

Company: ENCANA OIL & GAS (USA) INC

Well: HAGEN FEDERAL 22-1D (PC22)

Field: SOUTH PARACHUTE

County: GARFIELD State: COLORADO

SLIM CEMENT MAPPING LOG  
CBL-VDL  
GR-CCL

County: GARFIELD  
Field: SOUTH PARACHUTE  
Location: SHL: 666 FNL & 1831 FWL  
Well: HAGEN FEDERAL 22-1D (PC22)  
Company: ENCANA OIL & GAS (USA) INC

LOCATION		Elev.: K.B. 6543.00 ft	
SHL: 666 FNL & 1831 FWL		G.L. 6521.00 ft	
BHL: 898 FNL & 558 FEL		D.F. 6542.00 ft	
Permanent Datum:	GROUND LEVEL	Elev.: 6521.00 ft	
Log Measured From:	KELLY BUSHING	22.00 ft	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		
API Serial No.	Section 22	Township 7S	Range 95W
05-045-22007-0C			
Logging Date	21-Oct-2013		
Run Number	1		
Depth Driller	8650 ft		
Schlumberger Depth	8560 ft		
Bottom Log Interval	8551 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	8.750 in		
From	22 ft		
To	8650 ft		
Casing/Tubing Size	4.500 in		
Weight	11.6 lbm/ft		
Grade	S-80		
From	22 ft		
To	8628 ft		
Maximum Recorded Temperatures	224 degF		
Logger On Bottom	21-Oct-2013	13:30	
Unit Number	Location		
391	GRAND JUNCTION		
Recorded By	KIRSTIE BUNTING		
Witnessed By	SHANE		

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						
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	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
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.

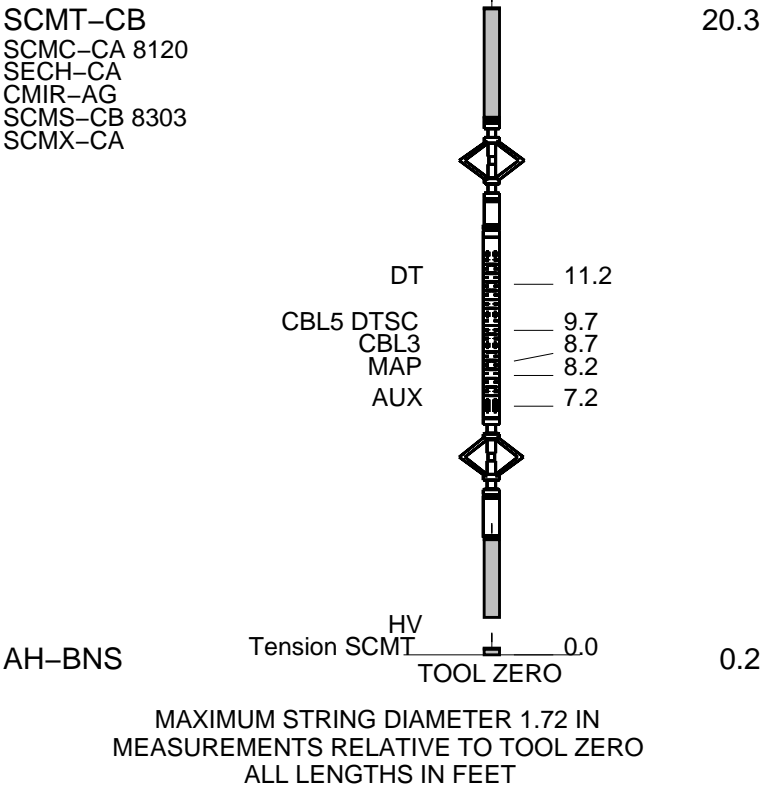
## DISCLAIMER

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: GR-CCL	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: 12:30	
TIME ON BOTTOM: 13:30	
EXIT TIME: 16:15	

MAXIMUM RECORDED TEMPERATURE: 224 DEGF					
MAXIMUM RECORDED PRESSURE: 3310 PSIA					
MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE					
EXPECTED CBL AMPLITUDE IN FREE PIPE IS 80MV					
SHORT JOINTS : 6164 FT & 7154 FT					
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY					
CREW: KBUNTING, KIRWIN, WAZIZ, KJOHNS					
<div> <div>RUN 1</div> <div> <div>SERVICE ORDER #:</div> <div>PROGRAM VERSION:</div> <div>FLUID LEVEL:</div> </div> <div> <div>CGF9-00154</div> <div>19C0-187</div> <div>60 ft</div> </div> </div>			<div> <div>RUN 2</div> <div> <div>SERVICE ORDER #:</div> <div>PROGRAM VERSION:</div> <div>FLUID LEVEL:</div> </div> </div>		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT					
WITM-A PSC_16MHZ					
DOWNHOLE EQUIPMENT					
<div> <div> <div>MH-22</div> <div>MH-22</div> <div> <div>Detail MT</div> <div>TelStatus</div> <div>CTEM</div> </div> </div> <div> <div>AH-38</div> <div>PSPT</div> <div>PSC-A</div> <div>PSPT-B 928</div> <div>PSTC-A</div> <div>PBMS-B</div> <div>CQG_F_Mano</div> <div>RTD_Thermometer</div> <div>GR</div> <div>CCL</div> <div>PBMS</div> </div> <div> <div>GR</div> <div>Well_Temp</div> <div>CQG Manom</div> <div>CCL</div> <div>PBMS PSTC</div> </div> </div>					
<div> <div> <div>MH-22</div> <div>MH-22</div> <div> <div>Detail MT</div> <div>TelStatus</div> <div>CTEM</div> </div> </div> <div> <div>AH-38</div> <div>PSPT</div> <div>PSC-A</div> <div>PSPT-B 928</div> <div>PSTC-A</div> <div>PBMS-B</div> <div>CQG_F_Mano</div> <div>RTD_Thermometer</div> <div>GR</div> <div>CCL</div> <div>PBMS</div> </div> <div> <div>GR</div> <div>Well_Temp</div> <div>CQG Manom</div> <div>CCL</div> <div>PBMS PSTC</div> </div> </div>			<div> <div>53.4</div> <div>51.8</div> <div>51.5</div> <div>47.8</div> <div>44.8</div> <div>44.5</div> <div>44.0</div> <div>43.3</div> <div>43.3</div> <div>34.2</div> <div>33.7</div> </div>		



Schlumberger

MAIN PASS CBL VDL

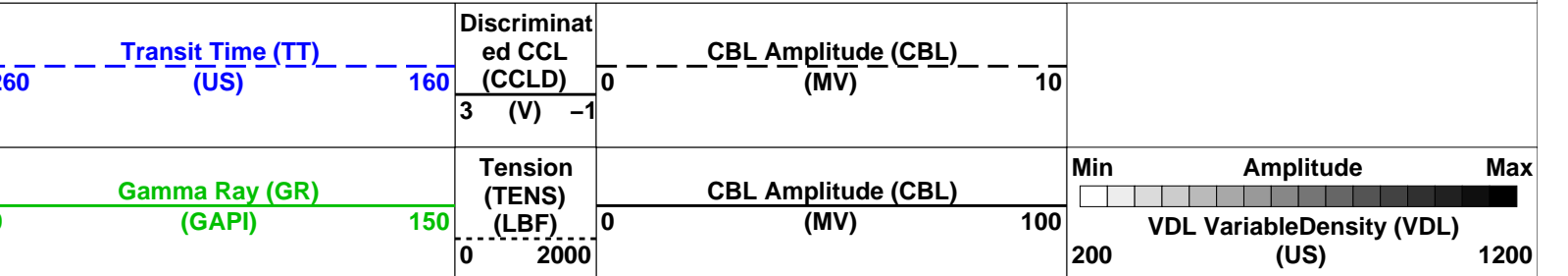
MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: HAGEN FEDERAL 22-1D (PC22)

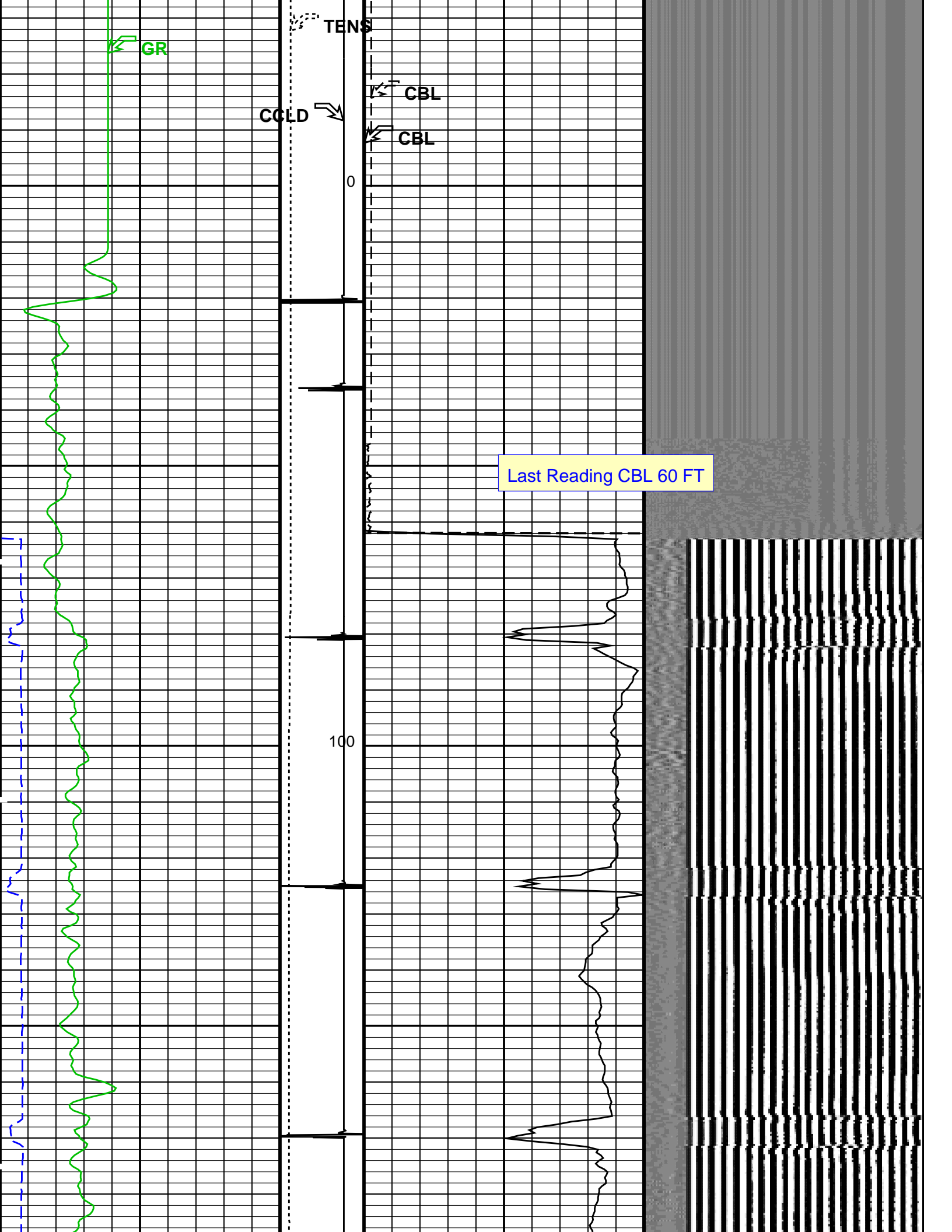
Input DLIS Files						
DEFAULT	SCMT_RST_PSP_018LUP	FN:16	PRODUCER	21-Oct-2013 13:37	8569.0 FT	5.5 FT
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_021PUP	FN:19	PRODUCER	21-Oct-2013 16:19	8574.0 FT	-34.0 FT
OP System Version: 19C0-187						
SCMT-CB	SRPC-5214-H2-2012-OP1	RST-C		SRPC-5214-H2-2012-OP1		
PSPT	SRPC-5214-H2-2012-OP1					

