Schlumberger

Company: **ANADARKO E P ONSHORE LLC**

Well: **Caboose 1248 21 44**

Field: **Wildcat**

County: **Cheyenne** State: **Colorado**

RESERVOIR SATURATION TOOL−SIGMA
CEMENT BOND LOG
GR, TEMP, PRESSURE, CCL

County: Cheyenne
Field: Wildcat
Location: SHL: SESE 675 FSL & 1100 FEL
Well: Caboose 1248 21 44
Company: ANADARKO E P ONSHORE LLC

LOCATION

SHL: SESE 675 FSL & 1100 FEL

Elev.: K.B. 4273.00 ft
G.L. 4254.00 ft
D.F. 4272.00 ft

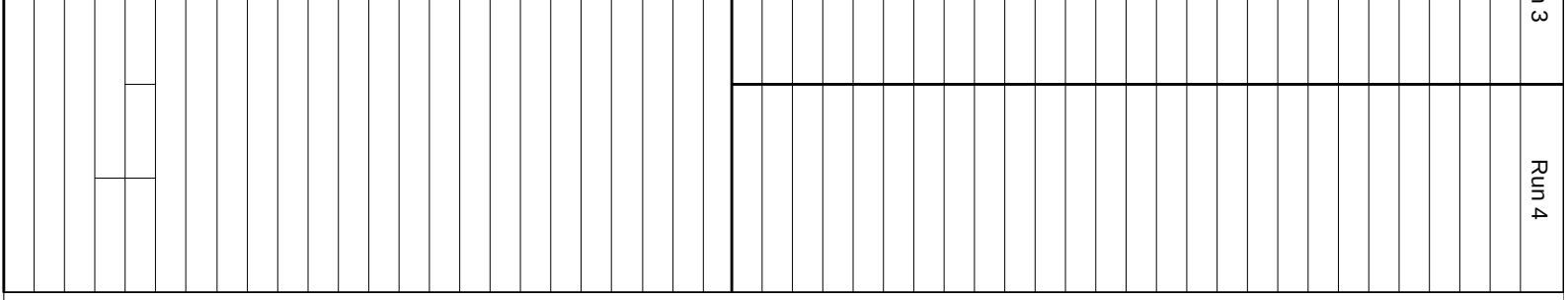
Permanent Datum: GROUND LEVEL Elev.: 4254.00 ft
Log Measured From: Kelly Bushing 19.00 ft above Perm. Datum
Drilling Measured From: Kelly Bushing

API Serial No.	Section	Township	Range
05−017−07780−00	21	15S	48W

Logging Date		13−Feb−2014						
Run Number		2						
Depth Driller		5919 ft						
Schlumberger Depth		5399 ft						
Bottom Log Interval		5390 ft						
Top Log Interval		16 ft						
Casing Fluid Type		Water Based Mud						
Salinity								
Density		8.55 lbm/gal						
Fluid Level		0 ft						
BIT/CASING/TUBING STRING								
Bit Size		8.750 in						
From								
To								
Casing/Tubing Size		7.000 in						
Weight		26 lbm/ft						
Grade								
From								
To								
Maximum Recorded Temperatures								
Logger On Bottom	Time	13−Feb−2014	18:45					
Unit Number	Location	2135	Fort Morgan					
Recorded By		Shelby Langford						
Witnessed By		Justin						

		Run 1	Run 2	Run
PVT DATA	Oil Density			
	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								
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	Time							
Unit Number	Location							
Recorded By								
Witnessed By								



DEPTH SUMMARY LISTING

Date Created: 13−FEB−2014 21:29:41

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−JA	Type:	CMTD−B/A	Type:	7−46P XS
Serial Number:	7027	Serial Number:	1919	Serial Number:	
Calibration Date:	20−AUG−2013	Calibration Date:	30−JAN−2014	Length:	22000 FT
Calibrator Serial Number:		Calibrator Serial Number:	78135		
Calibration Cable Type:	7−46P XS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−5	Calibration RMS:	5	Rig Type:	LAND
Wheel Correction 2:	−3	Calibration Peak Error:	9		

Depth Control Parameters

Log Sequence: Subsequent Log In the Well

Reference Log Name: Triple Combo
Reference Log Run Number: 1
Reference Log Date: 09−FEB−2014

Depth Control Remarks

1. IDW is Primary Depth Control
2. Drum Counter is Secondary Depth Control
3.
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: NONE	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Correlated to open hole log ran by Schlumberger on 09−FEB−2014.	
Correlated to GR curve located at 5162' & 4320'	
Run 1. RST and CBL in Combo.	

Run 2. CBL only.

2 Runs due to lack of fluid in hole.

Your crew today has been Wiley and Langford

Thank you for choosing E&P Wireline

RUN 1		RUN 2	
SERVICE ORDER #:		SERVICE ORDER #:	
PROGRAM VERSION:	19C0−187	PROGRAM VERSION:	
FLUID LEVEL:	0 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

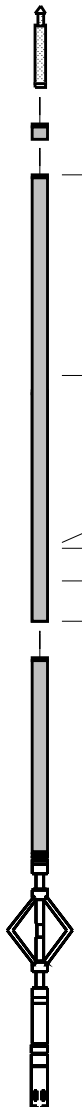
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

DOWNHOLE EQUIPMENT

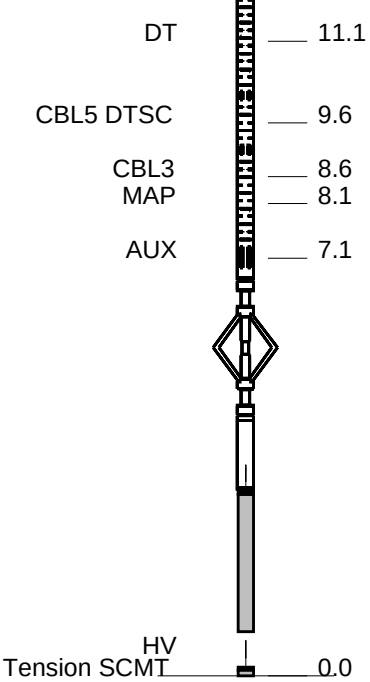


MH−22
MH−22

AH−38

PSPT
PSC−A 1765
PSPT−A
PSTC−A
PBMS−A
10k_Sapphire_Mano
RTD_Thermometer
GR
CCL
PBMS

SCMT−CB
SCMC−CA
SECH−CA
CMIR−AG
SCMS−CB 8258
SCMX−CA 8119



AH−BNS

0.2

MAXIMUM STRING DIAMETER 1.69 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS

MAXIS Field Log

Company: ANADARKO E P ONSHORE LLC **Well: Caboose 1548 21 44**

Input DLIS Files

DEFAULT	**SCMT_PSP_011LUP**	**FN:10**	**PRODUCER**	**13−Feb−2014 19:45**	**5400.5 FT**	**16.5 FT**

Output DLIS Files

DEFAULT	**SCMT_PSP_014PUP**	**FN:13**	**PRODUCER**	**13−Feb−2014 21:24**	**5398.5 FT**	**14.5 FT**

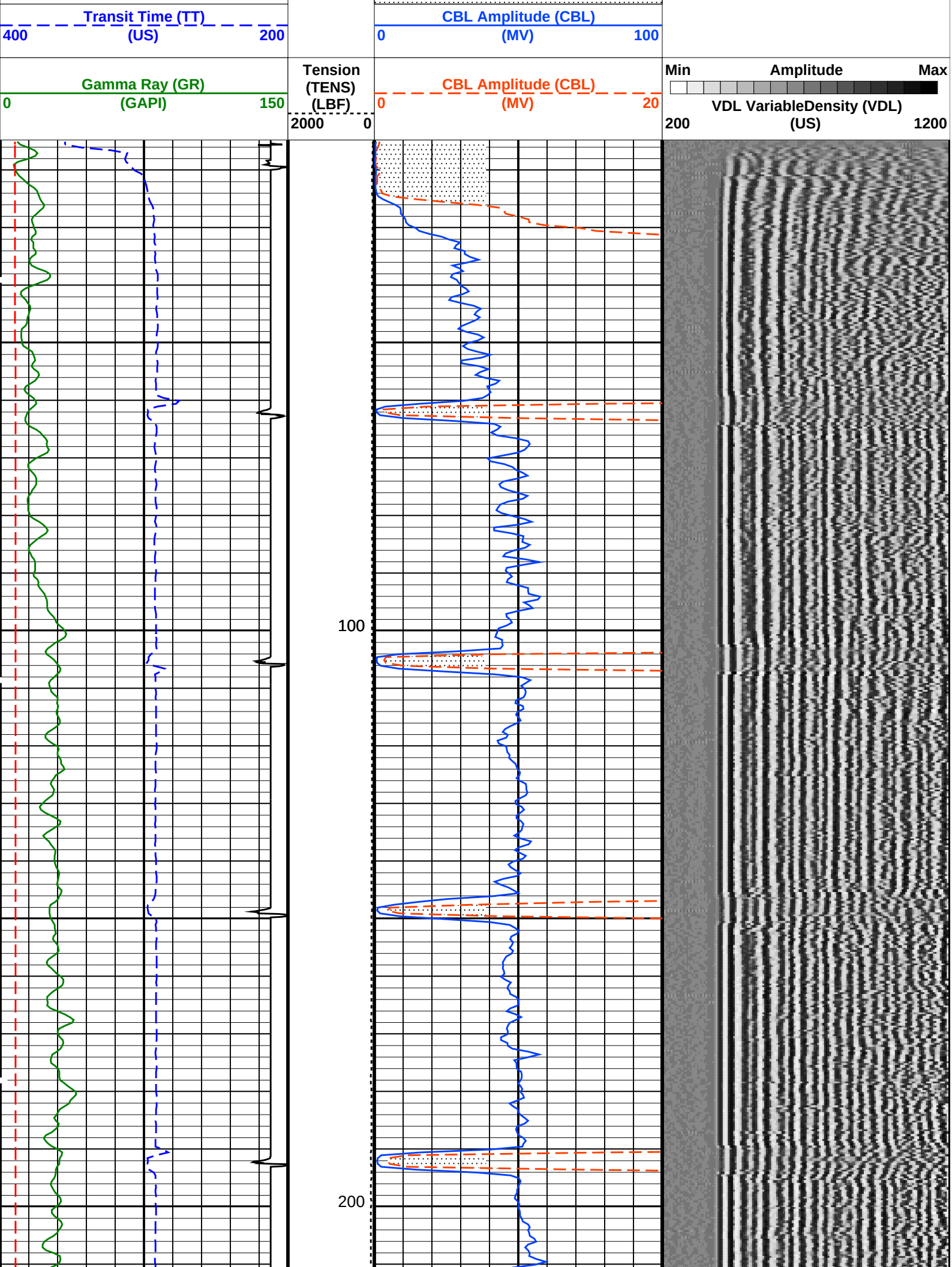
OP System Version: 19C0−187

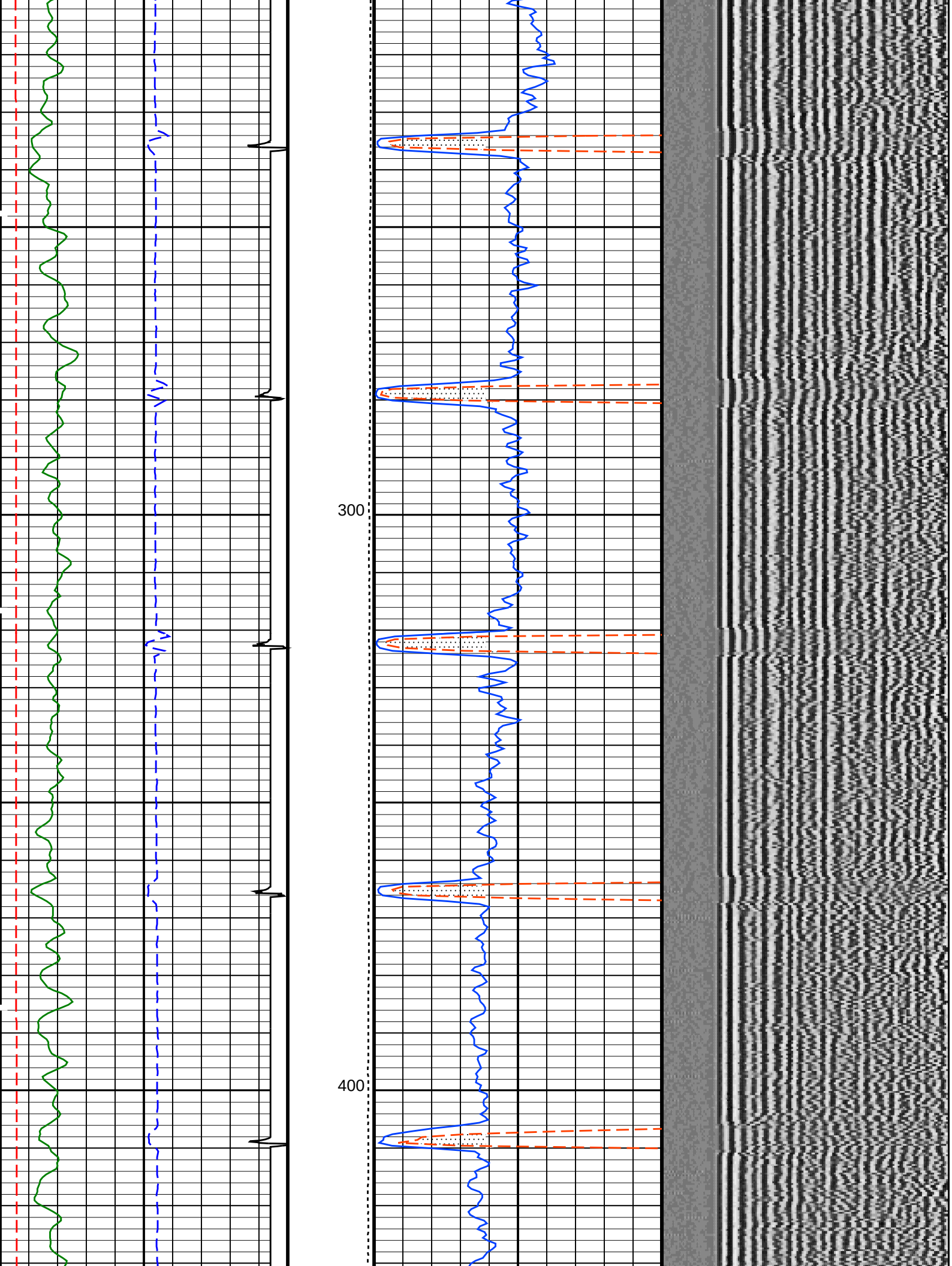
SCMT−CB	**19C0−187**	**PSPT**	**19C0−187**

