Schlumberger

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

Well: **RENNINGER 30-7-2 (NGG30NE)**
Field: **DIVIDE CREEK**
County: **MESA** State: **COLORADO**

SLIM CEMENT MAPPING LOG
CBL-VDL
GAMMA RAY-CCL

LOCATION

County: MESA
Field: DIVIDE CREEK
Location: SHL: 1609 FNL & 2136 FEL
Well: RENNINGER 30-7-2 (NGG30NE)
Company: ENCANA OIL & GAS (USA) INC

SHL: 1609 FNL & 2136 FEL

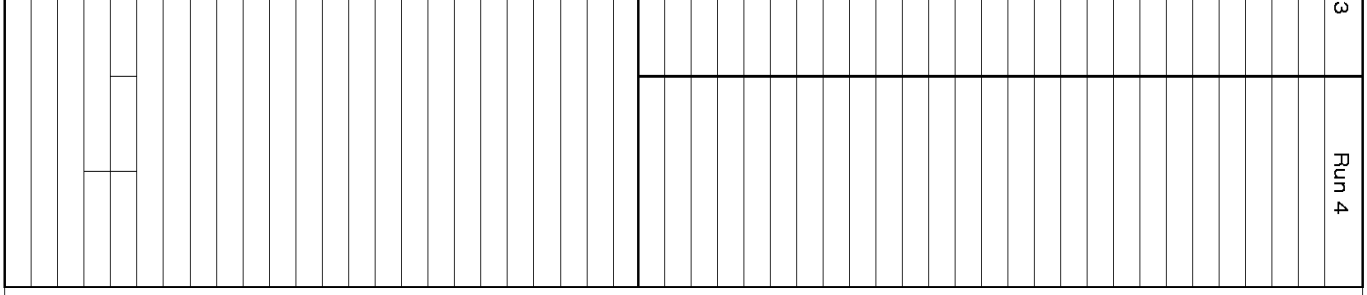
Elev.: K.B. 7269.00 ft
G.L. 7247.00 ft
D.F. 7268.00 ft

Permanent Datum: GROUND LEVEL Elev.: 7247.00 ft
Log Measured From: KELLY BUSHING 22.00 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	Section	Township	Range
05-077-10210-00	30	8S	91W

	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			
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			

	Run 1
Logging Date	15-Oct-2013
Run Number	1
Depth Driller	11539 ft
Schlumberger Depth	11466 ft
Bottom Log Interval	11455 ft
Top Log Interval	50 ft
Casing Fluid Type	FRESH WATER
Salinity	
Density	8.4 lbm/gal
Fluid Level	50 ft
BIT/CASING/TUBING STRING	
Bit Size	6.750 in
From	8520 ft
To	11539 ft
Casing/Tubing Size	5.000 in
Weight	23.2 lbm/ft
Grade	P-110
From	22 ft
To	11523 ft
Maximum Recorded Temperatures	343 degF
Logger On Bottom / Time	15-Oct-2013 10:30
Unit Number / Location	391 GRAND JUNCTION
Recorded By	KIRSTIE BUNTING
Witnessed By	BILLY MYERS



DEPTH SUMMARY LISTING

Date Created: 14-AUG-2013 11:54:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JB	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6349	Serial Number:	3421	Serial Number:	112136
Calibration Date:	7-31-2013	Calibration Date:	14-AUG-2013	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878		
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	-5	Calibration RMS:	3	Rig Type:	LAND
Wheel Correction 2:	-4	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES USED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SPWT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: RESERVOIR SATURATION	OS1:
OS2: LOG	OS2:
OS3: SIGMA MODE	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE CORRELATED TO HALLIBURTON OPEN HOLE LOG RUN ON 27-SEP-2013	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 09:30	
TIME ON BOTTOM: 10:30	
EXIT TIME:13:30	

MAXIMUM RECORDED TEMPERATURE= 343 DEGF	
MAXIMUM RECORDED PRESSURE= 4786 PSIA	
SHORT JOINTS: 9554 FT & 8522 FT & 5806FT	
EXPECTED CBL AMPLITUDE IN FREE PIPE IS 79MV	
MAIN PASS LOGGED UNDER ZERO SURFACE PRESSURE	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	
CREW: KBUNTING, WAZIZ, TLEGGITT	

RUN 1		RUN 2	
SERVICE ORDER #:	CGF9-00152	SERVICE ORDER #:	
PROGRAM VERSION:	19C0-187	PROGRAM VERSION:	
FLUID LEVEL:	50 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

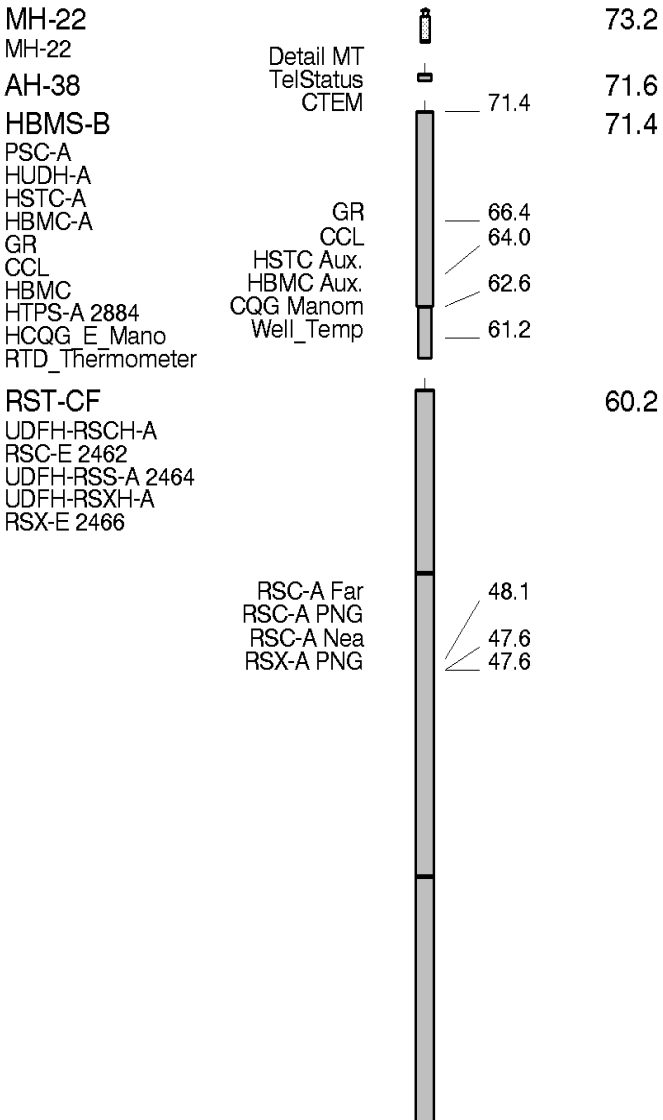
EQUIPMENT DESCRIPTION

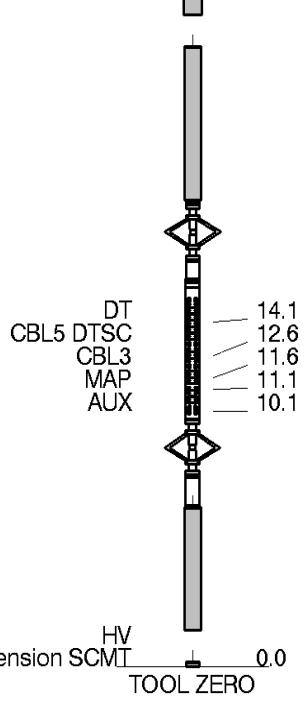
RUN 1 RUN 2

SURFACE EQUIPMENT

WITM-A
PSC_16MHZ

DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 2.13 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: RENNINGER 30-7-2 (NGG30NE)**

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_021LUP	FN:20	PRODUCER	15-Oct-2013 10:24	11457.5 FT	-43.0 FT

Output DLIS Files

DEFAULT	SCMT_RST_HBMS_024PUP	FN:23	PRODUCER	15-Oct-2013 13:27	11479.5 FT	-82.5 FT

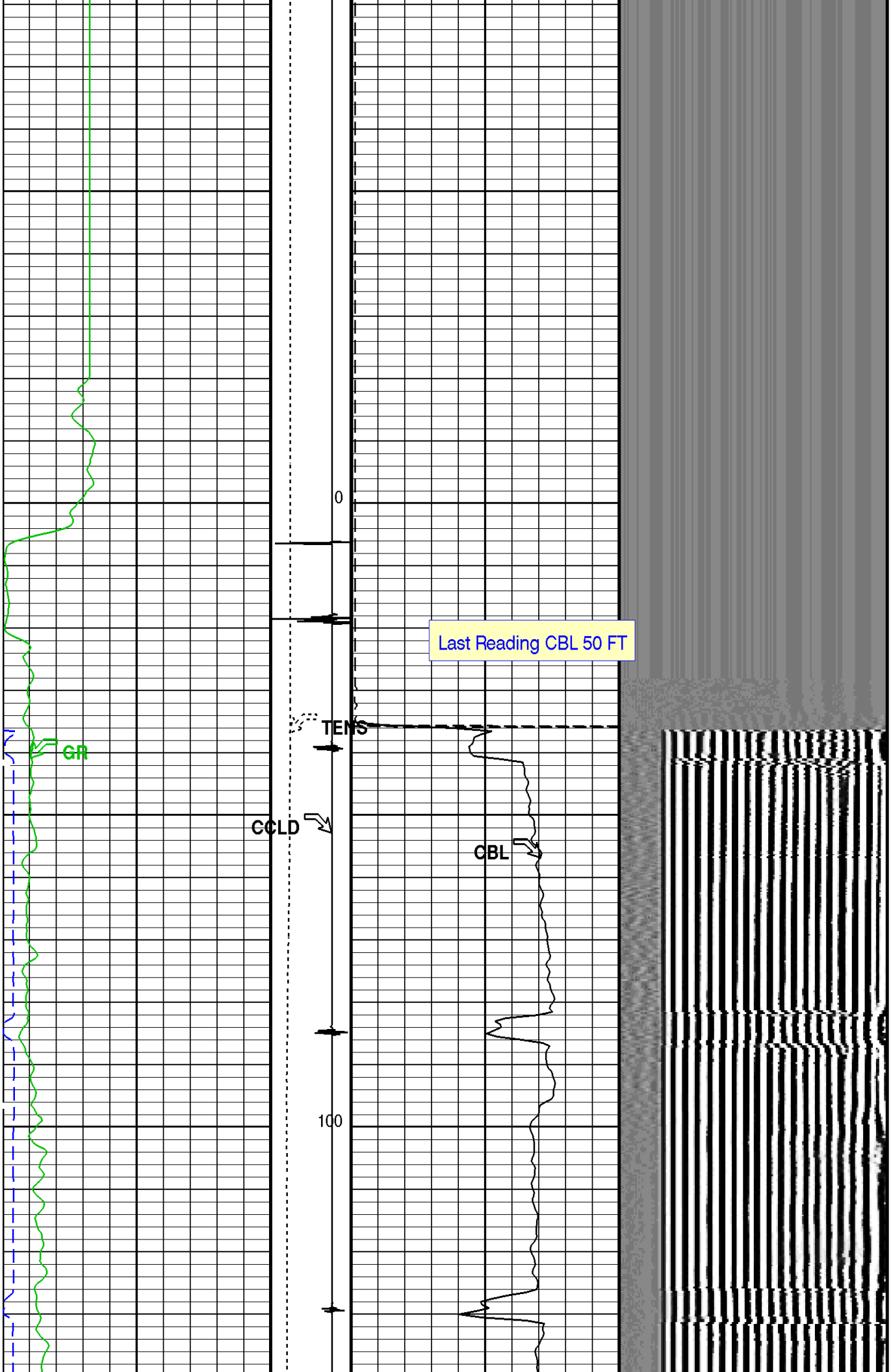
OP System Version: 19C0-187

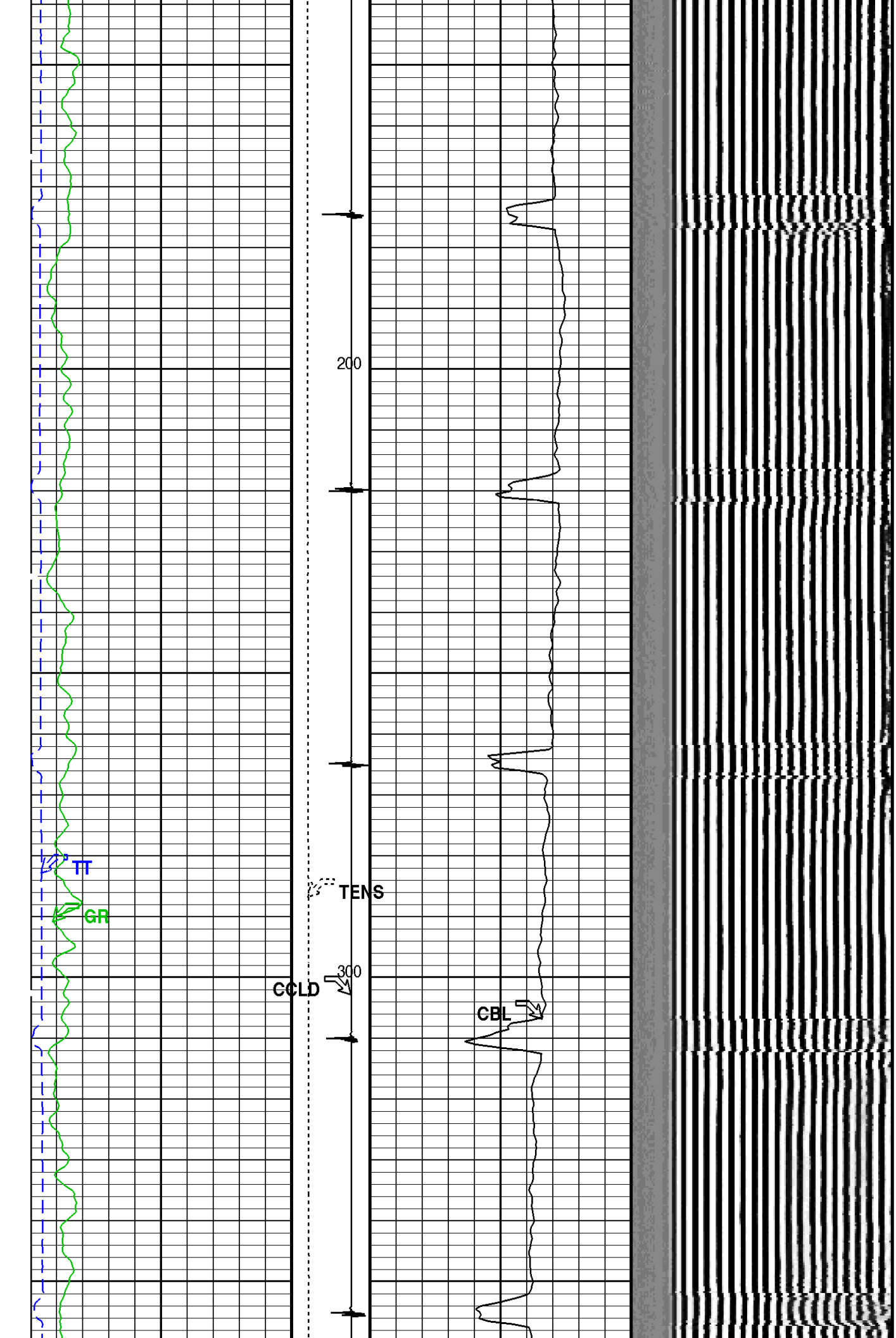
SCMT-HD	SRPC-5214-H2-2012-OP19	RST-CF	SRPC-5214-H2-2012-OP19
HBMS-B	SRPC-5214-H2-2012-OP19		

PIP SUMMARY

Time Mark Every 60 S

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


0
Last Reading CBL 50 FT
TENS
GR
CCLD
CBL
100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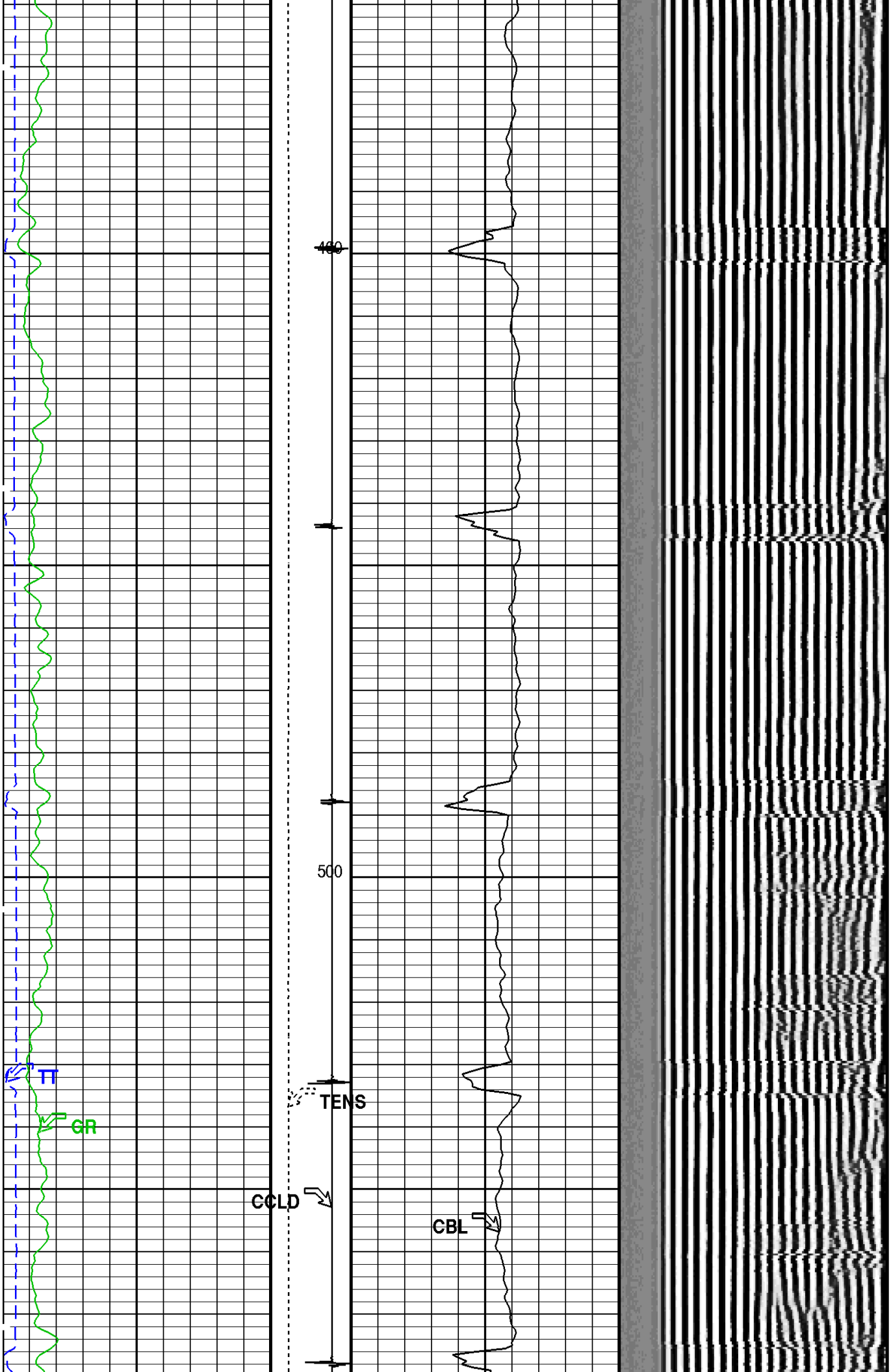
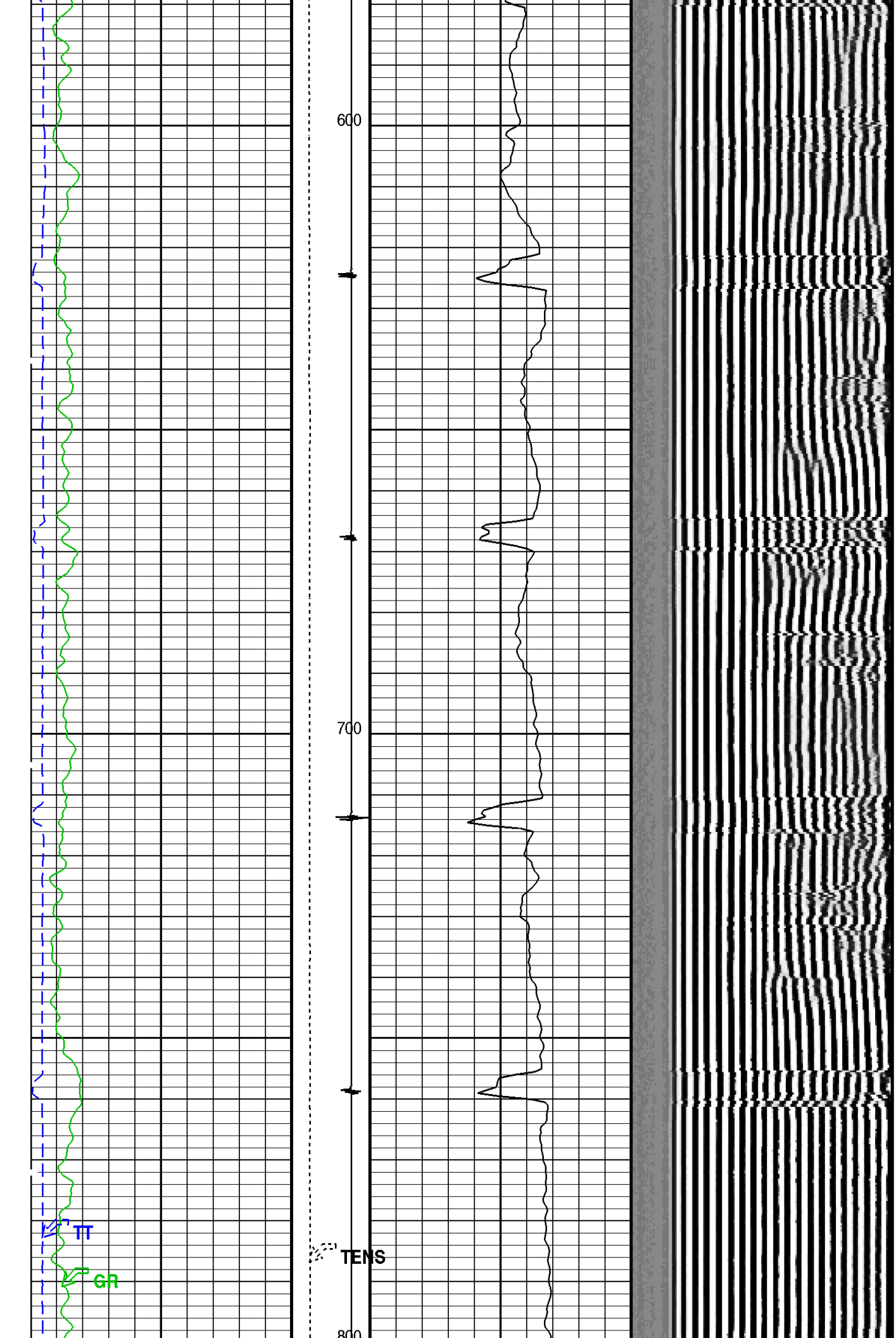
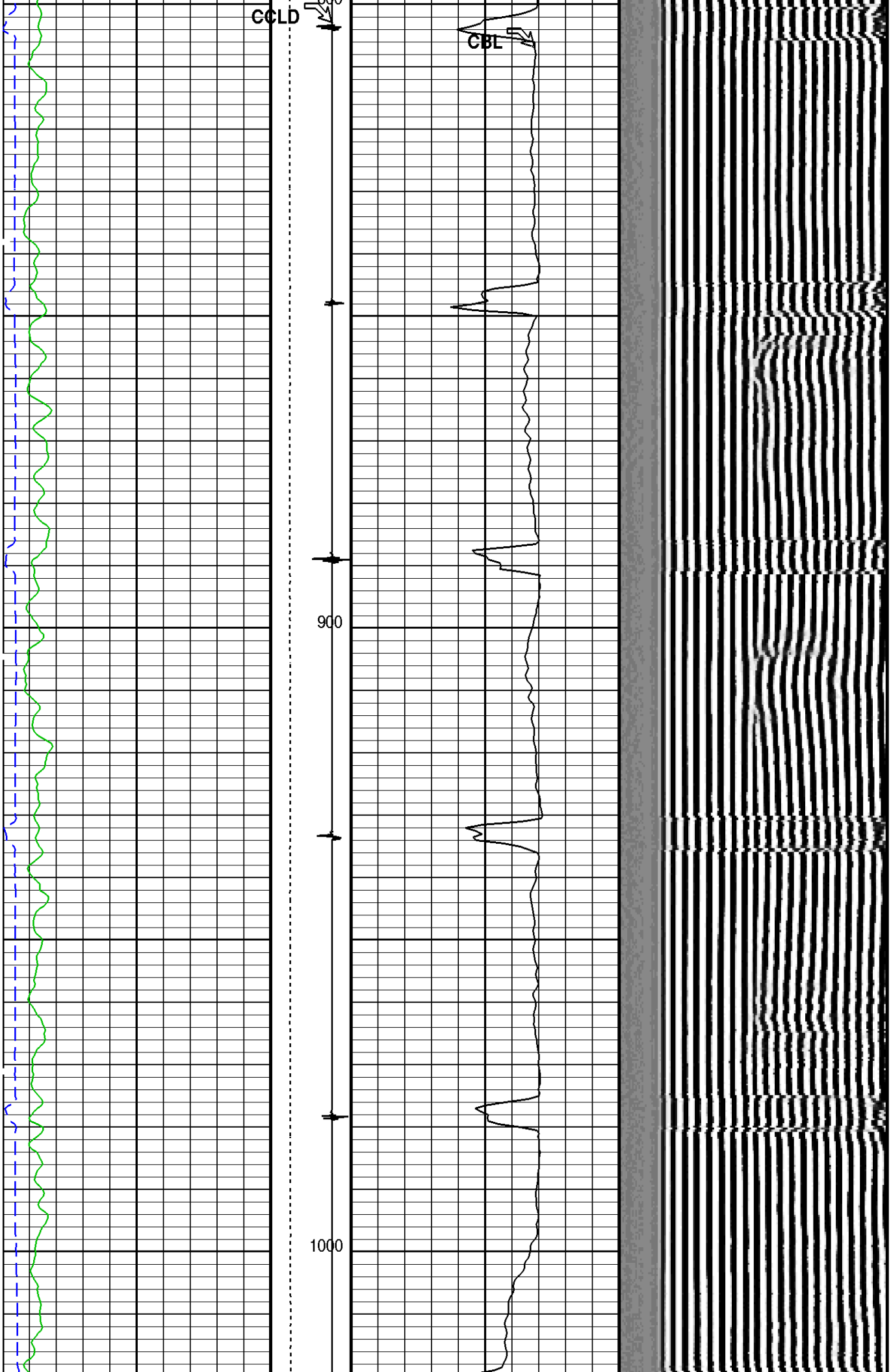
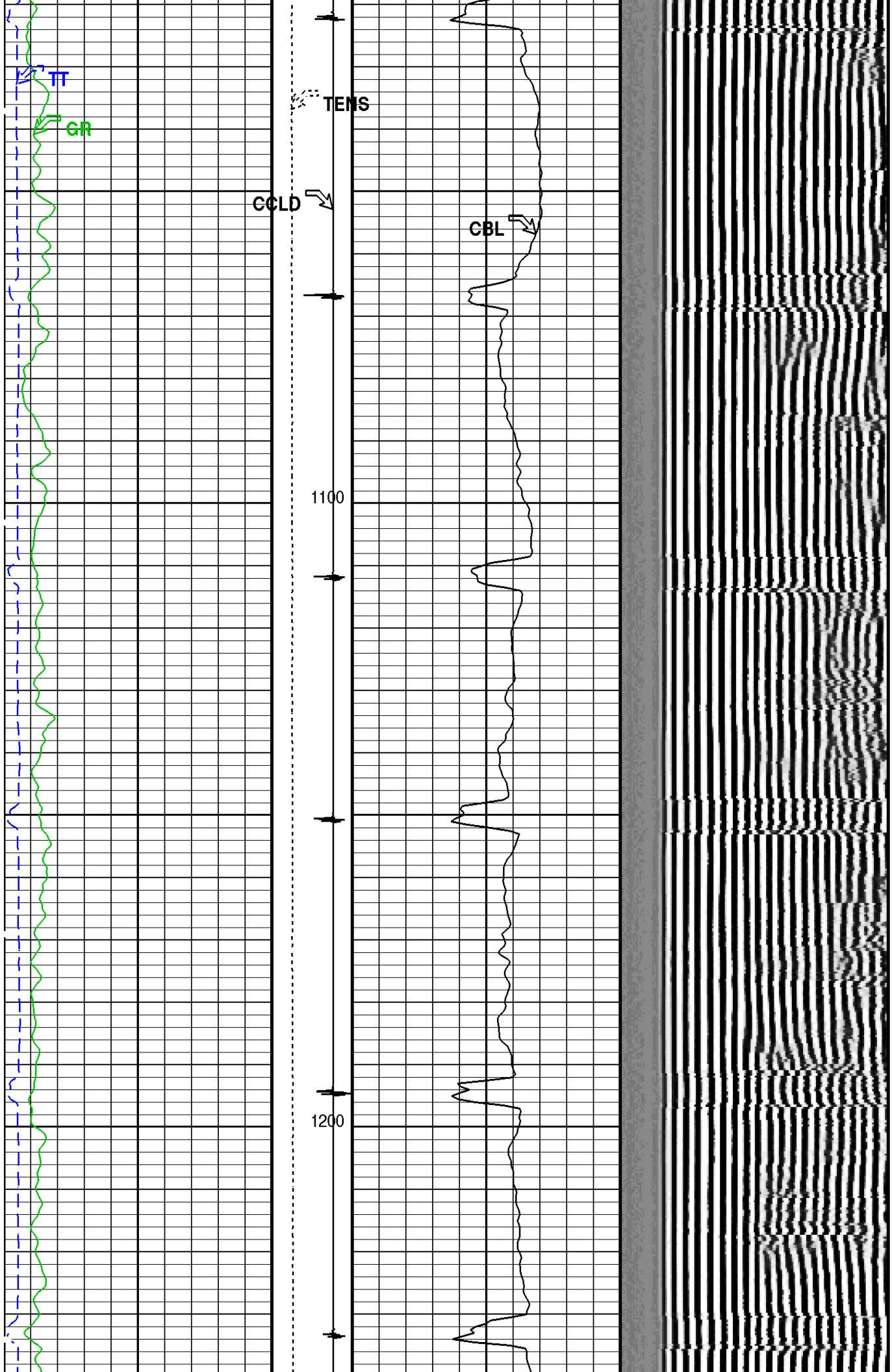
TT
GR
TENS
300
CCLD
CBL