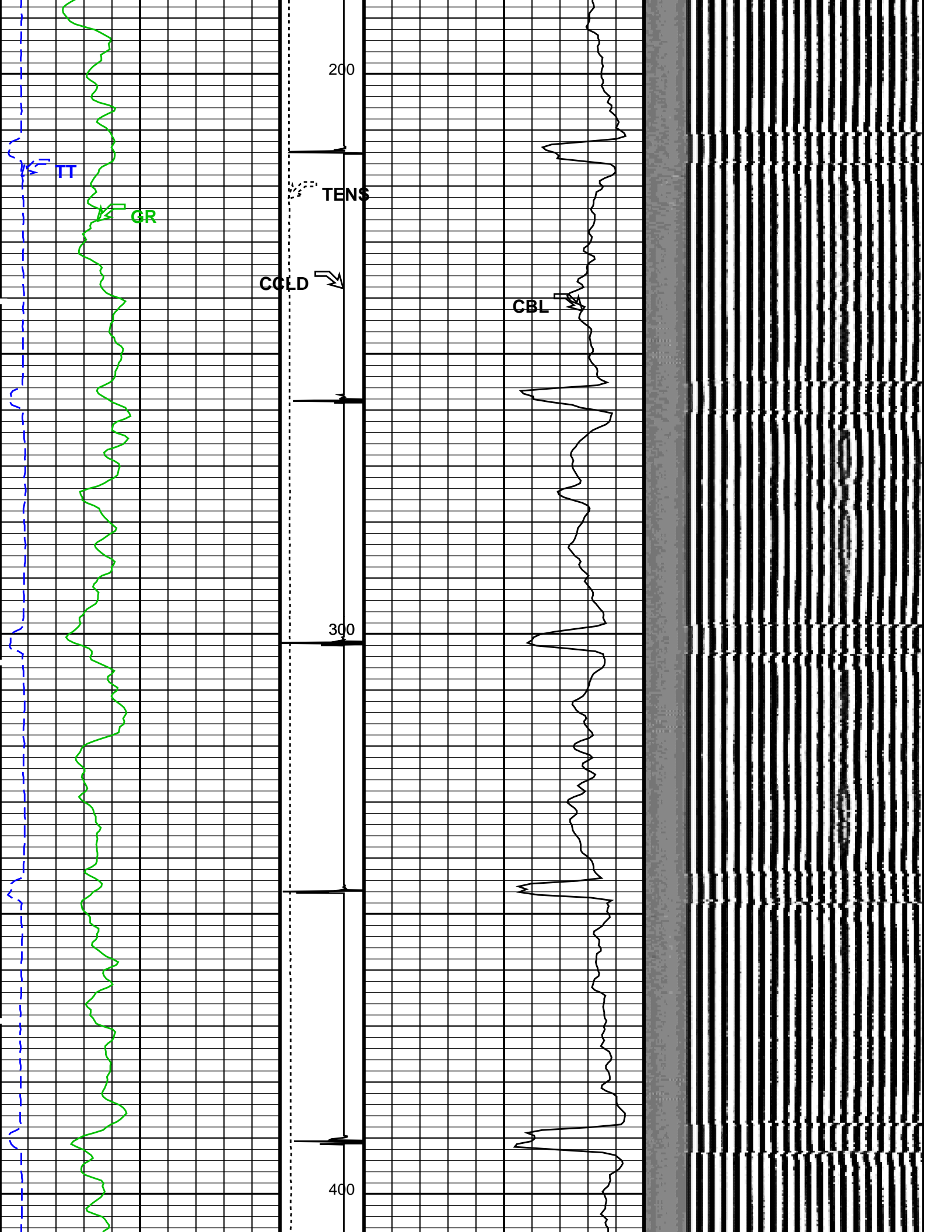
PIP SUMMARY

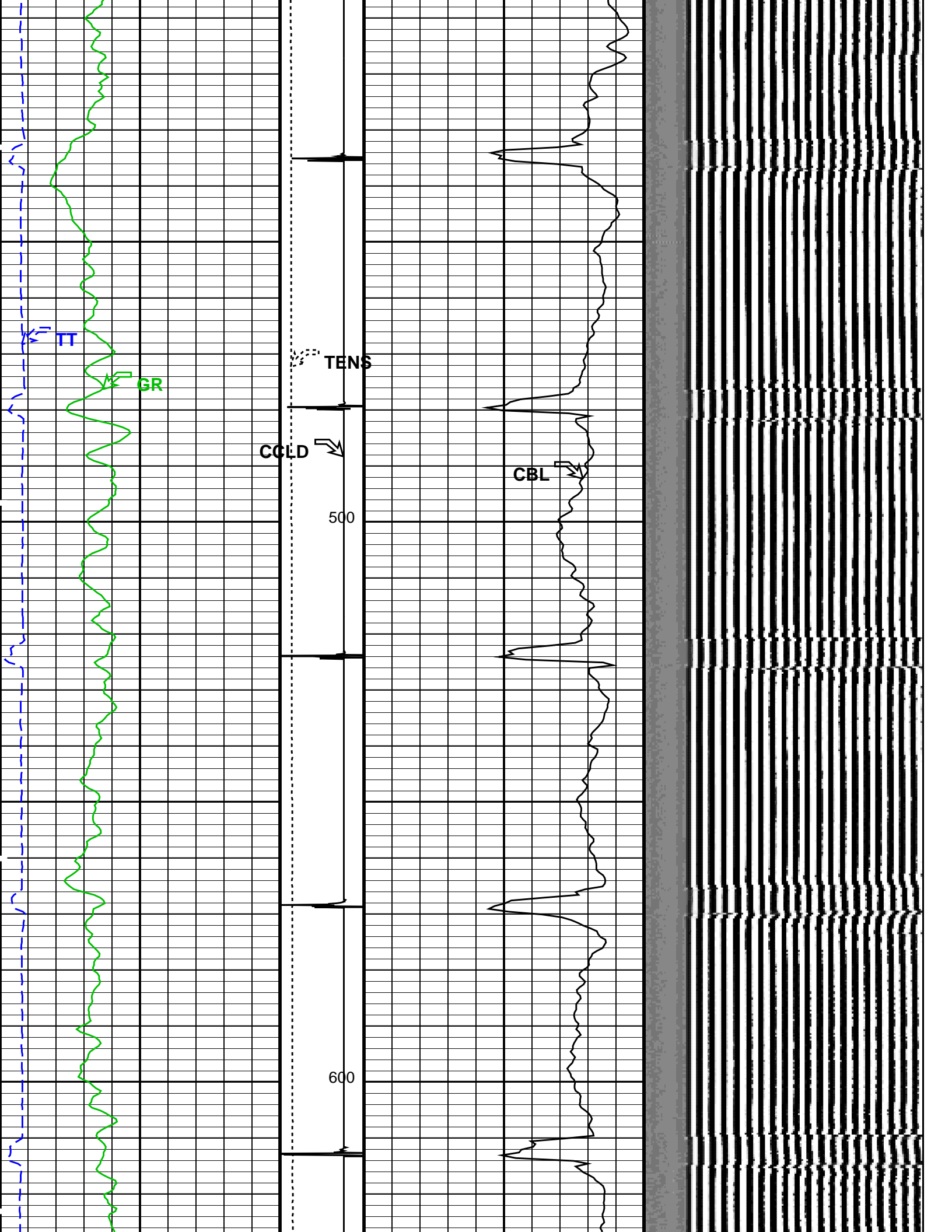
☒ Time Mark Every 60 S

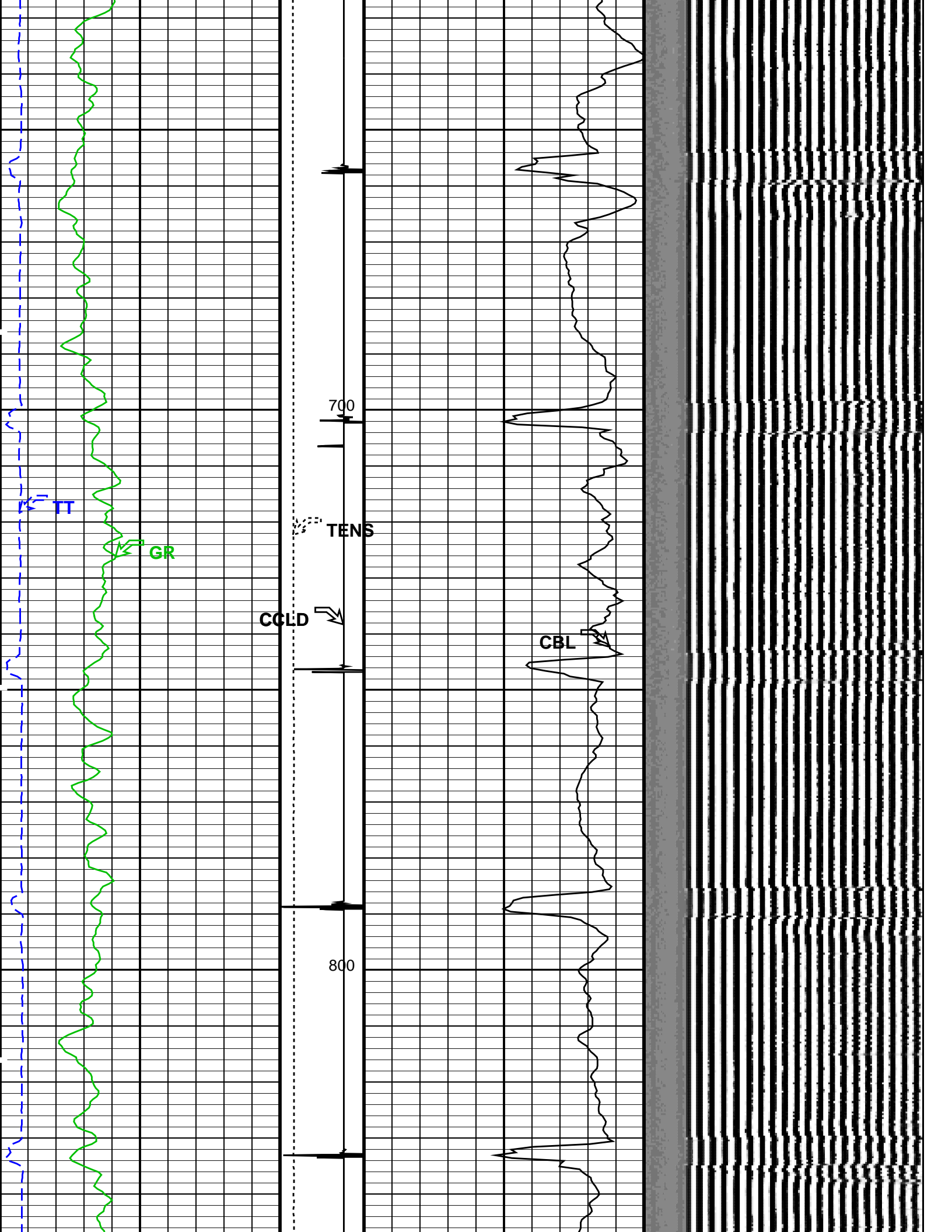


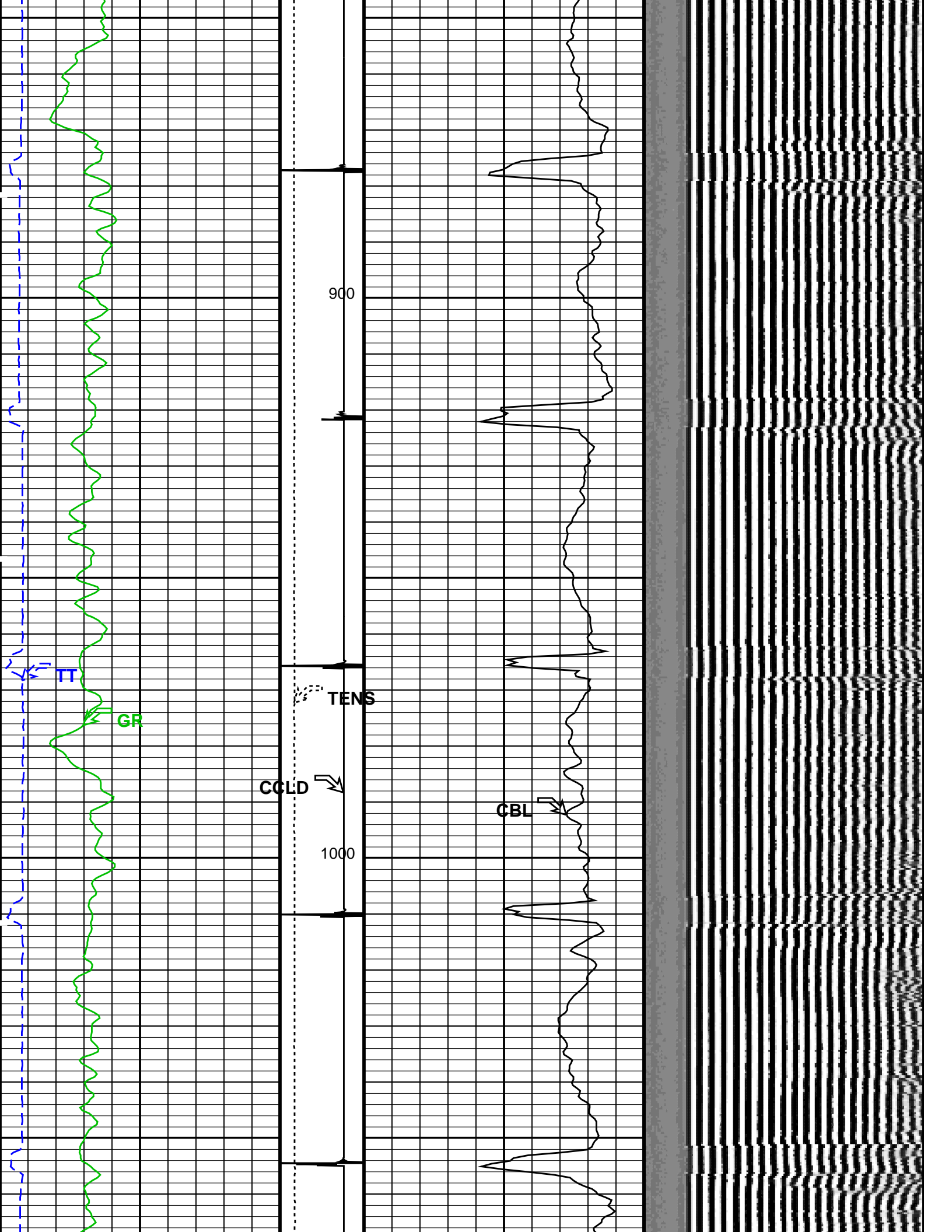




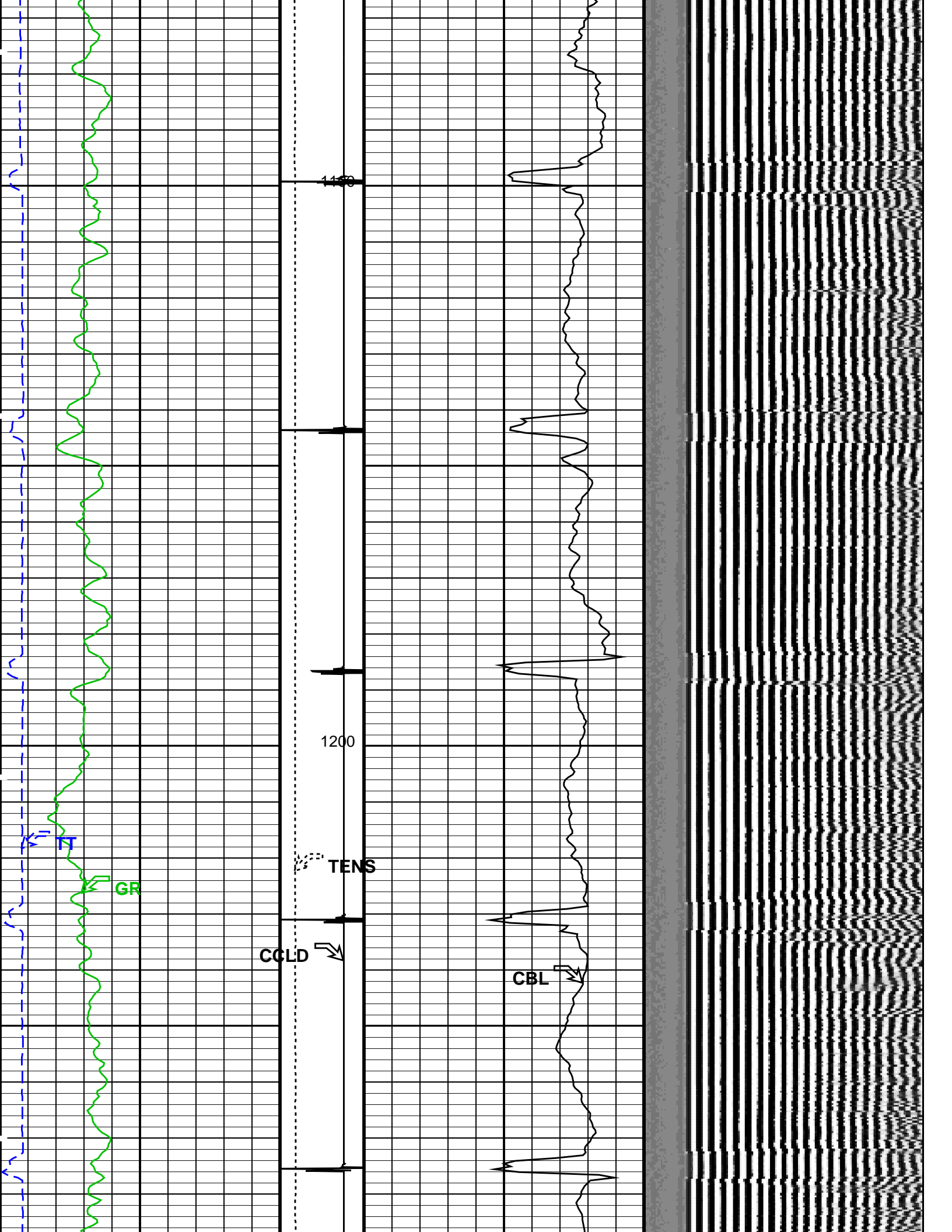


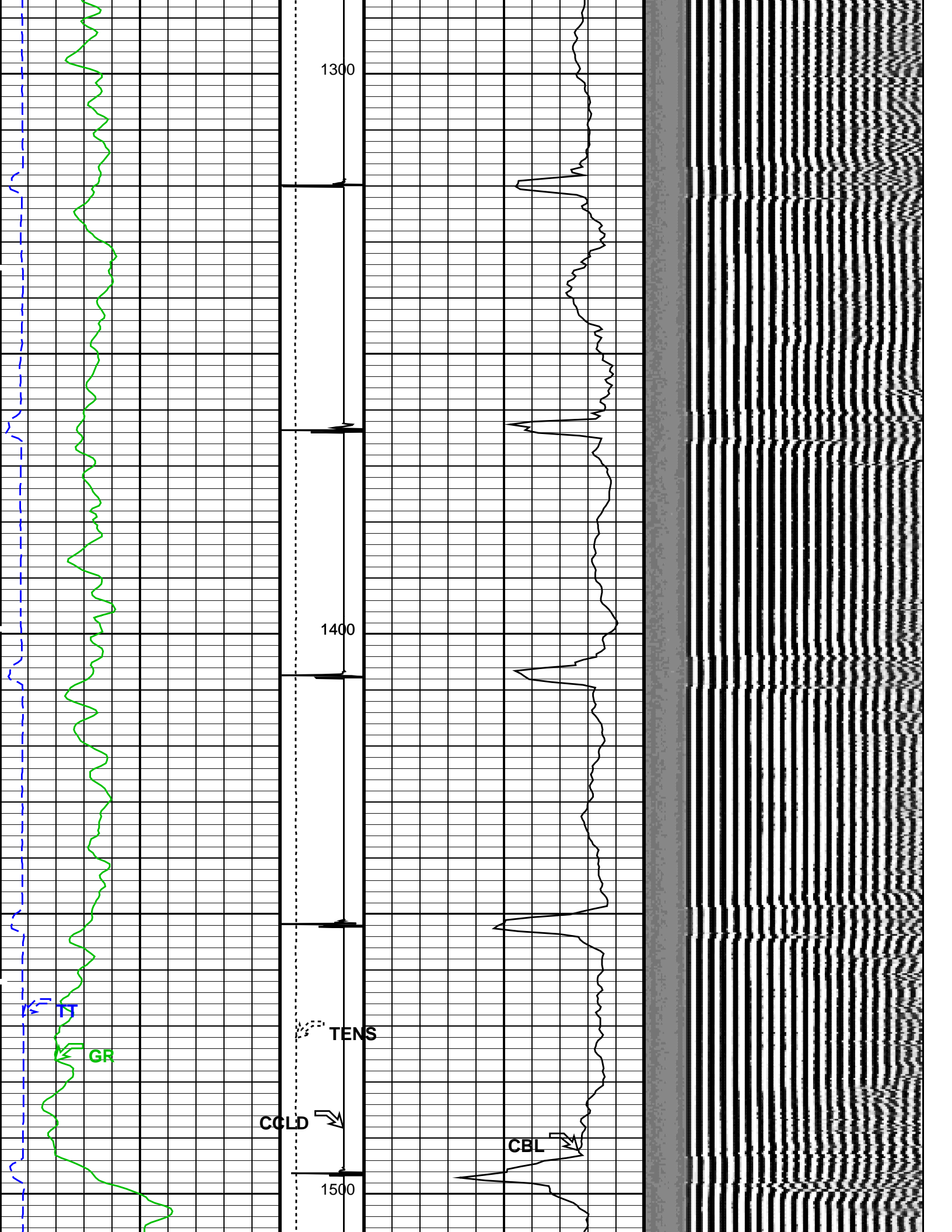


