

Company: ENCANA OIL & GAS (USA) INC.

Well: DAYBREAK FEDERAL 19-6D (PJ19)

Field: PARACHUTE

County: GARFIELD State: COLORADO

CEMENT BOND LOG
CBL – VDL
GAMMA RAY – CCL

County: GARFIELD

Field: PARACHUTE

Location: SHL: NWSE 2017' FSL & 2421' FEL

Well: DAYBREAK FEDERAL 19-6D (PJ19)

Company: ENCANA OIL & GAS (USA) INC.

LOCATION	
SHL: NWSE 2017' FSL & 2421' FEL BHL: SENW 2095' FNL & 1560' FWL	Elev.: K.B. 5447.00 ft G.L. 5425.00 ft D.F. 5446.00 ft
Permanent Datum: _____	GROUND LEVEL _____ Elev.: 5425.00 ft
Log Measured From: _____	KELLY BUSHING _____ 22.00 ft above Perm. Datum
Drilling Measured From: _____	KELLY BUSHING _____
API Serial No. _____ 05-045-19894-0000	Section 19 Township 7S Range 95W

	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	38.1 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	5-Oct-2011		
Run Number	ONE		
Depth Driller	6560 ft		
Schlumberger Depth	6486 ft		
Bottom Log Interval	6477.4 ft		
Top Log Interval	200 ft		
Casing Fluid Type	WATER		
Salinity			
Density	8.4 lbm/gal		
Fluid Level	22 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.750 in		
From	22 ft		
To	6560 ft		
Casing/Tubing Size	4.500 in		
Weight	11.6 lbm/ft		
Grade	M-80		
From	22 ft		
To	6535 ft		
Maximum Recorded Temperatures	193 degF		
Logger On Bottom	5-Oct-2011	13:21	
Unit Number	391	GRAND JUNCTION	
Recorded By	SHOWKAT HOSSAIN		
Witnessed By	UNATTENDED		

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: 5-OCT-2011 14:21:29

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JA	Type:	CMTD-C	Type:	1-25ZT
Serial Number:	6322	Serial Number:	5006	Serial Number:	391
Calibration Date:	07-APR-2011	Calibration Date:	04-OCT-2011	Length:	14500 FT
Calibrator Serial Number:	33	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:	-6	Calibration RMS:	4		
Wheel Correction 2:	-5	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	229.00 FT
Rig Up Length At Bottom:	230.00 FT
Rig Up Length Correction:	-1.00 FT
Stretch Correction:	5.00 FT
Tool Zero Check At Surface:	0.60 FT

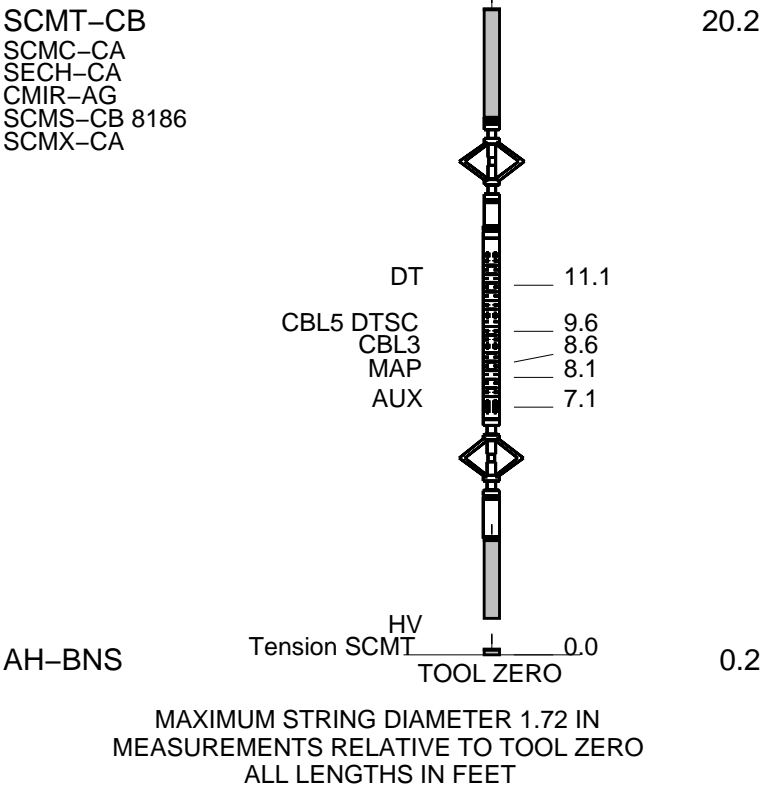
Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES FOLLOWED.
2. IDW USED AS PRIMARY DEPTH CONTROL.
3. Z-CHART AND DRUM COUNTER USED AS SECONDARY DEPTH CONTROL.
- 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: RST – SIGMA OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THIS IS A FIRST RUN IN WELL.	
TOOL RAN AS PER TOOL SKETCH.	
TD TAGGED AT: 6486 FT	
MAXIMUM RECORDED PRESSURE AT TD: 2572.6 PSIA	
MAXIMUM RECORDED TEMPERATURE AT TD: 193.4 DEGF	
SHORT JOINTS: 3258 FT – 3281 FT & 4747 FT – 4770 FT	



Schlumberger

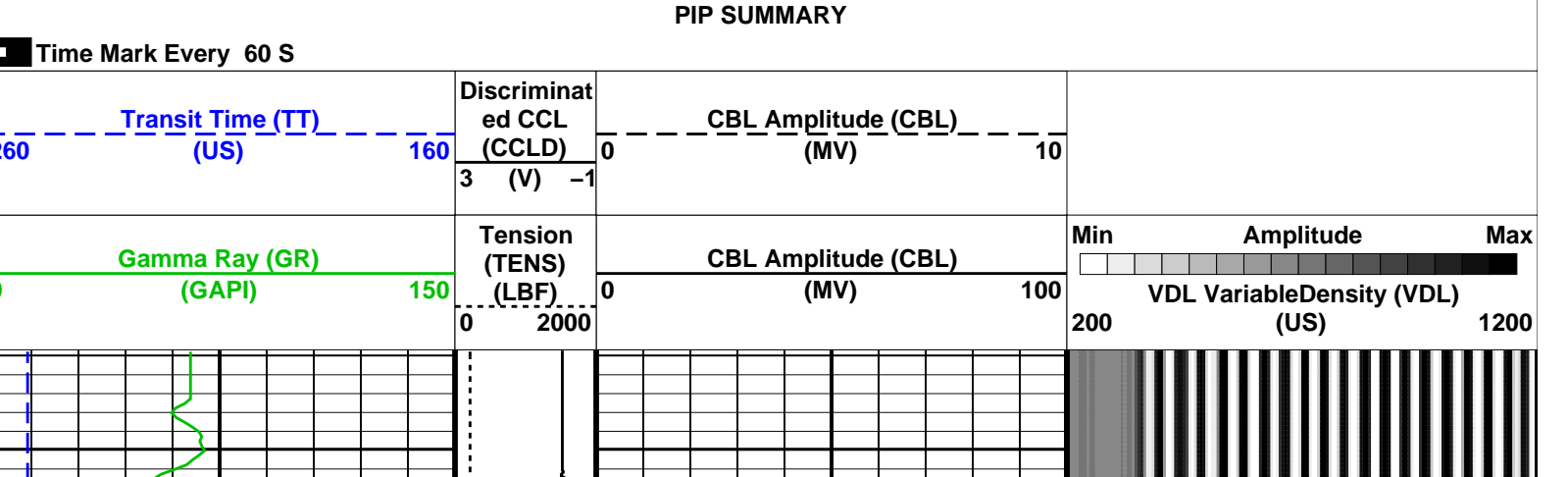
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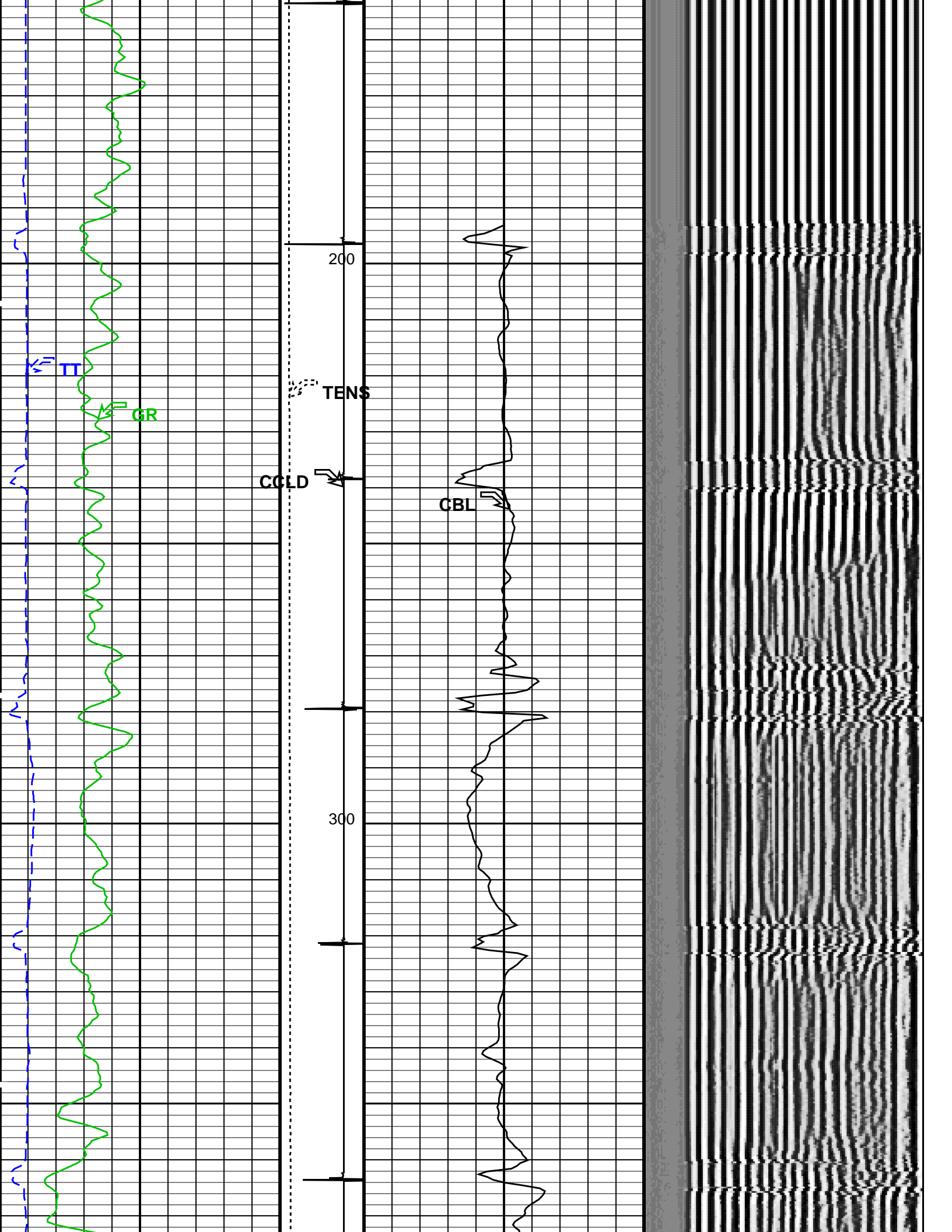
MAXIS Field Log

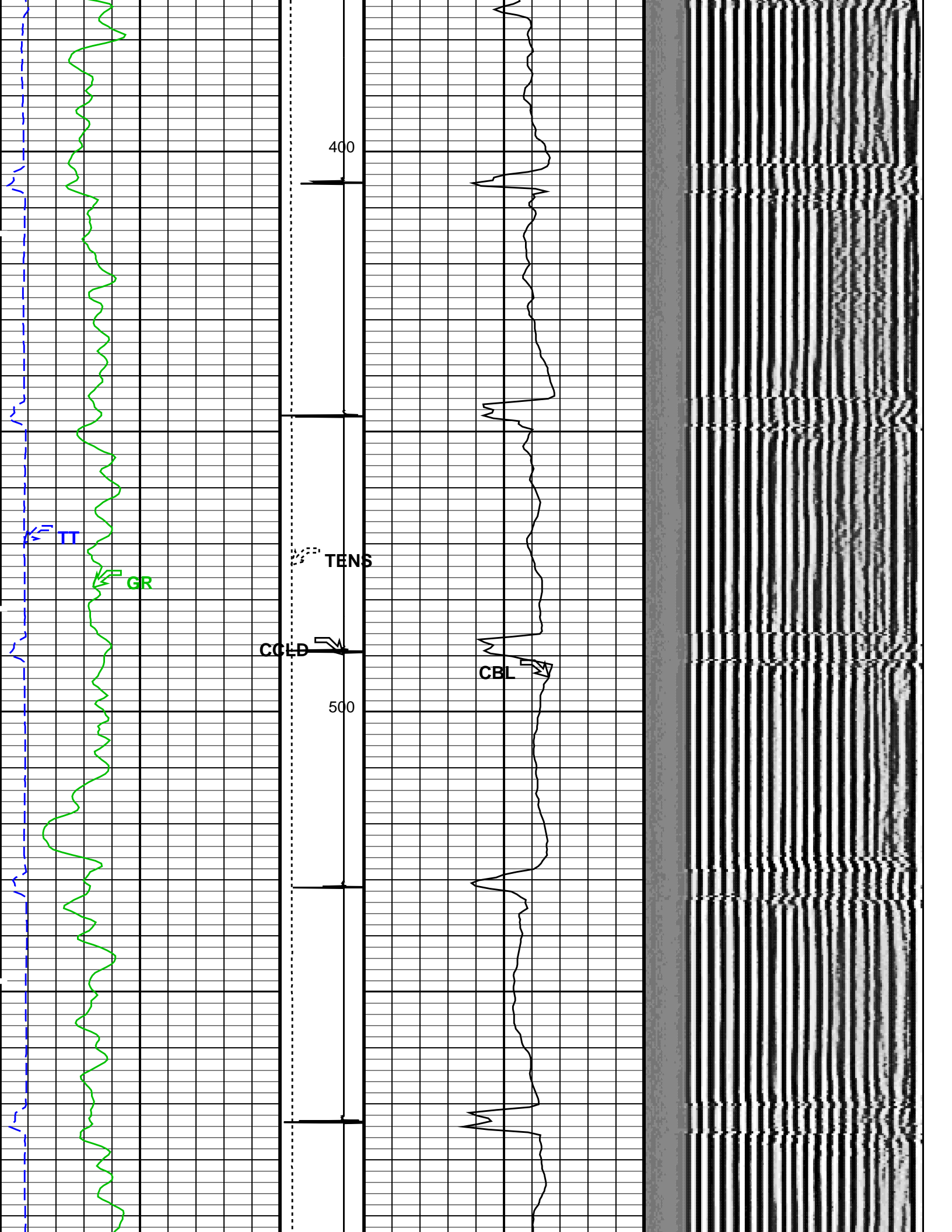
Company: ENCANA OIL & GAS (USA) INC. Well: DAYBREAK FEDERAL 19-6D (PJ19)

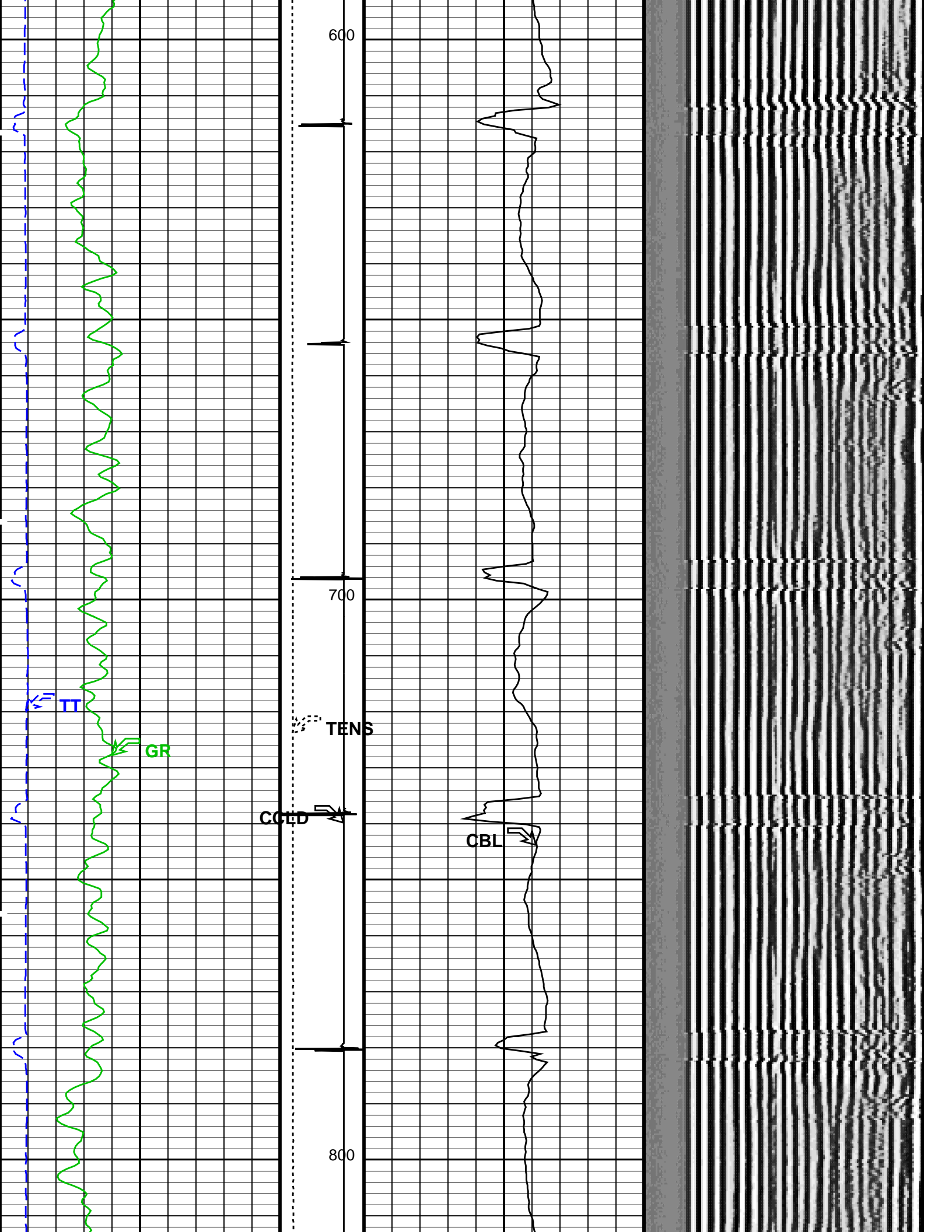
Output DLIS Files						
DEFAULT	SCMT_RST_PSP_017LUP	FN:16	PRODUCER	05-Oct-2011 13:21	6495.0 FT	139.0 FT

