

SlimXtreme Sonic Logging Tool									
CBL-VDL									
County:		Beaver		Elev.:		K.B.		5435.50 ft	
Field:		Wildcat		Elev.:		G.L.		5403.50 ft	
Location:		SHL: 1043' S & 495' E from W4 Corner of Sec 32, T26S, R9W		Elev.:		D.F.		5434.50 ft	
Well:		Forge 16A(78)-32		Permament Datum:		Ground Level		Elev.:	
Company:		University of Utah		Log Measured From:		Kelly Bushing		32.00 ft	
Location:		Drilling Measured From:		Kelly Bushing		above Perm. Datum			
API Serial No.		Section:		Township:		Range:			
Logging Date		16-Aug-2021		32		26S		9W	
Run Number		One							
Depth Driller		10987.00 ft							
Schlumberger Depth		10987.00 ft							
Bottom Log Interval		10716.00 ft							
Top Log Interval		100.00 ft							
Casing Fluid Type		Water							
Salinity									
Density		8.4 lbm/gal							
Fluid Level		8.00 ft							
BIT/CASING/TUBING STRING									
Bit Size		8.75 in							
From		5132.00 ft							
To		10987.00 ft							
Casing/Tubing Size		7 in							
Weight		38 lbm/ft							
Grade		N/A							
From		0.00 ft							
To		10738.00 ft							
Max Recorded Temperatures		427 degF							
Logger on Bottom		16-Aug-2021		11:50:00					
Unit Number		Location:		2801		FtMorgan, CO			
Recorded By		Avery Becker							
Witnessed By		Garth Larsen							

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 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.

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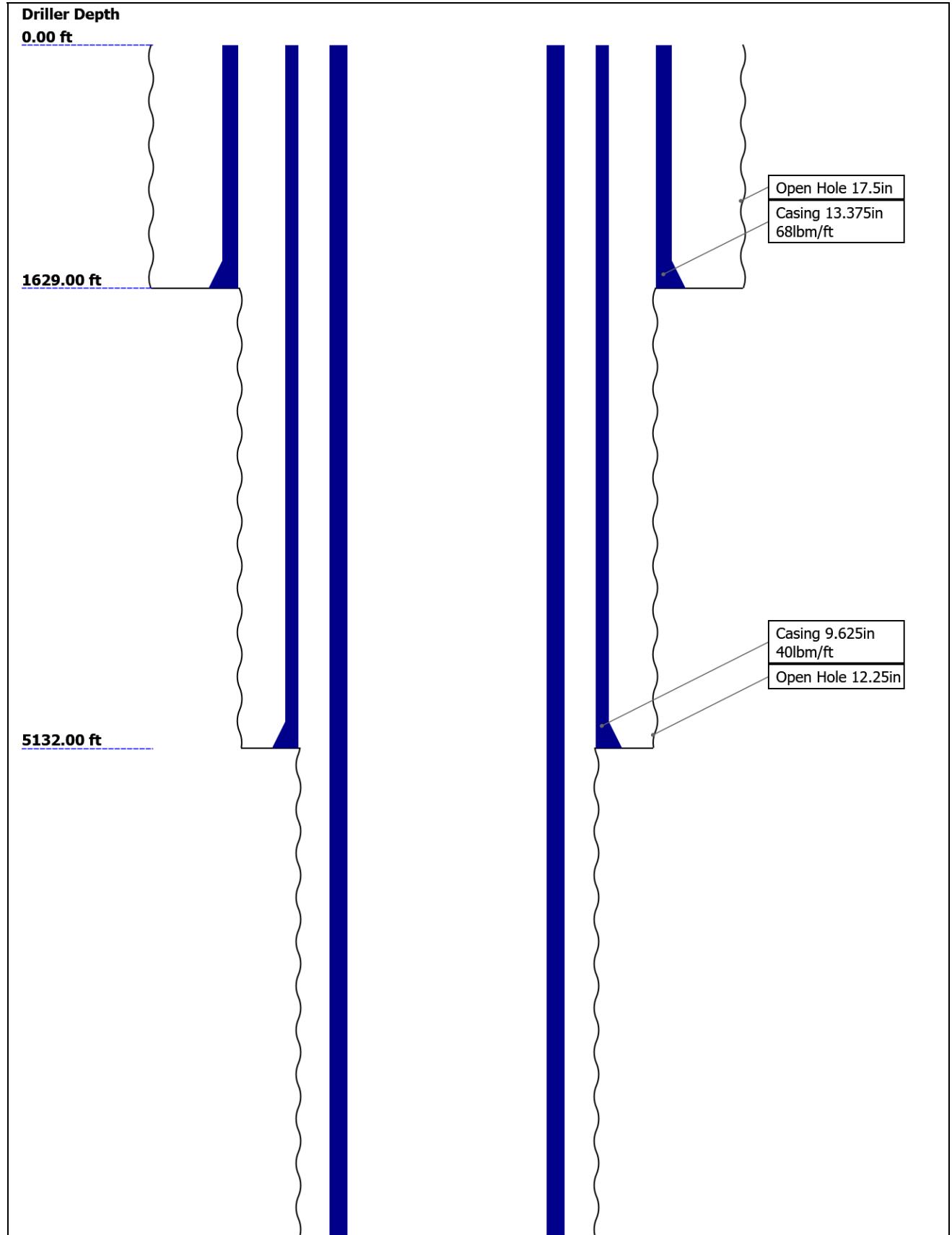
9.4 Log (Sonic CBL with VDL)

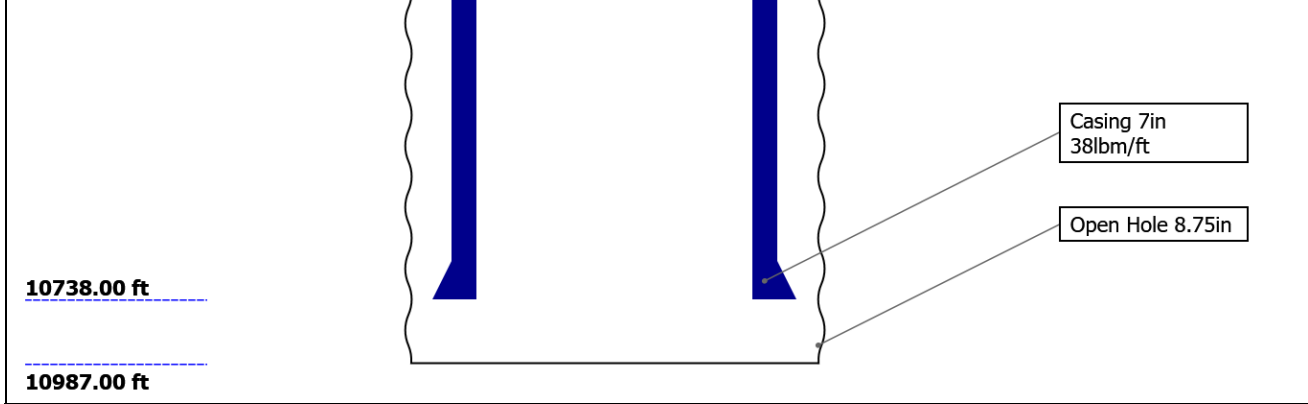
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Well Sketch

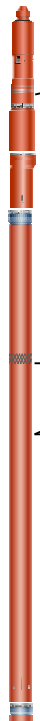




Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	17.5	12.25	8.75			
Top Driller (ft)	0	1629	5132			
Top Logger (ft)	0	1629	5132			
Bottom Driller (ft)	1629	5132	10987			
Bottom Logger (ft)	1629	5132	10987			
Casing						
Size (in)	13.375	9.625	7			
Weight (lbm/ft)	68	40	38			
Inner Diameter (in)	12.415	8.835	5.92			
Grade	N/A	N/A	N/A			
Top Driller (ft)	0	0	0			
Top Logger (ft)	0	0	0			
Bottom Driller (ft)	1629	5132	10738			
Bottom Logger (ft)	1629	5132	10738			

Remarks and Equipment Summary

One: Toolstring				One: Remarks	
<div><div><div>Equip name</div><div>Length</div></div><div>LEH-MT</div><div>75.45</div><div>LEH-MT</div></div> <div><div><div>MP name</div><div>Offset</div></div><div></div><div></div></div> <div><div><div>Mud Tem</div><div>perature</div></div><div>73.51</div></div> <div><div><div>GR</div><div>67.76</div></div></div> <div><div><div>STGC</div><div>0.00</div></div></div> <div><div><div>Accelerometer</div><div>0.00</div></div></div> <div><div><div>AH-234</div><div>2</div><div>72.3</div></div></div> <div><div><div>QTGC-B</div><div>1</div><div>250</div></div></div> <div><div><div>UDFH-PL</div><div>1</div><div>250</div></div></div> <div><div><div>STGC-ACC</div><div>Z:7</div><div>STGC-GR</div><div>STGC-B:81</div><div>21</div></div></div> <div><div><div>QSLT-B</div><div>80</div><div>60.44</div></div></div>			Tool was run as per tool sketch		
			All logging intervals as per client request		
			Log recorded without surface induced pressure		
			Log normalized to free pipe at 2400 ft		
			Log downhole affected by noise; caliper prevented repeat pass due to open fingers, see downlog		
			Header information and casing diagram pulled from Thru-Bit log		

22
UDFH-PA
QSTC-BB:8
022
QSAS-BB:8
022
UDFH-PP
QSLC-BA:8
022



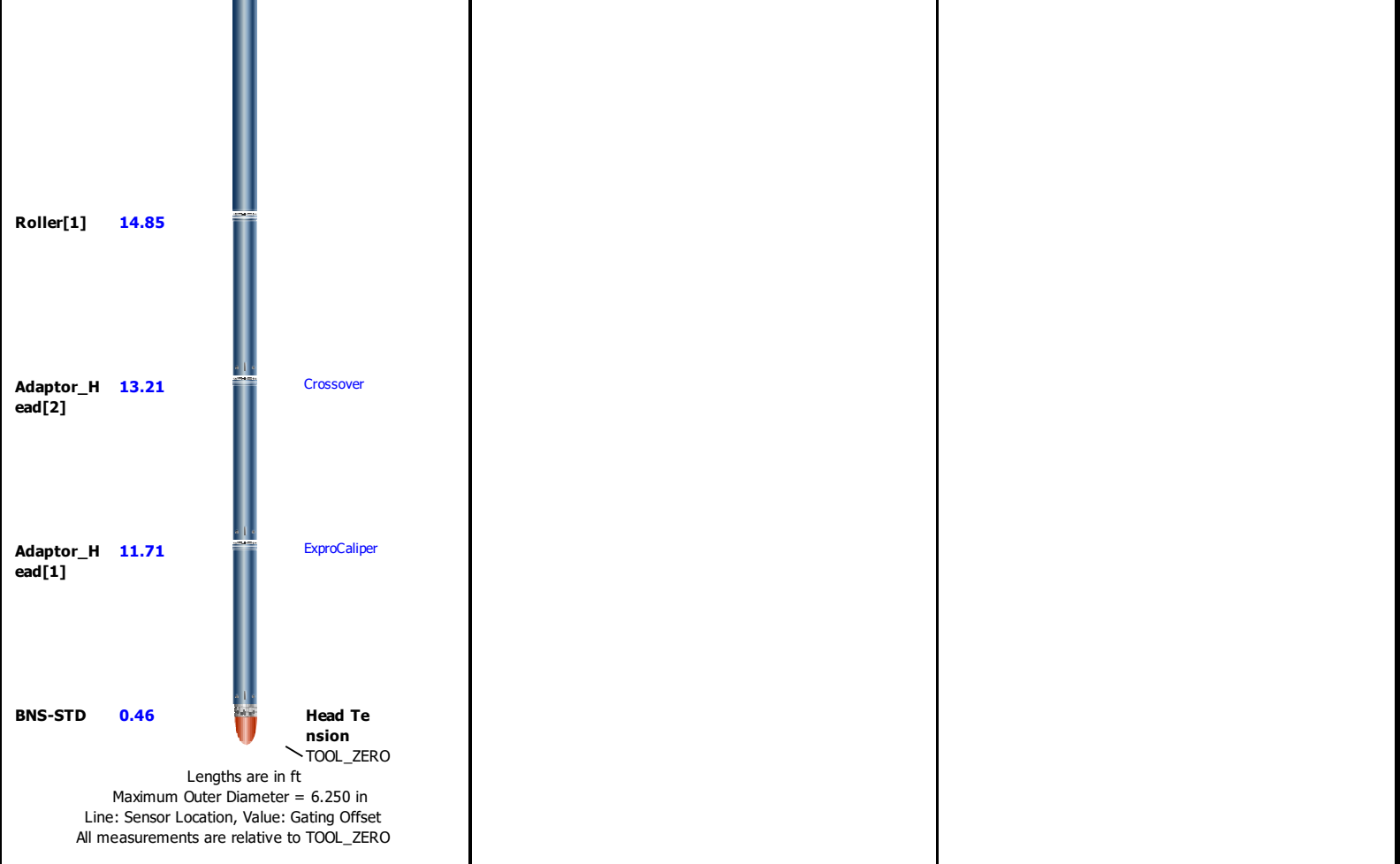
CBL_UP 52.78
VDL_UP 51.78
RX_ARR
AY 50.28
VDL_LO 48.78
W
DT_DDB 48.28
HC
CBL_LOW 47.78

AH-233[2] 37.43
Roller[3] 36.2

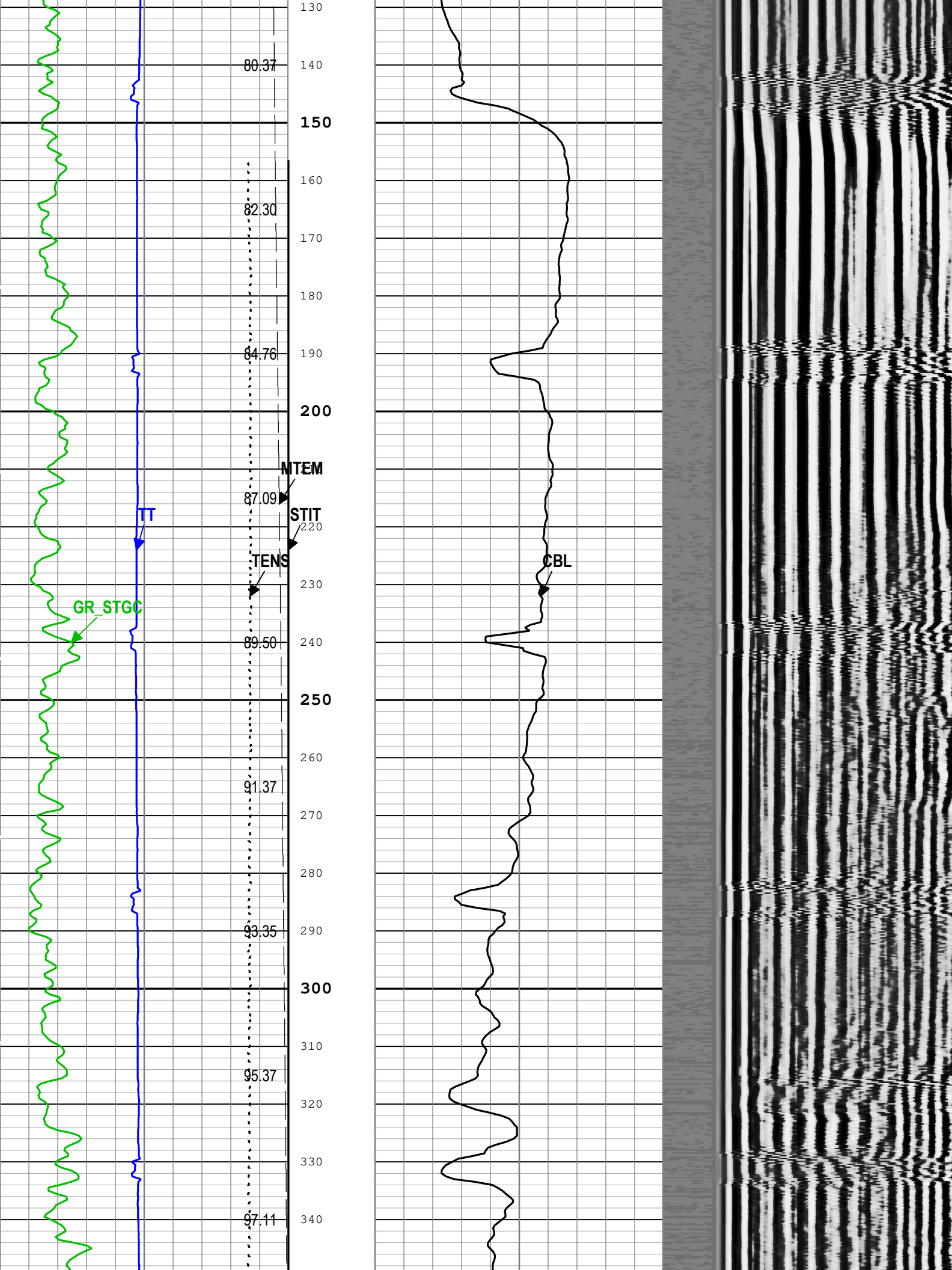
AH-234[1] 34.56
QILE-A 33.37

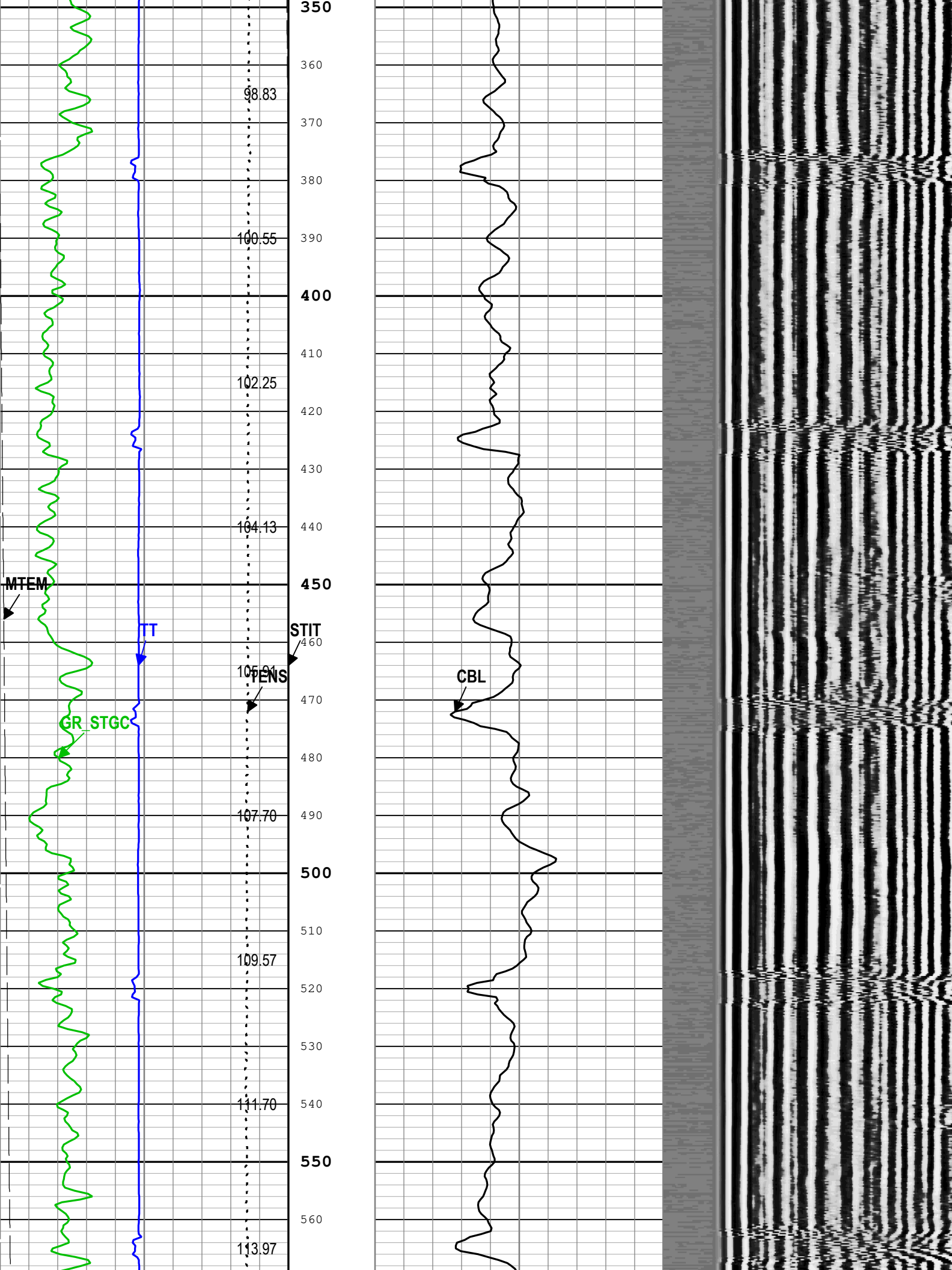
AH-233[1] 25.72
Roller[2] 24.49

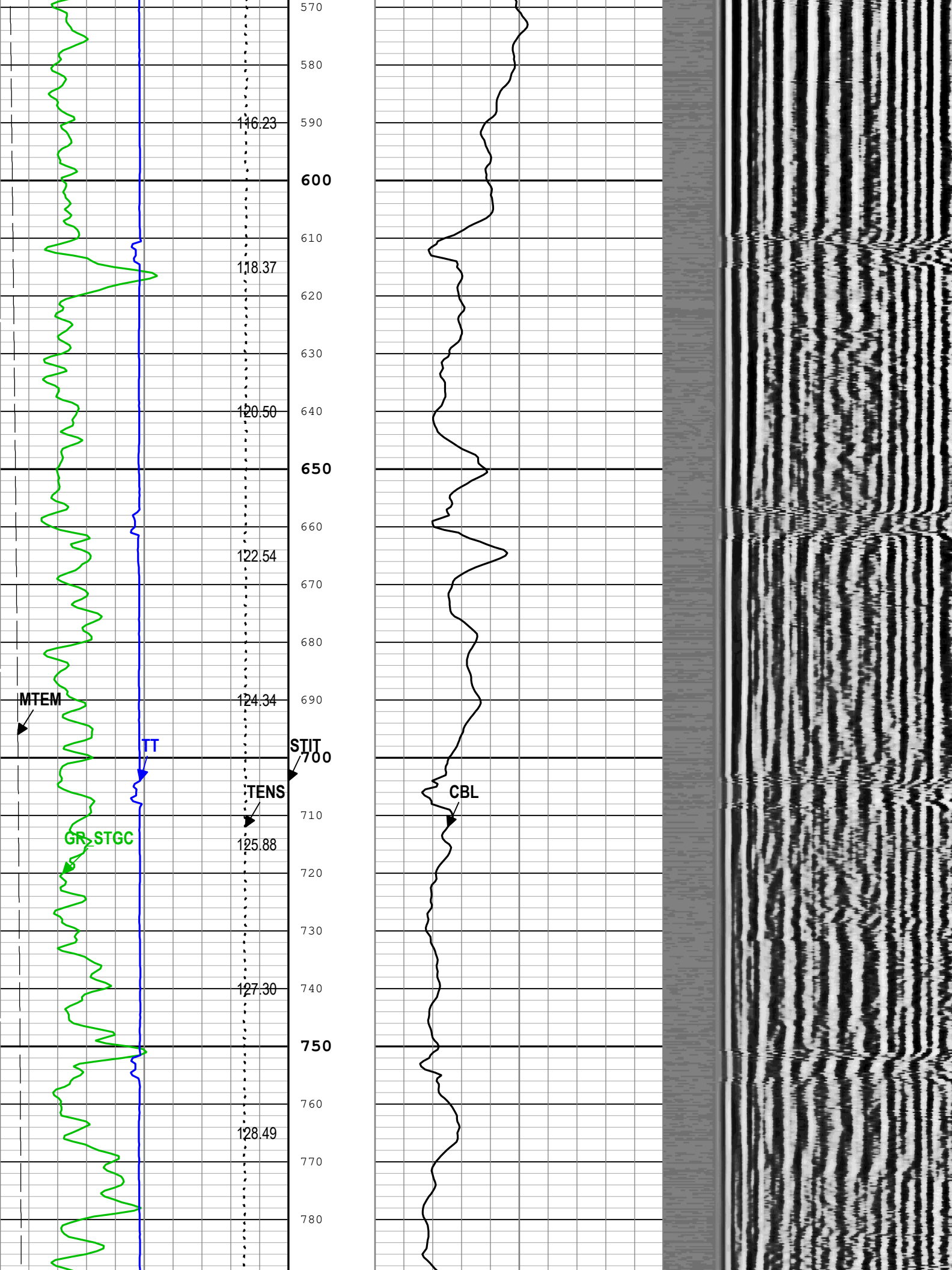
EQF-48 22.85

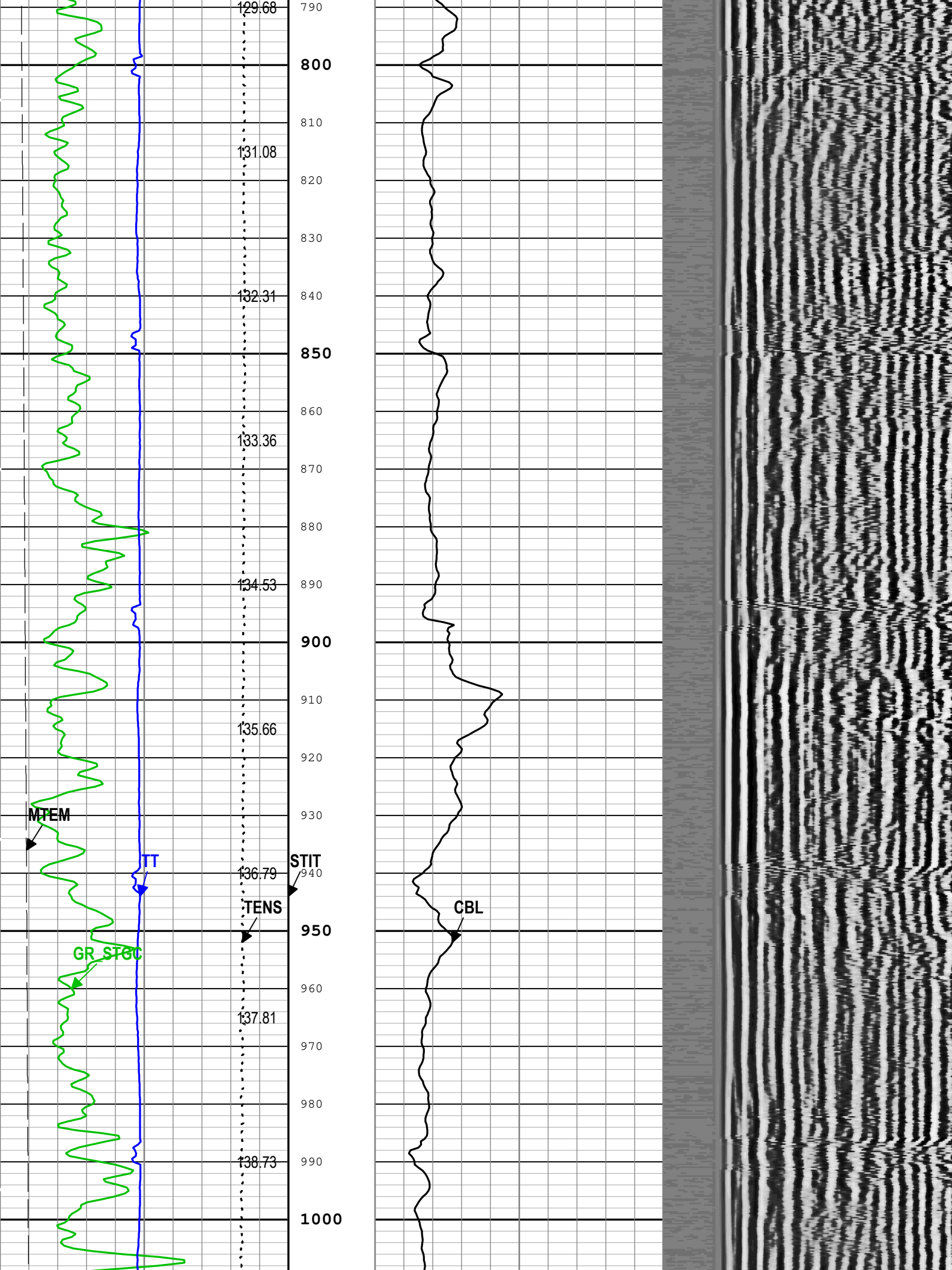


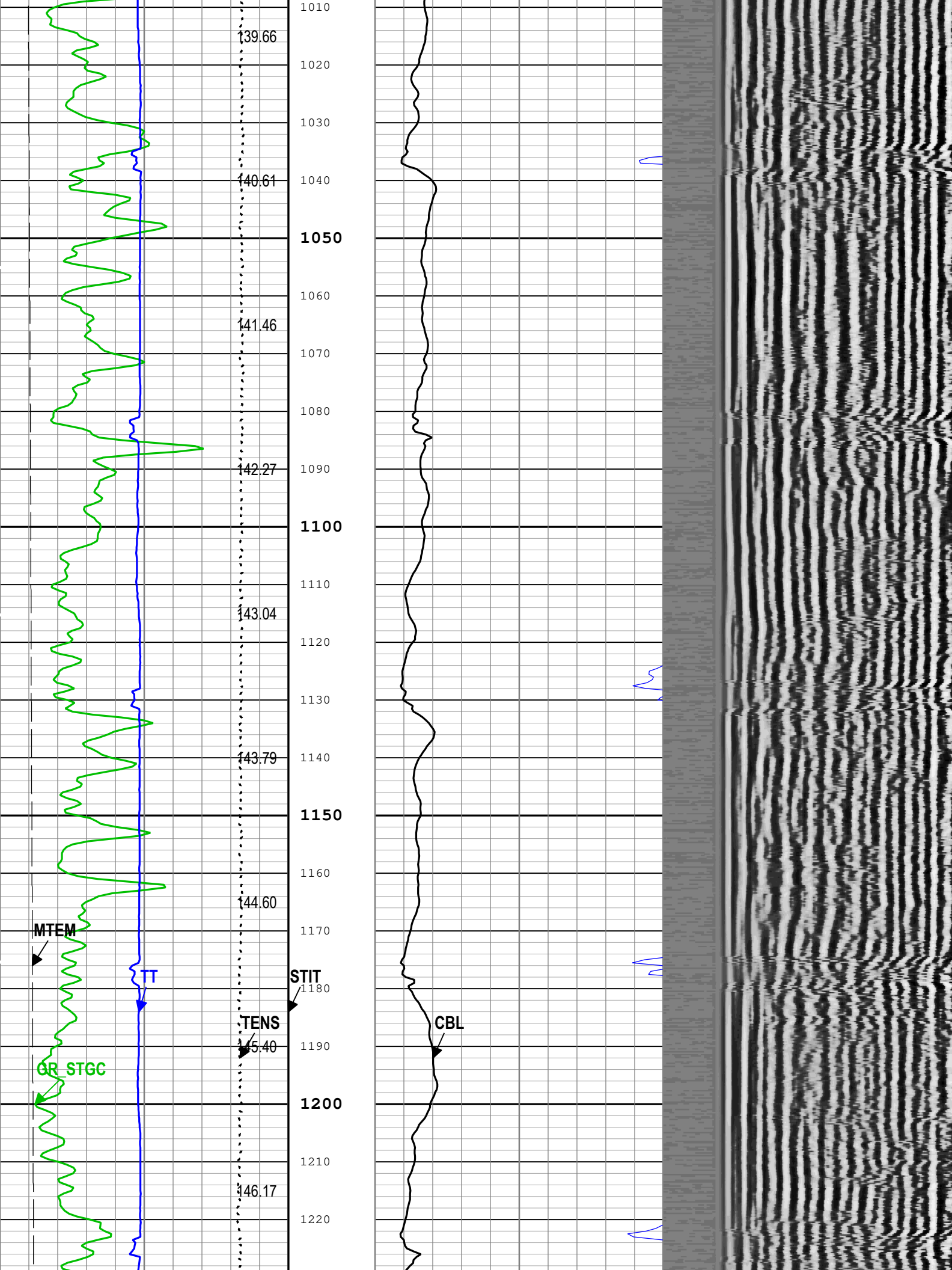
Depth Summary			
	One		
Depth Measuring Device			
Type	IDW-B		
Serial Number	5744		
Calibration Date	22-Sep-2020		
Calibrator Serial Number	57		
Calibration Cable Type	7-46A-XS		
Wheel Correction 1	-9		
Wheel Correction 2	-7		
Tension Device			
Type	CMTD-B/A		
Serial Number	5036		
Calibration Date	03-Jun-2021		
Calibrator Serial Number	78135A		
Number of Calibration Points	10		
Calibration Root Mean Square Error	22		
Calibration Peak Error	39		
Logging Cable			
Type	7-46A-XS		
Serial Number	307080		
Length	18000.00 ft		
Conveyance Type	Wireline		