500
TT
GR
TENS
CCLD
CBL


600
700
TT
GR
TENS


CCLD
CBL
900
1000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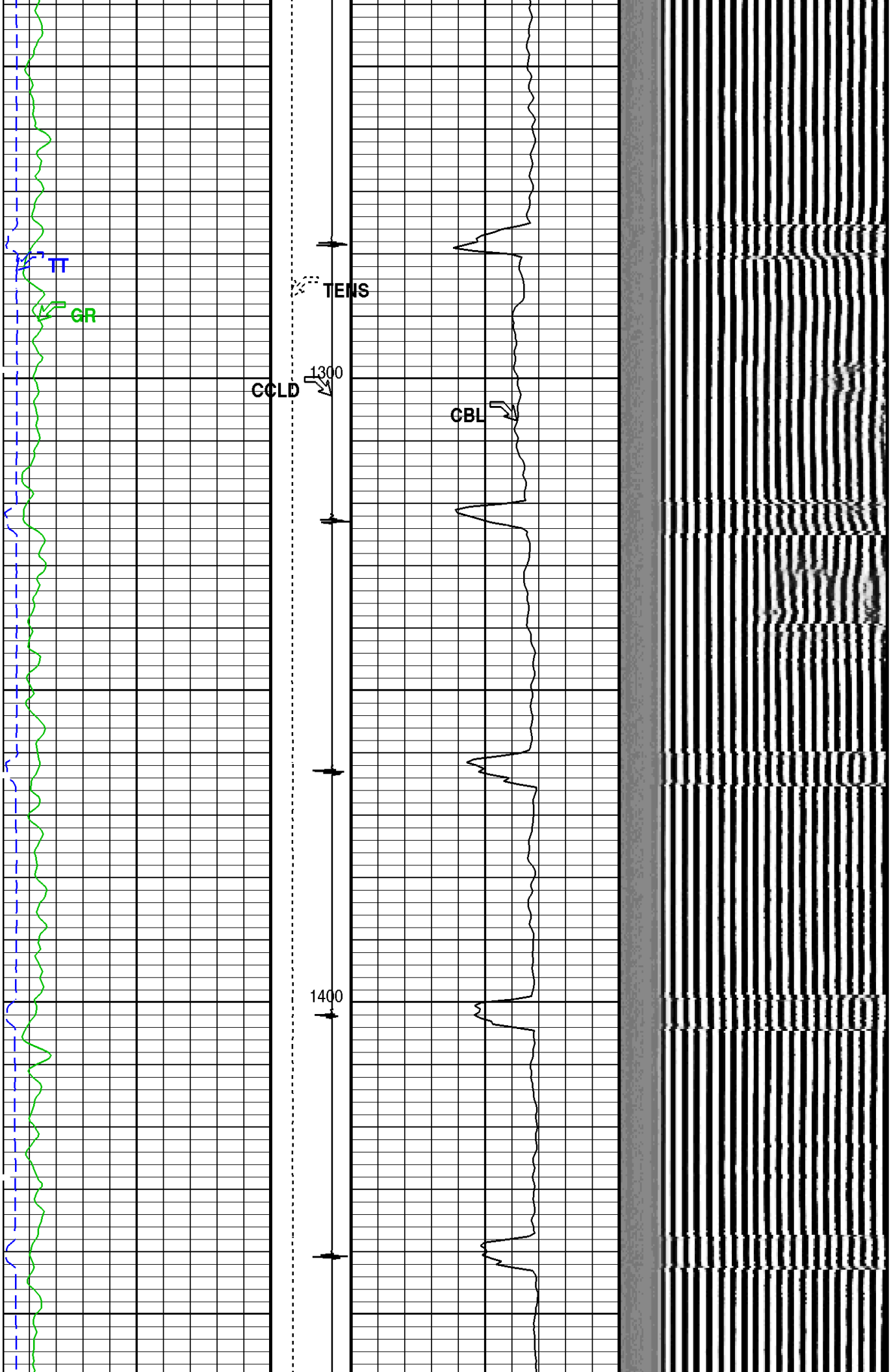
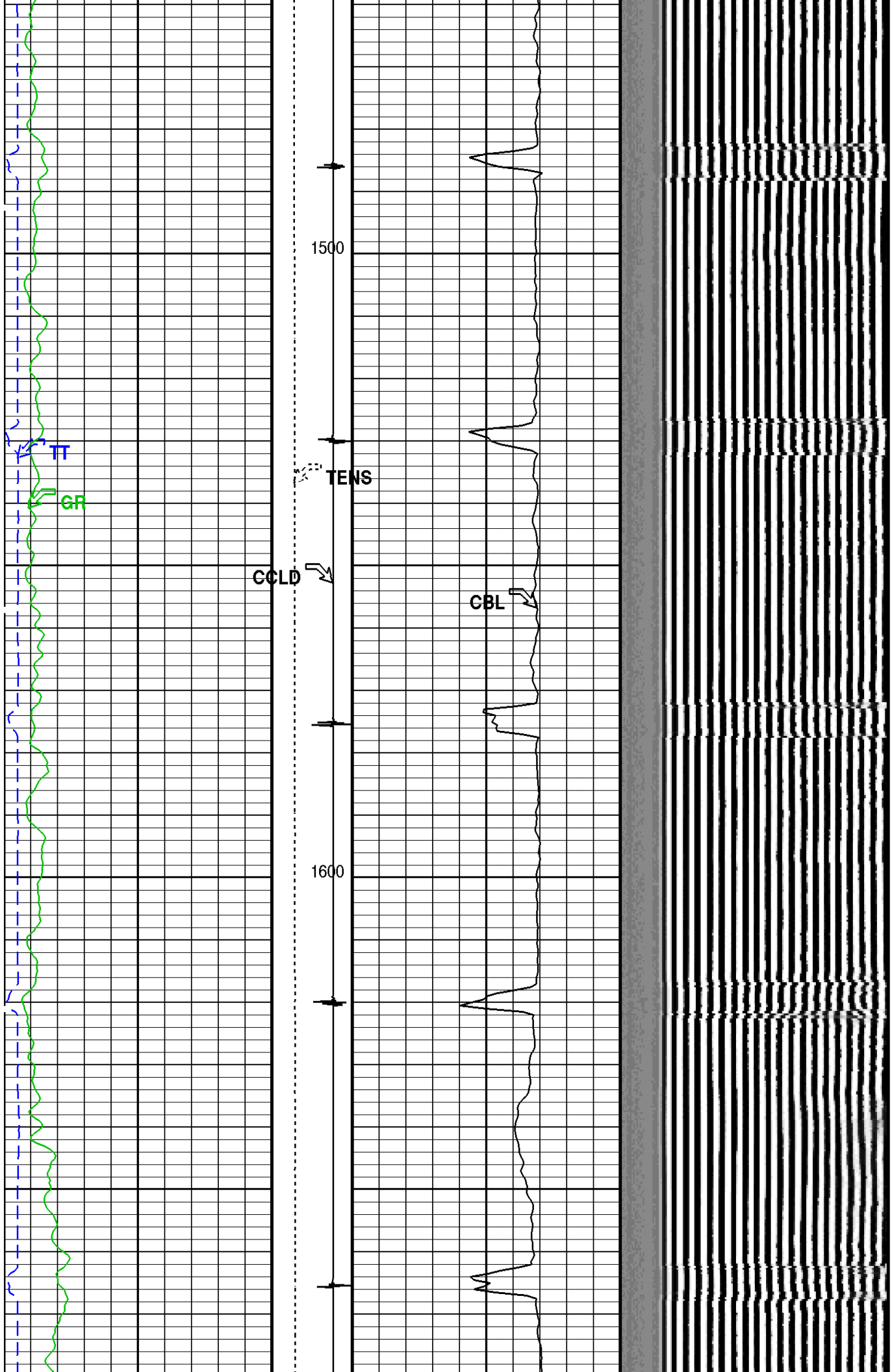
GR
TENS
CCLD
CBL
1100
1200


TT
GR
TENS
1300
CCLD
CBL
1400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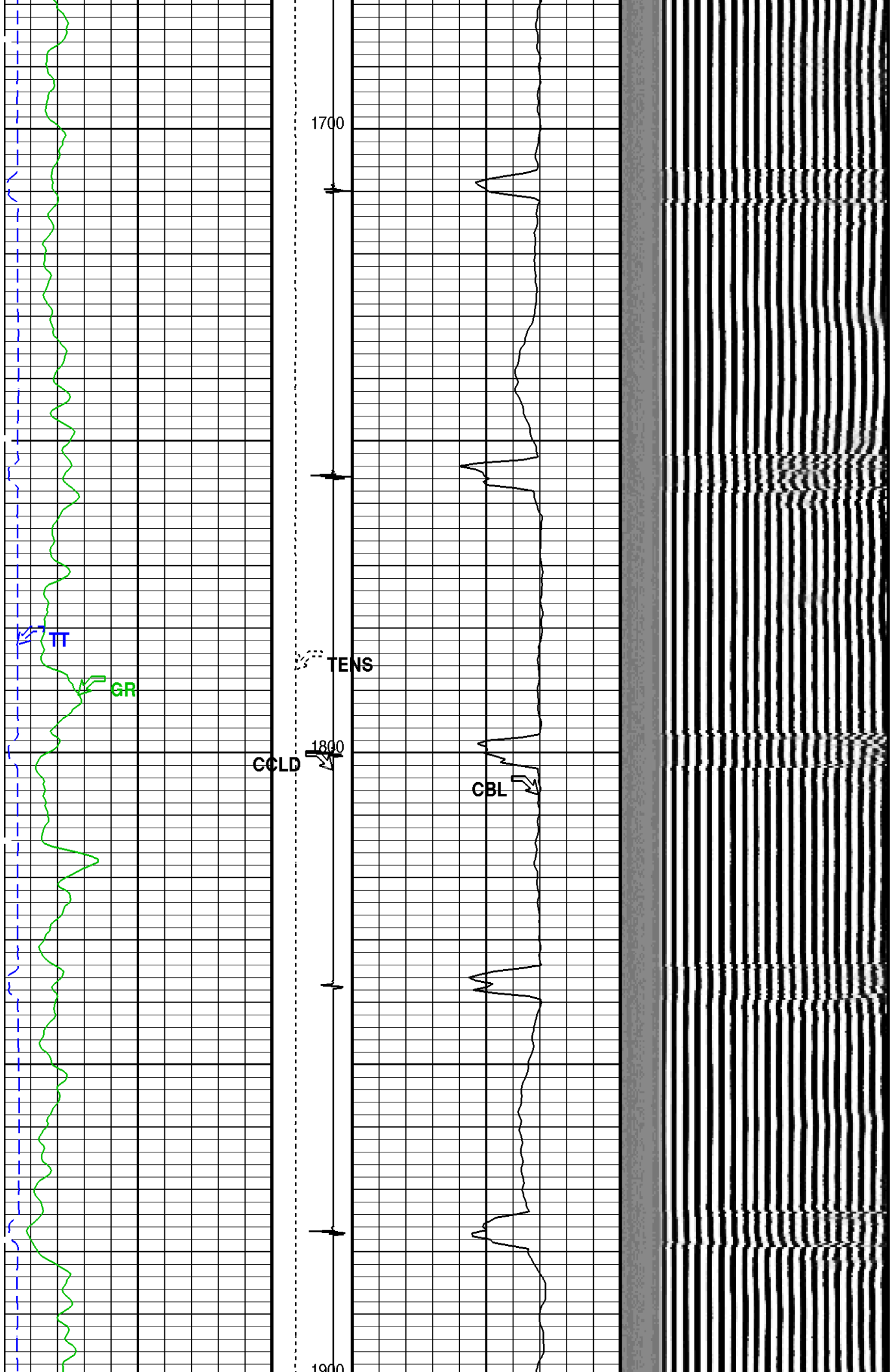
TT
TENS
GR
CCLD
CBL
1600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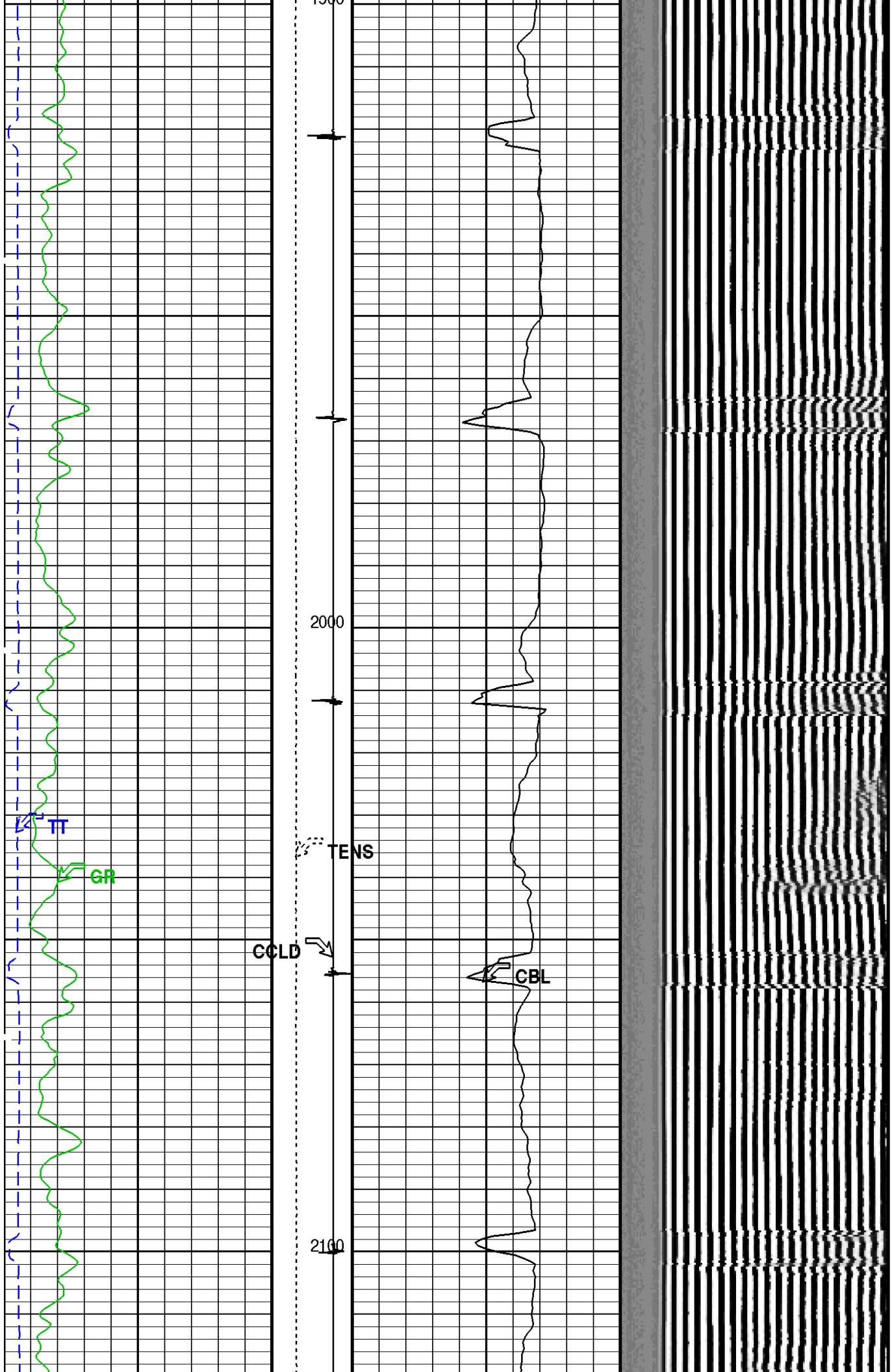
TT
GR
TENS
1800
CCLD
CBL
1900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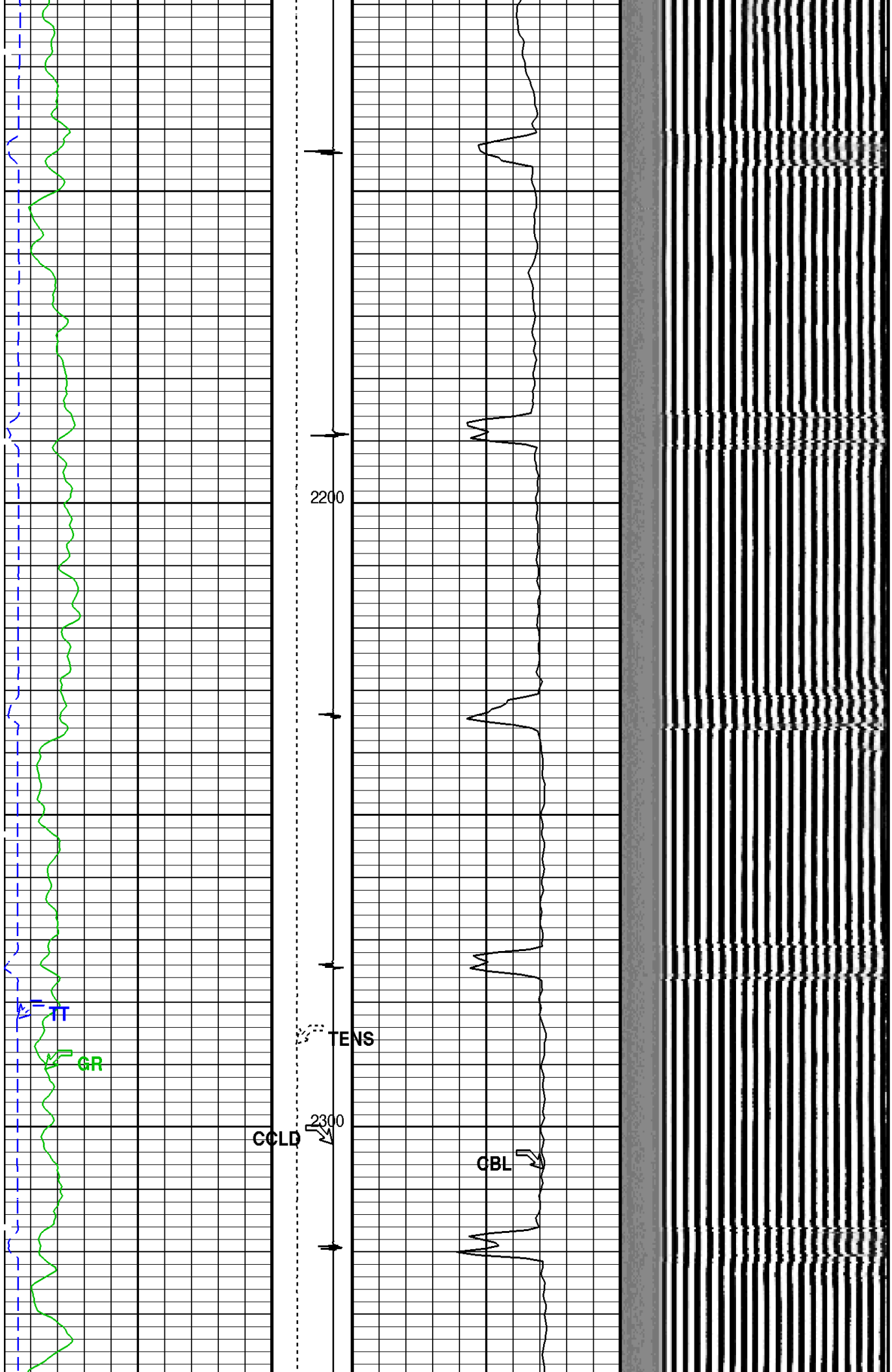
TT
GR
TENS
CCLD
CBL
2100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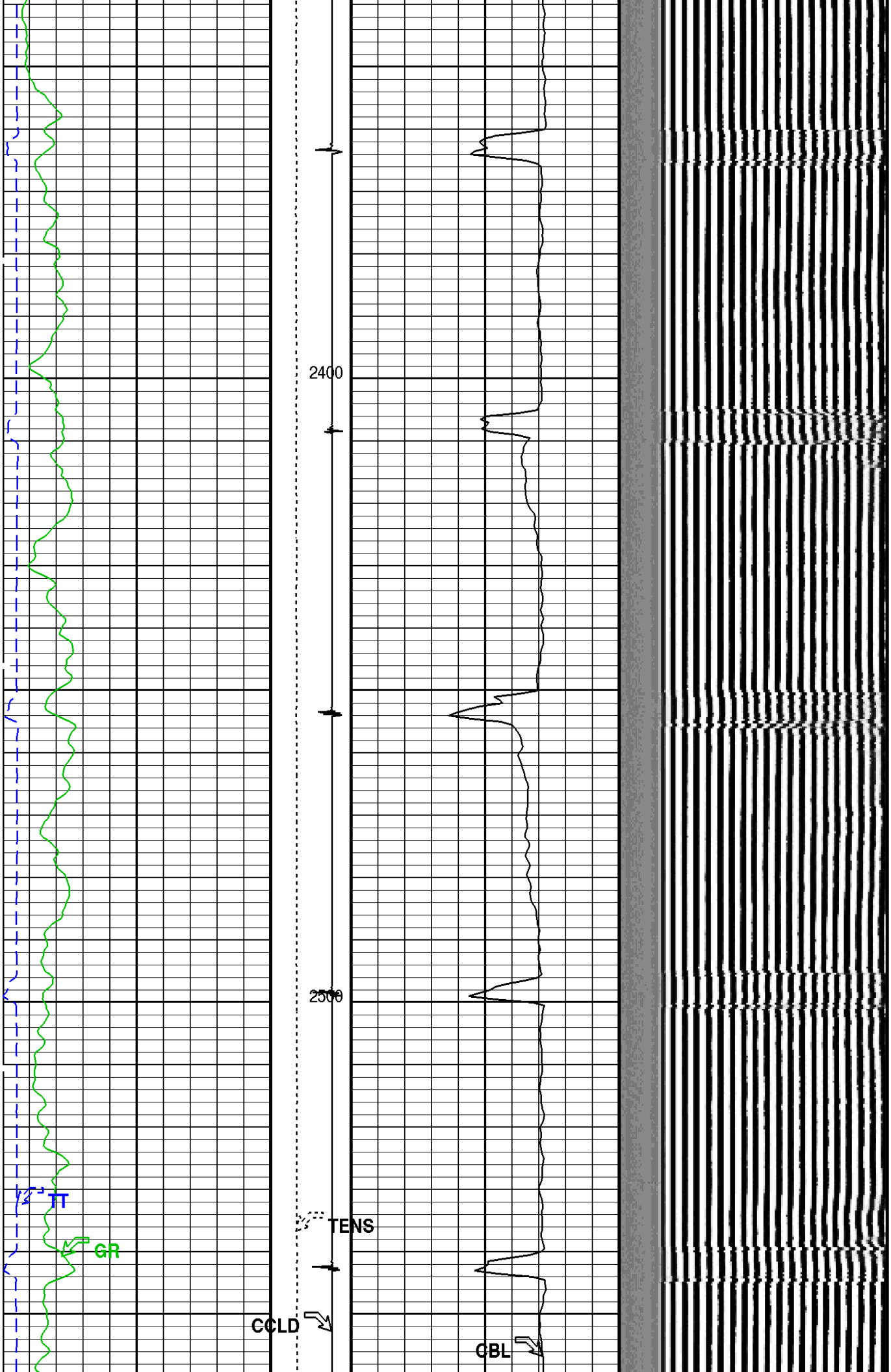
TT
GR
TENS
2300
CCLD
CBL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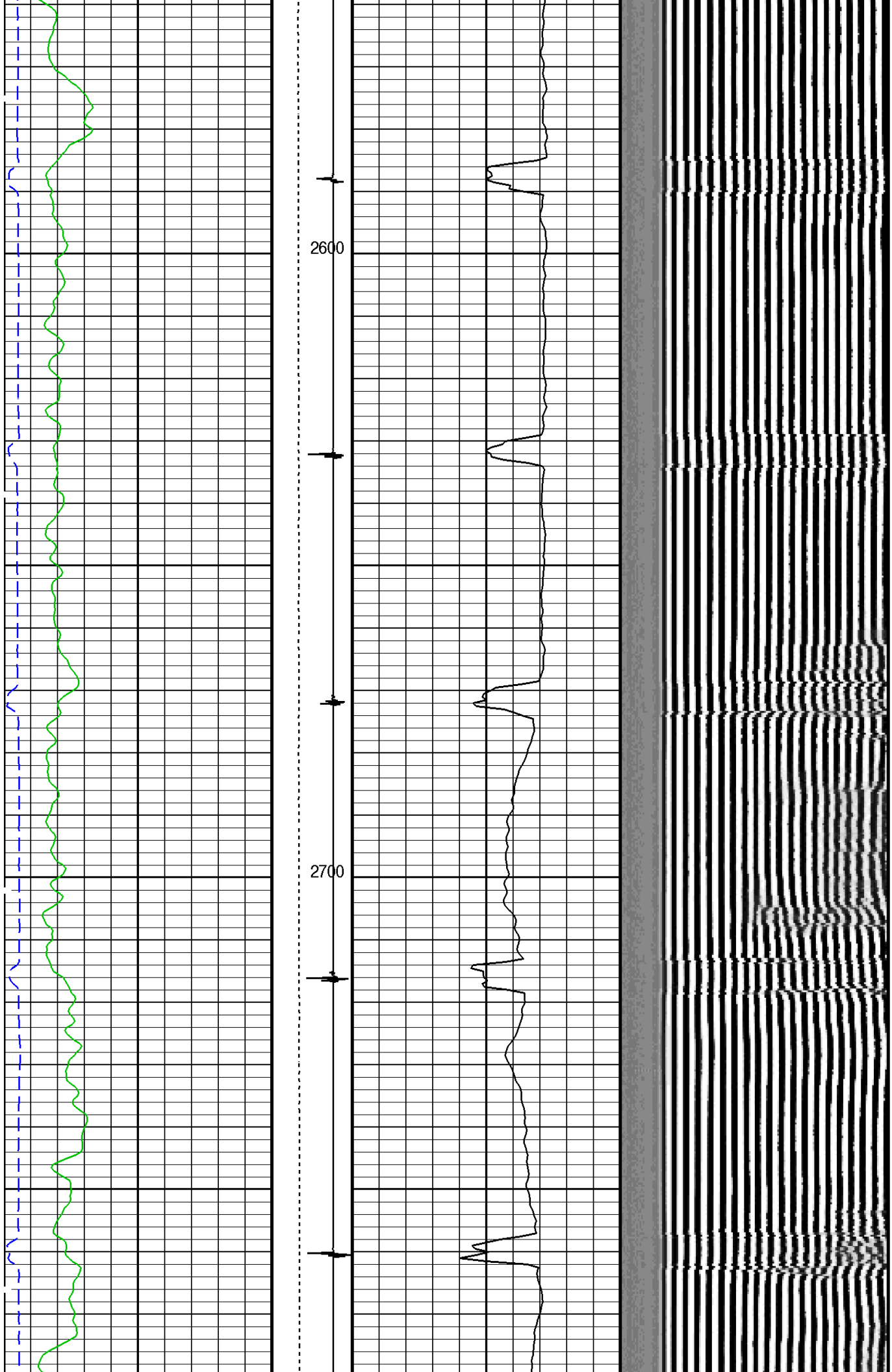
2500
TT
GR
TENS
CCLD
CBL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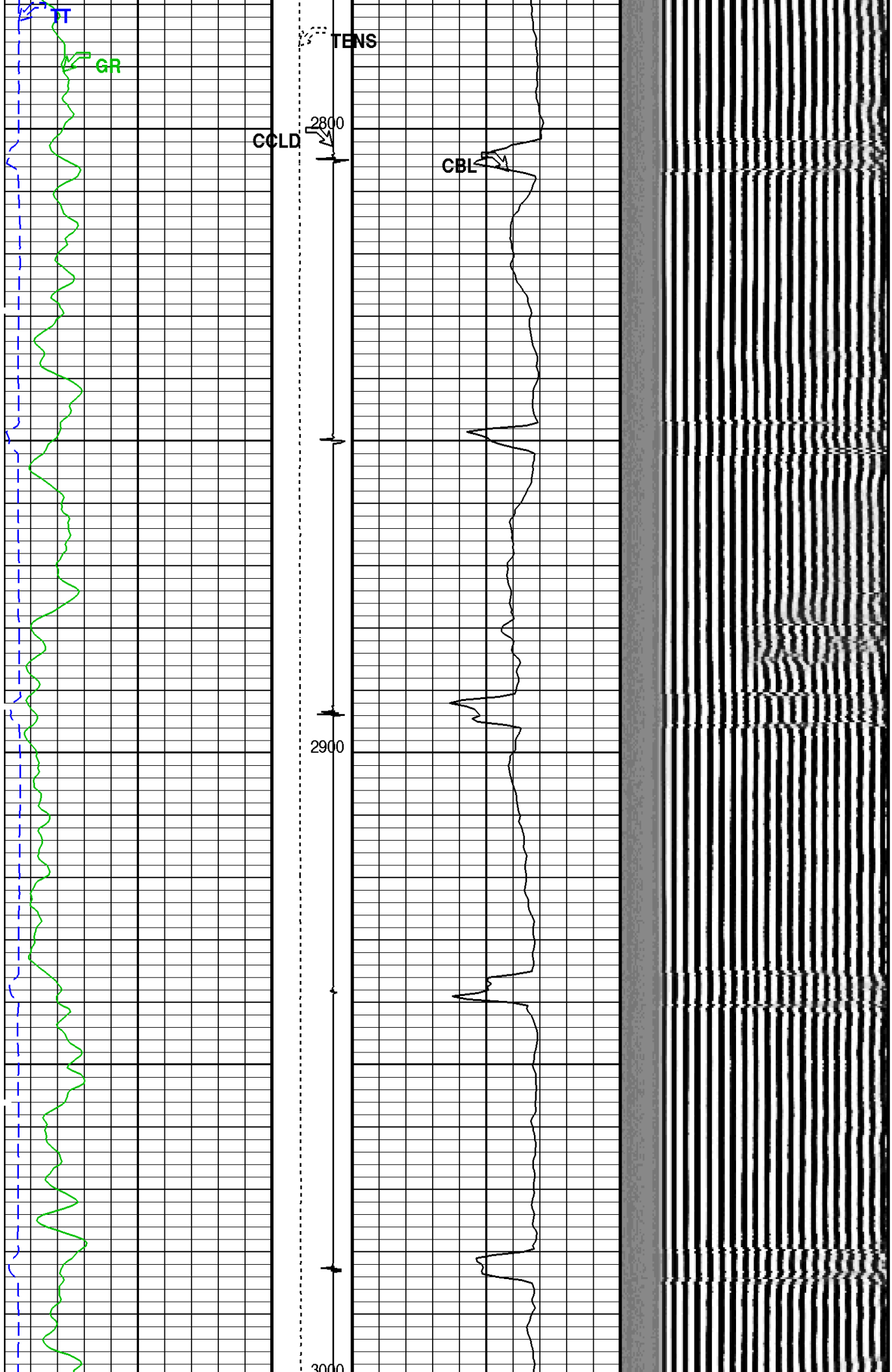
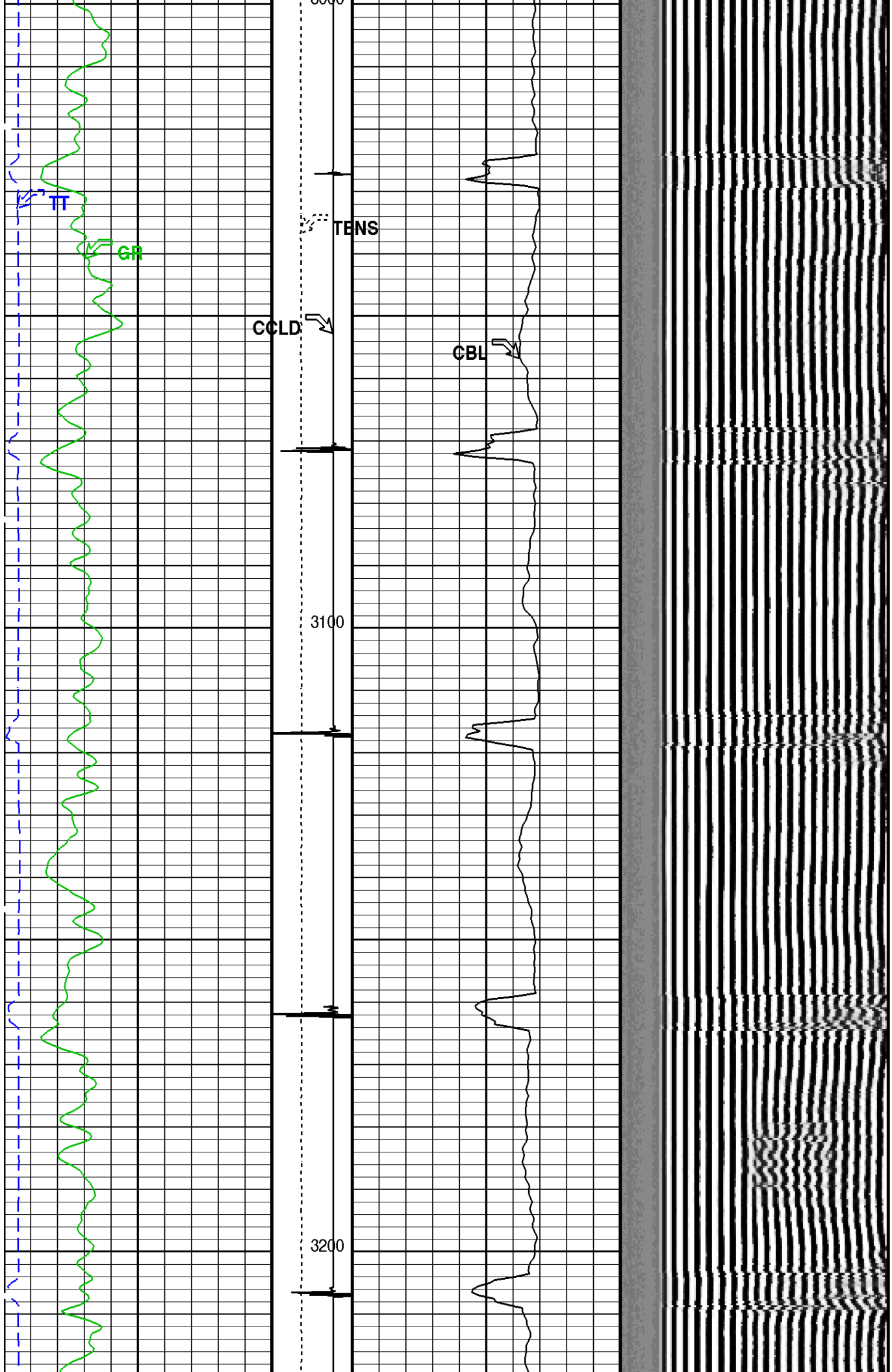
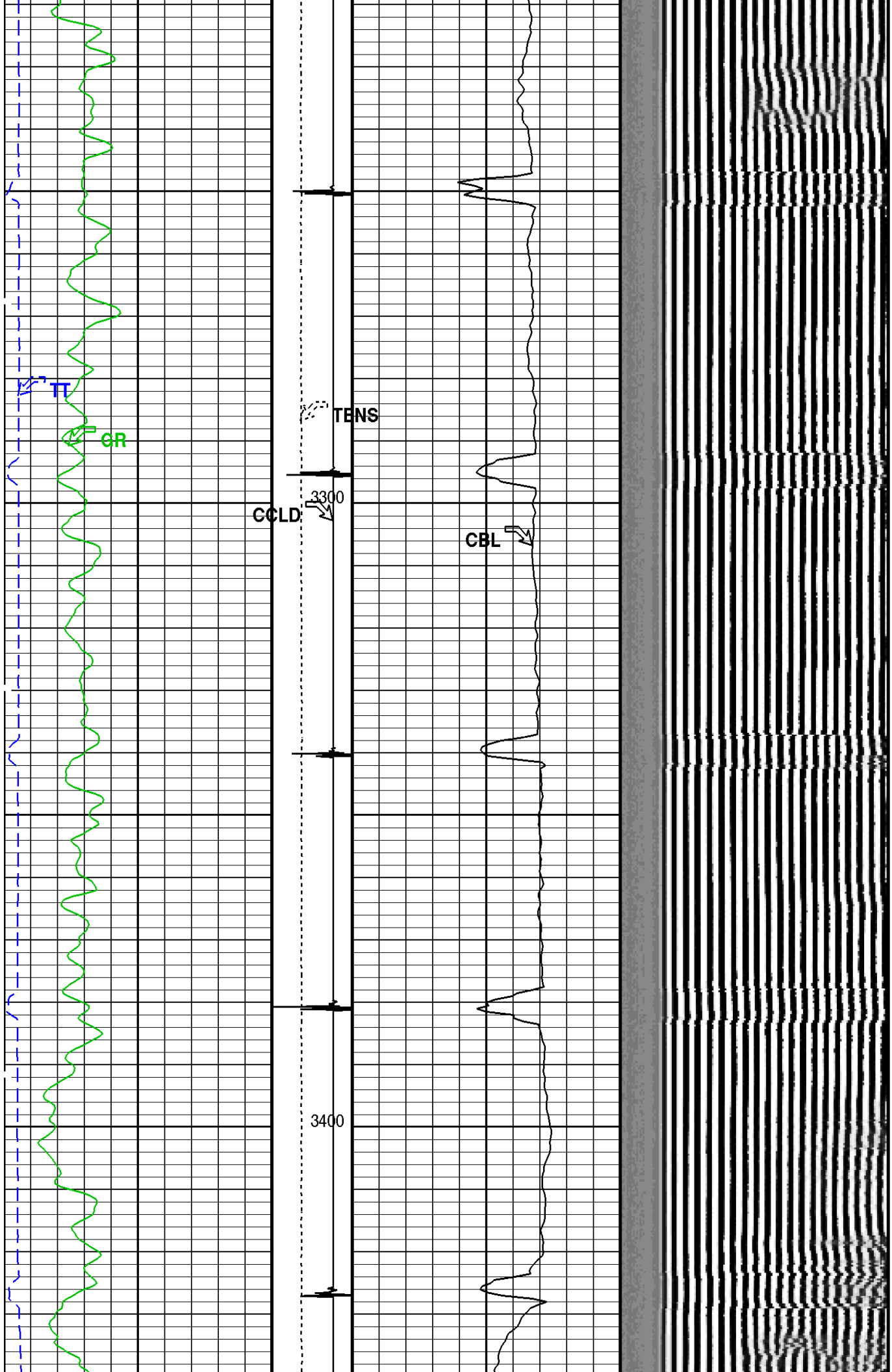
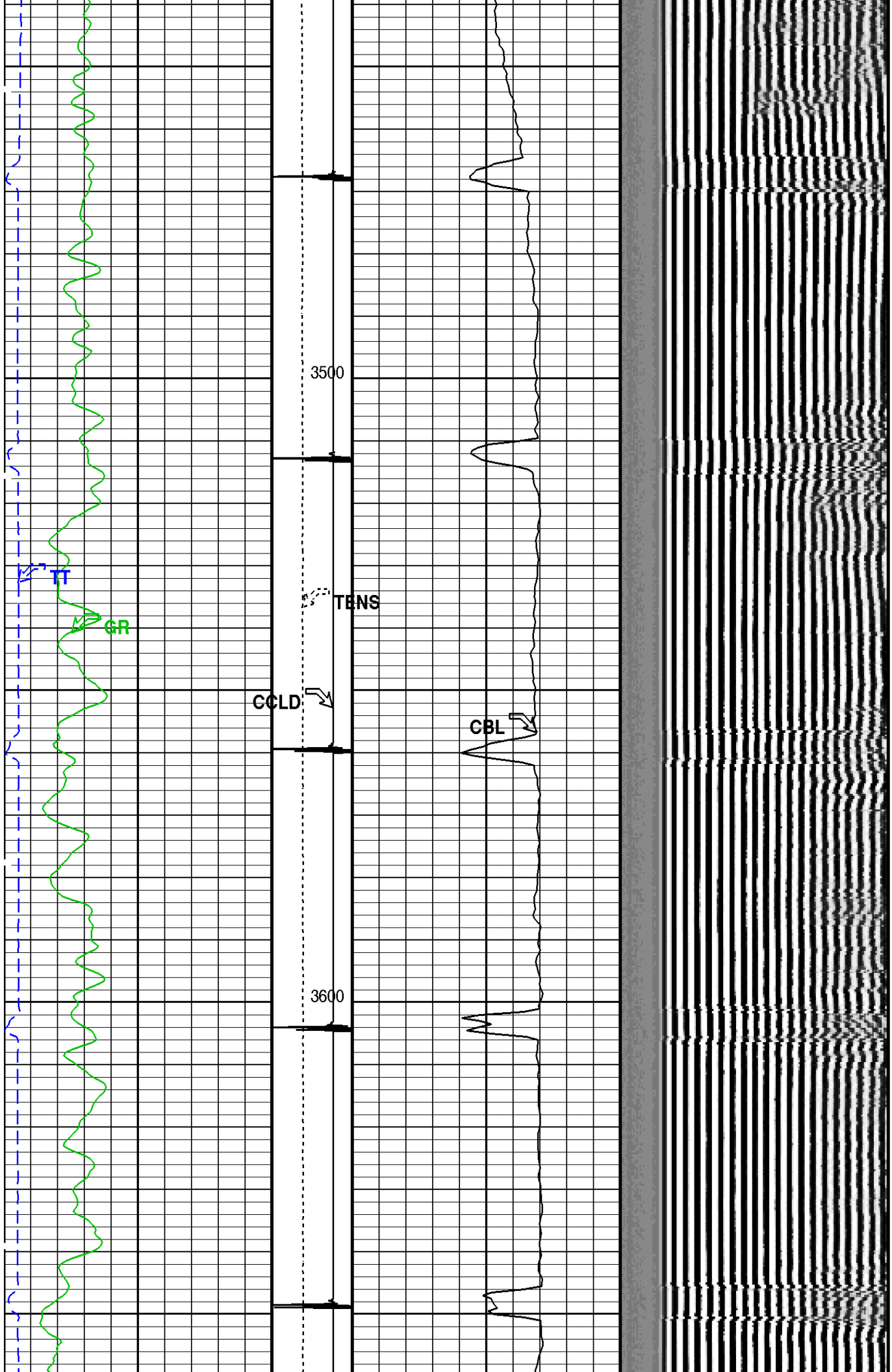

