Schlumberger

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

Well: **SGU 8512D−24 (L24 496)**
Field: **STORY GULCH**
County: **GARFIELD** State: **COLORADO**

County: GARFIELD
Field: STORY GULCH
Location: SHL: 1596' FSL & 882' FWL
Well: SGU 8512D−24 (L24 496)
Company: ENCANA OIL & GAS (USA) INC

SLIM CEMENT MAPPING LOG
GAMMA RAY − CCL − TEMPERATUR
CBL − VDL

LOCATION

SHL: 1596' FSL & 882' FWL
BHL: 1806' FSL & 669' FWL

Elev.: K.B. 8210.00 ft
G.L. 8180.00 ft
D.F. 8109.00 ft

Permanent Datum: GROUND LEVEL Elev.: 8180.00 ft
Log Measured From: KELLY BUSHING 30.00 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	Section	Township	Range
05−045−21171−0000	24	4S	96W

	Run 1	Run 2	Run
PVT DATA Oil Density			
PVT DATA Water Salinity			
PVT DATA Gas Gravity			
PVT DATA Bo			
PVT DATA Bw			
PVT DATA 1/Bg			
PVT DATA Bubble Point Pressure			
PVT DATA 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		18−Mar−2013						
Run Number		1						
Depth Driller		12470 ft						
Schlumberger Depth		12327 ft						
Bottom Log Interval		12319 ft						
Top Log Interval		75 ft						
Casing Fluid Type		FRESH WATER						
Salinity								
Density		8.4 lbm/gal						
Fluid Level		75 ft						
BIT/CASING/TUBING STRING								
Bit Size		7.875 in						
From		10108 ft						
To		12470 ft						
Casing/Tubing Size		4.500 in						
Weight		13.5 lbm/ft						
Grade								
From		30 ft						
To		12445 ft						
Maximum Recorded Temperatures		288 degF						
Logger On Bottom	Time	18−Mar−2013	15:15					
Unit Number	Location	391	GRAND JUNCTION					
Recorded By		JASON BARRY						
Witnessed By		JOHN MILLER						

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: 14−MAR−2013 10:41:08

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	1−25ZT
Serial Number:	6214	Serial Number:	3421	Serial Number:	112136
Calibration Date:	24−APR−2012	Calibration Date:	20−FEB−201	Length:	19500 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878		
Calibration Cable Type:	1−25ZT	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−3	Calibration RMS:	4	Rig Type:	LAND
Wheel Correction 2:	−4	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SWPT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: RESERVOIR SATURATION	OS1:
OS2: LOG	OS2:
OS3: SIGMA MODE	OS3:
OS4: GAMMA RAY − CCL	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE	
TOOL RAN AS PER TOOL SKETCH	
MAX RECORDED TEMPERATURE: 288 DEGF	
MAX RECORDED PRESSURE: 5199 PSI	
SHORT JOINTS: 10871 FT & 7684 FT	

ENTRANCE TIME: 14:30

TIME ON BOTTOM: 15:15

EXIT TIME: 18:45

MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE

EXPECTED CBL AMP IN FREE PIPE = 0 MV

CREW: J BARRY, B CUPP, J MANN, W AZIZ, K JOHNS

THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY

RUN 1			RUN 2		
SERVICE ORDER #:		C920−00054	SERVICE ORDER #:		
PROGRAM VERSION:		19C0−187	PROGRAM VERSION:		
FLUID LEVEL:		75 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

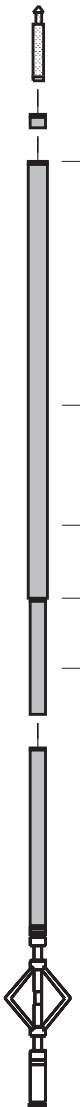
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

DOWNHOLE EQUIPMENT

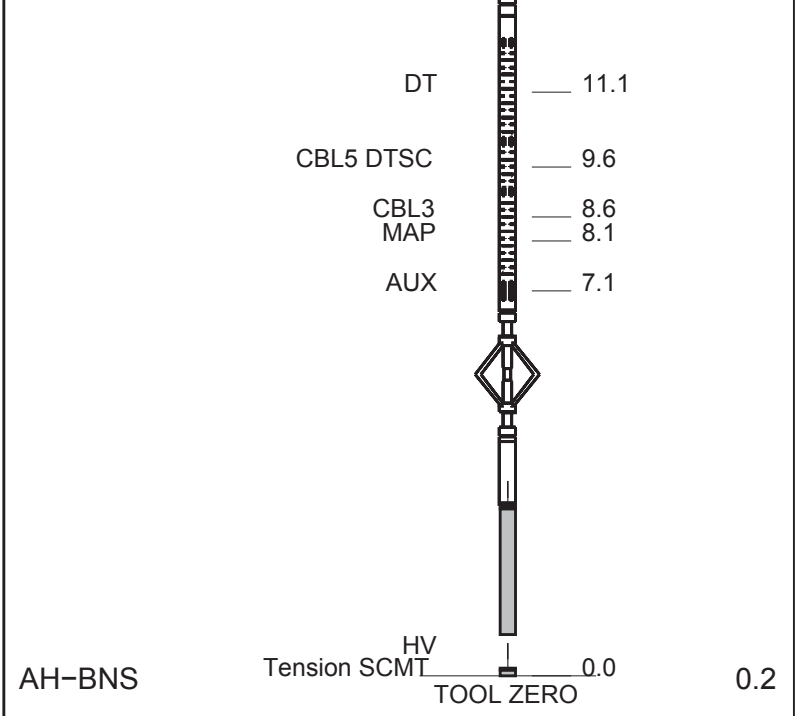


MH−22 33.2
MH−22

AH−38 31.6

HBMS−B 31.3
PSC−A 2880
HUDH−A 2880
HSTC−A
HBMC−A
GR
CCL
HBMC
HTPS−A 2880
HCQG_E_Mano
RTD_Thermometer

SCMT−CB 20.2
SCMC−CA 8120
SECH−CA
CMIR−AG
SCMS−CB 8179
SCMX−CA



AH−BNS

0.2

MAXIMUM STRING DIAMETER 2.07 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC **Well: SGU 8512D−24 (L24 496)**

Input DLIS Files

DEFAULT	SCMT_HBMS_011LUP	FN:10	PRODUCER	18−Mar−2013 15:17	12342.5 FT	51.5 FT

Output DLIS Files

DEFAULT	SCMT_HBMS_015PUP	FN:14	PRODUCER	18−Mar−2013 18:54	12342.5 FT	20.0 FT

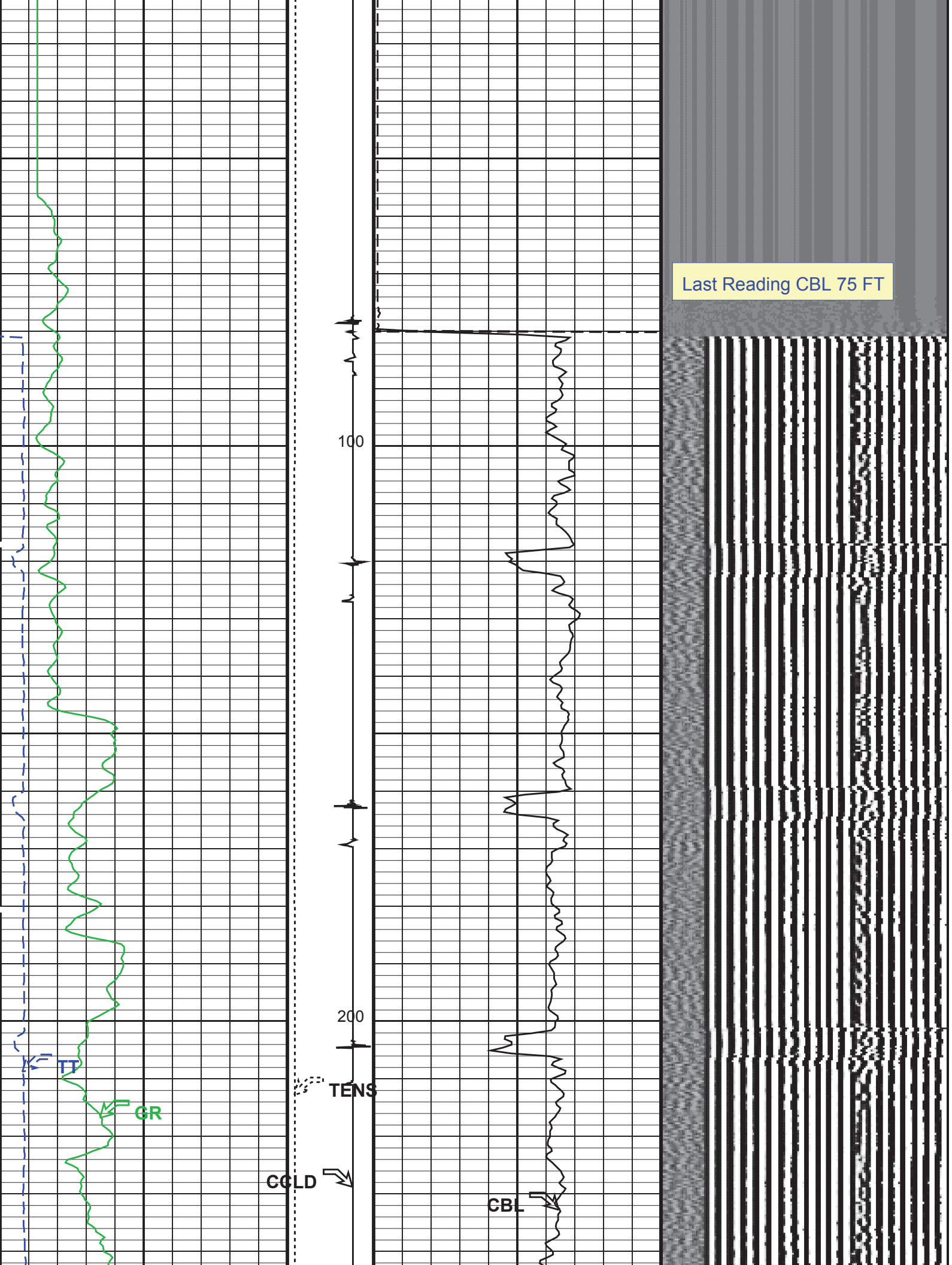
OP System Version: 19C0−187

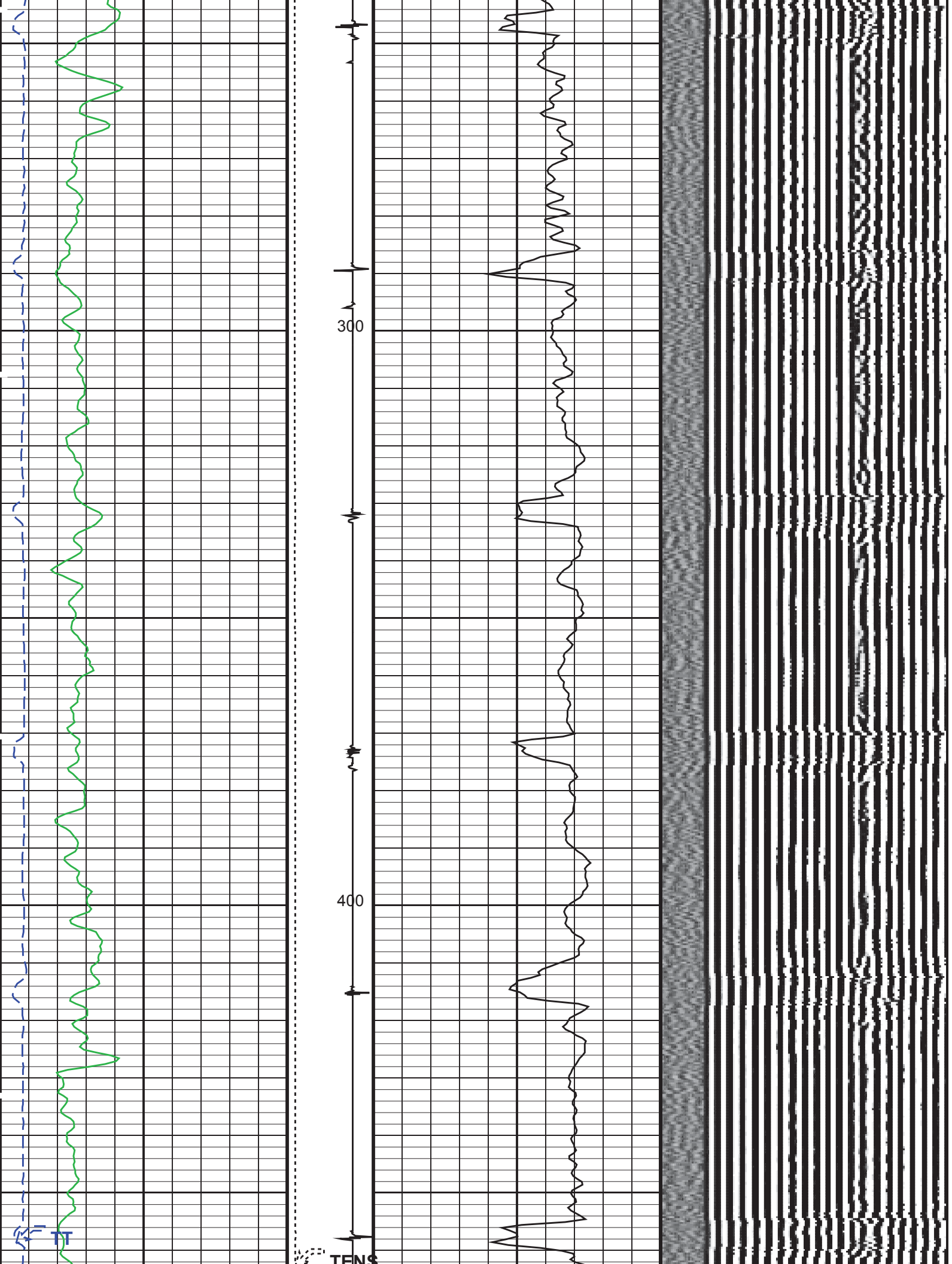
SCMT−CB	SRPC−5214−H2−2012−OP1	HBMS−B	SRPC−5214−H2−2012−OP1

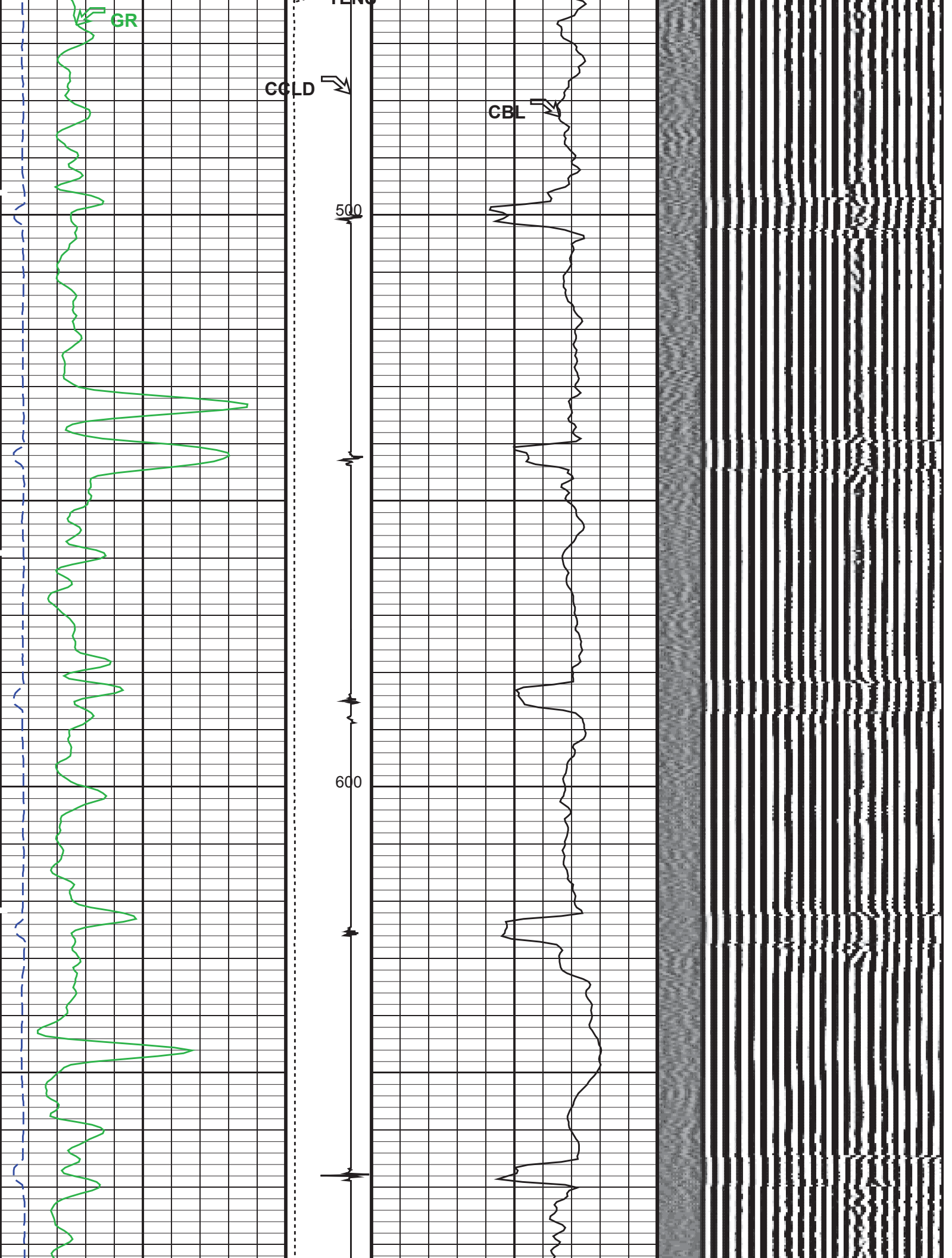
PIP SUMMARY

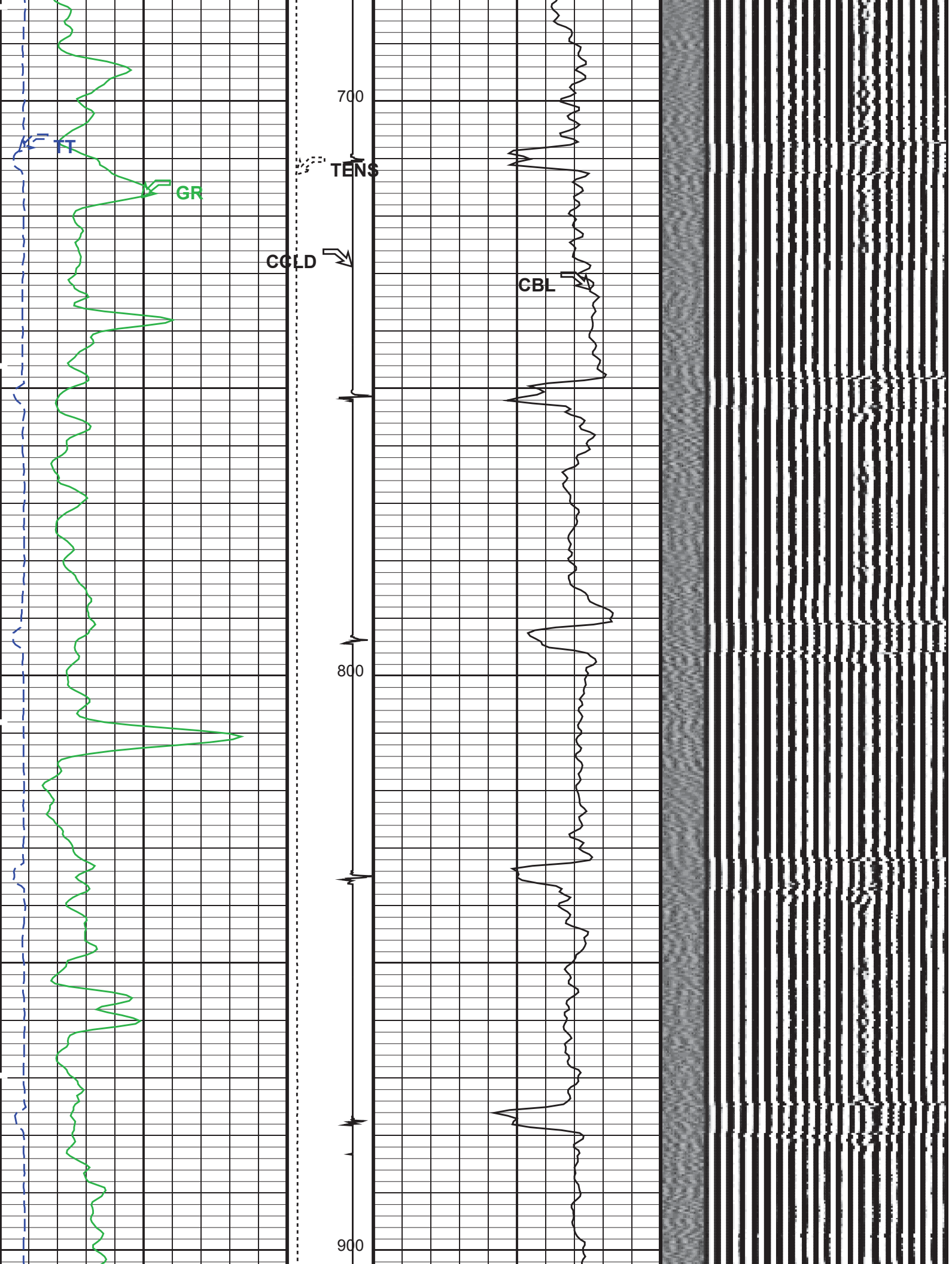
Time Mark Every 60 S

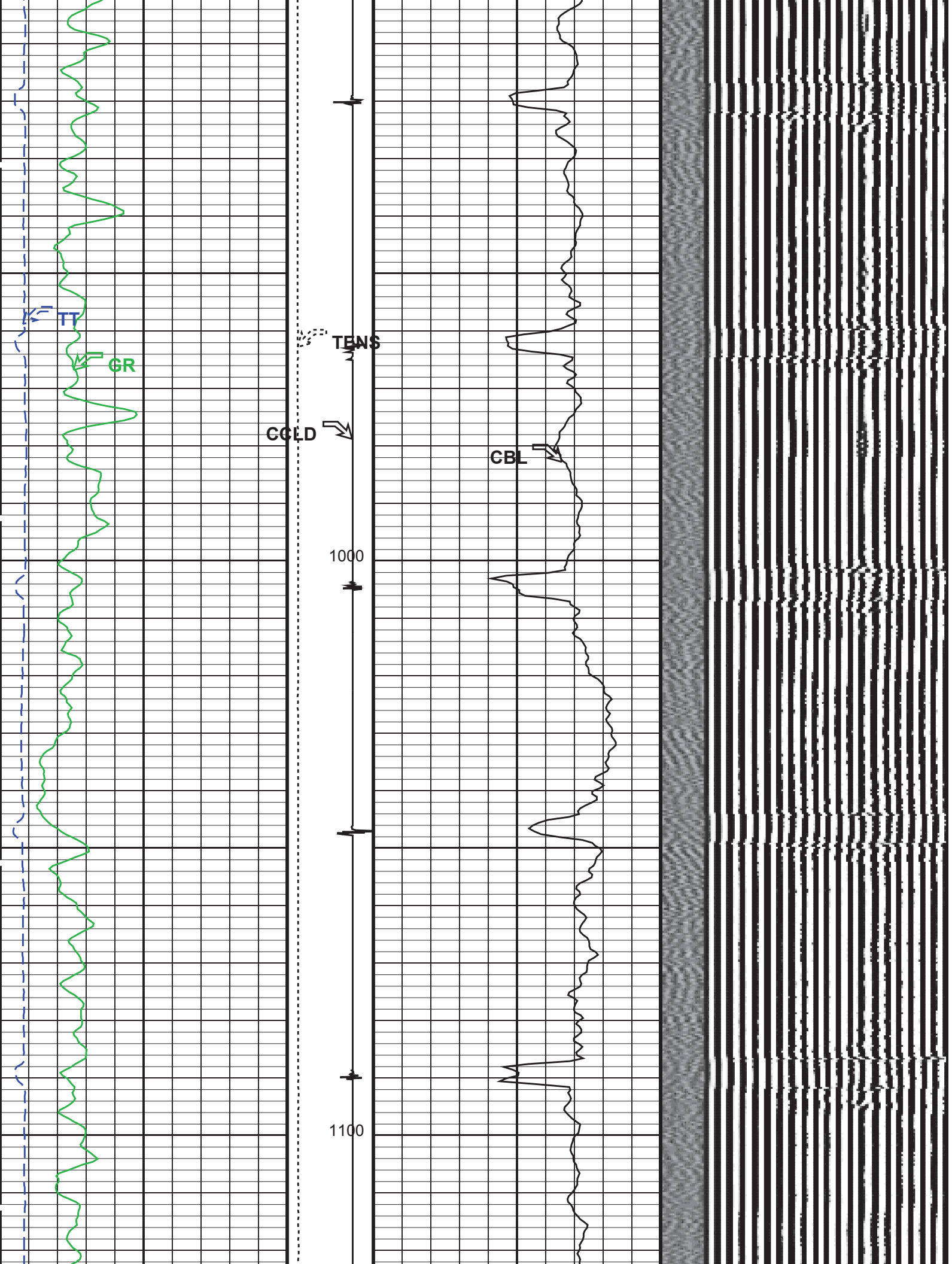
Transit Time (TT) 260 (US) 160	Discriminated CCL (CCLD) 3 (V) −1	CBL Amplitude (CBL) 0 (MV) 10	
Gamma Ray (GR) 0 (GAPI) 150	Tension (TENS) (LBF) 0 2000	CBL Amplitude (CBL) 0 (MV) 100	Min Amplitude Max VDL VariableDensity (VDL) 200 (US) 1200