PIP SUMMARY

Time Mark Every 60 S

	Discriminated CCL (CCLD)
	−3.5 (V) 0.5
	COLLARS From CCLD to T1
Well Temperature (WTEP) **50 (DEGF) 250**	**GOOD BOND From ACBL to GOBO**


Transit Time (TT)
400
(US)
200
CBL Amplitude (CBL)
0
(MV)
100
Gamma Ray (GR)
0
(GAPI)
150
Tension
(TENS)
(LBF)
2000
0
CBL Amplitude (CBL)
0
(MV)
20
Min
Amplitude
Max
VDL VariableDensity (VDL)
200
(US)
1200
100
200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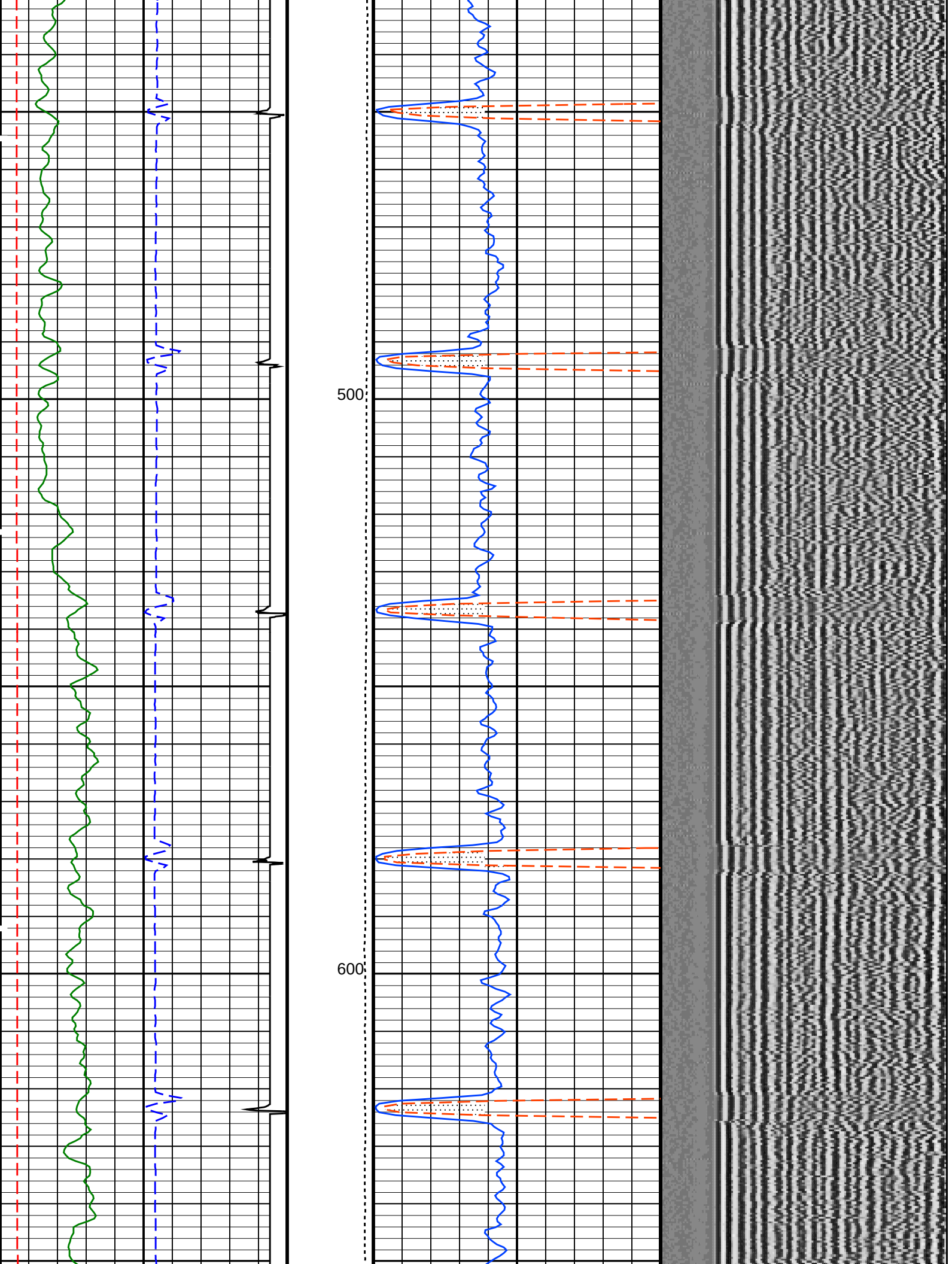
