

Schlumberger

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

Well: **DW 8609D-28 (P28496)**

Field: **Double Willow**

County: **Garfield** State: **Colorado**

SLIM CEMENT MAPPING TOOL CBL - VDL GAMMA RAY - CCL

County:	Garfield		
Field:	Double Willow		
Location:	SHL: 704 FSL 453 FEL		
Well:	DW 8609D-28 (P28496)		
Company:	ENCANA OIL & GAS (USA) INC		
LOGGING DATE	LOCATION		
	SHL: 704 FSL 453 FEL	Elev: K.B. 7813.00 ft	
	BHL: 1989 FSL 1313 FEL	G.L. 7791.00 ft	
	39.667992N 108.166736W	D.F. 7813.00 ft	
API SERIAL NO.	Permanent Datum:	GROUND LEVEL	Elev: 7791.00 ft
	Log Measured From:	KELLY BUSHING	22.00 ft above Perm. Datum
	Drilling Measured From:	KELLY BUSHING	
	05-045-20796-00	Section 28	Township 4S Range 96W
Logging Date	10-Jul-2012		
Run Number	1		
Depth Driller	11003 ft		
Schlumberger Depth	10934 ft		
Bottom Log Interval	10925 ft		
Top Log Interval	200 ft		
Casing Fluid Type	FRESH WATER		
Salinity			
Density	8.6 lbm/gal		
Fluid Level	22 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.750 in		
From	0 ft		
To	11003 ft		
Casing/Tubing Size	4.500 in		
Weight	11.6 lbm/ft		
Grade	P-110		
From	0 ft		
To	10973 ft		
Maximum Recorded Temperatures	279 degF		
Logger On Bottom	10-Jul-2012	14.45	
Unit Number	391	Grand Junction	
Recorded By	Kirstie Bunting		
Witnessed By	Scott Pitt		

PVT DATA				Run 1	Run 2	Run
Oil Density						
Water Salinity						
Gas Gravity						
Bo						
Bw						
1/Bq						
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						
Unit Number						
Recorded By						
Witnessed By						

DEPTH SUMMARY LISTING

Date Created: 10-JUL-2012 13:51:17

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	OMTD-B/A	Type:	1-25ZT
Serial Number:	5873	Serial Number:	5006	Serial Number:	391
Calibration Date:	20-DEC-2011	Calibration Date:	21-JUN-2012	Length:	24000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	174878	Conveyance Method: Wireline Rig Type: LAND	
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-3	Calibration RMS:	15		
Wheel Correction 2:	-3	Calibration Peak Error:	9		

Depth Control Parameters

Log Sequence: First Log In the Well

Rig Up Length At Surface: 200.00 FT

Rig Up Length At Bottom: 200.00 FT

Rig Up Length Correction: 0.00 FT

Stretch Correction: 0.00 FT

Tool Zero Check At Surface: 0.00 FT

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH PROCEDURES USED
2. PRIMARY DEPTH CONTROL: IDW
3. SECONDARY DEPTH CONTROL: DRUM COUNTER (SWPT)
- 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

OS1: NONE

OS2:

OS3:

OS4:

OS5:

OTHER SERVICES2

OS1:

OS2:

OS3:

OS4:

OS5:

REMARKS: RUN NUMBER 1

FIRST RUN IN HOLE CORRELATED TO DOWN LOG

TOOL RAN AS PER TOOL SKETCH

ENTRANCE TIME: 14:00

TIME AT BOTTOM: 14:45

EXIT TIME: 17:45

TOTAL DEPTH = 10934 FT

REMARKS: RUN NUMBER 2

ESTIMATED TOP OF CEMENT = 600 FT	
MAX RECORDED TEMPERATURE = 279 DEGF	
MAX RECORDED PRESSURE = 4555 PSIA	
STRETCH CORRECTION = 4 FT	
CBAF = .95	
CYCLE SKIPPING DUE TO GOOD BOND	
EXPECTED FREE PIPE AMPLITUDE 80 MV	
MAIN PASS RAN WITH ZERO SURFACE PRESSURE	

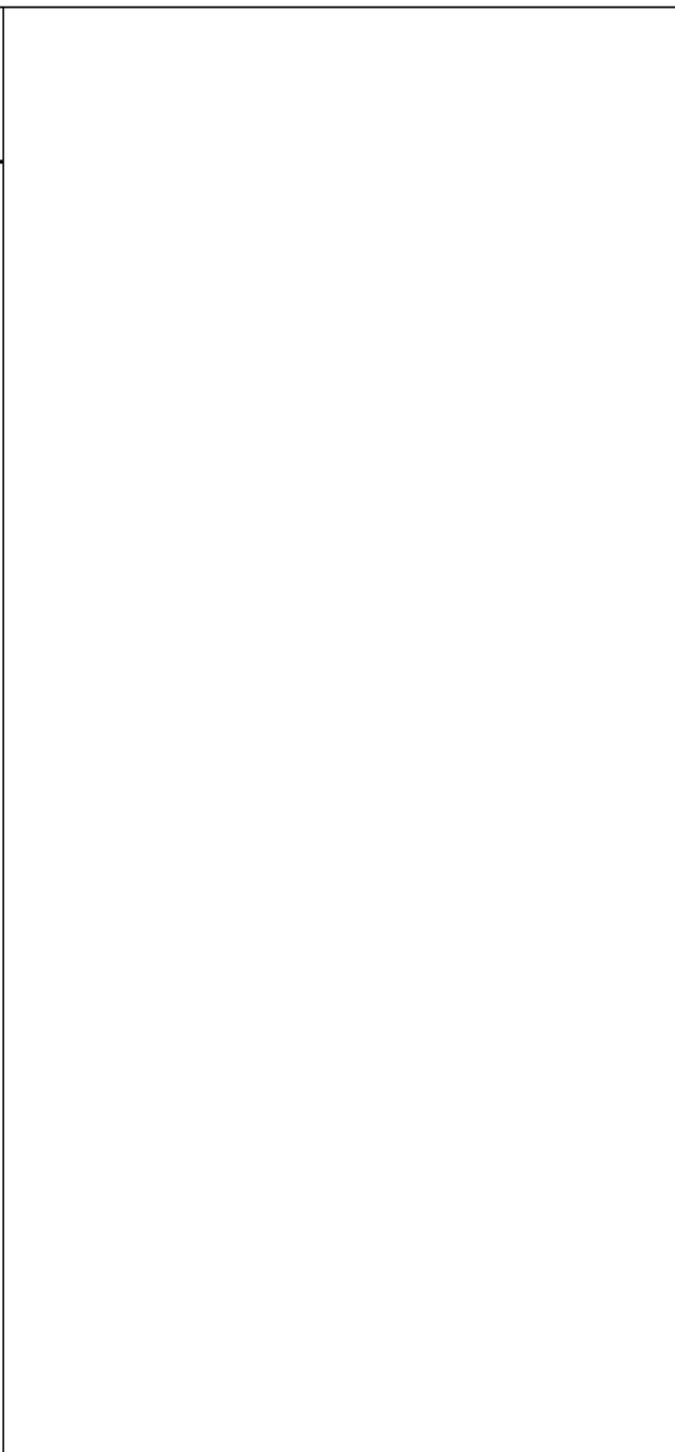
THANK YOU FOR CHOOSING SCHLUMBERGER!	
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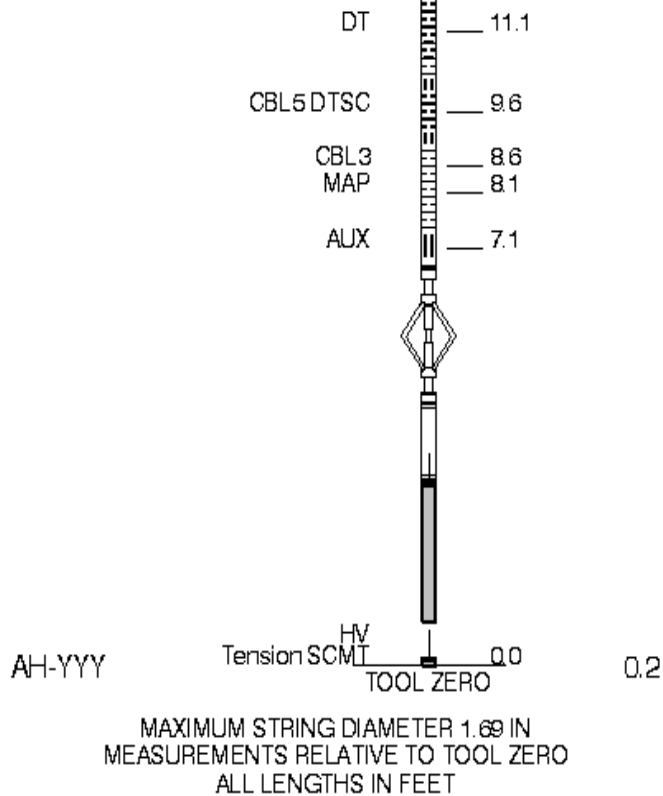
RUN 1			RUN 2		
SERVICE ORDER #:	C8Q2-00009		SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187		PROGRAM VERSION:		
FLUID LEVEL:	22 ft		FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT	
WITM-A PSC_16MHZ	

DOWNHOLE EQUIPMENT	
MH-22 MH-22	30.3
AH-38	28.7
PSPT	28.4
PSC-A	28.4
PSPT-A	
PSTC-A	
PBMS-A 3779	
10k Sapphire Mano	
RTD Thermometer	
GR	24.7
CCL	
PBMS	
Well Temp Manometer	21.7
CCL	21.5
PBMS PSTC	20.9
	20.2
SCMT-CB	20.2
SCMC-CA 8172	
SECH-CA	
CMIR-AG	
SCMS-CB 8179	
SCMX-CA	





Schlumberger

MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: DW 8609D-28 (P28496)

Input DLIS Files

DEFAULT	Splice_SCMT_PSP_021CUP	FN:1	PRODUCER	10-Jul-2012 17:50	10945.5 FT	150.5 FT
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Output DLIS Files

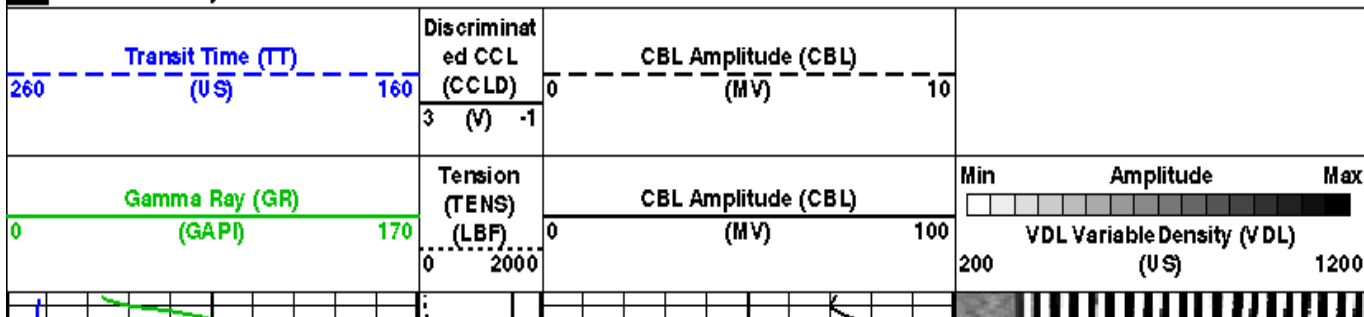
DEFAULT	SCMT_PSP_023PUP	FN:19	PRODUCER	10-Jul-2012 18:05	10949.5 FT	154.5 FT
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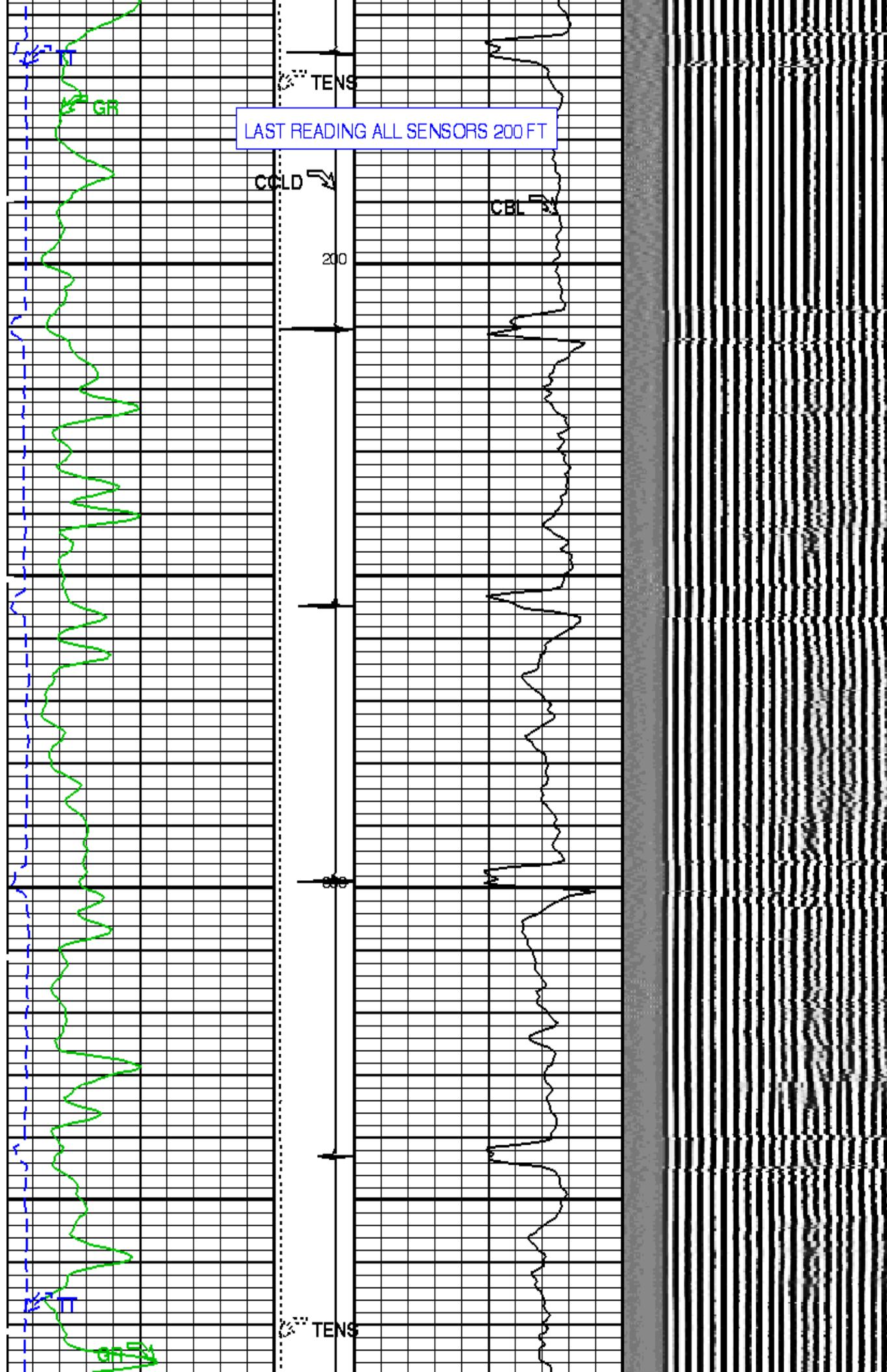
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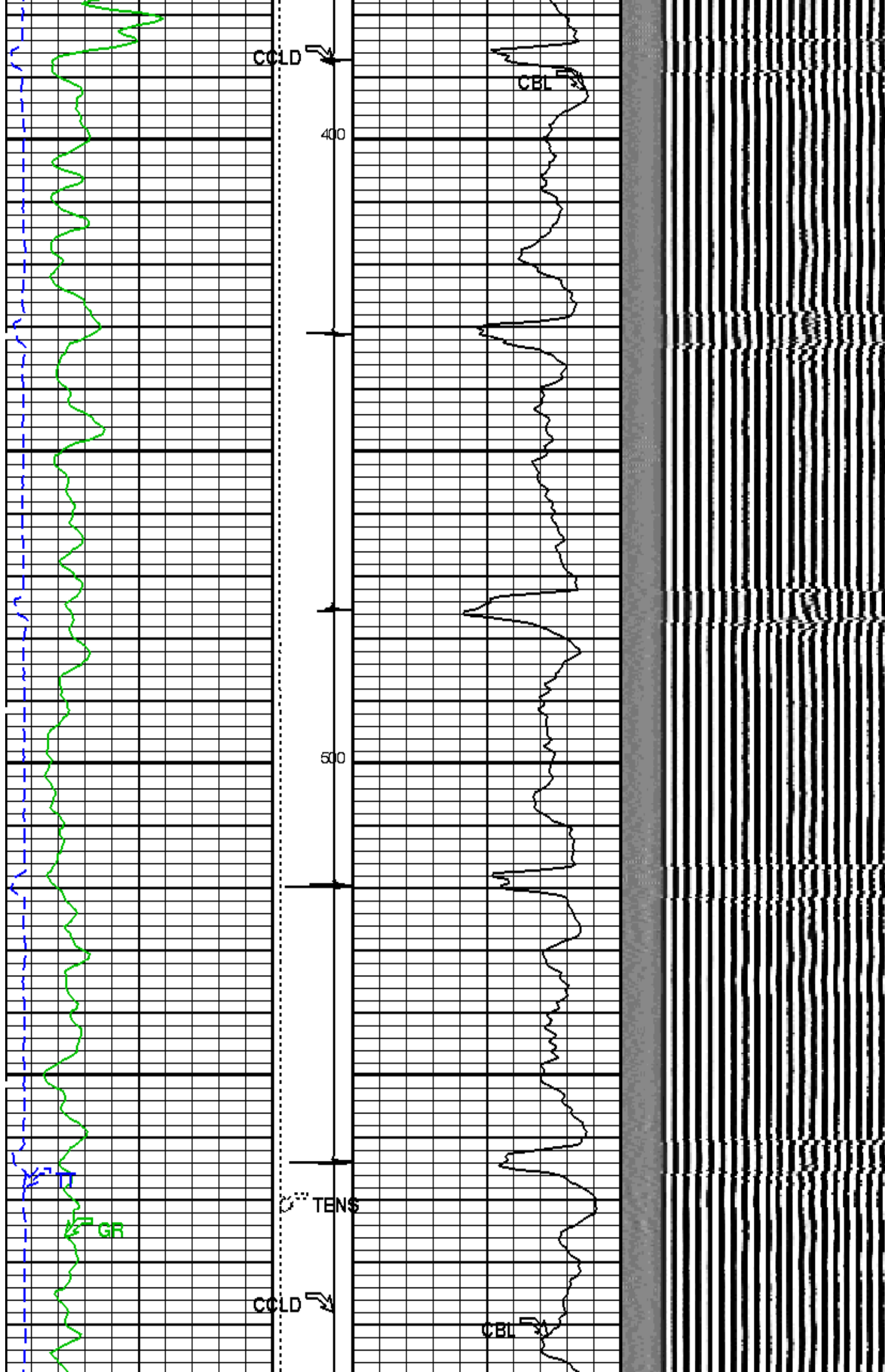
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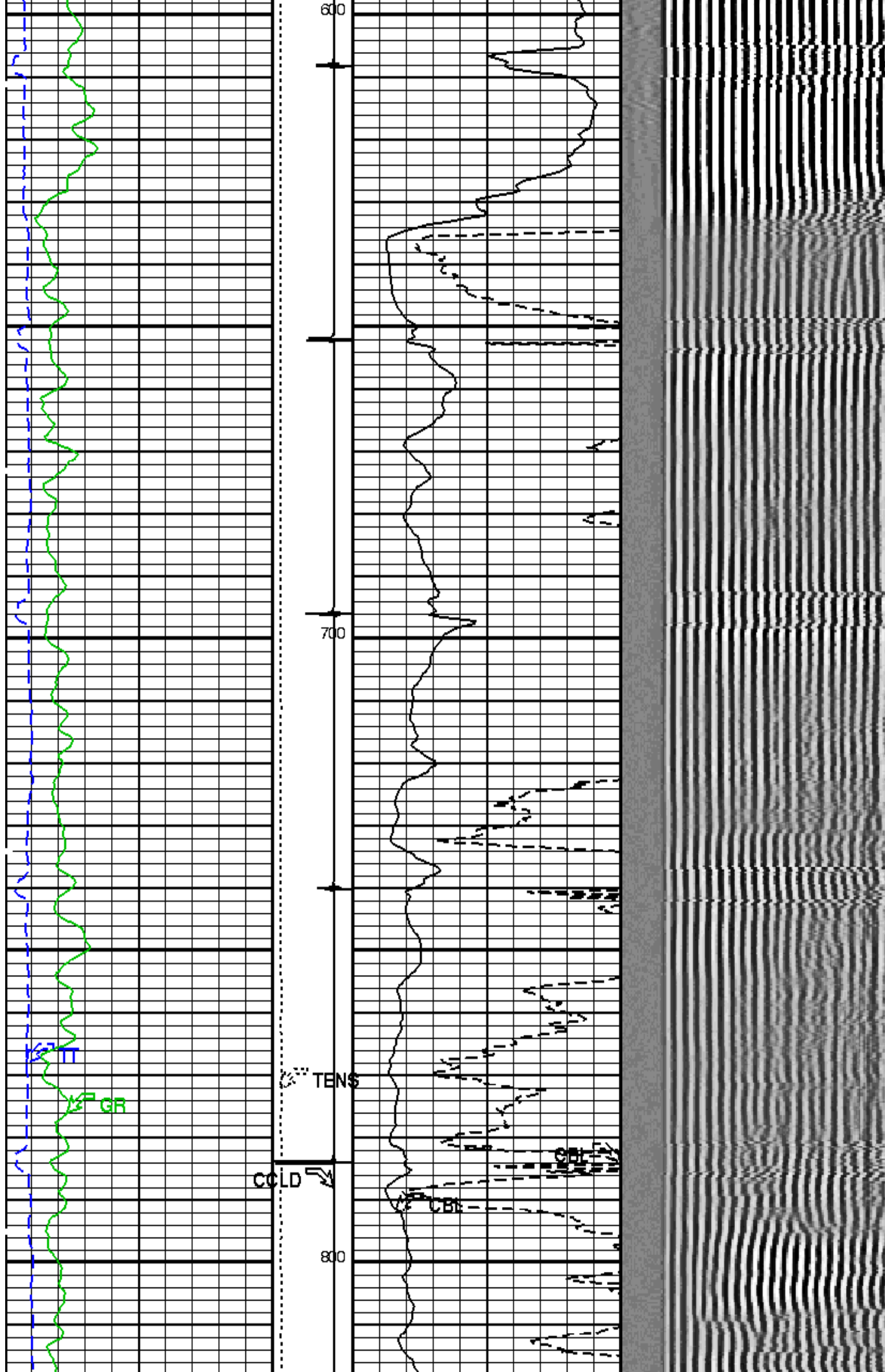
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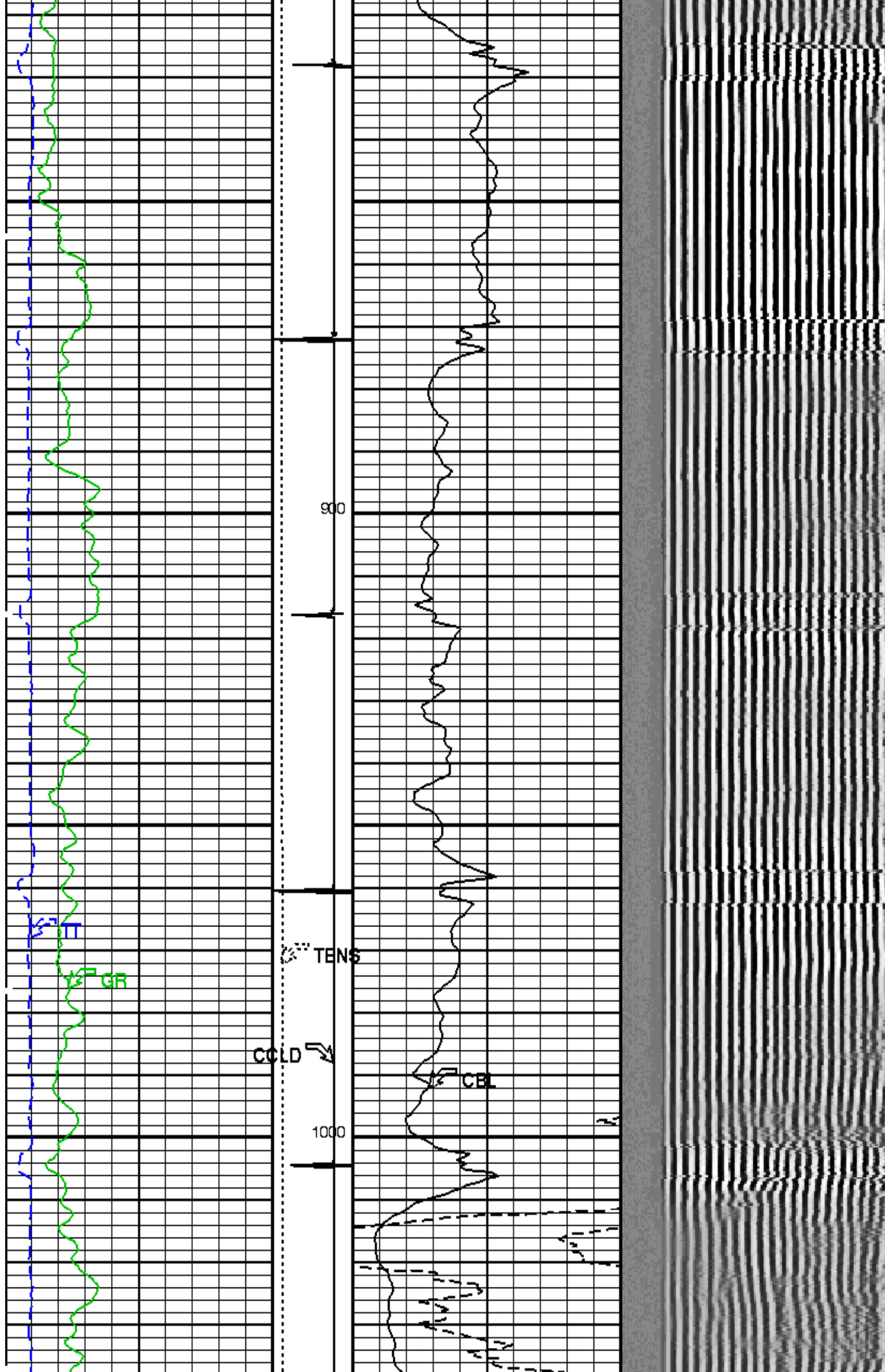
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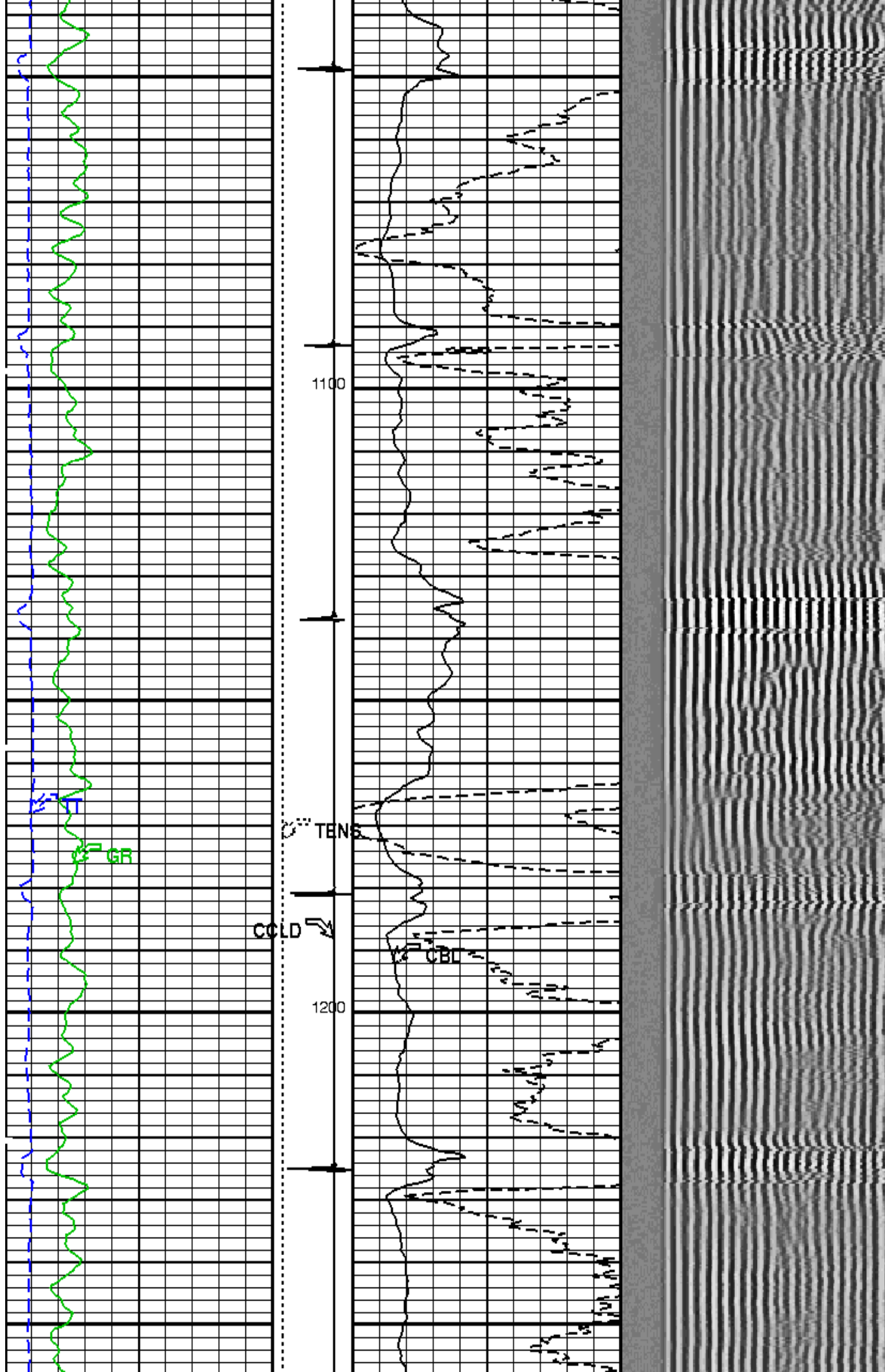