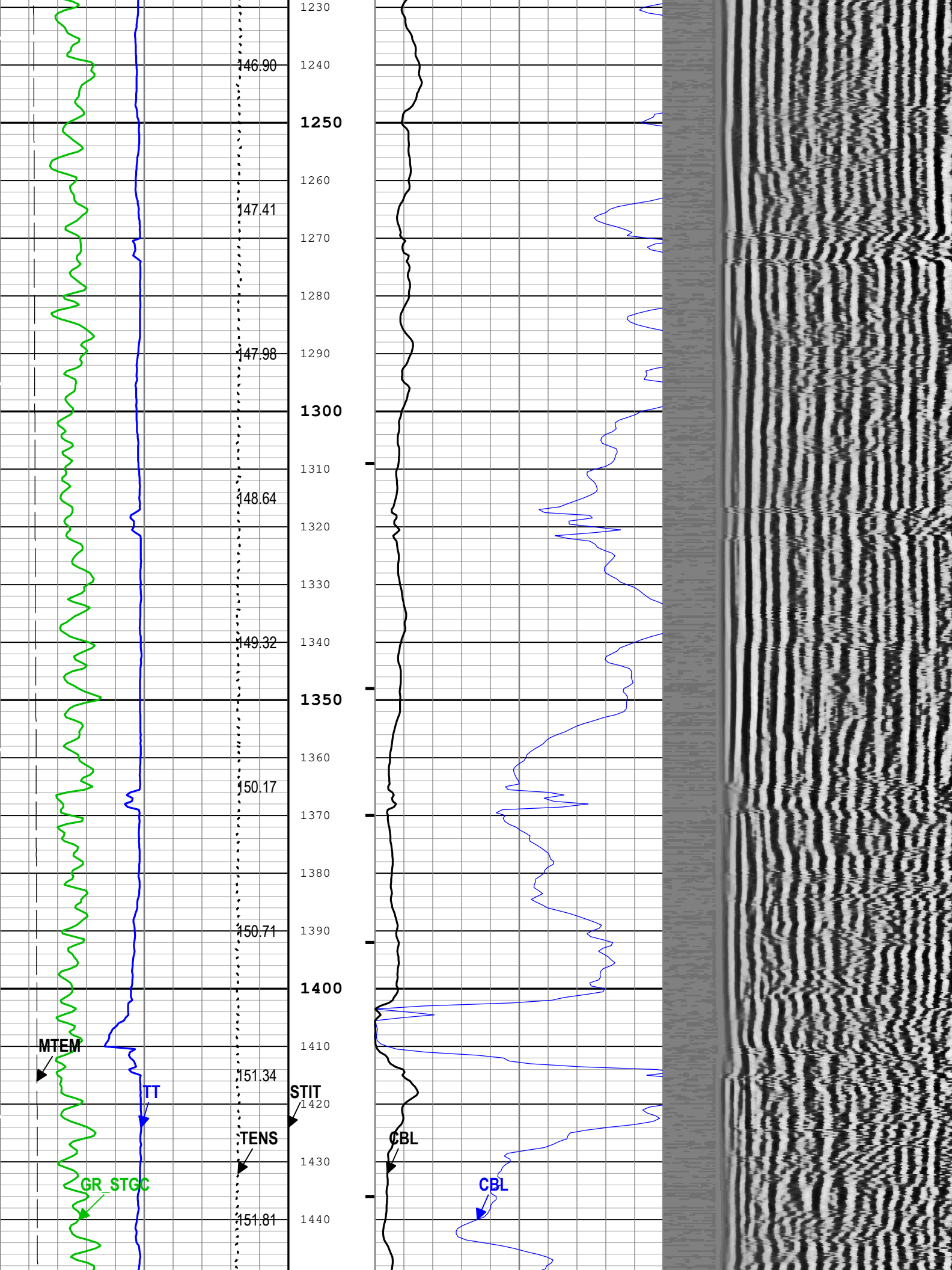


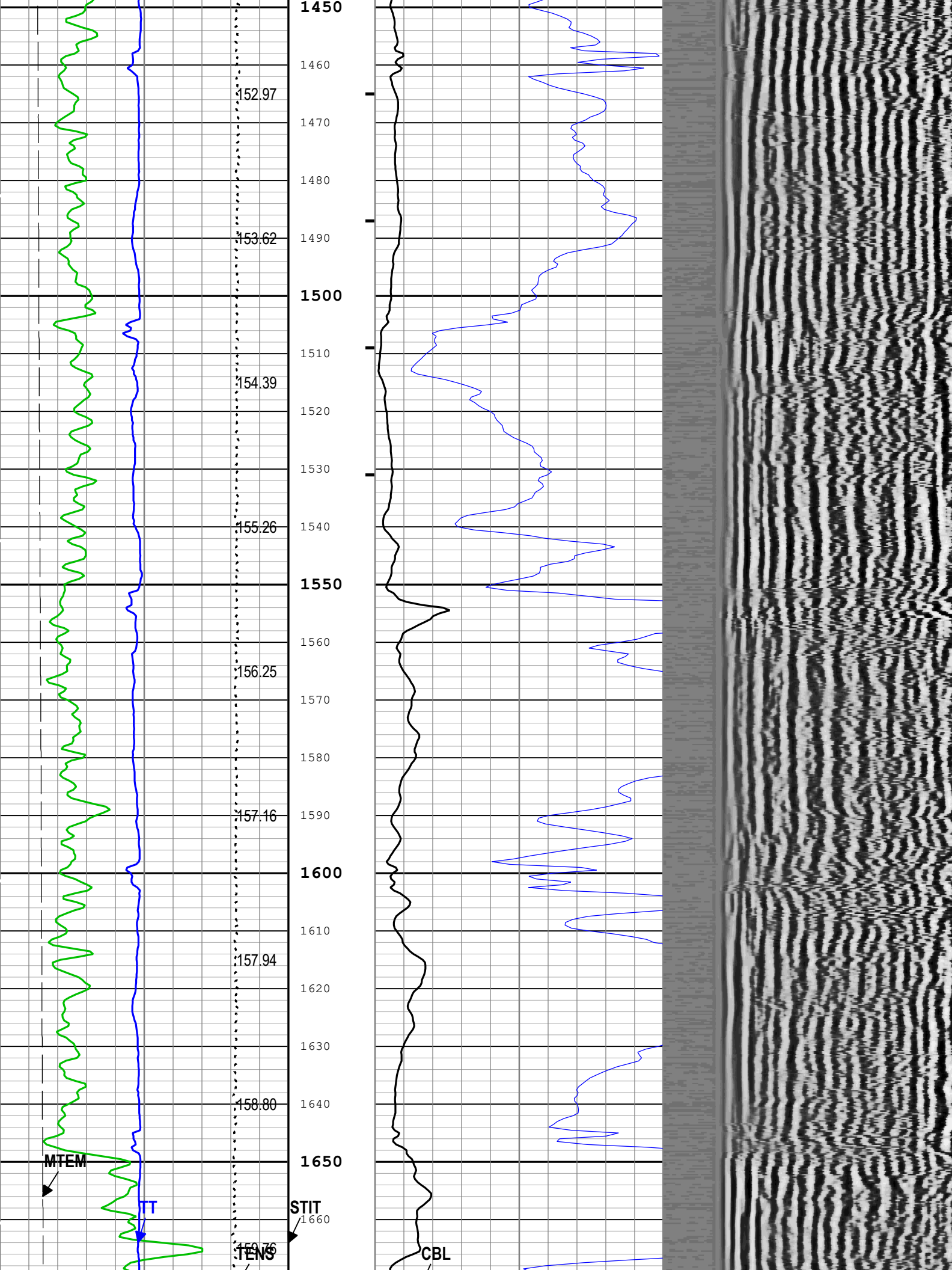


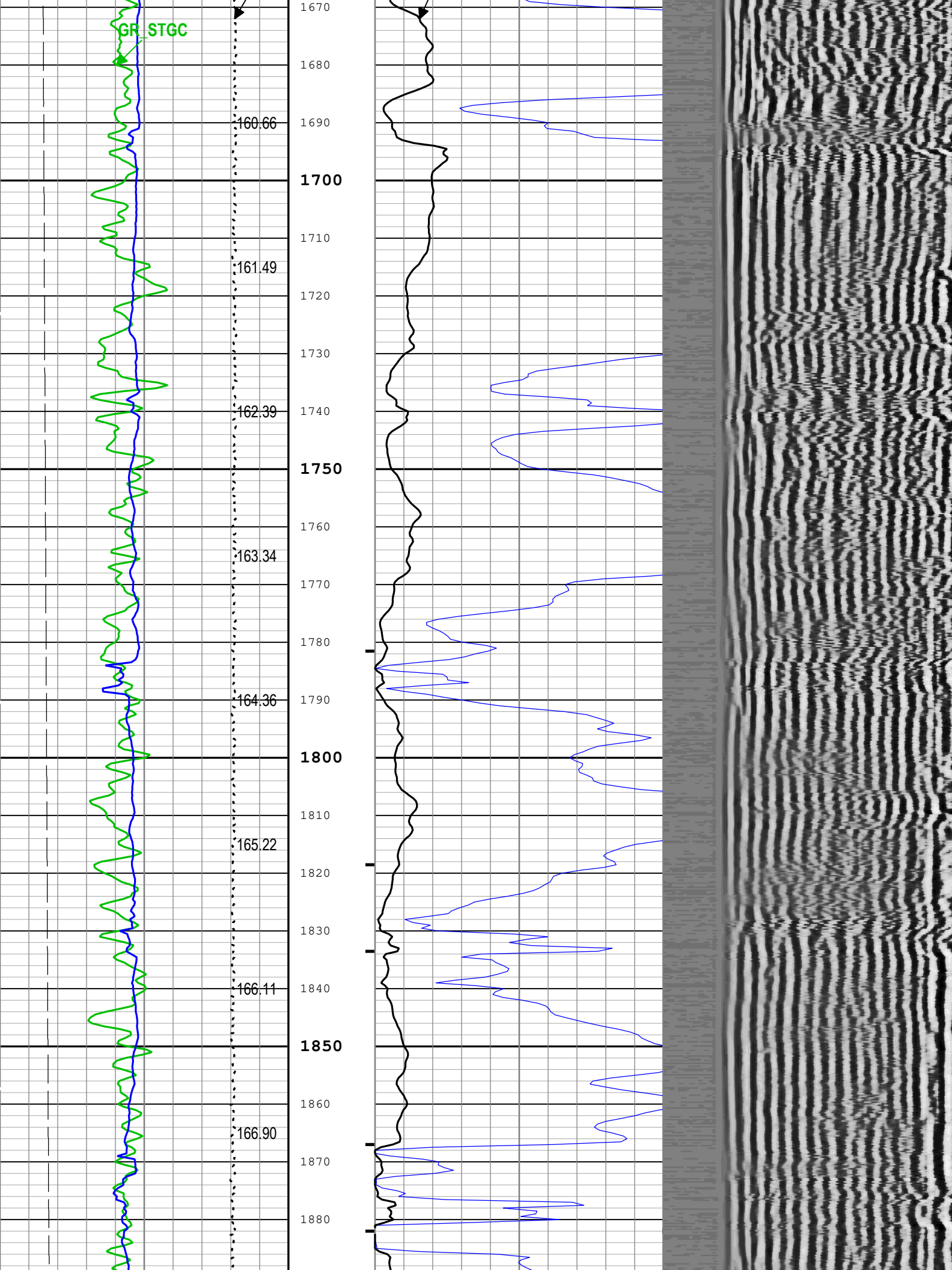


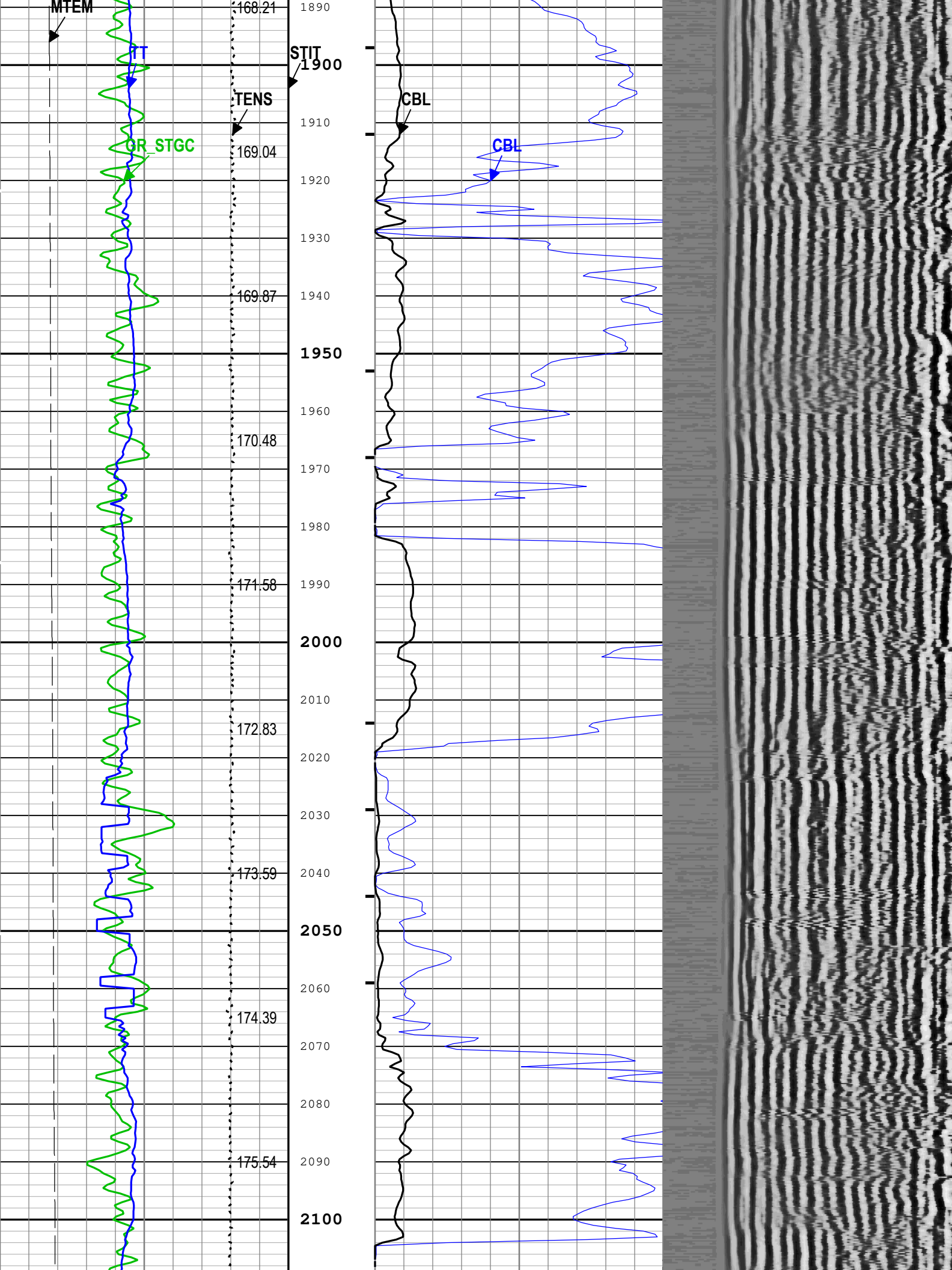


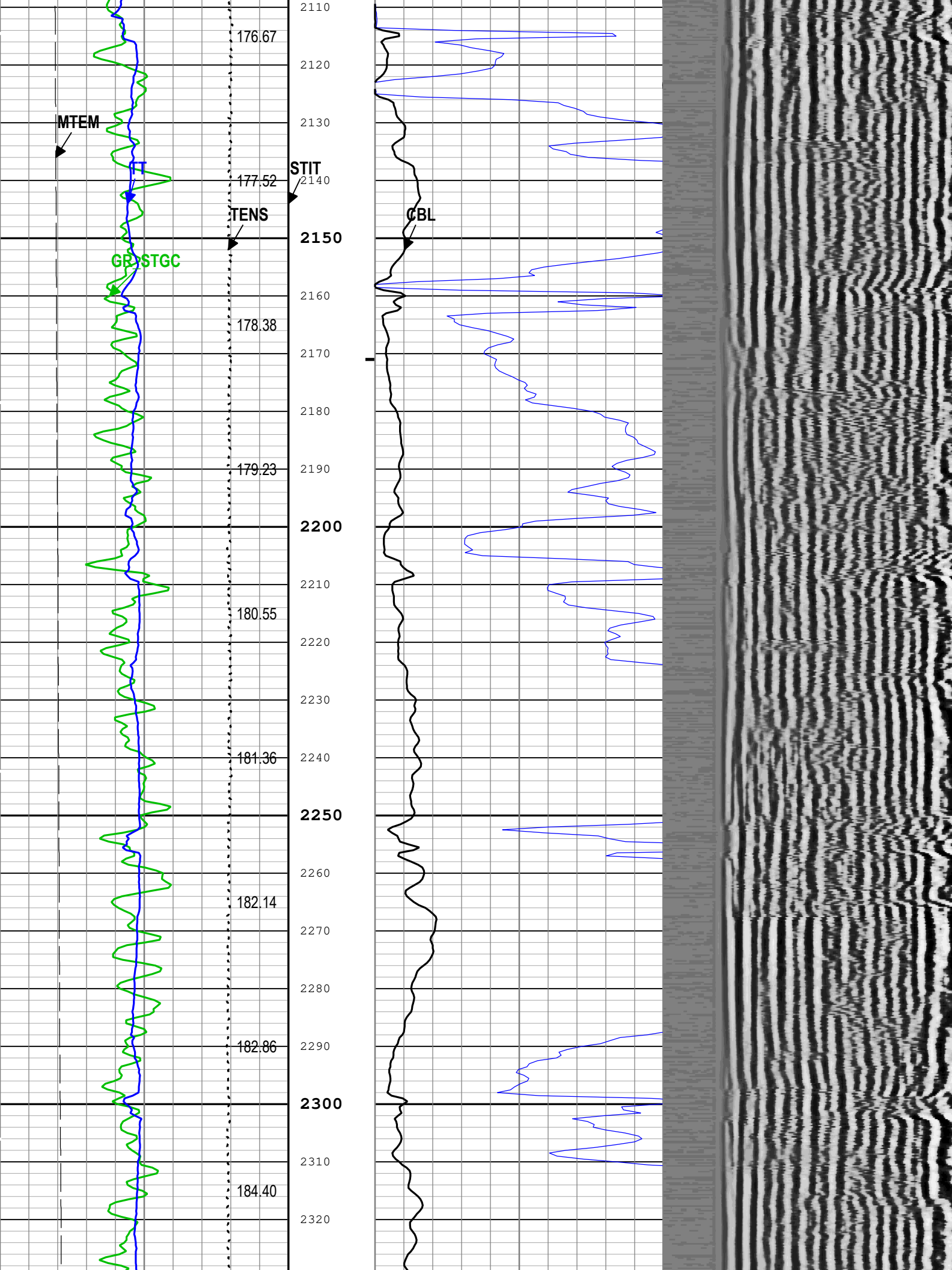


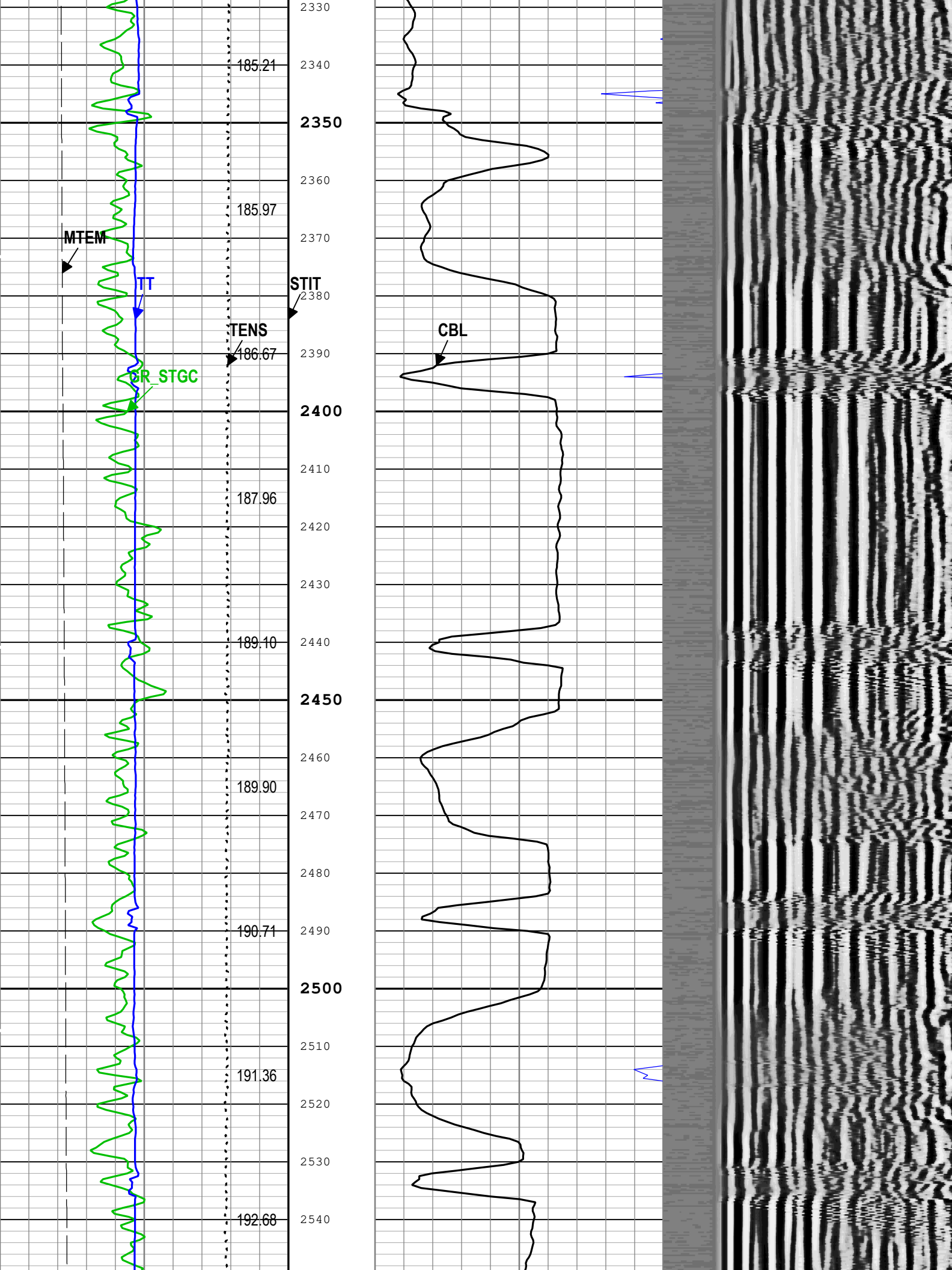


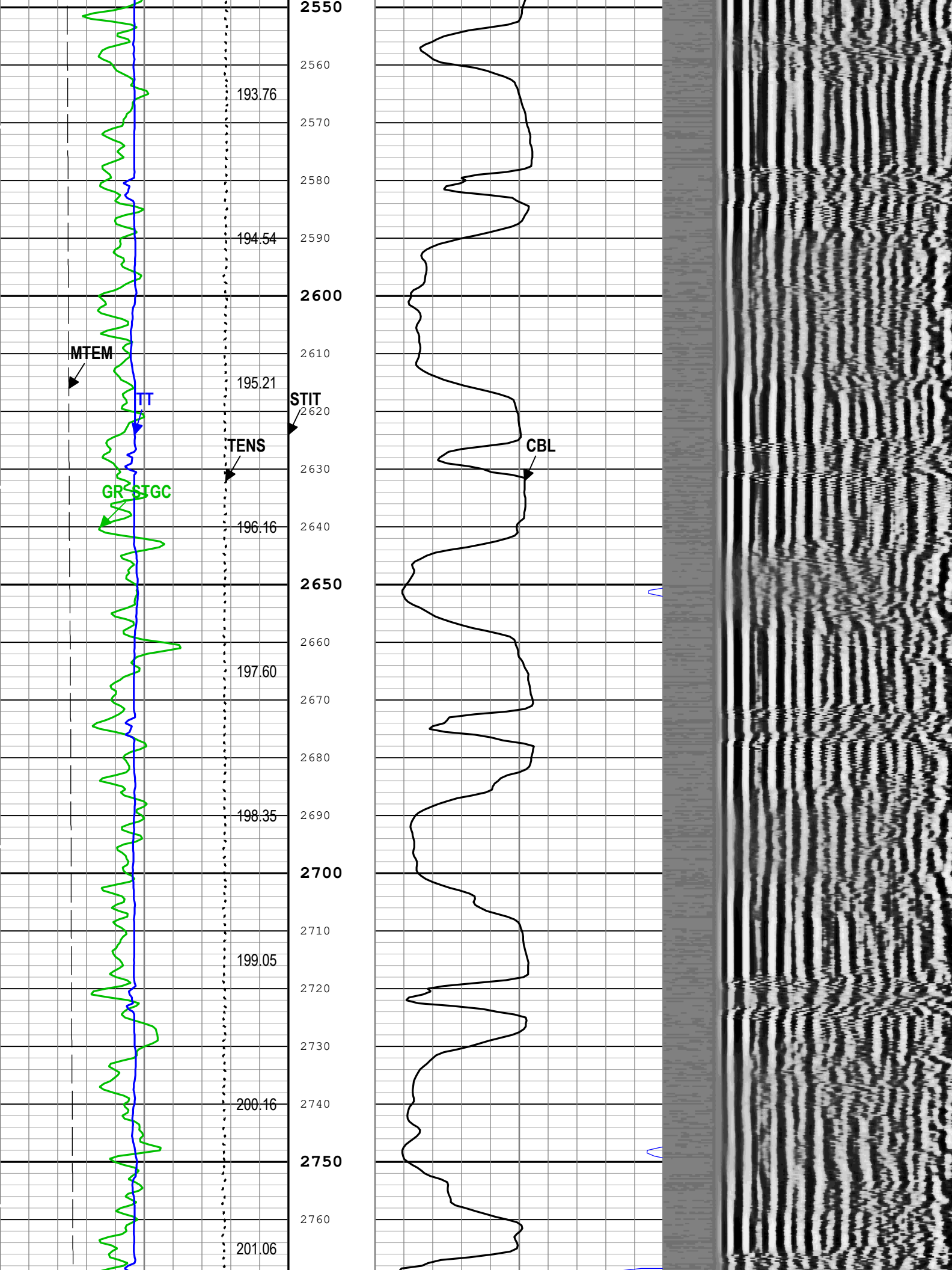


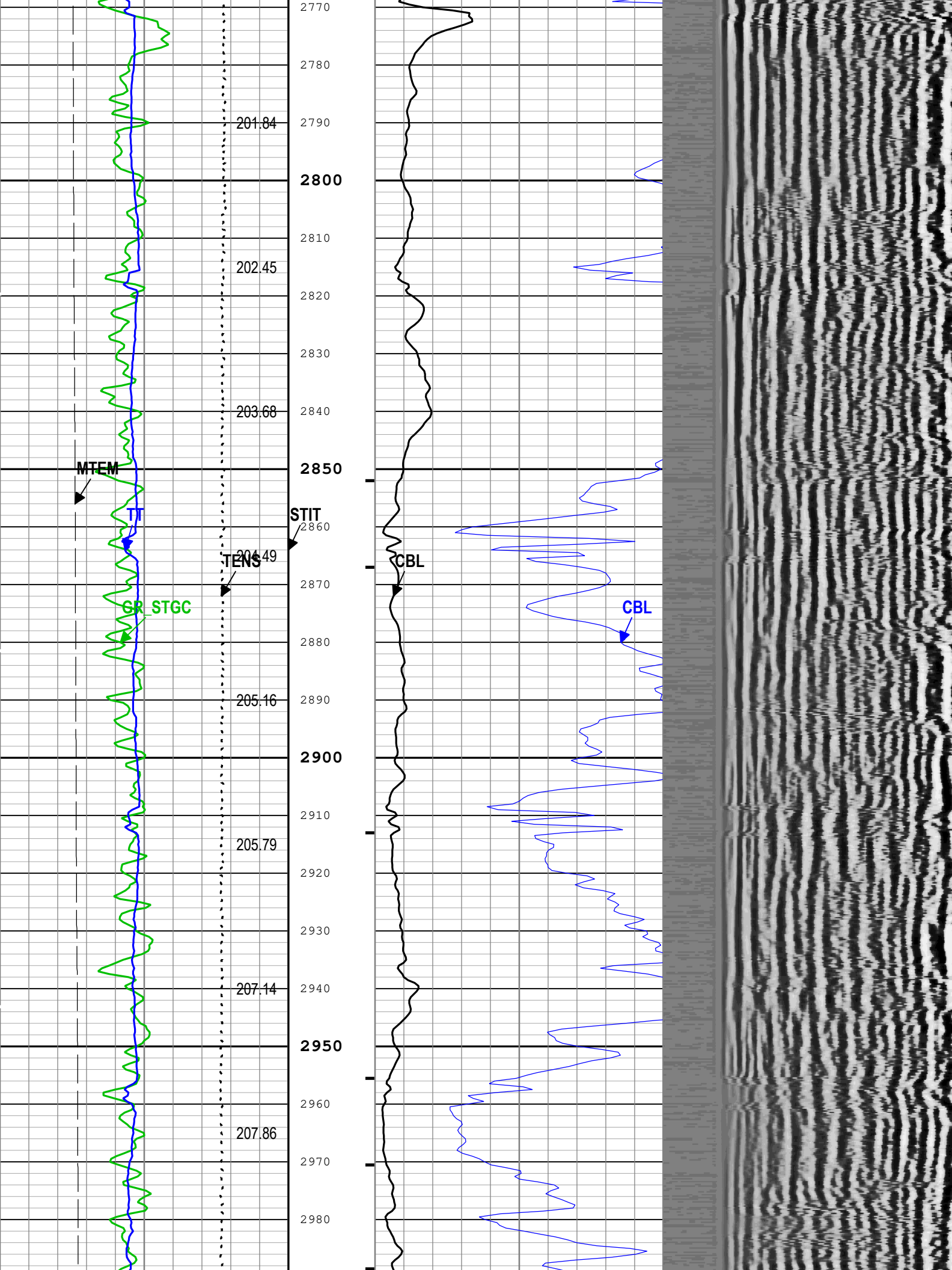


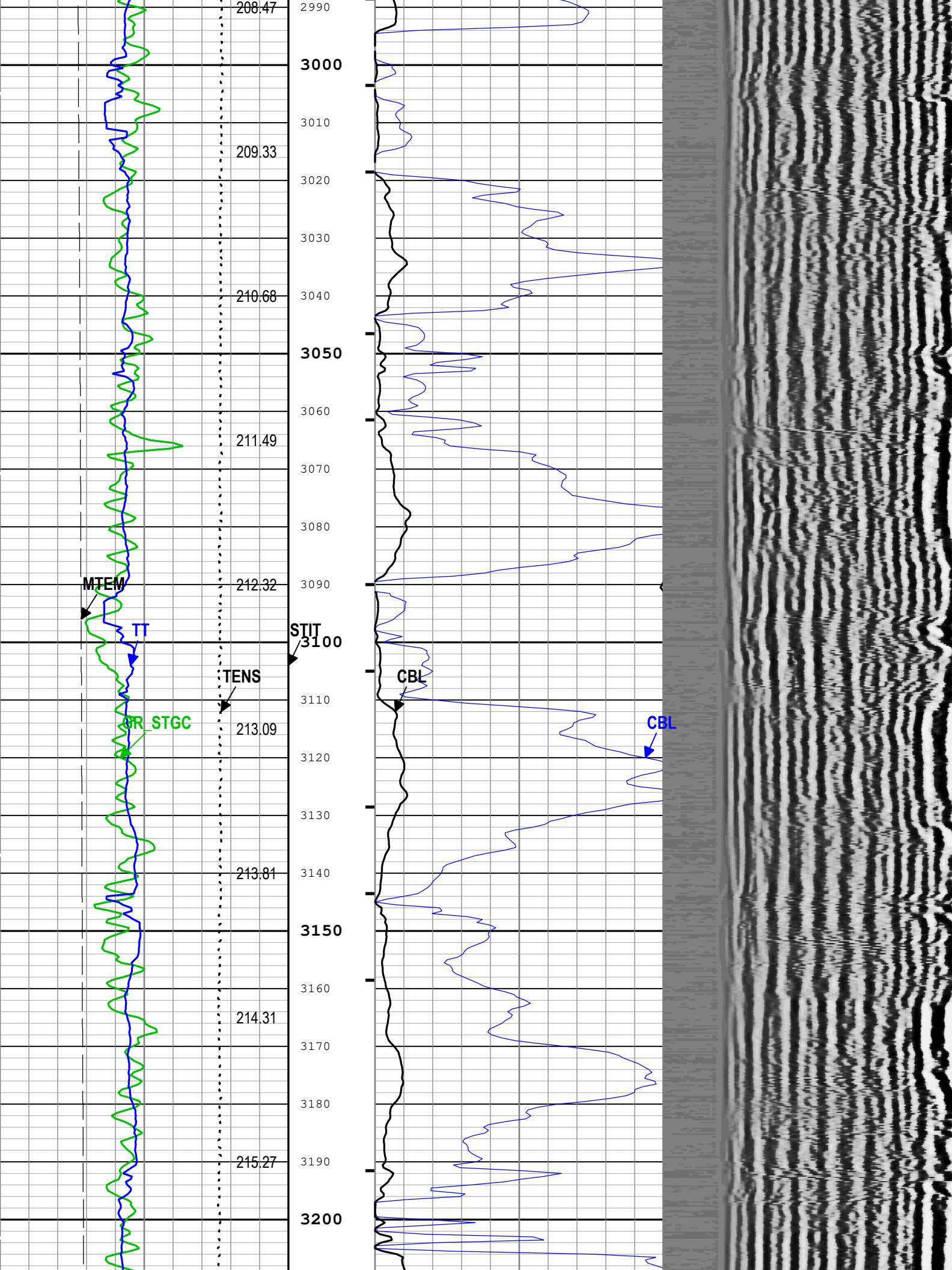


