

Schlumberger

Company: NIGHTHAWK PRODUCTION LLC

Well: ARIKAREE CREEK SWD 1

Field: ARIKAREE CREEK

County: LINCOLN State: COLORADO

County: LINCOLN

Field: ARIKAREE CREEK

Location: SHL: 685' FNL & 610' FEL

Well: ARIKAREE CREEK SWD 1

Company: NIGHTHAWK PRODUCTION LLC

SLIM CEMENT MAPPING LOG

CBL-VDL

GR-CCL

LOCATION

SHL: 685' FNL & 610' FEL
LAT. 39.53388, LONG. -103.418110

Elev.: K.B. 5238.00 ft
G.L. 5223.00 ft
D.F. 5237.00 ft

Permanent Datum: GROUND LEVEL

Log Measured From: KELLY BUSHING

Drilling Measured From: KELLY BUSHING

API Serial No. 05-073-06571-0000

Section 15

Township 6S

Range 54W

Logging Date 25-Apr-2014

Run Number 1

Depth Driller 8445 ft

Schlumberger Depth 8324 ft

Bottom Log Interval 8317 ft

Top Log Interval 100 ft

Casing Fluid Type FRESH WATER

Salinity

Density

Fluid Level 100 ft

BIT/CASING/TUBING STRING

Bit Size 8.750 in

From 15 ft

To 8445 ft

Casing/Tubing Size 7.000 in

Weight 26 lbm/ft

Grade

From 15 ft

To 8445 ft

Maximum Recorded Temperatures 215 degF

Logger On Bottom 25-Apr-2014

Time 9:30

Unit Number 336

Location CASPER

Recorded By KIRSTIE BUNTING

Witnessed By DON CARROL

PVT DATA				Run 1	Run 2	Run
Oil Density						
Water Salinity						
Gas Gravity						
Bo						
Bw						
1/Bq						
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						
Time						
Unit Number						
Location						
Recorded By						
Witnessed By						

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.

```
OS1:  NONE
OS2:
OS3:
OS4:
OS5:
```

OS1:
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 2

TOOL RUN AS PER TOOL SKETCH

EXIT TIME: 12:00

MAXIMUM RECORDED PRESSURE: 3548 PSIA

EXPECTED CBL AMPLITUDE IN FREE PIPE IS 62MV

CREW: KBUNTING, BMEYER, JORTIZ

CGF9-00214
19C0-187
100 ft

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

STOP

STOP

RUN 2

WITM-A
PSC 16MHZ

MH-22
MH-22

PSPT

Detail MT
TelStatus
CTEM

28 4

30.2

28.6

28.4

PSC-A
PSPT-A 1978
PSTC-A
PBMS-A
10k Sapphire Mano
RTD Thermometer
GR
CCL
PBMS

GR — 24.7

Well Temp — 21.6
Manometer — 21.5
CCL — 20.8
PBMS PSTC — 20.1

SCMT-CB
SCMC-CA 8120
SECH-CA
CMIR-AG
SCMS-CB 8303
SCMX-CA

20.1

DT — 11.0
CBL5 DTSC — 9.5
CBL3 — 8.5
MAP — 8.0
AUX — 7.0

AH-BNS HV
Tension SCMT — 0.0
TOOL ZERO 0.1

MAXIMUM STRING DIAMETER 1.69 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET



MAIN PASS CBL VDL

MAXIS Field Log

Company: NIGHTHAWK PRODUCTION LLC Well: ARIKAREE CREEK SWD 1

Input DLIS Files

DEFAULT SCMT_PSP_008LUP FN:7 PRODUCER 25-Apr-2014 10:30 8329.5 FT 69.7 FT

Output DLIS Files

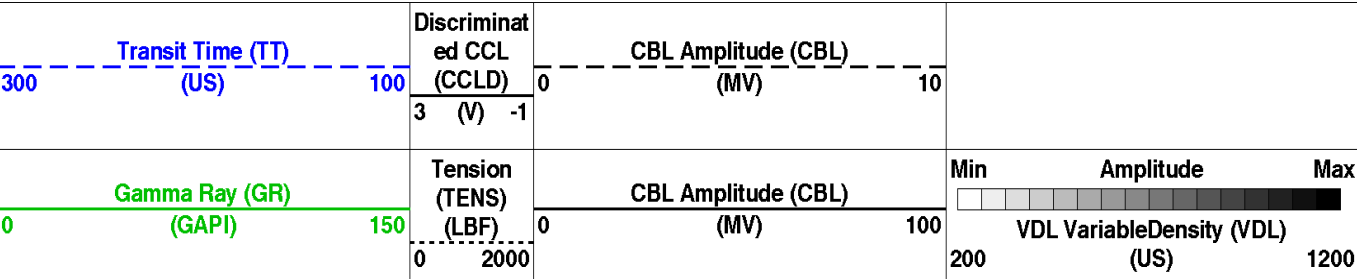
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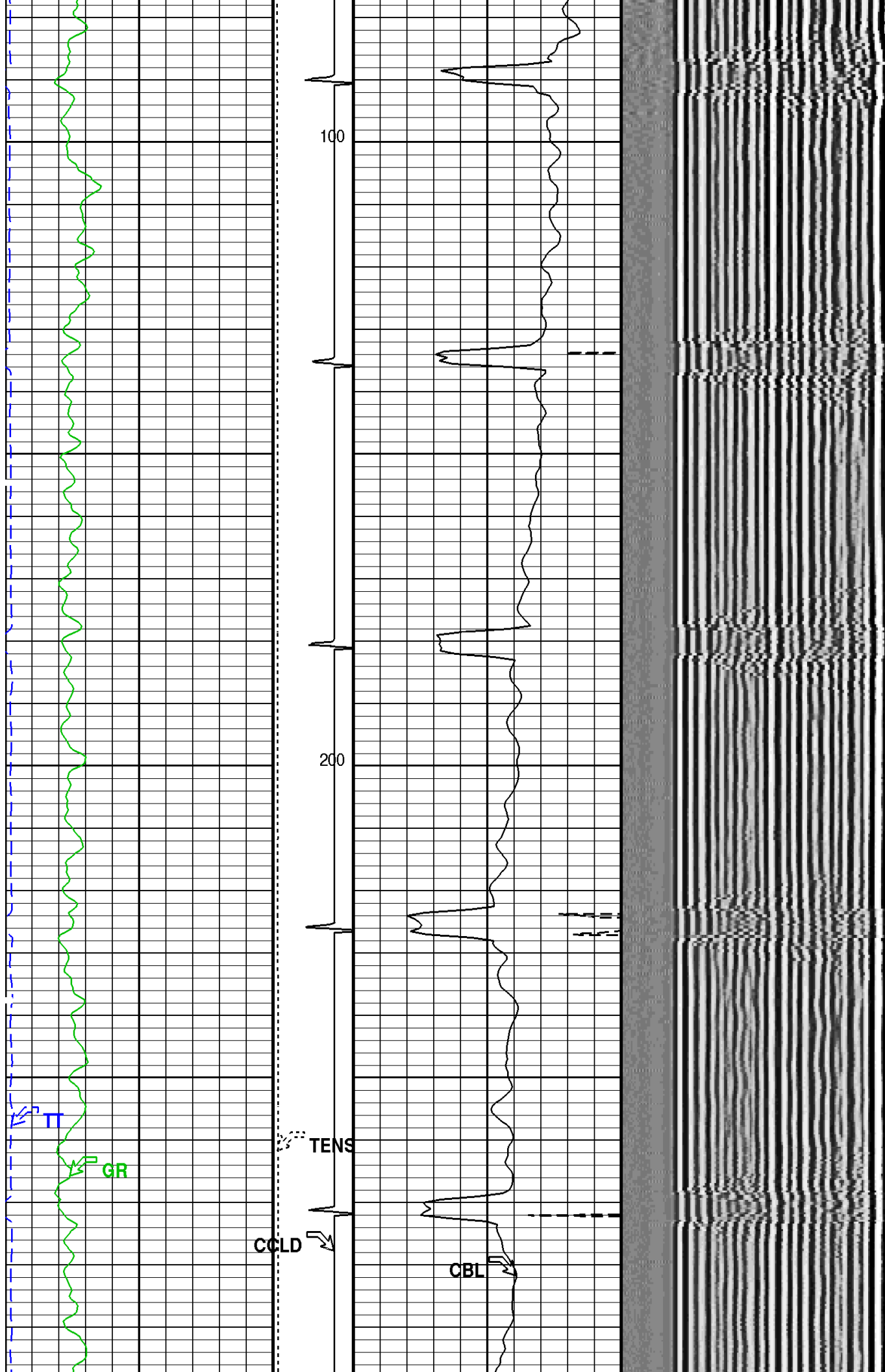
OP System Version: 19C0-187

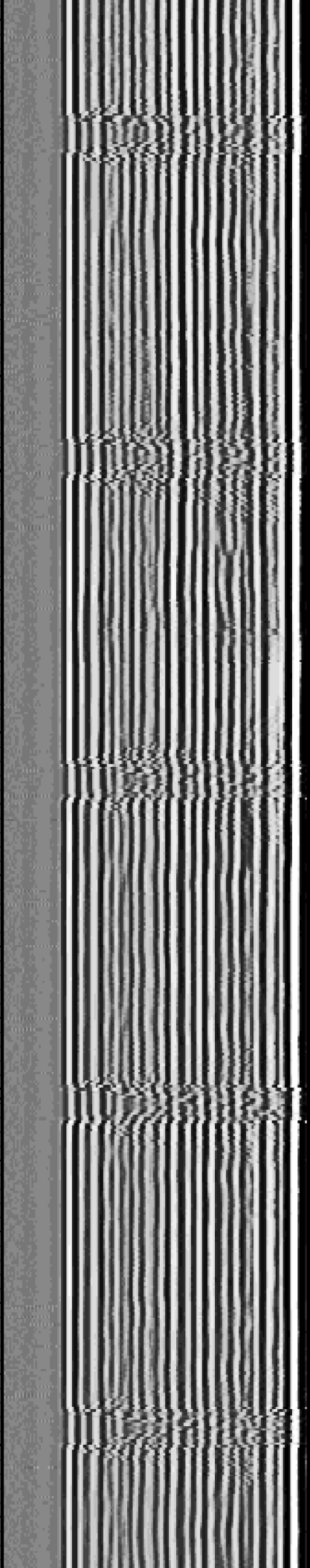
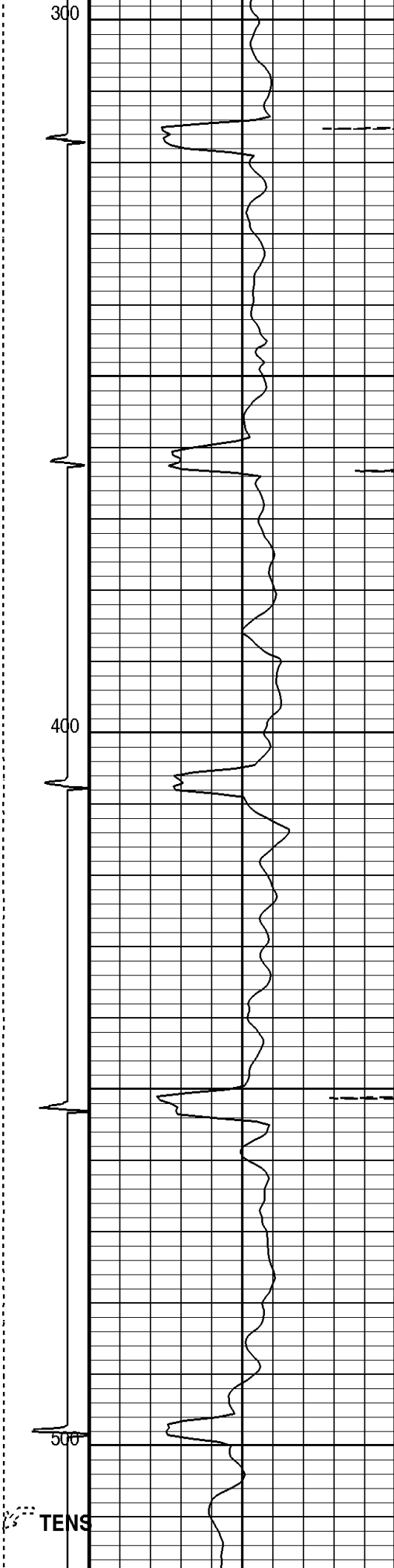
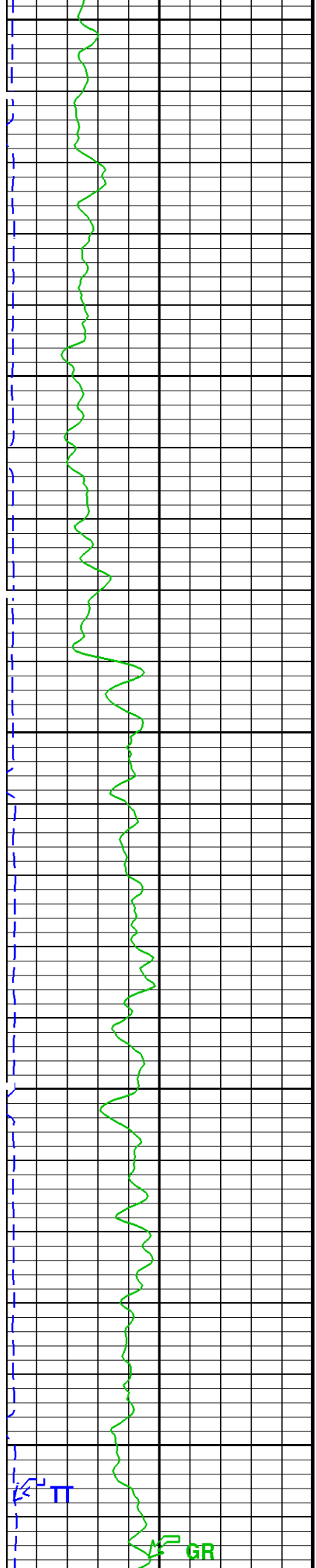
SCMT-CB 19C0-187 PSPT 19C0-187