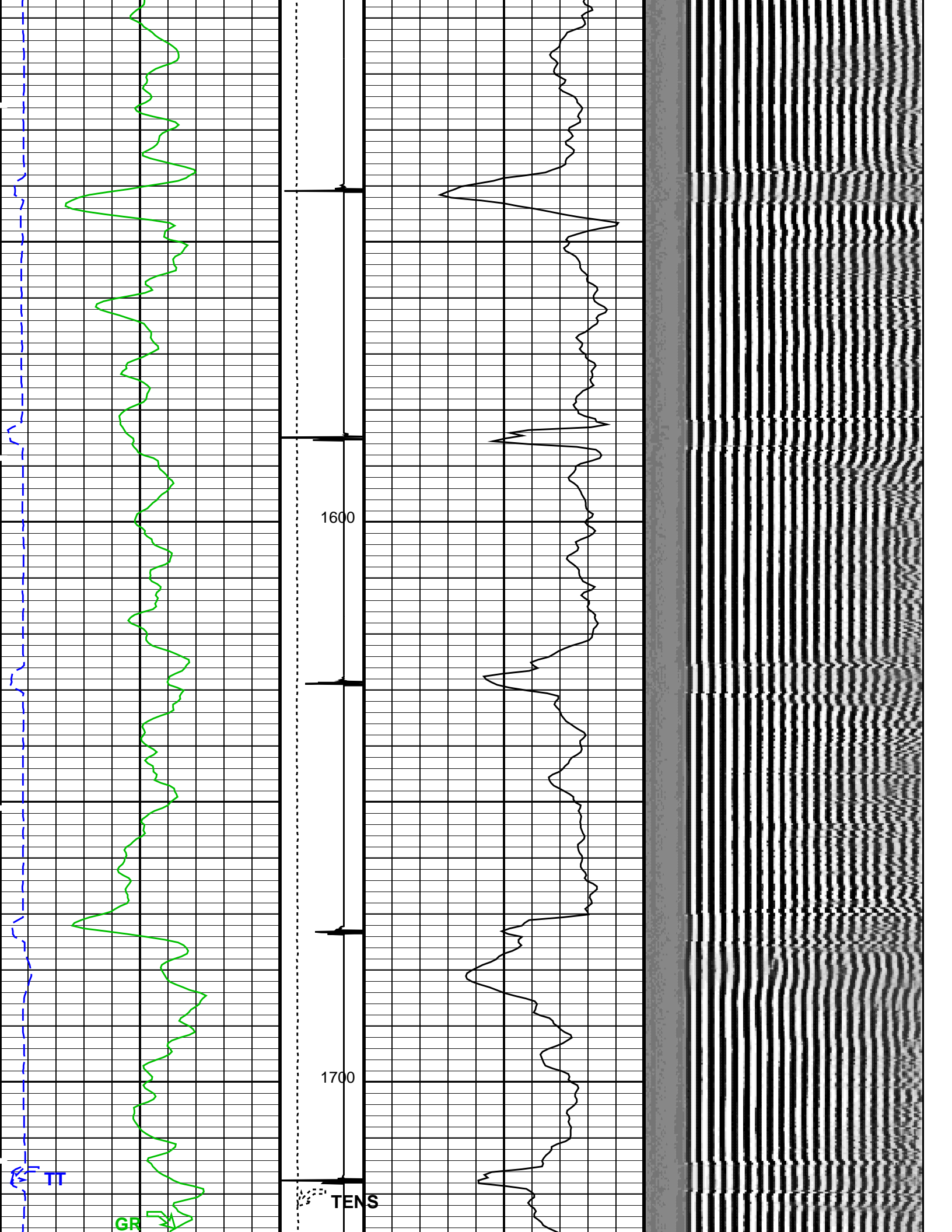




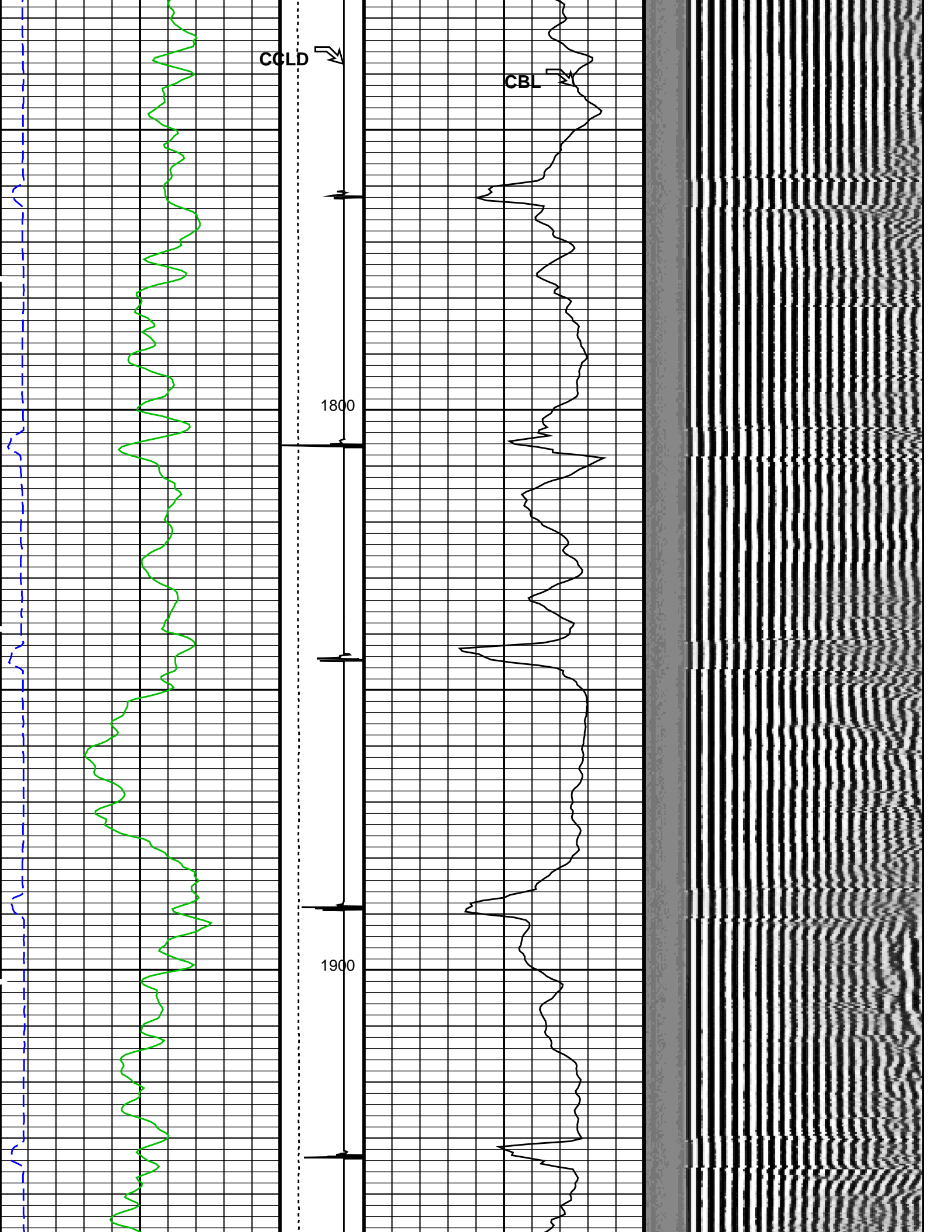


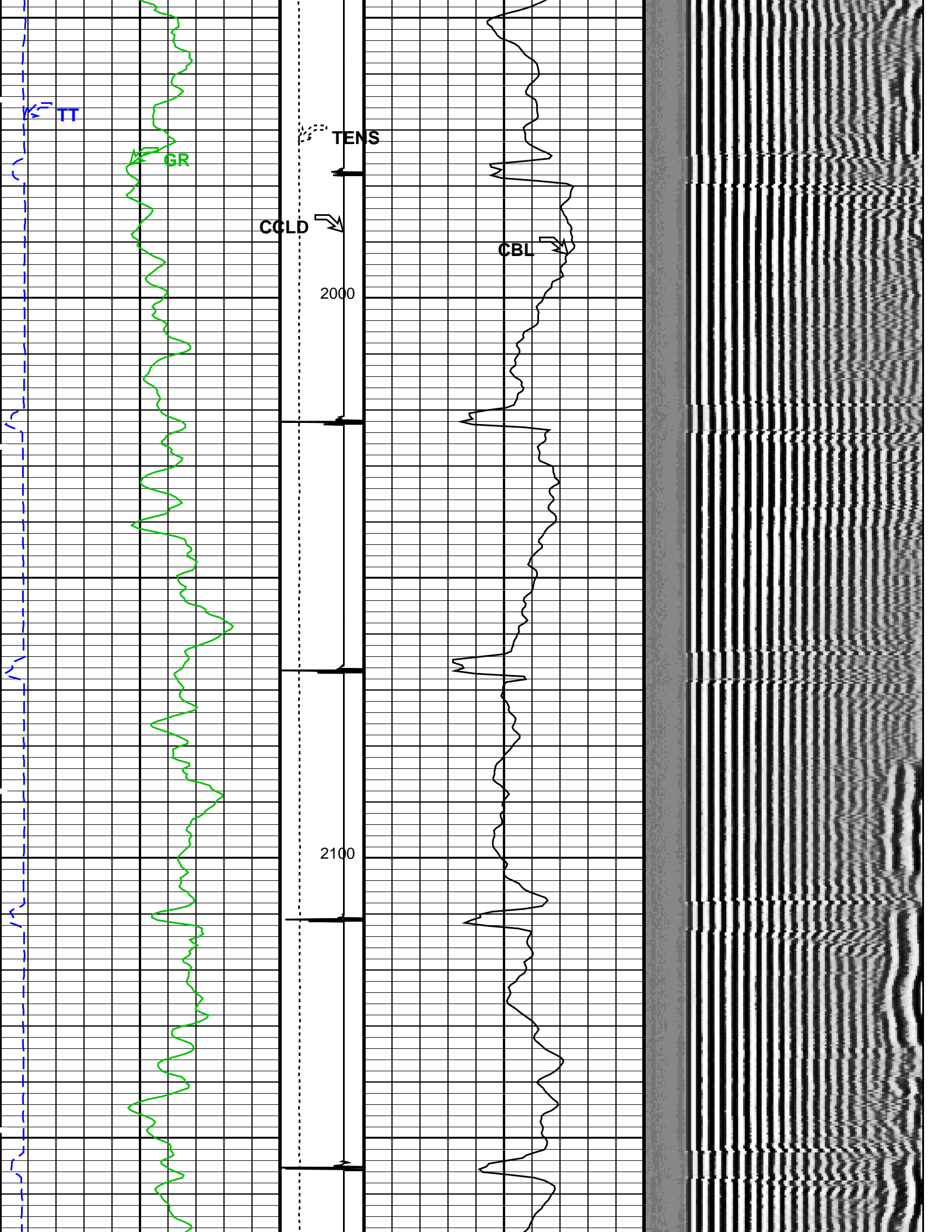


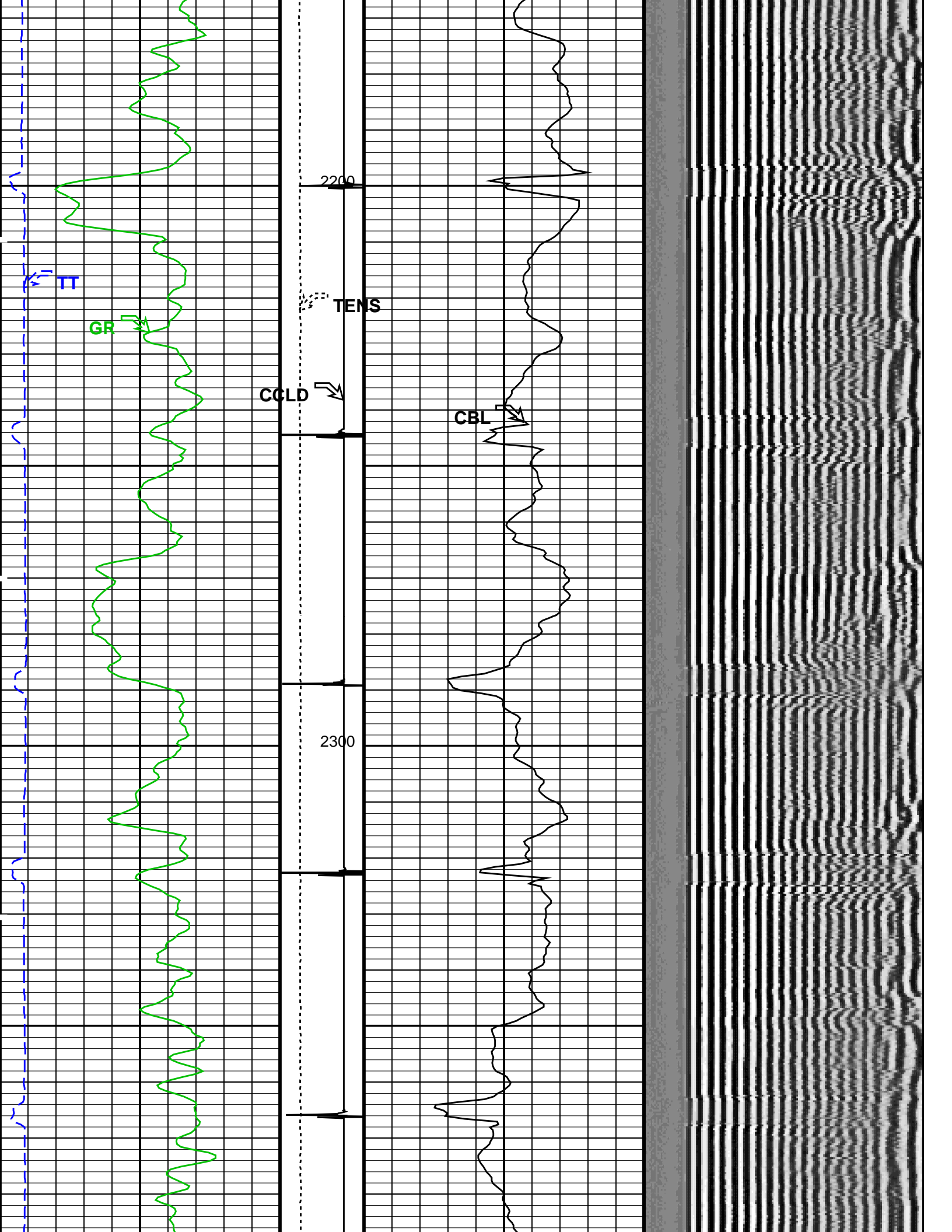


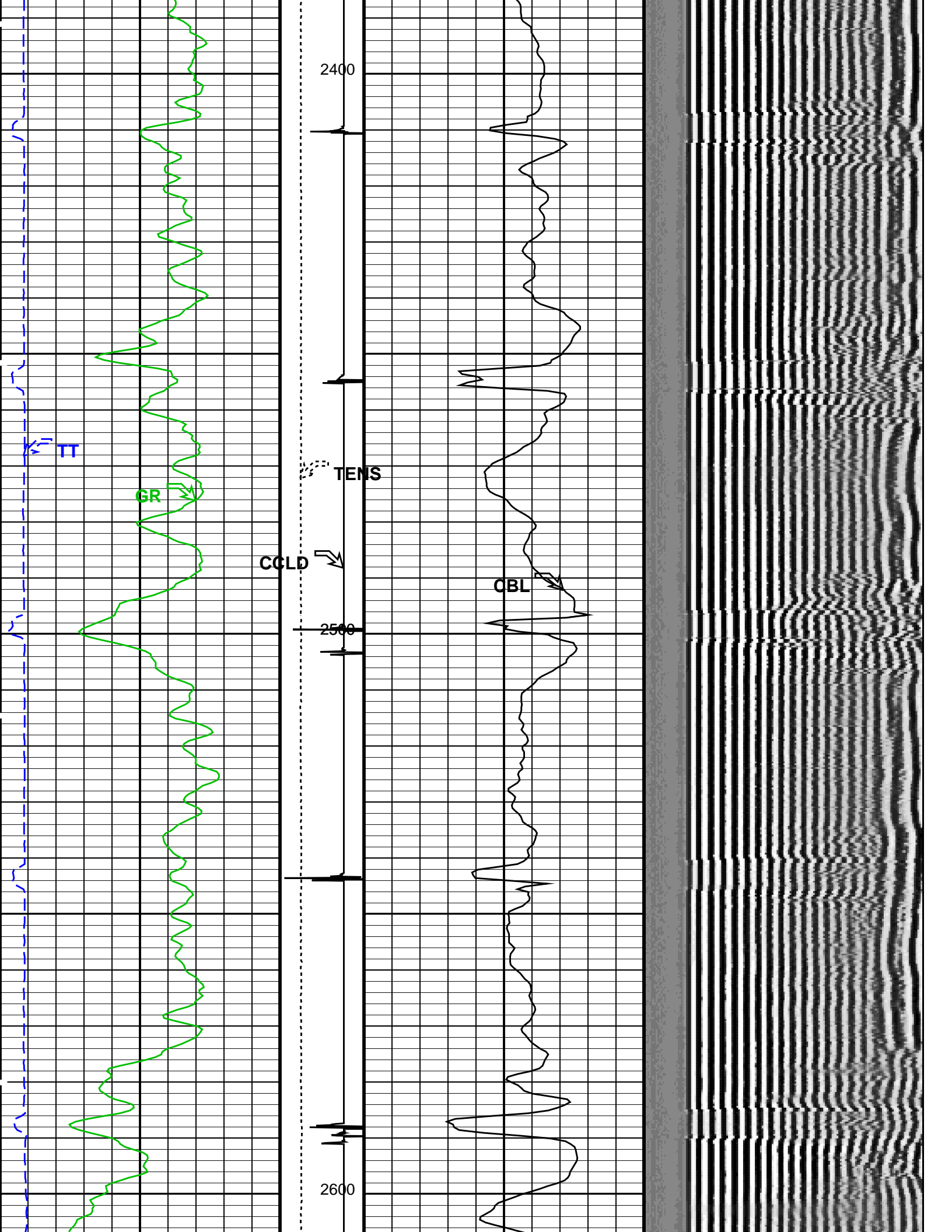




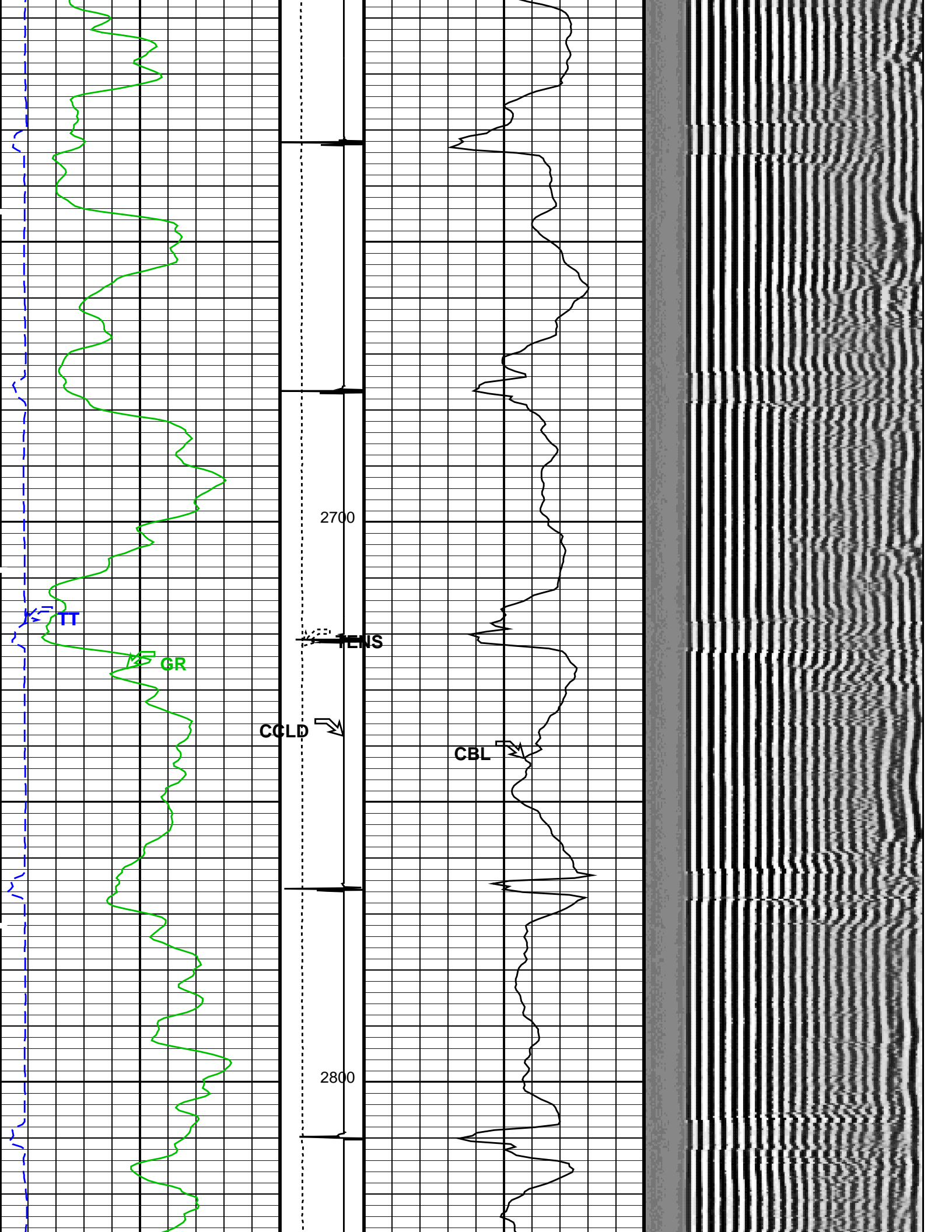


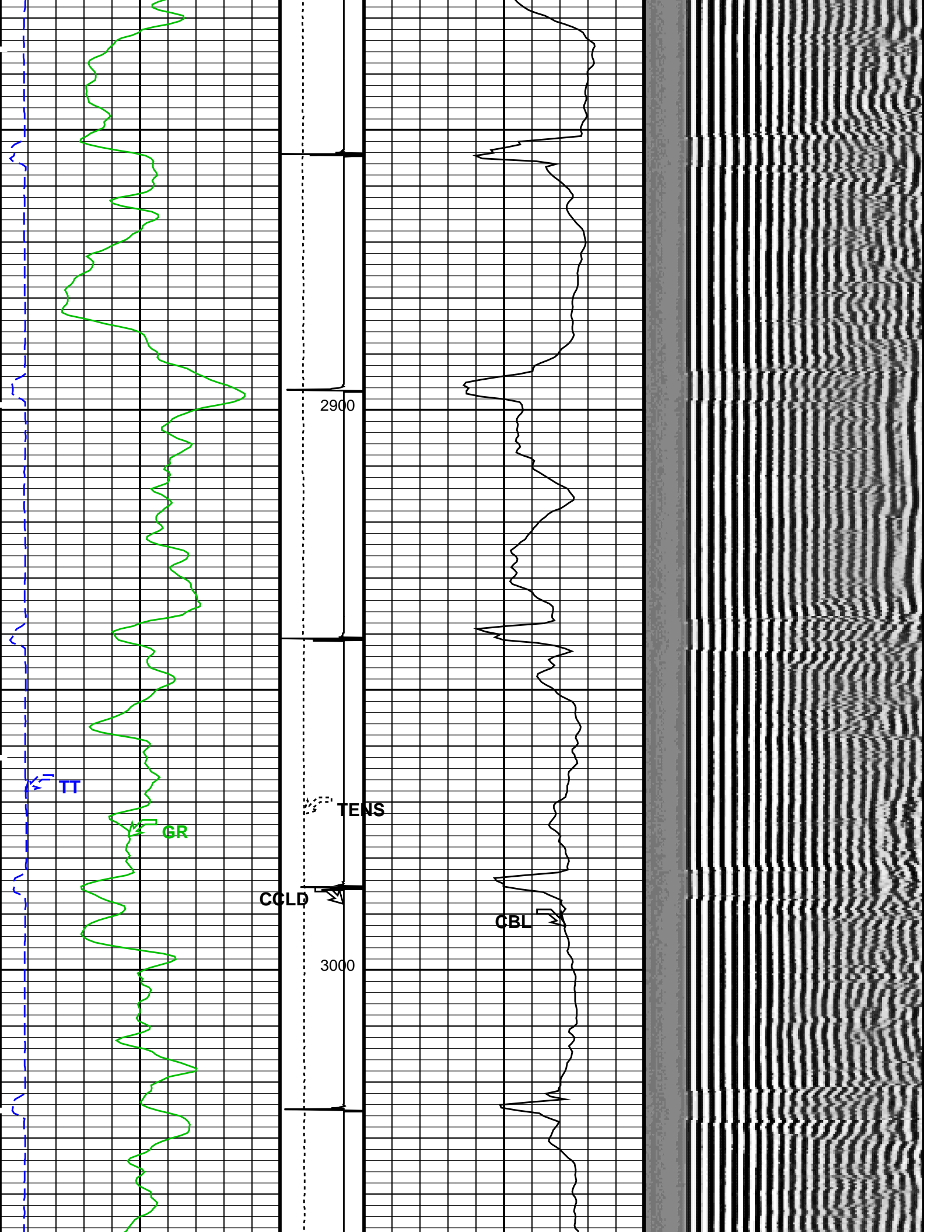


