



Company: ENCANA OIL & GAS (USA) INC.

Well: SG 8509C-21 N22 496

Field: STORY GULCH

County: GARFIELD

State: COLORADO

County:	GARFIELD			
Field:	NORTH PARACHUTE			
Location:	SHL: 1231' FSL & 1962' FWL			
Well:	SG 8509C-21 N22 496			
Company:	ENCANA OIL & GAS (USA) INC.			
CEMENT BOND LOG CBL - VDL GAMMA RAY - CCL		LOCATION		
		SHL: 1231' FSL & 1962' FWL		Elev.: K.B. 7607.00 ft
		BHL: 2003' FSL & 1299' FEL		G.L. 7585.00 ft
				D.F. 7606.00 ft
Permanent Datum:		GROUND LEVEL	Elev.: 7585.00 ft	
Log Measured From:		KELLY BUSHING	22.00 ft above Perm. Datum	
Drilling Measured From:		KELLY BUSHING		
API Serial No.		Section	Township	Range
05-045-21033-000C		21	4S	96W

	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			
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-Apr-2012			
Run Number	ONE			
Depth Driller	11847 ft			
Schlumberger Depth	11787 ft			
Bottom Log Interval	11779 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	11847 ft			
Casing/Tubing Size	4.500 in			
Weight	11.6 lbm/ft			
Grade	P-110			
From	22 ft			
To	11827 ft			
Maximum Recorded Temperatures	282 degF			
Logger On Bottom	30-Apr-2012	Time	1:33	
Unit Number	Location	383	GRAND JUNCTION	
Recorded By	DAVID PATE			
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		Time	
Unit Number	Location		
Recorded By			
Witnessed By			

DEPTH SUMMARY LISTING

Date Created: 30-APR-2012 8:15:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-C	Type:	1-25ZT
Serial Number:	5873	Serial Number:	5006	Serial Number:	391
Calibration Date:	20-DEC-2011	Calibration Date:	31-MAR-201	Length:	16700 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	174878	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-3	Calibration RMS:	5		
Wheel Correction 2:	-3	Calibration Peak Error:	9		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	267.00 FT
Rig Up Length At Bottom:	266.00 FT
Rig Up Length Correction:	1.00 FT
Stretch Correction:	9.00 FT
Tool Zero Check At Surface:	1.40 FT

Depth Control Remarks

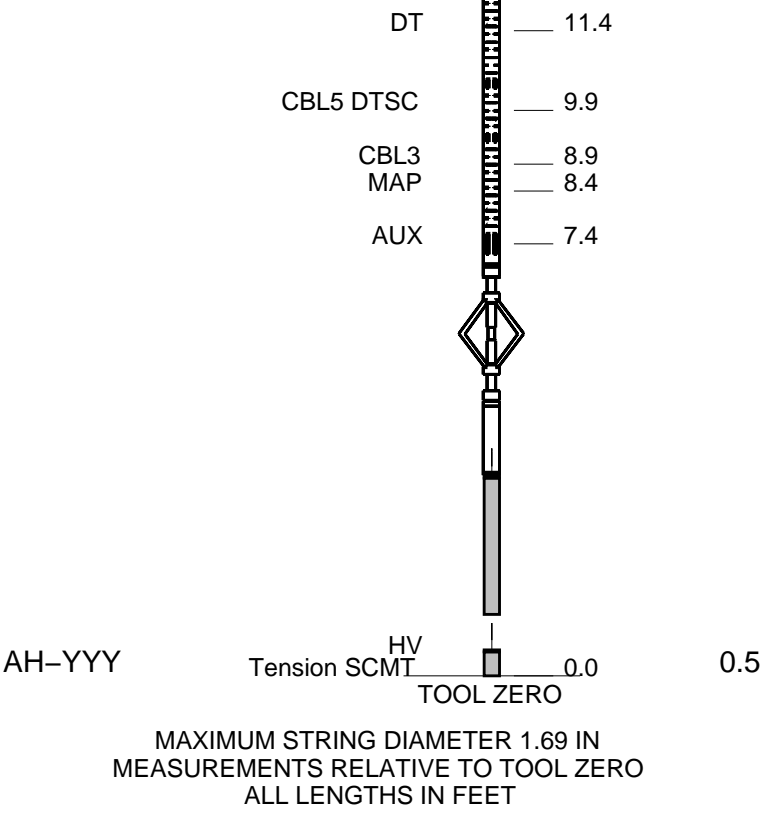
1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED
2. IDW USED AS PRIMARY DEPTH CONTROL.
3. Z-CHART USED AS SECONDARY DEPTH CONTROL
- 4.
- 5.
- 6.

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: NONE OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THIS IS THE FIRST RUN IN THE HOLE.	
TOOL RAN AS PER TOOL SKETCH.	
TD TAGGED AT: 11787 FT	
MAXIMUM RECORDED PRESSURE AT TD: 4638 PSIA	
MAXIMUM RECORDED TEMPERATURE AT TD: 282 DEGF	

SHORT JOINTS: 7410 FT & 10330 FT					
EXPECTED FREE PIPE AMPLITUDE: 80 mV					
CYCLE SKIPING DUE TO GOOD BOND CAUSING TT TO READ HIGH					
AFE: 12162610					
THANK YOU FOR CHOOSING SCHLUMBERGER.					
CREW: WALEED A. & CHRIS A.					
RUN 1			RUN 2		
SERVICE ORDER #:		BIHS-00239	SERVICE ORDER #:		
PROGRAM VERSION:		18C0-147	PROGRAM VERSION:		
FLUID LEVEL:		22 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT					
WITM-A 3412 PSC_16MHZ 3412					
DOWNHOLE EQUIPMENT					



MAIN PASS 0 PSI

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC. Well: SG 8511C-22 N22 496

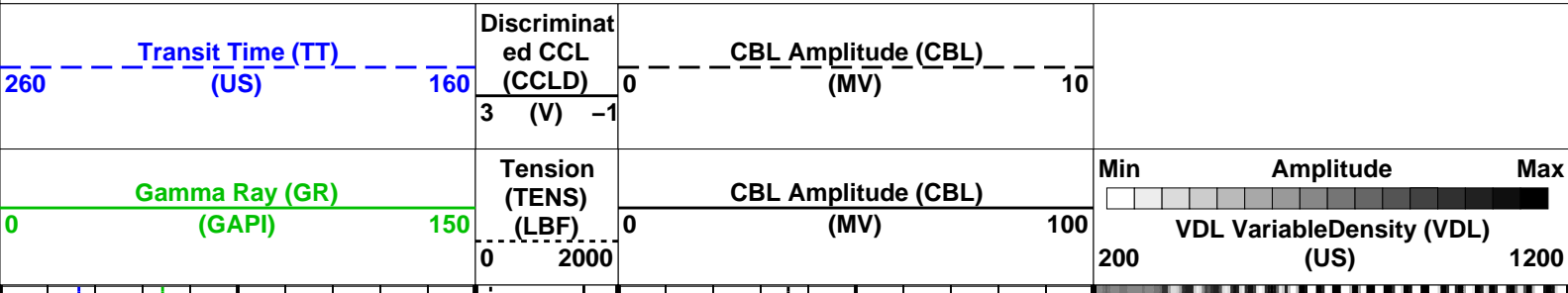
Input DLIS Files						
DEFAULT	SPLICE_SCMT_PSP_031	FN:1	PRODUCER	30-Apr-2012 05:02	11803.5 FT	180.1 FT

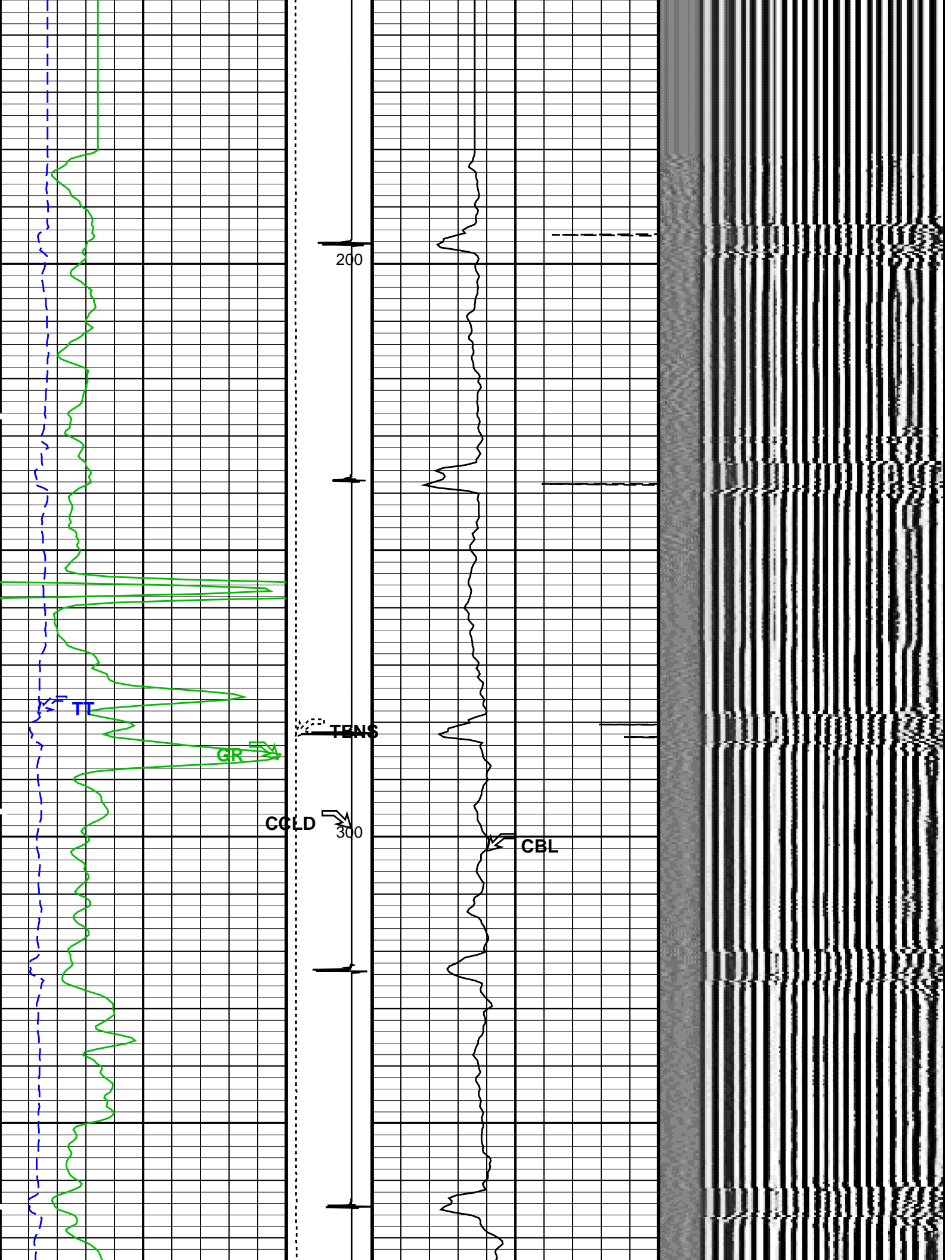
Output DLIS Files						
DEFAULT	SCMT_PSP_032PUP	FN:27	PRODUCER	30-Apr-2012 05:04	11803.5 FT	151.5 FT

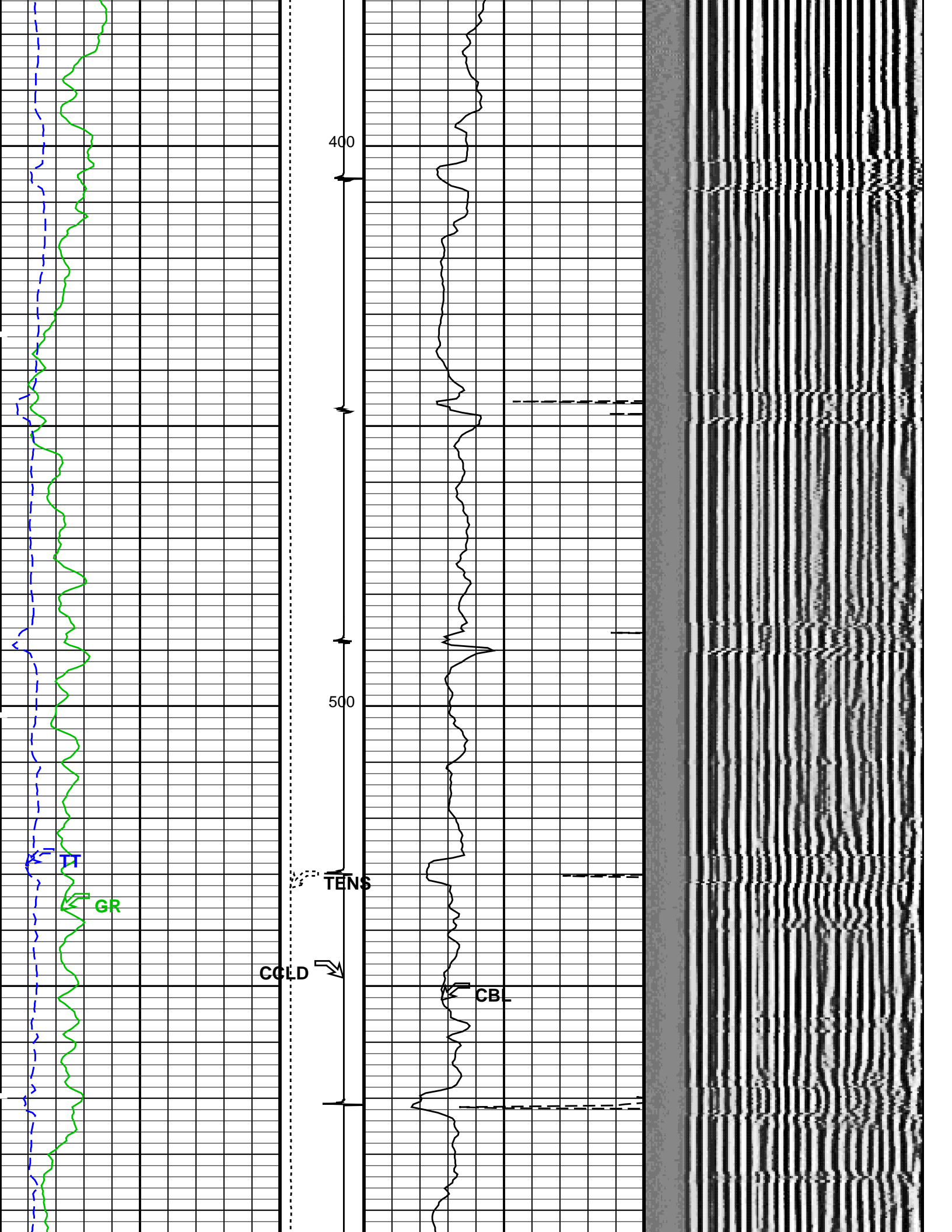
OP System Version: 18C0-147						
SCMT-CB	HFE-4028-IFLEX	PSPT	HFE-4028-IFLEX			

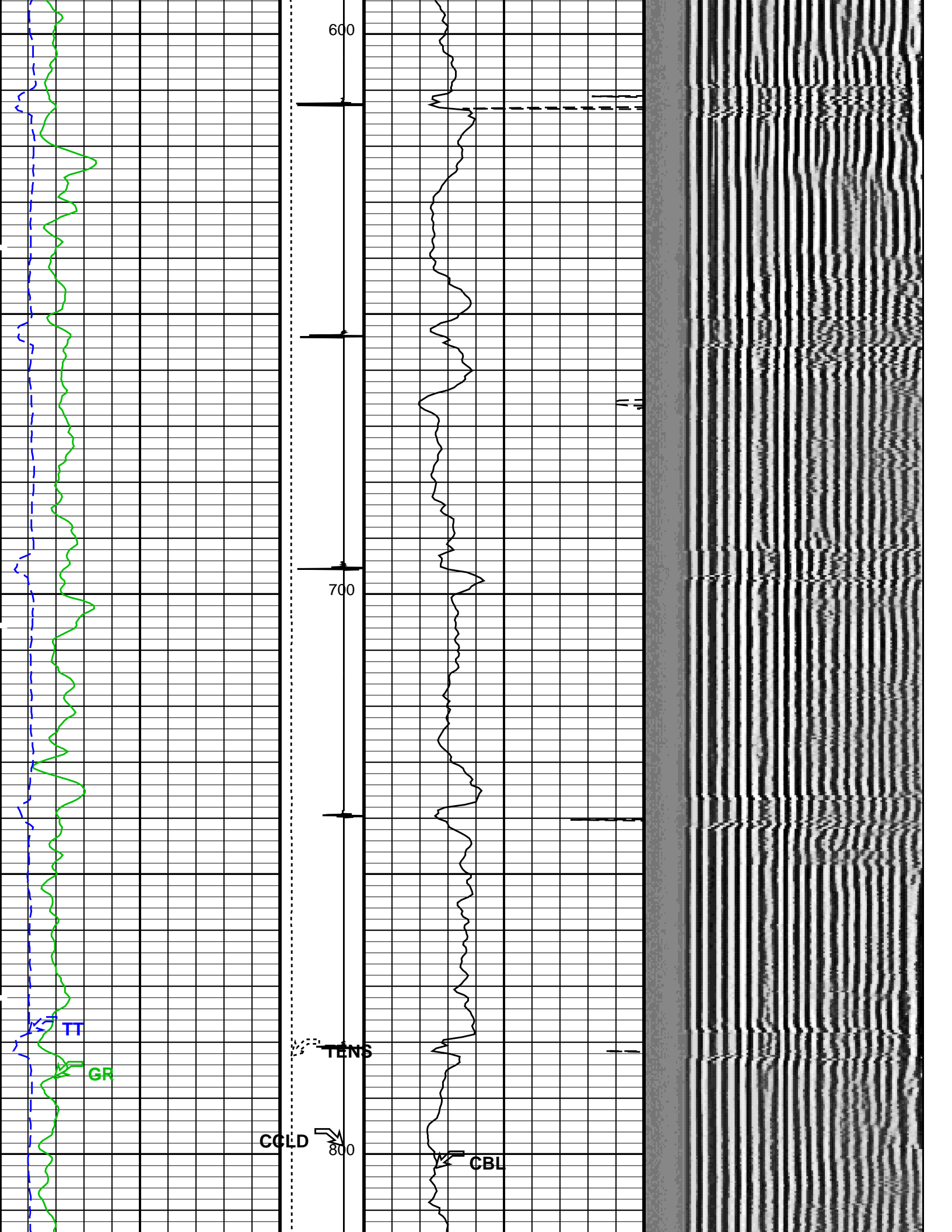
PIP SUMMARY

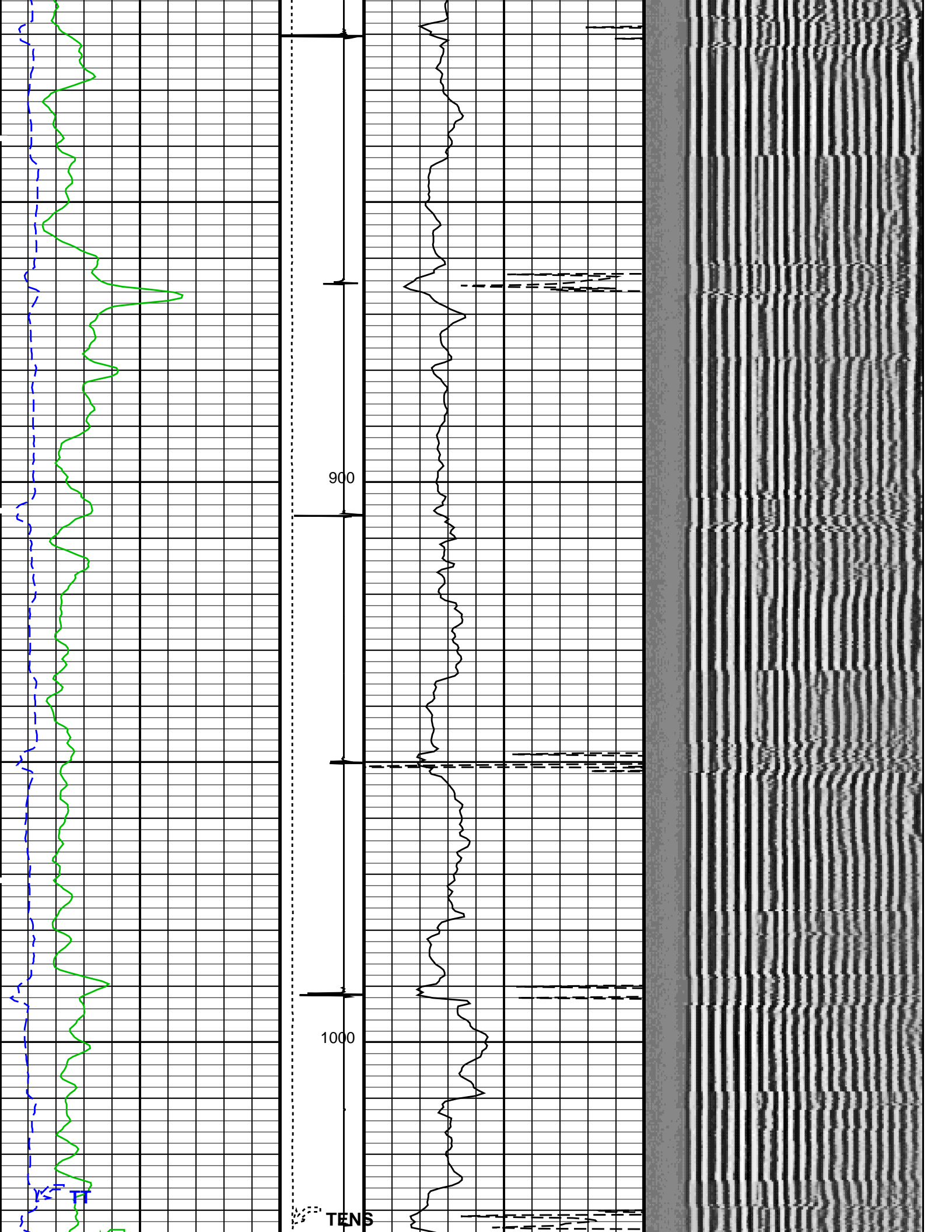
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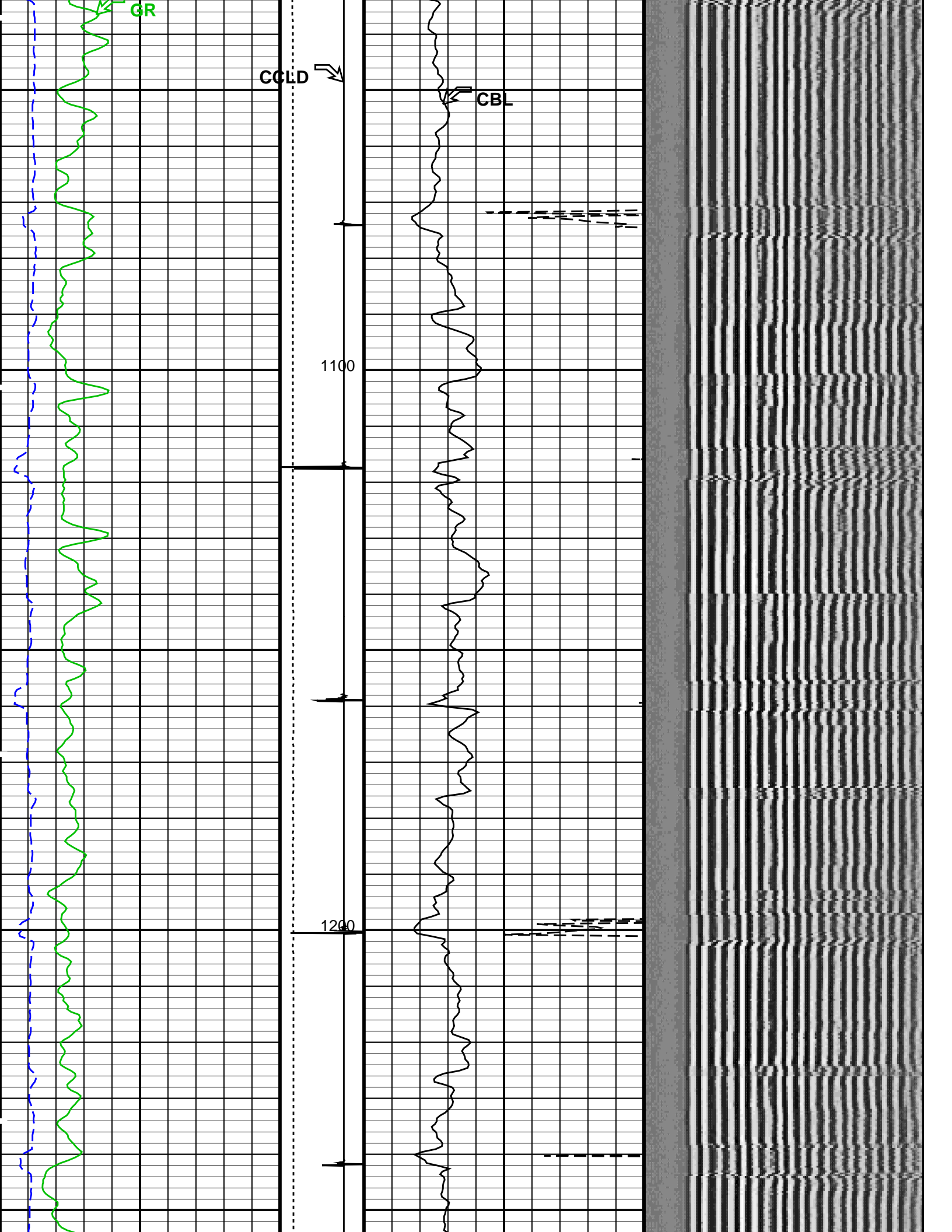