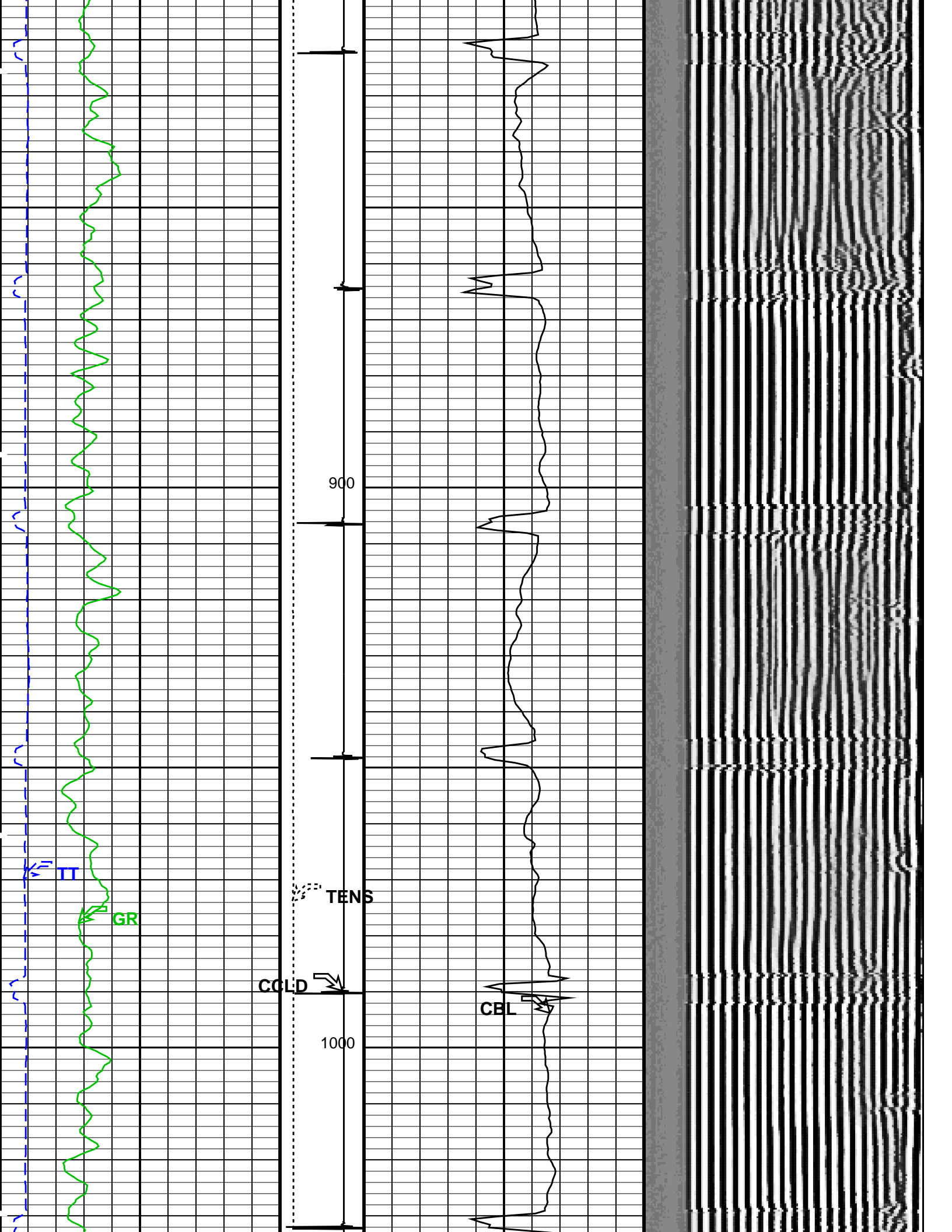
OP System Version: 19C0-187			
SCMT-CB PSPT	SRPC-5095-H2-2011-OP19_b 19C0-187	RST-C	SRPC-5095-H2-2011-OP19_b

