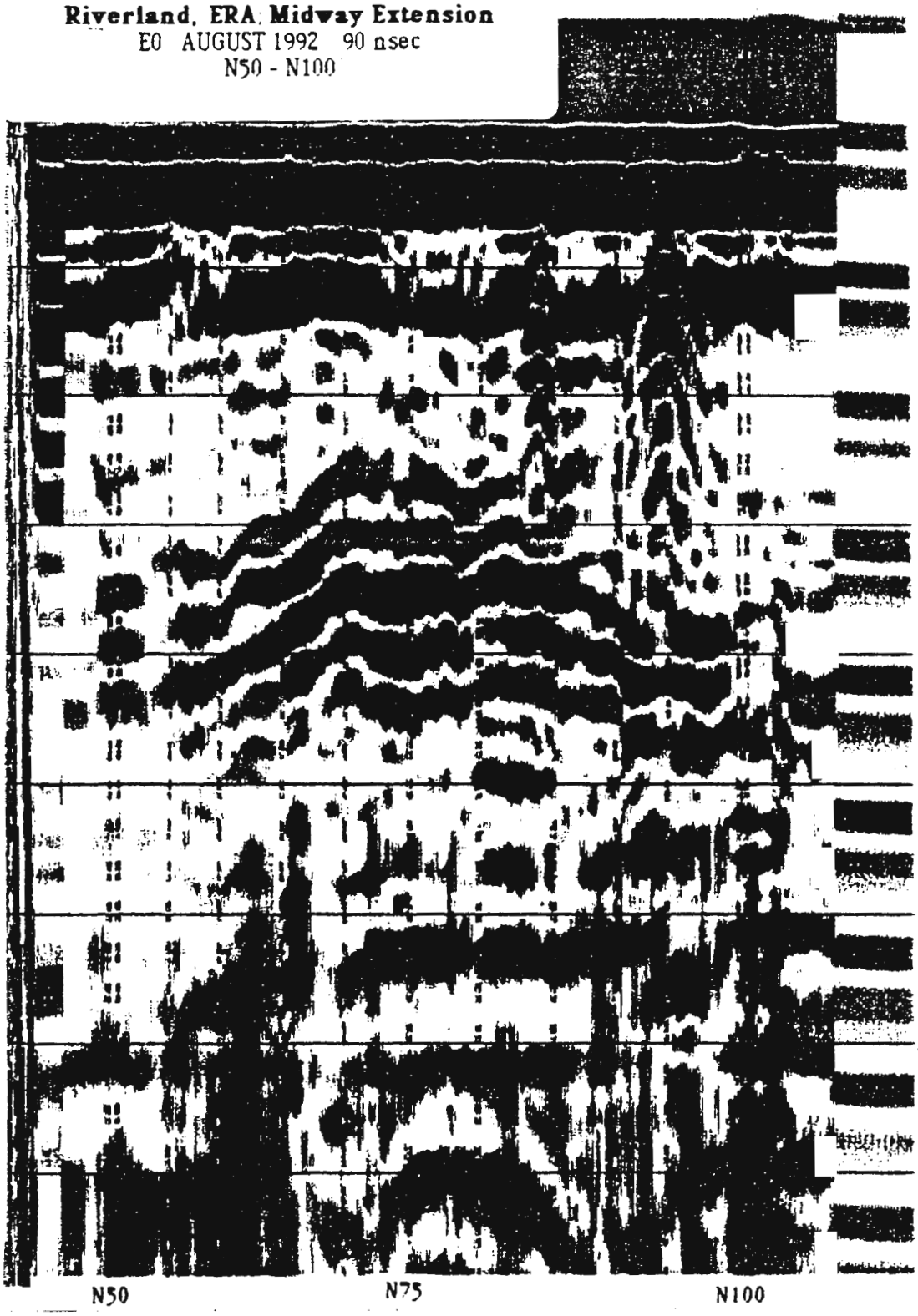


9312975.0800

Riverland, ERA Midway Extension
E0 AUGUST 1992 90 nsec
N50 - N100



9312975.0801

GROUND-PENETRATING RADAR (GPR) SURVEY

Team Geophysics, Westinghouse Hanford Operations

TITLE: Riverland ERA, (AAA) sites

DATE: 8-17-92

LOCATION:
Anti-aircraft artilley sites on Umtanum Ridge ~ 1/2 west of highway 240.

CLIENT: Paul Valcich

DATA COLLECTED BY
K.A. Bergstrom, T.H. Mitchell

EQUIPMENT USED:
GSSI System 8, model 4800
Calibrator Model P731
Digital Tape Recoder DT6000A

ANTENNA(S) USED:
100 ____ 300 XX 100 BISTATIC ____

LOG BOOK: EFL 1029

TIME WINDOW (NS): 100

PROCEDURES FOLLOWED: WHC-CM-7-7 EII 11.2, REV. 3

GRID : 50x55' 30x65', 35x50' NO. OF PROFILES: 53 TOTAL FOOTAGE COLLECTED: 2400

PARAMETERS: Three seperategrids where used; one for each mound.
Two sets of perpendicular profiles; five feet between profiles.

DATA TAPE NO.: ERA #2 RECORDS LOCATION: Geophysical files

TAPE ADDRESS : 24135-57255 CALIBRATION ADDRESS: 57047-57255

INTERPRETED BY : T.H. Mitchell REVIEWED BY : K. A. Bergstrom

INTERPRETATION DELIVERED TO draft to P. Valcich DATE : 9-92

OBJECTIVE(S):

To determine what was buried under three mounds at the AAA site.

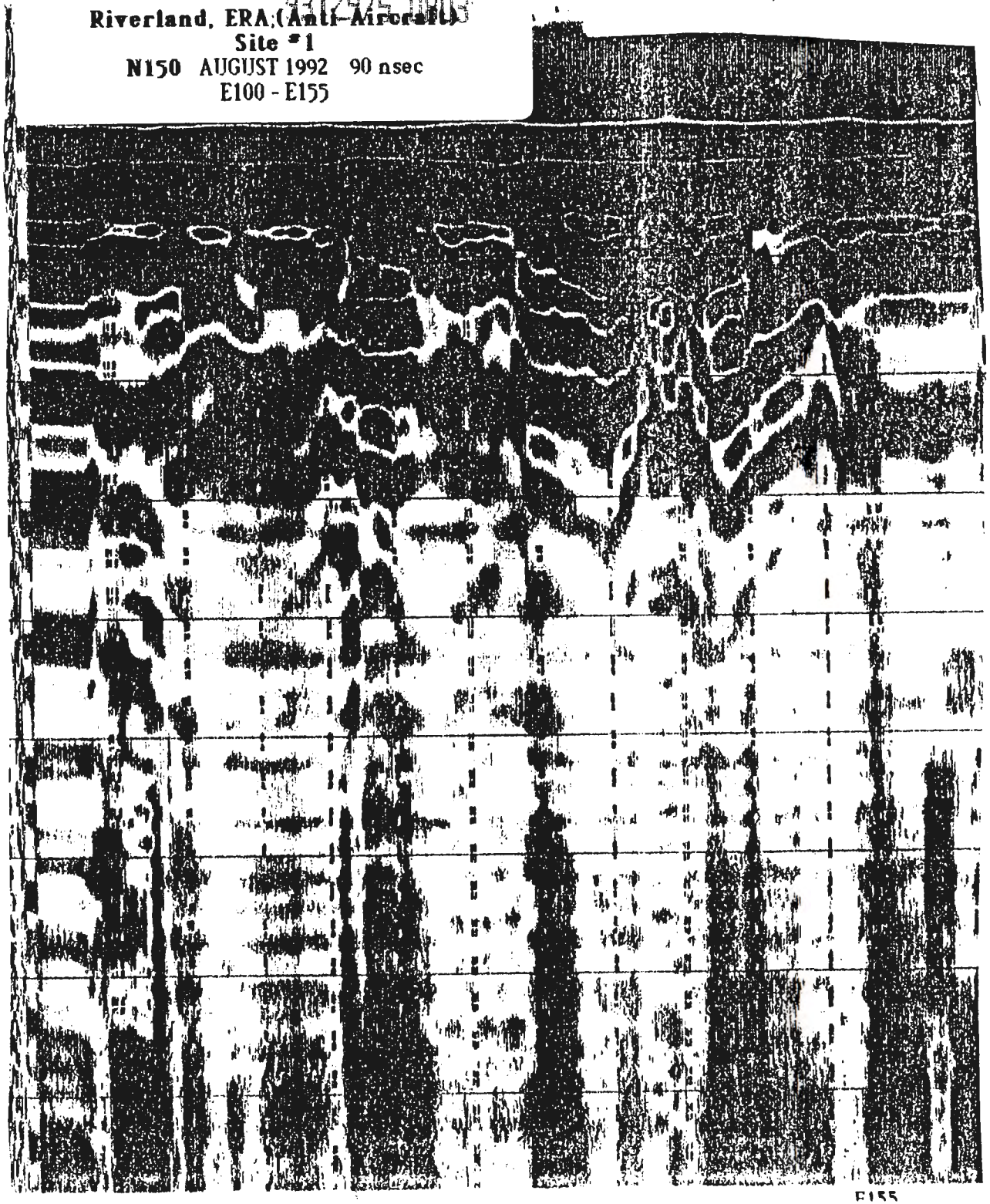
NOTES:

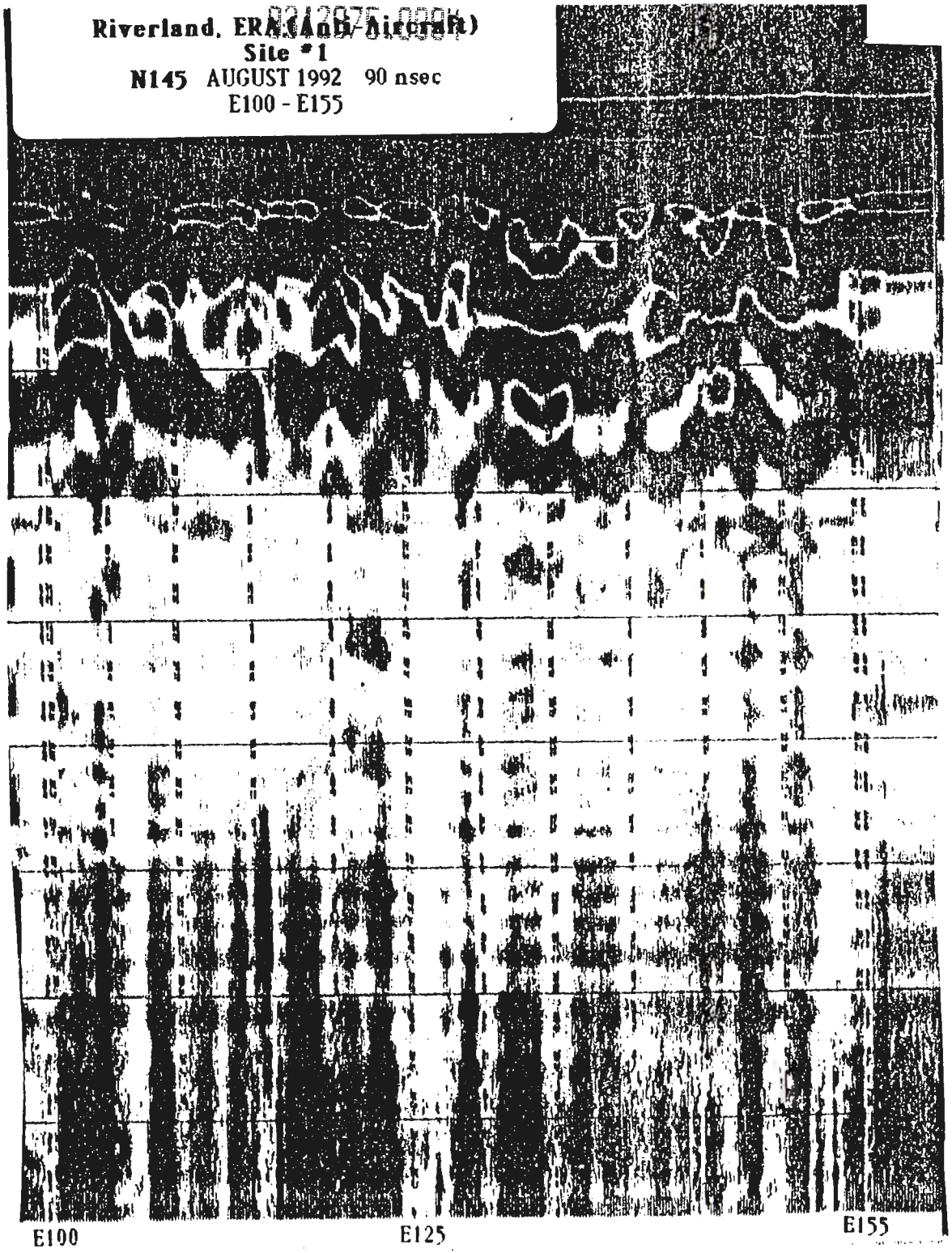
Antenna pulled by hand at 1-2 mph. 50 meter cable. Pulled on south and east side of survey marks.

9312975.0802

9312975.0903

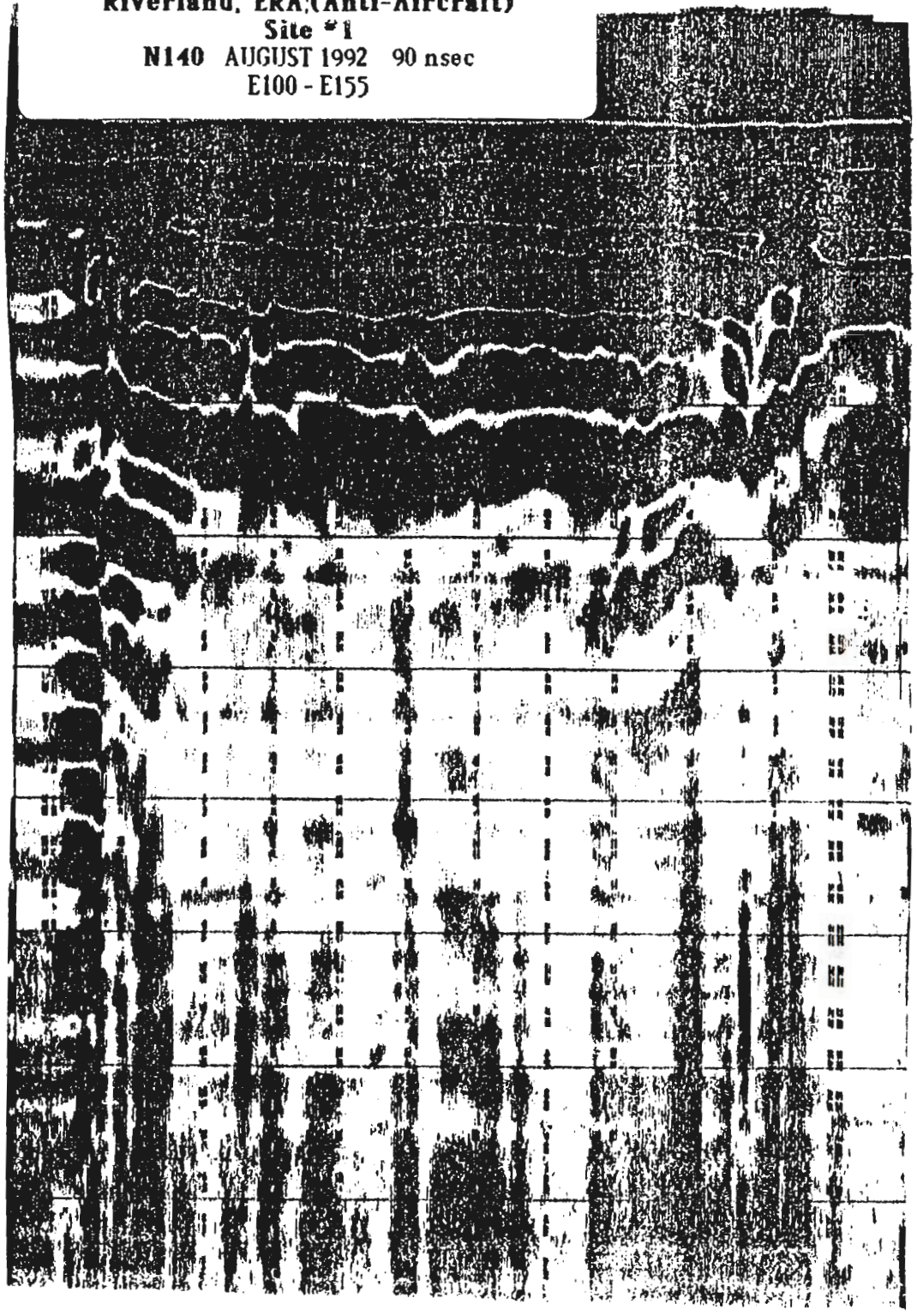
Riverland, ERA (Anti-Aircraft)
Site #1
N150 AUGUST 1992 90 nsec
E100 - E155




Riverland, ERA (Anti-Aircraft)
Site #1
N145 AUGUST 1992 90 nsec
E100 - E155
E100
E125
E155

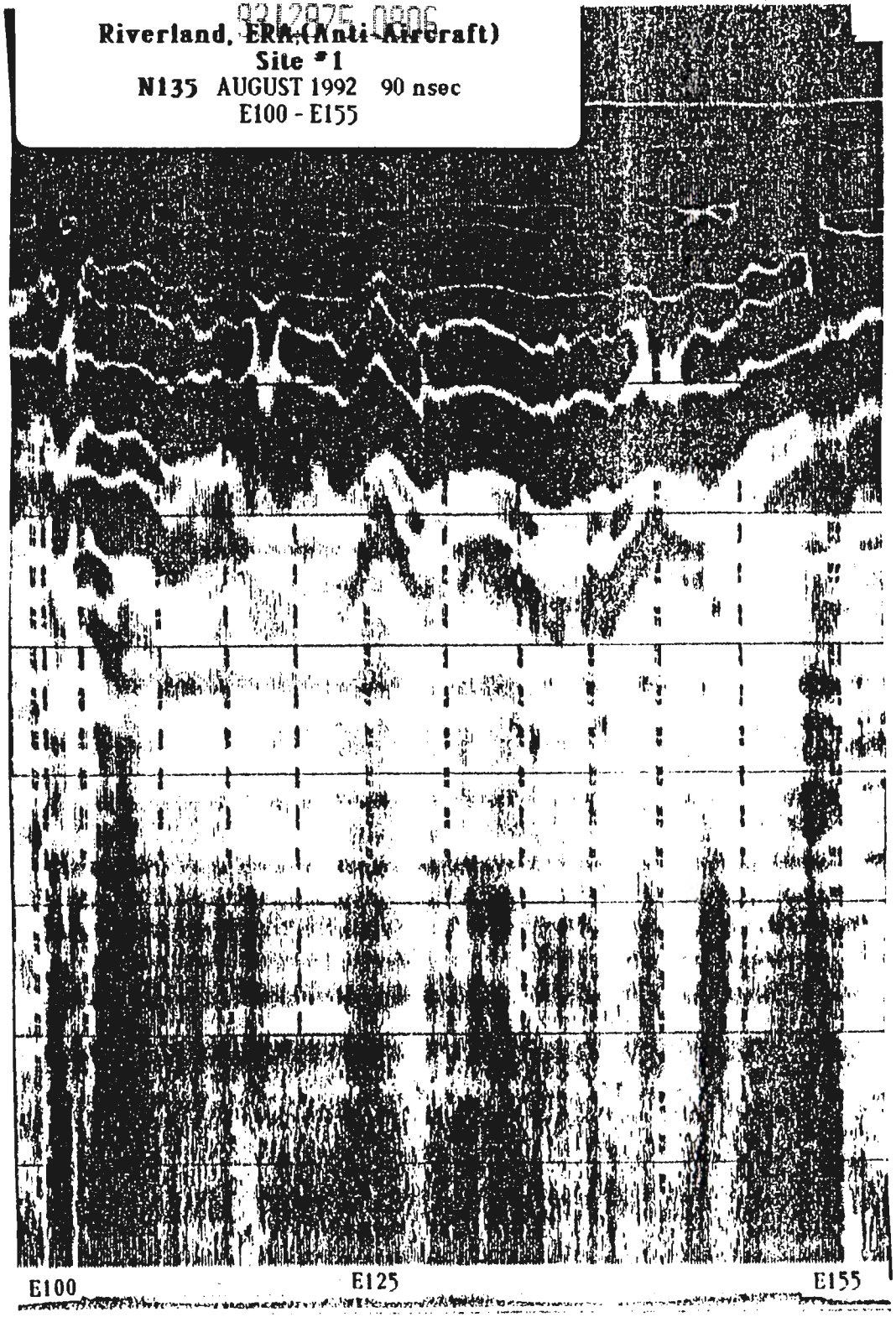
9312975.0805

Riverland, ERA (Anti-Aircraft)
Site #1
N140 AUGUST 1992 90 nsec
E100 - E155



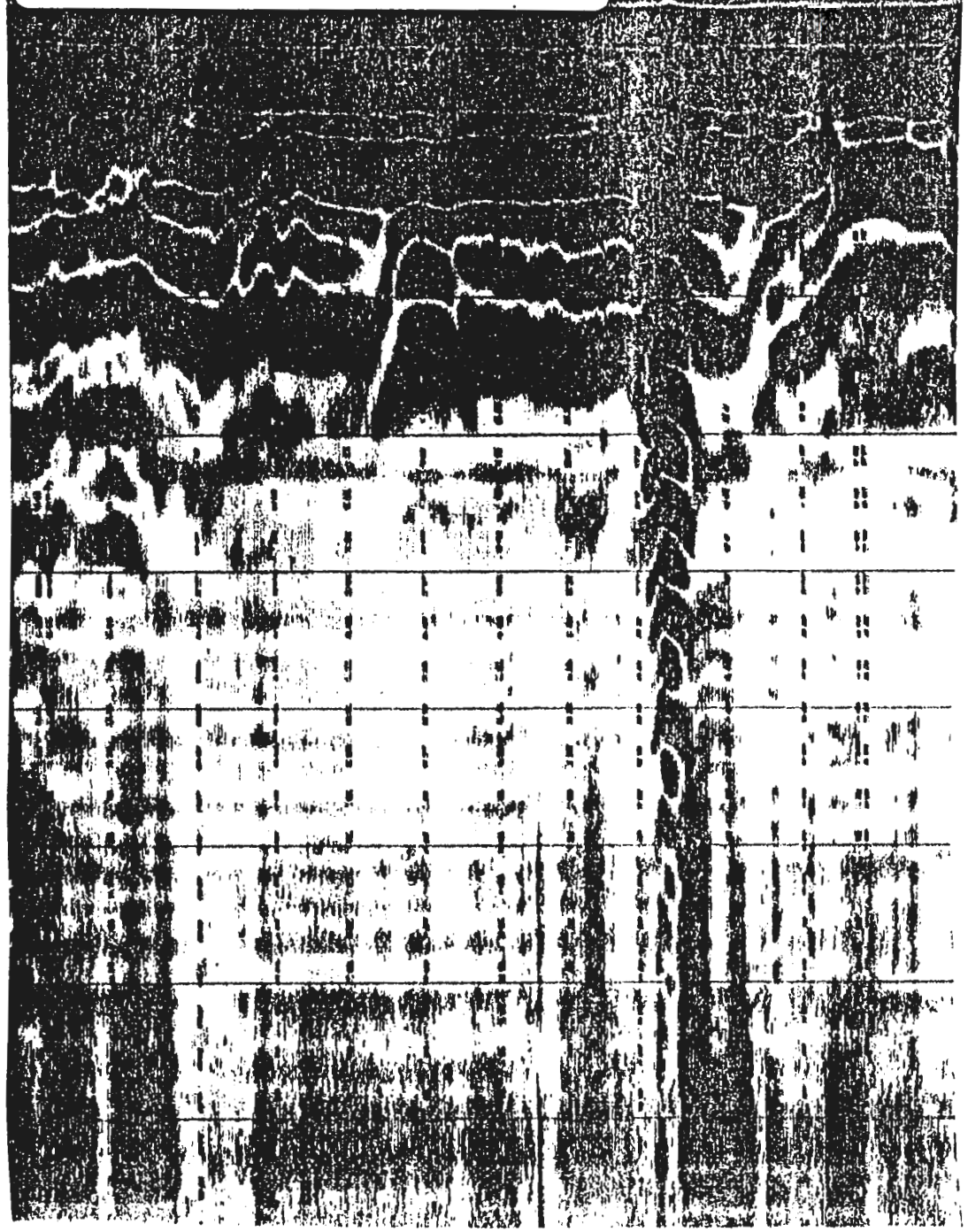
9212875.0806

Riverland, ERA (Anti-Aircraft)
Site #1
N135 AUGUST 1992 90 nsec
E100 - E155



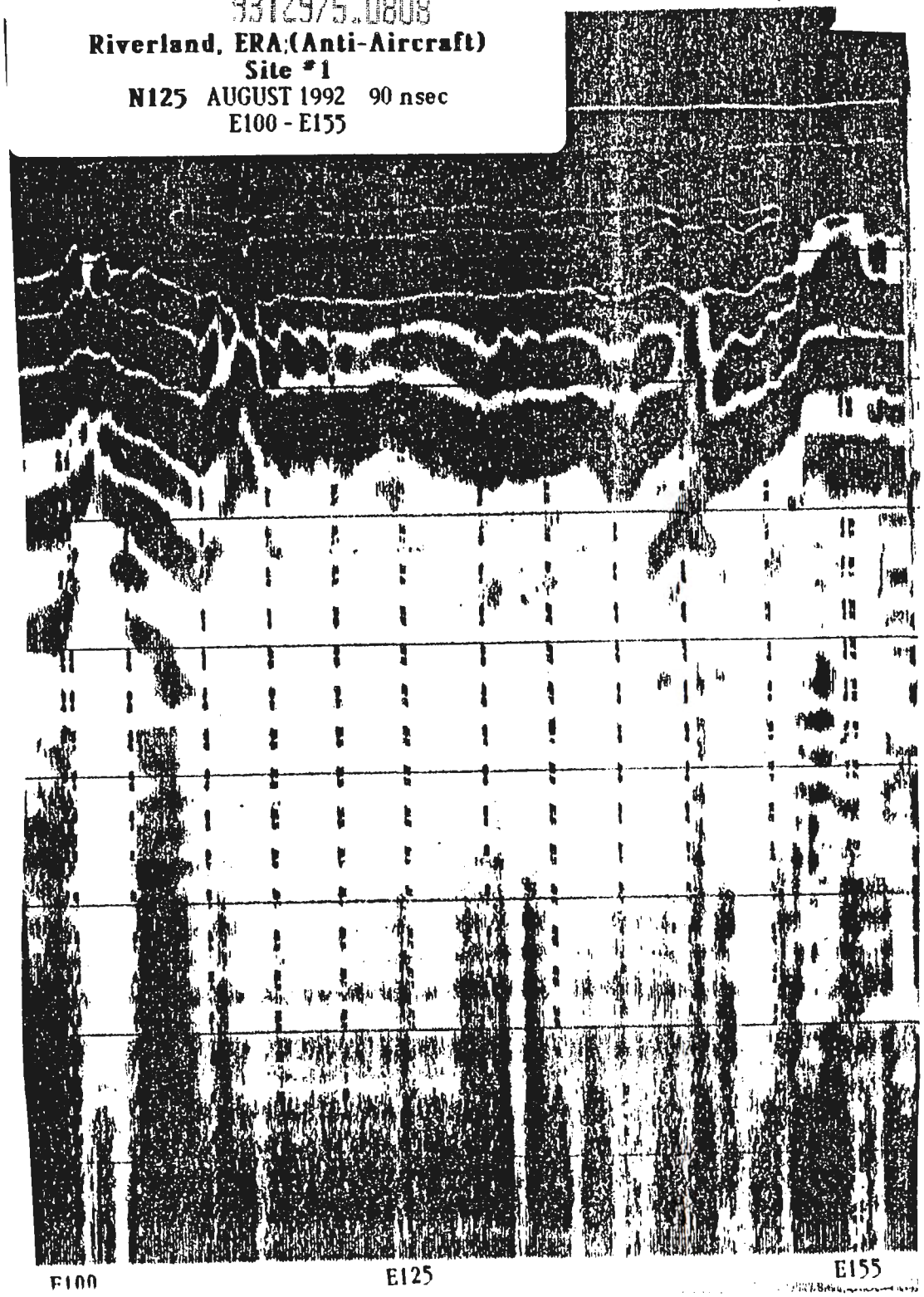
9312975.0807

Riverland, ERA (Anti-Aircraft)
Site #1
N130 AUGUST 1992 90 nsec
E100 - E155



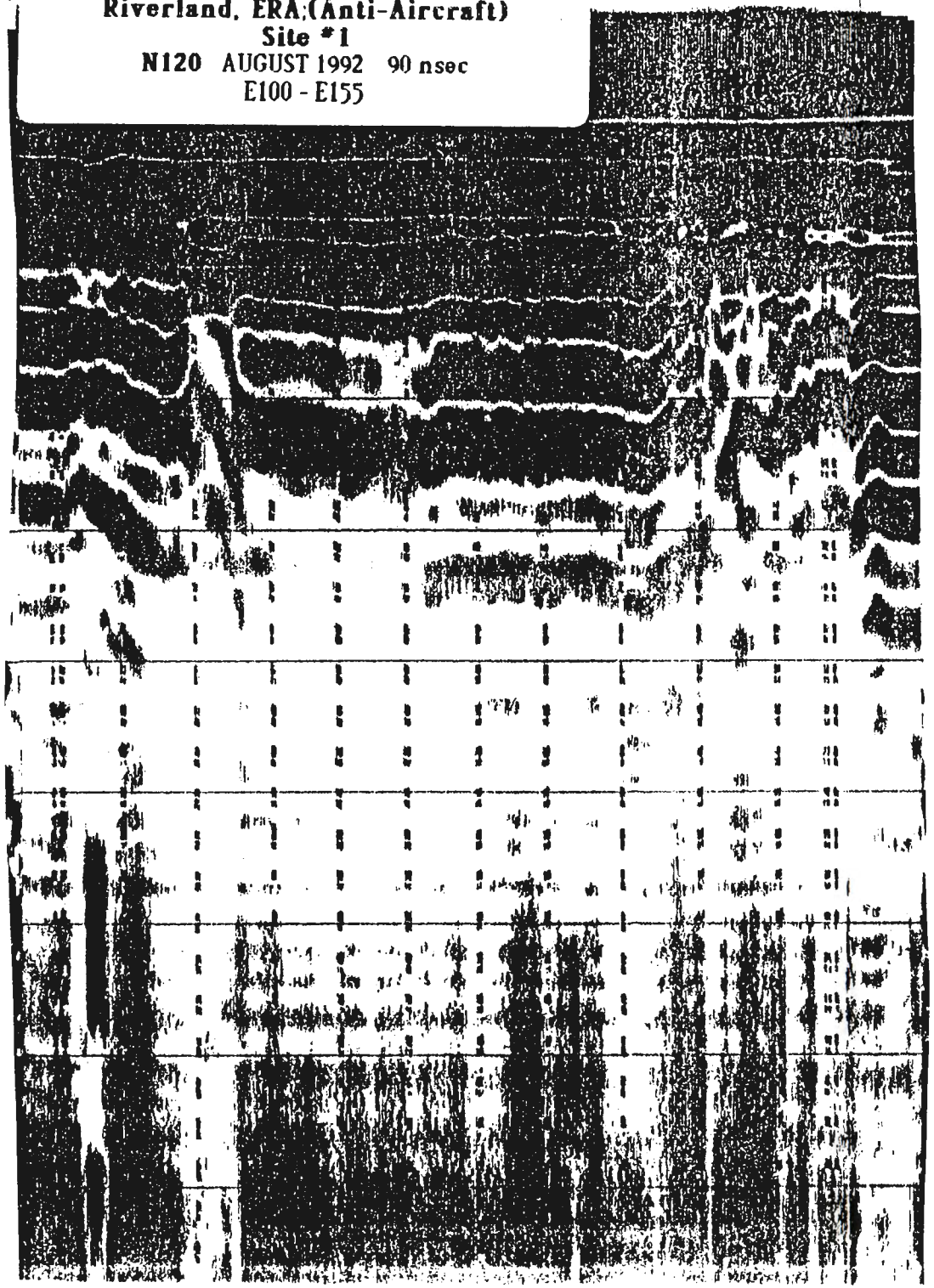
9312975.0808

Riverland, ERA (Anti-Aircraft)
Site #1
N125 AUGUST 1992 90 nsec
E100 - E155



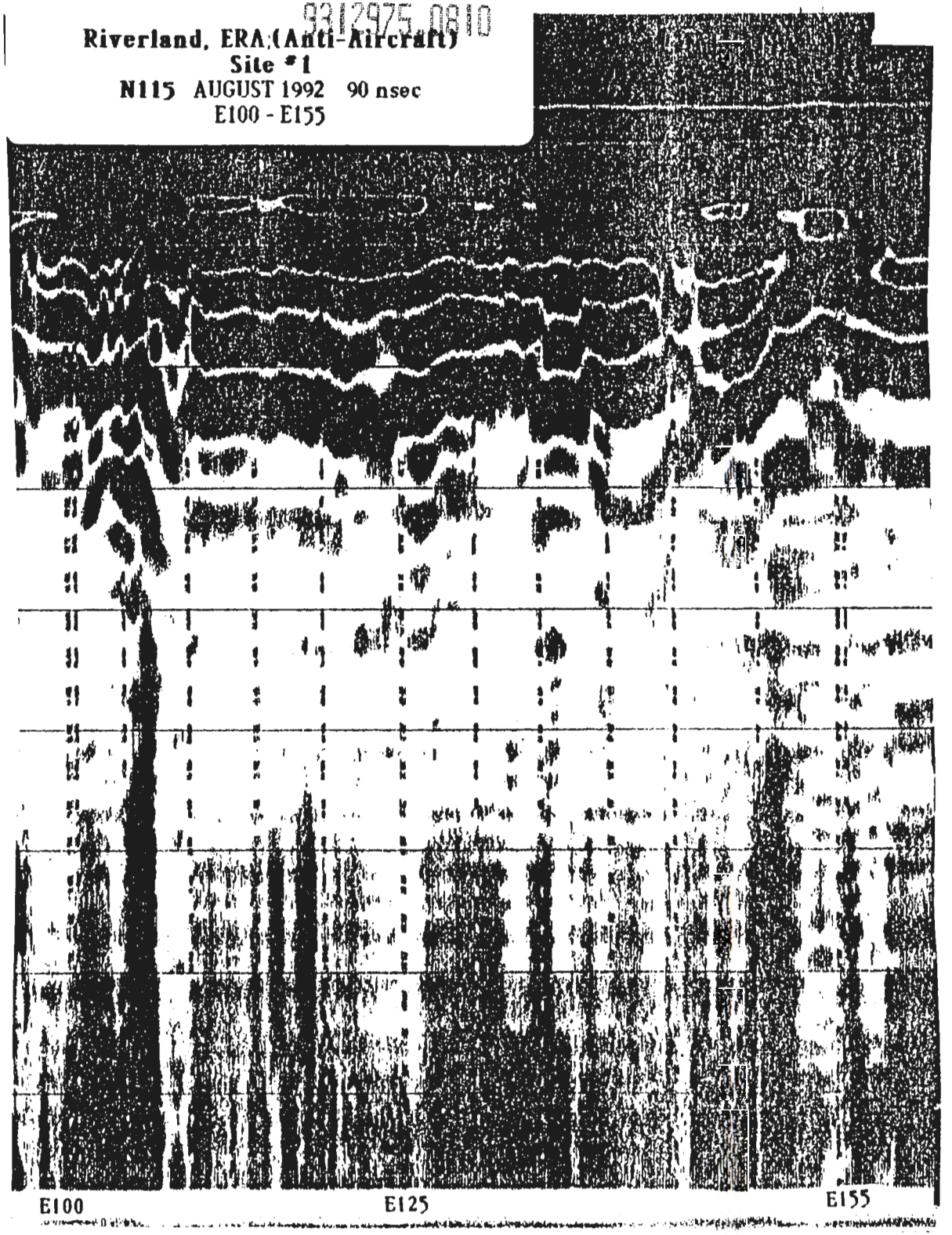
9312975.0809

Riverland, ERA;(Anti-Aircraft)
Site #1
N120 AUGUST 1992 90 nsec
E100 - E155



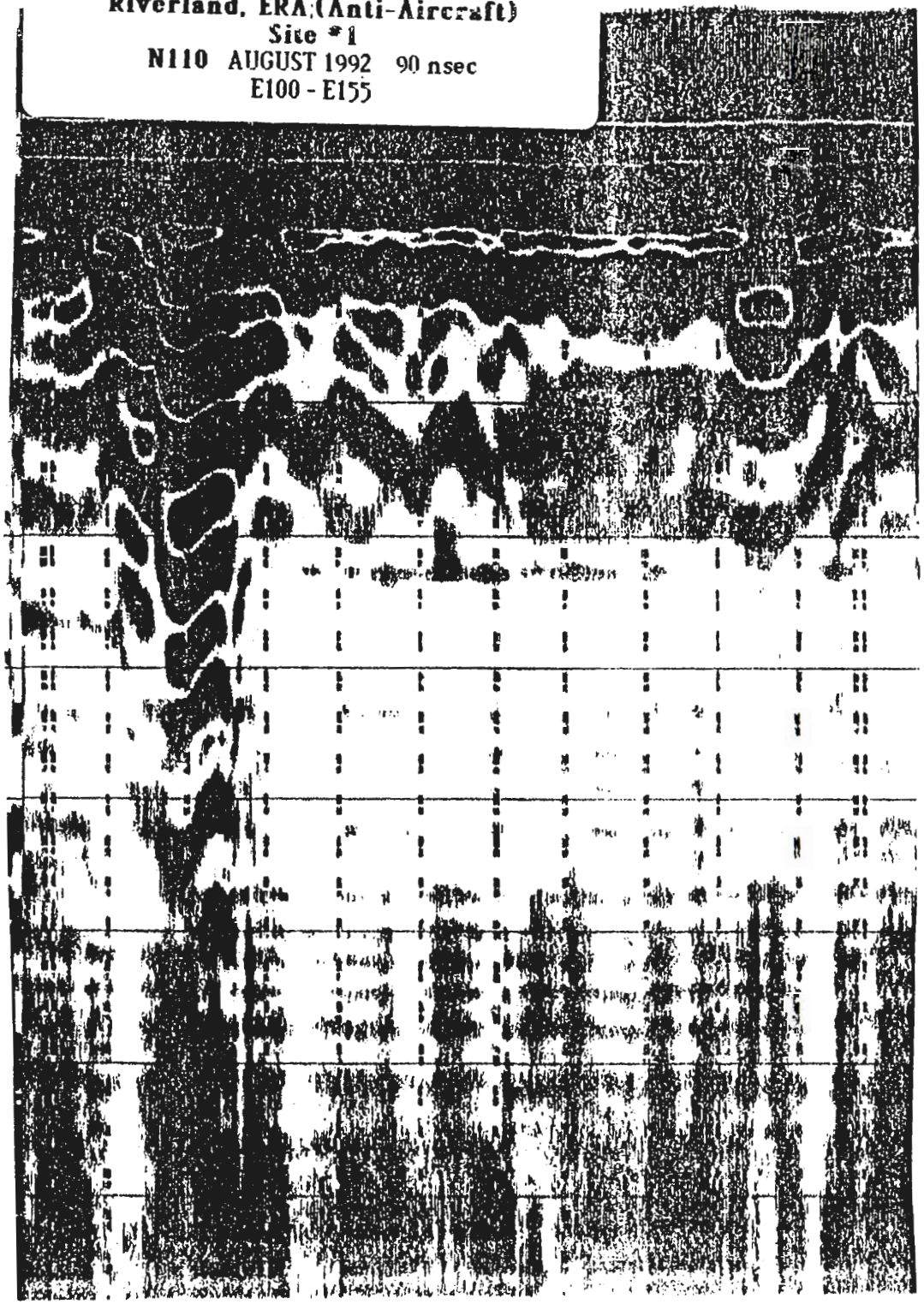
9312975.0810

Riverland, ERA (Anti-Aircraft)
Site #1
N115 AUGUST 1992 90 nsec
E100 - E155



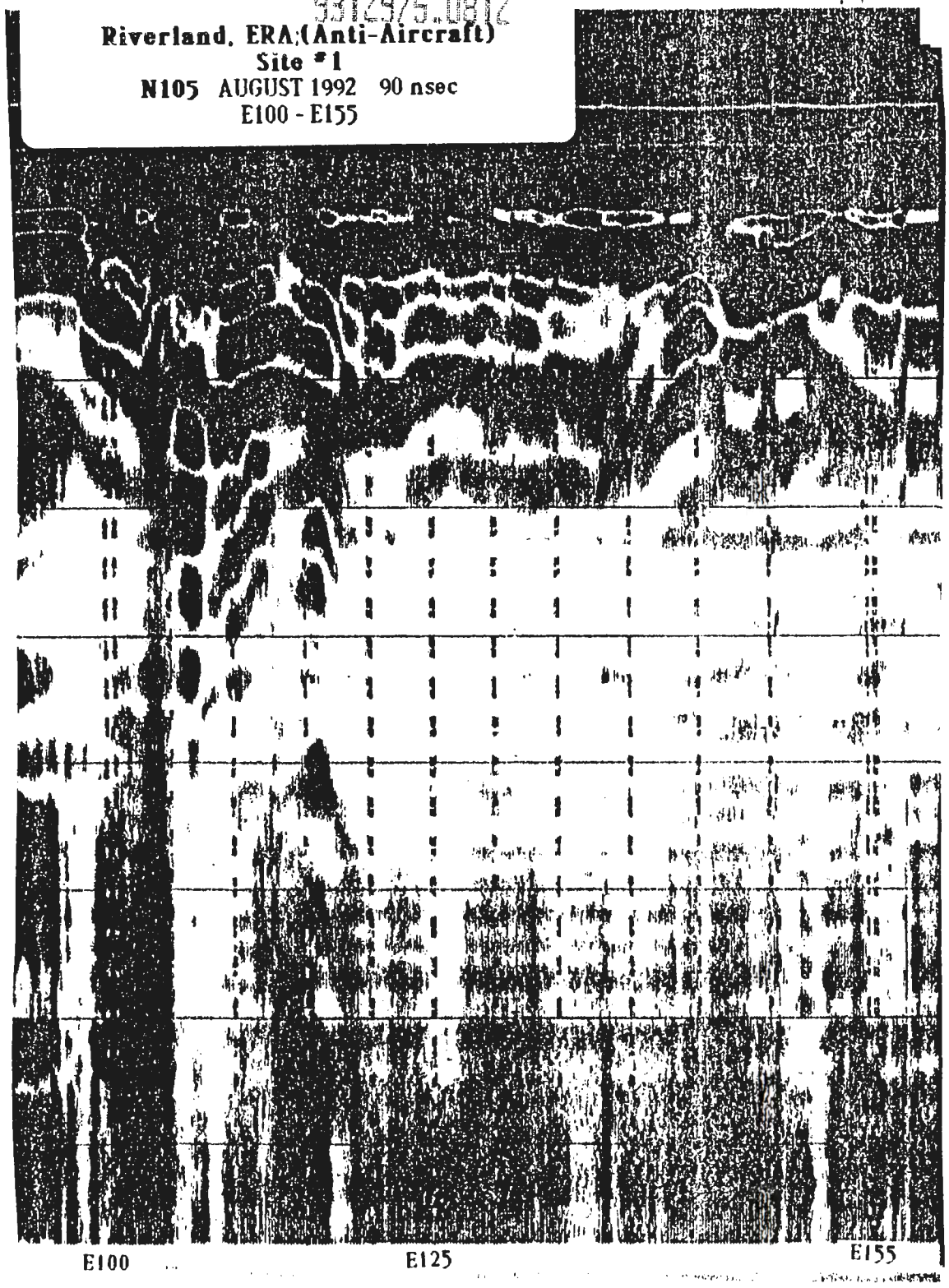
9312975.0811

Riverland, ERA (Anti-Aircraft)
Site #1
N110 AUGUST 1992 90 nsec
E100 - E155



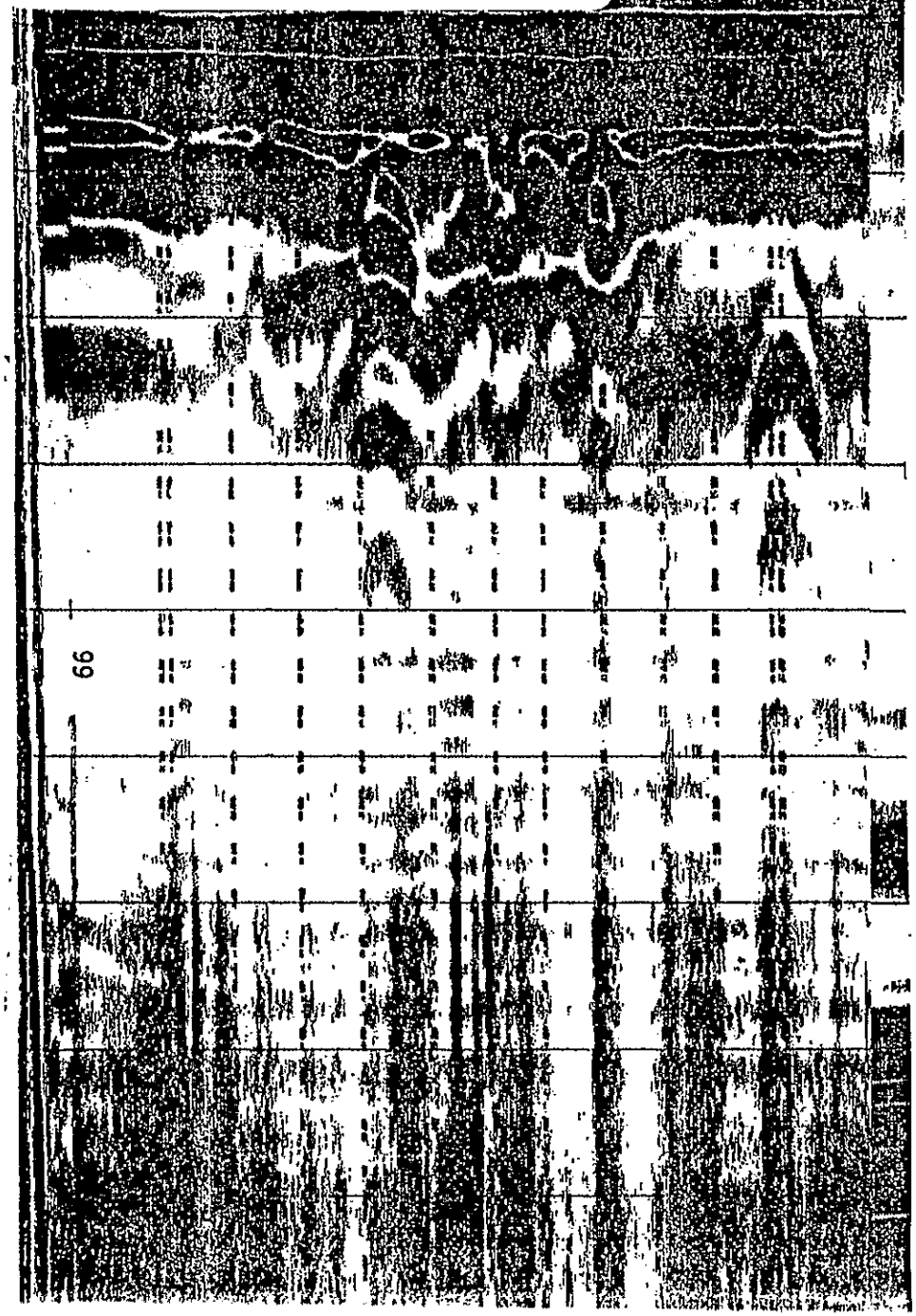
9312975.0812

Riverland, ERA (Anti-Aircraft)
Site #1
N105 AUGUST 1992 90 nsec
E100 - E155

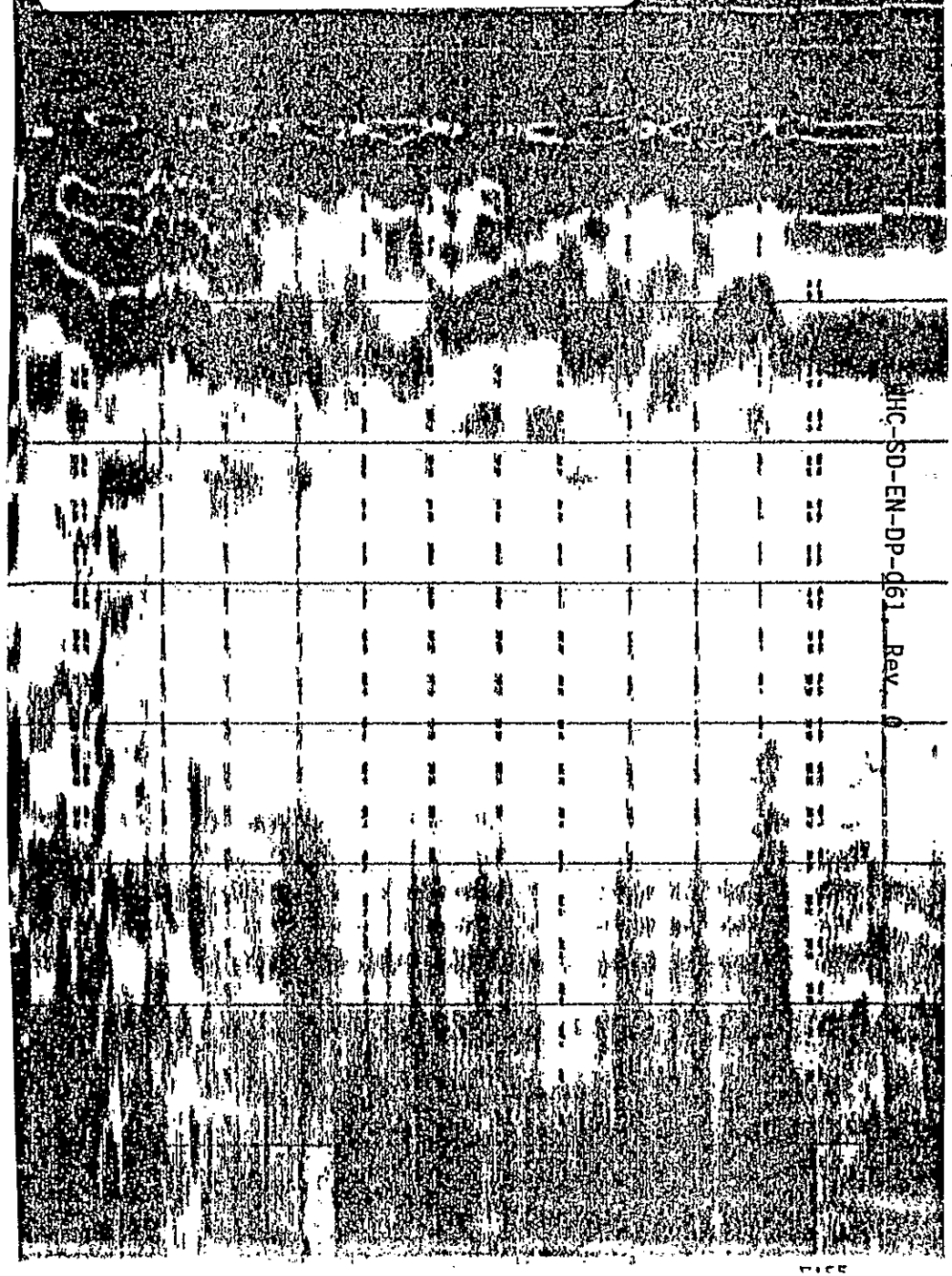


9312975.0012

Riverland, ERA;(Anti-Aircraft)
Site #1
E155 AUGUST 1992 90 nsec
N100 - N150

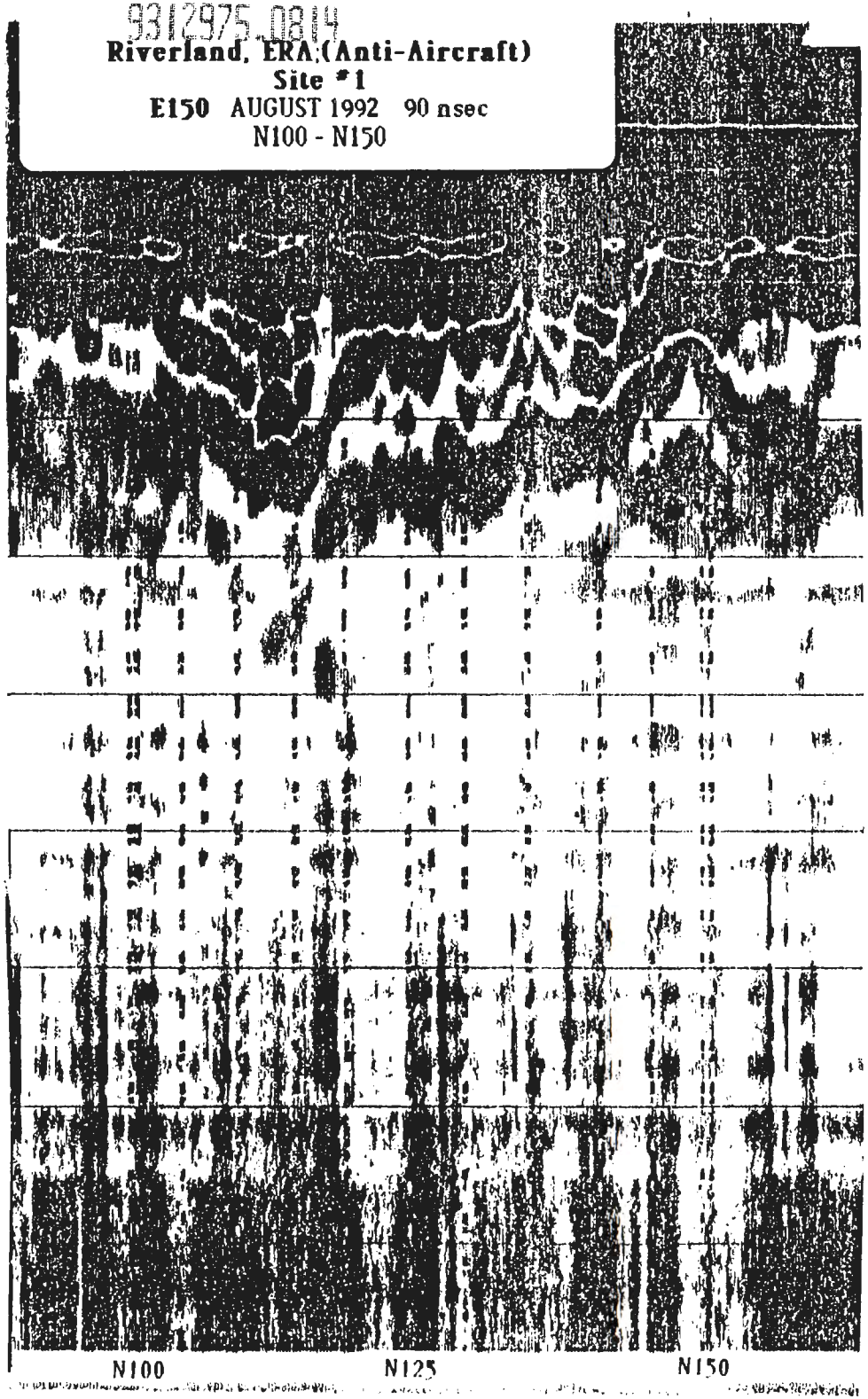


Riverland, ERA;(Anti-Aircraft)
Site #1
N100 AUGUST 1992 90 nsec
E100 - E155



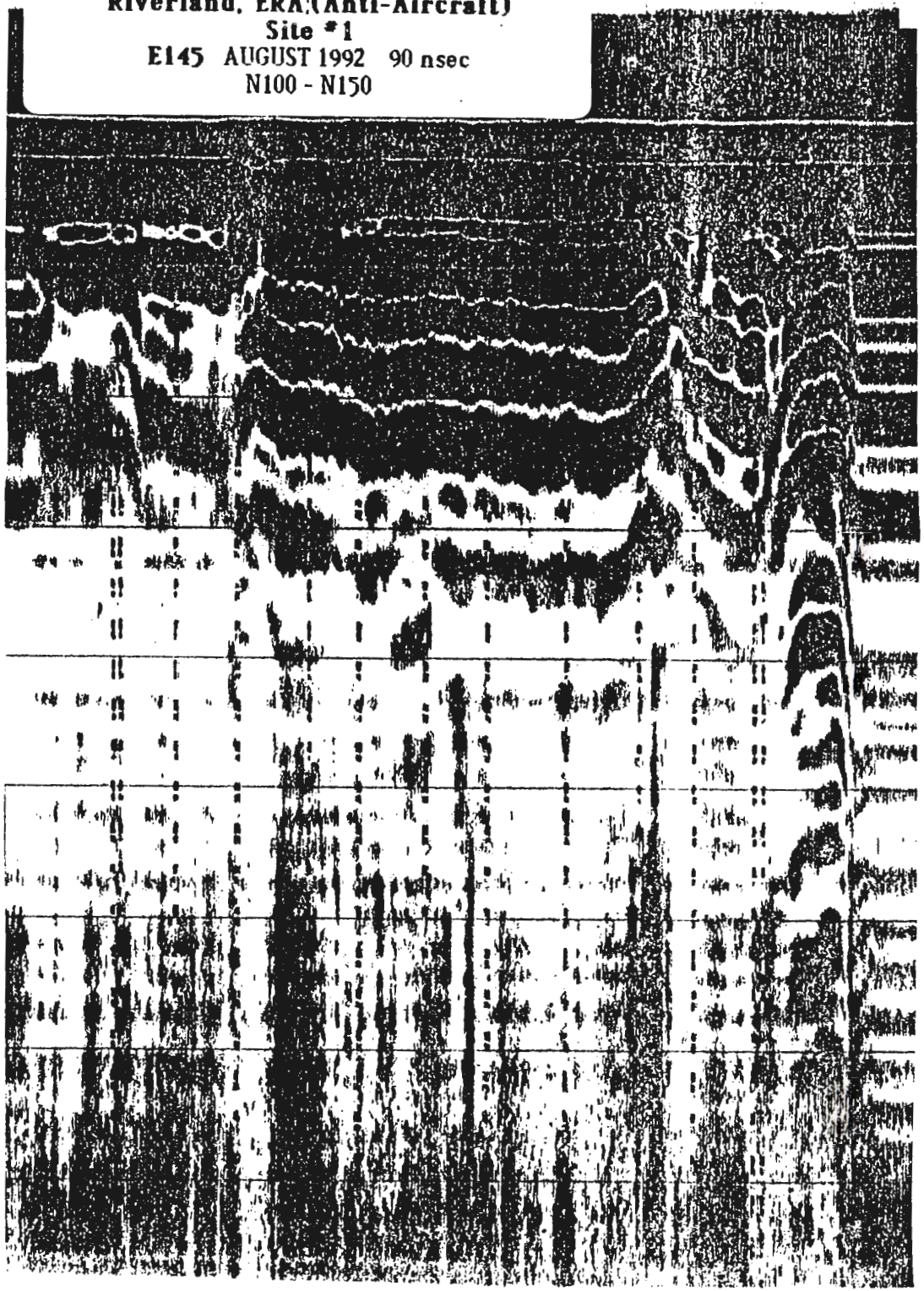
9312975.0814

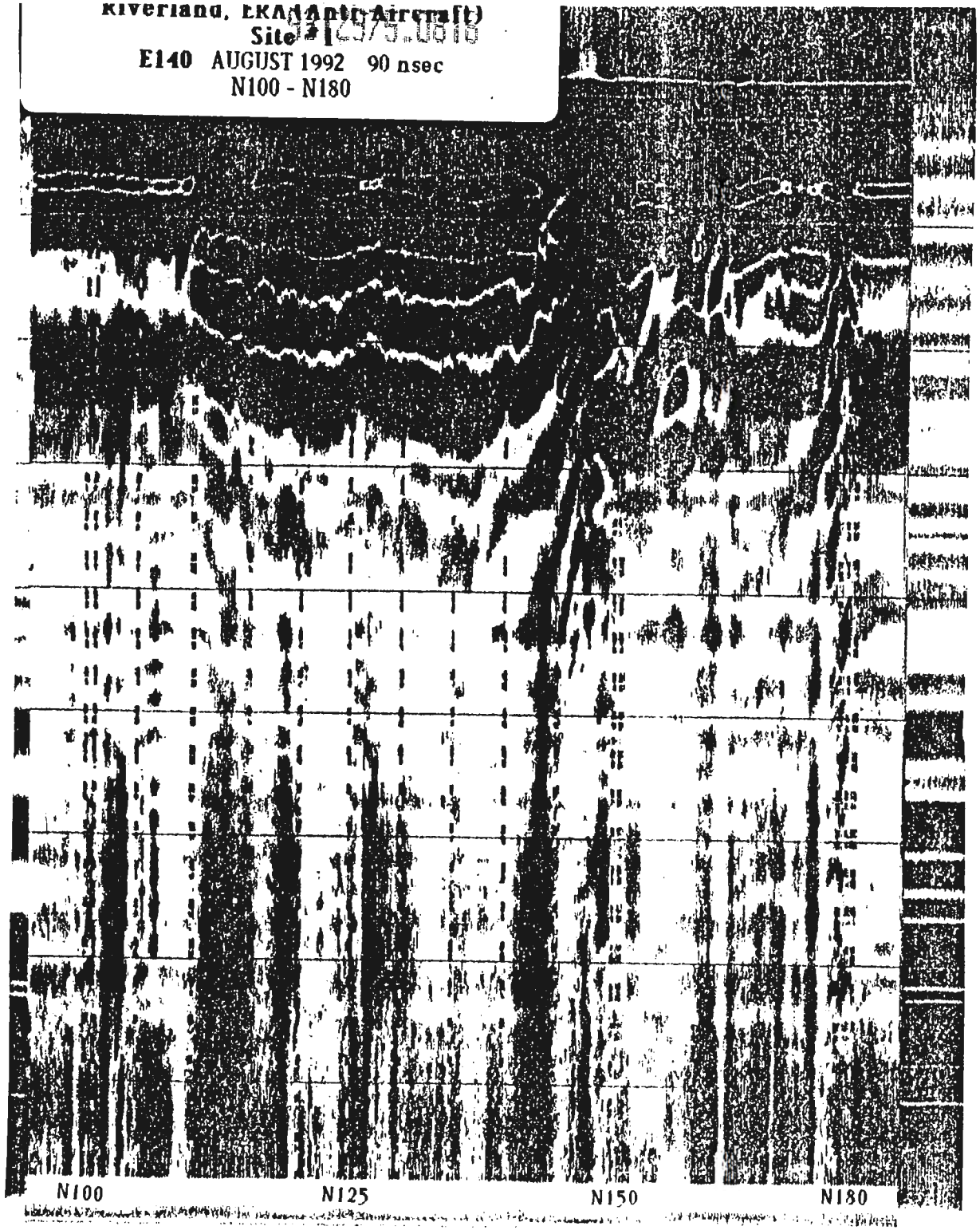
Riverland, ERA (Anti-Aircraft)
Site #1
E150 AUGUST 1992 90 nsec
N100 - N150



