

Company: ENCANA OIL & GAS (USA) INC

Well: MCU 22-13C (N22W)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

SLIM CEMENT MAPPING LOG
CBL – VDL
GAMMA RAY – CCL

County:	GARFIELD		
Field:	MAMM CREEK		
Location:	SHL: 645 FSL 2055 FWL		
Well:	MCU 22-13C (N22W)		
Company:	ENCANA OIL & GAS (USA) INC		
	LOCATION		
	SHL: 645 FSL 2055 FWL BHL: 600 FSL 720 FWL	Elev.: K.B. 7048.00 ft G.L. 7026.00 ft D.F. 7047.00 ft	
	Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	GROUND LEVEL _____ KELLY BUSHING _____ KELLY BUSHING _____	Elev.: 7026.00 ft 22.00 ft above Perm. Datum
	API Serial No. _____ 05 045 21275 00		Section 22 Township 7S Range 93W

	Run 1	Run 2	Run 3
PVT DATA			
Oil Density			
Water Salinity			
Gas Gravity			
Bo			
Bw			
1/Bg			
Bubble Point Pressure			
Bubble Point Temperature			
Solution GOR			
Maximum Deviation	16 deg		
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	23-Sep-2012		
Run Number	1		
Depth Driller	9333 ft		
Schlumberger Depth	9254 ft		
Bottom Log Interval	9245 ft		
Top Log Interval	68 ft		
Casing Fluid Type	Fresh Water		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	68 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.750 in		
From	22 ft		
To	9333 ft		
Casing/Tubing Size	4.500 in		
Weight	11.6 lbm/ft		
Grade	S-80		
From	22 ft		
To	9313 ft		
Maximum Recorded Temperatures	252 degF		
Logger On Bottom	23-Sep-2012	3:00	
Unit Number	391	Grand Junction	
Recorded By	Kirstie Bunting		
Witnessed By	Unwitnessed		

DEPTH SUMMARY LISTING

Date Created: 23-SEP-2012 4:58:28

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-C	Type:	1-25ZT
Serial Number:	6214	Serial Number:	5006	Serial Number:	
Calibration Date:	24-APR-2012	Calibration Date:	20-SEP-2011	Length:	16000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	Rigless
Wheel Correction 1:	-3	Calibration RMS:	7		
Wheel Correction 2:	-4	Calibration Peak Error:	15		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	
Rig Up Length At Bottom:	
Rig Up Length Correction:	
Stretch Correction:	2.00 FT
Tool Zero Check At Surface:	

Depth Control Remarks

1. All Schlumberger Depth Control Procedures Used
2. Primary Depth Control: IDW
3. Secondary Depth Control: Drum Counter (SWPT)
- 4.
- 5.
- 6.

DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: RESERVOIR SATURATION	OS1:
OS2: LOG – SIGMA MODE	OS2:
OS3:	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 TIME: 1:15	
TIME LOGGER AS BLI: 3:00	
EXIT TIME: 6:00	
MAXIMUM RECORDED TEMPERATURE: 252 DEGF	
MAXIMUM RECORDED PRESSURE: 3881 PSI	

EXPECTED CBL AMP IN FREE PIPE 80 MV	
CYCLE SKIPPING DUE TO GOOD CEMENT BOND	
MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE	
CREW: KBUNTING; ATERHUNE; JBARRY; WAZIZ; CARNOLD; KJOHNS	
THANK YOU FOR CHOOSING E&P WIRELINE – A SCHLUMBERGER COMPANY	

RUN 1 SERVICE ORDER #: C49N-00016 PROGRAM VERSION: 19C0-187 FLUID LEVEL: 68 ft			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT	DESCRIPTION

	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
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86	1	1
87	1	1
88	1	1
89	1	1
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

WITM-A PSC_16MHZ	SURFACE EQUIPMENT	
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DOWNHOLE EQUIPMENT

Device	Temperature (°C)
MH-22	56.2
MH-22	
Detail MT	
TelStatus	
CTEM	54.3
AH-38	54.6
HBMS-B	54.3
PSC-A	
HUDH-A	
HSTC-A 2884	
HBMC-A	
GR	49.4
CCL	
HBMC	
HTPS-A 2884	47.0
HCQG_E_Mano	
RTD_Thermometer	
HSTC Aux.	45.5
HBMC Aux.	
CQG Manom	
Well_Temp	44.1
RST-C	43.2
RSCH-A 155	
RSC-E	
RSS-A 481	
RSXH-A 493	
RSX-E	
RSC-A Far	34.1
RSC-A PNG	
RSC-A Nea	
RSX-A PNG	33.6

SCMT-CB
SCMC-CA 8120
SECH-CA
CMIR-AG
SCMS-CB 8179
SCMX-CA

20.2

DT 11.1
CBL5 DTSC 9.6
CBL3 8.6
MAP 8.1
AUX 7.1

0.2
AH-Bottom Nose Tension SCMT HV
TOOL ZERO 0.0

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

Schlumberger

MAIN PASS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: MCU 22-13C (N22W)

Input DLIS Files

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Output DLIS Files

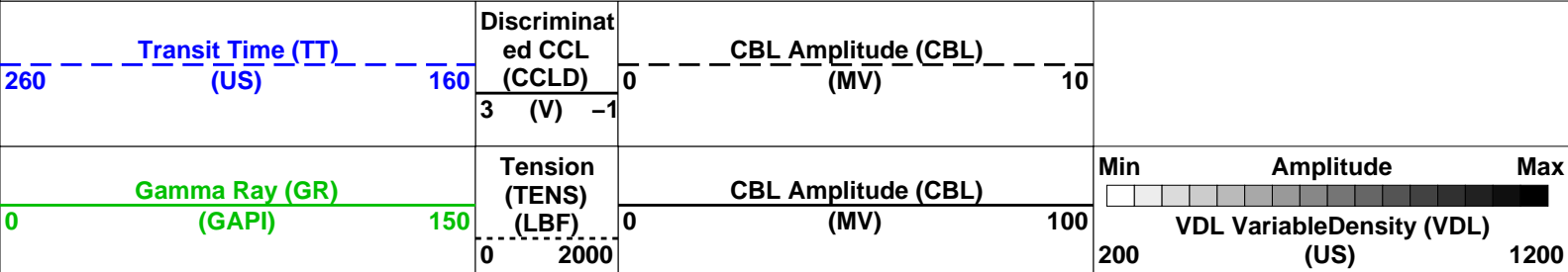
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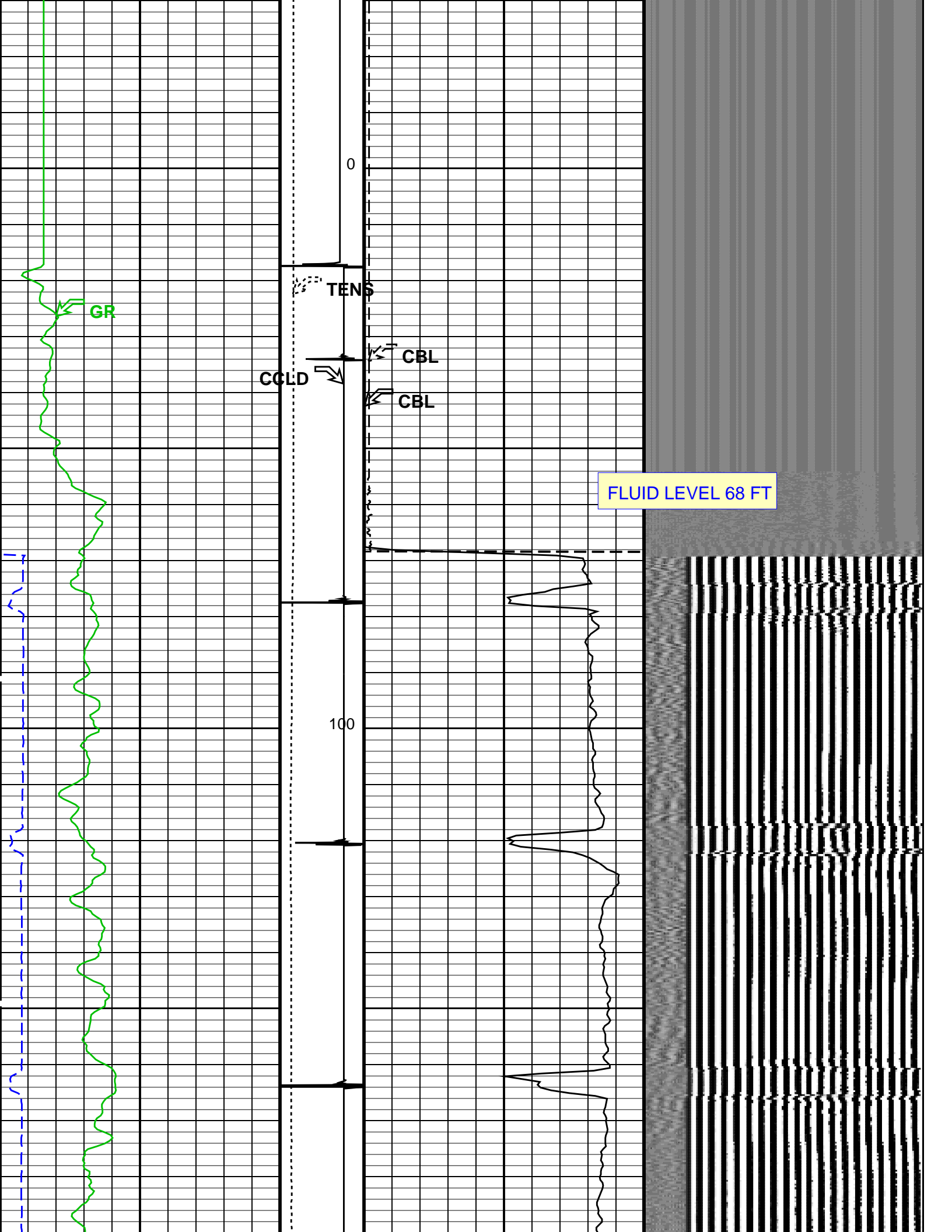
OP System Version: 19C0-187

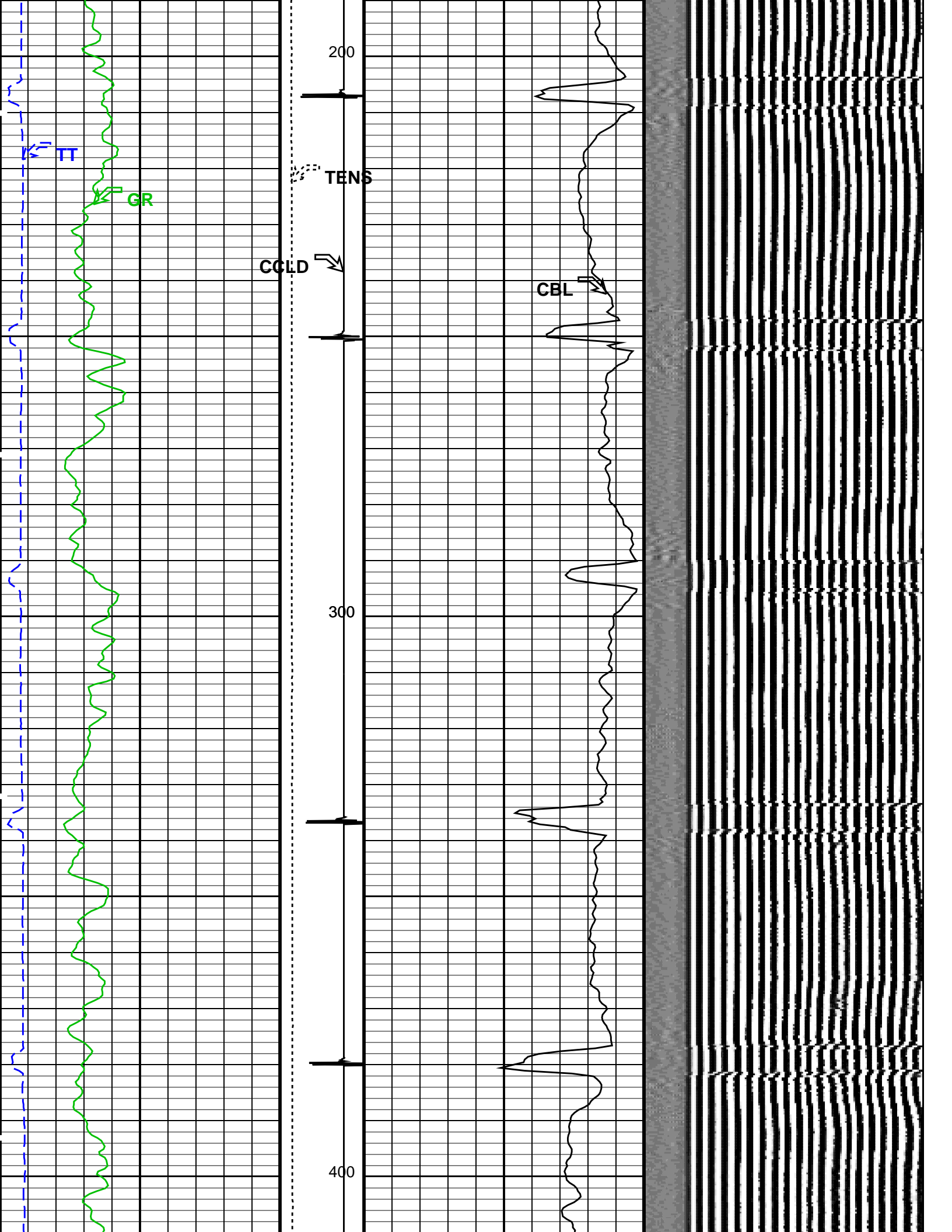
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HBMS-B SRPC-5214-H2-2012-OP1

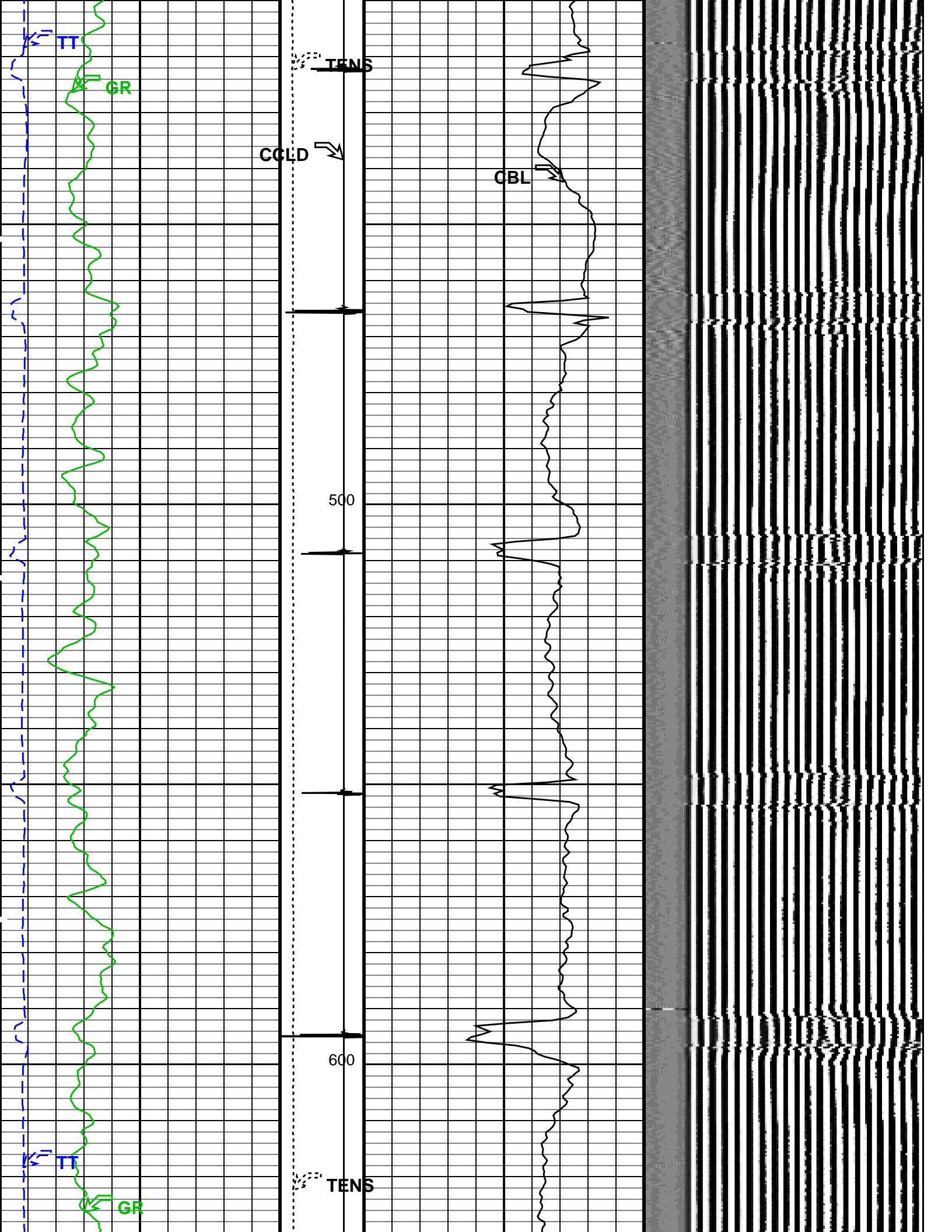
PIP SUMMARY

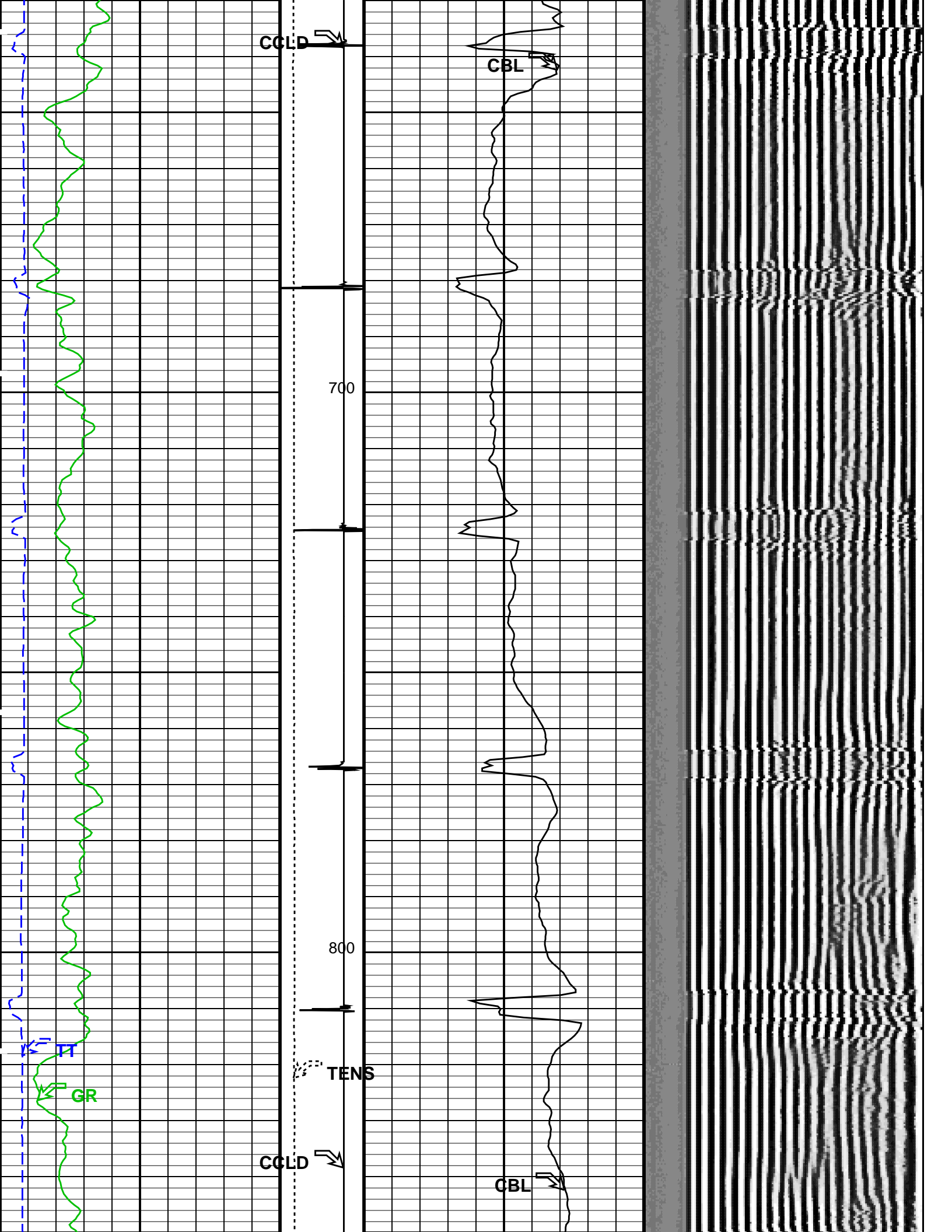
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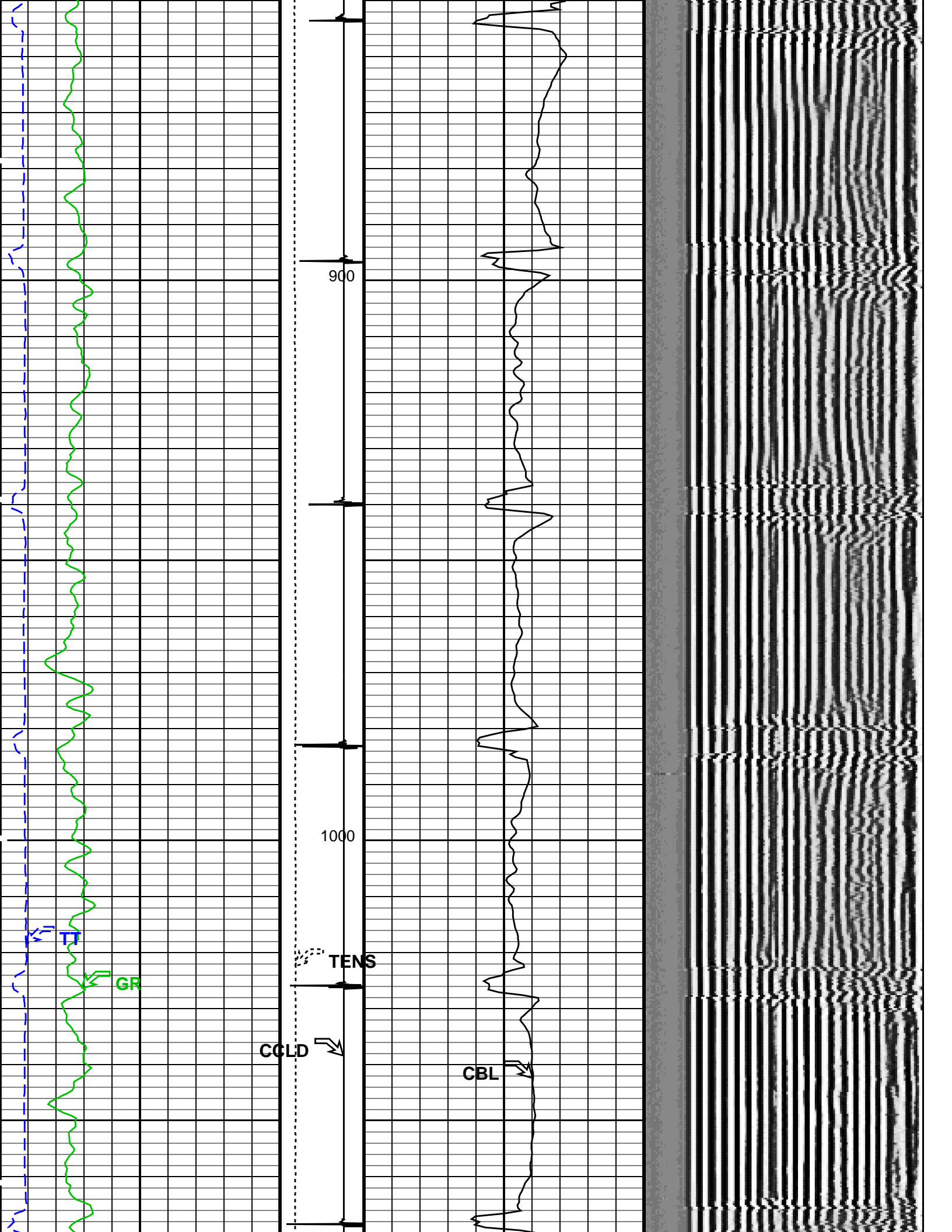