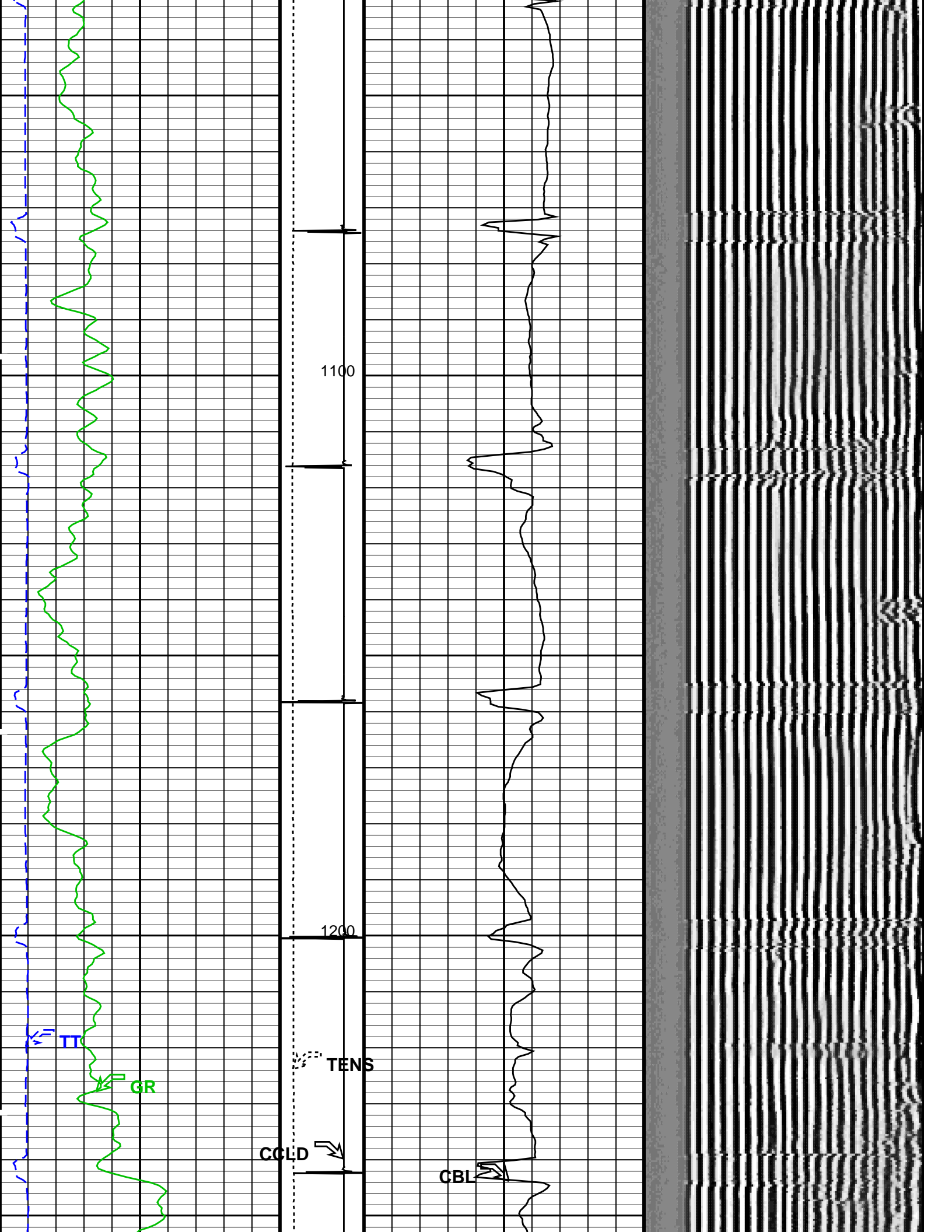


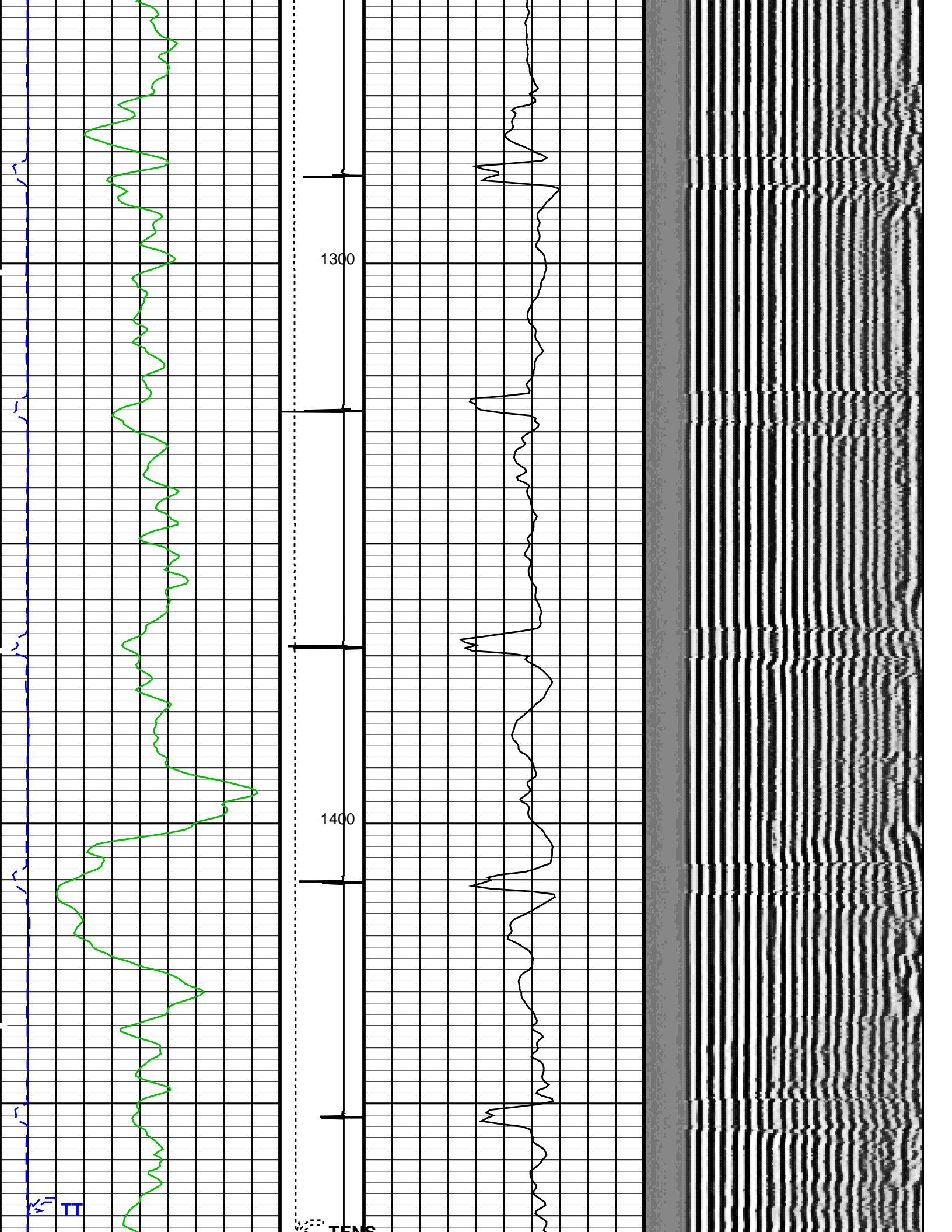


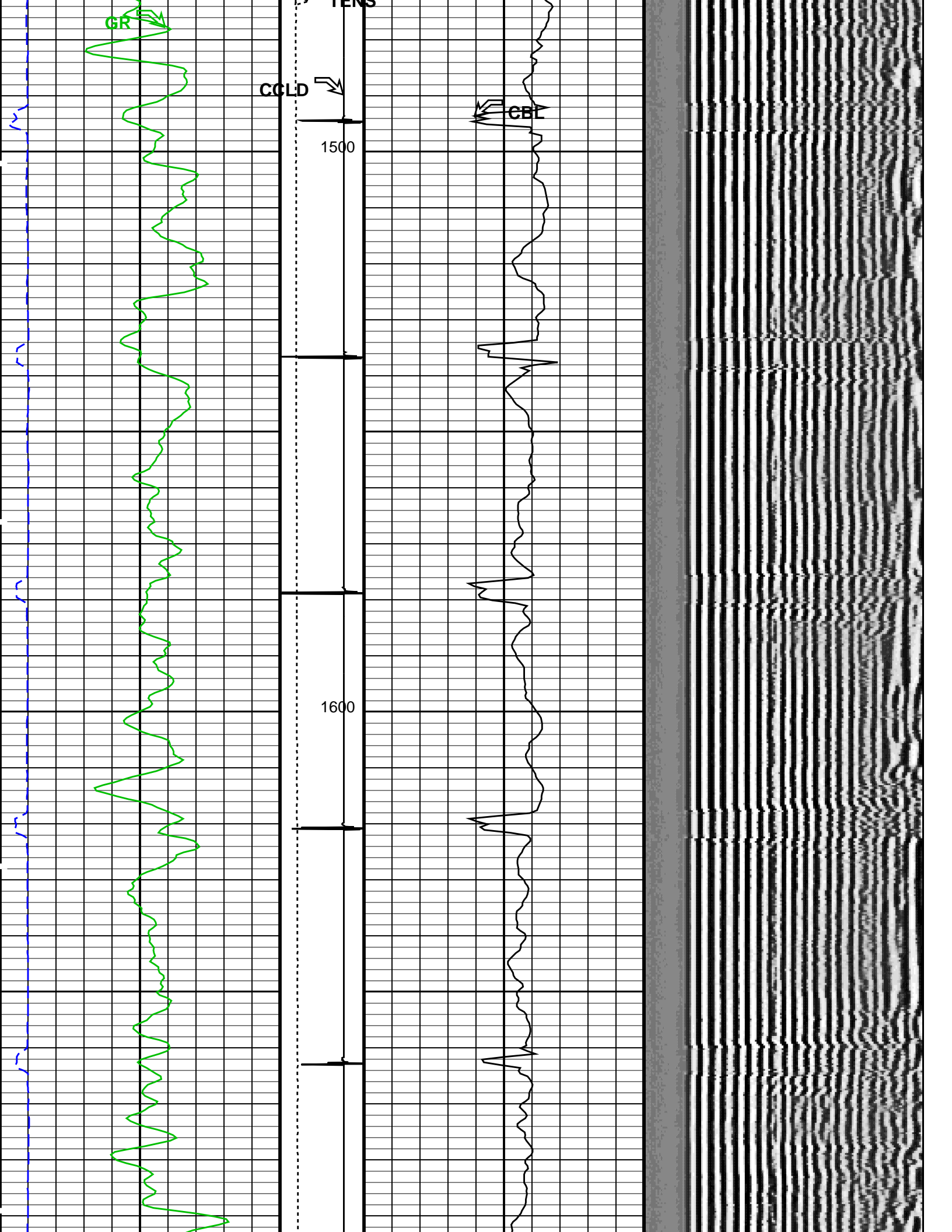


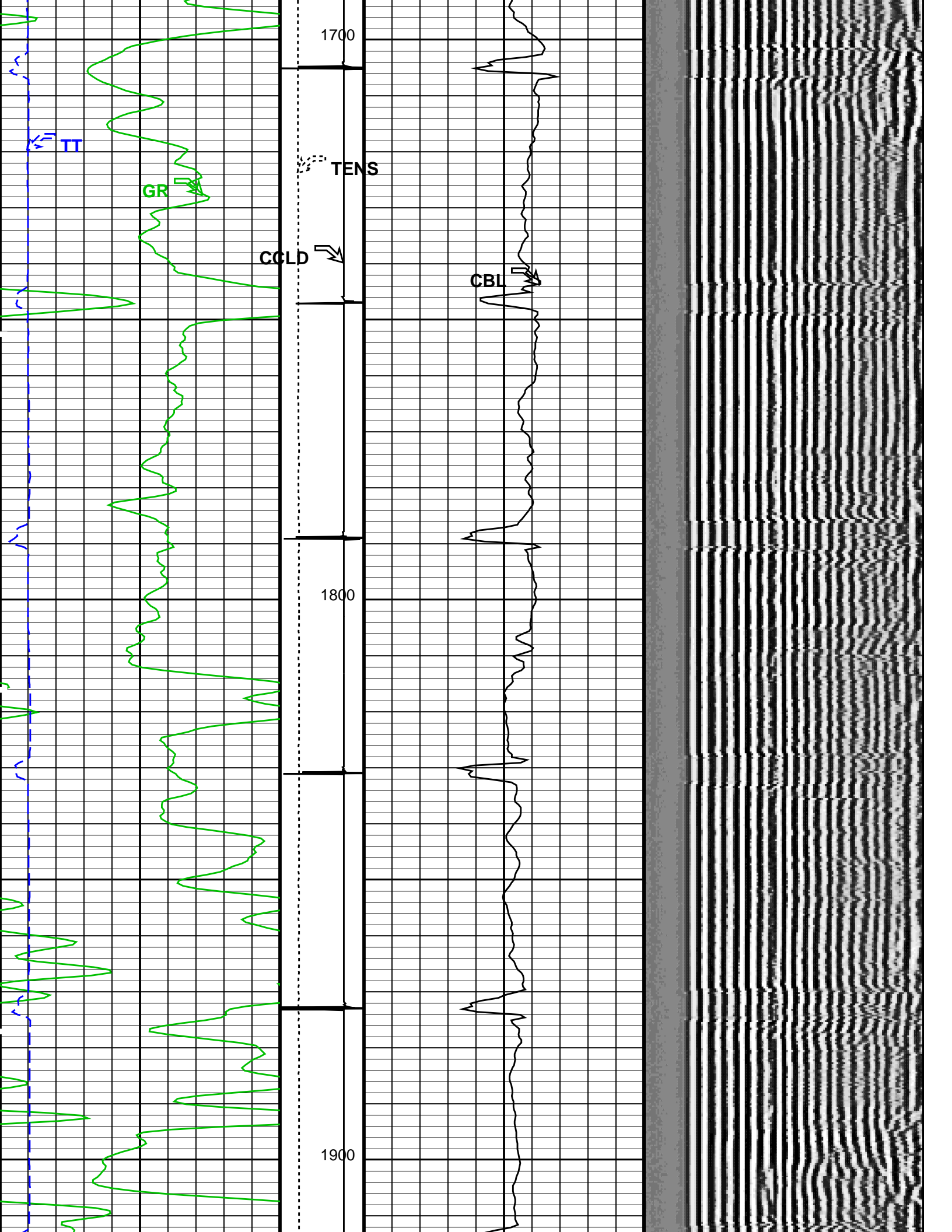


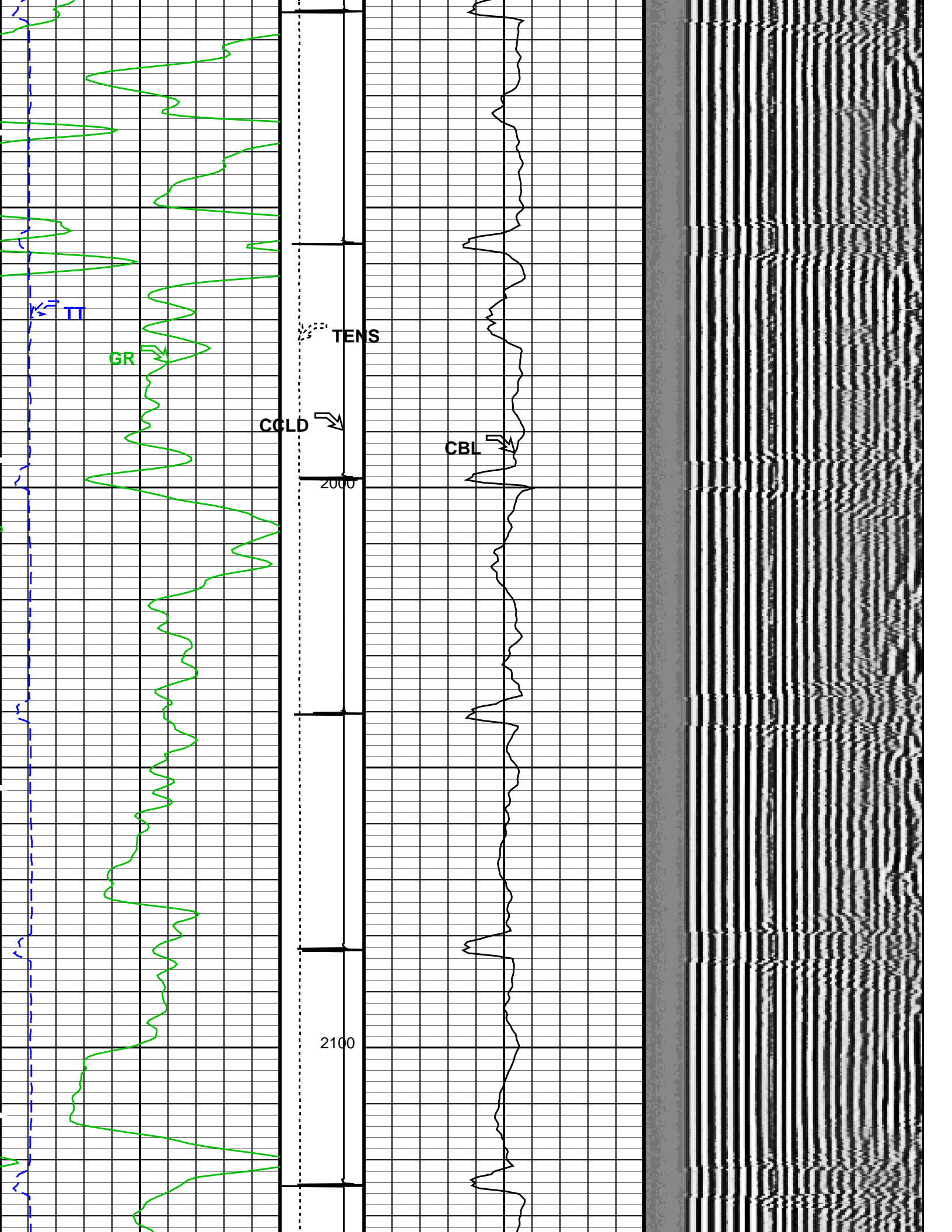


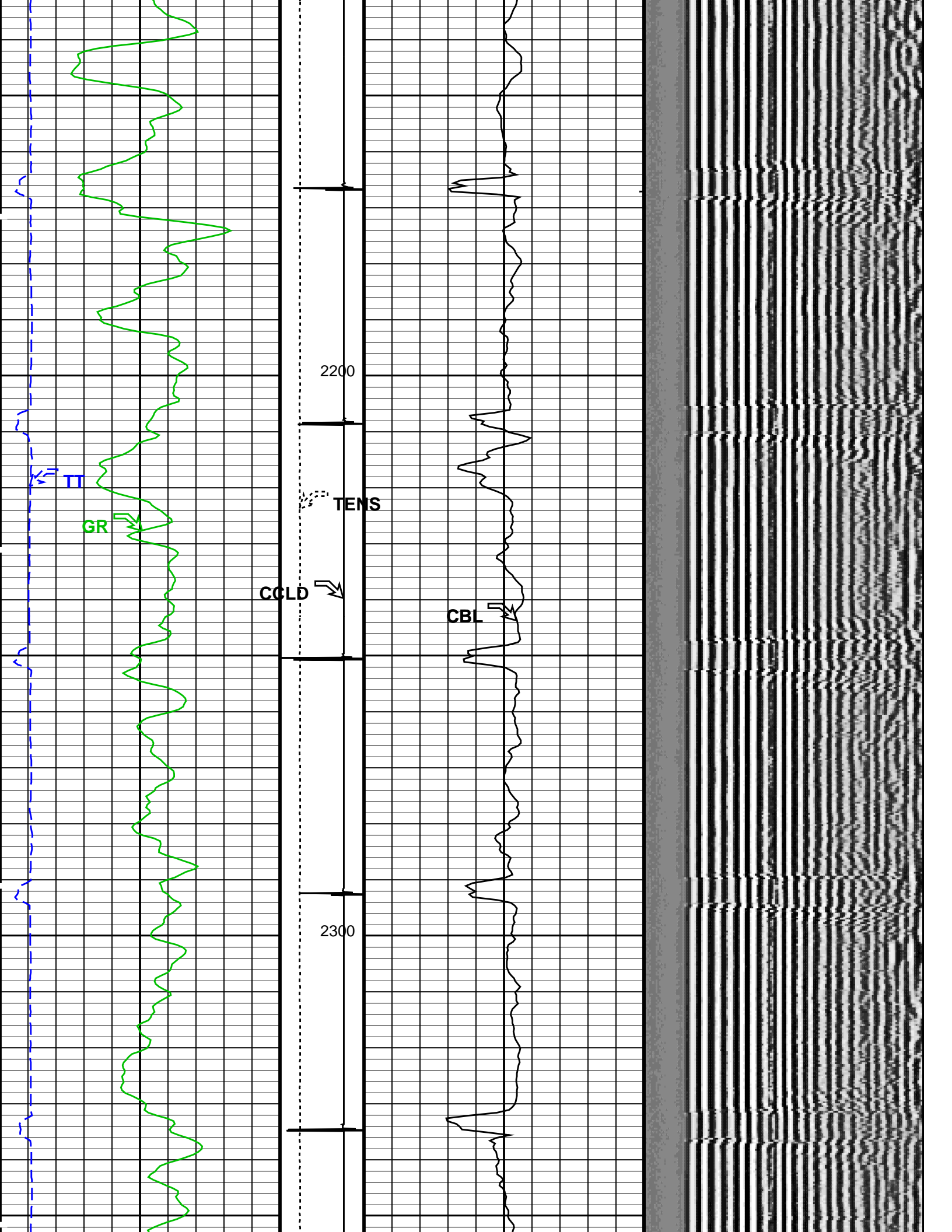


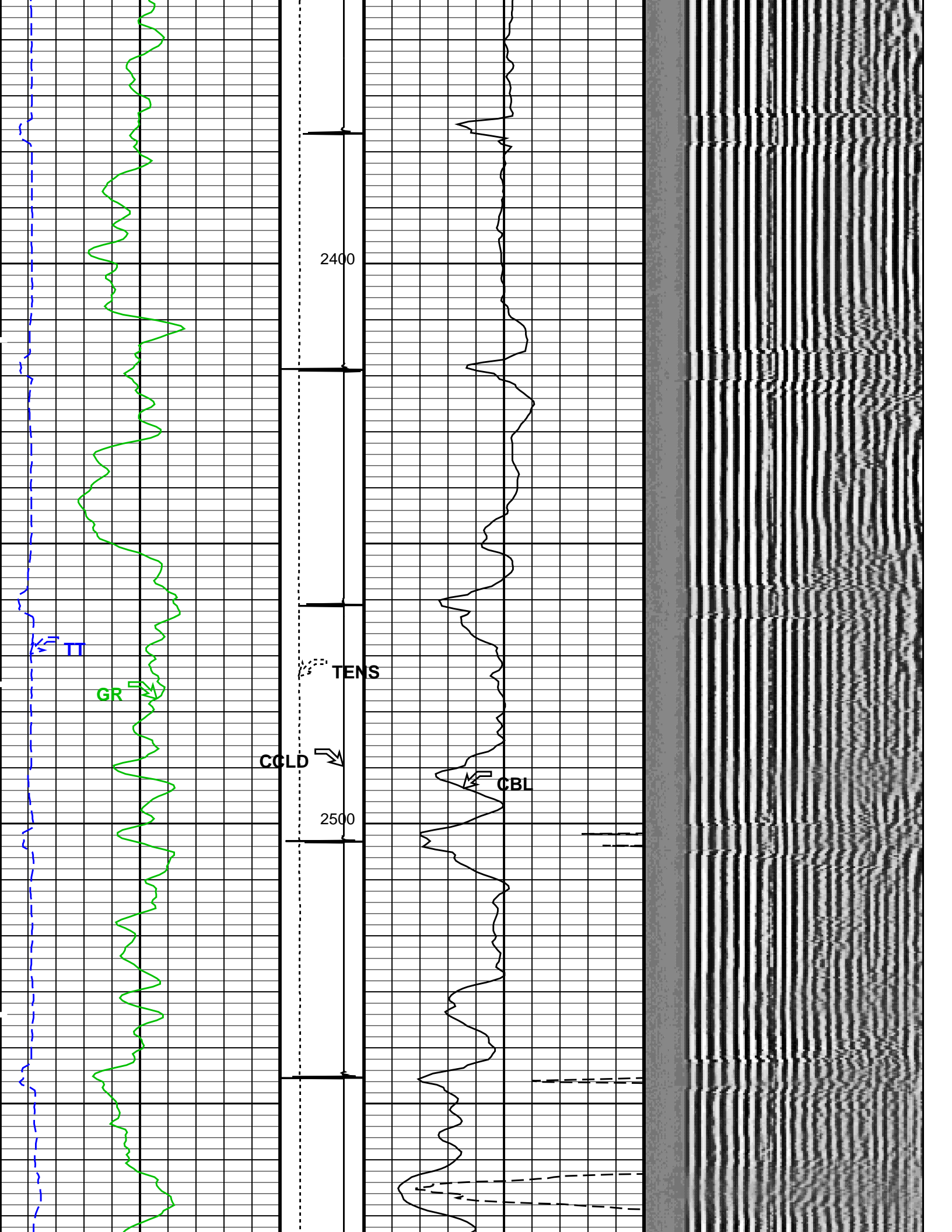