9312975.0815

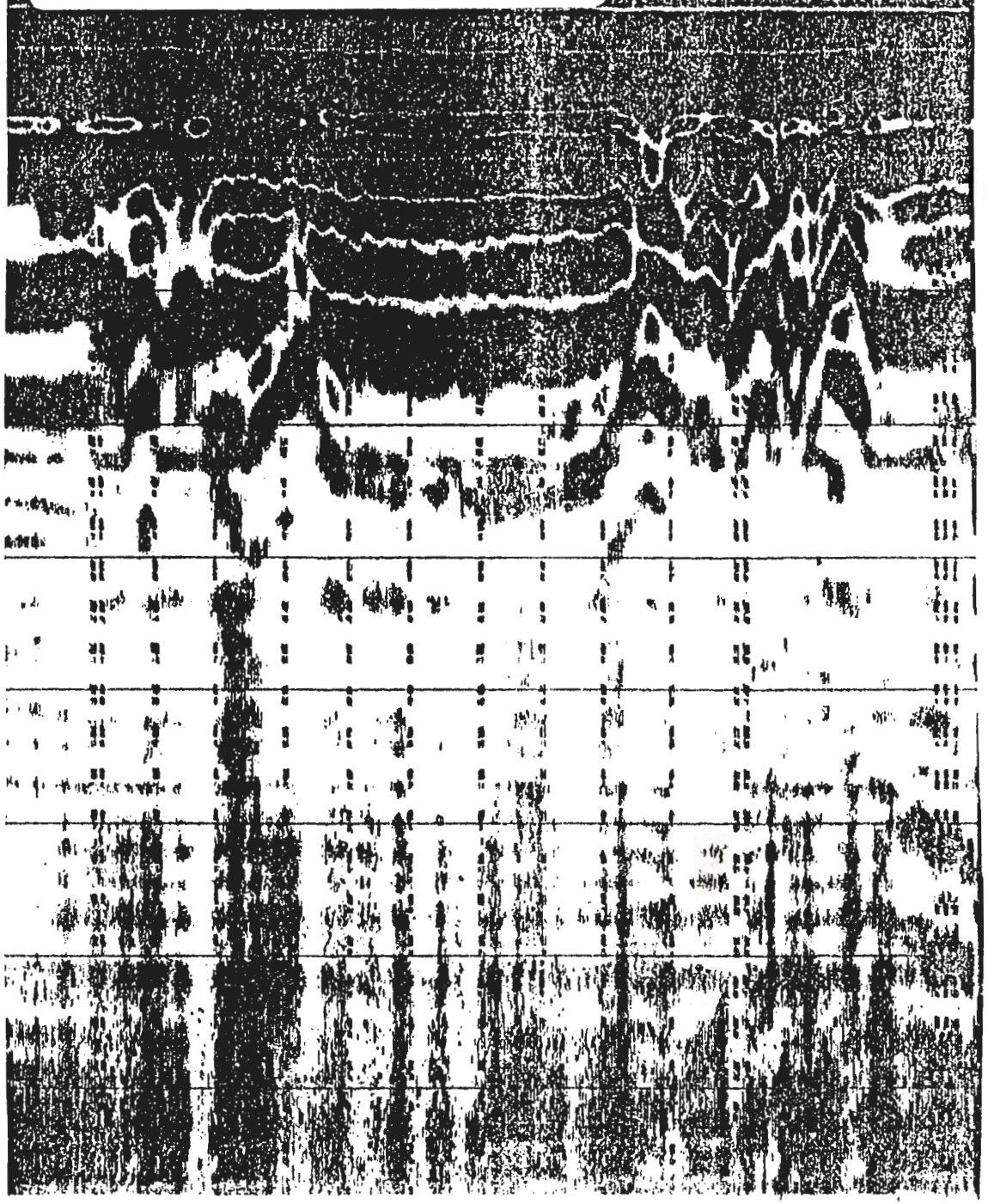
Riverland, ERA (Anti-Aircraft)
Site #1
E145 AUGUST 1992 90 nsec
N100 - N150

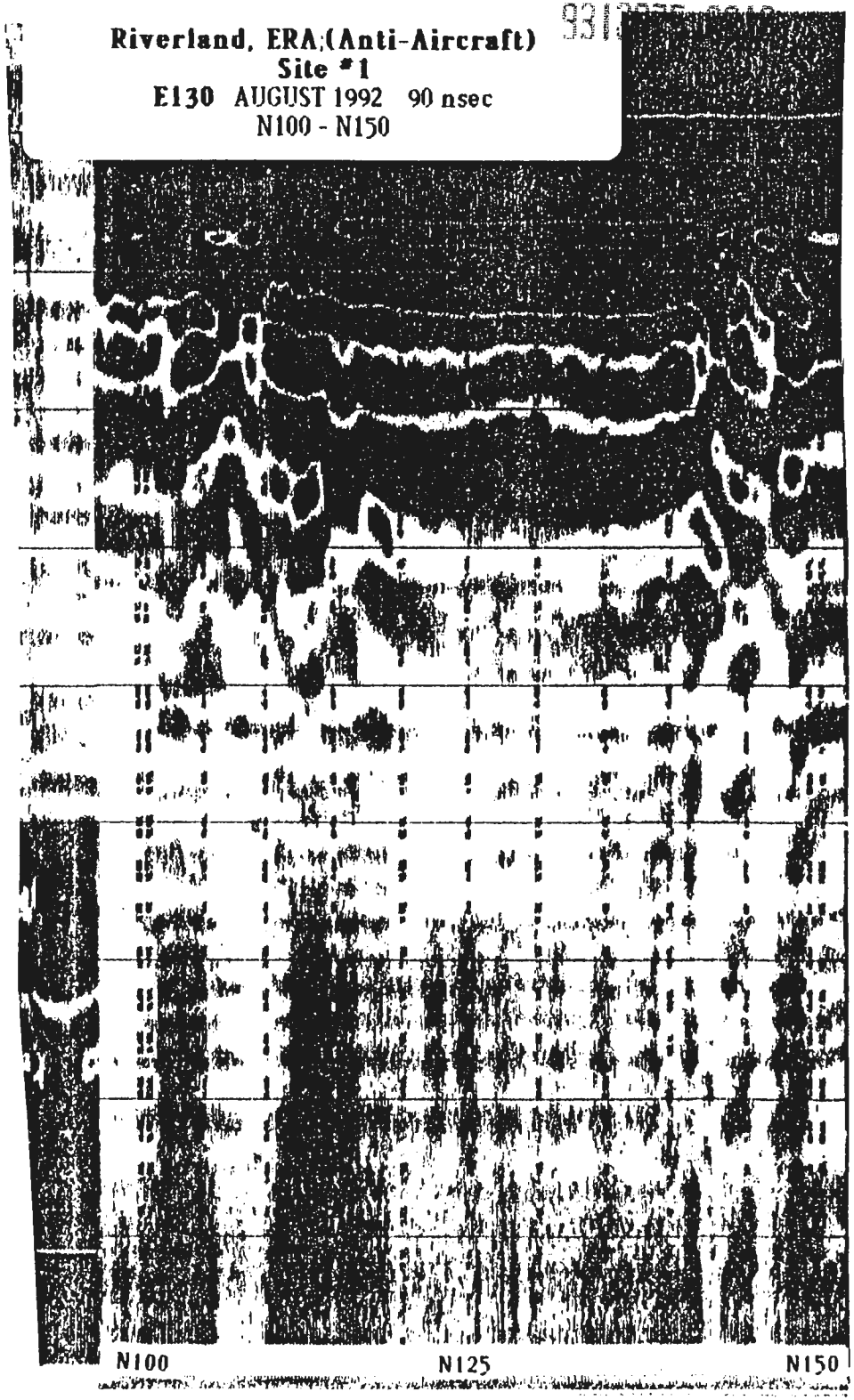


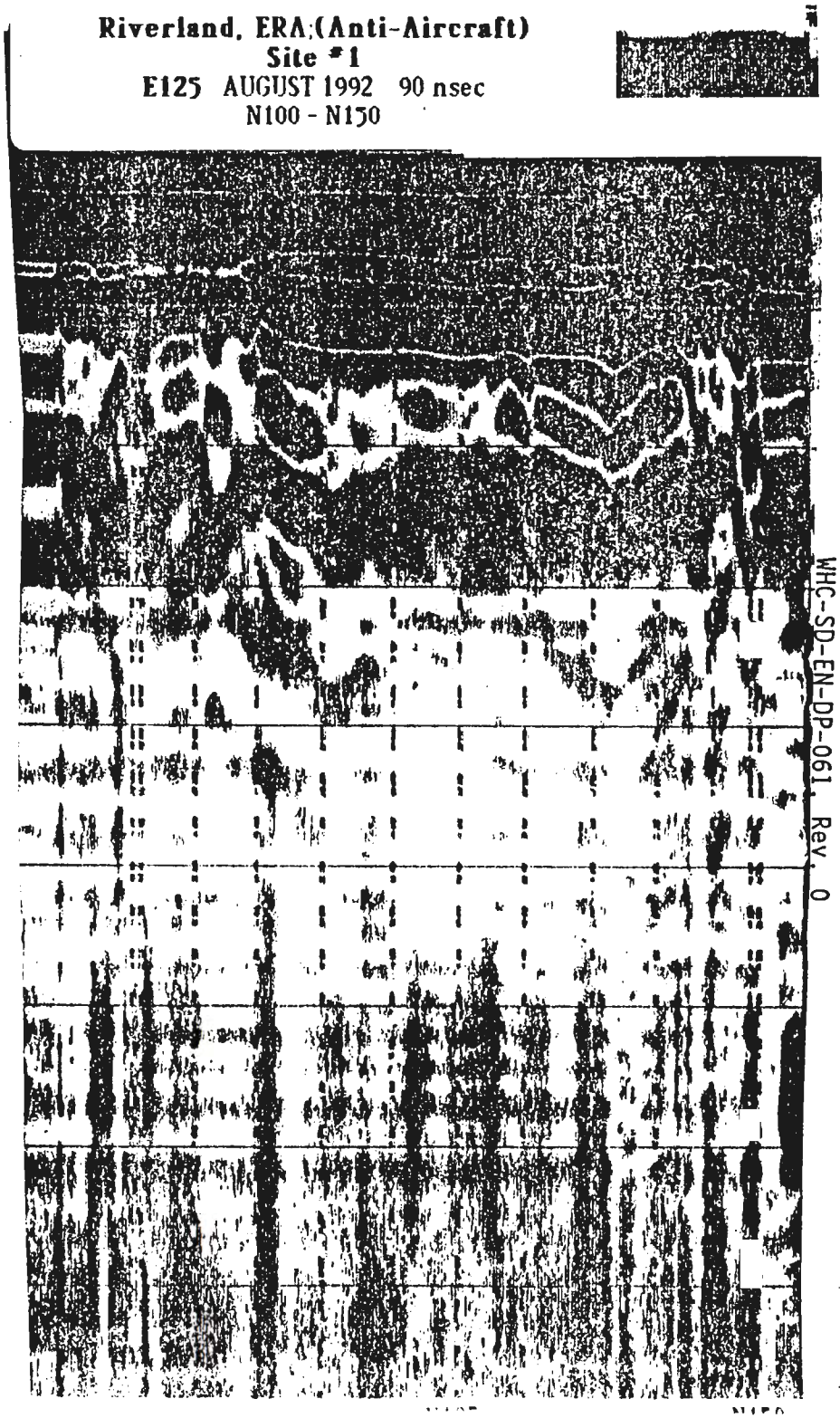

Riverland, EKA (Apto Aircraft)
Site
E140 AUGUST 1992 90 nsec
N100 - N180
N100
N125
N150
N180

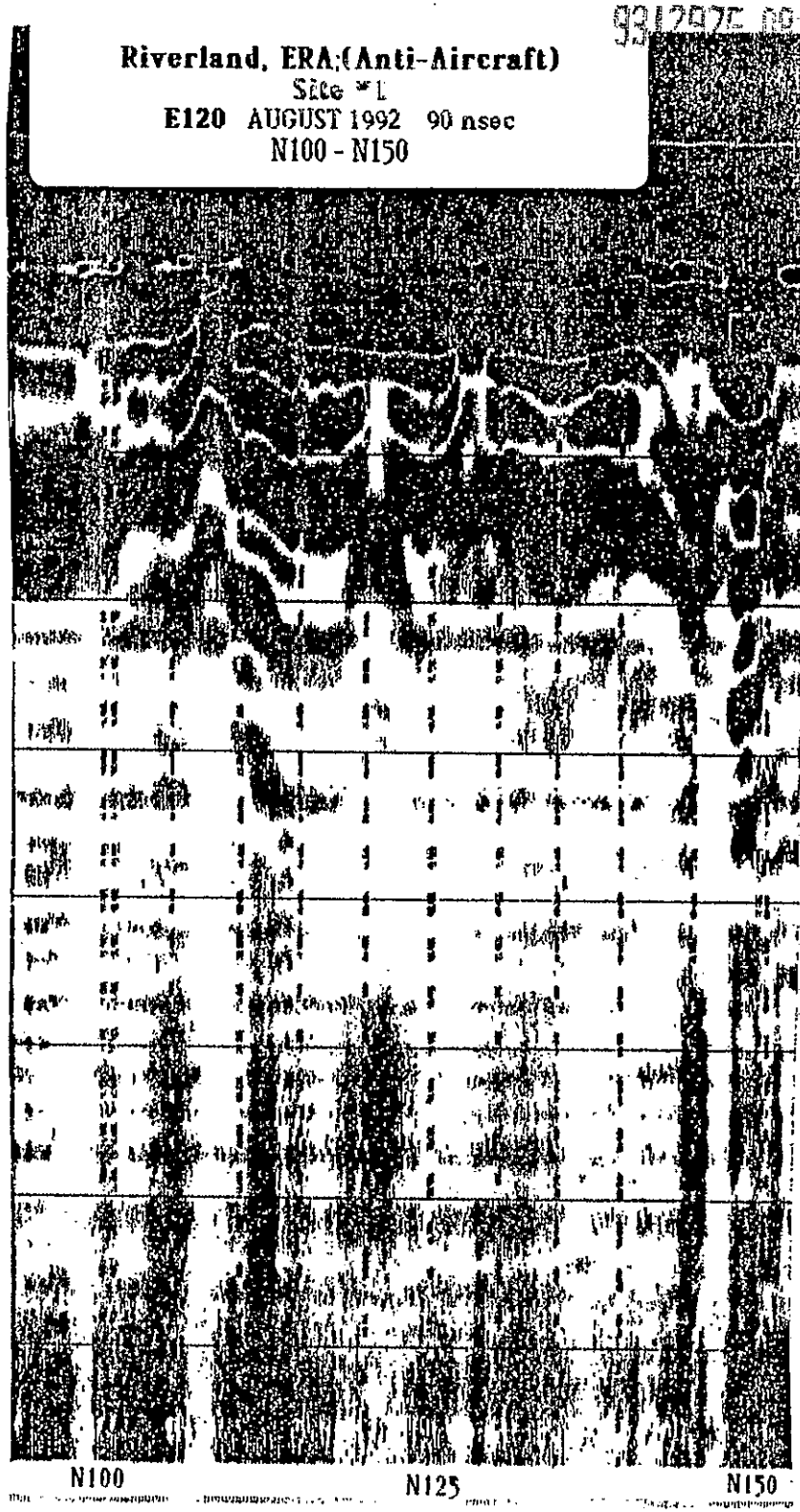
9312975.0817

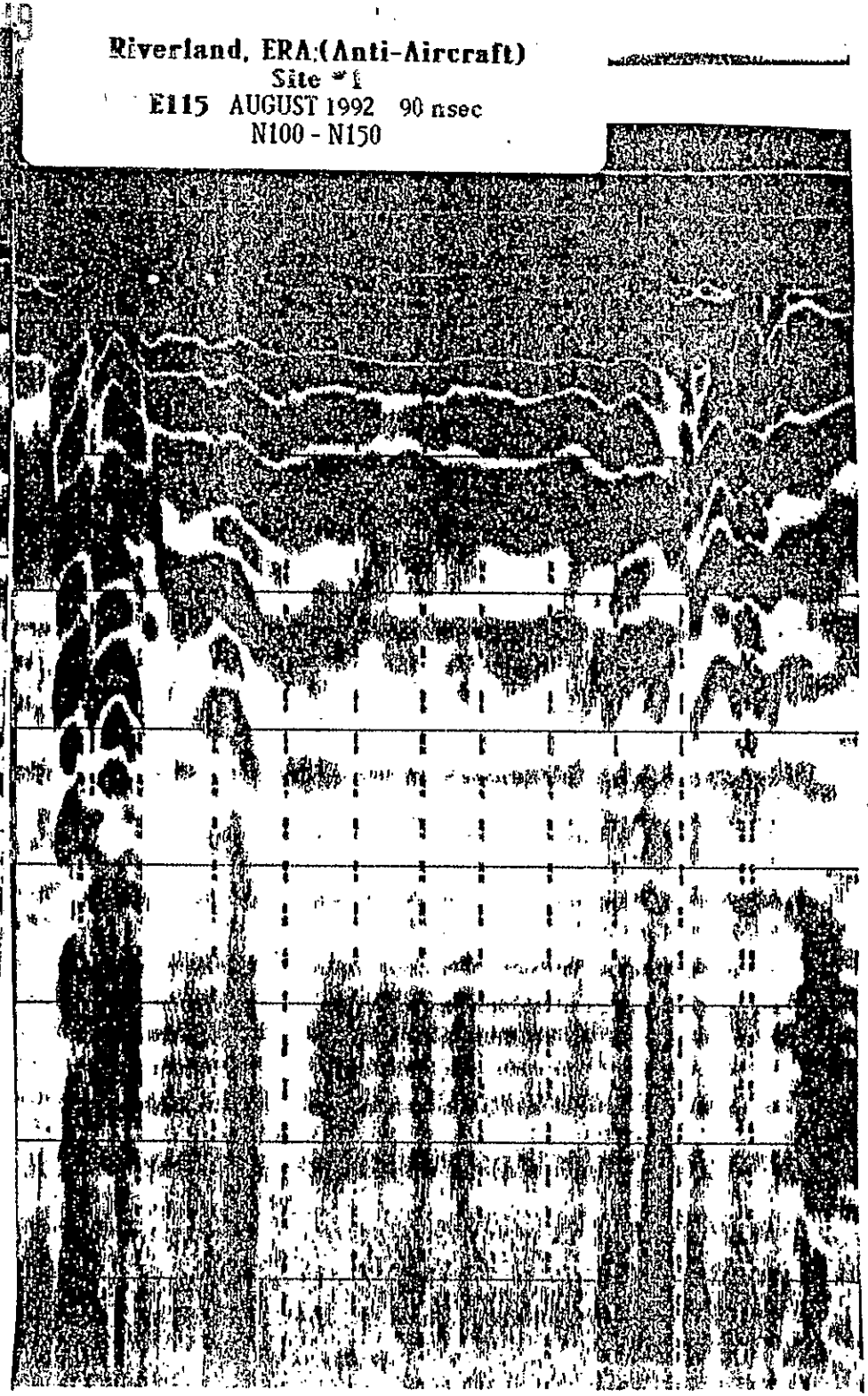
Riverland, ERA (Anti-Aircraft)
Site #1
E135 AUGUST 1992 90 nsec
N100 - N175




Riverland, ERA;(Anti-Aircraft)
Site #1
E130 AUGUST 1992 90 nsec
N100 - N150
N100
N125
N150

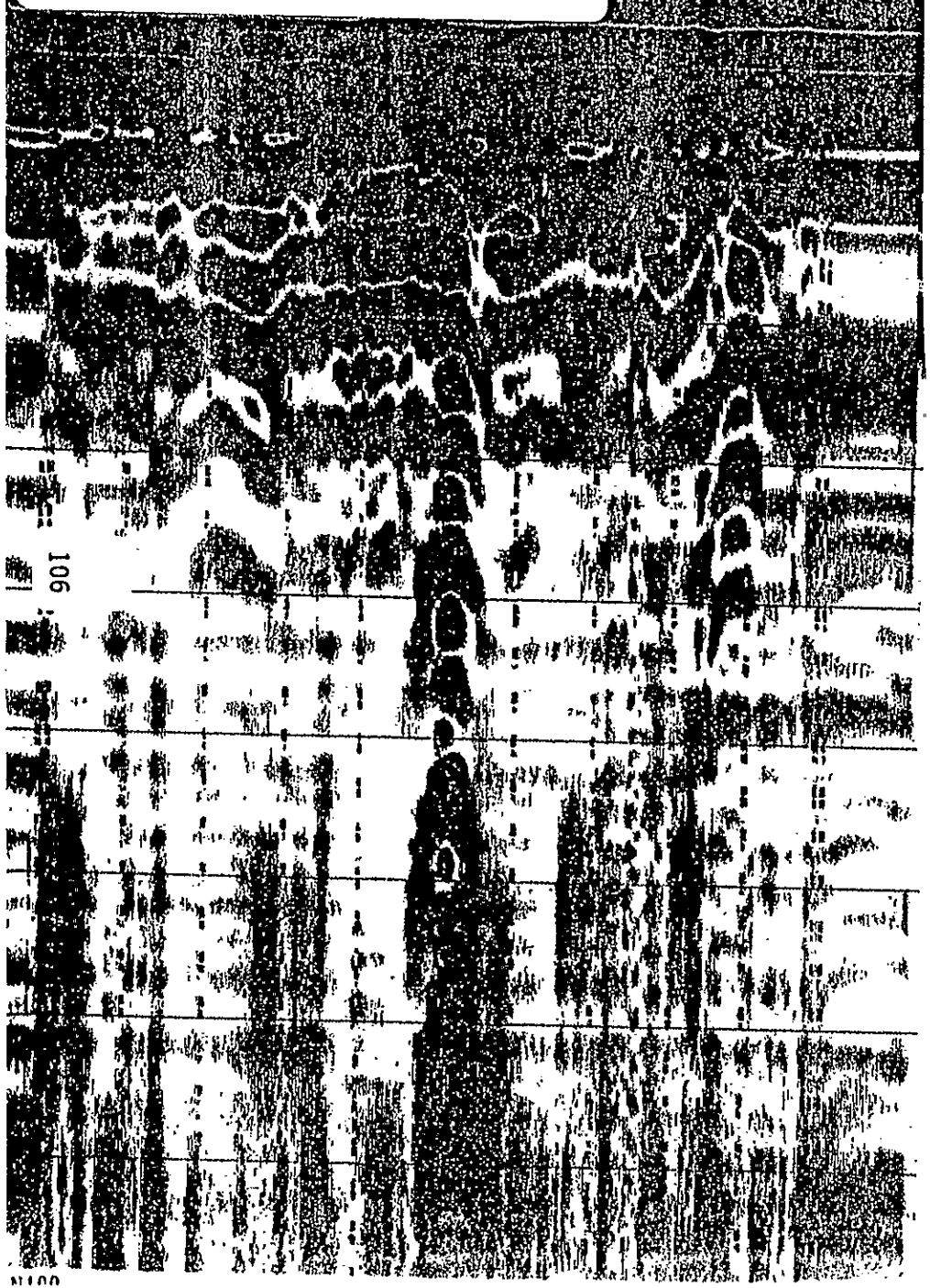

Riverland, ERA;(Anti-Aircraft)
Site #1
E125 AUGUST 1992 90 nsec
N100 - N150


Riverland, ERA:(Anti-Aircraft)
Site #1
E120 AUGUST 1992 90 nsec
N100 - N150
N100
N125
N150

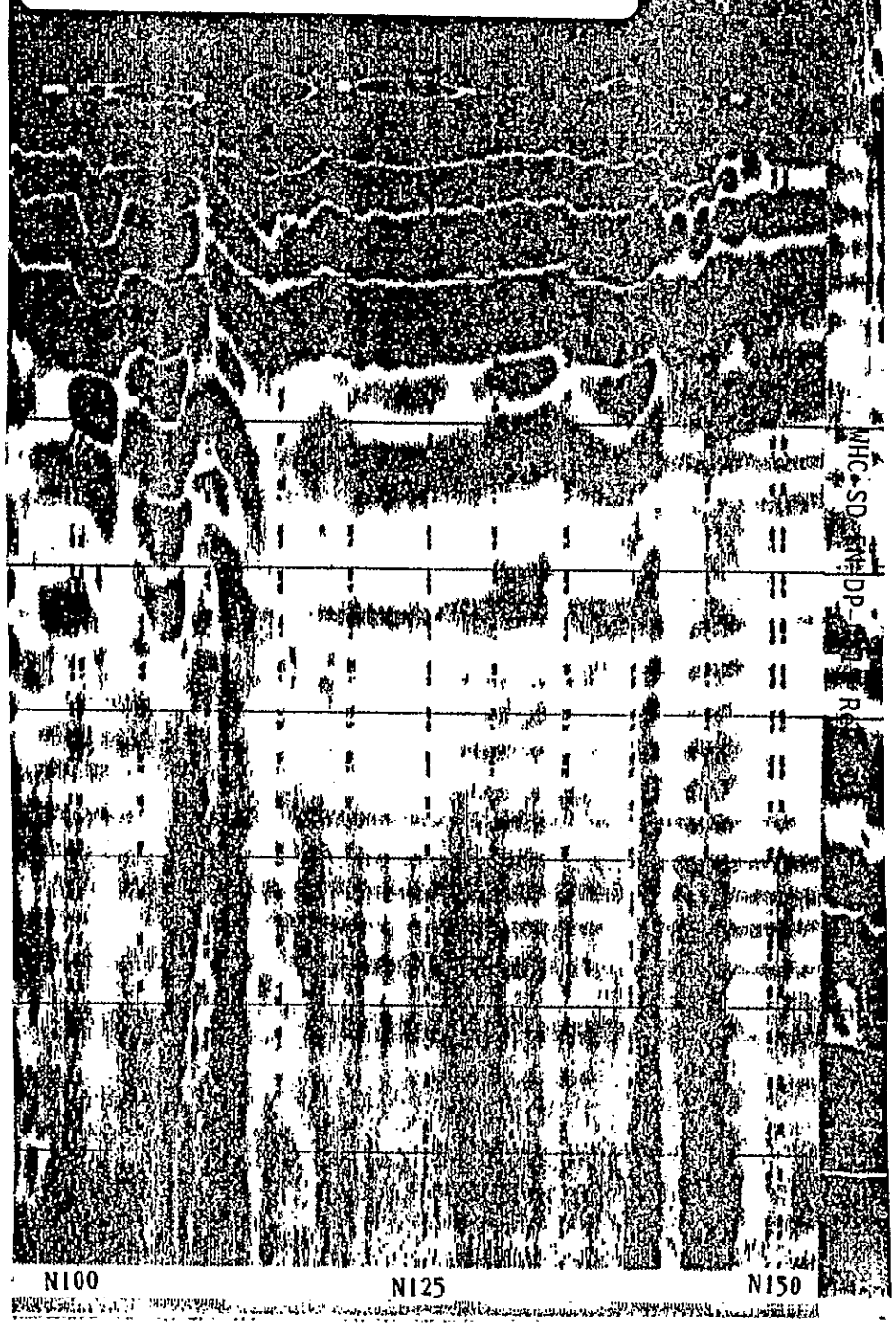

Riverland, ERA:(Anti-Aircraft)
Site #1
E115 AUGUST 1992 90 nsec
N100 - N150

9312975.0820

Riverland, ERA;(Anti-Aircraft)
Site #1
E105 AUGUST 1992 90 nsec
N100 - N150

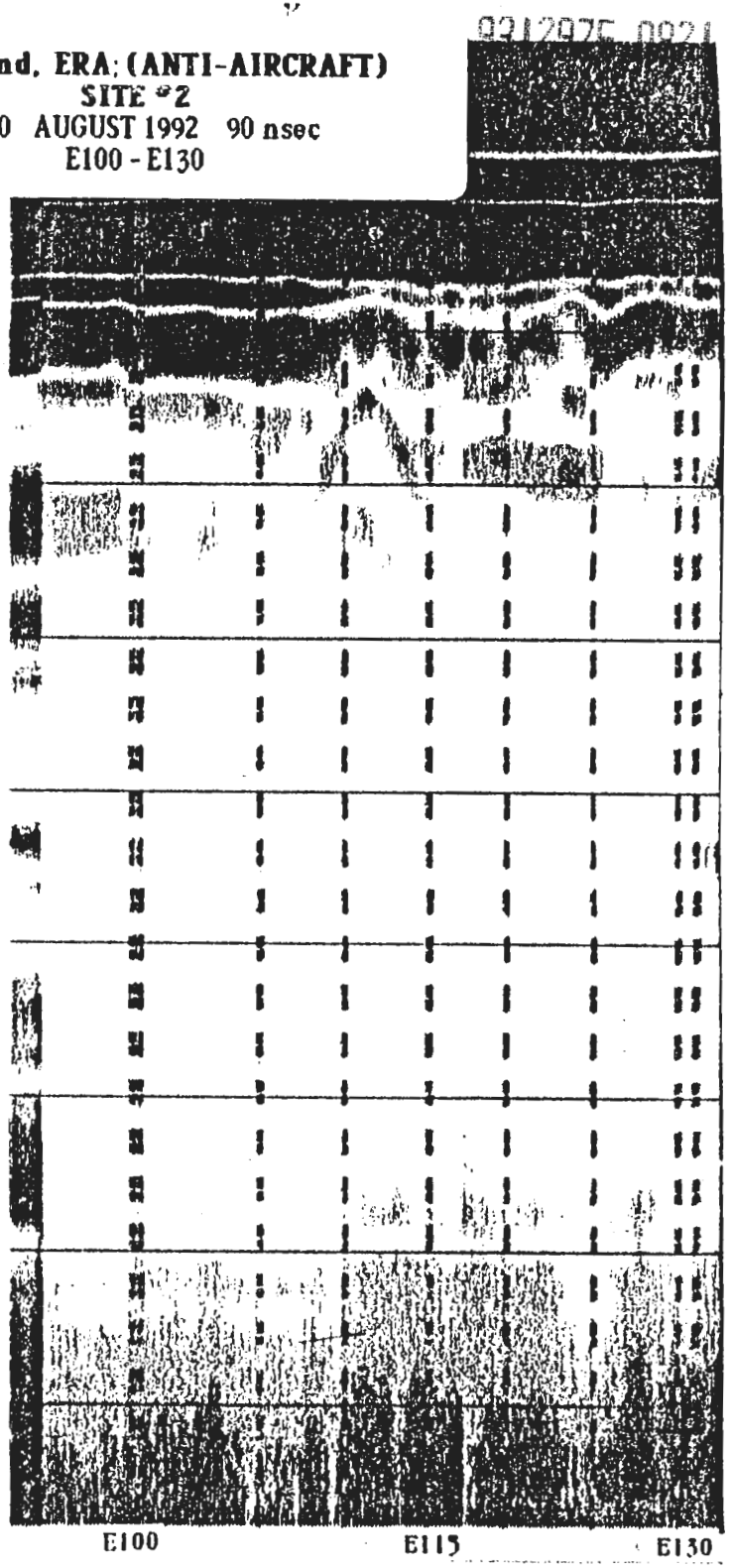


Riverland, ERA;(Anti-Aircraft)
Site #1
E110 AUGUST 1992 90 nsec
N100 - N150

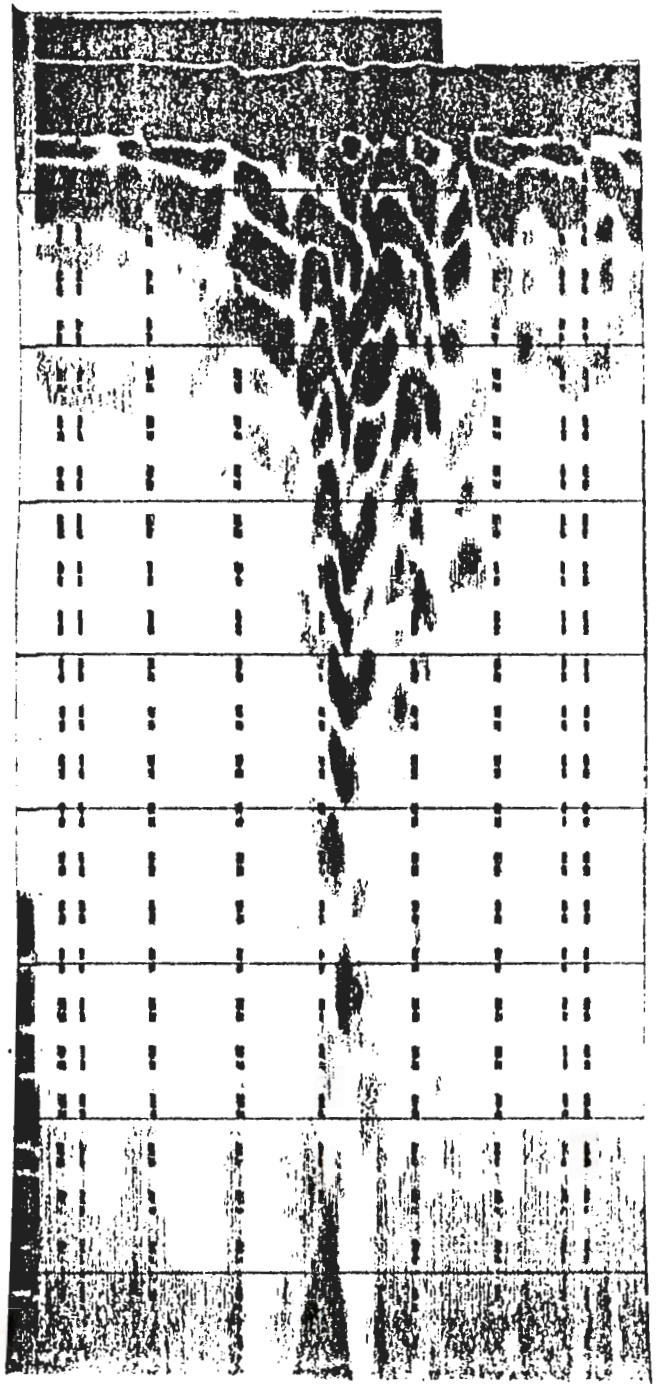


WHC-SD-EN-DP-

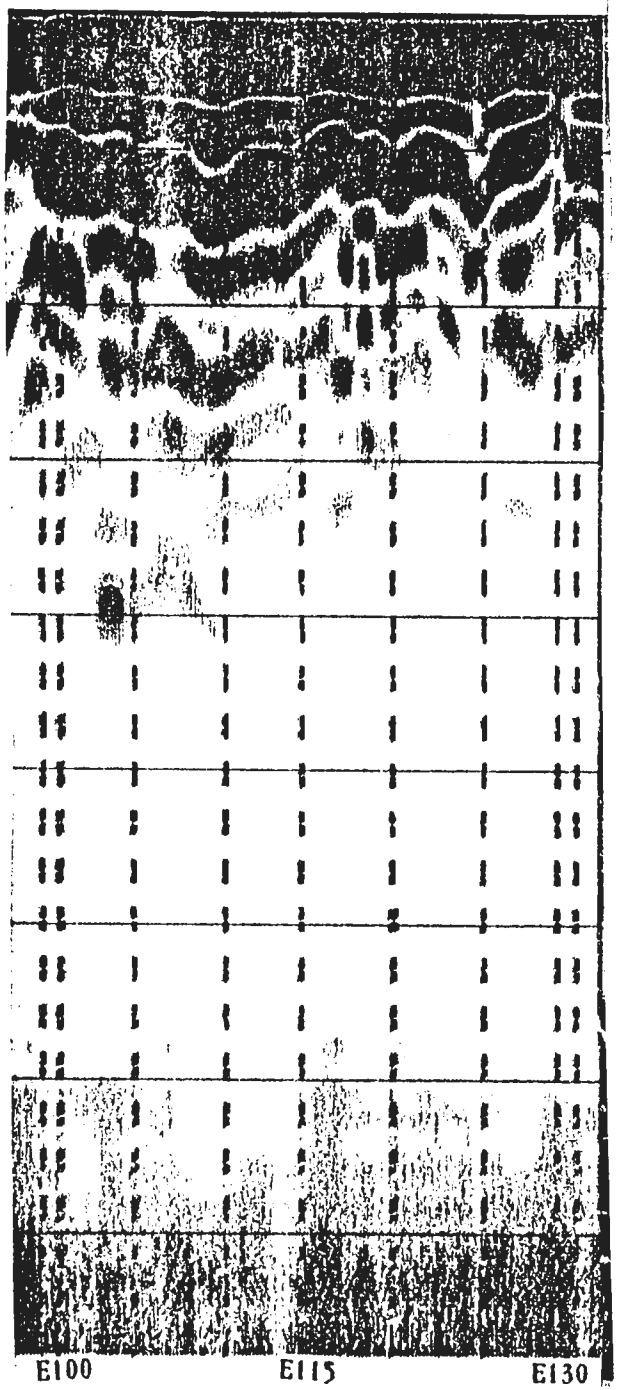
Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N100 AUGUST 1992 90 nsec
E100 - E130



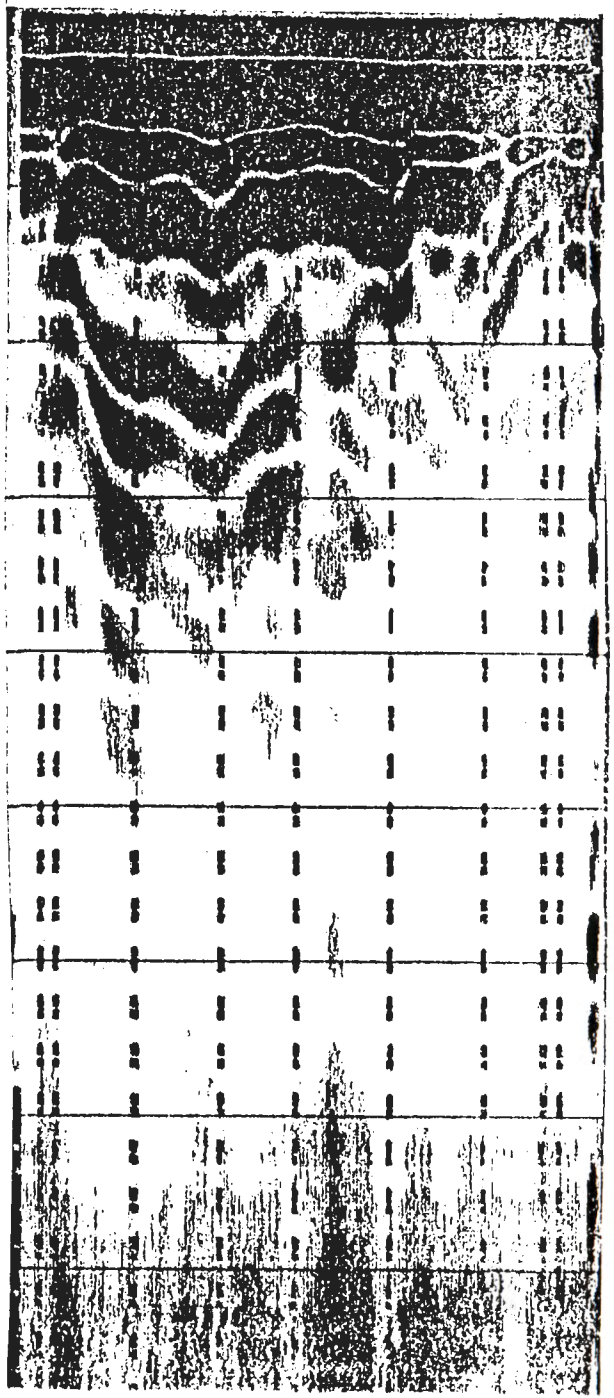
Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N105 AUGUST 1992 90 nsec
E100 - E130



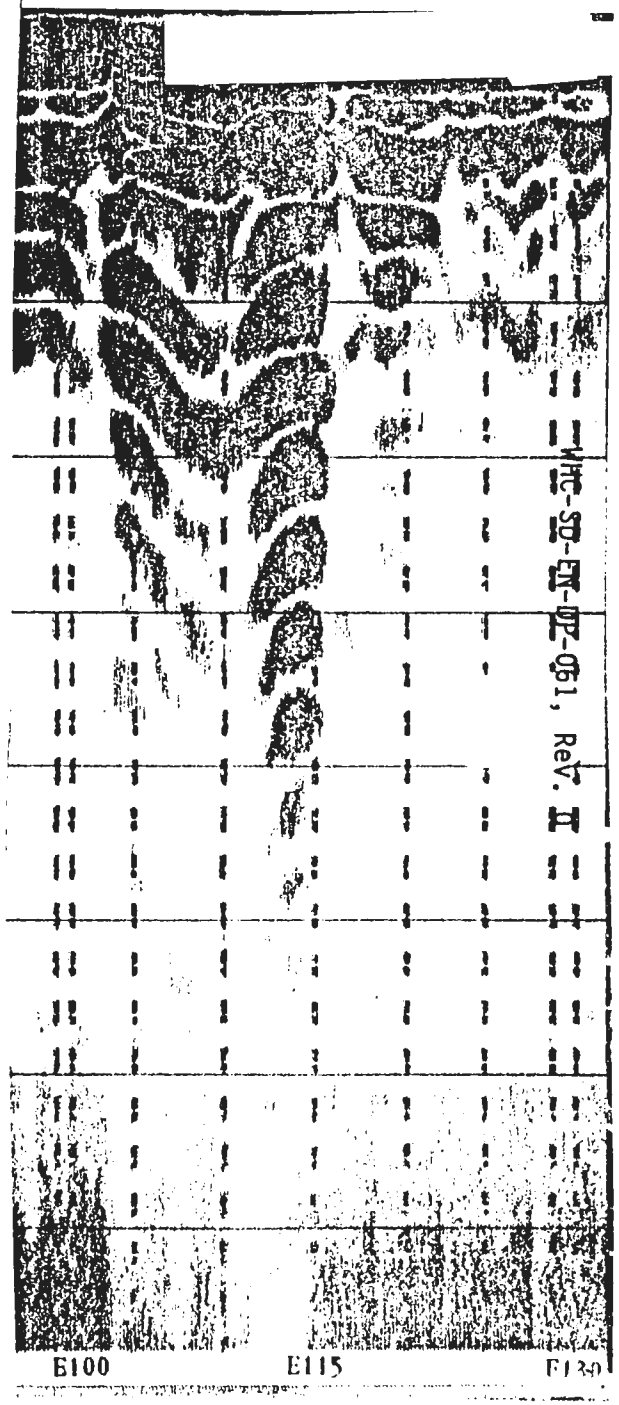
Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N120 AUGUST 1992 90 nsec
E100 - E130



Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N115 AUGUST 1992 90 nsec
E100 - E130

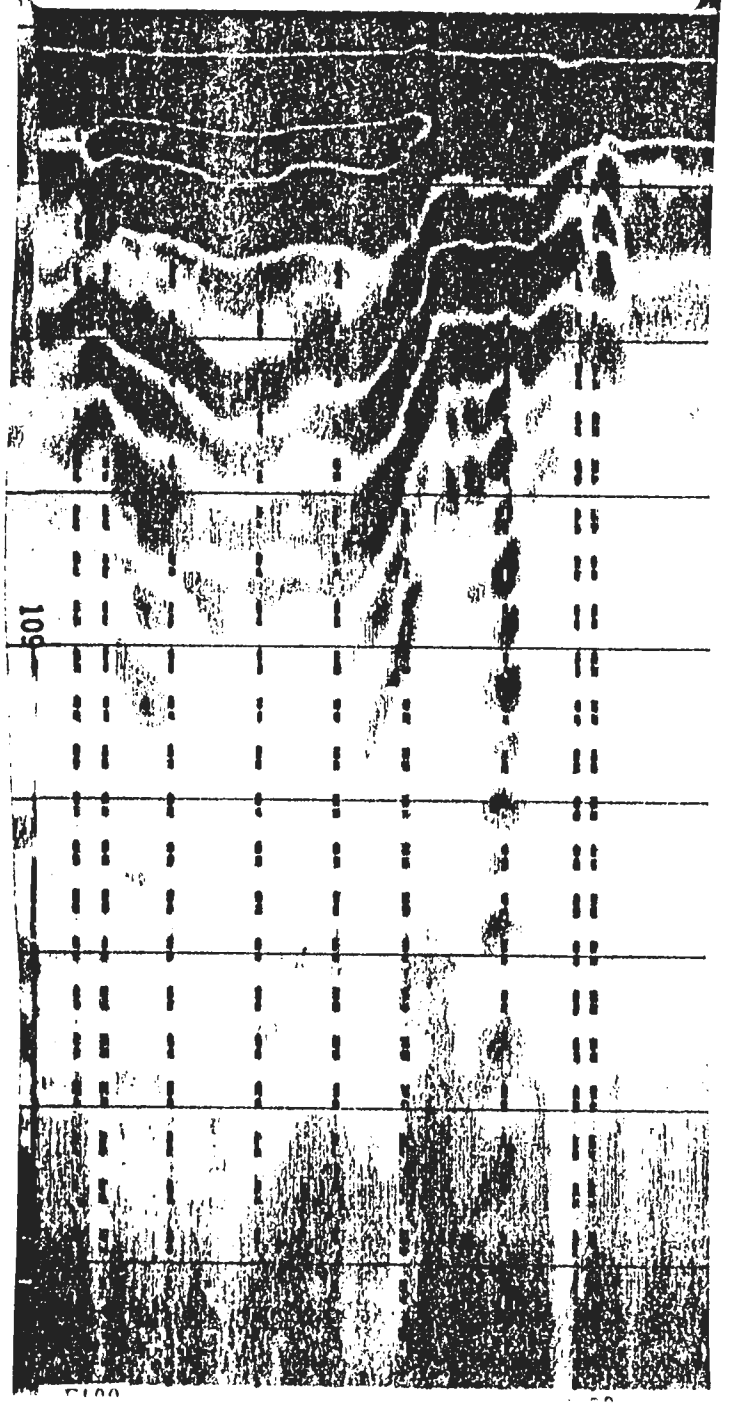


Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N110 AUGUST 1992 90 nsec
E100 - E130

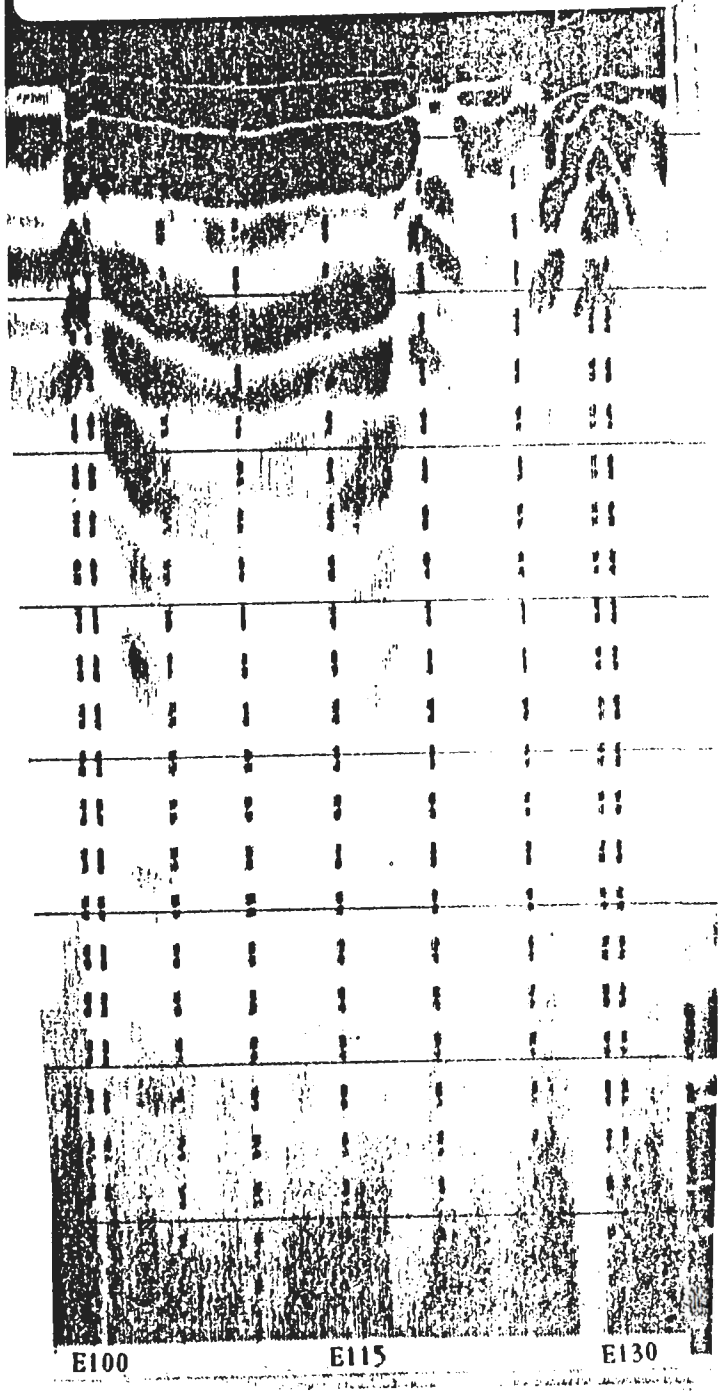


9312975.0823

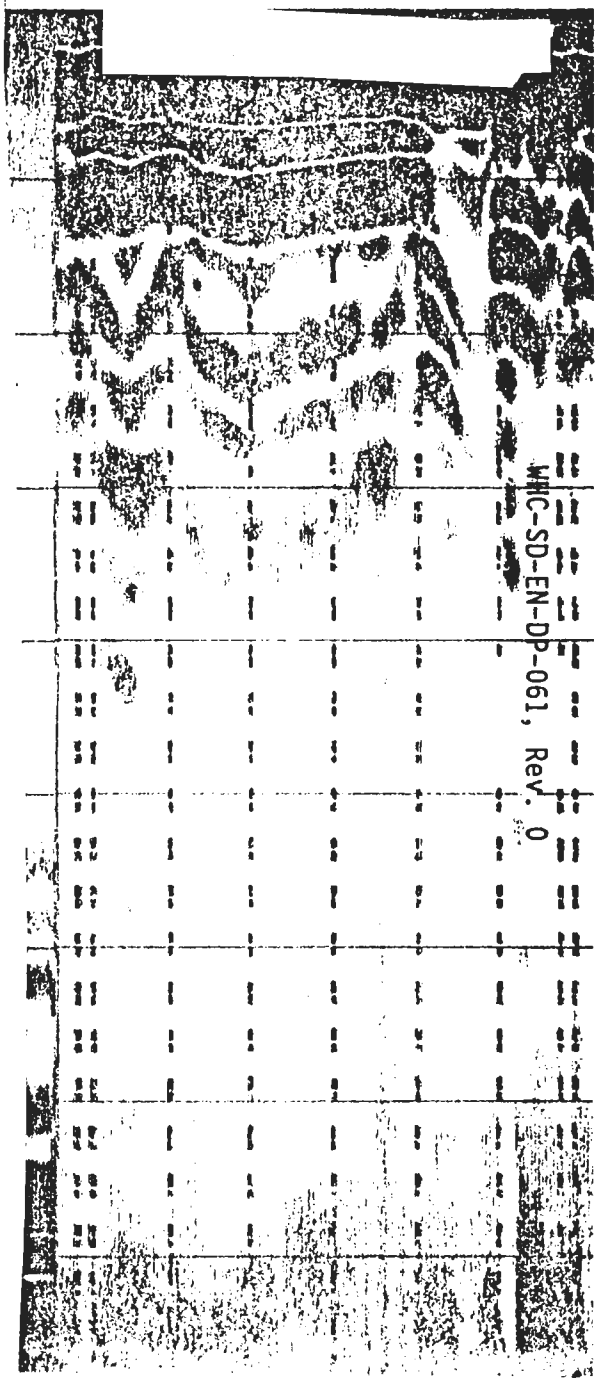
Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N135 AUGUST 1992 90 nsec
E100 - E130



Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N130 AUGUST 1992 90 nsec
E100 - E130



Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N125 AUGUST 1992 90 nsec
E100 - E130



9312976.0824

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SITE #2
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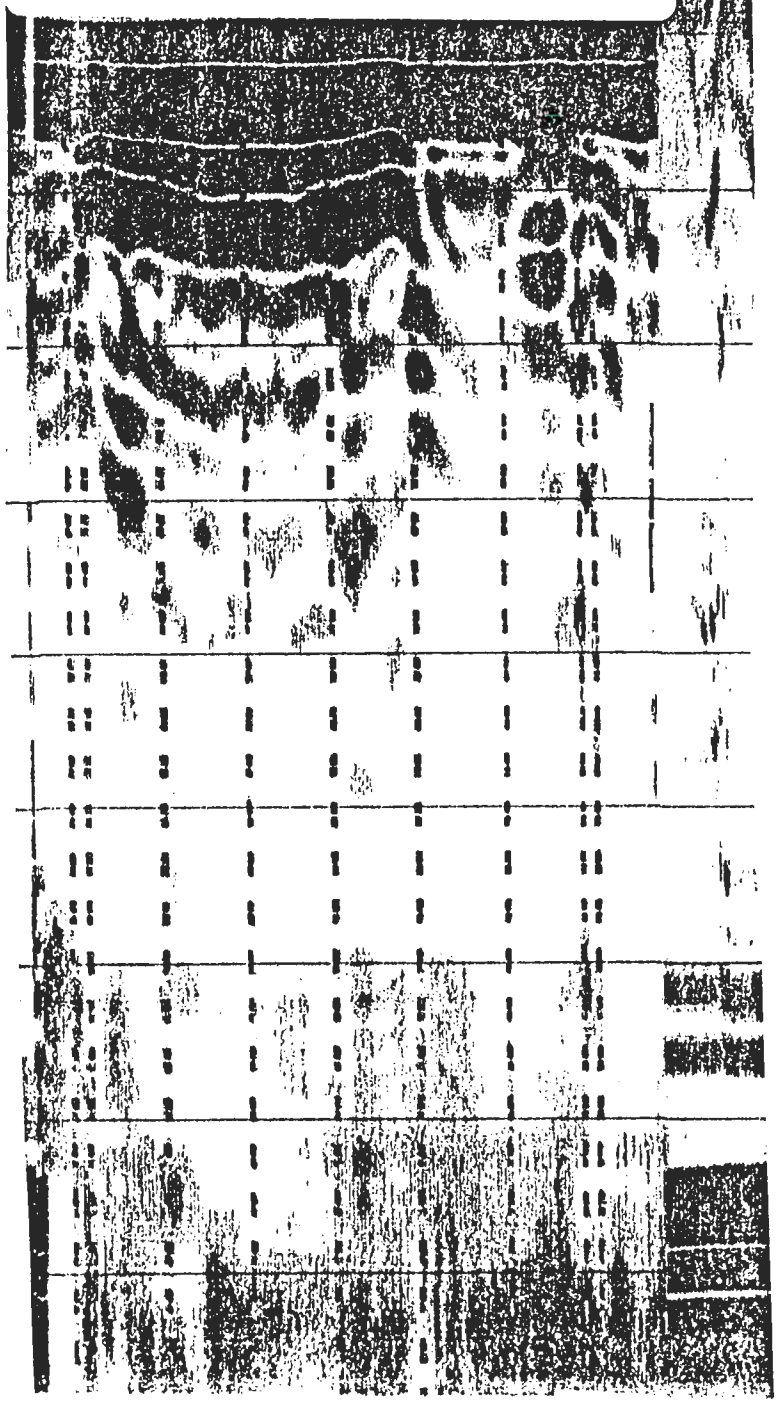
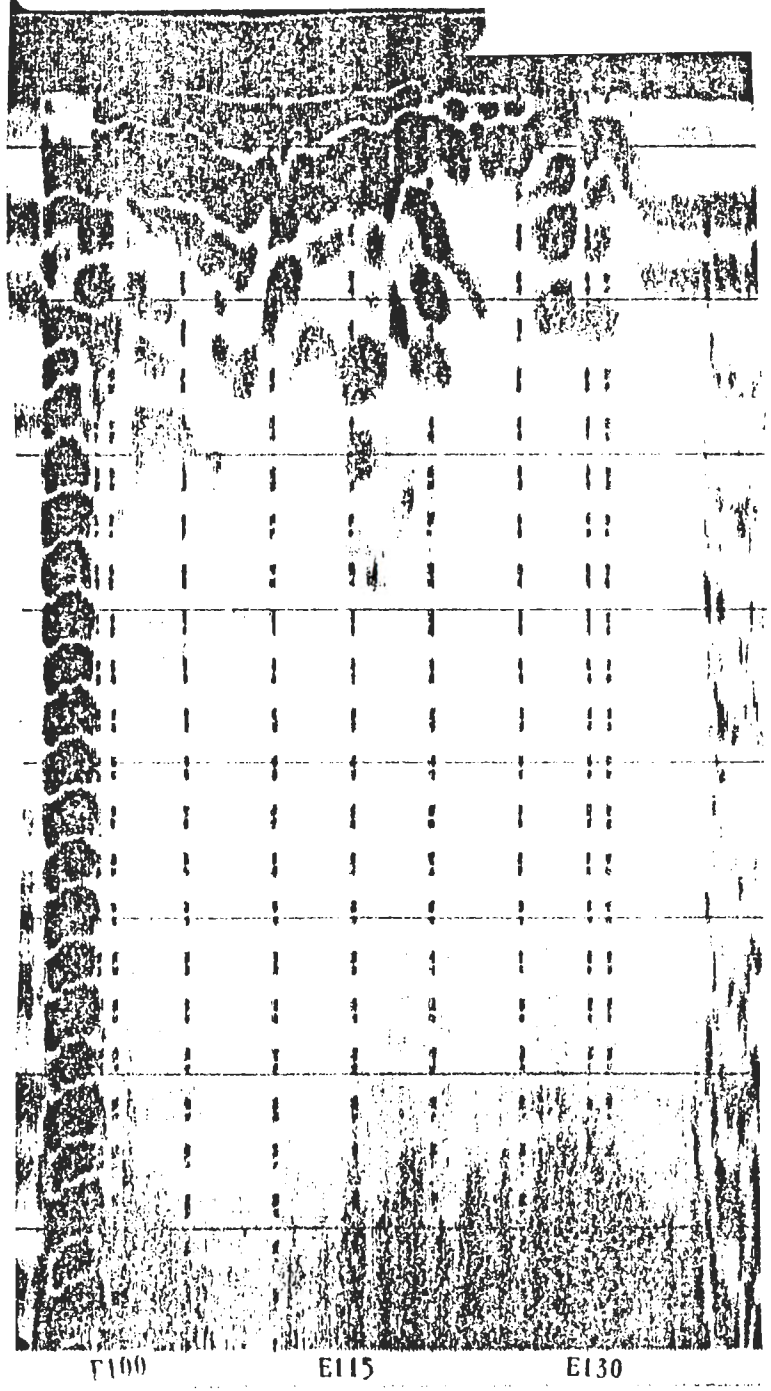
E100 - E130

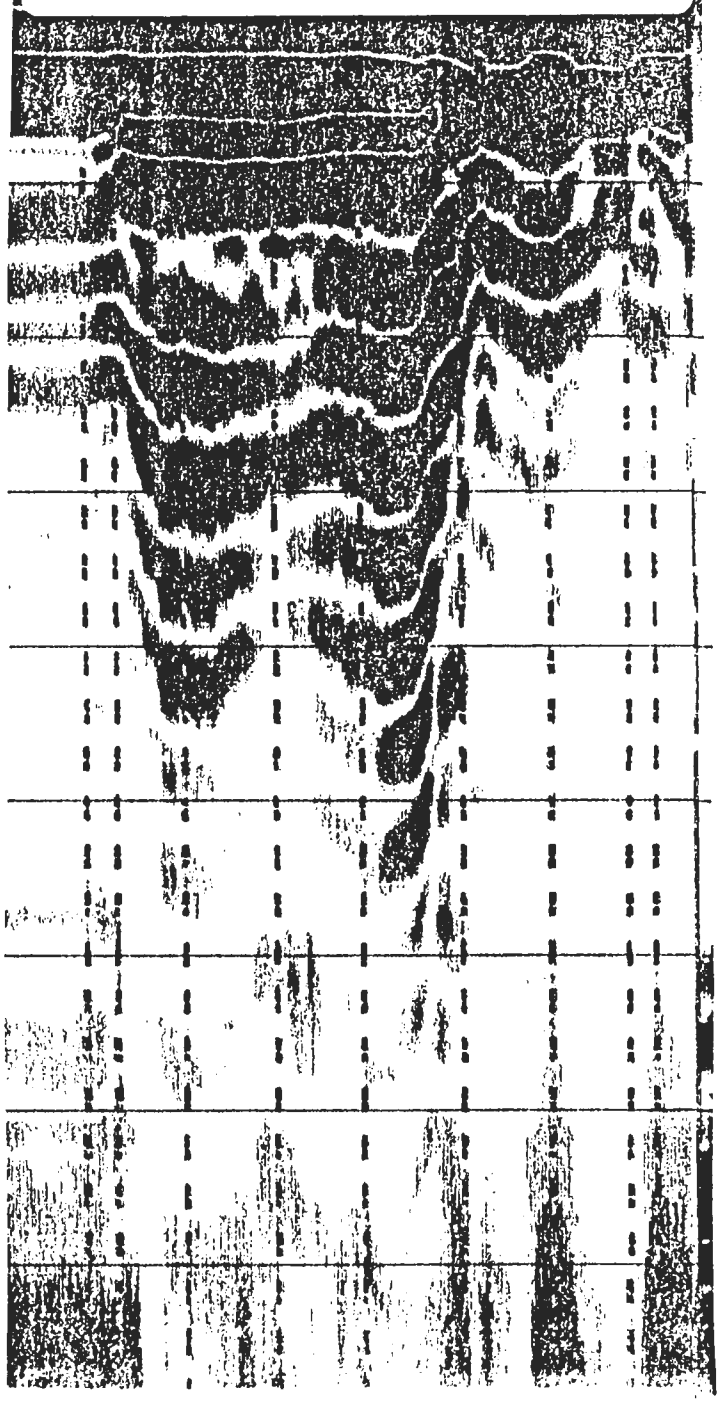


Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N140 AUGUST 1992 90 nsec
E100 - E130

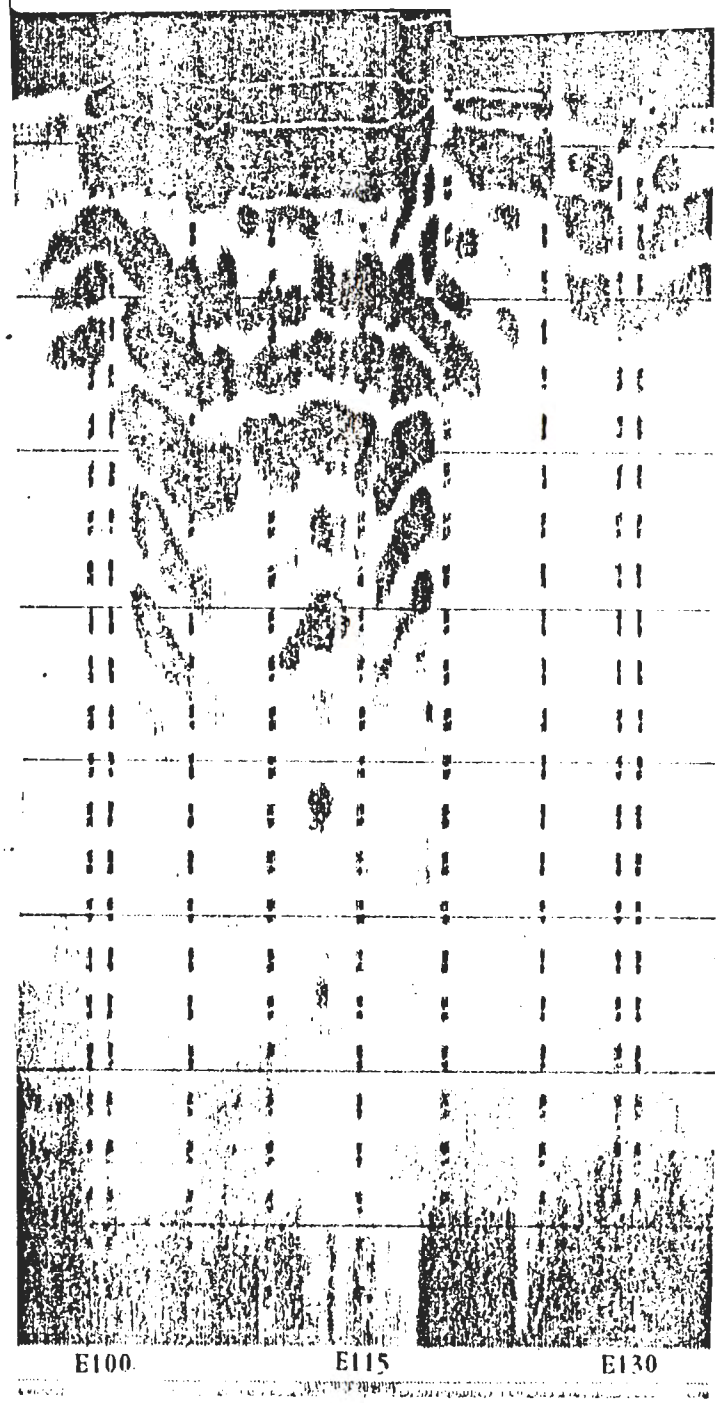


9312975.0825

Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N155 AUGUST 1992 90 nsec
E100 - E130