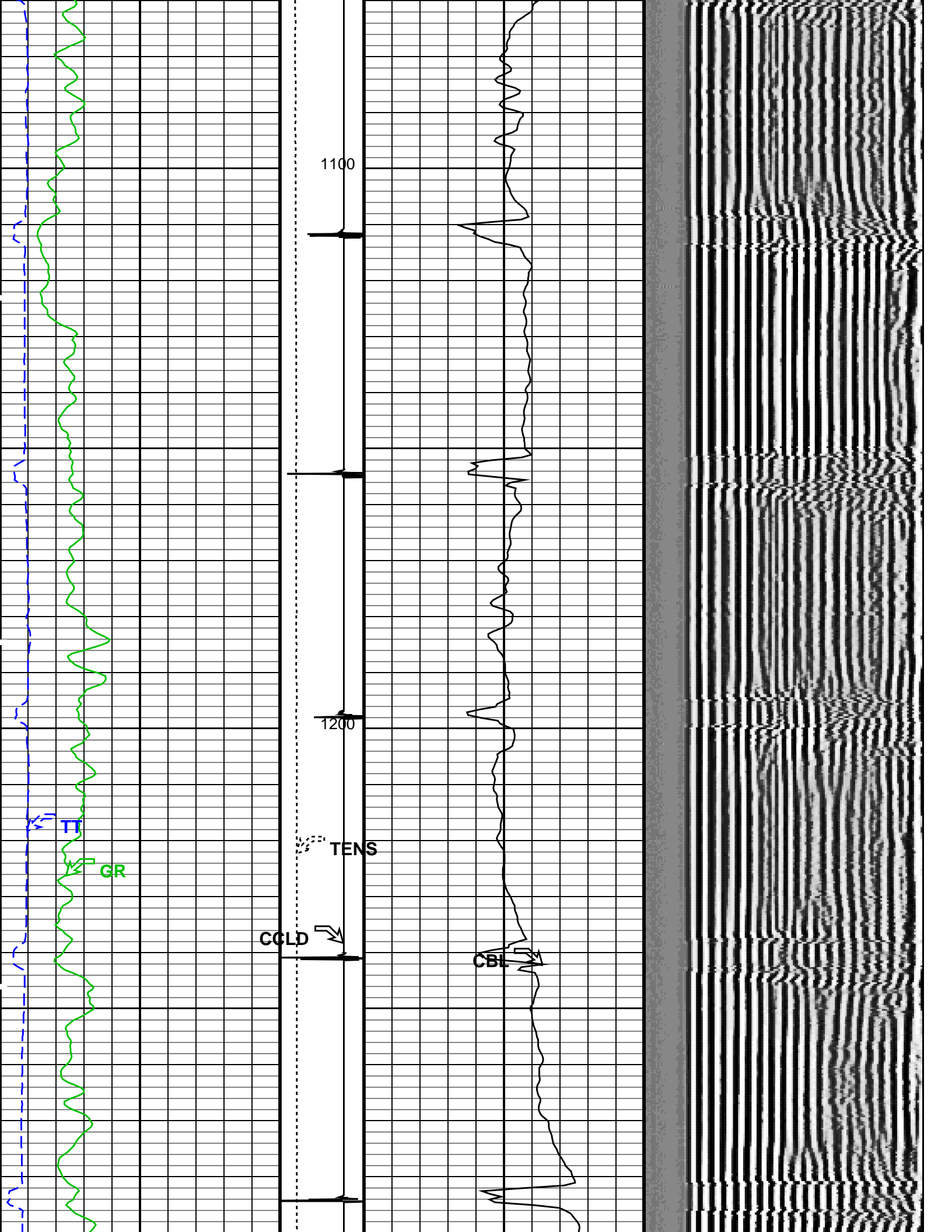


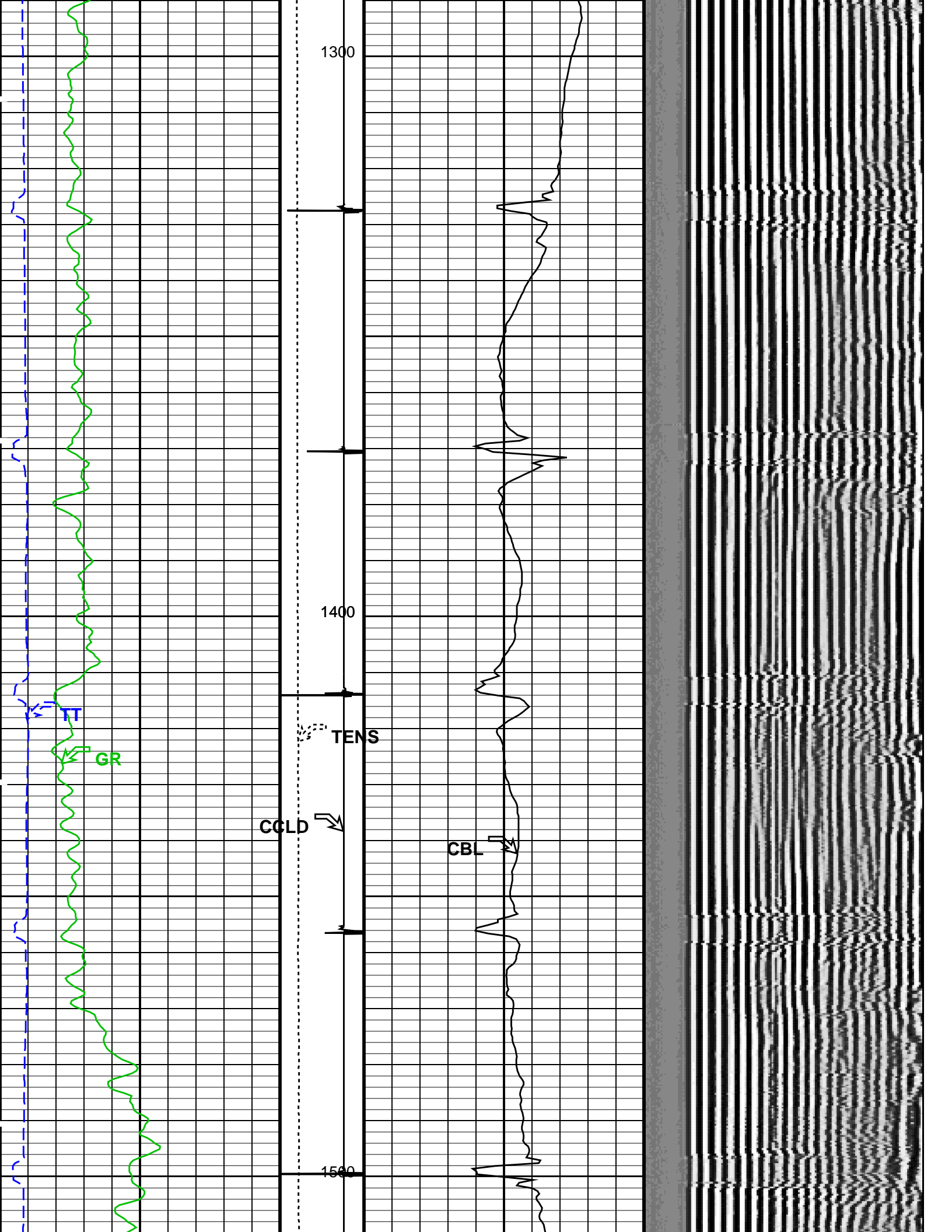


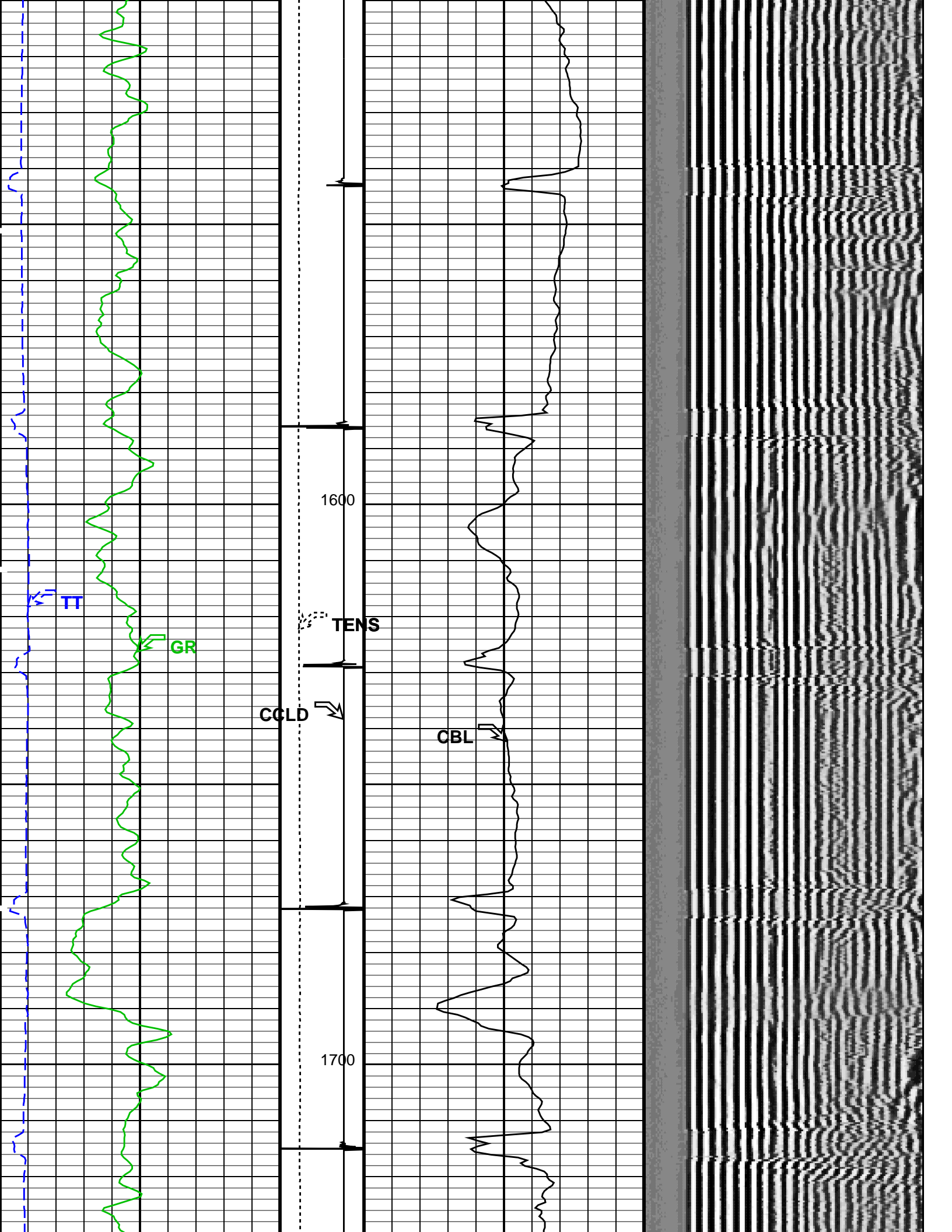


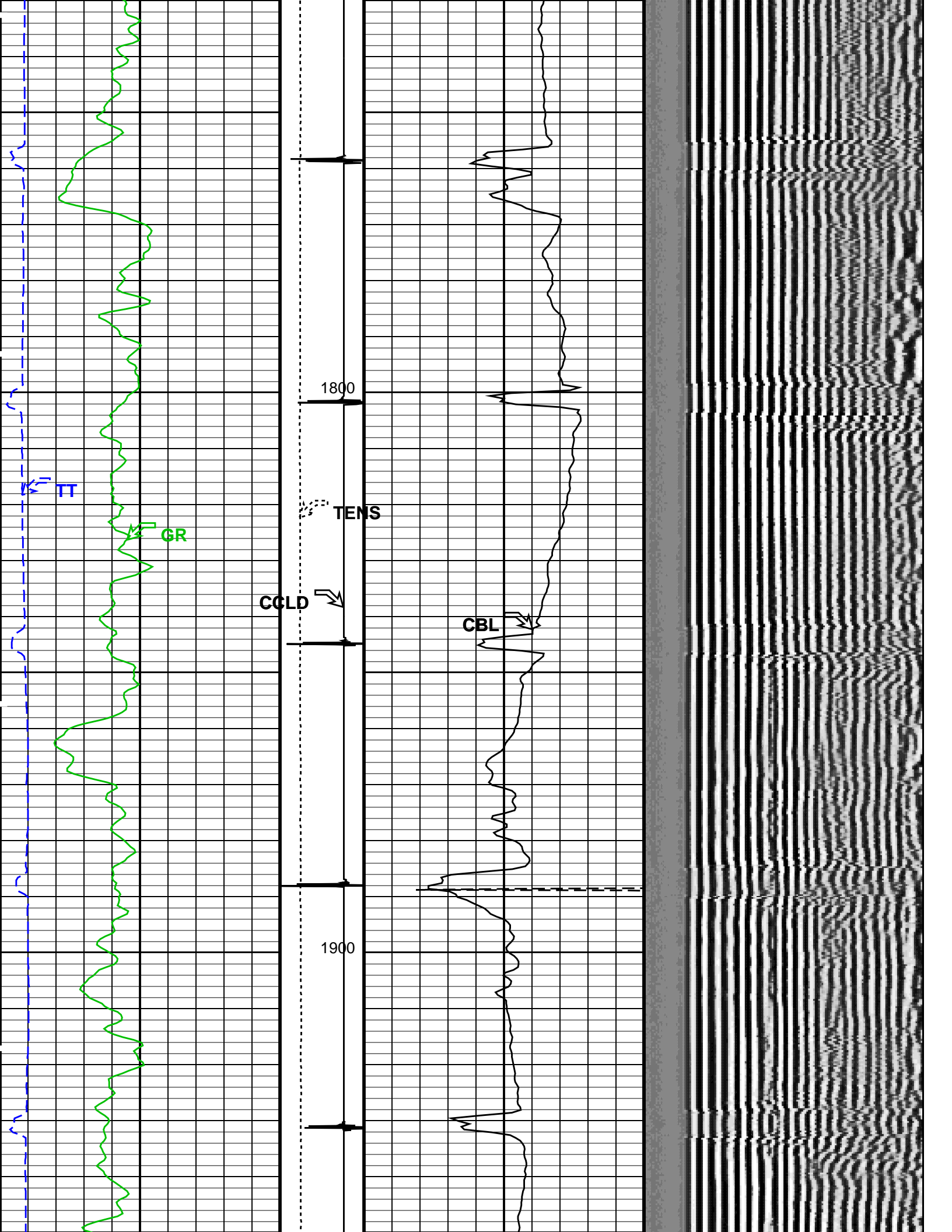


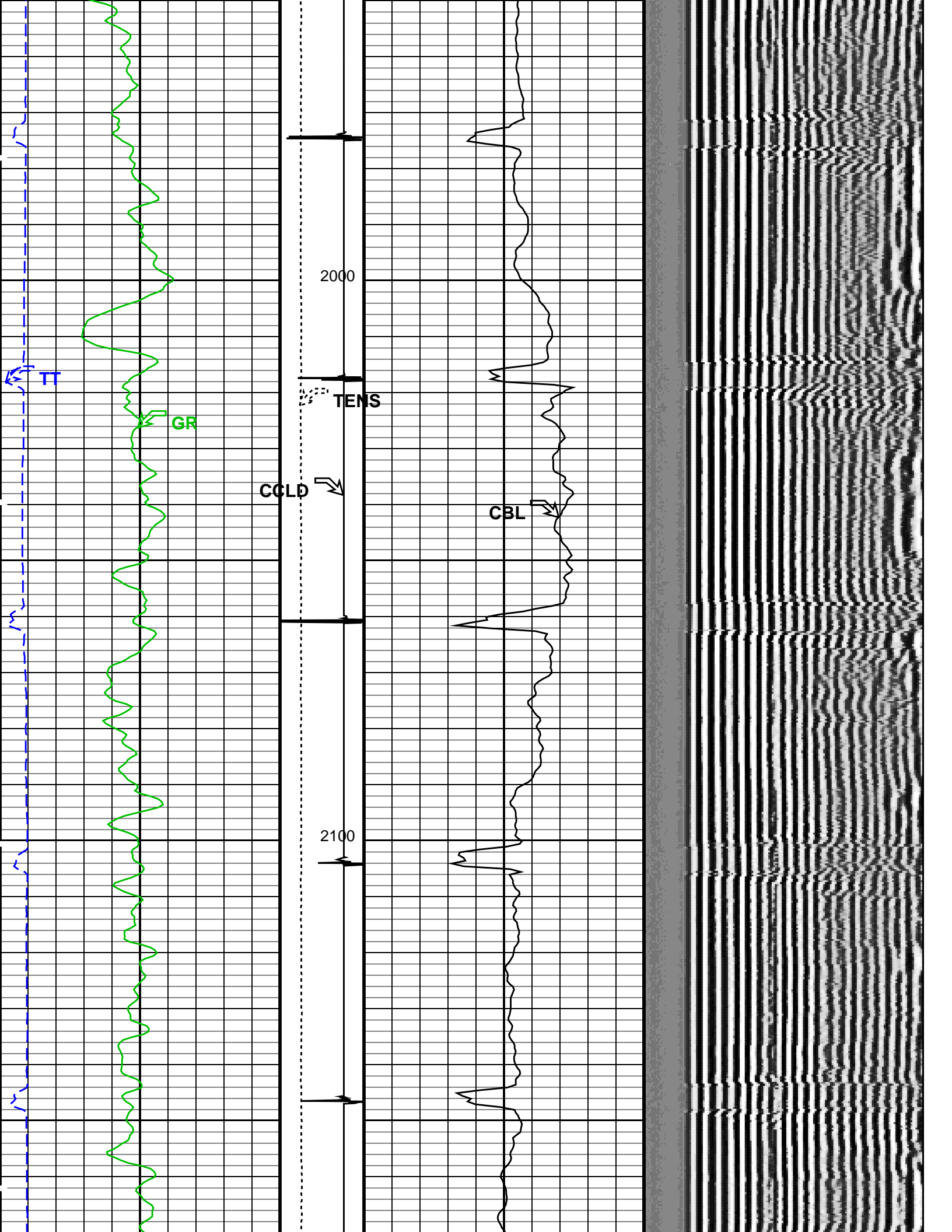


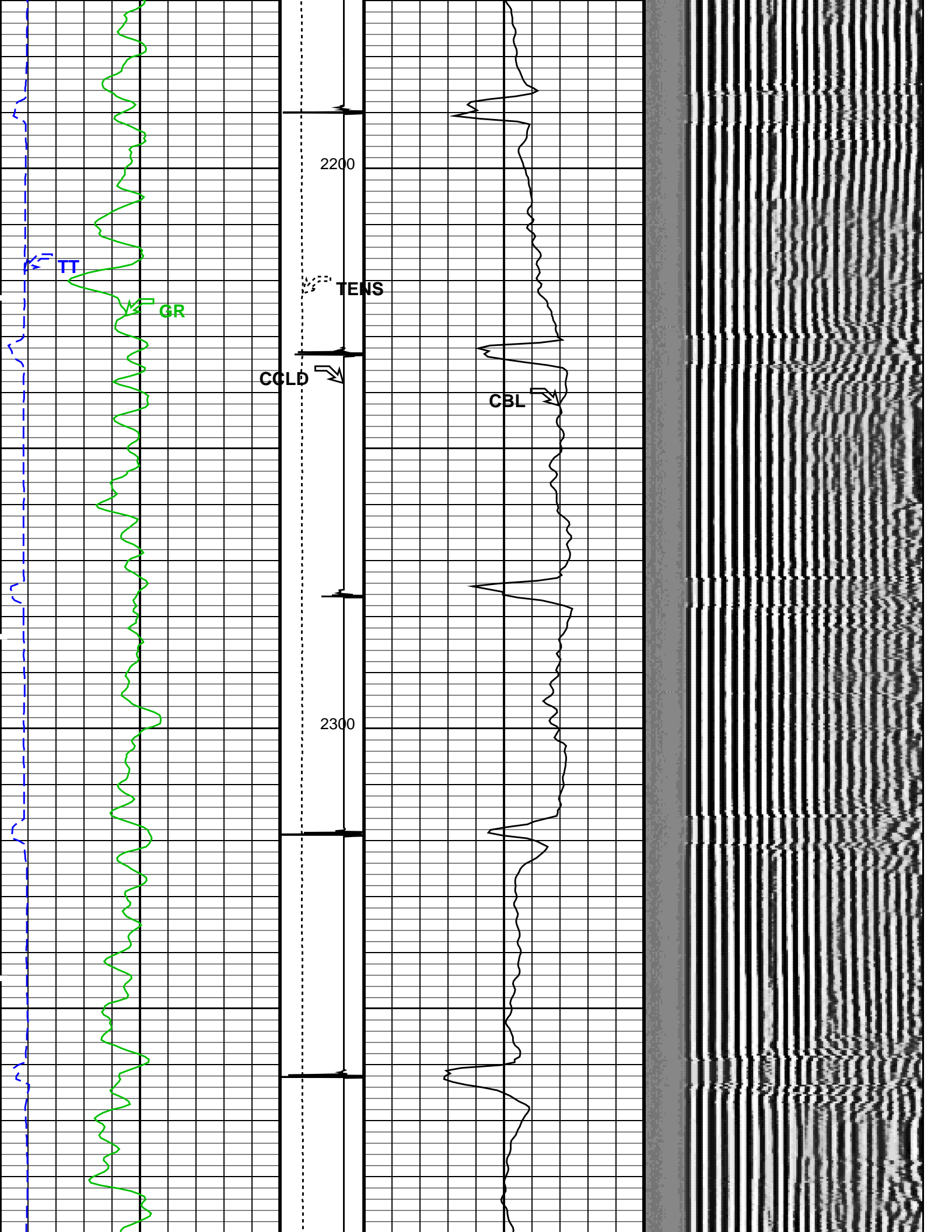


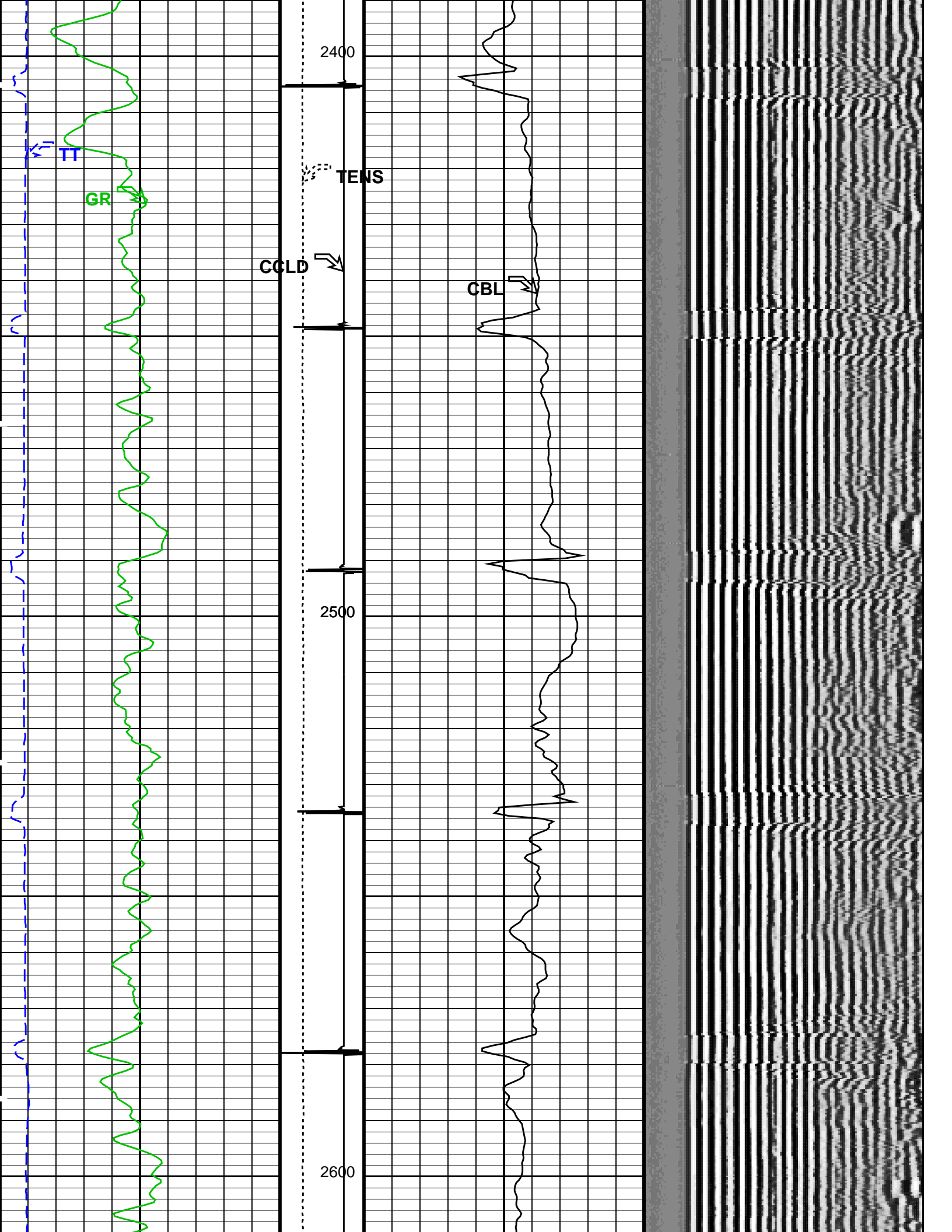


