

Company: ENCANA OIL & GAS (USA) INC

Well: MCU 16-13CC (M16W)

Field: MAMM CREEK

County: GARFIELD State: COLORADO

SLIM CEMENT MAPPING LOG  
CBL-VDL  
GAMMA RAY-CCL

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 531 FSL & 1221 FWL

Well: MCU 16-13CC (M16W)

Company: ENCANA OIL & GAS (USA) INC

LOCATION

SHL: 531 FSL & 1221 FWL  
BHL: 130 FSL & 641 FWL

Elev.: K.B. 7903.00 ft  
G.L. 7881.00 ft  
D.F. 7902.00 ft

Permanent Datum: \_\_\_\_\_  
Log Measured From: KELLY BUSHING  
Drilling Measured From: KELLY BUSHING

GROUND LEVEL \_\_\_\_\_  
Elev.: 7881.00 ft

22.00 ft above Perm. Datum

API Serial No. 05-045-20587-0C

Section 16

Township 7S

Range 93W

PVT DATA				Run 1	Run 2	Run 3
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 30-Aug-2013

Run Number 1

Depth Driller 10074 ft

Schlumberger Depth 9996 ft

Bottom Log Interval 9987 ft

Top Log Interval 70 ft

Casing Fluid Type FRESH WATER

Salinity

Density 8.4 lbm/gal

Fluid Level 70 ft

BIT/CASING/TUBING STRING

Bit Size 7.625 in

From 9727 ft

To 10074 ft

Casing/Tubing Size 4.500 in

Weight 11.6 lbm/ft

Grade S-80

From 22 ft

To 10051 ft

Maximum Recorded Temperatures 249 degF

Logger On Bottom 30-Aug-2013 11:30

Unit Number 391 Location GRAND JUNCTION

Recorded By KIRSTIE BUNTING

Witnessed By JIM DYKEMAN

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 Location

Recorded By

Witnessed By

## DEPTH SUMMARY LISTING

Date Created: 14-AUG-2013 11:54:57

## Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JB	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6349	Serial Number:	3421	Serial Number:	112136
Calibration Date:	7-31-2013	Calibration Date:	14-AUG-201	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	<div>Conveyance Method: Wireline</div> <div>Rig Type: LAND</div>	
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-5	Calibration RMS:	3		
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 PROCEDURES USED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SPWT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

## DISCLAIMER

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

OTHER SERVICES1	OTHER SERVICES2
OS1: 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 RUN AS PER TOOL SKETCH	
ENTRANCE: 10:00	
TIME ON BOTTOM: 11:30	
EXIT: 14:45	

MAXIMUM RECORDED TEMPERATURE: 249 DEGF	
MAXIMUM RECORDED PRESSURE: 4234 PSIA	
SHORT JOINTS: 7812 FT & 8888 FT	
MAIN PASS LOGGED WITH ZERO SURFACE PRESSRE	
EXPECTED FREE PIPE CBL AMPLITUDE IS 80MV	
CREW: KBUNTING, WAZIZ, KJOHNS	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

RUN 1 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

[illegible]

	RUN 1	RUN 2
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
18	1	1
19	1	1
20	1	1
21	1	1
22	1	1
23	1	1
24	1	1
25	1	1
26	1	1
27	1	1
28	1	1
29	1	1
30	1	1
31	1	1
32	1	1
33	1	1
34	1	1
35	1	1
36	1	1
37	1	1
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90	1	1
91	1	1
92	1	1
93	1	1
94	1	1
95	1	1
96	1	1
97	1	1
98	1	1
99	1	1
100	1	1

SURFACE EQUIPMENT	
WITM-A PSC_16MHZ	

## DOWNHOLE EQUIPMENT

Device	Temperature (°C)
MH-22	53.3
MH-22	
AH-38	51.7
PSPT	51.5
PSC-A	
PSPT-A	
PSTC-A	
PBMS-A 1978	47.8
10k_Sapphire_Mano	
RTD_Thermometer	
GR	
Well_Temp	44.7
CCL	44.6
Manometer	44.0
PBMS	43.2
PBMS PSTC	
RST-C	43.2
RSCH-A	
RSC-E 469	
RSS-A 278	
RSXH-A	
RSX-E 493	
RSC-A Far	34.1
RSC-A PNG	
RSC-A Nea	
RSX-A PNG	33.6

20.2

Gene	DT	DTSC	CBL3	MAP	AUX
DT	11.1				
CBL5		9.6			
CBL3			8.6		
MAP				8.1	
AUX					7.1

## 11.1

9.6

## 8.6

## 8.1

## 7.1

HV

Tension SCMT

## TOOL ZERO

0.0

0.2

MAXIMUM STRING DIAMETER 1.72 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: MCU 16-13CC (M16W)

## Input DLIS Files

DEFAULT	SCMT_RST_PSP_011LUP	FN:10	PRODUCER	30-Aug-2013 11:39	10002.0 FT	20.5 FT
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## Output DLIS Files

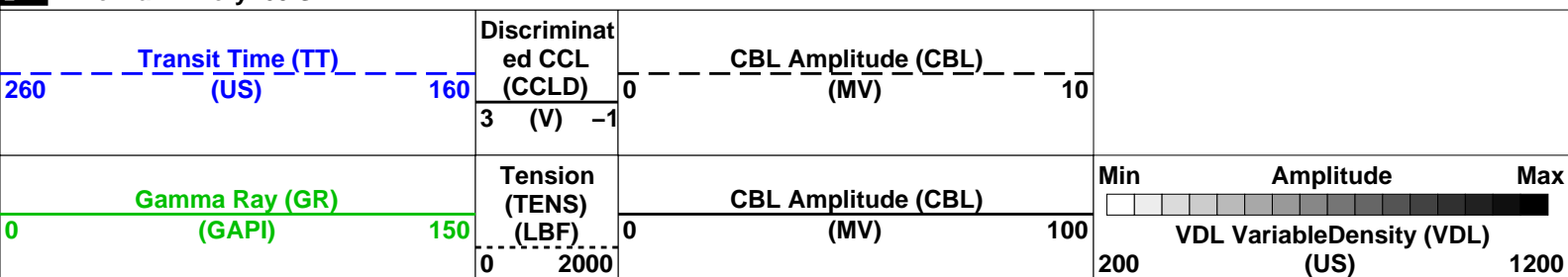
DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	30-Aug-2013 14:25	10005.0 FT	-21.0 FT
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**OP System Version: 19C0-187**

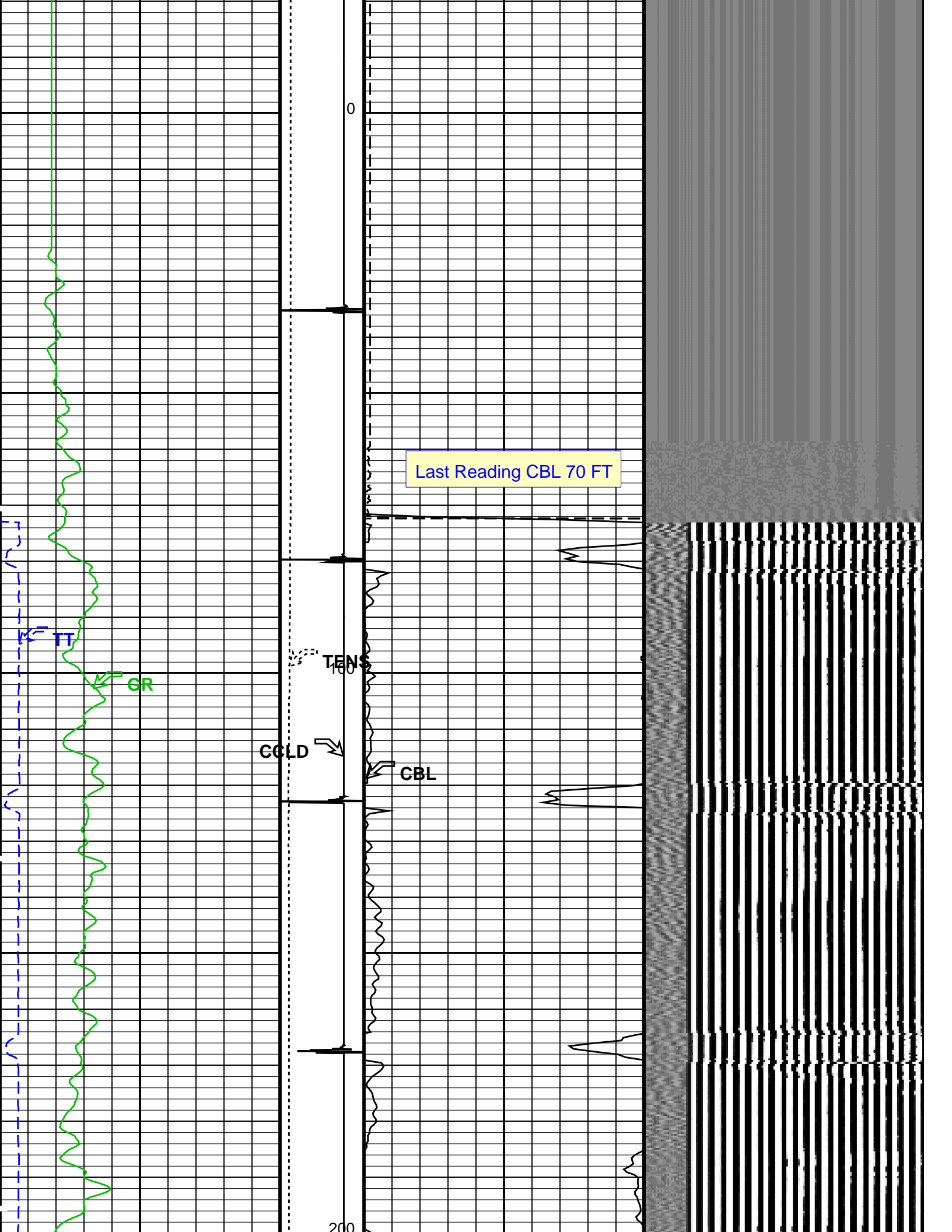
SCMT-CB	SRPC-5214-H2-2012-OP19	RST-C	SRPC-5214-H2-2012-OP19
PSPT	SRPC-5214-H2-2012-OP19		