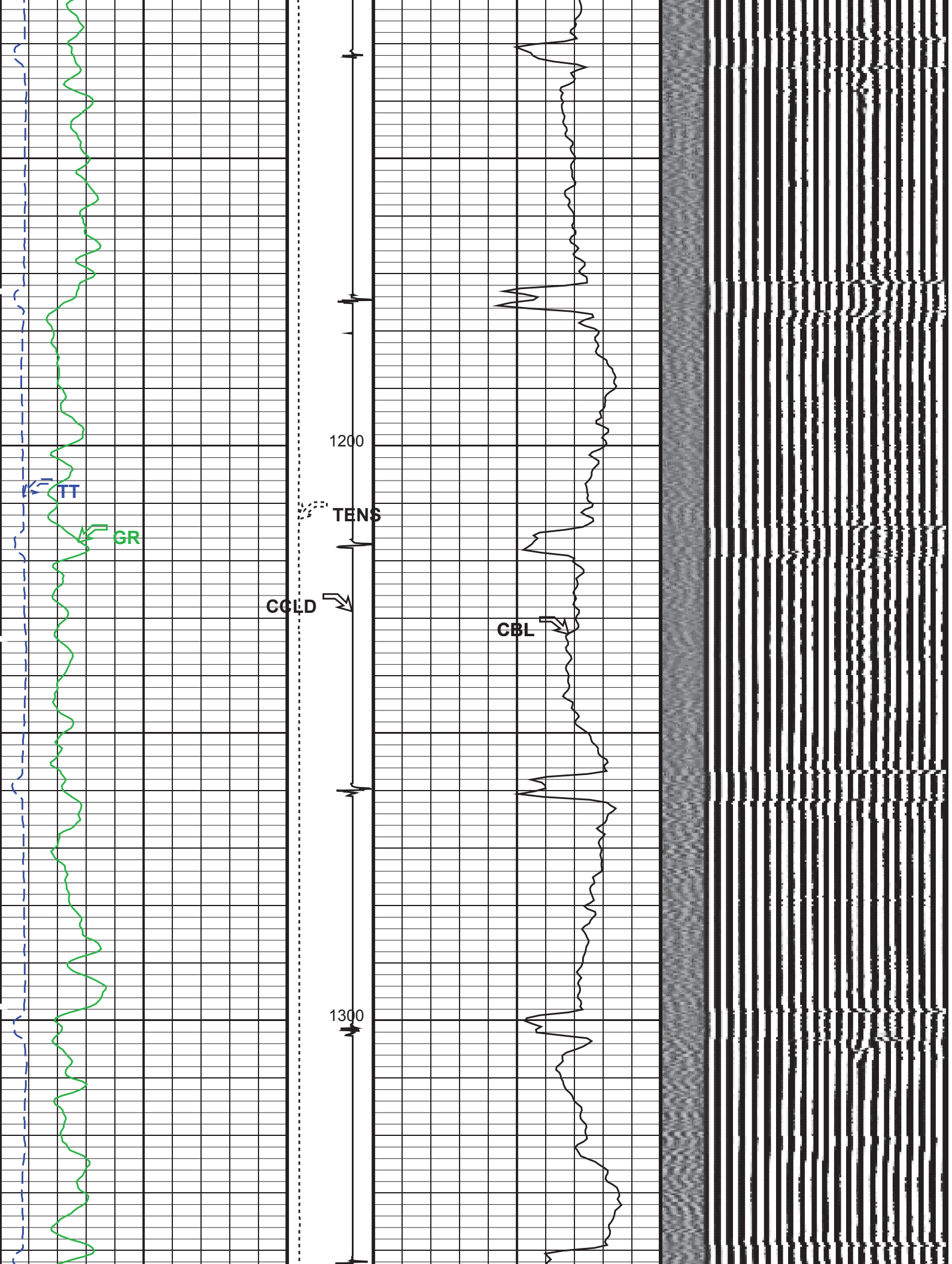

Last Reading CBL 75 FT
100
200
TT
GR
TENS
CCLD
CBL

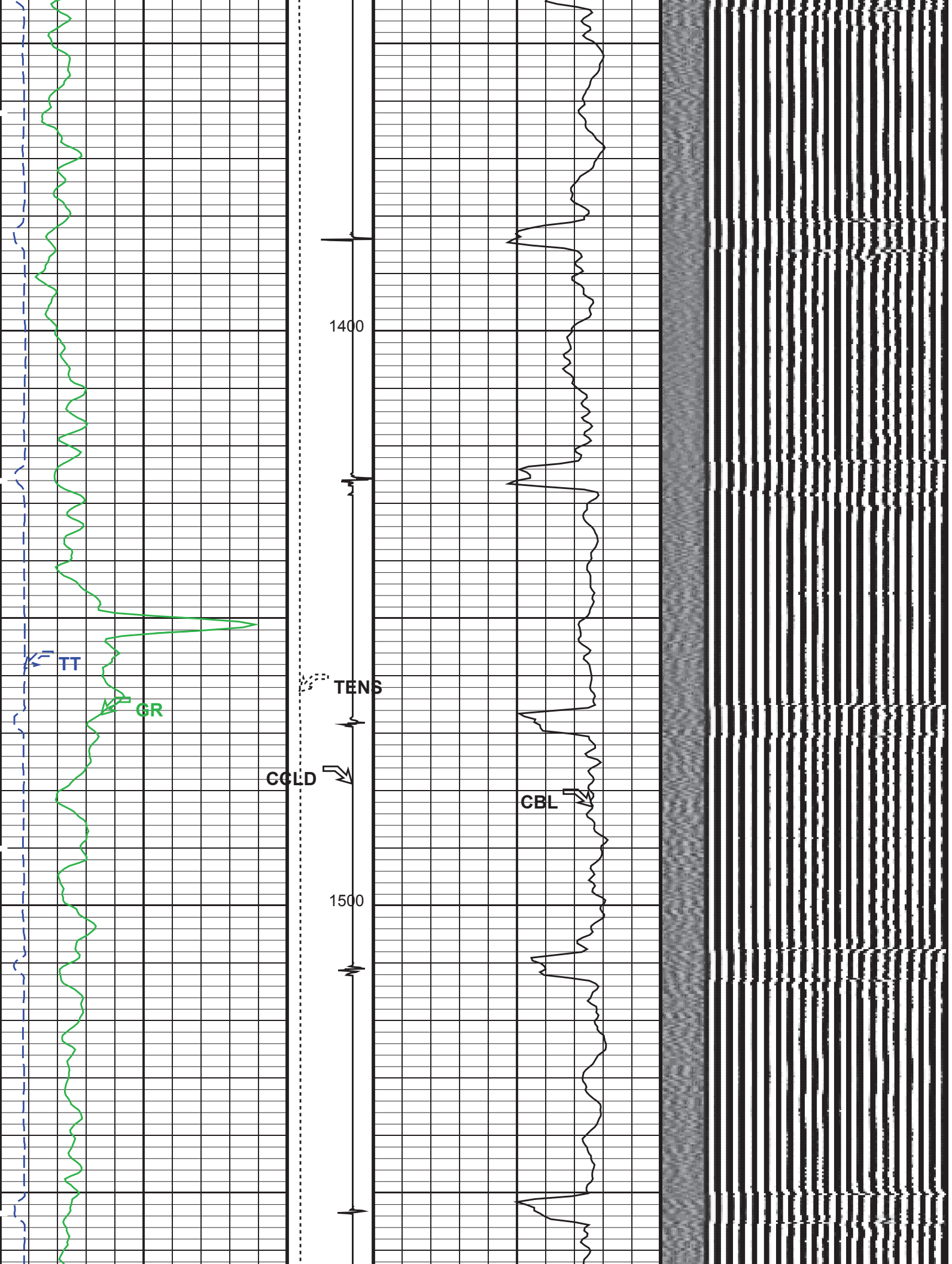

300
400
TT
TENS

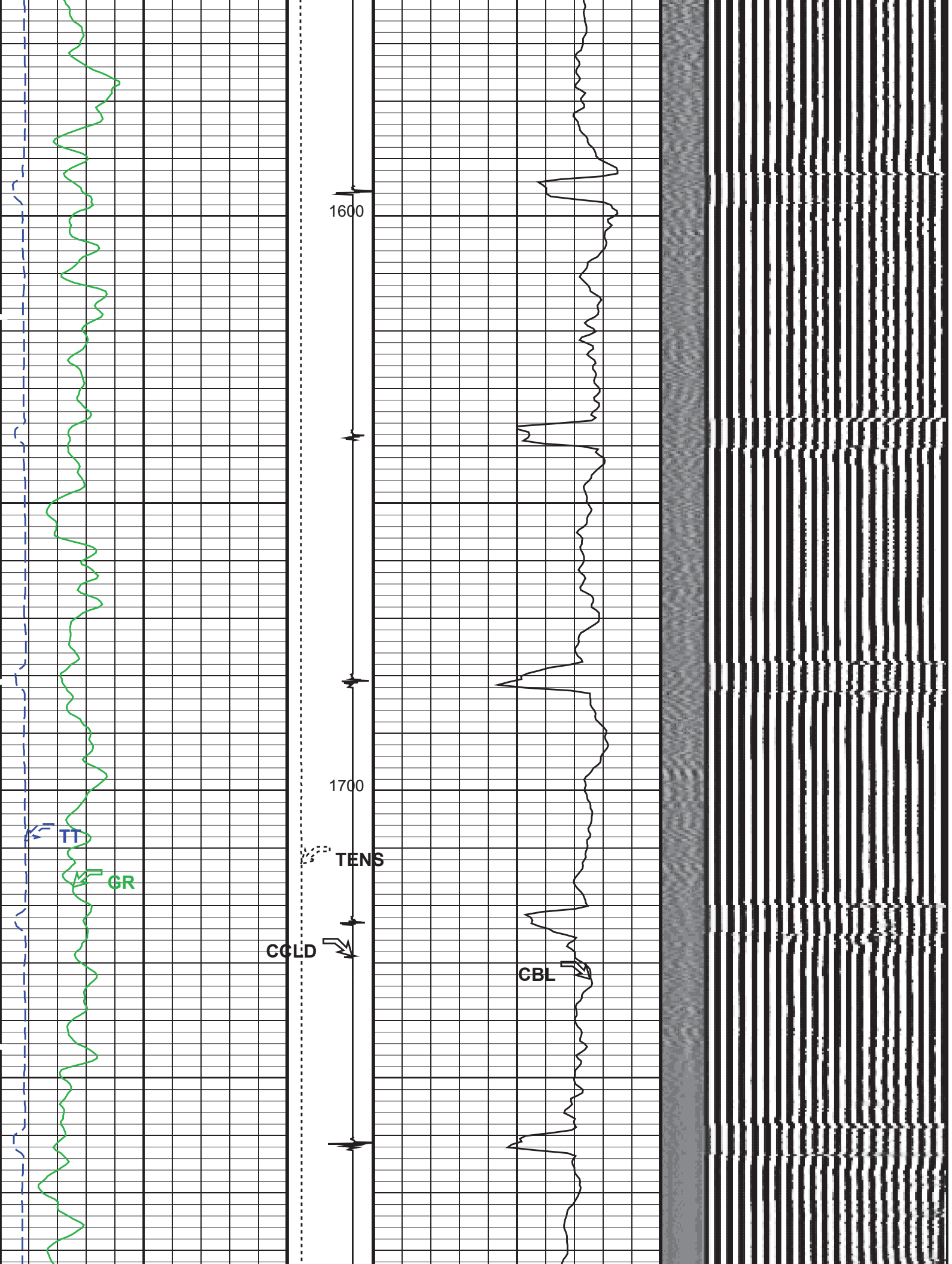

GR
CCLD
CBL
500
600

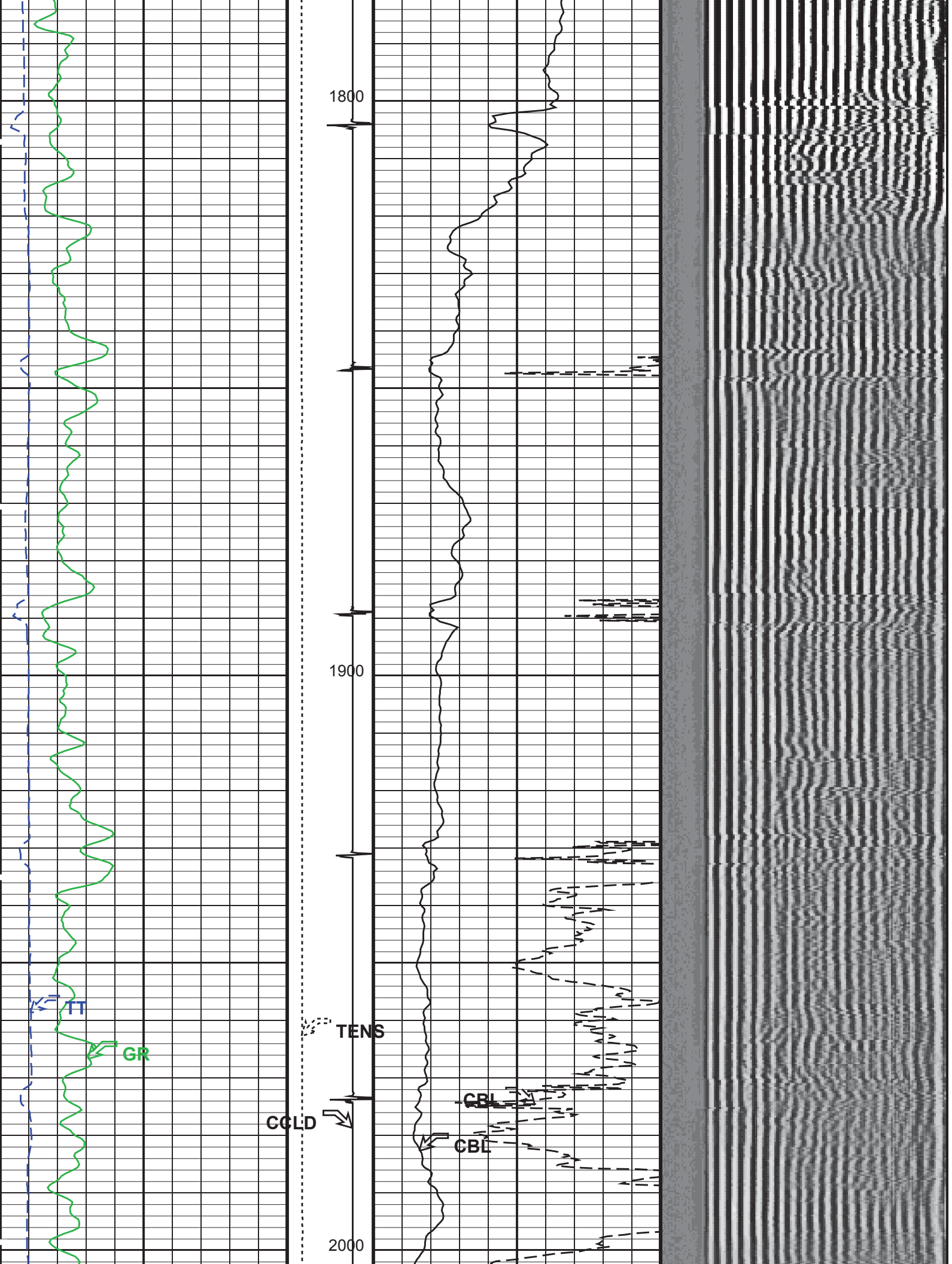

TT
GR
700
TENS
CCLD
CBL
800
900

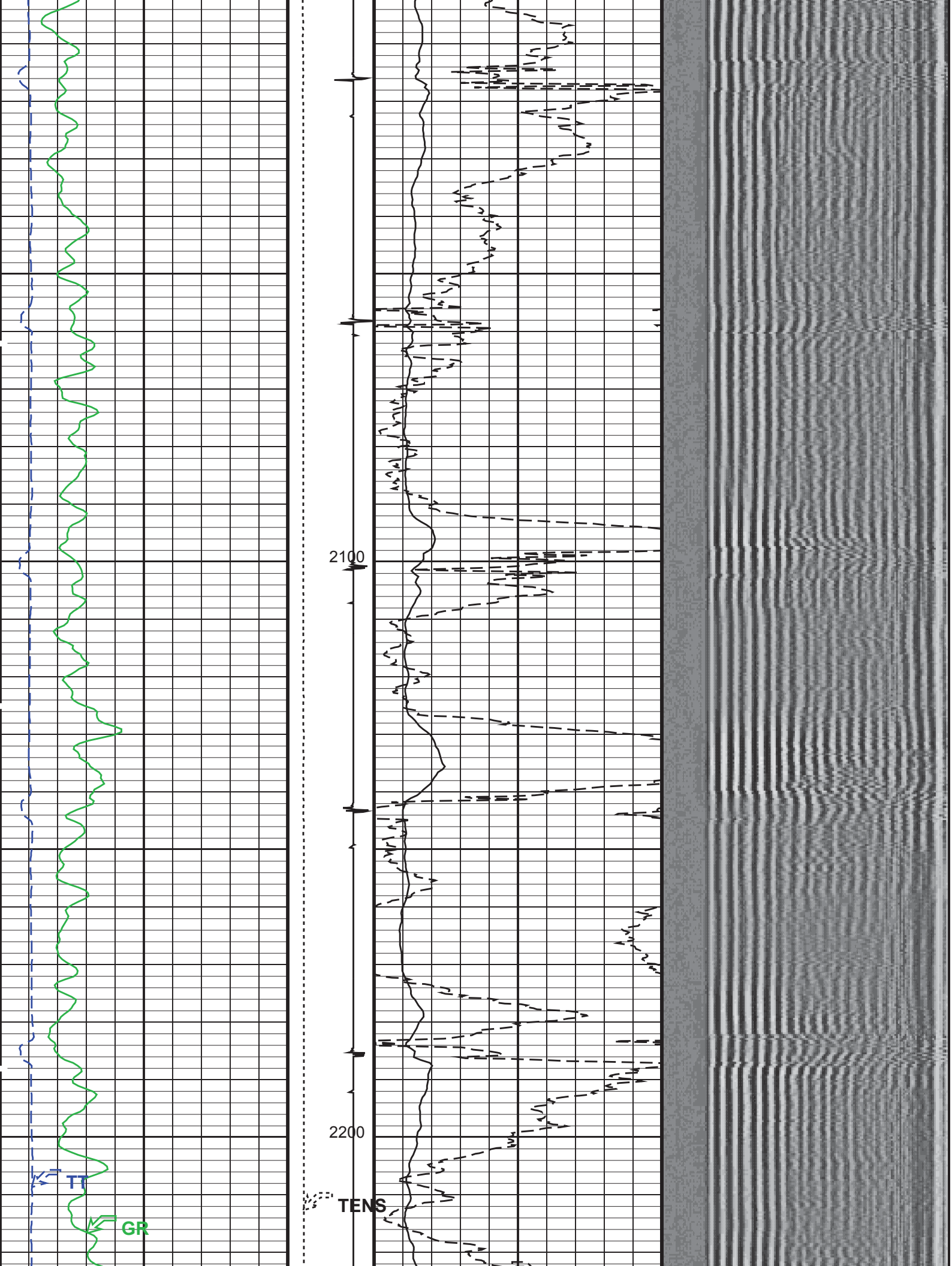

TT
GR
TENS
CCLD
CBL
1000
1100

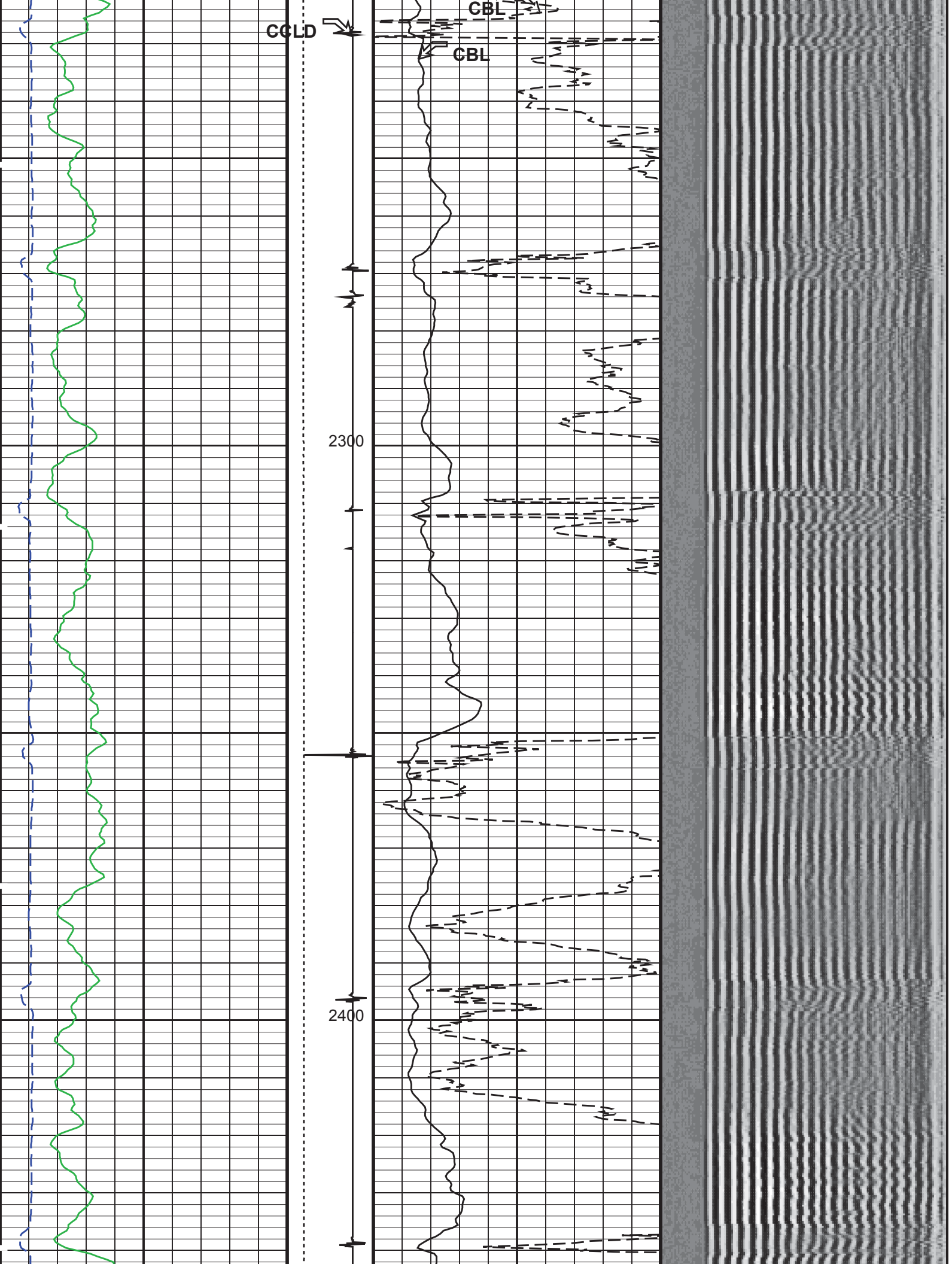

1200
TT
GR
TENS
CCLD
CBL
1300

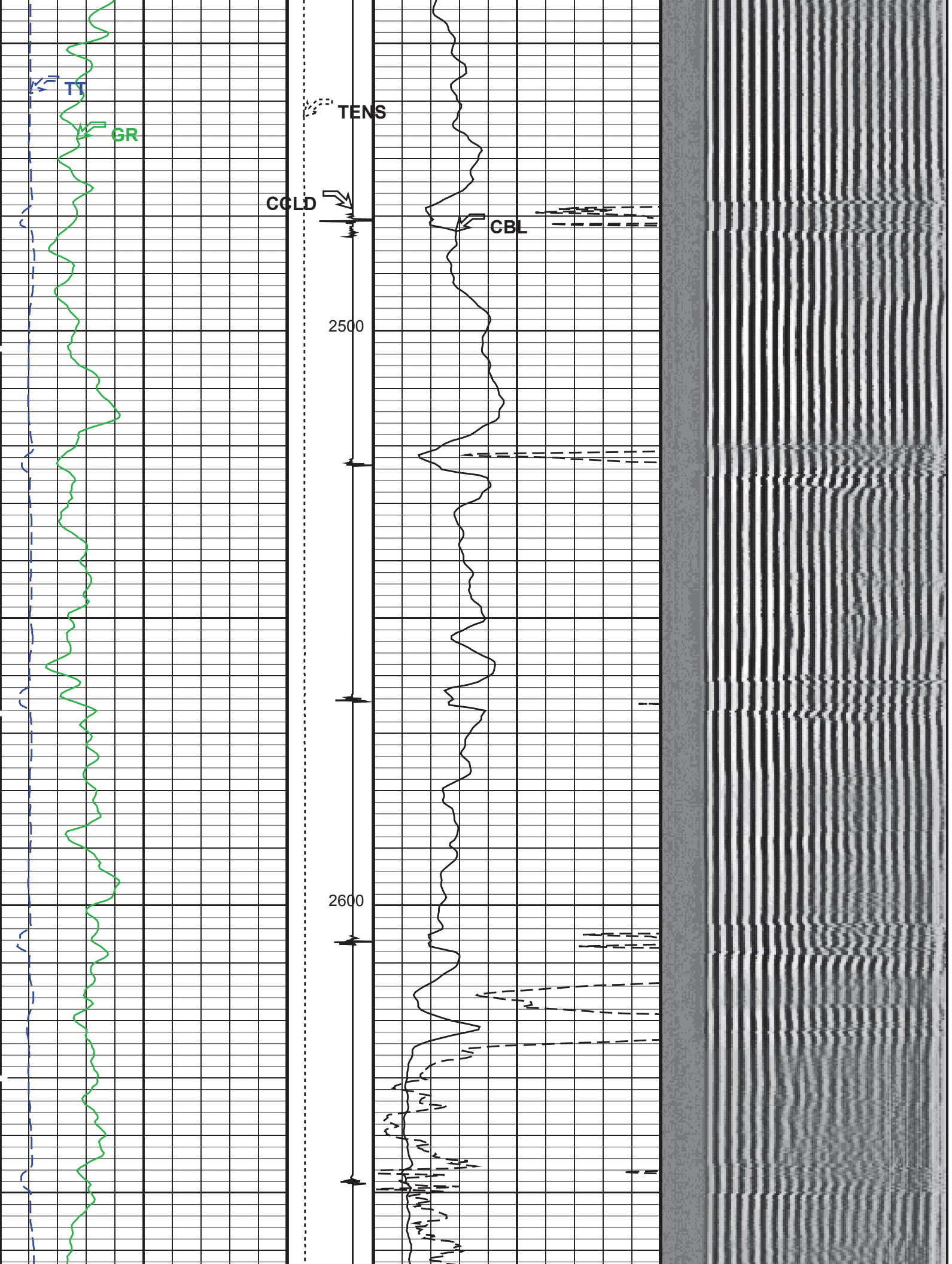

1400
TT
TENS
GR
CCLD
CBL
1500

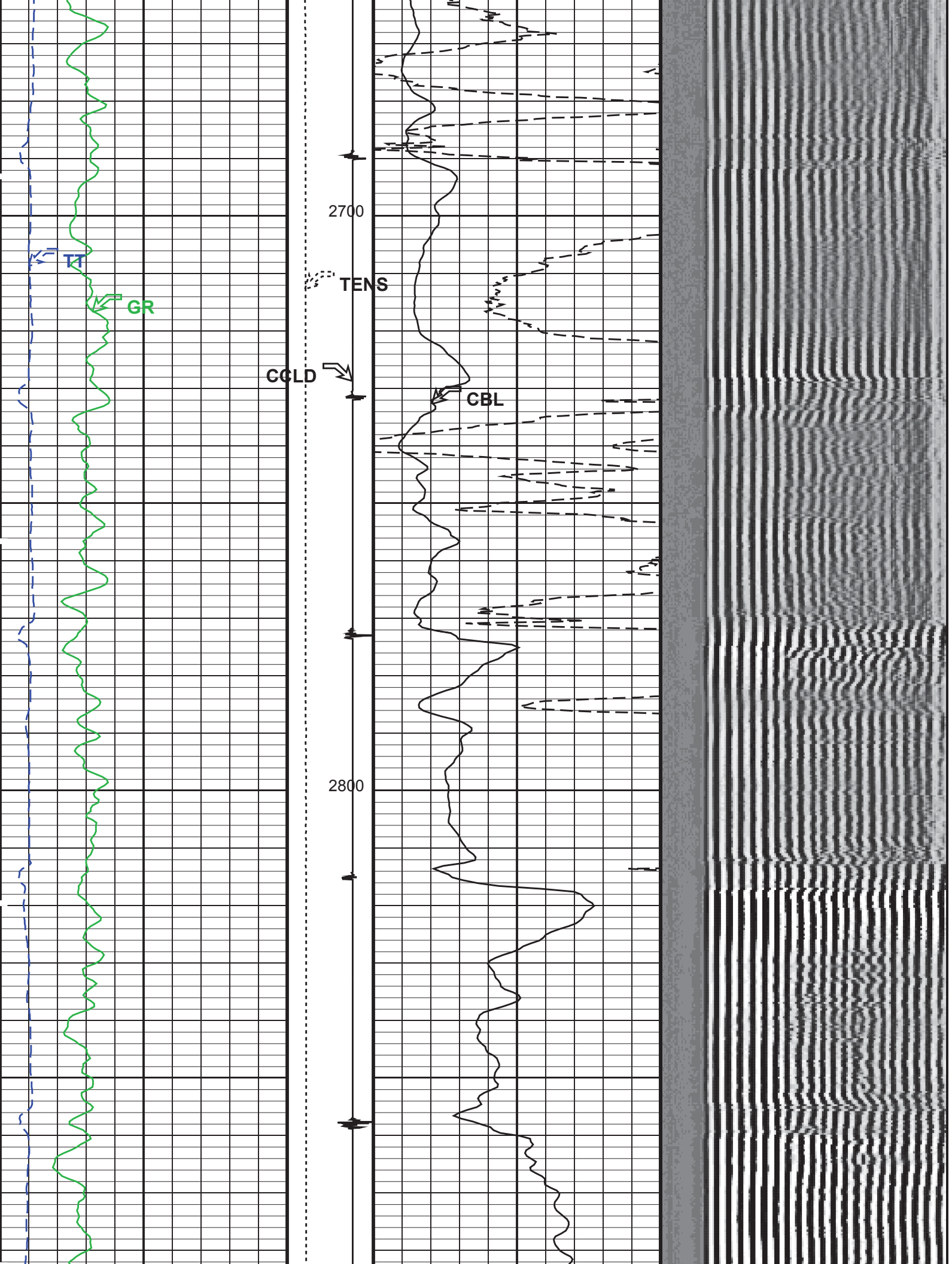

1600
1700
TT
GR
TENS
CCLD
CBL

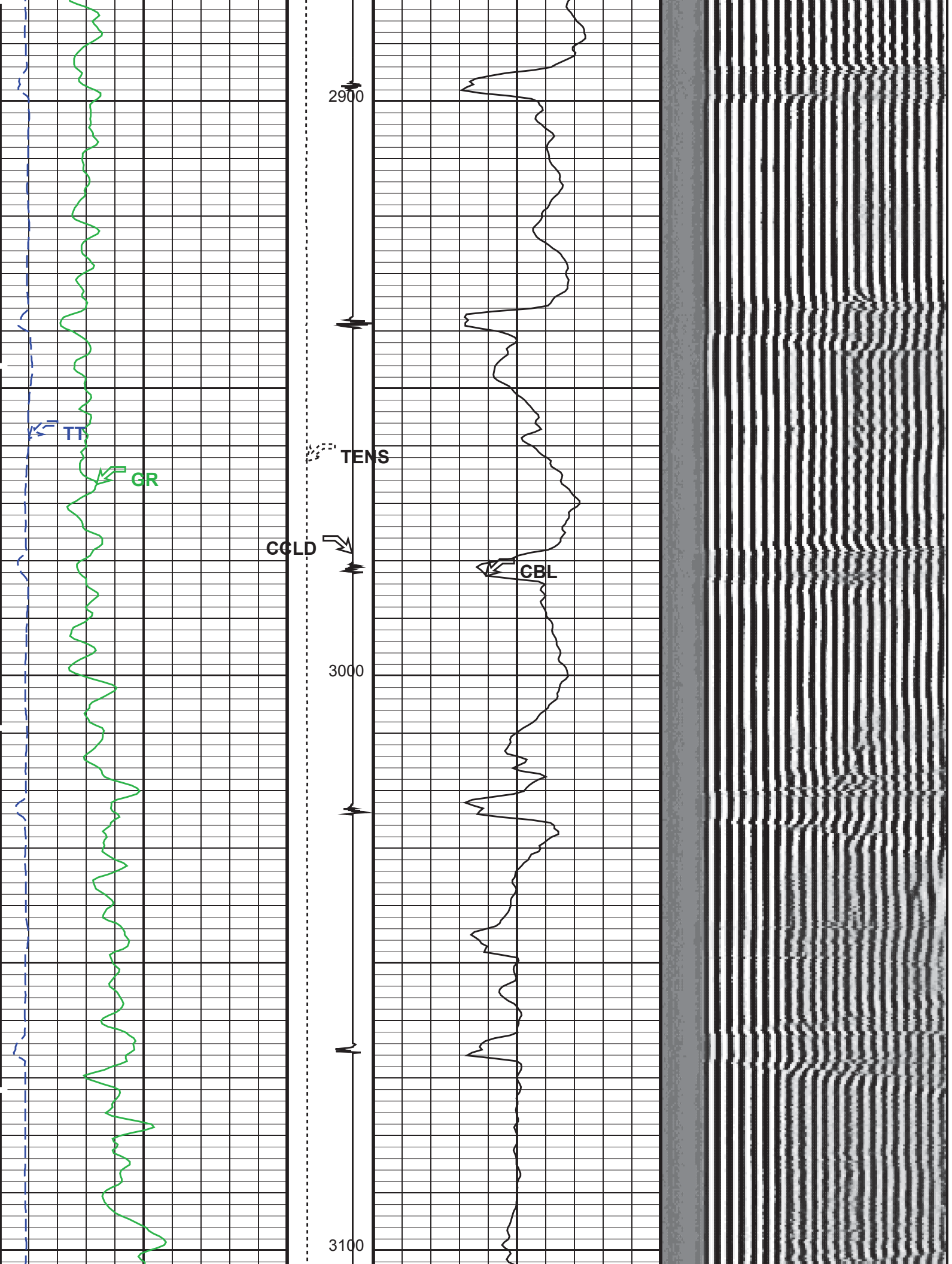

1800
1900
2000
TT
GR
TENS
CCLD
CBL
CBL

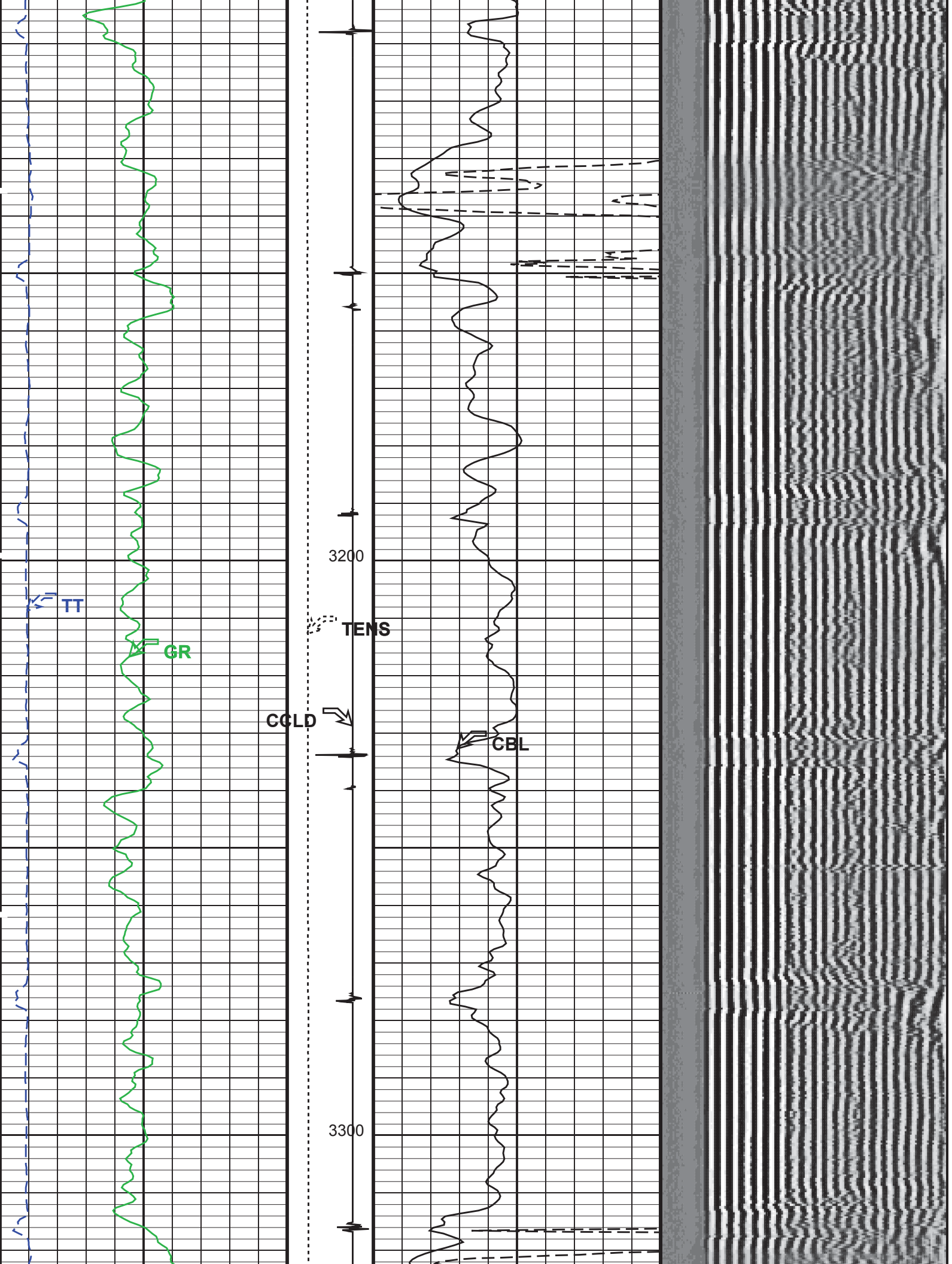

2100
2200
TT
GR
TENS

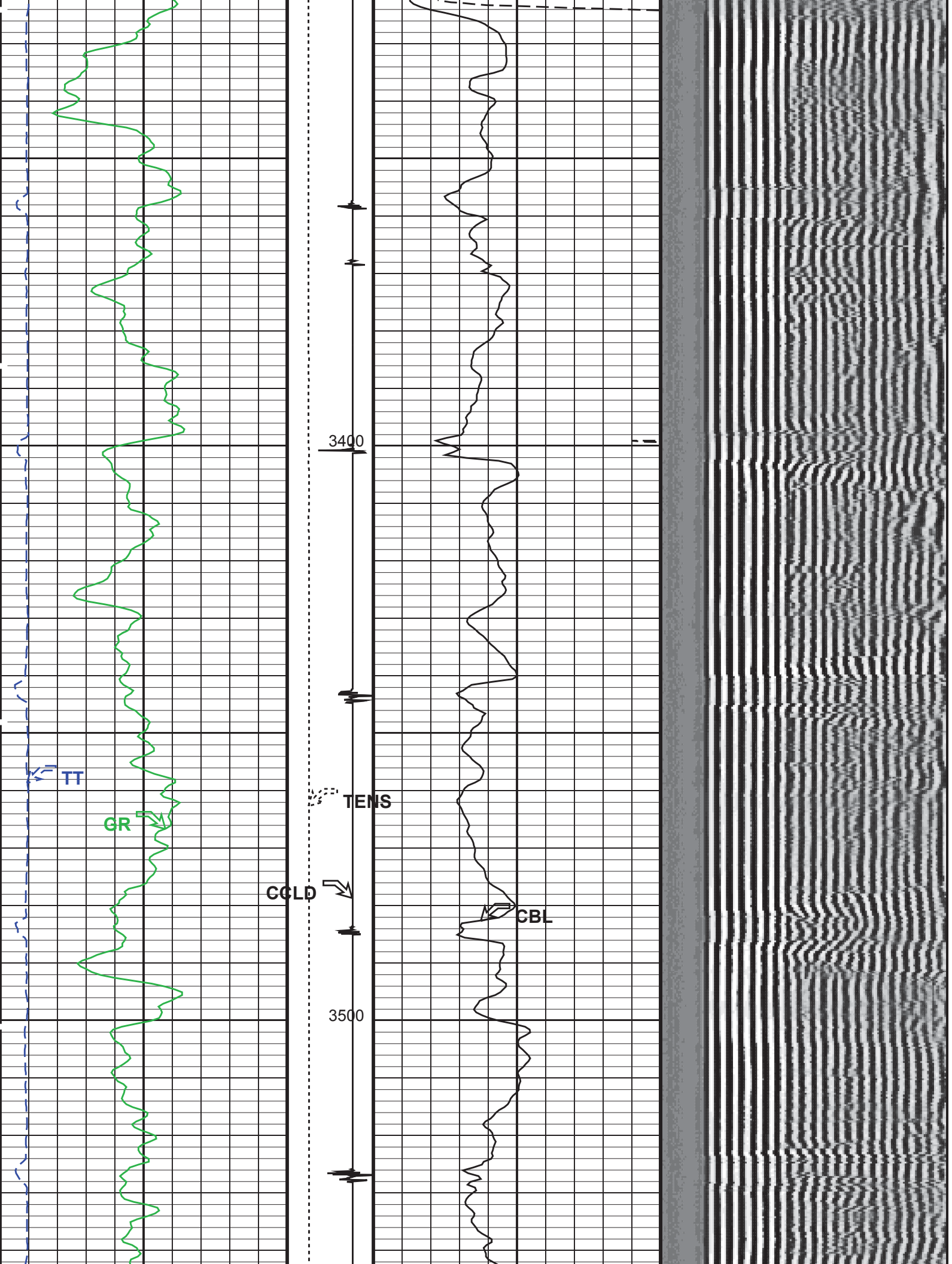

CBL
CCLD
CBL
2300
2400

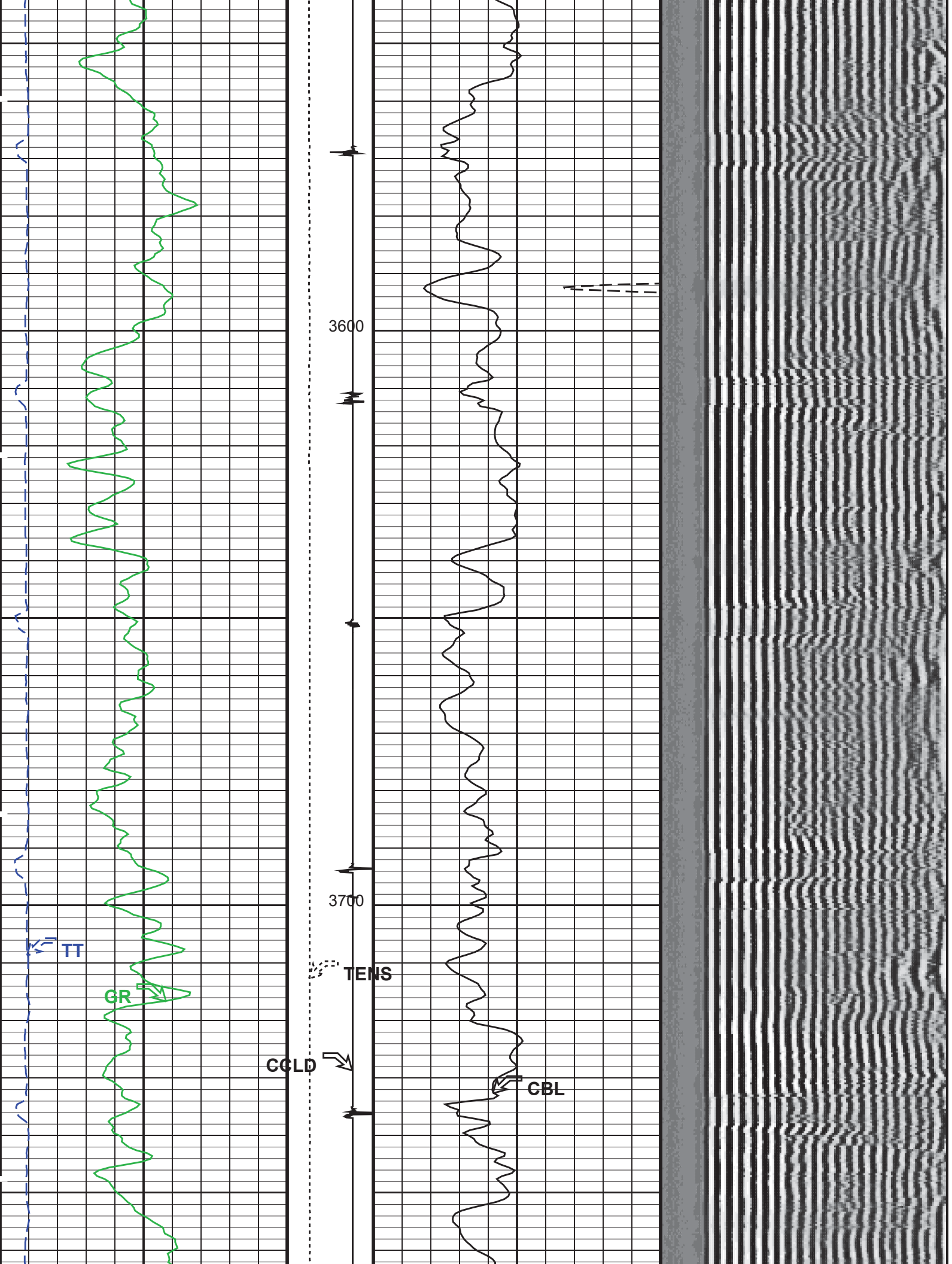

TT
GR
TENS
