

Company: Caerus Operating LLC

Well: NPR 22D-10 596

Field: NPR

County: Garfield State: Colorado

Cement Bond Log
RST Sigma Log
Gamma Ray - Collar Locator Log

County: Garfield
Field: NPR
Location: K10-596
Well: NPR 22D-10 596
Company: Caerus Operating LLC

K10-596	Location:		Elev.: K.B. 6733.00 ft G.L. 6709.00 ft D.F. 6733.00 ft
	Permanent Datum:	Ground Level	
	Log Measured From:	Kelly Bushing	
	Drilling Measured From:	Kelly Bushing	
API Serial No. 05045237560000	Section: 10	Township: 5S	Range: 96W

Logging Date 12-Sep-2018

Run Number ONE

Depth Driller 9953.00 ft

Schlumberger Depth 9928.00 ft

Bottom Log Interval 9918.00 ft

Top Log Interval 2100.00 ft

Casing Fluid Type 2% KCL Water

Salinity

Density 8.5 lbm/gal

Fluid Level 8.00 ft

BIT/CASING/TUBING STRING

Bit Size 8.75 in

From 2274.00 ft

To 9953.00 ft

Casing/Tubing Size 4.5 in

Weight 11.6 lbm/ft

Grade P110

From 0.00 ft

To 9953.00 ft

Max Recorded Temperatures 276.39 degF

Logger on Bottom 12-Sep-2018 12:20:00

Unit Number 3007 Location: Evanson, WY

Recorded By Albert Ng

Witnessed By Trent Ray

Disclaimer

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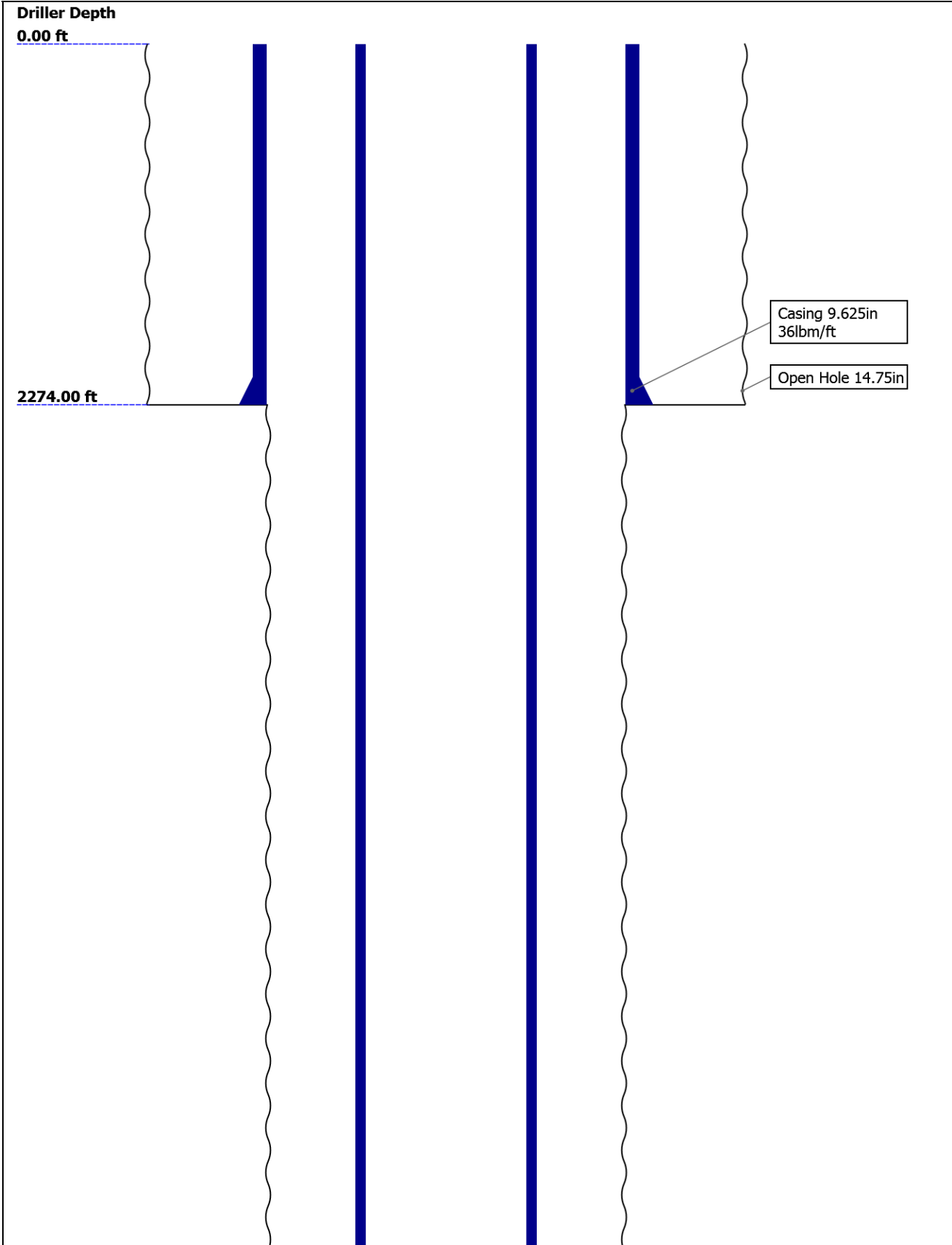
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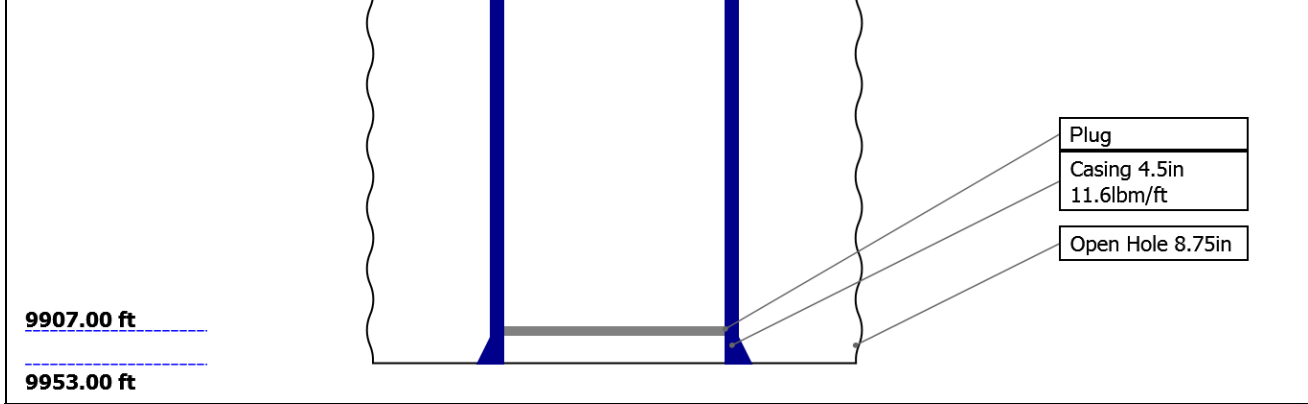
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Well Sketch



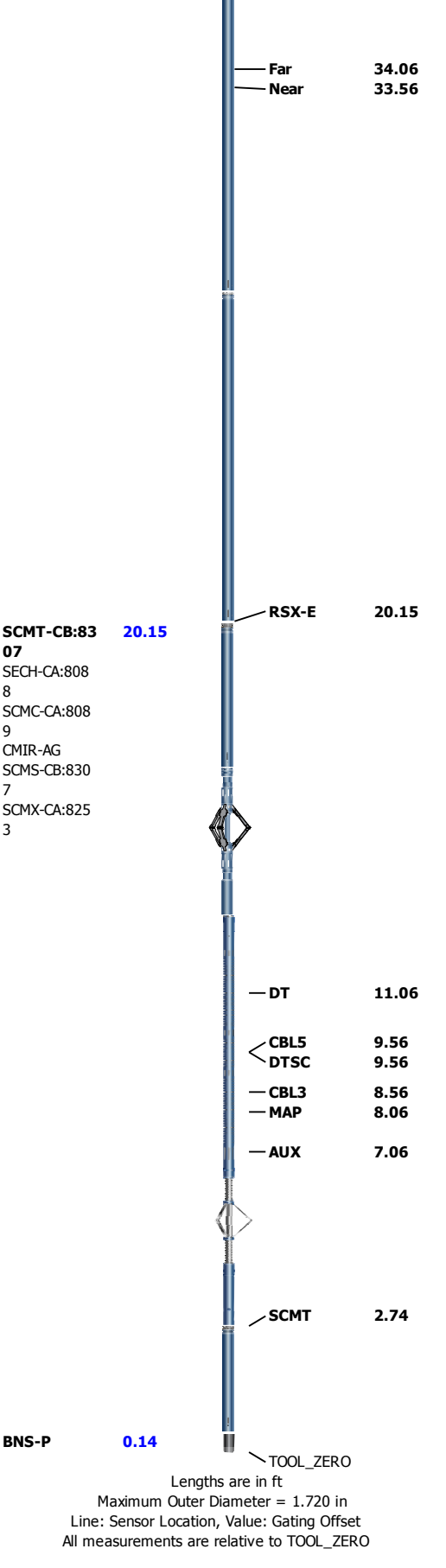


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	14.75	8.75				
Top Driller (ft)	0	2274				
Top Logger (ft)	0	2274				
Bottom Driller (ft)	2274	9953				
Bottom Logger (ft)	2274	9953				
Casing						
Size (in) (in)	9.625	4.5				
Weight (lbm/ft)	36	11.6				
Inner Diameter (in)	8.921	4				
Grade	J55	P110				
Top Driller (ft)	0	0				
Top Logger (ft)	0	0				
Bottom Driller (ft)	2274	9953				
Bottom Logger (ft)	2274	9953				

Remarks and Equipment Summary

ONE: Toolstring				ONE: Remarks		
Equip name	Length	MP name	Offset	Toolstring run as per toolsketch.		
PEH-E	53.4			RST Mode: Sigma		
				Matrix: Sandstone		
AH-38	51.72			Max Recorded Temp: 276.39 degF		
PSTP-B:282	51.44			SLB Depth: 9928ft		
PSC-A				Thank You for choosing Schlumberger!		
PSTC-A						
PBMS-B:2826						
		GR	47.74			
		PSTC	47.44			
		PSTC Tool String Bottom	0.00			
		Temperature	44.69			
		CQG Pressure	44.34			
		CCL	43.92			
		PBMS	43.17			
RST-C:578	43.17					
RSCH-A:524						
RSC-E:564						
RSS-A:413						
MNTR-F						
RSXH-A:597						
RSX-E:578						
		RSC-E	36.82			



Depth Summary			
ONE			
Depth Measuring Device			
Type	IDW-JA		
Serial Number	5979		
Calibration Date	10-JUN-2017		

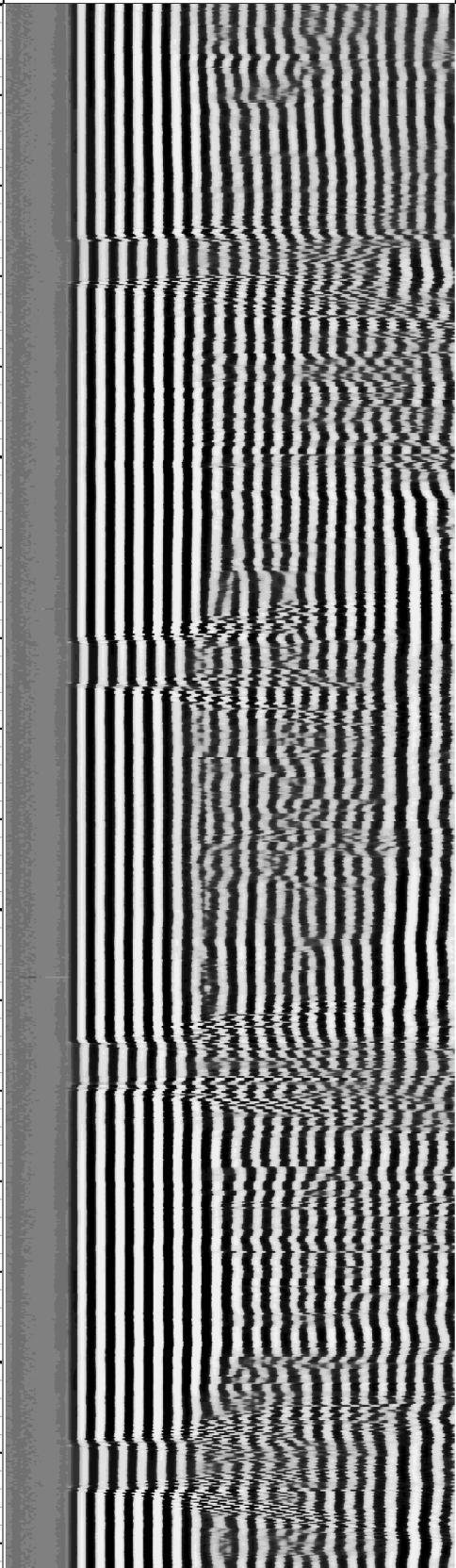
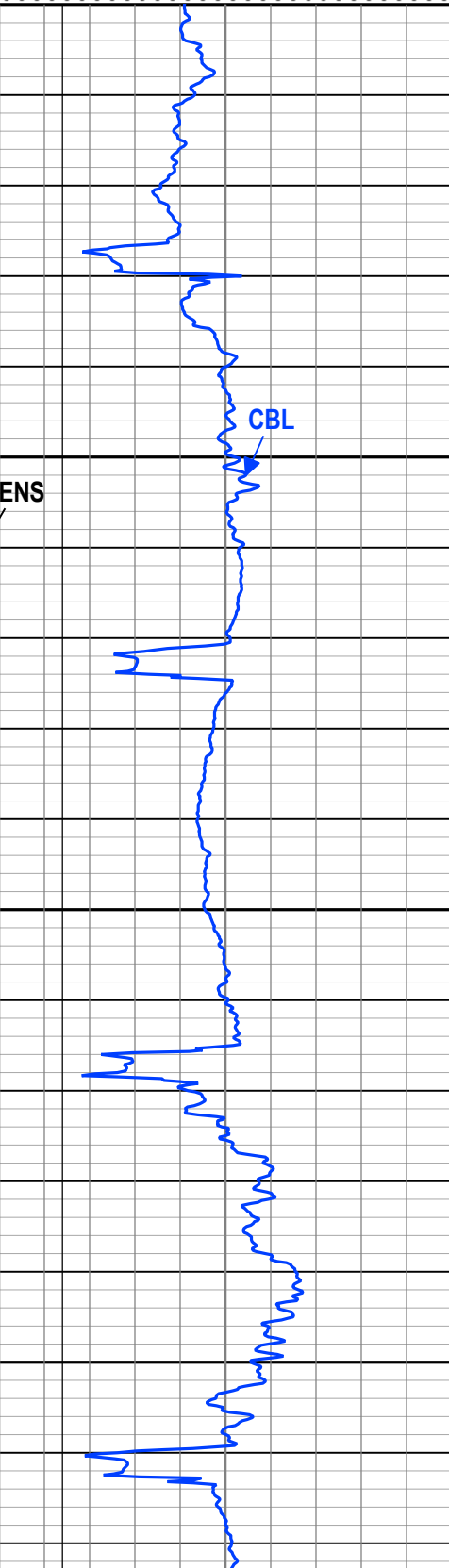
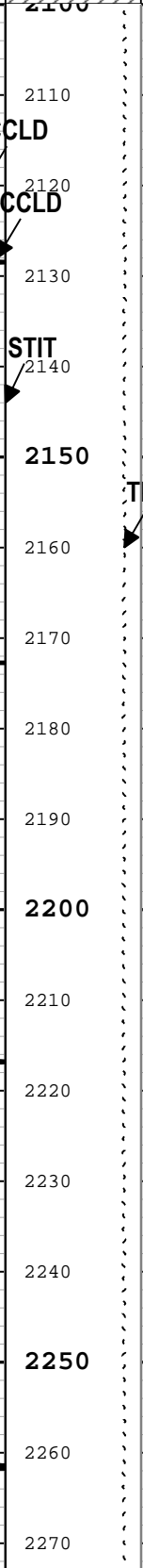
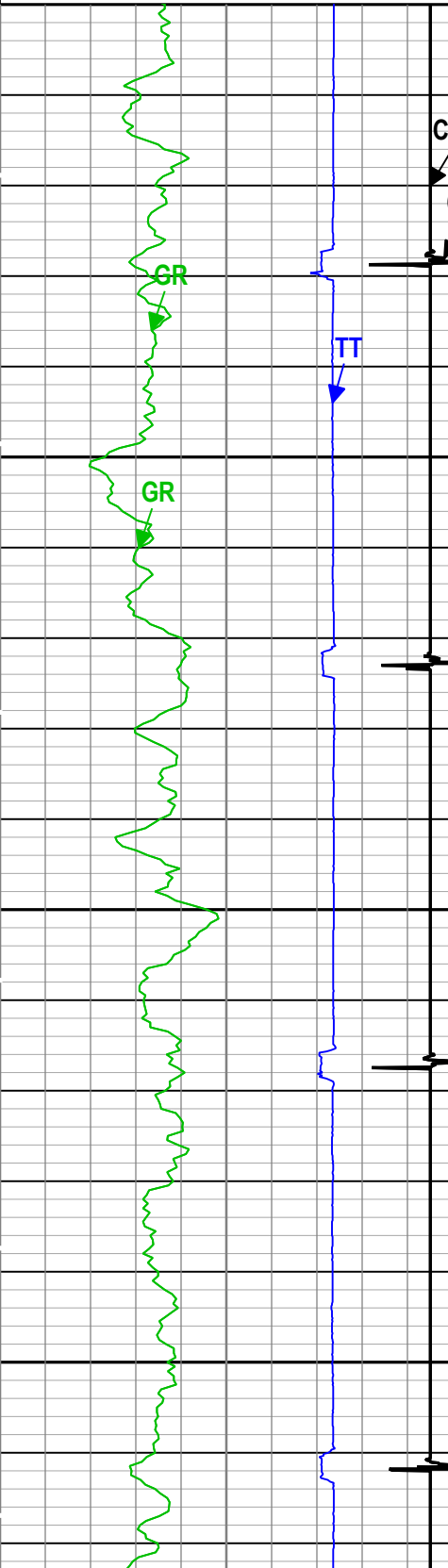
Gamma Ray (GR) PSTP-B	Cable Tension
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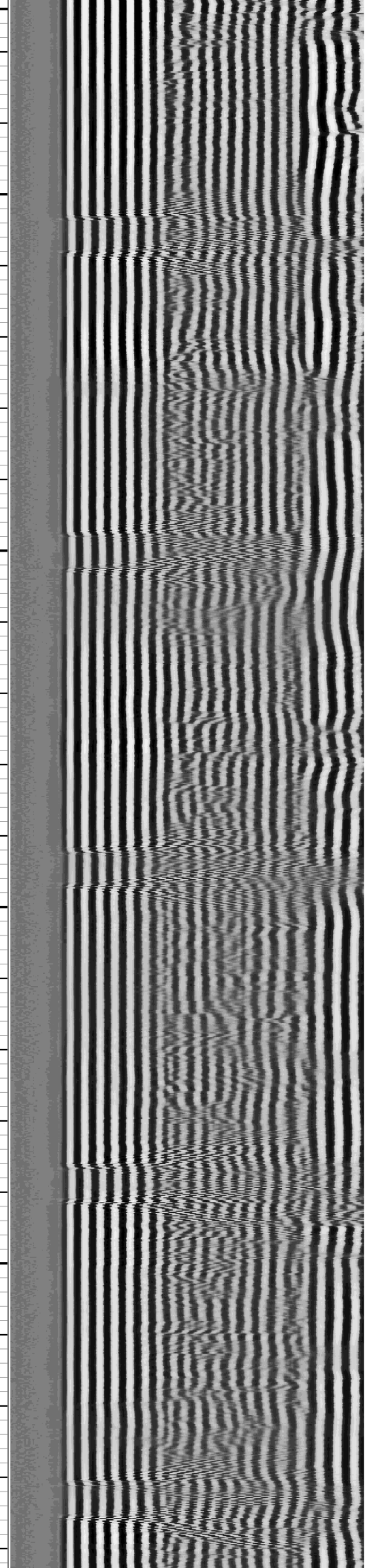
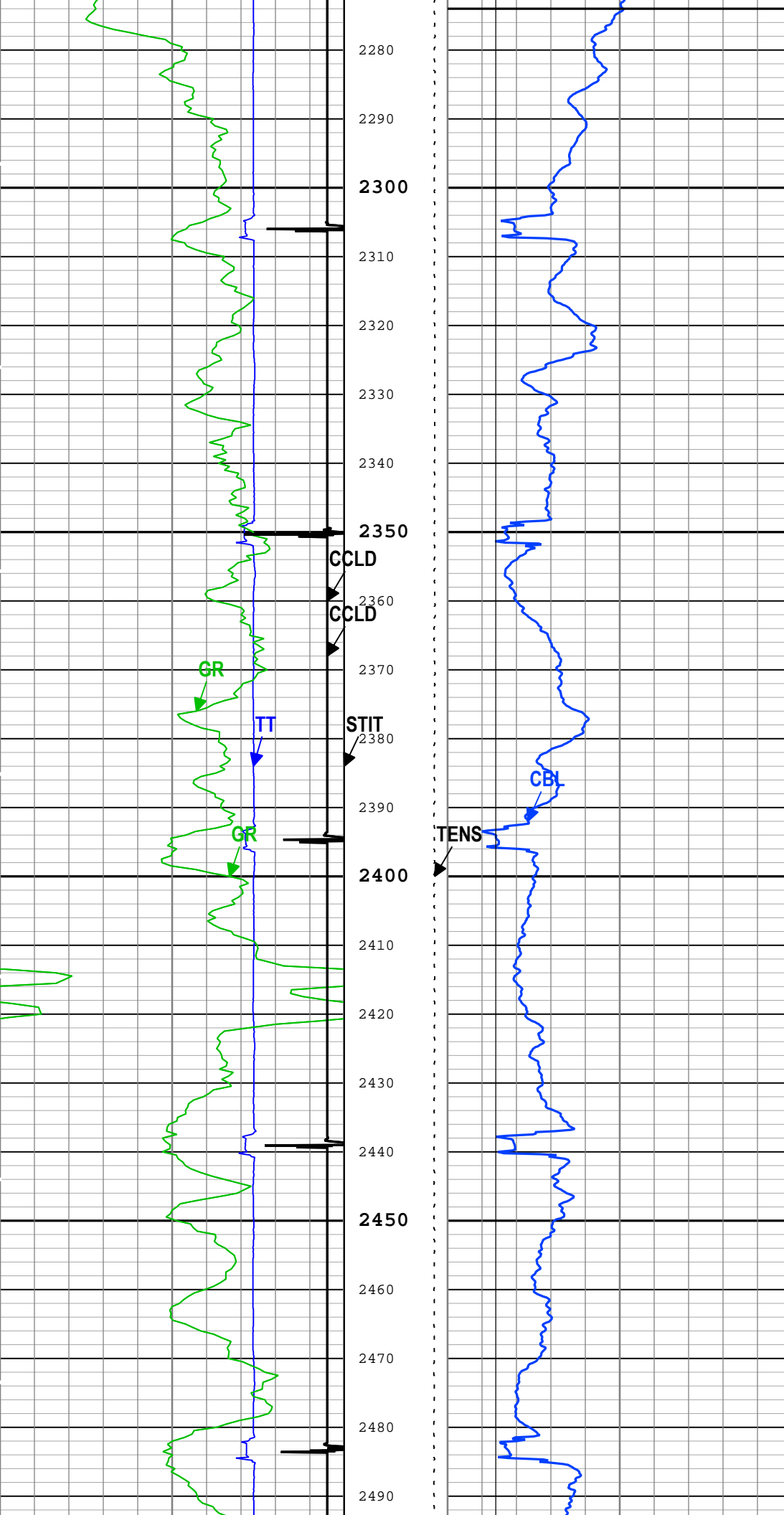
Gamma Ray (GR) PSTP-B		
0	gAPI	150
Transit Time for CBL (TT) SCMT-CB		
400	us	200
Gamma Ray (GR) PSTP-B		
0	gAPI	150
CCL Discriminated Amplitude (CCLD) PSTP-B		
-19	V	1
CCL Discriminated Amplitude (CCLD) PSTP-B		
-19	V	1

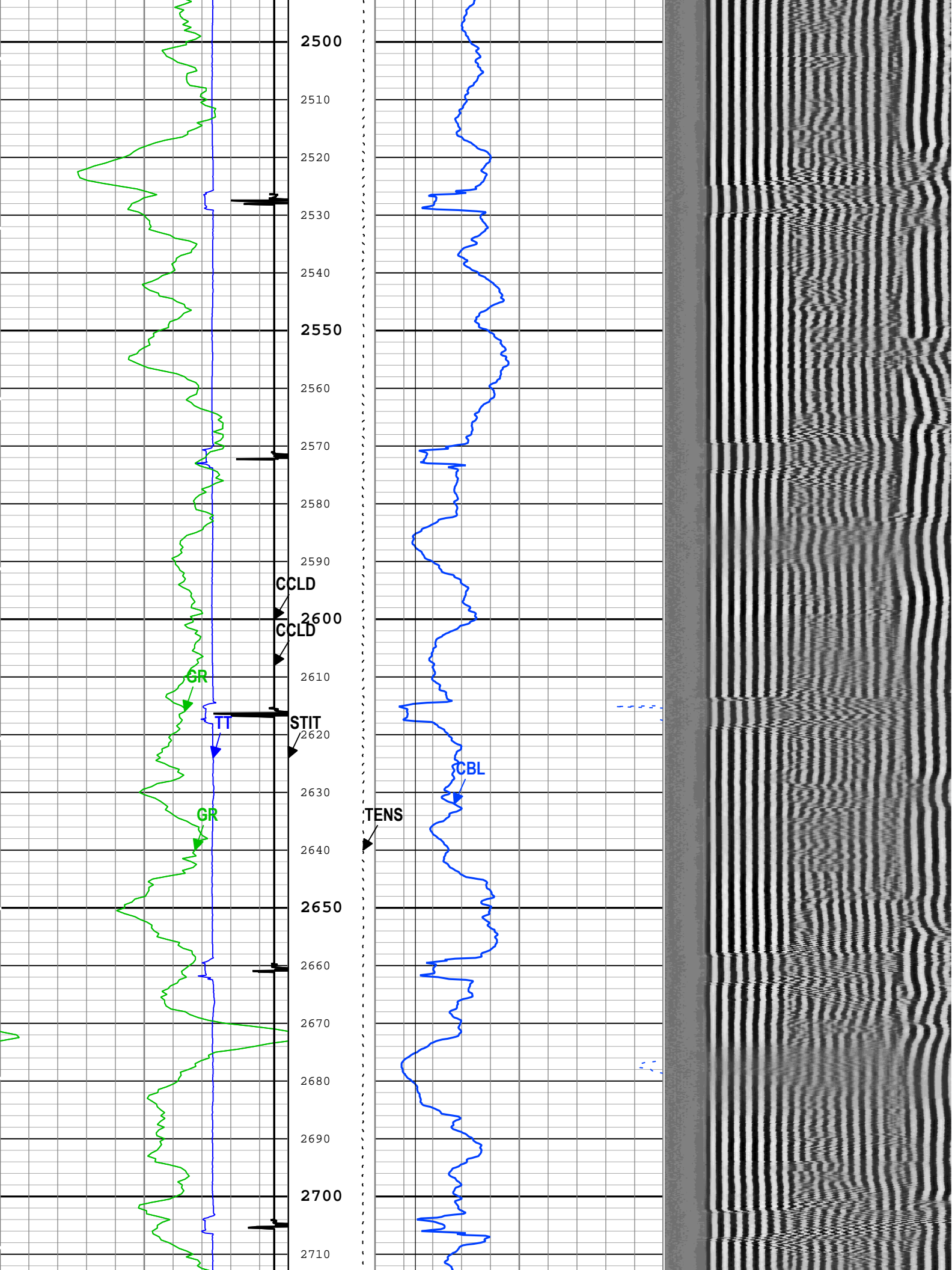
Tension (TENS)	
3000 lbf	0
Stuck Tool Indicator, Total (STIT)	
0	ft 50
Cable Drag	
Tool Tot. Drag	

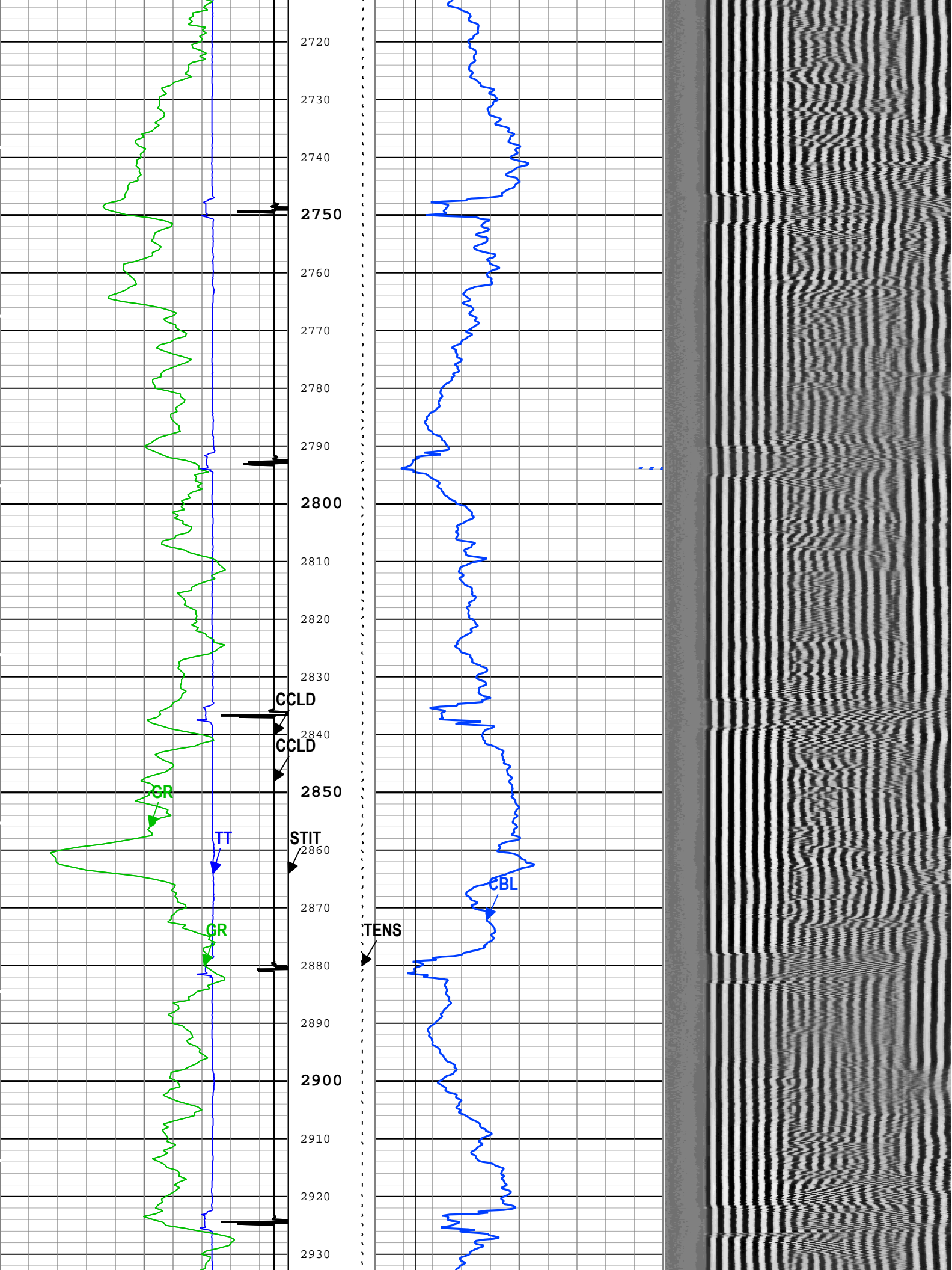
CBL Amplitude (CBL) SCMT-CB		
0	mV	10
CBL Amplitude (CBL) SCMT-CB		
0	mV	100
Good Bond (GOBO)		
0	mV	10
GoodBond From CBL to GOBO		
200	us	1200

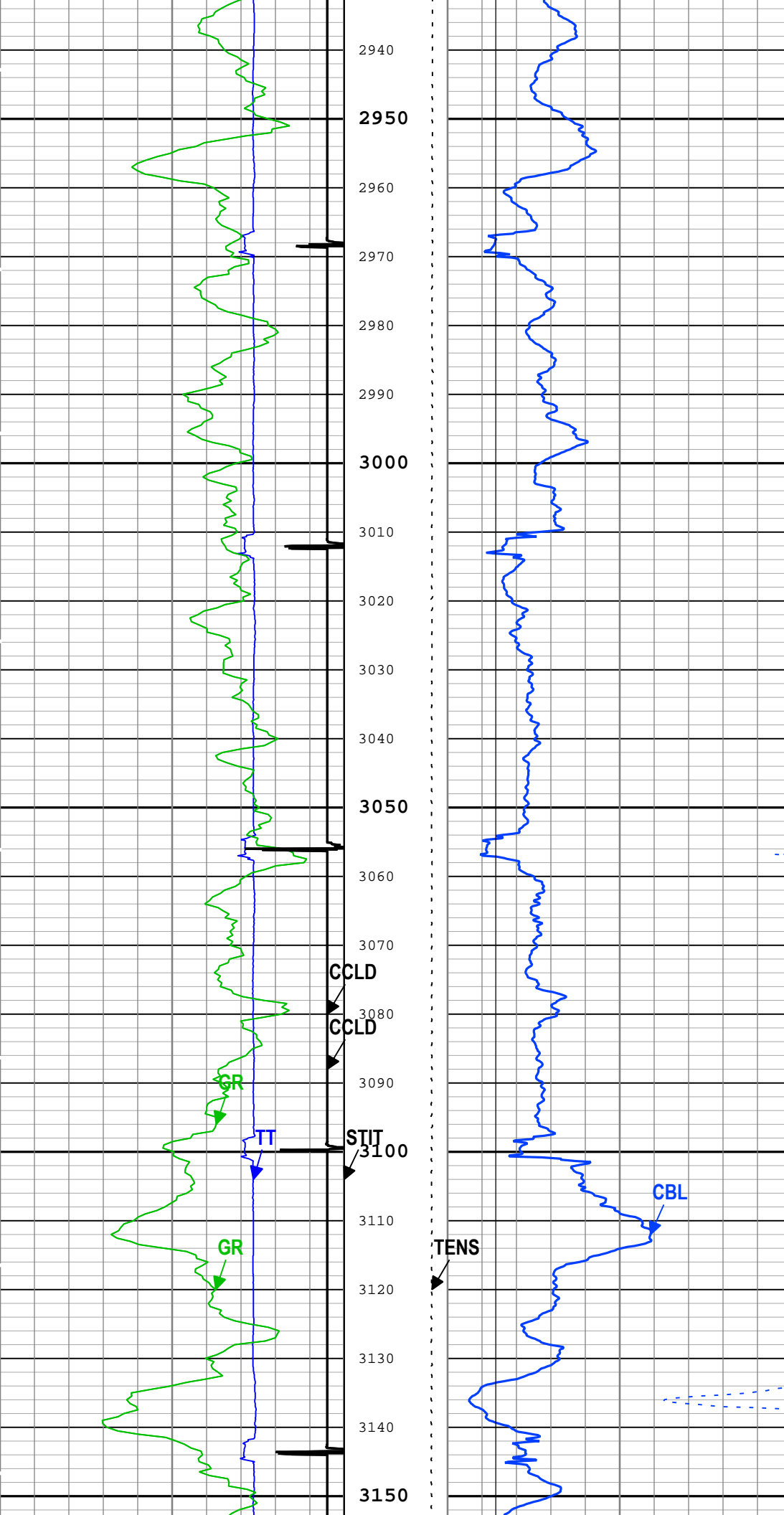
Min	Amplitude	Max
VDL VariableDensity (VDL) SCMT-CB		
200	us	1200

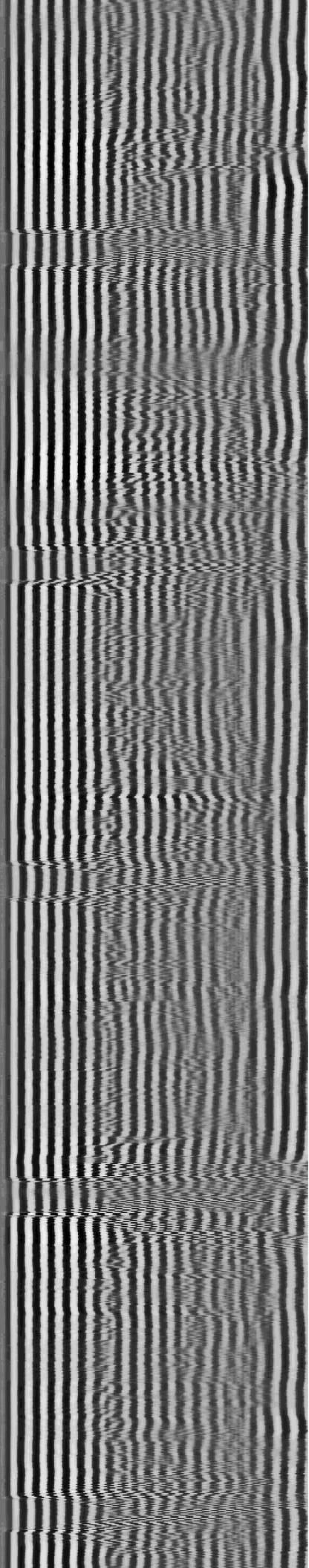
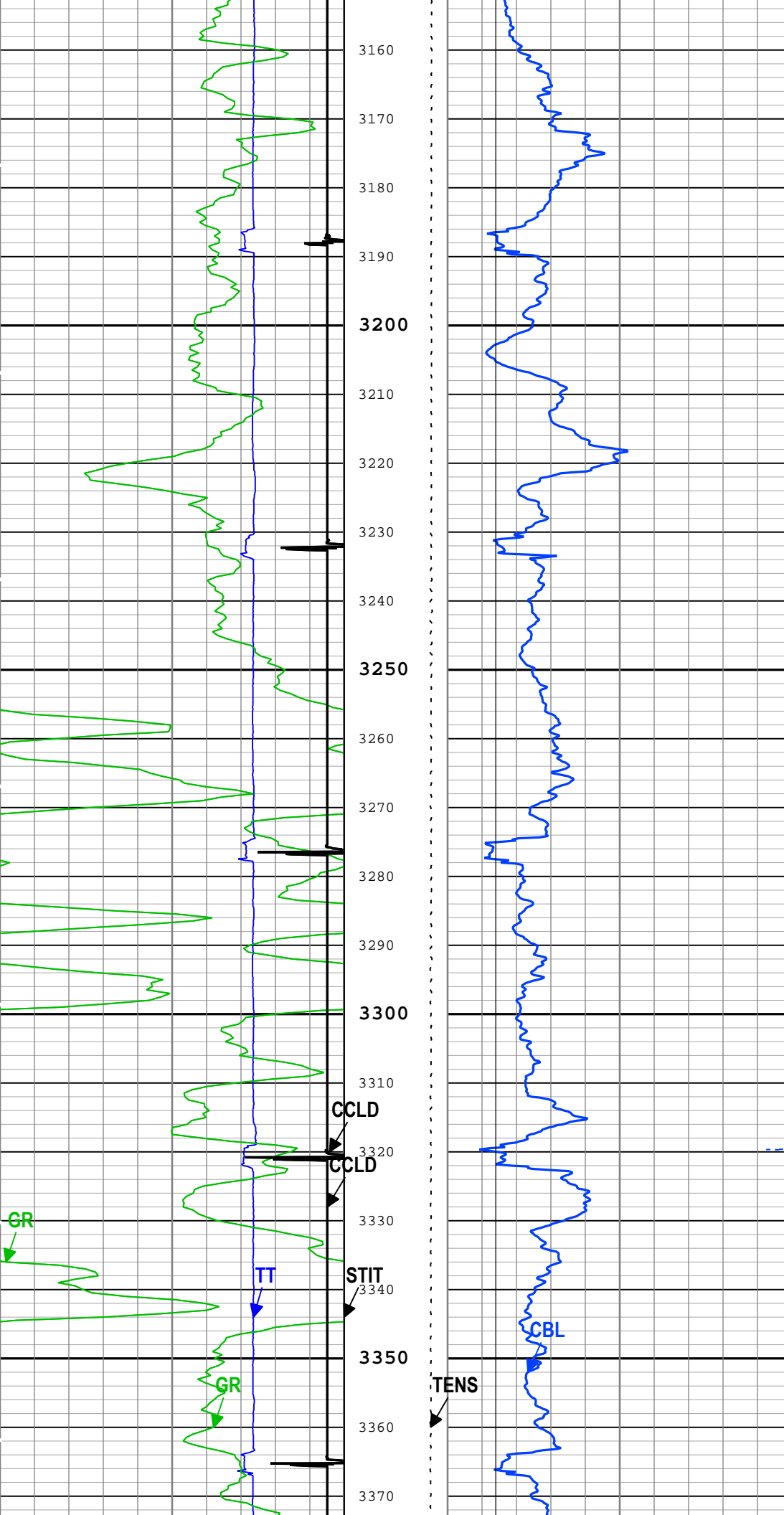


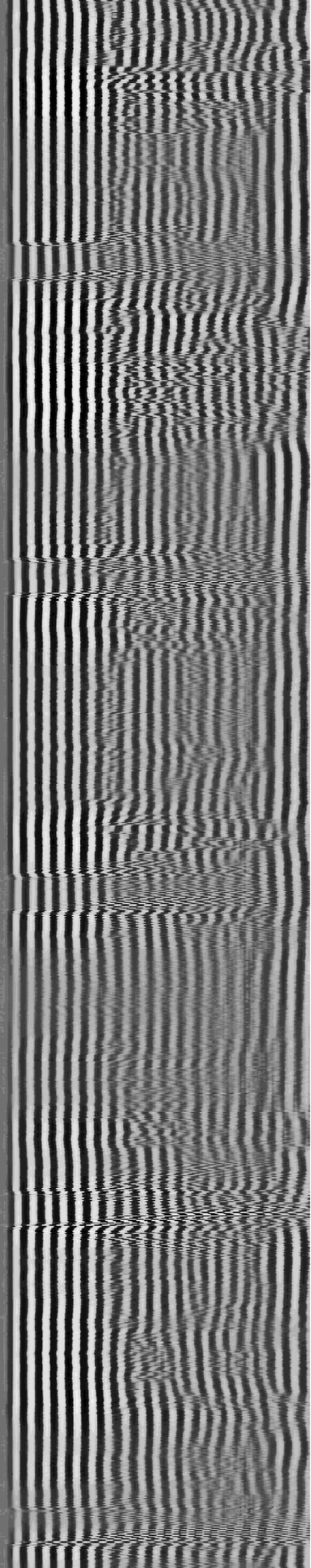
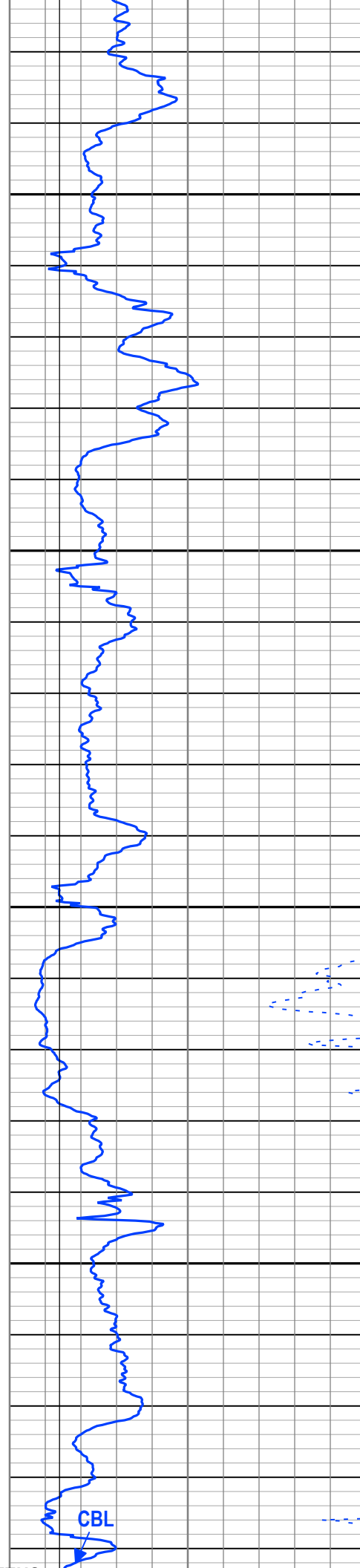
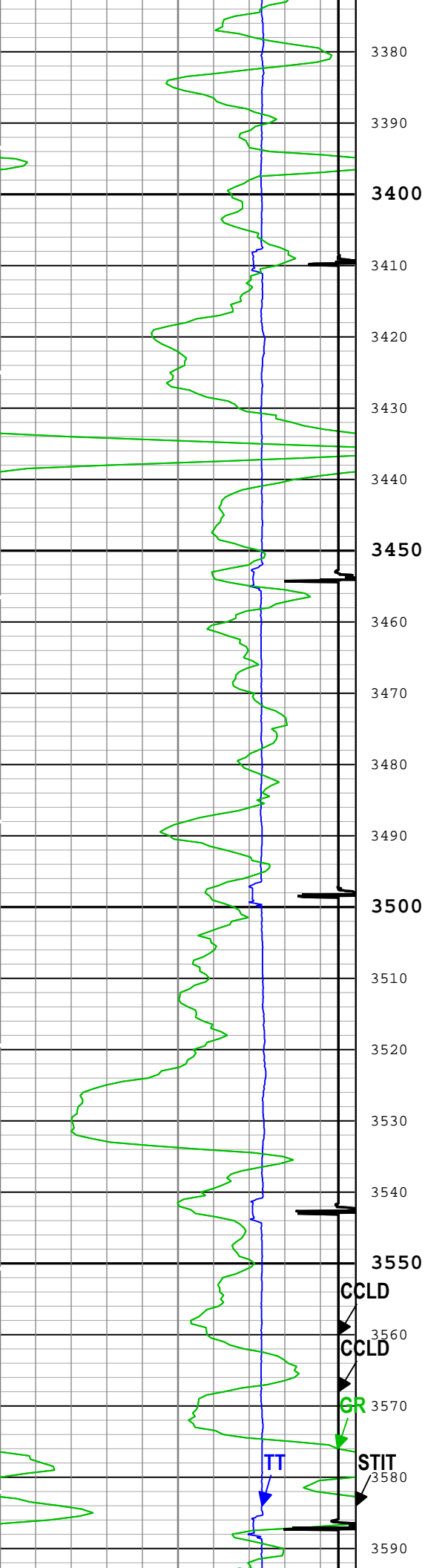


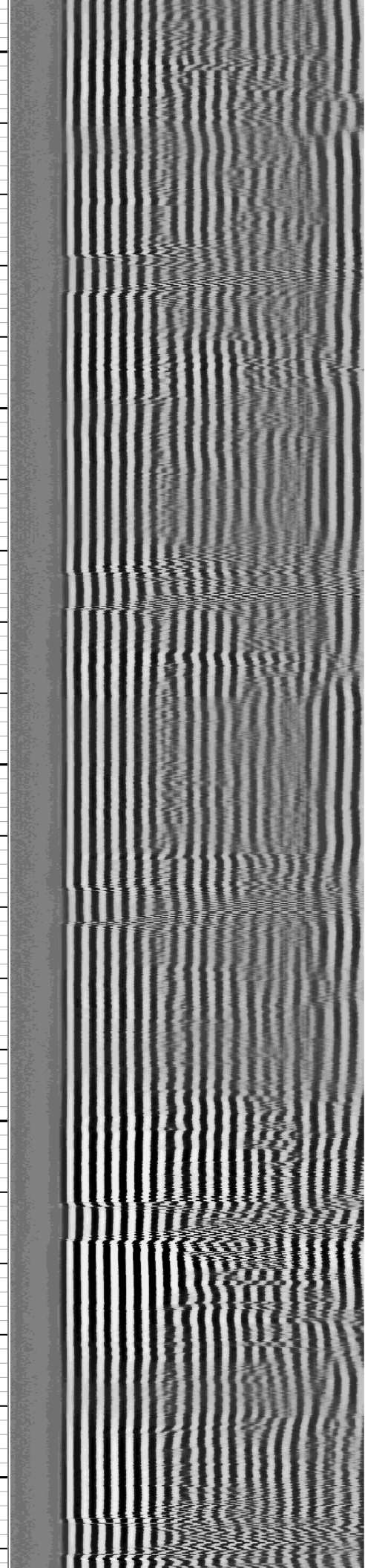
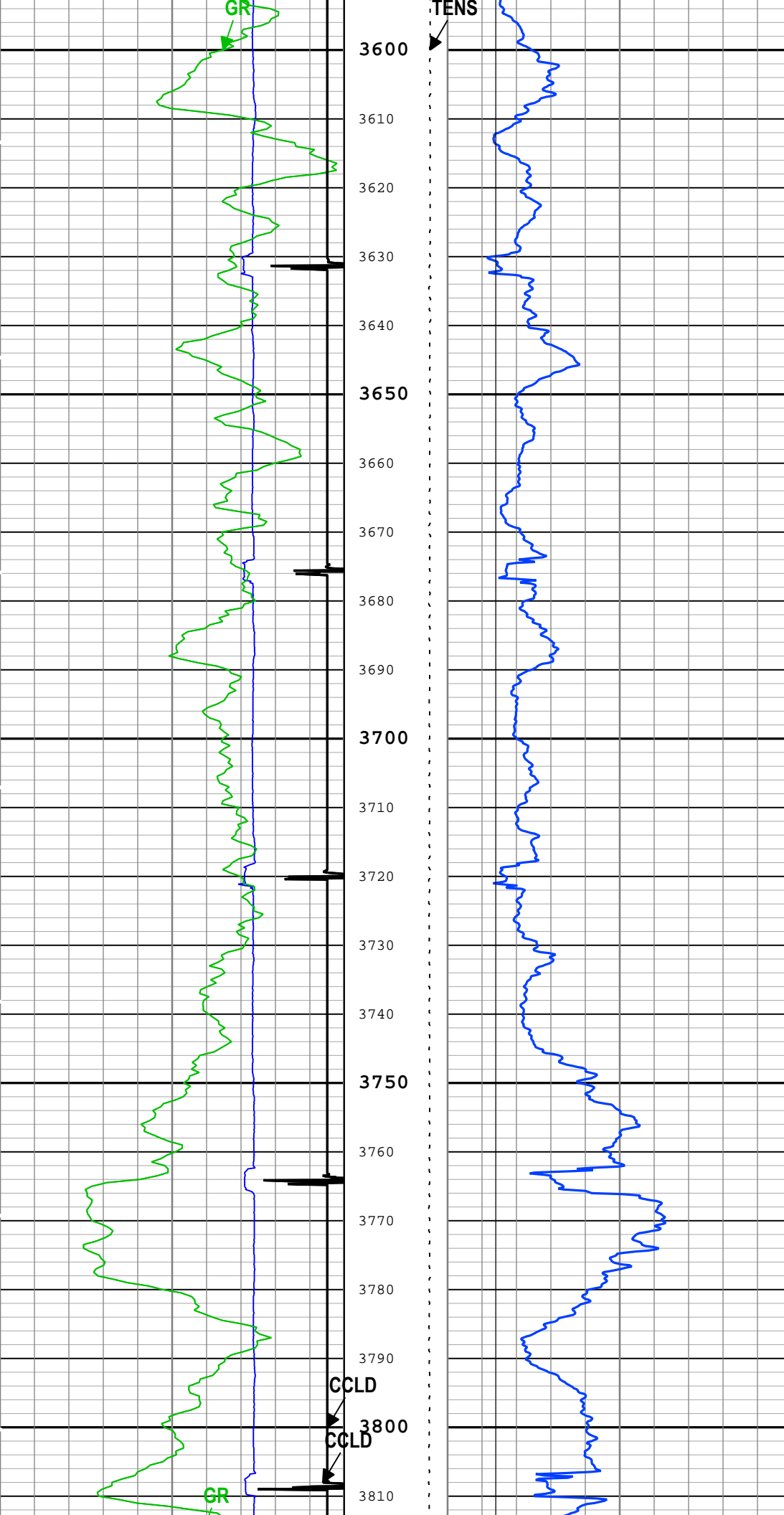


