

Company: ENCANA OIL & GAS (USA) INC

Well: MF11A-16 (H17 696)
Field: NORTH PARACHUTE
County: GARFIELD

State: COLORADO

CEMENT BOND LOG
CBL - VDL
GAMMA RAY - CCL

County: GARFIELD
 Field: NORTH PARACHUTE
 Location: SHL: SENE 1582 FNL 294 FEL
 Well: MF11A-16 (H17 696)
 Company: ENCANA OIL & GAS (USA) INC

LOCATION			
SHL: SENE 1582 FNL 294 FEL BHL: 2853 FSL 1436 FWL	Elev.: K.B. 5676.00 ft G.L. 5654.00 ft D.F. 5675.00 ft		
Permanent Datum: _____	GROUND LEVEL _____	Elev.: 5654.00 ft	
Log Measured From: _____	KELLY BUSHING _____	22.00 ft	above Perm. Datum
Drilling Measured From: _____	KELLY BUSHING _____		
API Serial No. _____	Section _____	Township _____	Range _____
05-045-18702-000C	17	6S	96W

PVT DATA			
Oil Density		Run 1	Run 2
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation			
CEMENTING DATA			
Primary/Squeeze	Primary		
Casing String No			
Lead Cement Type			
Volume			
Density			
Water Loss			
Additives			
Tail Cement Type			
Volume			
Density			
Water Loss			
Additives			
Expected Cement Top			

Logging Date	28-Mar-2011
Run Number	ONE
Depth Driller	7830 ft
Schlumberger Depth	7798 ft
Bottom Log Interval	7789.4 ft
Top Log Interval	200 ft
Casing Fluid Type	WATER
Salinity	
Density	8.4 lbm/gal
Fluid Level	22 ft
BIT/CASING/TUBING STRING	
Bit Size	8.750 in
From	22 ft
To	7830 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	E-80
From	22 ft
To	7824 ft
Maximum Recorded Temperatures	237 degF
Logger On Bottom	28-Mar-2011
Unit Number	3017
Recorded By	SHOWKAT HOSSAIN
Witnessed By	UNATTENDED

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Fluid Type	
Salinity	
Density	
Fluid Level	
BIT/CASING/TUBING STRING	
Bit Size	
From	
To	
Casing/Tubing Size	
Weight	
Grade	
From	
To	
Maximum Recorded Temperatures	
Logger On Bottom	
Unit Number	
Recorded By	
Witnessed By	

DEPTH SUMMARY LISTING

Date Created: 28-MAR-2011 22:22:32

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 57835784 Calibration Date: 09-NOV-2011 Calibrator Serial Number: 33 Calibration Cable Type: 1-25ZT Wheel Correction 1: -3 Wheel Correction 2: -3	Type: CMTD-C Serial Number: 1155 Calibration Date: 27-MAR-2011 Calibrator Serial Number: 100518 Number of Calibration Points: 10 Calibration RMS: 10 Calibration Peak Error: 19	Type: 1-25ZT Serial Number: 3017 Length: 24000 FT Conveyance Method: Wireline Rig Type: LAND

Depth Control Parameters

Log Sequence: First Log In the Well
Rig Up Length At Surface: 283.80 FT
Rig Up Length At Bottom: 283.00 FT
Rig Up Length Correction: 0.80 FT
Stretch Correction: 9.00 FT
Tool Zero Check At Surface: 0.20 FT

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED
2. IDW USED AS PRIMARY DEPTH CONTROL.
3. Z-CHZRT USED AS SECONDARY DEPTH CONTROL
4.
5.
6.

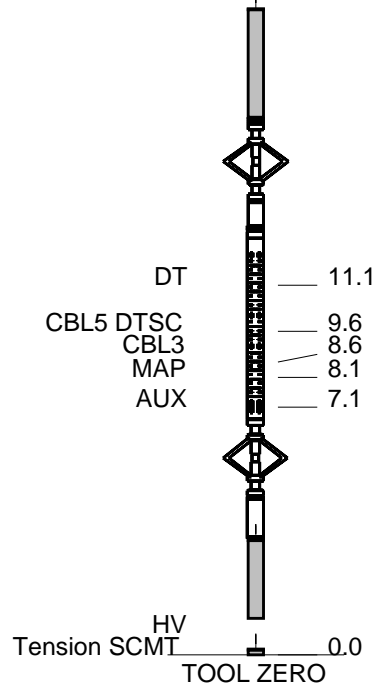
DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1	OTHER SERVICES2
OS1: RST SIGMA	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THIS IS THE FIRST RUN IN WELL.	
TOOL RAN AS PER TOOL SKETCH.	
TD TAGGED AT: 7798 FT	
MAXIMUM RECORDED PRESSURE AT TD: 3046.7 PSIA	
MAXIMUM RECORDED TEMPERATURE AT TD: 237 DEGF	

SCMT-CB
 SCMC-CA 8248
 SECH-CA 8248
 CMIR-AG 2
 SCMS-CB 8303
 SCMx-CA 8251

20.2



AH-BNS

0.2

MAXIMUM STRING DIAMETER 1.72 IN
 MEASUREMENTS RELATIVE TO TOOL ZERO
 ALL LENGTHS IN FEET



MAIN PASS 0 PSI

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: MF11A-16 (H17 696)

Input DLIS Files

DEFAULT SCMT_RST_PSP_038LUP FN:37 PRODUCER 28-Mar-2011 21:20 7803.0 FT 118.0 FT

Output DLIS Files

DEFAULT SCMT_RST_PSP_041PUP FN:40 PRODUCER 28-Mar-2011 23:29 7812.0 FT 75.0 FT

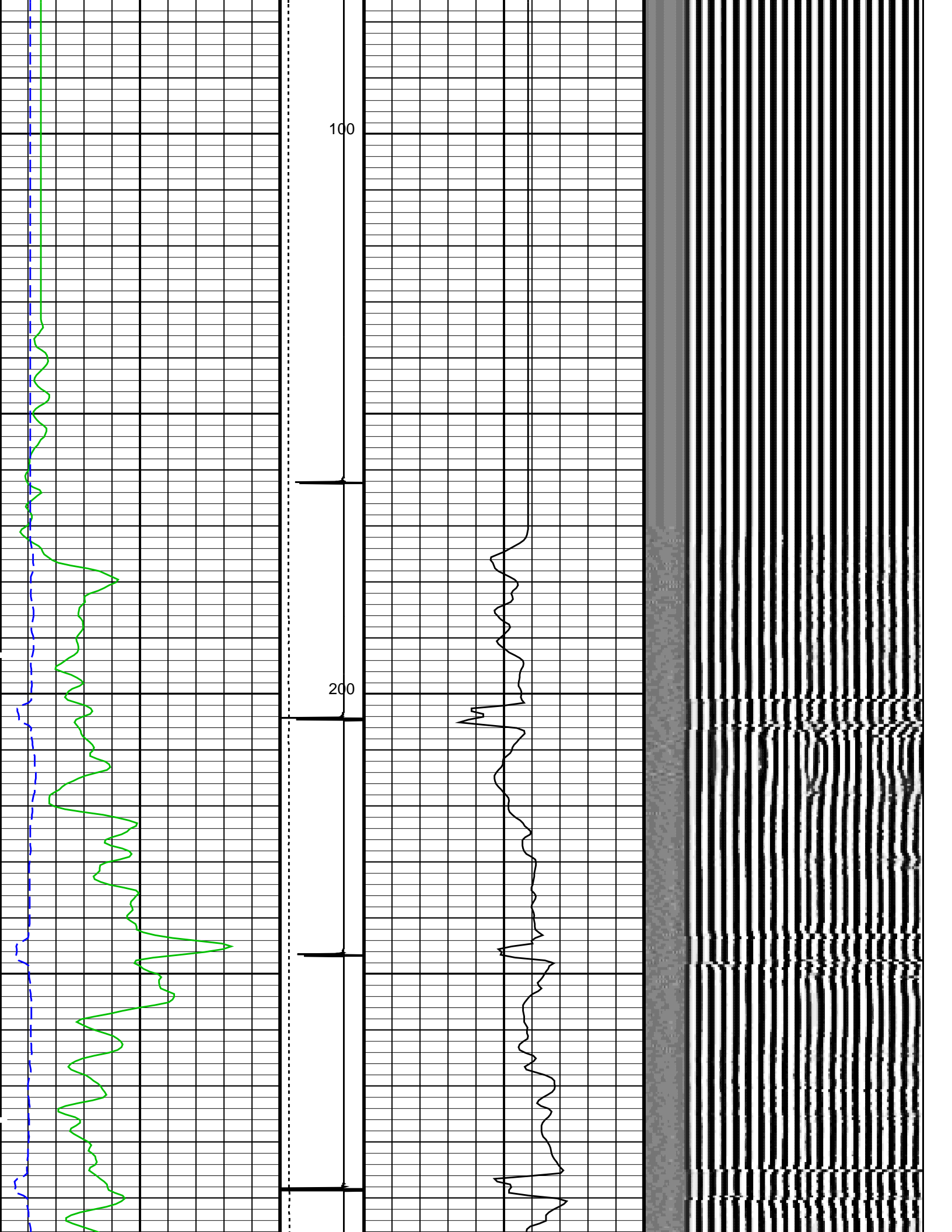
OP System Version: 18C0-147

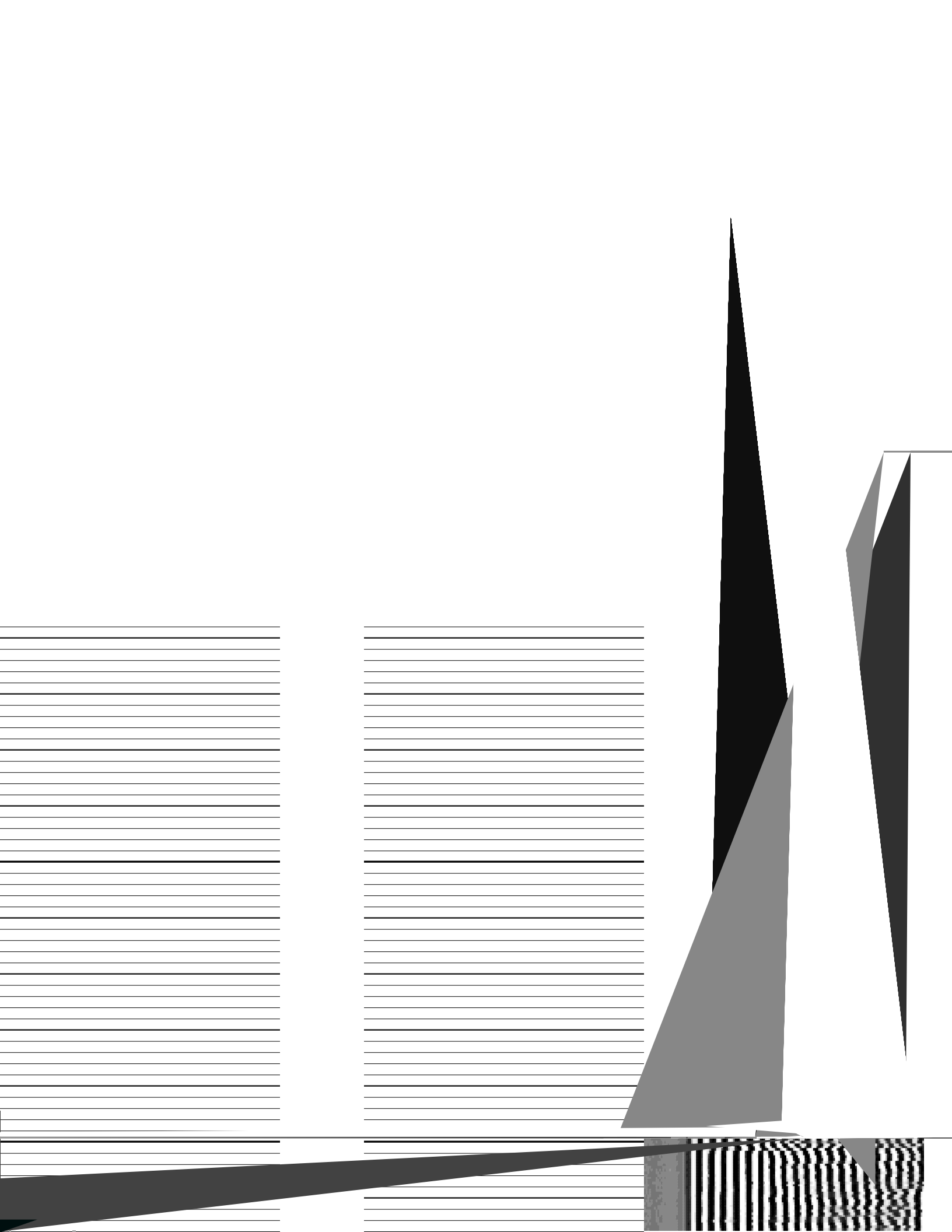
SCMT-CB 18C0-147 RST-C 18C0-147
 PSPT 18C0-147