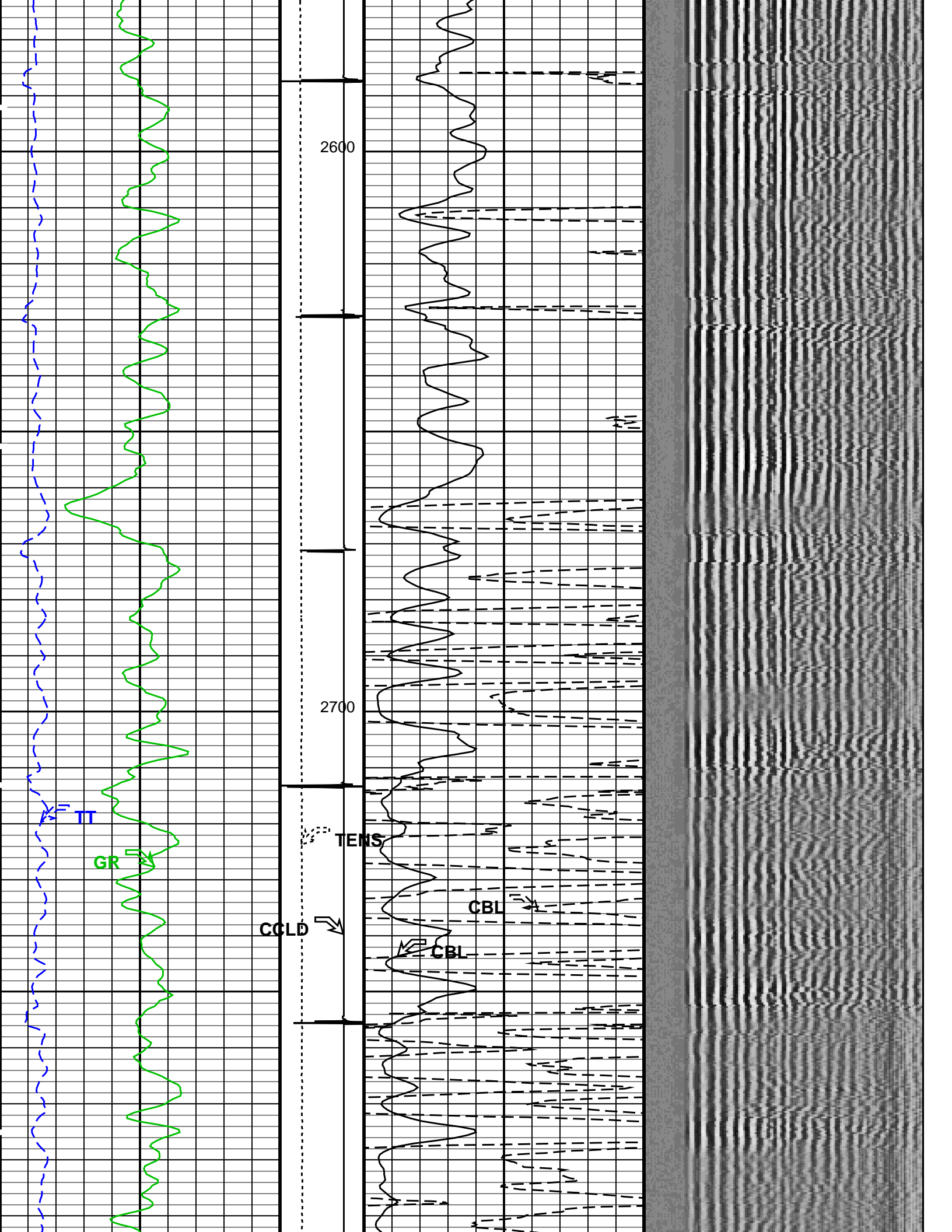


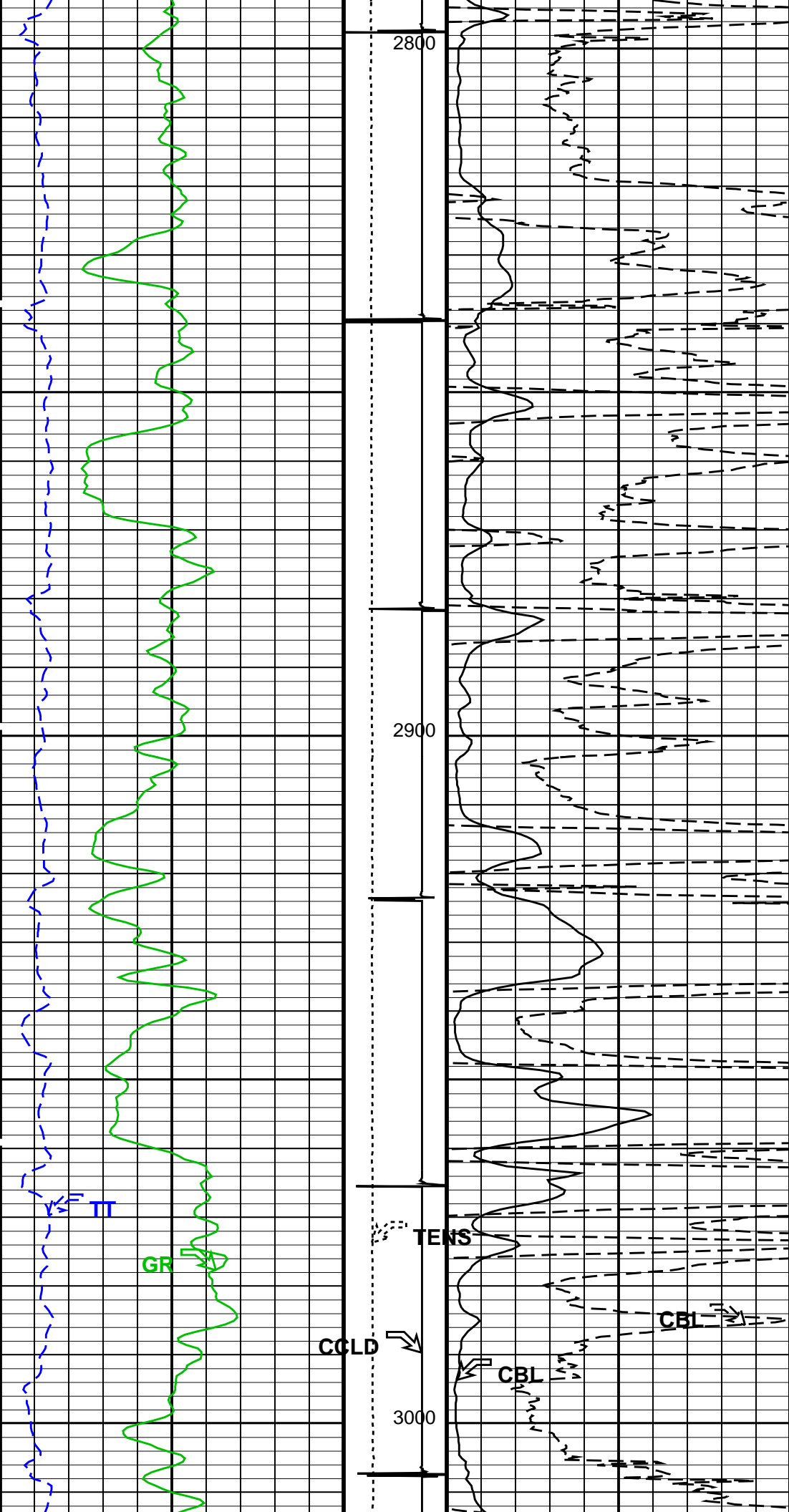


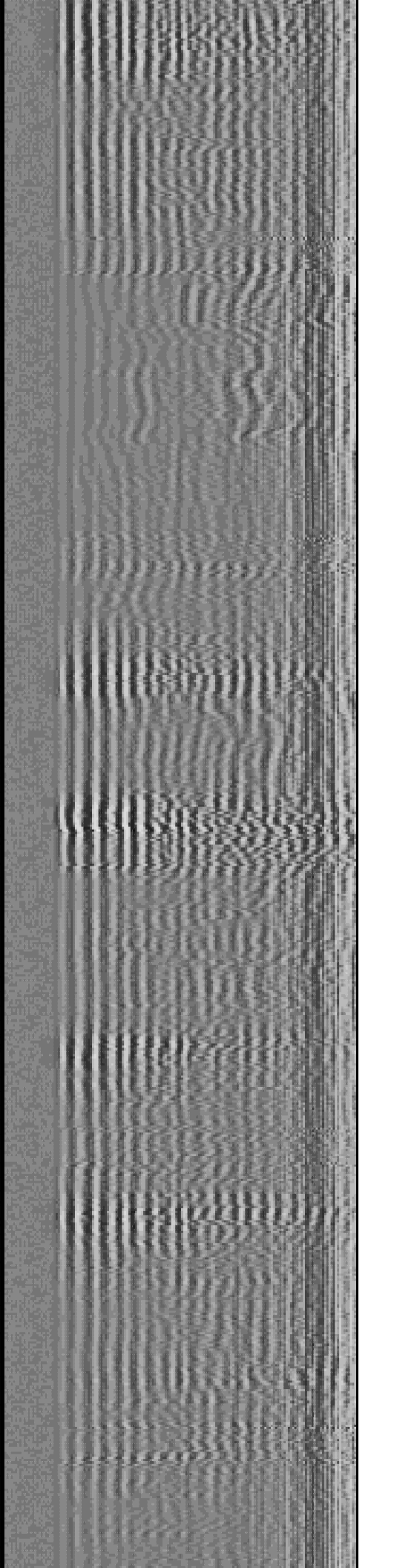
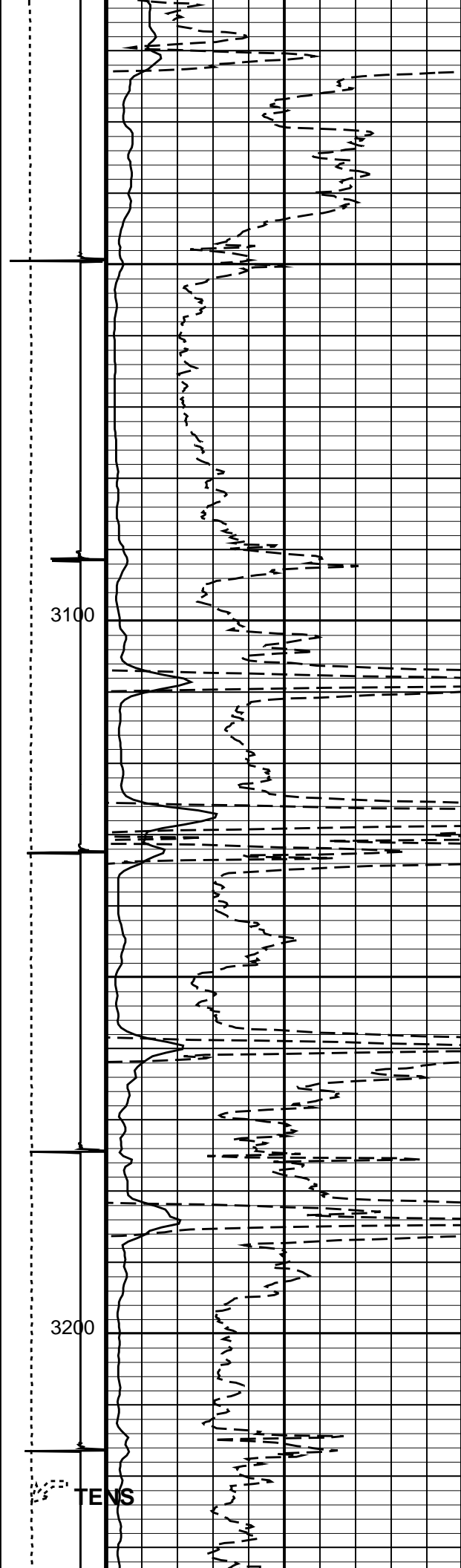
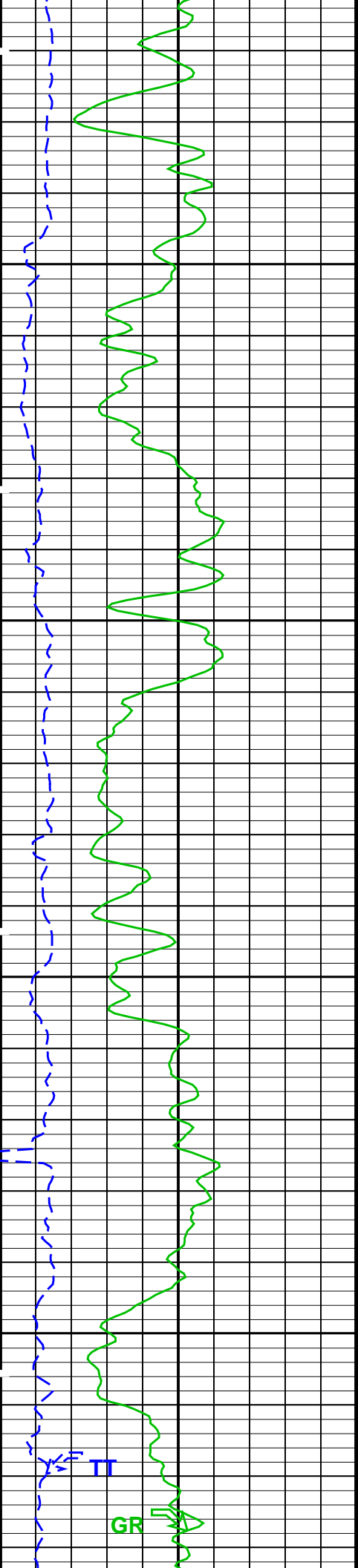


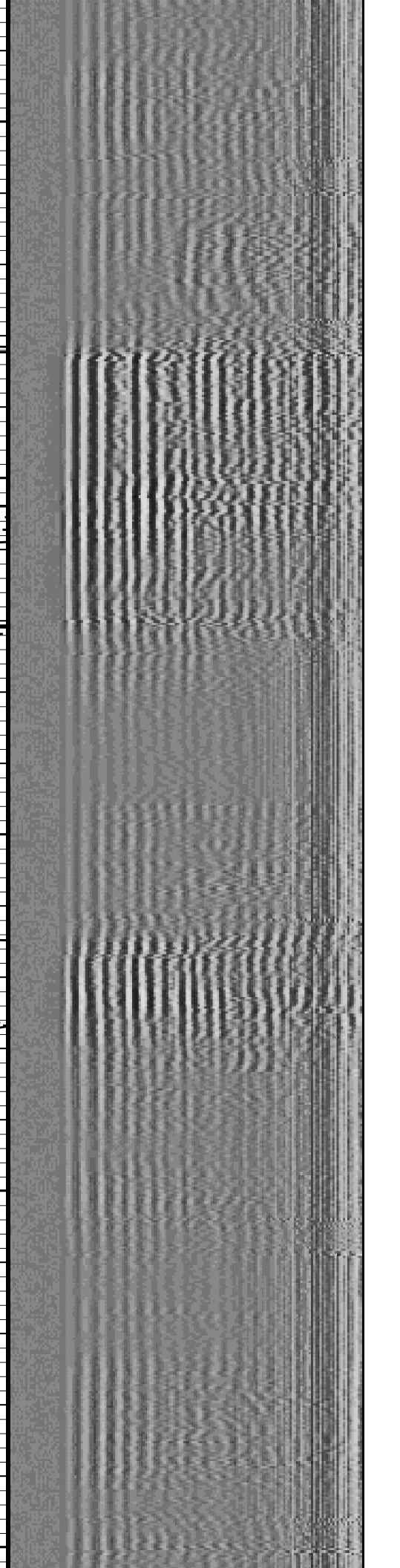
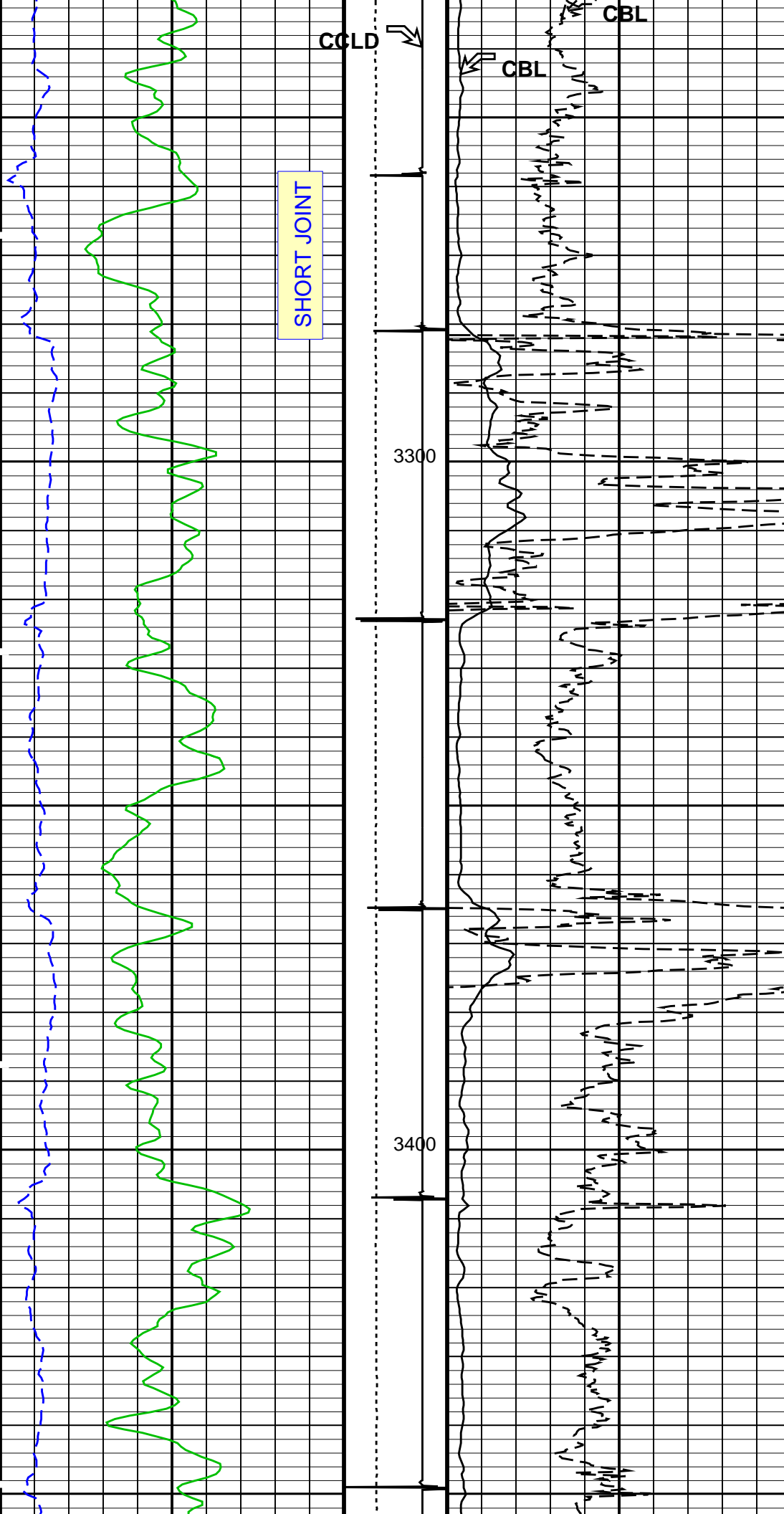