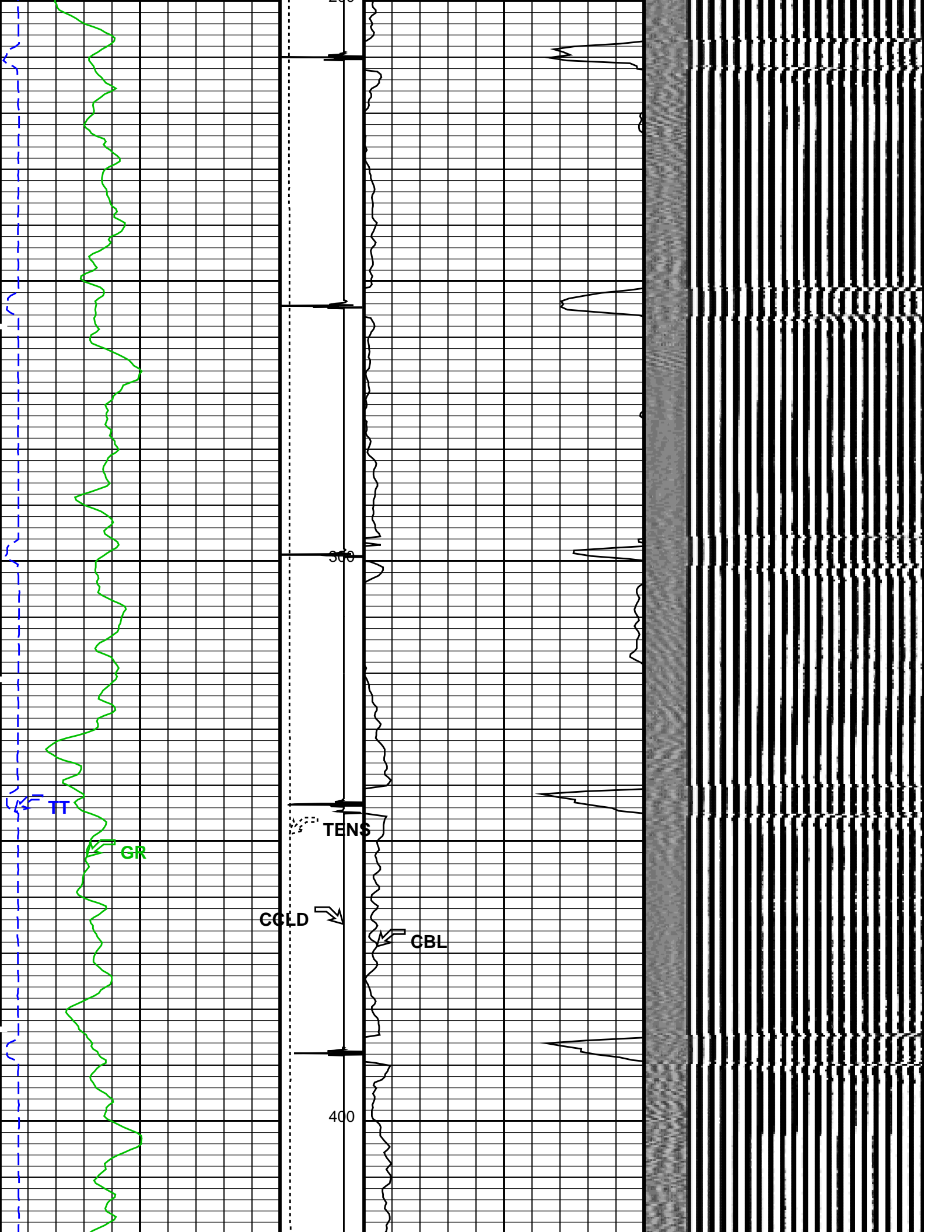
## PIP SUMMARY

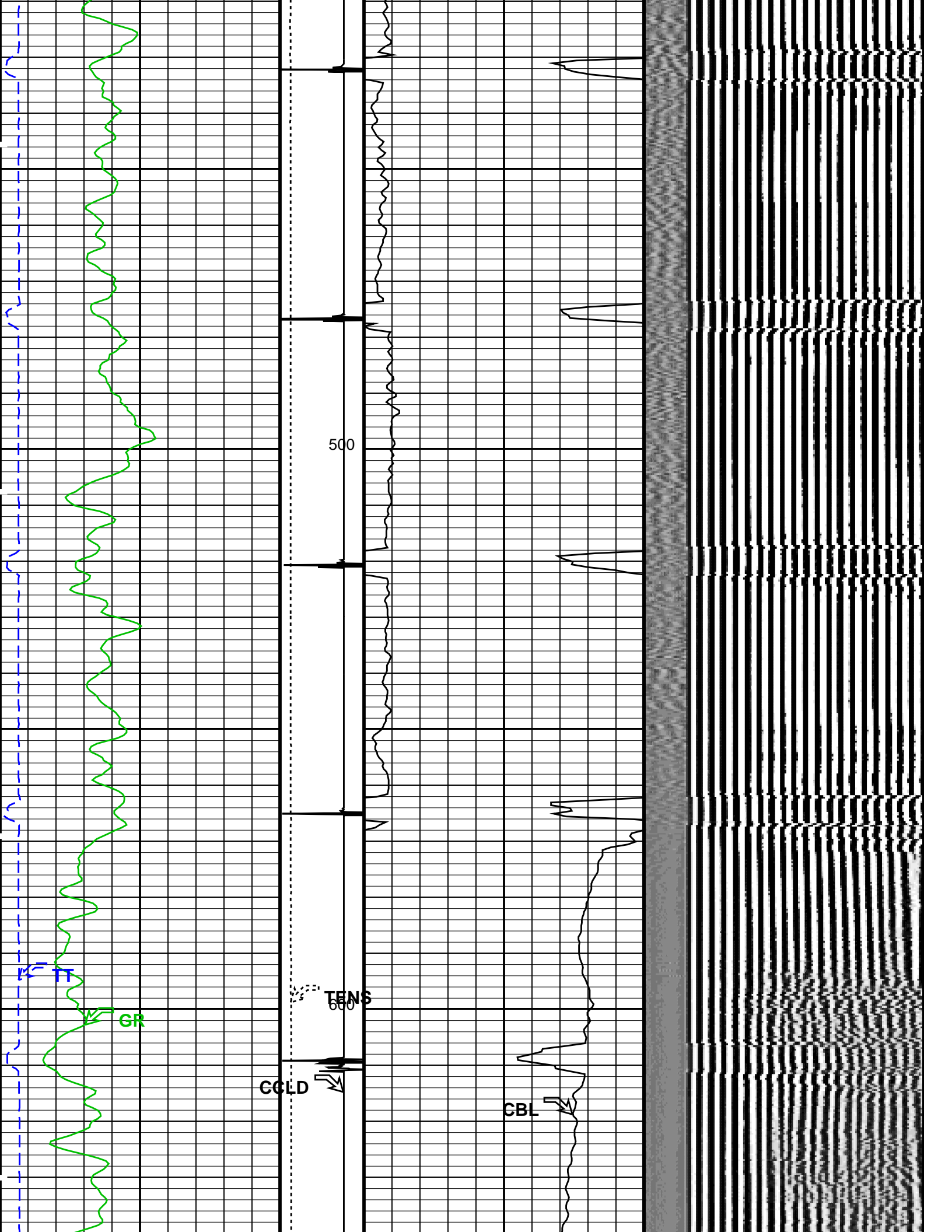
**Time Mark Every 60 S**

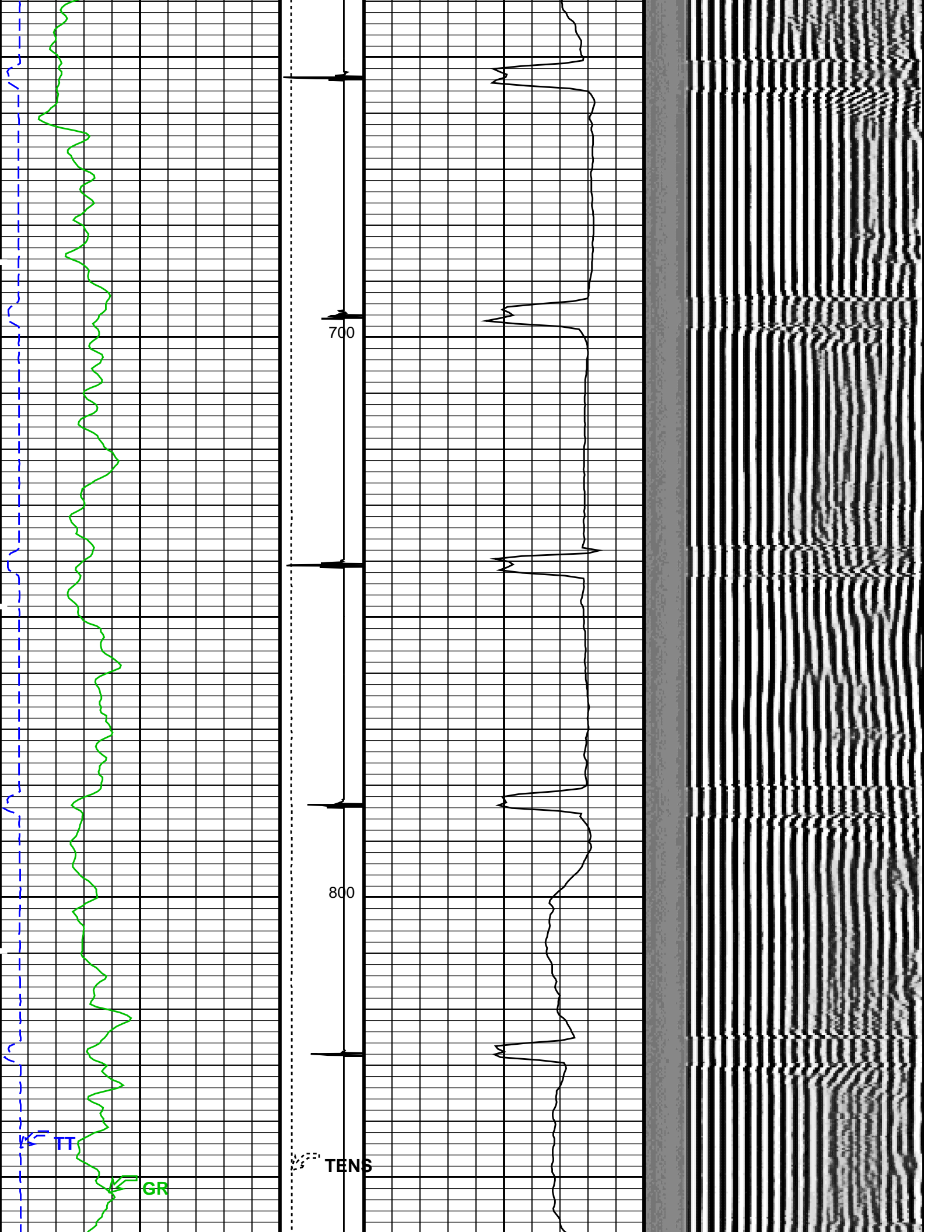


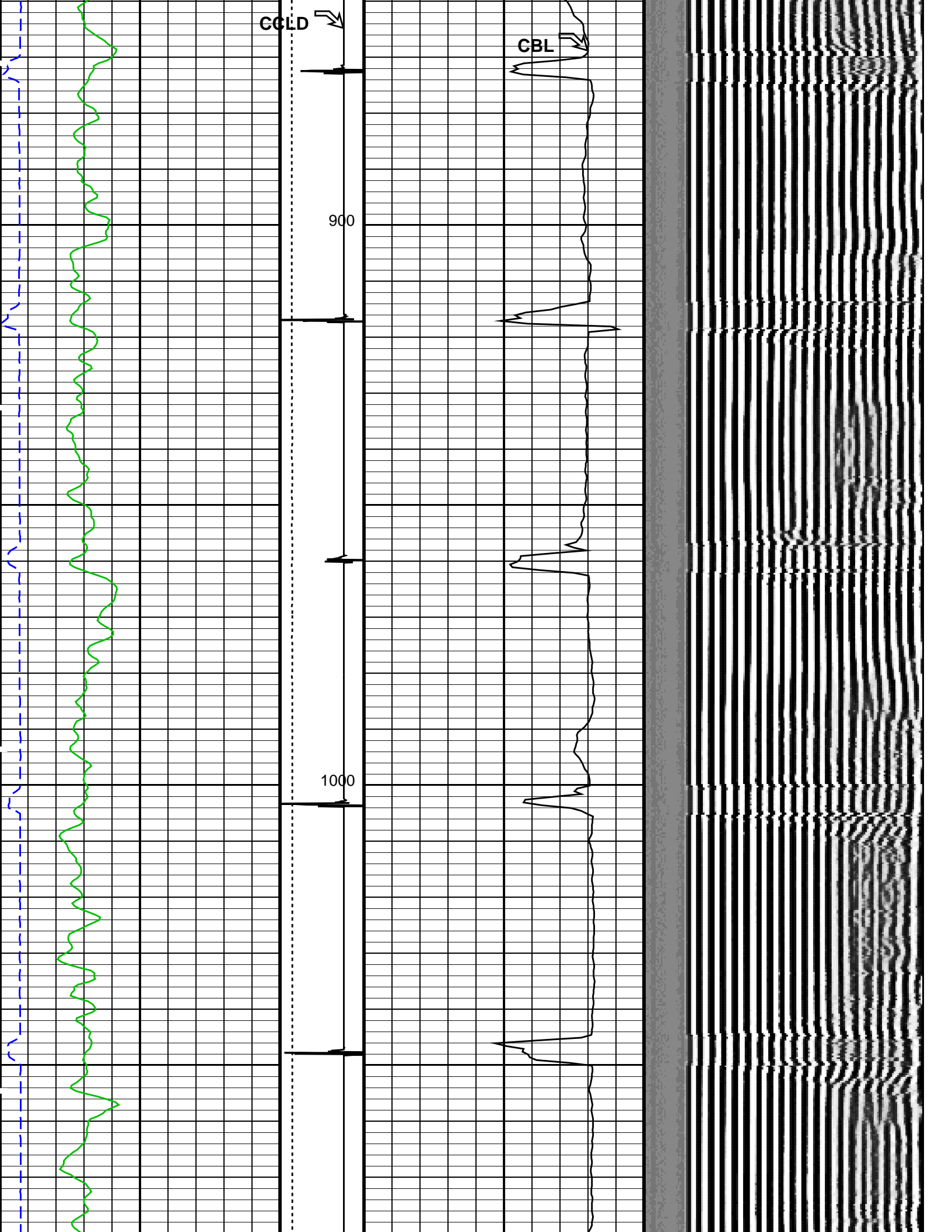




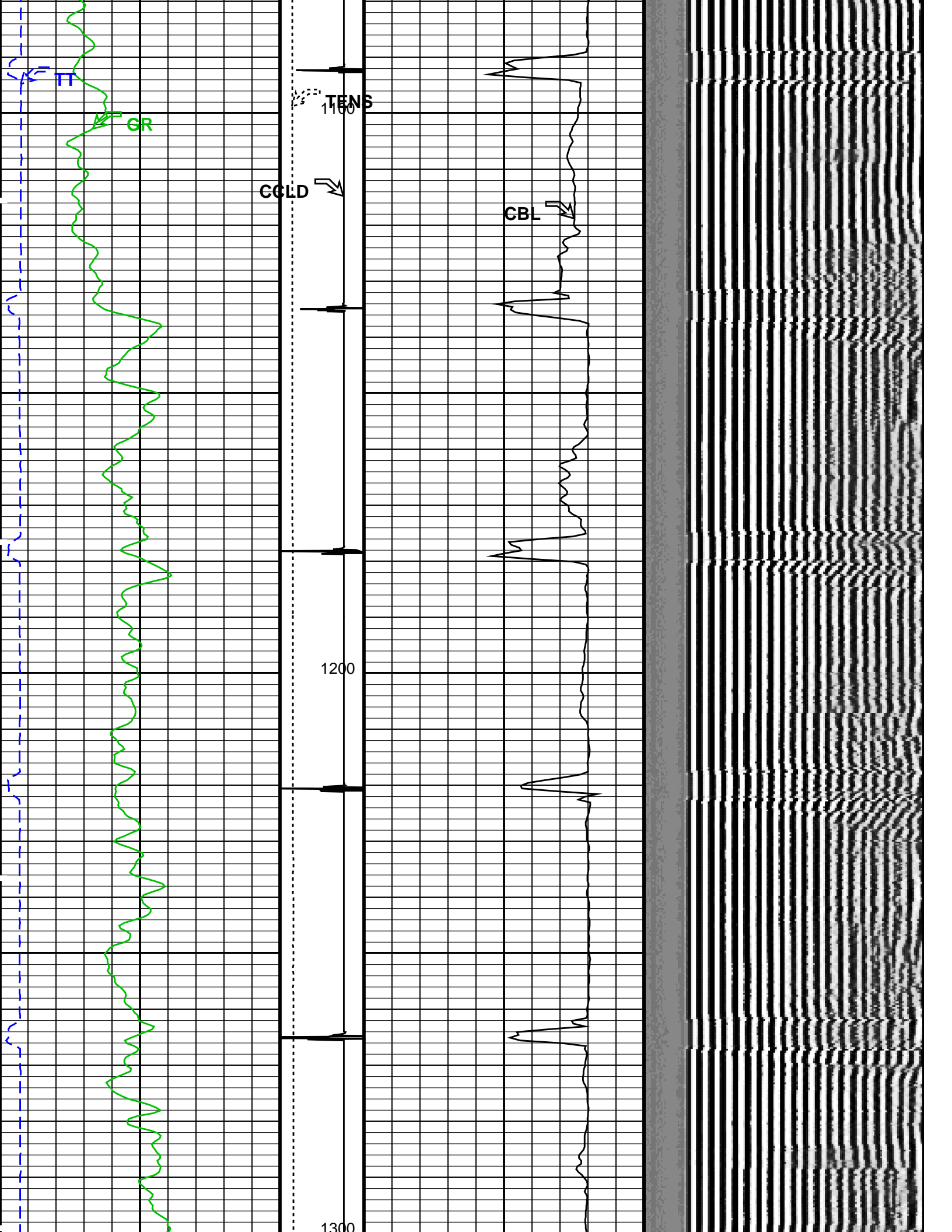


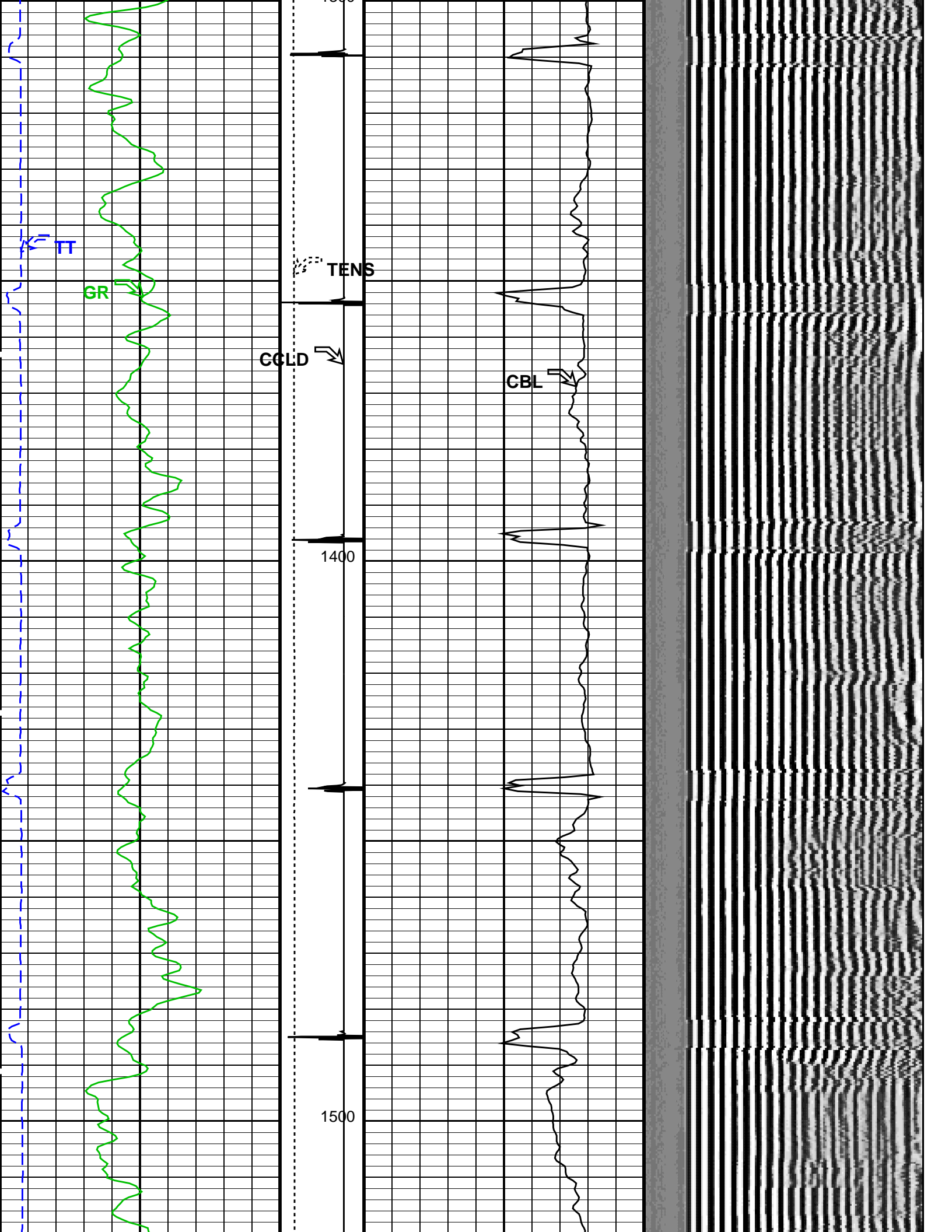