CCLD
CBL
2500
2600

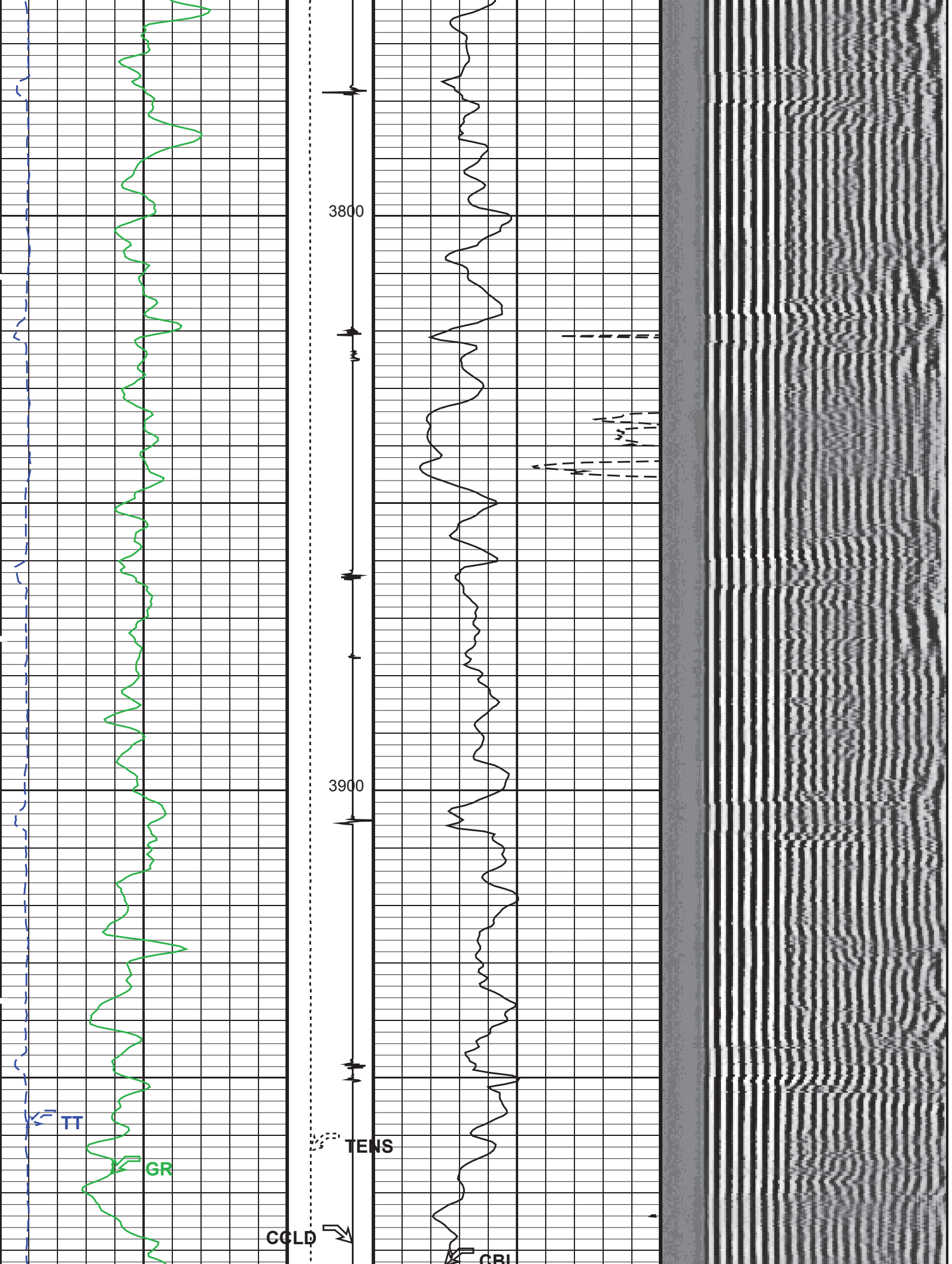

TT
GR
2700
TENS
CCLD
CBL
2800

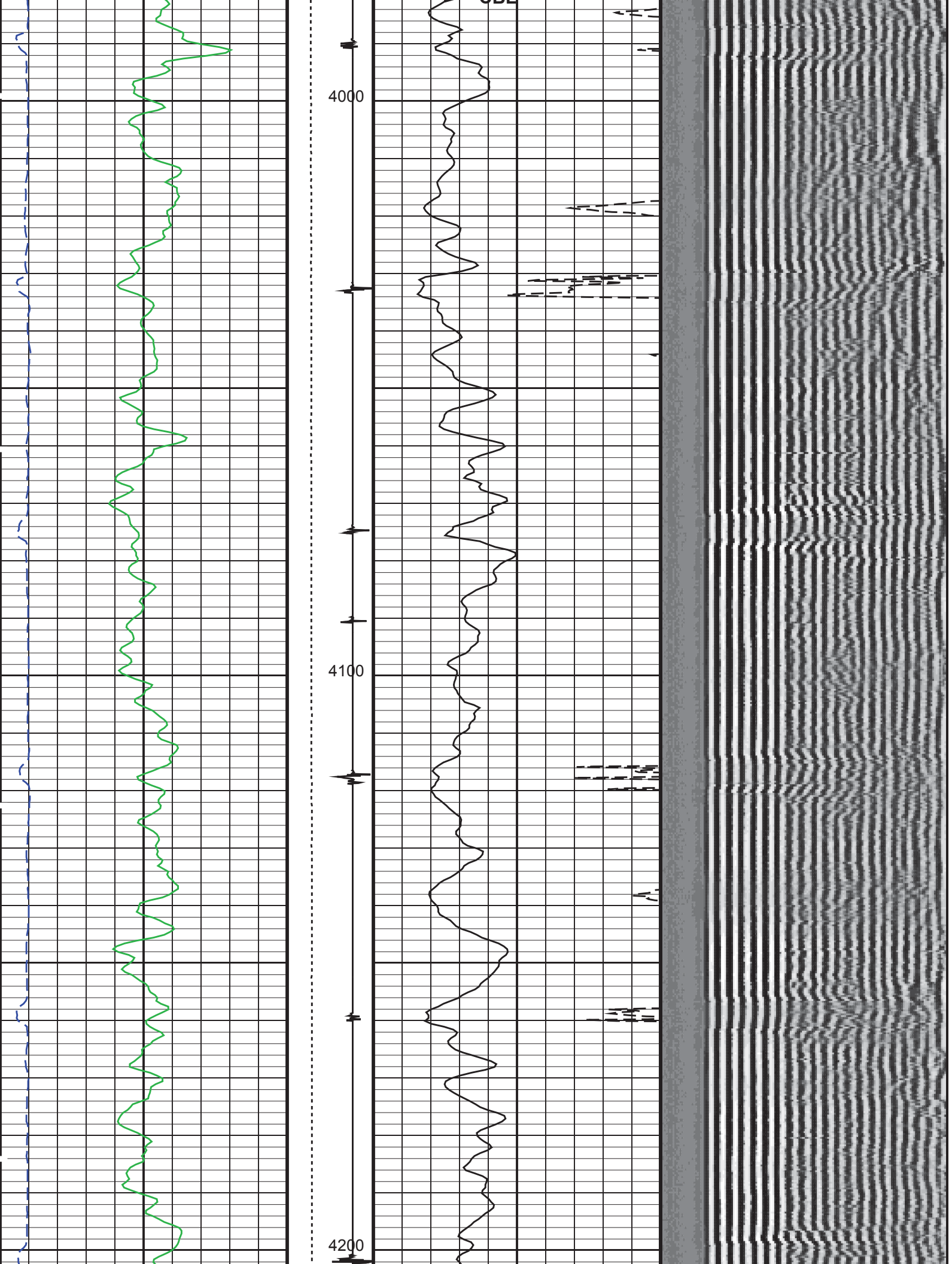

TT
GR
TENS
CCLD
CBL
2900
3000
3100


TT
GR
3200
TENS
CCLD
CBL
3300


3400
TT
GR
TENS
CCLD
CBL
3500


3600
3700
TT
GR
TENS
CCLD
CBL


3800
3900
TT
GR
TENS
CCLD
CBL


4000
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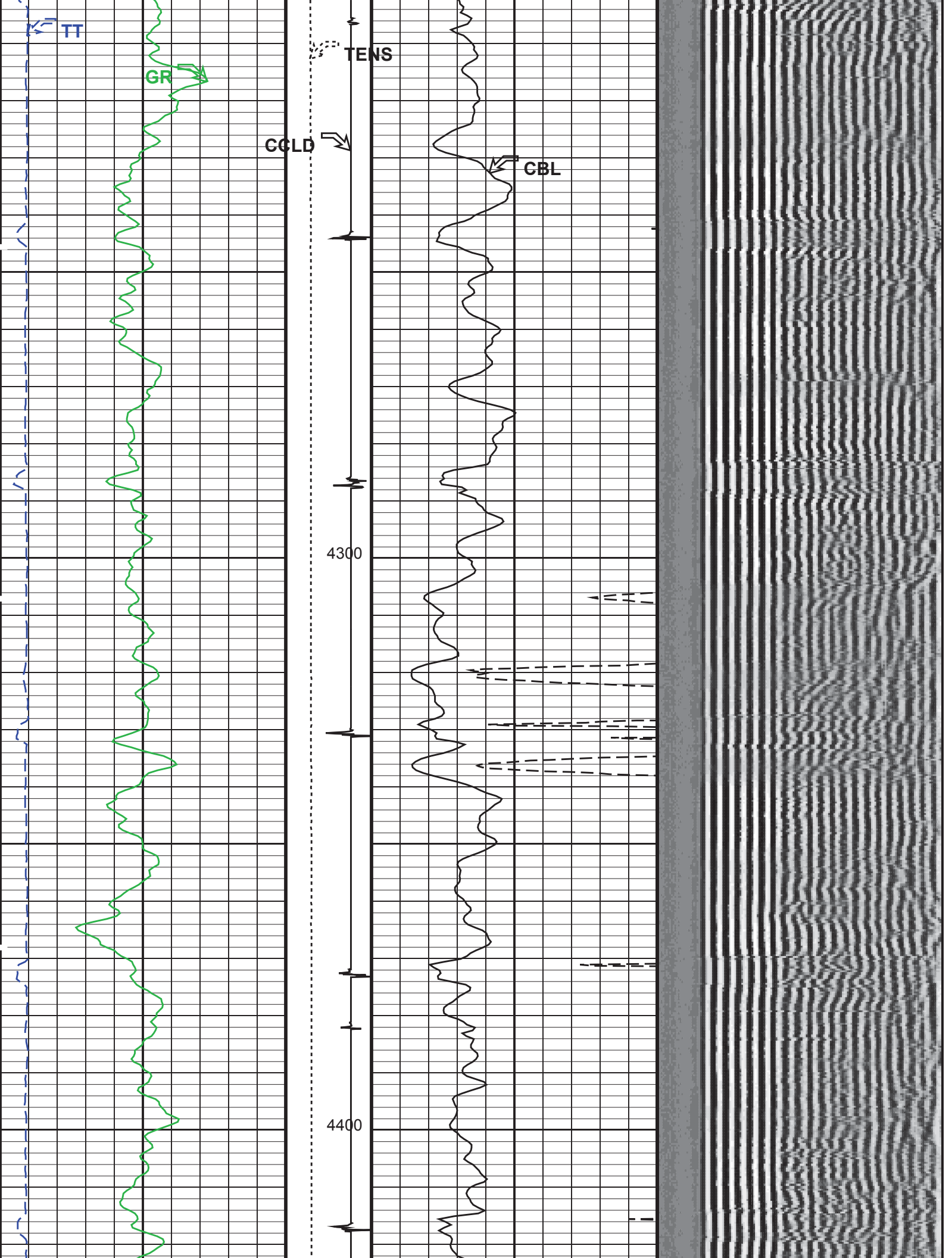
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GR
TENS
CCLD
CBL
4300
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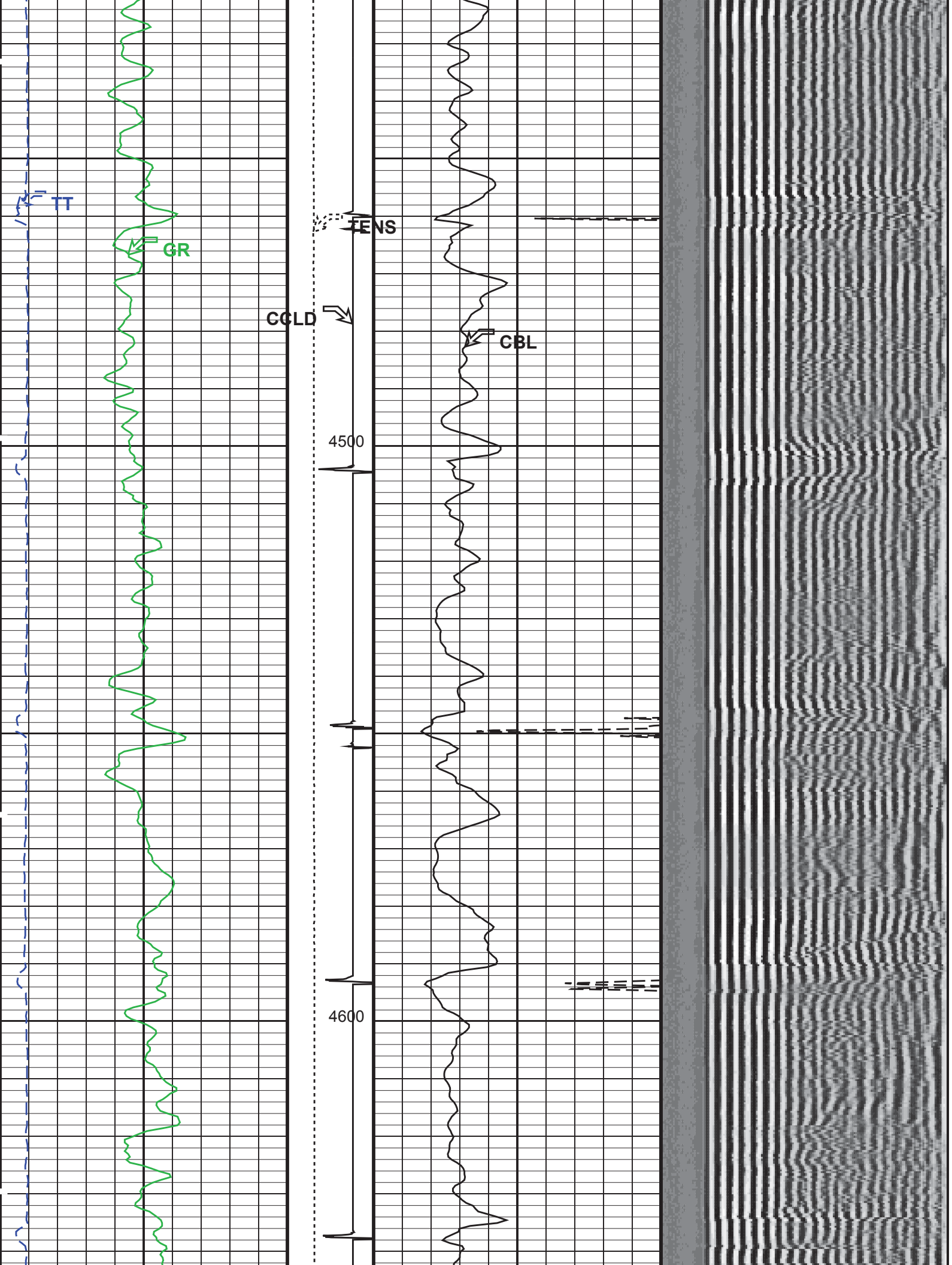
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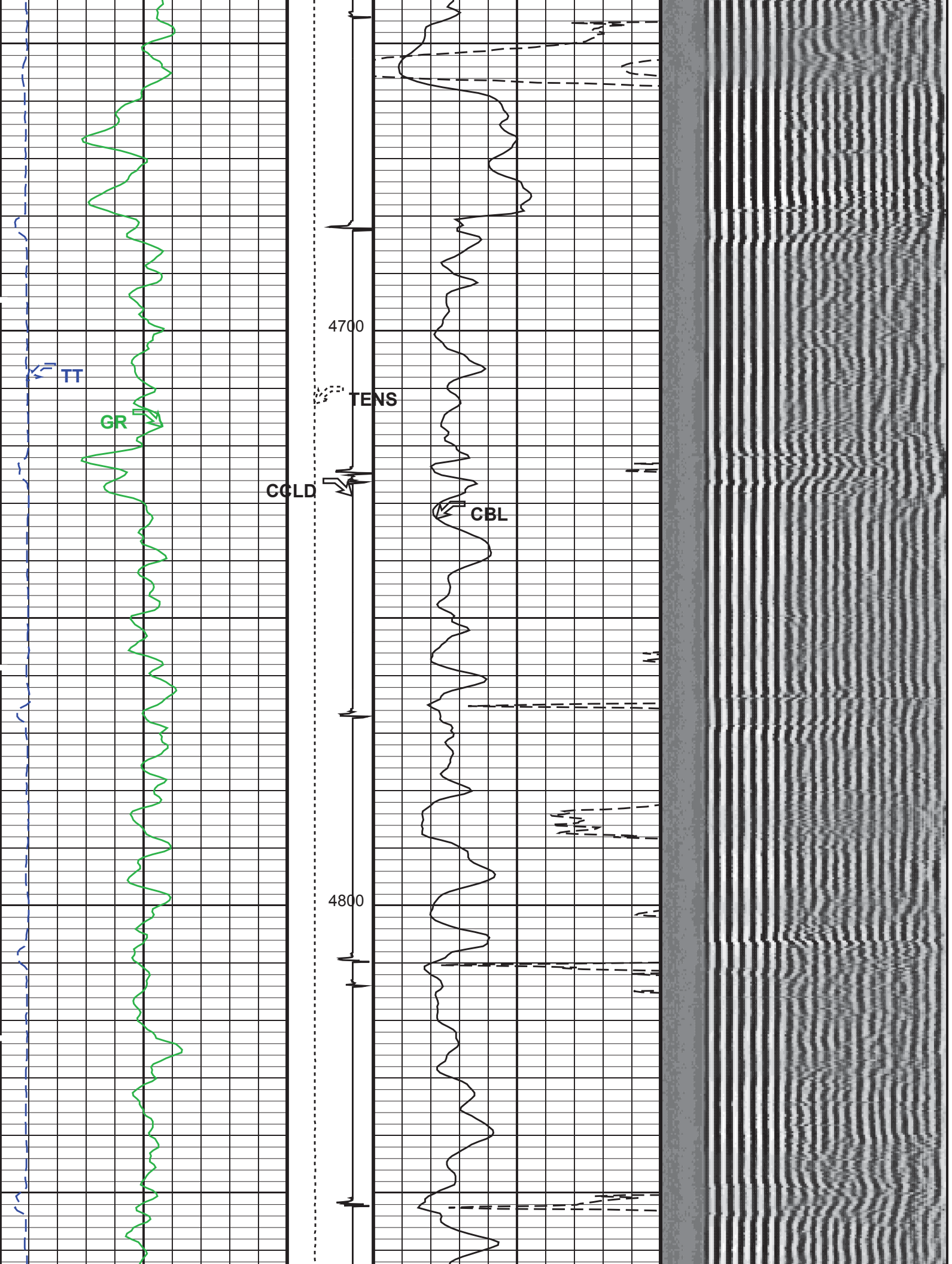
GR
TENS
CCLD
CBL
4500
4600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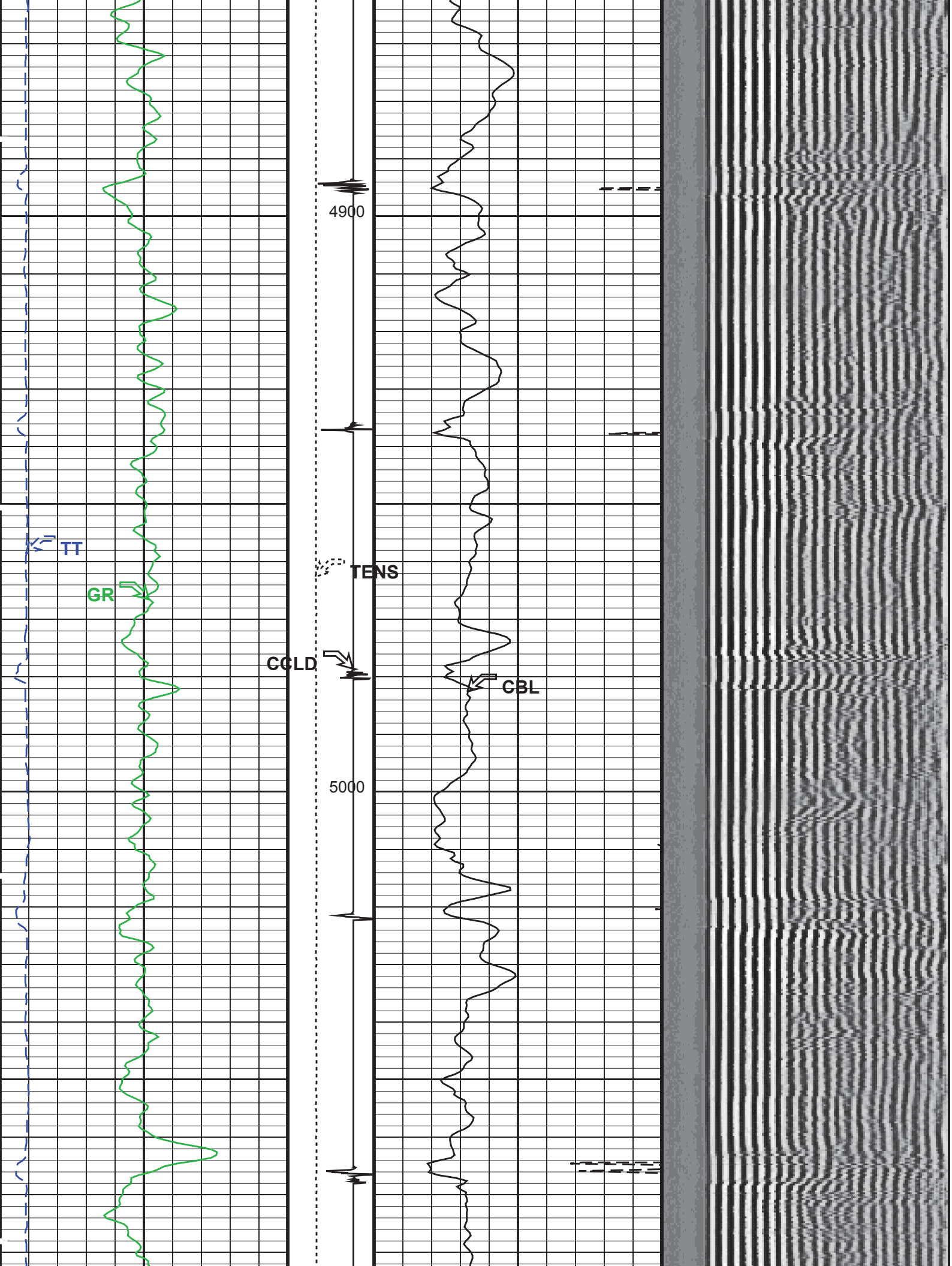
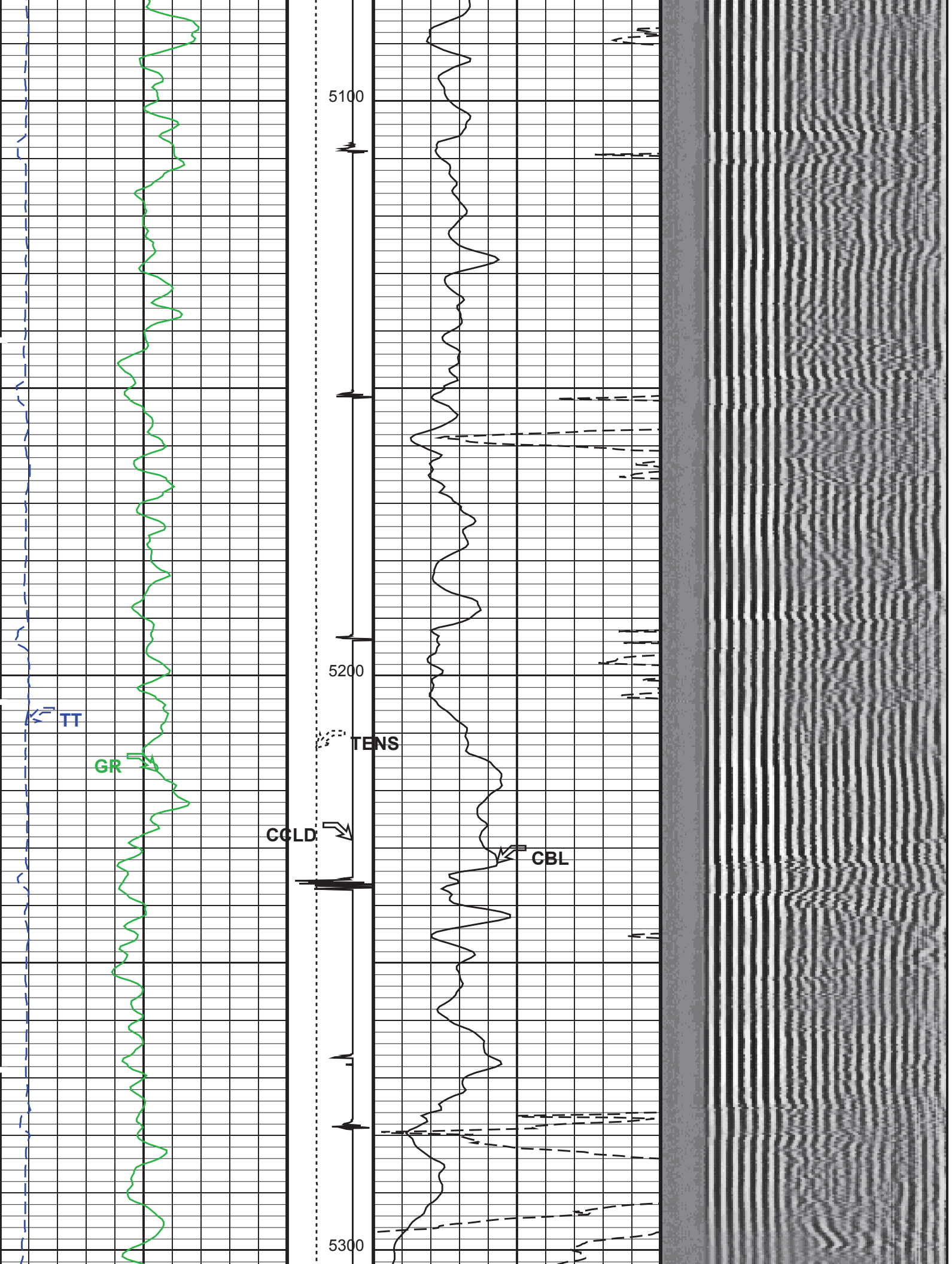
GR
4700
TENS
CCLD
CBL
4800