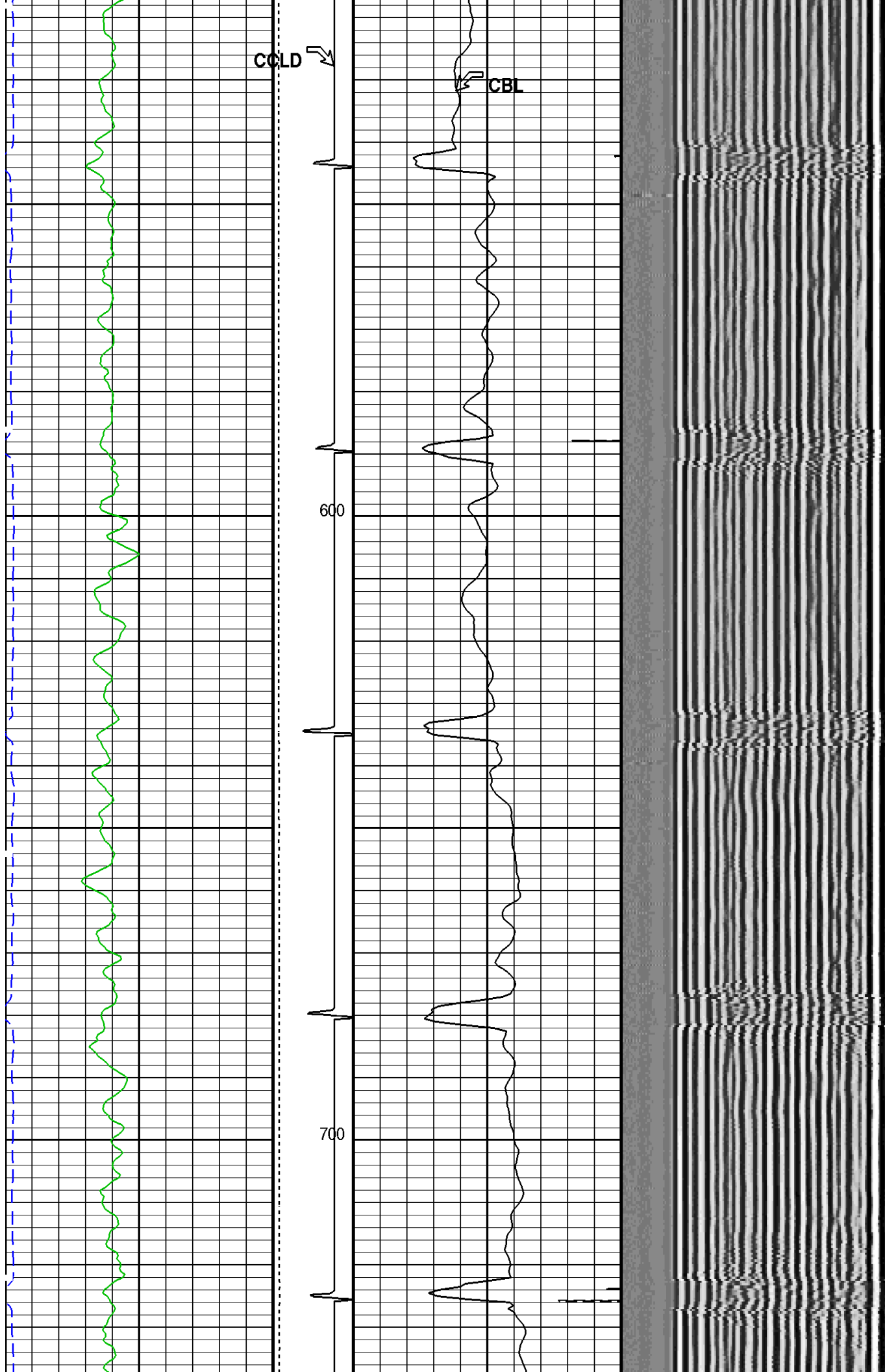
PIP SUMMARY

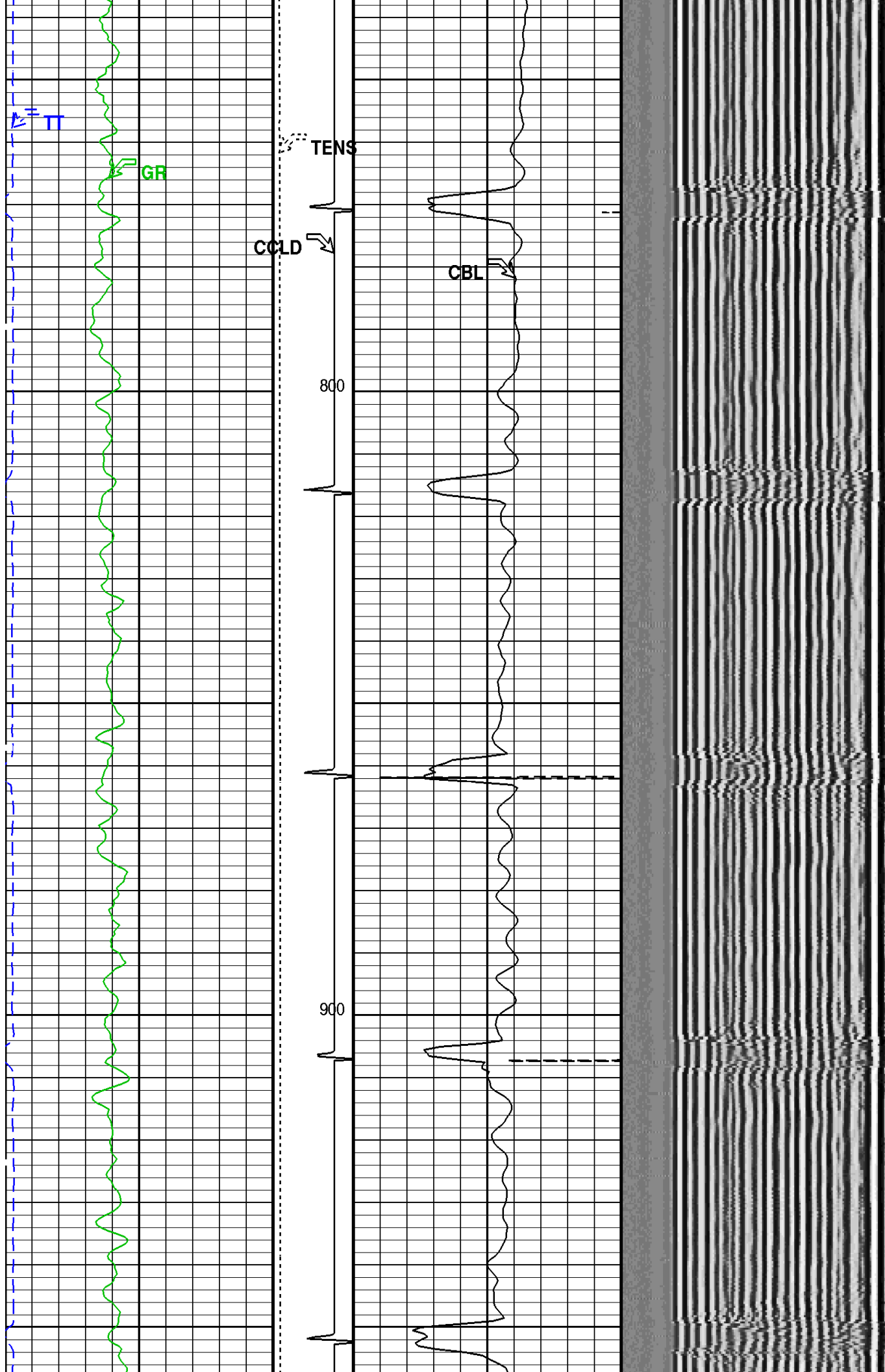
Time Mark Every 60 S

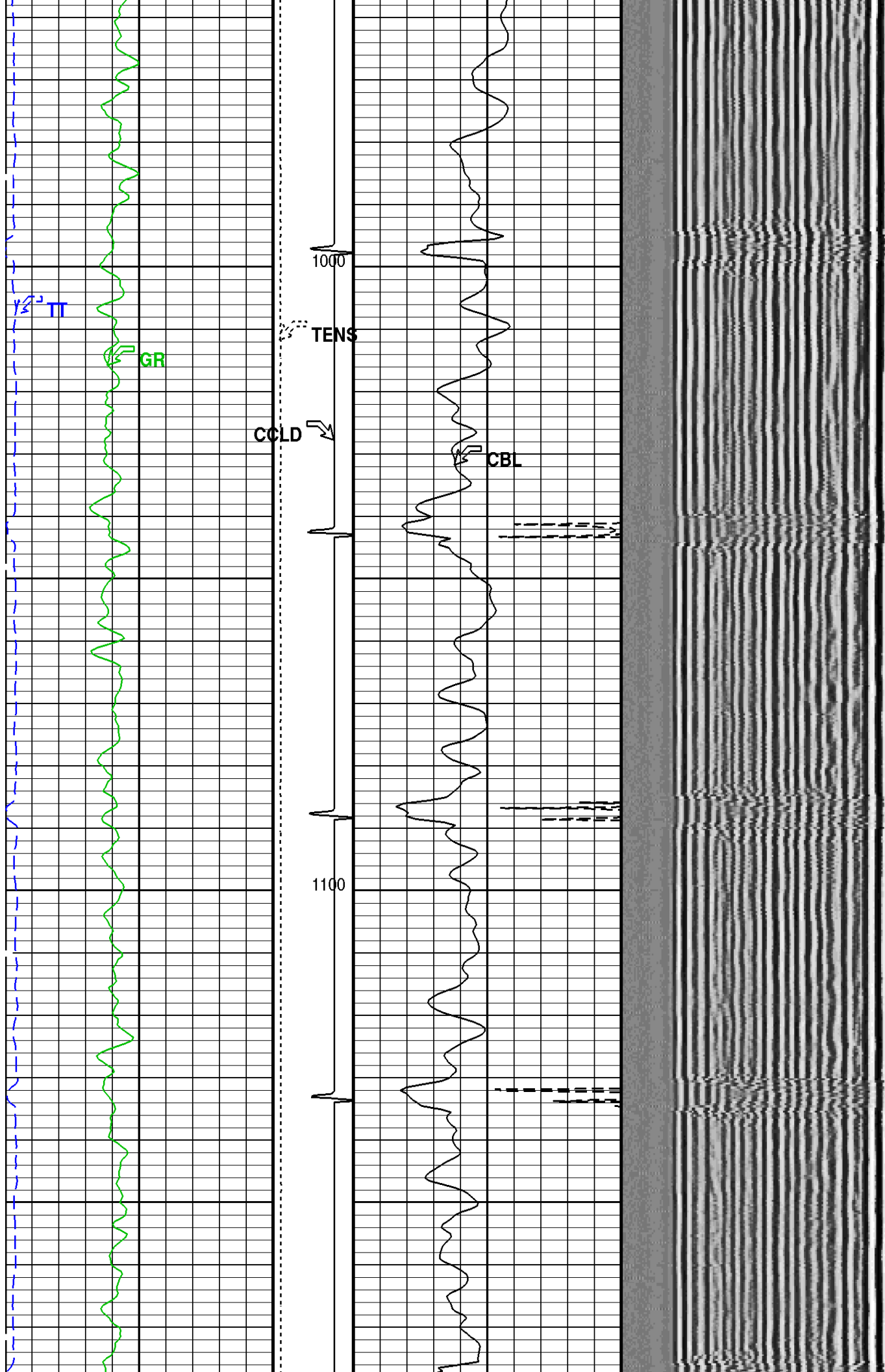


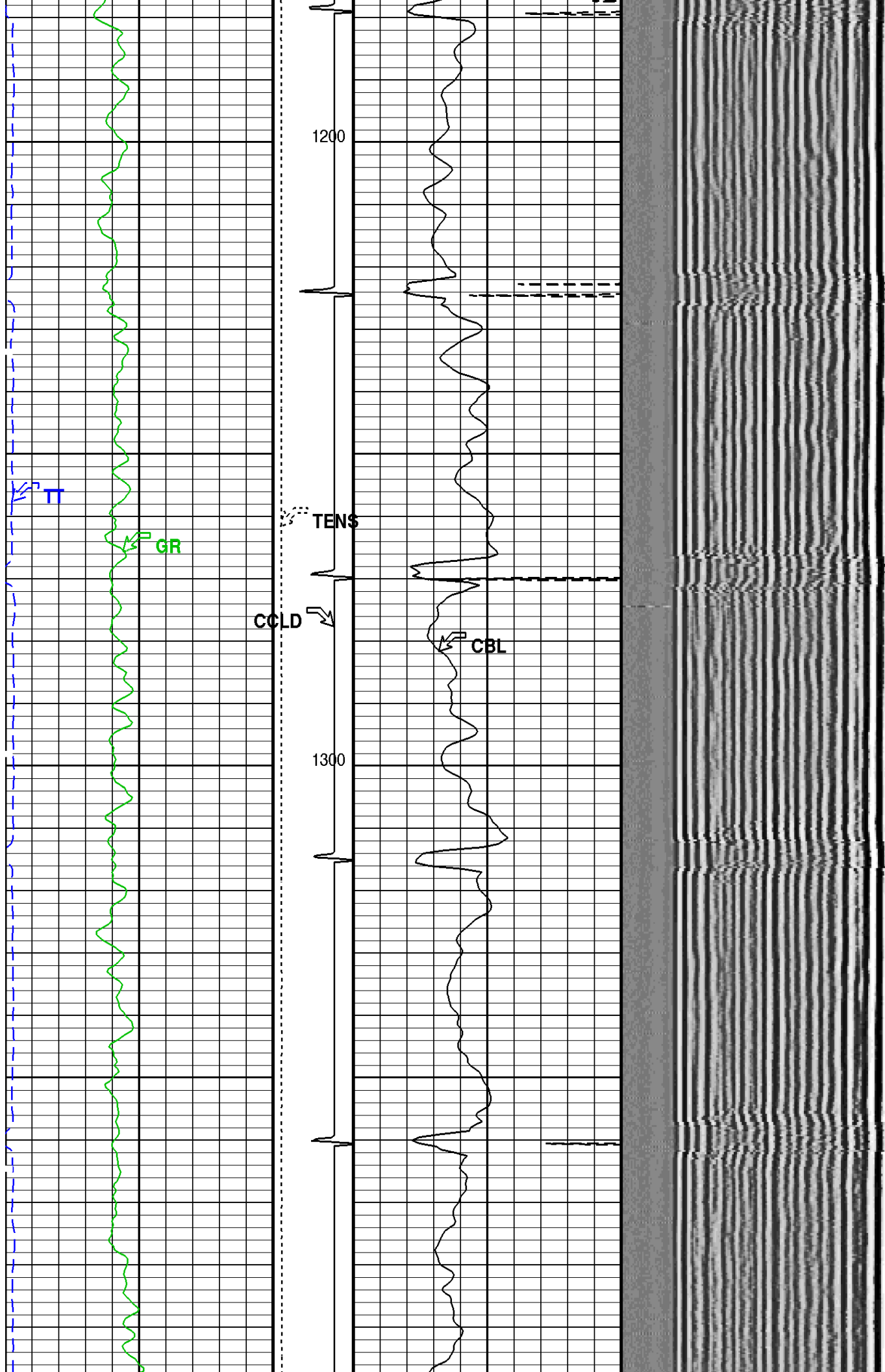


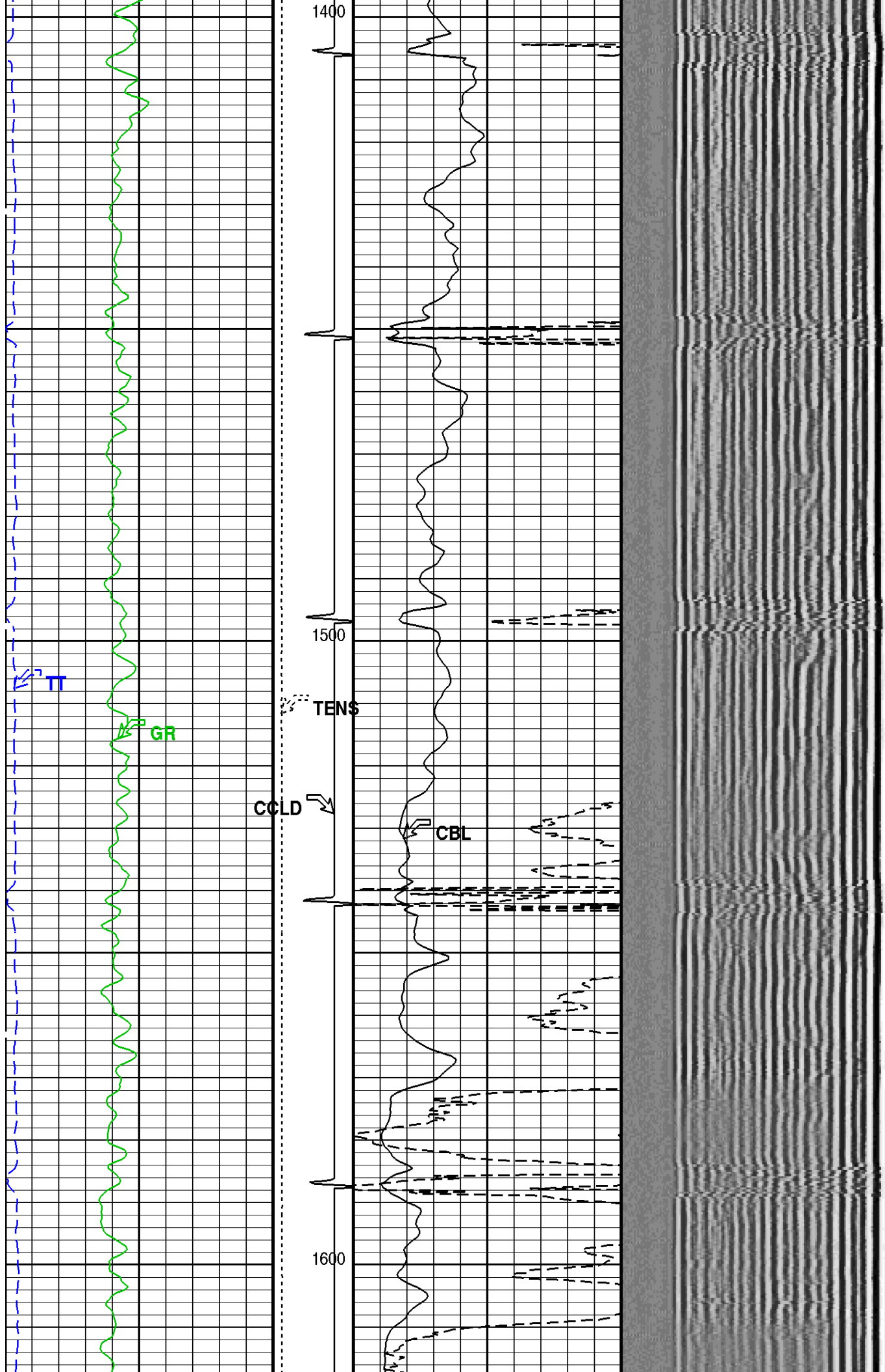


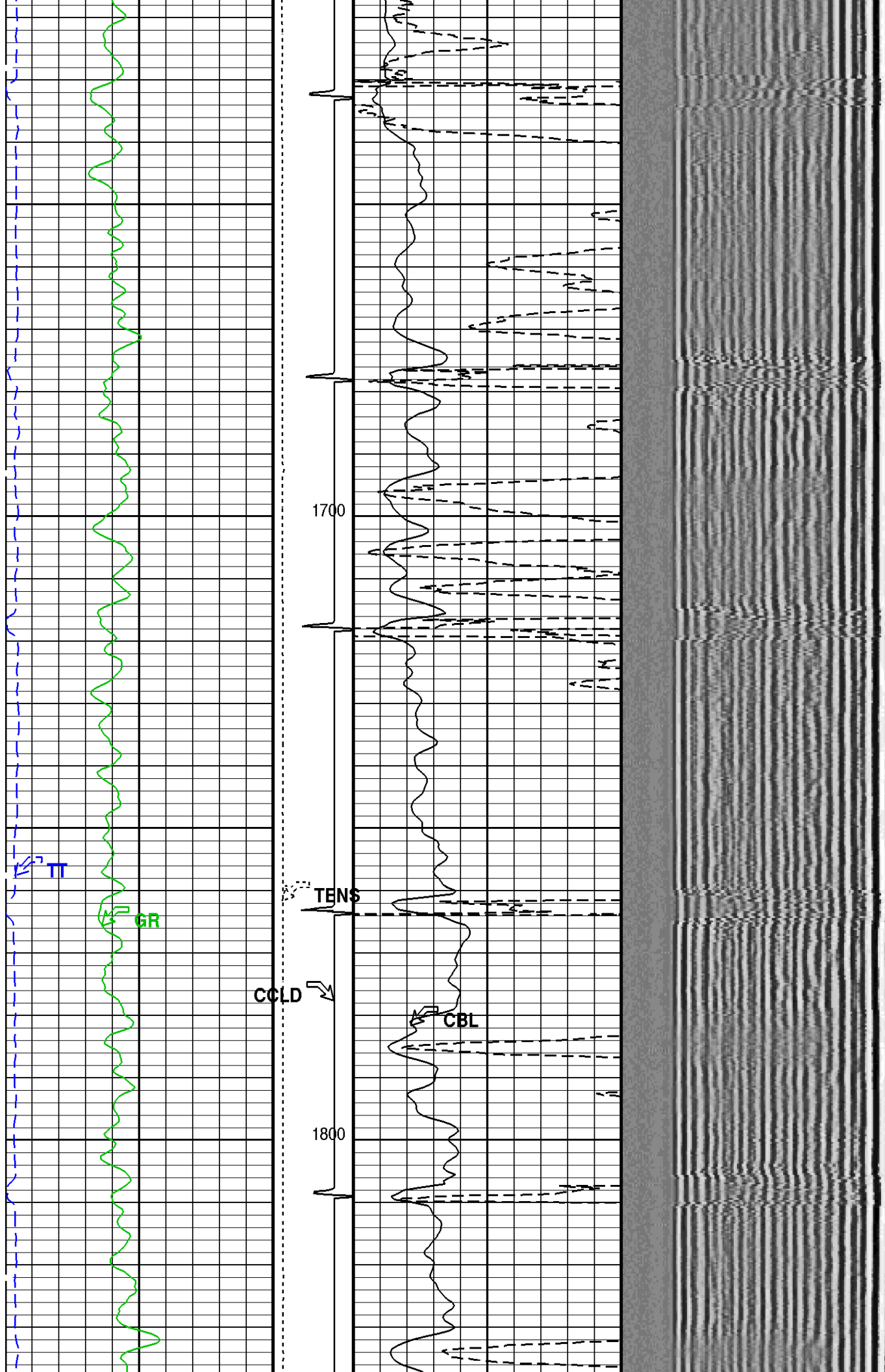


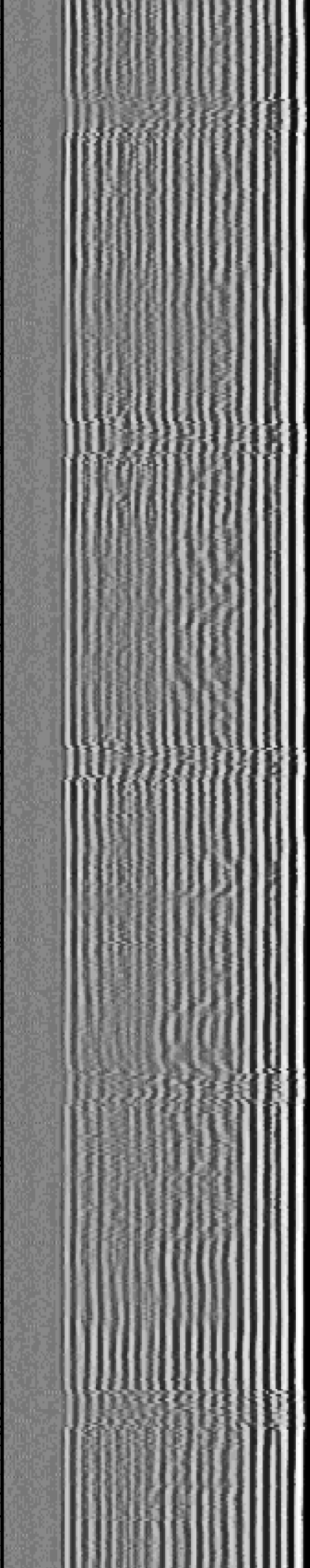
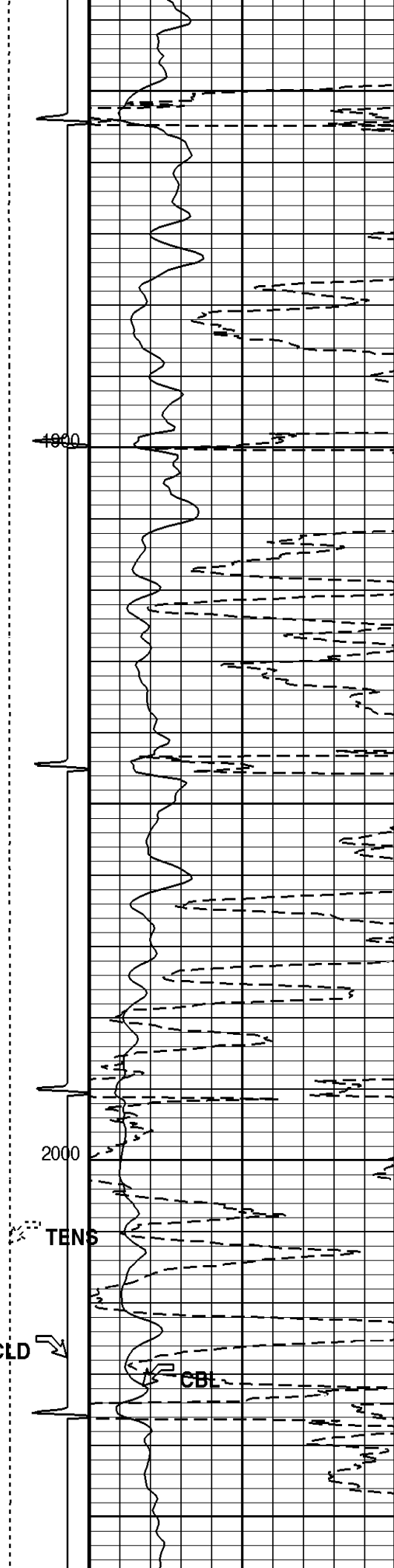
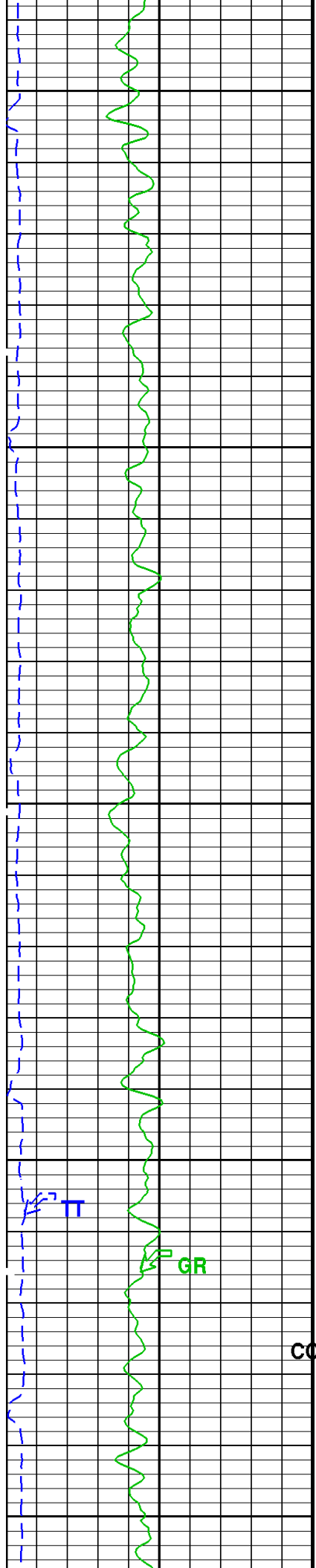