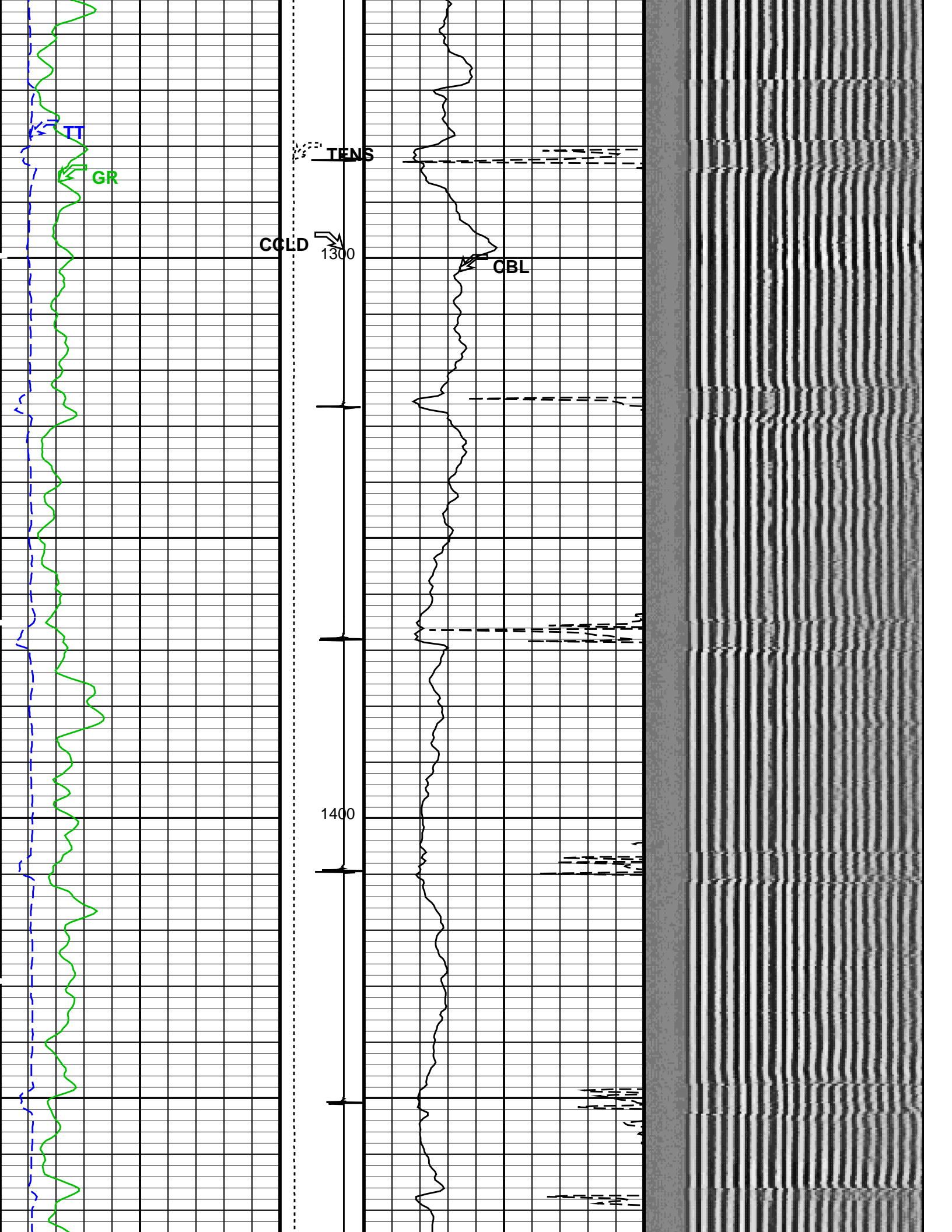


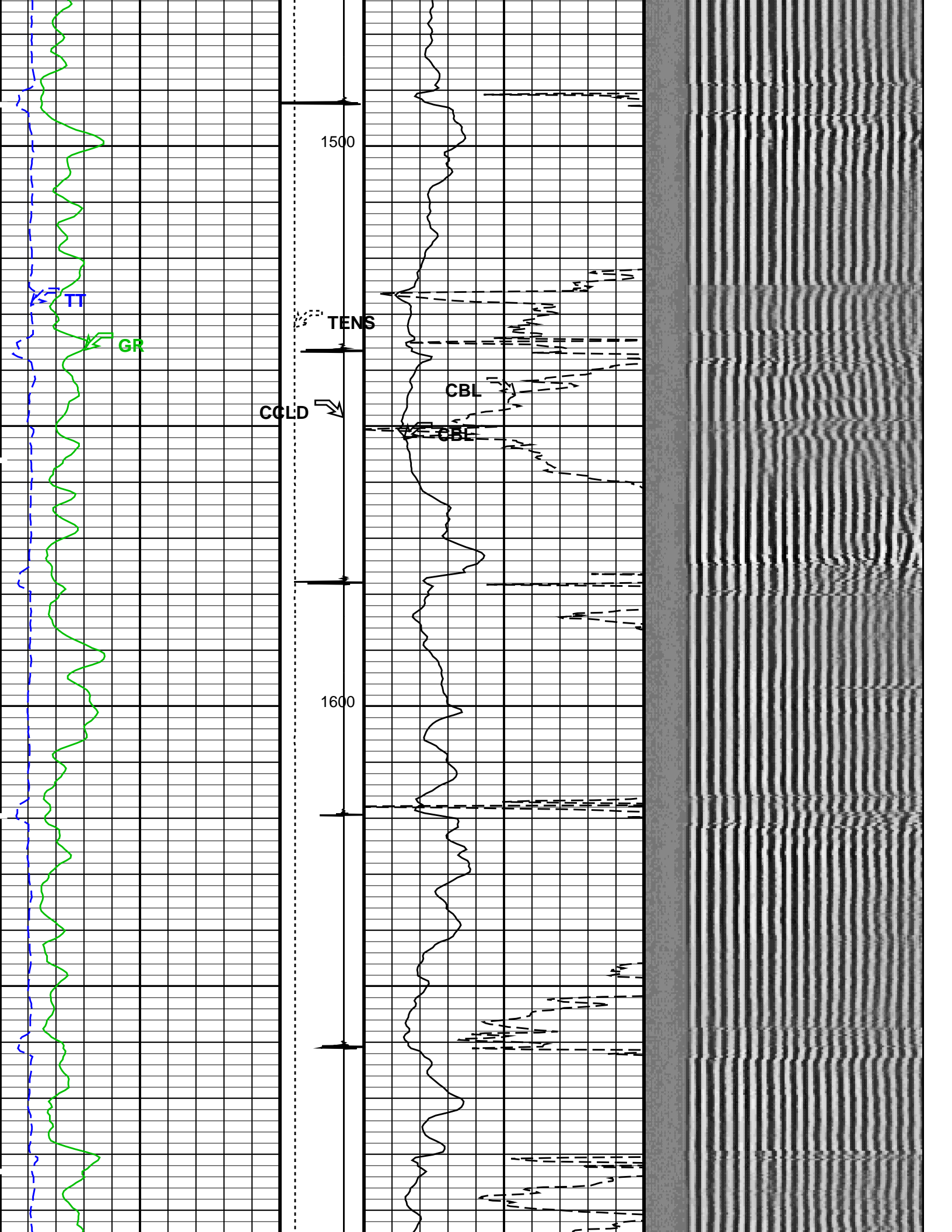


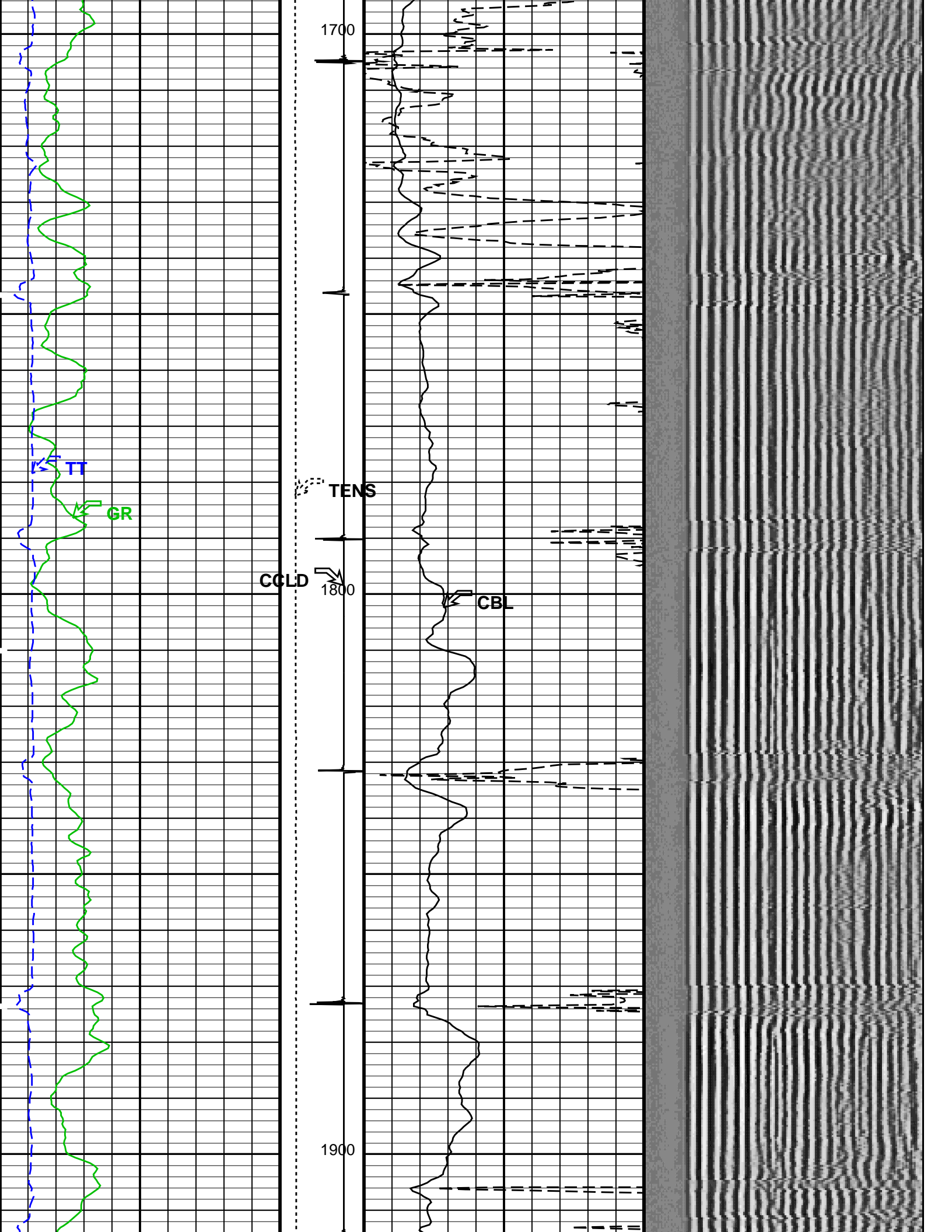


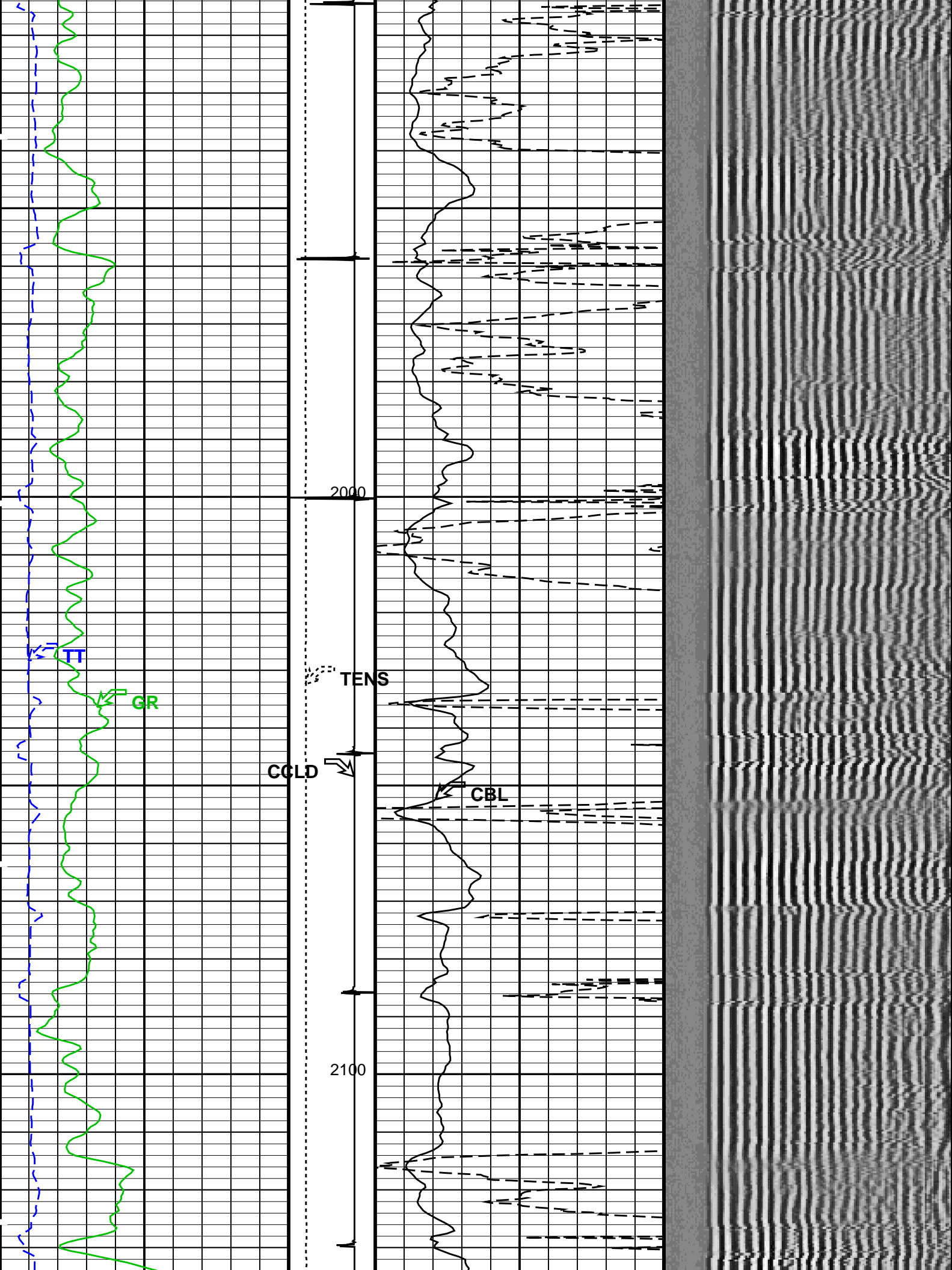


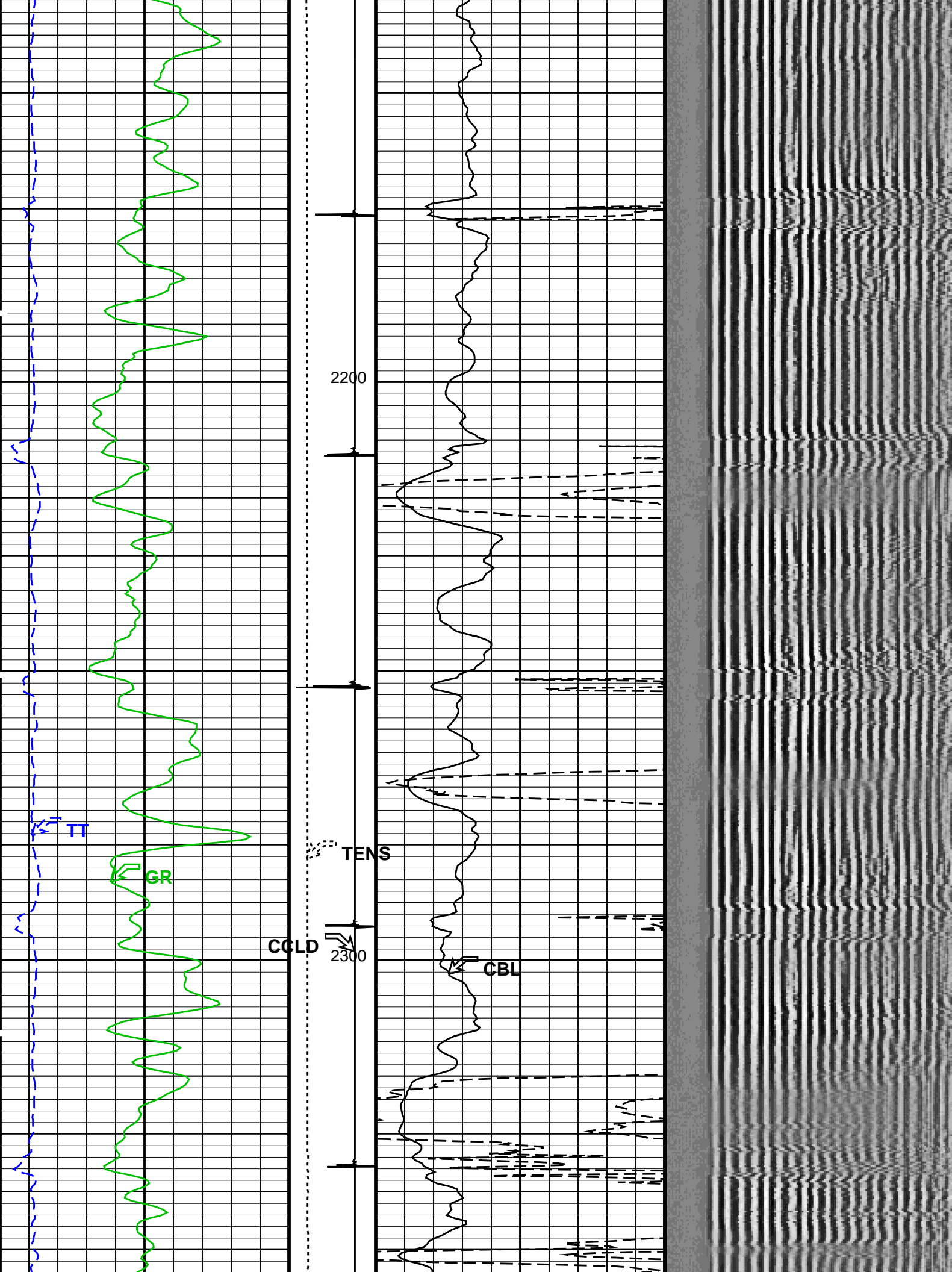


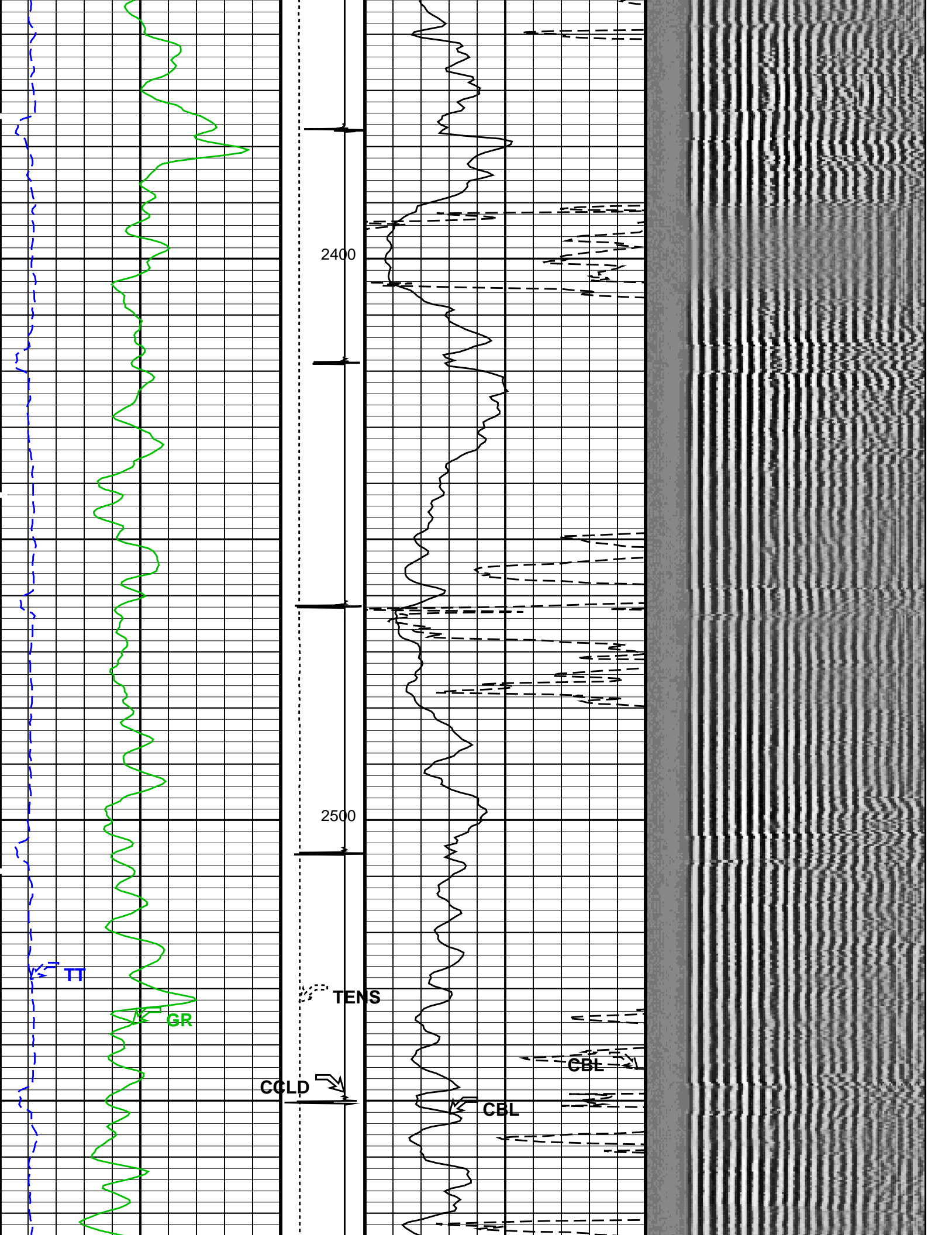


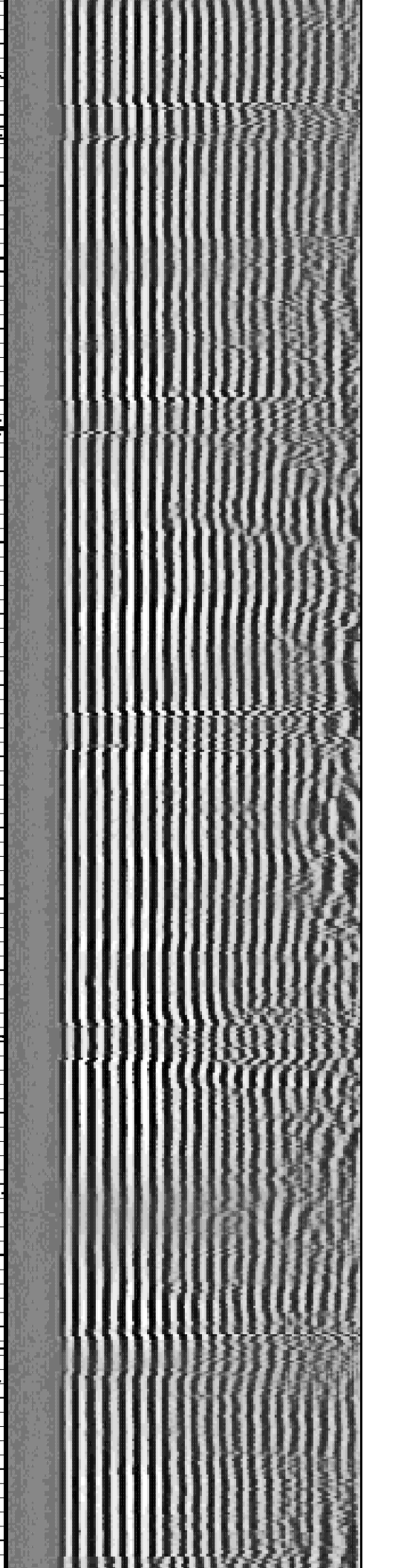
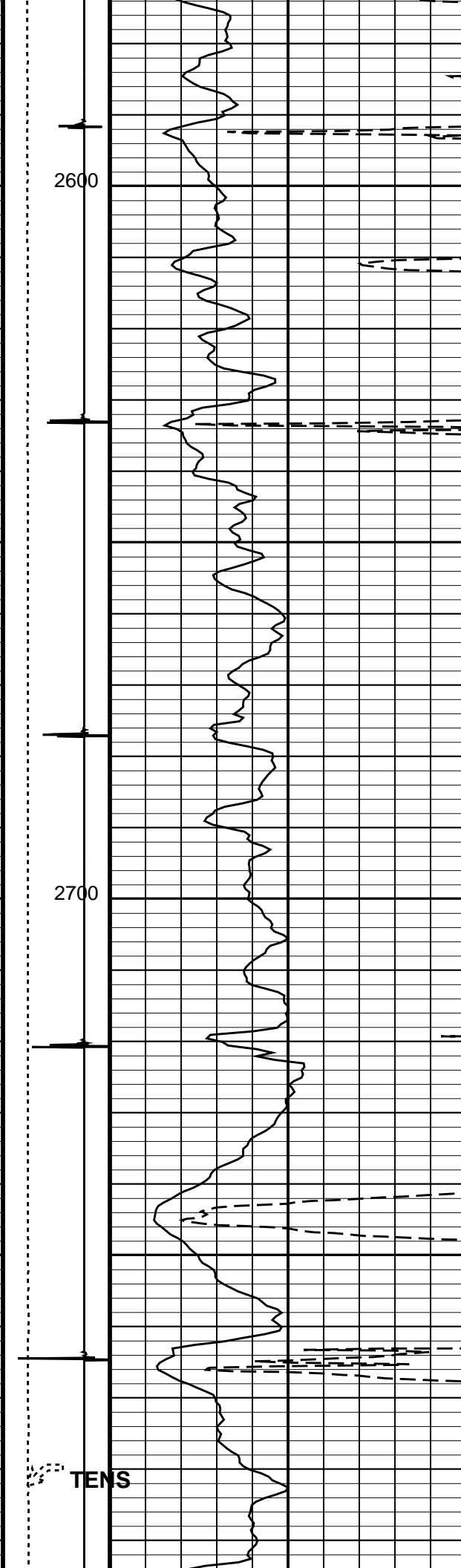
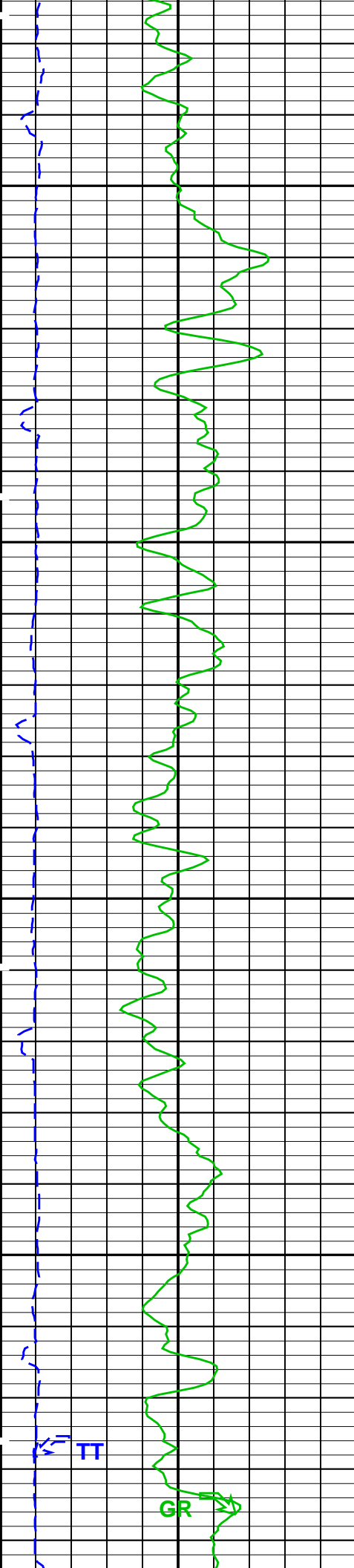