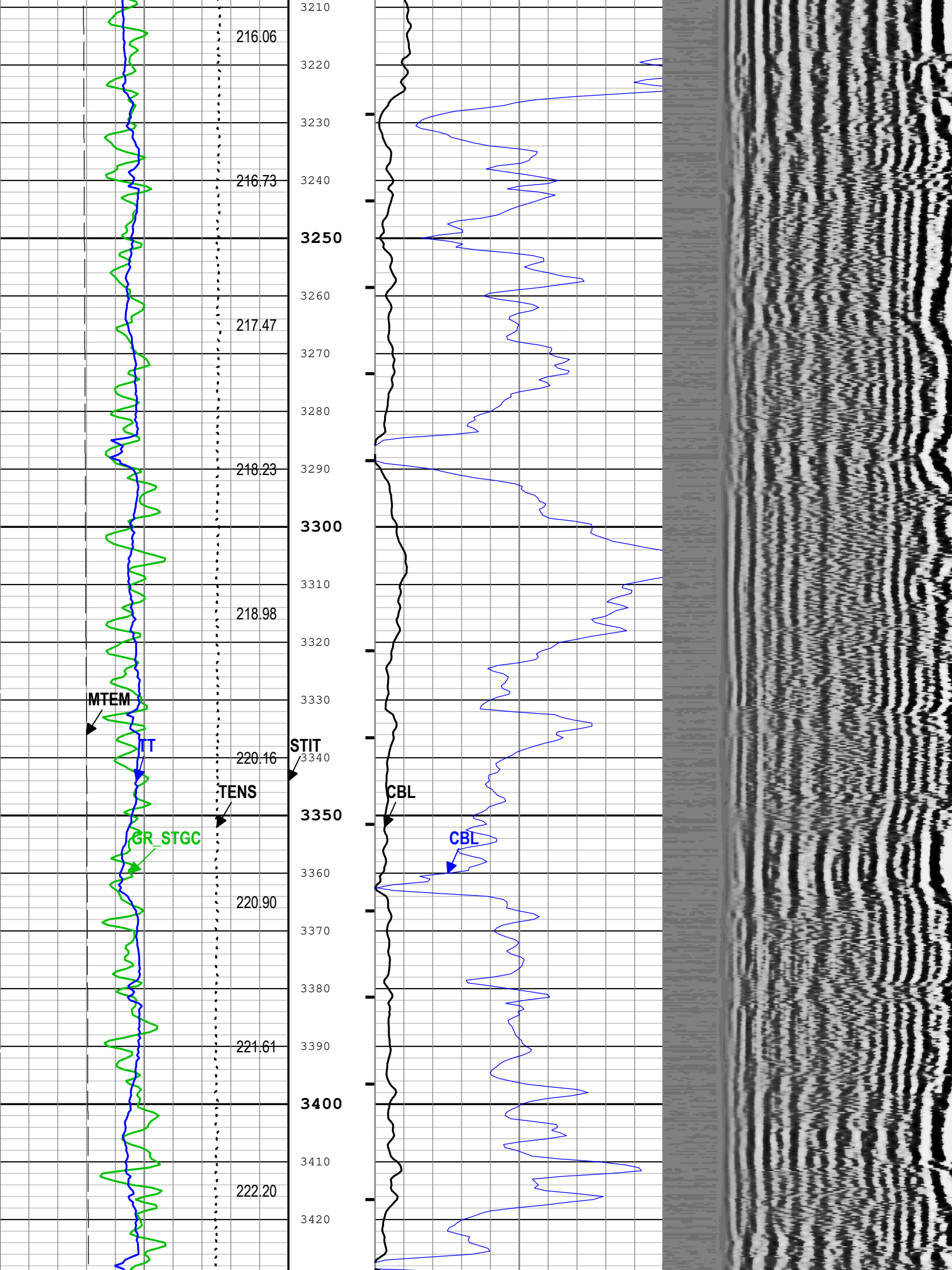


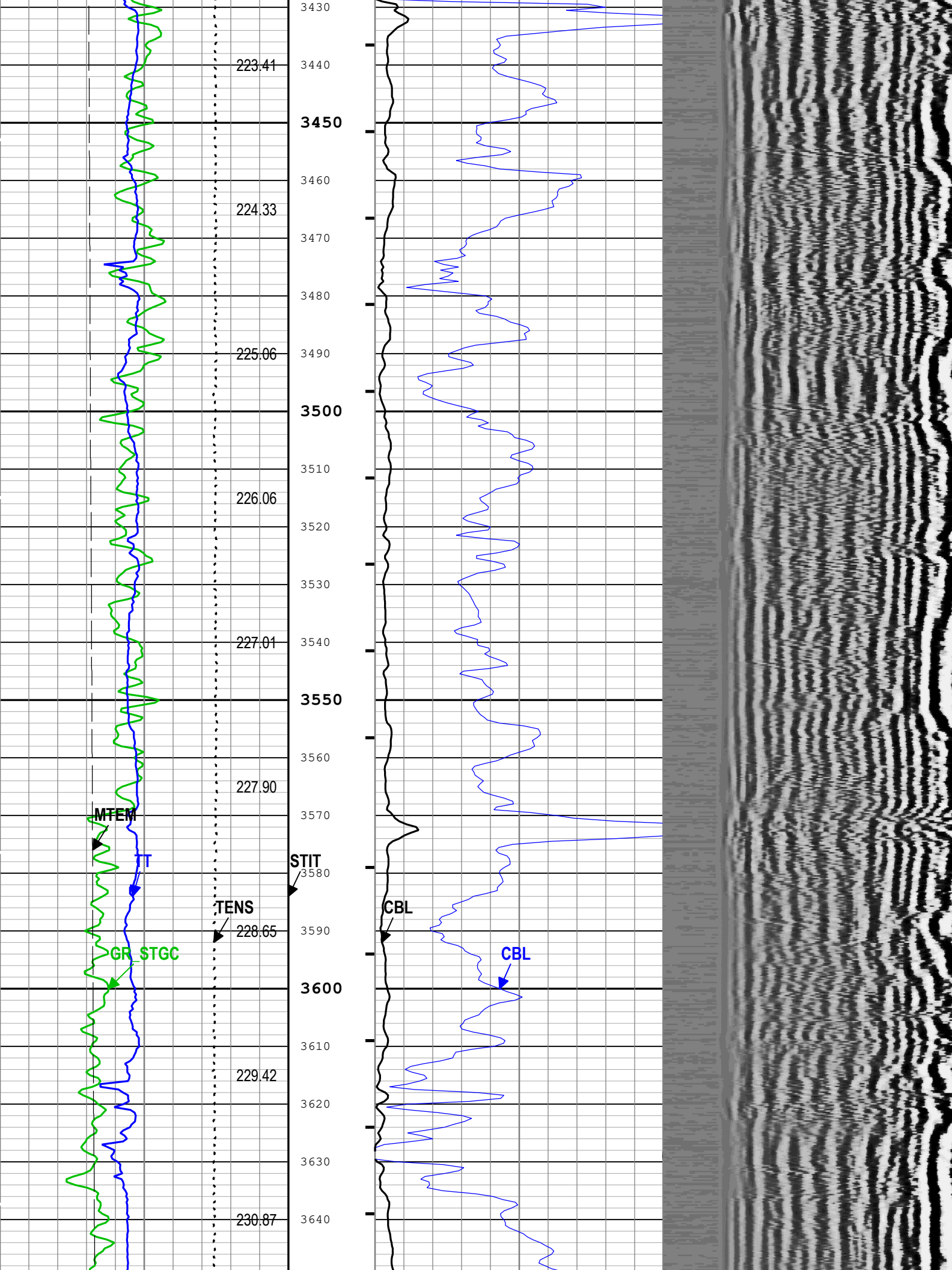


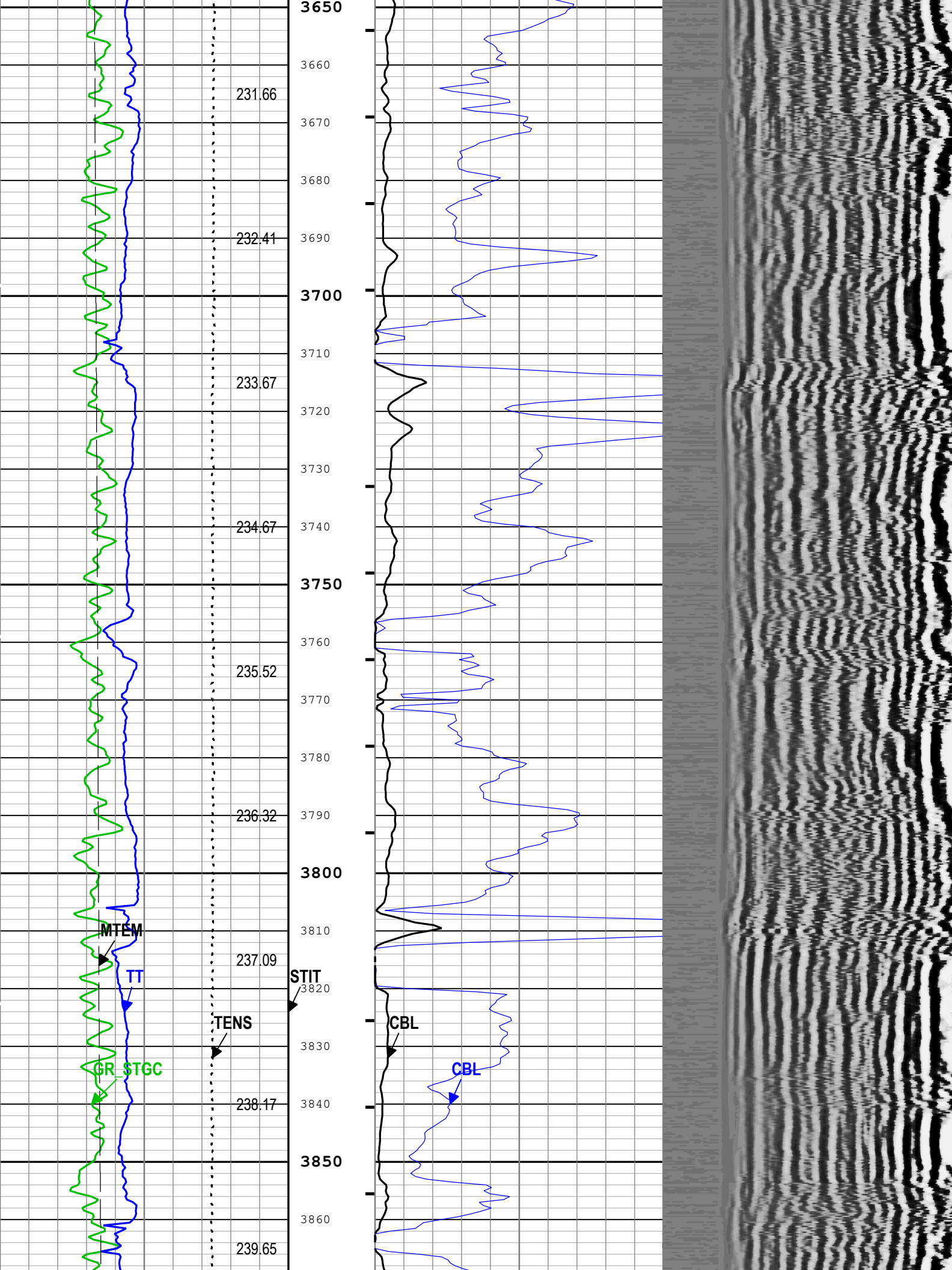


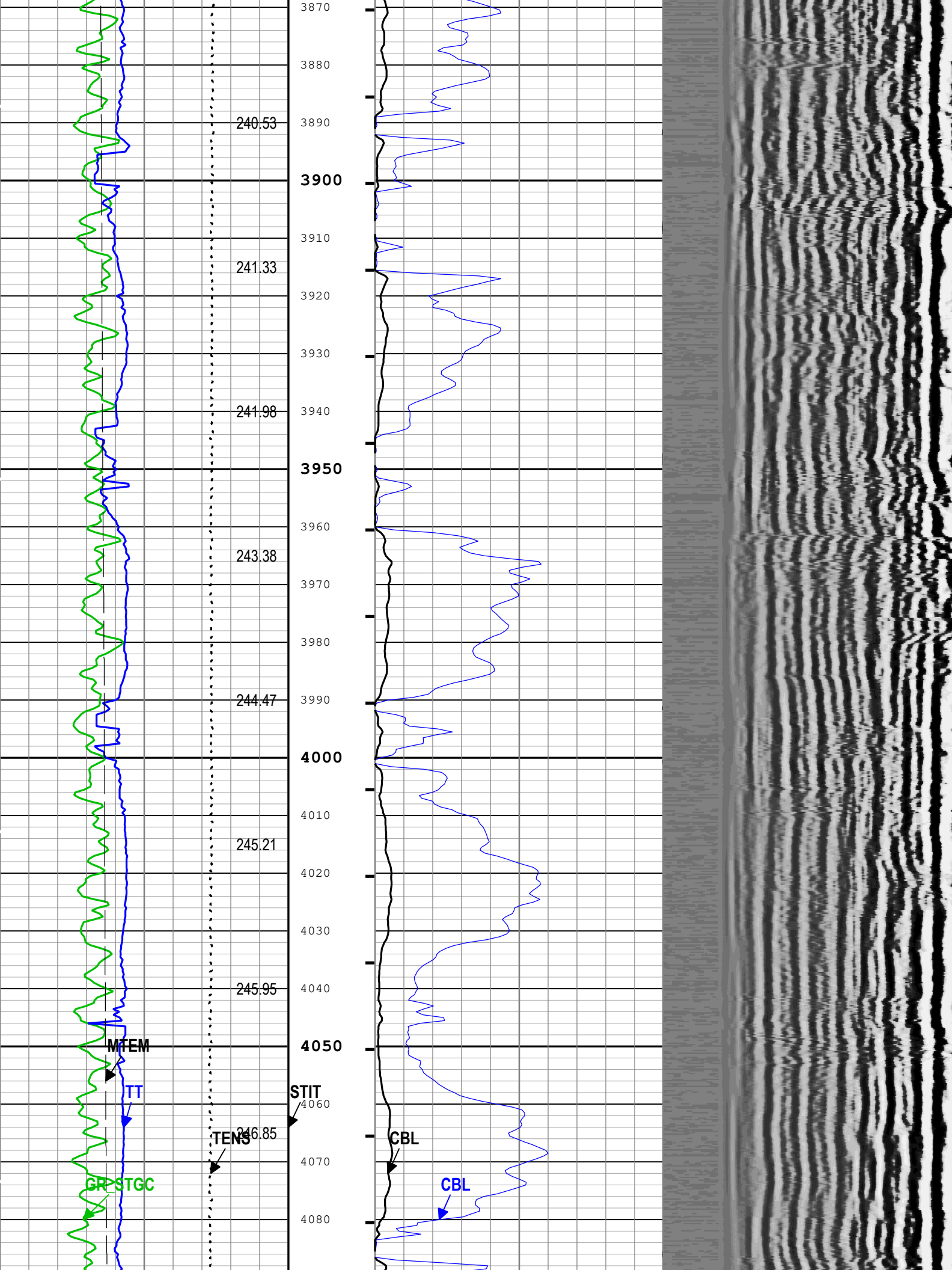


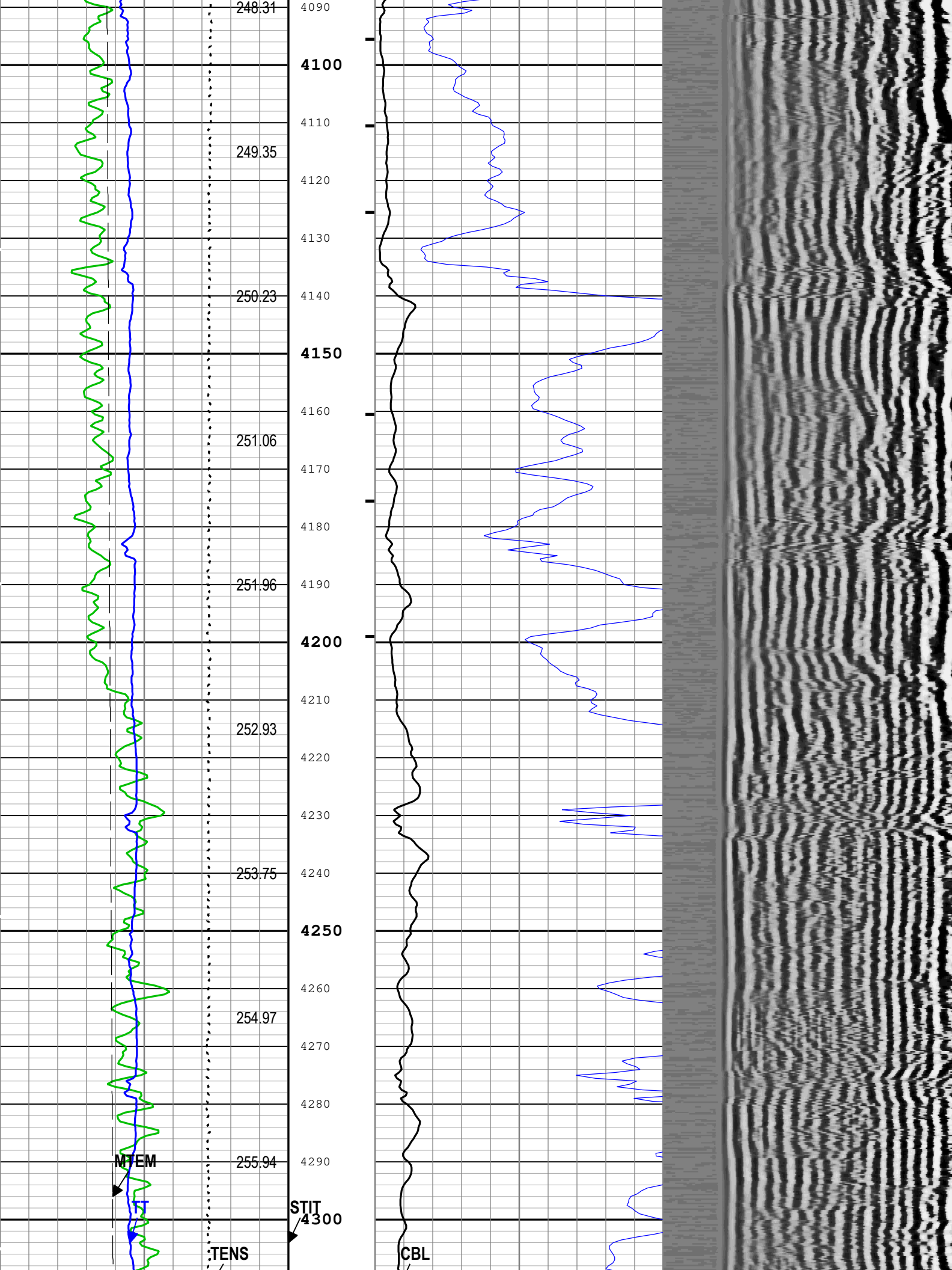


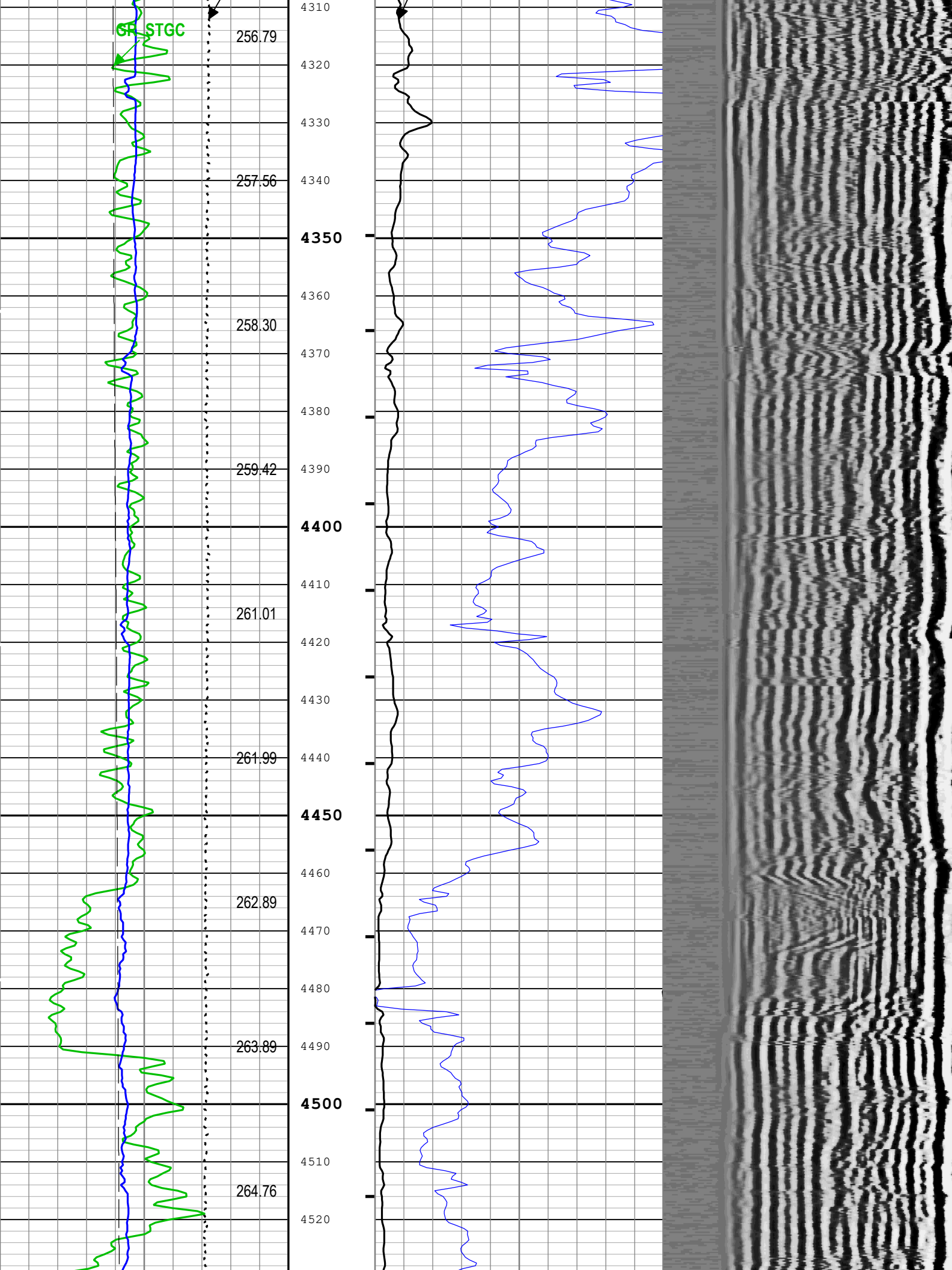


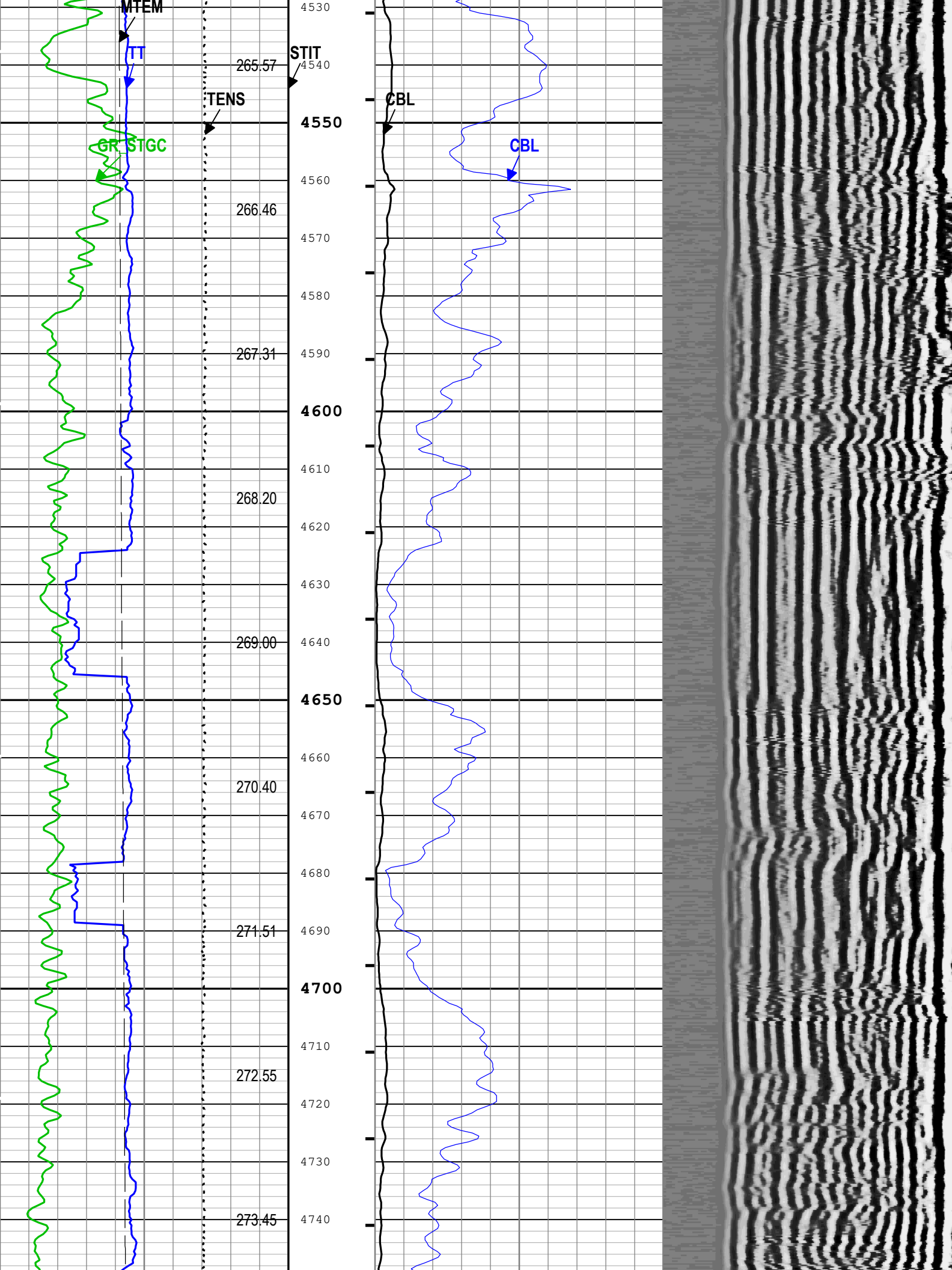


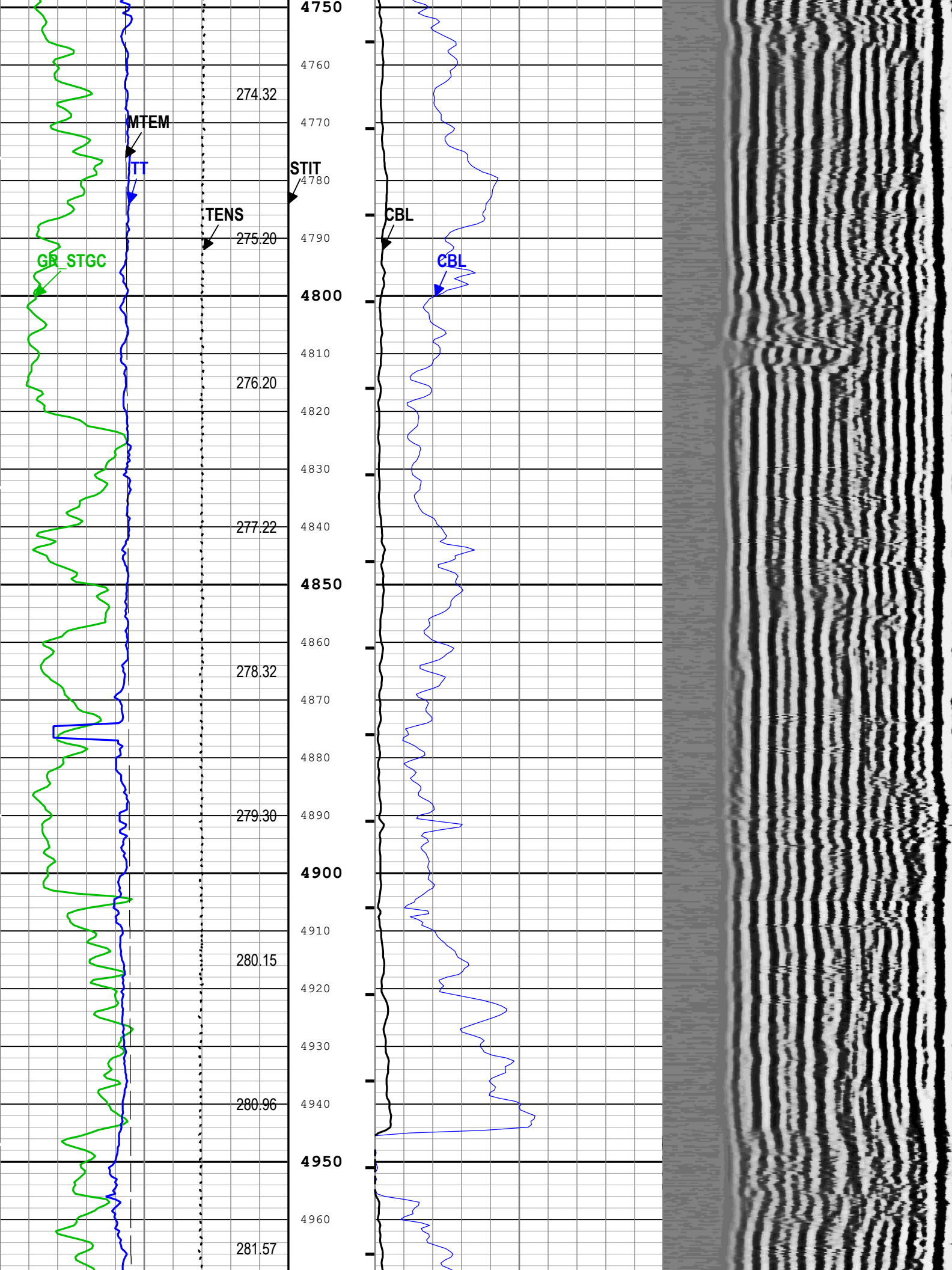


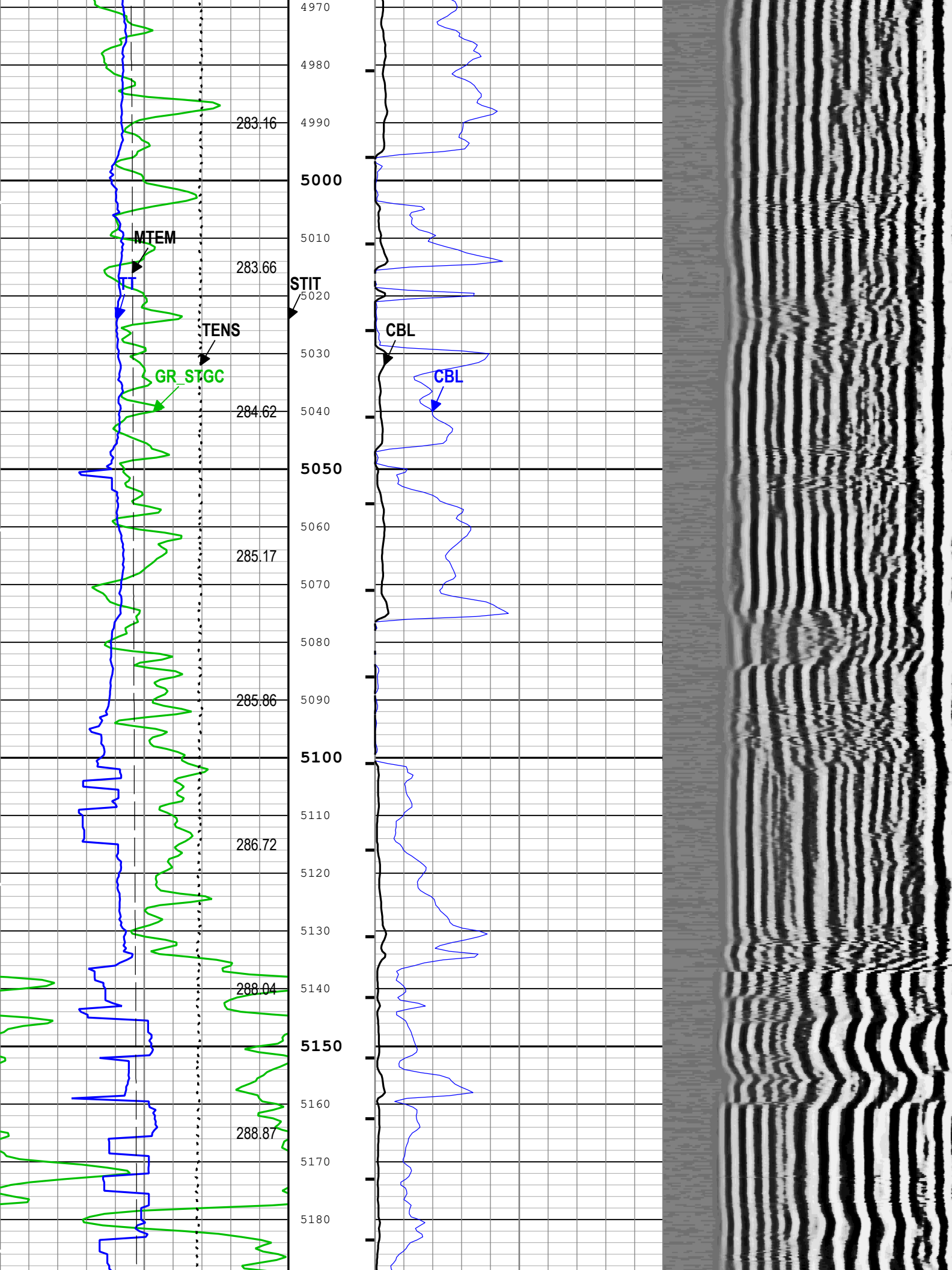