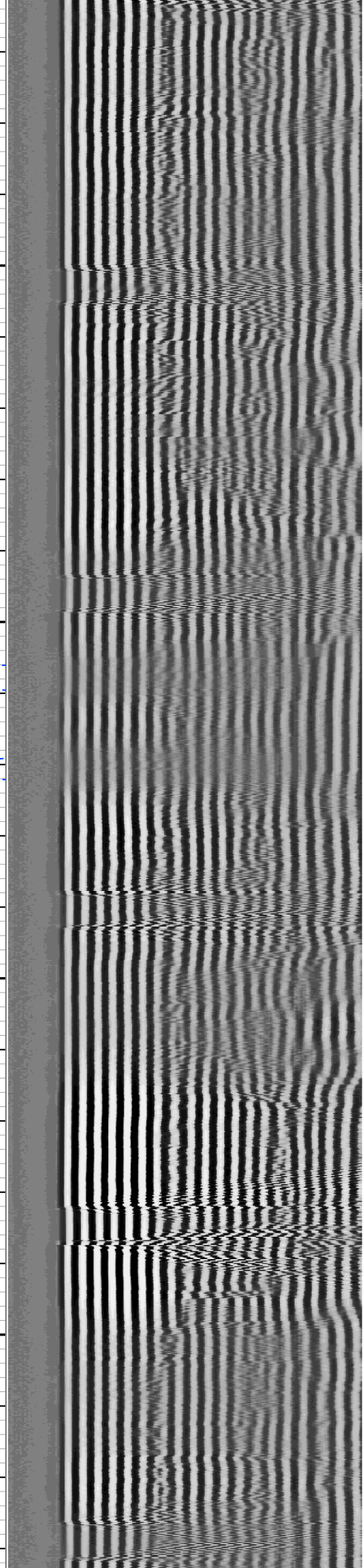
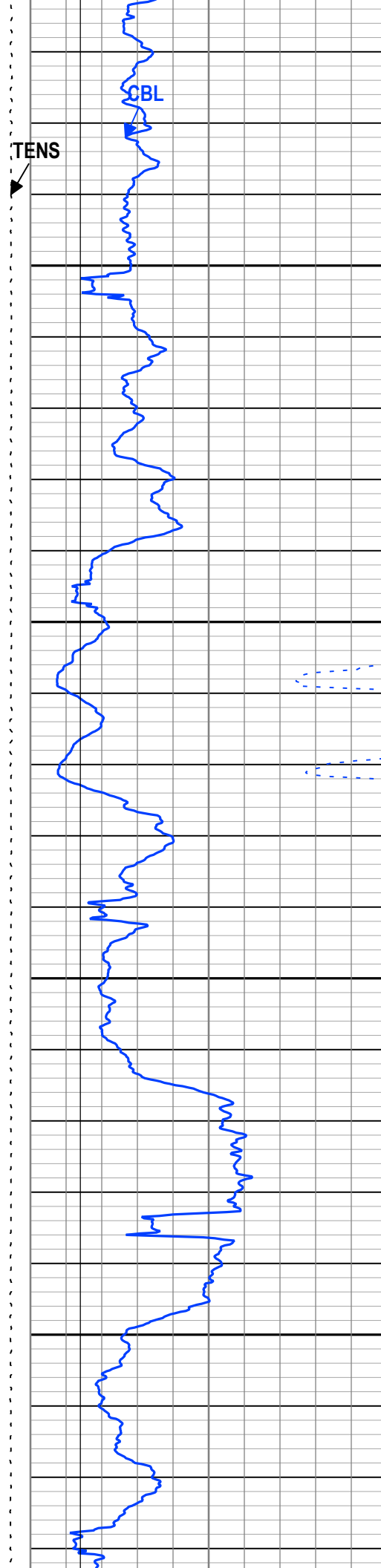
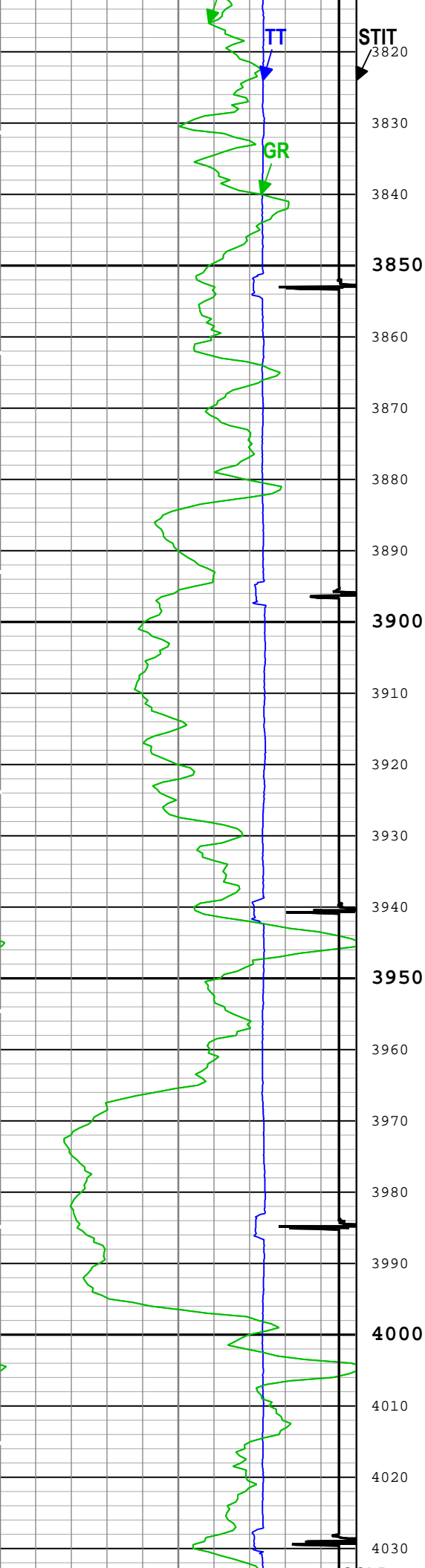


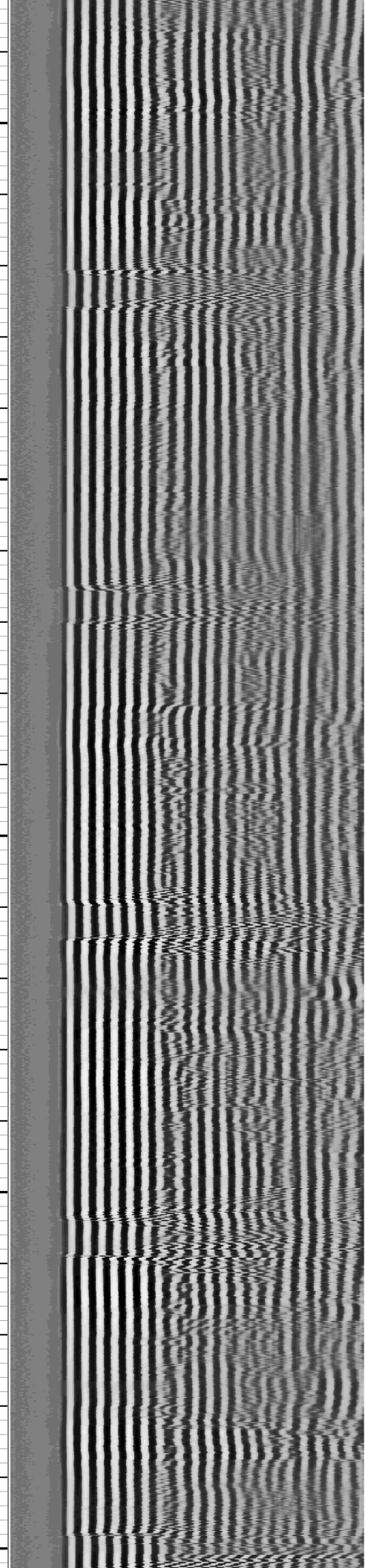
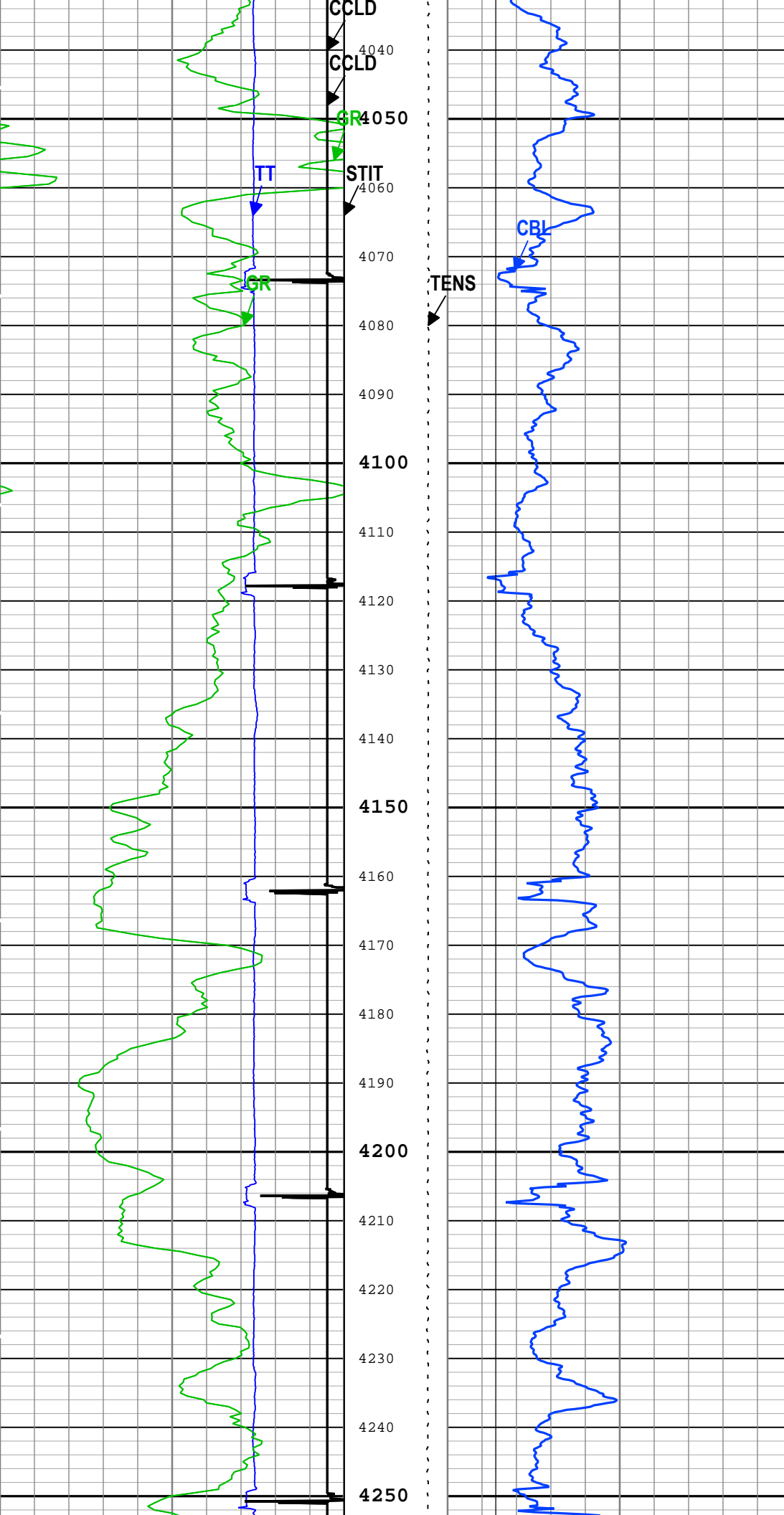


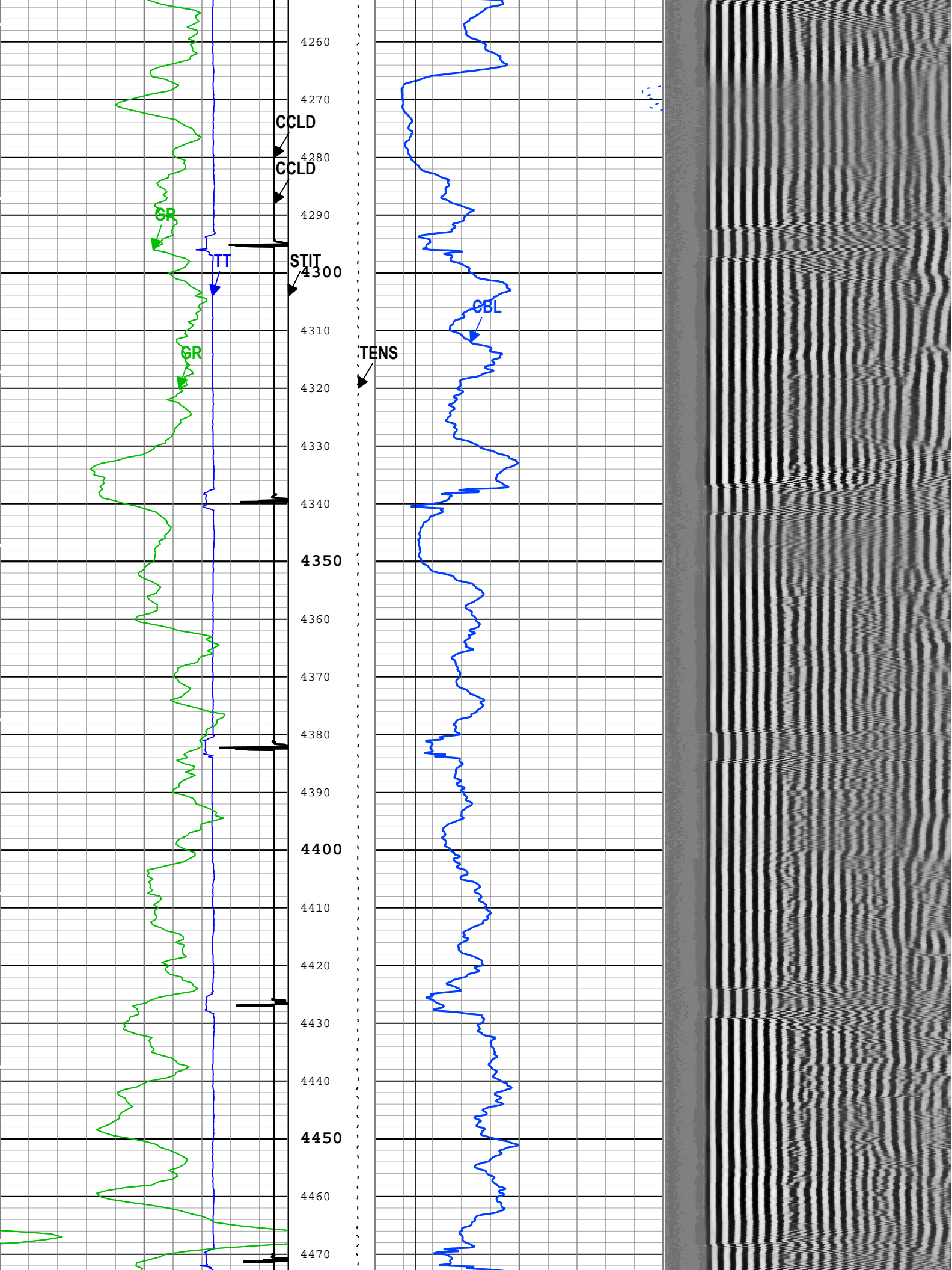


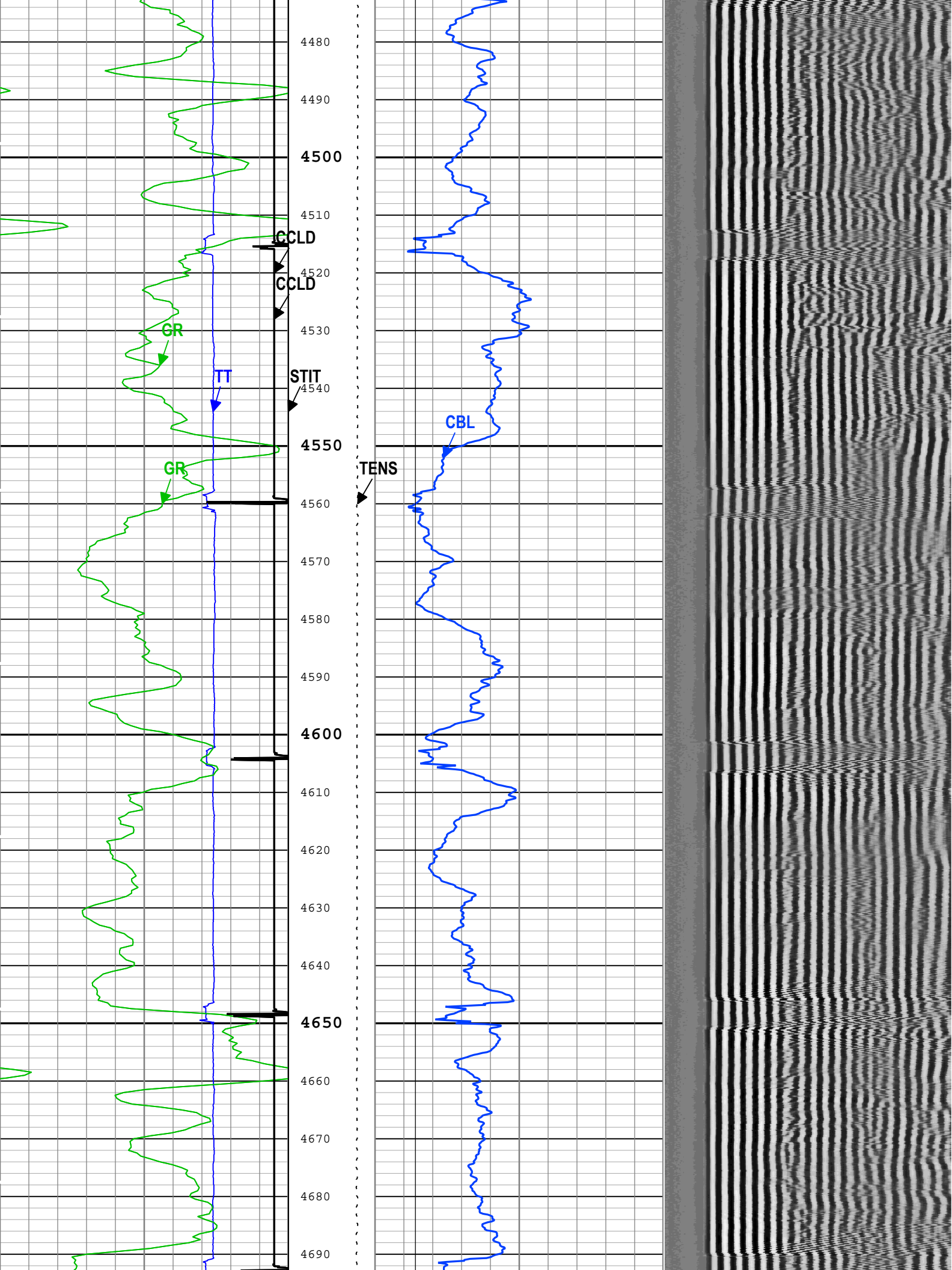


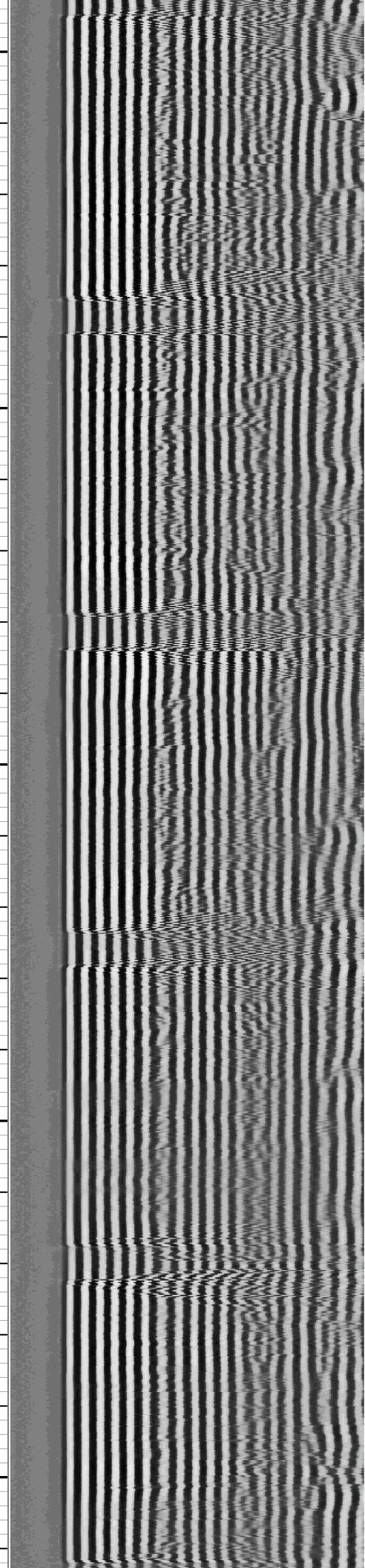
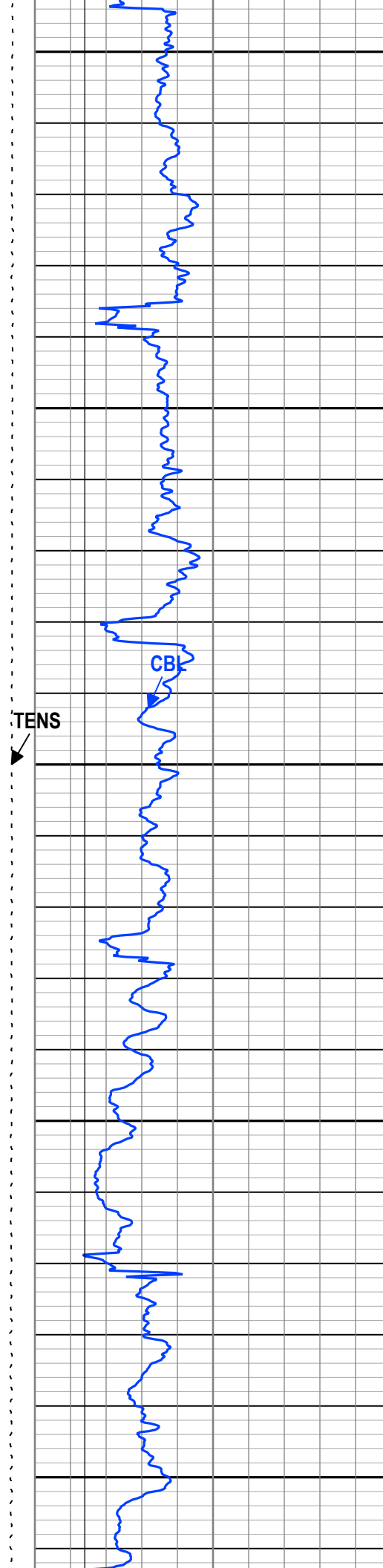
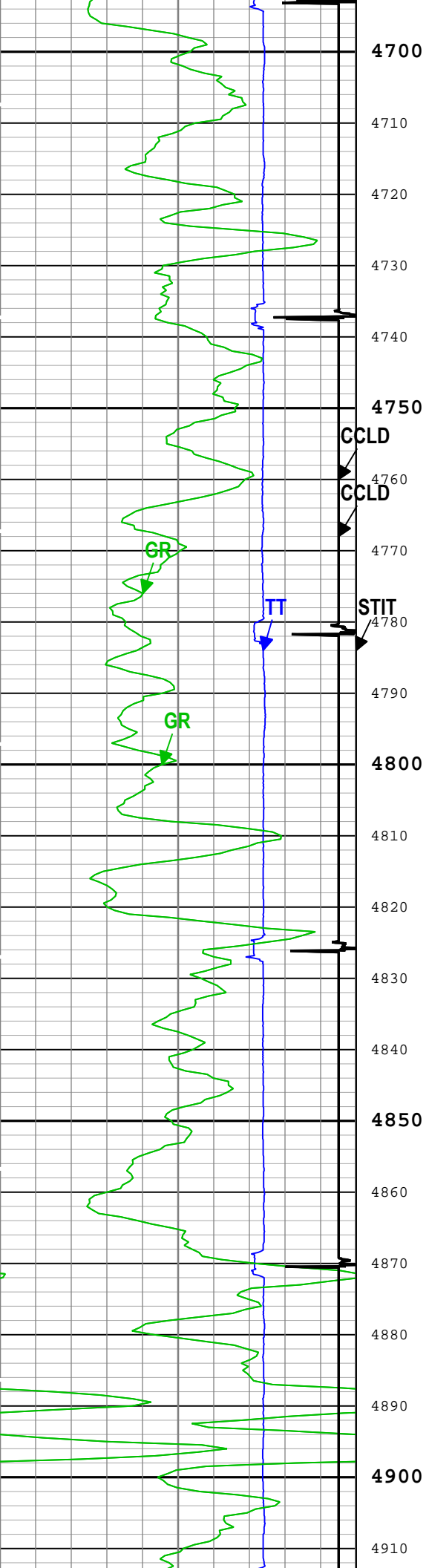


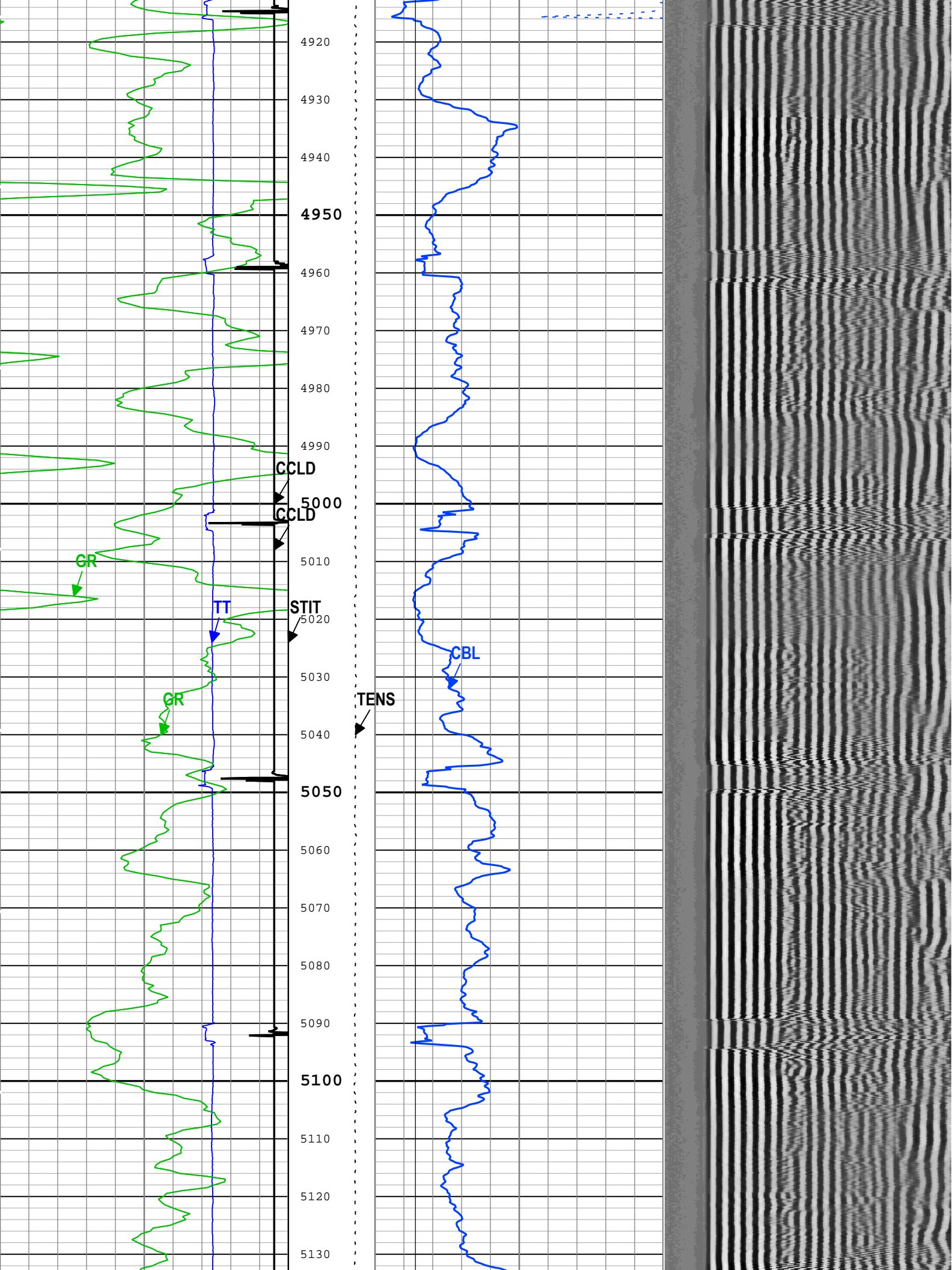


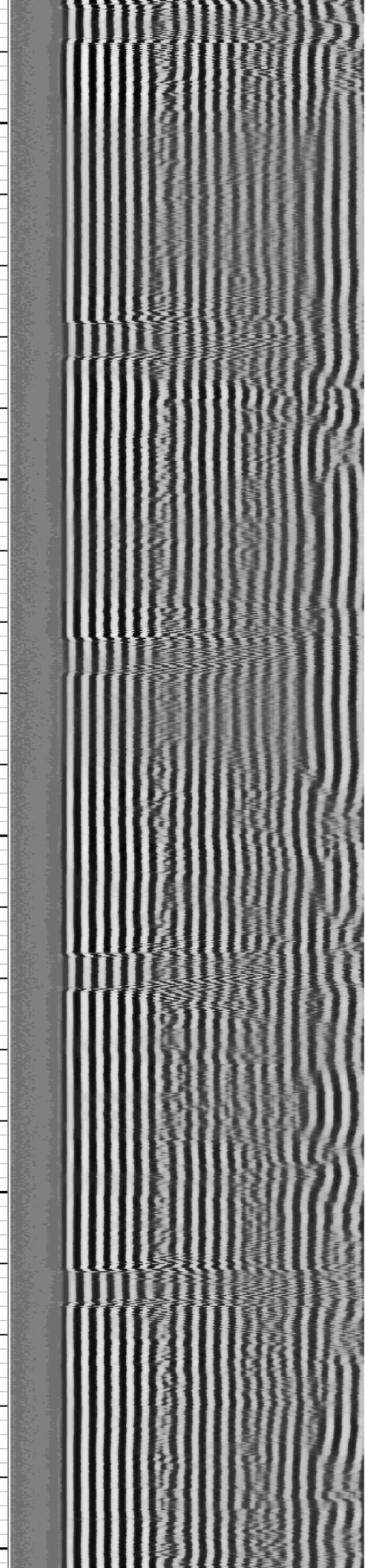
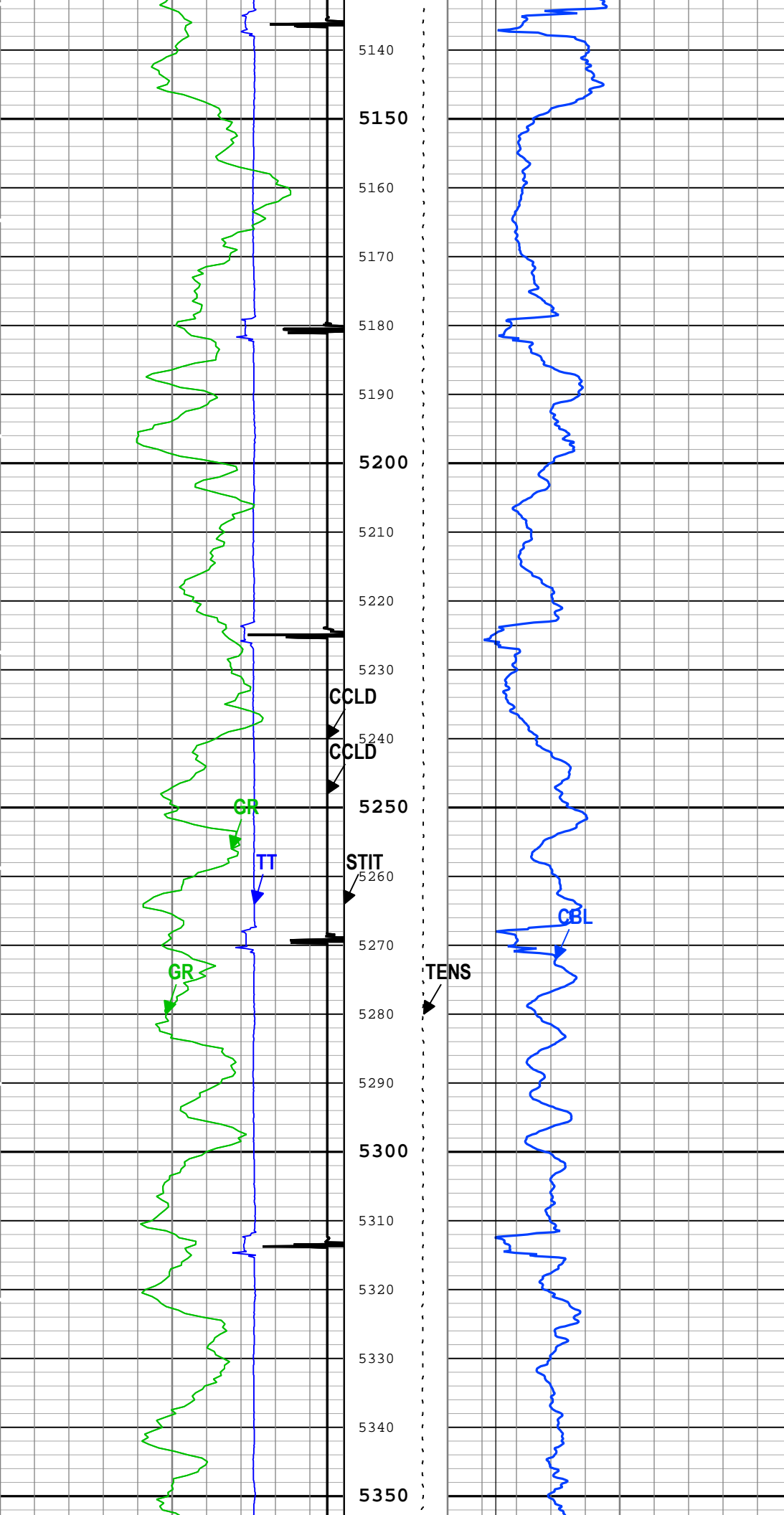


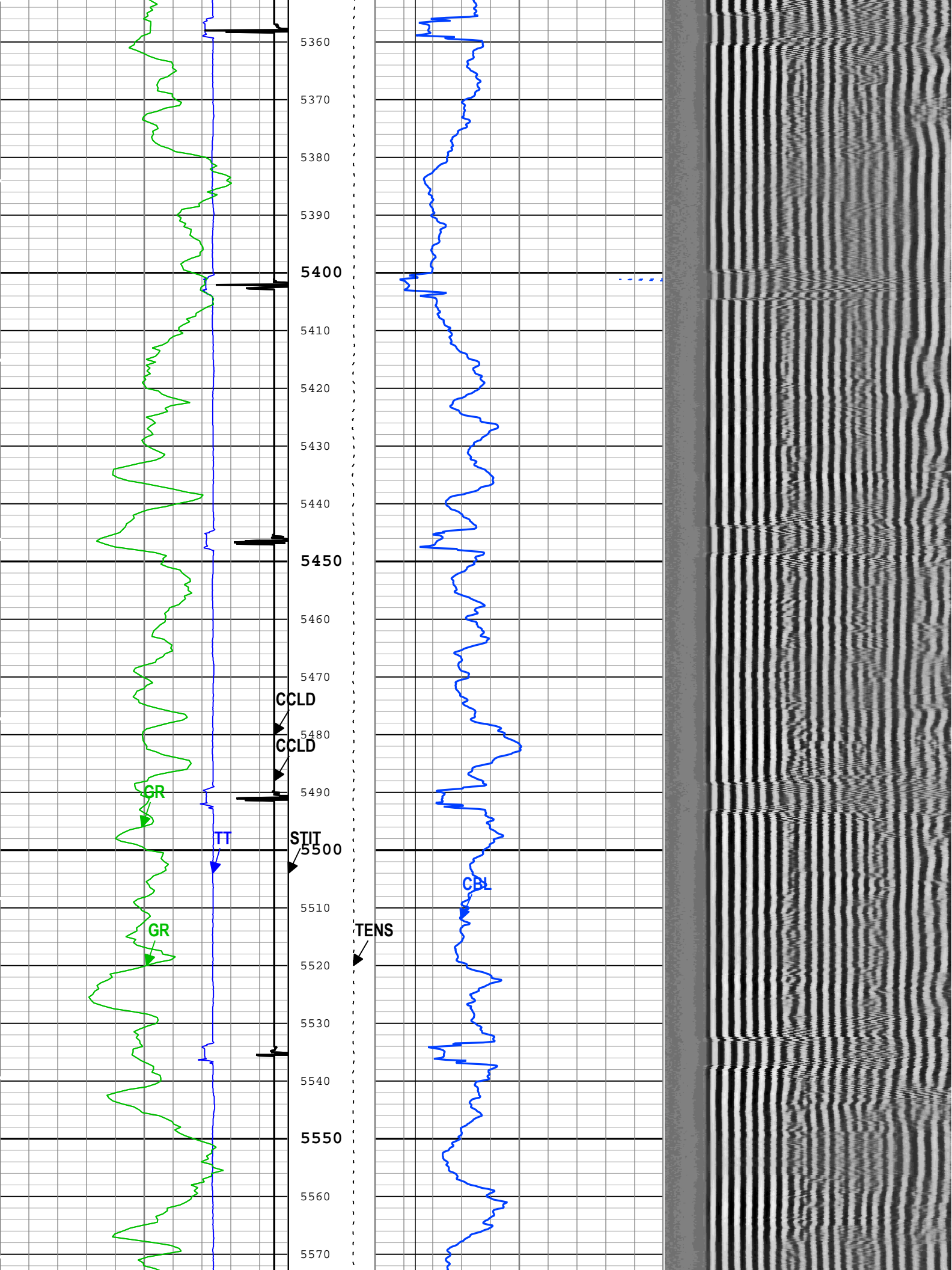


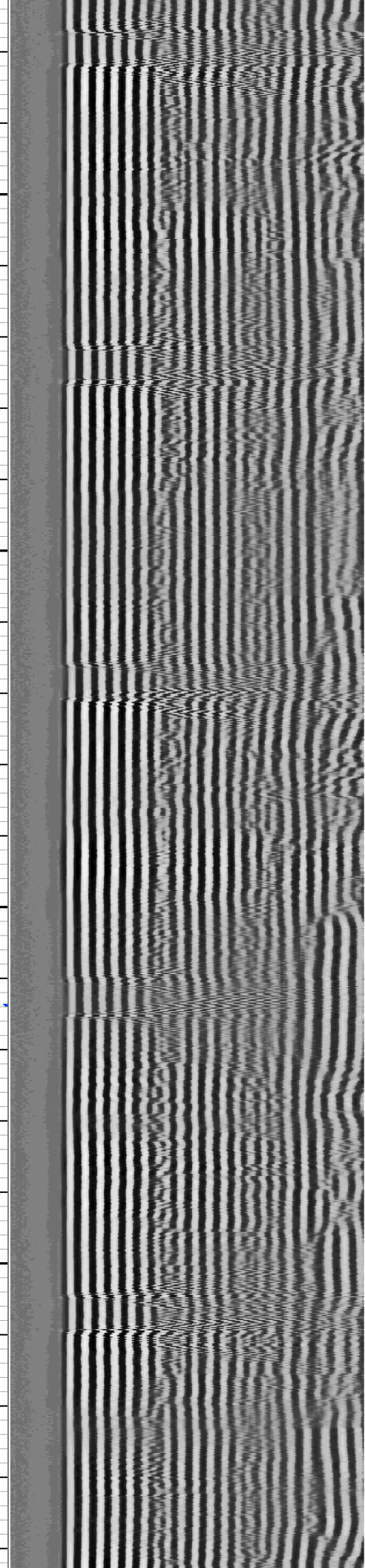
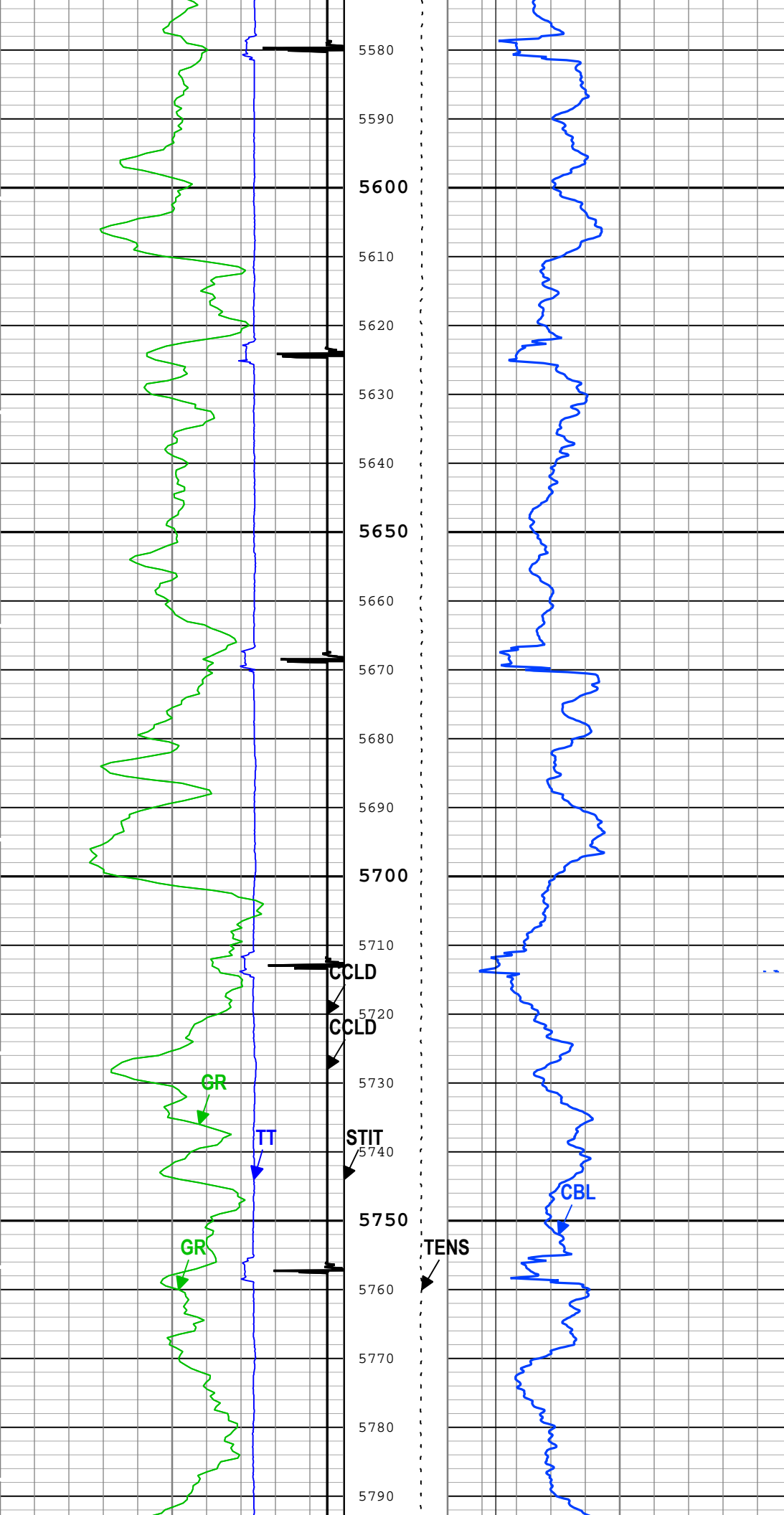


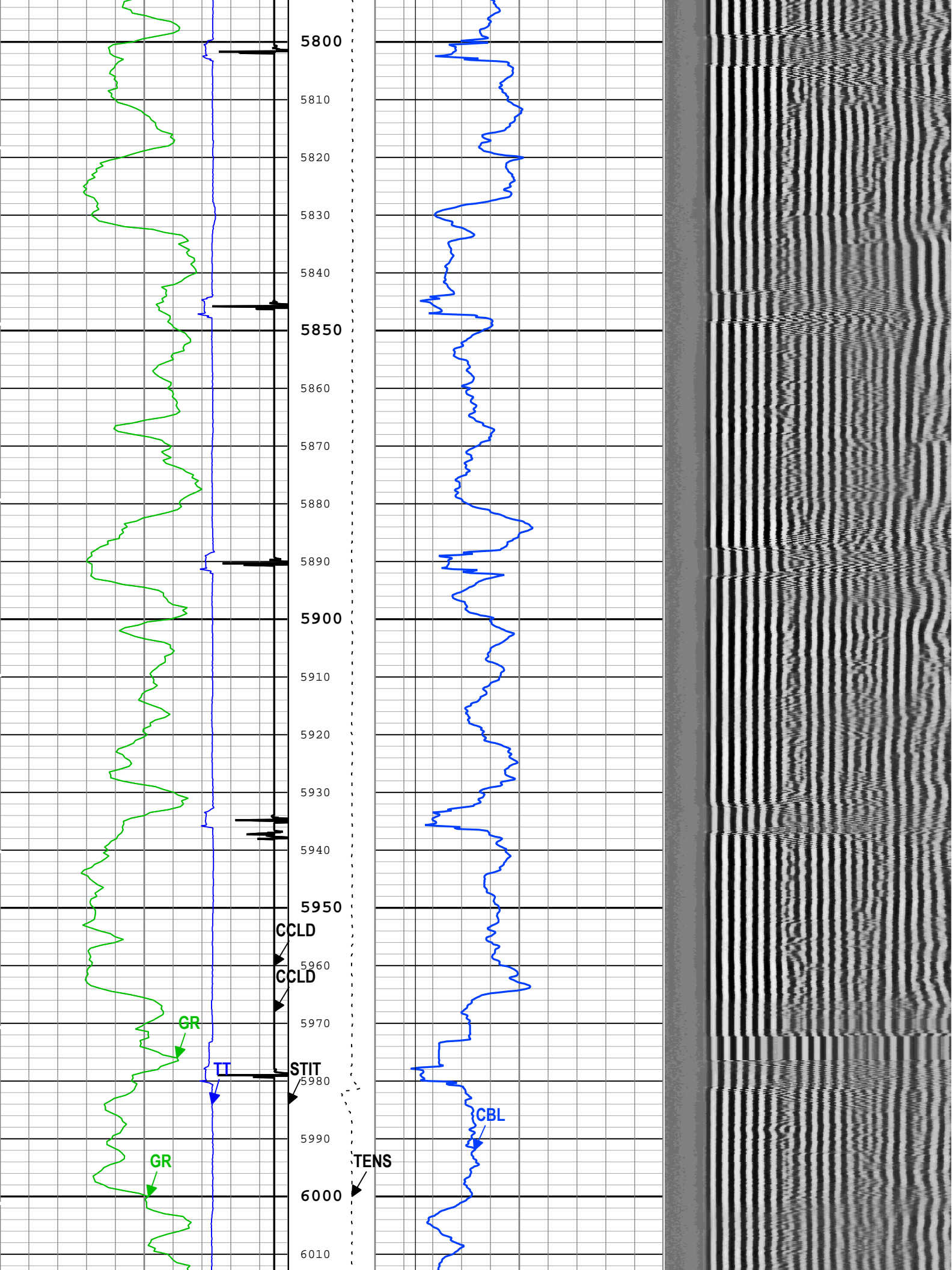


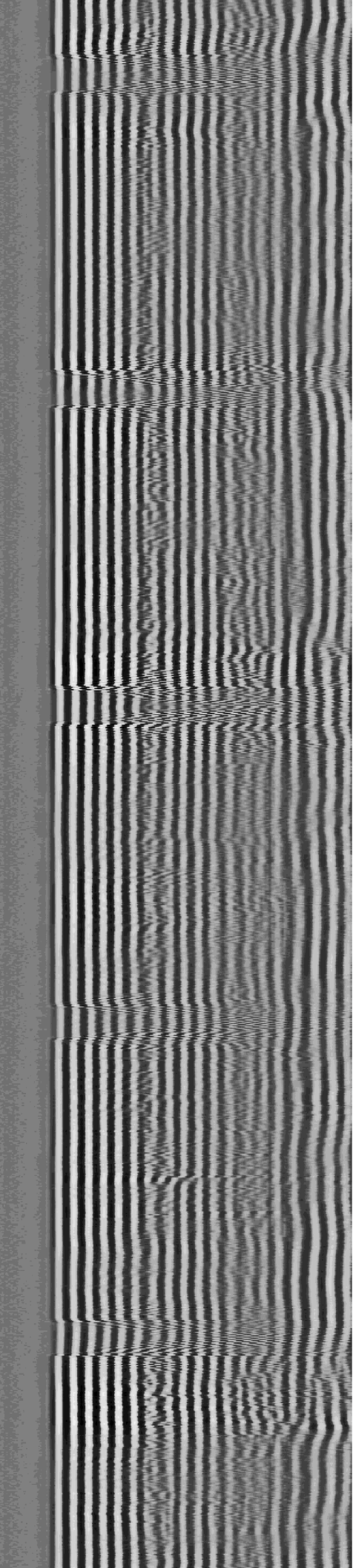
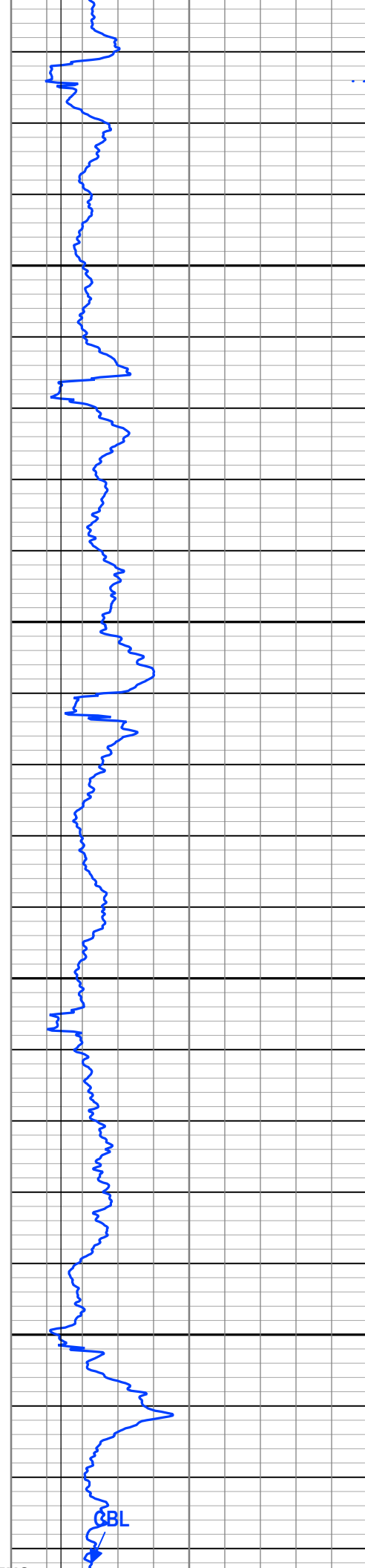
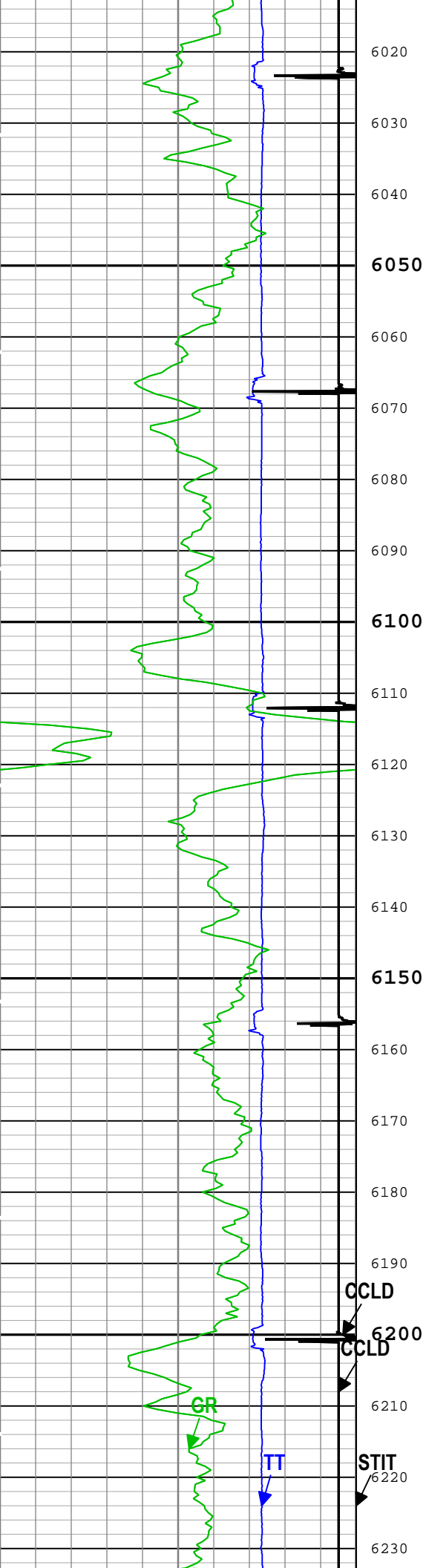