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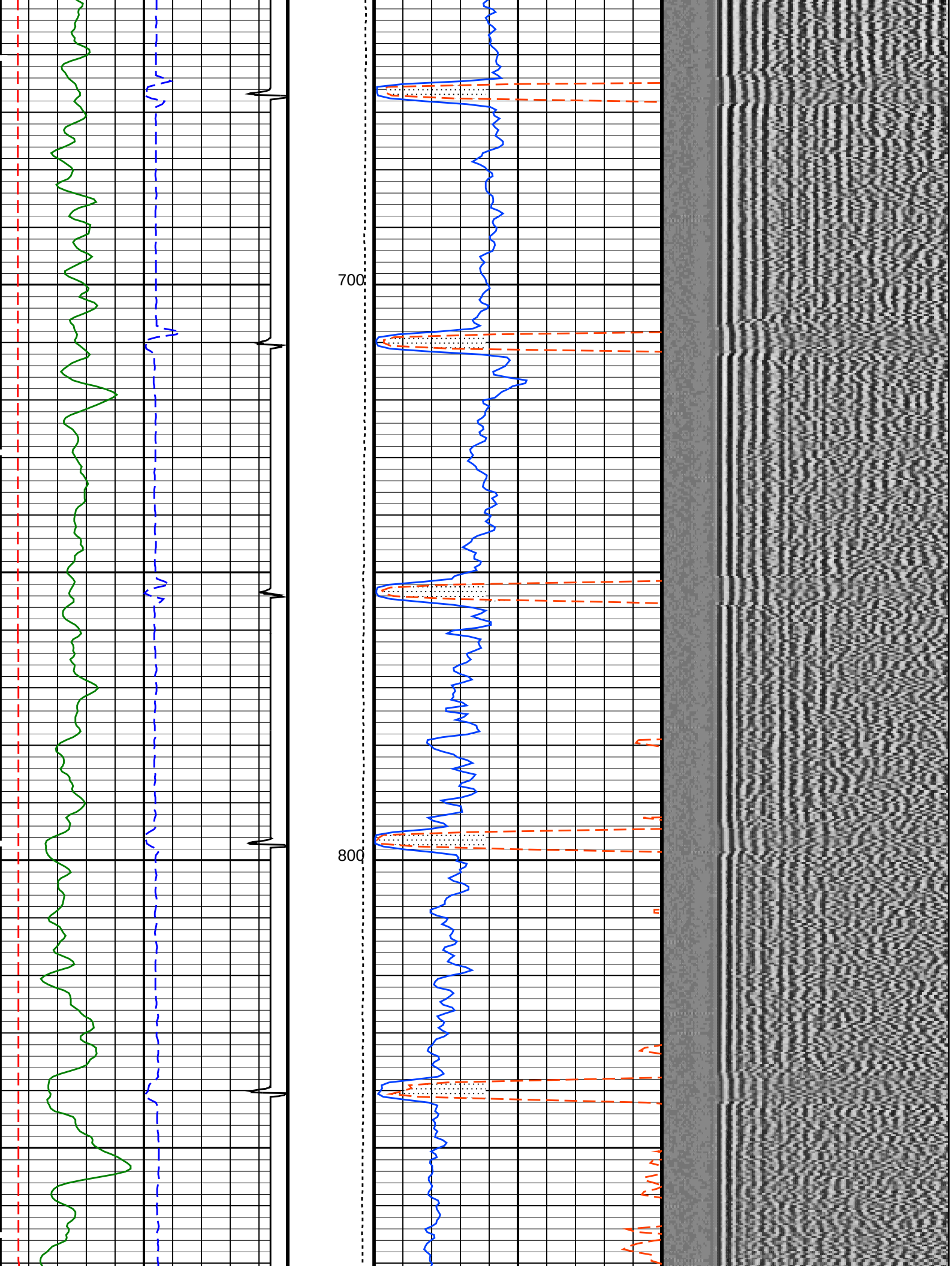
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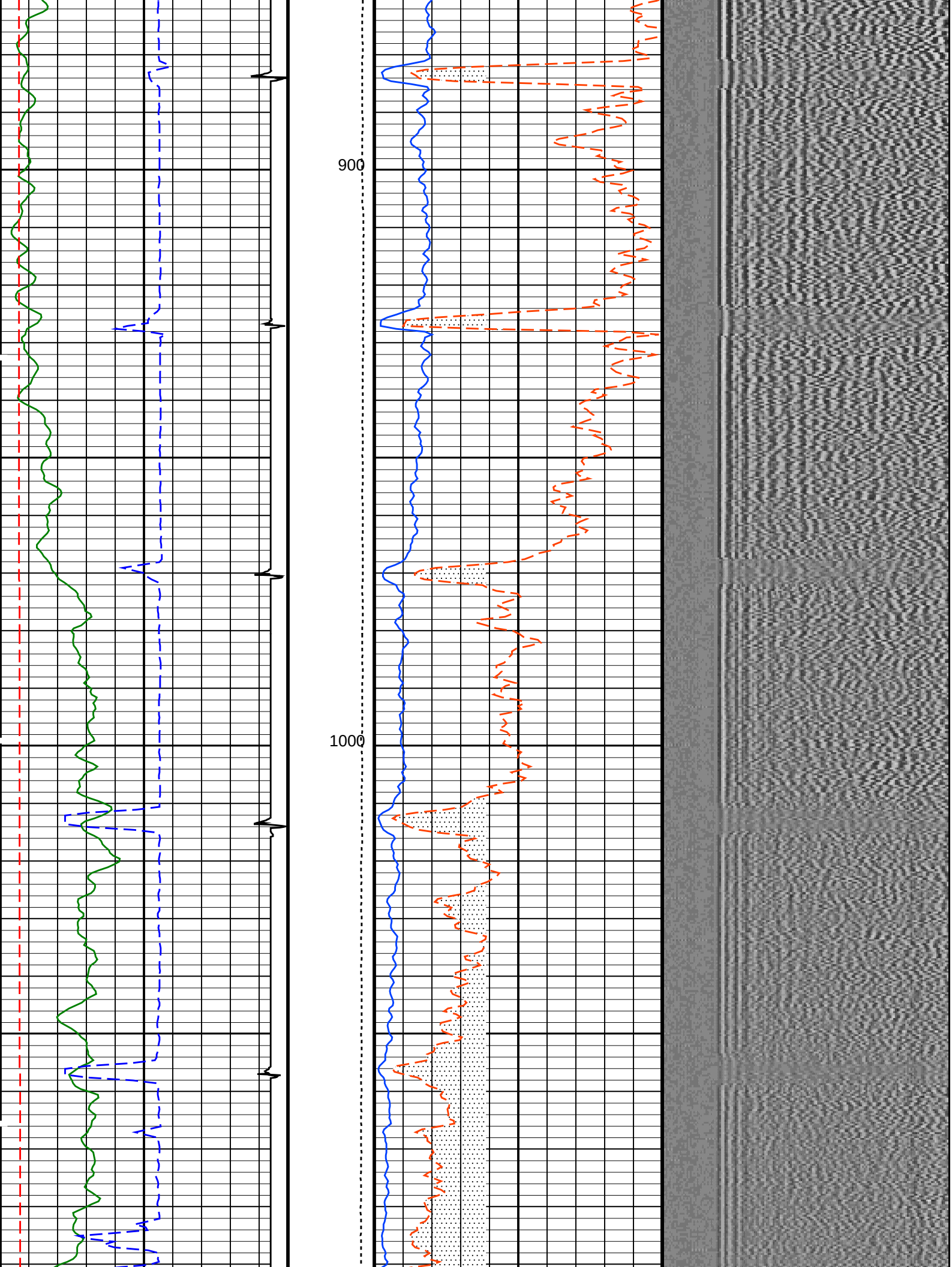
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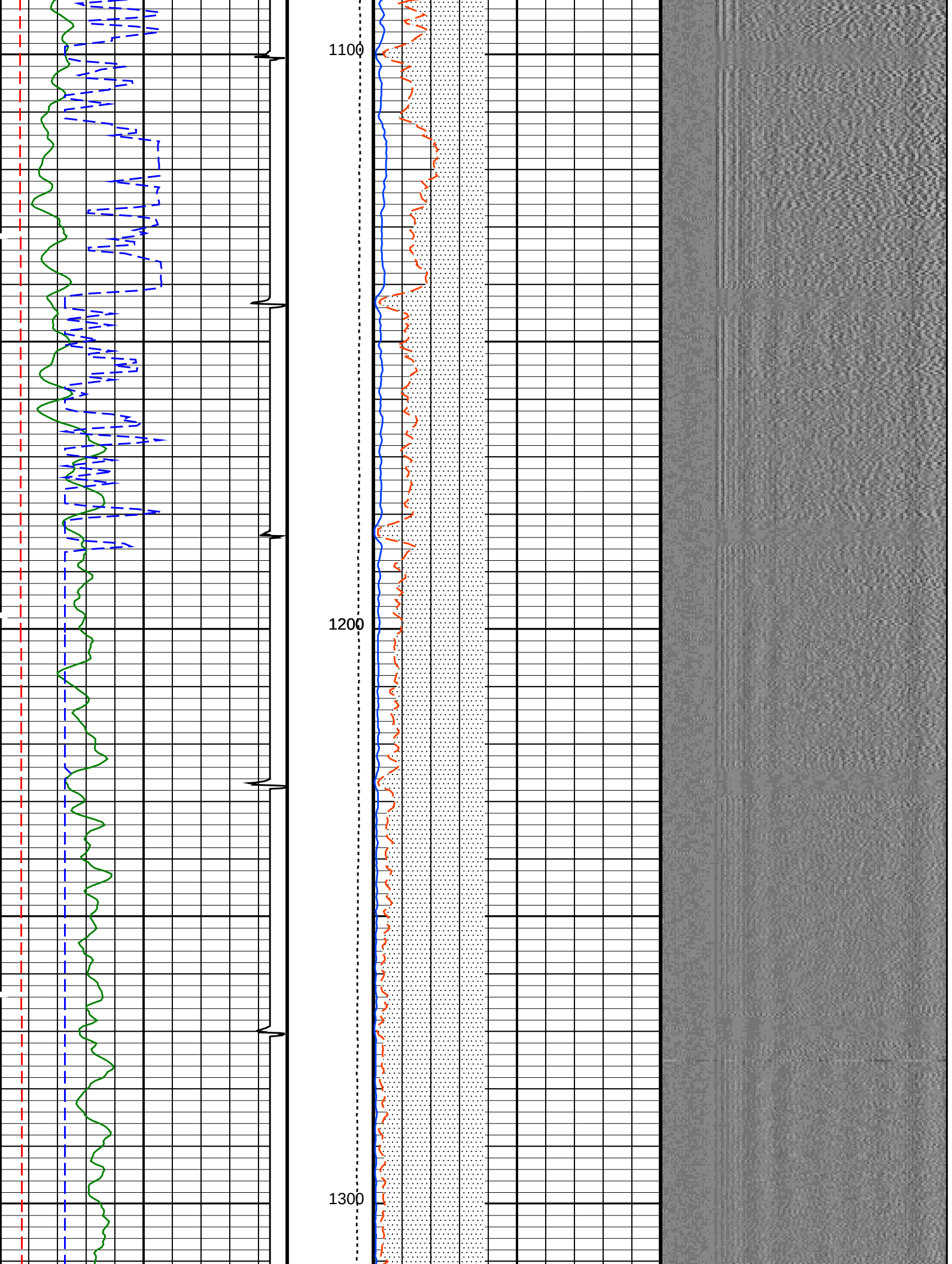
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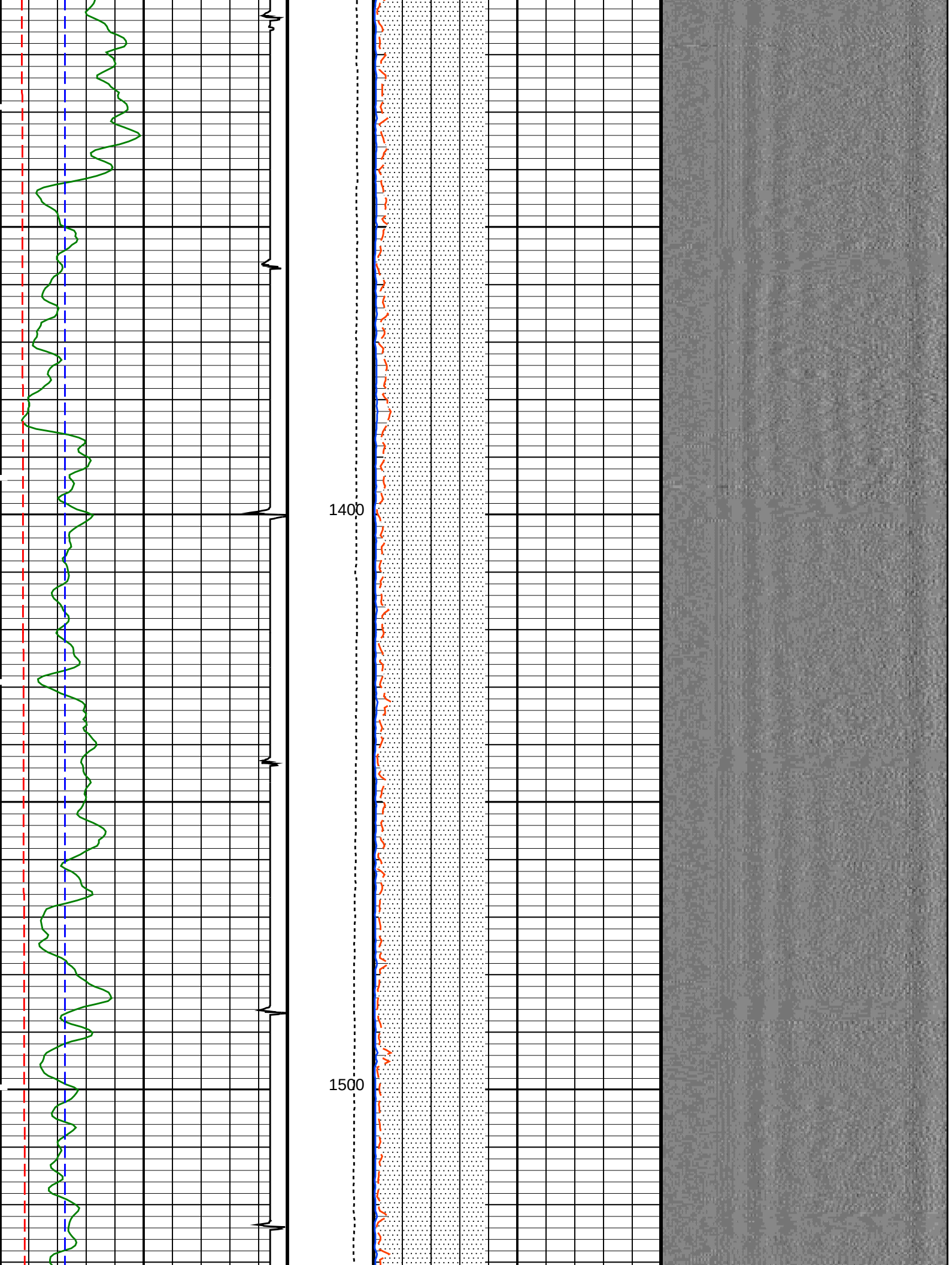
1200