TT
GR
TENS
2800
CCLD
CBL
2900
3000


TT
GR
TENS
CCLD
CBL
3100
3200


TT
GR
TENS
3300
CCLD
CBL
3400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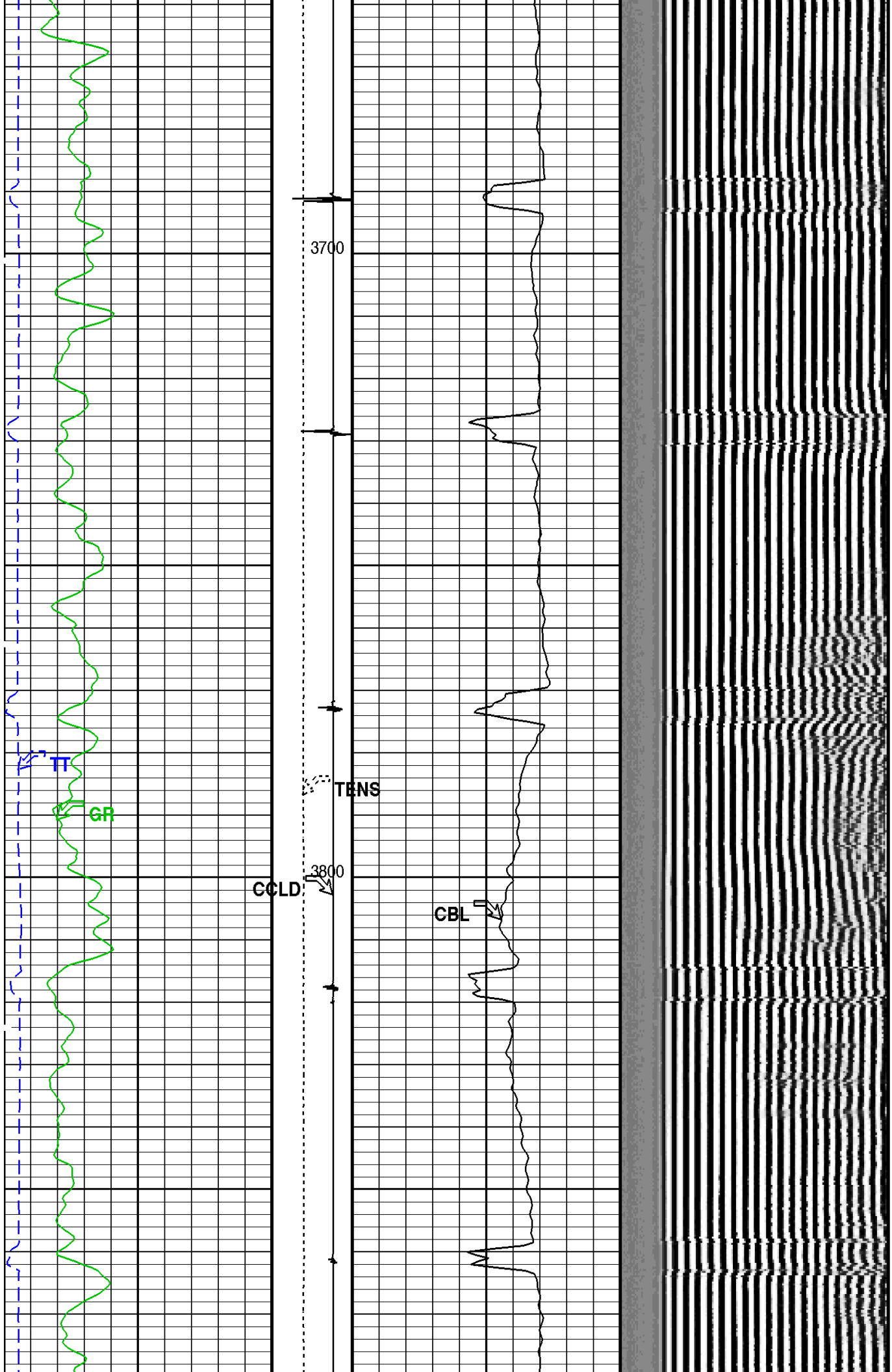
TT
GR
TENS
CCLD
CBL
3600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TENS
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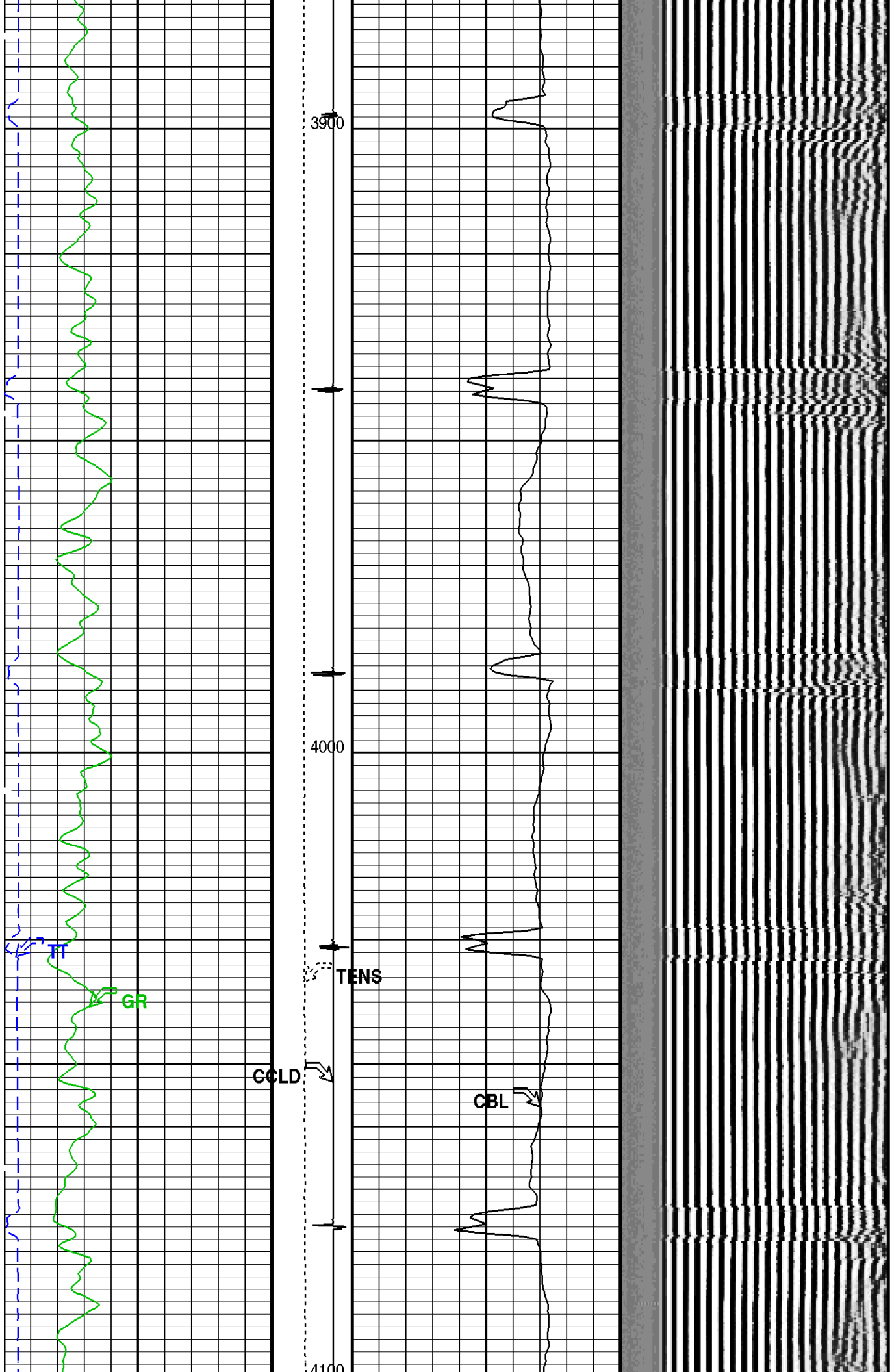
CBL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4000
4100
TT
GR
TENS
CCLD
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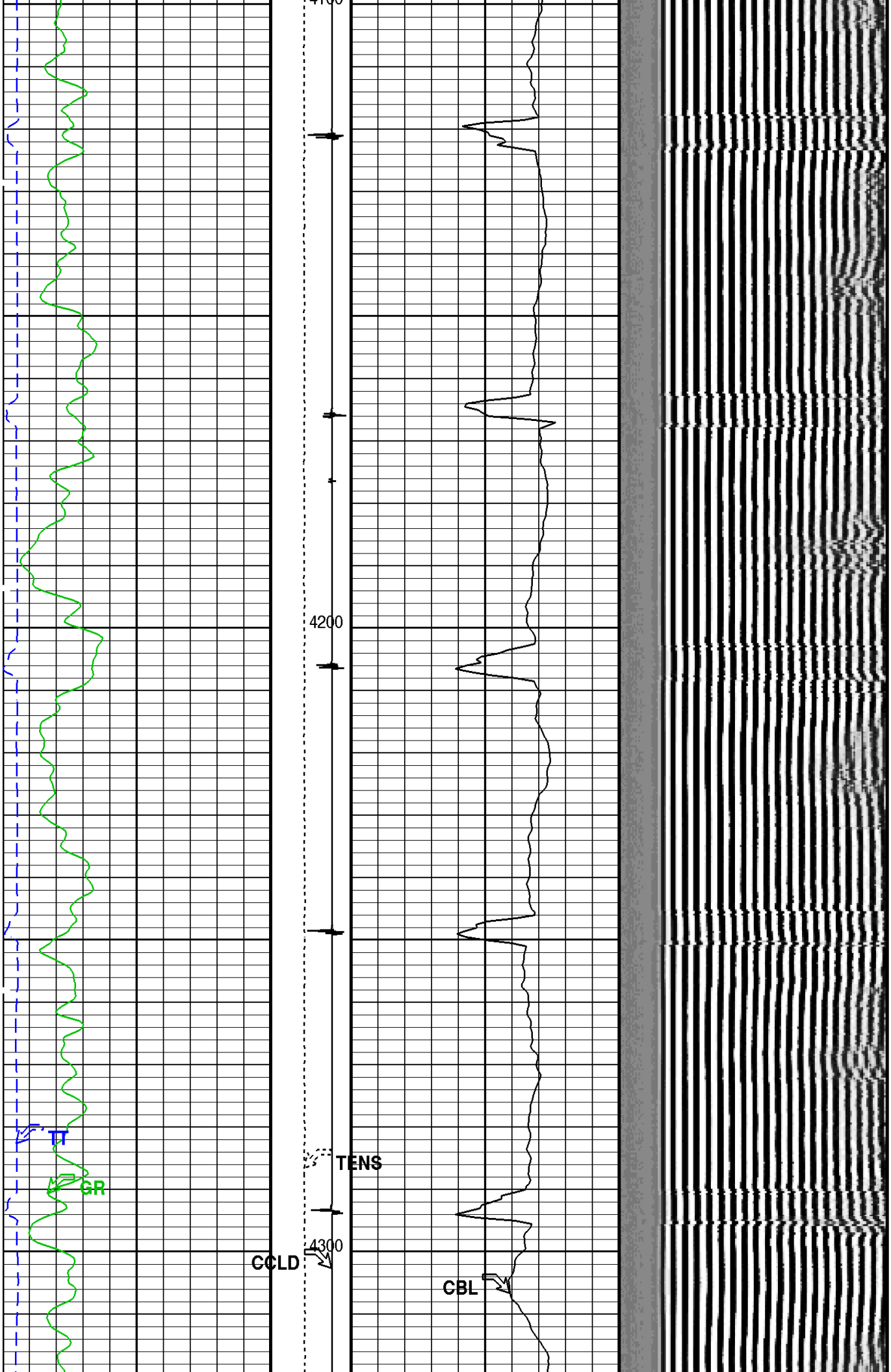
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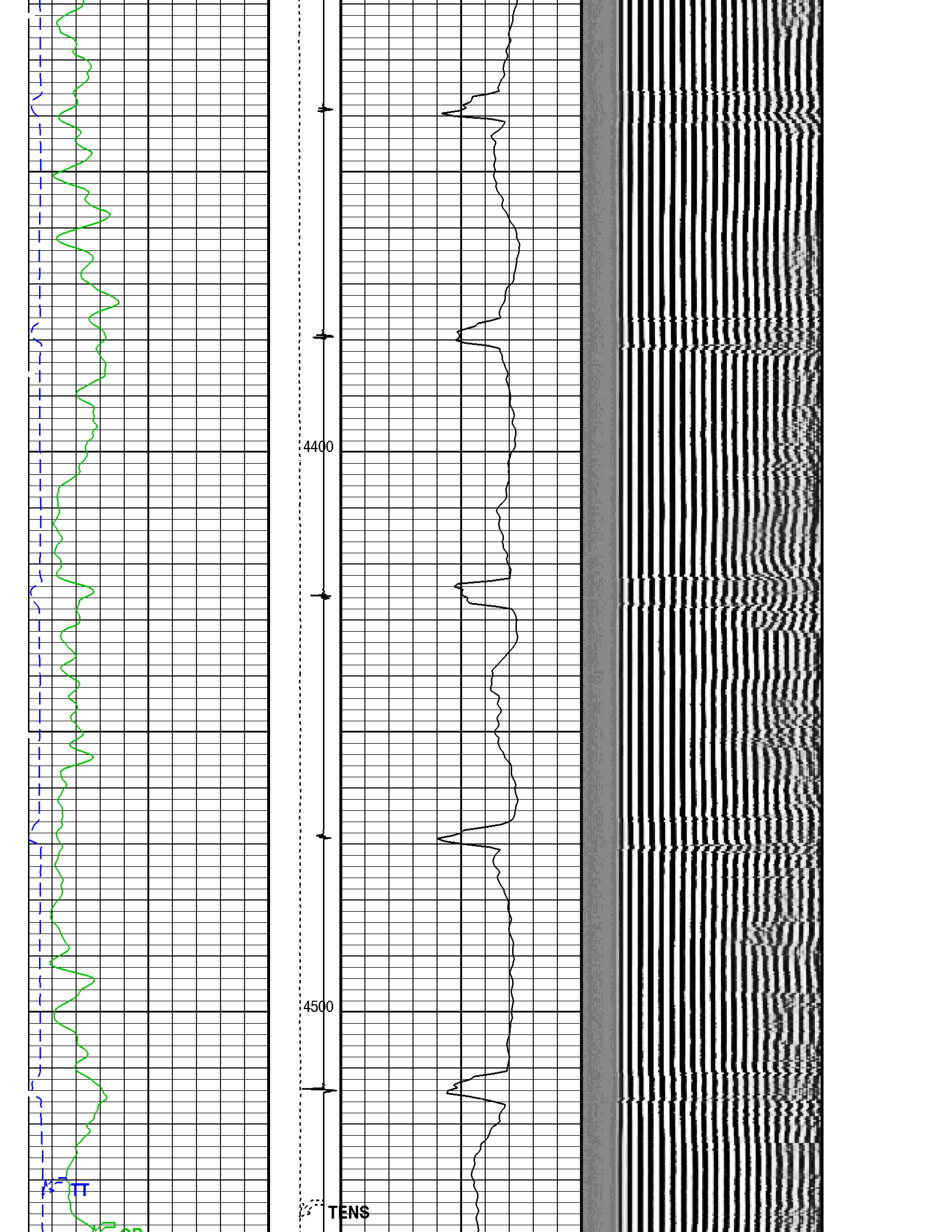
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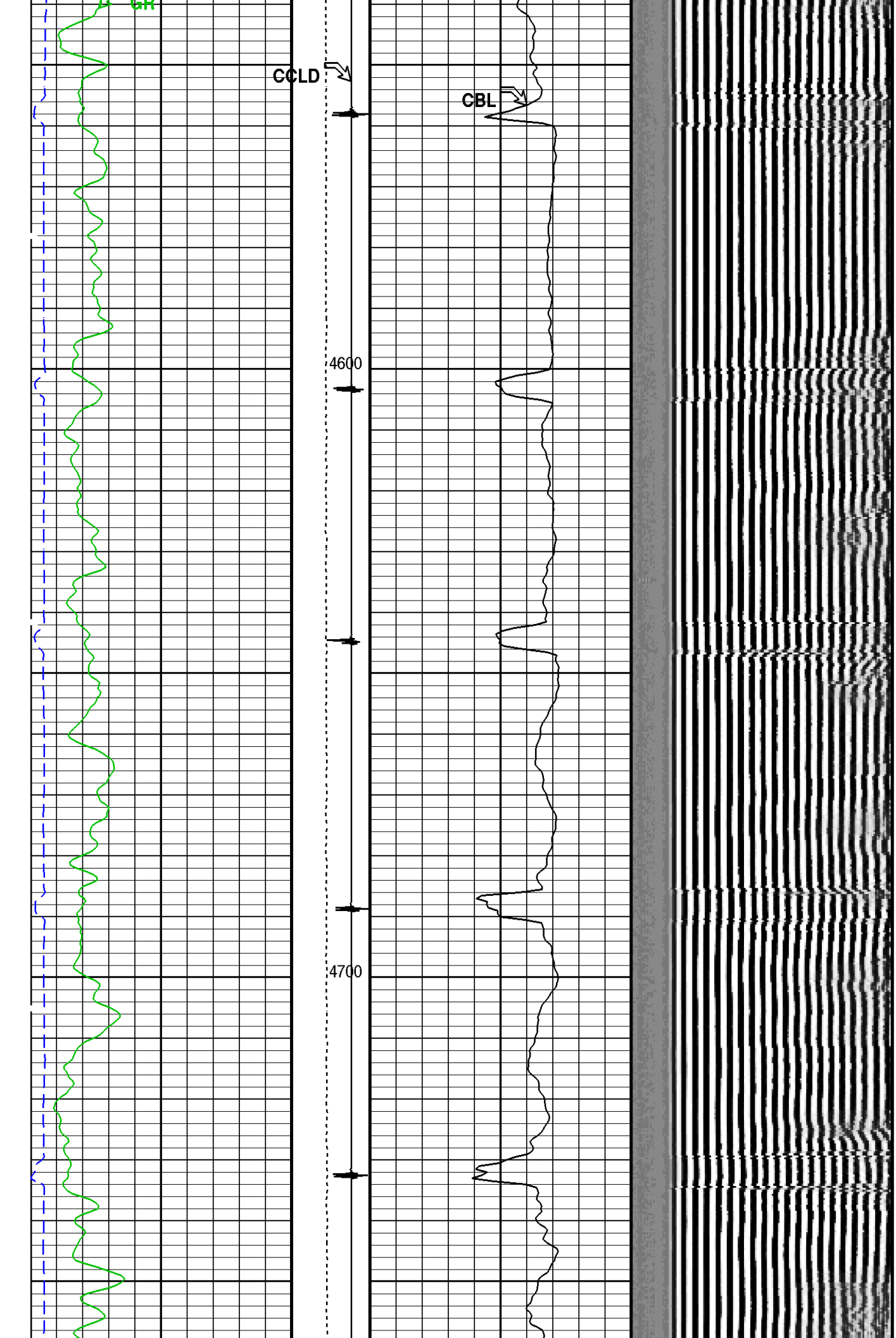
4500
TT
TENS