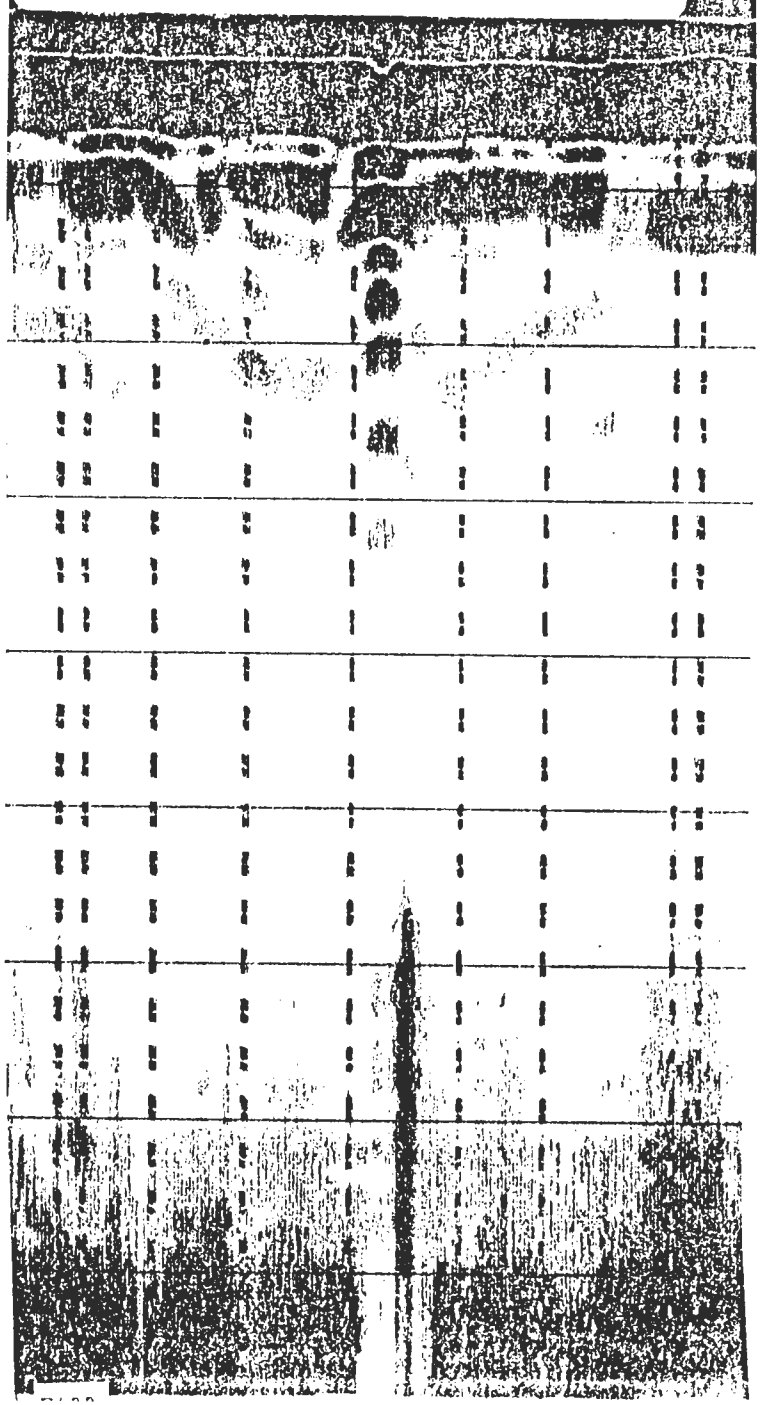


Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N150 AUGUST 1992 90 nsec
E100 - E130

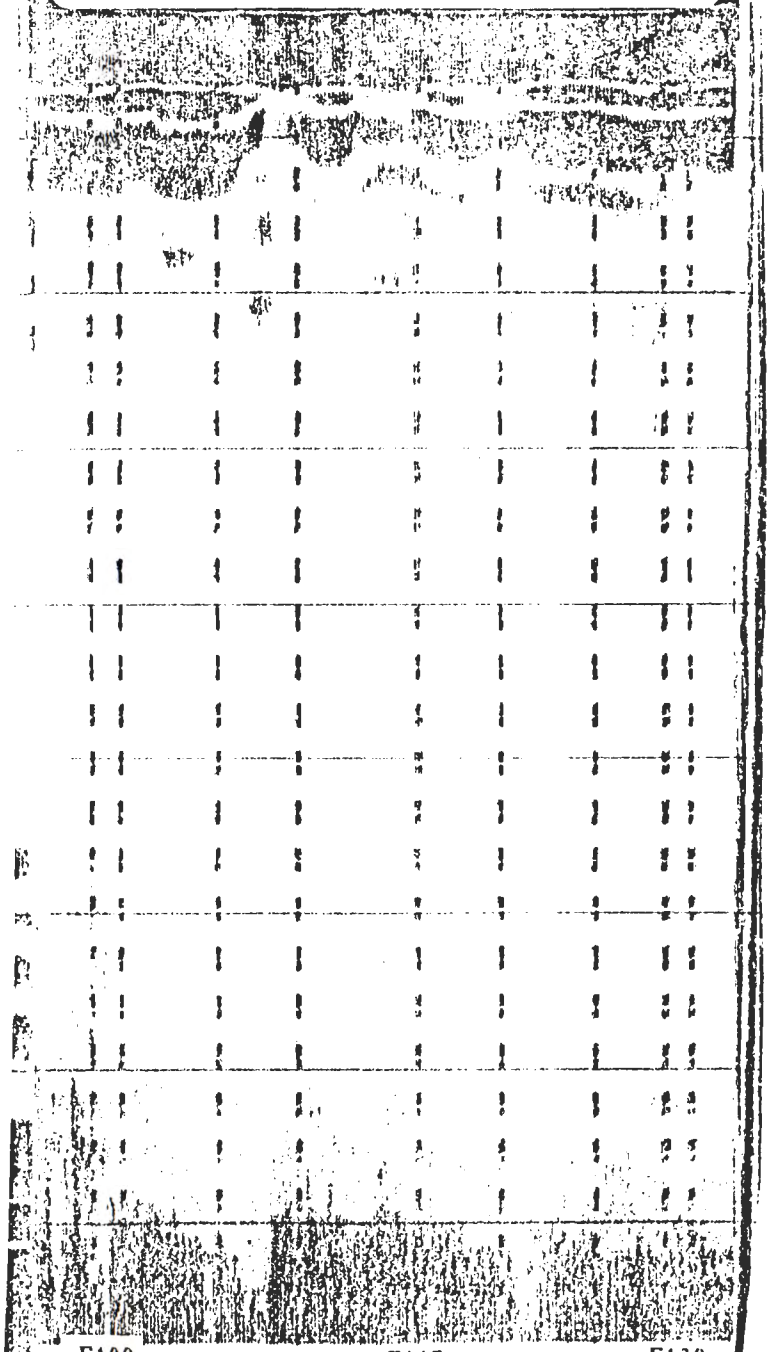


9312975.0826

Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N165 AUGUST 1992 90 nsec
E100 - E130

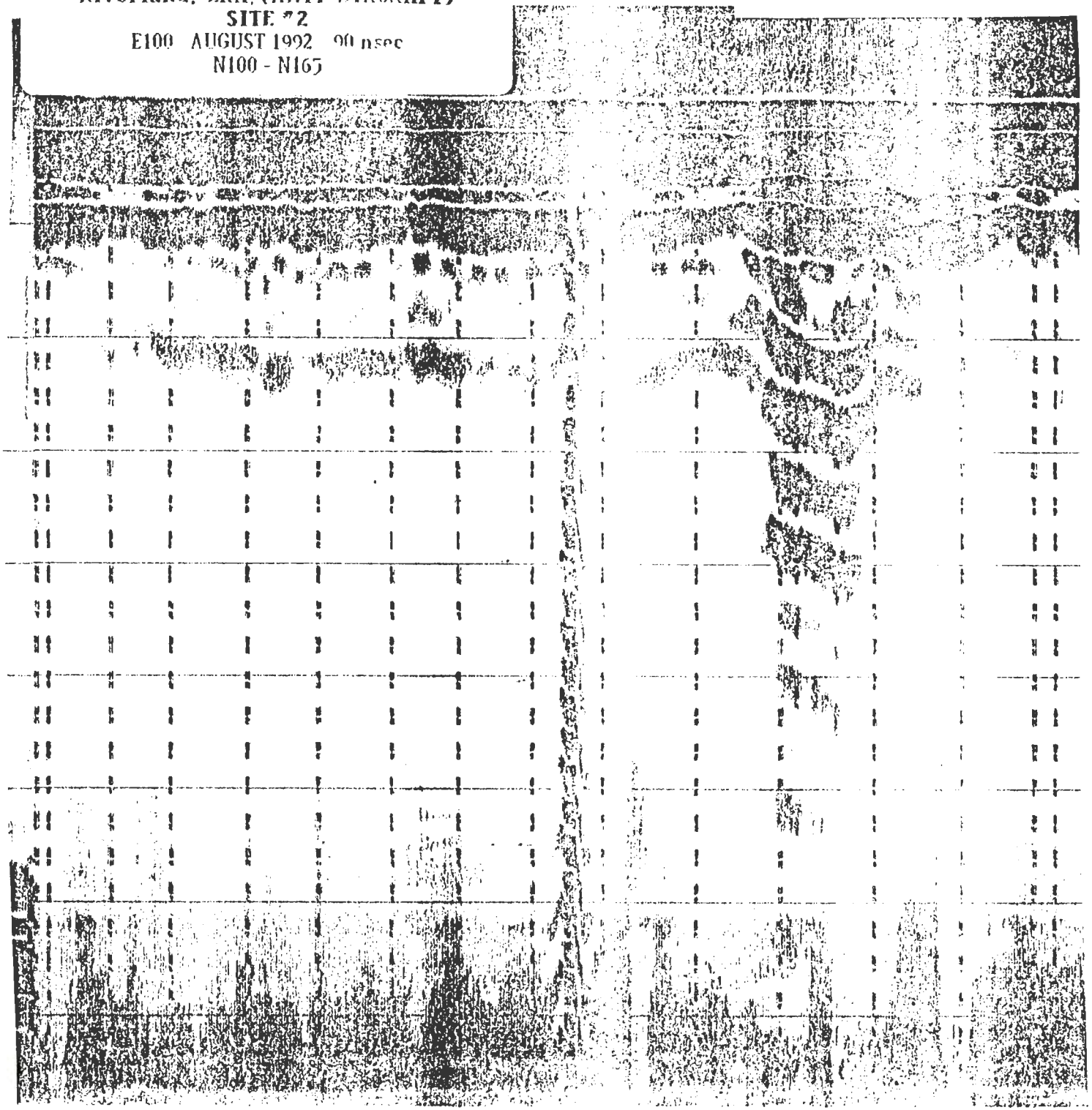


Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
N160 AUGUST 1992 90 nsec
E100 - E130

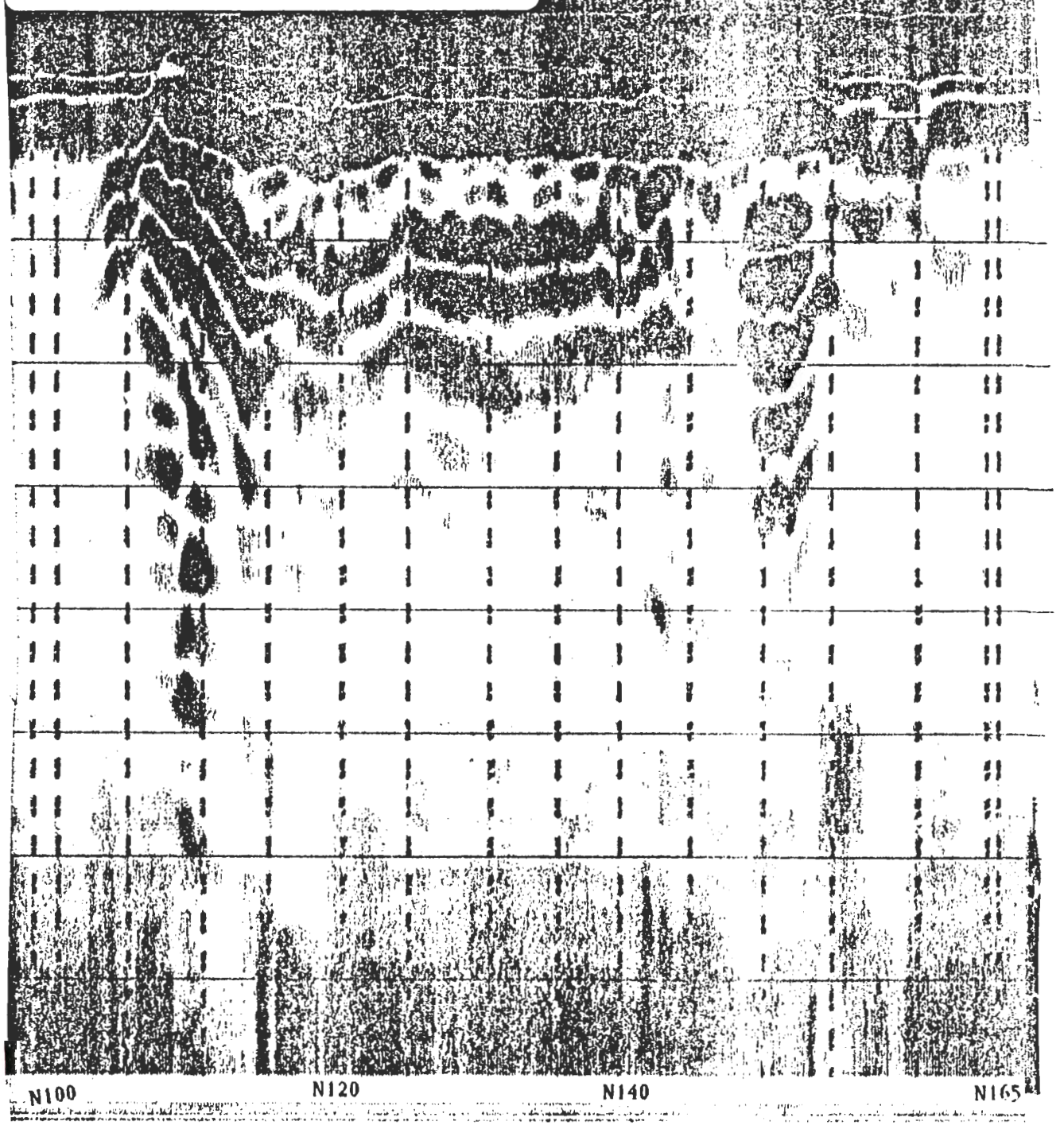


9312975.0827

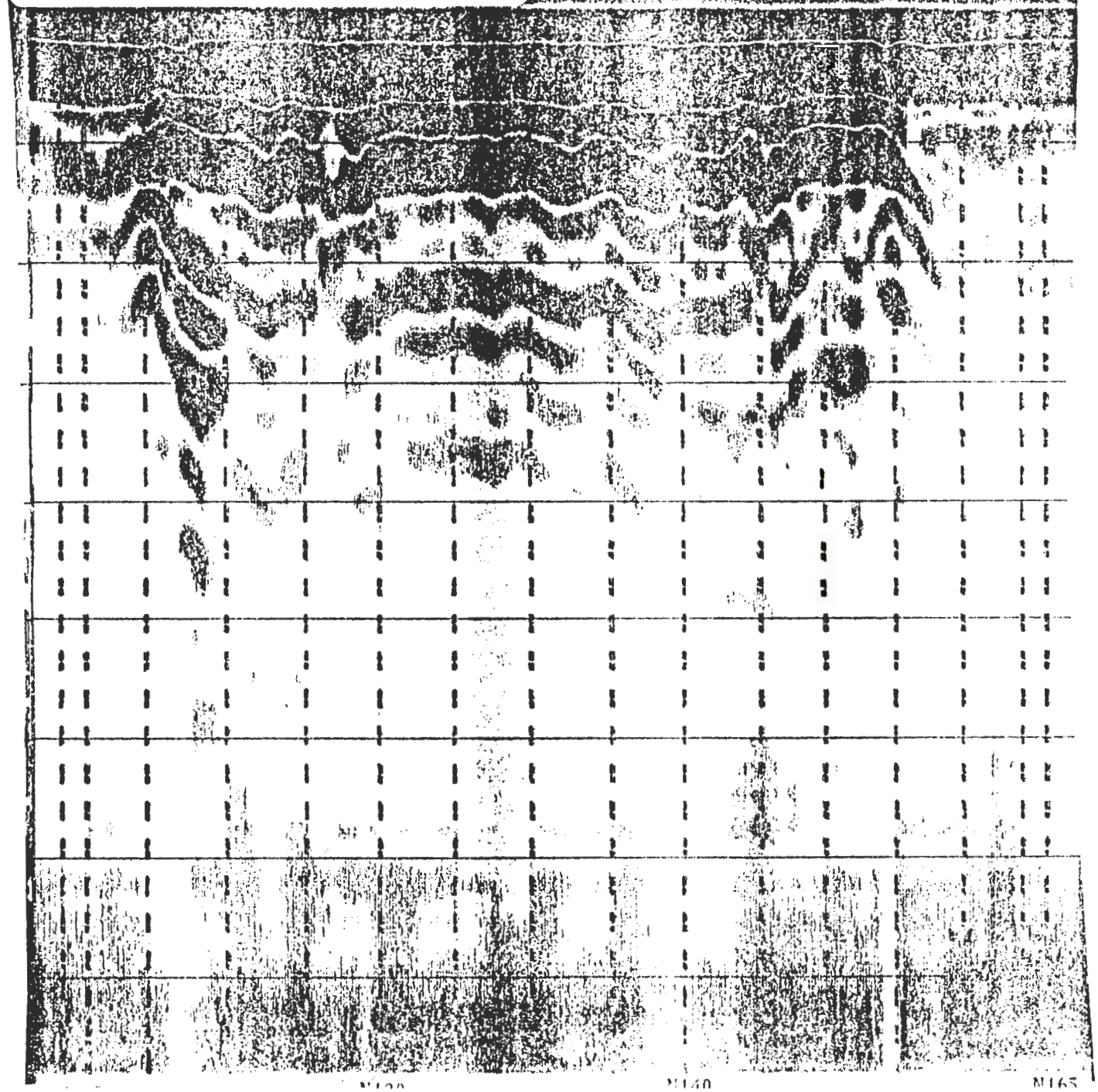
Riverland, ERA (ANTI-AIRCRAFT)
SITE #2
E100 AUGUST 1992 90 nsec
N100 - N165



Riverland, ERA (ANTI-AIRCRAFT)
SITE #2
E105 AUGUST 1992 90 nsec
N100 - N165

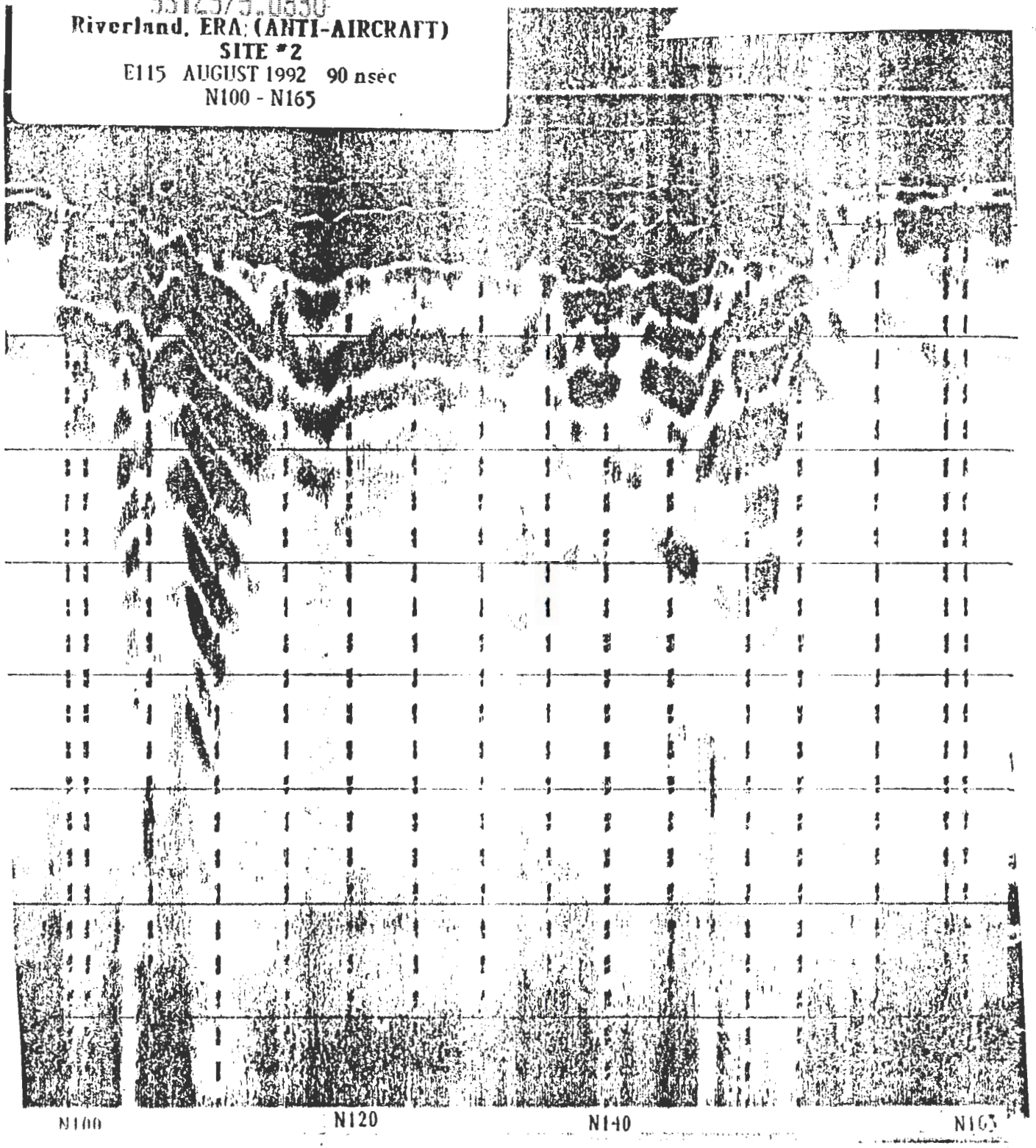


Riverland, ERA; (ANTI-AIRCRAFT)
SITE #2
E110 AUGUST 1992 90 nsec
N100 - N165



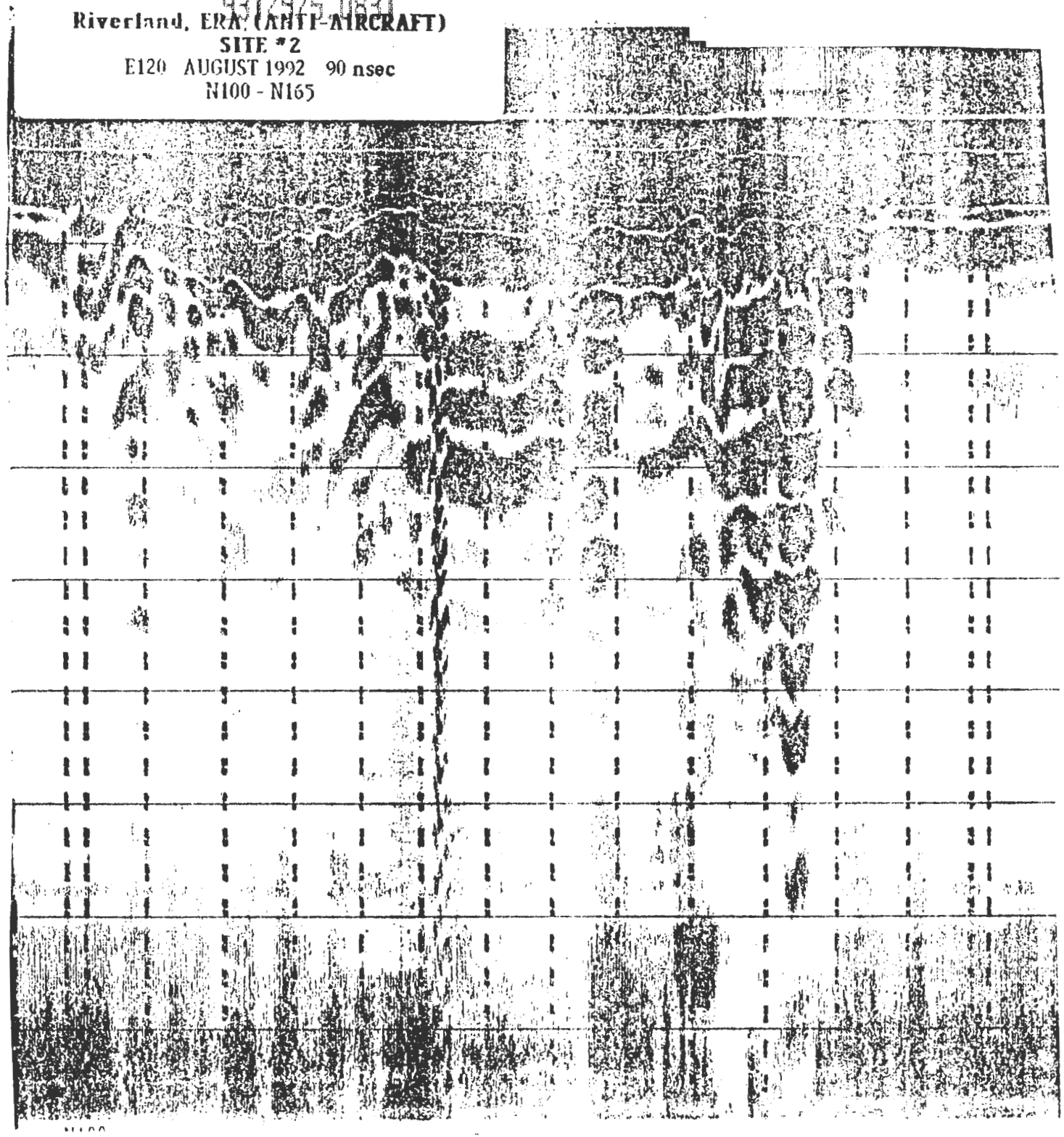
9312975.0830

Riverland, ERA (ANTI-AIRCRAFT)
SITE #2
E115 AUGUST 1992 90 nsec
N100 - N165



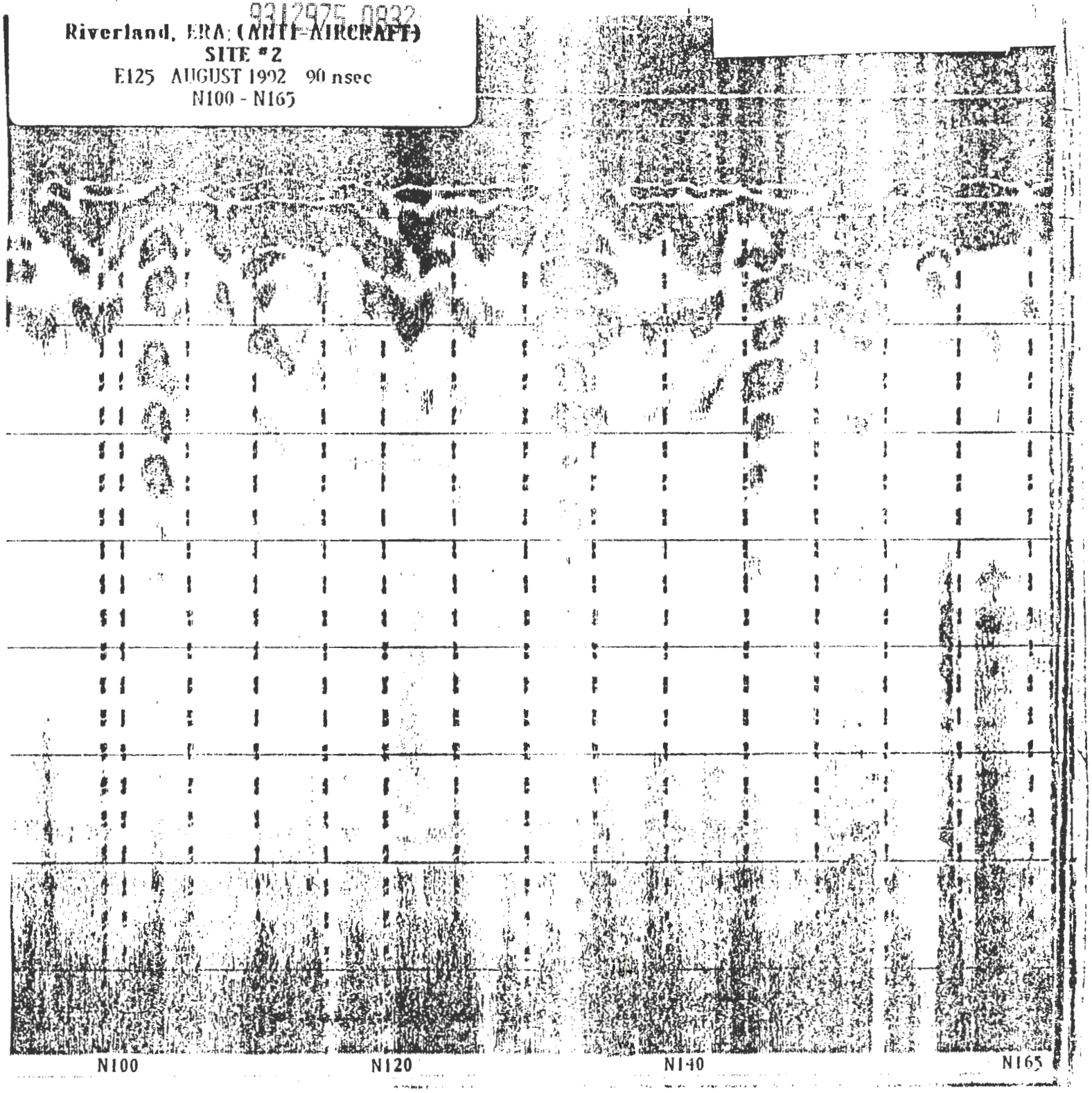
9312975.0831

Riverland, ERA (ANTI-AIRCRAFT)
SITE #2
E120 AUGUST 1992 90 nsec
N100 - N165

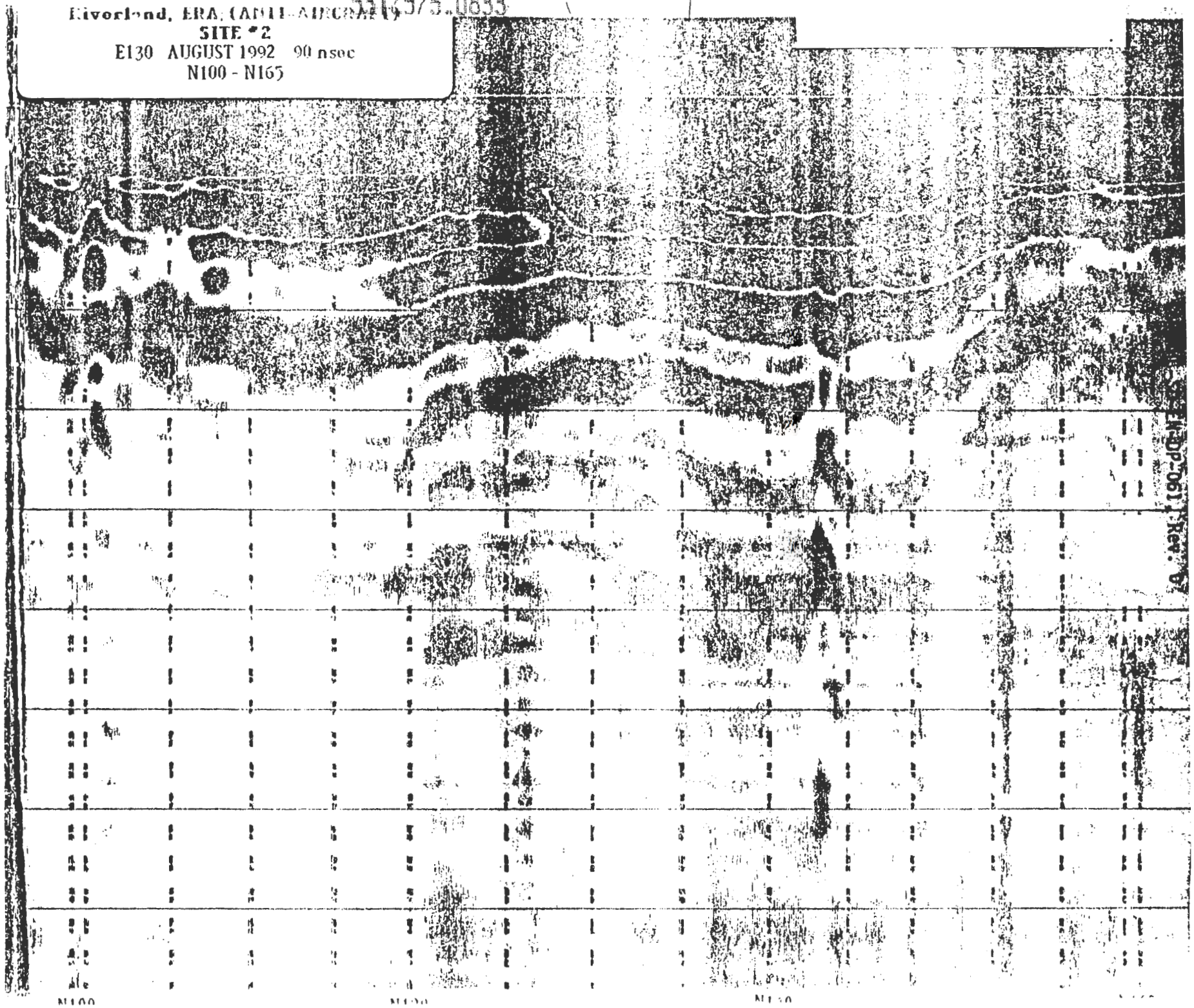


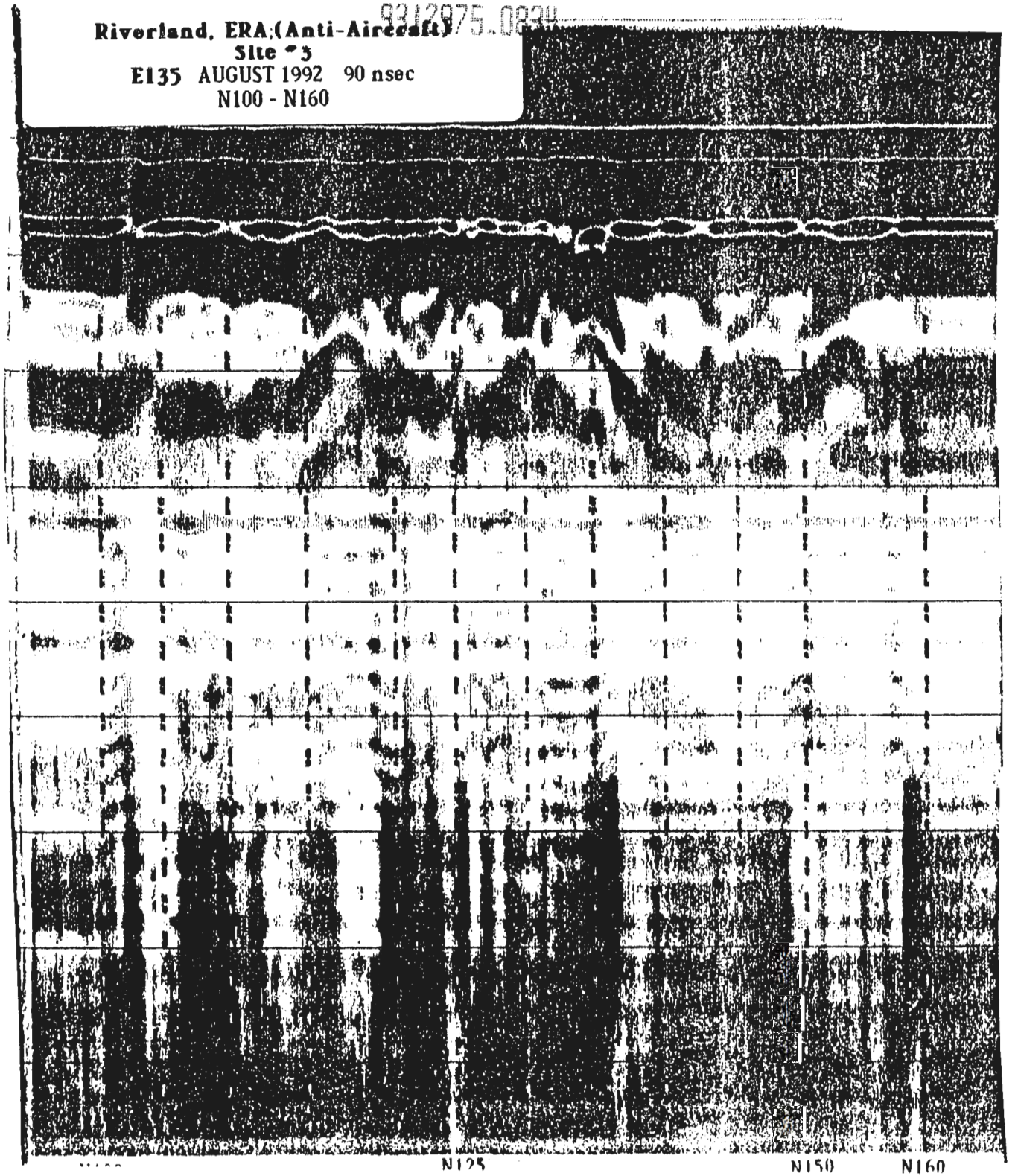
9312975.0832

Riverland, ERA: (ANTI-AIRCRAFT)
SITE #2
E125 AUGUST 1992 90 nsec
N100 - N165



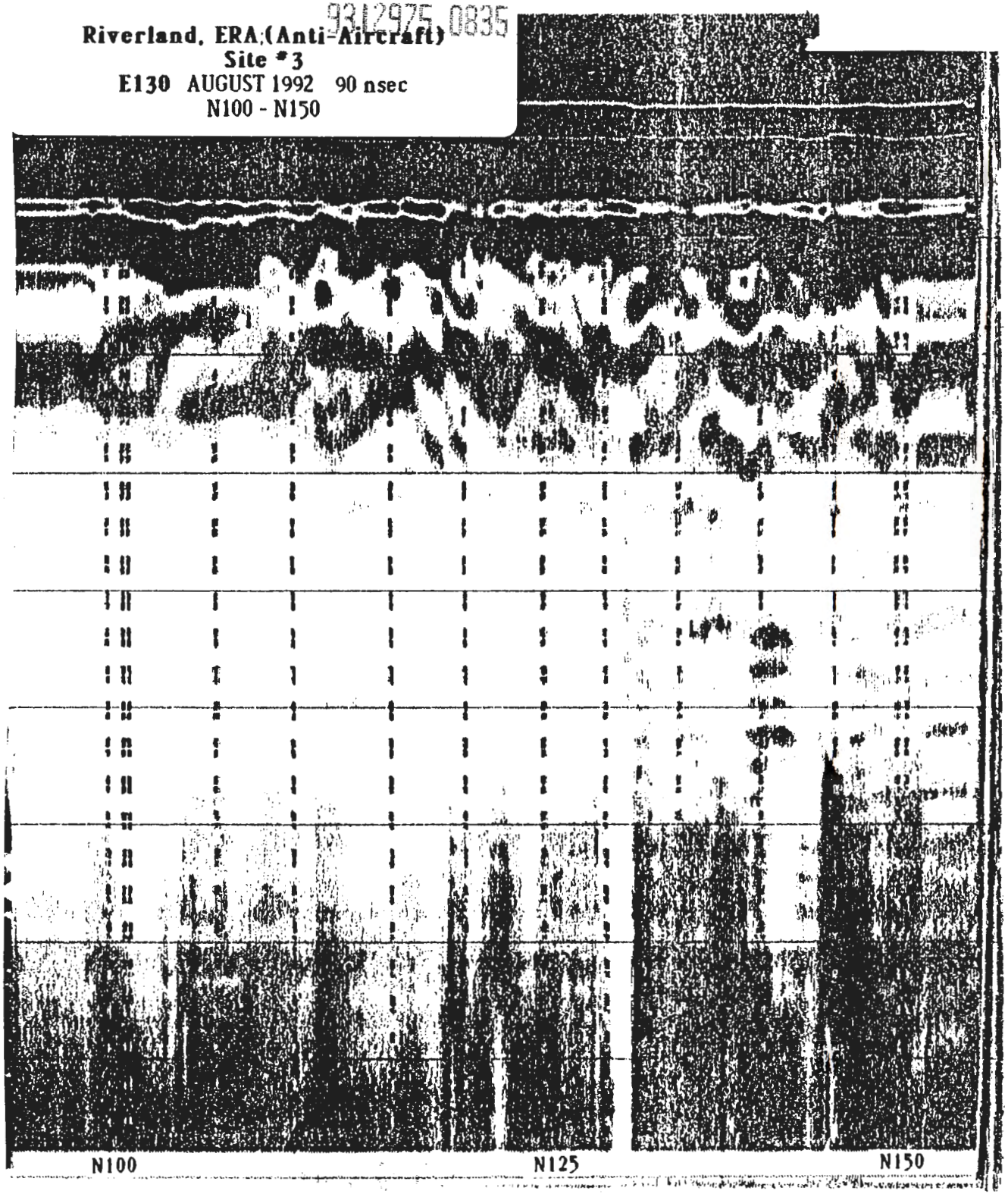
Riverland, ERA, (ANTI-AIRCRAFT)
SITE #2
E130 AUGUST 1992 90 nsec
N100 - N165




9312975.0839
Riverland, ERA (Anti-Aircraft)
Site #3
E135 AUGUST 1992 90 nsec
N100 - N160
N125
N150
N160

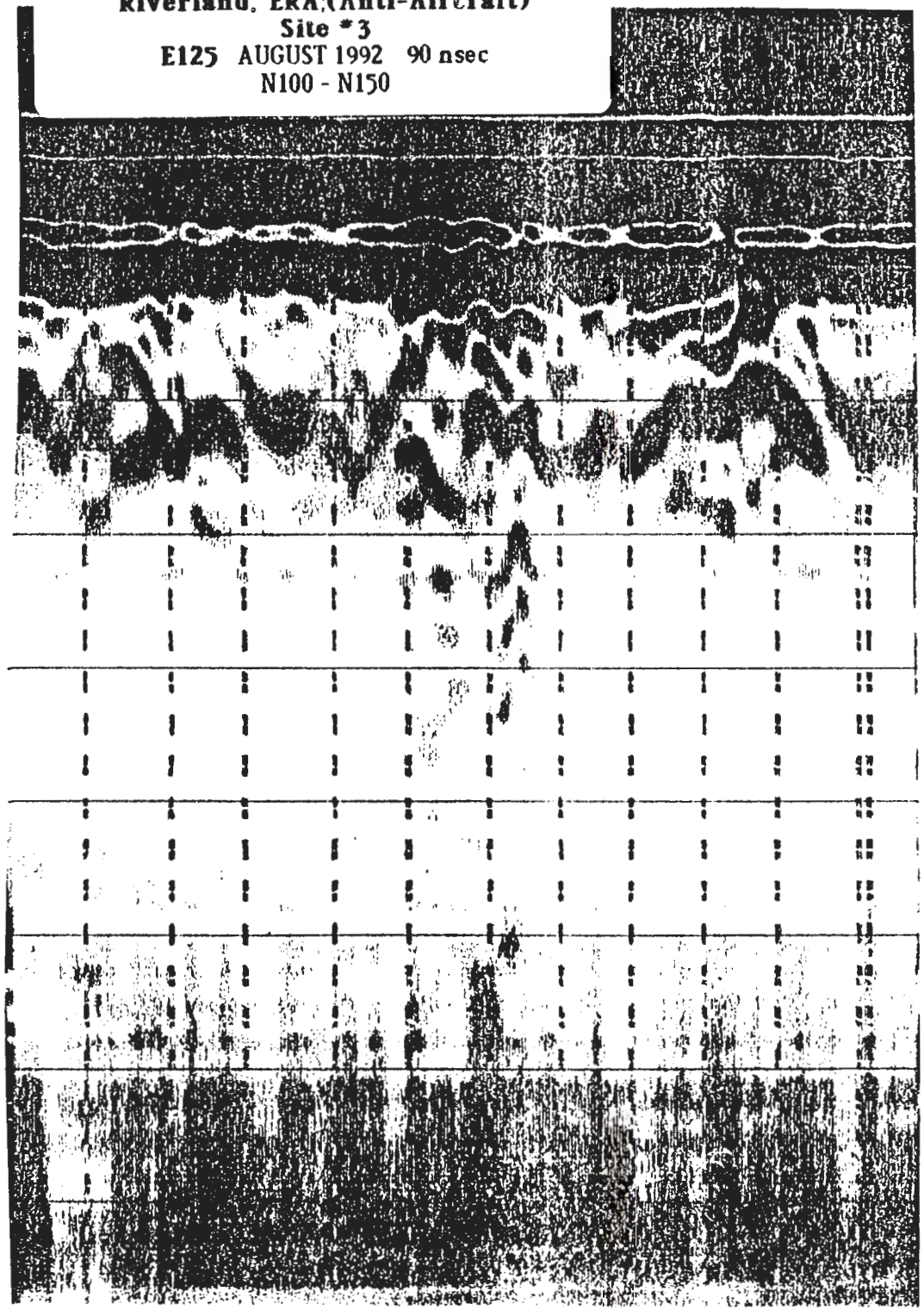
9312975.0835

Riverland, ERA (Anti-Aircraft)
Site #3
E130 AUGUST 1992 90 nsec
N100 - N150



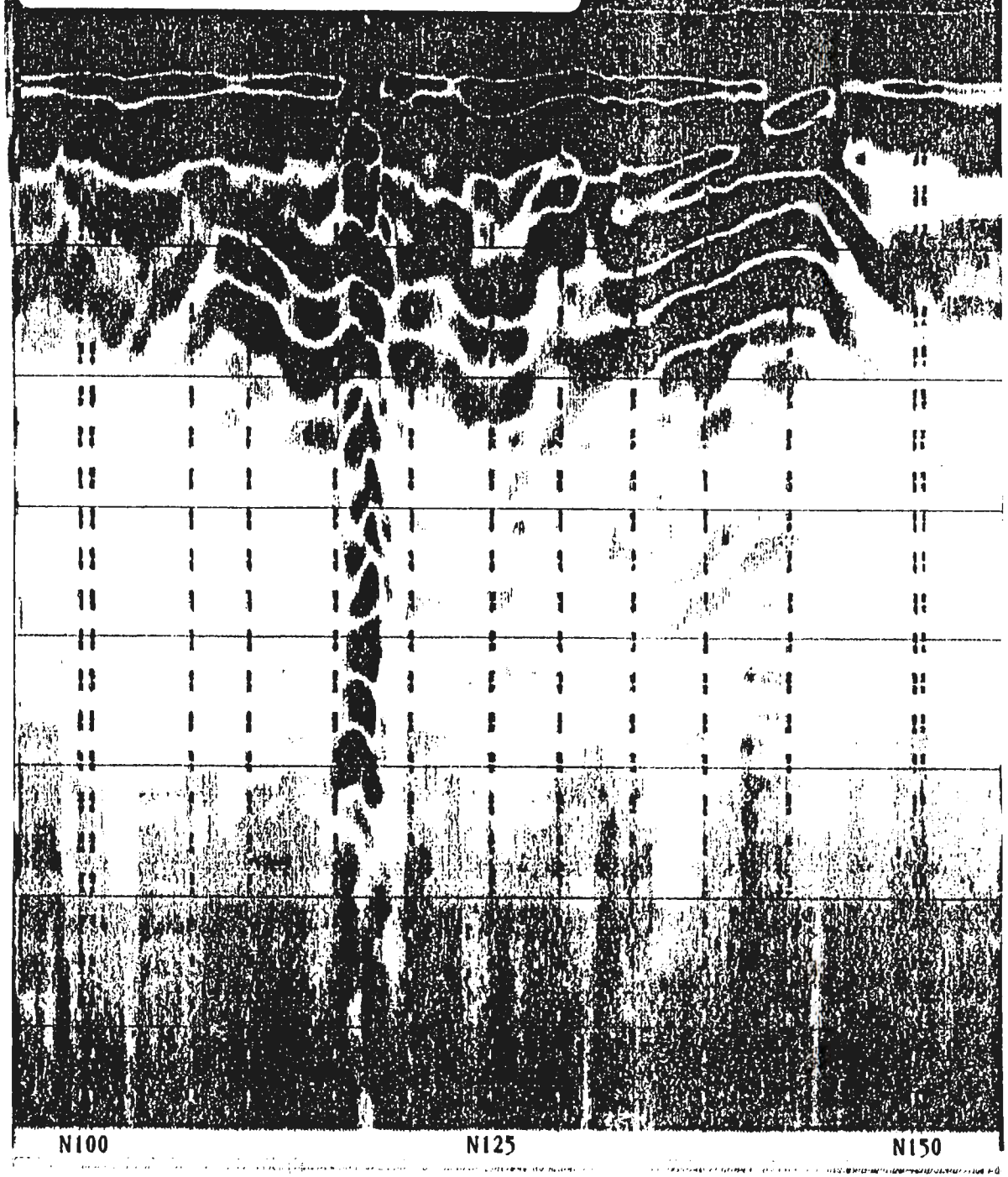
9312975.0836

Riverland, ERA (Anti-Aircraft)
Site #3
E125 AUGUST 1992 90 nsec
N100 - N150

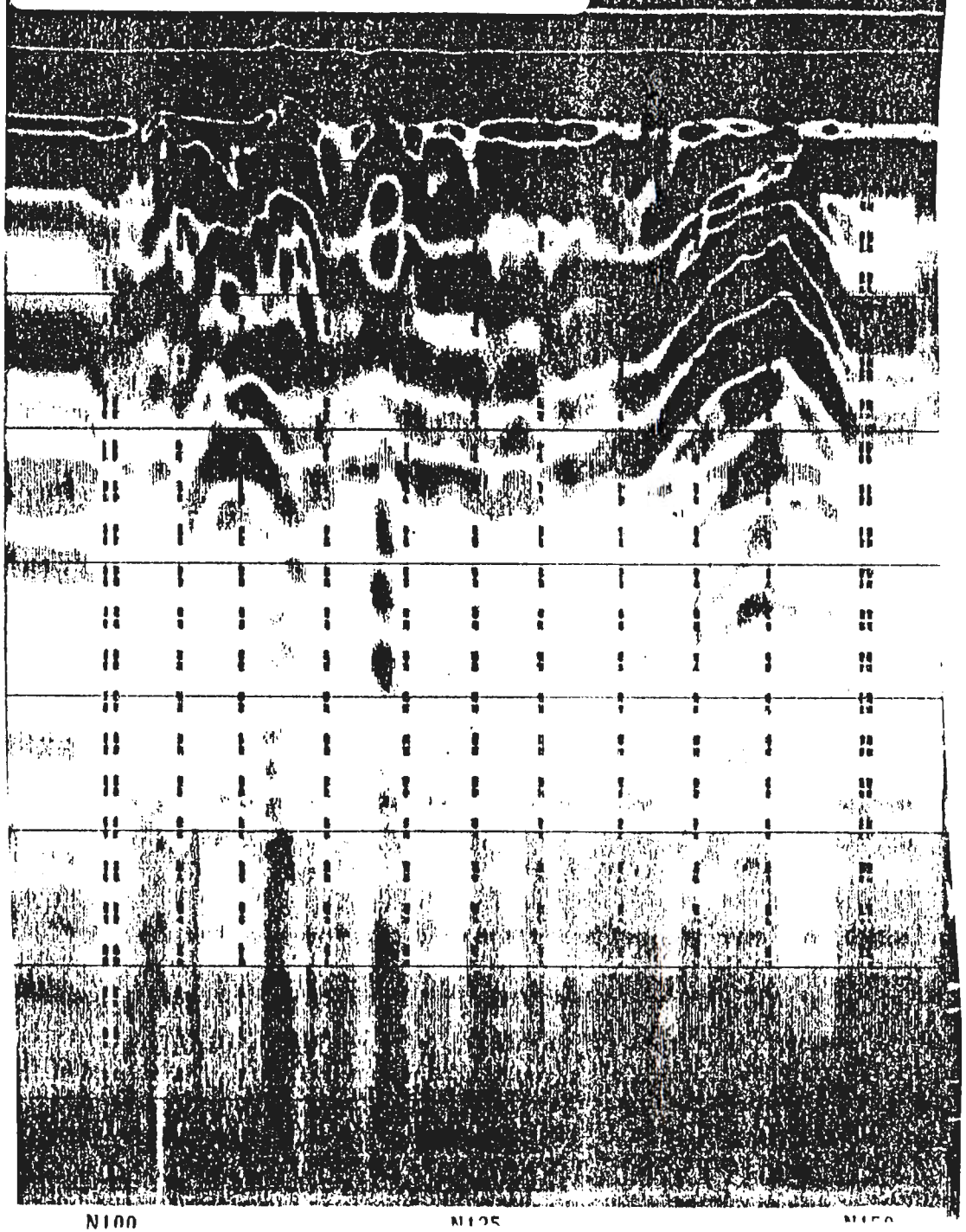


9312975.0837

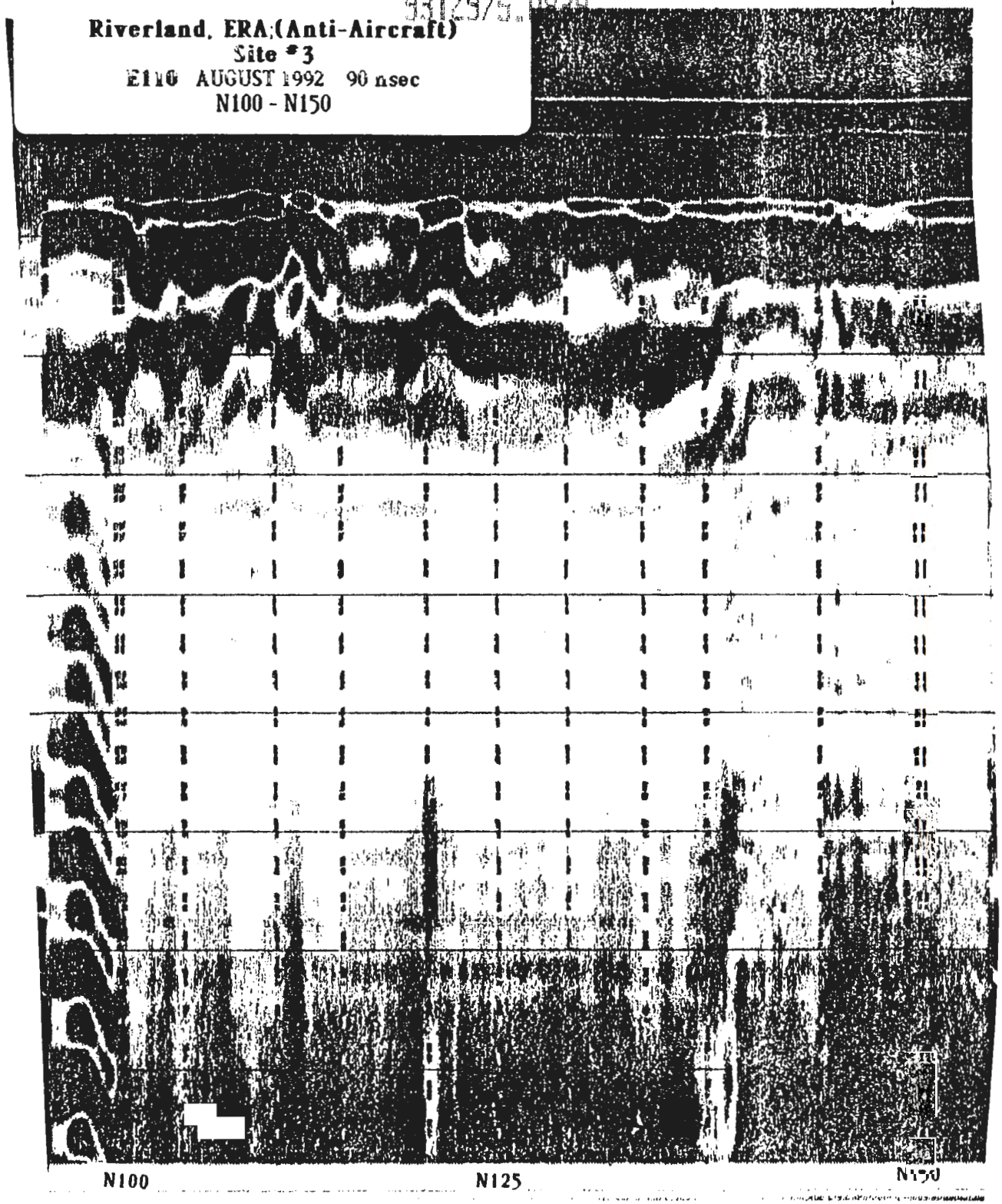
Riverland, ERA (Anti-Aircraft)
Site #3
E120 AUGUST 1992 90 nsec
N100 - N150

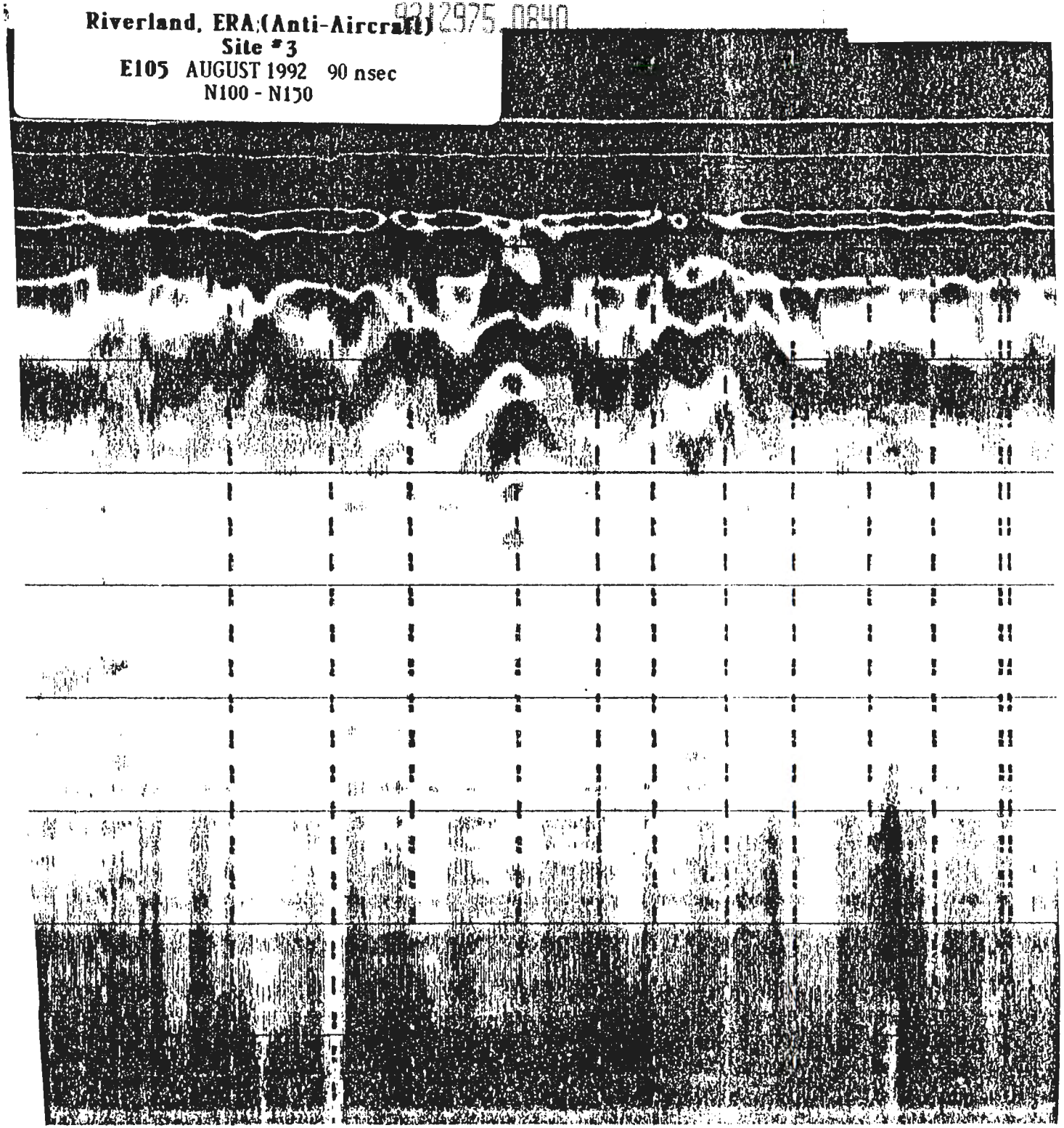


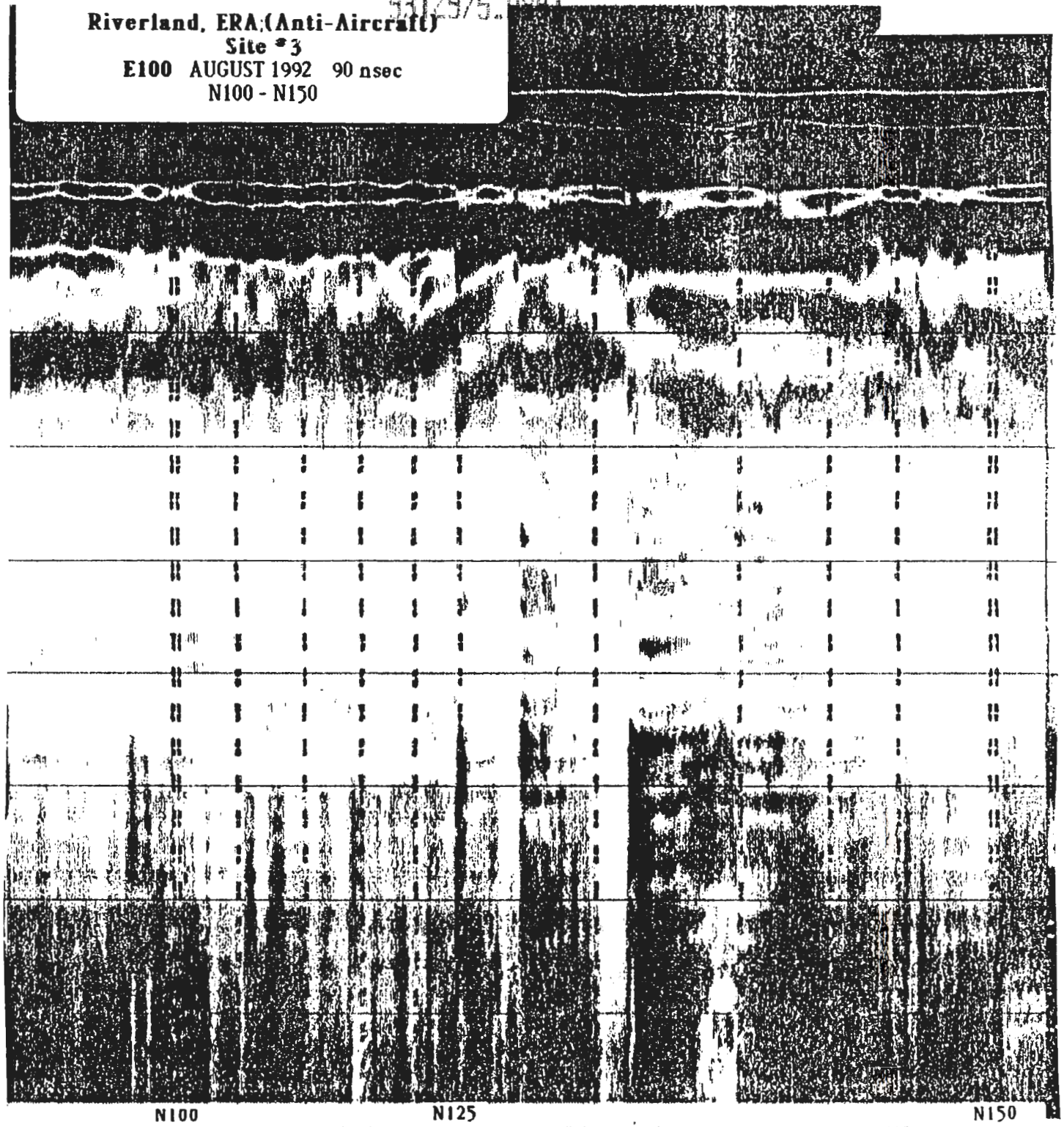
Riverland, ERA (Anti-Aircraft)
Site #3
E115 AUGUST 1992 90 nsec
N100 - N150