1300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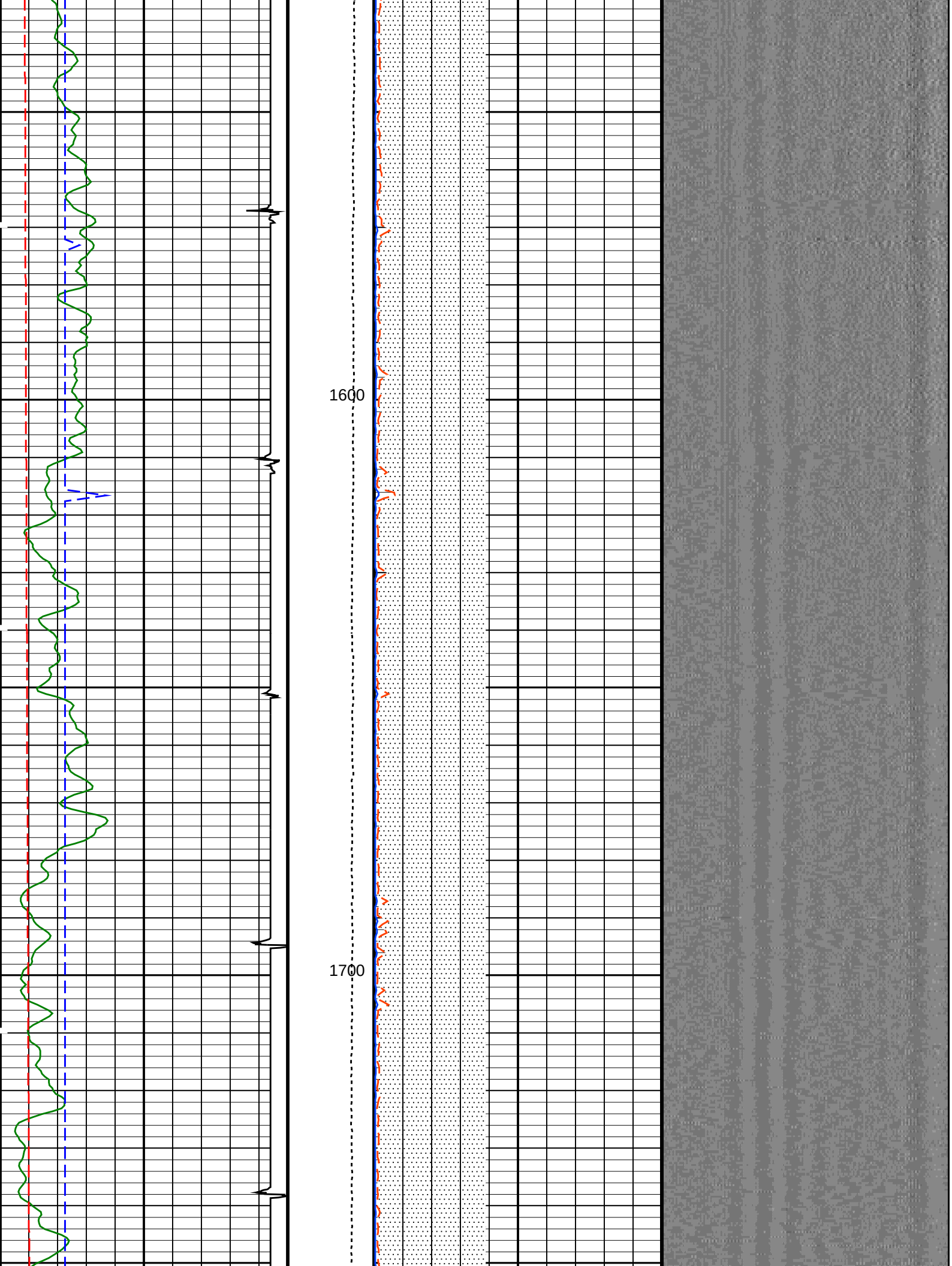
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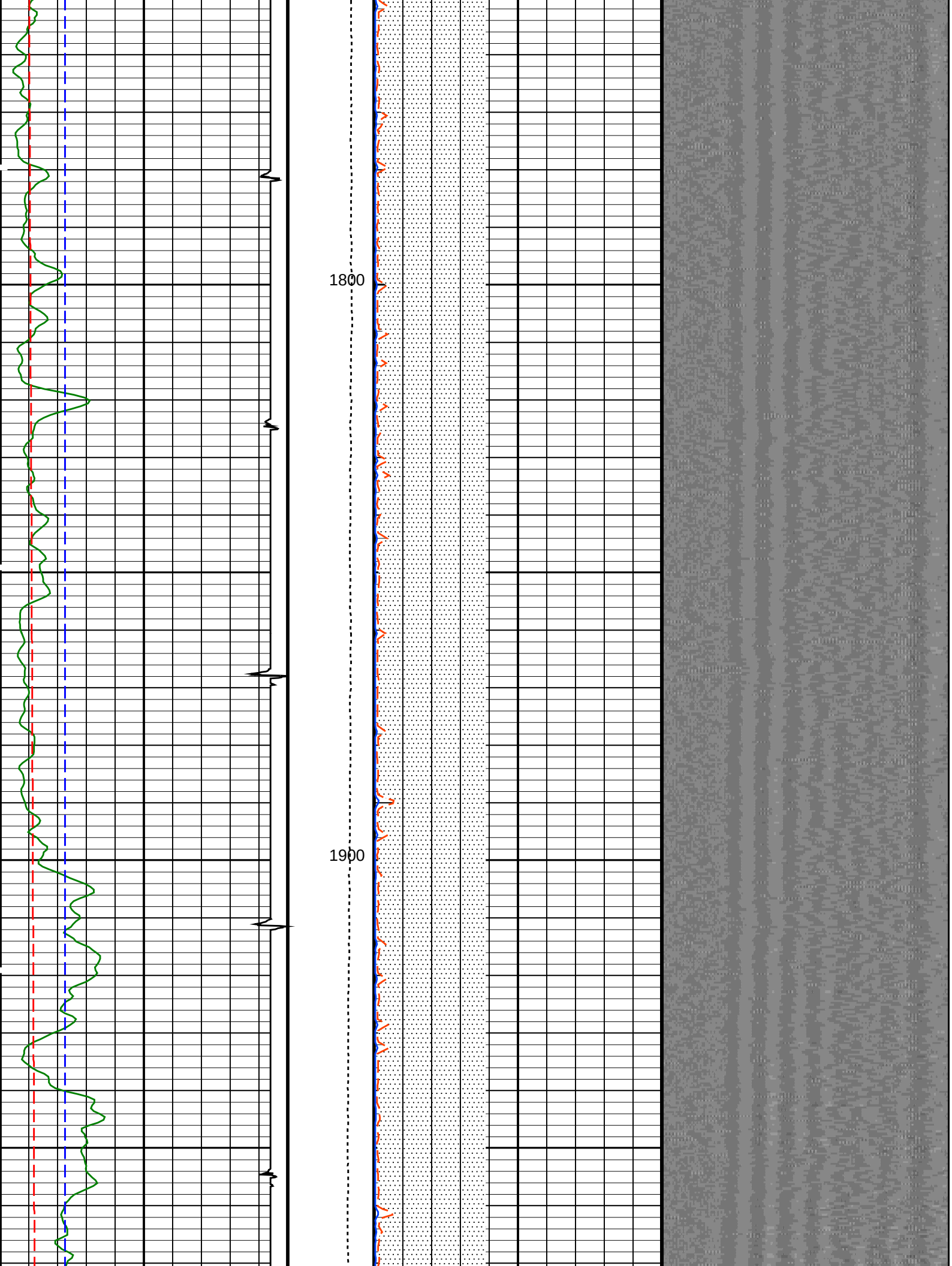
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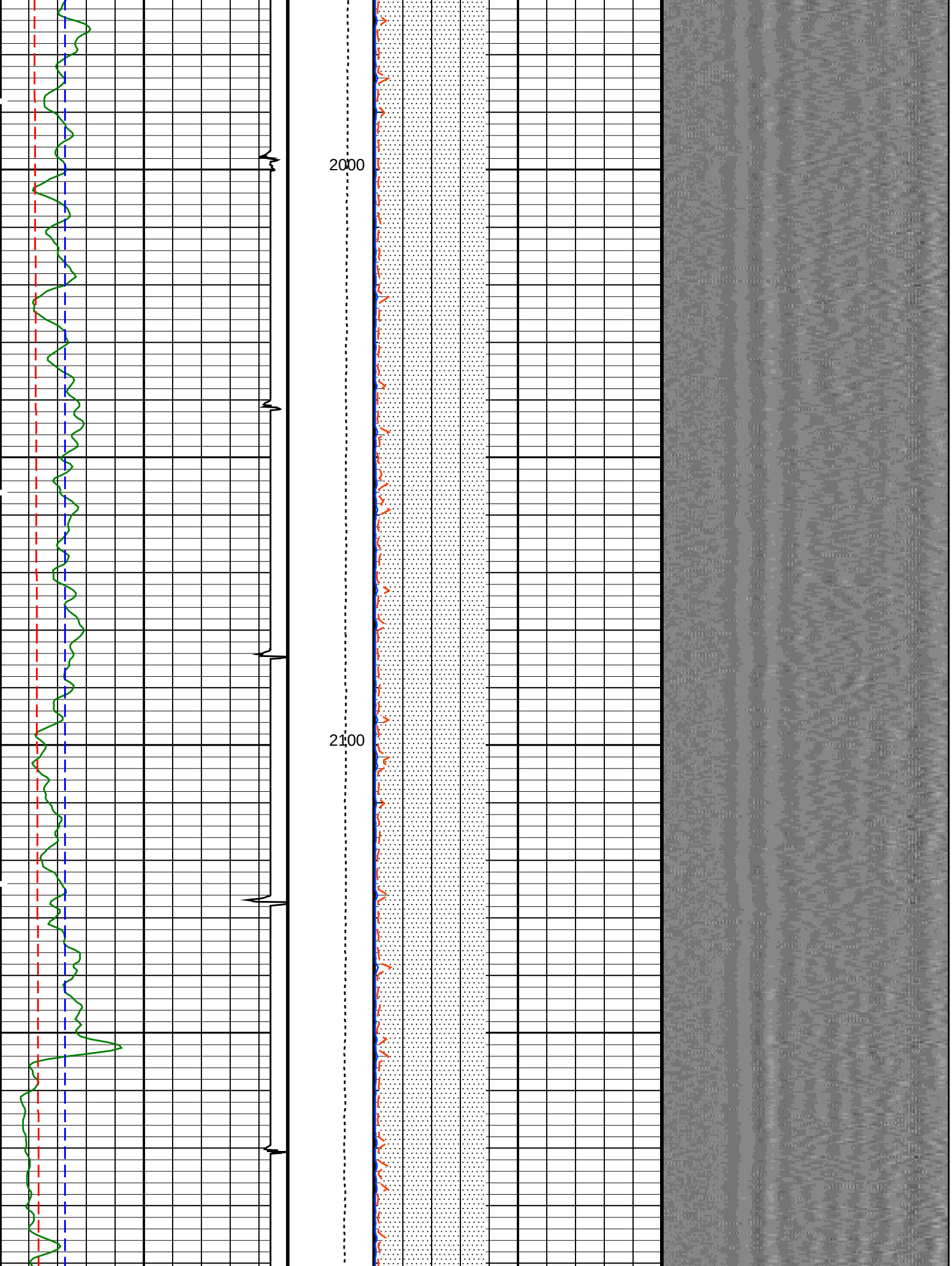
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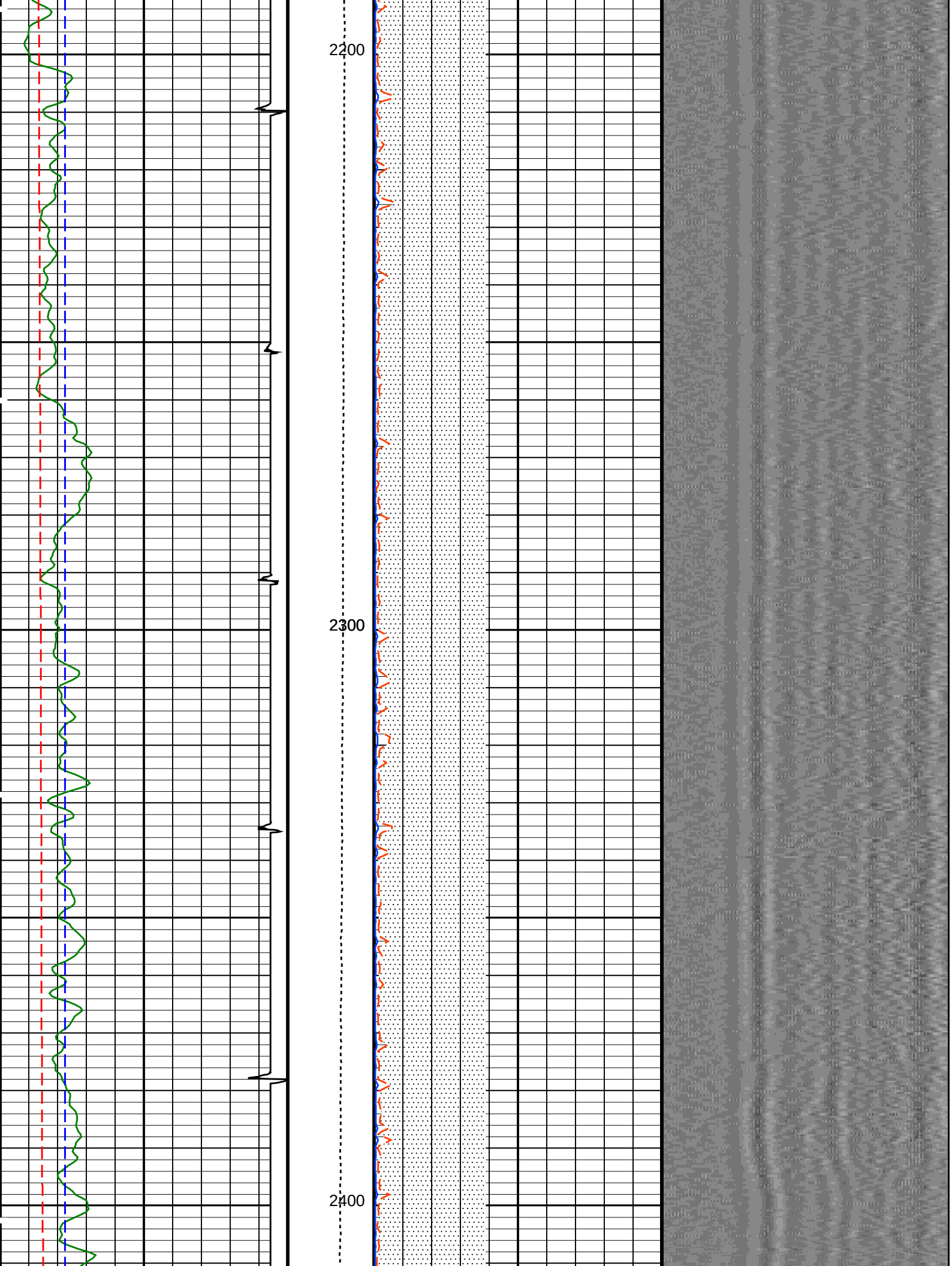
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2300