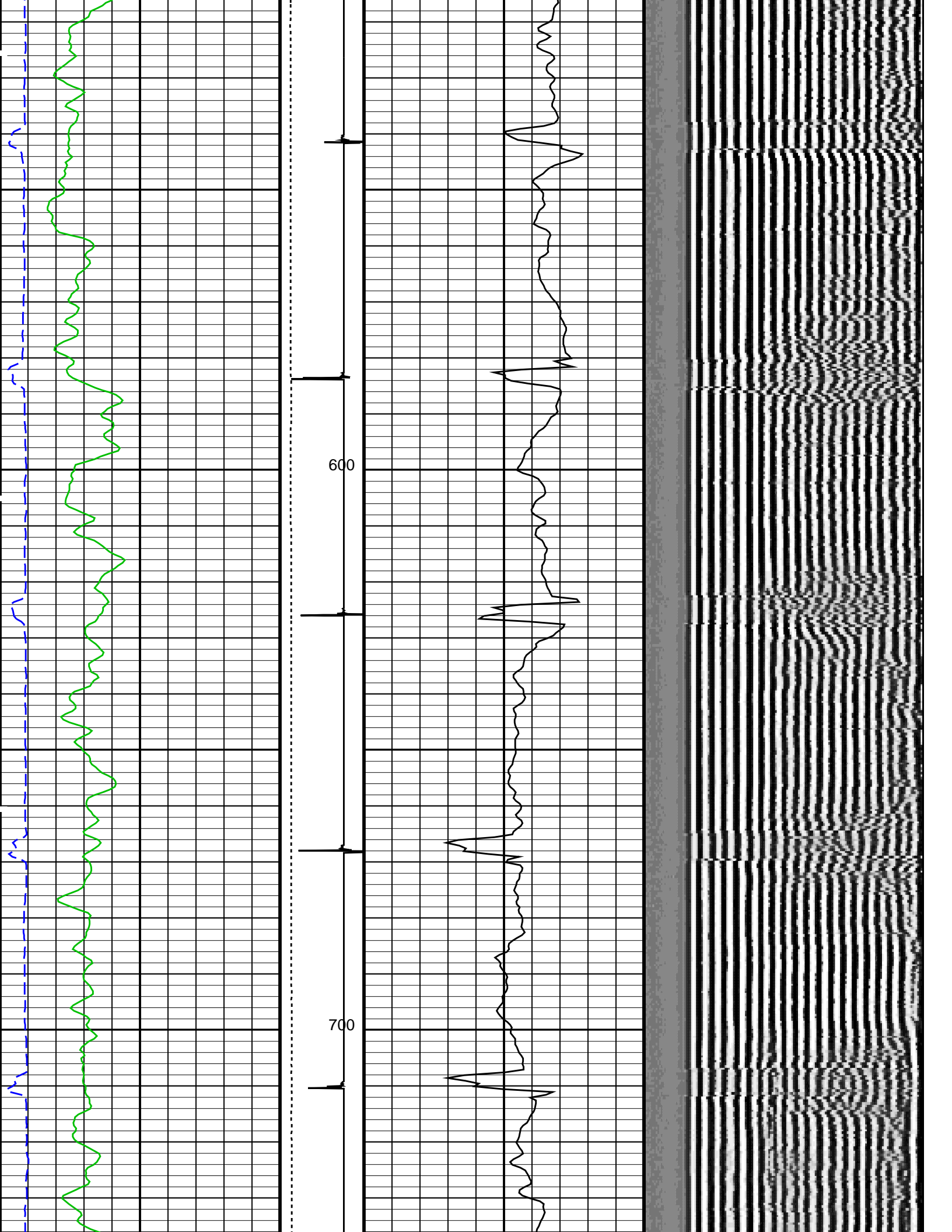
PIP SUMMARY

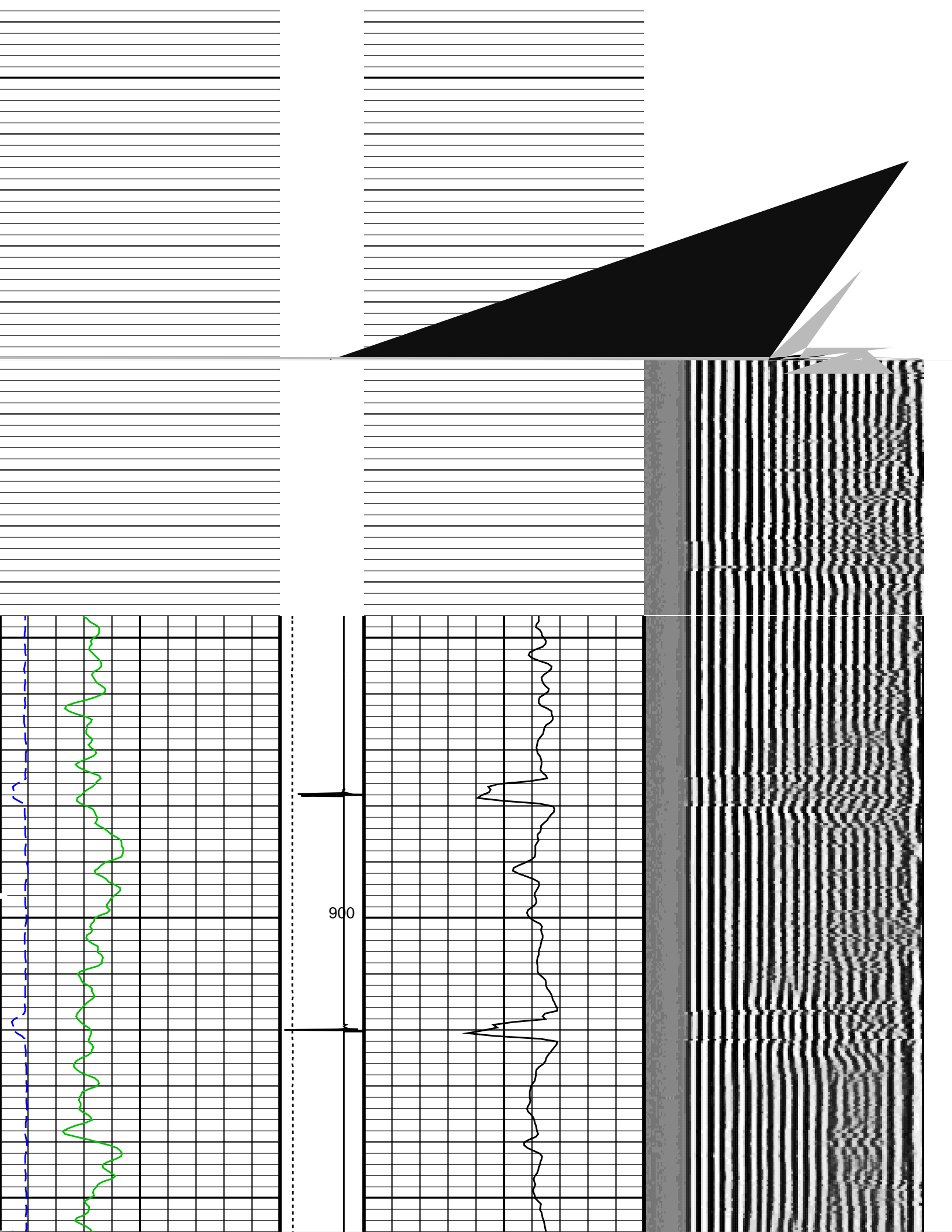
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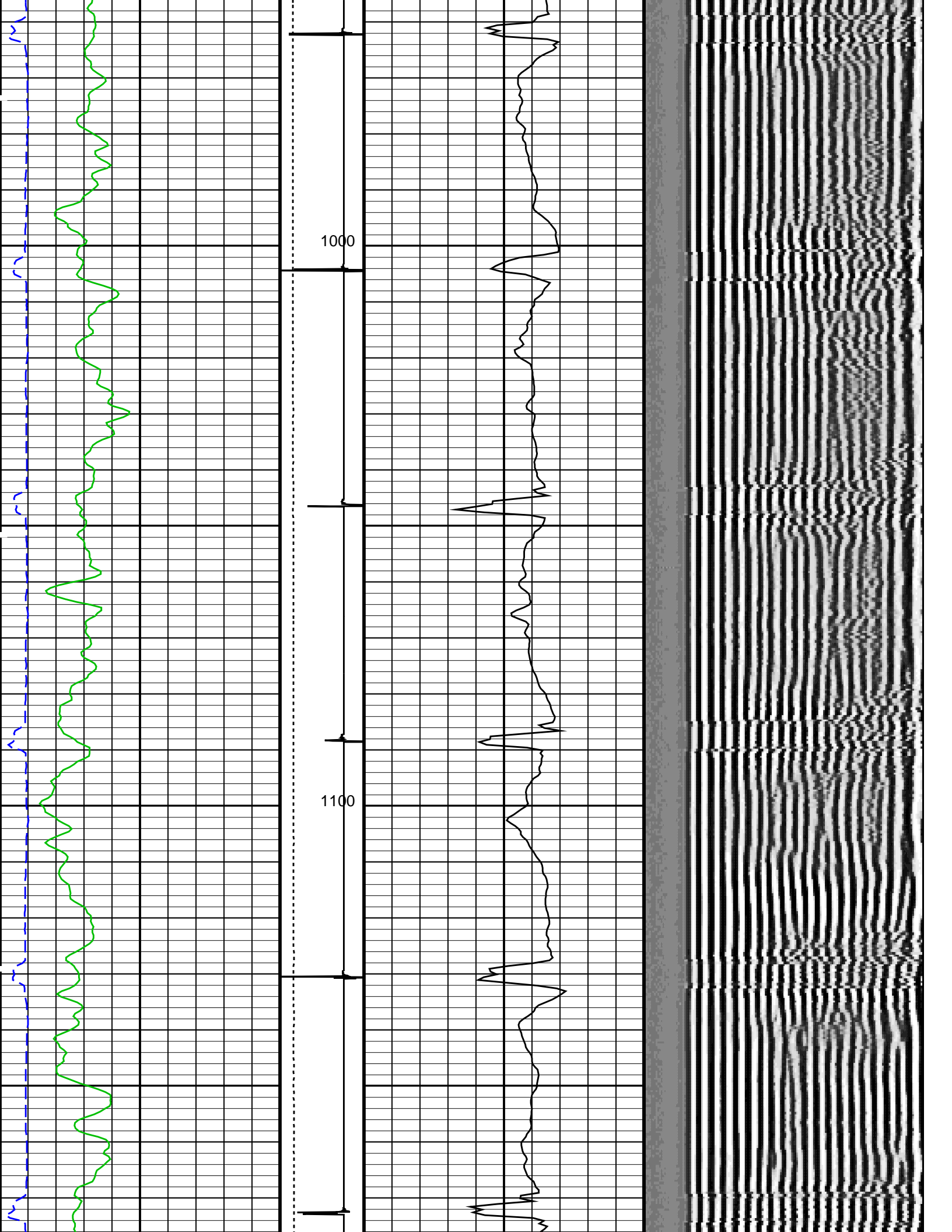
<p>Transit Time (TT) (US)</p> <p>0 260 160</p>	<p>Discriminat ed CCL (CCLD) (V) -1</p> <p>3</p>	<p>CBL Amplitude (CBL) (MV)</p> <p>0 10</p>	
<p>Gamma Ray (GR) (GAPI)</p> <p>0 150</p>	<p>Tension (TENS) (LBF)</p> <p>0 2000</p>	<p>CBL Amplitude (CBL) (MV)</p> <p>0 100</p>	<p>Min Amplitude Max</p> <p>200 VDL VariableDensity (VDL) (US) 1200</p>

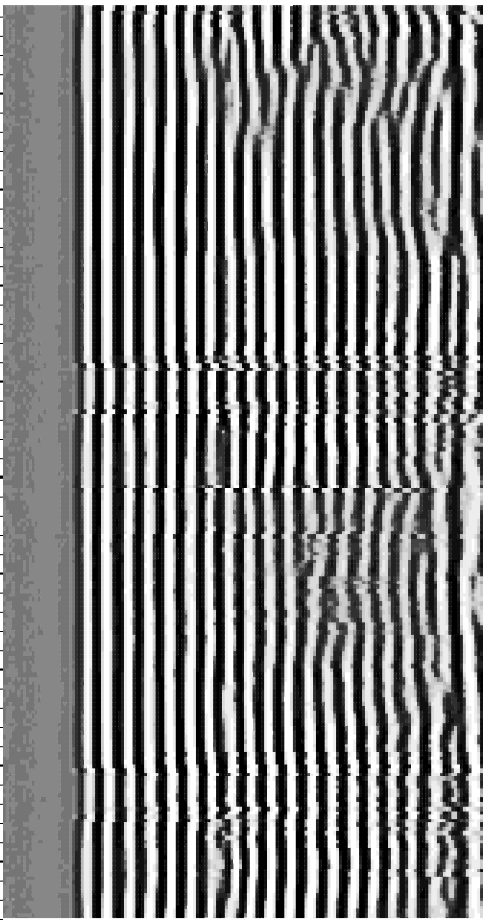
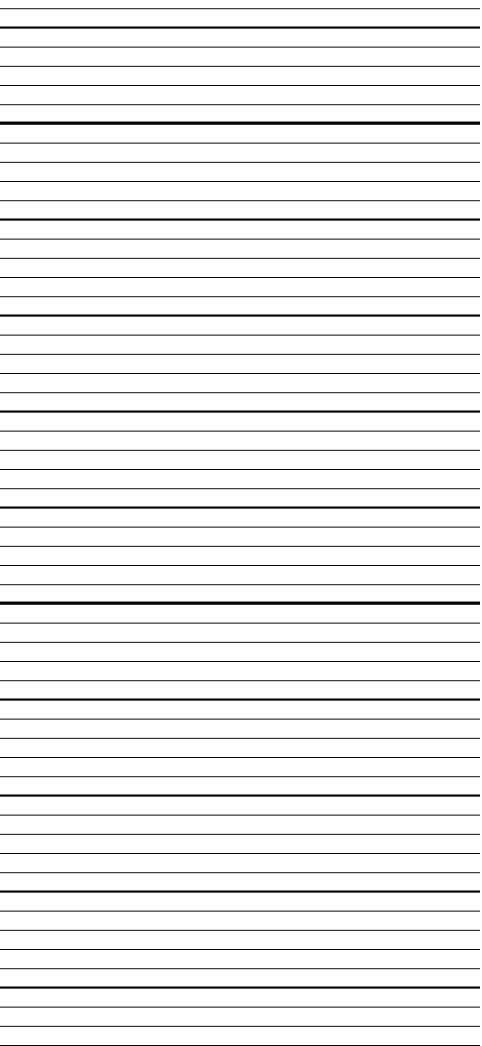


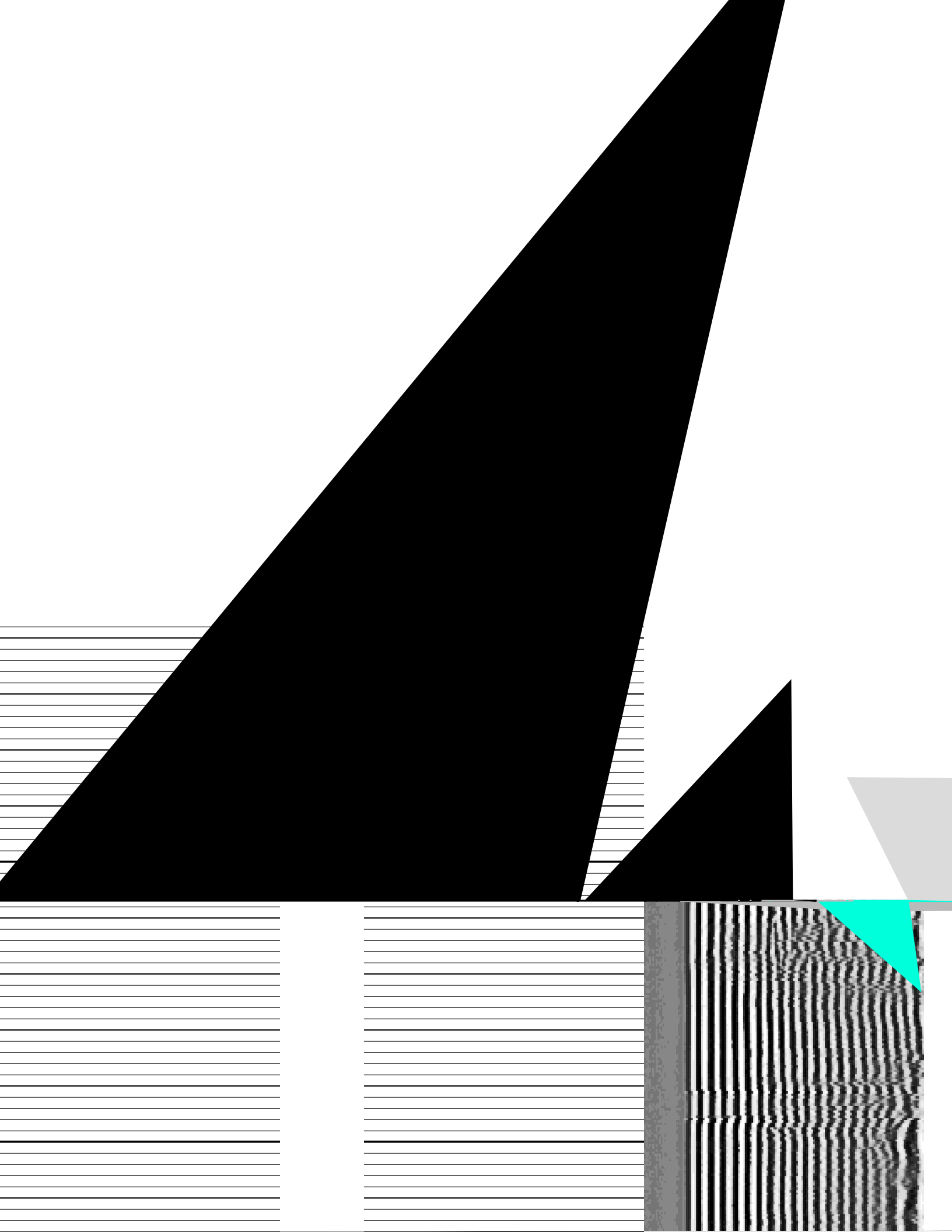


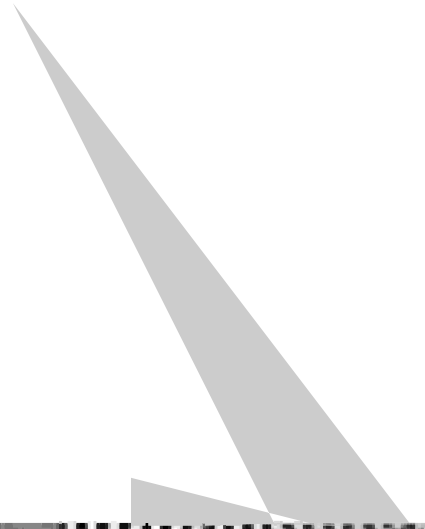
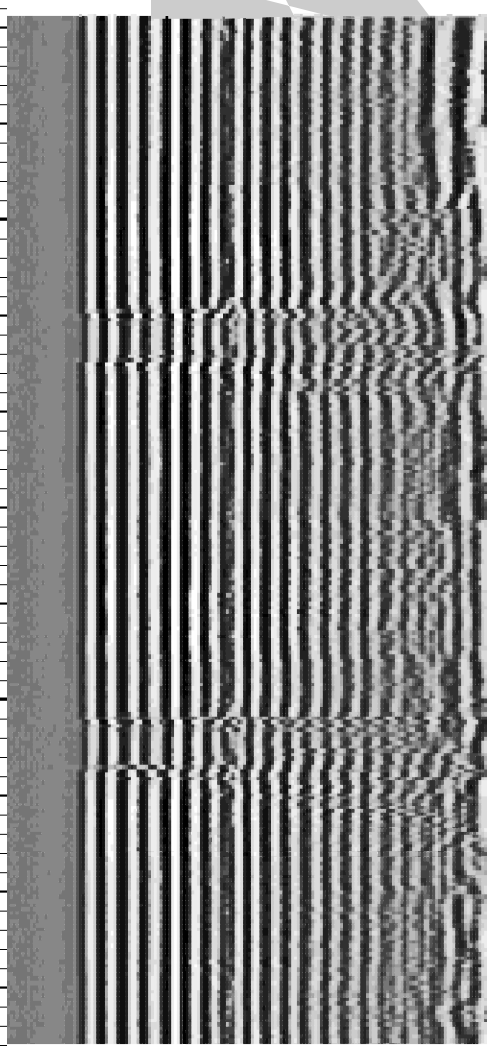
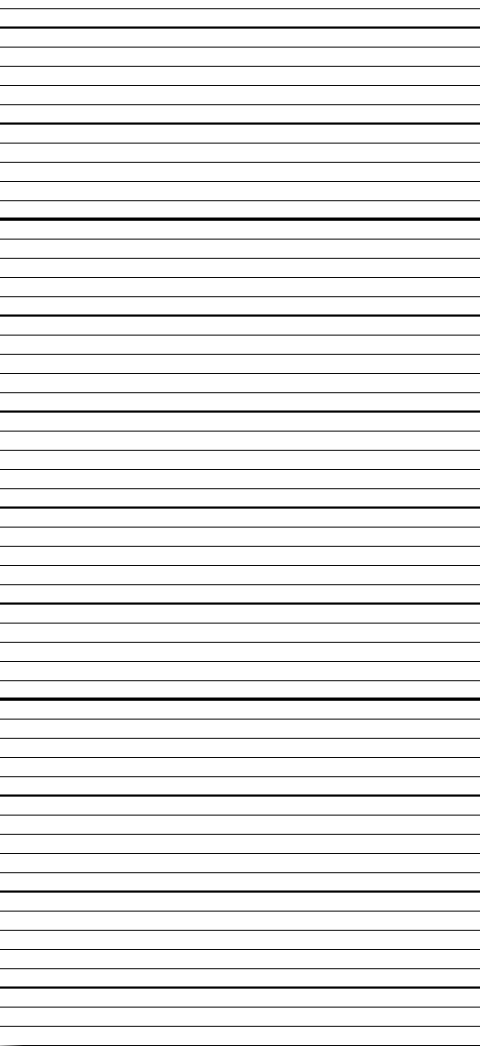


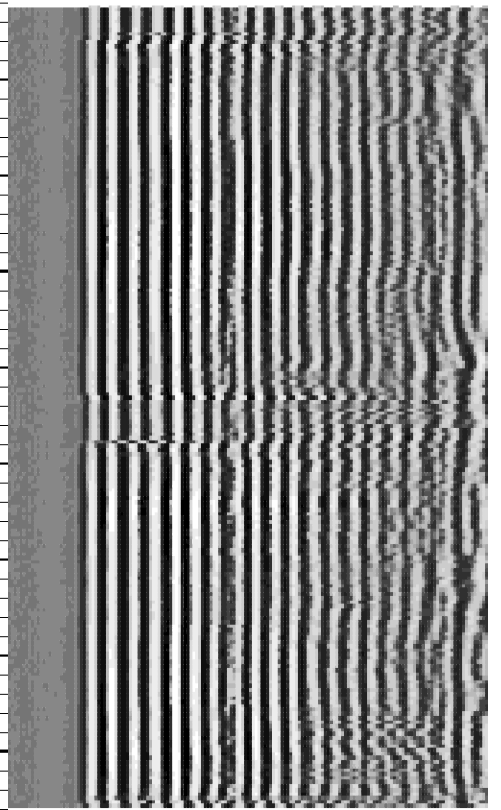
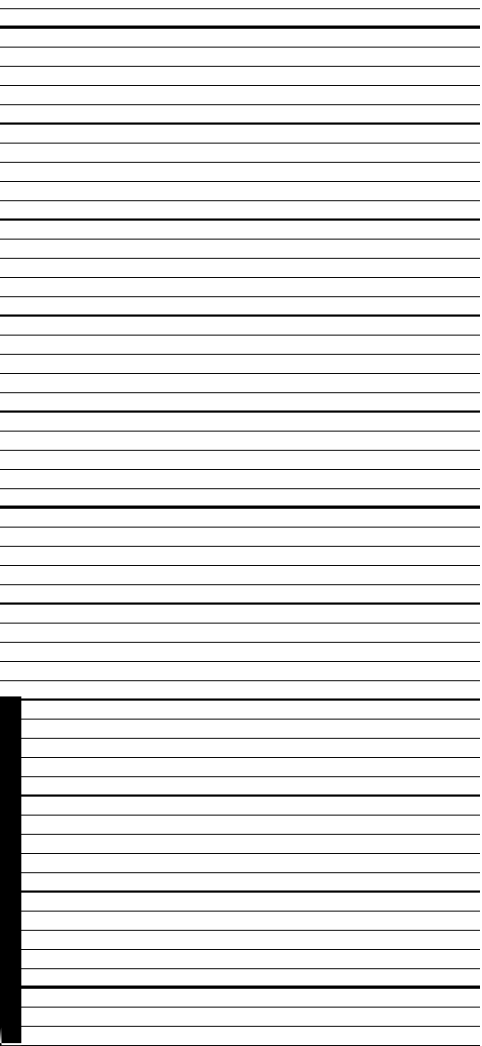