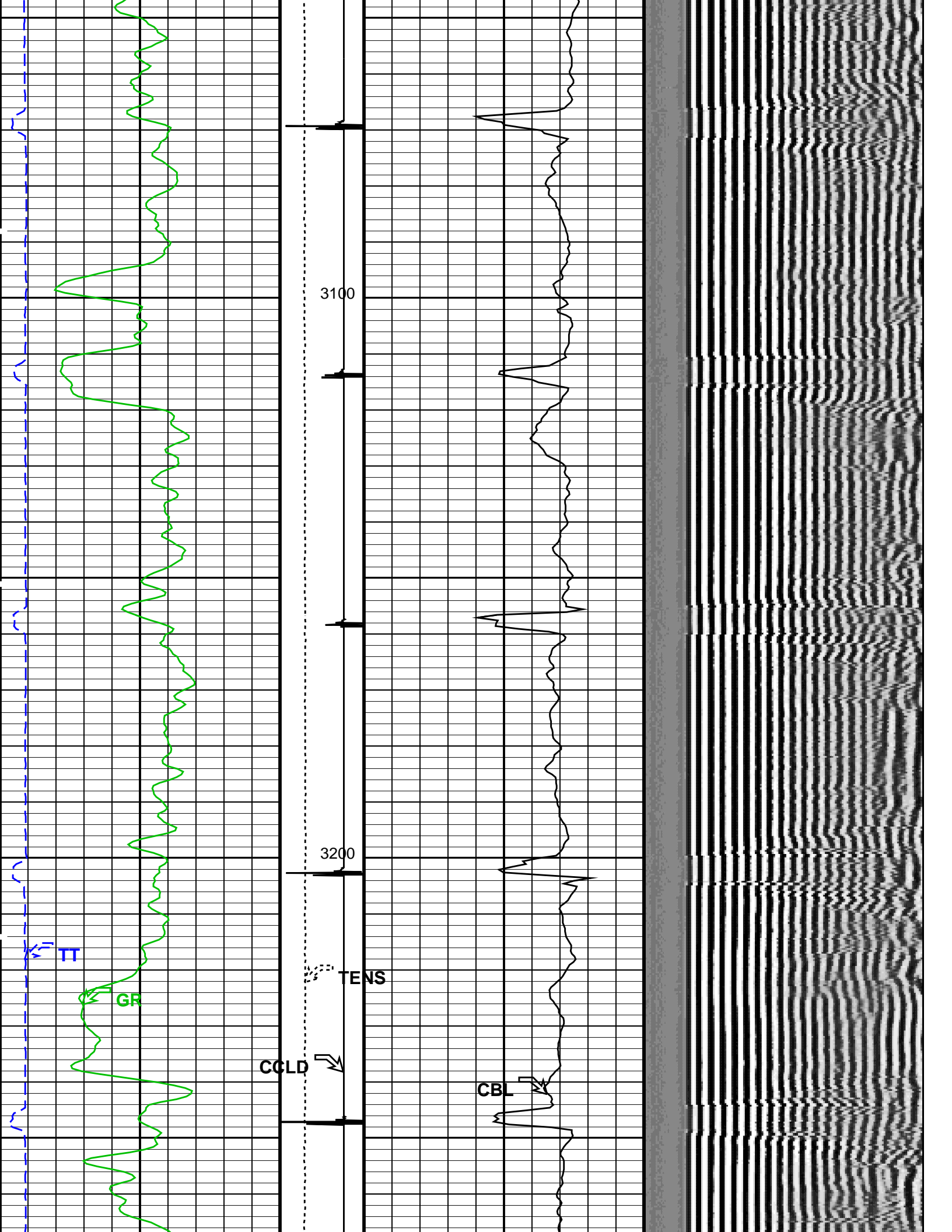


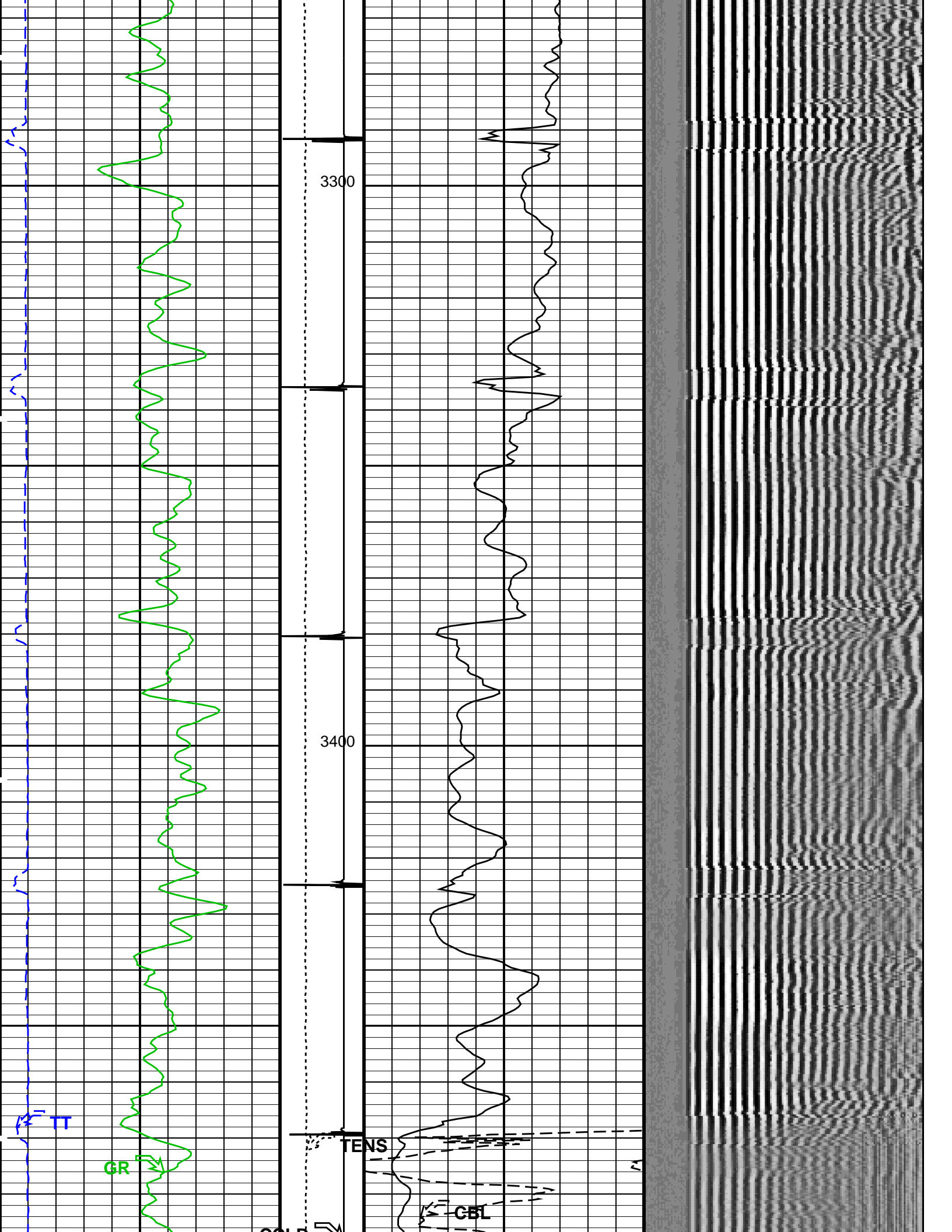




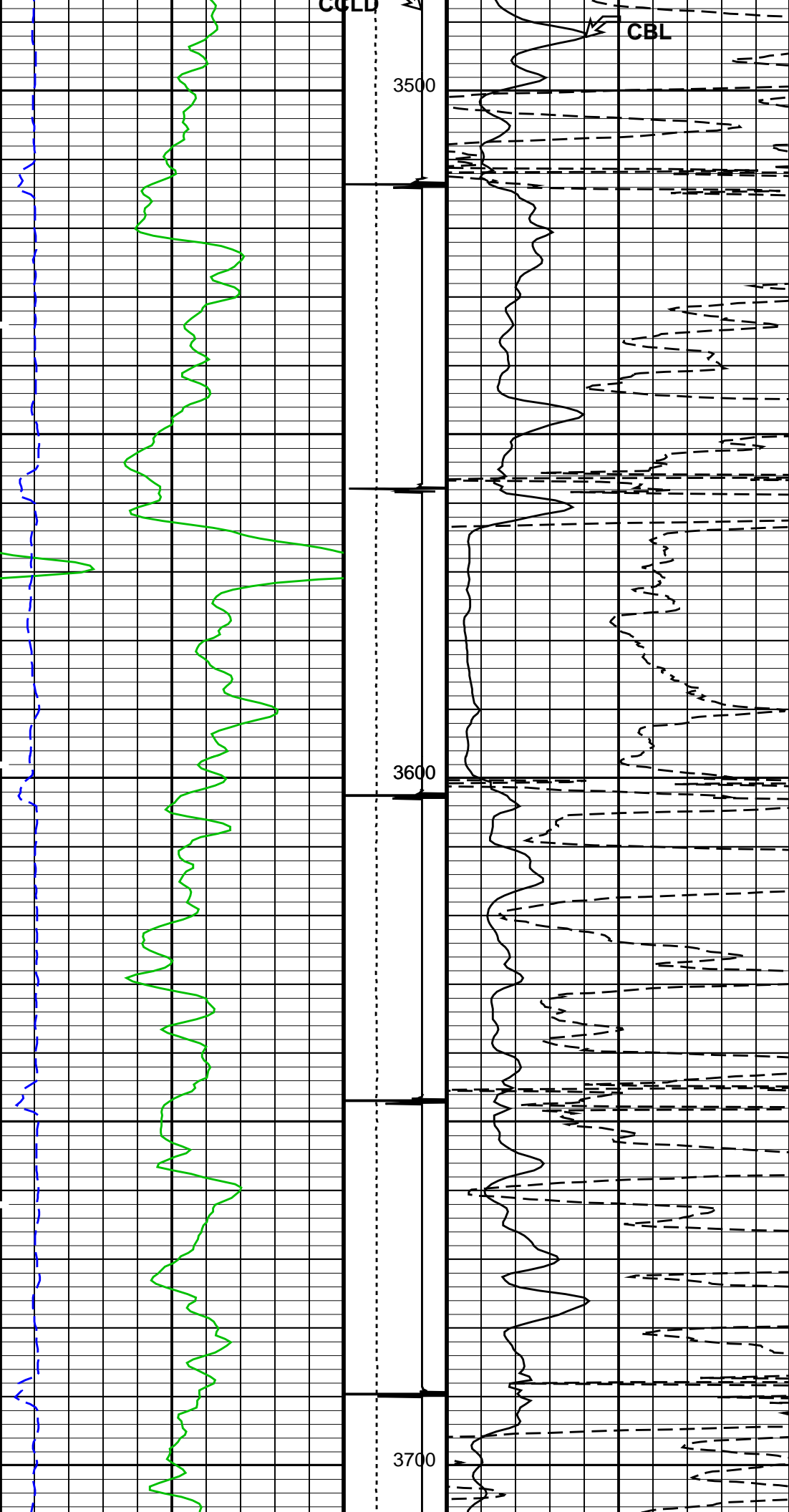


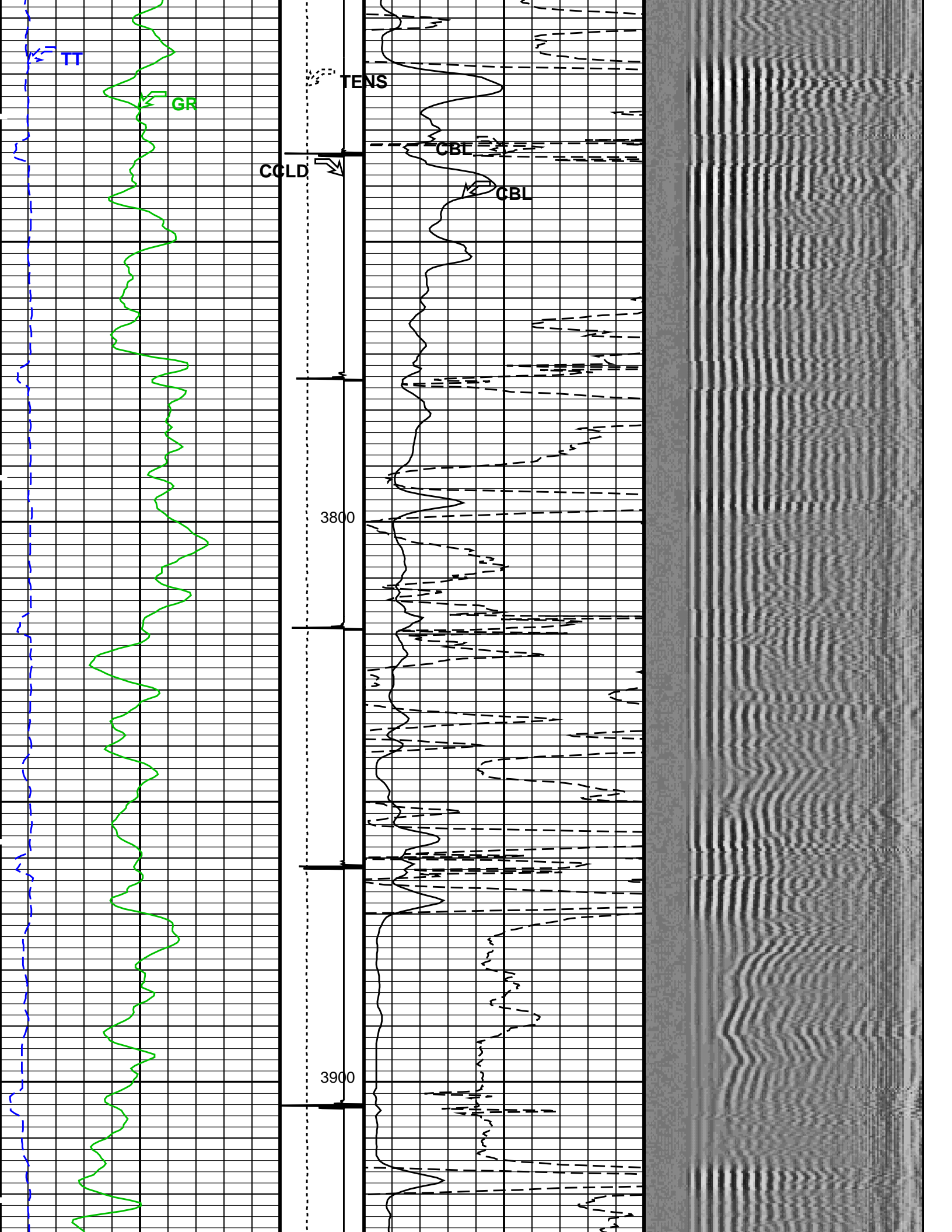


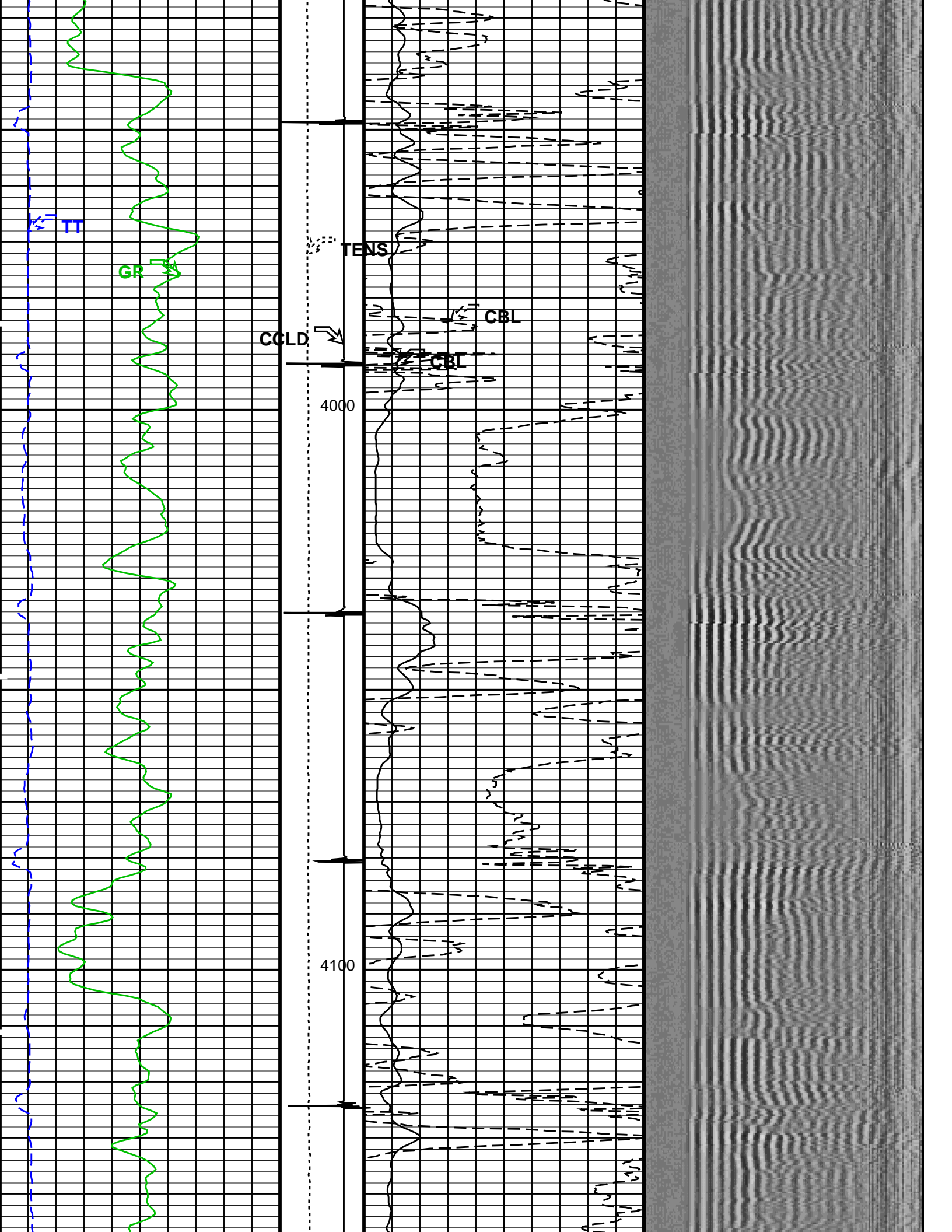




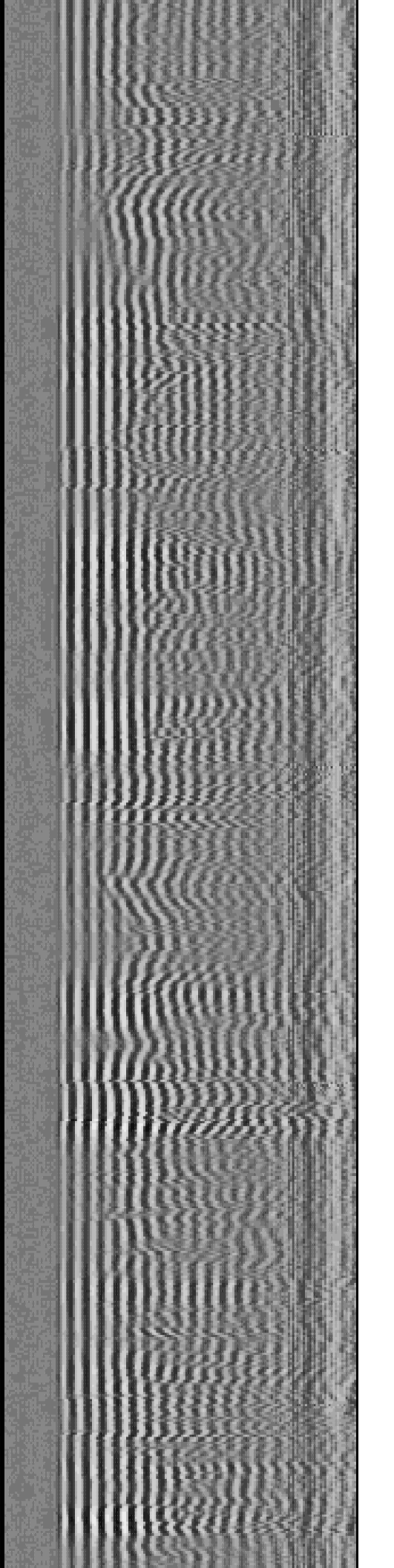
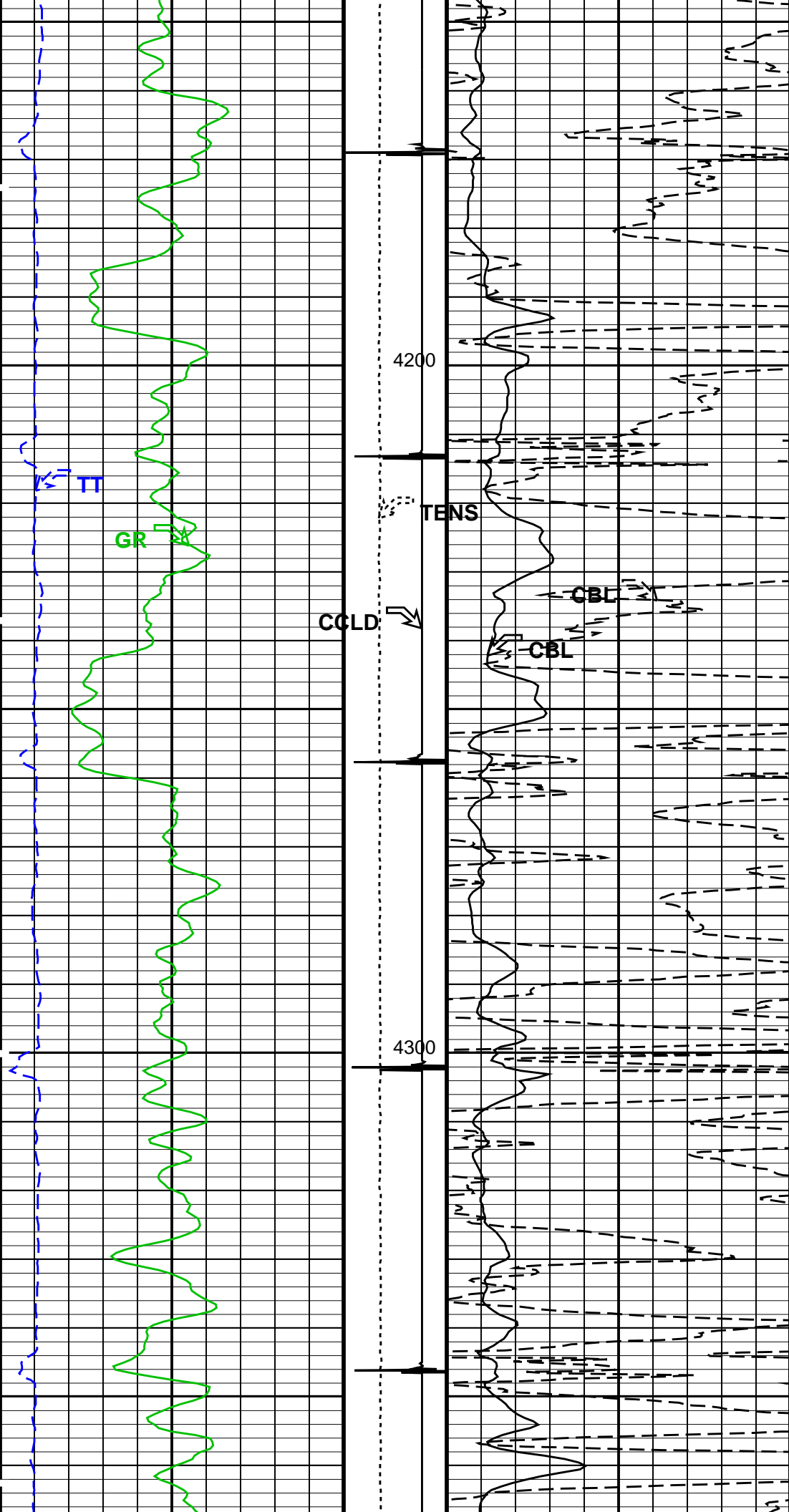


