Schlumberger

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

Well: **ENCANA FEE 24−1A (K19CNE)**
Field: **MAMM CREEK**
County: **GARFIELD** State: **COLORADO**

County: GARFIELD
Field: MAMM CREEK
Location: SHL: 2387 FSL & 324 FWL
Well: ENCANA FEE 24−1A (K19CNE)
Company: ENCANA OIL & GAS (USA) INC

SLIM CEMENT MAPPING LOG
CBL−VDL
GAMMA RAY − CCL

LOCATION

SHL: 2387 FSL & 324 FWL
BHL: 640 FNL & 640 FEL

Elev.: K.B. 5688.00 ft
G.L. 5666.00 ft
D.F. 5686.00 ft

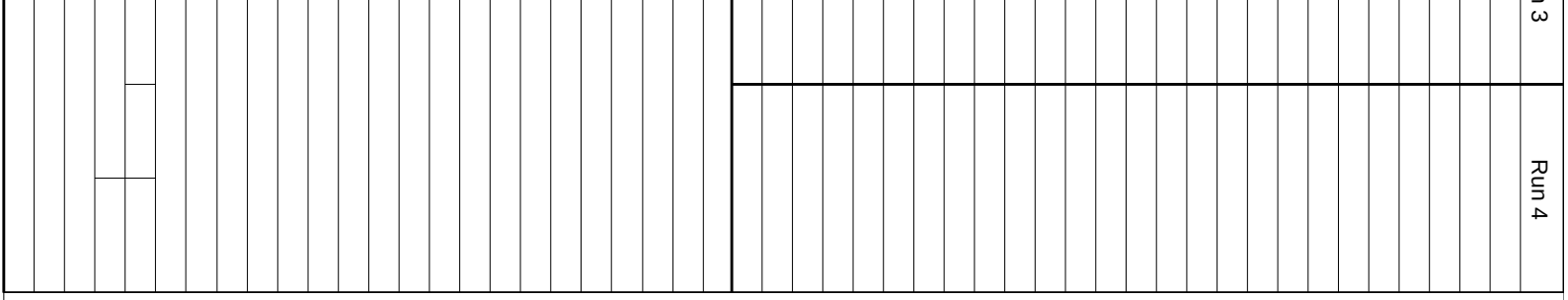
Permanent Datum: GROUND LEVEL Elev.: 5666.00 ft
Log Measured From: KELLY BUSHING 22.00 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	Section	Township	Range
05−045−20753−0(	19	6S	92W

Logging Date		2−May−2013						
Run Number		1						
Depth Driller		9505 ft						
Schlumberger Depth		9435 ft						
Bottom Log Interval		9426 ft						
Top Log Interval		60 ft						
Casing Fluid Type		FRESH WATER						
Salinity								
Density		8.4 lbm/gal						
Fluid Level		60 ft						
BIT/CASING/TUBING STRING								
Bit Size		7.875 in						
From		6547 ft						
To		9505 ft						
Casing/Tubing Size		4.500 in						
Weight		11.6 lbm/ft						
Grade								
From		22 ft						
To		9497 ft						
Maximum Recorded Temperatures		237 degF						
Logger On Bottom	Time	2−May−2013	11:00					
Unit Number	Location	391	GRAND JUNCTION					
Recorded By		KIRSTIE BUNTING						
Witnessed By		EUGENE						

		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: 30−APR−2013 11:07:37

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:	30−APR−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:	7	Rig Type:	LAND
Wheel Correction 2:	−4	Calibration Peak Error:	15		

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:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE CORRELATED TO DOWN LOG	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 10:30	
TIME ON BOTTOM: 11:00	
EXIT TIME: 13:30	

MAX RECORDED TEMPERATURE: 237 DEGF

MAX RECORDED PRESSURE: 3789 PSIA

SHORT JOINTS: 5979 FT & 7010 FT

MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE

EXPECTED CBL AMPLITUDE IN FREE PIPE IS 80MV

CREW: J BARRY, K BUNTING, K JOHNS, K BOZARTH, T LEGGITT

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

RUN 1		RUN 2	
SERVICE ORDER #:	C920−00063	SERVICE ORDER #:	
PROGRAM VERSION:	19C0−187	PROGRAM VERSION:	
FLUID LEVEL:	60 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

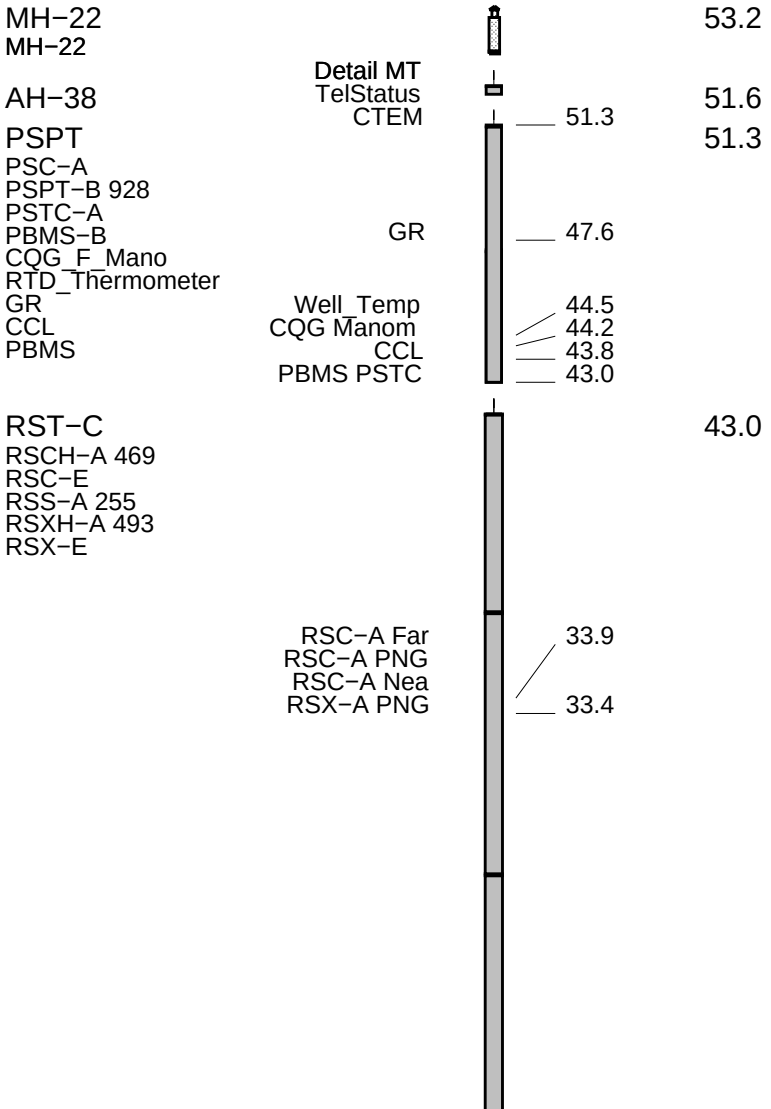
EQUIPMENT DESCRIPTION

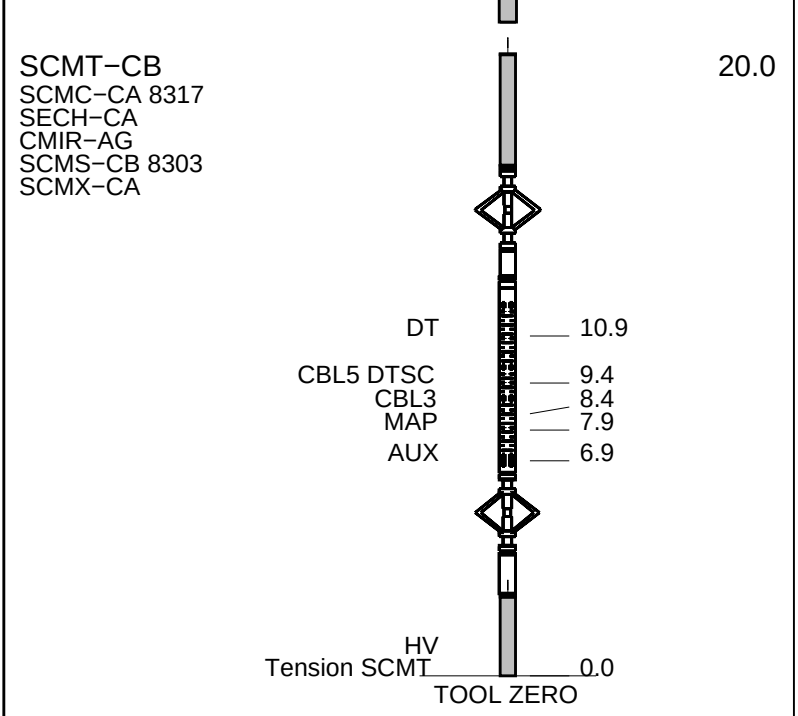
RUN 1 RUN 2

SURFACE EQUIPMENT

WITM−A
PSC_16MHZ

DOWNHOLE EQUIPMENT





Schlumberger

MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC **Well: ENCANA FEE 24−1A (K19CNE)**

Input DLIS Files

DEFAULT	**SCMT_RST_PSP_065LUP**	**FN:63**	**PRODUCER**	**02−May−2013 11:00**	**9441.5 FT**	**9.0 FT**

Output DLIS Files

DEFAULT	**SCMT_RST_PSP_070PUP**	**FN:68**	**PRODUCER**	**02−May−2013 13:38**	**9445.5 FT**	**−31.5 FT**

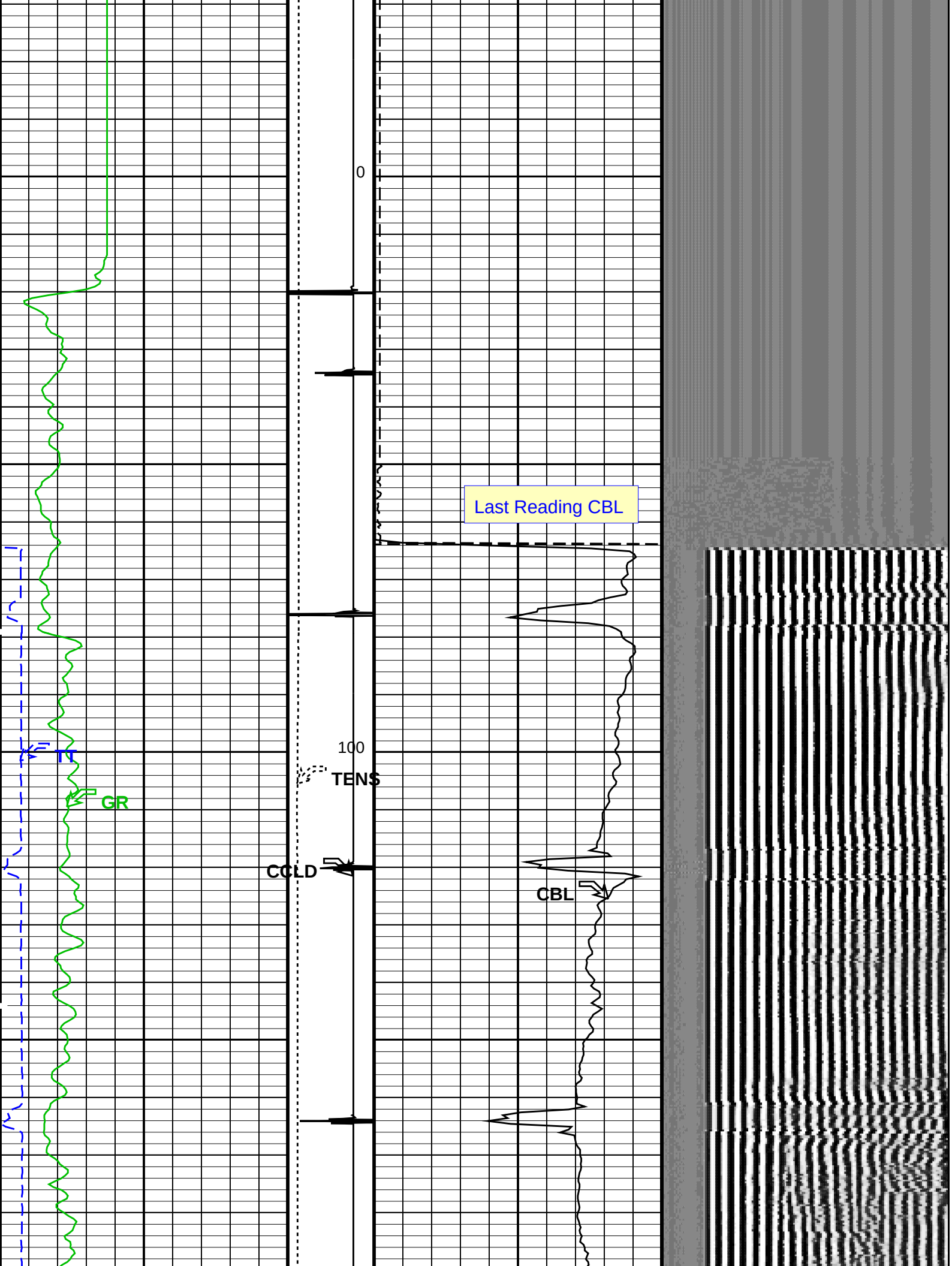
OP System Version: 19C0−187

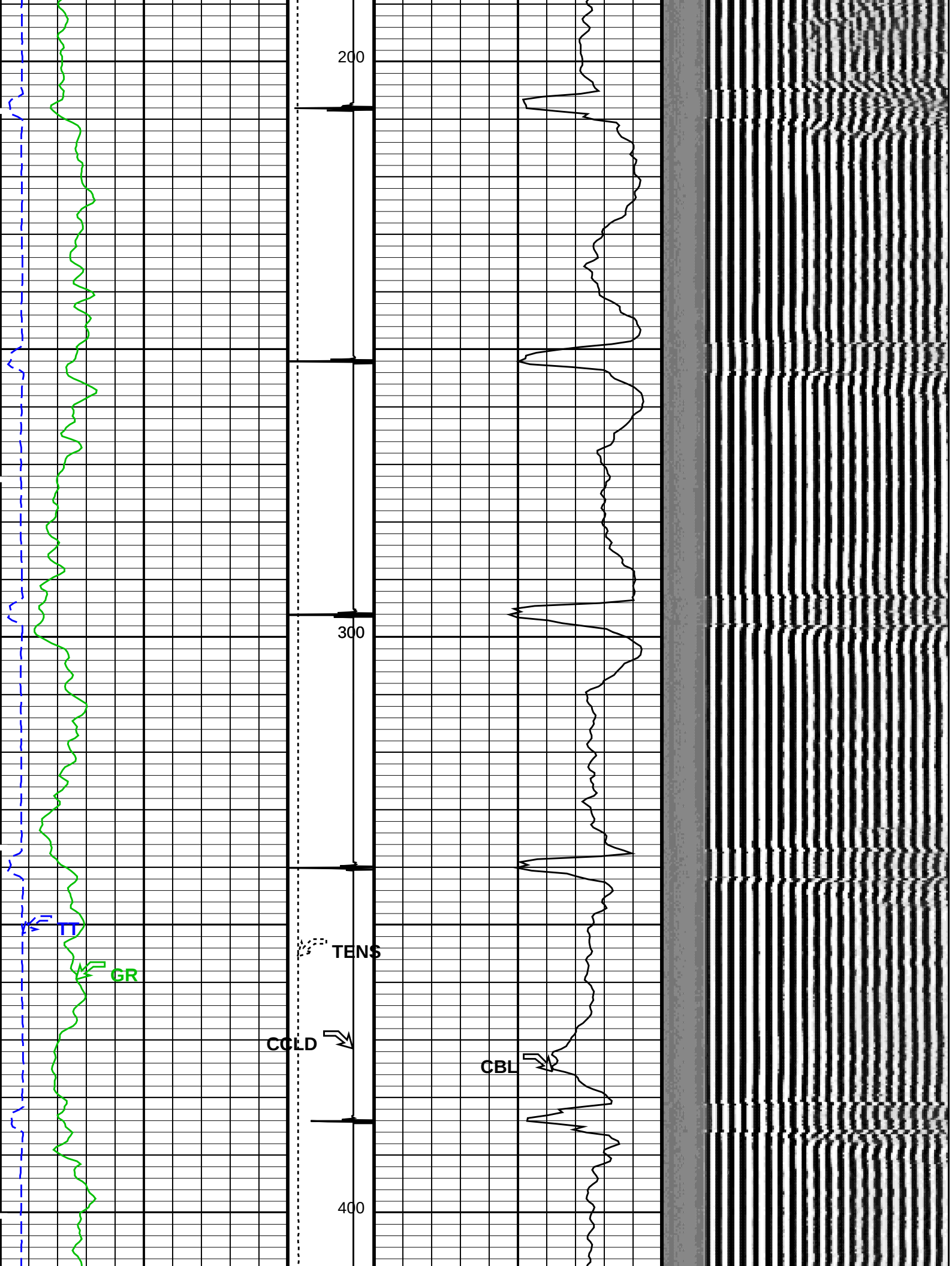
SCMT−CB	**SRPC−5214−H2−2012−OP1**	**RST−C**	**SRPC−5214−H2−2012−OP1**
PSPT	**SRPC−5214−H2−2012−OP1**		

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


0
100
Last Reading CBL
TT
GR
TENS
CCLD
CBL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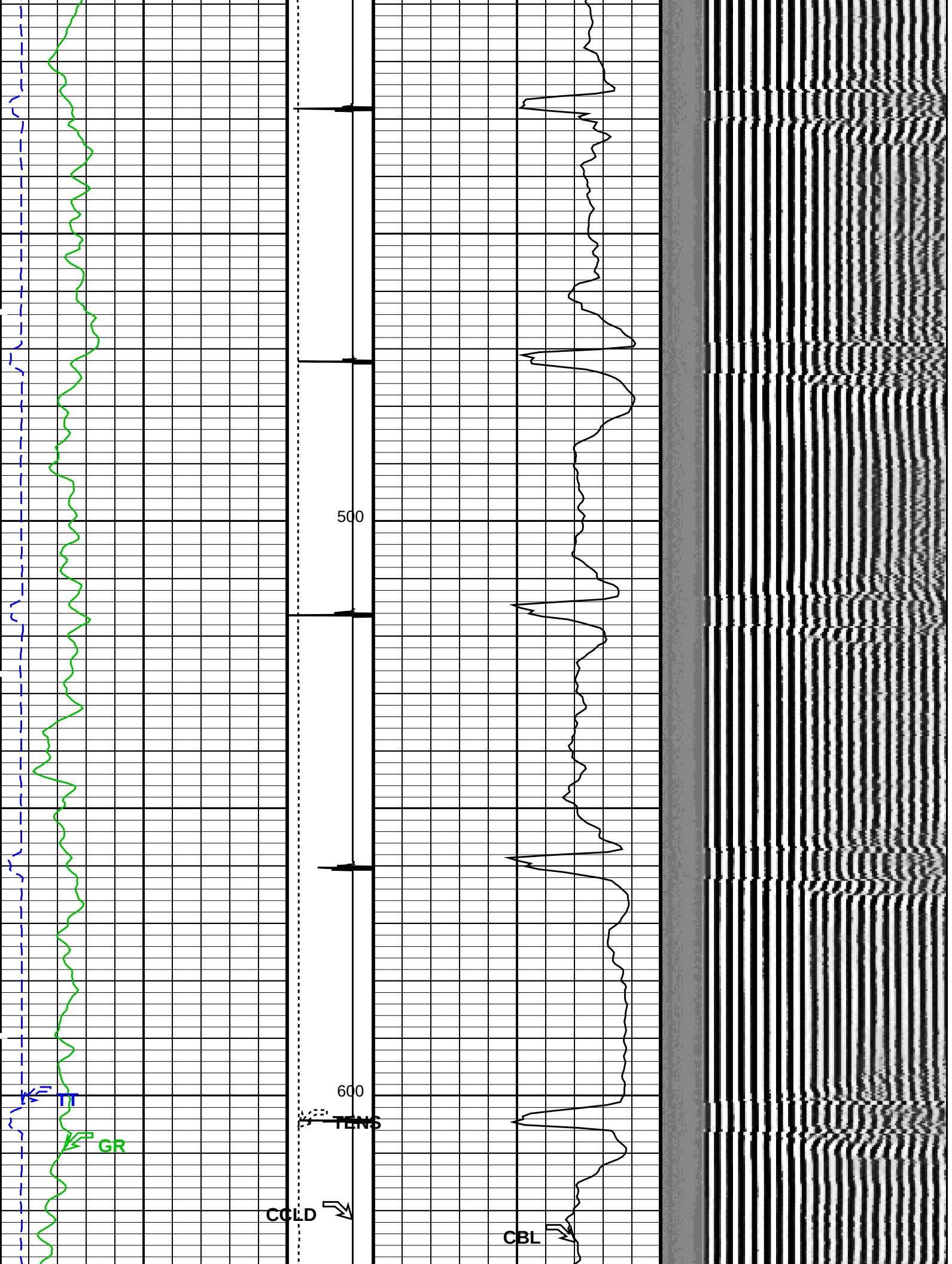
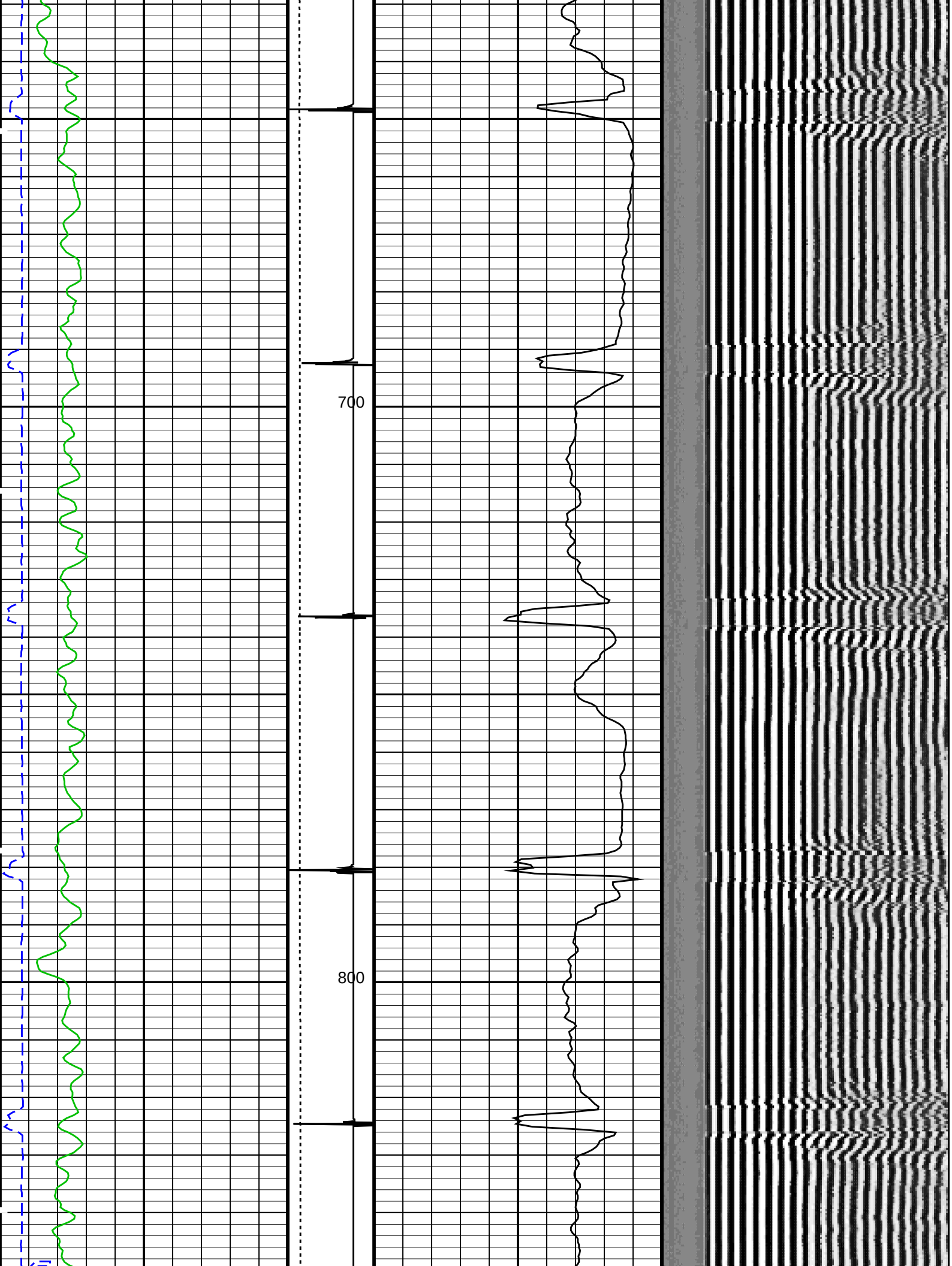
300
400
TT
GR
TENS
CCLD
CBL