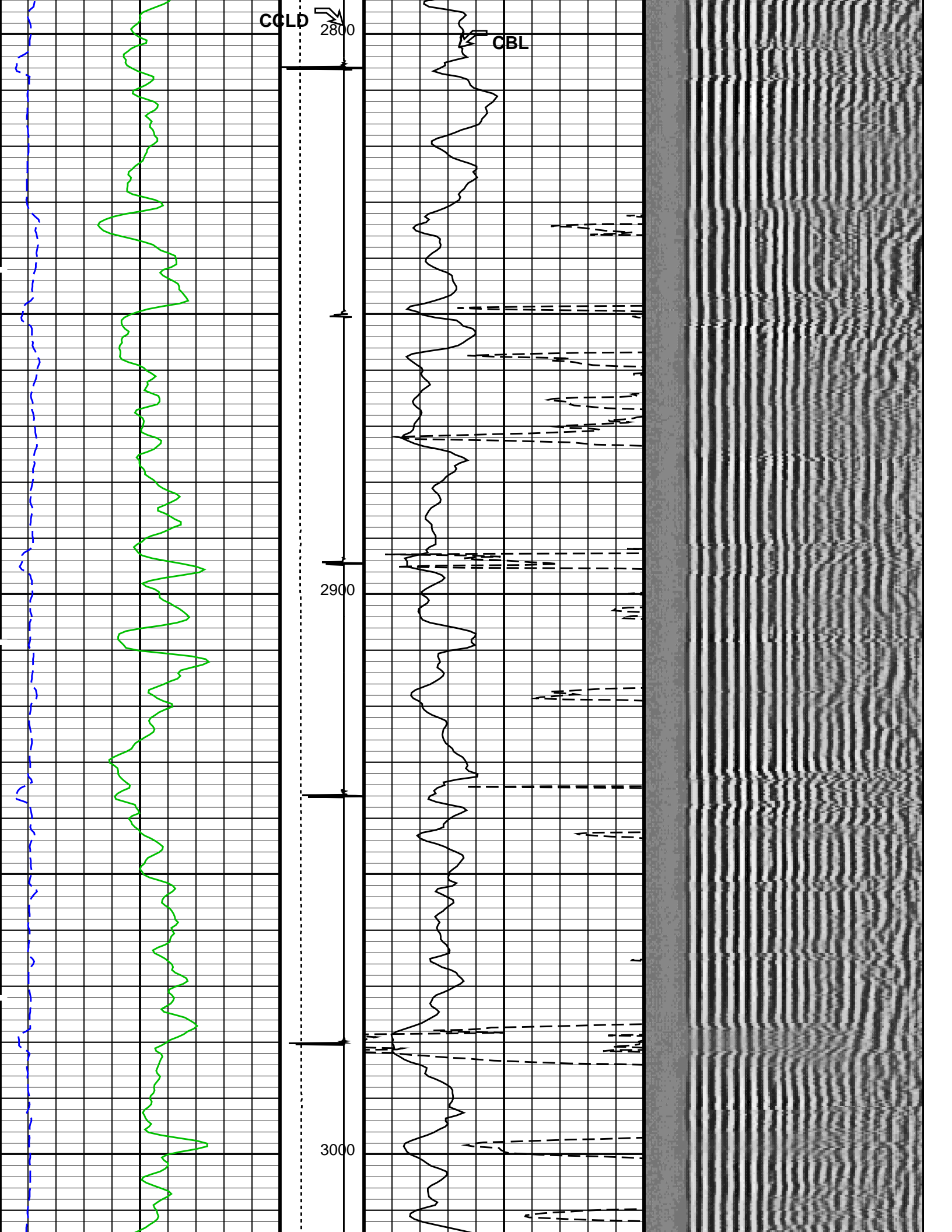


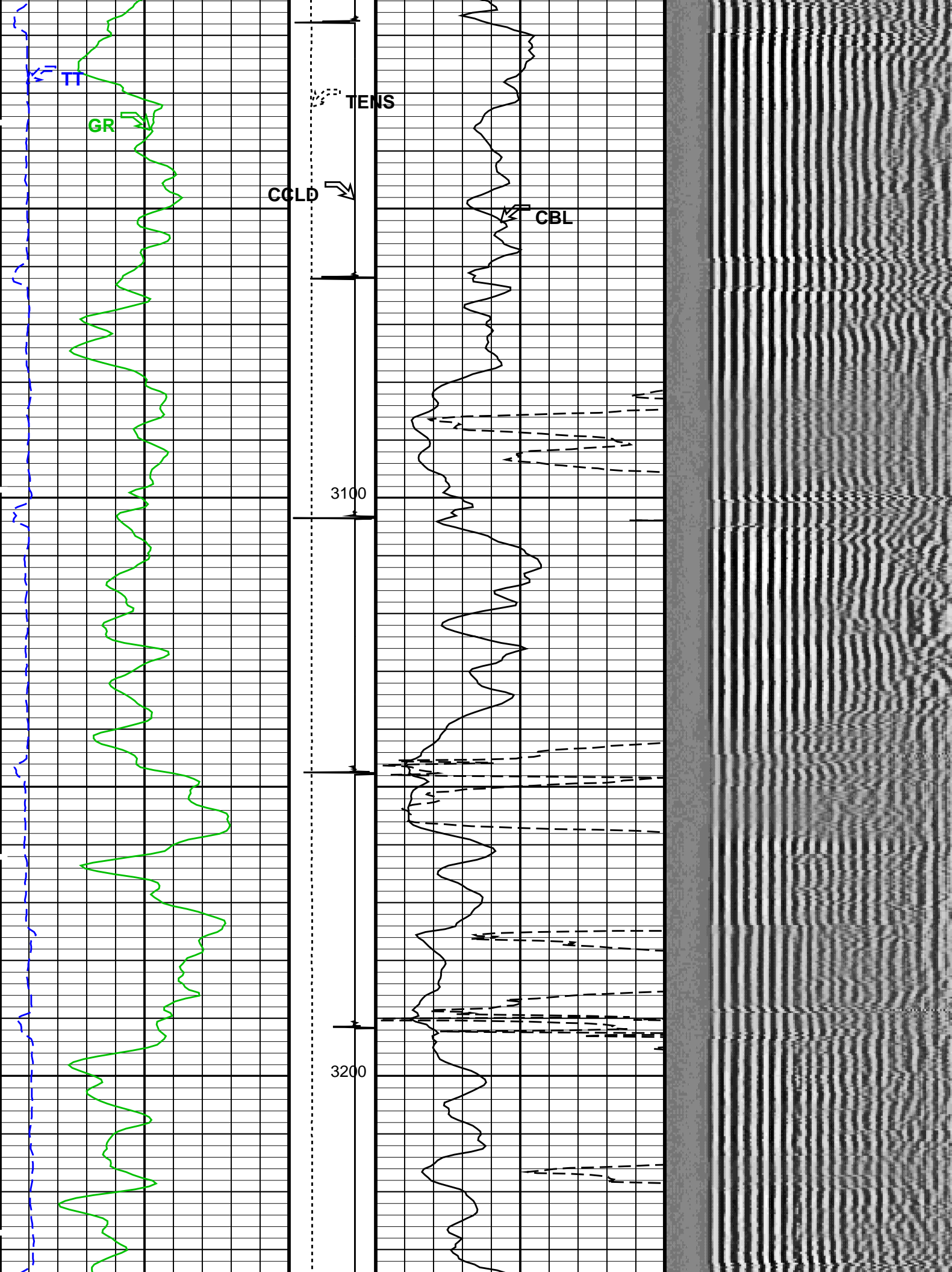


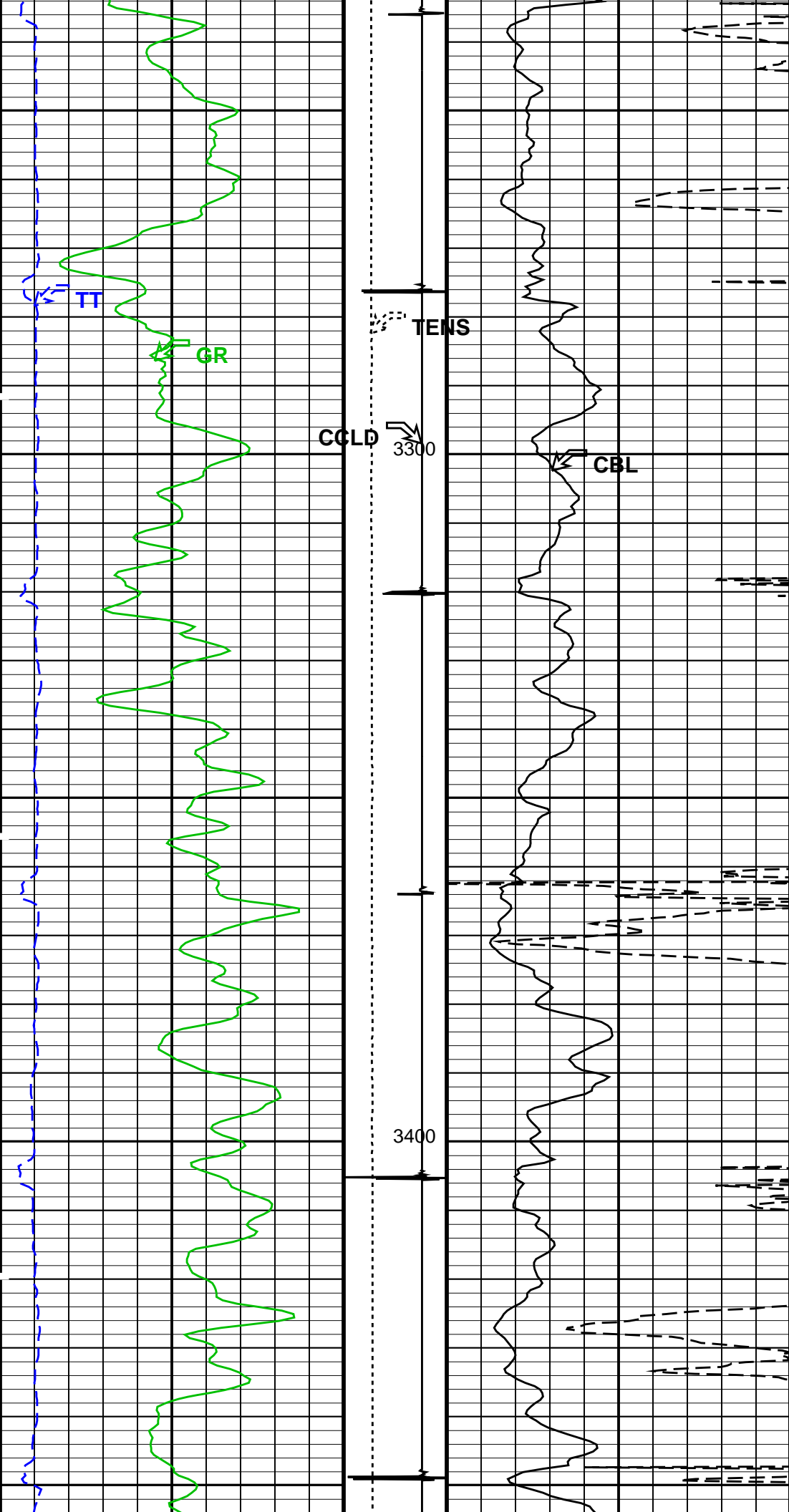


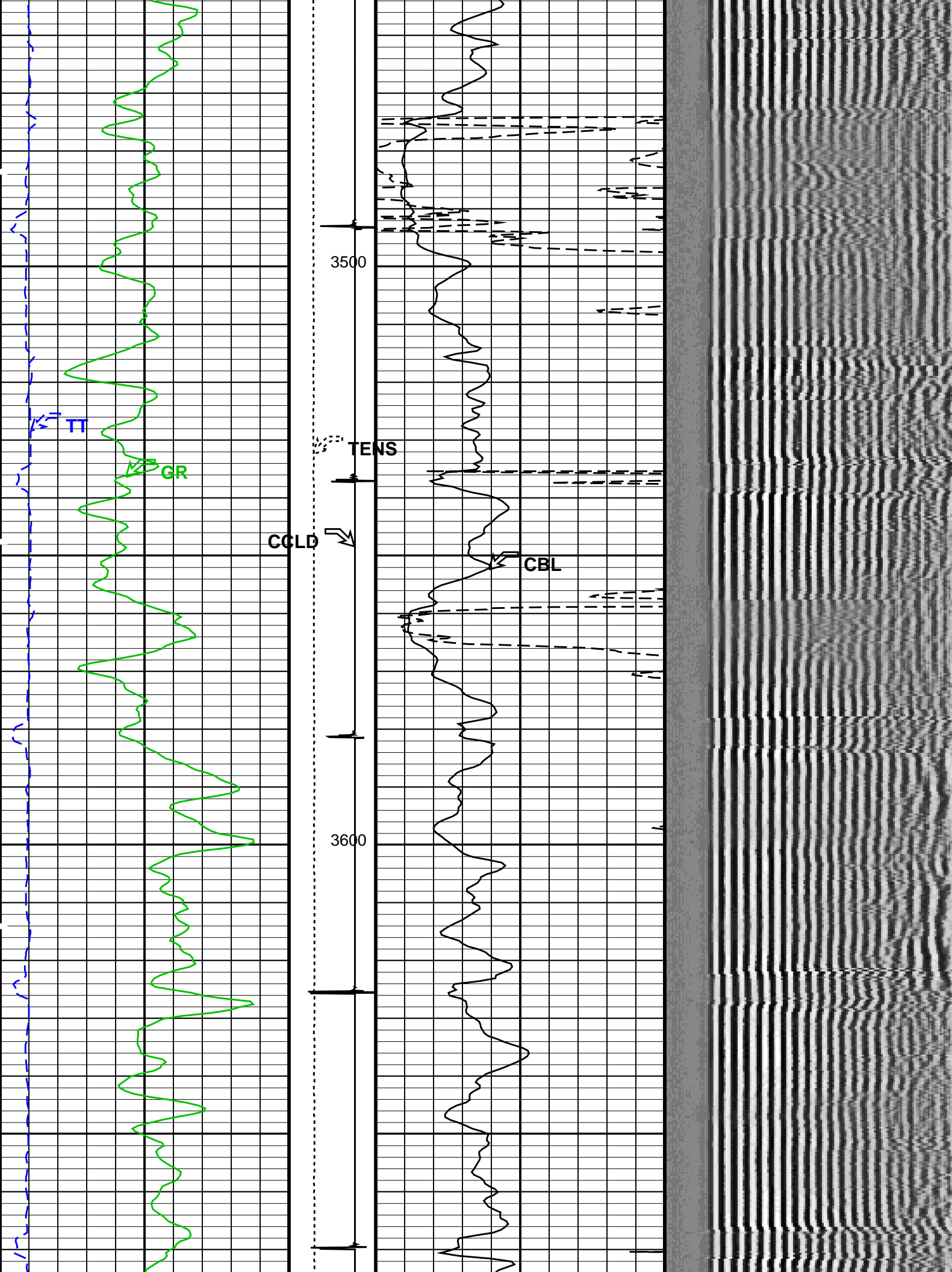


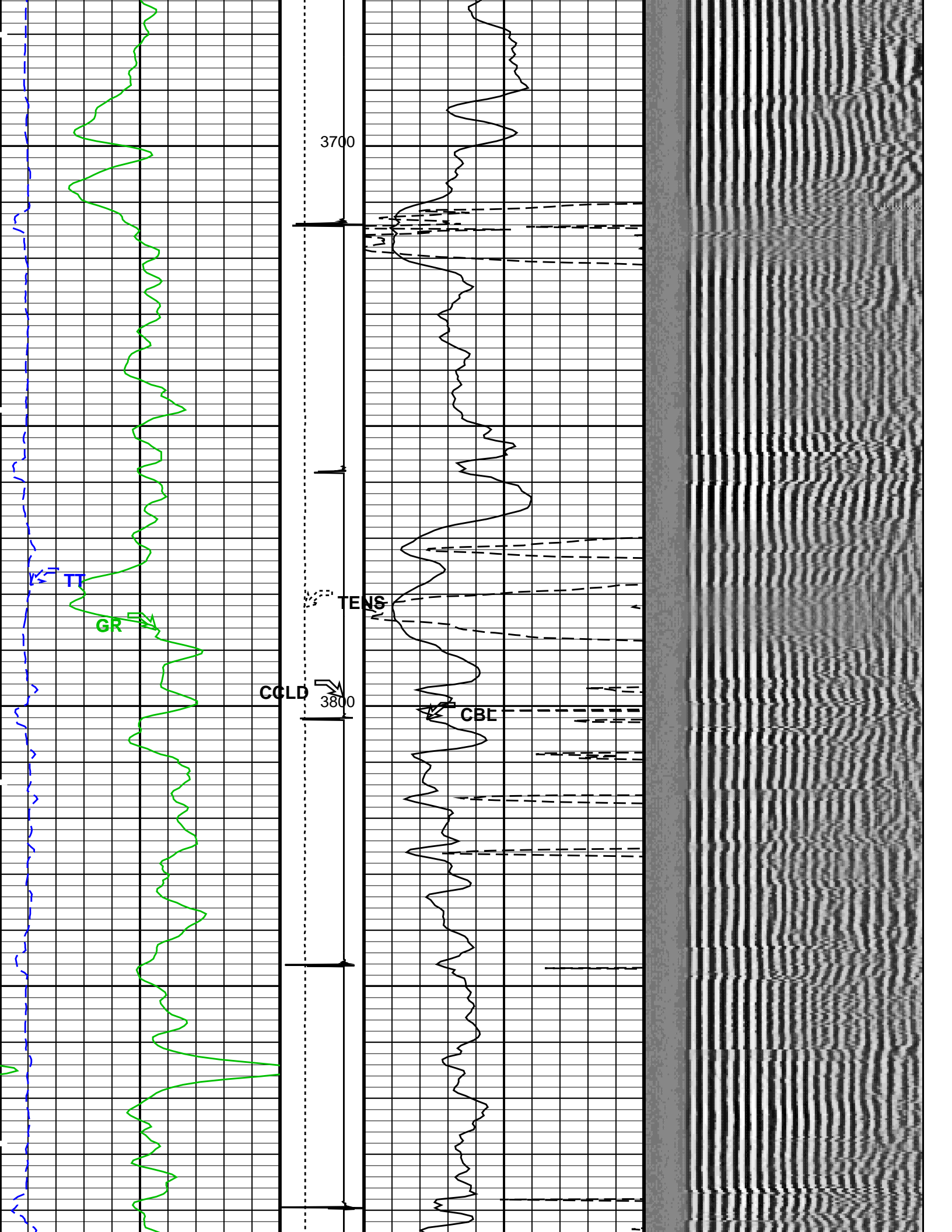


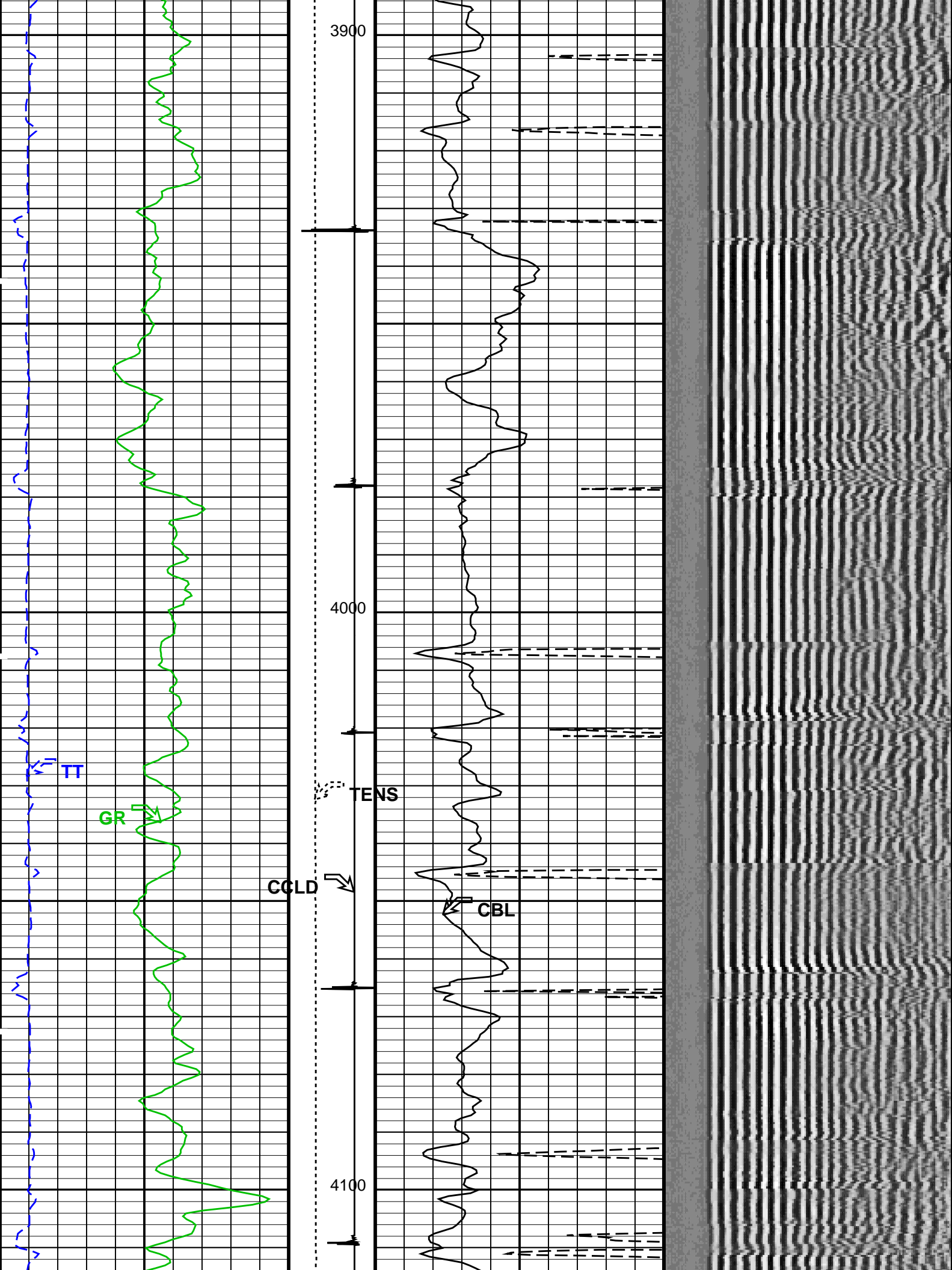


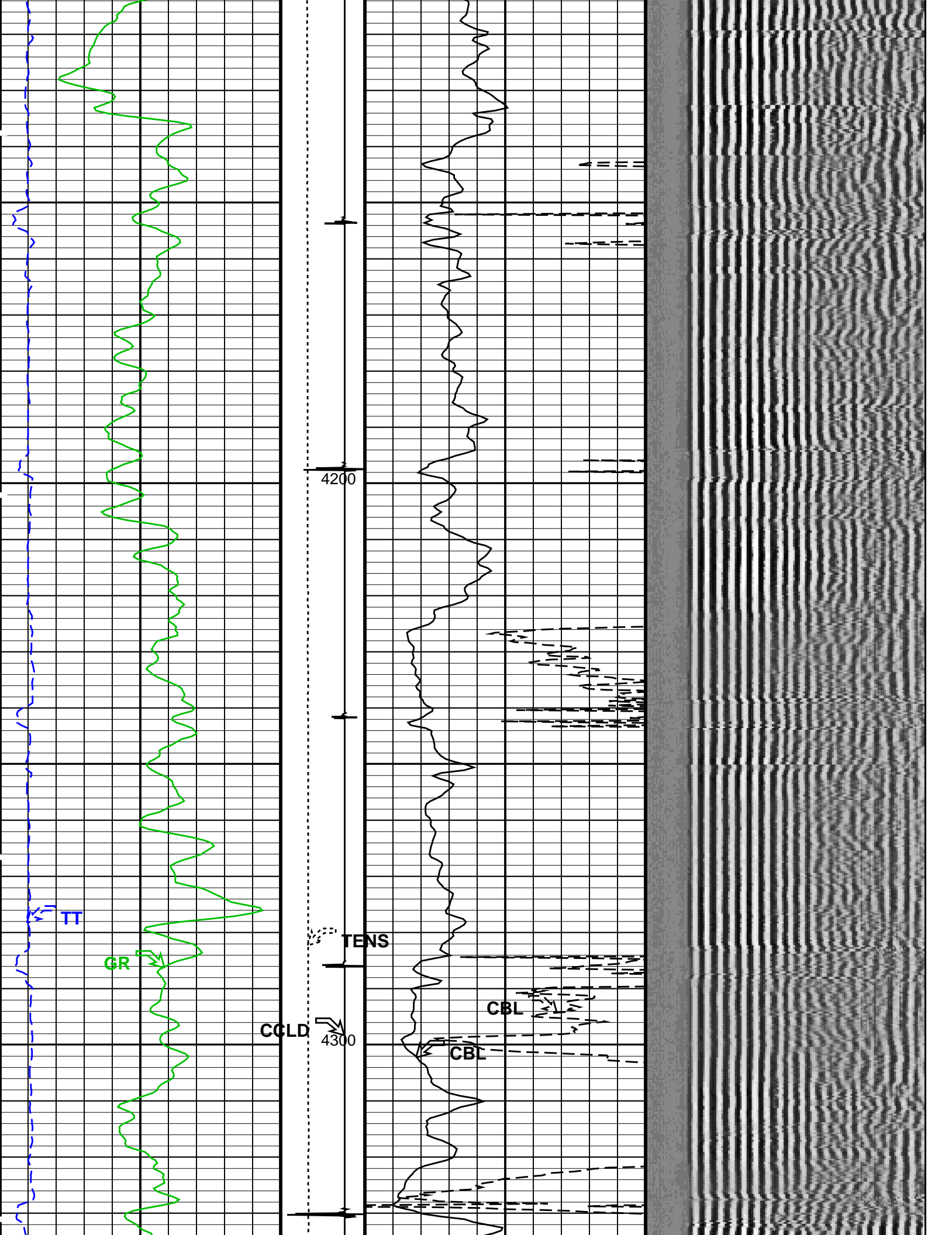


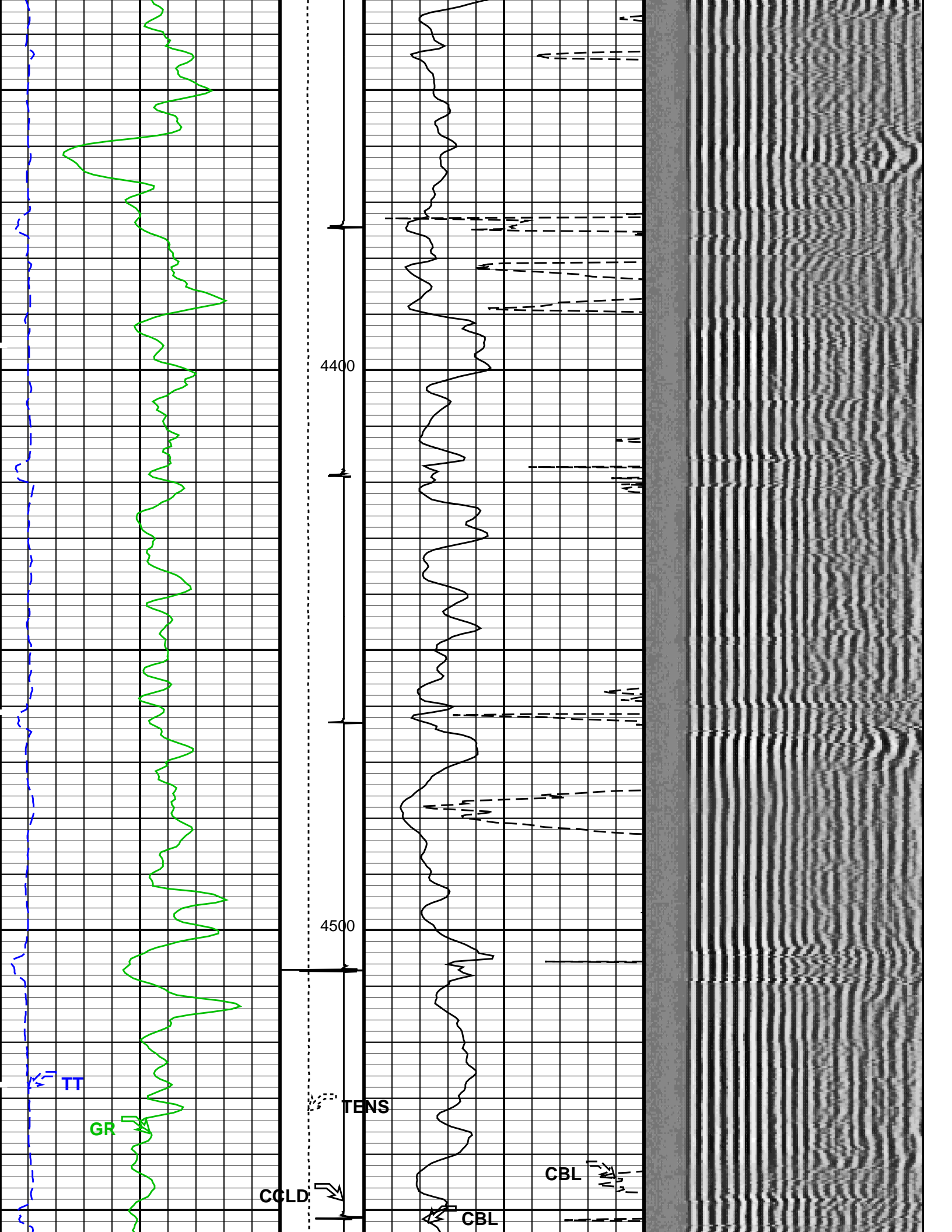


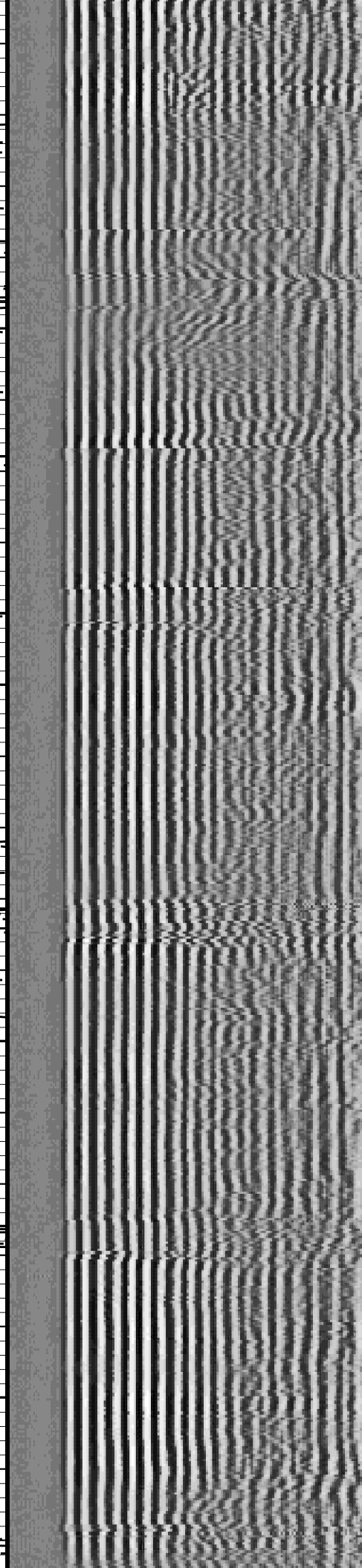
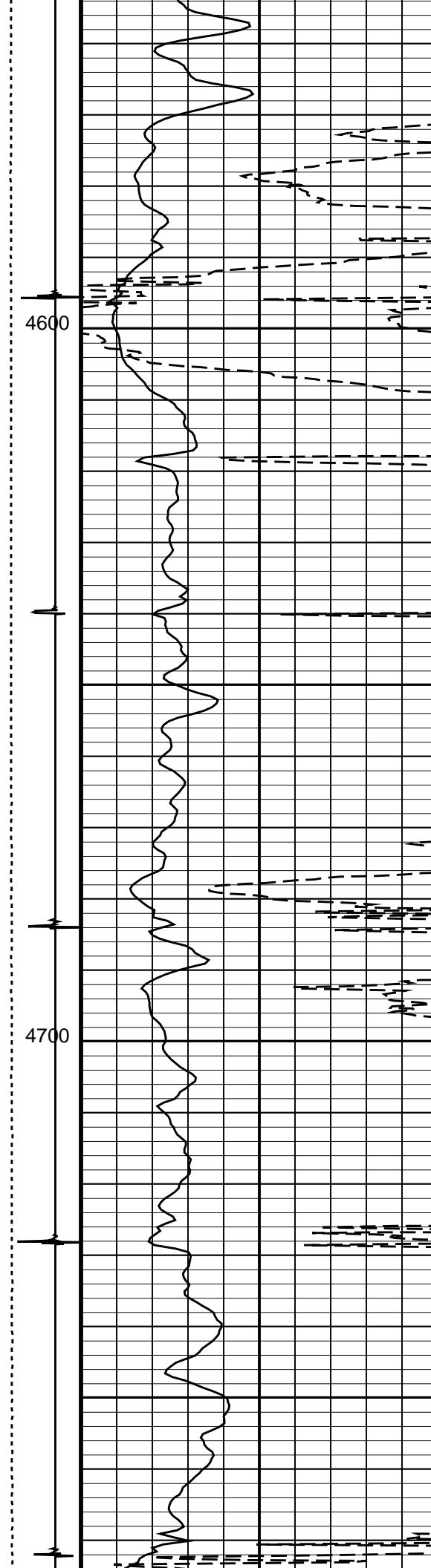
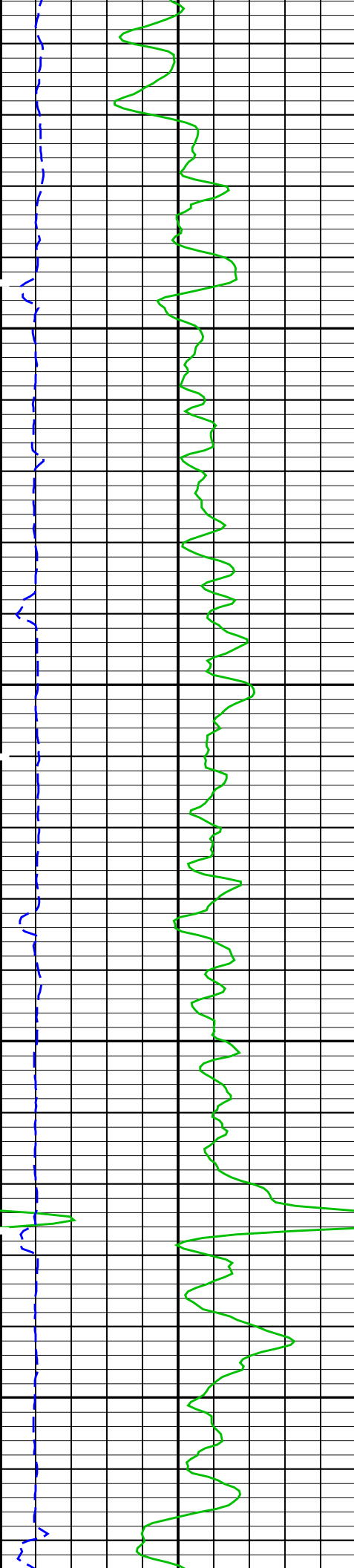