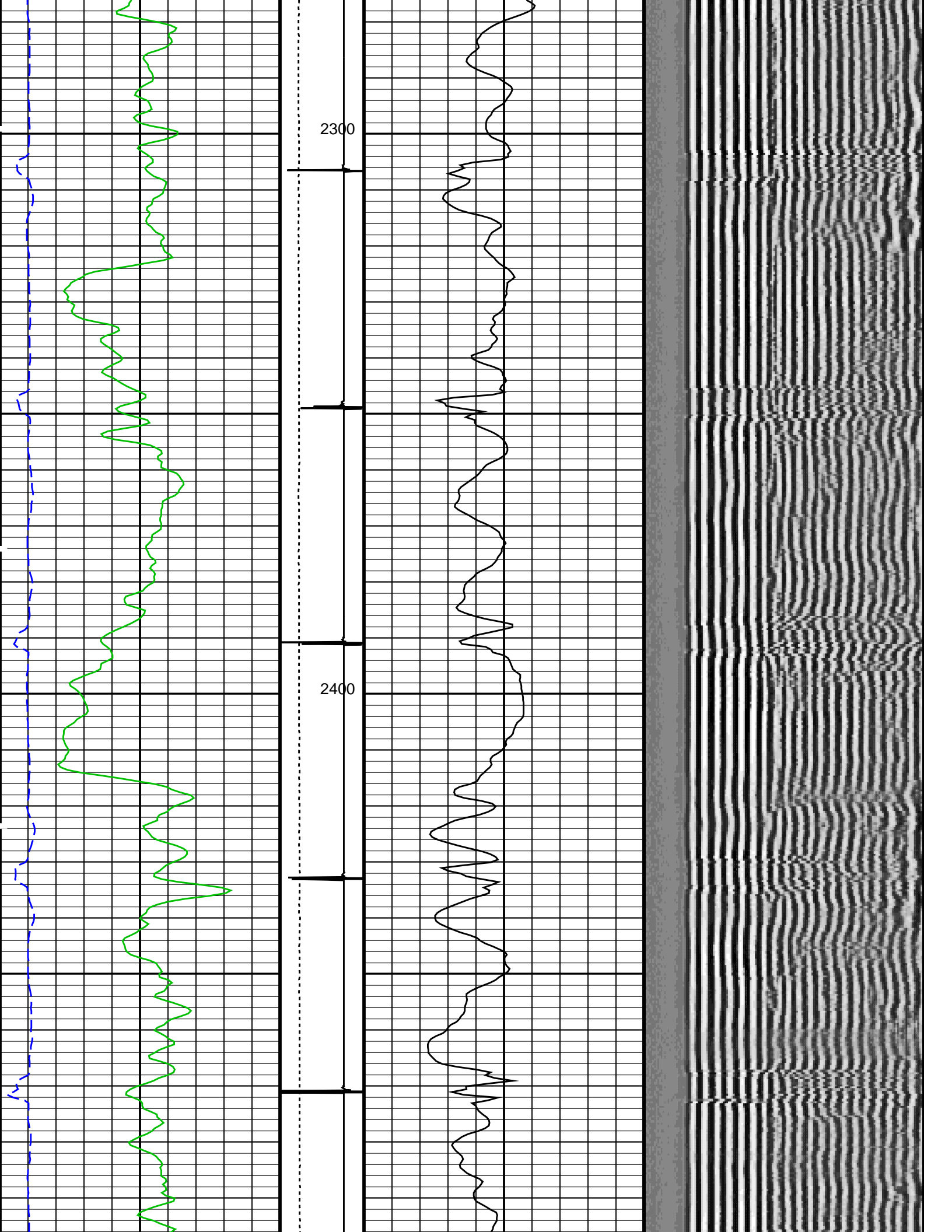


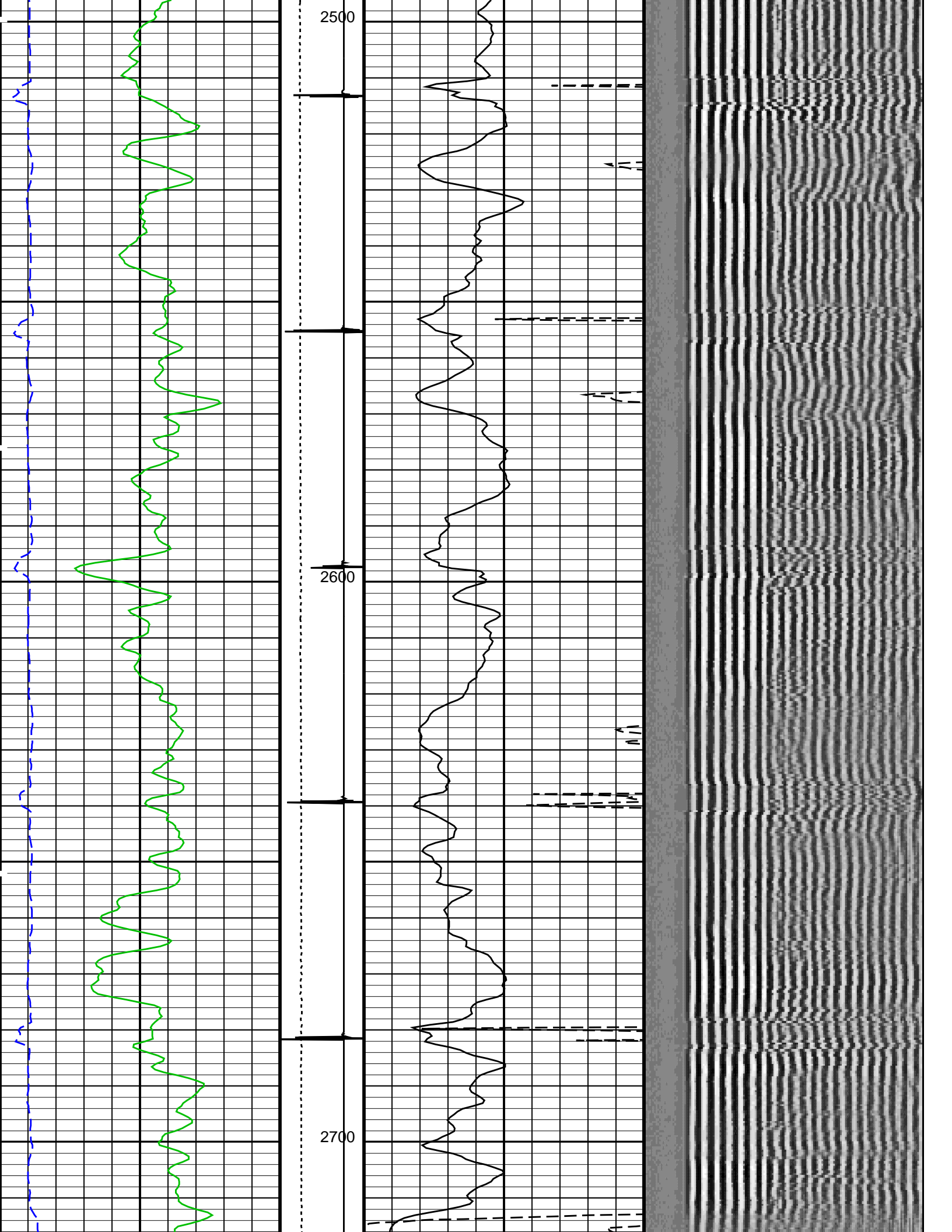


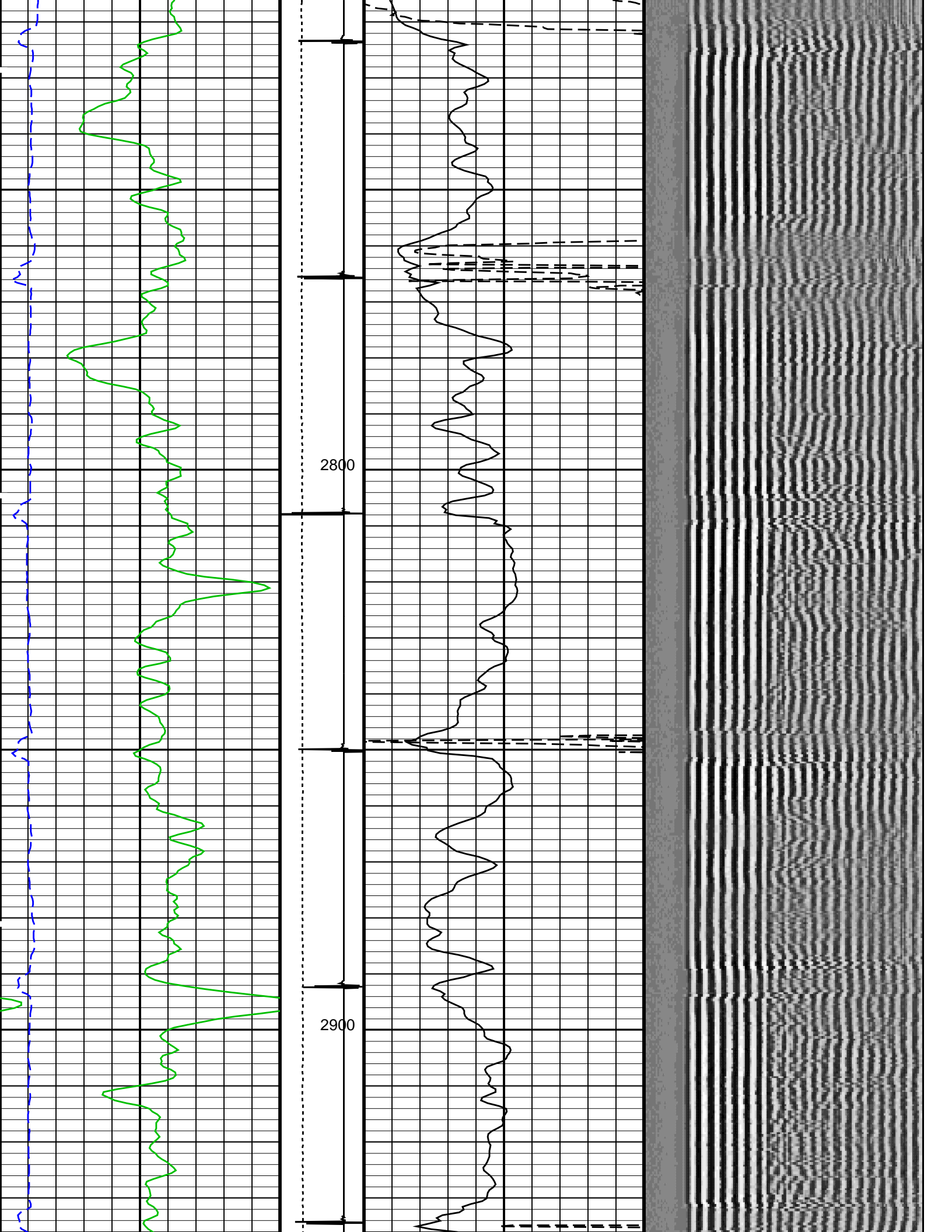


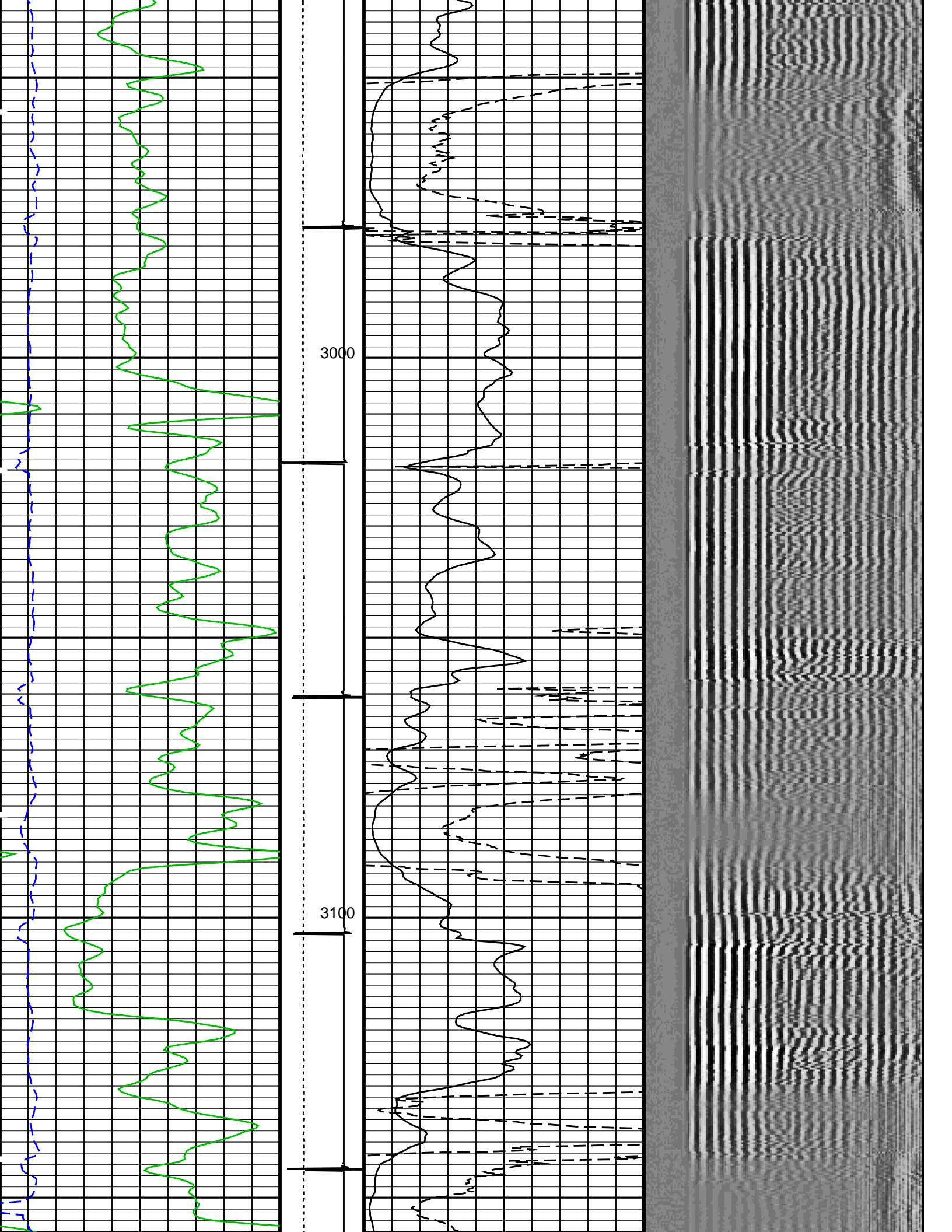


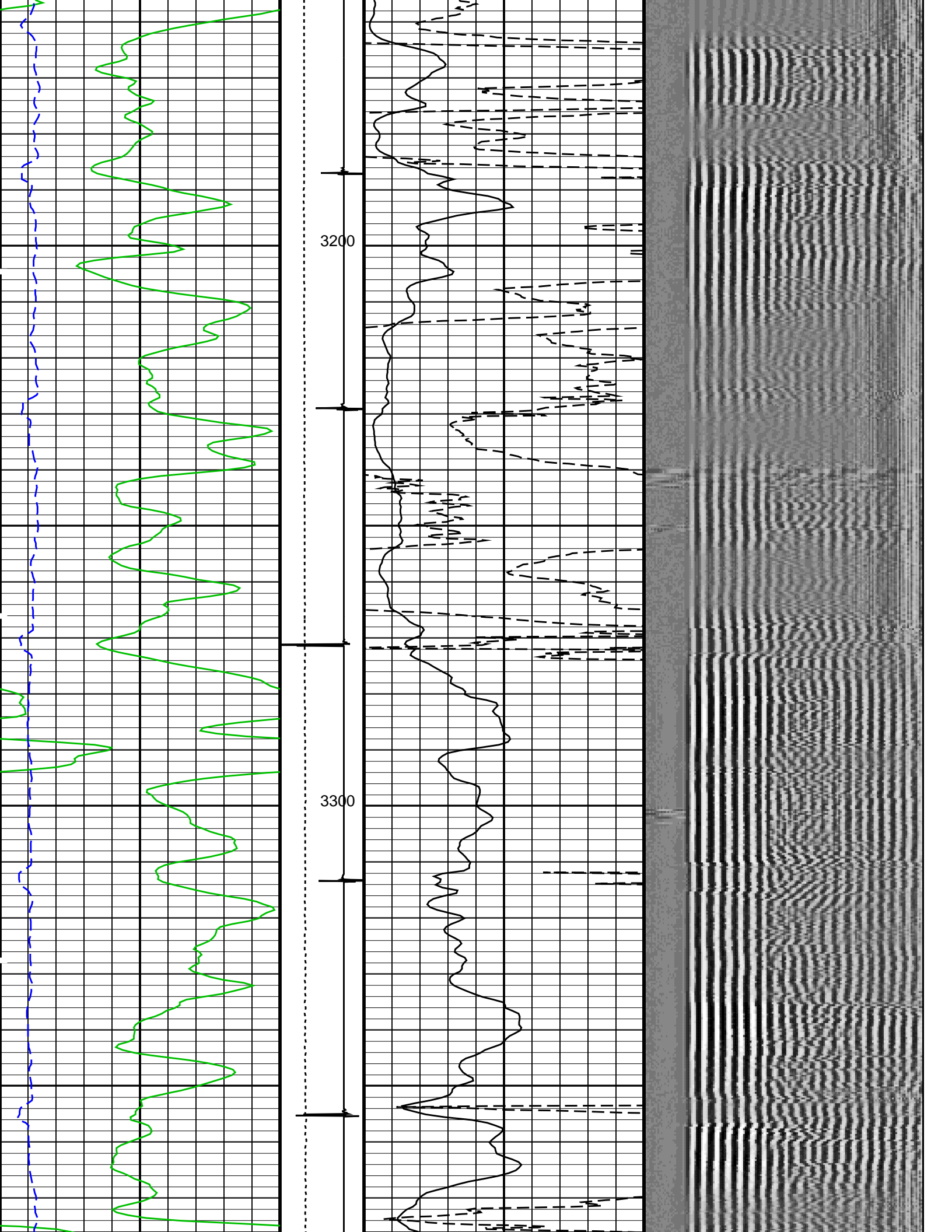


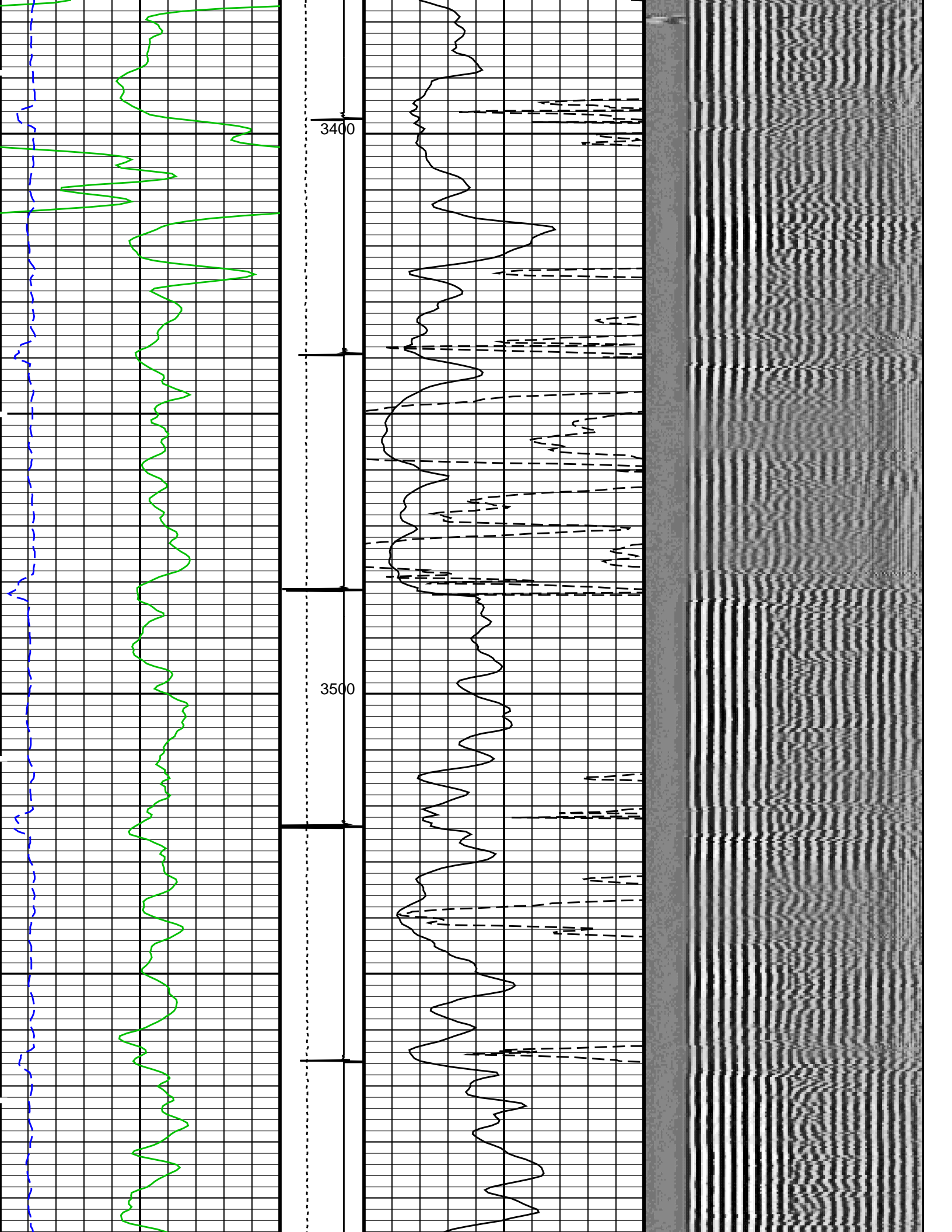