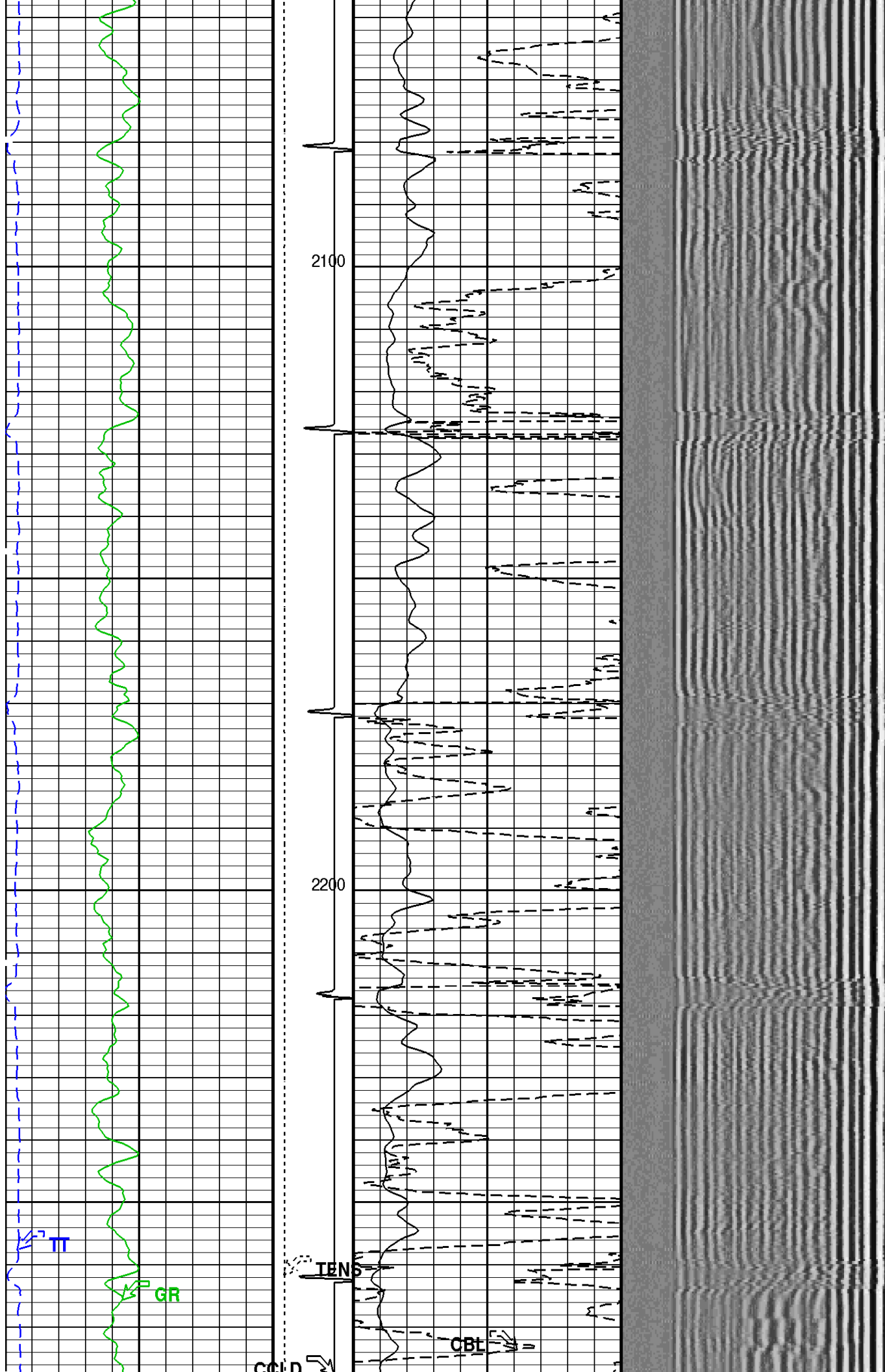


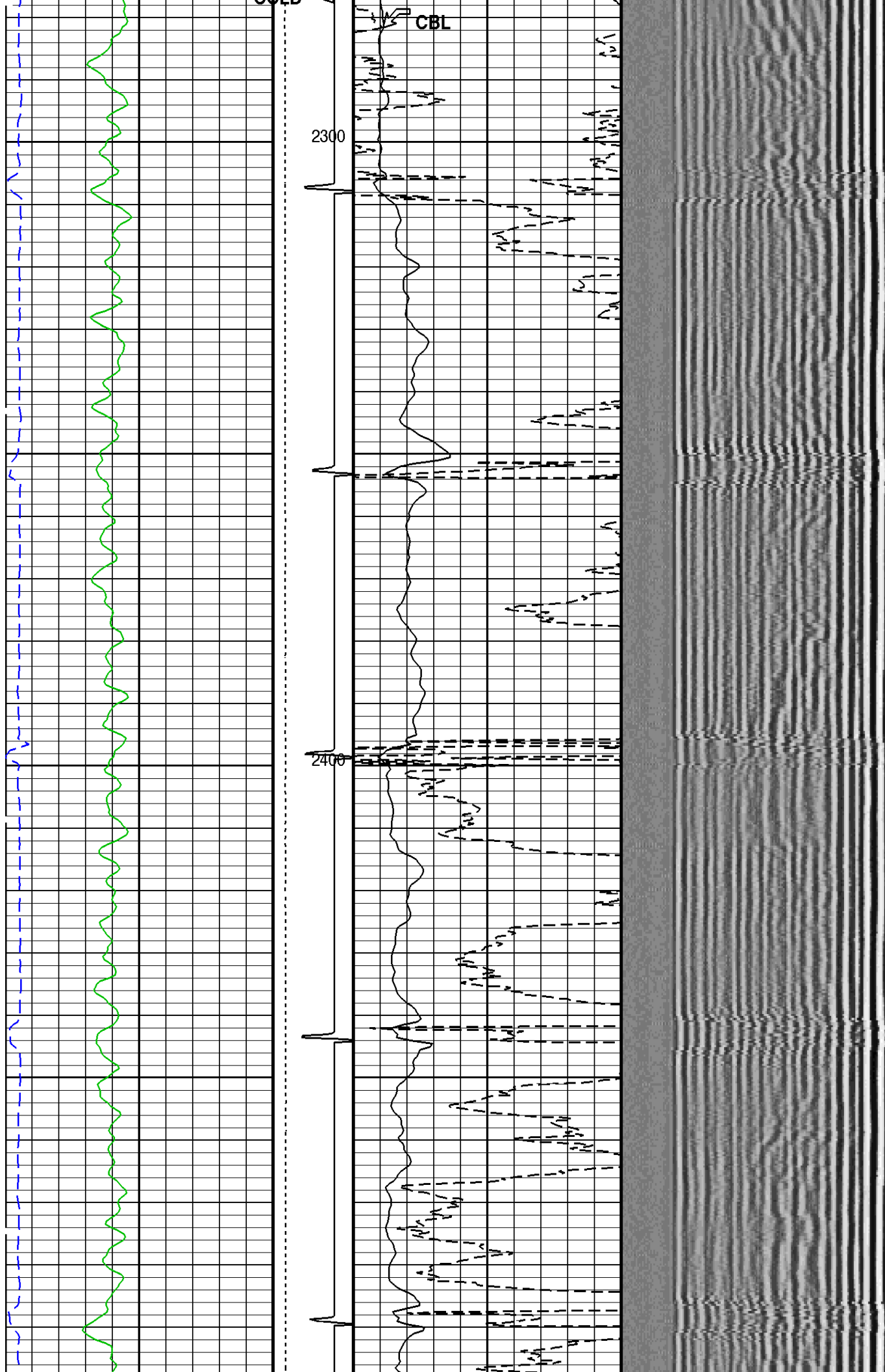


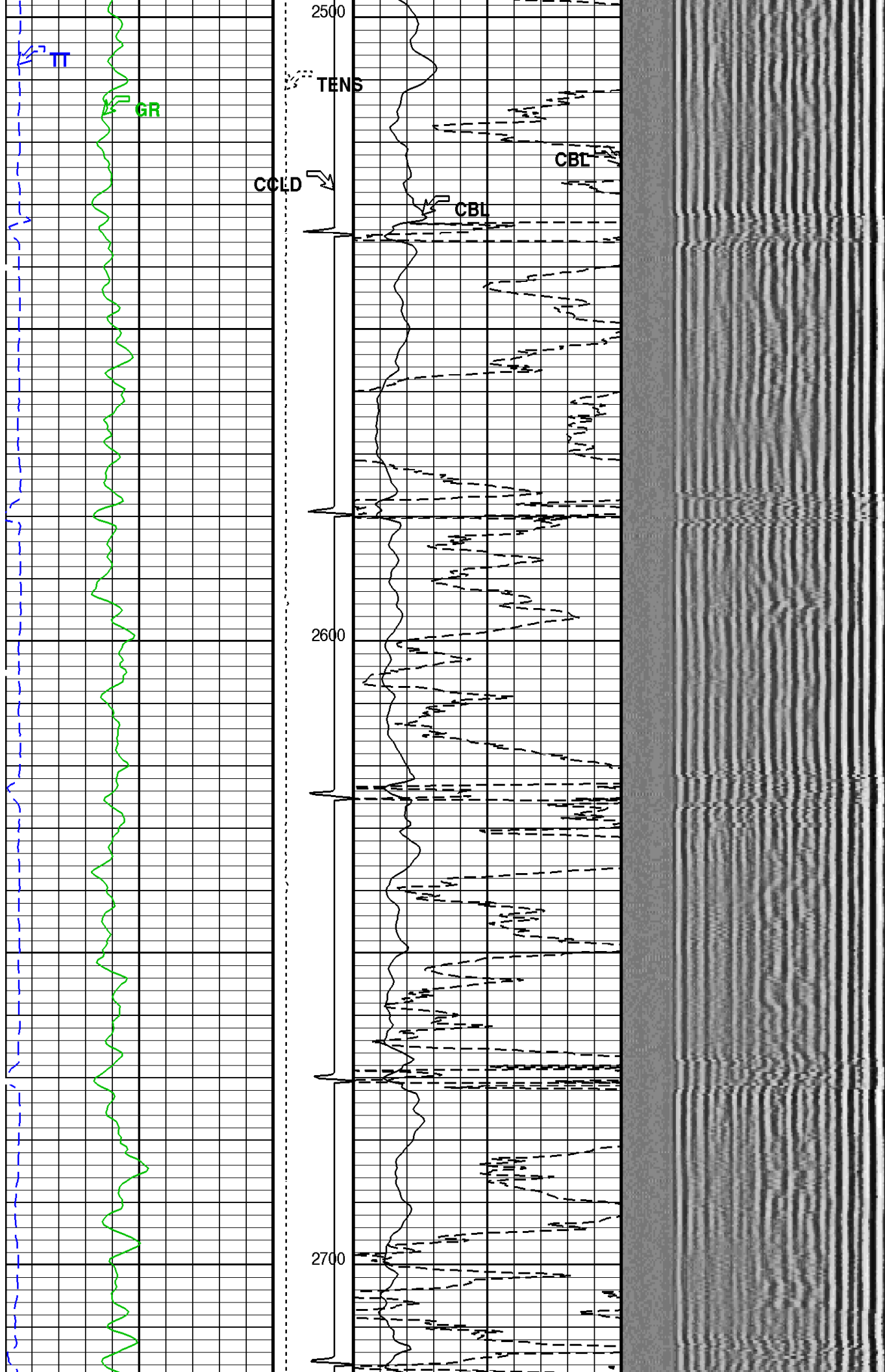


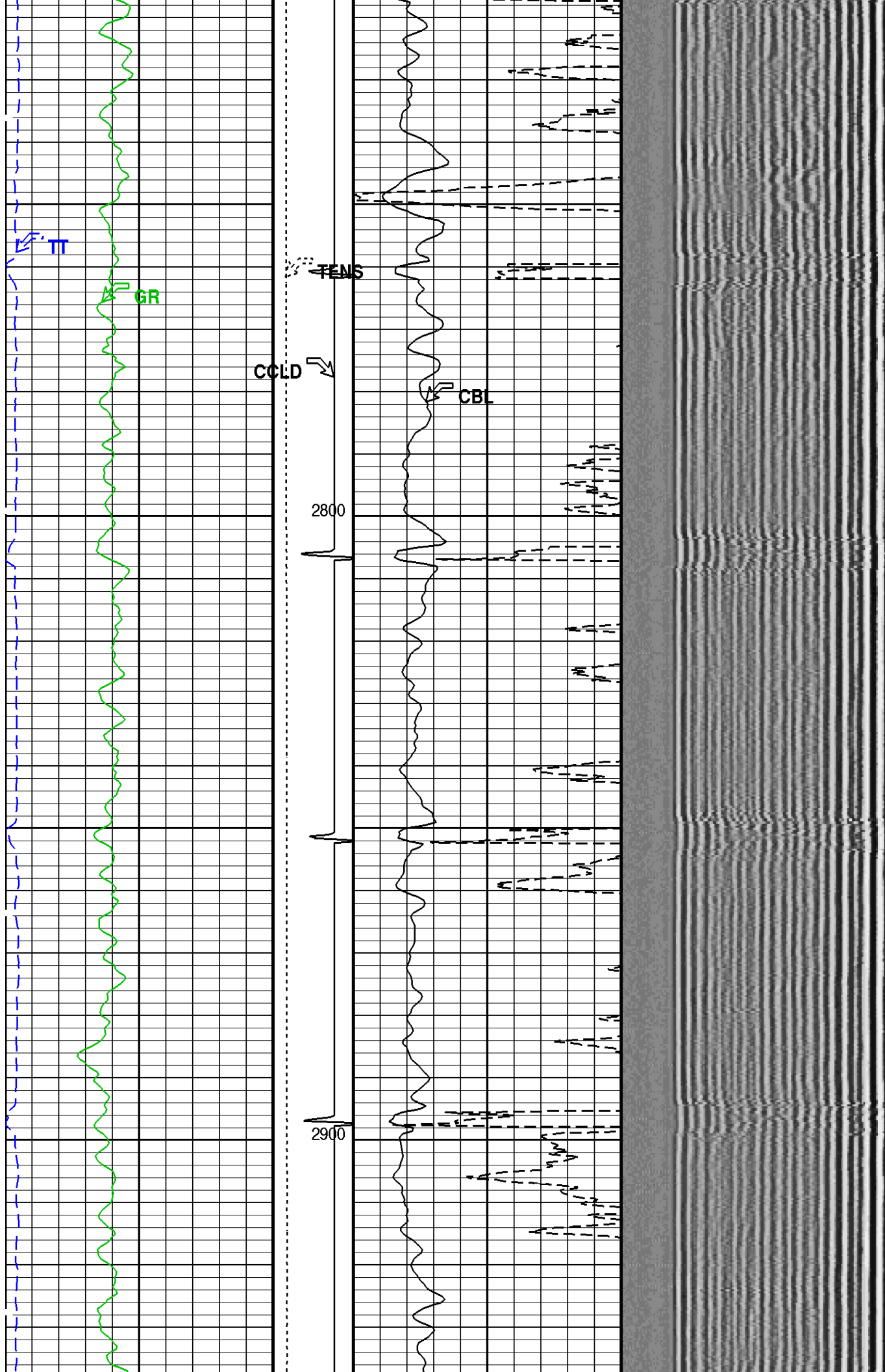


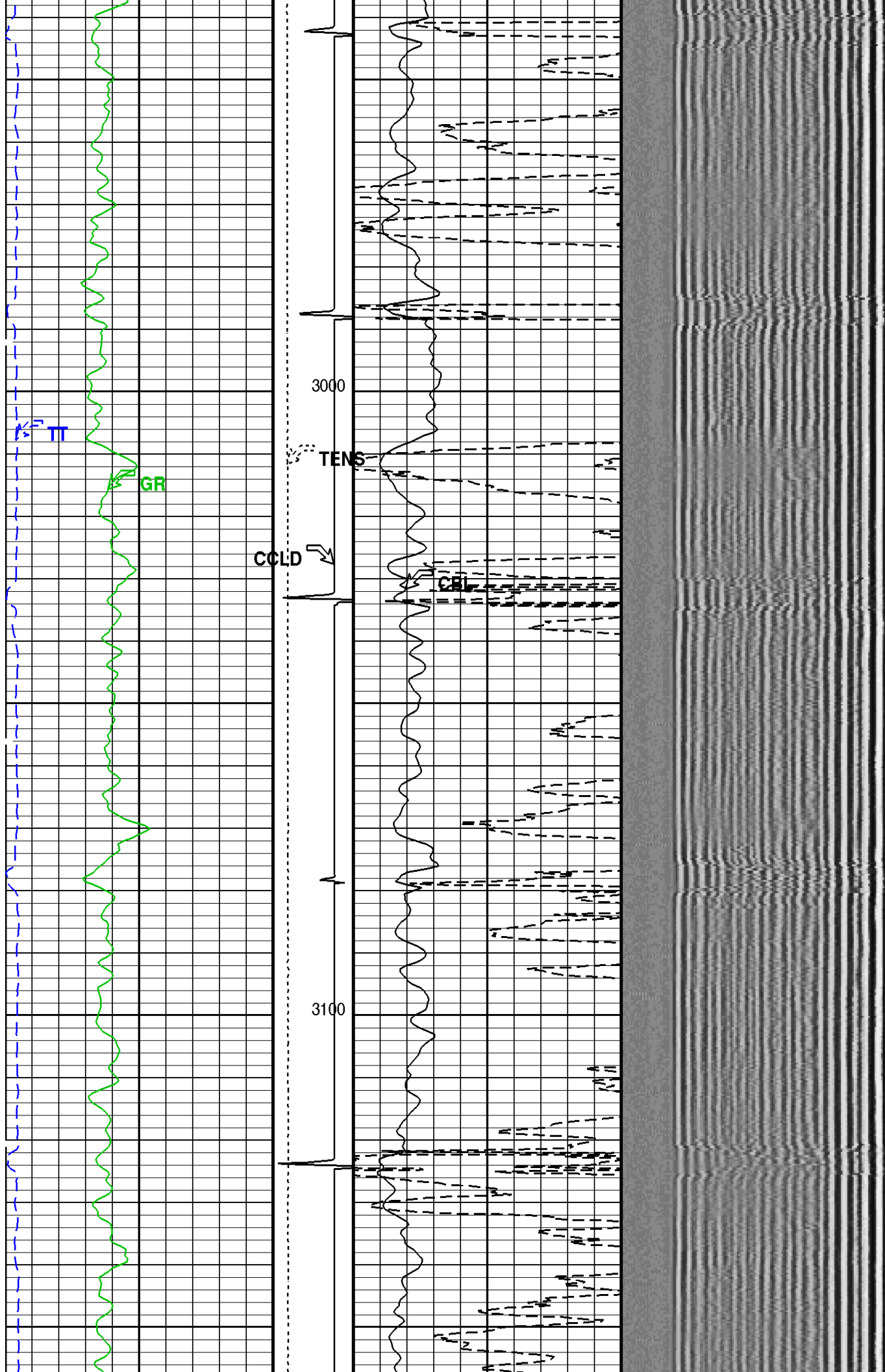


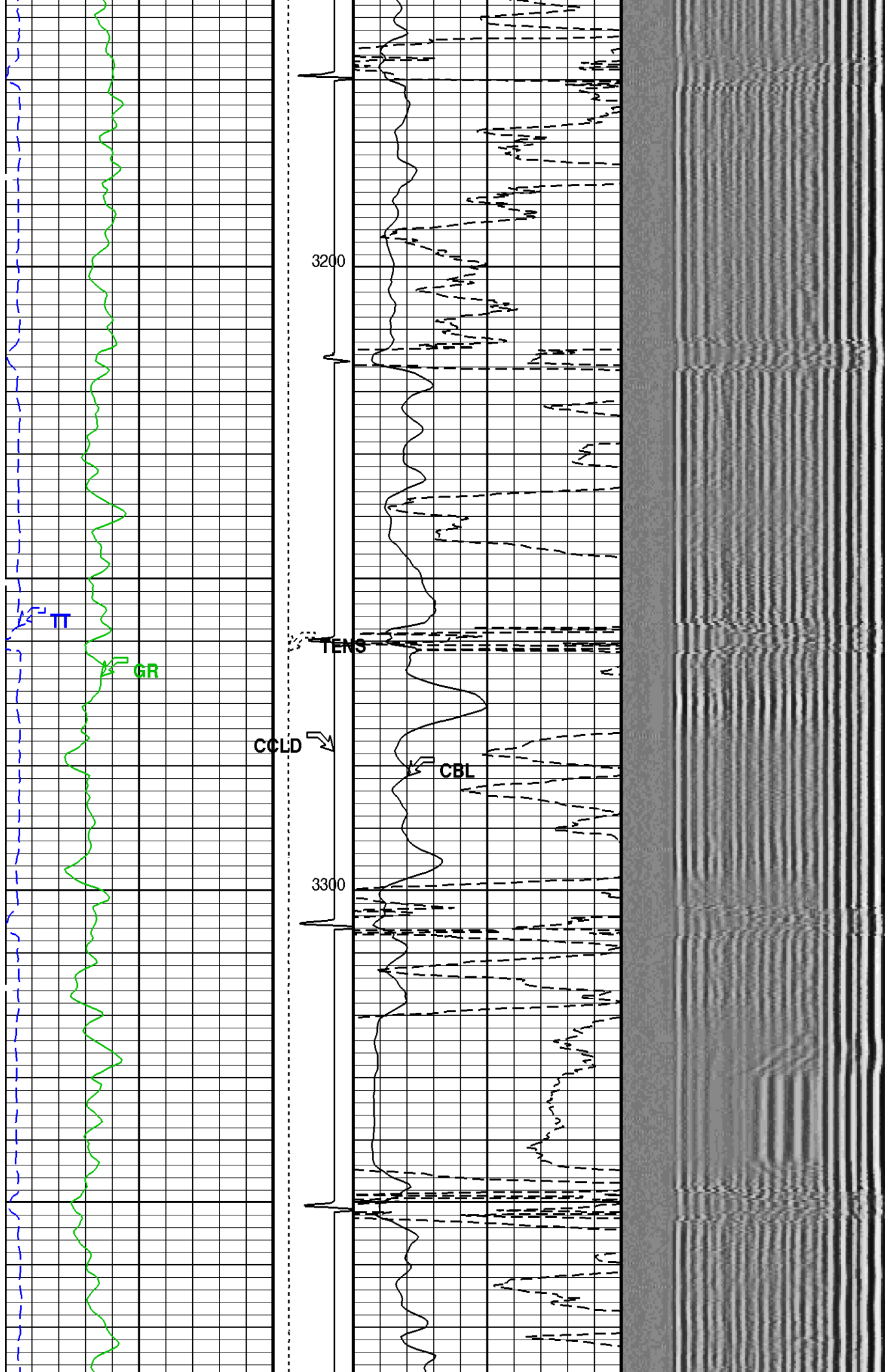


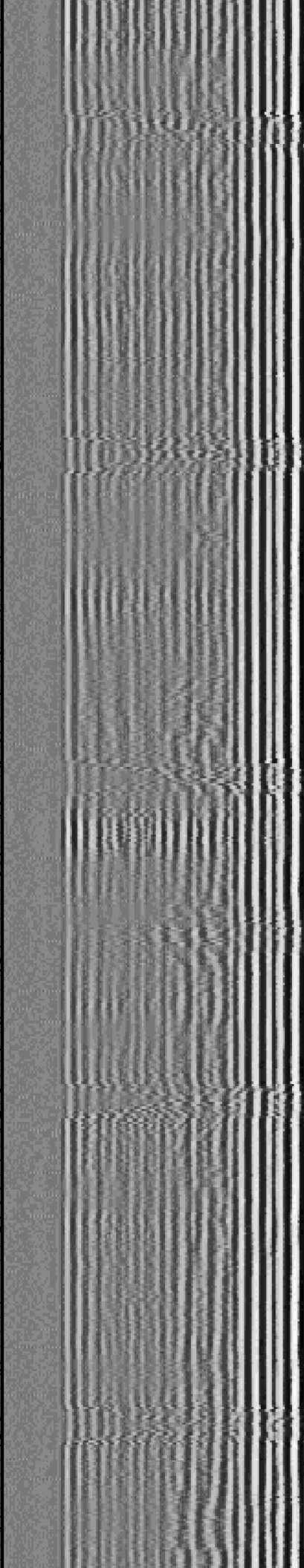
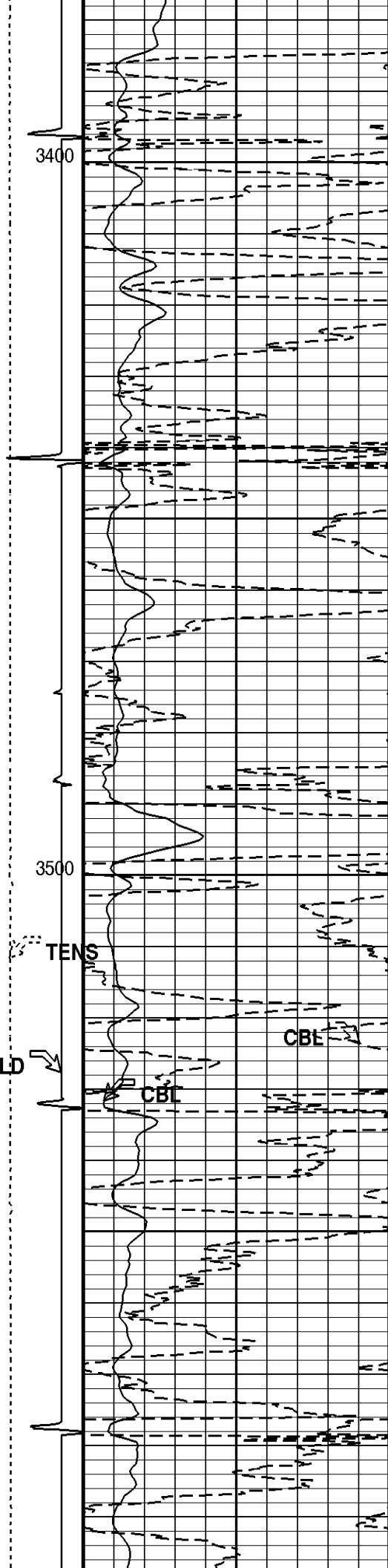
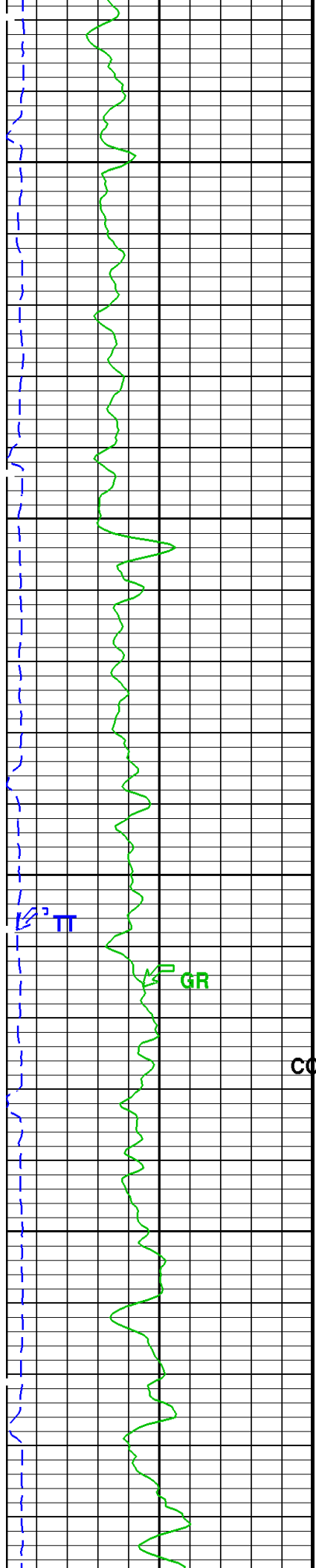