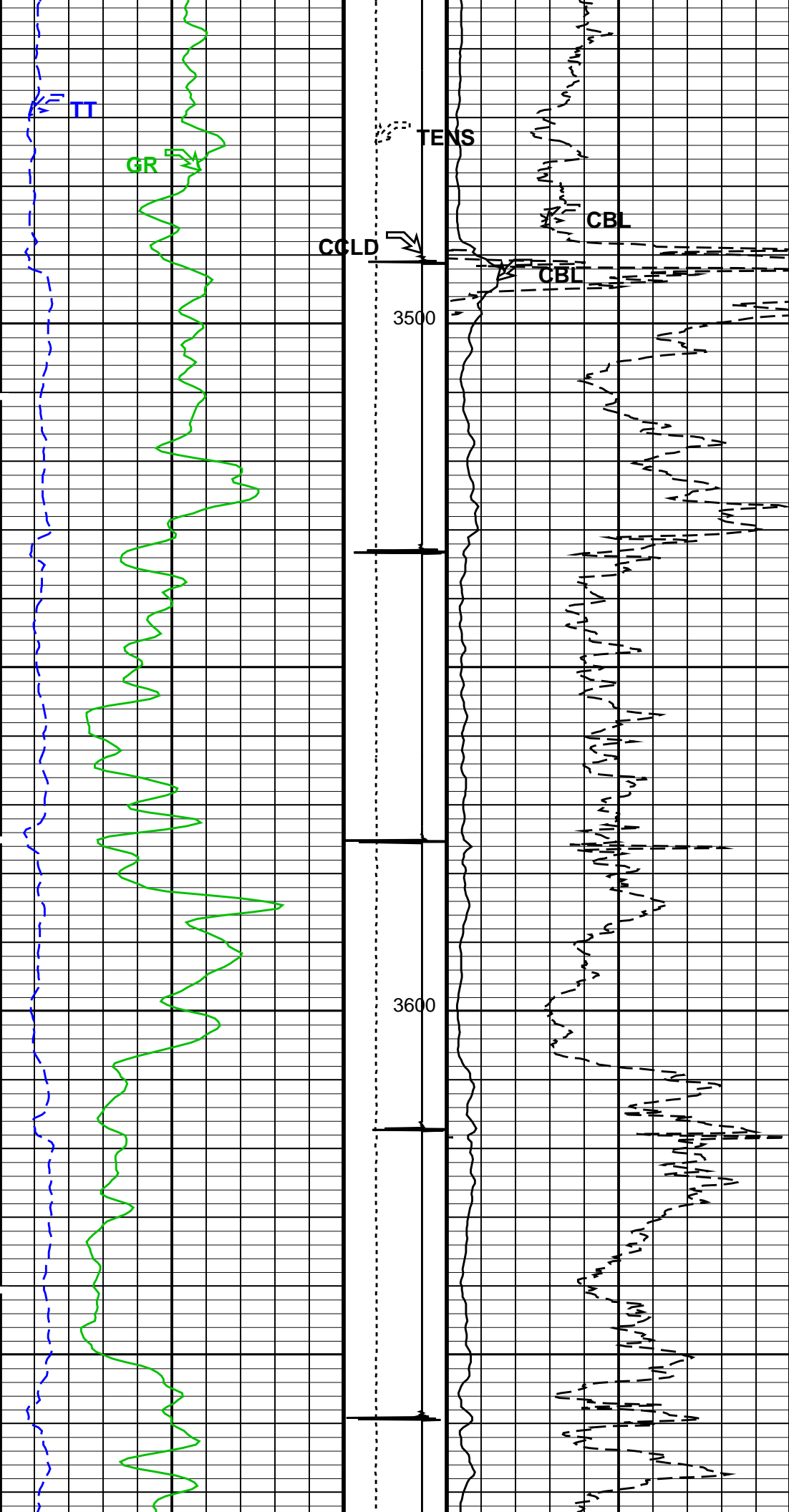


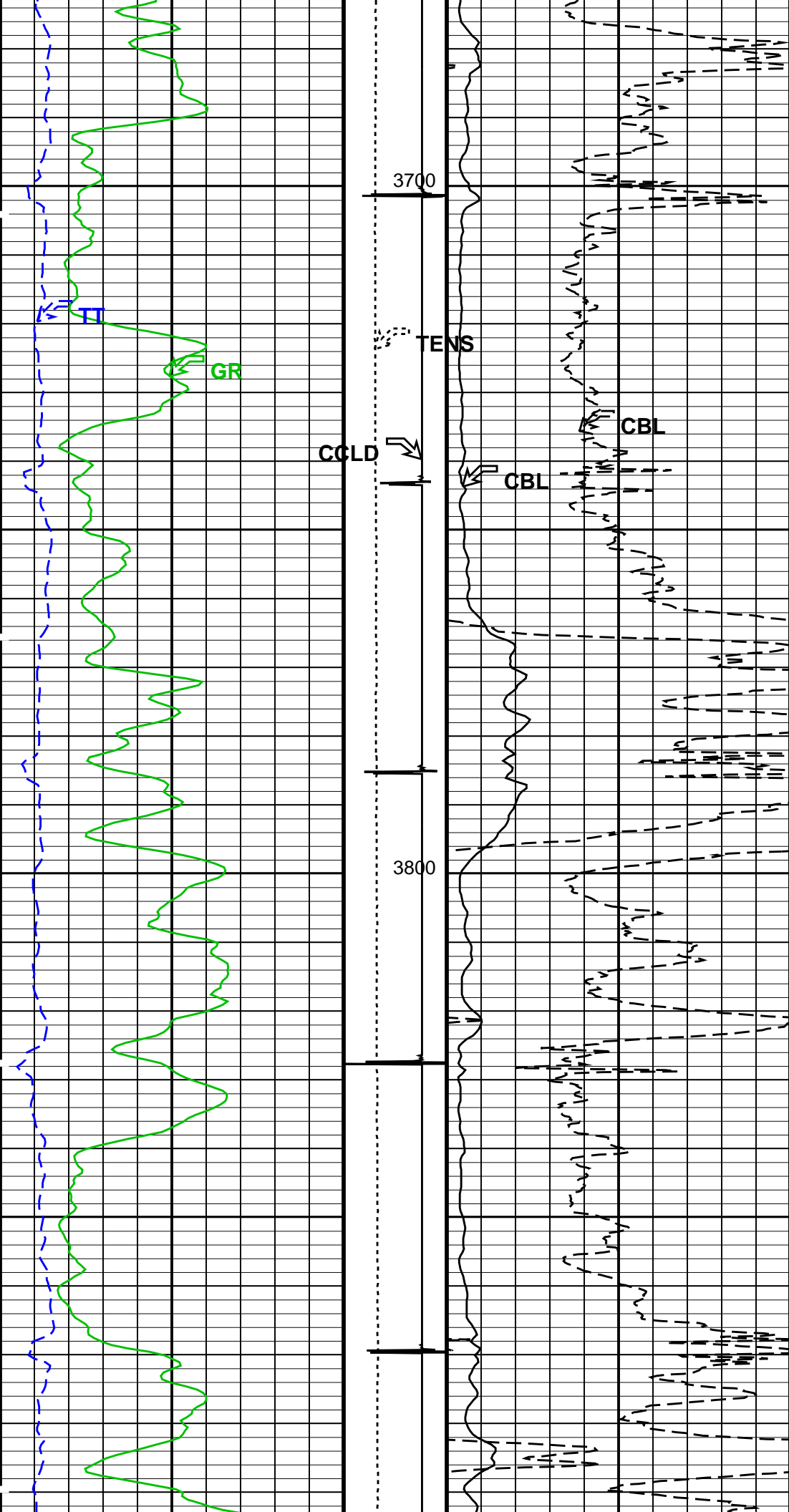


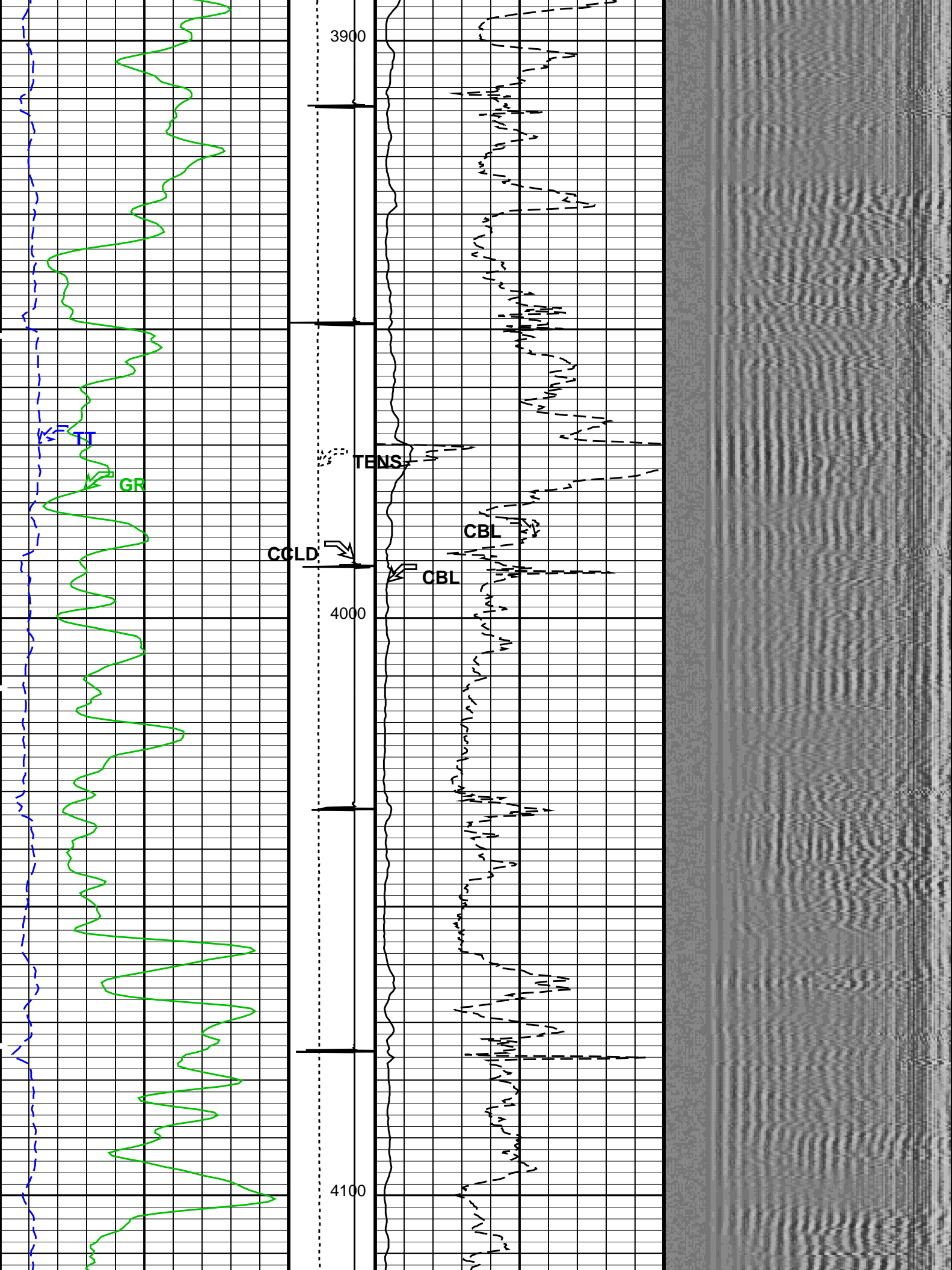


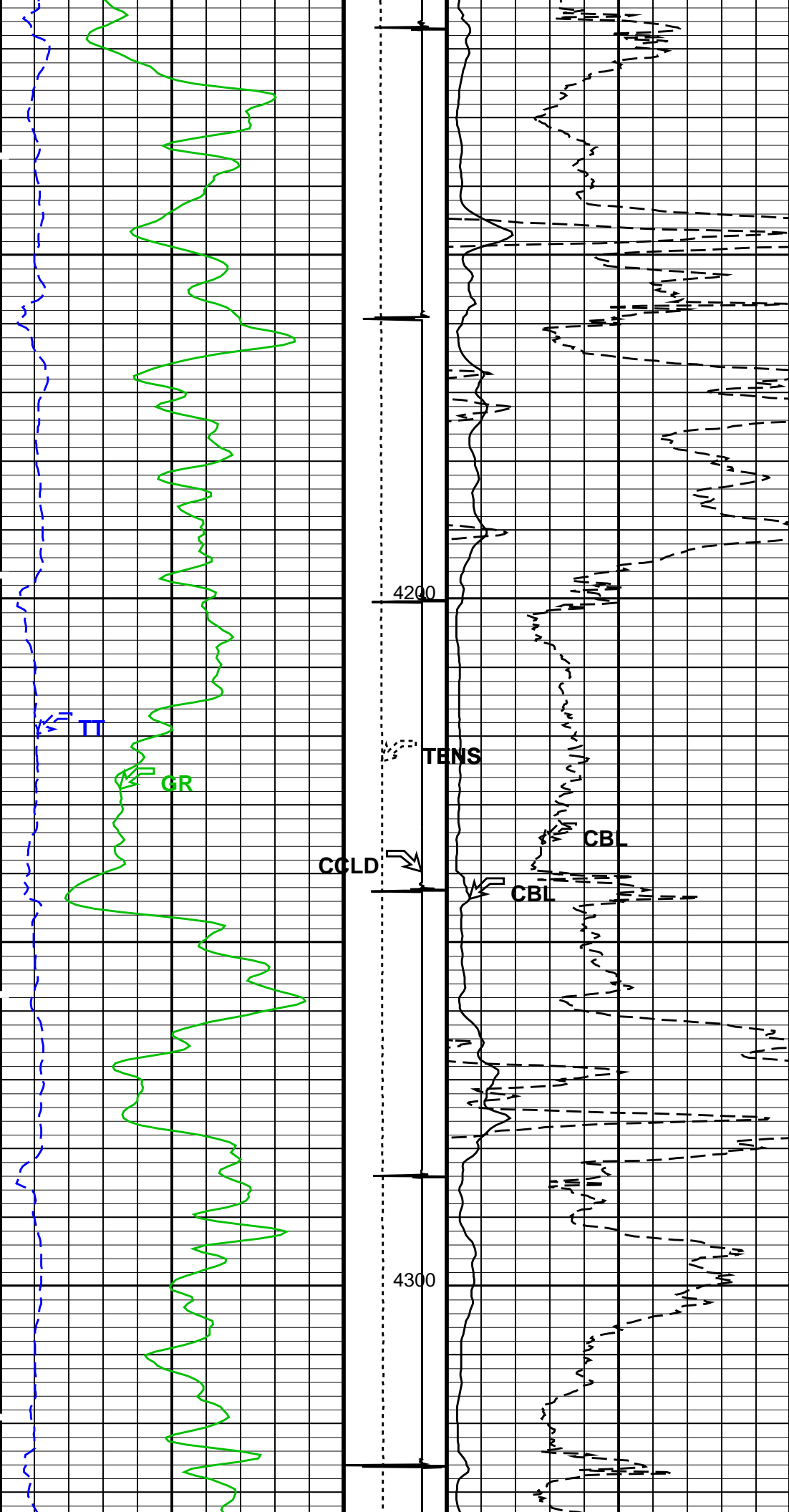


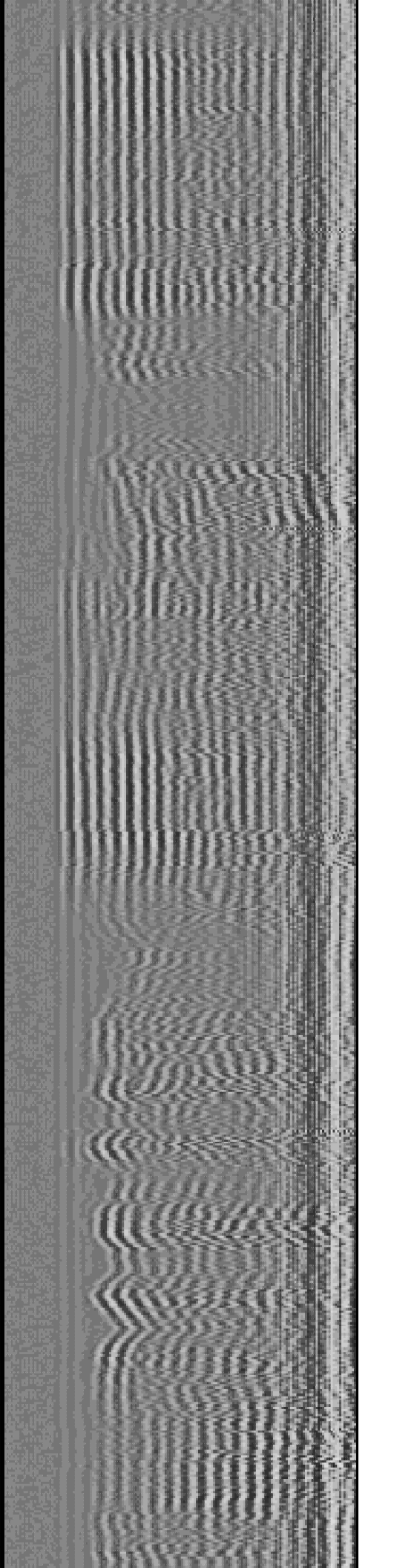
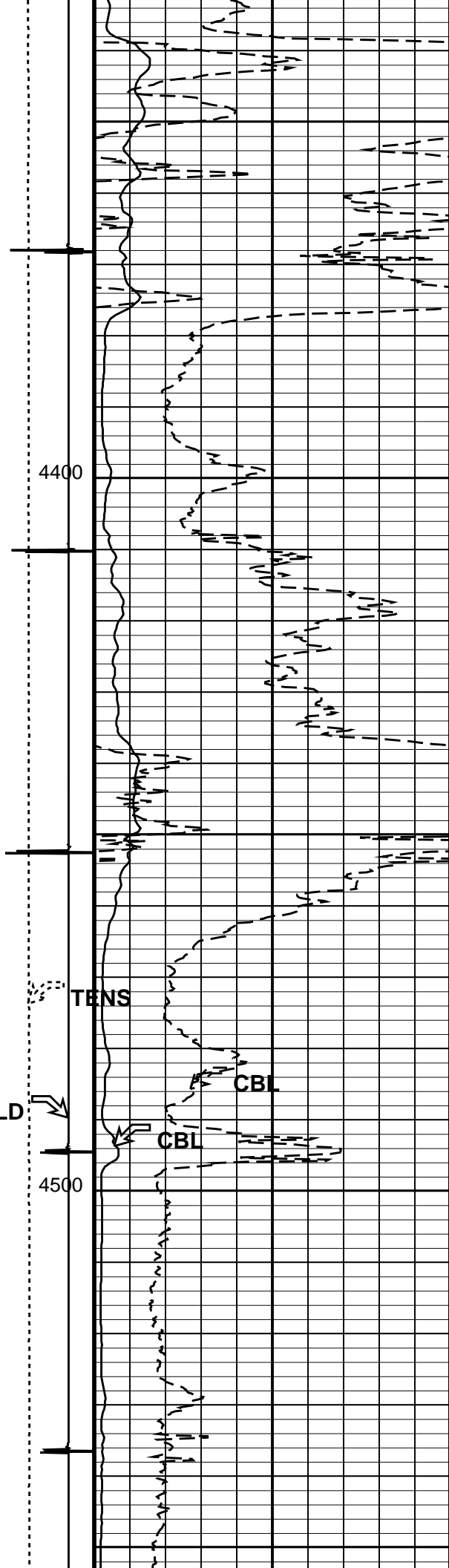
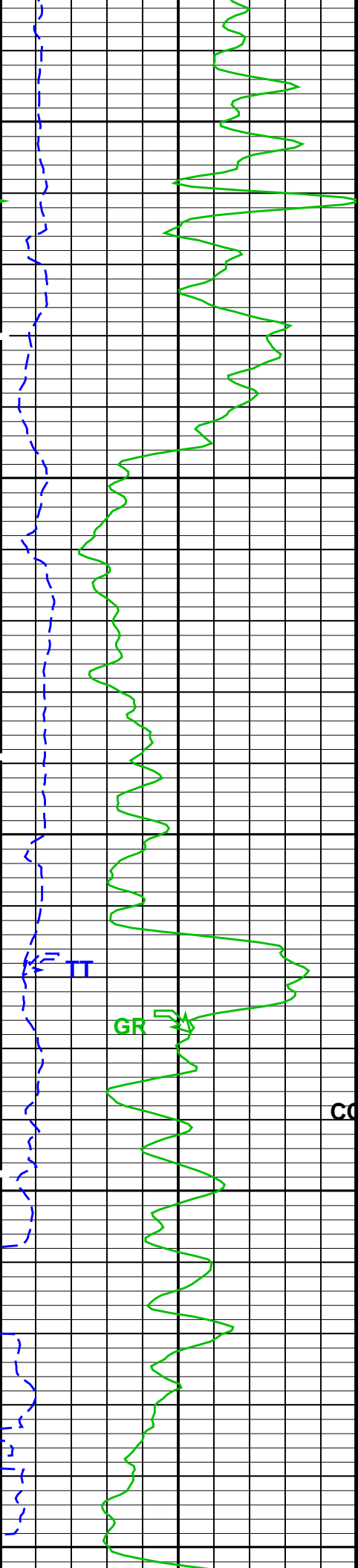


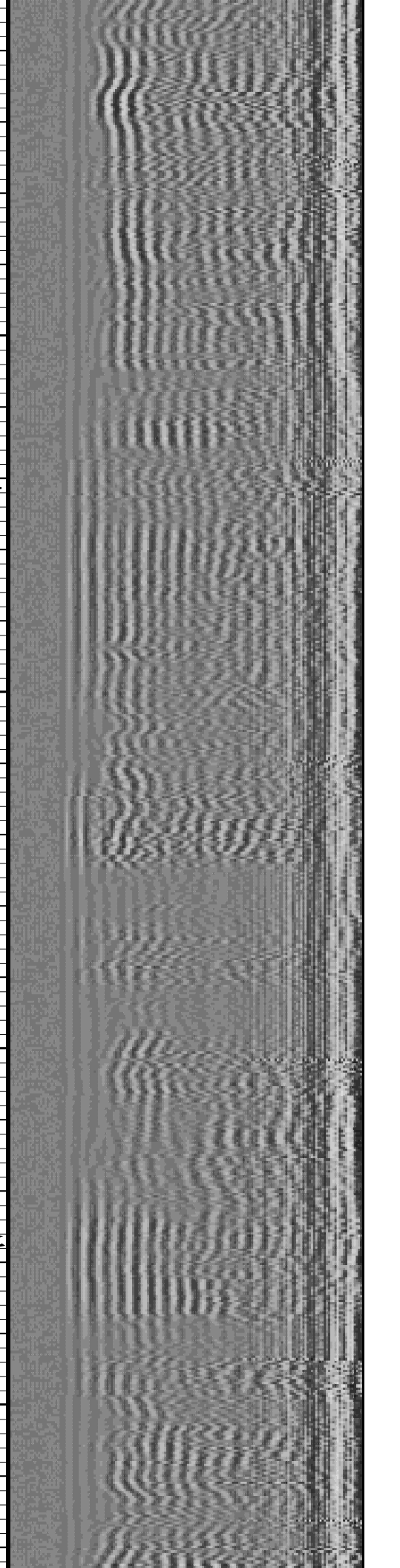
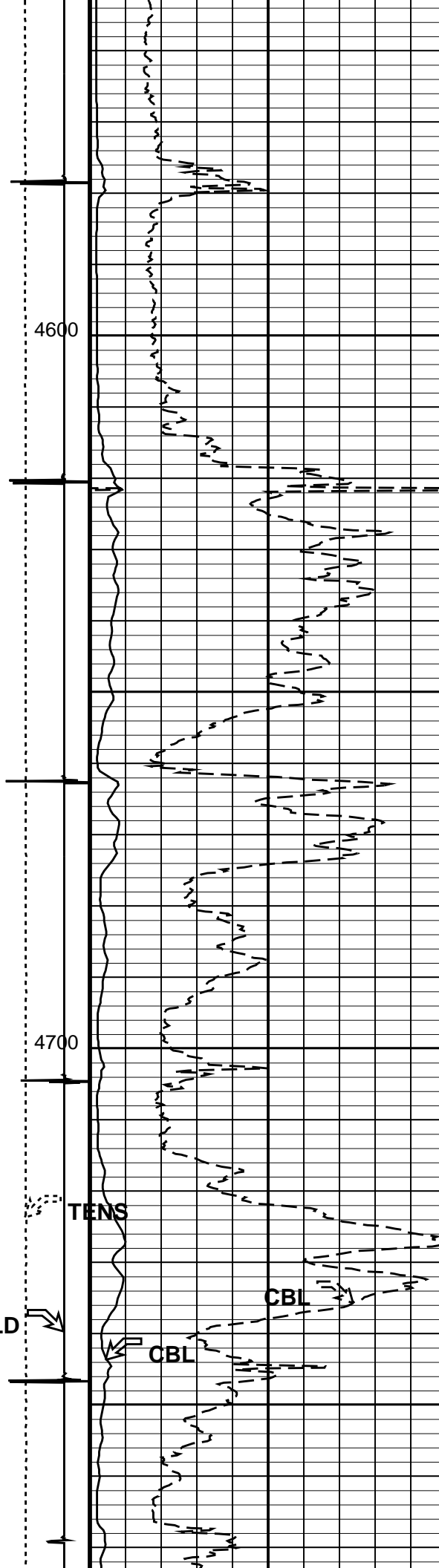
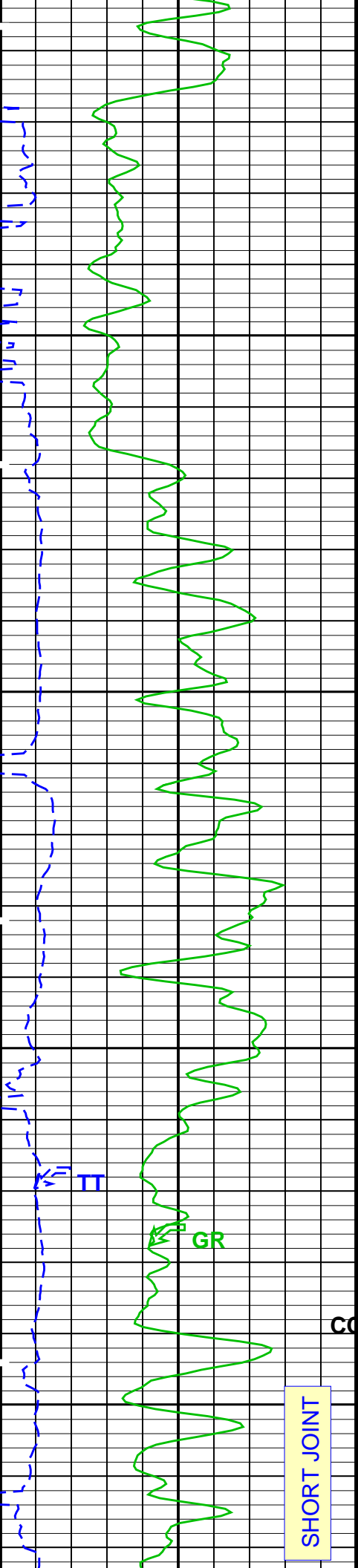