500
600
TT
GR
TENS
CCLD
CBL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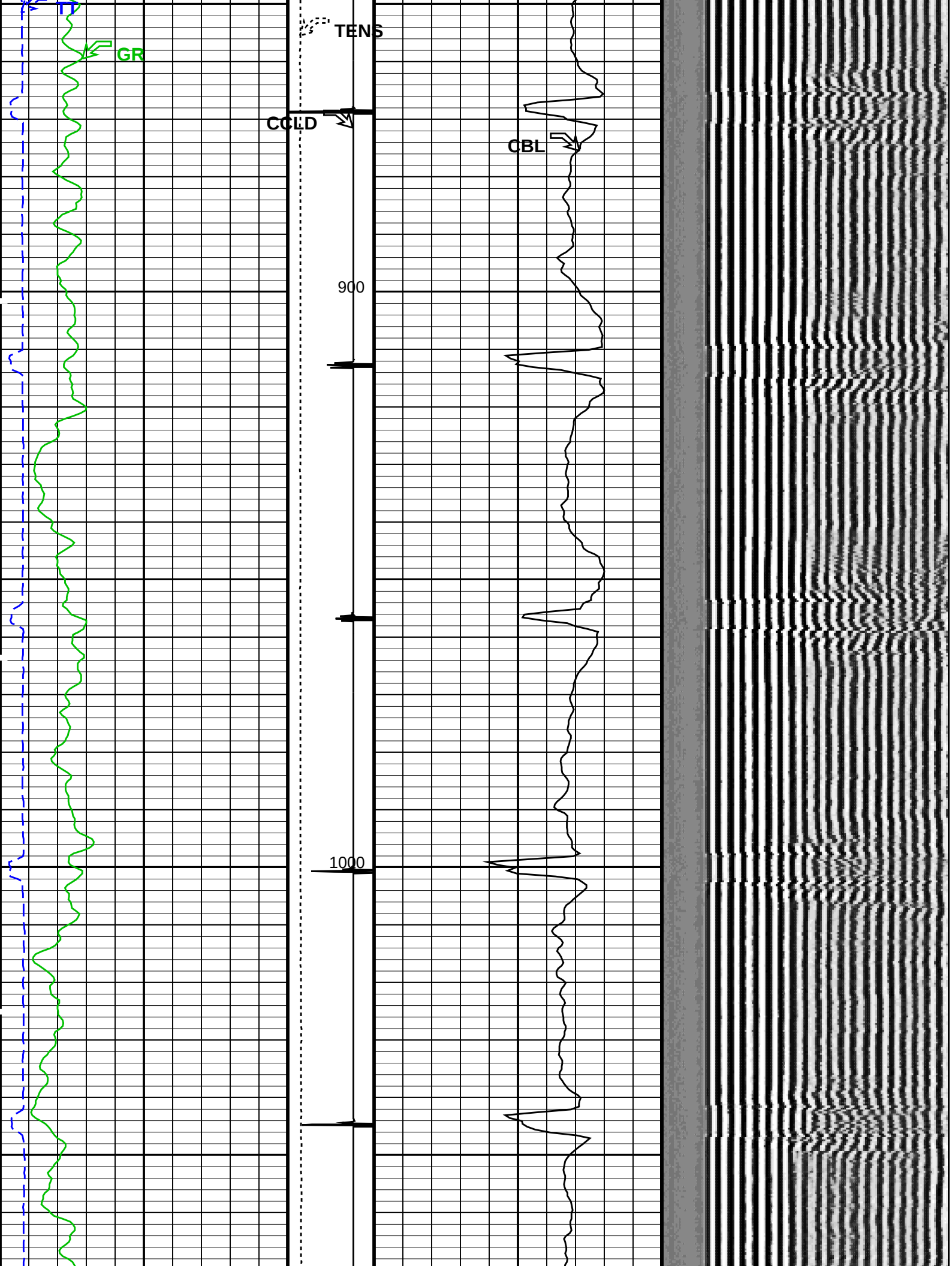
800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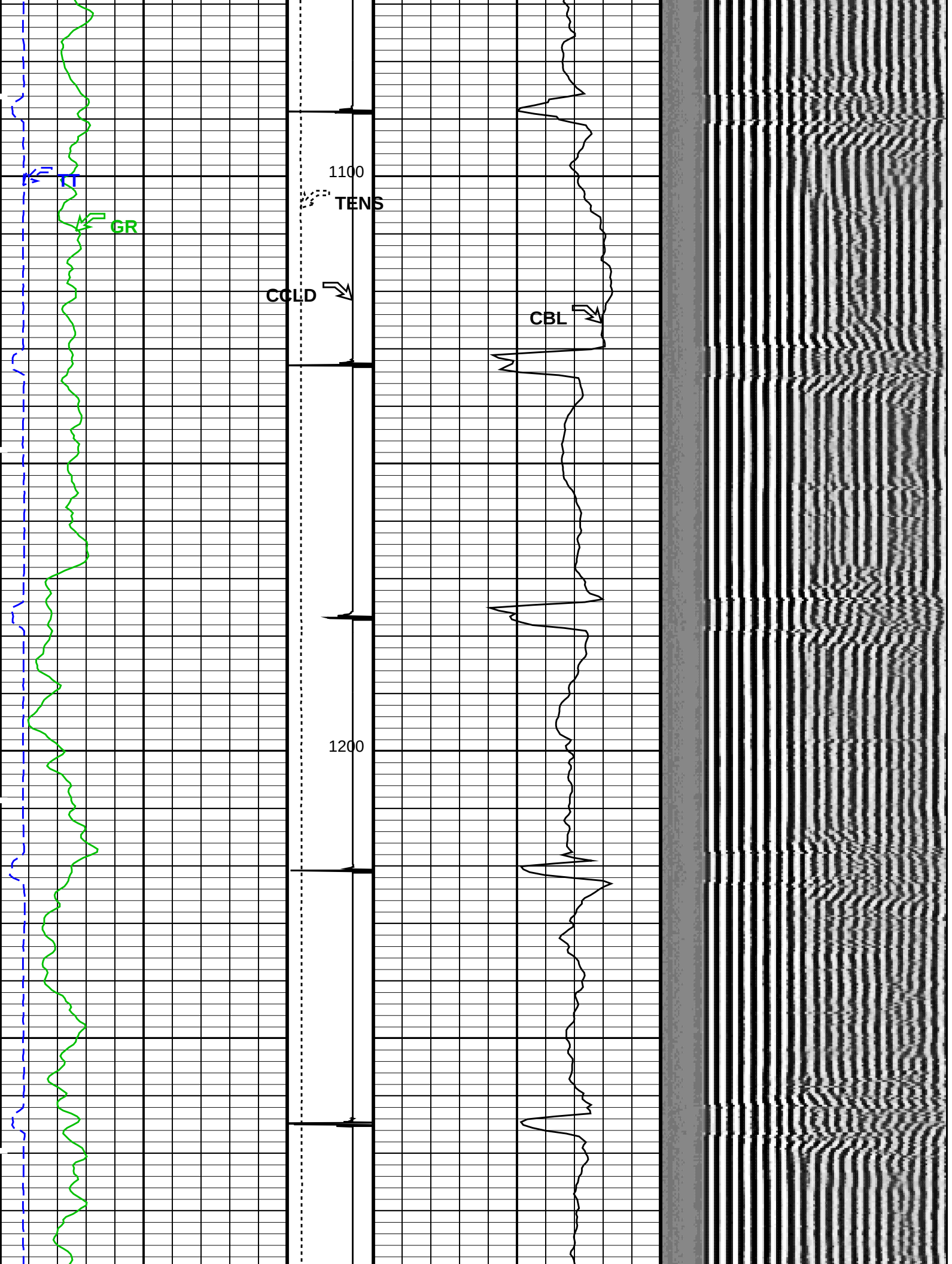
GR
TENS
CCLD
CBL
900
1000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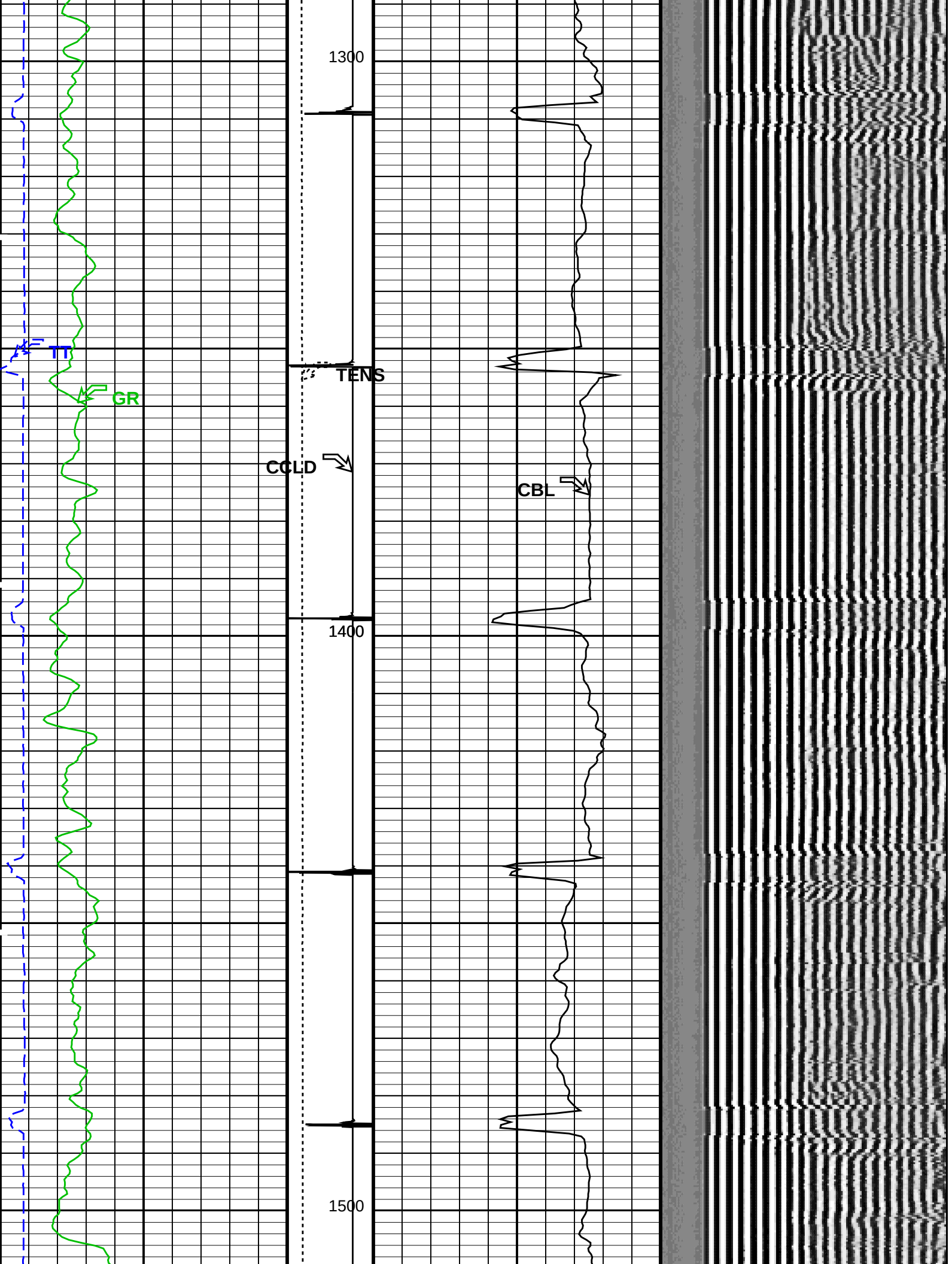
GR
1100
TENS
CCLD
CBL
1200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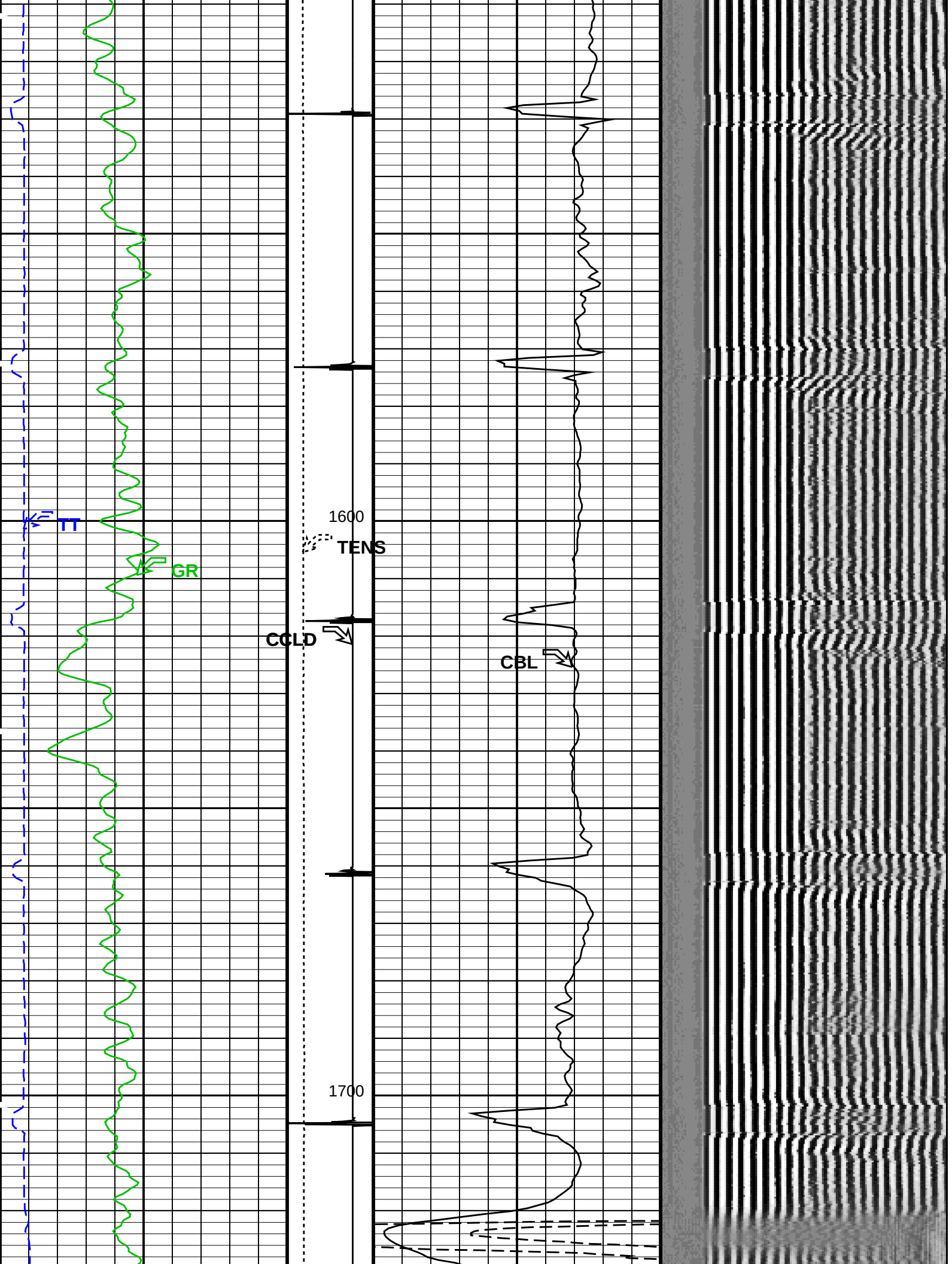
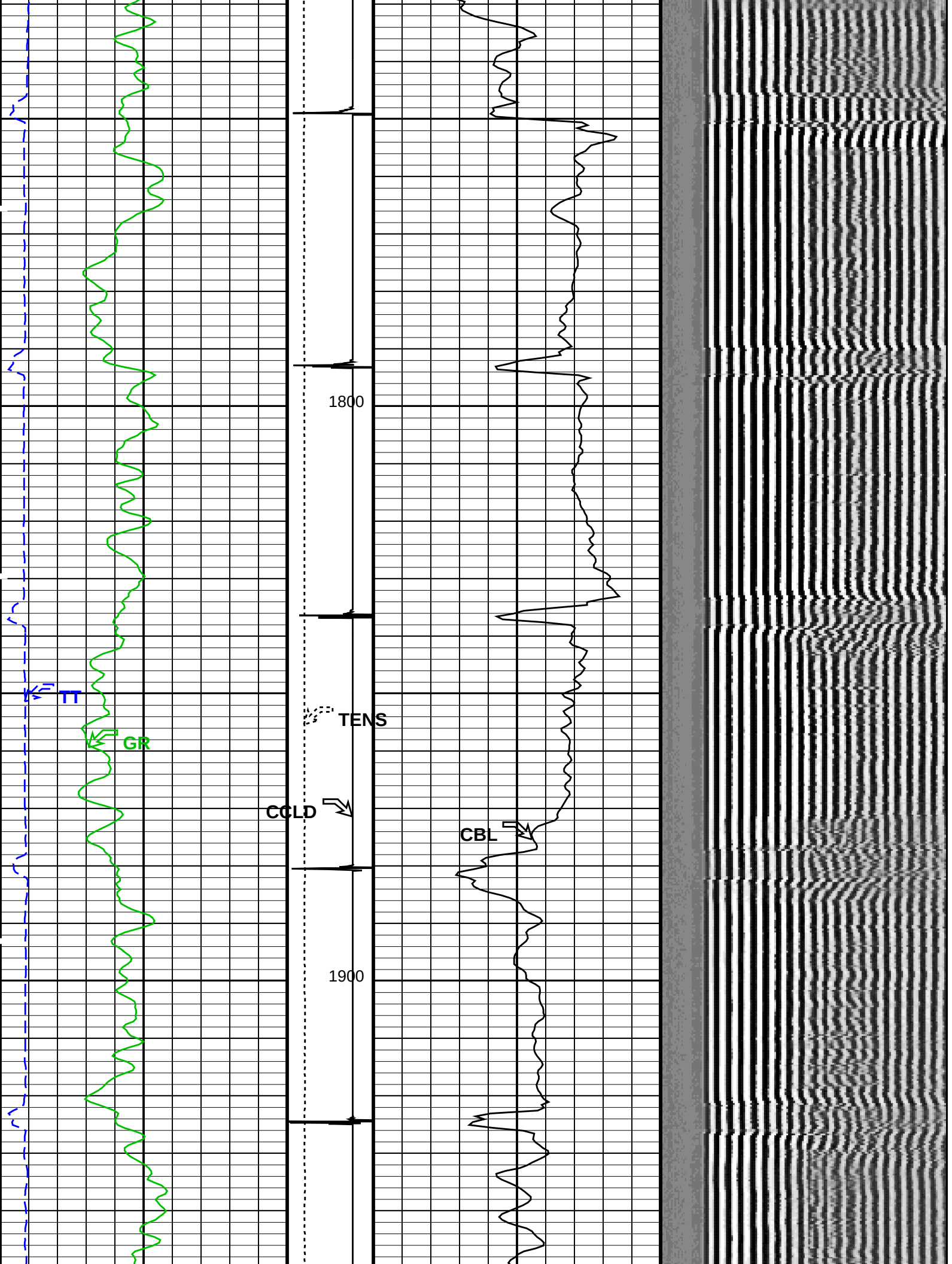
TT
GR
TENS
CCLD
CBL
1400
1500