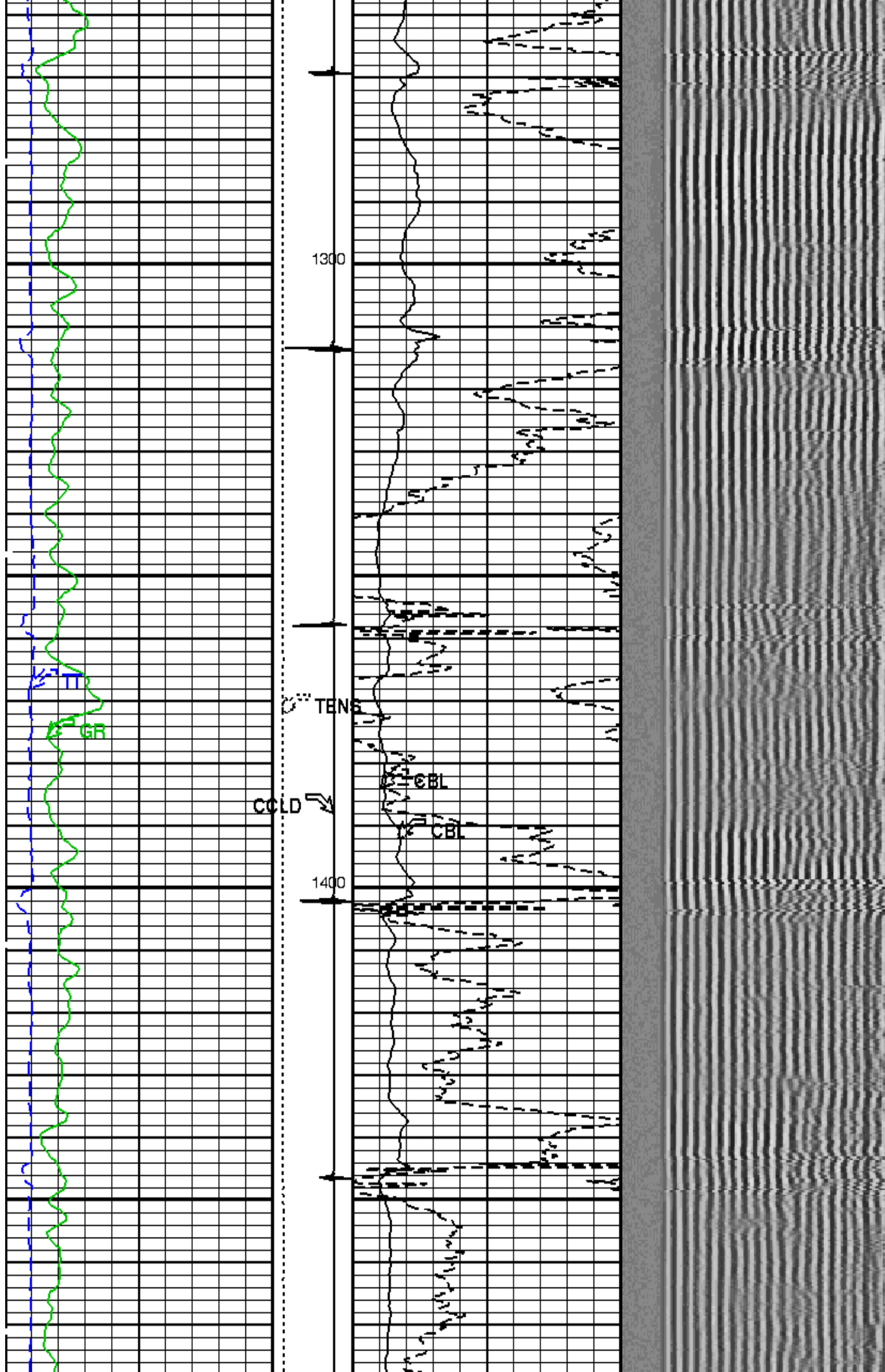


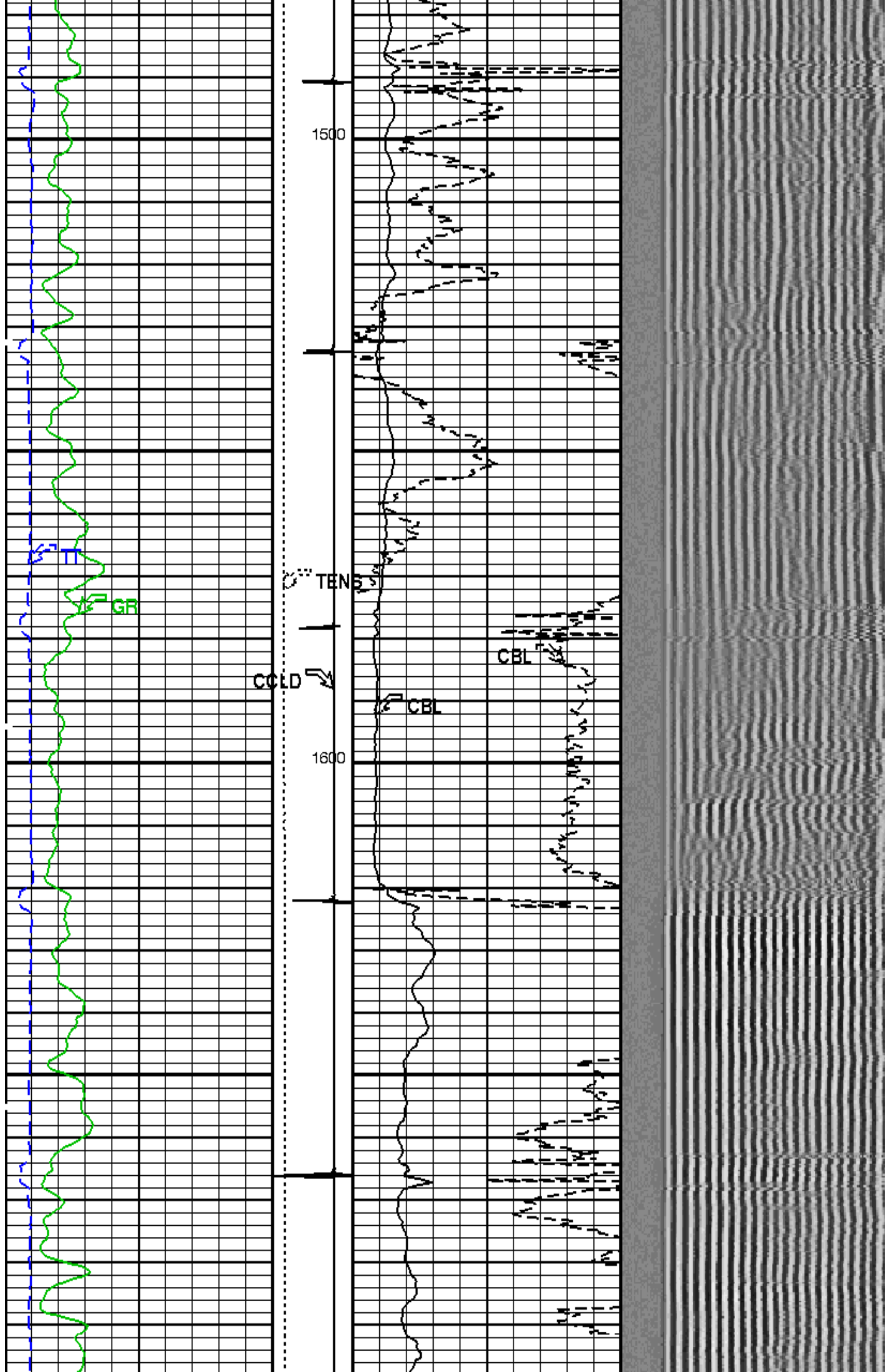


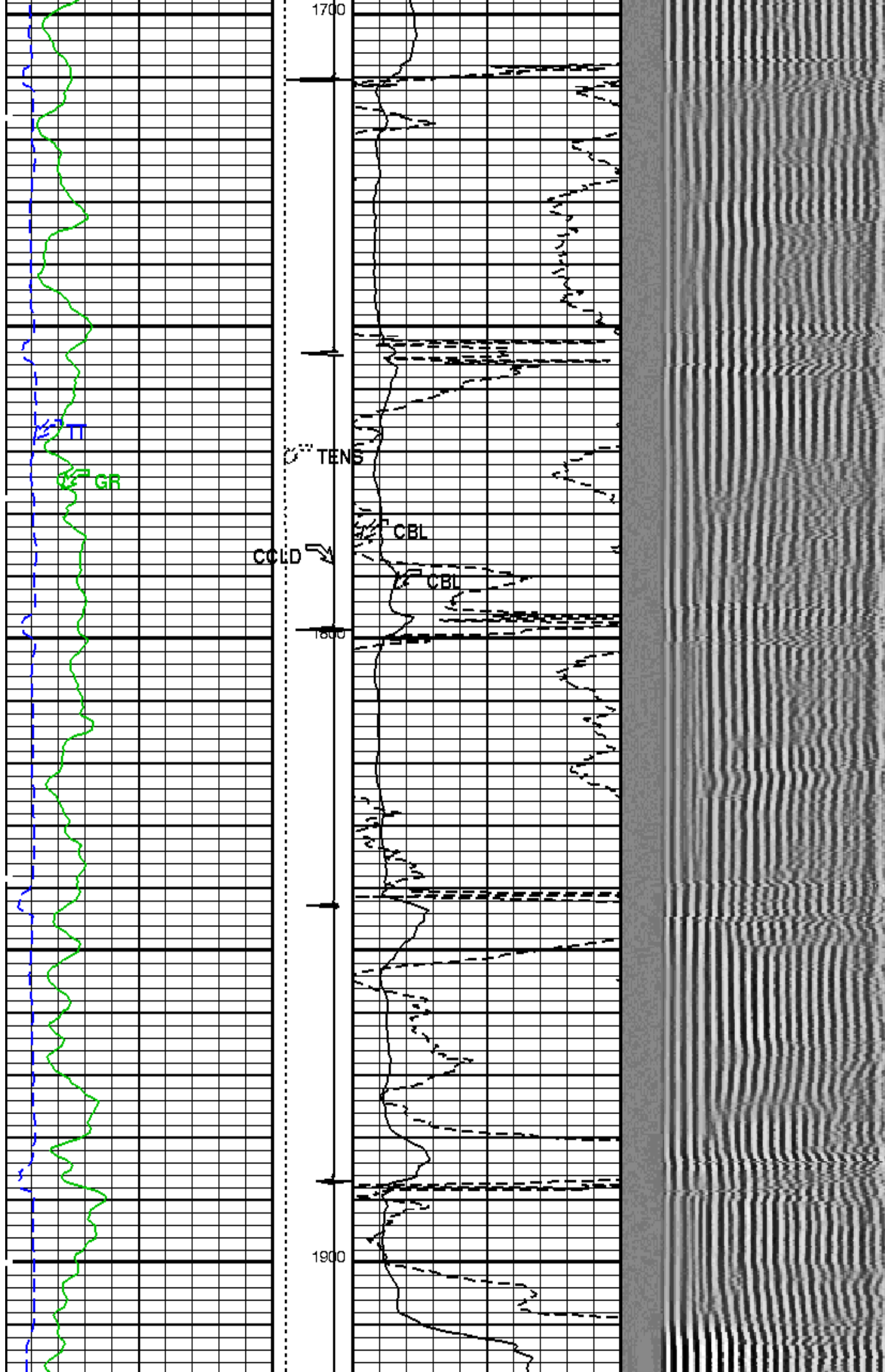


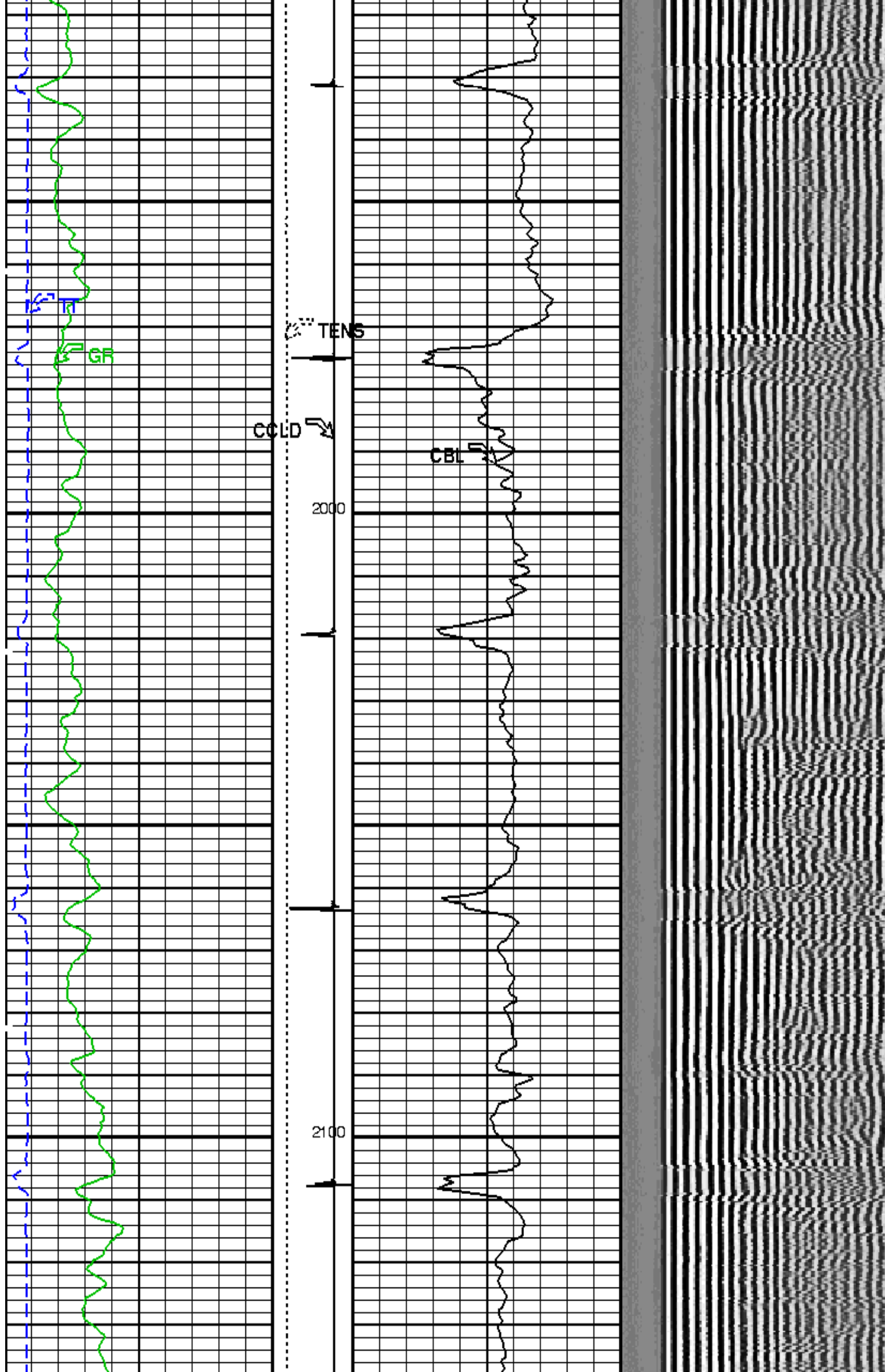


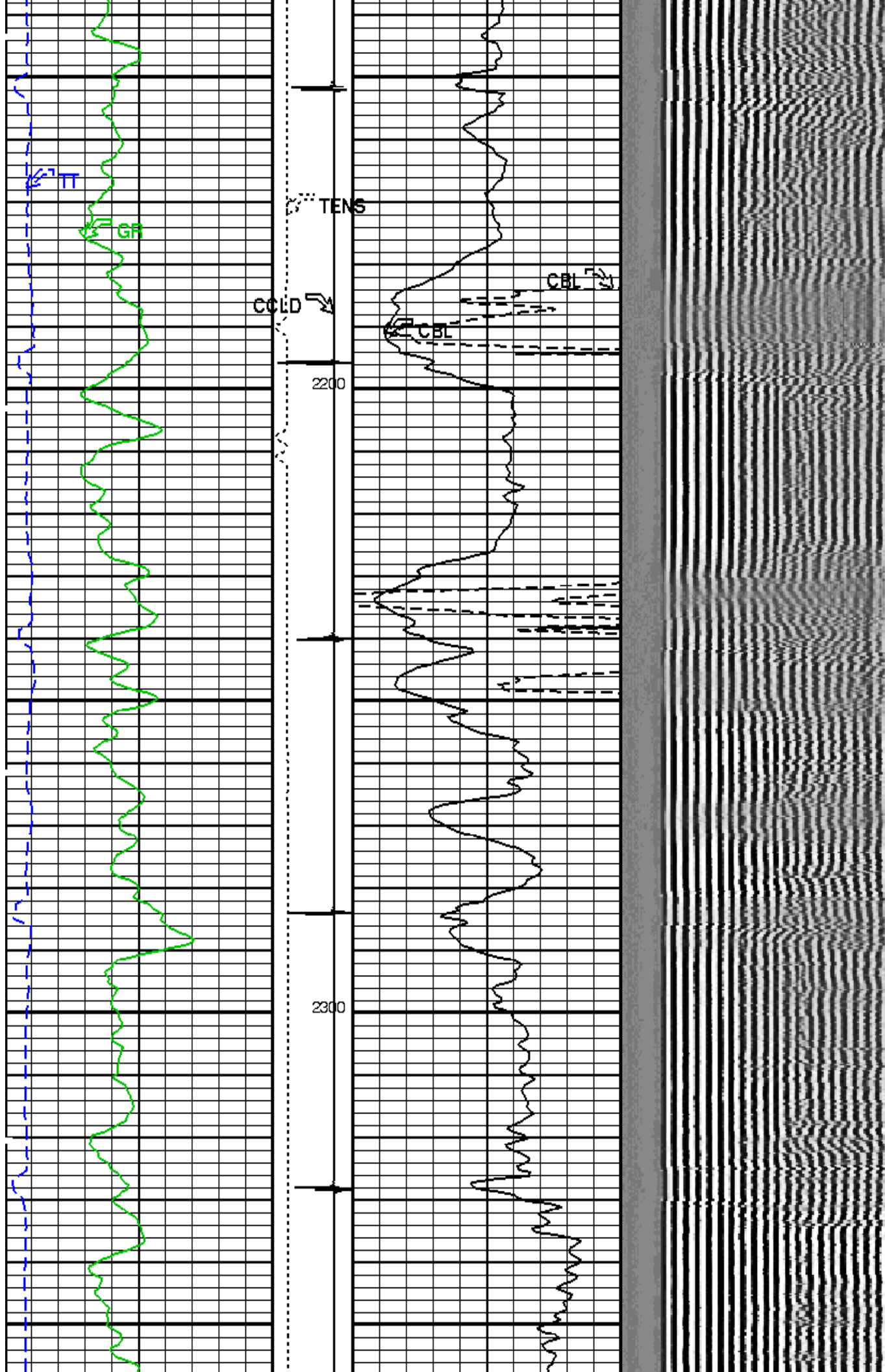


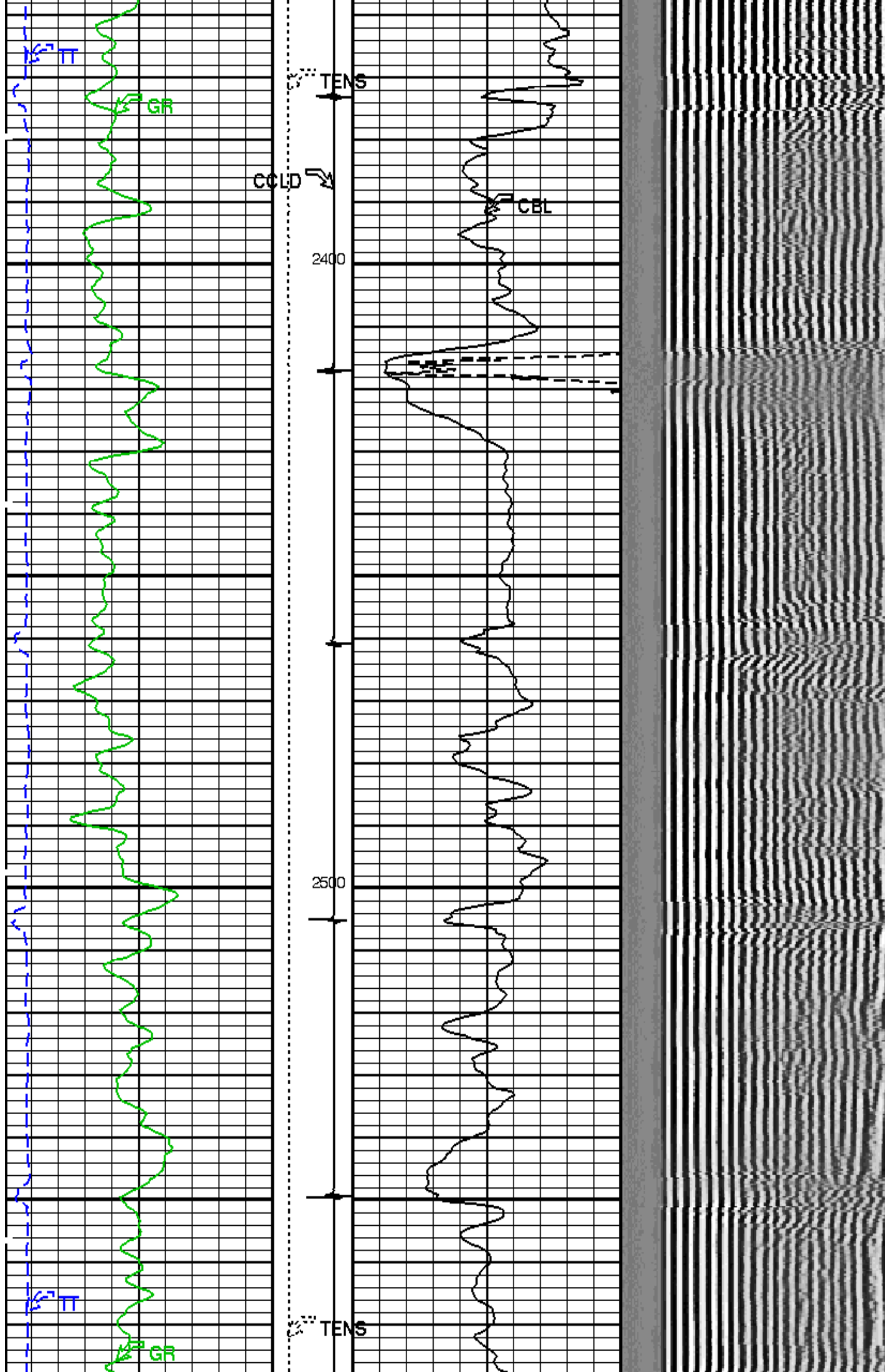


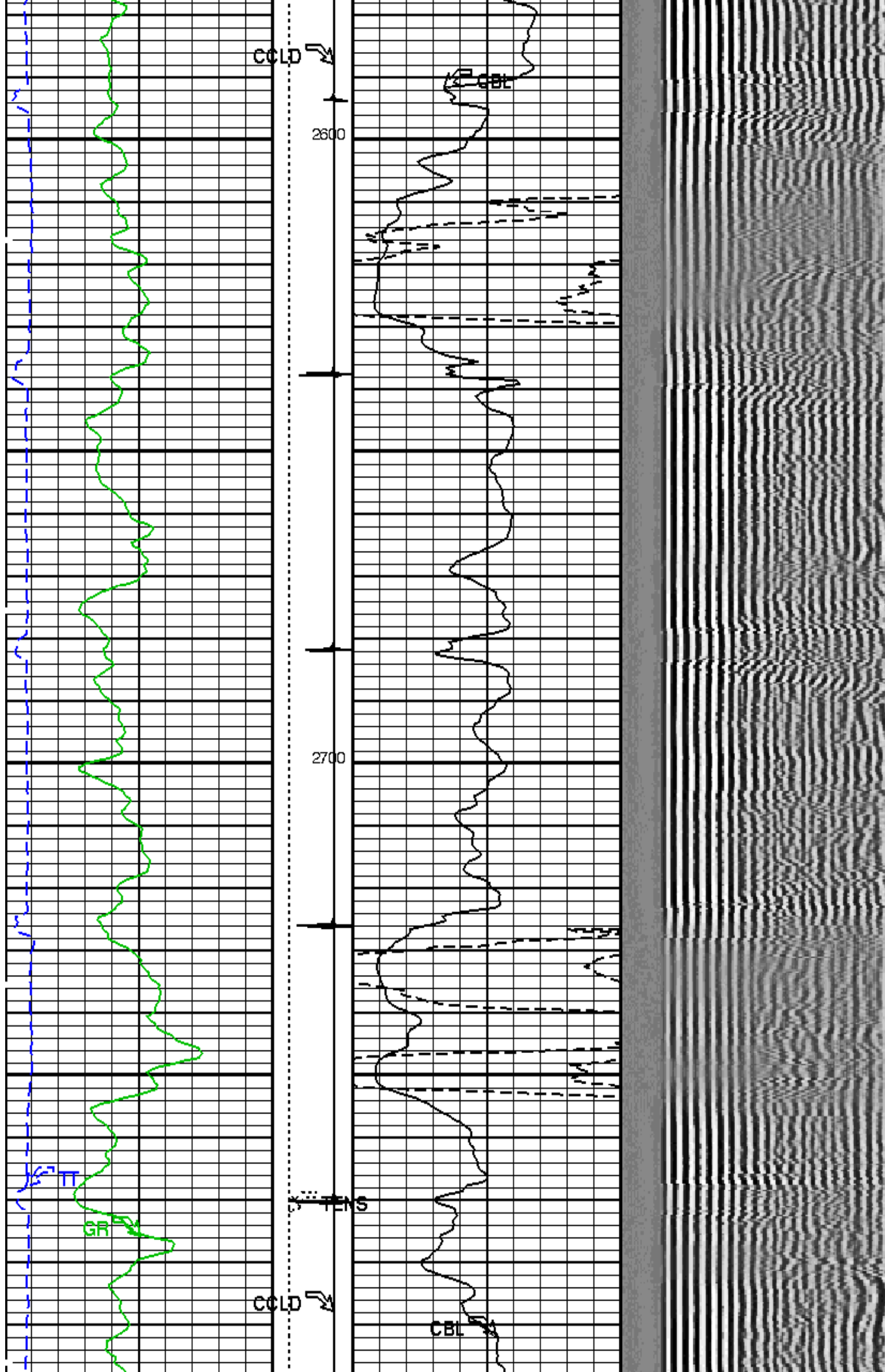


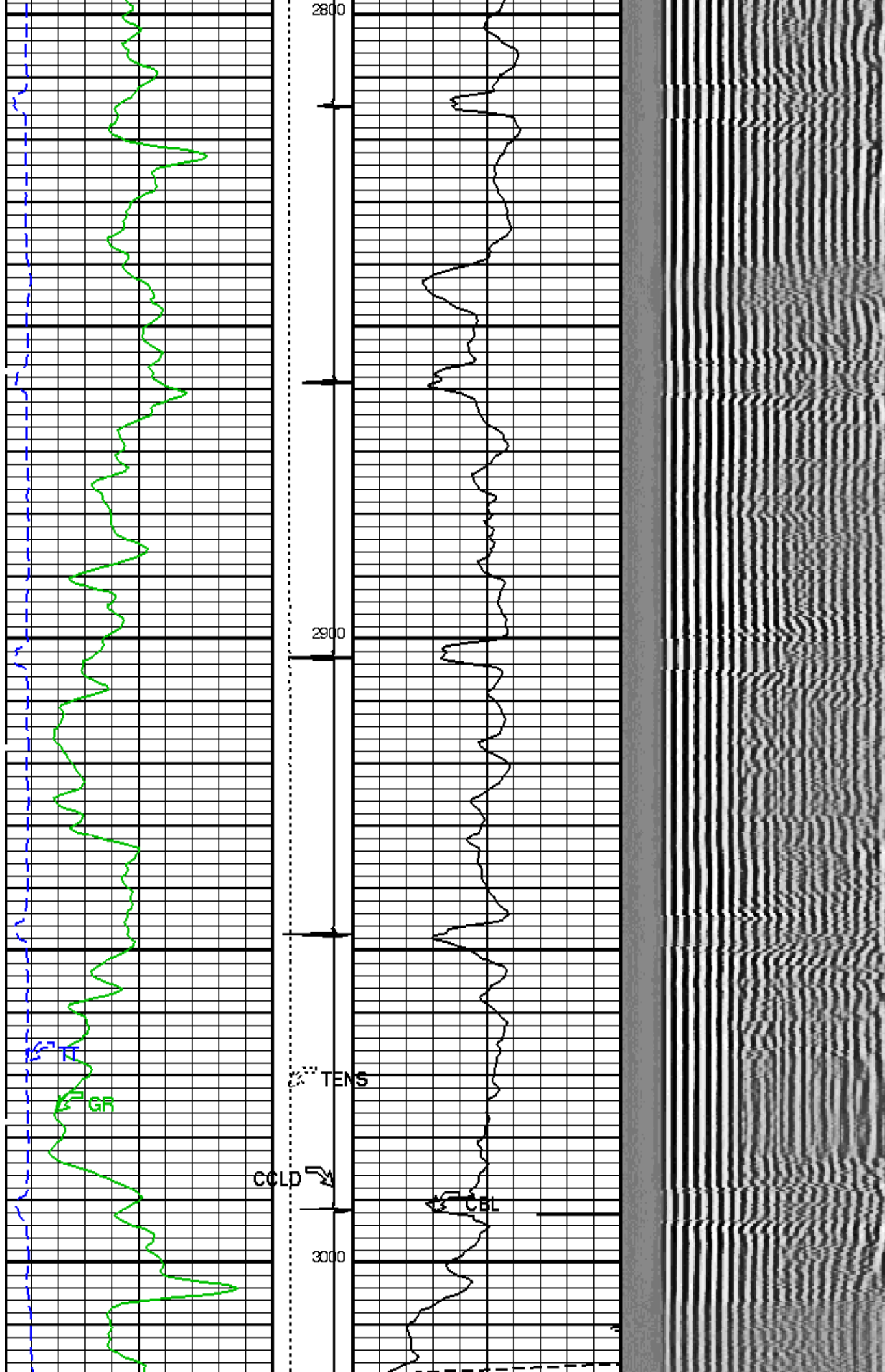


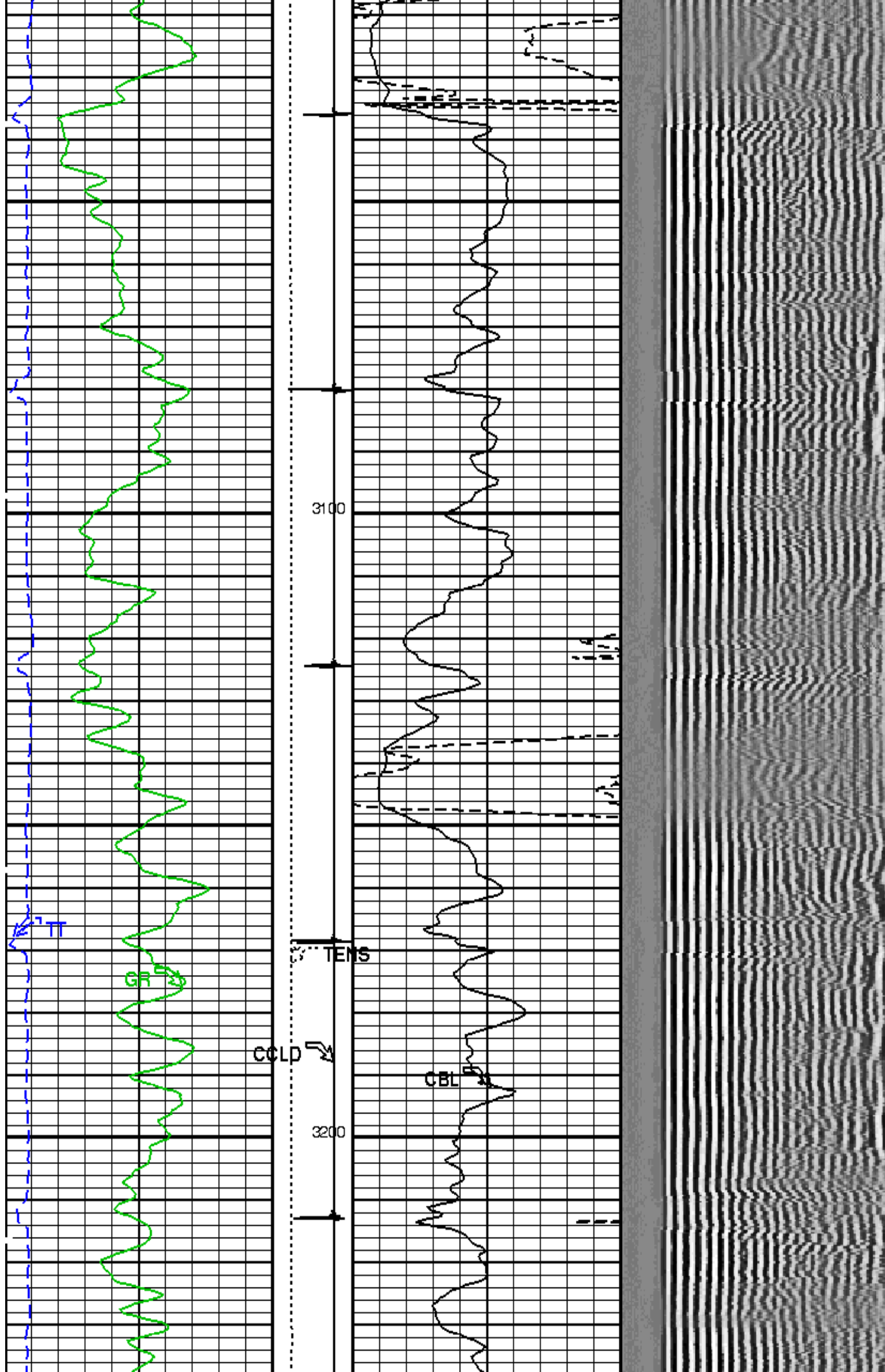