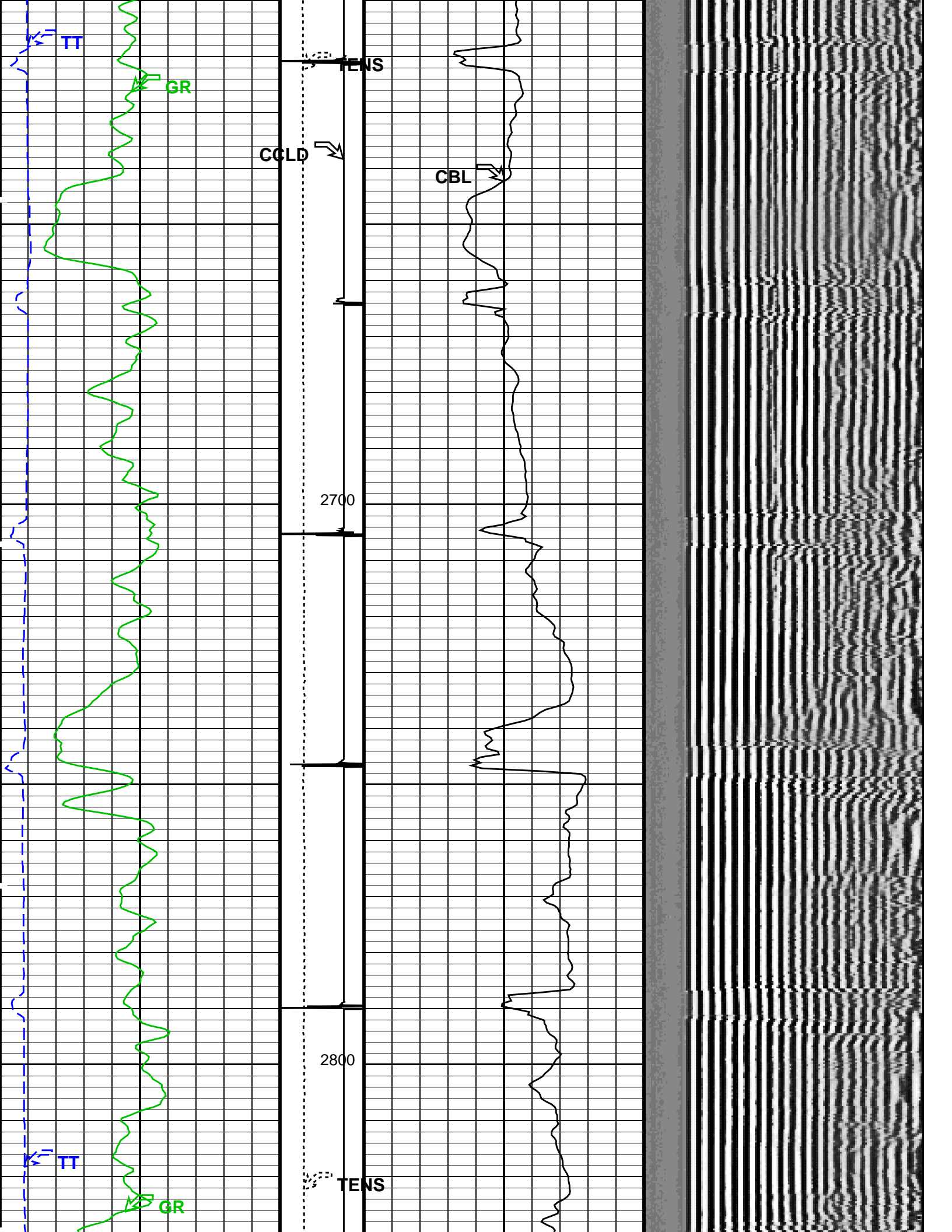


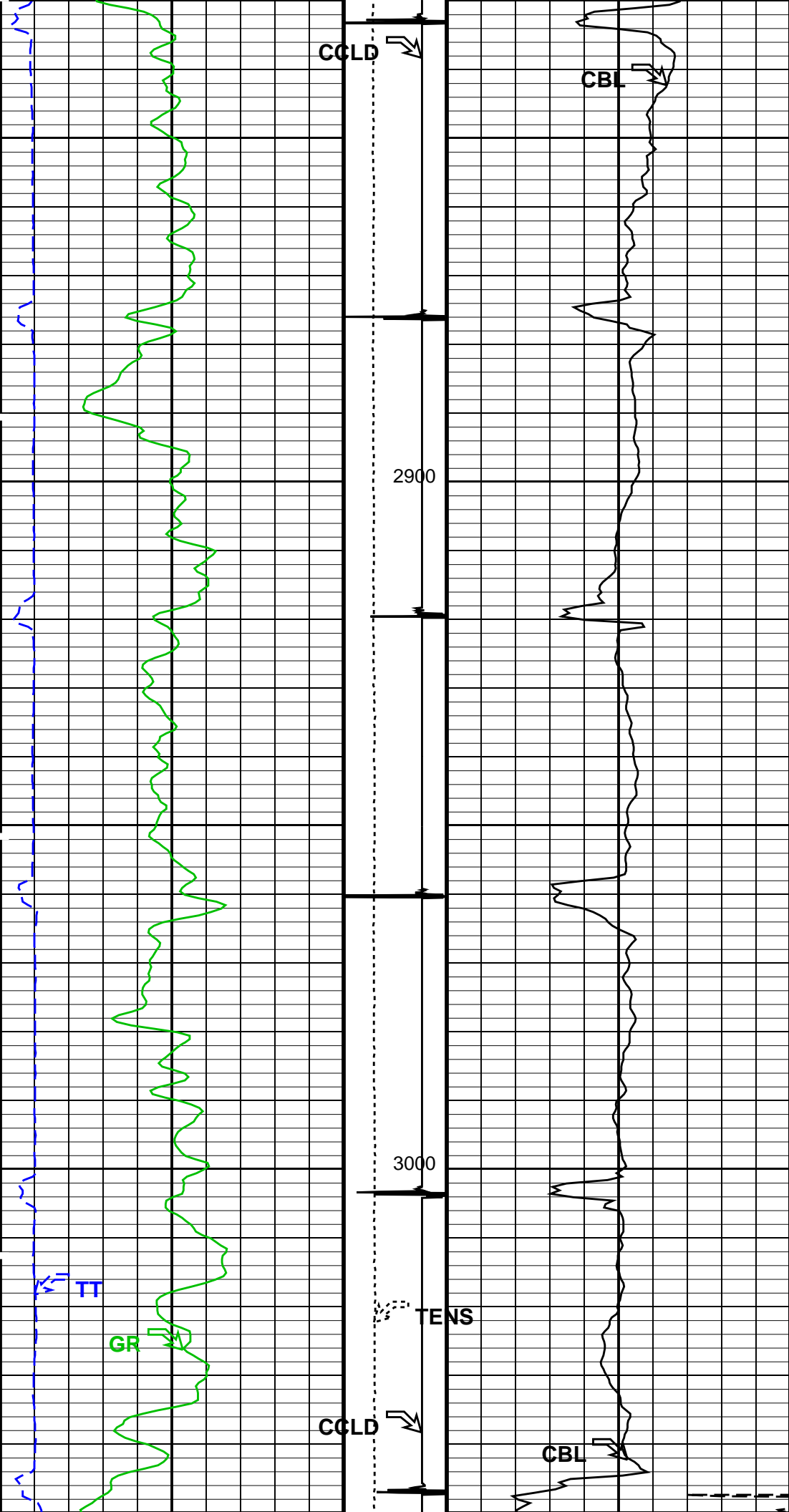


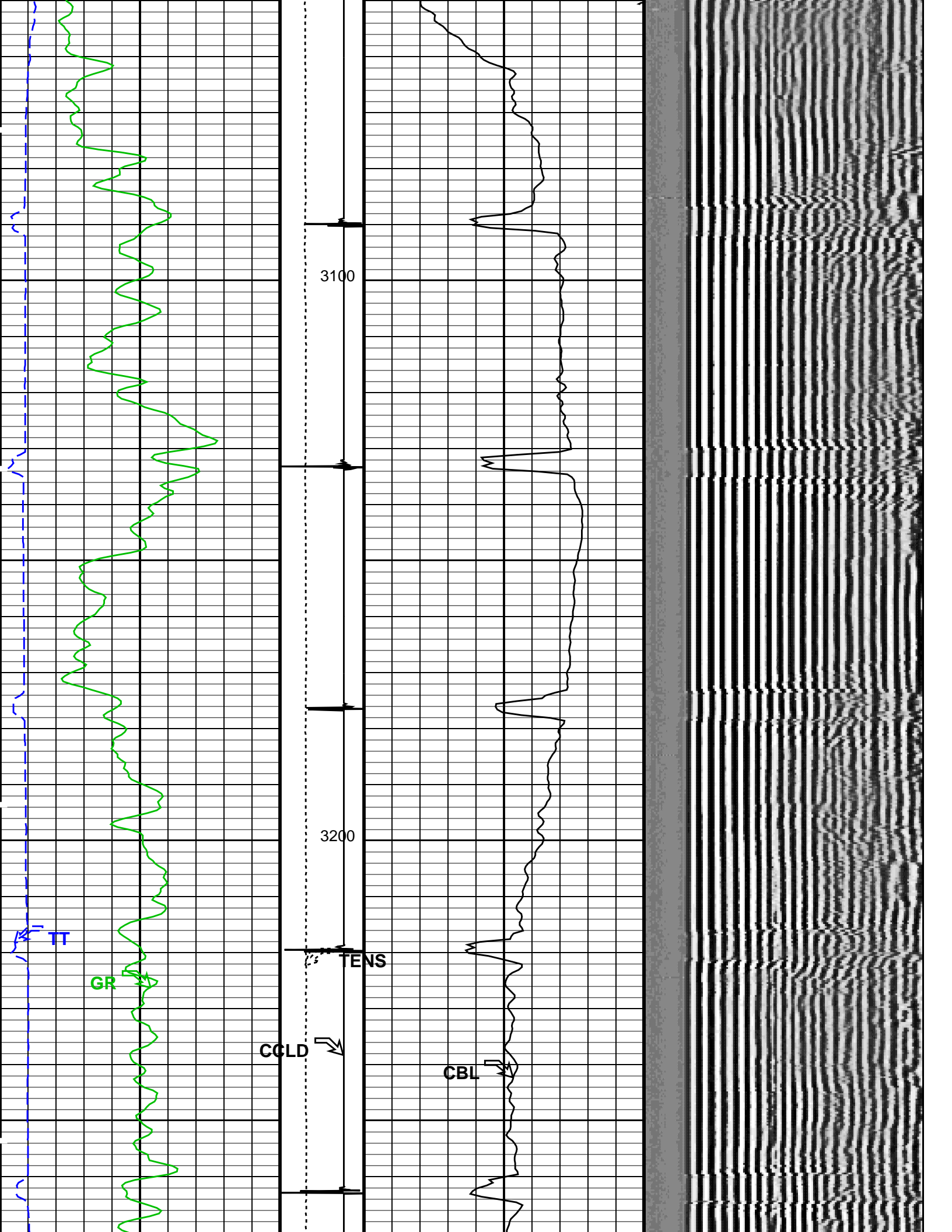


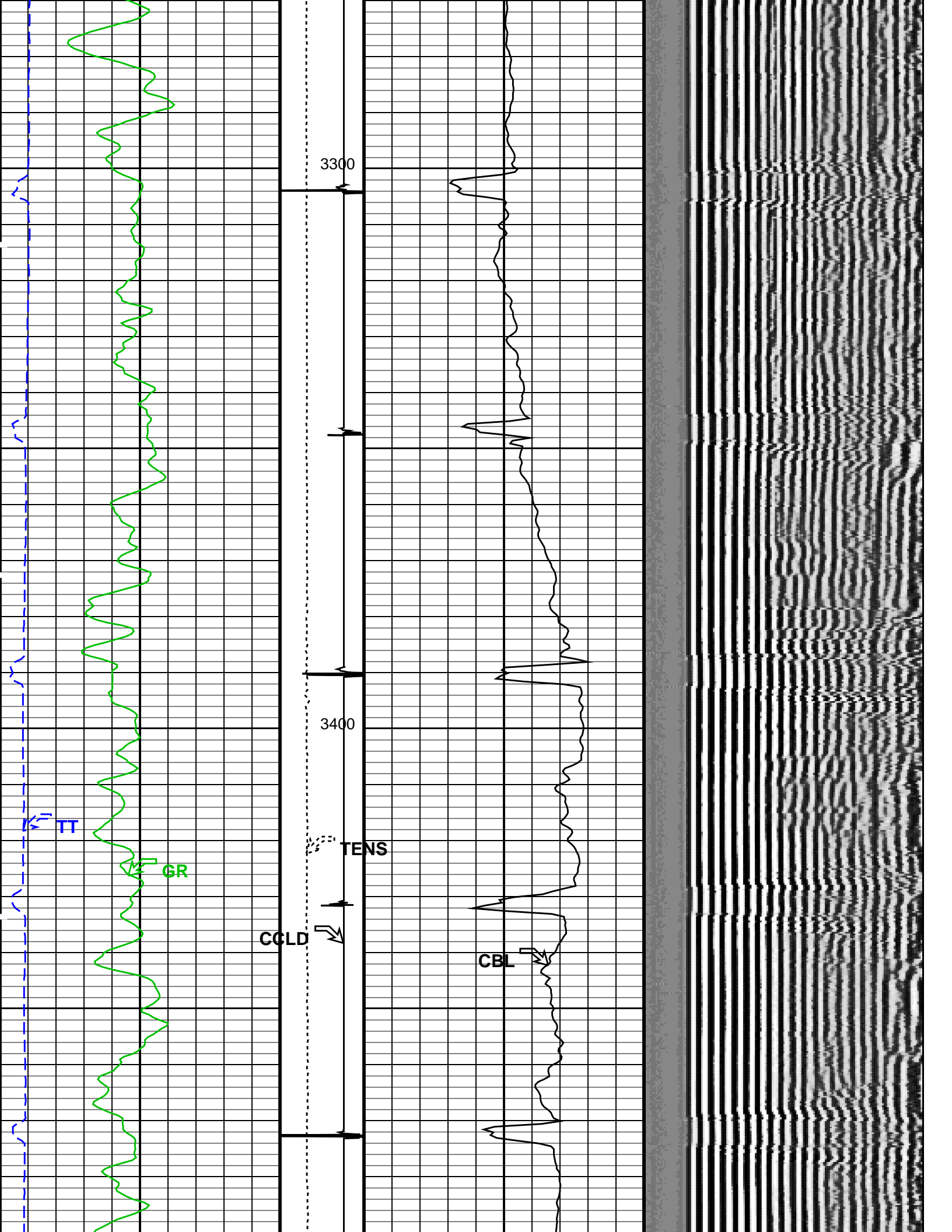


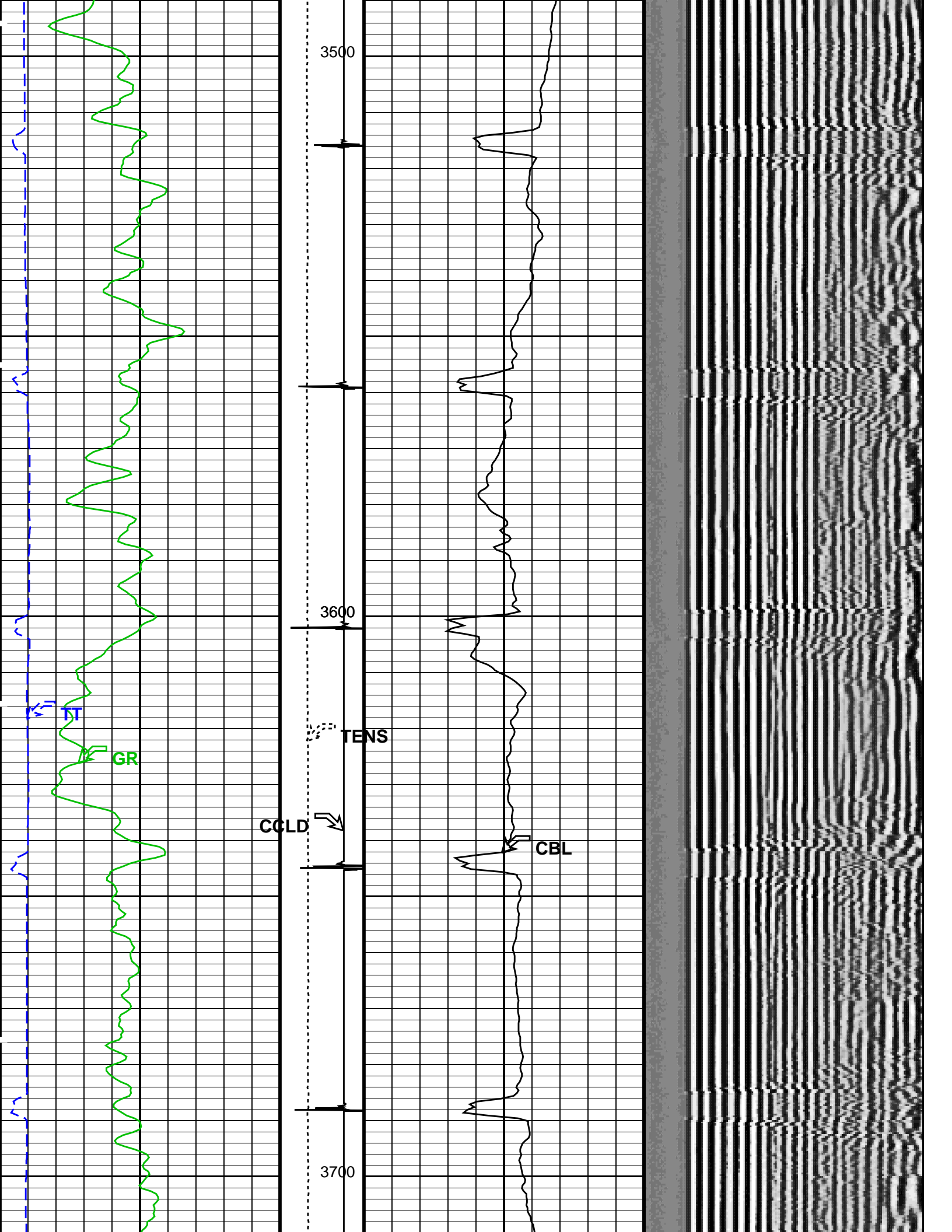


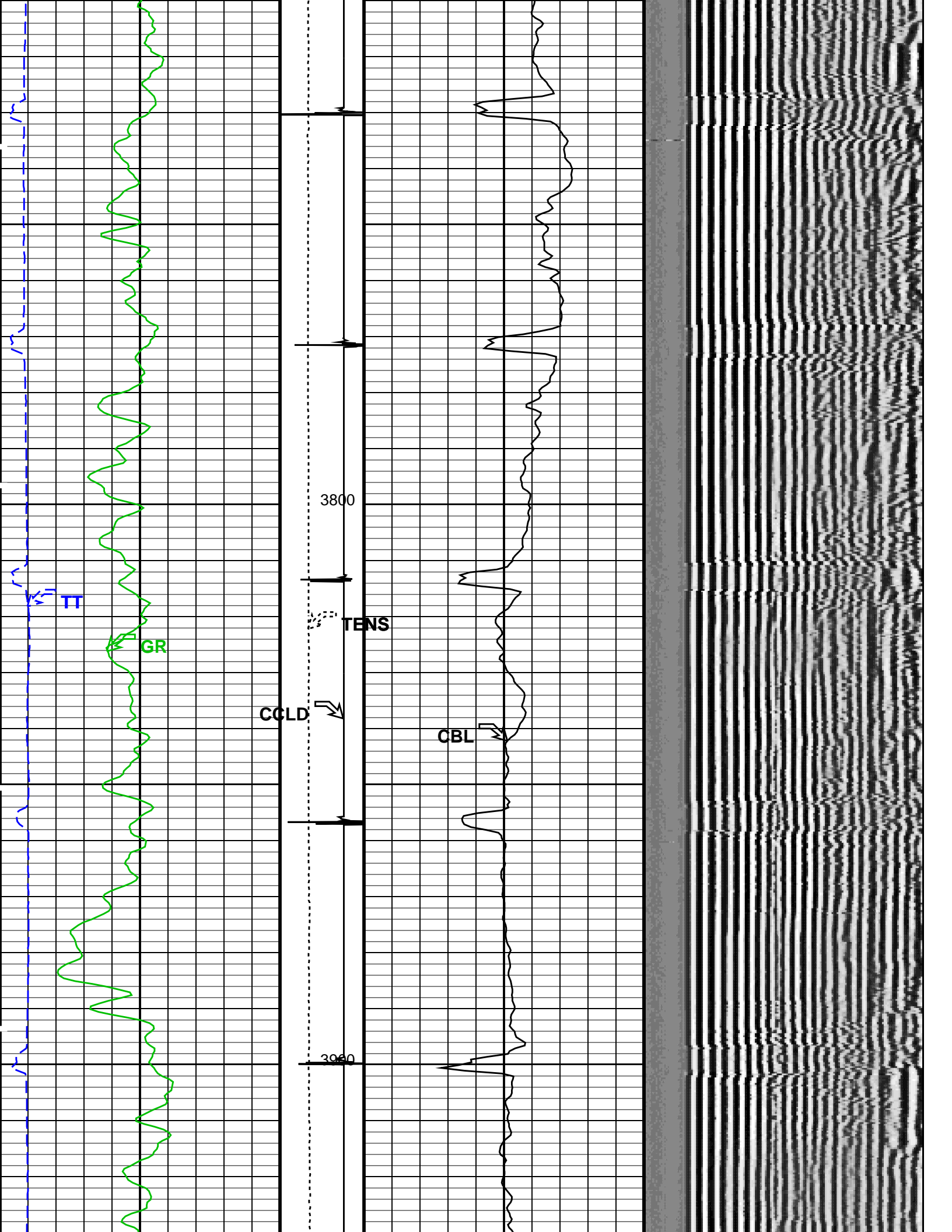