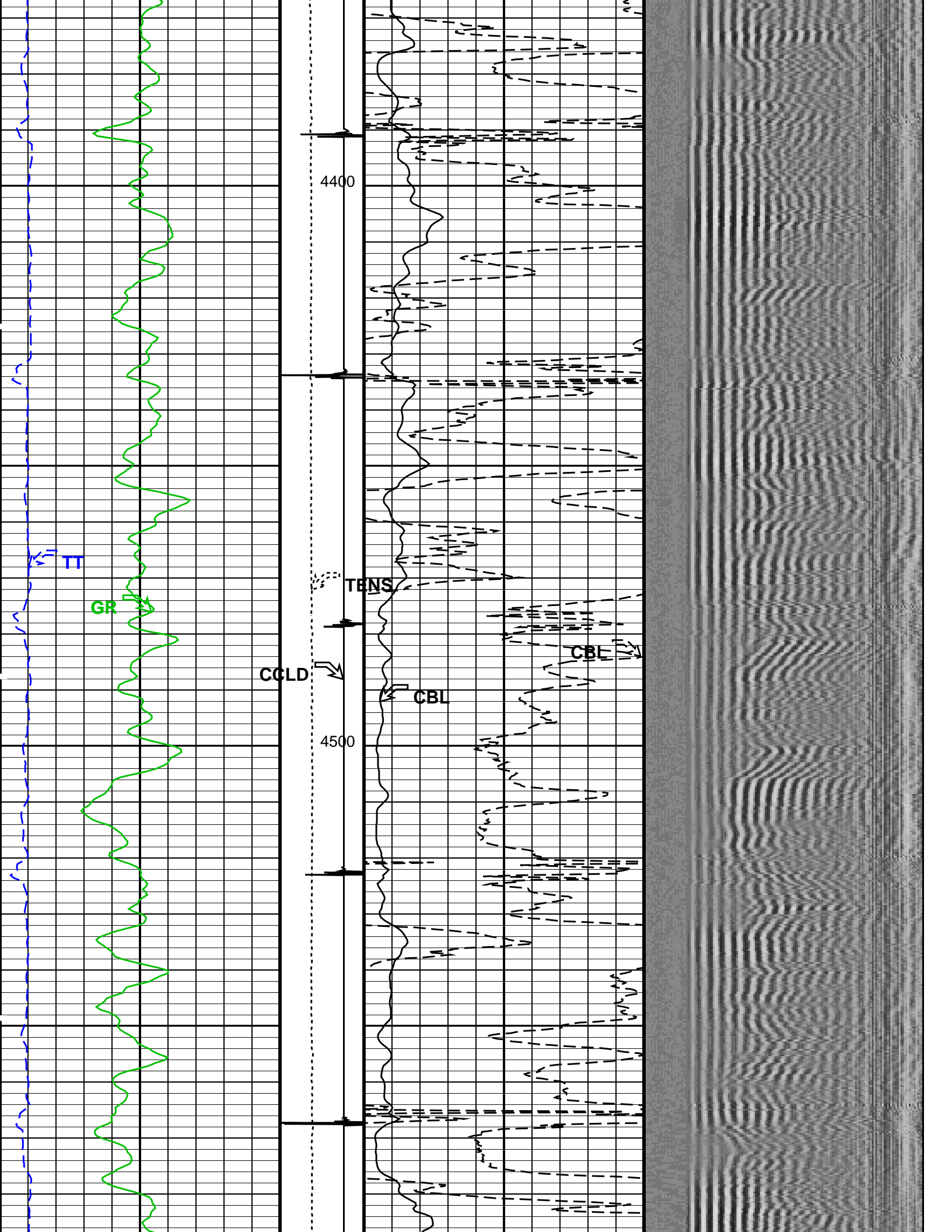


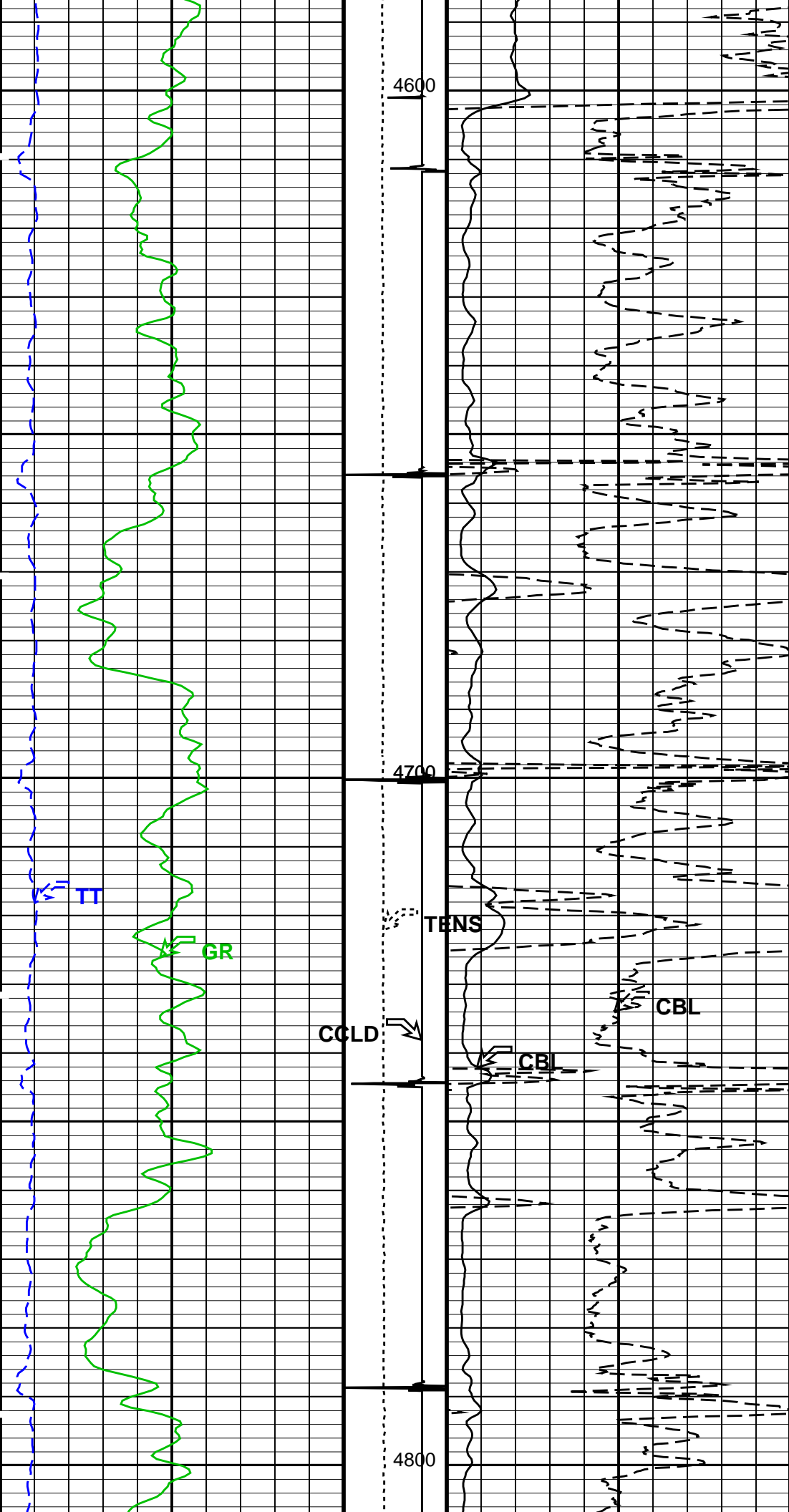




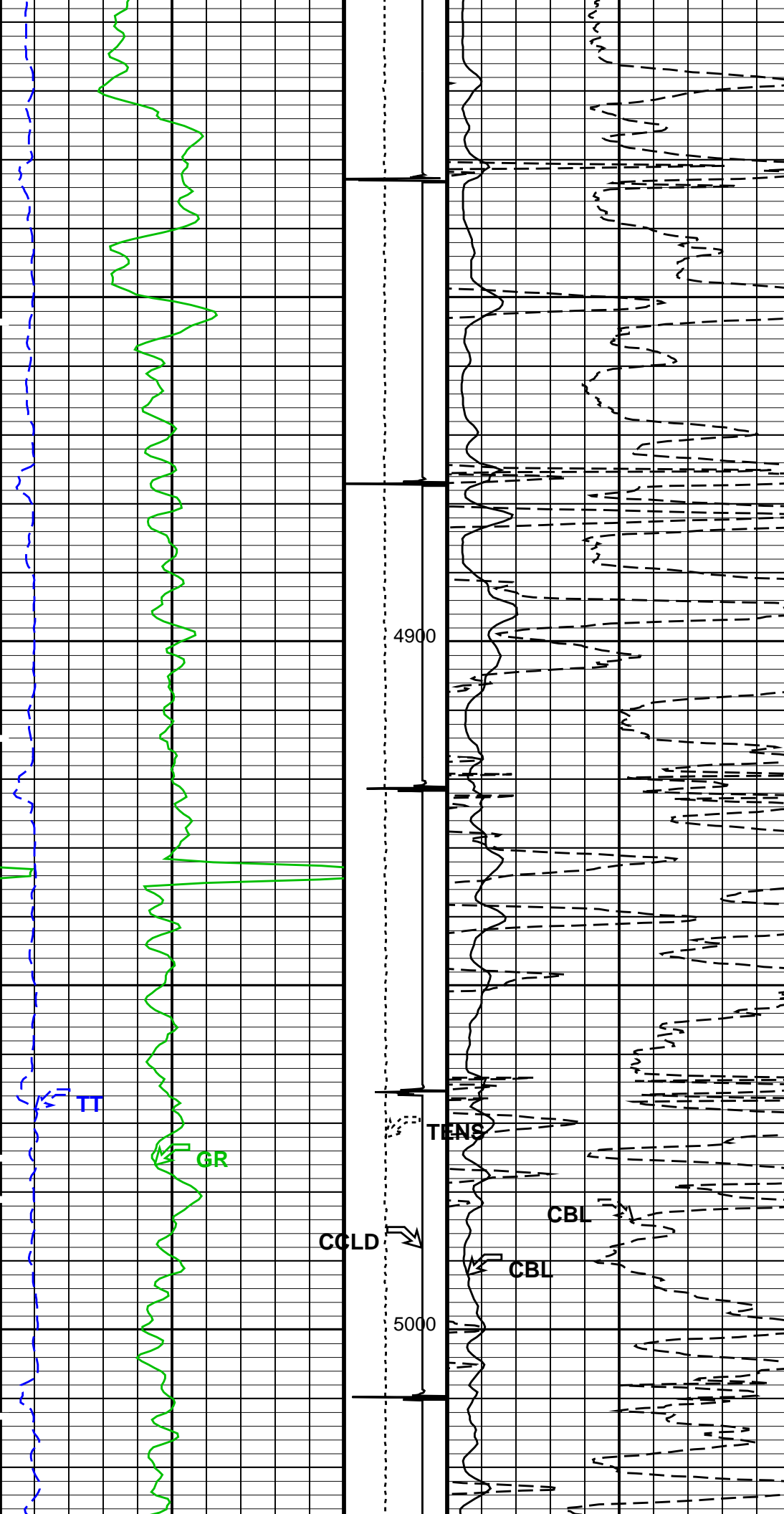


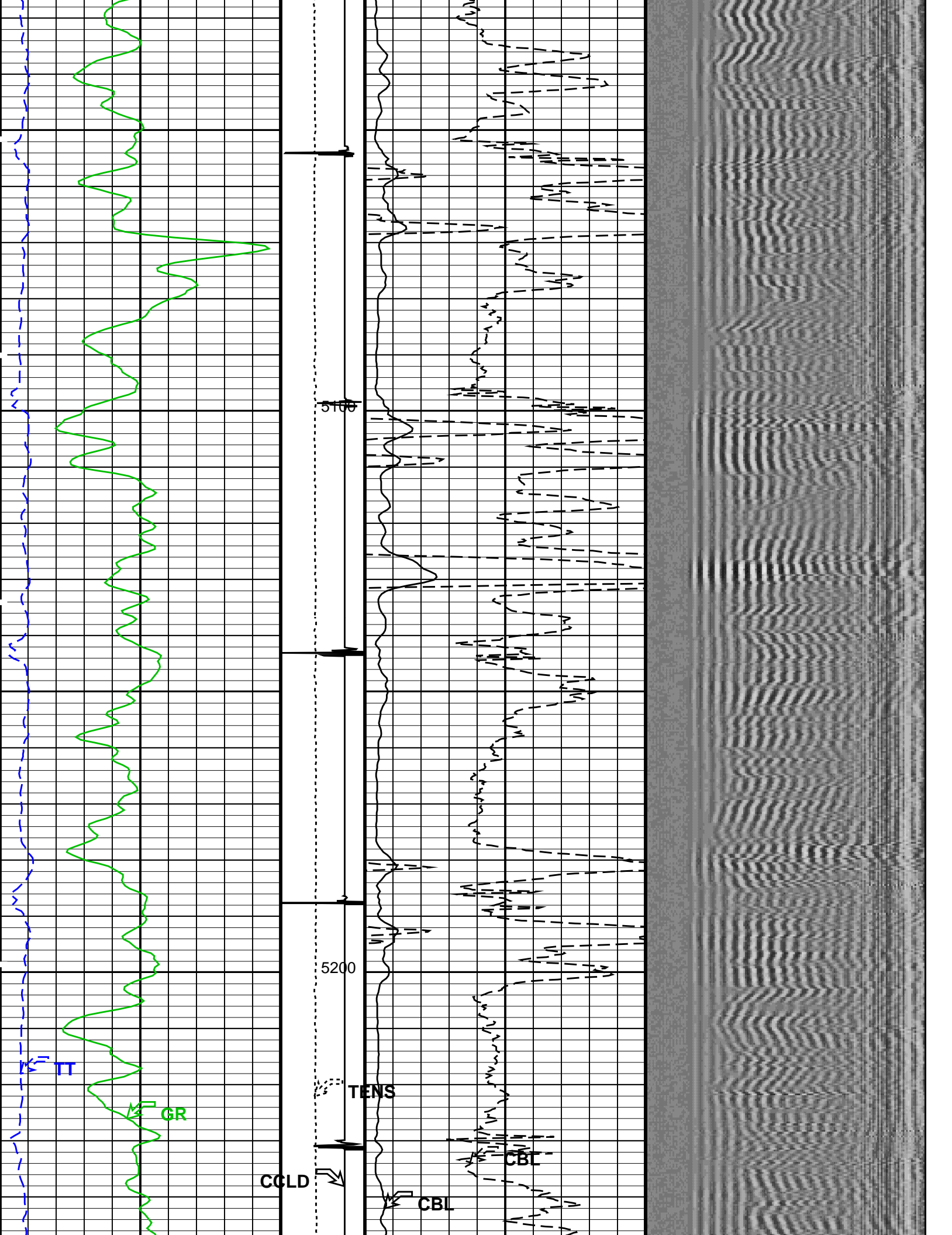




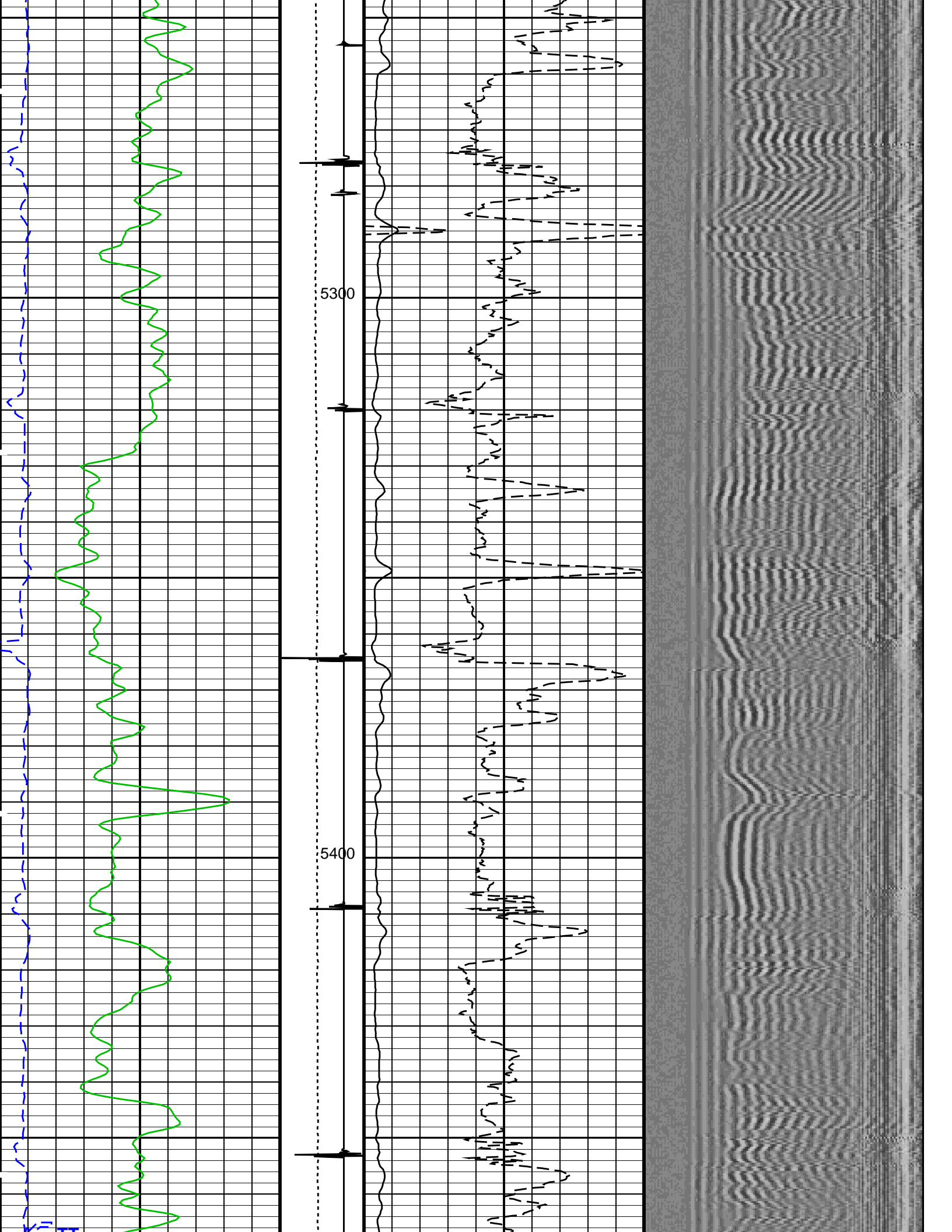


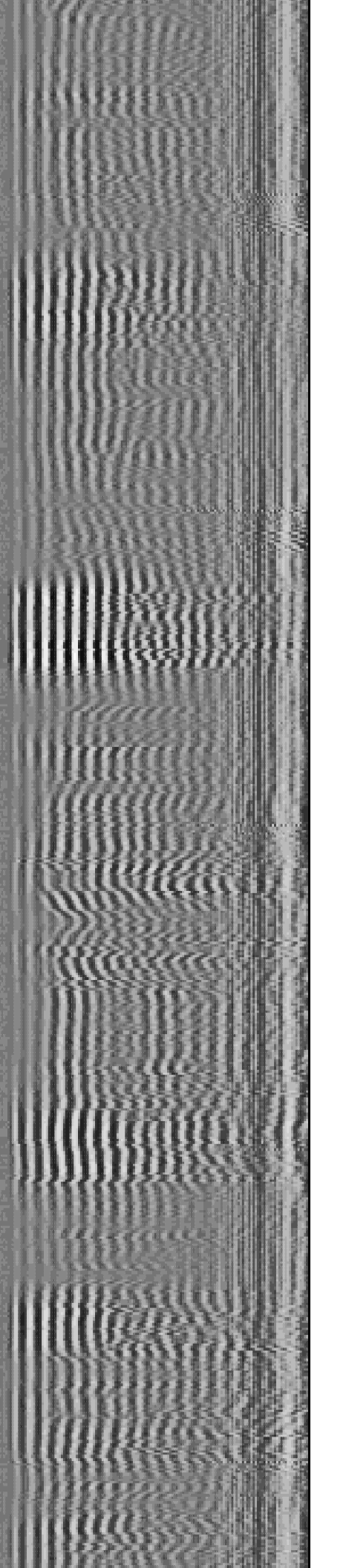
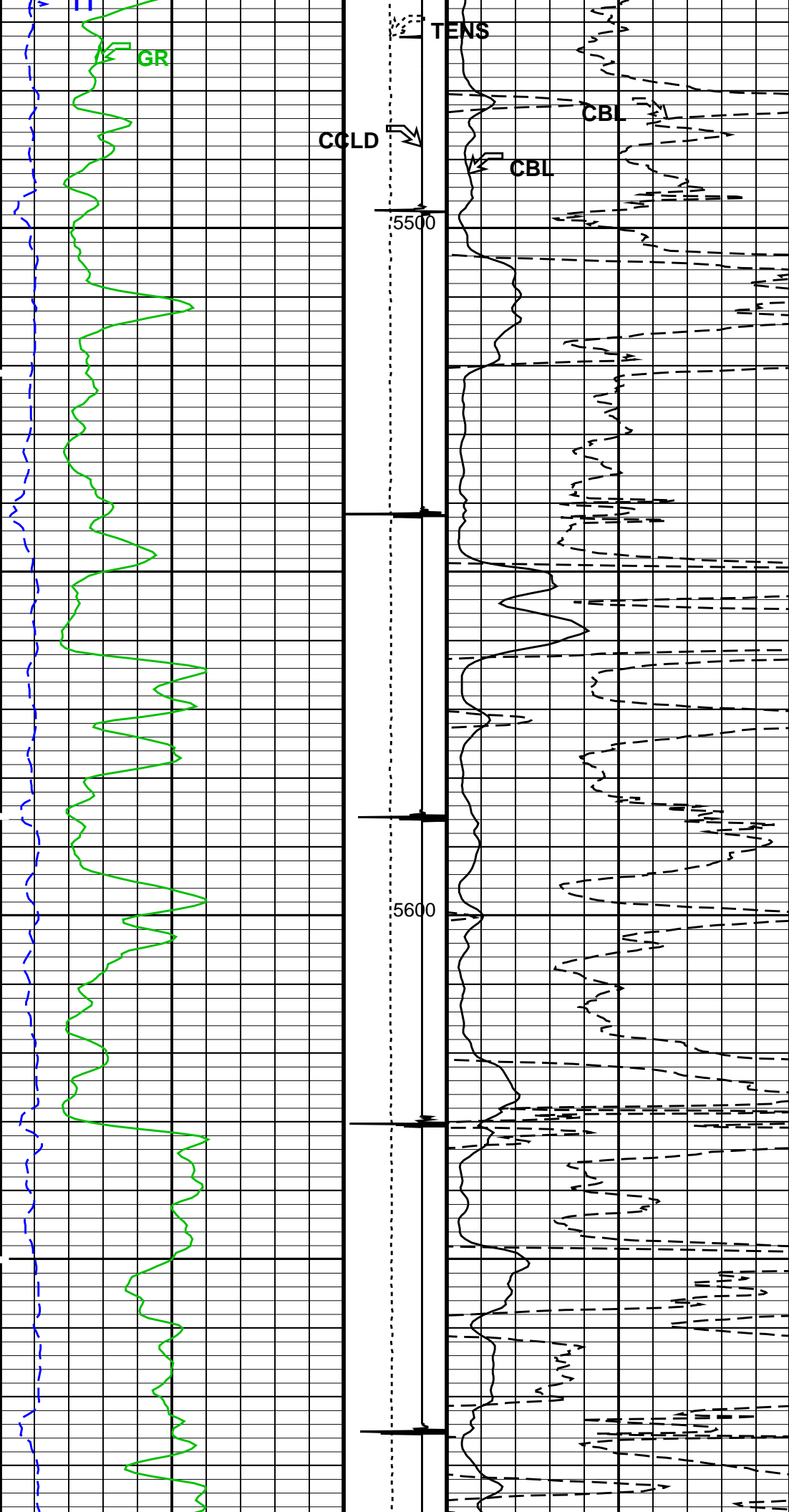