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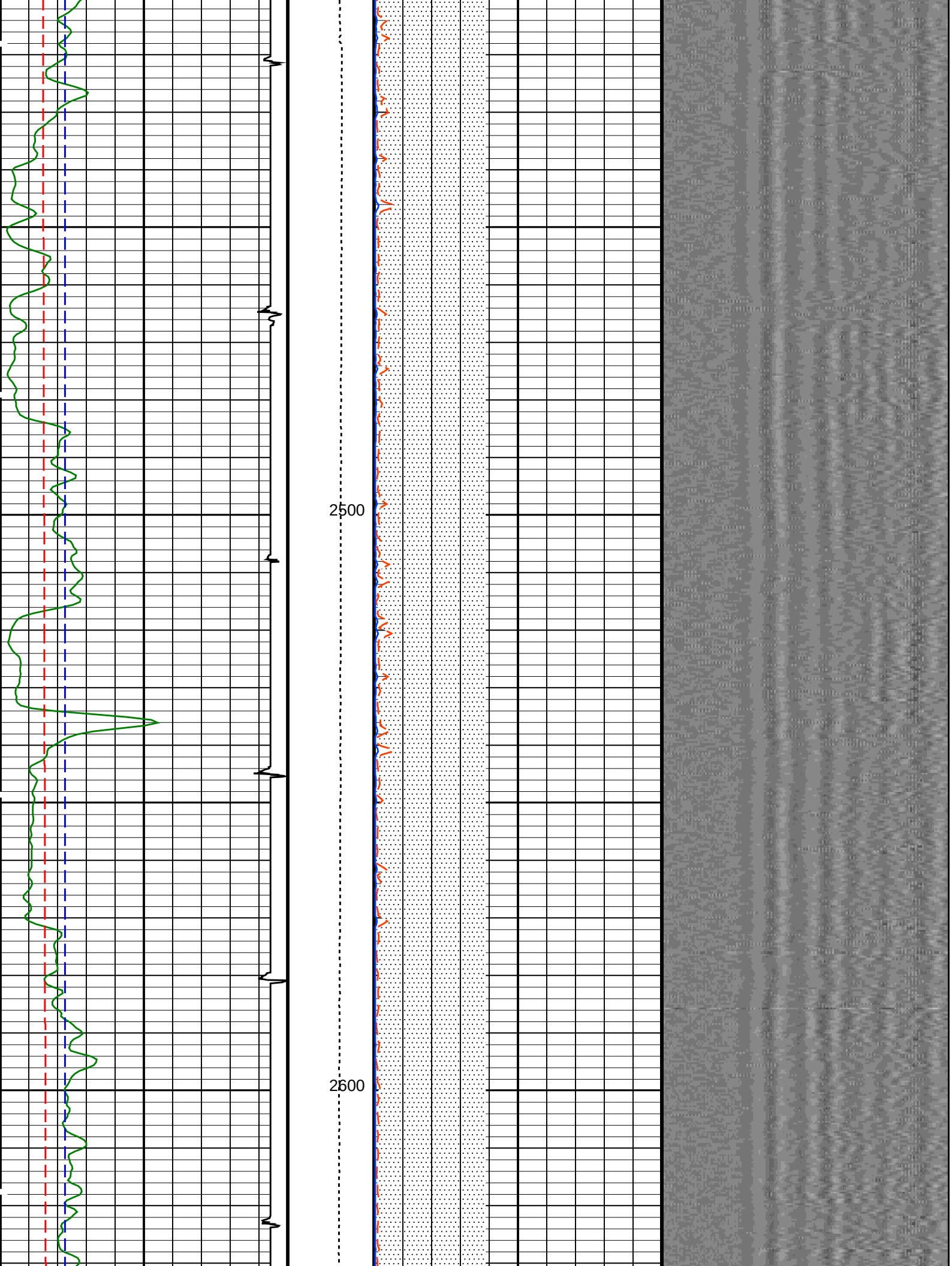
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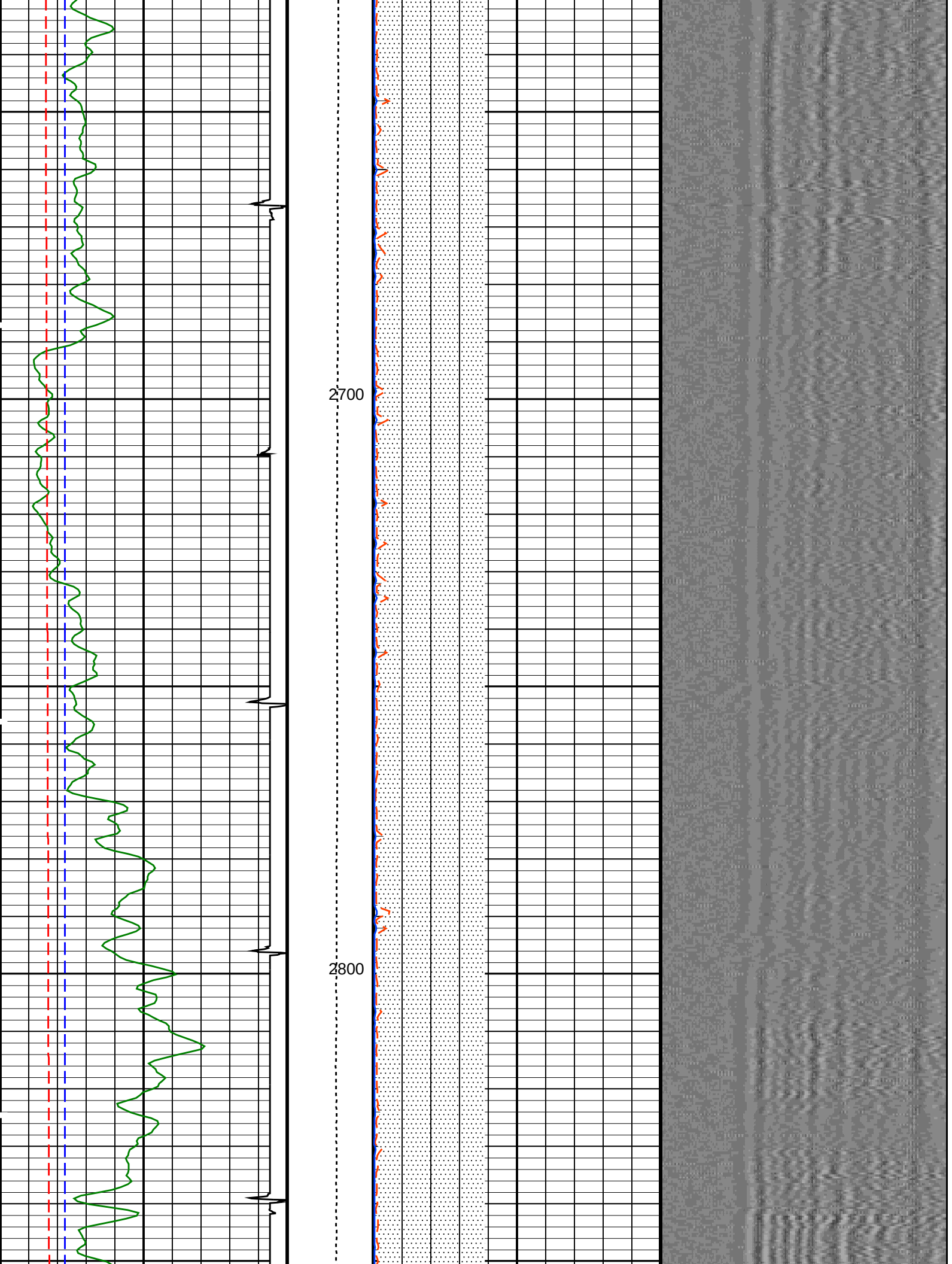
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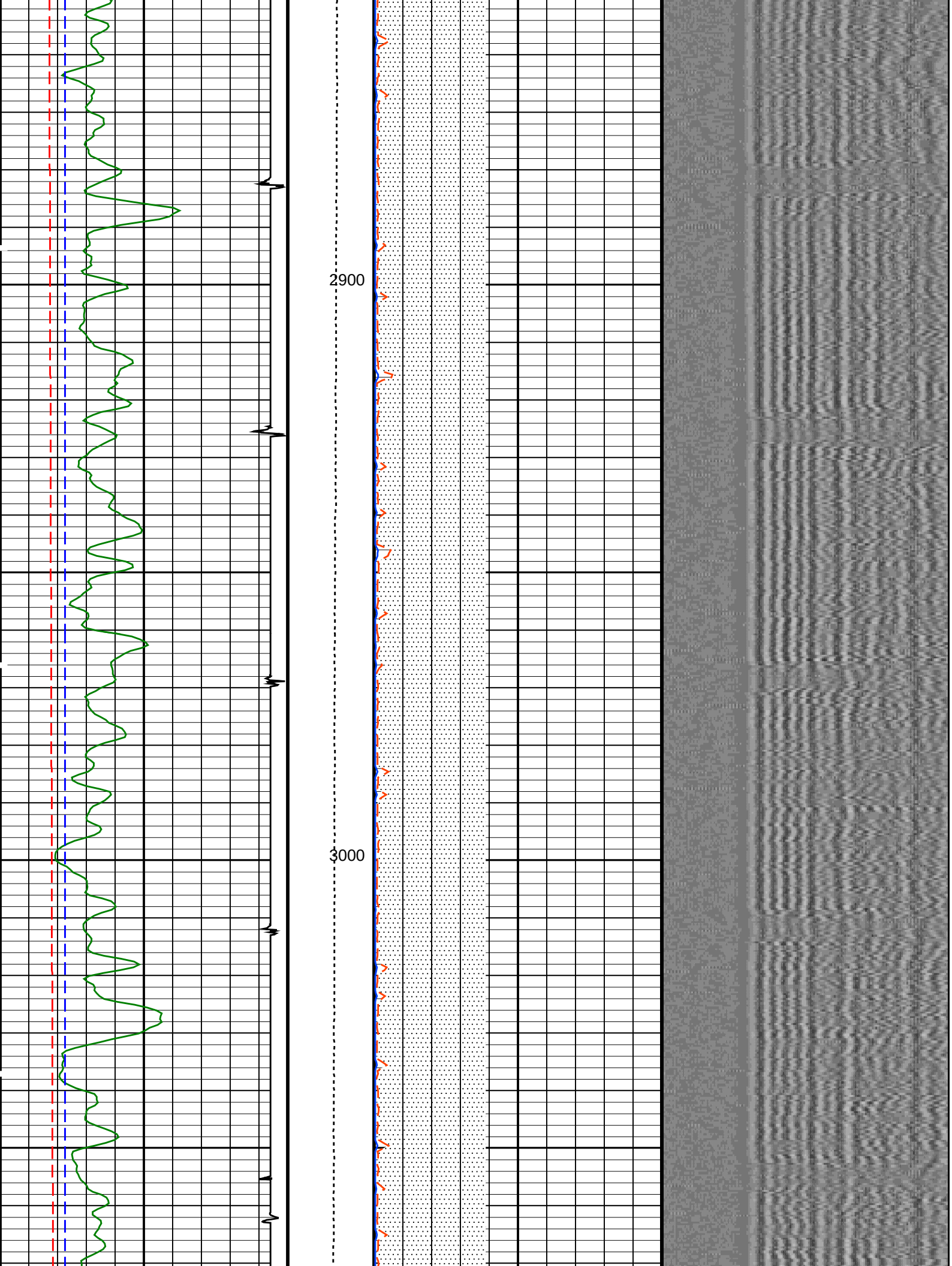
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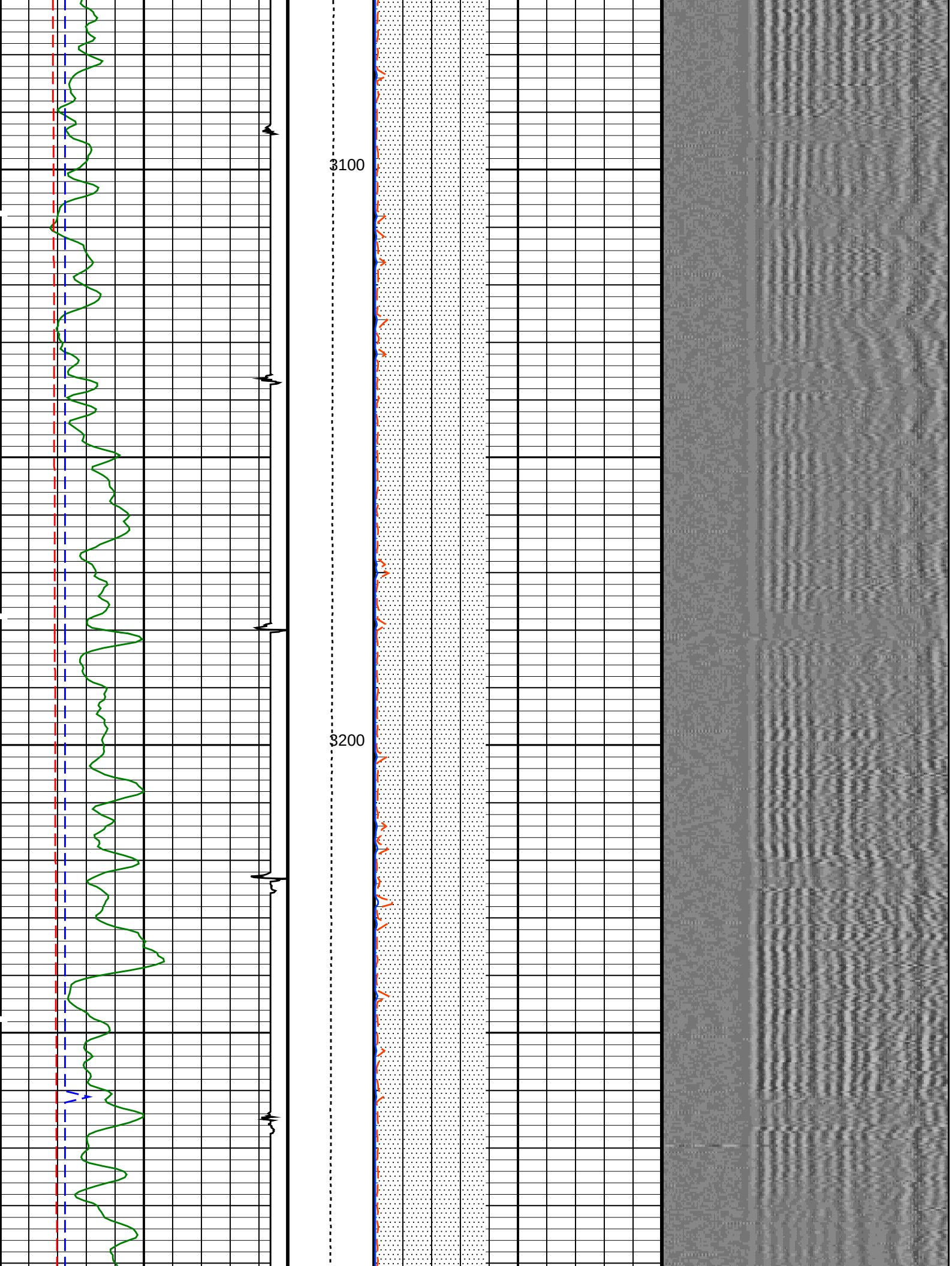
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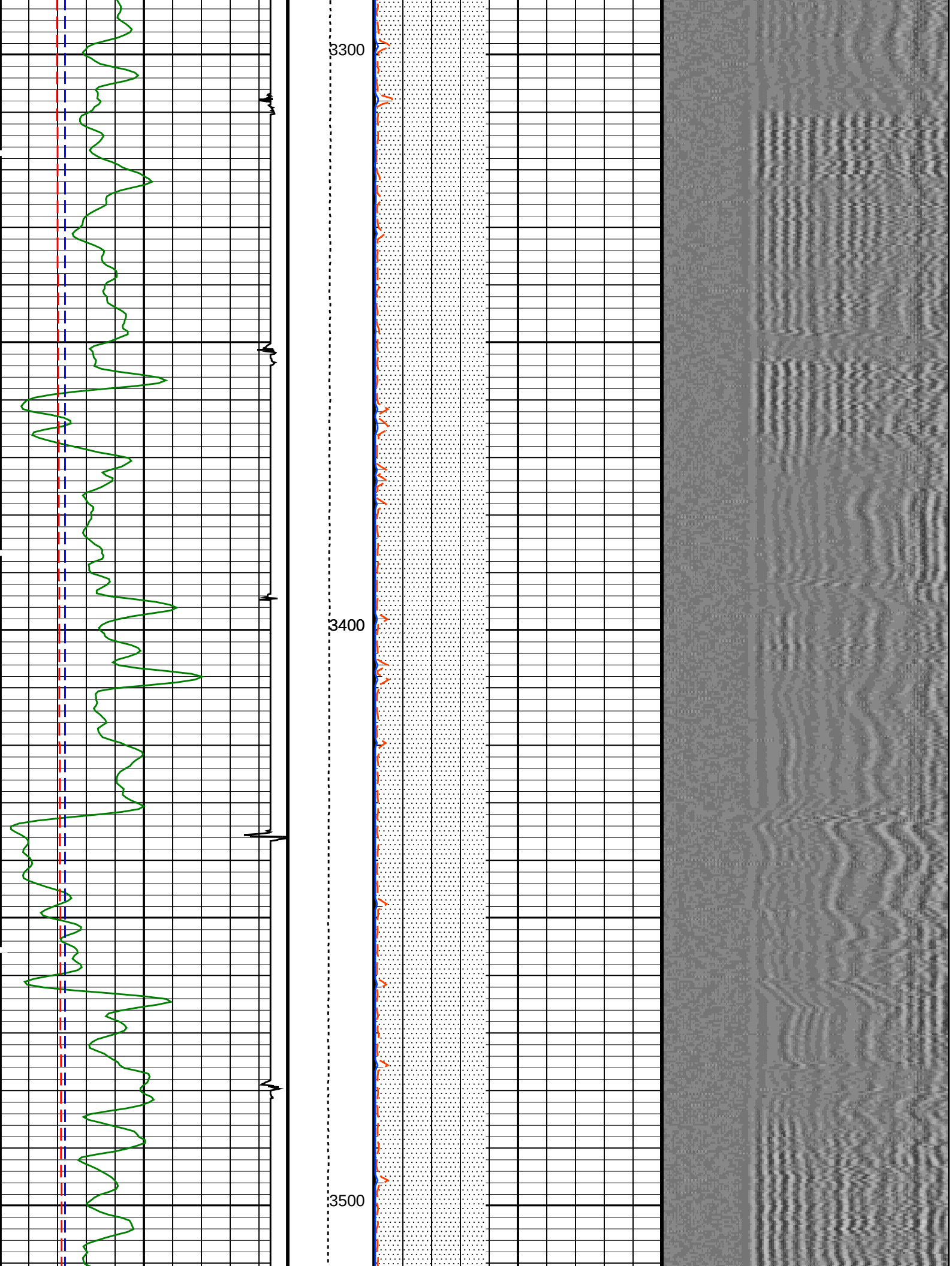