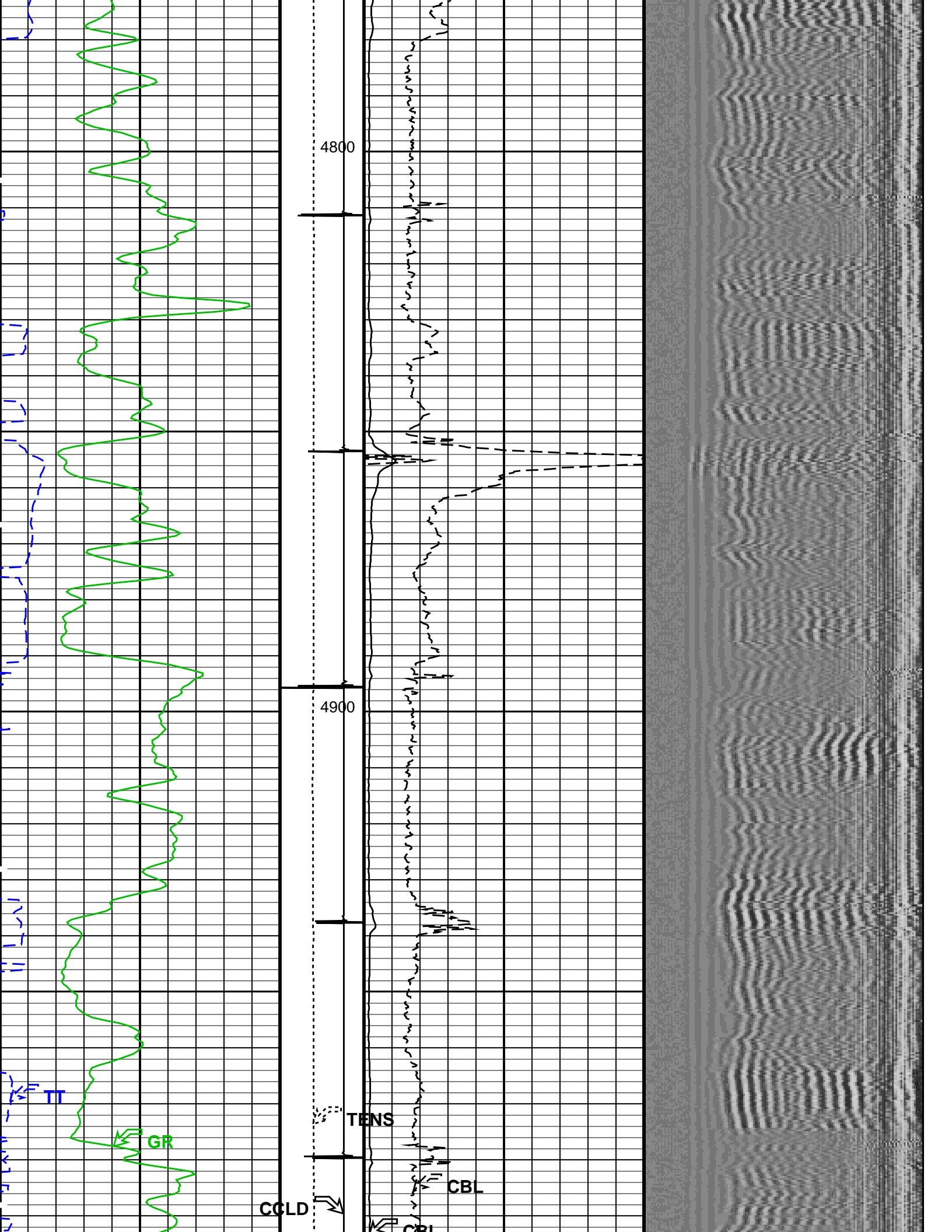


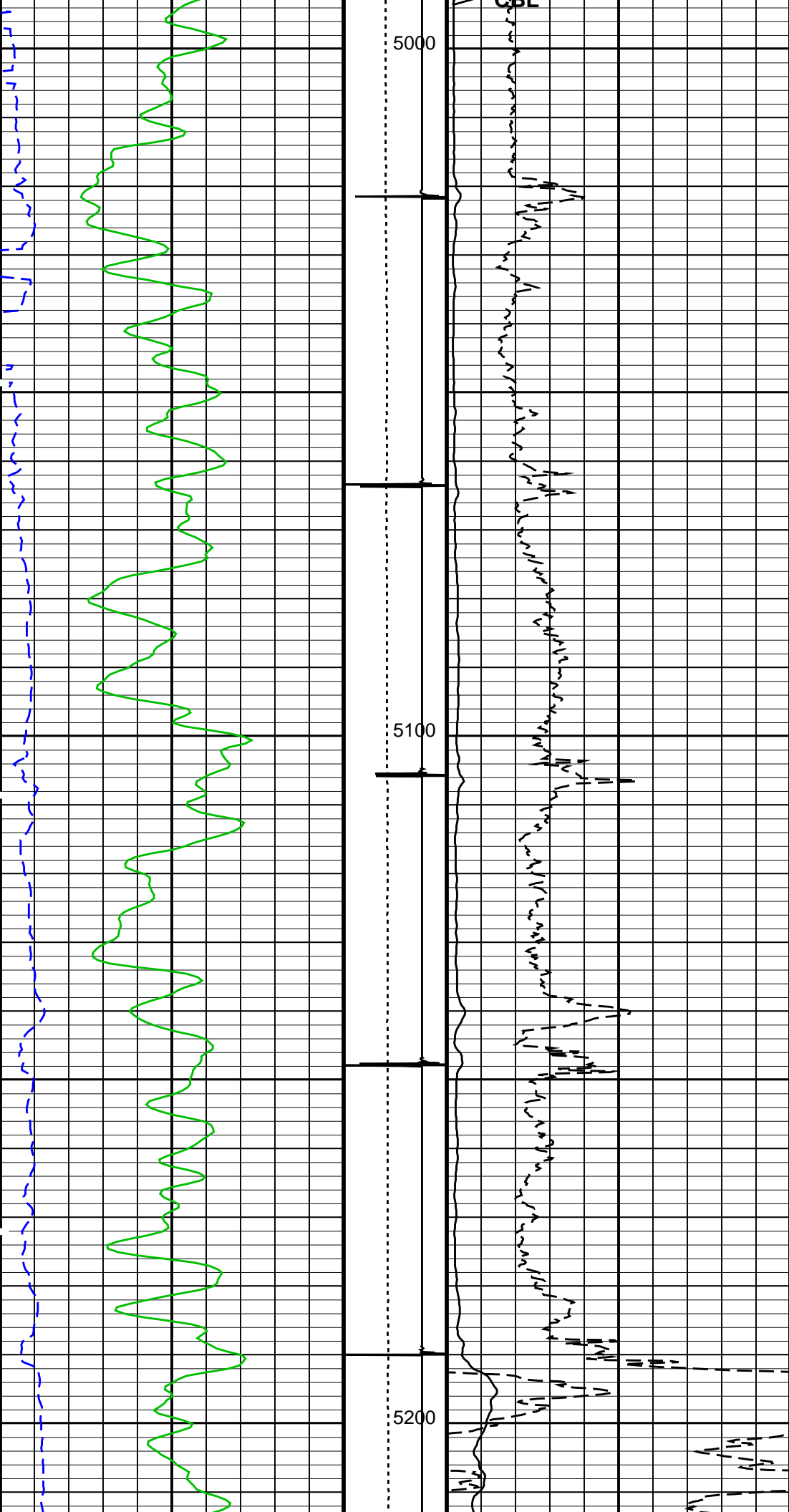


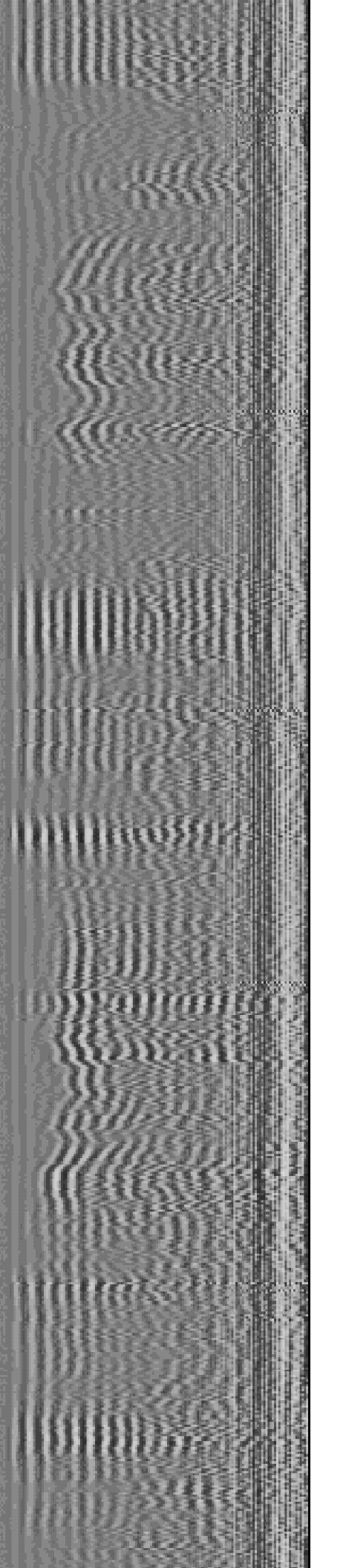
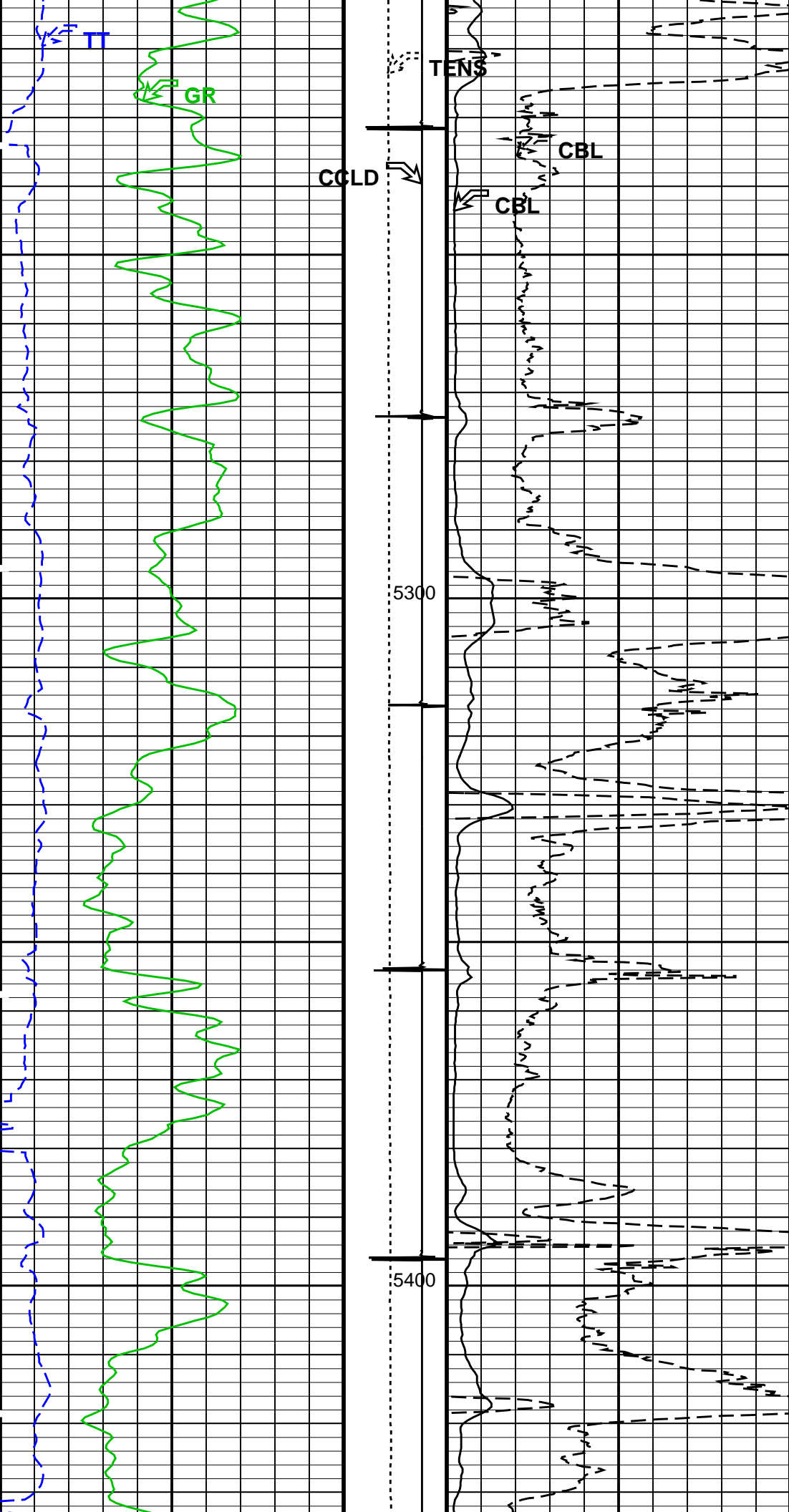