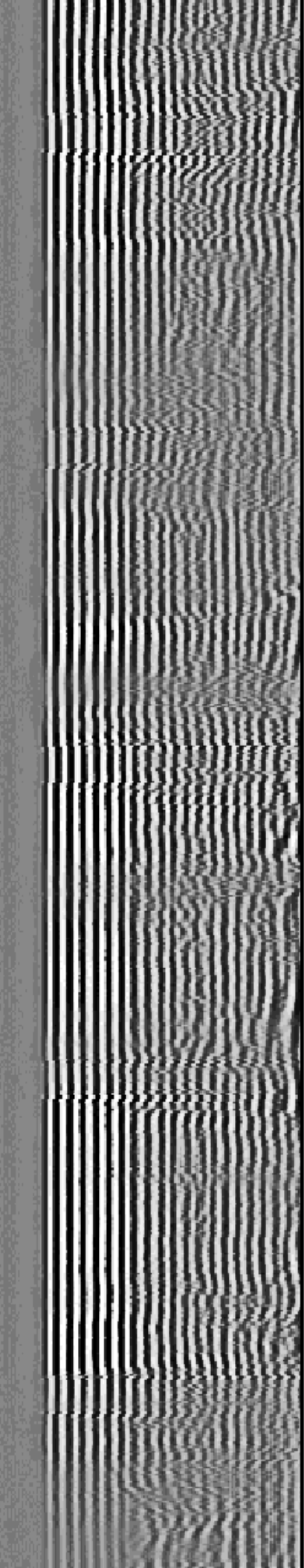
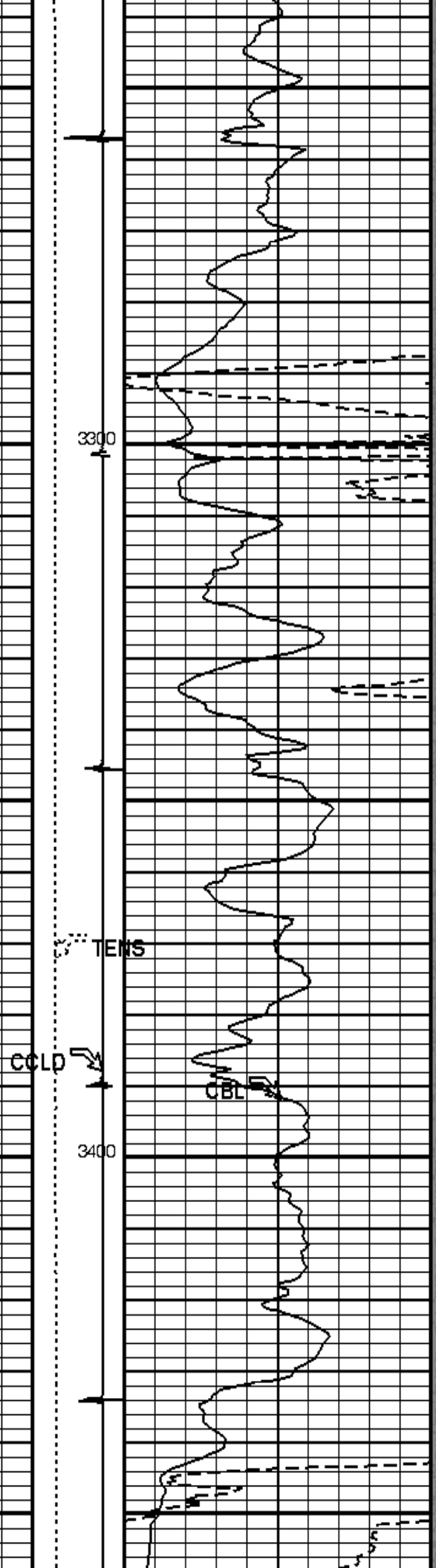
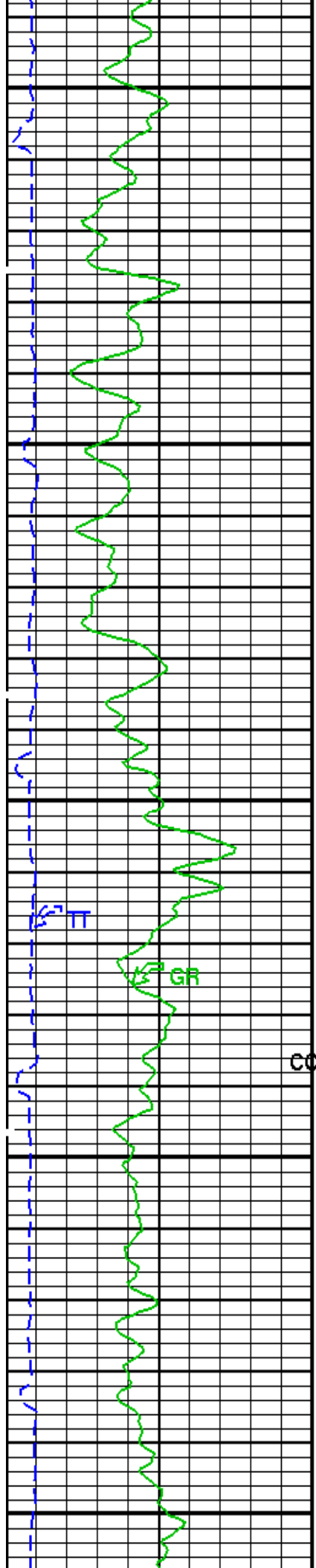


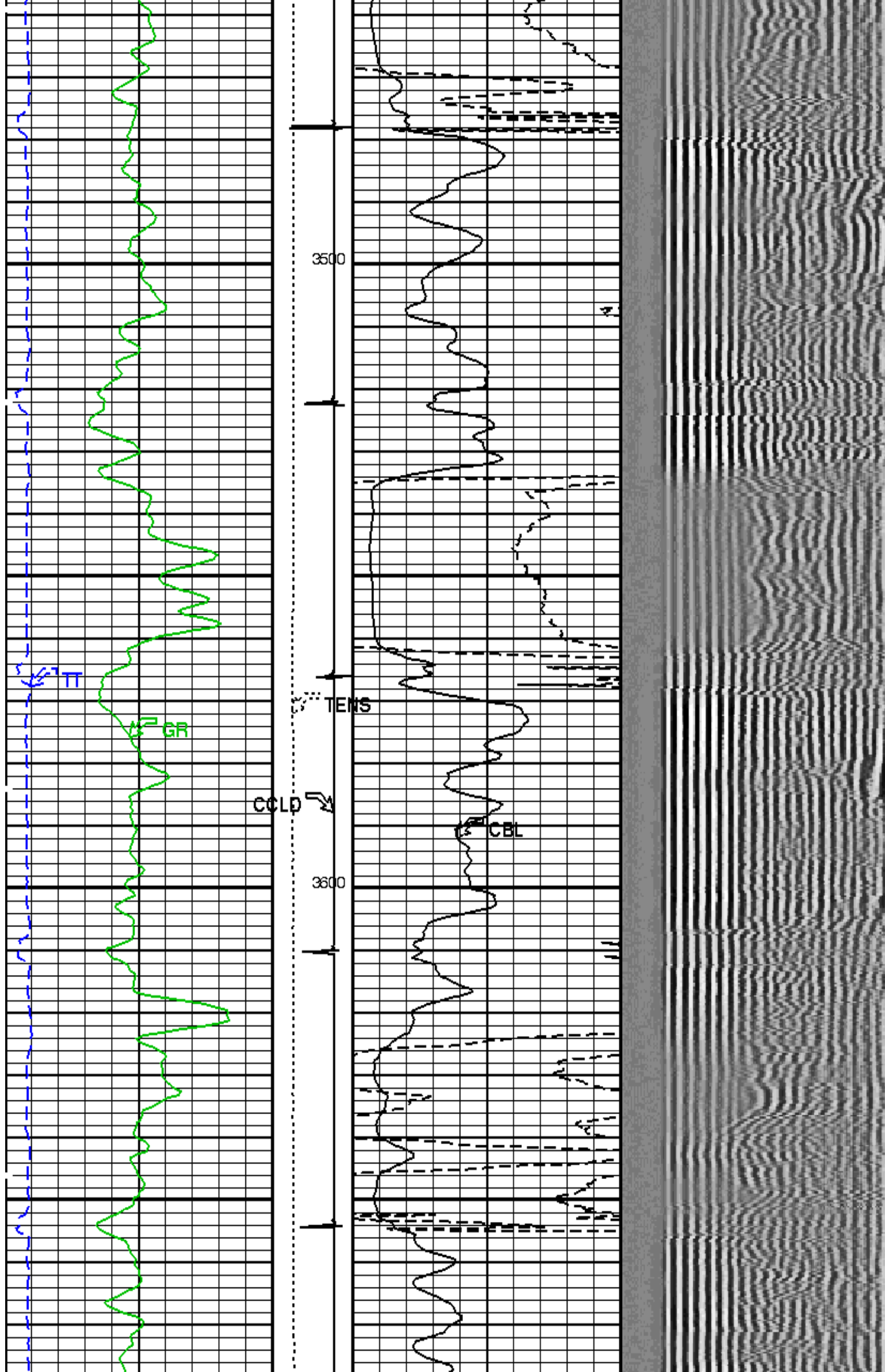


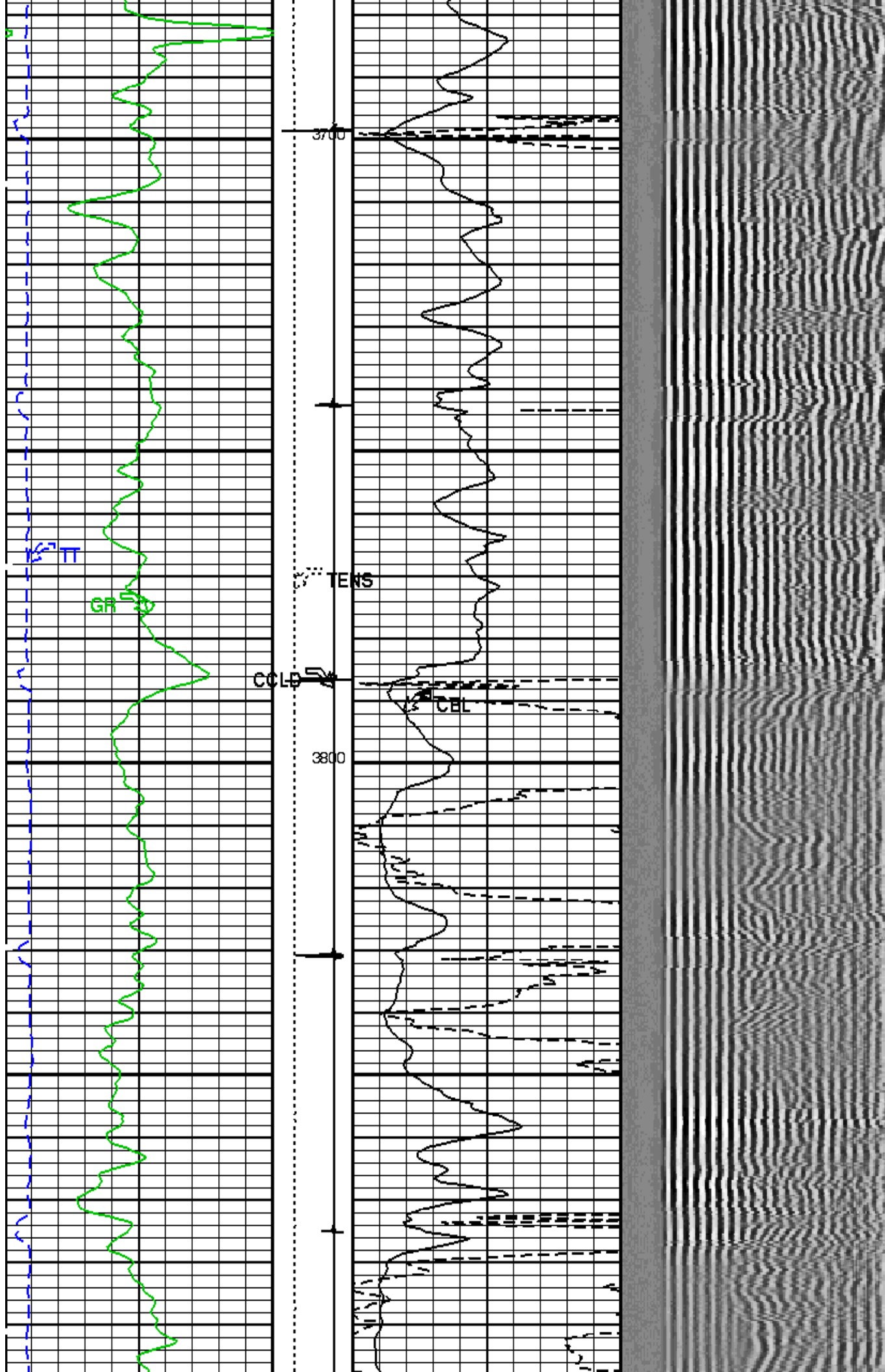


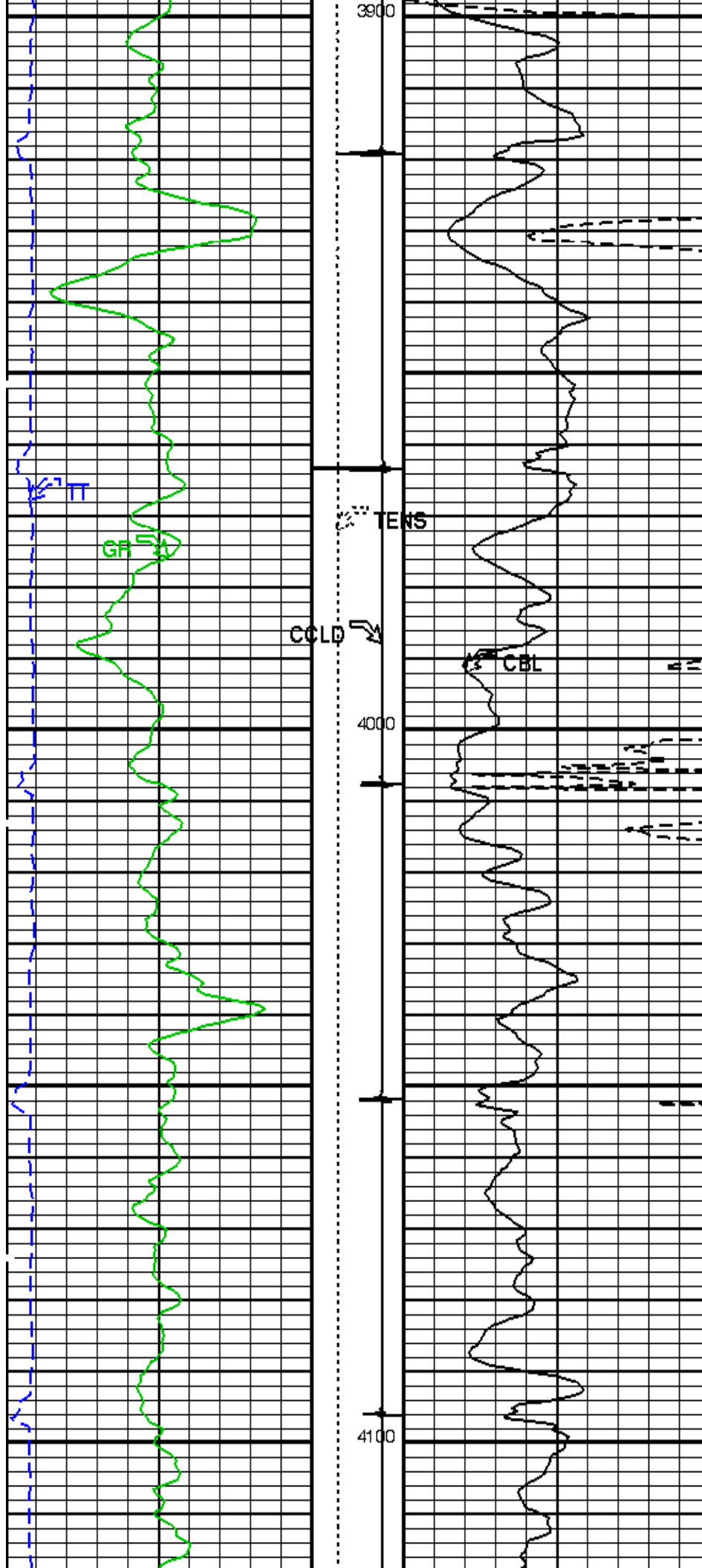


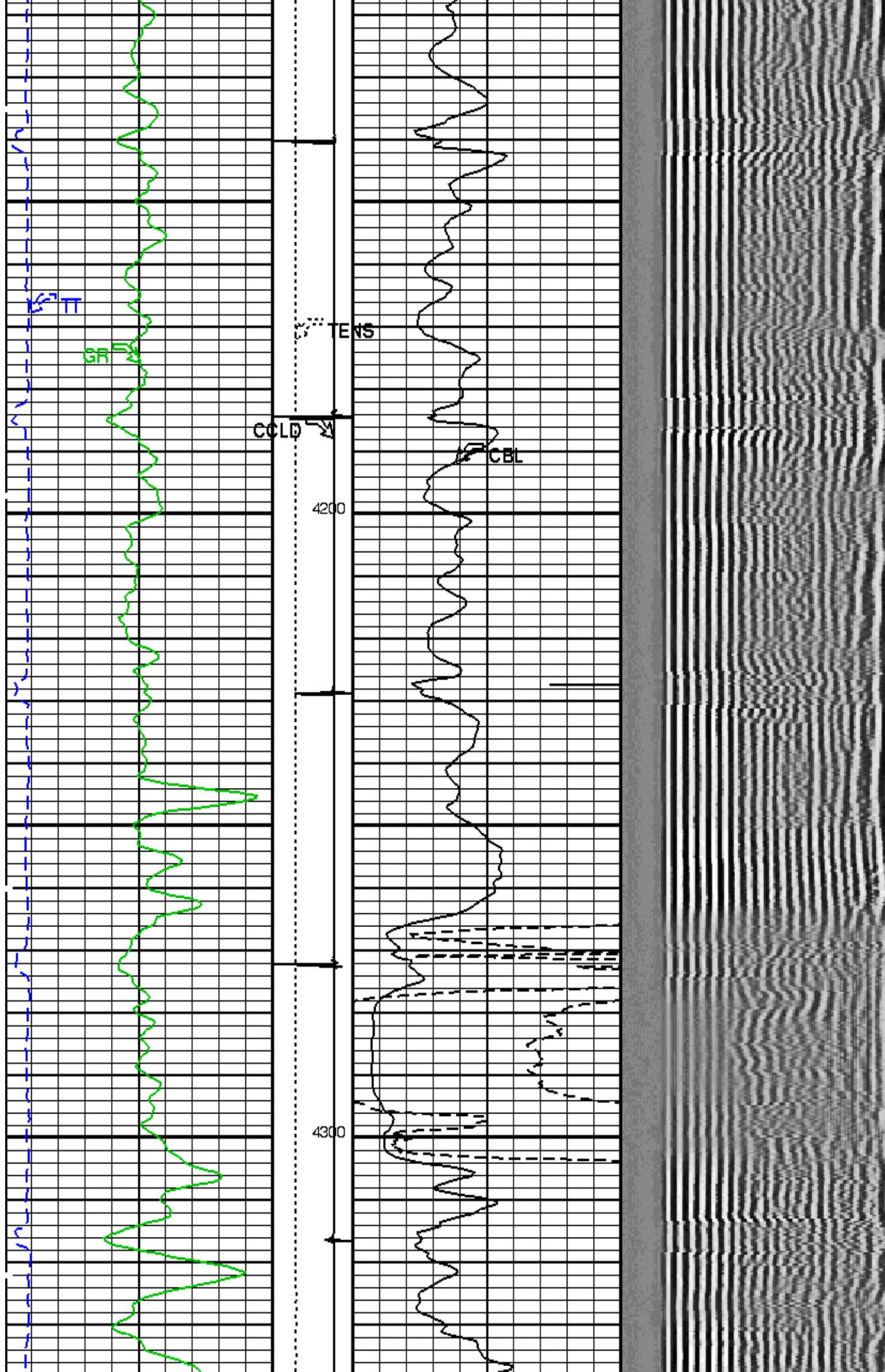


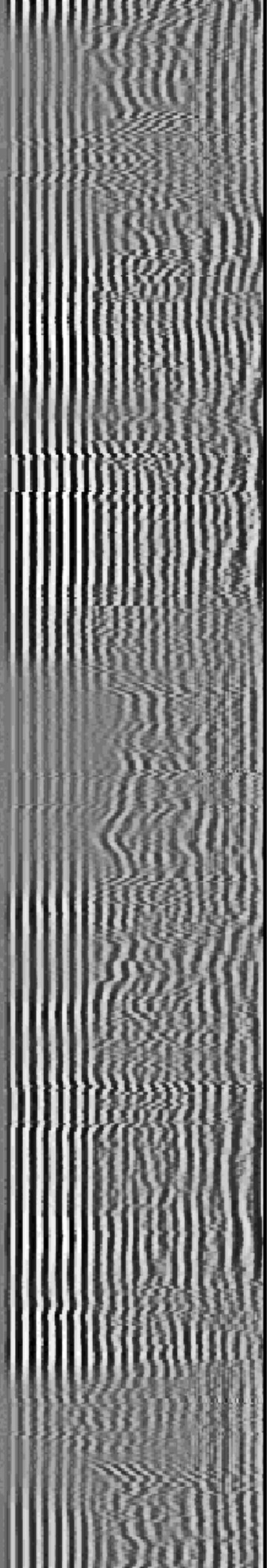
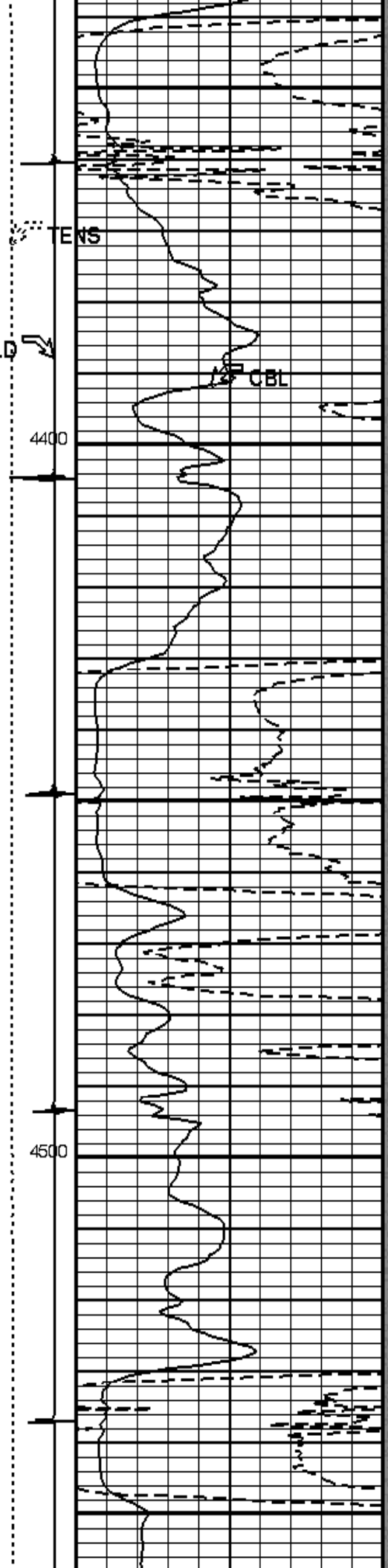
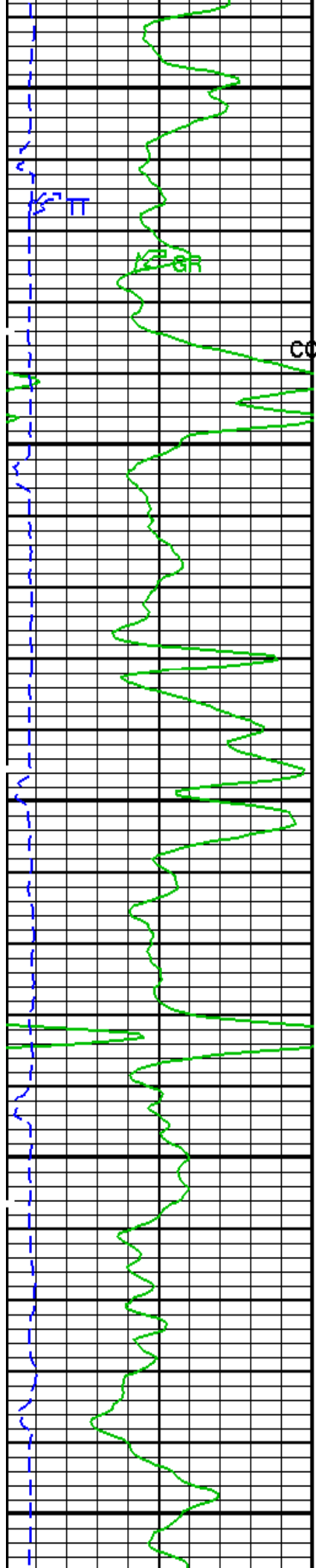