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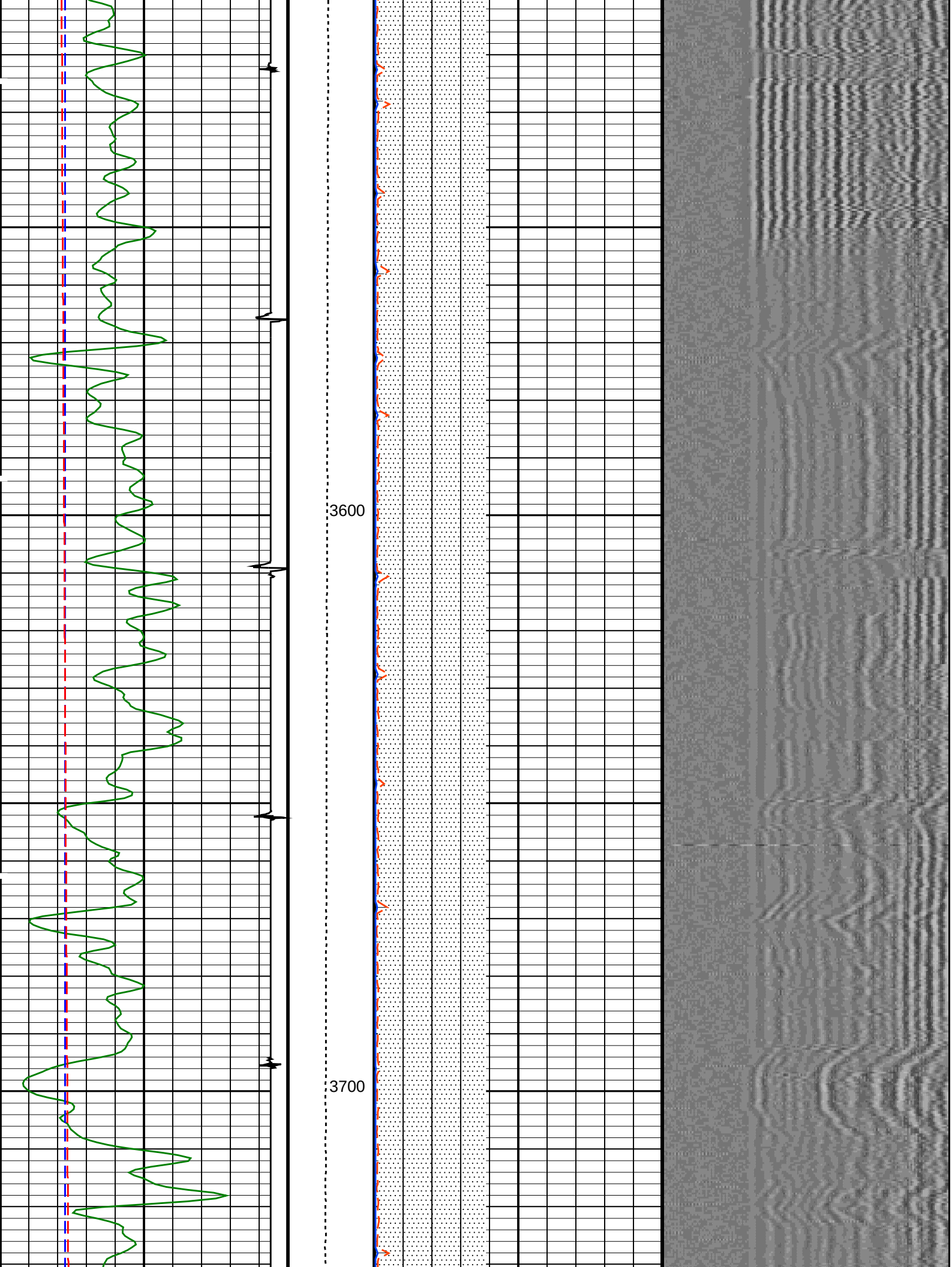
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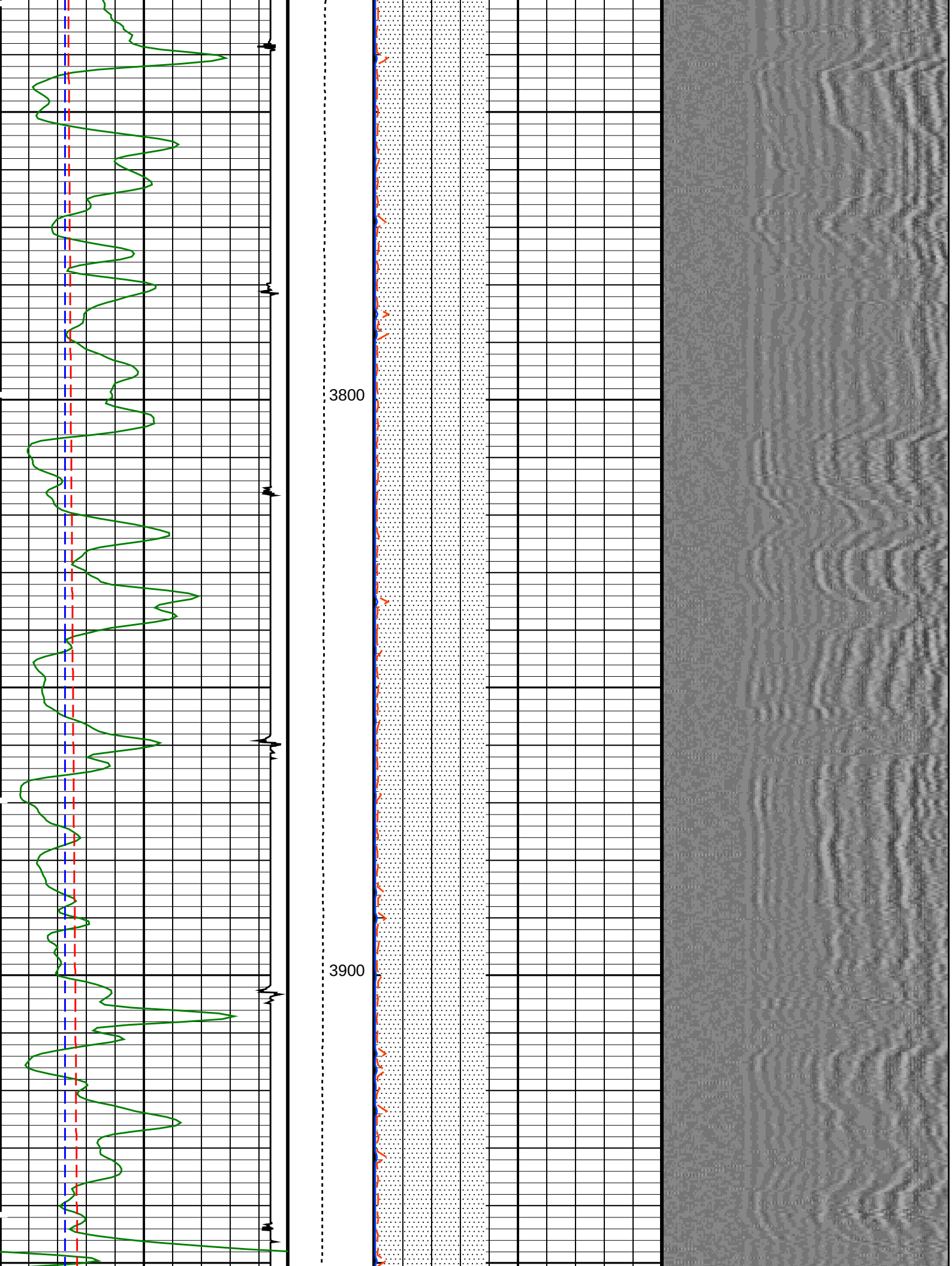
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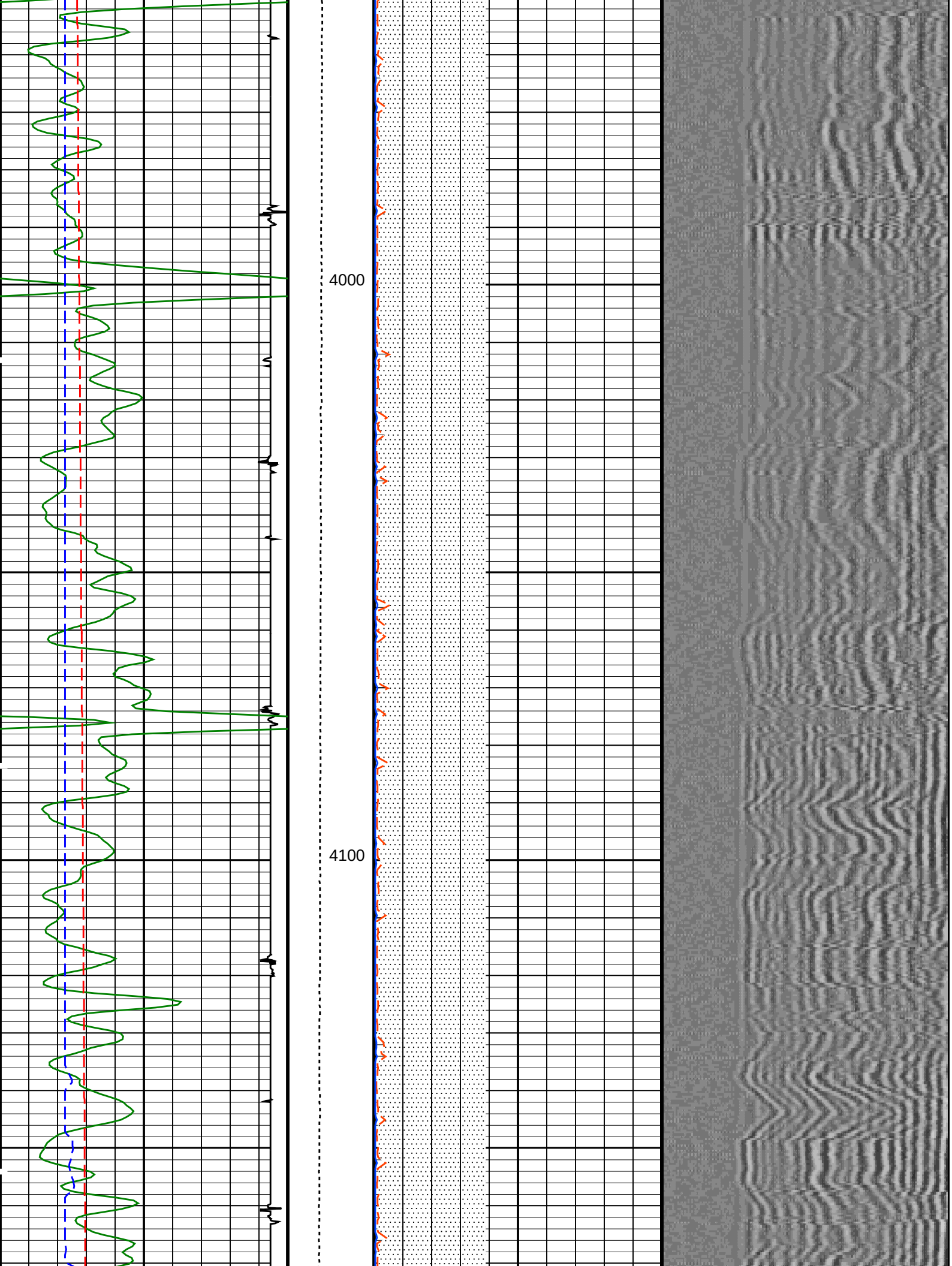
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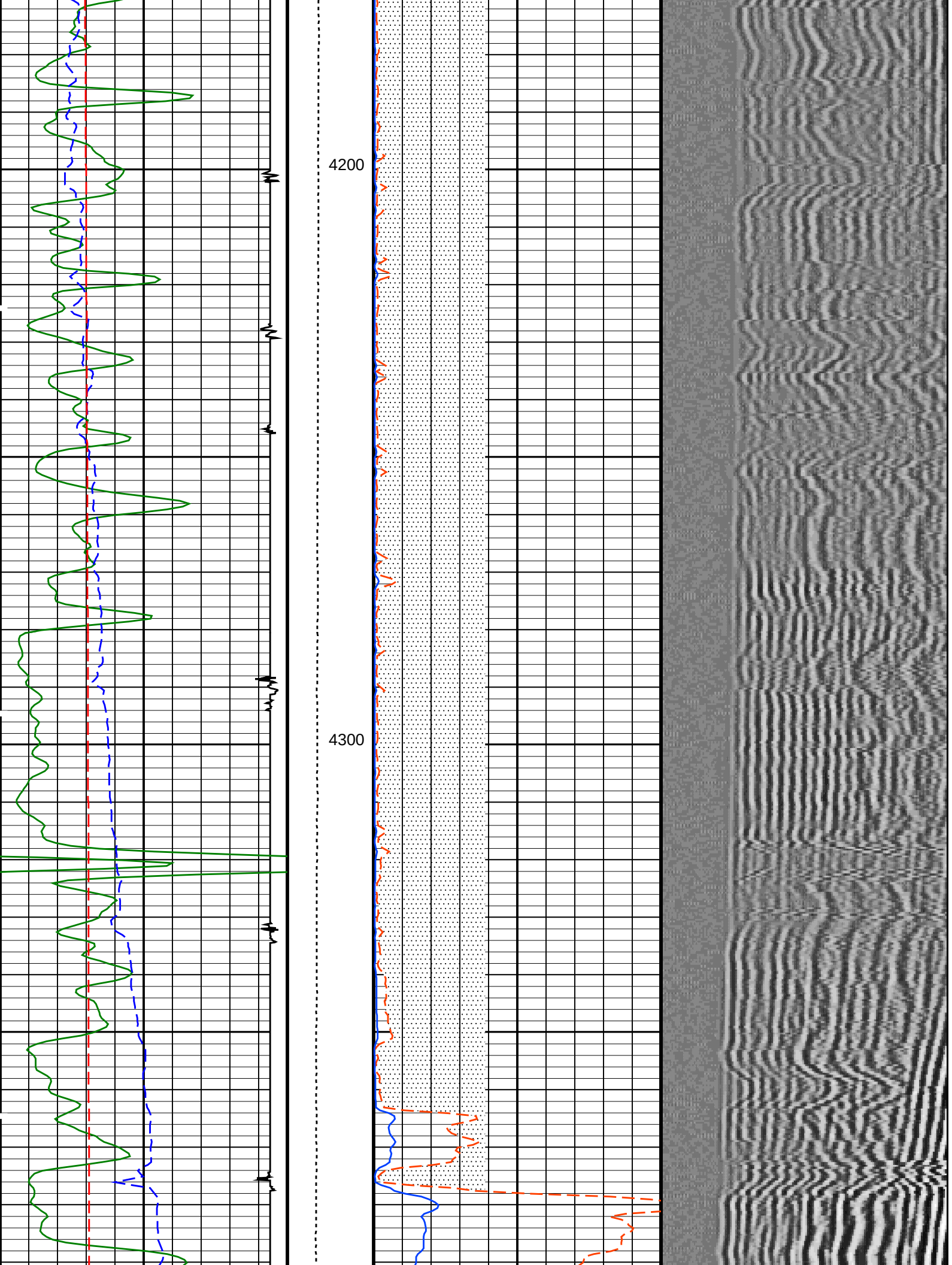