9312975.0930

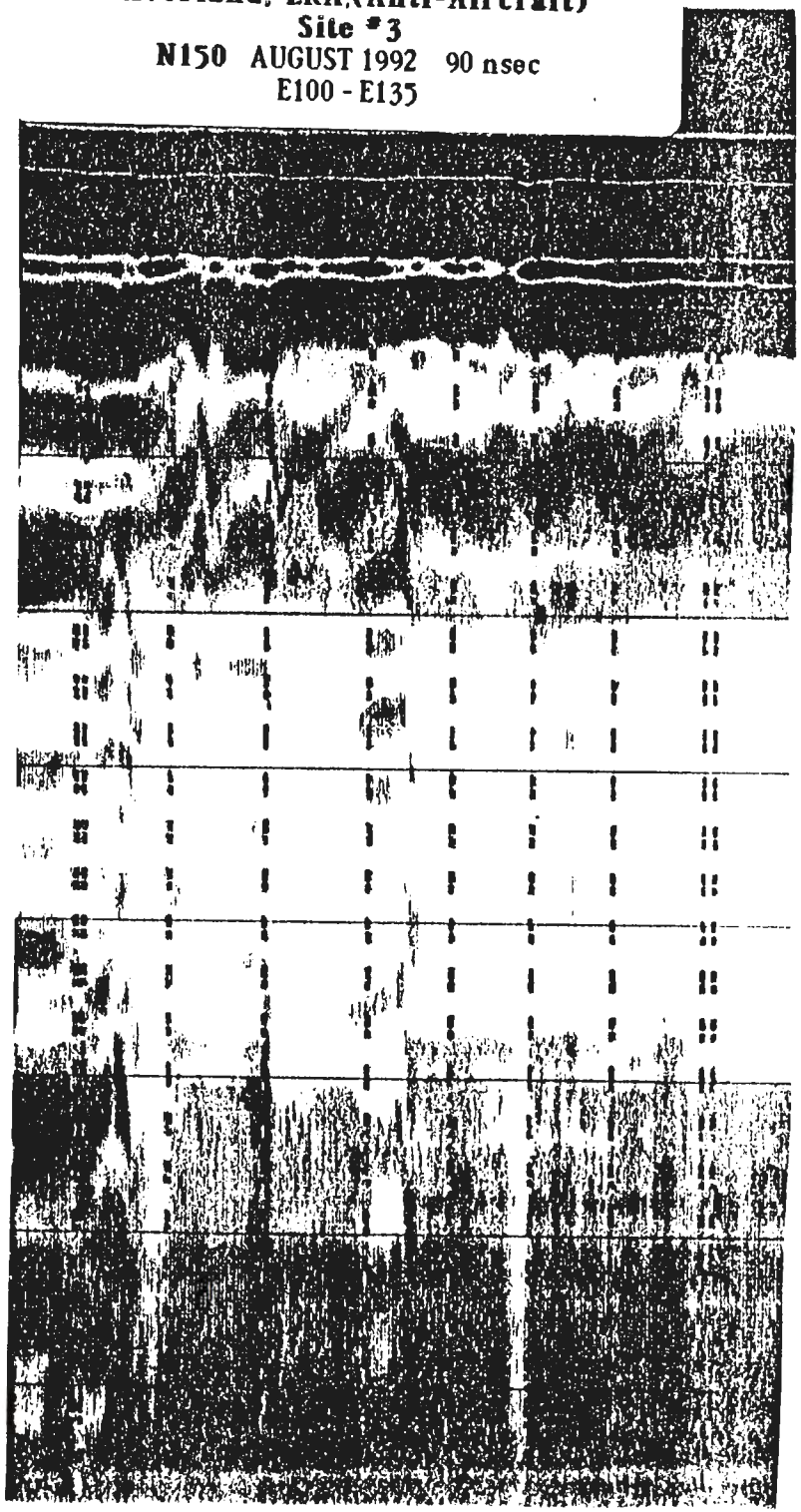


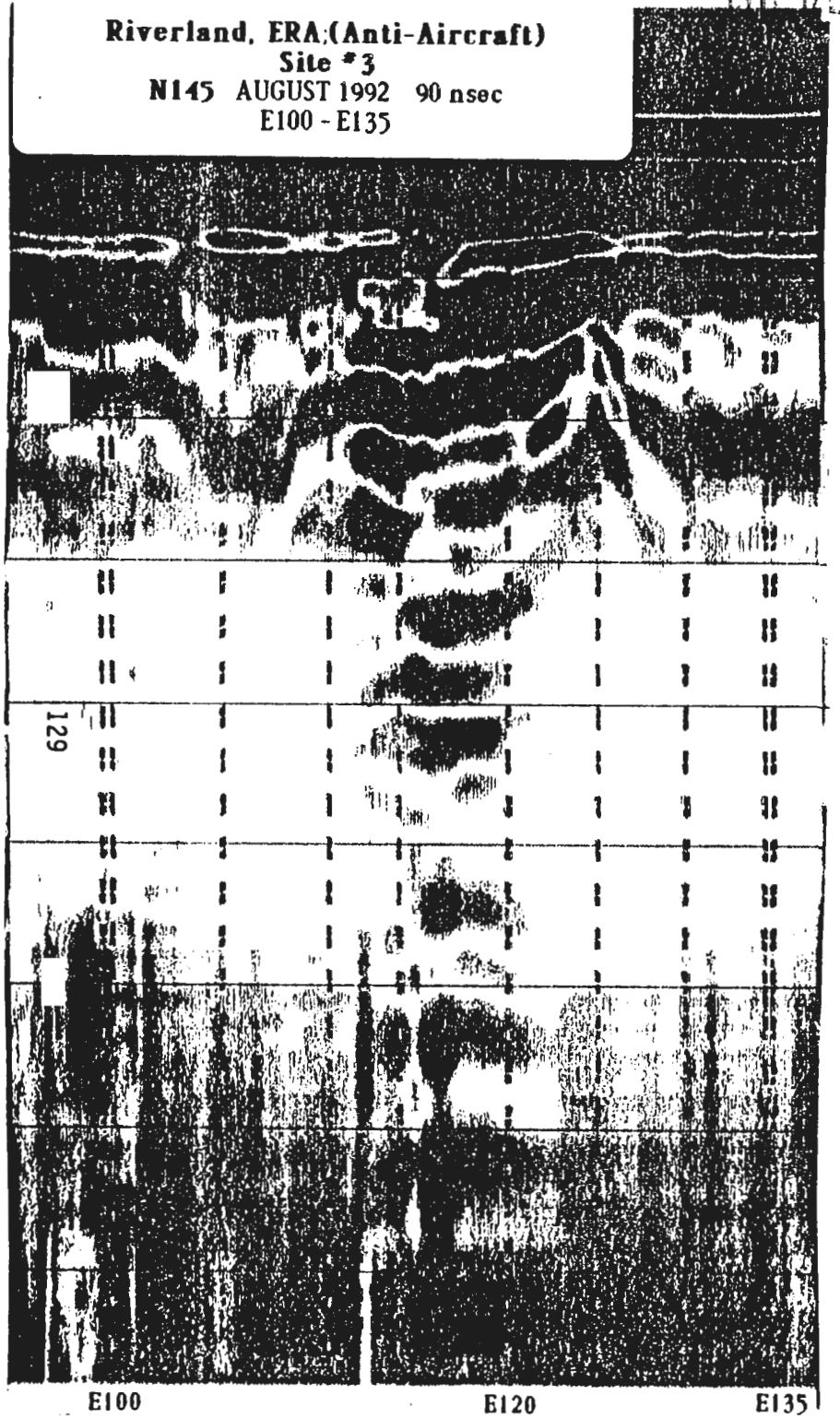

9212975.0840
Riverland, ERA (Anti-Aircraft)
Site #3
E105 AUGUST 1992 90 nsec
N100 - N150

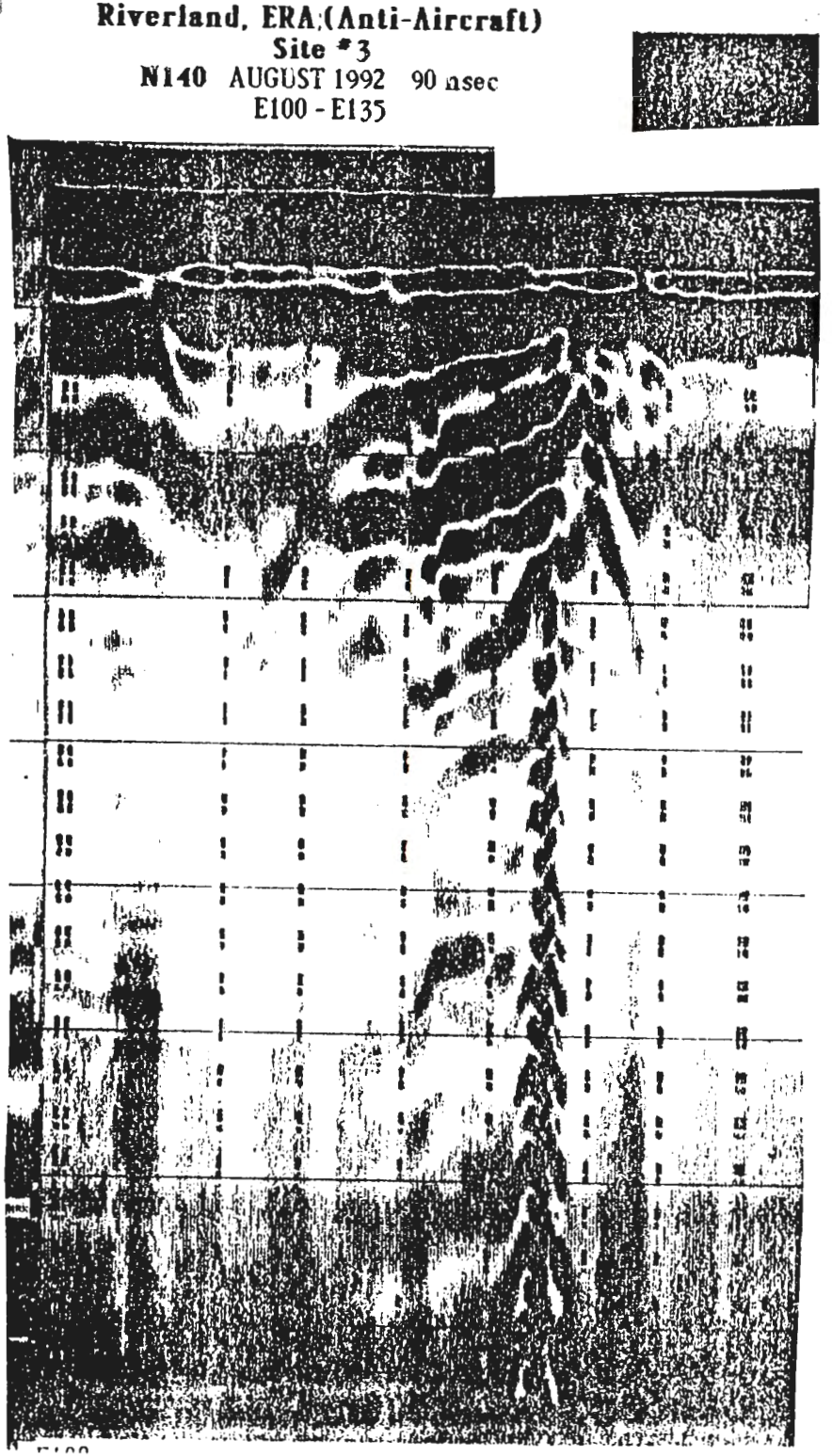

9312975.0911
Riverland, ERA (Anti-Aircraft)
Site #3
E100 AUGUST 1992 90 nsec
N100 - N150
N100
N125
N150

9312975.0842

Riverland, ERA (Anti-Aircraft)
Site #3
N150 AUGUST 1992 90 nsec
E100 - E135

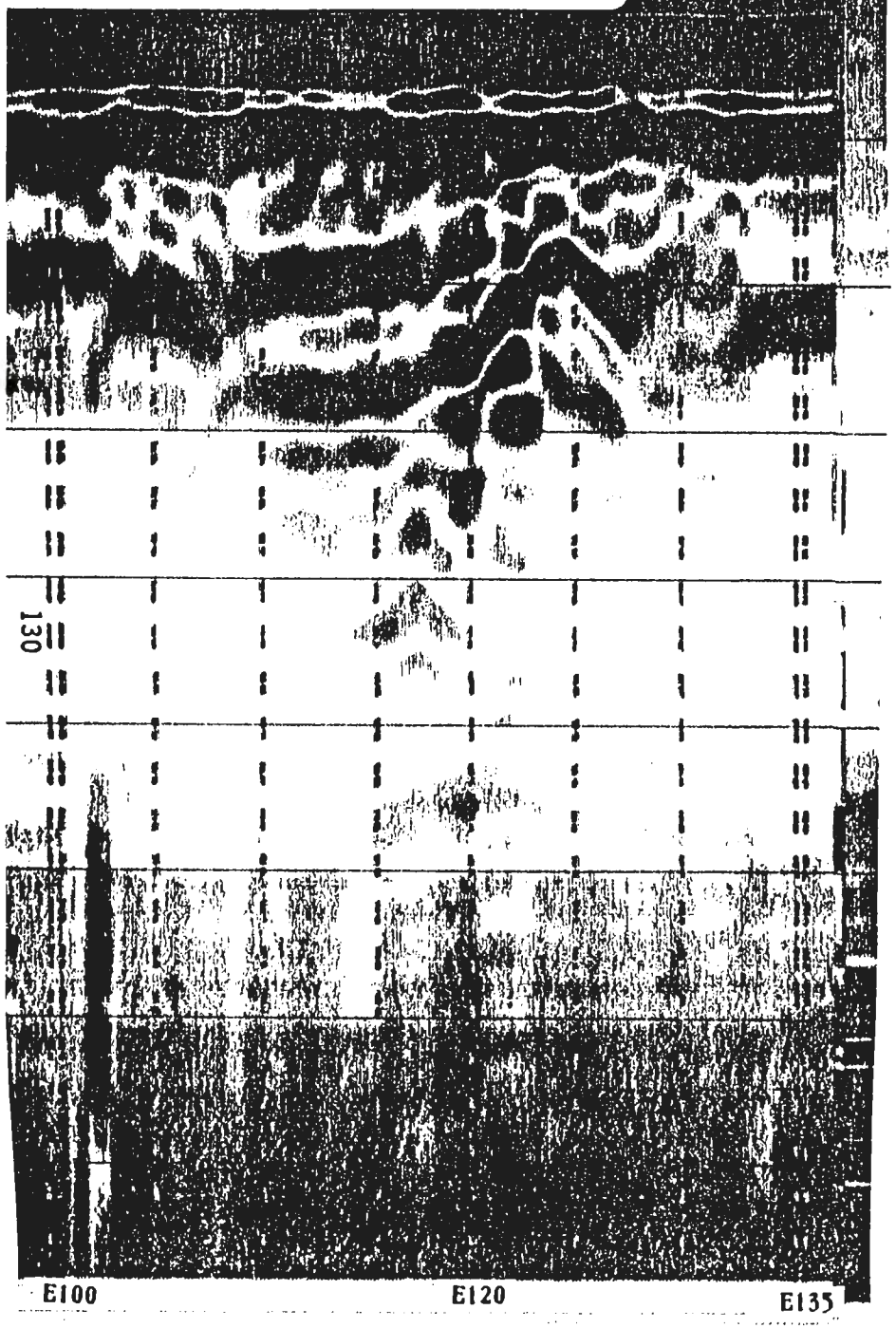



Riverland, ERA;(Anti-Aircraft)
Site #3
N145 AUGUST 1992 90 nsec
E100 - E135
E100
E120
E135

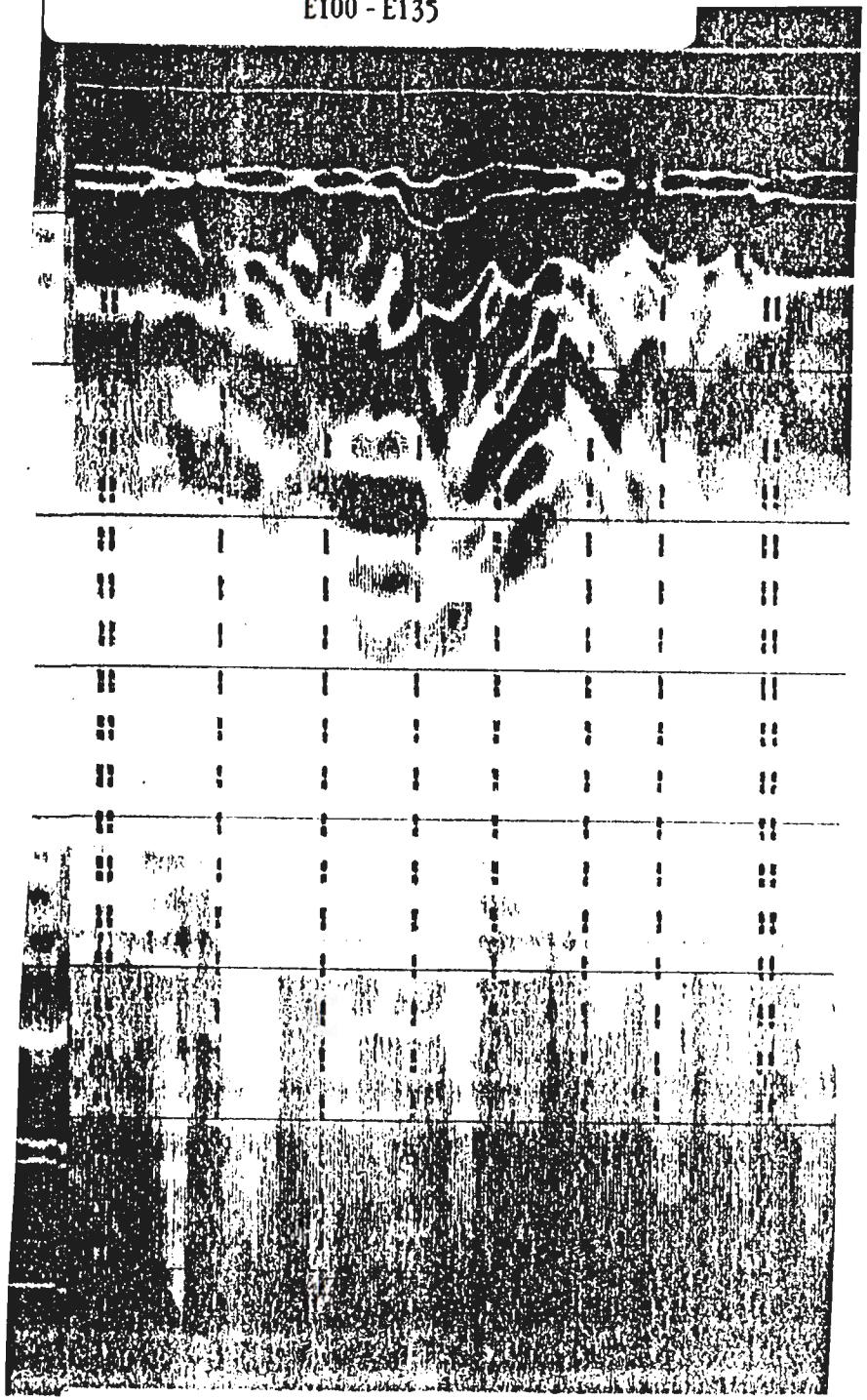

Riverland, ERA;(Anti-Aircraft)
Site #3
N140 AUGUST 1992 90 nsec
E100 - E135

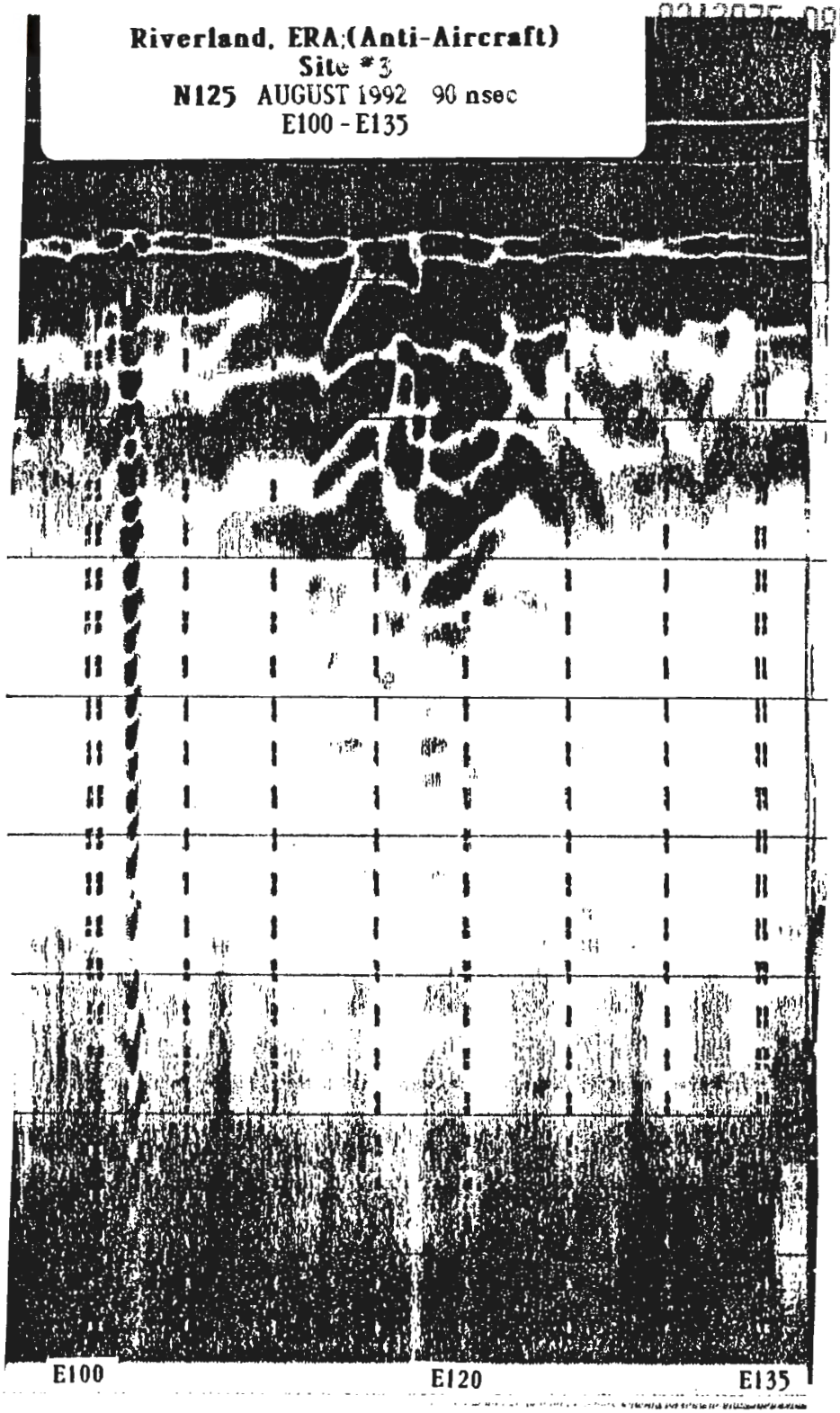
0212075 0844

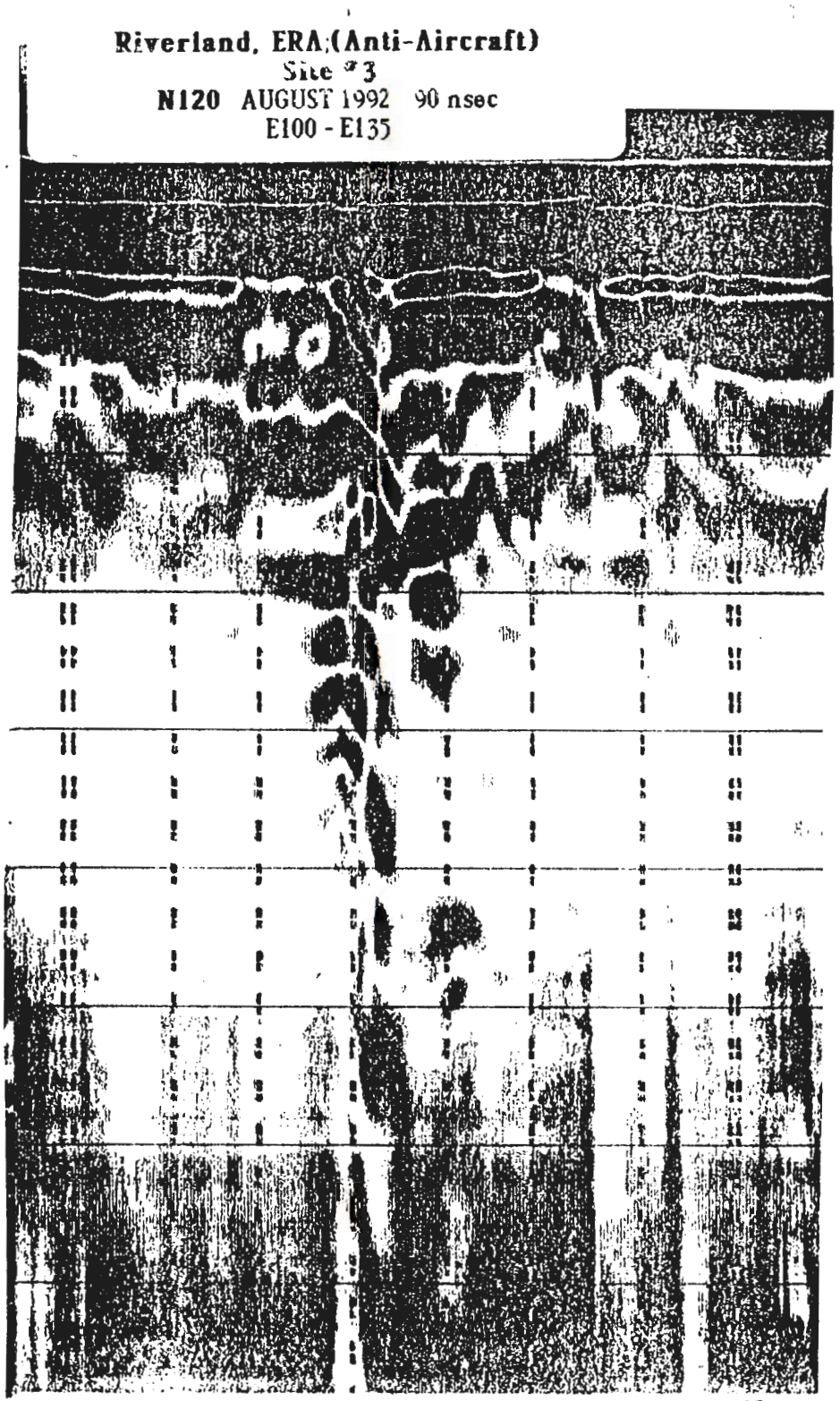
Riverland, ERA;(Anti-Aircraft)
Site #3
N135 AUGUST 1992 90 nsec
E100 - E135



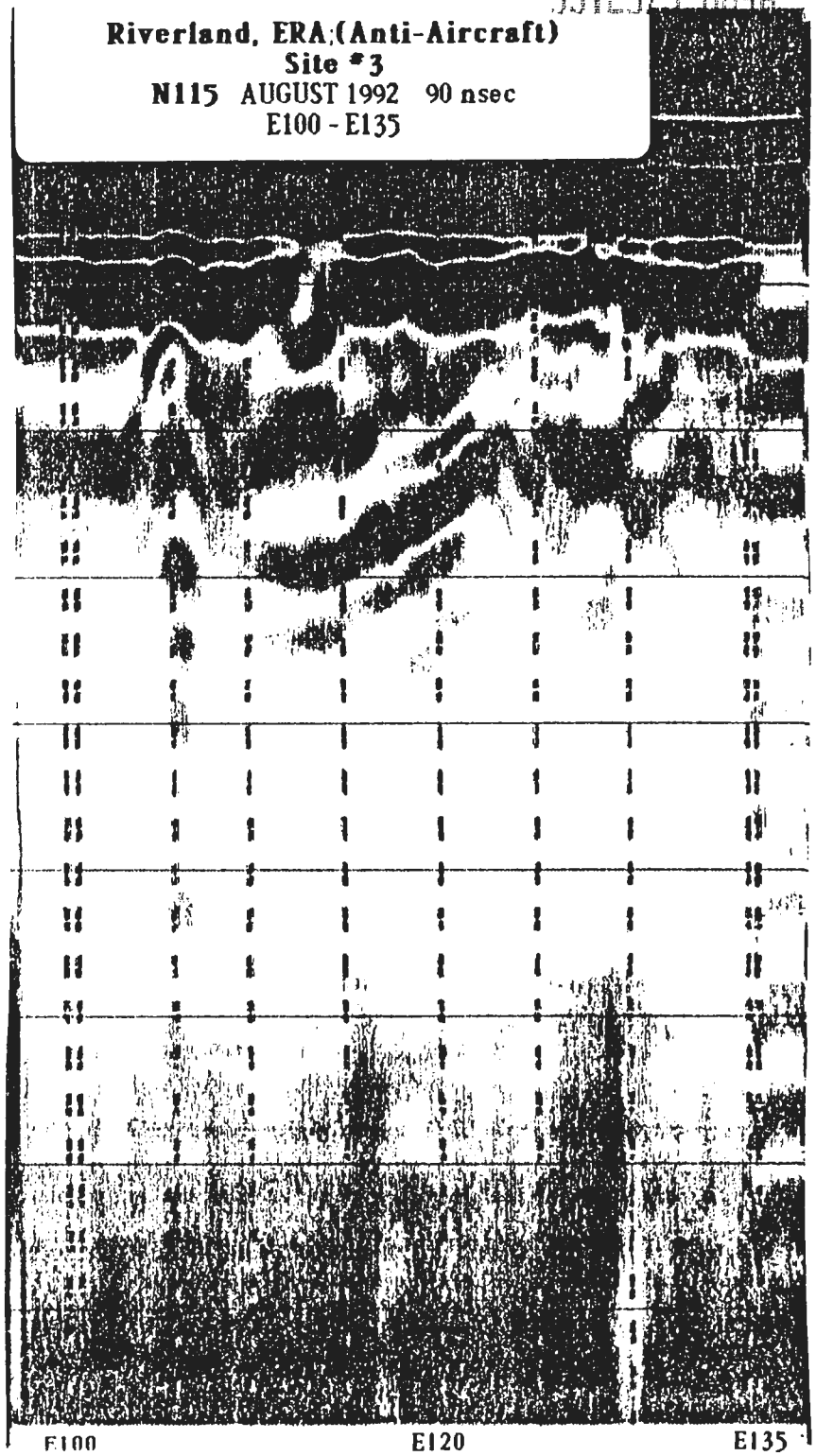
Riverland, ERA;(Anti-Aircraft)
Site #3
N130 AUGUST 1992 90 nsec
E100 - E135

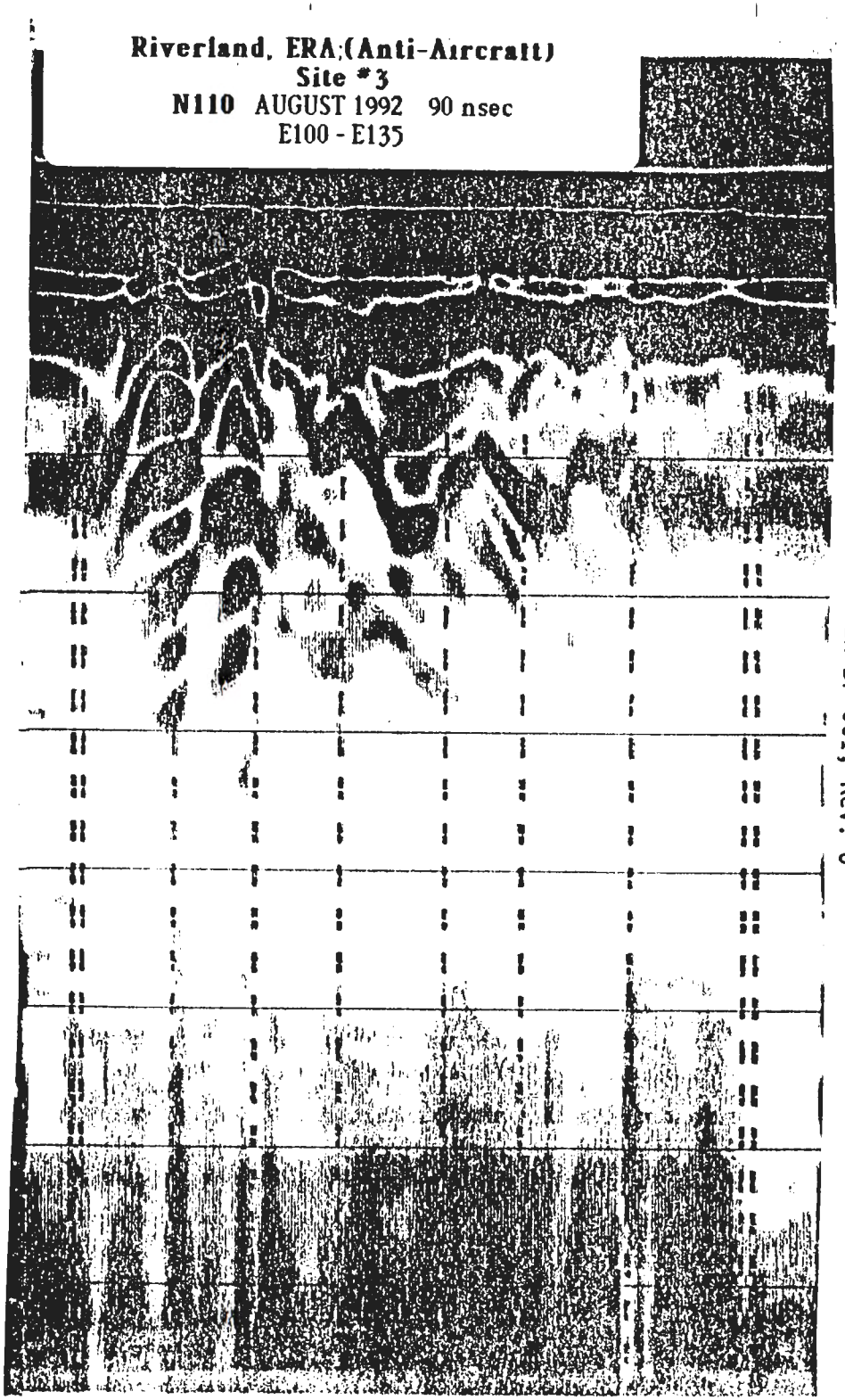


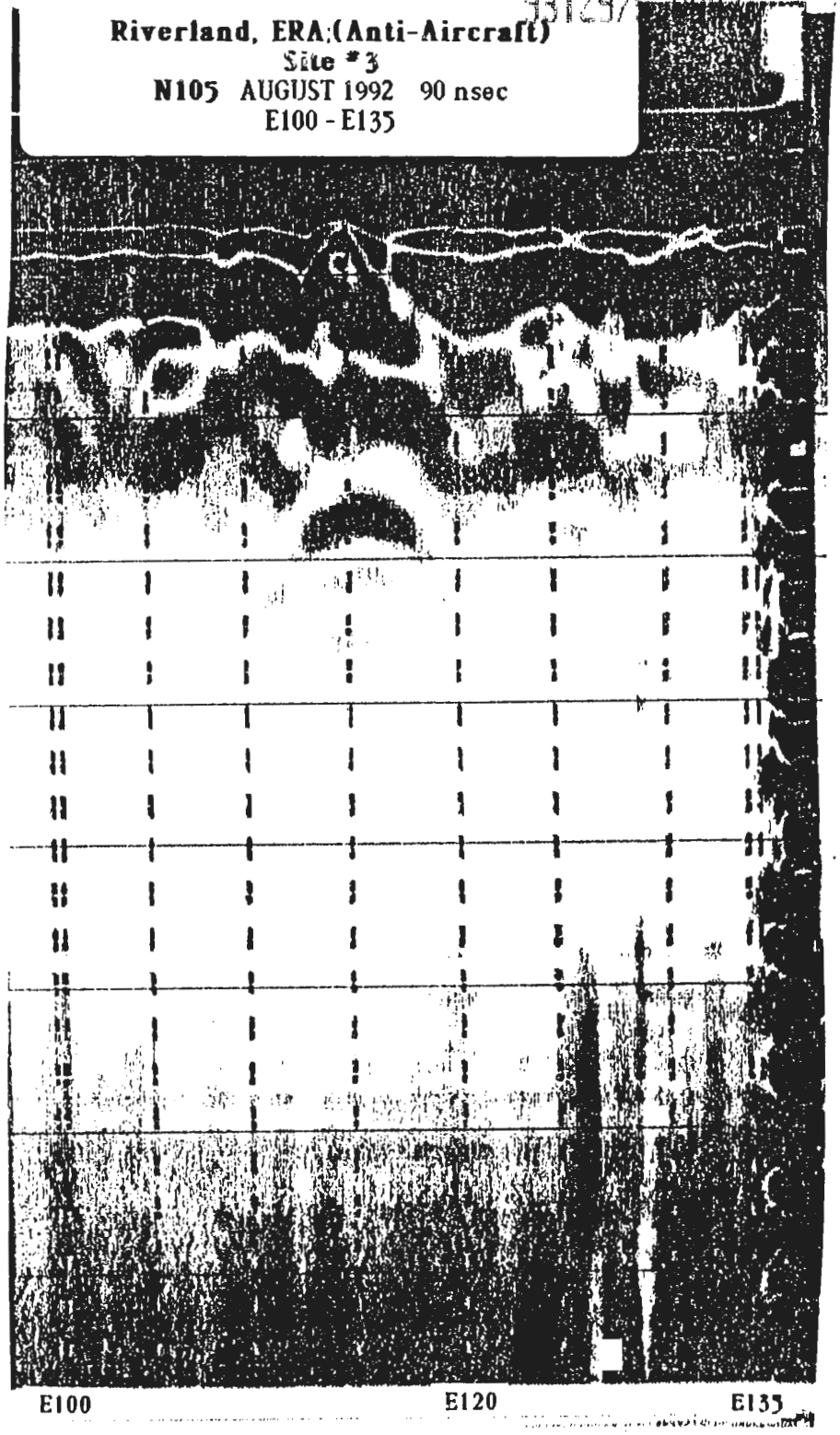

Riverland, ERA (Anti-Aircraft)
Site #3
N125 AUGUST 1992 90 nsec
E100 - E135
E100
E120
E135

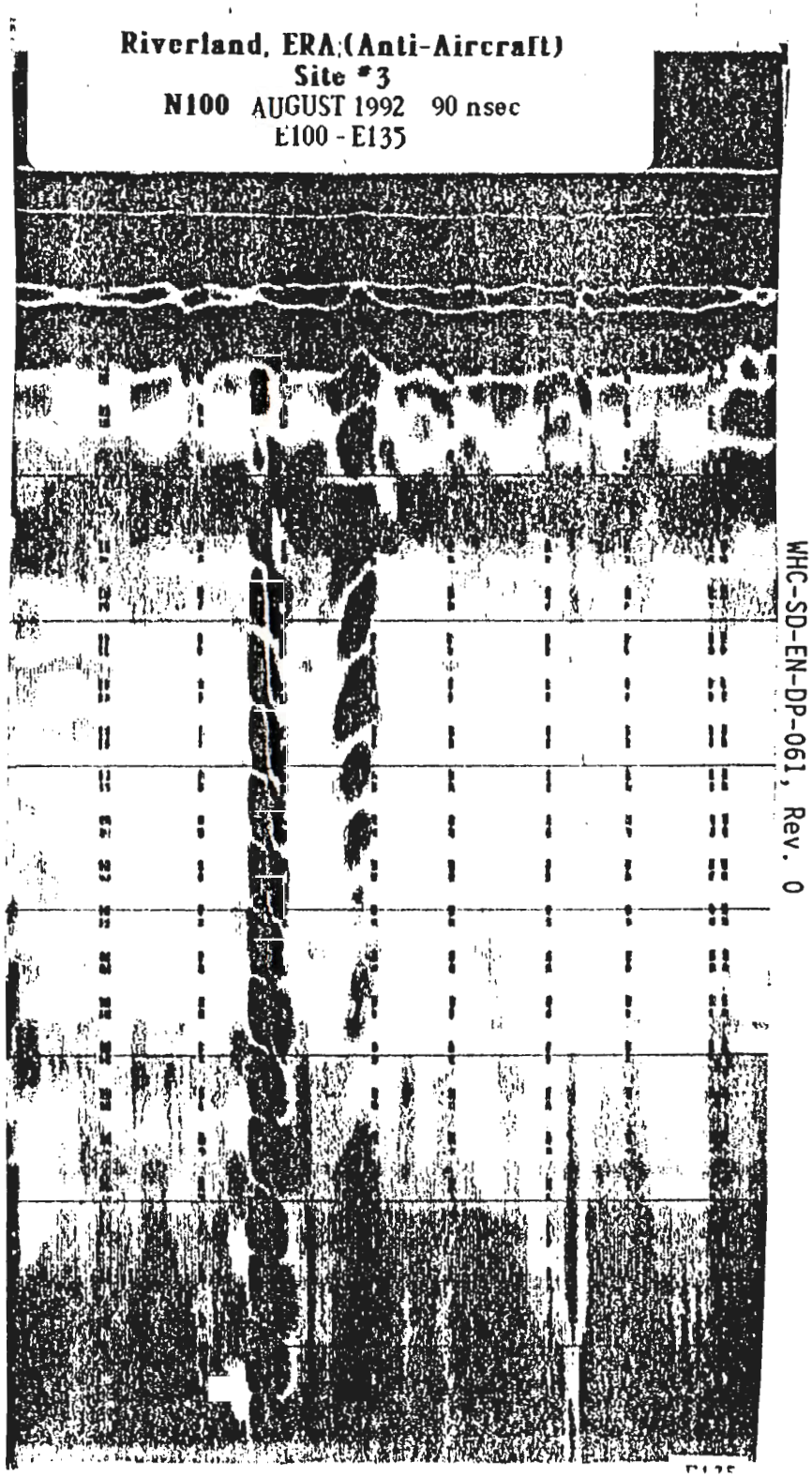

Riverland, ERA (Anti-Aircraft)
Site #3
N120 AUGUST 1992 90 nsec
E100 - E135

9312975.0846






Riverland, ERA;(Anti-Aircraft)
Site #3
N105 AUGUST 1992 90 nsec
E100 - E135
E100
E120
E135


Riverland, ERA;(Anti-Aircraft)
Site #3
N100 AUGUST 1992 90 nsec
E100 - E135

GROUND-PENETRATING RADAR (GPR) SURVEY

Team Geophysics, Westinghouse Hanford Operations

TITLE: Riverland ERA, PHASE III Extension West

DATE: 11-11-92

LOCATION:
Midway railroad decon. site.

CLIENT: Paul Valcich

DATA COLLECTED BY
K.A. Bergstrom, T.H. Mitchell

EQUIPMENT USED:
GSSI System 8, model 4800
Calibrator Model P731
Digital Tape Recoder DT6000A

ANTENNA(S) USED:
100 ____ 300 XX 100 BISTATIC ____

LOG BOOK: EFL 1029

TIME WINDOW (NS): 100

PROCEDURES FOLLOWED: WHC-CM-7-7 EII 11.2, REV. 3

GRID : 50x80' NO. OF PROFILES: 28 TOTAL FOOTAGE COLLECTED: 1730

PARAMETERS:
Two sets of perpendicular profiles; five feet between profiles.

DATA TAPE NO.: ERA #3 RECORDS LOCATION: Geophysical files

TAPE ADDRESS : 0-20781 ____ CALIBRATION ADDRESS: 20281-20781

INTERPRETED BY : T.H. Mitchell REVIEWED BY : K. A. Bergstrom

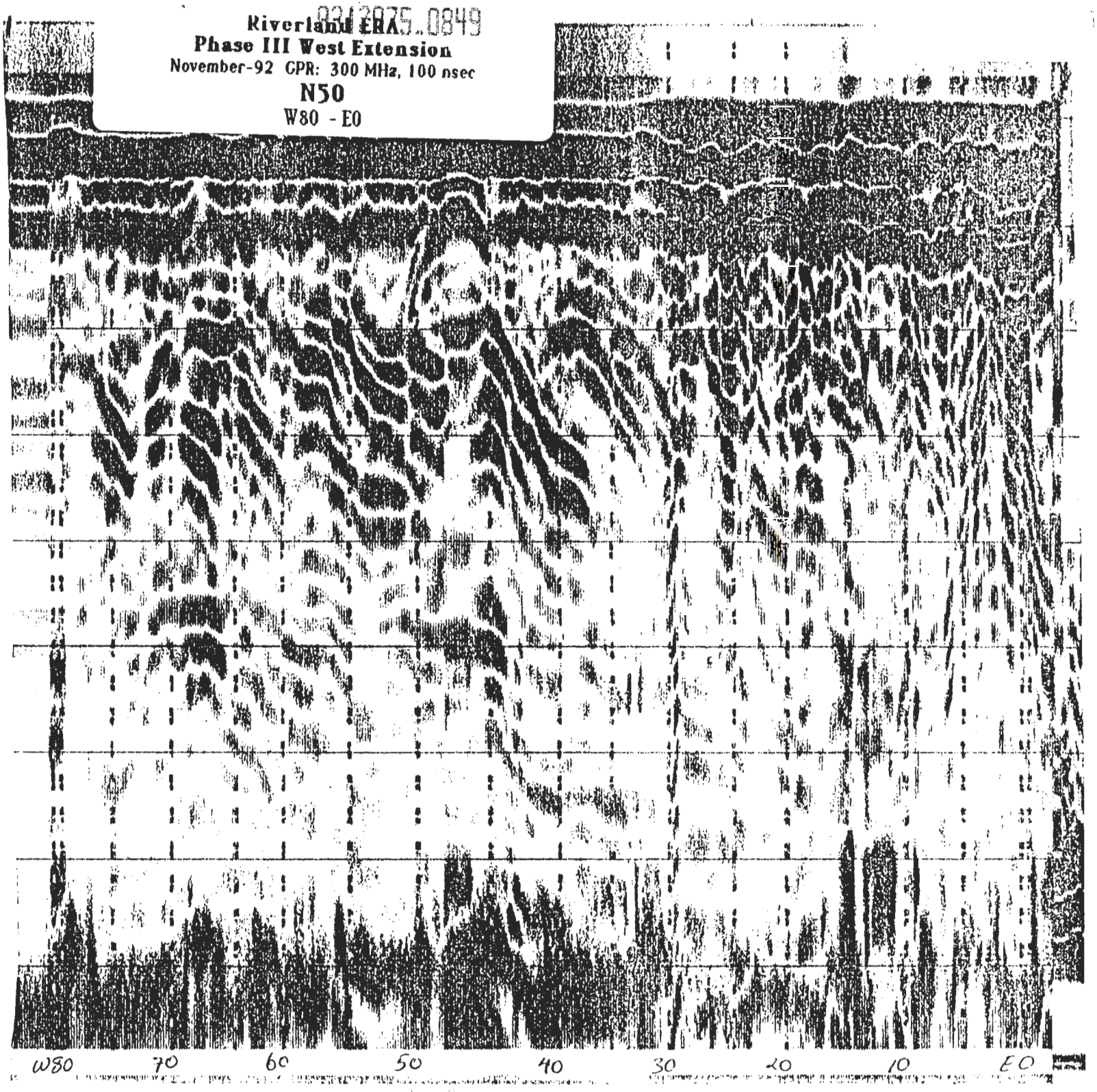
INTERPRETATION DELIVERED TO draft to P. Valcich DATE : 9-92

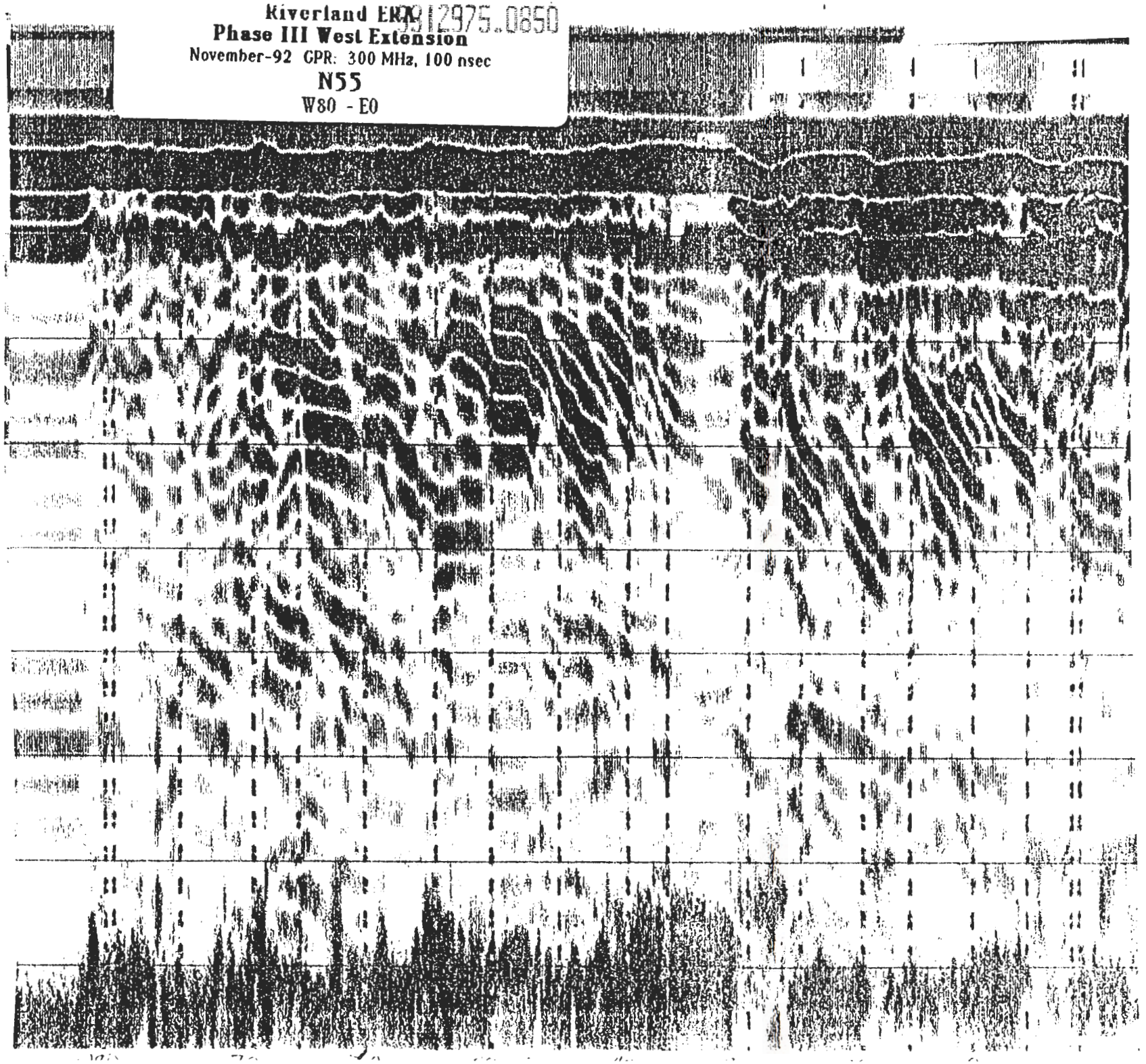
OBJECTIVE(S):
To determine where a buried pipe, that was detected during the investigation of the diesel tank, go to. To determine whether there were additional structures further to the west.

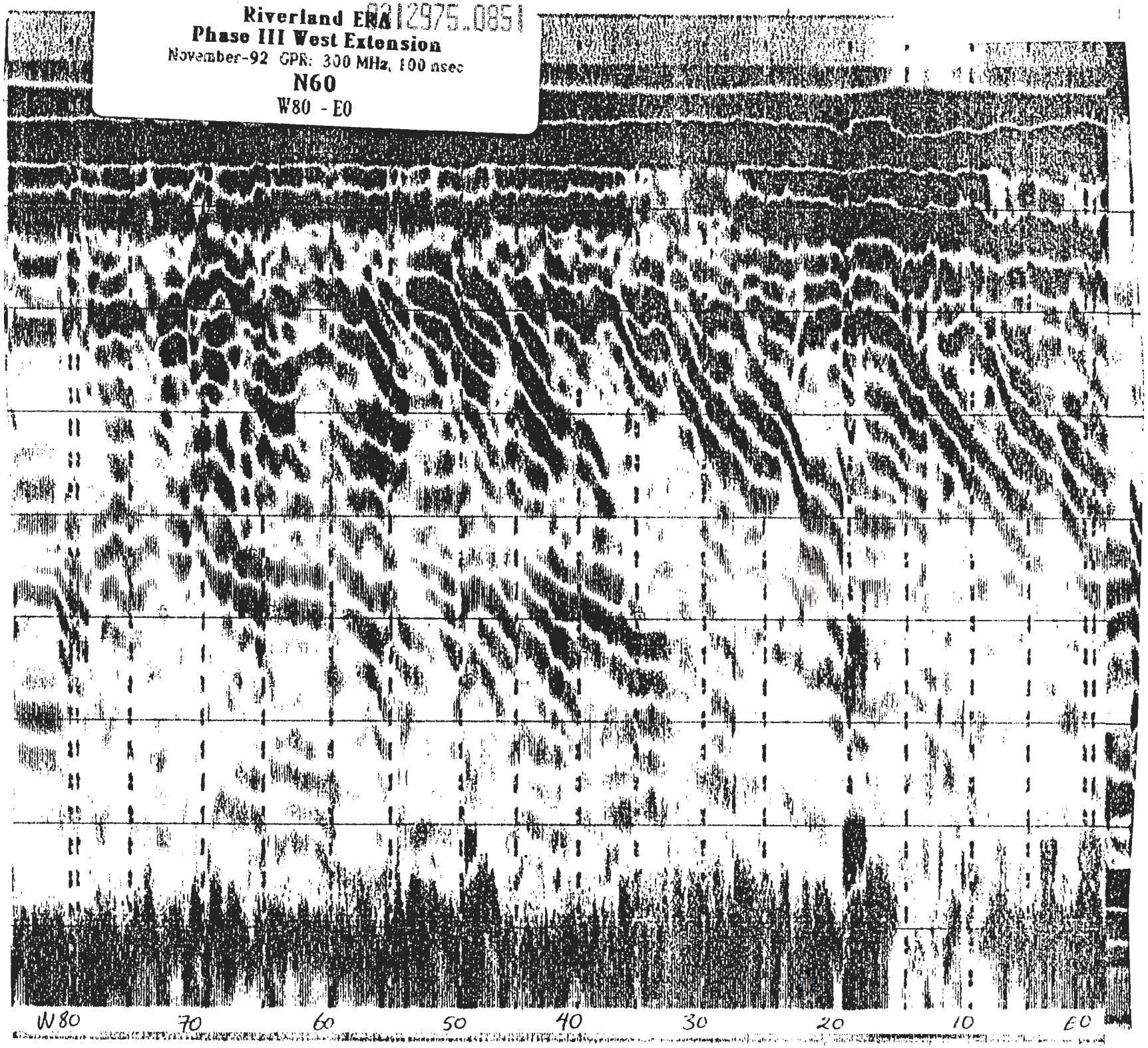
NOTES:

Antenna pulled by hand at 1-2 mph. 50 meter cable. Pulled on south and east side of survey marks.