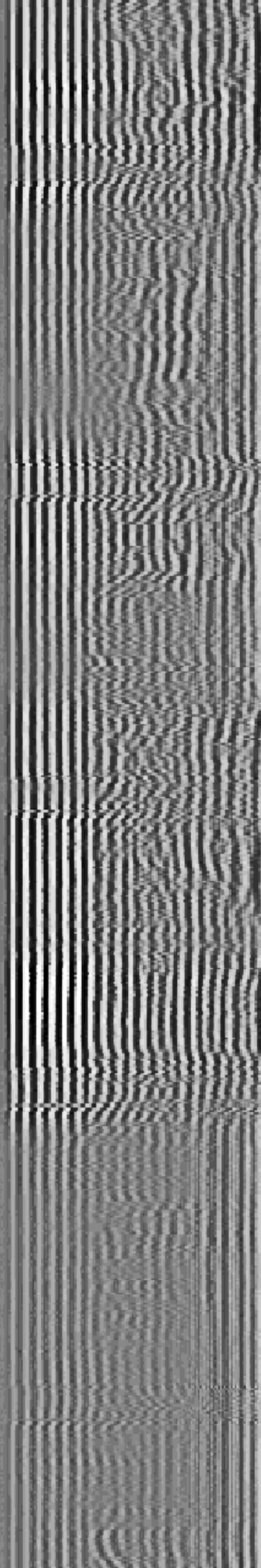
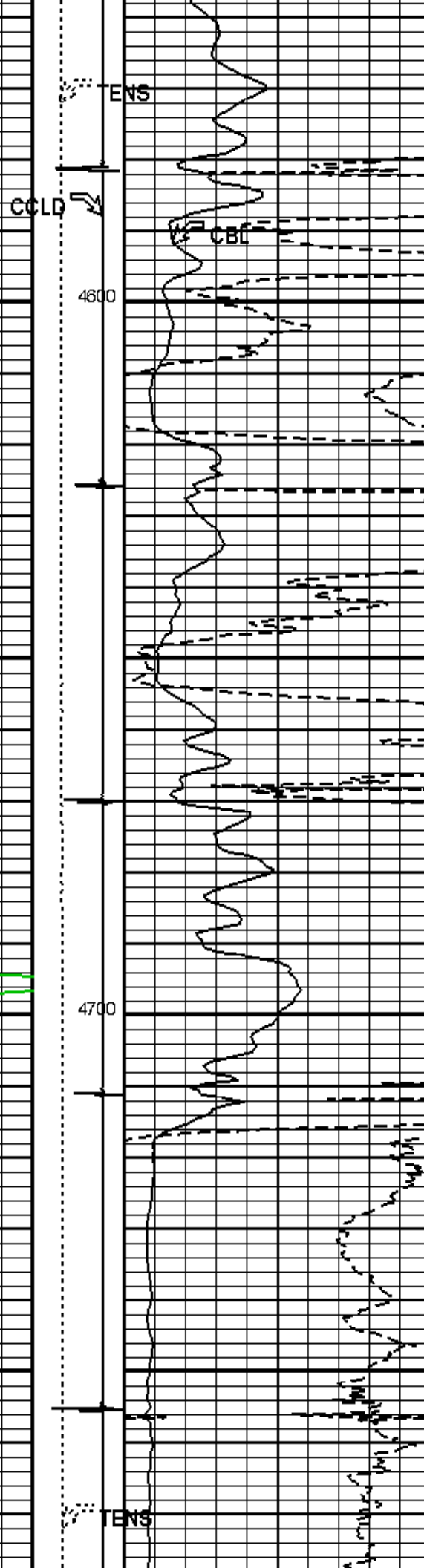
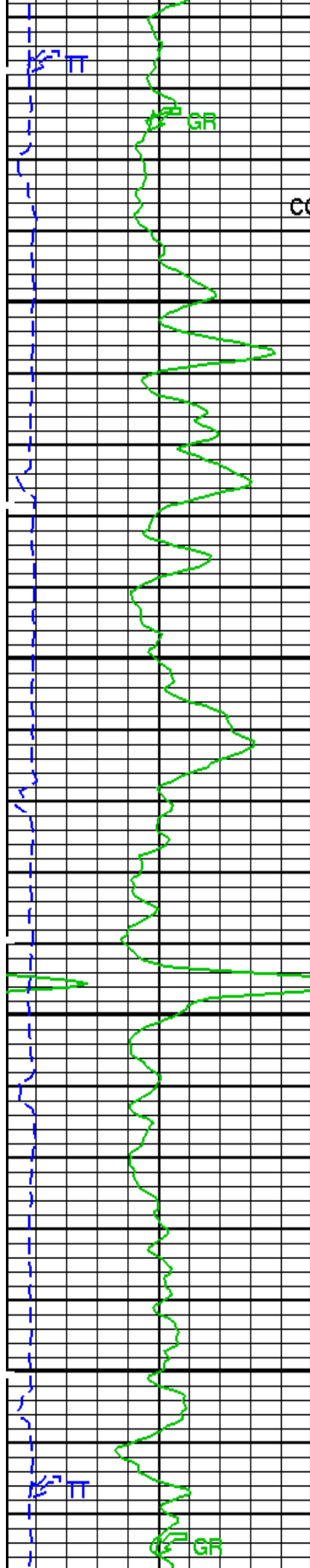


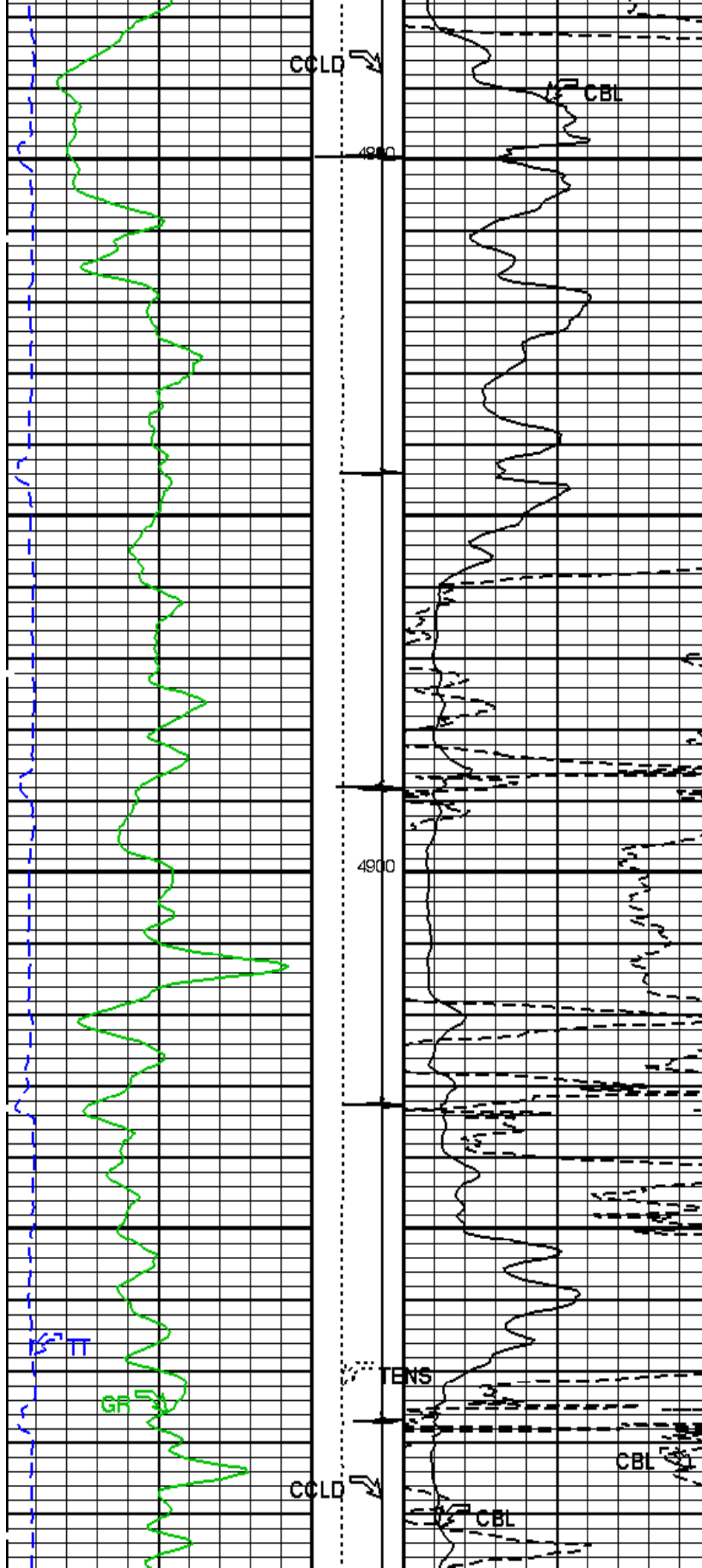


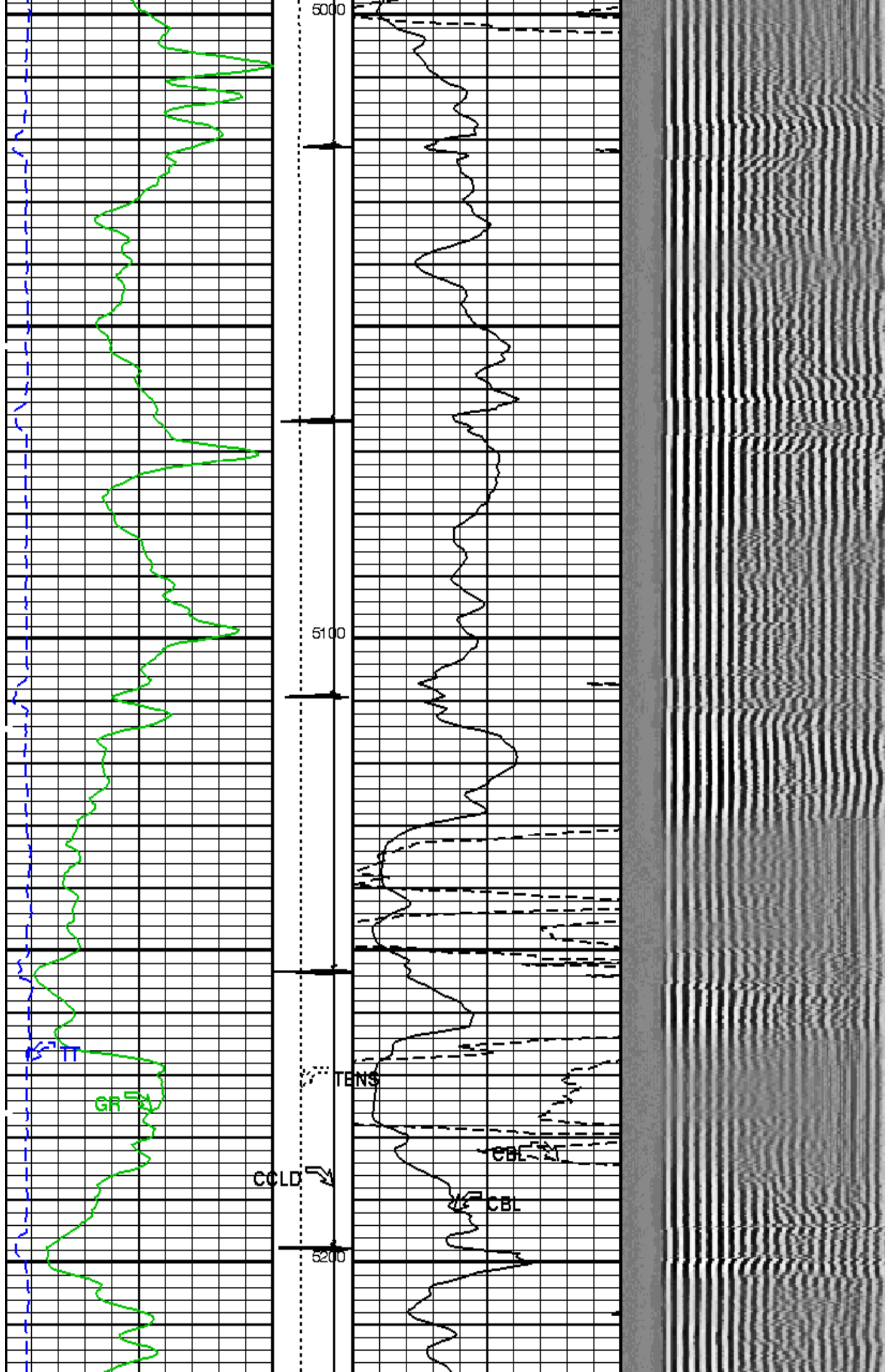


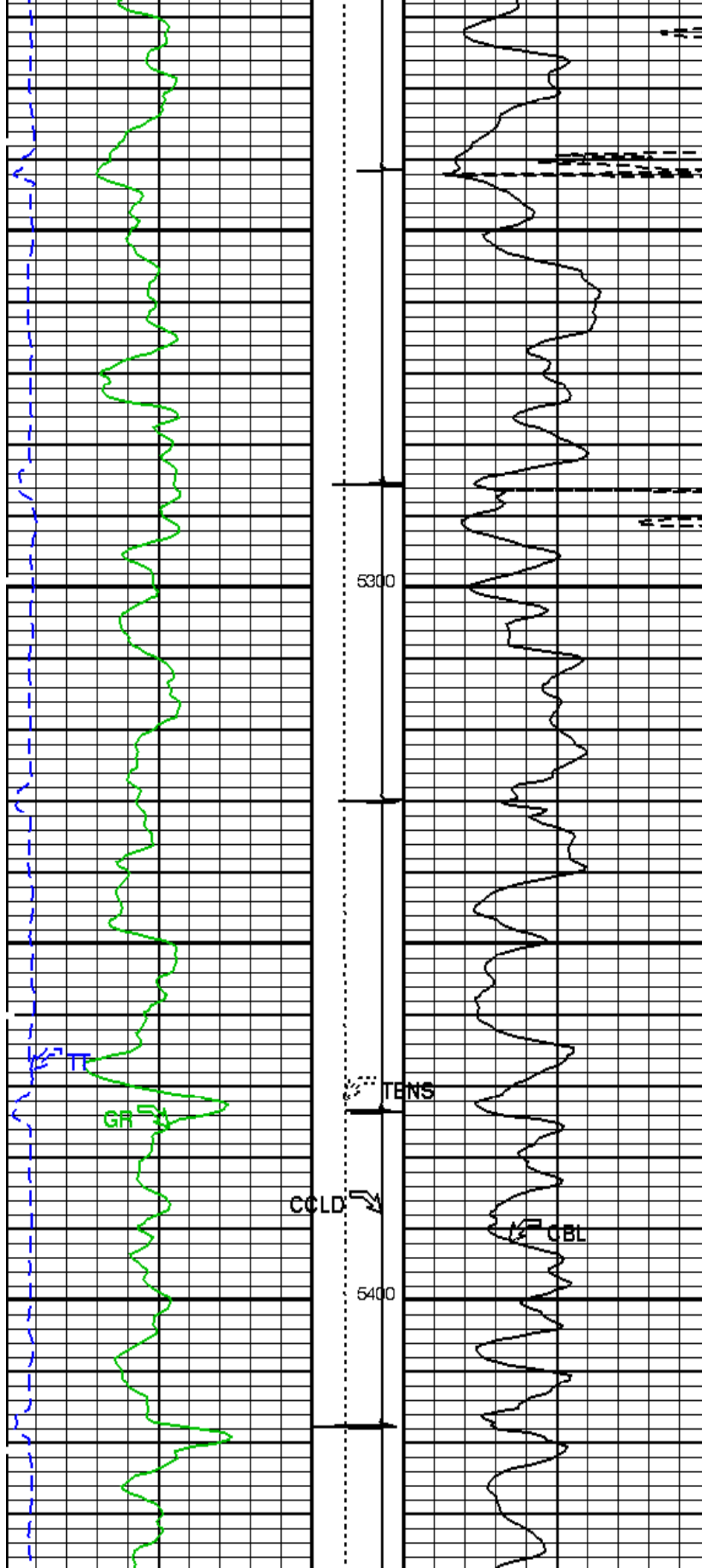


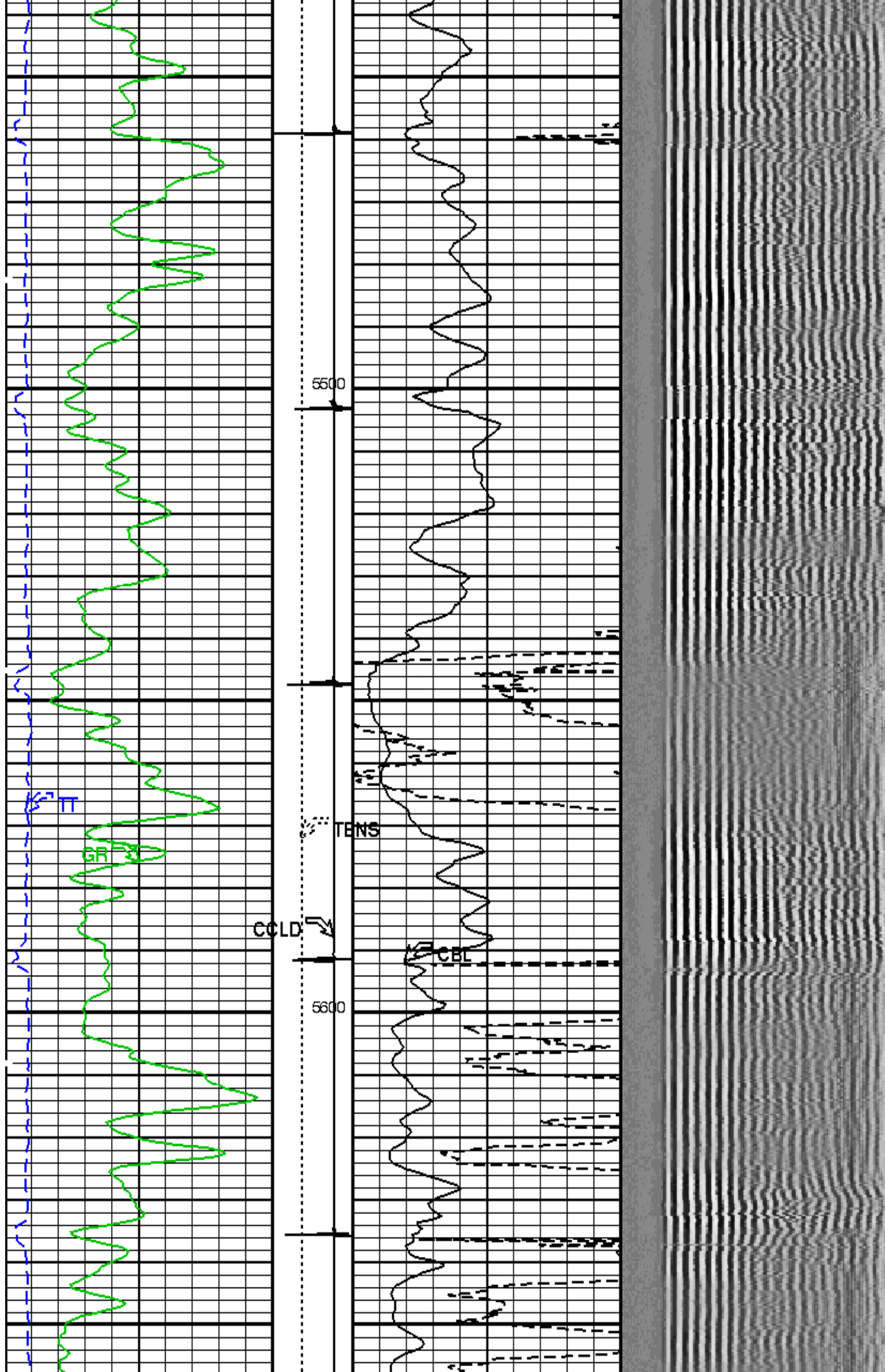


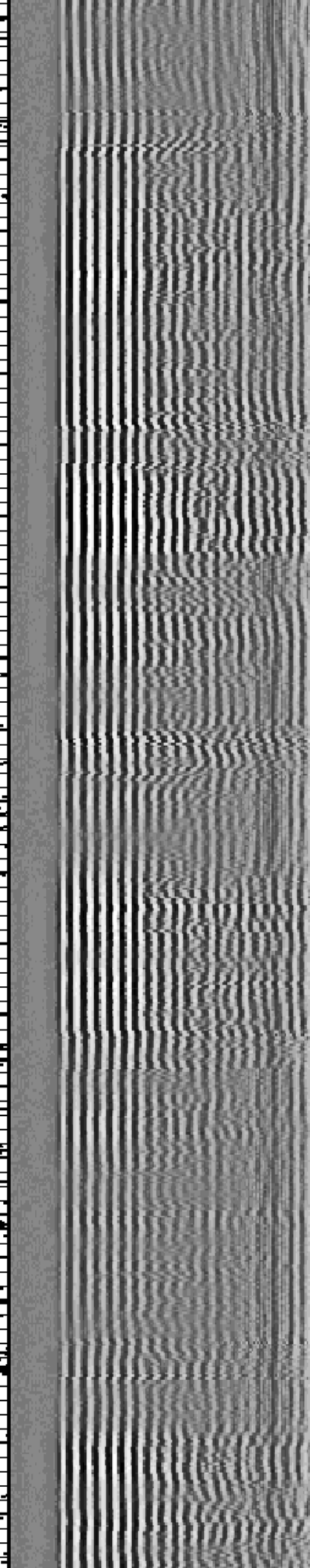
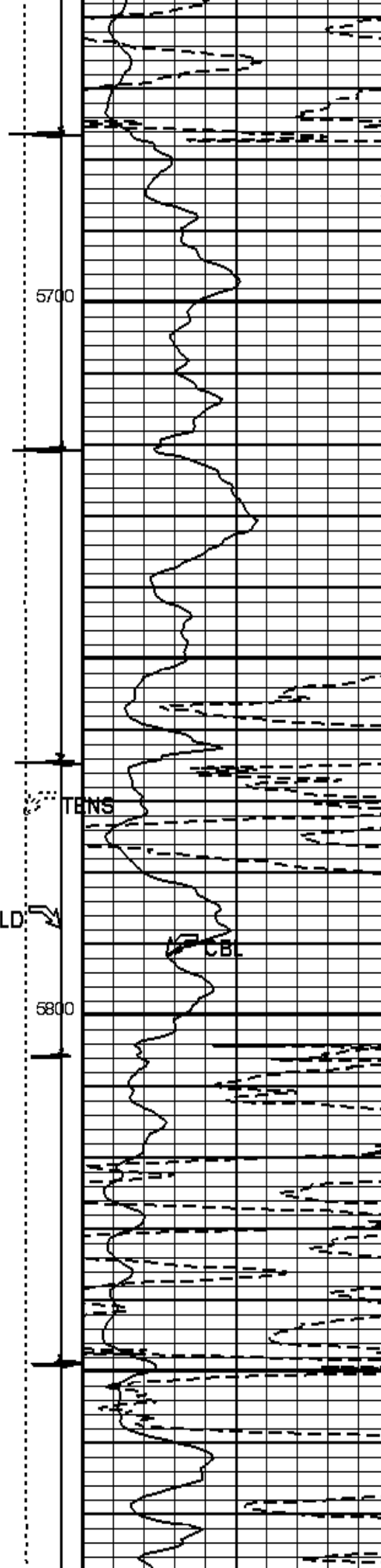
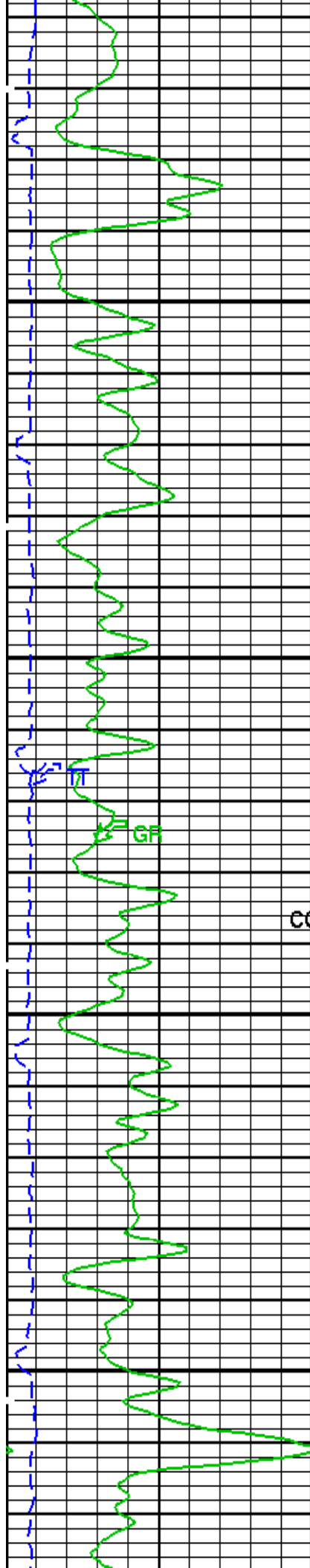