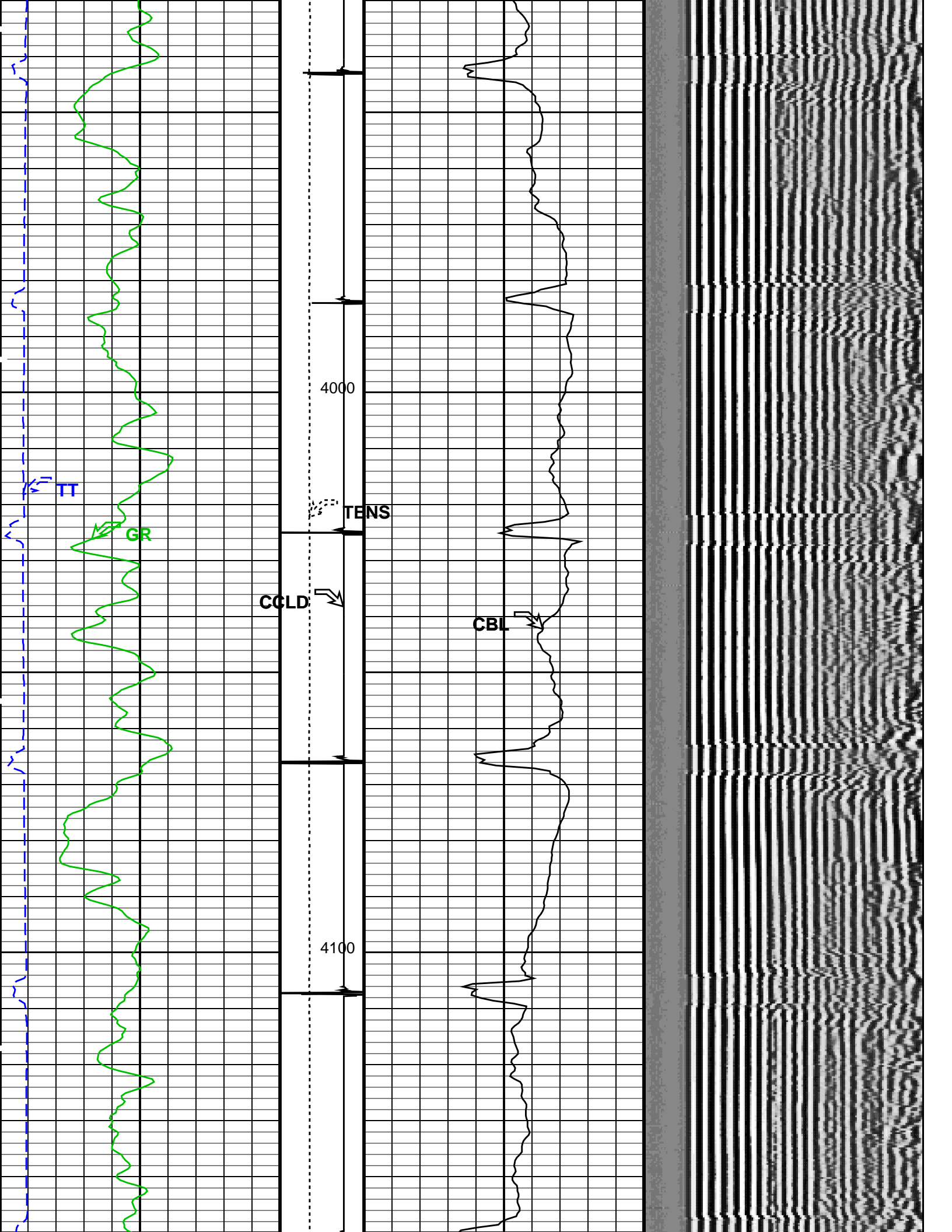


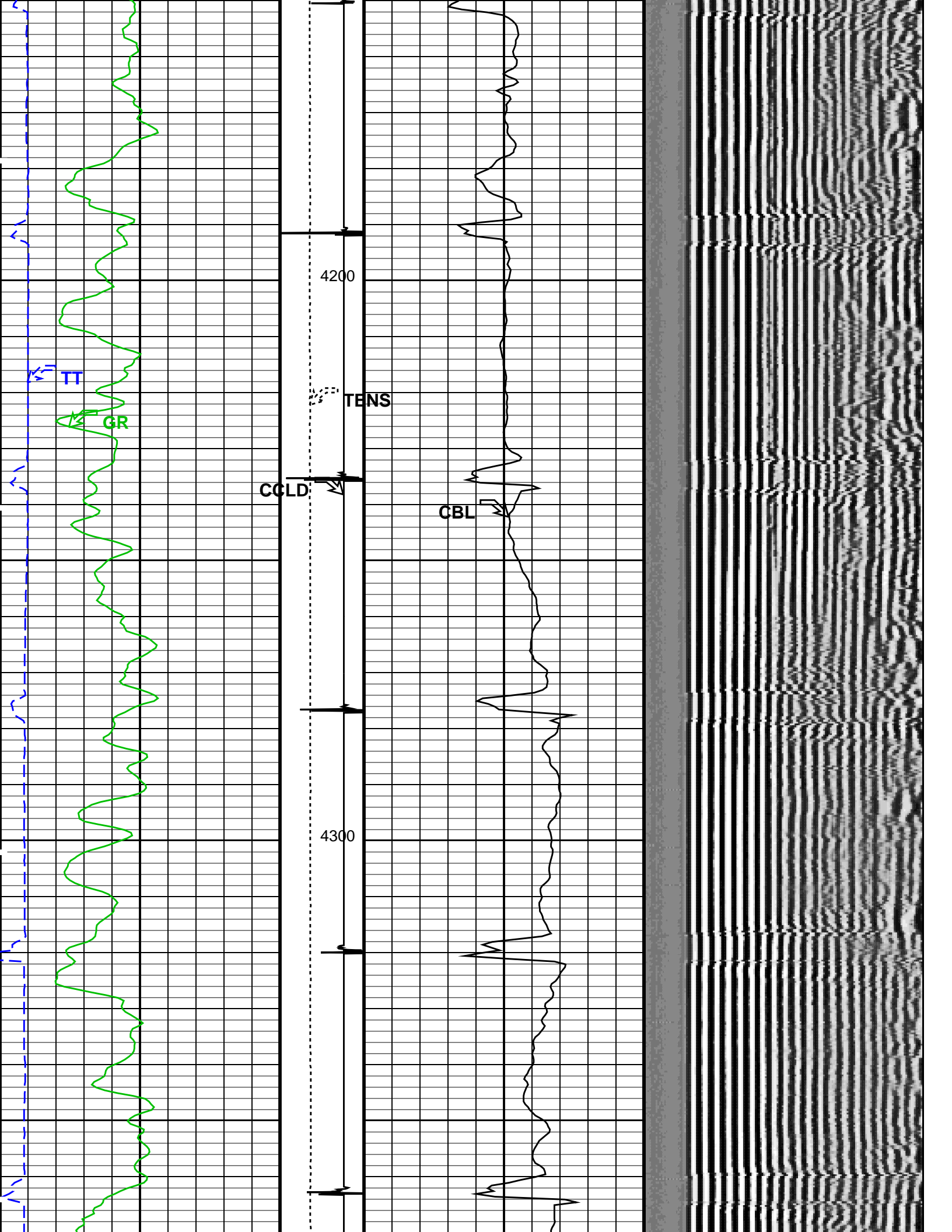


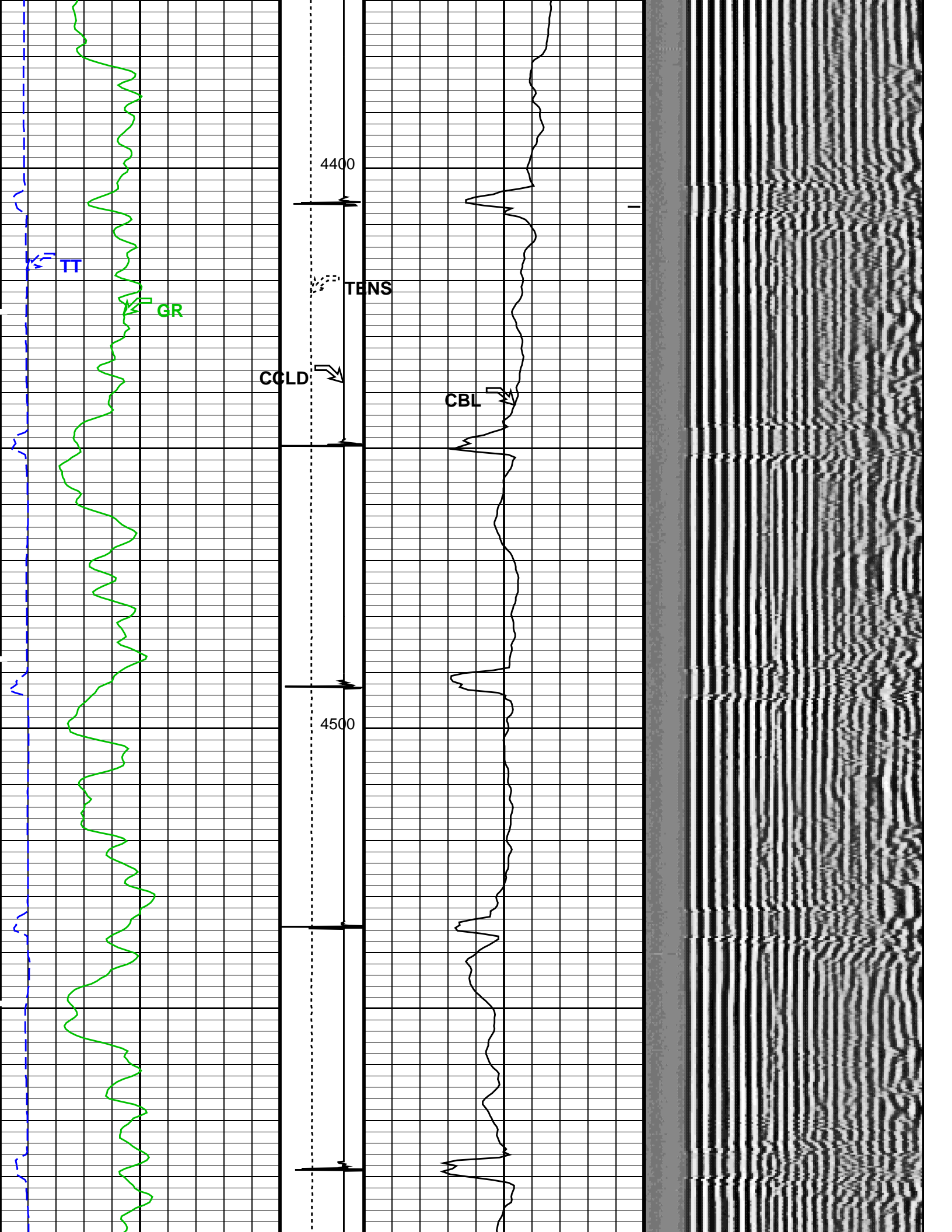


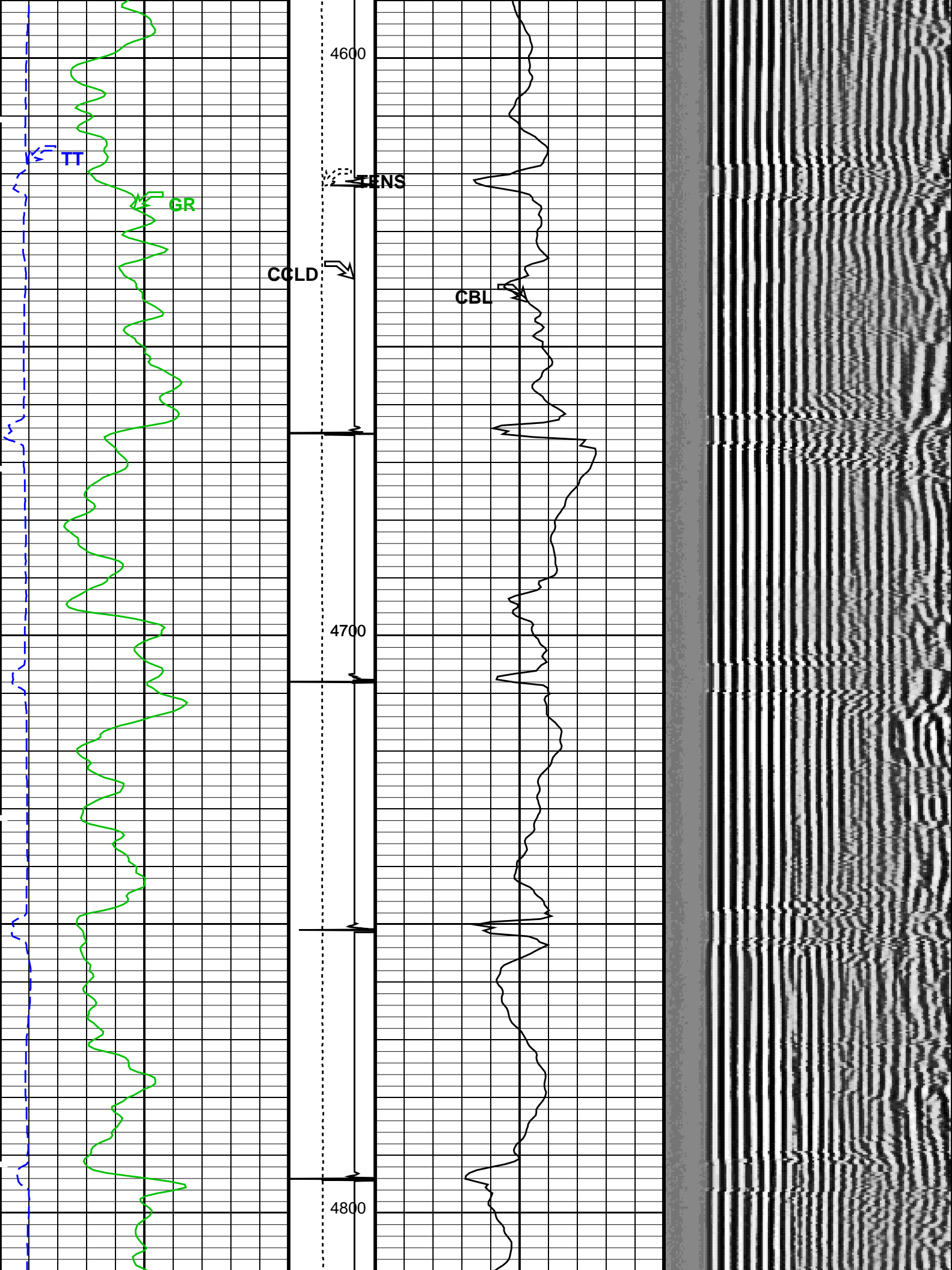


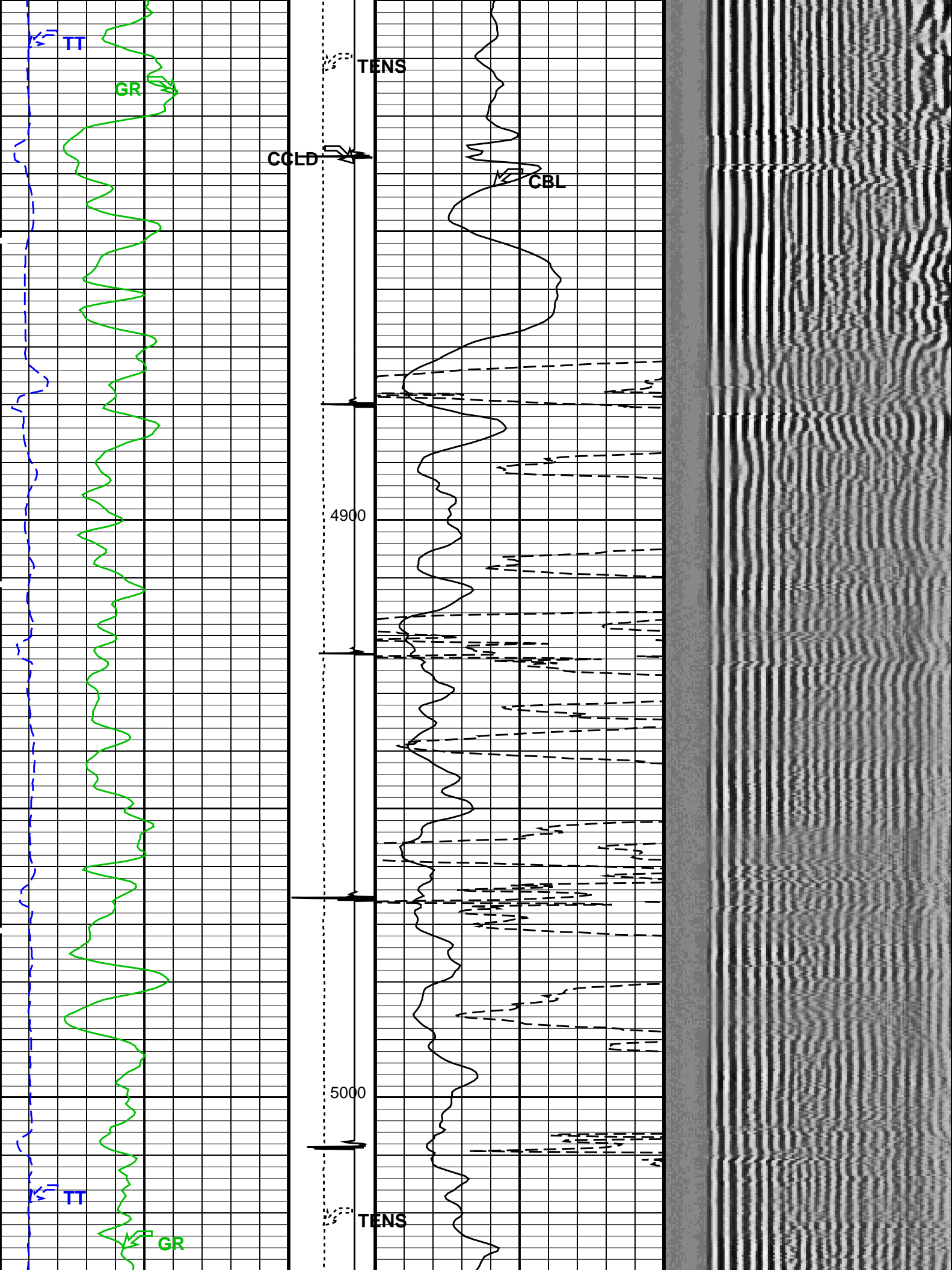


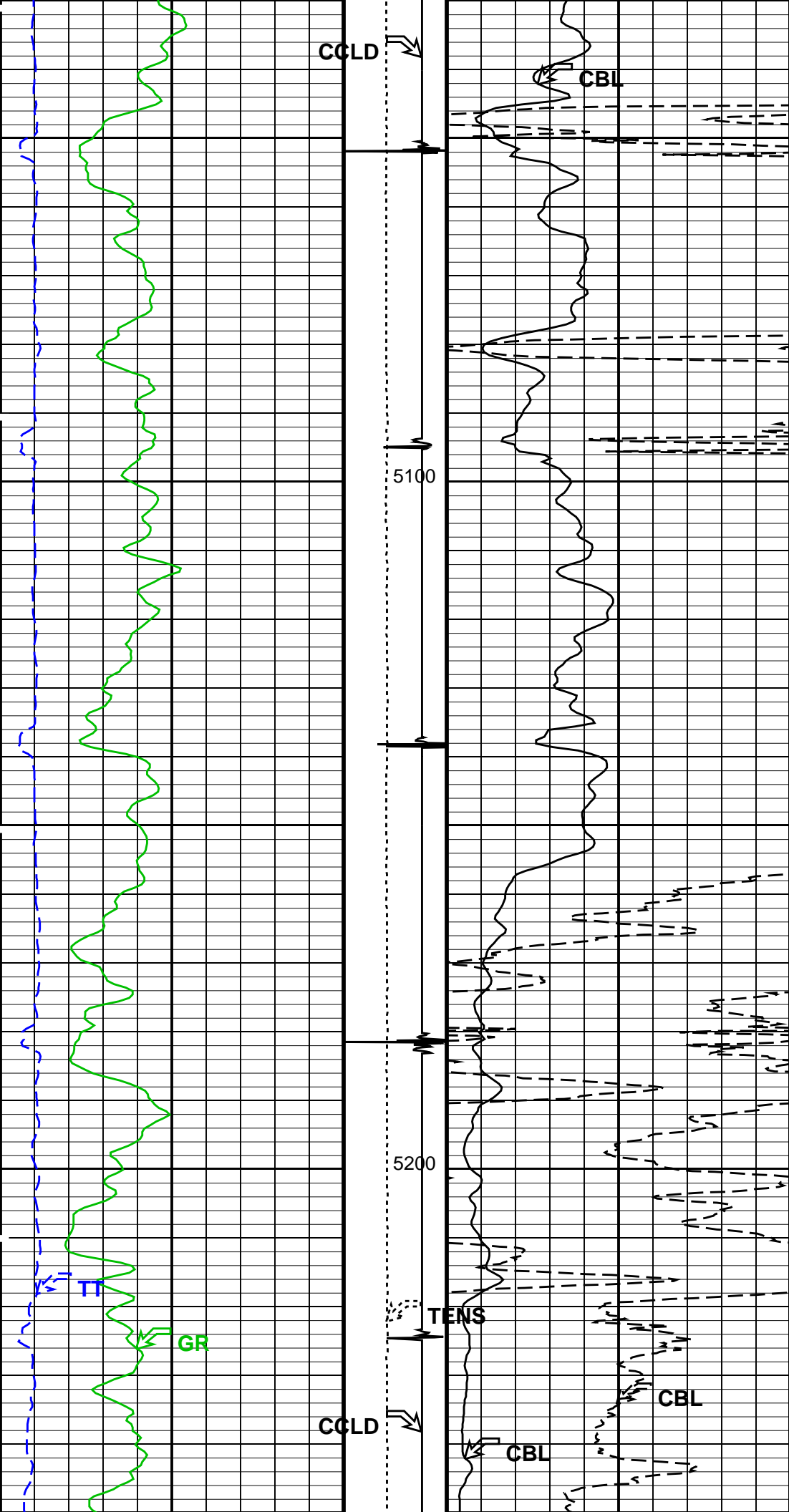


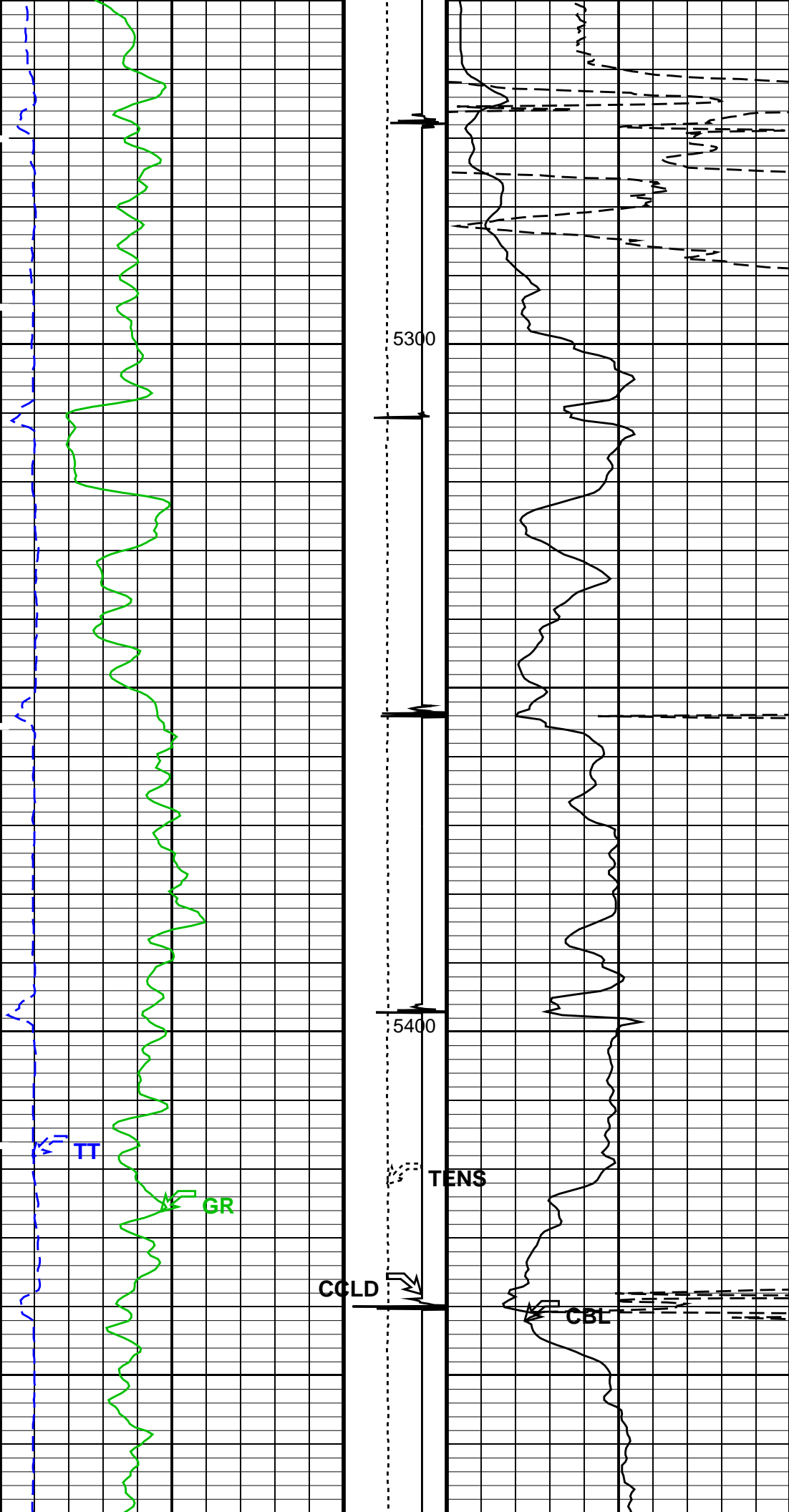