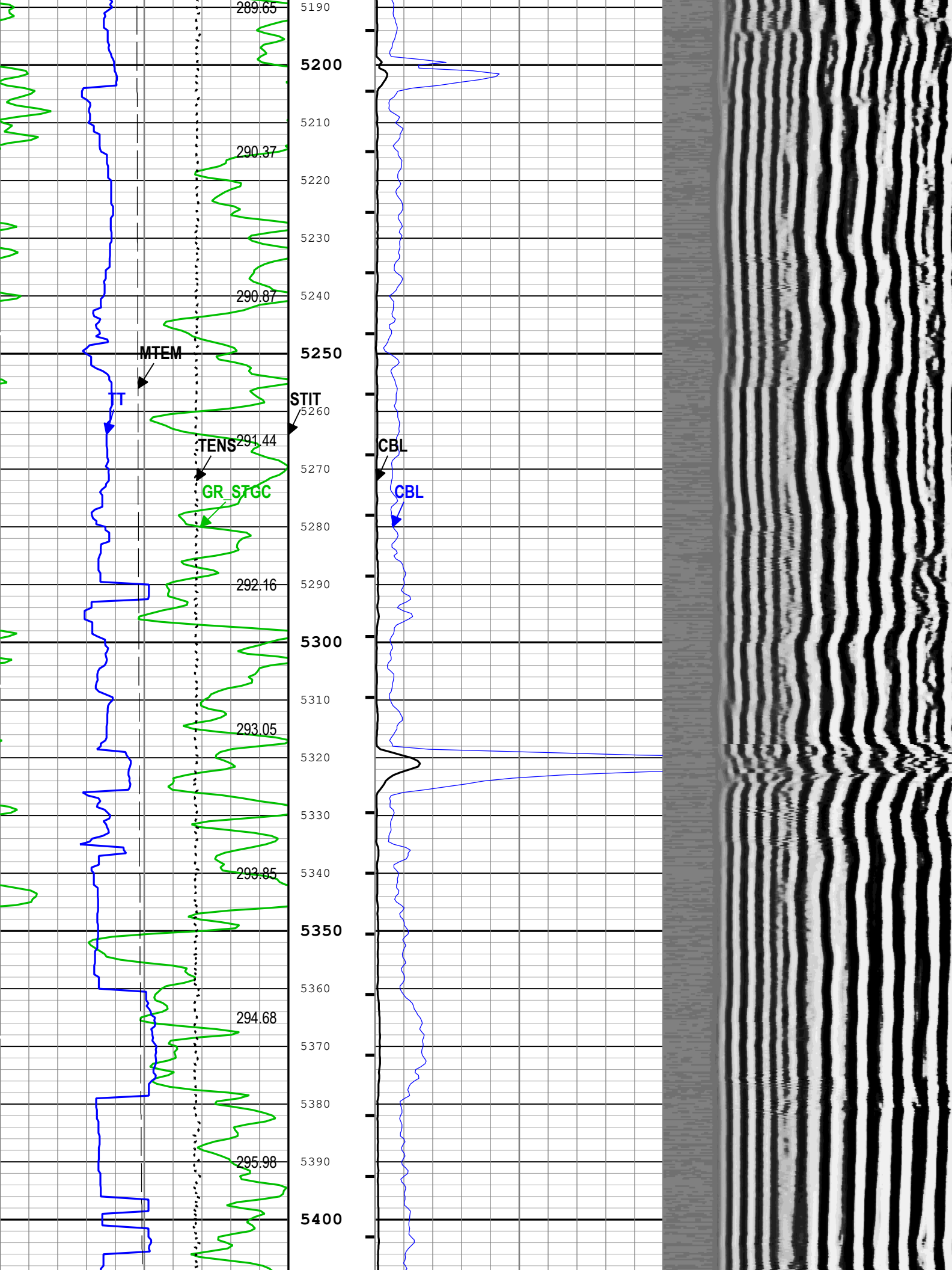


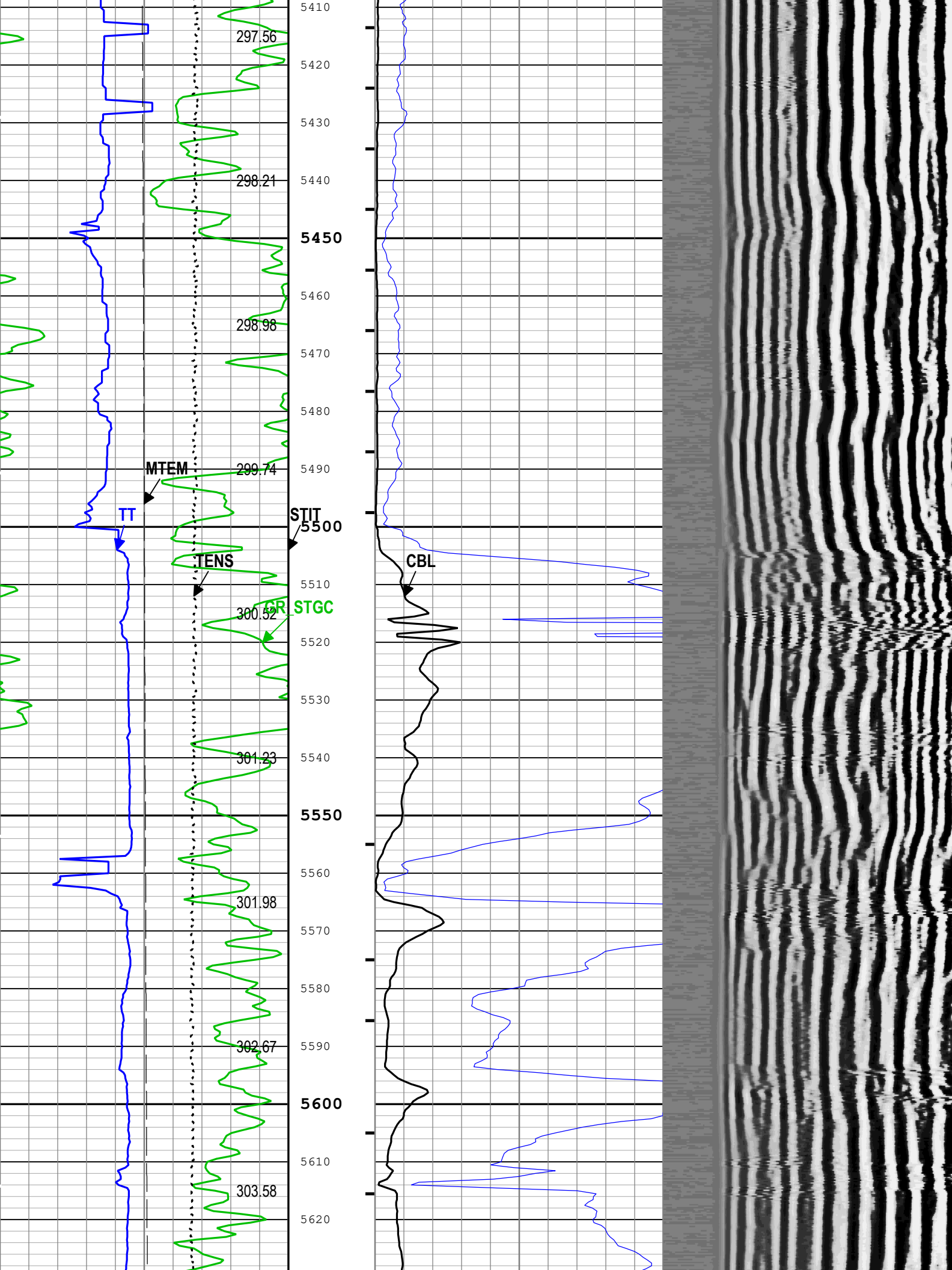


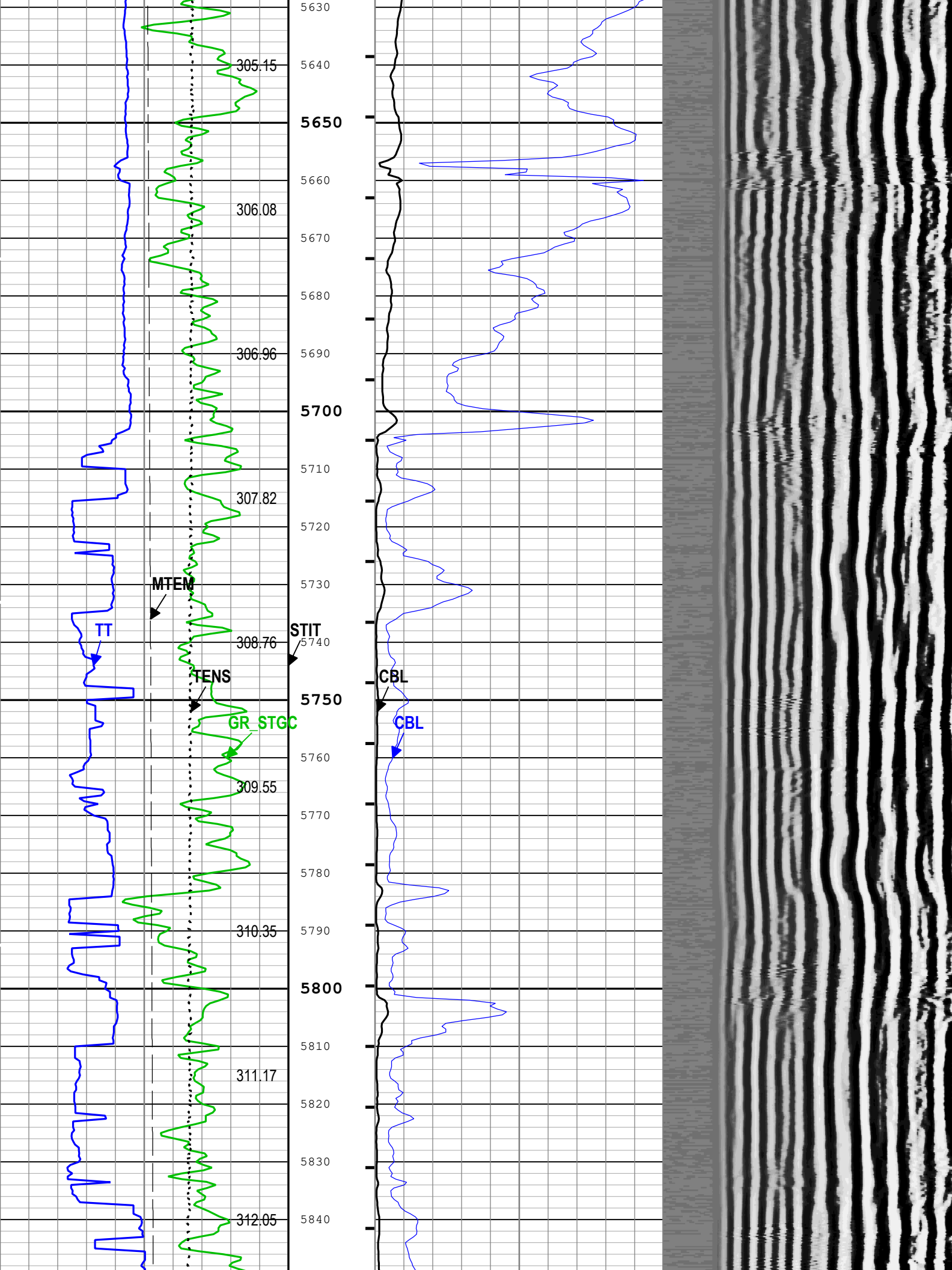


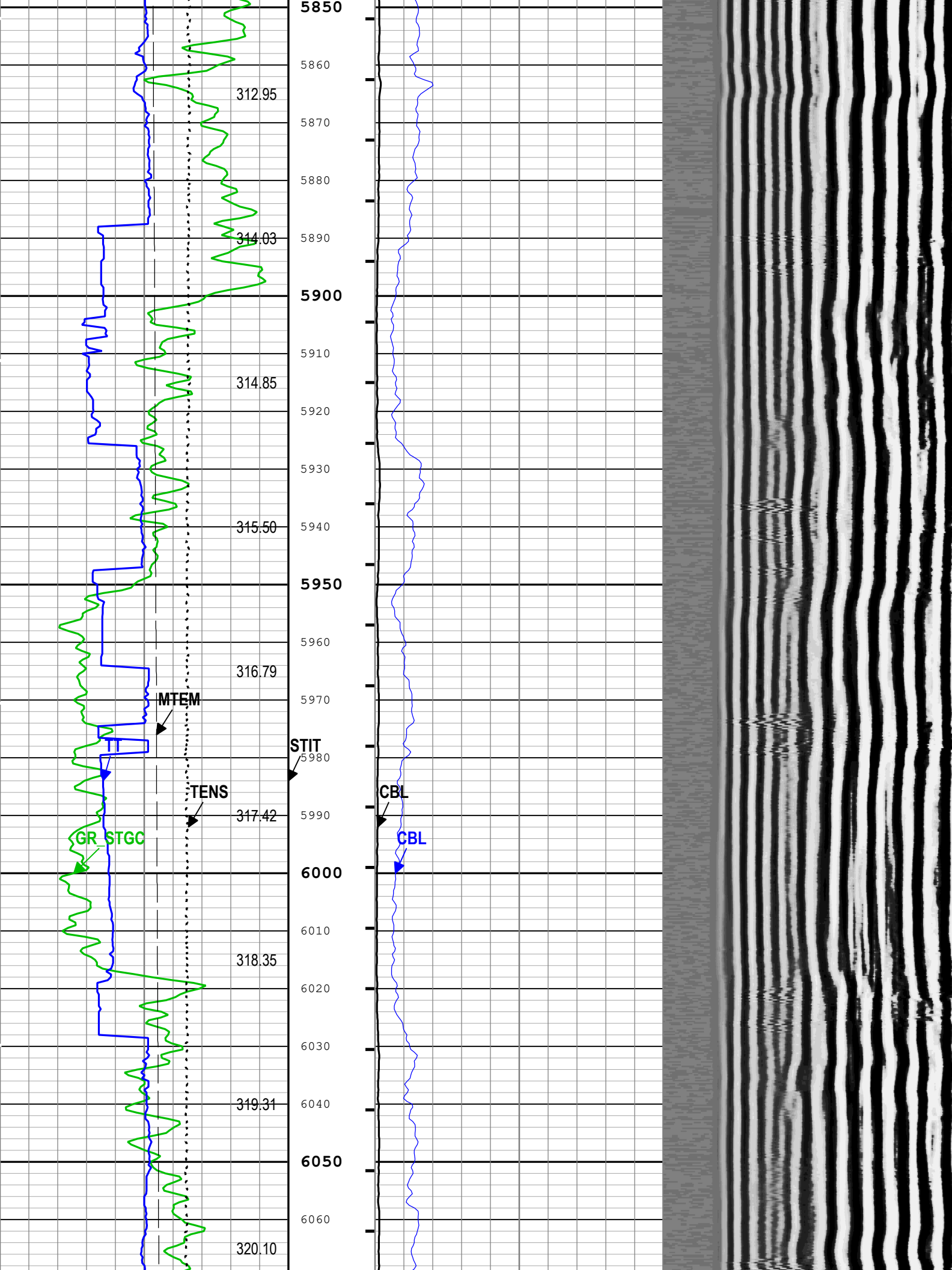


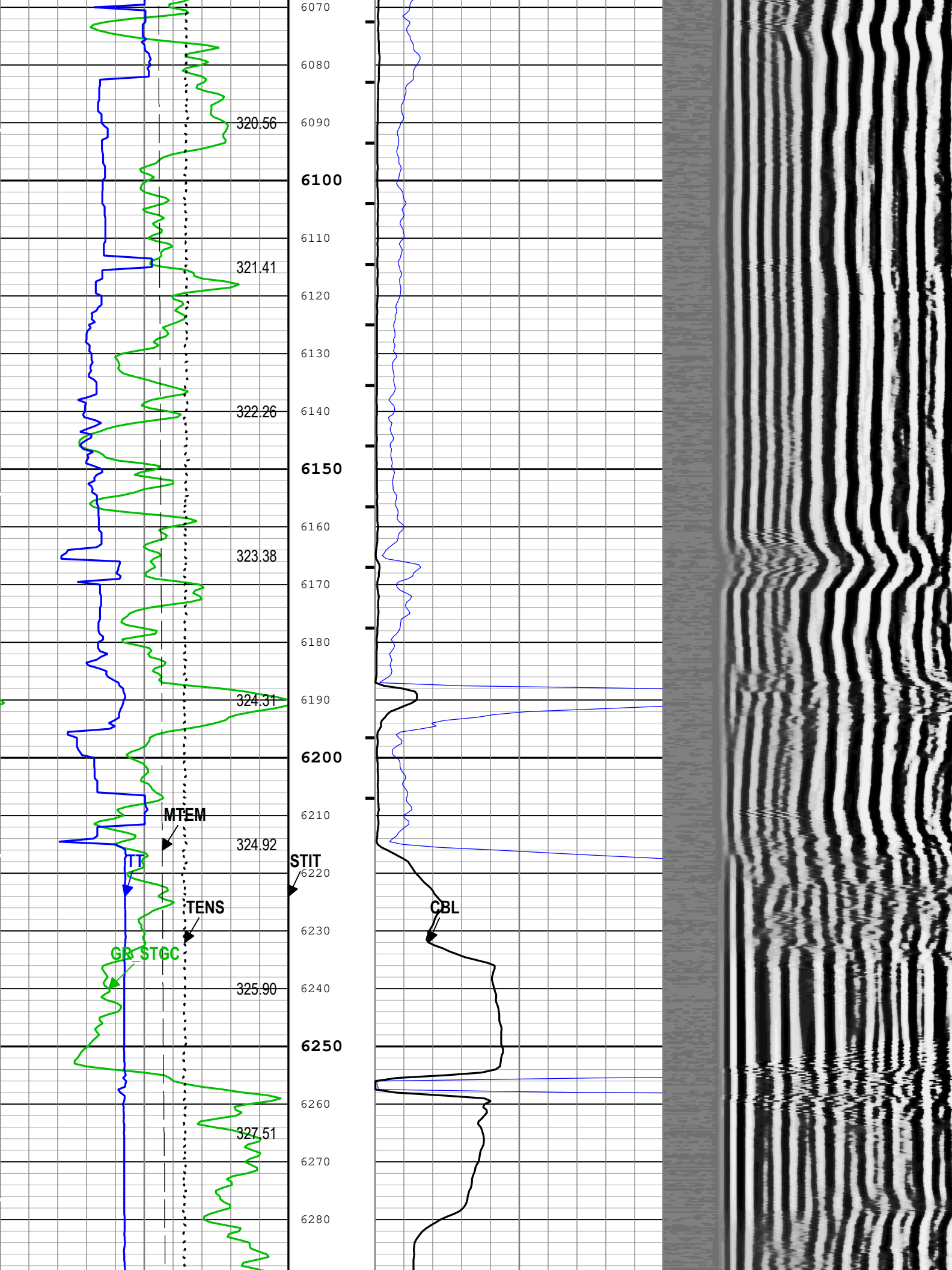


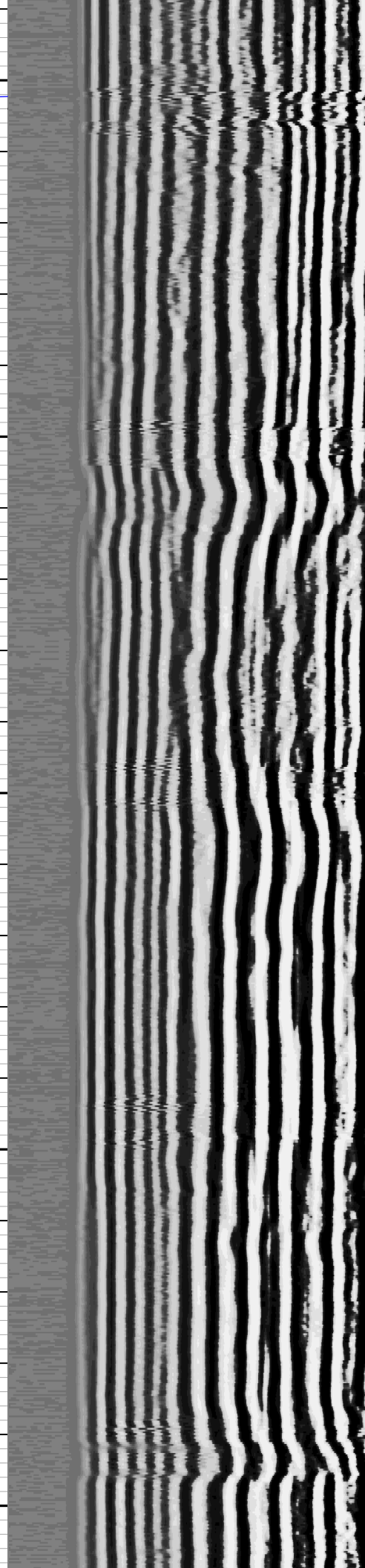
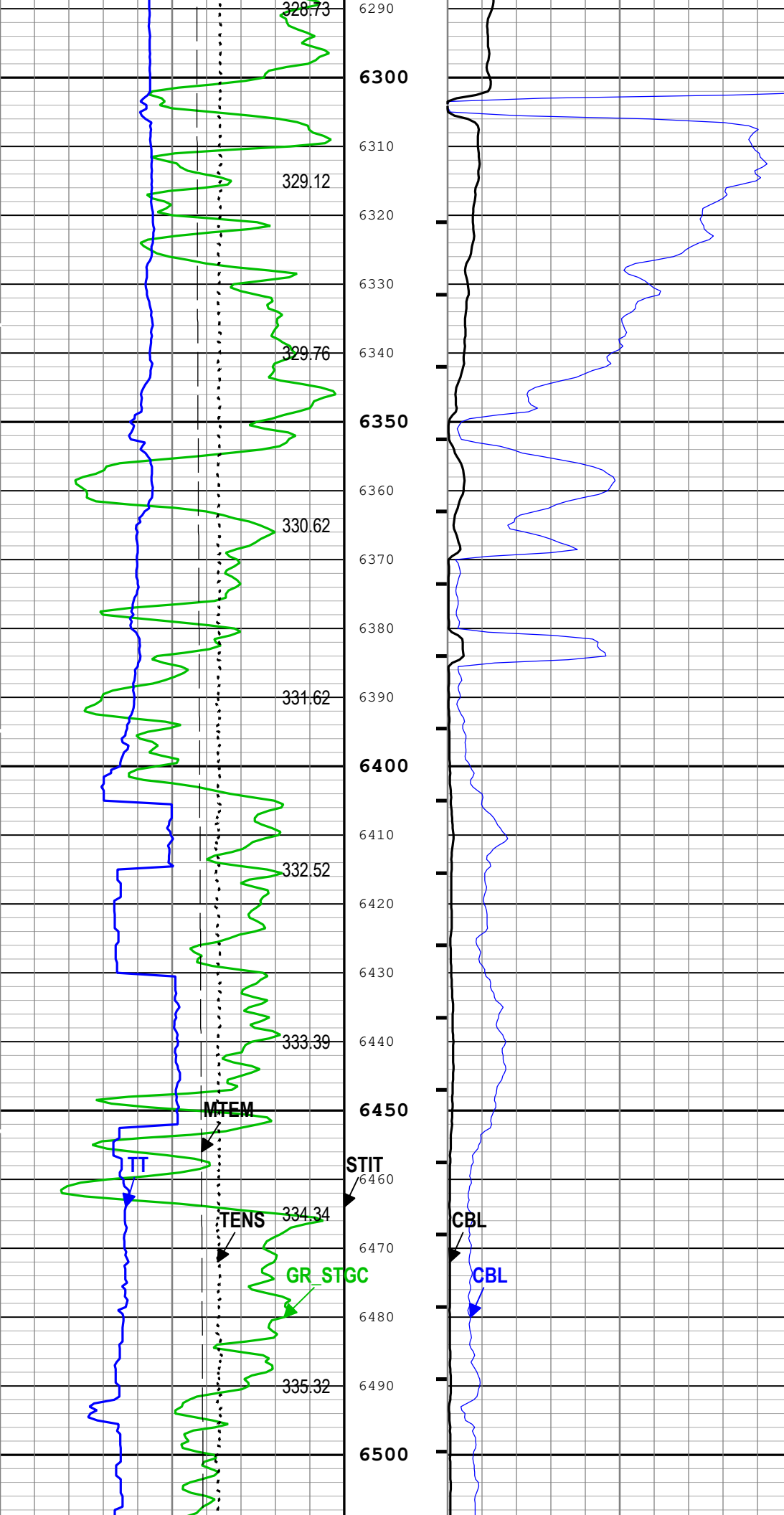


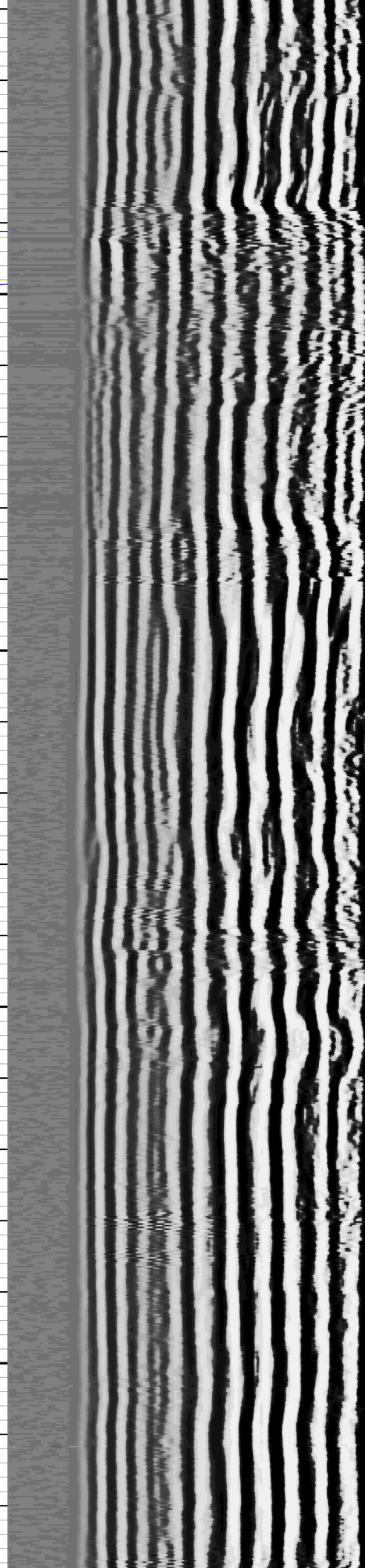
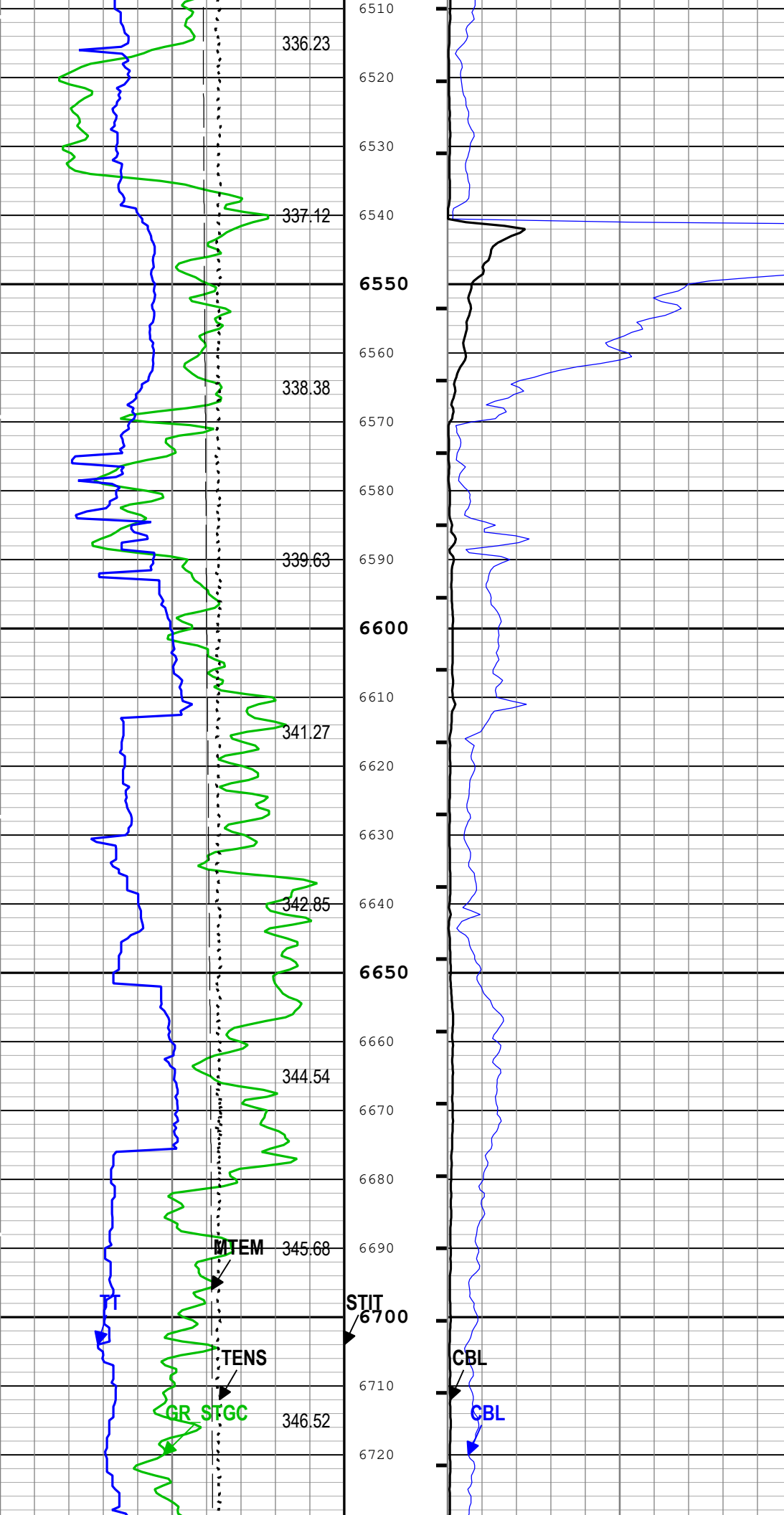