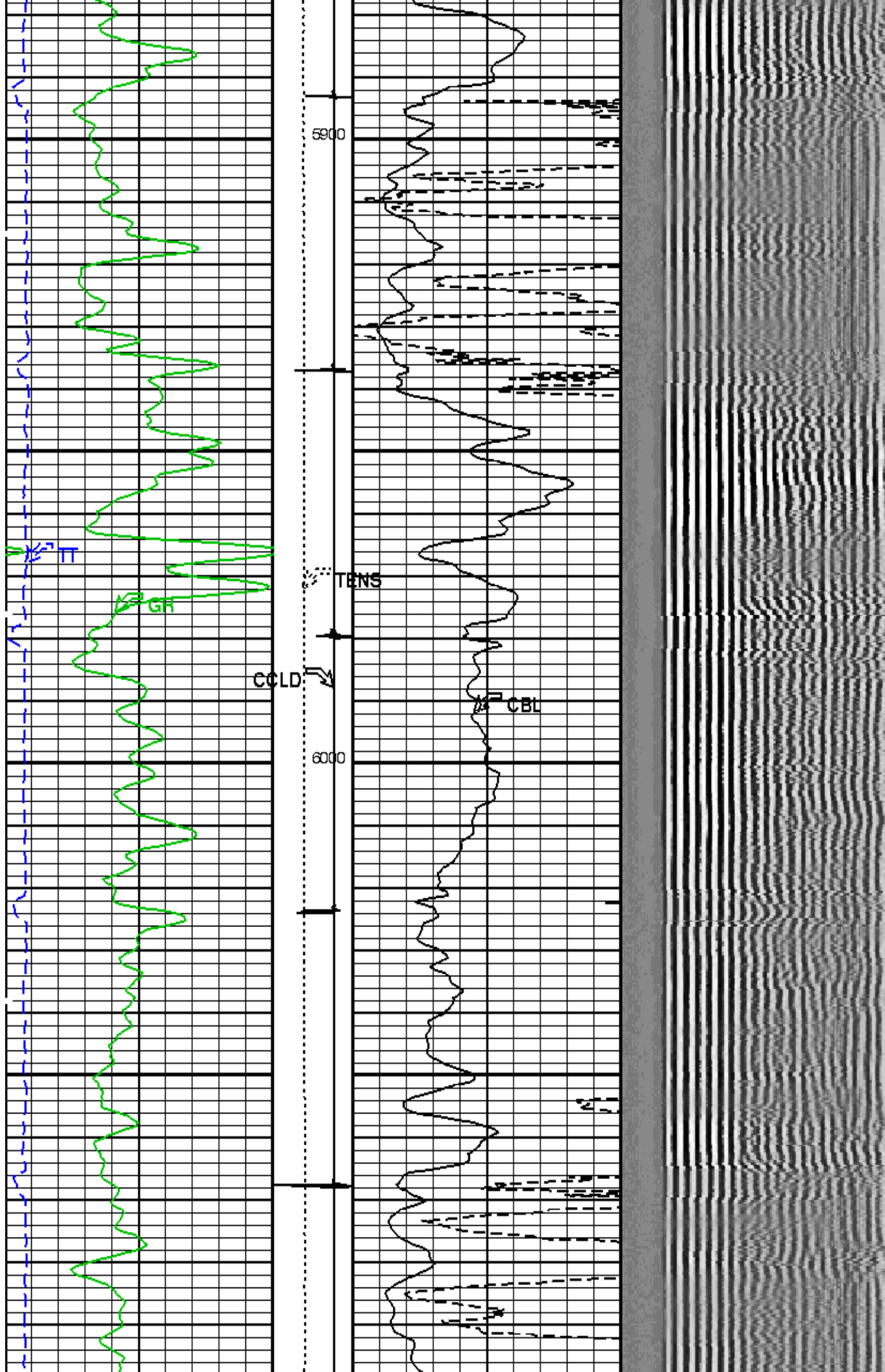


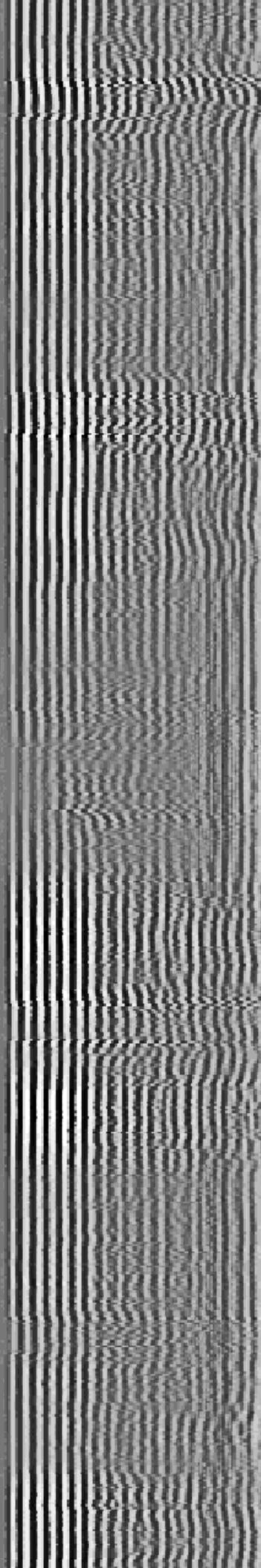
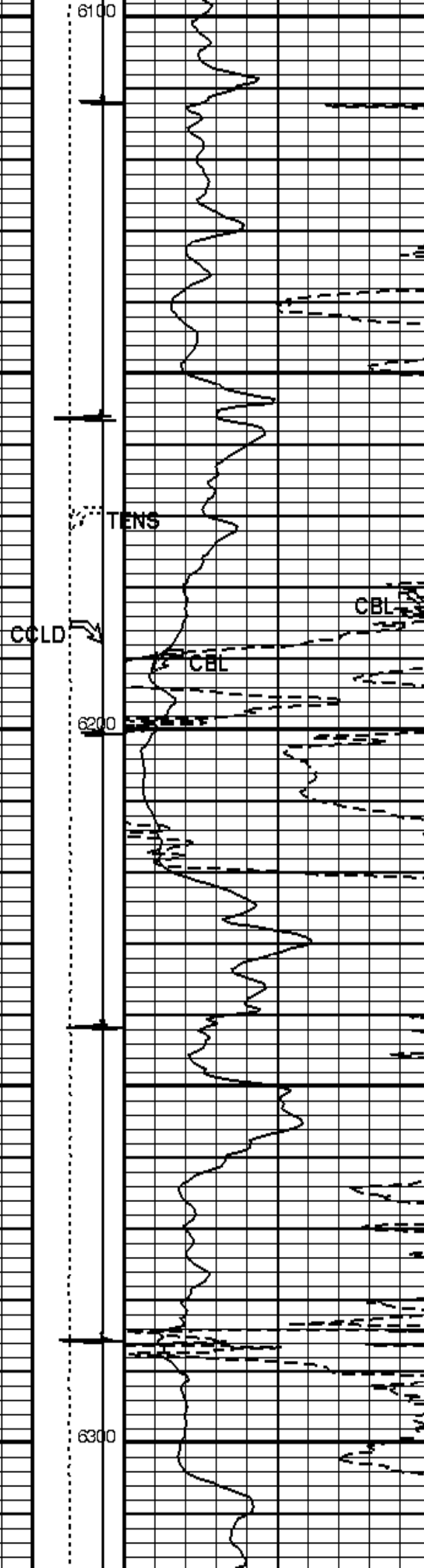
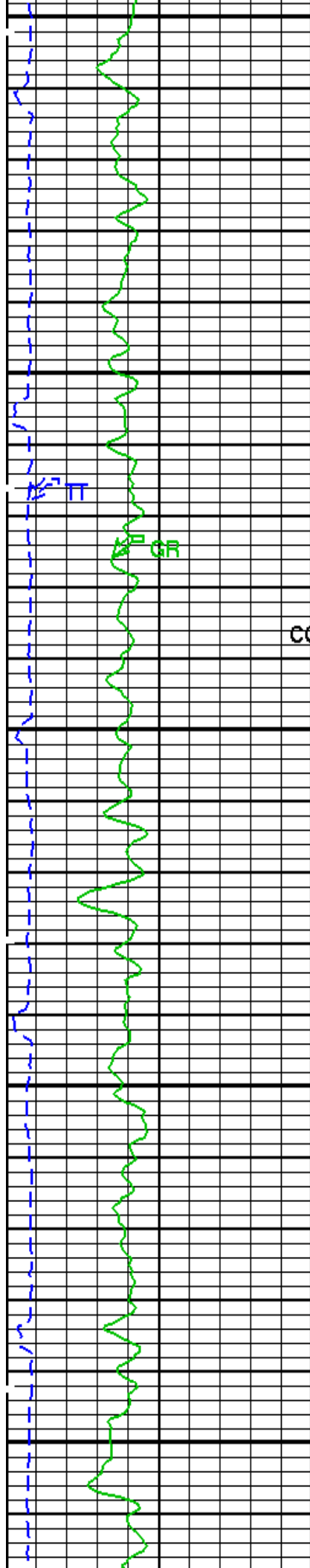