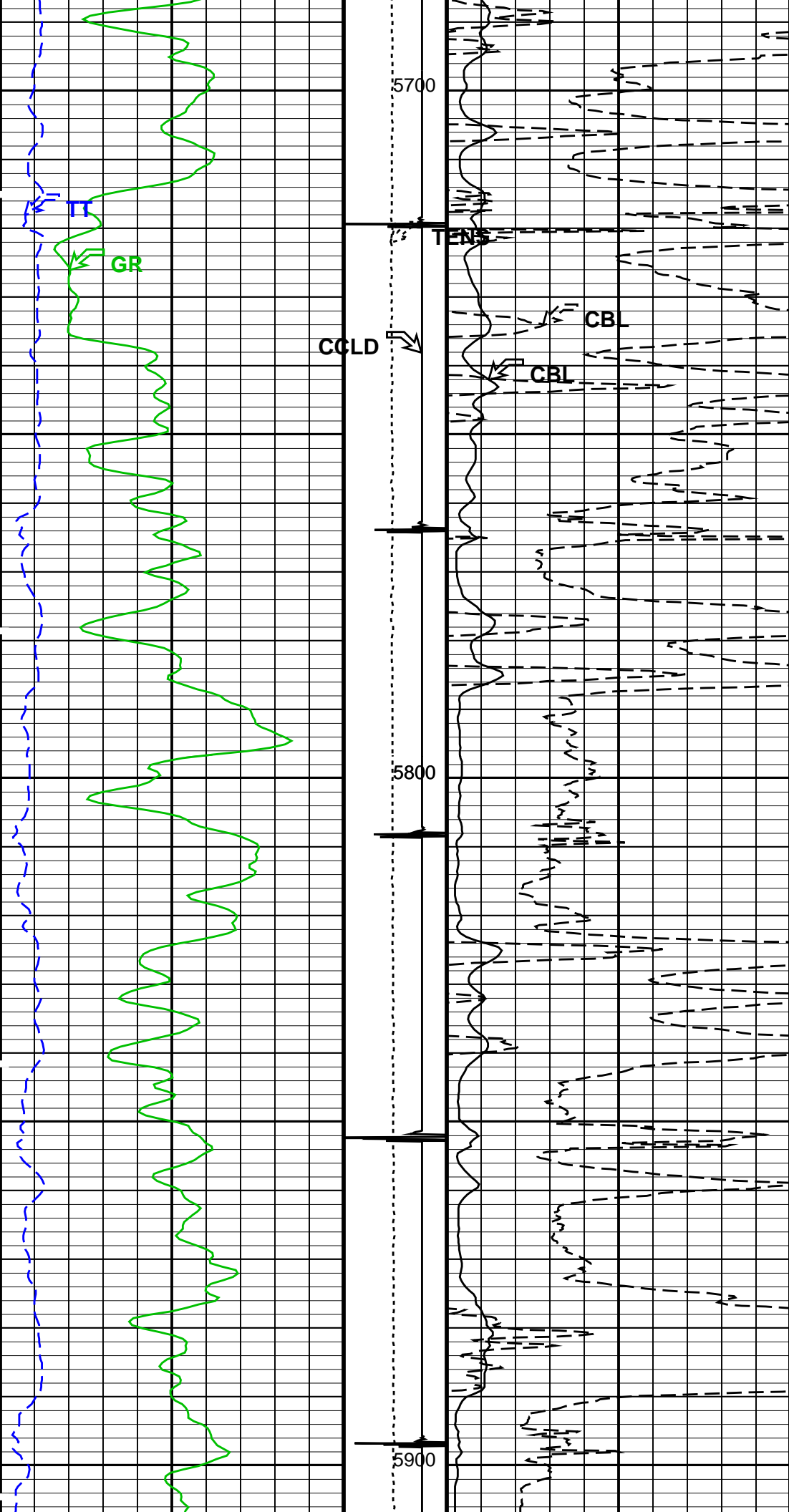


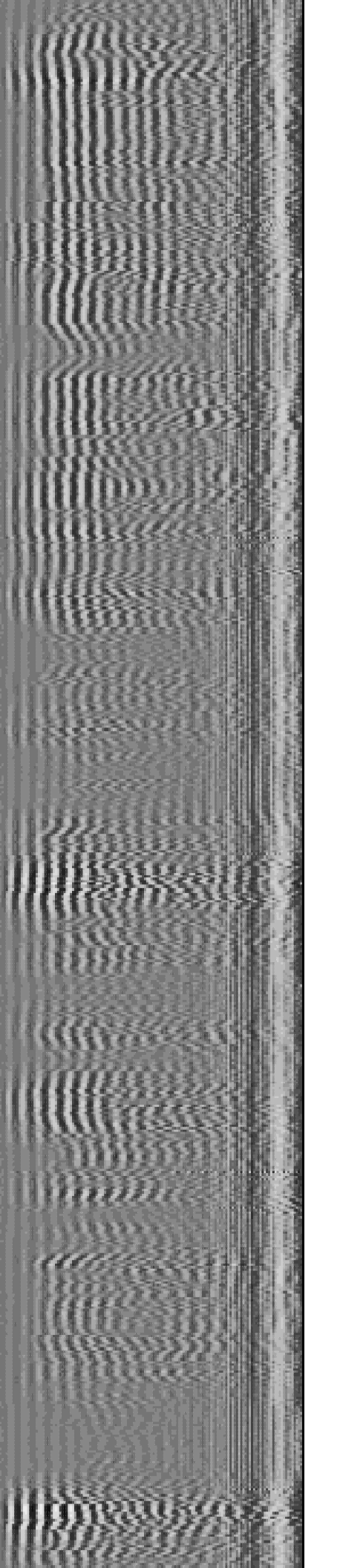
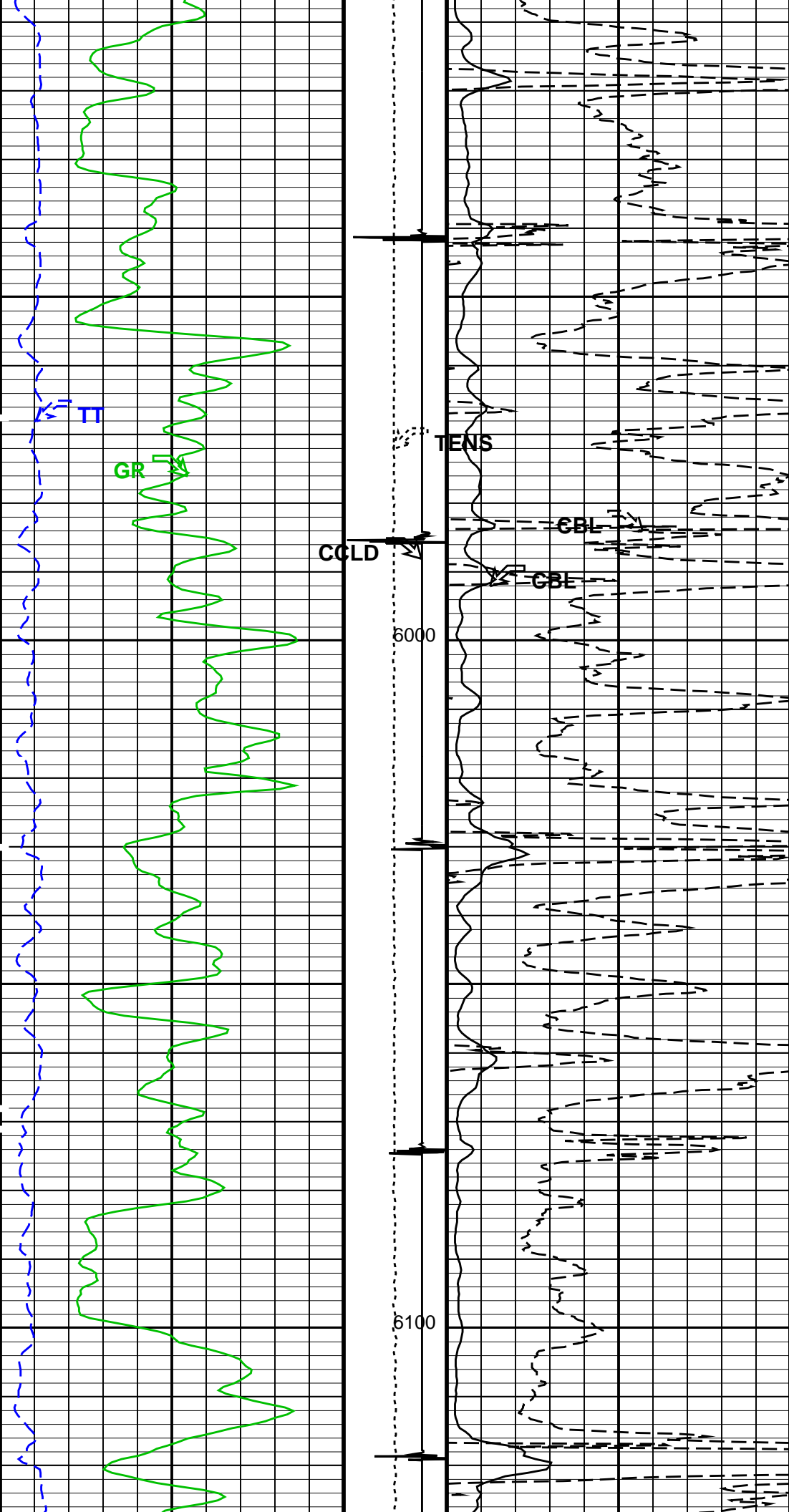




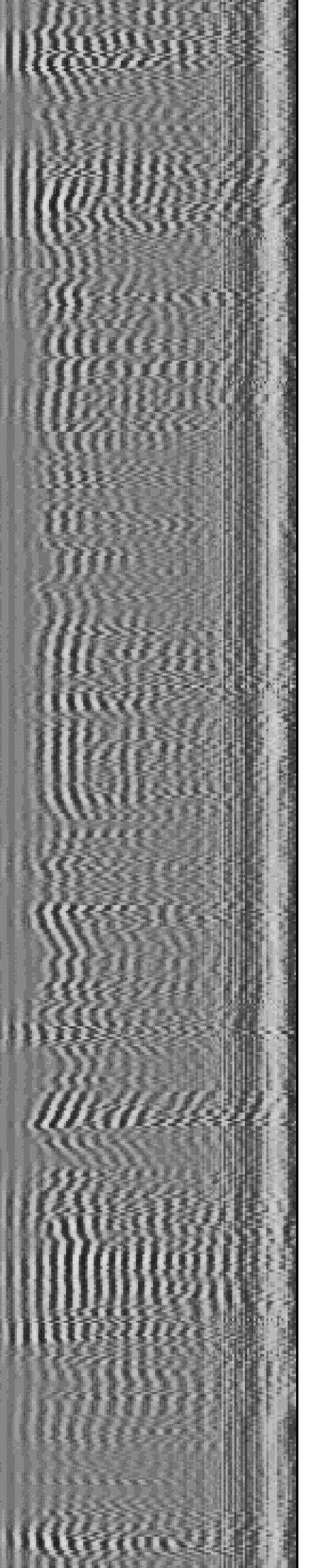
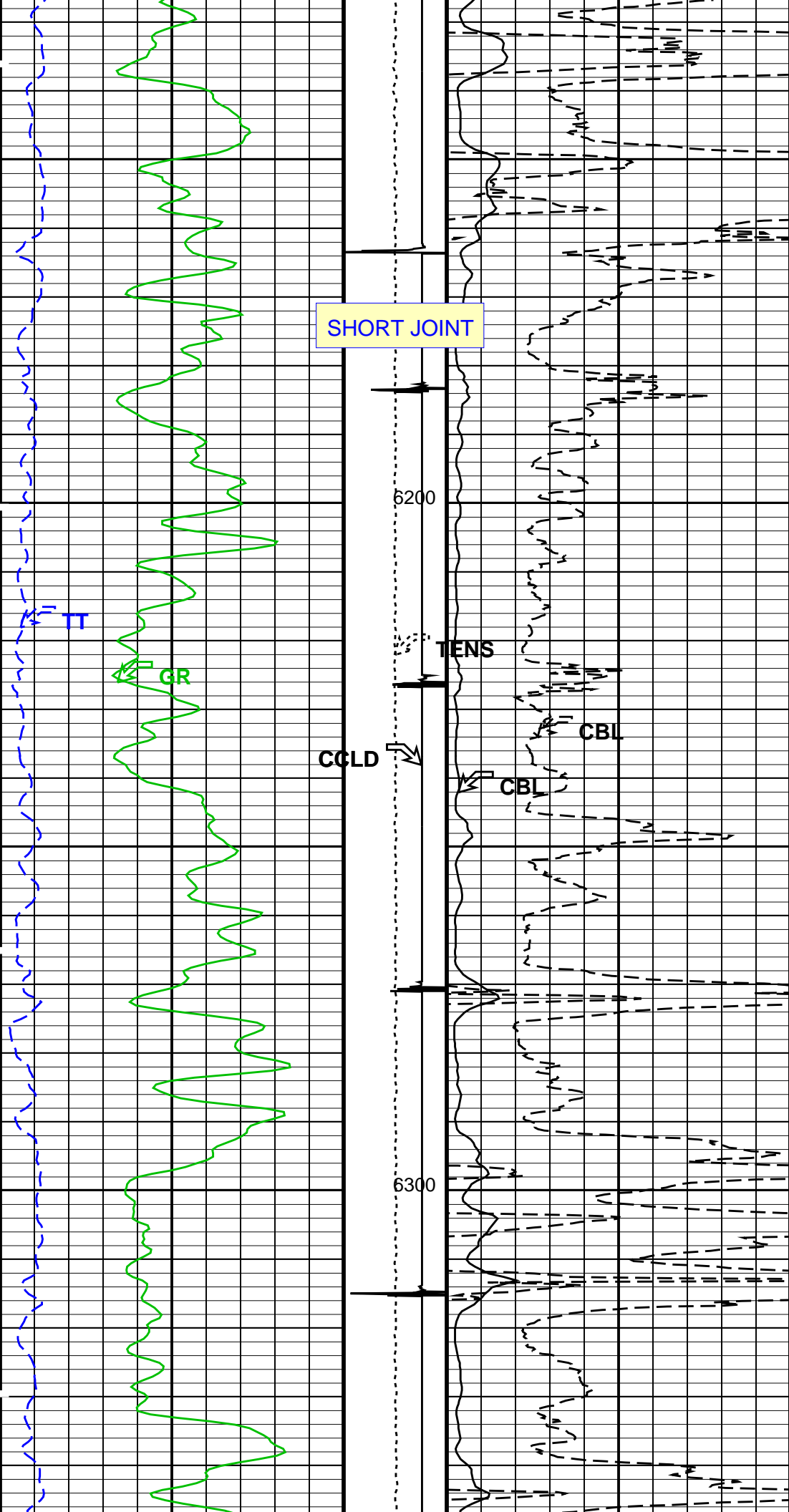