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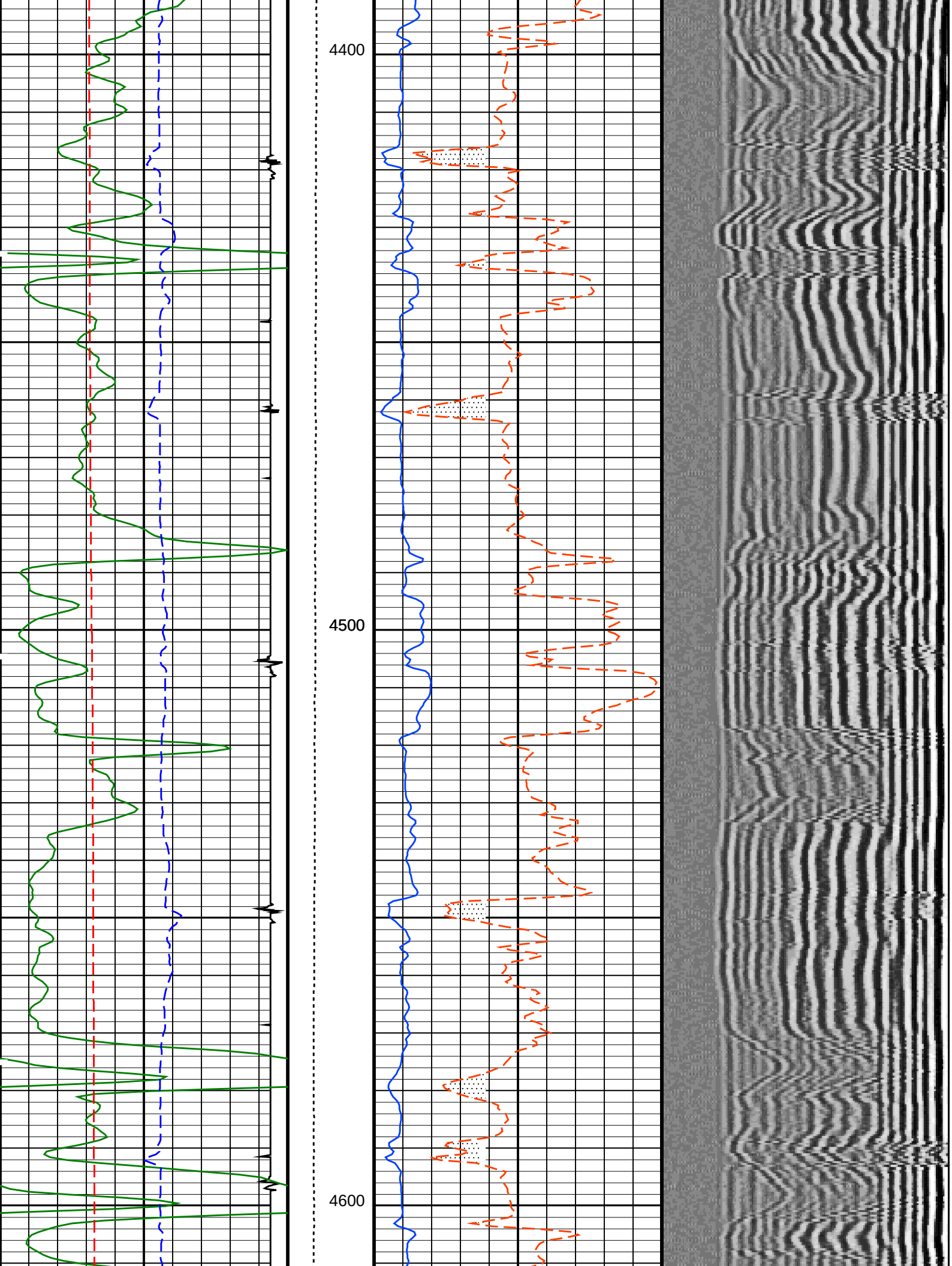
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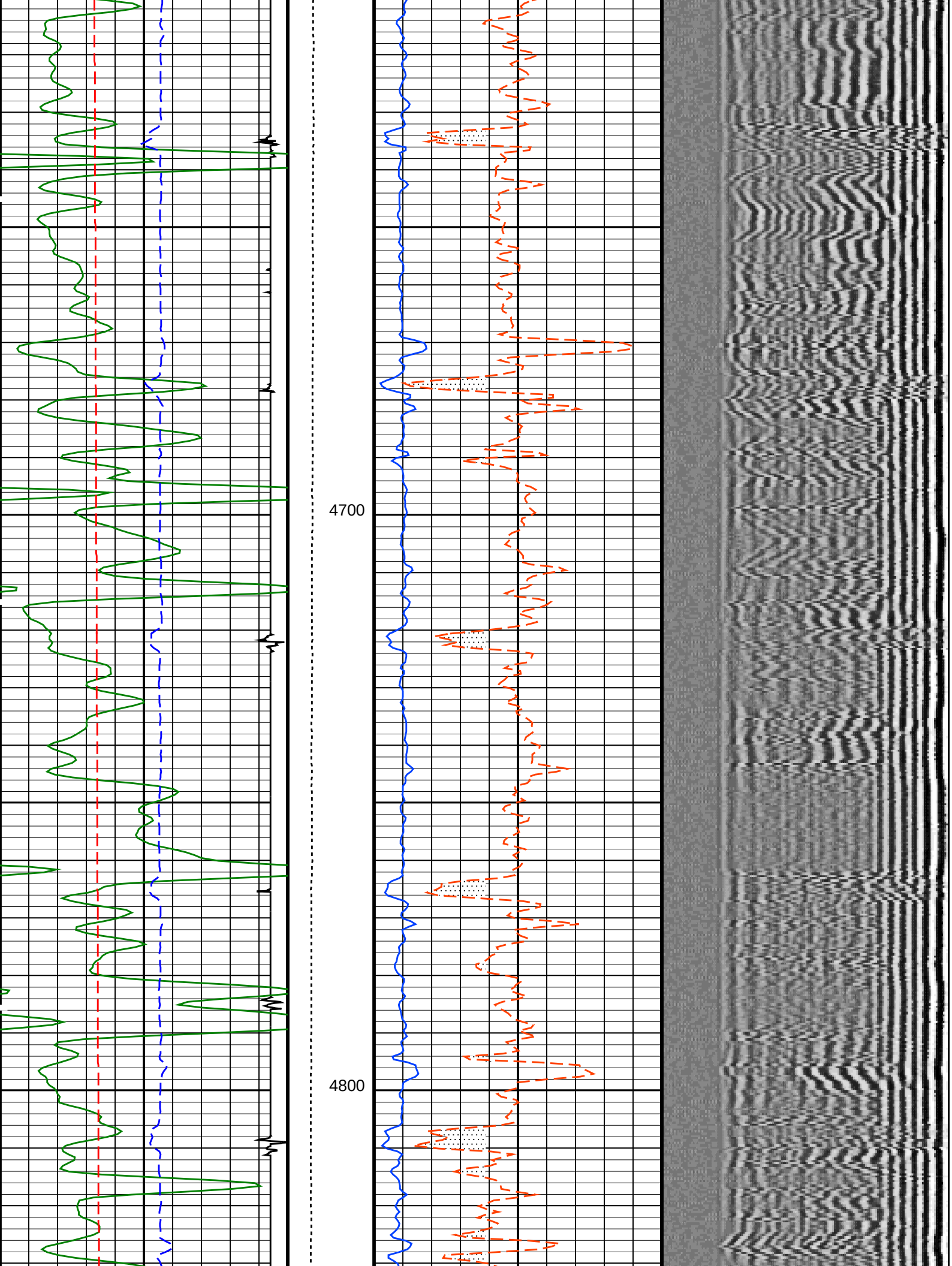
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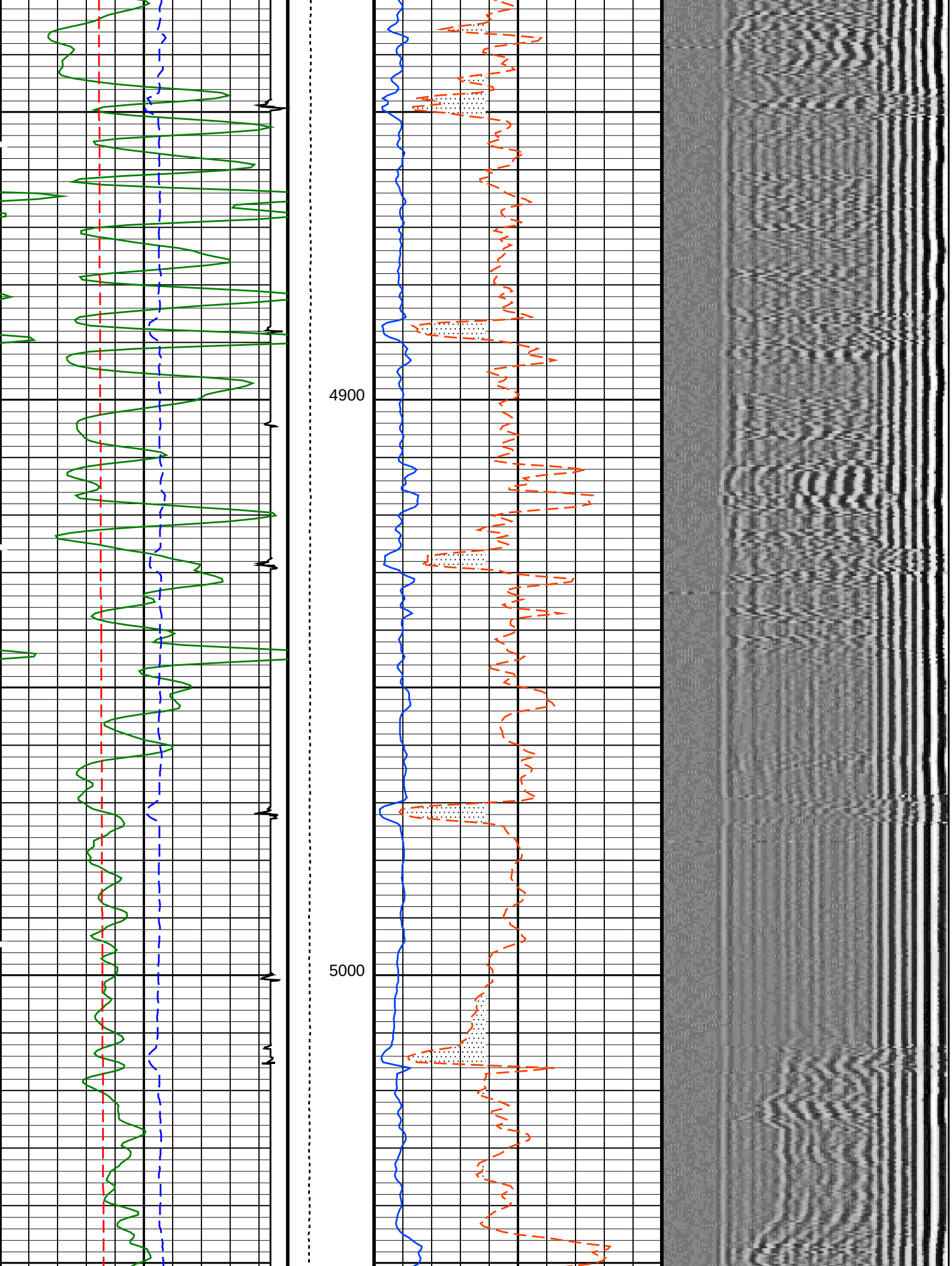
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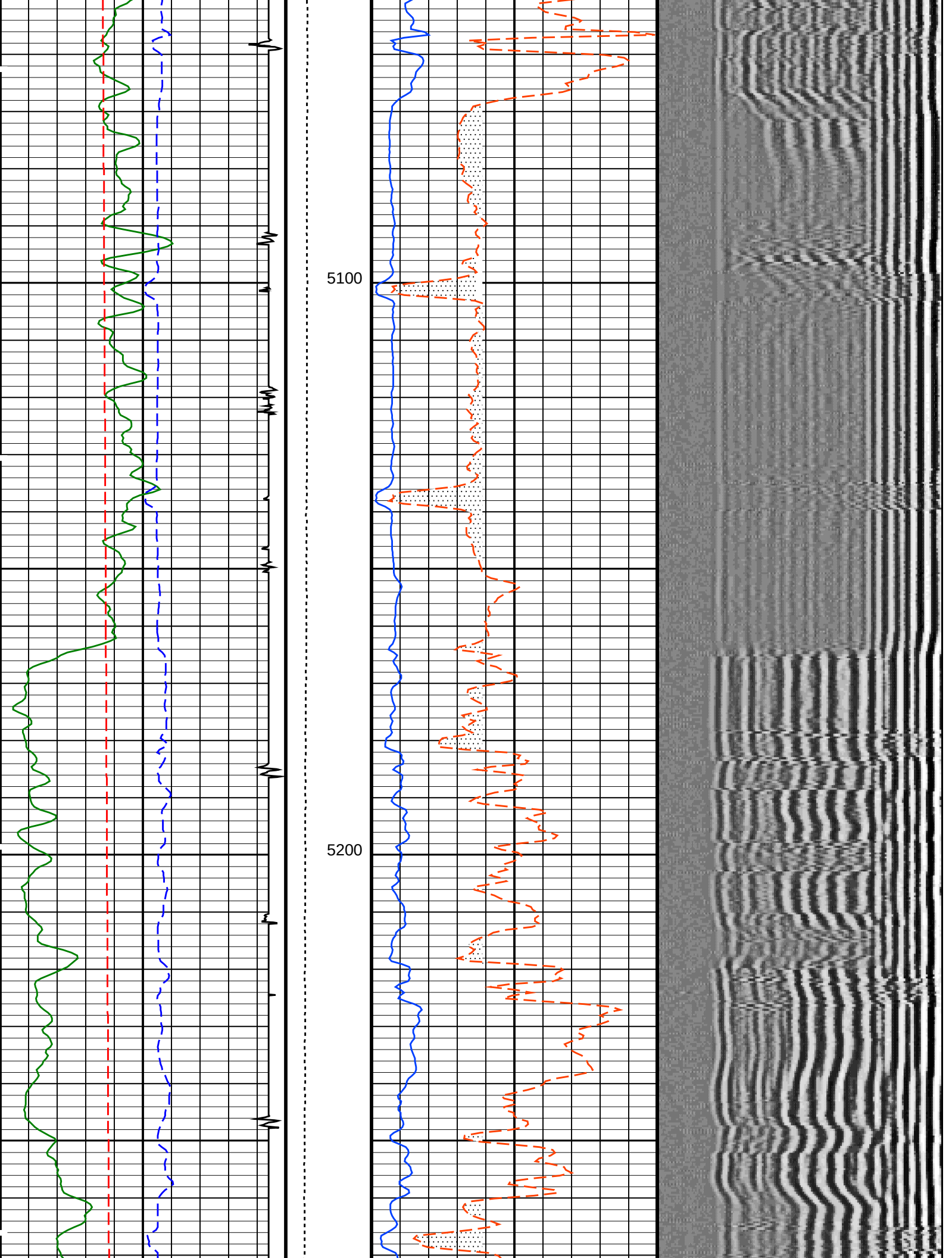
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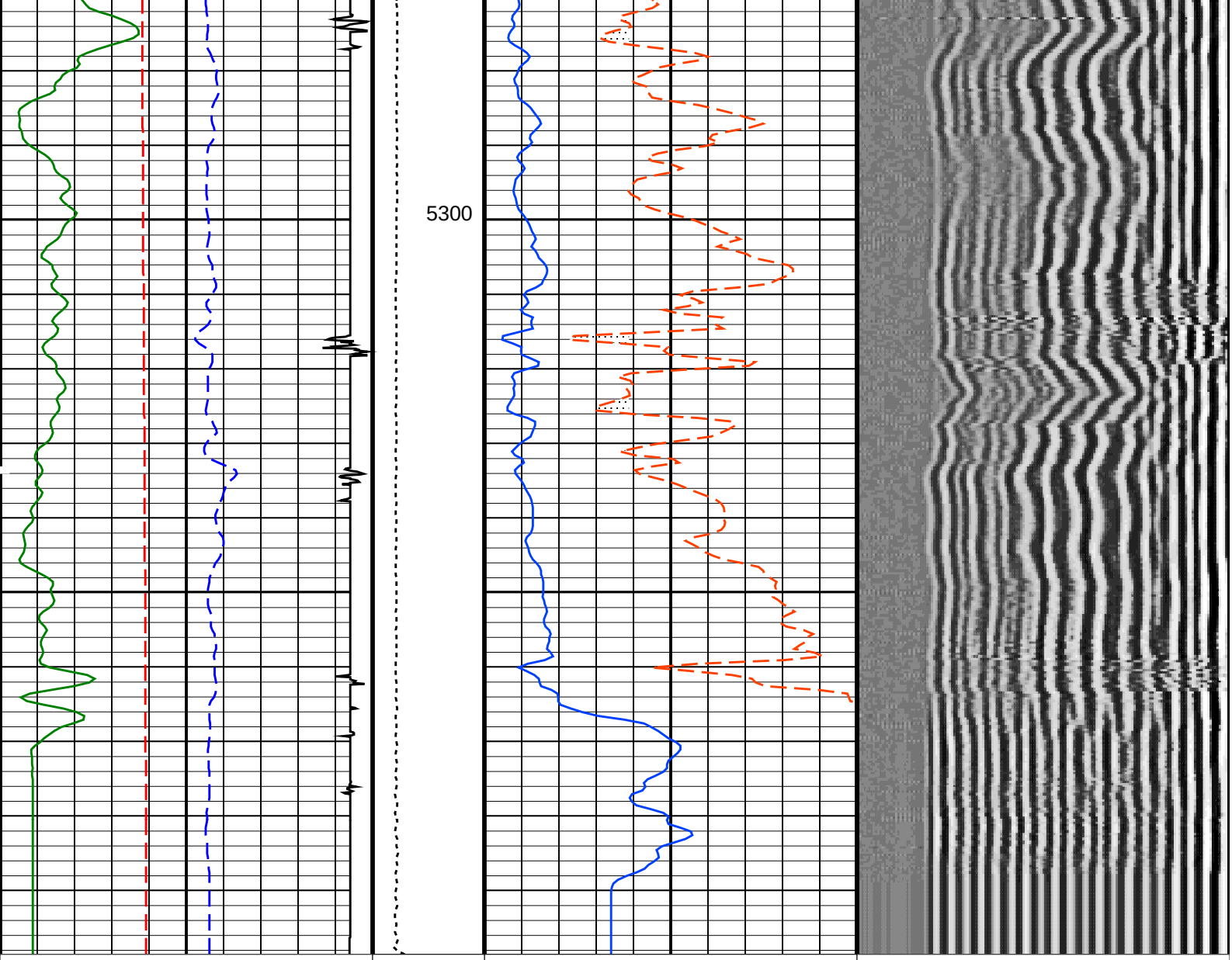