GR
CCLD
CBL
4600
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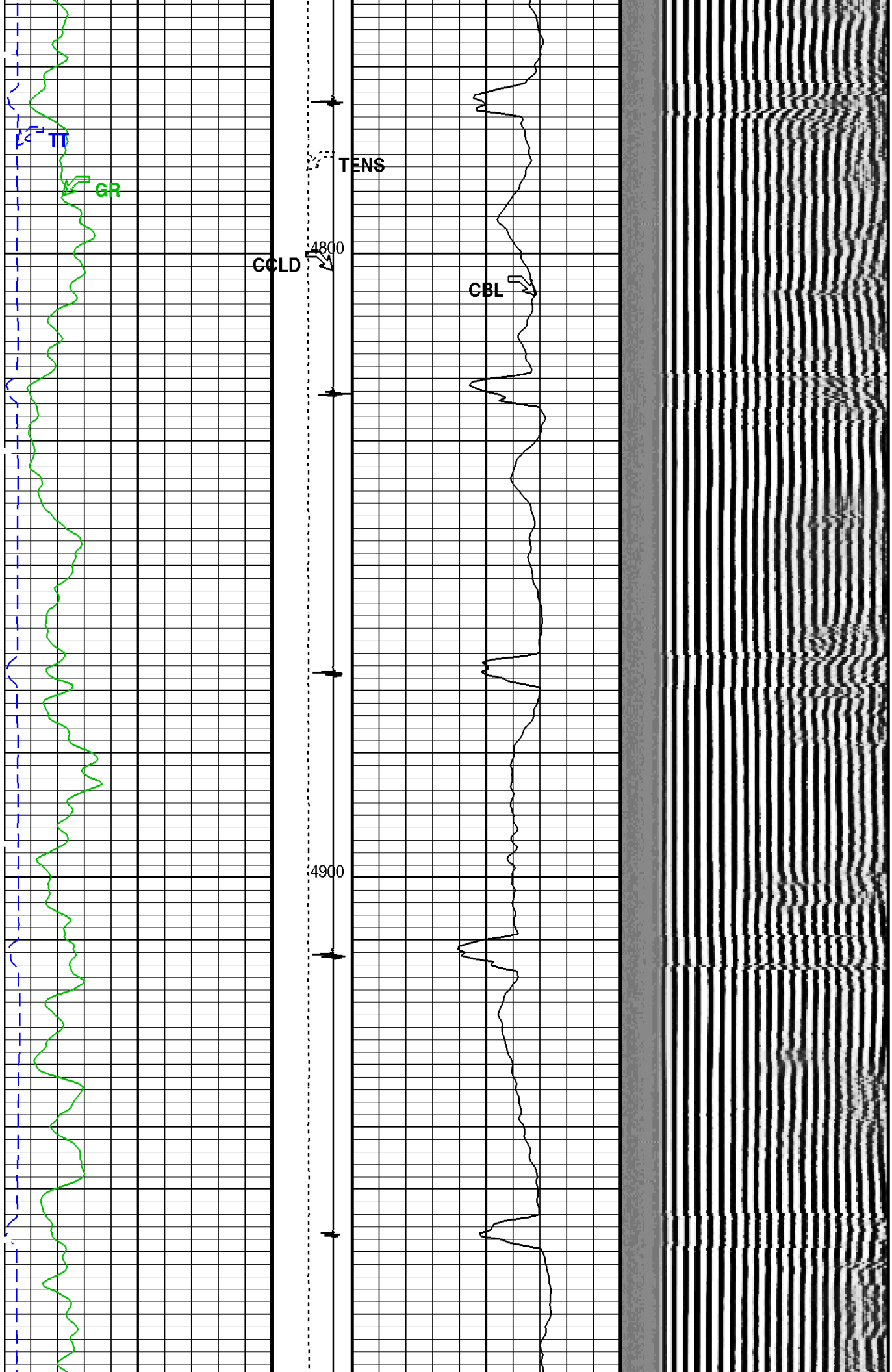
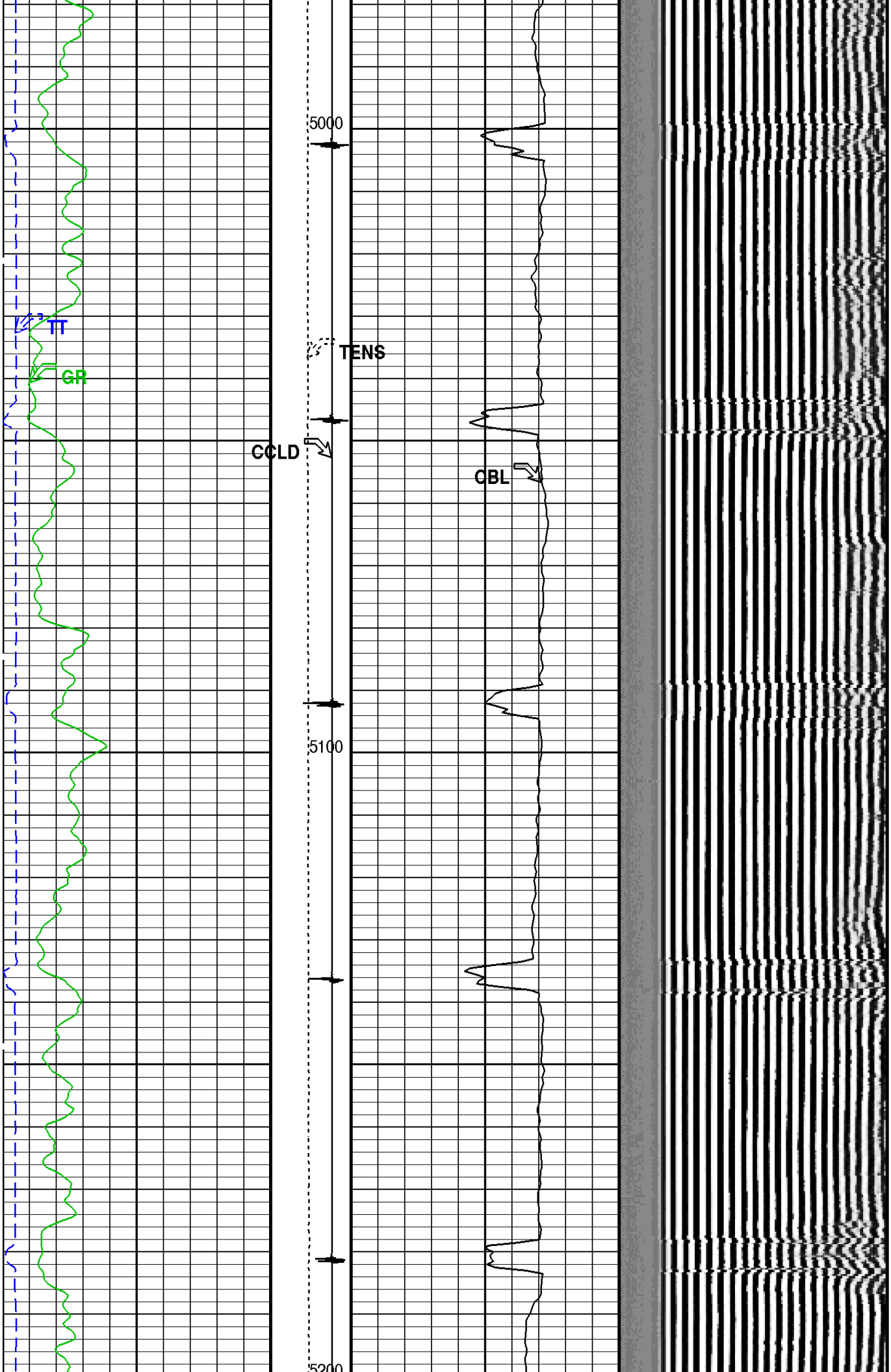