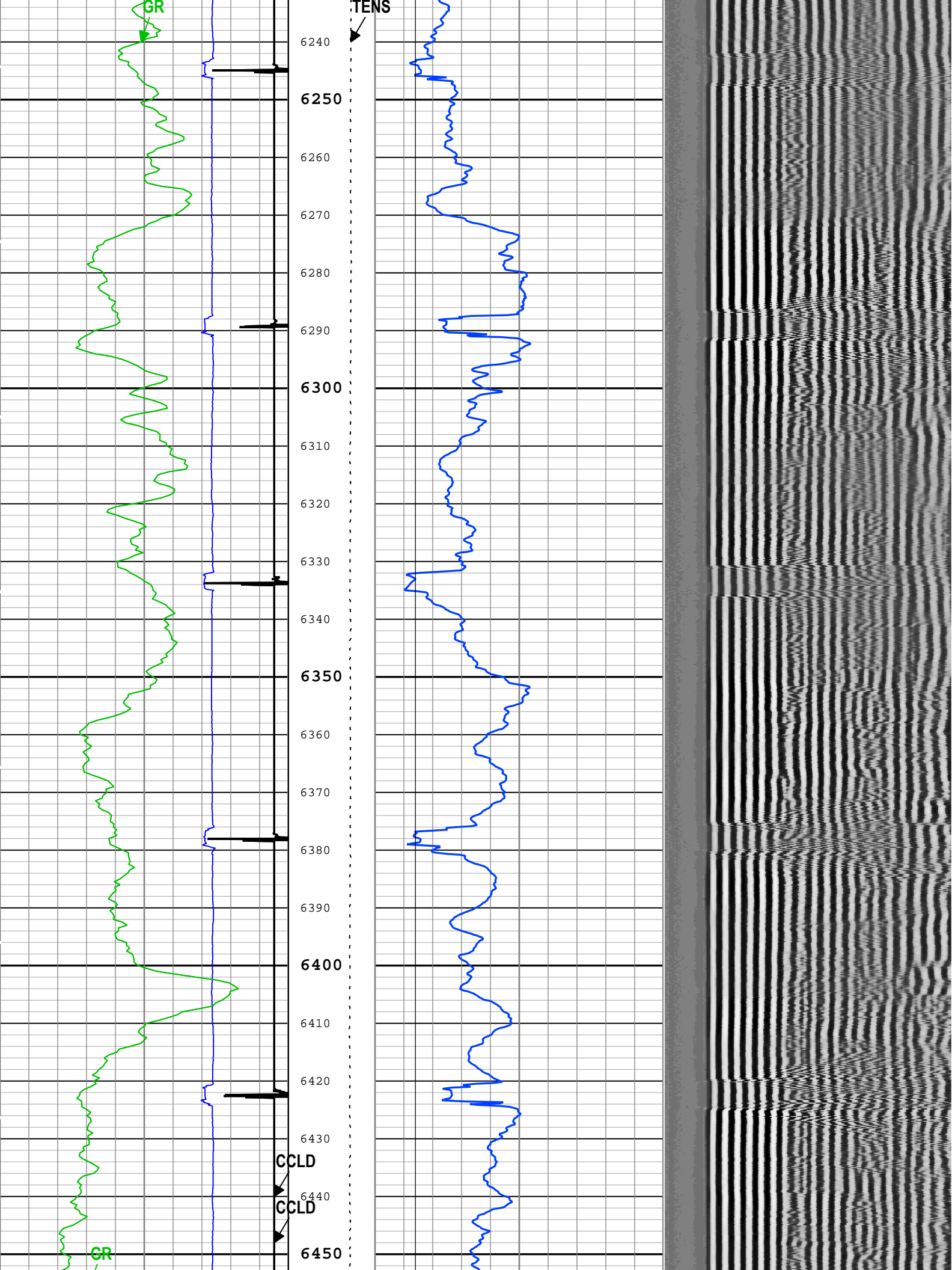


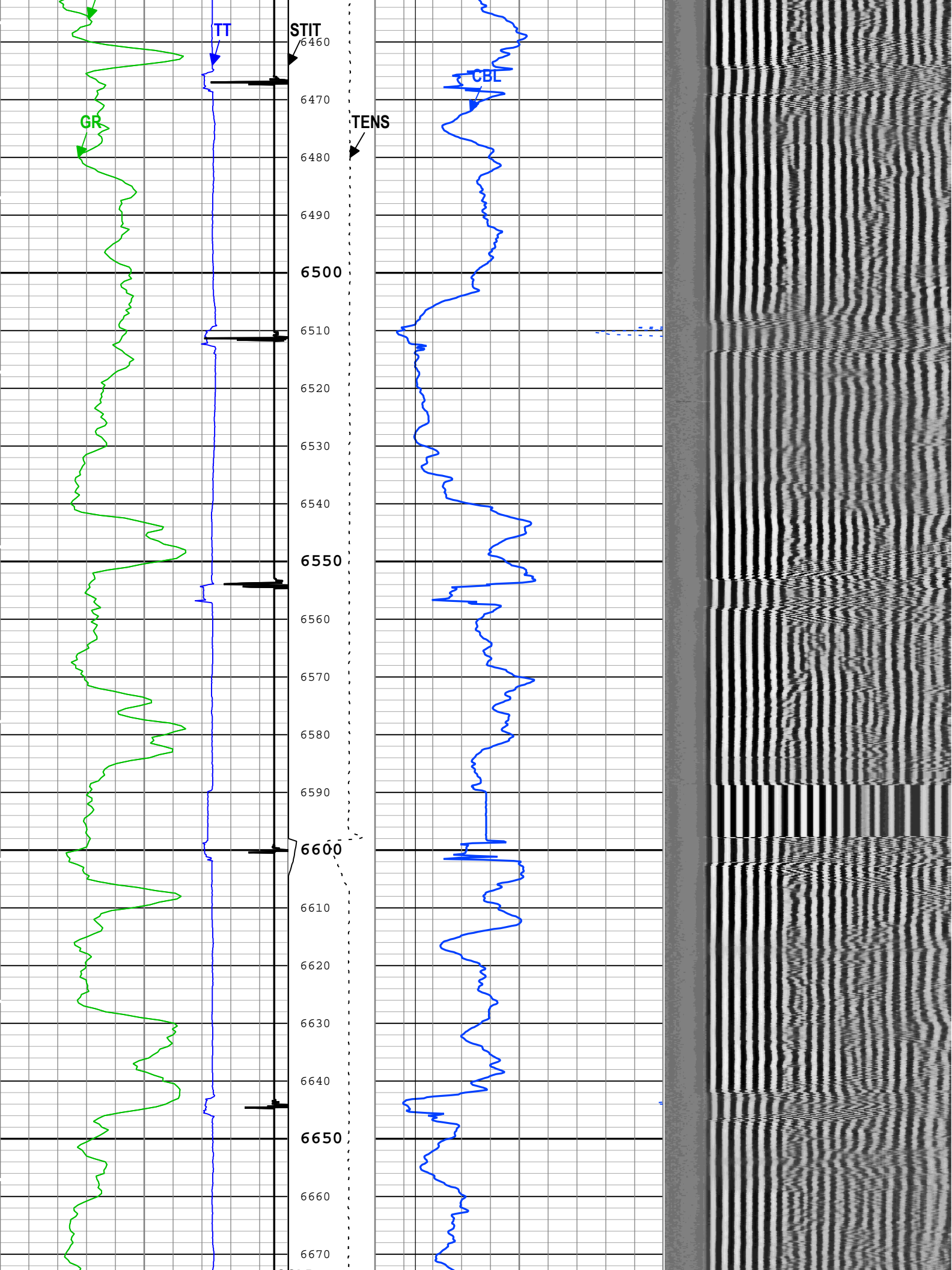


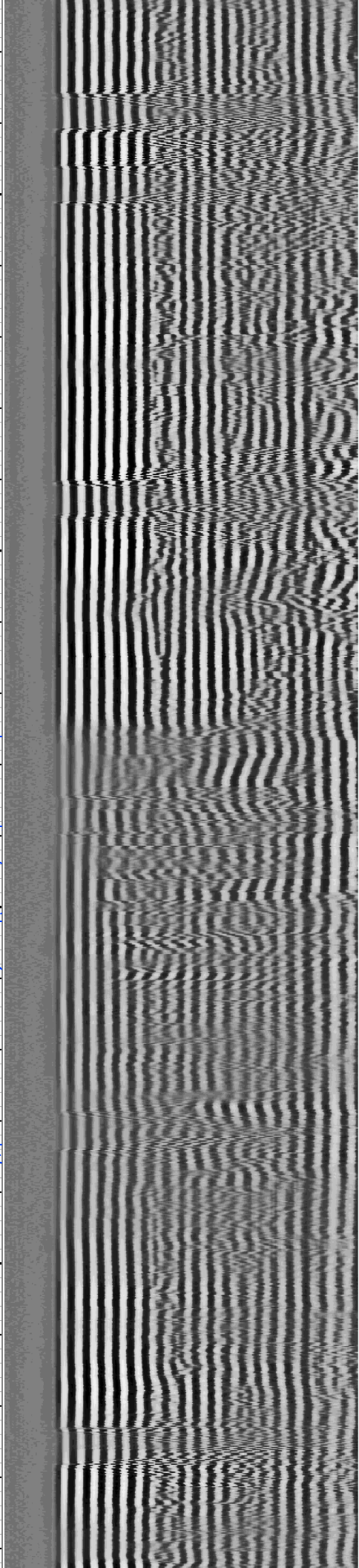
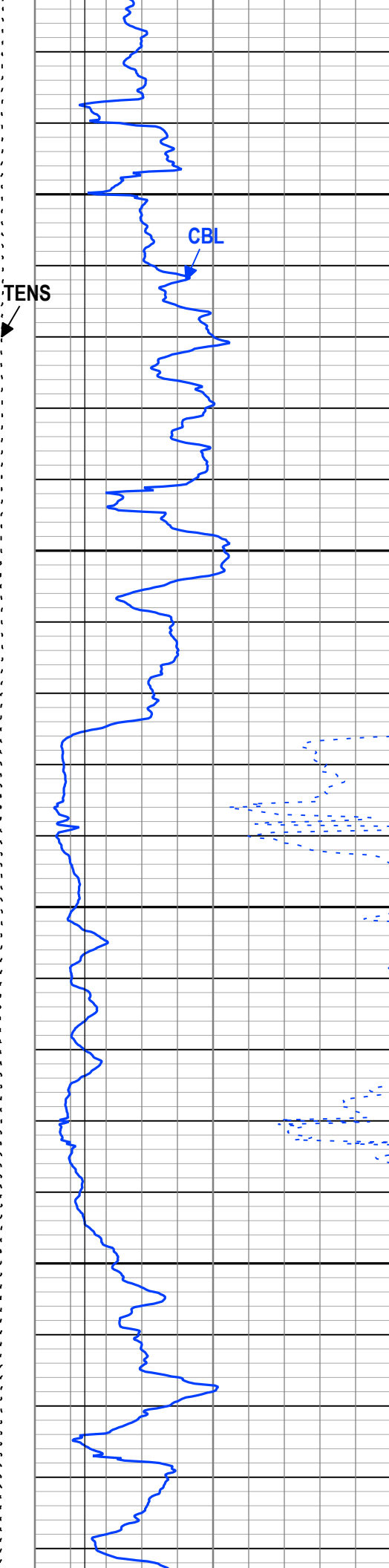
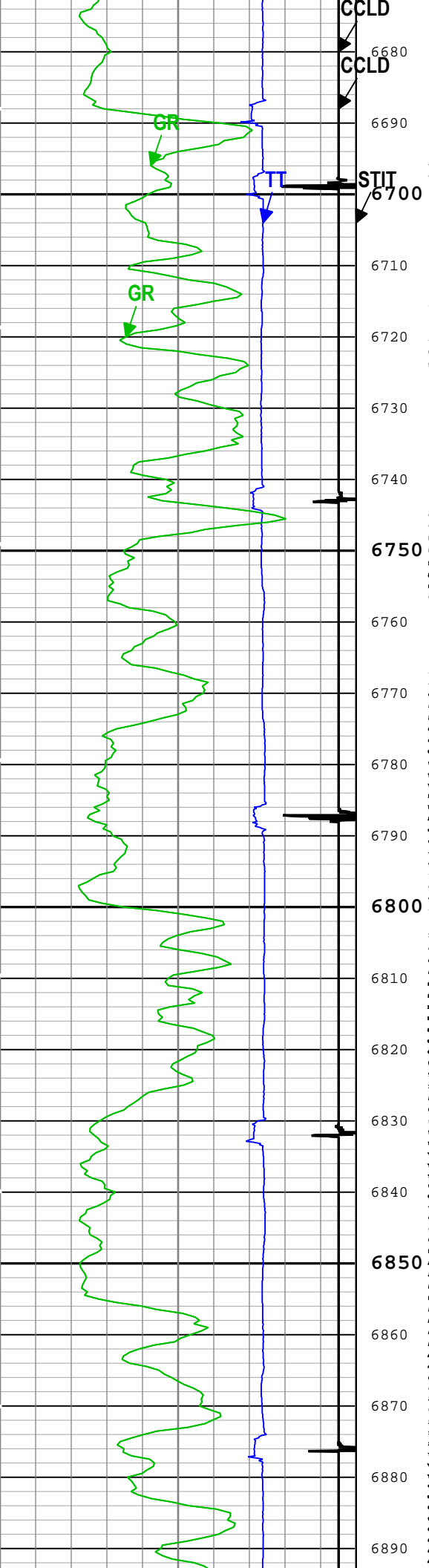


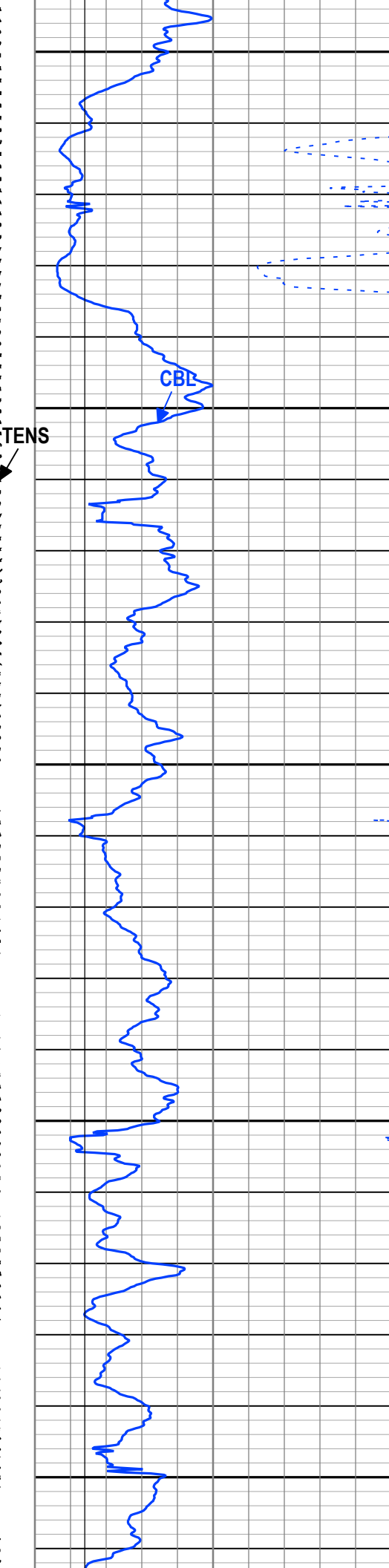
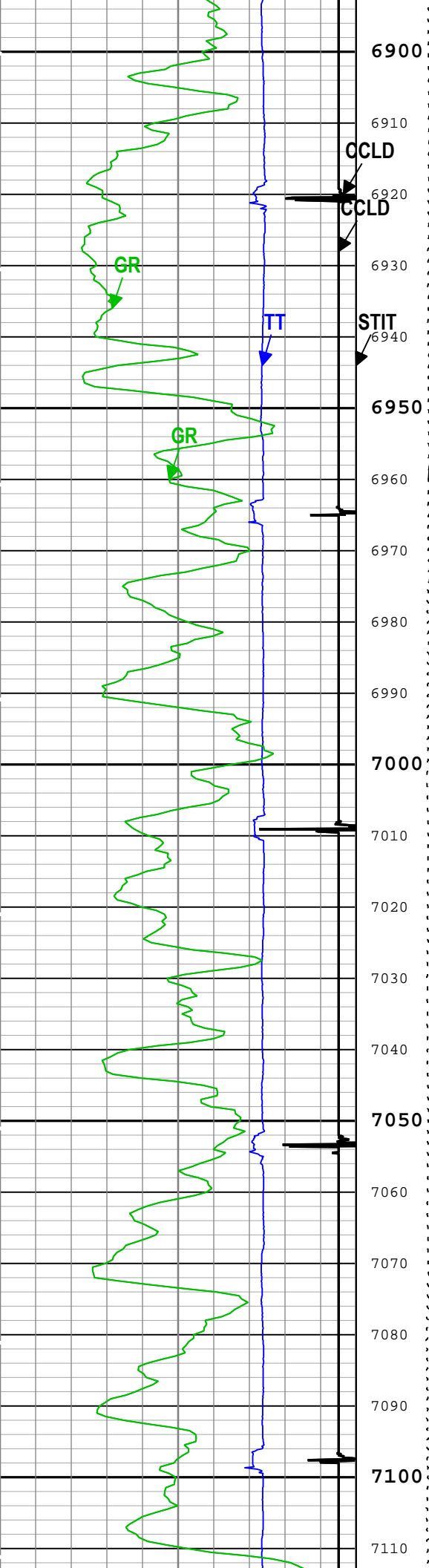


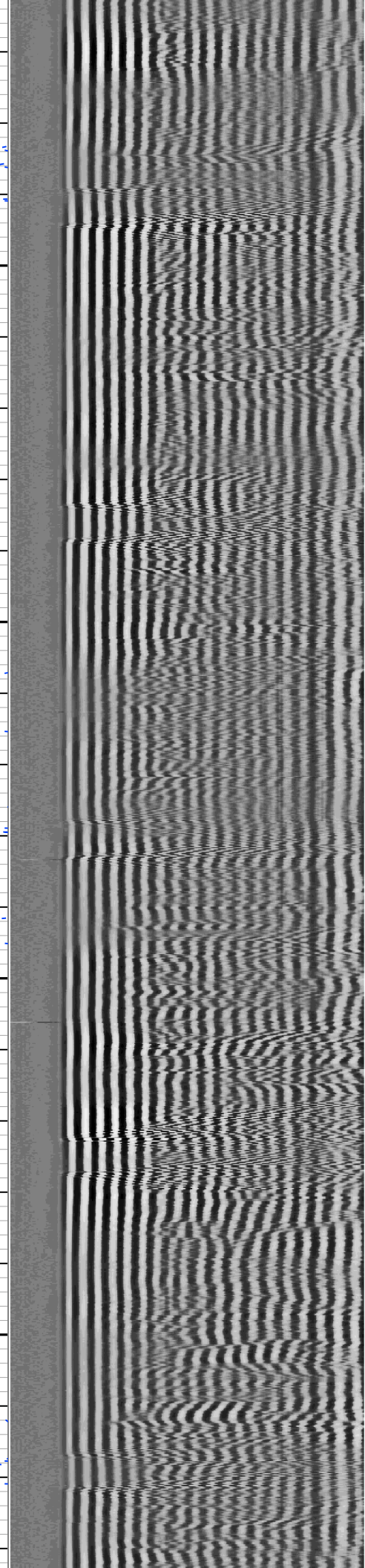
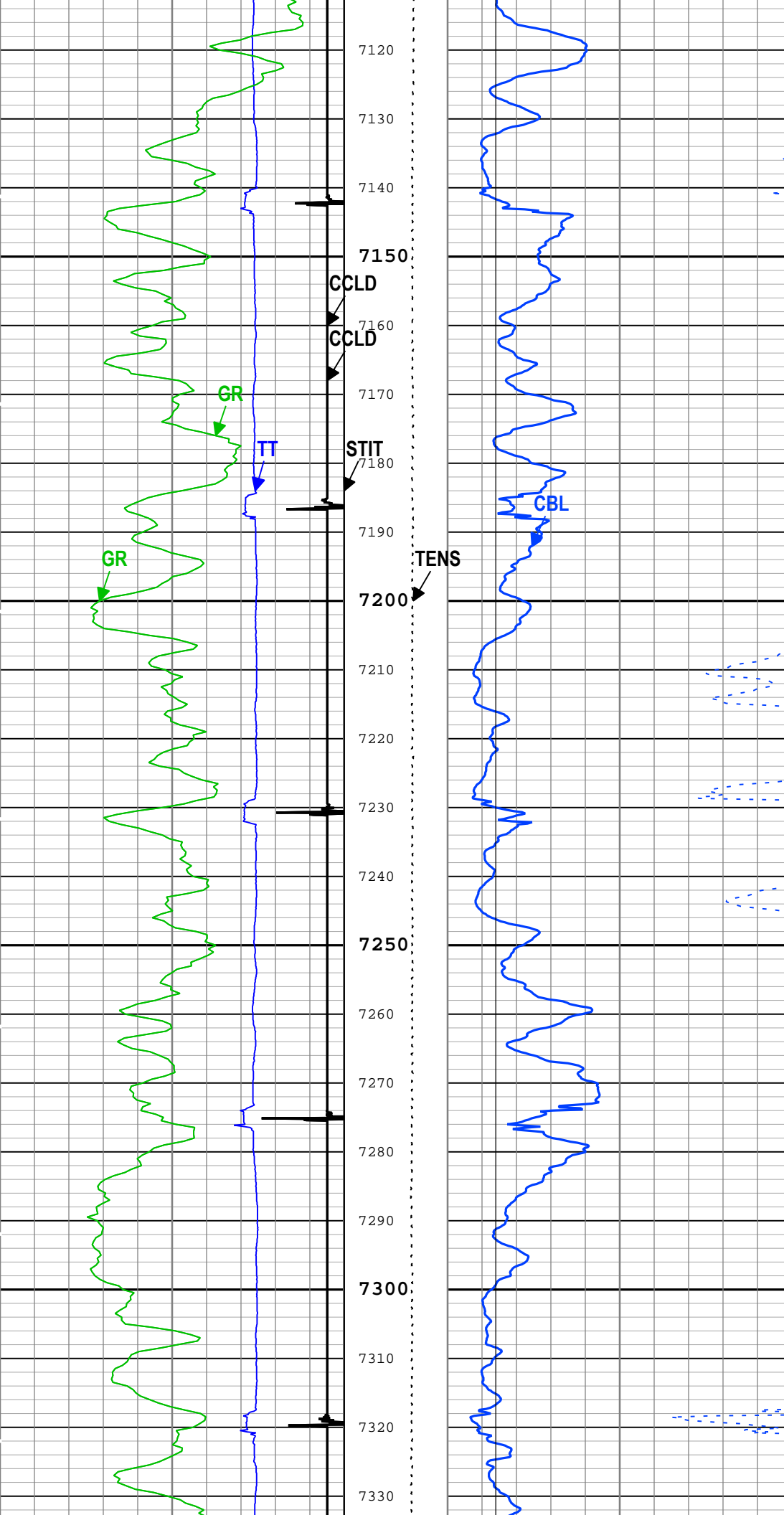


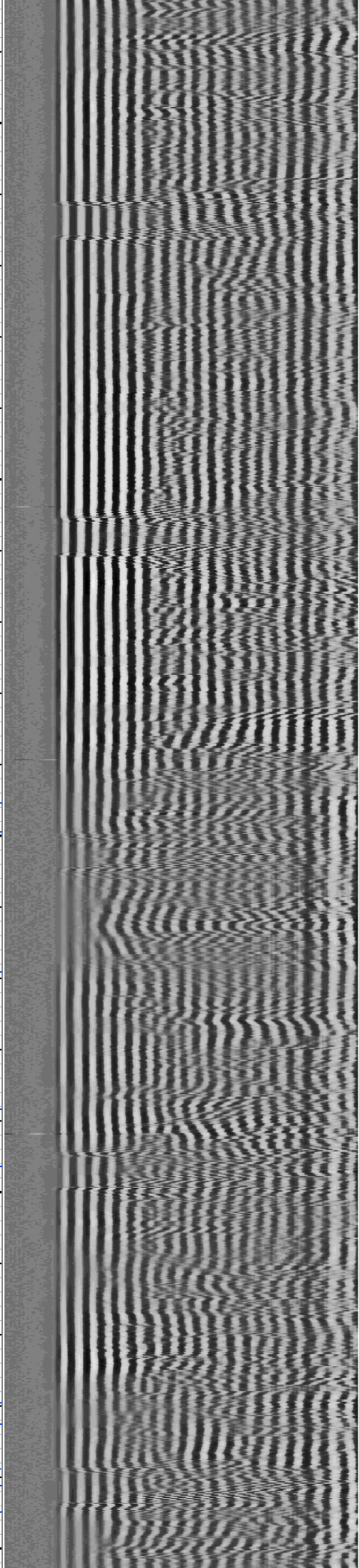
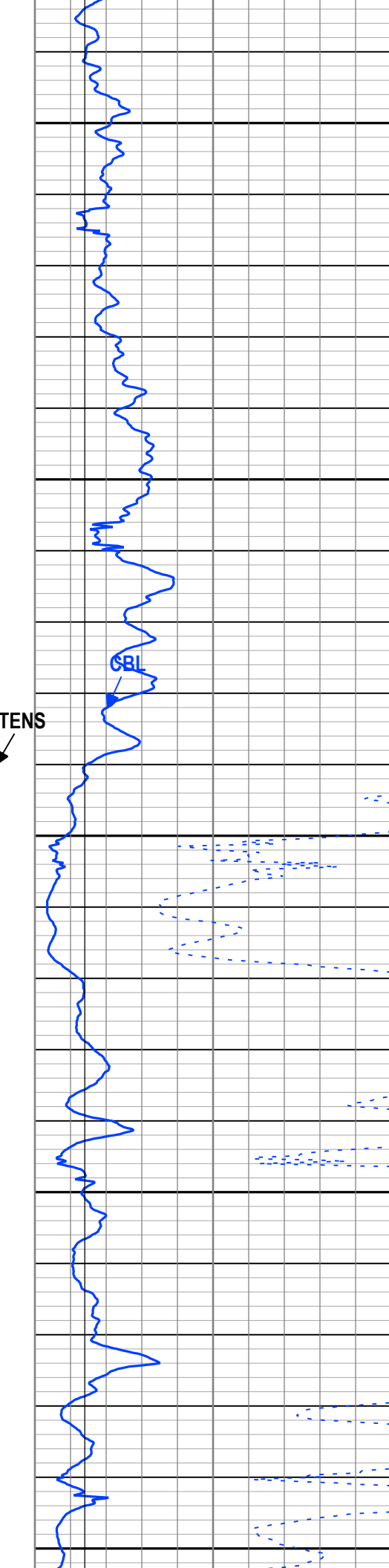
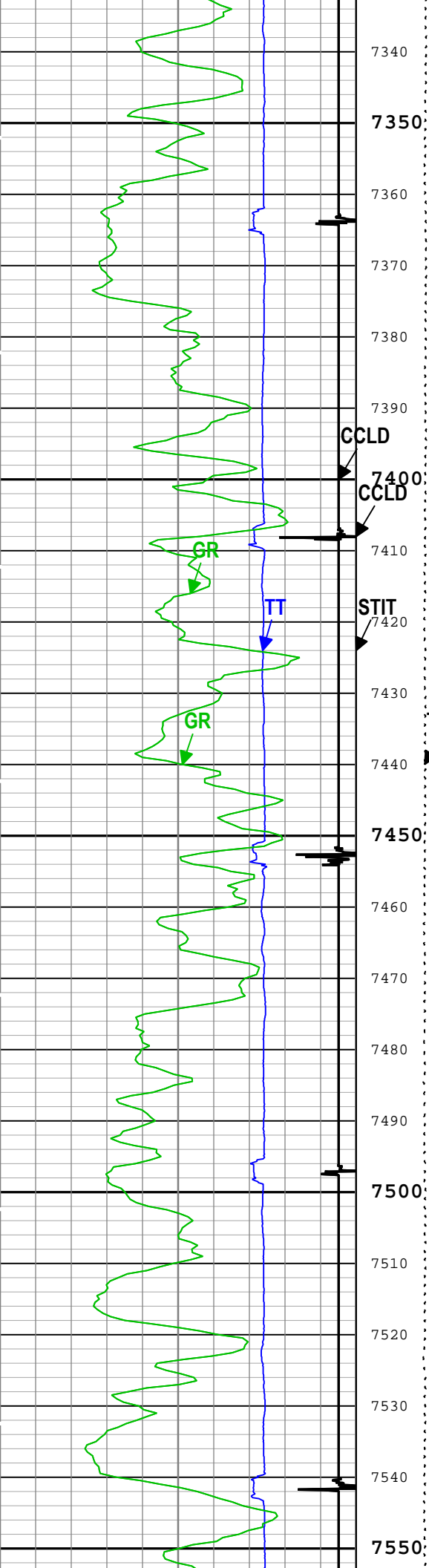


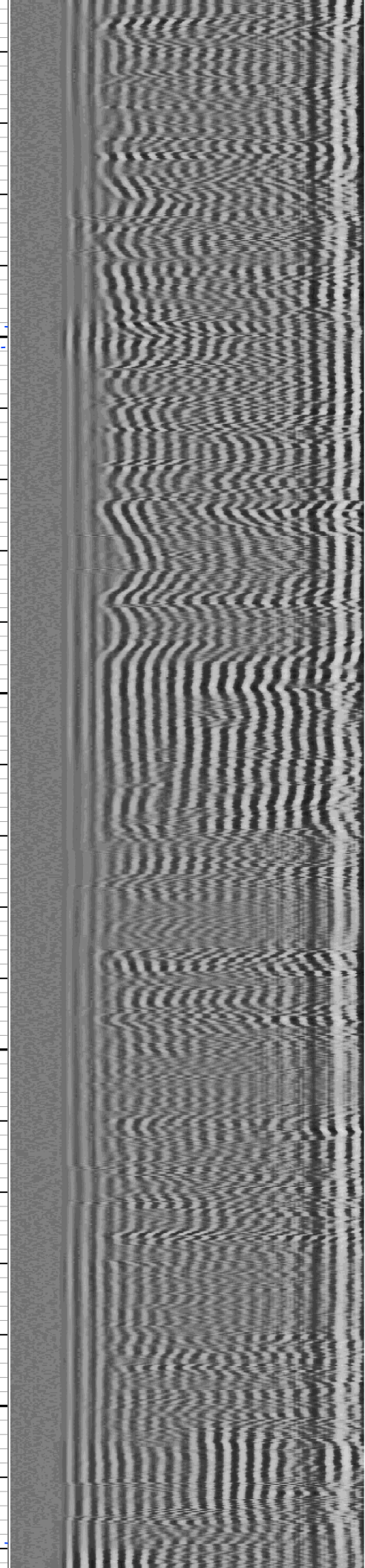
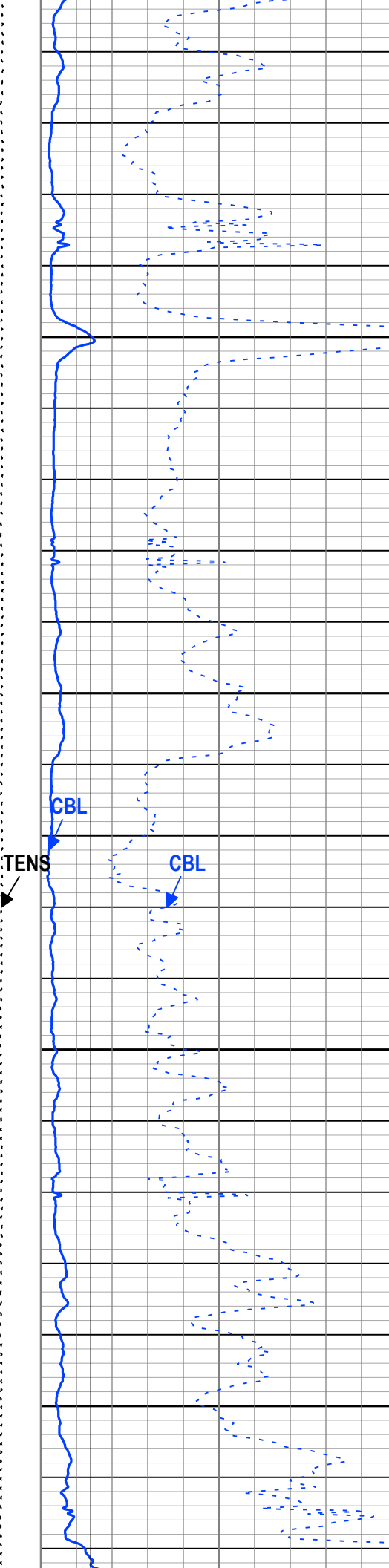
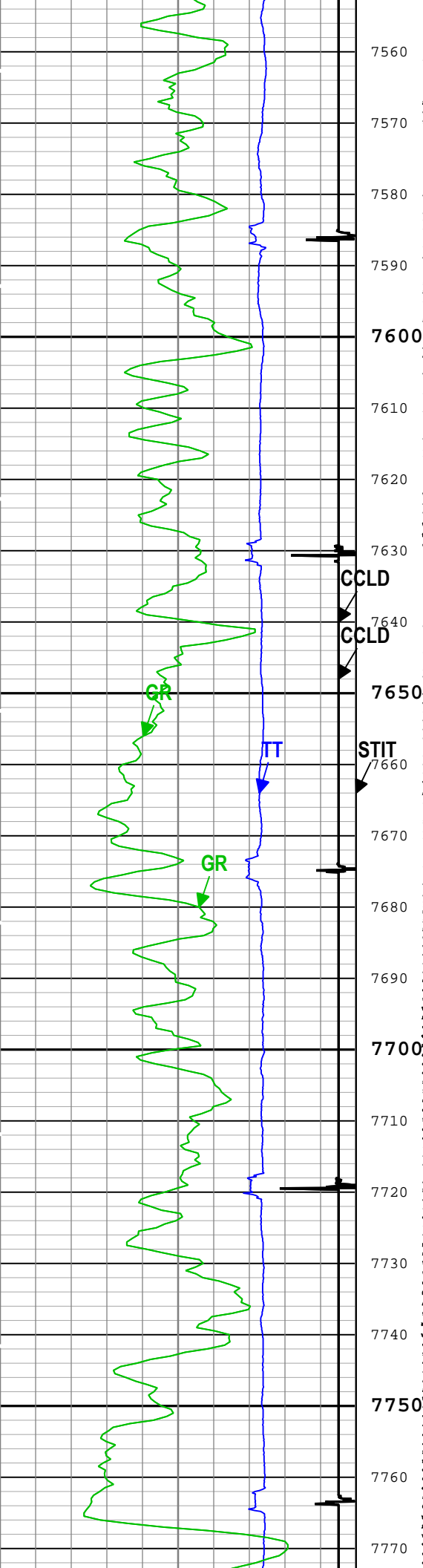


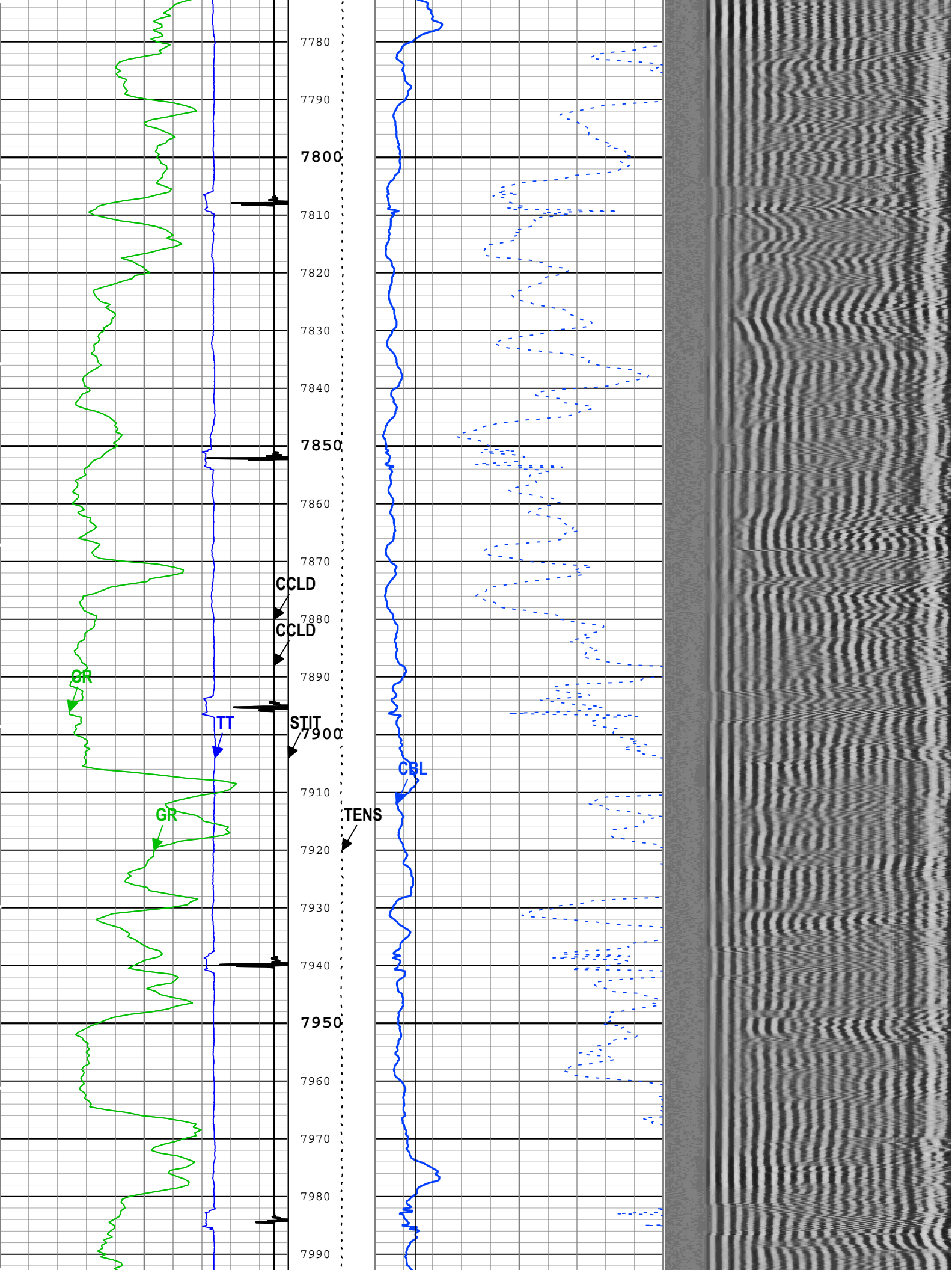


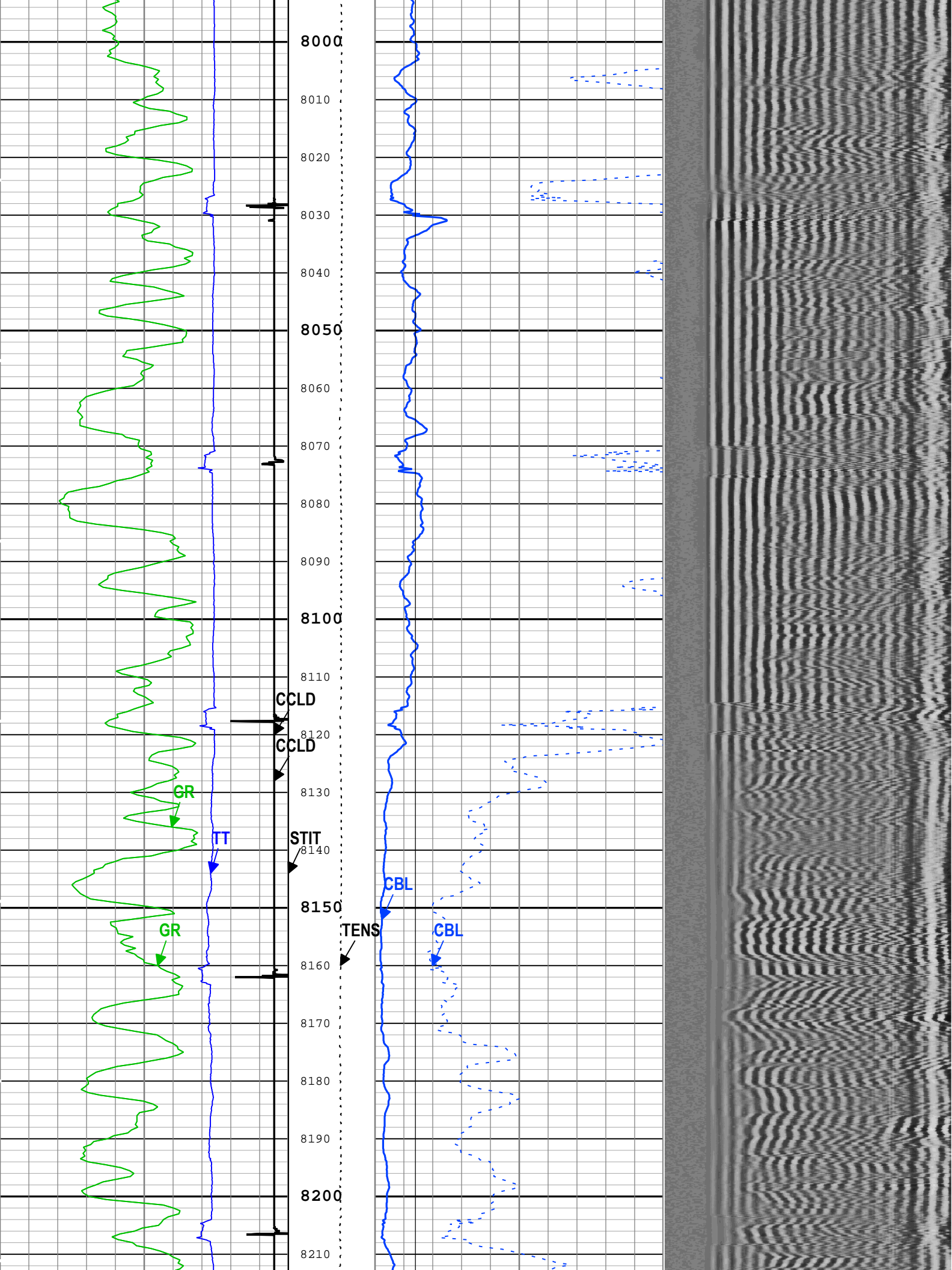


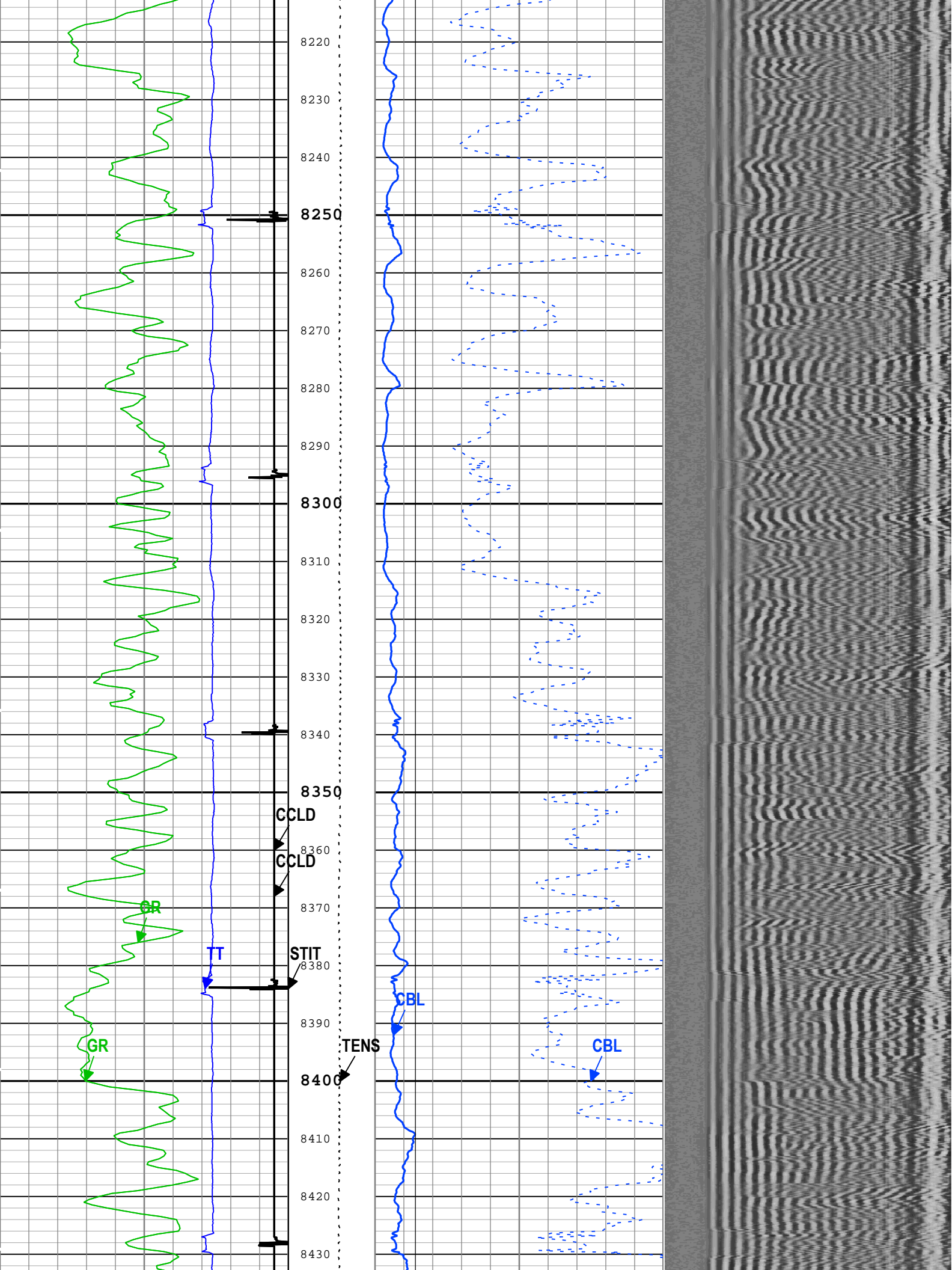


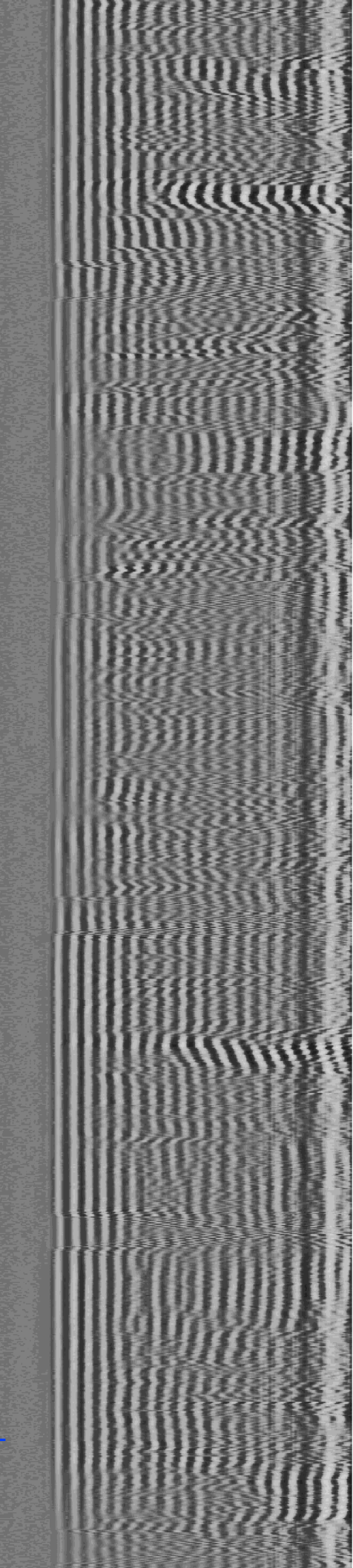
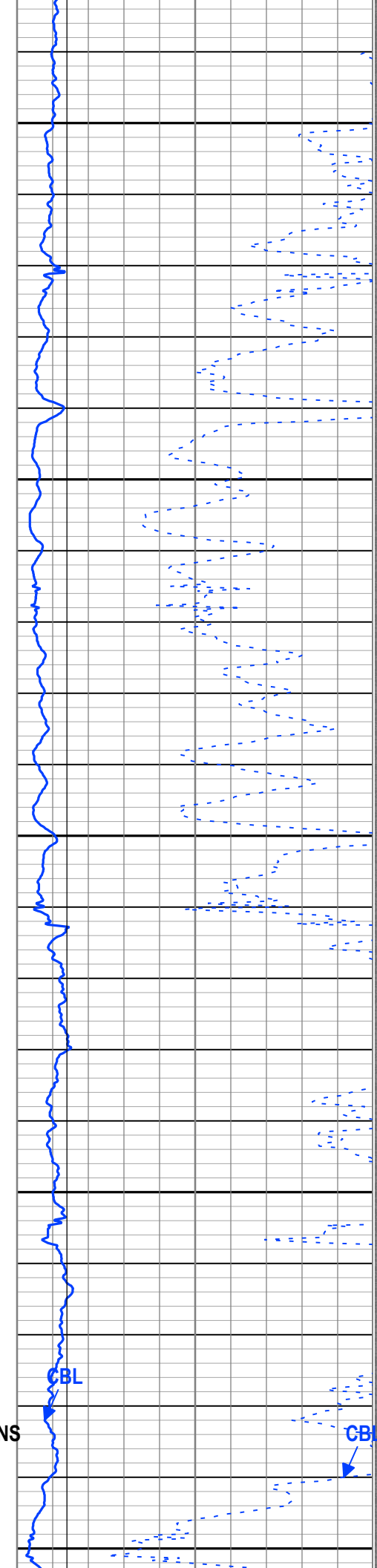
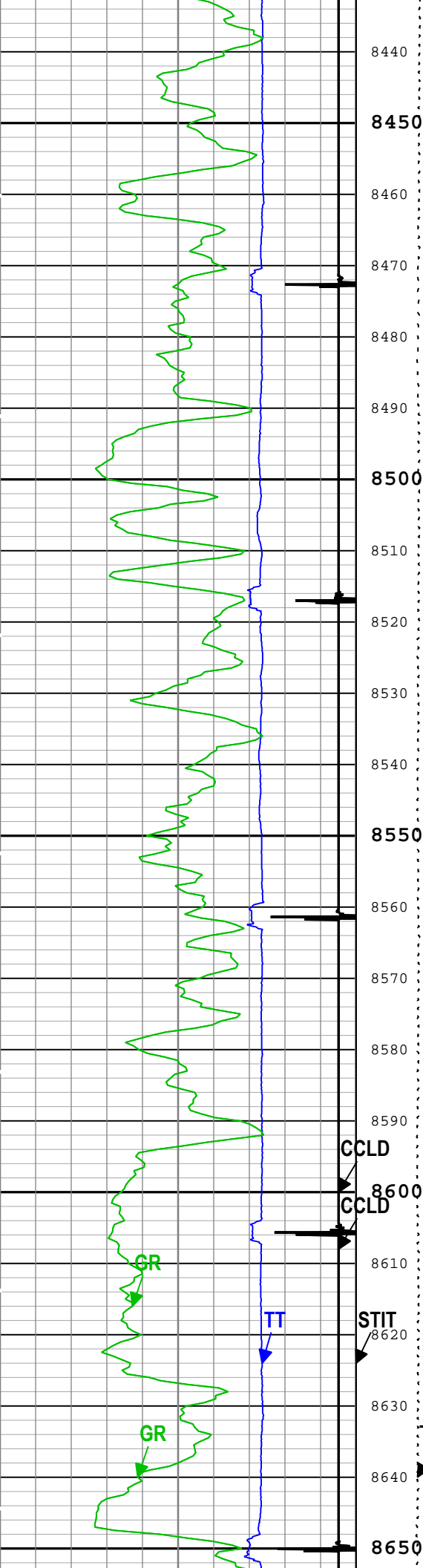