4900
TT
TENS
GR
CCLD
CBL
5000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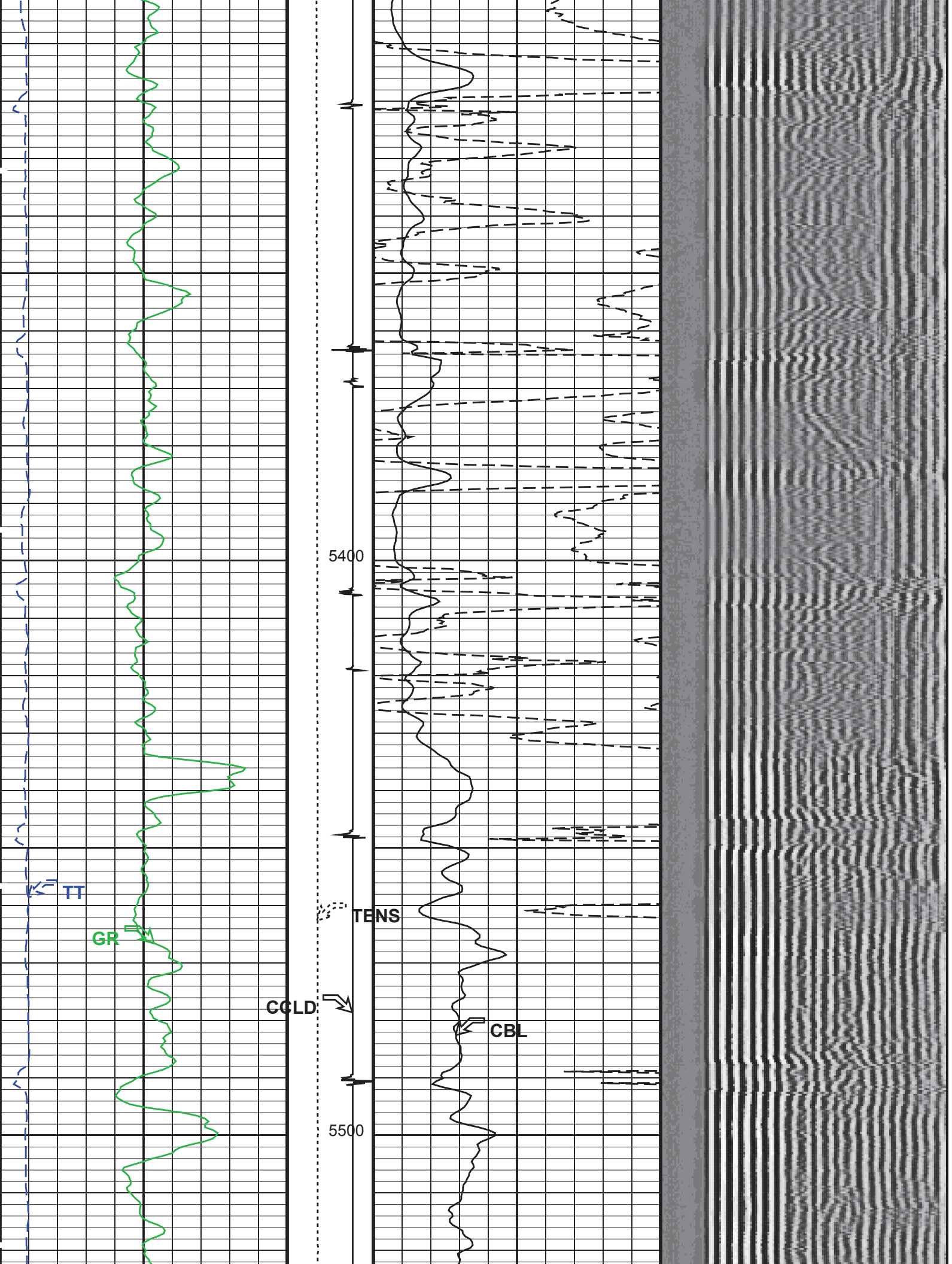
5200
5300
TT
GR
TENS
CCLD
CBL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GR
TENS
CCLD
CBL
5400
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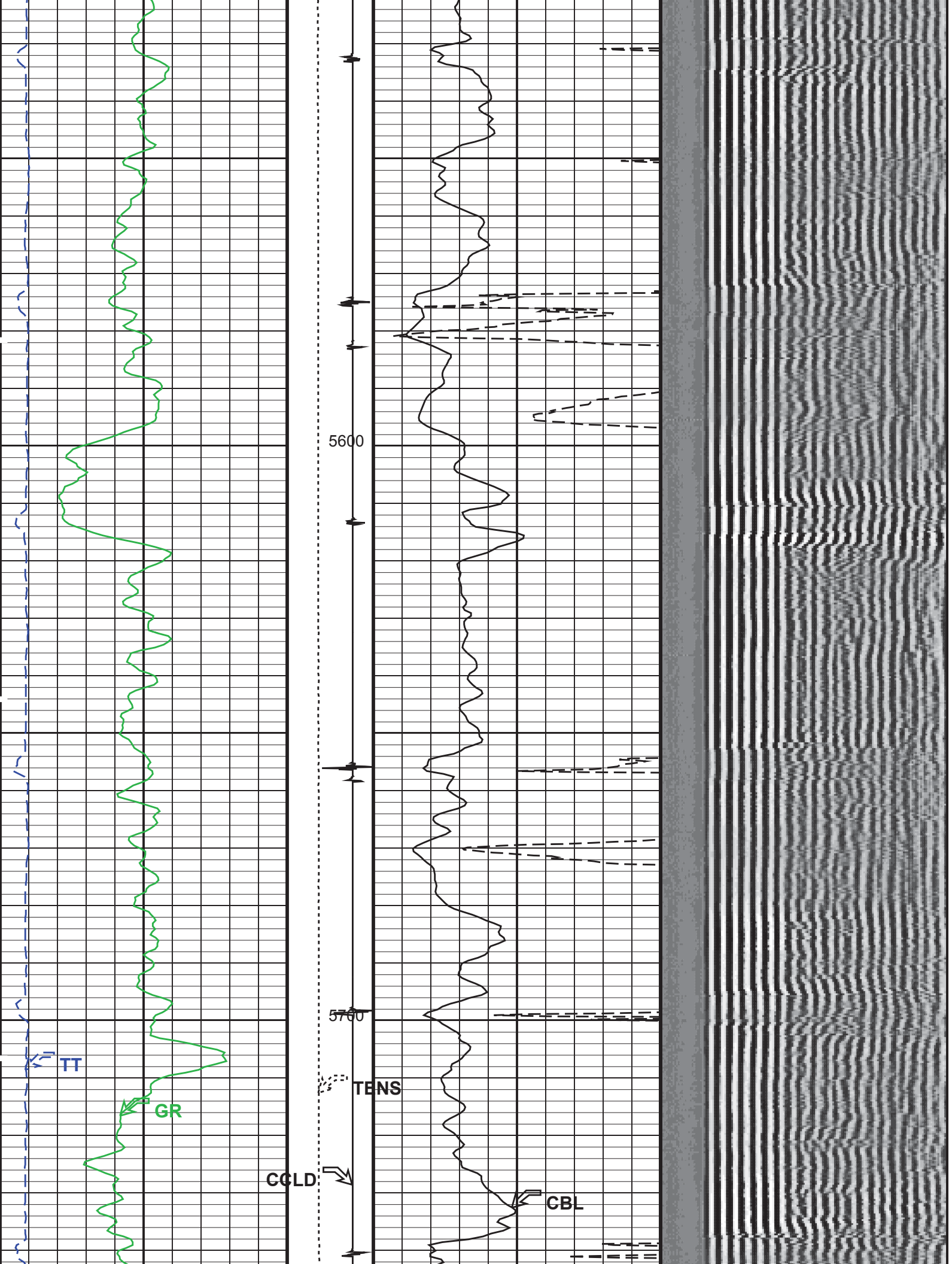
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GR
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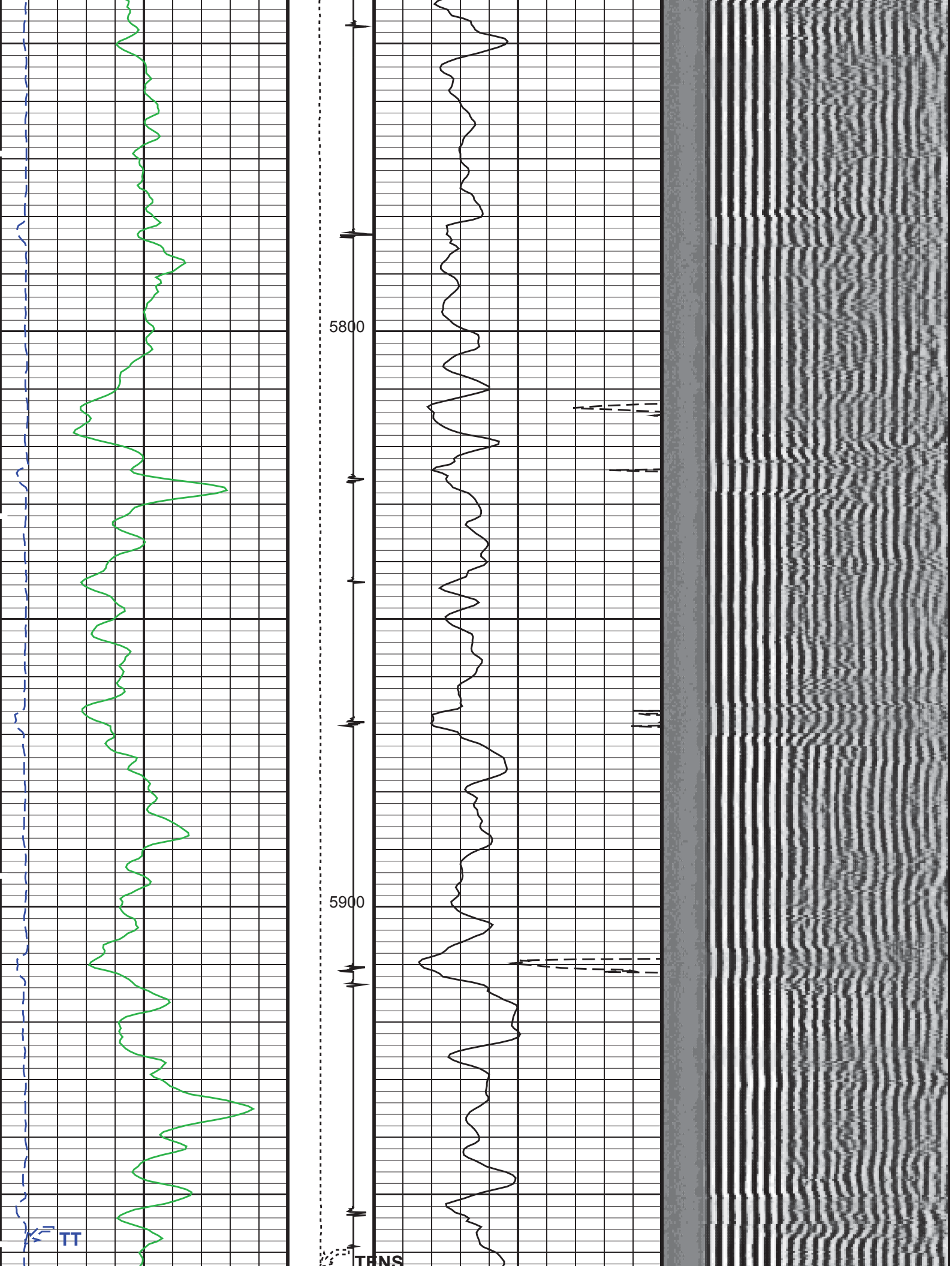
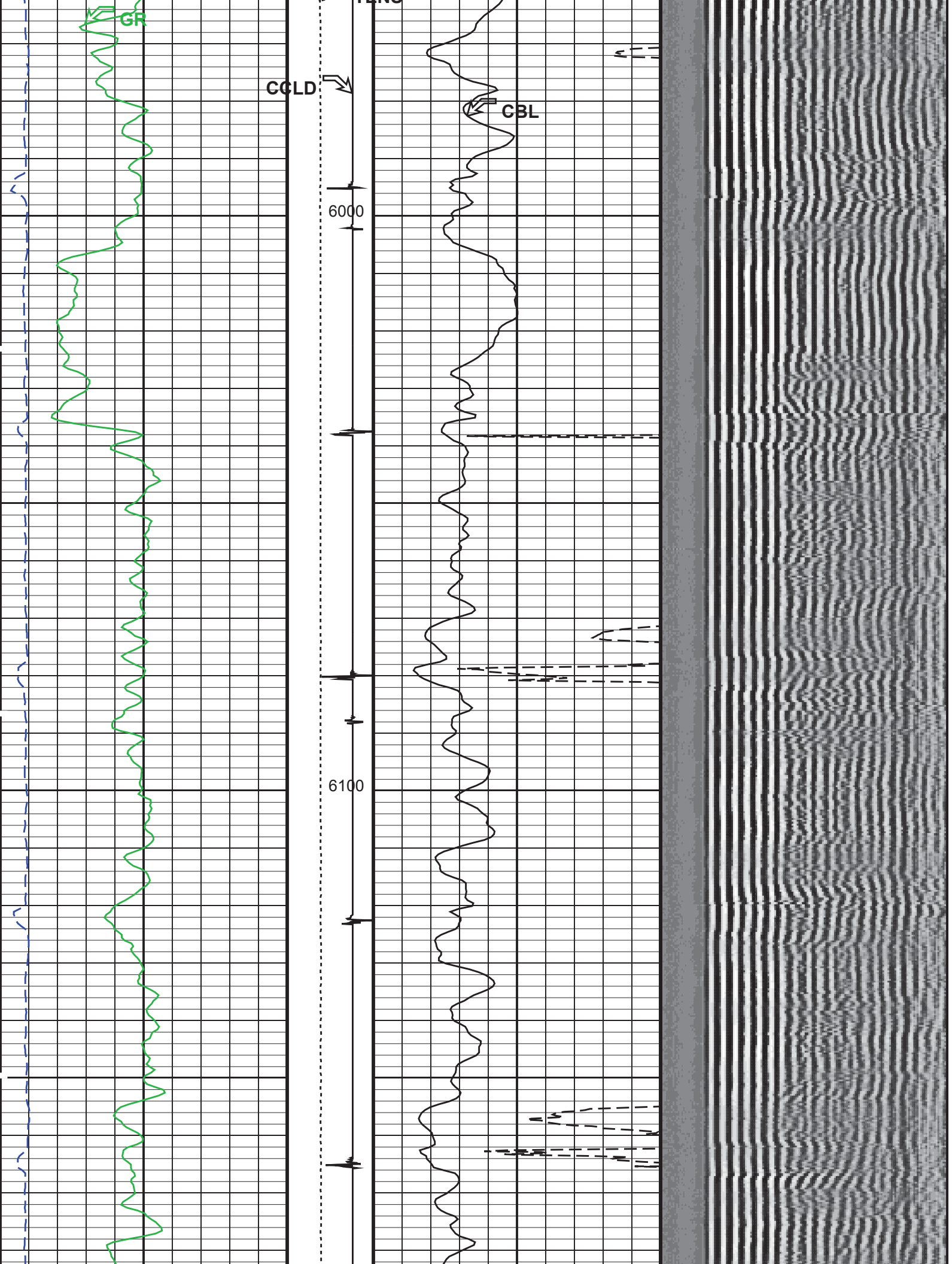
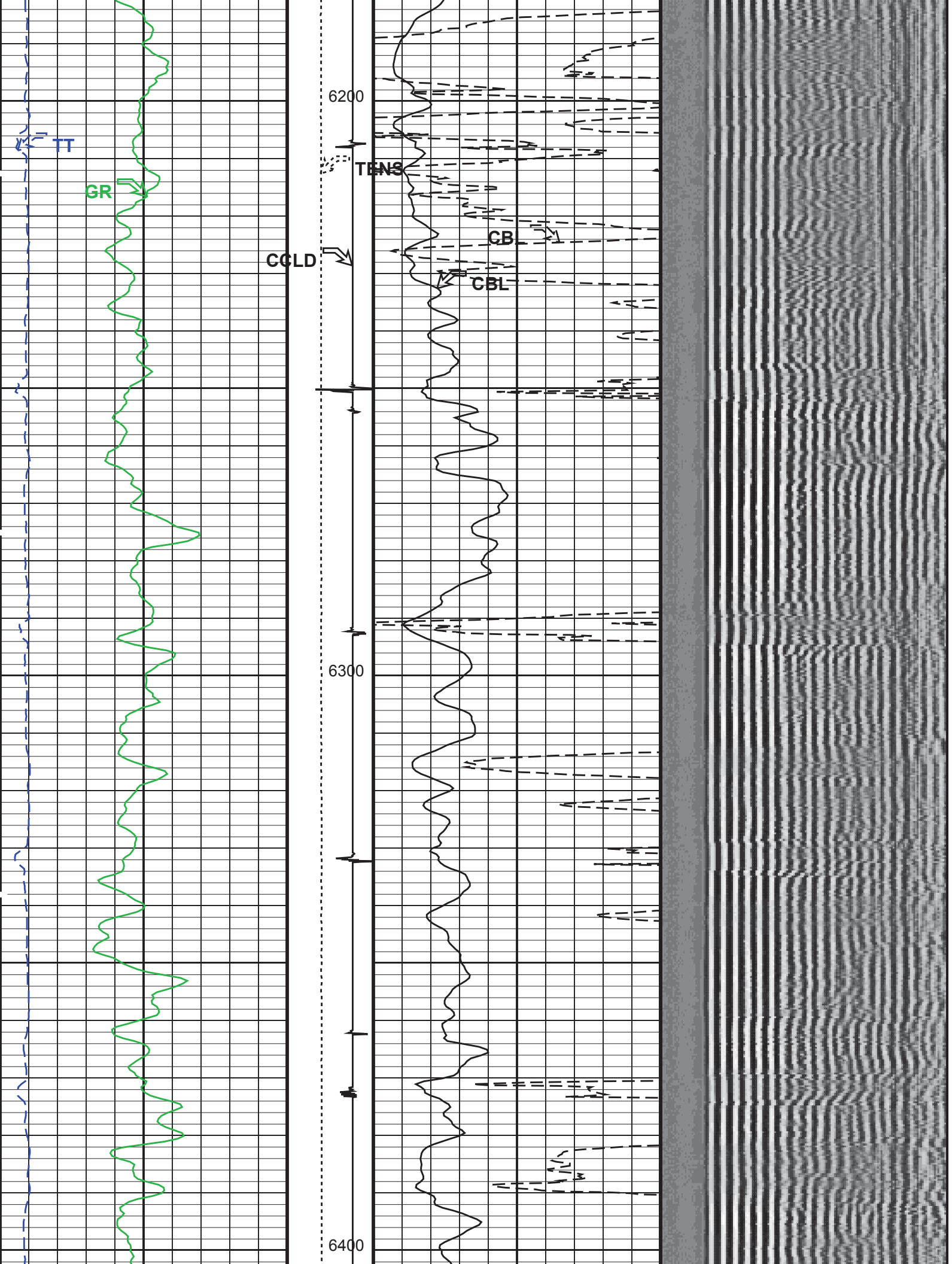
CBL


5800
5900
TT
TRNS


GR
CCLD
CBL
6000
6100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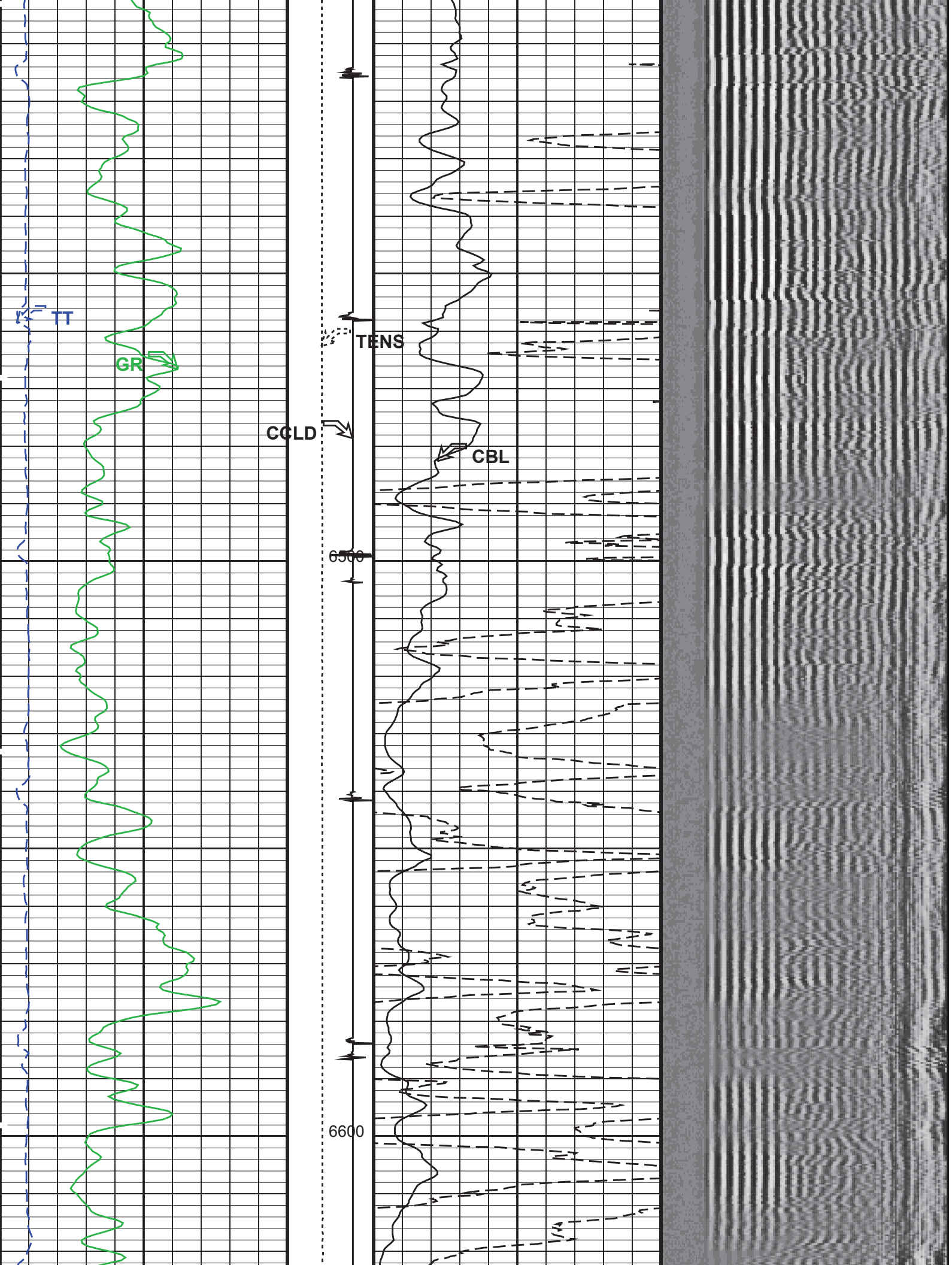
GR
6200
TENS
CB
CCLD
CBL
6300
6400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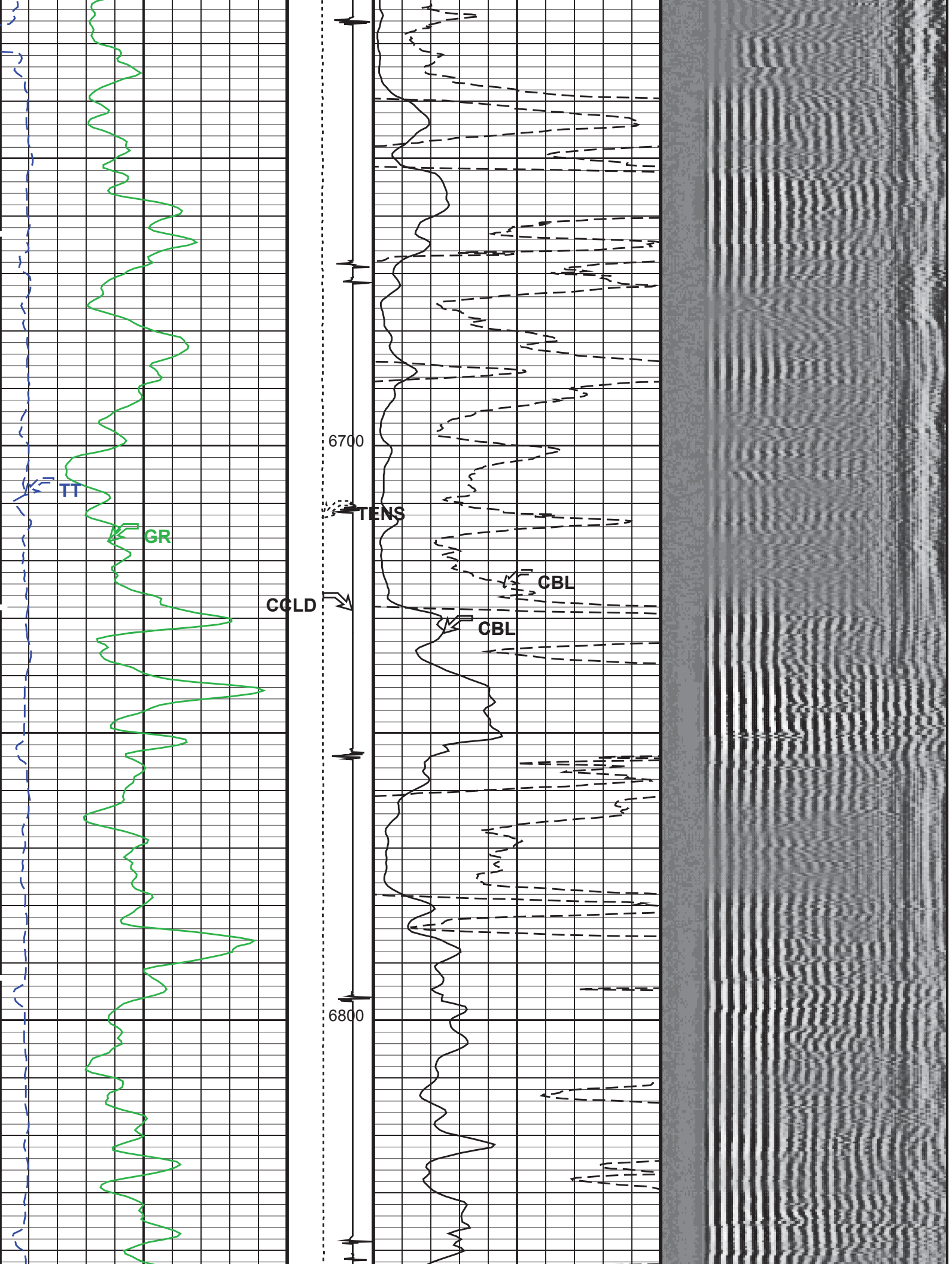
GR
TENS
CCLD
CBL
6500
6600