TT
GR
1600
TENS
CCLD
CBL
1700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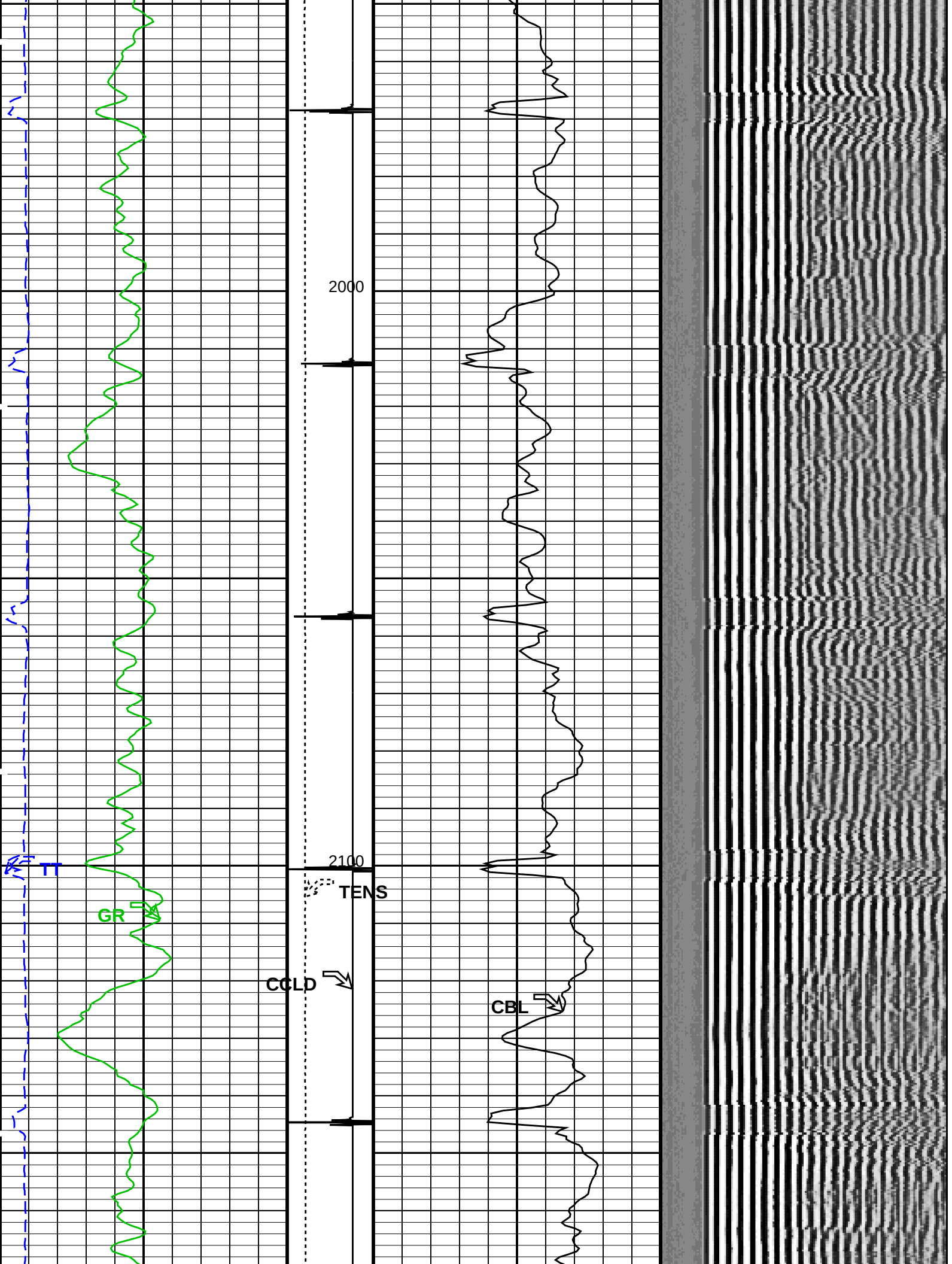
TT
GR
TENS
CCLD
CBL
1900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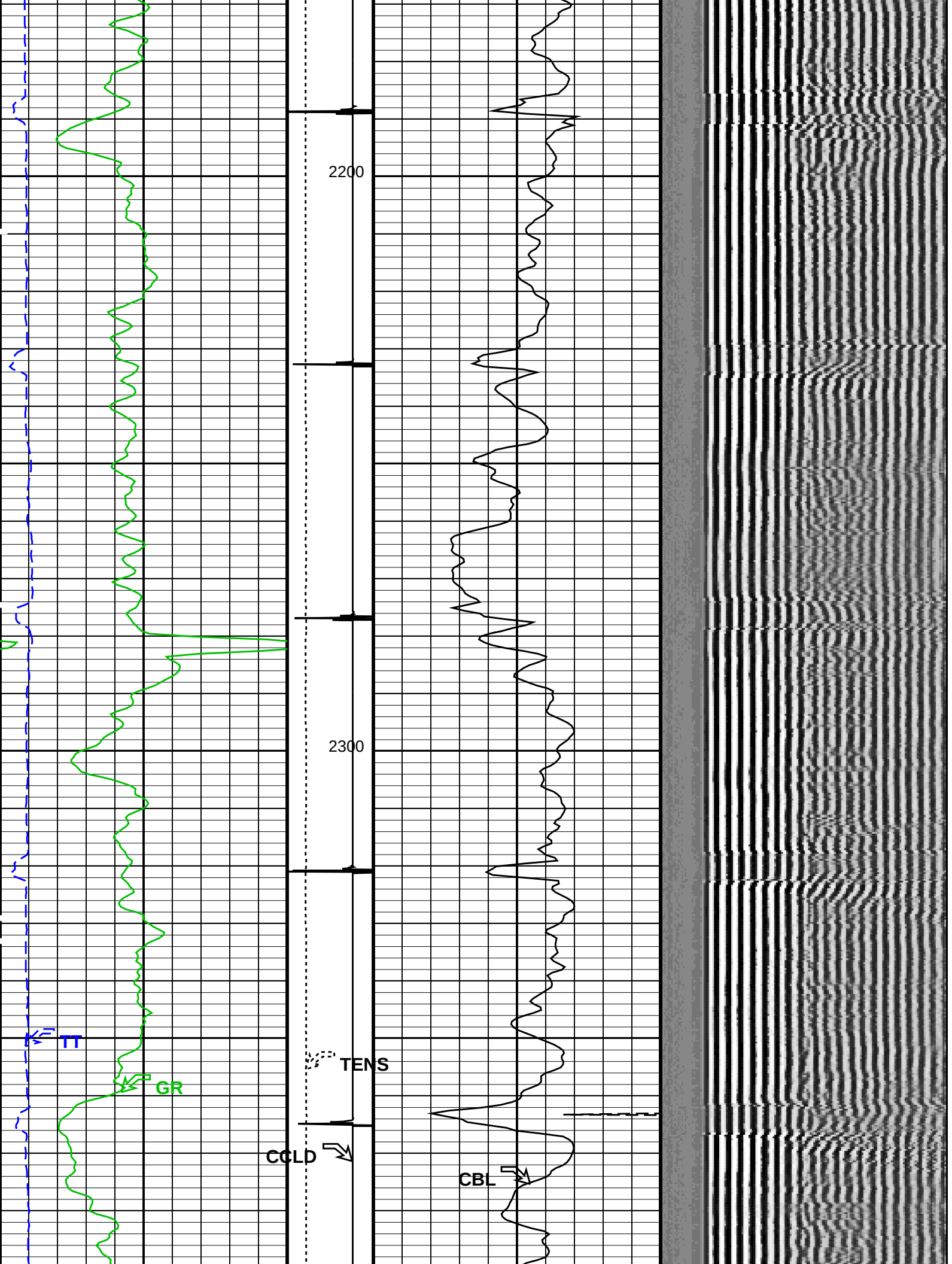
TT
GR
TENS
CCLD
CBL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2300
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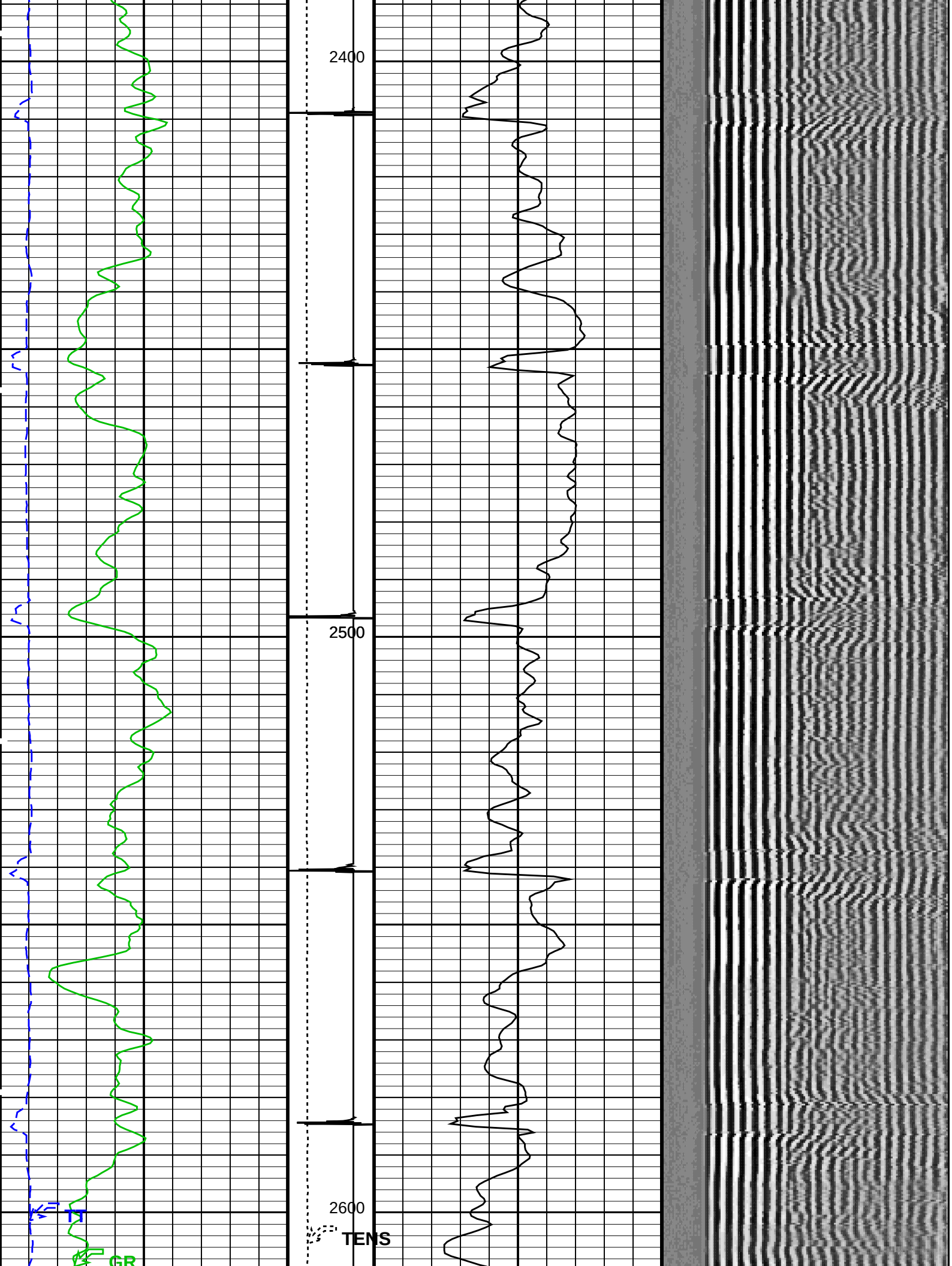
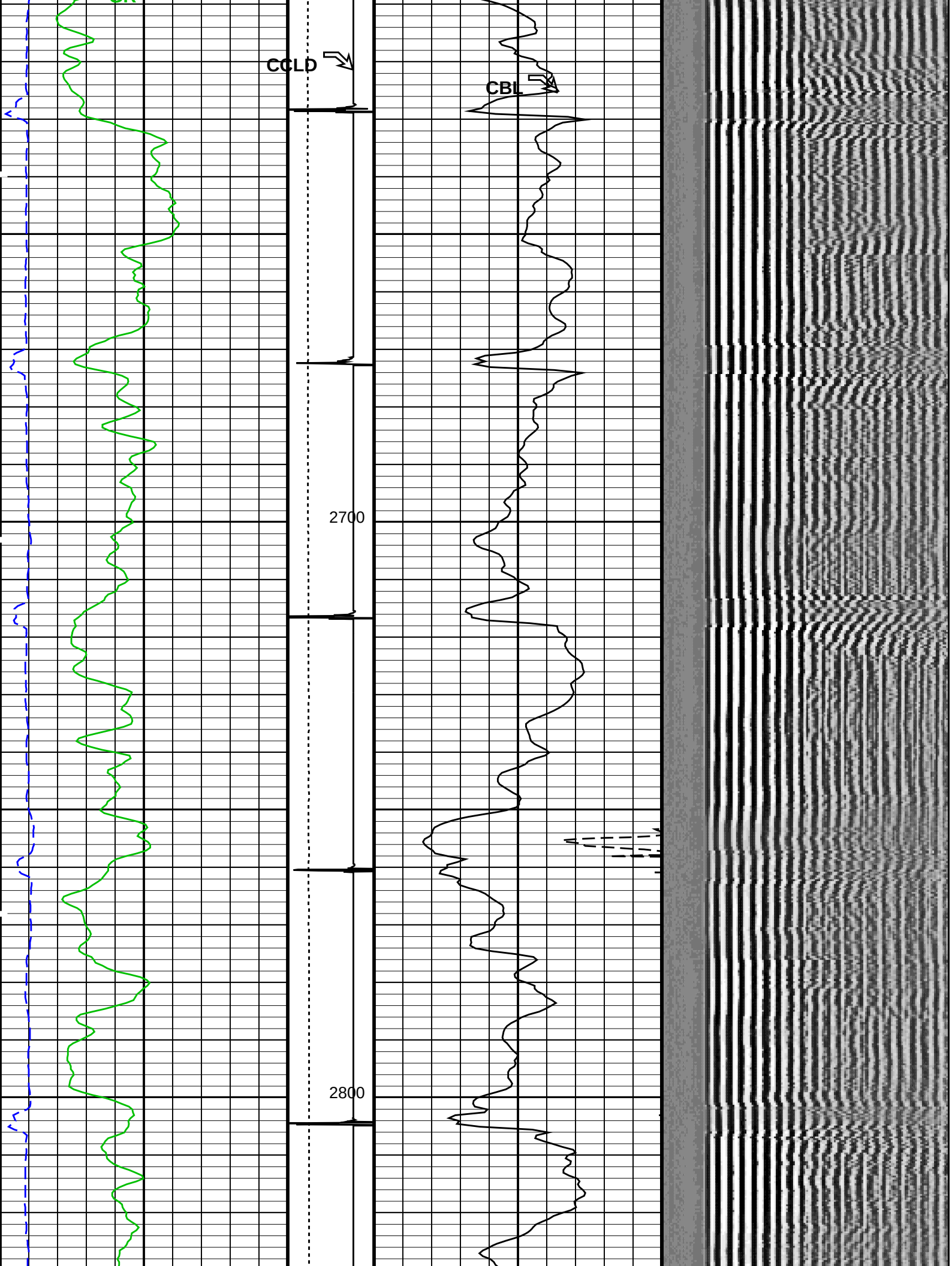
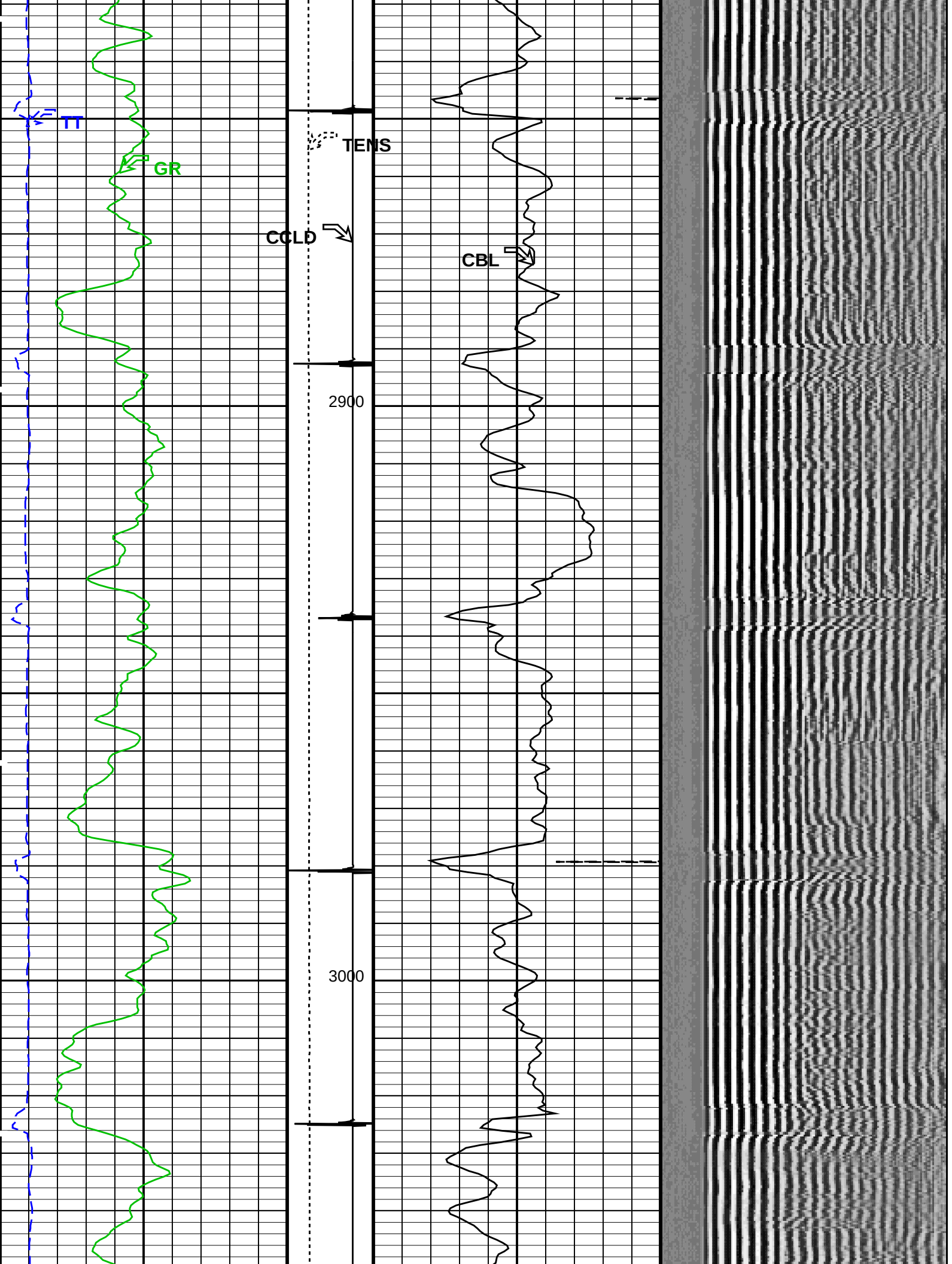
GR
TENS
CCLD
CBL