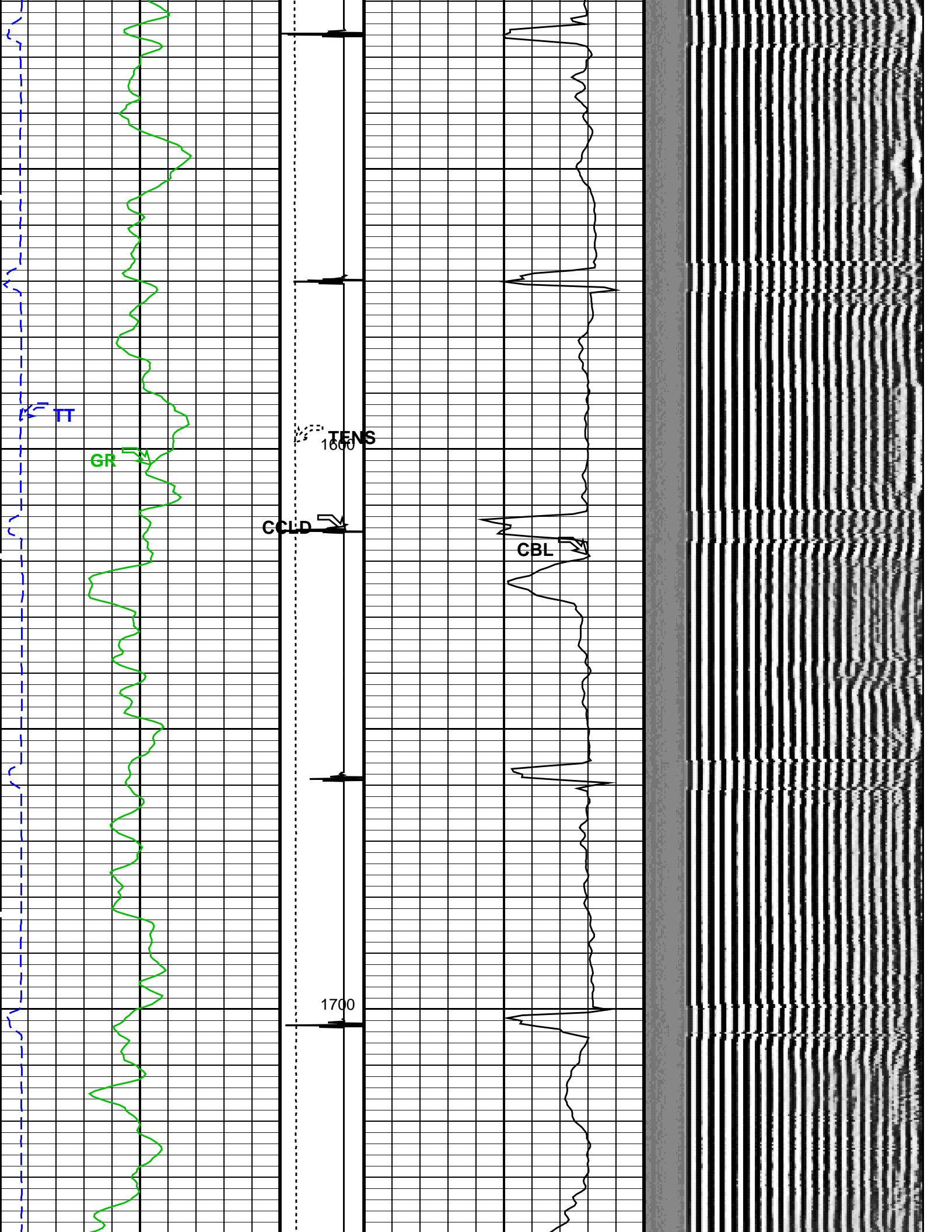




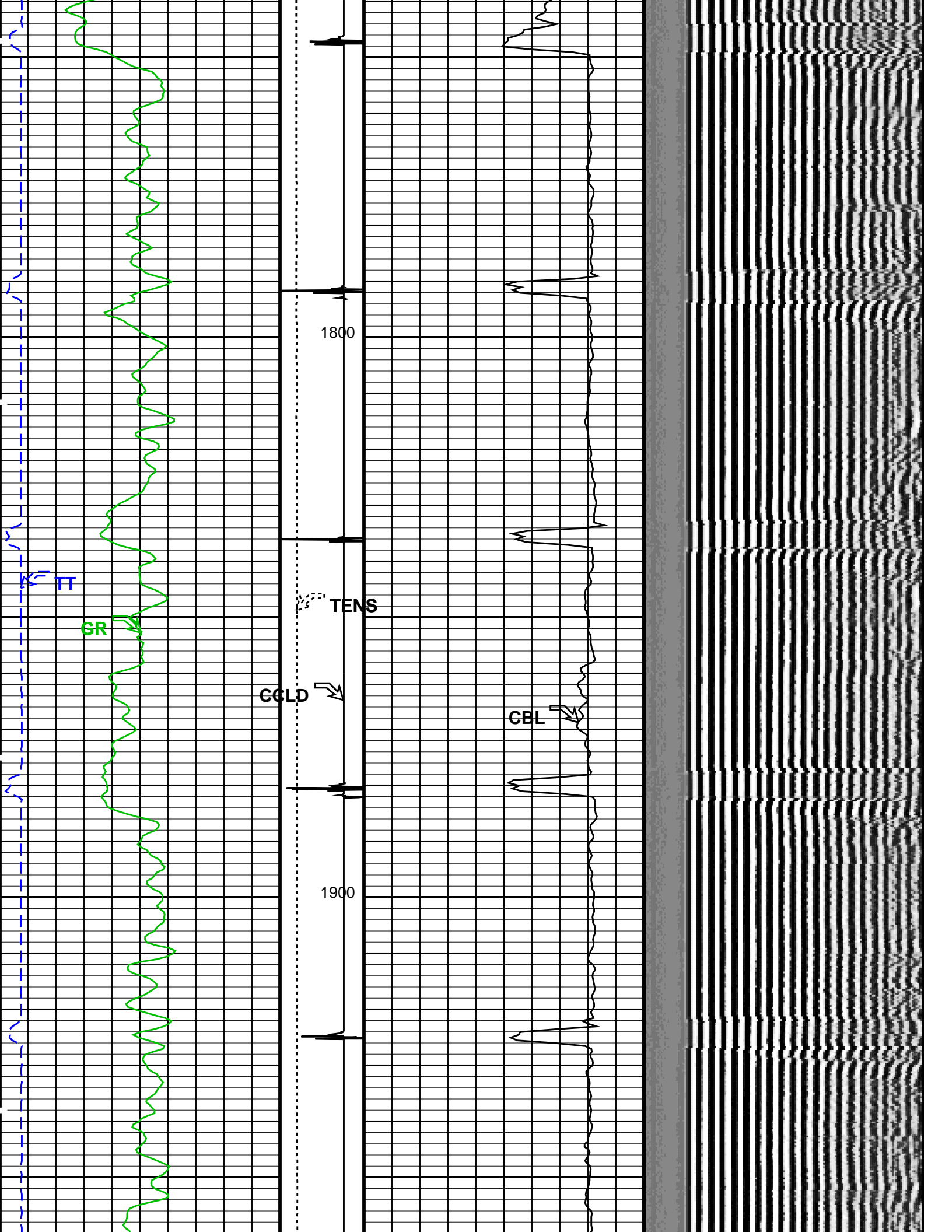


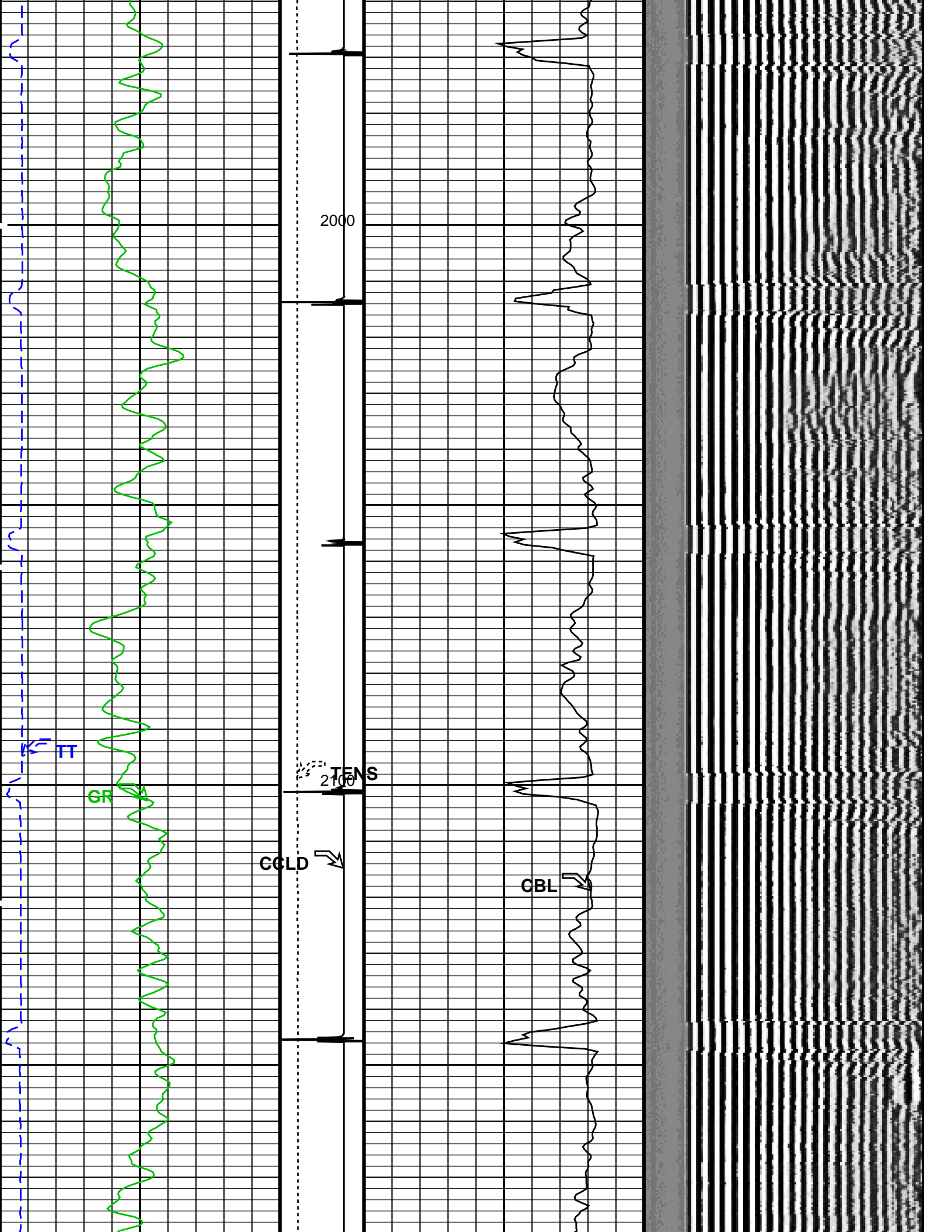


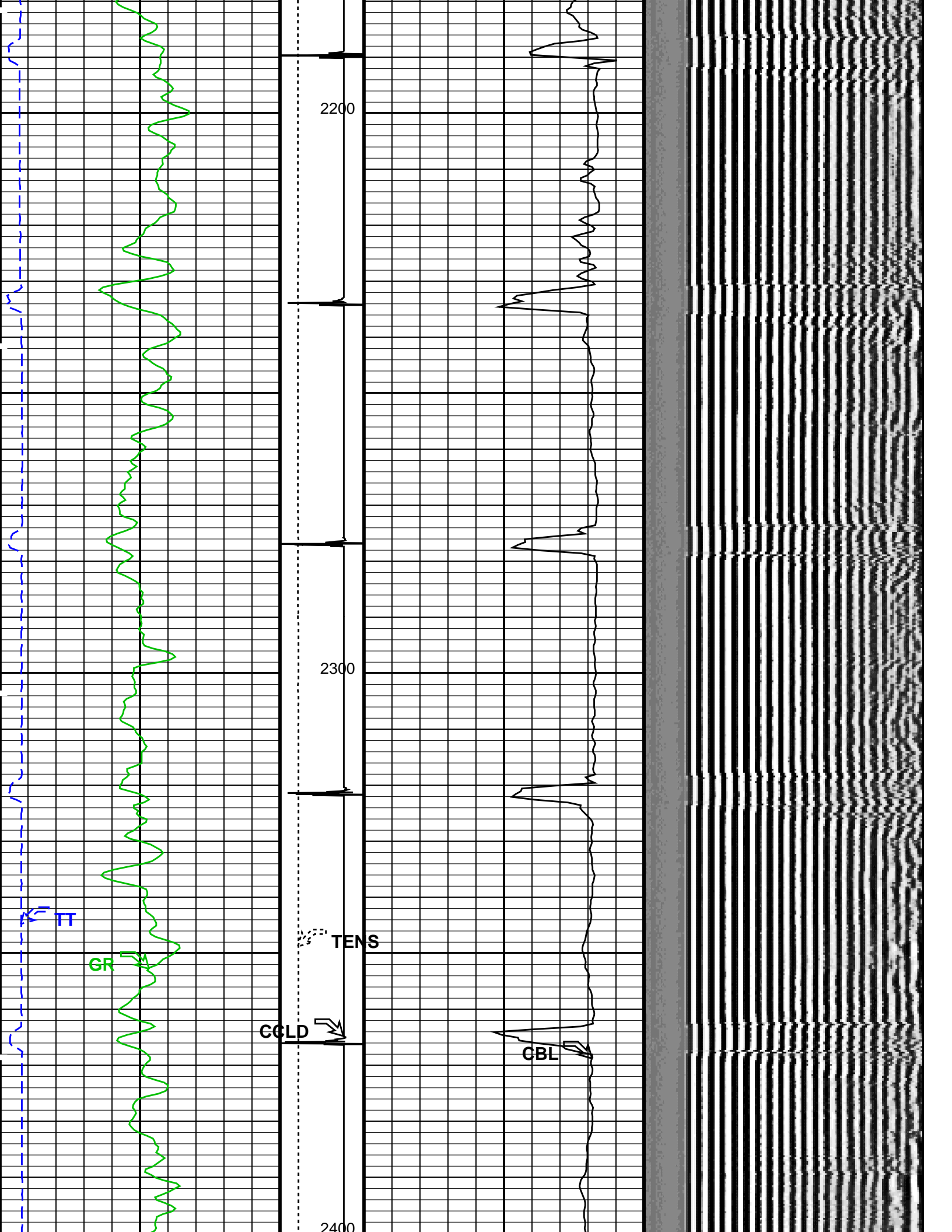


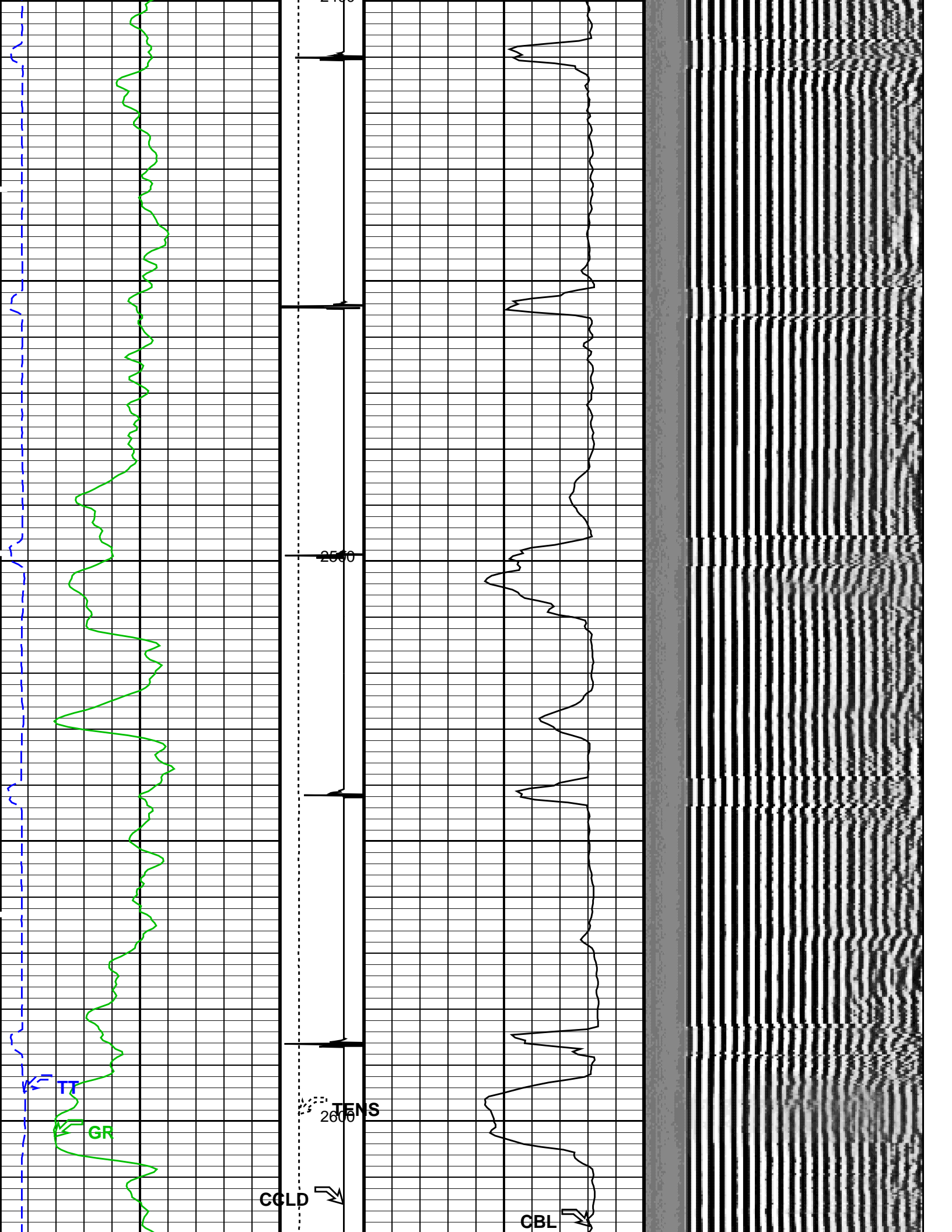




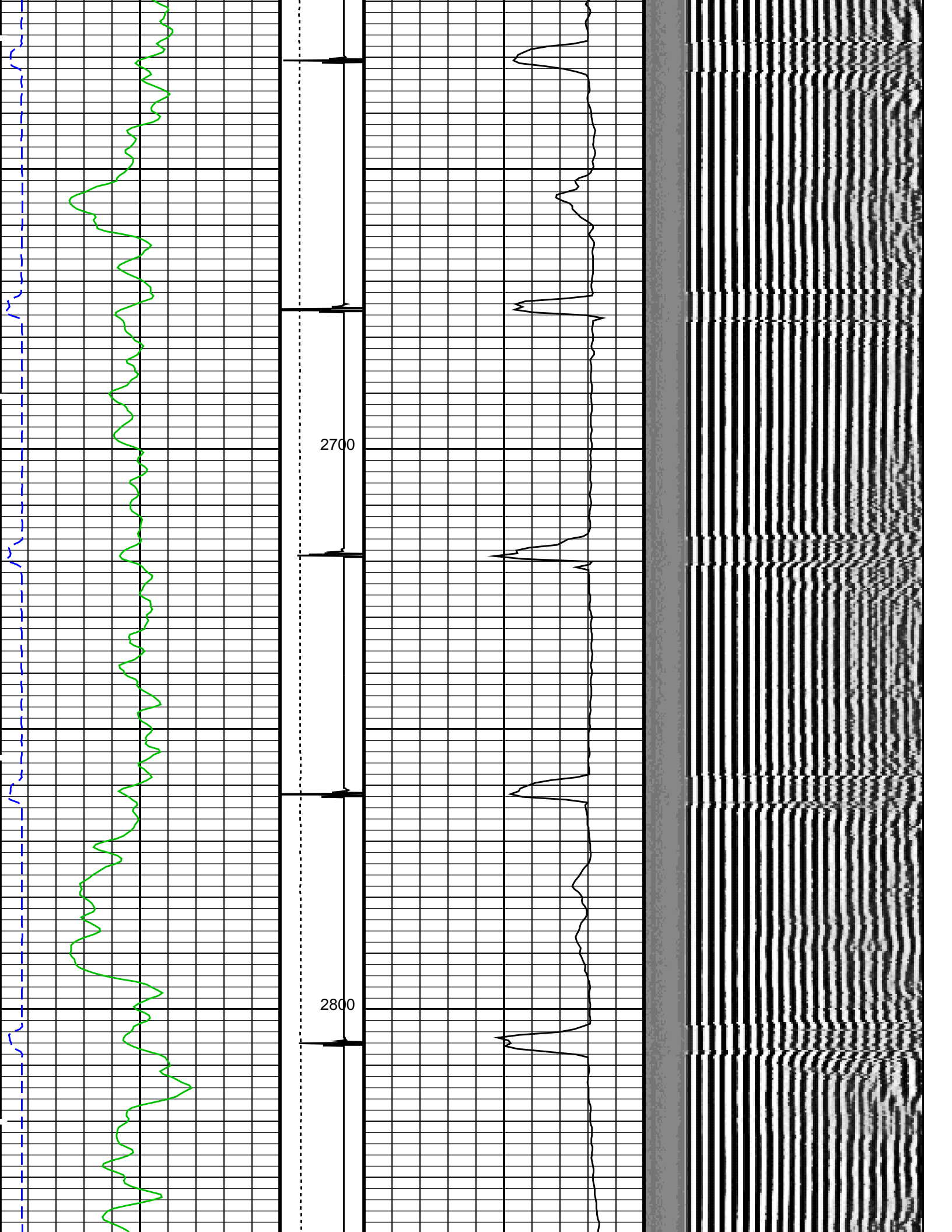


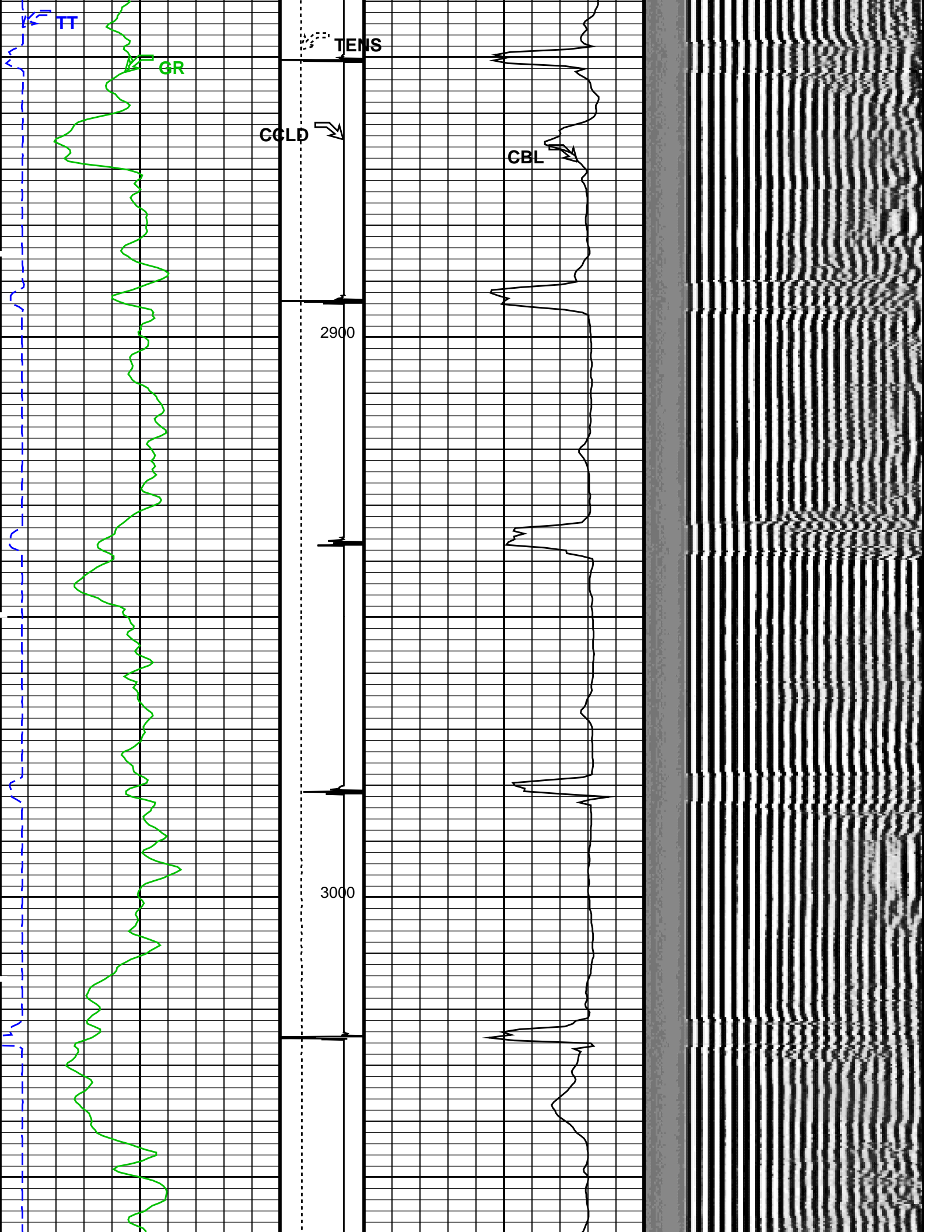