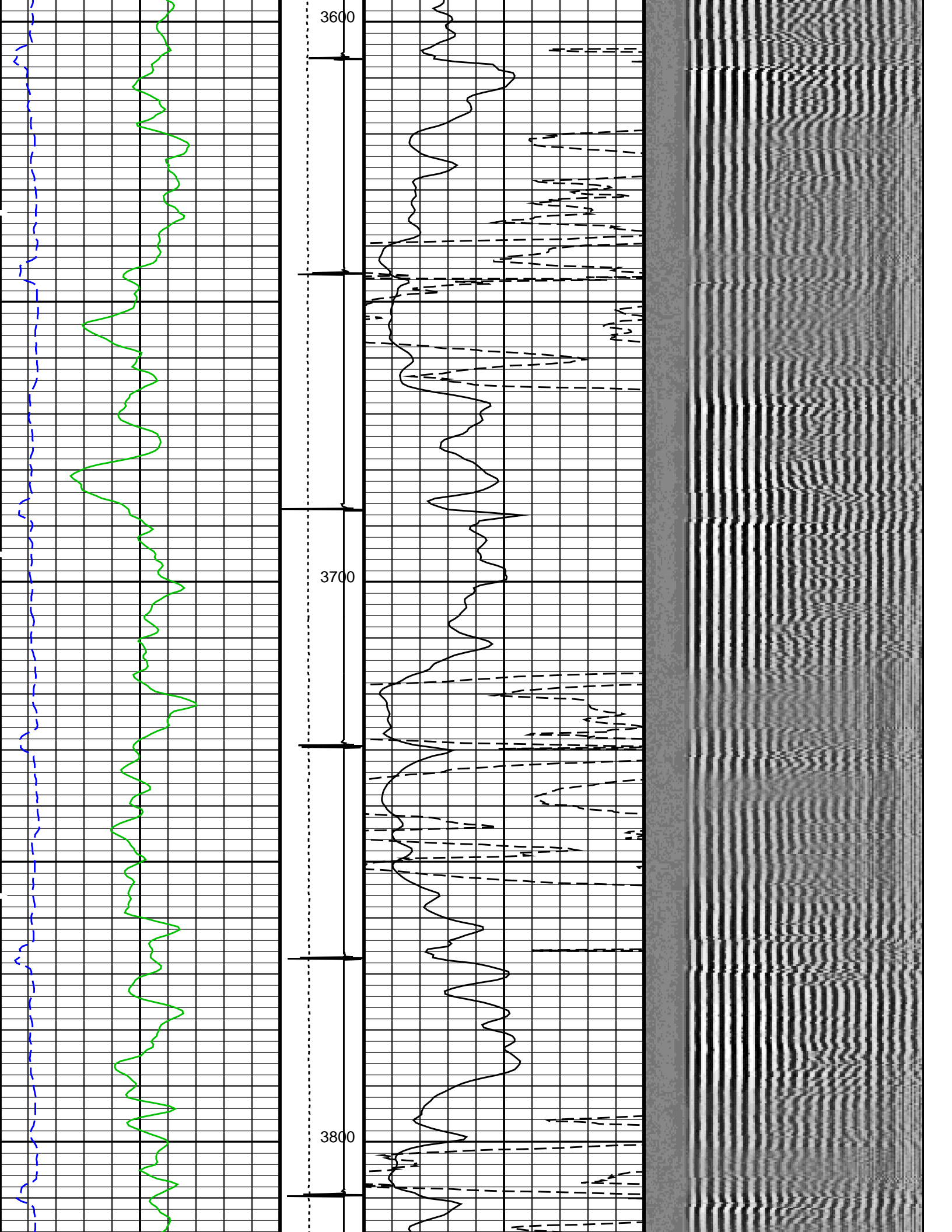


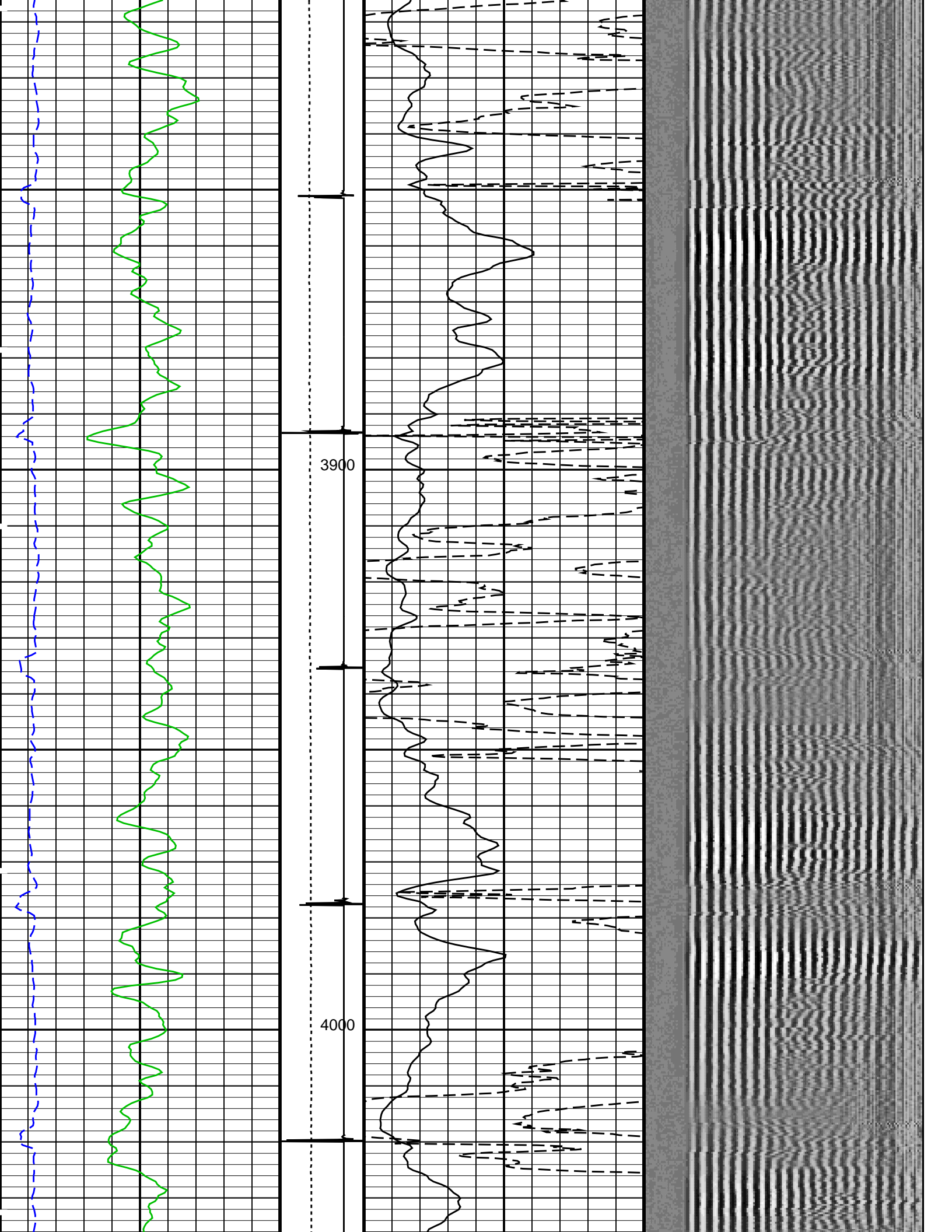


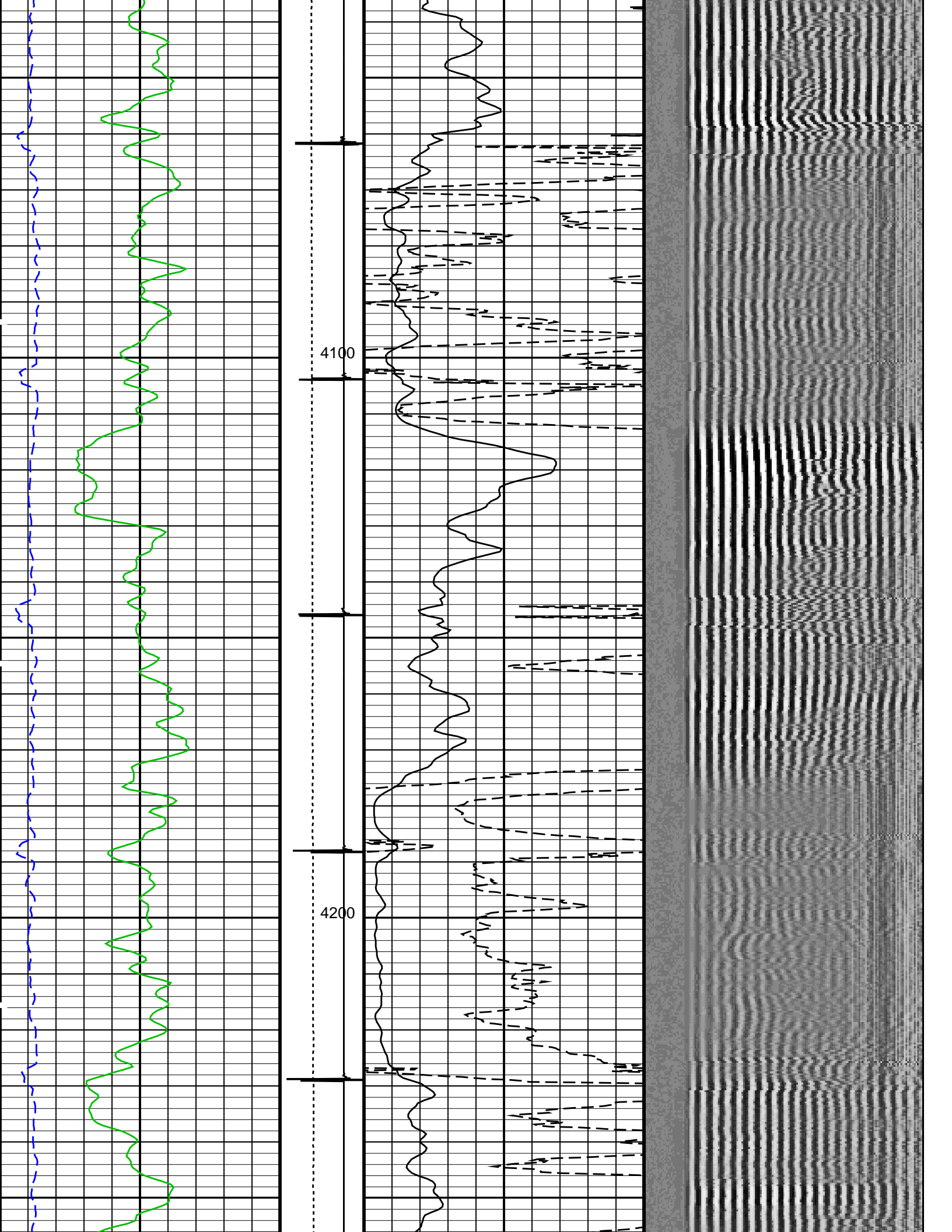


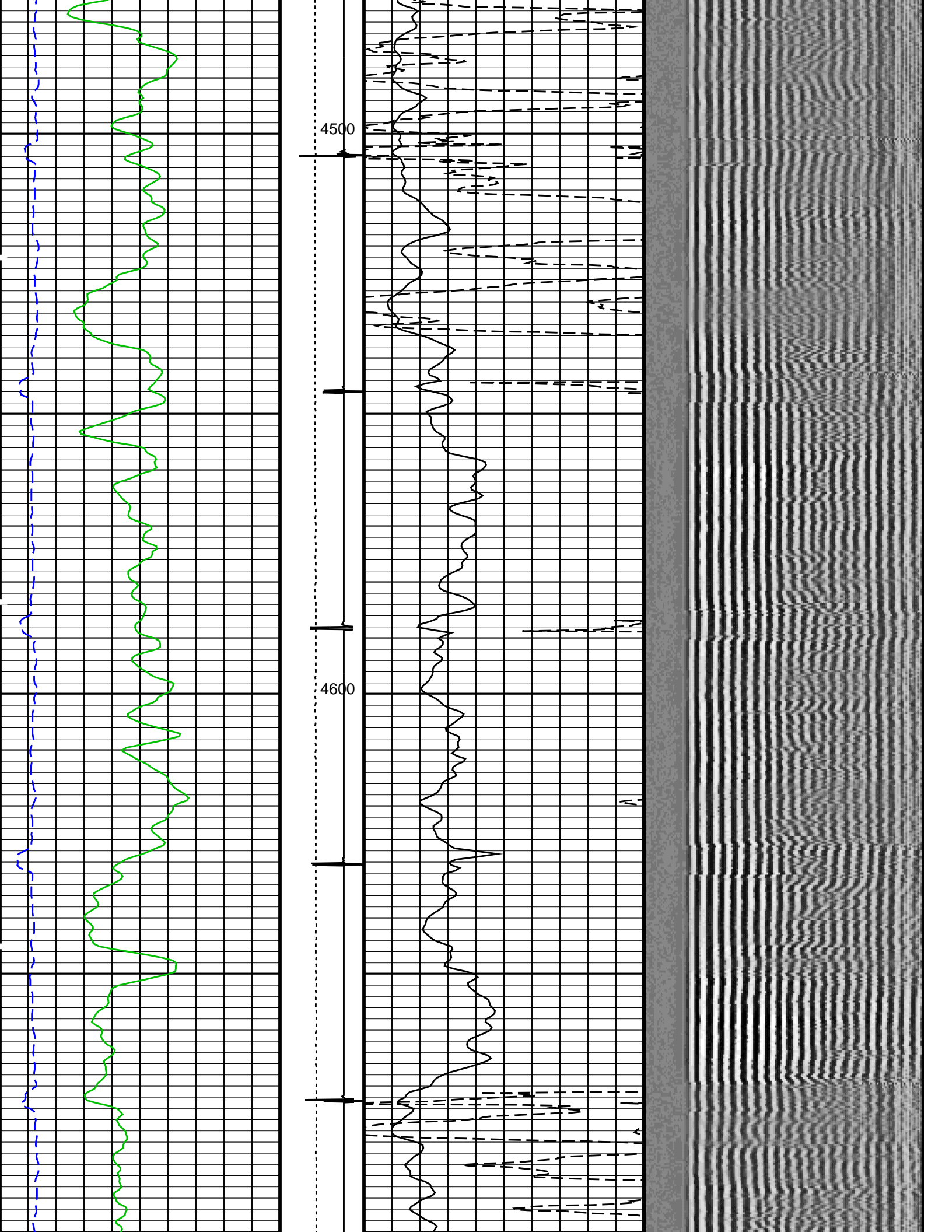


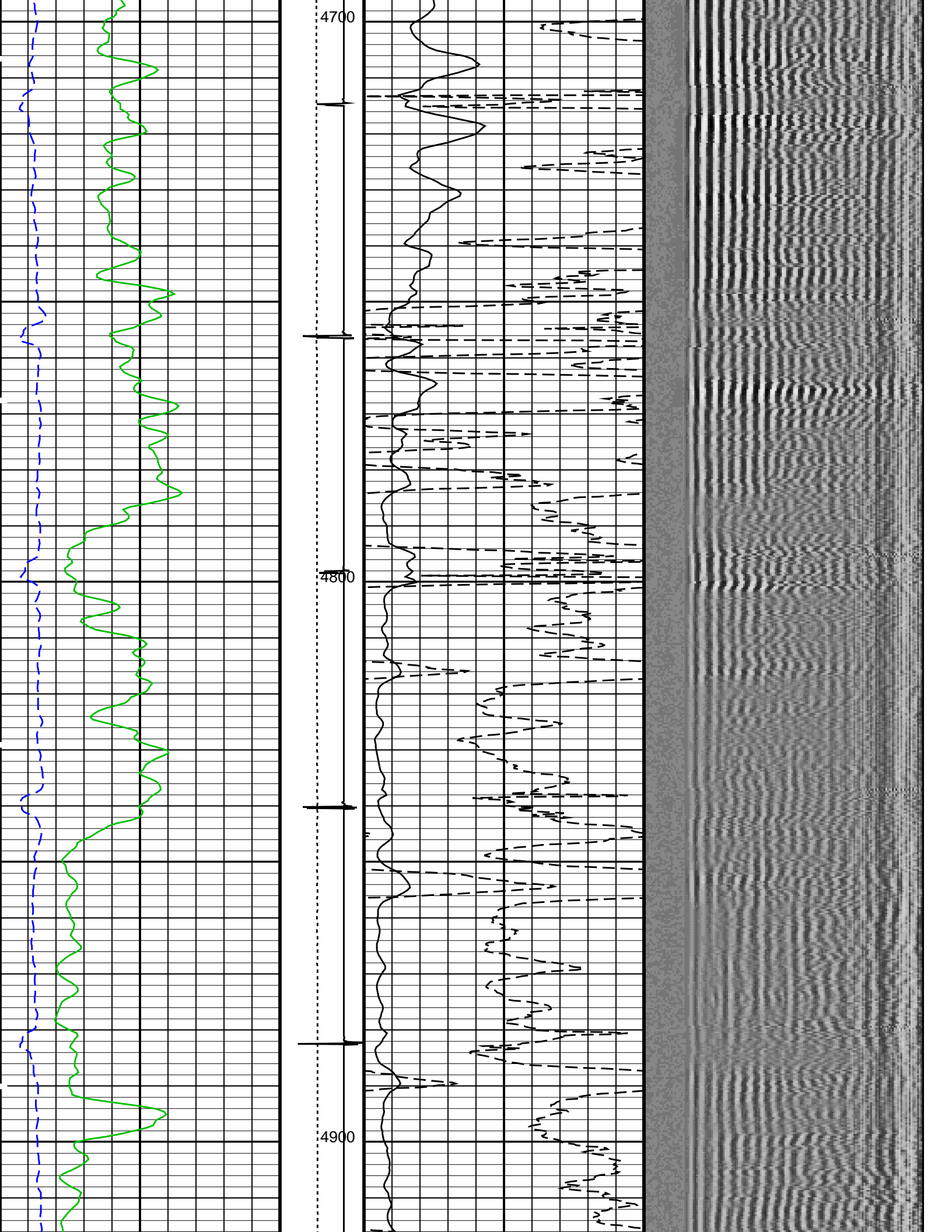


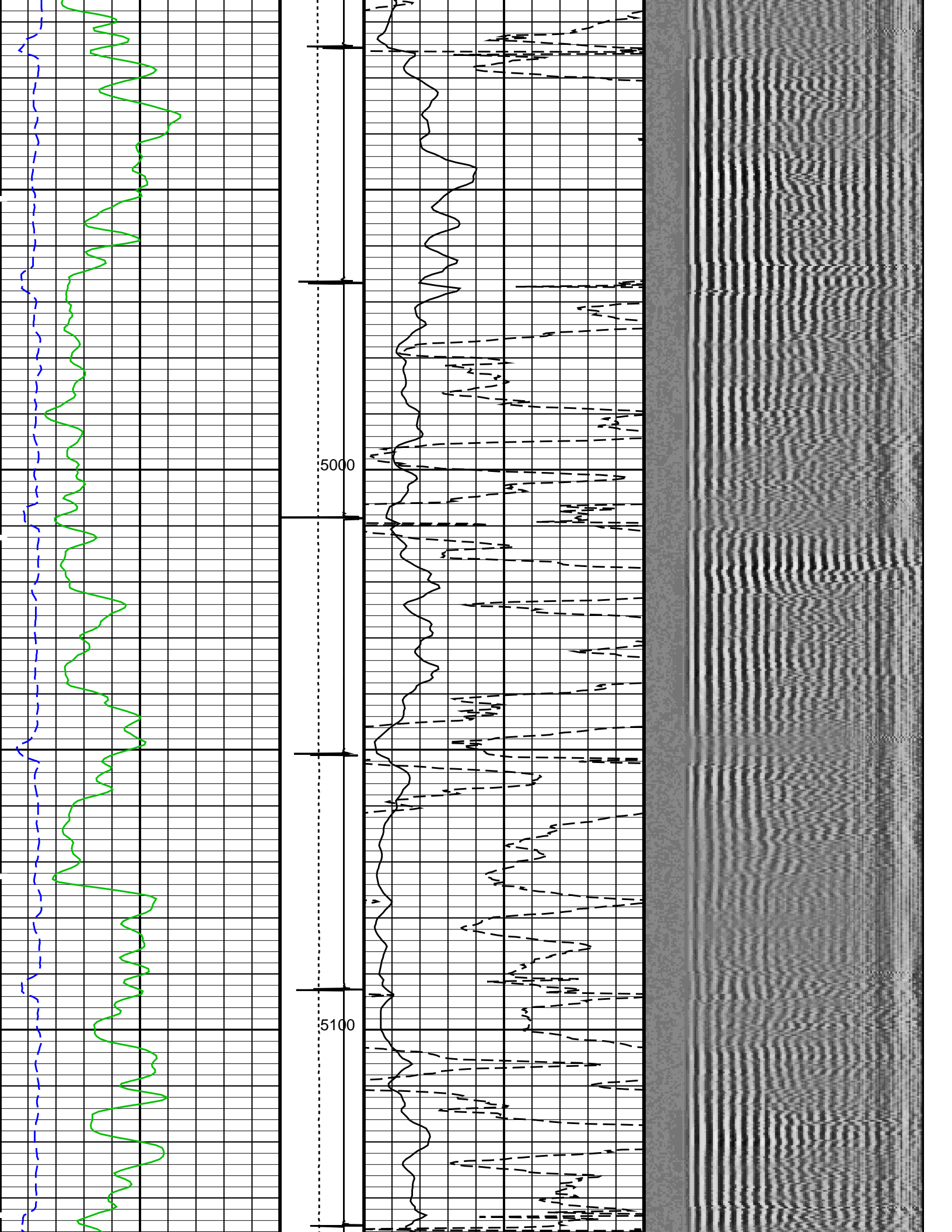


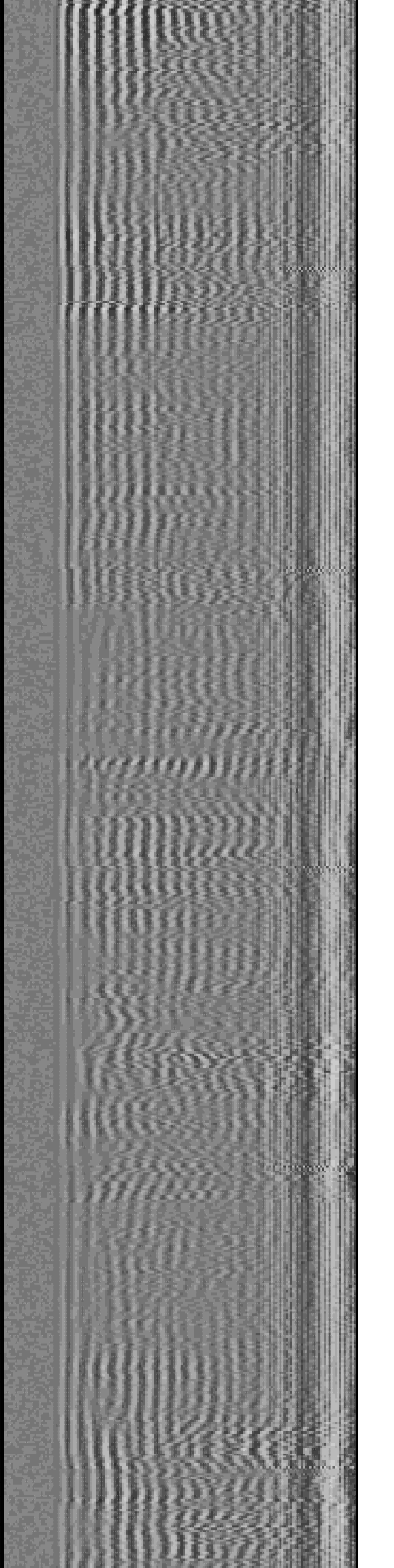