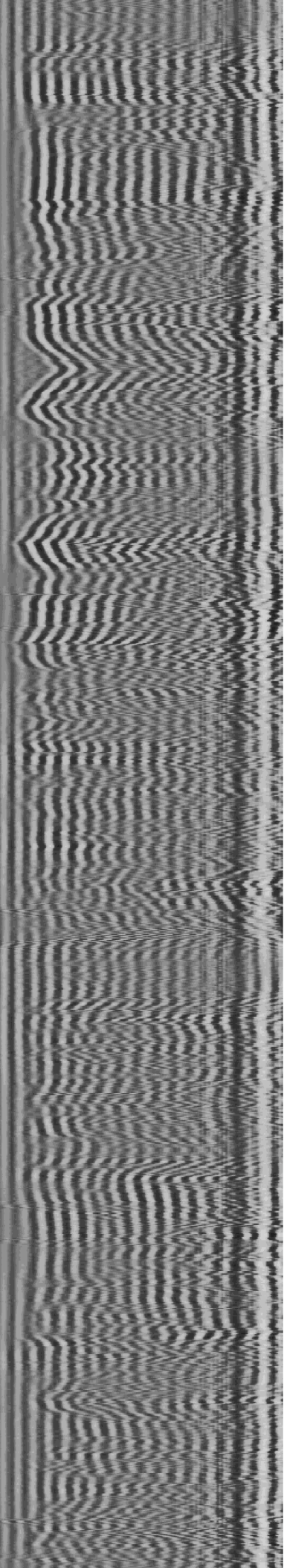
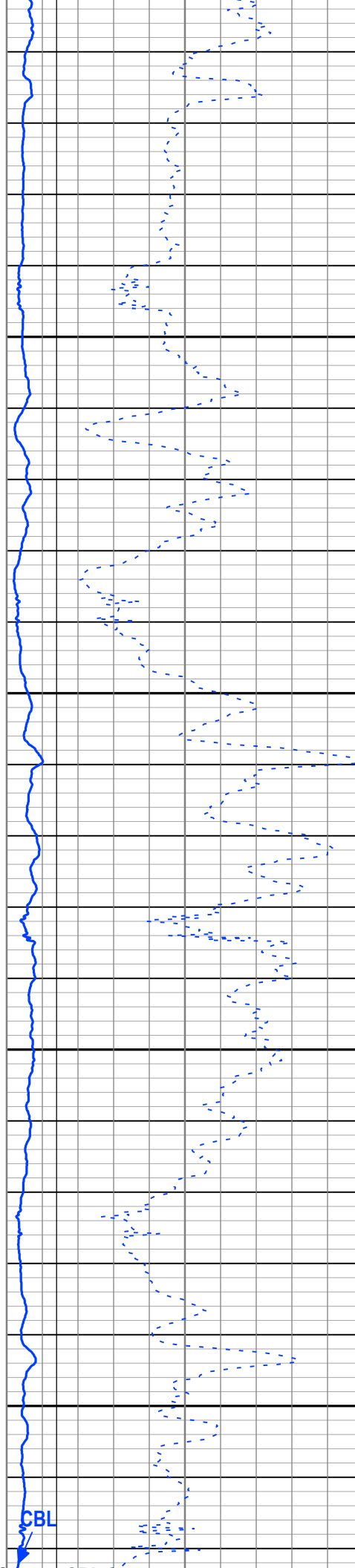
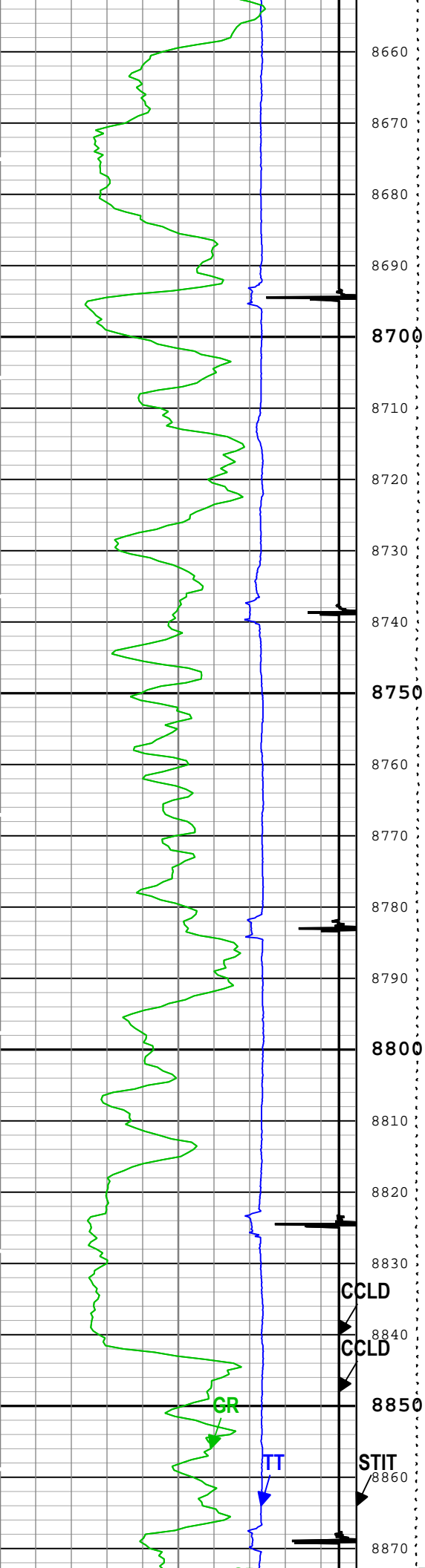


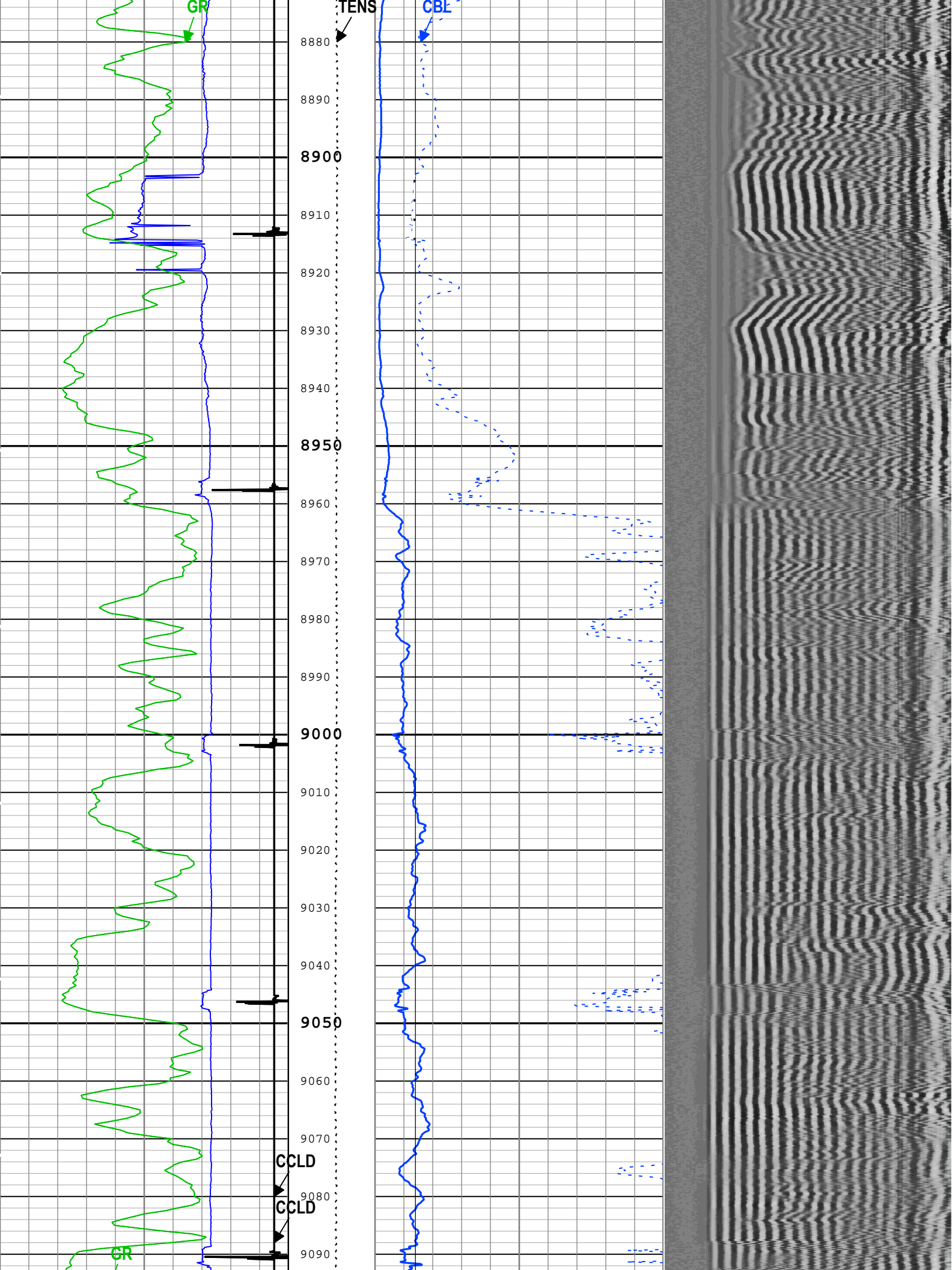


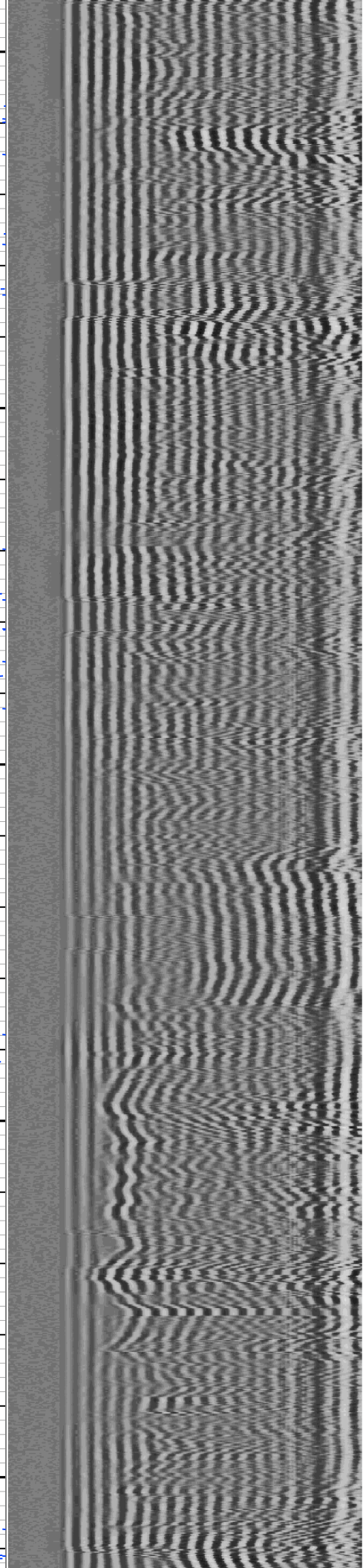
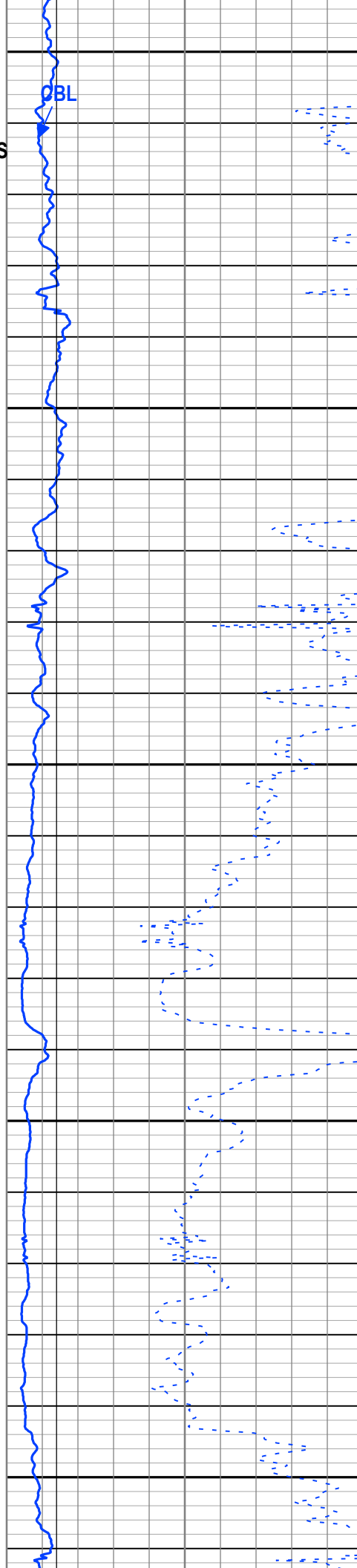
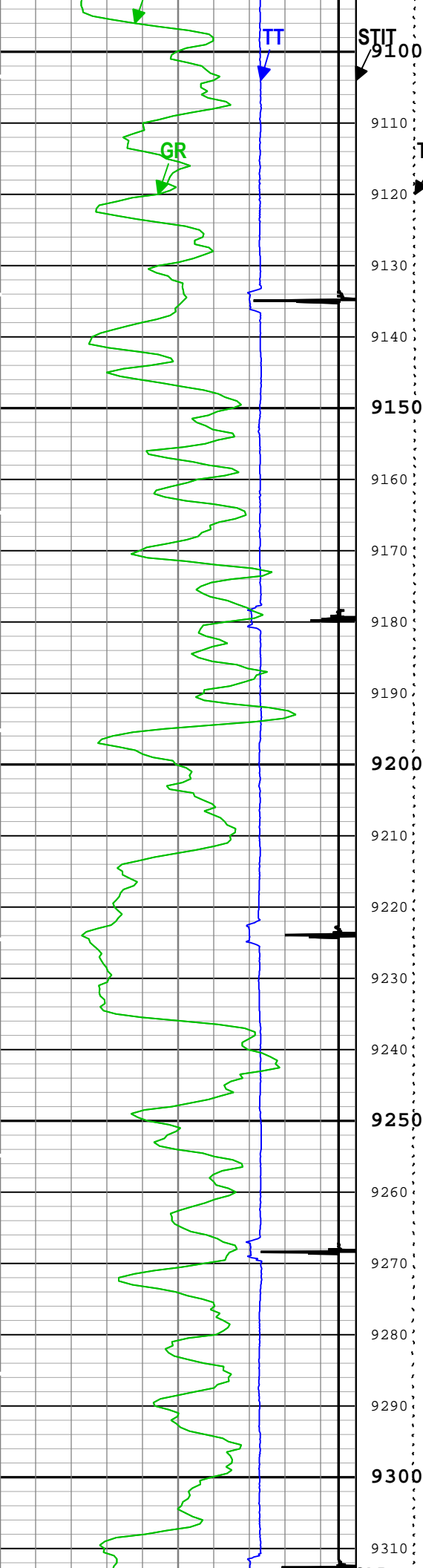


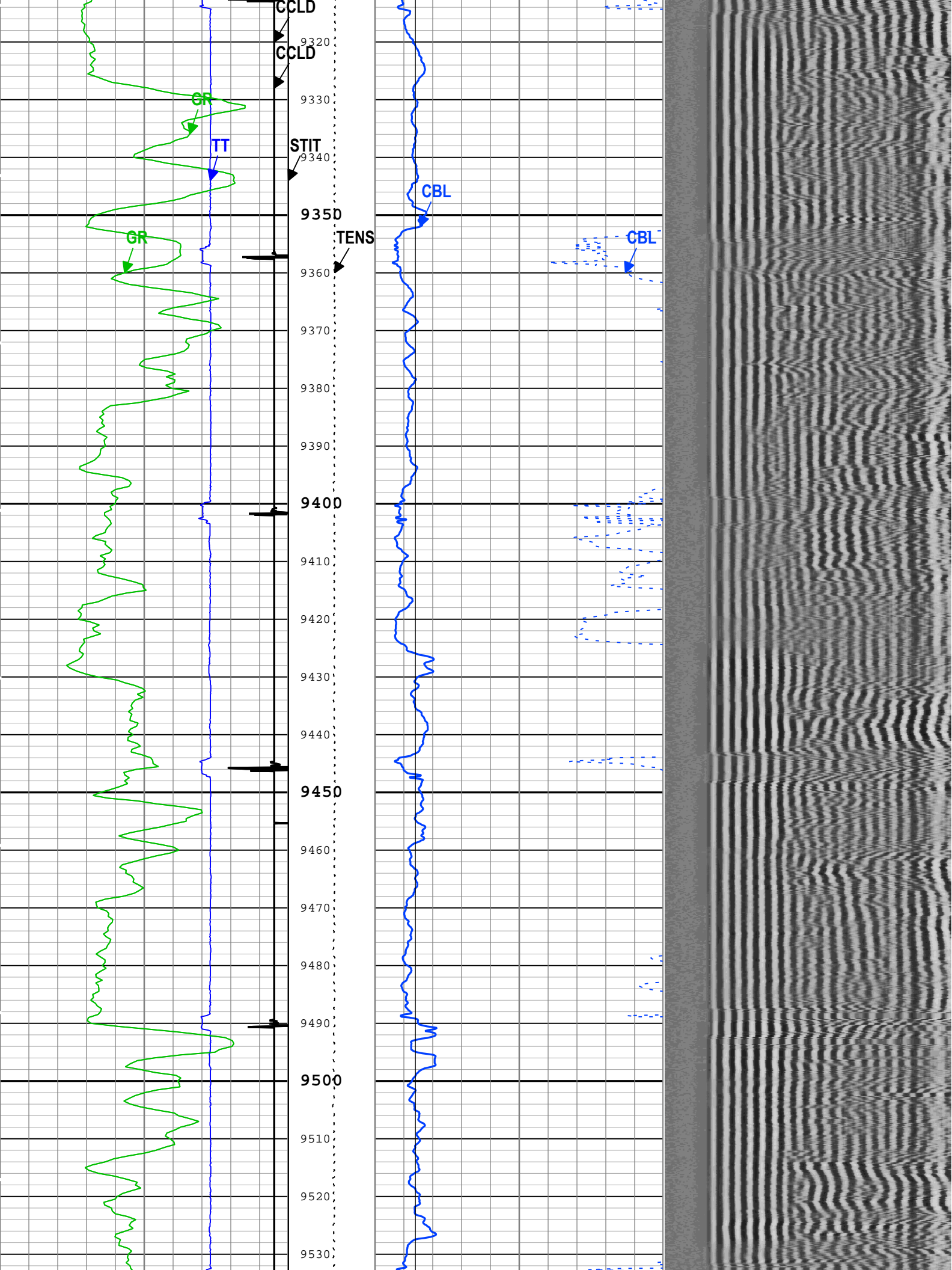


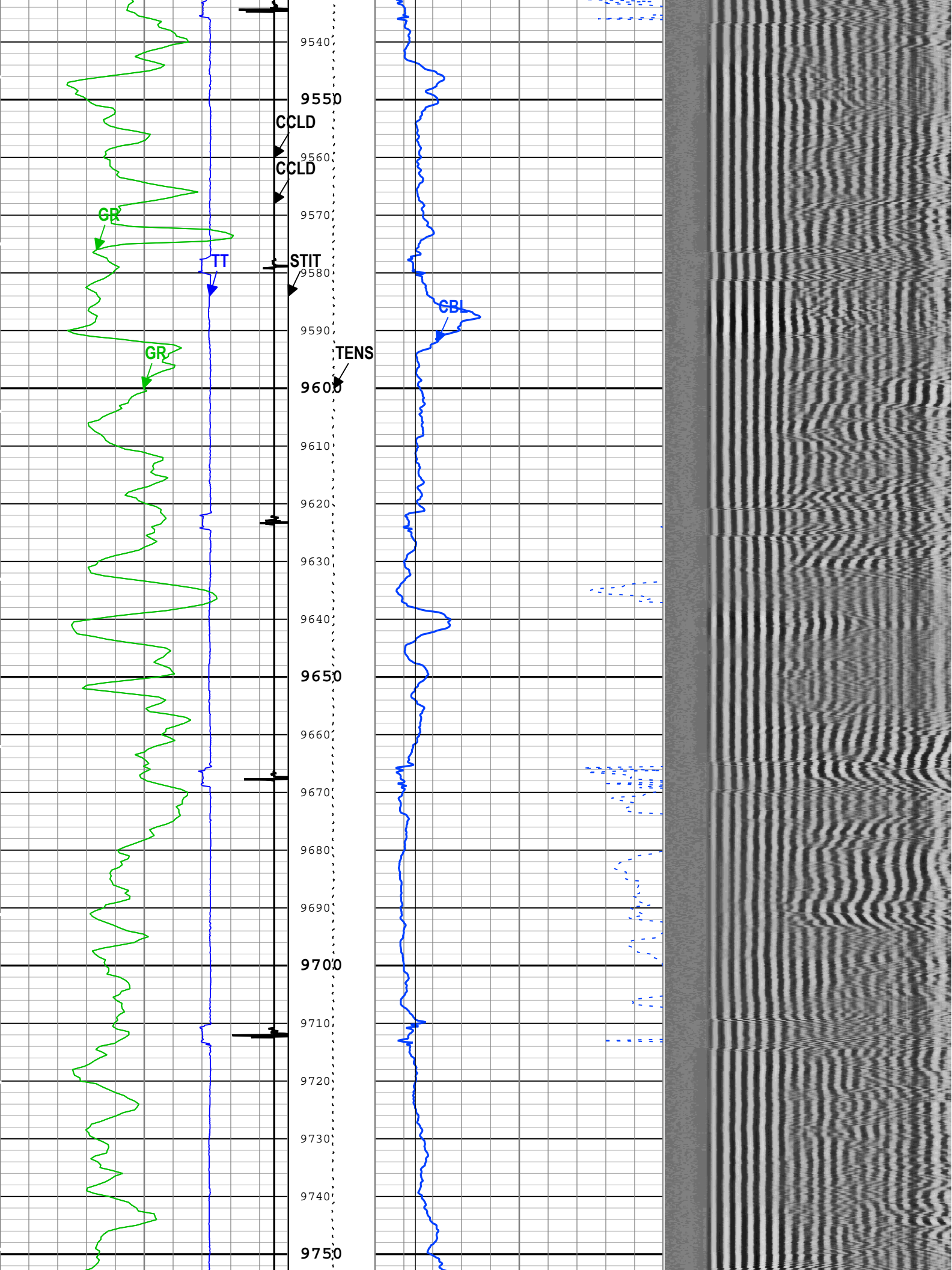


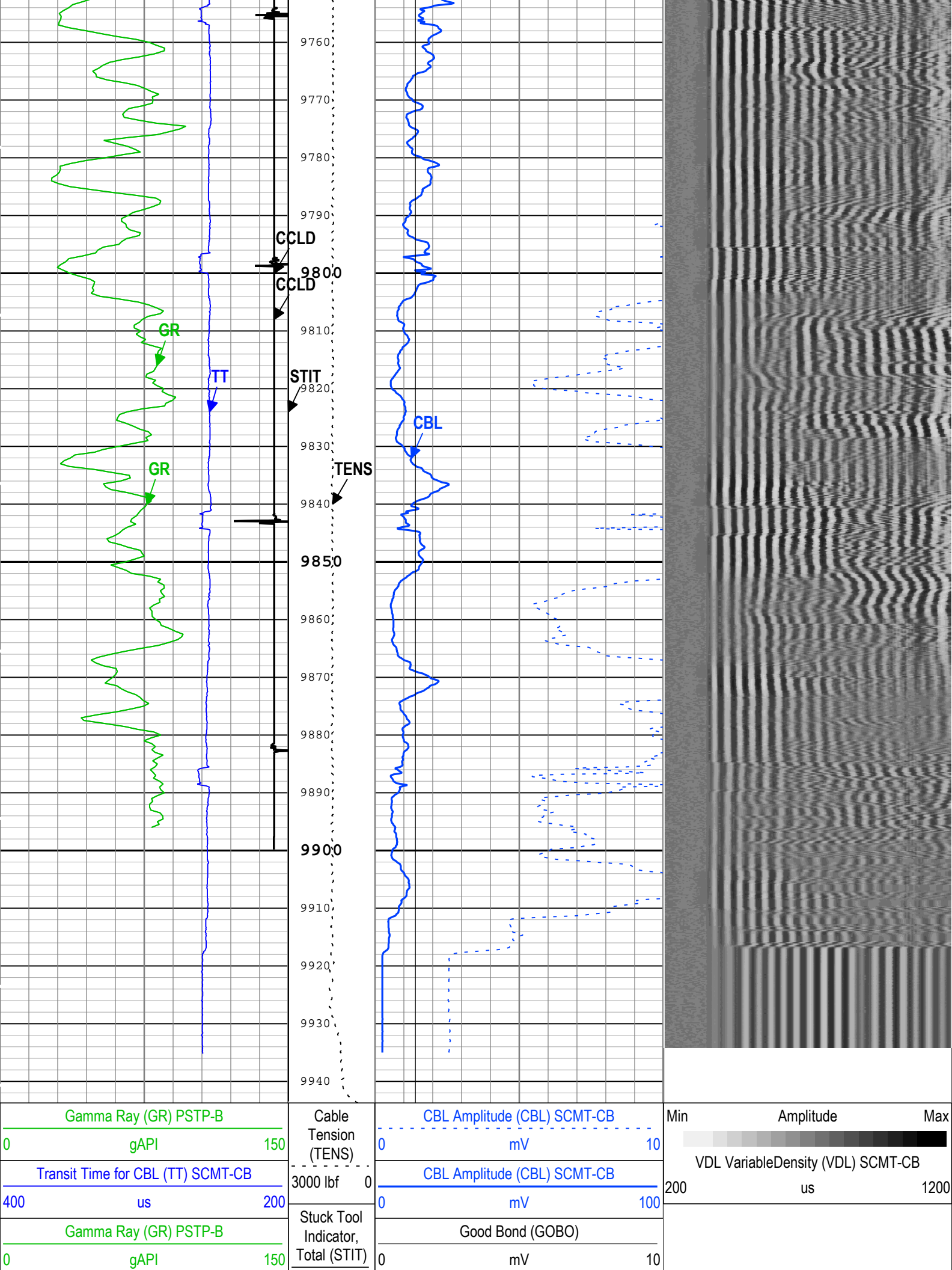












CCL Discriminated Amplitude (CCLD) PSTP-B	0	ft	50	GoodBond From CBL to GOBO
-19	V	1	Cable Drag	
CCL Discriminated Amplitude (CCLD) PSTP-B			Tool_Tot. Drag	
-19	V	1		
TIME_1900 - Time Marked every 60.00 (s)				
BIEP - Bond Index Event Pips SCMT-CB				
Description: Sonic CBL with VDL Format: Log (Sonic CBL with VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Sep-2018 21:01:53				

Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	276.39	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-CB	80	mV
THNO	Nominal Casing Thickness - Zoned along logger depths	WLSESSION	0.25	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	24	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	6709	ft
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GOBO_CURR	Good Bond in Arbitrary Cement	SCMT-CB	1.4	mV
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MATT_CURR	Maximum Attenuation in Arbitrary Cement	SCMT-CB	16.92	dB/ft
MCI	Minimum Cemented Interval for Isolation	SCMT-CB	Depth Zoned	ft
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
MSA_CURR	Minimum Sonic Amplitude in Arbitrary Cement	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF
TD	Total Measured Depth	Borehole	9928	ft
Depth Zone Parameters				
Parameter	Value	Start (ft)	Stop (ft)	
MCI	14.81	2100	2274	
MCI	1.25	2274	9943.75	
All depth are actual.				
Tool Control Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
CMTM	SCMT Operating Mode	SCMT-CB	Log	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-B	24 dB	
ONE				

Repeat Pass

Software Version

Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100
Application Patch	Wireline_Hotfix-RTDLIS-2017SP3_7.3.92363
	Wireline_Hotfix-SML-2017SP3_7.3.101161

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	9606.78 ft	9945.31 ft	12-Sep-2018 12:17:41 PM	12-Sep-2018 12:30:58 PM	ON	7.01 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Caerus Operating LLC

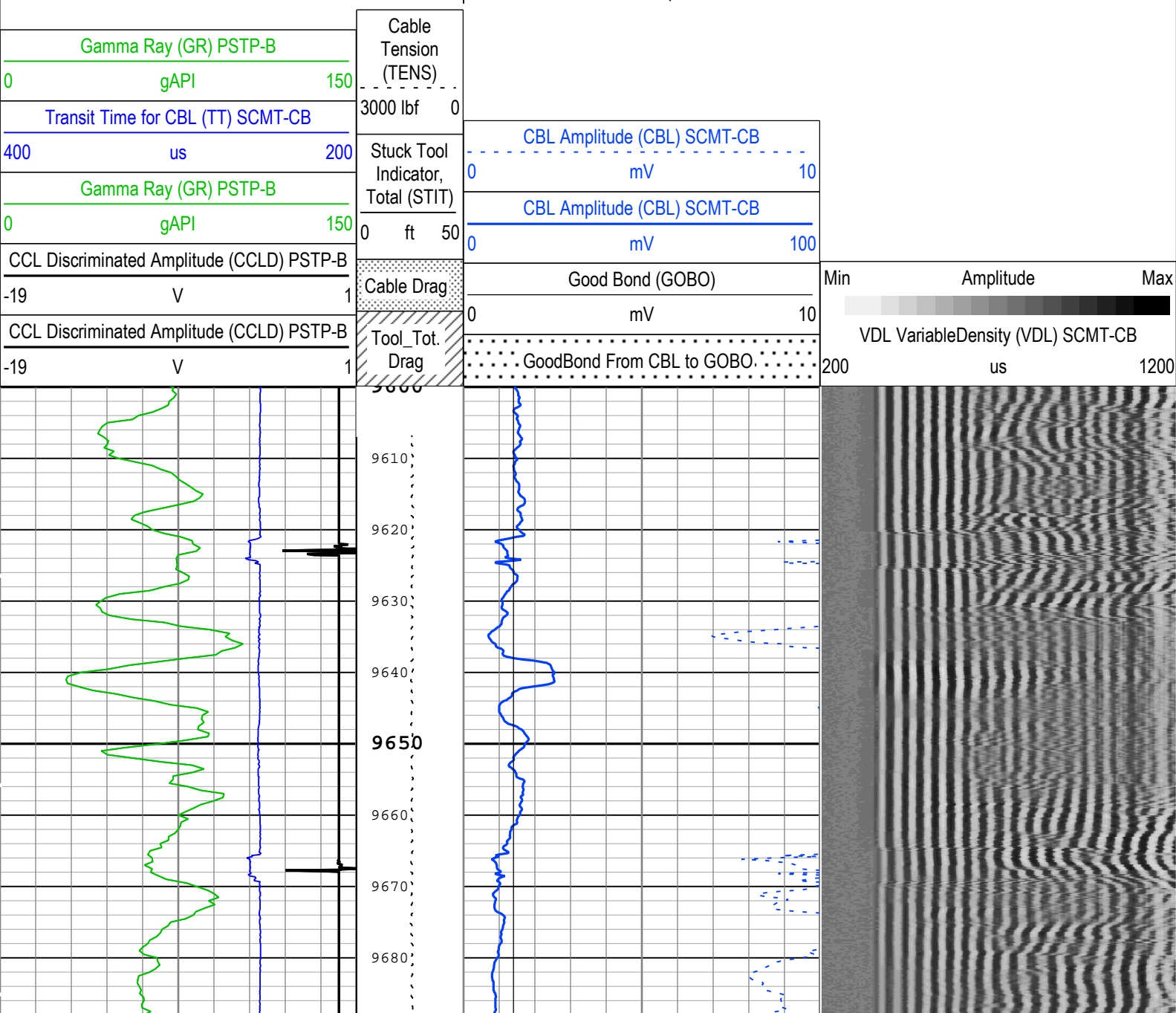
Well:NPR 22D-10 596

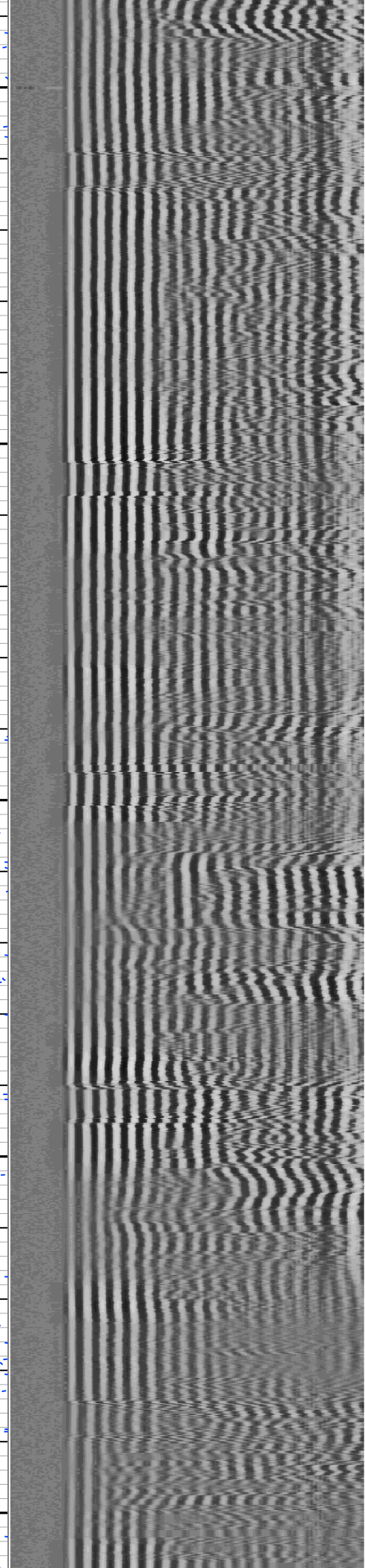
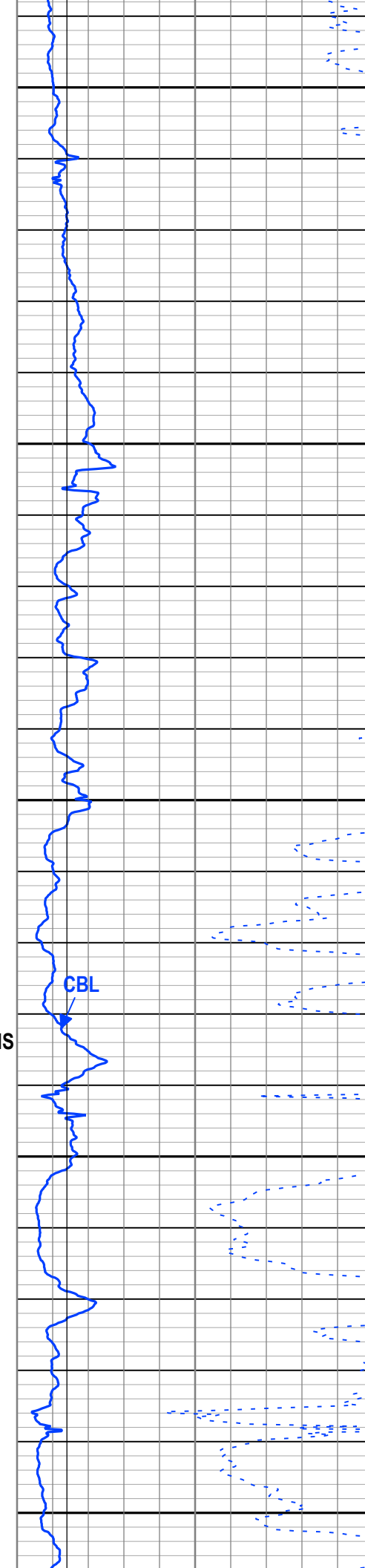
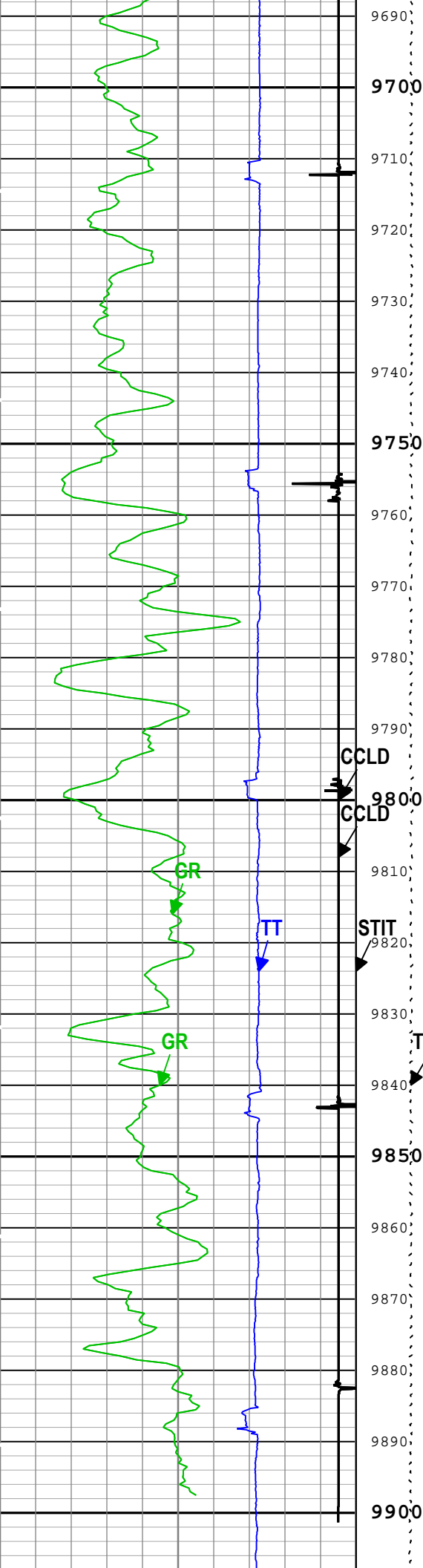
ONE: Log[4]:Up:S002

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: 12-Sep-2018 21:02:09

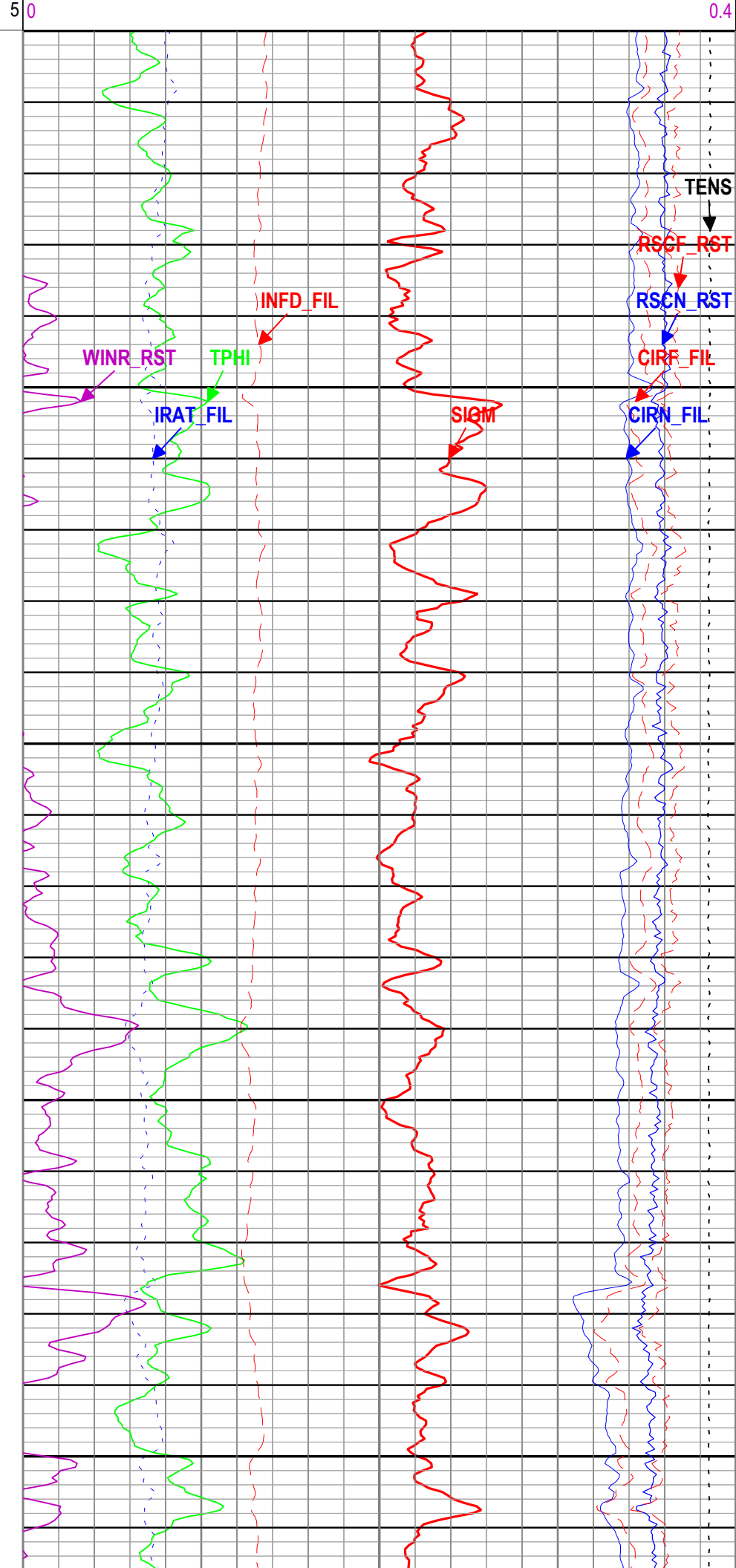
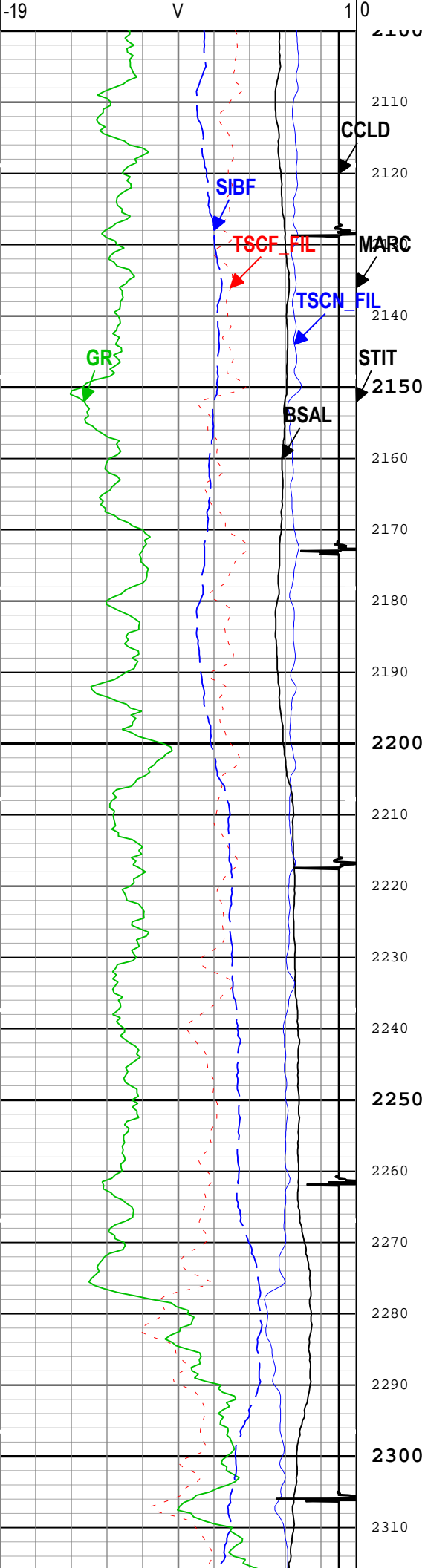
TIME_1900 - Time Marked every 60.00 (s)