TT
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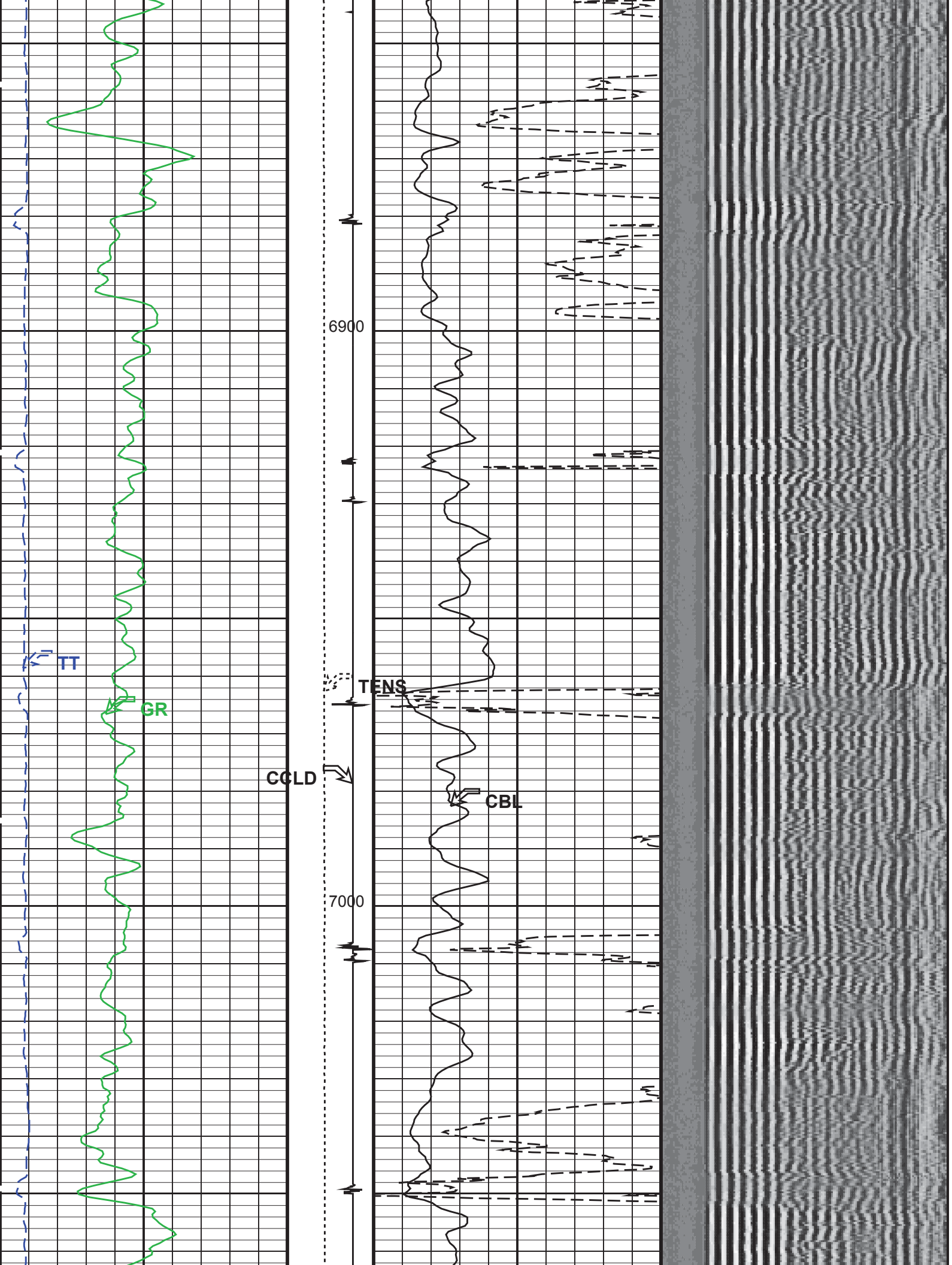
6700
TENS
CBL
CCLD
CBL
6800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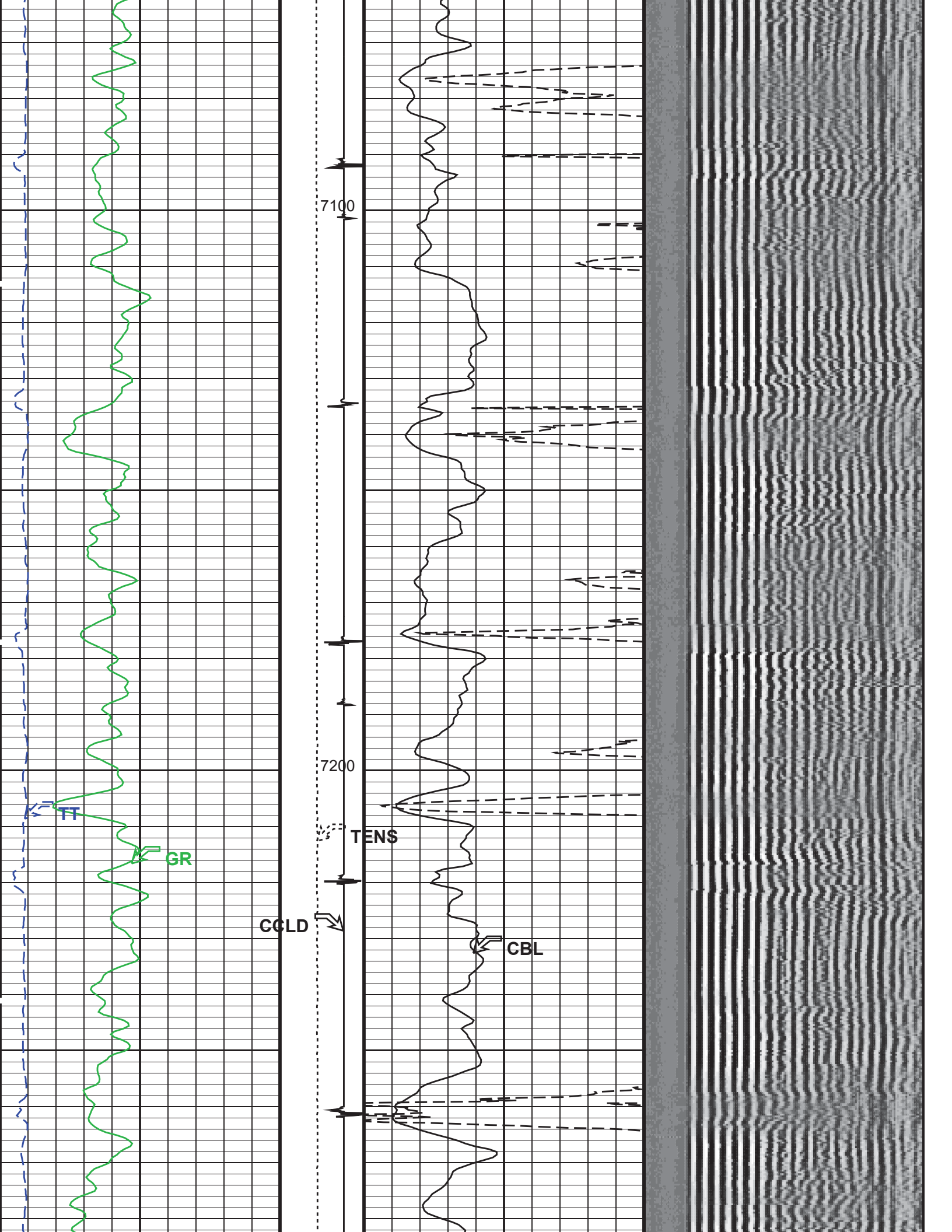
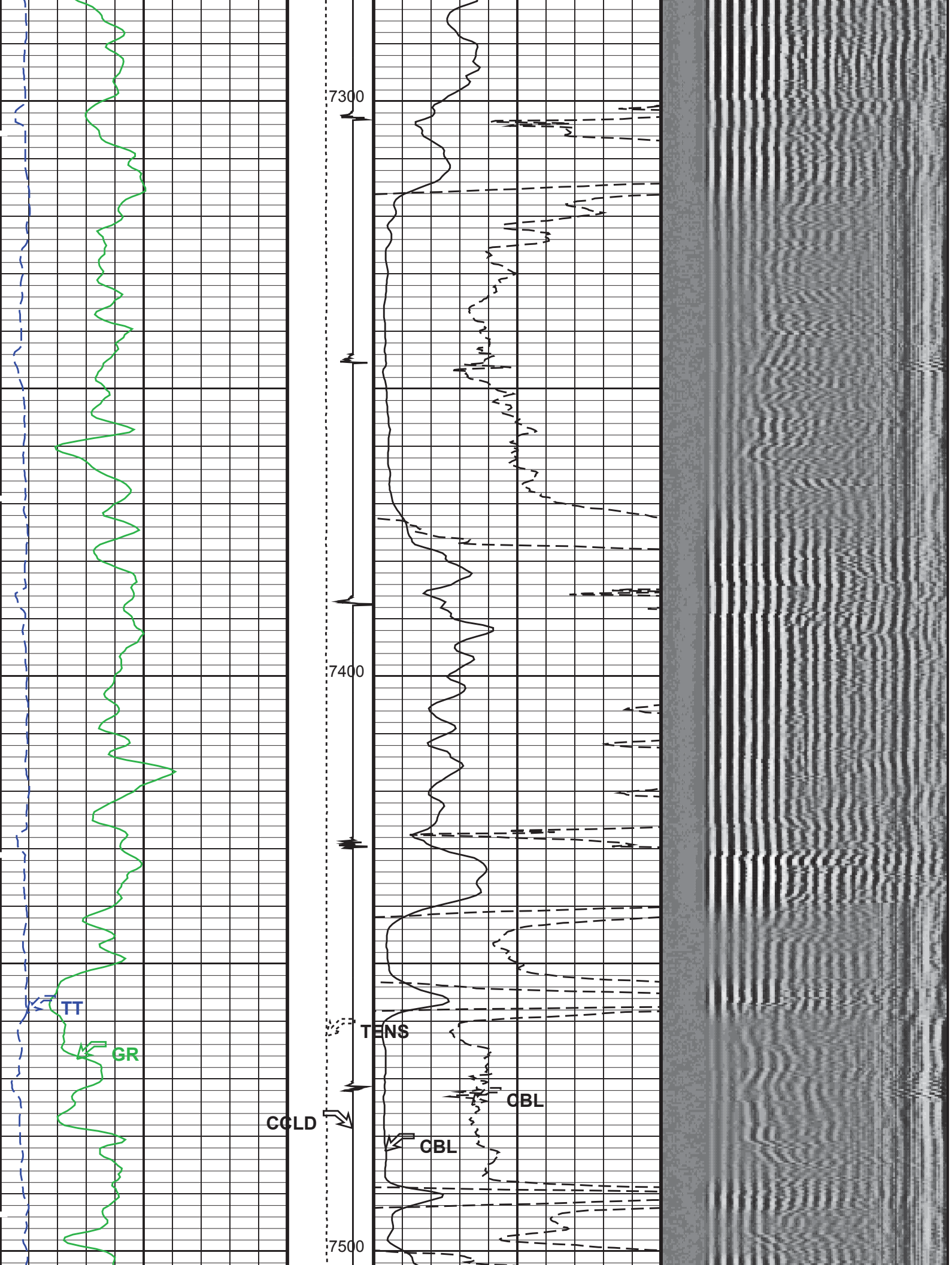
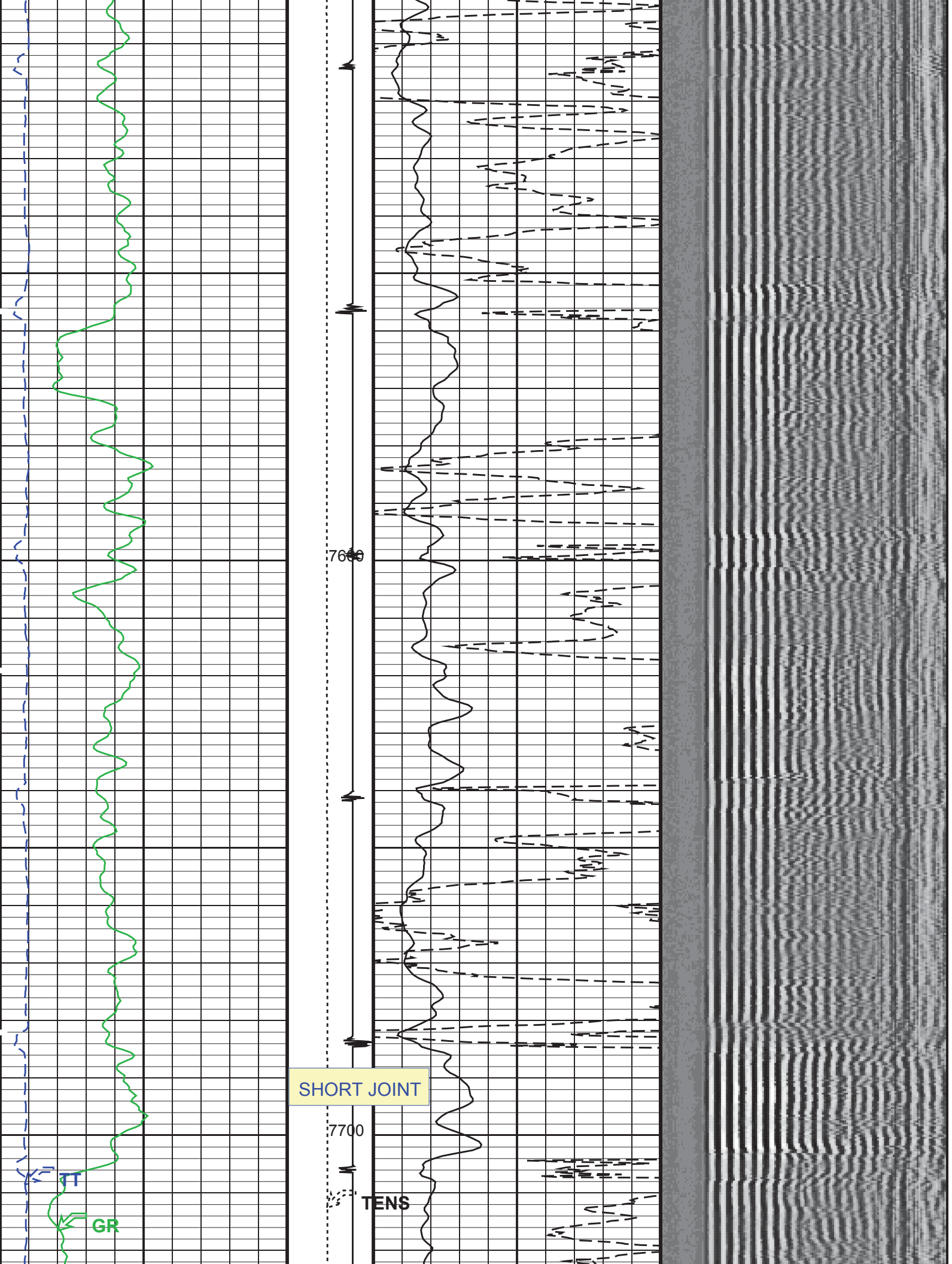
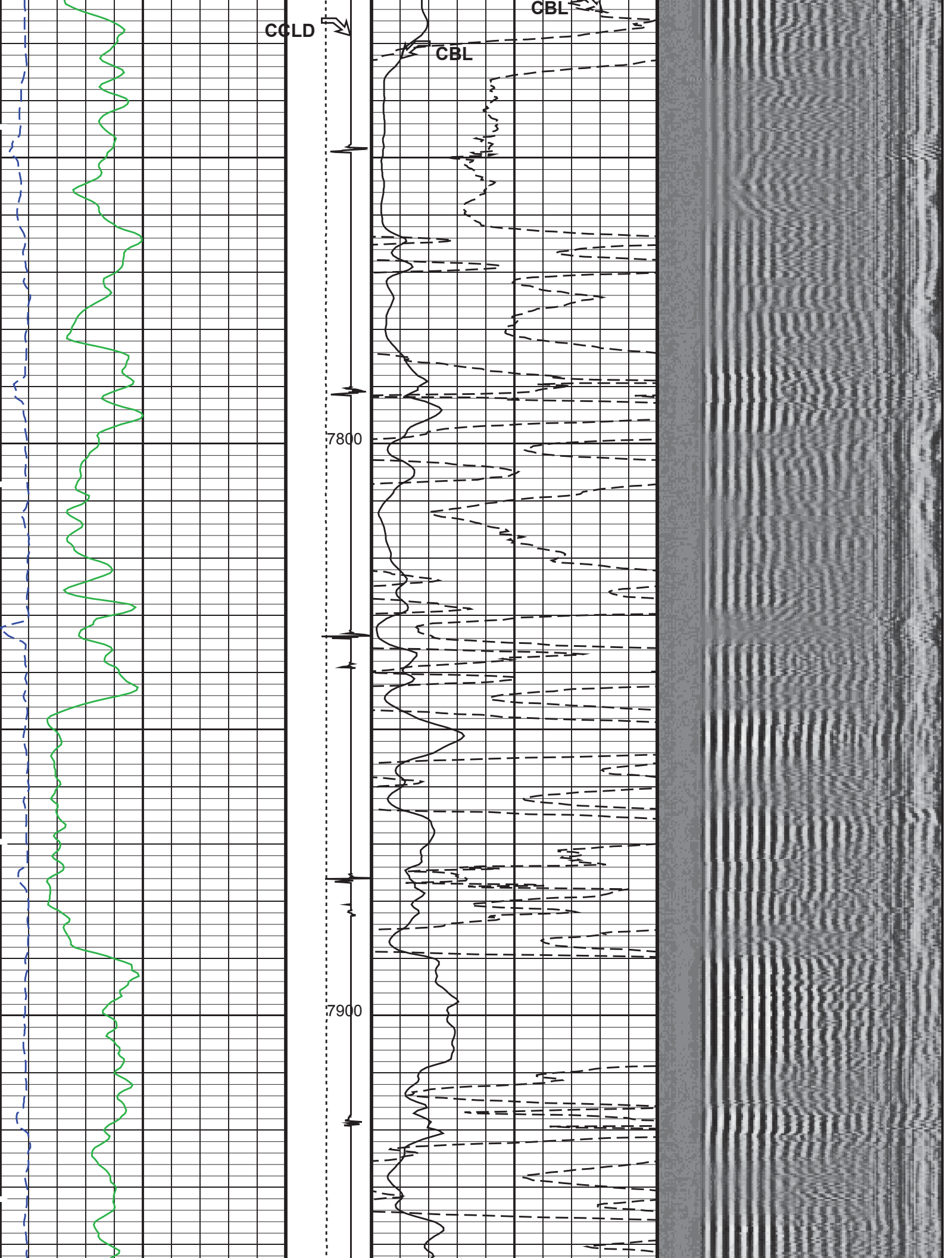
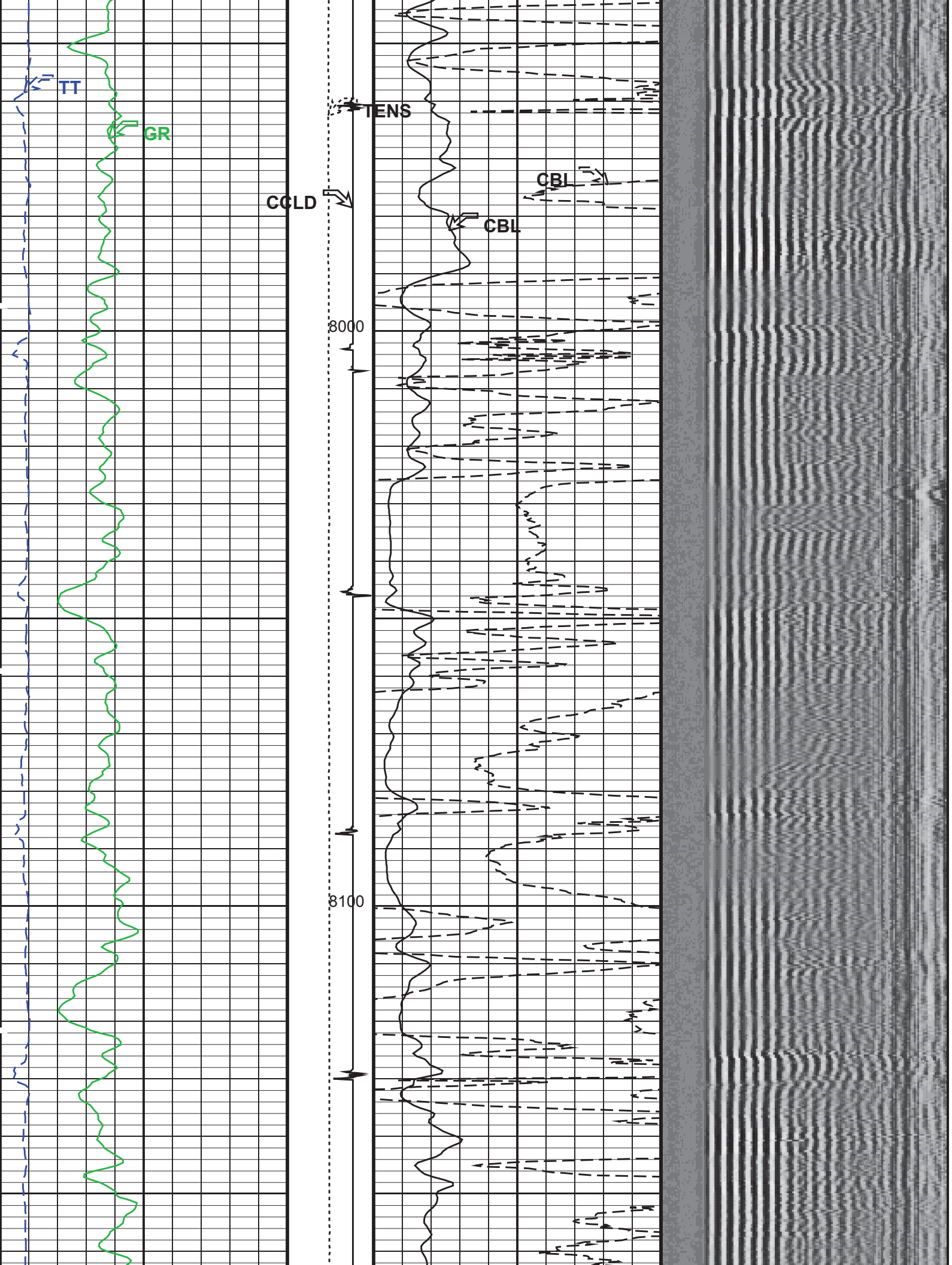
7000
TT
GR
TENS
CCLD
CBL