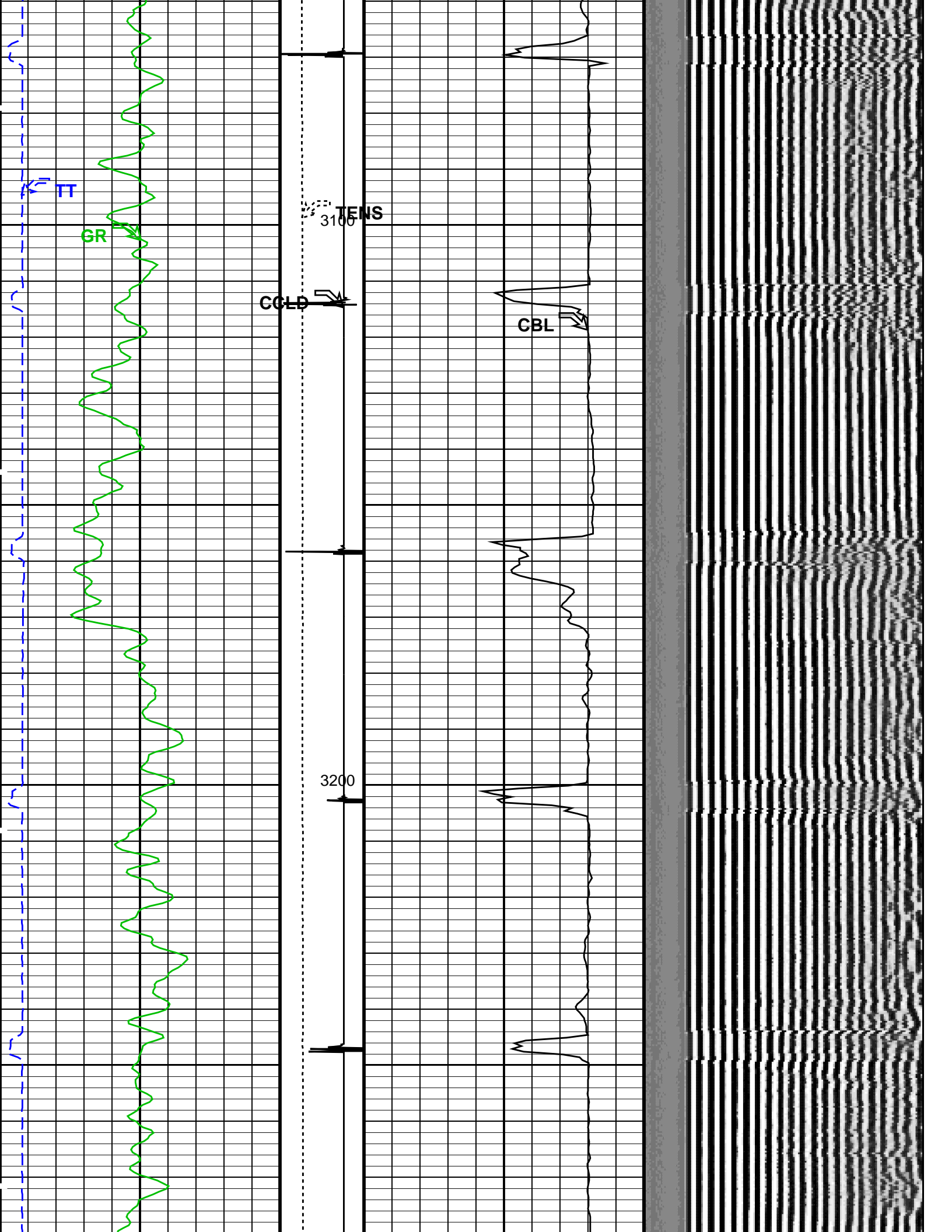


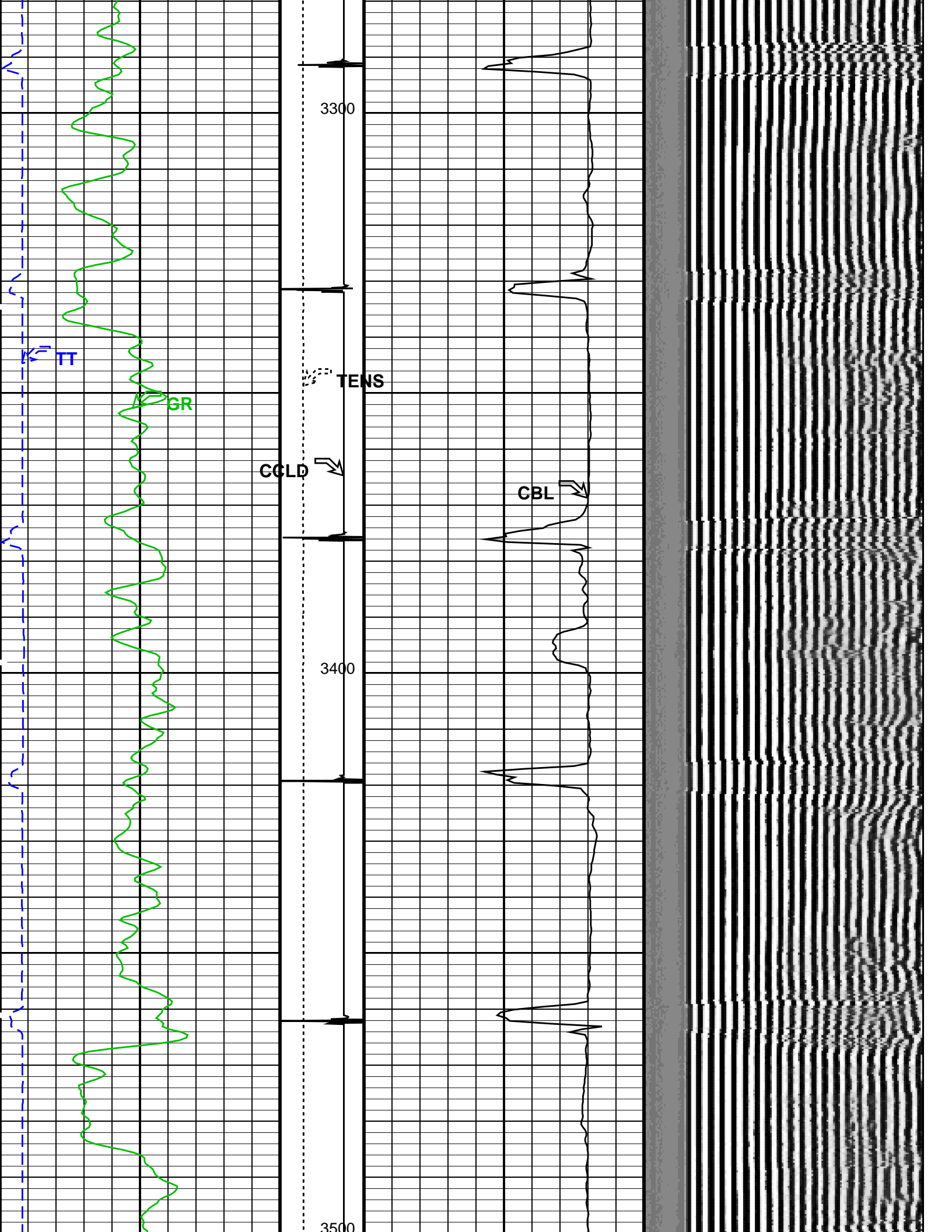




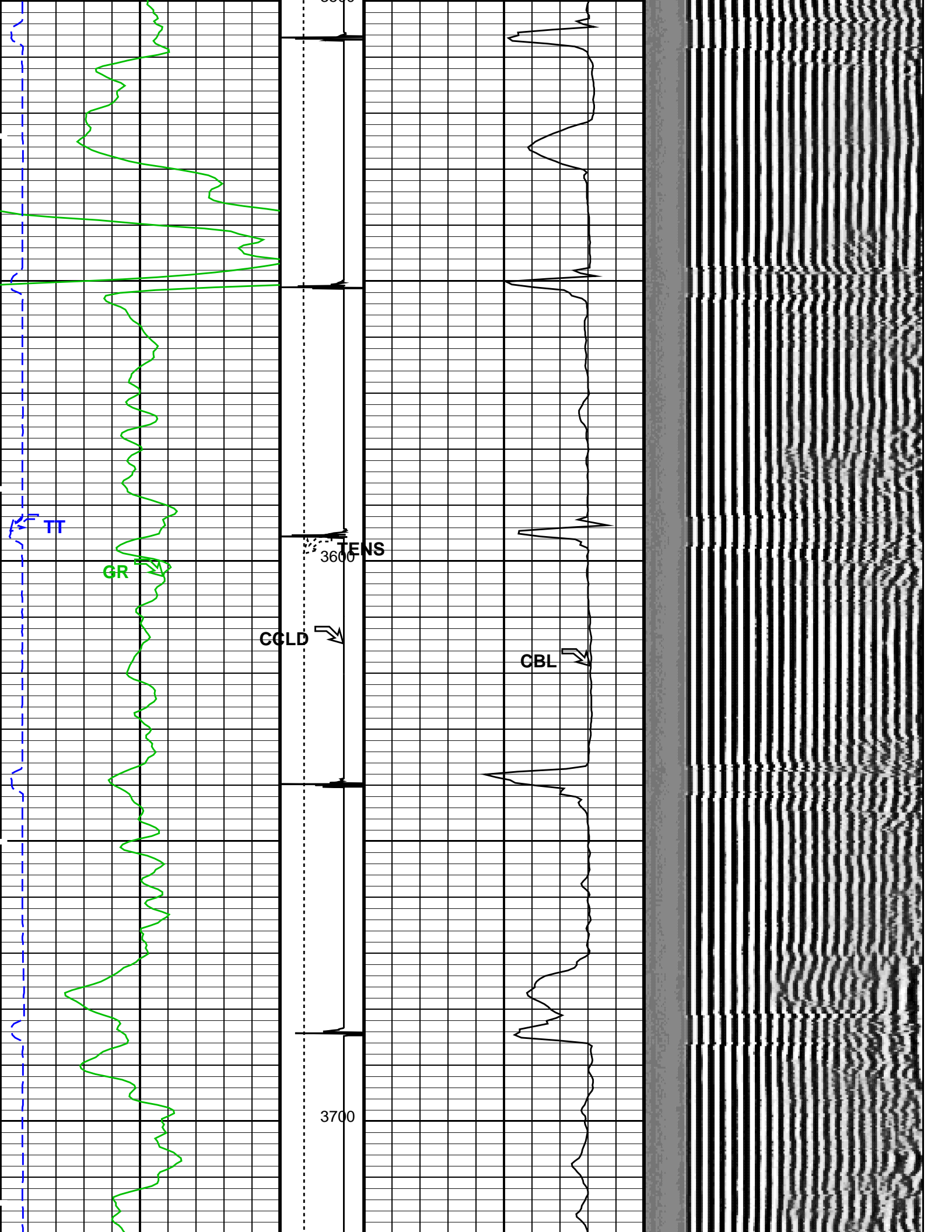


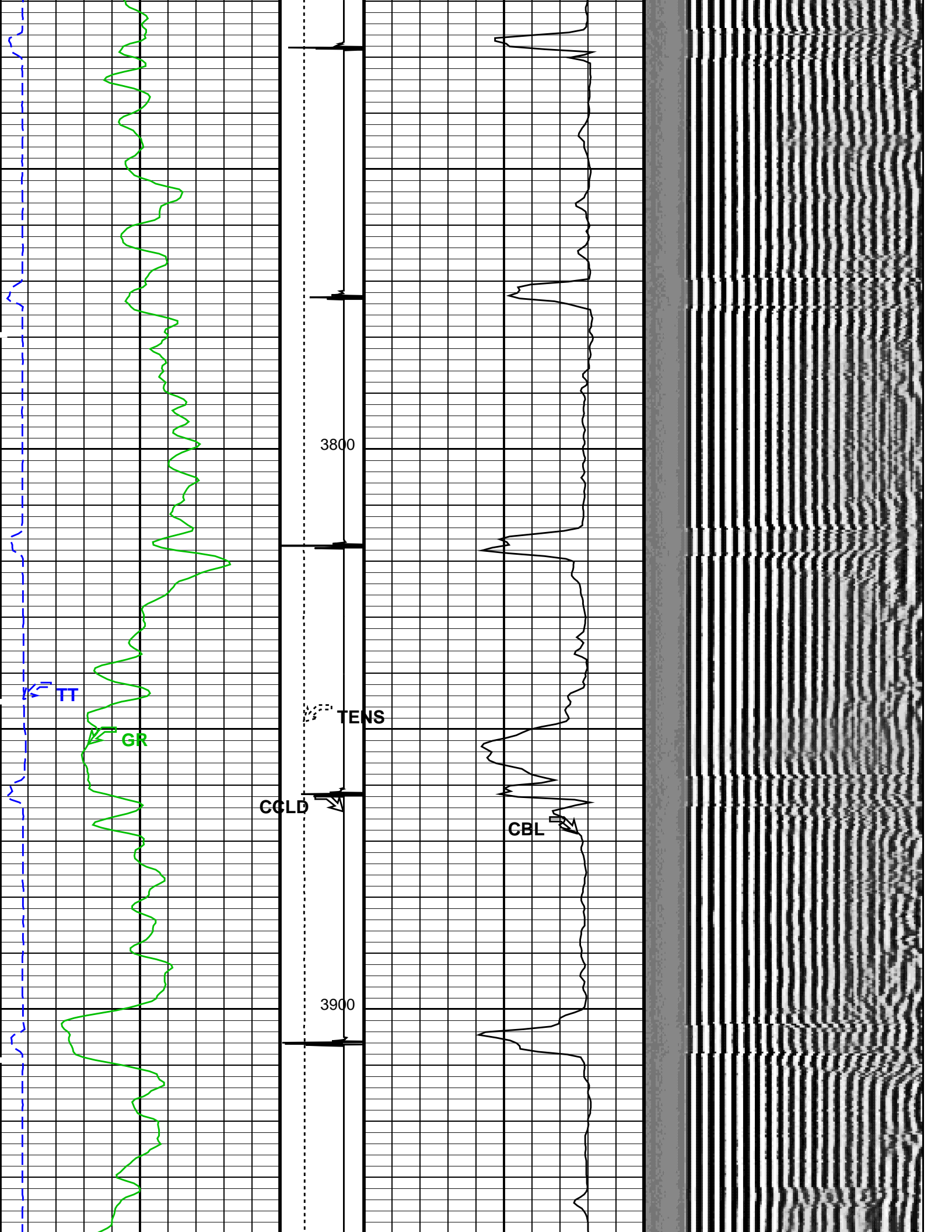


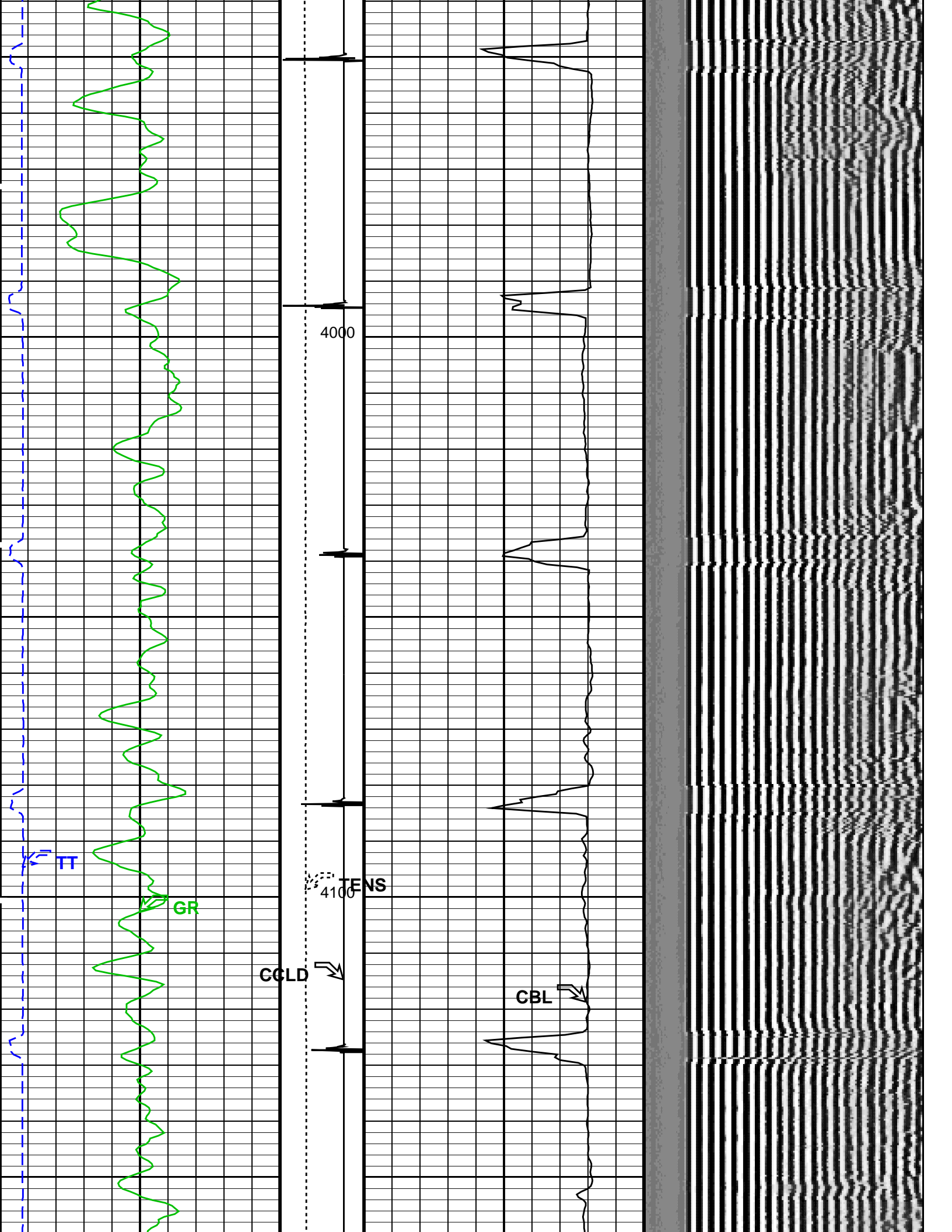


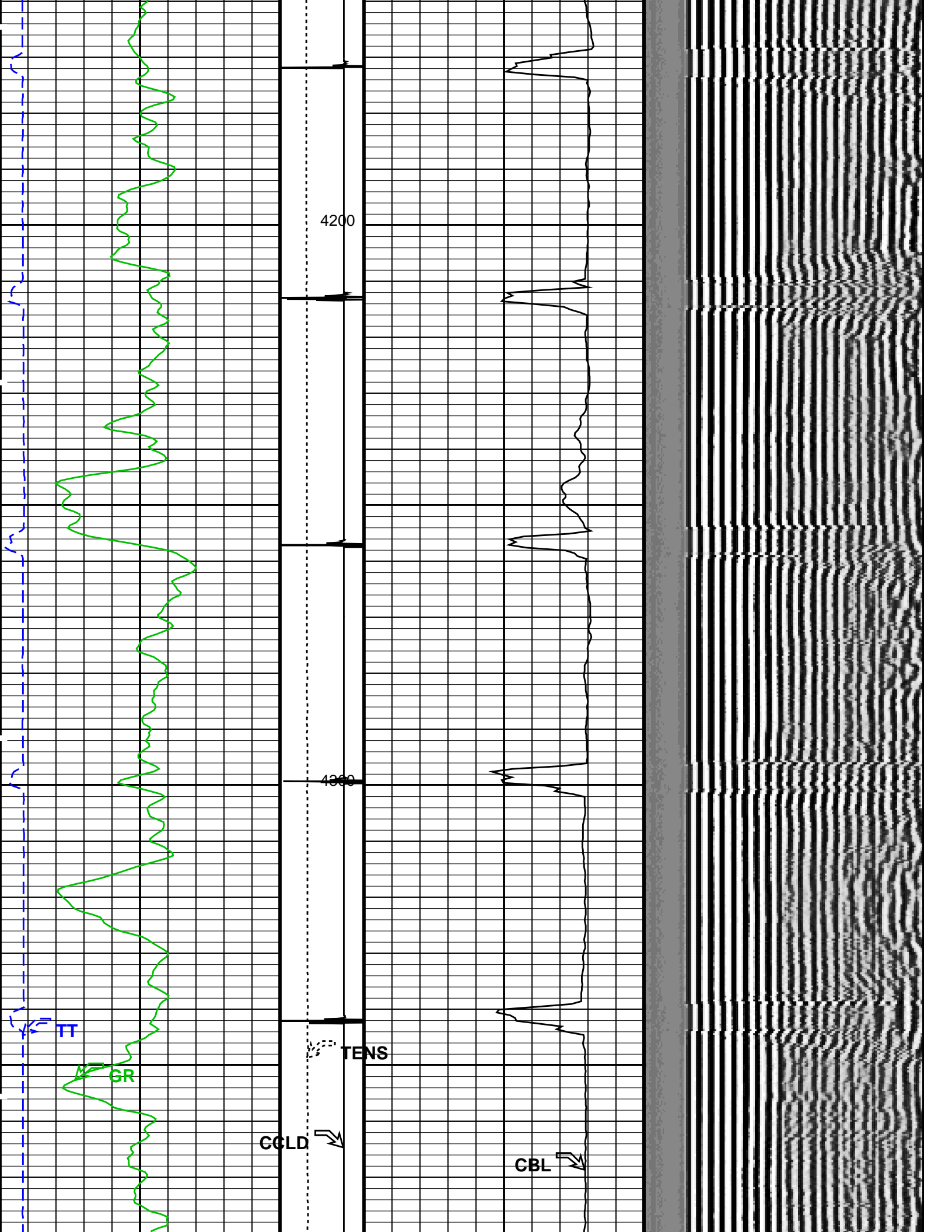




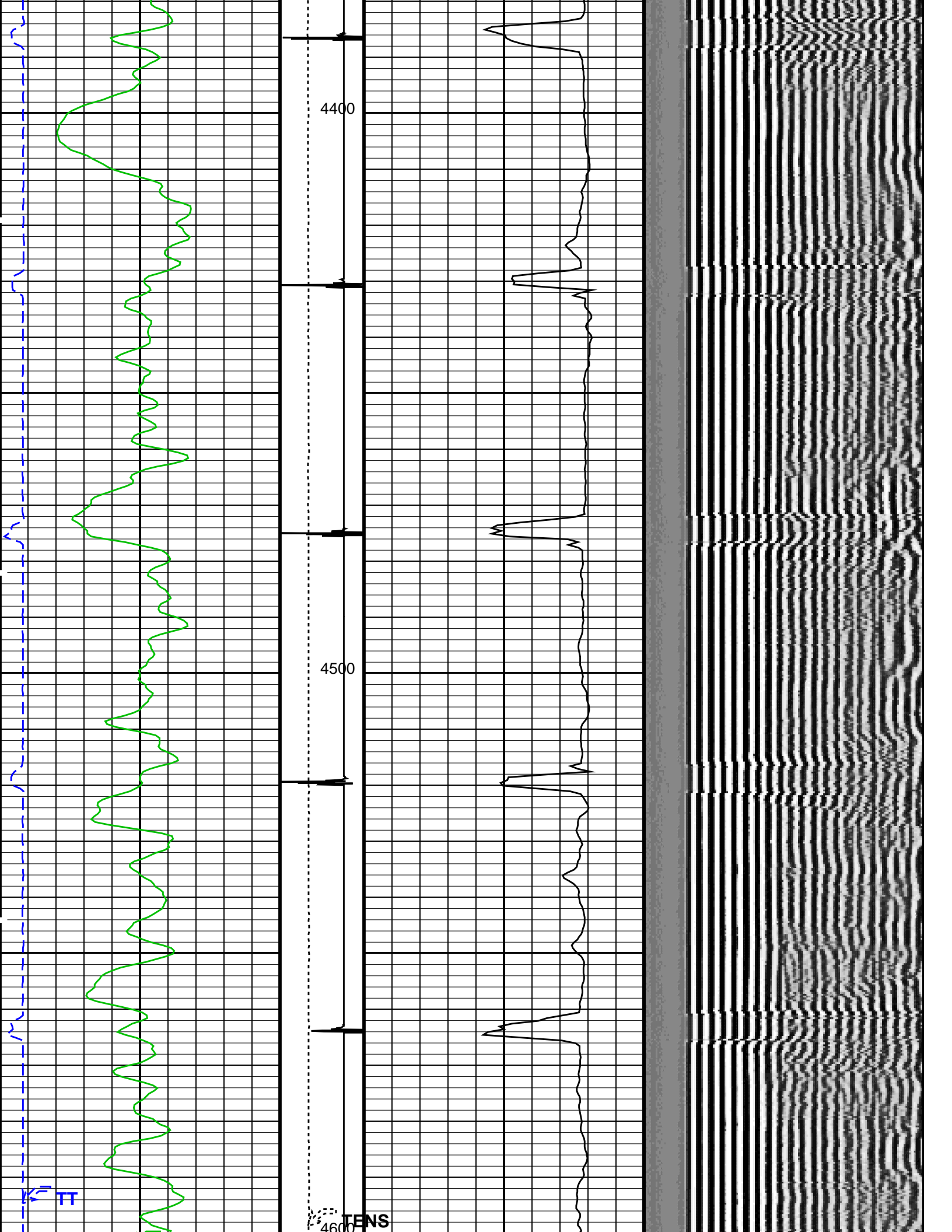