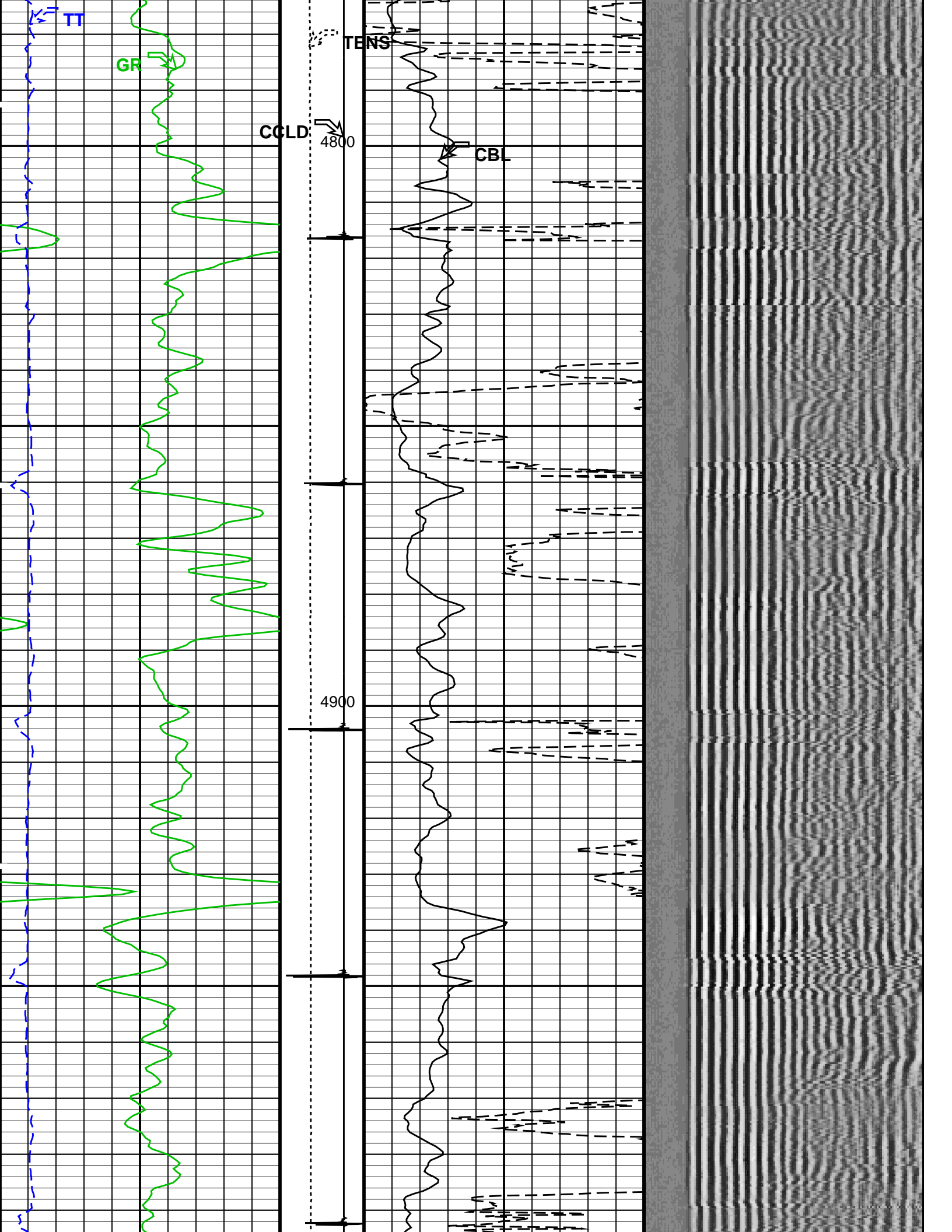


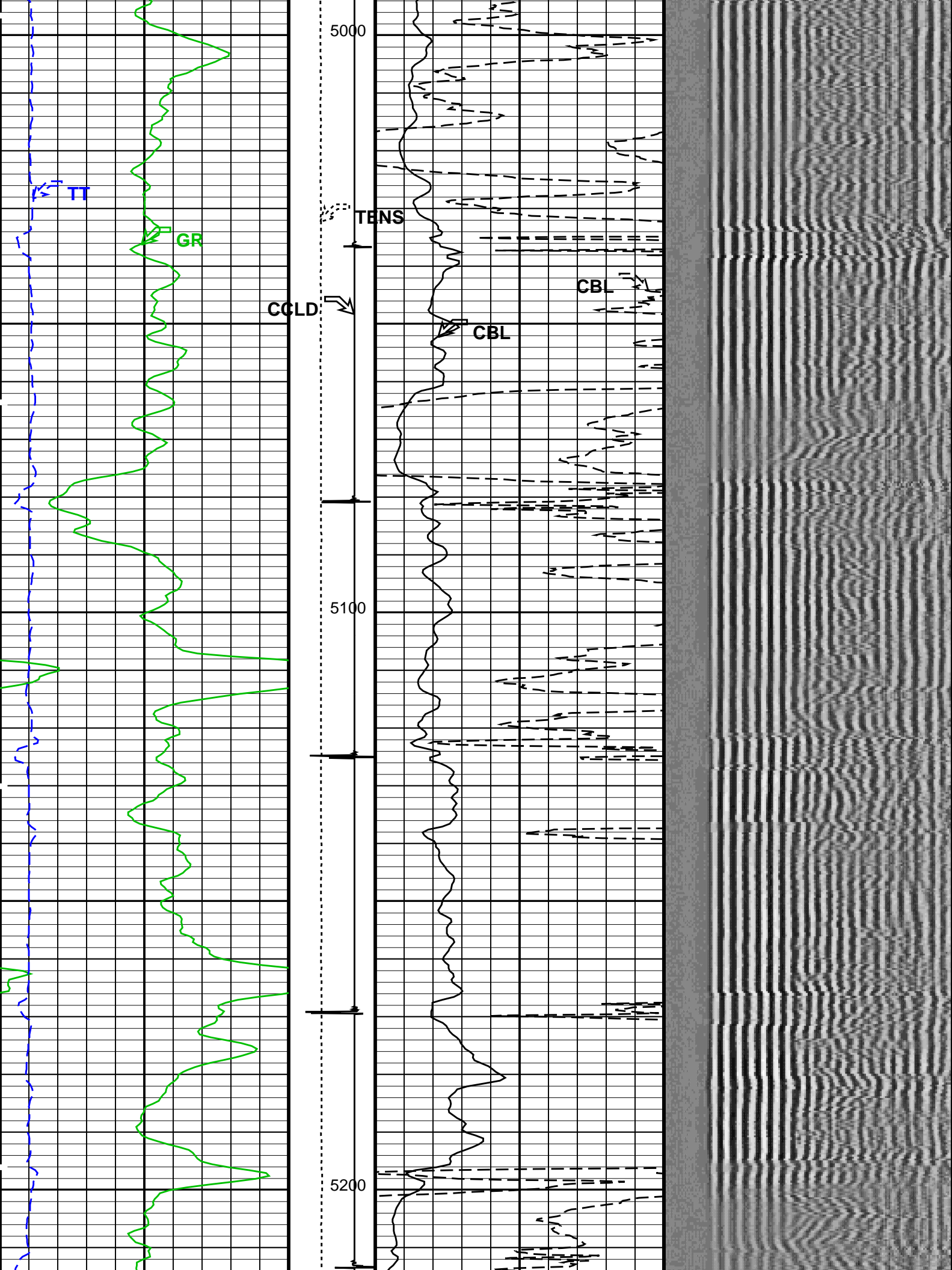


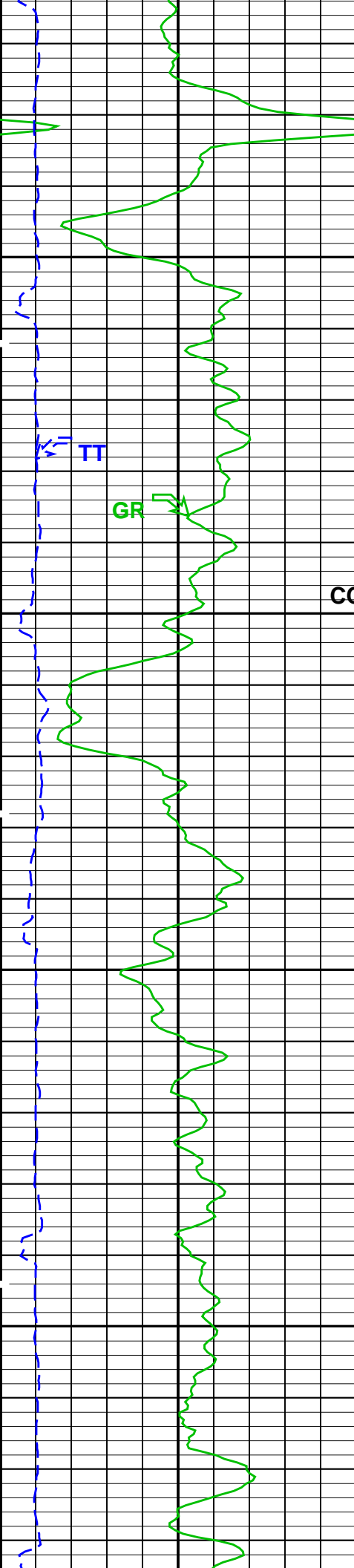




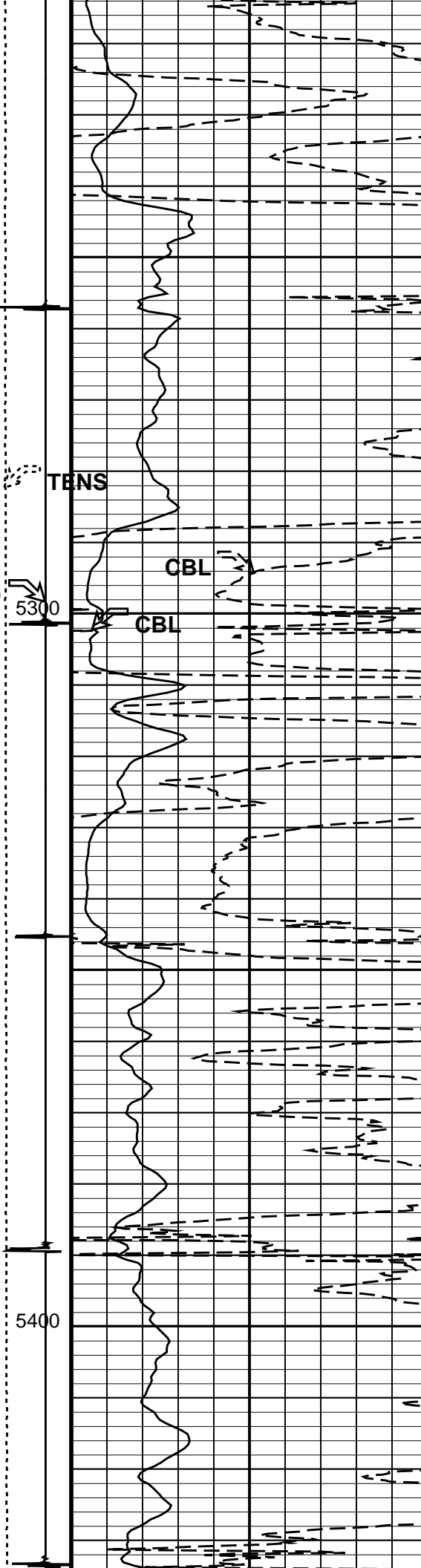






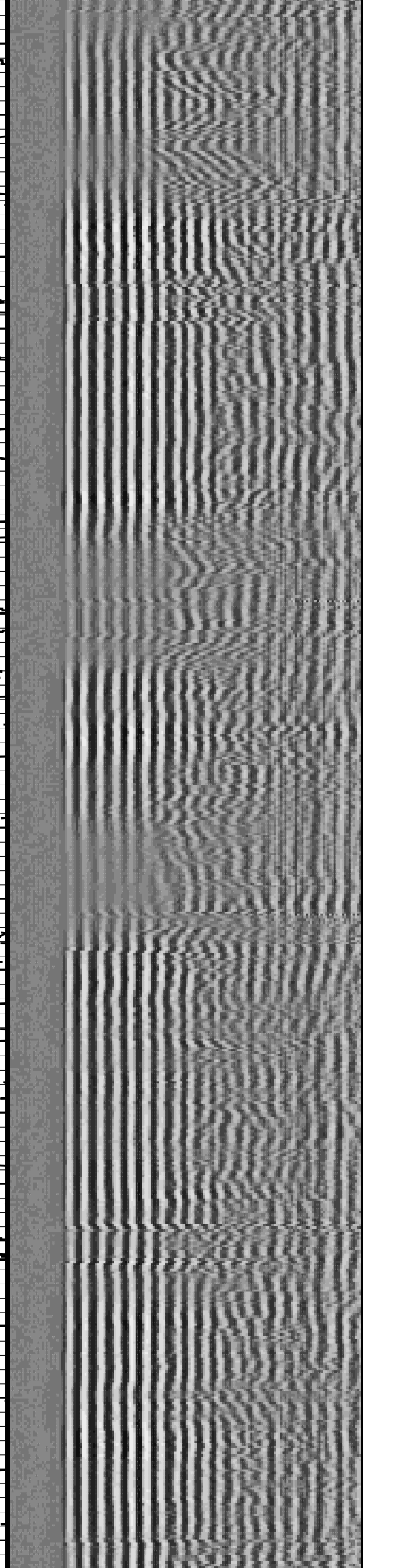


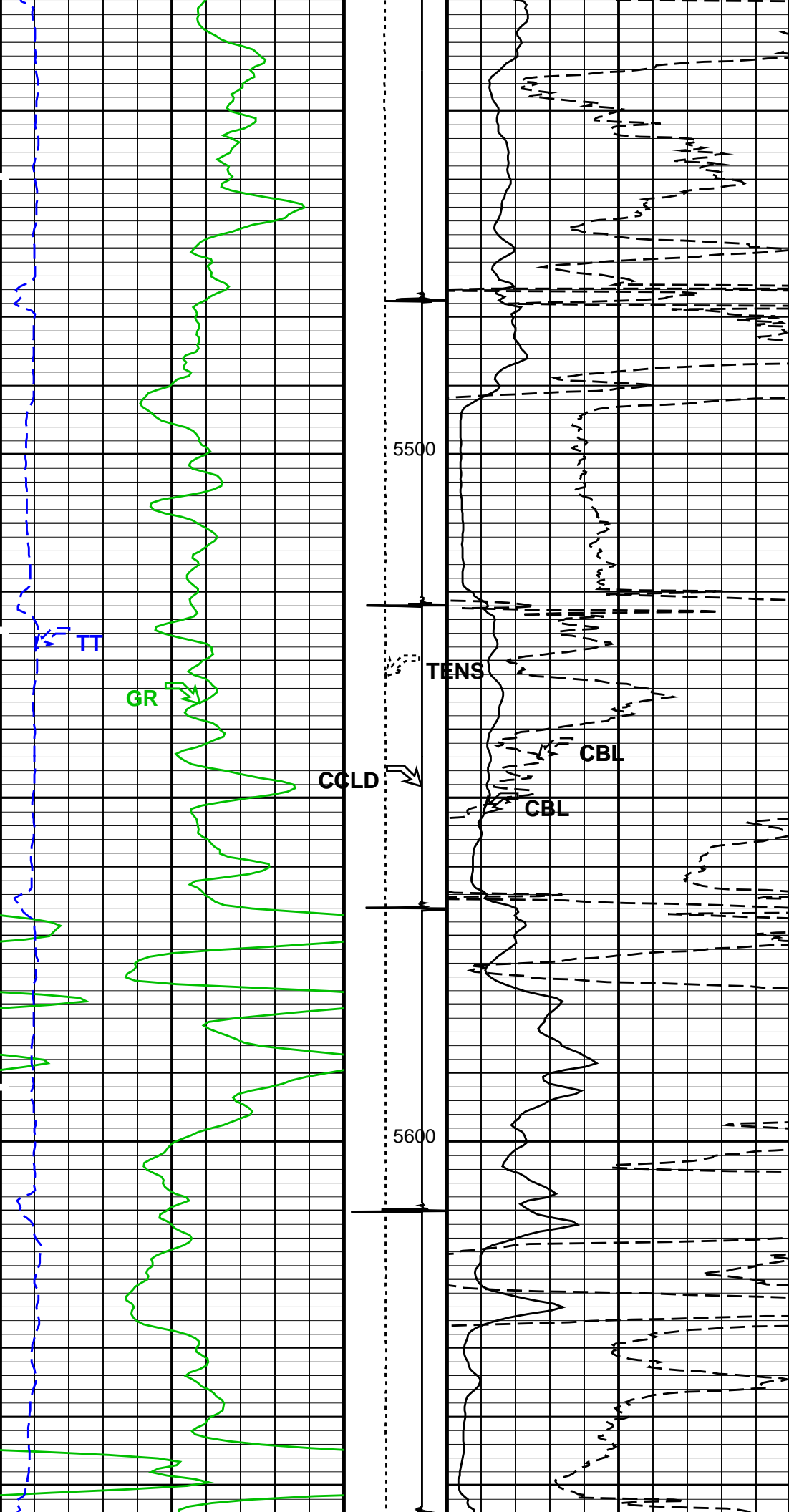
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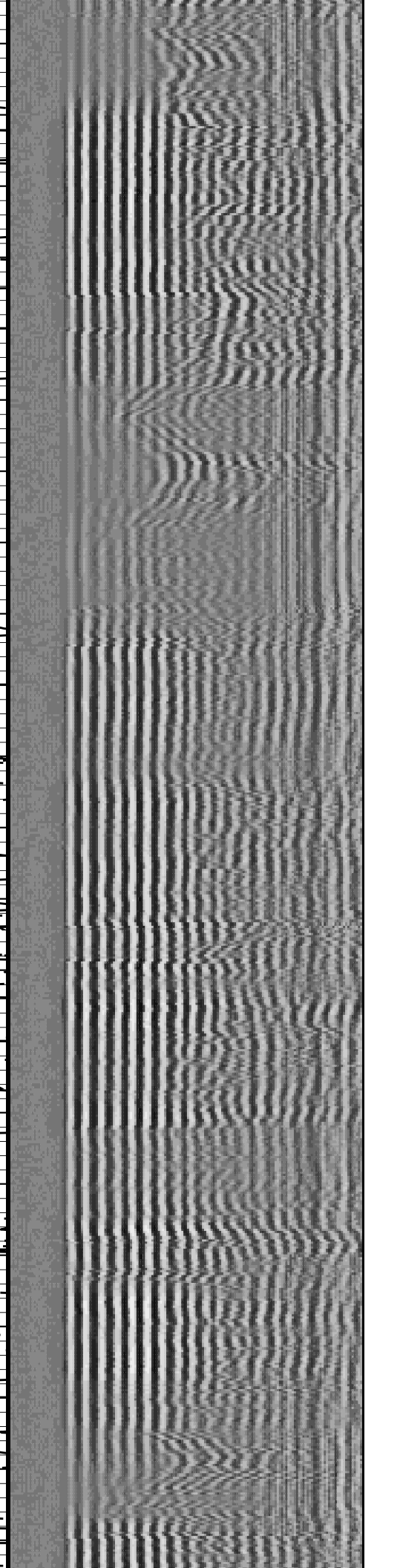
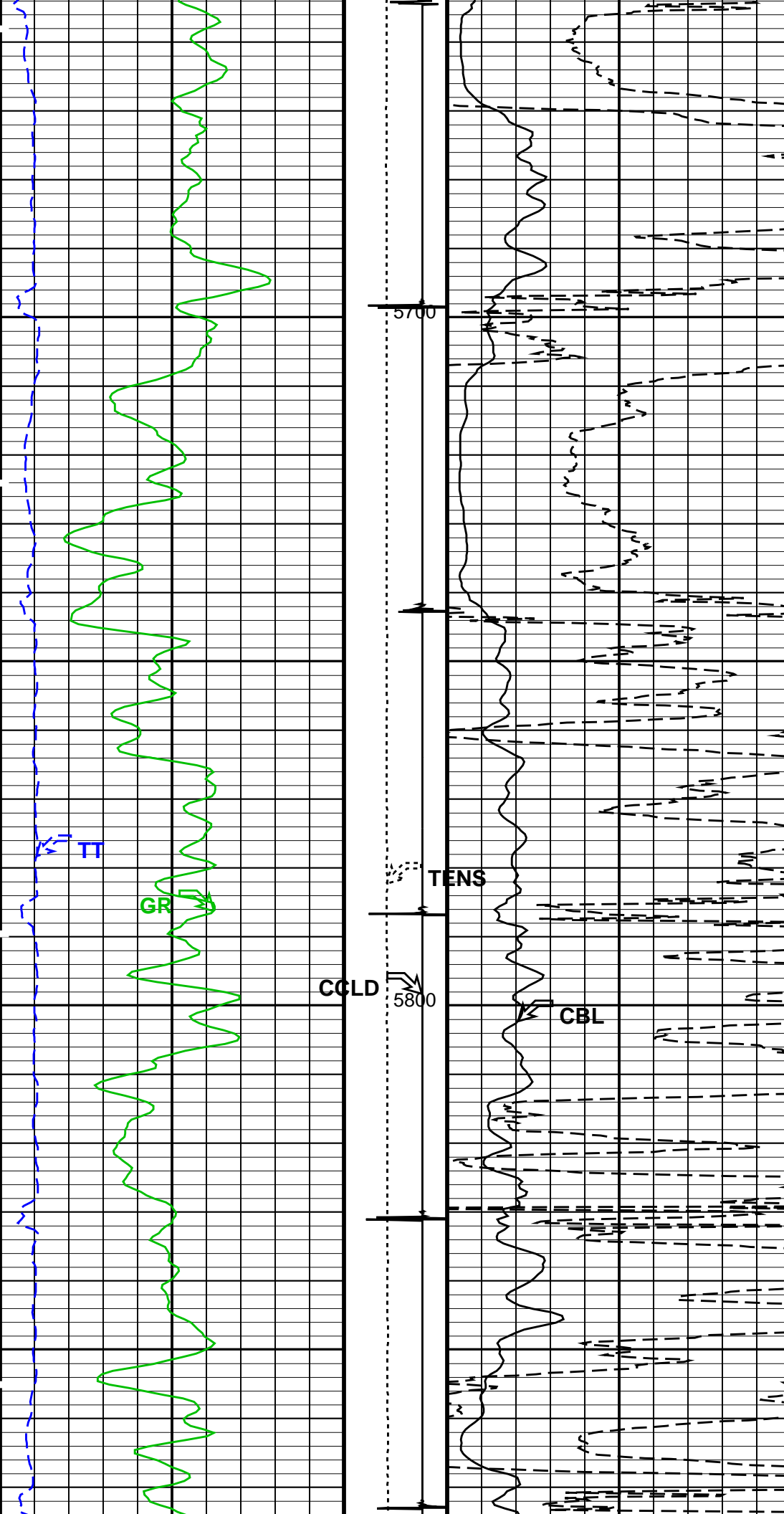


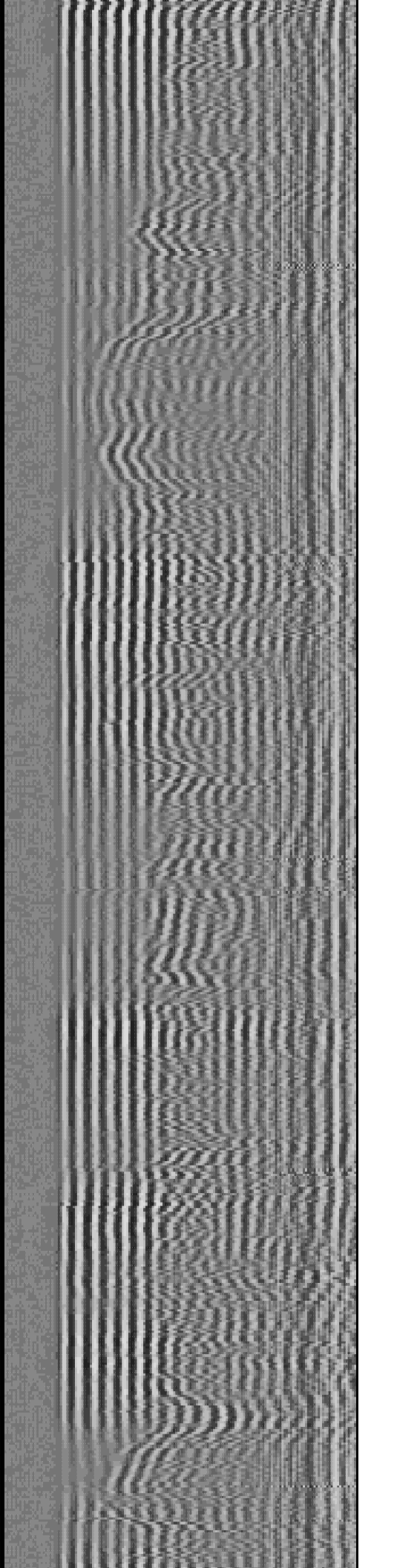
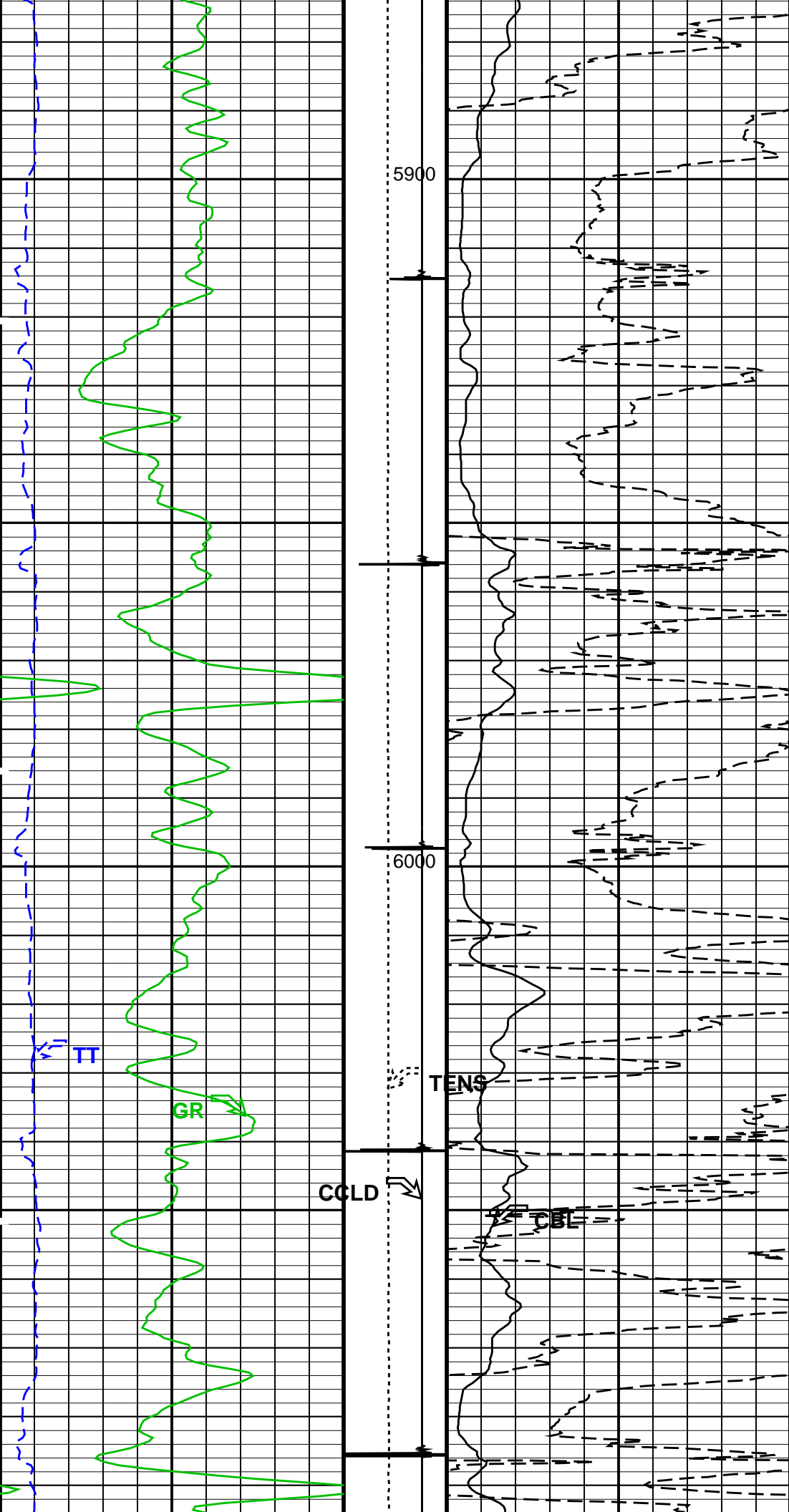
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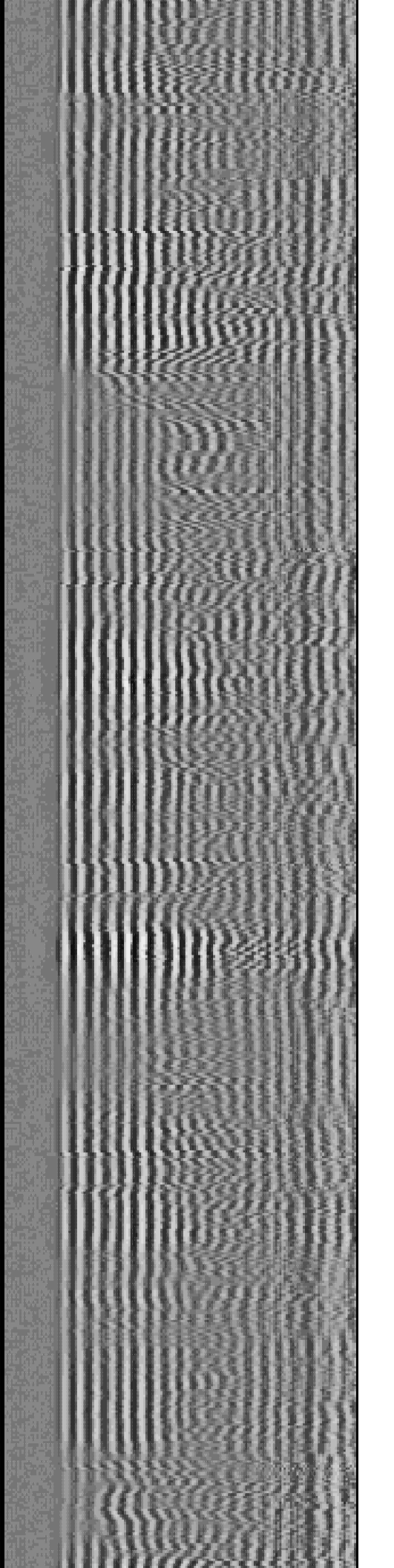
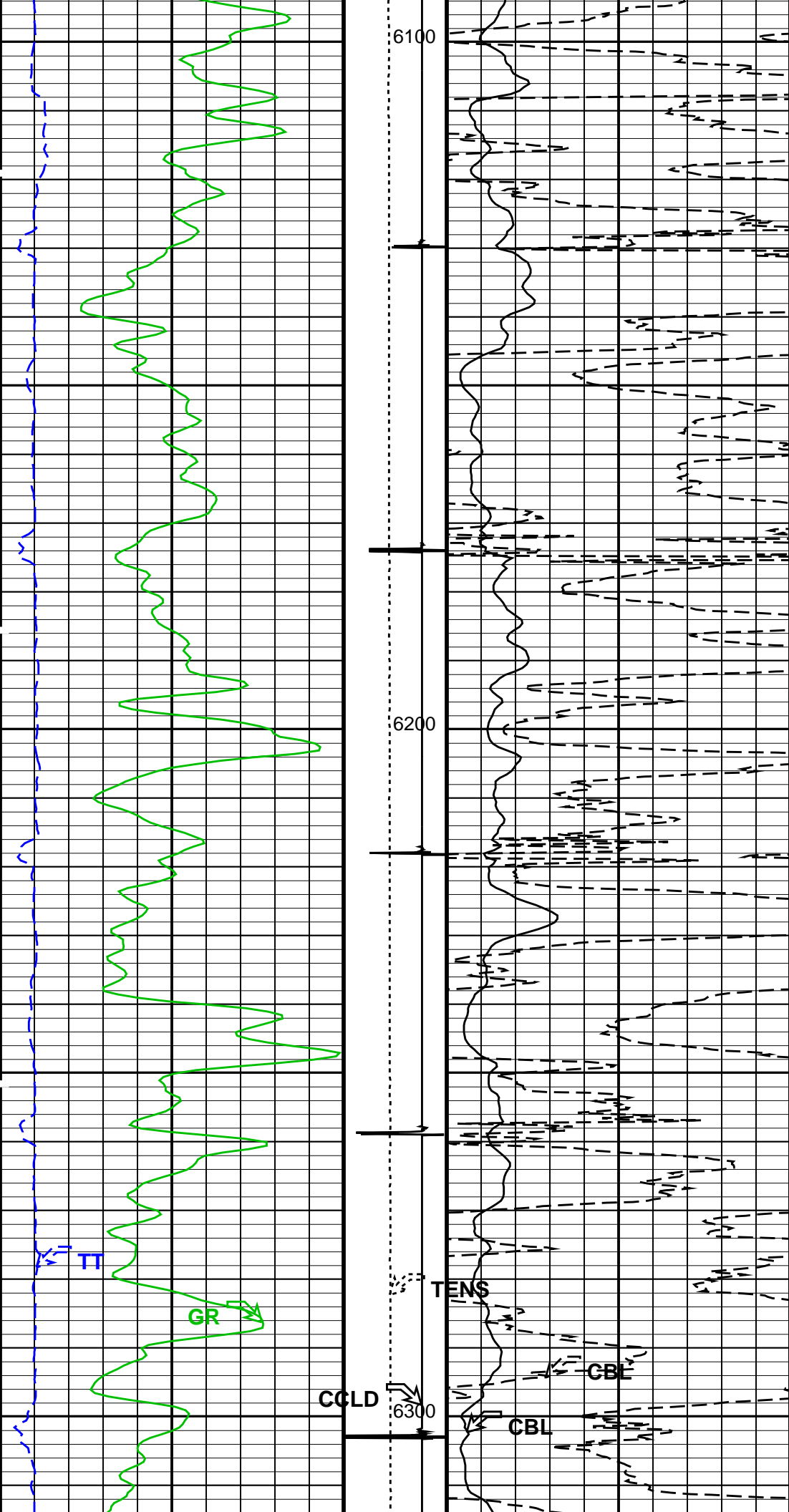
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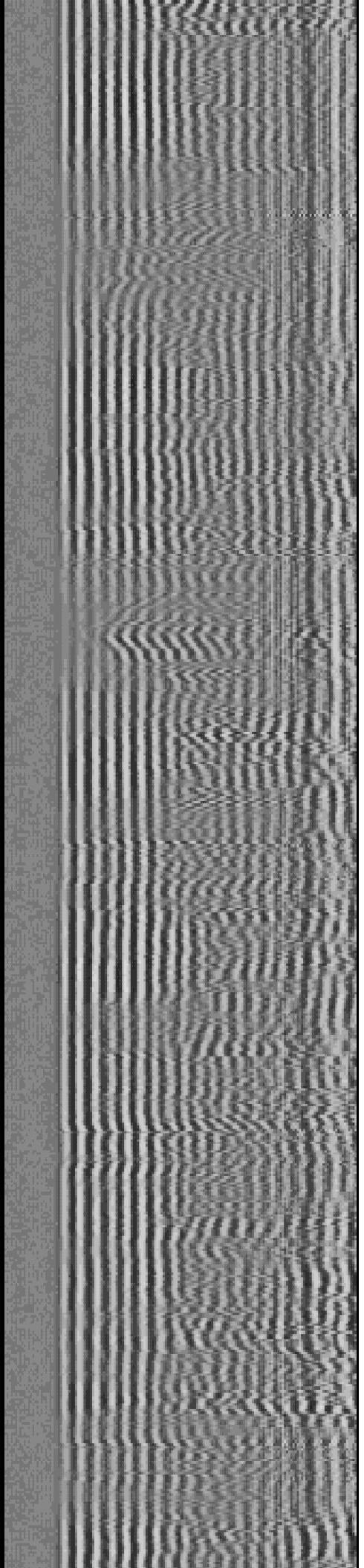
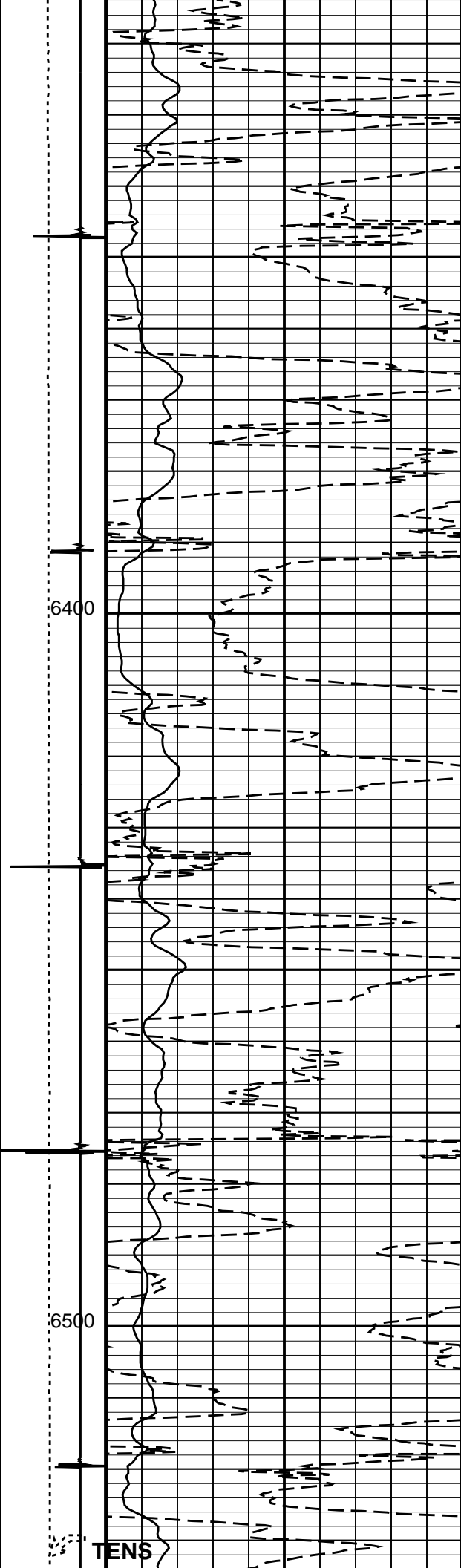
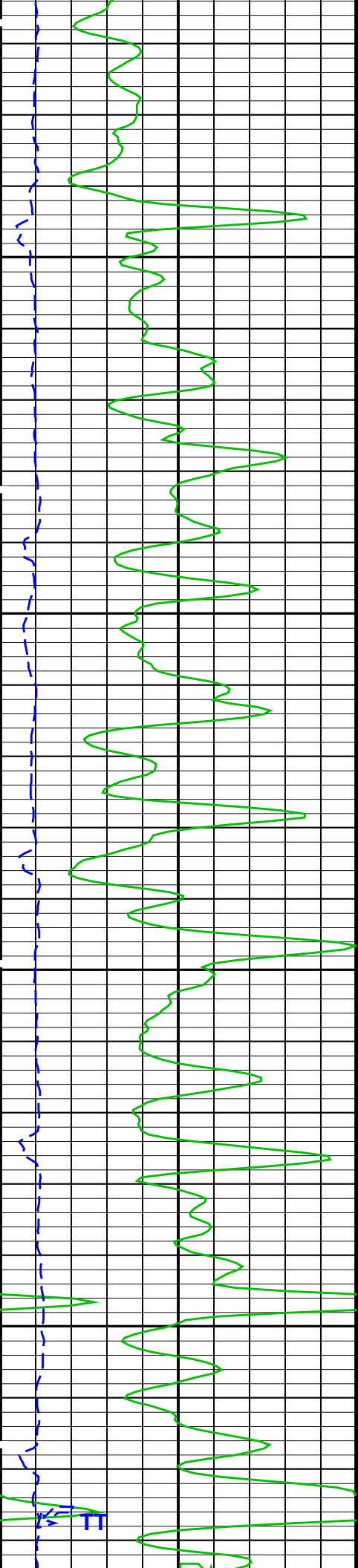