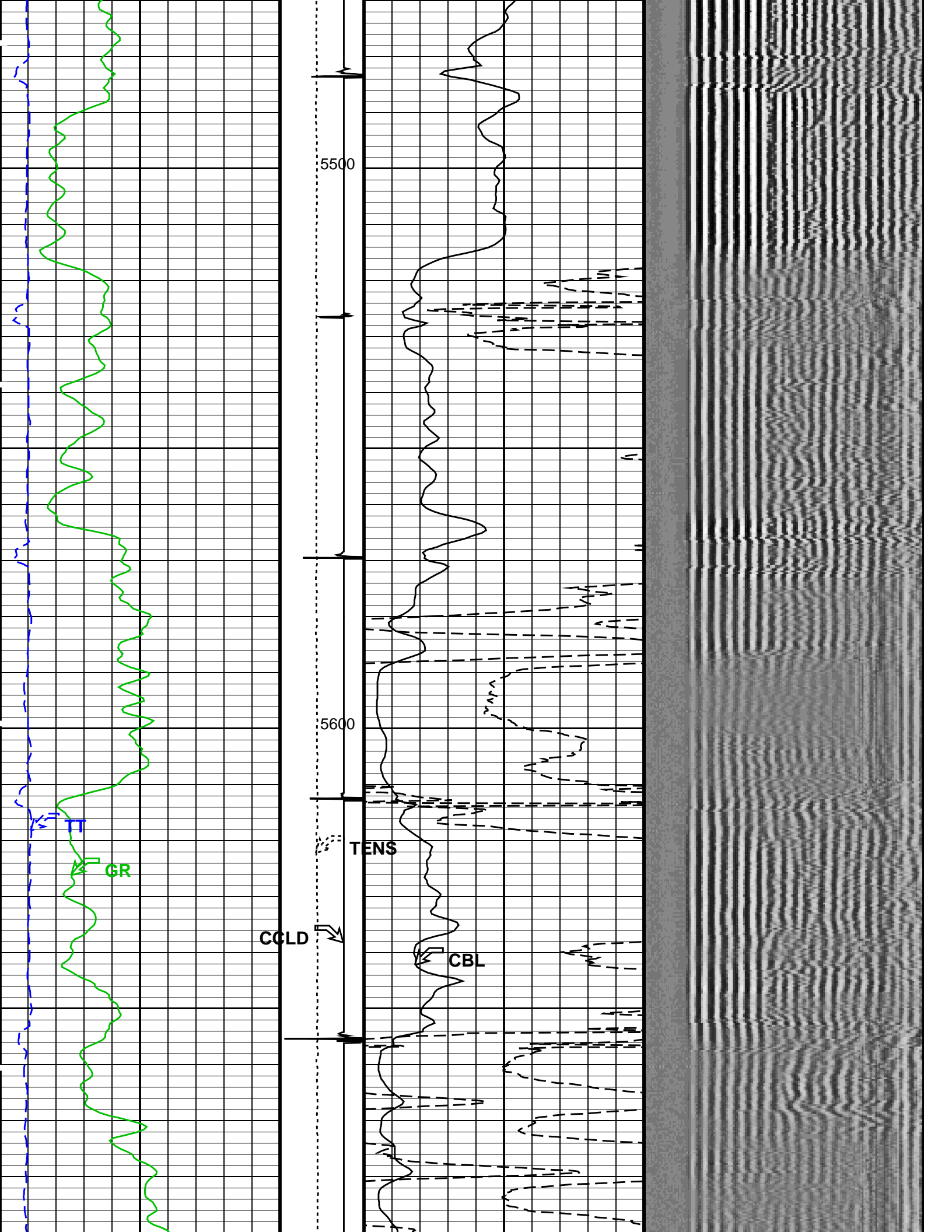


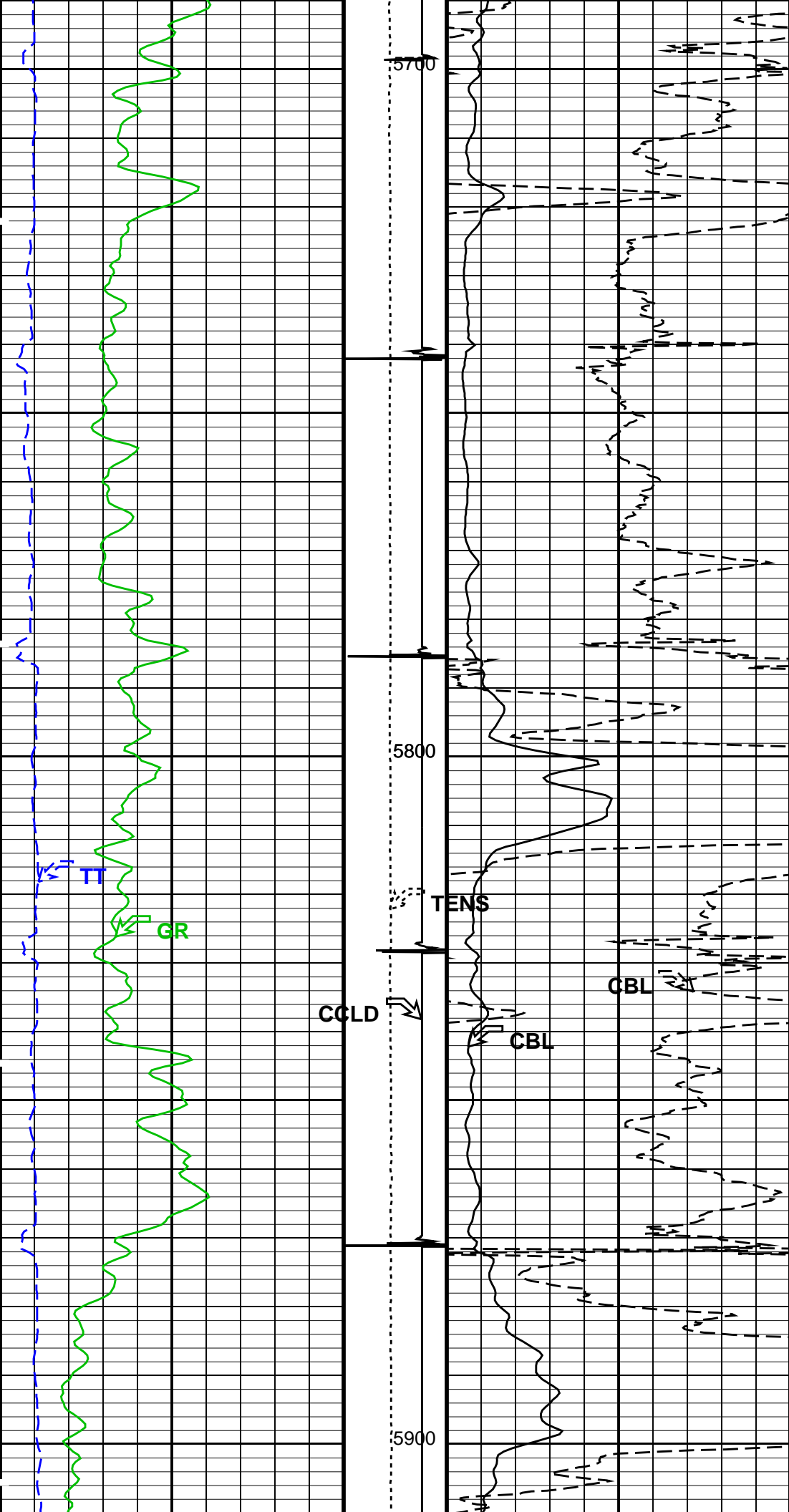


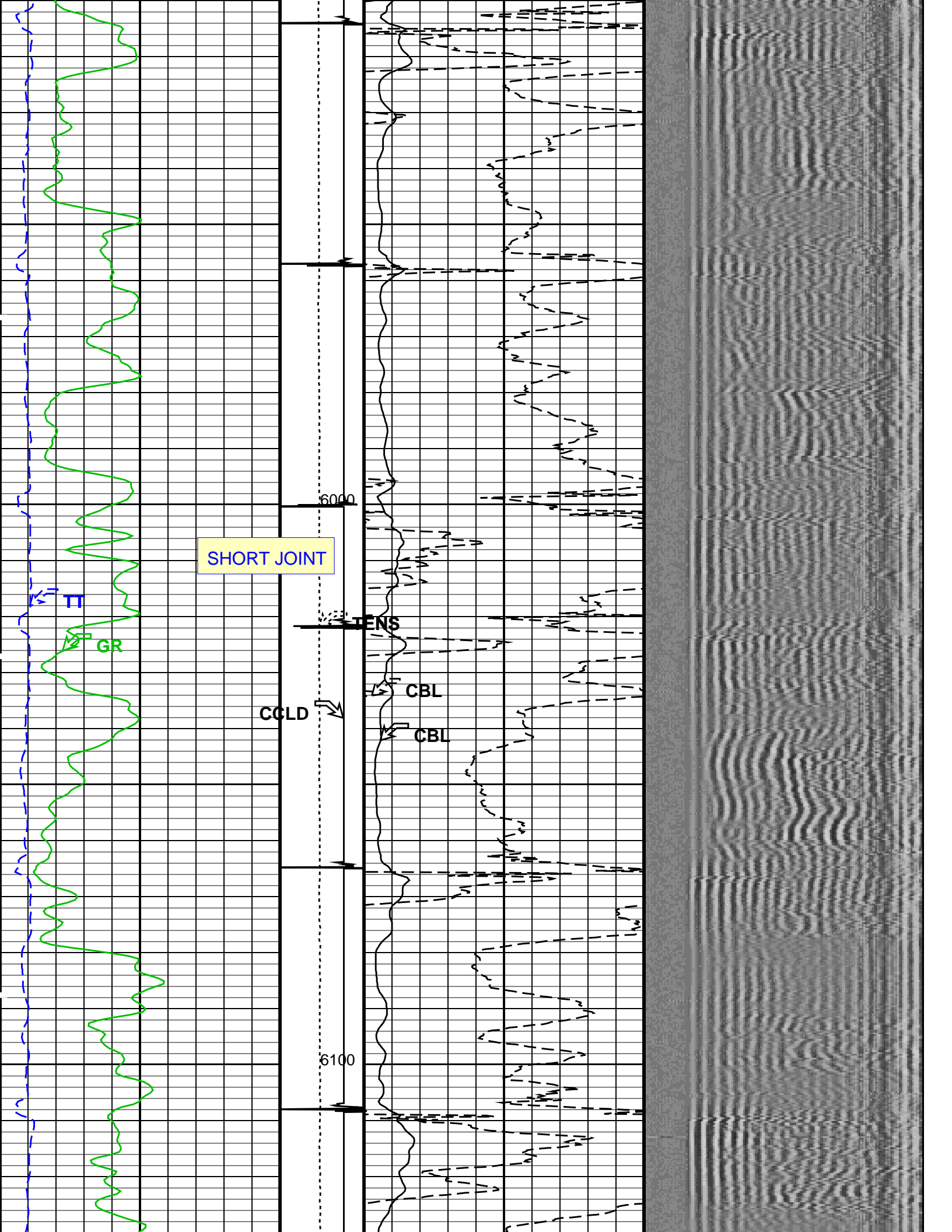


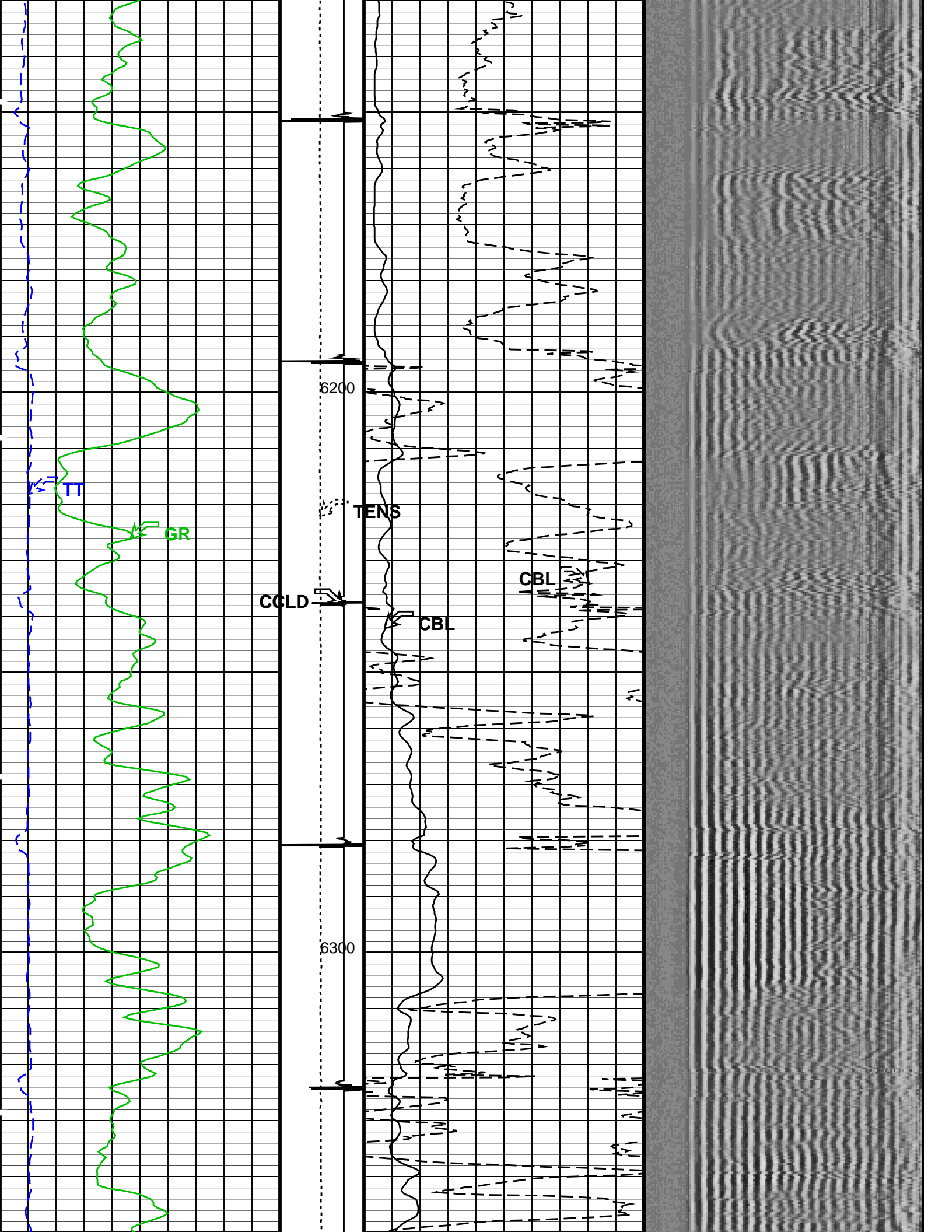


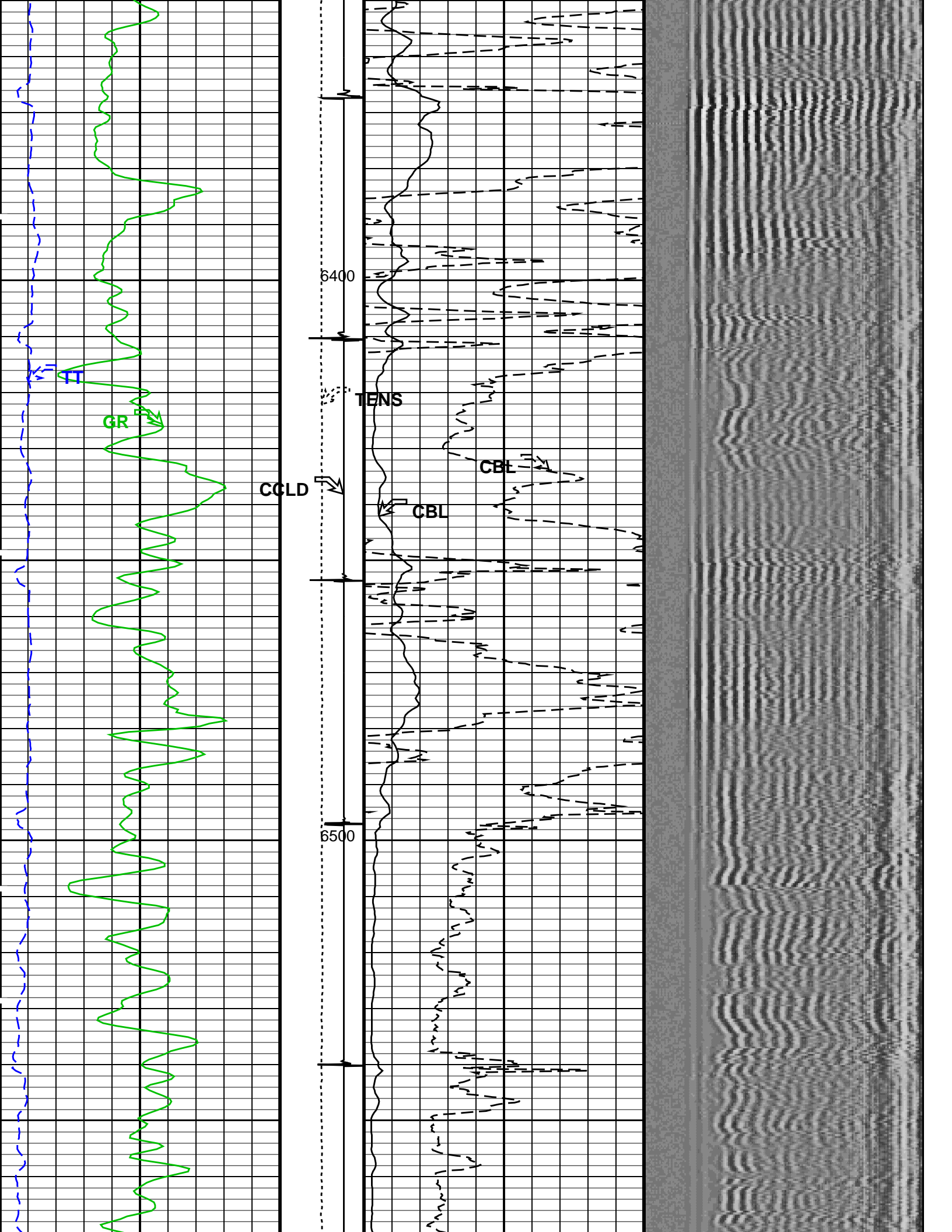


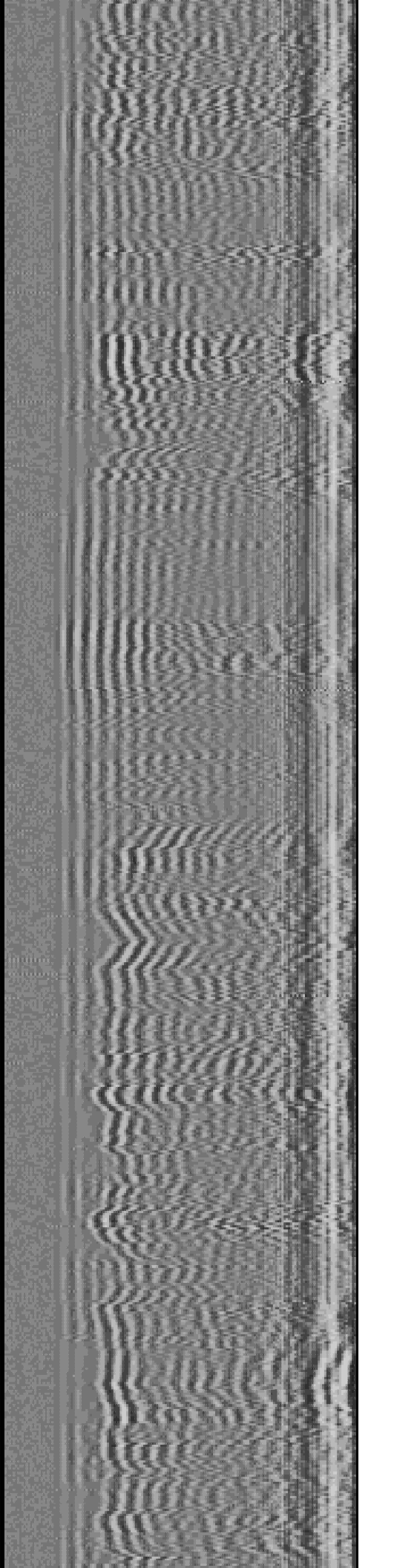
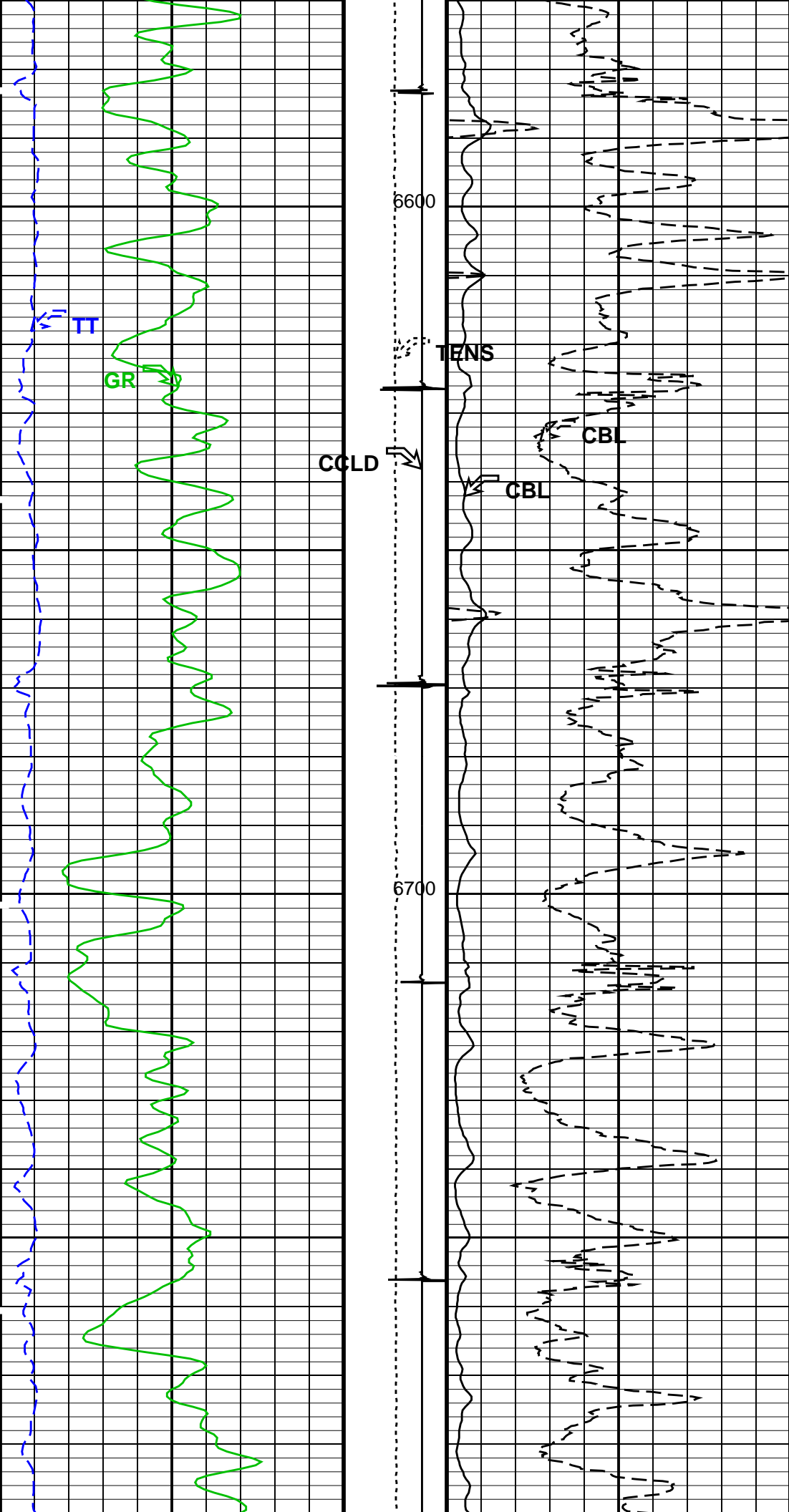