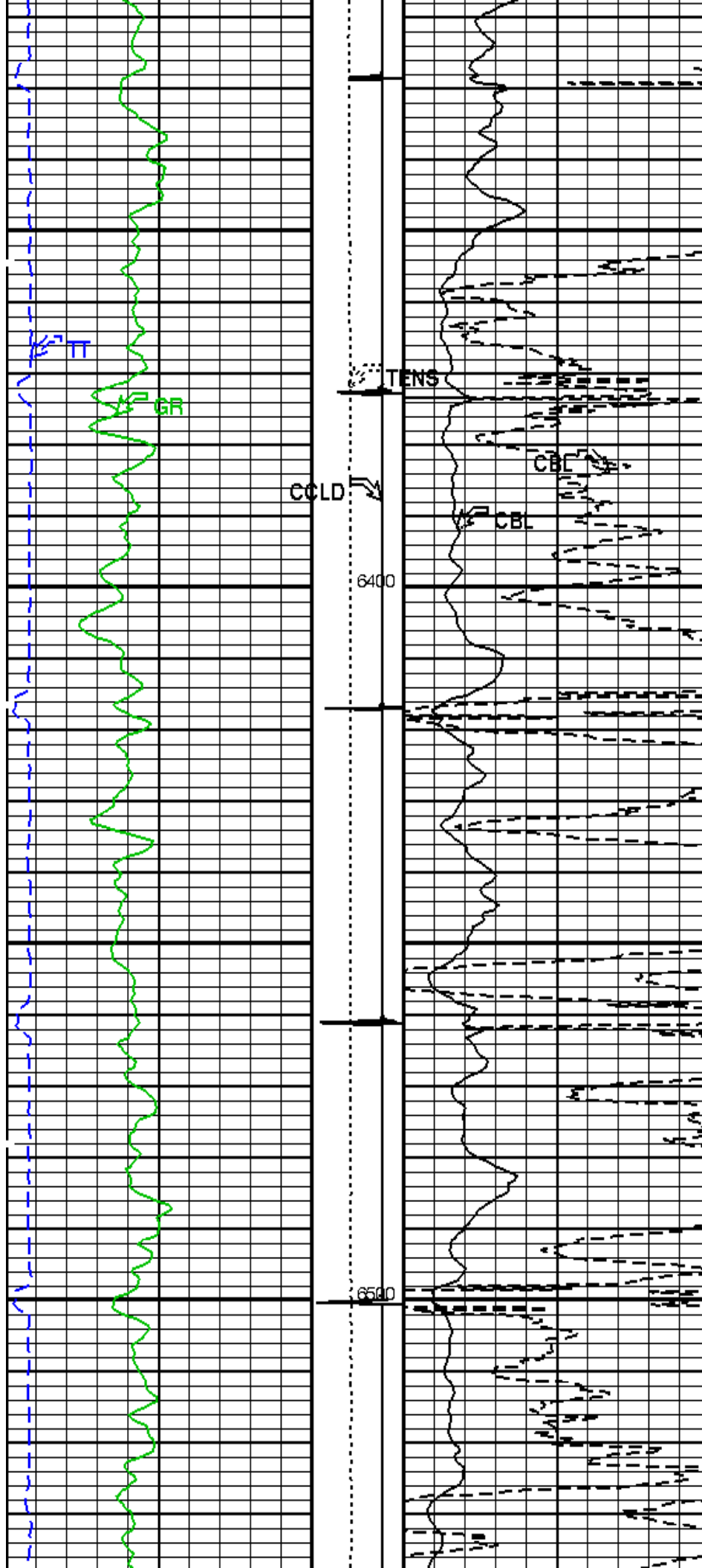


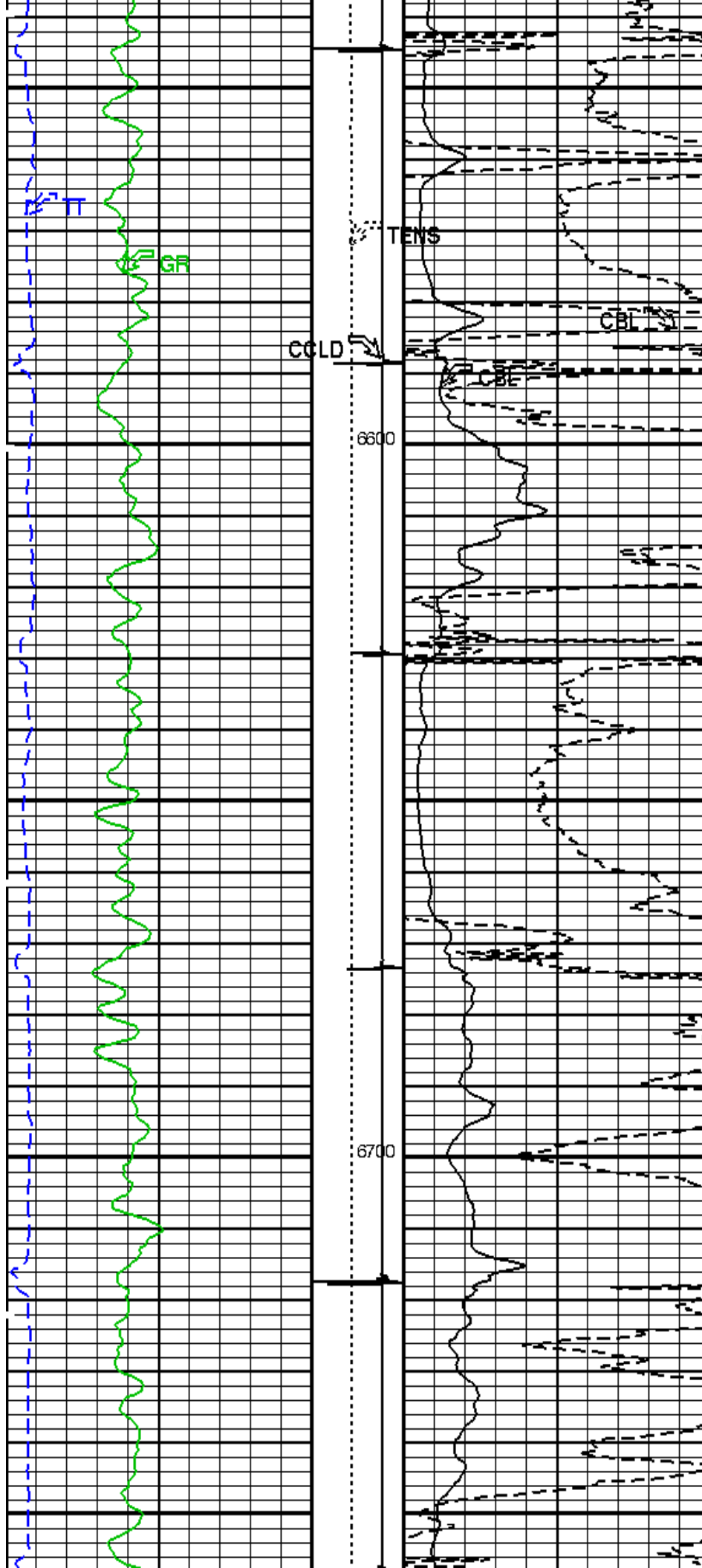


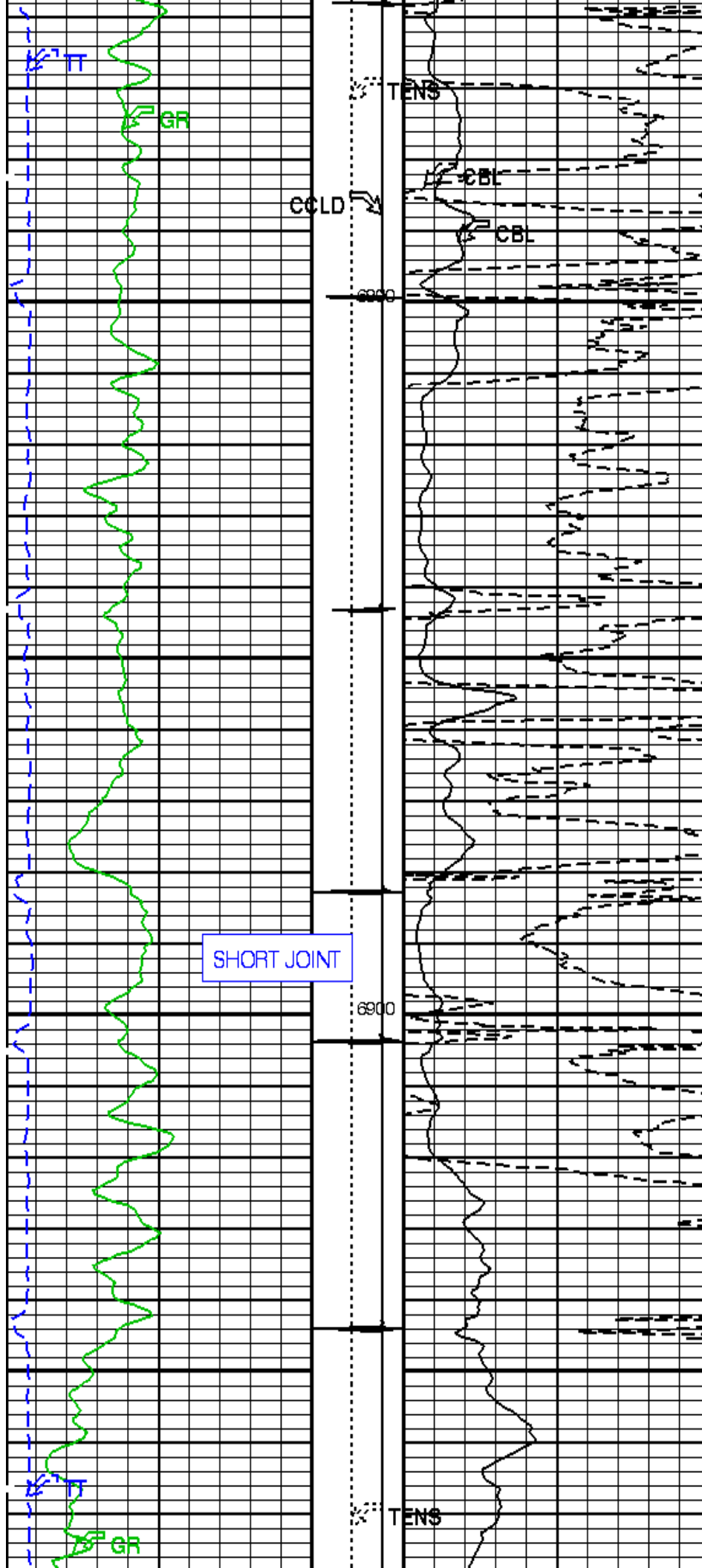


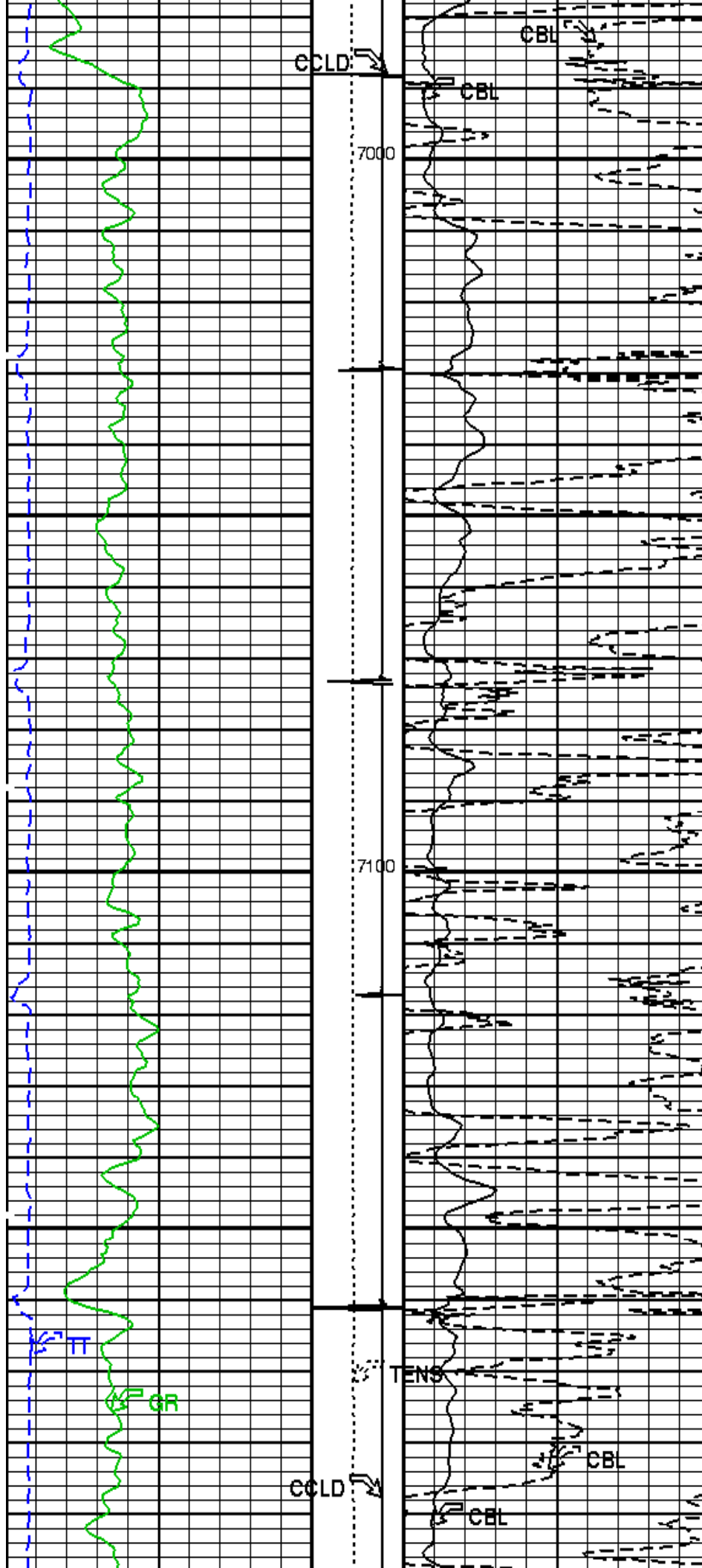


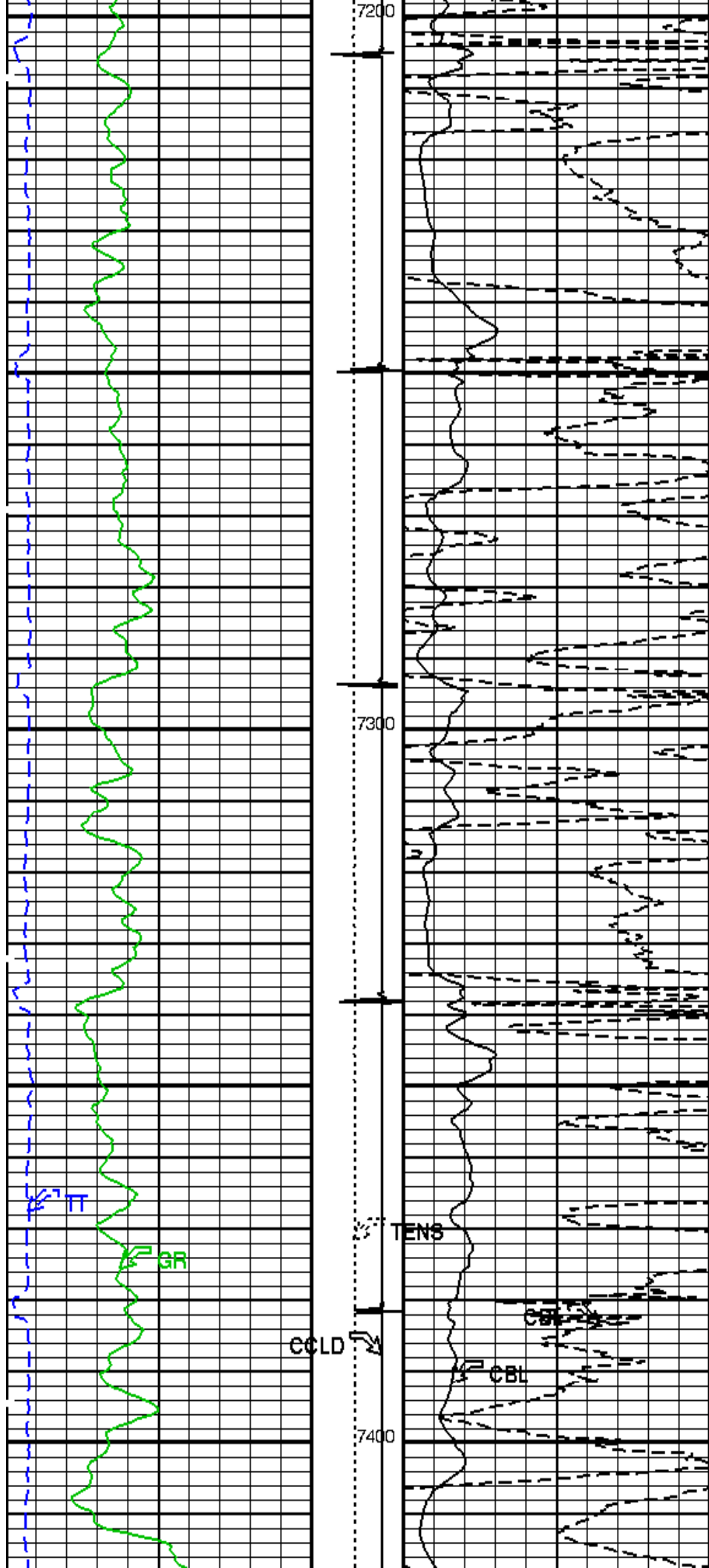


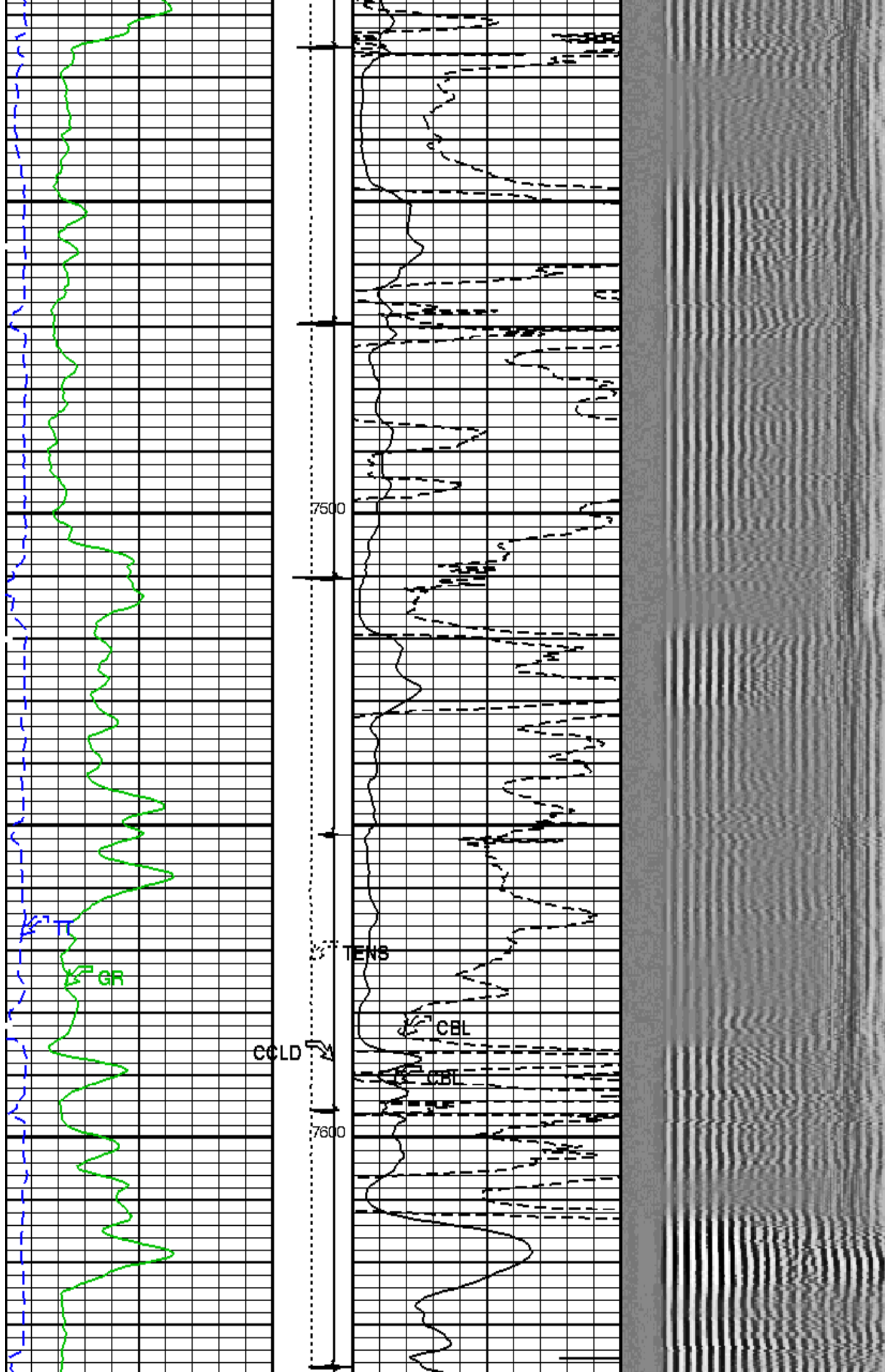


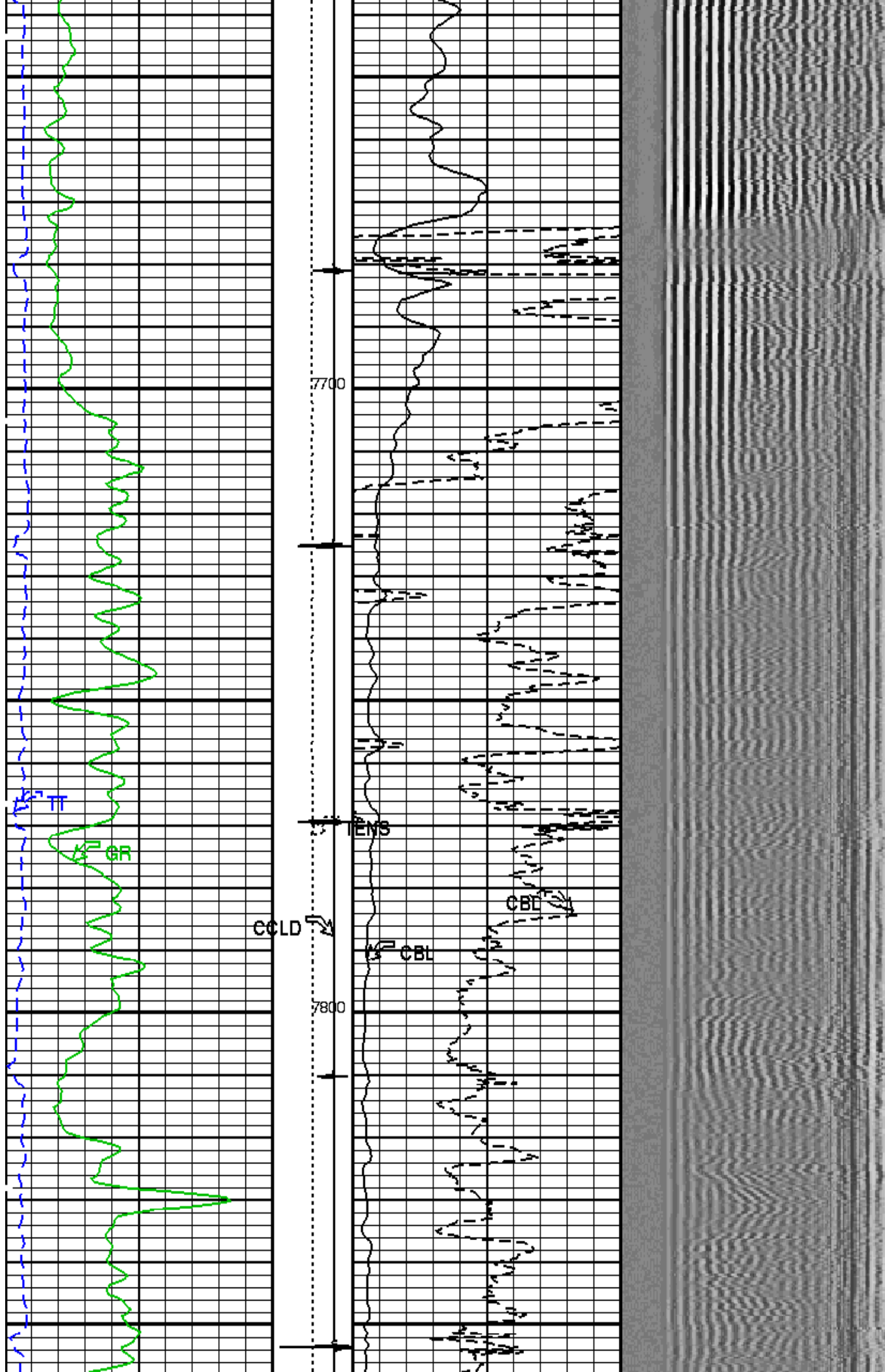


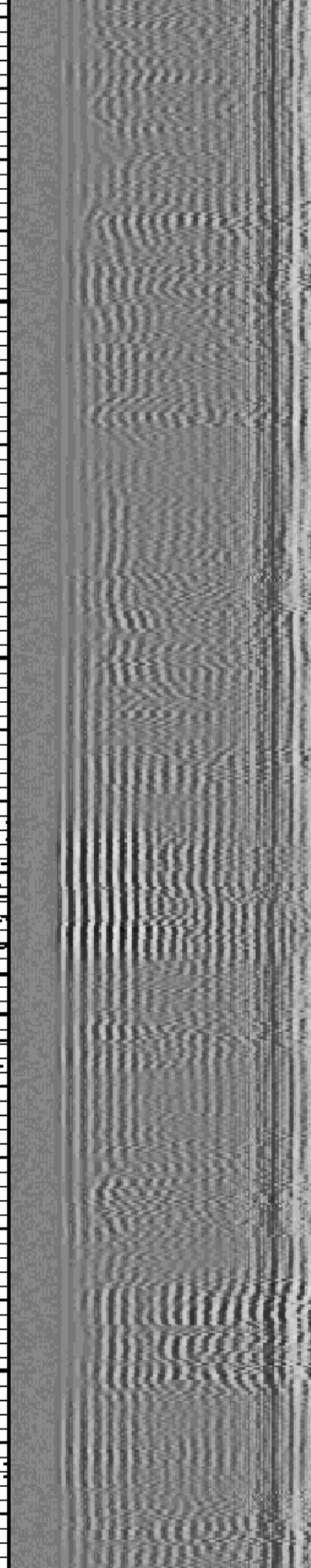
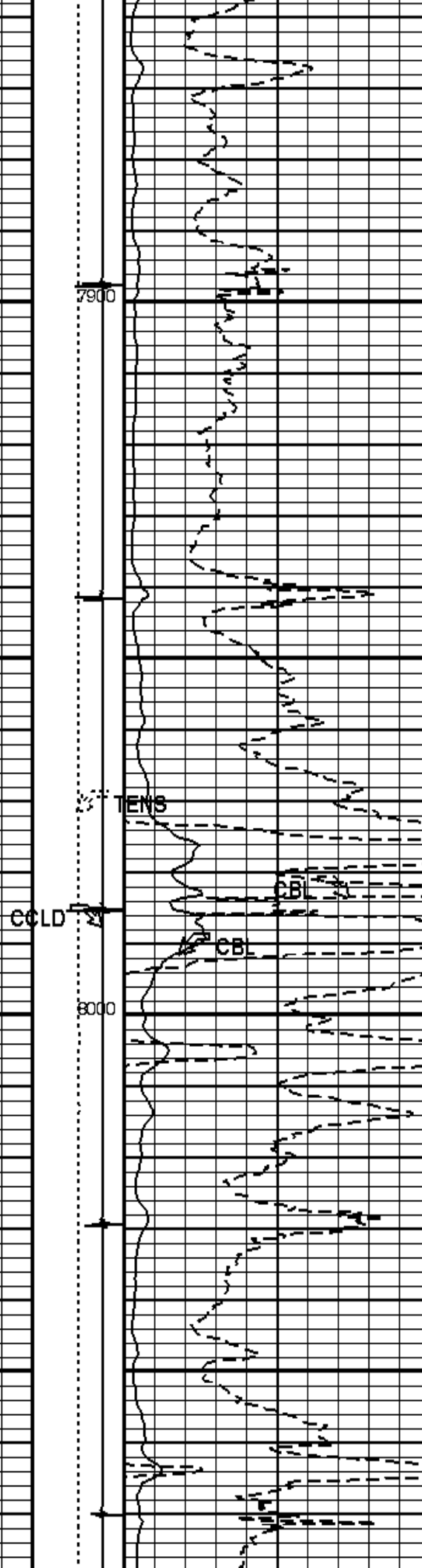
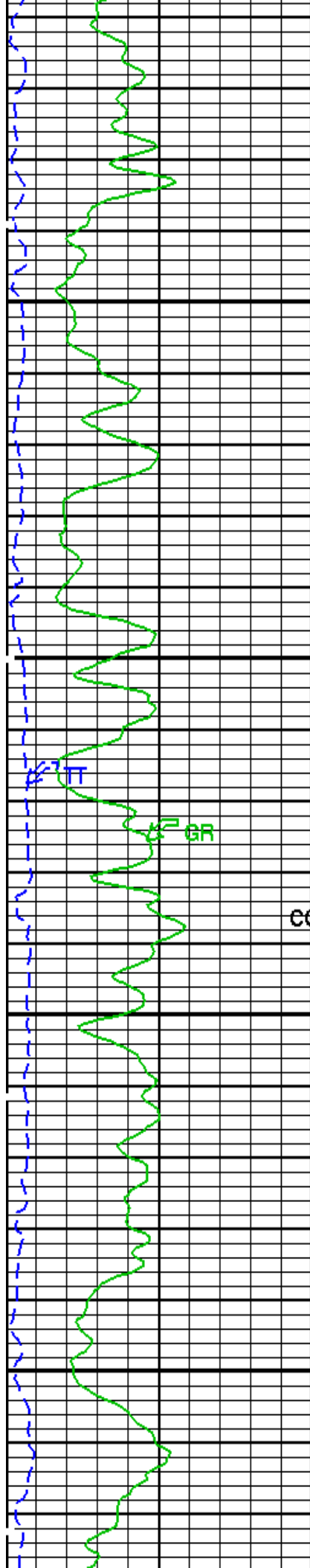


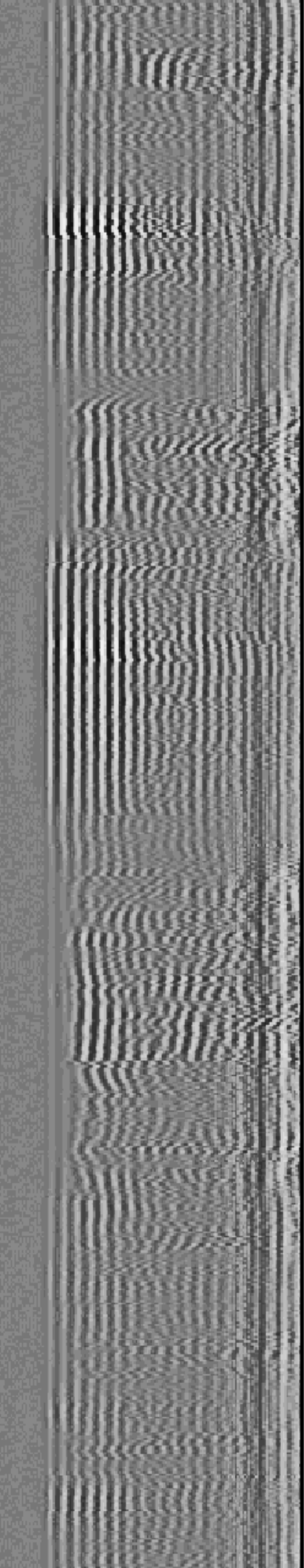
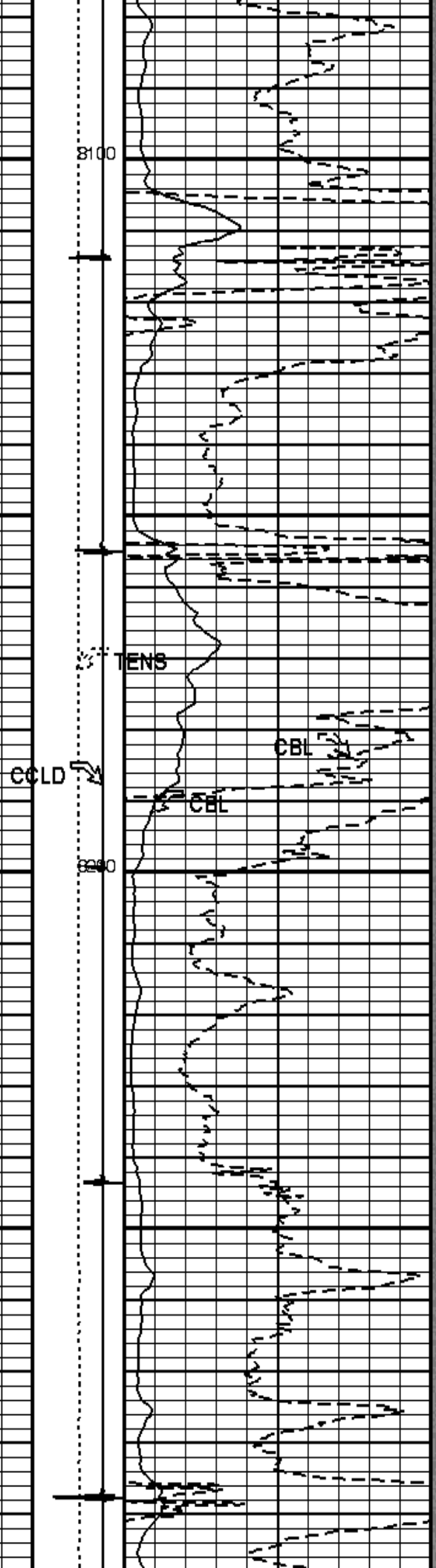
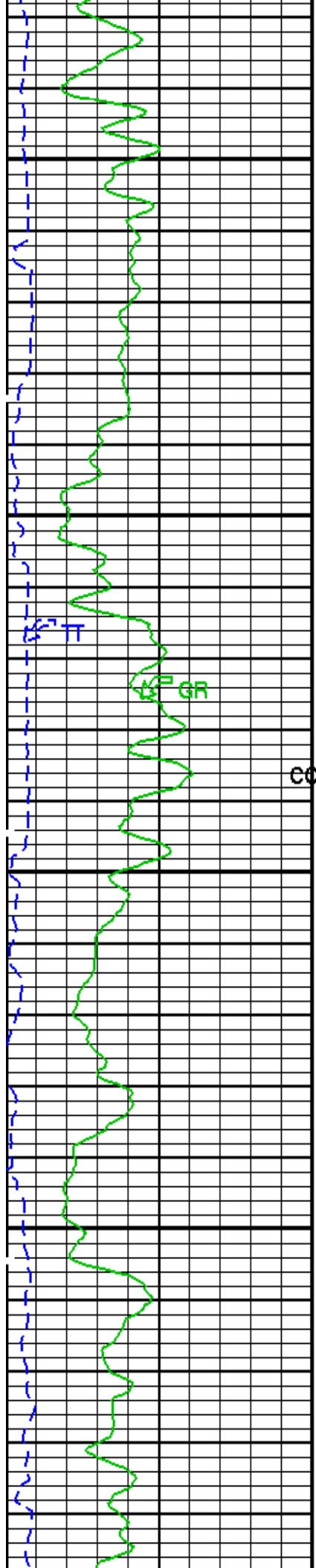


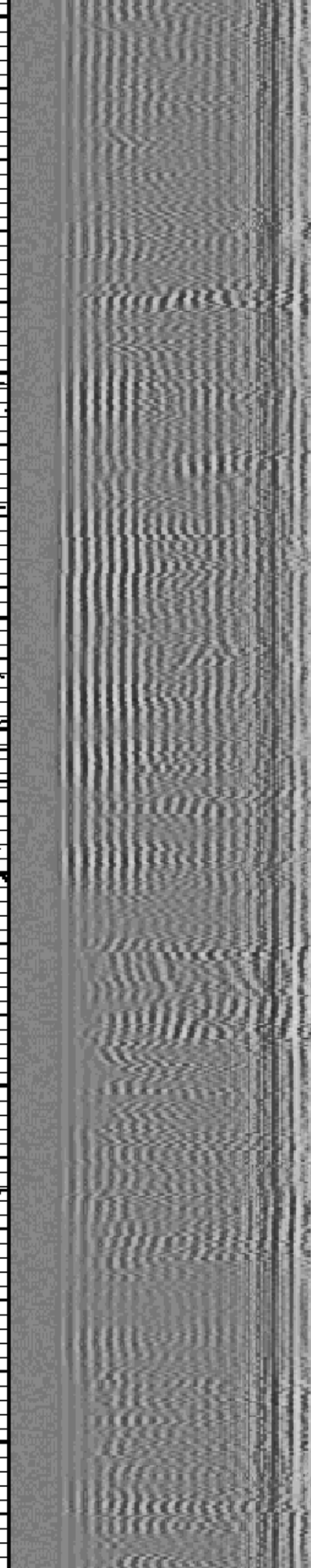
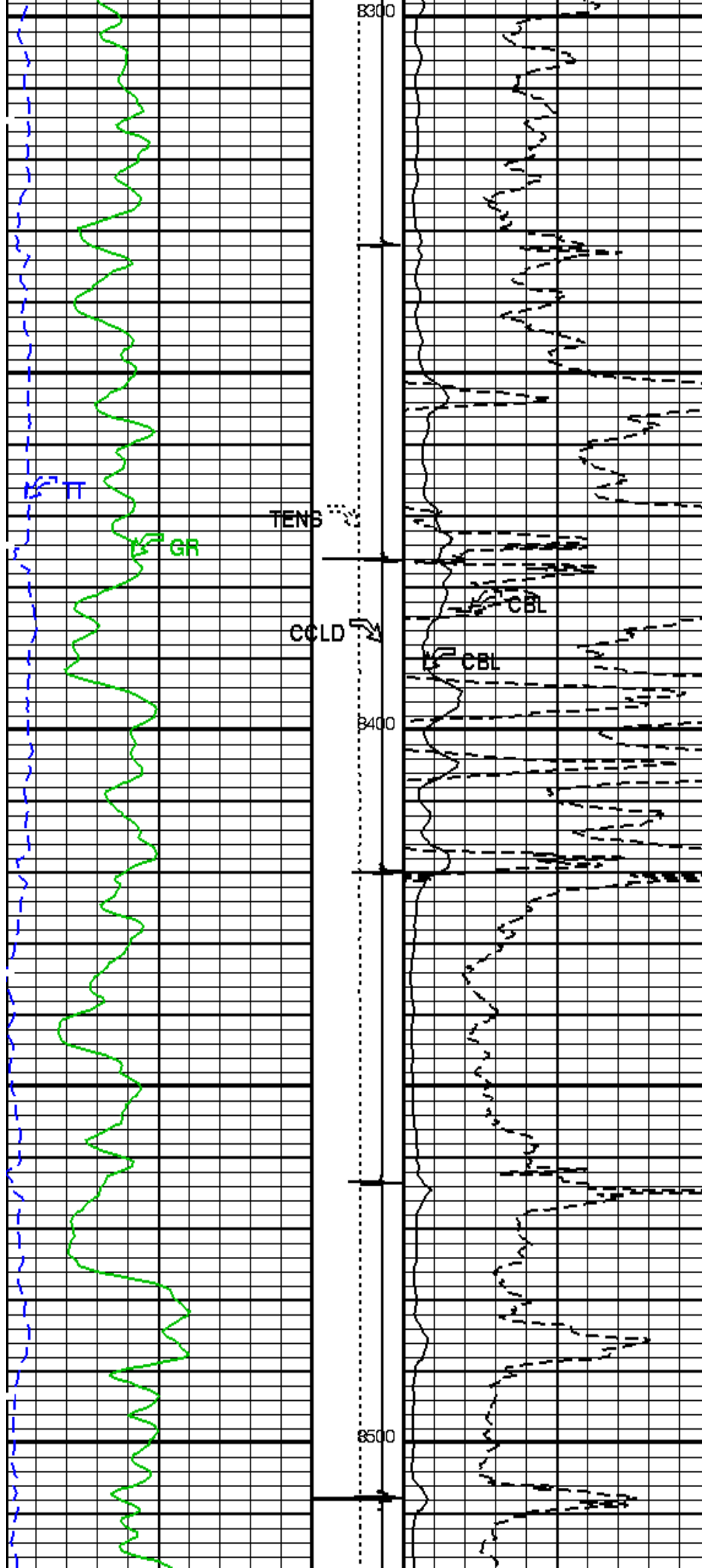