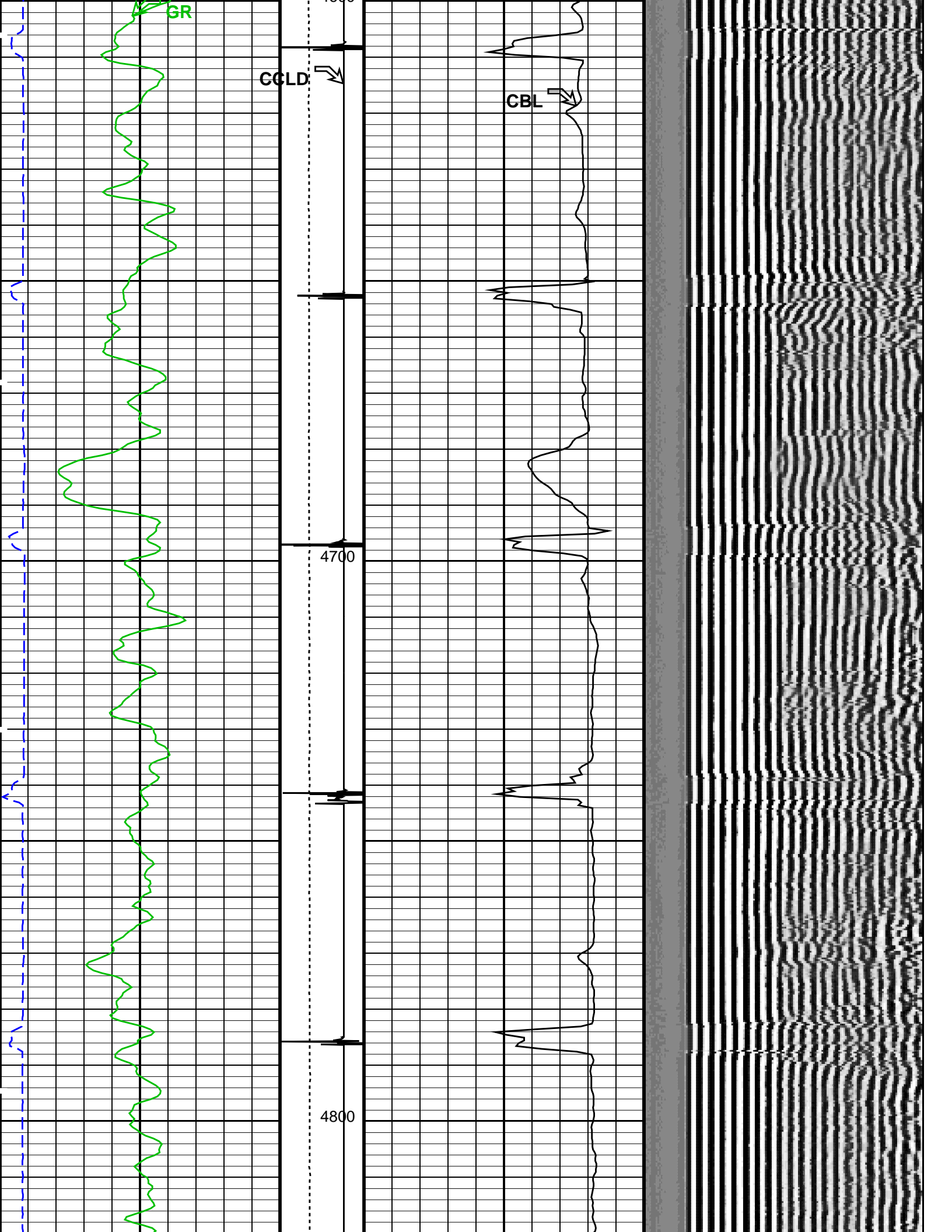


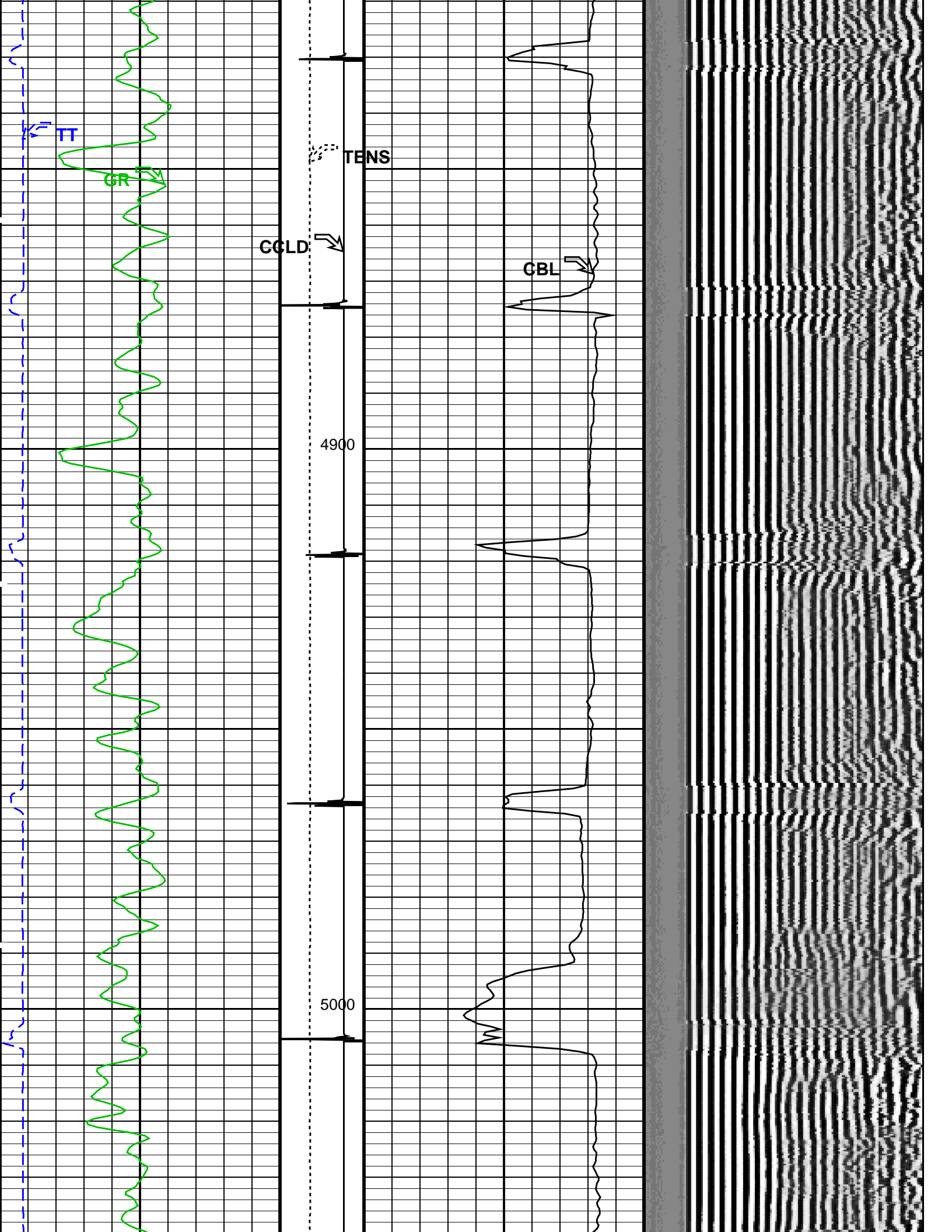


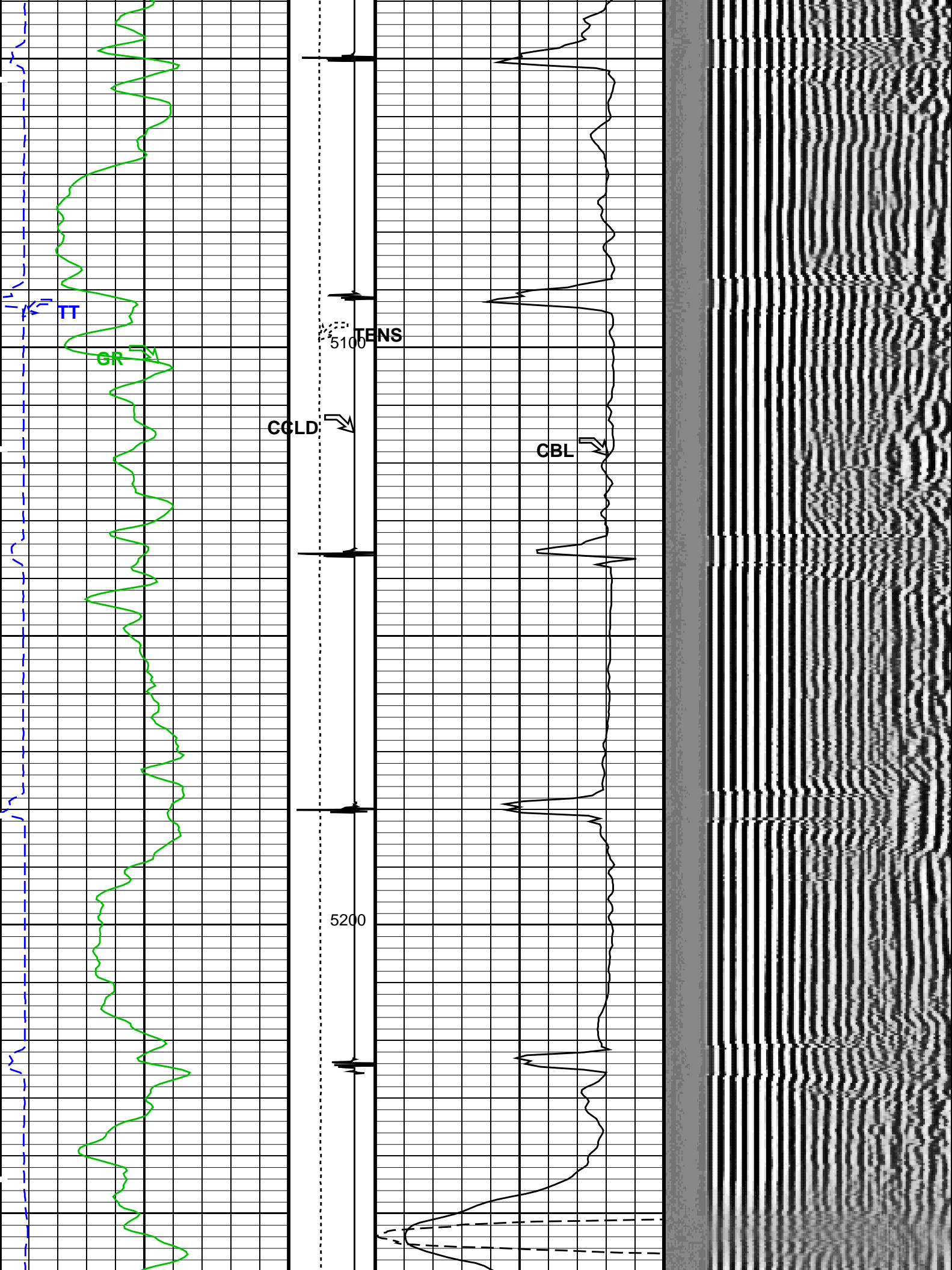




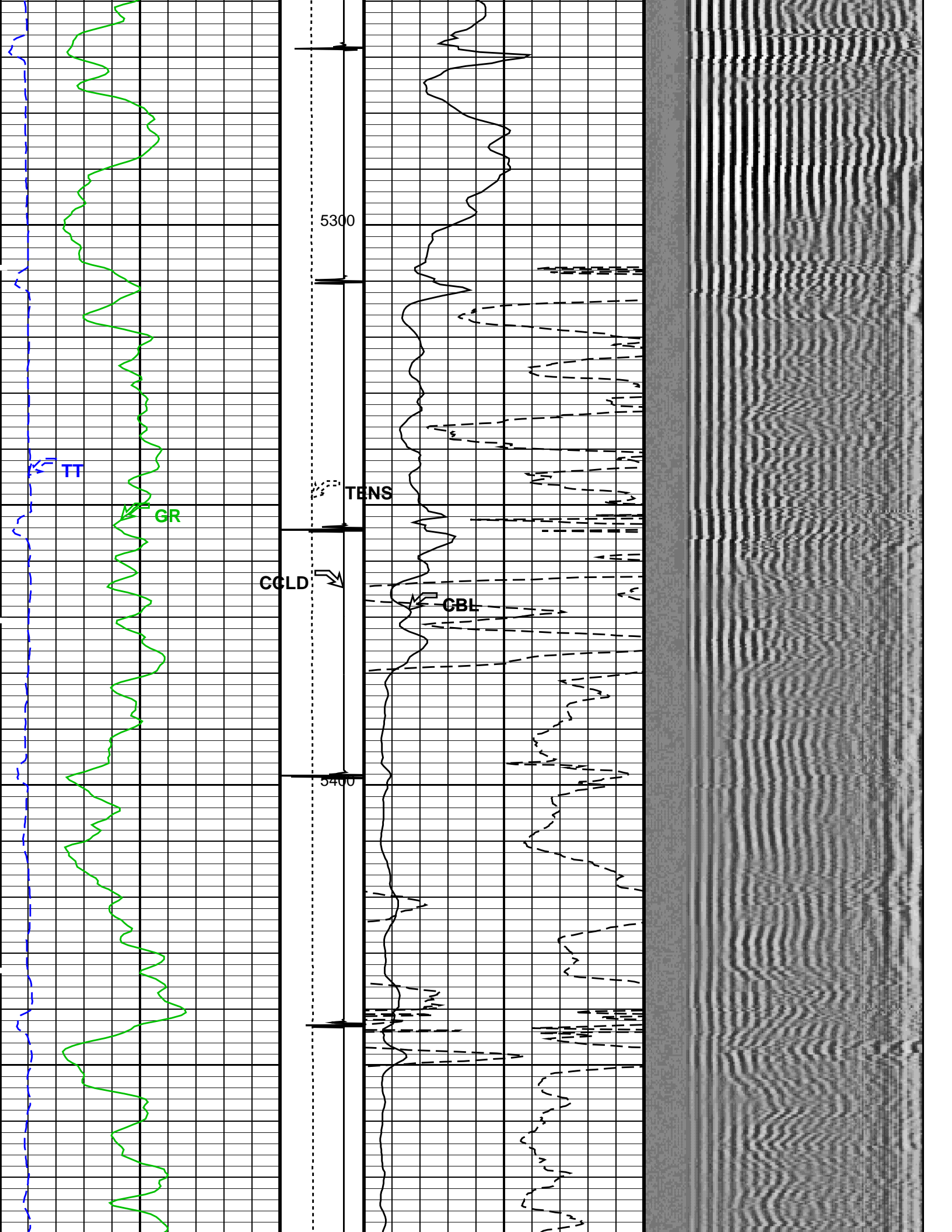


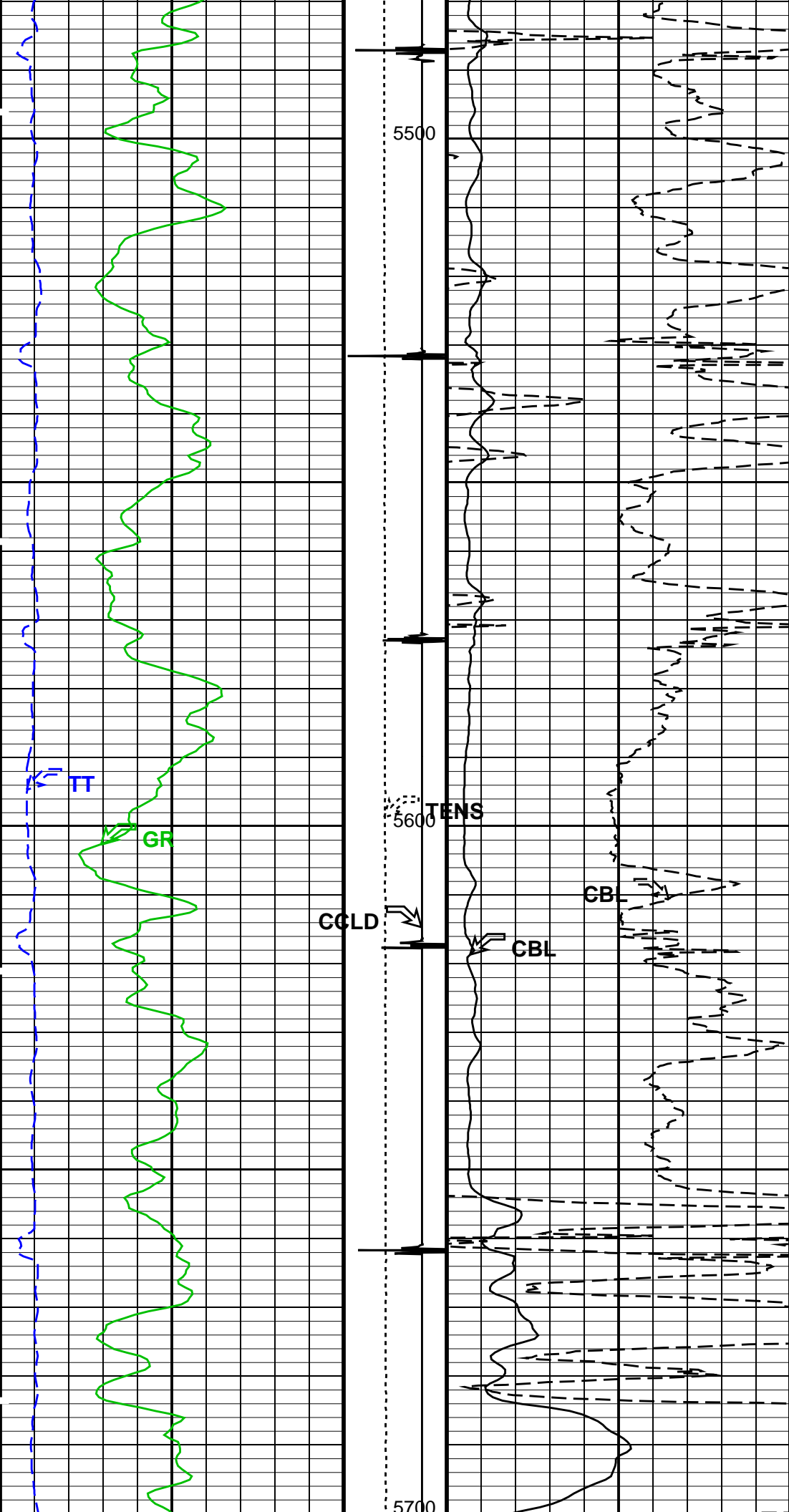


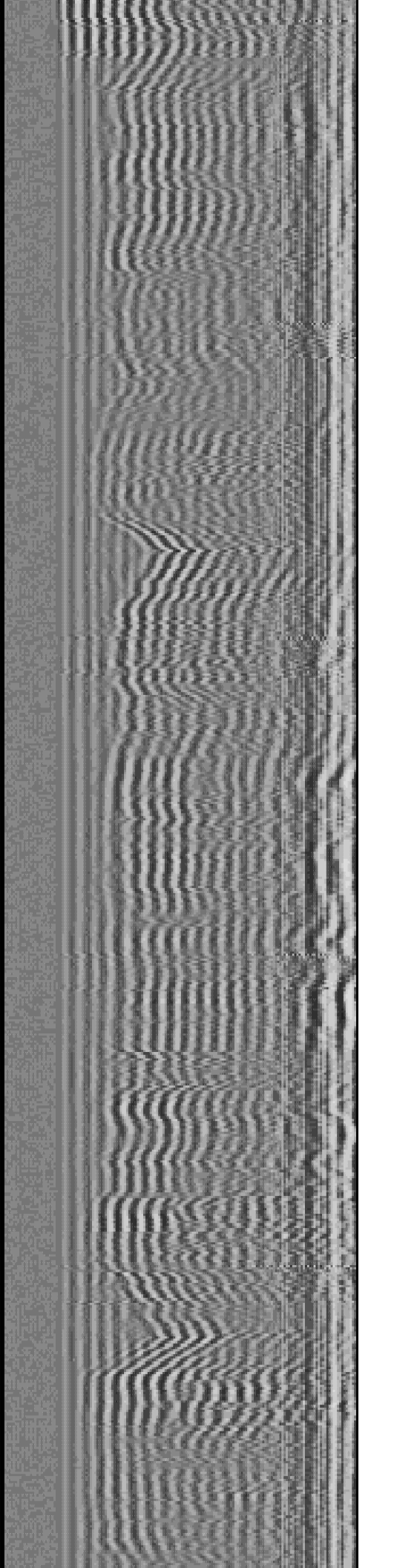
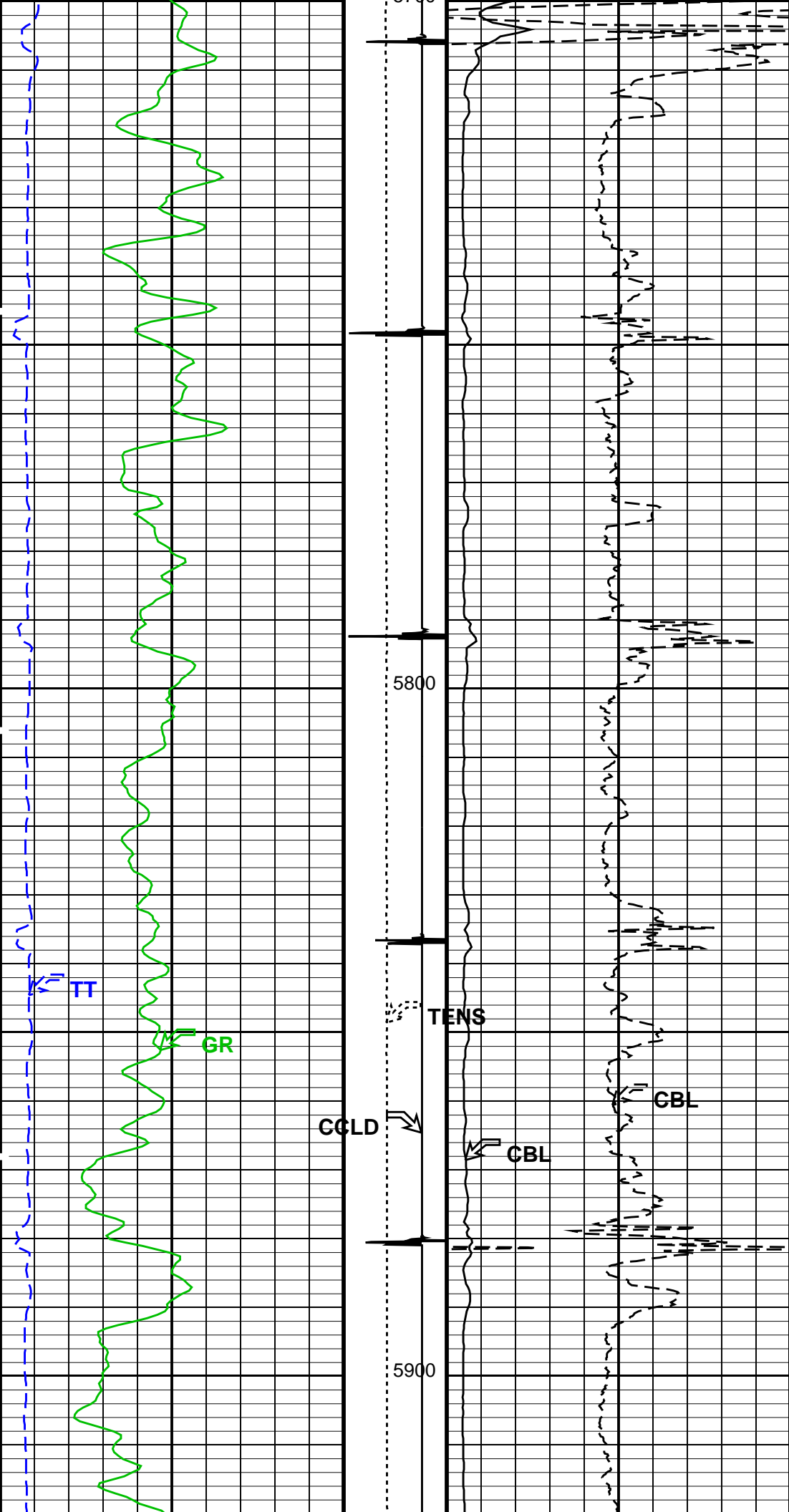