Gamma Ray (GR)
0 (GAPI) 150

Tension (TENS) (LBF)
2000 0

CBL Amplitude (CBL)
0 (MV) 20

Min Amplitude Max
VDL VariableDensity (VDL)
200 (US) 1200

Transit Time (TT)
400 (US) 200

CBL Amplitude (CBL)
0 (MV) 100

Well Temperature (WTEP)
50 (DEGF) 250

GOOD BOND
From ACBL to GOBO

COLLARS
From CCLD to T1

Discriminated CCL (CCLD)
−3.5 (V) 0.5

PIP SUMMARY

Time Mark Every 60 S

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	255	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	375	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	62	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	0.366591	IN
DTF	Delta−T Fluid	203	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.975325	
GOBO	Good Bond	3.85141	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	195	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	11.6819	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	3	FT
MMSA	MAP Minimum Sonic Amplitude	11.1834	MV
MSA	Minimum Sonic Amplitude	1.92277	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	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	8.55	LB/G
DO	Depth Offset for Playback	−2.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	−50000	FT

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 13−Feb−2014 21:24

OP System Version: 19C0−187

SCMT−CB	19C0−187	PSPT	19C0−187

Input DLIS Files

DEFAULT	SCMT_PSP_011LUP	FN:10	PRODUCER	13−Feb−2014 19:45	5400.5 FT	16.5 FT

Output DLIS Files

DEFAULT	SCMT_PSP_014PUP	FN:13	PRODUCER	13−Feb−2014 21:24

Schlumberger

REPEAT PASS

MAXIS Field Log

Company: ANADARKO E P ONSHORE LLC Well: Caboose 1548 21 44

Input DLIS Files

DEFAULT	SCMT_PSP_010LUP	FN:9	PRODUCER	13−Feb−2014 19:37	5400.0 FT	5097.0 FT

Output DLIS Files

DEFAULT	SCMT_PSP_013PUP	FN:12	PRODUCER	13−Feb−2014 21:23	5398.0 FT	5095.0 FT

OP System Version: 19C0−187

SCMT−CB	19C0−187	PSPT	19C0−187

PIP SUMMARY

Time Mark Every 60 S

Discriminated CCL (CCLD)

−3.5 (V) 0.5

COLLARS From CCLD to T1

Well Temperature (WTEP)

50 (DEGF) 250

Transit Time (TT)

400 (US) 200

GOOD BOND From ACBL to GOBO

CBL Amplitude (CBL)

0 (MV) 100

Gamma Ray (GR)

0 (GAPI) 150

Tension (TENS) (LBF)

2000 0

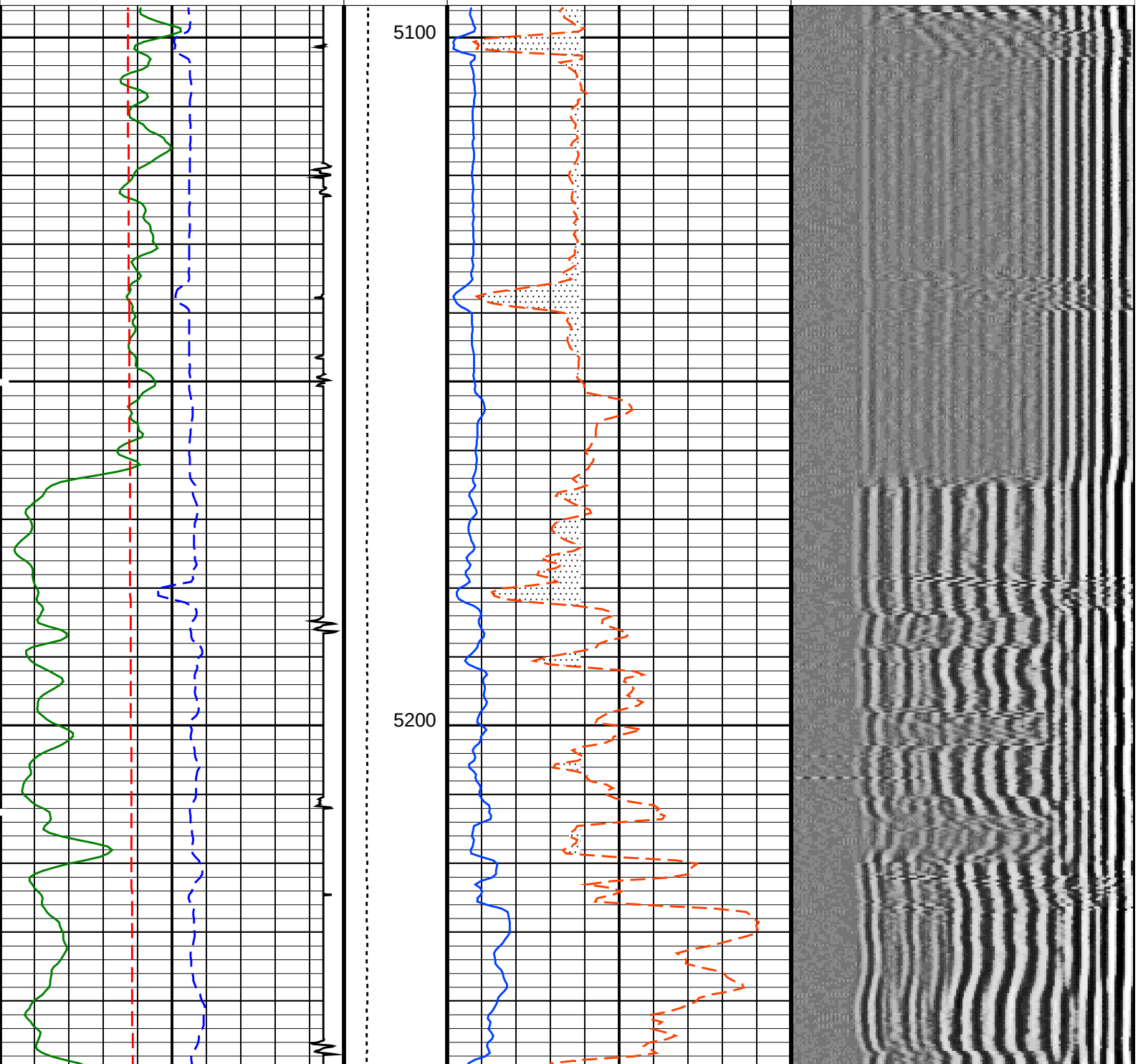
CBL Amplitude (CBL)

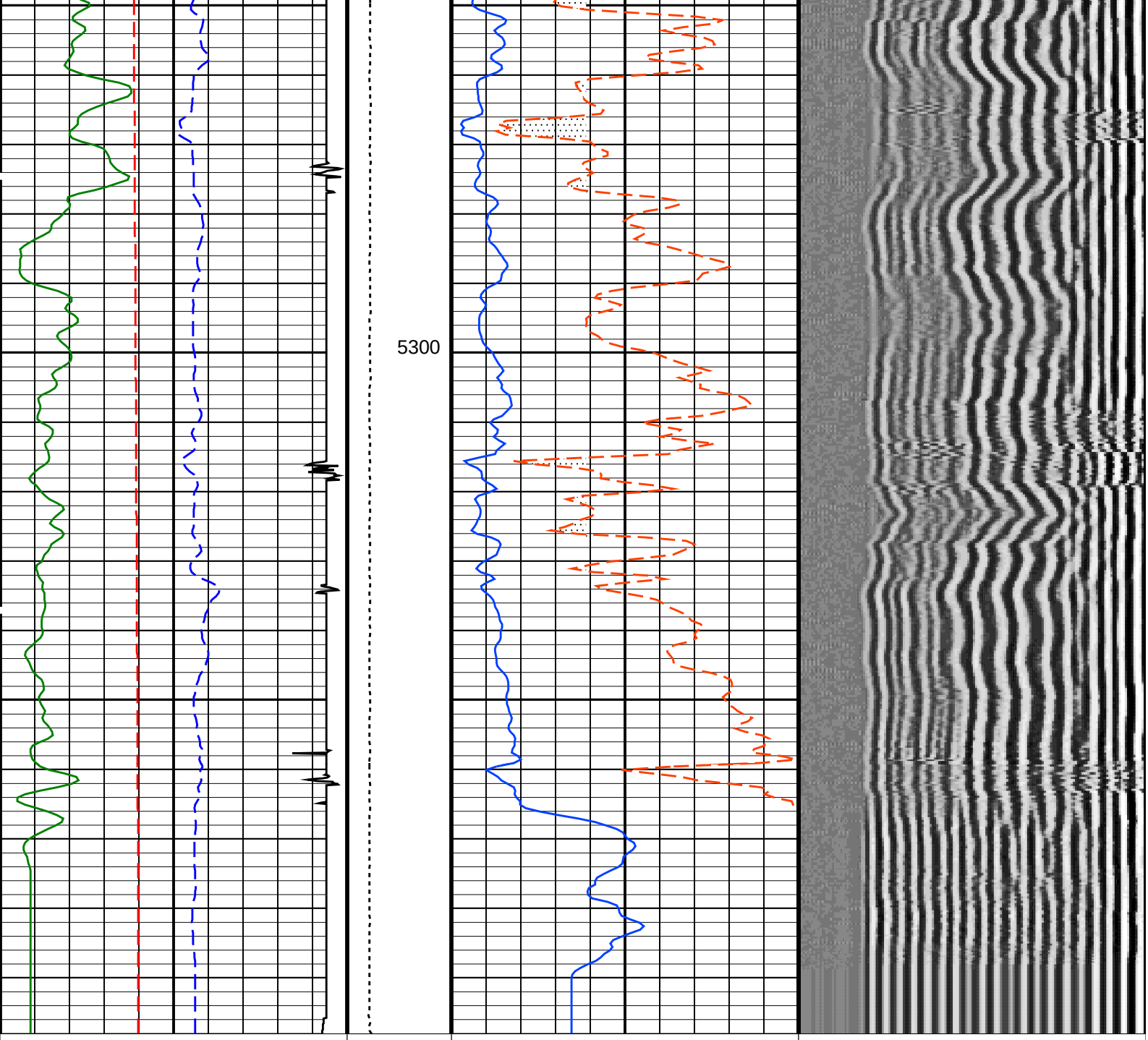
0 (MV) 20

Min Amplitude Max

VDL VariableDensity (VDL)

200 (US) 1200





Gamma Ray (GR)
0 (GAPI) 150

Tension (TENS) (LBF)
2000 0

CBL Amplitude (CBL)
0 (MV) 20

Min Amplitude Max
VDL VariableDensity (VDL)
200 (US) 1200

Transit Time (TT)
400 (US) 200

CBL Amplitude (CBL)
0 (MV) 100

Well Temperature (WTEP)
50 (DEGF) 250

GOOD BOND
From ACBL to GOBO

COLLARS
From CCLD to T1

Discriminated CCL (CCLD)
−3.5 (V) 0.5

PIP SUMMARY

Time Mark Every 60 S

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	255	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	375	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	62	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	0.366591	IN
DTF	Delta−T Fluid	203	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.975325	
GOBO	Good Bond	3.85141	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	195	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	11.6819	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	3	FT
MMSA	MAP Minimum Sonic Amplitude	11.1834	MV
MSA	Minimum Sonic Amplitude	1.92277	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	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	8.55	LB/G
DO	Depth Offset for Playback	−2.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	−50000	FT

Format: CBL_VDL **Vertical Scale: 5" per 100'** **Graphics File Created: 13−Feb−2014 21:23**

OP System Version: 19C0−187

SCMT−CB	**19C0−187**	**PSPT**	**19C0−187**

Input DLIS Files

DEFAULT	**SCMT_PSP_010LUP**	**FN:9**	**PRODUCER**	**13−Feb−2014 19:37**	**5400.0 FT**	**5097.0 FT**

Output DLIS Files

DEFAULT	**SCMT_PSP_013PUP**	**FN:12**	**PRODUCER**	**13−Feb−2014 21:23**

Company: **ANADARKO E P ONSHORE LLC**

Schlumberger

Well: **Caboose 1248 21 44**
Field: **Wildcat**
County: **Cheyenne**
State: **Colorado**

RESERVOIR SATURATION TOOL−SIGMA
CEMENT BOND LOG
GR, TEMP, PRESSURE, CCL