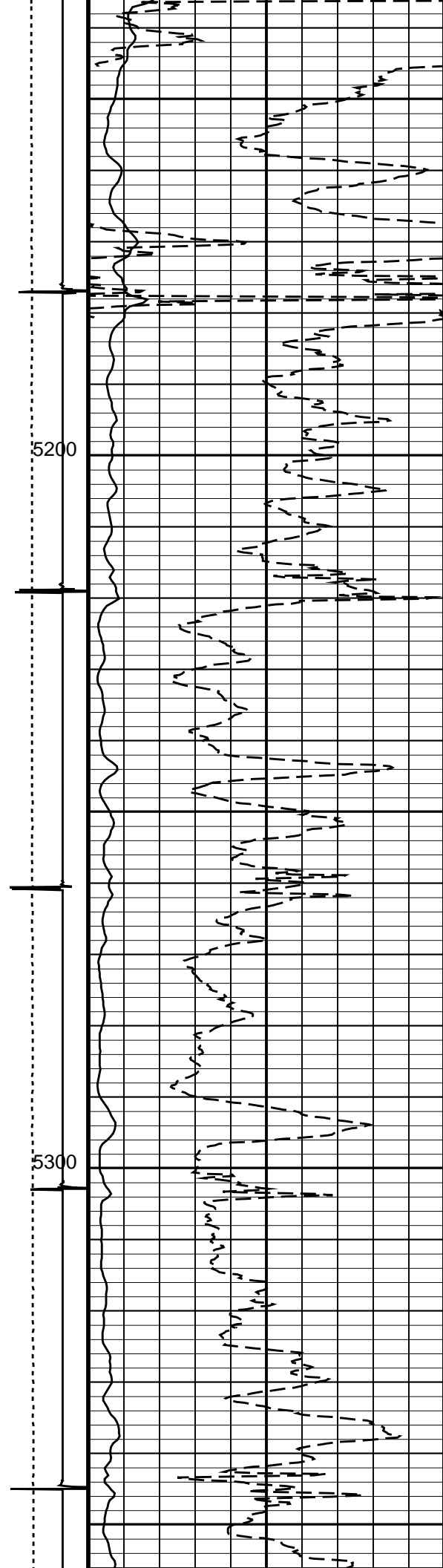
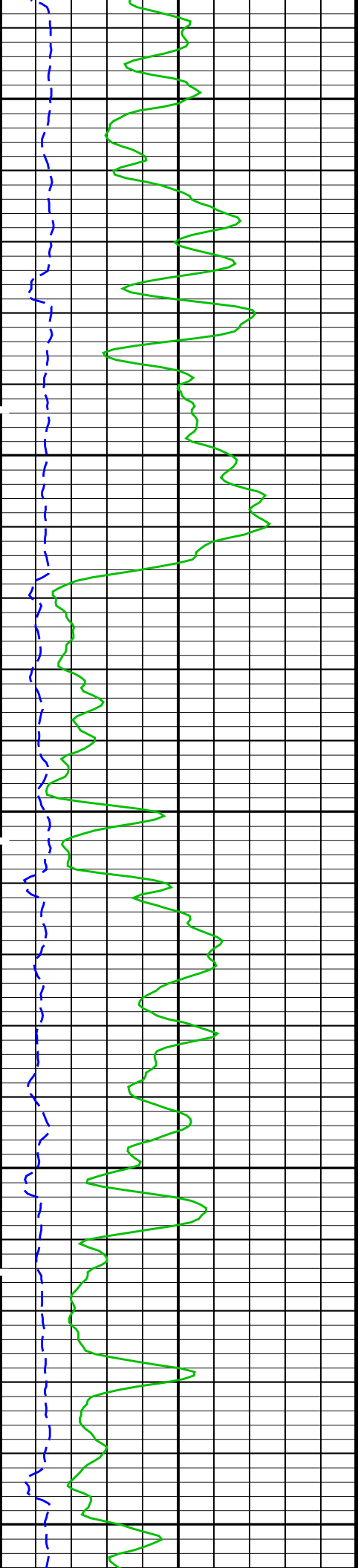


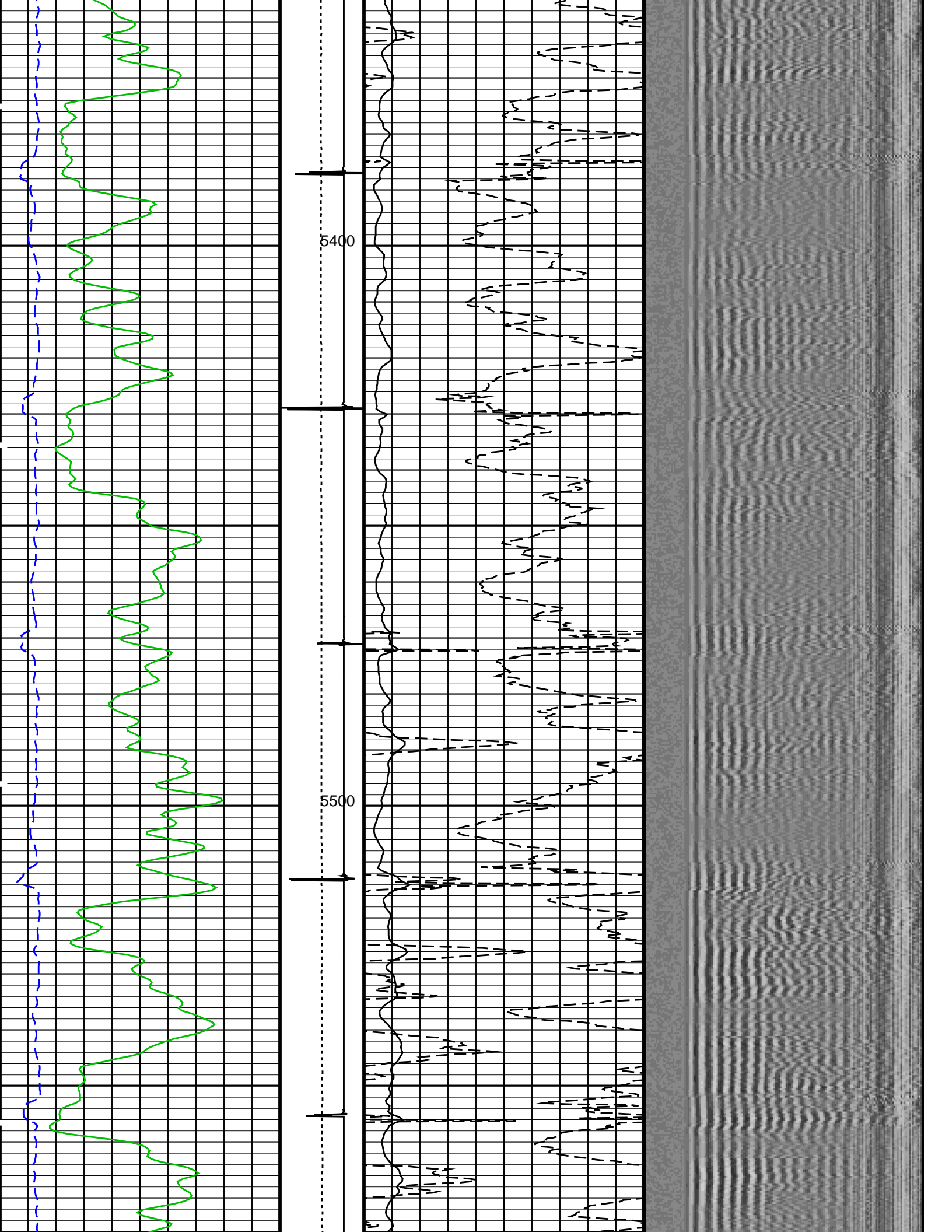


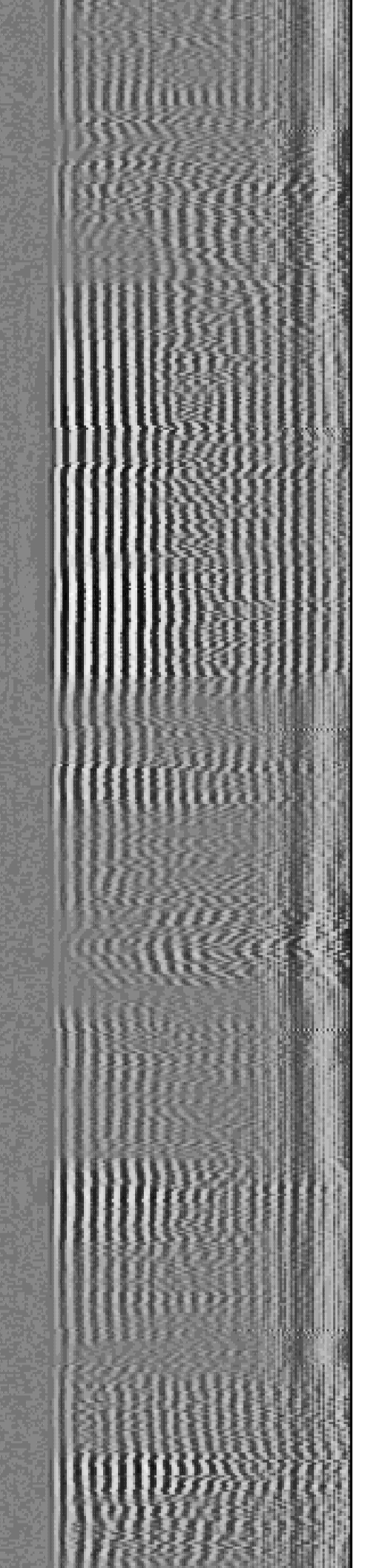
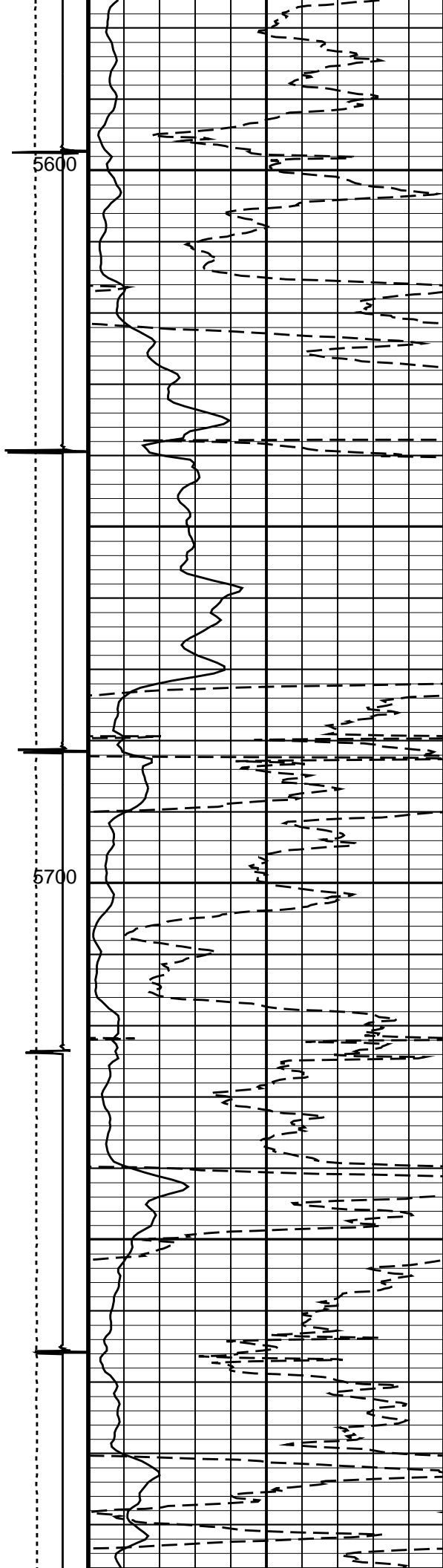
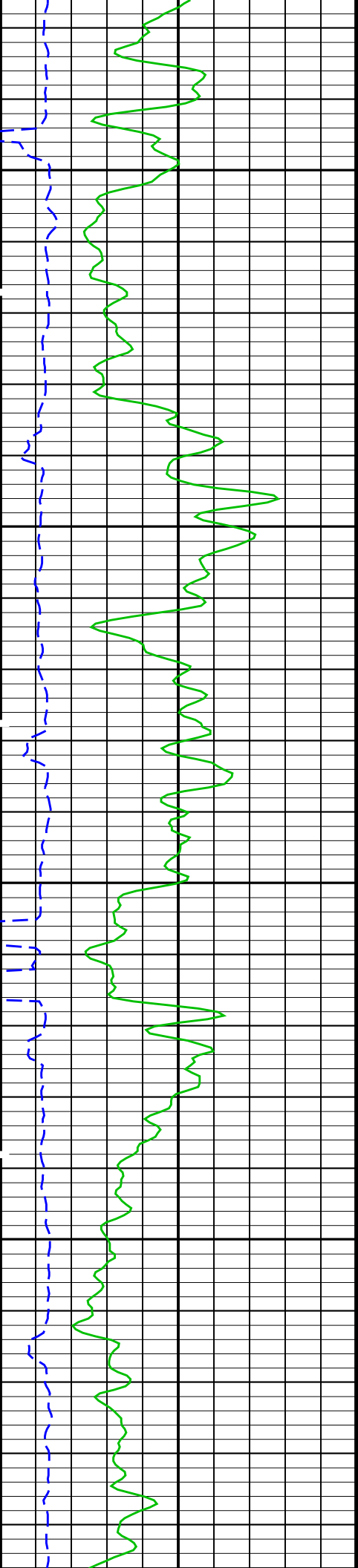