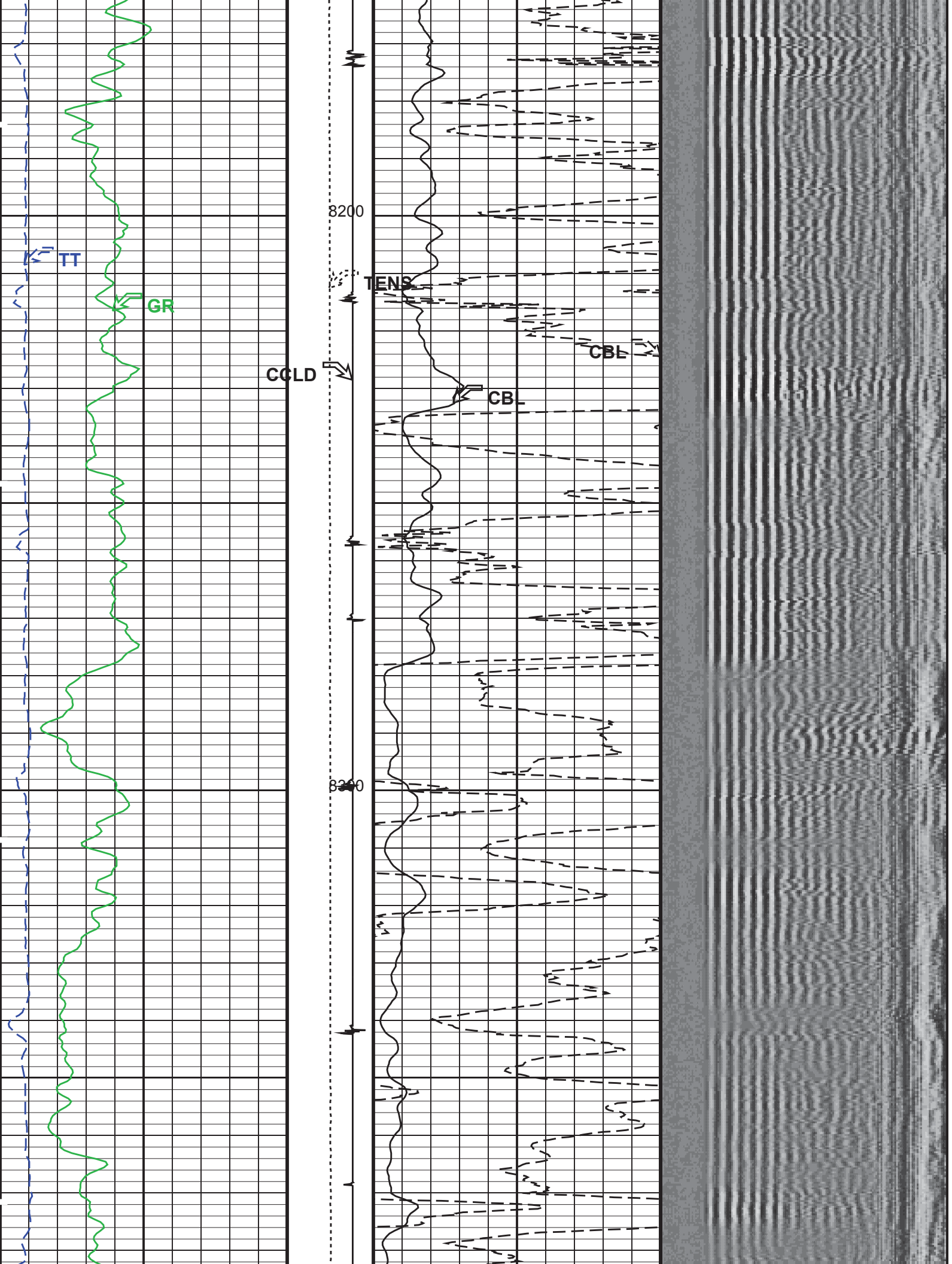

7100
7200
TT
GR
TENS
CCLD
CBL

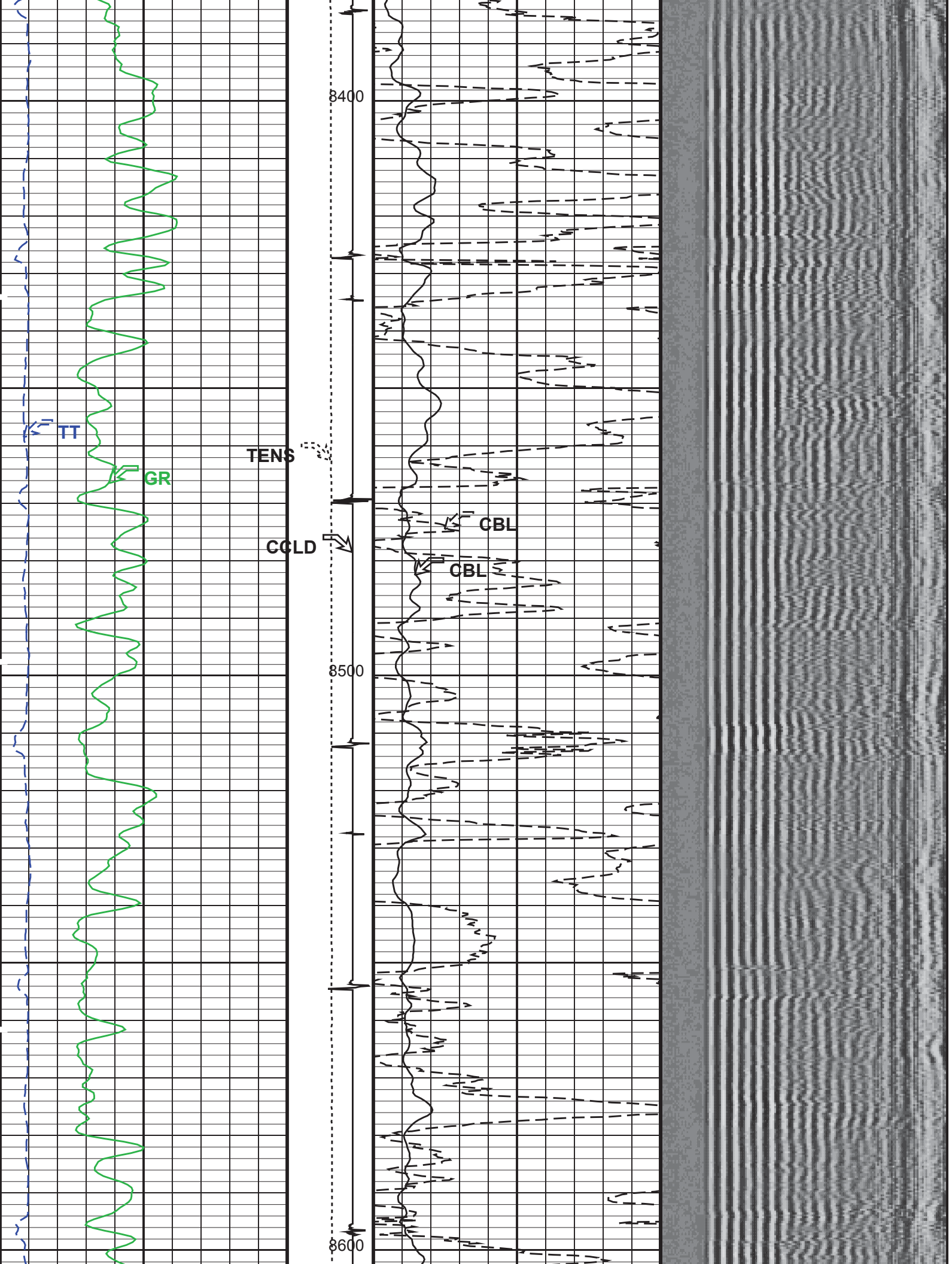

7300
7400
7500
TT
GR
TENS
CBL
CCLD
CBL


7600
SHORT JOINT
7700
TT
GR
TENS


CCLD
CBL
CBL
7800
7900


TT
GR
TENS
CCLD
CBL
CBL
8000
8100


TT
GR
8200
TENS
CBL
CCLD
CBL
8300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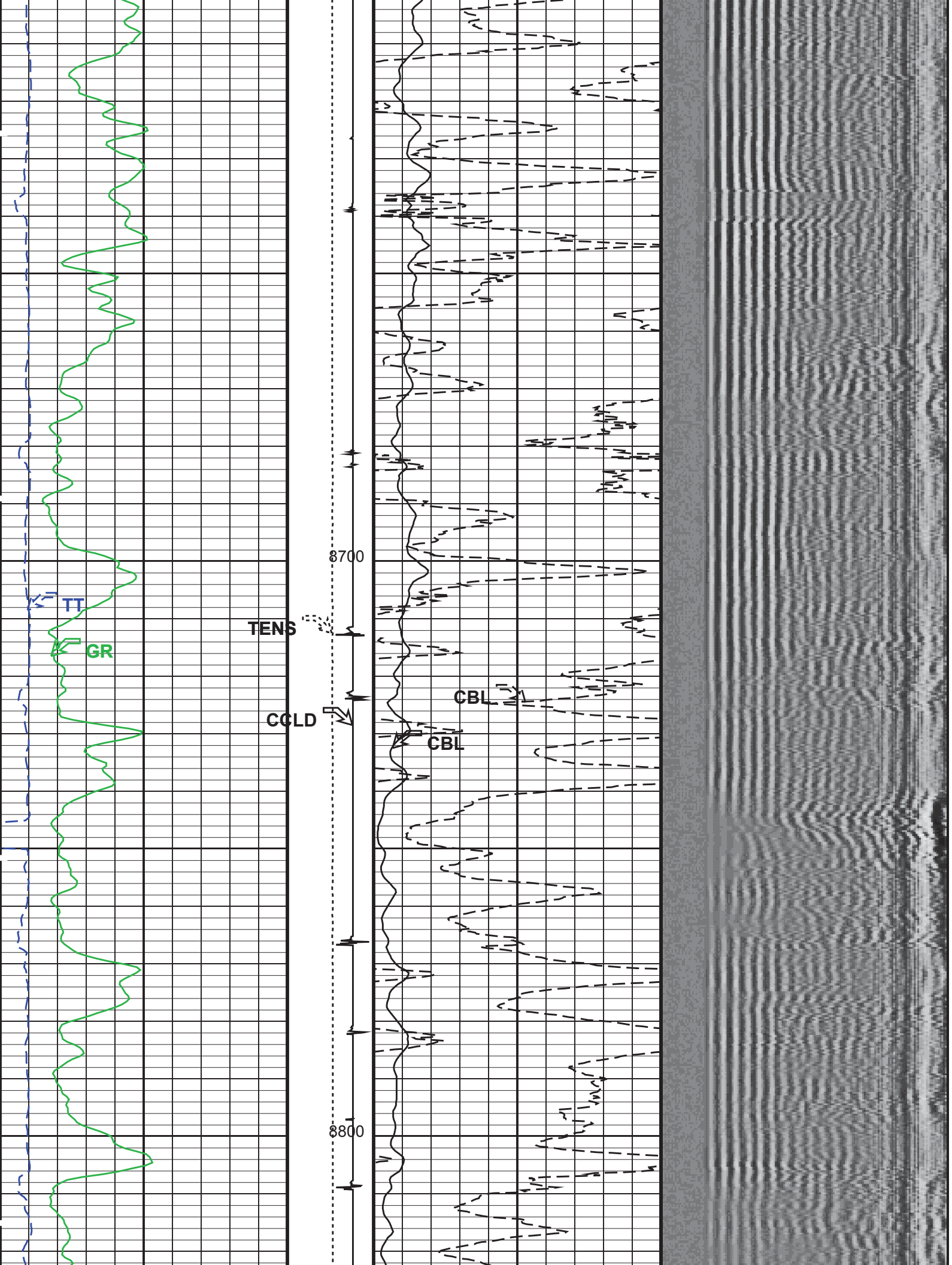
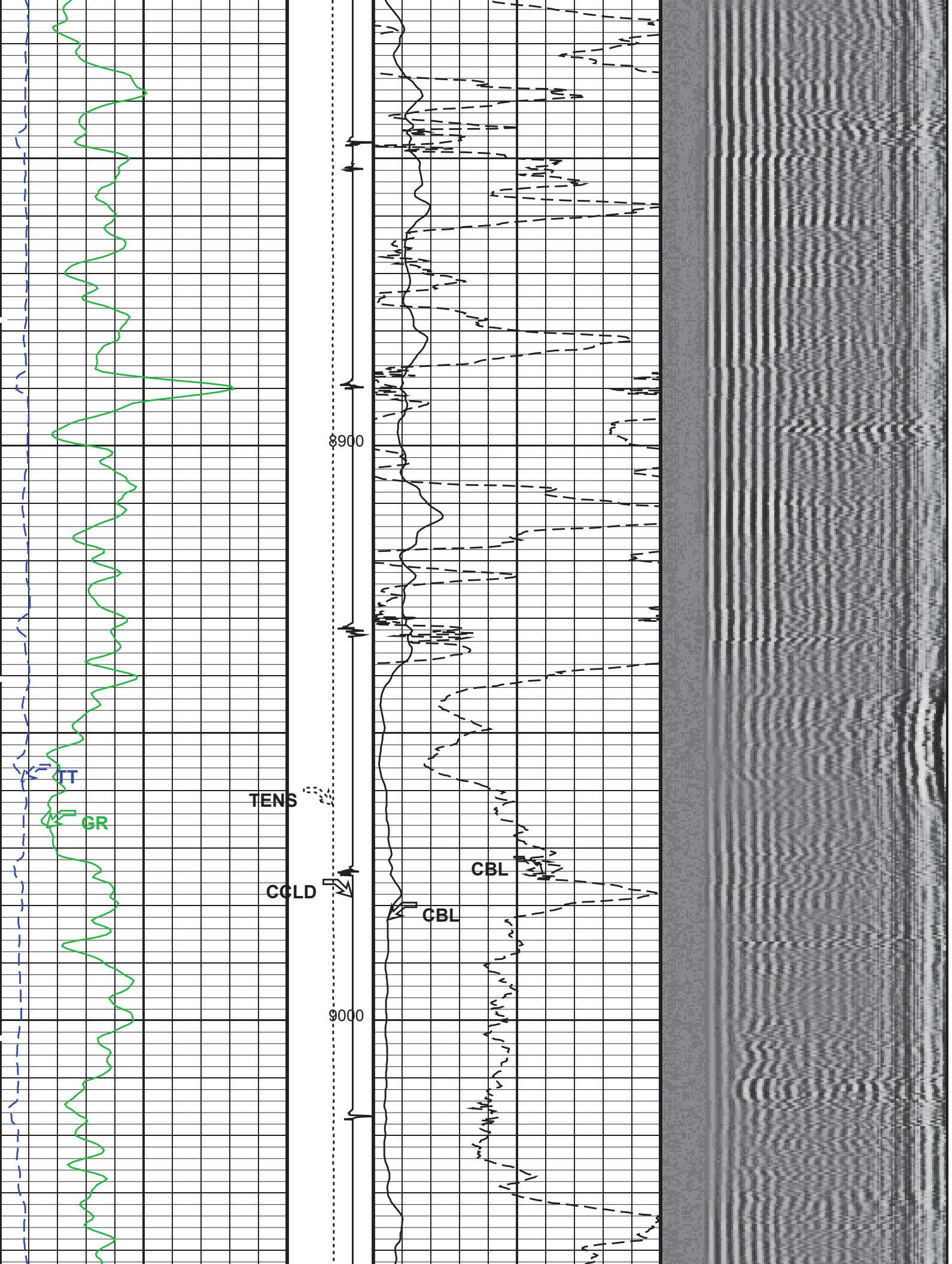
TT
TENS
GR
CBL
CCLD
CBL
8500
8600


TT
GR
TENS
CCLD
CBL
CBL
8700
8800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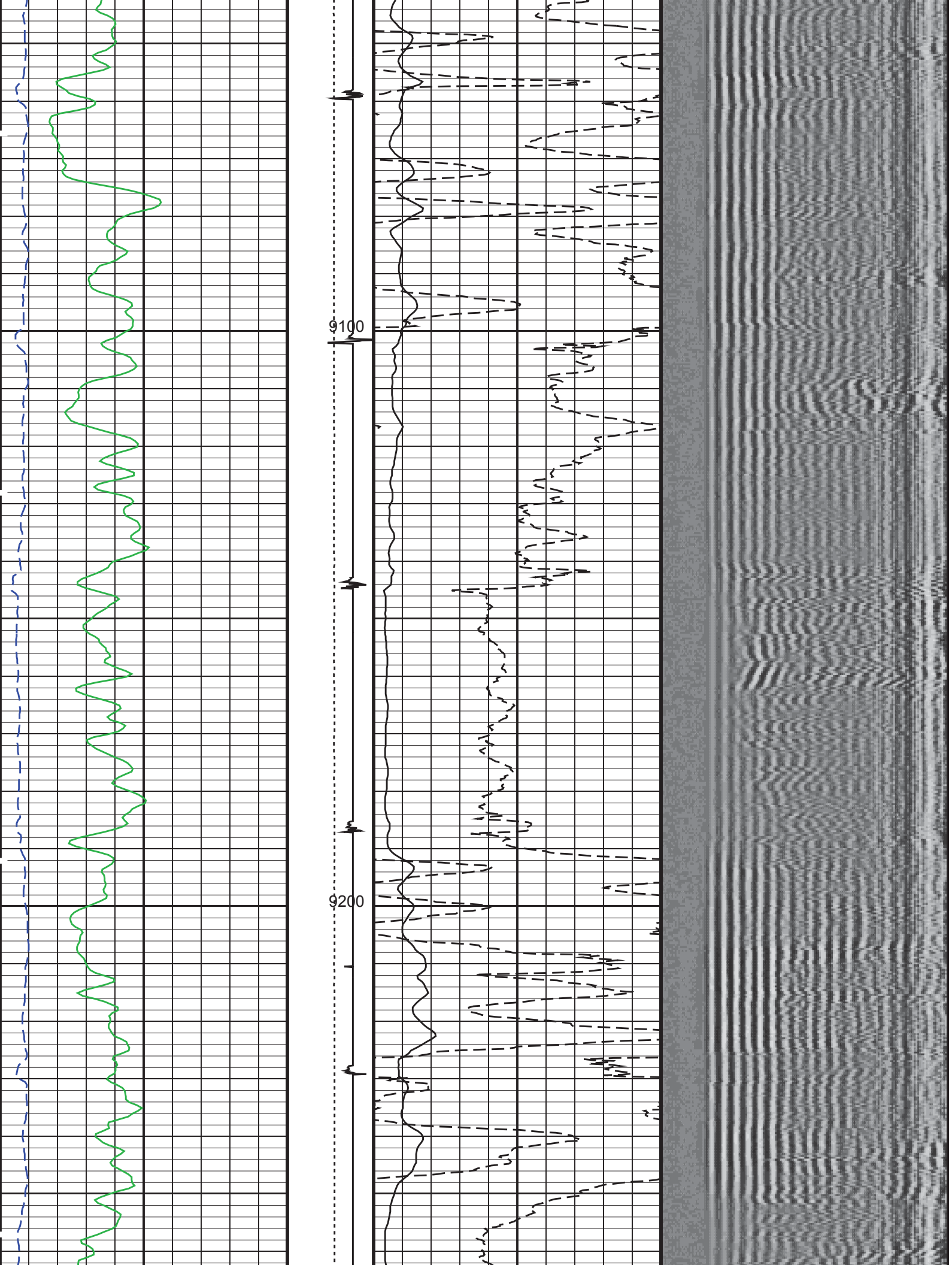
9000
TT
GR
TENS
CCLD
CBL
CBL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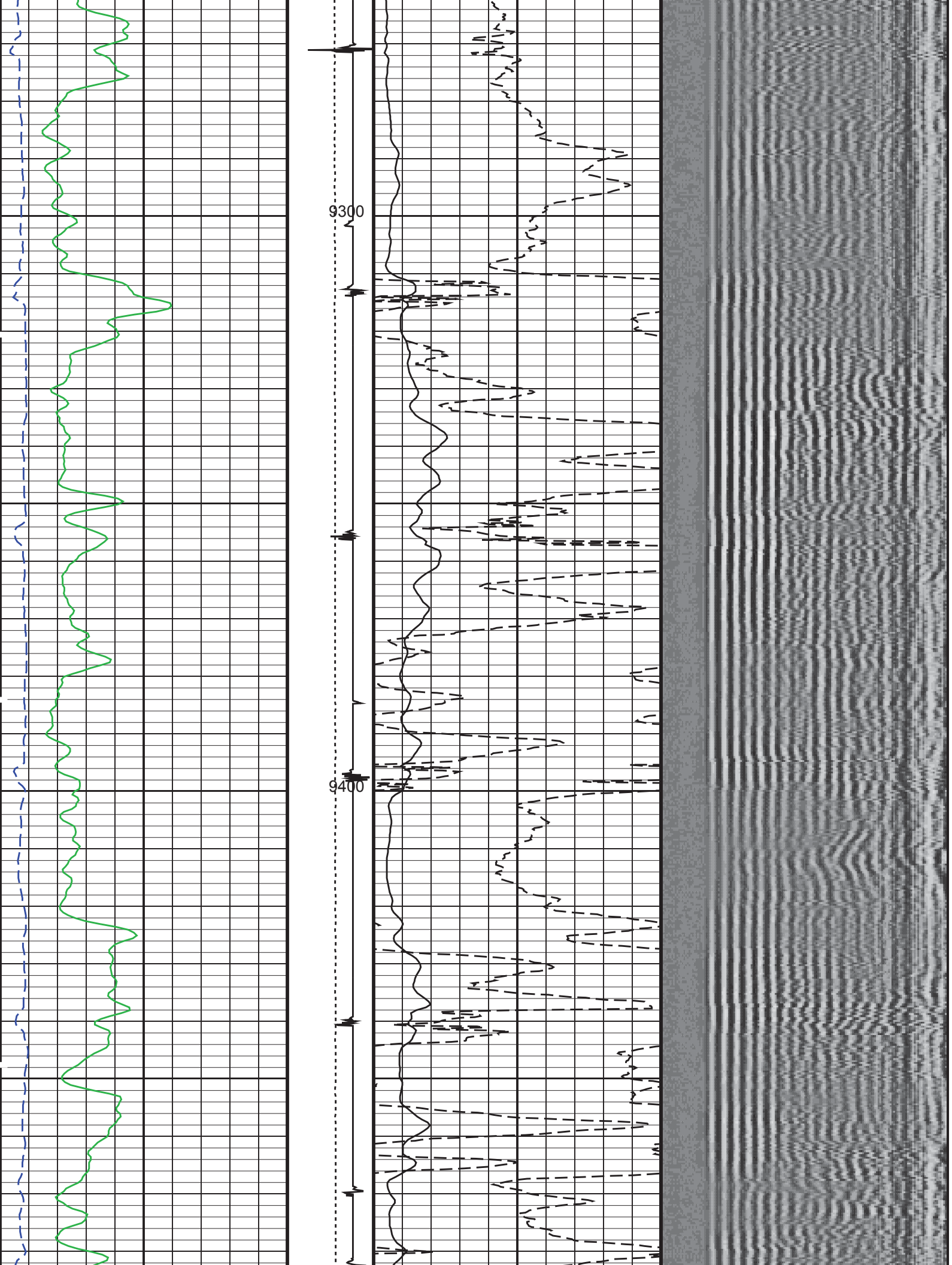
9200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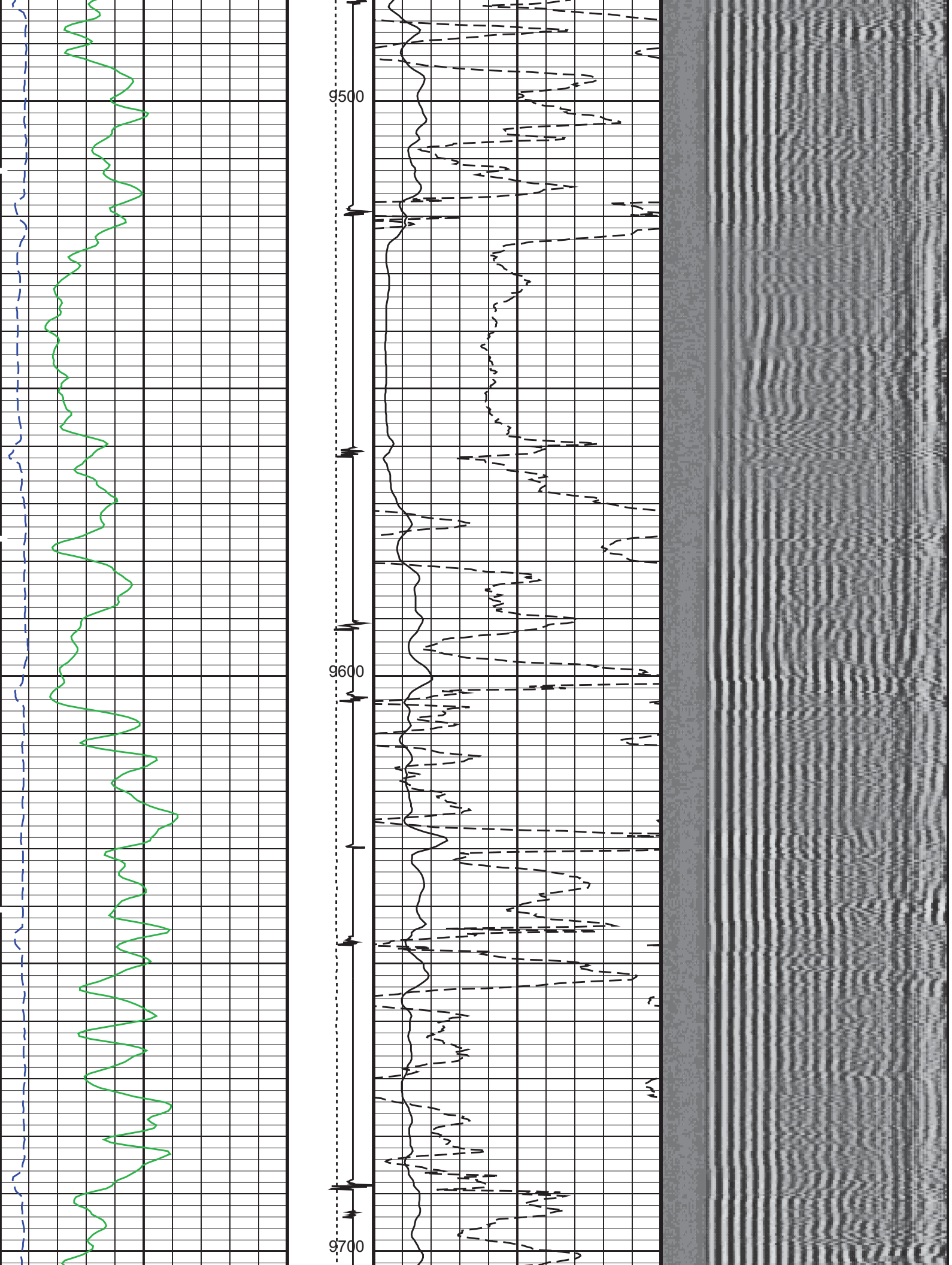
9400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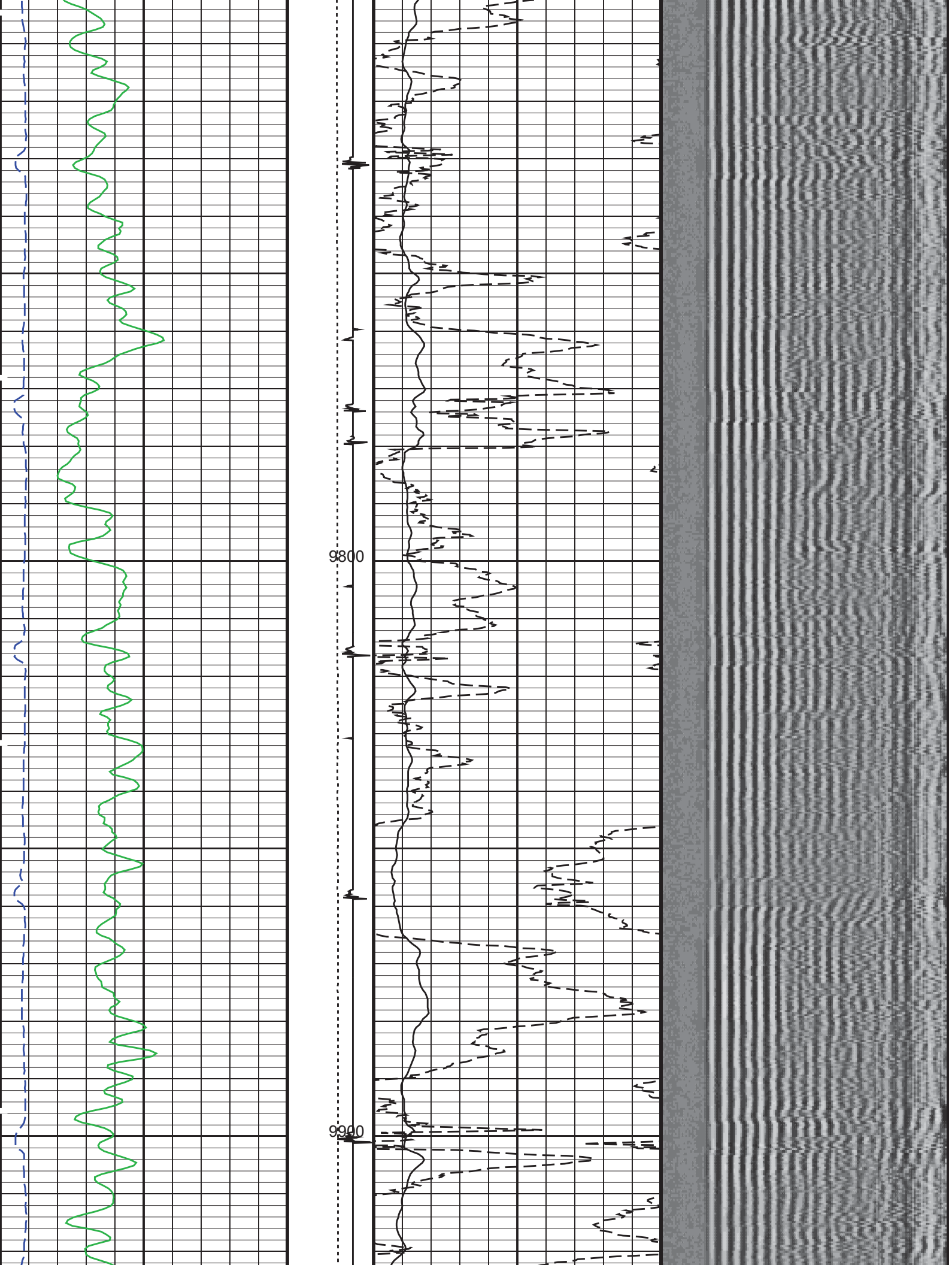
9600
9700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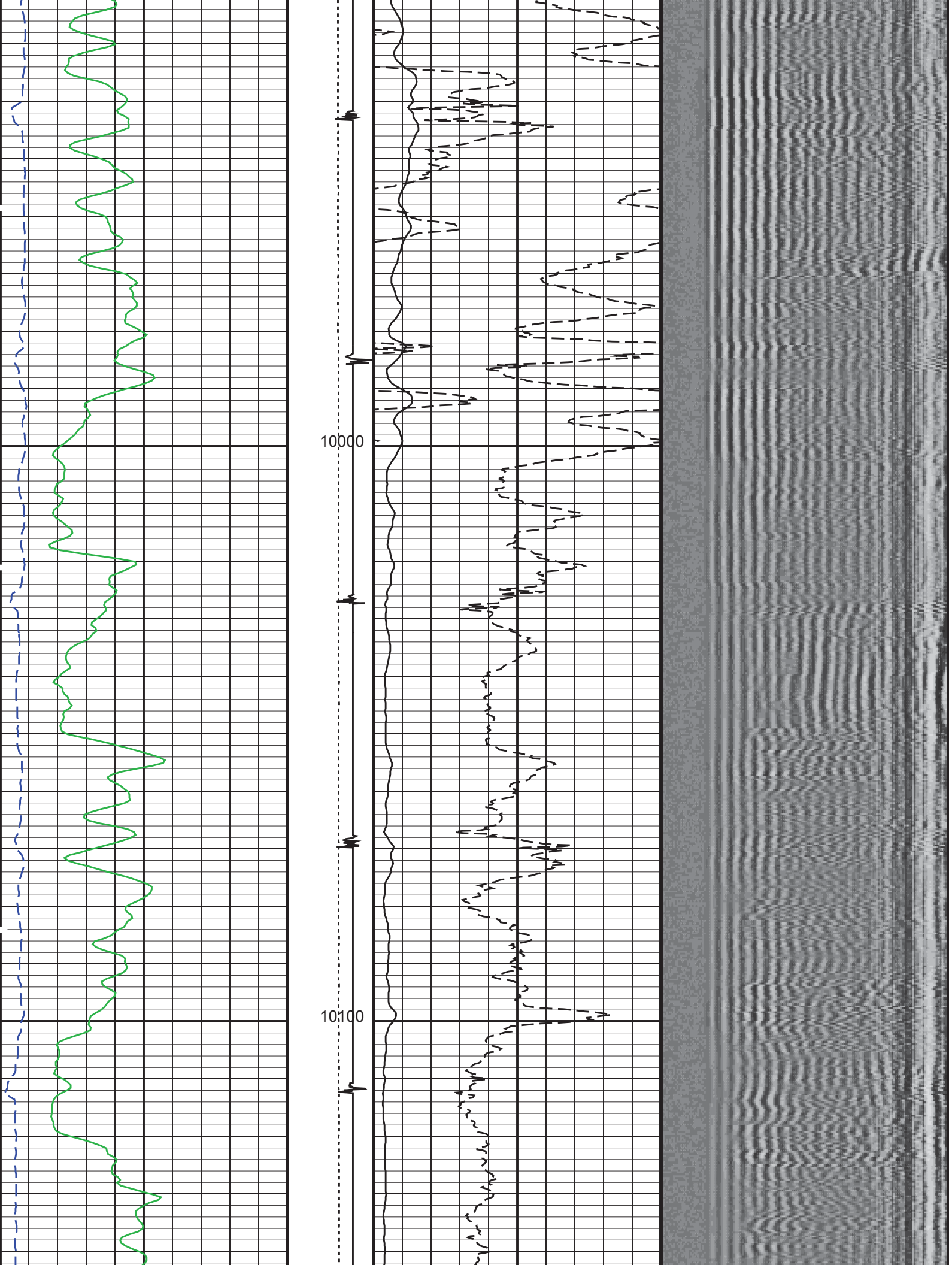
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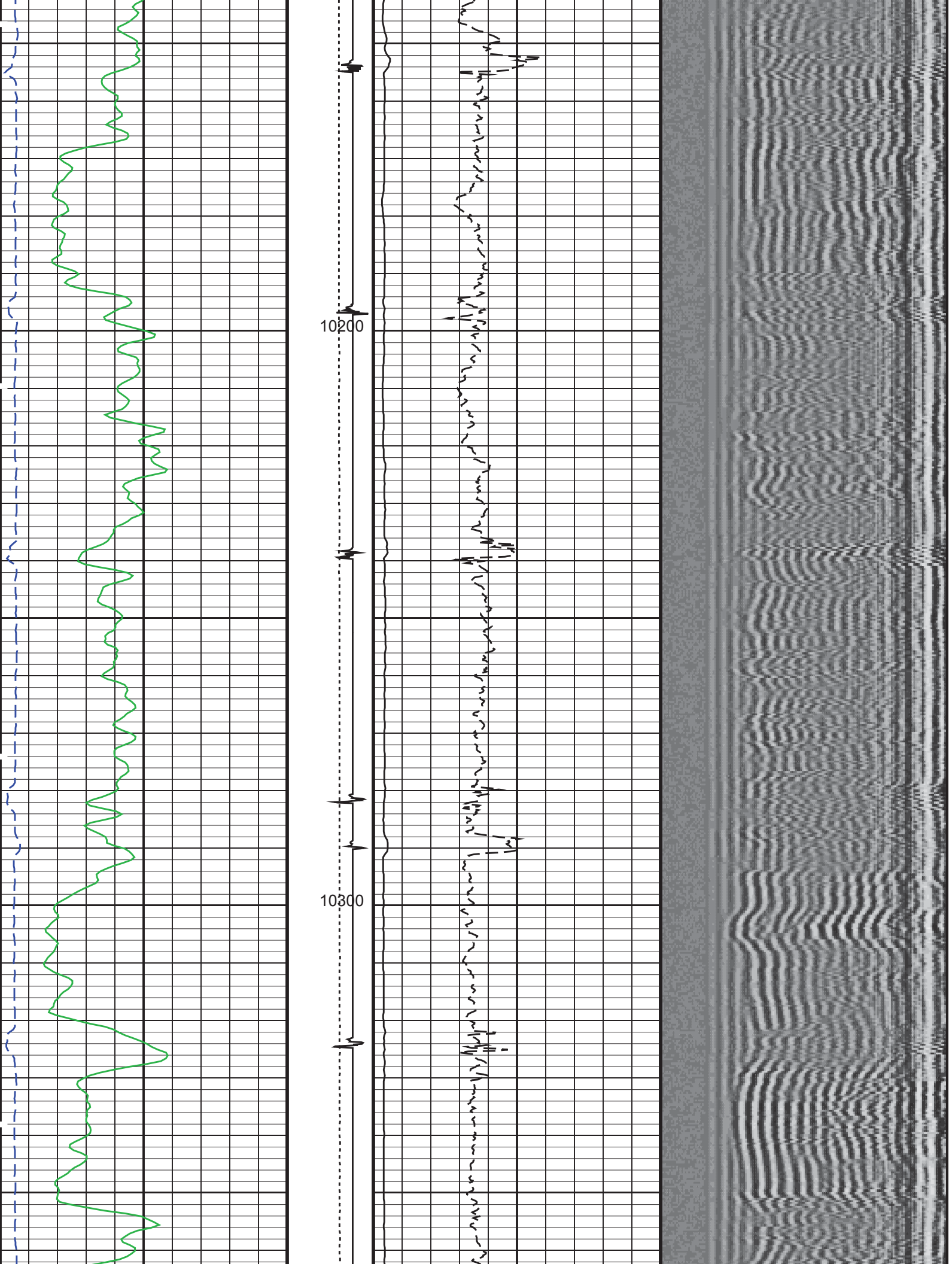
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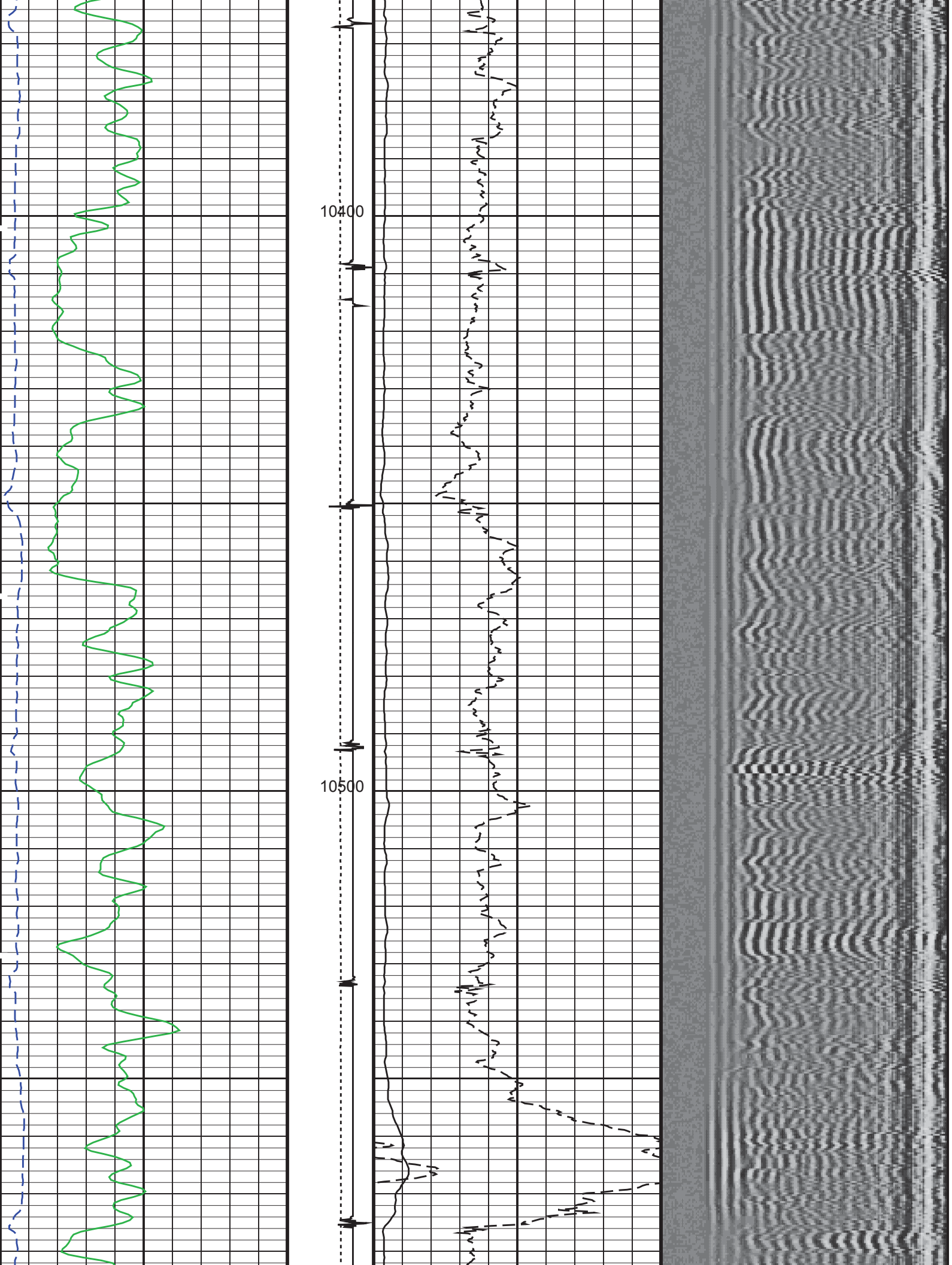
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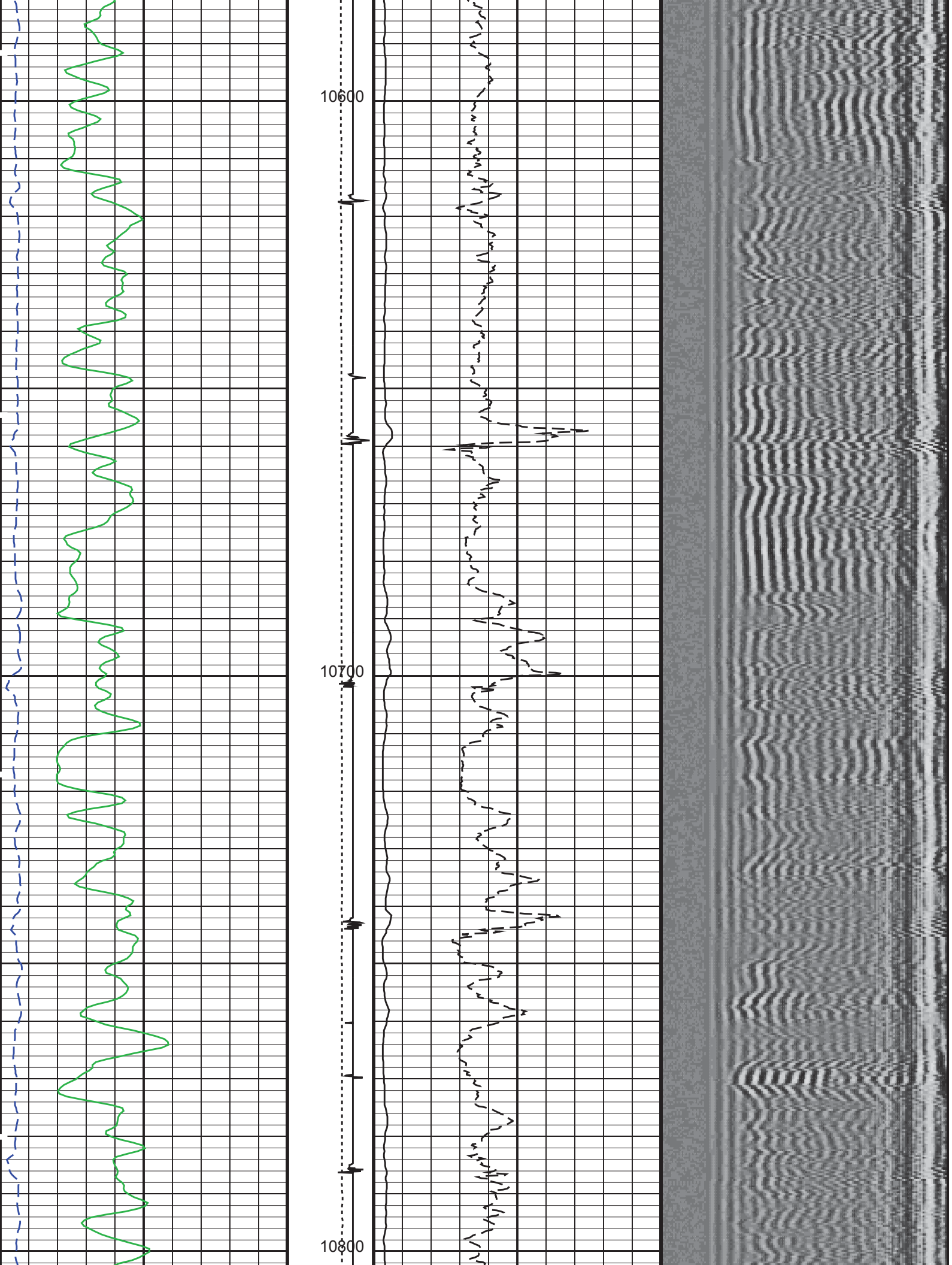
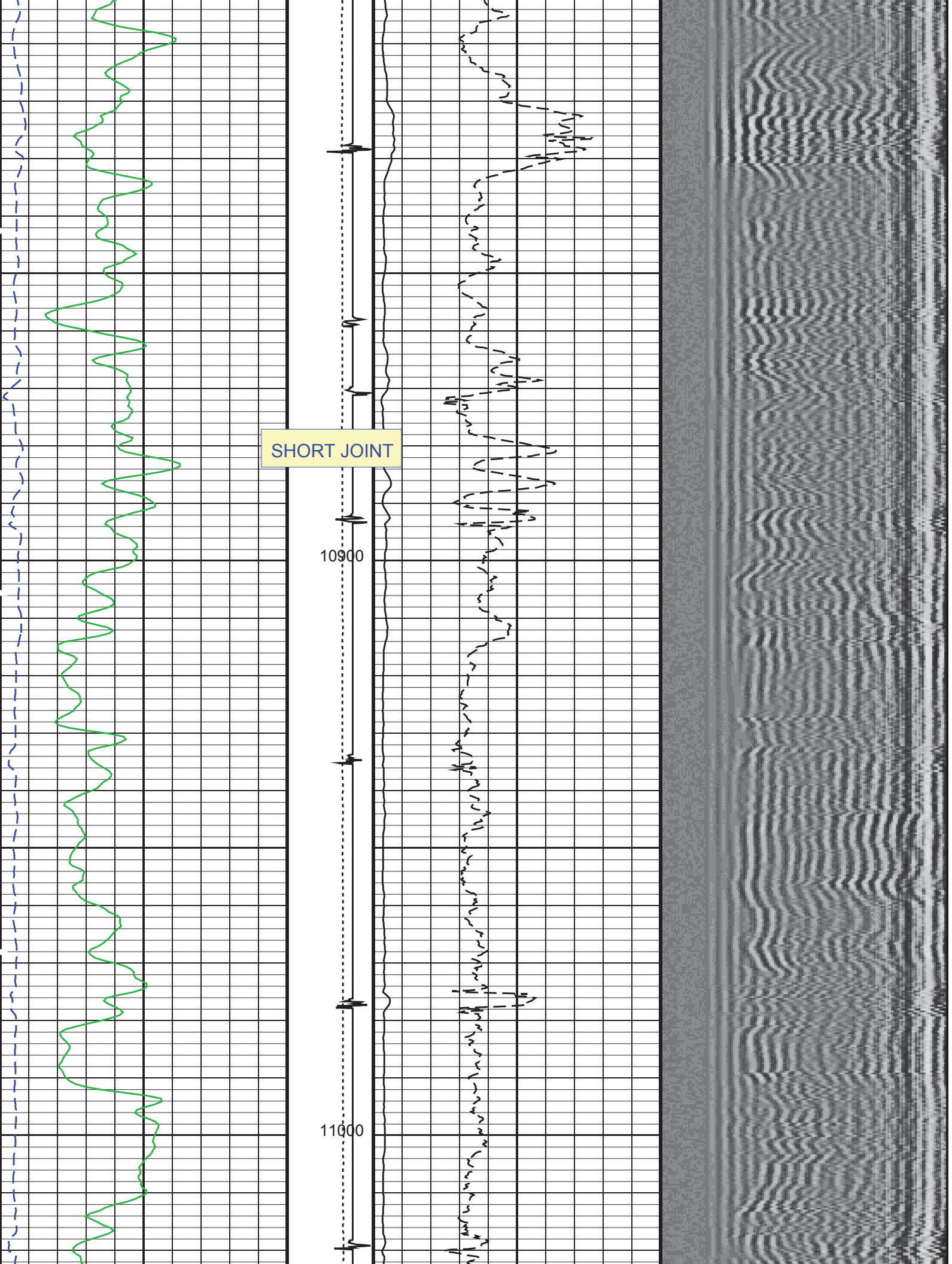
10500