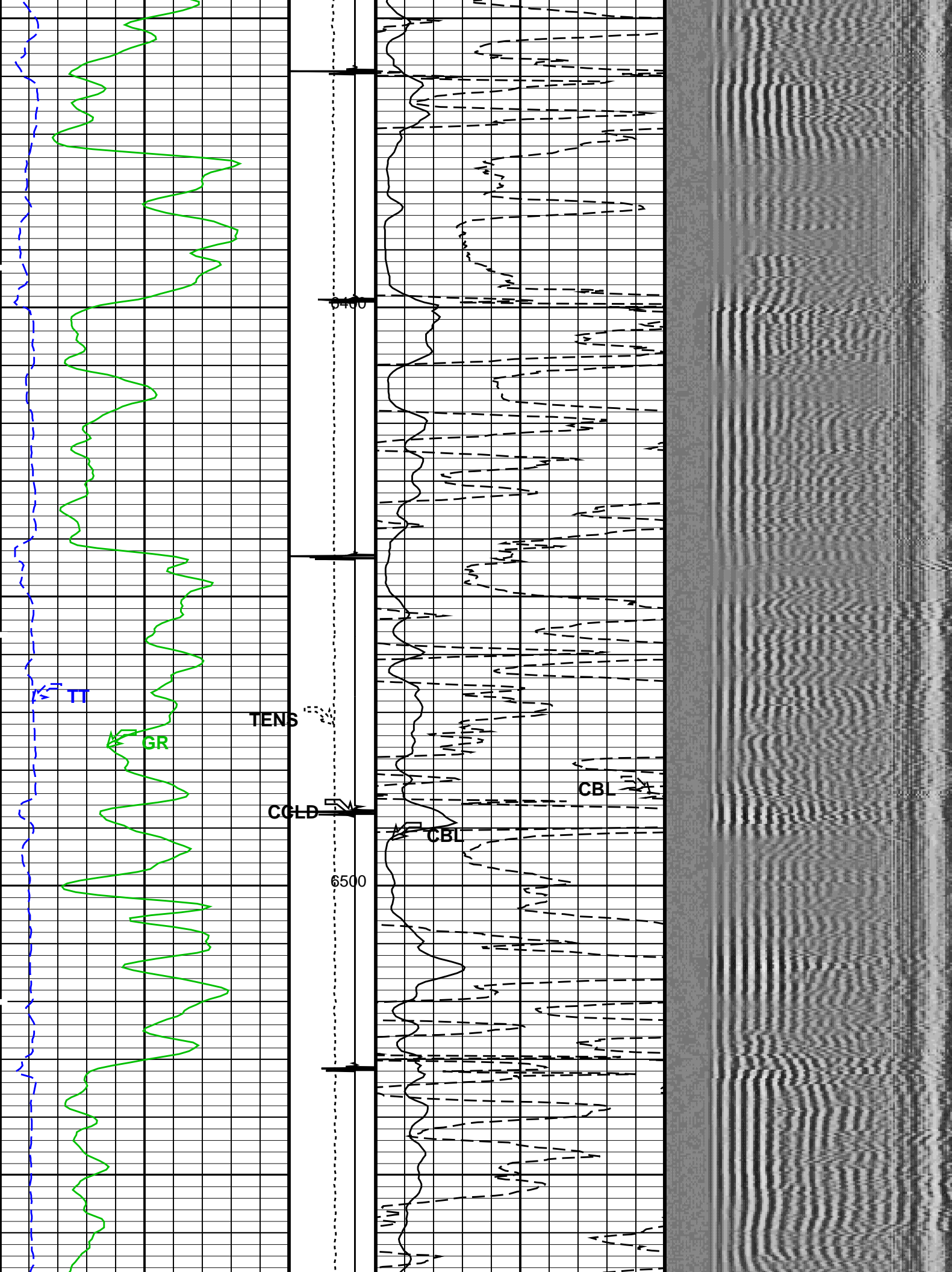


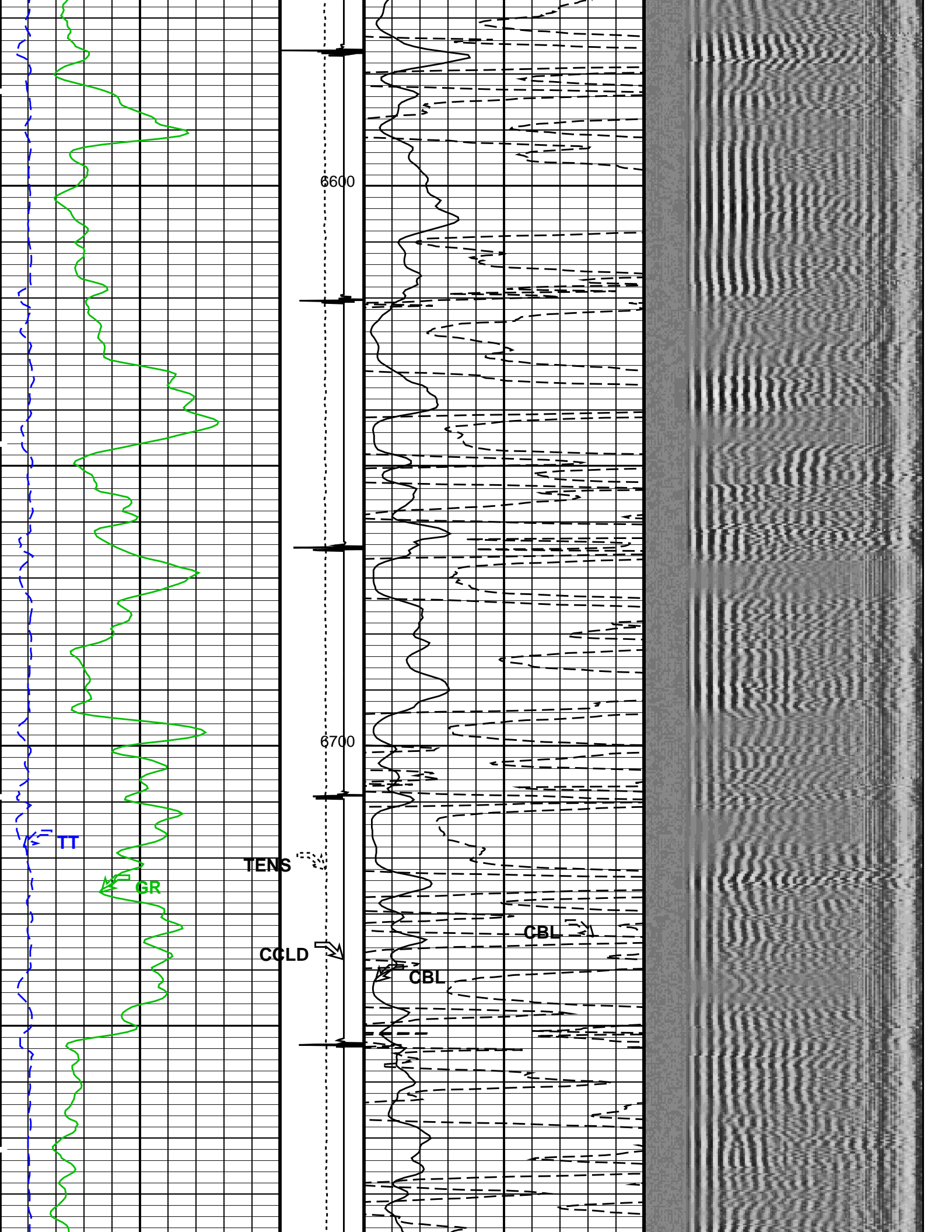




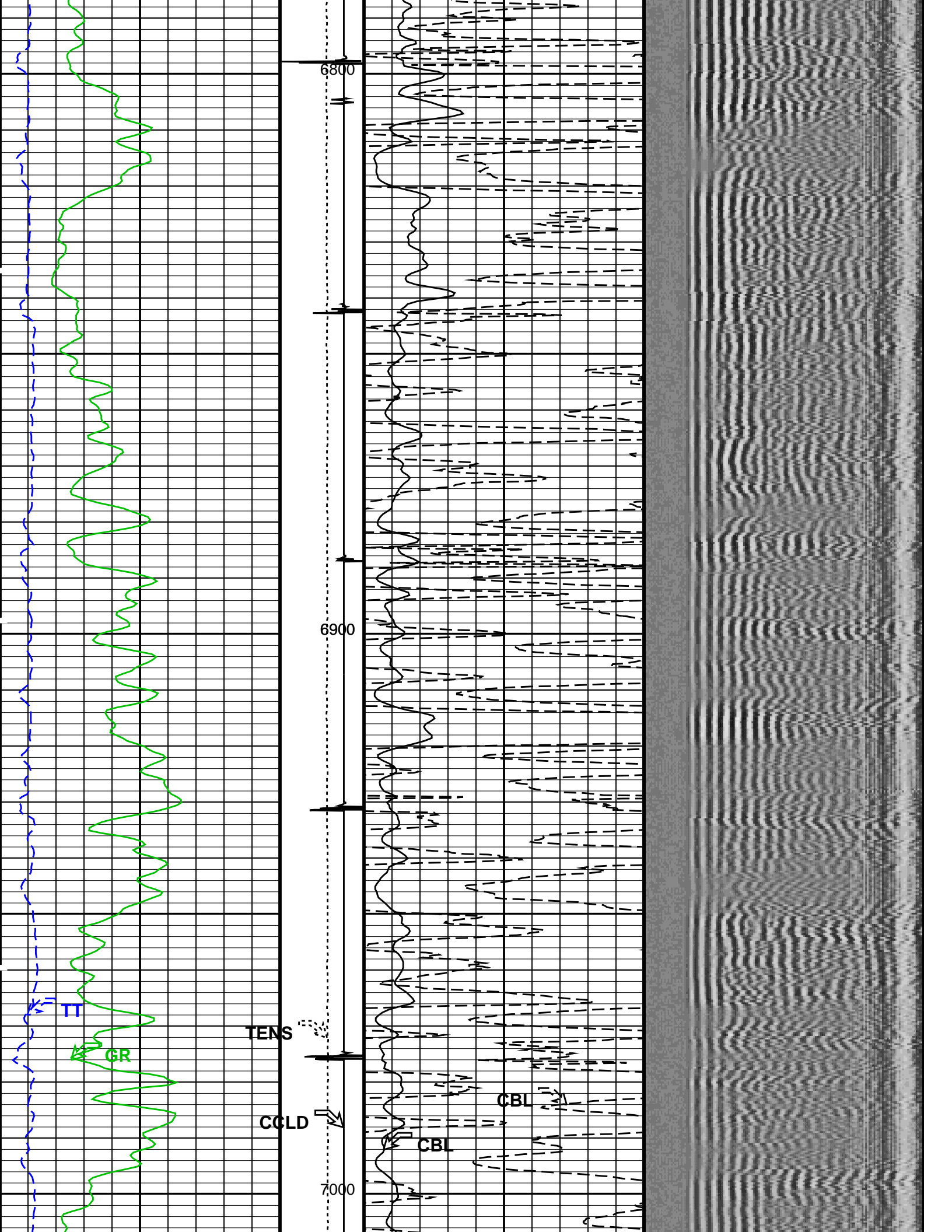




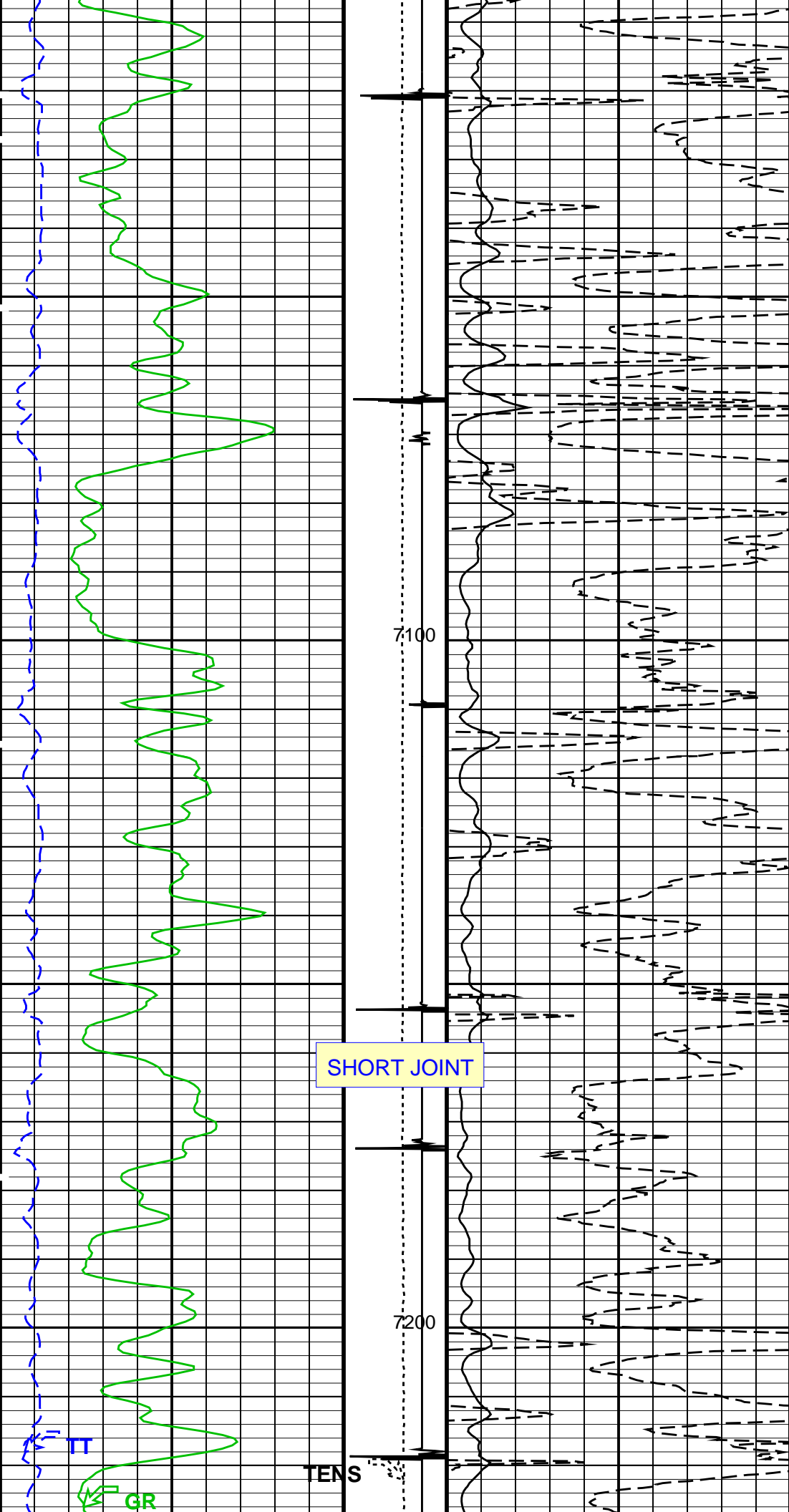


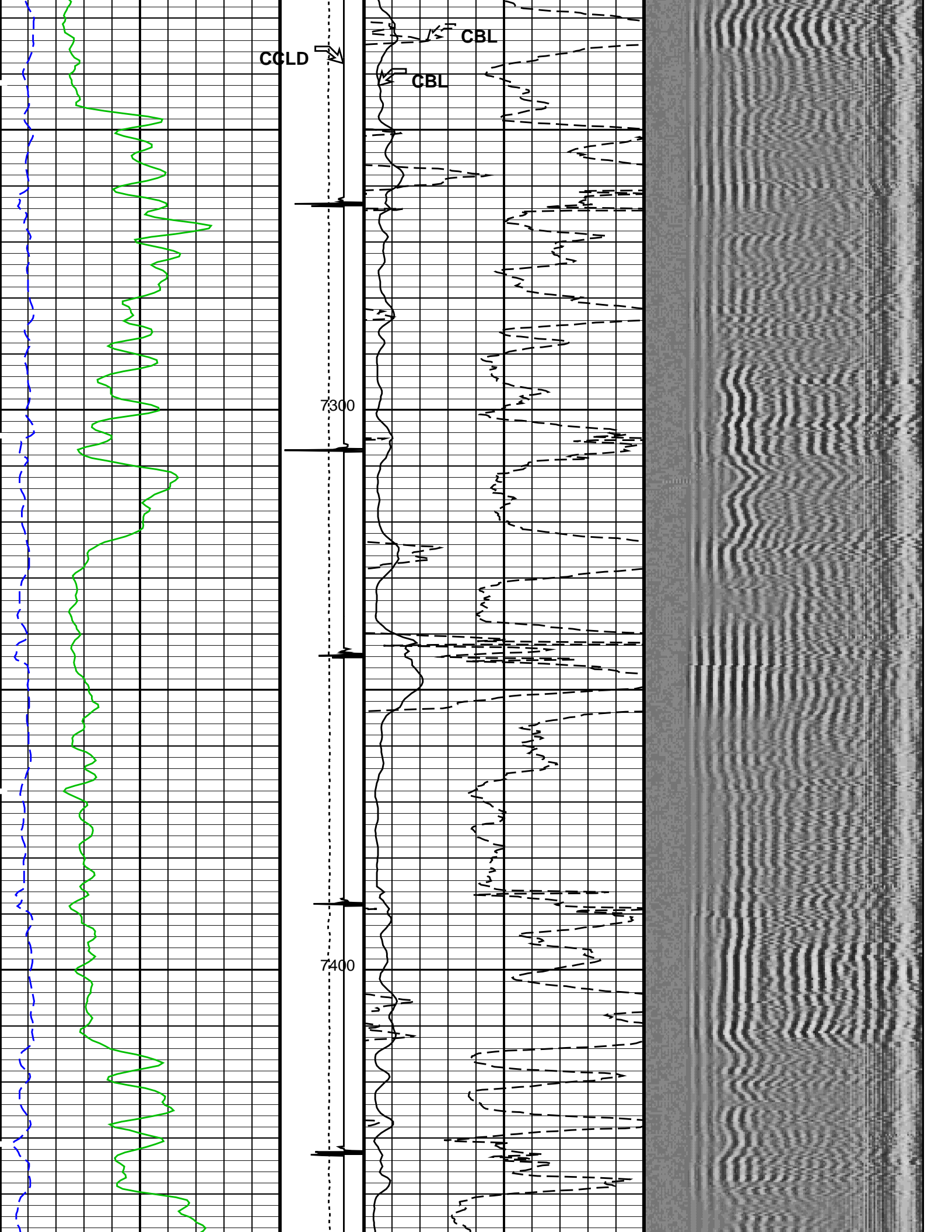


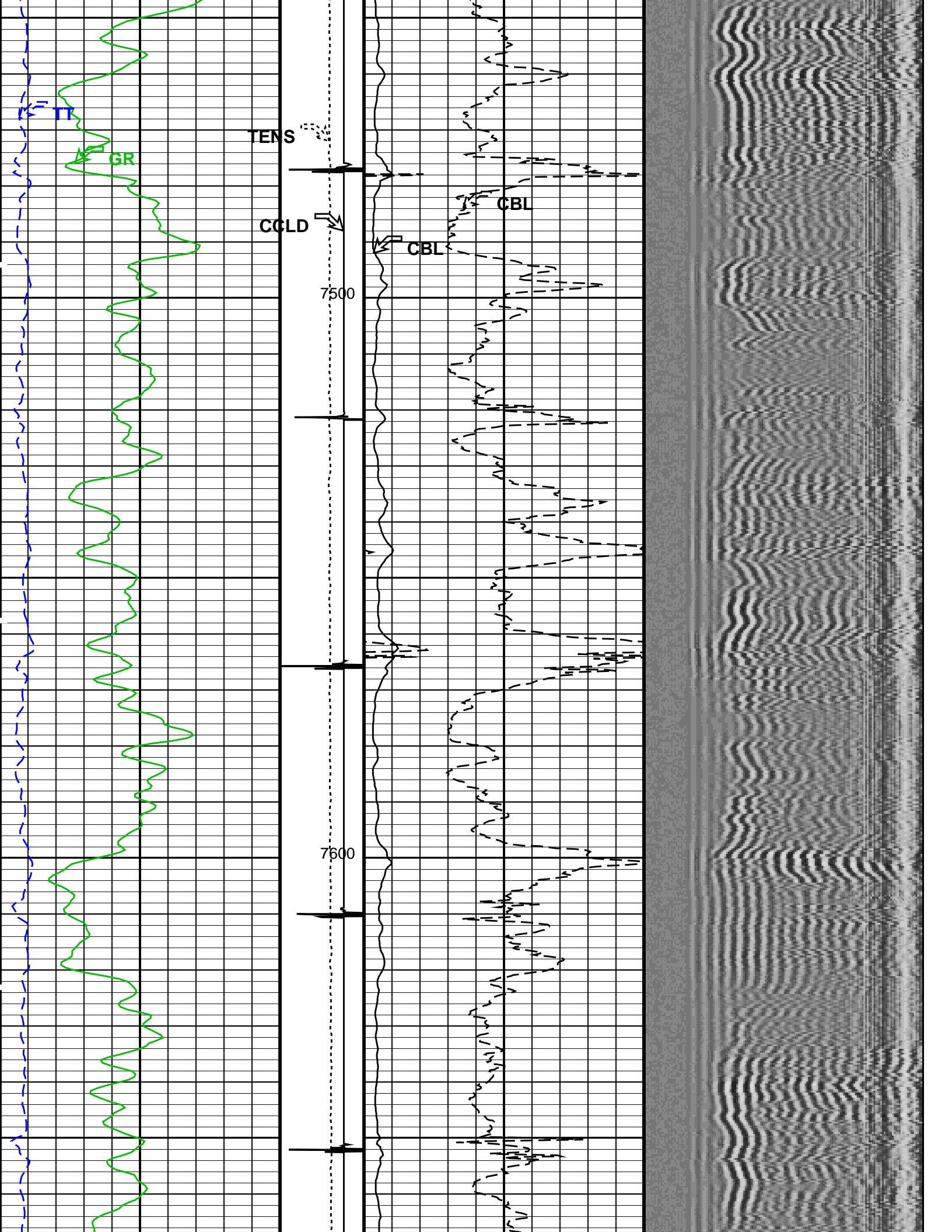




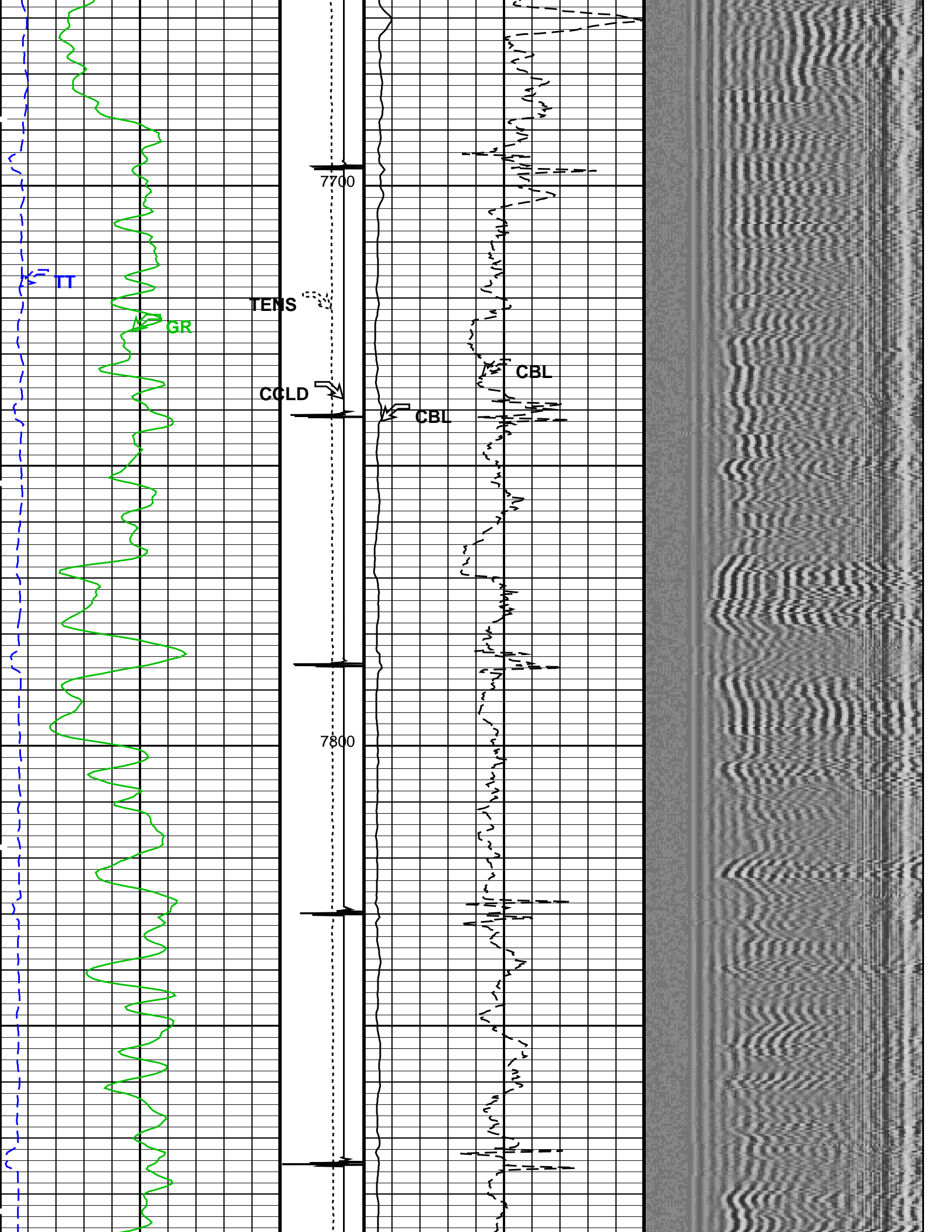


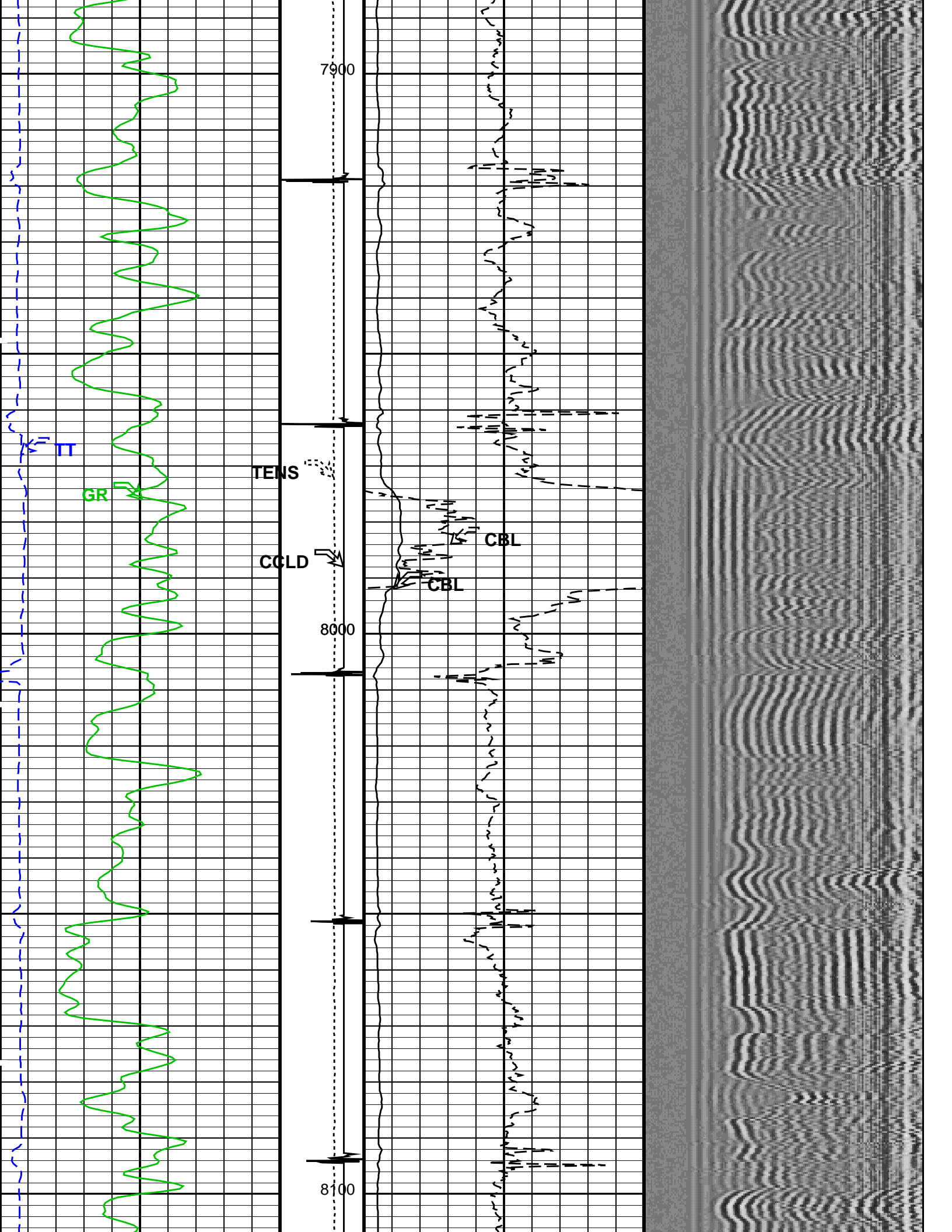


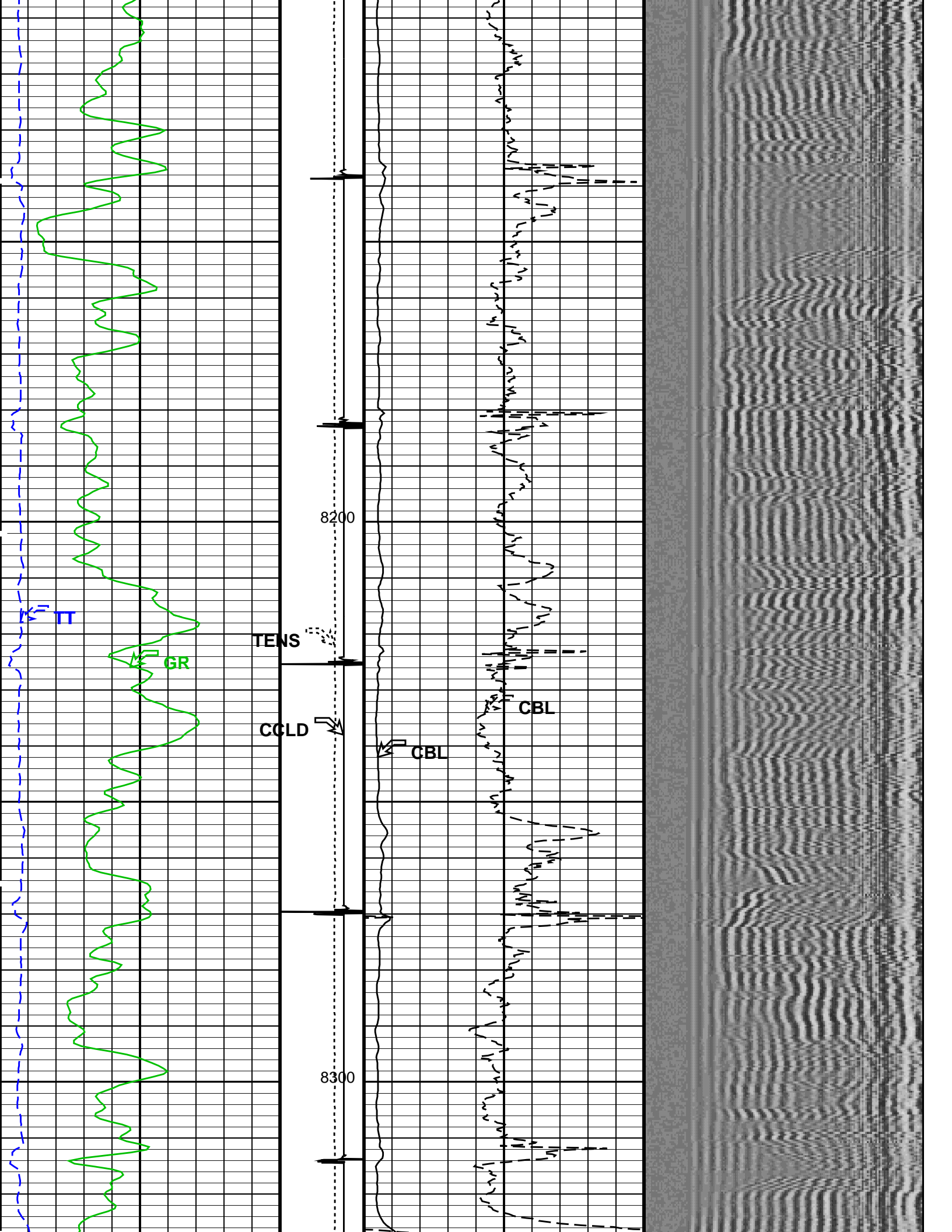


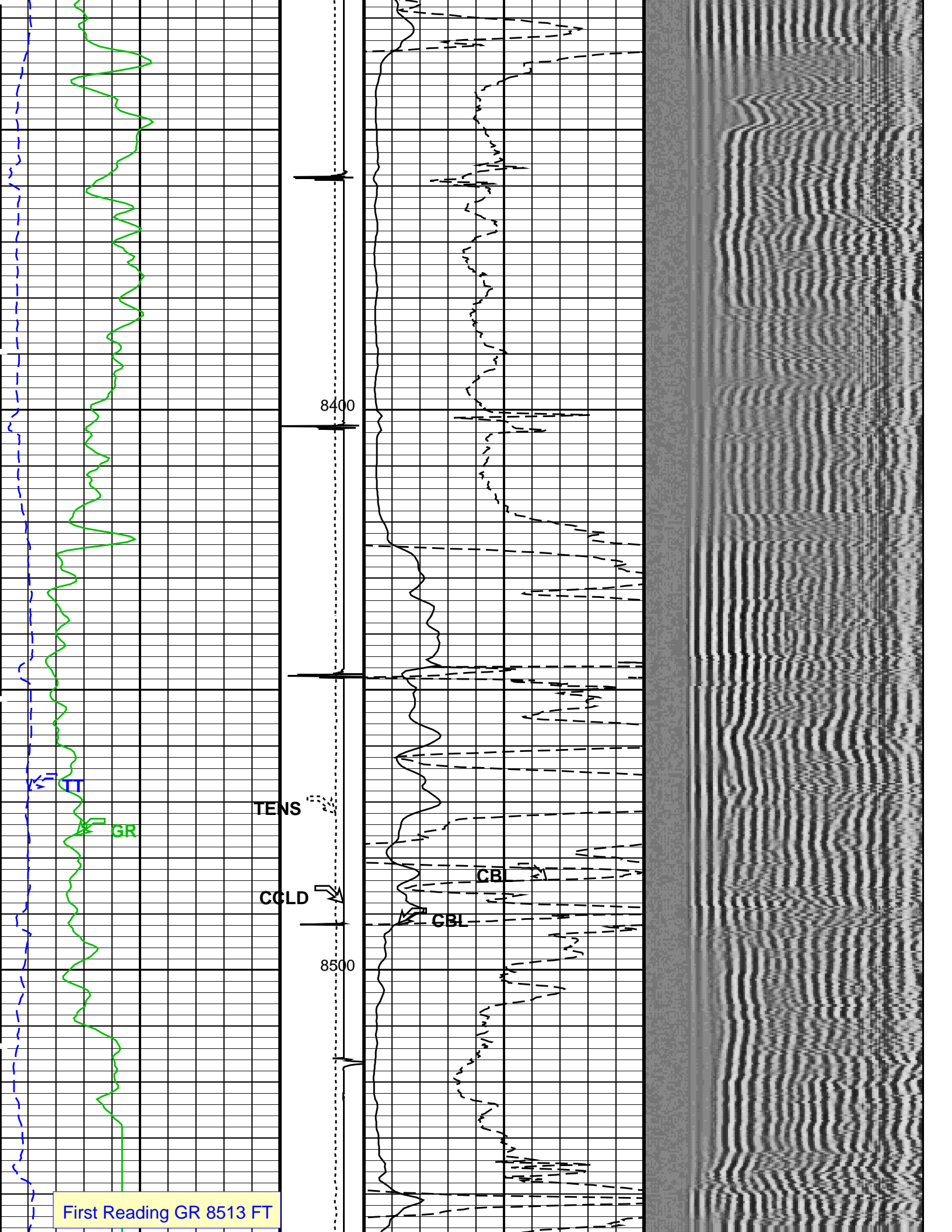




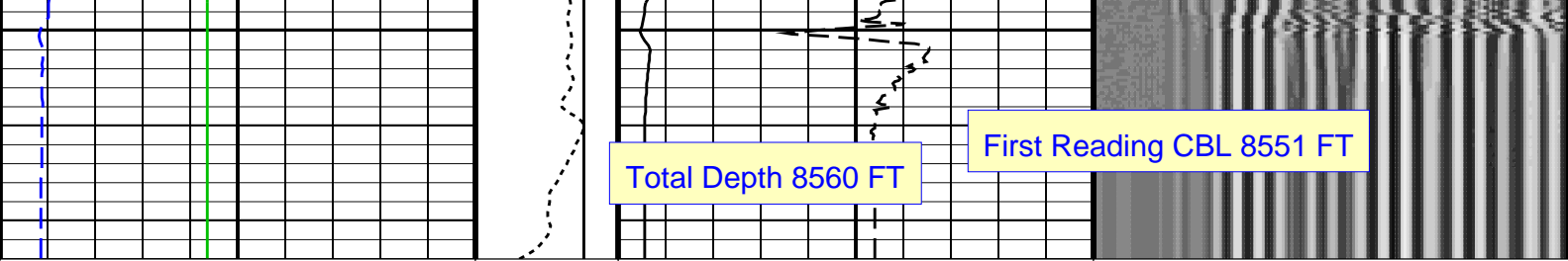












Gamma Ray (GR) (GAPI)		Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min	Amplitude	Max
0	150	0 2000	0 100	200	VDL Variable Density (VDL) (US)	1200
Transit Time (TT) (US)		Discriminat ed CCL (CCLD)	CBL Amplitude (CBL) (MV)			
260	160	3 (V) -1	0 10			

#### PIP SUMMARY

Time Mark Every 60 S

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

Graphics File Created: 21-Oct-2013 16:19

### 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	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

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	5.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	8560	FT

### Input DLIS Files

DEFAULT	SCMT_RST_PSP_018LUP	FN:16	PRODUCER	21-Oct-2013 13:37	8569.0 FT	5.5 FT
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### Output DLIS Files

DEFAULT	SCMT_RST_PSP_021PUP	FN:19	PRODUCER	21-Oct-2013 16:19
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**Schlumberger**

## REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC	Well: HAGEN FEDERAL 22-1D (PC22)
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### Input DLIS Files

DEFAULT	SCMT_RST_PSP_016LUP	FN:14	PRODUCER	21-Oct-2013 13:22	6320.5 FT	5987.0 FT
DEFAULT	SCMT_RST_PSP_021PUP	FN:19	PRODUCER	21-Oct-2013 16:19	8574.0 FT	-34.0 FT

### Output DLIS Files

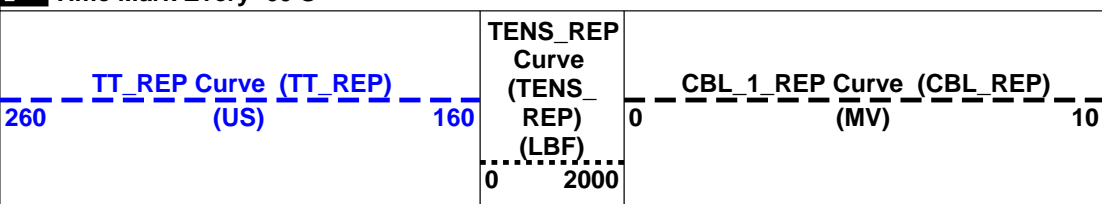
DEFAULT	SCMT_RST_PSP_022PUP	FN:20	PRODUCER	21-Oct-2013 16:30	6322.5 FT	5944.5 FT
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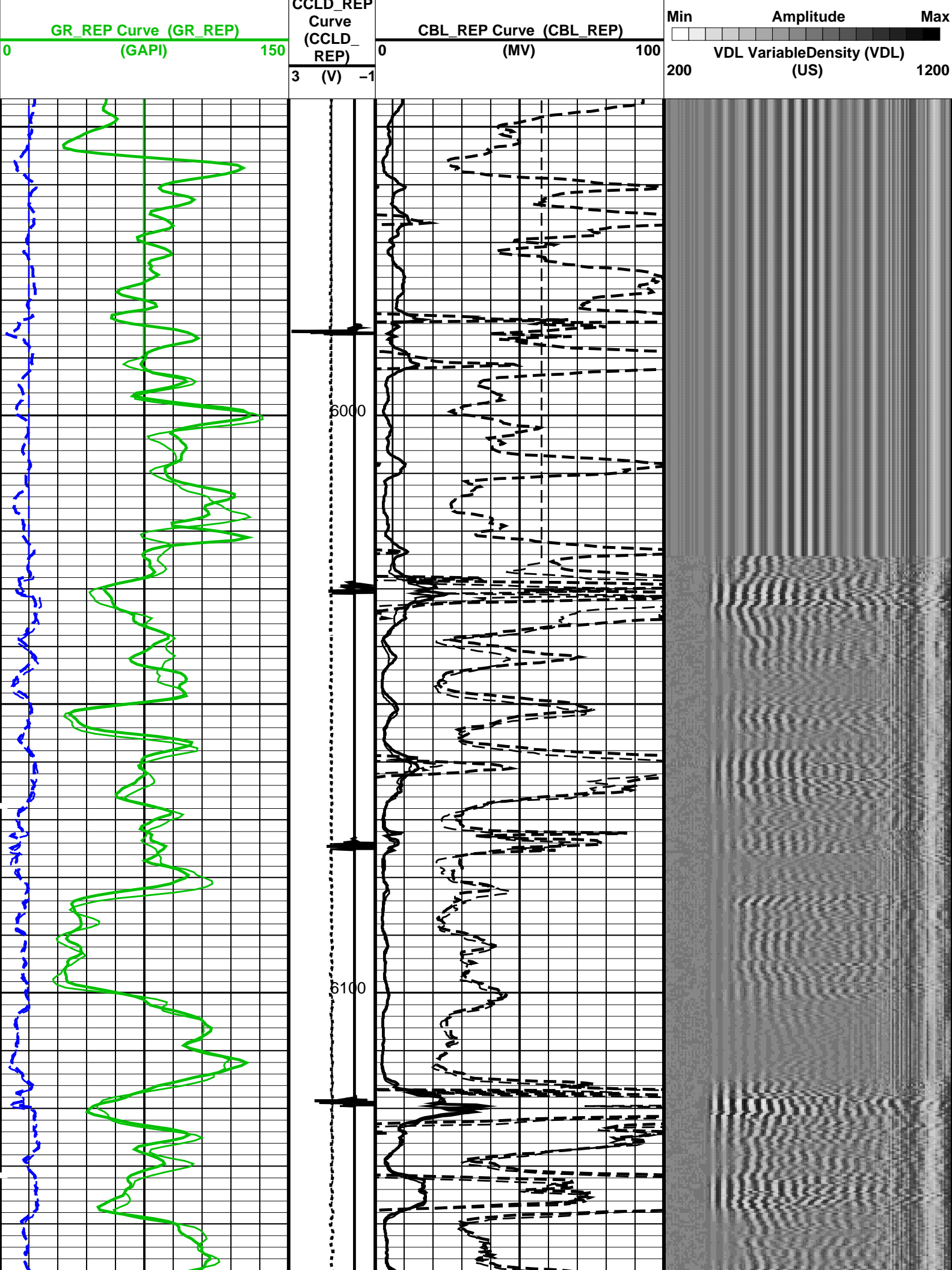
## OP System Version: 19C0-187

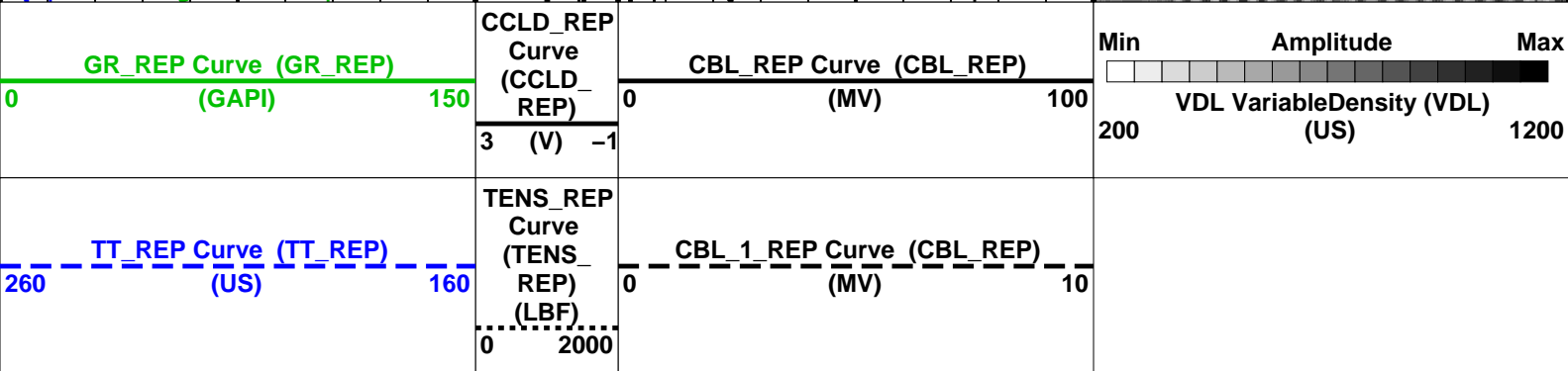
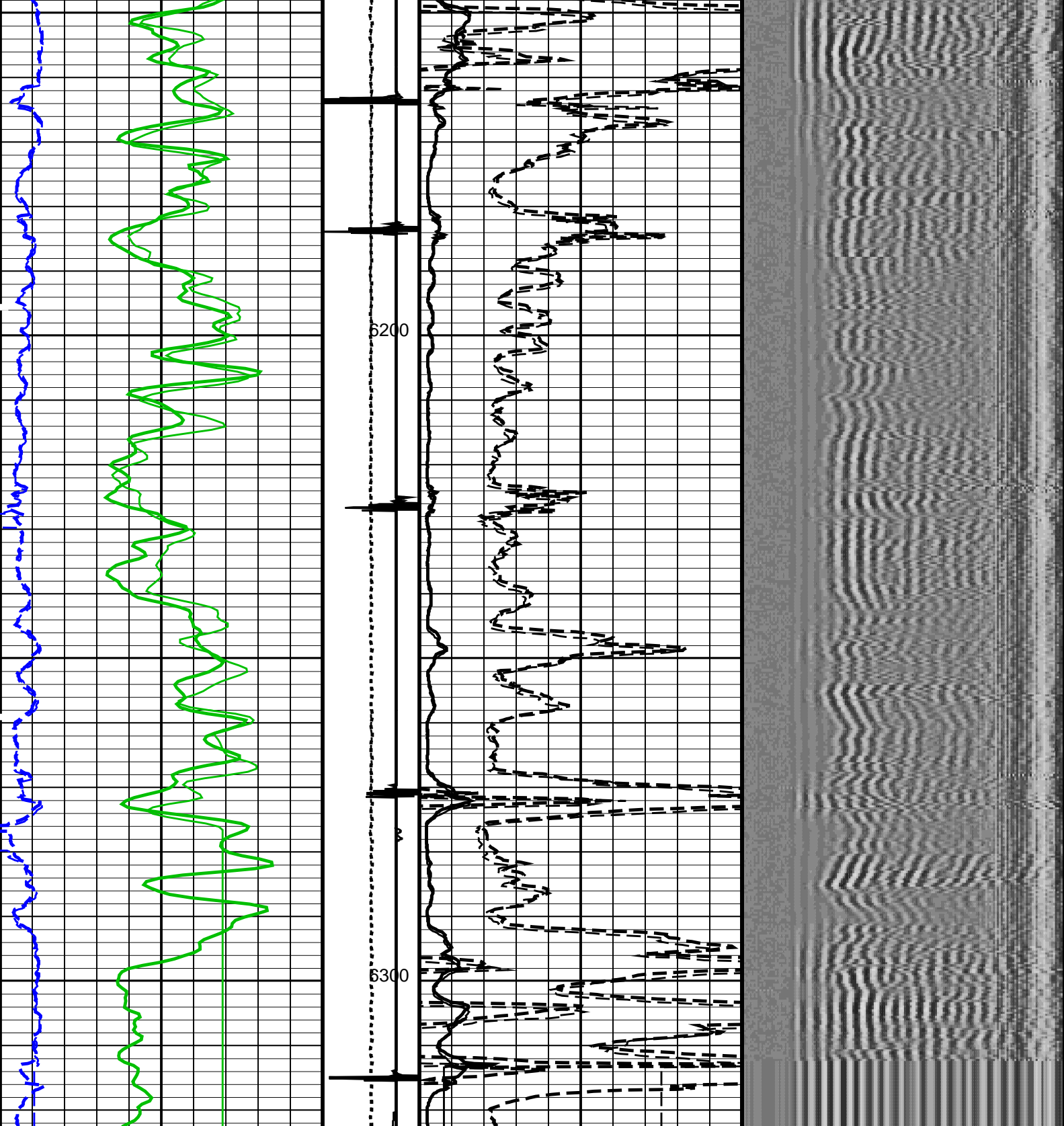
SCMT-CB	SRPC-5214-H2-2012-OP1	RST-C	SRPC-5214-H2-2012-OP1
PSPT	SRPC-5214-H2-2012-OP1		

### PIP SUMMARY

Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

## 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	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			
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	2.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT