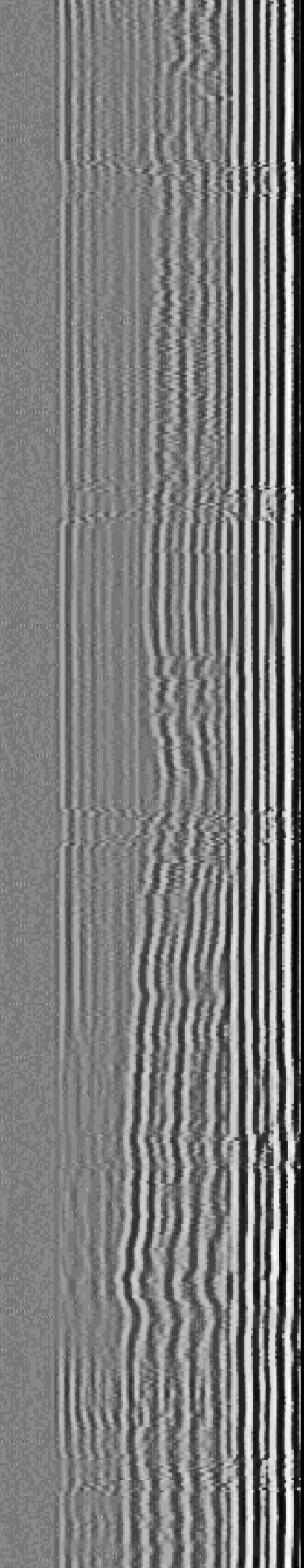
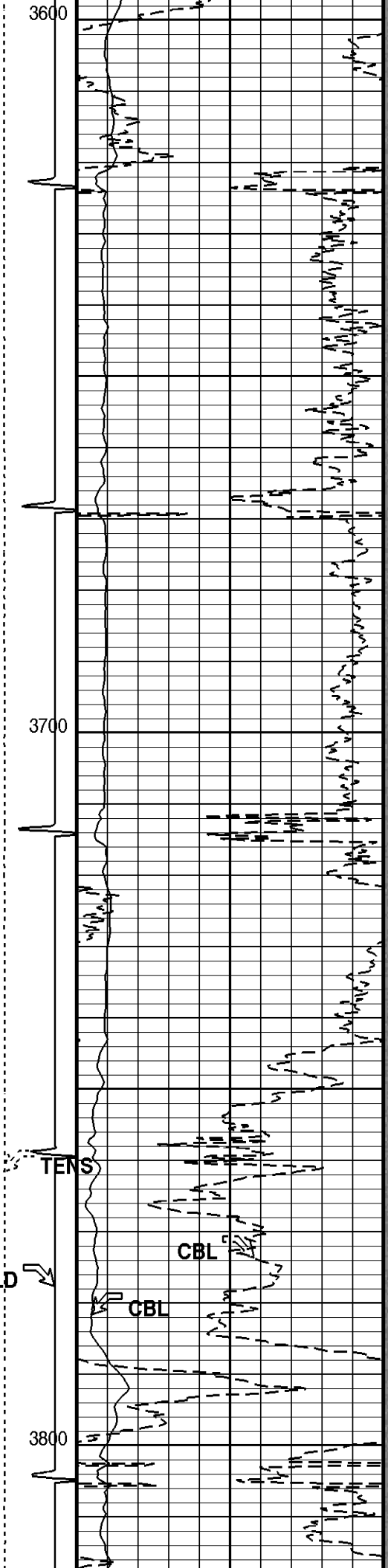
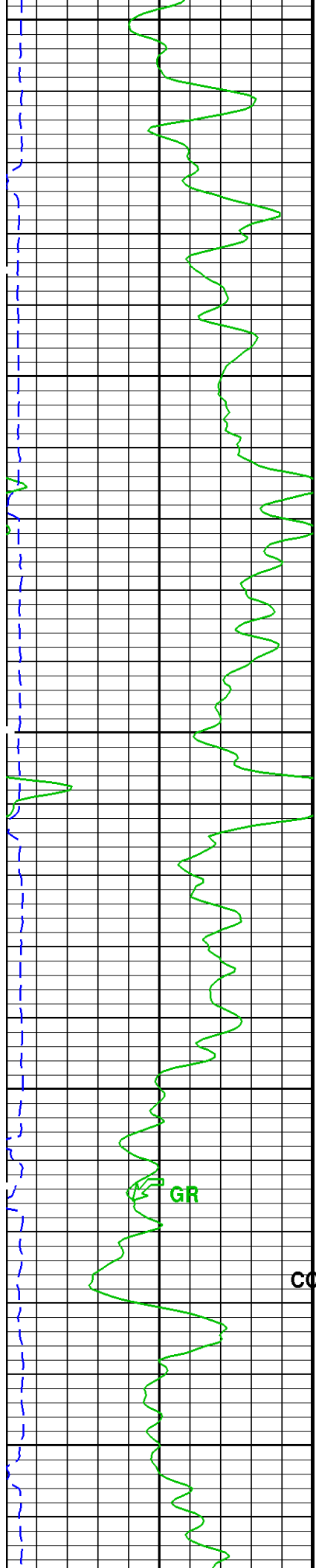


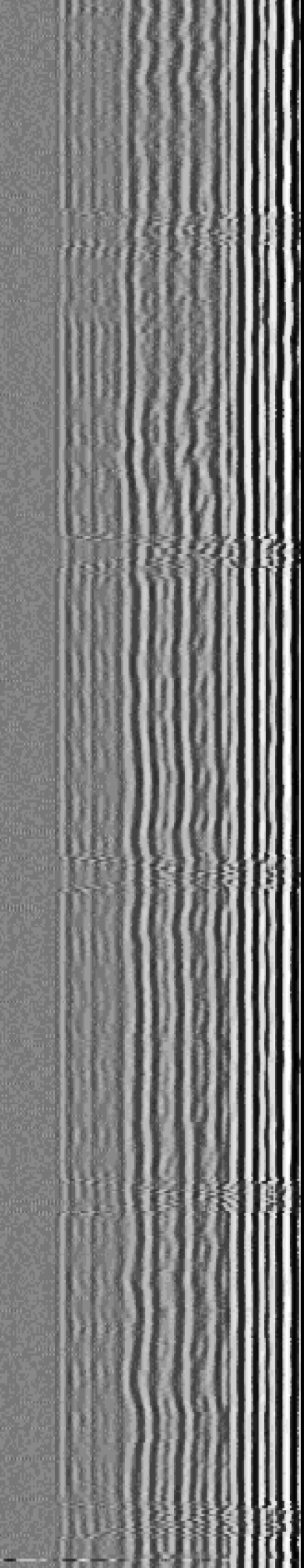
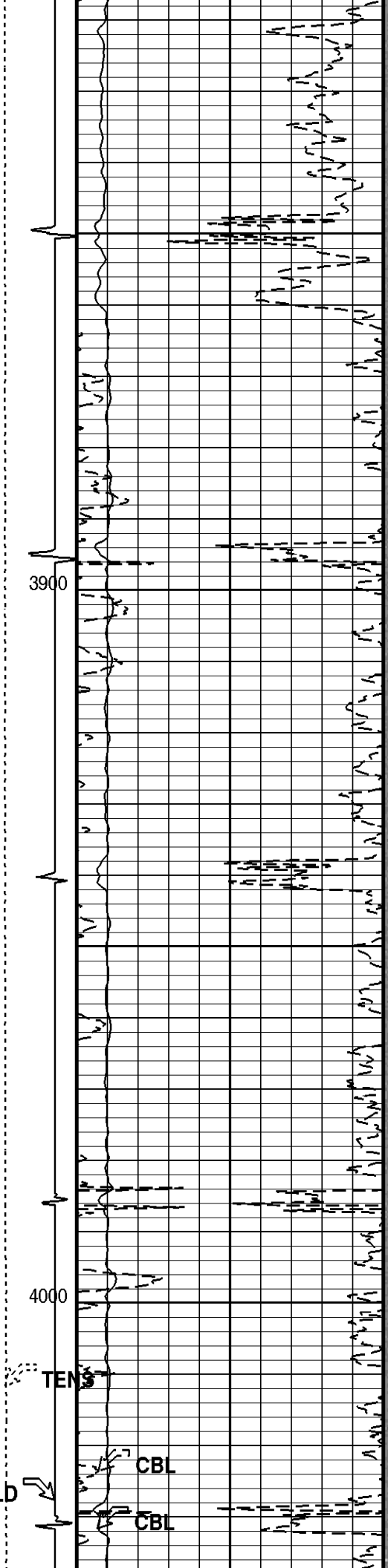
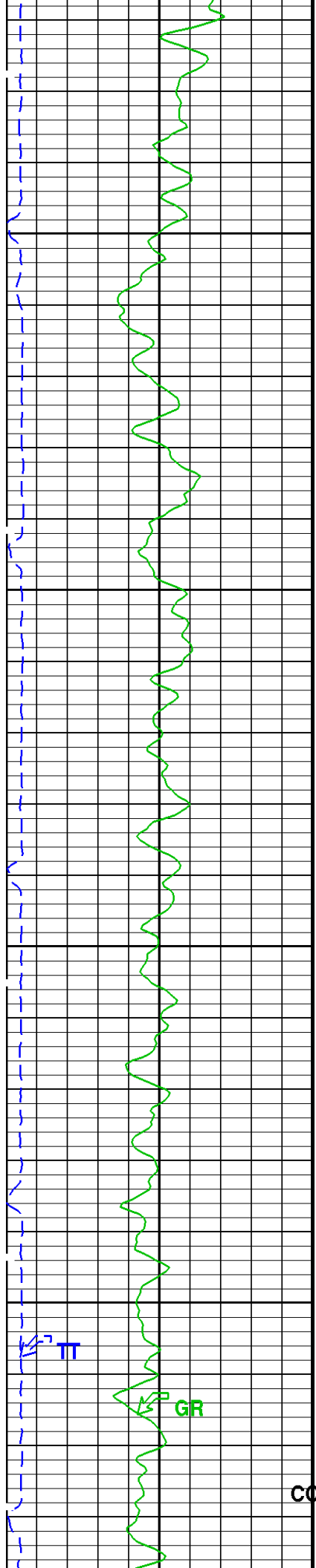