TT
GR
TENS
4800
CCLD
CBL
4900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TT
TENS
GR
CCLD
CBL
5100
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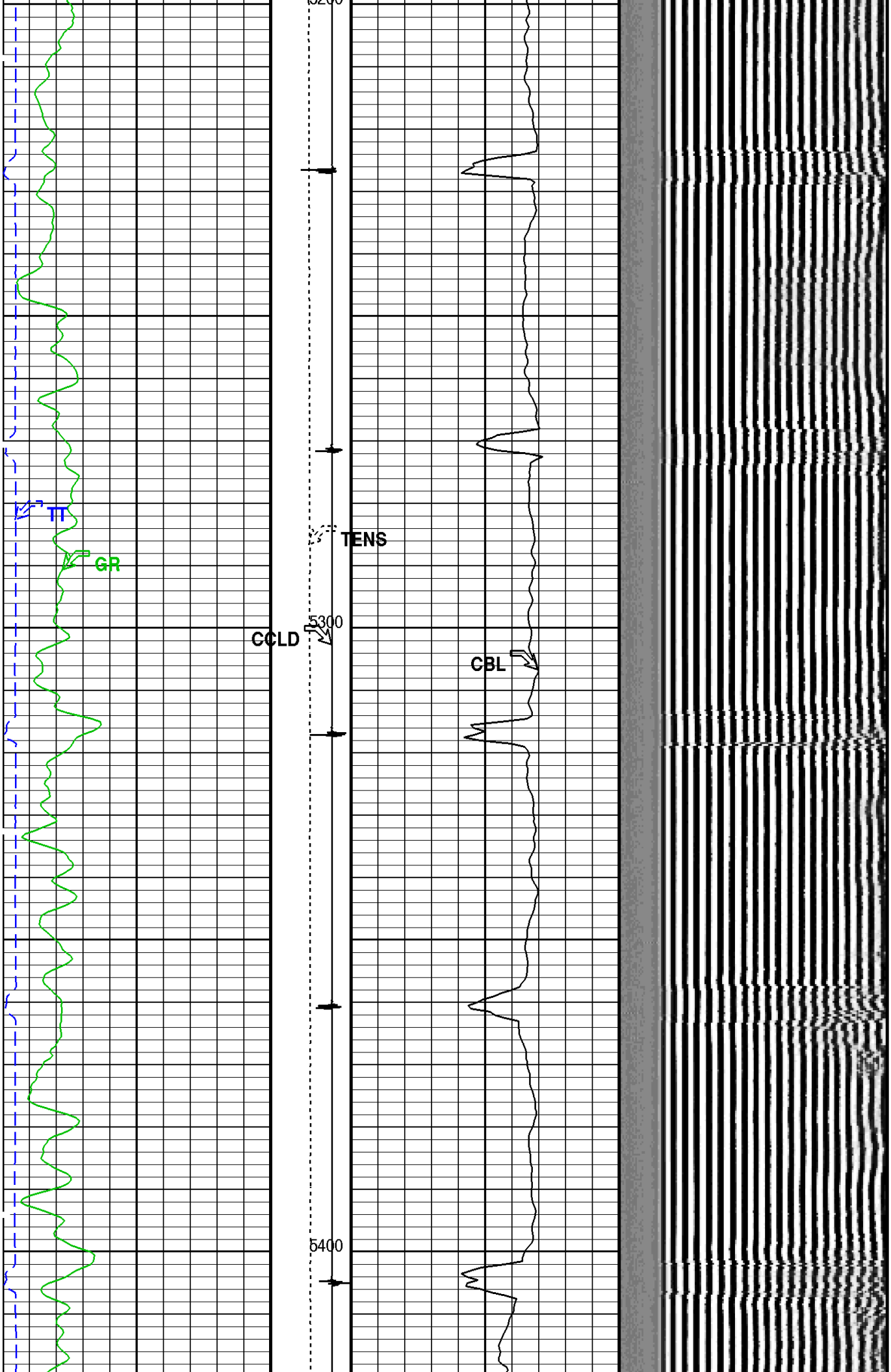
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TENS
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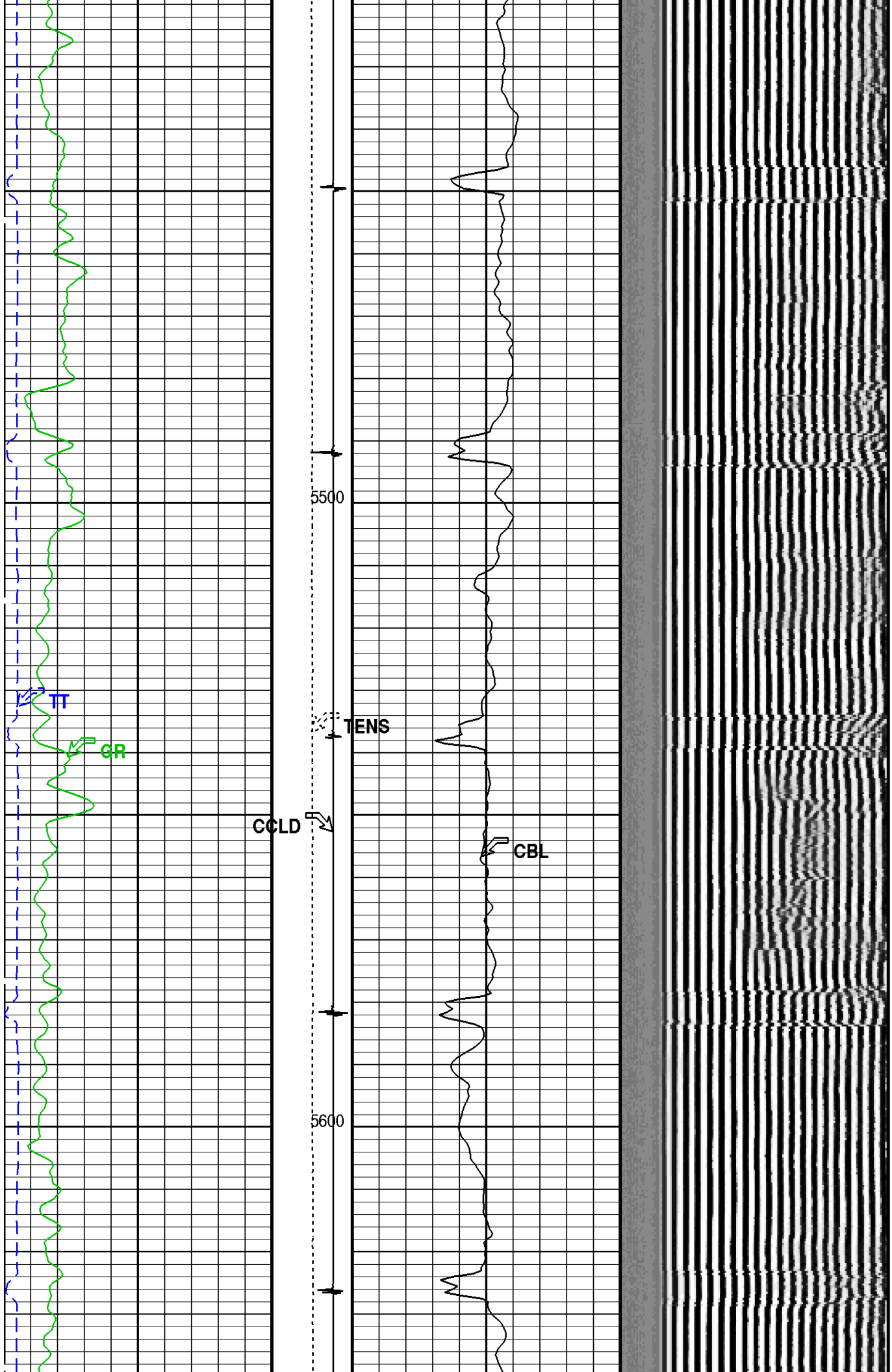
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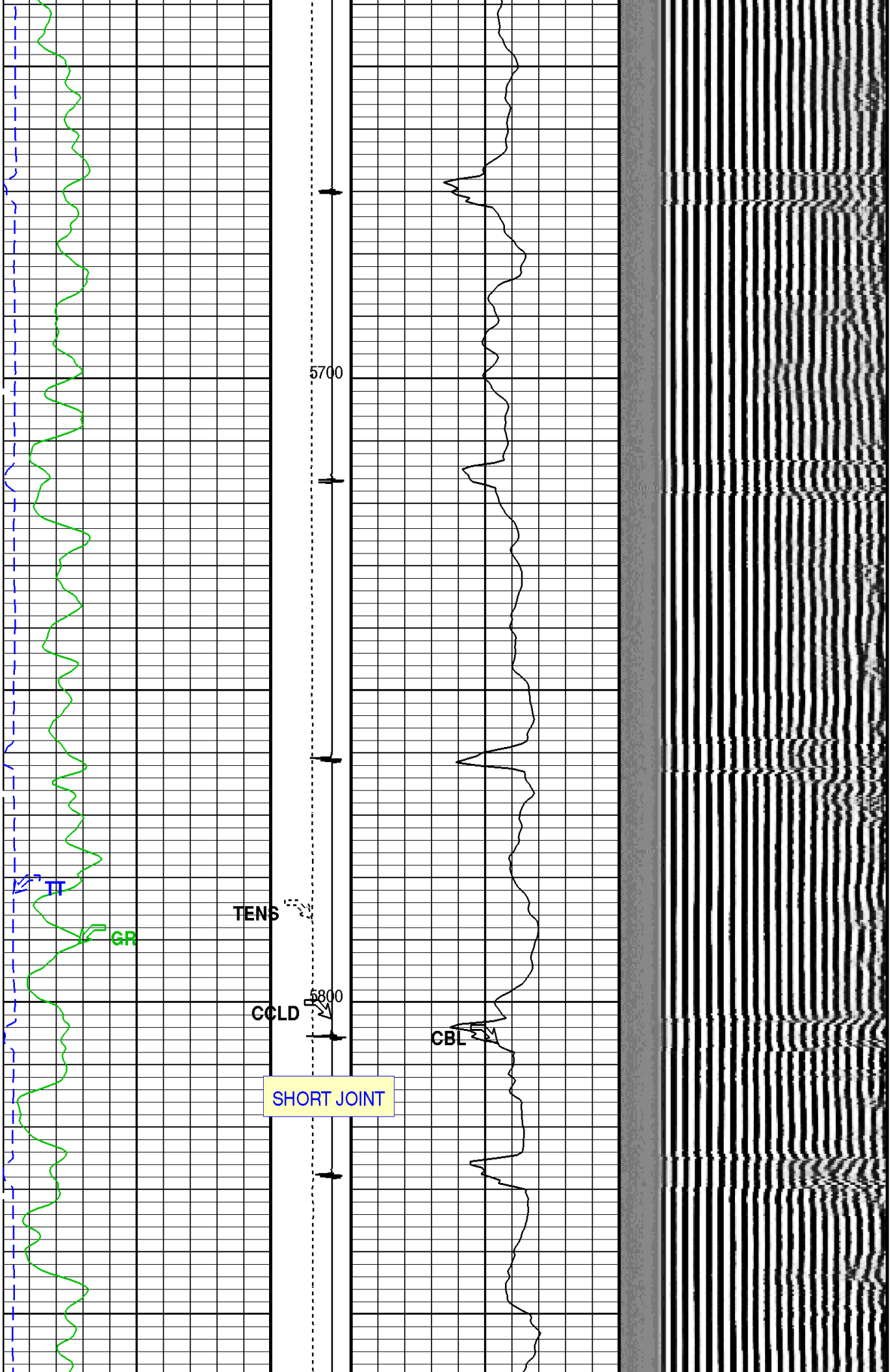
TT
GR
TENS
CCLD
CBL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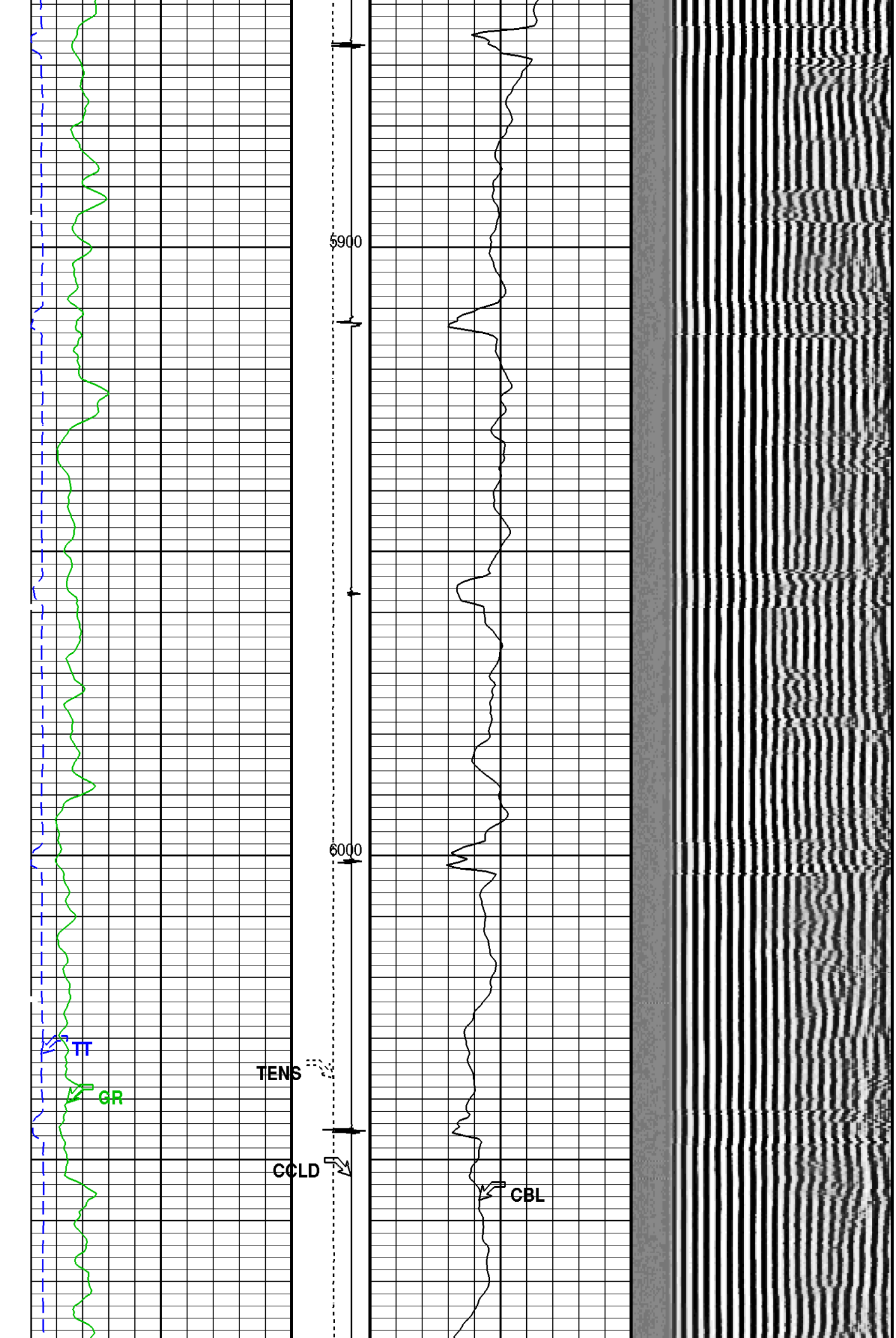
TT
GR
TENS
5800
CCLD
CBL
SHORT JOINT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TT
GR
TENS
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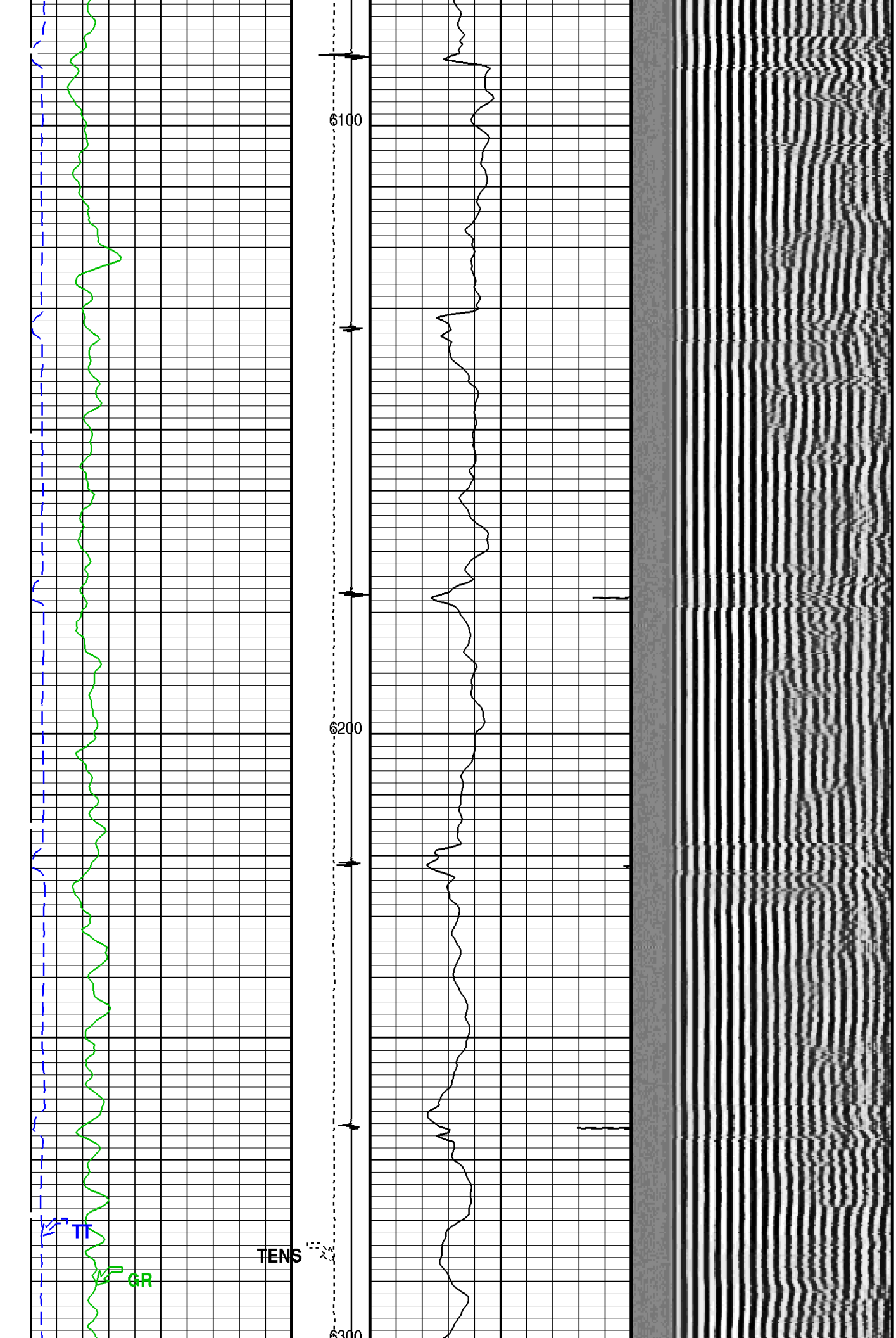
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6300
TT
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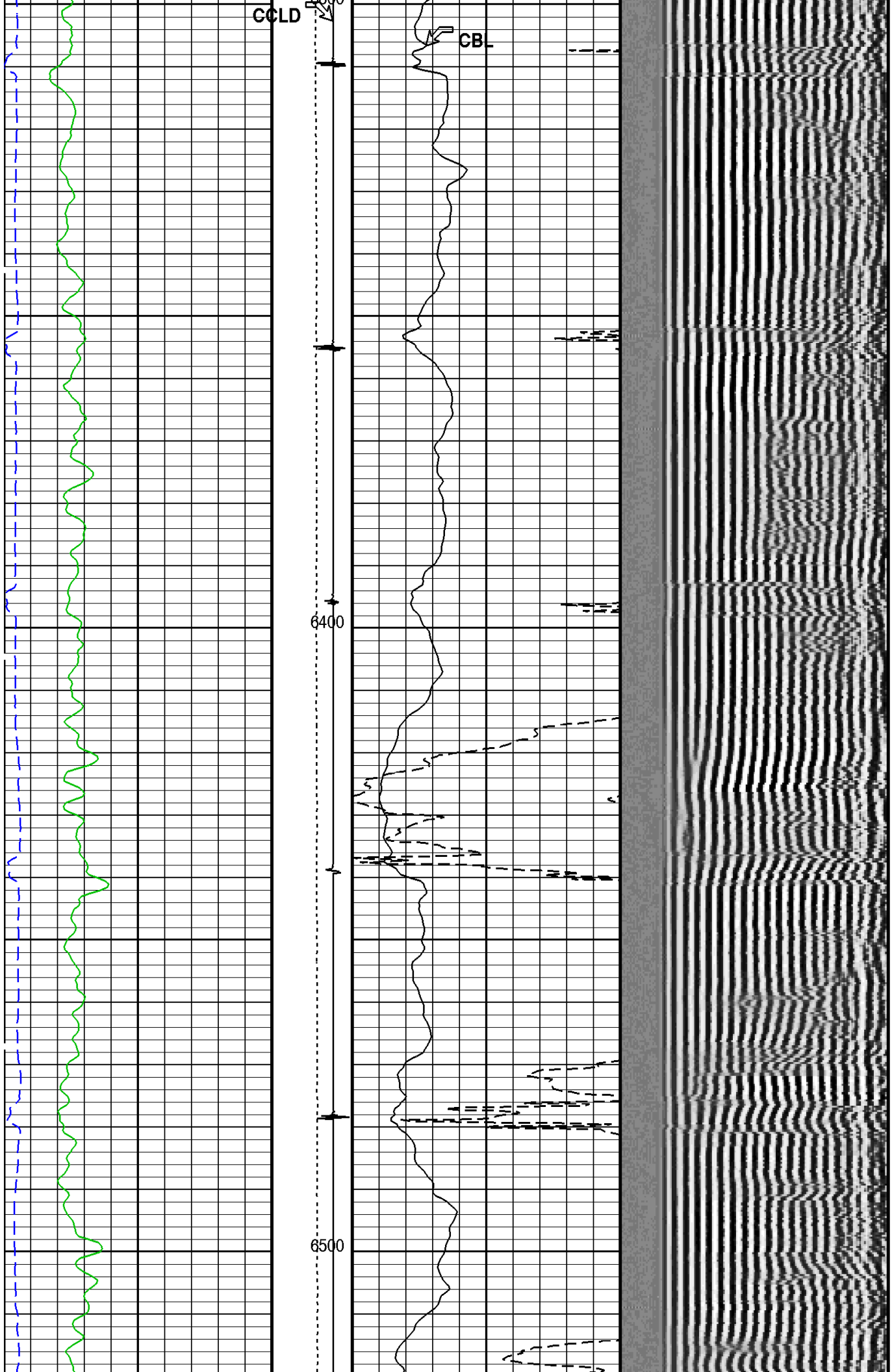
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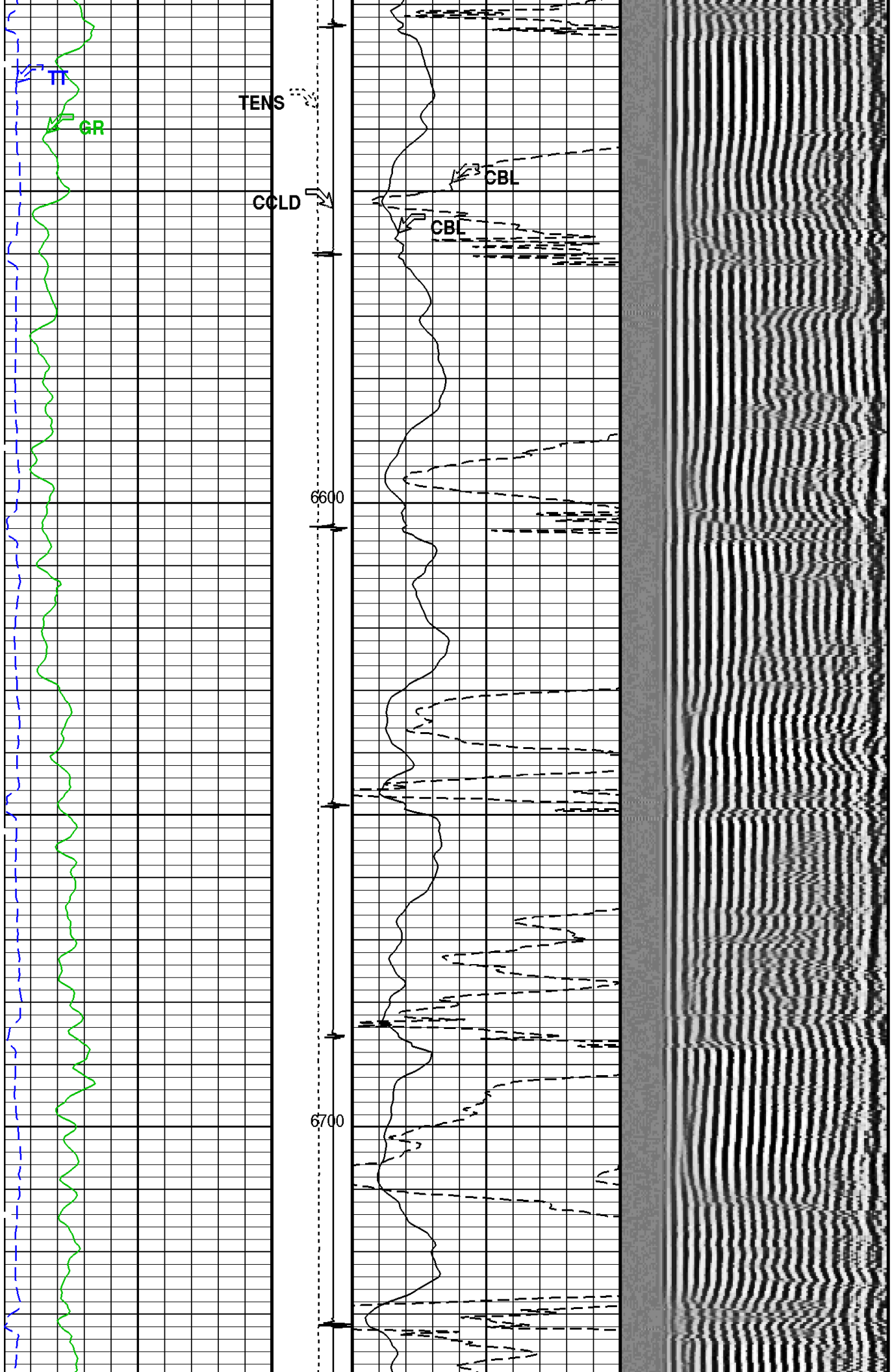
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TENS