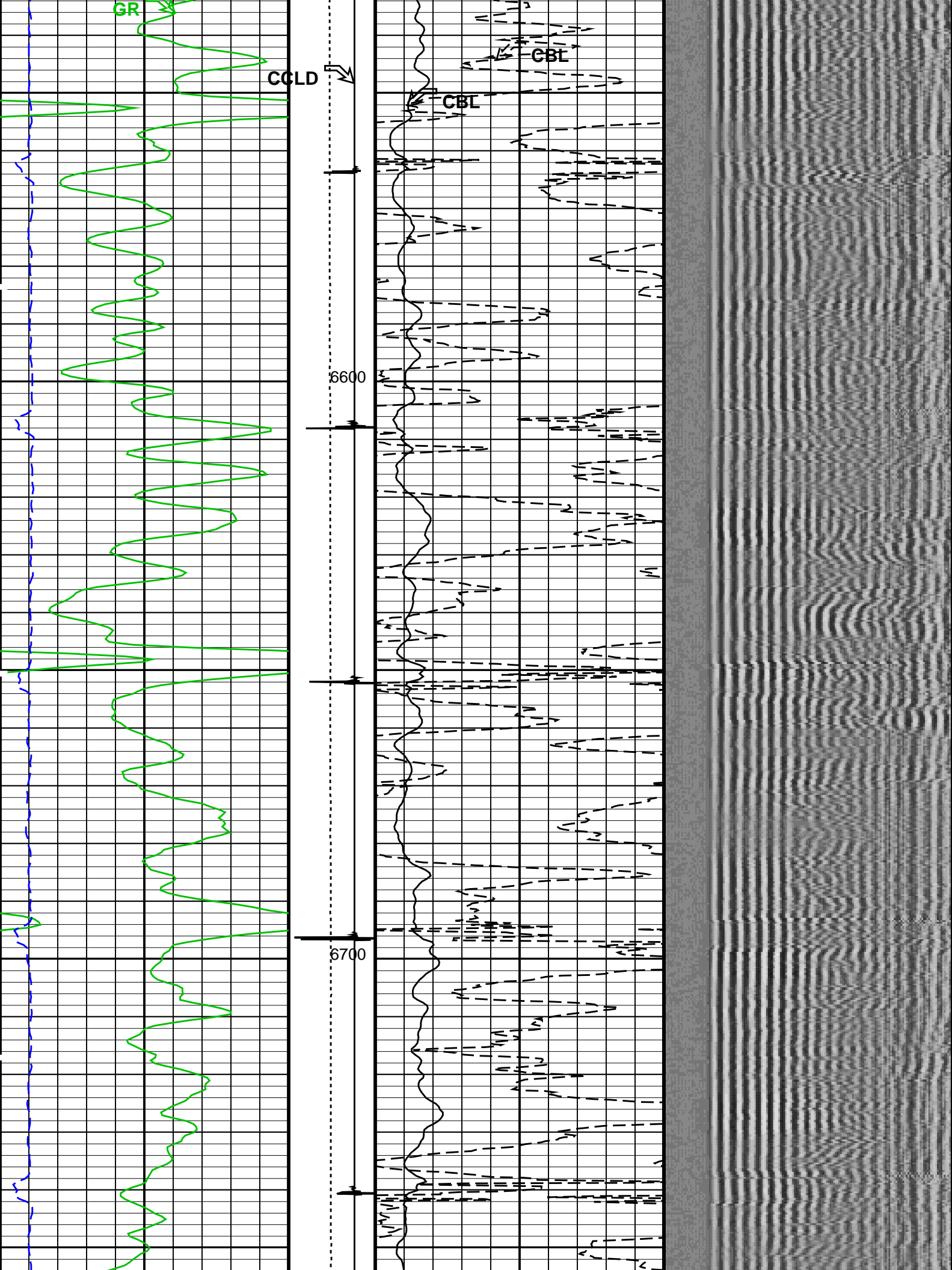


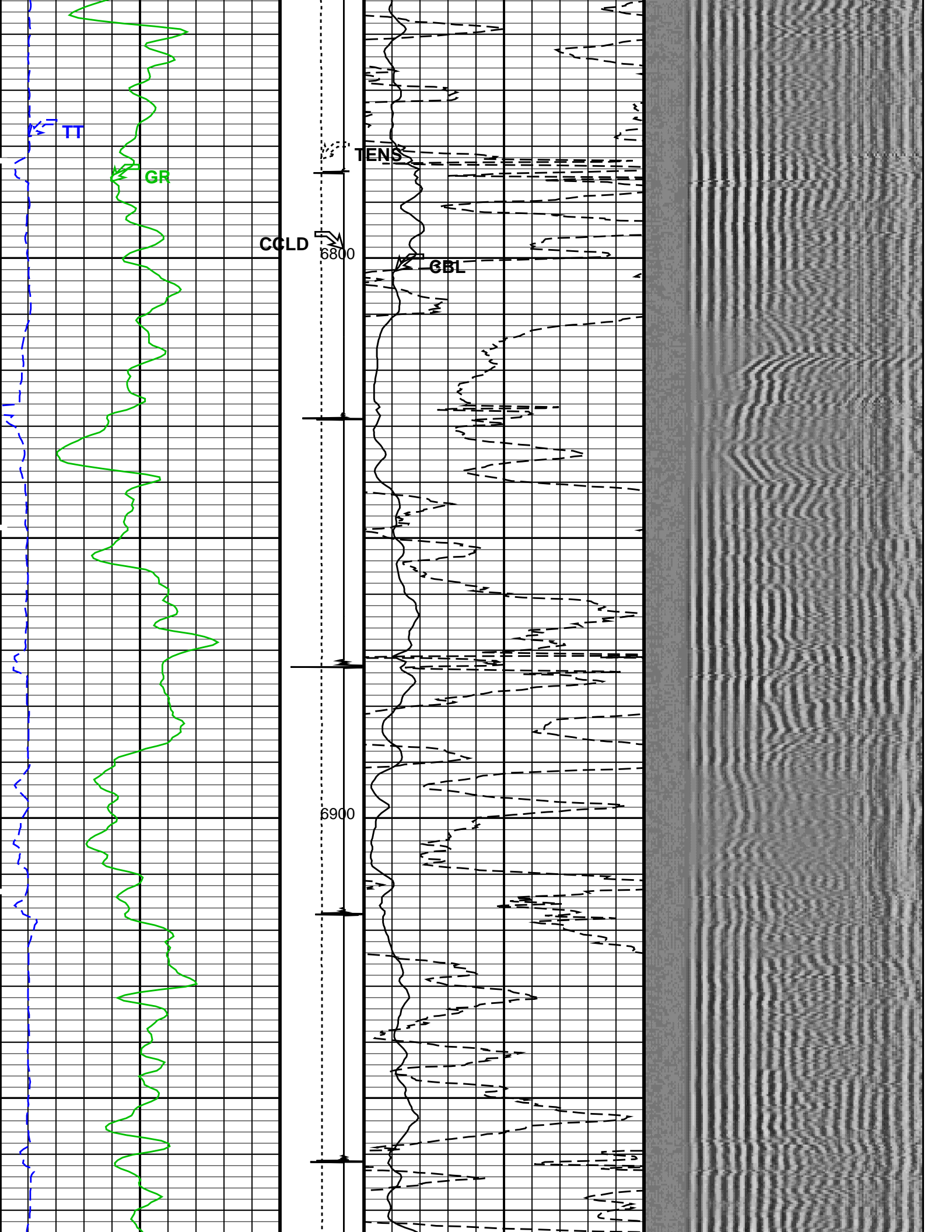


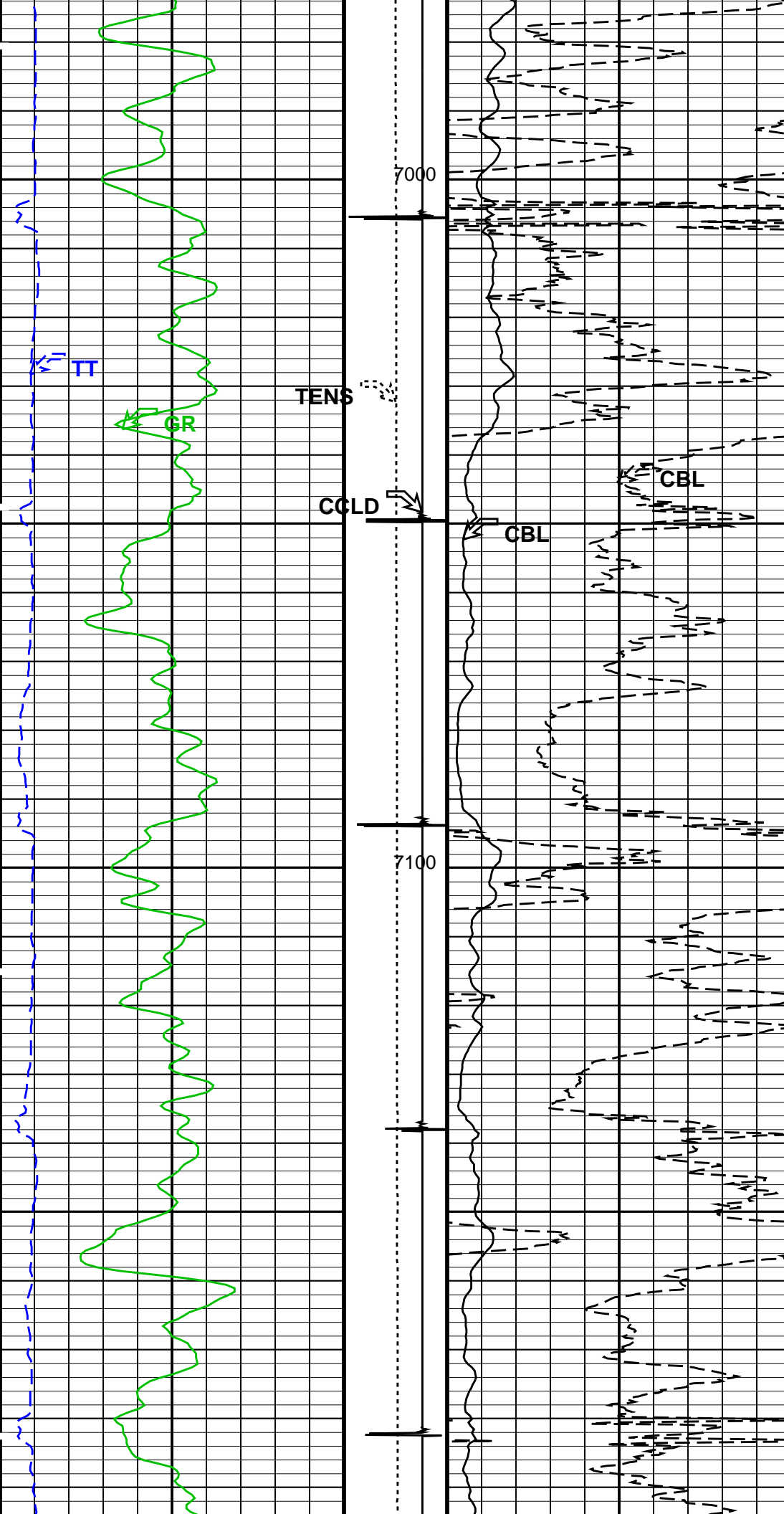


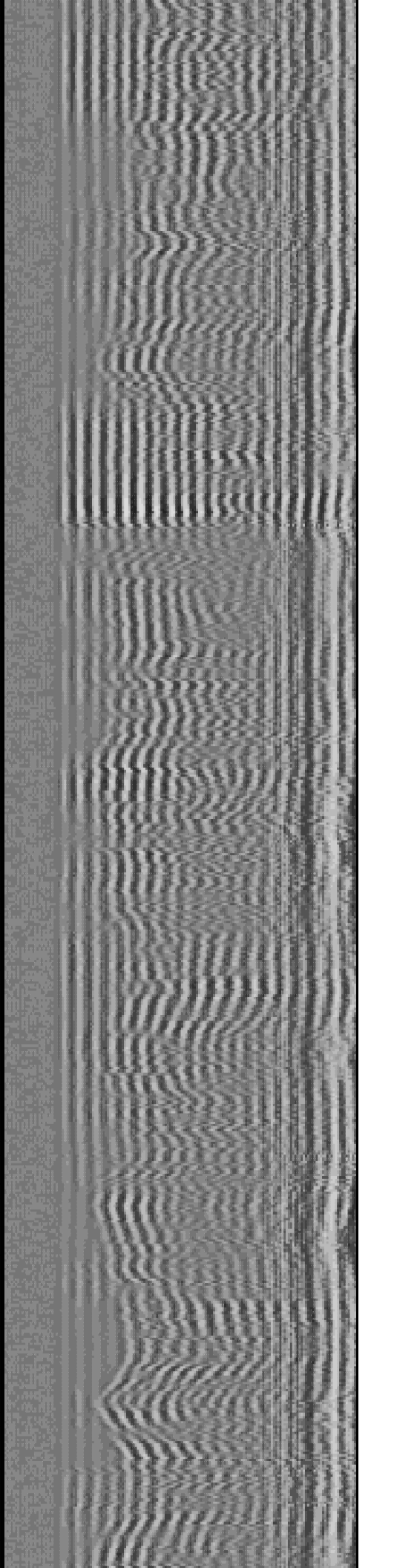
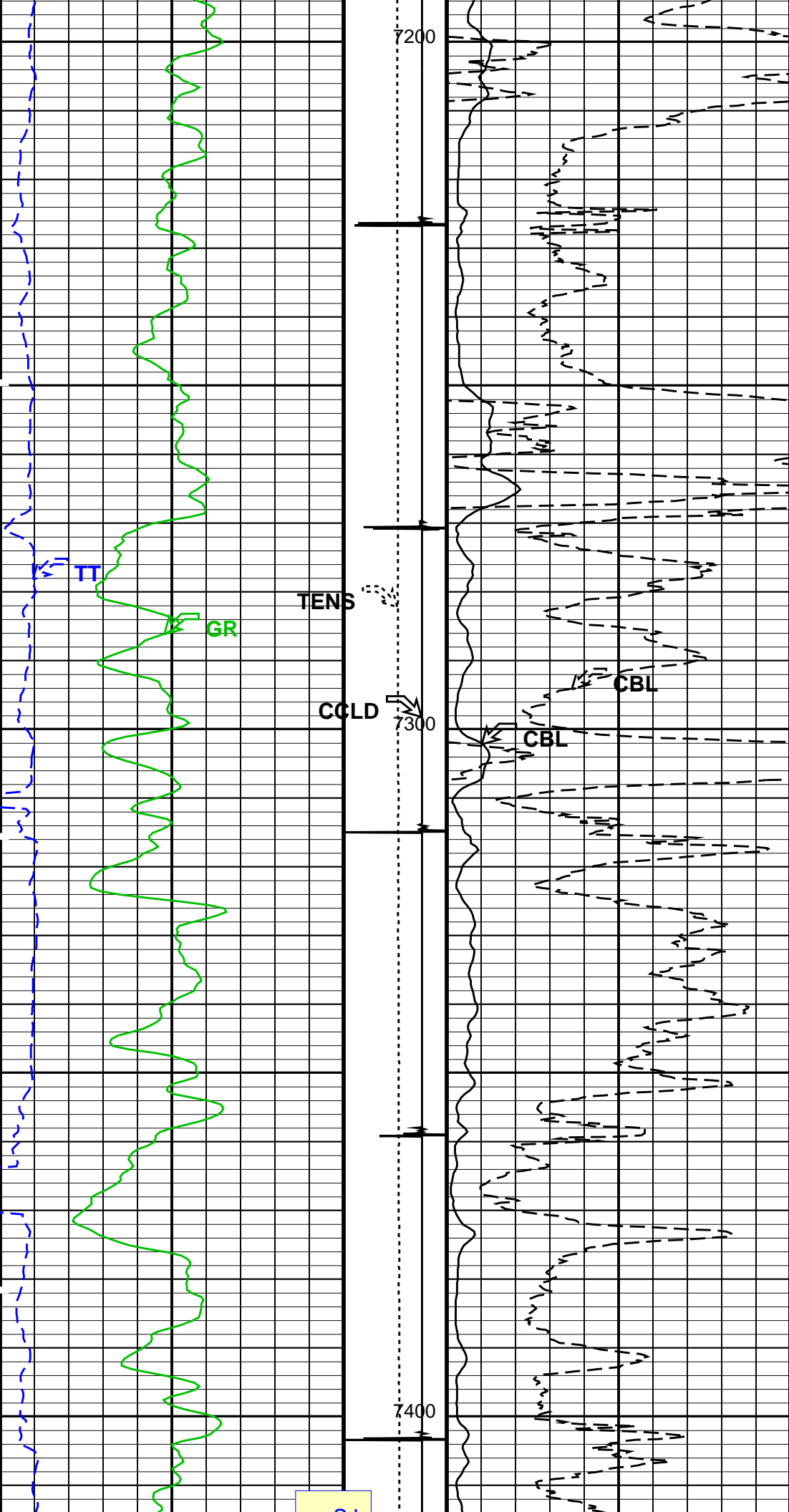


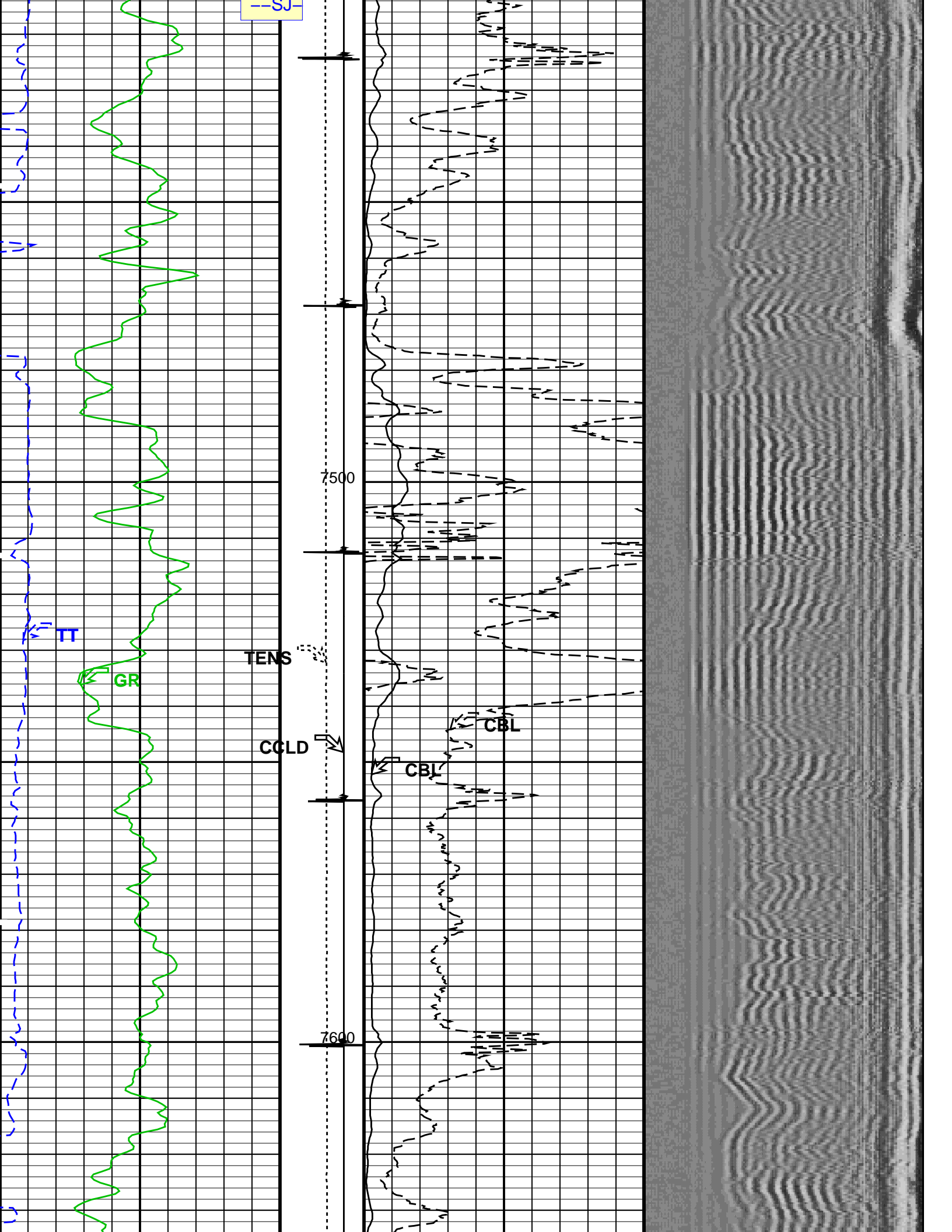
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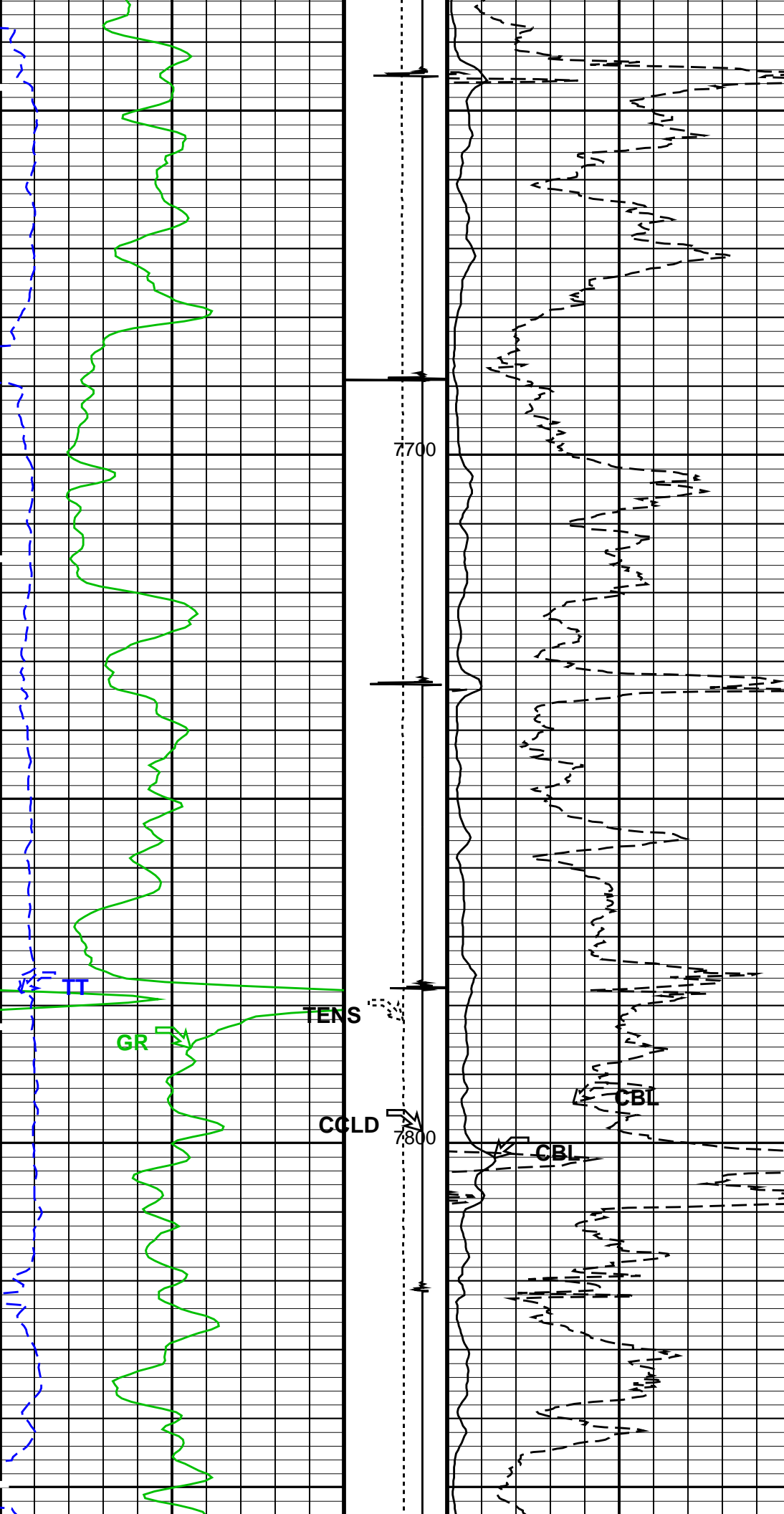