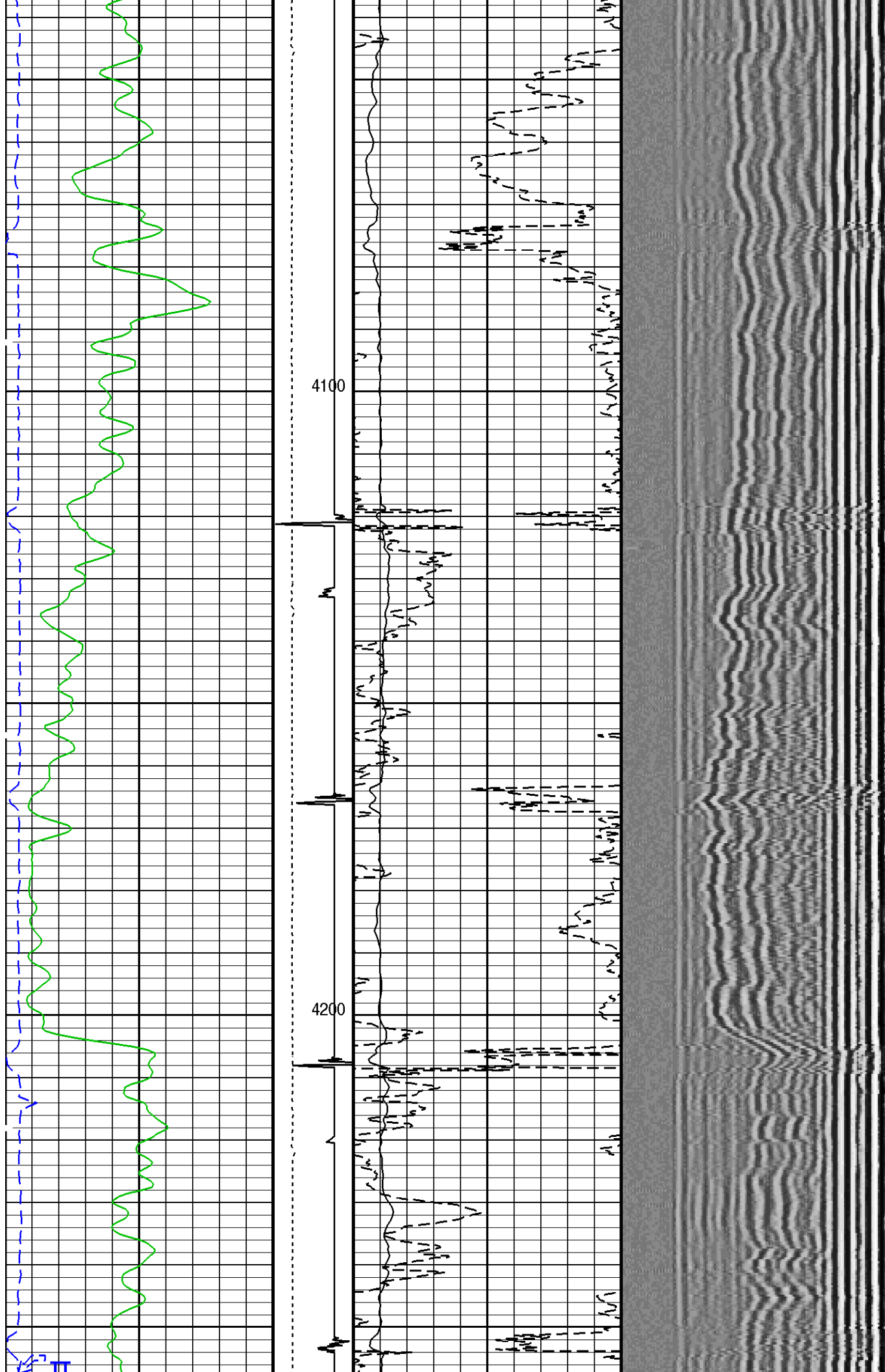


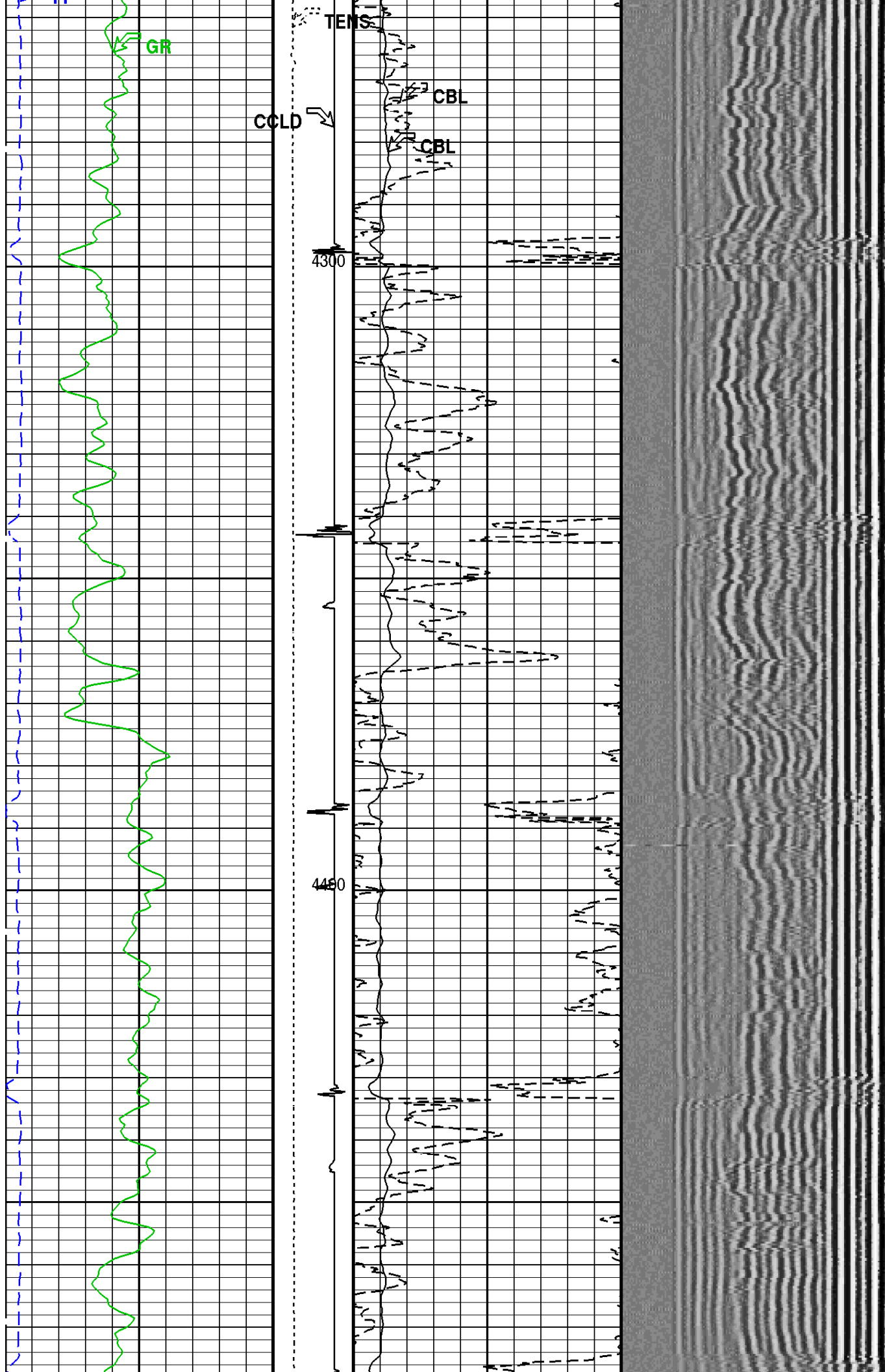


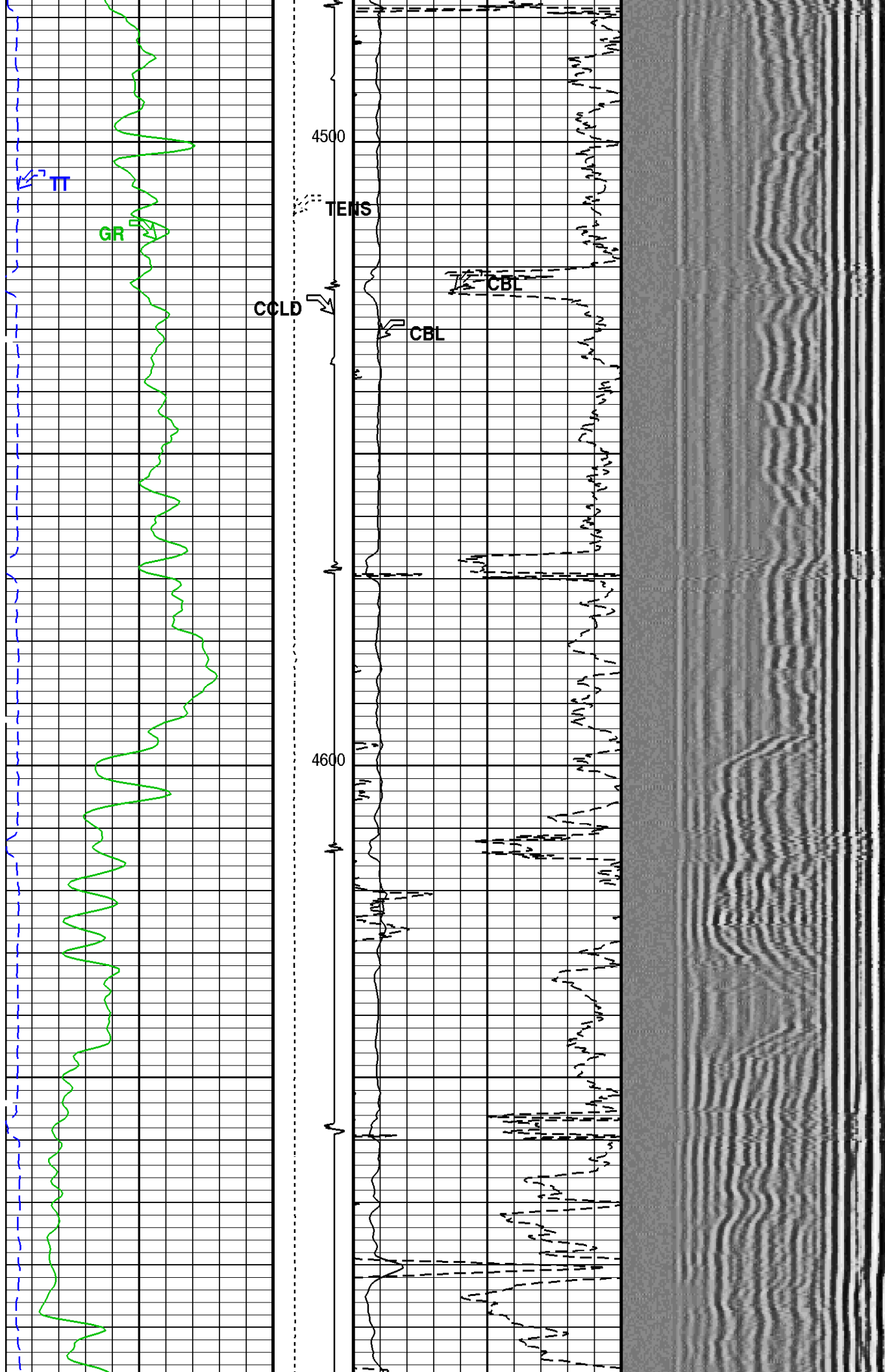


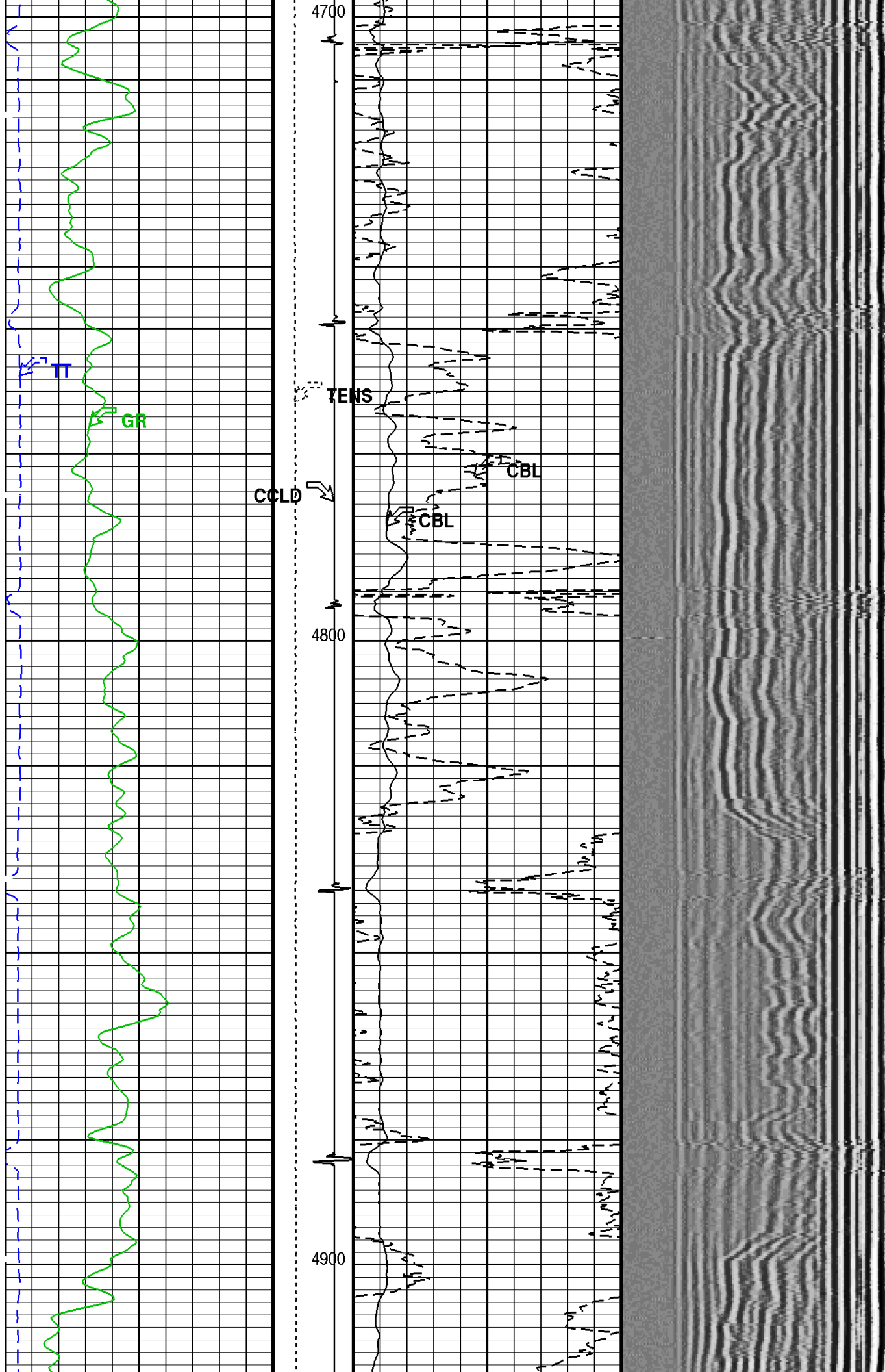


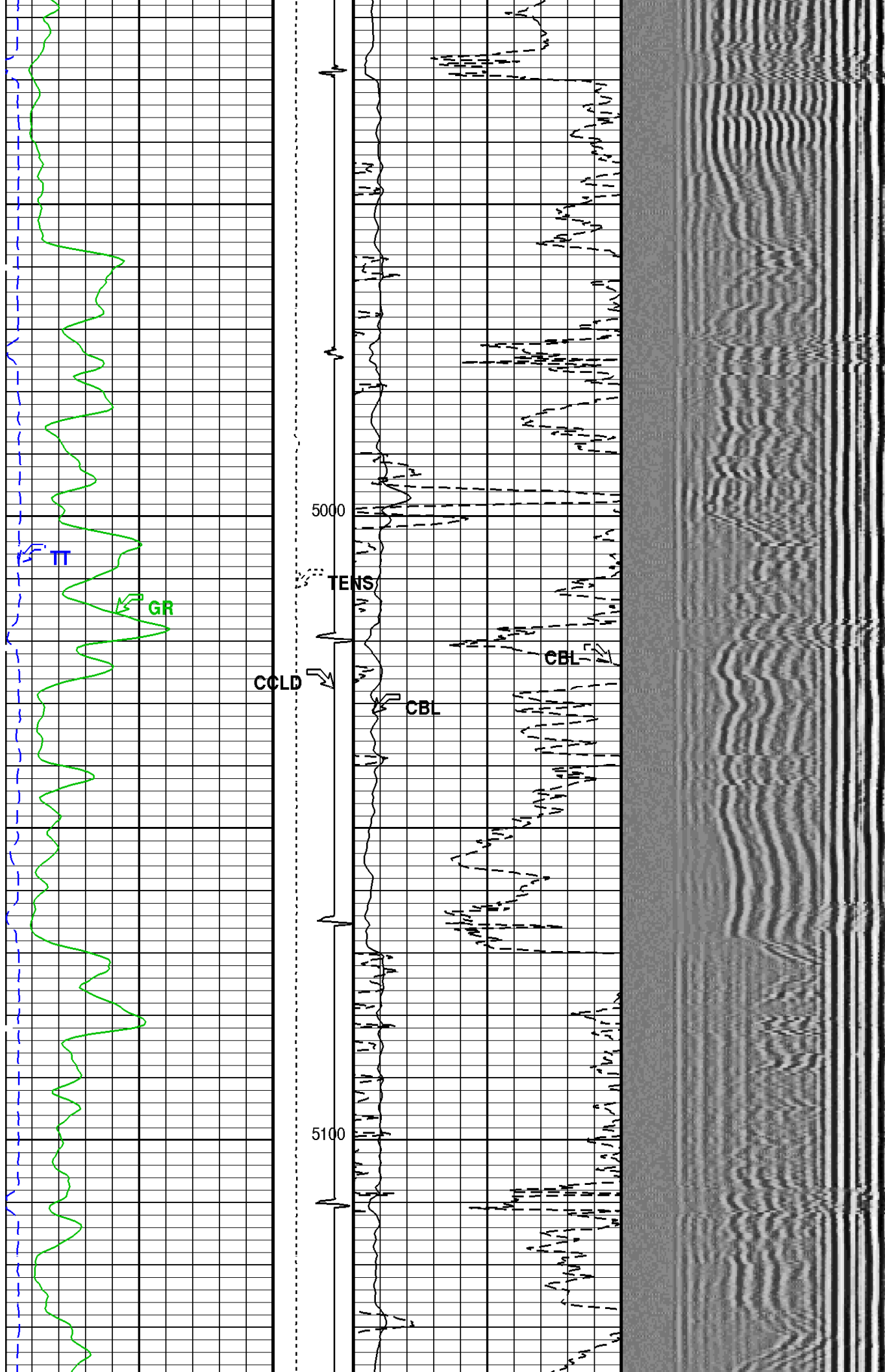


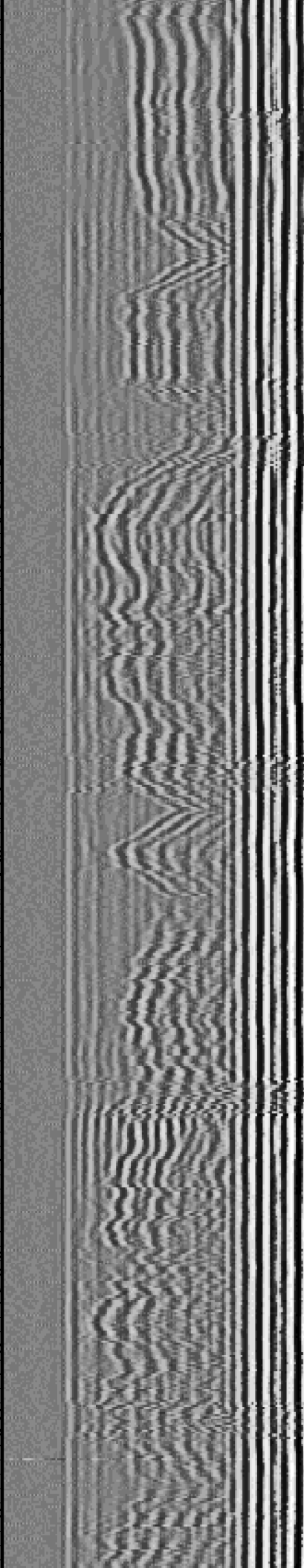
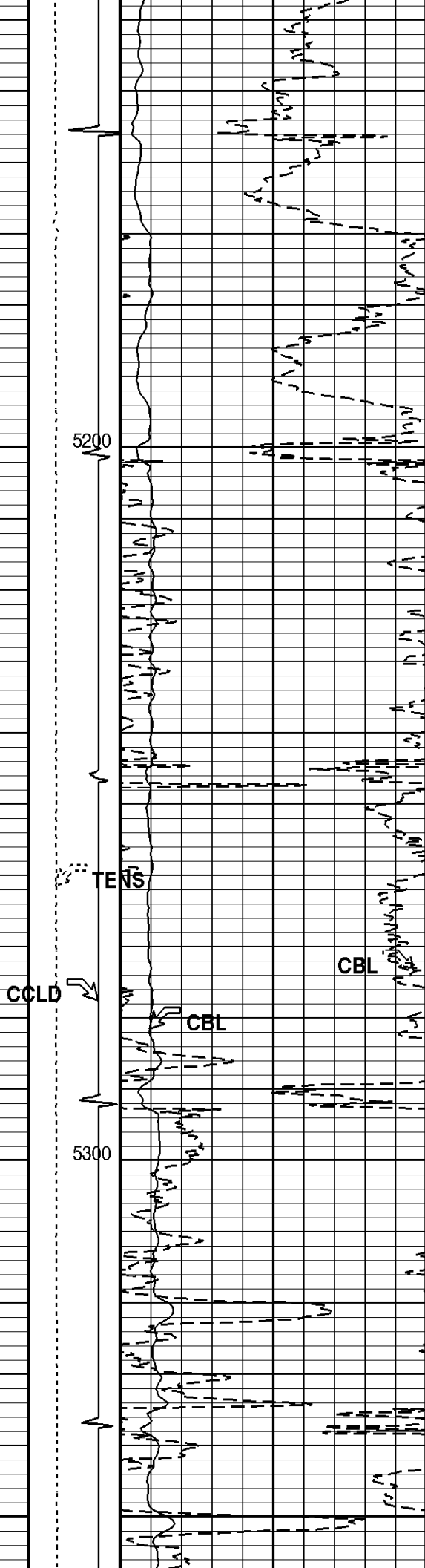
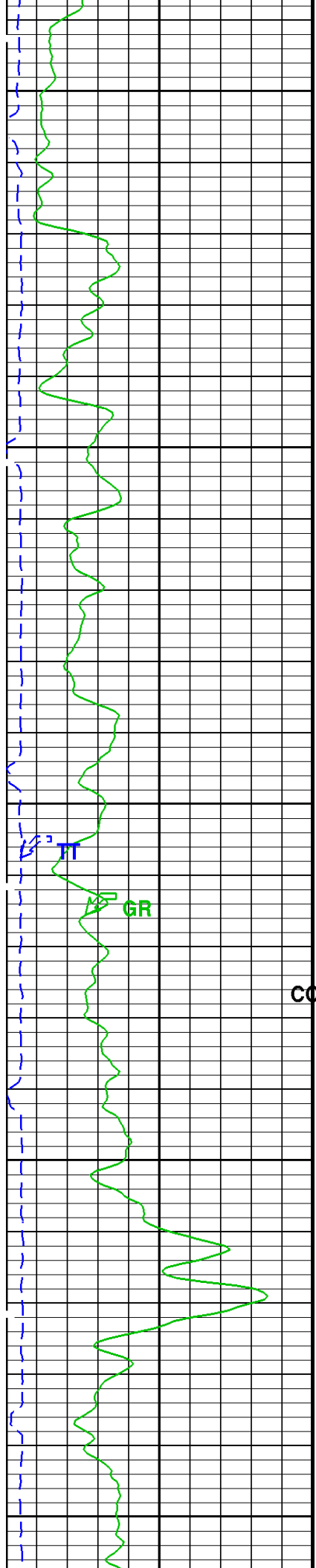


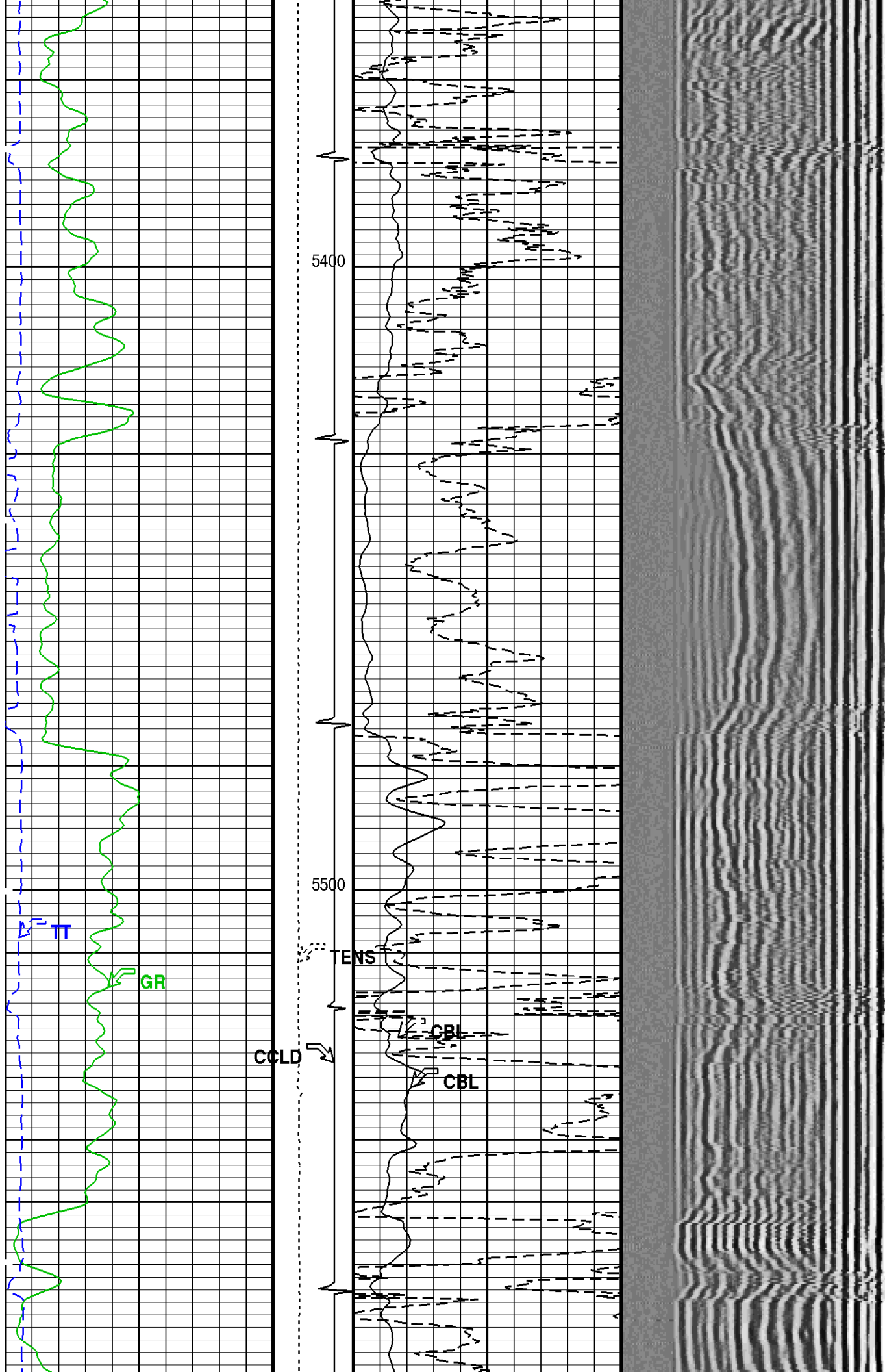


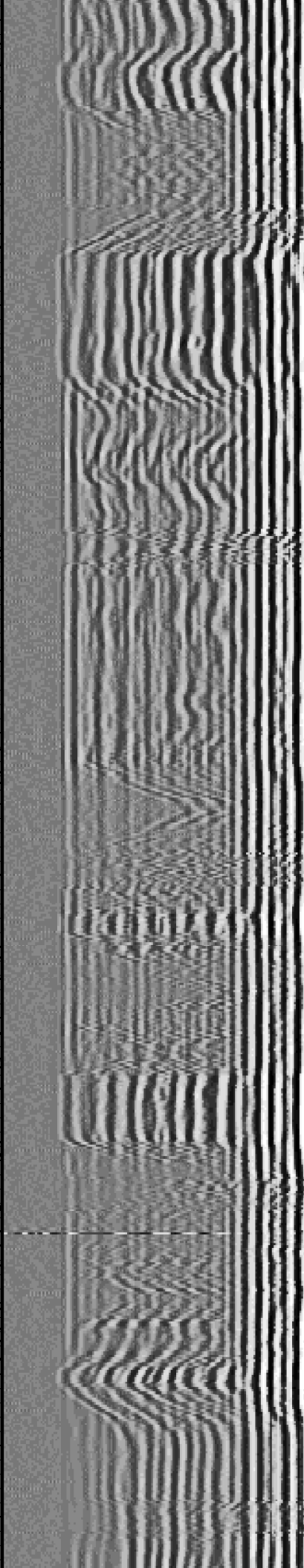
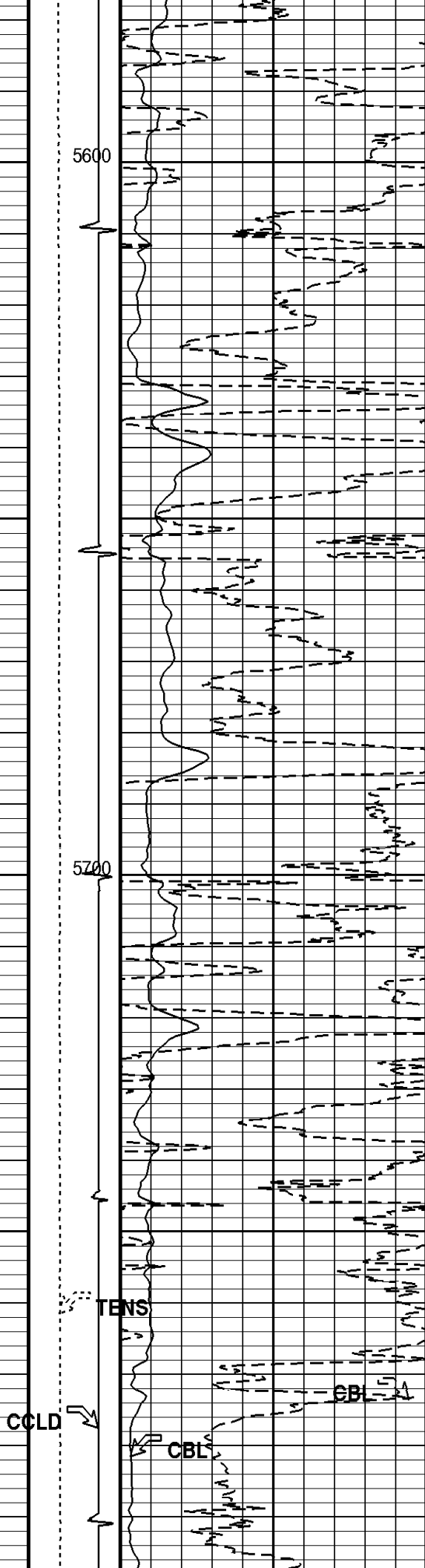
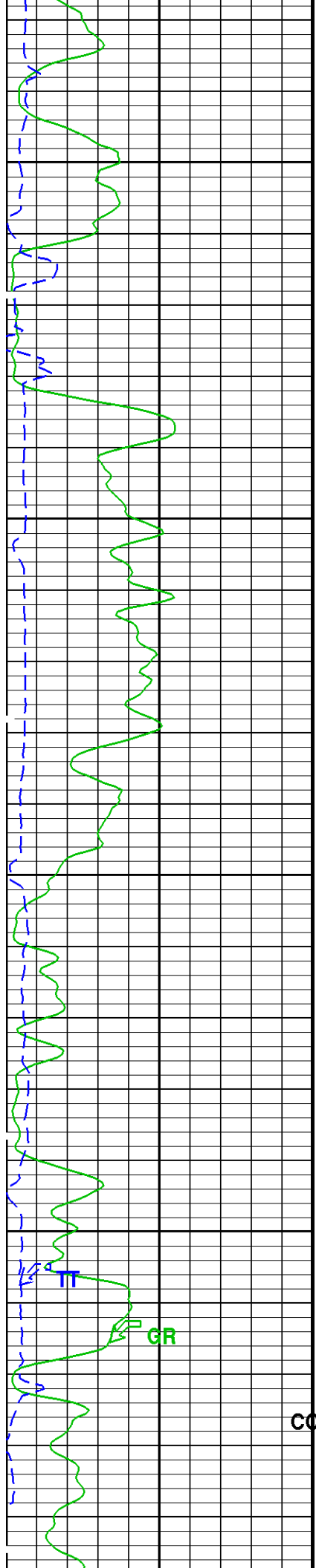