2400
2500
2600
TT
GR
TENS


CCLD
CBL
2700
2800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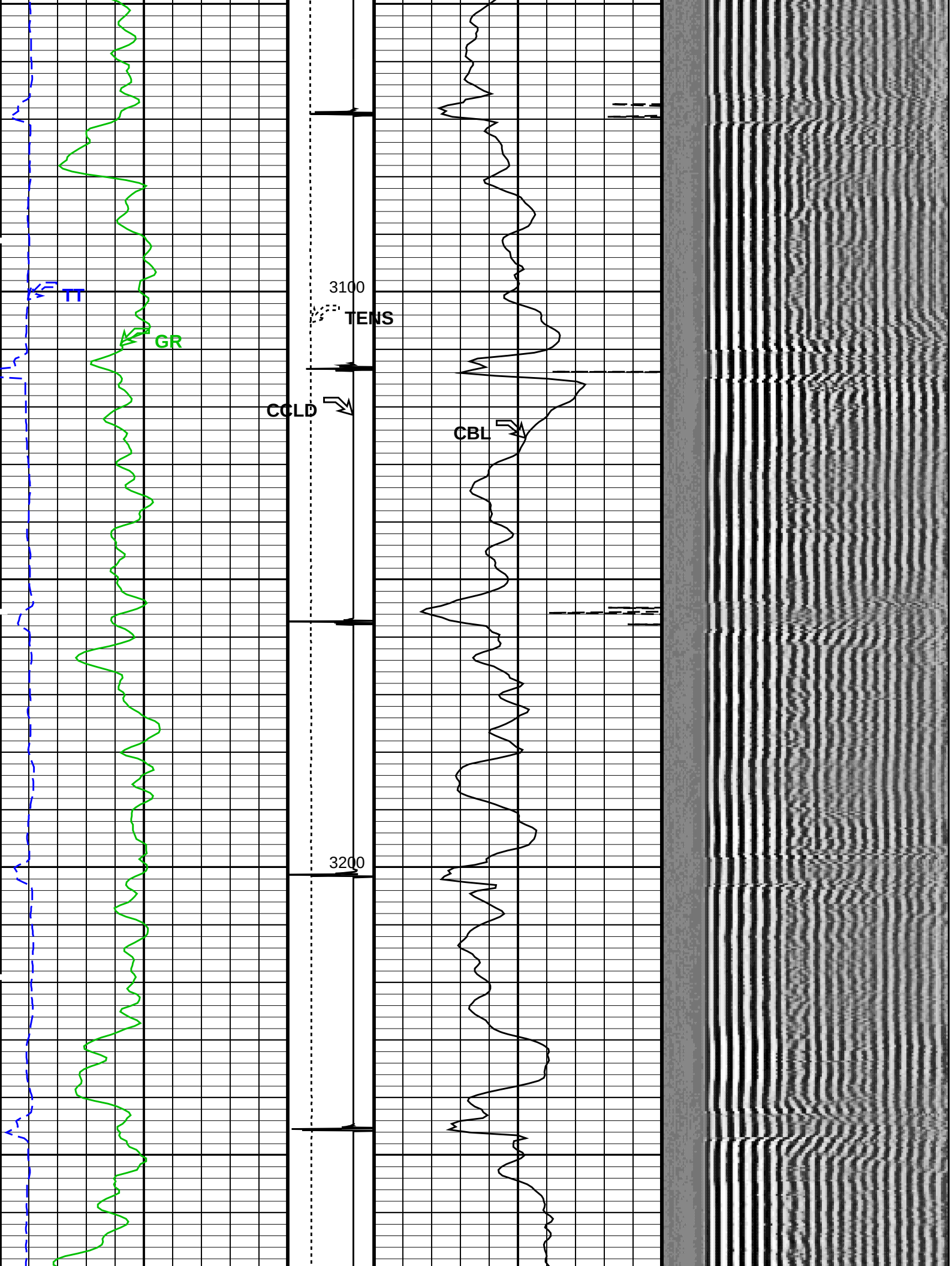
GR
TENS
CCLD
CBL
2900
3000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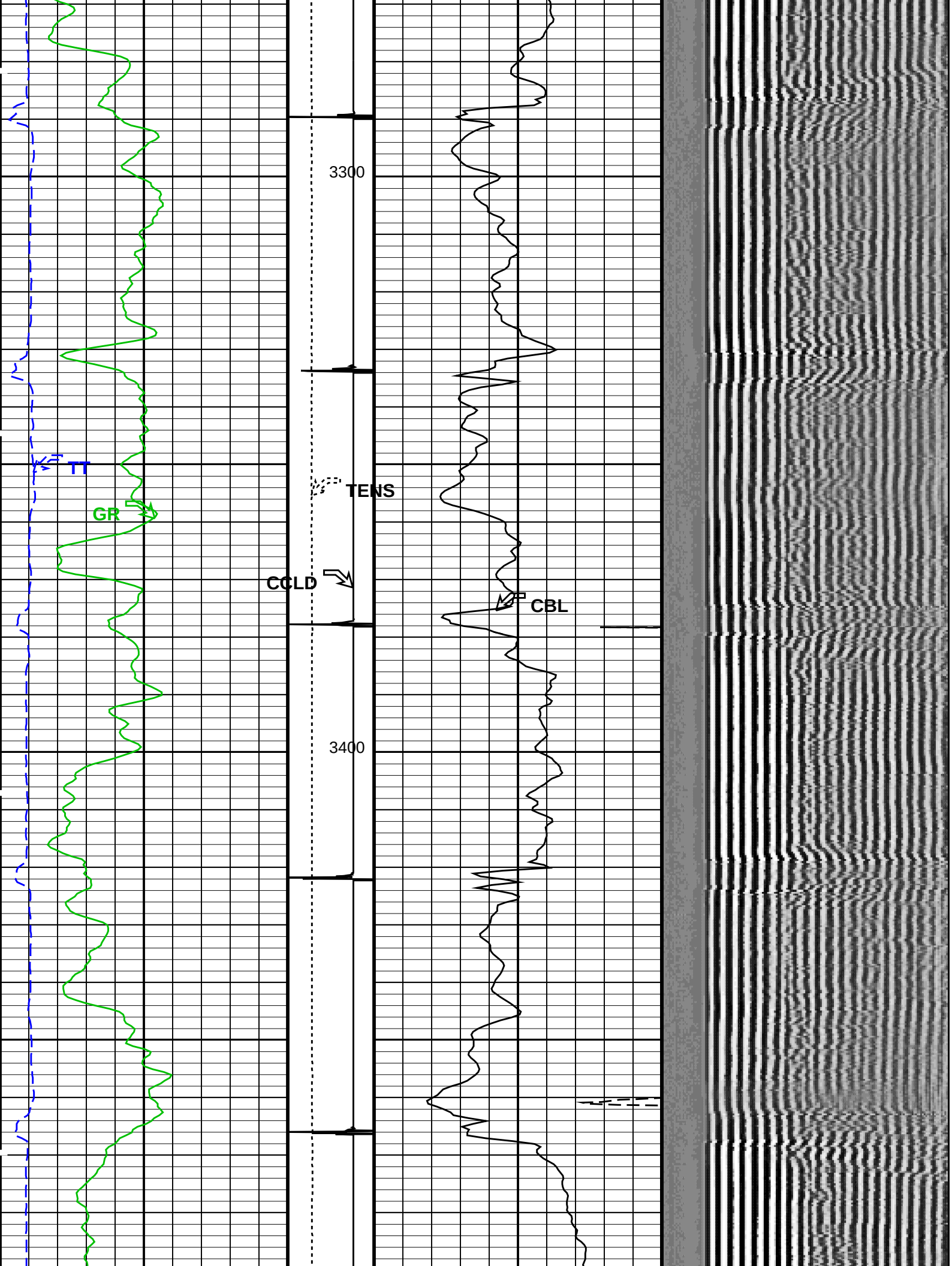
GR
3100
TENS
CCLD
CBL
3200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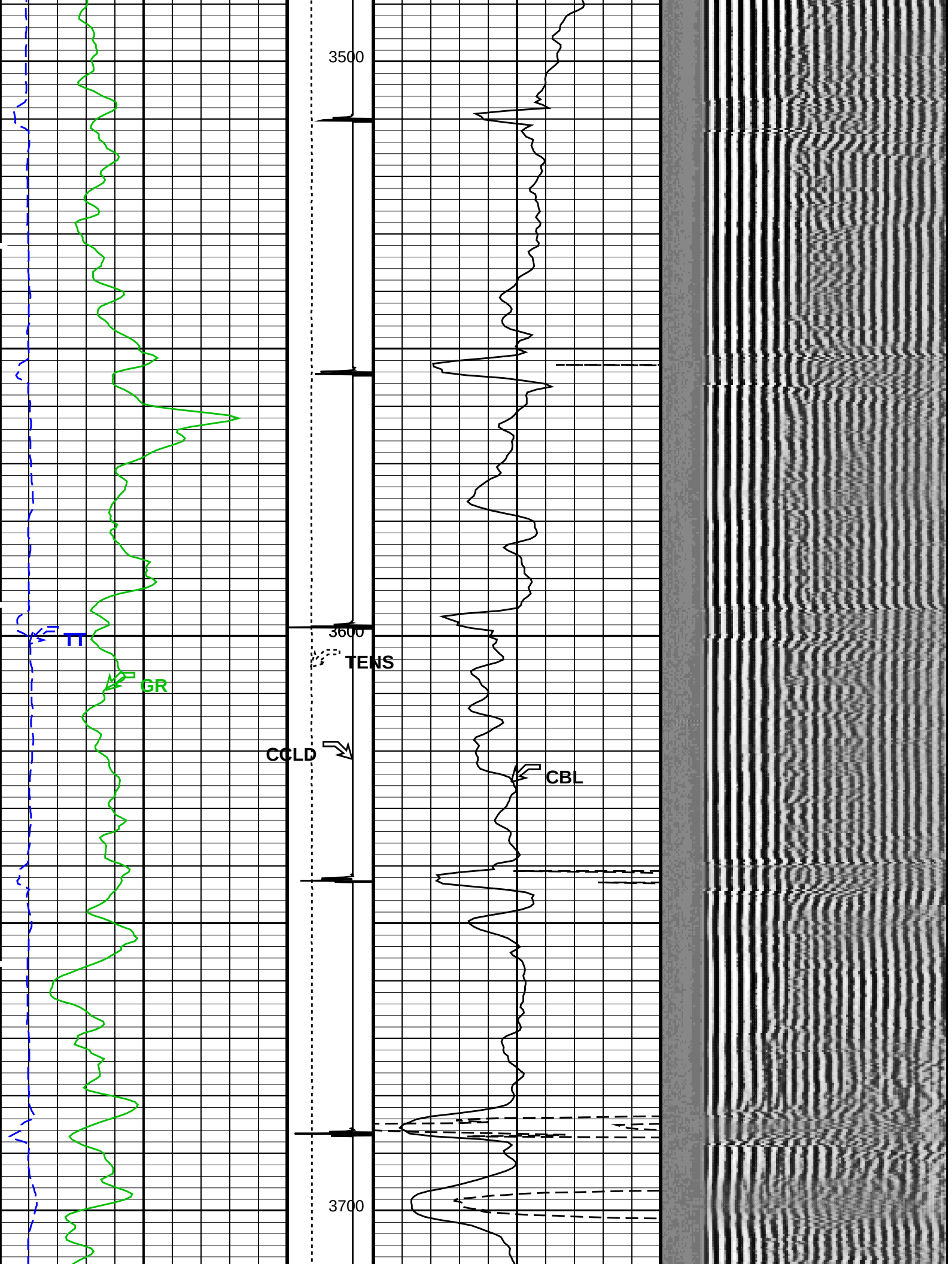
TT
TENS
GR
CCLD
CBL
3400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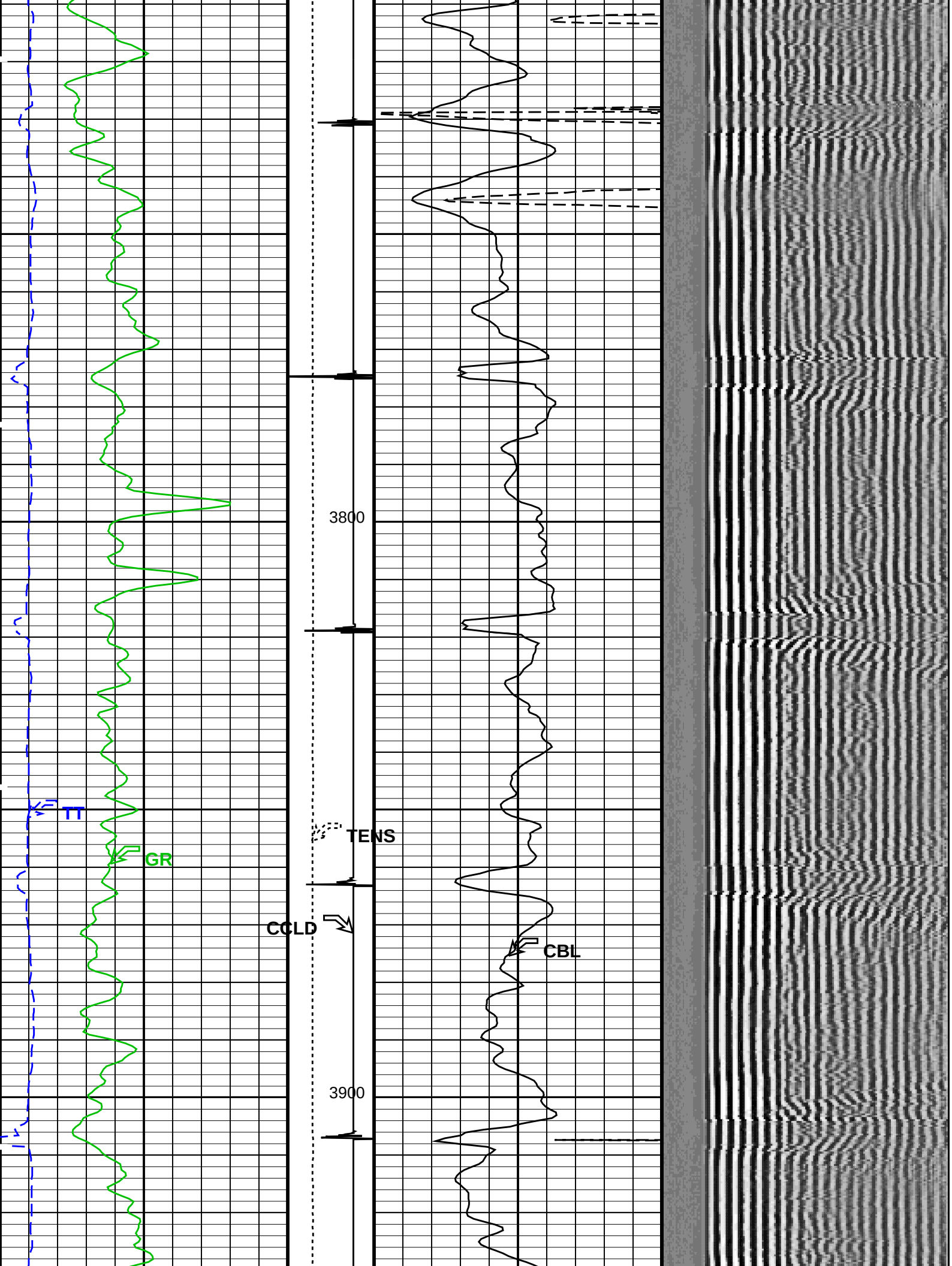
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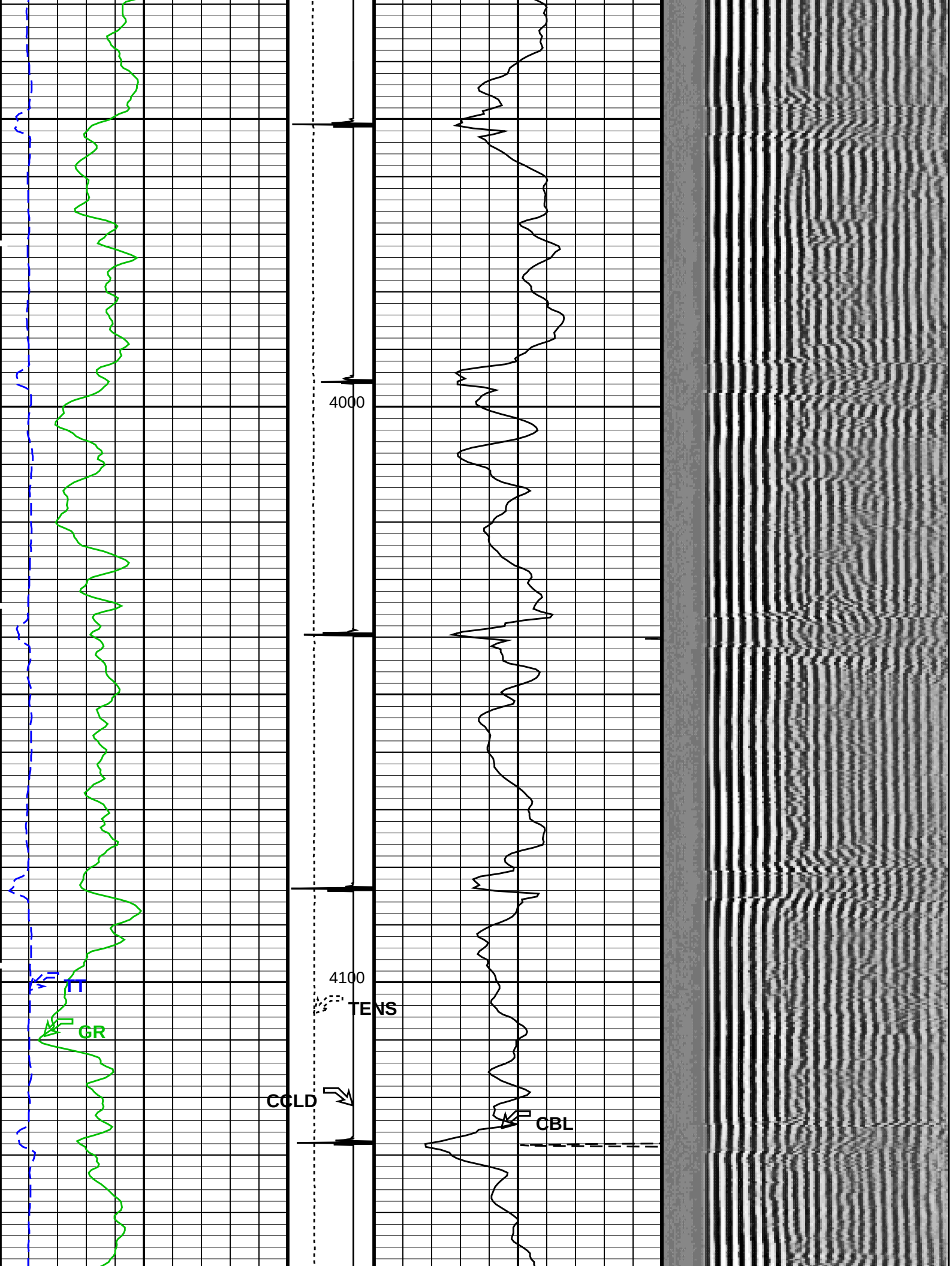
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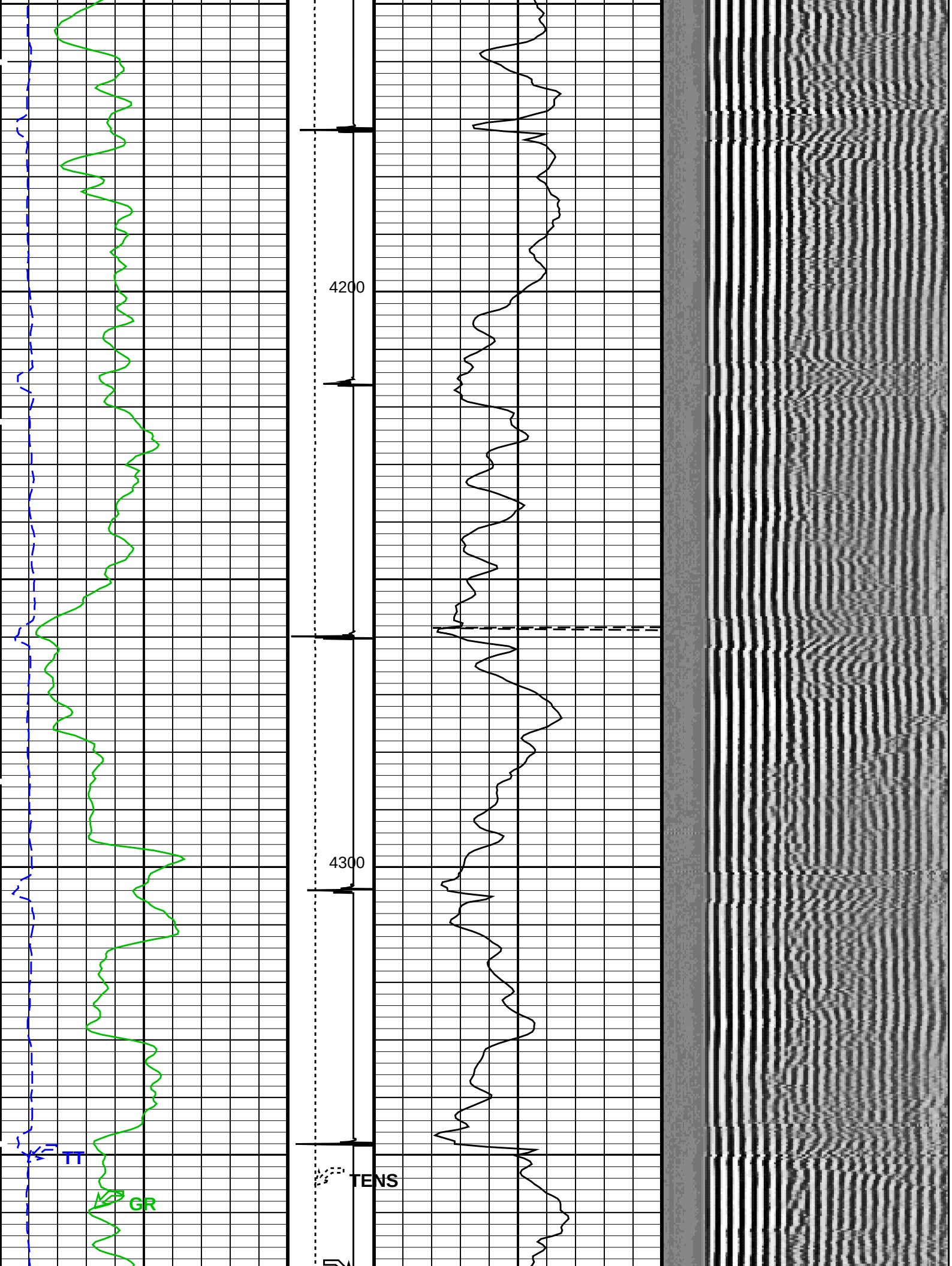
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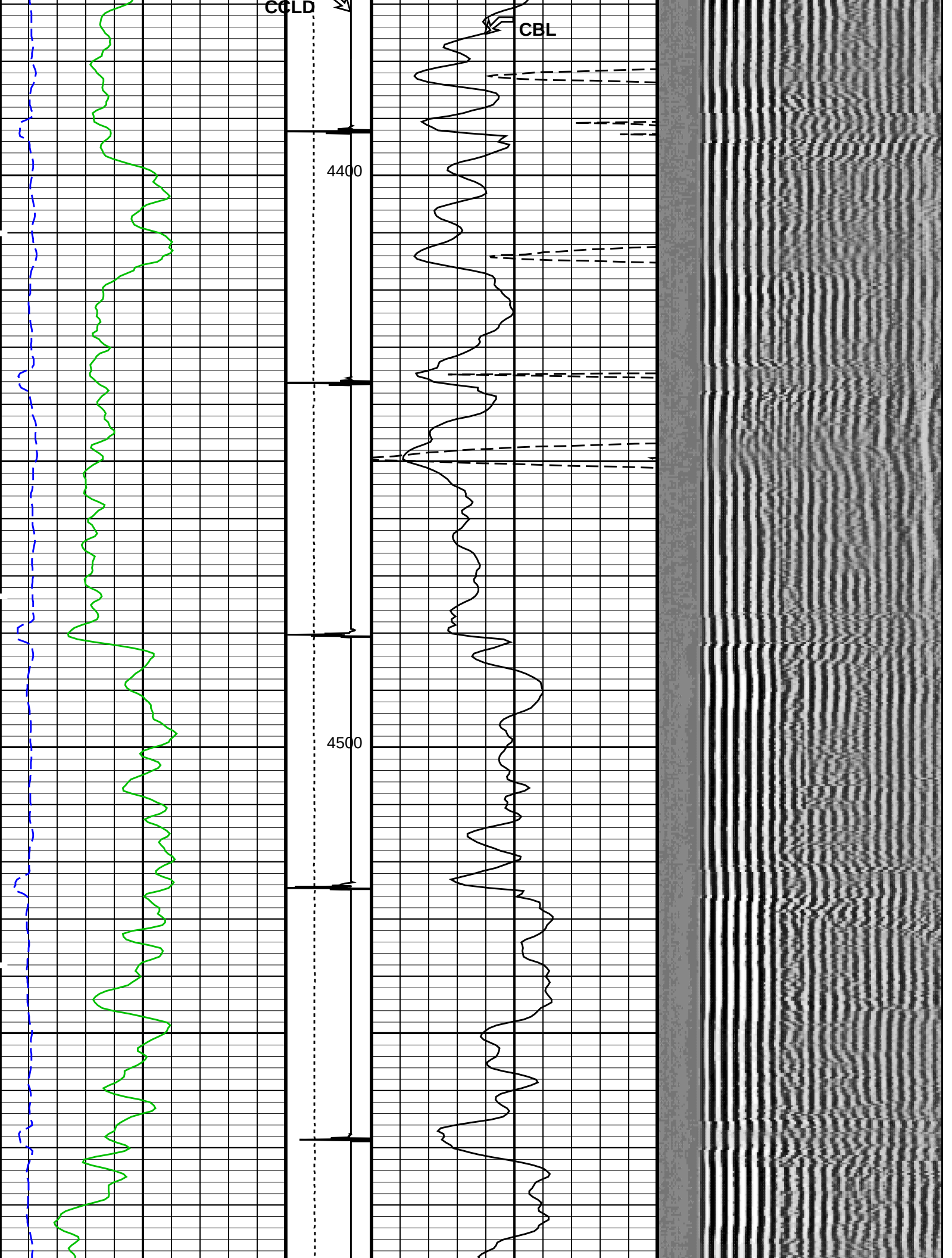
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CBL
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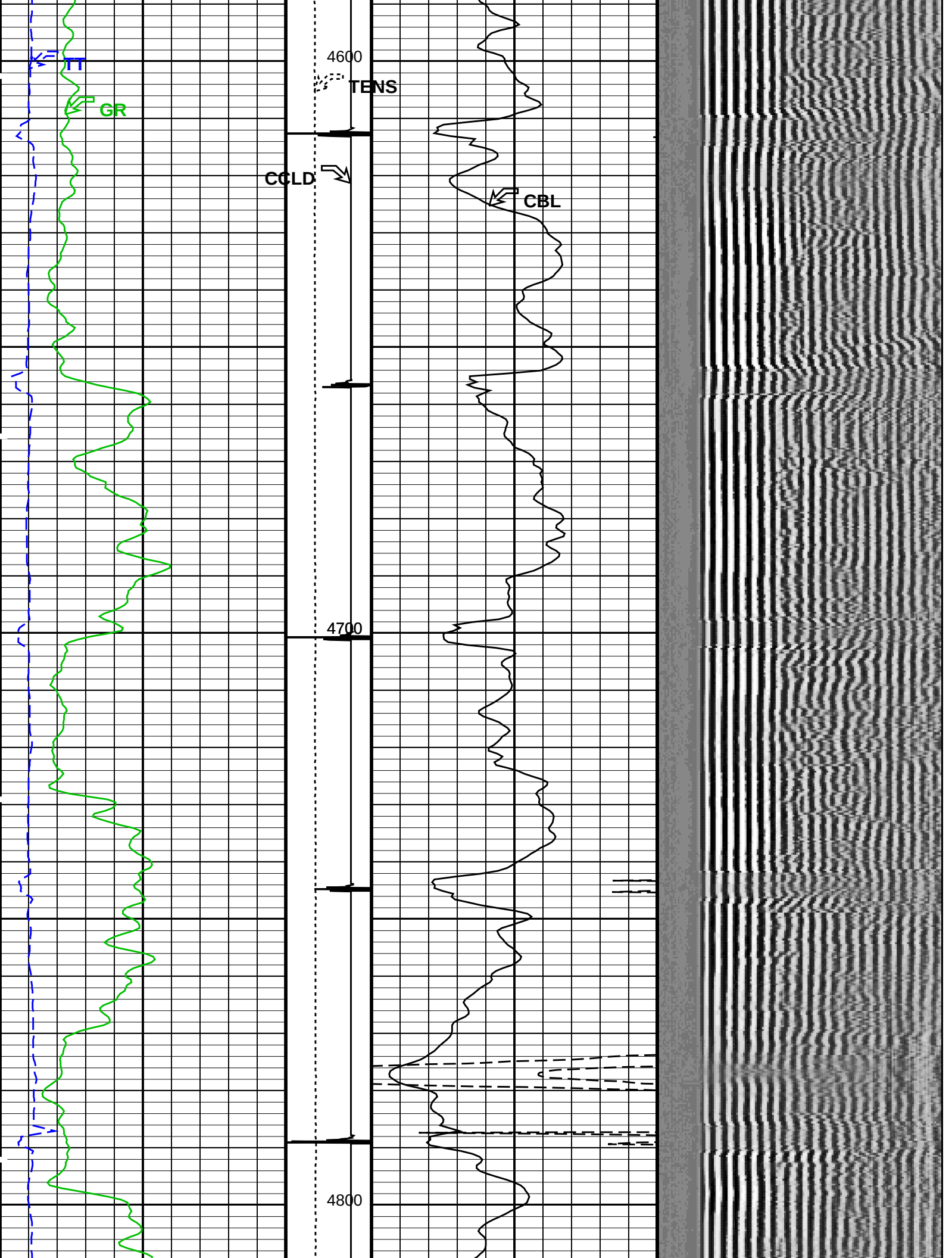