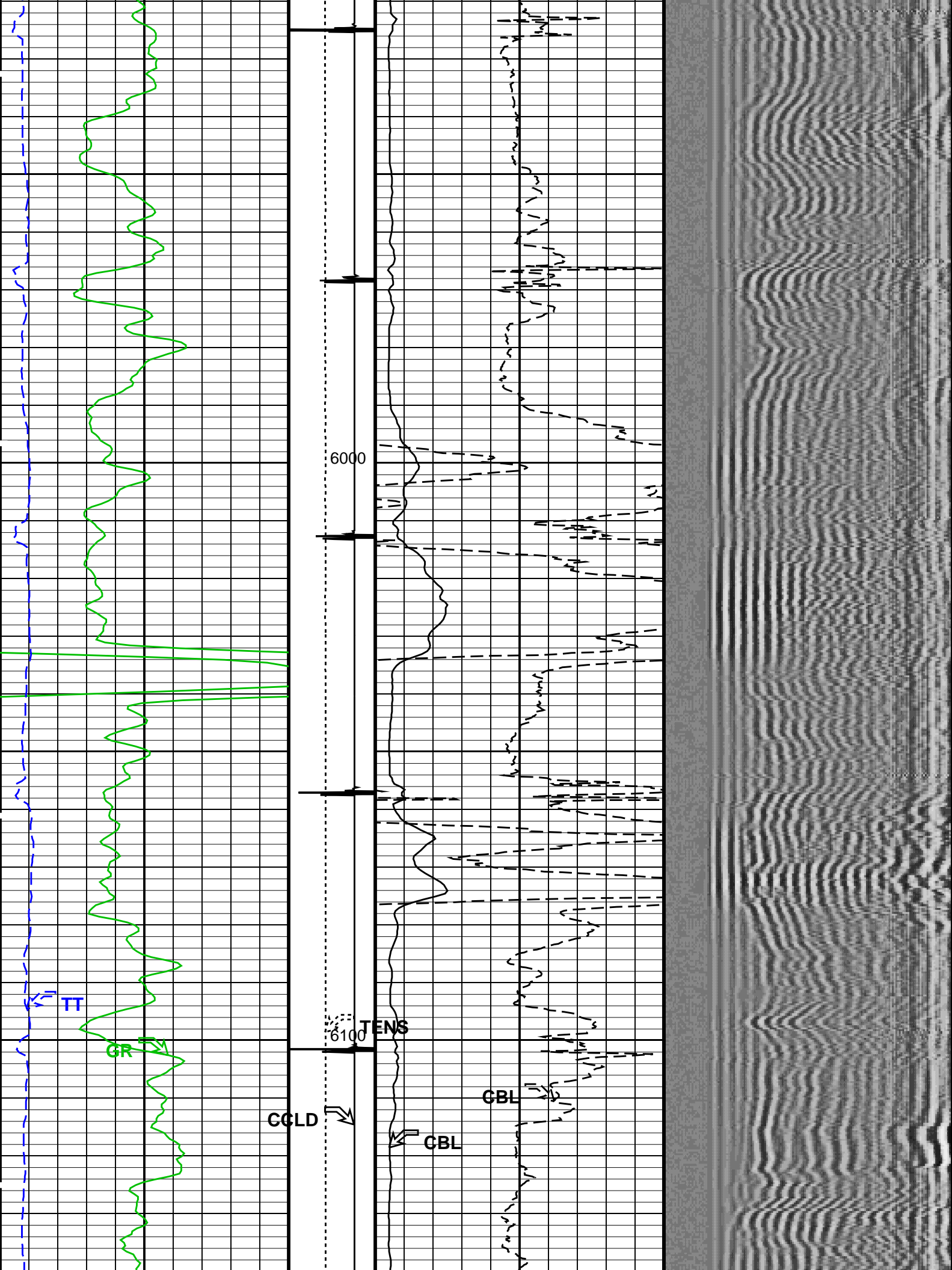




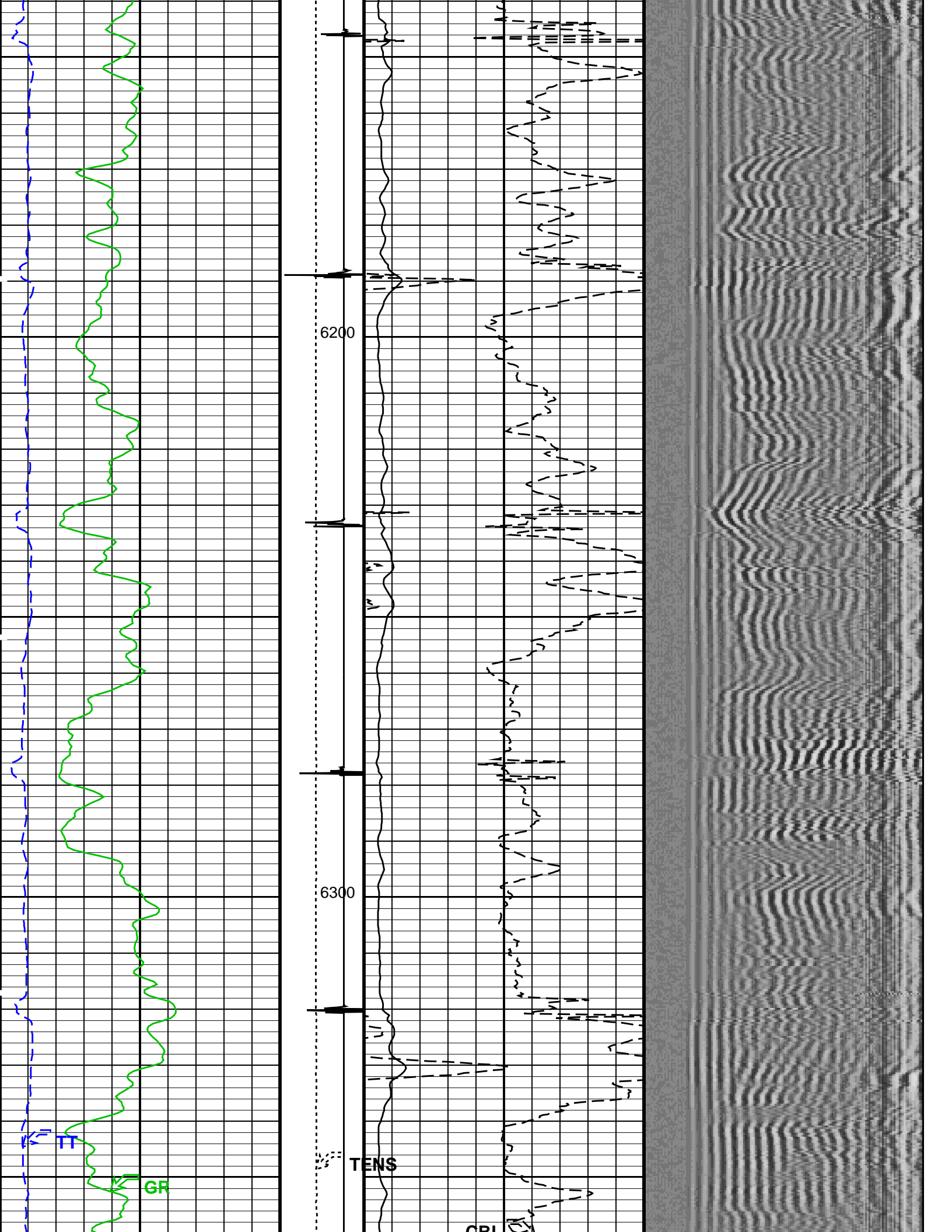


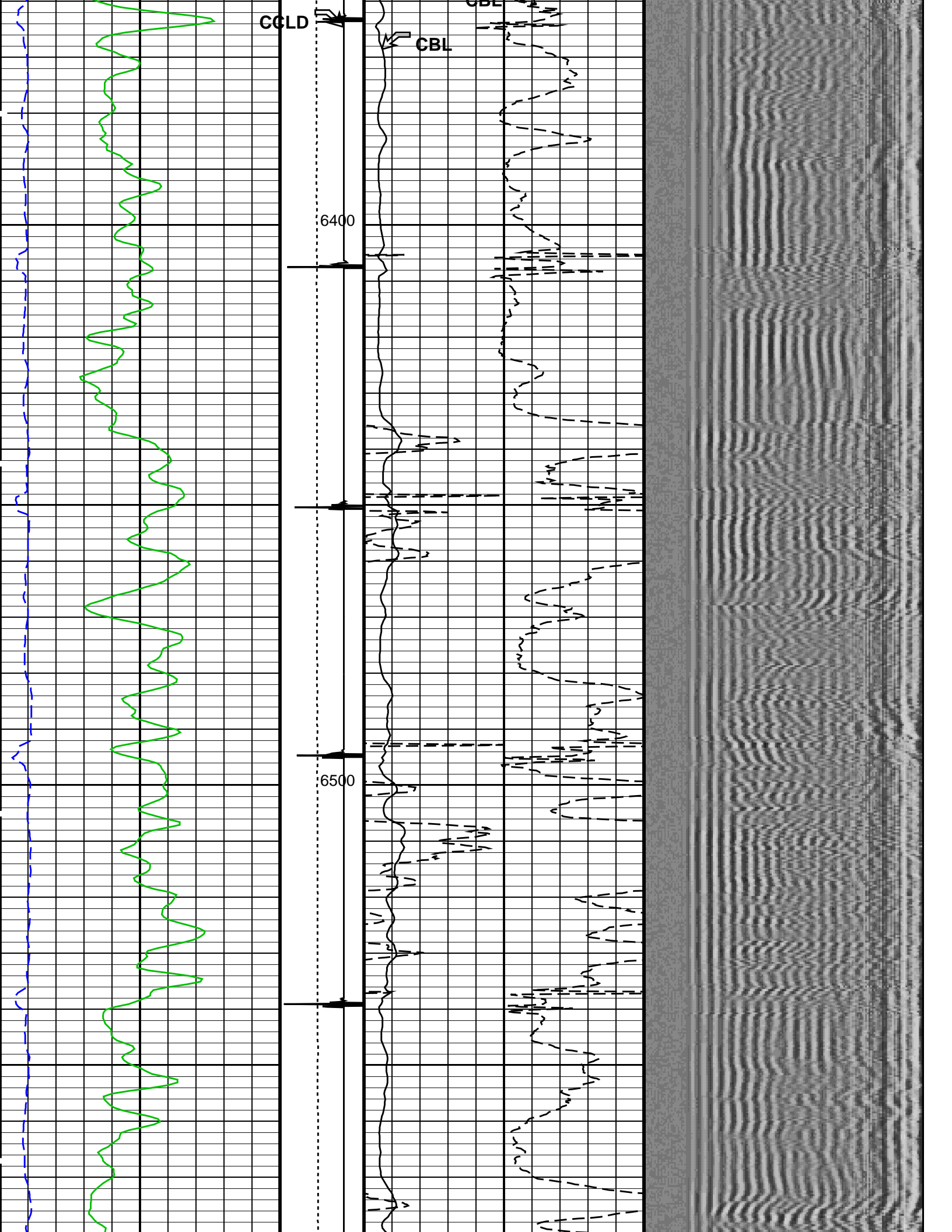


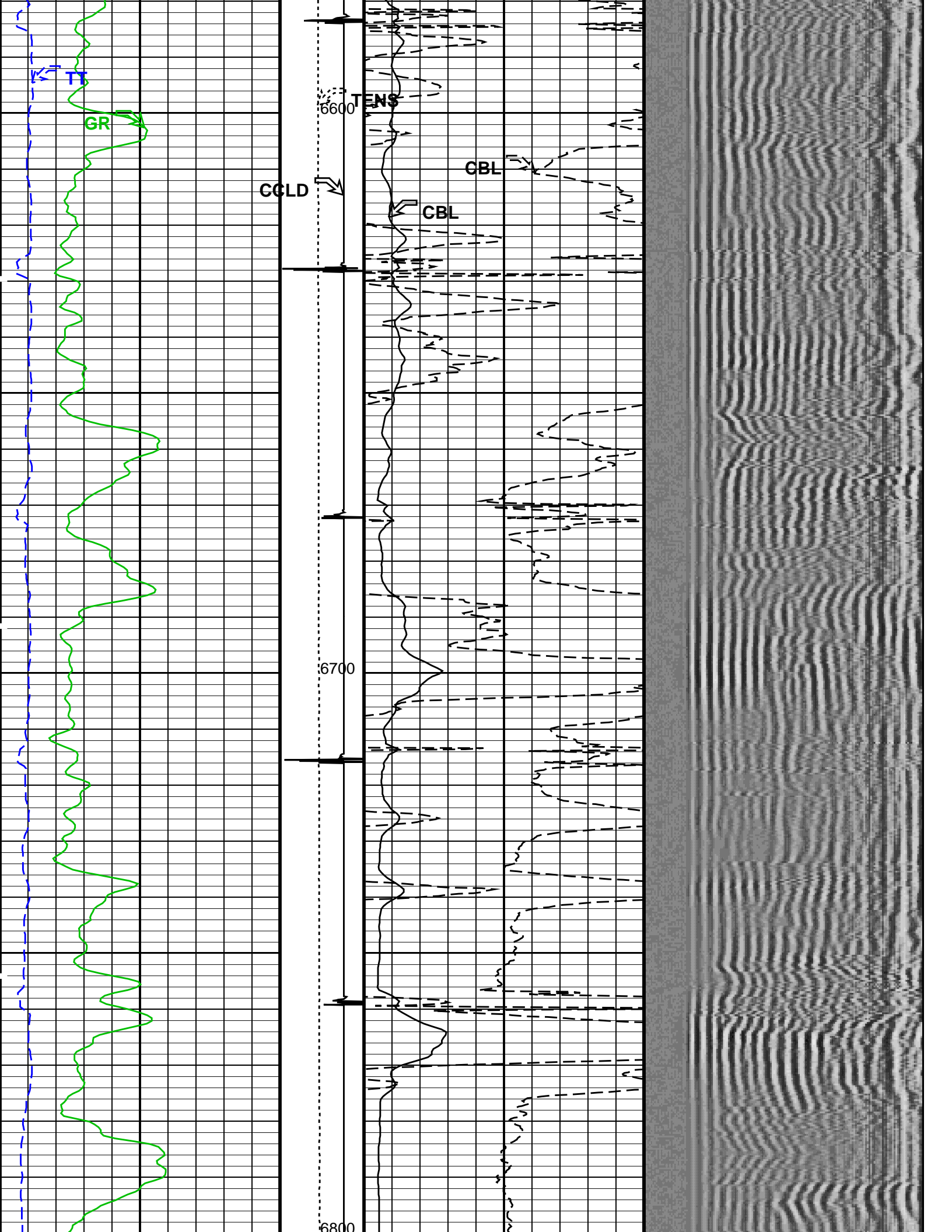


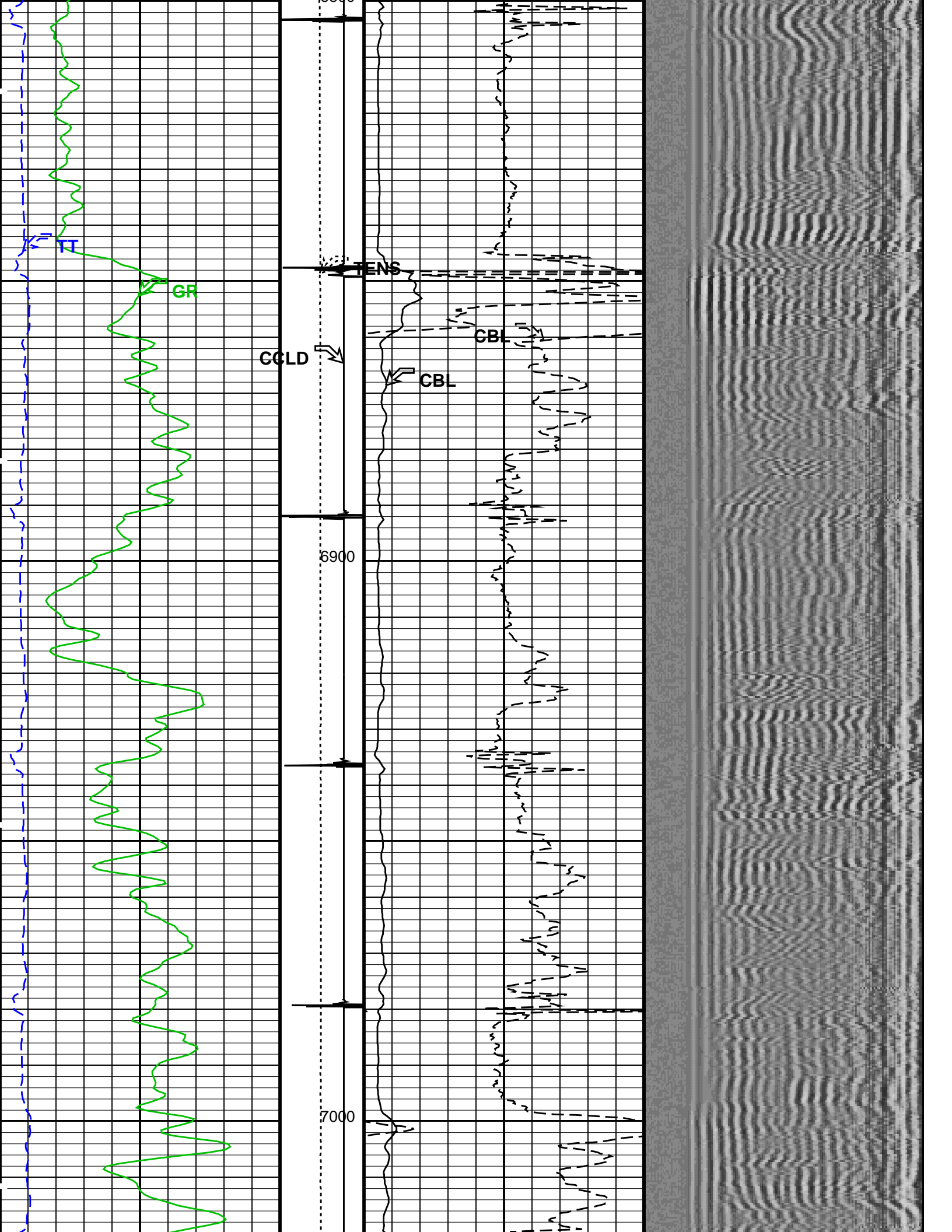




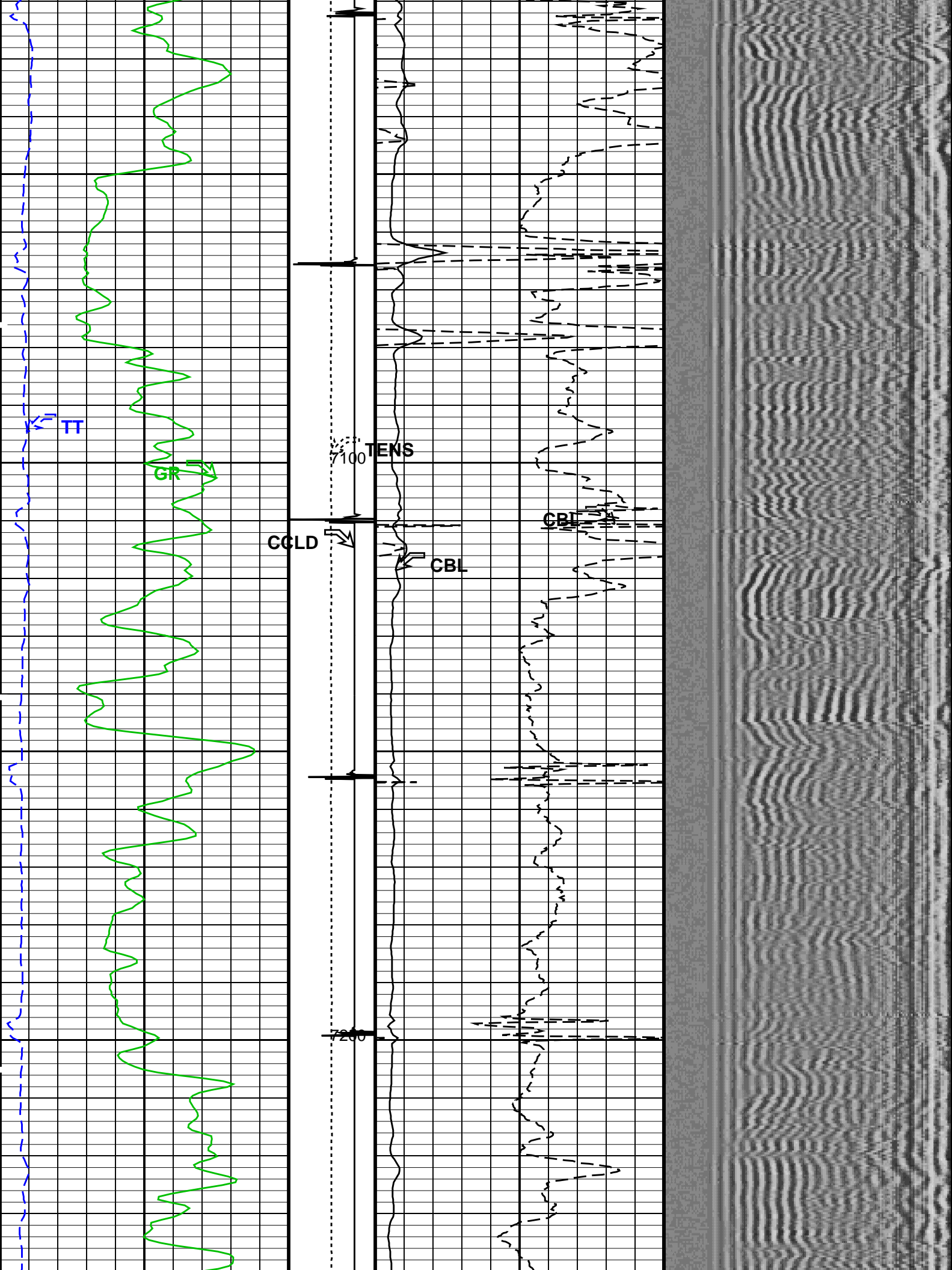


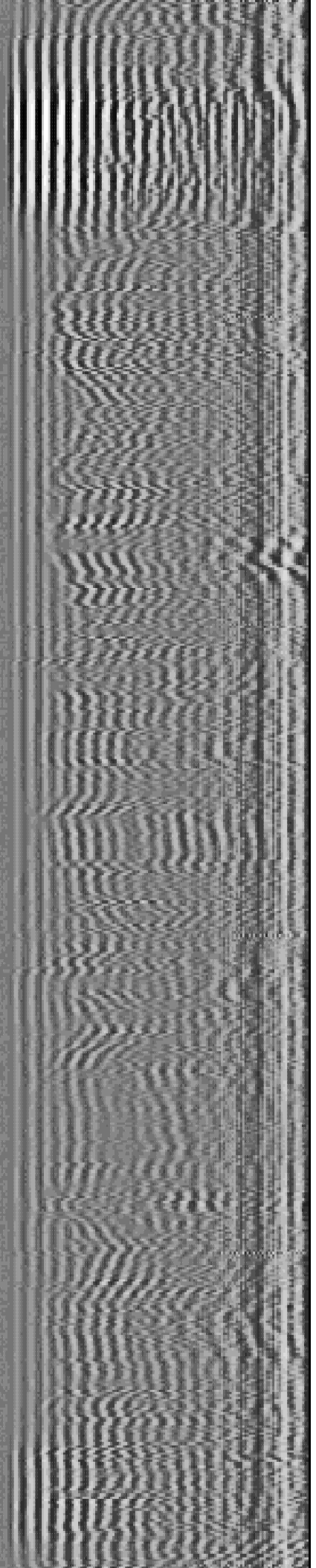
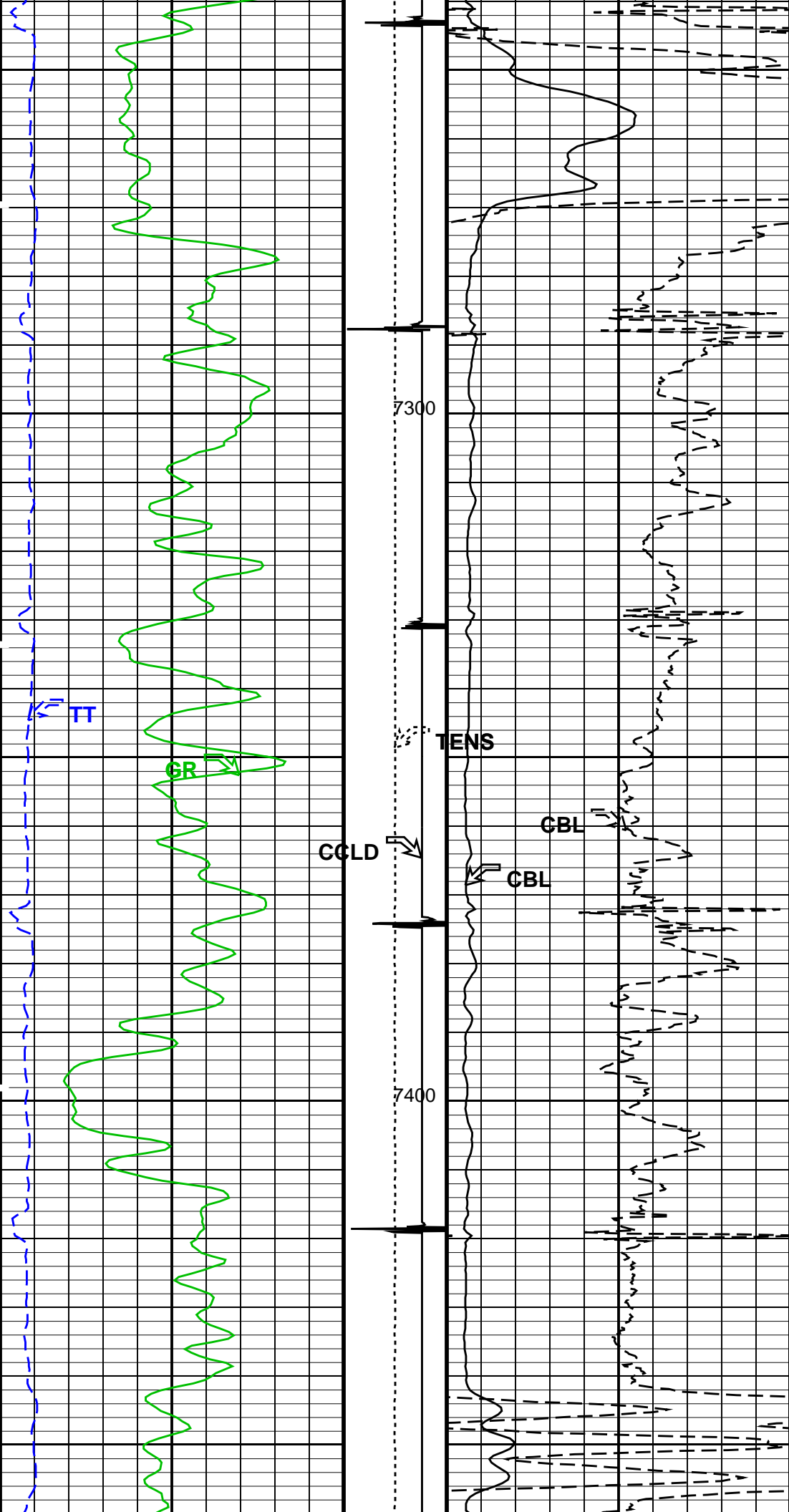


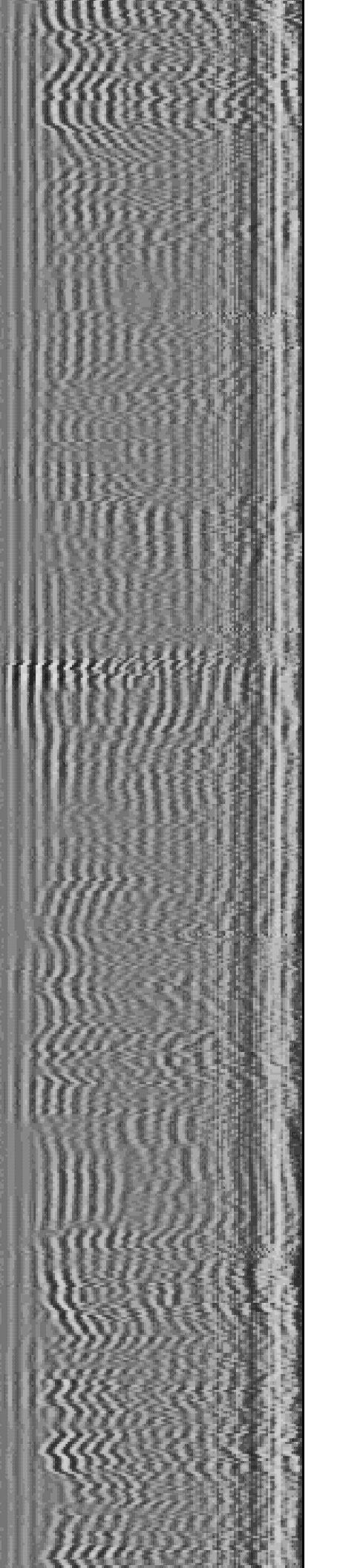
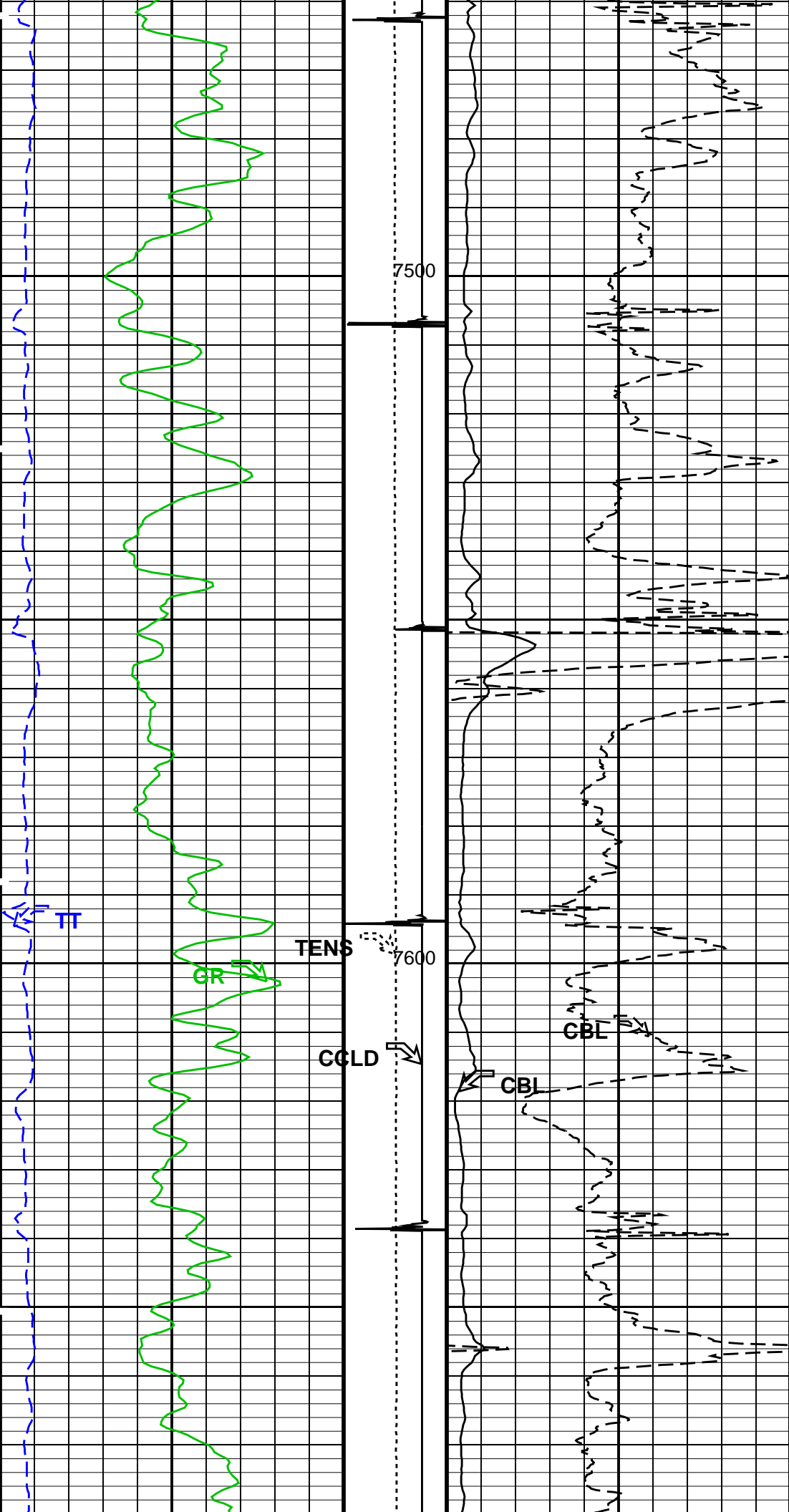


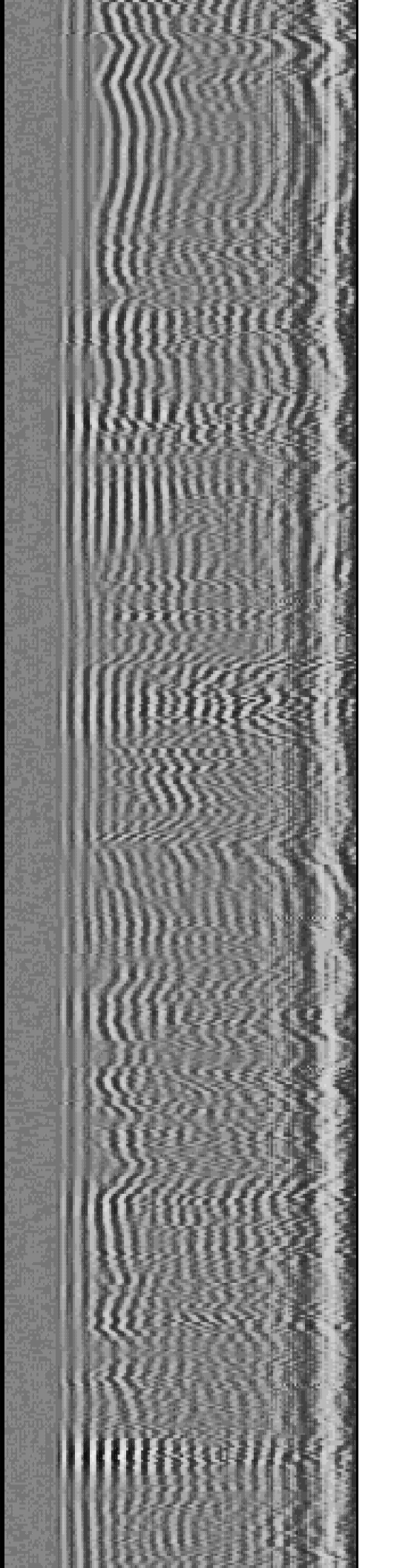
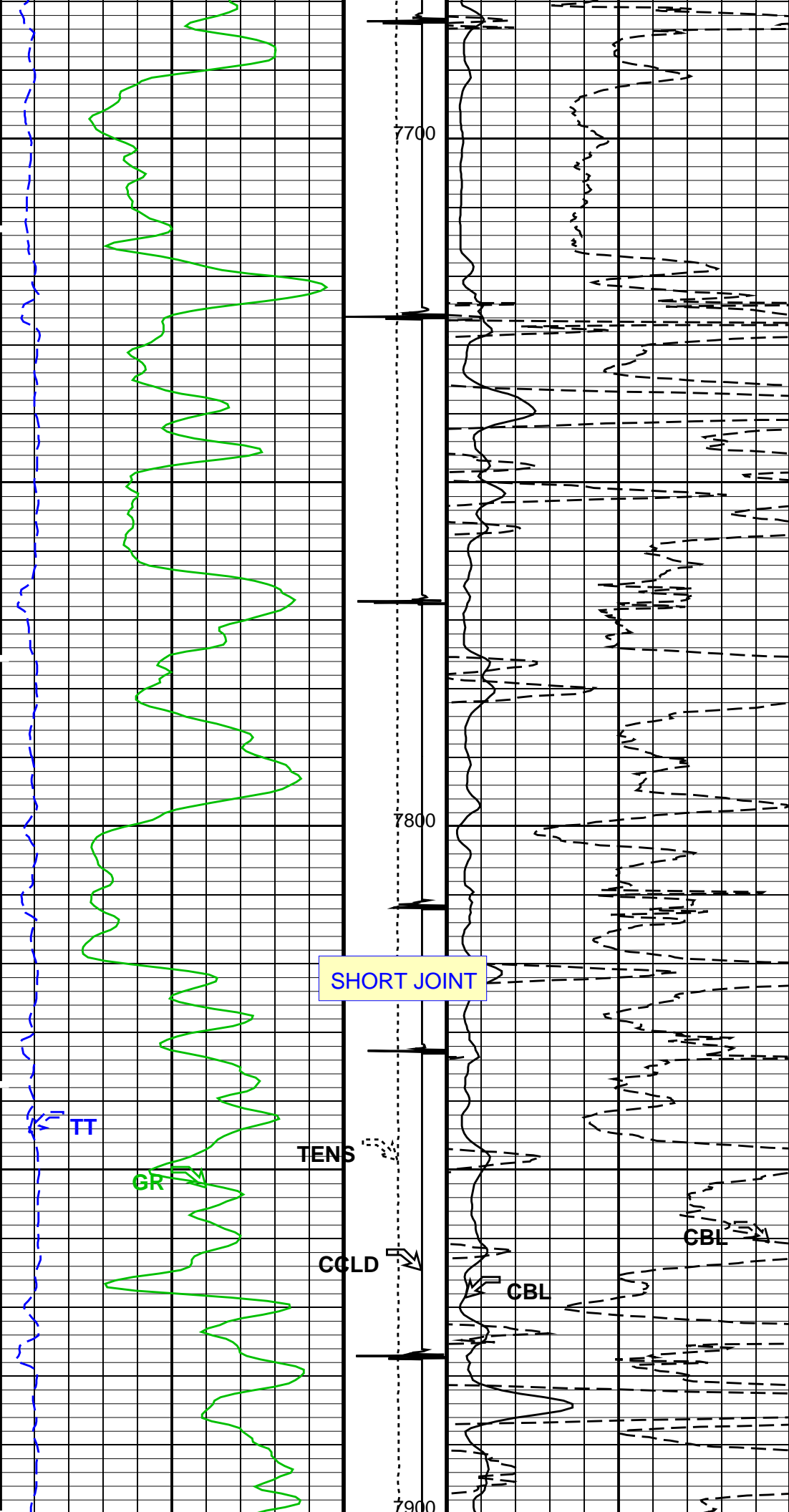