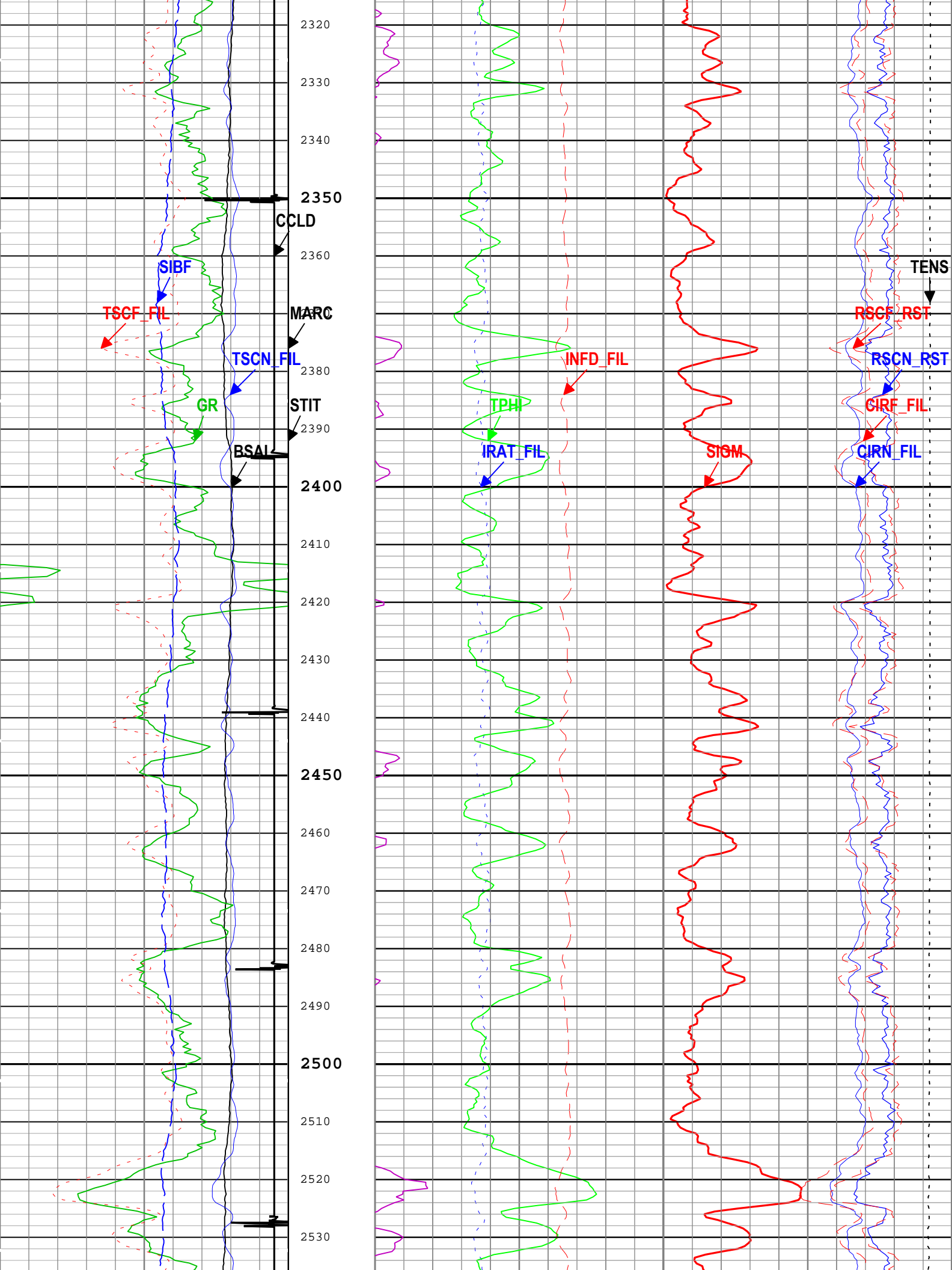
■ BIEP - Bond Index Event Pips SCMT-CB

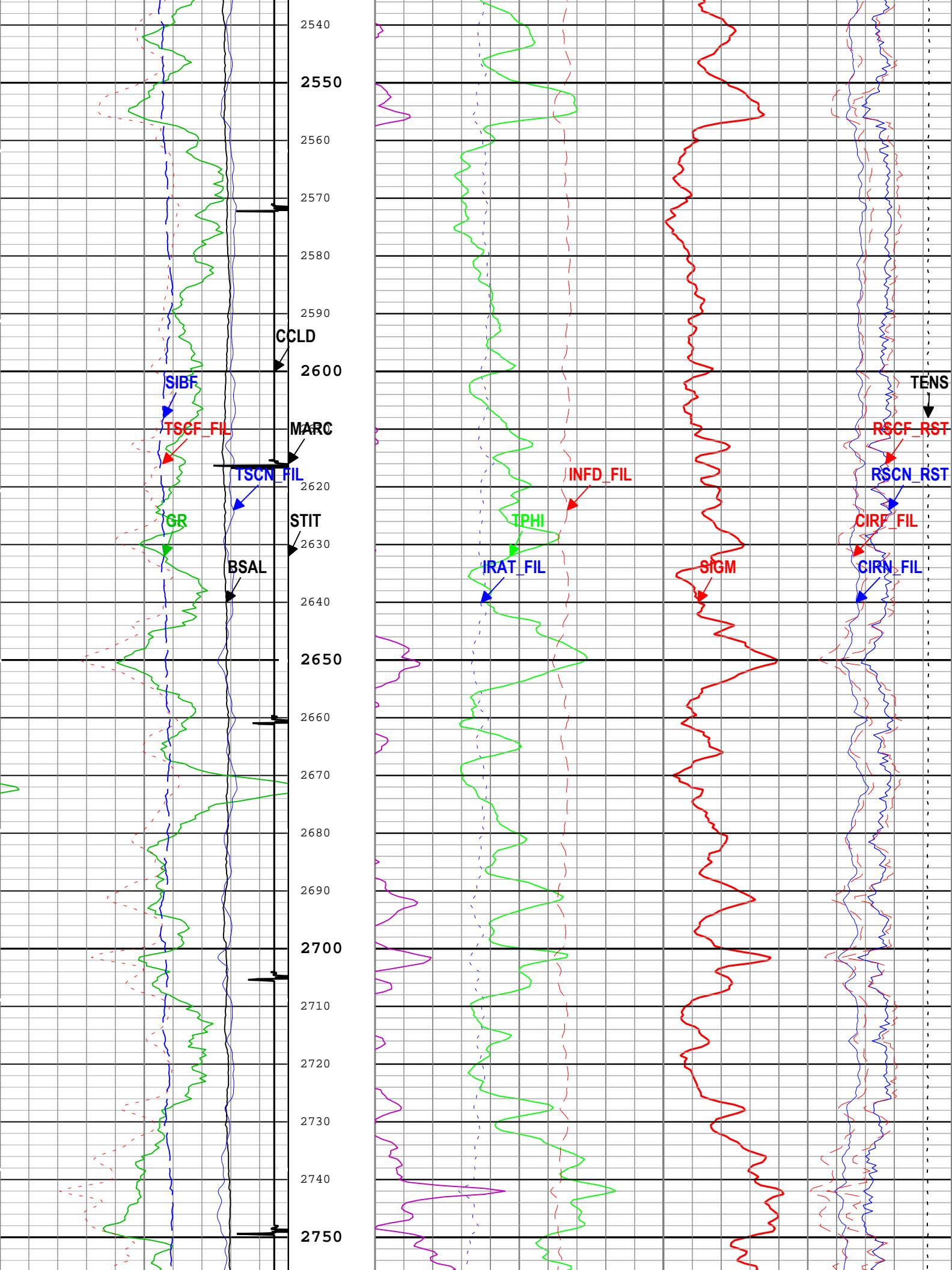


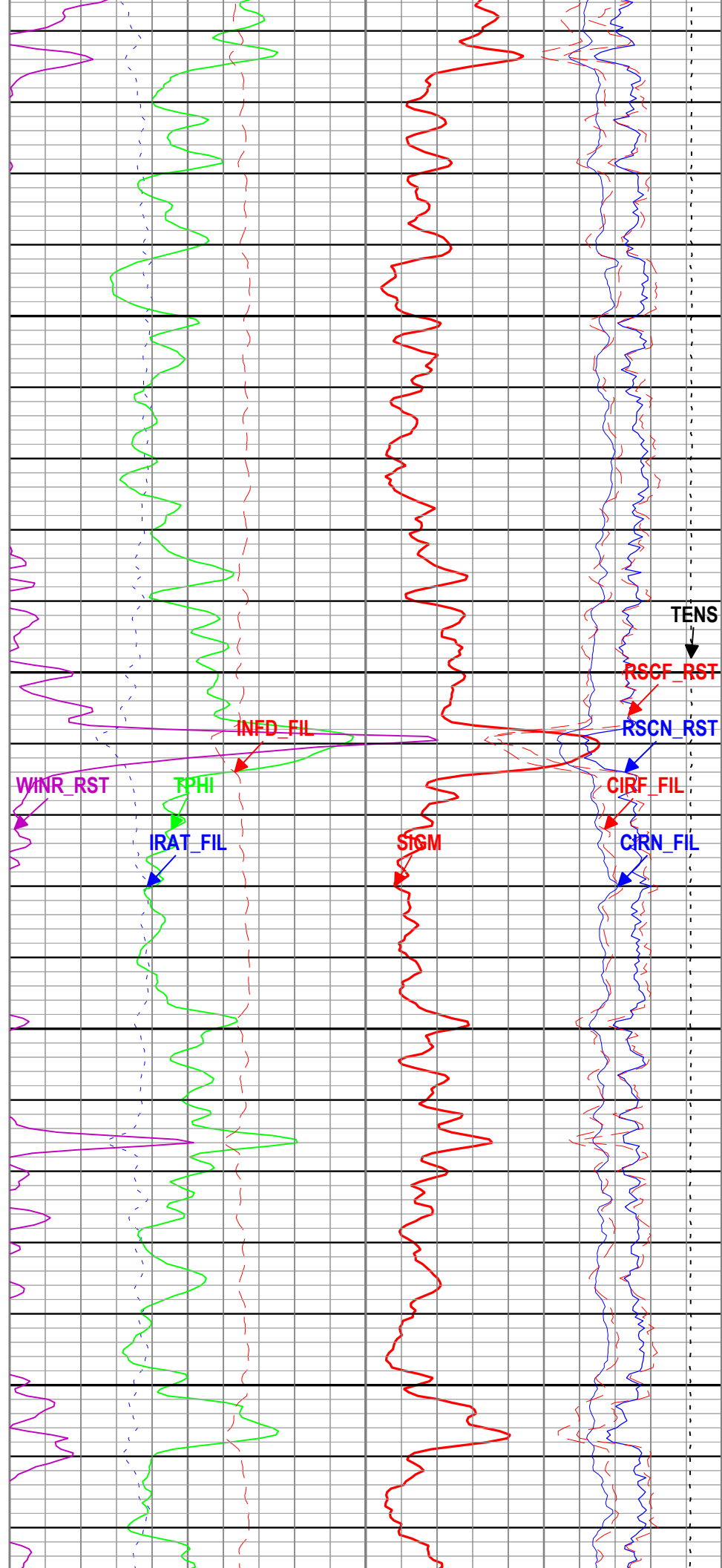
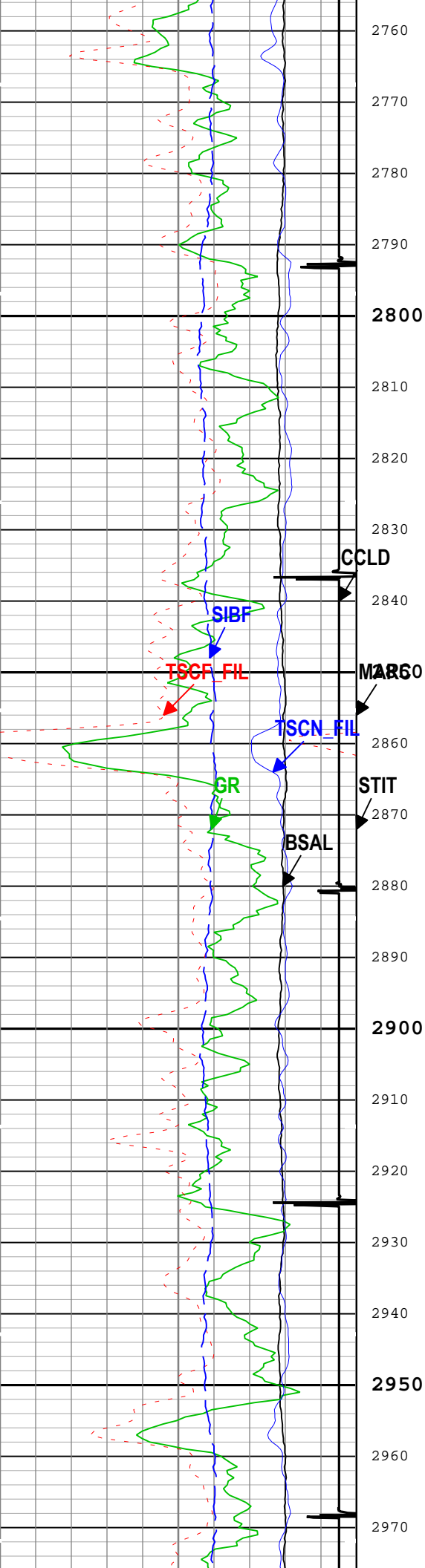


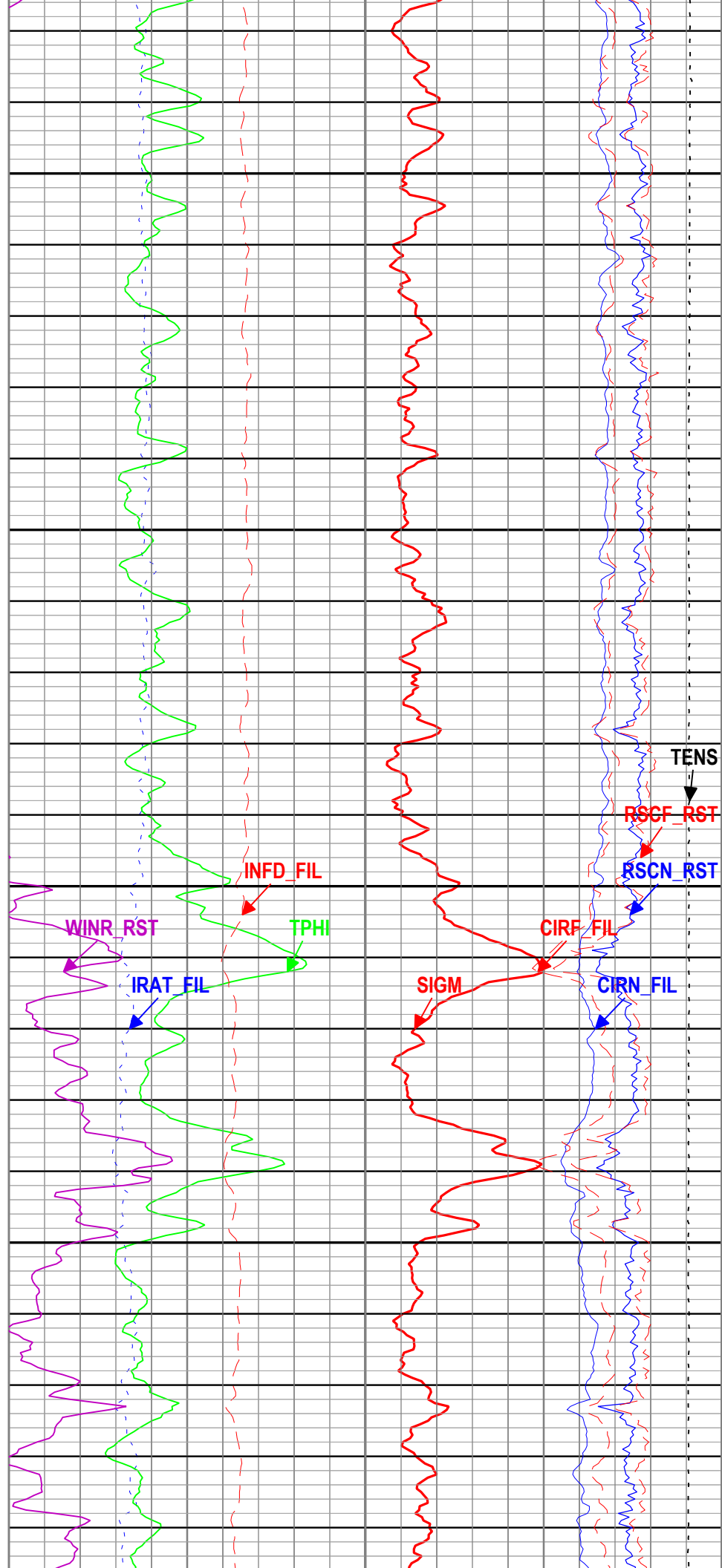
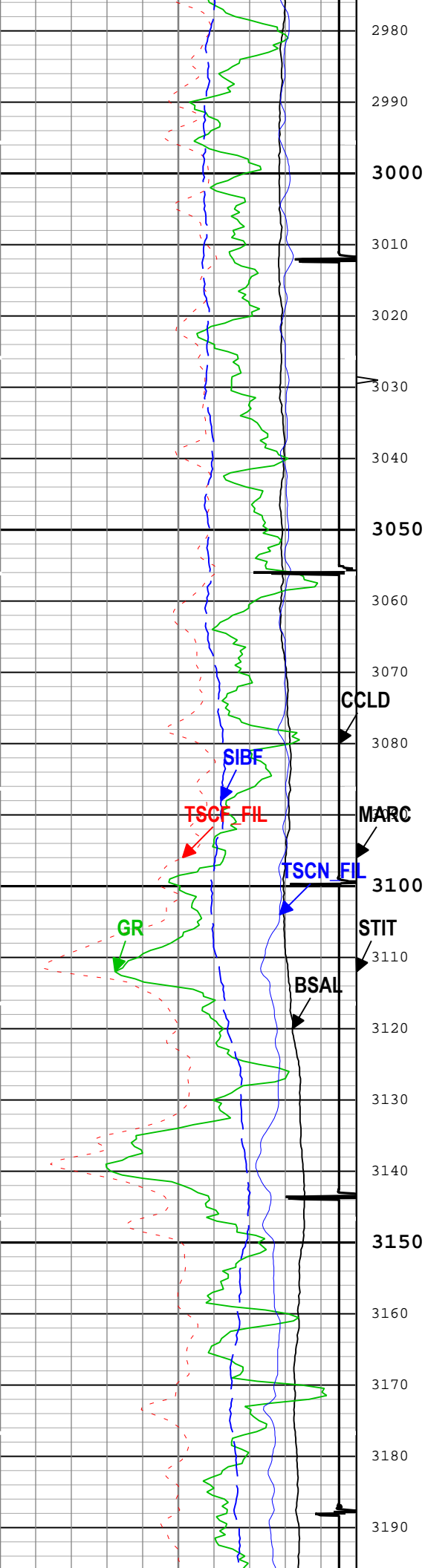
		Total Measured Depth		Borehole		9928		ft	
Tool Control Parameters									
ONE: Parameters									
Parameter		Description			Tool		Value		Unit
CMTM		SCMT Operating Mode			SCMT-CB		Log		
MAX_LOG_SPEED		Toolstring Maximum Logging Speed			WLSESSION		150		ft/h
PCCG		PSP Downhole CCL Gain			PSTP-B		24 dB		
ONE									
Main Pass									
Software Version									
Acquisition System						Version			
Maxwell 2017 SP3						7.3.92069.3100			
Application Patch						Wireline_Hotfix-RTDLIS-2017SP3_7.3.92363			
						Wireline_Hotfix-SML-2017SP3_7.3.101161			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[5]:Up	Up	51.50 ft	9943.76 ft	12-Sep-2018 12:37:37 PM	12-Sep-2018 6:04:55 PM	ON	7.78 ft	Yes
All depths are referenced to toolstring zero									
Log	Company:Caerus Operating LLC Well:NPR 22D-10 596 ONE: Log[5]:Up:S002								
Description: RST SIGMA Answer Format: Log (RST SIGMA Answer) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Sep-2018 21:02:13									
TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)									
TIME_1900 - Time Marked every 60.00 (s)									
IHV - Integrated Hole Volume every 10.00 (ft3)									
IHV - Integrated Hole Volume every 100.00 (ft3)									
ICV - Integrated Cement Volume every 10.00 (ft3)									
ICV - Integrated Cement Volume every 100.00 (ft3)									
Borehole Salinity (BSAL) RST-C			Stuck Tool Indicator, Total (STIT)	Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C					
450	ppk	-50		2.50					
Gamma Ray (GR) PSTP-B			Cable Drag From STIA to STIT	Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C					
0	gAPI	150		50					
Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C			Tool_Tot. Drag From D3T to STIT	Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C					
30000	1/s	0		450					
Total Selected Count Rate Far Detector Filtered (TSCF_FIL) RST-C			Minitron Arc Count (MARC) RST-C	Inelastic Ratio Filtered (IRAT_FIL) RST-C					
12000	1/s	0		0.750					
Sigma Borehole Fluid (SIBF) RST-C				Thermal Decay Porosity (TPHI) RST-C					
100	cu	0		450					
CCL Discriminated Amplitude (CCLD) PSTP-B				Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C					
				450					
				Cable Tension (TENS)					
				5000 lbf					
				Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C					
				60 cu					
				Weighted Inelastic Ratio (WINR_RST) RST-C					

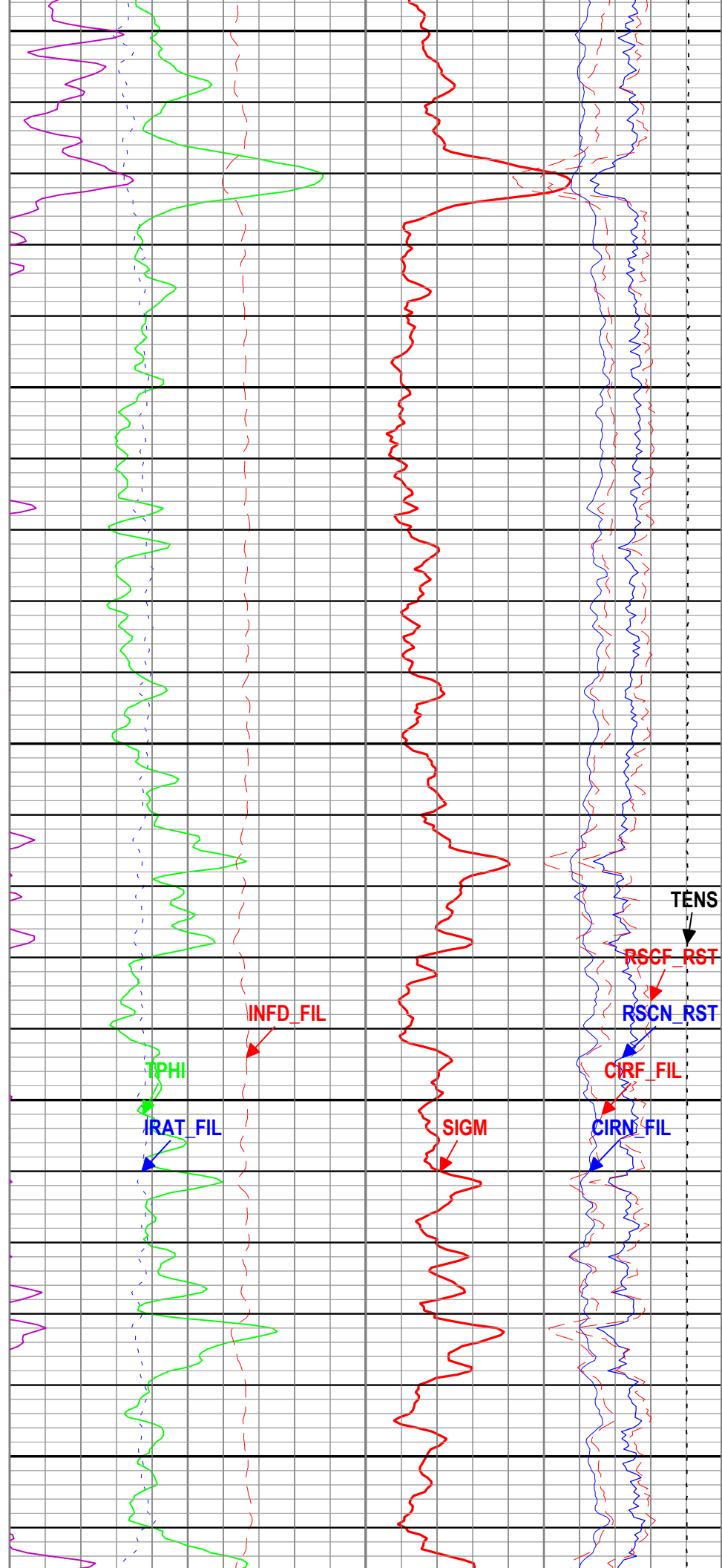
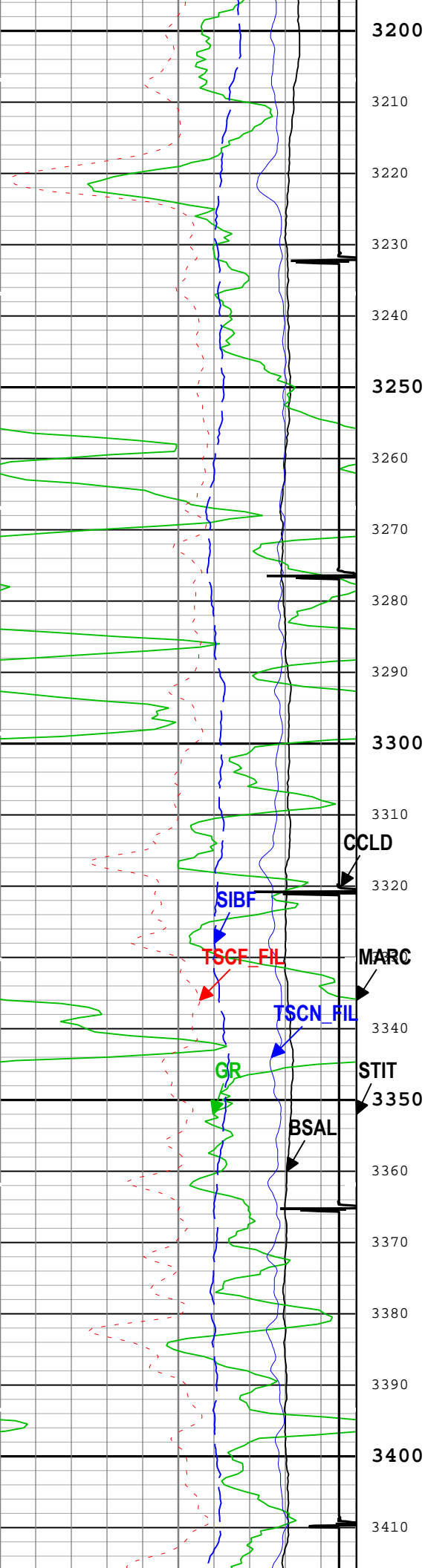


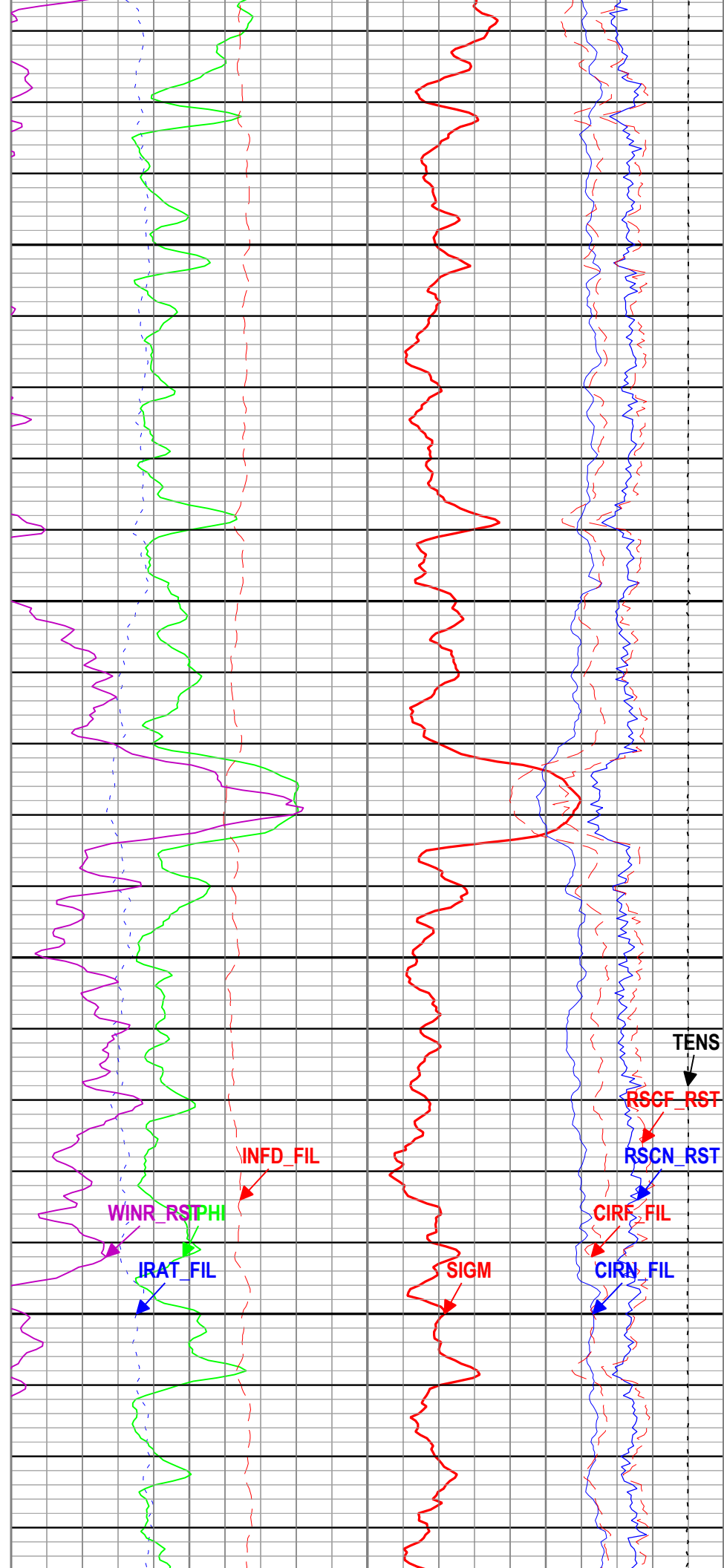
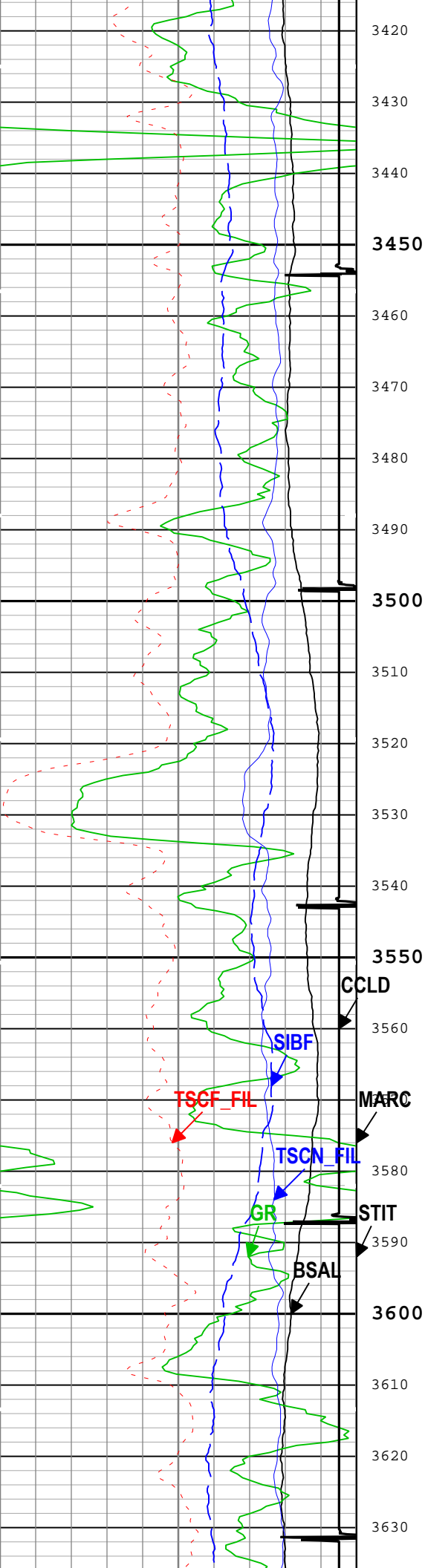


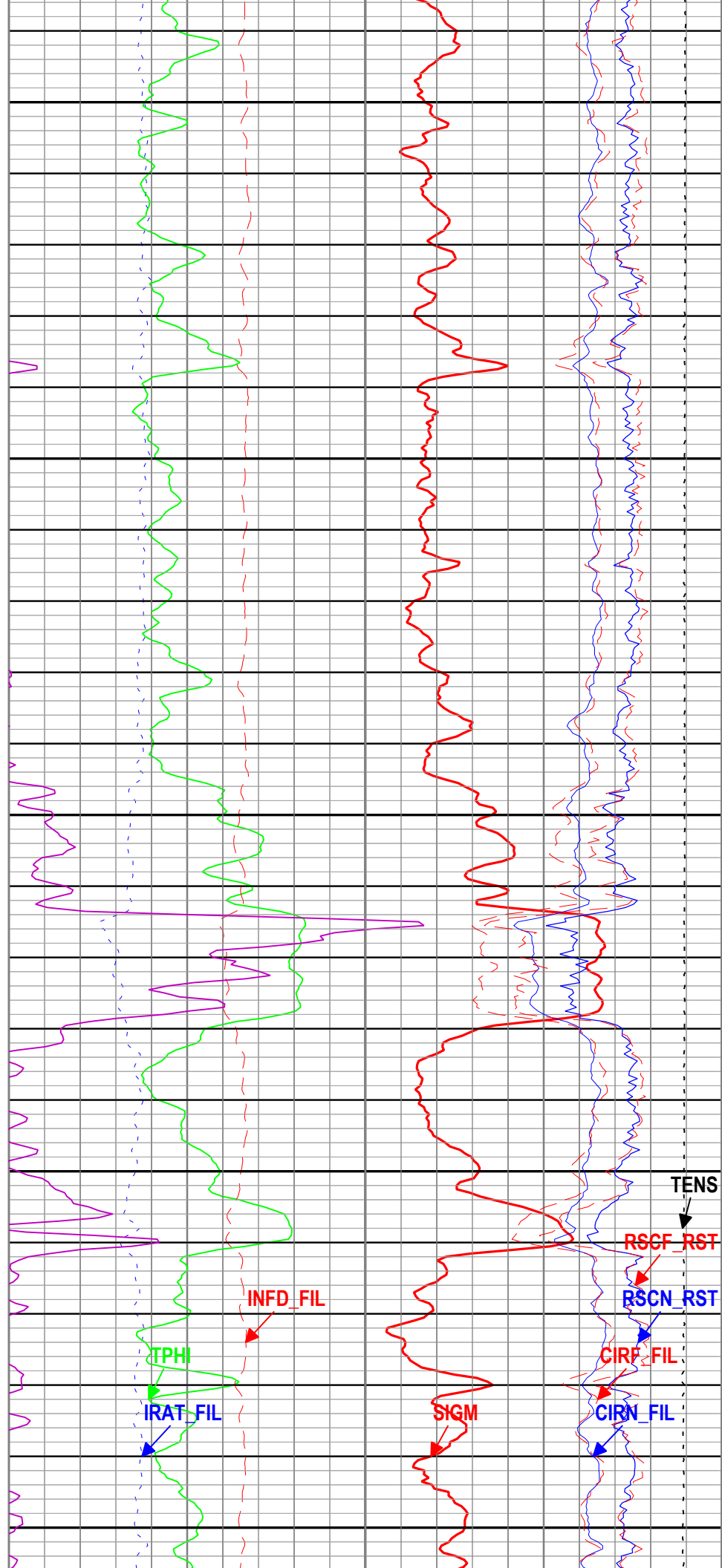
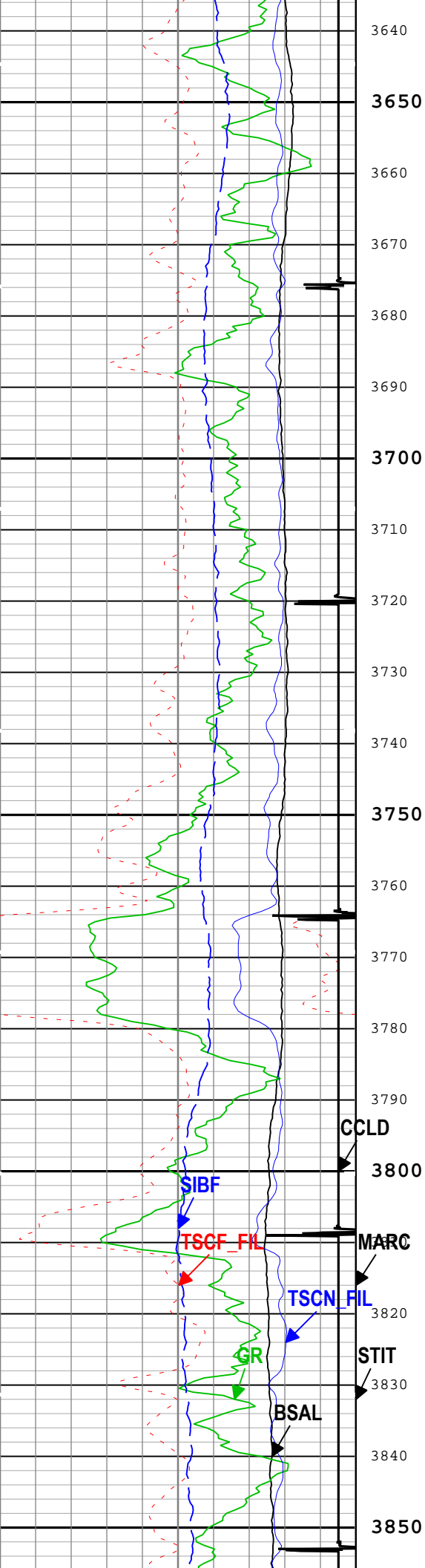


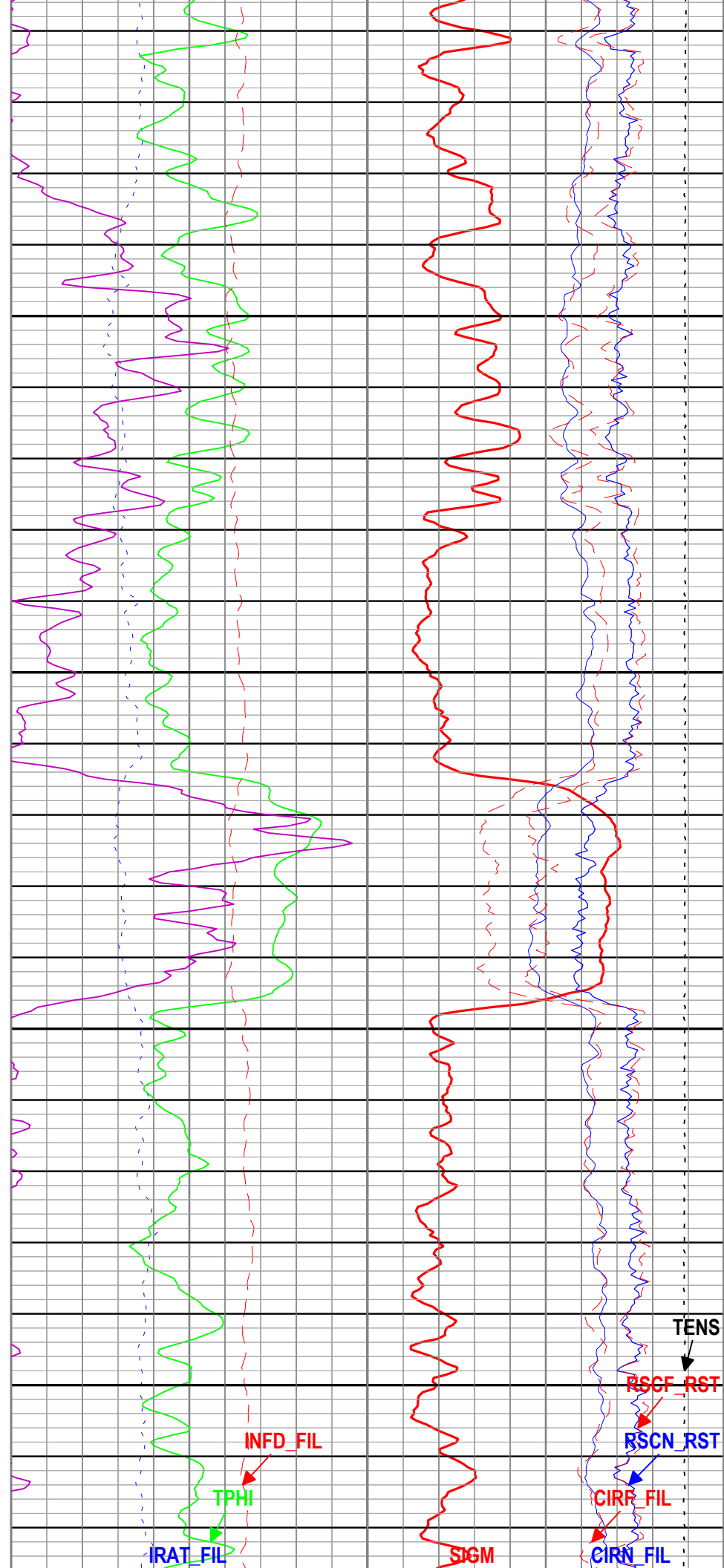
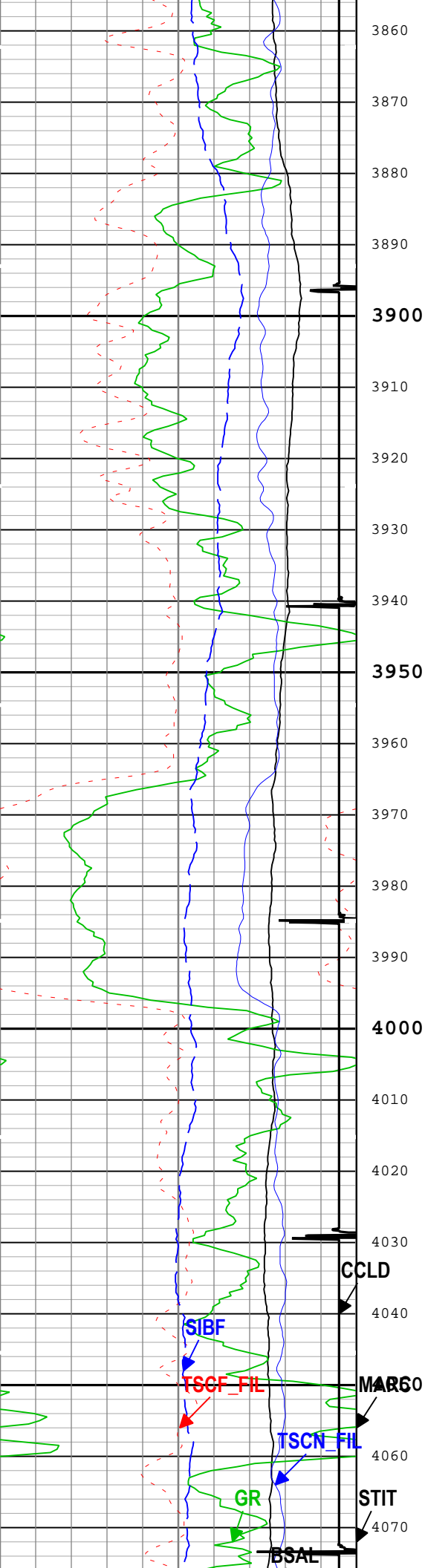


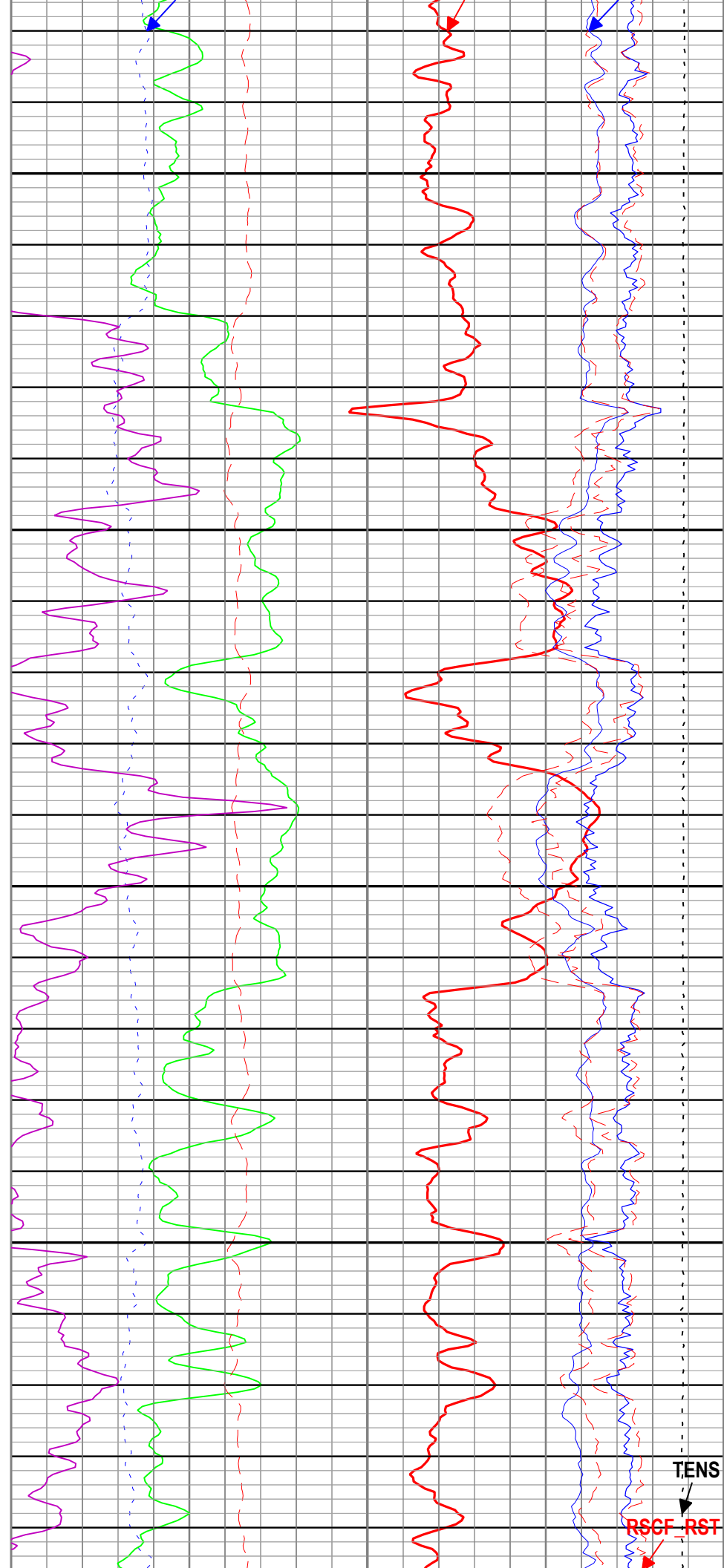
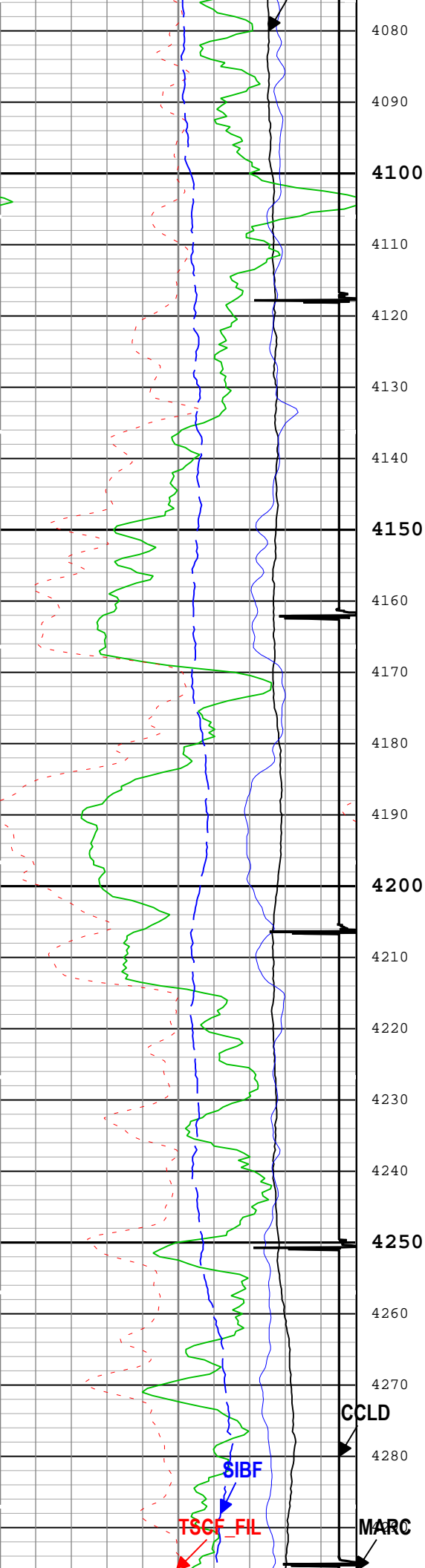


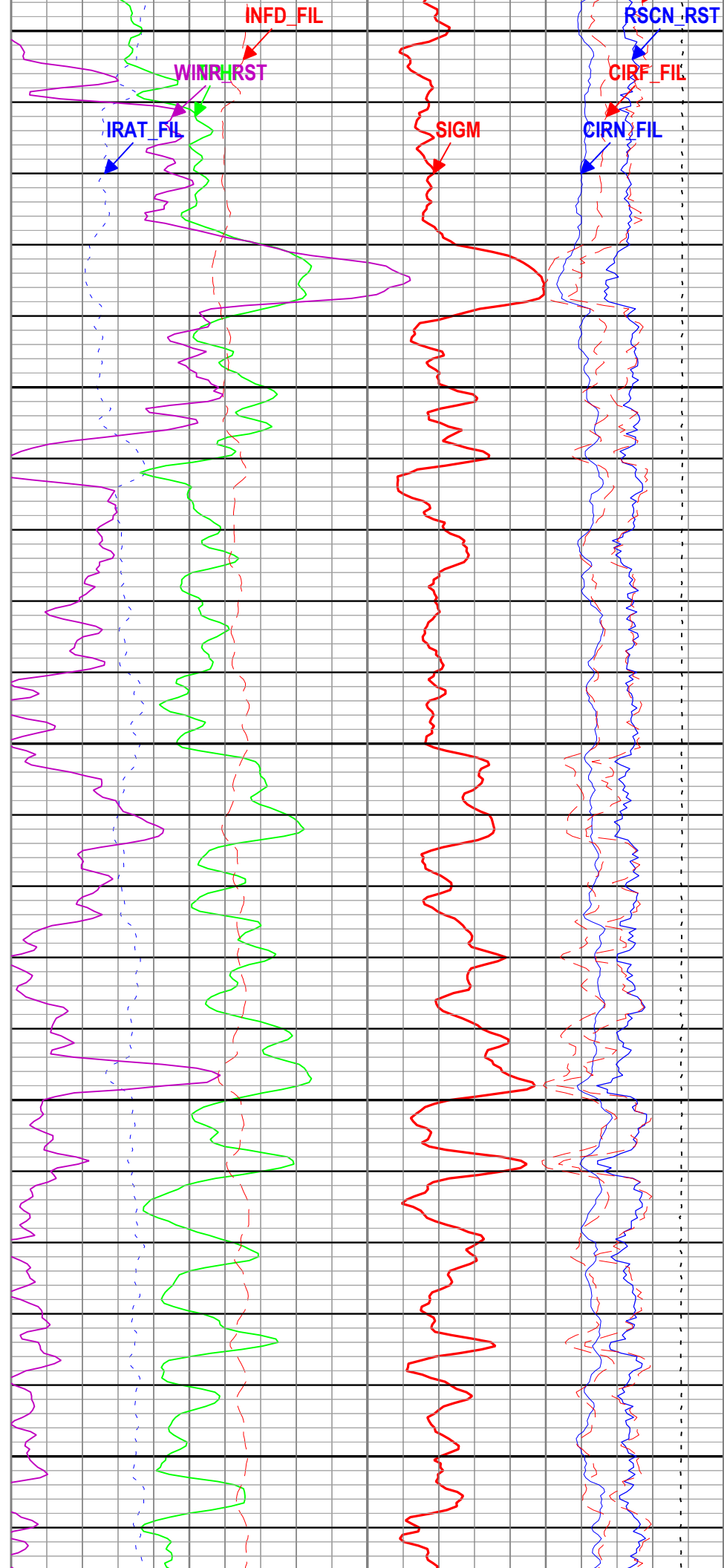
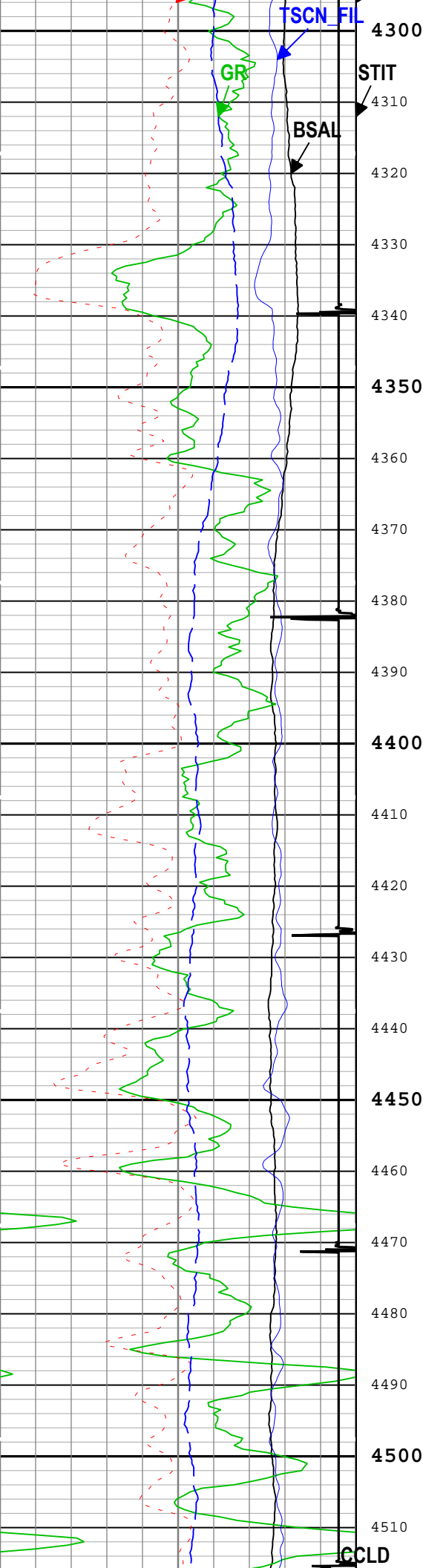