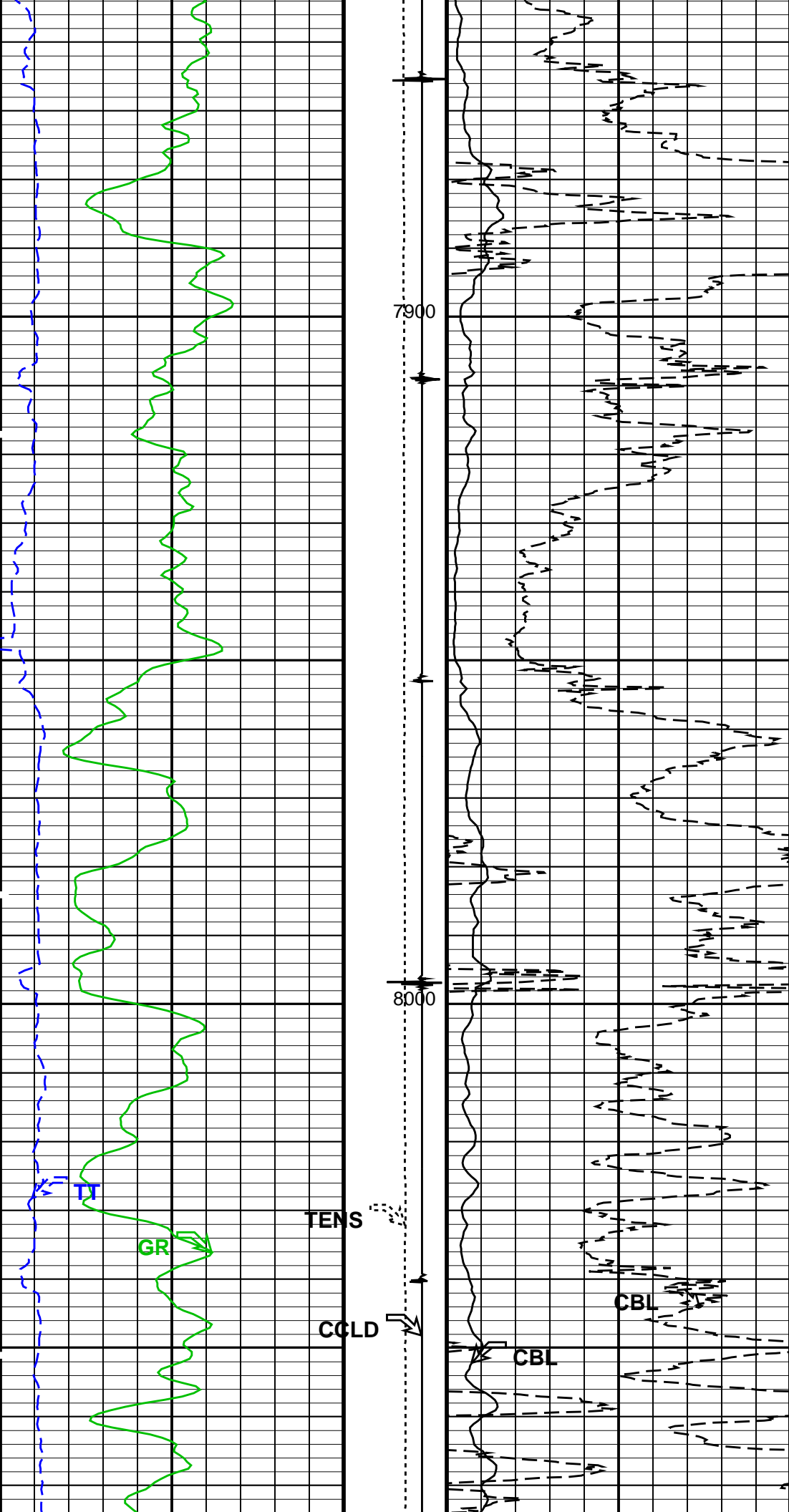


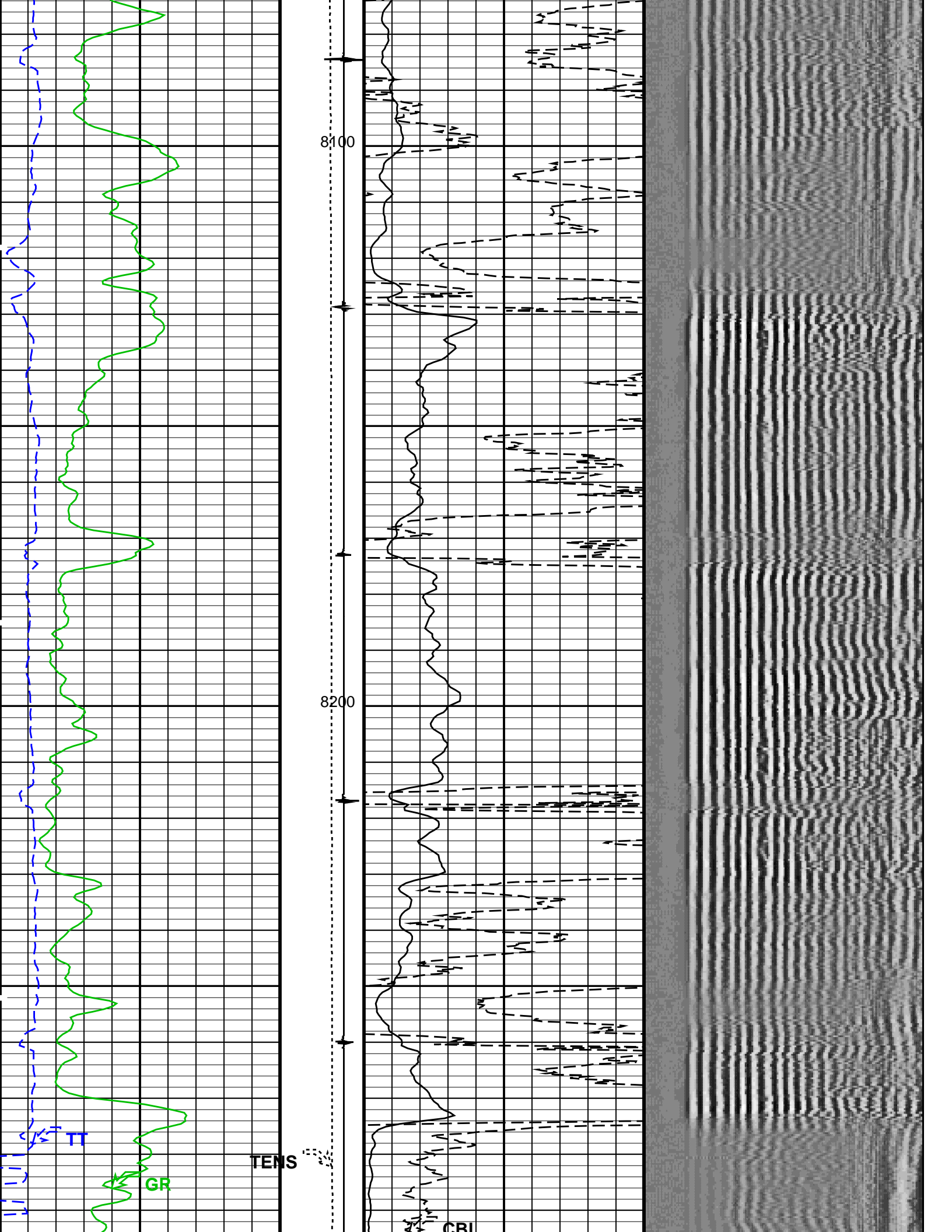


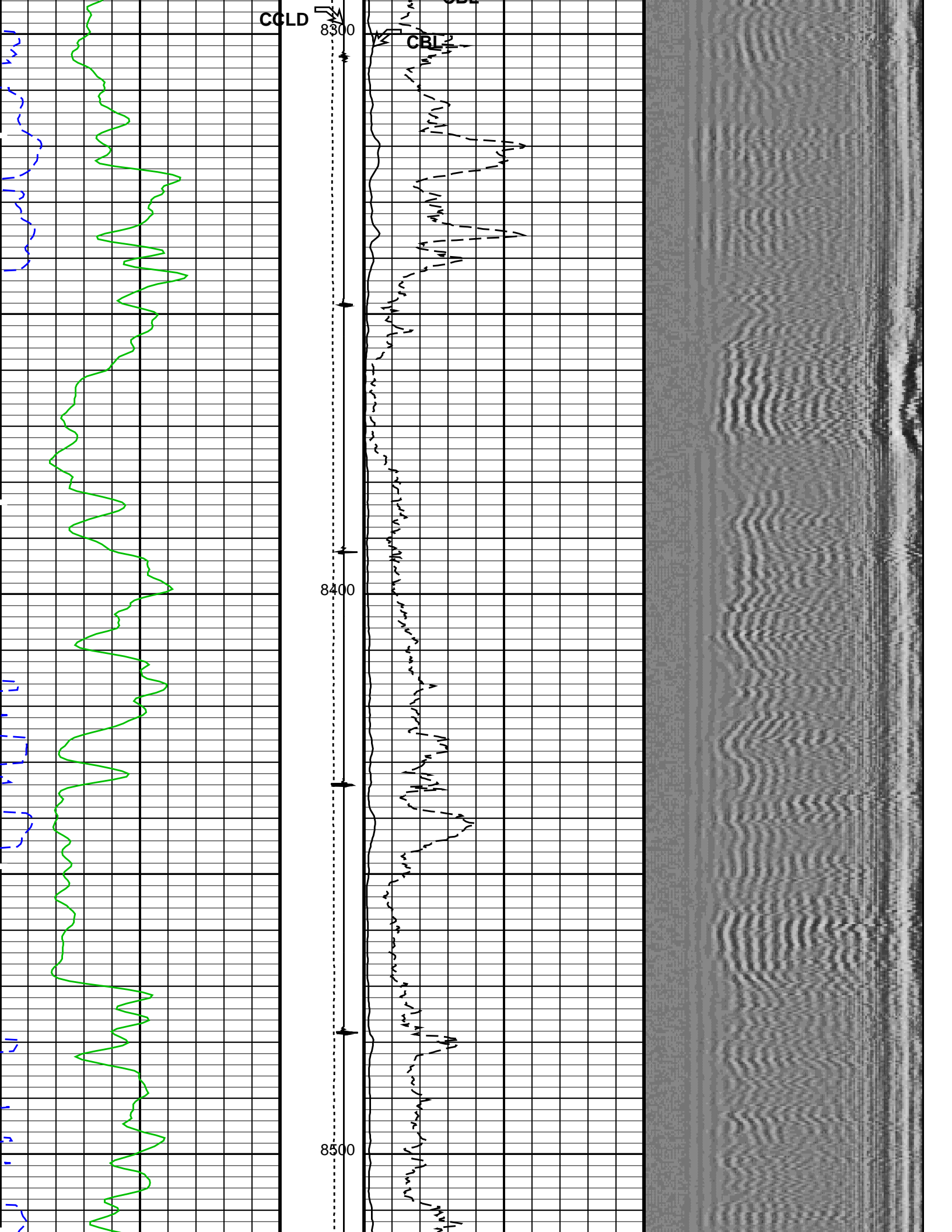


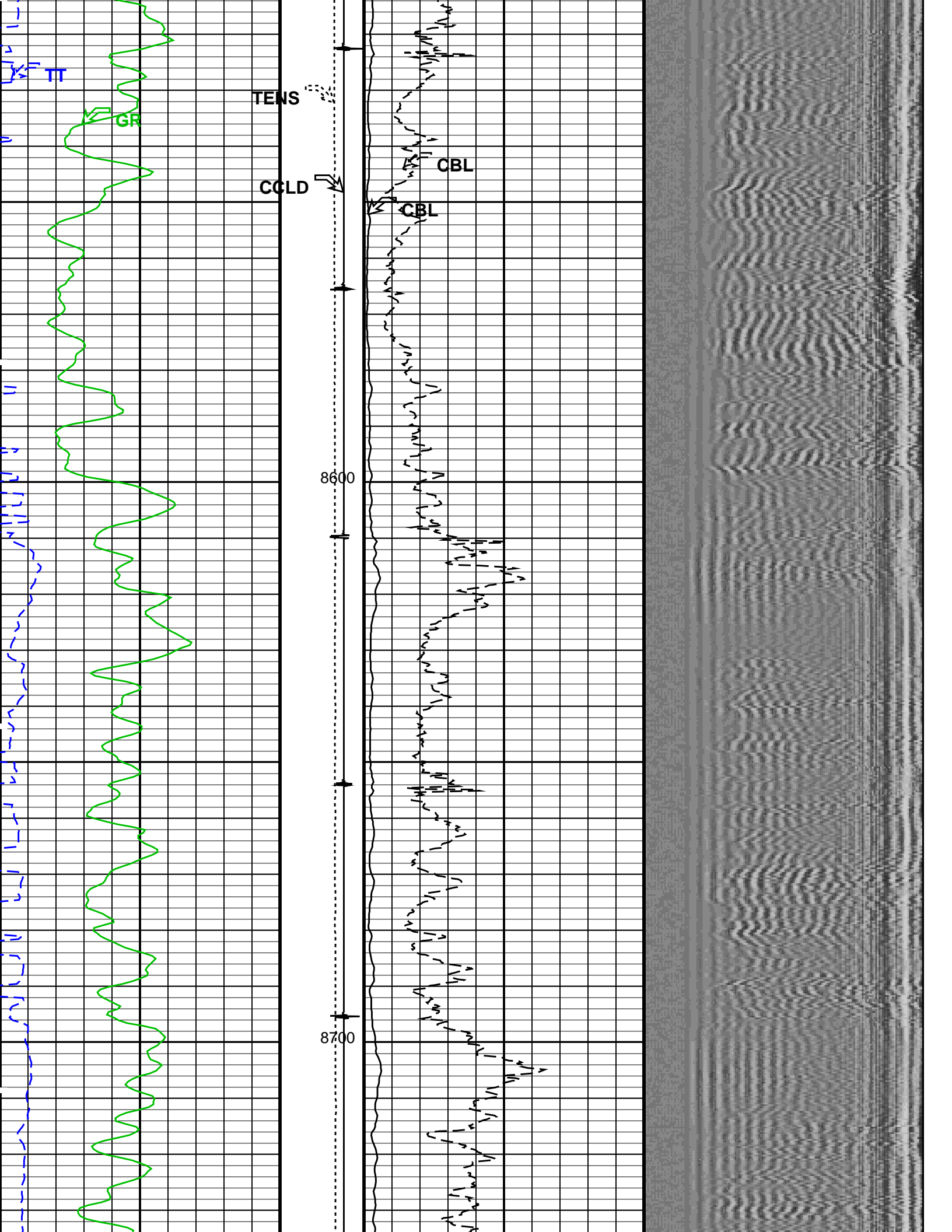


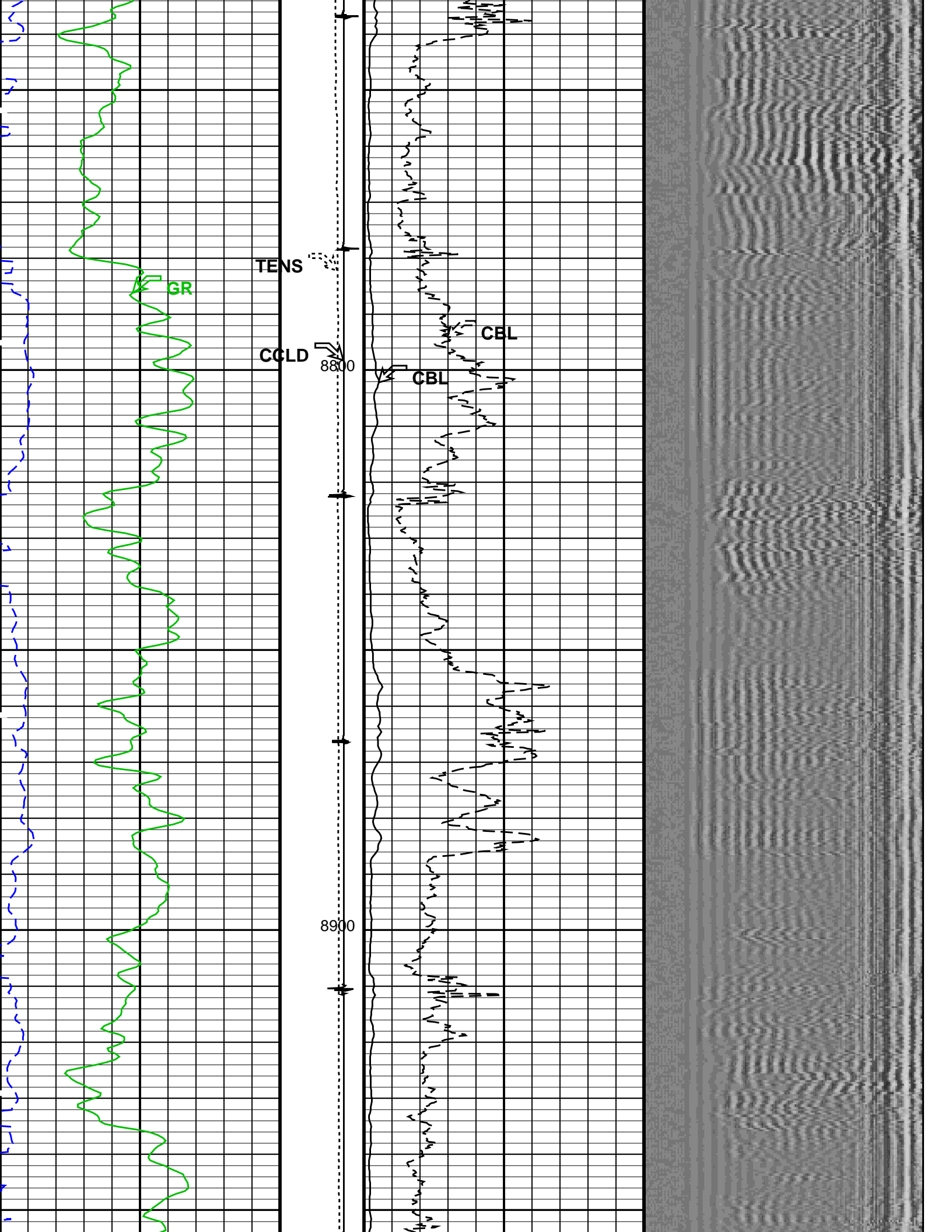


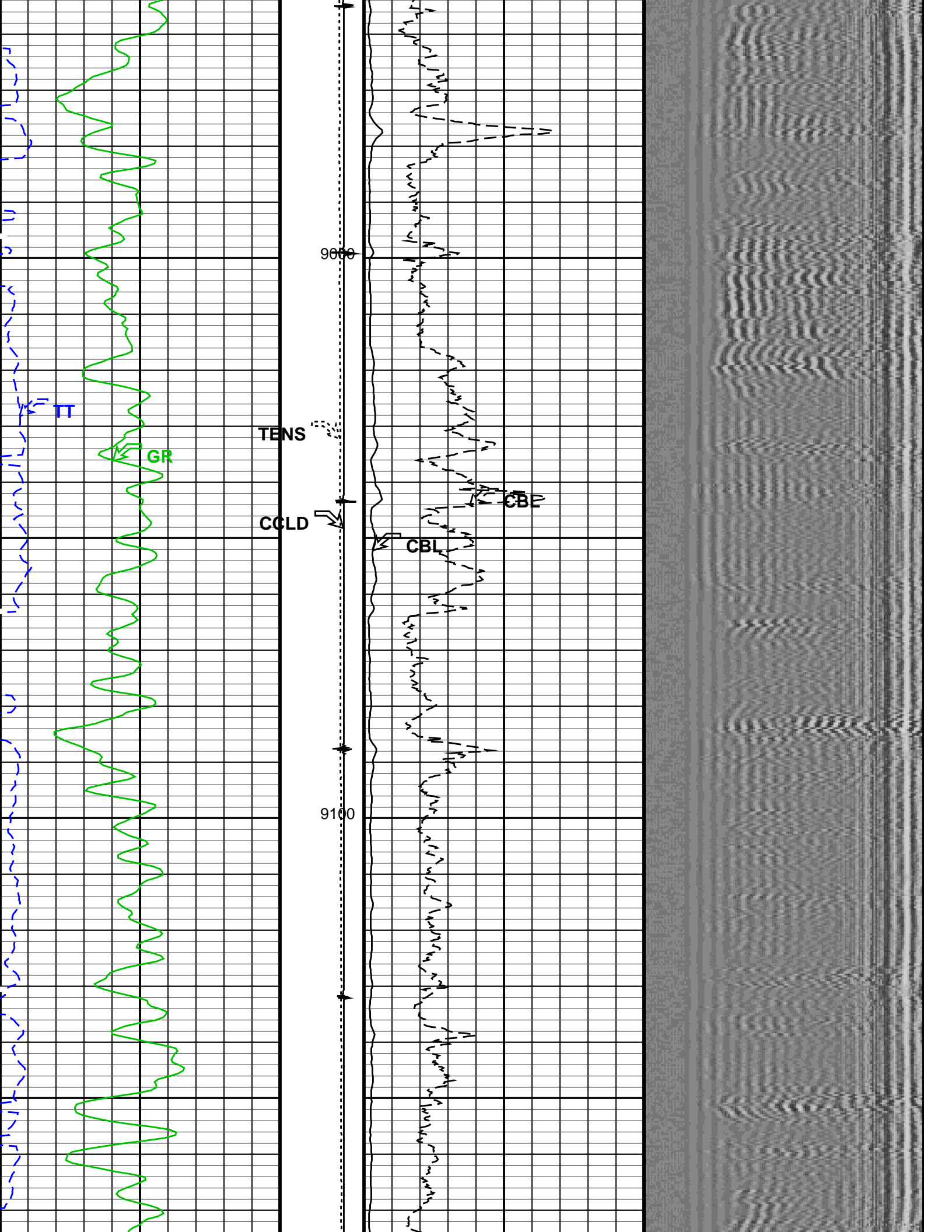


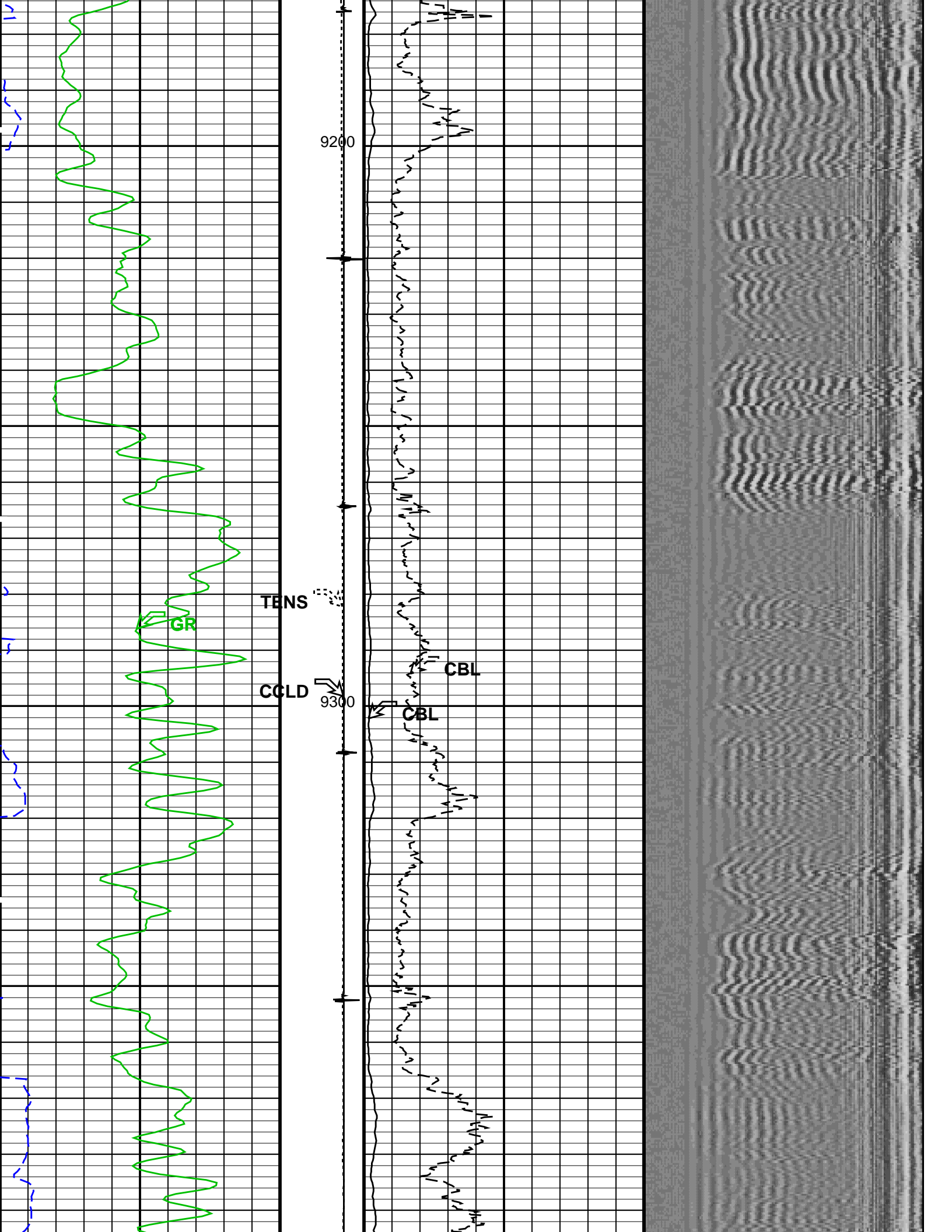


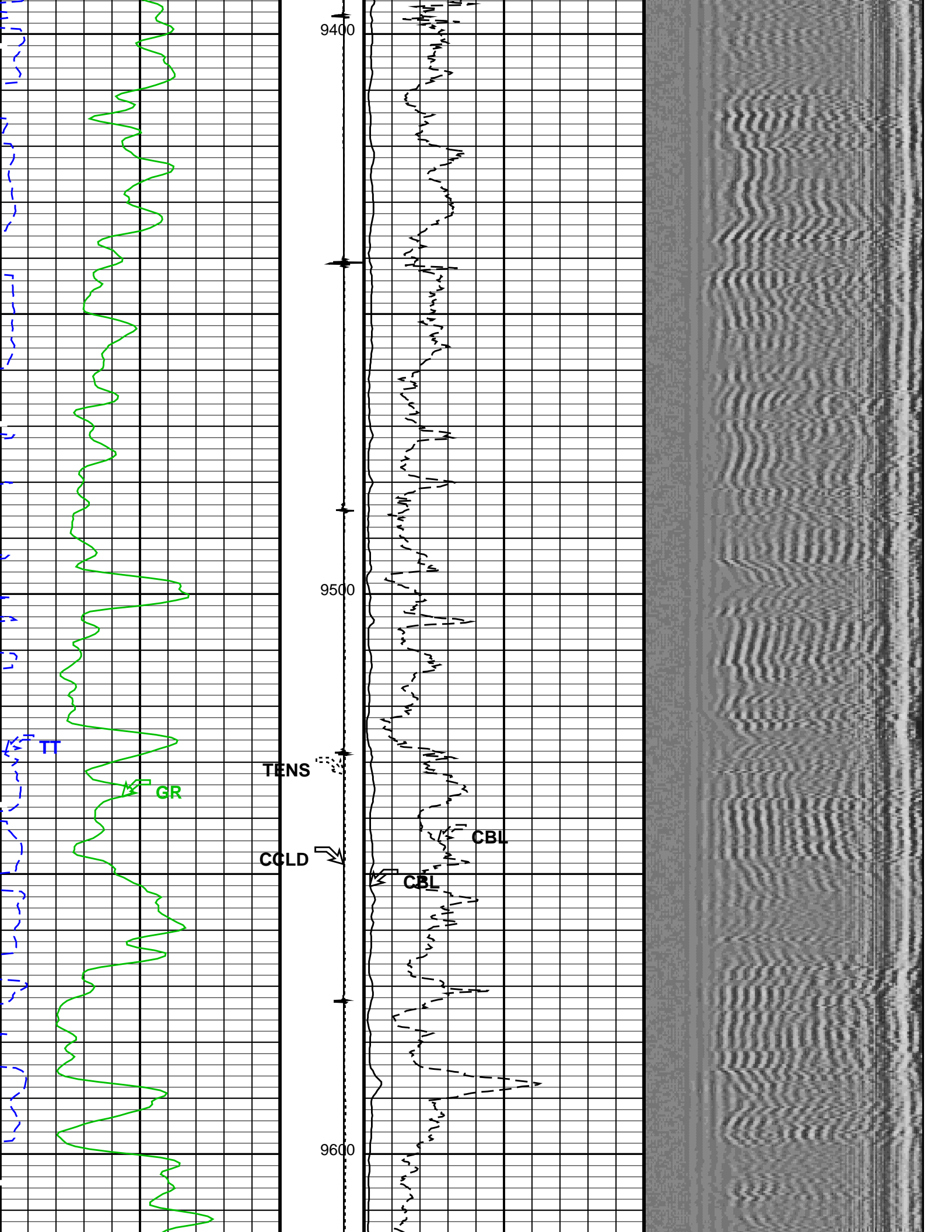


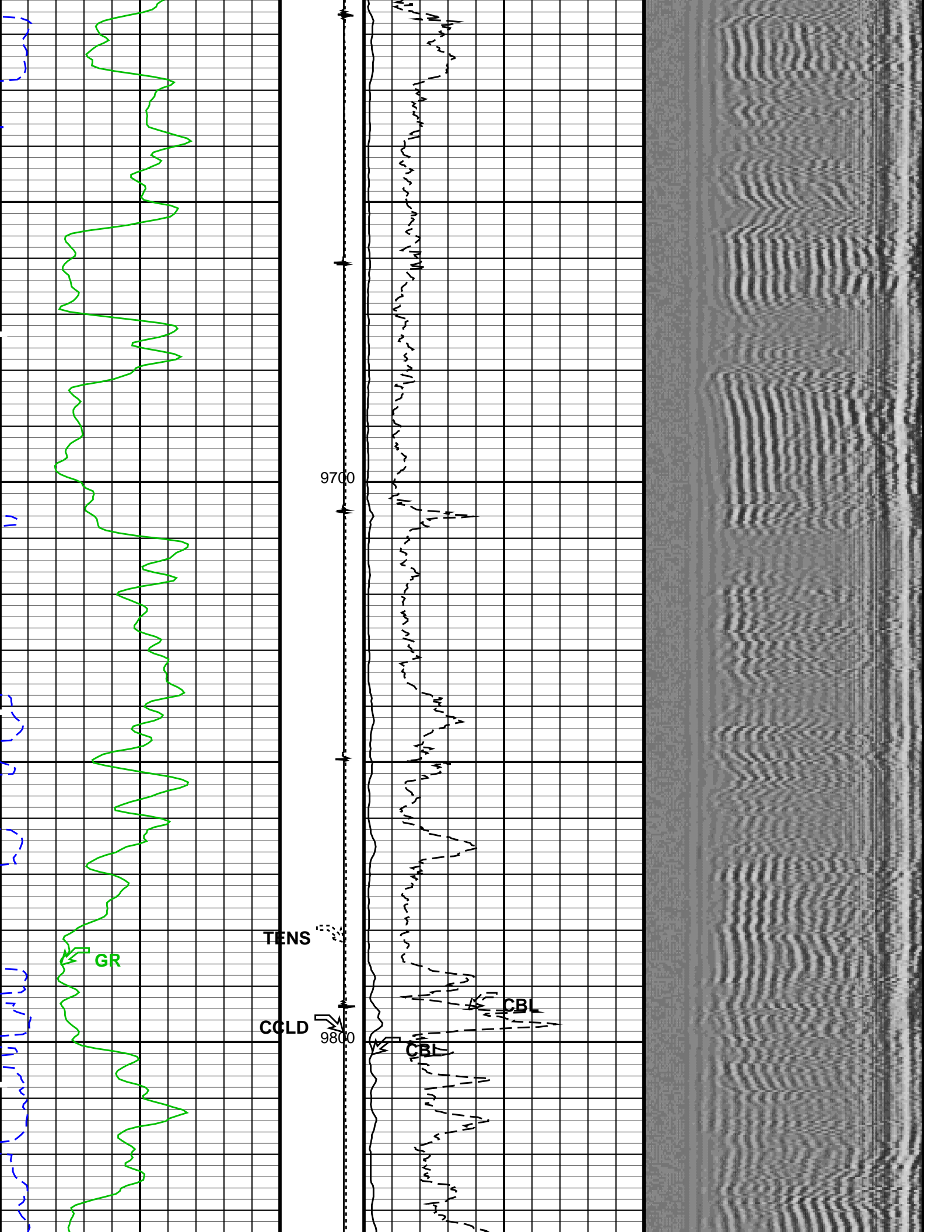


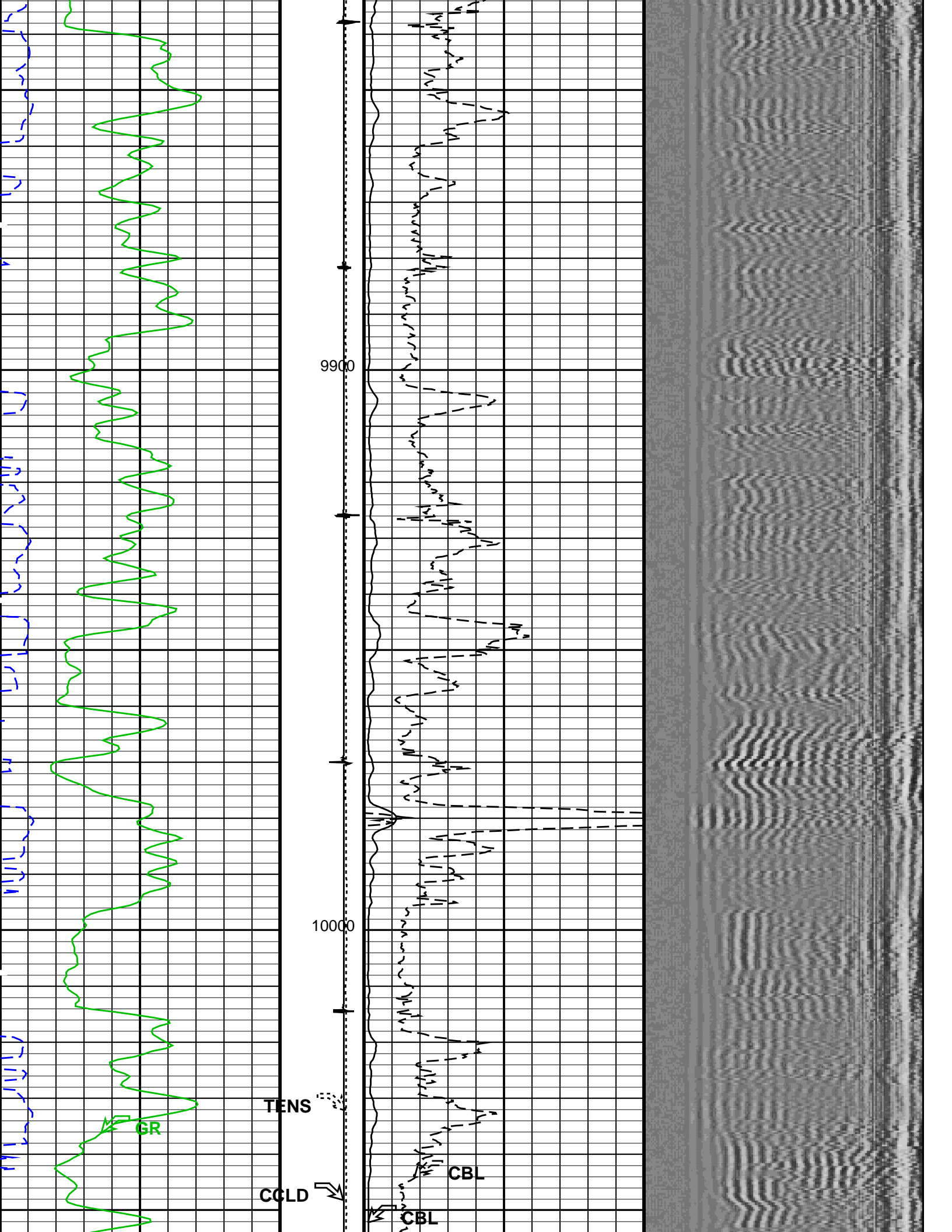


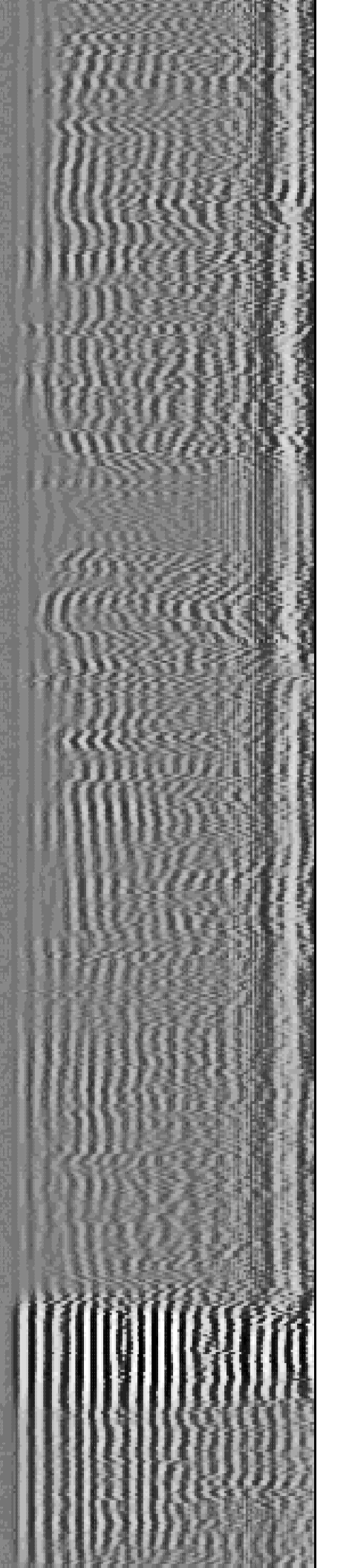
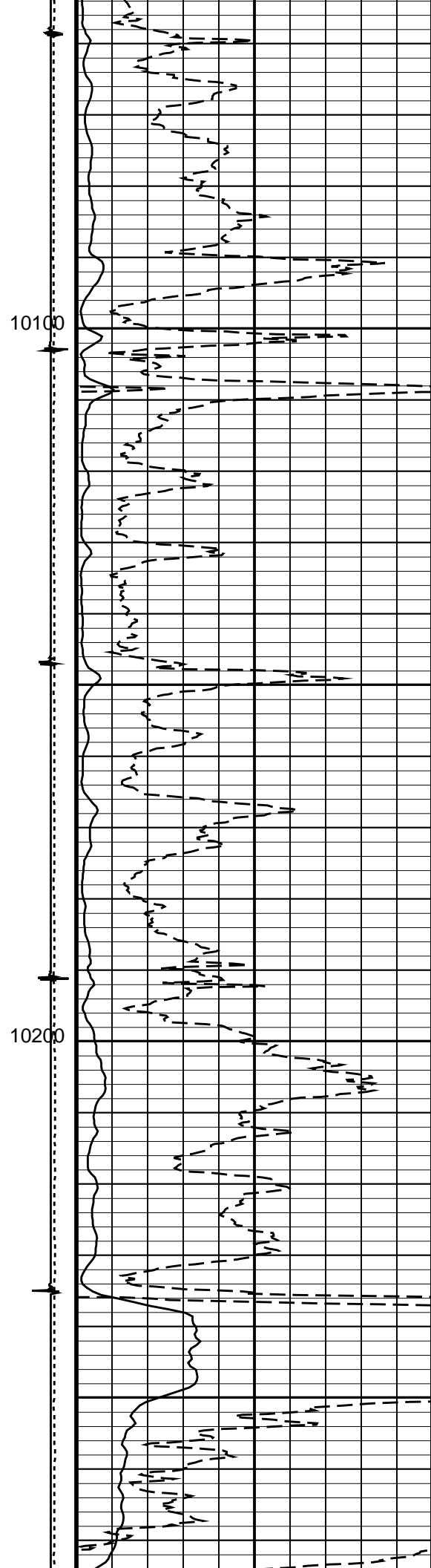
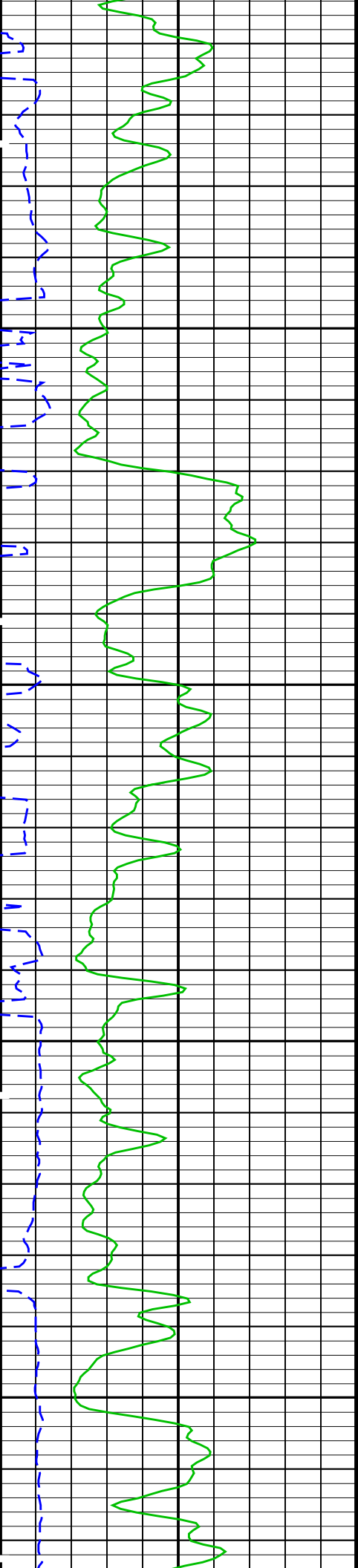