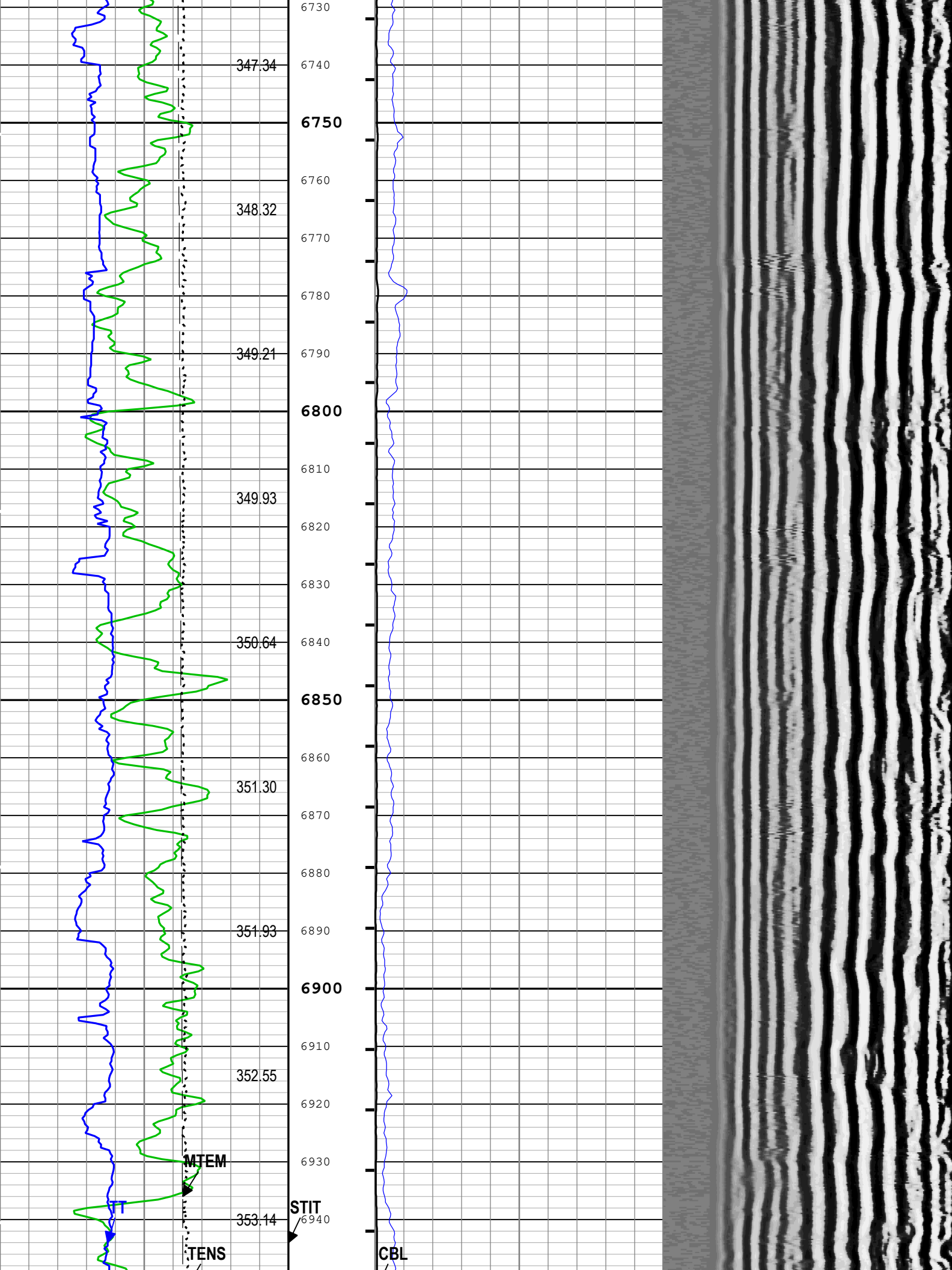


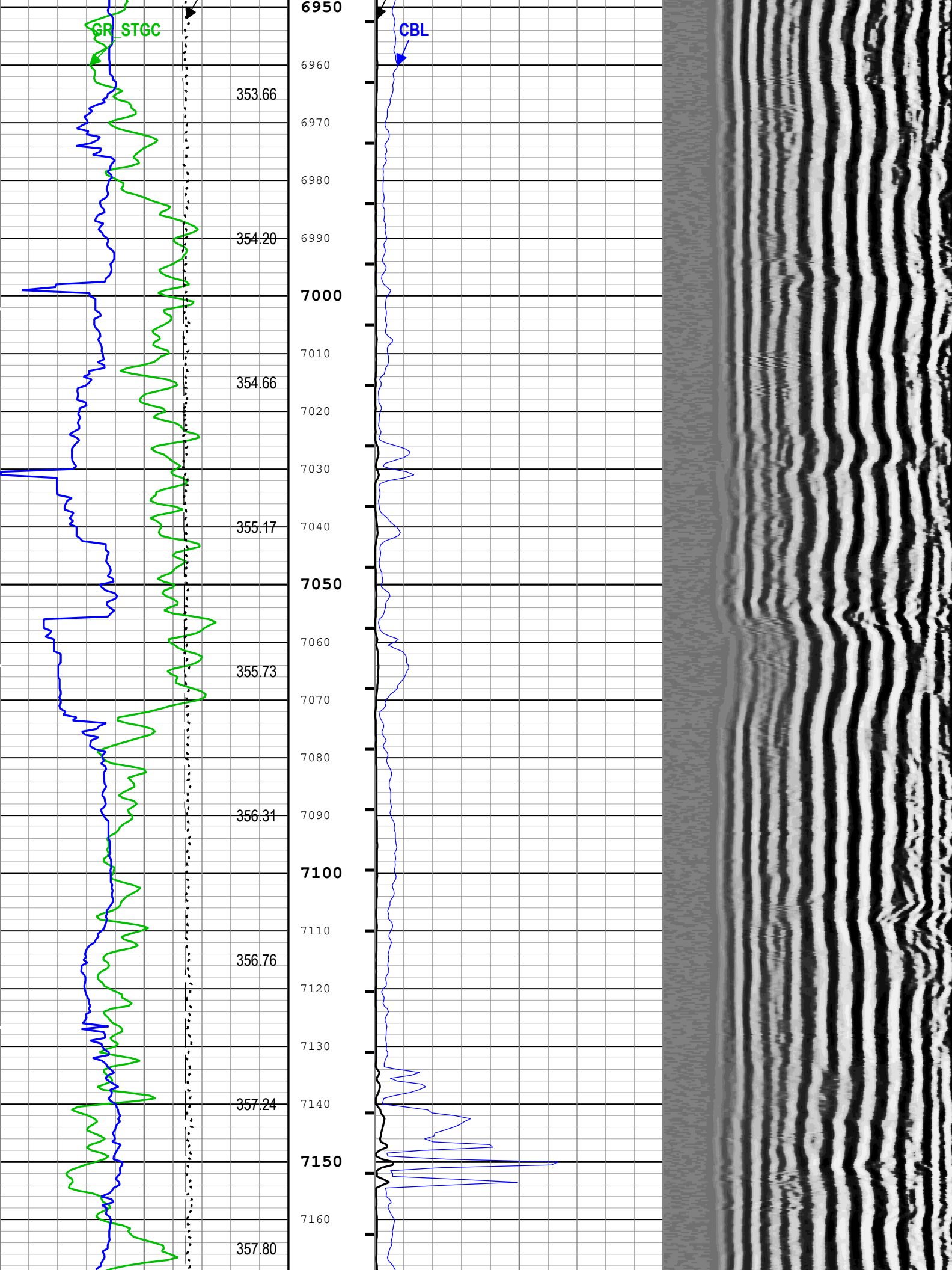


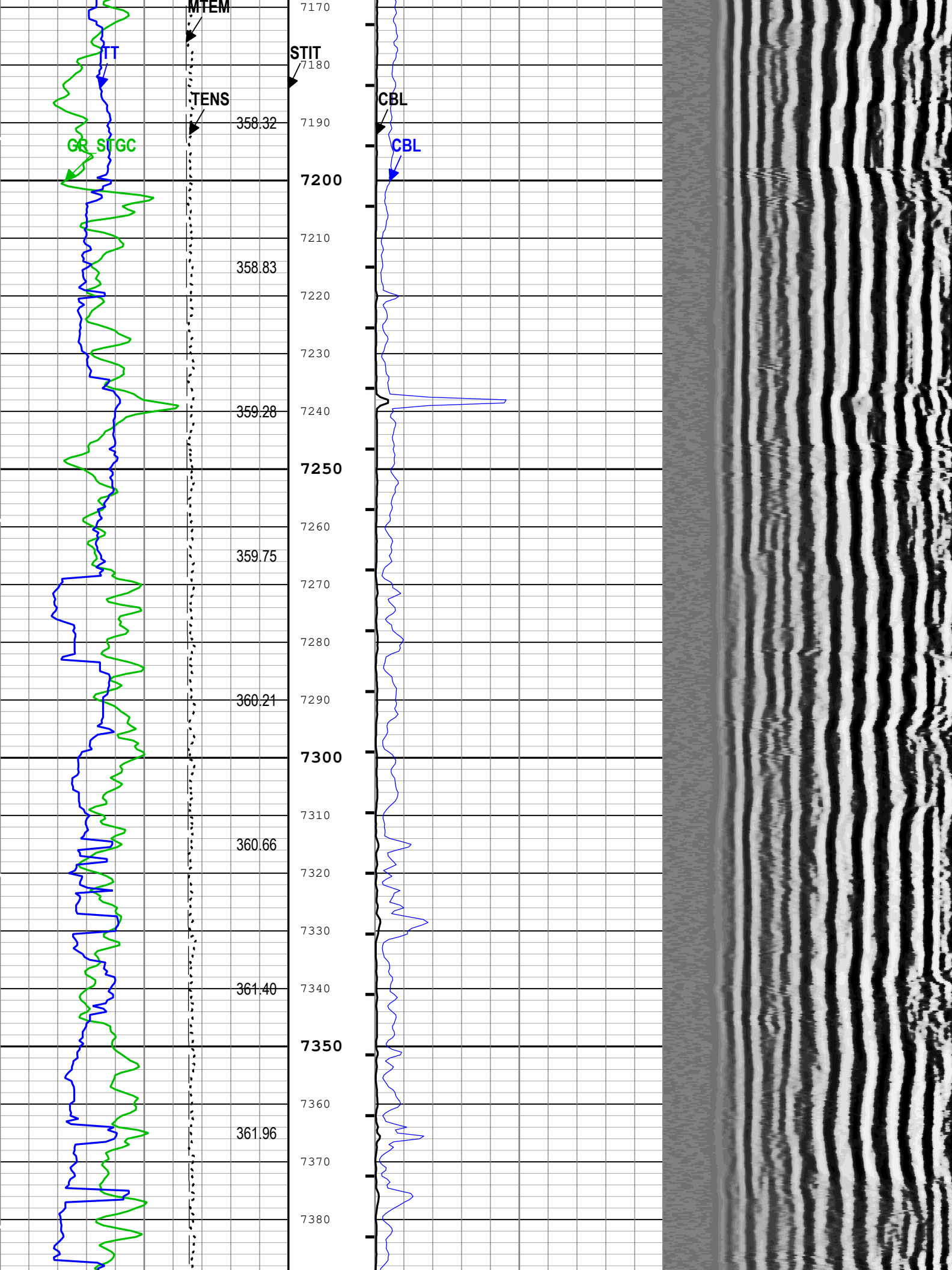


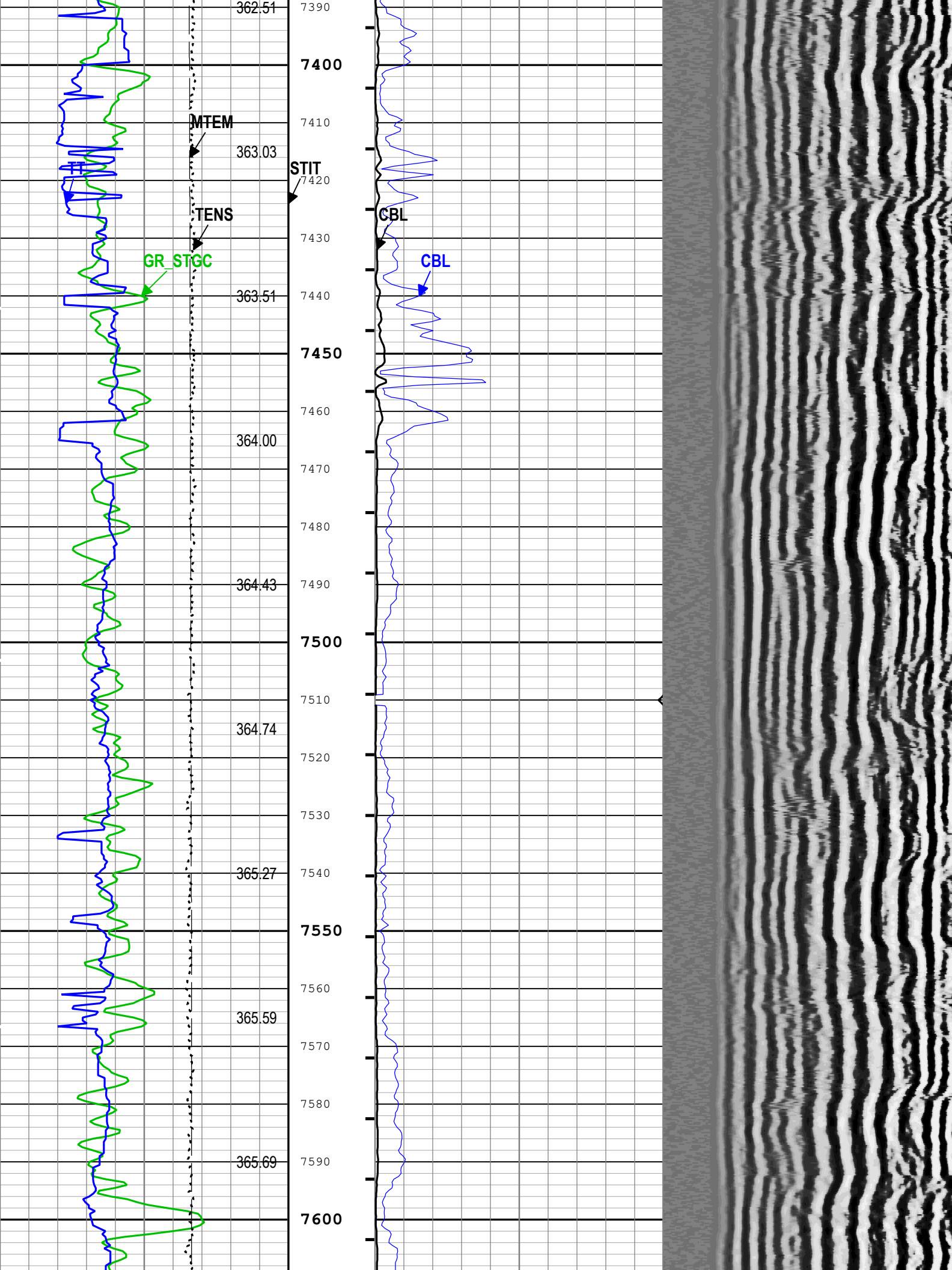


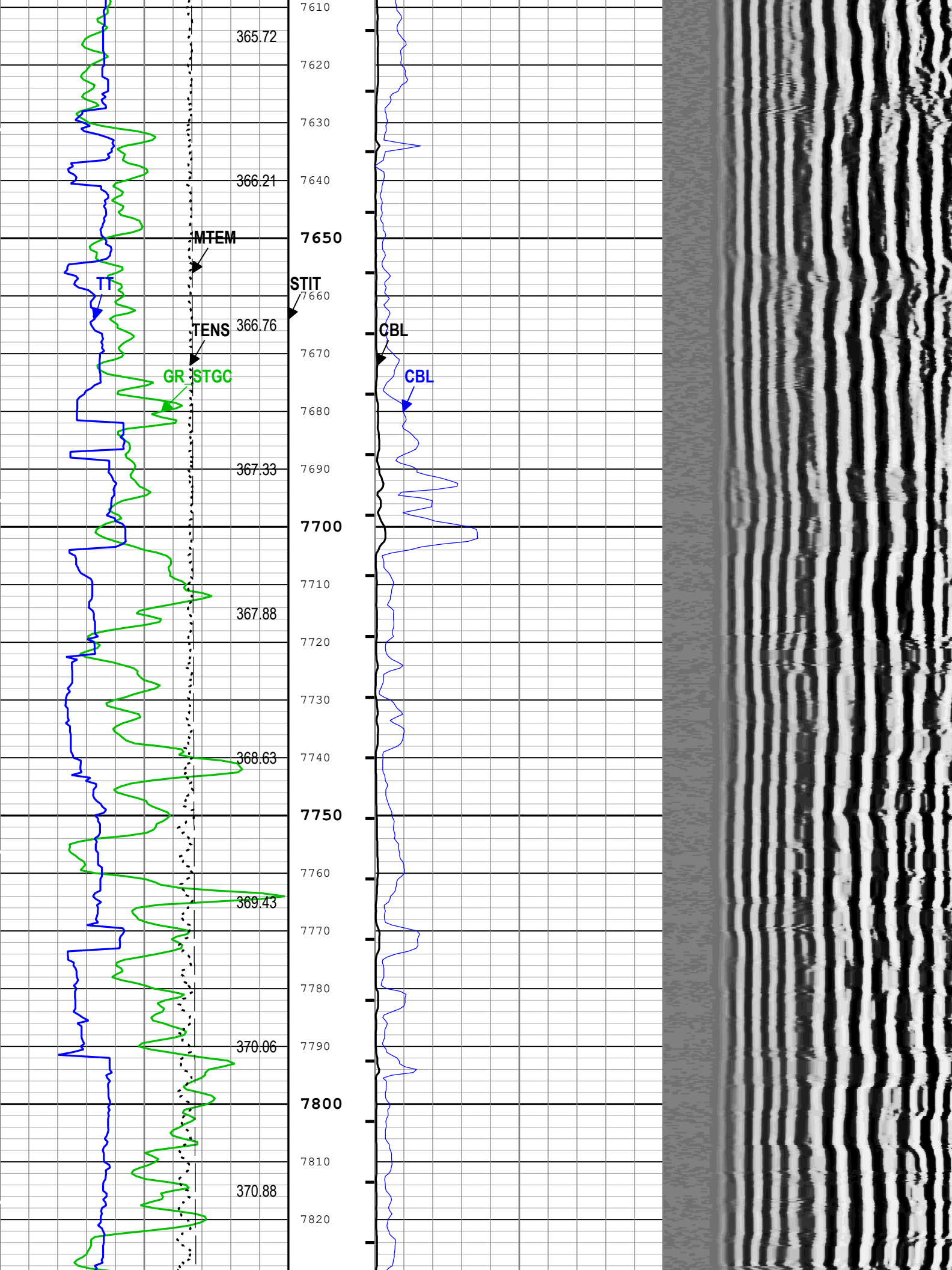


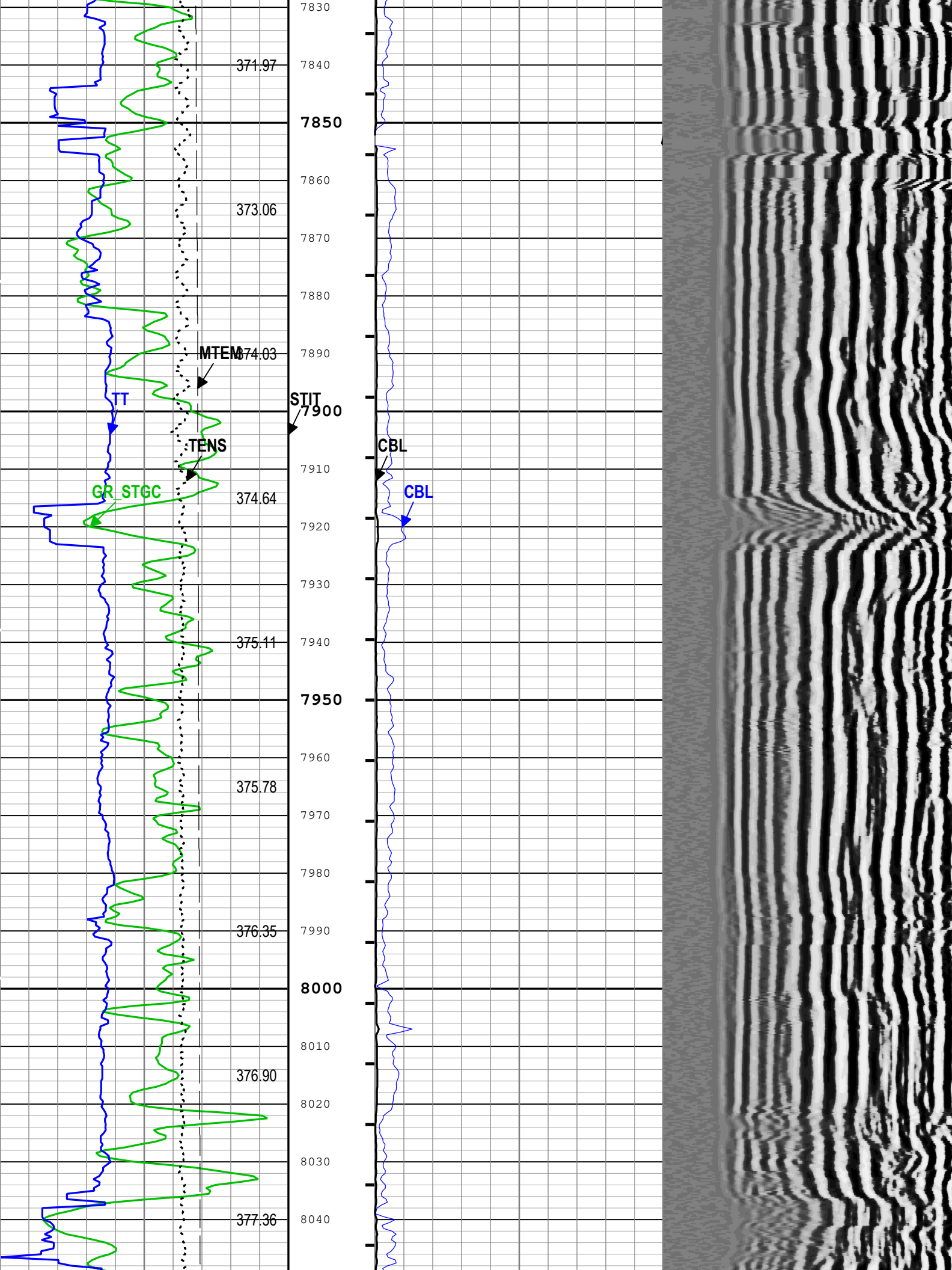


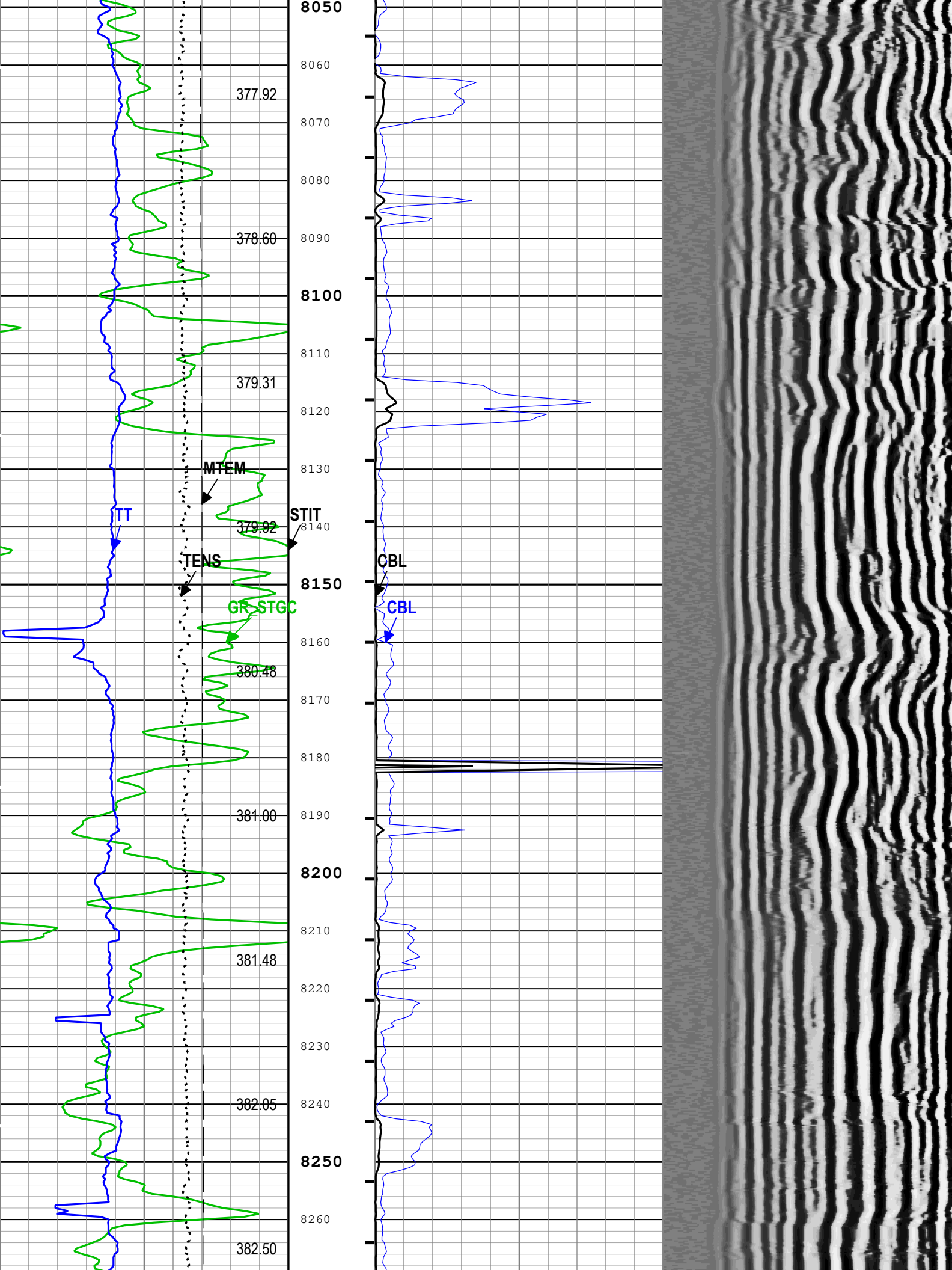


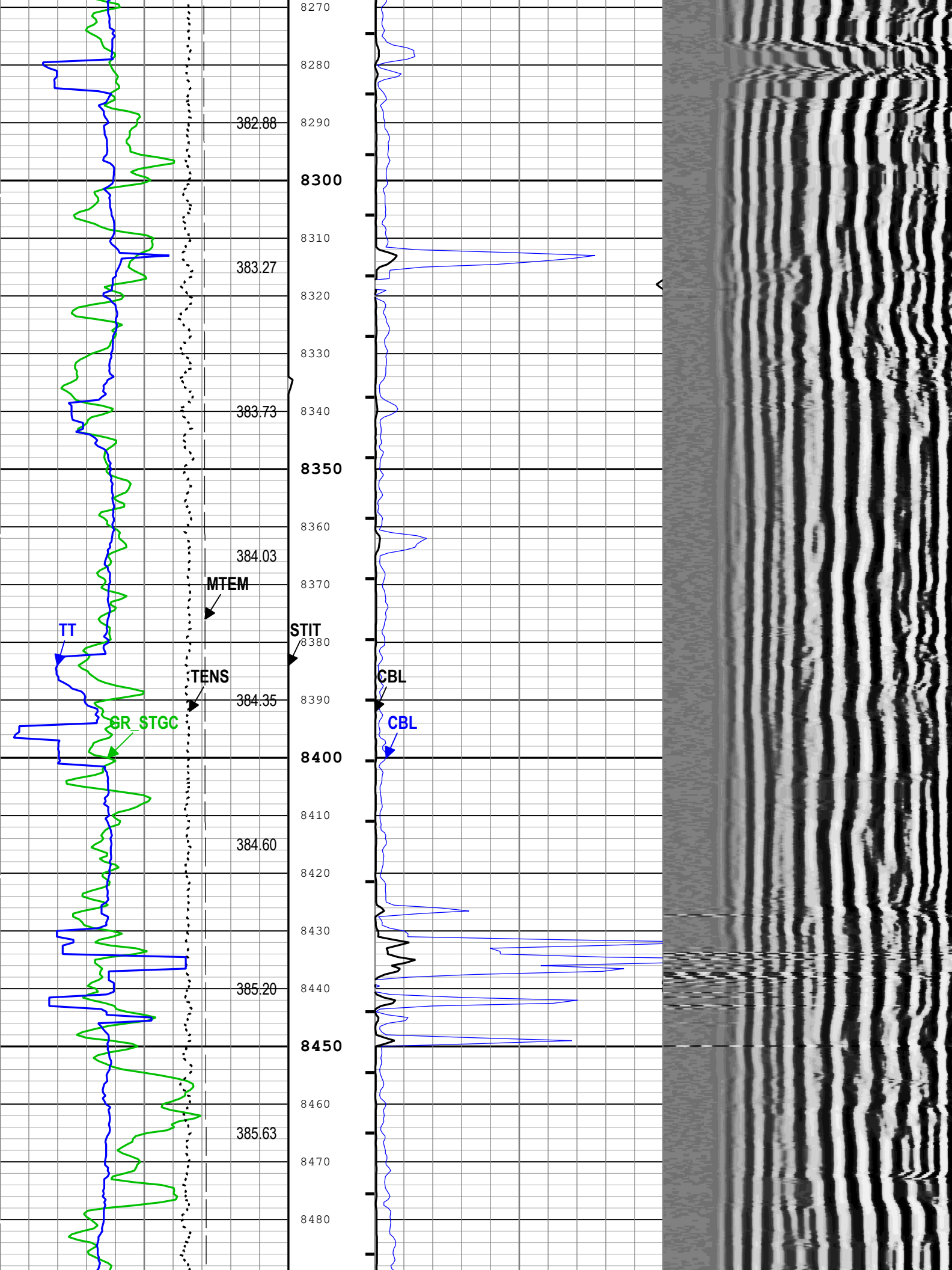


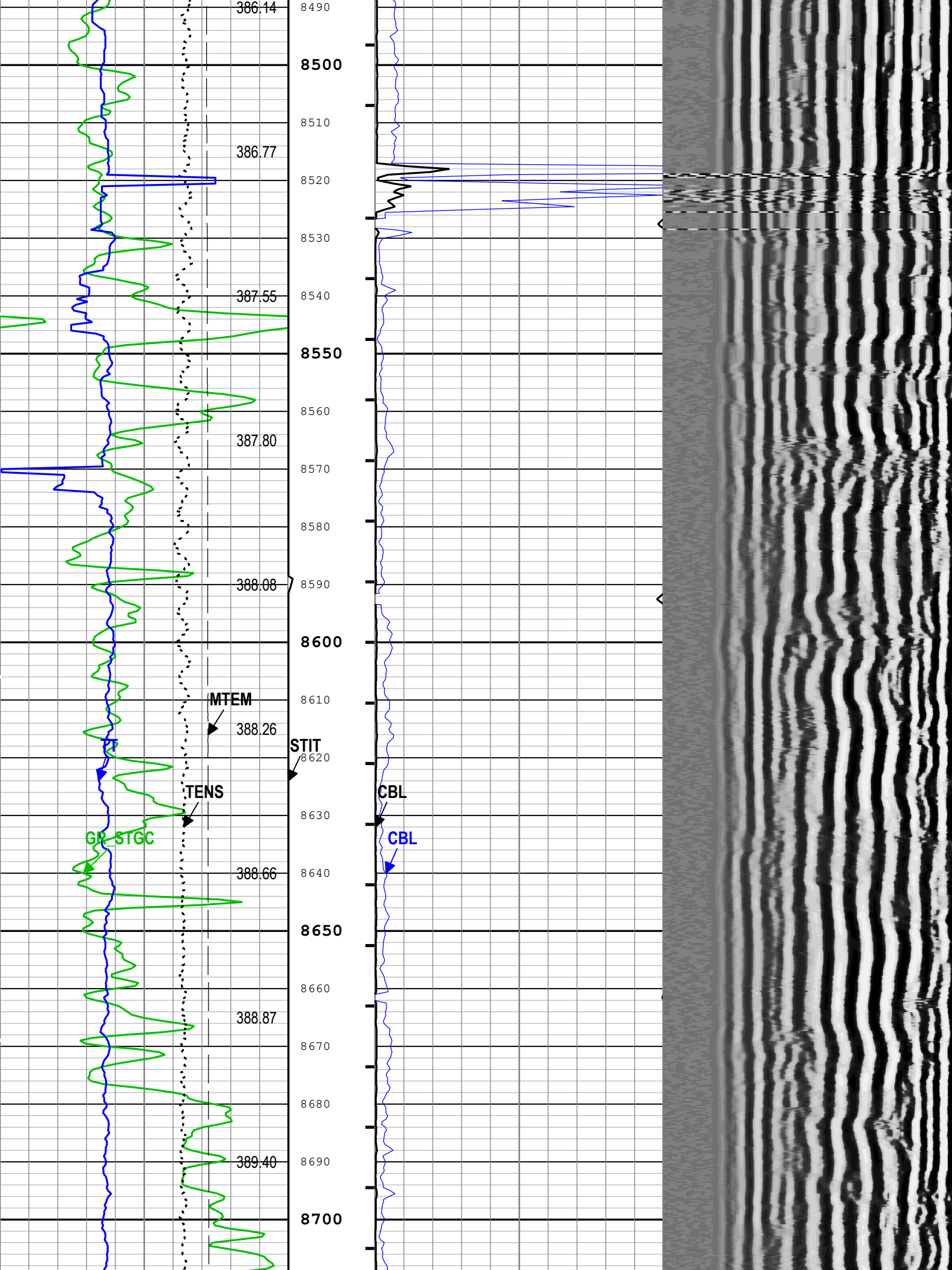


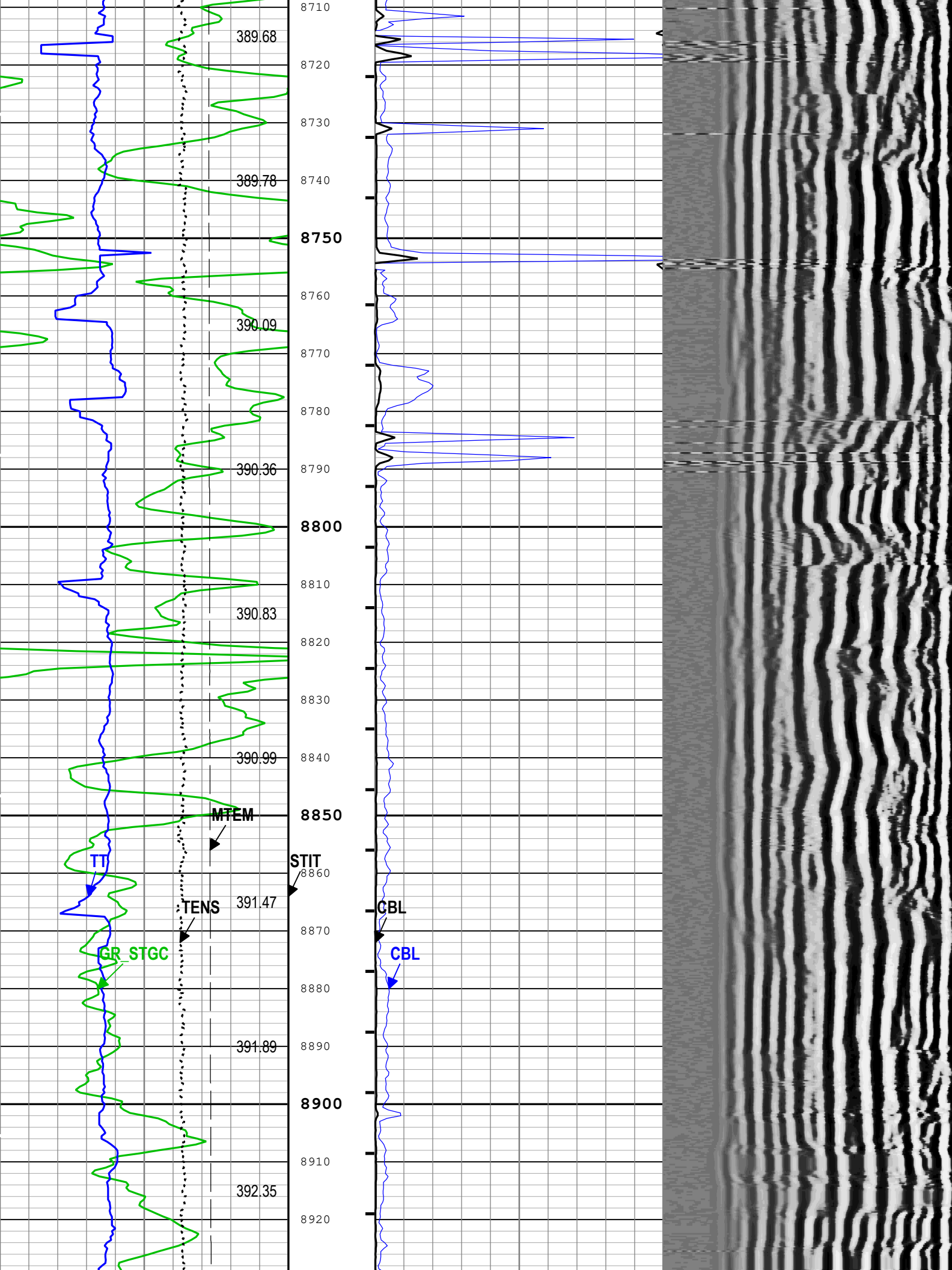


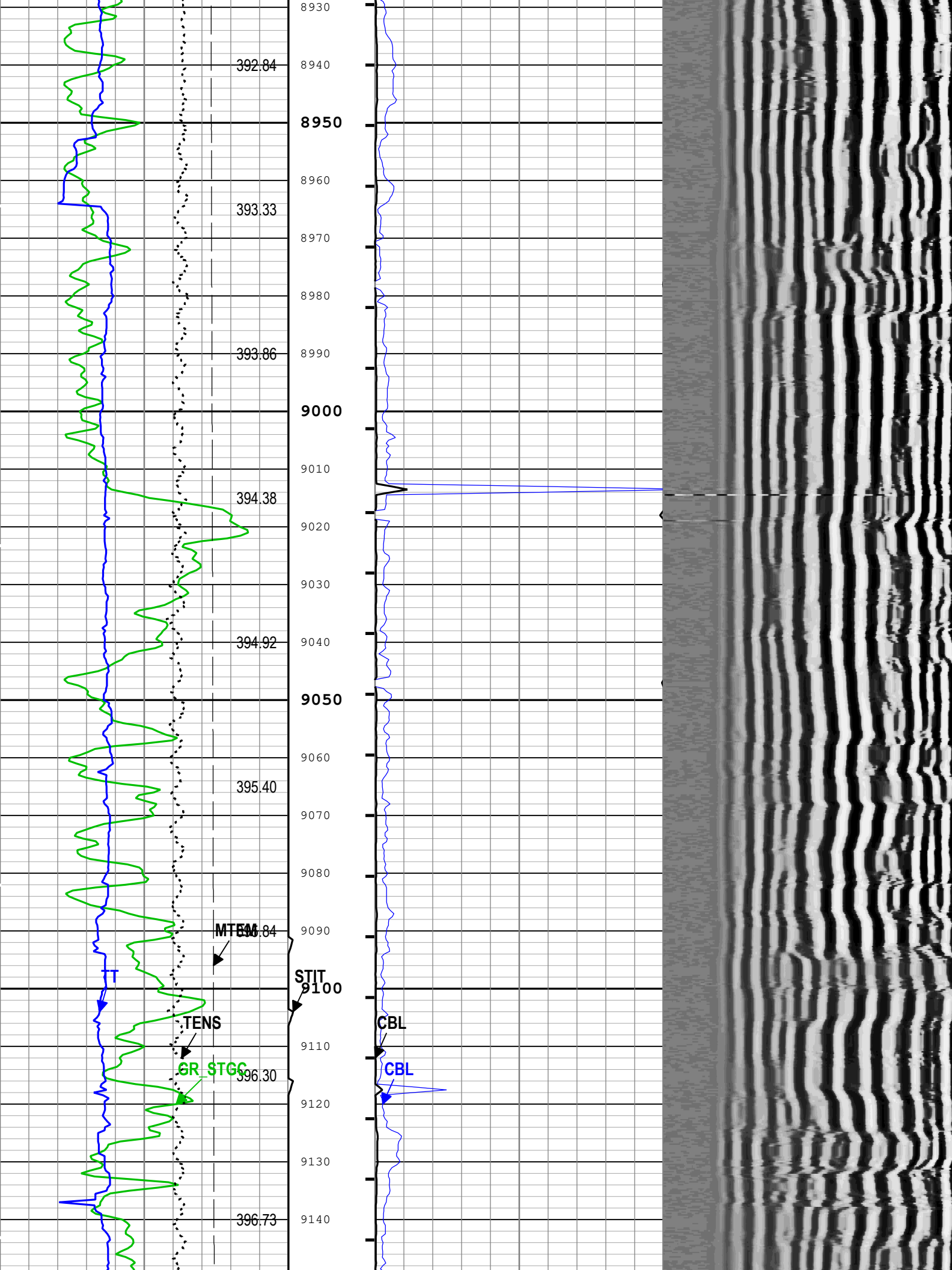


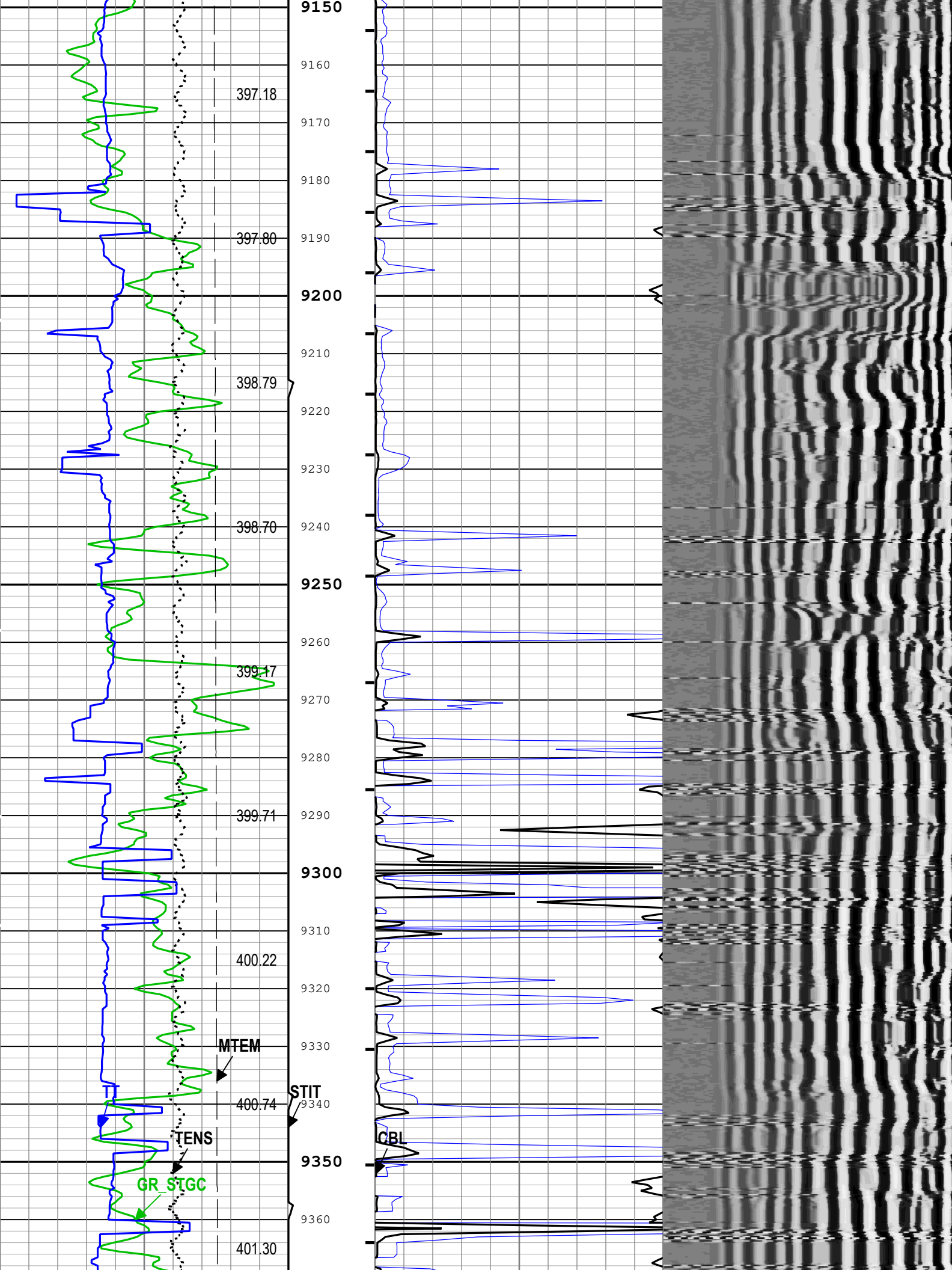


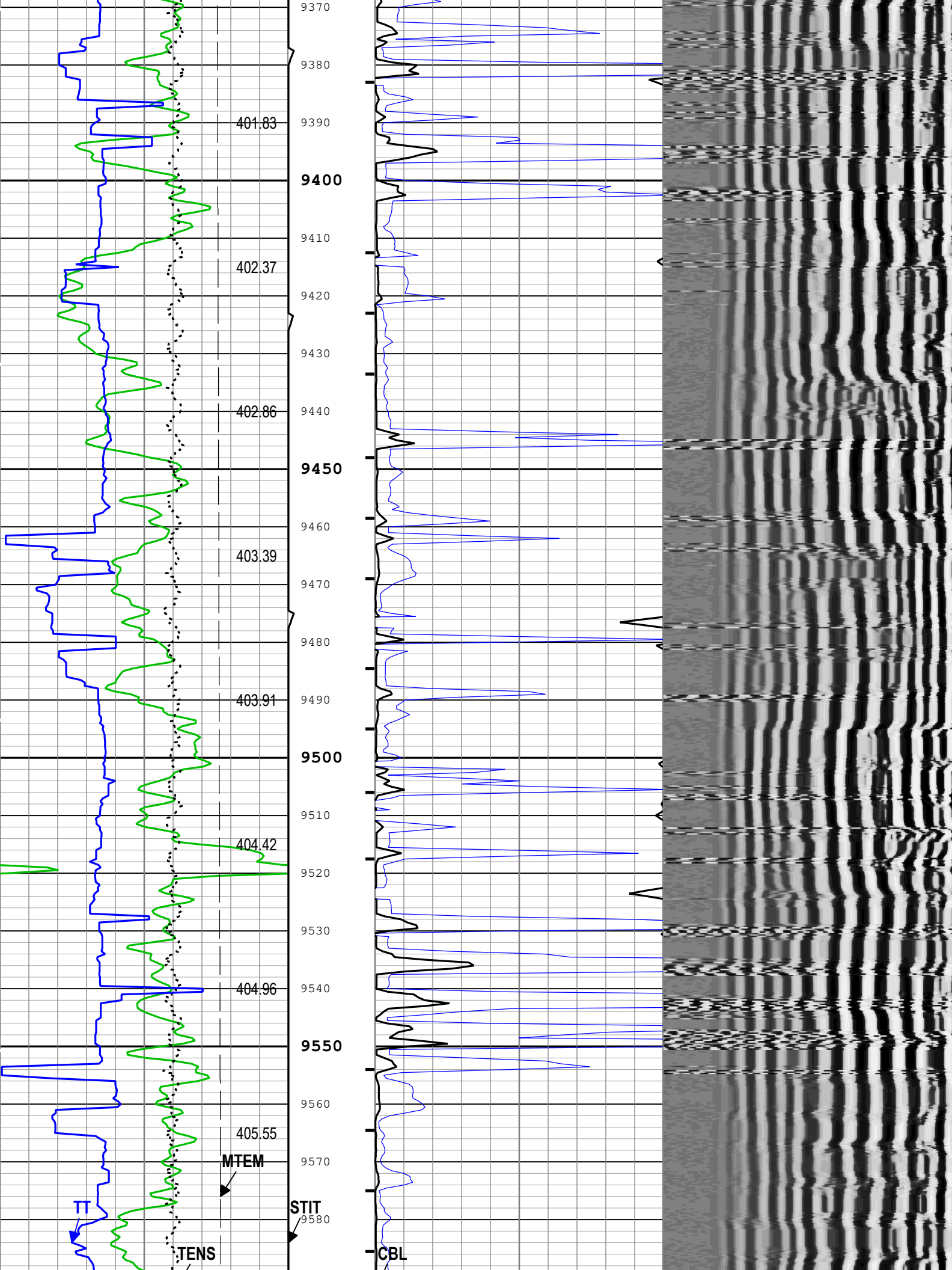


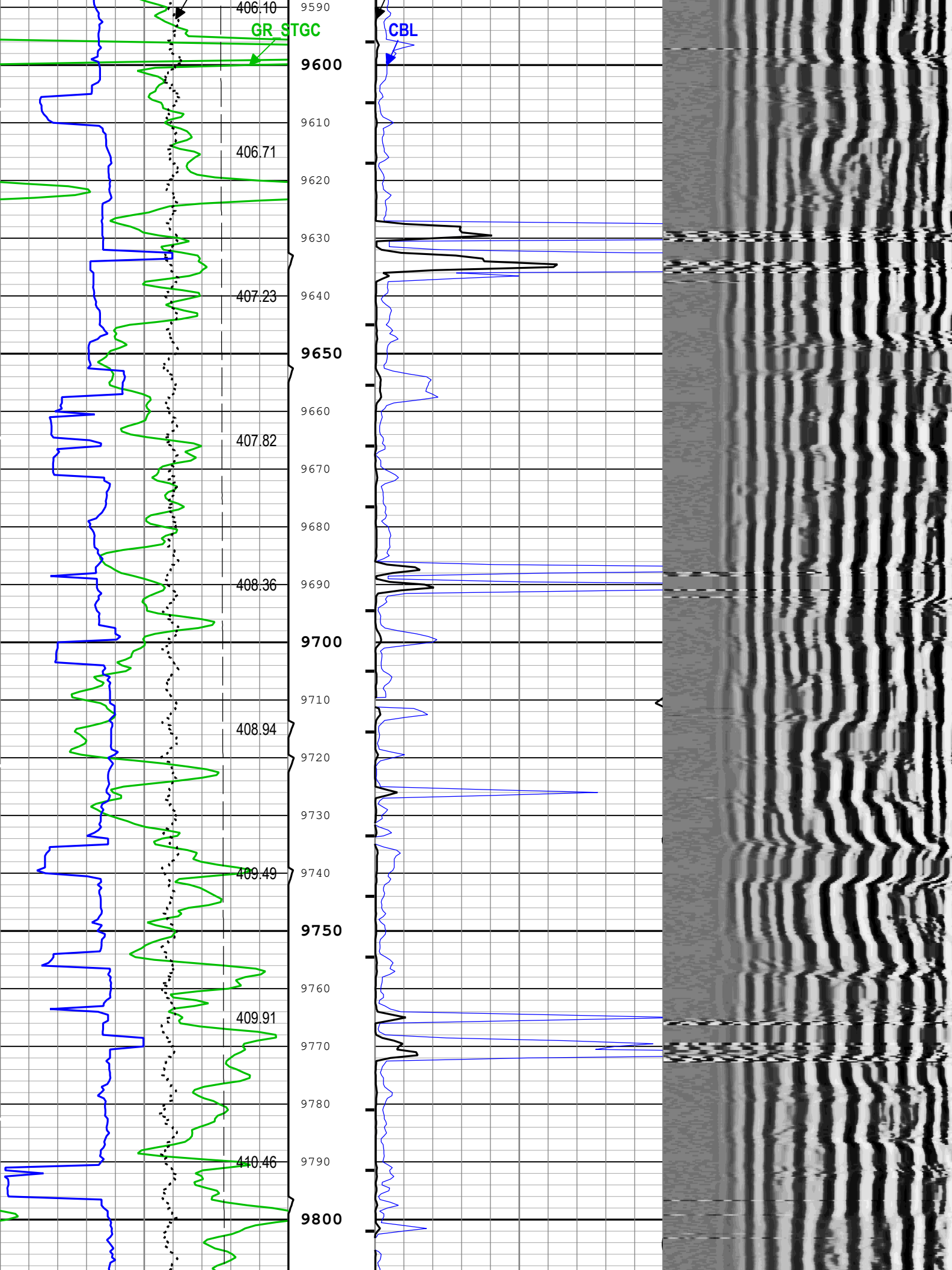


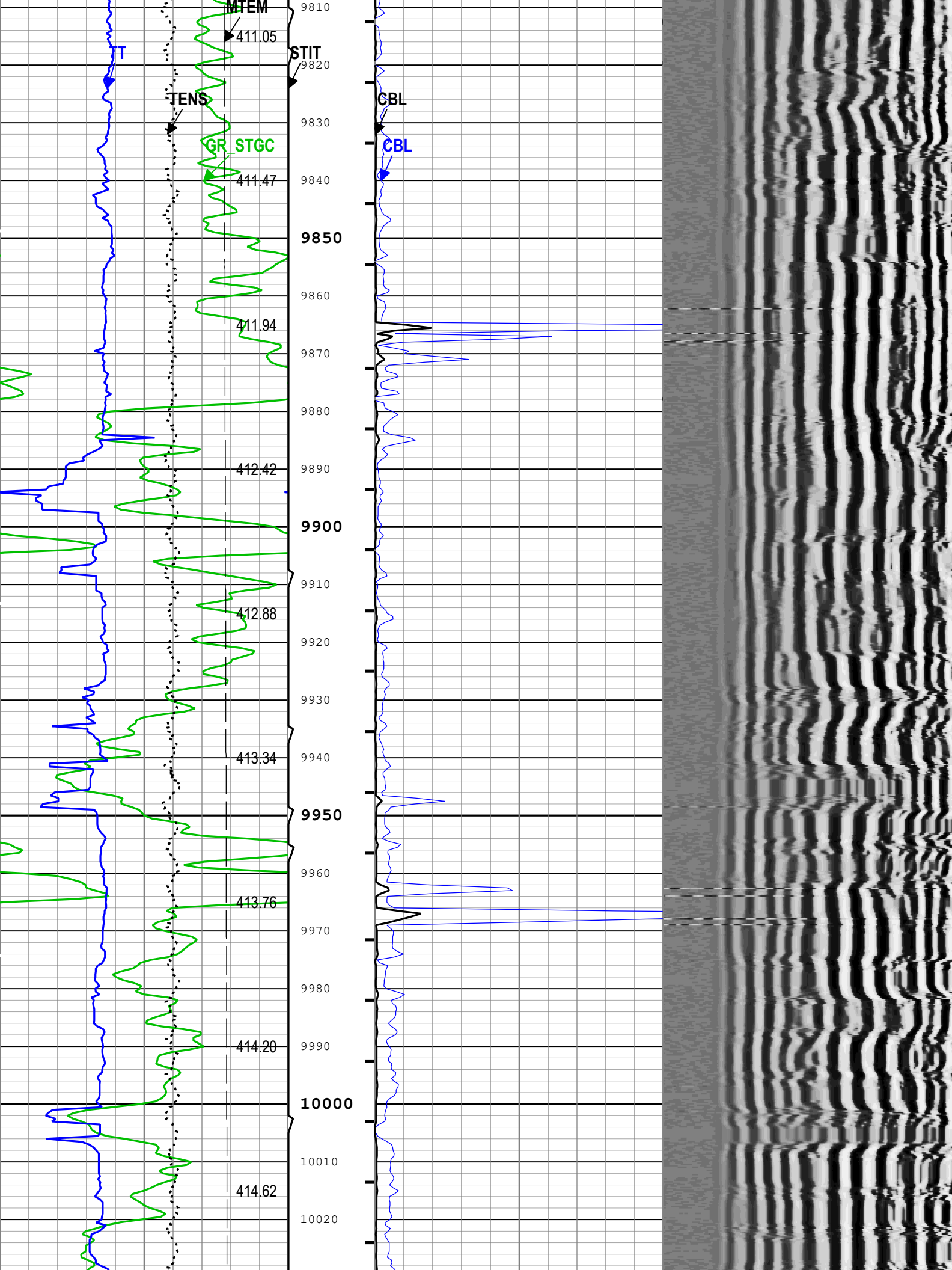


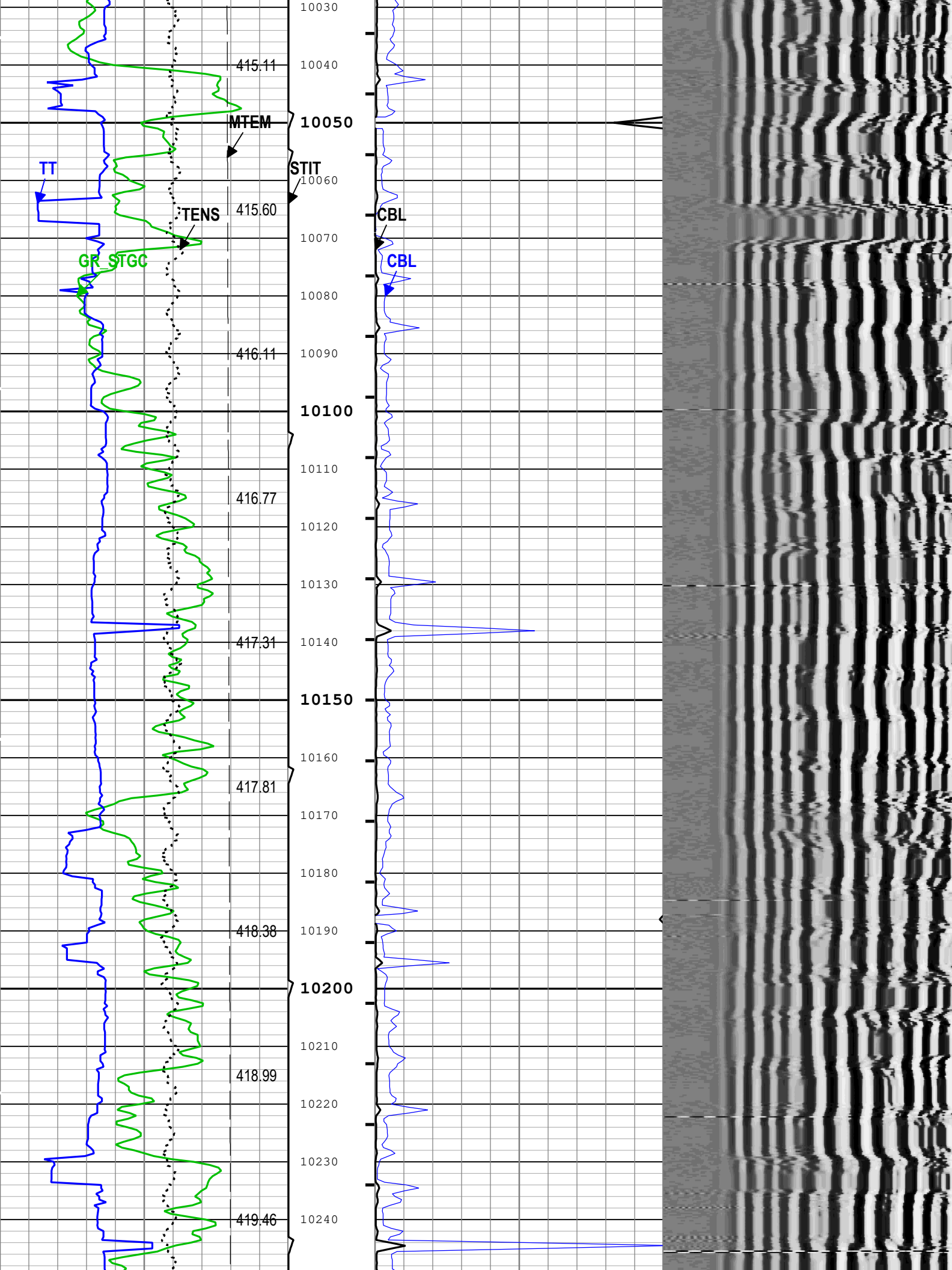


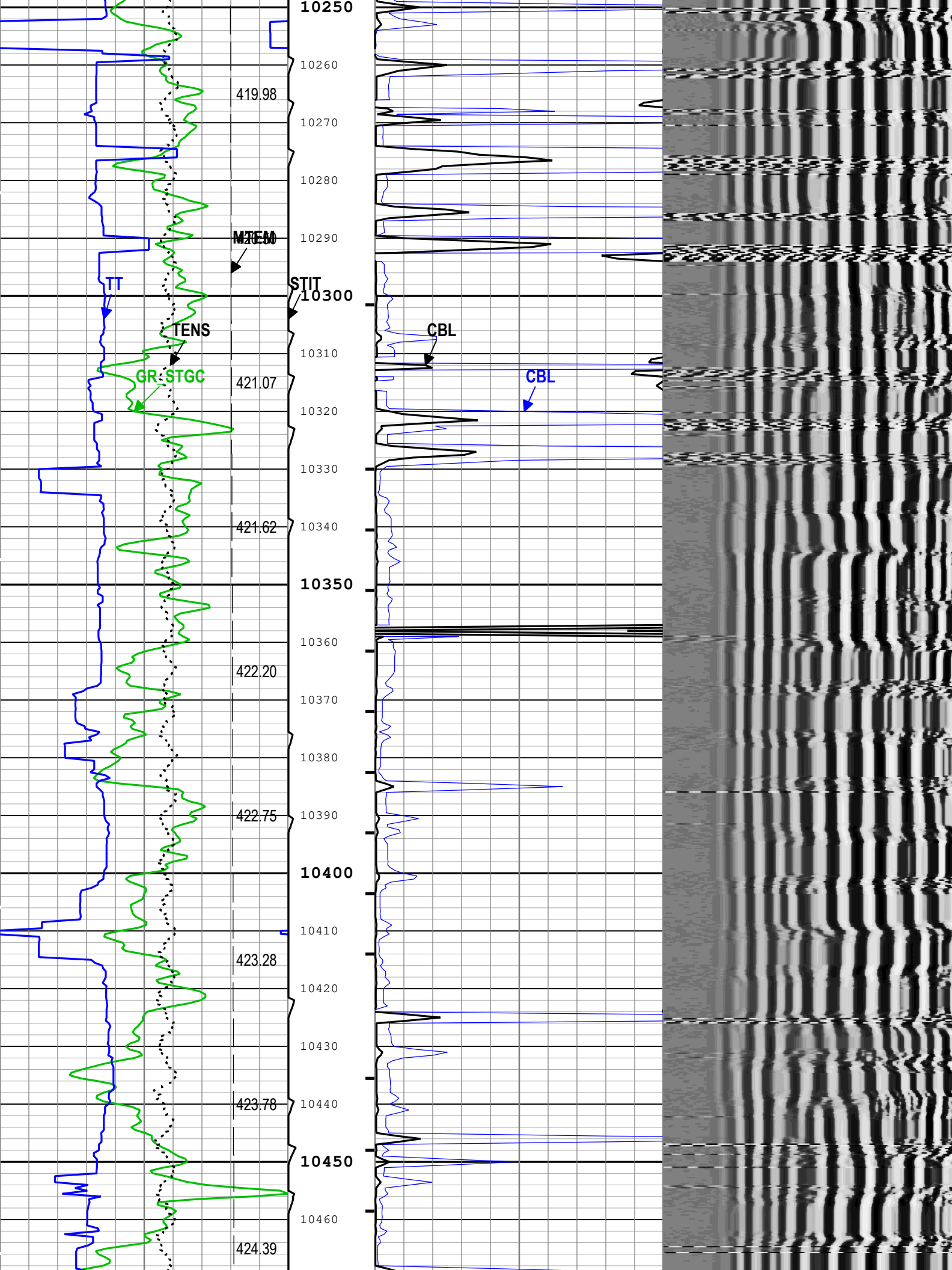


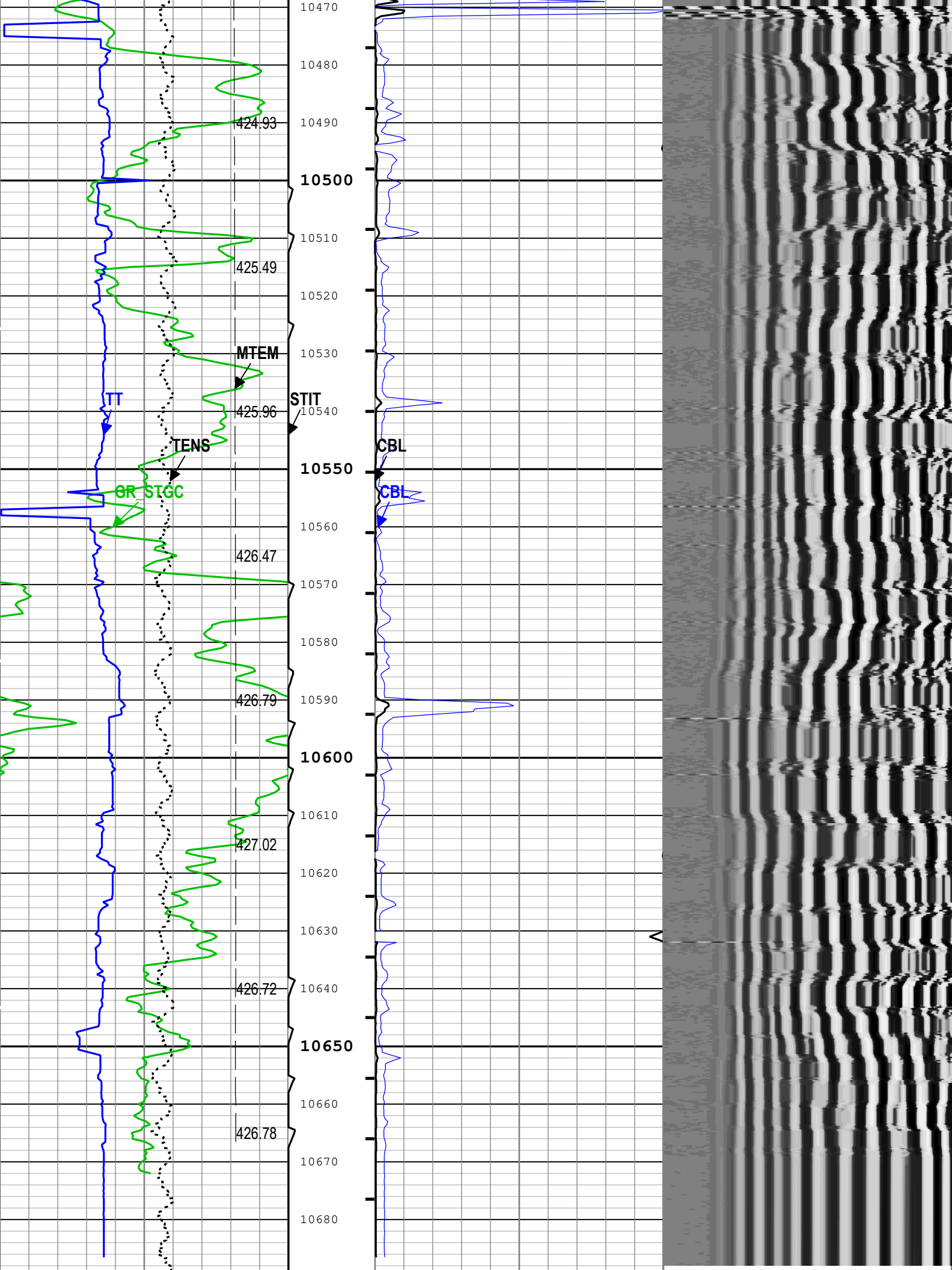


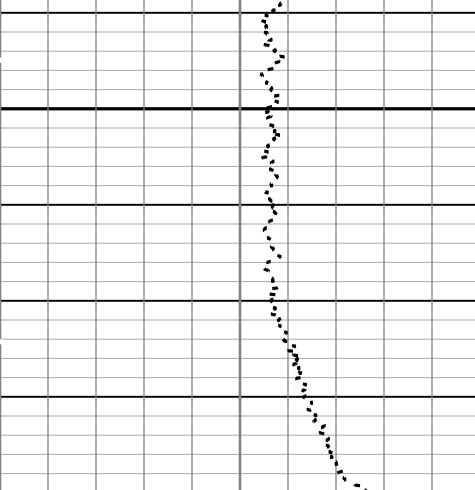












10690

10700

10710

10720

10730

10740

Calibrated Gamma Ray (GR_STGC) QTGC-B

0 gAPI 150

Cable Tension (TENS)

10000	lbf	0
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Transit Time for CBL (TT) QSLT-B

400 us 200

Mud Temperature (MTEM) LEH-MT

100 degF 500

Mud Temperature (MTEM) LEH-MT

degF

Stuck Tool
Indicator,
Total (STIT)

0 ft 50

Cable Drag

Tool_Tot.
Drag

CBL Amplitude (CBL) QSLT-B

0 mV 10

CBL Amplitude (CBL) QSLT-B

0 mV 100

Min	Amplitude	Max
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Amplitude

Max

VDL VariableDensity (VDL) QSLT-B

200	us	1200
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US

1200

- BIEP - Bond Index Event Pips QSLT-B

TIME_1900 - Time Marked every 60.00 (s)

Description: Sonic CBL with VDL	Format: Log (Sonic CBL with VDL)	Index Scale: 5 in per 100 ft	Index Unit: ft	Index Type: Measured Depth	Creation Date: 16-Aug-2021 15:43:59
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Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
AMSG	Auxiliary Minimum Sliding Gate	QSLT-B	180	us
BILI	Bond Index Level for Zone Isolation	QSLT-B	0.8	
CBLG	CBL Gate Width	QSLT-B	80	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	QSLT-B	Depth Zoned	mV
CMCF	CBL Cement Type Compensation Factor	QSLT-B	1	
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.54	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DETE	Delta-T Detection	QSLT-B	E1	
DFAD	Slim Sonic DFAD Computation Control	QSLT-B	Surface	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
FCF	CBL Fluid Compensation Factor	QSLT-B	1.01	
GOBO	Good Bond	QSLT-B	Depth Zoned	mV
GOBO_CURR	Good Bond in Arbitrary Cement	QSLT-B	Depth Zoned	mV