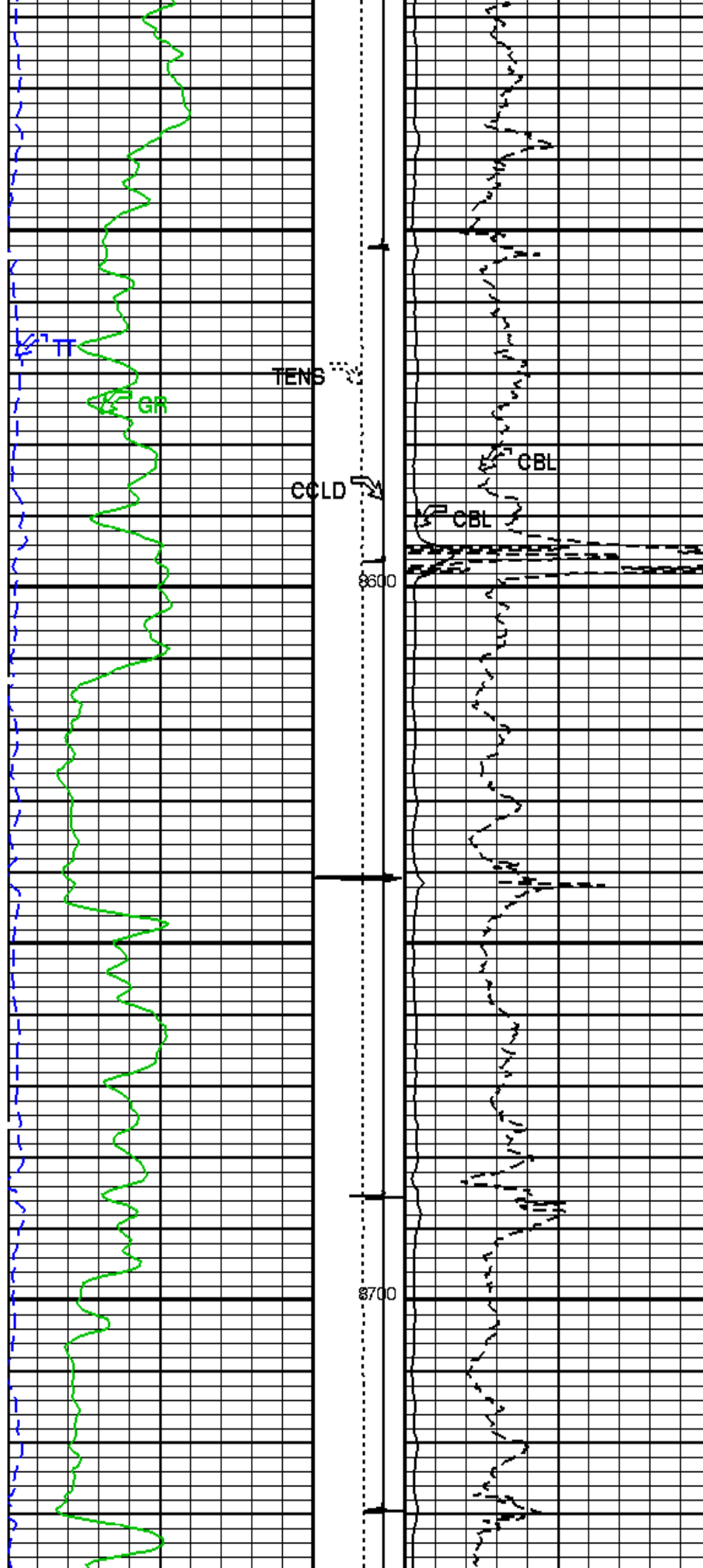


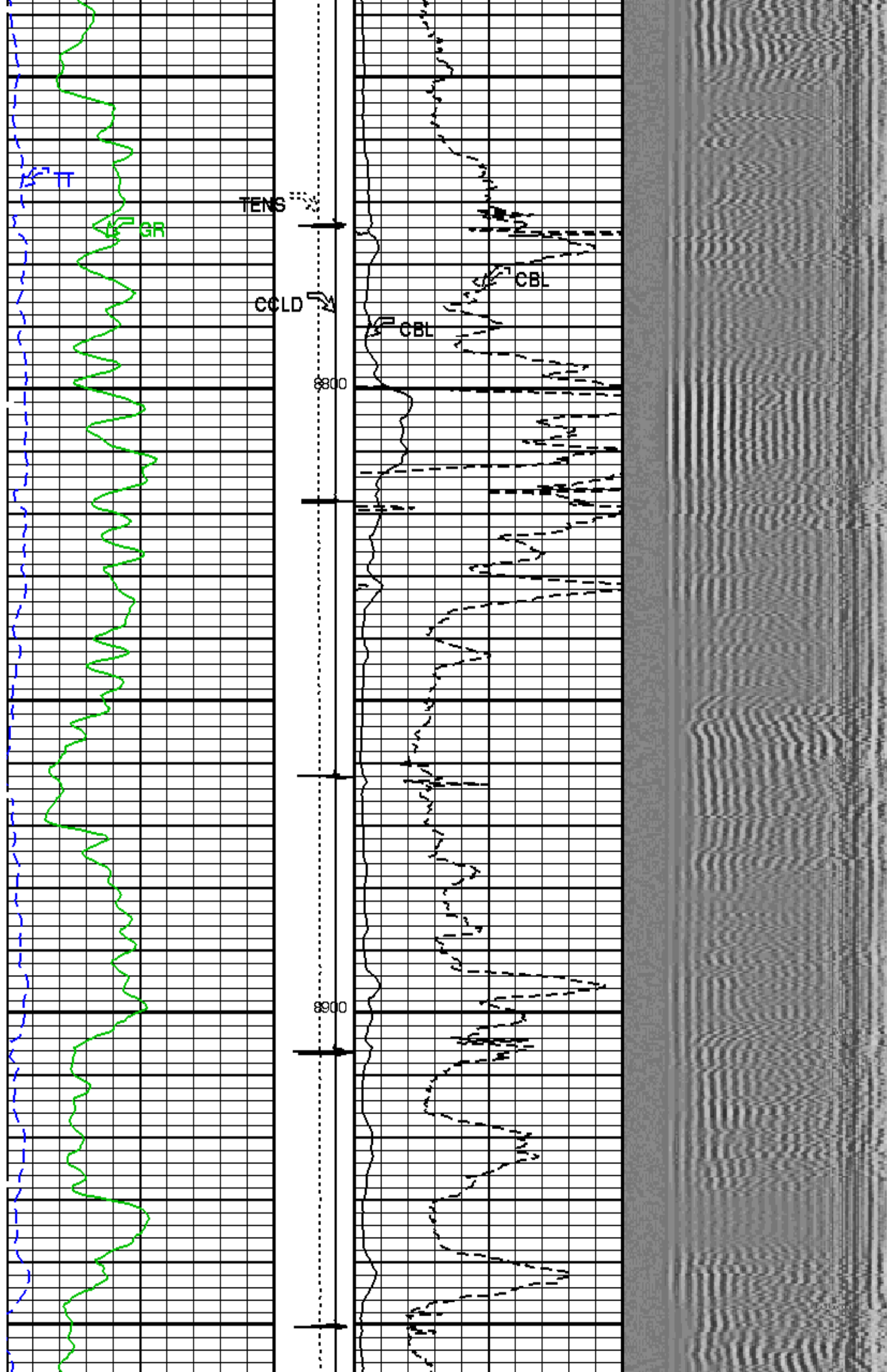


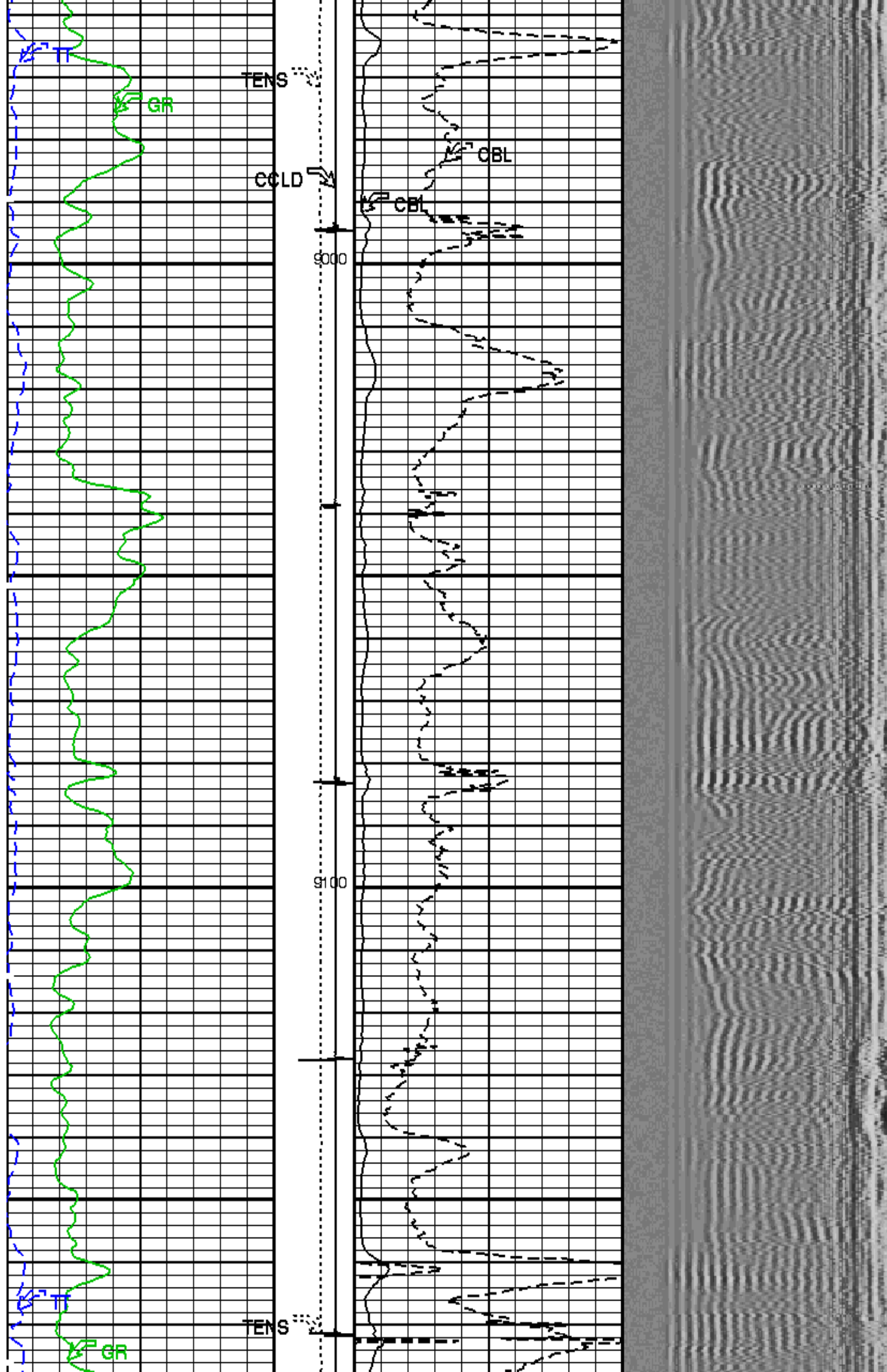


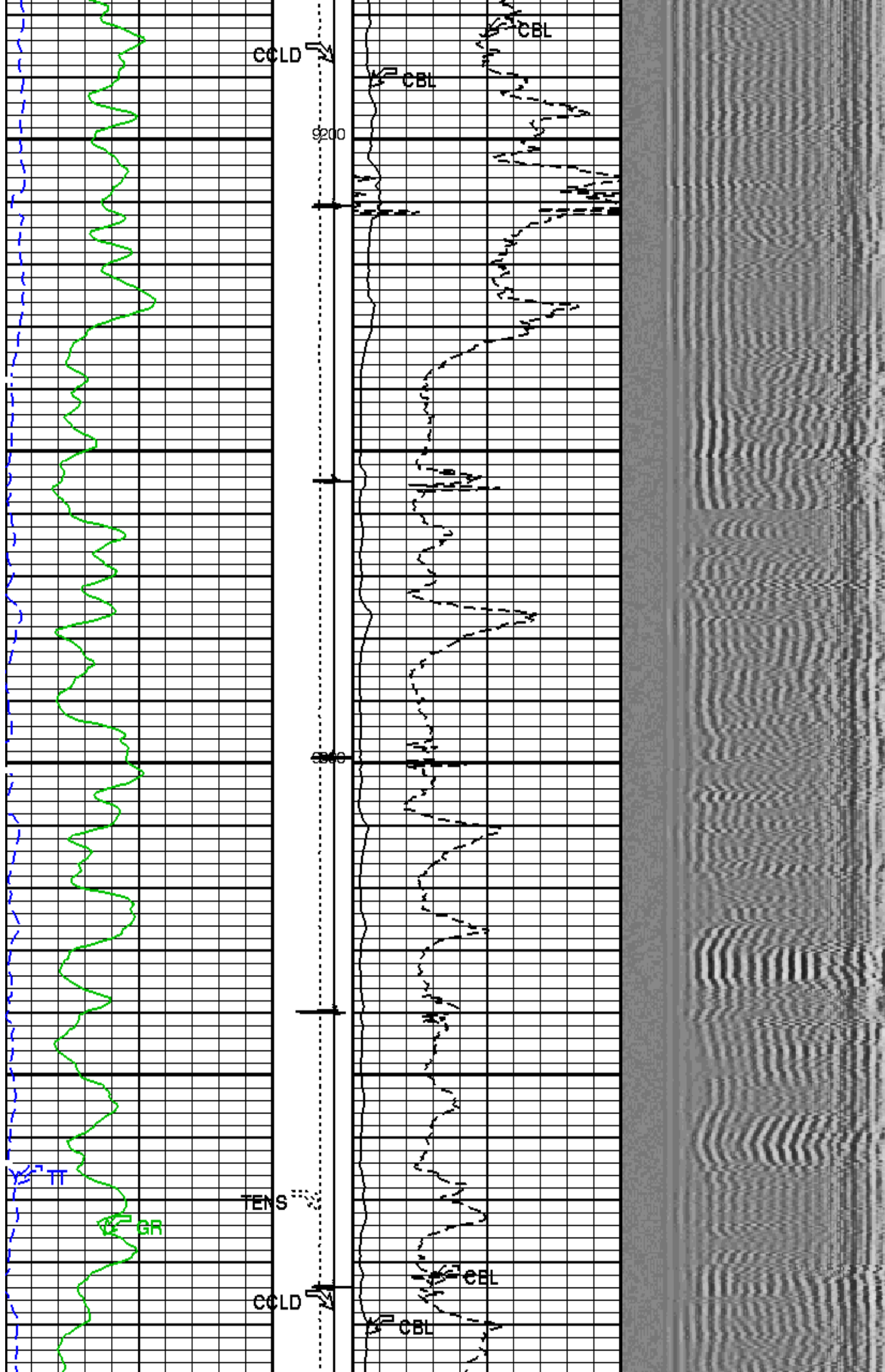


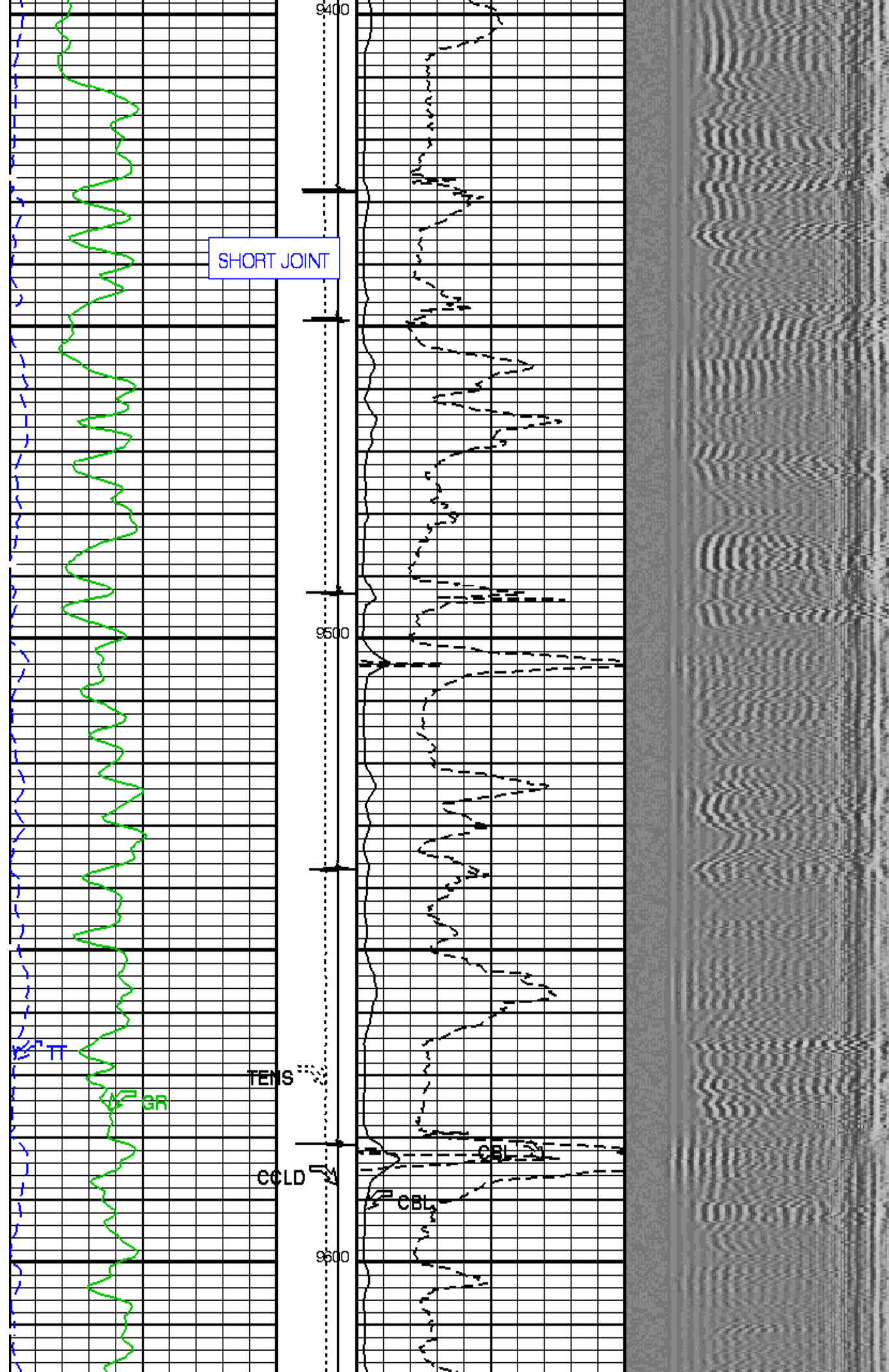


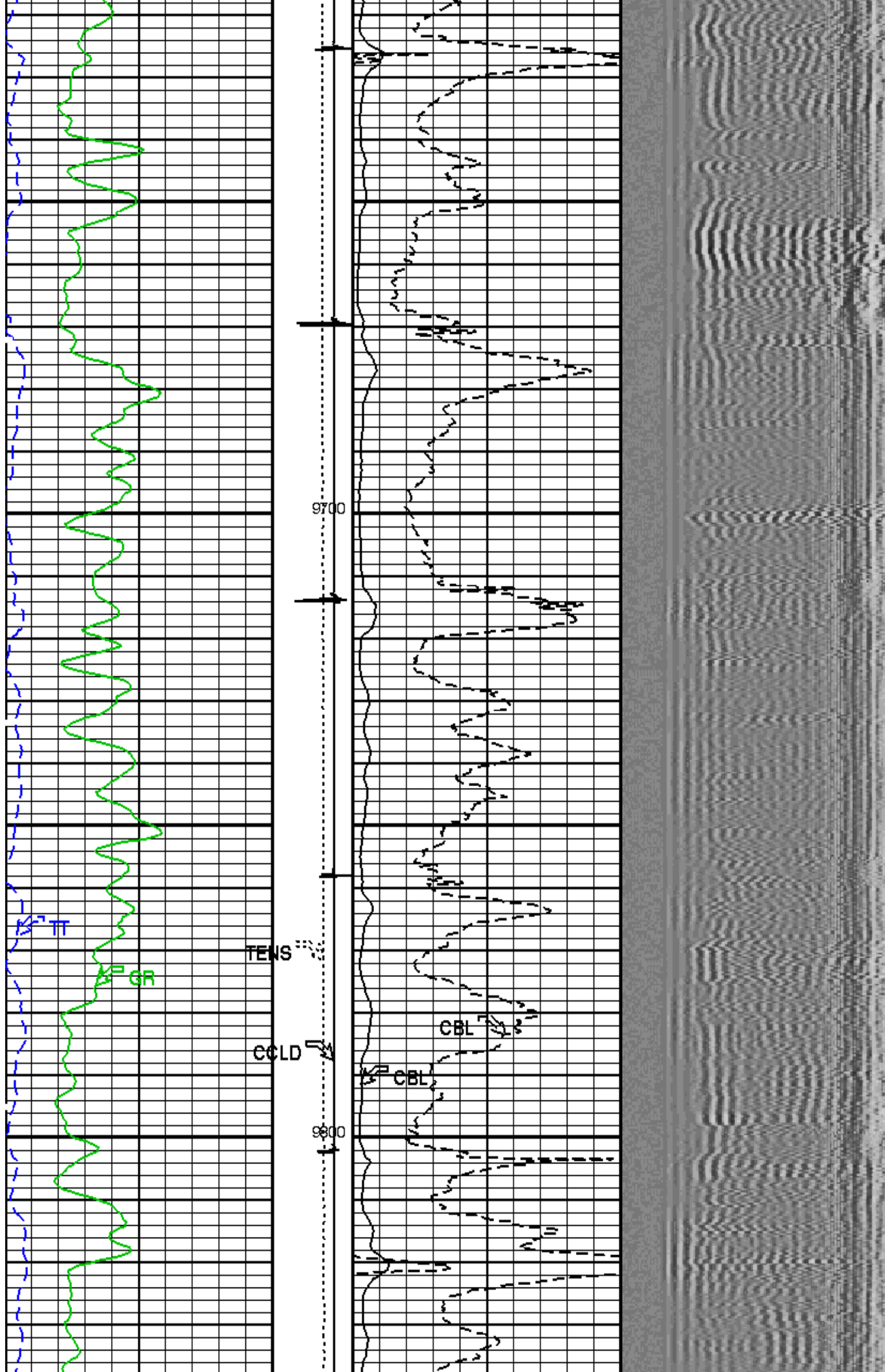


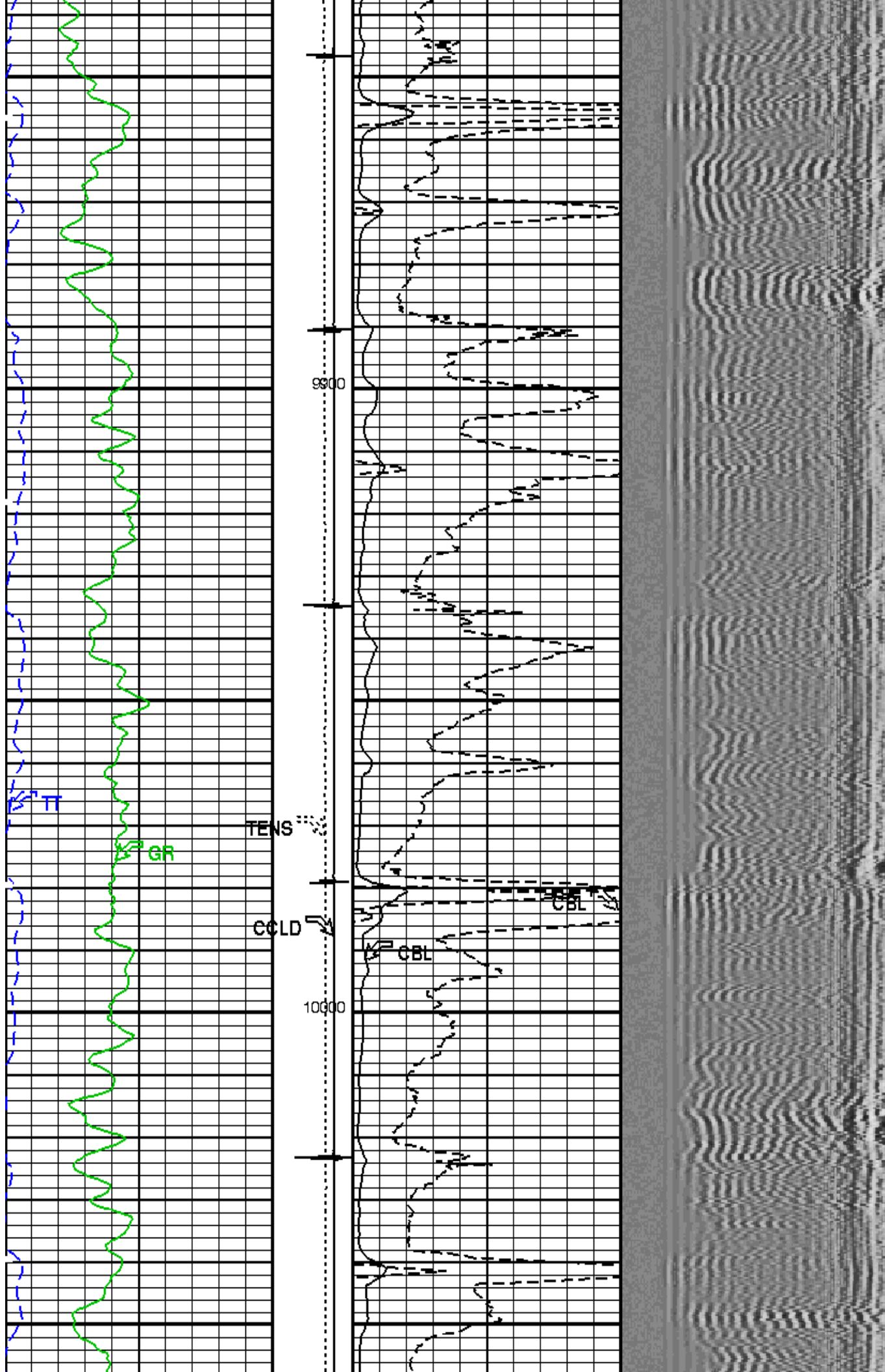


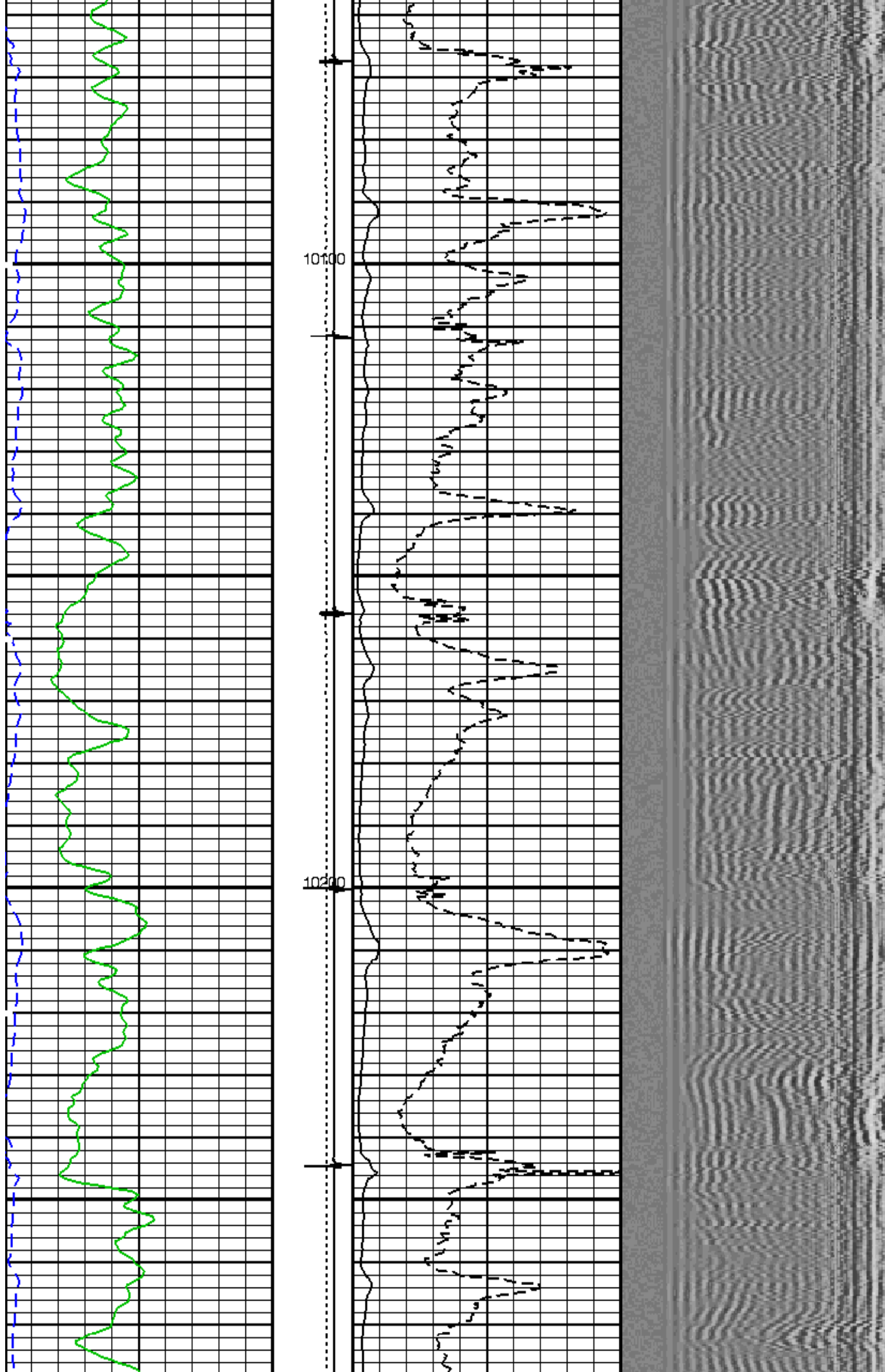


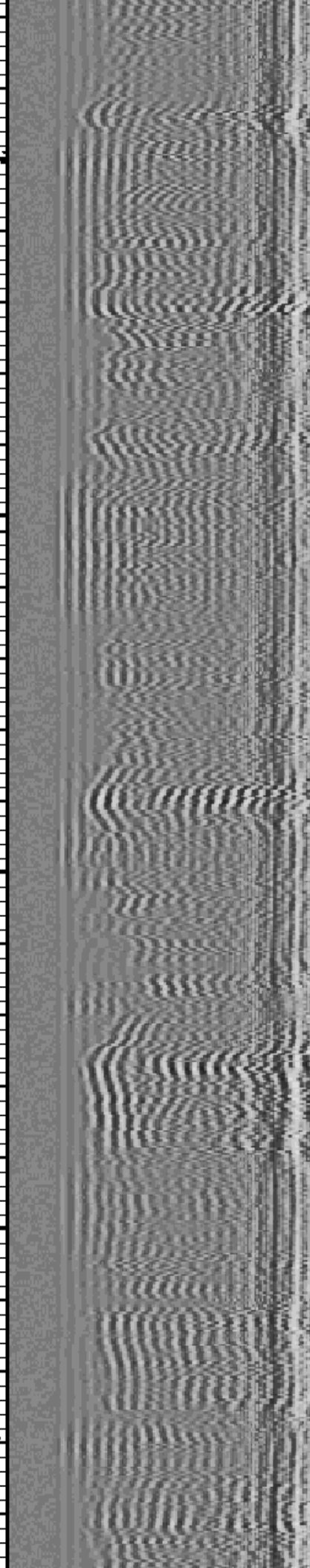
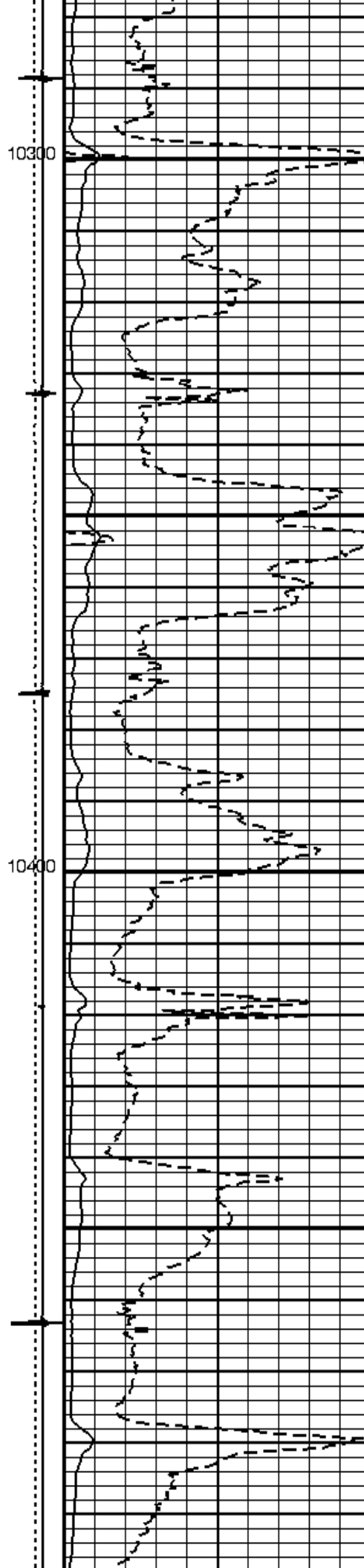
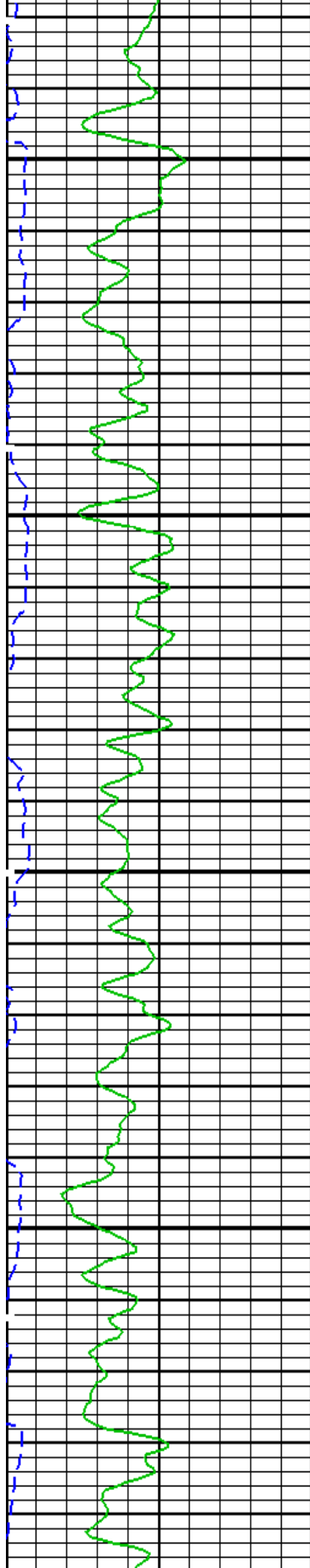