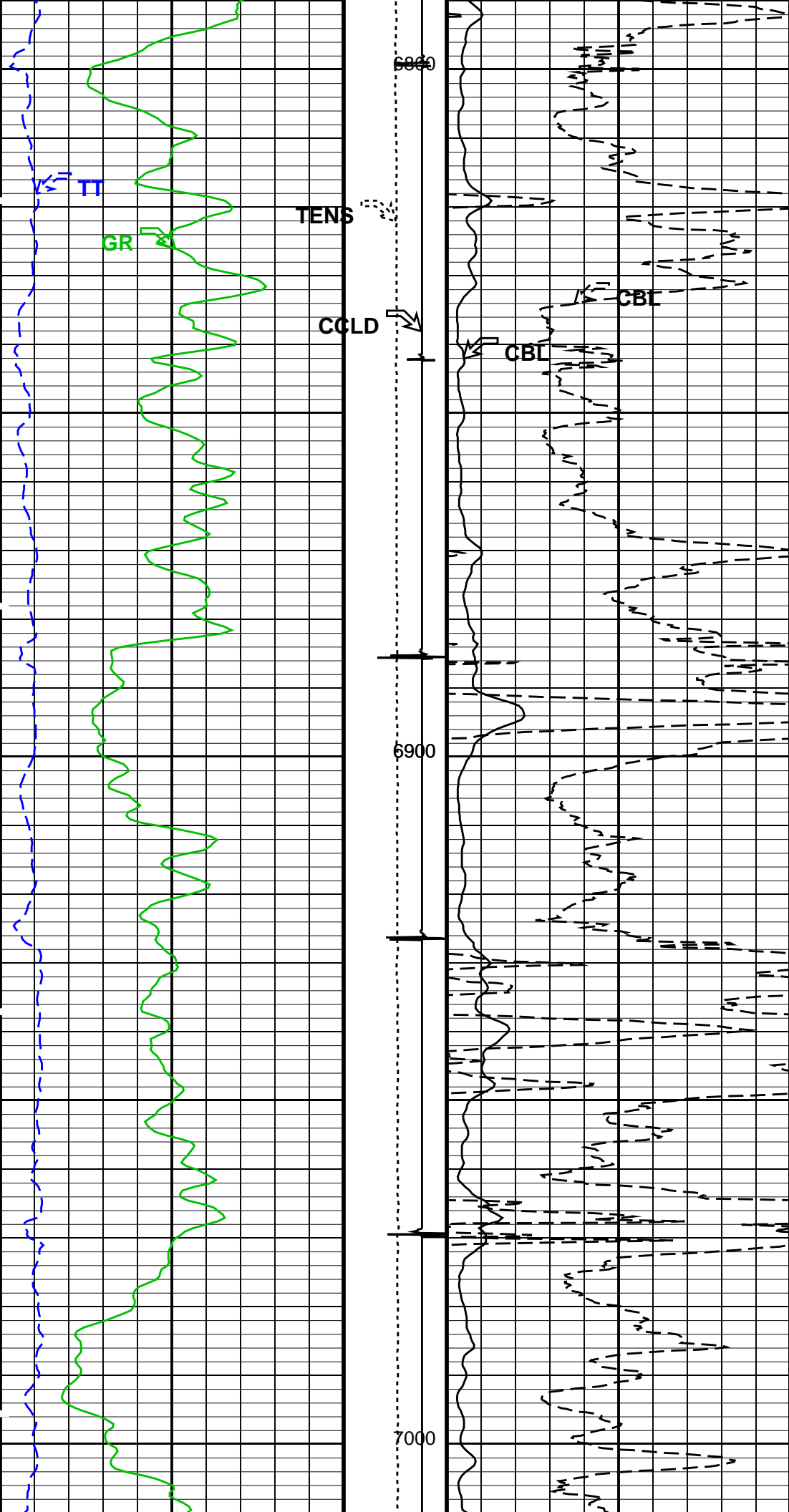


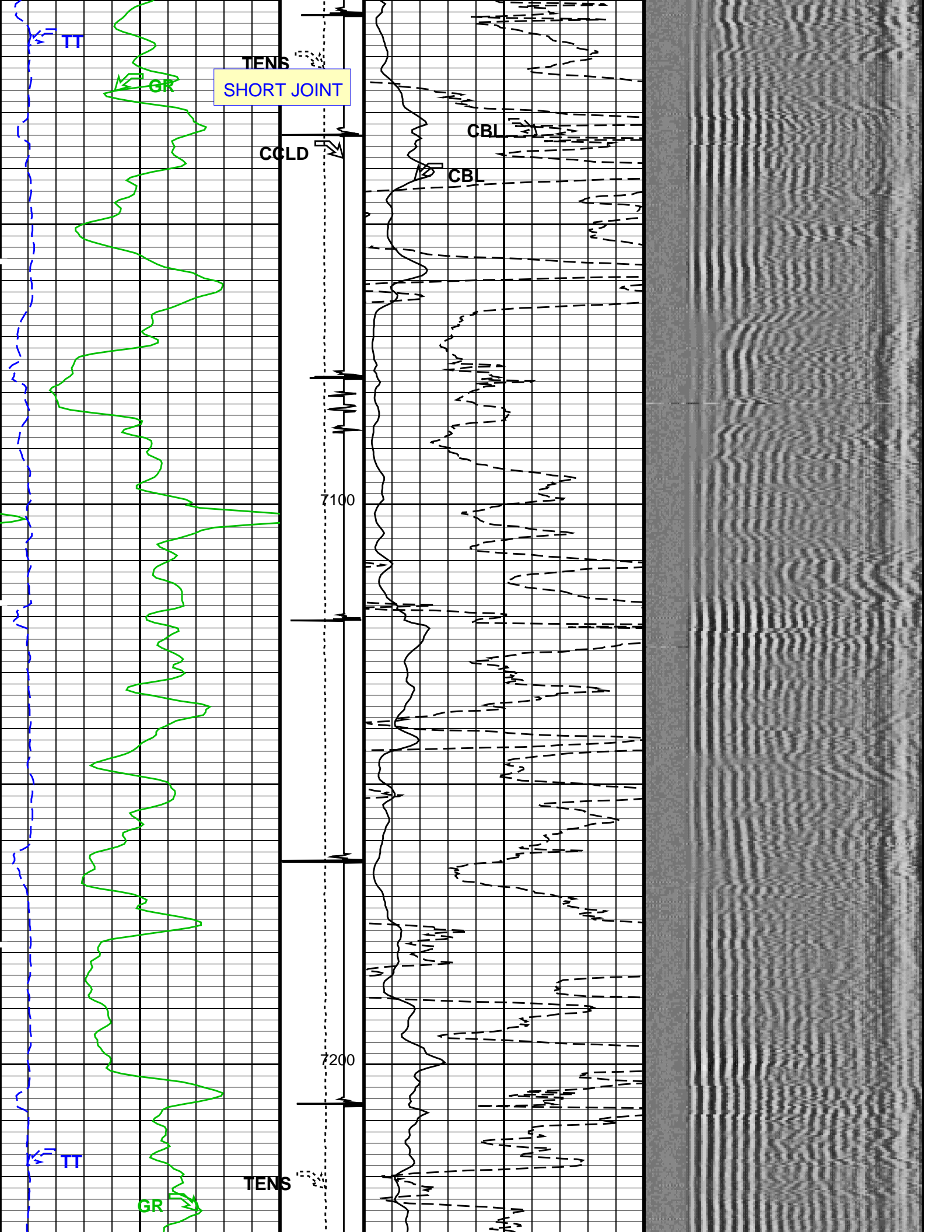


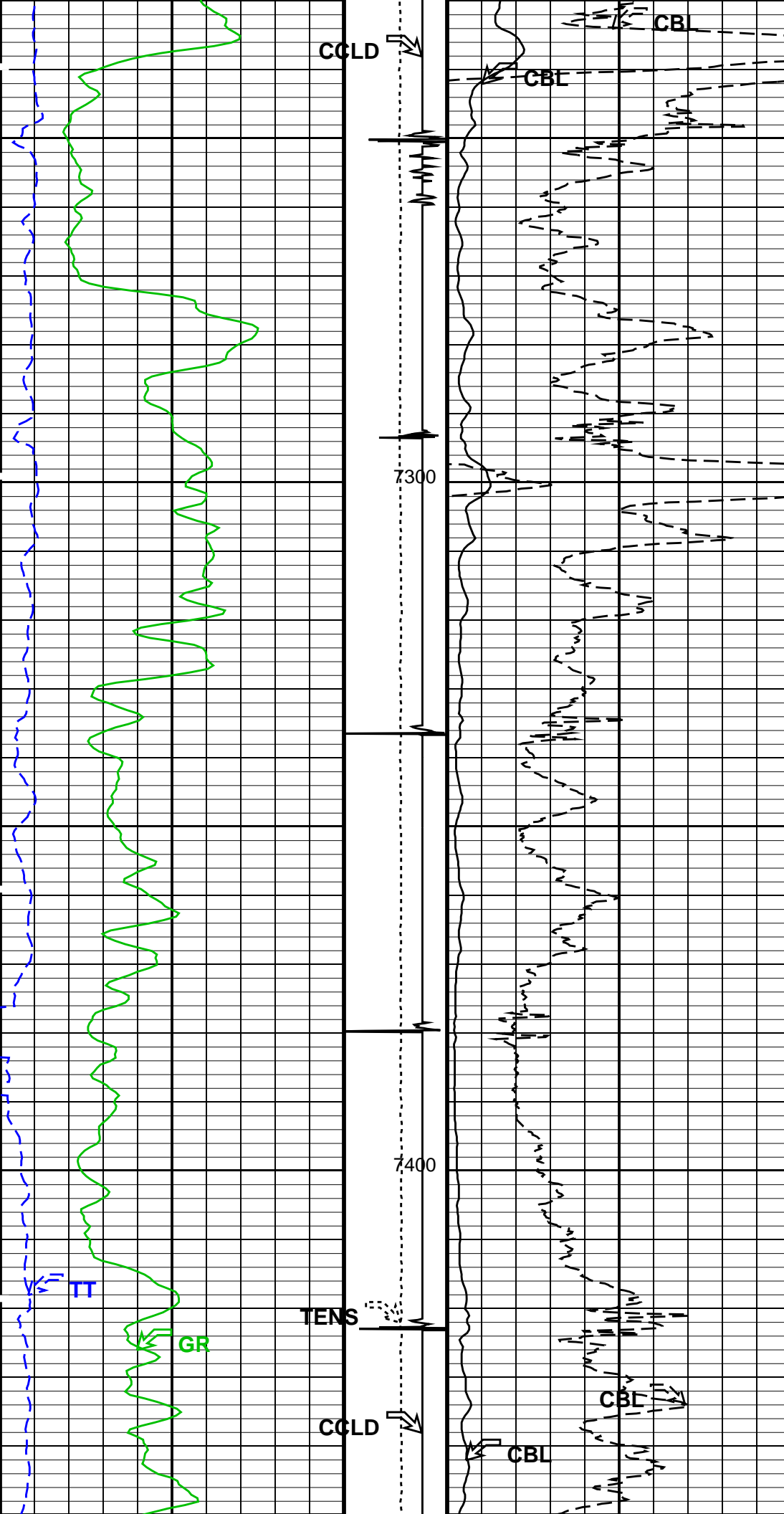


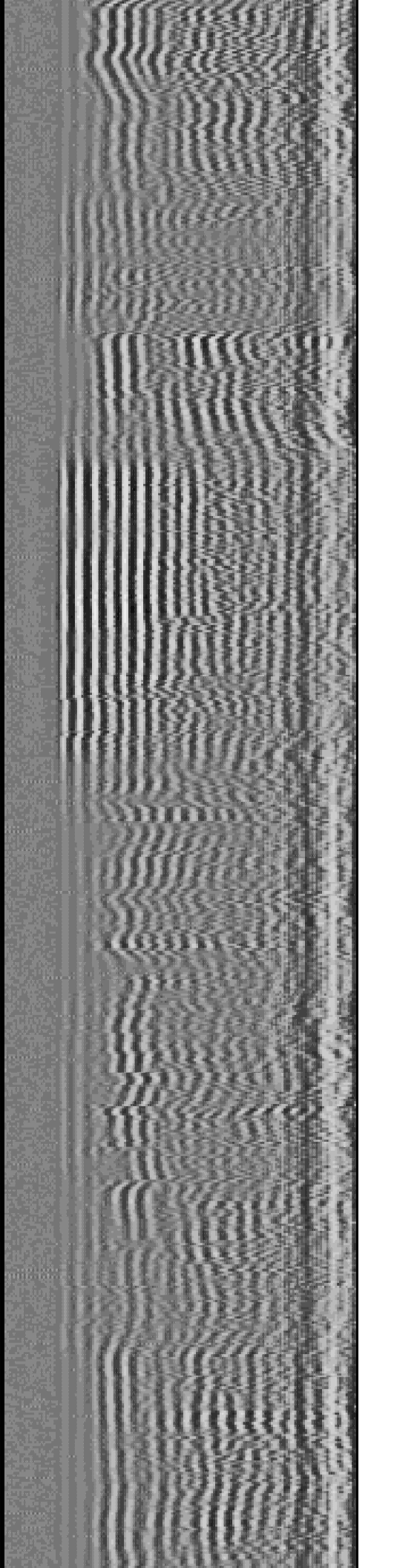
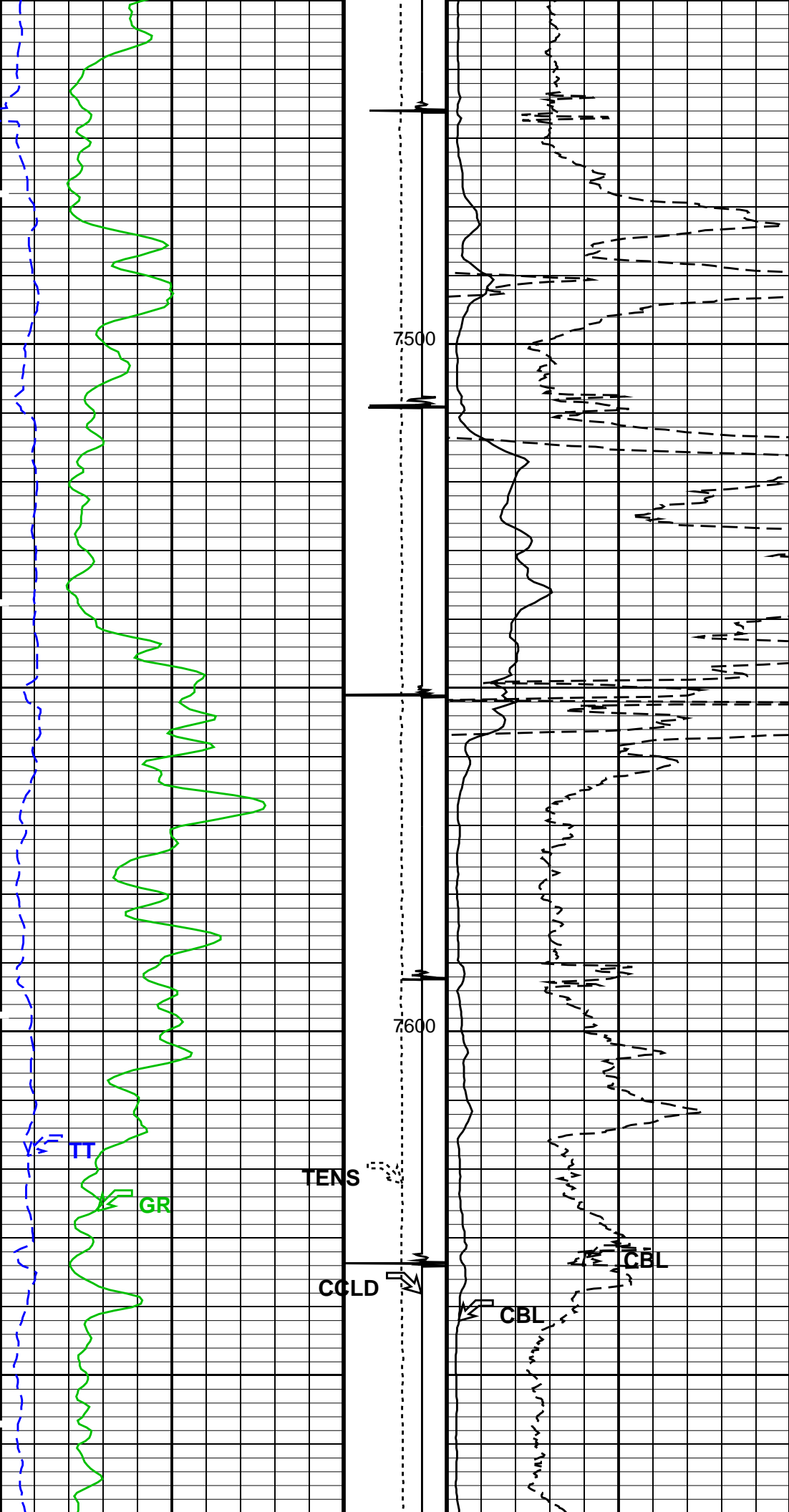


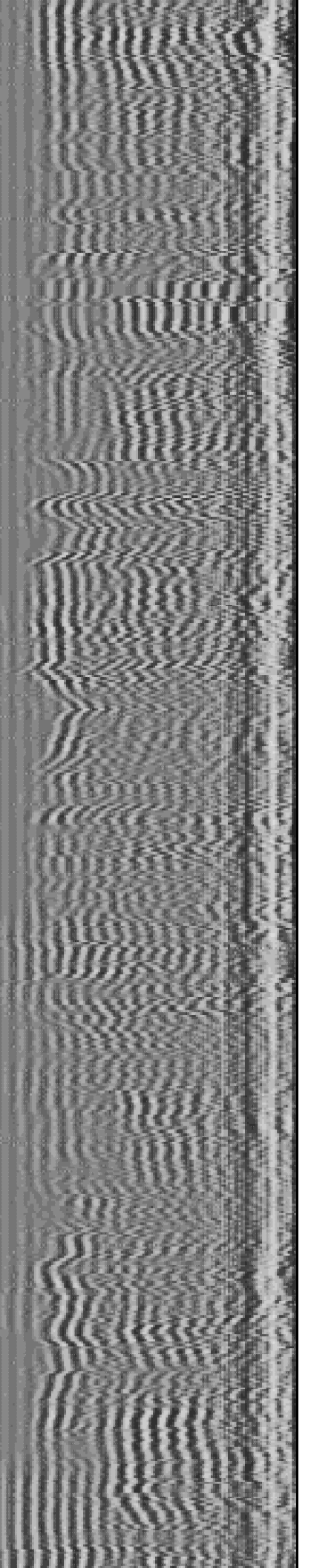
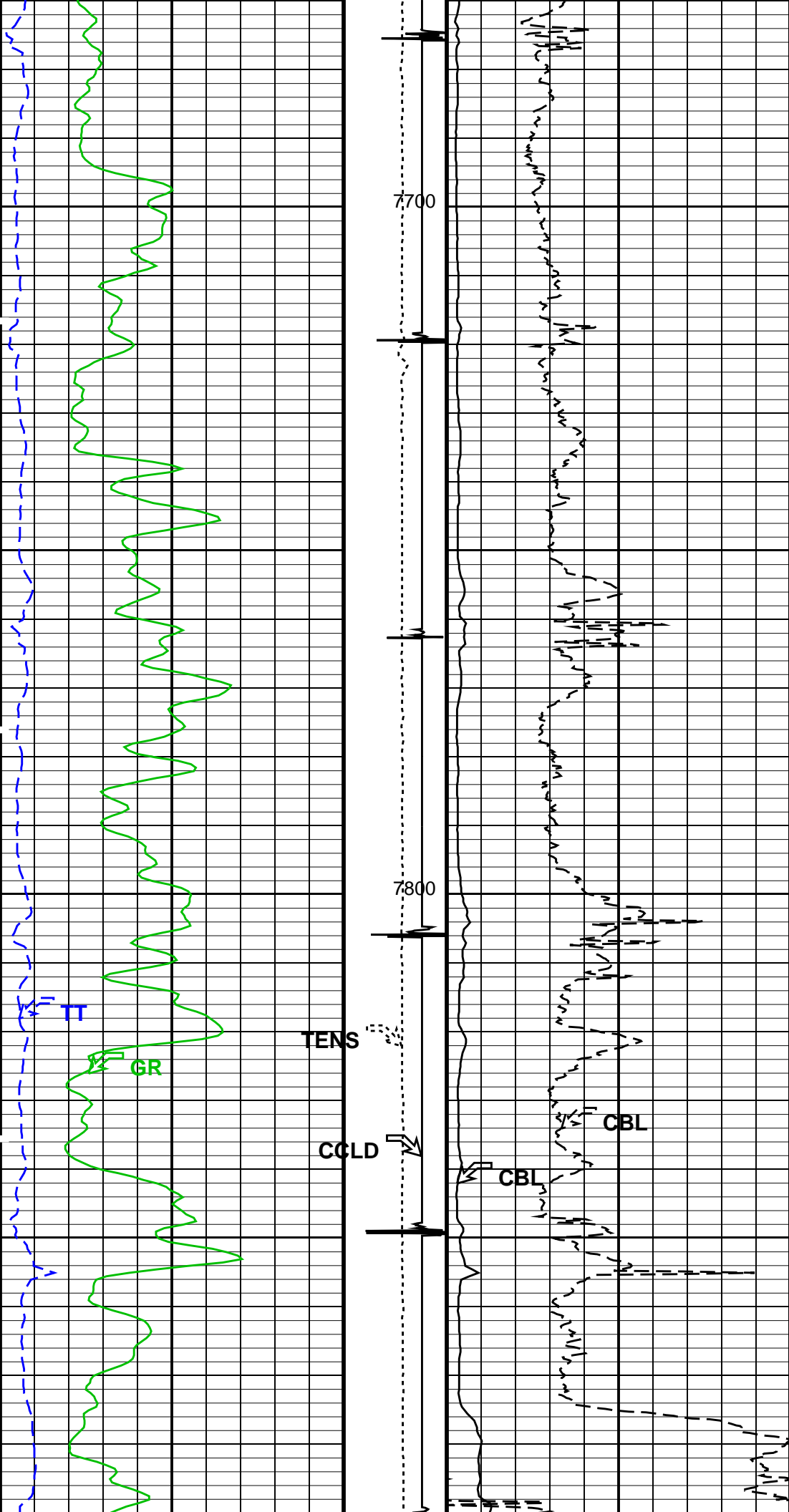


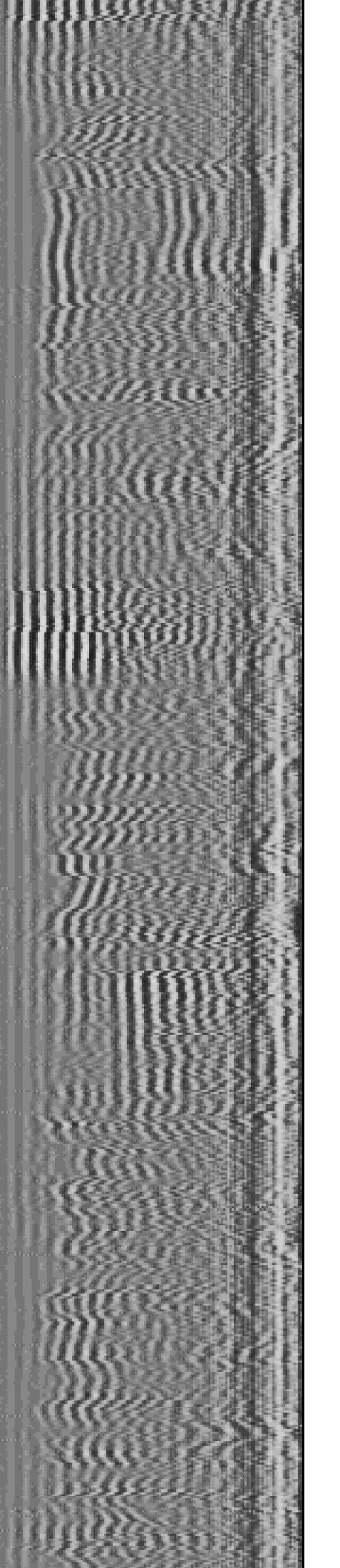
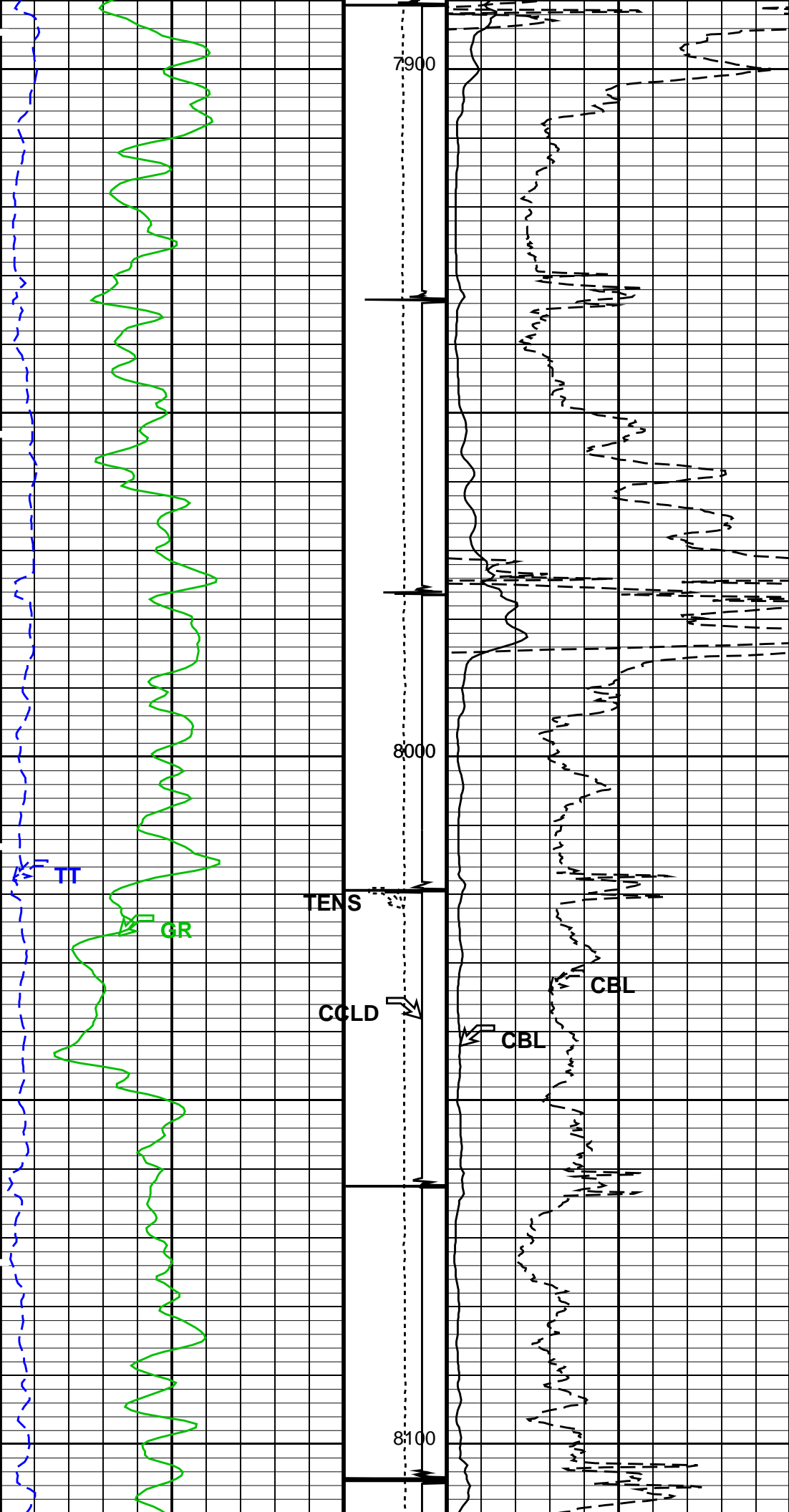