GR_MULTIPLIER	Gamma Ray Multiplier	QTGC-B	1	
MAHTR	Manual High Threshold Reference for first arrival detection	QSLT-B	40	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	QSLT-B	Depth Zoned	dB/ft
MCI	Minimum Cemented Interval for Isolation	QSLT-B	Depth Zoned	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	QSLT-B	30	
MSA	Minimum Sonic Amplitude	QSLT-B	Depth Zoned	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	QSLT-B	Depth Zoned	mV

MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	QSLT-B	Depth Zoned	mV
NMSG	Near Minimum Sliding Gate	QSLT-B	250	us
NMXG	Near Maximum Sliding Gate	QSLT-B	750	us
NUMP	Number of Detection Passes	QSLT-B	2	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SFAF	Sonic Formation Attenuation Factor	QSLT-B	0	dB/ft
SGAD	Sliding Gate Status	QSLT-B	Off	
SGCL	Sliding Gate Closing Delta-T	QSLT-B	170	us/ft
SGCW	Sliding Gate Closing Width	QSLT-B	33	us
SGDT	Sliding Gate Delta-T	QSLT-B	Time Zoned	us/ft
SGW	Sliding Gate Width	QSLT-B	80	us
SLEV	Signal Level for AGC	QSLT-B	5000	mV
VDLG	VDL Manual Gain	QSLT-B	5	
ZCMT	Acoustic Impedance of Cement	QSLT-B	6.8	Mrayl
ZCMT_NEAT	Acoustic Impedance of Cement in Neat Cement	QSLT-B	6.8	Mrayl

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
CBRA	64	83	10738
CBRA	0	10738	10740
GOBO	9.2	83	10738
GOBO	0	10738	10740
GOBO_CURR	9.2	83	10738
GOBO_CURR	0	10738	10740
MATT_CURR	8.27	83	10738
MATT_CURR	0	10738	10740
MCI	21.68	83	1629
MCI	14.81	1629	5132
MCI	10	5132	10738
MCI	0	10738	10740
MSA	5.66	83	10738
MSA	0	10738	10740
MSA_CURR	5.66	83	10738
MSA_CURR	0	10738	10740

All depth are actual.

Time Zone Parameters

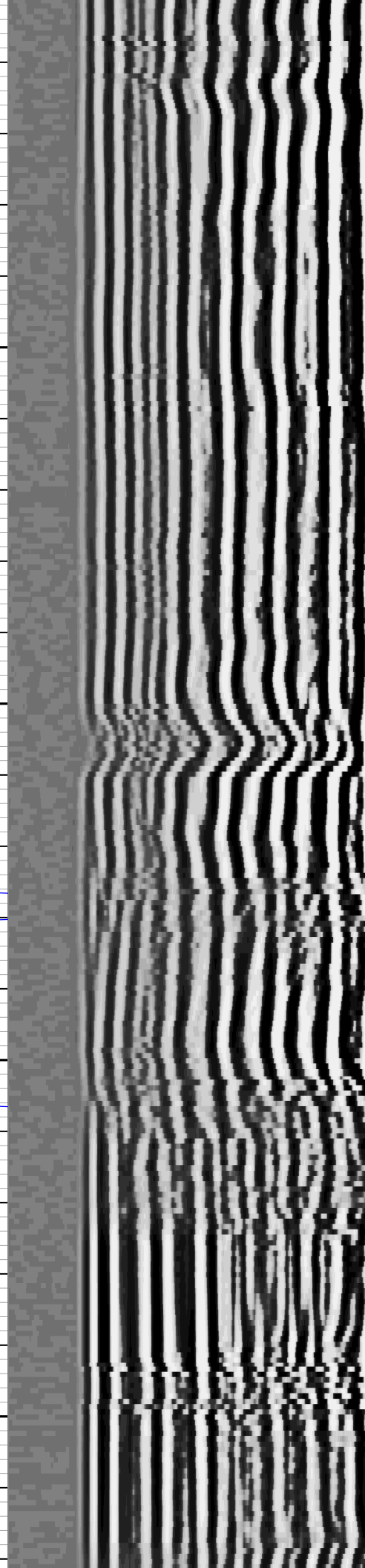
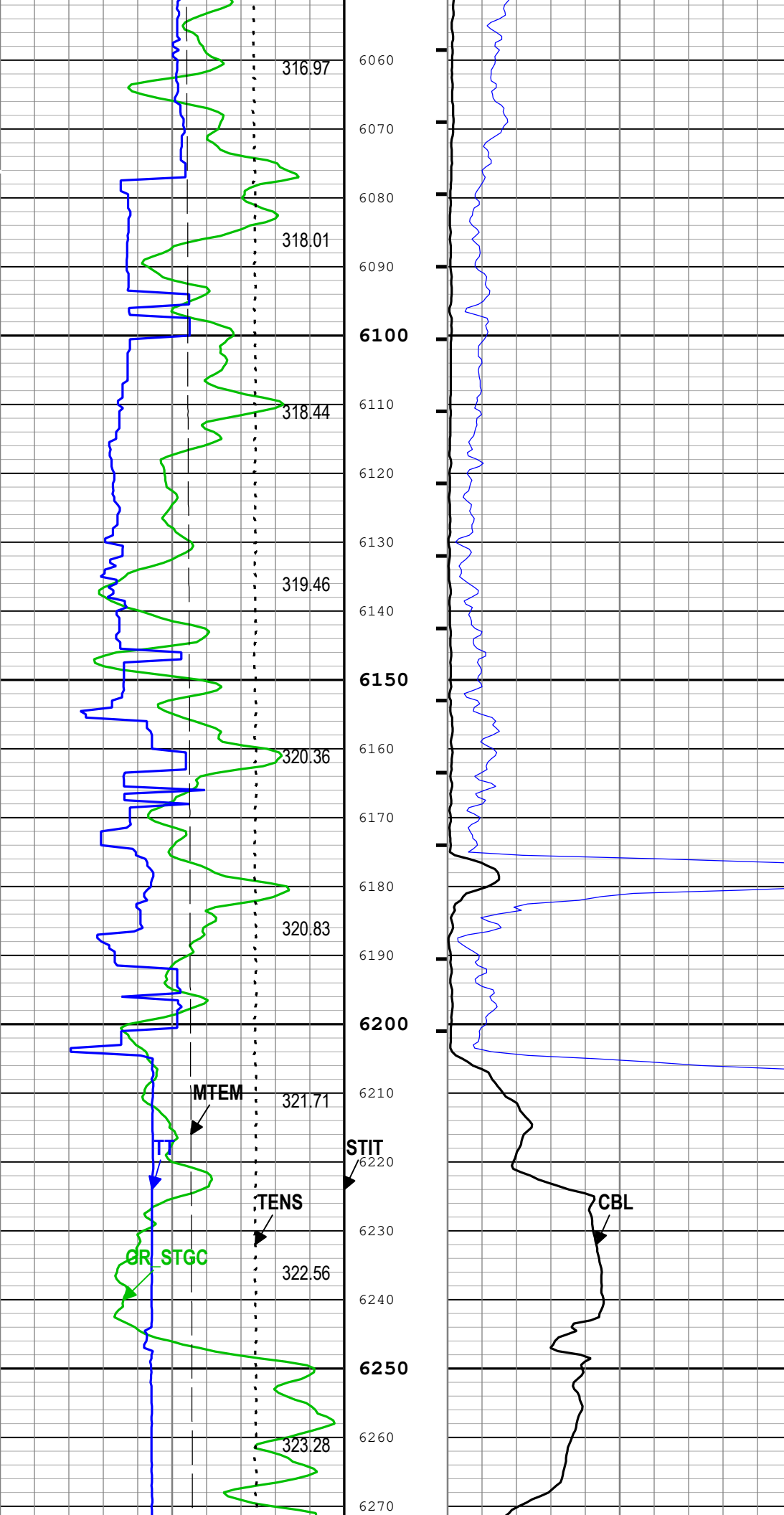
Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
SGDT	65	16-Aug-2021 11:48:17	16-Aug-2021 13:48:40	10739.97	3656.67
SGDT	65	16-Aug-2021 13:48:40	16-Aug-2021 14:46:46	3656.67	156.15

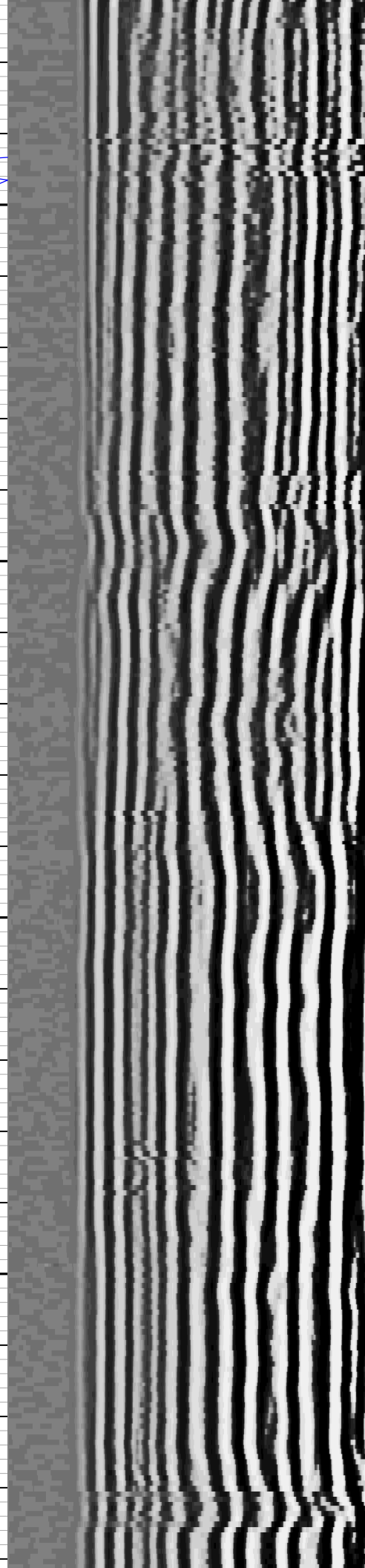
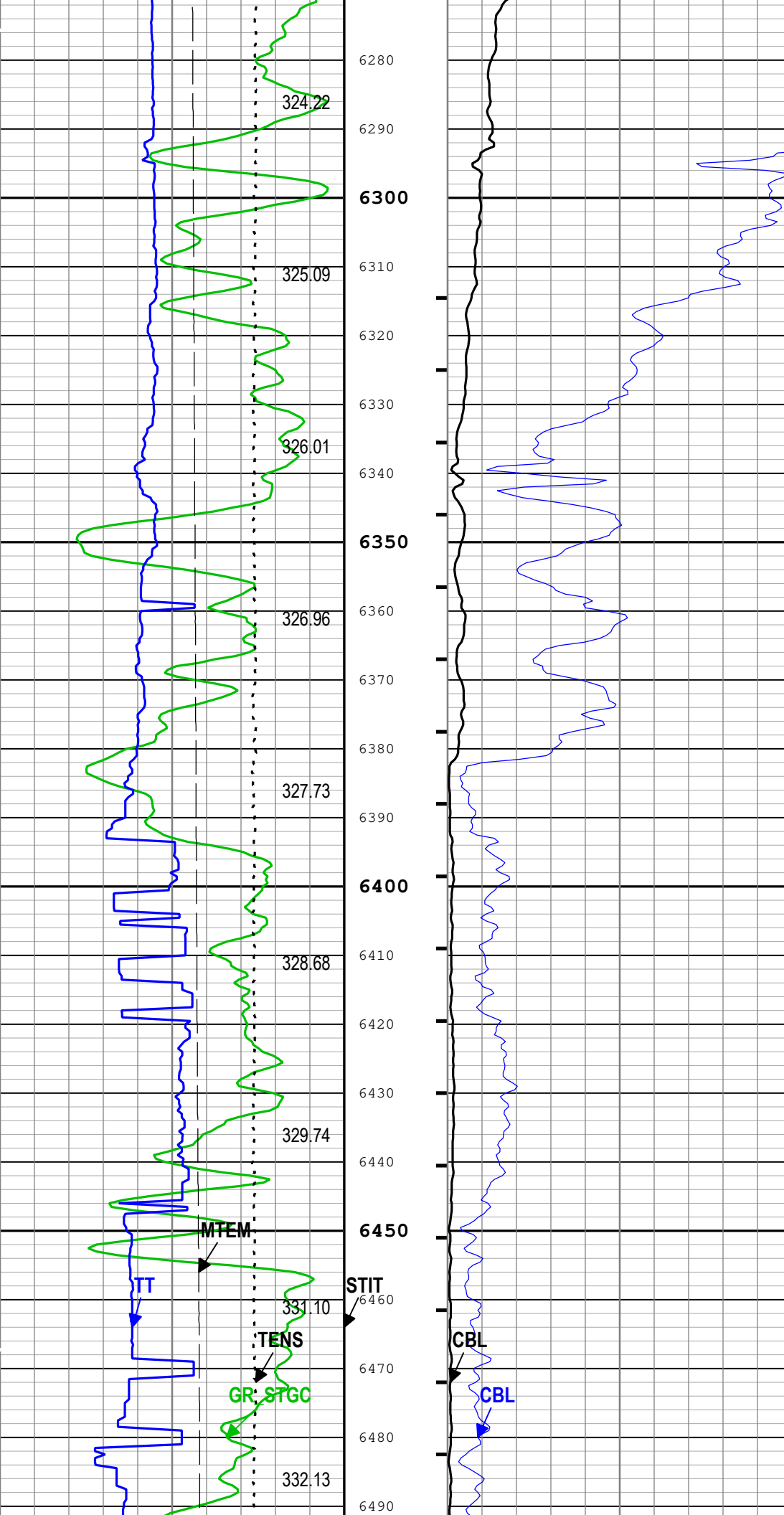
All depth are at tool zero.

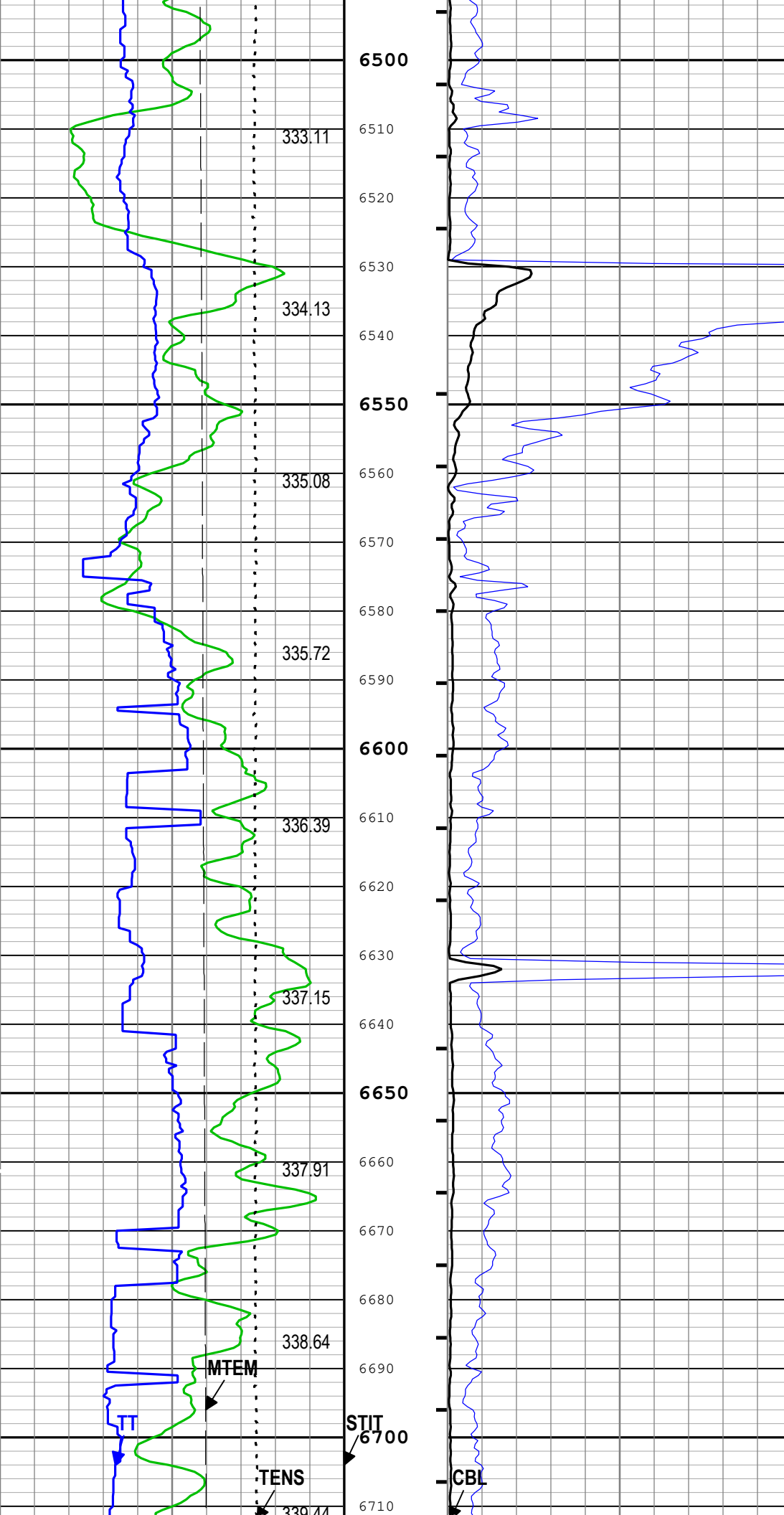
Tool Control Parameters

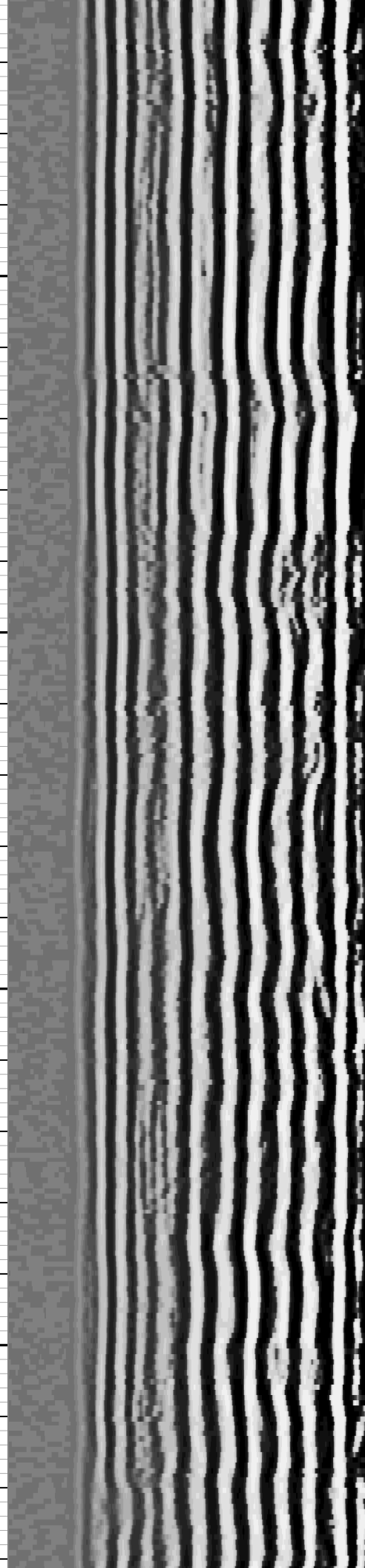
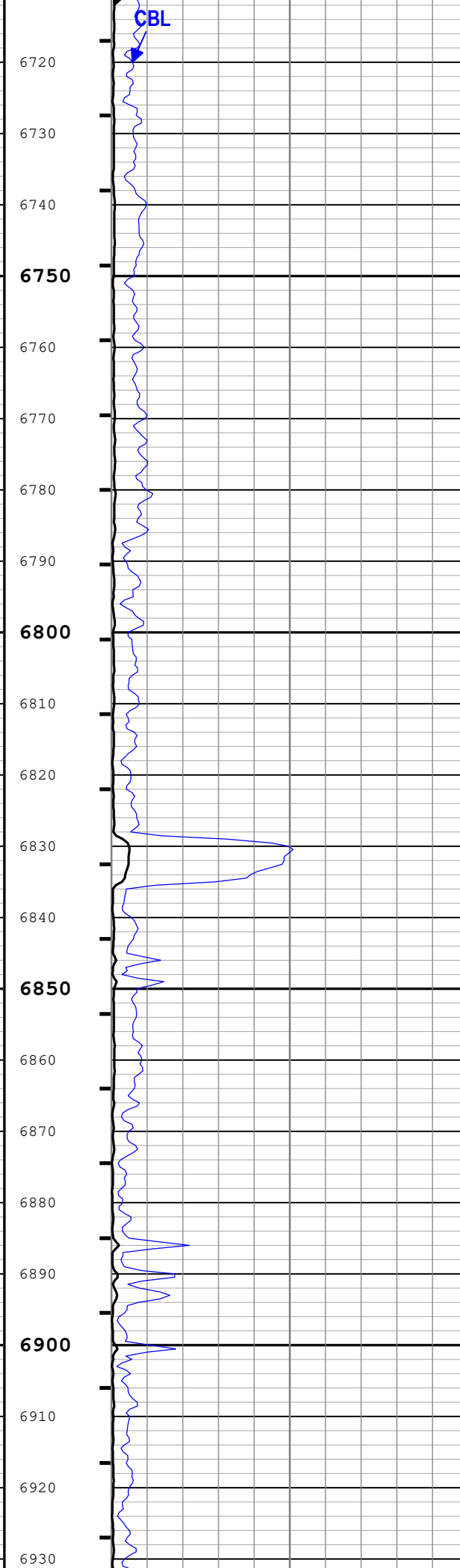
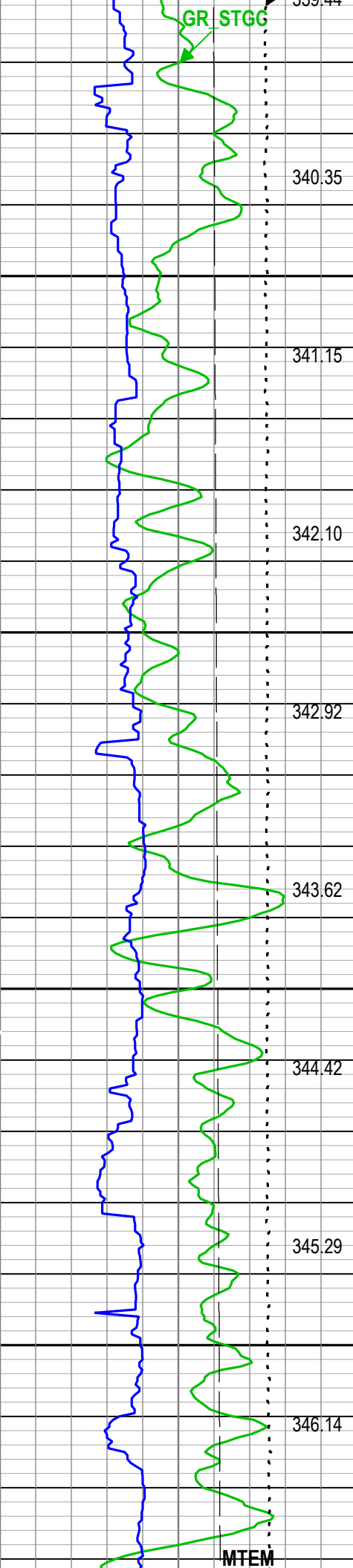
One: Parameters

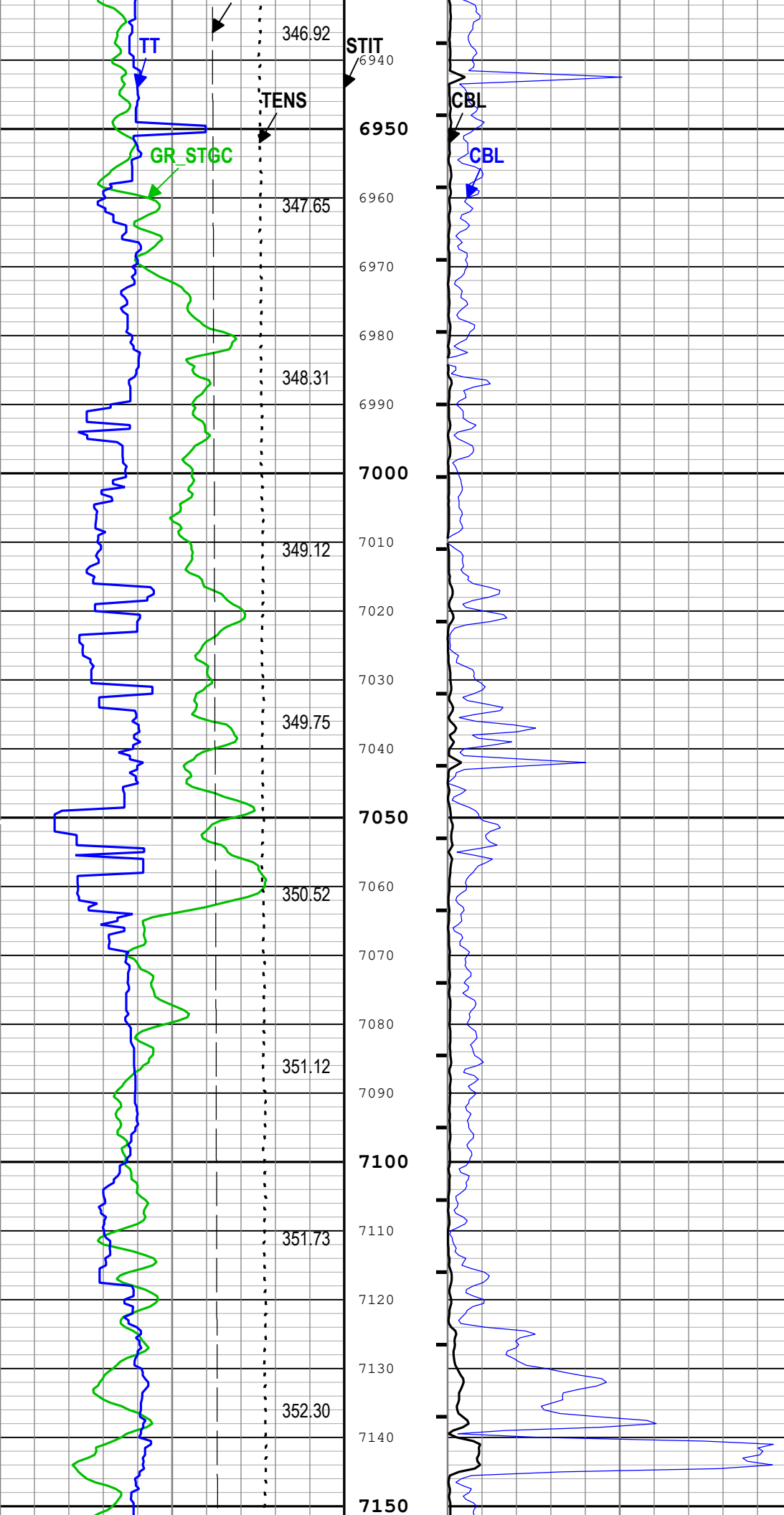
Parameter	Description	Tool	Value	Unit
ACSS	Attenuation Mode CBL Source Switch	QSLT-B	CBL	
DDE1	Digitizing Delay 1	QSLT-B	40	us
DDE2	Digitizing Delay 2	QSLT-B	40	us
DSIN	Digitizer Sample Interval	QSLT-B	10	us
DWCO	Digitizer Word Count	QSLT-B	256	
GAI1	SSLT Manual Gain 1	QSLT-B	High	