9312975.0249


Riverland ERA 0849
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N50
W80 - E0
W80
70
60
50
40
30
20
10
E0


Riverland ER
9312975.0850
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N55
W80 - E0

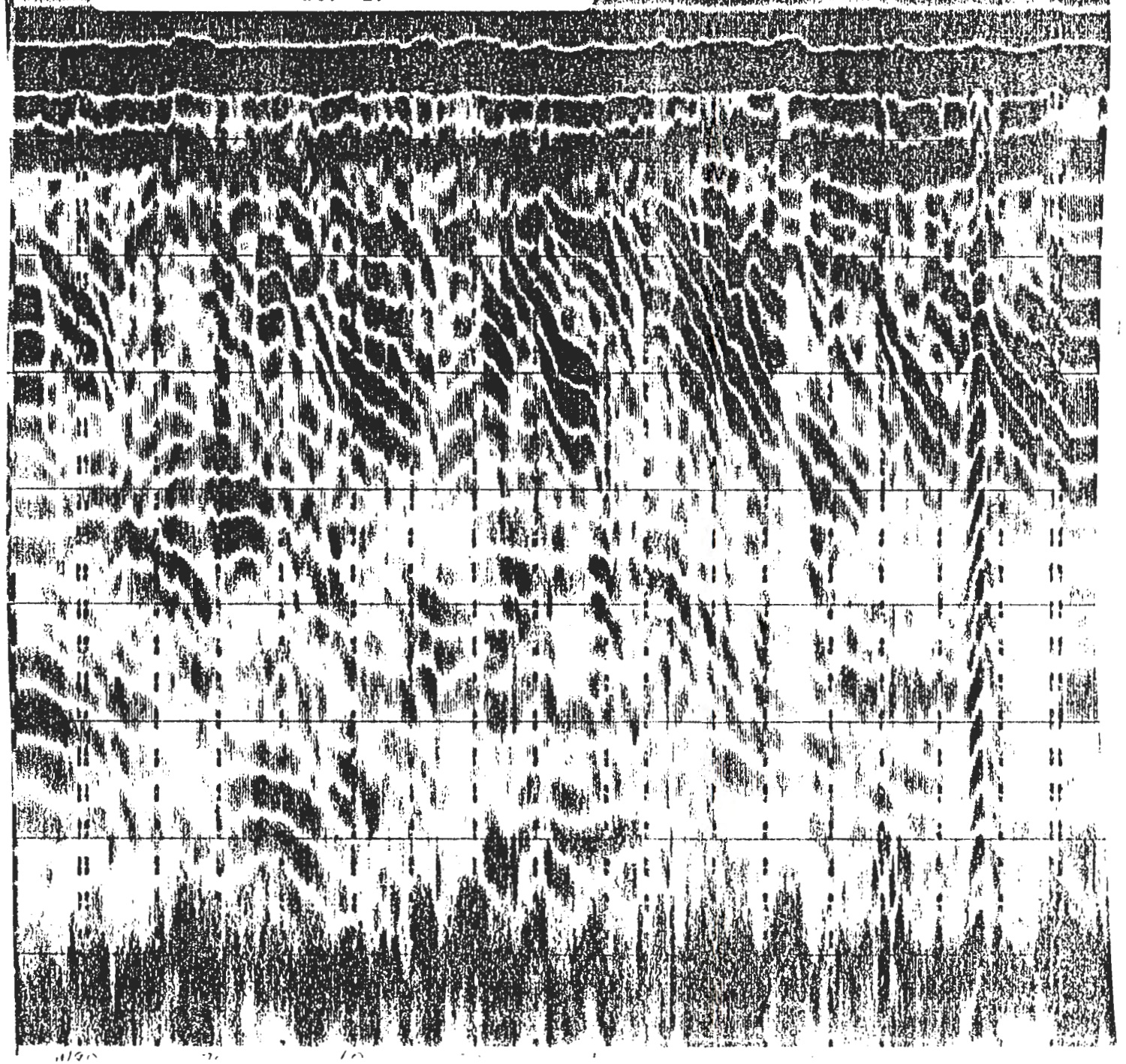

9312975.0851
Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N60
W80 - E0
W80
70
60
50
40
30
20
10
E0

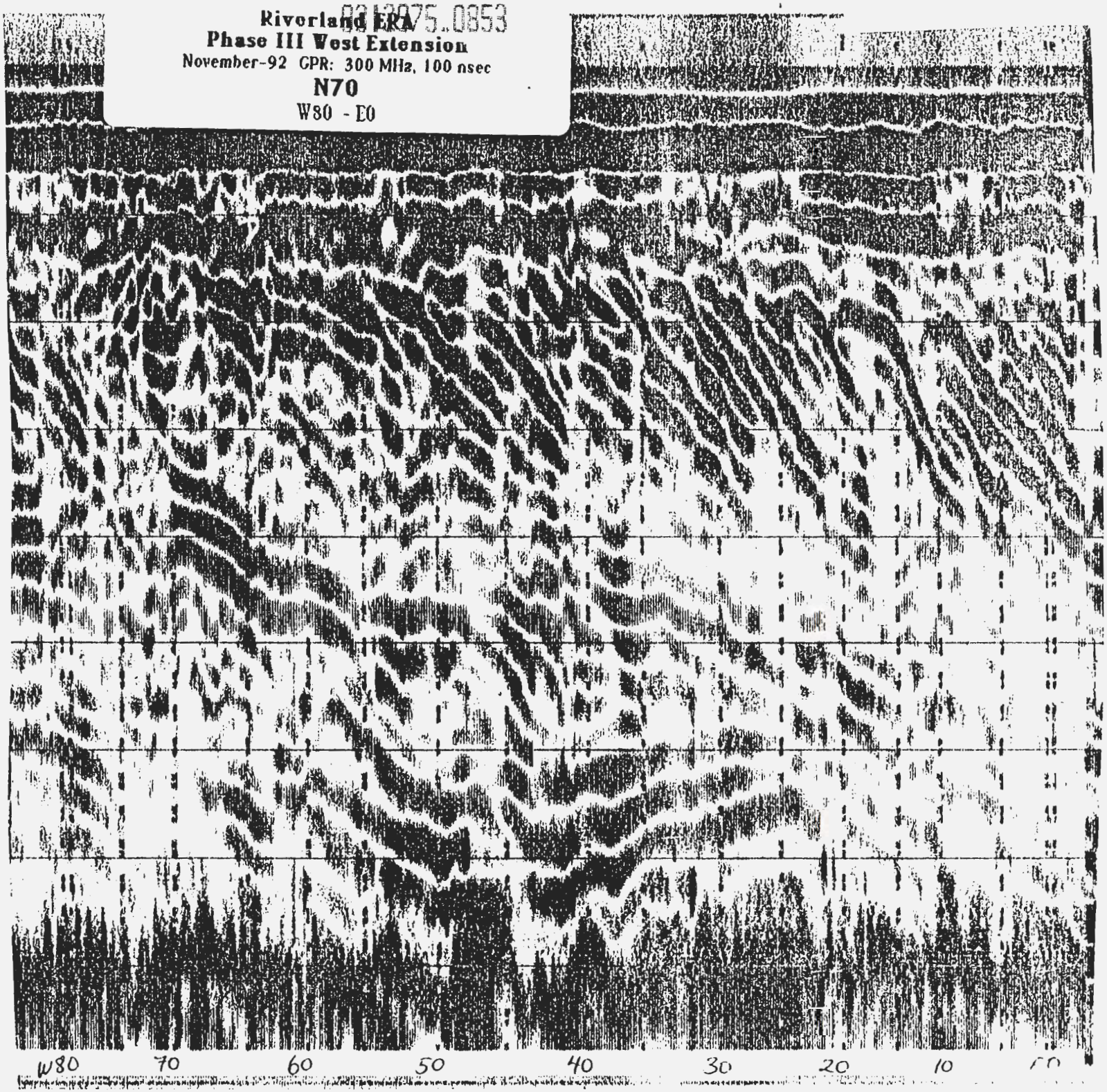
Phase III West Extension

November-92 GPR: 300 MHz, 100 nsec

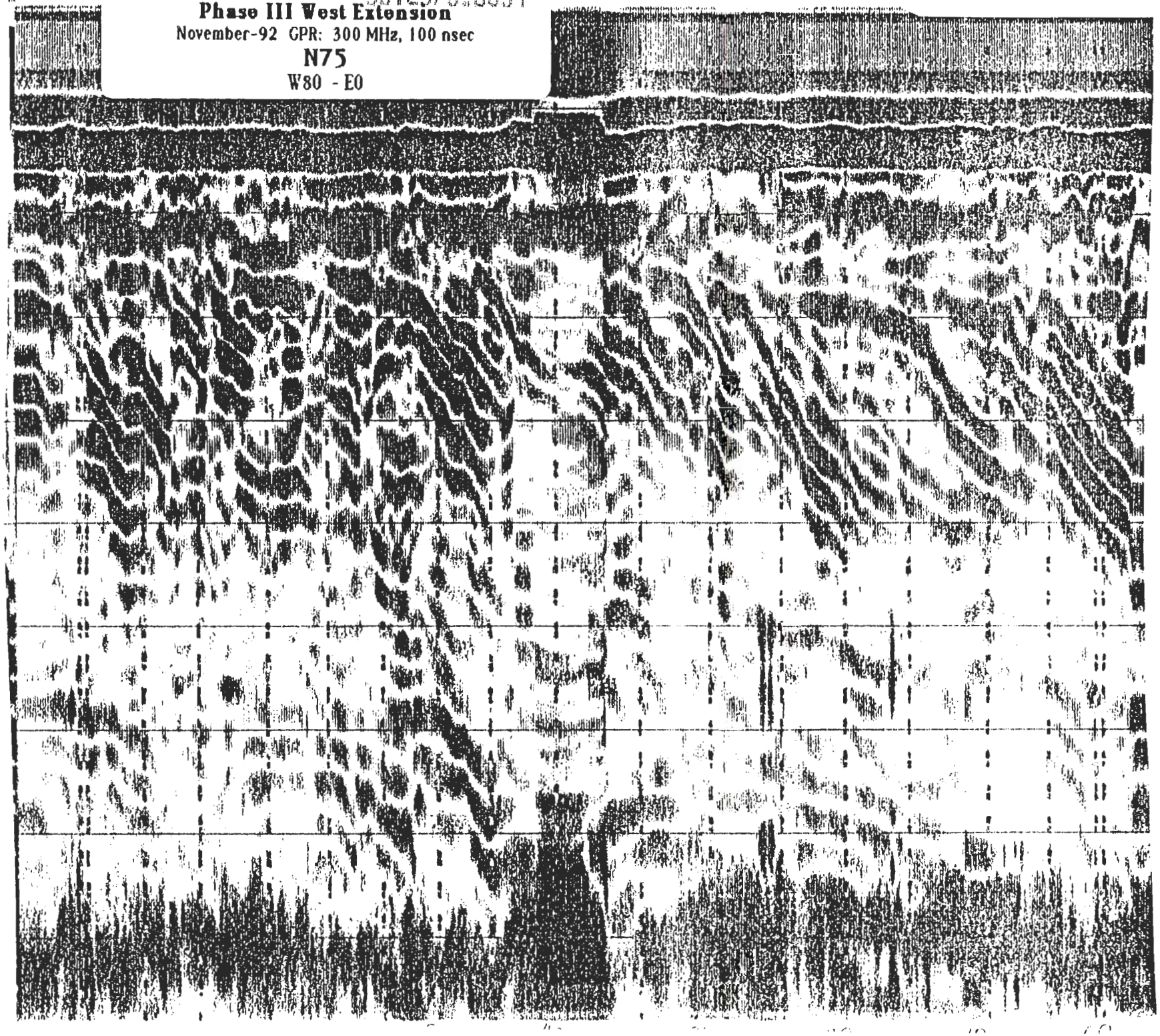
N65

W80 - E0




Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N70
W80 - E0
W80
70
60
50
40
30
20
10

Riverland ERN 9412975.0854
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N75
W80 - E0



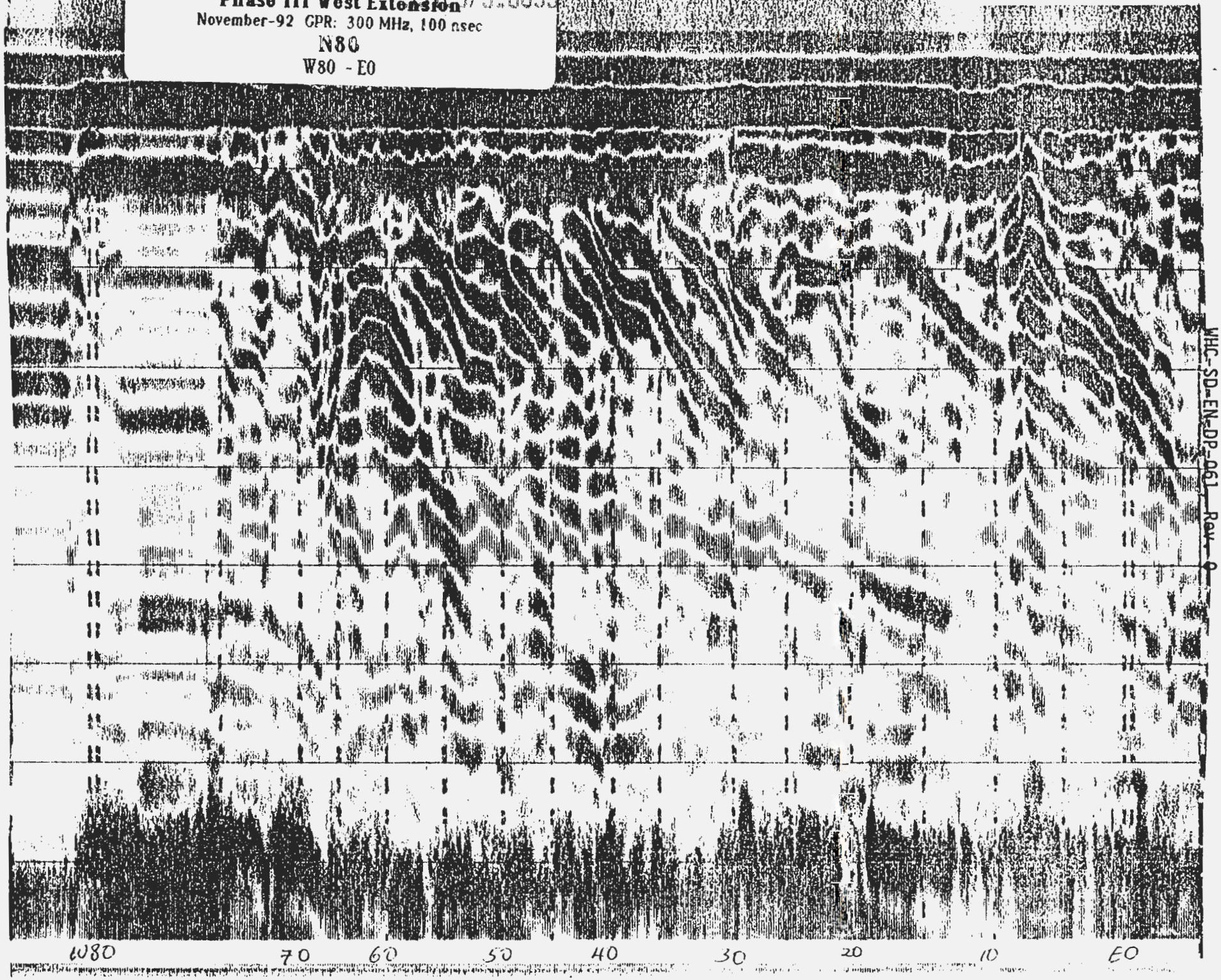
Riverland ERA 9312975.0855

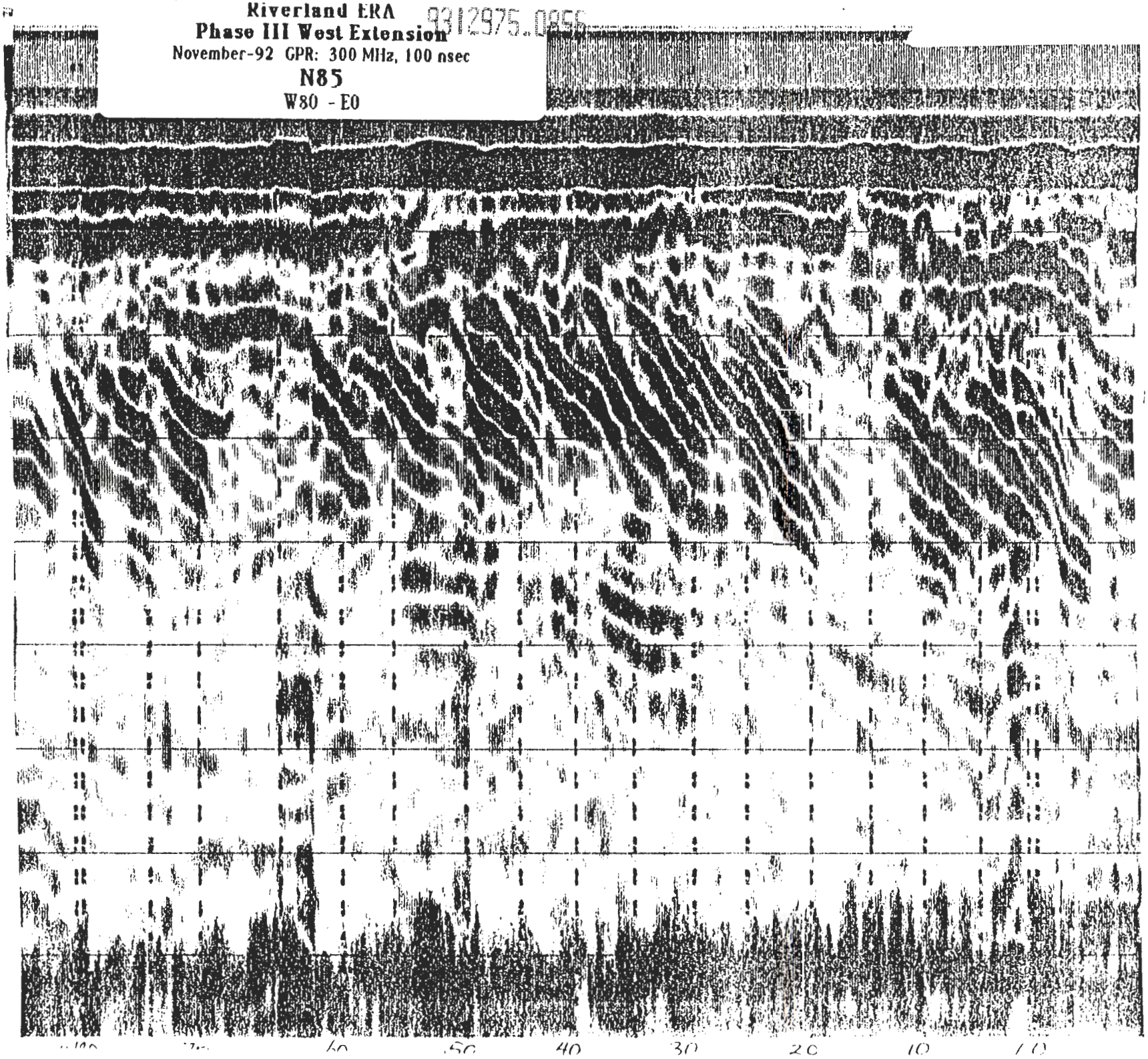
Phase III West Extension

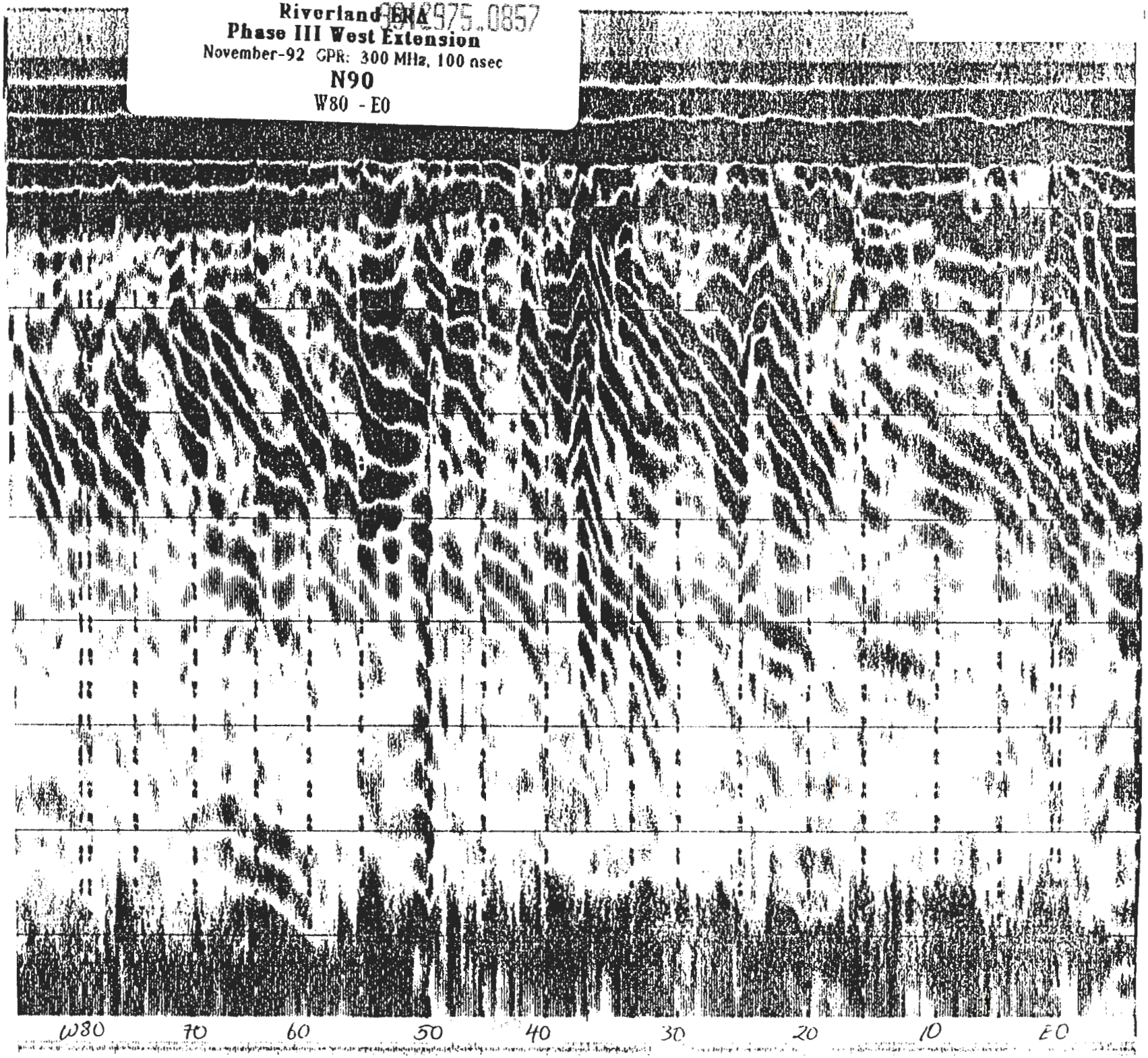
November-92 GPR: 300 MHz, 100 nsec

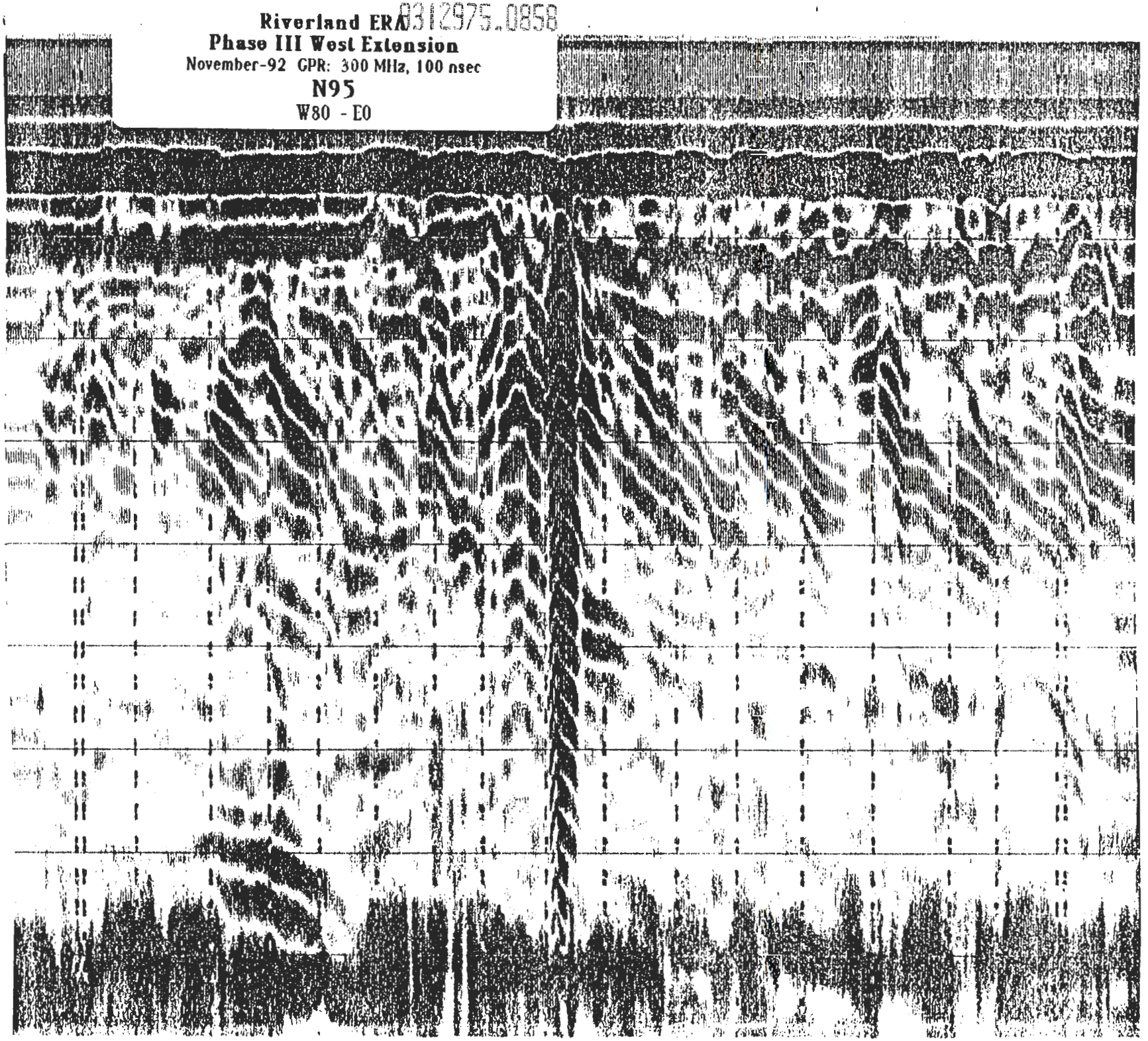
N80

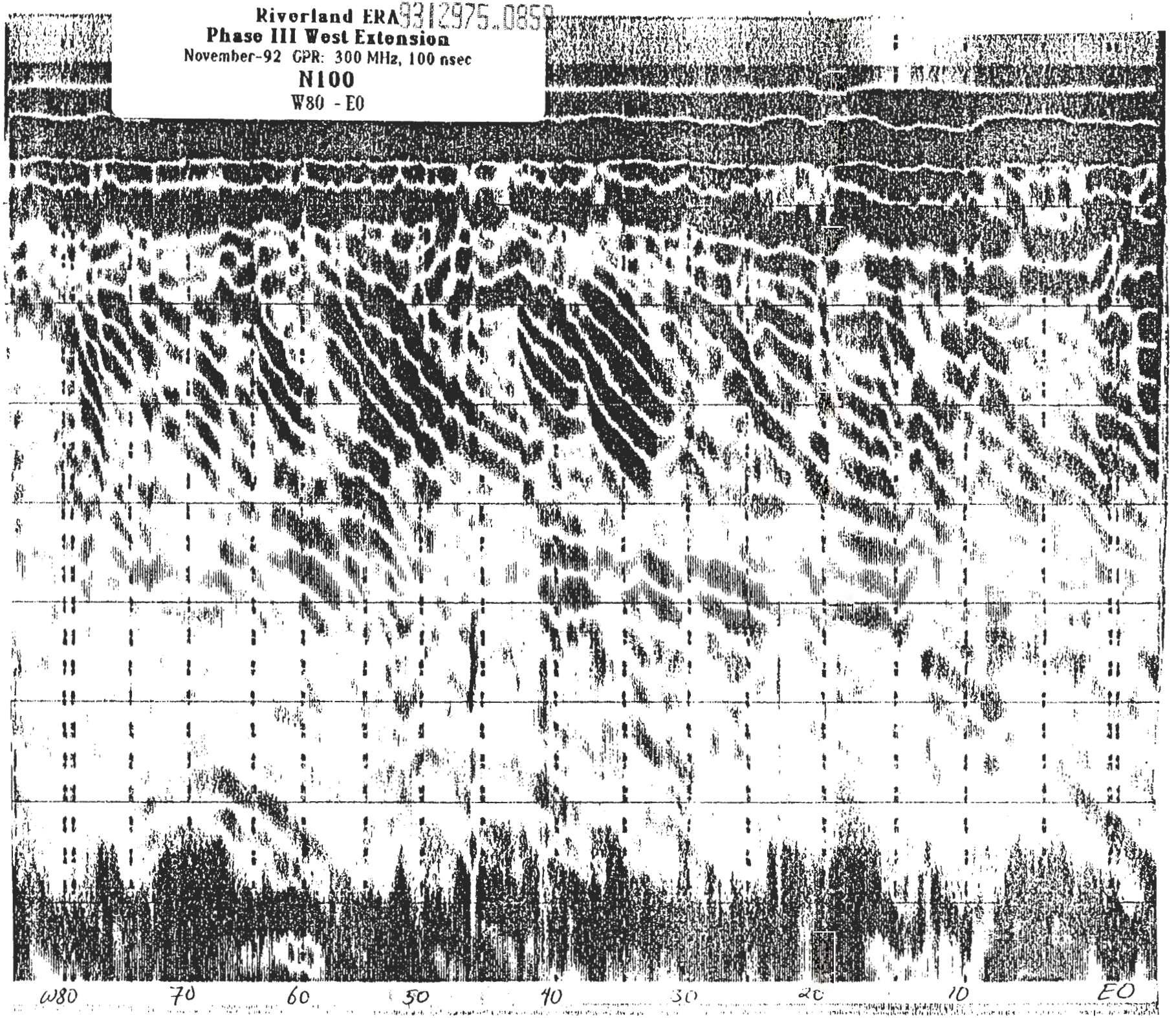
W80 - E0

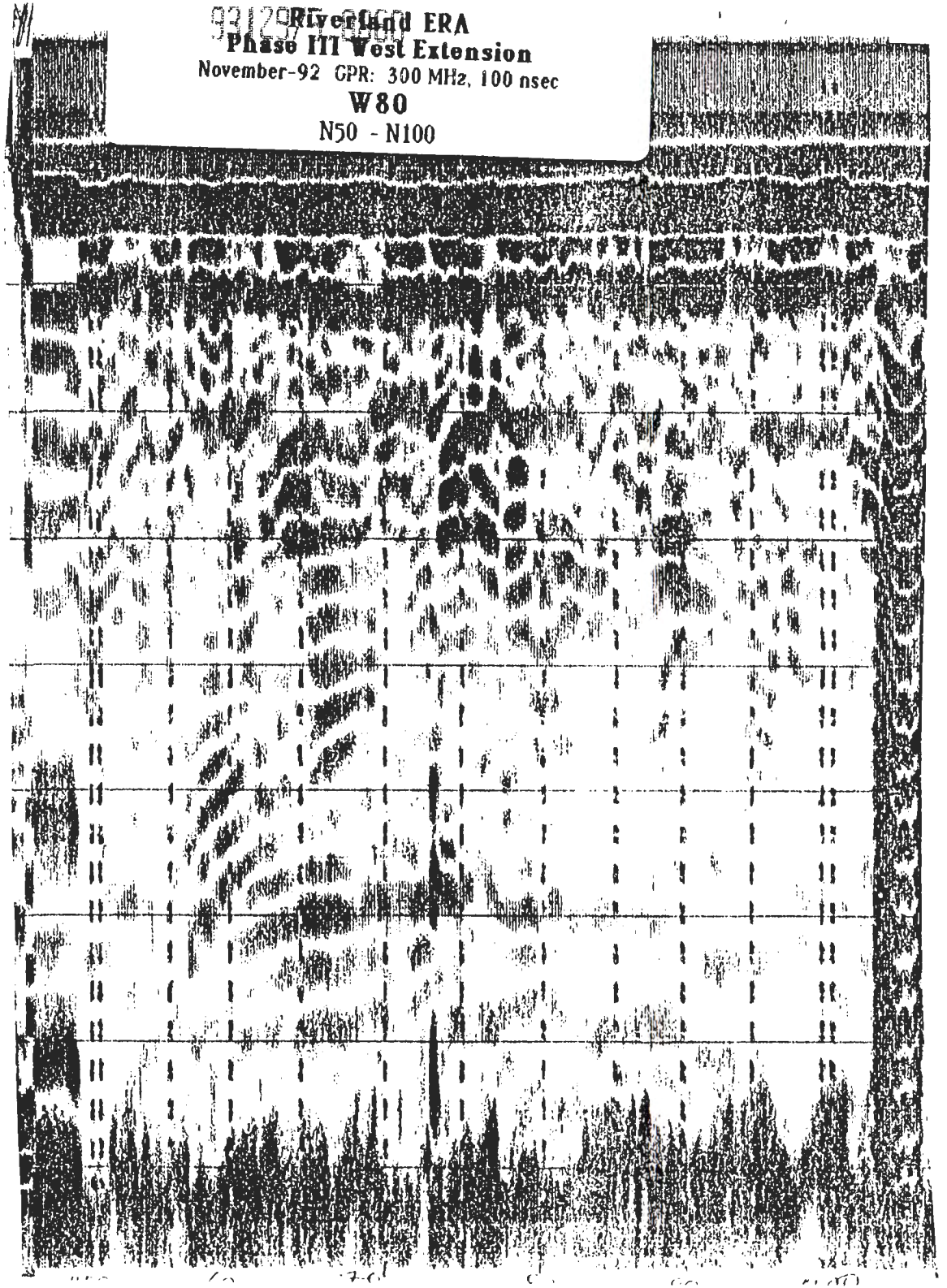



Riverland ERA
Phase III West Extension
9312975.0856
November-92 GPR: 300 MHz, 100 nsec
N85
W80 - E0
60
50
40
30
20
10
0


Riverland ERA
9412975.0857
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N90
W80 - E0
W80
70
60
50
40
30
20
10
E0

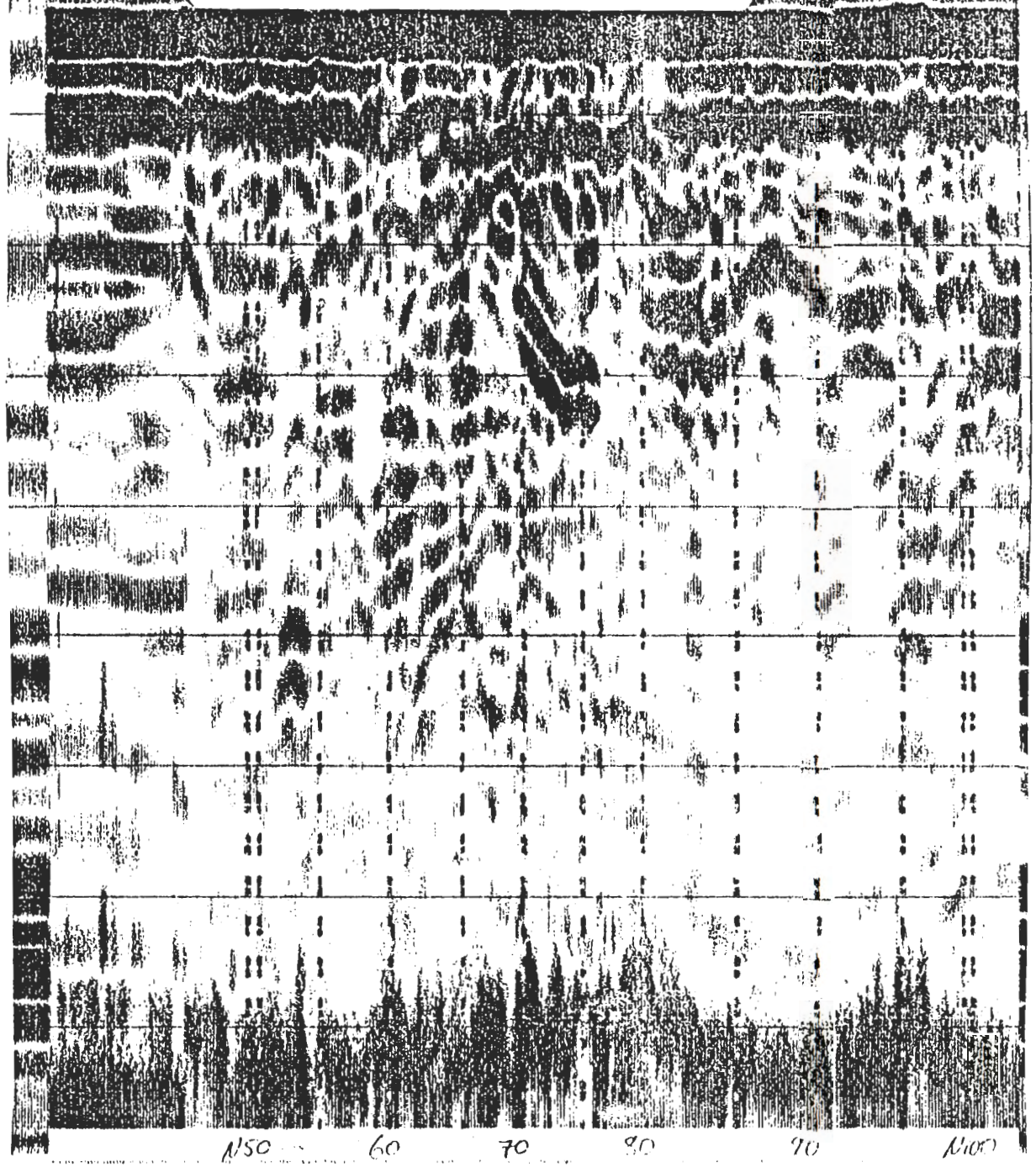

8312975.0858
Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N95
W80 - E0


Riverland ERA 9312975.0859
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
N100
W80 - E0
W80
70
60
50
40
30
20
10
E0

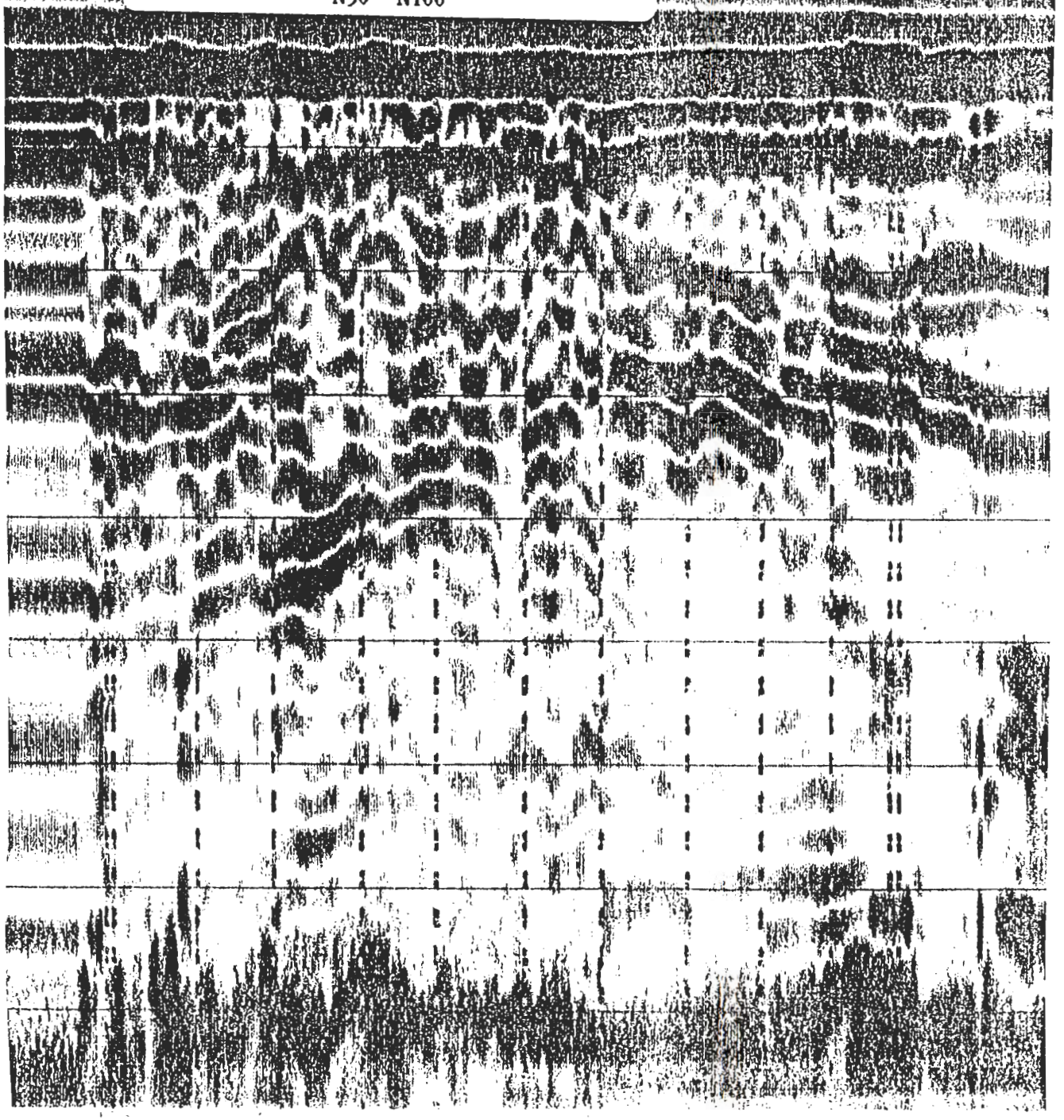

Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W80
N50 - N100

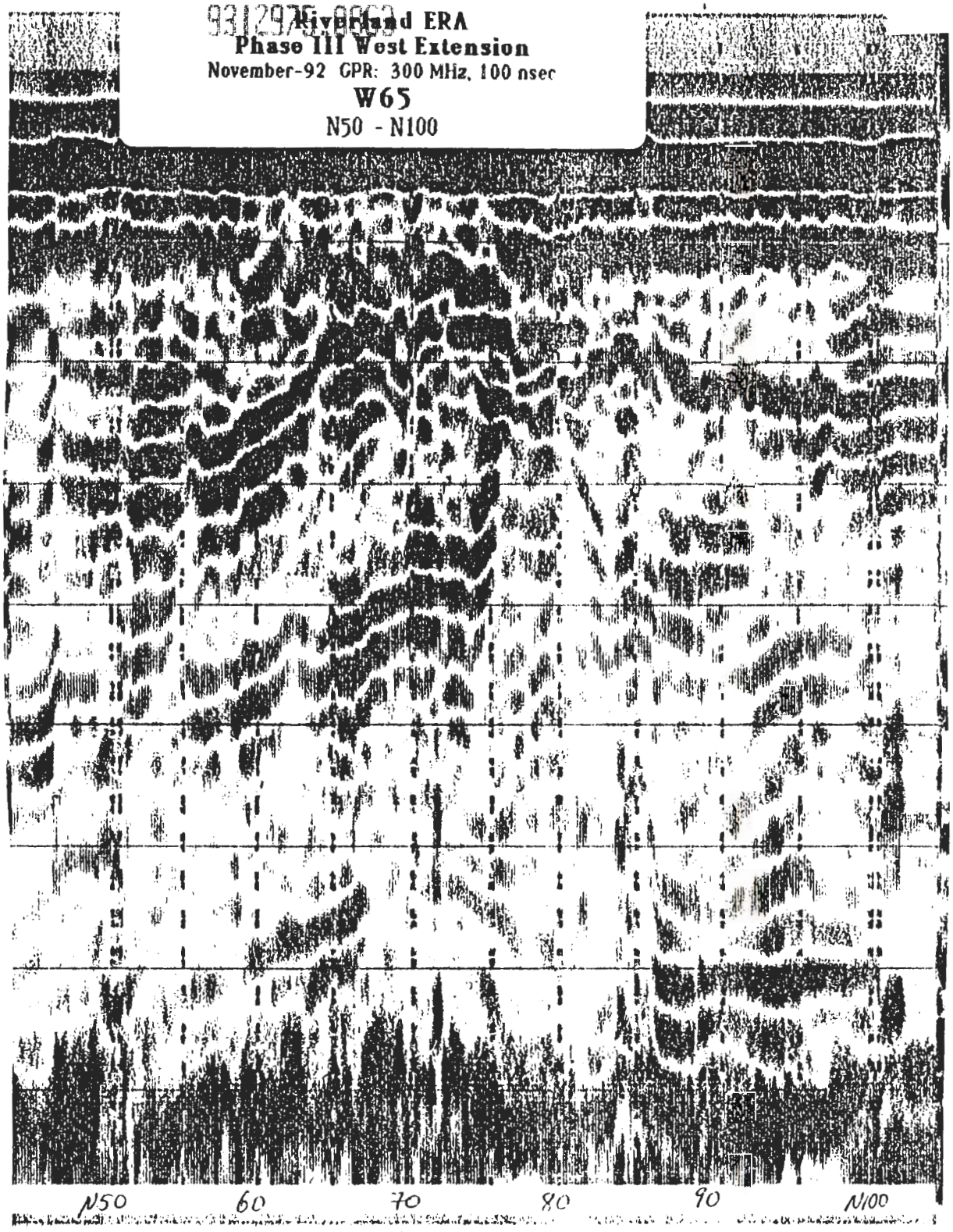
9312975.0961

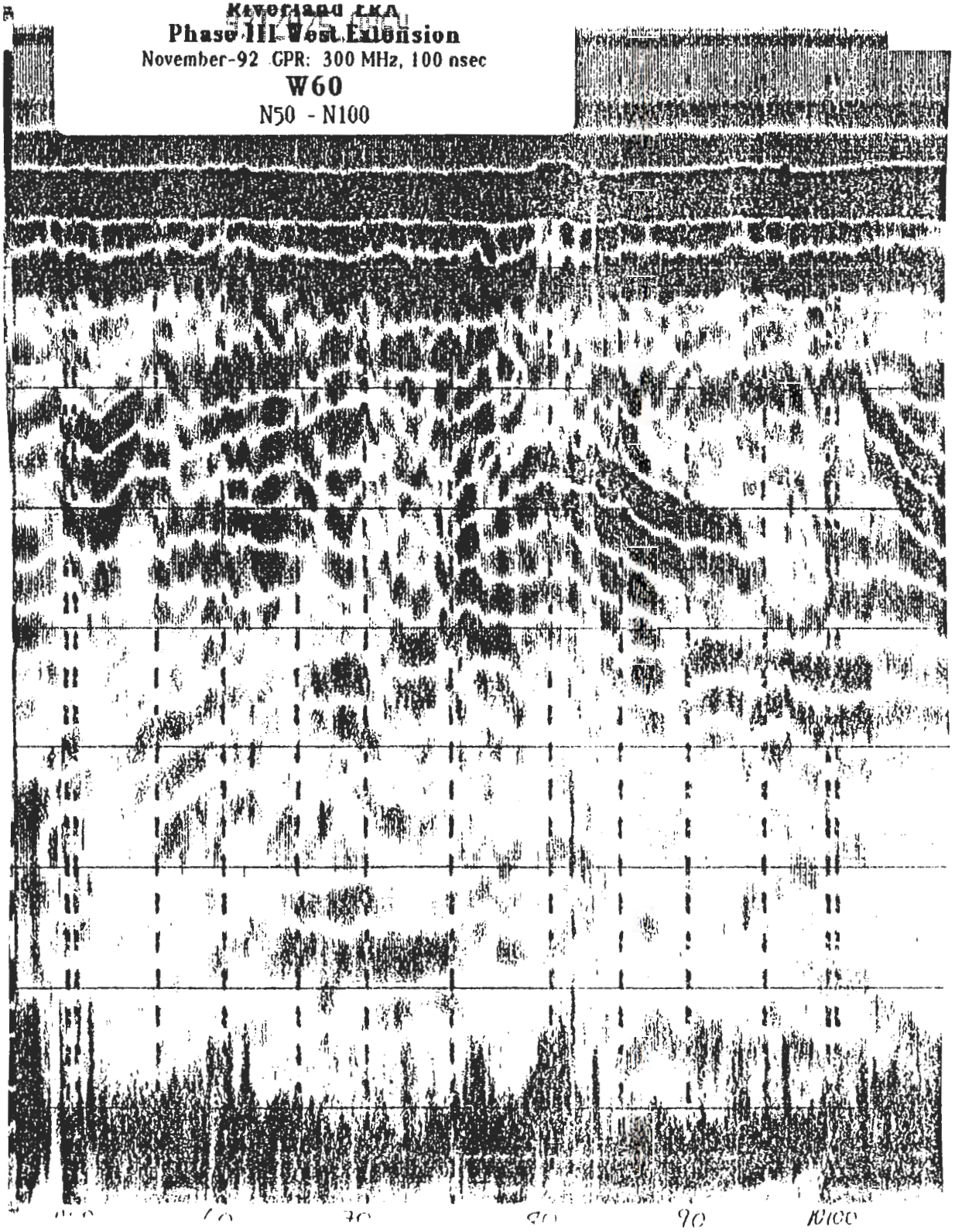
Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W75
N50 - N100

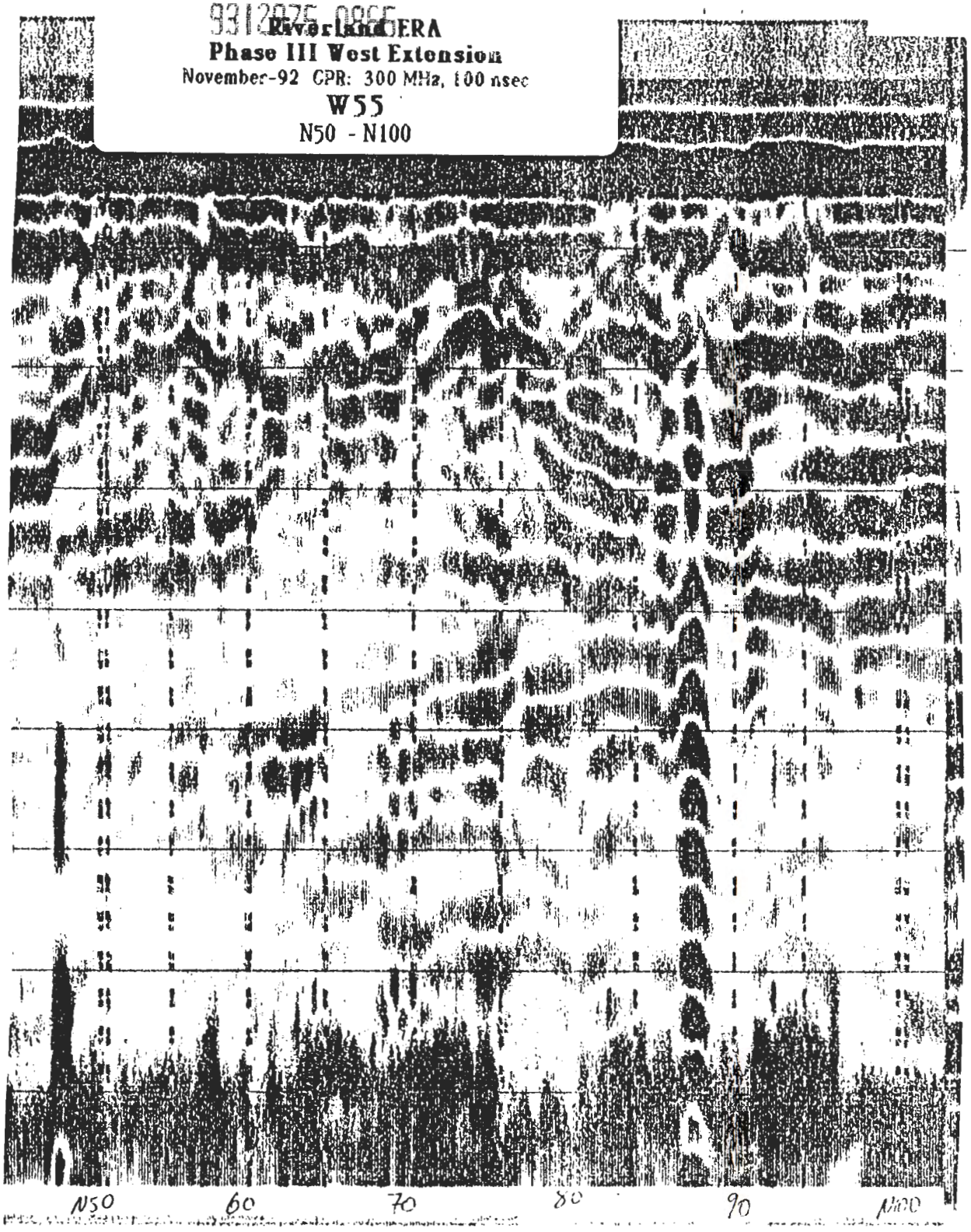


Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W70
N50 - N100



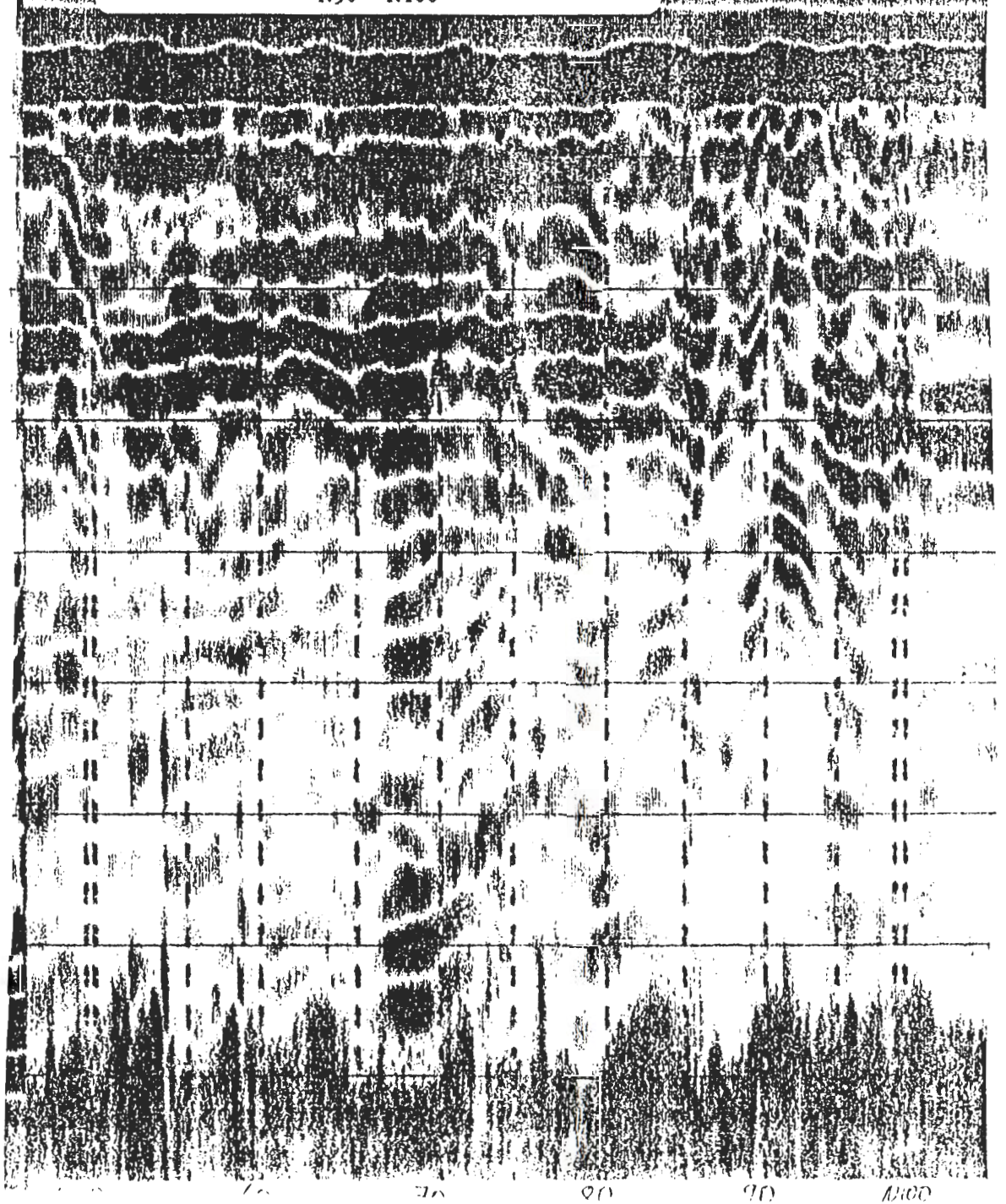

9312975.0863
Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W65
N50 - N100
N50
60
70
80
90
N100


Hanford LLA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W60
N50 - N100
60
90
W100


9312075.0855
Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W55
N50 - N100
N50
60
70
80
90
N100

9312975.0896

Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W50
N50 - N100



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Riverland ERA
Phase III West Extension
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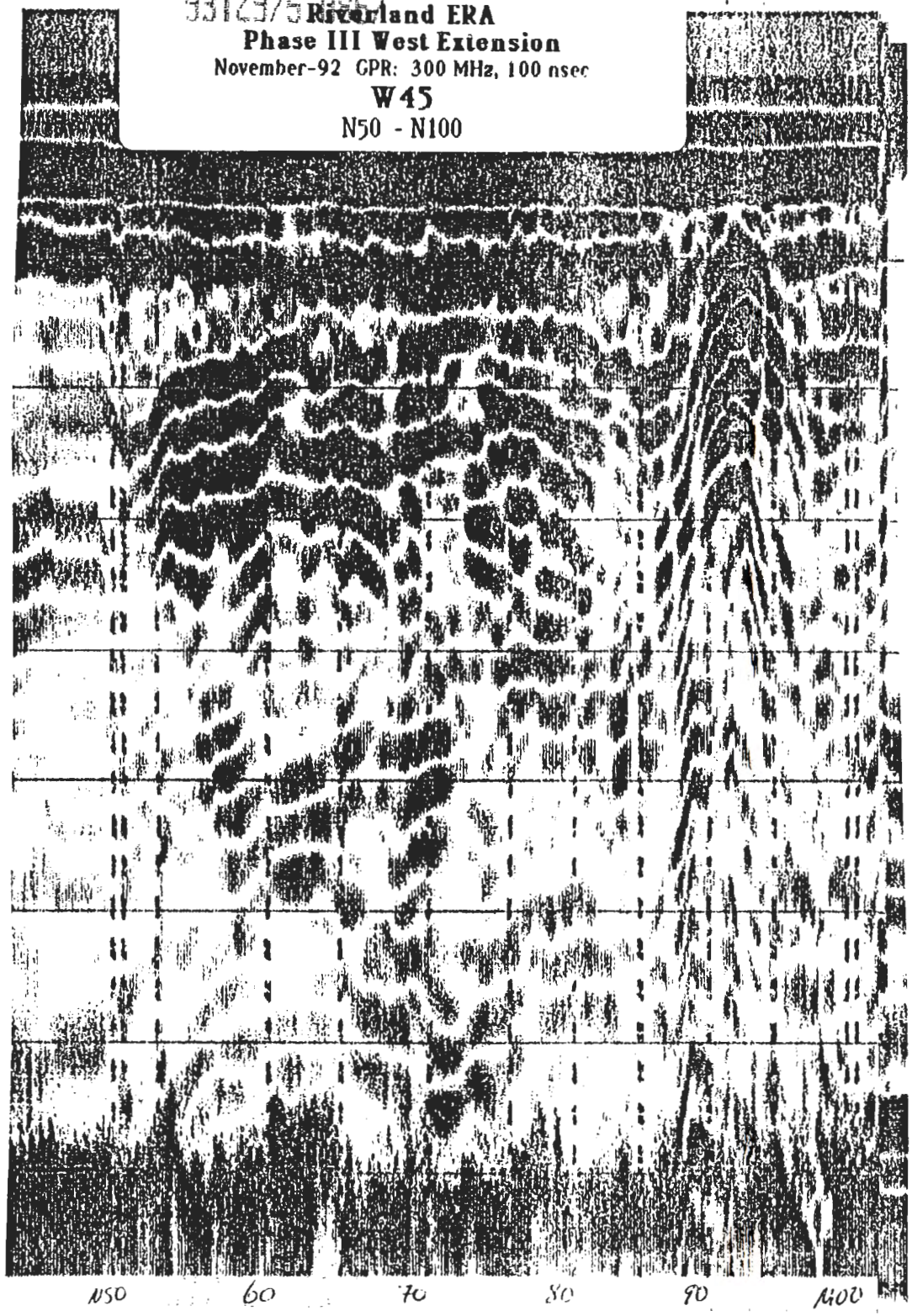
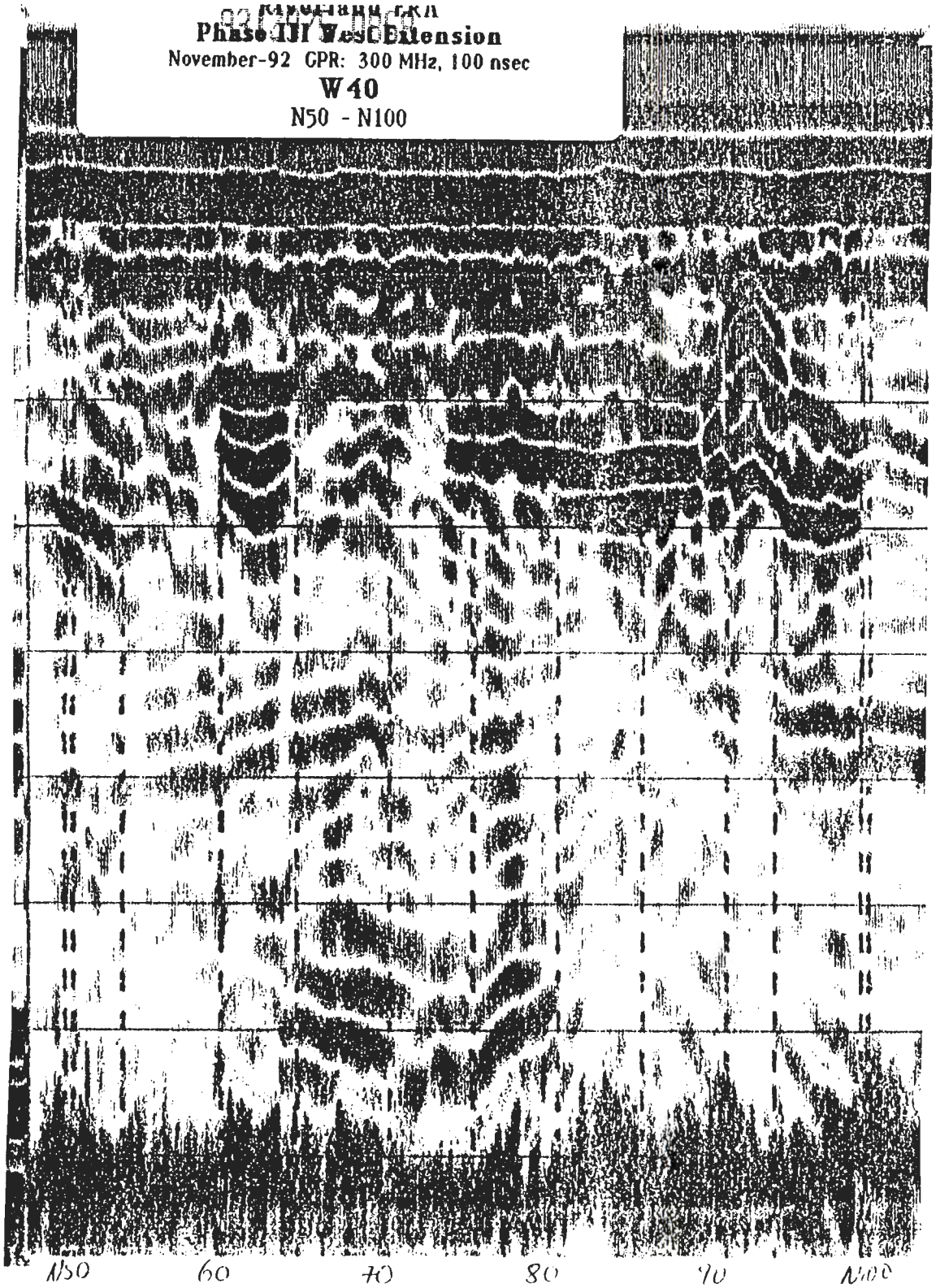
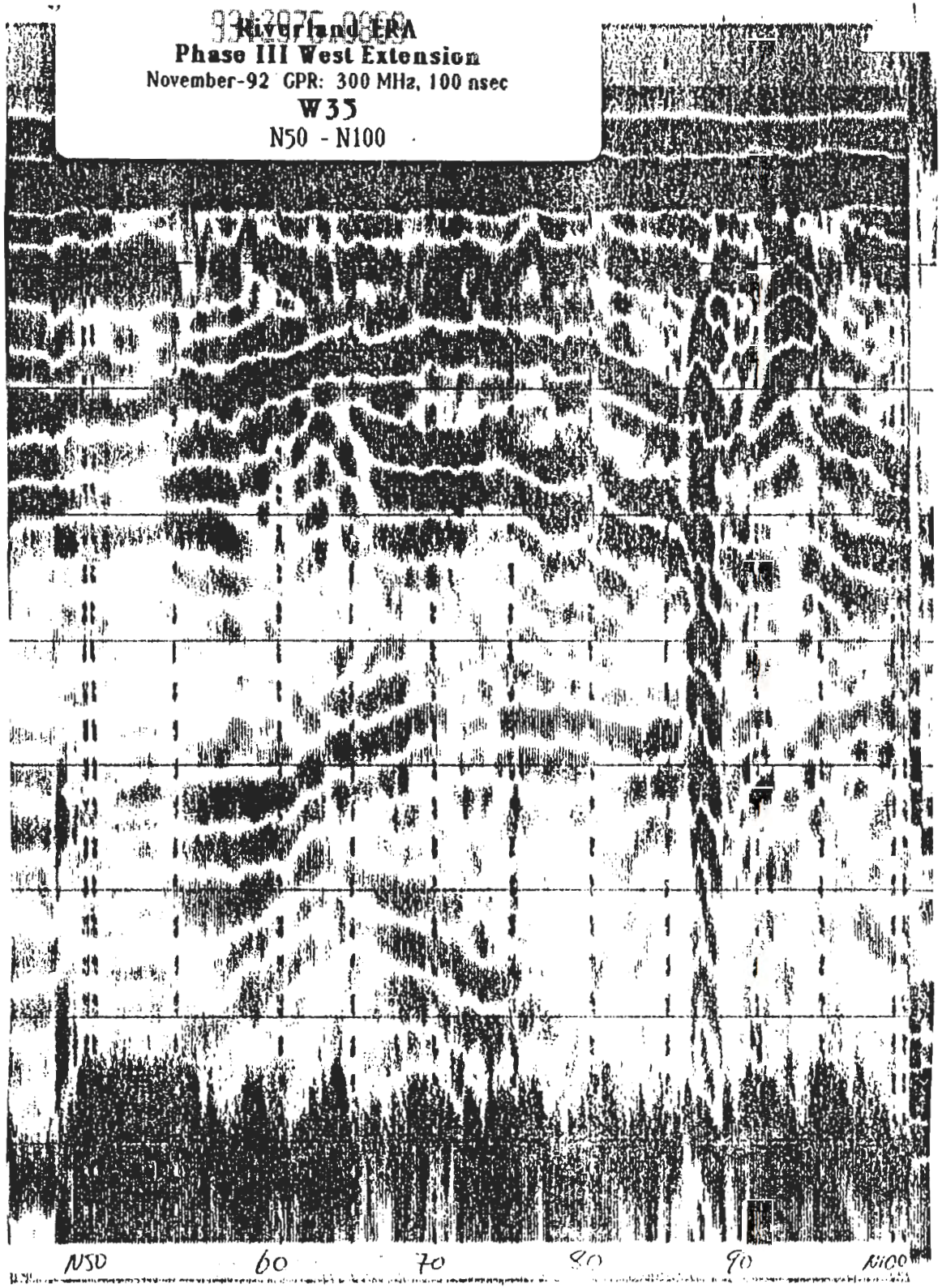
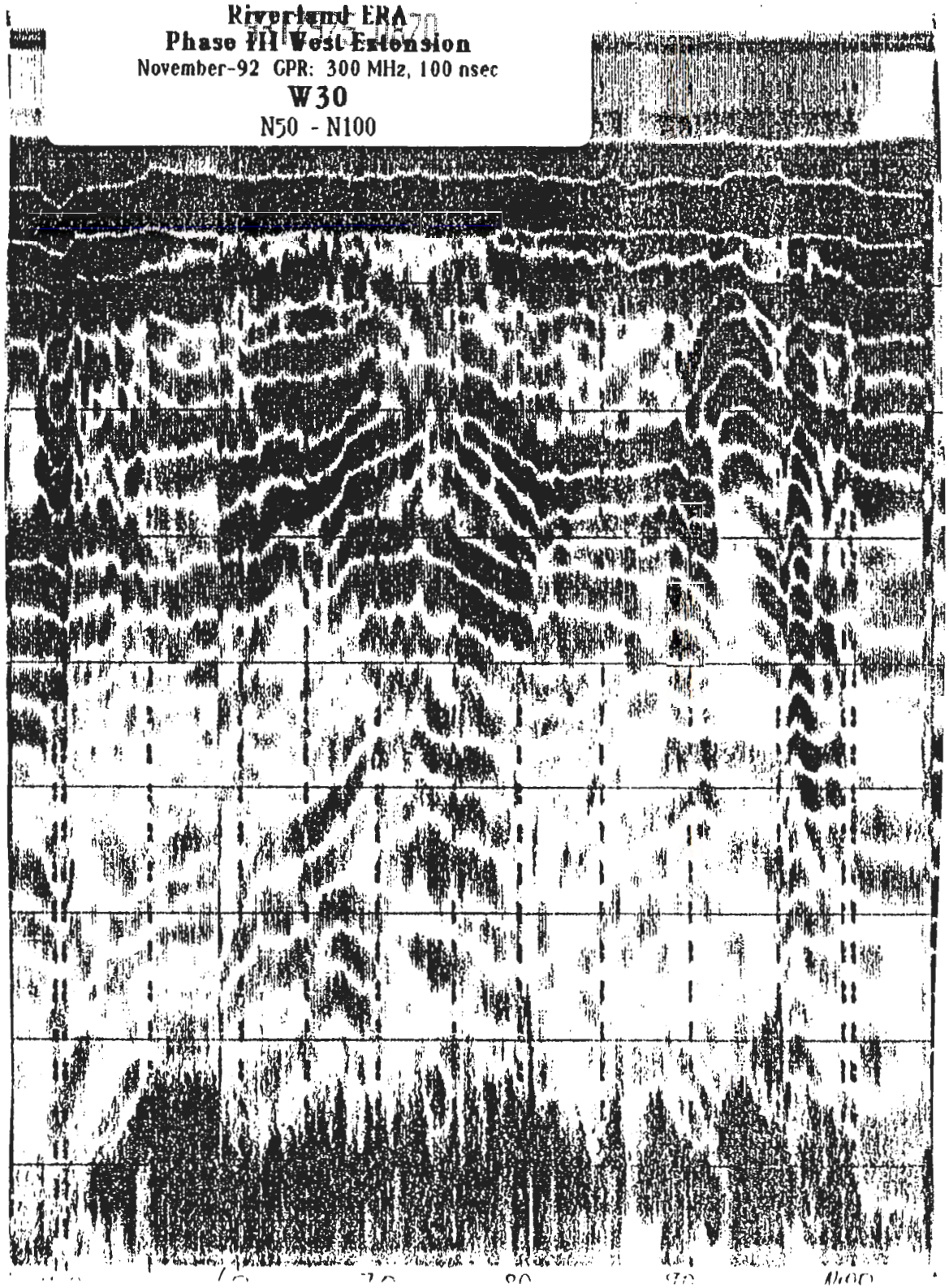
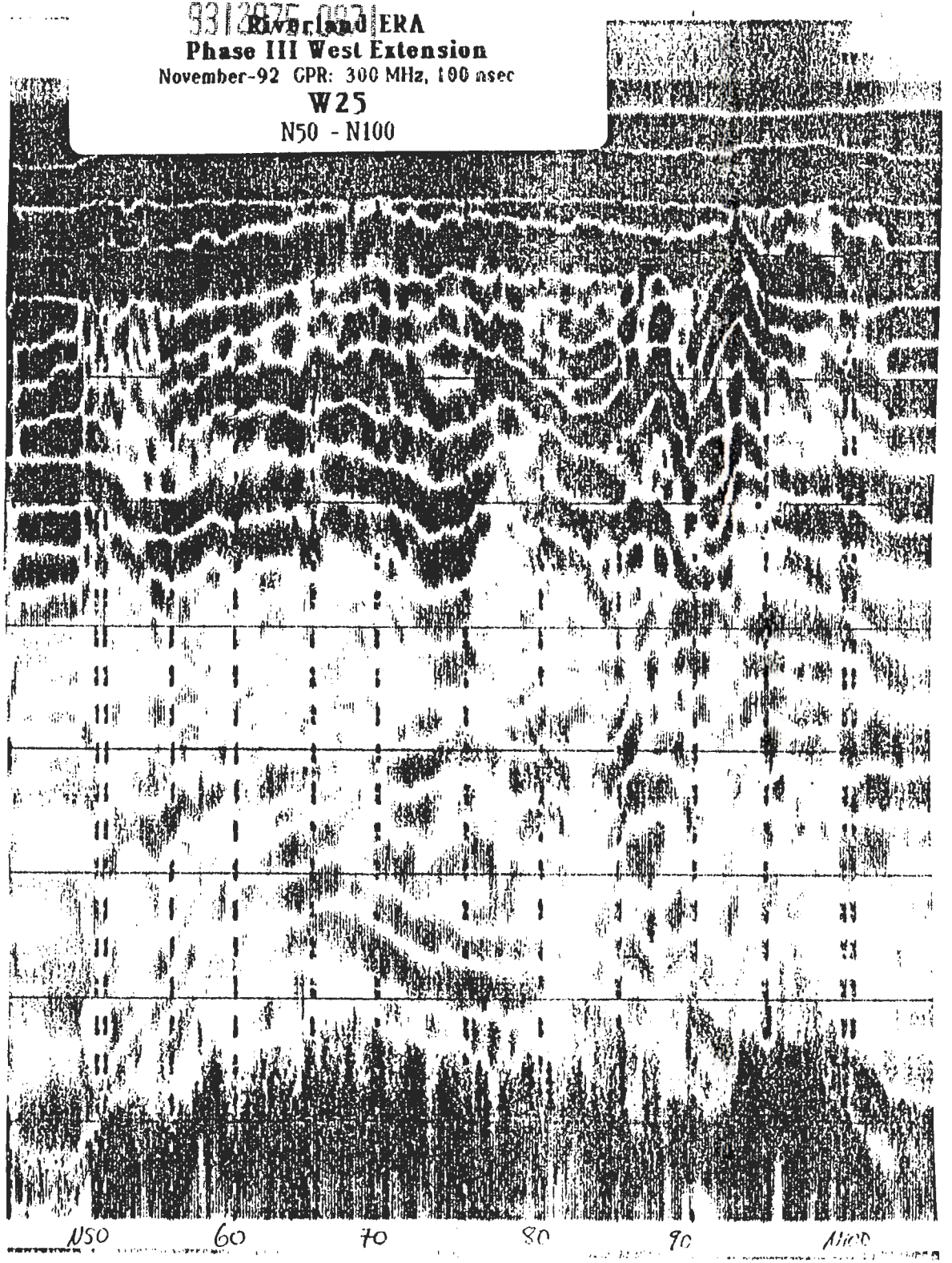
W45
N50 - N100