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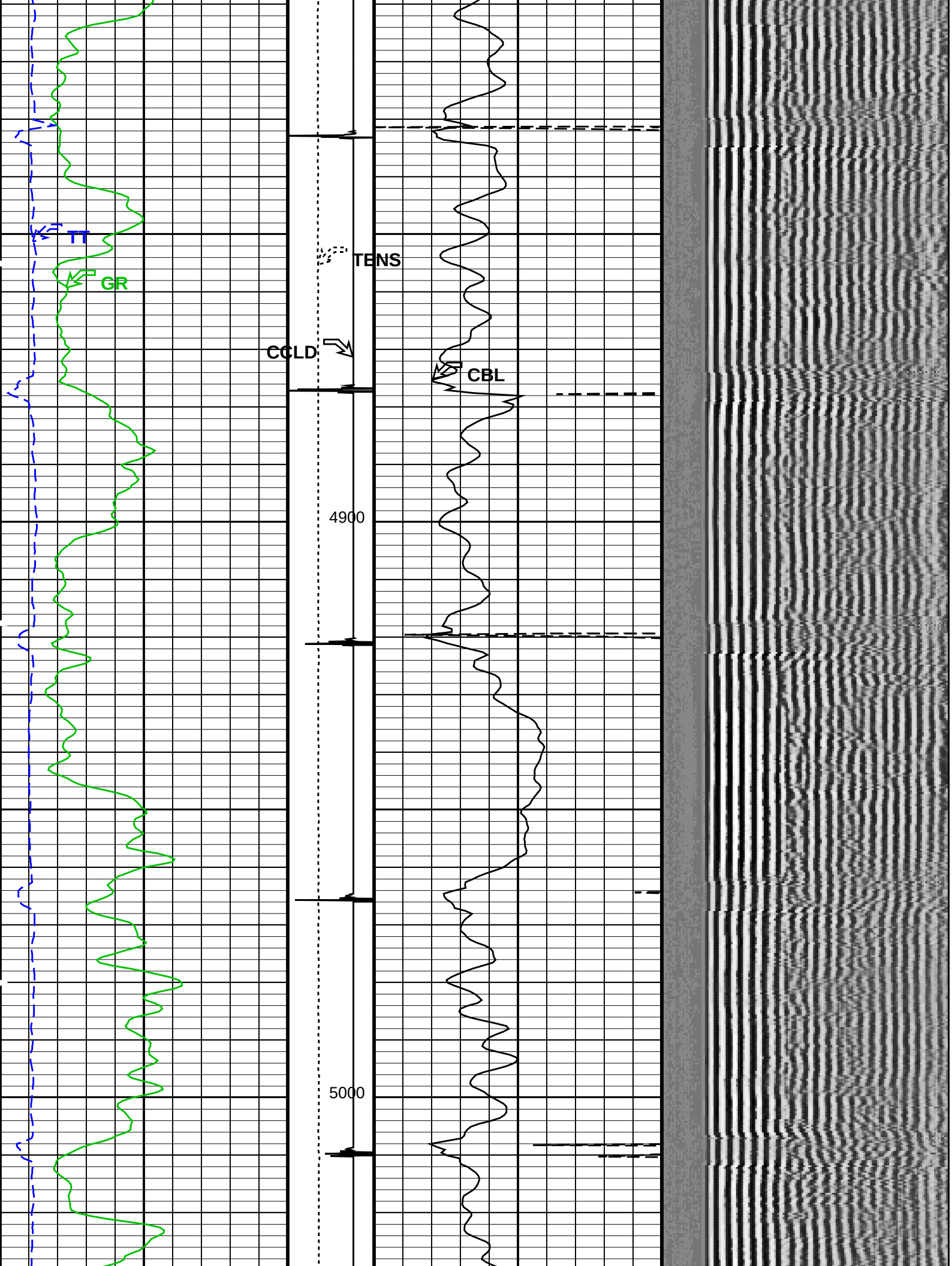
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GR
TENS
CCLD
CBL
4900
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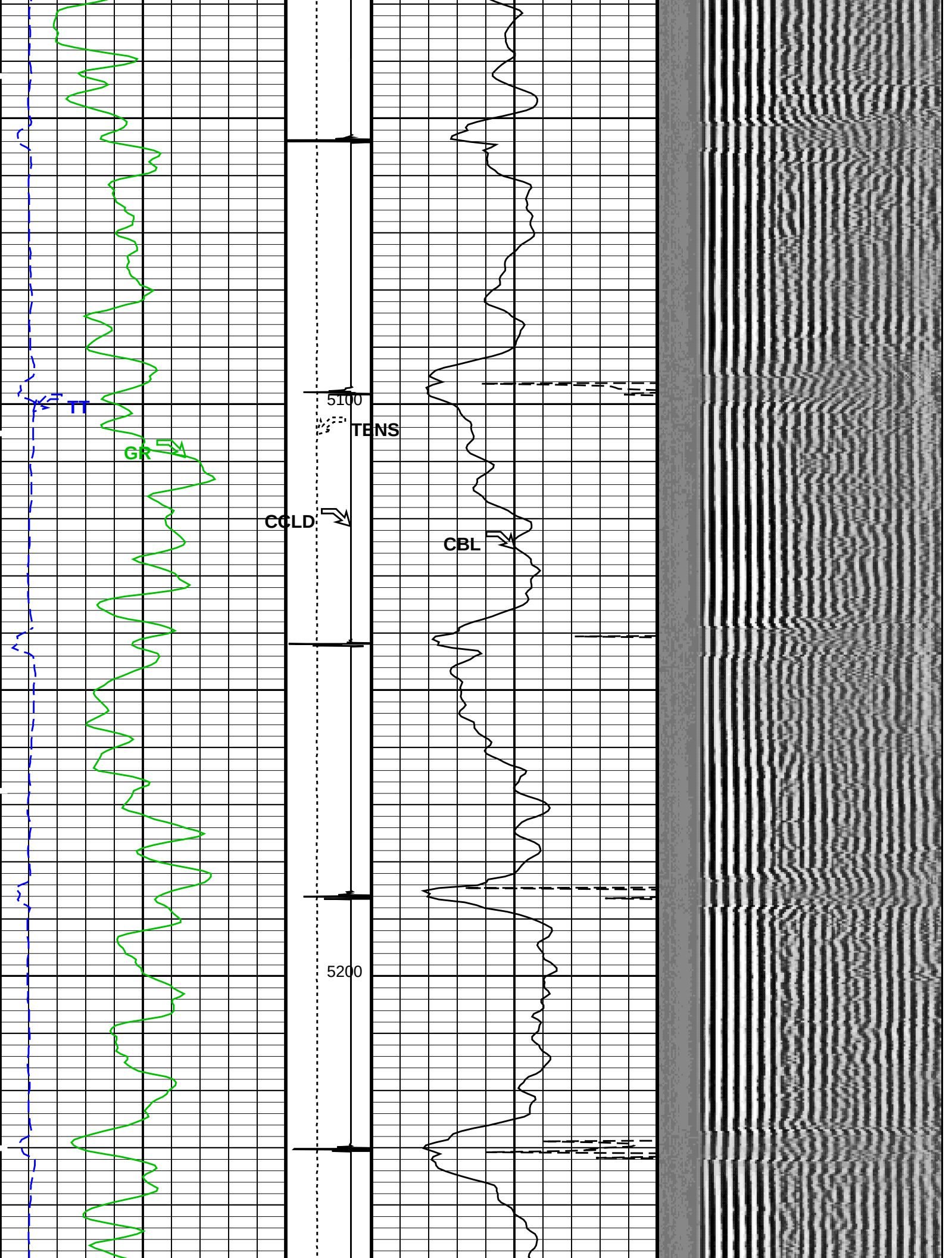
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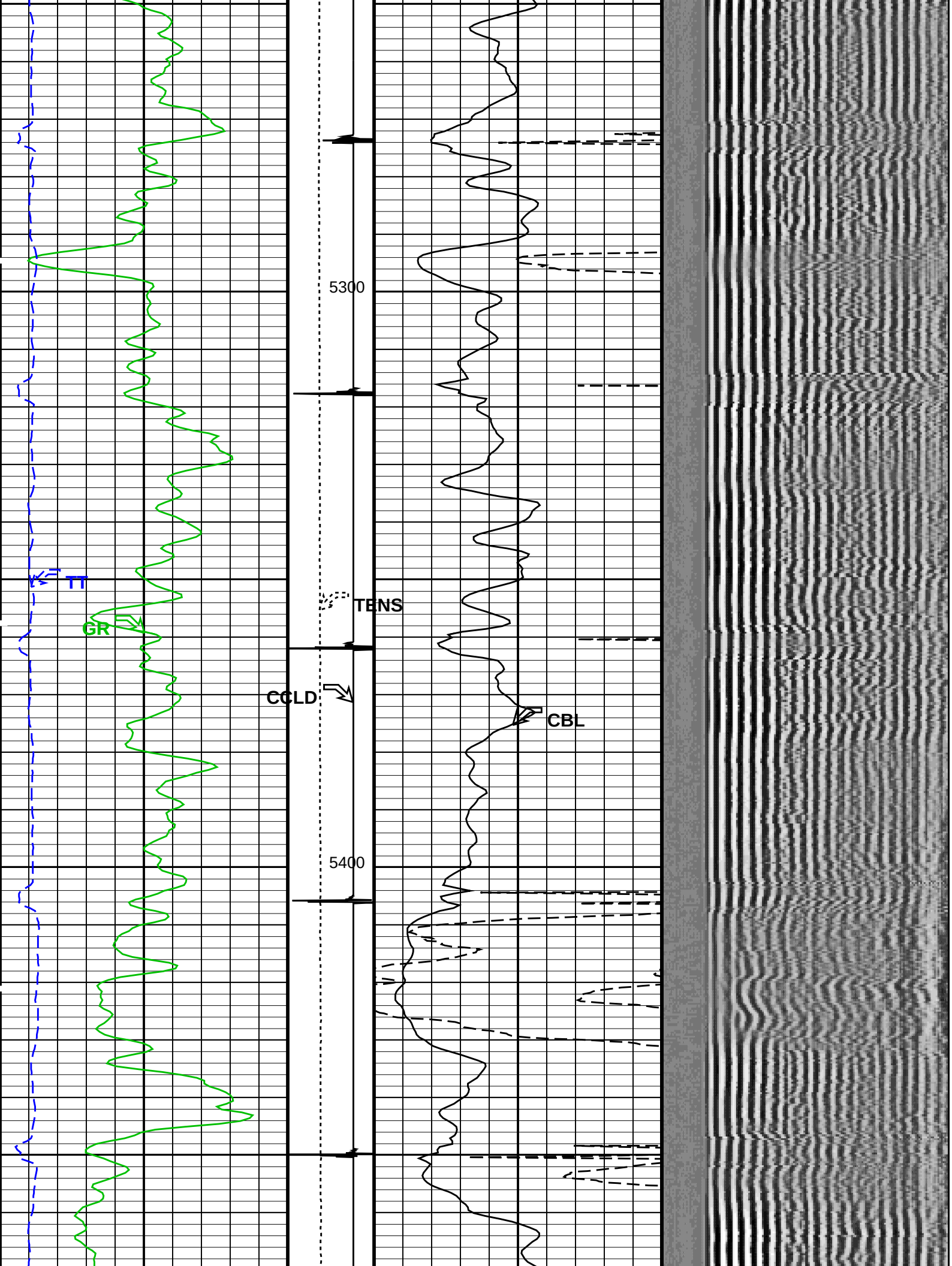
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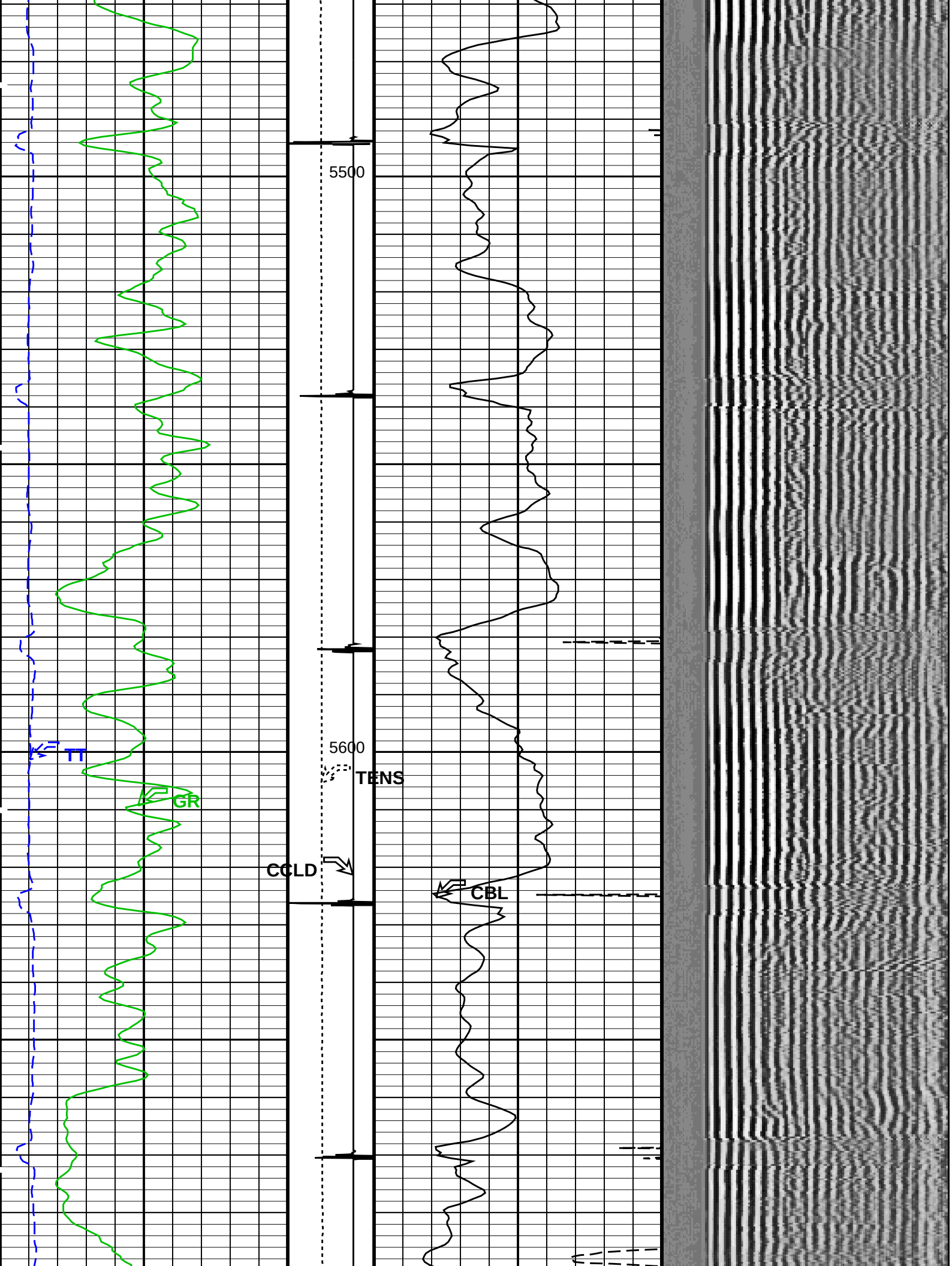
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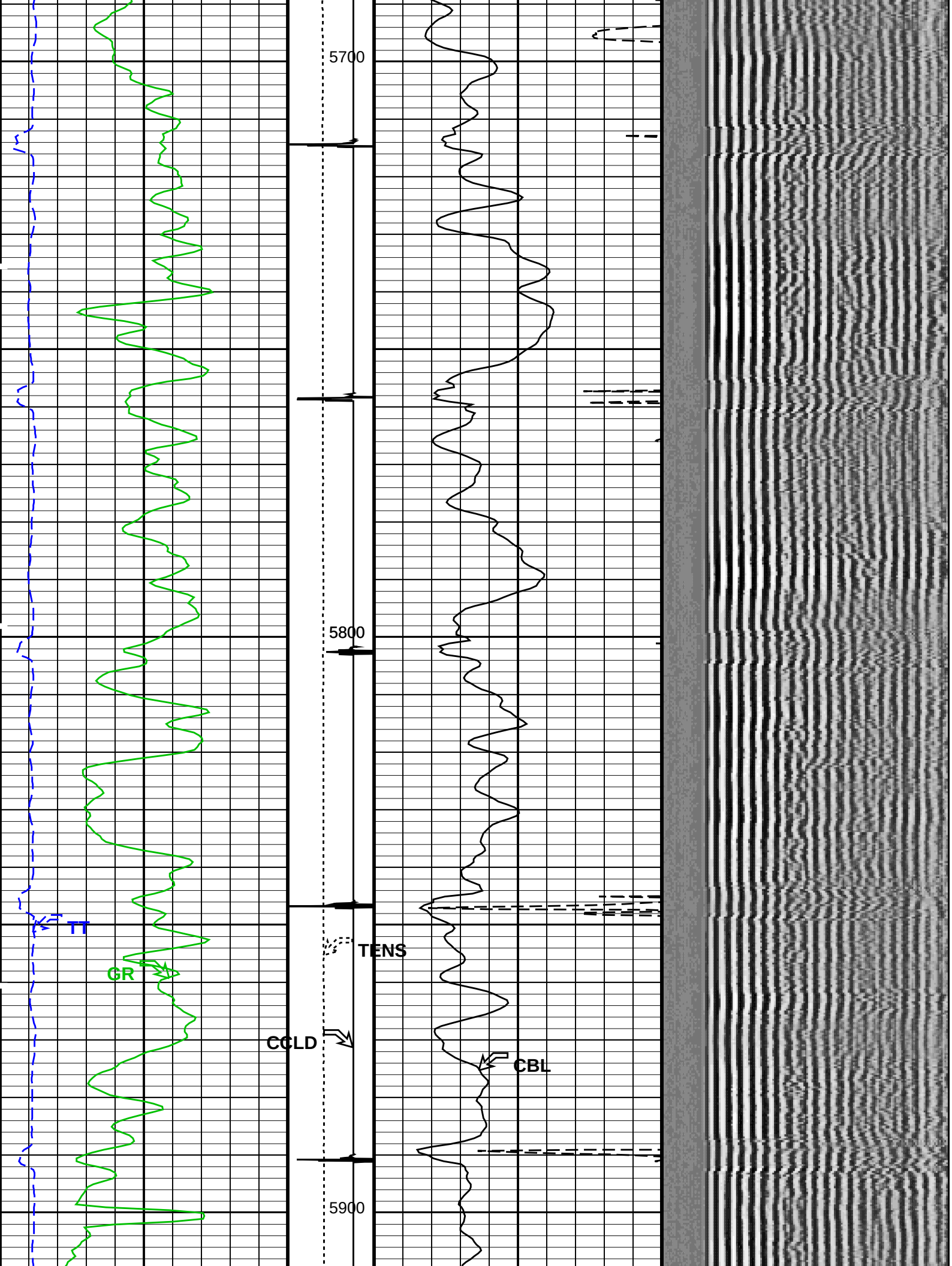
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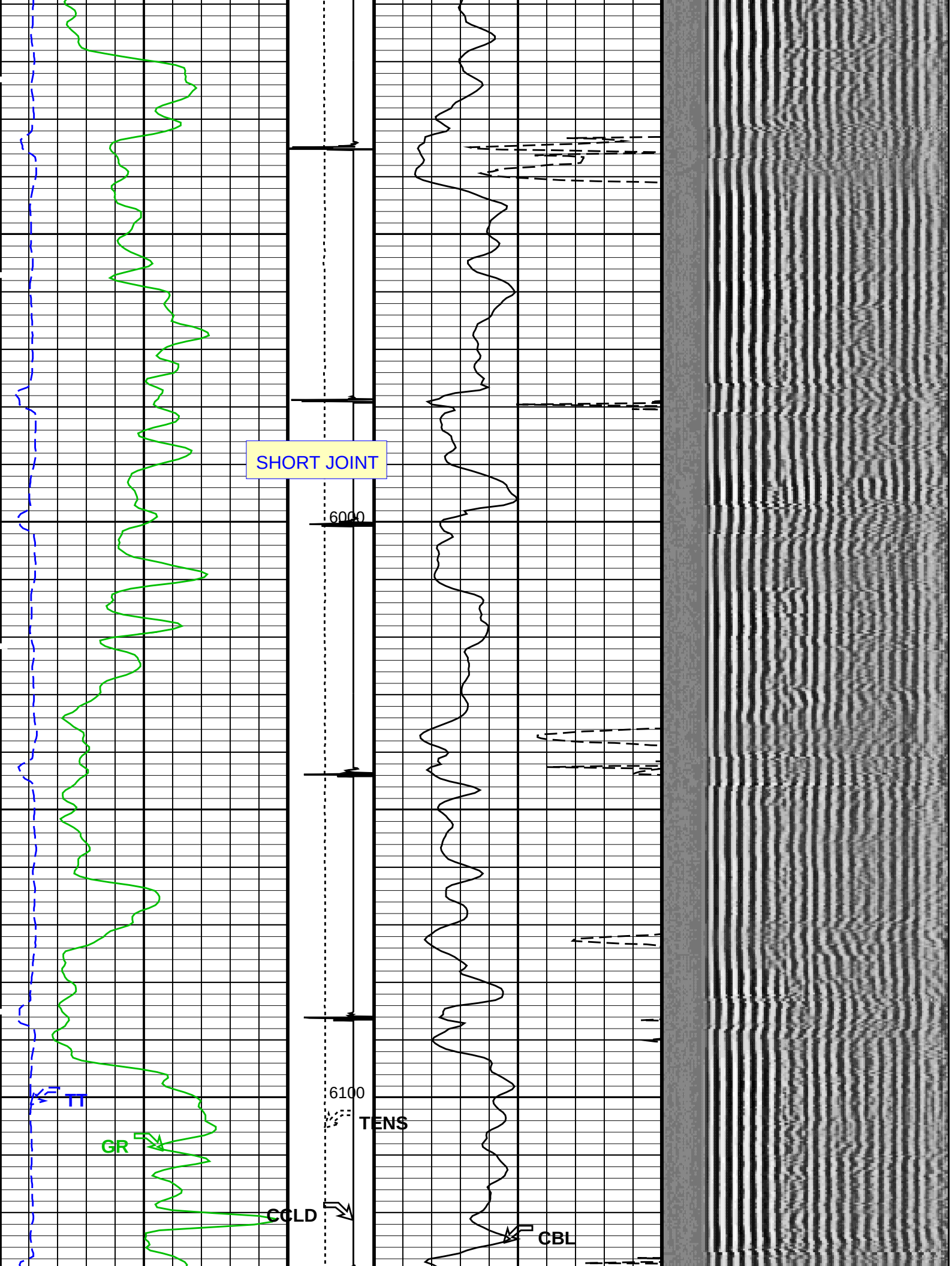
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TENS
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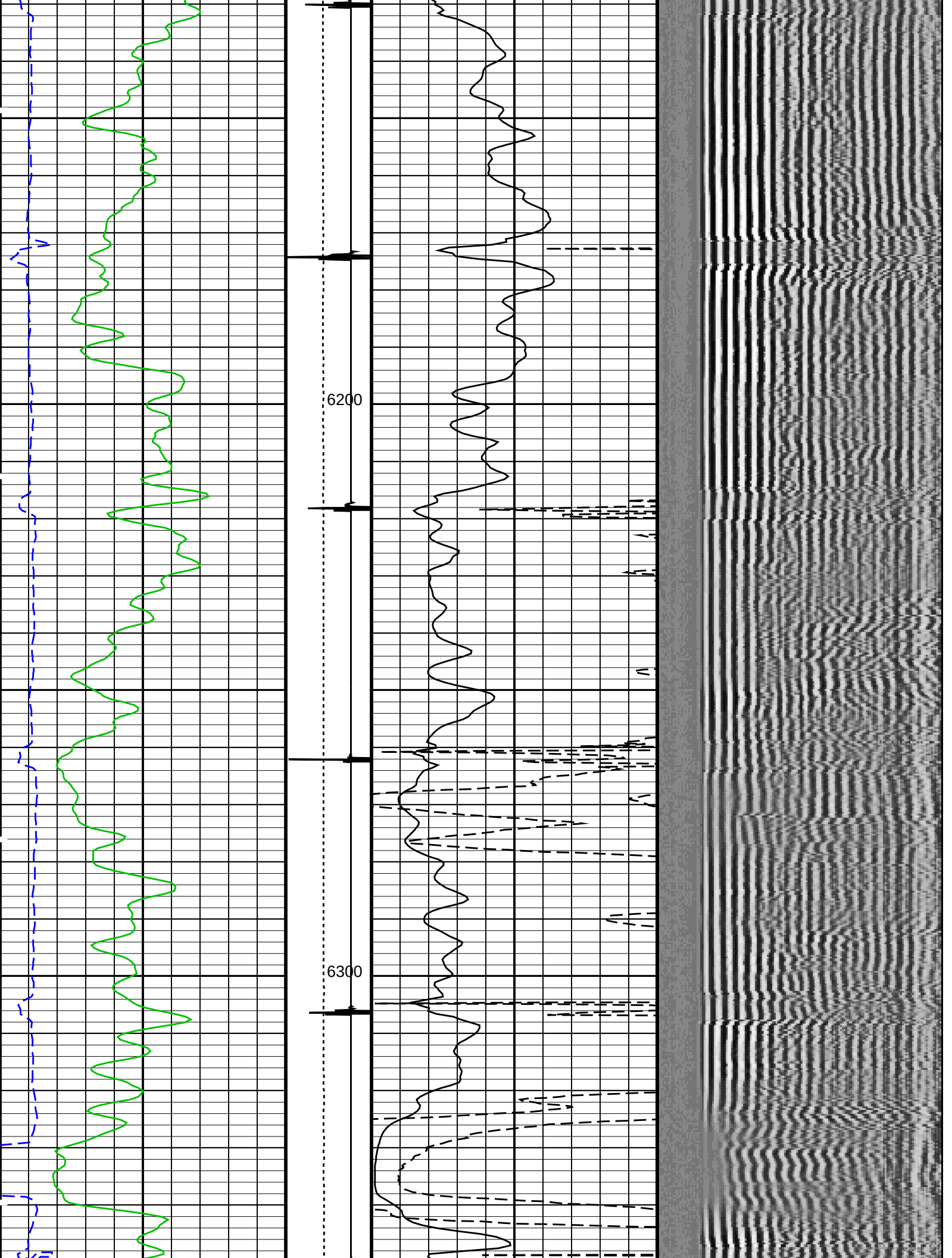
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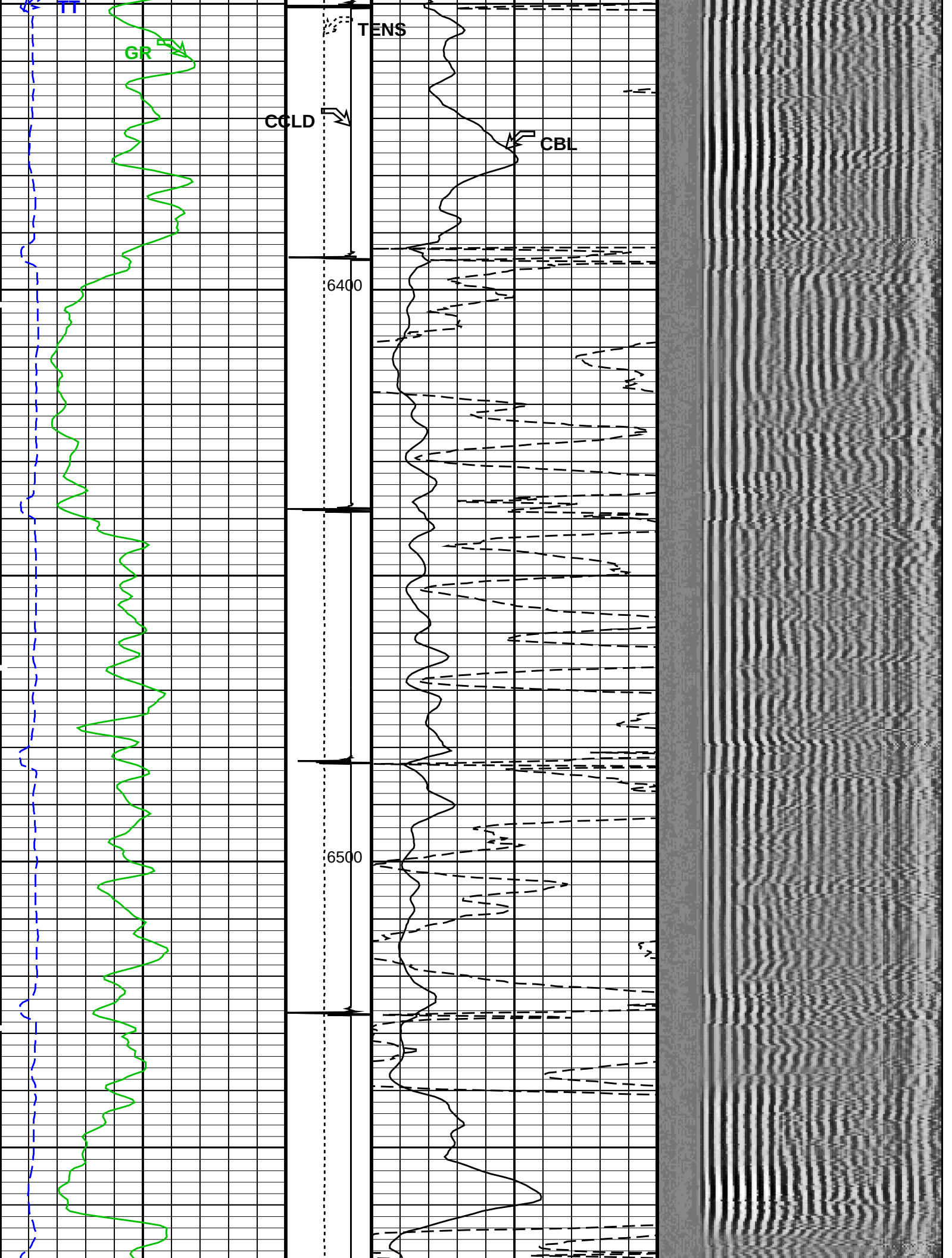