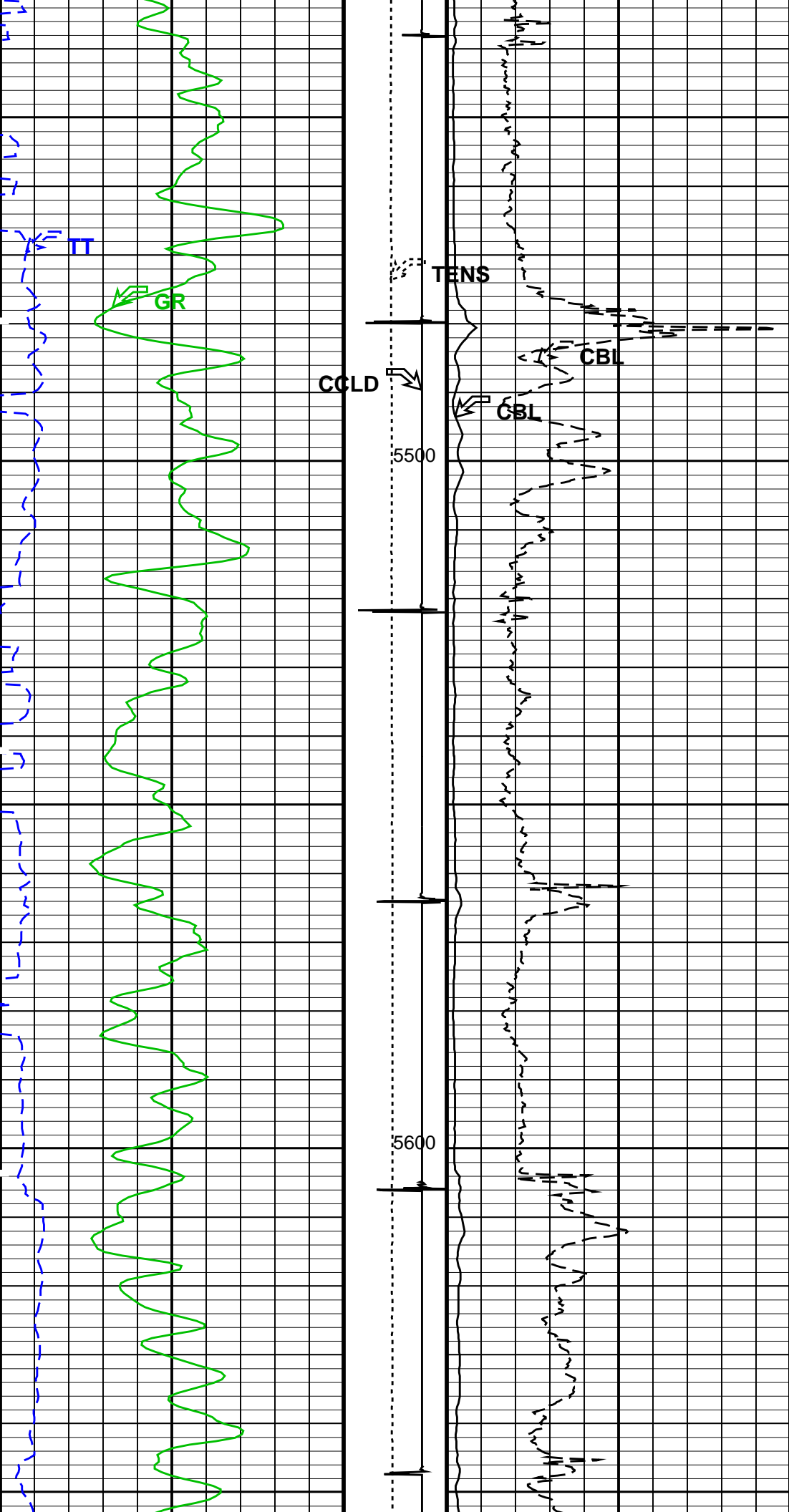


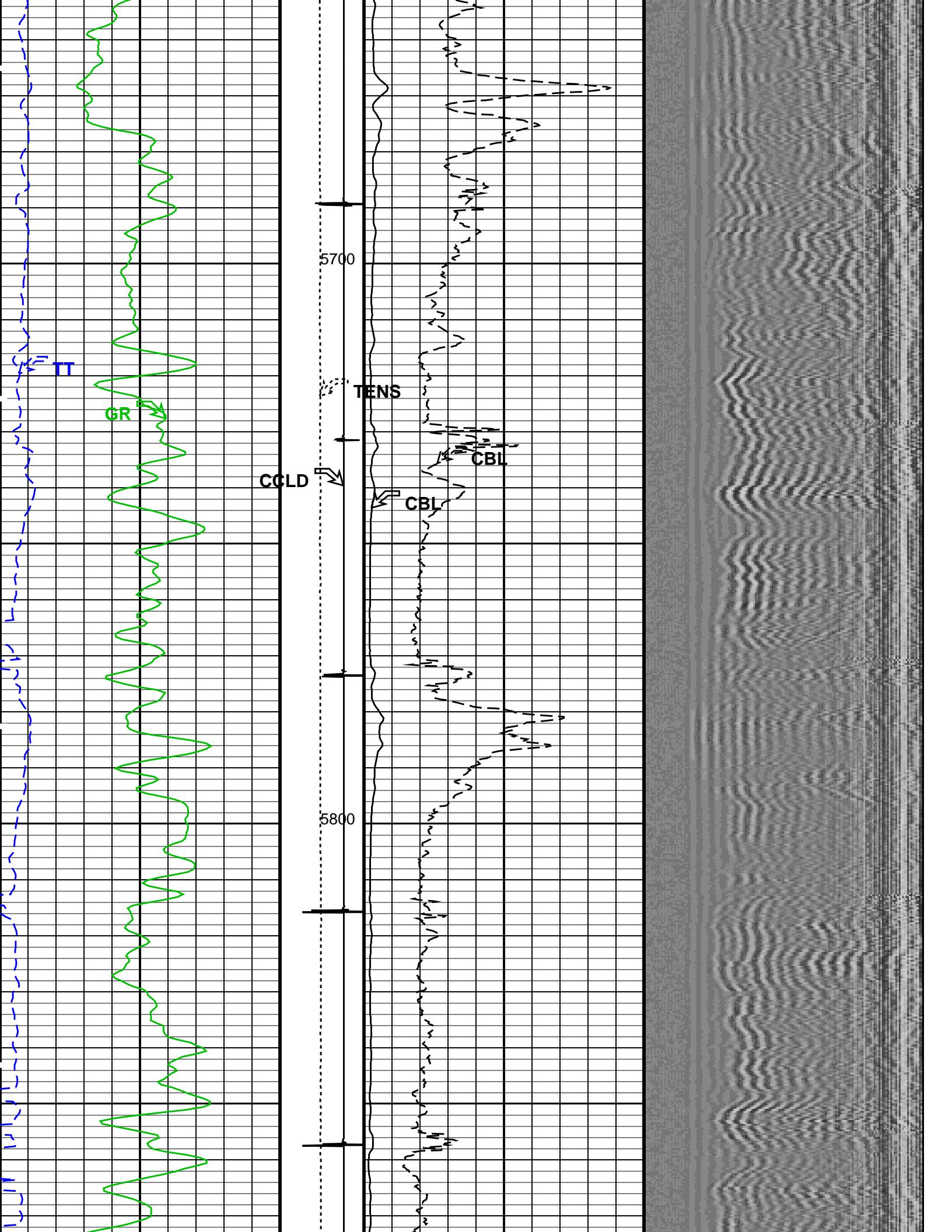


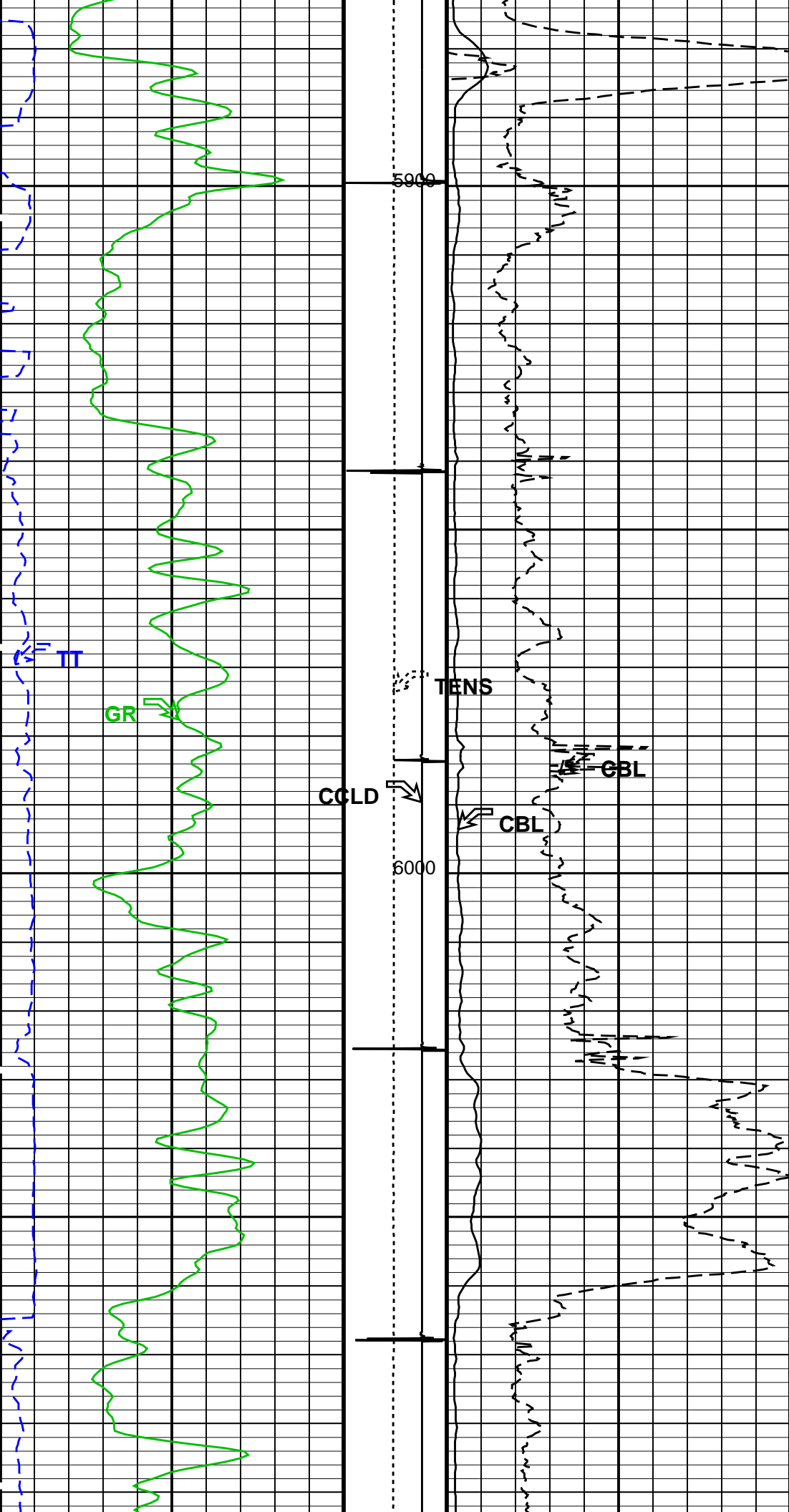


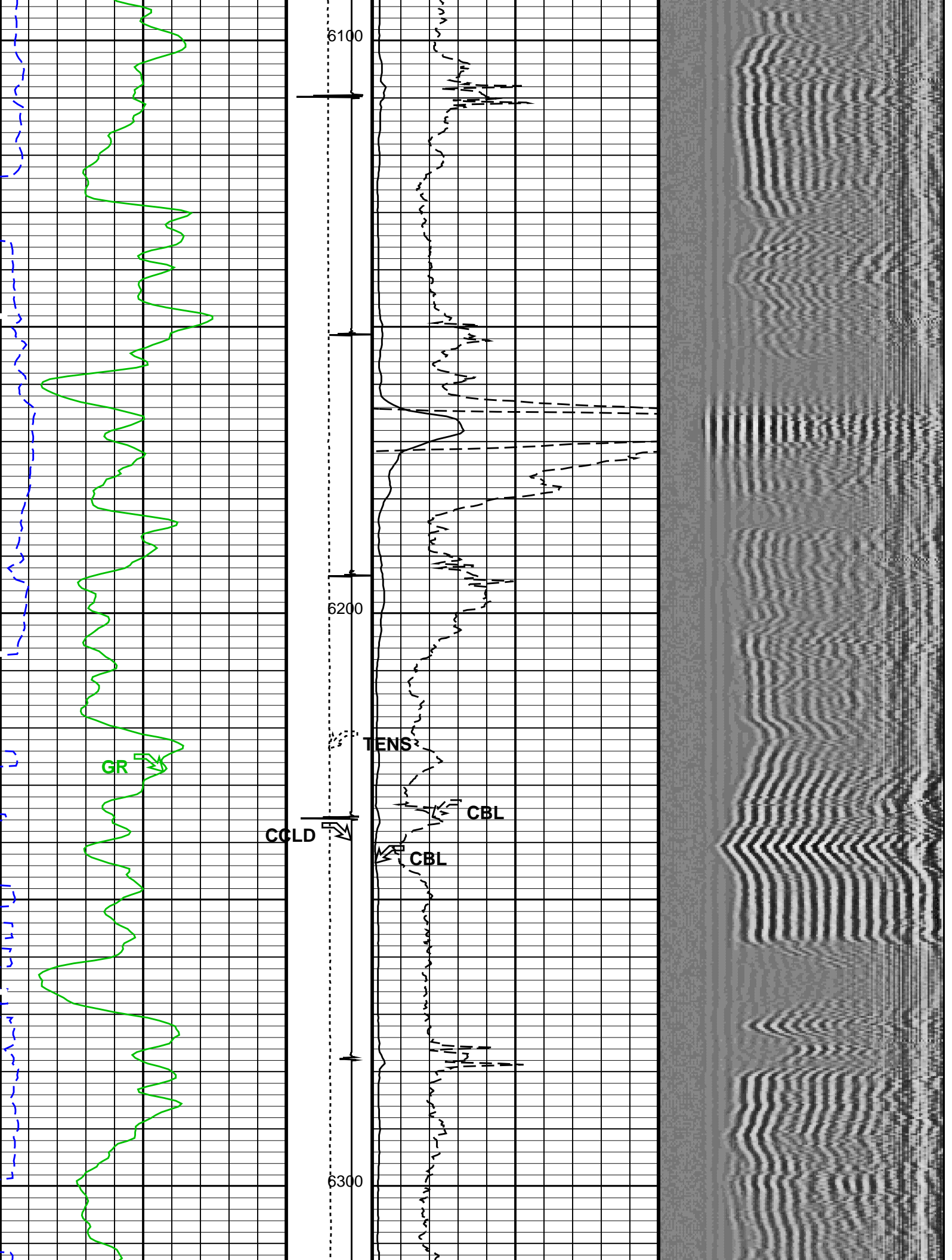


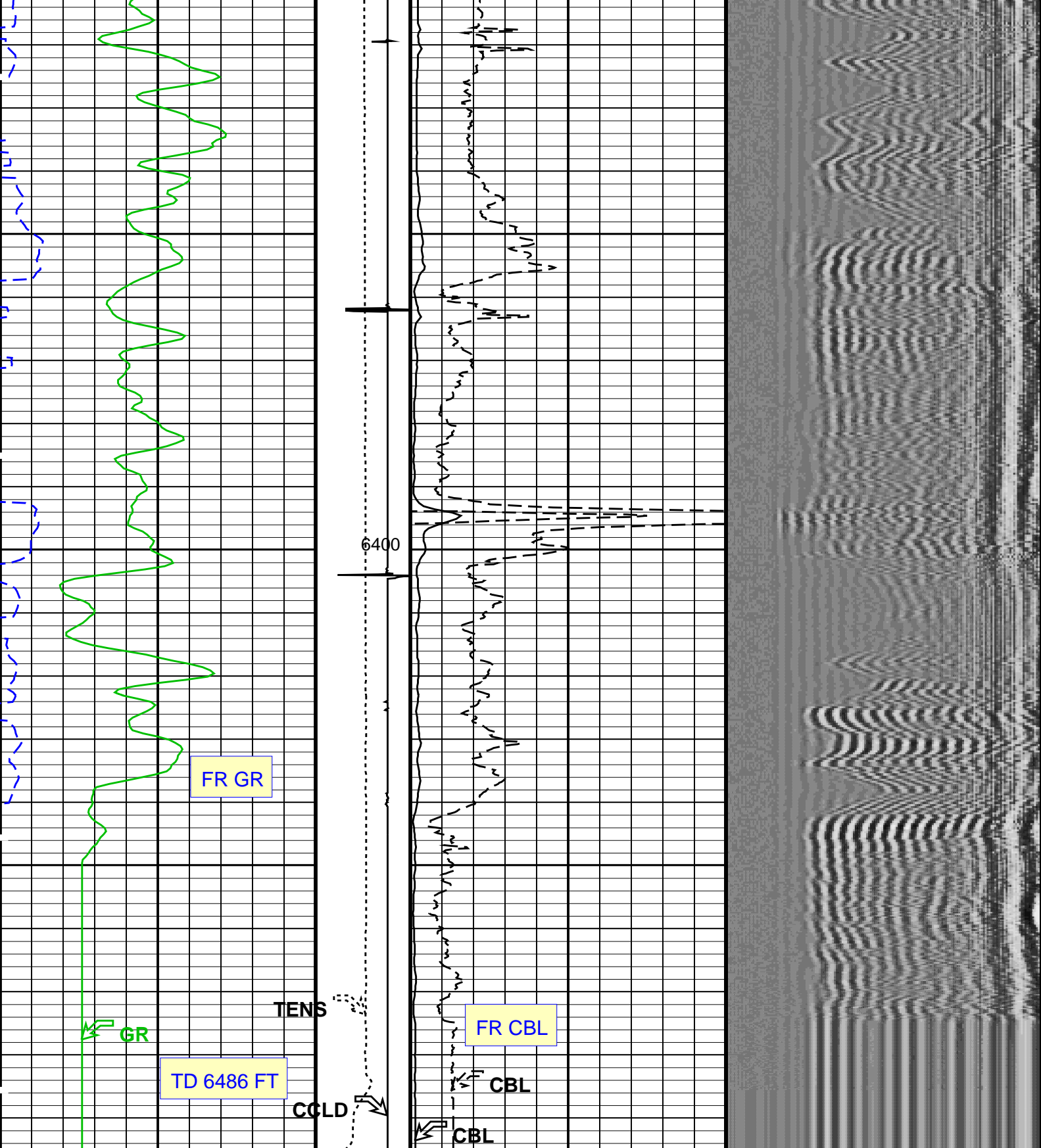












0150	Gamma Ray (GR) (GAPI)	Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min 200 VLD VariableDensity (VLD) (US) Max 1200
		0 2000	0 100	
0260160	Transit Time (TT) (US)	Discriminat ed CCL (CCLD) (V)	CBL Amplitude (CBL) (MV)	
		3 -1	0 10	

PIP SUMMARY

Format: CBL_VDL		Vertical Scale: 5" per 100'		Graphics File Created: 05-Oct-2011 13:21	
OP System Version: 19C0-187					
SCMT-CB		SRPC-5095-H2-2011-OP19_b		RST-C	
PSPT		19C0-187		SRPC-5095-H2-2011-OP19_b	
<<<SCMT Cement Evaluation Information Summary>>>					
Sonde Serial Number		SCMS-CB 8186			
Current Casing Size		4.50000 IN			
Casing Weight		11.6000 LB/F			
Expected CBL Amplitude		80 MV	Minimum Sonic Amplitude		0.579149 MV (100% Cement)
in Free Pipe Section					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		23-FEB-2011			
CBL Correction Factor		0.0700110	CBL Adjustment Factor (CBAF)		1.0
MAP 1 Correction Factor		0.0960446	MAP Adjustment Factor (MPAF)		1.0
MAP 2 Correction Factor		0.103019			
MAP 3 Correction Factor		0.112474			
MAP 4 Correction Factor		0.170246			
MAP 5 Correction Factor		0.138168			
MAP 6 Correction Factor		0.126543			
MAP 7 Correction Factor		0.0891491			
MAP 8 Correction Factor		0.107987			
Parameters					
DLIS Name		Description		Value	
SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD					
BILI		Bond Index Level for Zone Isolation		0.8	
CB3D		SCMT CBL 3 ft Peak Detection Mode		PEAK	
CB3G		SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate		224.559	US
CB3T		SCMT CBL 3 ft Fixed Threshold Level		20	MV
CB5D		SCMT CBL 5 ft Peak Detection Mode		PEAK	
CB5G		SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate		338.559	US
CB5T		SCMT CBL 5 ft Fixed Threshold Level		20	MV
CBLG		CBL Gate Width		40	US
CBRA		CBL LQC Reference Amplitude in Free Pipe		80	MV
CMCF		CBL Cement Type Compensation Factor		1	
CMTC		SCMT Slow Channel Multiplexer Mode		SCAN	
CMTM		SCMT Operating Mode		LOG	
CSCS		SCMT Slow Channel Index		VCC	
CTHI		Casing Thickness		0.255617	IN
DTF		Delta-T Fluid		189	US/F
FATT		Acoustic Attenuation due to Fluid		0	DB/F
FCF		CBL Fluid Compensation Factor		0.924277	
GOBO		Good Bond		1.55185	MV
MAPD		SCMT MAP Peak Detection Mode		PEAK	
MAPG		SCMT MAP Peak Detection T0_Delay and Noise Gate		167.559	US
MAPT		SCMT MAP Fixed Threshold Level		30	MV
MATT		Maximum Attenuation		16.5449	DB/F
MCCF		MAP Cement Type Compensation Factor		1	
MCI		Minimum Cemented Interval for Isolation		1.25	FT
MMSA		MAP Minimum Sonic Amplitude		4.32284	MV
MSA		Minimum Sonic Amplitude		0.579149	MV
PEDE		Peak Detection On/Off Switch in Playback		OFF	
VDLG		VDL Manual Gain		5	
ZCMT		Acoustic Impedance of Cement		6.8	MRAY
System and Miscellaneous					
CSIZ		Current Casing Size		4.500	IN
CWEI		Casing Weight		11.60	LB/F
DFD		Drilling Fluid Density		8.40	LB/G
DORL		Depth Offset for Repeat Analysis		0.0	FT
TD		Total Depth		-50000	FT

Output DLIS Files

DEFAULT

SCMT_RST_PSP_017LUP

FN:16

PRODUCER

05-Oct-2011 13:21

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC.