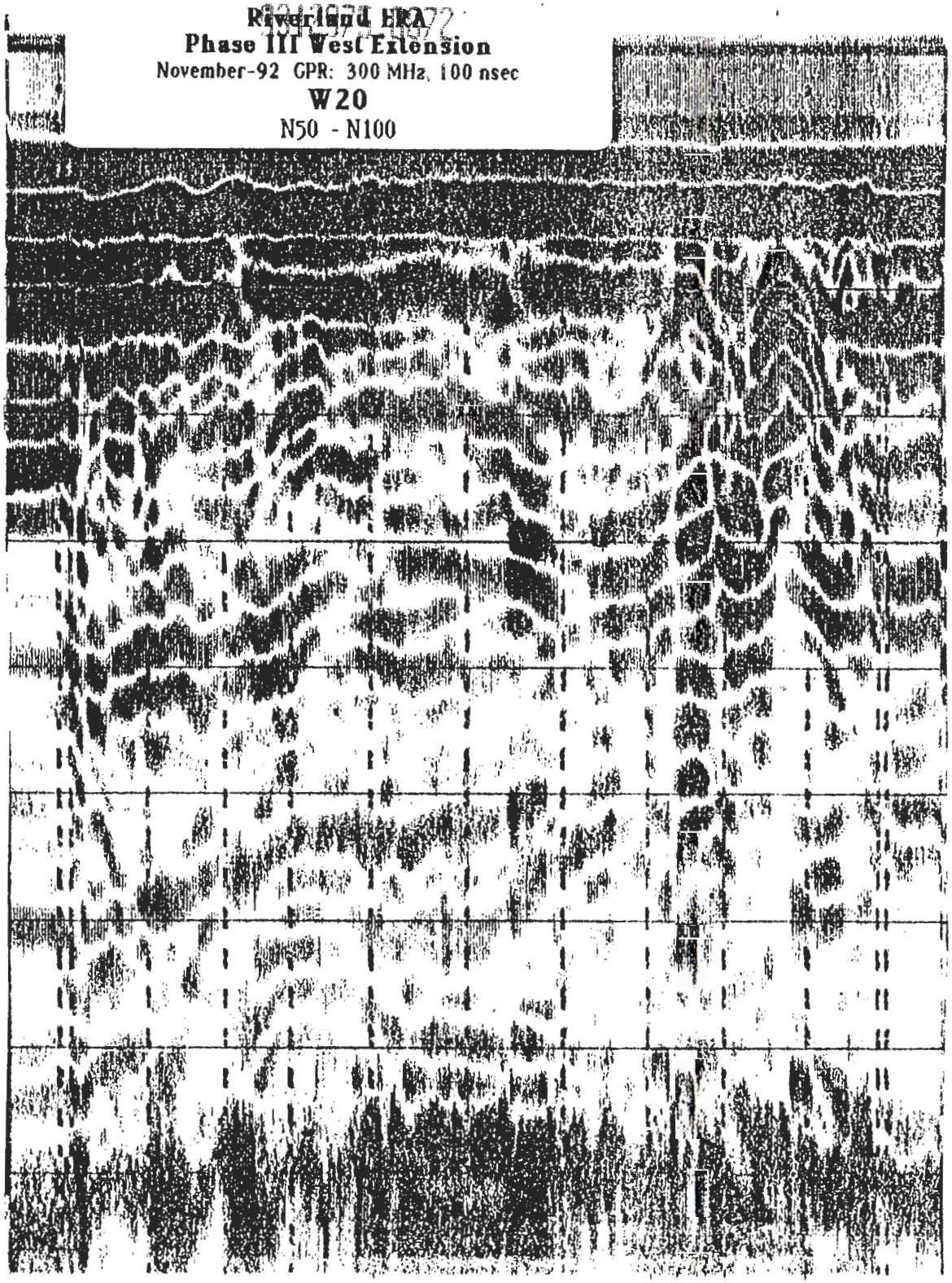



Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W40
N50 - N100
N50
60
70
80
90
N100


Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W35
N50 - N100
N50
60
70
80
90
N100


Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W30
N50 - N100


9312875.0931
Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W25
N50 - N100
N50
60
70
80
90
N100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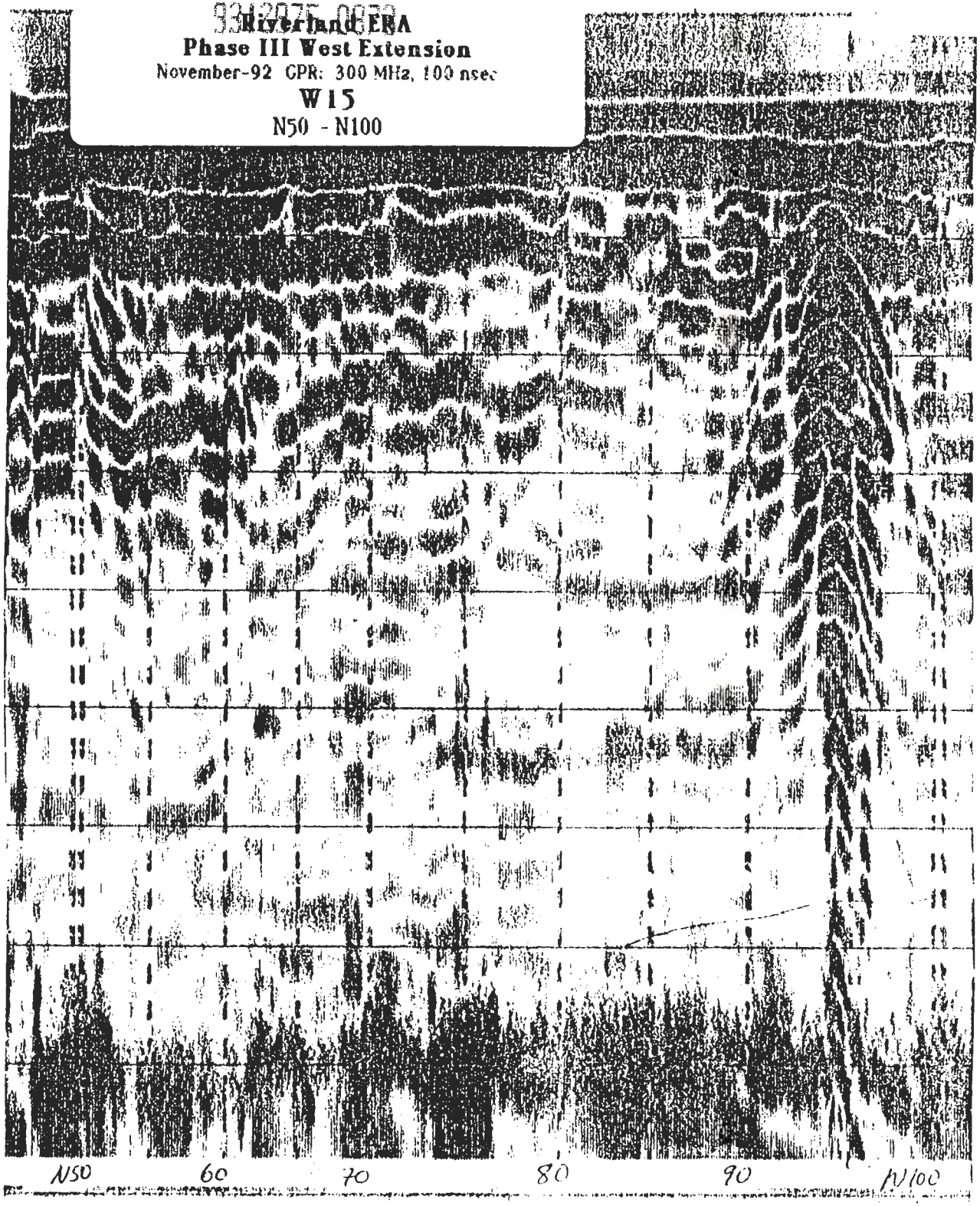
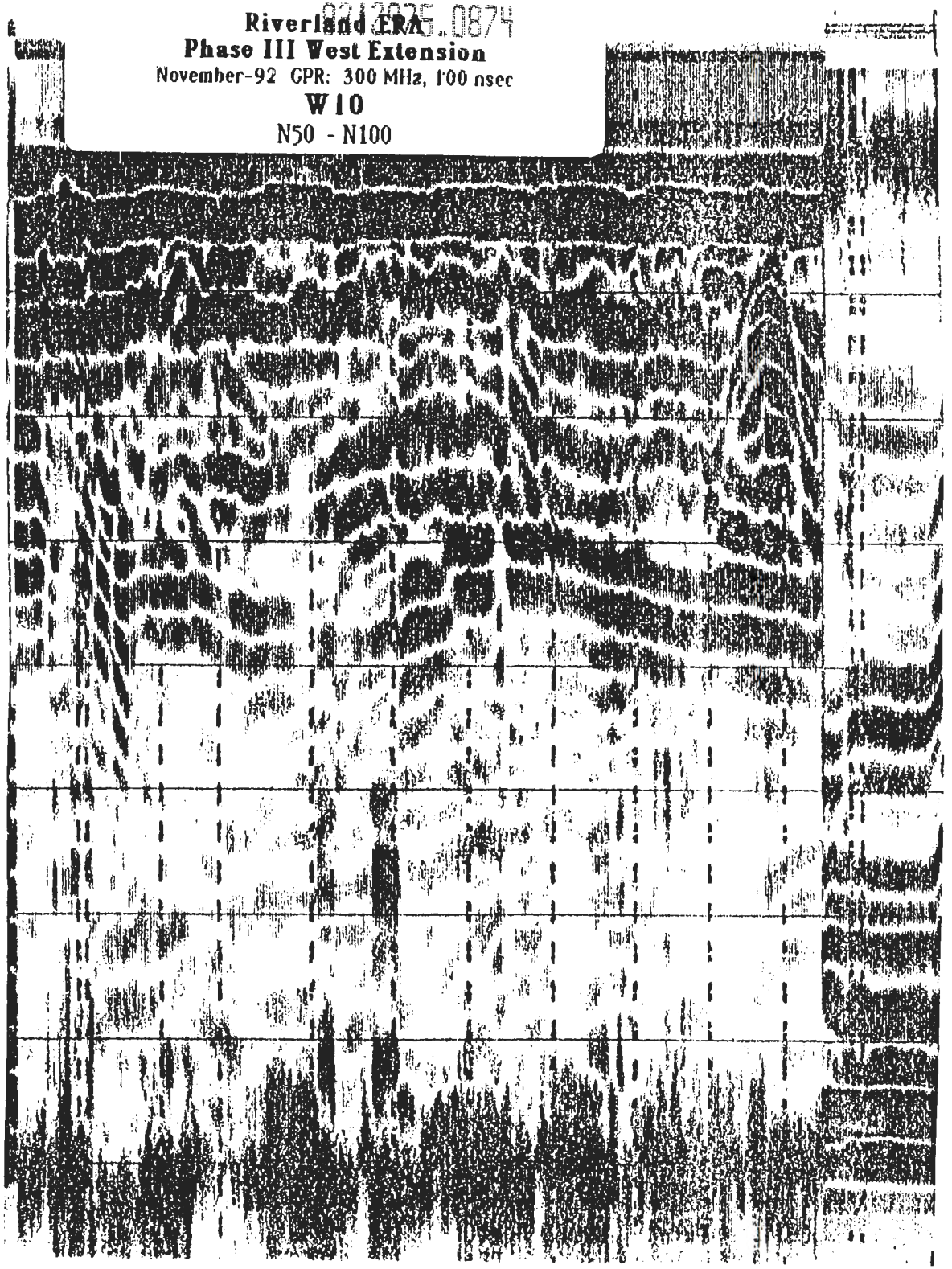
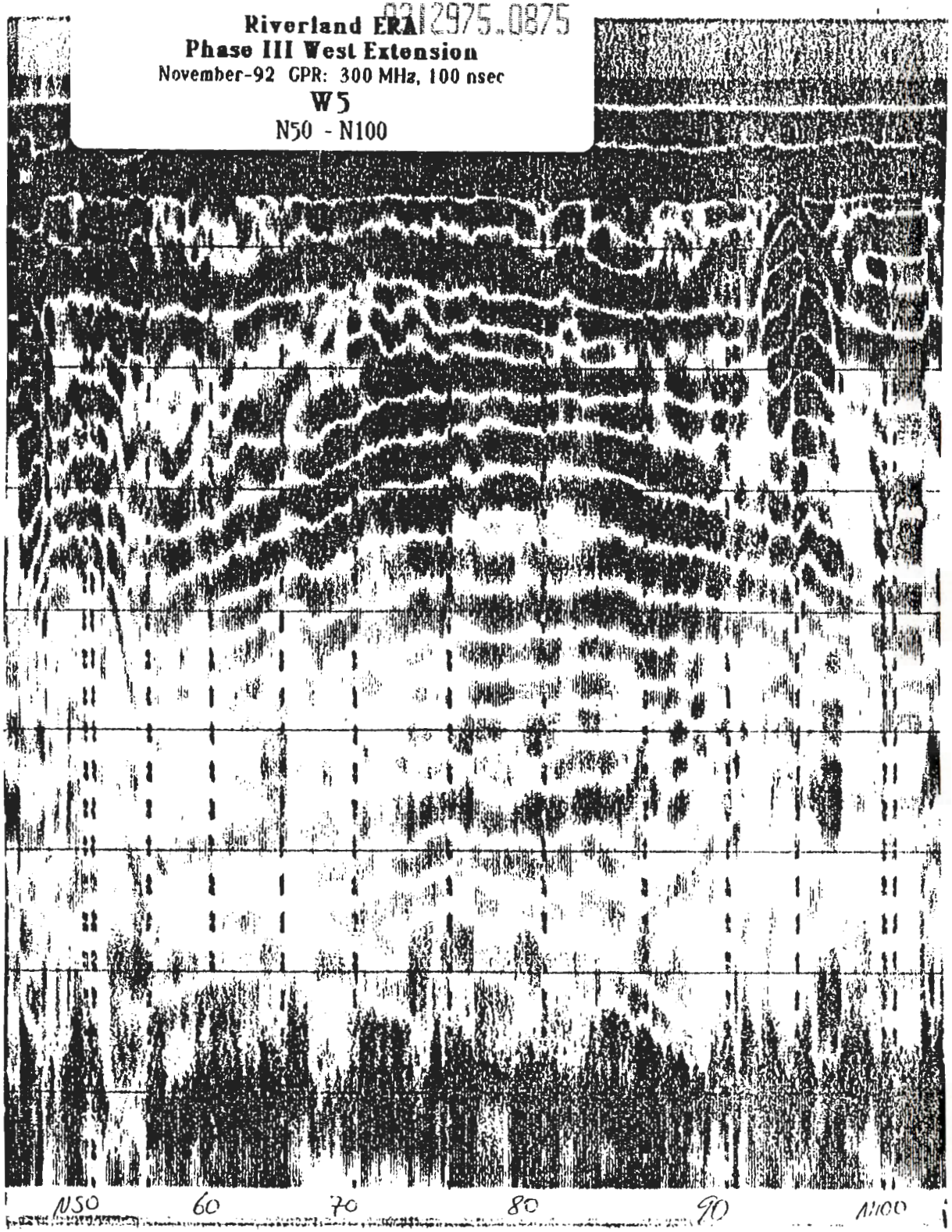
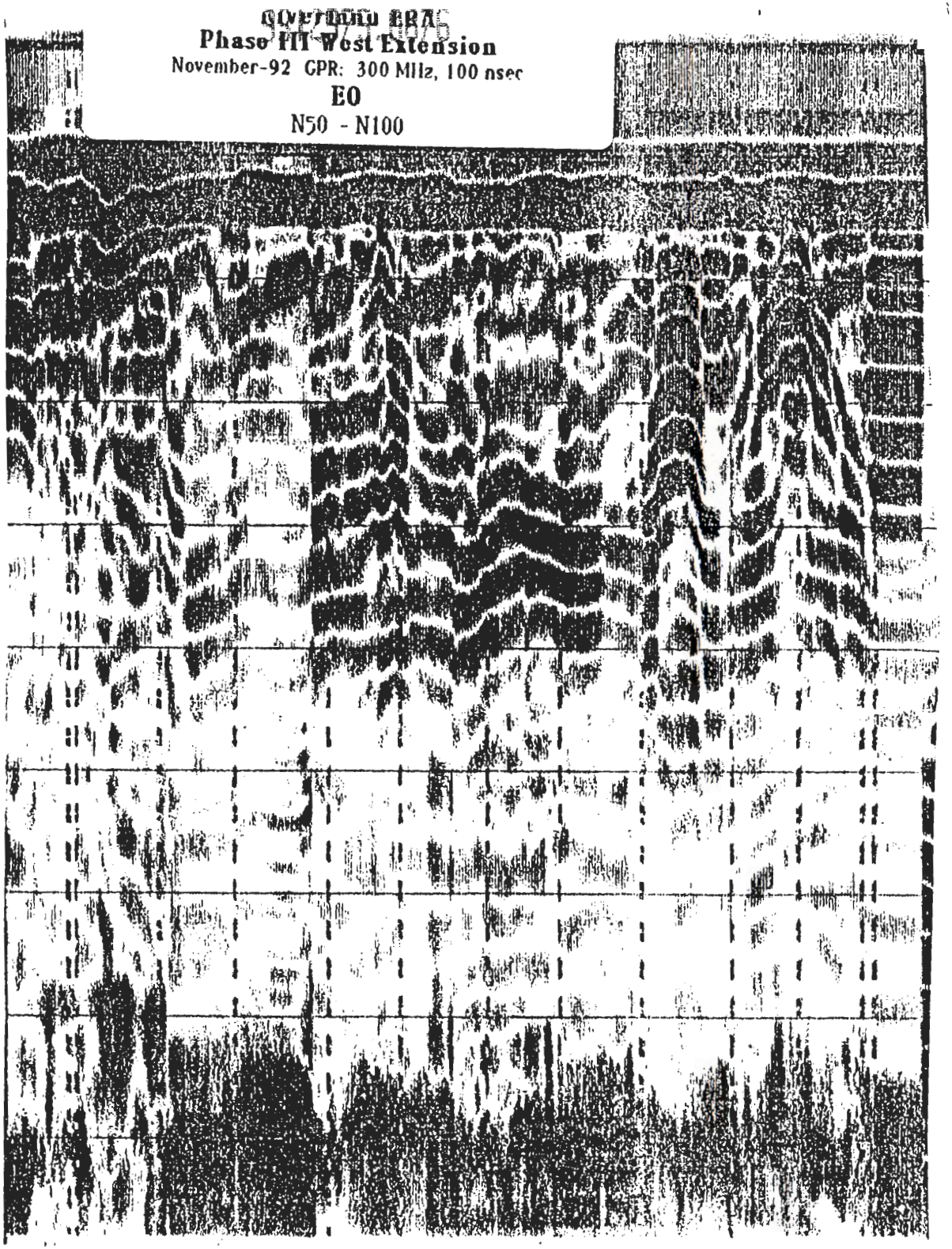
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W20
N50 - N100


Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W15
N50 - N100
N50
60
70
80
90
N100


Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W10
N50 - N100


Riverland ERA
Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
W5
N50 - N100
N50
60
70
80
90
N100


Phase III West Extension
November-92 GPR: 300 MHz, 100 nsec
E0
N50 - N100

GROUND PENETRATING RADAR (GPR) SURVEY

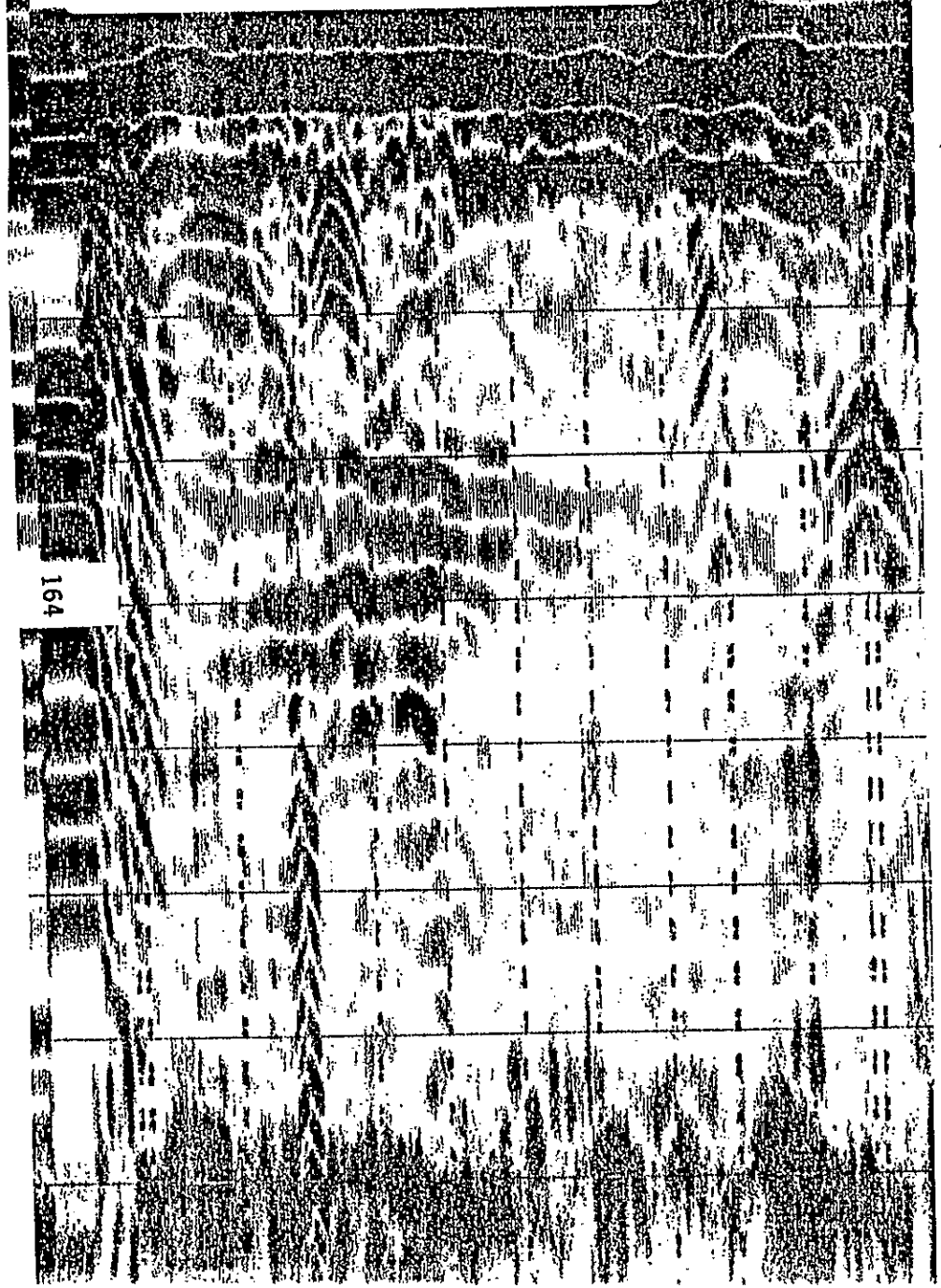
Team Geophysics, Westinghouse Hanford Operations

TITLE: Riverland ERA, PHASE III Extension East	DATE: 11-11-92
LOCATION: Midway railroad decon. site.	
CLIENT: Paul Valcich	DATA COLLECTED BY K.A. Bergstrom, T.H. Mitchell
EQUIPMENT USED: GSSI System 8, model 4800; Calibrator Model P731; Digital Tape Recoder DT6000A	ANTENNA(S) USED: 100 ____ 300 XX 100 BISTATIC ____
	LOG BOOK: EFL 1029
	TIME WINDOW (NS): 100
PROCEDURES FOLLOWED: WHC-CM-7-7 EII 11 2, REV 3	
GRID : 50x90' NO. OF PROFILES: 30 TOTAL FOOTAGE COLLECTED: 1900	
PARAMETERS: Two sets of perpendicular profiles; five feet between profiles.	
DATA TAPE NO.: ERA #3 RECORDS LOCATION: Geophysical files	
TAPE ADDRESS : 20781-40993 CALIBRATION ADDRESS: 40116-40993	
INTERPRETED BY : T.H. Mitchell REVIEWED BY : K. A. Bergstrom	
INTERPRETATION DELIVERED TO draft to P. Valcich DATE : 9-92	
OBJECTIVE(S): To determine where a pipe, that was detected during recon. excavation, went to.	
NOTES: Antenna pulled by hand at 1-2 mph. 50 meter cable. Pulled on south and east side of survey marks.	

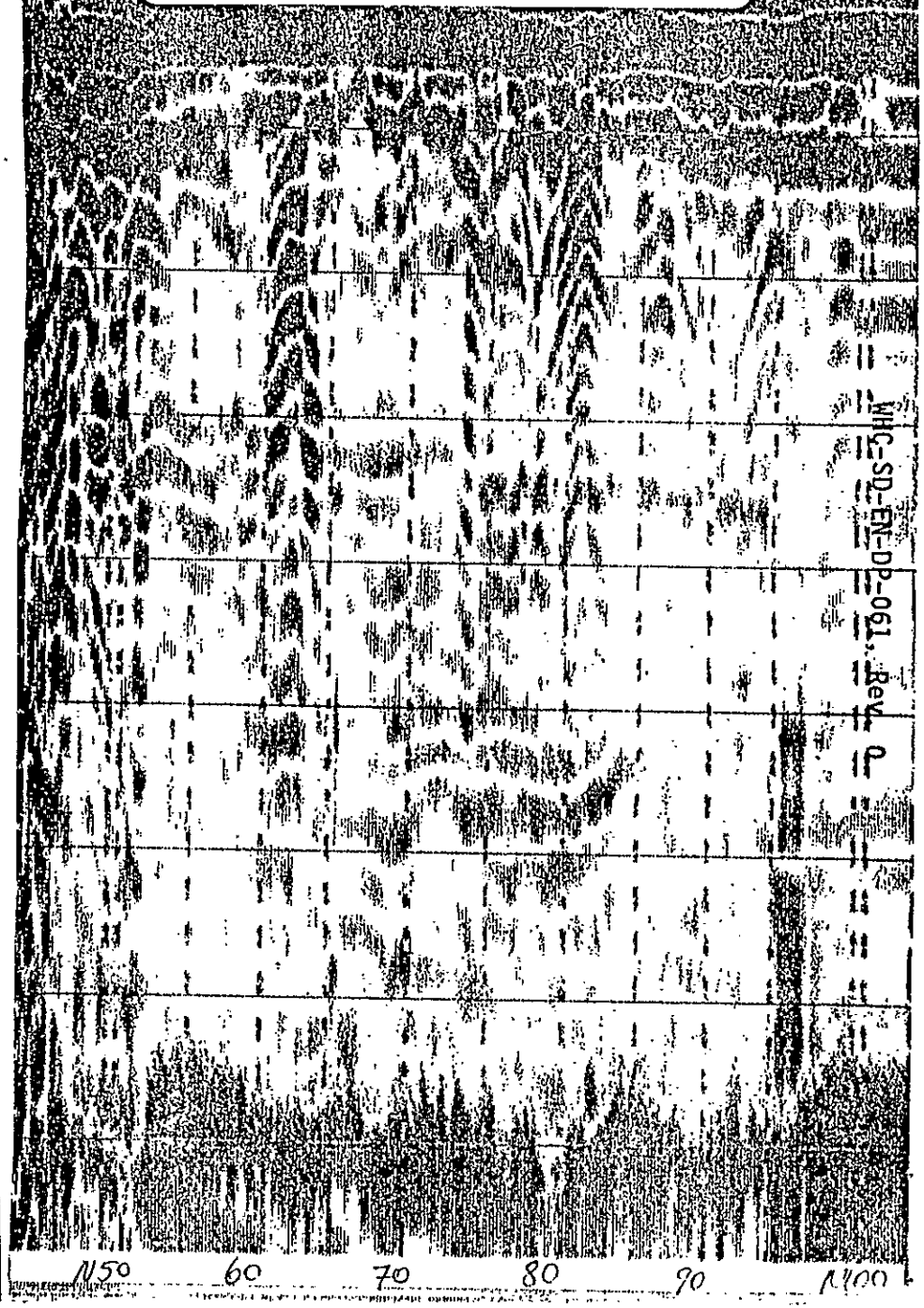
9212275.0877

9312975.0878

Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E220
N50 - N100

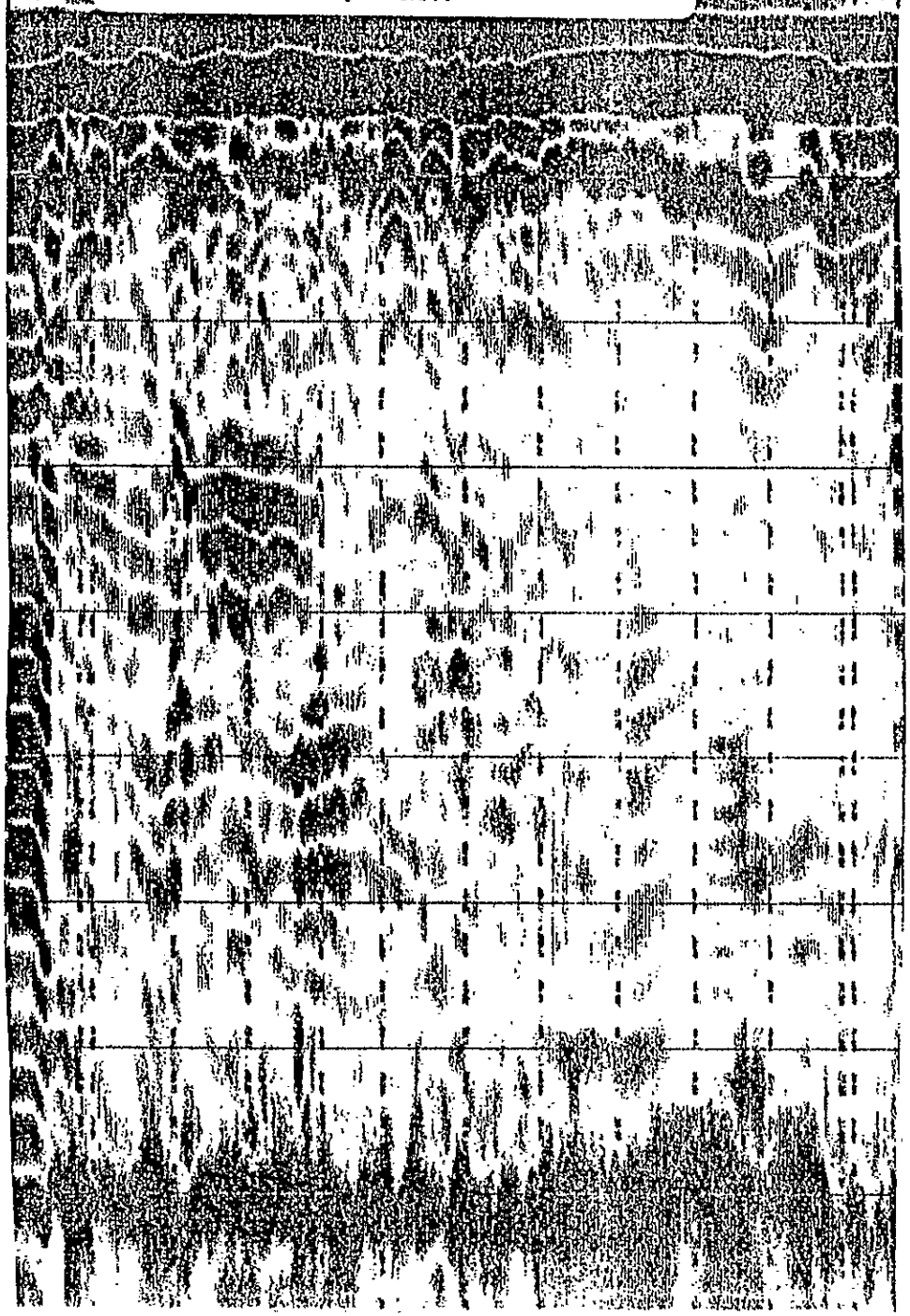


Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E225
N50 - N100



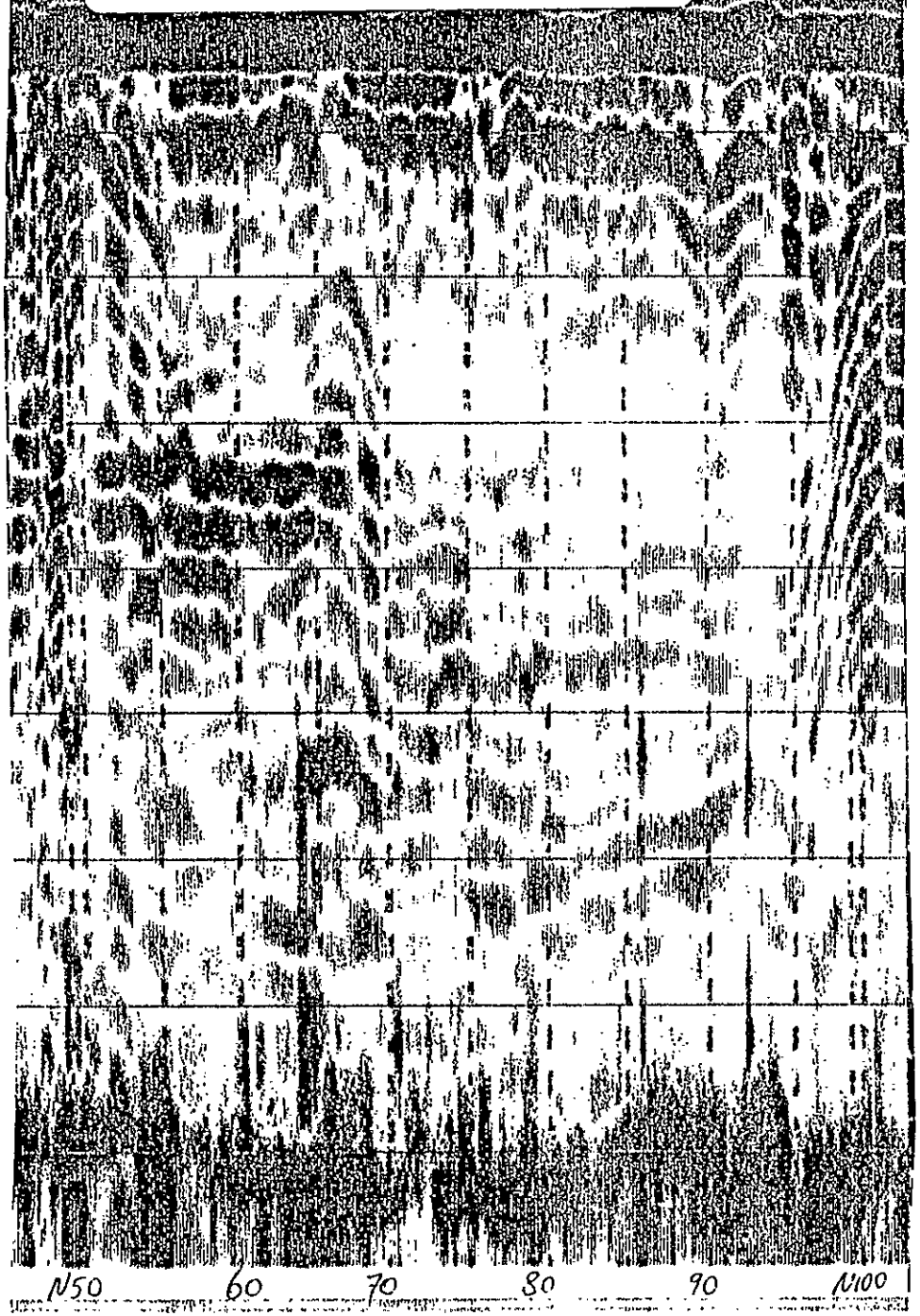
93129[illegible]

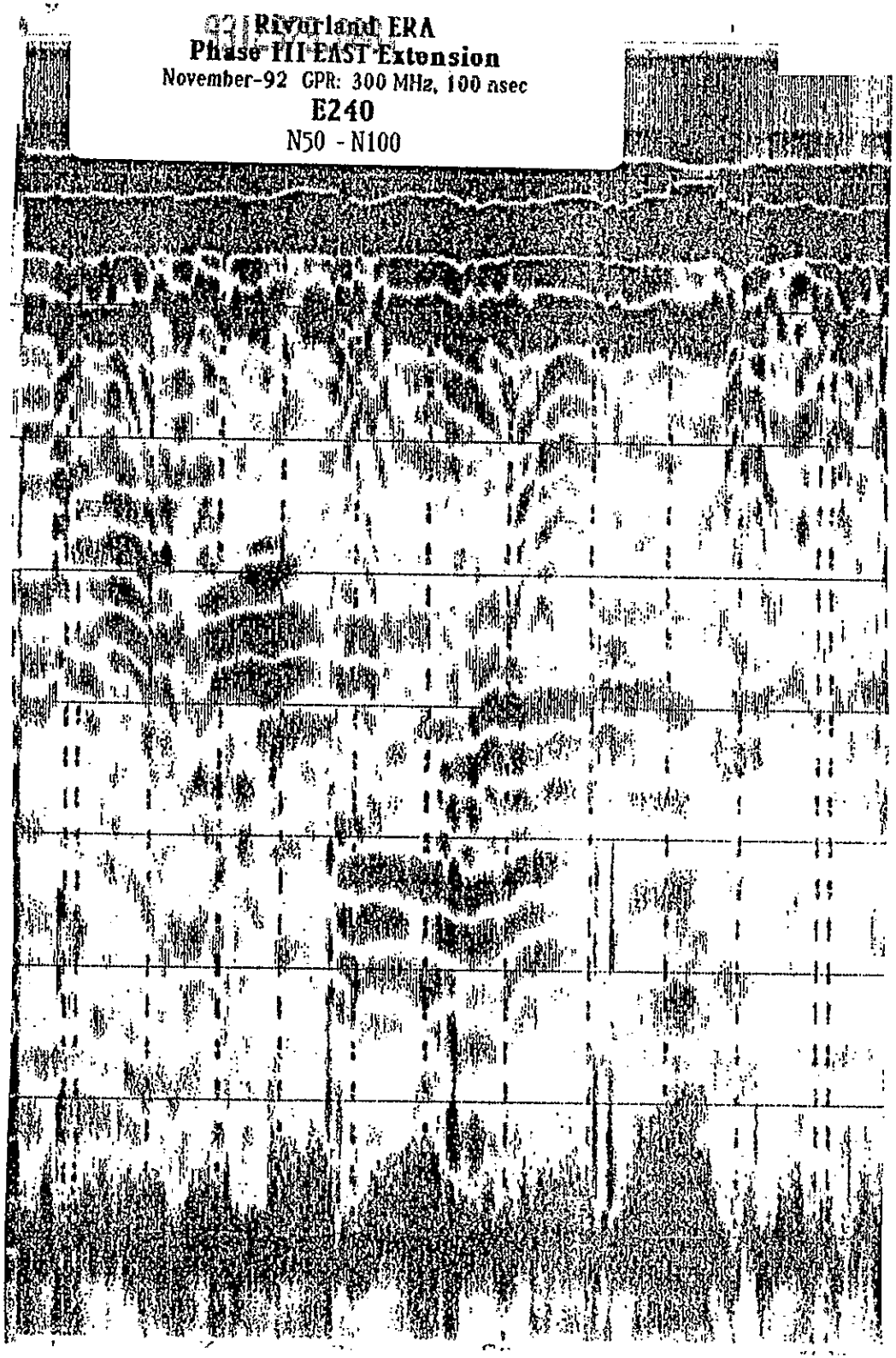
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
EZ30
N50 - N100



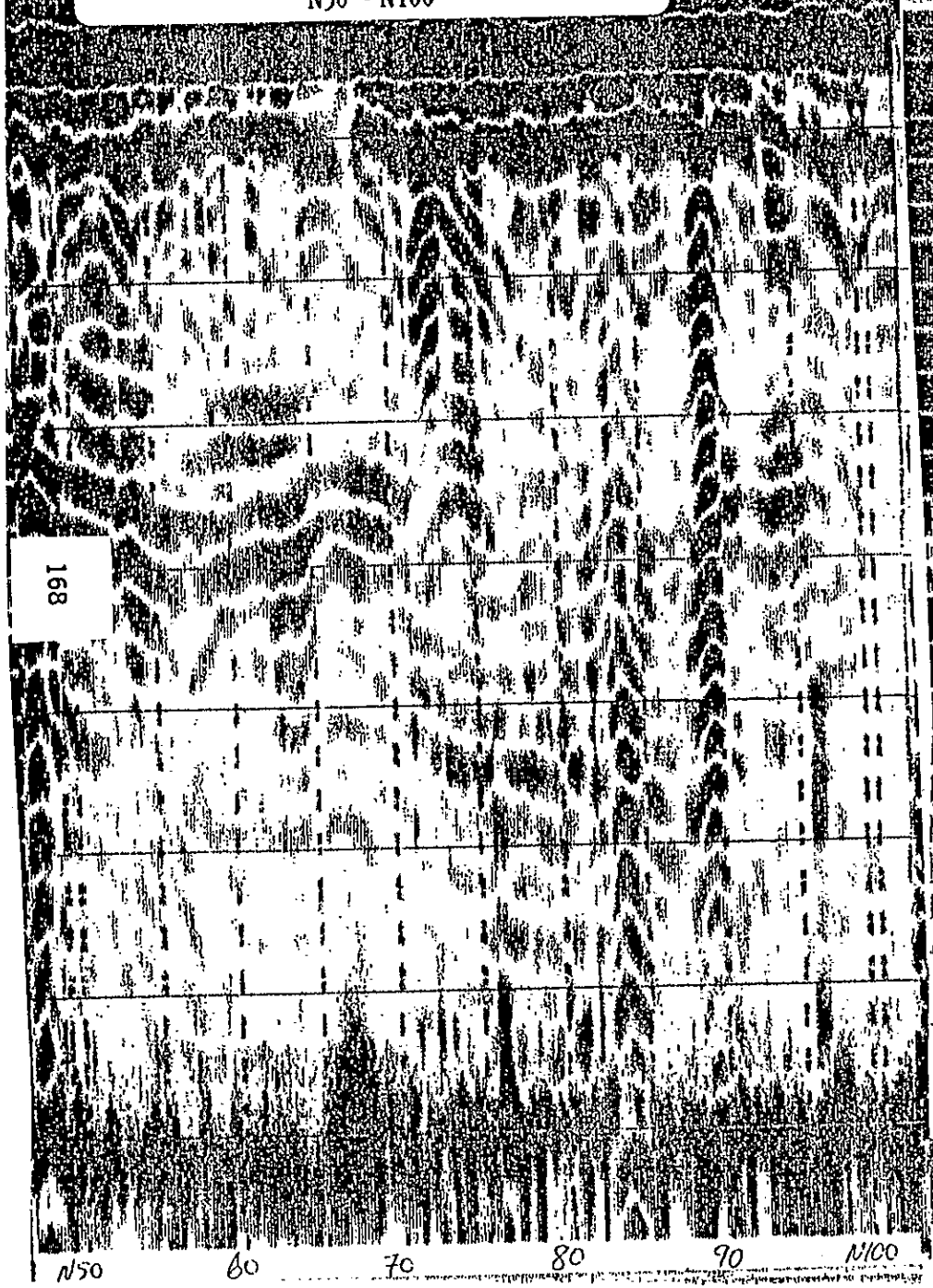
9312975.0000

Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E235
N50 - N100

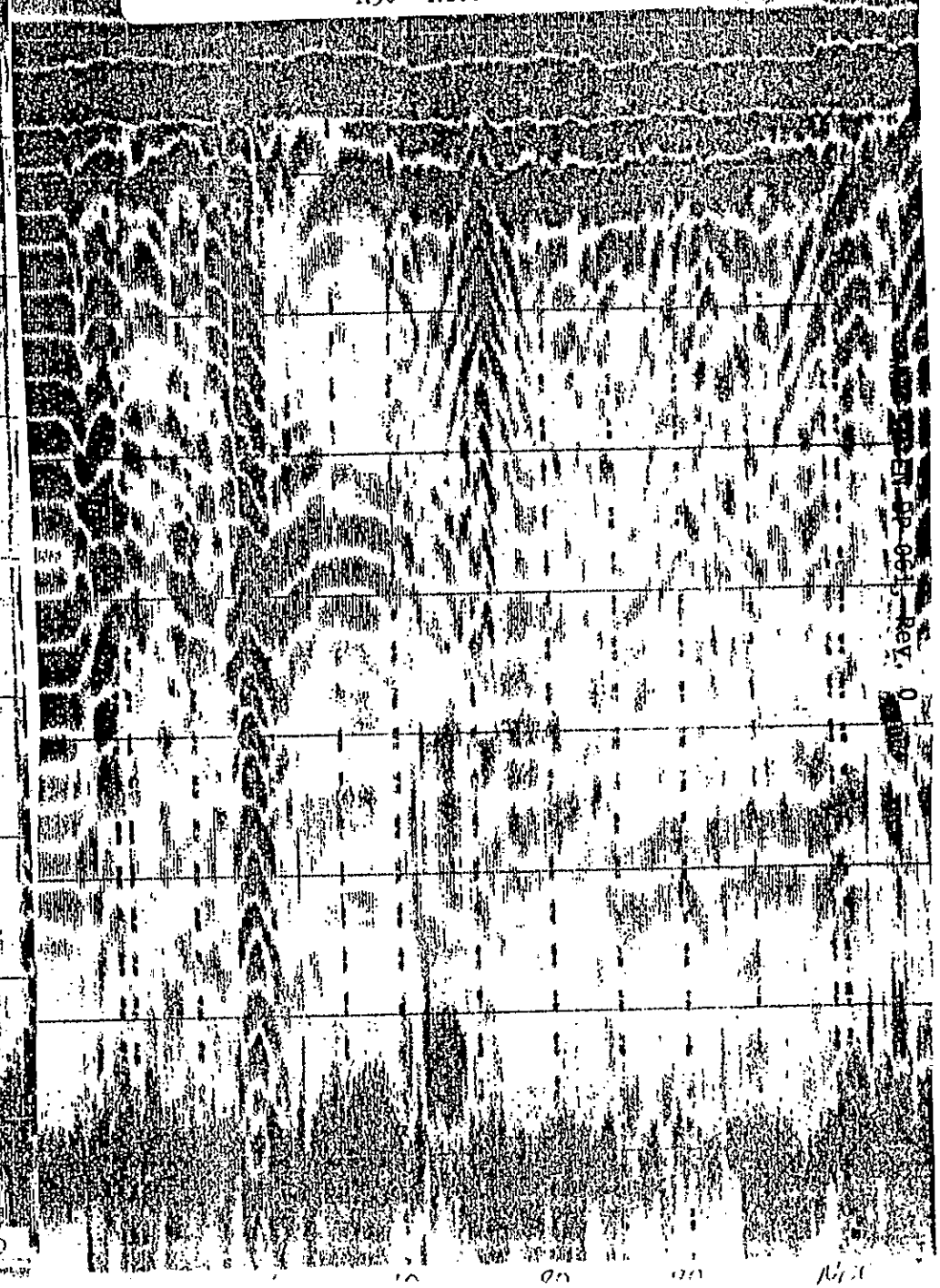



Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E240
N50 - N100

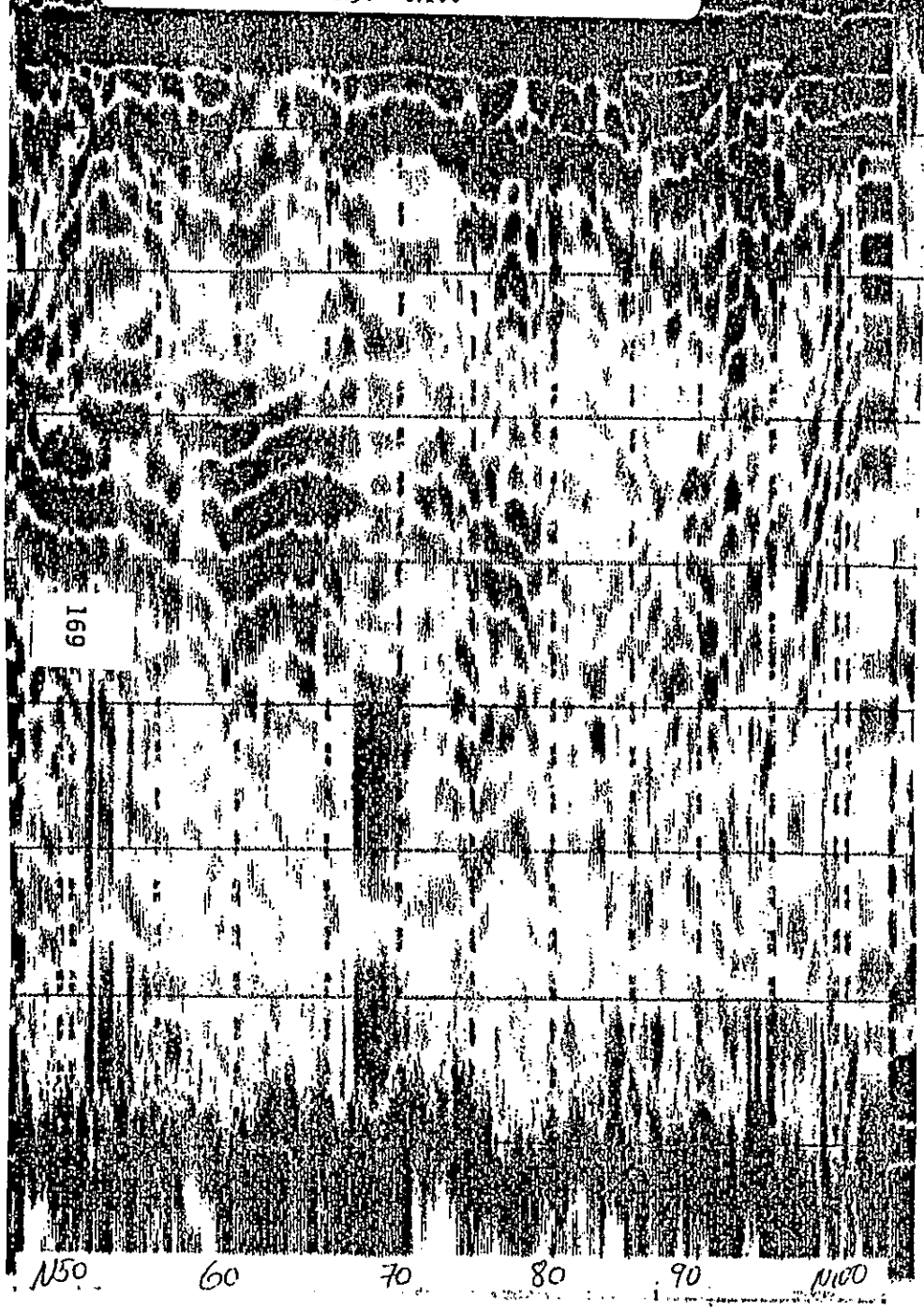
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E245
N50 - N100



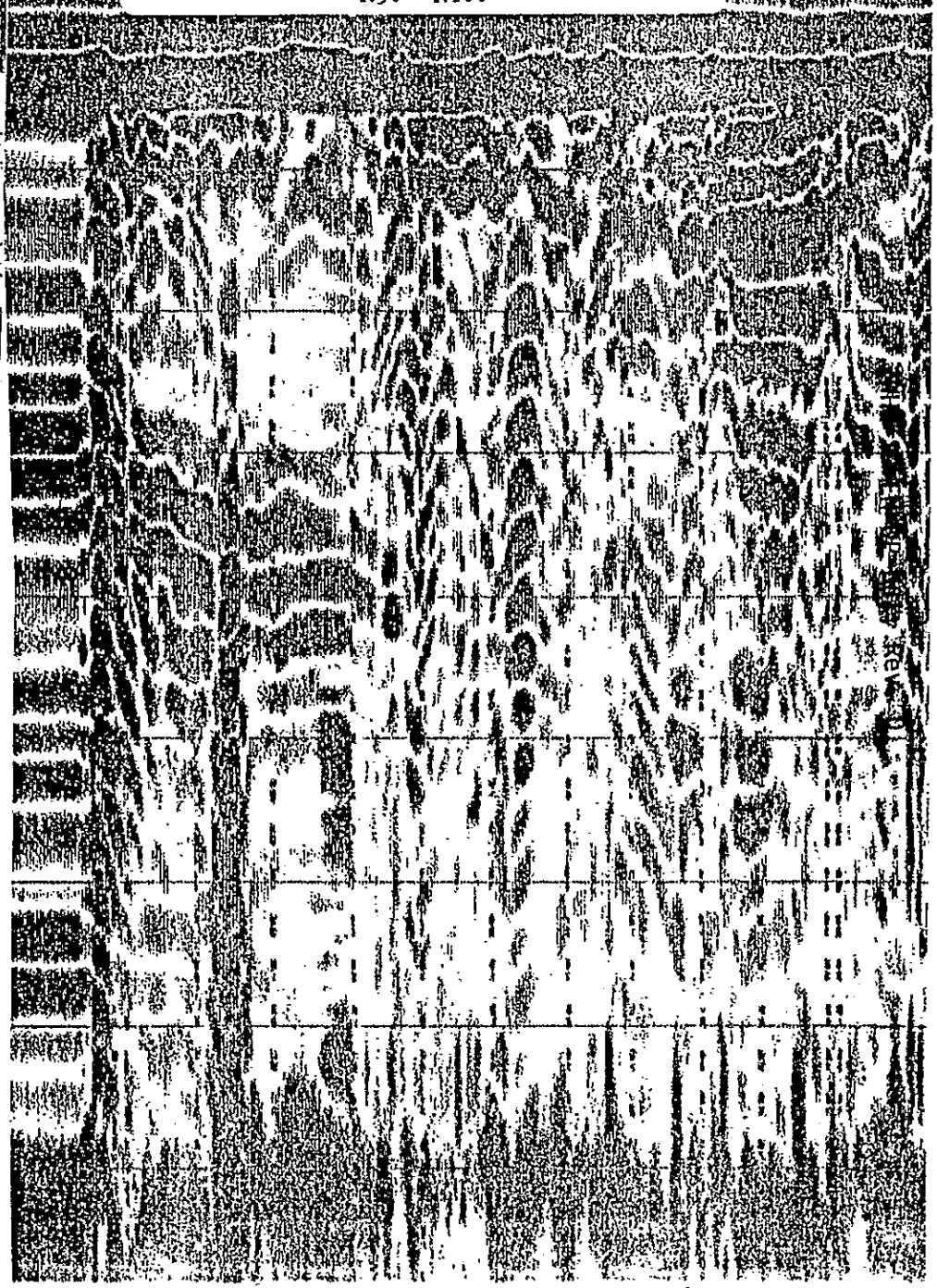
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E250
N50 - N100



Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E255
N50 - N100

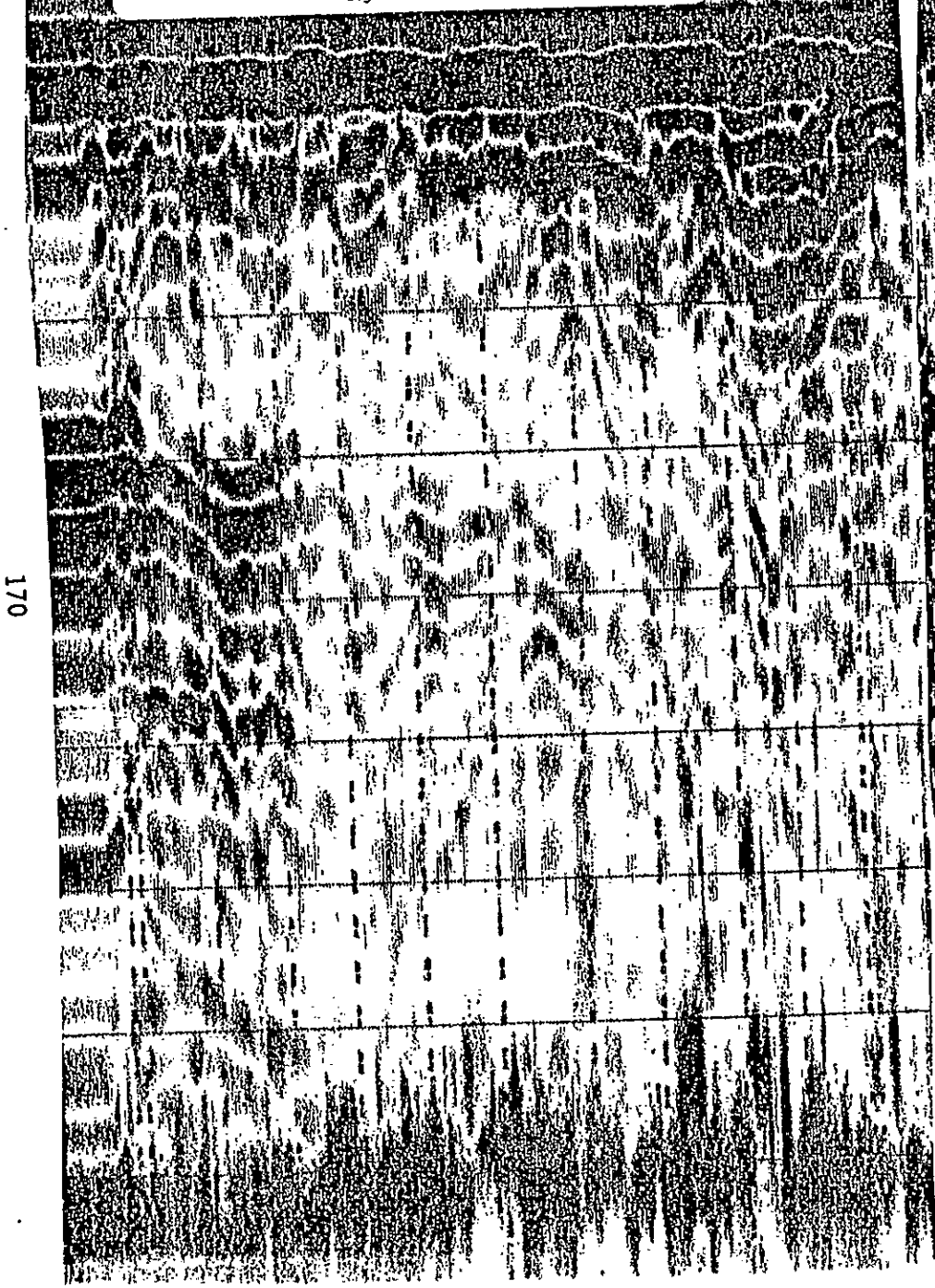


Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E260
N50 - N100

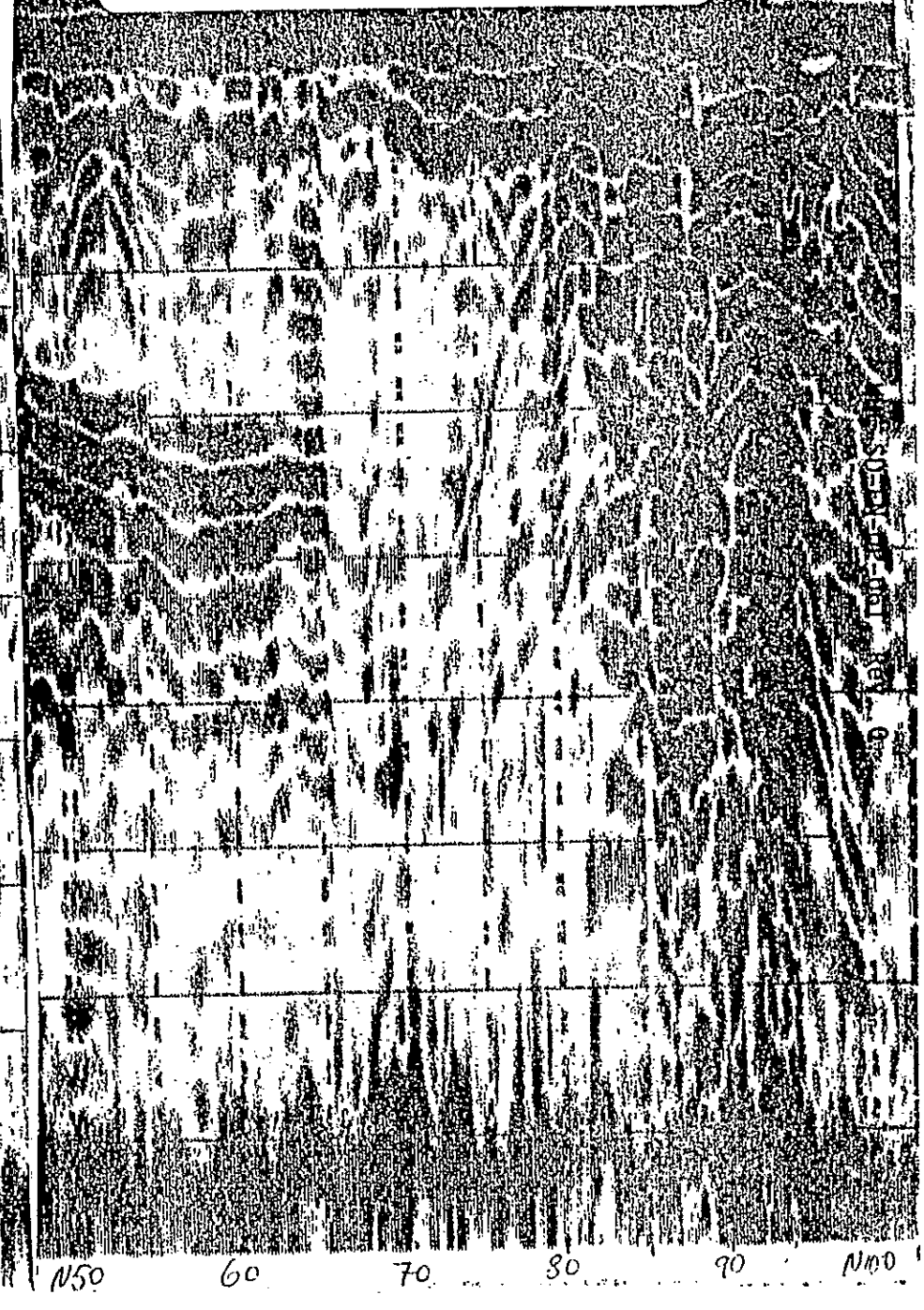


9312975.0884

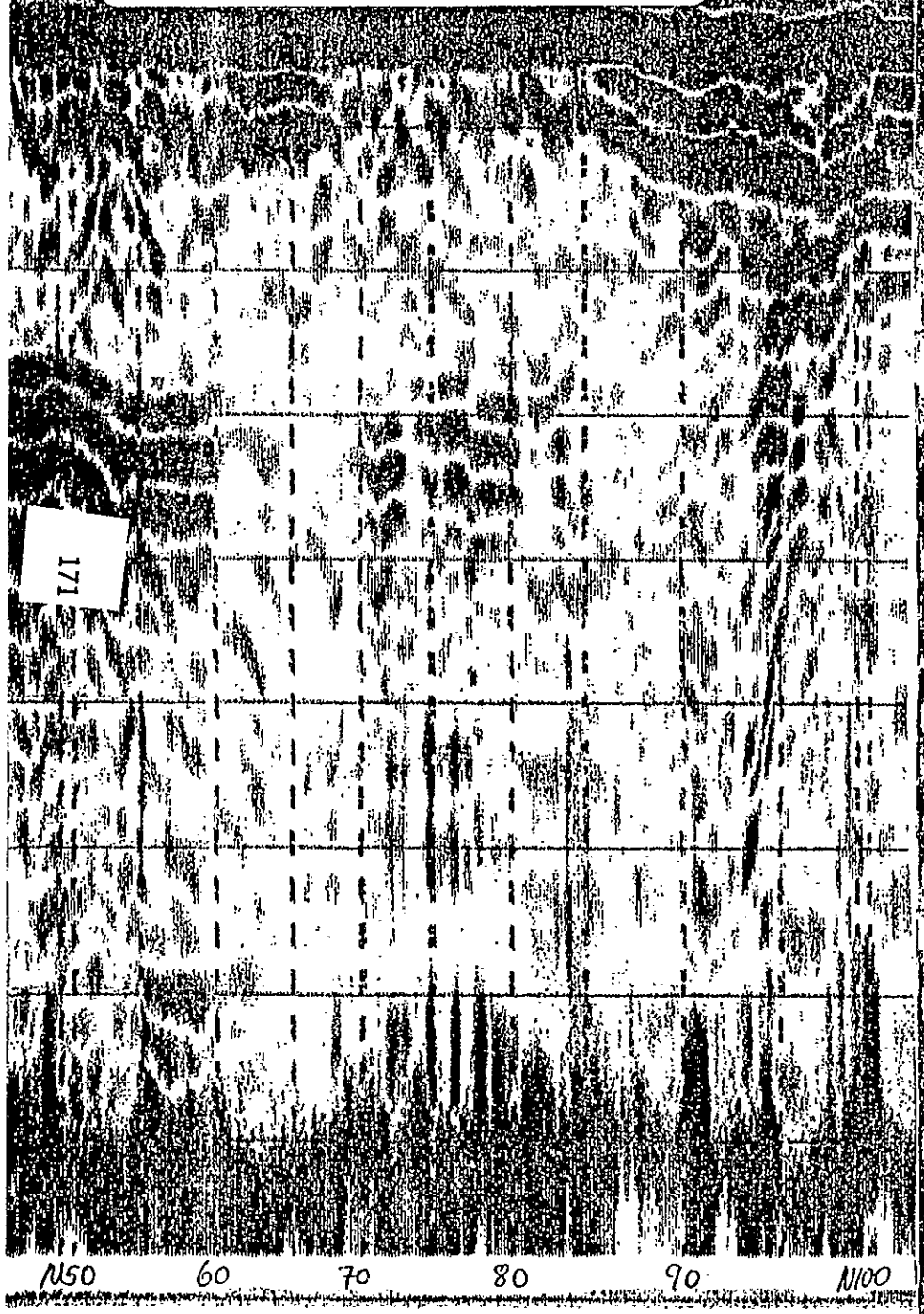
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E270
N50 - N100



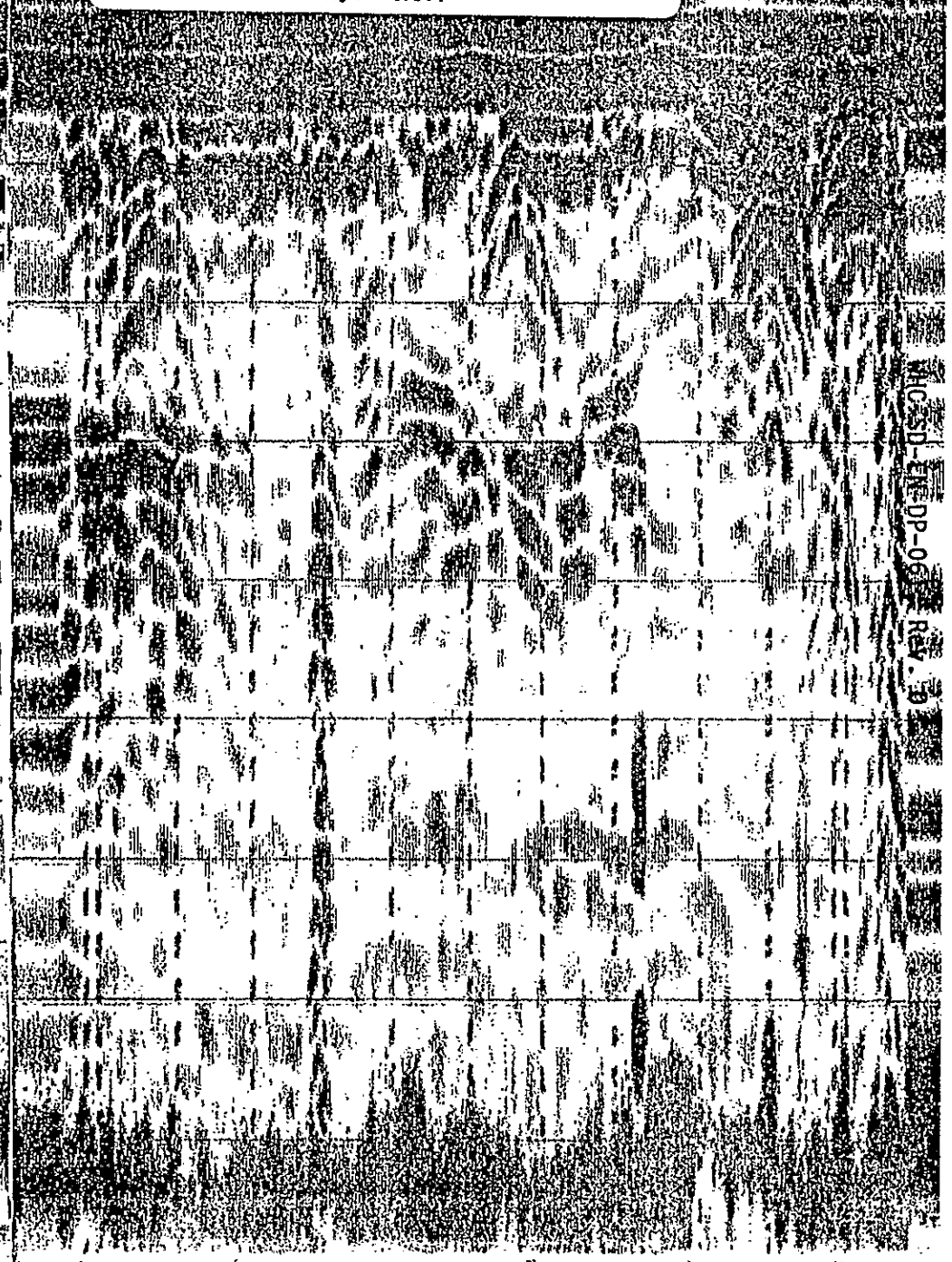
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E265
N50 - N100



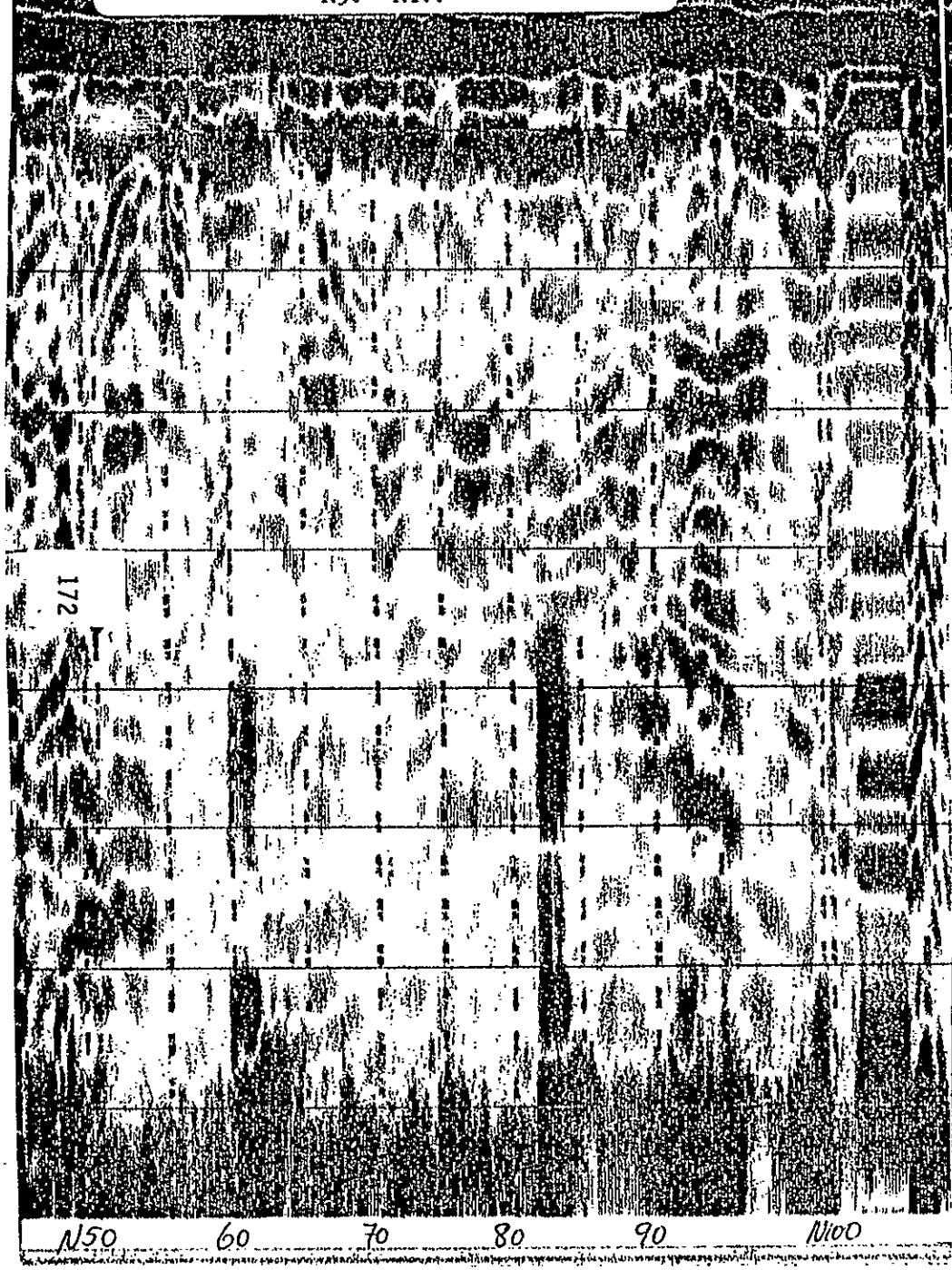
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E275
N50 - N100



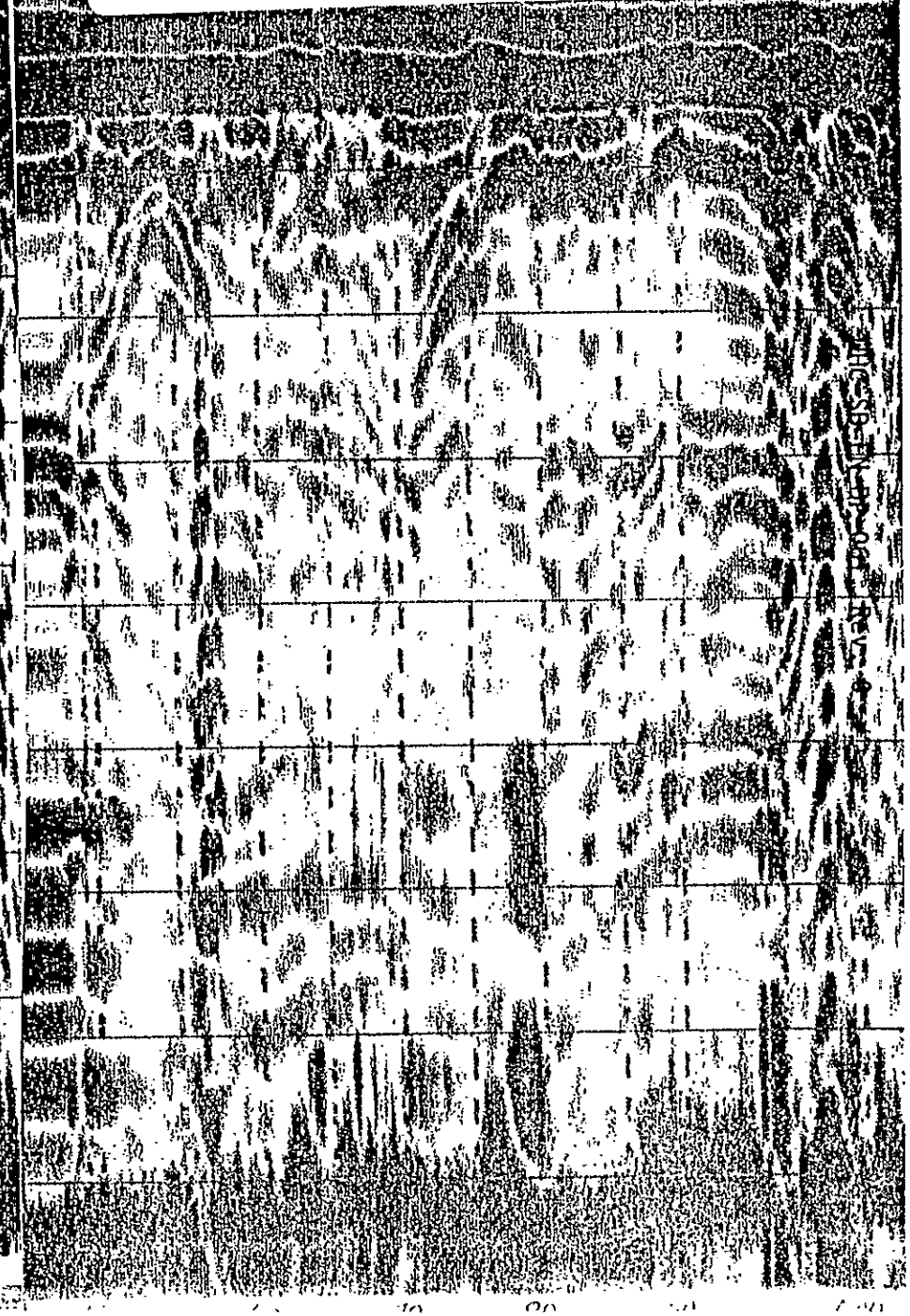
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E280
N50 - N100



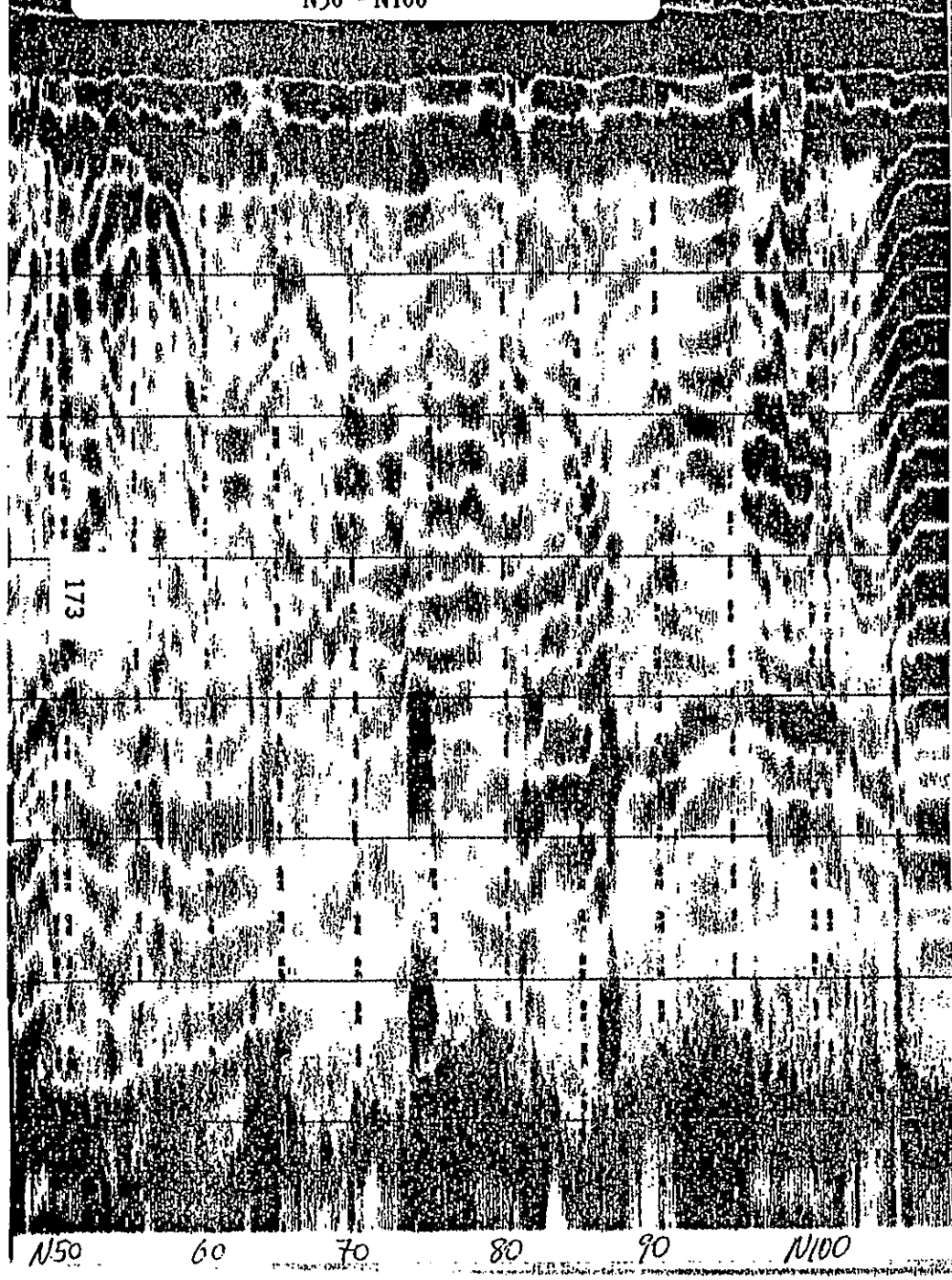
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E285
N50 - N100



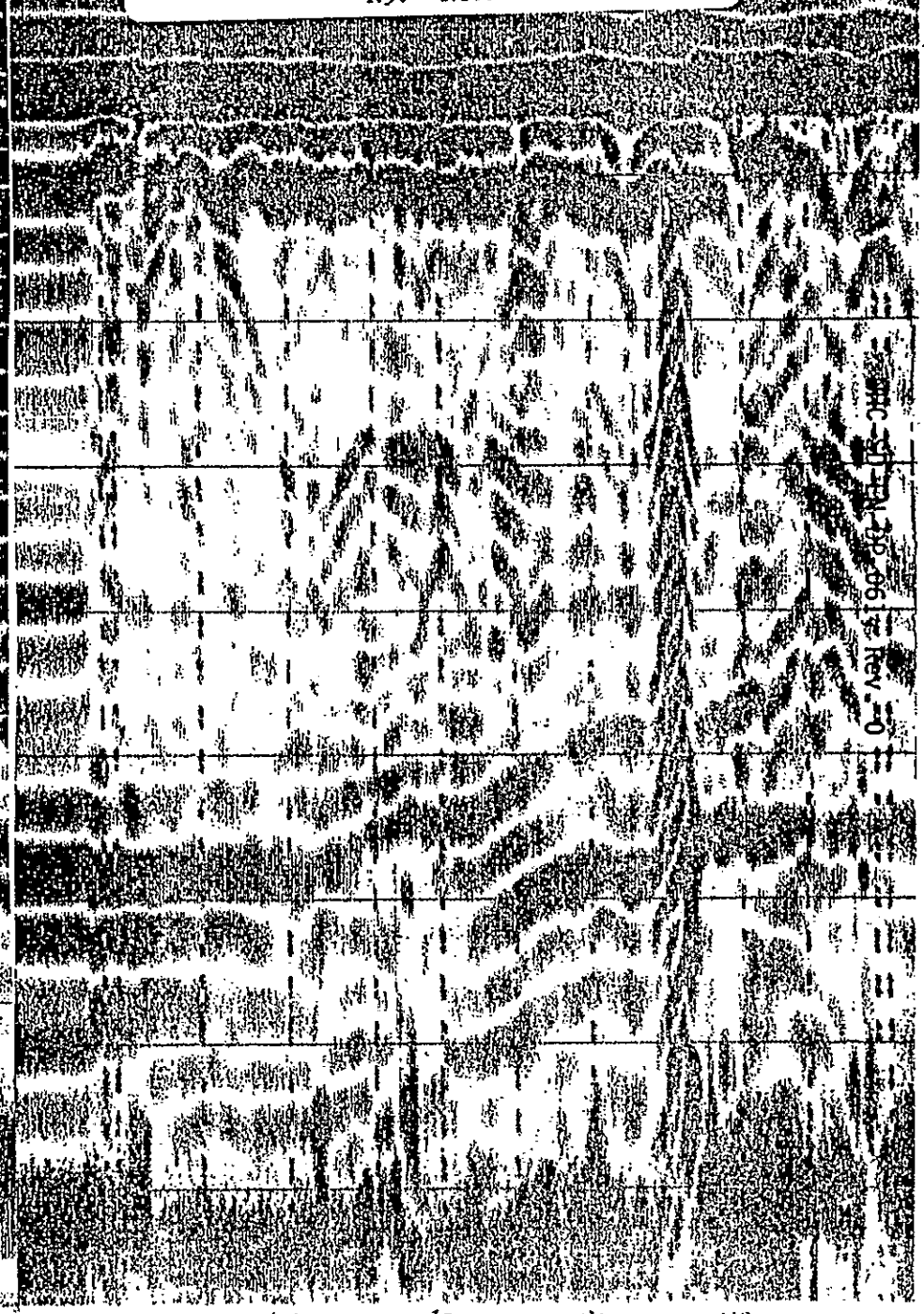
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E290
N50 - N100

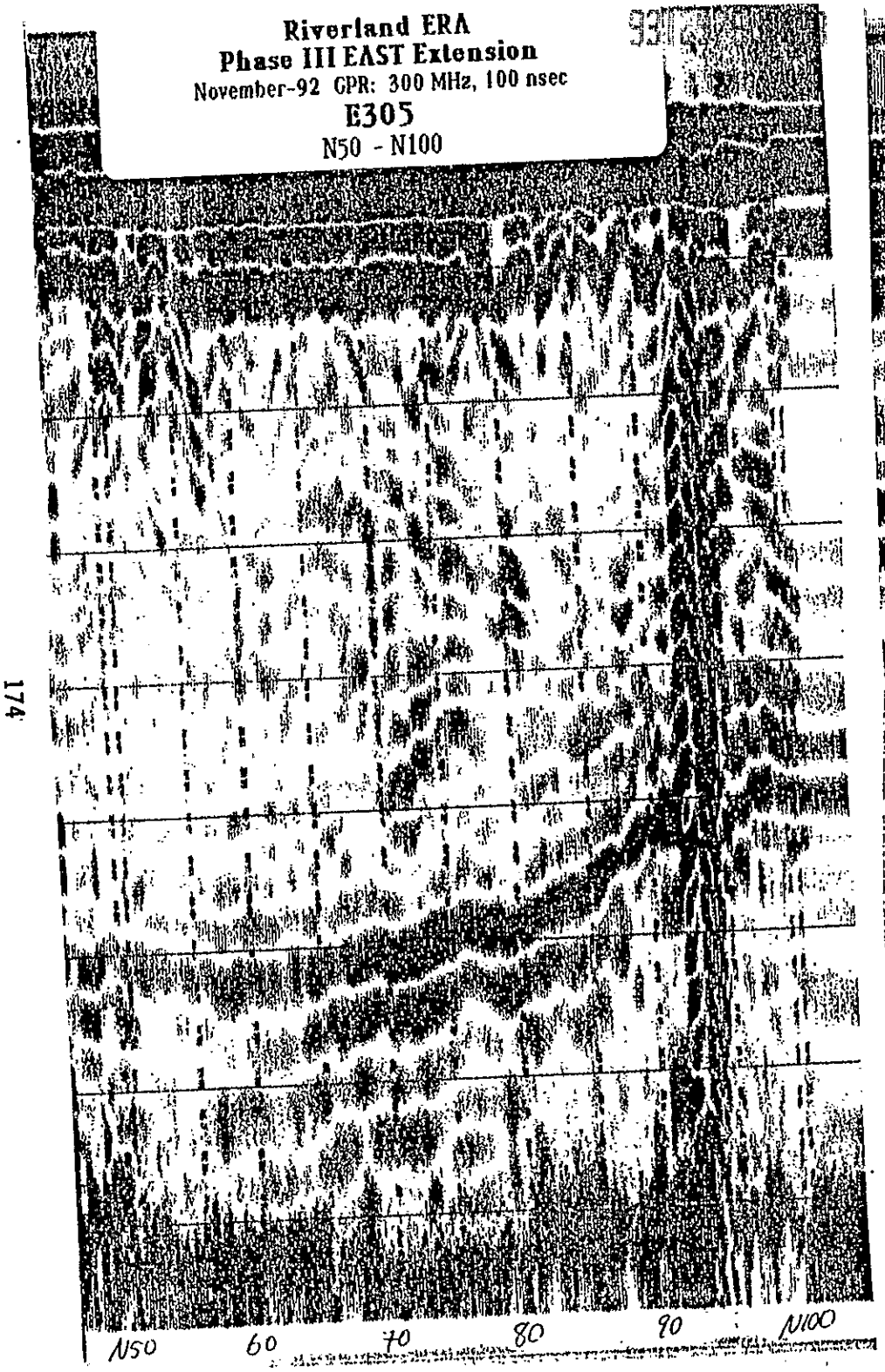


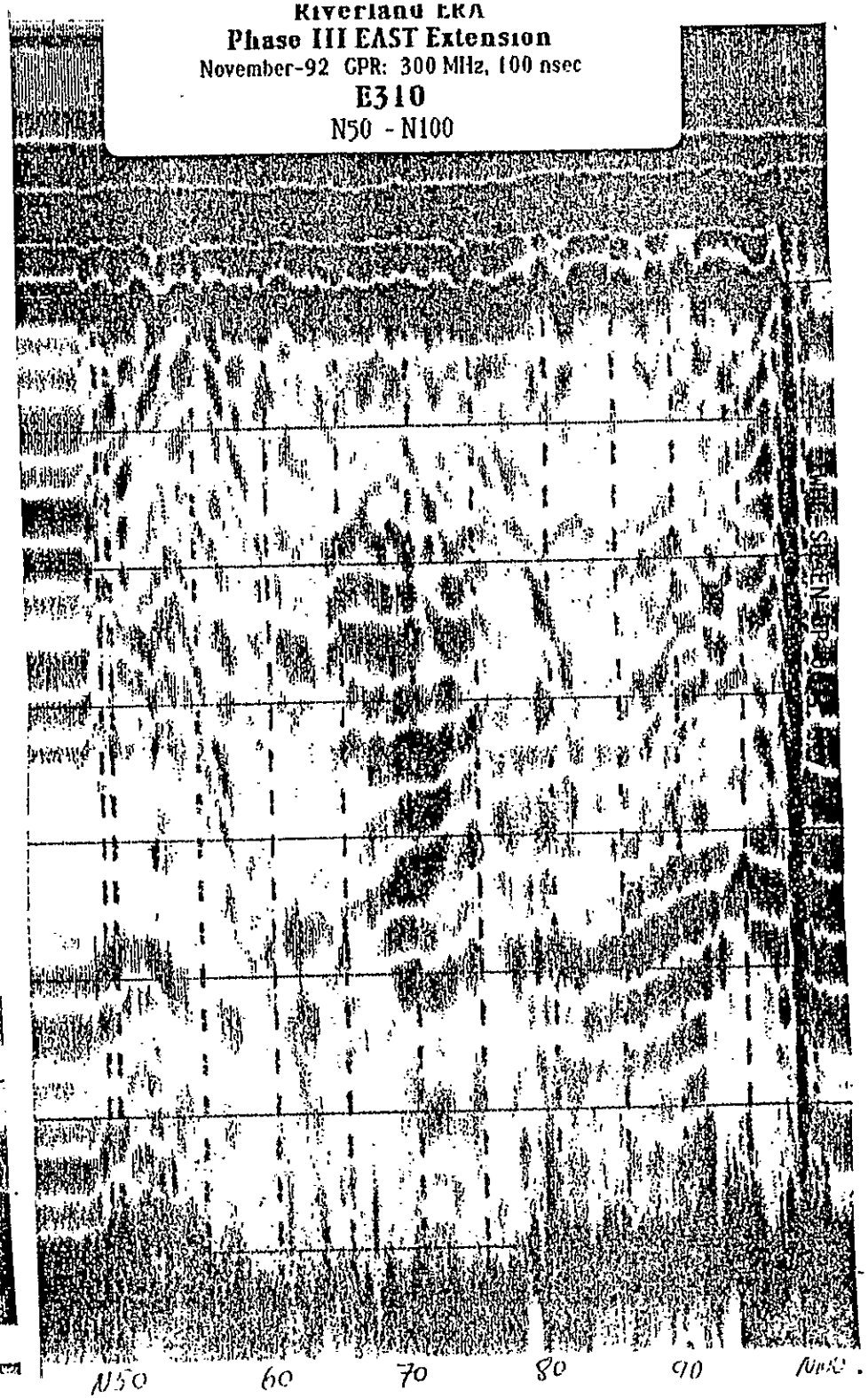
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E295
N50 - N100

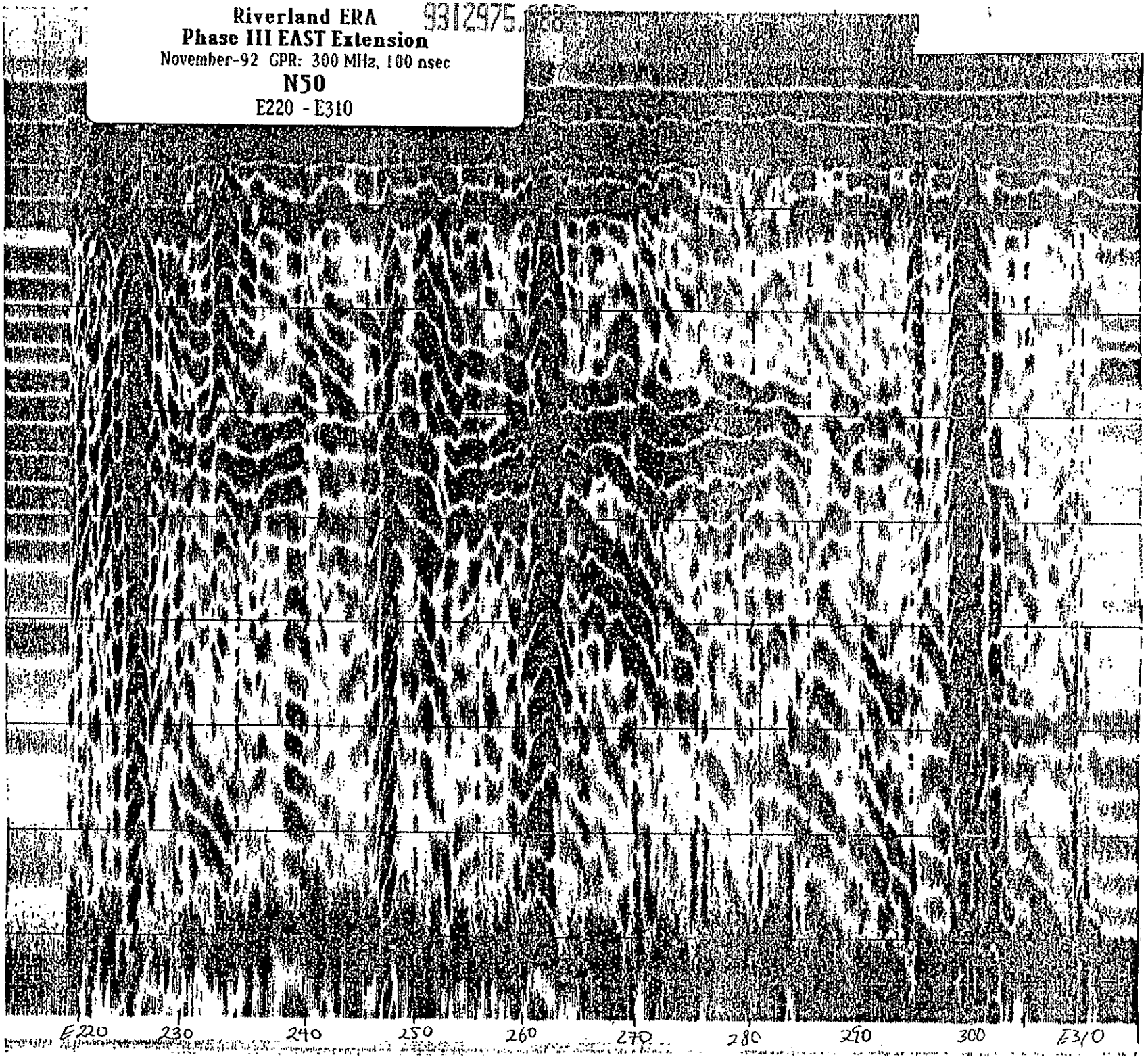


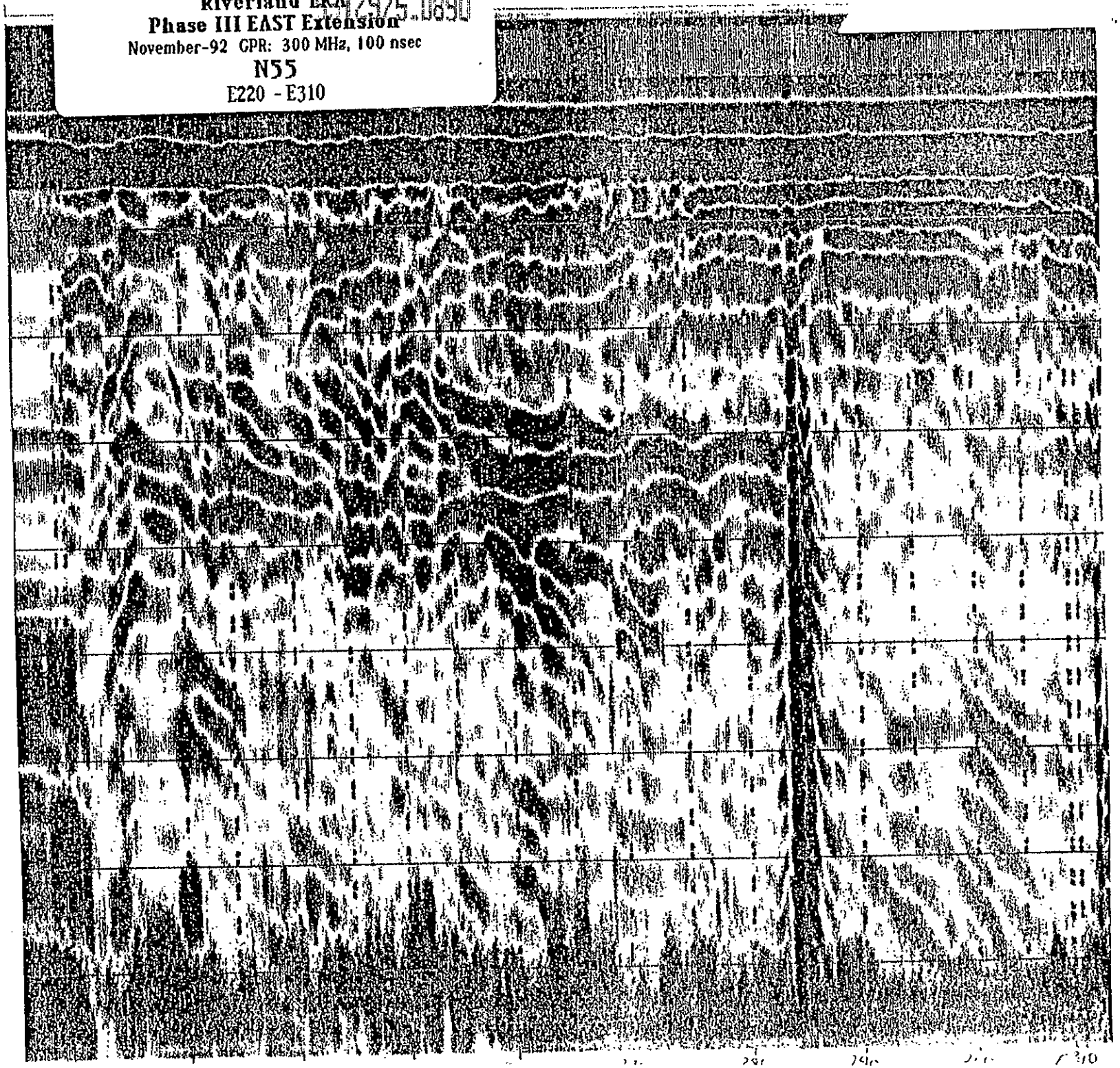
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E300
N50 - N100

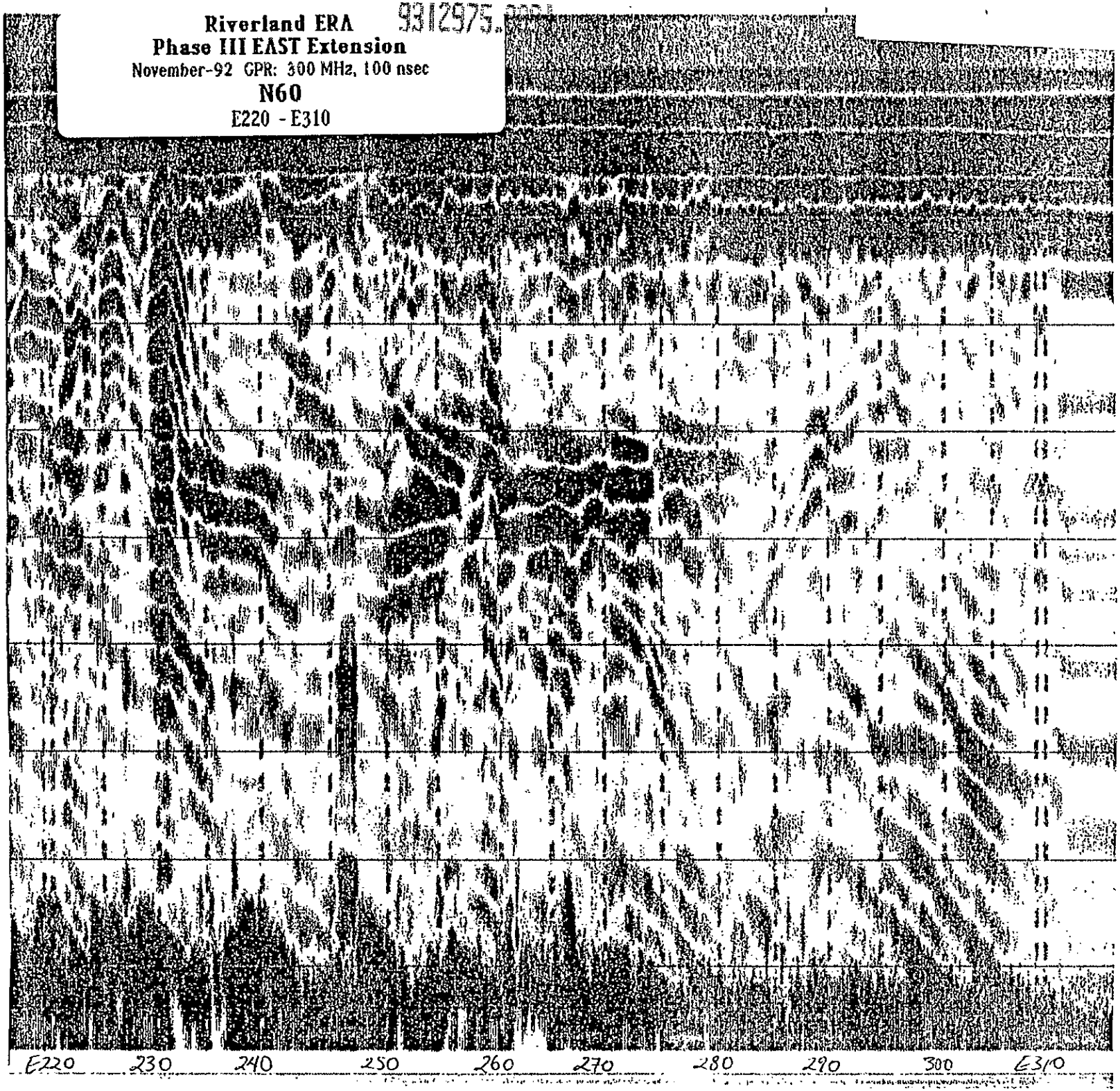


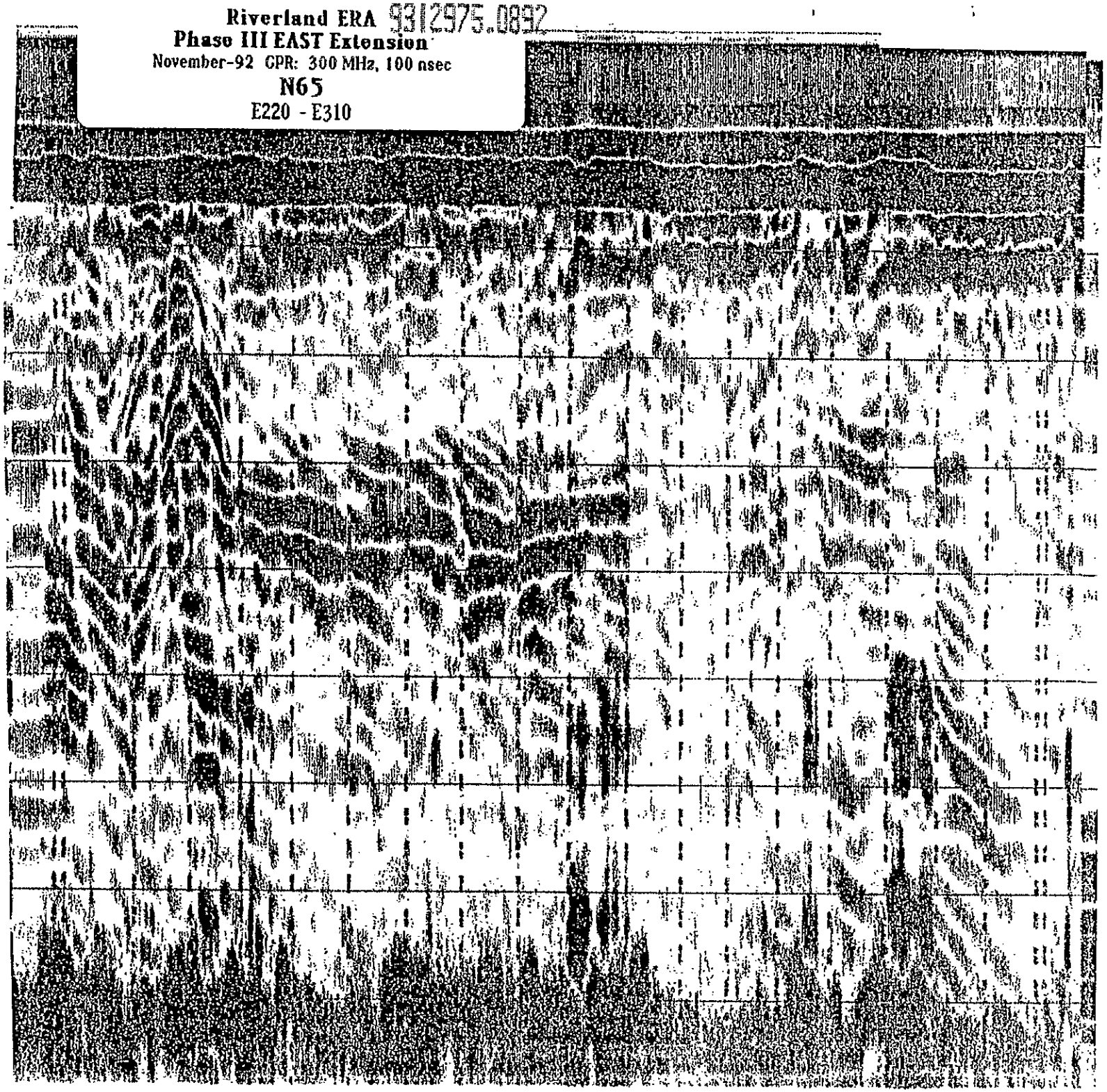

Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E305
N50 - N100
N50
60
70
80
90
N100


Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
E310
N50 - N100
N50
60
70
80
90


Riverland ERA
9312975.0888
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N50
E220 - E310
E220
230
240
250
260
270
280
290
300
E310

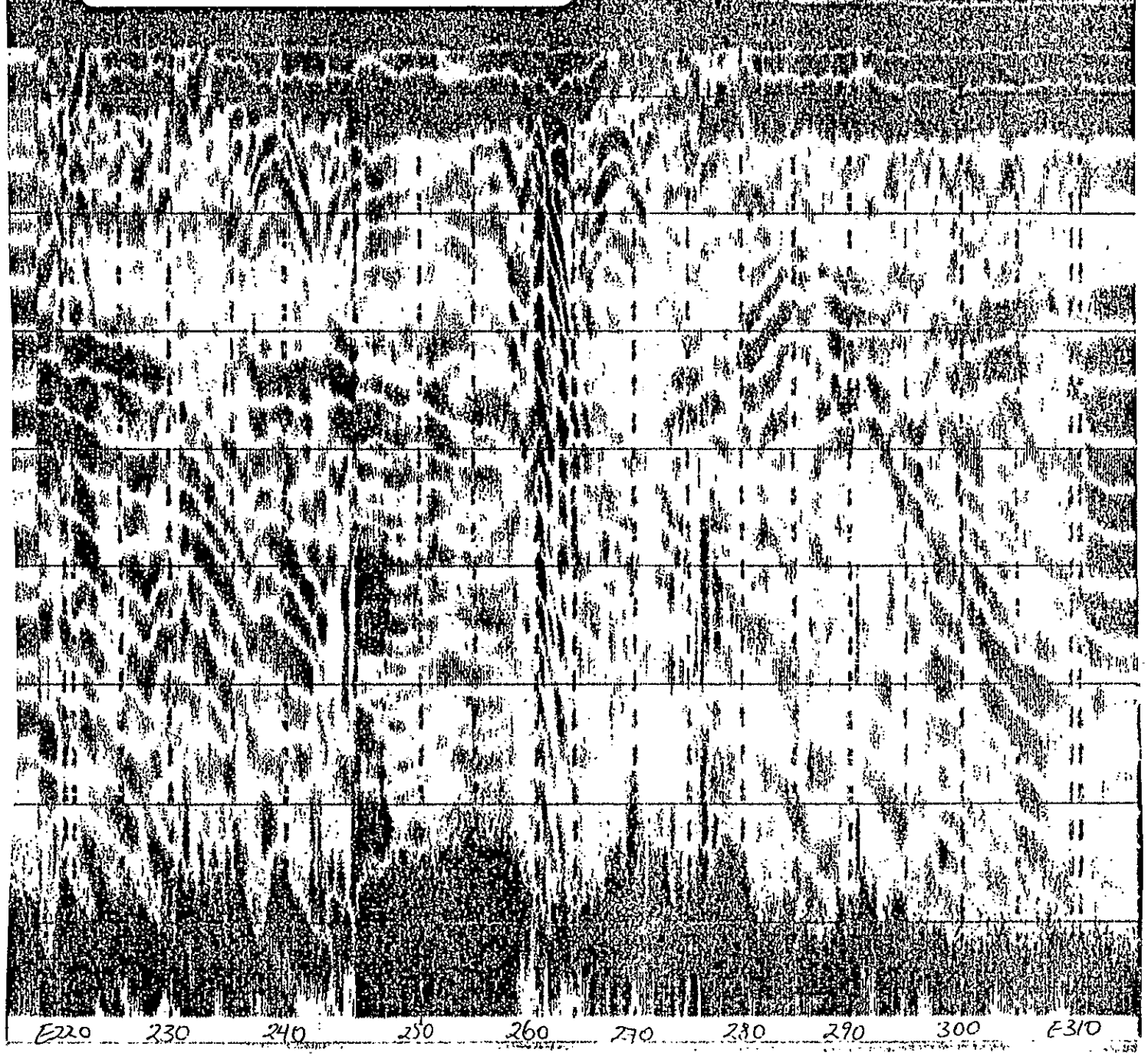

Riverland ERM 2975.0890
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N55
E220 - E310


Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N60
E220 - E310
9312975.
E220
230
240
250
260
270
280
290
300
E310


Riverland ERA 9312975.0892
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N65
E220 - E310

9312975.0893

Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N70
E220 - E310



9312975.0894

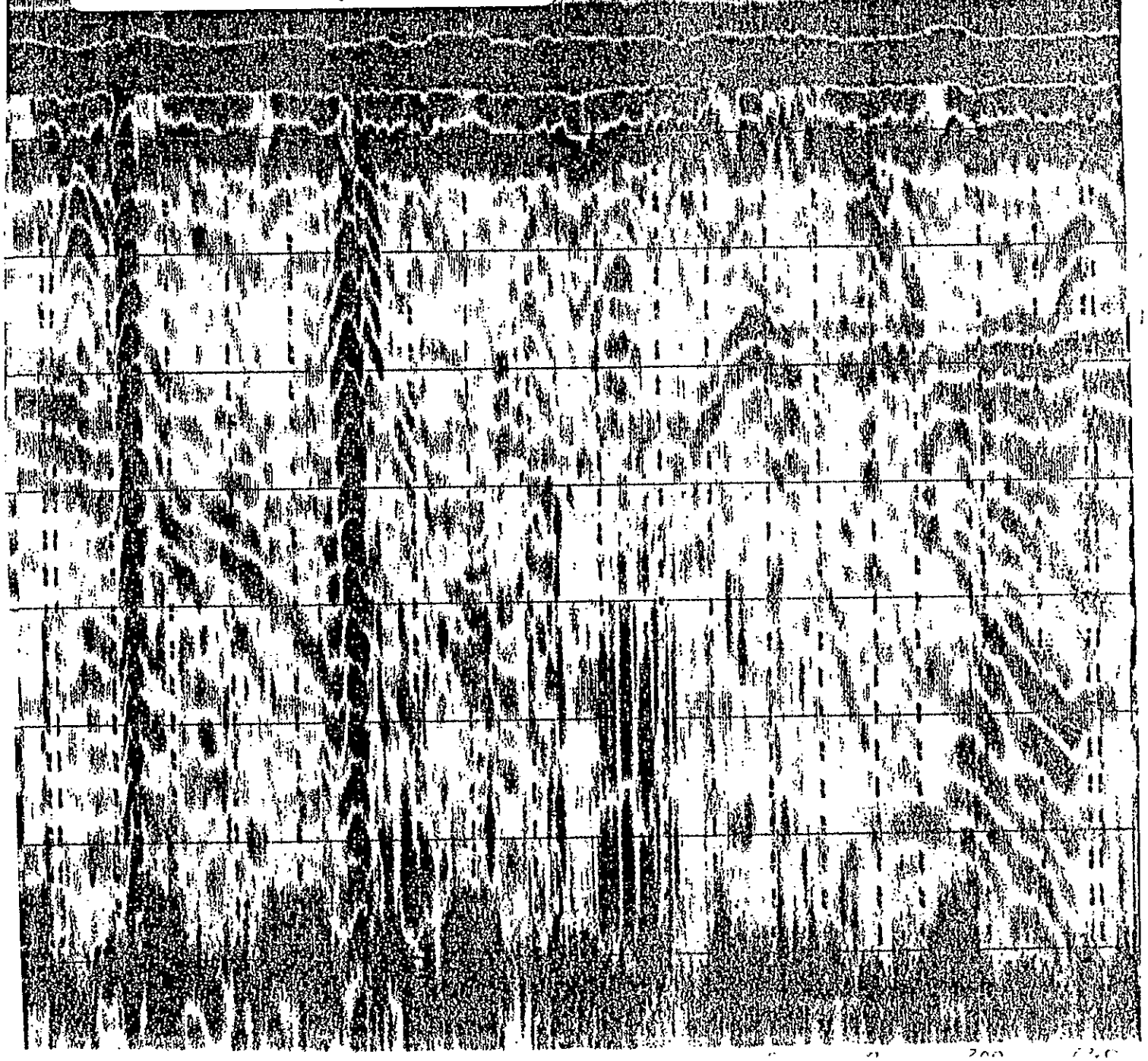
Riverland ERA

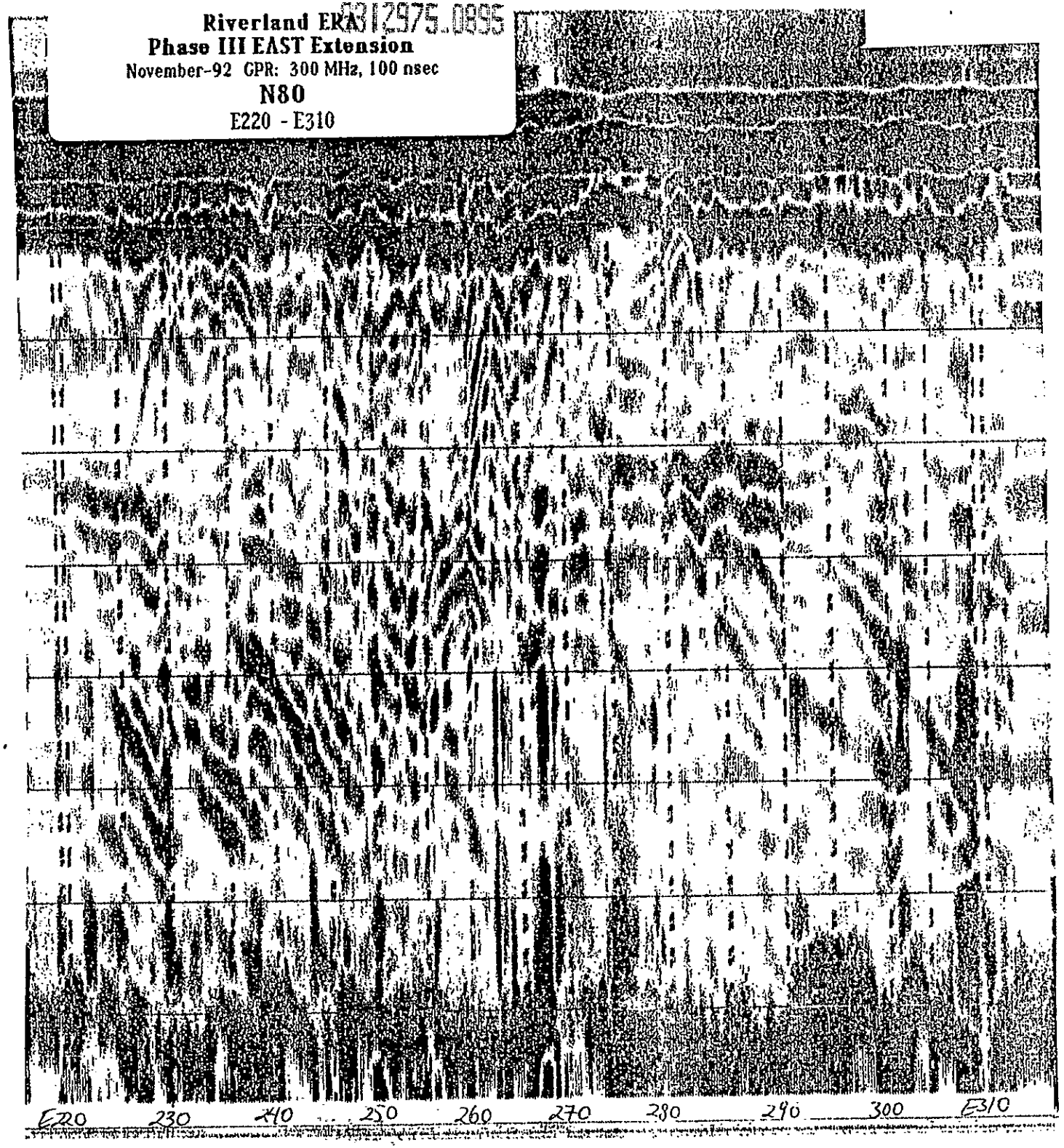
Phase III EAST Extension

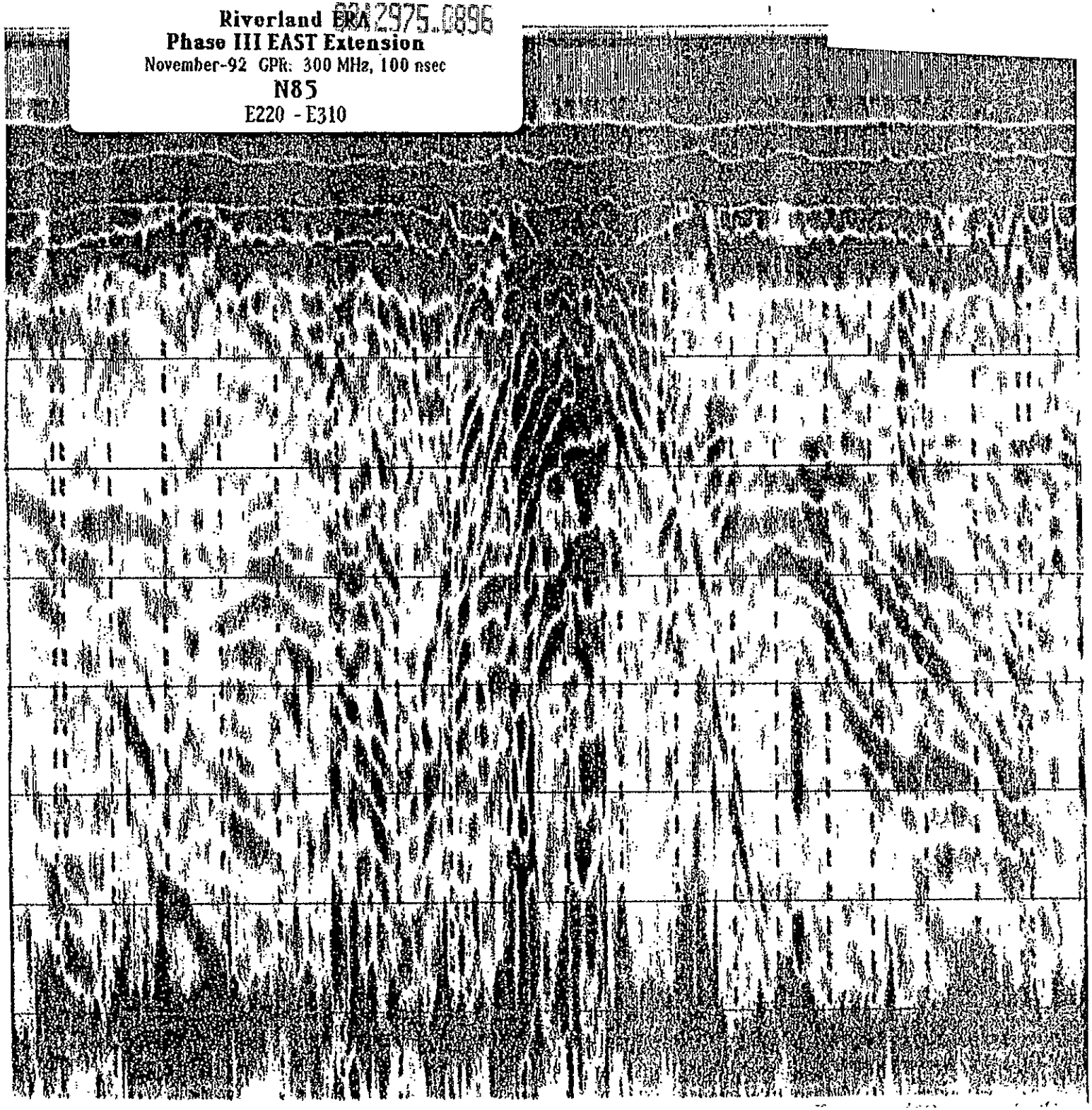
November-92 GPR: 300 MHz, 100 nsec

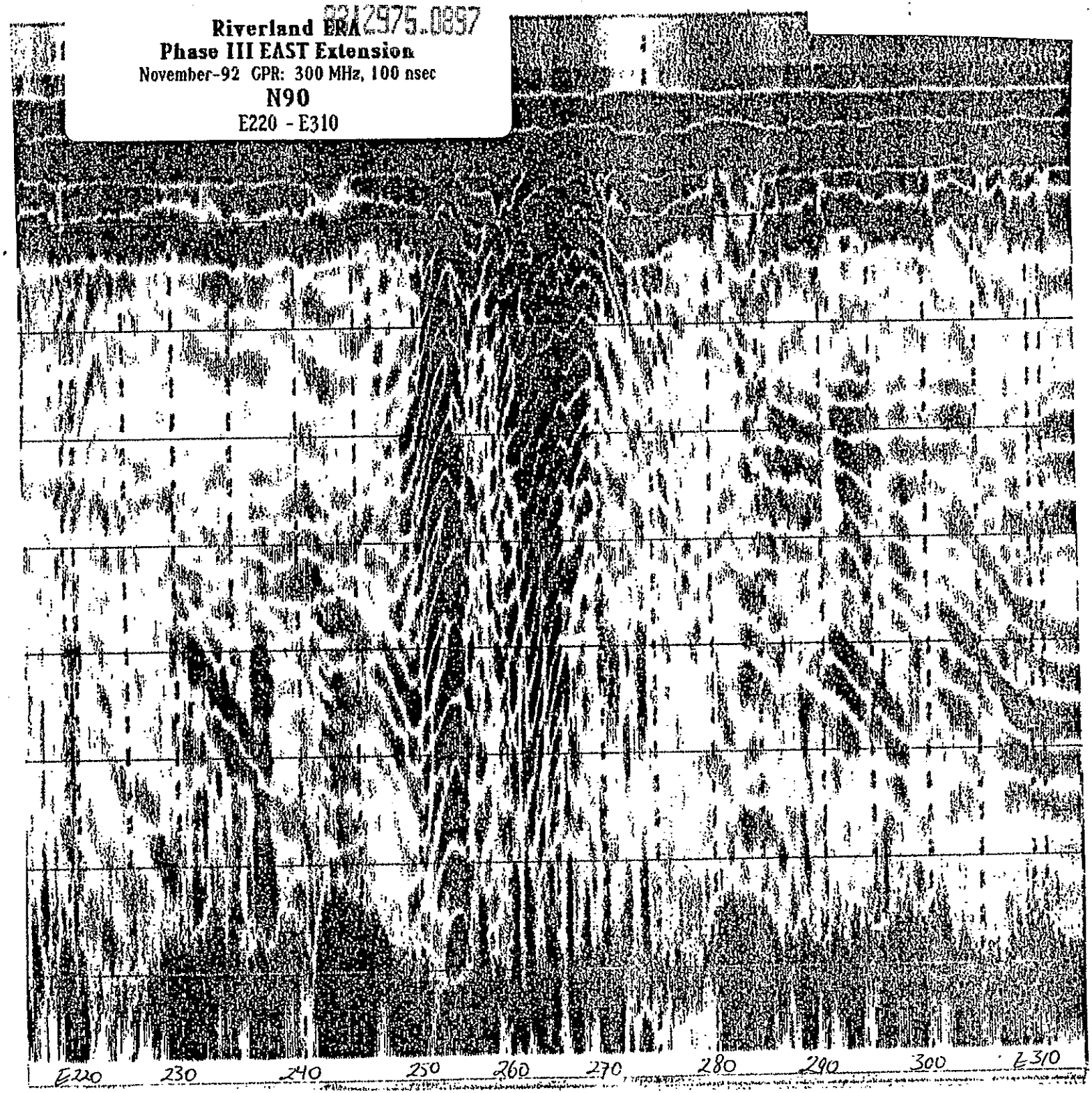
N75

E220 - E310




9312975.0895
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N80
E220 - E310
E220
230
240
250
260
270
280
290
300
E310