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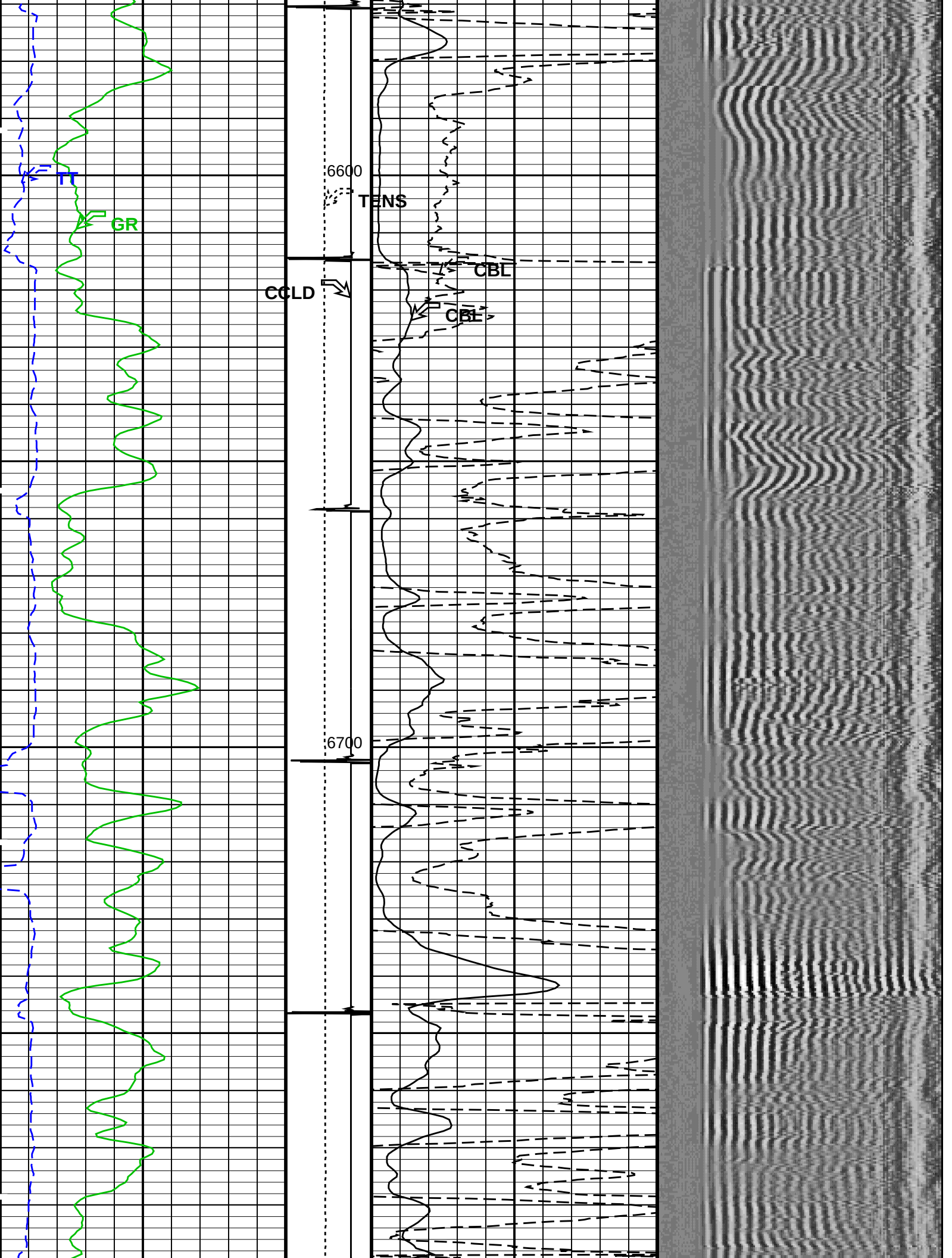
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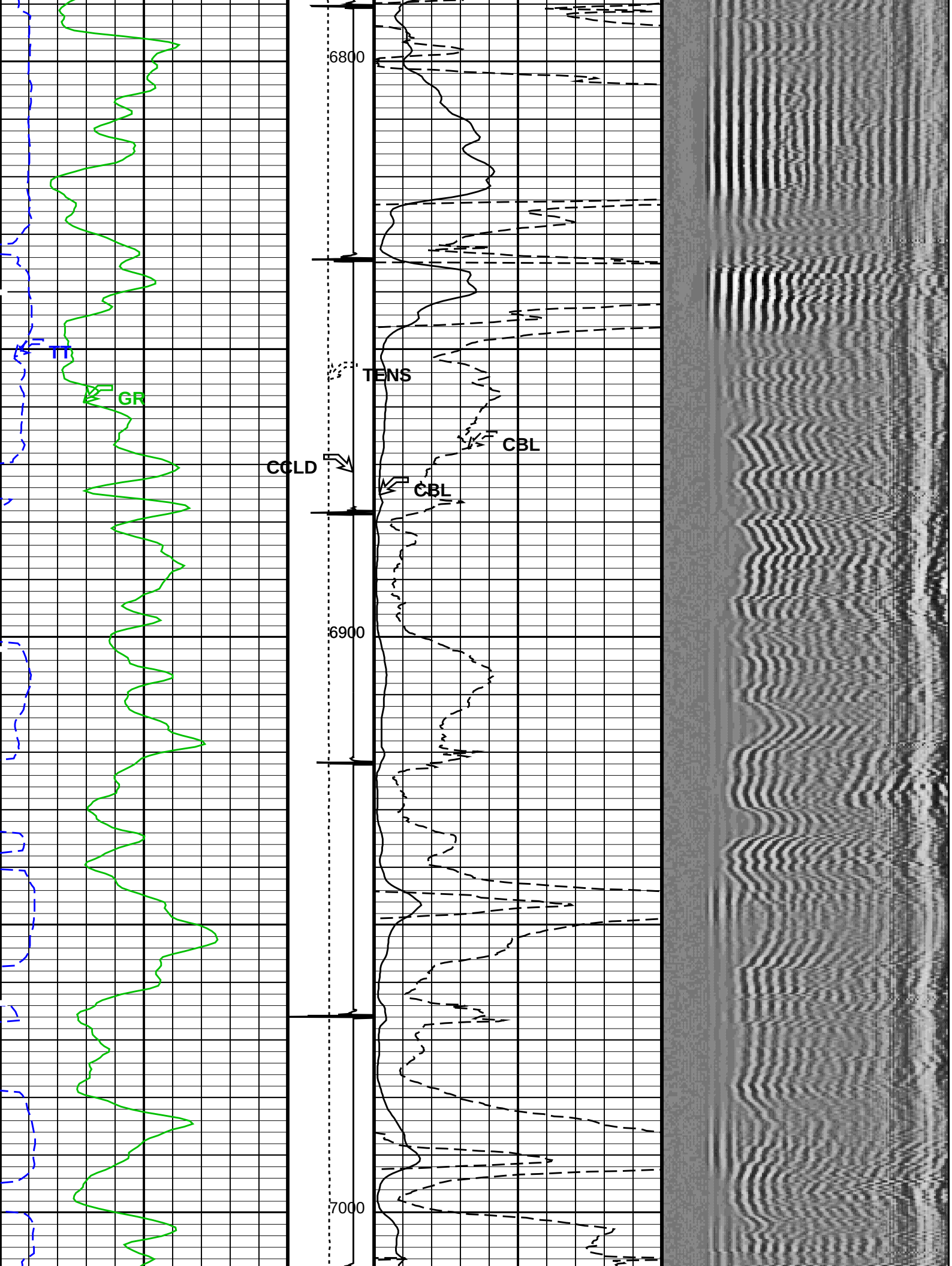
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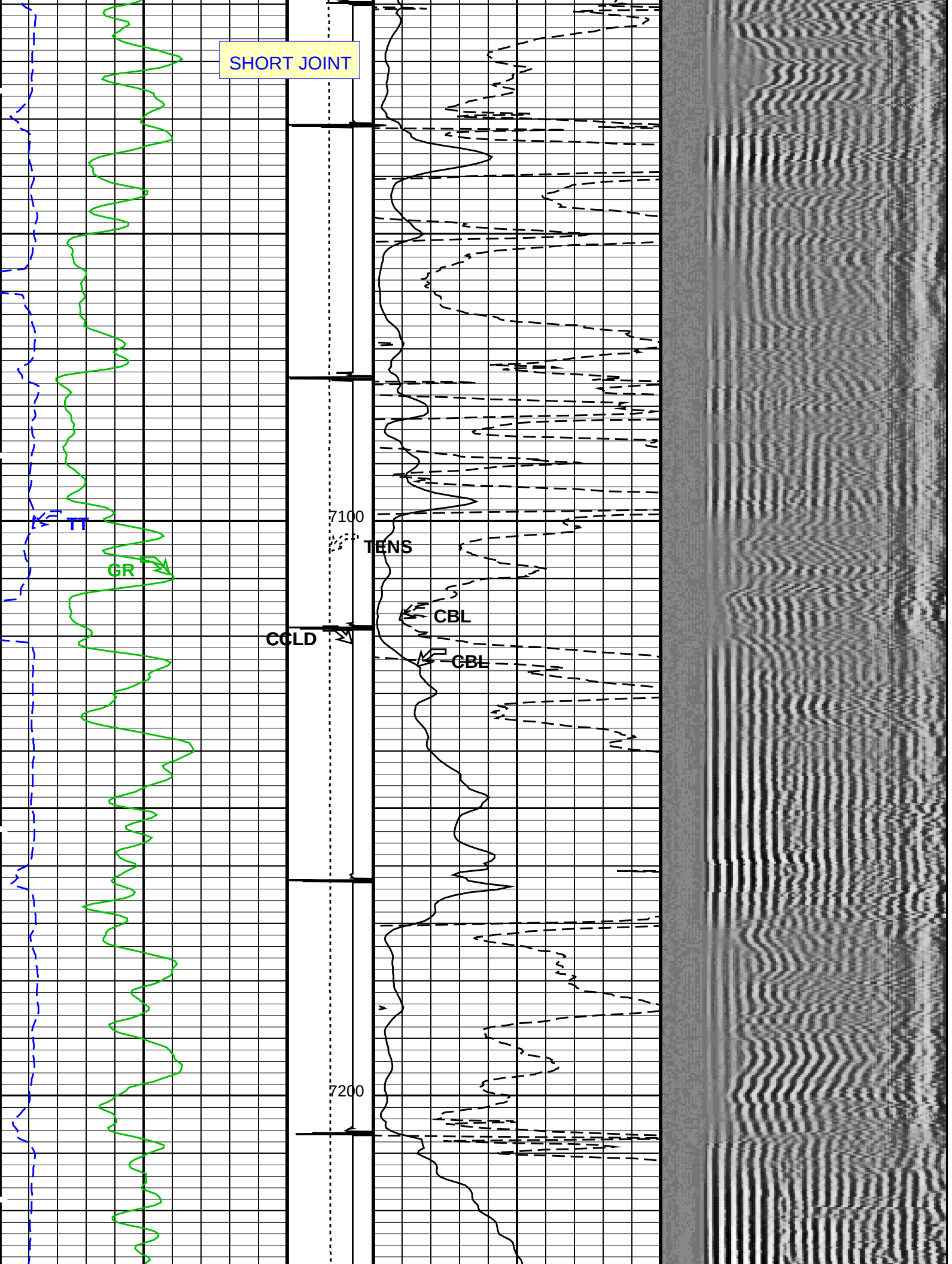
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GR
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TENS
CBL
CCLD
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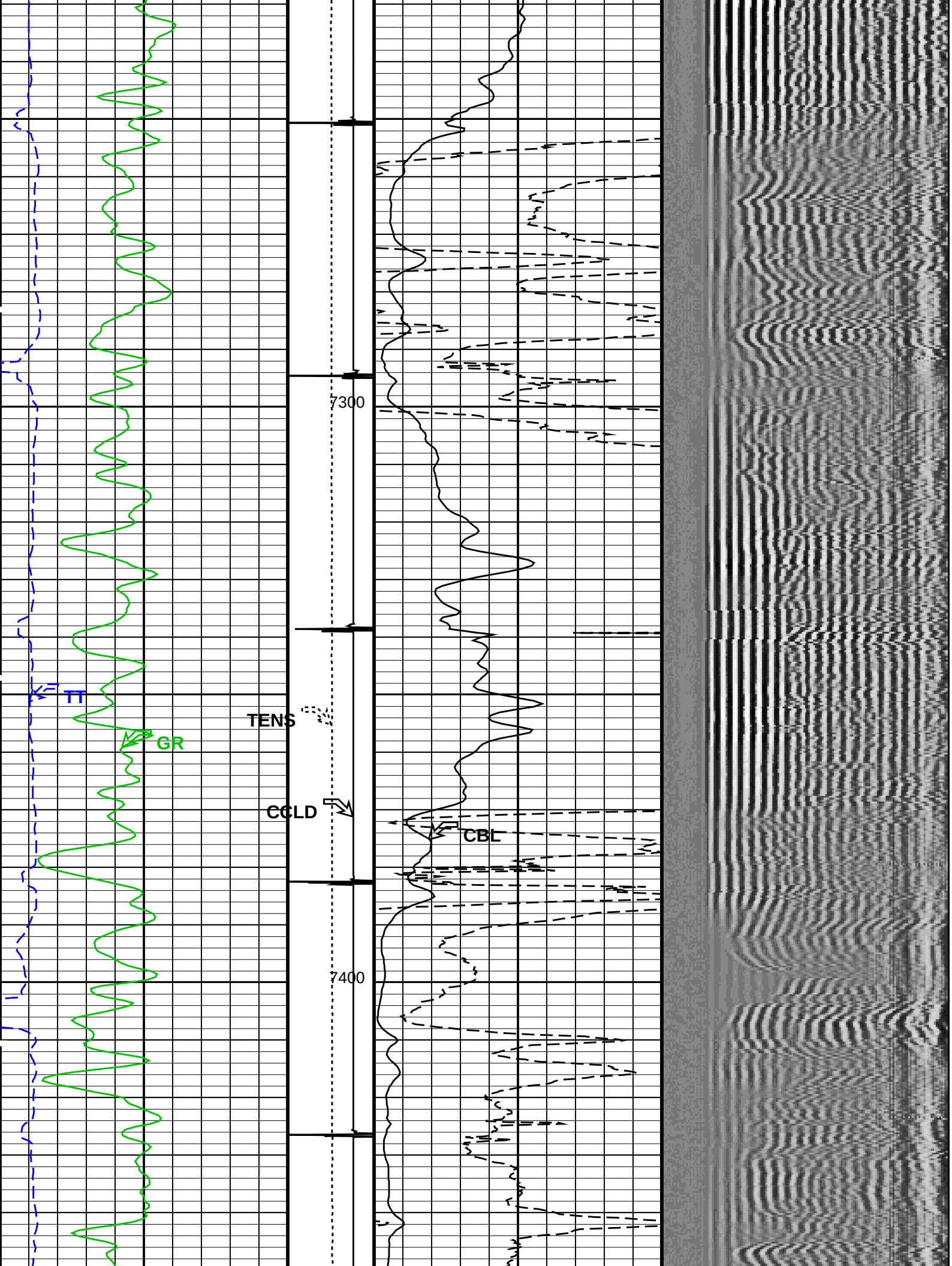
7200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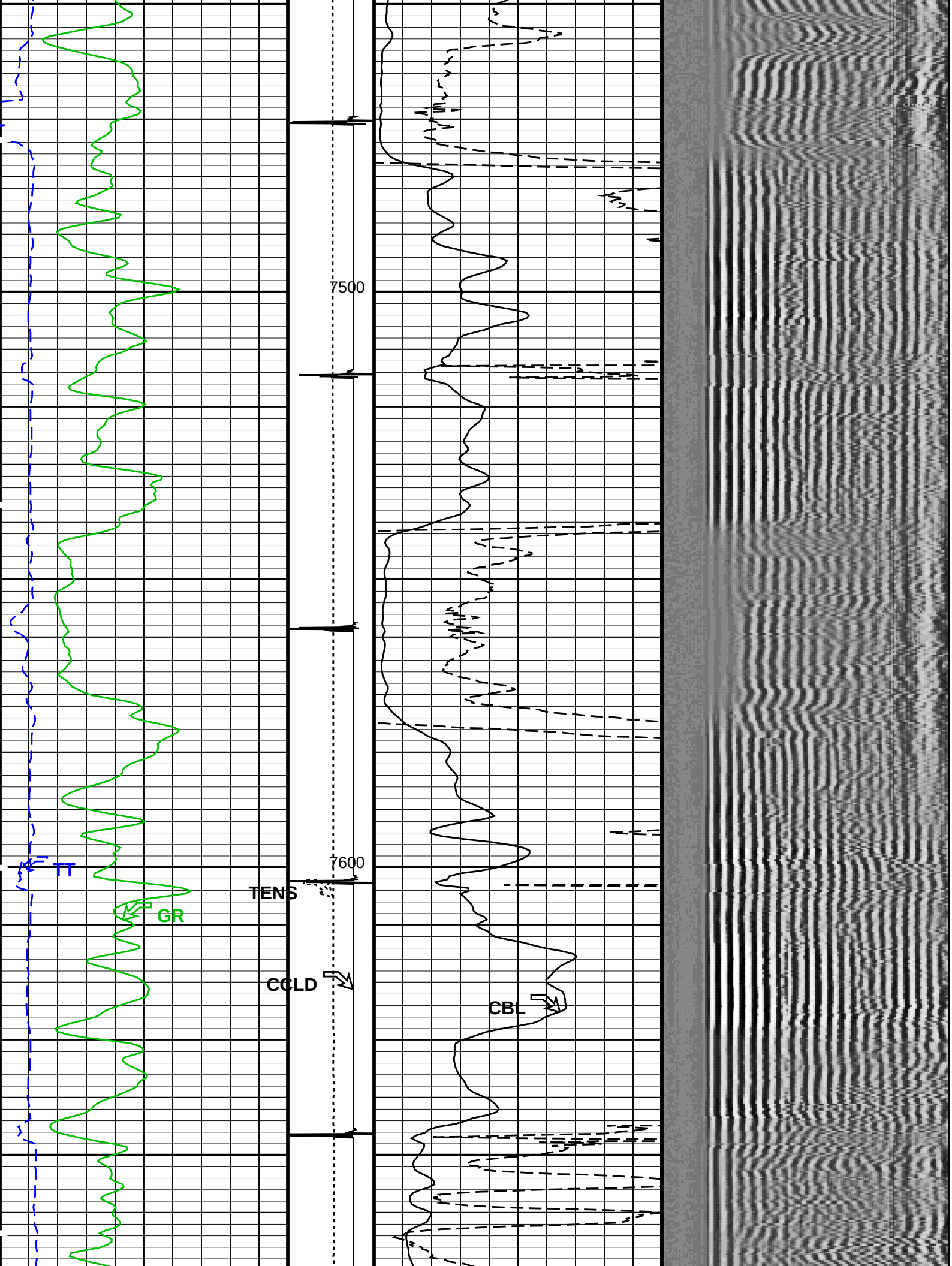
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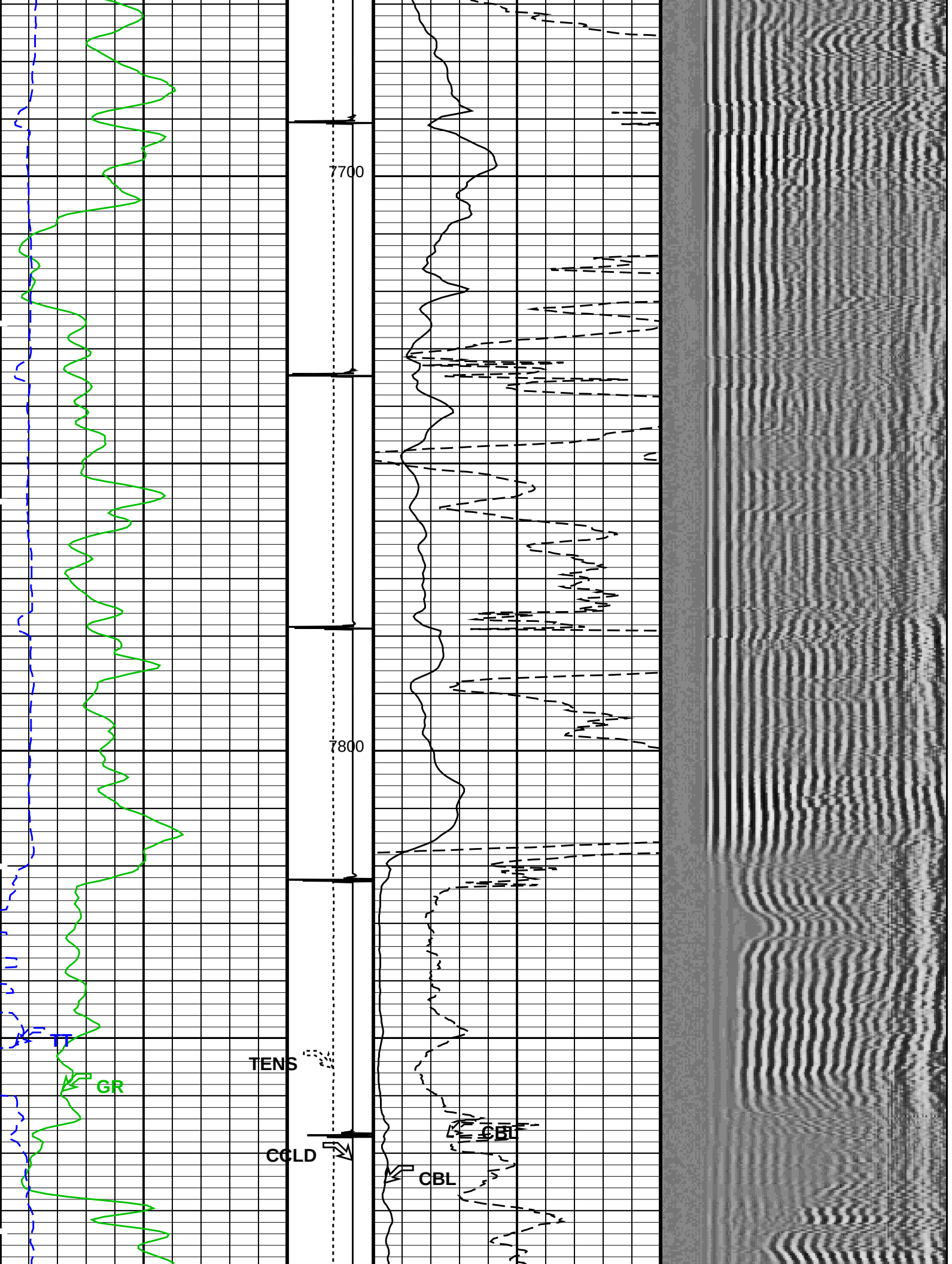
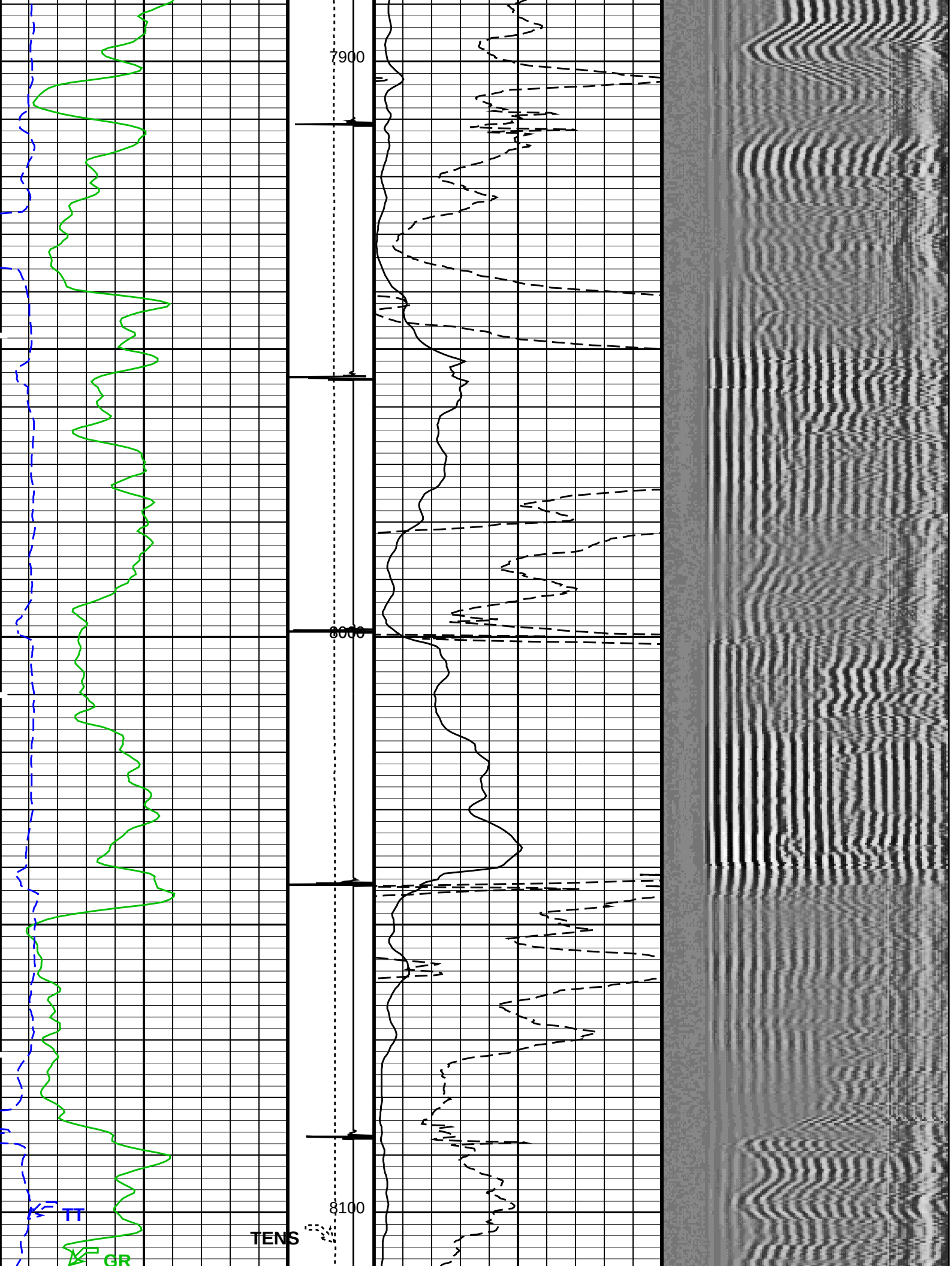
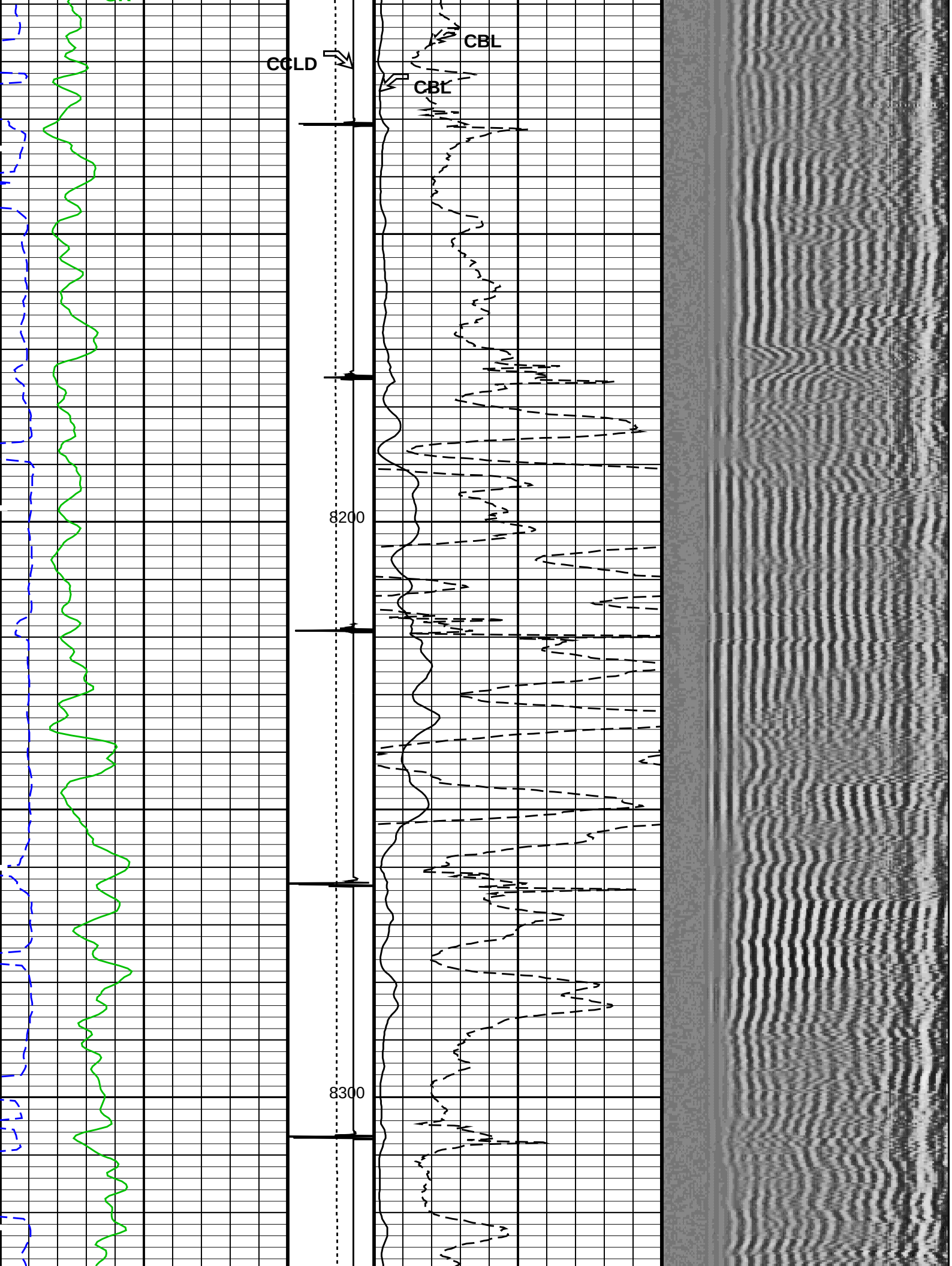
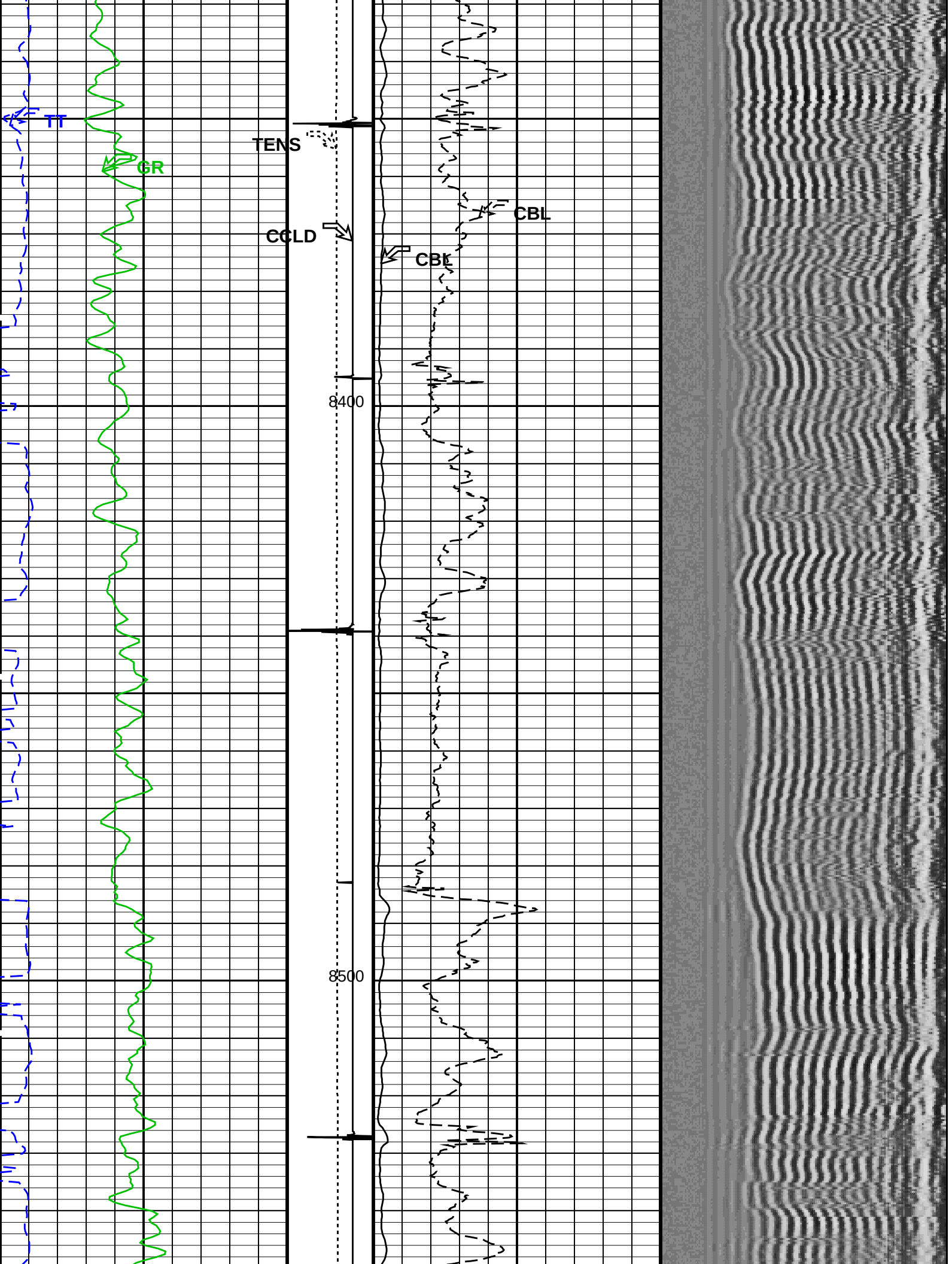
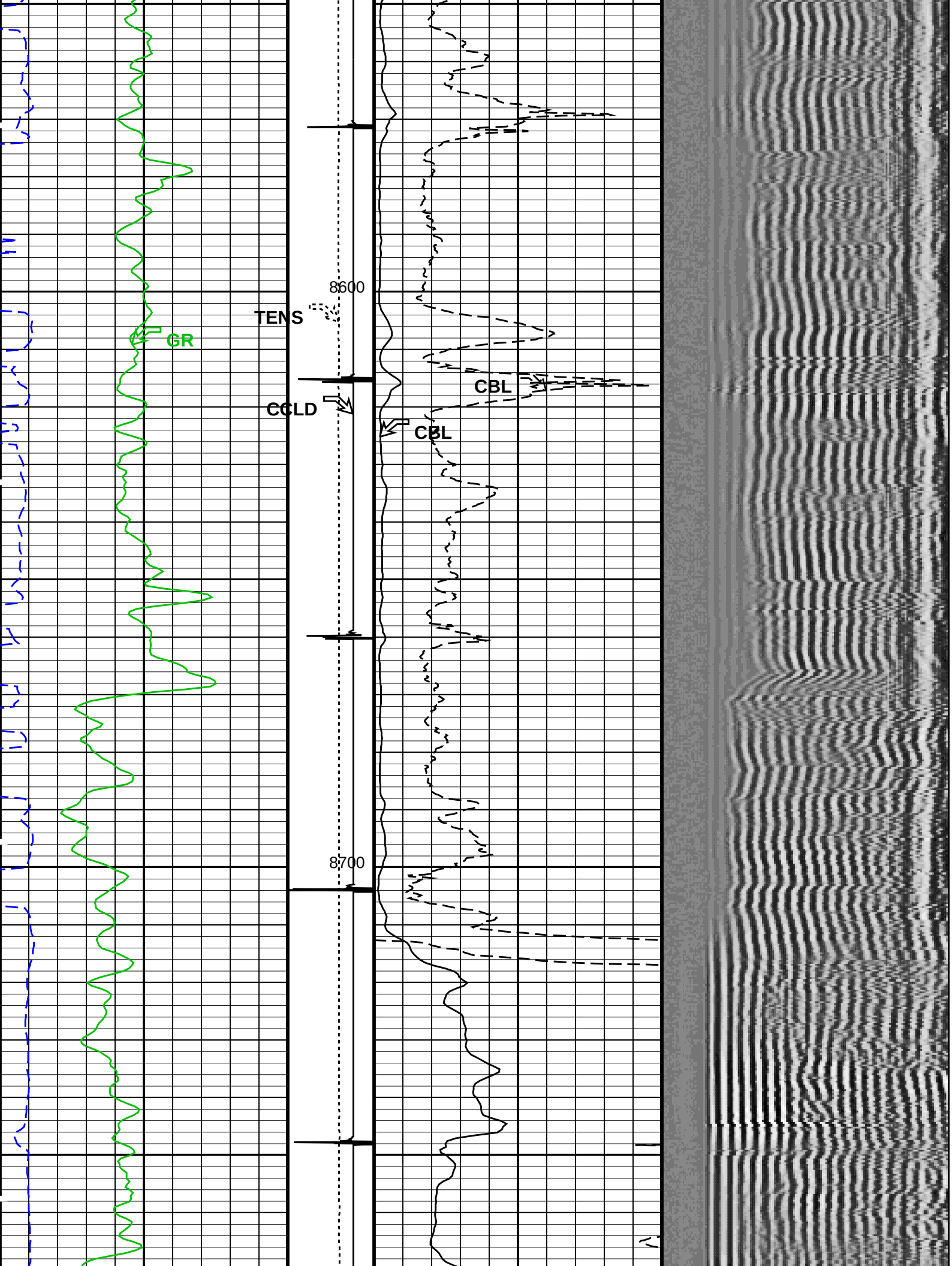
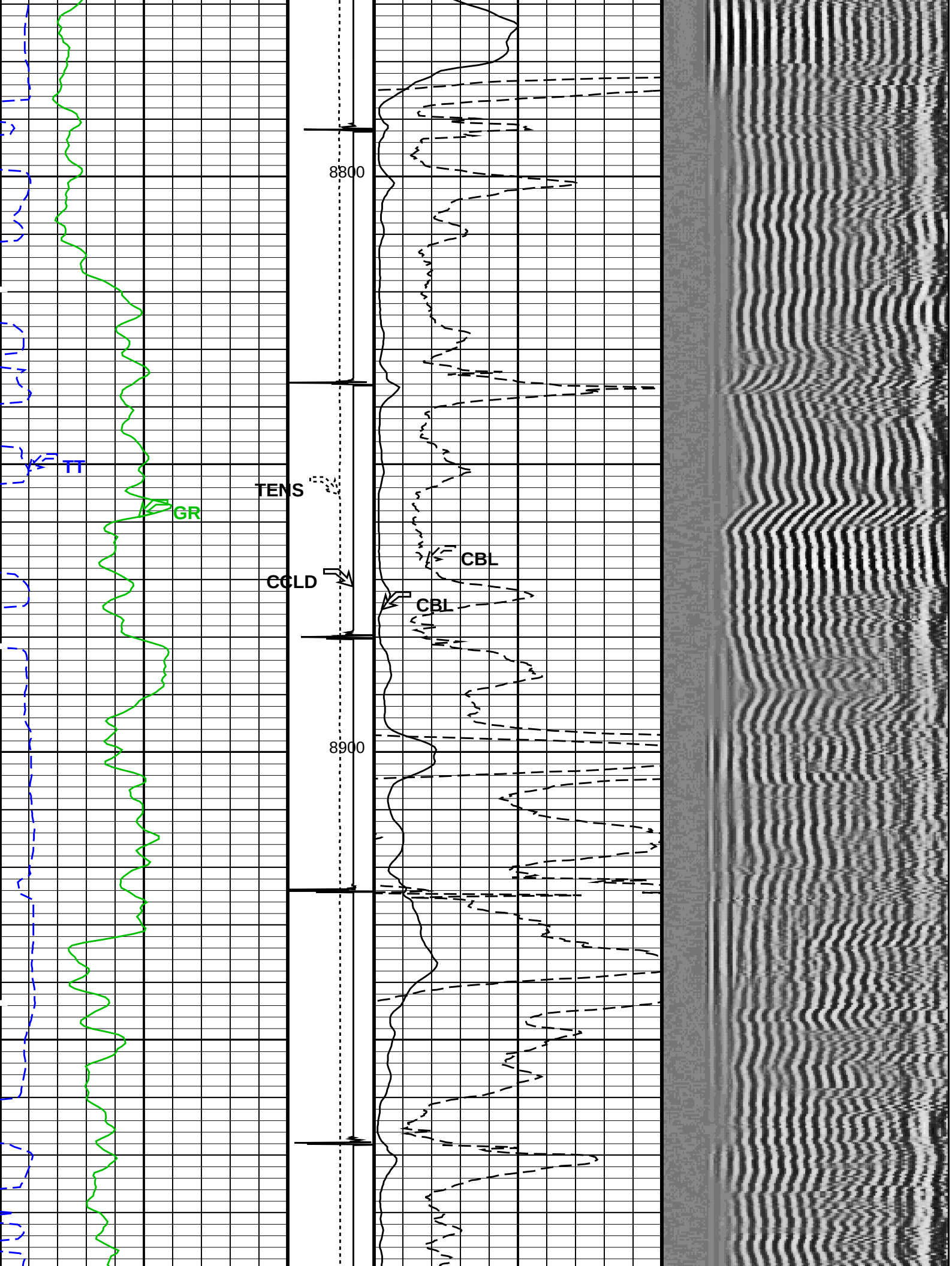