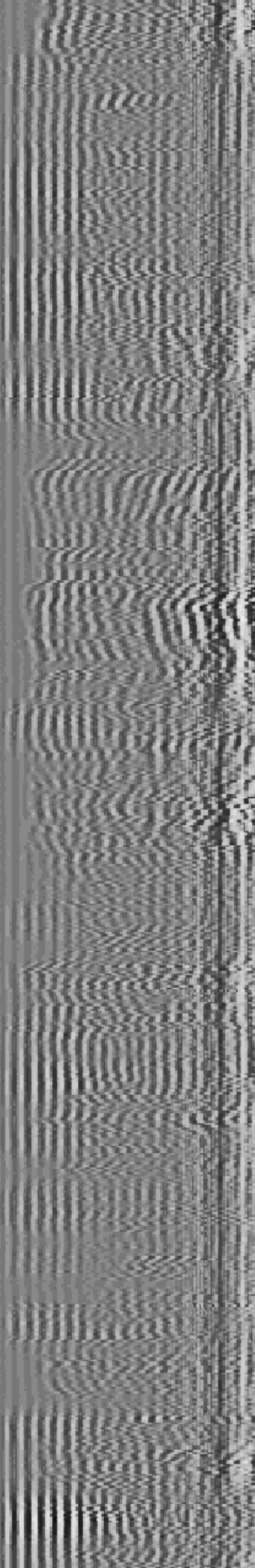
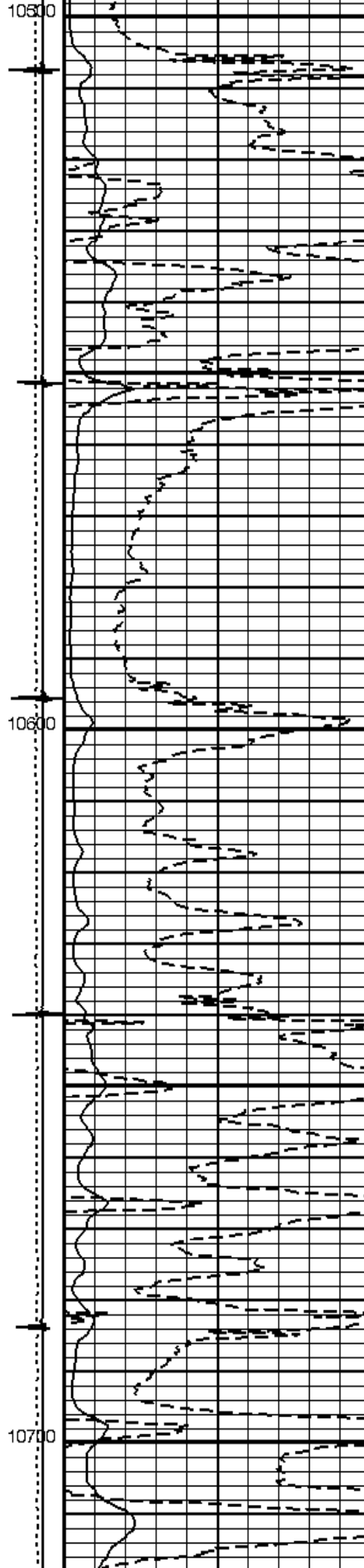
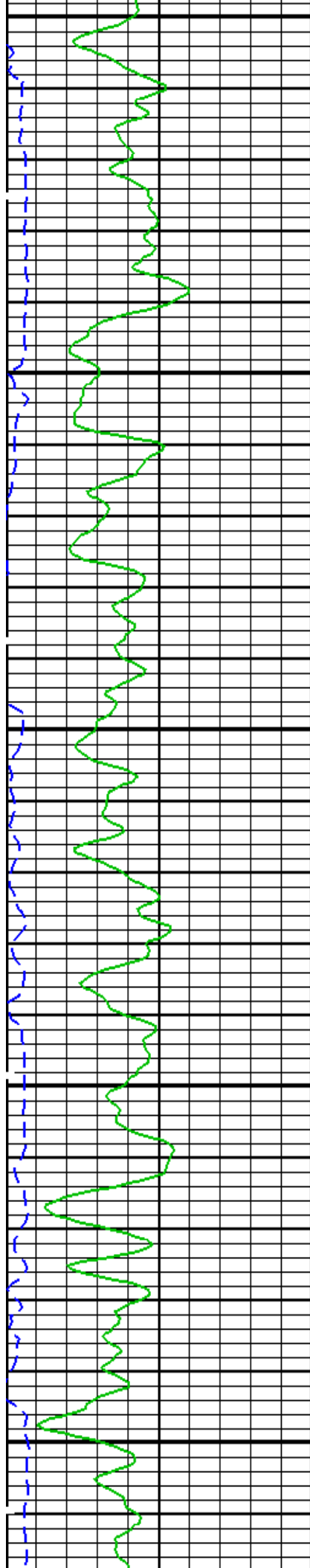


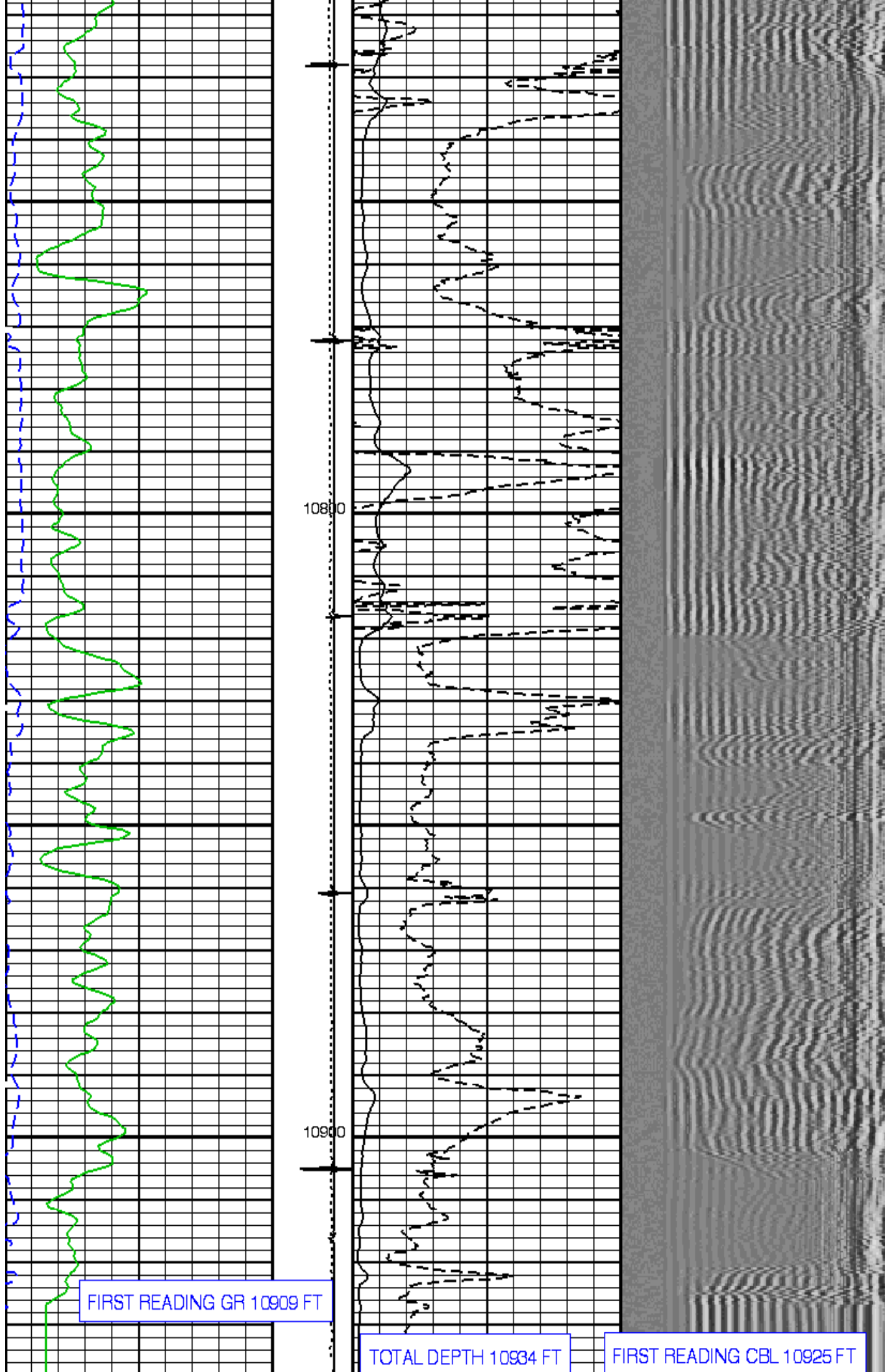














Gamma Ray (GR) (GAPI)	Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min Amplitude Max  VDL Variable Density (VDL) (US)
0 170	0 2000	0 100	200 1200
Transit Time (TT) (US)	Discriminat ed CCL (CCLD) (V)	CBL Amplitude (CBL) (MV)	
260 160	3 -1	0 10	
PIP SUMMARY			
<div style="display: flex; justify-content: space-between;">  Time Mark Every 60 S Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 10-Jul-2012 18:05 </div>			

OP System Version: 19C0-187

SCMT-CB SRPC-5095-H2-2011-OP19 PSPT 19C0-187

<<< SCMT Cement Evaluation Information Summary >>>

Sonde Serial Number	SCMS-CB 8179		
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	6-MAR-2012		
CBL Correction Factor	0.0704263	CBL Adjustment Factor (CBFAF)	0.950000
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	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	45	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	0.902782	

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	8.60	LB/G
DO	Depth Offset for Playback	4.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	10934	FT

Input DLIS Files

DEFAULT Splice_SCMT_PSP_021CUP FN:1 PRODUCER 10-Jul-2012 17:50 10945.5 FT 150.5 FT

Output DLIS Files

DEFAULT SCMT_PSP_023PUP FN:19 PRODUCER 10-Jul-2012 18:05

Schlumberger

REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: DW 8609D-28 (P28496)

Input DLIS Files

DEFAULT SCMT_PSP_016LUP FN:13 PRODUCER 10-Jul-2012 14:22 7247.0 FT 6845.2 FT

Output DLIS Files

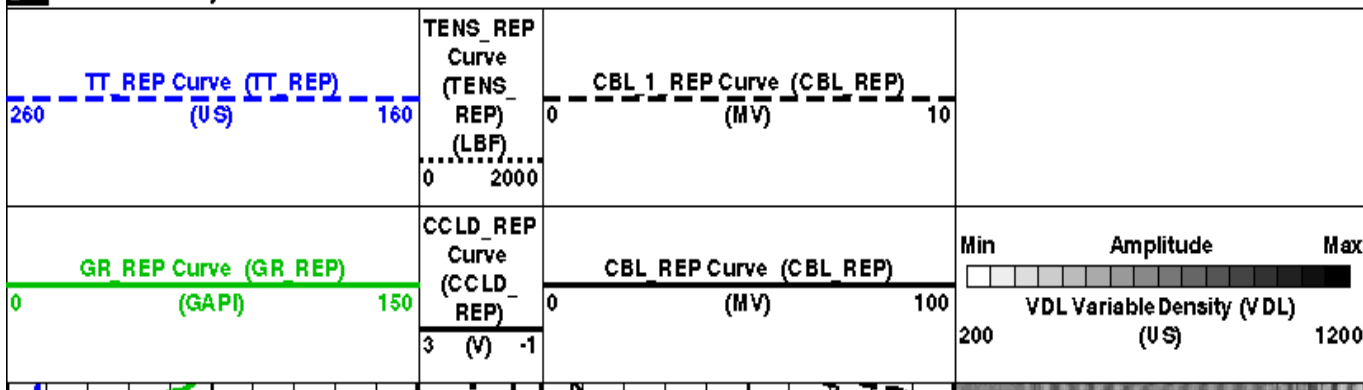
DEFAULT SCMT_PSP_023PUP FN:19 PRODUCER 10-Jul-2012 18:05

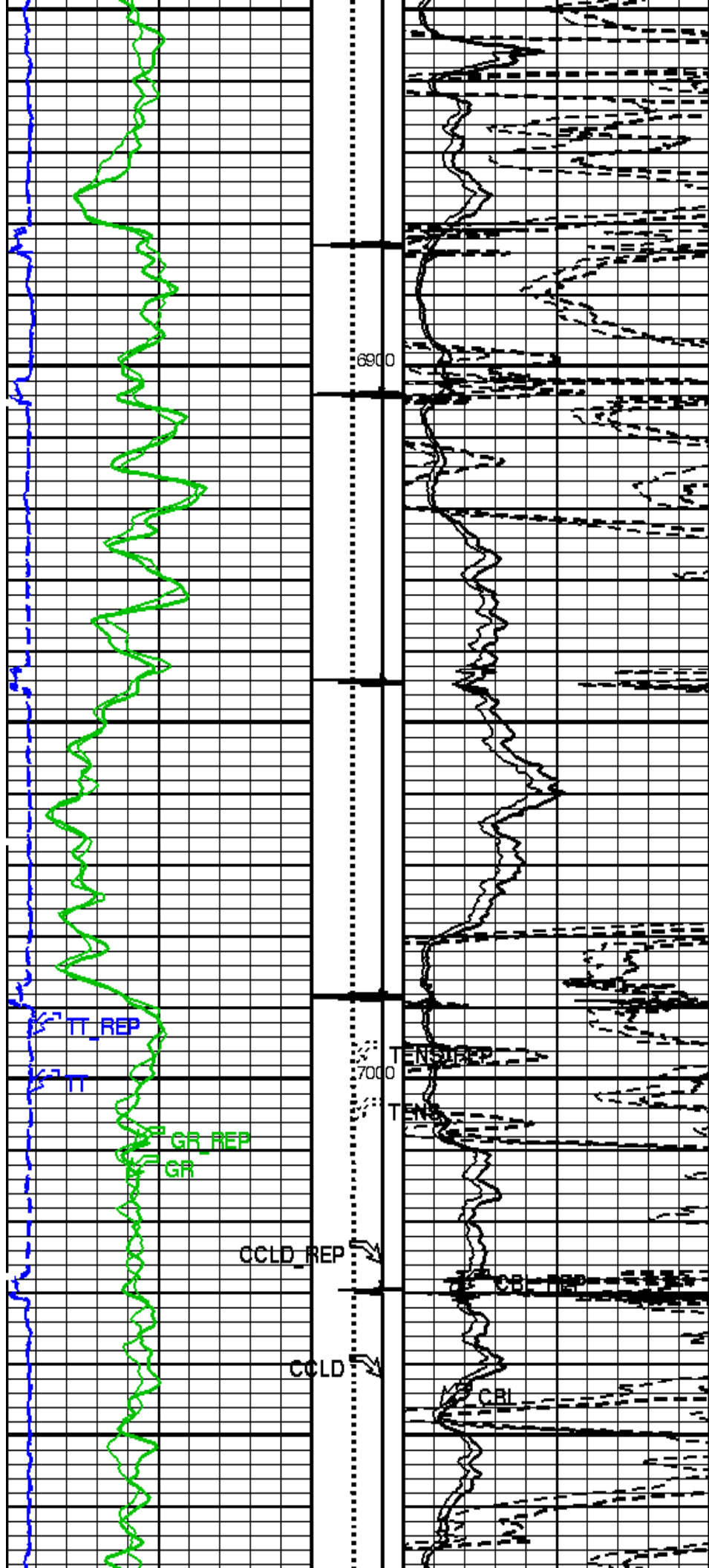
OP System Version: 19C0-187

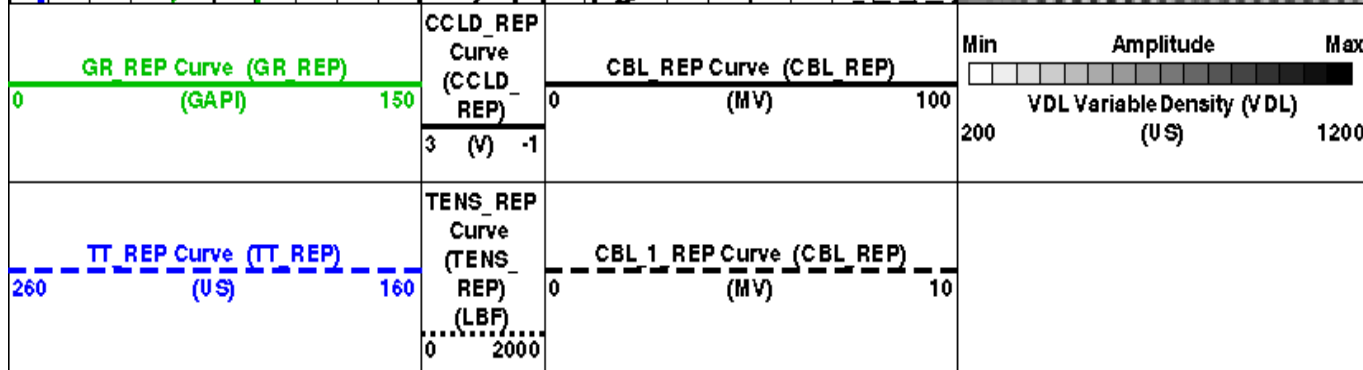
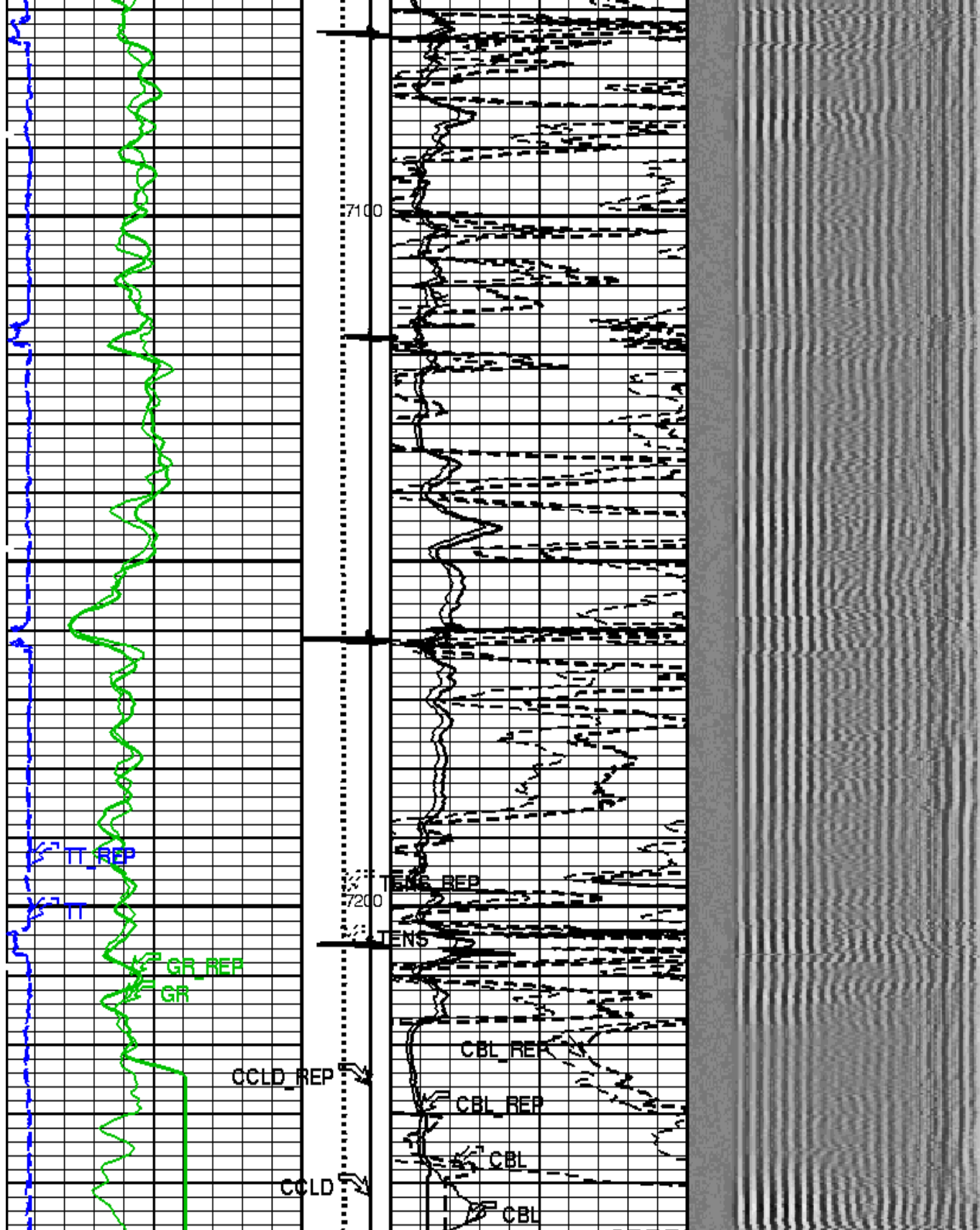
SCMT-CB SRPC-5095-H2-2011-OP19 PSPT 19C0-187

PIP SUMMARY

Time Mark Every 60 S







OP System Version: 19C0-187

SCMT-CB SRPC-5095-H2-2011-OP19 PSPT 19C0-187


<<< SCMT Cement Evaluation Information Summary >>>

Sonde Serial Number	SCMS-CB 8179		
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	6-MAR-2012		
CBL Correction Factor	0.0704263	CBL Adjustment Factor (CBAF)	0.950000
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	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	45	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMT	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	0.902782	
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	8.60	LB/G
DO	Depth Offset for Playback	4.0	FT

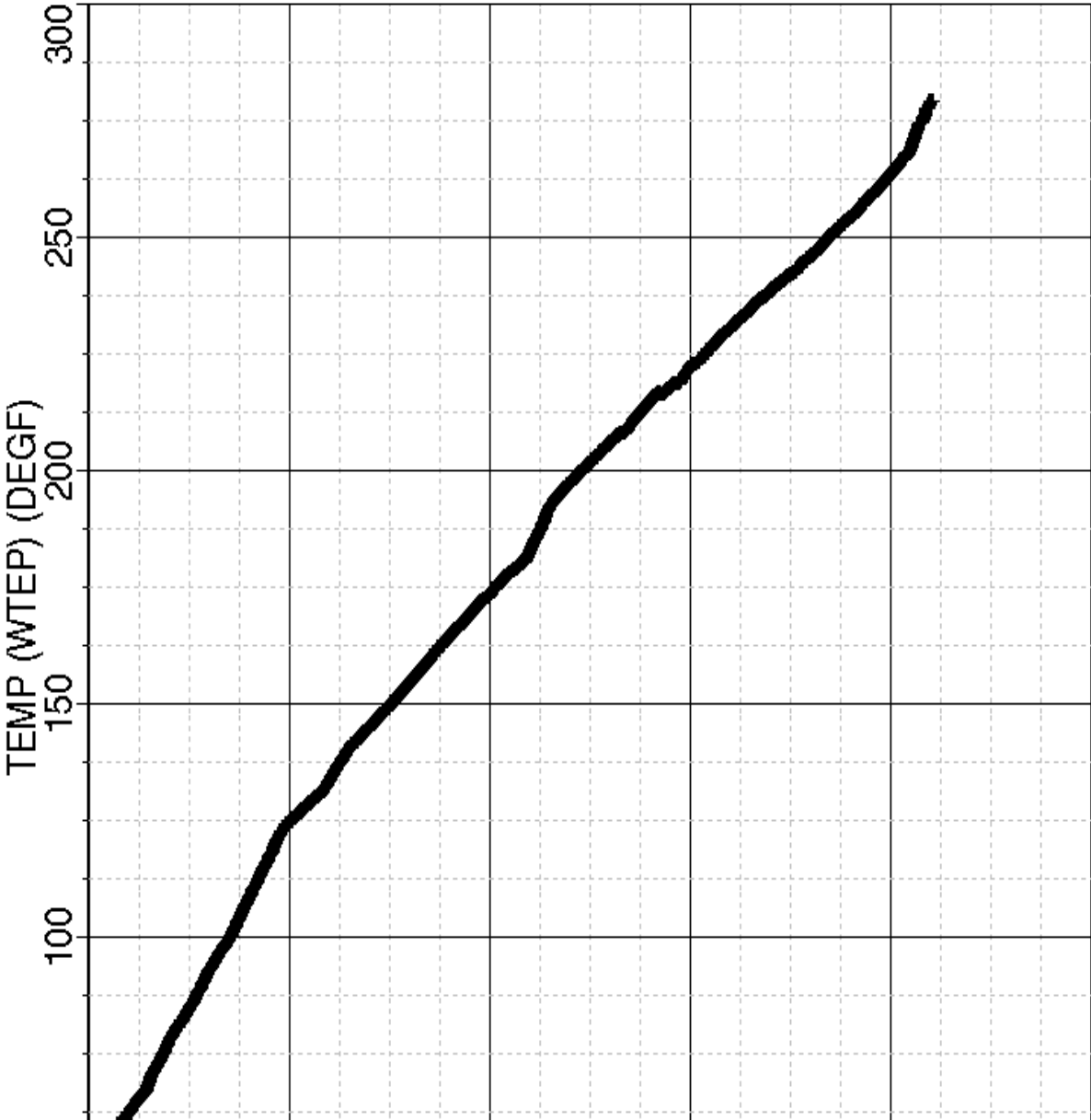
DORL	Depth Offset for Repeat Analysis					0.0	FT
PP	Playback Processing					RECOMPUTE	
TD	Total Depth					10934	FT
Input DLIS Files							
DEFAULT	SCMT_PSP_016LUP	FN:13	PRODUCER	10-Jul-2012 14:22	7247.0 FT	6845.2 FT	
Output DLIS Files							
DEFAULT	SCMT_PSP_023PUP	FN:19	PRODUCER	10-Jul-2012 18:05			



TEMPERATURE PLOT

MAXIS Field Log

Index: 10949.5 - 154.5 FT



50

0

2600

5200

7800

10400

13000

Tool Depth (TDEP) (F)

21591 Points Plotted

10-JUL-2012 18:11

Schlumberger**PBMS COEFFICIENTS**

MAXIS Field Log

Client:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	Clock Model
Run date:		

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:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	Sapphire
Run date:		

PBMS Sapphire 10kPsi Gauge

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

Pres Coeff

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

Tt**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:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	GR
Run date:		

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							
	<table> <tr> <th>Rt**0</th><th>Rt**1</th></tr> <tr> <td>Rt**0</td><td> <table> <tr> <td>+200000000000e+04</td><td>+21400000000e+04</td></tr> </table> </td></tr> </table>	Rt**0	Rt**1	Rt**0	<table> <tr> <td>+200000000000e+04</td><td>+21400000000e+04</td></tr> </table>	+200000000000e+04	+21400000000e+04
Rt**0	Rt**1						
Rt**0	<table> <tr> <td>+200000000000e+04</td><td>+21400000000e+04</td></tr> </table>	+200000000000e+04	+21400000000e+04				
+200000000000e+04	+21400000000e+04						

Client:	Tool:	PSP
Field:	Sub Type:	PBMS
Well:	Sensor:	WellTemp RTD
Run date:		

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

	T^{**0}	T^{**1}	T^{**2}
T^{**0}	$+ .492135102627E+02$	$- .278827553804E+03$	$+ .142867554561E+03$
	T^{**3}	T^{**4}	T^{**5}
T^{**0}	$- .233378392336E+02$	$+ .145553494493E+01$	0.0

Schlumberger

MASTER CALIBRATION

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Slim Cement Mapping Tool, 1-11/16 OD Master Calibration - SCMT CBL and MAP Amplitude Normalization in SFT-155/-255							
Master: 6-Mar-2012 15:06							
MAP 1 Amplitude Plus	1075	1208	-	-	-	-	MV
MAP 2 Amplitude Plus	1075	1275	-	-	-	-	MV
MAP 3 Amplitude Plus	1075	1182	-	-	-	-	MV
MAP 4 Amplitude Plus	1075	1049	-	-	-	-	MV
MAP 5 Amplitude Plus	1075	937.6	-	-	-	-	MV
MAP 6 Amplitude Plus	1075	990.2	-	-	-	-	MV
MAP 7 Amplitude Plus	1075	1063	-	-	-	-	MV
MAP 8 Amplitude Plus	1075	1166	-	-	-	-	MV
CBL Amplitude Plus	1350	1363	-	-	-	-	MV










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	8172

Auxiliary Equipment:

Slim Electronics Cartridge Housing	SCCH - CA	
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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			1208	Master			1275
	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			1182	Master			1049
	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			937.6	Master			990.2
	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			1063	Master			1166
	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)		500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	CBL Amplitude Plus MV		Value				
Master			1363				
	1000 (Minimum)	1350 (Nominal)	1700 (Maximum)				
Master: 6-Mar-2012 15:06							

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

Schlumberger

Well: **DW 8609D-28 (P28496)**

Field: **Double Willow**

County: **Garfield**

State: **Colorado**

SLIM CEMENT MAPPING TOOL

CBL - VDL

GAMMA RAY - CCL