Riverland GRA2975.0896
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N85
E220 - E310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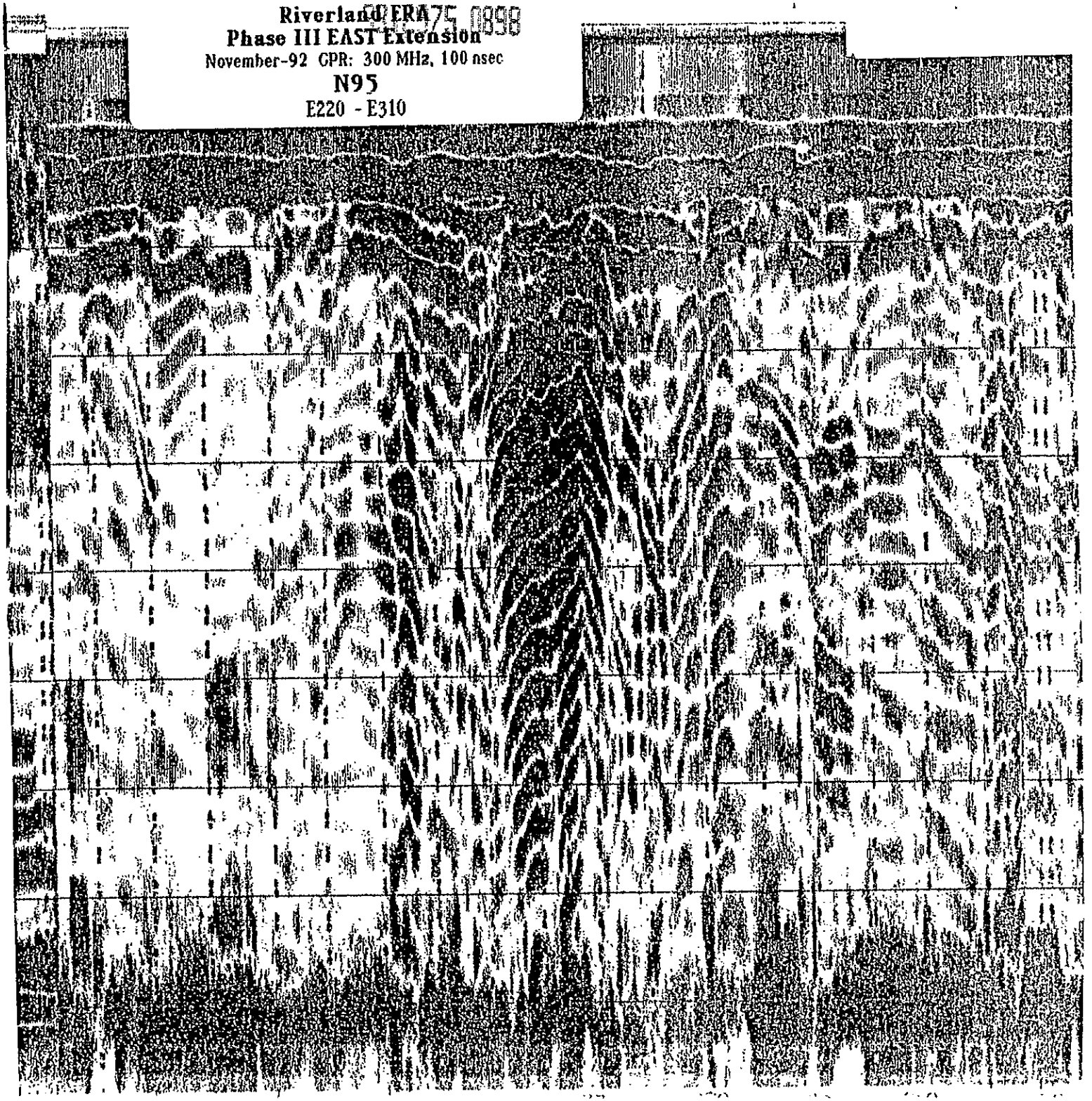
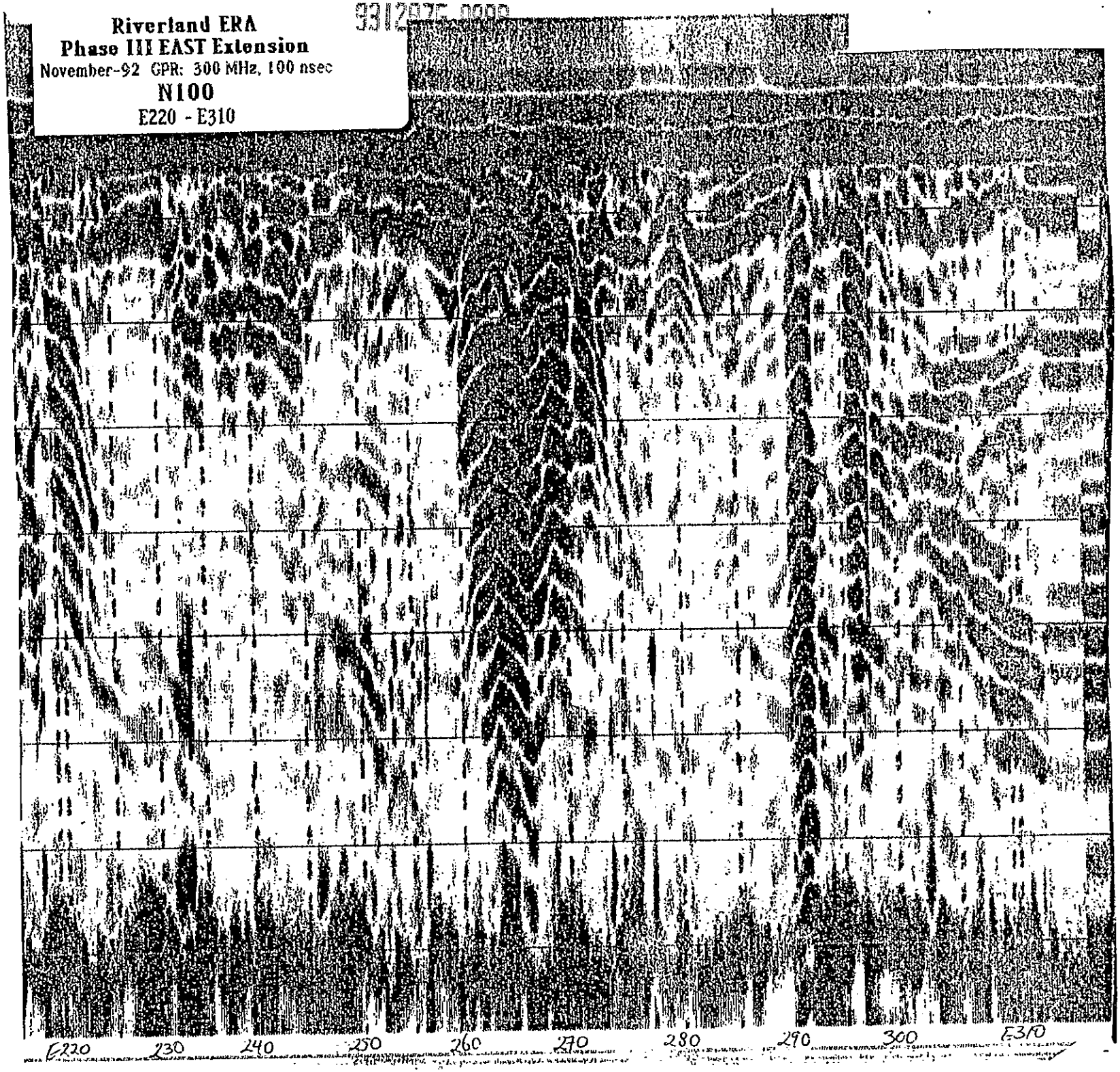
Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N90
E220 - E310
E220
230
240
250
260
270
280
290
300
E310


Riverland ERA75 0898
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N95
E220 - E310


Riverland ERA
Phase III EAST Extension
November-92 GPR: 300 MHz, 100 nsec
N100
E220 - E310
E220
230
240
250
260
270
280
290
300
E310

GROUND-PENETRATING RADAR (GPR) SURVEY

Team Geophysics, Westinghouse Hanford Operations

TITLE: Riverland ERA, PHASE III Extension East - | DATE: 2-3-93

LOCATION:
Midway railroad decon. site.

CLIENT: Paul Valcich

DATA COLLECTED BY
K.A. Bergstrom, T.H. Mitchell

EQUIPMENT USED:
GSSI System 8, model 4800
Calibrator Model P731
Digital Tape Recoder DT6000A

ANTENNA(S) USED:
100 ____ 300 XX 100 BISTATIC ____

LOG BOOK: EFL 1029

TIME WINDOW (NS): 100

PROCEDURES FOLLOWED: WHC-CM-7-7 EII 11.2, REV. 3

GRID : 25x145' NO. OF PROFILES: 16 TOTAL FOOTAGE COLLECTED: 400

PARAMETERS:
One set of profiles ten feet apart.

DATA TAPE NO.: ERA #3 RECORDS LOCATION: Geophysical files

TAPE ADDRESS : 40993-47174 CALIBRATION ADDRESS: 46685-47174

INTERPRETED BY : T.H. Mitchell REVIEWED BY : K. A. Bergstrom

INTERPRETATION DELIVERED TO draft to P. Valcich DATE : 2-93

OBJECTIVE(S):
To determine whether a pipe, that was detected during recon. excavation and traced through the east extension, went to a ditch along the railroad tracks.

NOTES:
Antenna pulled by hand at 1-2 mph. 50 meter cable. East side of survey marks. The data was not collected on grid. The only objective was to trace the pipe.

0080 5/62/93

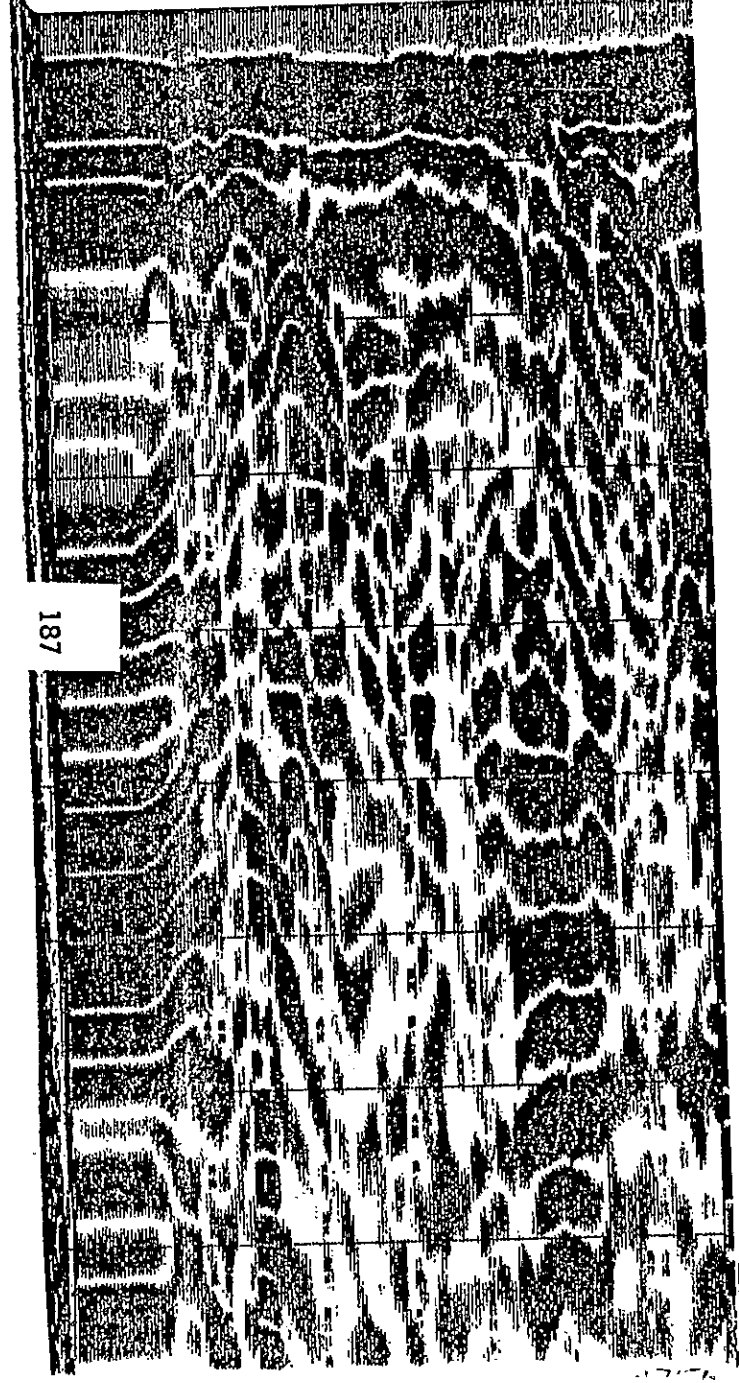
9312975.0901

Riverland FRA

2-3-93 300 Mhz, 80 nsec

E310

N50 - N175

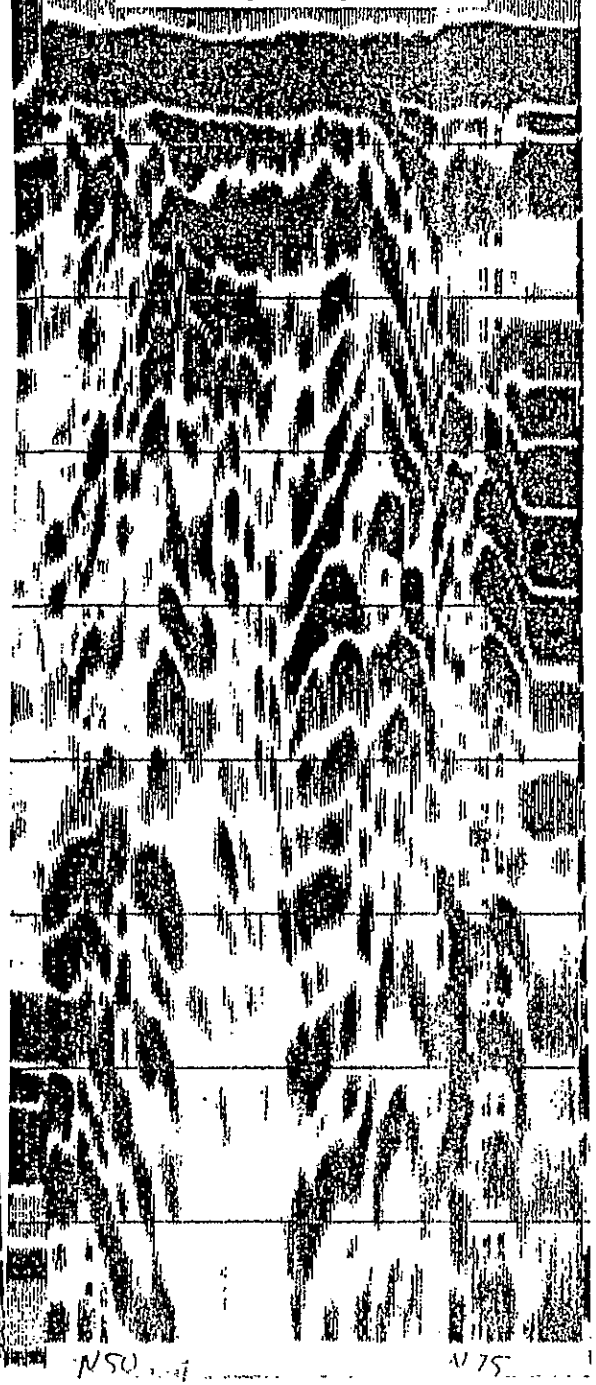


Riverland FR

2-3-93 300 Mhz, 80 nsec

E320

N50 - N75



N50

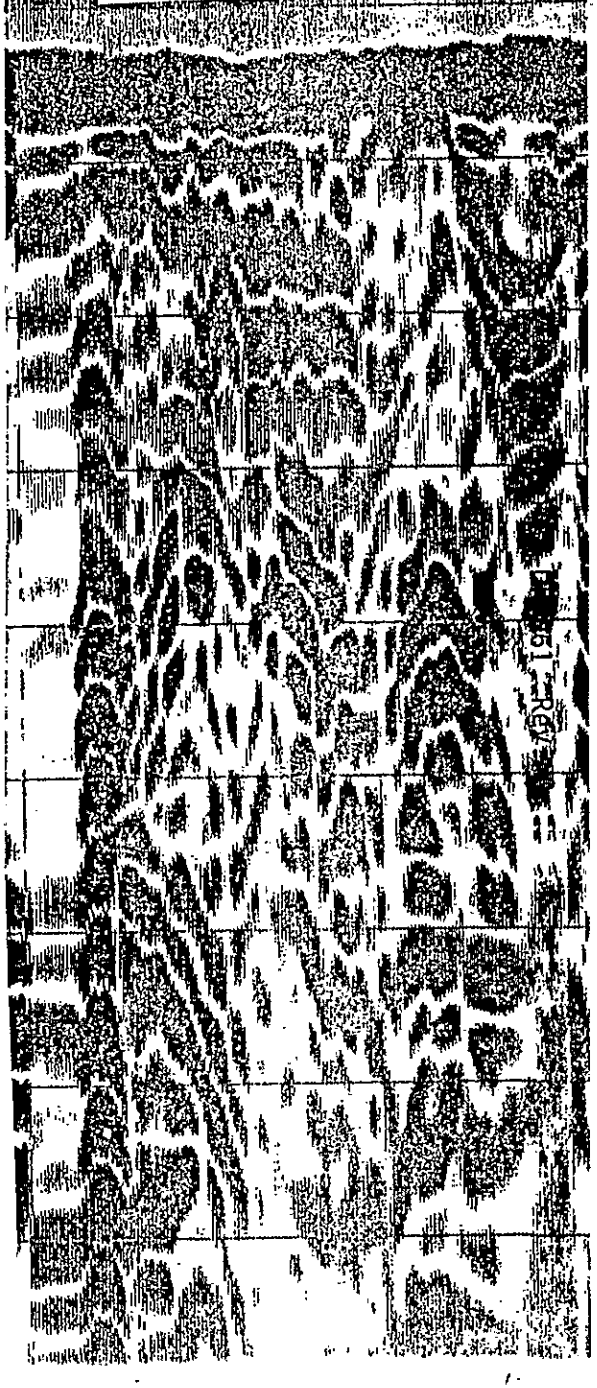
N75

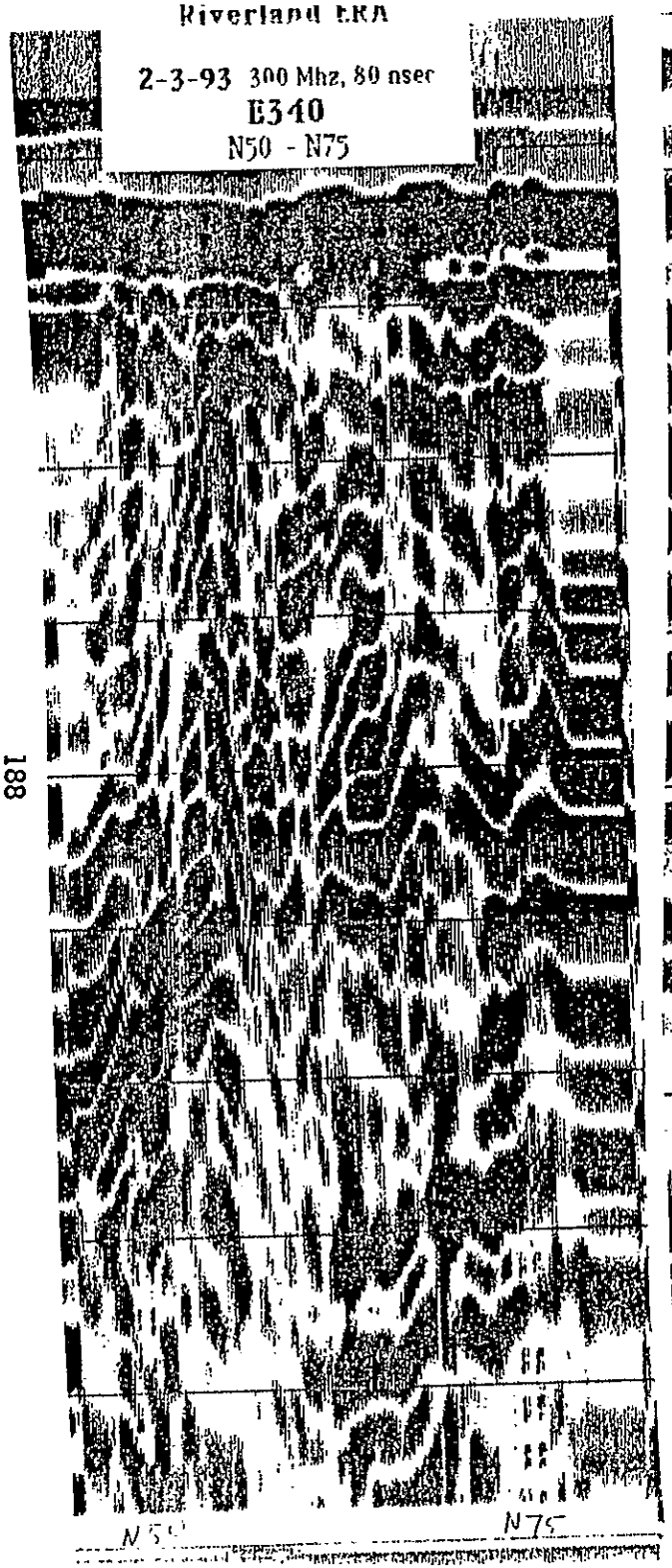
Riverland FRA

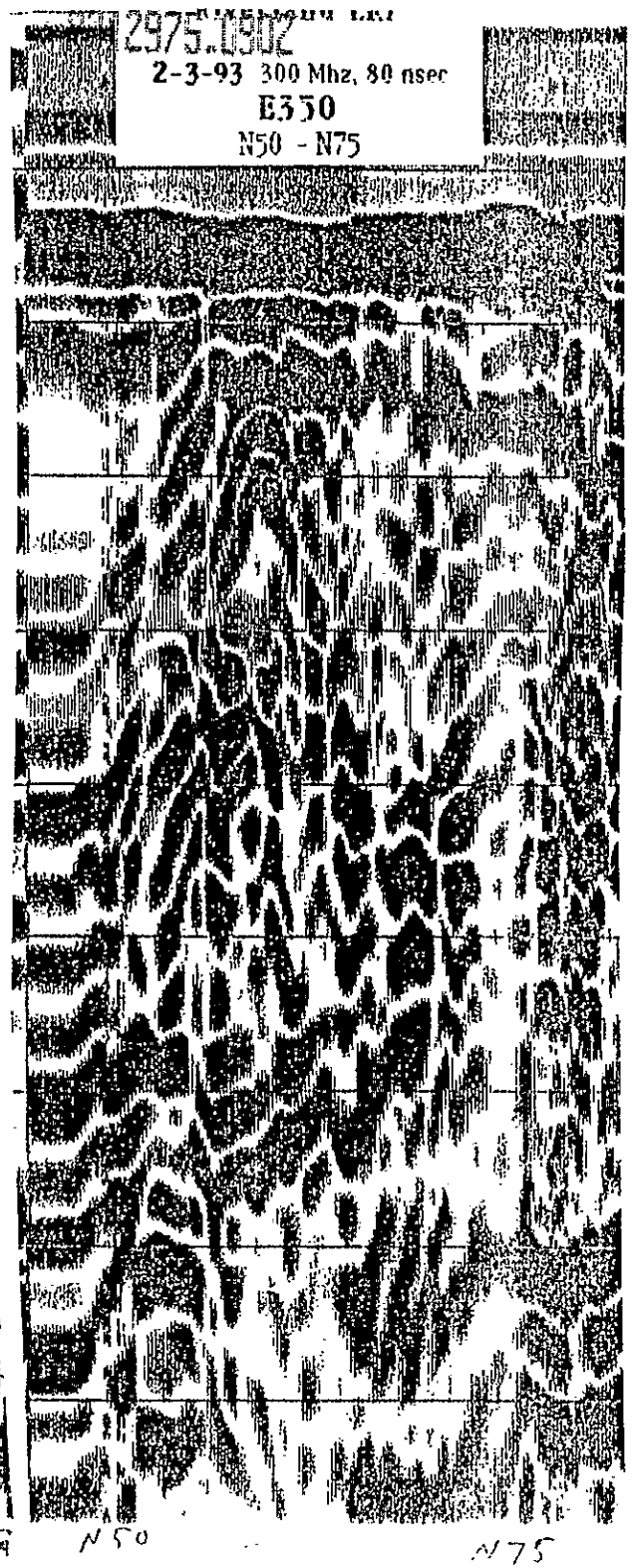
2-3-93 300 Mhz, 80 nsec

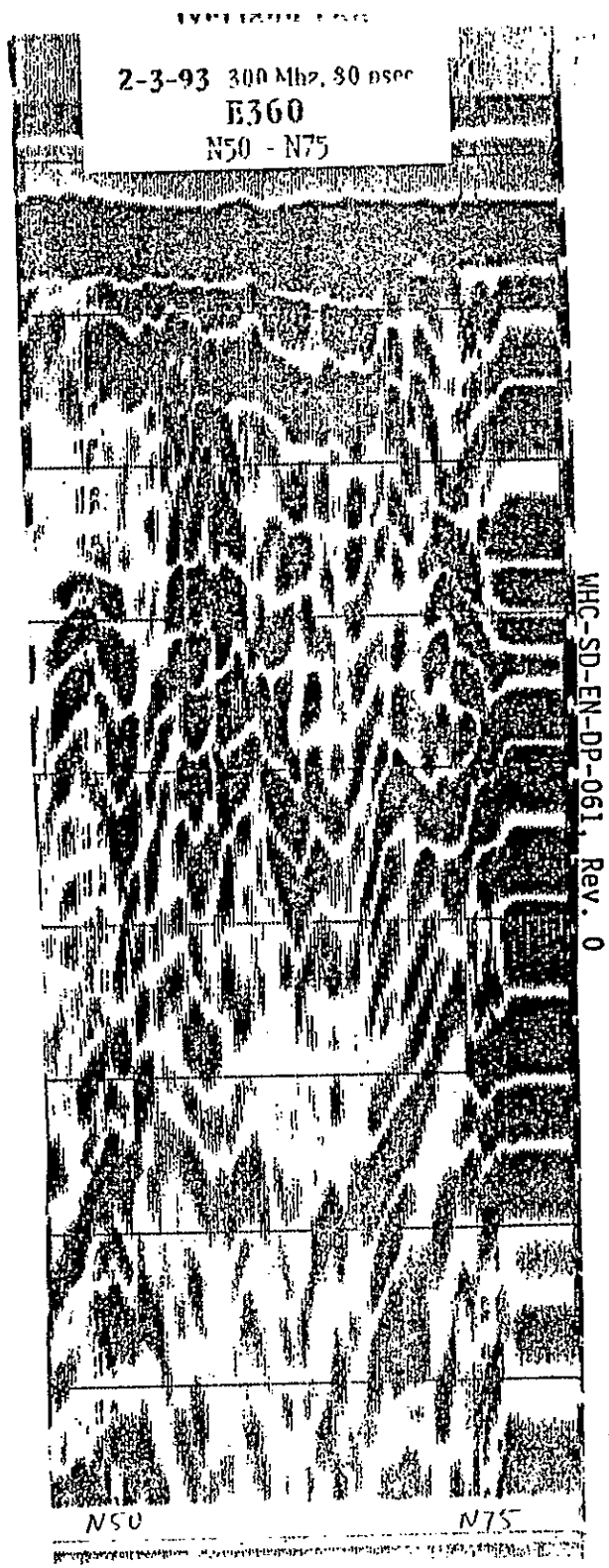
E330

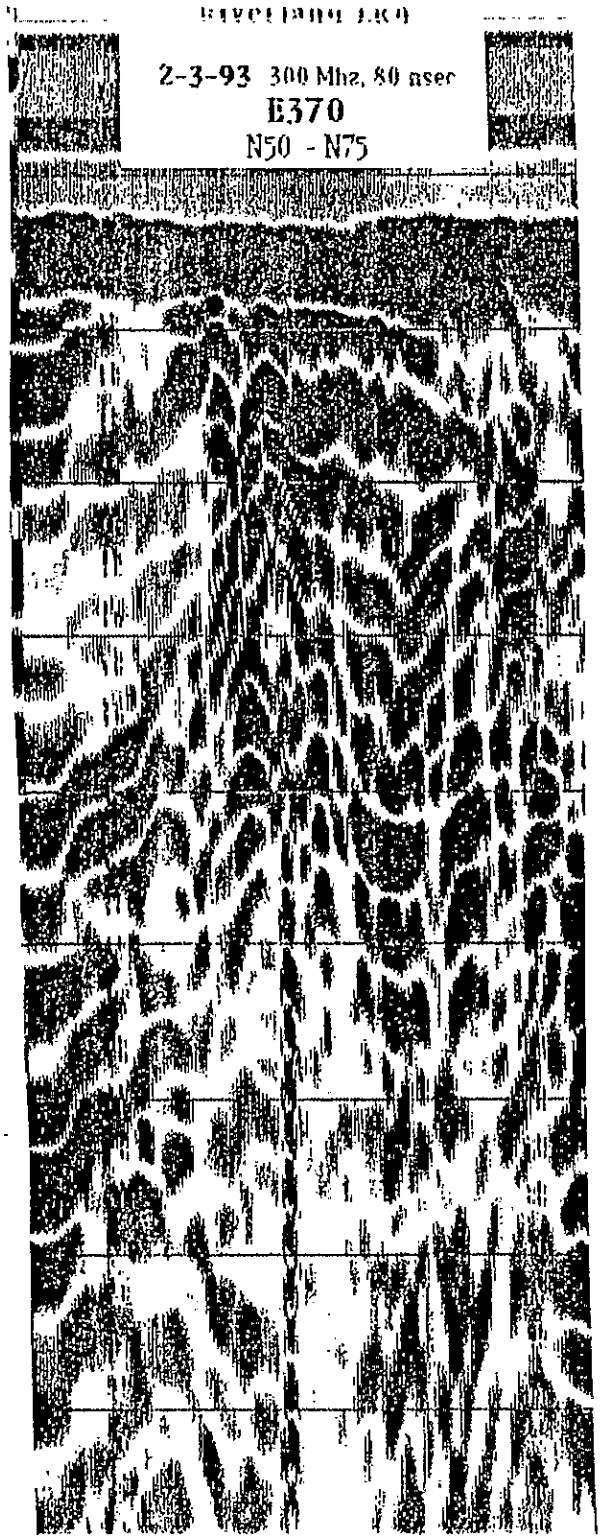
N50 - N75

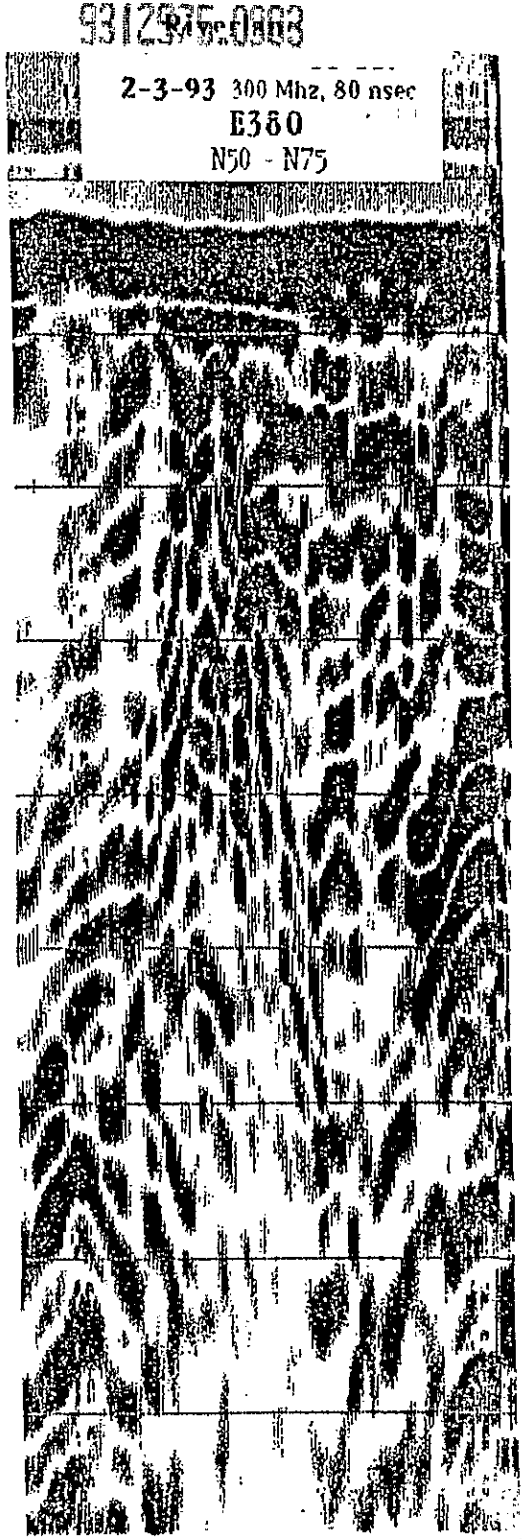


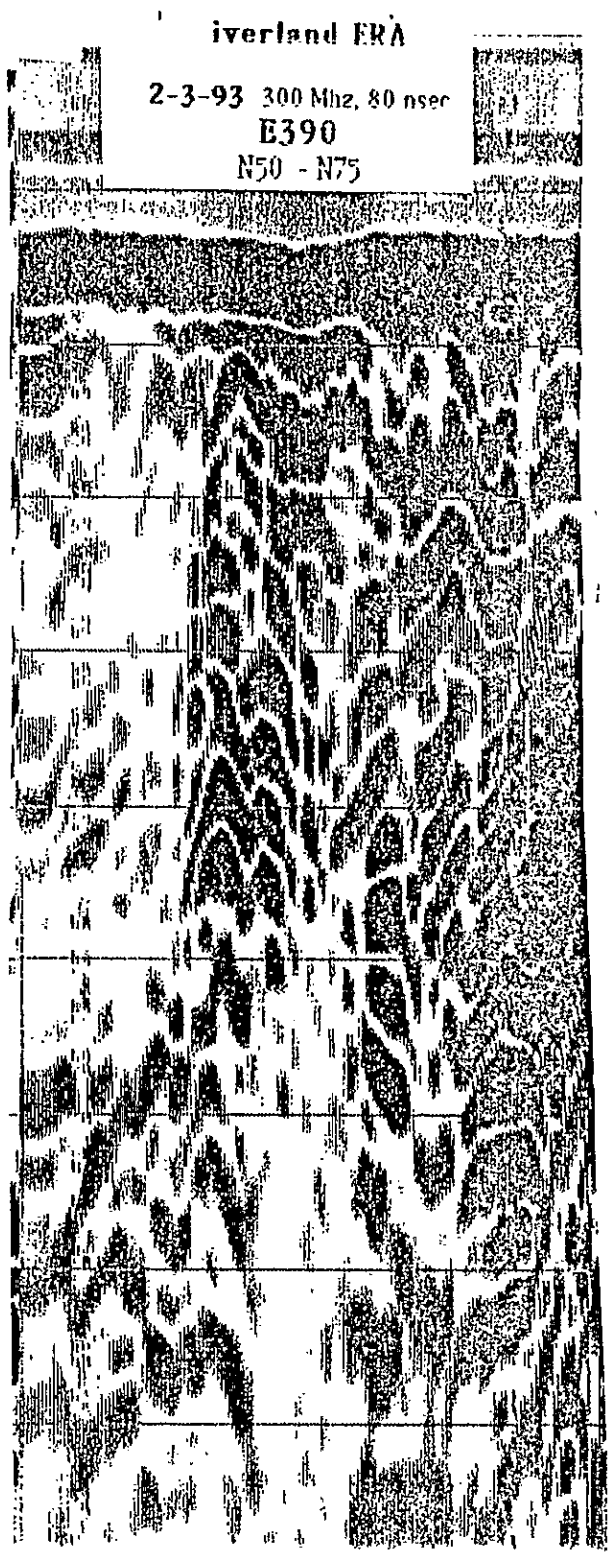

Riverland ERA
2-3-93 300 Mhz, 80 nsec
E340
N50 - N75
N50
N75


2975.0902
2-3-93 300 Mhz, 80 nsec
E350
N50 - N75
N50
N75


2-3-93 300 Mhz, 80 nsec
E360
N50 - N75
N50
N75


2-3-93 300 Mhz, 80 nsec
E370
N50 - N75
N50
N75


9312975.0803
2-3-93 300 Mhz, 80 nsec
E380
N50 - N75
N50
N75

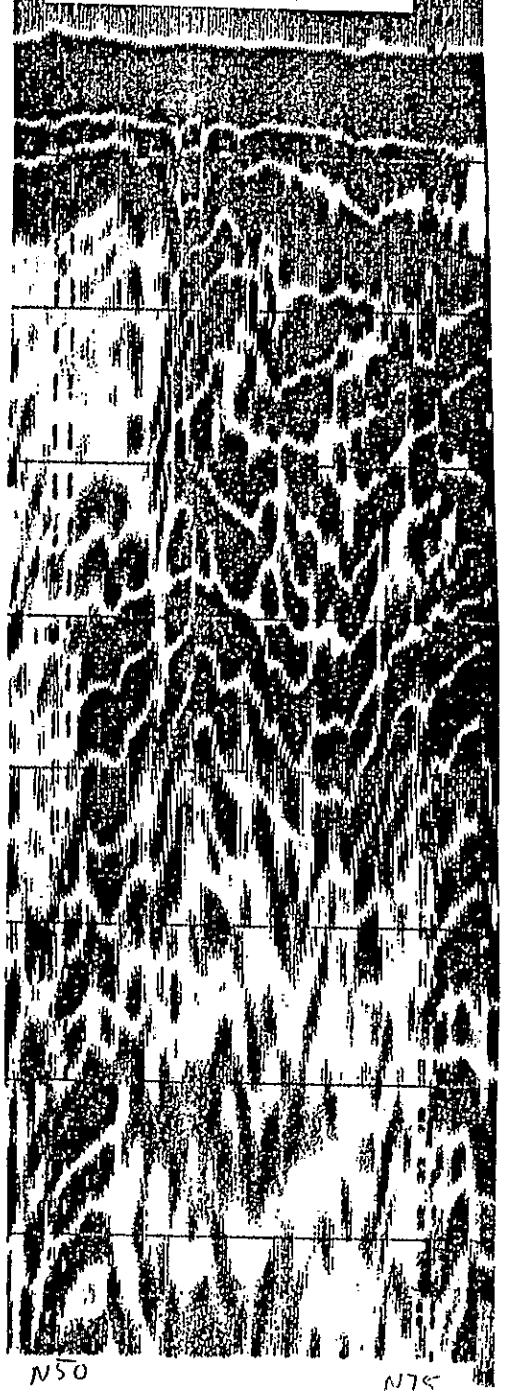

iverland ERA
2-3-93 300 Mhz, 80 nsec
E390
N50 - N75

Riverland ERA

2-3-93 300 Mhz, 80 nsec

E400

N50 - N75

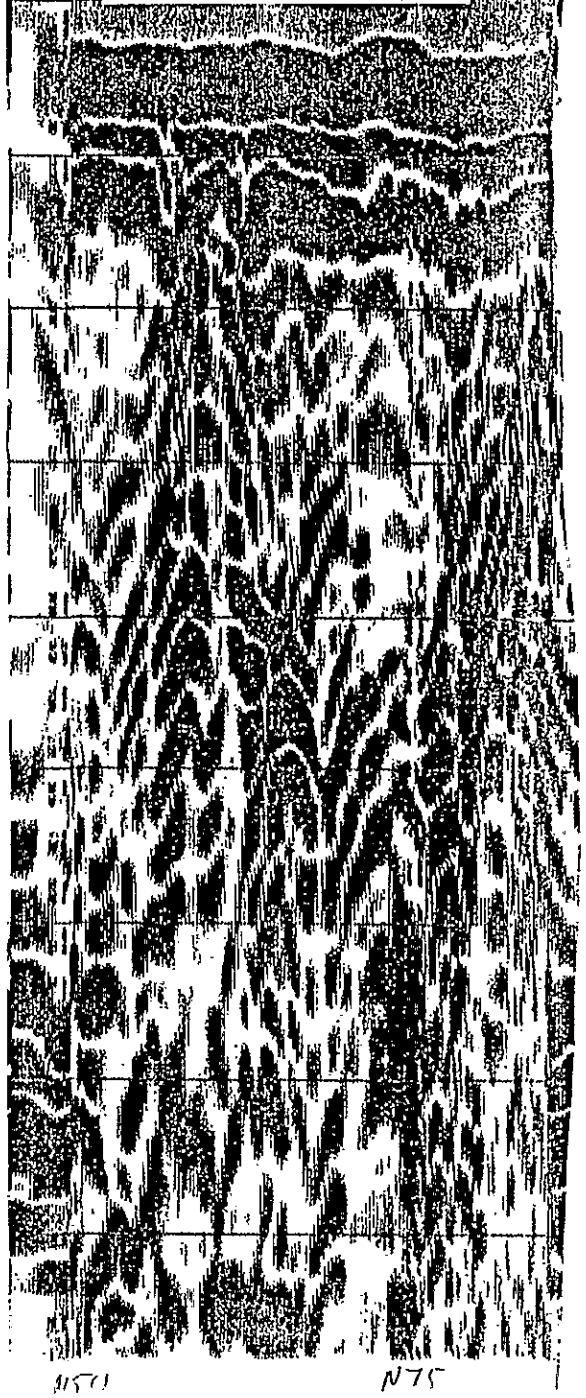


Riverland ERA

2-3-93 300 Mhz, 80 nsec

E410

N50 - N75

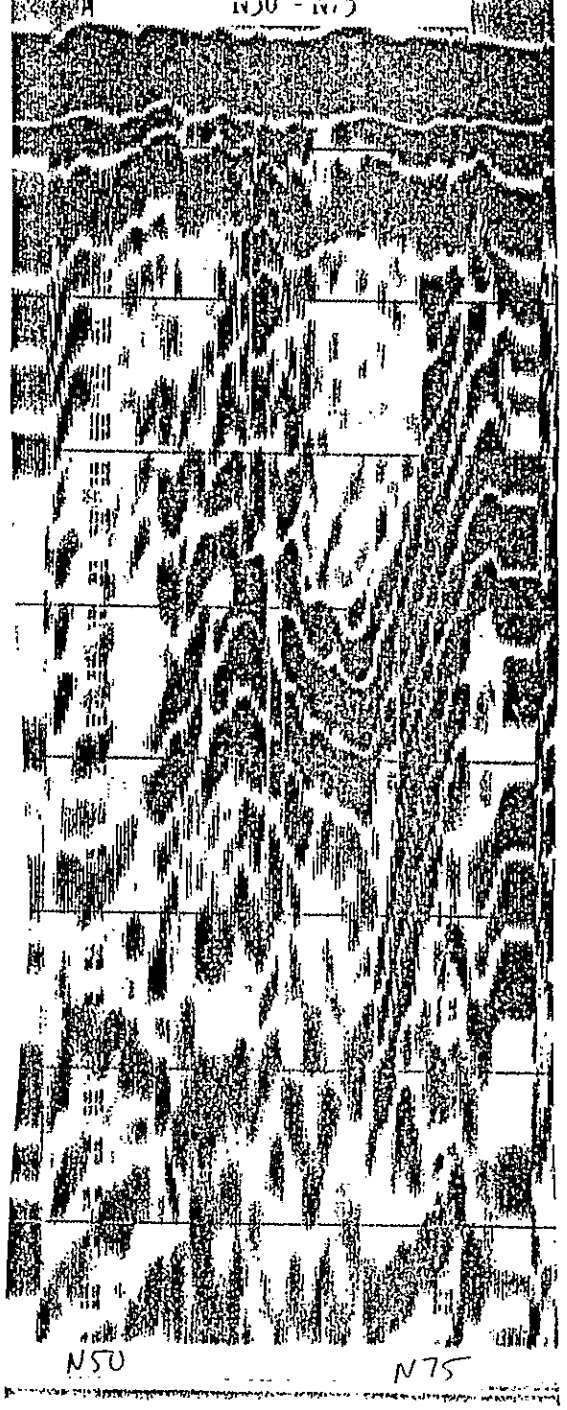


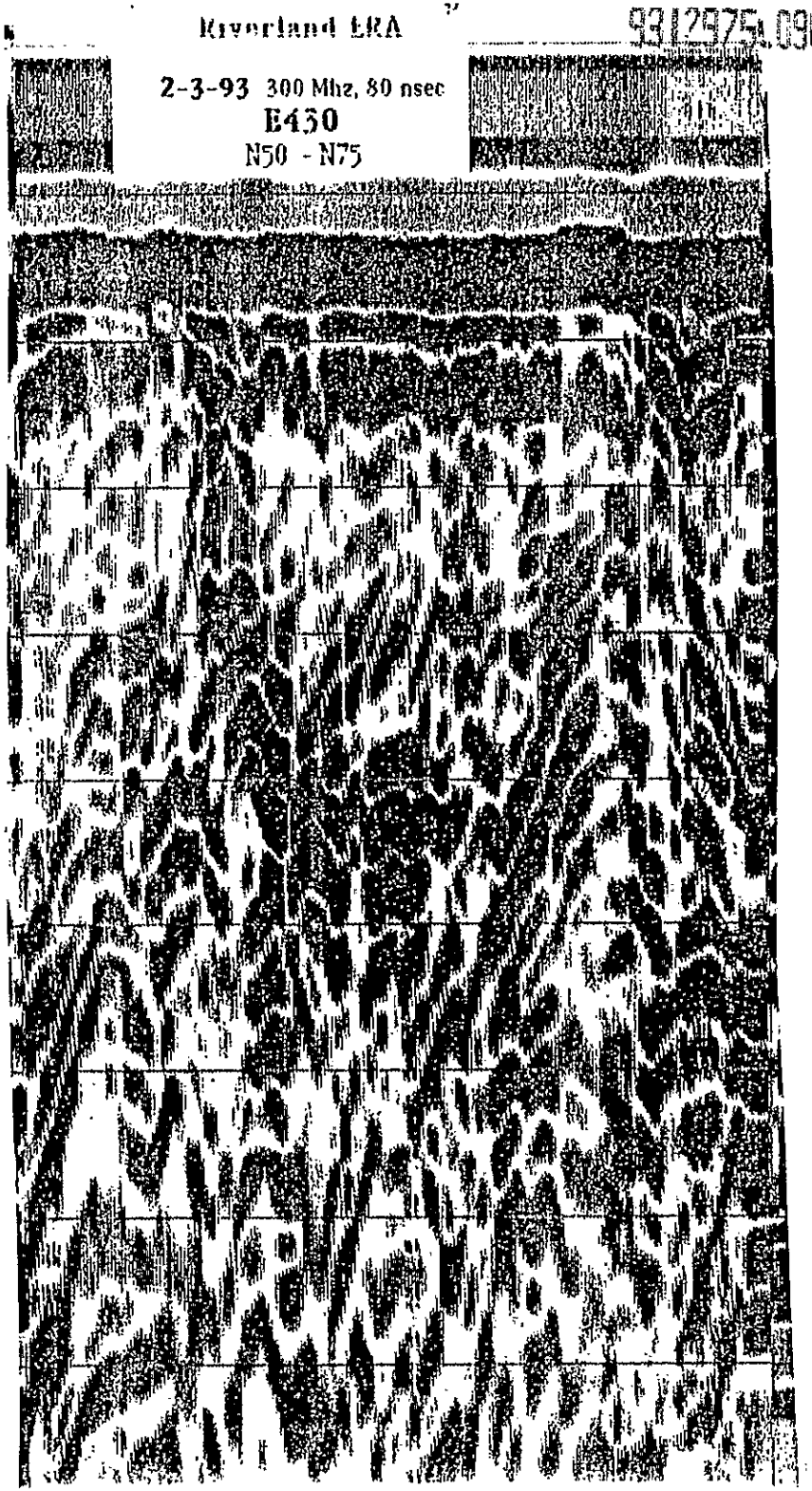
Riverland ERA

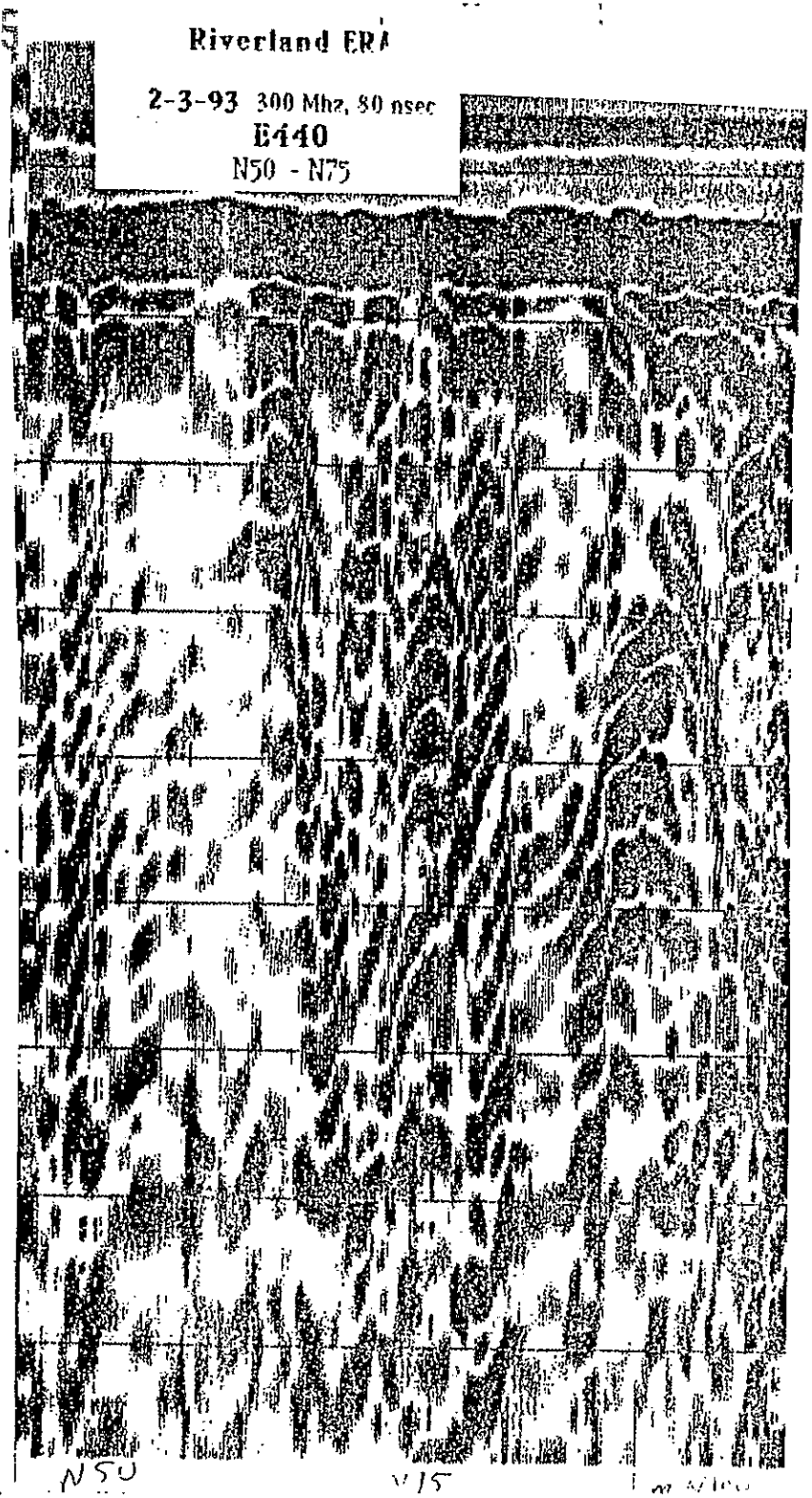
2-3-93 300 Mhz, 80 nsec

E420

N50 - N75




Riverland ERA
9312975.0905
2-3-93 300 Mhz, 80 nsec
E430
N50 - N75


Riverland ERA
2-3-93 300 Mhz, 80 nsec
E440
N50 - N75
N50
N75

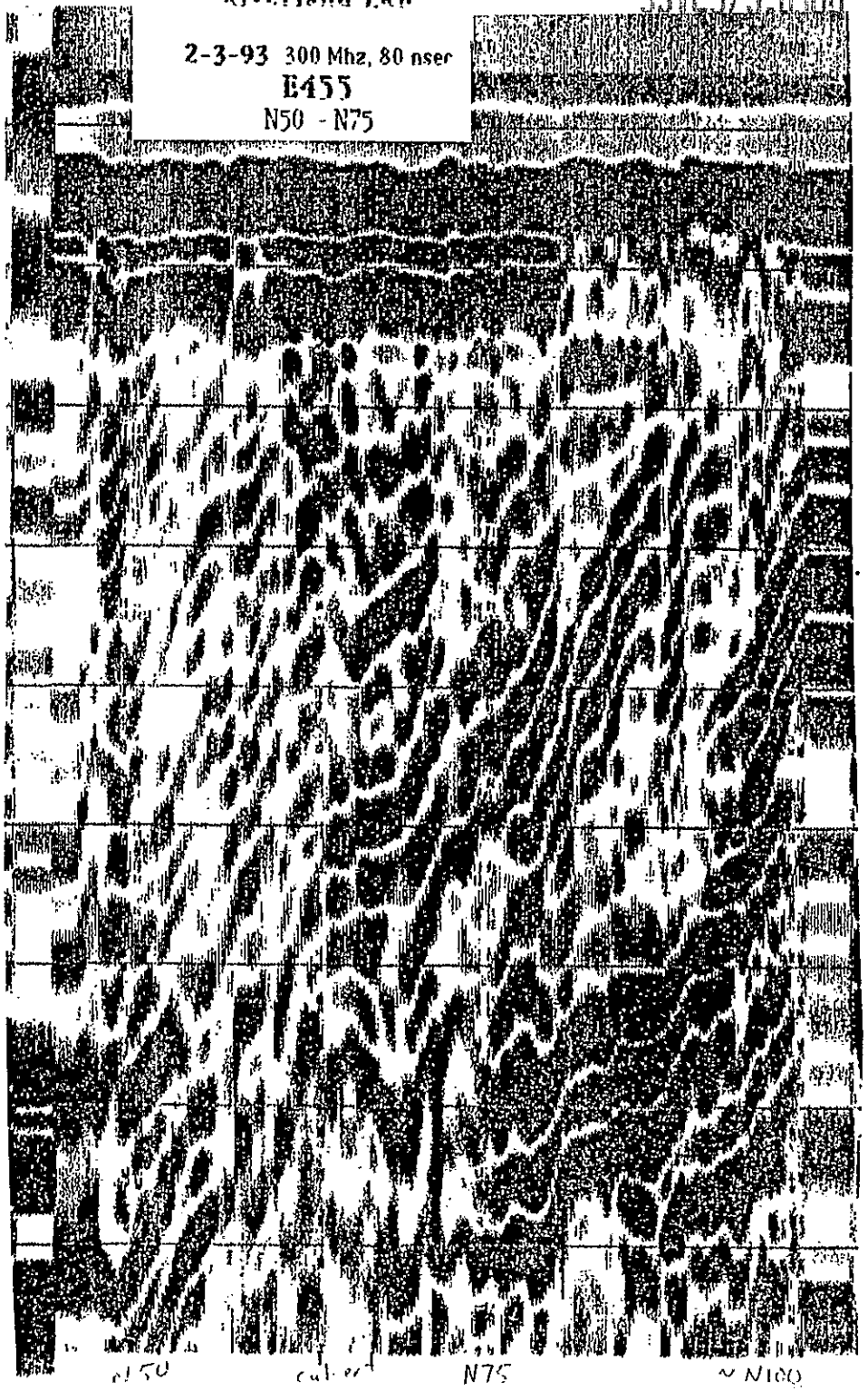
Riverland ERA

9312975.0905

2-3-93 300 Mhz, 80 nsec

E455

N50 - N75

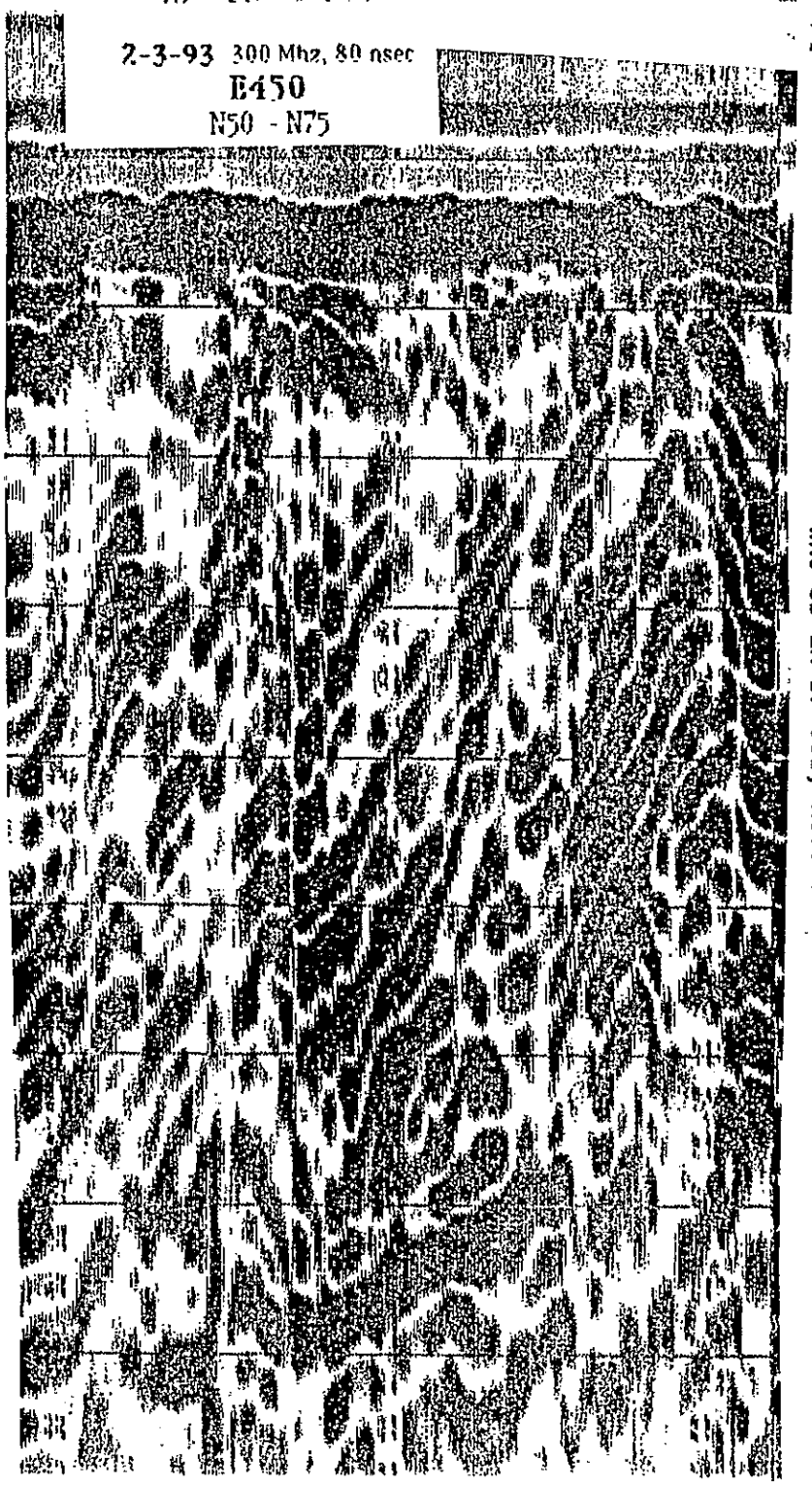


Riverland ERA

2-3-93 300 Mhz, 80 nsec

E450

N50 - N75



CUSTOMER DOCUMENT RELEASE INFORMATION

DATE: 6/15/93

CUSTOMER NAME: K. A. Bergstrom PHONE: 6-1747

PAYROLL NUMBER: 67362

PROJECT / PROJECT NUMBER: WHC-SD-EN-DP-061, Rev:0

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9312975.0907

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