7700
7800
TT
GR
TENS
CCLD
CBL
CBL

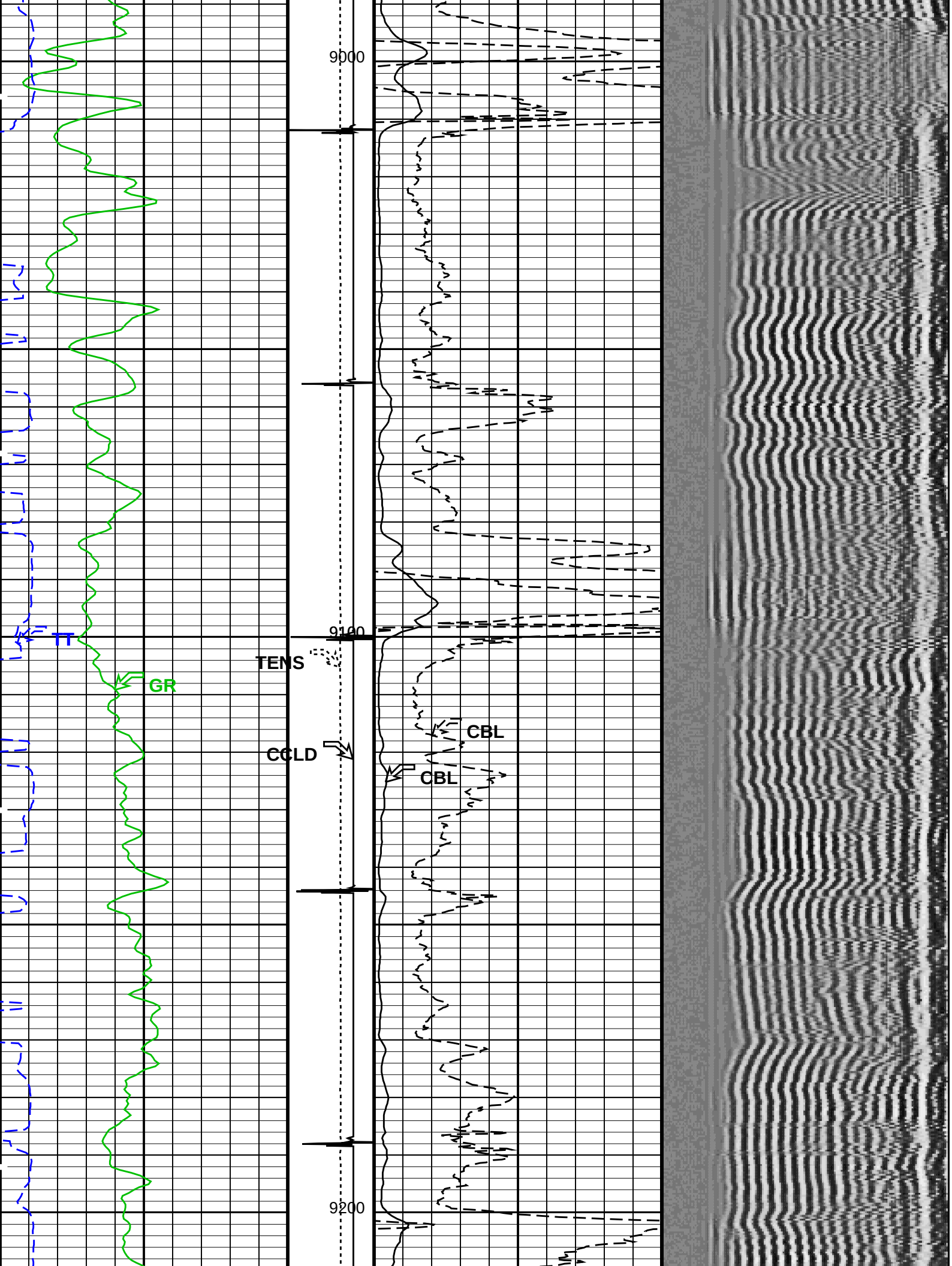

7900
8000
8100
TT
GR
TENS

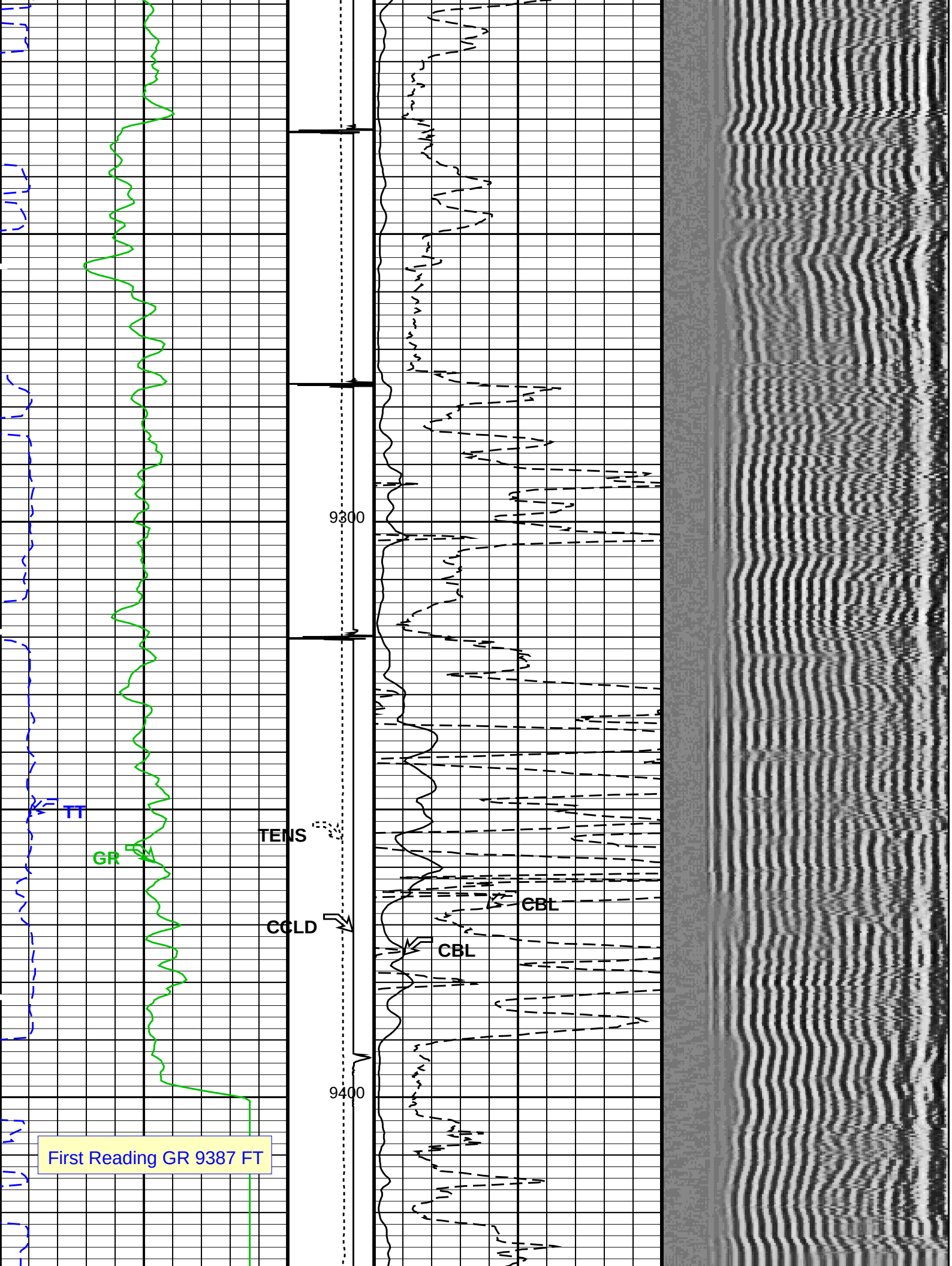

CCLD
CBL
CBL
8200
8300

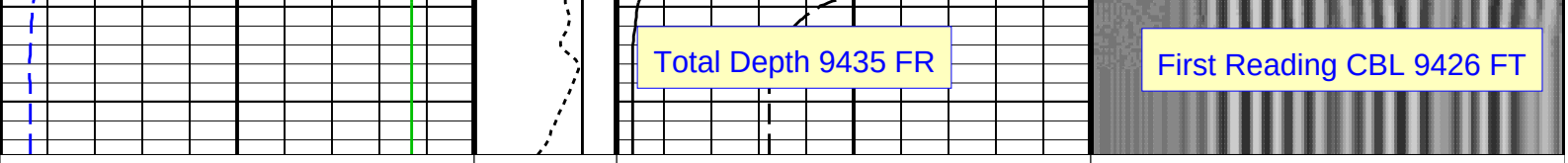

TT
TENS
GR
CCLD
CBL
CBL
8400
8500


8600
TENS
GR
CBL
CCLD
CBL
8700


8800
TT
TENS
GR
CBL
CCLD
CBL
8900


9000
9100
9200
TT
GR
TENS
CCLD
CBL
CBL


9300
TT
GR
TENS
CCLD
CBL
CBL
9400
First Reading GR 9387 FT



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

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 02−May−2013 13:38

OP System Version: 19C0−187

SCMT−CB	SRPC−5214−H2−2012−OP1	RST−C	SRPC−5214−H2−2012−OP1
PSPT	SRPC−5214−H2−2012−OP1		

<<<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	0.579149 MV (100% Cement)
			1.55185 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.32284 MV (100% Cement)
			8.10244 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	7−SEP−2012		
CBL Correction Factor	0.0756720	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.136845	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.165126		
MAP 3 Correction Factor	0.125717		
MAP 4 Correction Factor	0.196395		
MAP 5 Correction Factor	0.147692		
MAP 6 Correction Factor	0.128887		
MAP 7 Correction Factor	0.150775		
MAP 8 Correction Factor	0.144577		