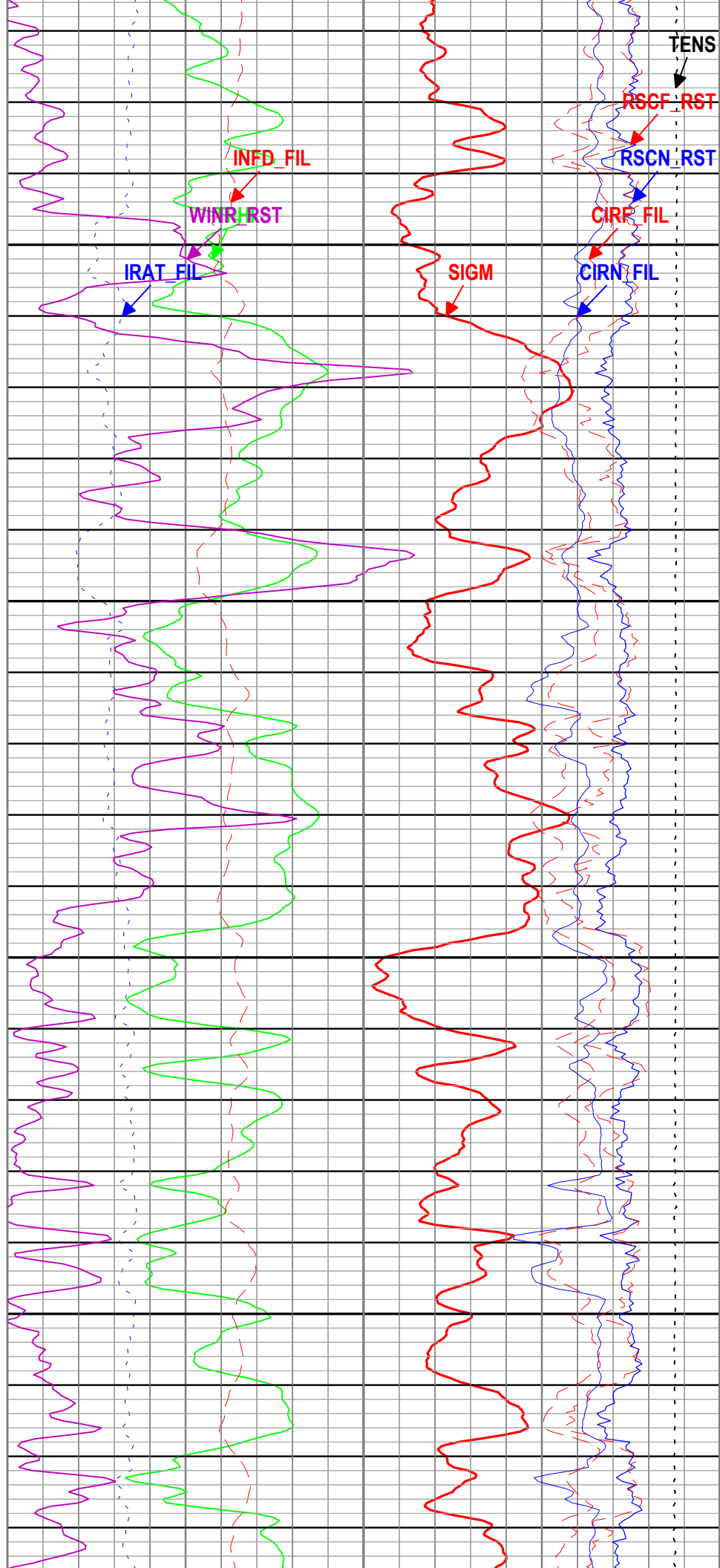
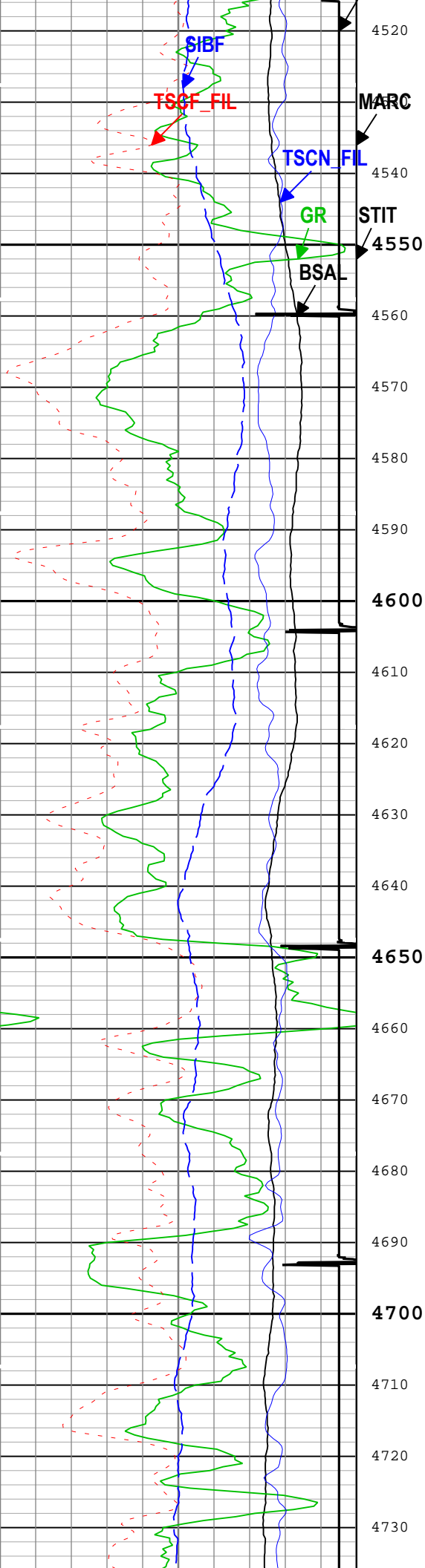


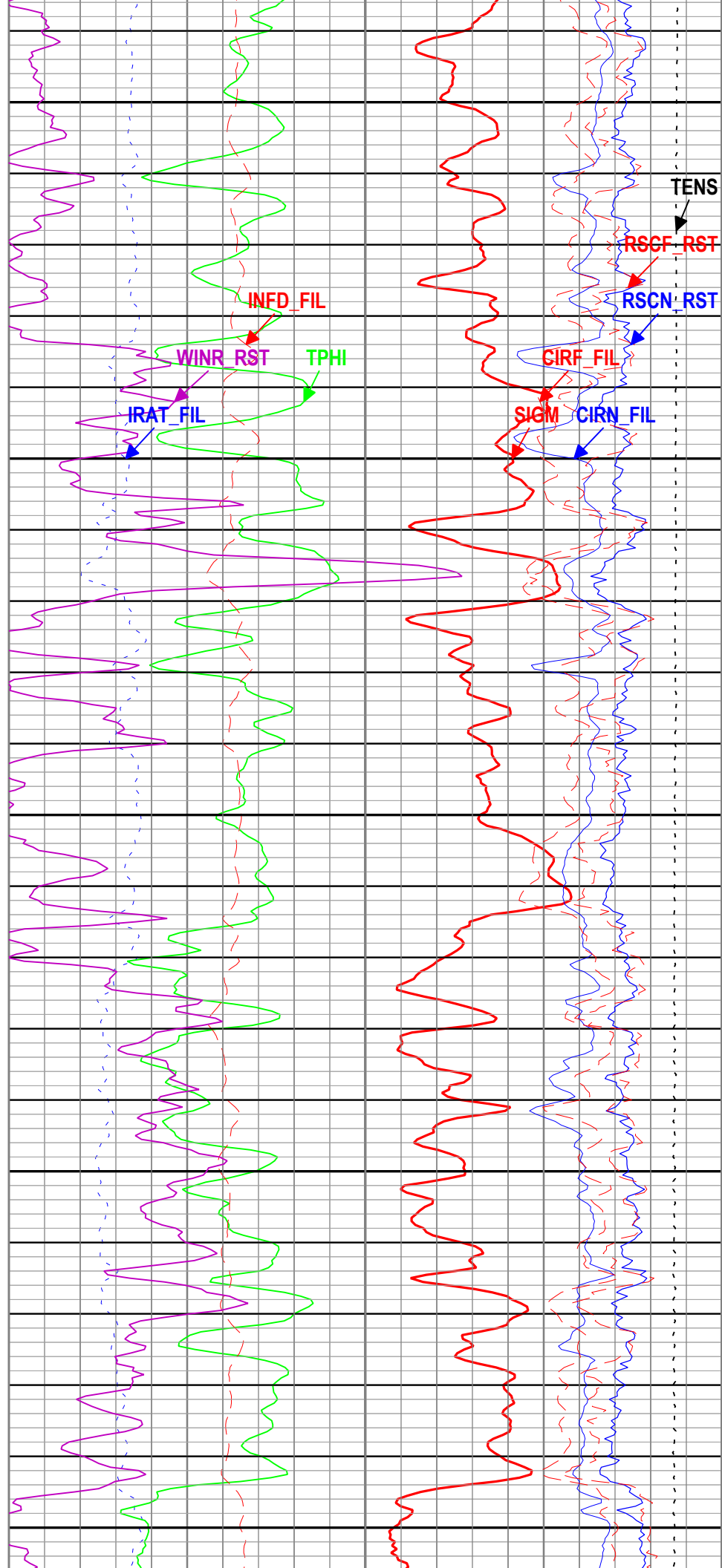
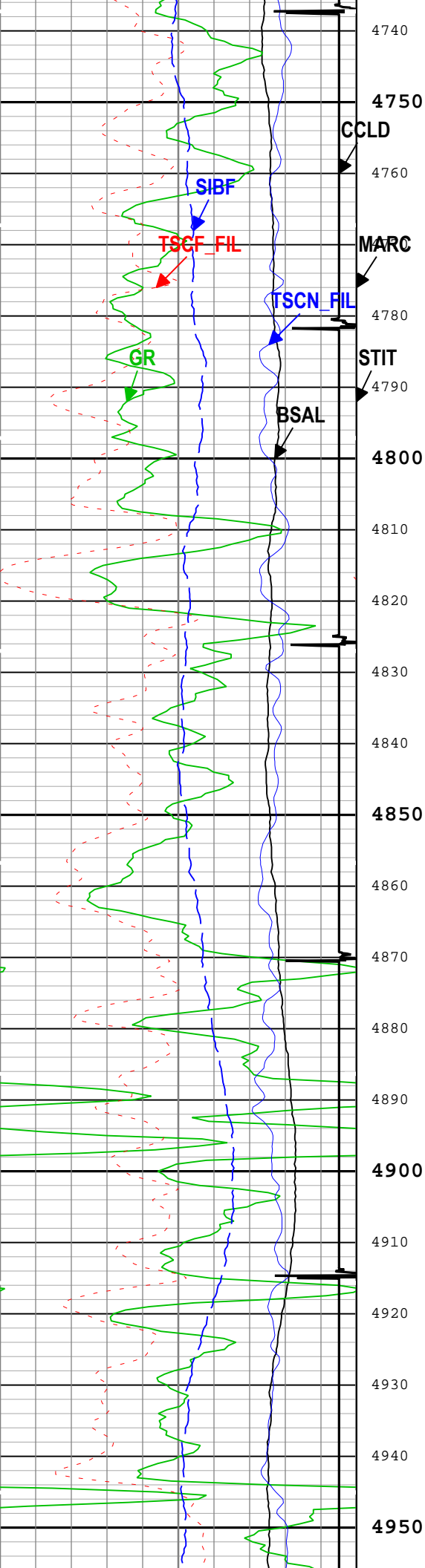


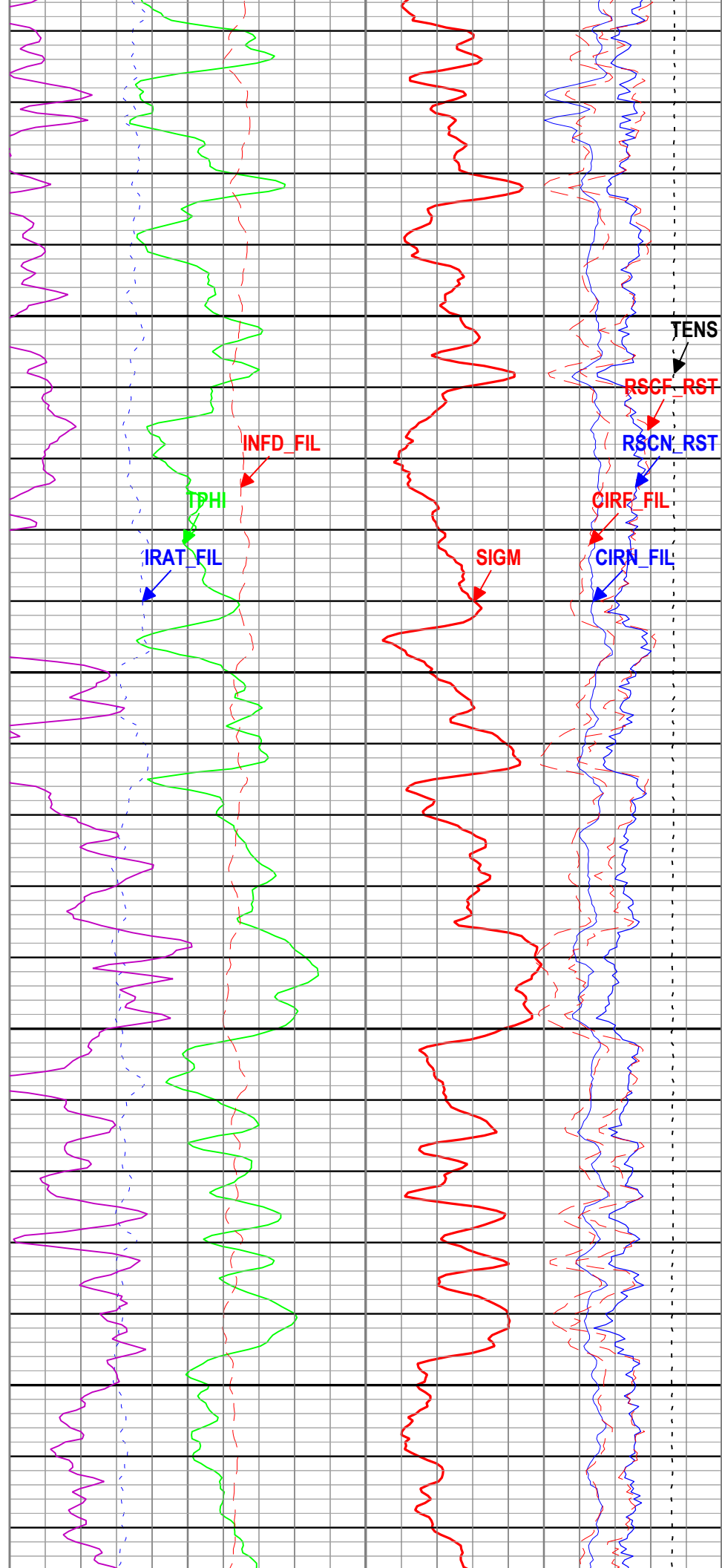
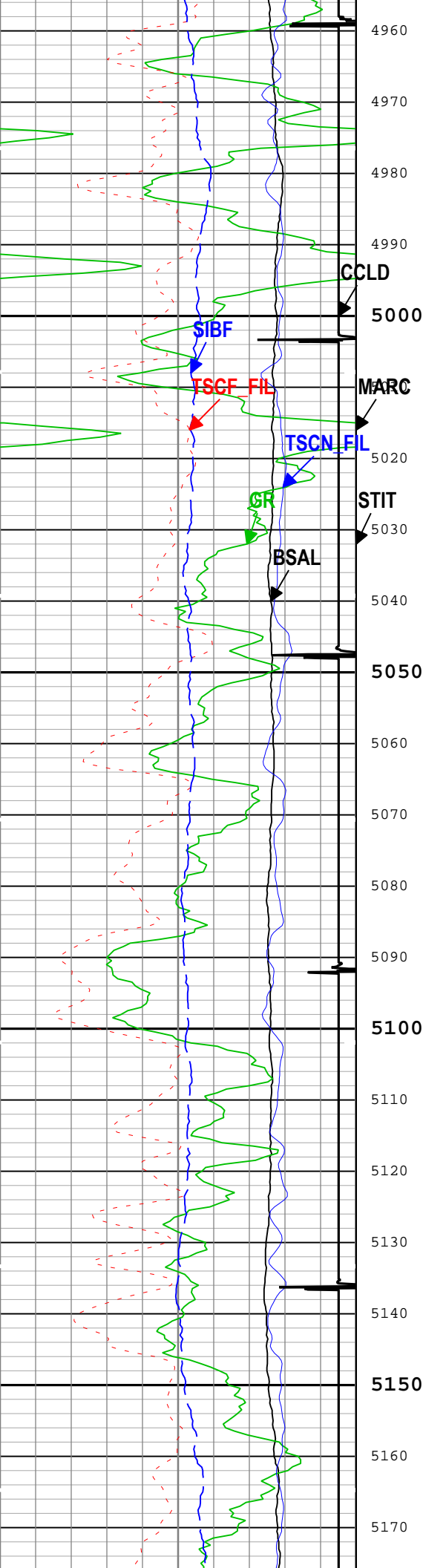


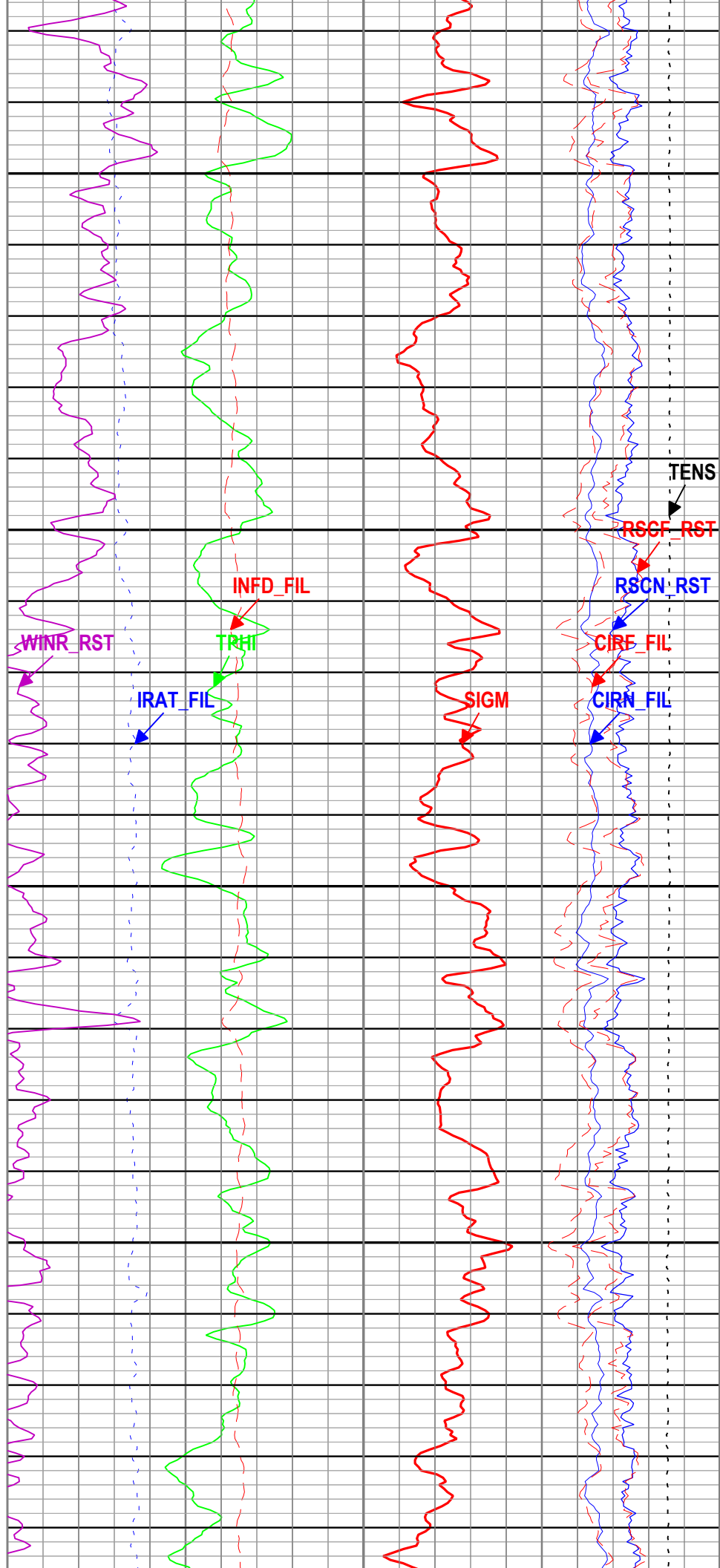
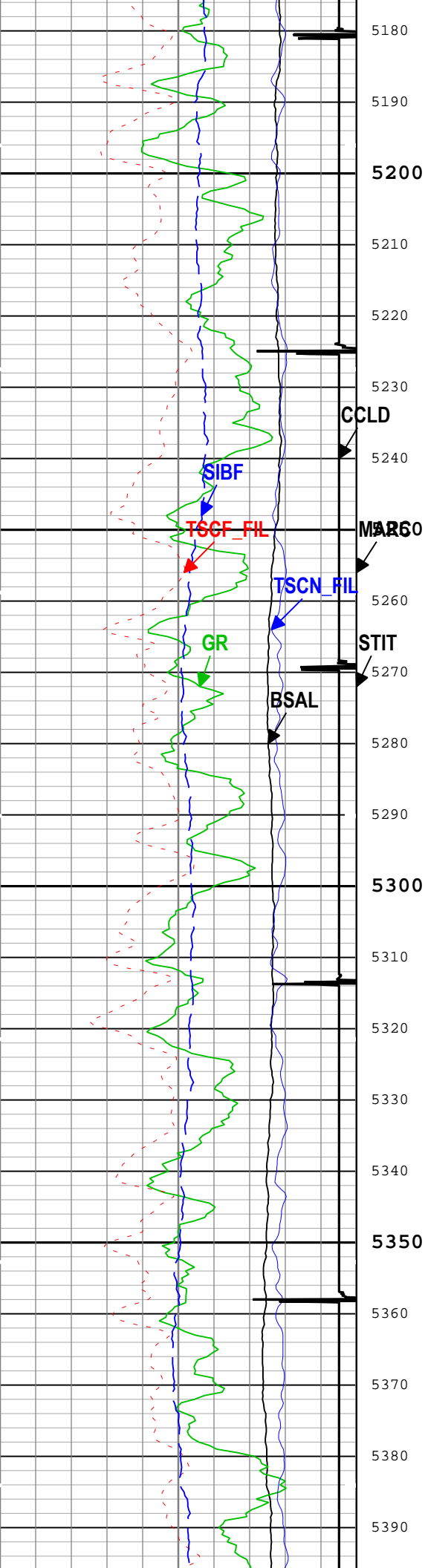


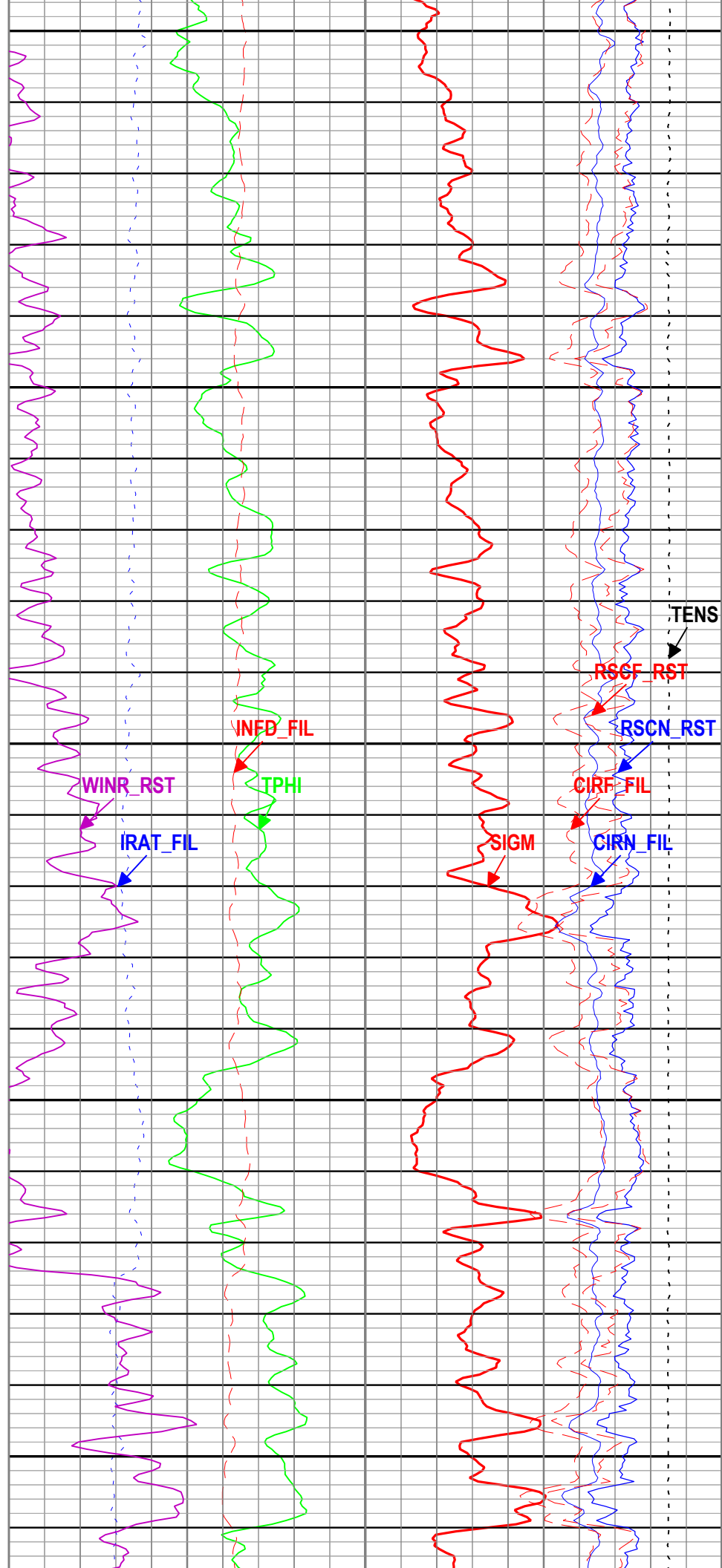
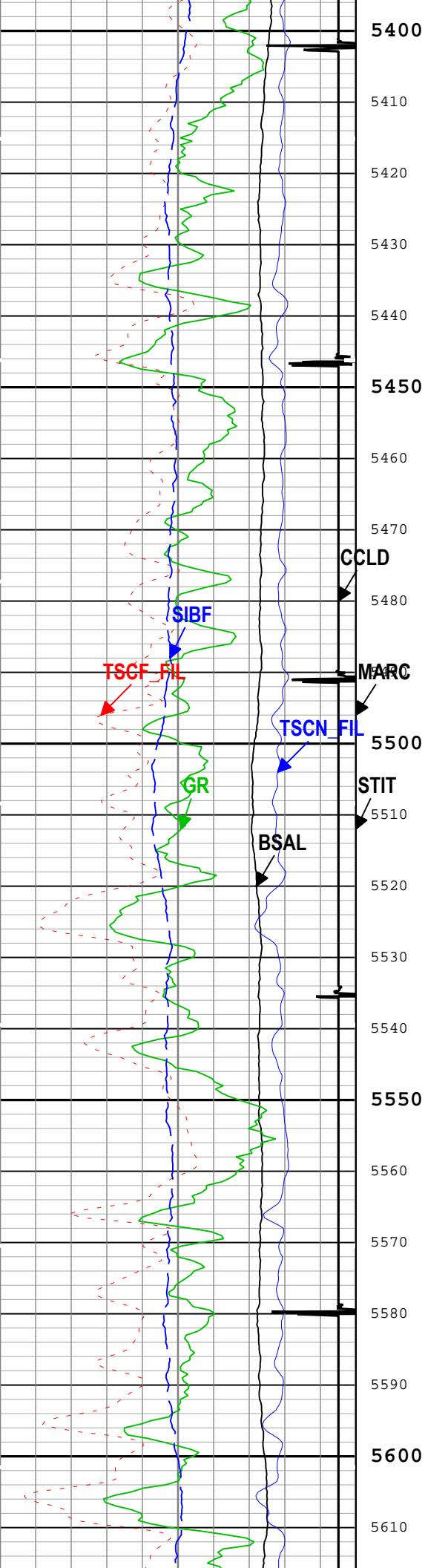


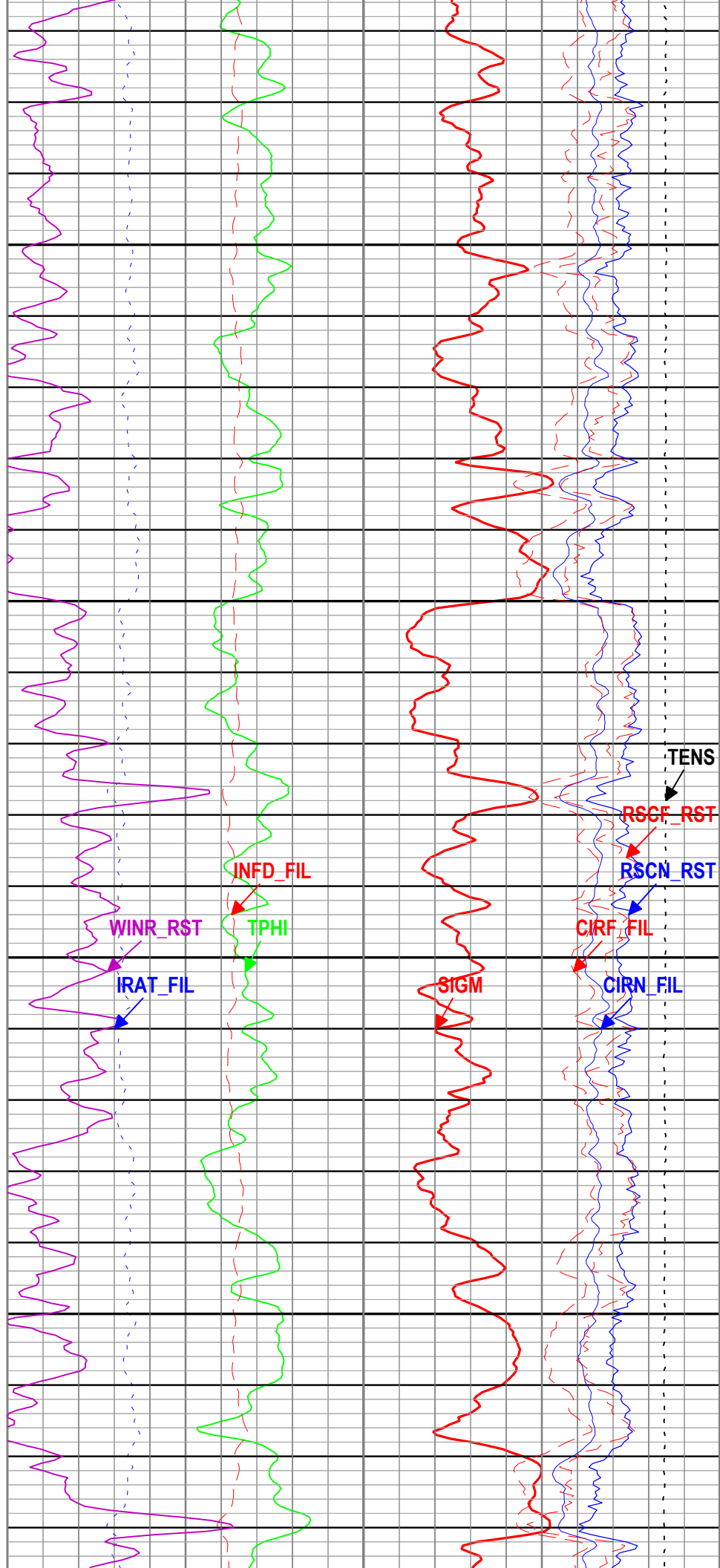
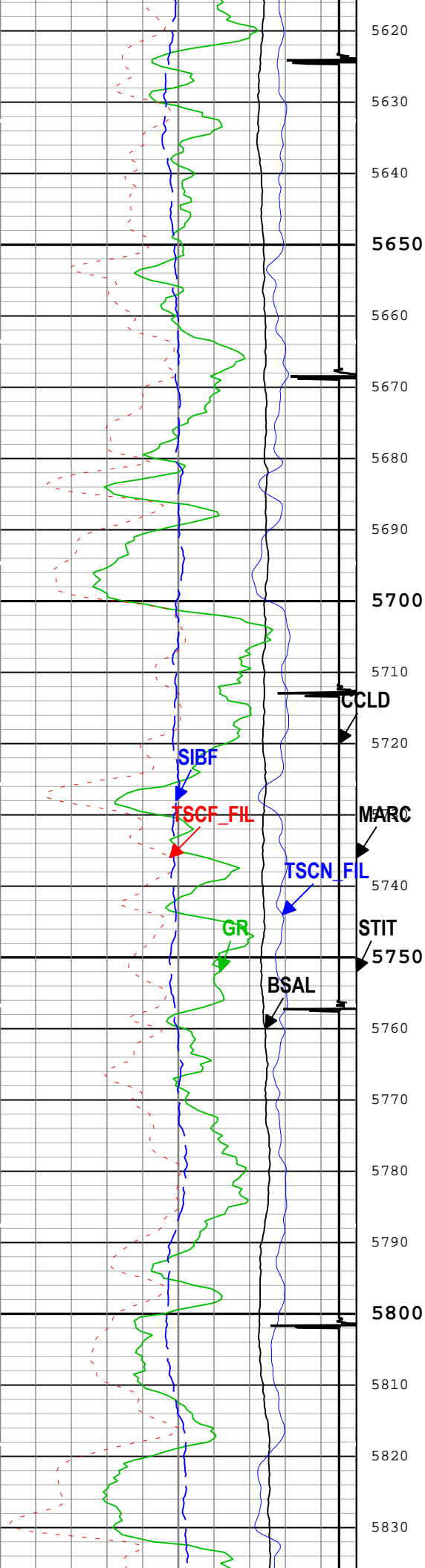


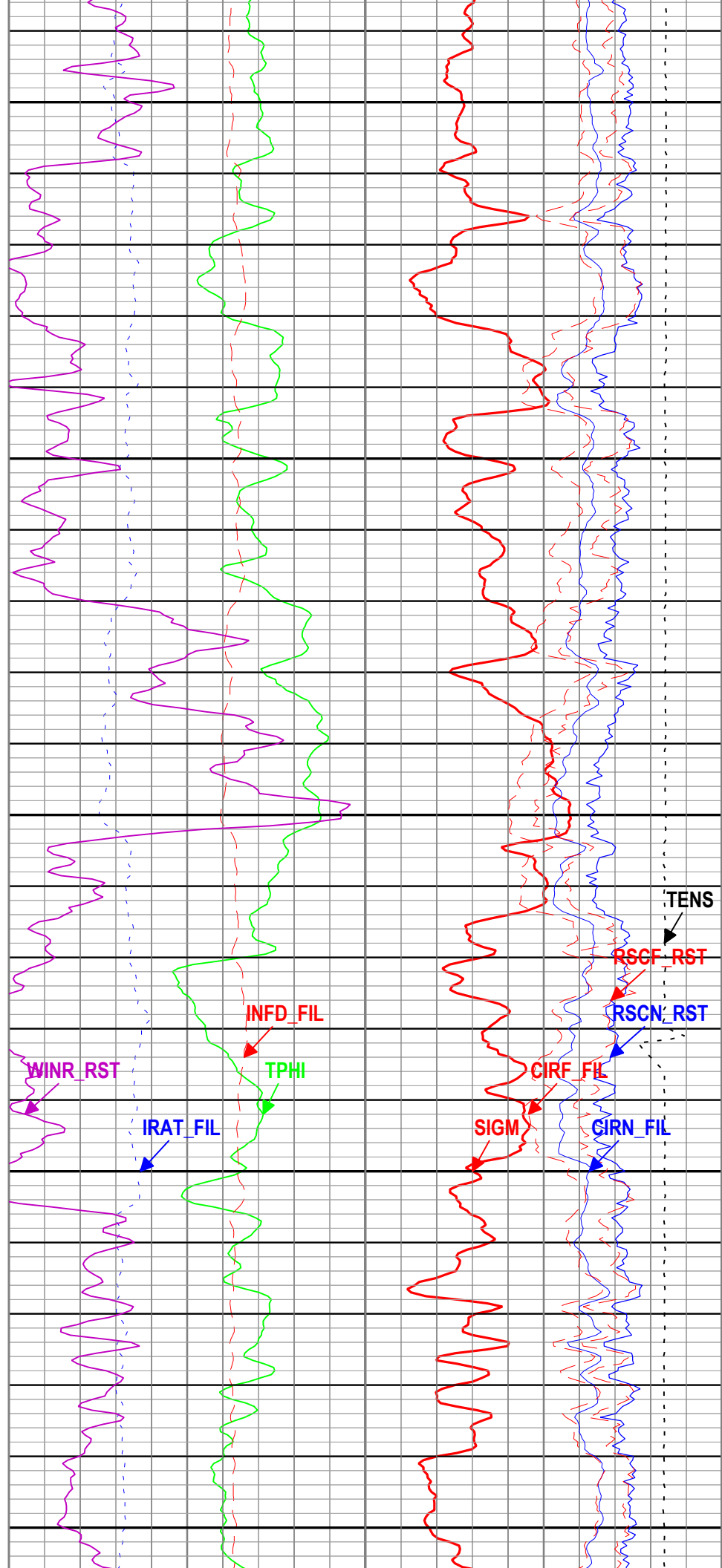
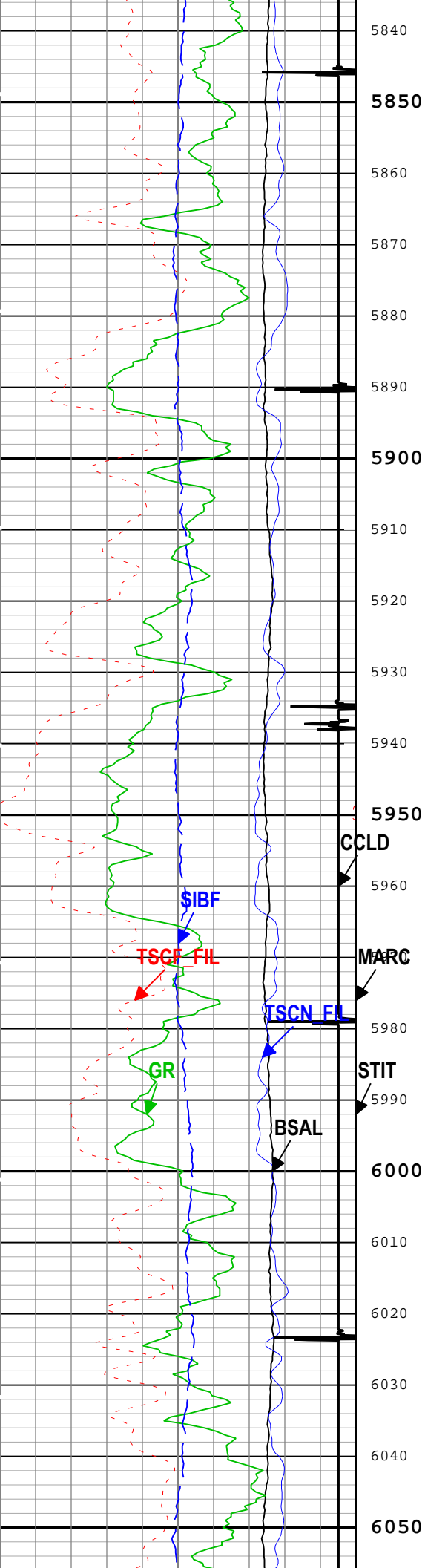


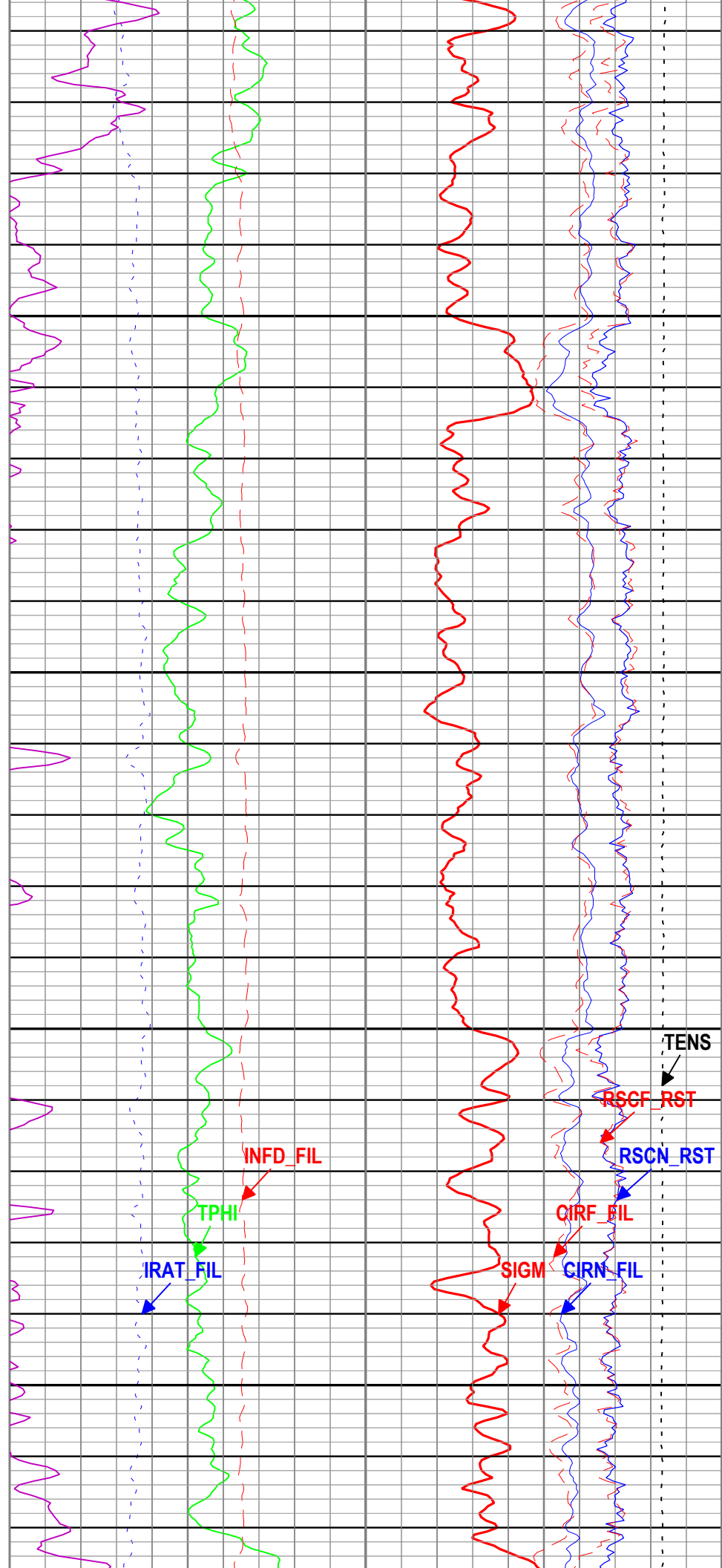
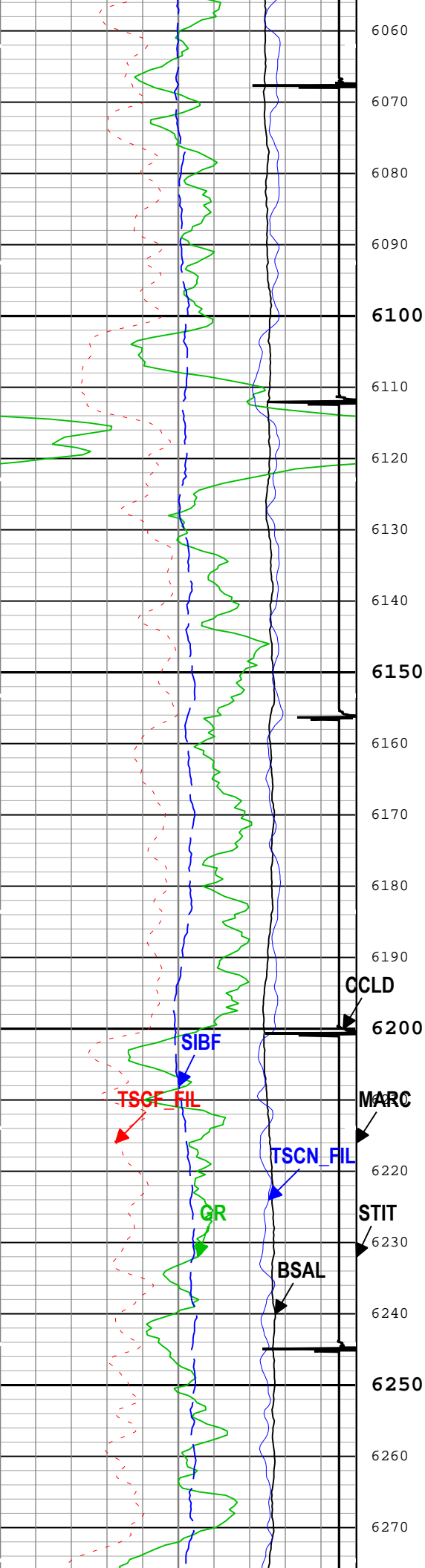


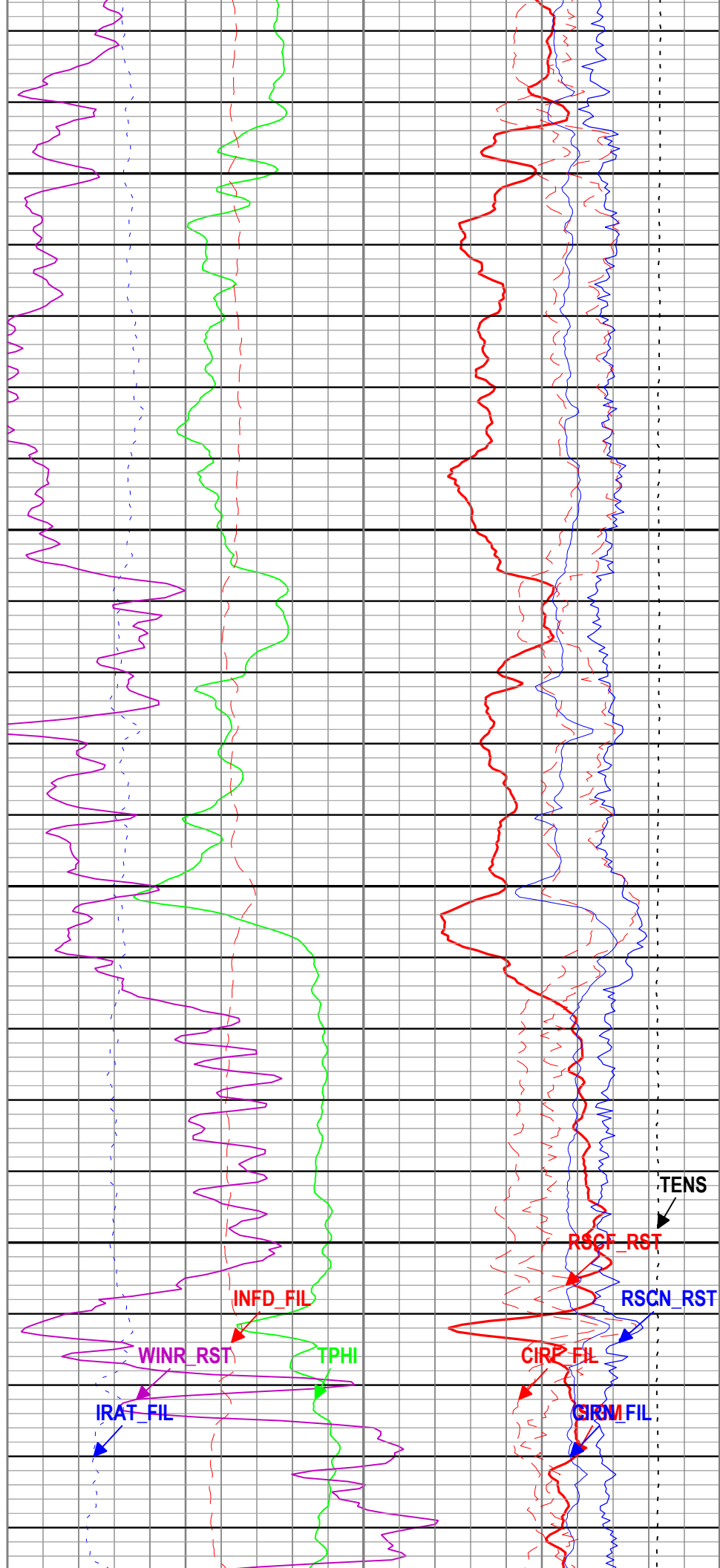
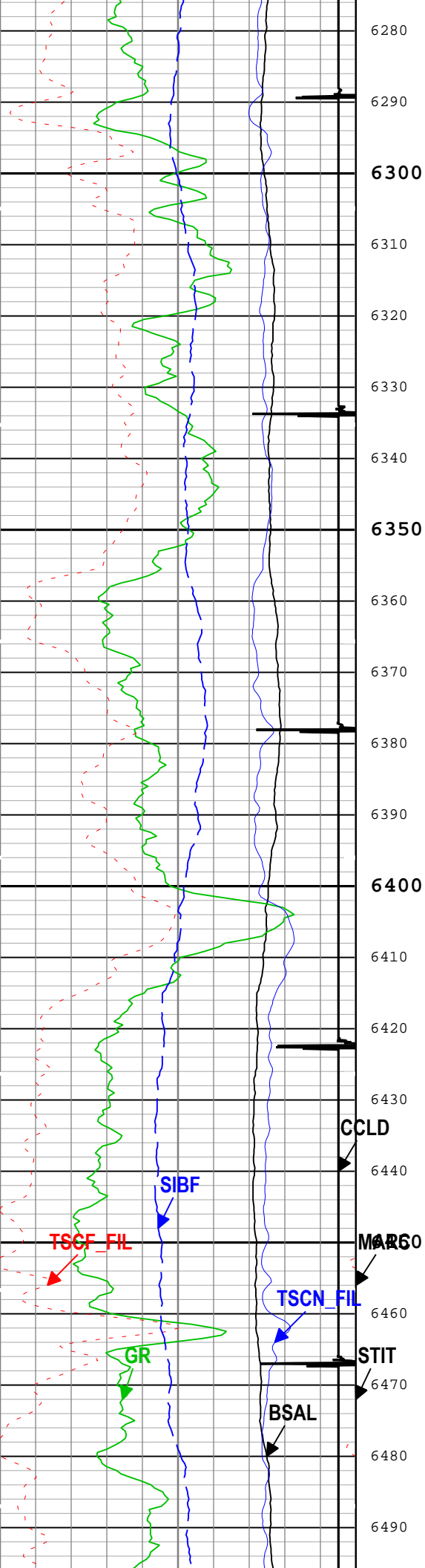