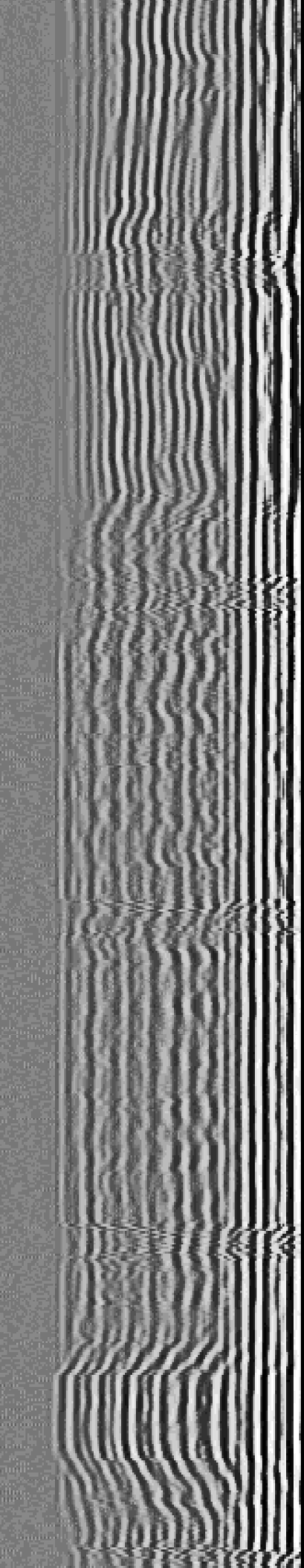
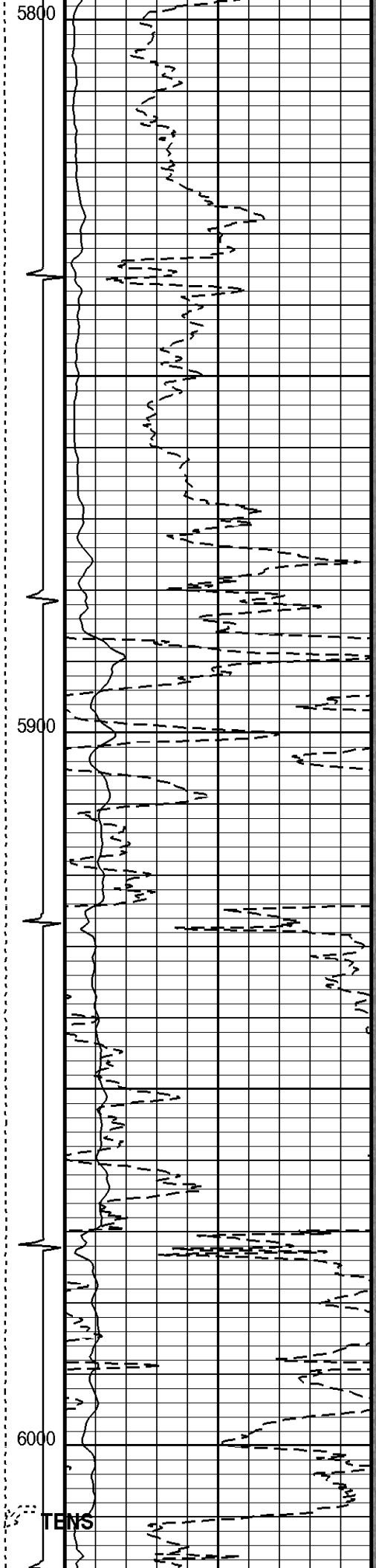
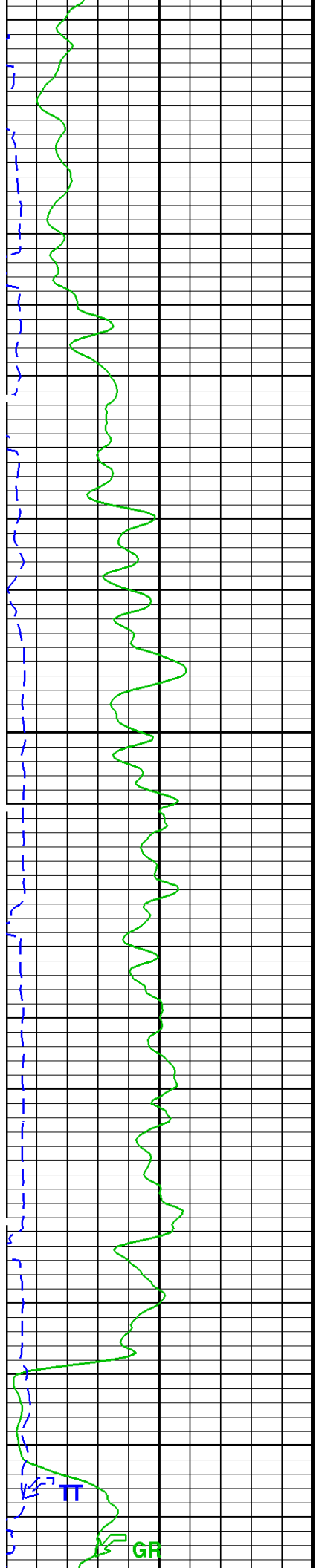


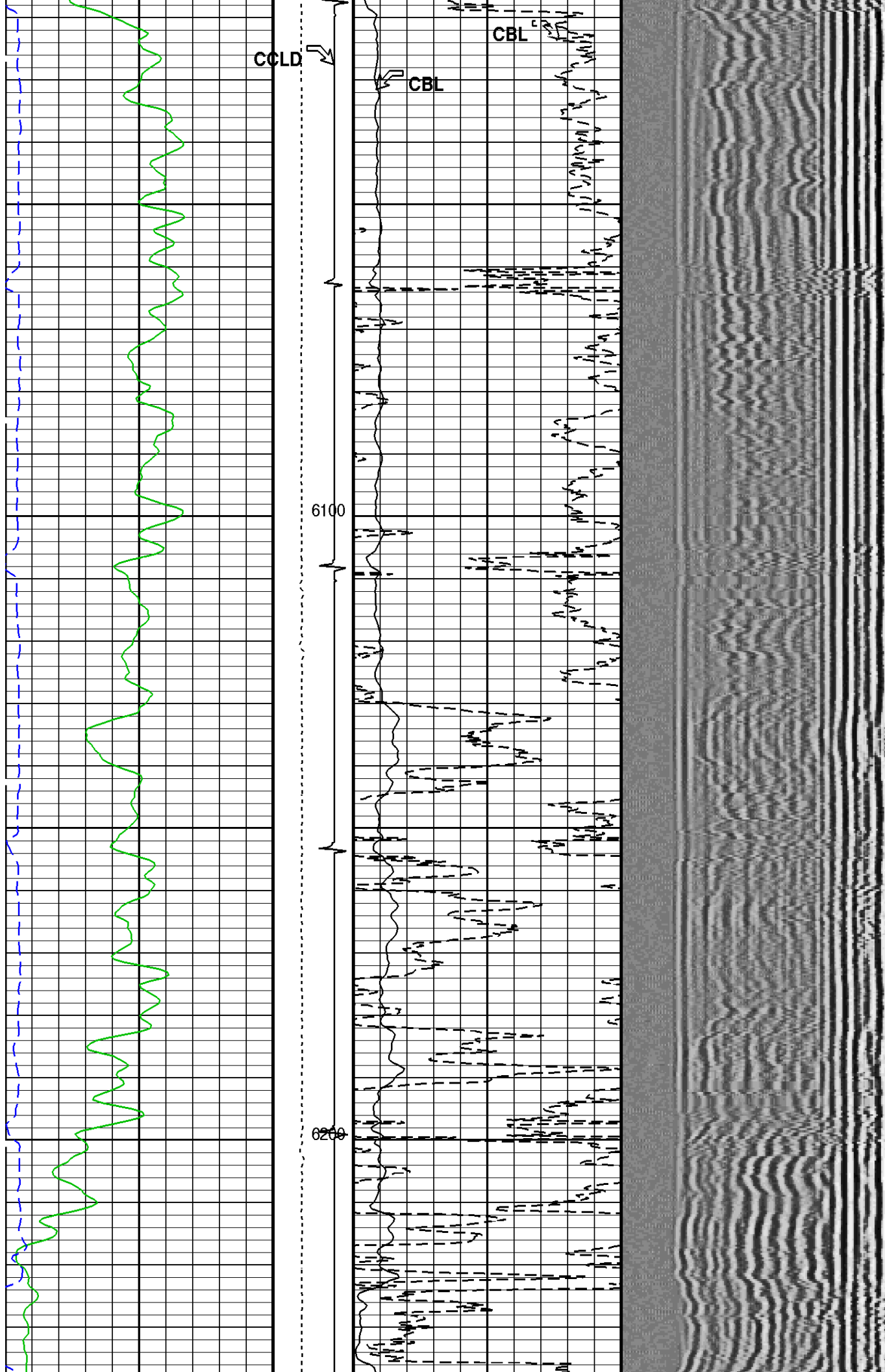


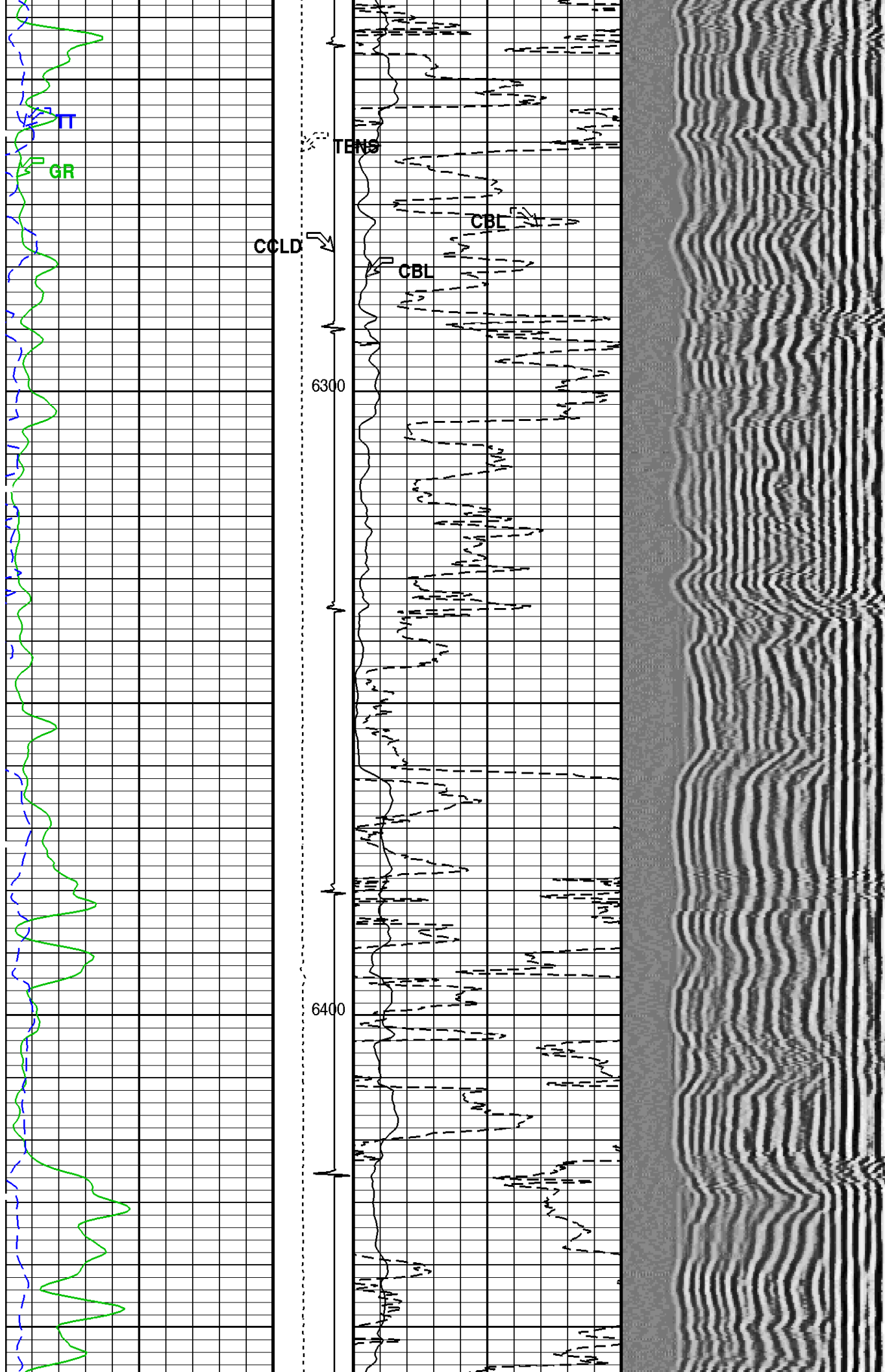


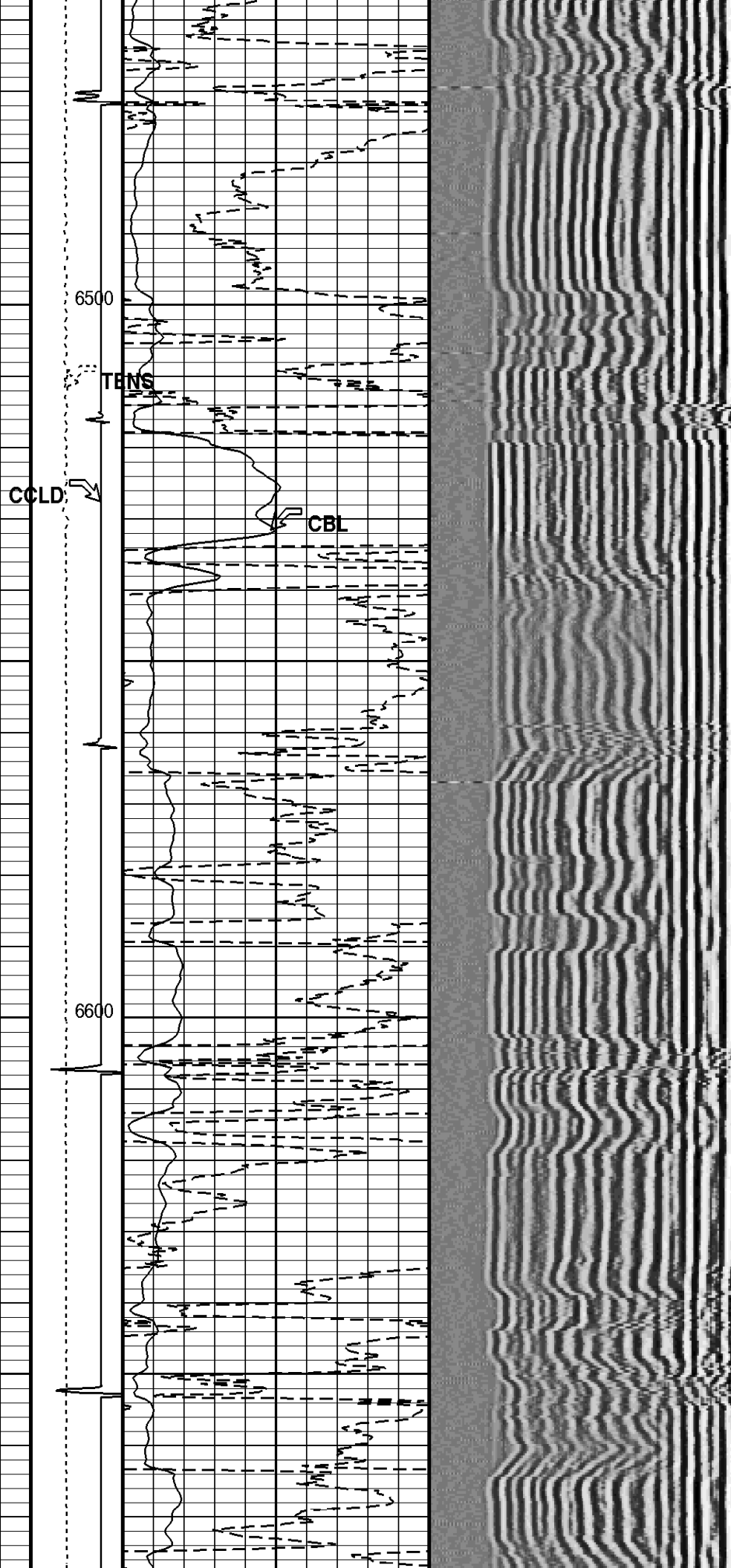
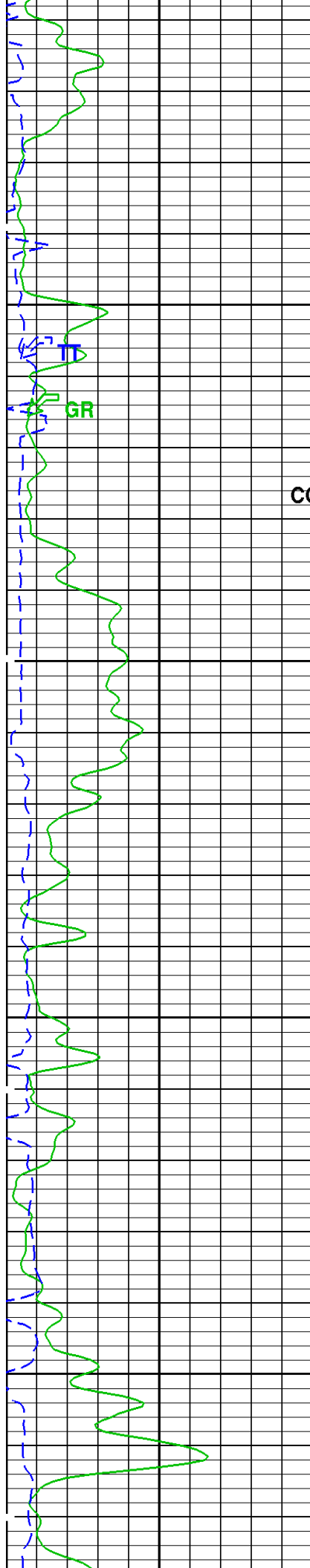