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	224.559	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	338.559	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	189	US/F

FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	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	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	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	4.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9435	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_065LUP	FN:63	PRODUCER	02−May−2013 11:00	9441.5 FT	9.0 FT

Output DLIS Files

DEFAULT	SCMT_RST_PSP_070PUP	FN:68	PRODUCER	02−May−2013 13:38		

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REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC **Well: ENCANA FEE 24−1A (K19CNE)**

Input DLIS Files

DEFAULT	SCMT_RST_PSP_063LUP	FN:61	PRODUCER	02−May−2013 10:39	6154.5 FT	5738.2 FT
DEFAULT	SCMT_RST_PSP_070PUP	FN:68	PRODUCER	02−May−2013 13:38	9445.5 FT	−31.5 FT

Output DLIS Files

DEFAULT	SCMT_RST_PSP_071PUP	FN:69	PRODUCER	02−May−2013 13:45	6155.5 FT	5695.0 FT

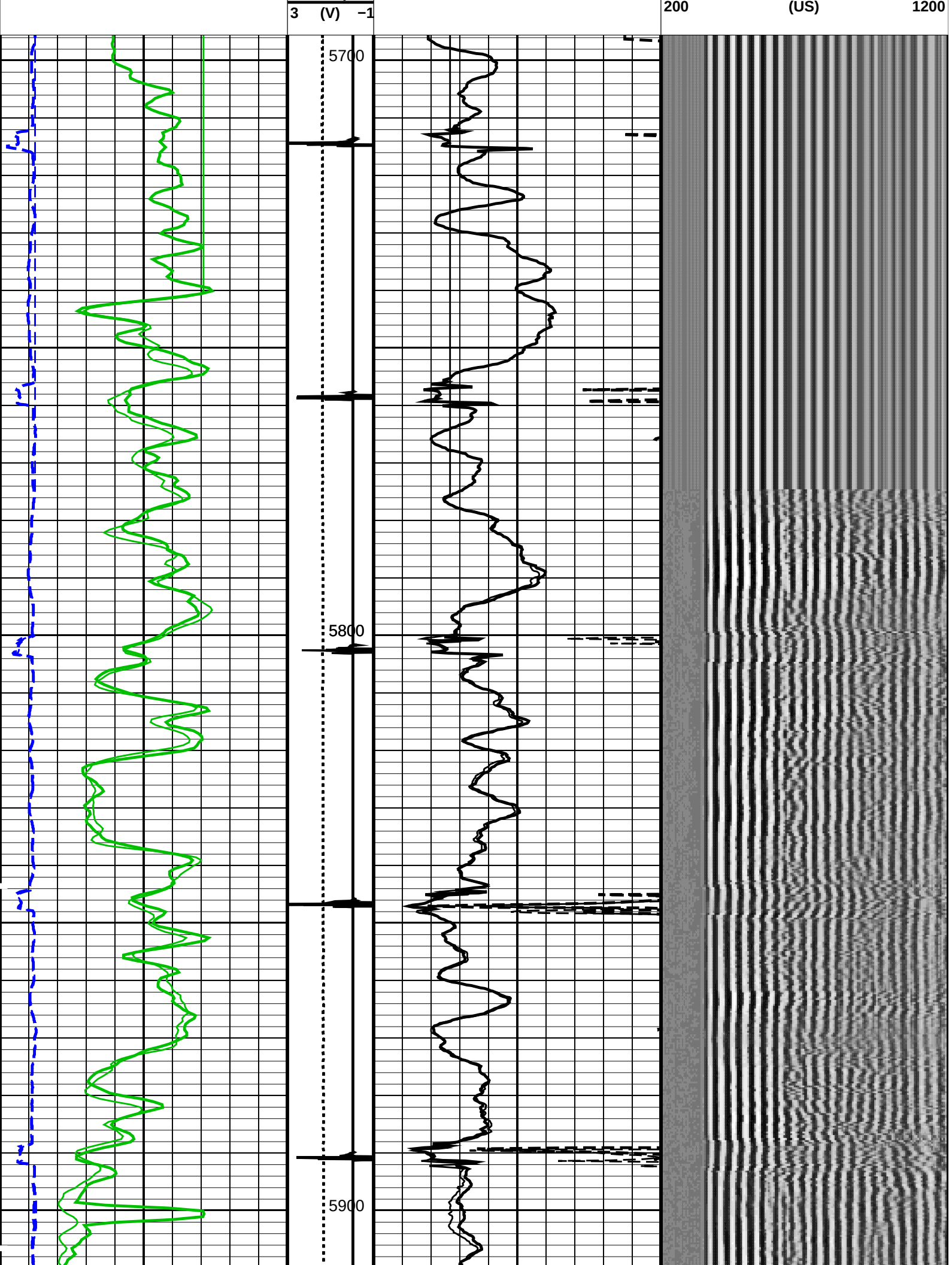
OP System Version: 19C0−187

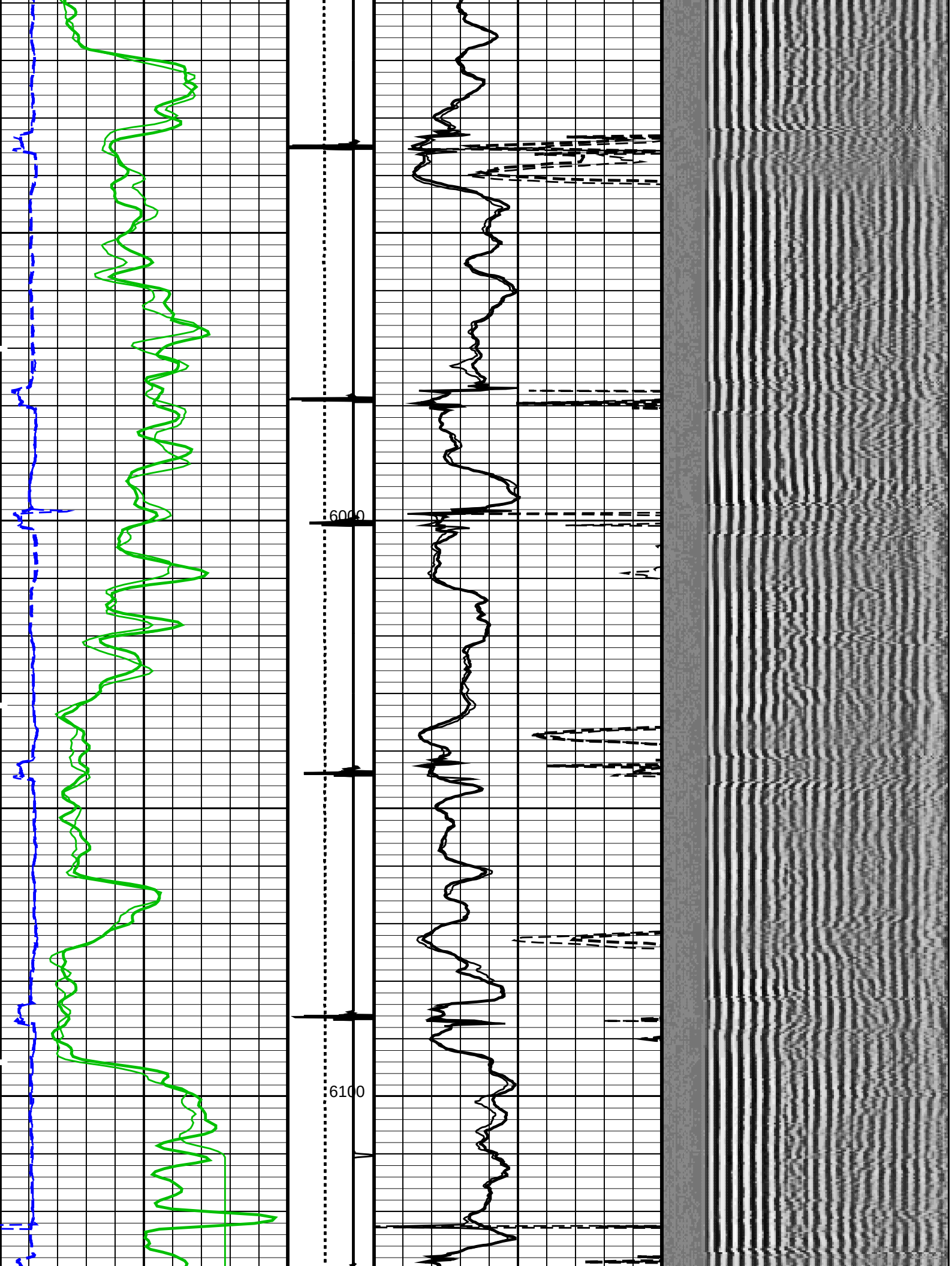
SCMT−CB	SRPC−5214−H2−2012−OP1	RST−C	SRPC−5214−H2−2012−OP1
PSPT	SRPC−5214−H2−2012−OP1		

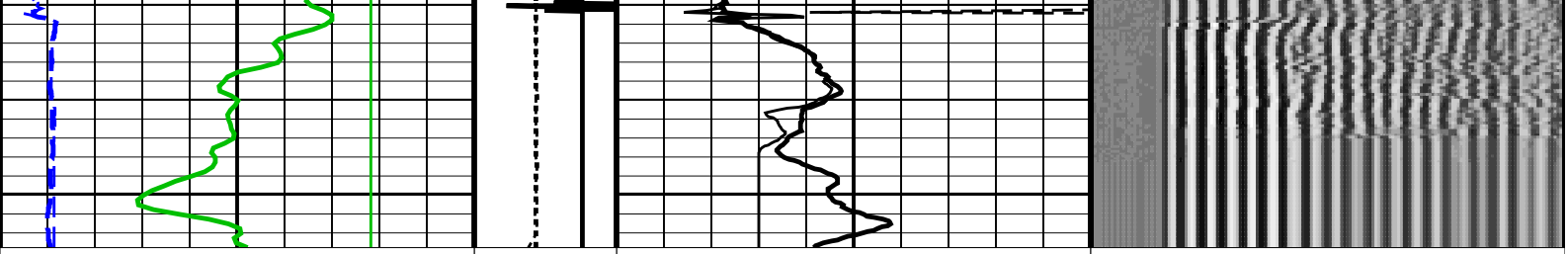
PIP SUMMARY

Time Mark Every 60 S

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
GR_REP Curve (GR_REP) 0 (GAPI) 150	CCLD_REP Curve (CCLD_REP)	CBL_REP Curve (CBL_REP) 0 (MV) 100
		Min Amplitude Max VDL VariableDensity (VDL)


3 (V) −1
200 (US) 1200
5700
5800
5900


6000
6100



GR_REP Curve (GR_REP)	CCLD_REP Curve (CCLD_REP)	CBL_REP Curve (CBL_REP)	Amplitude
0 (GAPI) 150	3 (V) −1	0 (MV) 100	Min Max
			VDL VariableDensity (VDL)
			200 (US) 1200
TT_REP Curve (TT_REP)	TENS_REP Curve (TENS_REP) (LBF)	CBL_1_REP Curve (CBL_REP)	
260 (US) 160	0 2000	0 (MV) 10	

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100' Graphics File Created: 02−May−2013 13:45

OP System Version: 19C0−187

SCMT−CB	SRPC−5214−H2−2012−OP1	RST−C	SRPC−5214−H2−2012−OP1
PSPT	SRPC−5214−H2−2012−OP1		

<<<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	0.579149 MV (100% Cement)
			1.55185 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.32284 MV (100% Cement)
			8.10244 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	7−SEP−2012		
CBL Correction Factor	0.0756720	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.136845	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.165126		
MAP 3 Correction Factor	0.125717		
MAP 4 Correction Factor	0.196395		
MAP 5 Correction Factor	0.147692		
MAP 6 Correction Factor	0.128887		
MAP 7 Correction Factor	0.150775		
MAP 8 Correction Factor	0.144577		

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	224.559	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	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US

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	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	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	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	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	1.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9435	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_063LUP	FN:61	PRODUCER	02−May−2013 10:39	6154.5 FT	5738.2 FT
DEFAULT	SCMT_RST_PSP_070PUP	FN:68	PRODUCER	02−May−2013 13:38	9445.5 FT	−31.5 FT

Output DLIS Files

DEFAULT	SCMT_RST_PSP_071PUP	FN:69	PRODUCER	02−May−2013 13:45

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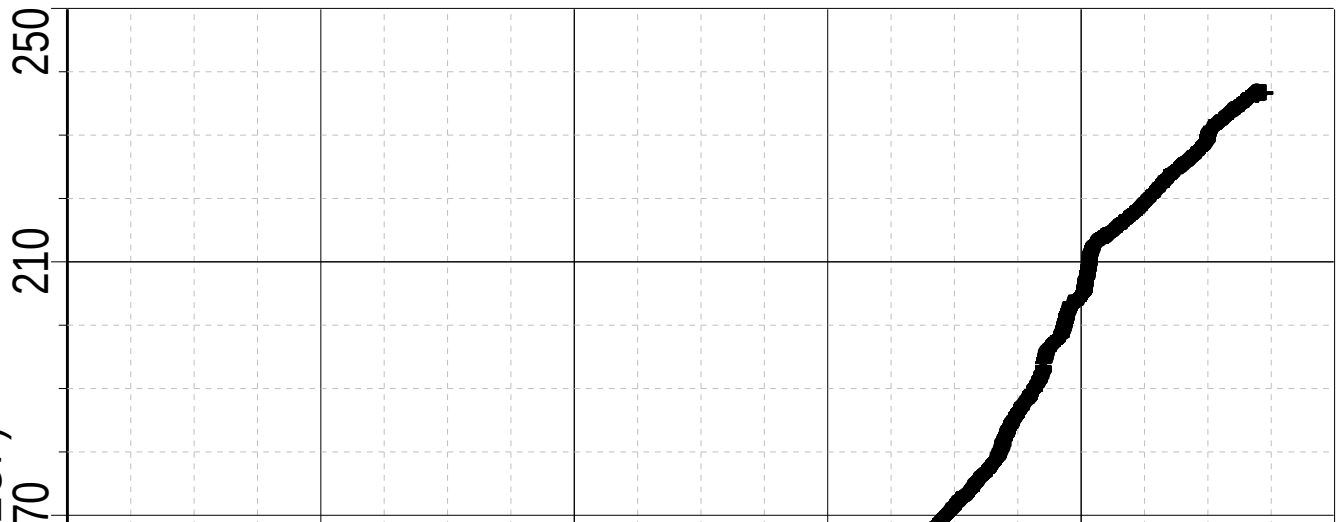
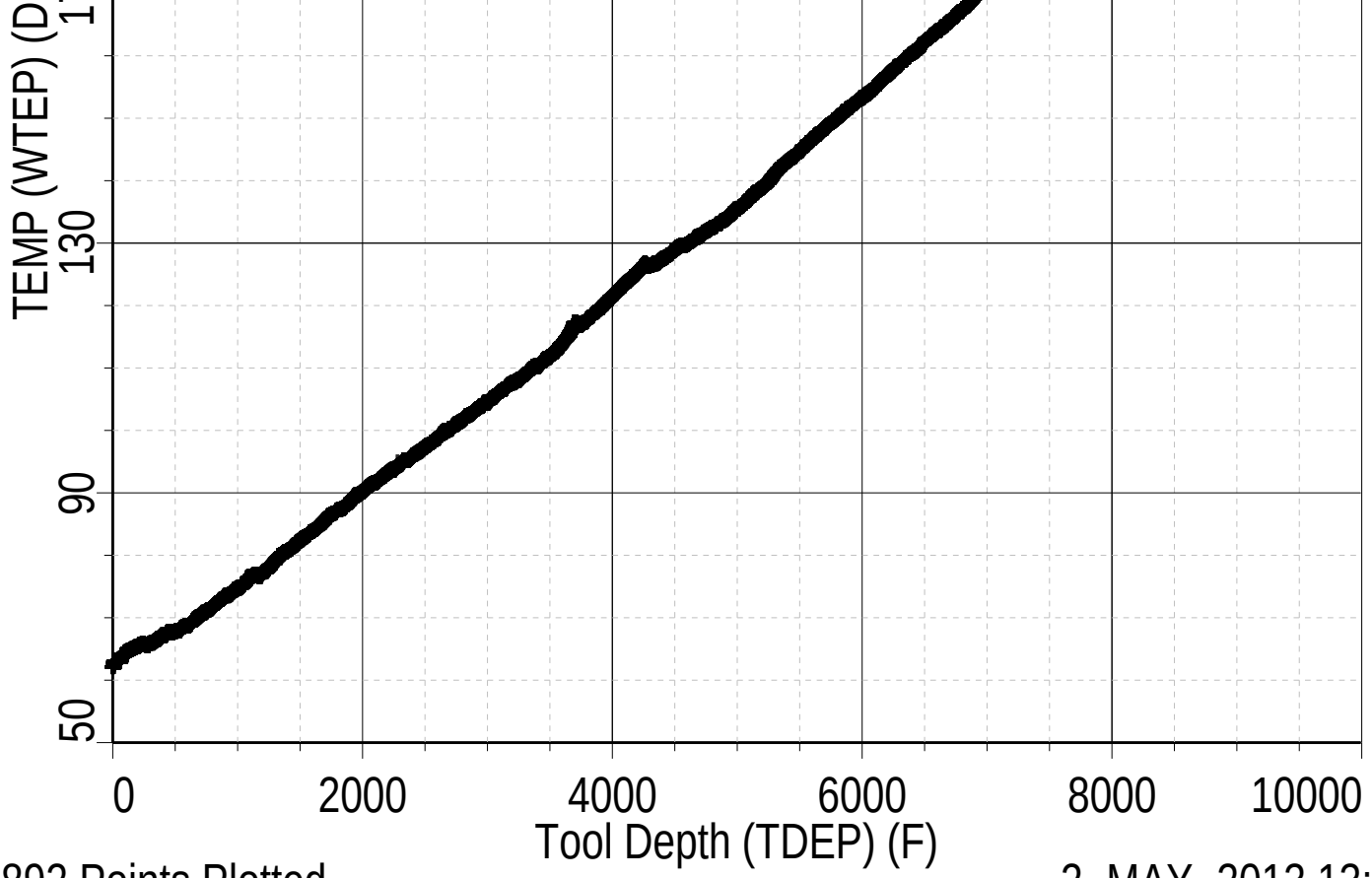
TEMPERATURE PLOT

MAXIS Field Log

Index: 9445.5 − −31.5 FT





18892 Points Plotted

2−MAY−2013 13:44

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PBMS COEFFICIENTS

MAXIS Field Log

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**MAMM CREEK**	**Sub Type:**	**PBMS**
Well:	**ENCANA FEE 24−1A (K19CNE)**	**Sensor:**	**GR**
Run date:	**2−May−2013**		

PBMS Gamma Ray

Sonde Serial NB	**RESISTORS FOR GR SENSOR N.33223,TOOL PBMS−BA0928. SENSOR S/N:**
Sensor Serial NB	**33223**
Calib Date ddmmyy	**090800**
Matrix Size	**12**
Coeff CRC	**CFE2**

GR HV Rt

	Rt0**	**Rt**1**
Rt0**	**+.182000000000e+04**	**+.332000000000e+04**

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**MAMM CREEK**	**Sub Type:**	**PBMS**
Well:	**ENCANA FEE 24−1A (K19CNE)**	**Sensor:**	**WellTemp RTD**
Run date:	**2−May−2013**		

PBMS RTD Well Thermometer

Sonde Serial NB	**COEFFICIENTS FOR RTD THERMOMETER PBMS−B.928 S/N:**
Sensor Serial NB	**928**
Calib Date ddmmyy	**280612**
Matrix Size	**16**
Coeff CRC	**A24E**

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt0**	**−.391987973189E+03**	**+.191346892512E+03**	**−.440920753451E+02**

	Tt**3	Tt**4	Tt**5
Tt0**	**+.957191300908E+01**	**−.711421725686E+00**	**0.0**

Client:	**ENCANA OIL & GAS (USA) INC**	**Tool:**	**PSP**
Field:	**MAMM CREEK**	**Sub Type:**	**PBMS**
Well:	**ENCANA FEE 24−1A (K19CNE)**	**Sensor:**	**CQG**
Run date:	**2−May−2013**		

PBMS Quartz Gauge type F

Sonde Serial NB	**COEFFICIENTS FOR CQG PBMS−B.928 S/N:**

Sonde Serial NB COEFFICIENTS FOR CQG PBMS-B.928 S/N:
Sensor Serial NB 928
Calib Date ddmmyy 280612
Matrix Size 66
Coeff CRC 9DC3

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc**0	+.714463802232E+04	+.183434658655E-01	-.156620073569E-06
Fc**1	-.100638308957E+01	-.119899563644E-04	-.912155899025E-10
Fc**2	+.936268101283E-06	+.423898071451E-10	+.958076371919E-15
Fc**3	+.185123362373E-11	+.203107925433E-15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

	Fb**3	Fb**4	Fb**5
Fc**0	-.746577997611E-10	-.588773826860E-15	-.622250441458E-19
Fc**1	-.120636521092E-15	+.400325894750E-19	0.0
Fc**2	0.0	0.0	0.0
Fc**3	0.0	0.0	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

PBMS Quartz Gauge type F
Sonde Serial NB :
Sensor Serial NB 928
Calib Date ddmmyy 280612
Matrix Size 66
Coeff CRC 283B

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+.117016867873E+03	-.284359629614E-03	+.604391180345E-08
Fb**1	-.598309140812E-02	+.182731130848E-07	+.160166486172E-12
Fb**2	-.307621454576E-07	+.300601550309E-12	+.311233548560E-17
Fb**3	-.419658736767E-12	+.117473708647E-16	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	+.114322792679E-12	+.153807711176E-17	-.736714260866E-21
Fb**1	-.528037875456E-18	-.220337637519E-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	**928**
Calib Date ddmmyy	**280612**
Matrix Size	**16**
Coeff CRC	**093F**

Clock Freq Coeff

	(Fb'−Fc')**0	(Fb'−Fc')**1	(Fb'−Fc')**2
(Fb'−Fc')**0	+.310874009898E+05	+.288920923041E−02	+.697940727038E−06
	(Fb'−Fc')**3	(Fb'−Fc')**4	(Fb'−Fc')**5
(Fb'−Fc')**0	−.657432344763E−10	−.412920638782E−15	+.213369826099E−20

PBMS Quartz Gauge type F

Sonde Serial NB	**:**
Sensor Serial NB	**928**
Calib Date ddmmyy	**280612**
Matrix Size	**16**
Coeff CRC	**8419**

Clock Temp Coeff

	(Fb'−Fc')**0	(Fb'−Fc')**1	(Fb'−Fc')**2
(Fb'−Fc')**0	+.115369519827E+03	−.565338877075E−02	−.333717531829E−07
	(Fb'−Fc')**3	(Fb'−Fc')**4	(Fb'−Fc')**5
(Fb'−Fc')**0	−.124387135327E−12	+.713102327208E−16	−.316084316842E−20

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	8303
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
Master		876.9
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 2 Amplitude Plus MV	Value
Master		726.7
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 3 Amplitude Plus MV	Value
Master		954.5
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 4 Amplitude Plus MV	Value
Master		611.0
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 5 Amplitude Plus MV	Value
Master		812.5
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 6 Amplitude Plus MV	Value
Master		931.0
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 7 Amplitude Plus MV	Value
Master		795.9
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 8 Amplitude Plus MV	Value
Master		830.0
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	CBL Amplitude Plus MV	Value
Master		1269
1000 (Minimum)	1350 (Nominal)	1700 (Maximum)

Master: 7−Sep−2012 16:30

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

Schlumberger

Well: **ENCANA FEE 24−1A (K19CNE)**
Field: **MAMM CREEK**
County: **GARFIELD**
State: **COLORADO**

SLIM CEMENT MAPPING LOG
CBL−VDL
GAMMA RAY − CCL