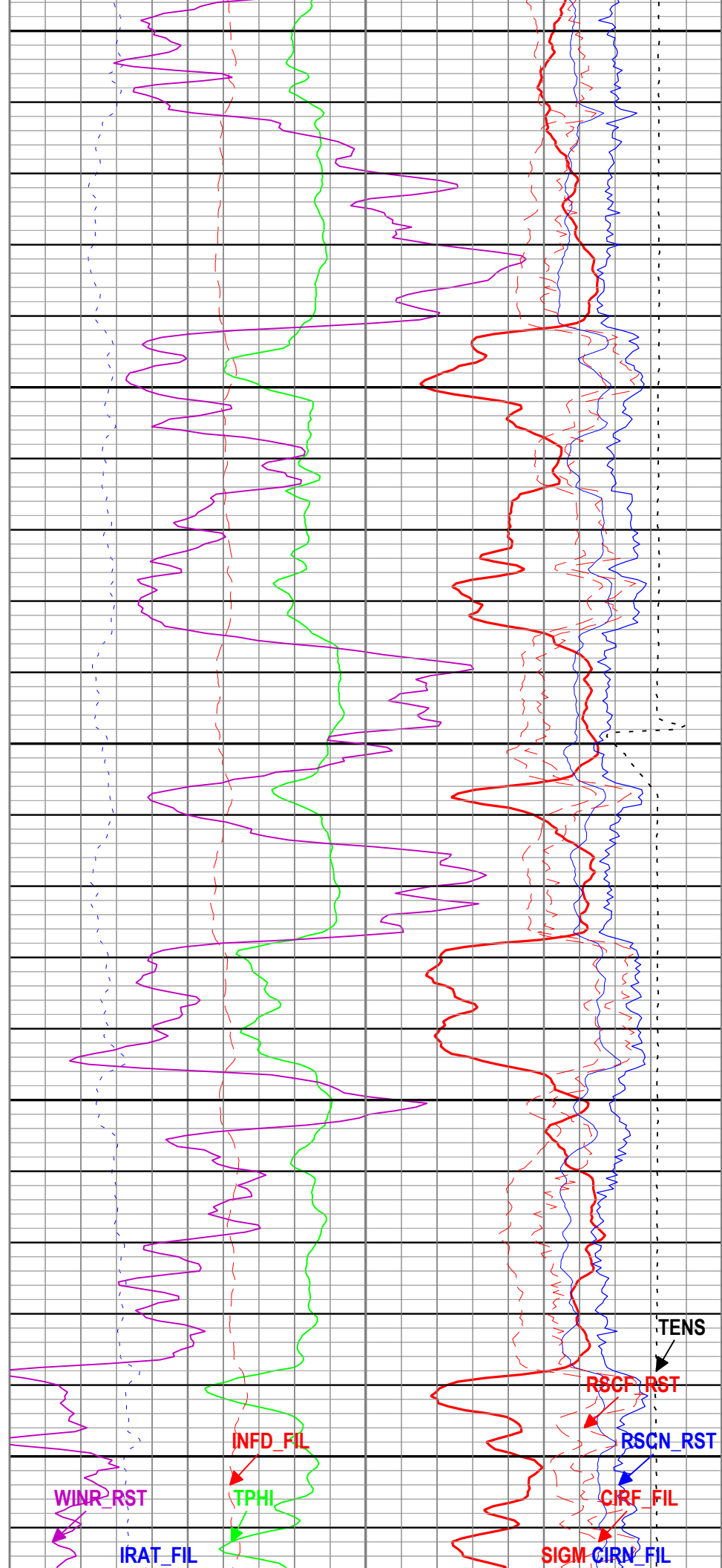
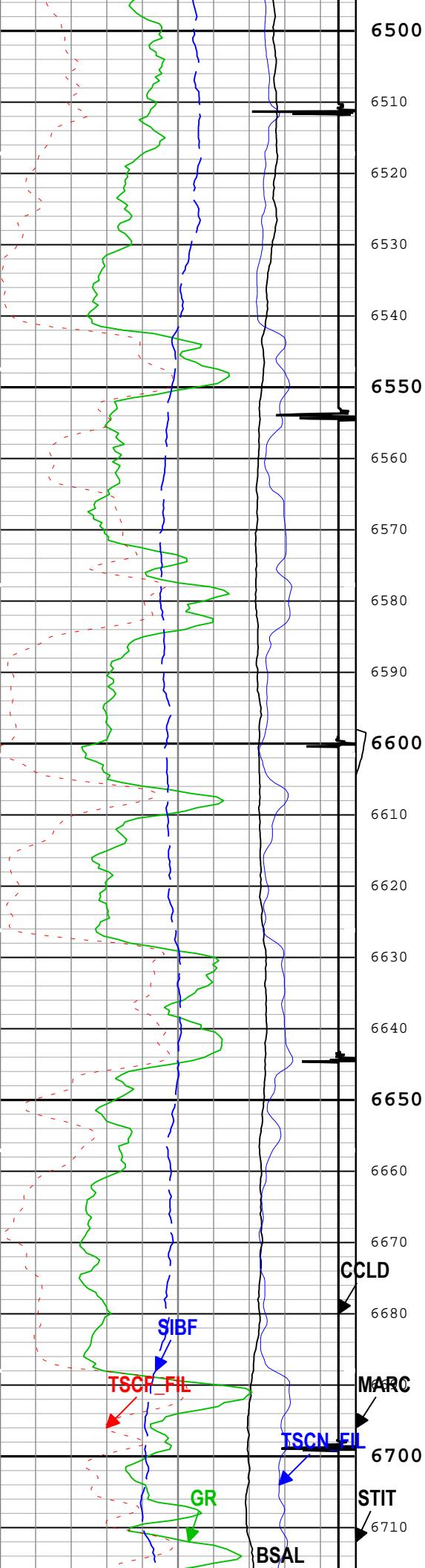


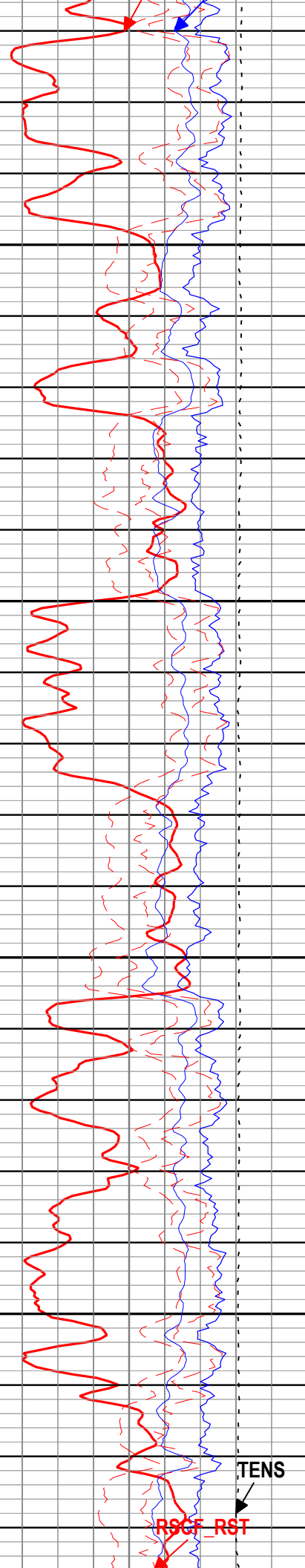
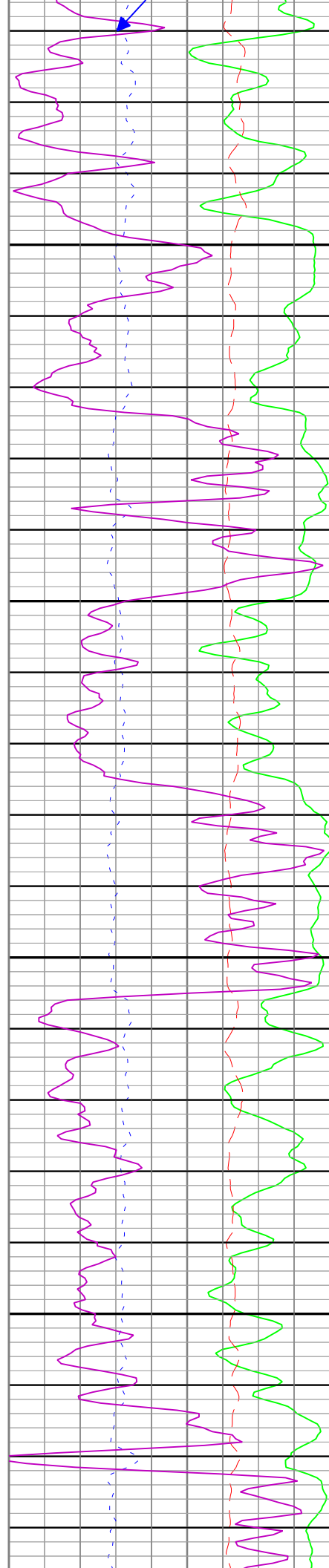
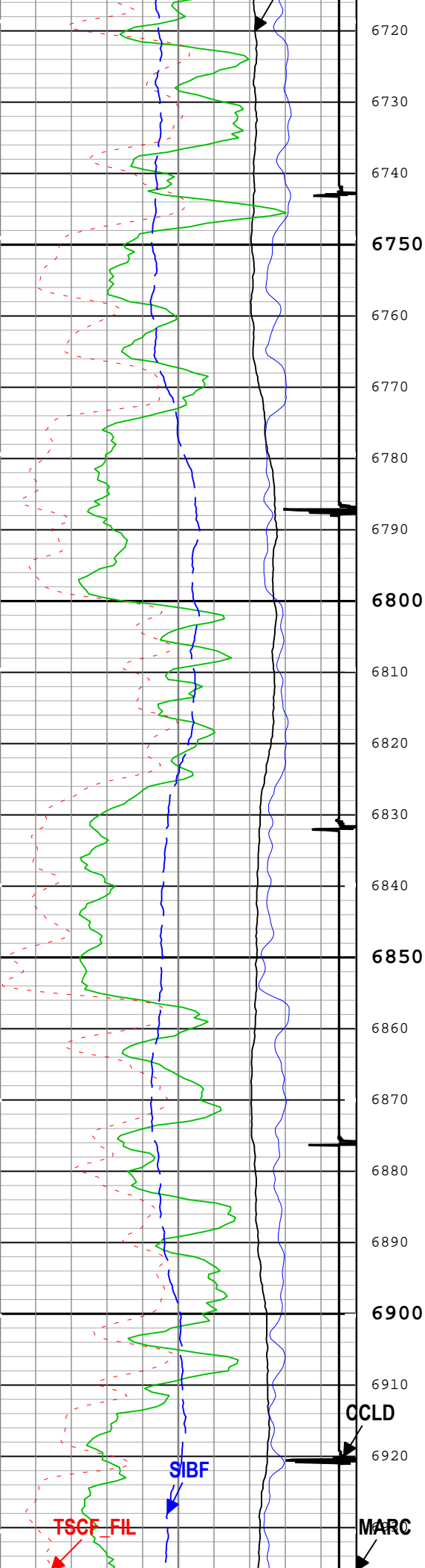


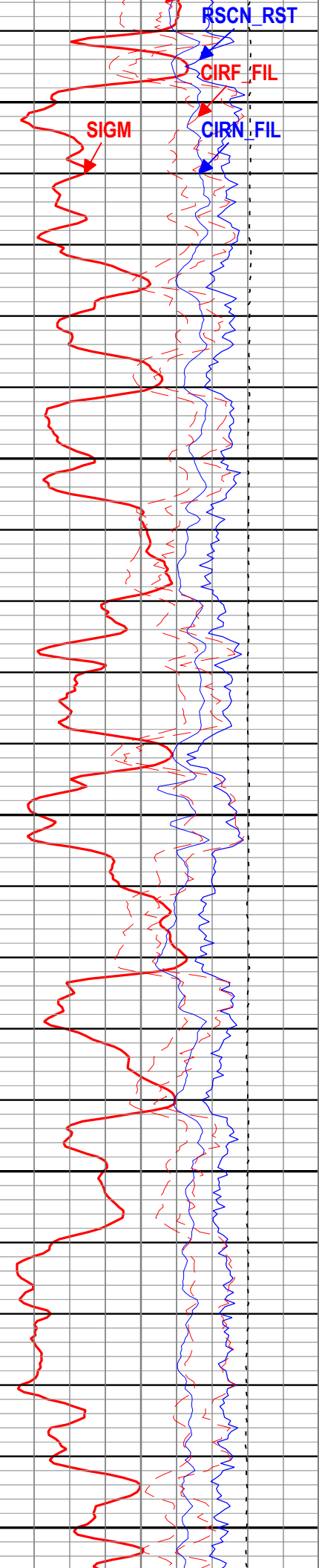
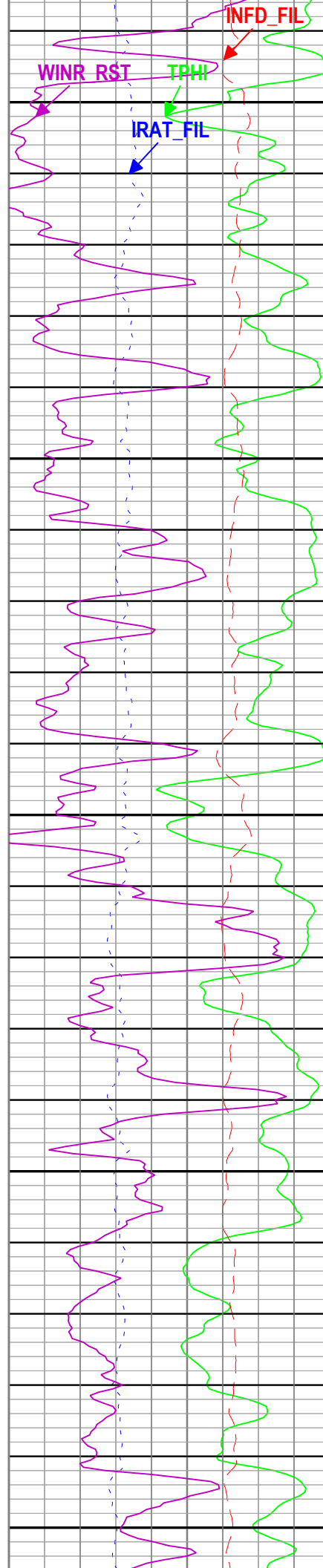
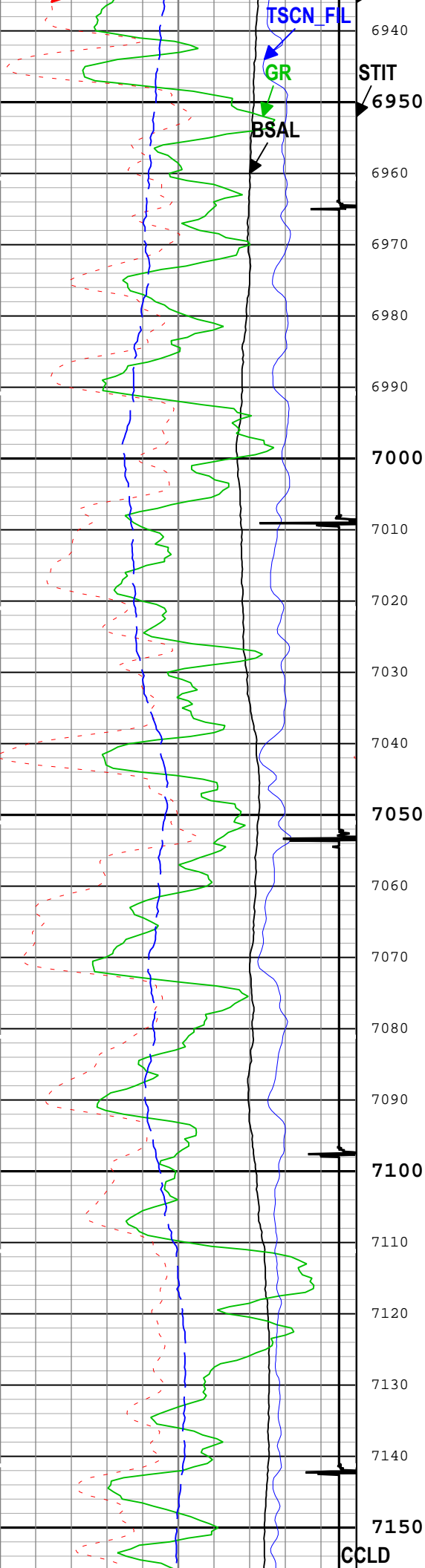


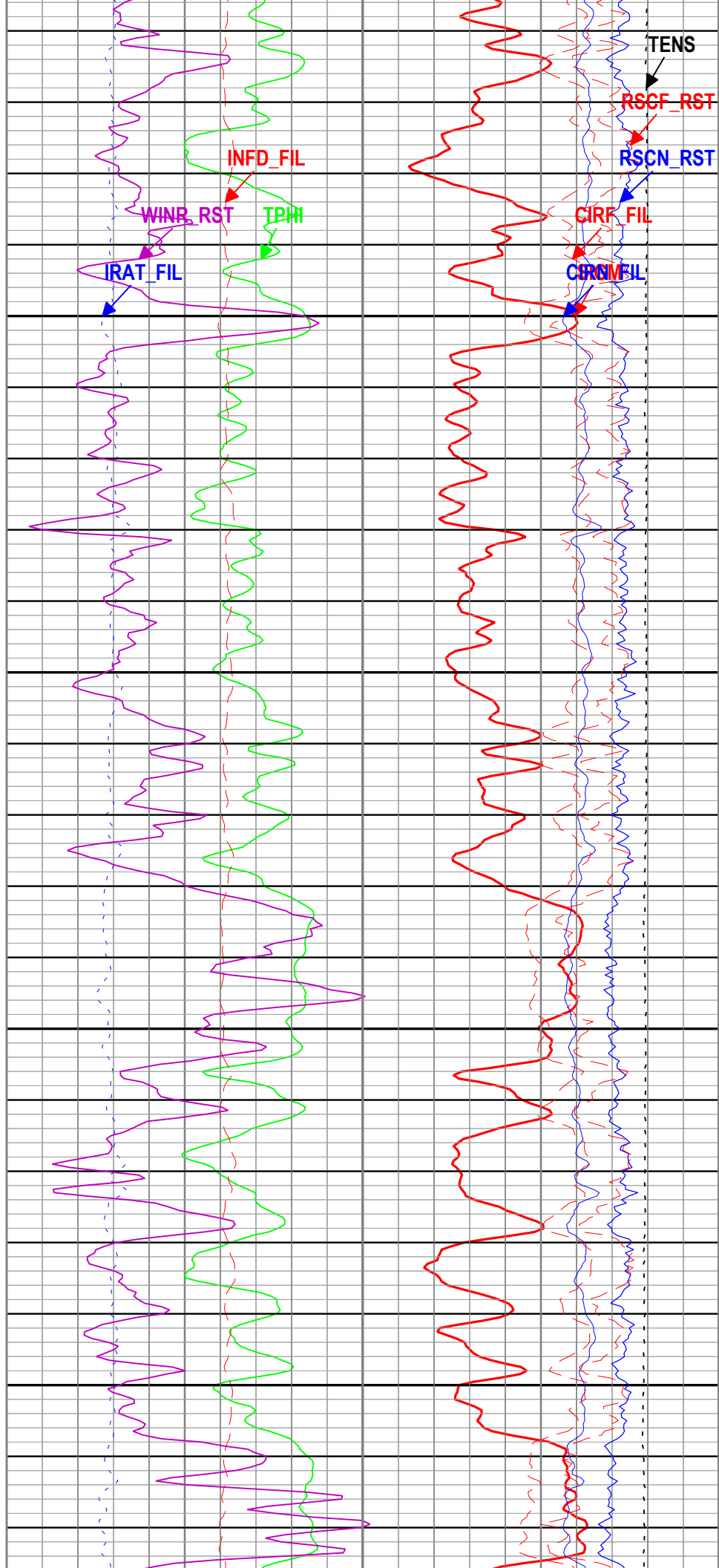
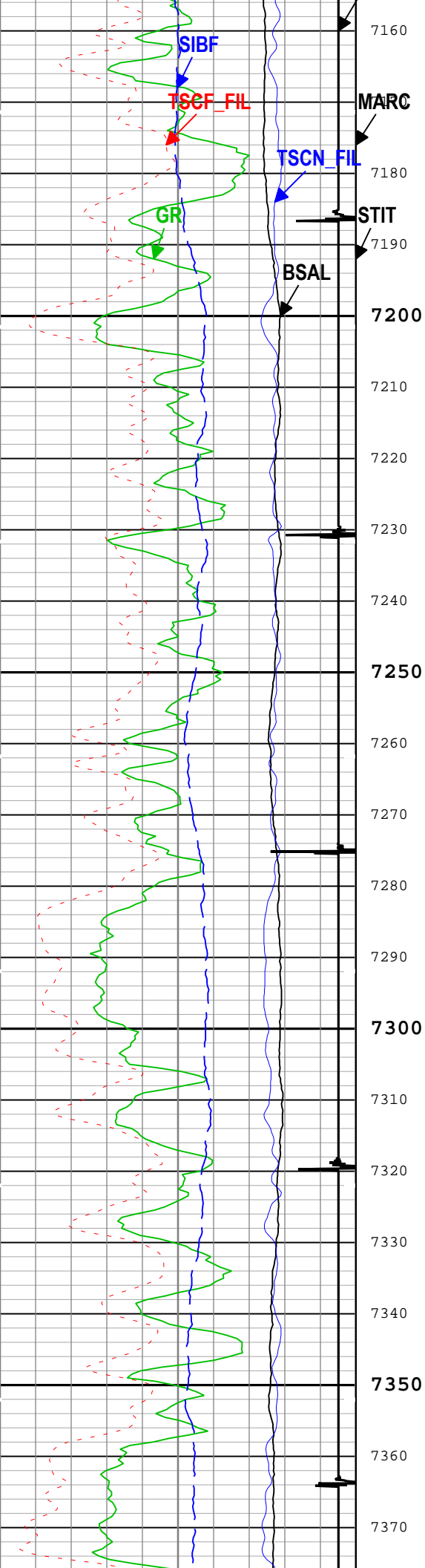


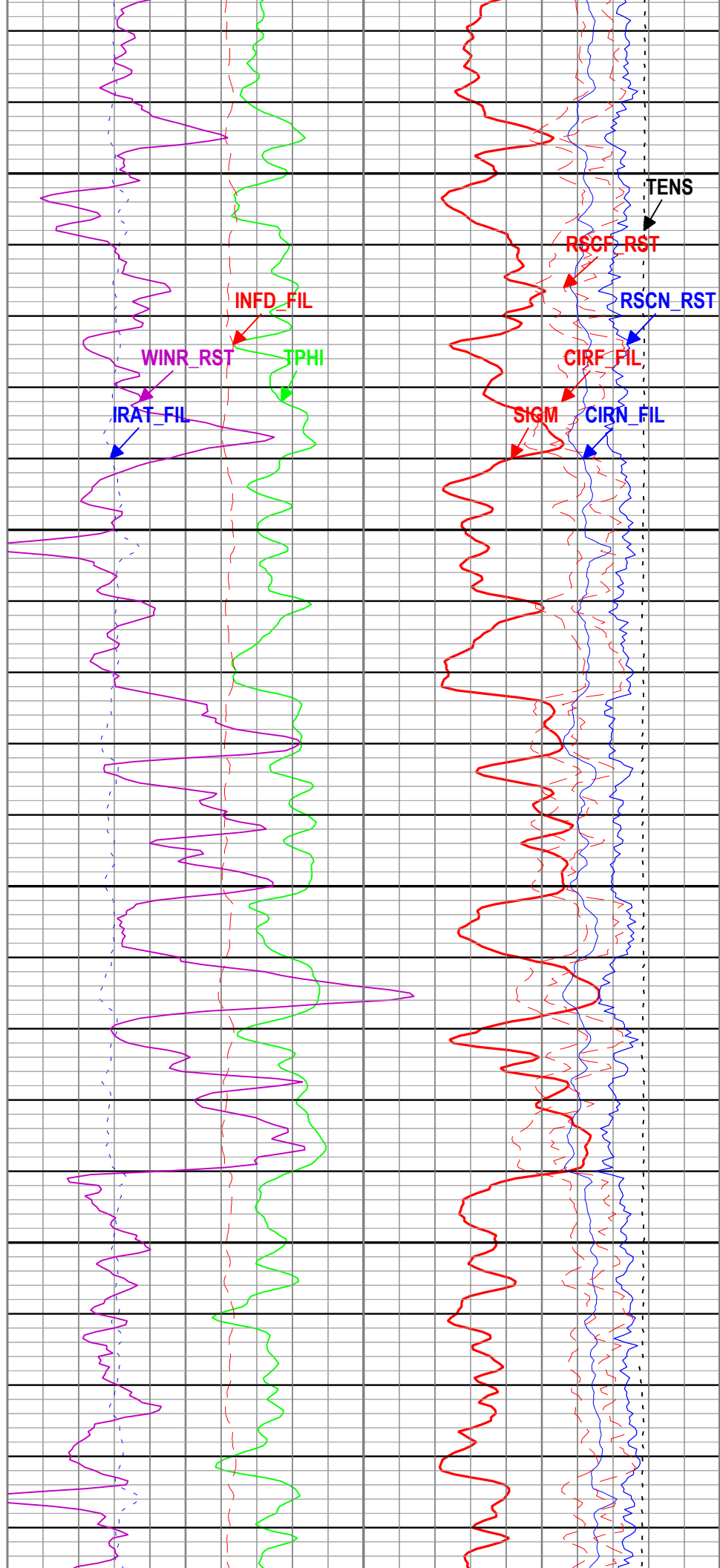
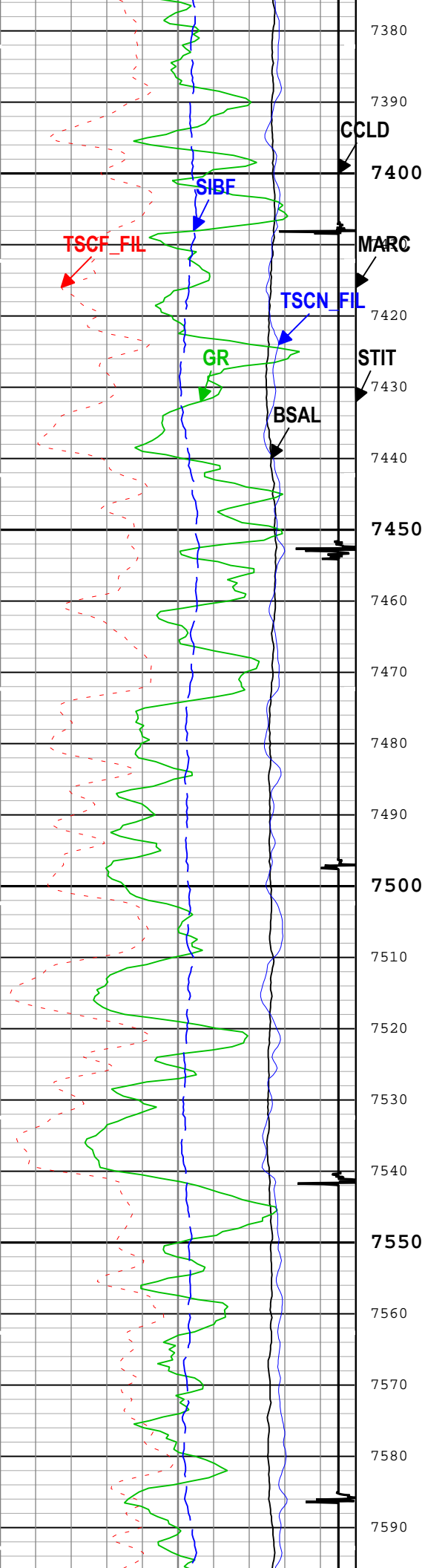


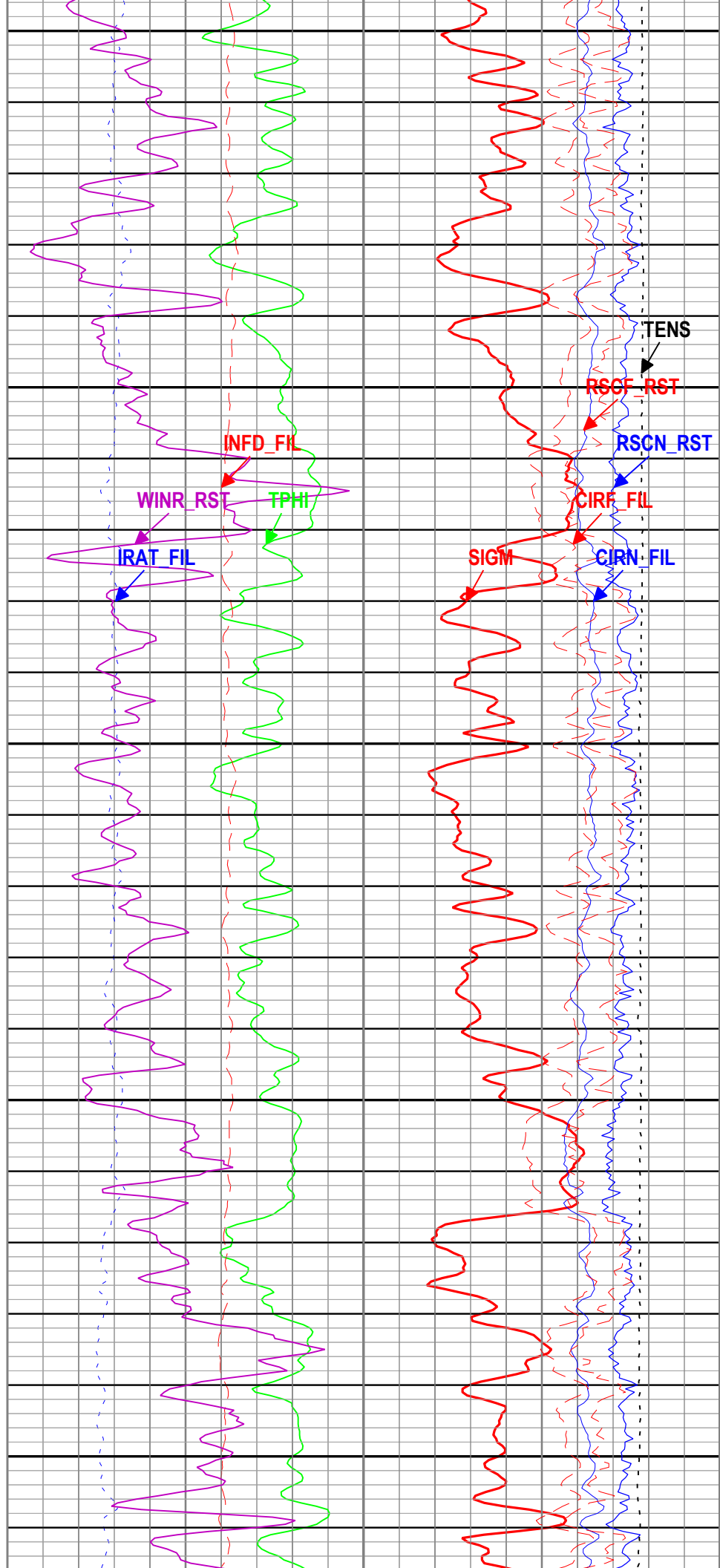
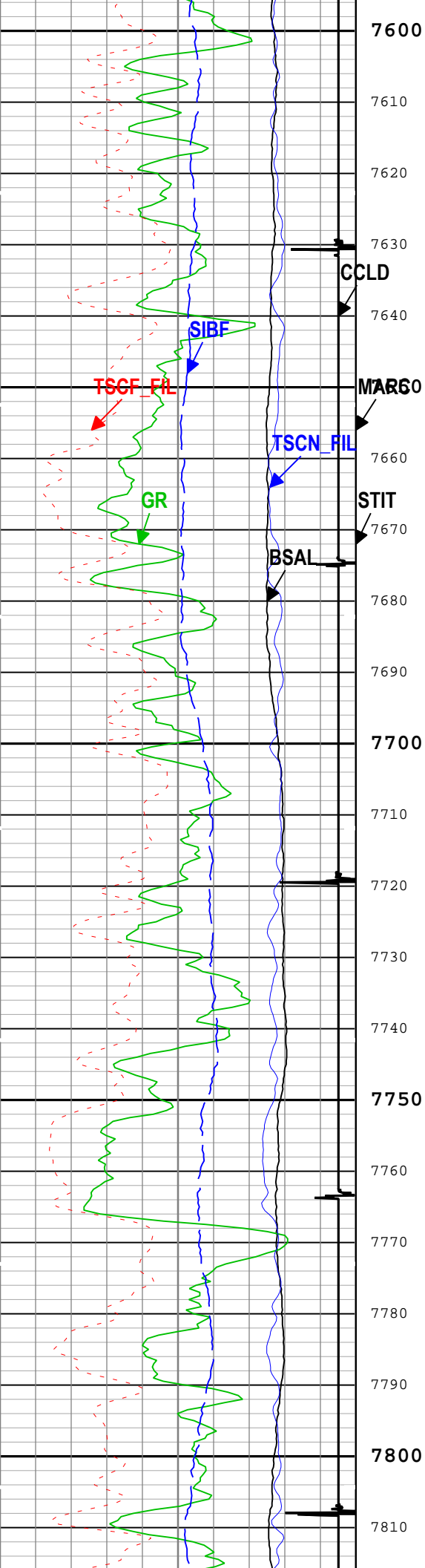


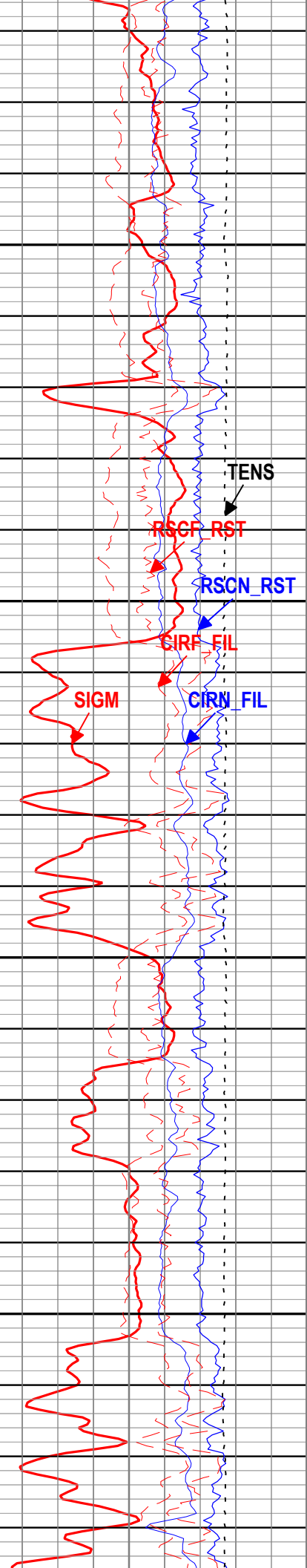
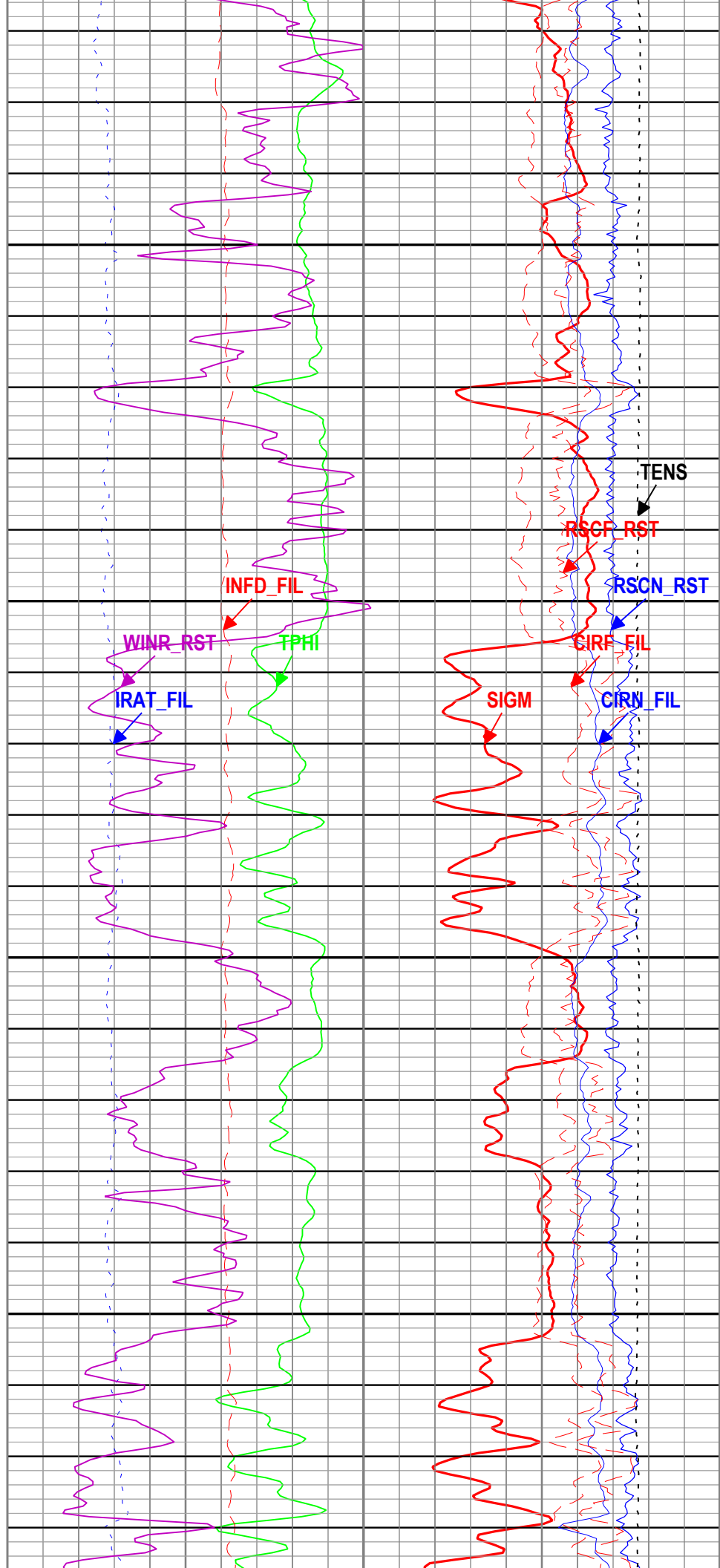
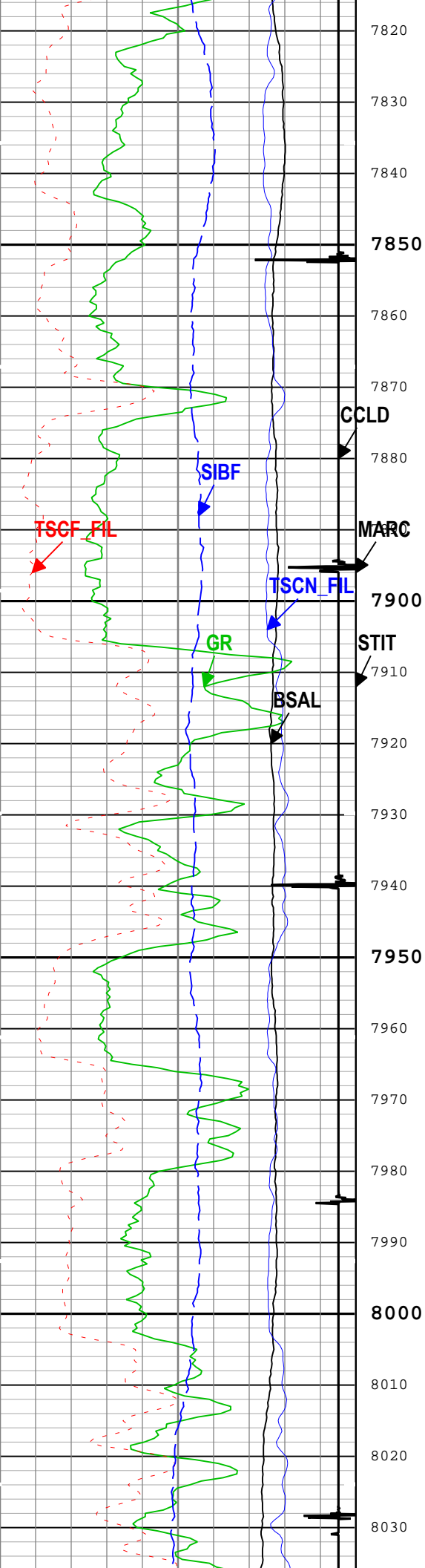


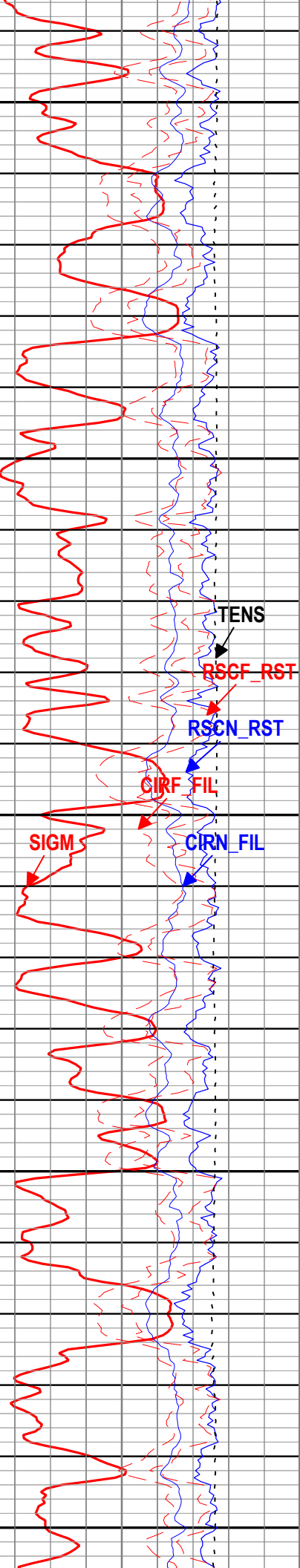
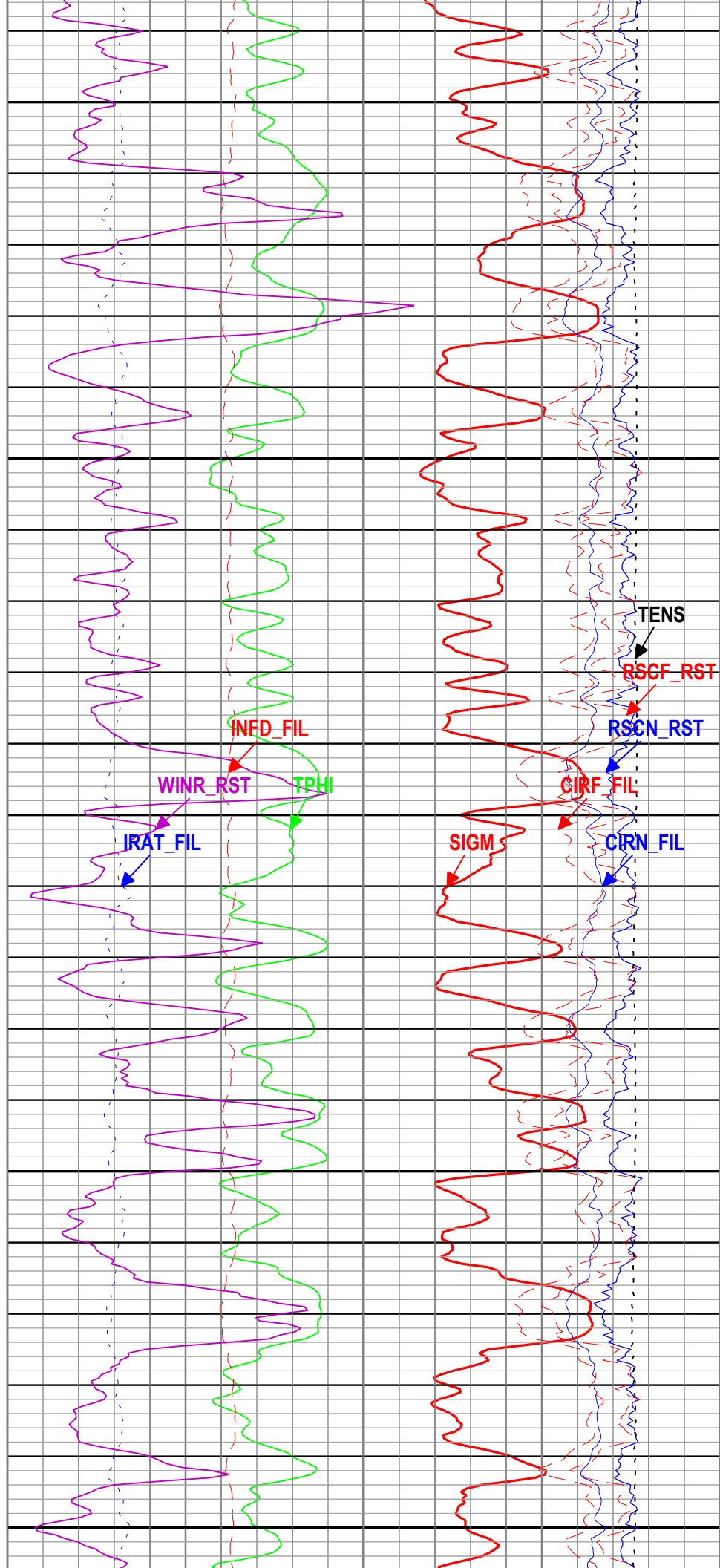
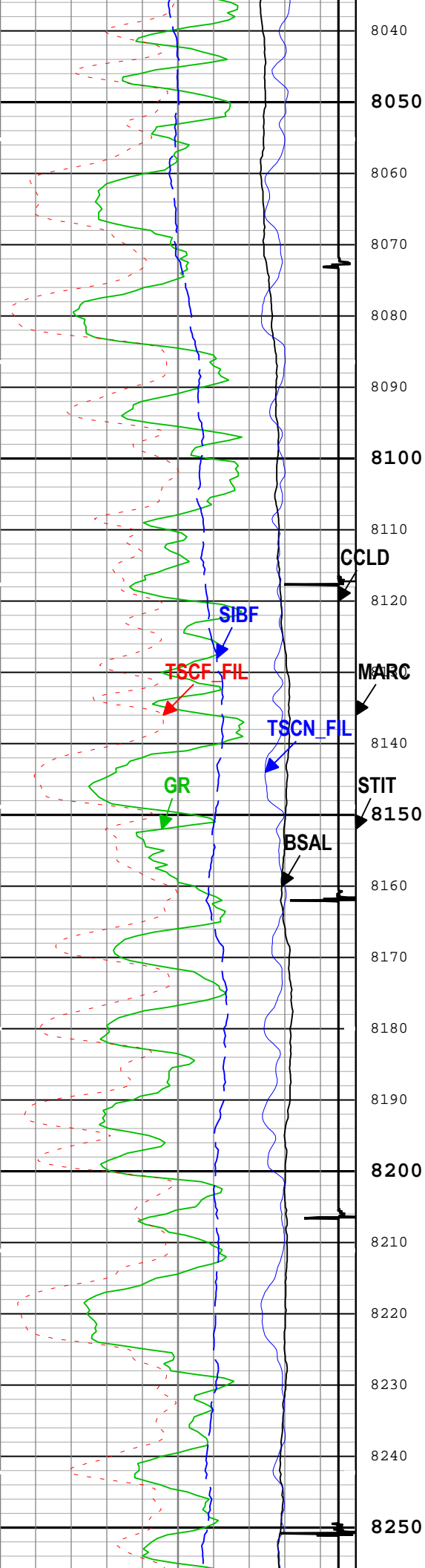


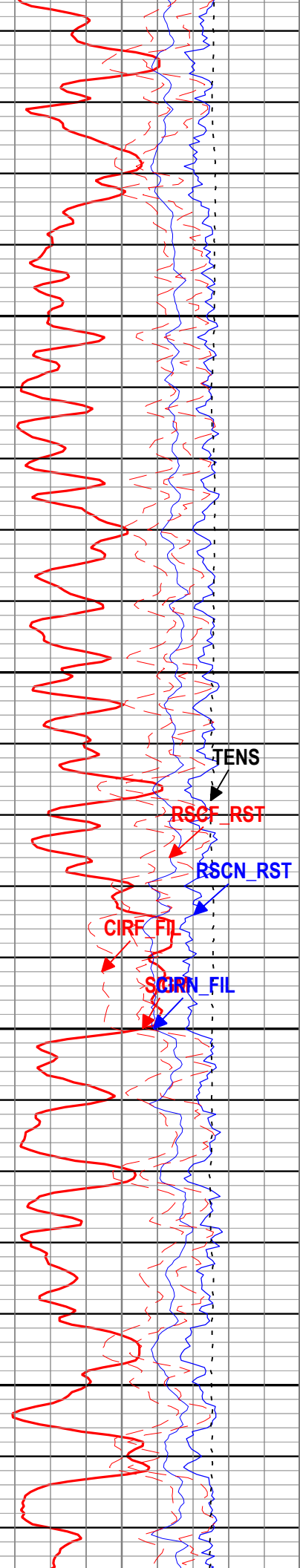
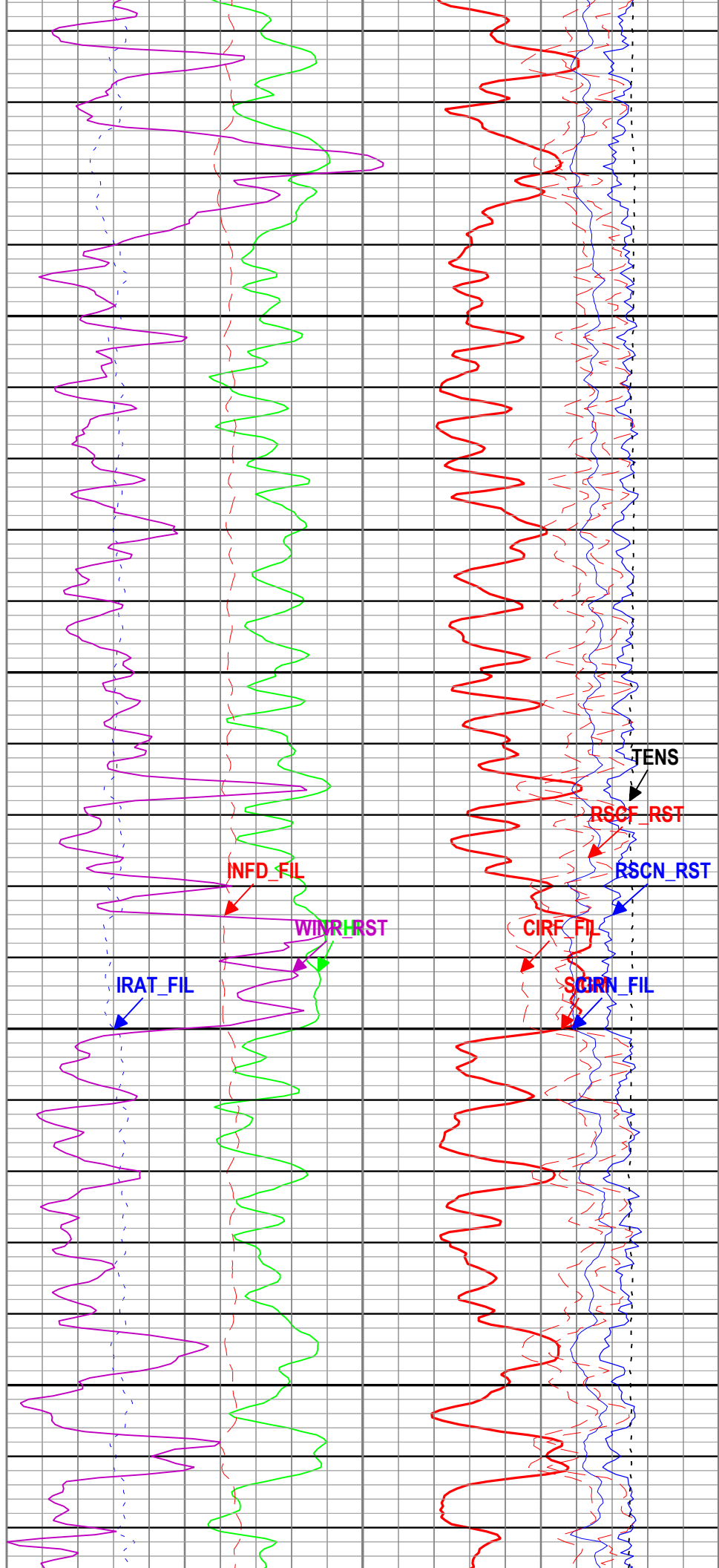
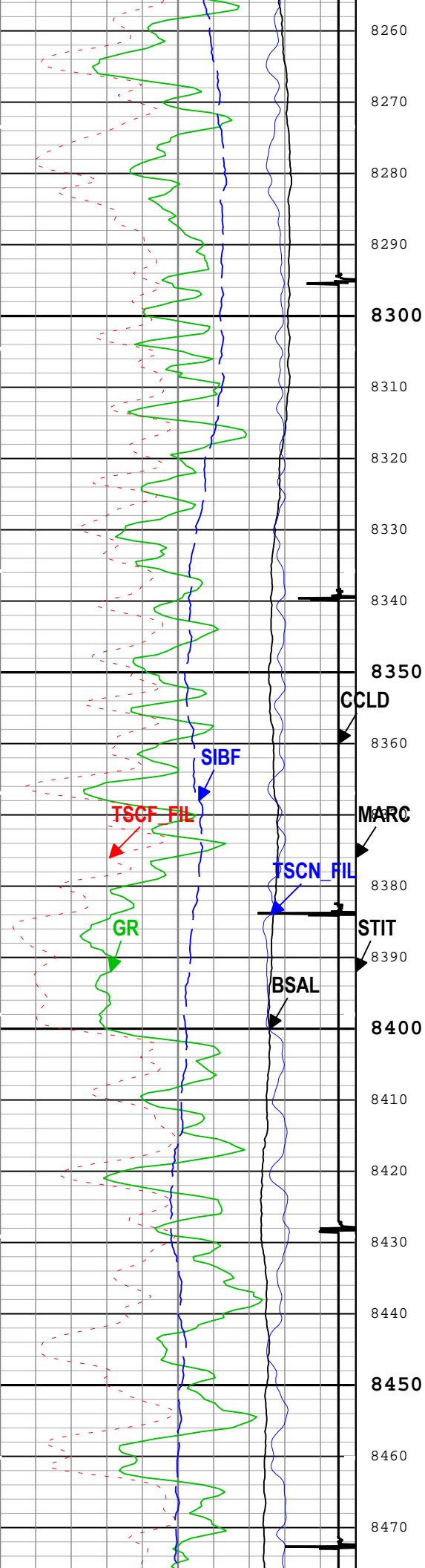