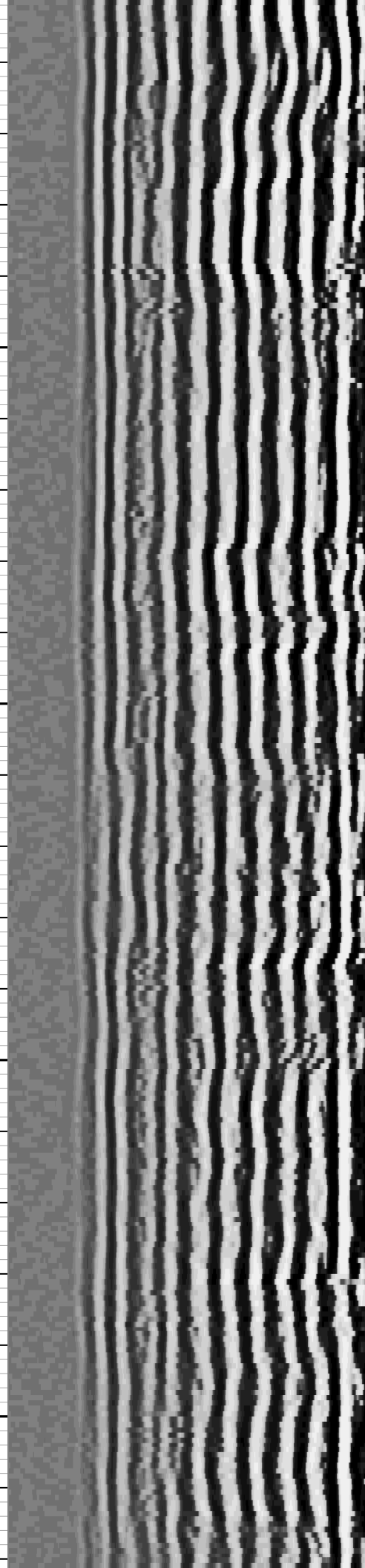
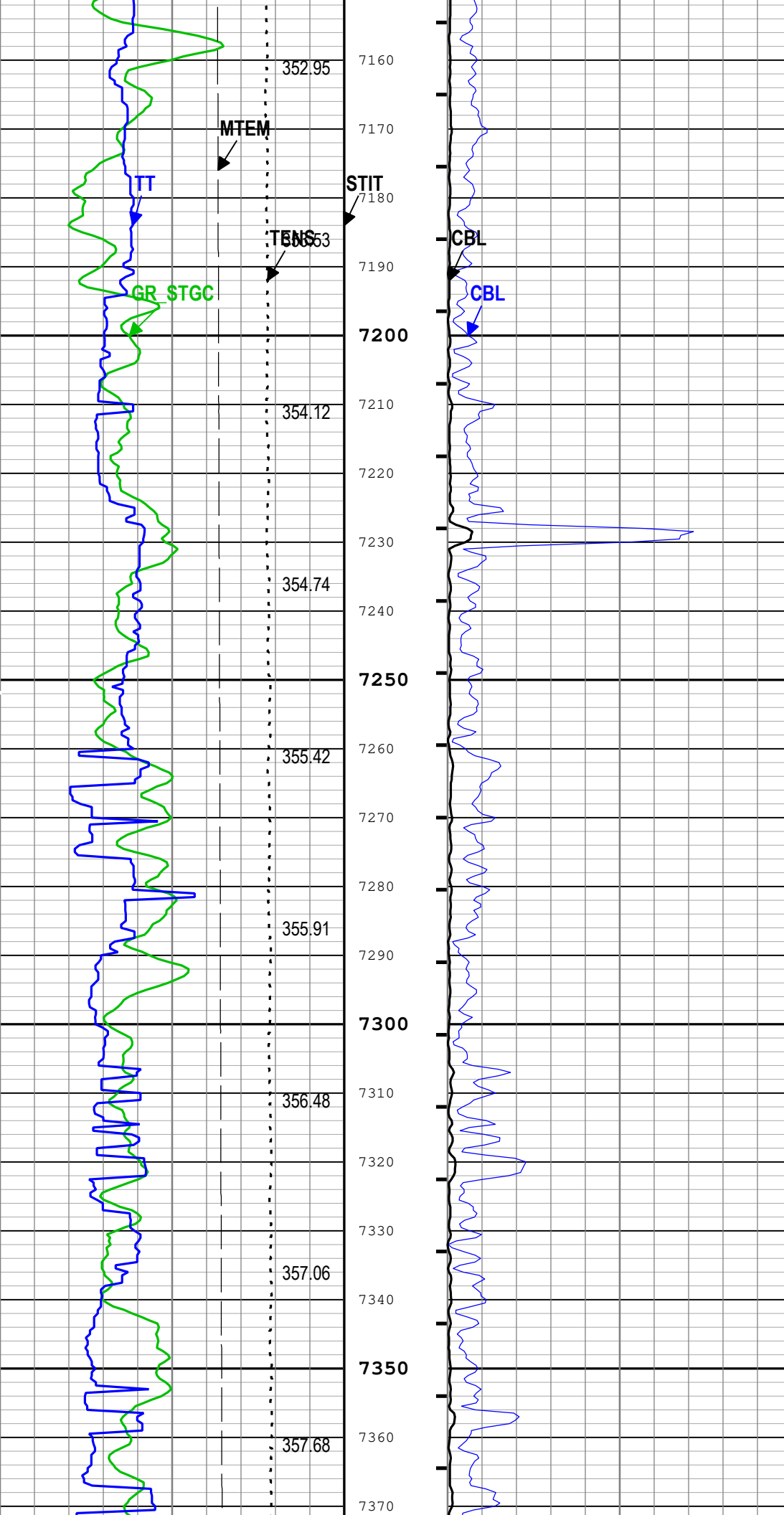


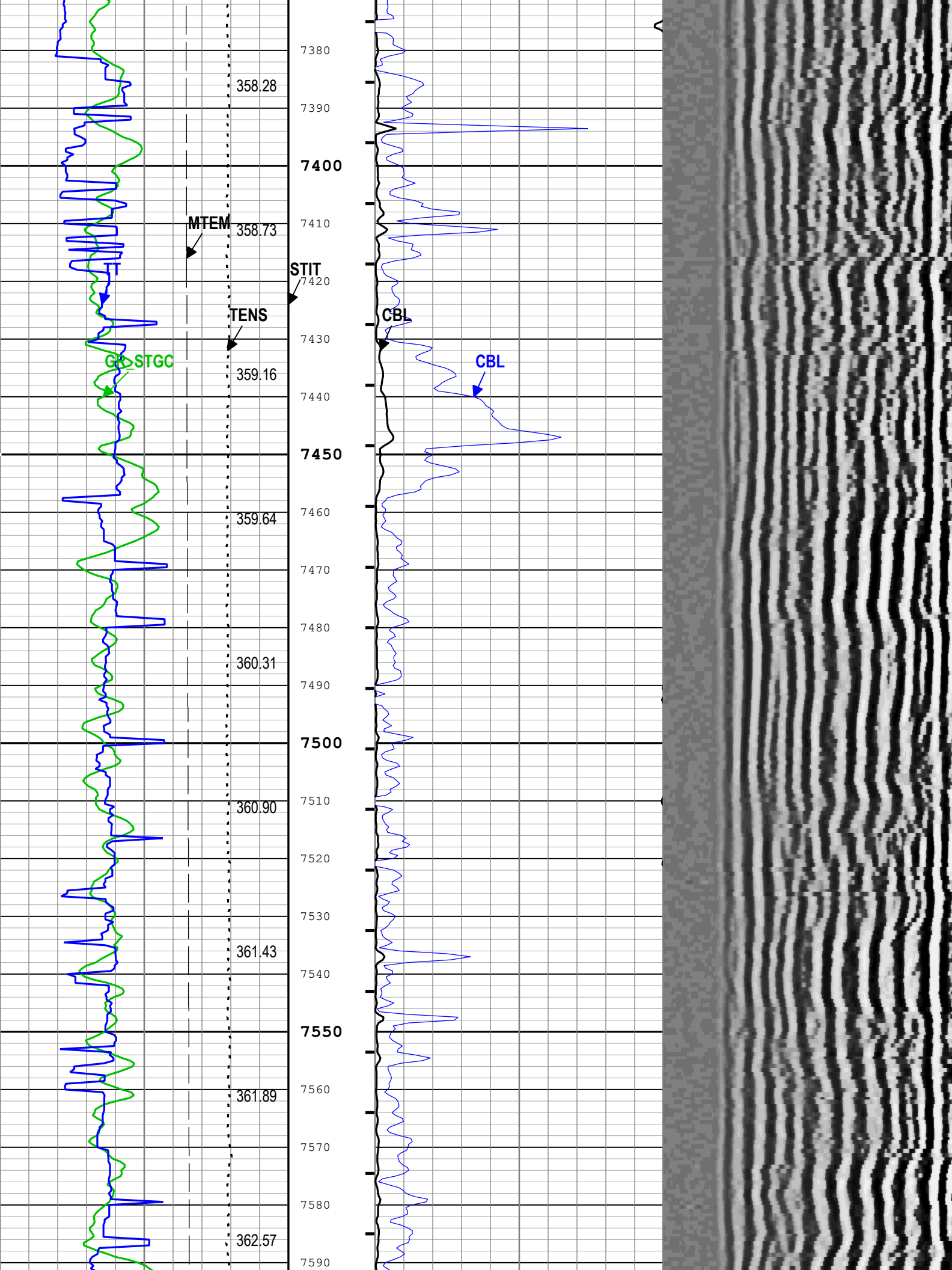


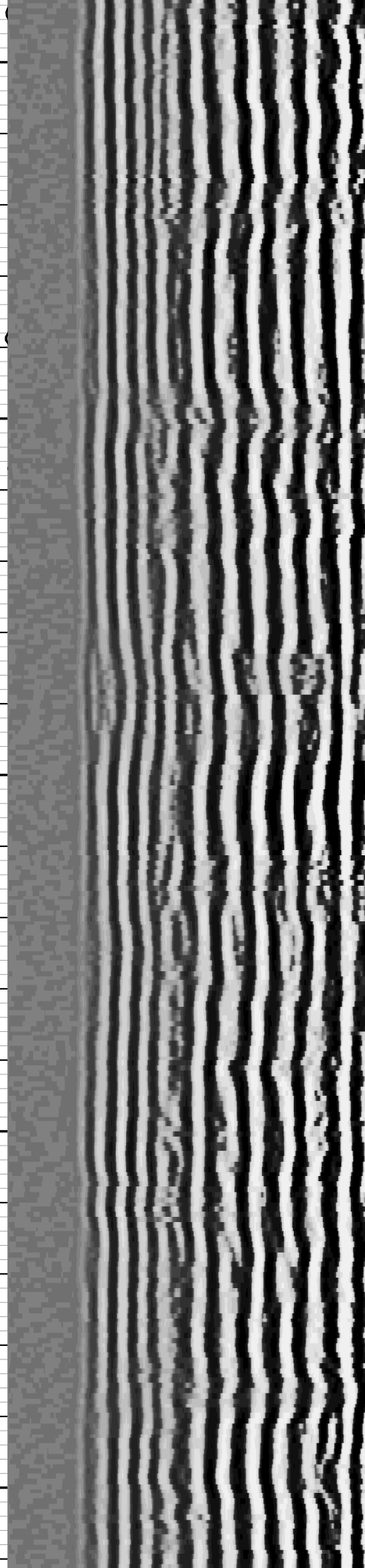
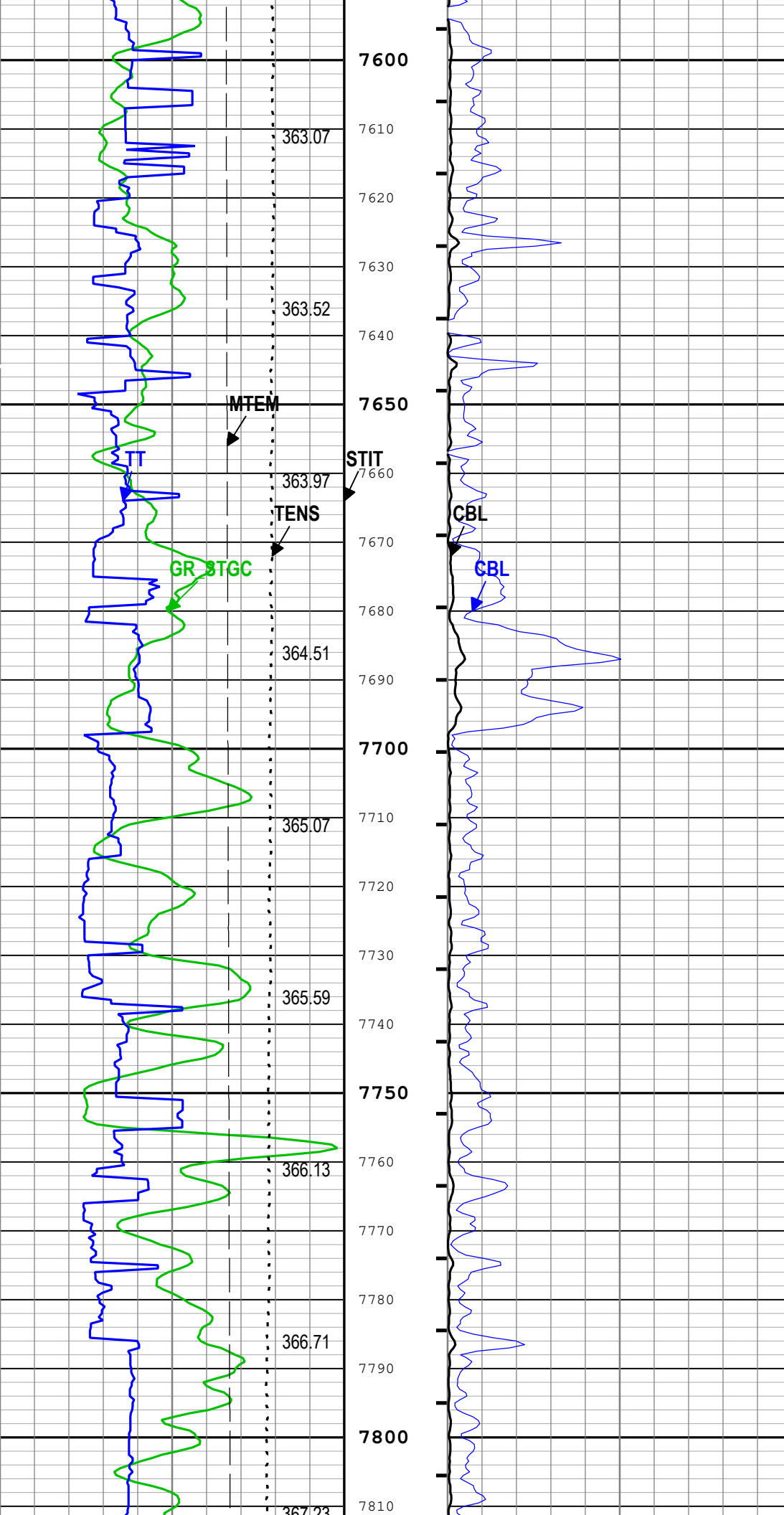


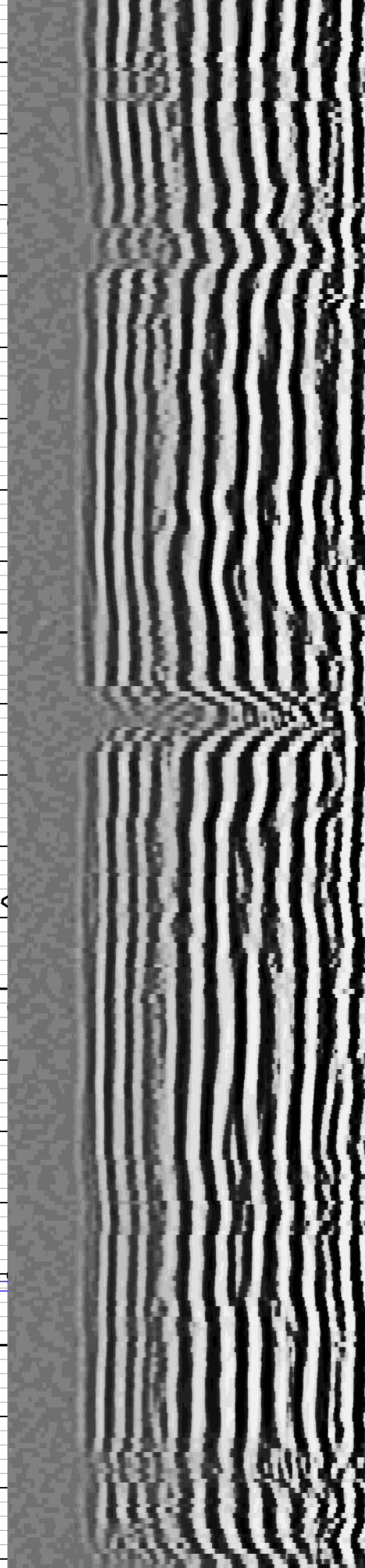
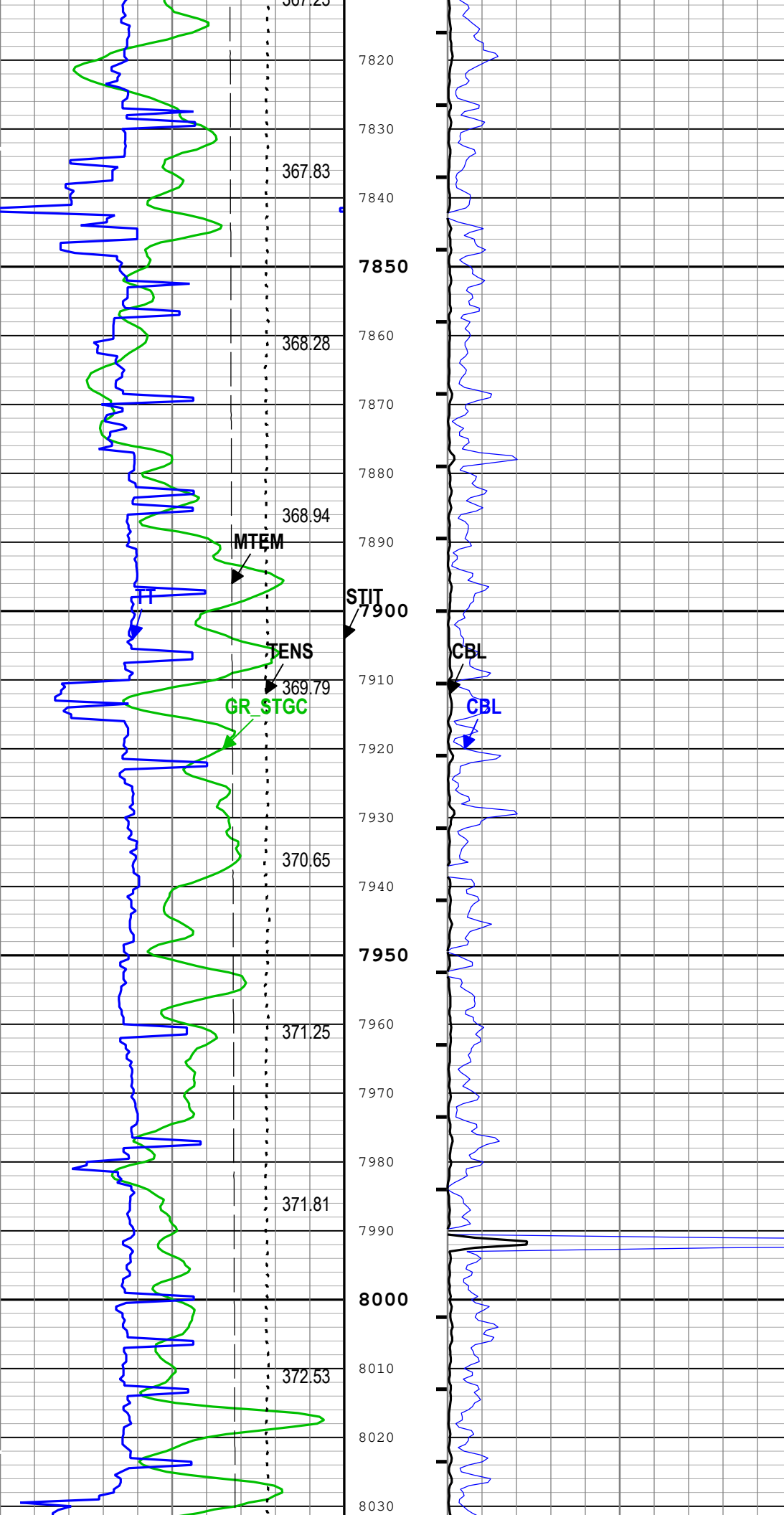


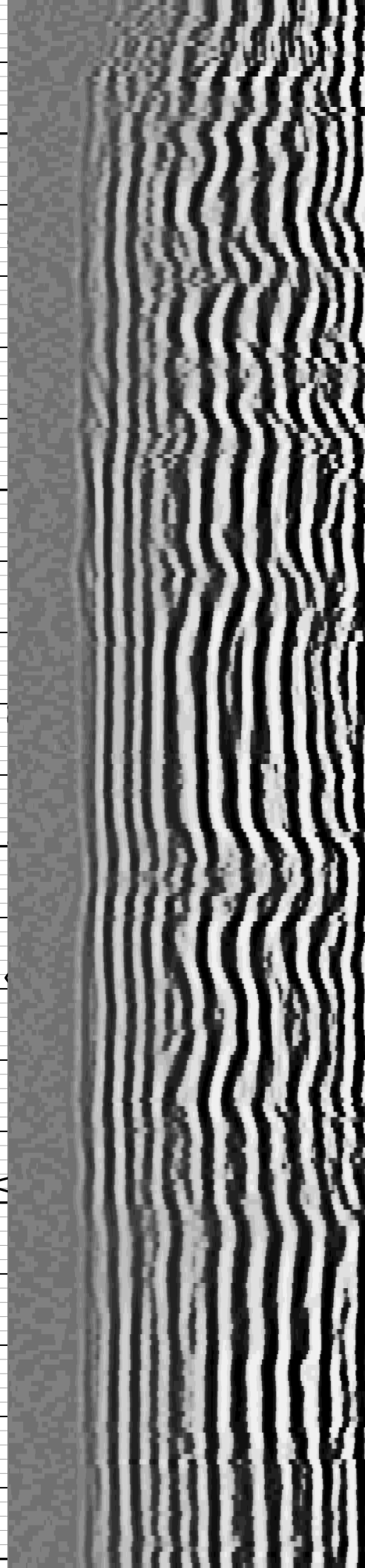
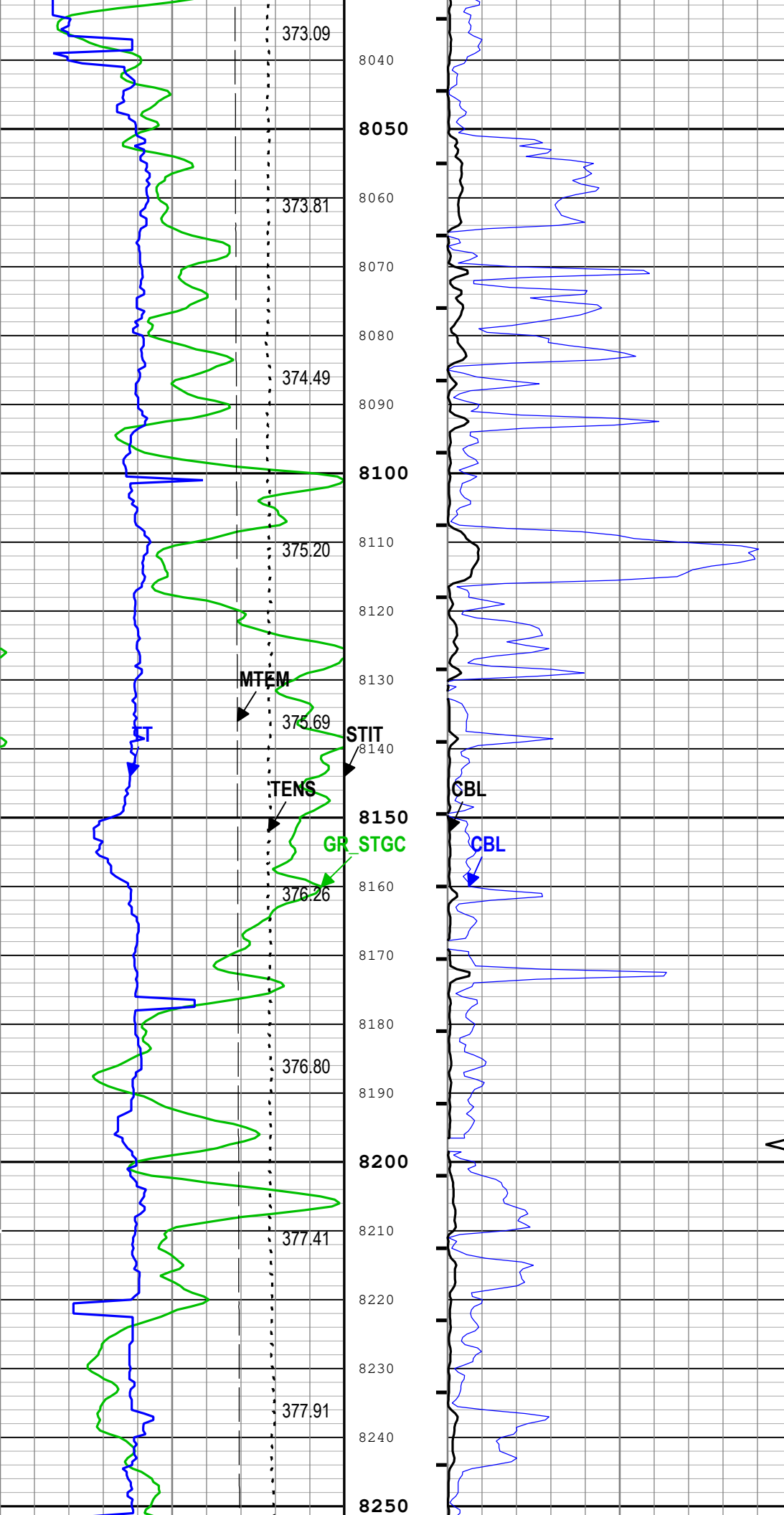