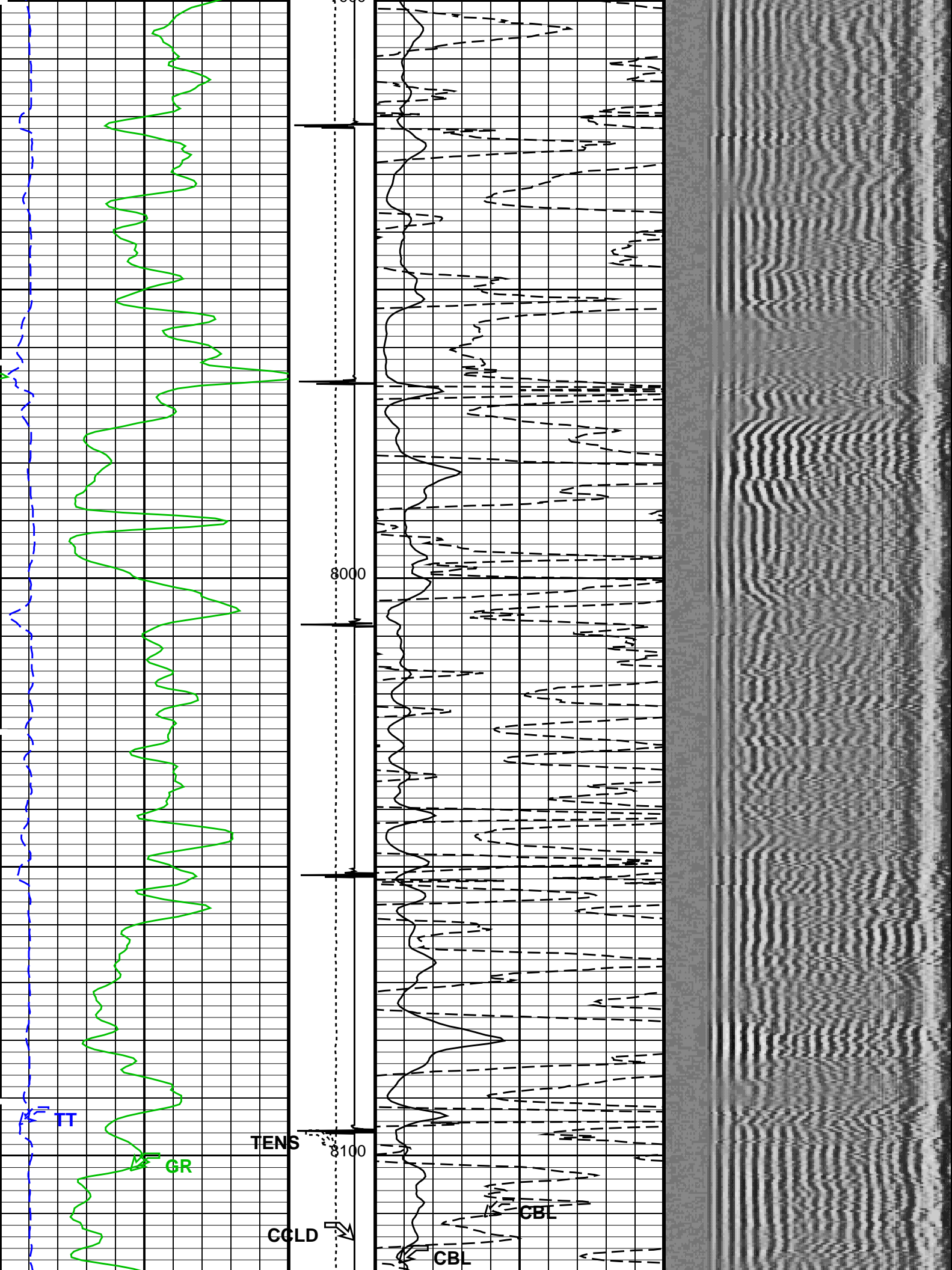




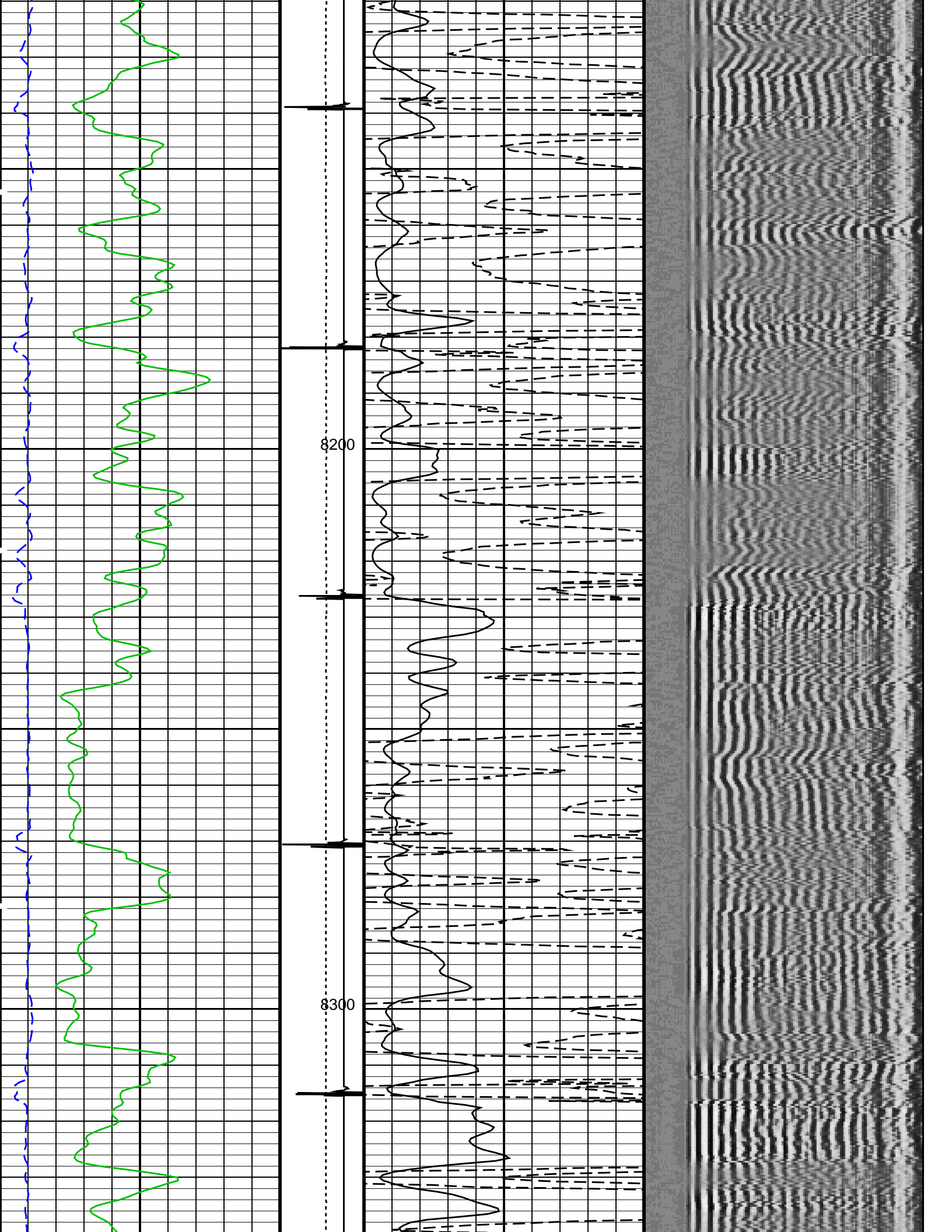


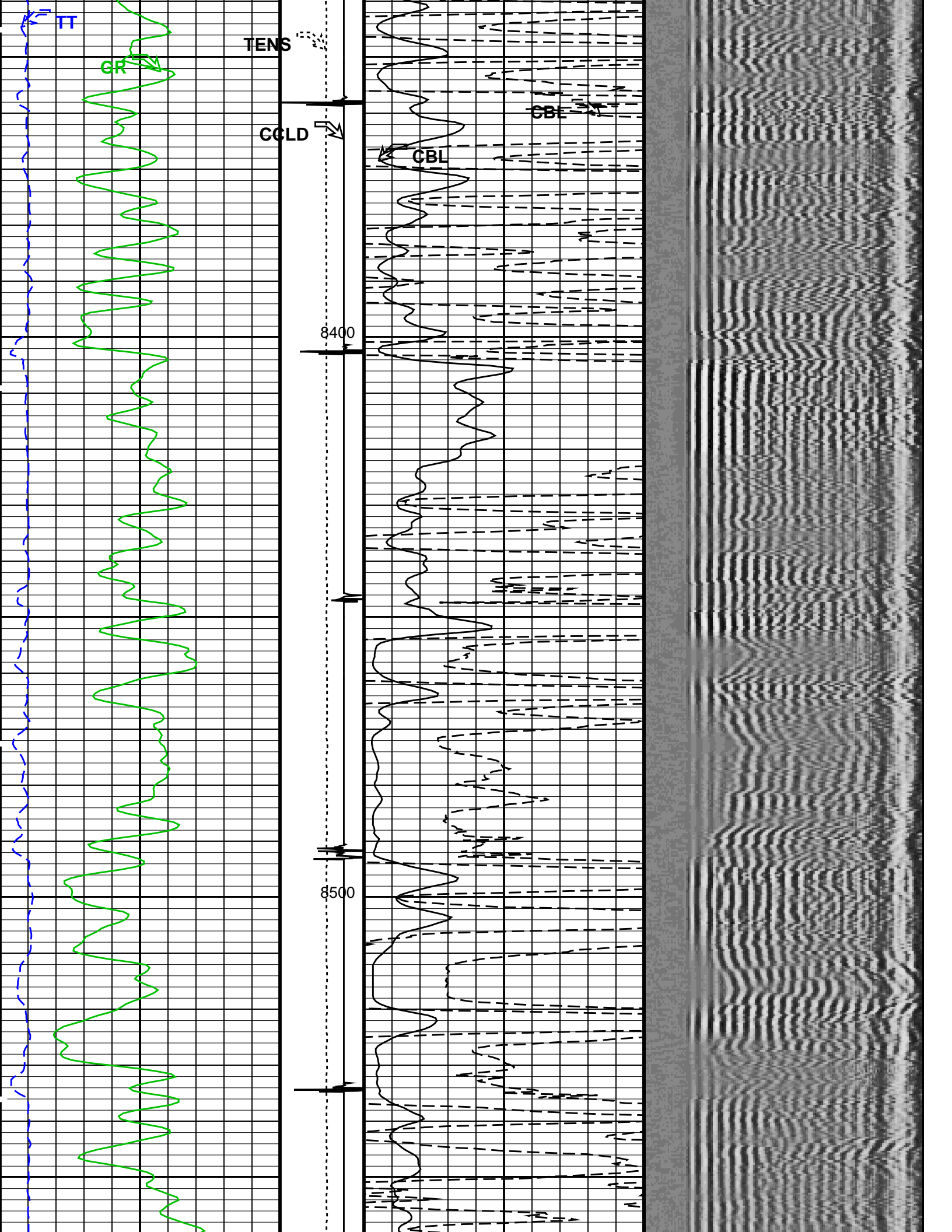


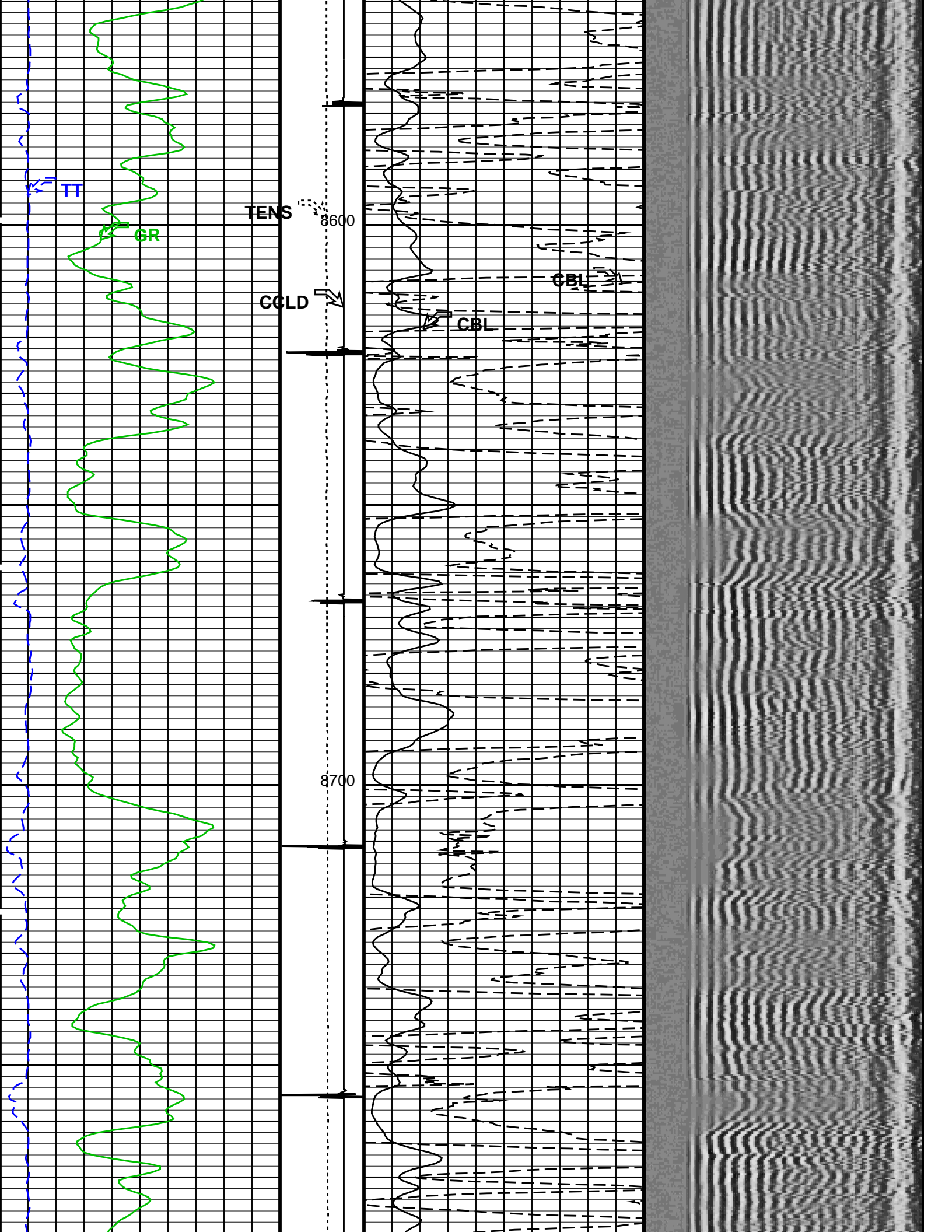




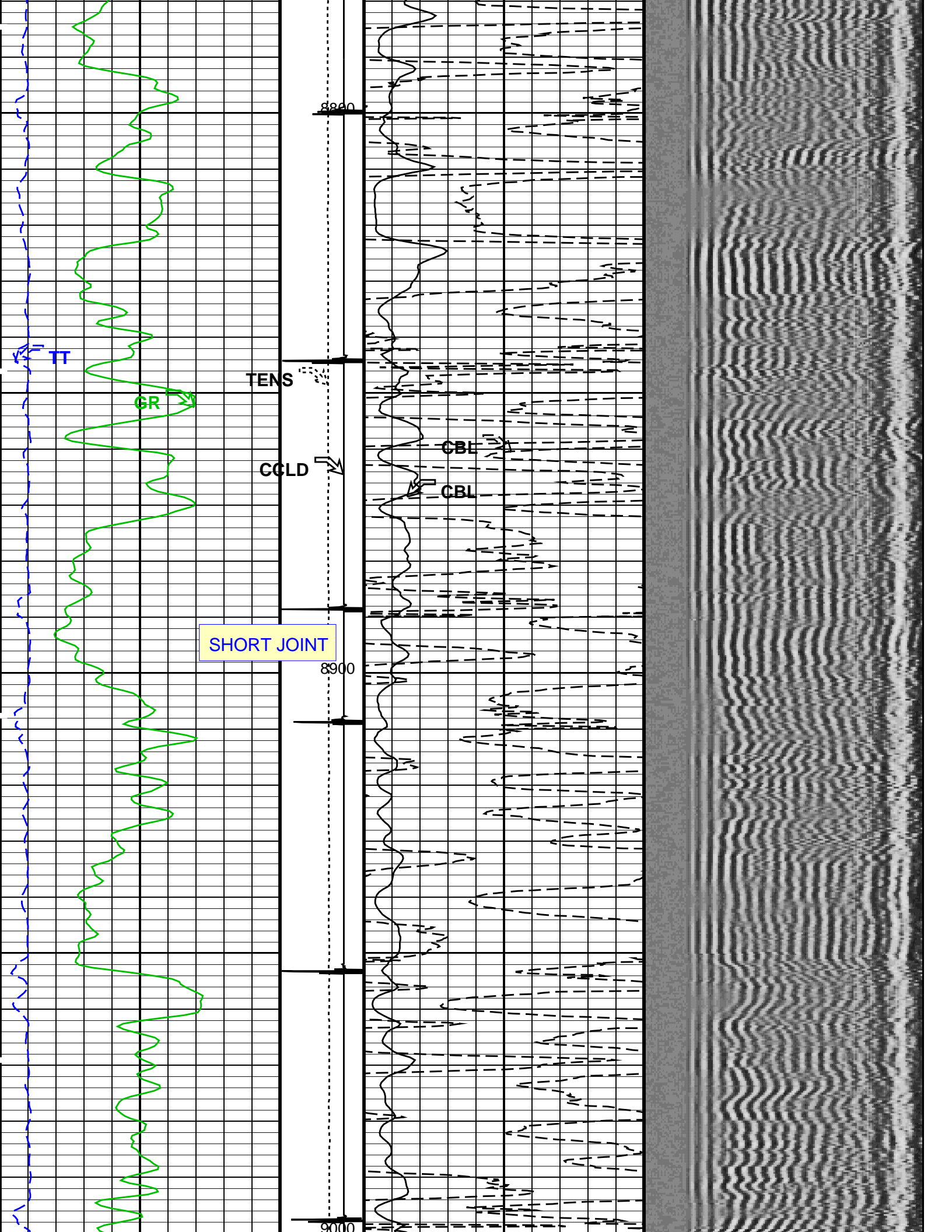


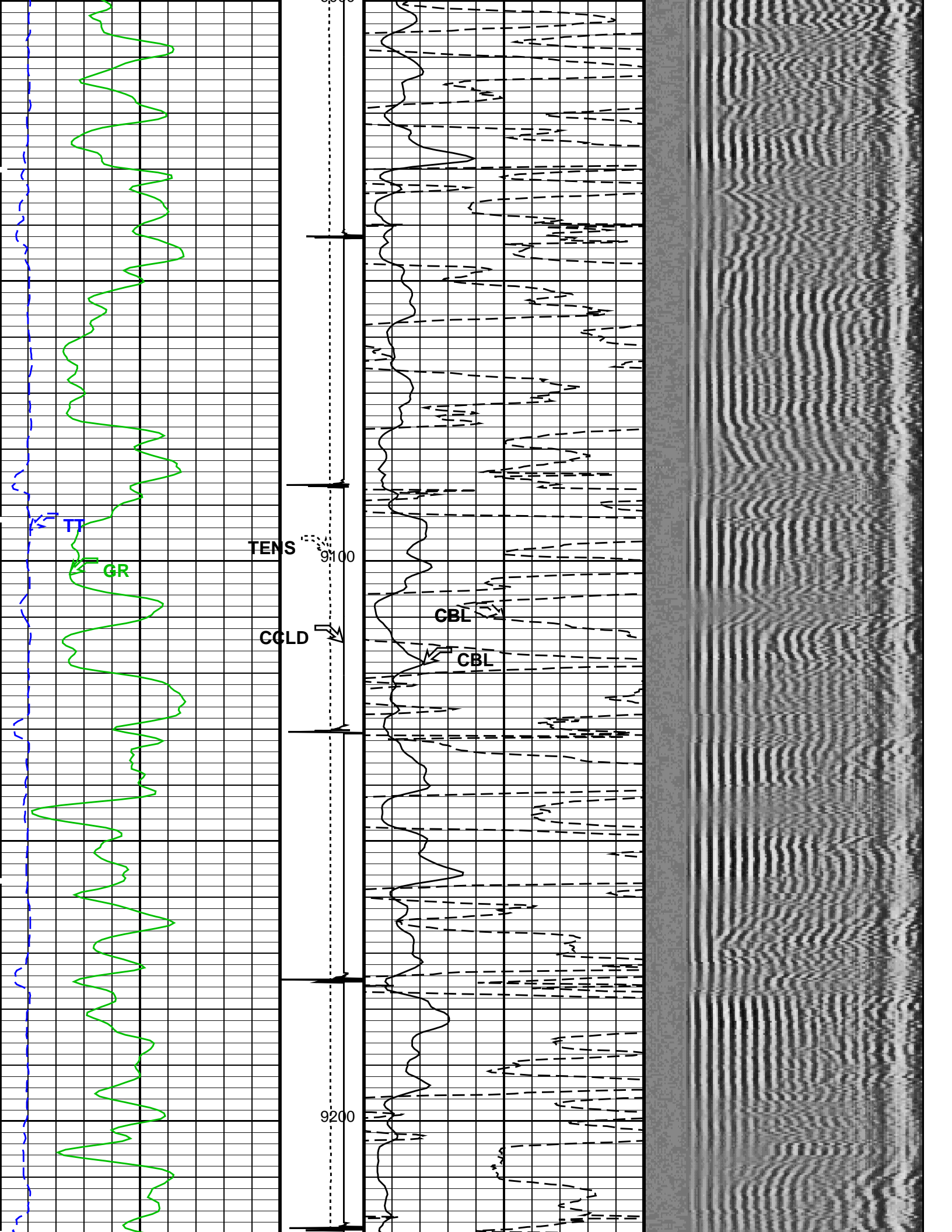




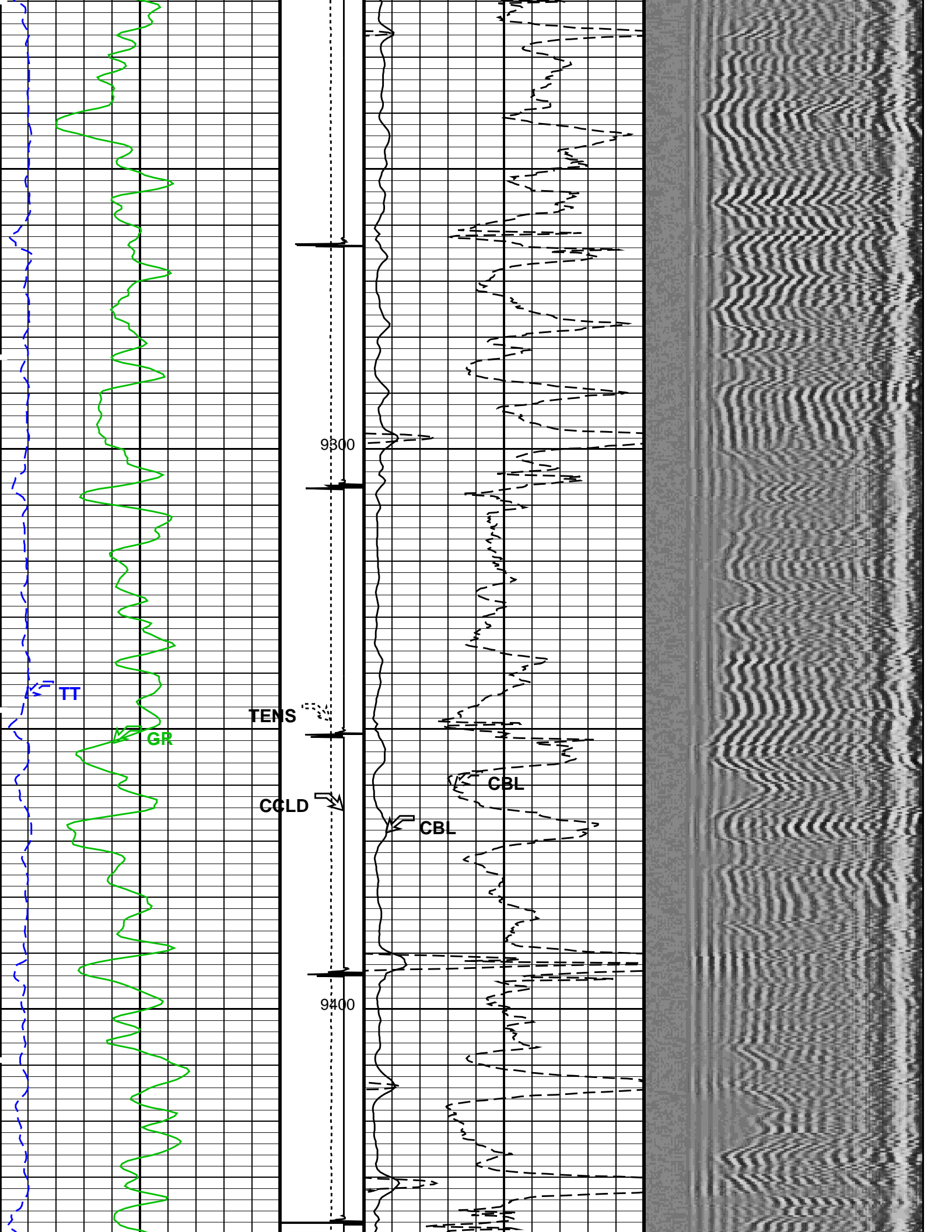


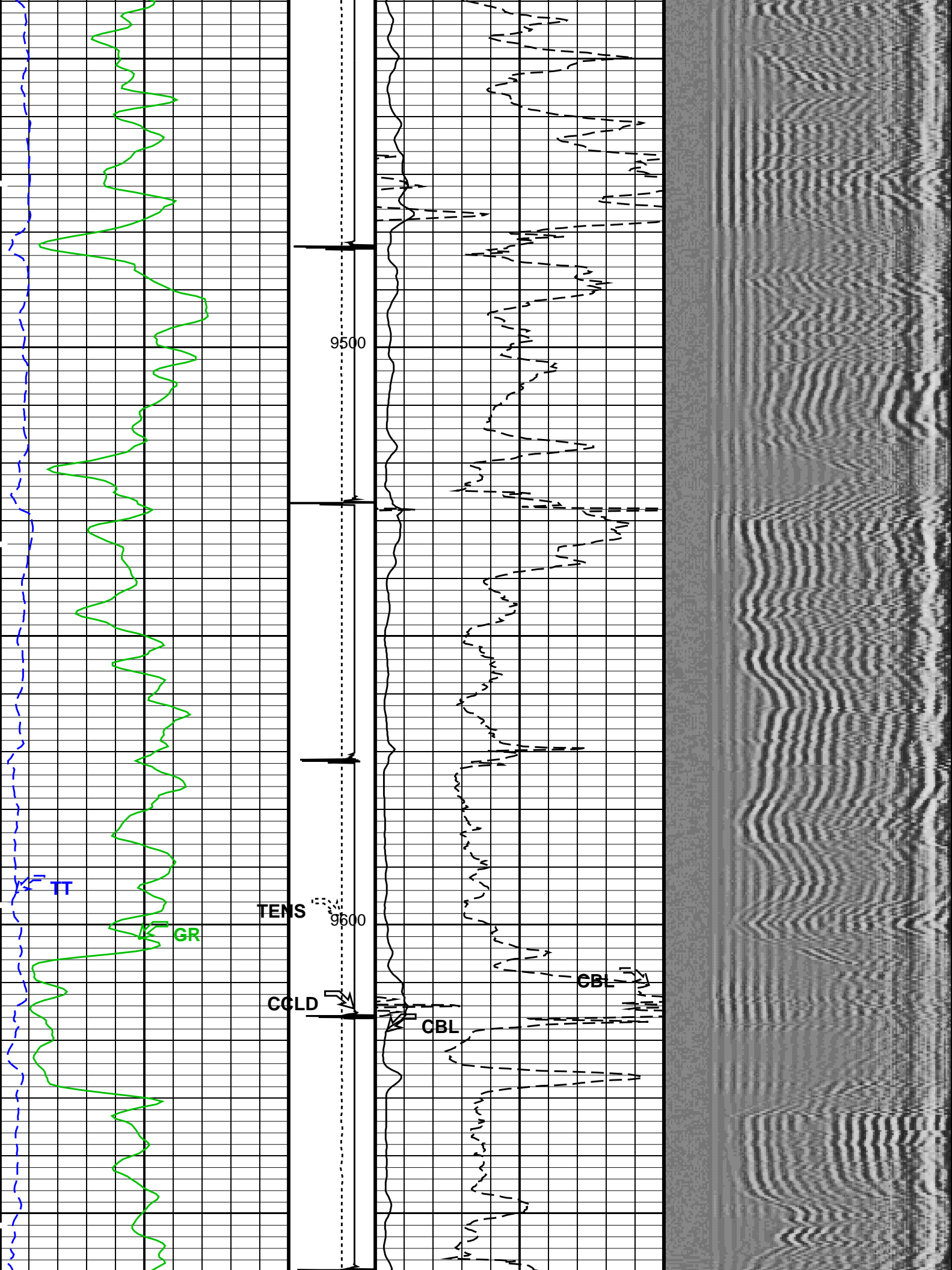


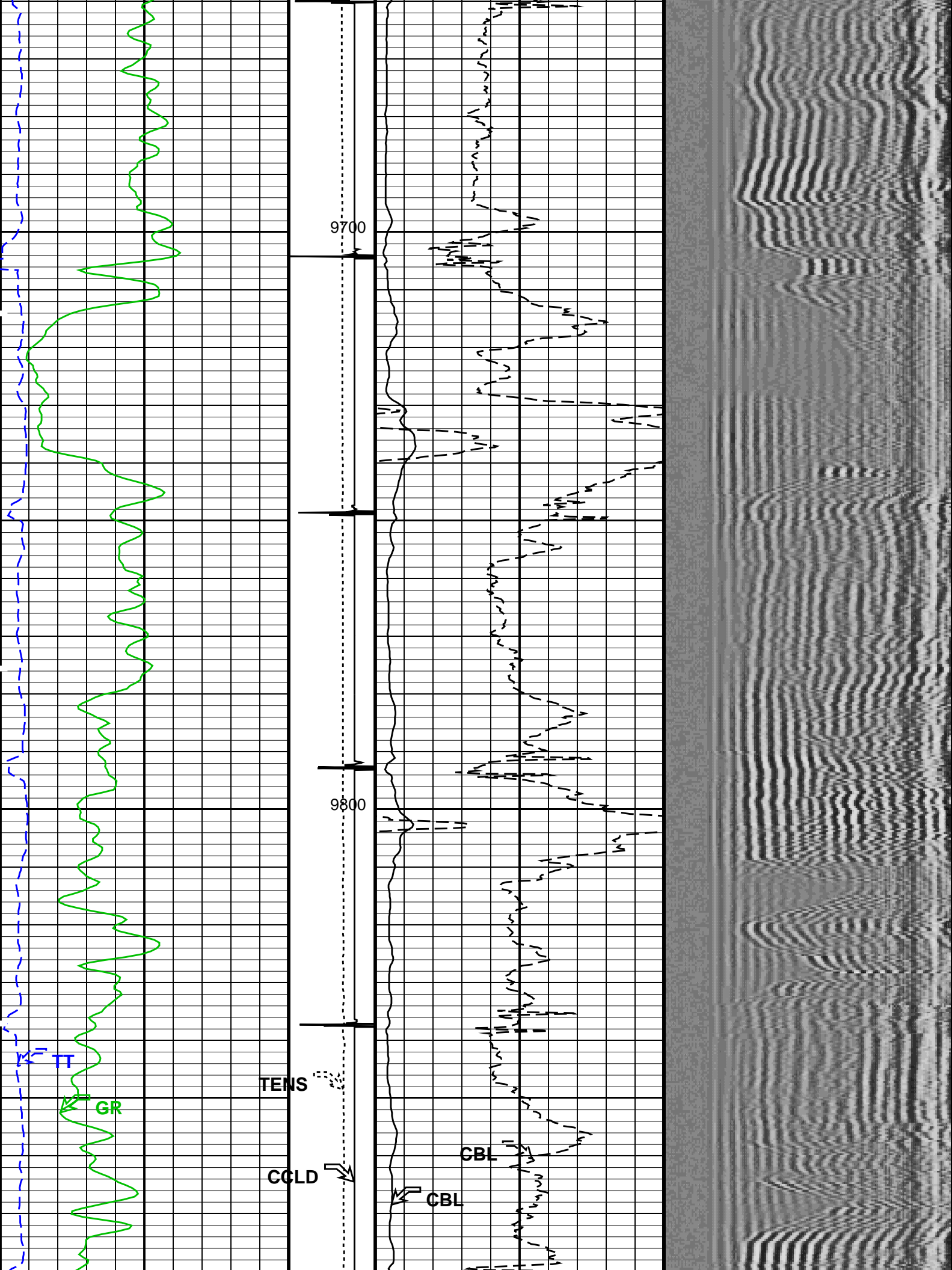


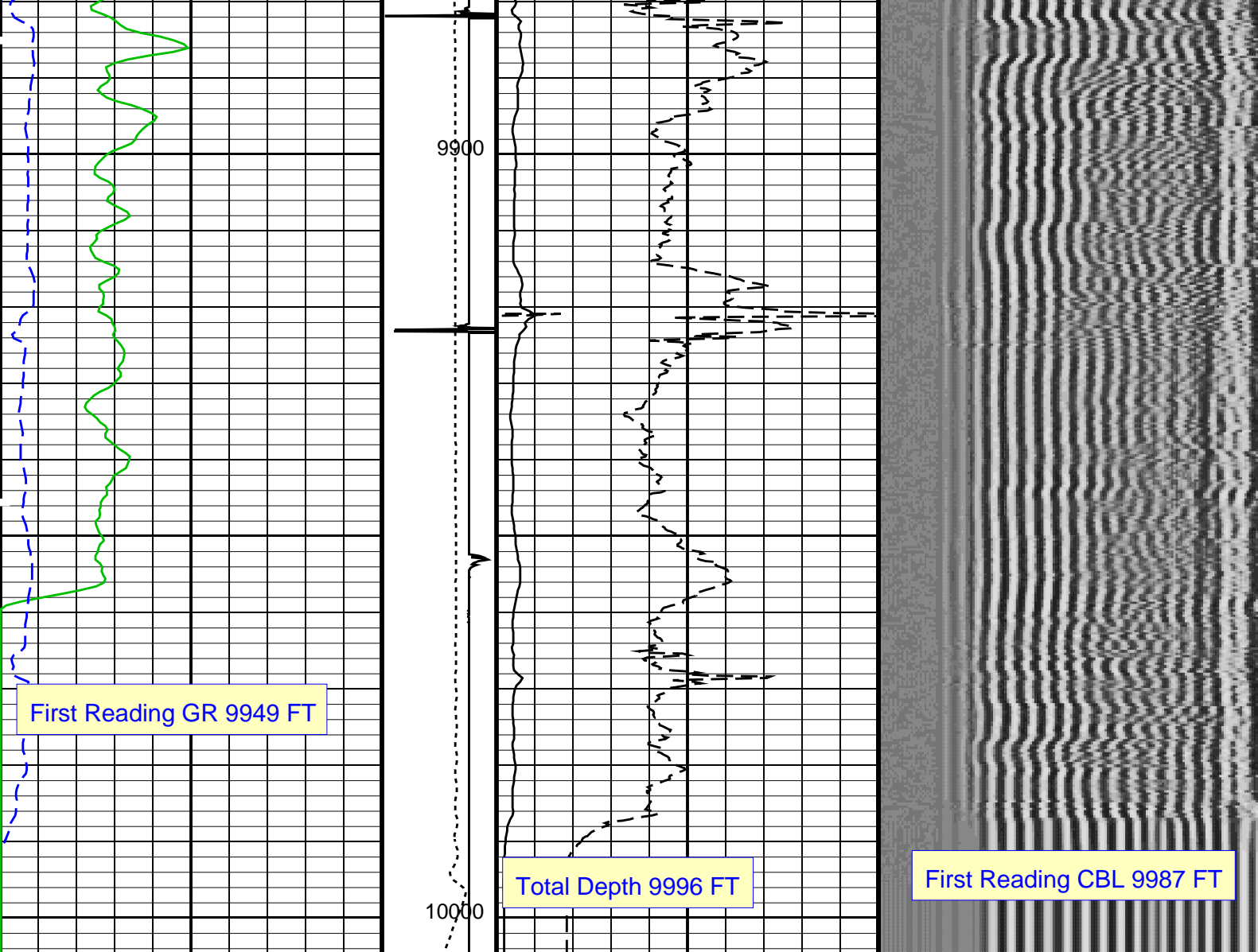












Gamma Ray (GR) (GAPI)	Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min 200	Amplitude VDL Variable Density (VDL) (US)	Max 1200
0 150	0 2000	0 100			
Transit Time (TT) (US)	Discriminat ed CCL (CCLD) (V)	CBL Amplitude (CBL) (MV)			
260 160	3 -1	0 10			

#### PIP SUMMARY

Time Mark Every 60 S

Format: CBL\_VDL Vertical Scale: 5" per 100'

Graphics File Created: 30-Aug-2013 14:25

### 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 8179

Current Casing Size 4.50000 IN

Casing Weight 11.6000 LB/F

Expected CBL Amplitude 80 MV

in Free Pipe Section

Minimum Sonic Amplitude

0.579149 MV (100% Cement)

1.55185 MV (80% Cement)

MAP Minimum Sonic Amplitude

4.32284 MV (100% Cement)



## Master Calibration (Normalization)

## Before Calibration (Adjustment)

Date of Master Calibration 6-MAR-2012

CBL Correction Factor 0.0704263

CBL Adjustment Factor (CBAF) 1.0

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	0.924277	
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			
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	3.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9996	FT

## Input DLIS Files

DEFAULT	SCMT_RST_PSP_011LUP	FN:10	PRODUCER	30-Aug-2013 11:39	10002.0 FT	20.5 FT
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## Output DLIS Files

DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	30-Aug-2013 14:25
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Company: ENCANA OIL &amp; GAS (USA) INC

Well: MCU 16-13CC (M16W)

## Input DLIS Files

DEFAULT	SCMT_RST_PSP_007LUP	FN:6	PRODUCER	30-Aug-2013 10:19	7997.0 FT	7691.5 FT
DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	30-Aug-2013 14:25	10005.0 FT	-21.0 FT

## Output DLIS Files

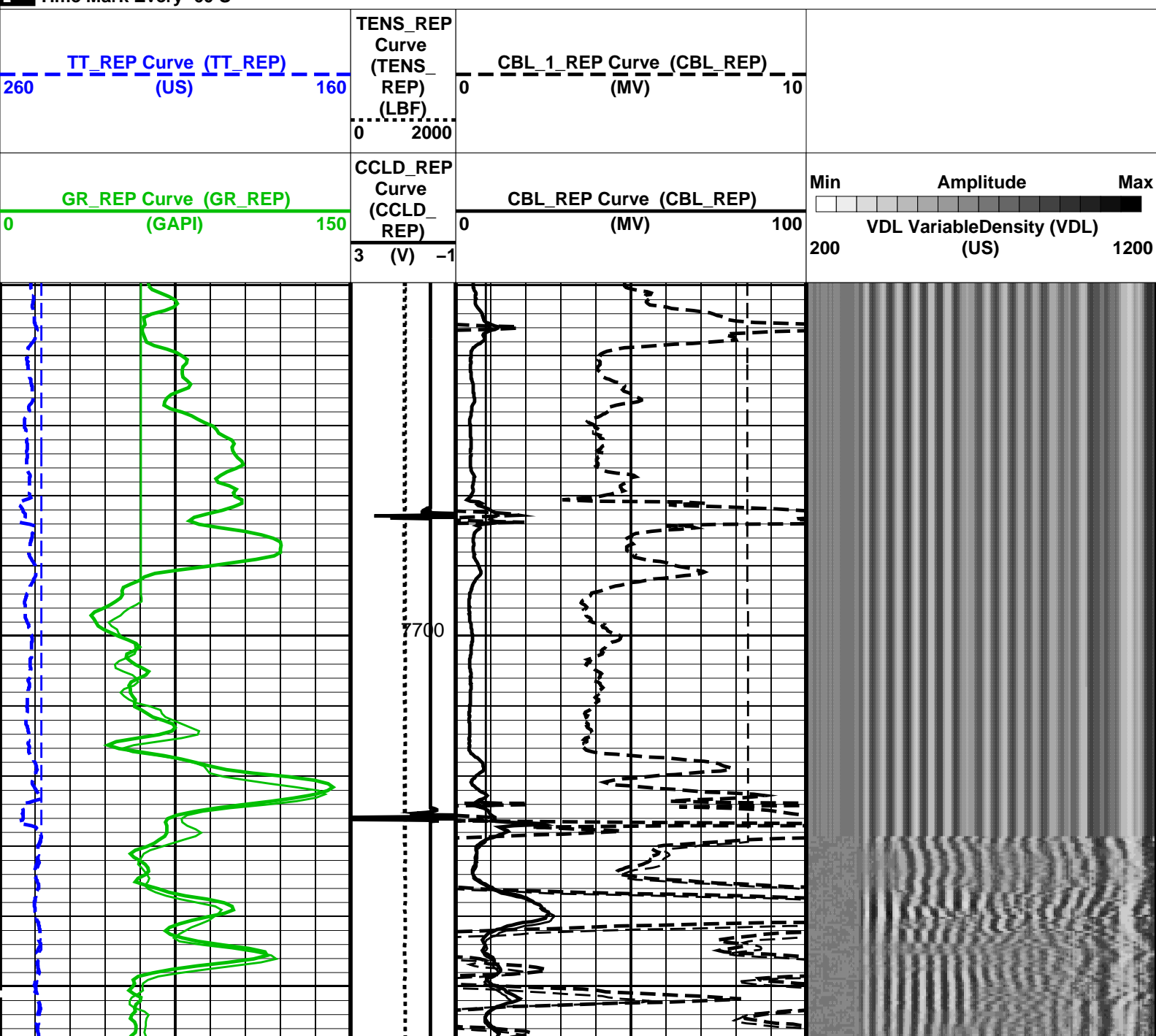
DEFAULT	SCMT_RST_PSP_017PUP	FN:16	PRODUCER	30-Aug-2013 14:34	7999.0 FT	7649.0 FT
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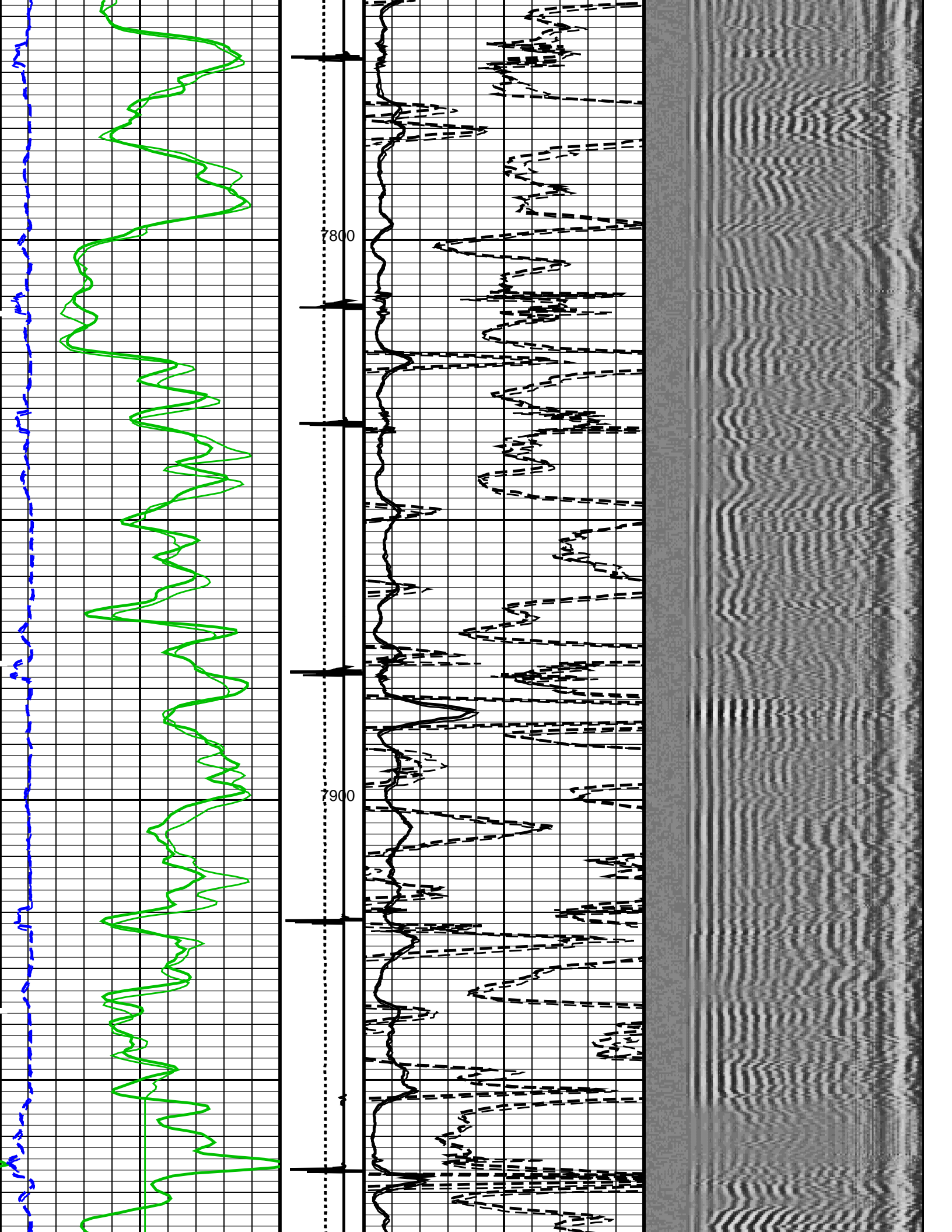
## OP System Version: 19C0-187

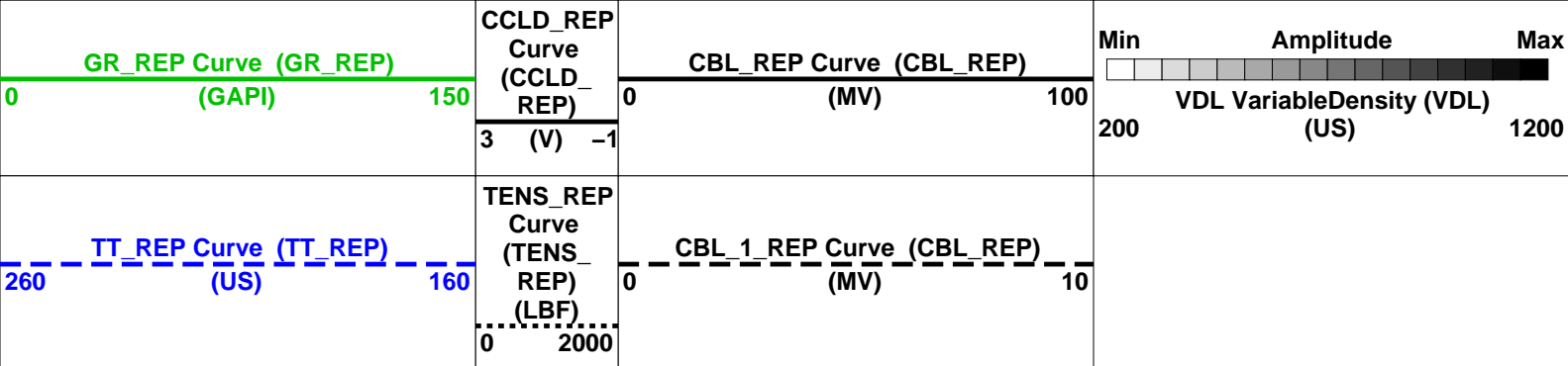
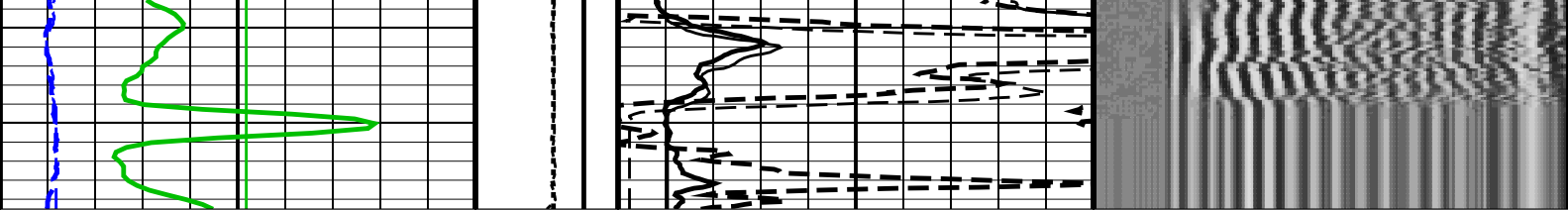
SCMT-CB	SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
PSPT	SRPC-5214-H2-2012-OP1!		

## PIP SUMMARY

Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

Format: CBL\_VDL\_REP Vertical Scale: 5" per 100' Graphics File Created: 30-Aug-2013 14:34