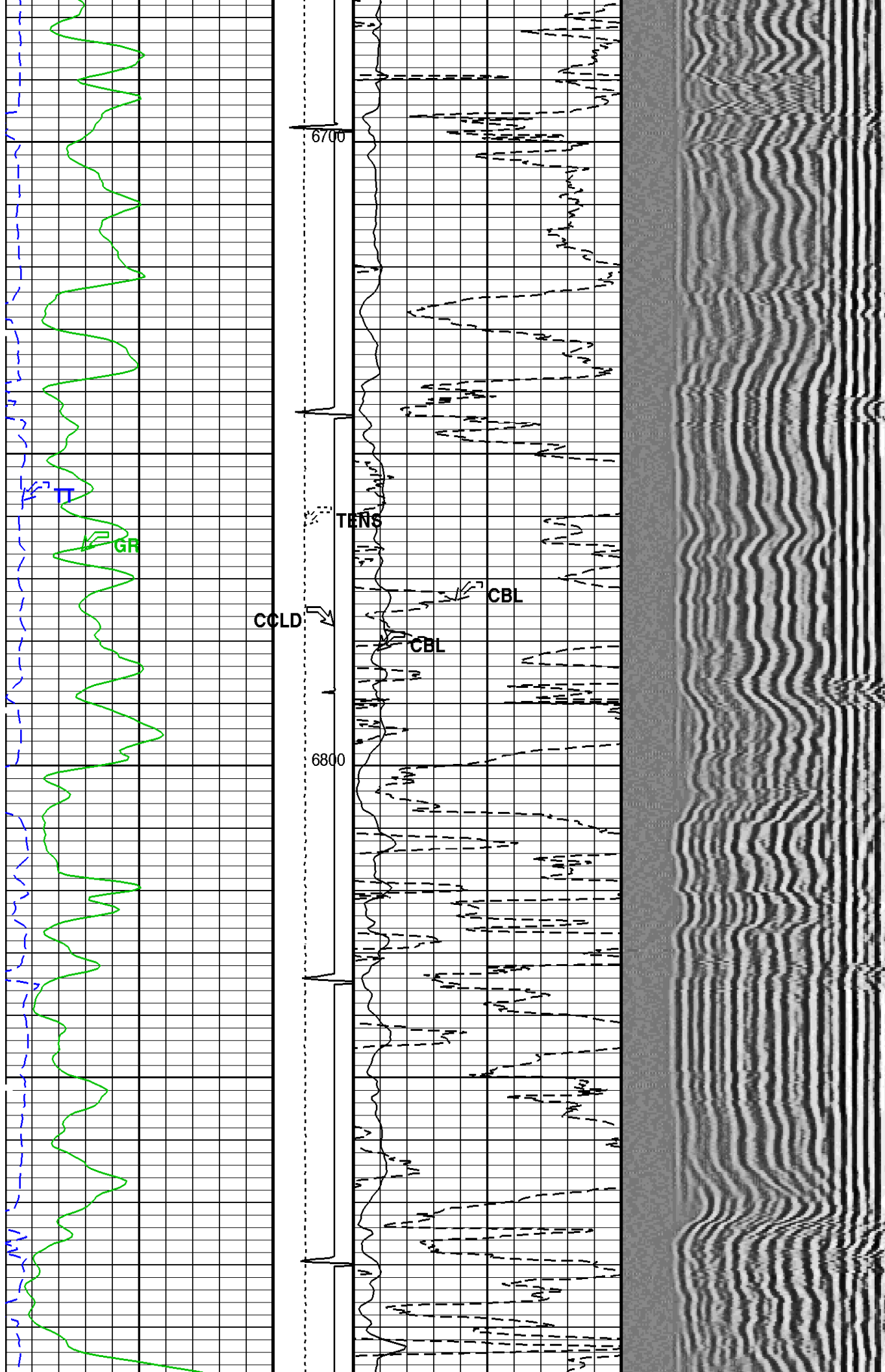


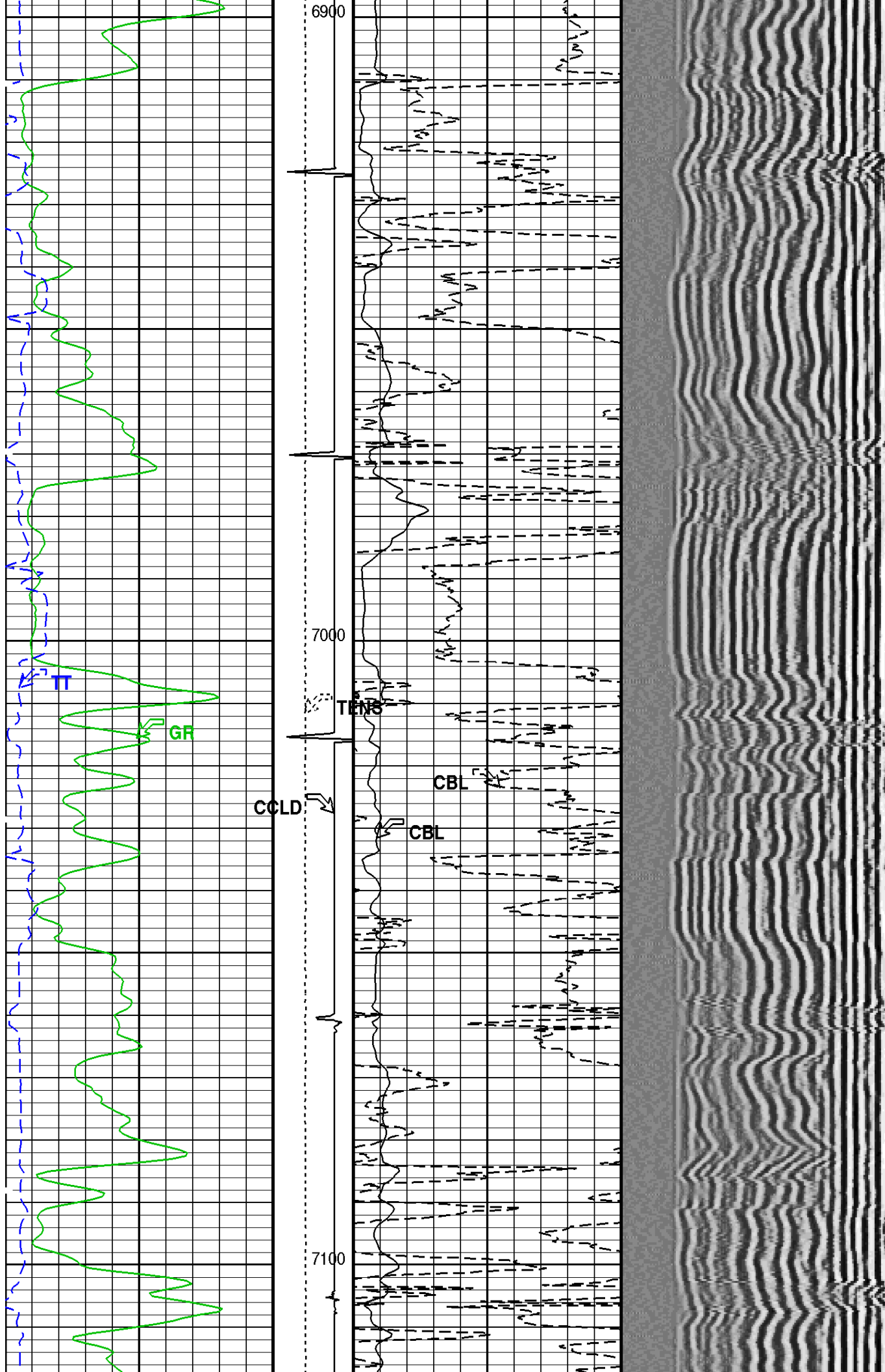


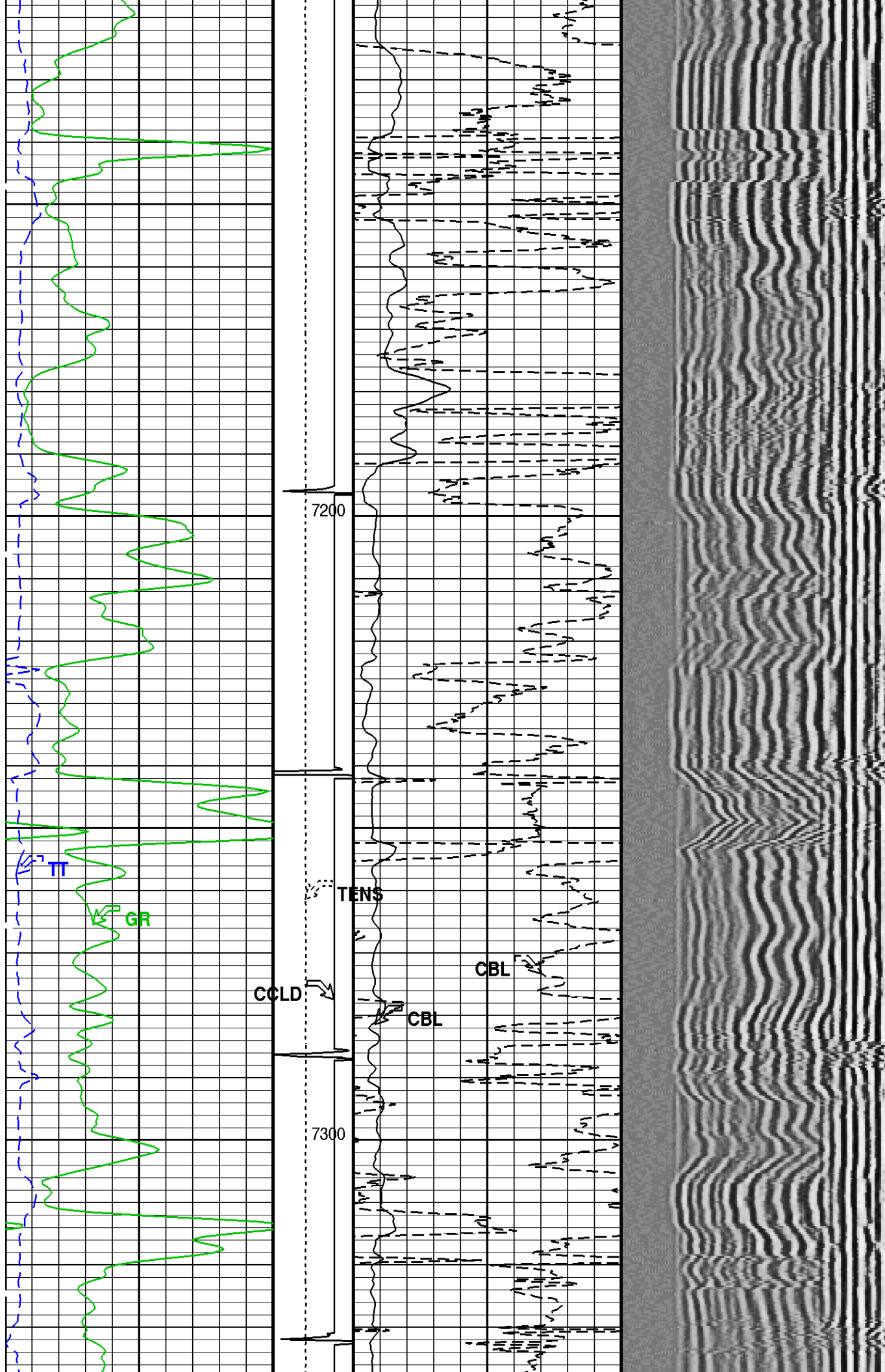


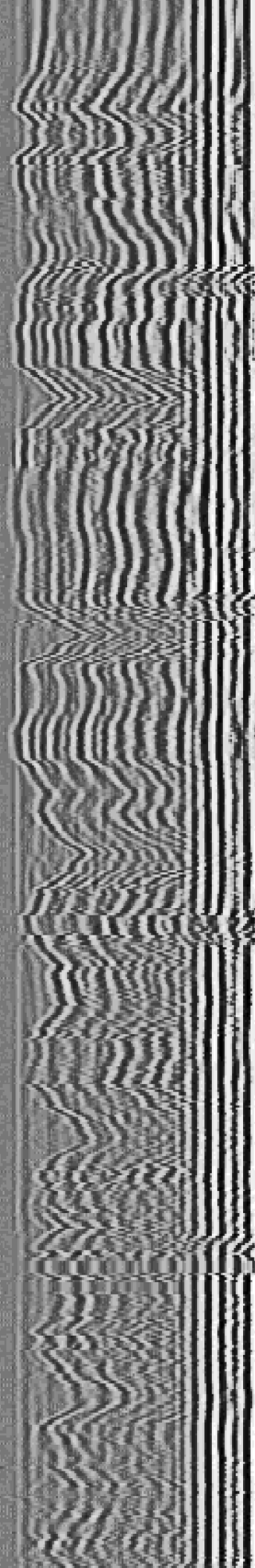
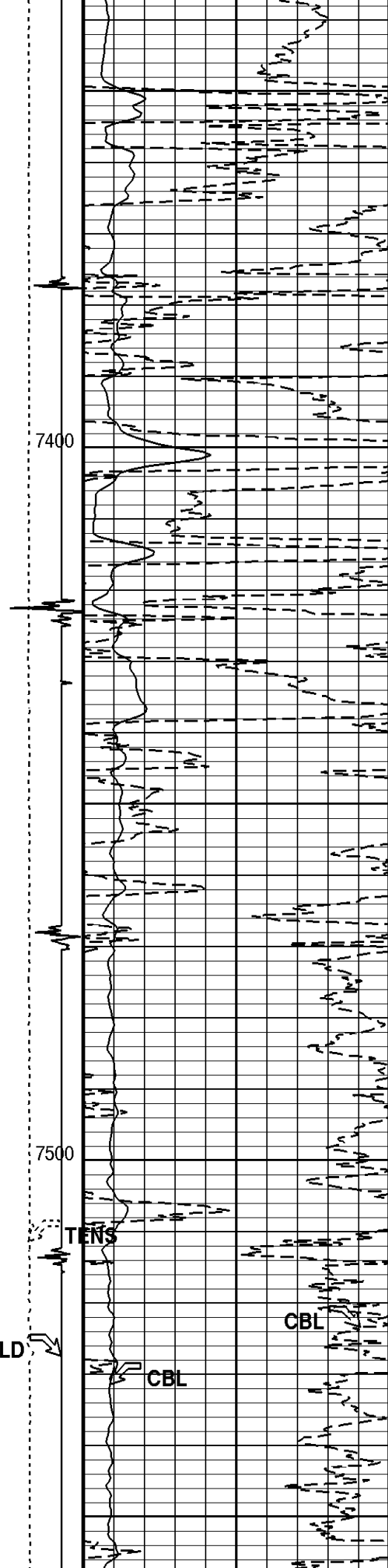
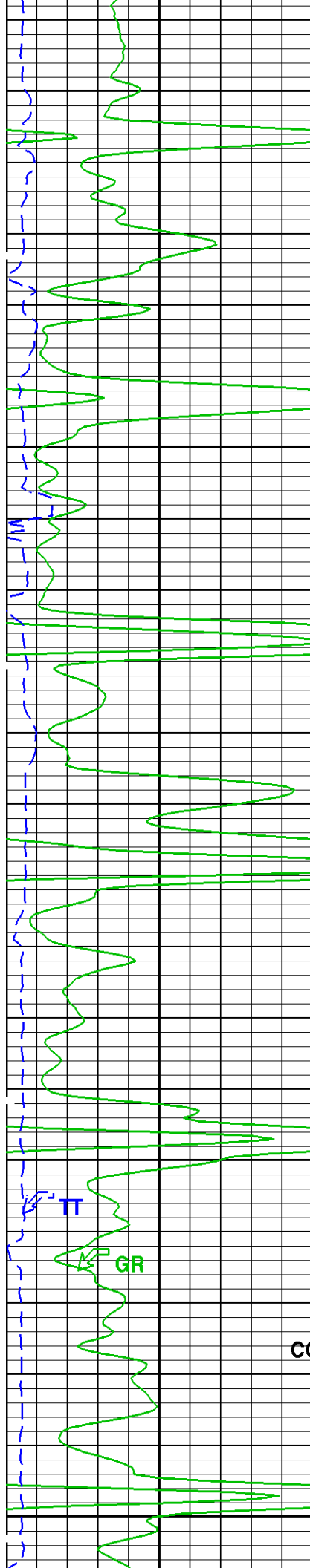












7400

7500

TENS

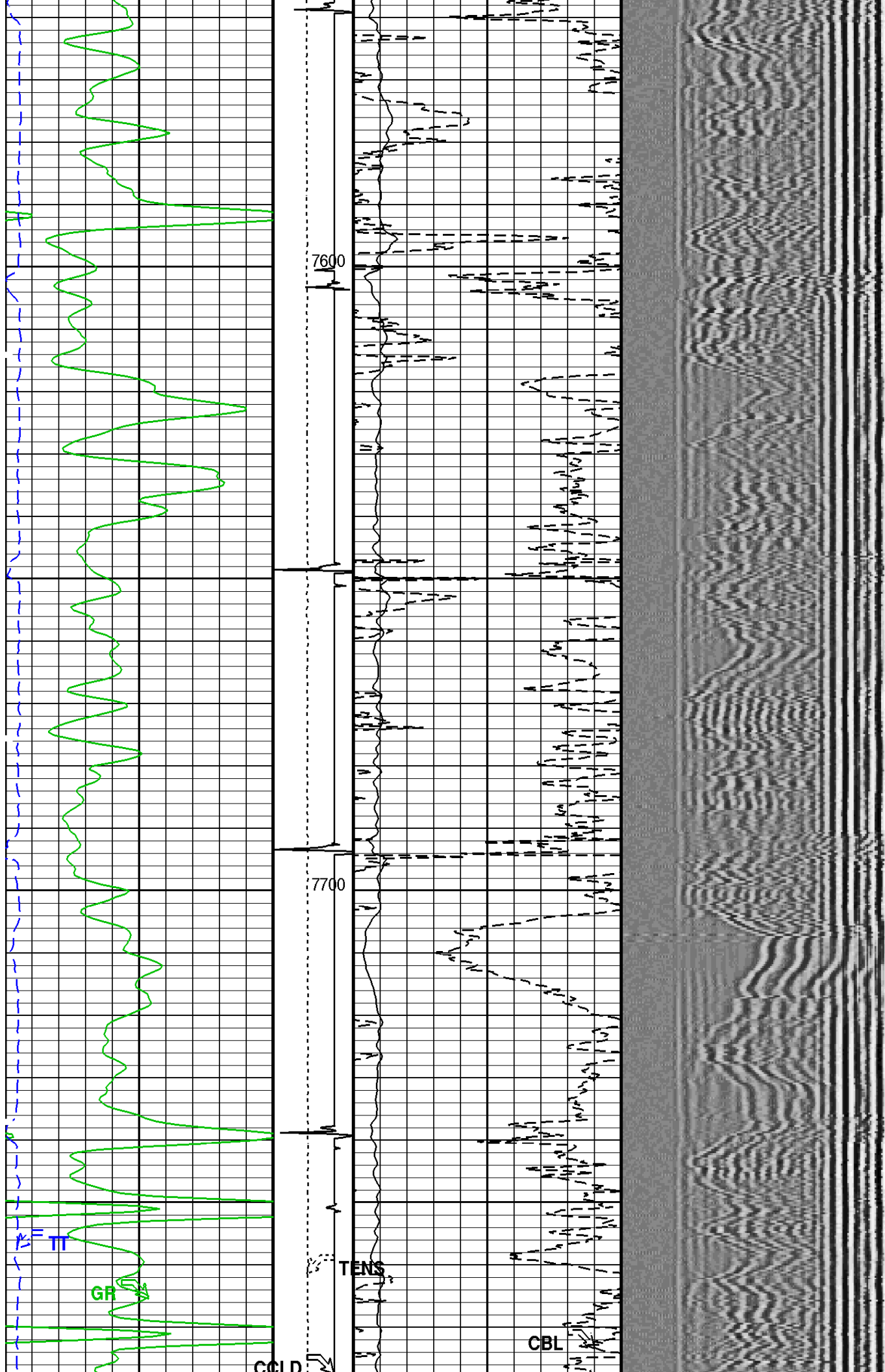
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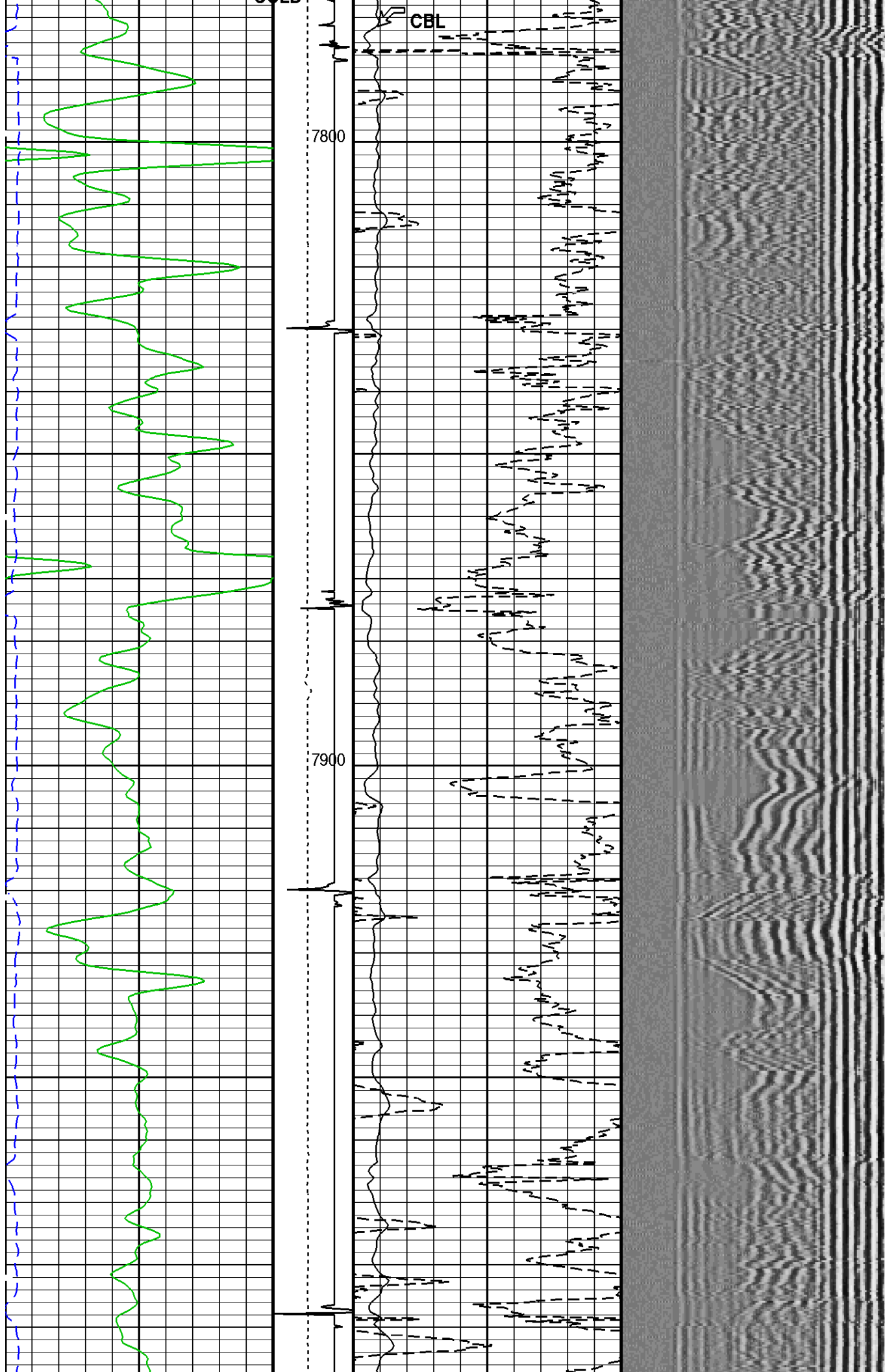
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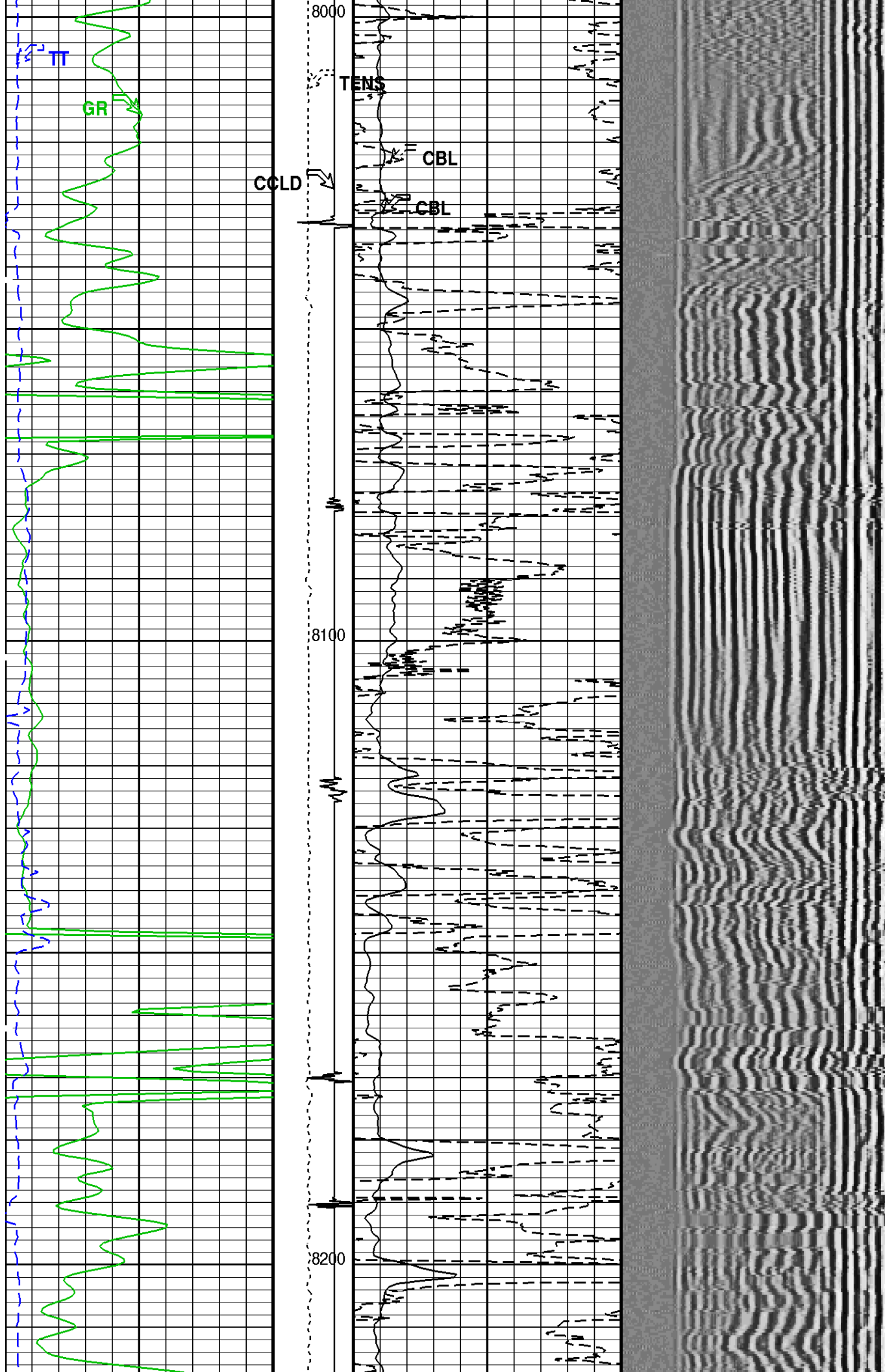
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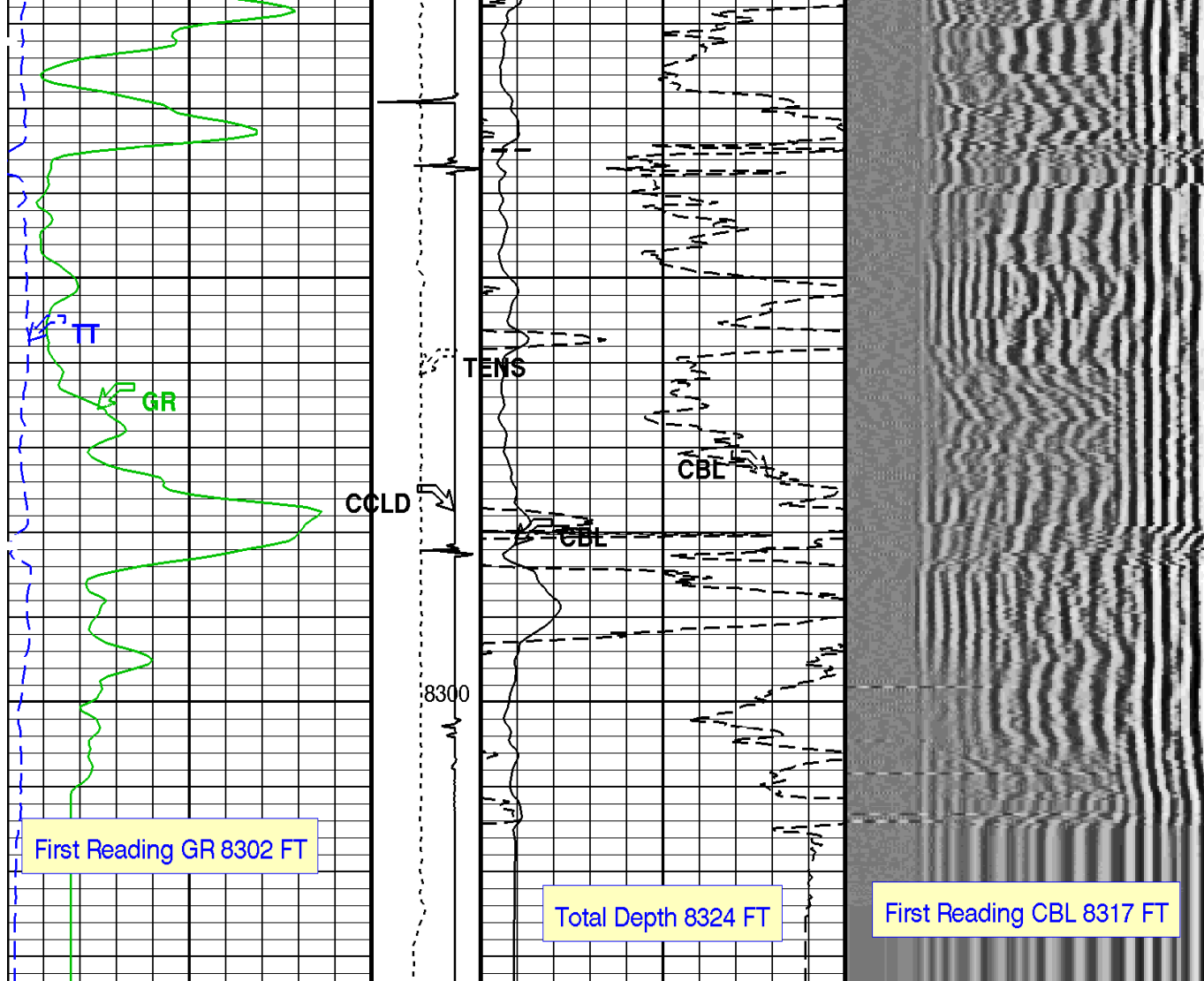
TT