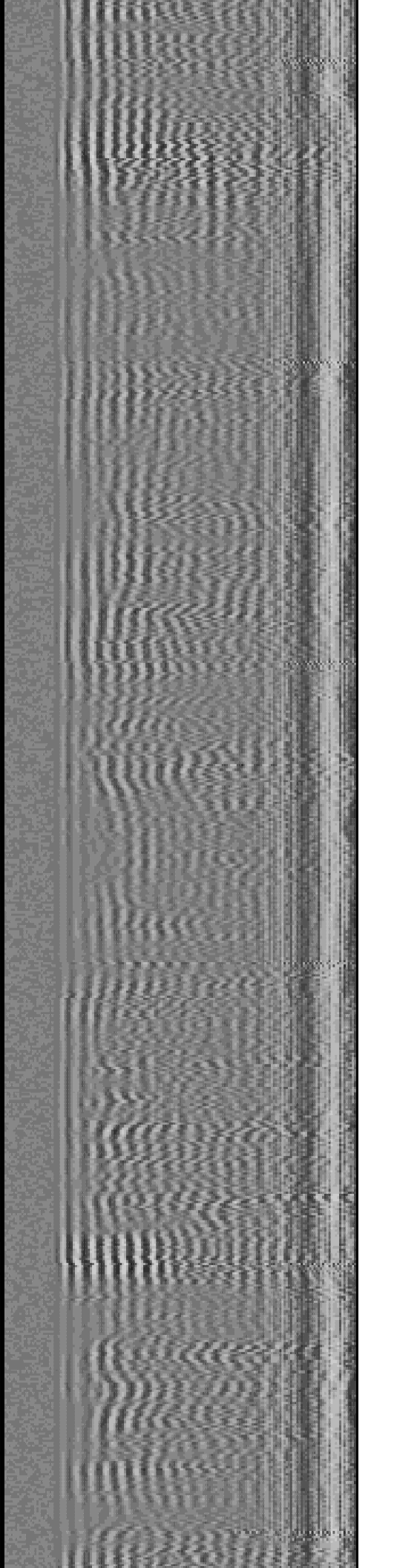
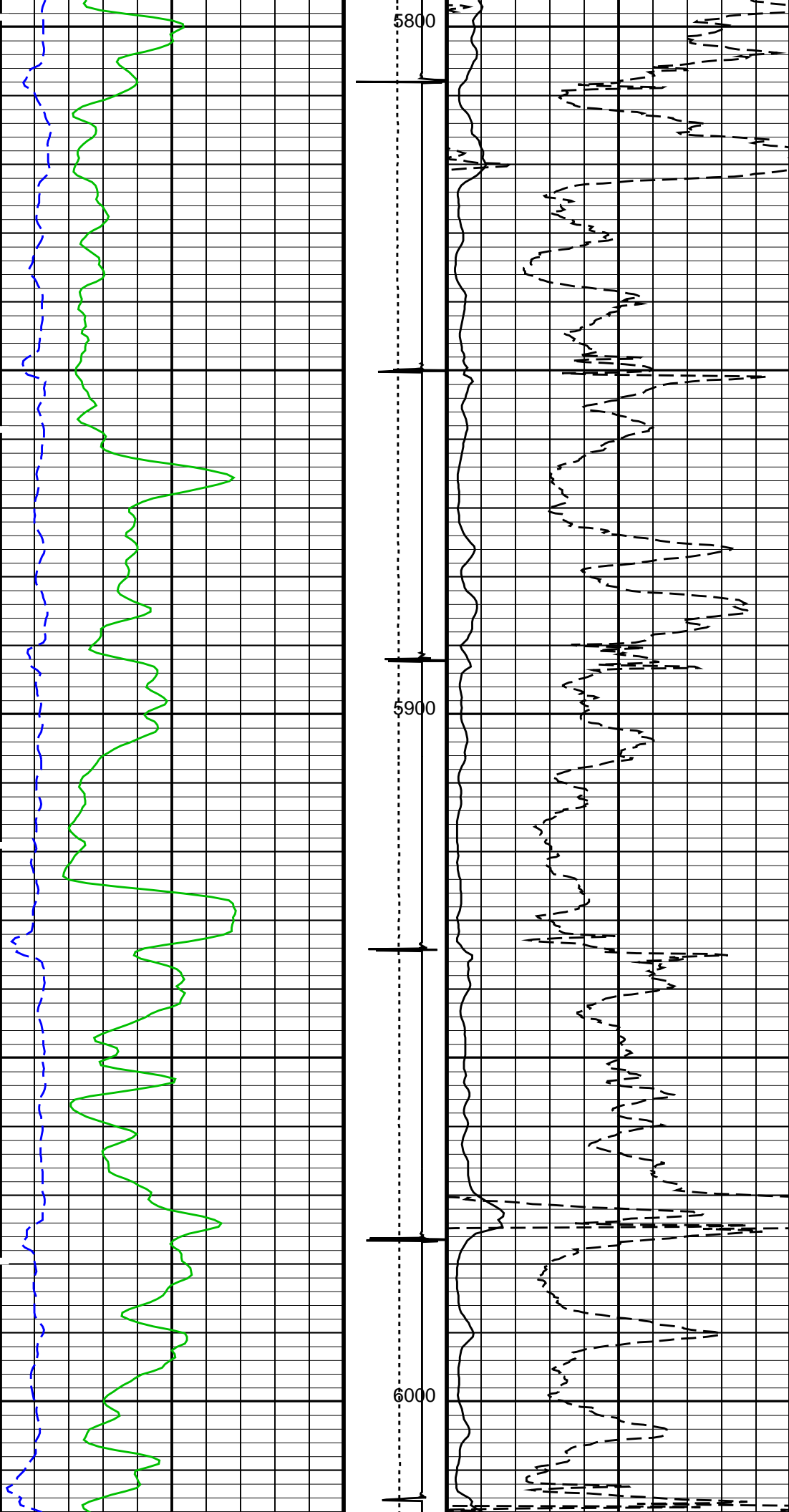


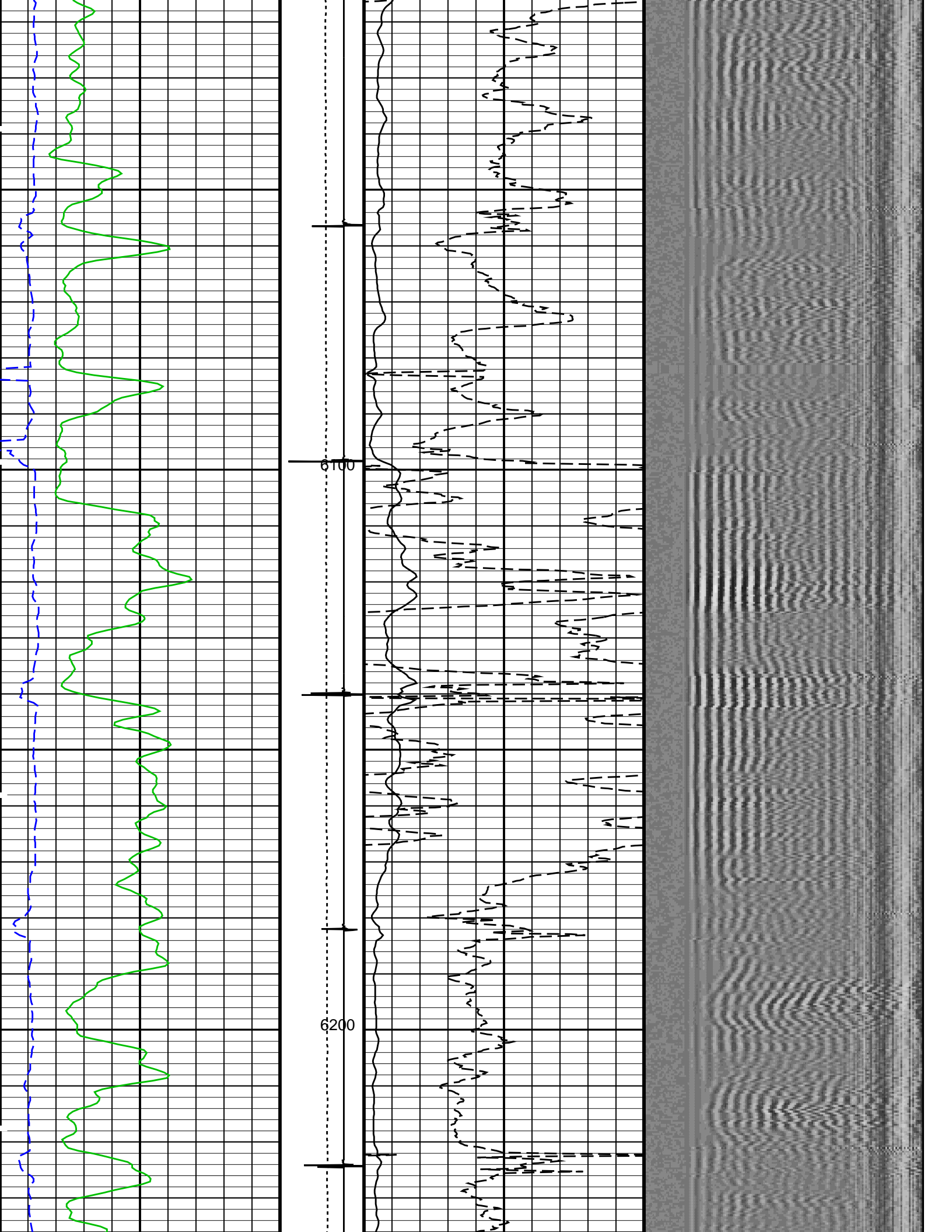


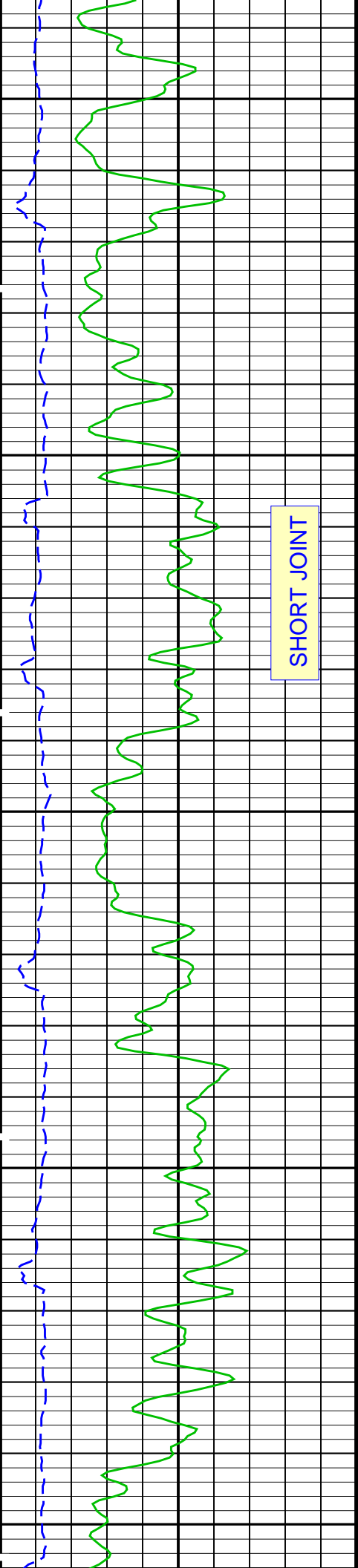




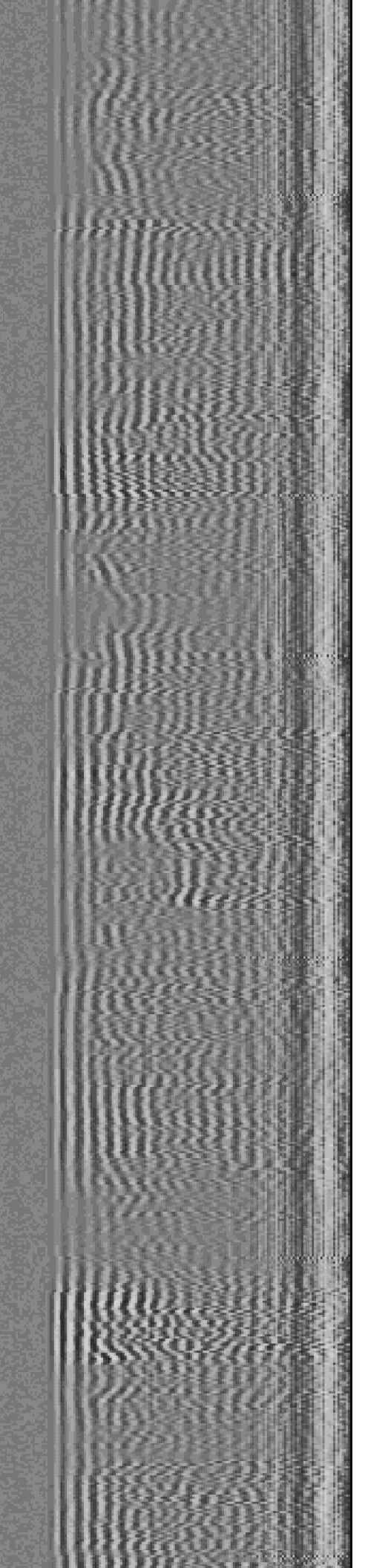
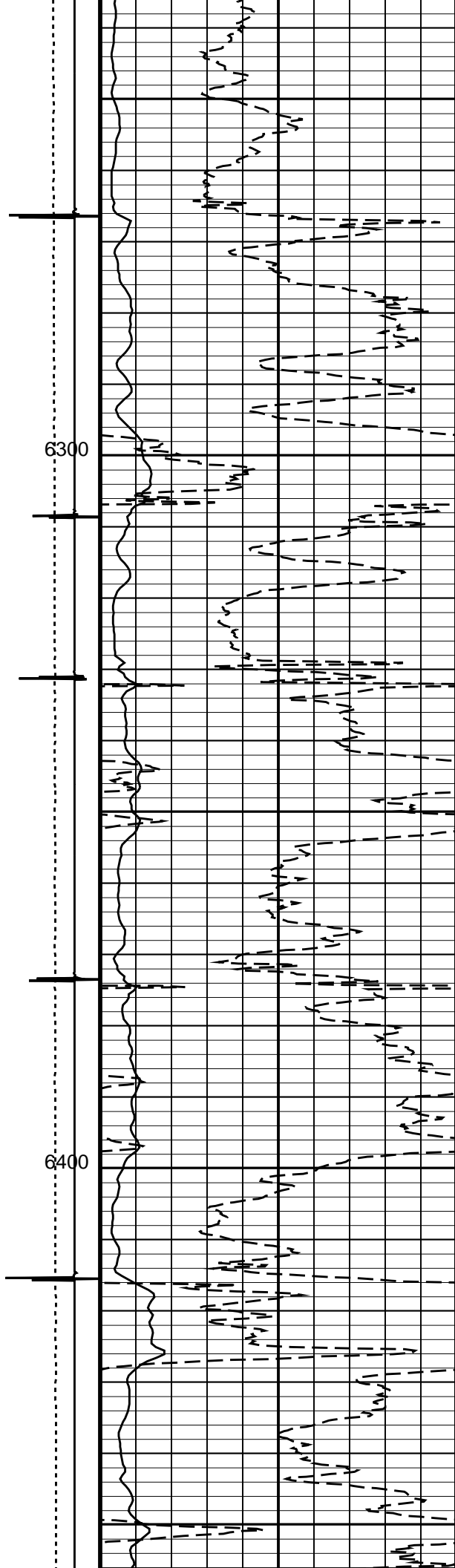


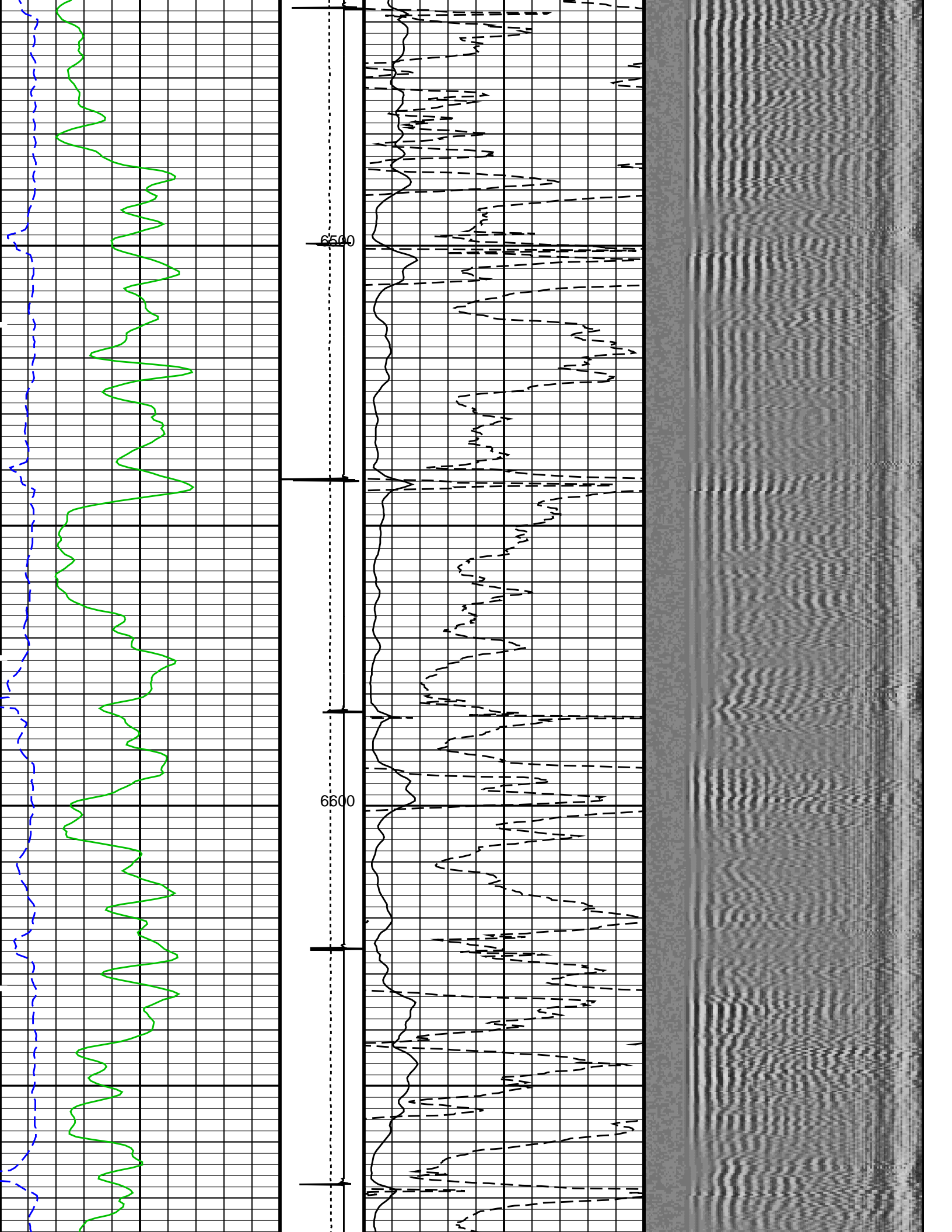


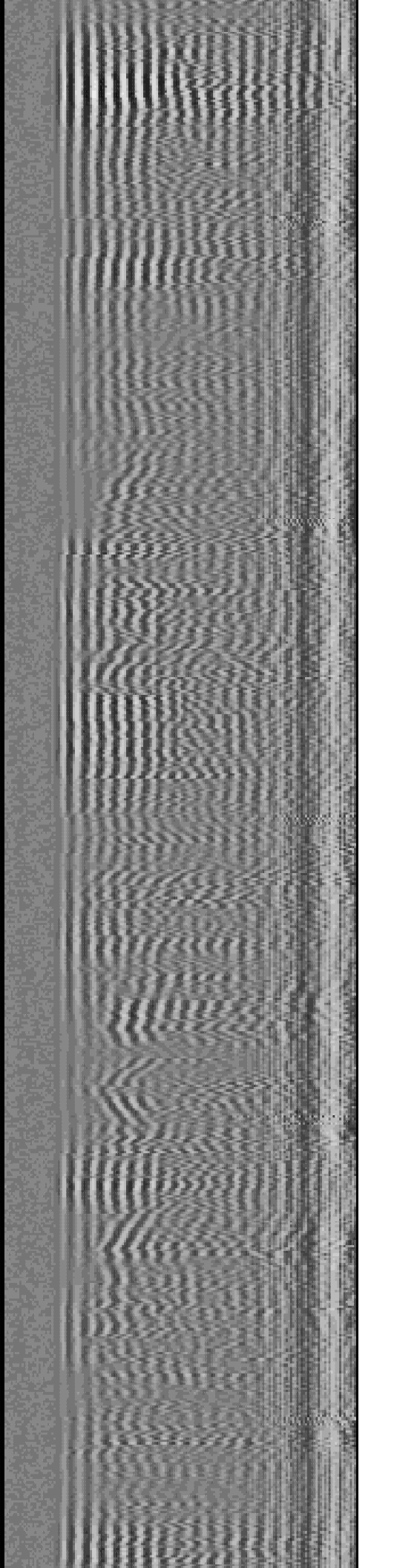
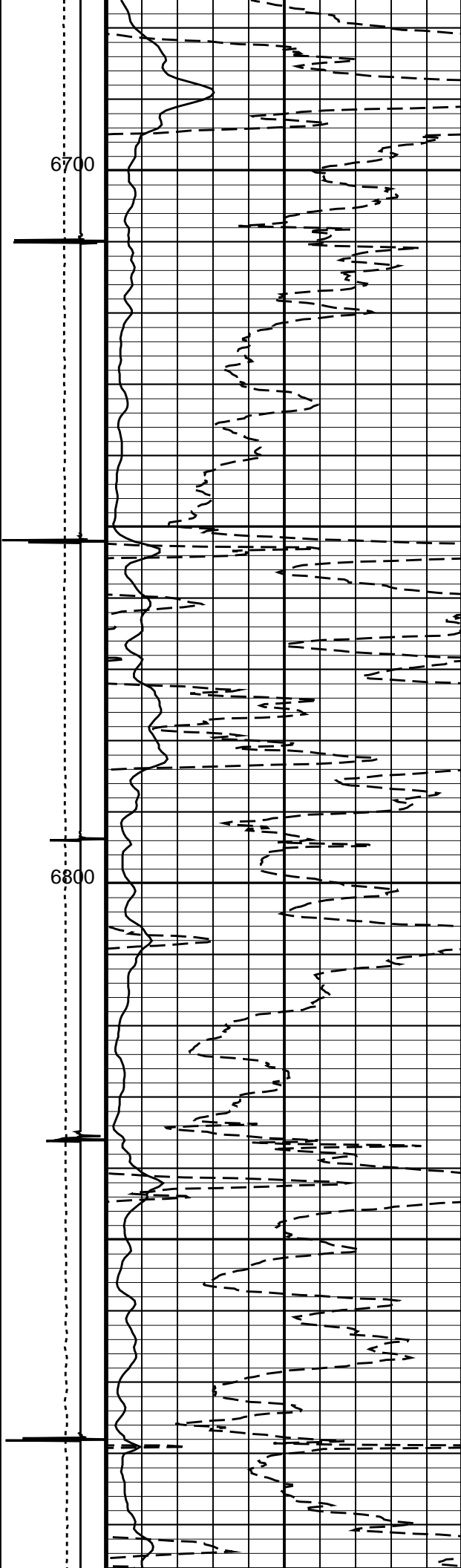
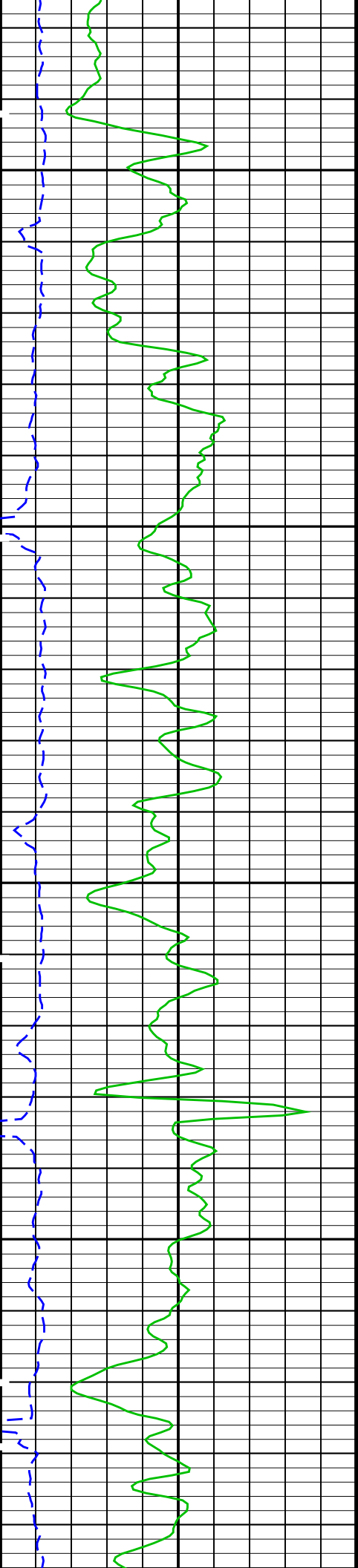