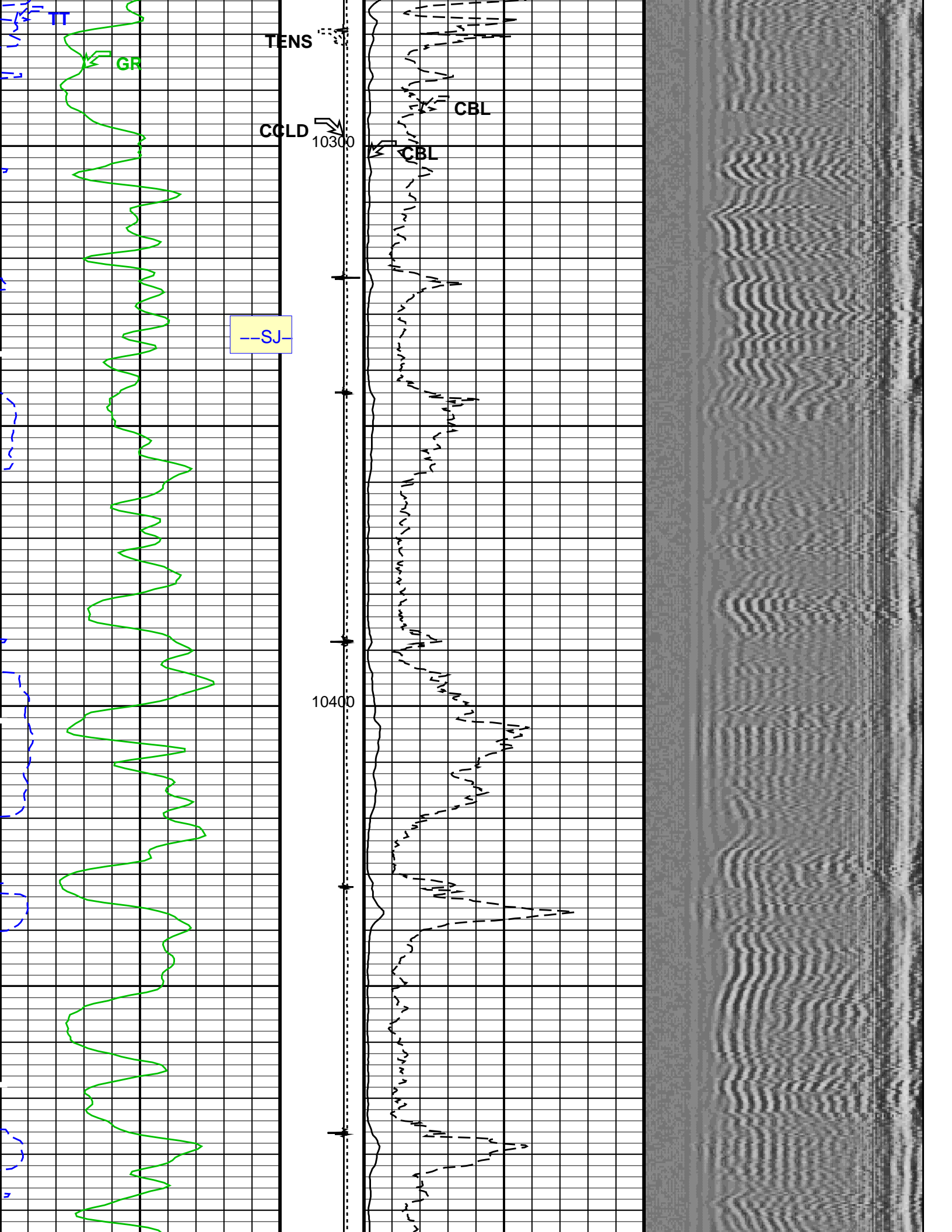


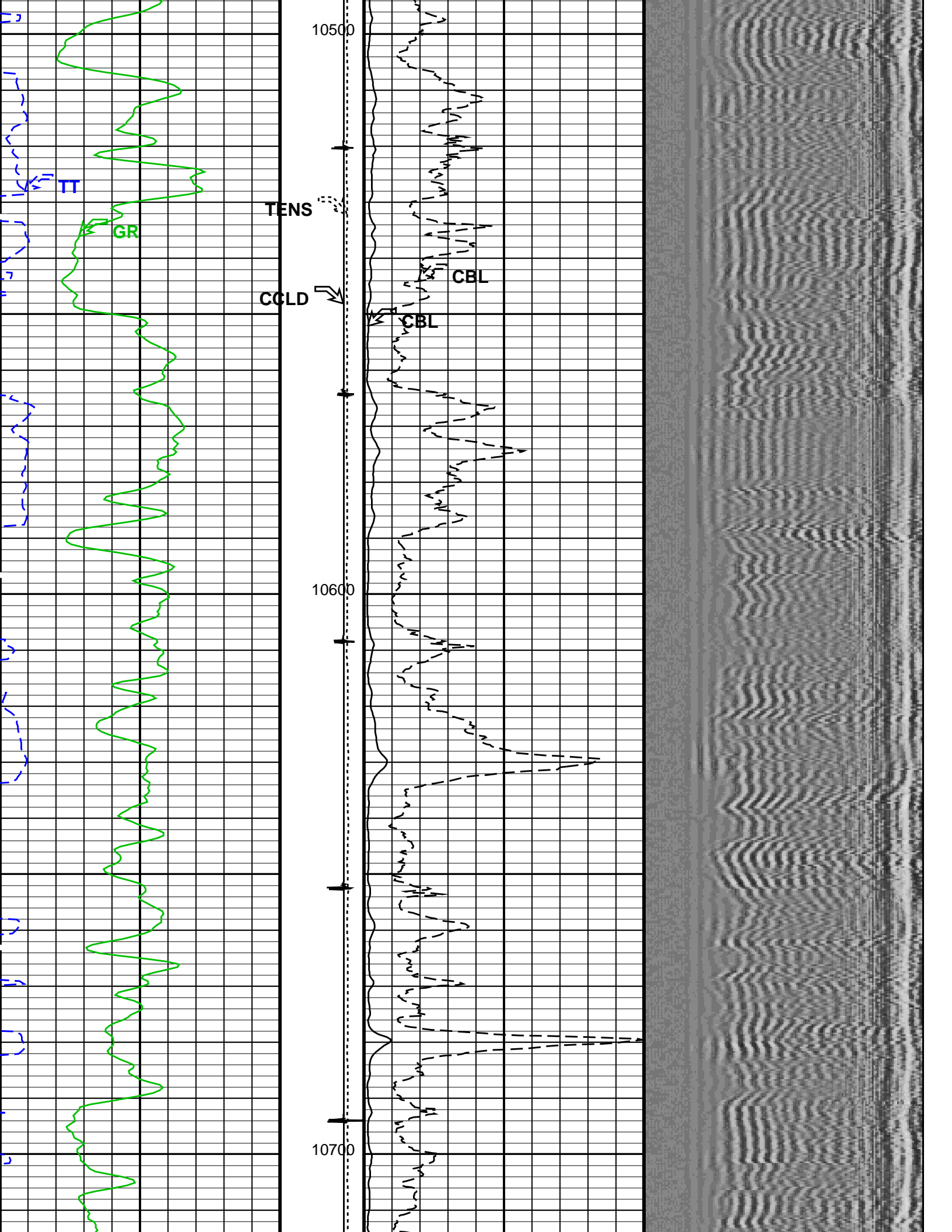


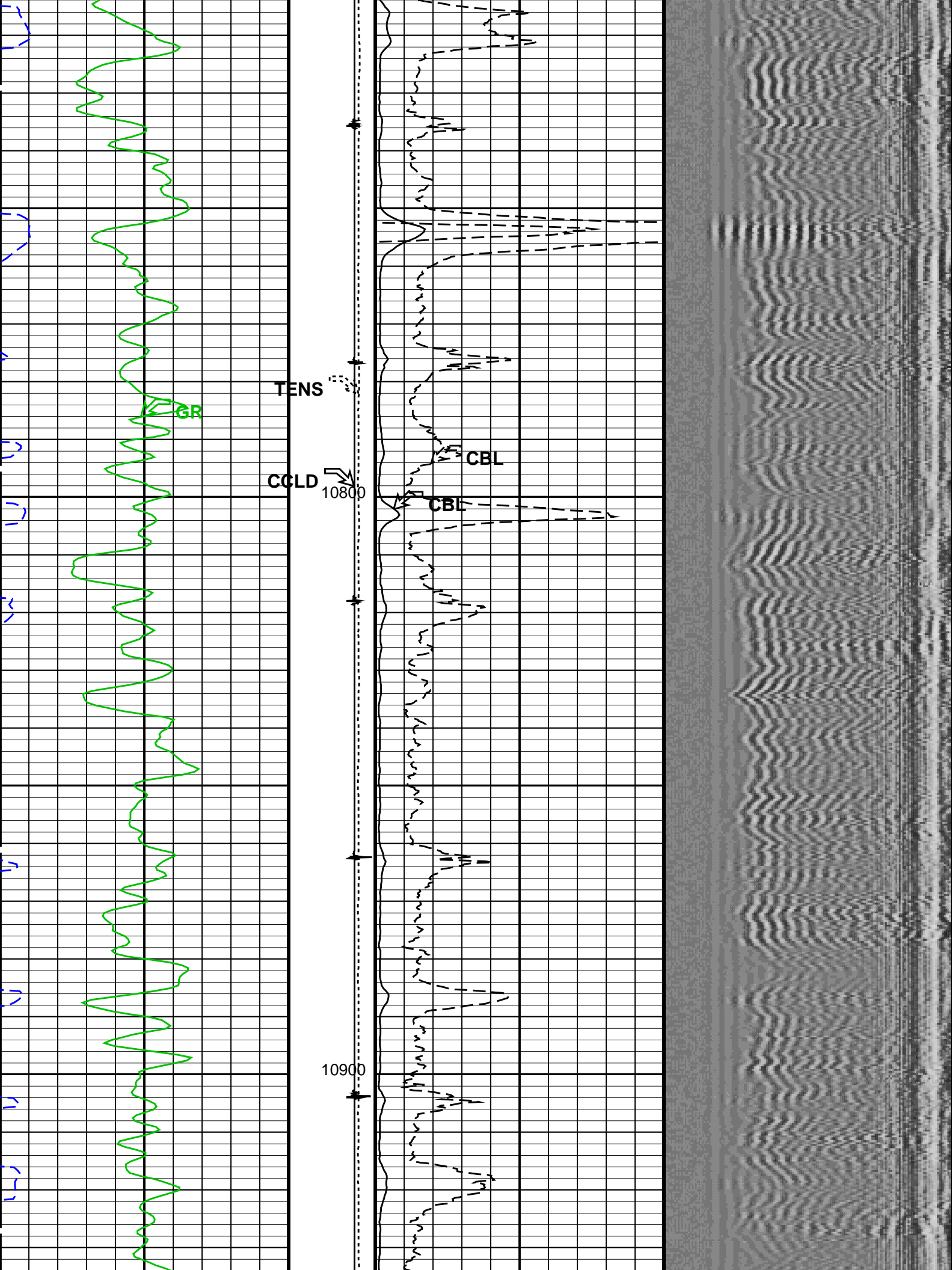


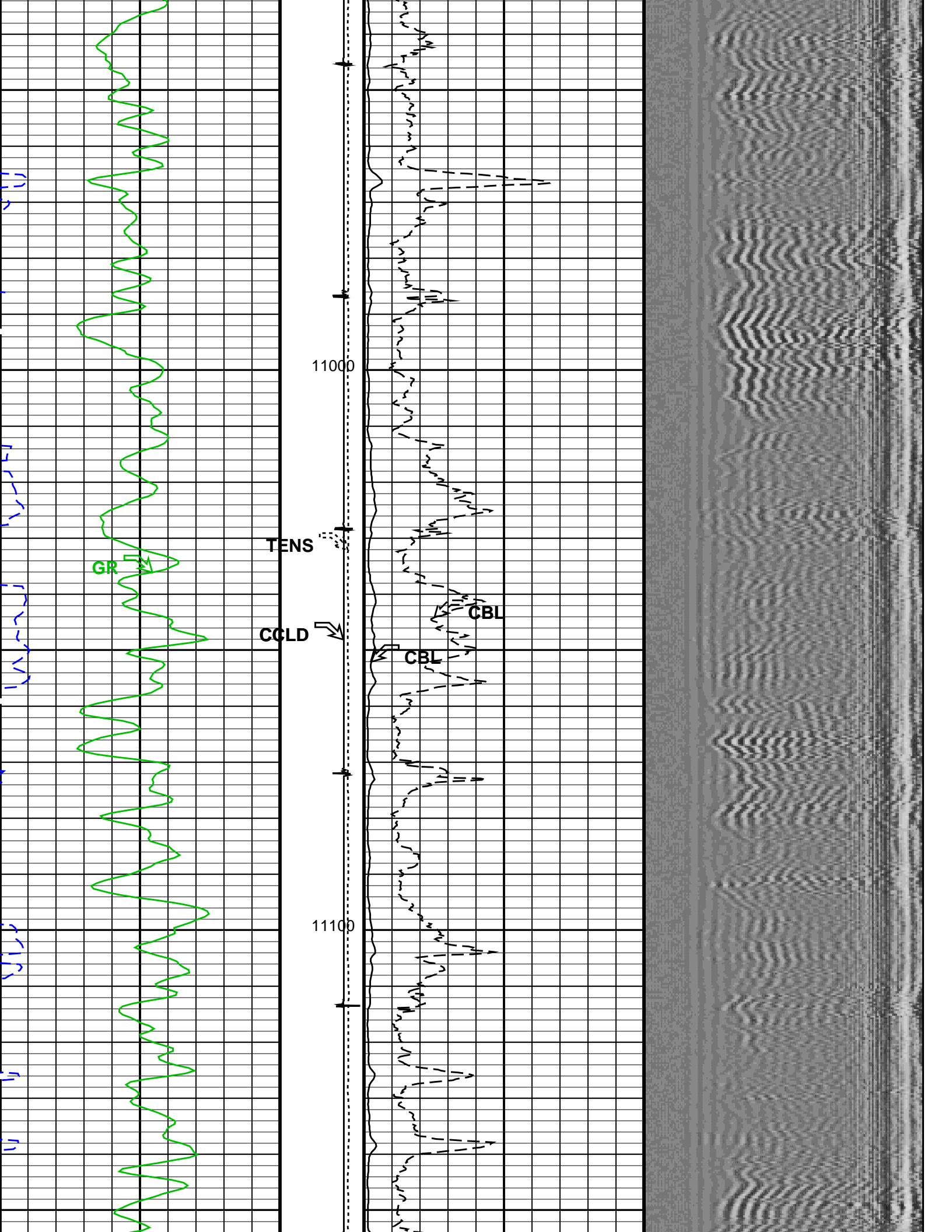


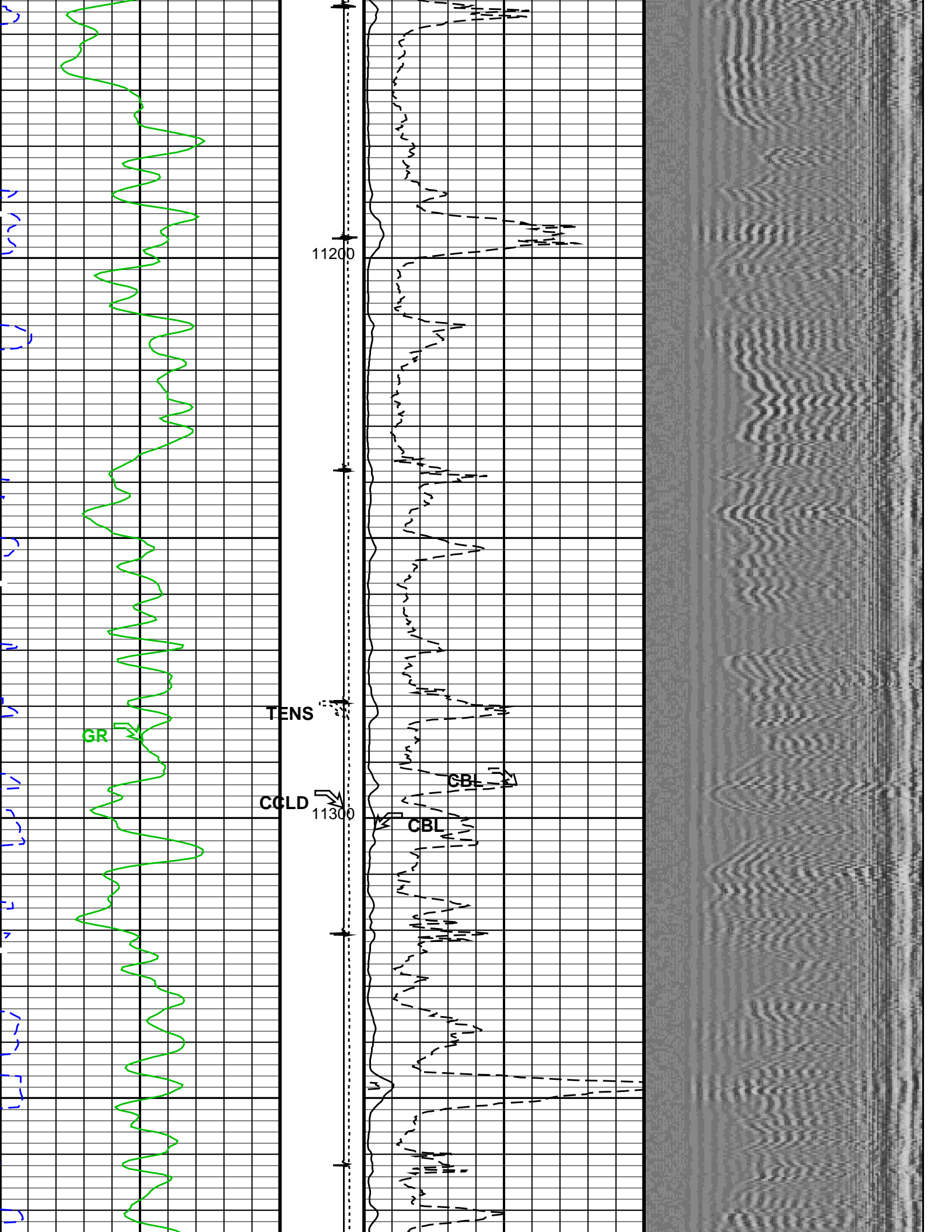


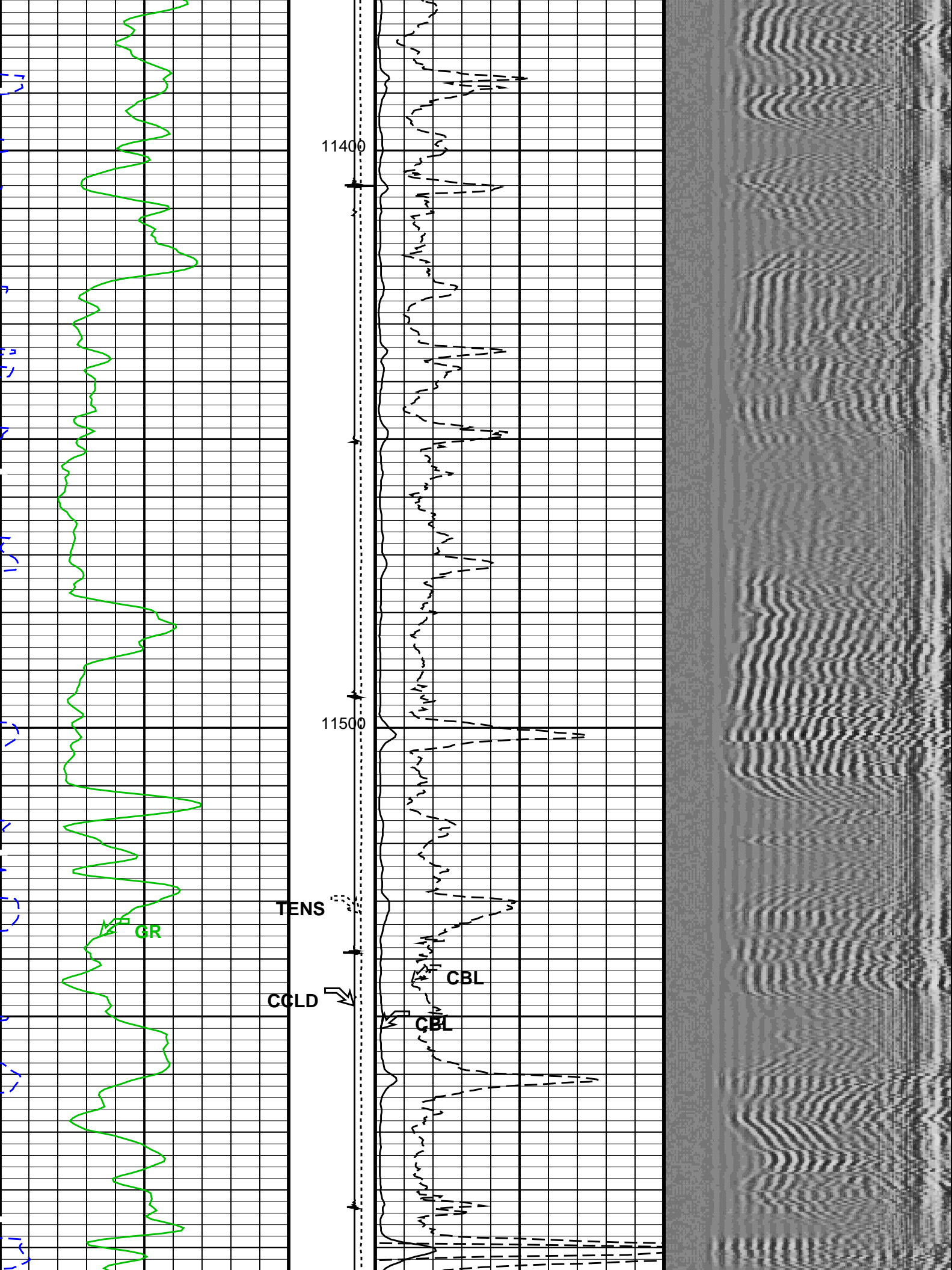


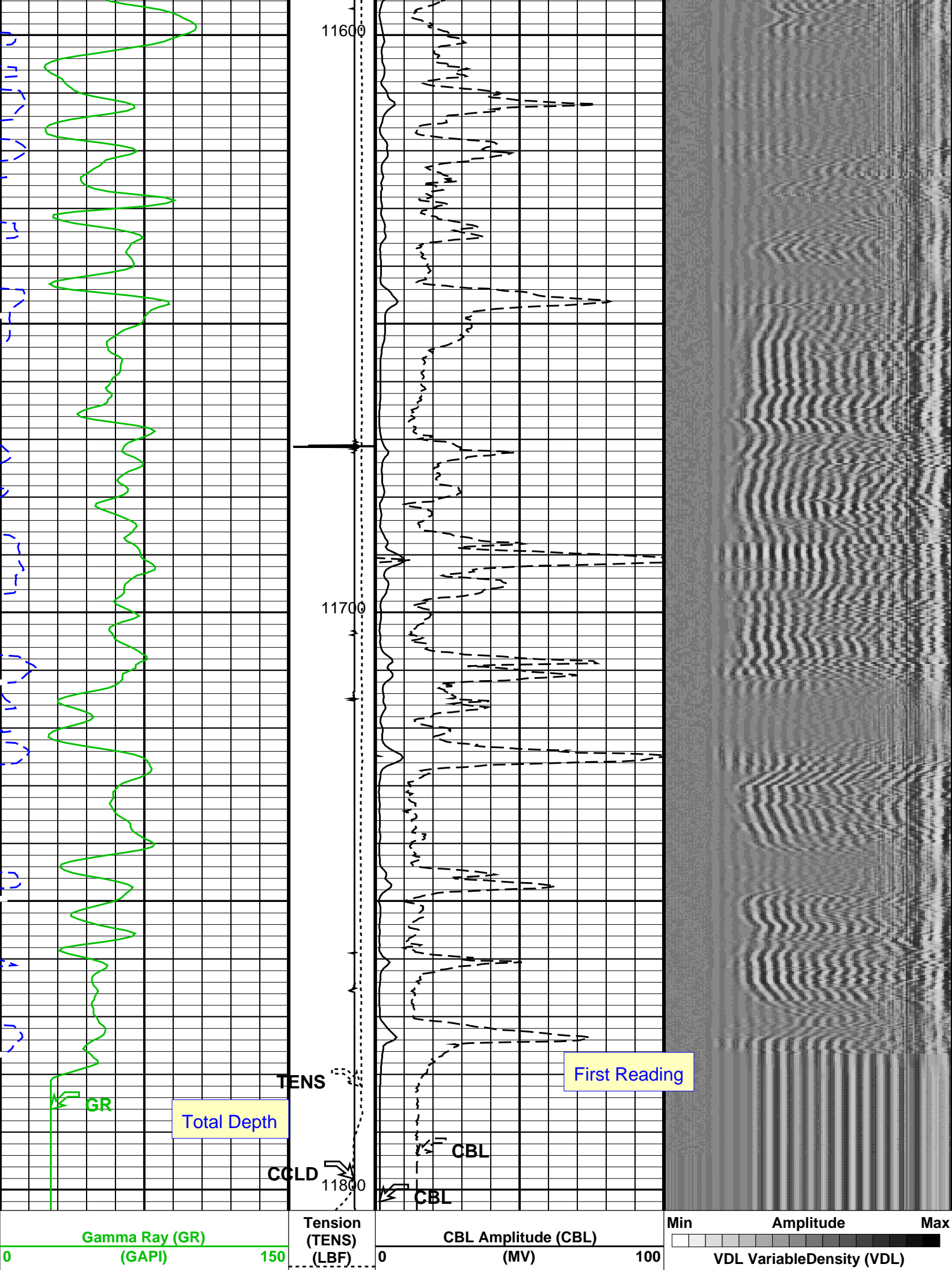












		0	2000			200	(US)	1200
Transit Time (TT) 260 (US) 160		Discriminat ed CCL (CCLD)		CBL Amplitude (CBL) (MV)		0		10
		3 (V) -1						
PIP SUMMARY								
Time Mark Every 60 S								
Format: CBL_VDL			Vertical Scale: 5" per 100'			Graphics File Created: 30-Apr-2012 05:04		
OP System Version: 18C0-147								
SCMT-CB		HFE-4028-IFLEX		PSPT		HFE-4028-IFLEX		
<<<SCMT Cement Evaluation Information Summary>>>								
Sonde Serial Number		SCMS-CB 8317						
Current Casing Size		4.50000 IN						
Casing Weight		11.6000 LB/F						
Expected CBL Amplitude in Free Pipe Section		80 MV	Minimum Sonic Amplitude		0.573313 MV (100% Cement)			
					1.53933 MV (80% Cement)			
			MAP Minimum Sonic Amplitude		4.27928 MV (100% Cement)			
					8.03705 MV (80% Cement)			
Master Calibration (Normalization)		Before Calibration (Adjustment)						
Date of Master Calibration		6-MAR-2012						
CBL Correction Factor		0.0689824	CBL Adjustment Factor (CBAF)		1.0			
MAP 1 Correction Factor		0.107072	MAP Adjustment Factor (MPAF)		1.0			
MAP 2 Correction Factor		0.128400						
MAP 3 Correction Factor		0.135634						
MAP 4 Correction Factor		0.115019						
MAP 5 Correction Factor		0.108562						
MAP 6 Correction Factor		0.113017						
MAP 7 Correction Factor		0.117769						
MAP 8 Correction Factor		0.123422						
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				228.052	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				342.052	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				203	US/F	
FATT		Acoustic Attenuation due to Fluid				0	DB/F	
FCF		CBL Fluid Compensation Factor				0.992742		
GOBO		Good Bond				1.53933	MV	
MAPD		SCMT MAP Peak Detection Mode				PEAK		
MAPG		SCMT MAP Peak Detection T0_Delay and Noise Gate				171.052	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				4.27928	MV	
MSA		Minimum Sonic Amplitude				0.573313	MV	

MSA	Minimum Sonic Amplitude	0.375313	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	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	-50000	FT

Input DLIS Files

DEFAULT SPLICE_SCMT_PSP_031 FN:1 PRODUCER 30-Apr-2012 05:02 11803.5 FT 180.1 FT

Output DLIS Files

DEFAULT SCMT_PSP_032PUP FN:27 PRODUCER 30-Apr-2012 05:04

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REPEAT ANALYSIS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC. Well: SG 8511C-22 N22 496

Input DLIS Files

DEFAULT SPLICE_SCMT_PSP_031 FN:1 PRODUCER 30-Apr-2012 05:02 11803.5 FT 180.1 FT
DEFAULT SCMT_PSP_027PUP FN:24 PRODUCER 30-Apr-2012 01:37 11809.0 FT 11562.0 FT

Output DLIS Files

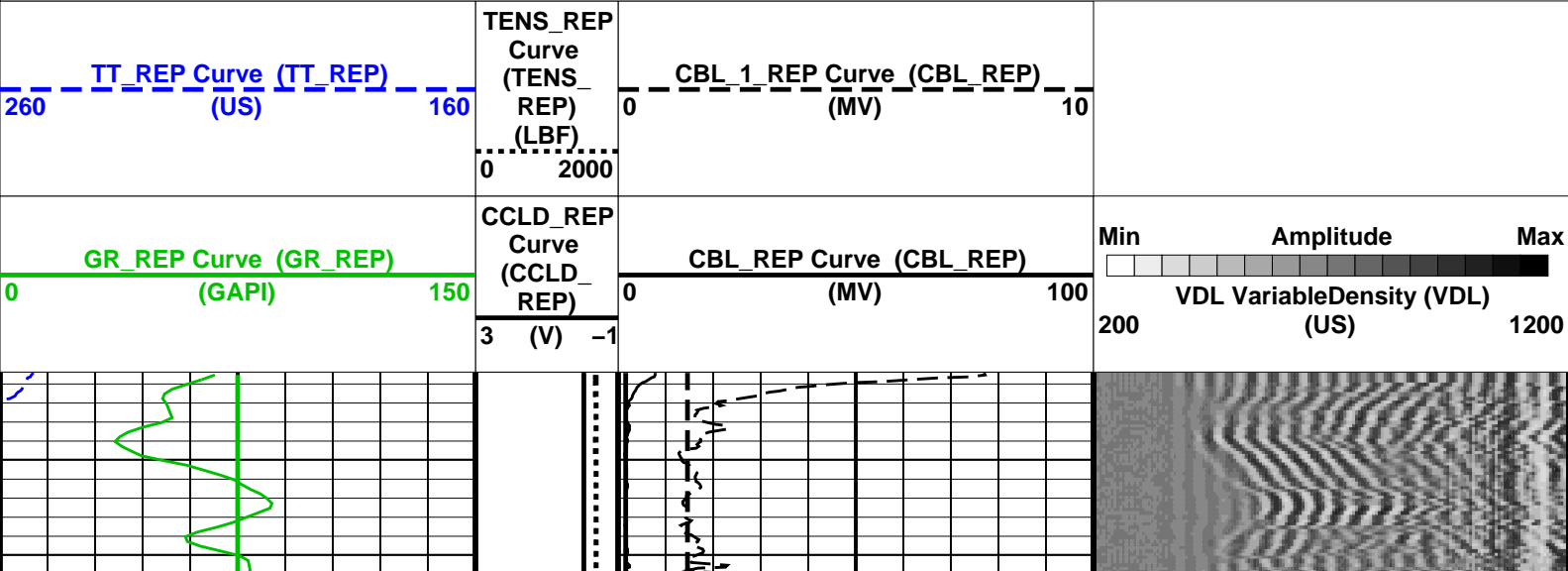
DEFAULT SCMT_PSP_032PUP FN:27 PRODUCER 30-Apr-2012 05:04

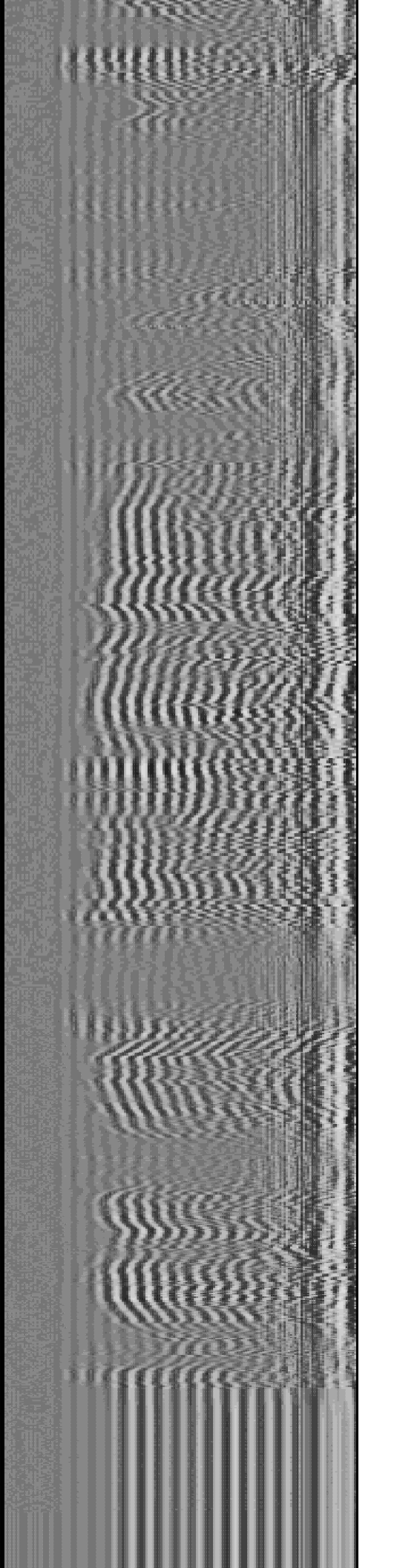