Well: DAYBREAK FEDERAL 19-6D (PJ19)

Input DLIS Files

DEFAULT

SCMT_RST_PSP_016PUP

FN:15

PRODUCER

05-Oct-2011 13:12

4862.5 FT

4380.0 FT

Output DLIS Files

DEFAULT

SCMT_RST_PSP_017LUP

FN:16

PRODUCER

05-Oct-2011 13:21

OP System Version: 19C0-187

SCMT-CB
PSPT

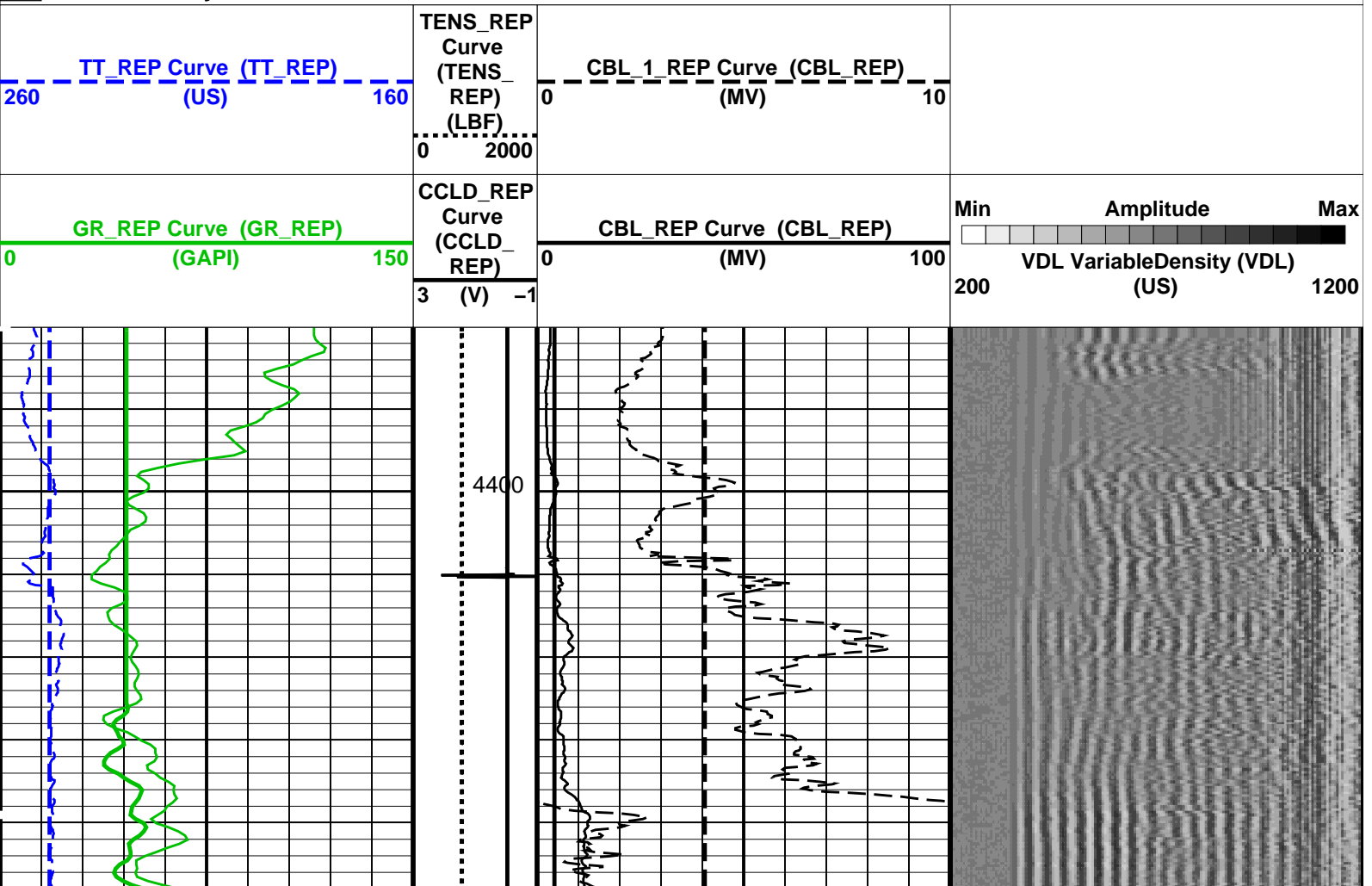
SRPC-5095-H2-2011-OP19_b
19C0-187

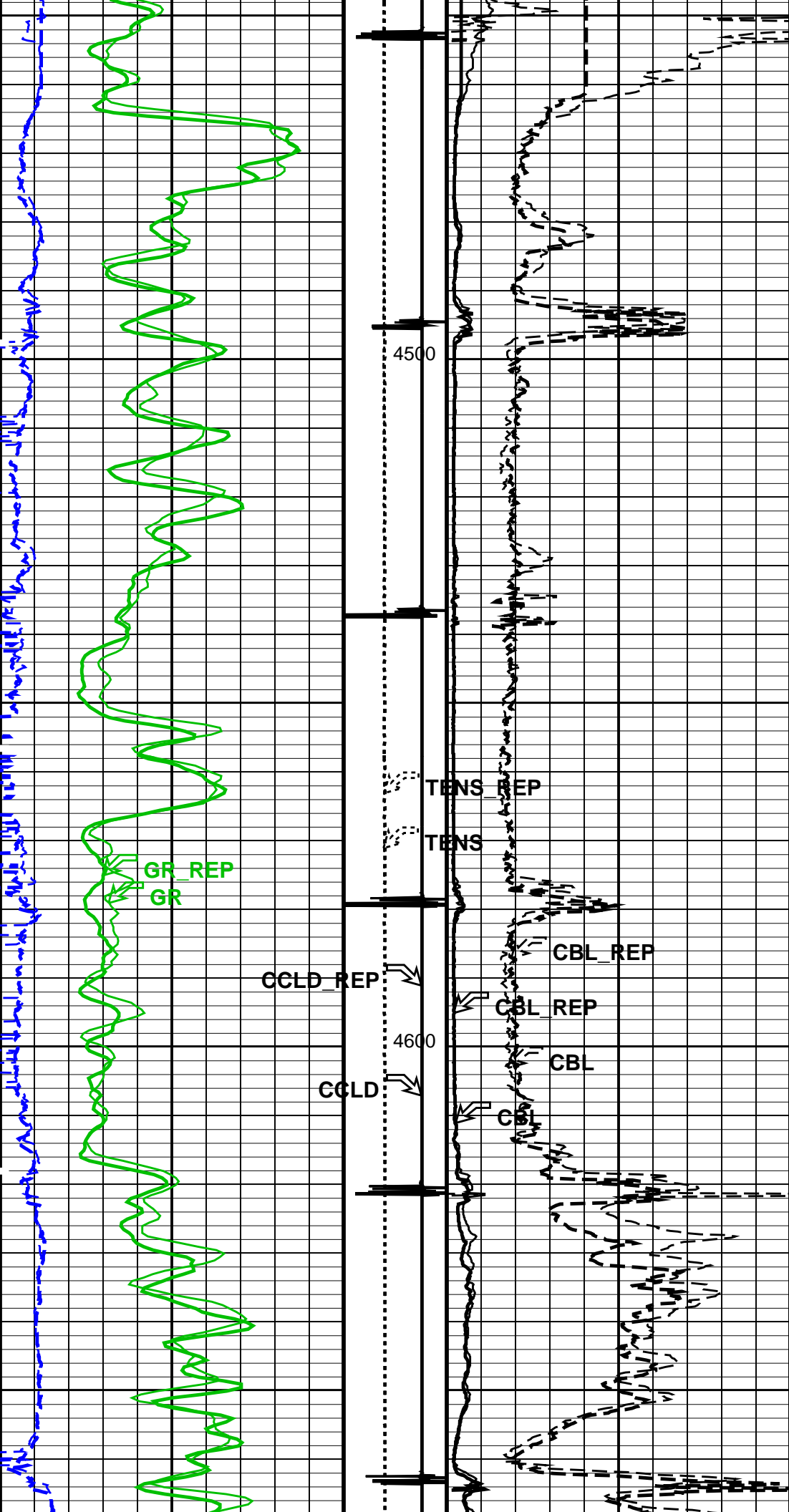
RST-C

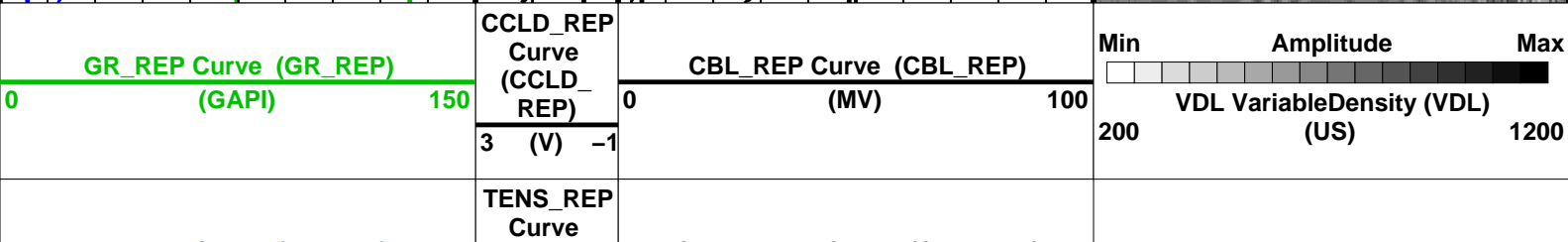
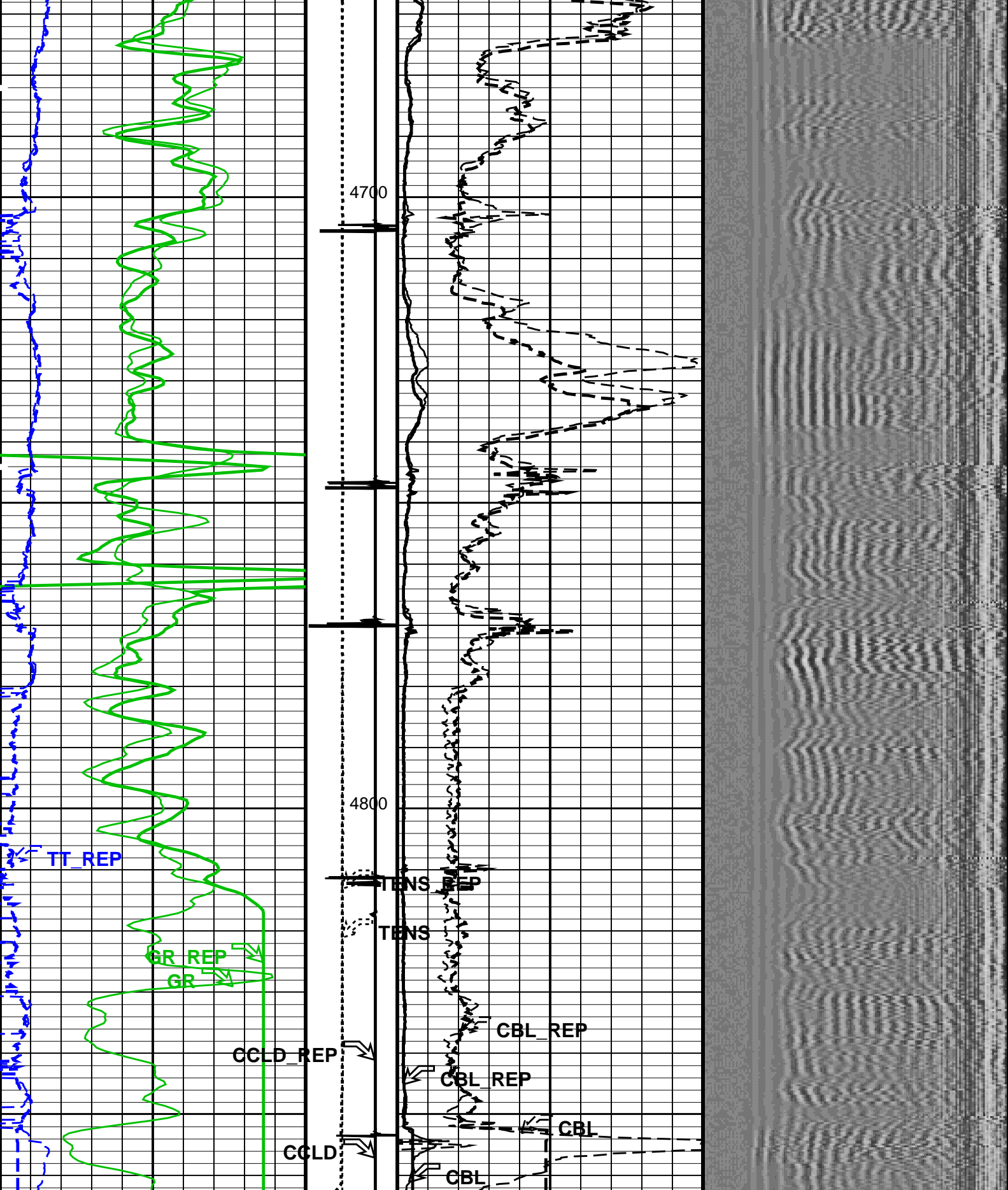
SRPC-5095-H2-2011-OP19_b

PIP SUMMARY

☐ Time Mark Every 60 S







TT REP Curve (TT REP)	(TENS REP)	CBL 1 REP Curve (CBL REP)
260 (US)	0	10
160	(LBF)	(MV)
	0	2000

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100' Graphics File Created: 05-Oct-2011 13:21

OP System Version: 19C0-187

SCMT-CB PSPT	SRPC-5095-H2-2011-OP19_b 19C0-187	RST-C	SRPC-5095-H2-2011-OP19_b
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<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8186		
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	23-FEB-2011		
CBL Correction Factor	0.0700110	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.0960446	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.103019		
MAP 3 Correction Factor	0.112474		
MAP 4 Correction Factor	0.170246		
MAP 5 Correction Factor	0.138168		
MAP 6 Correction Factor	0.126543		
MAP 7 Correction Factor	0.0891491		
MAP 8 Correction Factor	0.107987		

Parameters

DLIS Name	Description	Value	
	SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD		
BILI	Bond Index Level for Zone Isolation	0.8	
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	224.559	US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta-T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	

VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
	System and Miscellaneous		
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	11.60	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DORL	Depth Offset for Repeat Analysis	0.0	FT
TD	Total Depth	-50000	FT

Input DLIS Files

DEFAULT	SCMT_RST_PSP_016PUP	FN:15	PRODUCER	05-Oct-2011 13:12	4862.5 FT	4380.0 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_017LUP	FN:16	PRODUCER	05-Oct-2011 13:21		
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Schlumberger

COEFFICIENTS

MAXIS Field Log

Client:	ENCANA OIL & GAS (USA) INC.	Tool:	PSP
Field:	PARACHUTE	Sub Type:	PBMS
Well:	DAYBREAK FEDERAL 19-5 (PJ19)	Sensor:	Clock Model
Run date:	5-Oct-2011		

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: ENCANA OIL & GAS (USA) INC.

Field: PARACHUTE

Well: DAYBREAK FEDERAL 19-5 (PJ19)

Run date: 5-Oct-2011

Tool: PSP

Sub Type: PBMS

Sensor: Sapphire

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR SAPPHIRE PBMS-A.3779 S/N:

3779

090107

66

4C82

Pres Coeff

	Tt**0	Tt**1	Tt**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

	Tt**3	Tt**4	Tt**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

Calib Date ddmmyy

Matrix Size

Coeff CRC

:

3779

090107

66

C39E

Temp Coeff

	Tp**0	Tp**1	Tp**2
Tt**0	-.278275571347E+03	+.251216271916E+01	-.820715649824E+00
Tt**1	+.598349067015E+02	-.107326373545E+01	+.652890183203E-01
Tt**2	+.109160002120E+02	+.262812193556E+00	-.450134240377E-02

Tt**3	−.673302171285E+00	−.213772918779E−01	0.0
Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0
	Tp**3	Tp**4	Tp**5
Tt**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:	ENCANA OIL & GAS (USA) INC.	Tool:	PSP
Field:	PARACHUTE	Sub Type:	PBMS
Well:	DAYBREAK FEDERAL 19−5 (PJ19)	Sensor:	GR
Run date:	5−Oct−2011		

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

	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.214000000000e+04

Client:	ENCANA OIL & GAS (USA) INC.	Tool:	PSP
Field:	PARACHUTE	Sub Type:	PBMS

PBMS RTD Well Thermometer

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR RTD THERMOMETER PBMS–A.3779 S/N:

3779

090107

16

3846

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	+.492135102627E+02	–.278827553804E+03	+.142867554561E+03
	Tt**3	Tt**4	Tt**5
Tt**0	–.233378392336E+02	+.145553494493E+01	0.0

Company:

ENCANA OIL & GAS (USA) INC.

Schlumberger

Well:

DAYBREAK FEDERAL 19–6D (PJ19)

Field:

PARACHUTE

County:

GARFIELD

State:

COLORADO

CEMENT BOND LOG

CBL – VDL

GAMMA RAY – CCL