GR









Gamma Ray (GR) (GAPI)		Tension (TENS) (LBF)	CBL Amplitude (CBL) (MV)	Min	Amplitude	Max
0	150	0	100	VDL Variable Density (VDL) (US)		
Transit Time (TT) (US)		Discriminat ed CCL (CCLD) (V)	CBL Amplitude (CBL) (MV)	200		1200
300	100	3 -1	10			

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100'

Graphics File Created: 25-Apr-2014 12:51

OP System Version: 19C0-187

SCMT-CB 19C0-187 PSPT 19C0-187

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8303		
Current Casing Size	7.0 IN		
Casing Weight	26.0 LB/F		
Expected CBL Amplitude in Free Pipe Section	62 MV	Minimum Sonic Amplitude	1.94803 MV (100% Cement)
			3.89184 MV (80% Cement)
		MAP Minimum Sonic Amplitude	11.3304 MV (100% Cement)
			17.5144 MV (80% Cement)

Master Calibration (Normalization)

Before Calibration (Adjustment)

Date of Master Calibration 10-JAN-2013

CBL Correction Factor	0.0724347	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.0921134	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.0799274		
MAP 3 Correction Factor	0.0994426		
MAP 4 Correction Factor	0.102023		
MAP 5 Correction Factor	0.122976		
MAP 6 Correction Factor	0.111096		
MAP 7 Correction Factor	0.113991		
MAP 8 Correction Factor	0.113682		

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	258.768	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	372.768	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	50	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	62	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMT	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.366591	IN
DTF	Delta-T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	3.89184	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	201.768	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	11.6819	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	10	FT
MMSA	MAP Minimum Sonic Amplitude	11.3304	MV
MSA	Minimum Sonic Amplitude	1.94803	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	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	-50000.00	LB/G
DO	Depth Offset for Playback	4.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	8324	FT

Input DLIS Files

DEFAULT	SCMT_PSP_008LUP	FN:7	PRODUCER	25-Apr-2014 10:30	8329.5 FT	69.7 FT
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Output DLIS Files

DEFAULT	SCMT_PSP_011PUP	FN:10	PRODUCER	25-Apr-2014 12:51
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Schlumberger

REPEAT ANALYSIS CBL VDL

Input DLIS Files

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DEFAULT	SCMT_PSP_011PUP	FN:10	PRODUCER	25-Apr-2014 12:51	8333.5 FT	74.0 FT

Output DLIS Files

DEFAULT	SCMT_PSP_013PUP	FN:12	PRODUCER	25-Apr-2014 12:57	8334.0 FT	8079.0 FT
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OP System Version: 19C0-187

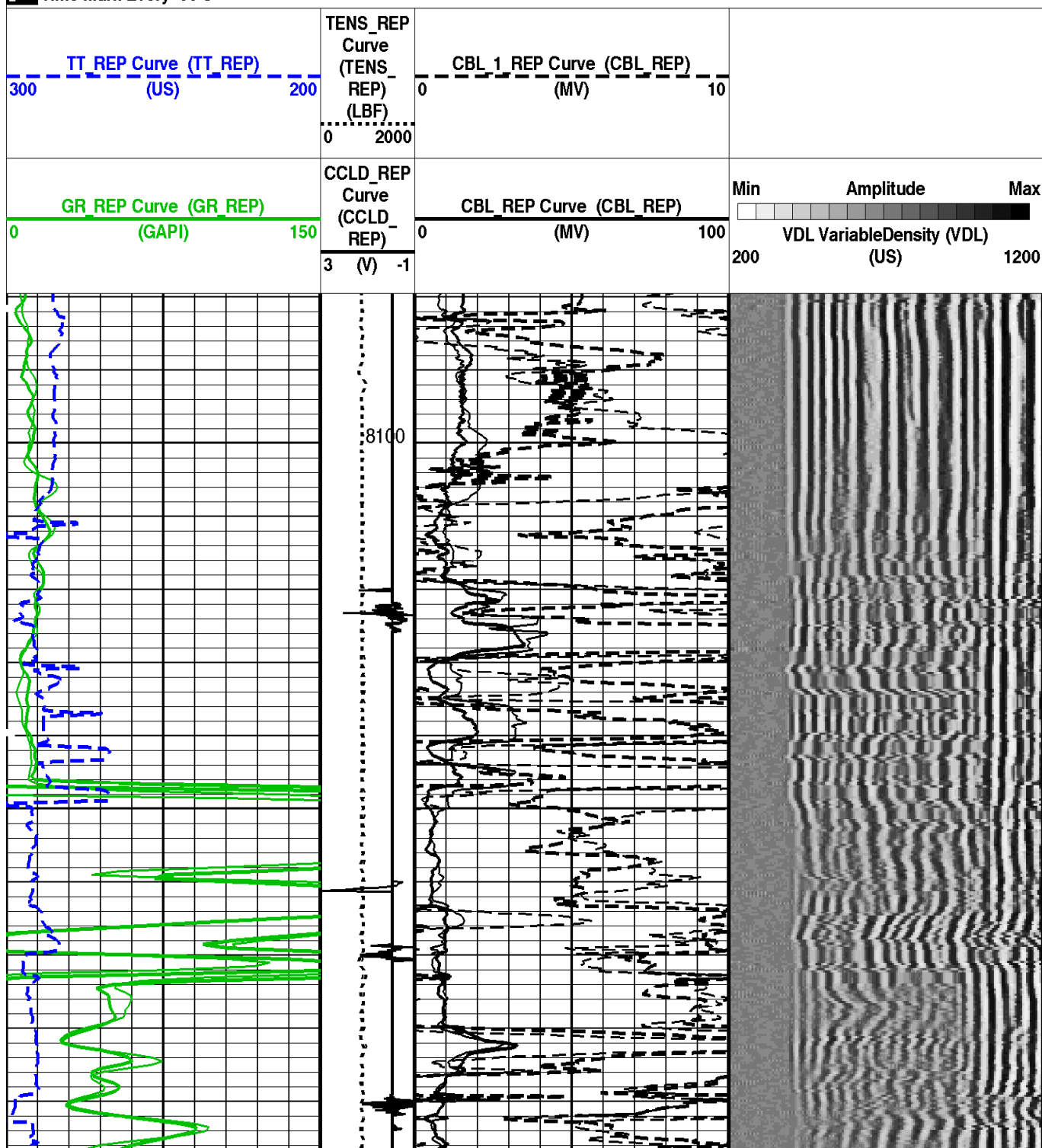
SCMT-CB 19C0-187

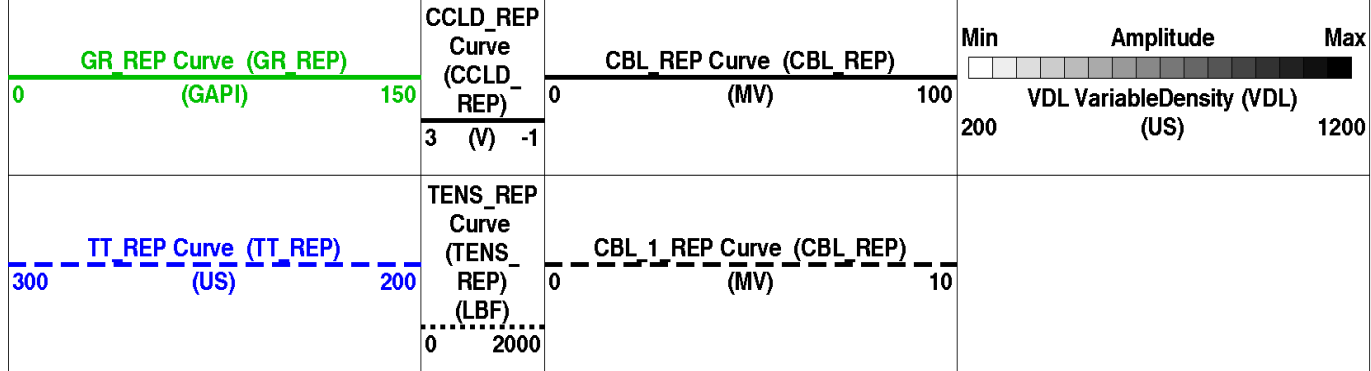
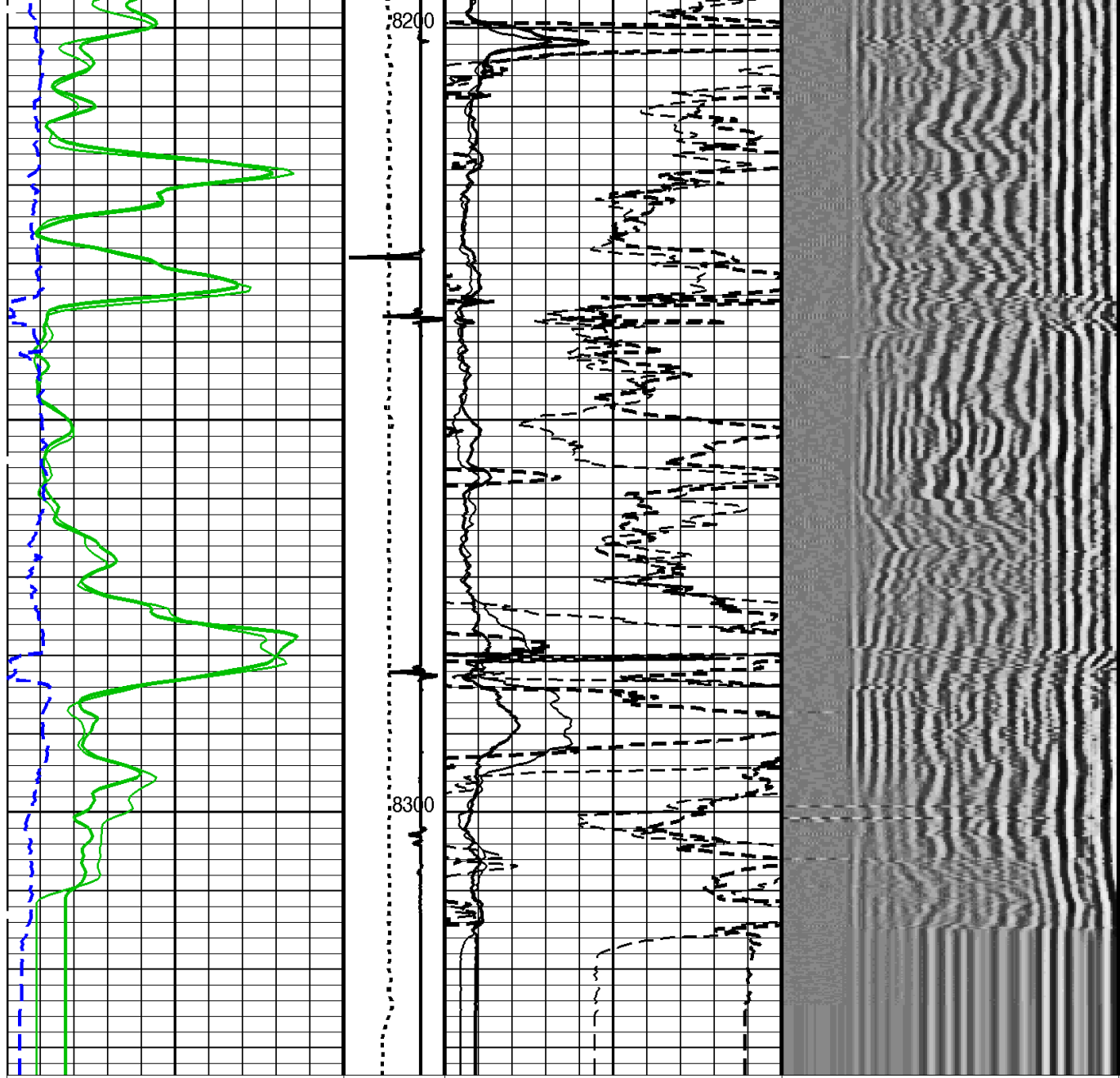
PSPT

19C0-187

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: 25-Apr-2014 12:57

OP System Version: 19C0-187

SCMT-CB	19C0-187	PSPT	19C0-187
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<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8303
Current casing size	7.0 IN

Current Casing Size	10.0 IN		
Casing Weight	26.0 LB/F		
Expected CBL Amplitude in Free Pipe Section	62 MV	Minimum Sonic Amplitude	1.94803 MV (100% Cement) 3.89184 MV (80% Cement)
		MAP Minimum Sonic Amplitude	11.3304 MV (100% Cement) 17.5144 MV (80% Cement)
Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	10-JAN-2013		
CBL Correction Factor	0.0724347	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.0921134	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.0799274		
MAP 3 Correction Factor	0.0994426		
MAP 4 Correction Factor	0.102023		
MAP 5 Correction Factor	0.122976		
MAP 6 Correction Factor	0.111096		
MAP 7 Correction Factor	0.113991		
MAP 8 Correction Factor	0.113682		

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	258.768	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	372.768	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	50	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	62	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	0.366591	IN
DTF	Delta-T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	1	
GOBO	Good Bond	3.89184	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	201.768	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	11.6819	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	10	FT
MMSA	MAP Minimum Sonic Amplitude	11.3304	MV
MSA	Minimum Sonic Amplitude	1.94803	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	7.000	IN
CWEI	Casing Weight	26.00	LB/F
DFD	Drilling Fluid Density	-50000.00	LB/G
DO	Depth Offset for Playback	4.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	8324	FT

Input DLIS Files

DEFAULT	SCMT_PSP_007LUP	FN:6	PRODUCER	25-Apr-2014 10:25	8330.0 FT	8074.7 FT
DEFAULT	SCMT_PSP_011PUP	FN:10	PRODUCER	25-Apr-2014 12:51	8333.5 FT	74.0 FT

Output DLIS Files

DEFAULT	SCMT_PSP_013PUP	FN:12	PRODUCER	25-Apr-2014 12:57
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PBMS COEFFICIENTS

MAXIS Field Log

Client: NIGHTHAWK PRODUCTION LLC

Field: ARIKAREE CREEK

Well: ARIKAREE CREEK SWD 1

Run date: 25-Apr-2014

Tool:

PSP

Sub Type:

PBMS

Sensor:

Clock Model

PBMS Digitalization Clock

Sonde Serial NB

Sensor Serial NB

1978

Calib Date ddmmyy

040413

Matrix Size

16

Coeff CRC

32D3

Clock Coeff

Temp**0

Temp**1

Temp**2

Temp**0

+ .197240577294E+02

- .385846870252E+01

- .884656308536E-01

Temp**3

Temp**4

Temp**5

Temp**0

+ .864677466012E-03

+ .180389331248E-05

0.0

Client: NIGHTHAWK PRODUCTION LLC

Field: ARIKAREE CREEK

Well: ARIKAREE CREEK SWD 1

Run date: 25-Apr-2014

Tool:

PSP

Sub Type:

PBMS

Sensor:

Sapphire

PBMS Sapphire 10kPsi Gauge

Sonde Serial NB

COEFFICIENTS FOR SAPPHIRE PBMS-A.1978 S/N:

Sensor Serial NB

1978

Calib Date ddmmyy

040413

Calib Date ddmmyy 040413
Matrix Size 66
Coeff CRC FC03

Pres Coeff

	Tt**0	Tt**1	Tt**2
Tp**0	-.610621928185E+04	+.733479463928E+04	-.366313458381E+04
Tp**1	+.560047728214E+04	-.464751655104E+04	+.226378681937E+04
Tp**2	+.226844774102E+02	+.466095162698E+01	-.416031460599E+01
Tp**3	-.565000011498E+01	+.155154221168E+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	+.661206381662E+03	-.442588980489E+02	0.0
Tp**1	-.405555010111E+03	+.270764938790E+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 1978
Calib Date ddmmyy 040413
Matrix Size 66
Coeff CRC A9F6

Temp Coeff

	Tp**0	Tp**1	Tp**2
Tt**0	-.311910596034E+03	-.260514939056E+02	+.113131692891E+02
Tt**1	+.942044266961E+02	+.115447305149E+02	-.325190620792E+01
Tt**2	+.217040881254E+01	-.166464613929E+01	+.530464403583E-01
Tt**3	+.169097553929E+00	+.121208915106E+00	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	-.311141115592E+01	+.330242609958E+00	0.0
Tt**1	+.850293467157E+00	-.913717647562E-01	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

Tt**4	0.0	0.0	0.0
Tt**5	0.0	0.0	0.0

Client:	NIGHTHAWK PRODUCTION LLC	Tool:	PSP
Field:	ARIKAREE CREEK	Sub Type:	PBMS
Well:	ARIKAREE CREEK SWD 1	Sensor:	GR
Run date:	25-Apr-2014		

PBMS Gamma Ray							
Sonde Serial NB	RESISTORS FOR GR SENSOR N.36646,TOOL PBMS-AA1978. SENSOR S/N:						
Sensor Serial NB	36646						
Calib Date ddmmyy	230611						
Matrix Size	12						
Coeff CRC	3017						
GR HV Rt							
	<table> <tr> <th>Rt**0</th><th>Rt**1</th></tr> <tr> <td>Rt**0</td><td> <table> <tr> <td>+.200000000000e+04</td><td>+.238000000000e+04</td></tr> </table> </td></tr> </table>	Rt**0	Rt**1	Rt**0	<table> <tr> <td>+.200000000000e+04</td><td>+.238000000000e+04</td></tr> </table>	+.200000000000e+04	+.238000000000e+04
Rt**0	Rt**1						
Rt**0	<table> <tr> <td>+.200000000000e+04</td><td>+.238000000000e+04</td></tr> </table>	+.200000000000e+04	+.238000000000e+04				
+.200000000000e+04	+.238000000000e+04						

Client:	NIGHTHAWK PRODUCTION LLC	Tool:	PSP
Field:	ARIKAREE CREEK	Sub Type:	PBMS
Well:	ARIKAREE CREEK SWD 1	Sensor:	WellTemp RTD
Run date:	25-Apr-2014		

PBMS RTD Well Thermometer	
Sonde Serial NB	COEFFICIENTS FOR RTD THERMOMETER PBMS-A.1978 S/N:
Sensor Serial NB	1978
Calib Date ddmmyy	040413
Matrix Size	16
Coeff CRC	5275

WT = 0.00

	Tt**0	Tt**1	Tt**2
Tt**0	-147060145836E+03	-.907965992712E+02	+.770663084969E+02
	Tt**3	Tt**4	Tt**5
Tt**0	-131119885893E+02	+.876373733985E+00	0.0

Schlumberger

MASTER CALIBRATION

MAXIS Field Log

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

Primary Equipment:









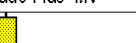
Slim Cement Mapping Xmitter Electronics	SCMX - CA	
Slim Cement Mapping Sonde	SCMS - CB	8303
Slim Cement Mapping Cartridge	SCMC - CA	8120

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		1303	Master		1501
	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		1207	Master		1176
	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		975.8	Master		1080
	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		1053	Master		1056
	500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)			500.0 (Minimum) 1075 (Nominal) 1650 (Maximum)	
Phase	CBL Amplitude Plus MV	Value			
Master		1325			
	1000 (Minimum) 1250 (Nominal) 1700 (Maximum)				

1000 (Minimum)	1300 (Nominal)	1700 (Maximum)	
Master: Calibration out of date 10-Jan-2013 9:02			

Company: **NIGHTHAWK PRODUCTION LLC**

Schlumberger

Well: **ARIKAREE CREEK SWD 1**
Field: **ARIKAREE CREEK**
County: **LINCOLN**
State: **COLORADO**

SLIM CEMENT MAPPING LOG
CBL-VDL
GR-CCL