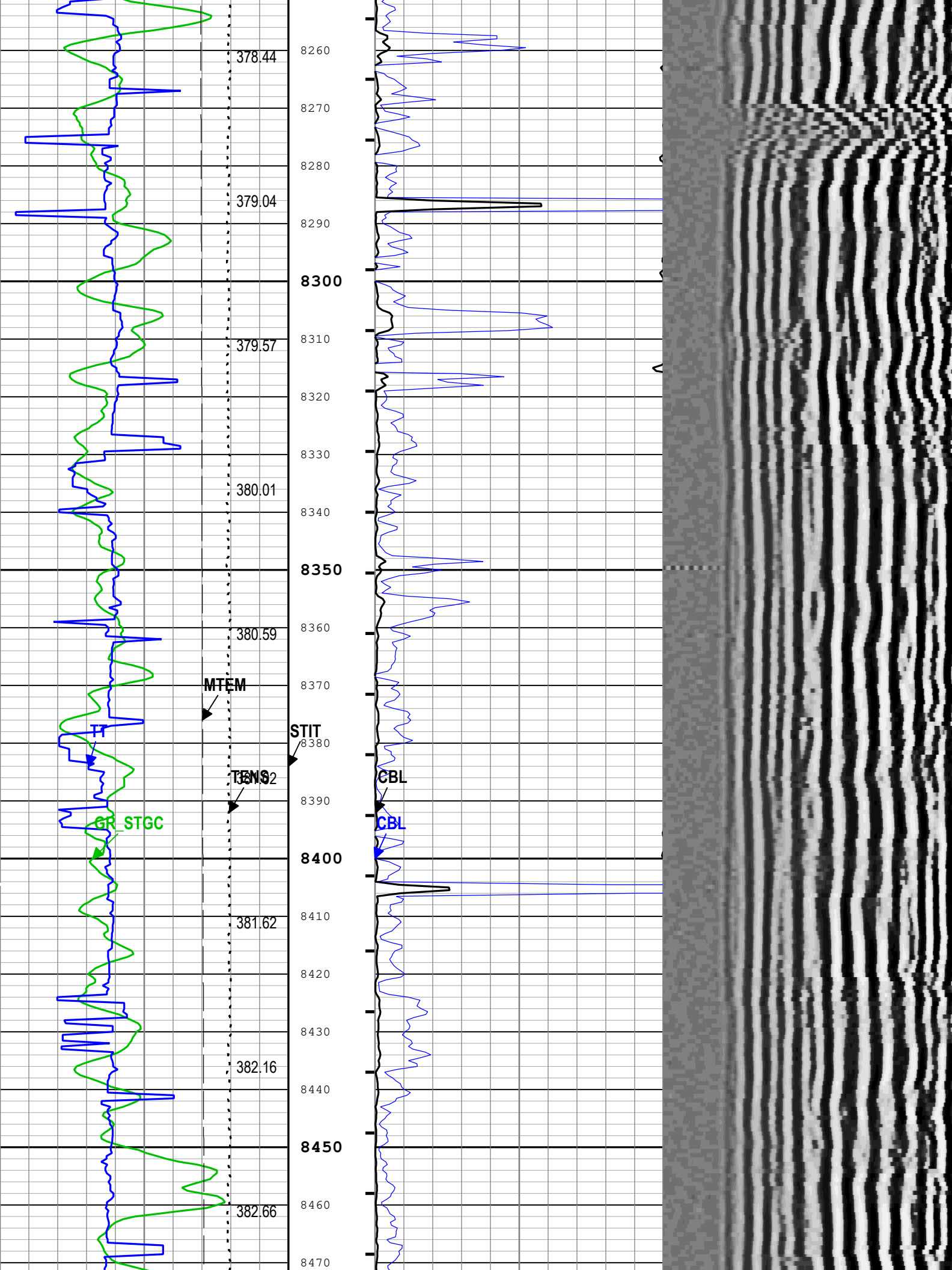


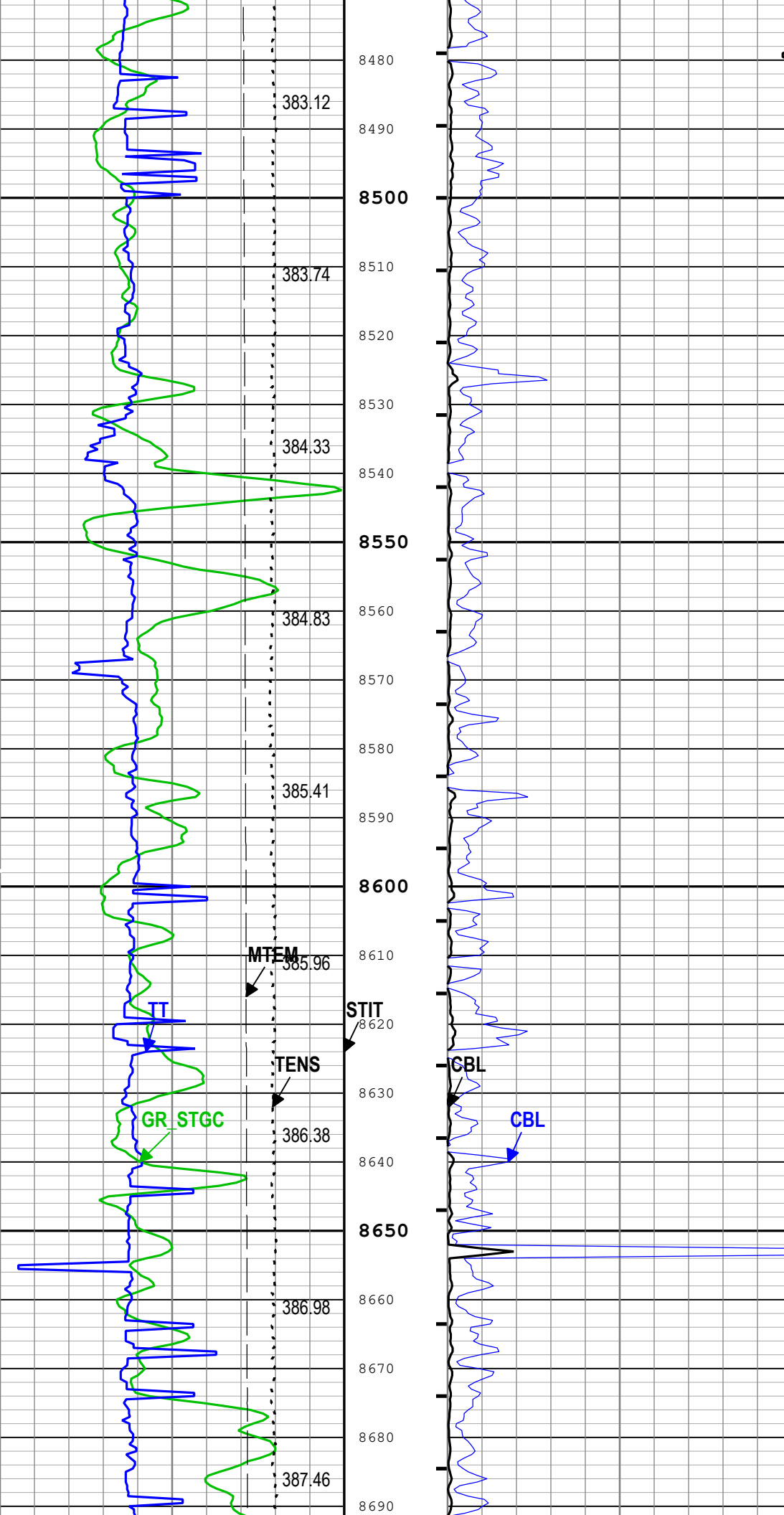


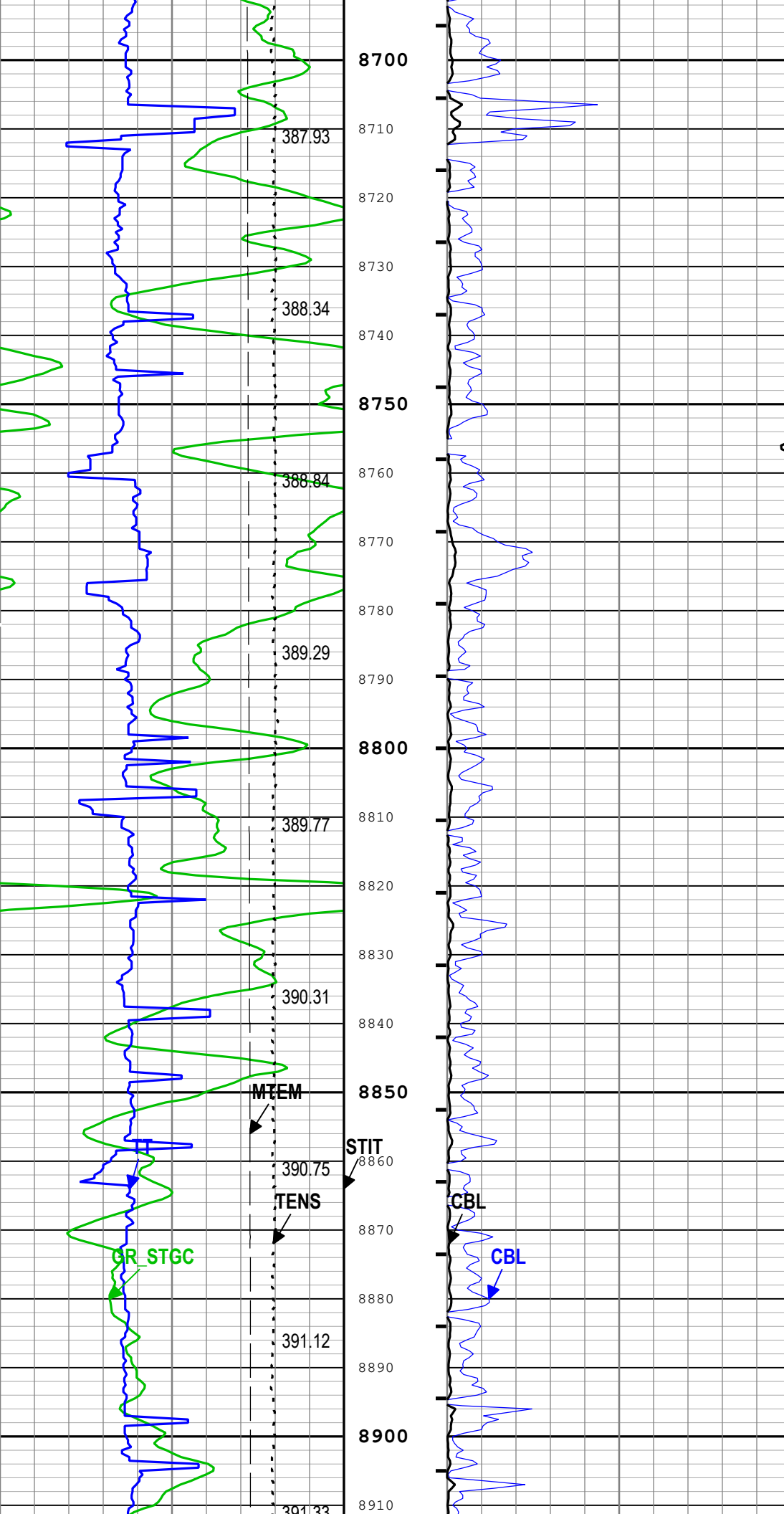


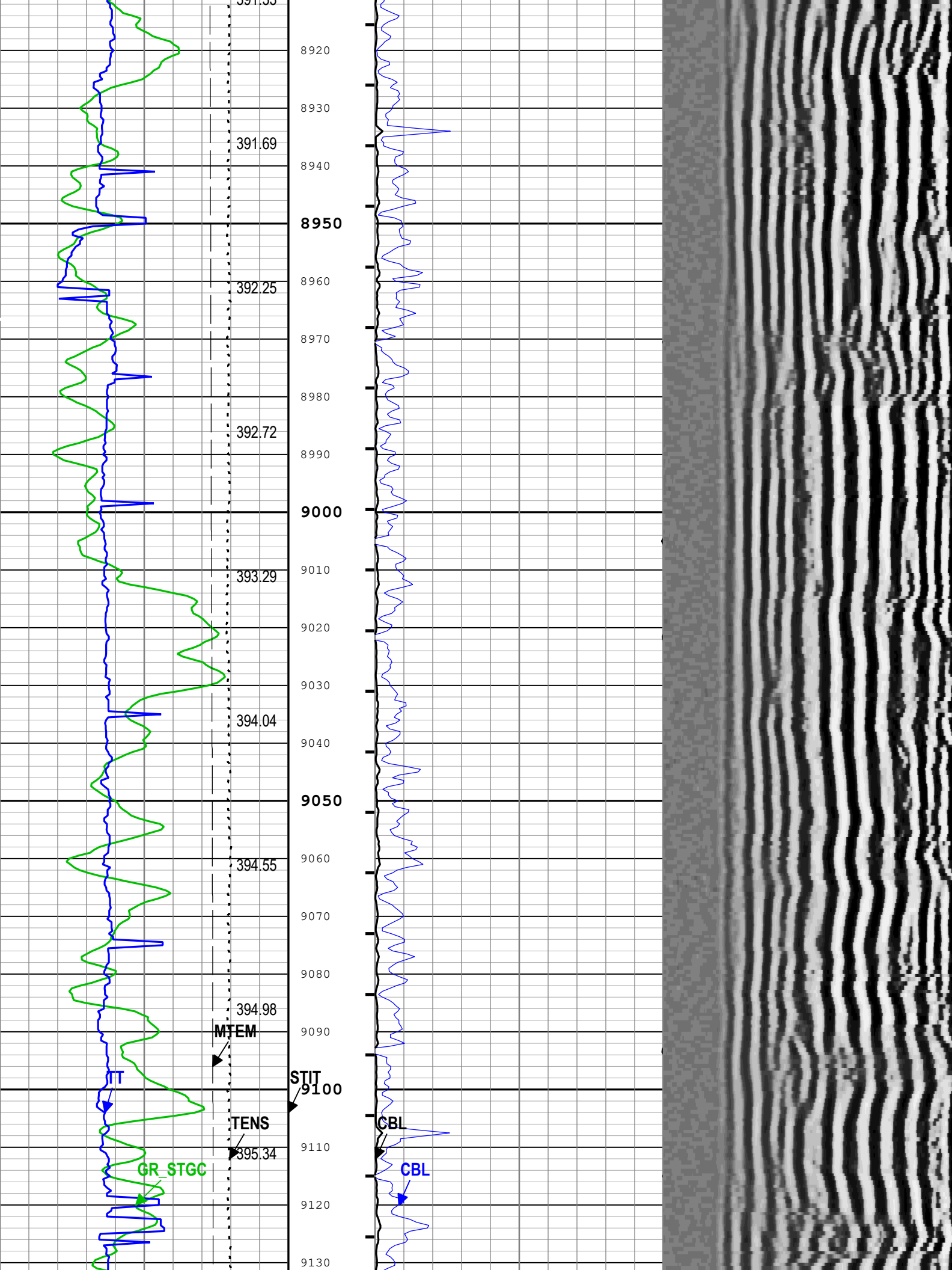


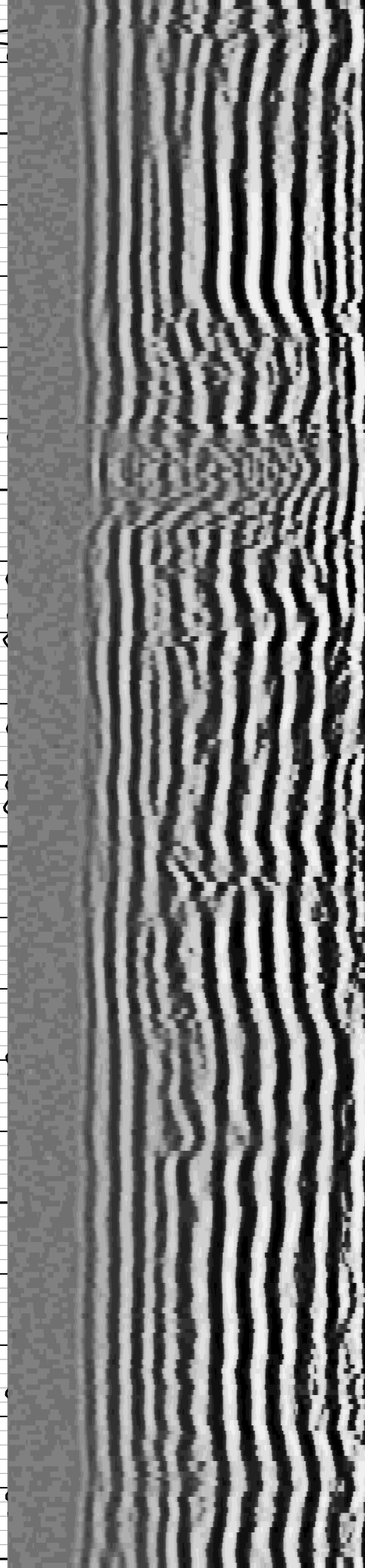
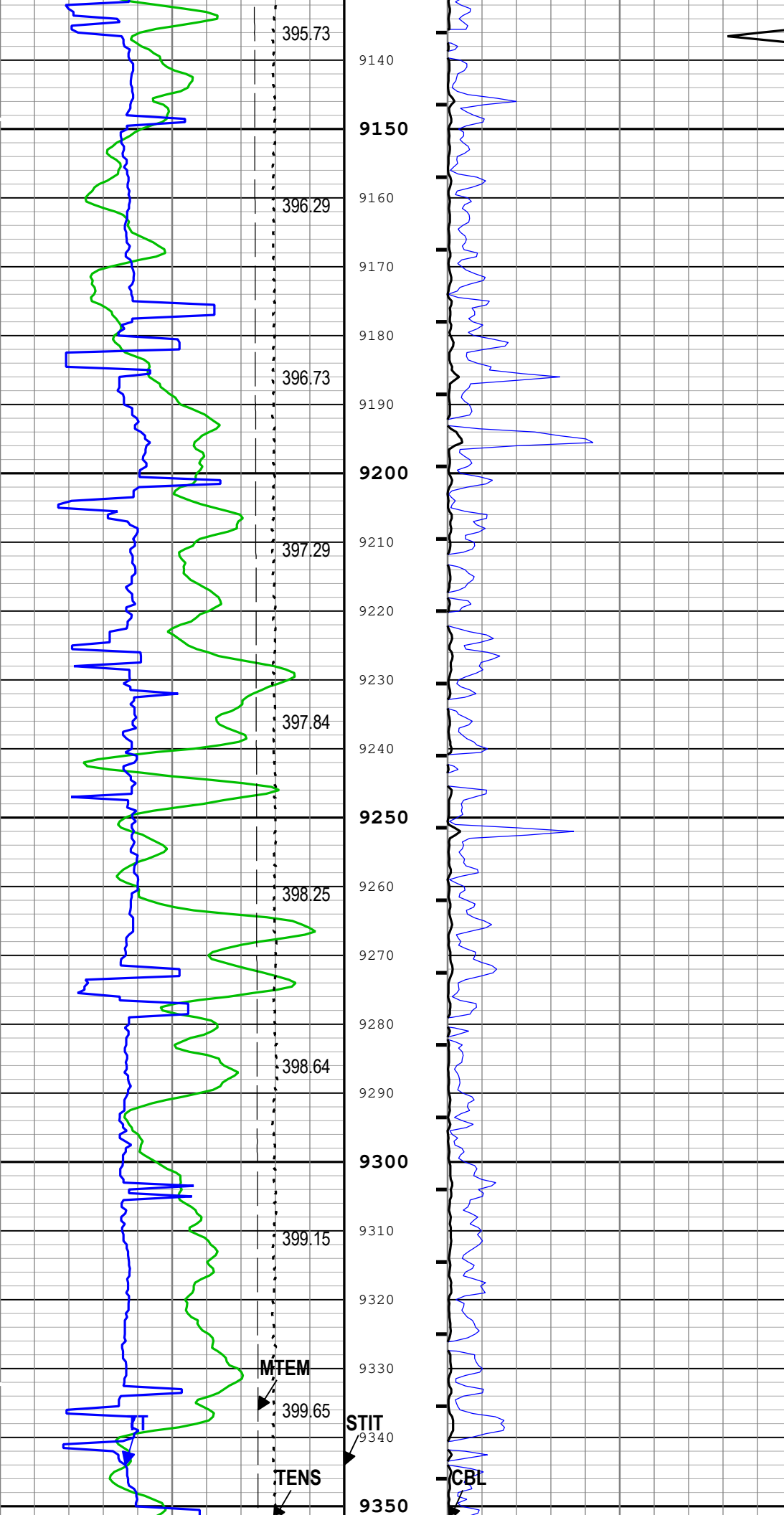


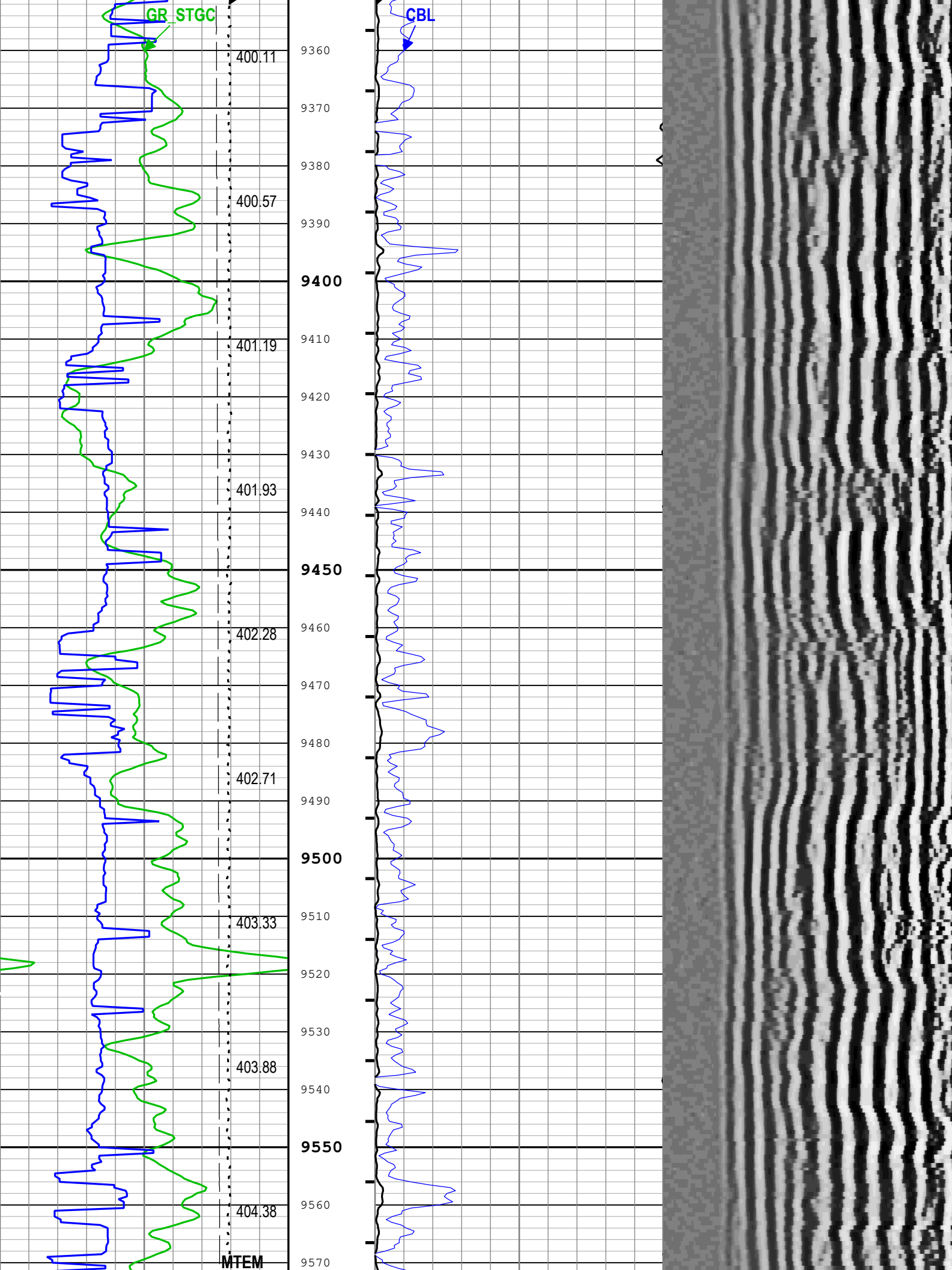


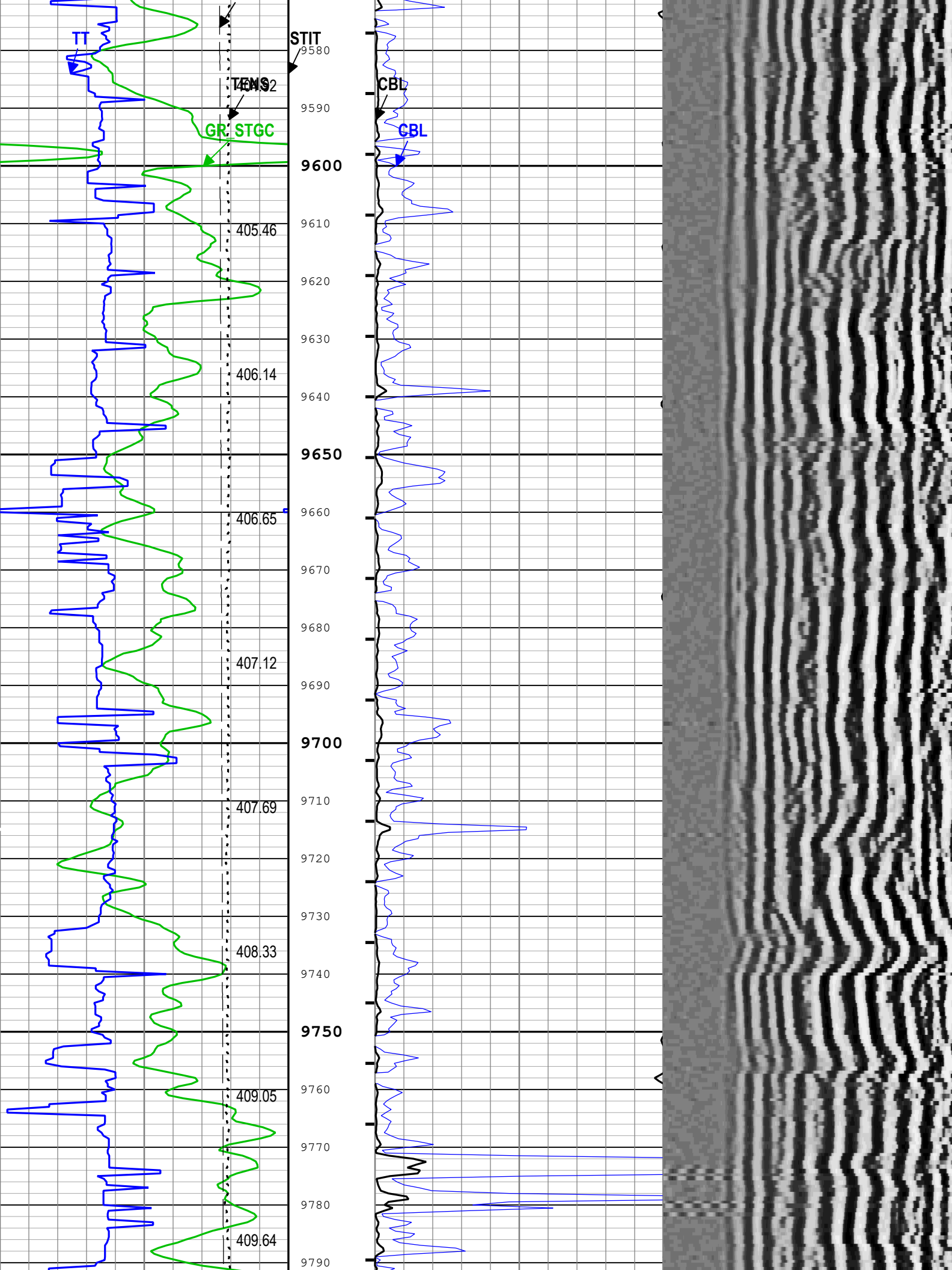


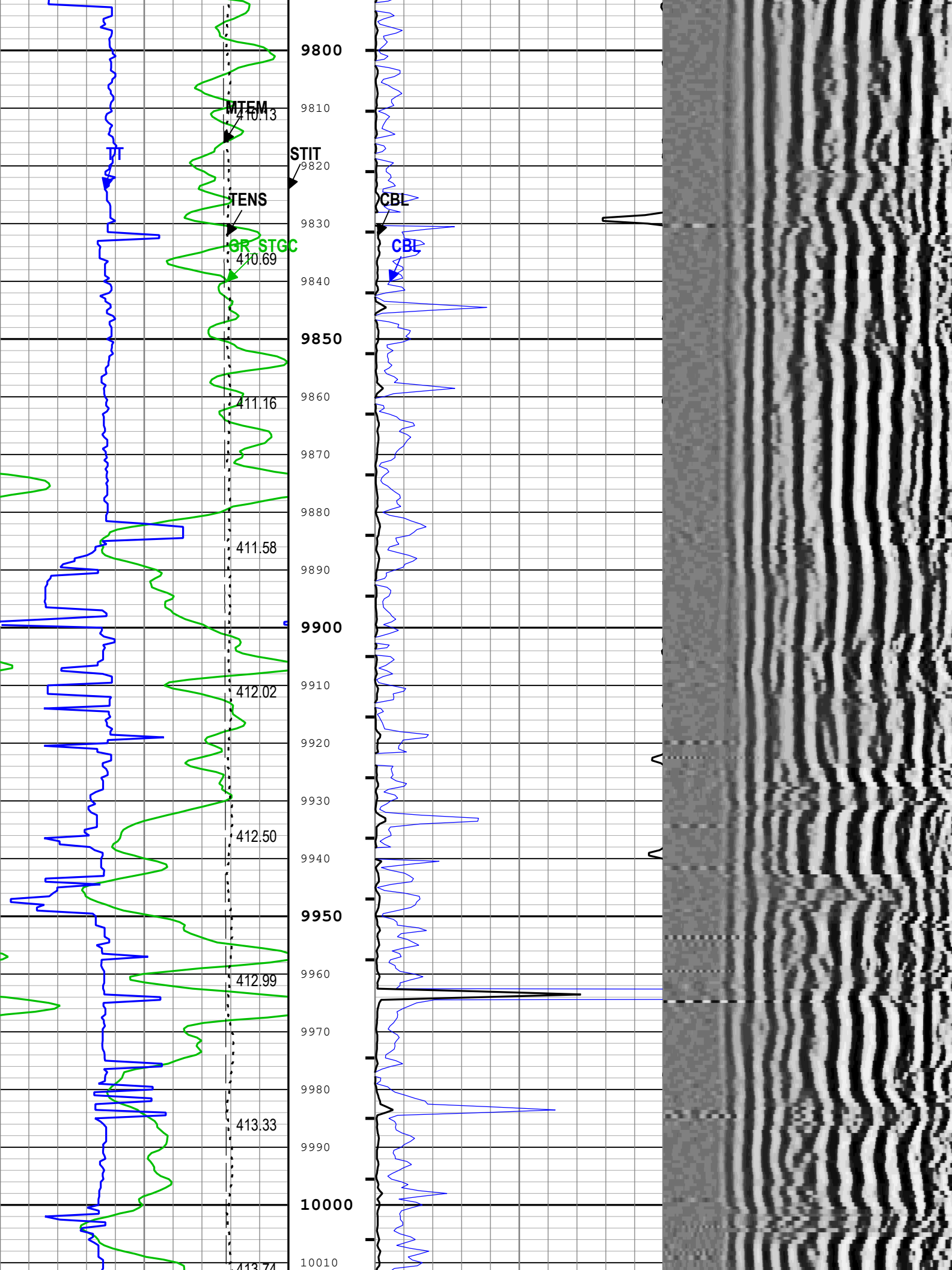


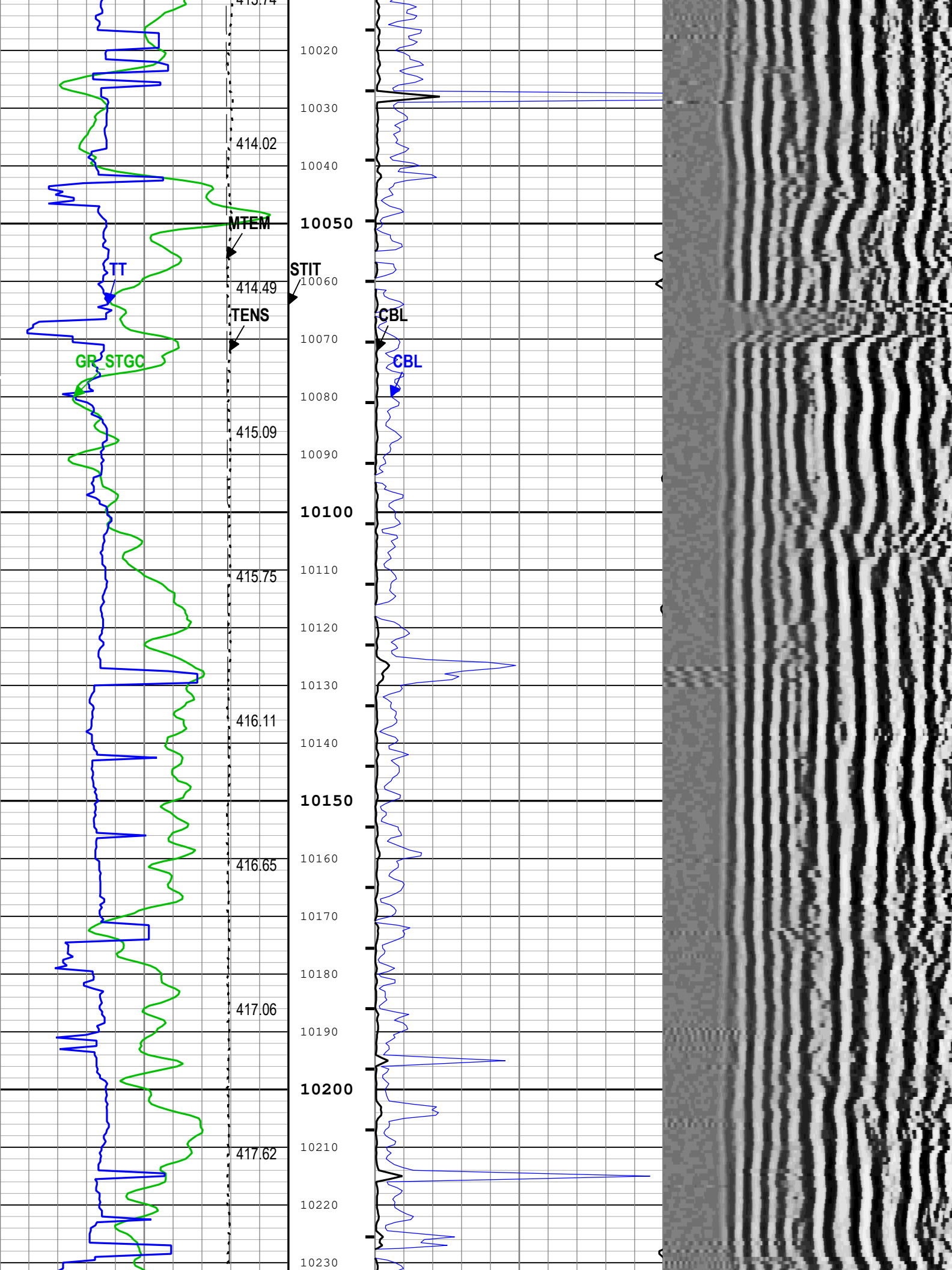


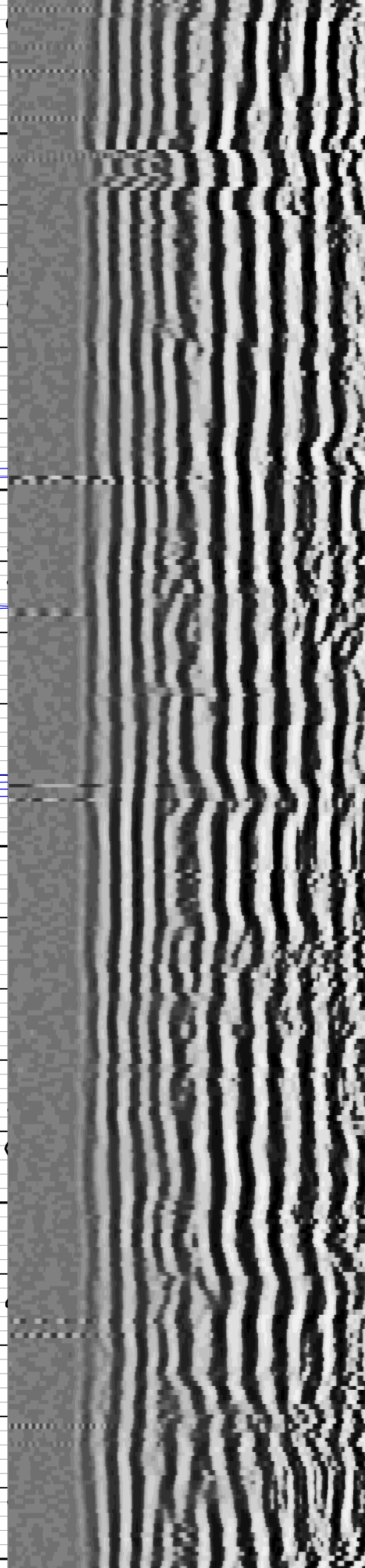
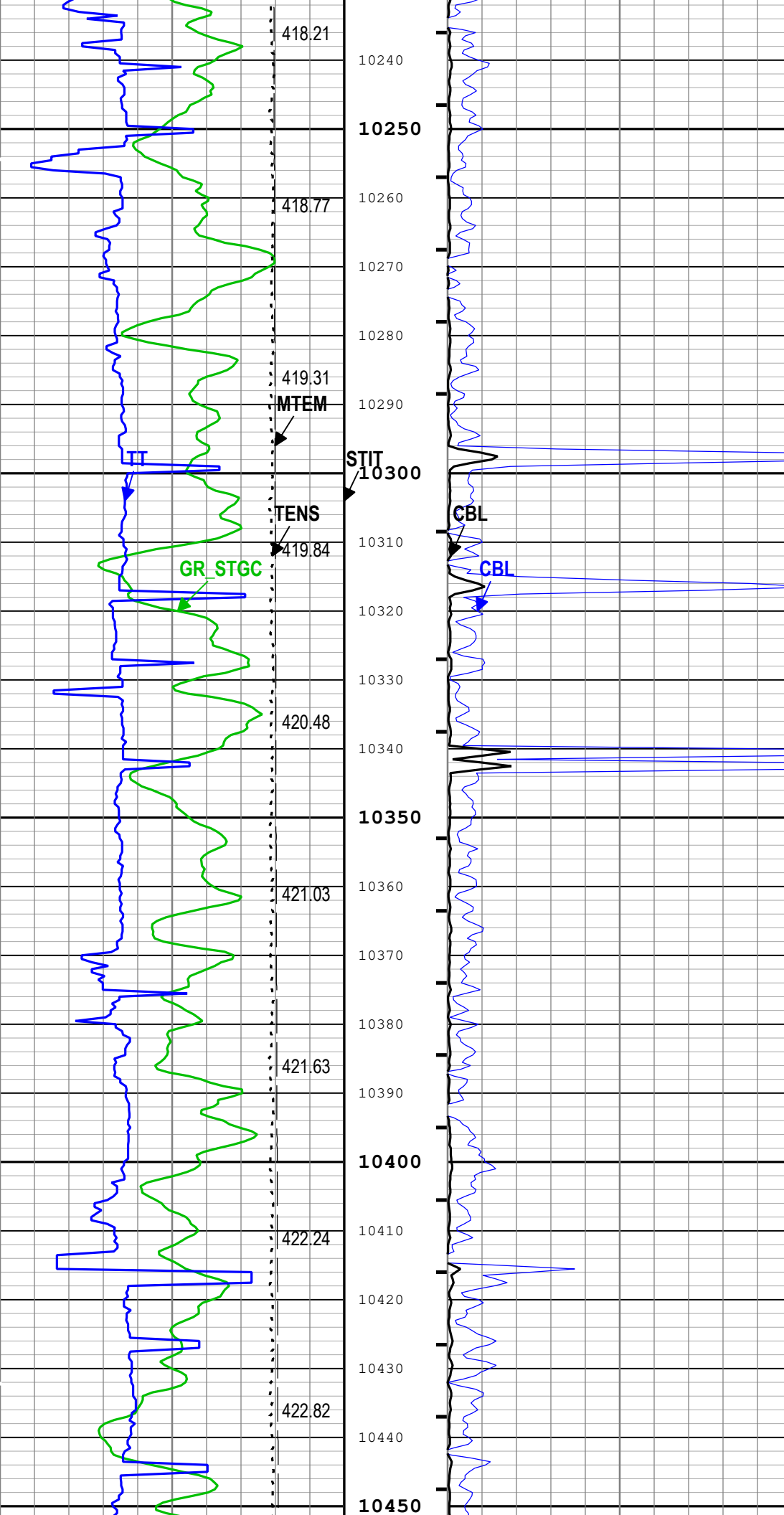


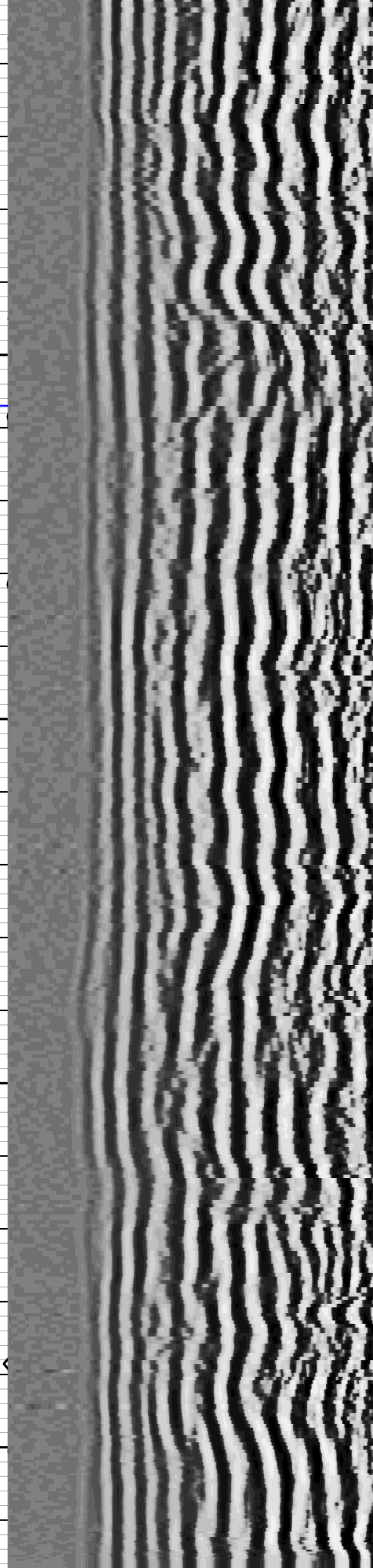
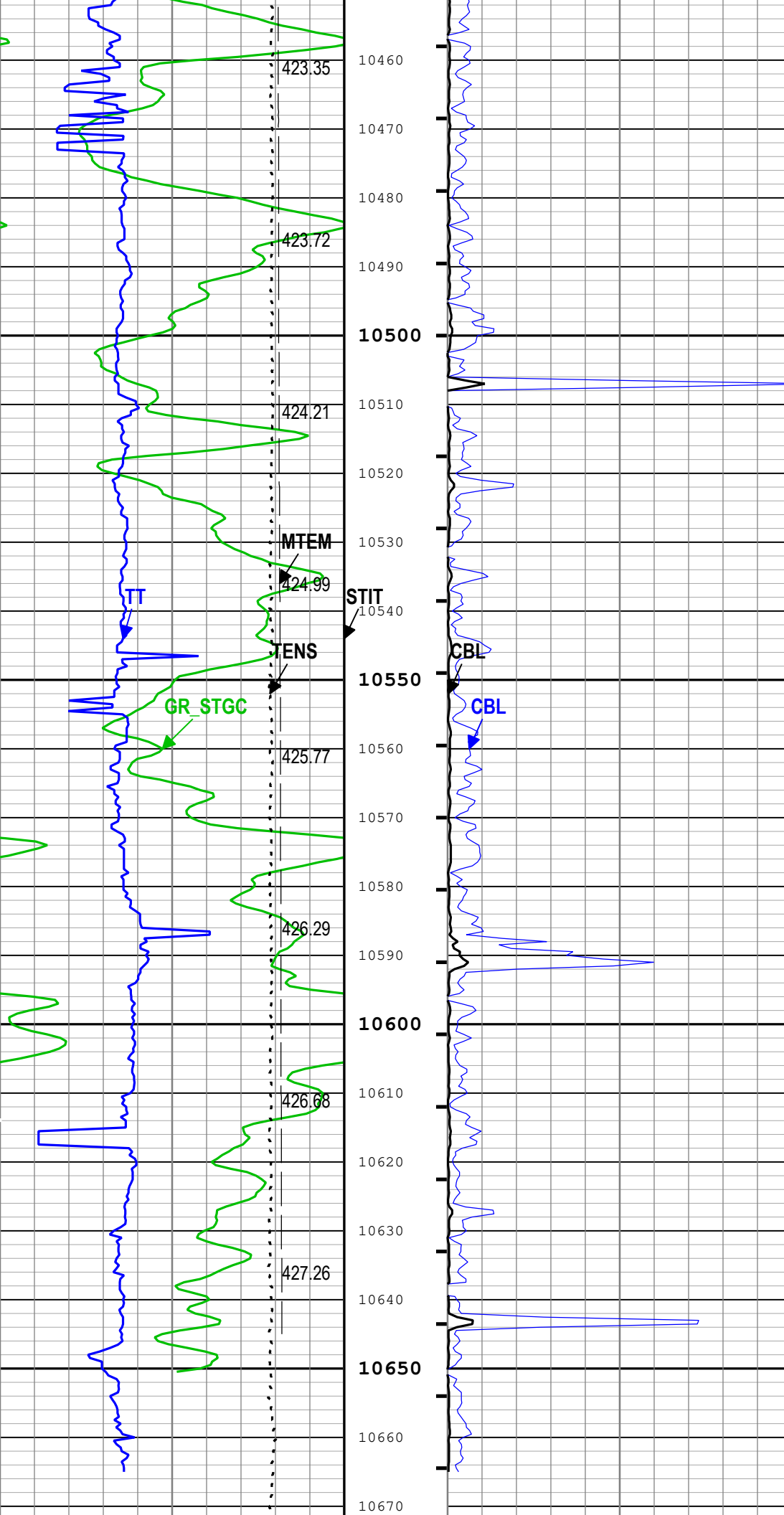


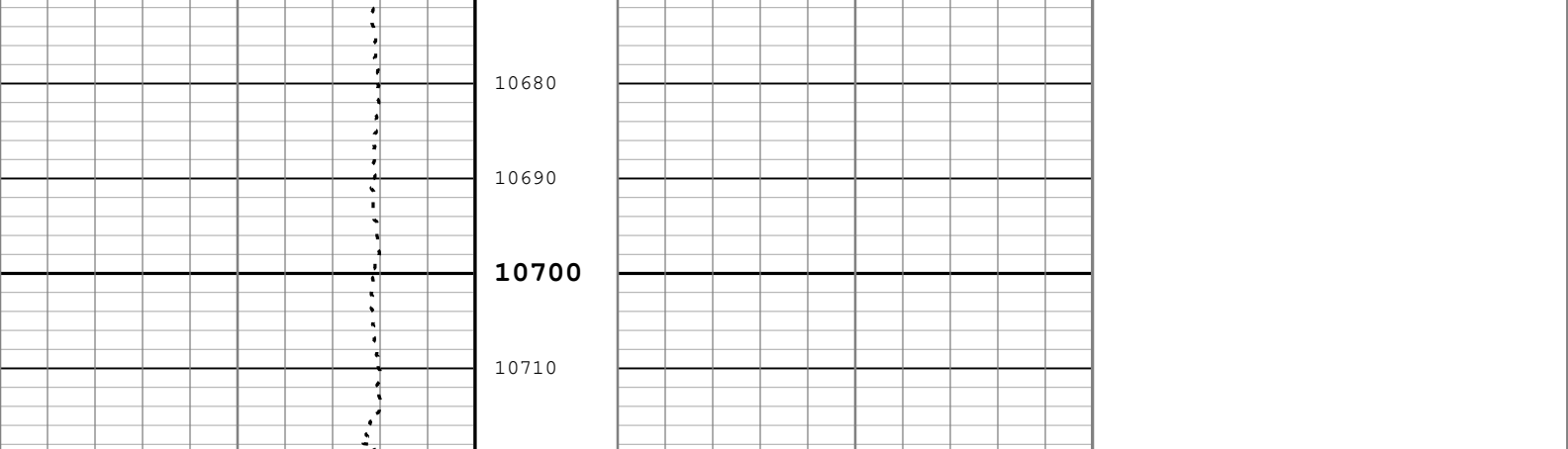












Calibrated Gamma Ray (GR_STGC) QTGC-B

0gAPI150

Cable Tension (TENS)

10000lbf0

Transit Time for CBL (TT) QSLT-B

400us200

Mud Temperature (MTEM) LEH-MT

100degF500

Mud Temperature (MTEM) LEH-MT

degF

Stuck Tool Indicator, Total (STIT)

0ft50

Cable Drag

Tool_Tot. Drag

CBL Amplitude (CBL) QSLT-B

0mV10

CBL Amplitude (CBL) QSLT-B

0mV100

MinAmplitudeMax

VDL VariableDensity (VDL) QSLT-B

200us1200

TIME_1900 - Time Marked every 60.00 (s)

■ BIEP - Bond Index Event Pips QSLT-B

Description: Sonic CBL with VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Aug-2021 15:44:13

Channel Processing Parameters				
One: Parameters				
Parameter	Description	Tool	Value	Unit
CBLG	CBL Gate Width	QSLT-B	80	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	QSLT-B	64	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.54	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DETE	Delta-T Detection	QSLT-B	E1	
DFAD	Slim Sonic DFAD Computation Control	QSLT-B	Surface	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
GOBO	Good Bond	QSLT-B	9.2	mV
GOBO_CURR	Good Bond in Arbitrary Cement	QSLT-B	9.2	mV
MATT_CURR	Maximum Attenuation in Arbitrary Cement	QSLT-B	8.27	dB/ft
MCI	Minimum Cemented Interval for Isolation	QSLT-B	10	ft
MNHTR	Minimum High Threshold Reference for first arrival detection	QSLT-B	30	
MSA	Minimum Sonic Amplitude	QSLT-B	5.66	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	QSLT-B	5.66	mV
NMSG	Near Minimum Sliding Gate	QSLT-B	250	us
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SGAD	Sliding Gate Status	QSLT-B	Off	
SGDT	Sliding Gate Delta-T	QSLT-B	65	us/ft

Tool Control Parameters				
One: Parameters				

One: Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	4010	ft/h
MODE	SSLT Firing Mode	QSLT-B	CBL	
RATE	Firing Rate	QSLT-B	4.46	Hz
VDM	SSLT VDL Display Mode	QSLT-B	R5	

Calibration Report

QSLT-B (SlimXtreme Sonic Logging Tool - B) Calibration - Run One

Primary Equipment :

SlimXtreme Sonic Array Sonde Segment - BB

QSAS-BB

8022

CBL Amplitude Free Pipe Adjustment - Free Pipe Measurements

Before (Manual Entry): 14:47:14 16-Aug-2021

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
CBL Amplitude (CBLF) - 0	mV	Before	-----	-----	-----	-----		
CBL Reference Amplitude (CBRA) - 0	mV	Before	-----	-----	-----	-----		
Measurement Depth (DEPTH) - 0	ft	Before	-----	-----	-----	-----		

CBL Amplitude Free Pipe Adjustment - CBL Amplitude Coefficients

Before (Manual Entry): 14:47:14 16-Aug-2021

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
CBL Adjustment Factor (CBL_ADJUST_FACTOR)		Before	1.000	0.300	0.669	3.000		
Depth of Before Calibration (BDEP)	ft	Before	-----	-----	2400.00	-----		

Company:	University of Utah	Schlumberger
Well:	Forge 16A(78)-32	
Field:	Wildcat	
County:	Beaver	
State:	Utah	
SlimXtreme Sonic Logging Tool		
CBL-VDL		