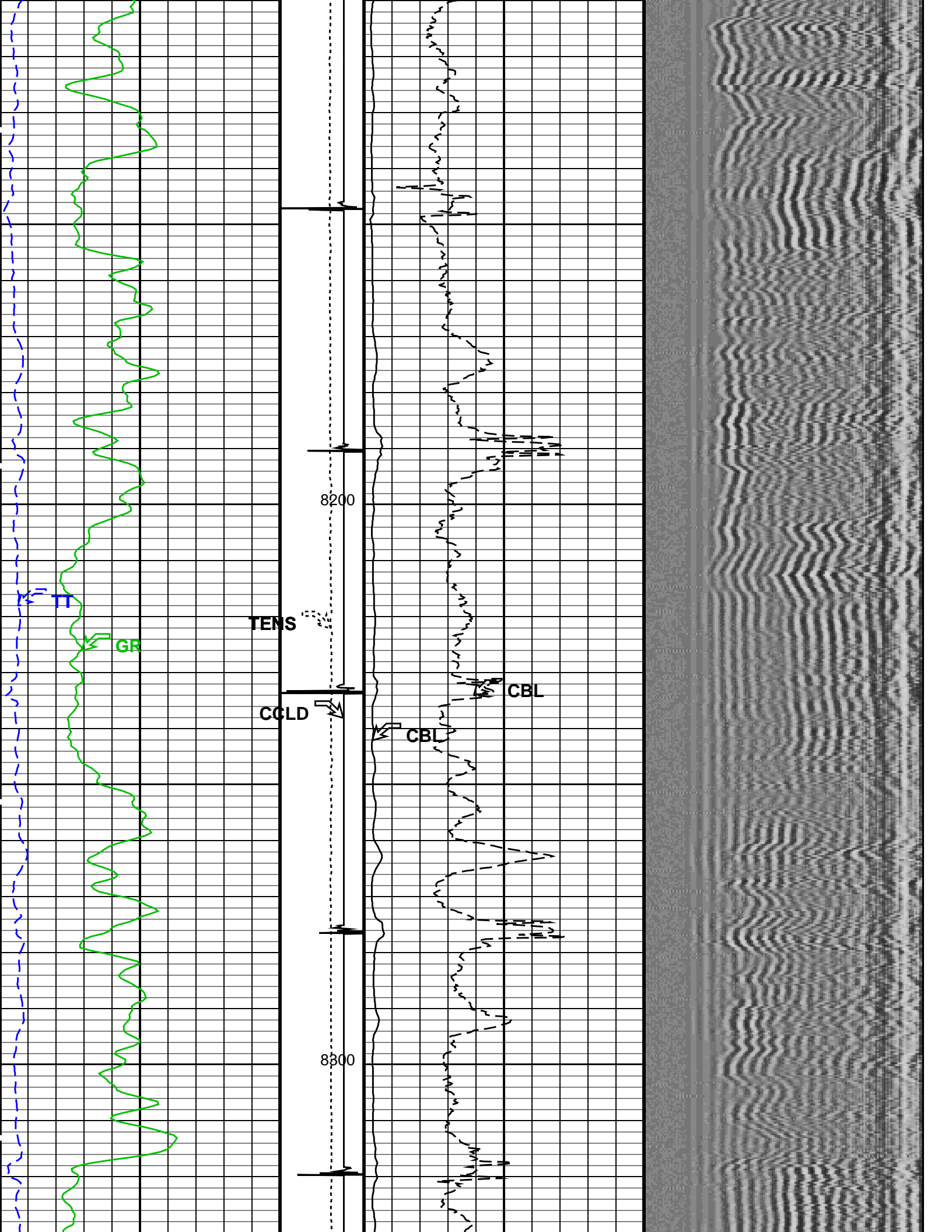


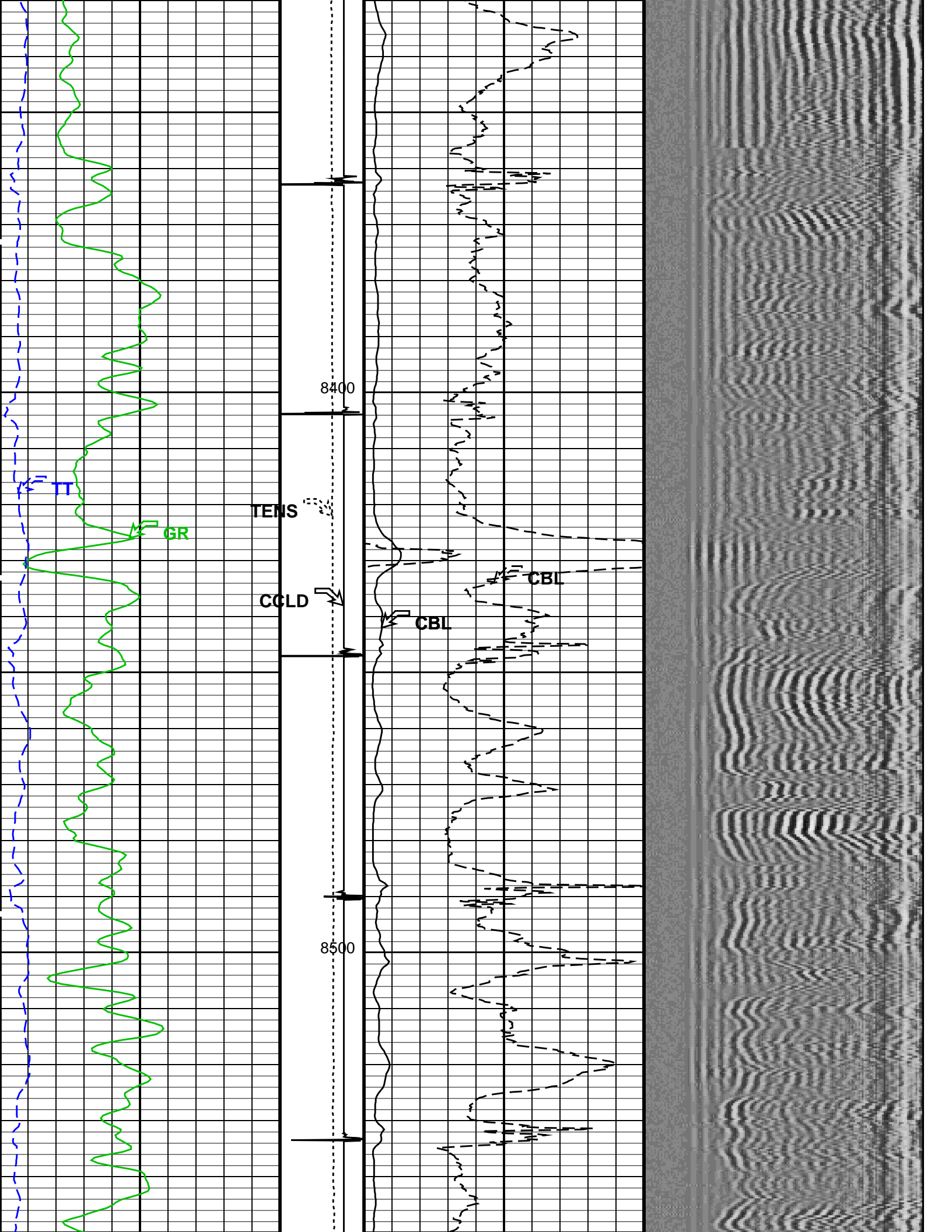


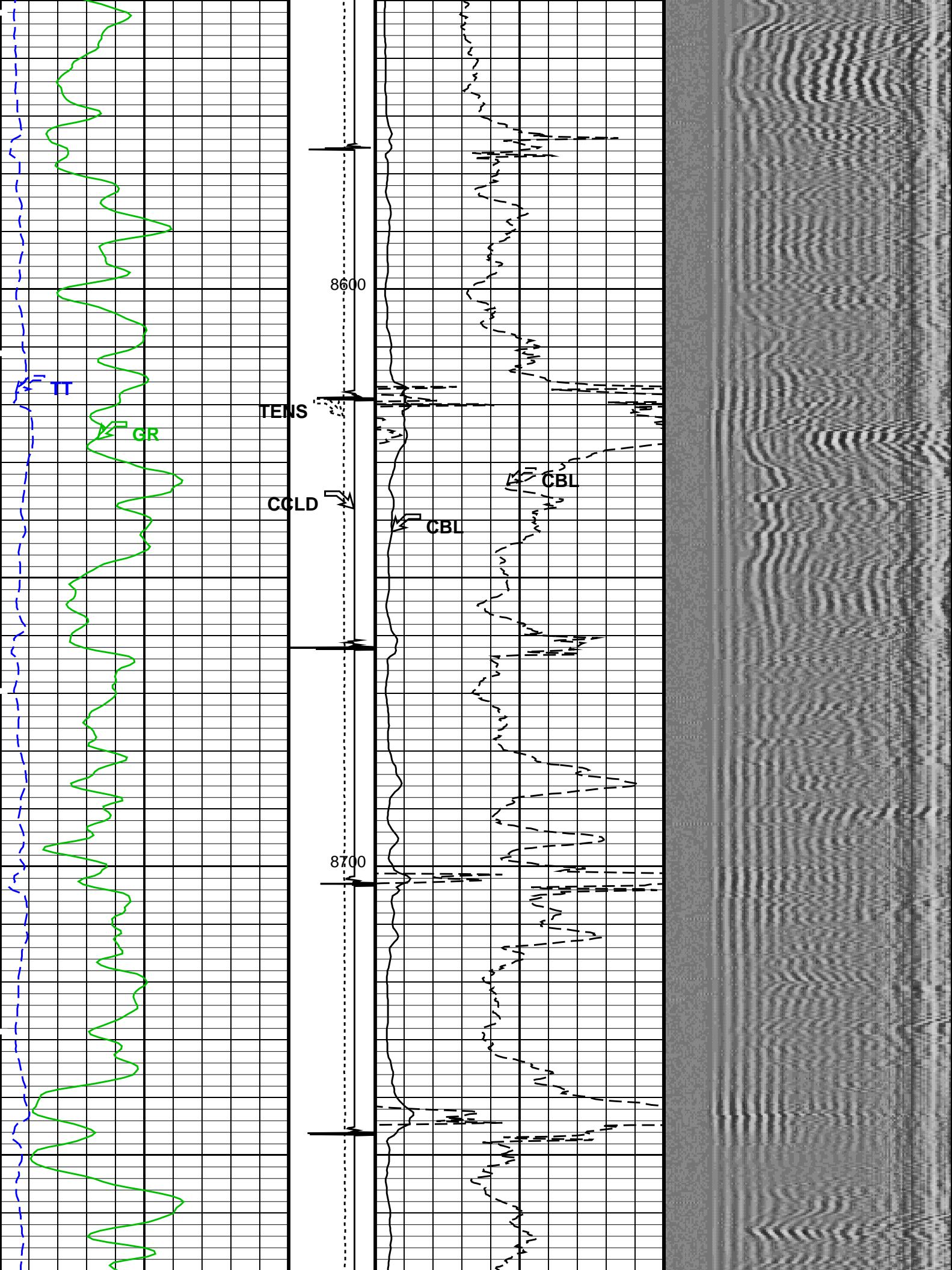


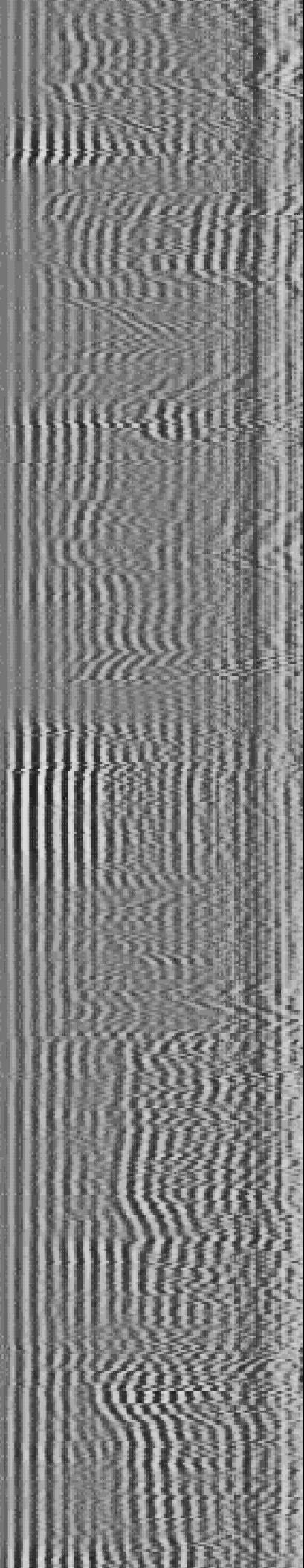
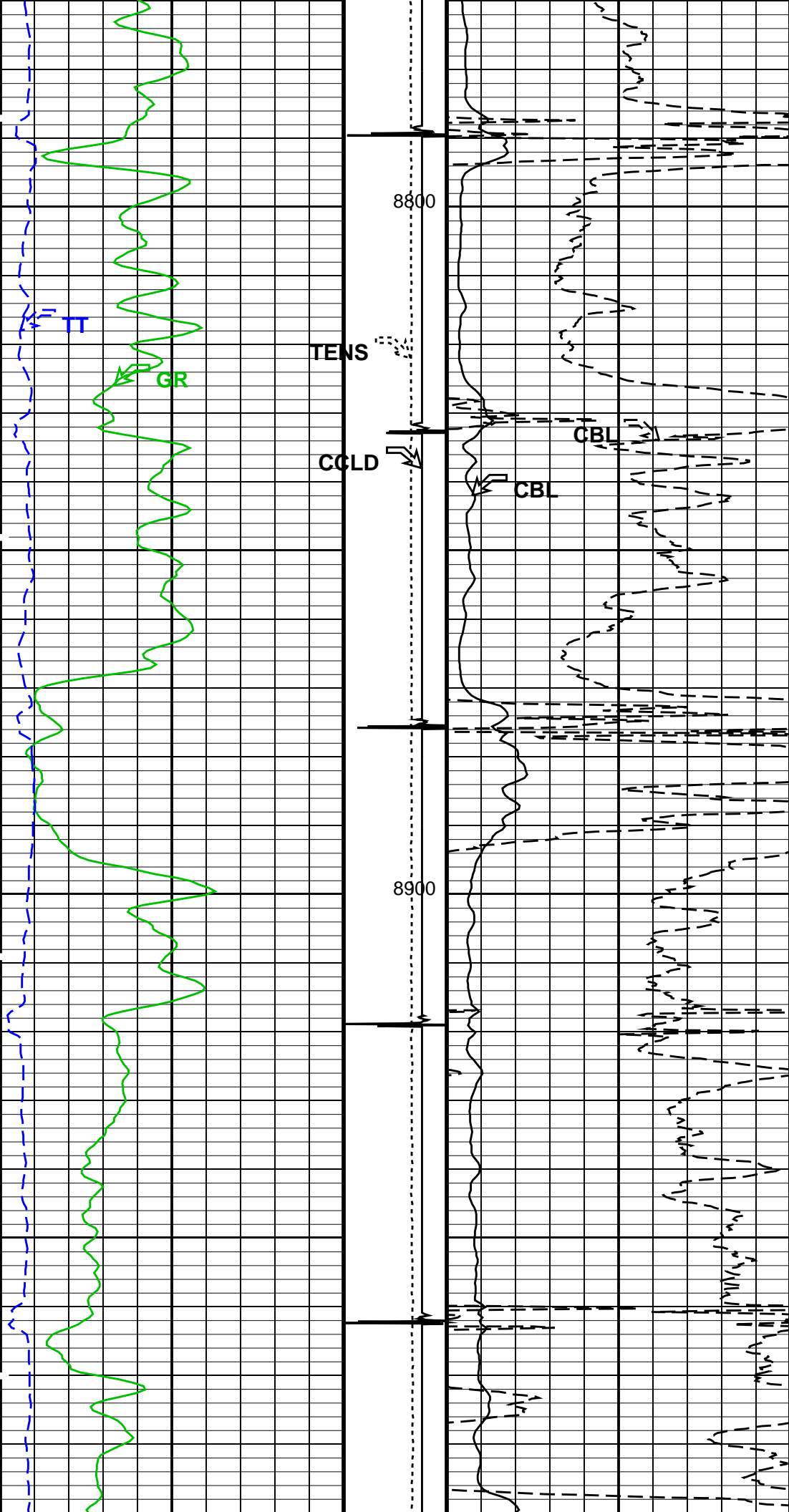


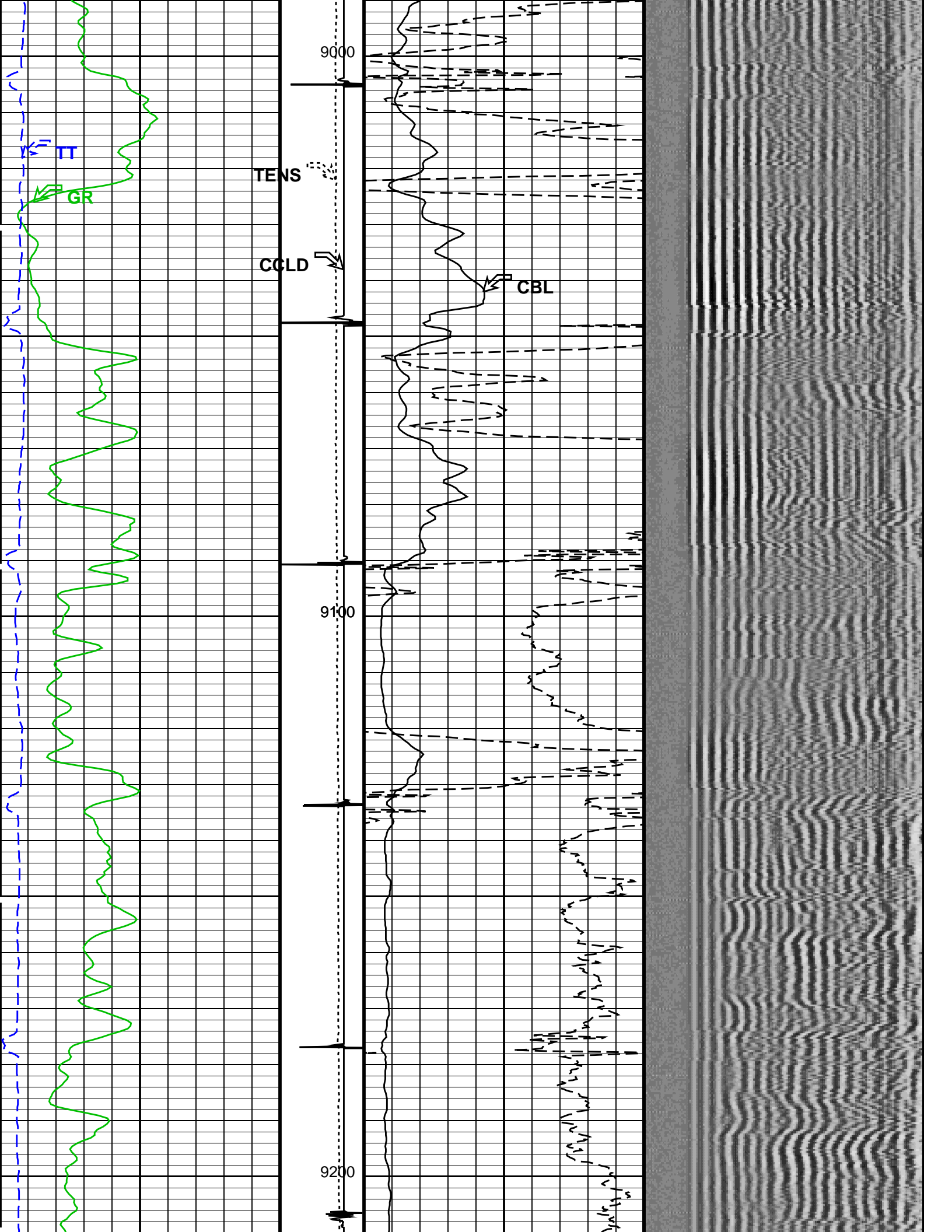


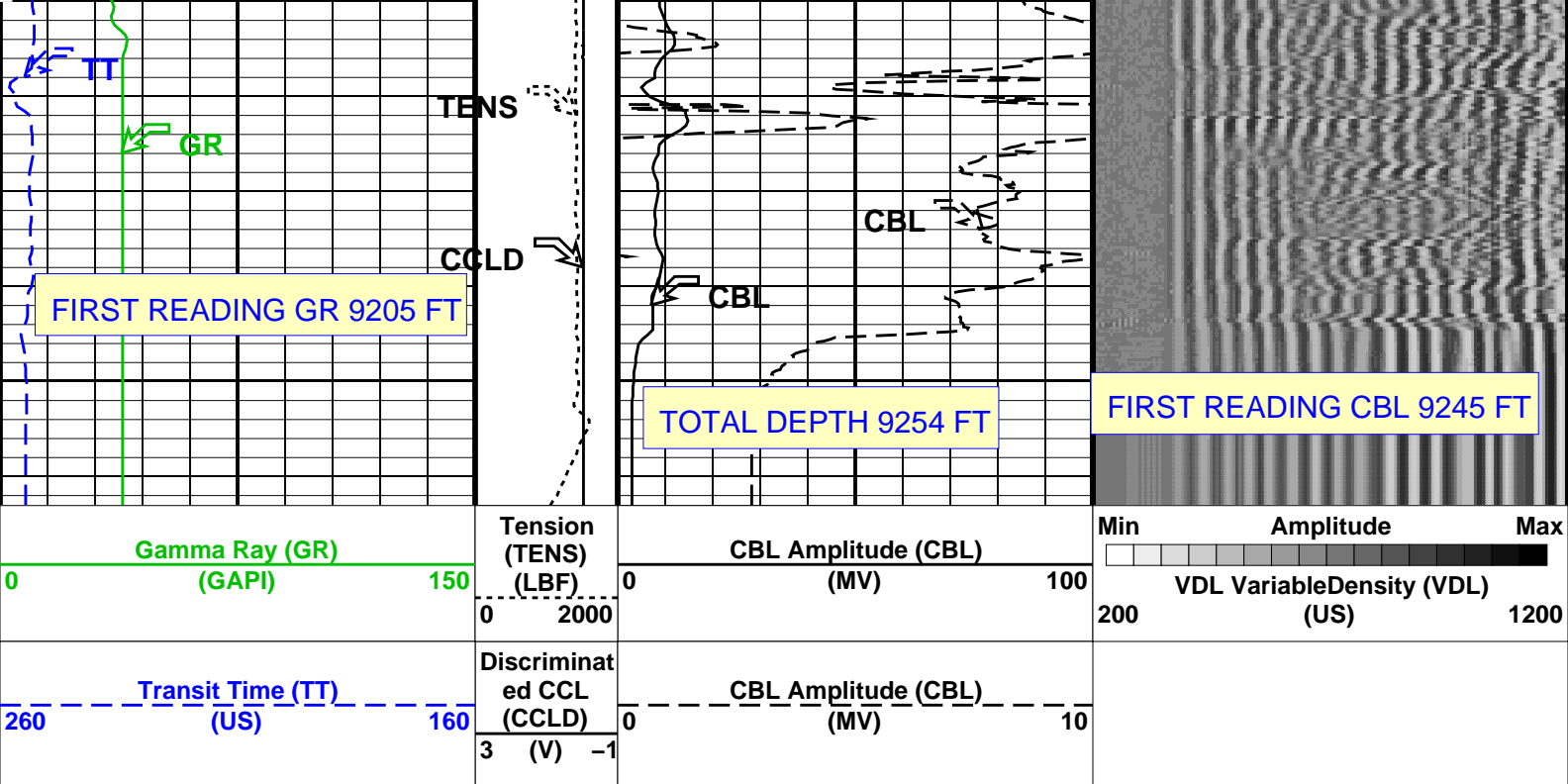












PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100'