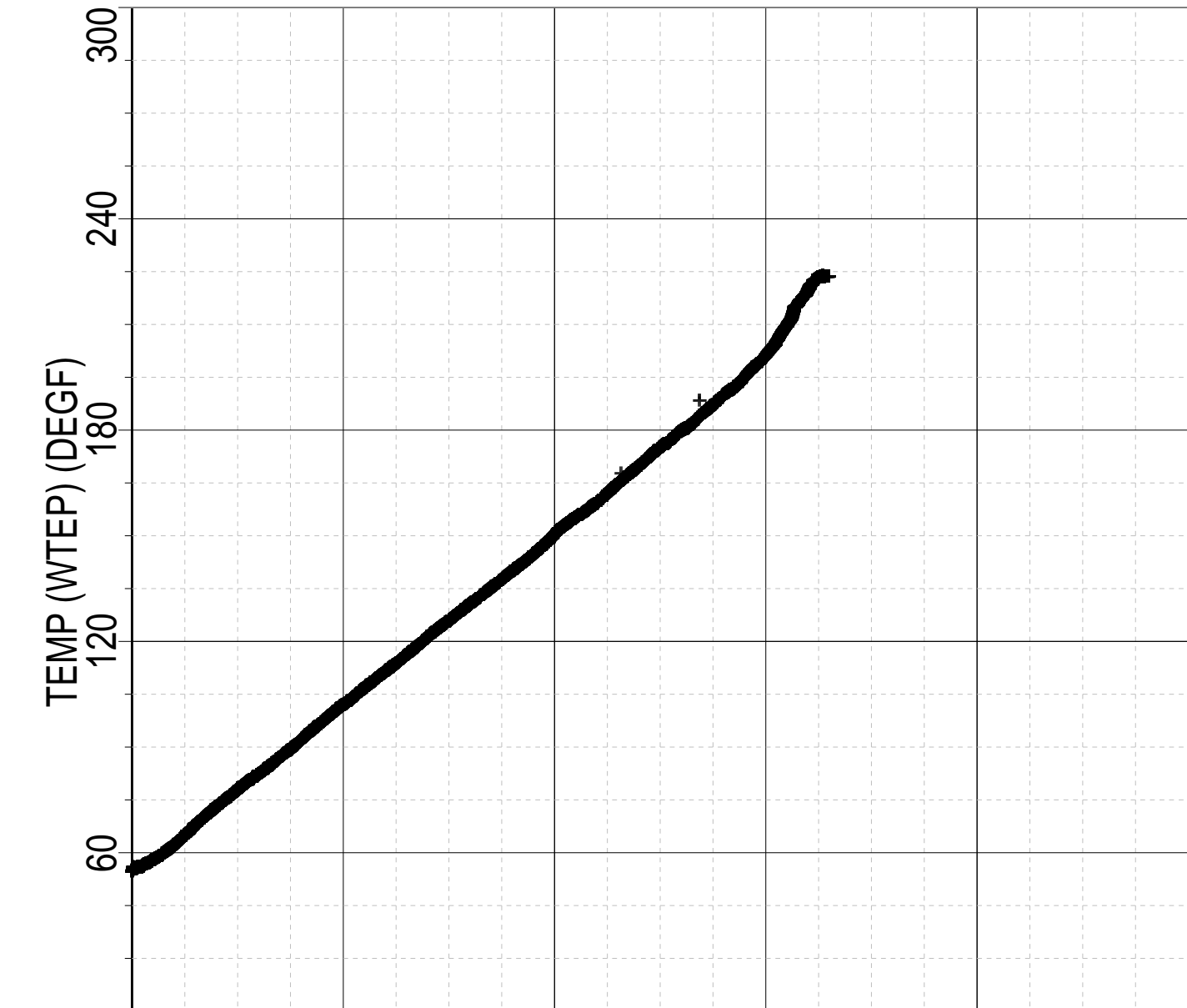
PP	Playback Processing	RECOMPUTE			8560	FT
TD	Total Depth					
Input DLIS Files						
DEFAULT	SCMT_RST_PSP_016LUP	FN:14	PRODUCER	21-Oct-2013 13:22	6320.5 FT	5987.0 FT
DEFAULT	SCMT_RST_PSP_021PUP	FN:19	PRODUCER	21-Oct-2013 16:19	8574.0 FT	-34.0 FT
Output DLIS Files						
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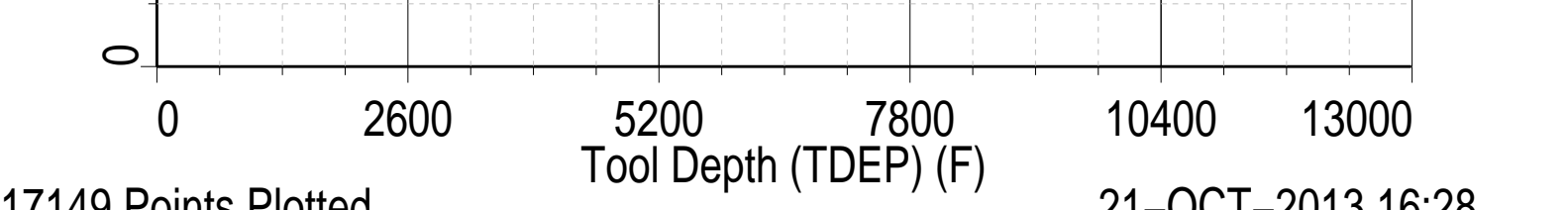
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 8574.0 – -34.0 FT





# PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC

Field: SOUTH PARACHUTE

Well: HAGEN FEDERAL 22-1D (PC22)

Run date: 21-Oct-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	<div>+.182000000000e+04</div>	<div>+.332000000000e+04</div>

Client: ENCANA OIL & GAS (USA) INC

Field: SOUTH PARACHUTE

Well: HAGEN FEDERAL 22-1D (PC22)

Run date: 21-Oct-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: SOUTH PARACHUTE

Well: HAGEN FEDERAL 22-1D (PC22)

Run date: 21-Oct-2013

Tool: PSP

Sub Type: PBMS

Sensor: CQG

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR CQG PBMS-B.928 S/N:  
928  
280612  
66  
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	212271222222E−05	222222222211E−02	227212722222E−02



(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







#### 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
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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		876.9	Master		726.7
	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		954.5	Master		611.0
	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
					
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)			500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	

Master		812.5	Master		931.0
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		795.9	Master		830.0
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)	500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)
Phase	CBL Amplitude Plus MV	Value			
Master		1269			
1000 (Minimum)	1350 (Nominal)	1700 (Maximum)			
Master: Calibration out of date 7-Sep-2012 16:30					

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

**Schlumberger**

Well: **HAGEN FEDERAL 22-1D (PC22)**

Field: **SOUTH PARACHUTE**

County: **GARFIELD**

State: **COLORADO**

SLIM CEMENT MAPPING LOG

CBL-VDL

GR-CCL