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CBL
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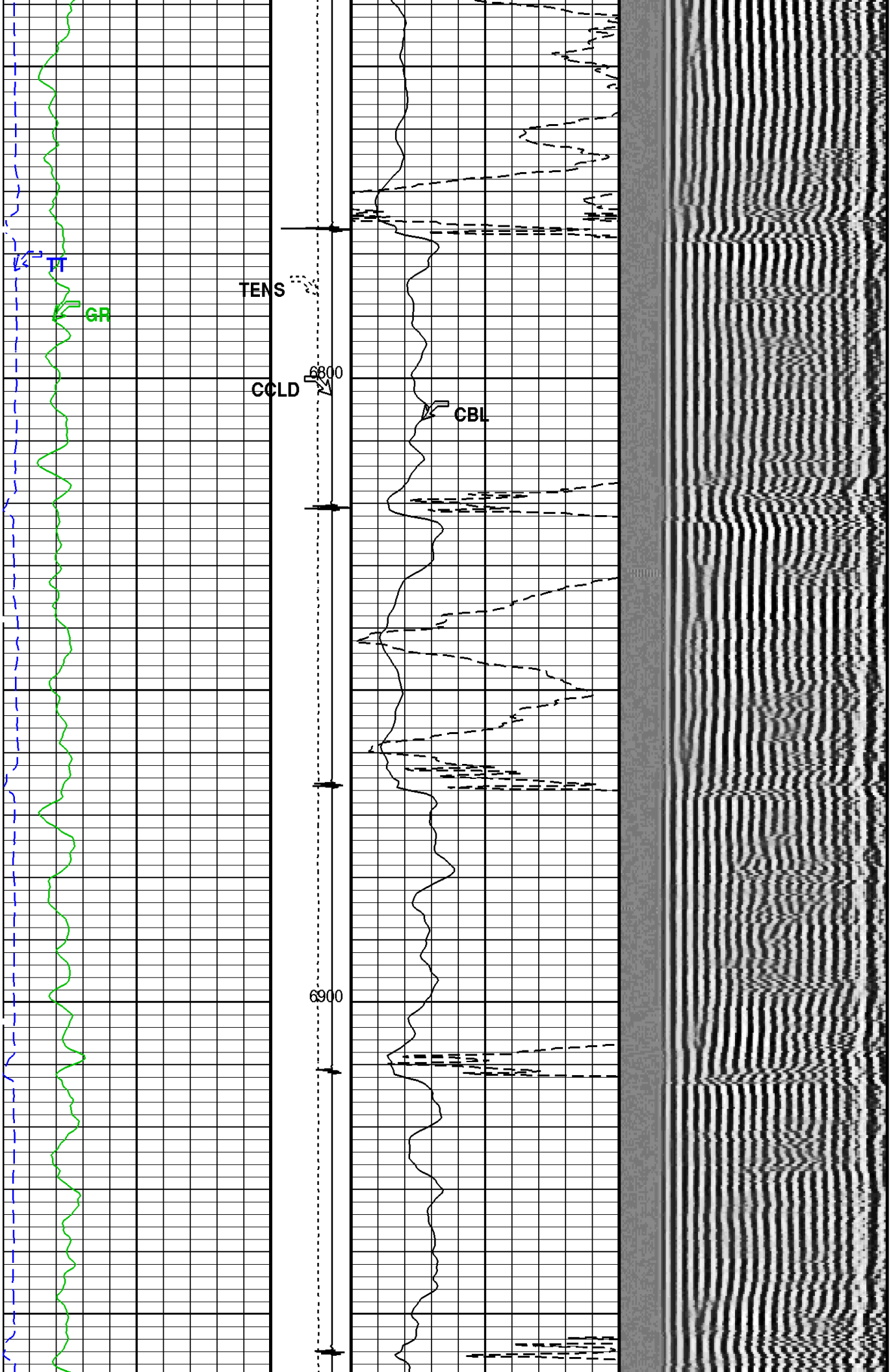
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GR
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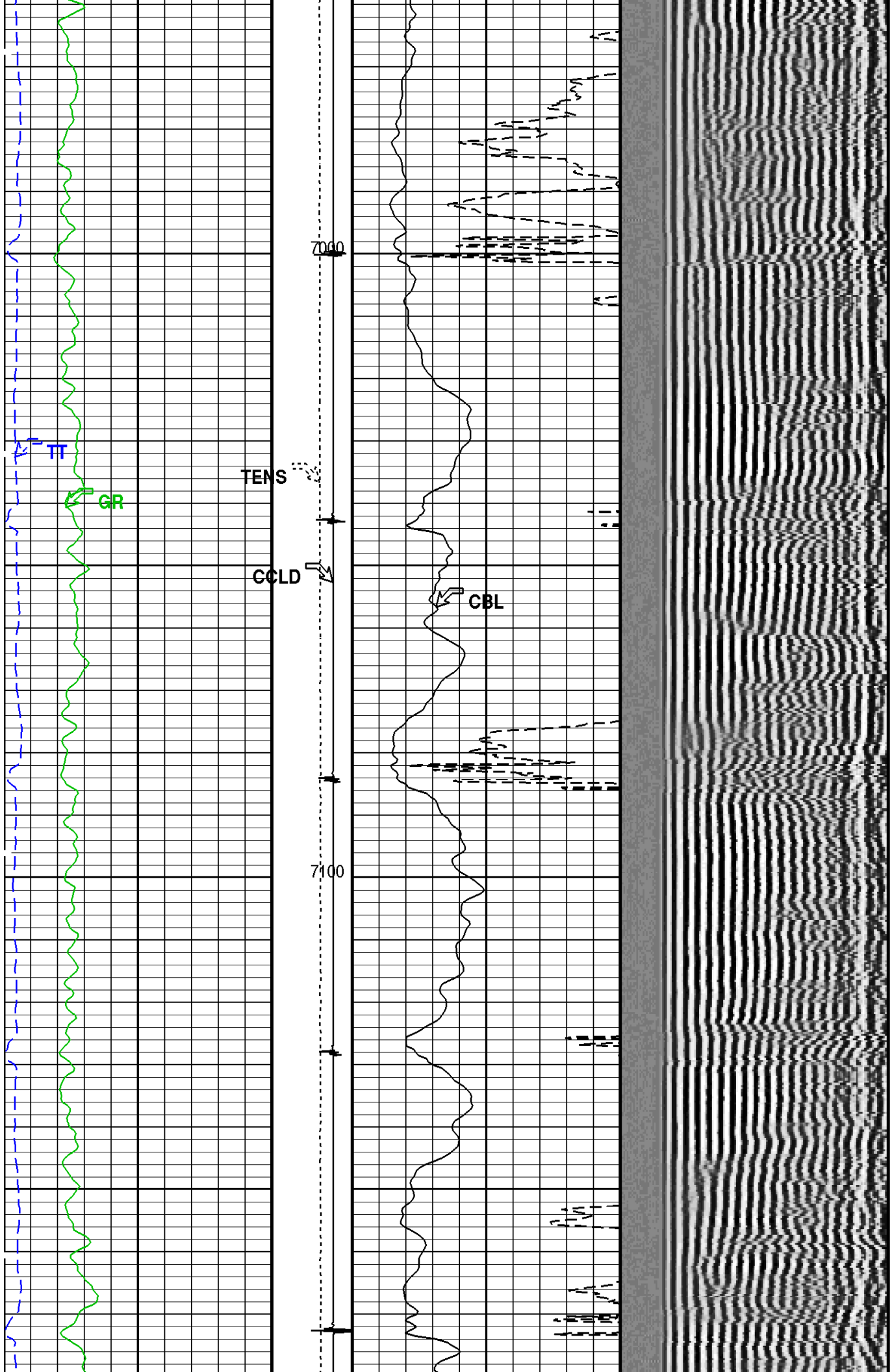
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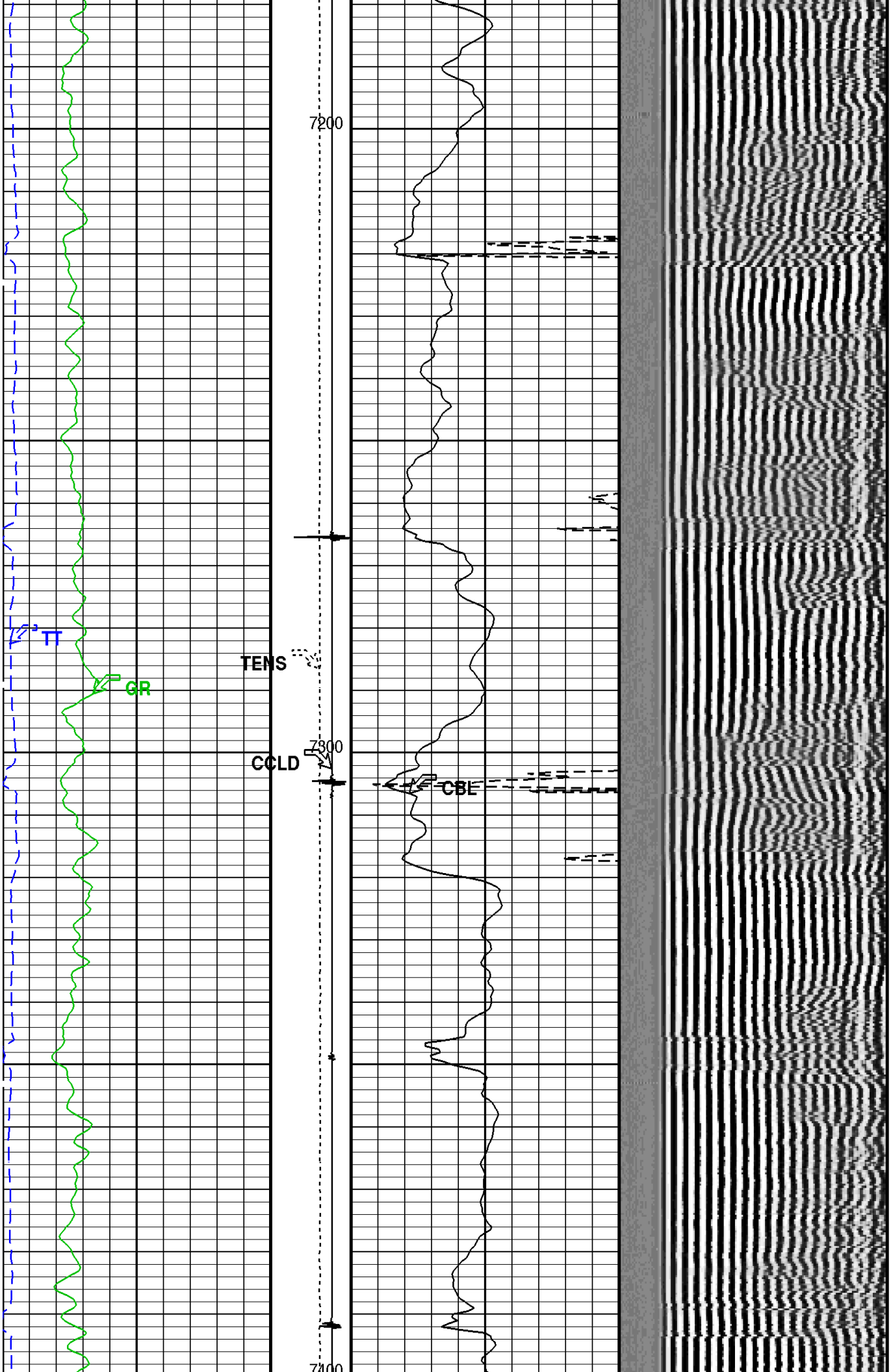
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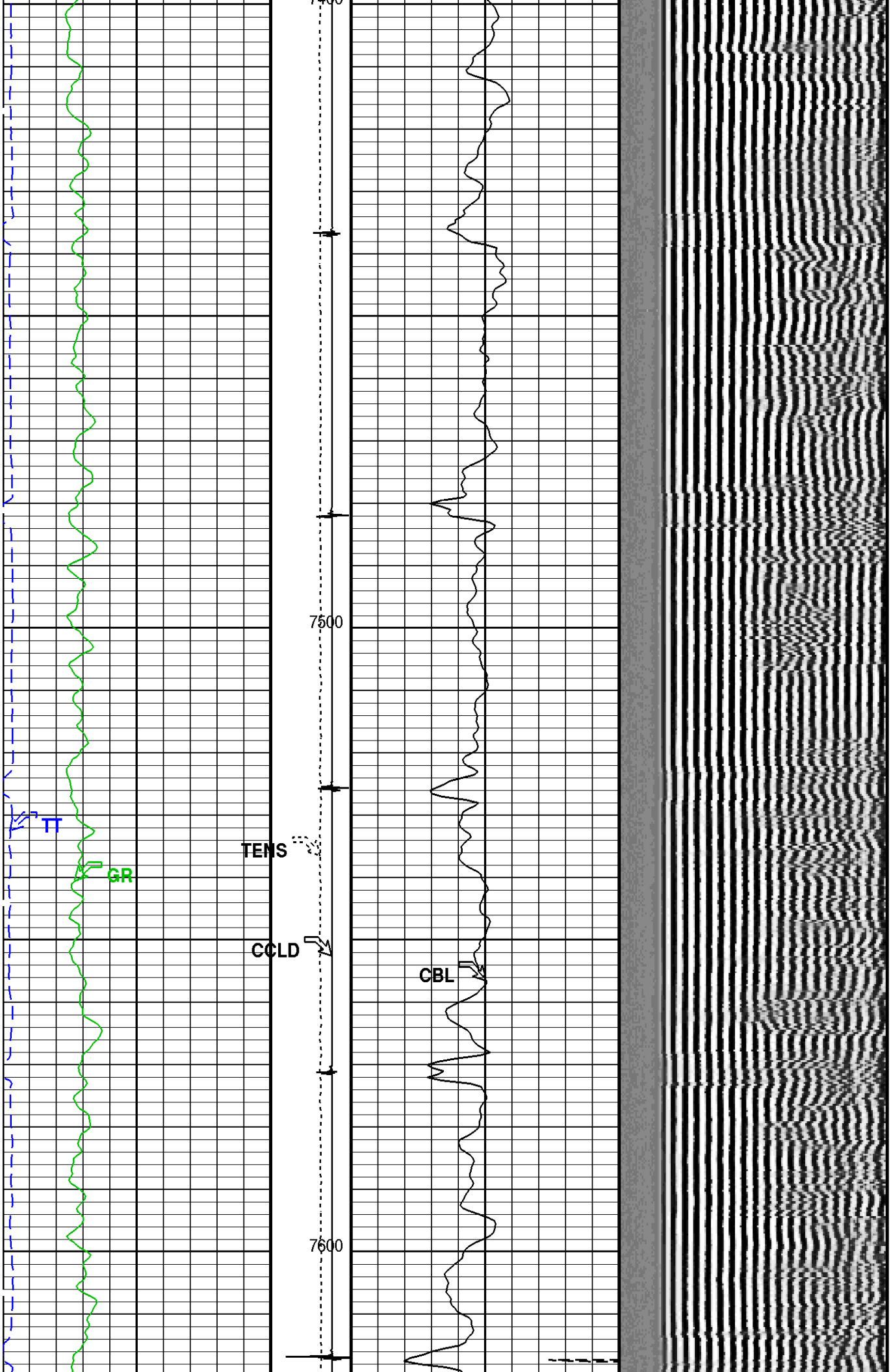
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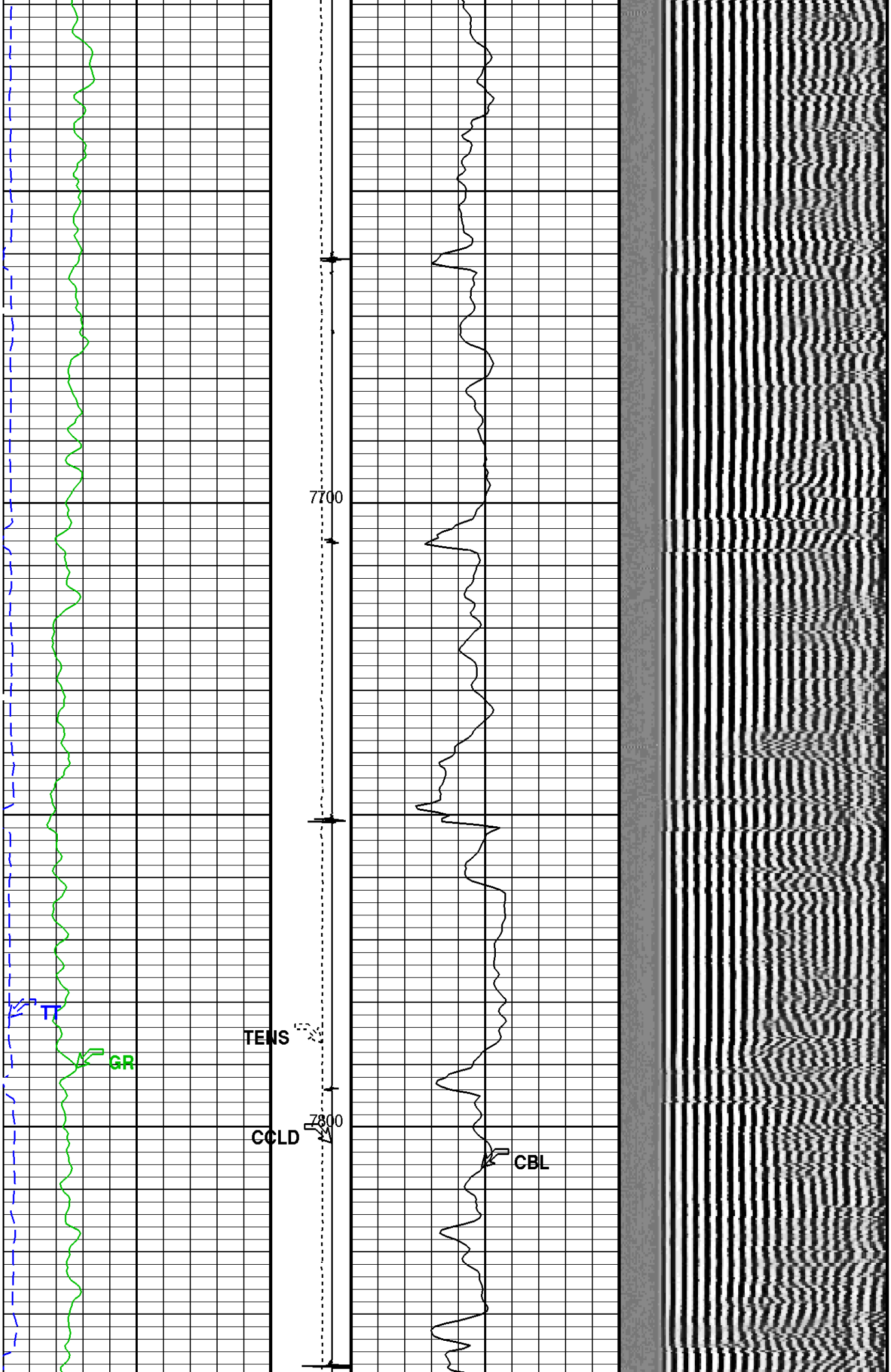
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TT
GR
TENS
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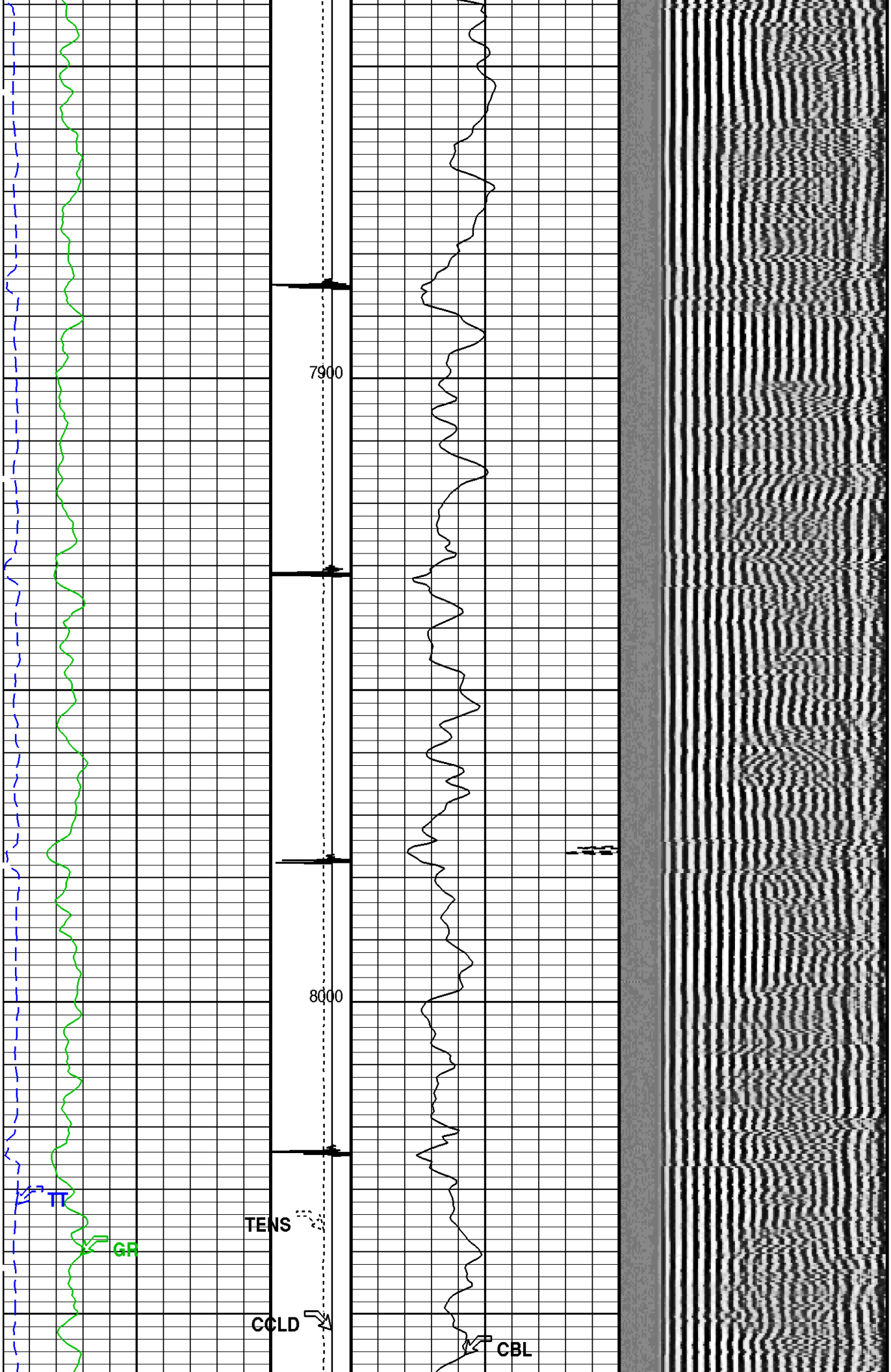
CBL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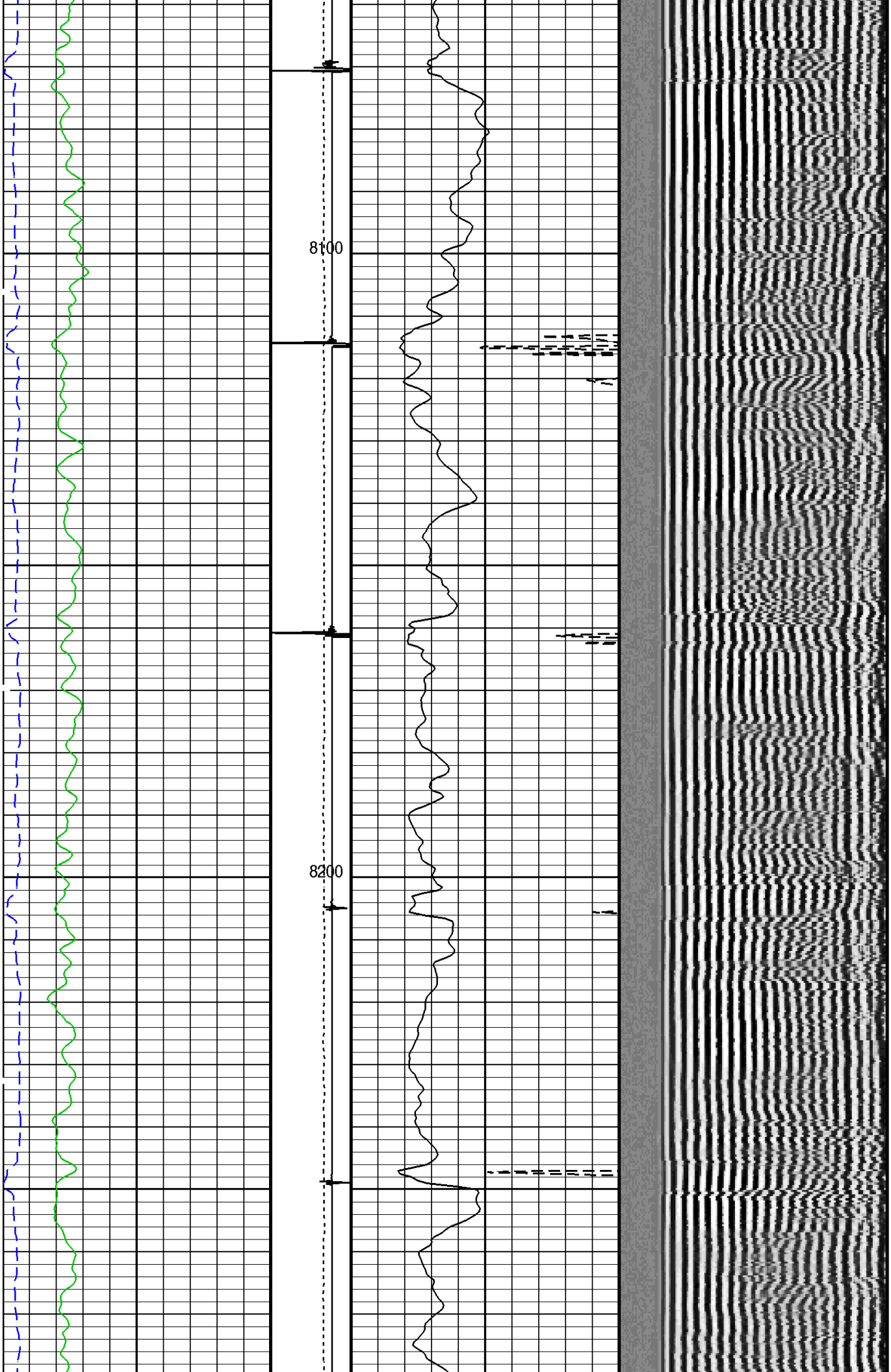
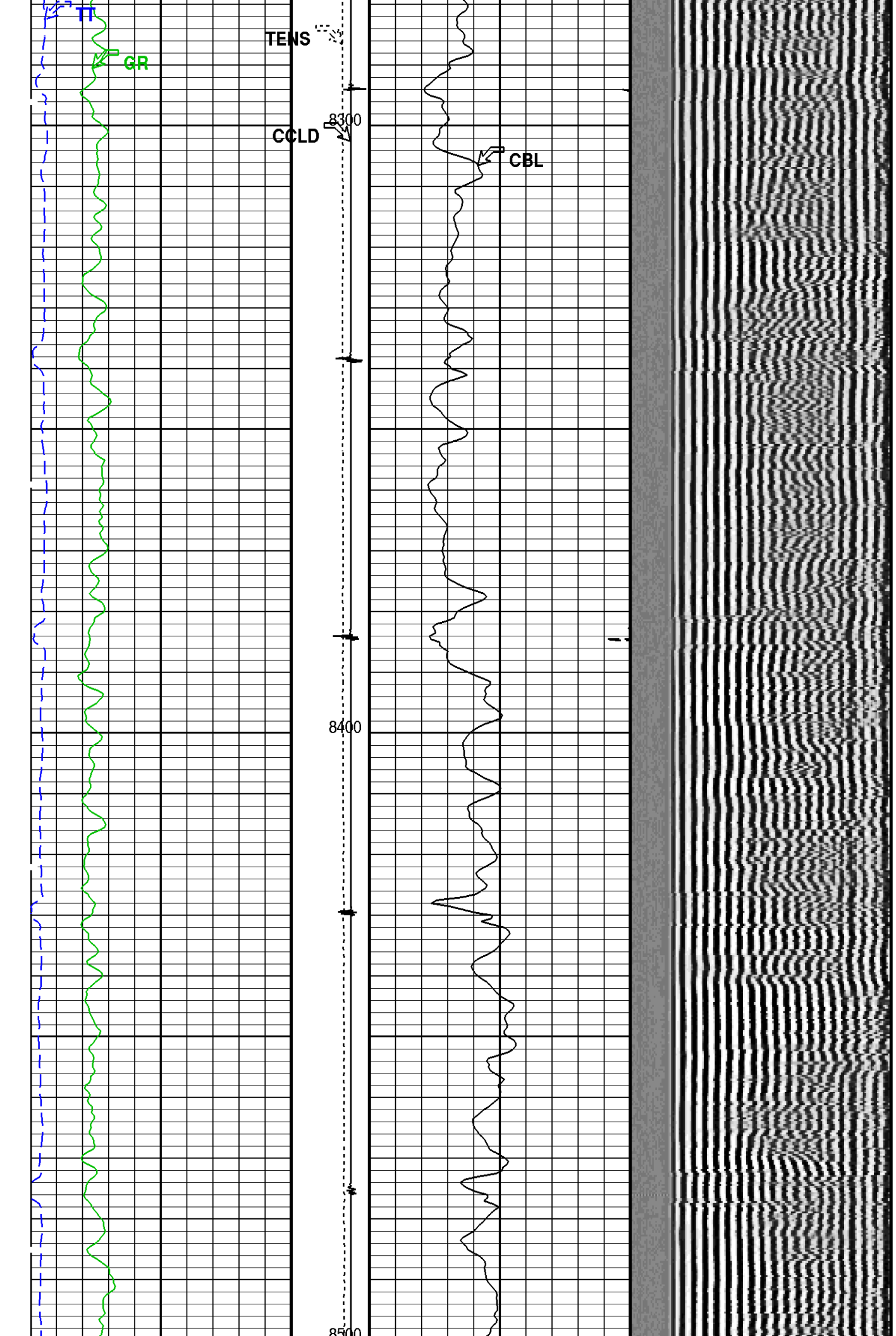
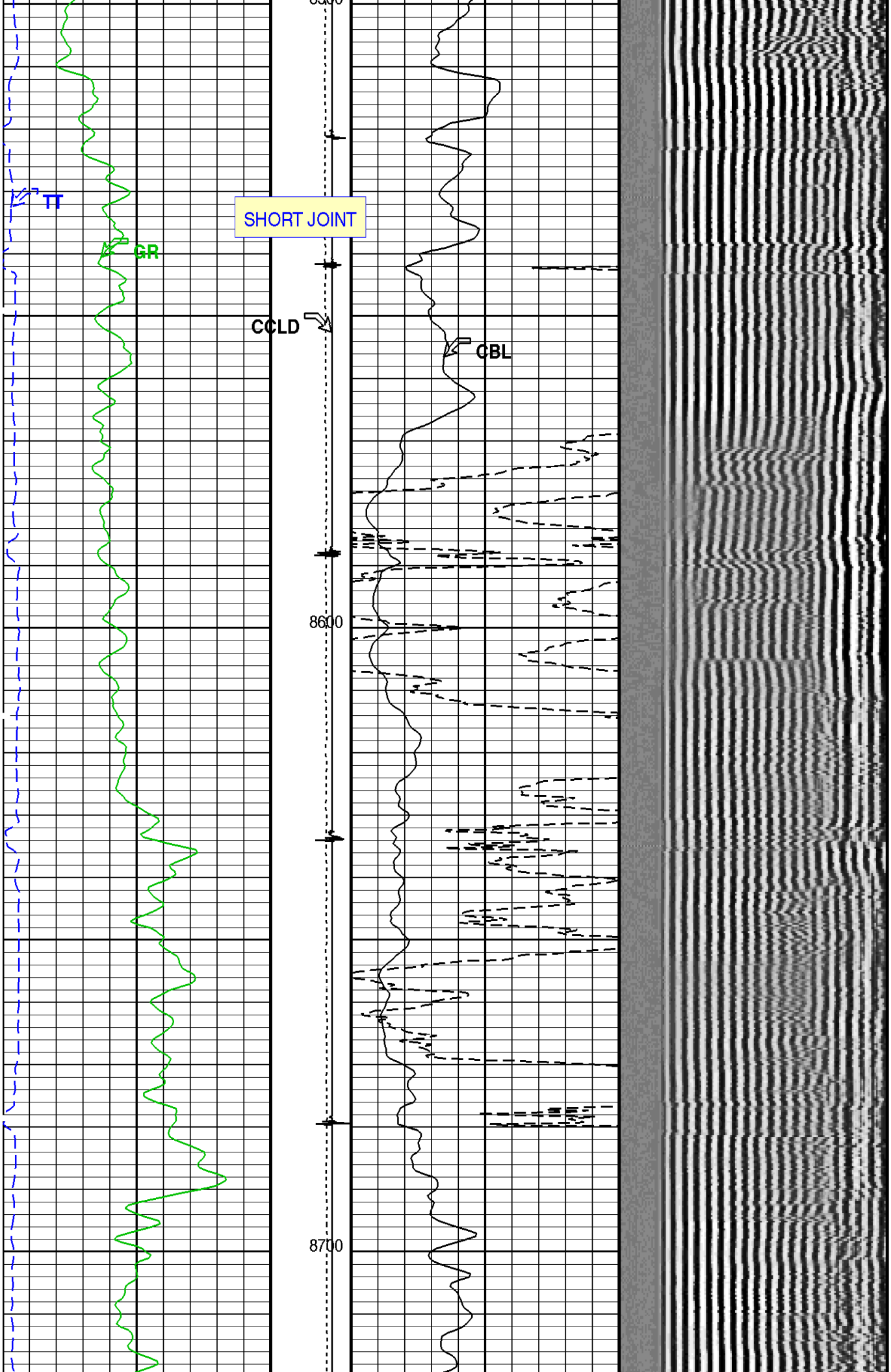
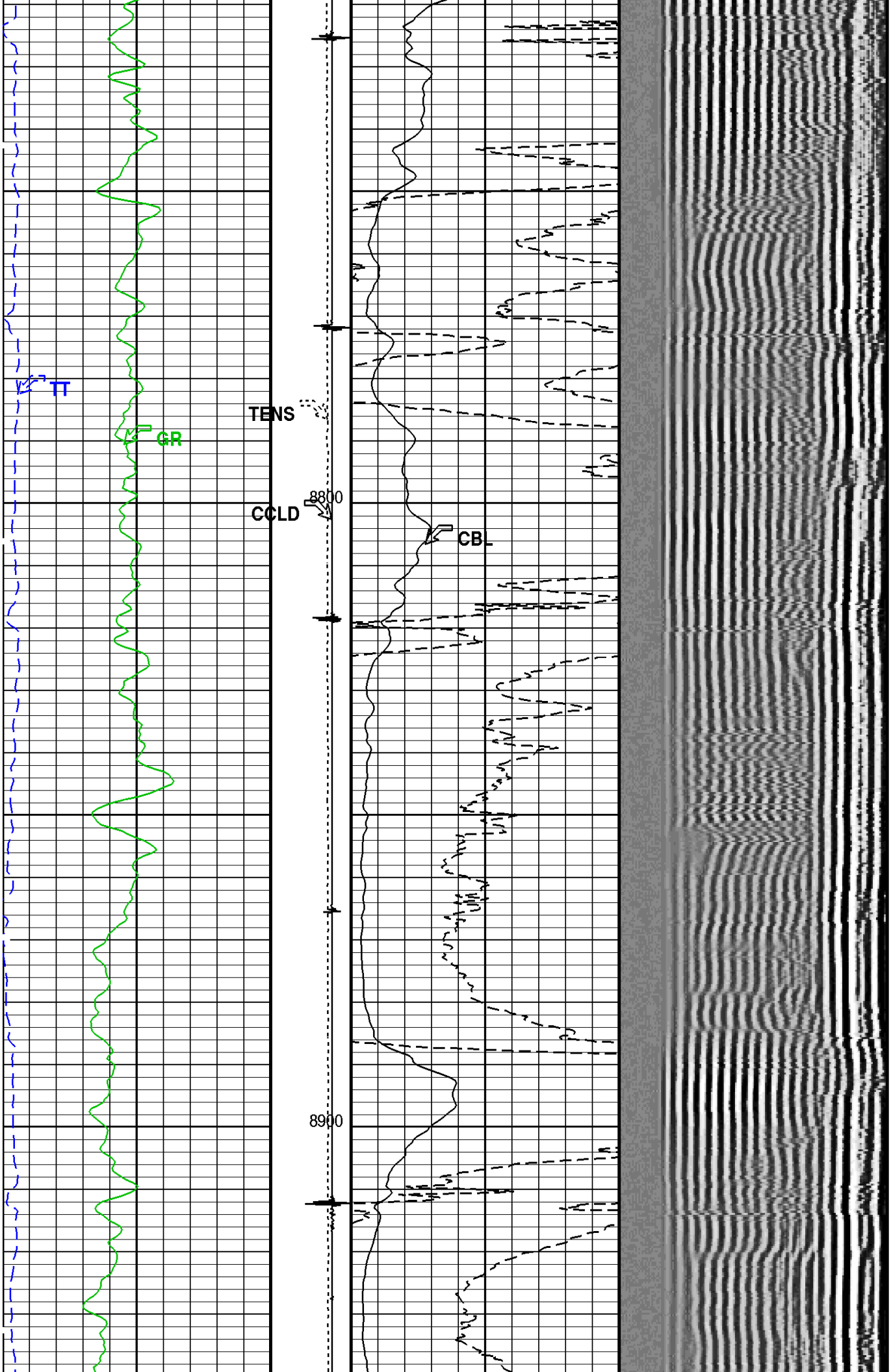
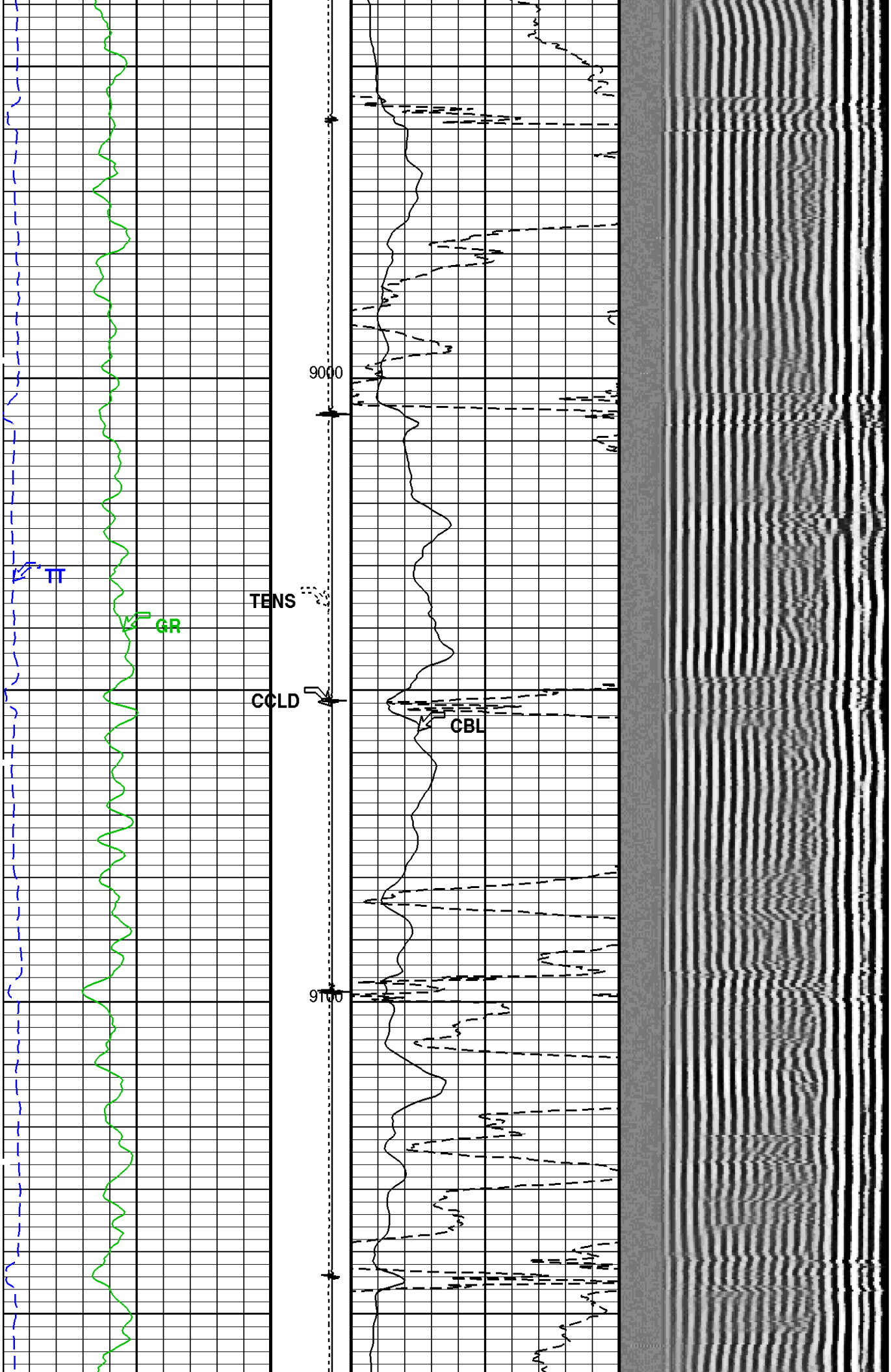
8000
TT
GR
TENS
CCLD
CBL