10600
10700
10800


SHORT JOINT
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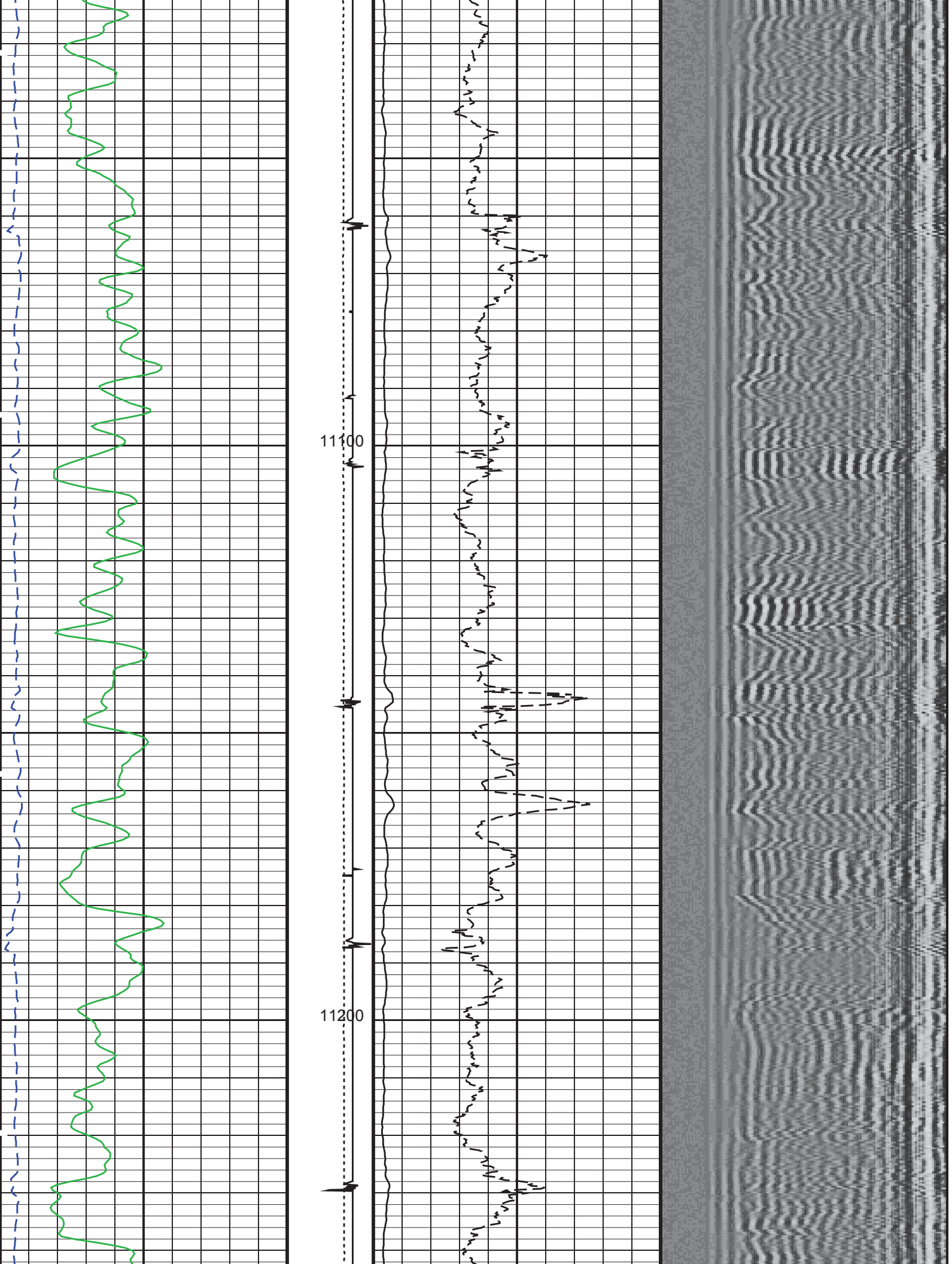
11000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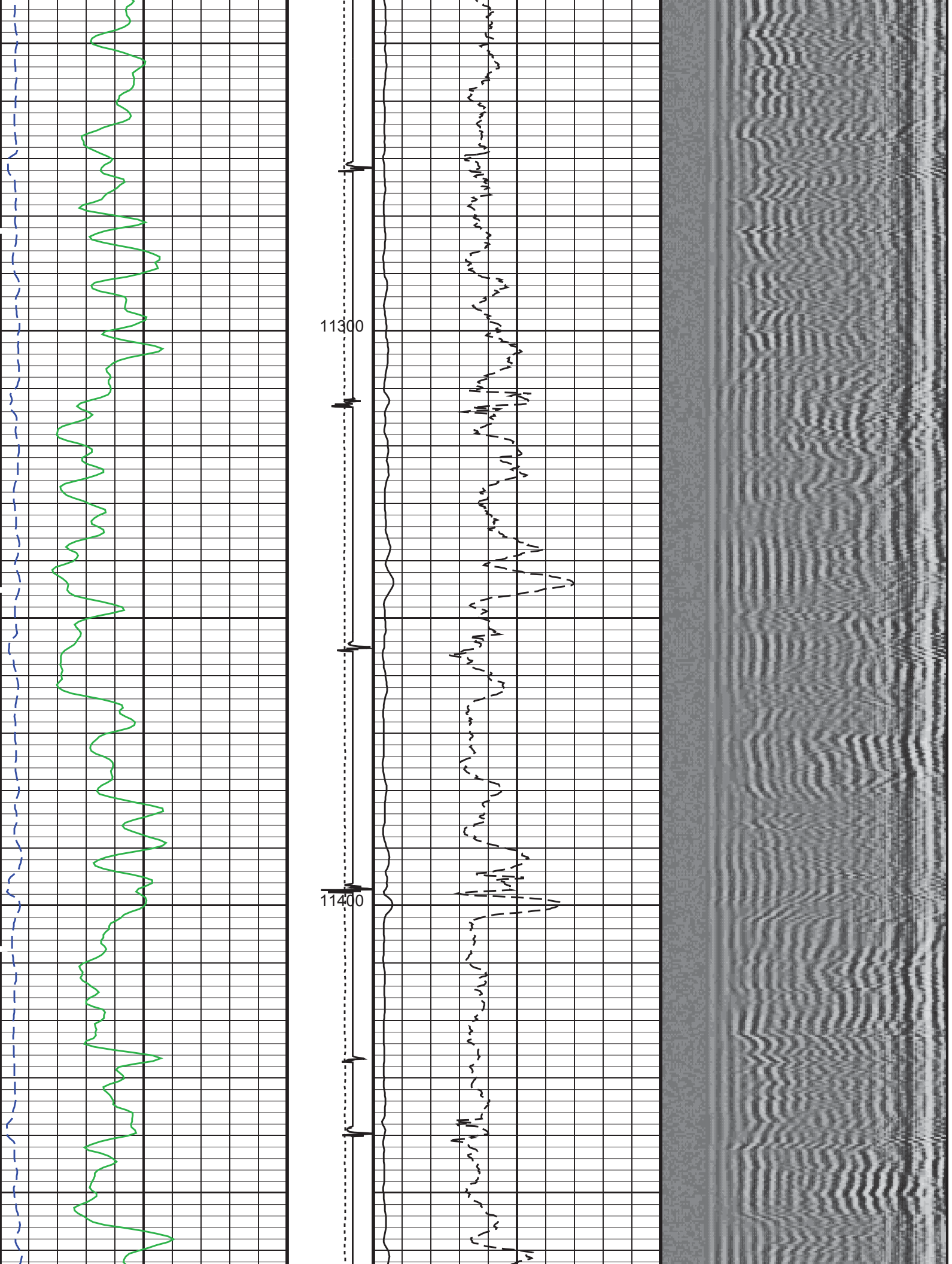
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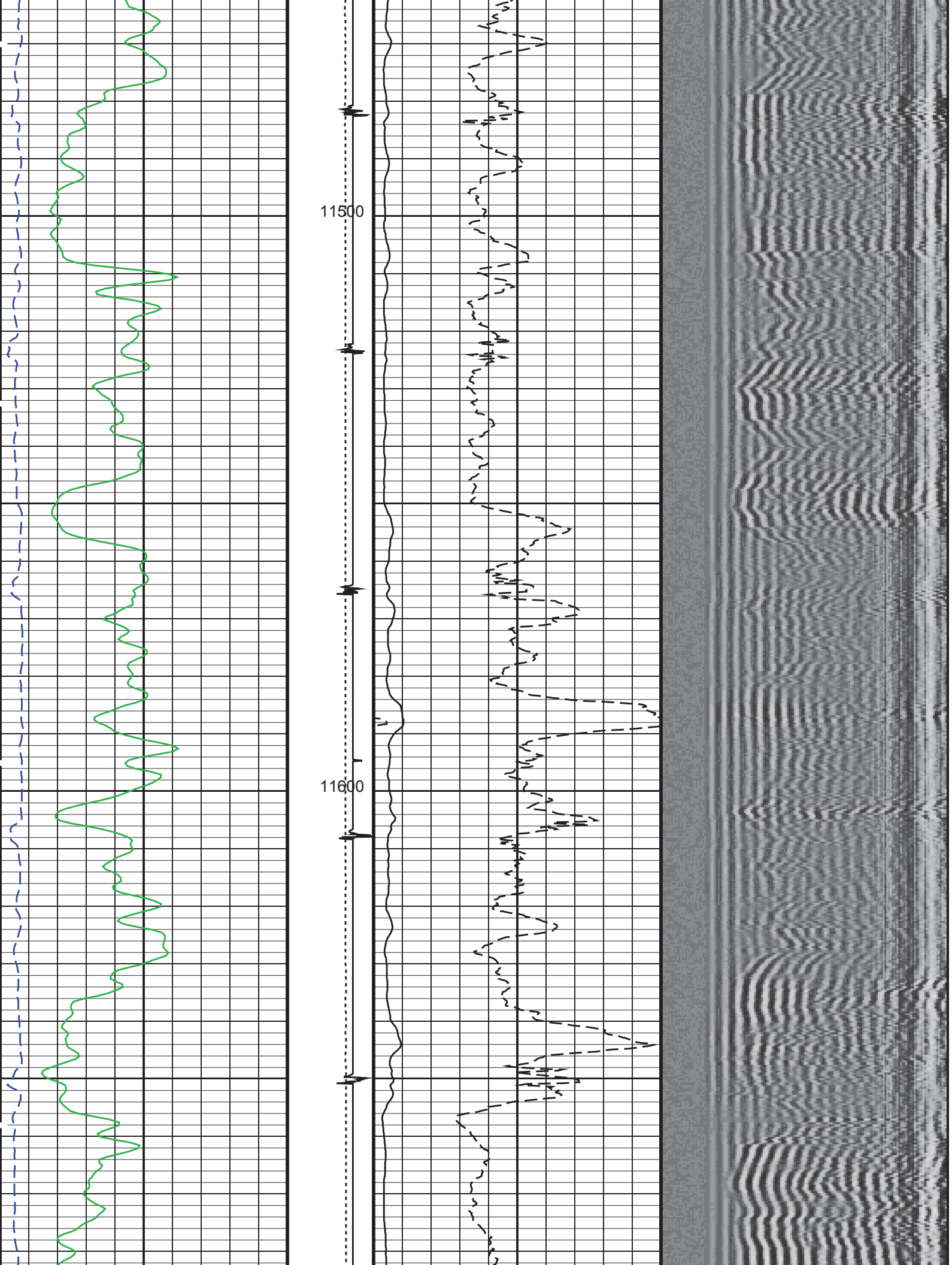
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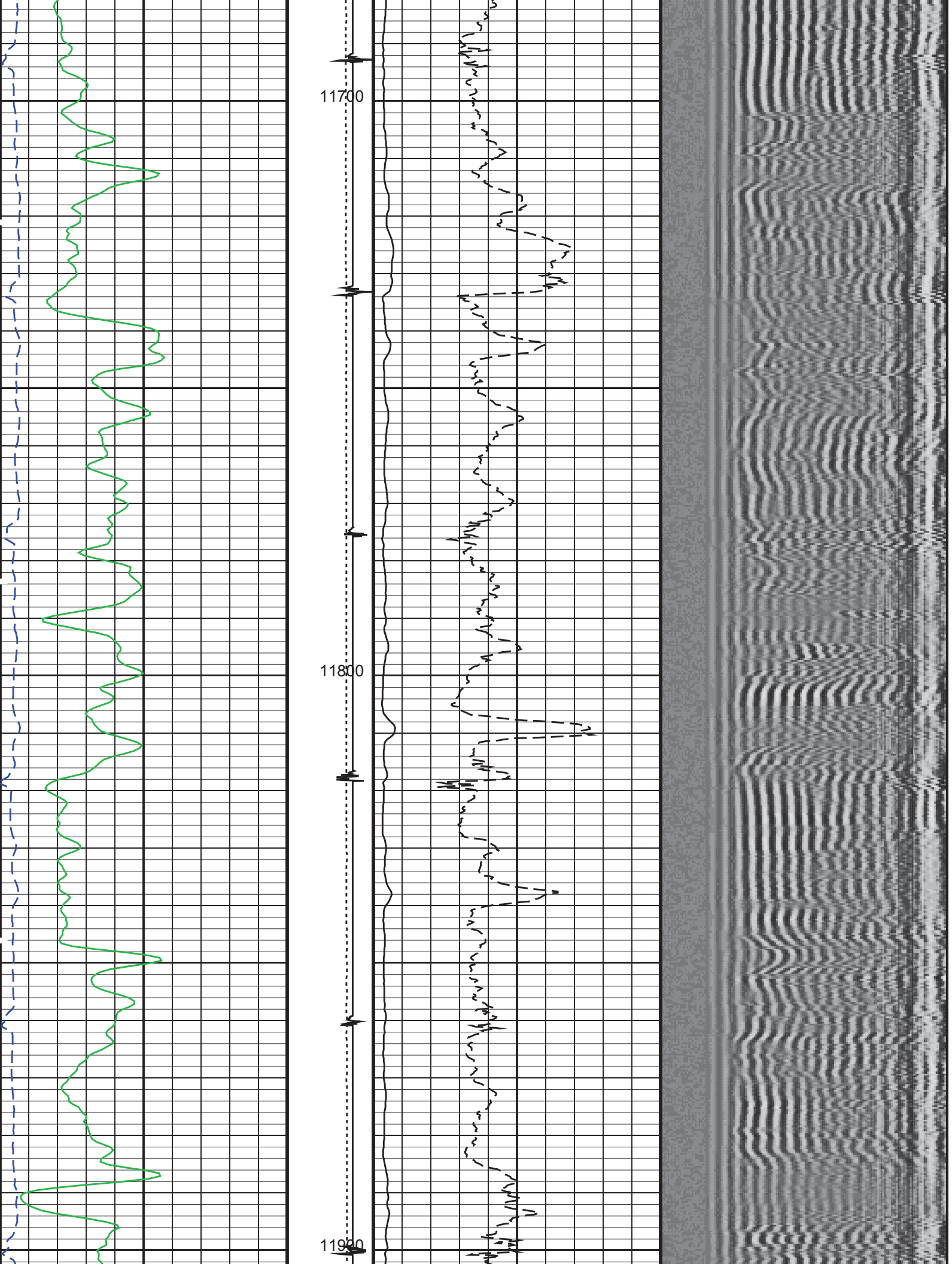
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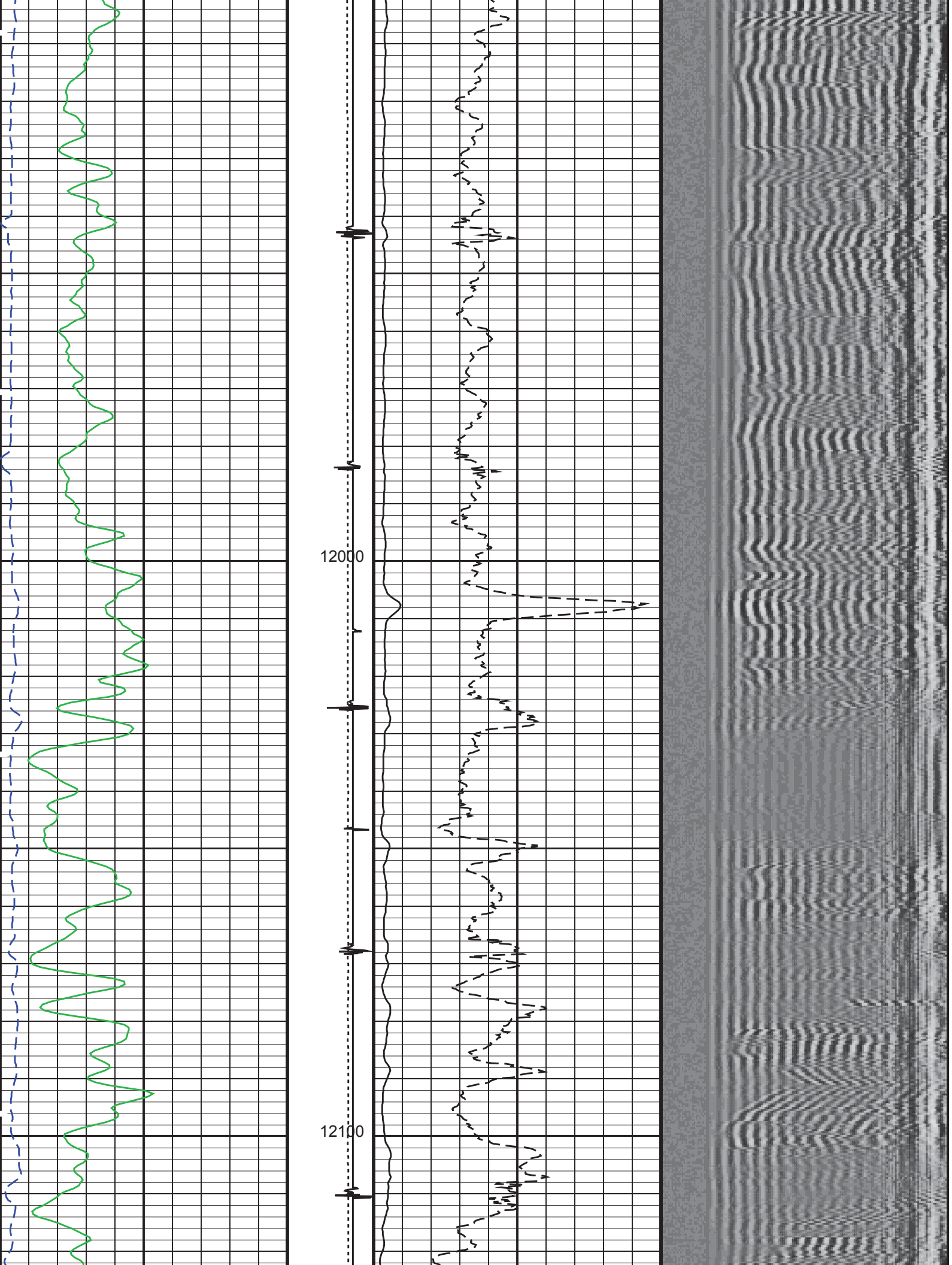
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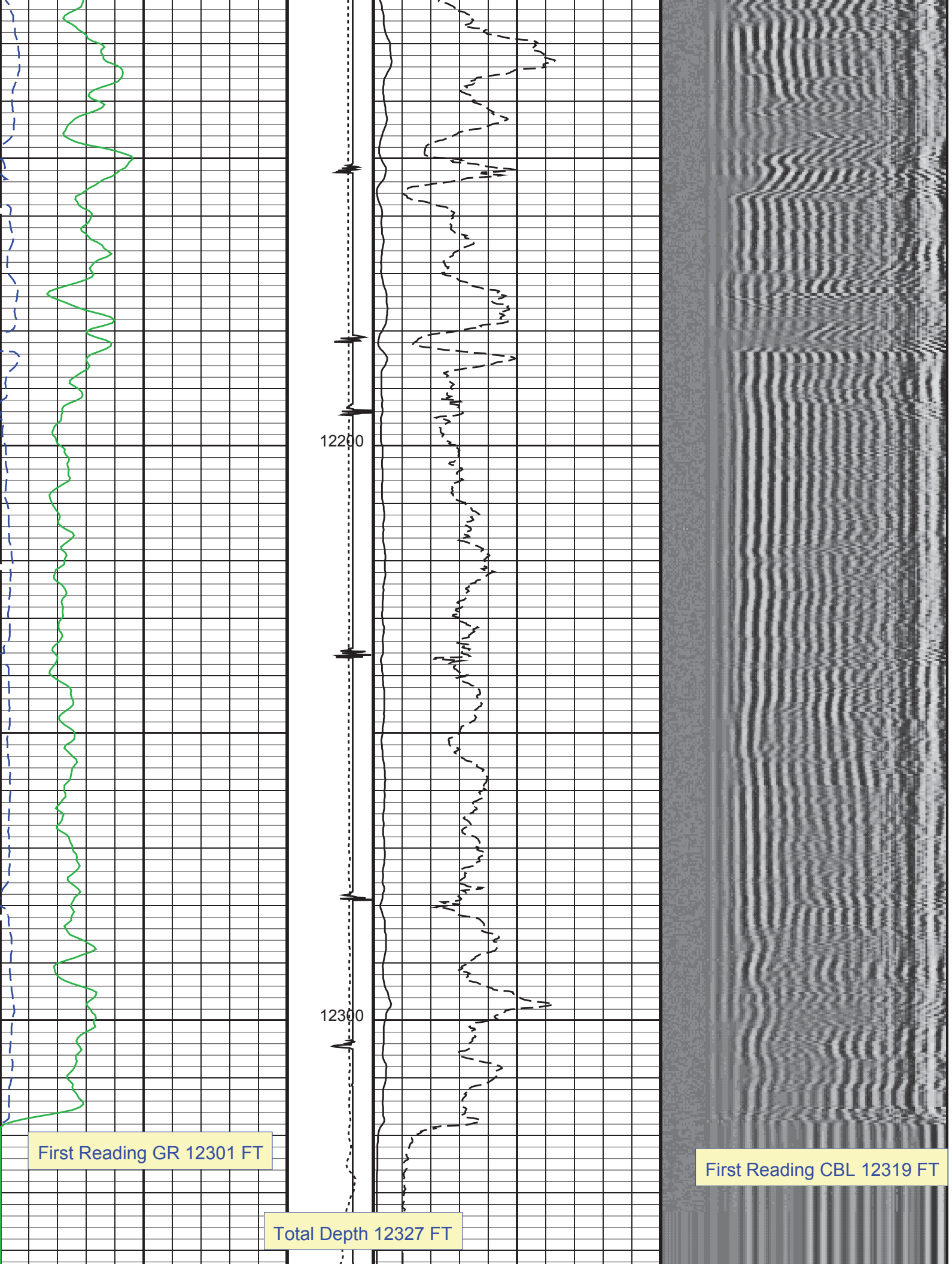
12200
12300
First Reading GR 12301 FT
First Reading CBL 12319 FT
Total Depth 12327 FT