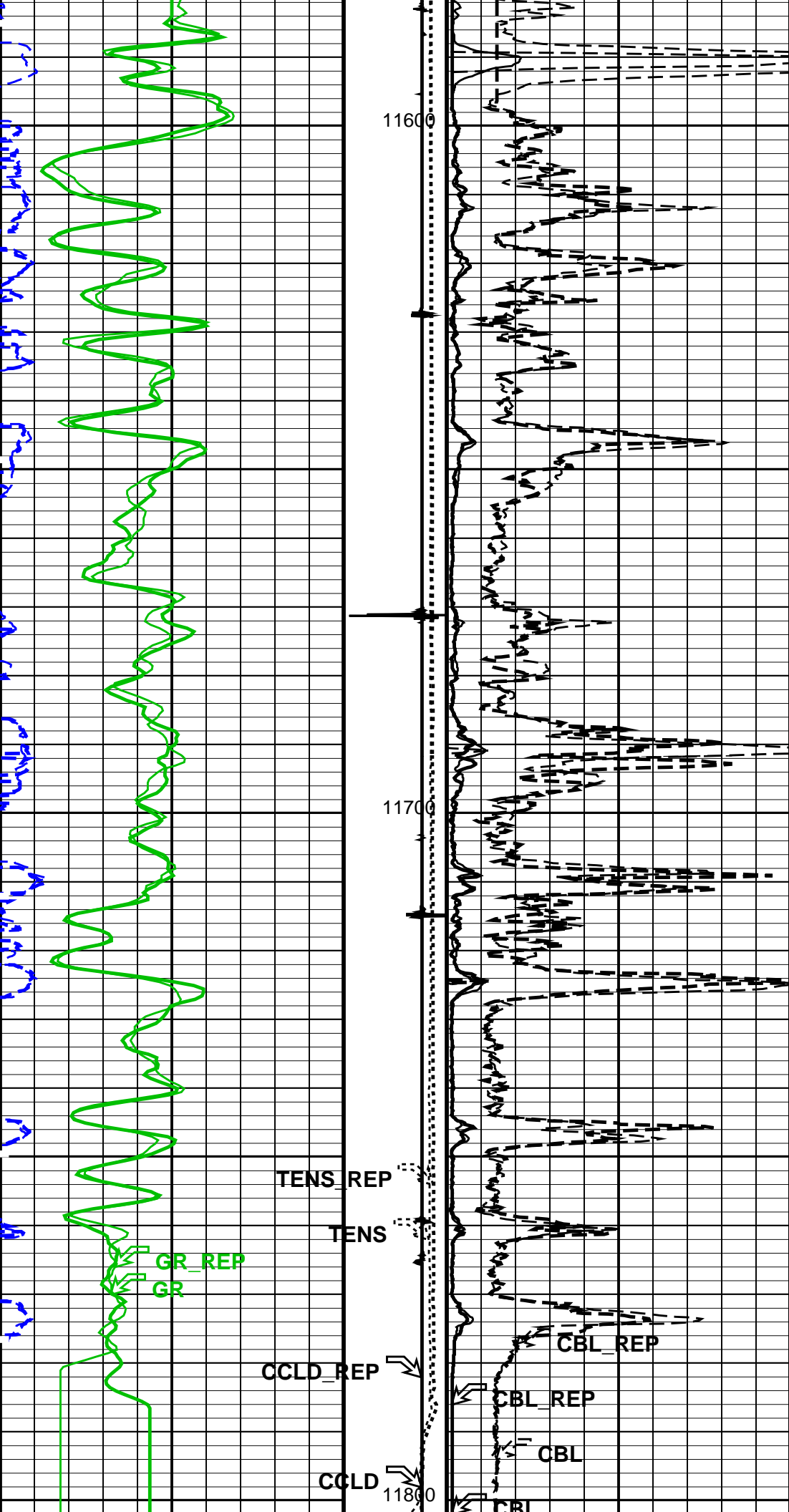
OP System Version: 18C0-147

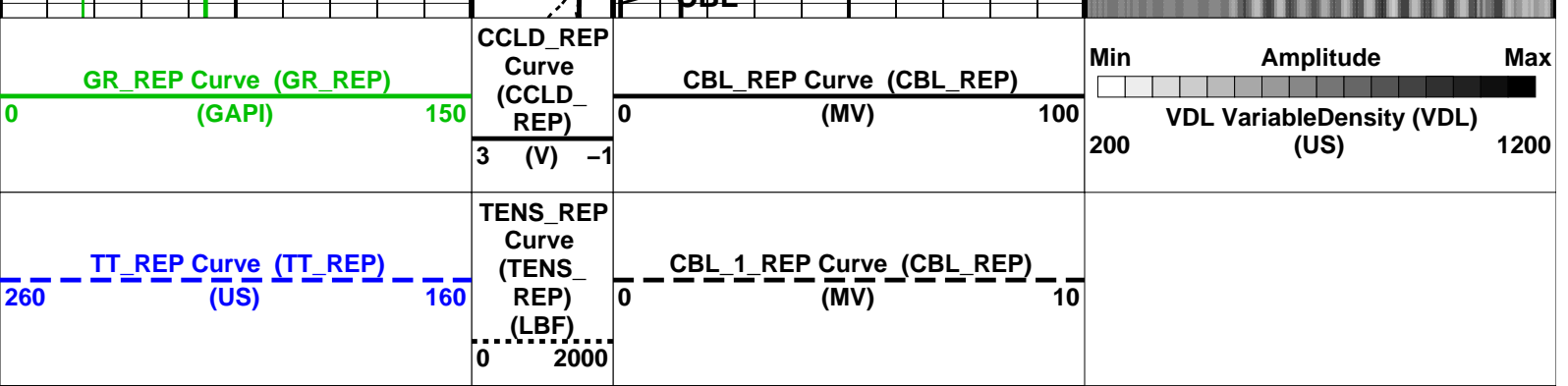
SCMT-CB HFE-4028-IFLEX PSPT HFE-4028-IFLEX

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-Apr-2012 05:04

OP System Version: 18C0-147

SCMT-CB HFE-4028-IFLEX PSPT HFE-4028-IFLEX

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8317		
Current Casing Size	4.50000 IN		
Casing Weight	11.6000 LB/F		
Expected CBL Amplitude in Free Pipe Section	80 MV	Minimum Sonic Amplitude	0.573313 MV (100% Cement)
			1.53933 MV (80% Cement)
		MAP Minimum Sonic Amplitude	4.27928 MV (100% Cement)
			8.03705 MV (80% Cement)

Master Calibration (Normalization)

Before Calibration (Adjustment)

Date of Master Calibration	6-MAR-2012		
CBL Correction Factor	0.0689824	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.107072	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.128400		
MAP 3 Correction Factor	0.135634		
MAP 4 Correction Factor	0.115019		
MAP 5 Correction Factor	0.108562		
MAP 6 Correction Factor	0.113017		
MAP 7 Correction Factor	0.117769		
MAP 8 Correction Factor	0.123422		

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	228.052	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	342.052	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	203	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.992742	

GOBO	Good Bond	1.53933	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	171.052	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	4.27928	MV
MSA	Minimum Sonic Amplitude	0.573313	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	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	NORMAL	
TD	Total Depth	-50000	FT

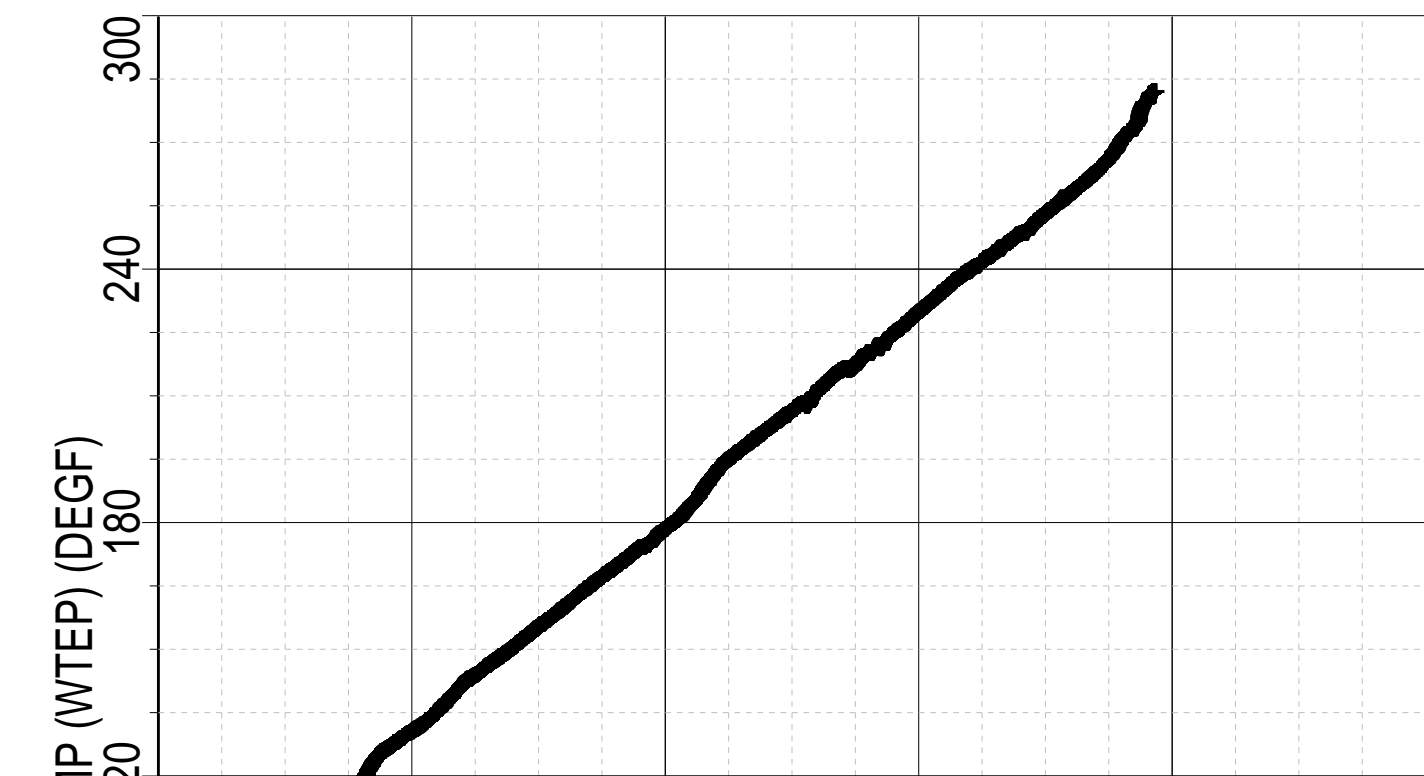
Input DLIS Files						
DEFAULT	SPLICE_SCMT_PSP_031	FN:1	PRODUCER	30-Apr-2012 05:02	11803.5 FT	180.1 FT
DEFAULT	SCMT_PSP_027PUP	FN:24	PRODUCER	30-Apr-2012 01:37	11809.0 FT	11562.0 FT
Output DLIS Files						
DEFAULT	SCMT_PSP_032PUP	FN:27	PRODUCER	30-Apr-2012 05:04		

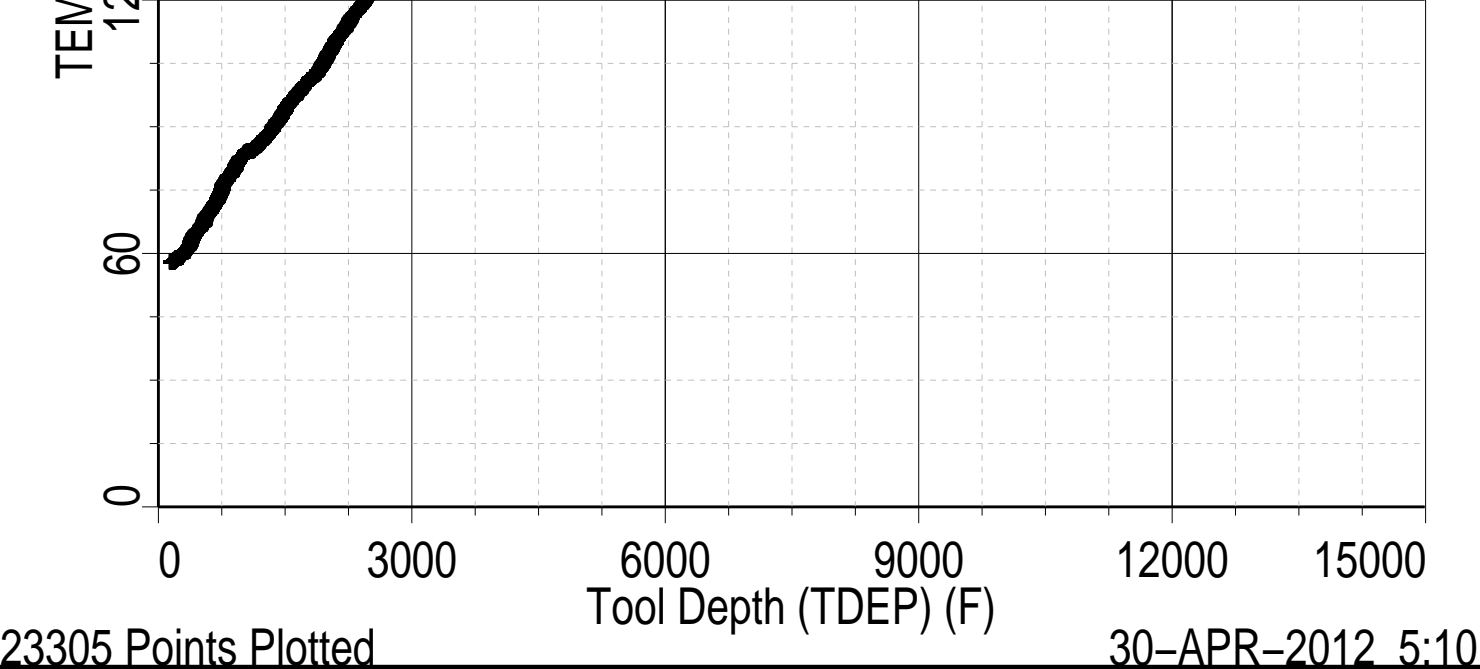


TEMPERATURE PLOT

MAXIS Field Log

Index: 11803.5 – 151.5 FT





Schlumberger

COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC.

Field: NORTH PARACHUTE

Well: N33 QUAD 4 & 5

Run date: 29-Apr-2012

Tool:

Sub Type:

Sensor:

PSP

PBMS

Clock Model

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: NORTH PARACHUTE

Well: N33 QUAD 4 & 5

Run date: 29-Apr-2012

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:	NORTH PARACHUTE	Sub Type:	PBMS
Well:	N33 QUAD 4 & 5	Sensor:	GR
Run date:	29−Apr−2012		

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

Client: ENCANA OIL & GAS (USA) INC.

Field: NORTH PARACHUTE

Well: N33 QUAD 4 & 5

Run date: 29-Apr-2012

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-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.

Well: SG 8509C-21 N22 496

Field: STORY GULCH

County: GARFIELD

State: COLORADO

Schlumberger

CEMENT BOND LOG

CBL – VDL

GAMMA RAY – CCL