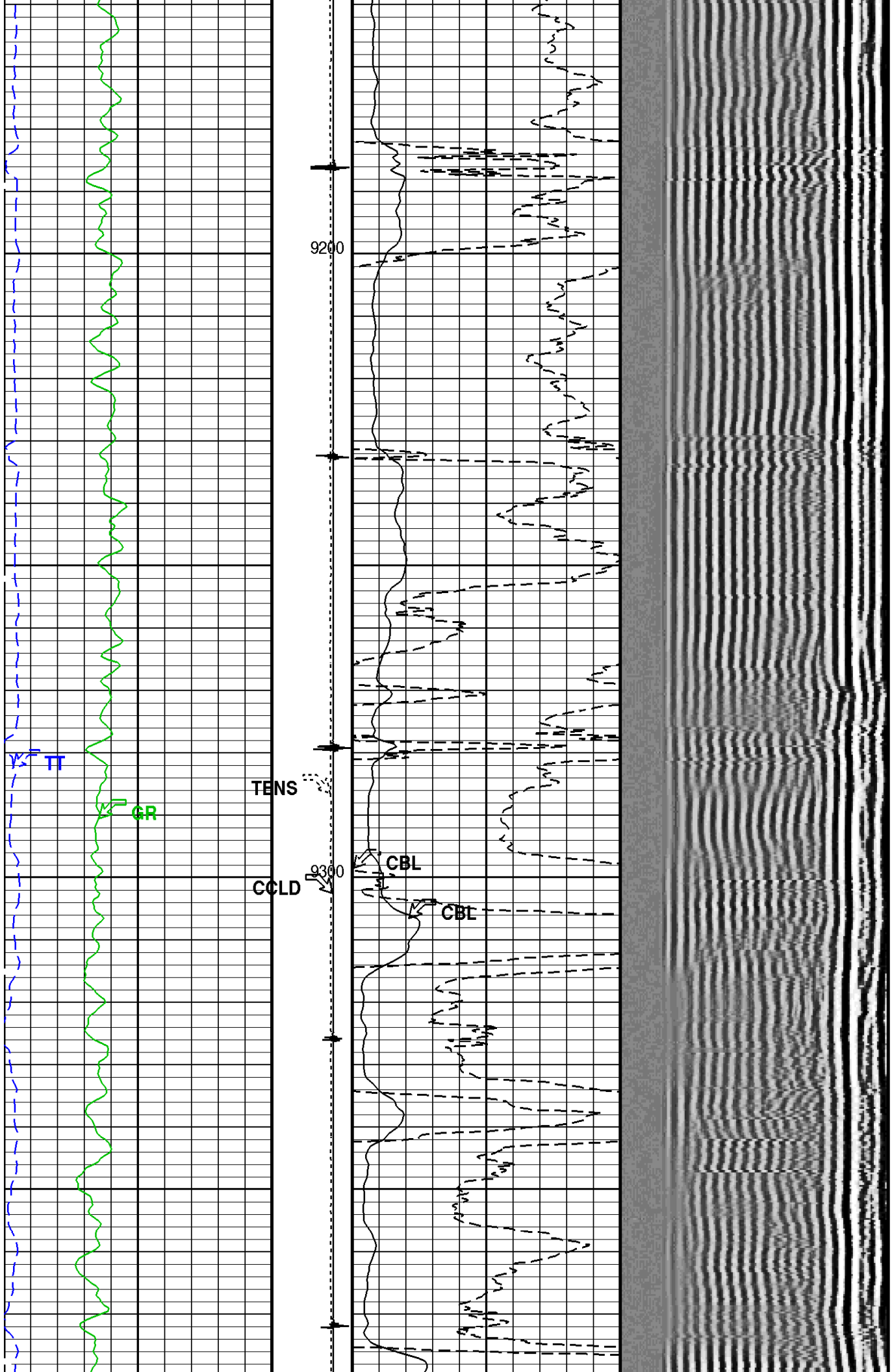

8100
8200


TT
GR
TENS
CCLD
CBL
8300
8400
8500


TT
GR
SHORT JOINT
CCLD
CBL
8600
8700


TT
GR
TENS
CCLD
8800
CBL
8900


9000
TT
GR
TENS
CCLD
CBL
9100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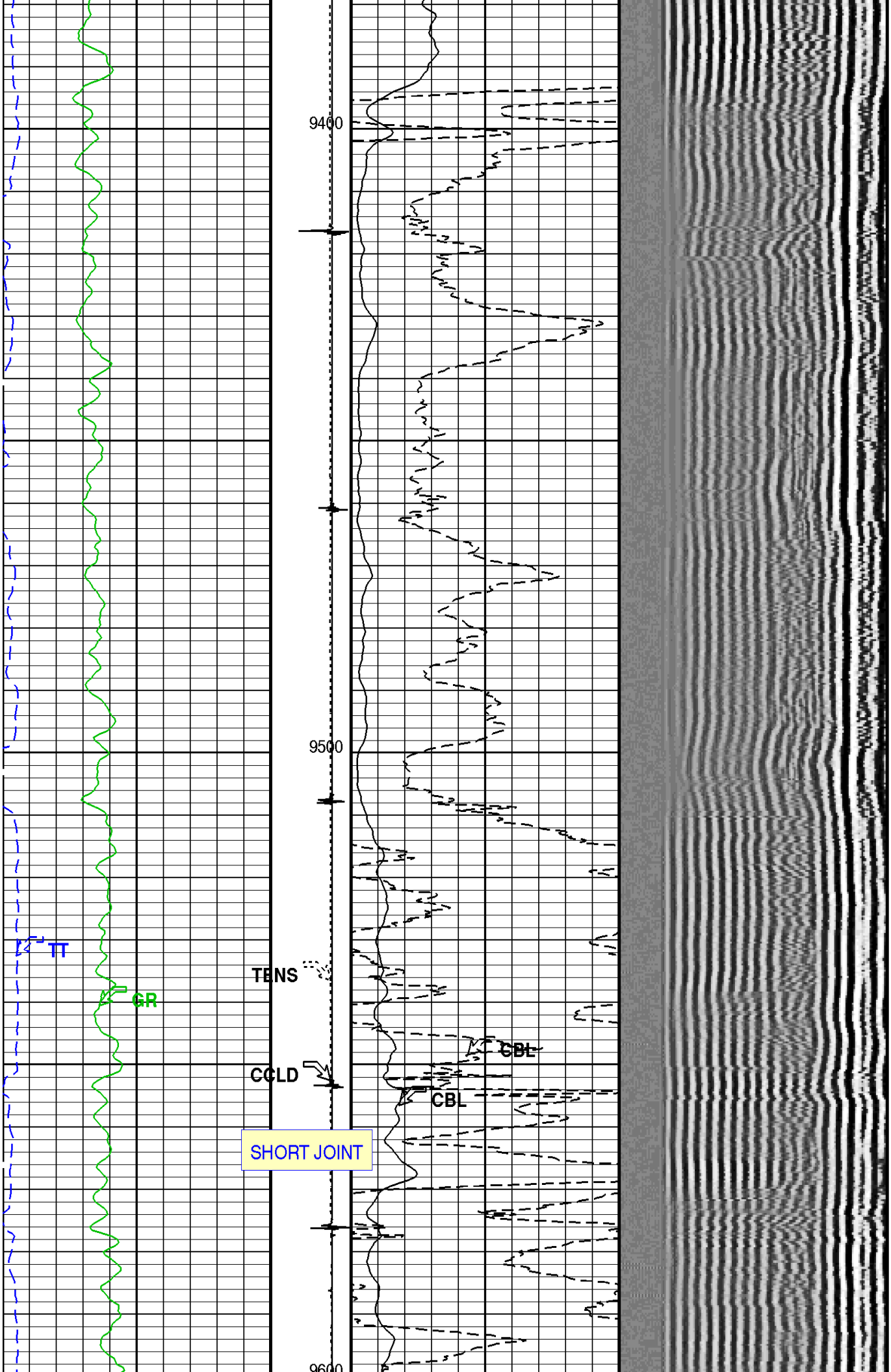
TT
GR
TENS
CCLD
9300
CBL
CBL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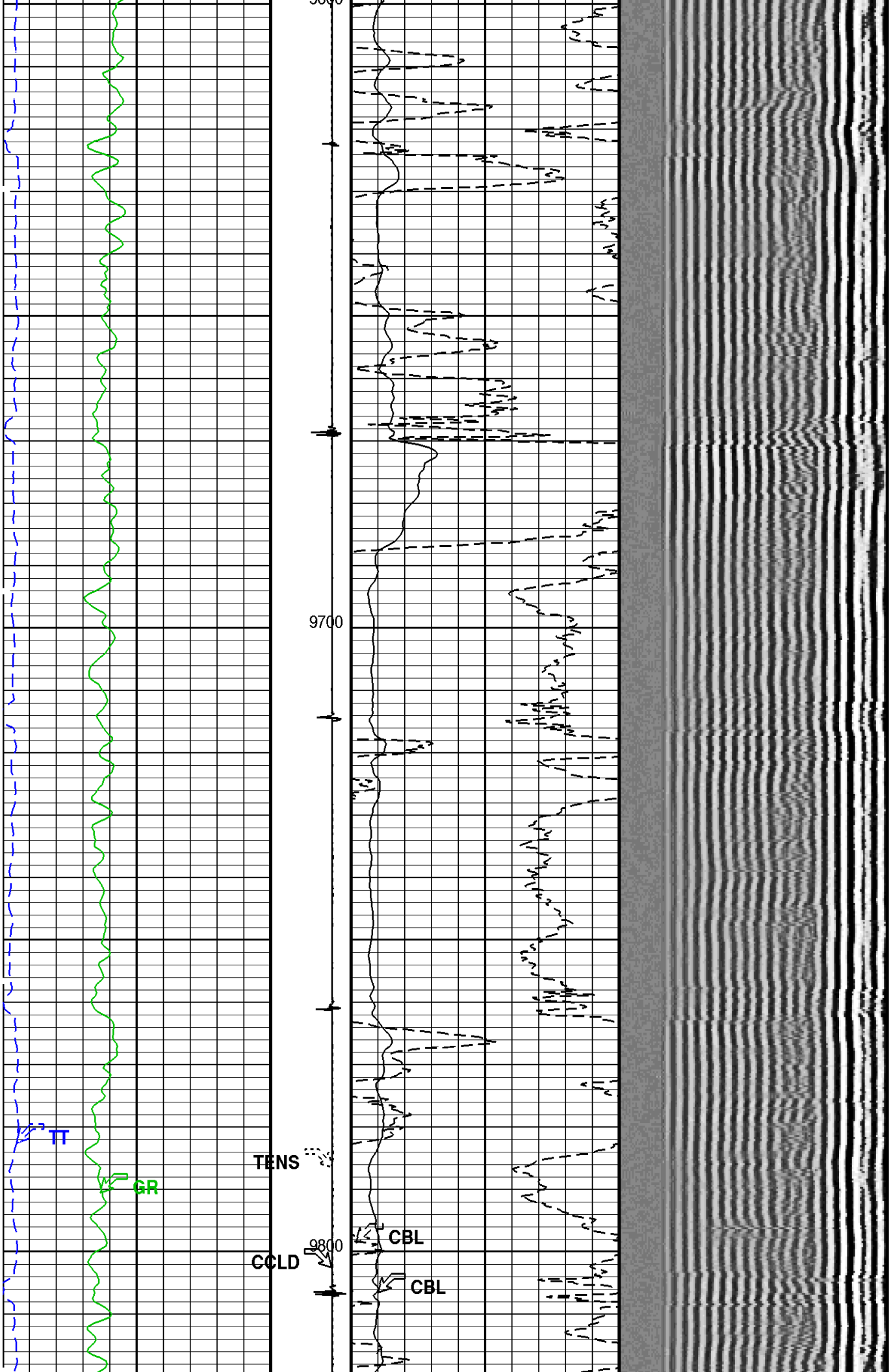
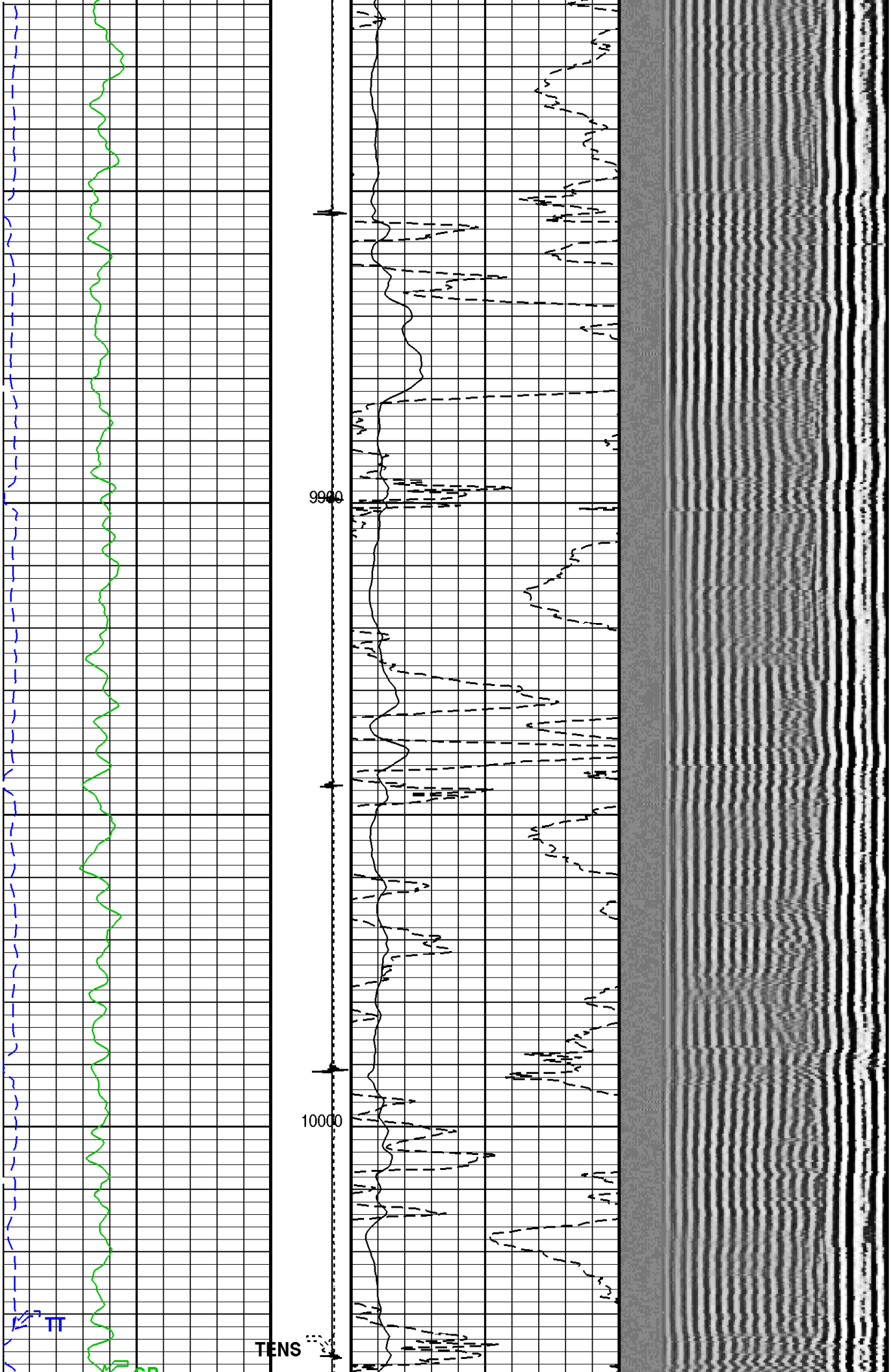
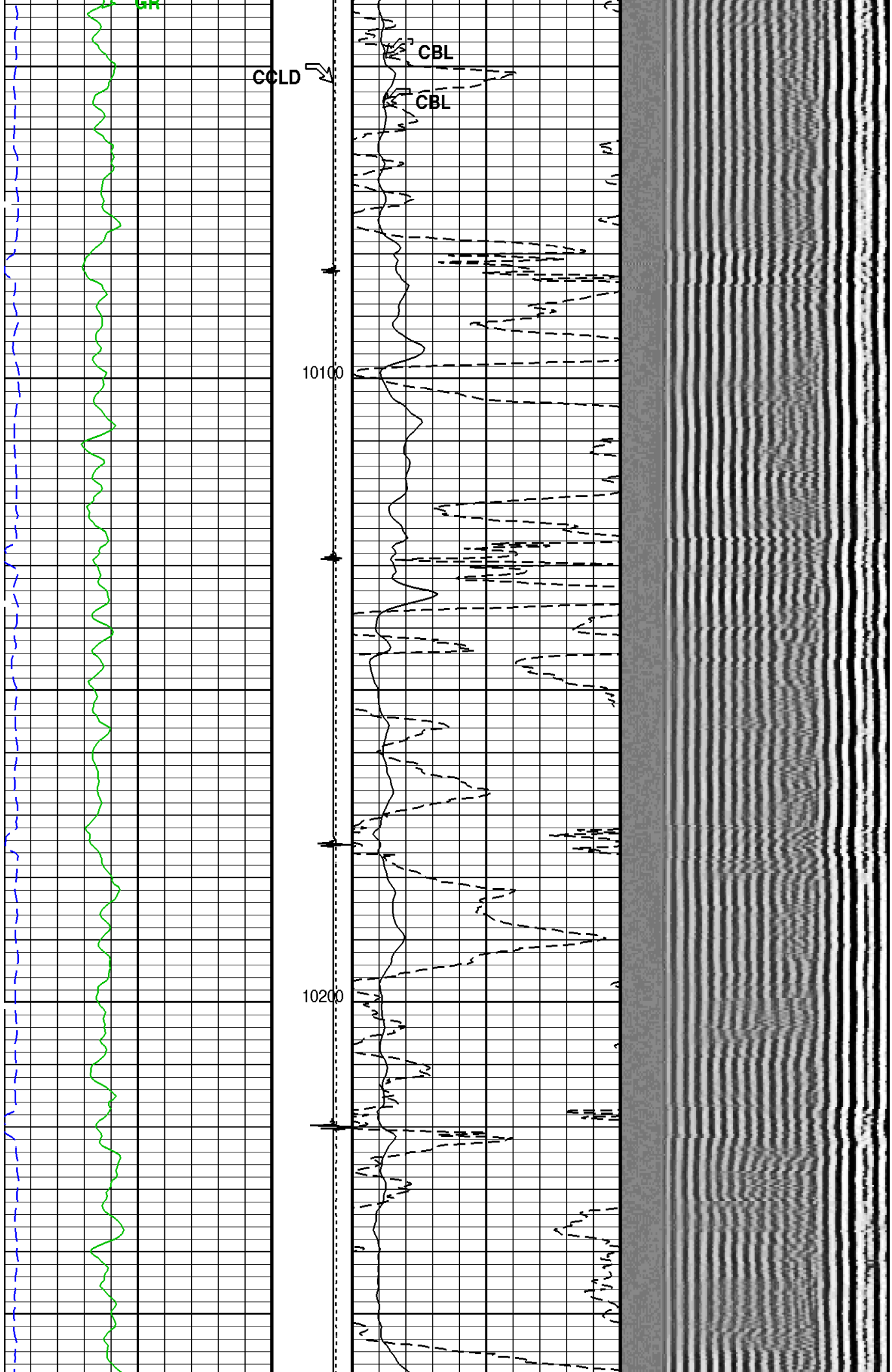
9500
9600
TT
GR
TENS
CCLD
CBL
CBL
SHORT JOINT


9700
TT
GR
TENS
9800
CBL
CCLD
CBL


9900
10000
TT
TENS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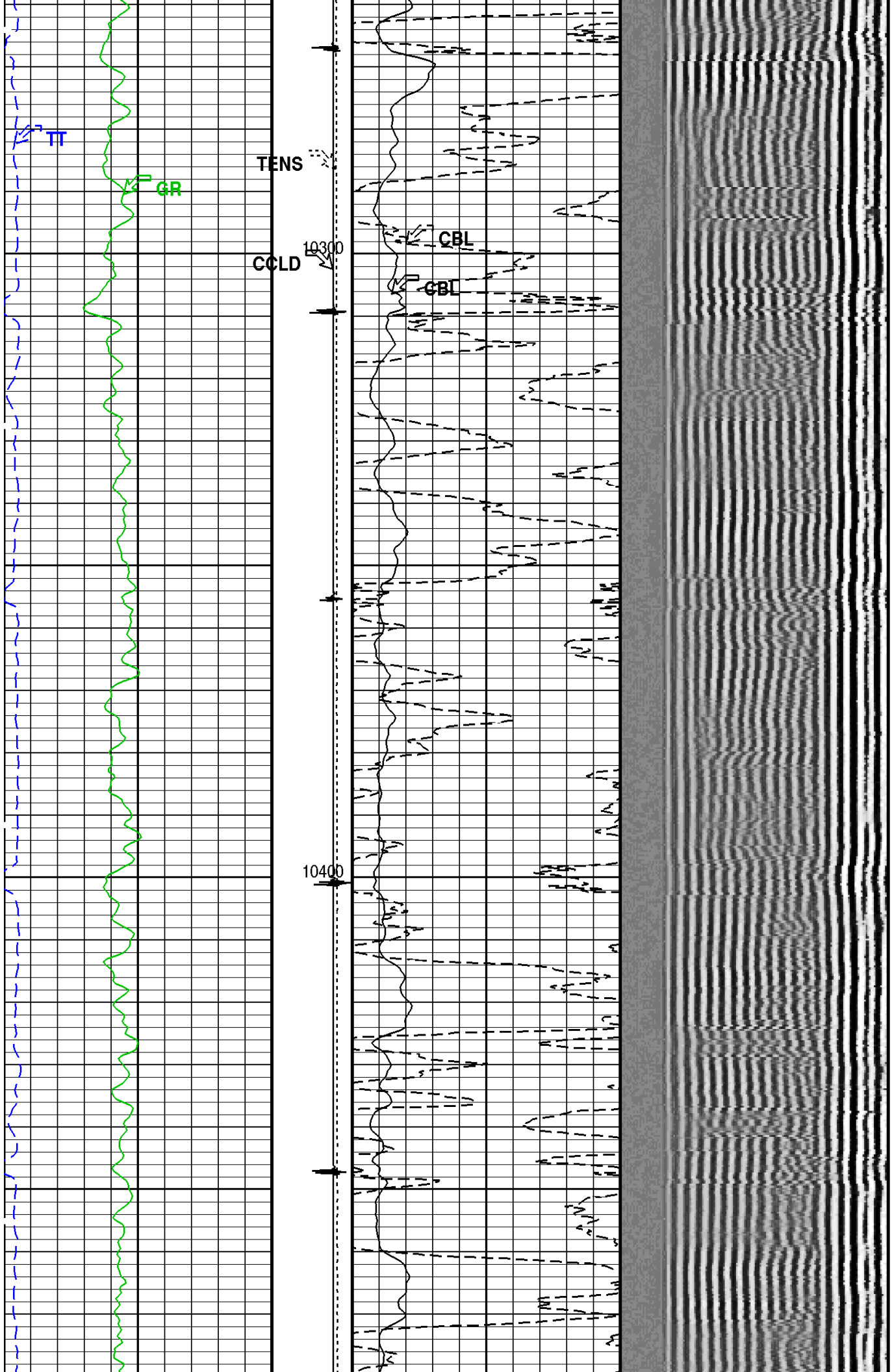
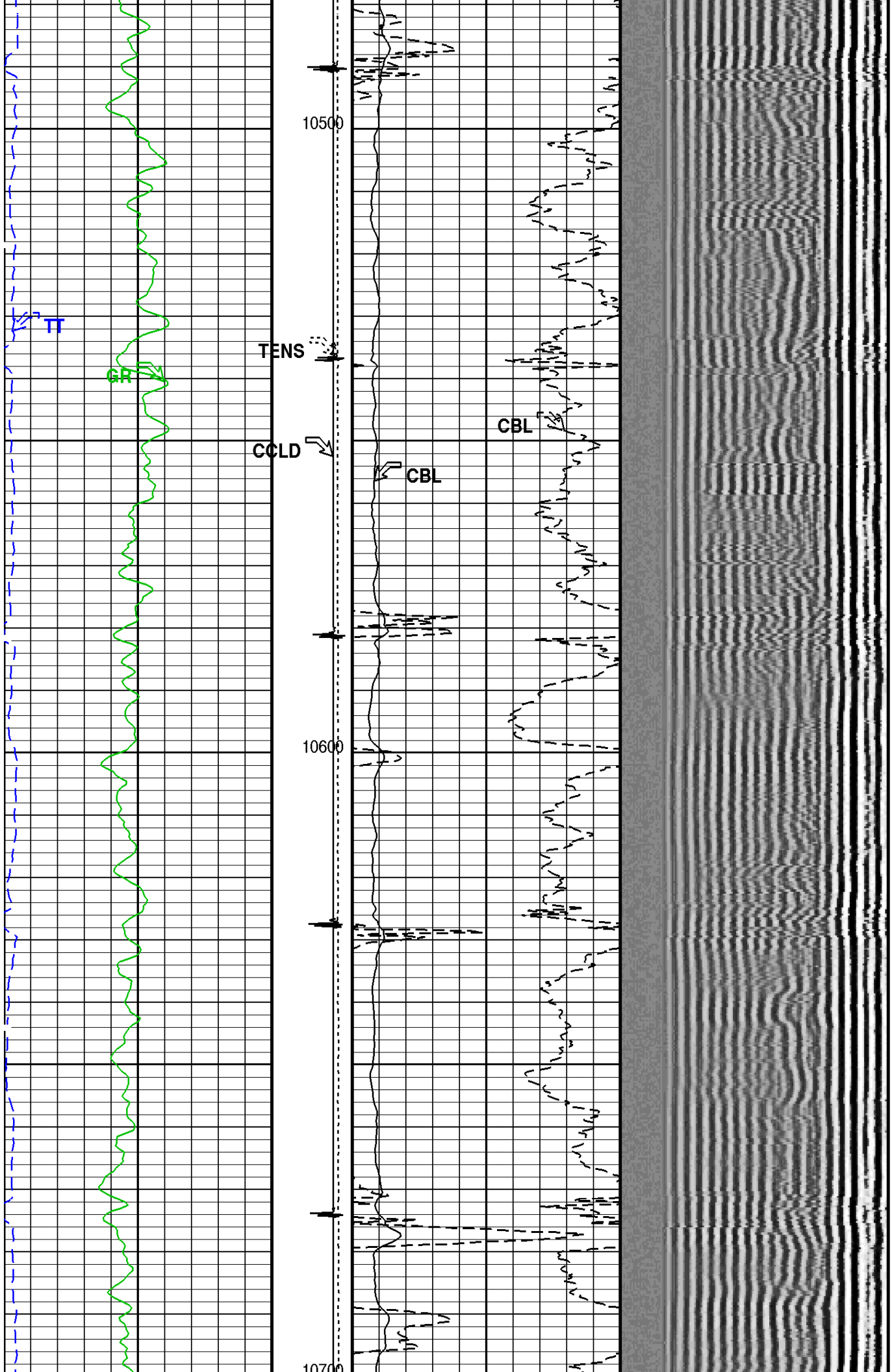
CCLD
CBL
CBL
10100
10200


TT
GR
TENS
CBL
10300
CCLD
CBL
10400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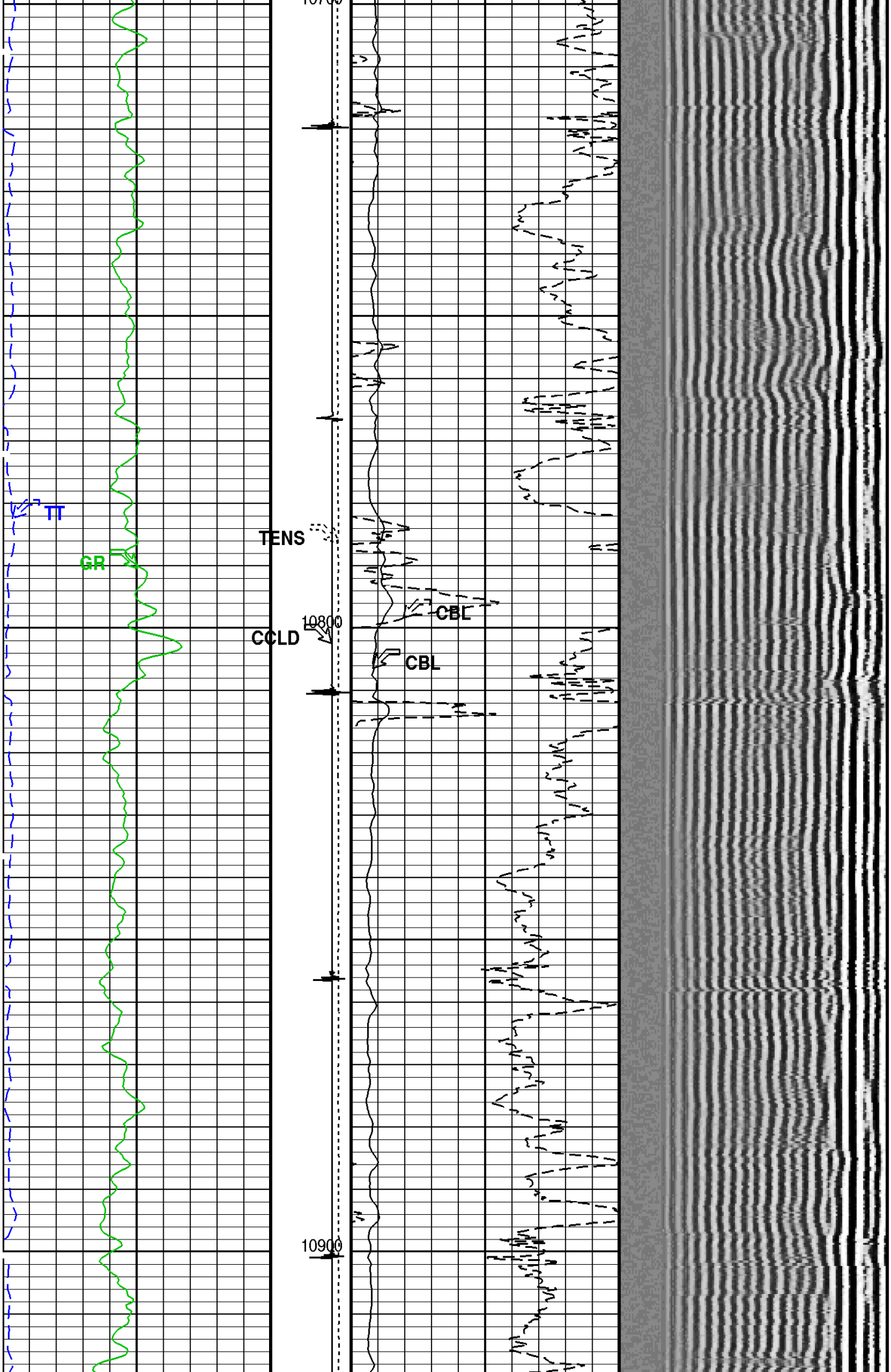
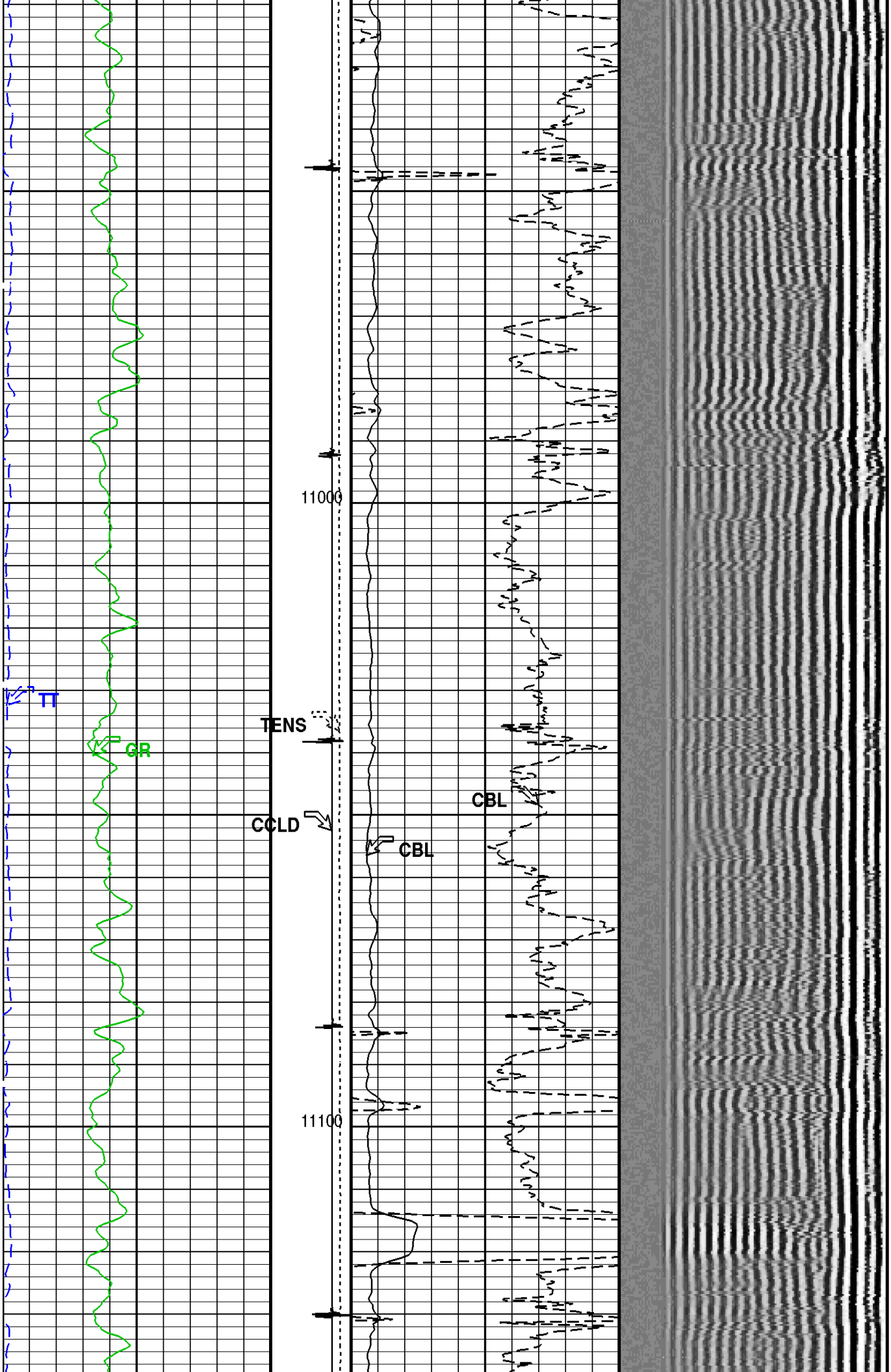
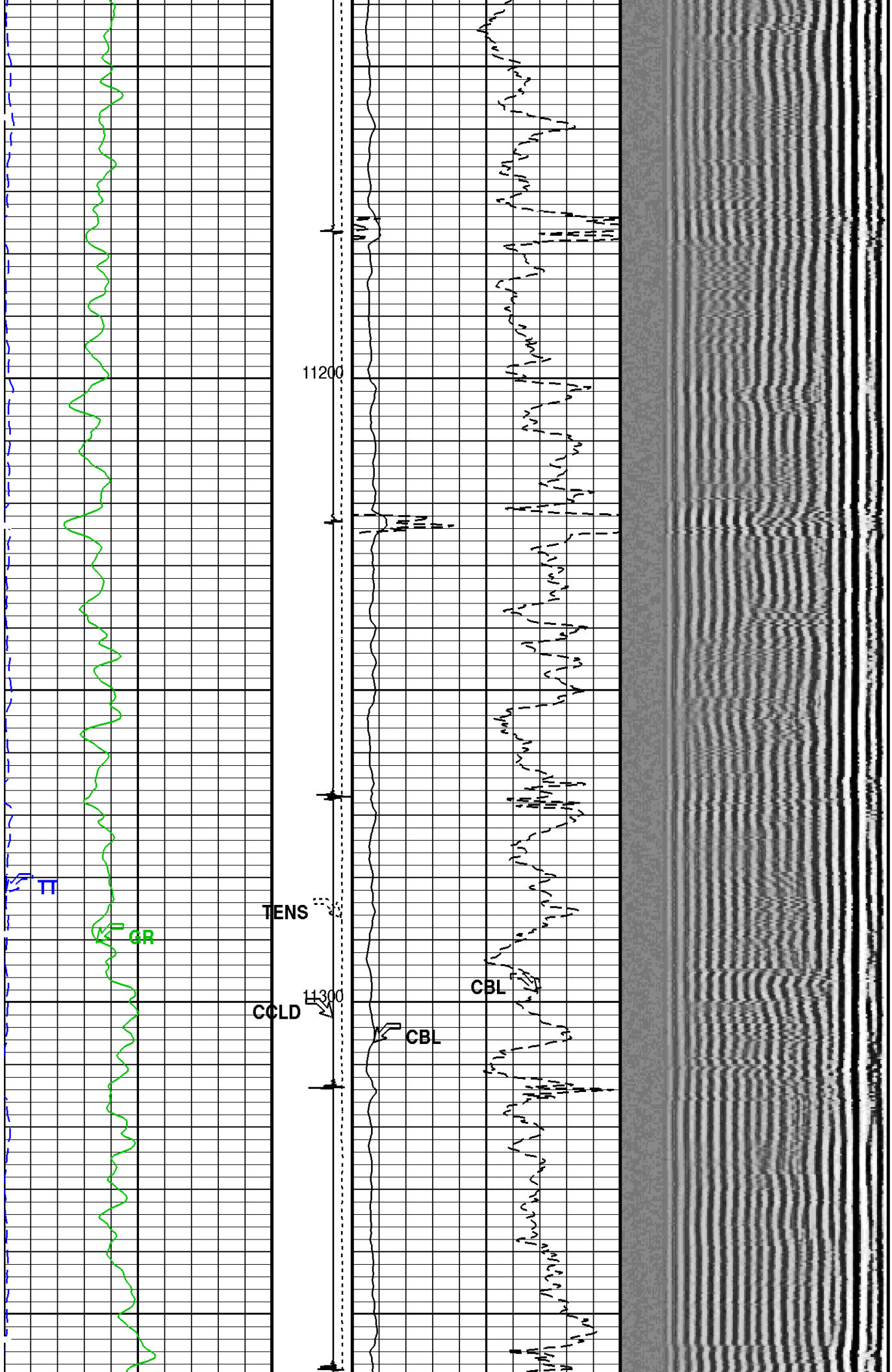
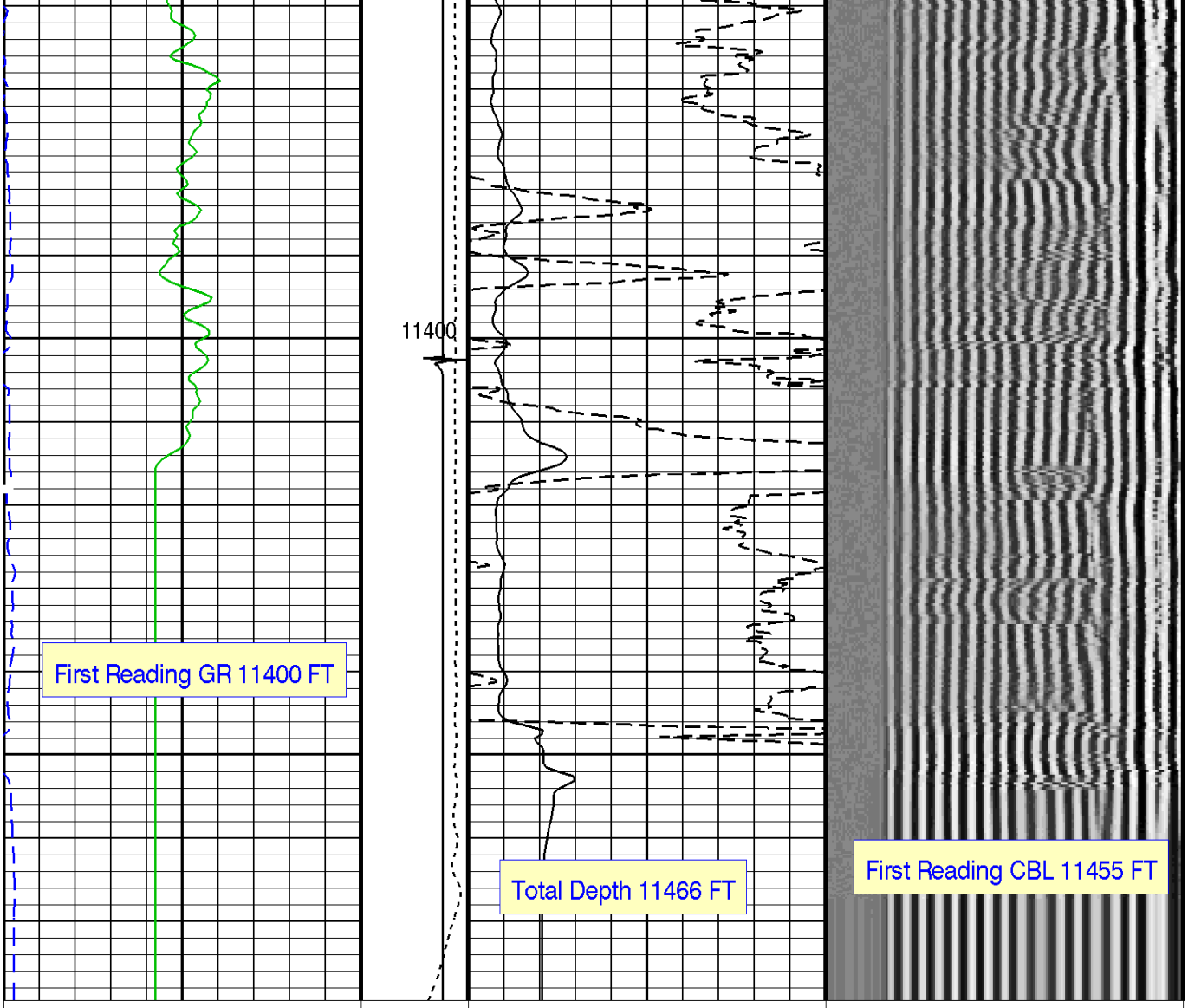
TT
TENS
GR
CCLD
CBL
CBL
10600