Gamma Ray (GR) 0 (GAPI) 150	Tension (TENS) (LBF) 0 2000	CBL Amplitude (CBL) 0 (MV) 100	Min Amplitude Max VDL VariableDensity (VDL) 200 (US) 1200
Transit Time (TT) 260 (US) 160	Discriminated CCL (CCLD) 3 (V) −1	CBL Amplitude (CBL) 0 (MV) 10	

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 18−Mar−2013 18:54

OP System Version: 19C0−187

SCMT−CB	SRPC−5214−H2−2012−OP1	HBMS−B	SRPC−5214−H2−2012−OP1

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS−CB 8179		
Current Casing Size	4.50000 IN		
Casing Weight	13.5000 LB/F		
Expected CBL Amplitude in Free Pipe Section	81 MV	Minimum Sonic Amplitude	1.28673 MV (100% Cement) 2.94636 MV (80% Cement)
		MAP Minimum Sonic Amplitude	7.12449 MV (100% Cement) 12.0838 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	6−MAR−2012		
CBL Correction Factor	0.0704263	CBL Adjustment Factor (CBAF)	0.800000
MAP 1 Correction Factor	0.0993191	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.0941329		
MAP 3 Correction Factor	0.101552		
MAP 4 Correction Factor	0.114415		
MAP 5 Correction Factor	0.127992		
MAP 6 Correction Factor	0.121190		
MAP 7 Correction Factor	0.112867		
MAP 8 Correction Factor	0.102913		

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	223.206	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	337.206	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	81	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	0.300677	IN
DTF	Delta−T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	2.94636	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	166.206	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	14.0905	DB/F

MATT	Maximum Attenuation	14.0905	DB/F	
MCCF	MAP Cement Type Compensation Factor	1		
MCI	Minimum Cemented Interval for Isolation	1.25	FT	
MMSA	MAP Minimum Sonic Amplitude	7.12449	MV	
MSA	Minimum Sonic Amplitude	1.28673	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	13.50	LB/F	
DFD	Drilling Fluid Density	8.40	LB/G	
DO	Depth Offset for Playback	0.0	FT	
PP	Playback Processing	RECOMPUTE		
TD	Total Depth	12327	FT	

Input DLIS Files

DEFAULT	SCMT_HBMS_011LUP	FN:10	PRODUCER	18-Mar-2013 15:17	12342.5 FT	51.5 FT

Output DLIS Files

DEFAULT	SCMT_HBMS_015PUP	FN:14	PRODUCER	18-Mar-2013 18:54		

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REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC **Well: SGU 8512D-24 (L24 496)**

Input DLIS Files

DEFAULT	SCMT_HBMS_010LUP	FN:9	PRODUCER	18-Mar-2013 14:56	7817.0 FT	7508.5 FT
DEFAULT	SCMT_HBMS_015PUP	FN:14	PRODUCER	18-Mar-2013 18:54	12342.5 FT	20.0 FT

Output DLIS Files

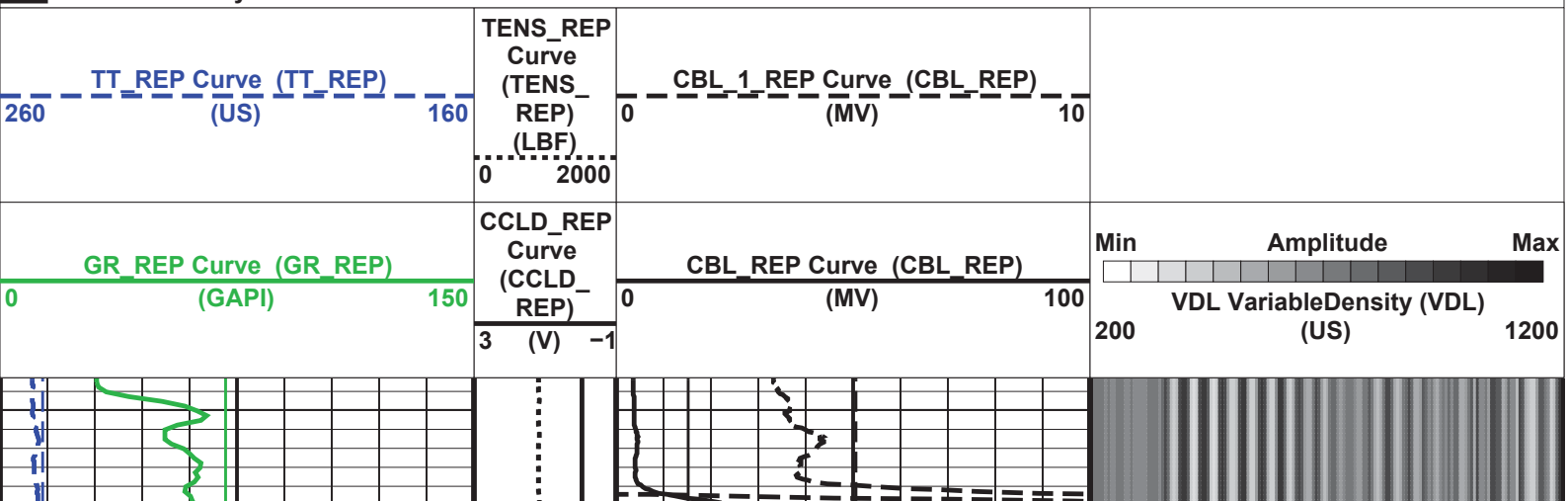
DEFAULT	SCMT_HBMS_016PUP	FN:15	PRODUCER	18-Mar-2013 19:06	7816.0 FT	7476.0 FT

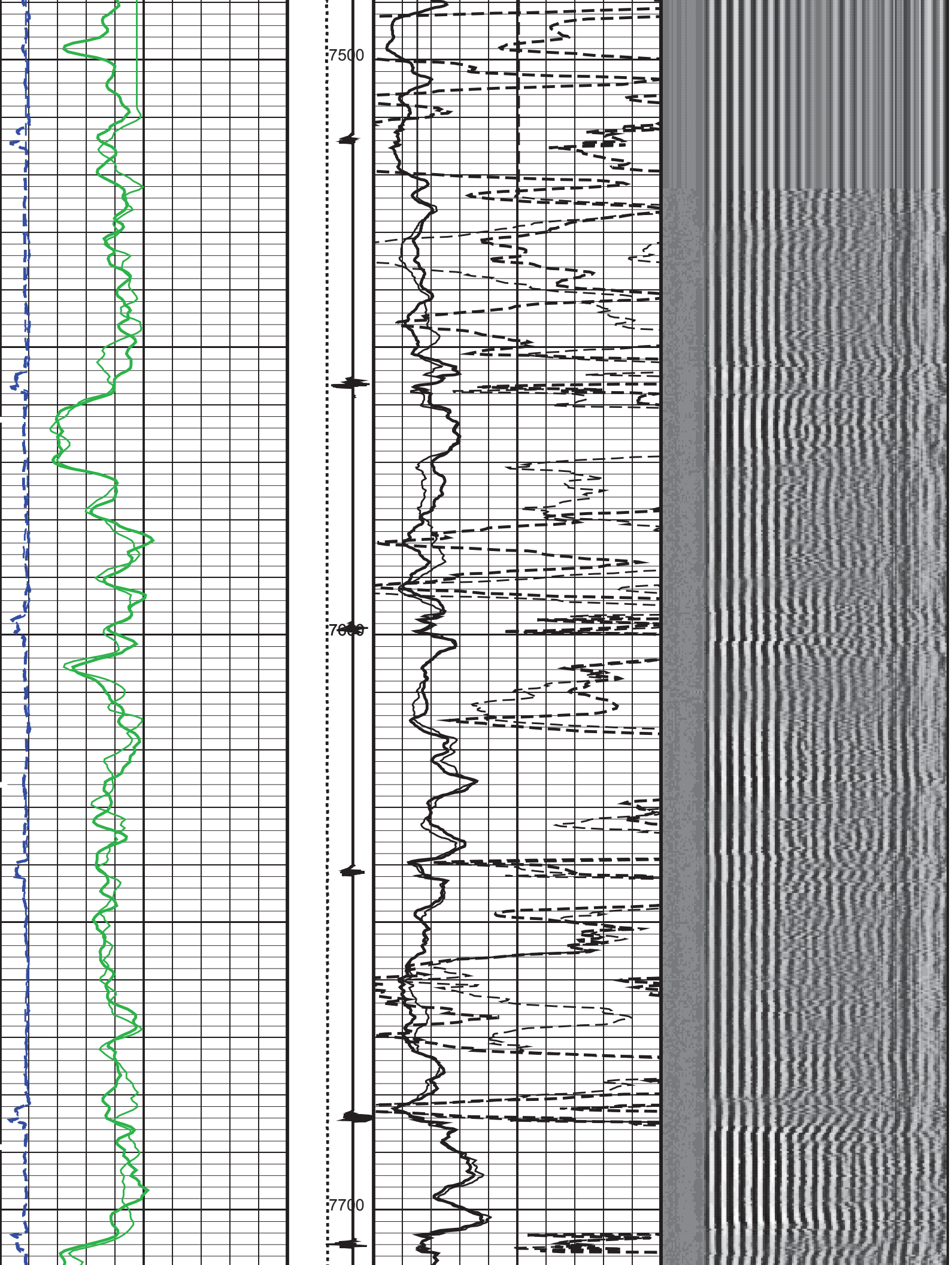
OP System Version: 19C0-187

SCMT-CB	SRPC-5214-H2-2012-OP1	HBMS-B	SRPC-5214-H2-2012-OP1

PIP SUMMARY

Time Mark Every 60 S

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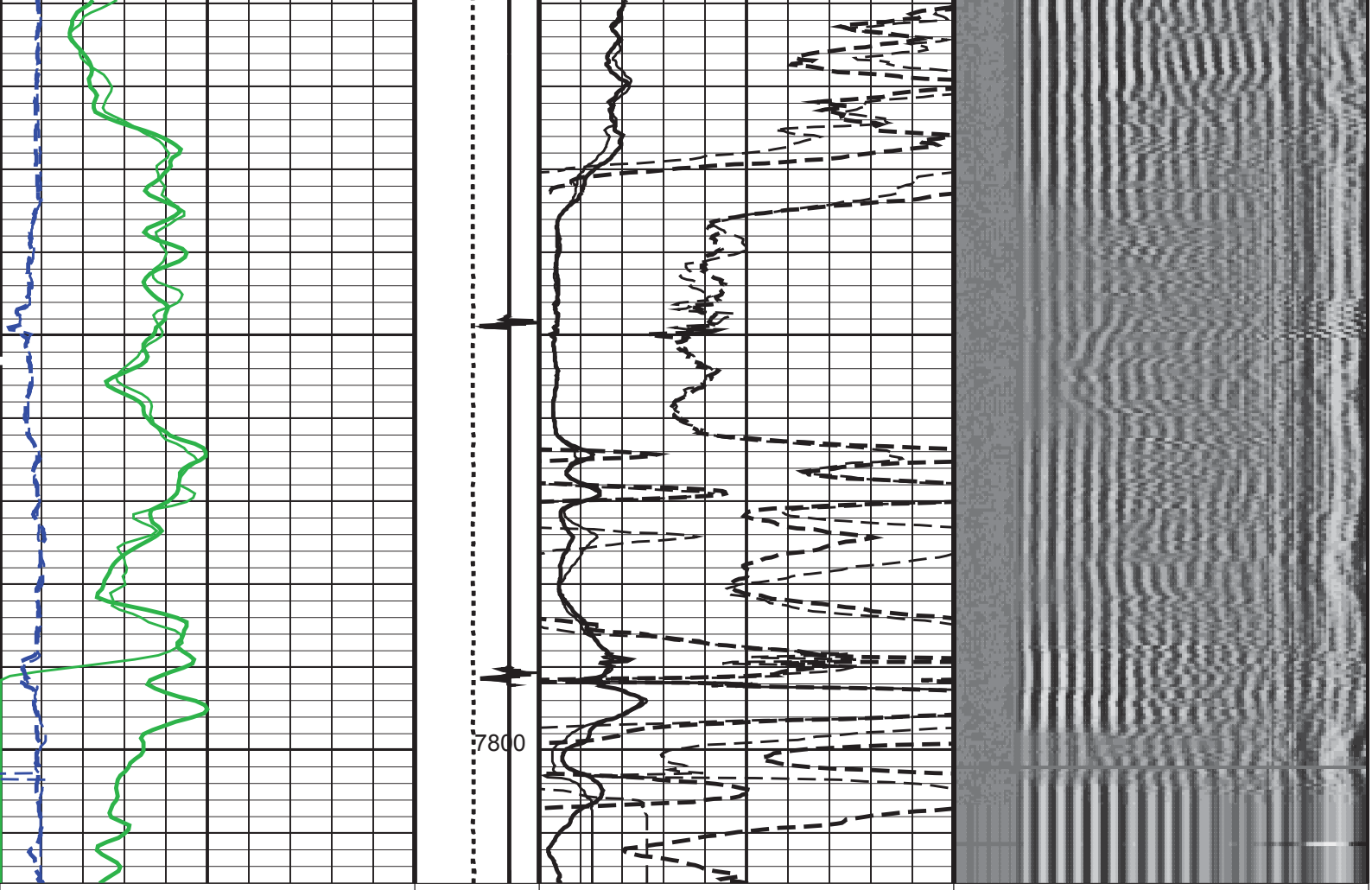
7700



GR_REP Curve (GR_REP)
0 (GAPI) 150

CCLD_REP Curve (CCLD_REP)
3 (V) −1

CBL_REP Curve (CBL_REP)
0 (MV) 100

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

TT_REP Curve (TT_REP)
260 (US) 160

TENS_REP Curve (TENS_REP) (LBF)
0 2000

CBL_1_REP Curve (CBL_REP)
0 (MV) 10

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100' Graphics File Created: 18−Mar−2013 19:06

OP System Version: 19C0−187

SCMT−CB	SRPC−5214−H2−2012−OP1	HBMS−B	SRPC−5214−H2−2012−OP1

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS−CB 8179		
Current Casing Size	4.50000 IN		
Casing Weight	13.5000 LB/F		
Expected CBL Amplitude in Free Pipe Section	81 MV	Minimum Sonic Amplitude	1.28673 MV (100% Cement) 2.94636 MV (80% Cement)
		MAP Minimum Sonic Amplitude	7.12449 MV (100% Cement) 12.0838 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	

Date of Master Calibration	6-MAR-2012		
CBL Correction Factor	0.0704263	CBL Adjustment Factor (CBAF)	0.800000
MAP 1 Correction Factor	0.0993191	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.0941329		
MAP 3 Correction Factor	0.101552		
MAP 4 Correction Factor	0.114415		
MAP 5 Correction Factor	0.127992		
MAP 6 Correction Factor	0.121190		
MAP 7 Correction Factor	0.112867		
MAP 8 Correction Factor	0.102913		

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	223.206	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	337.206	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	81	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	0.300677	IN
DTF	Delta-T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	2.94636	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	166.206	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	14.0905	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	7.12449	MV
MSA	Minimum Sonic Amplitude	1.28673	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	13.50	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	-1.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	12327	FT

Input DLIS Files

DEFAULT	SCMT_HBMS_010LUP	FN:9	PRODUCER	18-Mar-2013 14:56	7817.0 FT	7508.5 FT
DEFAULT	SCMT_HBMS_015PUP	FN:14	PRODUCER	18-Mar-2013 18:54	12342.5 FT	20.0 FT

Output DLIS Files

DEFAULT	SCMT_HBMS_016PUP	FN:15	PRODUCER	18-Mar-2013 19:06

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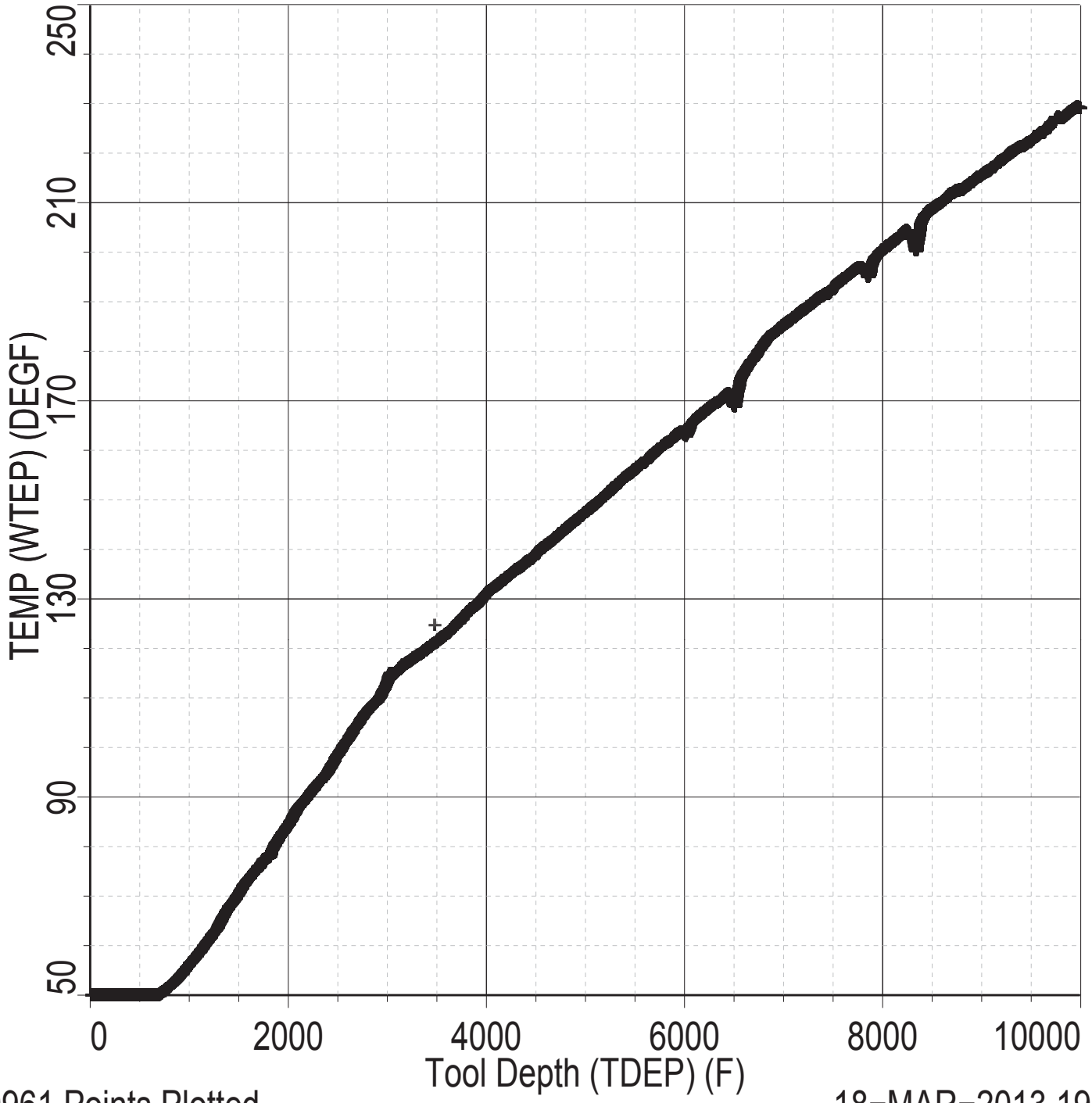
TEMPERATURE PLOT

MAXIS Field Log

Index: 12342.5 - 20.0 FT



19961 Points Plotted

18-MAR-2013 19:04

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PBMS COEFFICIENTS

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**STORY GULCH**	**Sub Type:**	**PBMS**
Well:	**SGU 8512D−24 (L24 496)**	**Sensor:**	**GR**
Run date:	**18−Mar−2013**		

PBMS Gamma Ray

Sonde Serial NB	**RESISTORS FOR GR SENSOR N.34384,TOOL HBMS−BA2880. SENSOR S/N:**
Sensor Serial NB	**34384**
Calib Date ddmmyy	**160206**
Matrix Size	**12**
Coeff CRC	**D8B5**

GR HV Rt

	Rt0**	**Rt**1**
Rt0**	**+.200000000000e+04**	**+.173000000000e+04**

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**STORY GULCH**	**Sub Type:**	**PBMS**
Well:	**SGU 8512D−24 (L24 496)**	**Sensor:**	**WellTemp RTD**
Run date:	**18−Mar−2013**		

PBMS RTD Well Thermometer

Sonde Serial NB	**COEFFICIENTS FOR RTD THERMOMETER PBMS−B.2880 S/N:**
Sensor Serial NB	**2880**
Calib Date ddmmyy	**260408**
Matrix Size	**16**
Coeff CRC	**A3AF**

WTemp Coeff

	Tt0**	**Tt**1**	**Tt**2**
Tt0**	**−.104337336008E+04**	**+.798824971753E+03**	**−.251944021281E+03**

	Tt3**	**Tt**4**	**Tt**5**
Tt0**	**+.406192777109E+02**	**−.240958437264E+01**	**0.0**

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**STORY GULCH**	**Sub Type:**	**PBMS**
Well:	**SGU 8512D−24 (L24 496)**	**Sensor:**	**CQG**
Run date:	**18−Mar−2013**		

PBMS Quartz Gauge type F

Sonde Serial NB	**COEFFICIENTS FOR CQG PBMS−B.2880 S/N:**
Sensor Serial NB	**2880**
Calib Date ddmmyy	**260408**
Matrix Size	**66**
Coeff CRC	**66B8**

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc0**	**+.694668499013E+04**	**+.138137467574E−01**	**−.206148488488E−06**
Fc1**	**−.104285125976E+01**	**−.125721589078E−04**	**−.971577899959E−10**
Fc2**	**+.101045175546E−05**	**+.480801816357E−10**	**+.889110474366E−15**
Fc3**	**+.127326781620E−11**	**+.130693902354E−15**	**0.0**
Fc4**	**0.0**	**0.0**	**0.0**
Fc5**	**0.0**	**0.0**	**0.0**

	Fb**3	Fb**4	Fb**5
Fc0**	**−.802395356069E−10**	**−.148392899370E−14**	**−.162952476494E−19**
Fc1**	**+.114970383999E−15**	**+.186330526680E−19**	**0.0**
Fc2**	**0.0**	**0.0**	**0.0**
Fc3**	**0.0**	**0.0**	**0.0**
Fc4**	**0.0**	**0.0**	**0.0**
Fc5**	**0.0**	**0.0**	**0.0**

PBMS Quartz Gauge type F

Sonde Serial NB	**:**
Sensor Serial NB	**2880**
Calib Date ddmmyy	**260408**

Matrix Size 66
Coeff CRC 3690

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+.114978632240E+03	−.318843725686E−03	+.651766172344E−08
Fb**1	−.590205352250E−02	+.168686572404E−07	+.162345150354E−12
Fb**2	−.362996279263E−07	+.407654559315E−12	+.452411391342E−17
Fb**3	−.276281361281E−12	+.871817059405E−17	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

	Fc**3	Fc**4	Fc**5
Fb**0	+.199118144093E−13	−.260997933236E−18	+.618908211390E−21
Fb**1	+.250084591851E−17	+.455070709200E−21	0.0
Fb**2	0.0	0.0	0.0
Fb**3	0.0	0.0	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

PBMS Quartz Gauge type F
Sonde Serial NB :
Sensor Serial NB 2880
Calib Date ddmmyy 260408
Matrix Size 16
Coeff CRC 71B5

Clock Freq Coeff

	(Fb'−Fc')**0	(Fb'−Fc')**1	(Fb'−Fc')**2
(Fb'−Fc')**0	+.310736316923E+05	+.273670214709E−02	+.731815197856E−06

	(Fb'−Fc')**3	(Fb'−Fc')**4	(Fb'−Fc')**5
(Fb'−Fc')**0	−.654219198492E−10	−.150585137208E−15	−.117697151708E−19

PBMS Quartz Gauge type F
Sonde Serial NB :
Sensor Serial NB 2880
Calib Date ddmmyy 260408
Matrix Size 16
Coeff CRC ECB5

Clock Temp Coeff

	(Fb'−Fc')**0	(Fb'−Fc')**1	(Fb'−Fc')**2

(Fb'−Fc')**0	+.116053417872E+03	−.554118045908E−02	−.348241454518E−07

	(Fb'−Fc')**3	(Fb'−Fc')**4	(Fb'−Fc')**5
(Fb'−Fc')**0	+.207992675474E−12	−.353168788938E−17	−.345142848607E−21

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MASTER CALIBRATION

MAXIS Field Log

Slim Cement Mapping Tool, 1−11/16 OD / Equipment Identification

Primary Equipment:		
Slim Cement Mapping Xmitter Electronics	SCMX − CA	
Slim Cement Mapping Sonde	SCMS − CB	8179
Slim Cement Mapping Cartridge	SCMC − CA	8120
Auxiliary Equipment:		
Slim Electronics Cartridge Housing	SECH − CA	

Slim Cement Mapping Tool, 1−11/16 OD Master Calibration

SCMT CBL and MAP Amplitude Normalization in SFT−155/−255

Phase	MAP 1 Amplitude Plus MV	Value	Phase	MAP 2 Amplitude Plus MV	Value
Master		1158	Master		1232
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)			500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	
Phase	MAP 3 Amplitude Plus MV	Value	Phase	MAP 4 Amplitude Plus MV	Value
Master		1237	Master		1118
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)			500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	
Phase	MAP 5 Amplitude Plus MV	Value	Phase	MAP 6 Amplitude Plus MV	Value
Master		1061	Master		1299
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)			500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	
Phase	MAP 7 Amplitude Plus MV	Value	Phase	MAP 8 Amplitude Plus MV	Value
Master		1258	Master		1267
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)			500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	
Phase	CBL Amplitude Plus MV	Value			
Master		1351			
	1000 (Minimum) 1350 (Nominal) 1700 (Maximum)				

Master: 2−Jan−2013 15:55

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

Schlumberger

Well: **SGU 8512D−24 (L24 496)**
Field: **STORY GULCH**
County: **GARFIELD**
State: **COLORADO**

SLIM CEMENT MAPPING LOG
GAMMA RAY − CCL − TEMPERATUR
CBL − VDL