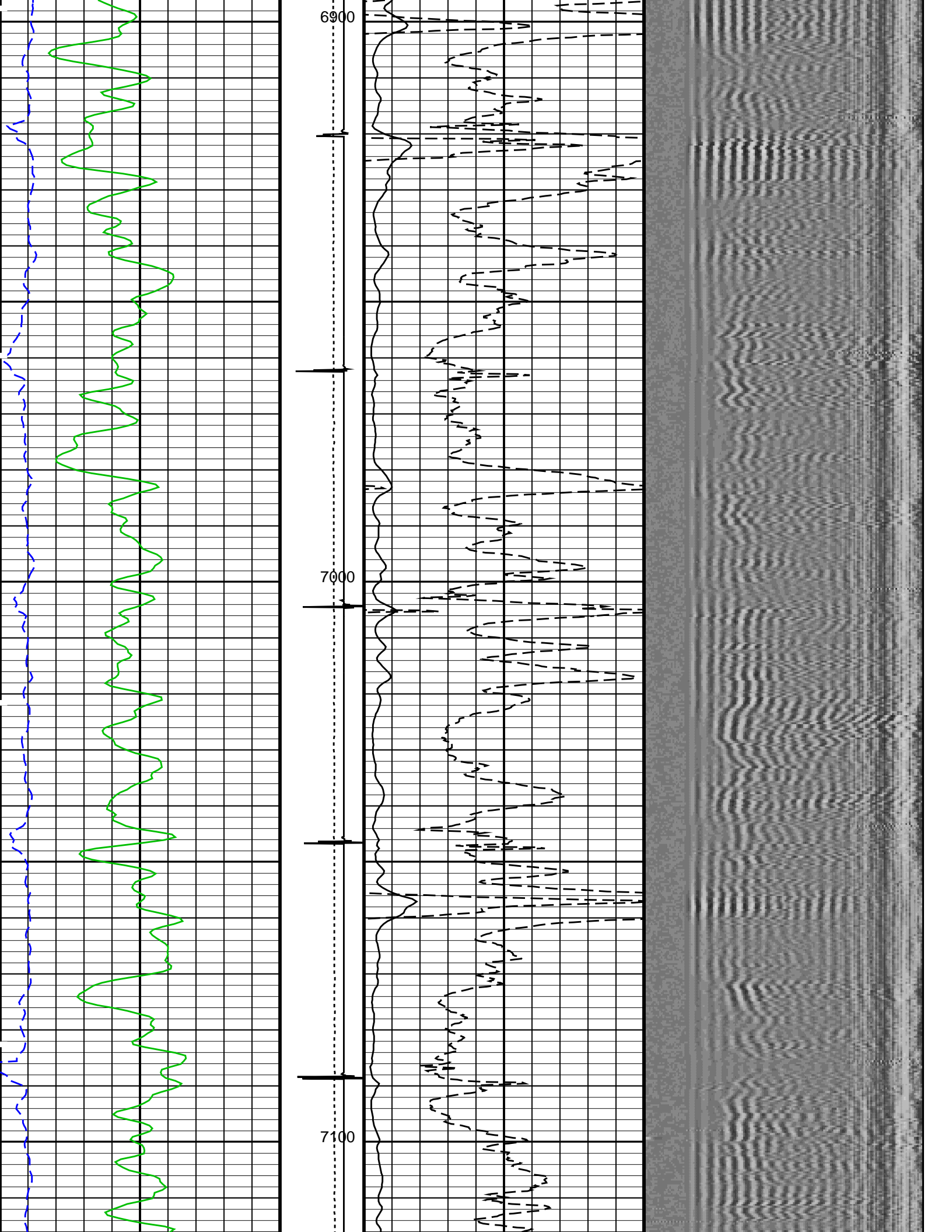


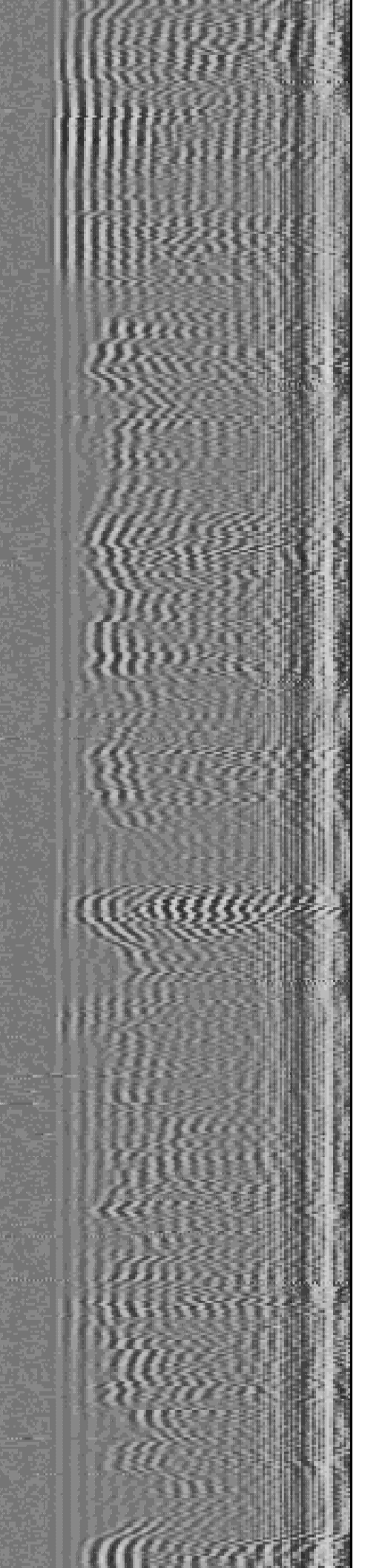
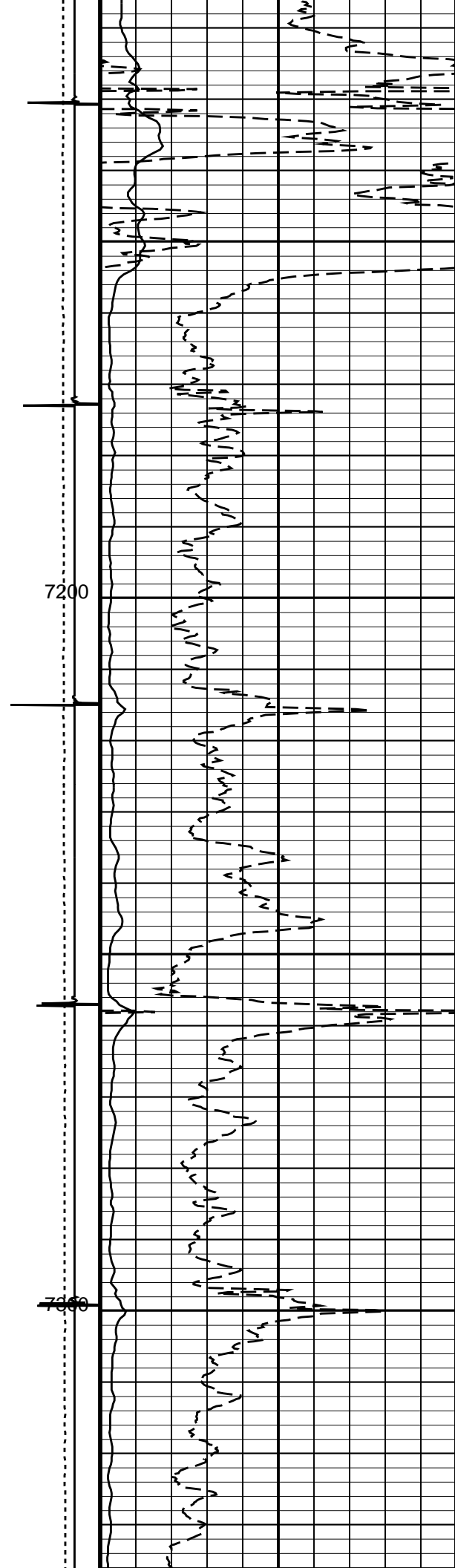
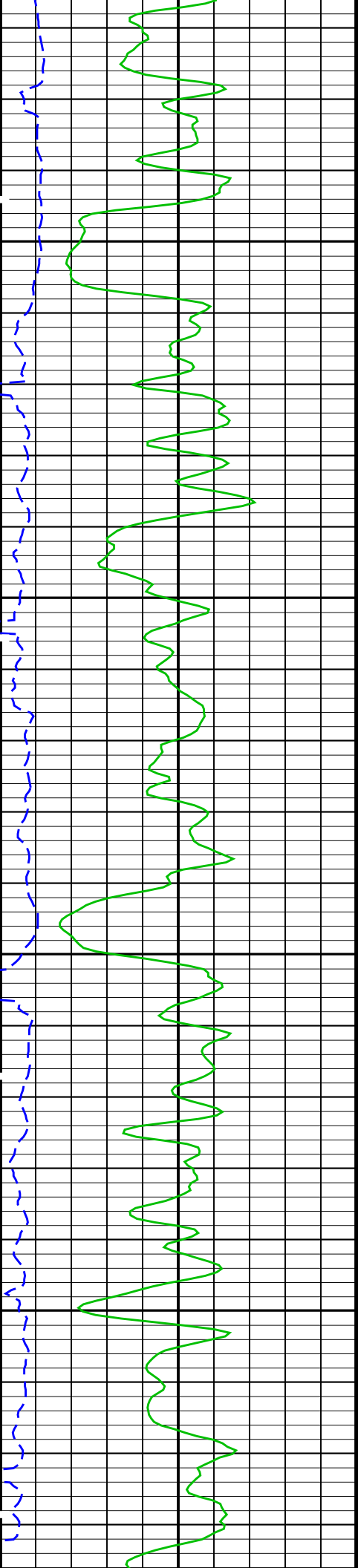
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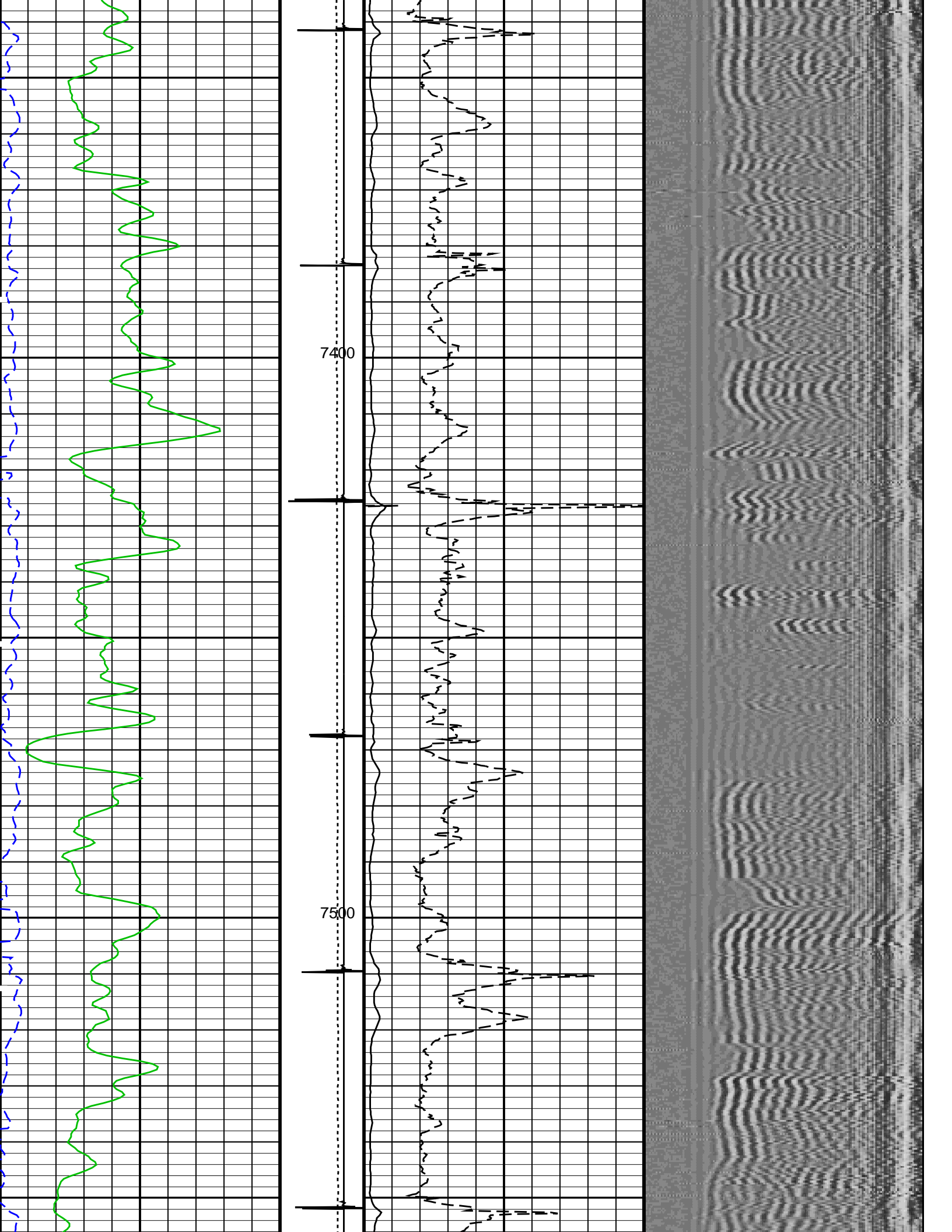


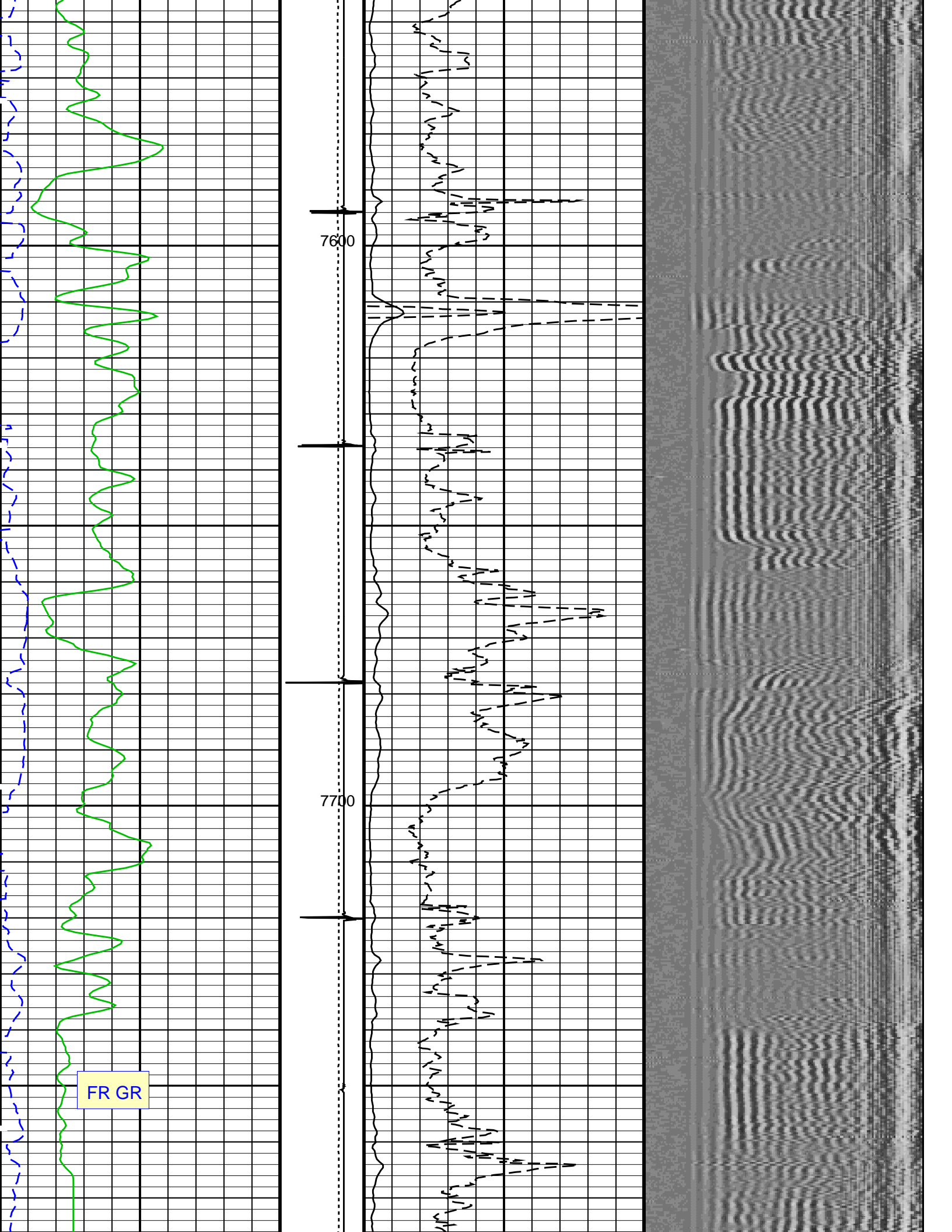


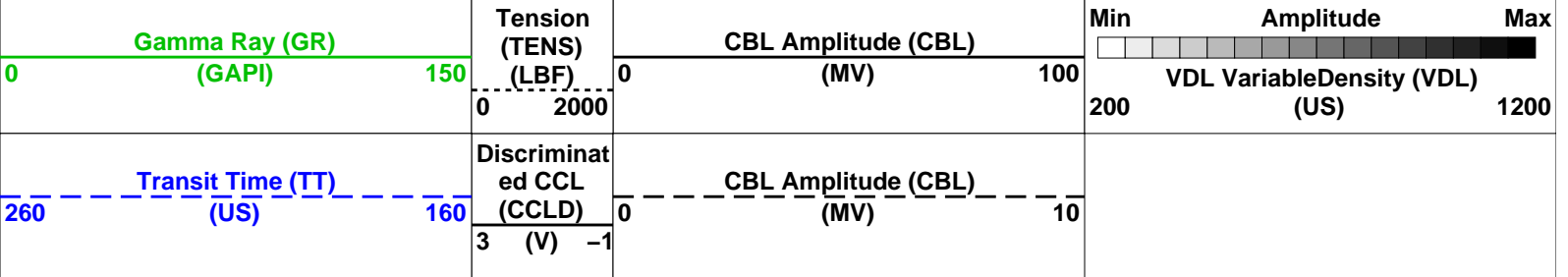
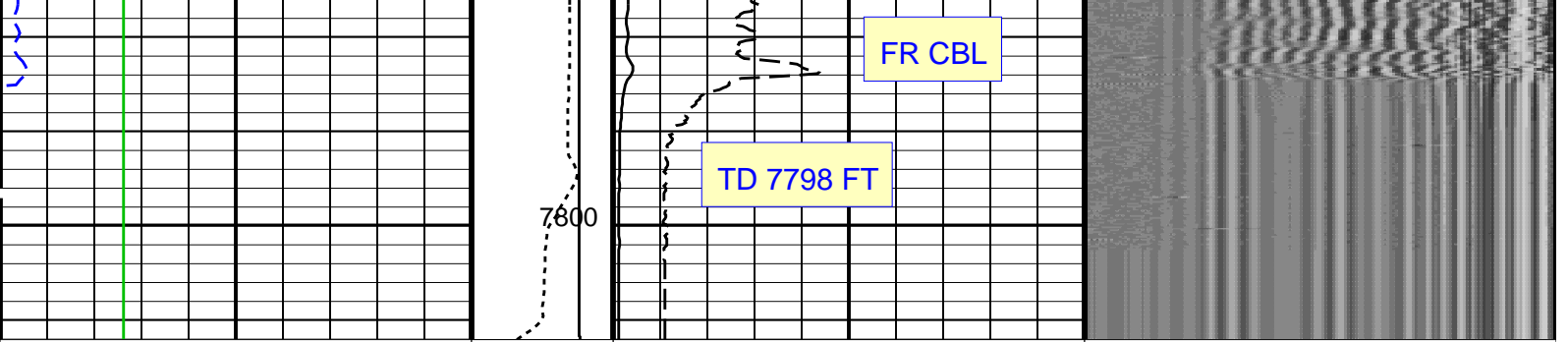