OP System Version: 19C0-187

SCMT-CB PSPT	SRPC-5214-H2-2012-OP1! SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
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<<<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)	1.0
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	SCAN
CMTC	SCMT Slow Channel Multiplexer Mode	LOG	
CMTM	SCMT Operating Mode	VCC	
CSCS	SCMT Slow Channel Index		
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			
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	2.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9996	FT

### Input DLIS Files

DEFAULT	SCMT_RST_PSP_007LUP	FN:6	PRODUCER	30-Aug-2013 10:19	7997.0 FT	7691.5 FT
DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	30-Aug-2013 14:25	10005.0 FT	-21.0 FT

### Output DLIS Files

DEFAULT	SCMT_RST_PSP_017PUP	FN:16	PRODUCER	30-Aug-2013 14:34
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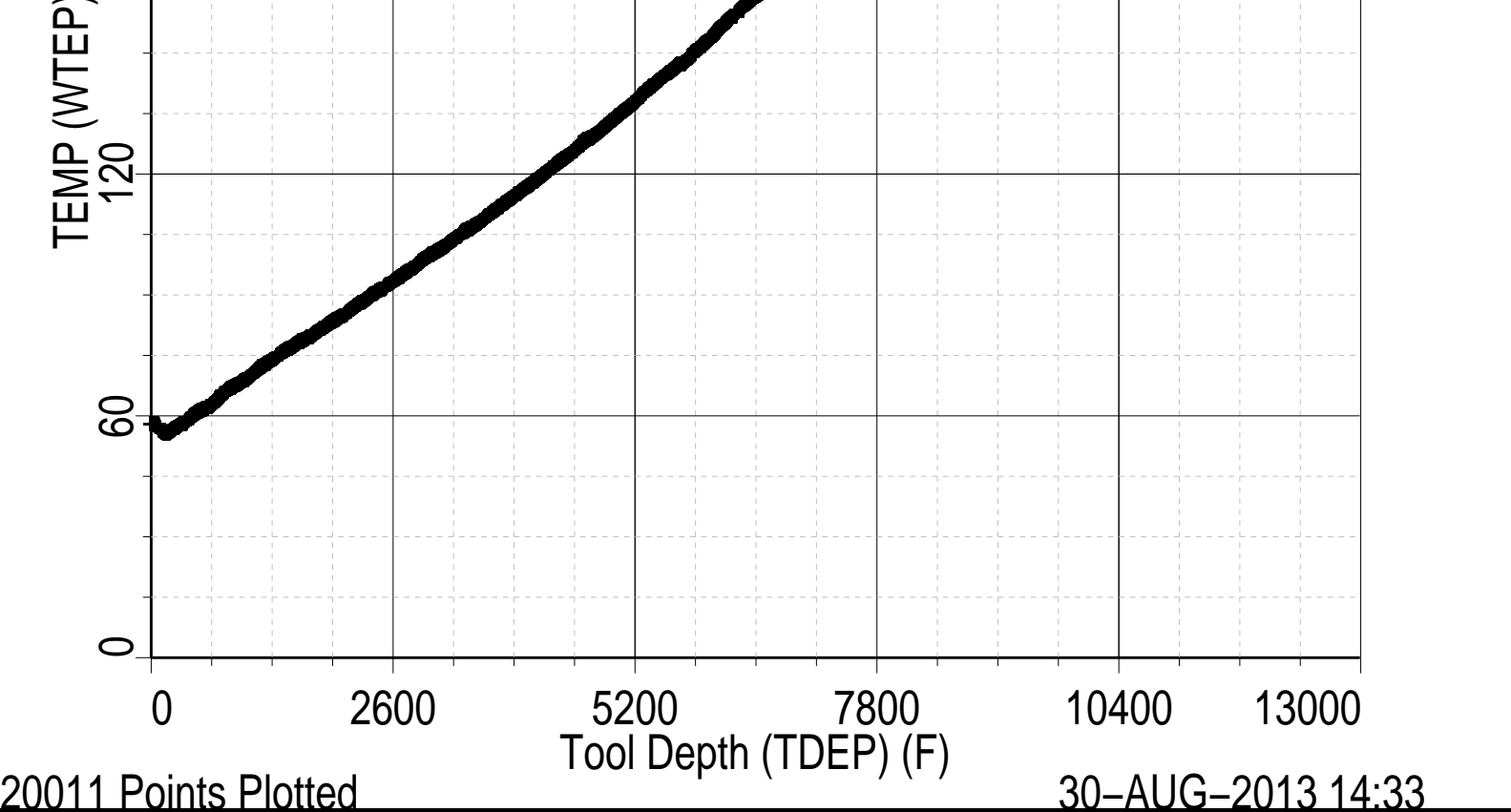
**Schlumberger**

## TEMPERATURE PLOT

MAXIS Field Log

Index: 10005.0 – -21.0 FT





**Schlumberger**

## PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC  
Field: MAMM CREEK  
Well: MCU 16-13CC (M16W)  
Run date: 30-Aug-2013

Tool: PSP  
Sub Type: PBMS  
Sensor: GR

### PBMS Gamma Ray

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

RESISTORS FOR GR SENSOR N.33223, TOOL PBMS-BA0928. SENSOR S/N:

33223

090800

12

CFE2

GR HV Rt

Rt\*\*0

Rt\*\*1

Rt\*\*0

+.182000000000e+04

+.332000000000e+04



Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: MCU 16–13CC (M16W)

Run date: 30–Aug–2013

Tool: PSP

Sub Type: PBMS

Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR RTD THERMOMETER PBMS–B.928 S/N:

928

280612

16

A24E

WTemp Coeff

Tt\*\*0

Tt\*\*1

Tt\*\*2

Tt\*\*0

–.391987973189E+03

+.191346892512E+03

–.440920753451E+02

Tt\*\*3

Tt\*\*4

Tt\*\*5

Tt\*\*0

+.957191300908E+01

–.711421725686E+00

0.0

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: MCU 16–13CC (M16W)

Run date: 30–Aug–2013

Tool: PSP

Sub Type: PBMS

Sensor: CQG

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

COEFFICIENTS FOR CQG PBMS–B.928 S/N:

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

**Schlumberger**

**MASTER CALIBRATION**

MAXIS Field Log

Primary Equipment:		
Slim Cement Mapping Xmitter Electronics	SCMX – CA	8251
Slim Cement Mapping Sonde	SCMS – CB	8179
Slim Cement Mapping Cartridge	SCMC – CA	8121
Auxiliary Equipment:		
Slim Electronics Cartridge Housing	SECH – CA	8120

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: **MCU 16–13CC (M16W)**

Field: **MAMM CREEK**

County: **GARFIELD**

State: **COLORADO**

SLIM CEMENT MAPPING LOG

CBL–VDL

GAMMA RAY–CCL