TT
GR
TENS
CCLD
CBL
CBL
10800
10900


TT
GR
TENS
CCLD
CBL
CBL
11000
11100


11200
TT
GR
TENS
11300
CCLD
CBL
CBL



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

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 15-Oct-2013 13:27

OP System Version: 19C0-187

SCMT-HD	SRPC-5214-H2-2012-OP19	RST-CF	SRPC-5214-H2-2012-OP19
HBMS-B	SRPC-5214-H2-2012-OP19		

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8303		
Current Casing Size	5.0 IN		
Casing Weight	23.2000 LB/F		
Expected CBL Amplitude in Free Pipe Section	79 MV	Minimum Sonic Amplitude	5.93440 MV (100% Cement)
			9.95925 MV (80% Cement)
		MAP Minimum Sonic Amplitude	19.2132 MV (100% Cement)
			26.7227 MV (80% Cement)

Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	7-SEP-2012		
CBL Correction Factor	0.0756720	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.136845	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.165126		
MAP 3 Correction Factor	0.125717		
MAP 4 Correction Factor	0.196395		
MAP 5 Correction Factor	0.147692		
MAP 6 Correction Factor	0.128887		
MAP 7 Correction Factor	0.150775		
MAP 8 Correction Factor	0.144577		

Parameters

DLIS Name	Description	Value	
	SCMT-HD: HPHT Slim Cement Mapping Tool		
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	225.327	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	339.327	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	45	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	79	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	0.480067	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	9.95925	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	168.327	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	9.1631	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	3	FT
MMSA	MAP Minimum Sonic Amplitude	19.2132	MV
MSA	Minimum Sonic Amplitude	5.9344	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	5.000	IN
CWEI	Casing Weight	23.20	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	22.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	11466	FT

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_021LUP	FN:20	PRODUCER	15-Oct-2013 10:24	11457.5 FT	-43.0 FT

Output DLIS Files

DEFAULT	SCMT_RST_HBMS_024PUP	FN:23	PRODUCER	15-Oct-2013 13:27

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REPEAT ANALYSIS CBL VDL

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC | Well: RENNINGER 30-7-2 (NGG30NE)

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_019LUP	FN:18	PRODUCER	15-Oct-2013 09:59	6021.5 FT	5637.5 FT
DEFAULT	SCMT_RST_HBMS_024PUP	FN:23	PRODUCER	15-Oct-2013 13:27	11479.5 FT	-82.5 FT

Output DLIS Files

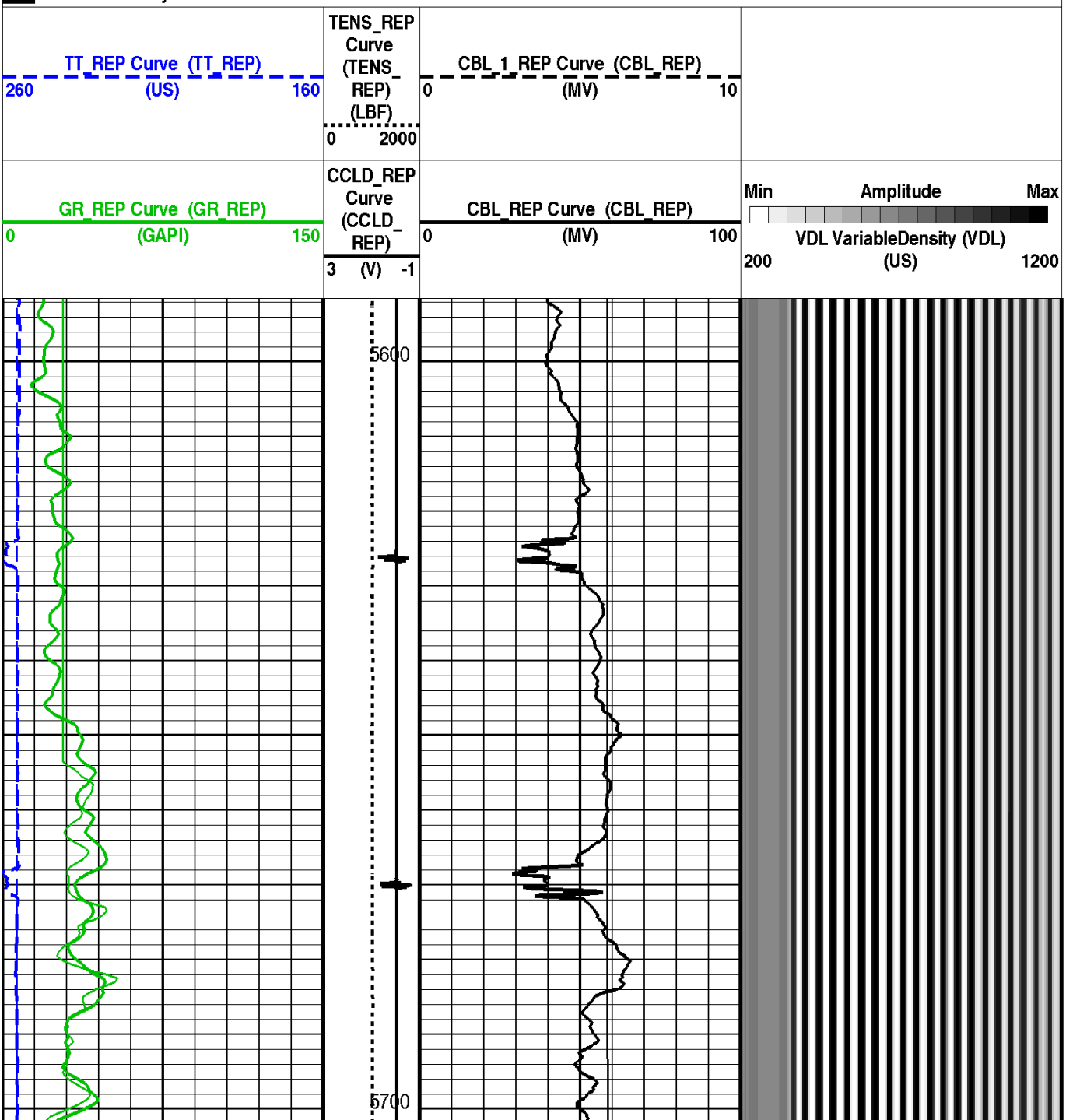
DEFAULT	SCMT_RST_HBMS_025PUP	FN:24	PRODUCER	15-Oct-2013 13:38	6036.5 FT	5591.0 FT

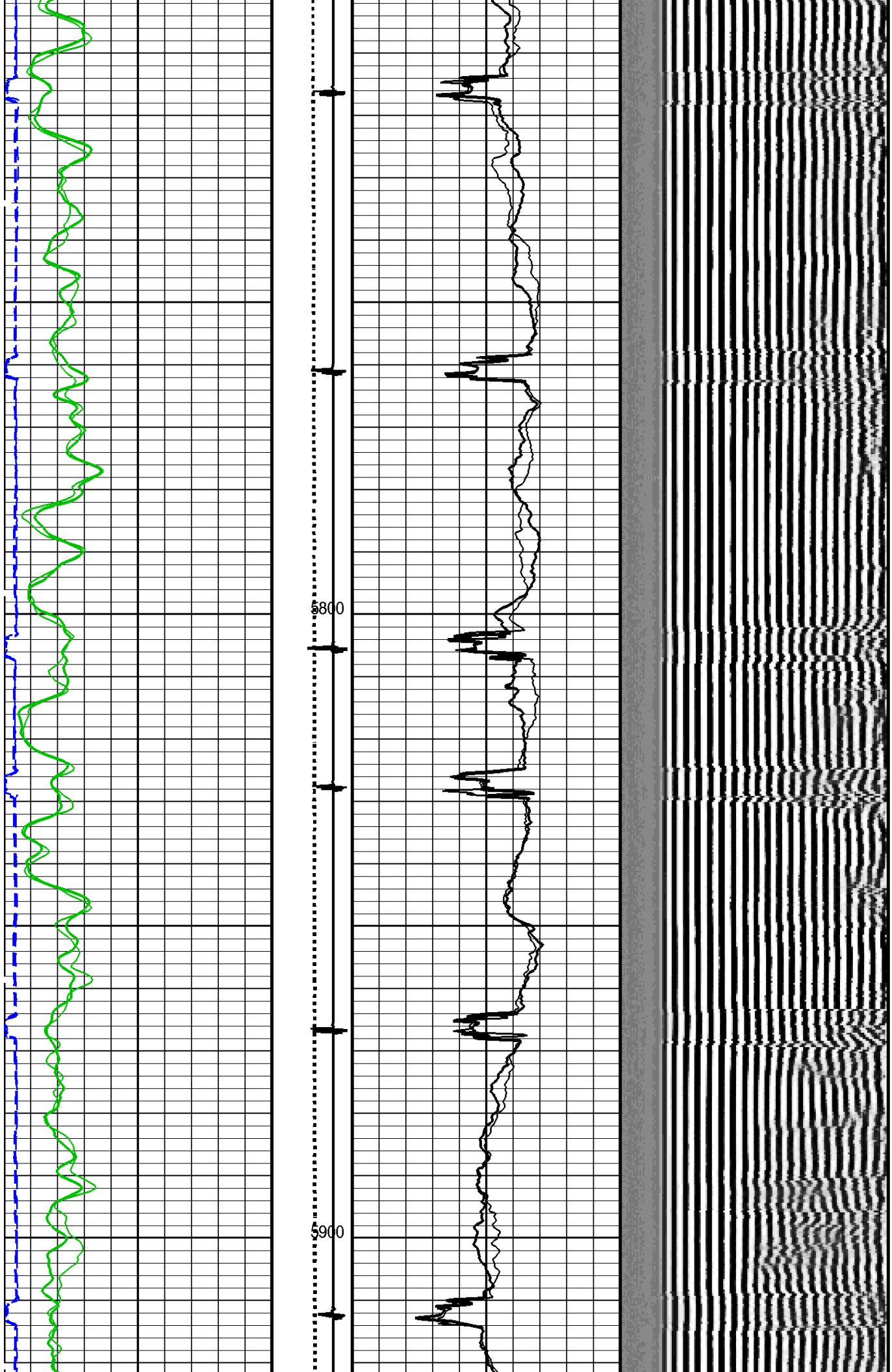
OP System Version: 19C0-187

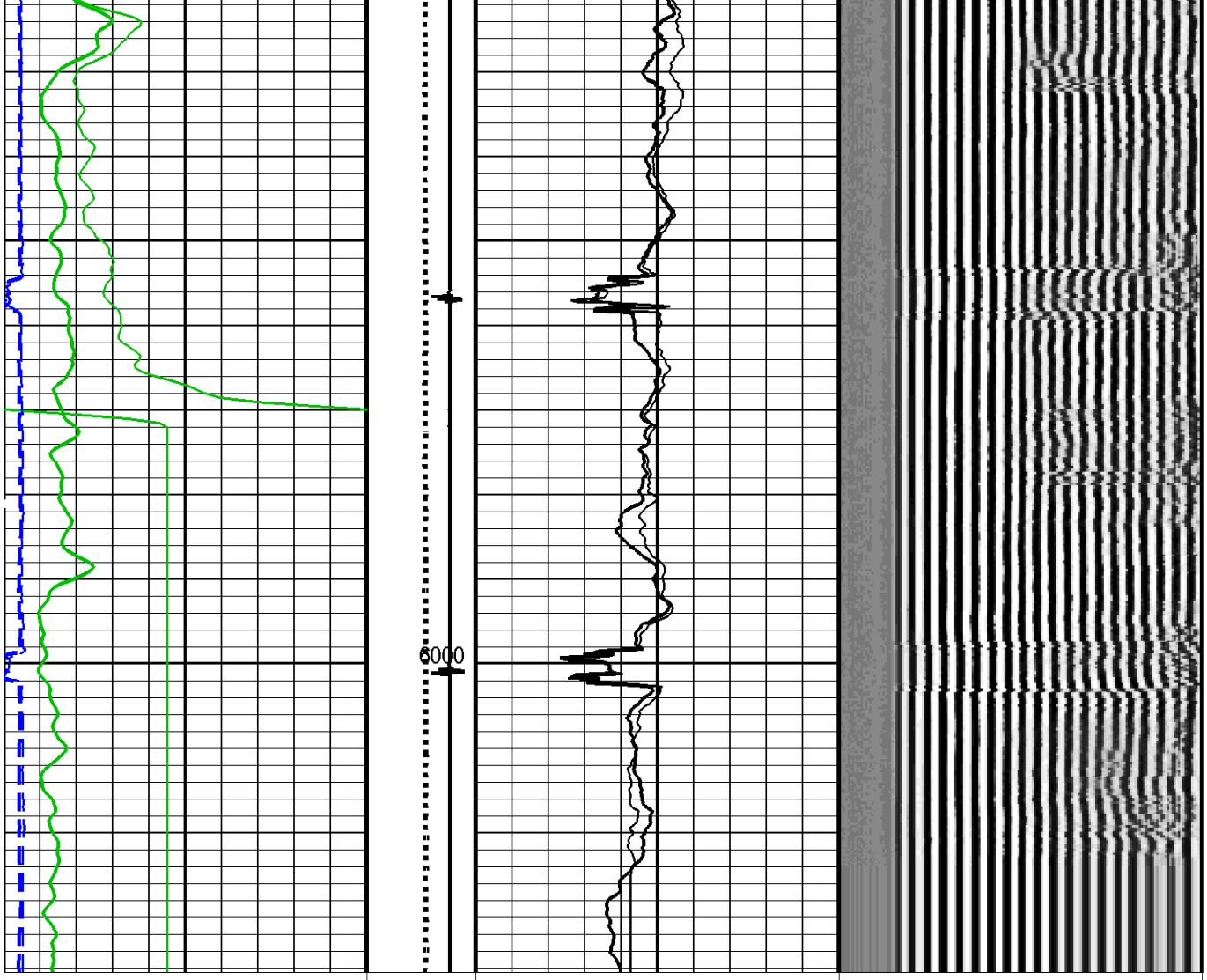
SCMT-HD	SRPC-5214-H2-2012-OP19	RST-CF	SRPC-5214-H2-2012-OP19
HBMS-B	SRPC-5214-H2-2012-OP19		

PIP SUMMARY

Time Mark Every 60 S




5800
5900



GR_REP Curve (GR_REP) 0 (GAPI) 150	CCLD_REP Curve (CCLD_REP) 3 (V) -1	CBL_REP Curve (CBL_REP) 0 (MV) 100
TT_REP Curve (TT_REP) 260 (US) 160	TENS_REP Curve (TENS_REP) (LBF) 0 2000	CBL_1_REP Curve (CBL_REP) 0 (MV) 10

Min Amplitude Max

VDL VariableDensity (VDL)

200 (US) 1200

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL_REP Vertical Scale: 5" per 100' Graphics File Created: 15-Oct-2013 13:38

OP System Version: 19C0-187

SCMT-HD	SRPC-5214-H2-2012-OP19	RST-CF	SRPC-5214-H2-2012-OP19
HBMS-B	SRPC-5214-H2-2012-OP19		

<<<SCMT Cement Evaluation Information Summary>>>

Sonde Serial Number	SCMS-CB 8303		
Current Casing Size	5.0 IN		
Casing Weight	23.2000 LB/F		
Expected CBL Amplitude in Free Pipe Section	79 MV	Minimum Sonic Amplitude	5.93440 MV (100% Cement)
			9.95925 MV (80% Cement)
		MAP Minimum Sonic Amplitude	19.2132 MV (100% Cement)

26.7227 MV (80% Cement)

Master Calibration (Normalization)		Before Calibration (Adjustment)	
Date of Master Calibration	7-SEP-2012		
CBL Correction Factor	0.0756720	CBL Adjustment Factor (CBAF)	1.0
MAP 1 Correction Factor	0.136845	MAP Adjustment Factor (MPAF)	1.0
MAP 2 Correction Factor	0.165126		
MAP 3 Correction Factor	0.125717		
MAP 4 Correction Factor	0.196395		
MAP 5 Correction Factor	0.147692		
MAP 6 Correction Factor	0.128887		
MAP 7 Correction Factor	0.150775		
MAP 8 Correction Factor	0.144577		

Parameters

DLIS Name	Description	Value	
	SCMT-HD: HPHT Slim Cement Mapping Tool		
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	225.327	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	339.327	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	45	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	79	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	0.480067	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	9.95925	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	168.327	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	9.1631	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	3	FT
MMSA	MAP Minimum Sonic Amplitude	19.2132	MV
MSA	Minimum Sonic Amplitude	5.9344	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	5.000	IN
CWEI	Casing Weight	23.20	LB/F
DFD	Drilling Fluid Density	8.40	LB/G
DO	Depth Offset for Playback	15.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	11466	FT

Input DLIS Files

DEFAULT	SCMT_RST_HBMS_019LUP	FN:18	PRODUCER	15-Oct-2013 09:59	6021.5 FT	5637.5 FT
DEFAULT	SCMT_RST_HBMS_024PUP	FN:23	PRODUCER	15-Oct-2013 13:27	11479.5 FT	-82.5 FT

Output DLIS Files

DEFAULT	SCMT_RST_HBMS_025PUP	FN:24	PRODUCER	15-Oct-2013 13:38

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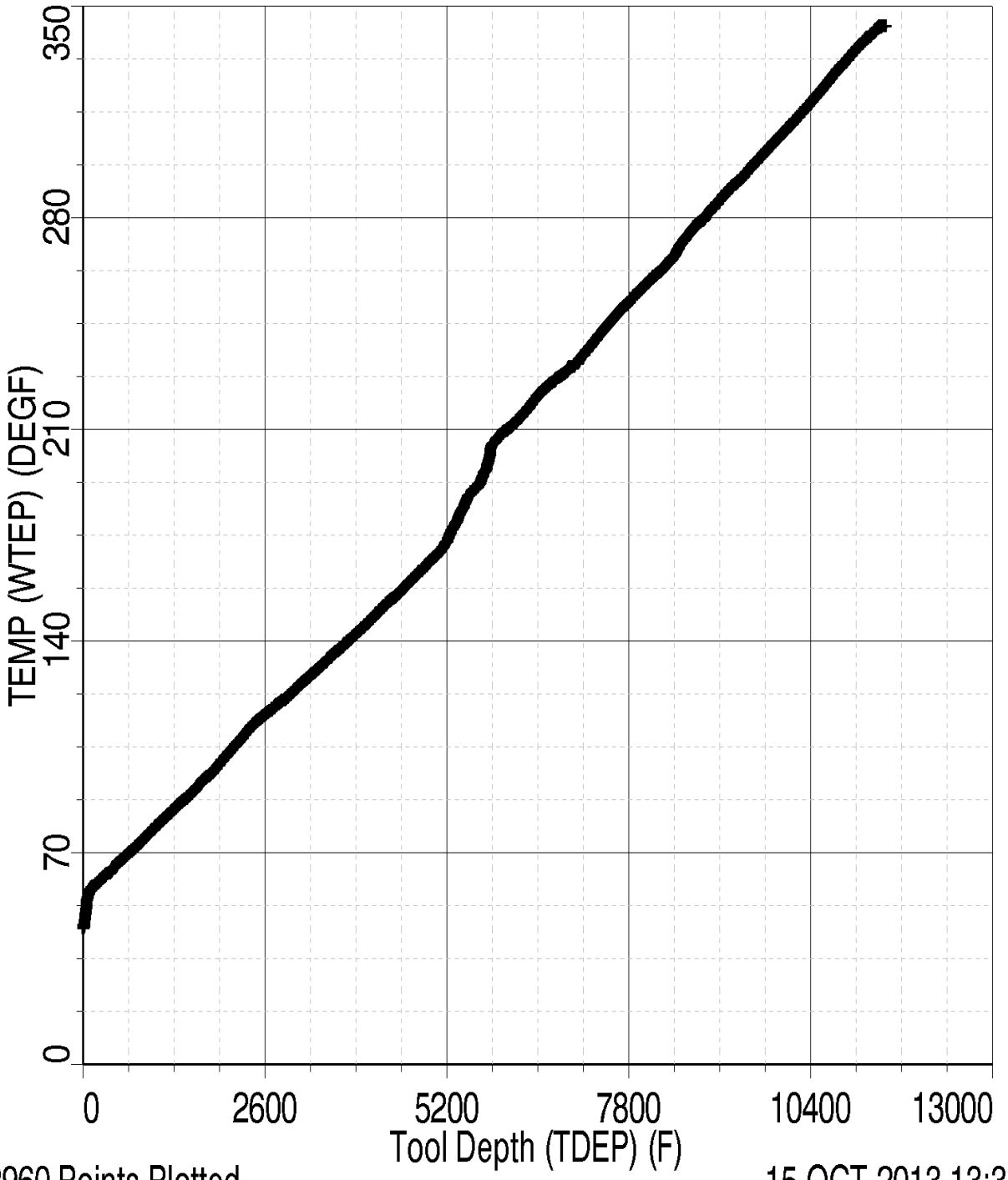
TEMPERATURE PLOT

Index: 11479.5 - -82.5 FT



22960 Points Plotted

15-OCT-2013 13:37

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PBMS COEFFICIENTS

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	DIVIDE CREEK	Sub Type:	PBMS
Well:	RENNINGER 30-7-2 (NGG30NE)	Sensor:	GR
Run date:	15-Oct-2013		

PBMS Gamma Ray

Sonde Serial NB	RESISTORS FOR GR SENSOR N.34473,TOOL HBMS-BA2884. SENSOR S/N:
Sensor Serial NB	34473
Calib Date ddmmyy	090506
Matrix Size	12
Coeff CRC	0708

GR HV Rt

	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.190000000000e+04

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	DIVIDE CREEK	Sub Type:	PBMS
Well:	RENNINGER 30-7-2 (NGG30NE)	Sensor:	WellTemp RTD
Run date:	15-Oct-2013		

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	Tool:	PSP
Field:	DIVIDE CREEK	Sub Type:	PBMS
Well:	RENNINGER 30-7-2 (NGG30NE)	Sensor:	CQG
Run date:	15-Oct-2013		

PBMS Quartz Gauge type F

Sonde Serial NB	COEFFICIENTS FOR CQG PBMS-B.2884 S/N:
Sensor Serial NB	2884
Calib Date ddmmyy	290706
Matrix Size	66
Coeff CRC	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 2884
Calib Date ddmmyy 290706
Matrix Size 66
Coeff CRC 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	-.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

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MASTER CALIBRATION

MAXIS Field Log

HPHT Slim Cement Mapping Tool / Equipment Identification

Primary Equipment:

HPHT Slim Cement Mapping Xmitter Elec	SCMX - HC	
Slim Cement Mapping Sonde	SCMS - CB	8179
HPHT Slim Cement Mapping Cartridge	SCMC - HC	8051

Auxiliary Equipment:

Universal Dewar Flask Housing	UDFH - RMT
Universal Dewar Flask Housing Assembly	UDFH - RMC

HPHT Slim Cement Mapping Tool Master Calibration

SCMT CBL and MAP Amplitude Normalization in SFT-155/-255

Phase	MAP 1 Amplitude Plus MV	Value
Master		1208
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 2 Amplitude Plus MV	Value
Master		1275
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 3 Amplitude Plus MV	Value
Master		1182
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 4 Amplitude Plus MV	Value
Master		1049
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 5 Amplitude Plus MV	Value
Master		937.6
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 6 Amplitude Plus MV	Value
Master		990.2
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 7 Amplitude Plus MV	Value
Master		1063
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	MAP 8 Amplitude Plus MV	Value
Master		1166
500.0 (Minimum)	1075 (Nominal)	1650 (Maximum)

Phase	CBL Amplitude Plus MV	Value
Master		1363
1000 (Minimum)	1350 (Nominal)	1700 (Maximum)

Master: Calibration out of date 6-Mar-2012 15:06

Company:	**ENCANA OIL & GAS (USA) INC**
Well:	**RENNINGER 30-7-2 (NGG30NE)**
Field:	**DIVIDE CREEK**
County:	**MESA**
State:	**COLORADO**

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SLIM CEMENT MAPPING LOG
CBL-VDL
GAMMA RAY-CCL