PIP SUMMARY

Time Mark Every 60 S
 Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 28-Mar-2011 23:29

OP System Version: 18C0-147

SCMT-CB 18C0-147 RST-C 18C0-147
 PSPT 18C0-147

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8303		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.572744 MV (100% Cement)
			1.53811 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.27504 MV (100% Cement)
			8.03067 MV (80% Cement)
Master Calibration (Normalization)	Before Calibration (Adjustment)		
Date of Master Calibration	17-JAN-2011		
CBL Correction Factor	0.0743637	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.165722	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.192039		
MAP 3 Correction Factor	0.132977		
MAP 4 Correction Factor	0.175062		
MAP 5 Correction Factor	0.161562		
MAP 6 Correction Factor	0.177685		
MAP 7 Correction Factor	0.144065		
MAP 8 Correction Factor	0.233552		

Parameters

DLIS Name	Description	Value
	SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD	
BILI	Bond Index Level for Zone Isolation	0.8
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	228.424 US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20 MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	342.424 US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20 MV

CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta-T Fluid	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	1.53811	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	171.424	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.27504	MV
MSA	Minimum Sonic Amplitude	0.572744	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
System and Miscellaneous			
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	9.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	7798	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_038LUP	FN:37	PRODUCER	28-Mar-2011 21:20	7803.0 FT	118.0 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_041PUP	FN:40	PRODUCER	28-Mar-2011 23:29
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REPEAT ANALYSIS

MAXIS Field Log

Company: ENCAN A OIL & GAS (USA) INC

Well: MF11A-16 (H17 696)

Input DLIS Files

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Output DLIS Files

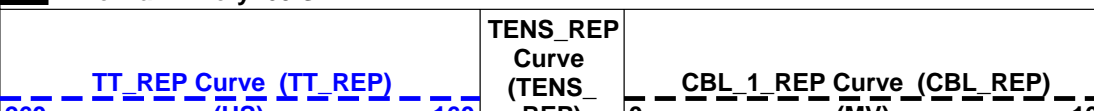
DEFAULT	SCMT_RST_PSP_041PUP	FN:40	PRODUCER	28-Mar-2011 23:29
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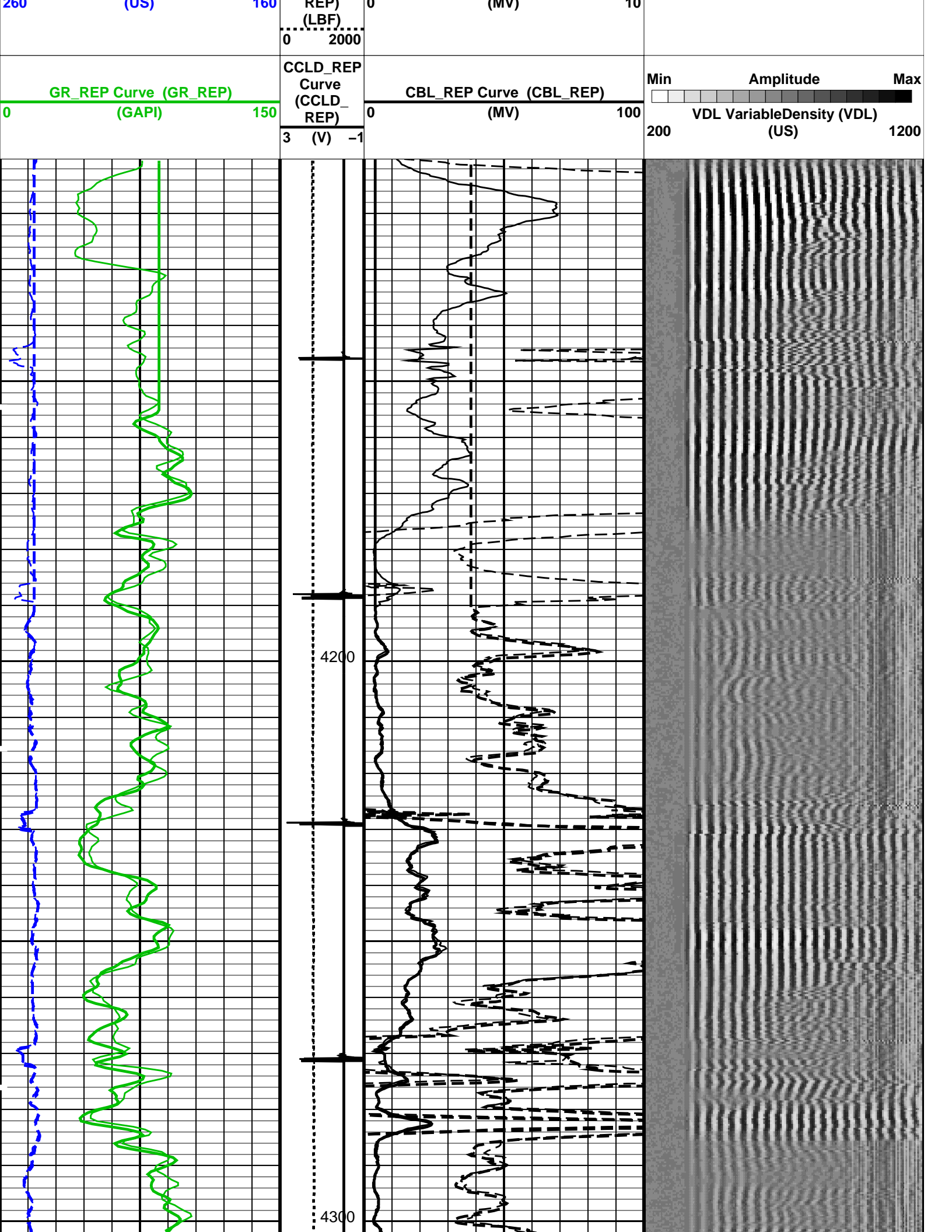
OP System Version: 18C0-147

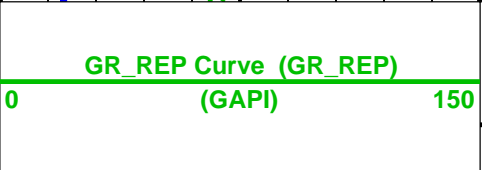
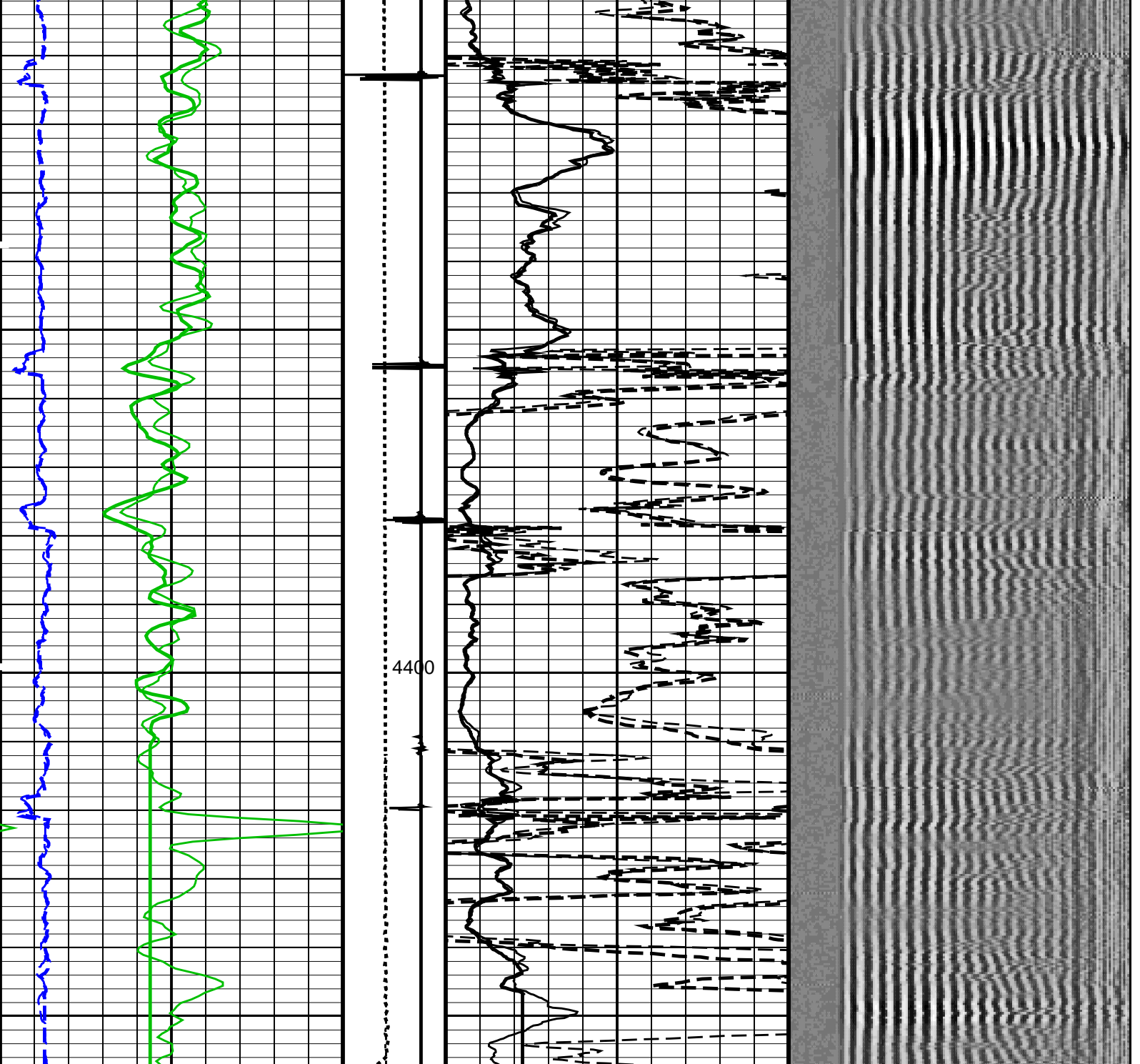
SCMT-CB	18C0-147	RST-C	18C0-147
PSPT	18C0-147		

PIP SUMMARY

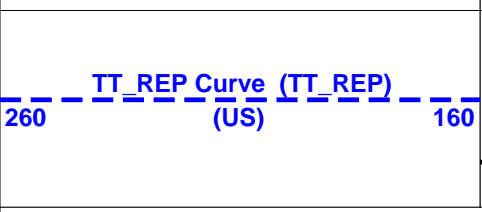
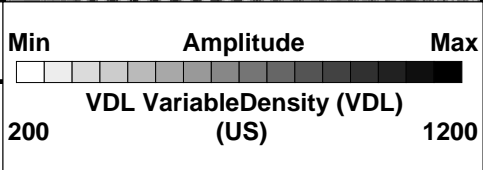
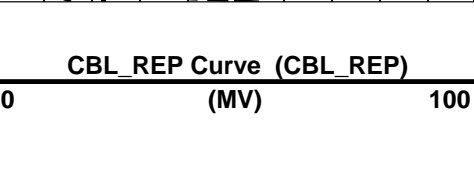
Time Mark Every 60 S



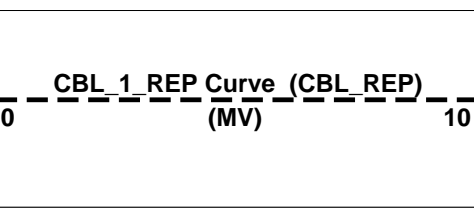




CCLD_REP
Curve
(CCLD_
REP)



TENS_REP
Curve
(TENS_
REP)
(LBF)



PIP SUMMARY

Time Mark Every 60 S
 Format: CBL_VDL_REP Vertical Scale: 5" per 100' Graphics File Created: 28-Mar-2011 23:29

OP System Version: 18C0-147

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8303		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.572744 MV (100% Cement) 1.53811 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.27504 MV (100% Cement) 8.03067 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	17-JAN-2011		
CBL Correction Factor	0.0743637	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.165722	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.192039		
MAP 3 Correction Factor	0.132977		
MAP 4 Correction Factor	0.175062		
MAP 5 Correction Factor	0.161562		
MAP 6 Correction Factor	0.177685		
MAP 7 Correction Factor	0.144065		
MAP 8 Correction Factor	0.233552		

Parameters

DLIS Name	Description	Value	
SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD			
BILI	Bond Index Level for Zone Isolation	0.8	
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	228.424	US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	342.424	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta-T Fluid	204.5	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	1.53811	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	171.424	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.27504	MV
MSA	Minimum Sonic Amplitude	0.572744	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
System and Miscellaneous			
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	9.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	7798	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_038LUP	FN:37	PRODUCER	28-Mar-2011 21:20	7803.0 FT	118.0 FT
DEFAULT	SCMT_RST_PSP_037LUP	FN:38	PRODUCER	28-Mar-2011 21:15	1157.0 FT	1110.0 FT

Output DLIS Files

DEFAULT SCMT_RST_PSP_041PUP FN:40 PRODUCER 28-Mar-2011 23:29



COEFFICIENTS

MAXIS Field Log

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	NORTH PARACHUTE	Sub Type:	PBMS
Well:	MF06D-16 (H17 696)	Sensor:	Clock Model
Run date:	28-Mar-2011		

PBMS Digitalization Clock

Sonde Serial NB

Sensor Serial NB 3779

Calib Date ddmmyy 090107

Matrix Size 16

Coeff CRC D285

Clock Coeff

	Temp**0	Temp**1	Temp**2
Temp**0	-.210501098404E+03	-.537713340627E+01	-.752421519422E-01
	Temp**3	Temp**4	Temp**5
Temp**0	+.630273975887E-03	+.266728381738E-05	0.0

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	NORTH PARACHUTE	Sub Type:	PBMS
Well:	MF06D-16 (H17 696)	Sensor:	Sapphire
Run date:	28-Mar-2011		

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB :
 Sensor Serial NB 3779
 Calib Date ddmmyy 090107
 Matrix Size 66
 Coeff CRC 4C82

COEFFICIENTS FOR SAPPHIRE PBMS-A.3779 S/N:

Pres Coeff

	Tt**0	Tt**1	Tt**2
Tp**0	-.611876617639E+04	+.471061007964E+04	-.216447354932E+04
Tp**1	+.371836126905E+04	-.234756196935E+04	+.129149325686E+04
Tp**2	+.193143980957E+02	-.189348218853E+01	-.341812471126E+01
Tp**3	-.568815065386E+01	+.200079683569E+01	0.0
Tp**4	0.0	0.0	0.0
Tp**5	0.0	0.0	0.0
	Tt**3	Tt**4	Tt**5
Tp**0	+.380249508124E+03	-.247683004908E+02	0.0
Tp**1	-.227135245080E+03	+.146352372057E+02	0.0
Tp**2	0.0	0.0	0.0
Tp**3	0.0	0.0	0.0
Tp**4	0.0	0.0	0.0
Tp**5	0.0	0.0	0.0

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB :
 Sensor Serial NB 3779
 Calib Date ddmmyy 090107
 Matrix Size 66
 Coeff CRC C39E

Temp Coeff

	Tp**0	Tp**1	Tp**2
Tt**0	-.278275571347E+03	+.251216271916E+01	-.820715649824E+00
Tt**1	+.598349067015E+02	-.107326373545E+01	+.652890183203E-01
Tt**2	+.109160002120E+02	+.262812193556E+00	-.450134240377E-02
Tt**3	-.673302171285E+00	-.213772918779E-01	0.0
Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0
	Tp**3	Tp**4	Tp**5
Tt**0	+.151507143209E+00	-.592670012996E-02	0.0

Tt**1	+1.127486538512E-01	-.437897076104E-02	0.0
Tt**2	0.0	0.0	0.0
Tt**3	0.0	0.0	0.0
Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0

Client: ENCANA OIL & GAS (USA) INC
 Field: NORTH PARACHUTE
 Well: MF06D-16 (H17 696)
 Run date: 28-Mar-2011

Tool: PSP
 Sub Type: PBMS
 Sensor: GR

PBMS Gamma Ray

Sonde Serial NB RESISTORS FOR GR SENSOR N.34552, TOOL PBMS-AA3779. SENSOR S/N:
 Sensor Serial NB 34552
 Calib Date ddmmyy 030606
 Matrix Size 12
 Coeff CRC 3AE5

GR HV Rt

	Rt**0	Rt**1
Rt**0	+2.200000000000e+04	+2.140000000000e+04

Client: ENCANA OIL & GAS (USA) INC
 Field: NORTH PARACHUTE
 Well: MF06D-16 (H17 696)
 Run date: 28-Mar-2011

Tool: PSP
 Sub Type: PBMS
 Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB COEFFICIENTS FOR RTD THERMOMETER PBMS-A.3779 S/N:

Sensor Serial NB 3779
Calib Date ddmmyy 090107
Matrix Size 16
Coeff CRC 3846

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	+492135102627E+02	-.278827553804E+03	+.142867554561E+03
	Tt**3	Tt**4	Tt**5
Tt**0	-.233378392336E+02	+.145553494493E+01	0.0

Company: **ENCANA OIL & GAS (USA) INC**

Schlumberger

Well: **MF11A-16 (H17 696)**
Field: **NORTH PARACHUTE**
County: **GARFIELD**
State: **COLORADO**

CEMENT BOND LOG
CBL - VDL
GAMMA RAY - CCL