Graphics File Created: 23-Sep-2012 06:16

OP System Version: 19C0-187

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

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8179		
Current Casing Size	4.50000 IN		
Casing Weight	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
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SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD

Well Index Level for Zone Isolation

0.8

BILI	Bond Index Level for Zone Isolation	0.8	PEAK
CB3D	SCMT CBL 3 ft Peak Detection Mode	224.559	US
CB3G	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB3T	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB5D	SCMT CBL 5 ft Peak Detection Mode	338.559	US
CB5G	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CB5T	CBL Gate Width	40	US
CBLG	CBL LQC Reference Amplitude in Free Pipe	80	MV
CBRA	CBL Cement Type Compensation Factor	1	
CMCF	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTC	SCMT Operating Mode	LOG	
CMTM	SCMT Slow Channel Index	VCC	
CSCS	Casing Thickness	0.255617	IN
CTHI	Delta-T Fluid	189	US/F
DTF	Acoustic Attenuation due to Fluid	0	DB/F
FATT	CBL Fluid Compensation Factor	0.924277	
FCF	Good Bond	1.55185	MV
GOBO	SCMT MAP Peak Detection Mode	PEAK	
MAPD	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US
MAPG	SCMT MAP Fixed Threshold Level	30	MV
MAPT	Maximum Attenuation	16.5449	DB/F
MATT	MAP Cement Type Compensation Factor	1	
MCCF	Minimum Cemented Interval for Isolation	1.25	FT
MCI	MAP Minimum Sonic Amplitude	4.32284	MV
MMSA	Minimum Sonic Amplitude	0.579149	MV
MSA	Peak Detection On/Off Switch in Playback	OFF	
PEDE	VDL Manual Gain	5	
VDLG	Acoustic Impedance of Cement	6.8	MRAY
ZCMT			
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
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9254	FT

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_009LUP	FN:8	PRODUCER	23-Sep-2012 03:08	9261.0 FT	14.5 FT
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Output DLIS Files

DEFAULT	SCMT_RST_HBMS_015PUP	FN:14	PRODUCER	23-Sep-2012 06:16
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Schlumberger

REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: MCU 22-13C (N22W)

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_007LUP	FN:6	PRODUCER	23-Sep-2012 02:39	7136.0 FT	6749.5 FT
DEFAULT	SCMT_RST_HBMS_009LUP	FN:8	PRODUCER	23-Sep-2012 03:08	9261.0 FT	14.5 FT

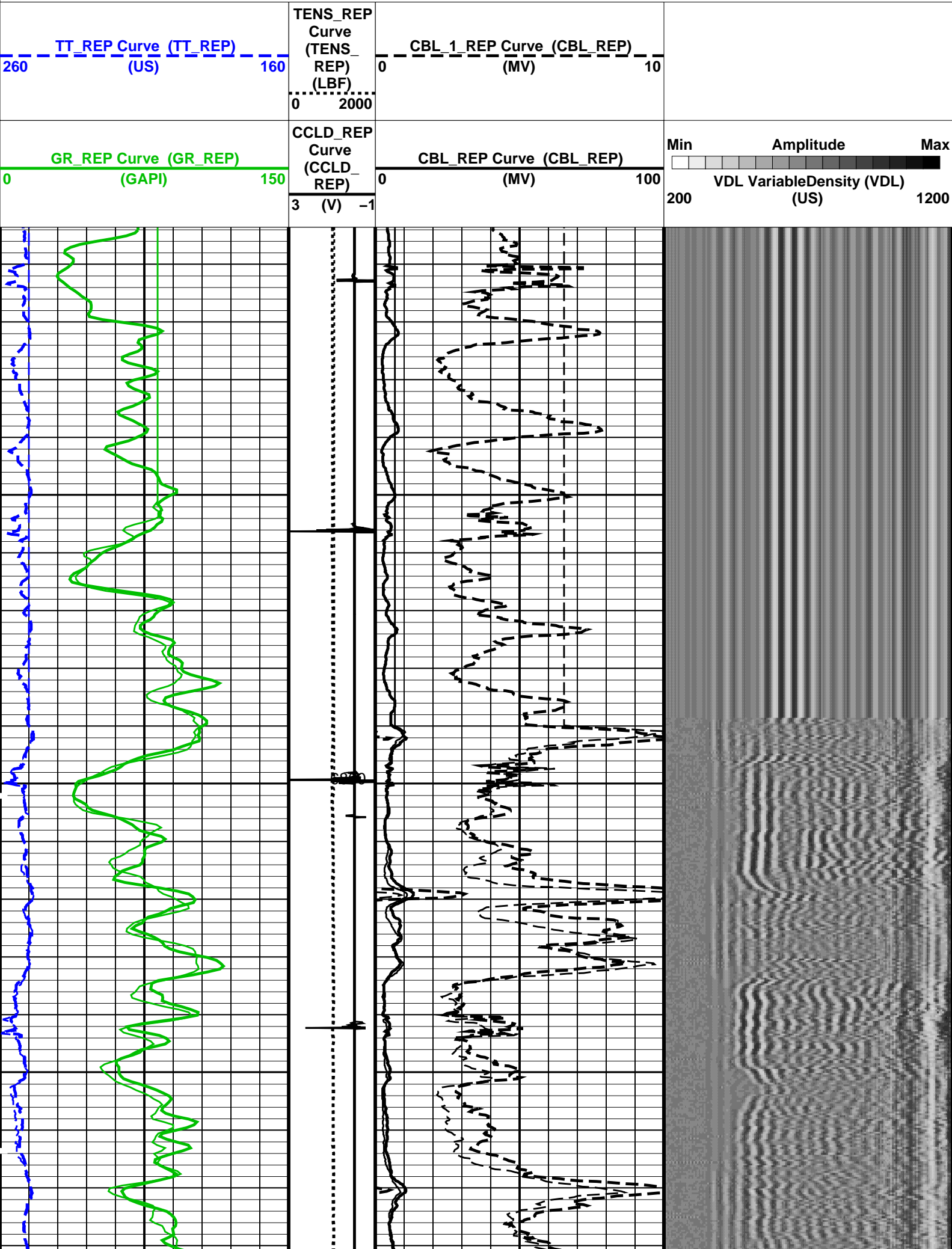
Output DLIS Files

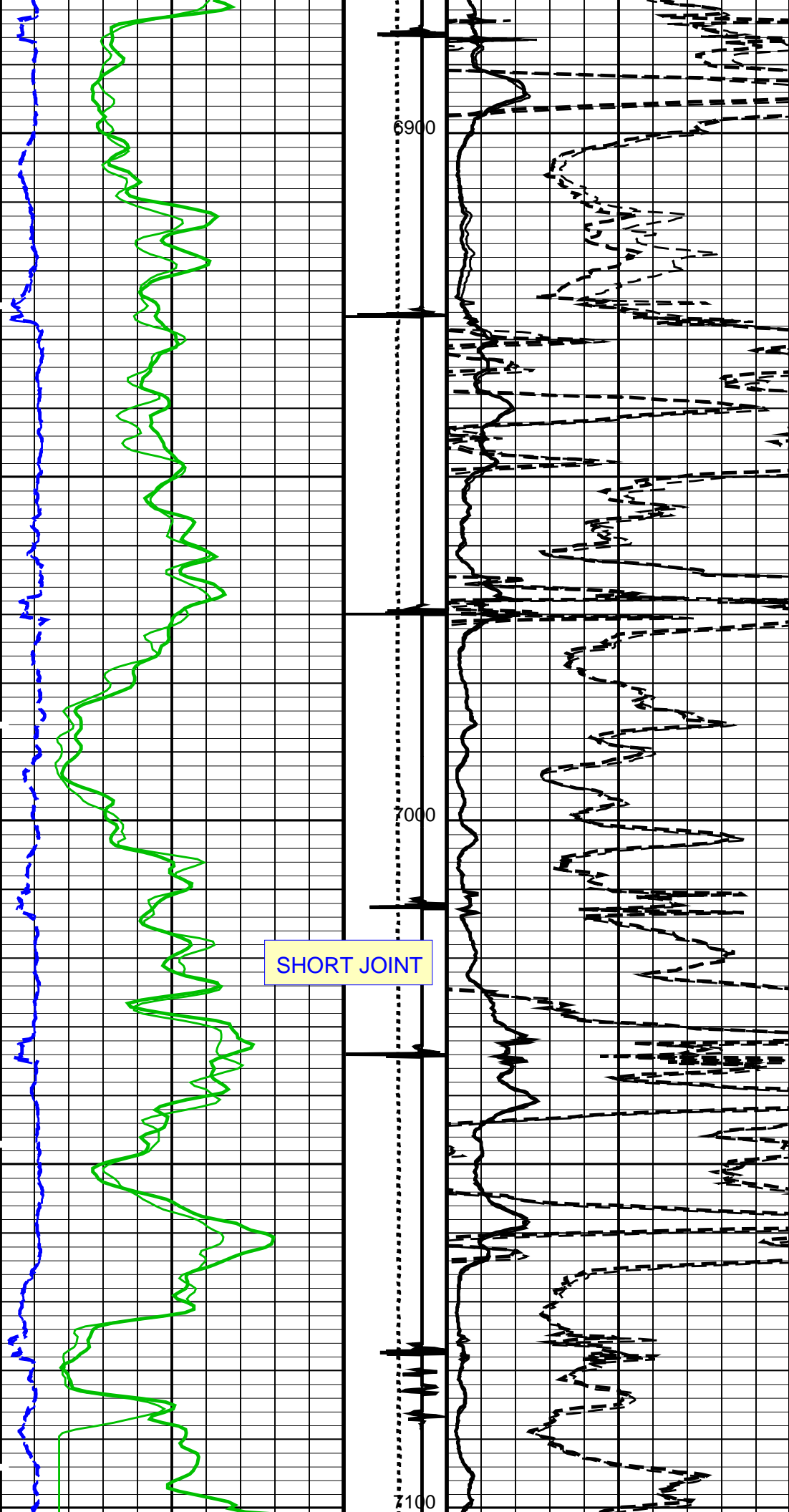
DEFAULT	SCMT_RST_HBMS_018PUP	FN:17	PRODUCER	23-Sep-2012 06:33	7137.0 FT	6703.0 FT
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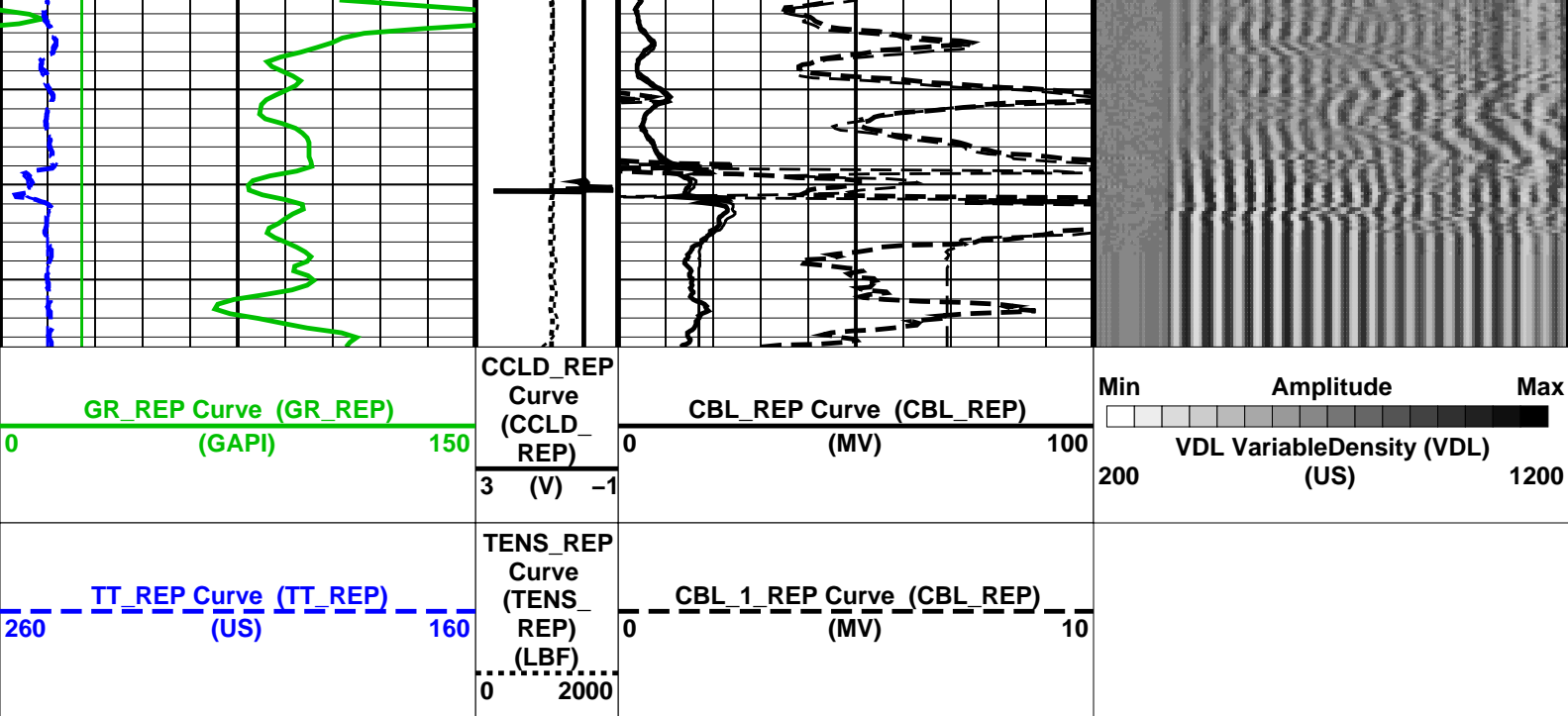
OP System Version: 19C0-187

SCMT-CB	SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
HBMS-B	SRPC-5214-H2-2012-OP1!		

PIP SUMMARY







PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100'

Graphics File Created: 23-Sep-2012 06:33

OP System Version: 19C0-187

SCMT-CB SRPC-5214-H2-2012-OP1! RST-C SRPC-5214-H2-2012-OP1!
HBMS-B SRPC-5214-H2-2012-OP1!

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8179		
Current Casing Size	4.50000 IN		
Casing Weight	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 Peak Detection T0_Delay and Noise Gate	224.559 US

CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMT C	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta-T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
System and Miscellaneous			
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	1.0	FT
DORL	Depth Offset for Repeat Analysis	2.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	9254	FT

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_007LUP	FN:6	PRODUCER	23-Sep-2012 02:39	7136.0 FT	6749.5 FT
DEFAULT	SCMT_RST_HBMS_009LUP	FN:8	PRODUCER	23-Sep-2012 03:08	9261.0 FT	14.5 FT

Output DLIS Files

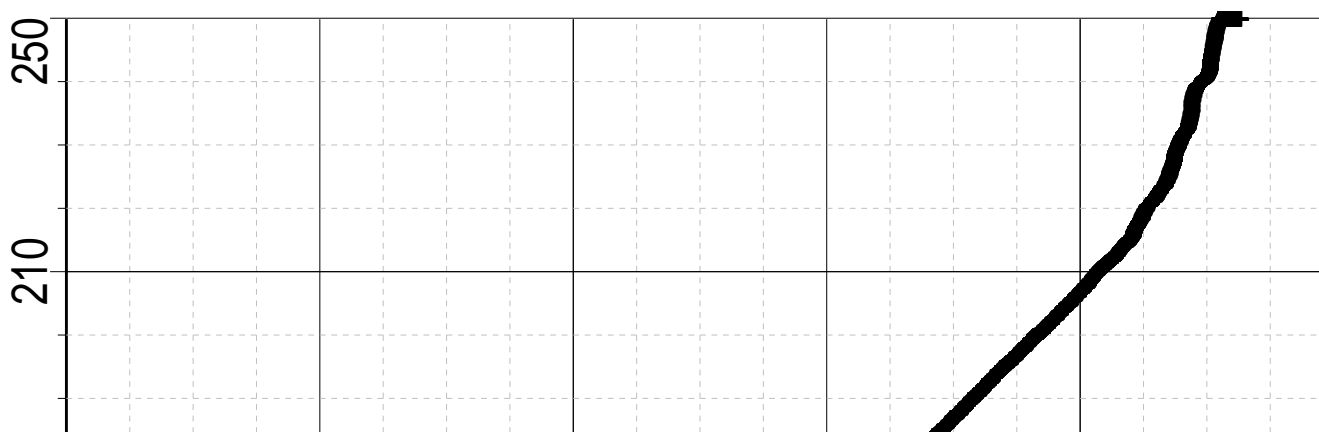
DEFAULT	SCMT_RST_HBMS_018PUP	FN:17	PRODUCER	23-Sep-2012 06:33
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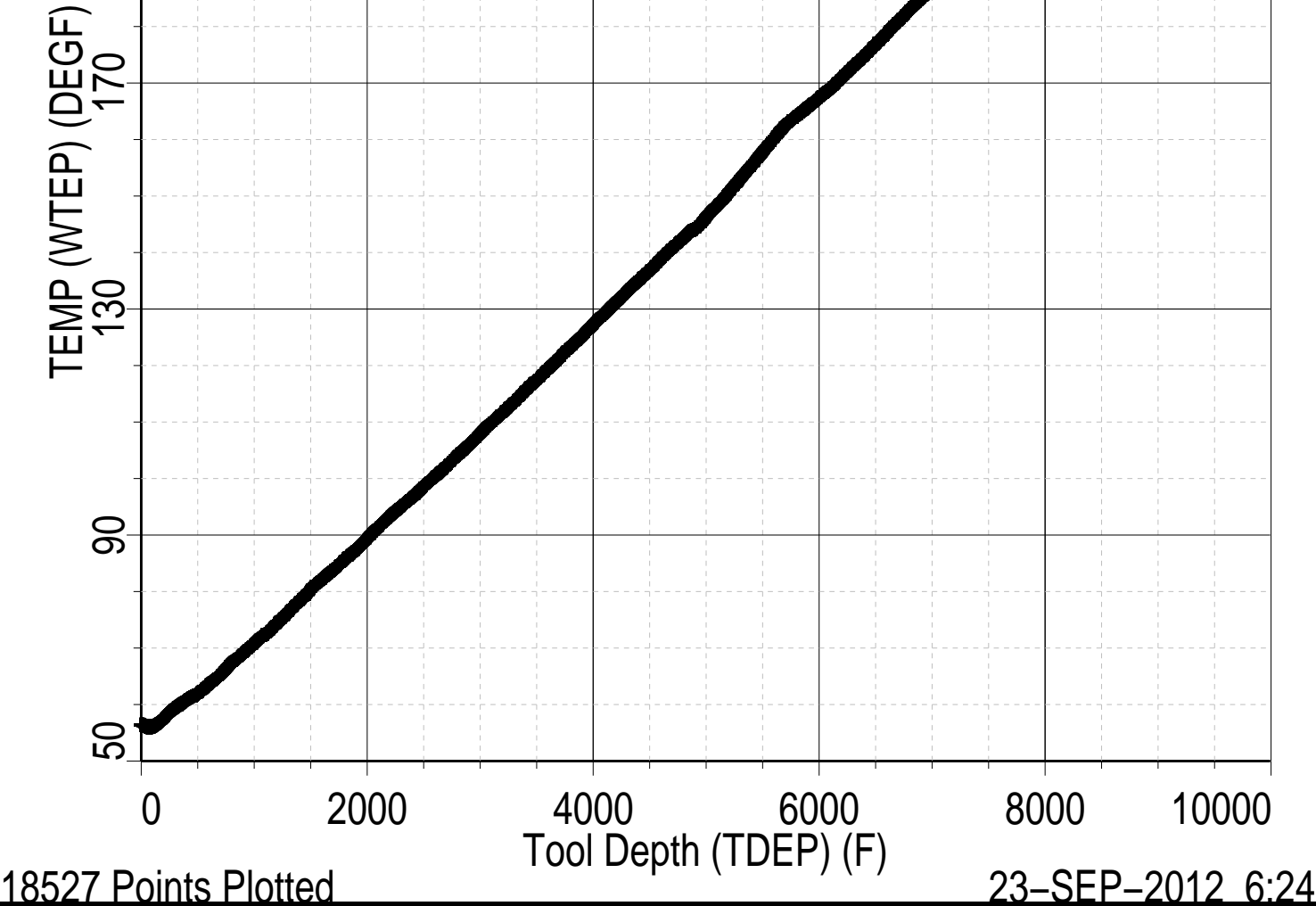
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TEMPERATURE PLOT

MAXIS Field Log

Index: 9263.0 – -31.0 FT





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PBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC
Field: MAMM CREEK
Well: MCU 22-13C (N22W)
Run date: 23-Sep-2012

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.34473, TOOL HBMS-BA2884. SENSOR S/N:
34473
090506
12
0708

GR HV Rt

Rt**0

Rt**1

Rt**0

+.200000000000e+04

+.190000000000e+04

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Client: ENCANA OIL & GAS (USA) INC
Field: MAMM CREEK
Well: MCU 22-13C (N22W)
Run date: 23-Sep-2012

Tool: PSP
Sub Type: PBMS
Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB	COEFFICIENTS FOR RTD THERMOMETER PBMS-B.2884 S/N:
Sensor Serial NB	2884
Calib Date ddmmyy	290706
Matrix Size	16
Coeff CRC	B134

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	-.111322977181E+04	+.870150832462E+03	-.279503665762E+03
	Tt**3	Tt**4	Tt**5
Tt**0	+.449965652060E+02	-.264920434334E+01	0.0

Client: ENCANA OIL & GAS (USA) INC
Field: MAMM CREEK
Well: MCU 22-13C (N22W)
Run date: 23-Sep-2012

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.2884 S/N:

2884

290706

66

CA7A

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc**0	+.746225778248E+04	+.221418944849E-01	-.210426289152E-06
Fc**1	-.104881478055E+01	-.124860716120E-04	-.949662972749E-10
Fc**2	+.872904863754E-06	+.426833452654E-10	+.759423319181E-15
Fc**3	+.239319347612E-11	+.290279345385E-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	-.812091932516E-10	-.147717591127E-14	-.150620854654E-19
Fc**1	+.145644303959E-15	+.160803895109E-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

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

2884

290706

66

F21E

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+.113897507996E+03	-.324965333678E-03	+.697134219555E-08
Fb**1	-.601014483015E-02	+.175847256148E-07	+.180458009797E-12
Fb**2	-.317240807344E-07	+.374112953741E-12	+.133653042149E-17
Fb**3	-.236568542854E-12	+.787205826536E-17	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

	Fc**3	Fc**4	Fc**5
Fb**0	+.881675188724E-13	-.146952444192E-16	-.415359060767E-21
Fb**1	+.552774825442E-18	+.7882728244827E-24	0.0

Fb**1	-.553774805449E-18	-.739378844697E-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 2884
 Calib Date ddmmyy 290706
 Matrix Size 16
 Coeff CRC 72C9

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+.310161623072E+05	+.363878692519E-02	+.311171630292E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.277965051815E-10	-.181738305366E-14	-.633170122188E-20

PBMS Quartz Gauge type F

Sonde Serial NB :
 Sensor Serial NB 2884
 Calib Date ddmmyy 290706
 Matrix Size 16
 Coeff CRC 3E80

Clock Temp Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+.111177101155E+03	-.545261137223E-02	-.112186276799E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	+.756690675632E-11	-.207457772298E-16	-.121623071907E-19

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

Primary Equipment:










Slim Cement Mapping Xmitter Electronics
 Slim Cement Mapping Sonde
 Slim Cement Mapping Cartridge

SCMX – CA
 SCMS – CB 8179
 SCMC – CA 8120

Auxiliary Equipment:

Slim Electronics Cartridge Housing

SECH – CA

Slim Cement Mapping Tool, 1–11/16 OD Master Calibration							
SCMT CBL and MAP Amplitude Normalization in SFT–155/–255							
Phase	MAP 1 Amplitude Plus MV		Value	Phase	MAP 2 Amplitude Plus MV		Value
Master			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: **MCU 22–13C (N22W)**

Field: **MAMM CREEK**

County: **GARFIELD**

State: **COLORADO**

SLIM CEMENT MAPPING LOG

CBL – VDL

GAMMA RAY – CCL