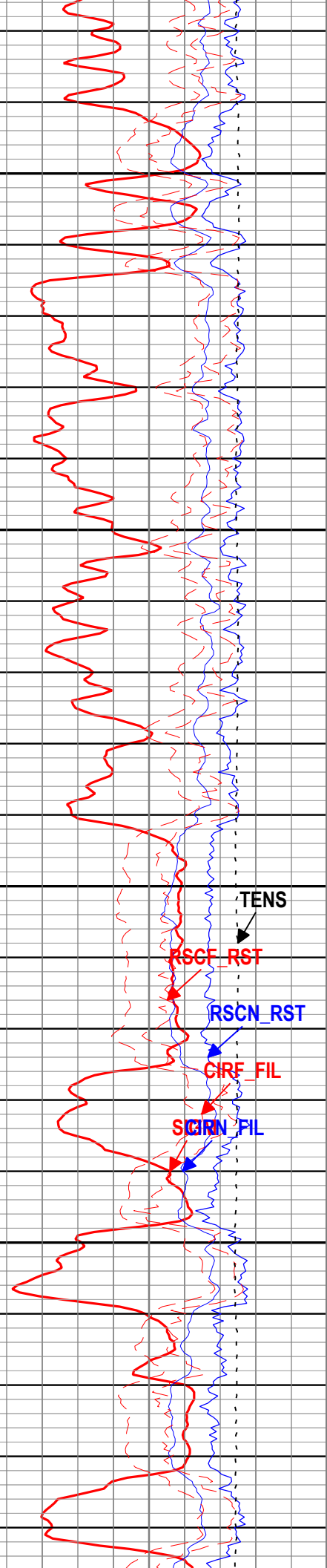
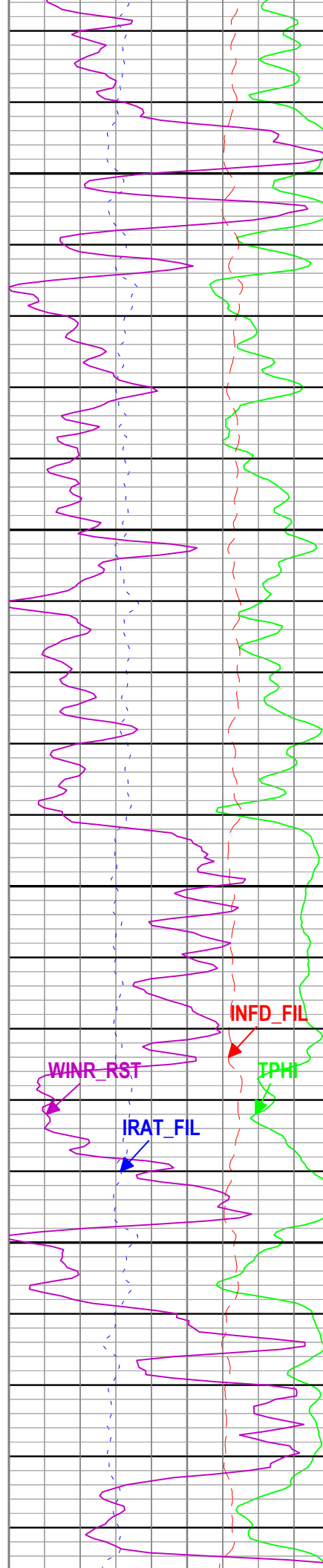
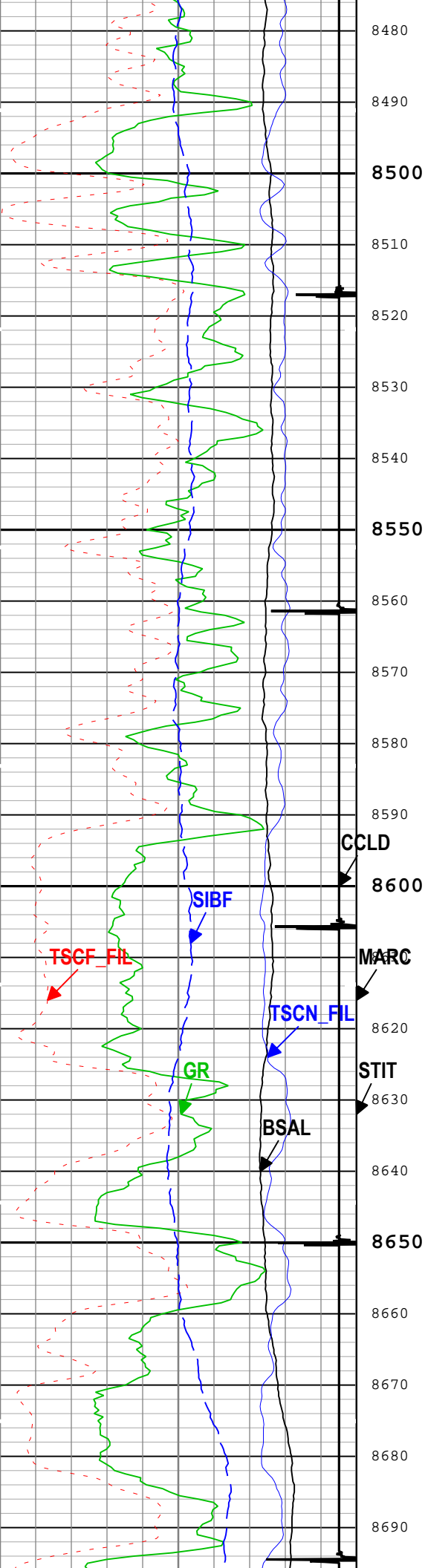


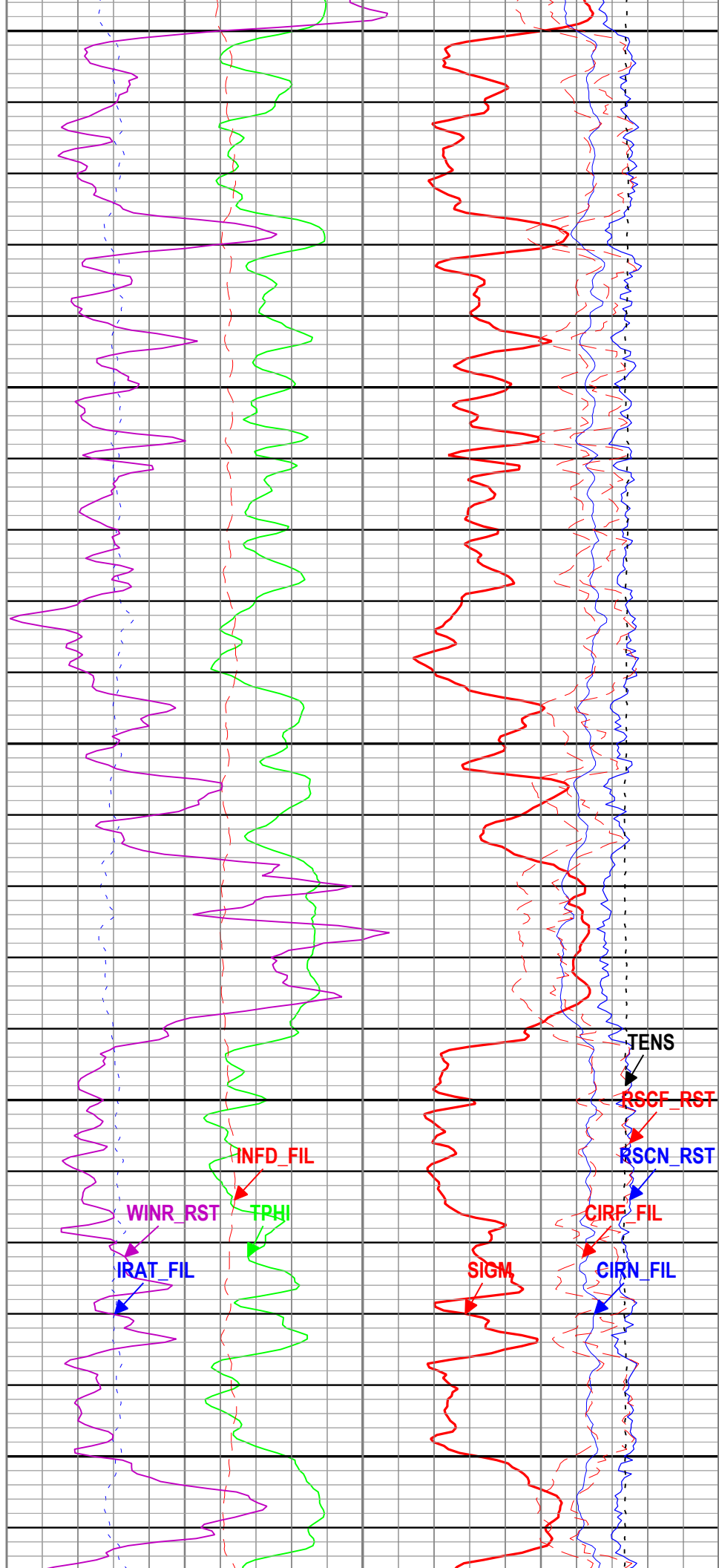
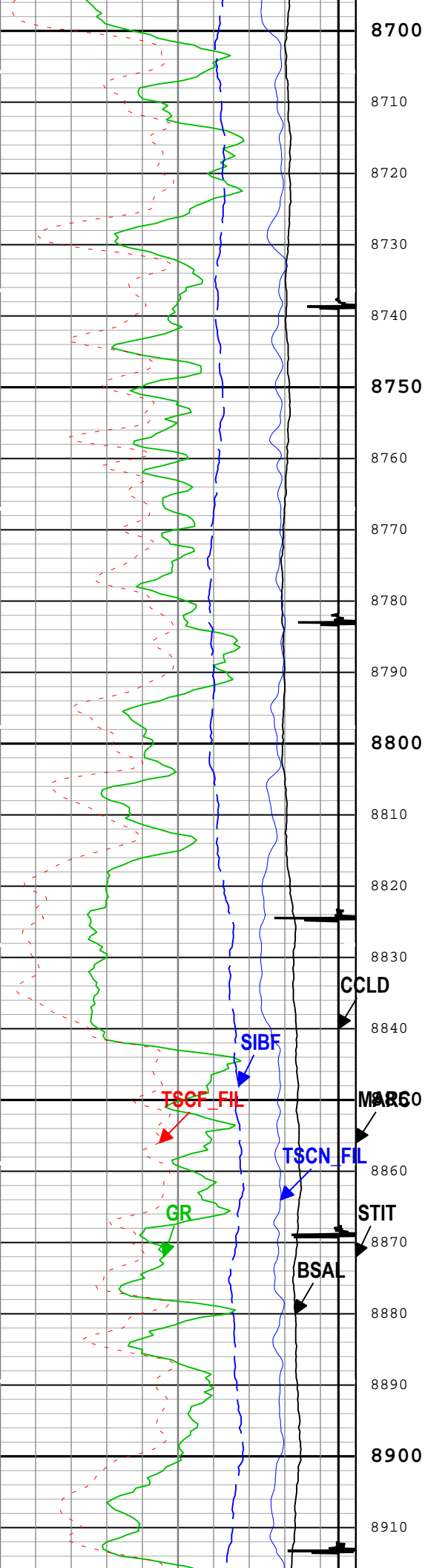


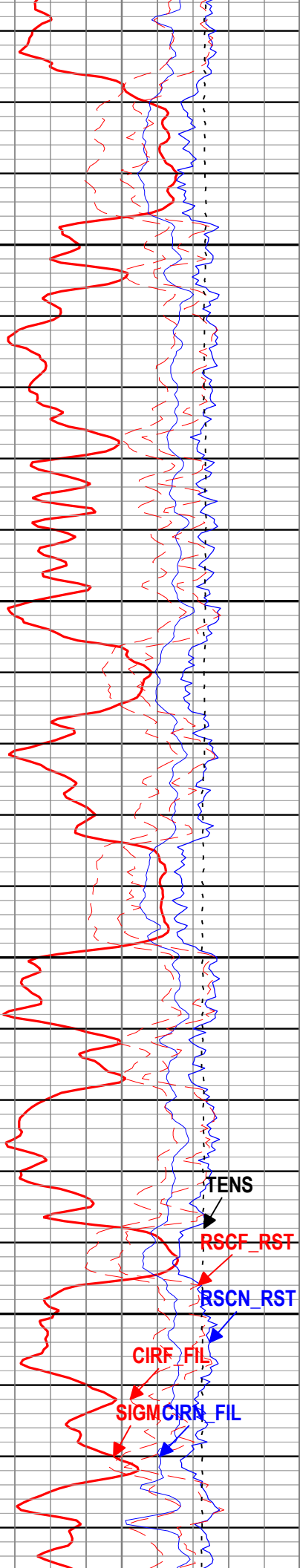
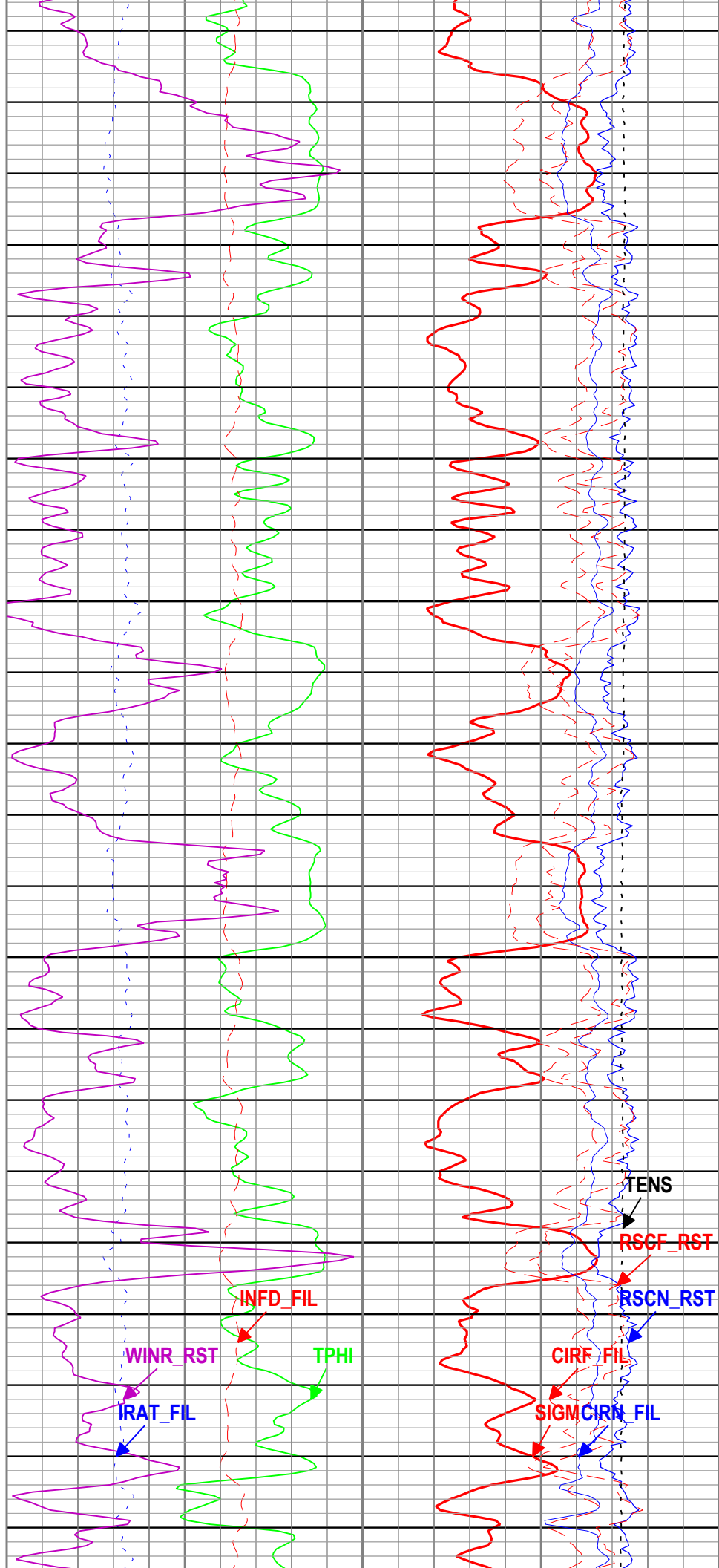
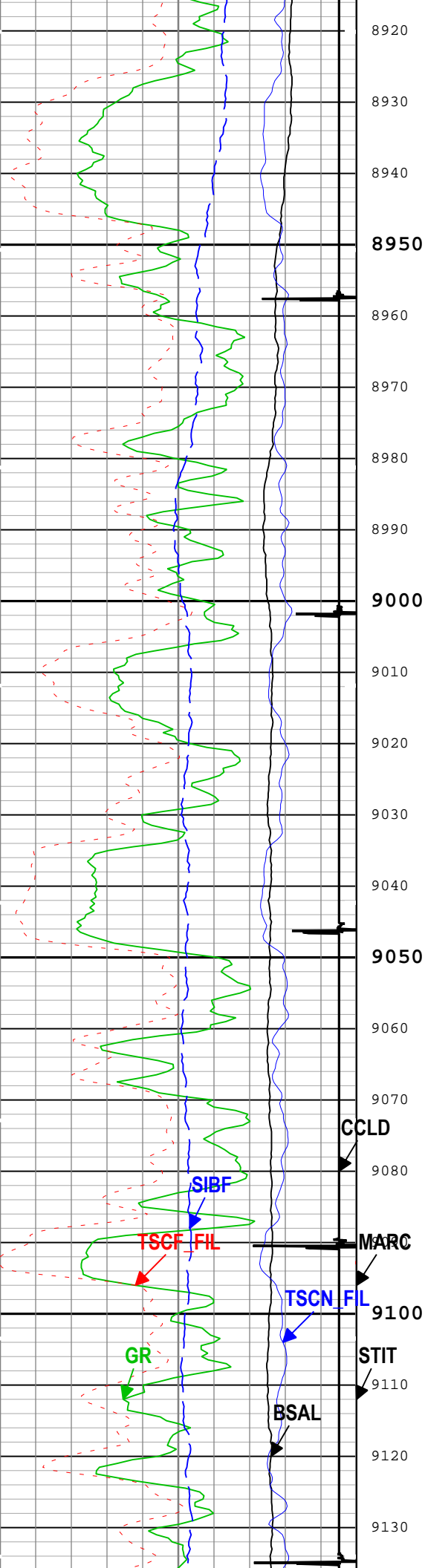


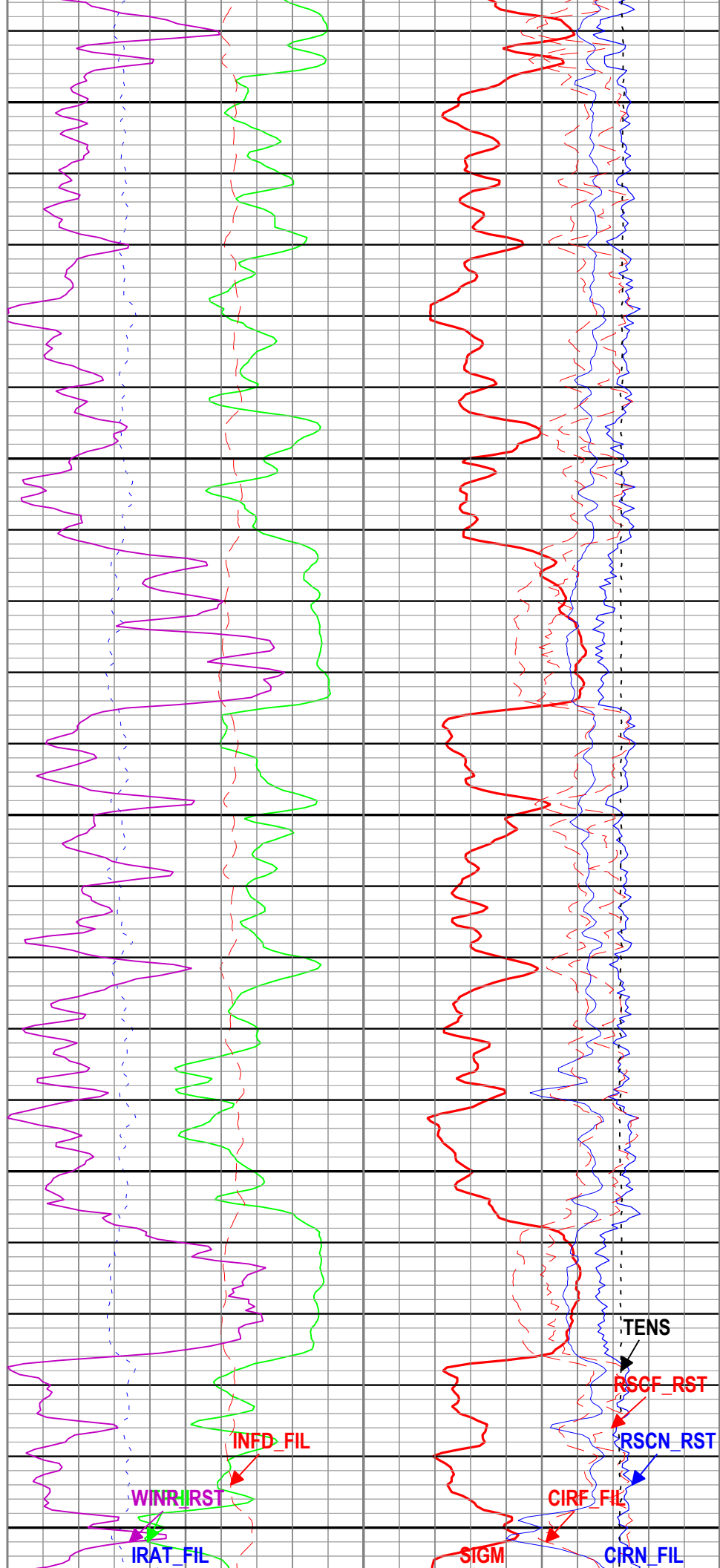
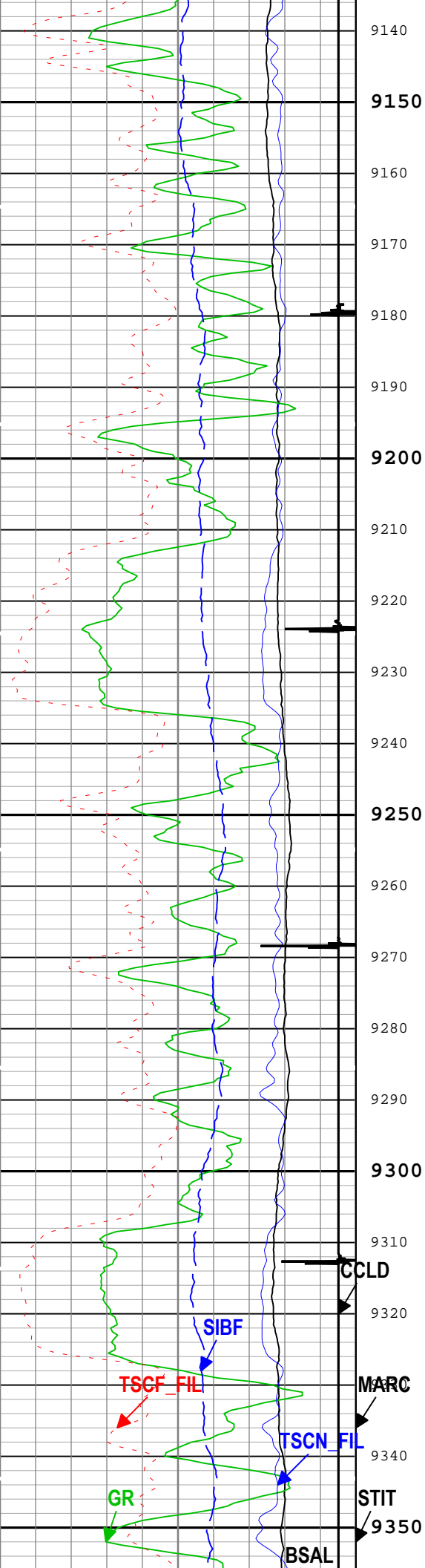


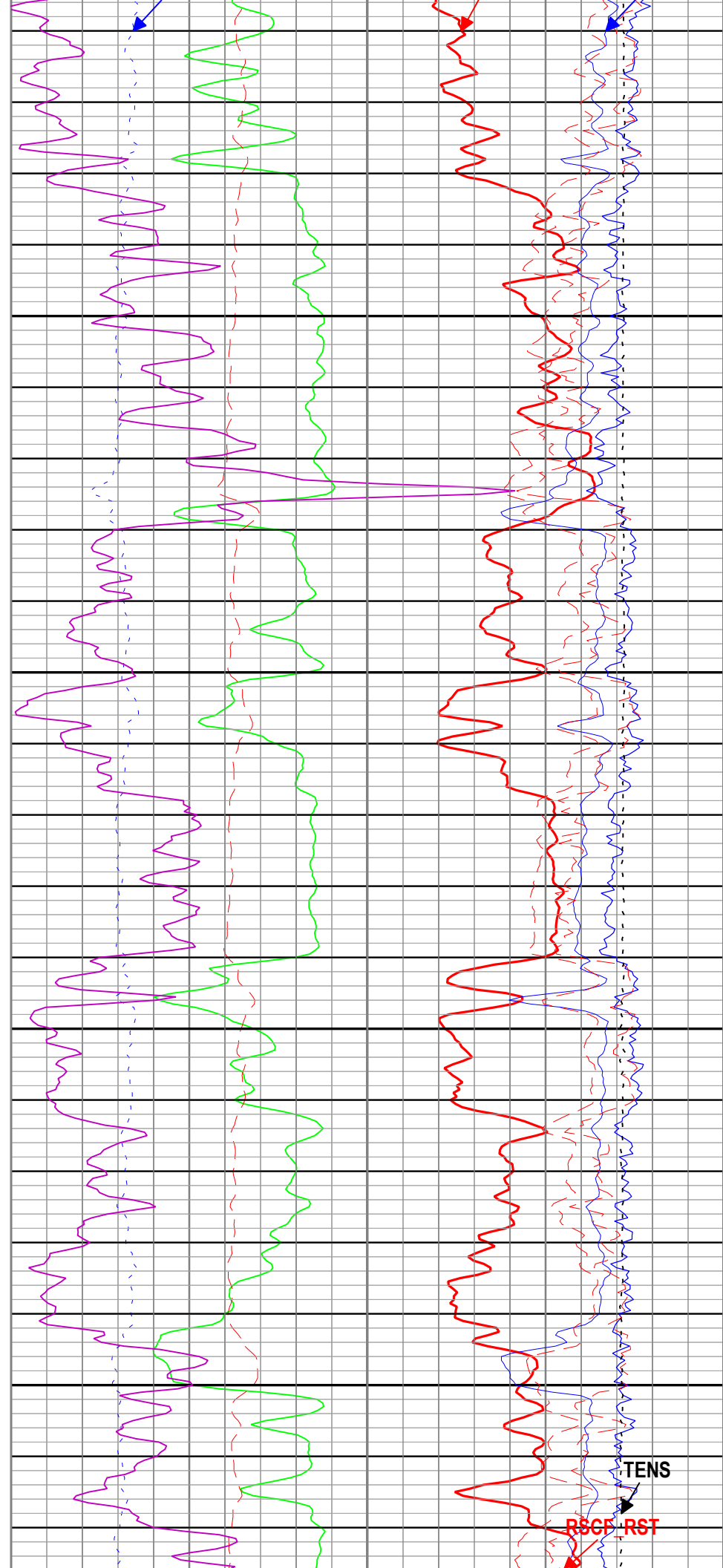
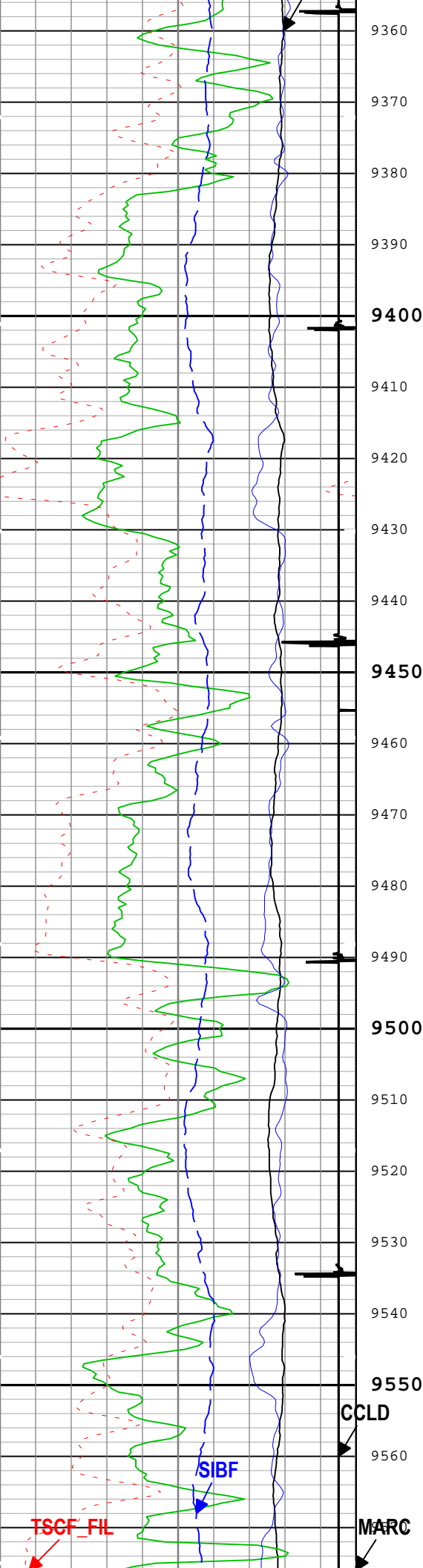


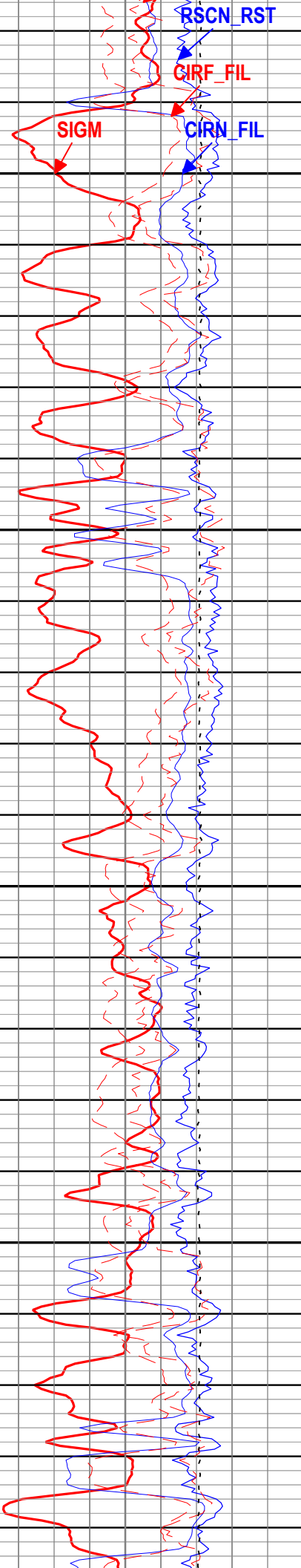
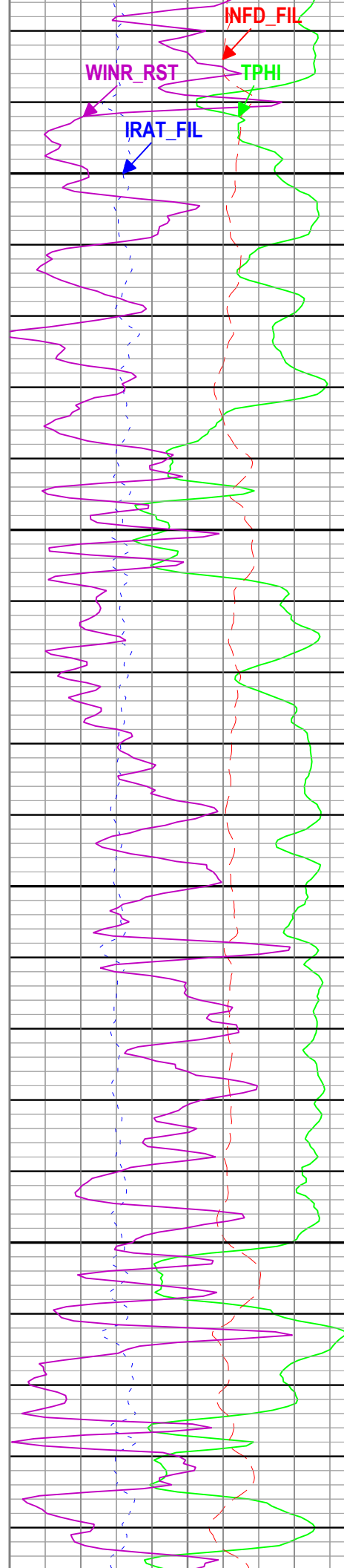
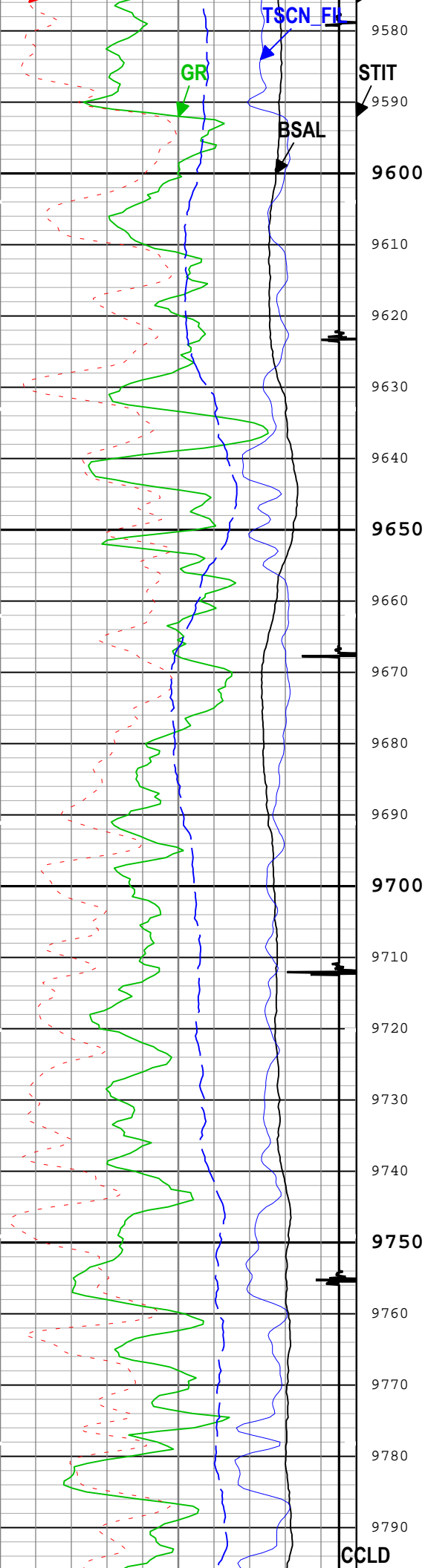


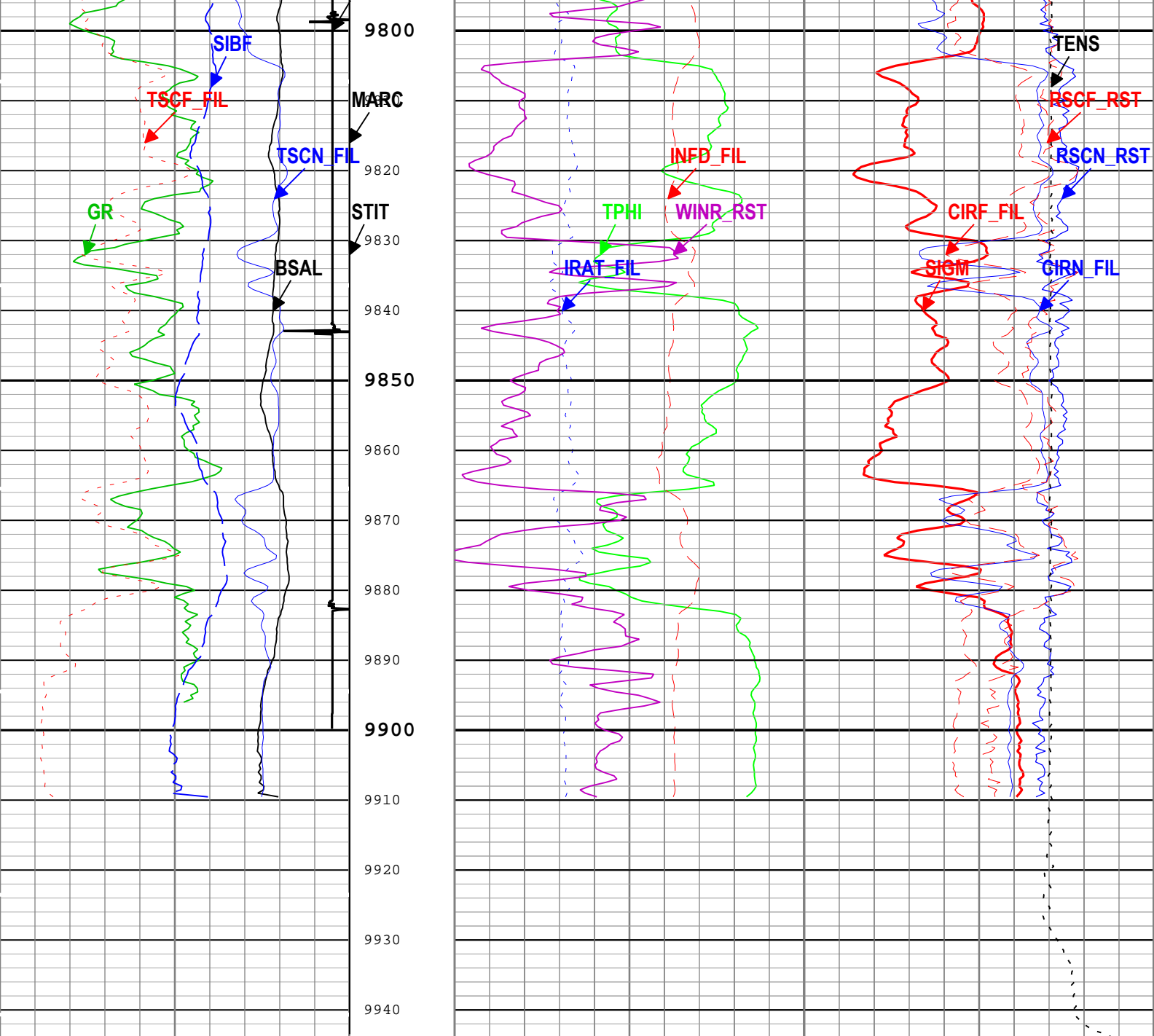












Borehole Salinity (BSAL) RST-C			Stuck Tool Indicator, Total (STIT)			Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C		
450	ppk	-50	0	ft	50	60	cu	0
Gamma Ray (GR) PSTP-B			Cable Drag From STIA to STIT			Weighted Inelastic Ratio (WINR_RST) RST-C		
0	gAPI	150	Tool_Tot. Drag From D3T to STIT			0		0.4
Total Selected Count Rate Near Detector Filtered (TSCN_FIL) RST-C			Minitron Arc Count (MARC) RST-C			Inelastic Ratio Filtered (IRAT_FIL) RST-C		
30000	1/s	0				0.75		0
Total Selected Count Rate Far Detector Filtered (TSCF_FIL) RST-C						Thermal Decay Porosity (TPHI) RST-C		
12000	1/s	0				0.6	ft3/ft3	0
Sigma Borehole Fluid (SIBF) RST-C						Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C		
100	cu	0				10000	1/s	0
CCL Discriminated Amplitude (CCLD) PSTP-B						Capture to Inelastic Ratio Near Filtered (CIRN_FIL) RST-C		
-19	V	1				2.5		0
						Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C		
						5		0
						Near Detector Effective Unregulated Capture Count Rate (RSCN_RST) RST-C		
						45		0
						Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C		
						45		

Cable Tension (TENS)

5000 lbf 0

— ICV - Integrated Cement Volume every 100.00 (ft3)

— ICV - Integrated Cement Volume every 10.00 (ft3)

— IHV - Integrated Hole Volume every 100.00 (ft3)

TIME_1900 - Time Marked every 60.00 (s)

— IHV - Integrated Hole Volume every 10.00 (ft3)

— TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

Channel Processing Parameters	
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Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	Depth Zoned	in
BSAL	Borehole Salinity	Borehole	0	ppm
BSALOPT	Borehole Salinity Option	RST-C	Unknown	
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	SANDSTONE	
TD	Total Measured Depth	Borehole	9928	ft

Parameter	Value	Start (ft)	Stop (ft)
BS	14.75	2100	2274
BS	8.75	2274	9944

Tool Control Parameters	
Tool ID	001
Tool Name	High-Speed Drill Bit
Material	Aluminum
Size (mm)	10
Speed (RPM)	1500
Feed (mm/min)	100
Depth (mm)	50
Angle (deg)	118
Condition	Good
Location	Workshop A
Operator	John Doe
Timestamp	2023-10-27 10:30:00

Parameter	Description	Tool	Value	Unit
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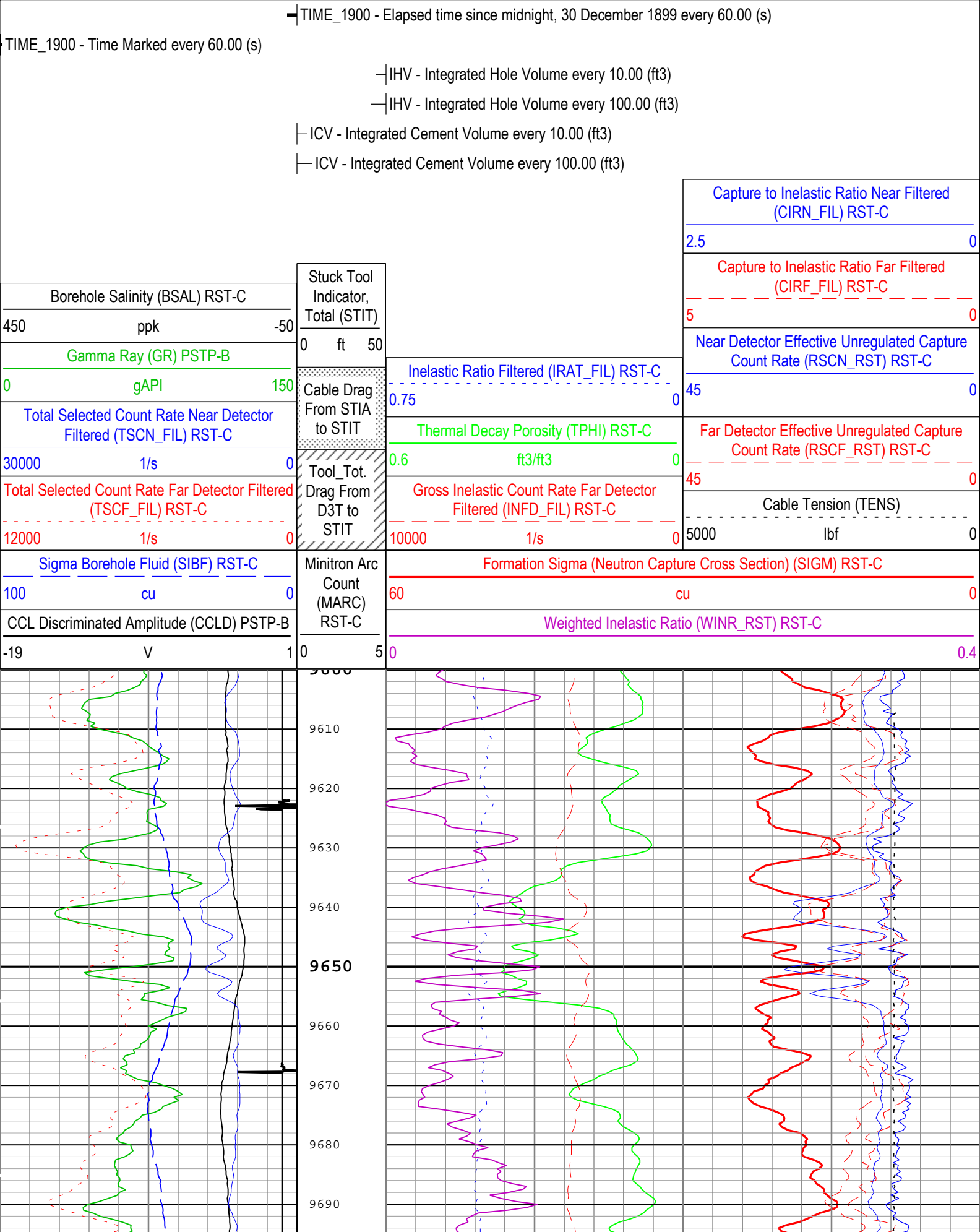
PCCG	PSP Downhole CCL Gain	PSTP-B	24 dB	
RST_DLM	Depth Log Mode	RST-C	Sigma	

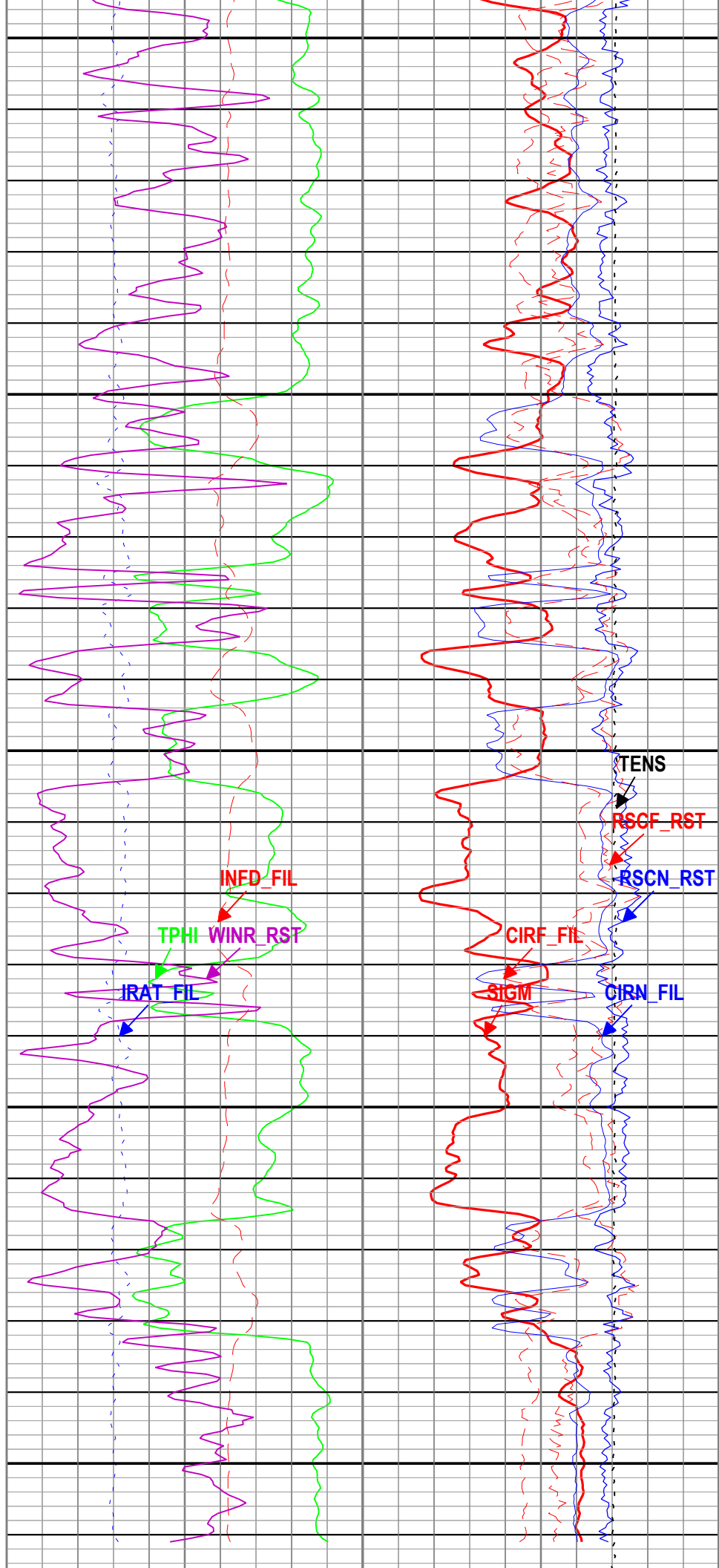
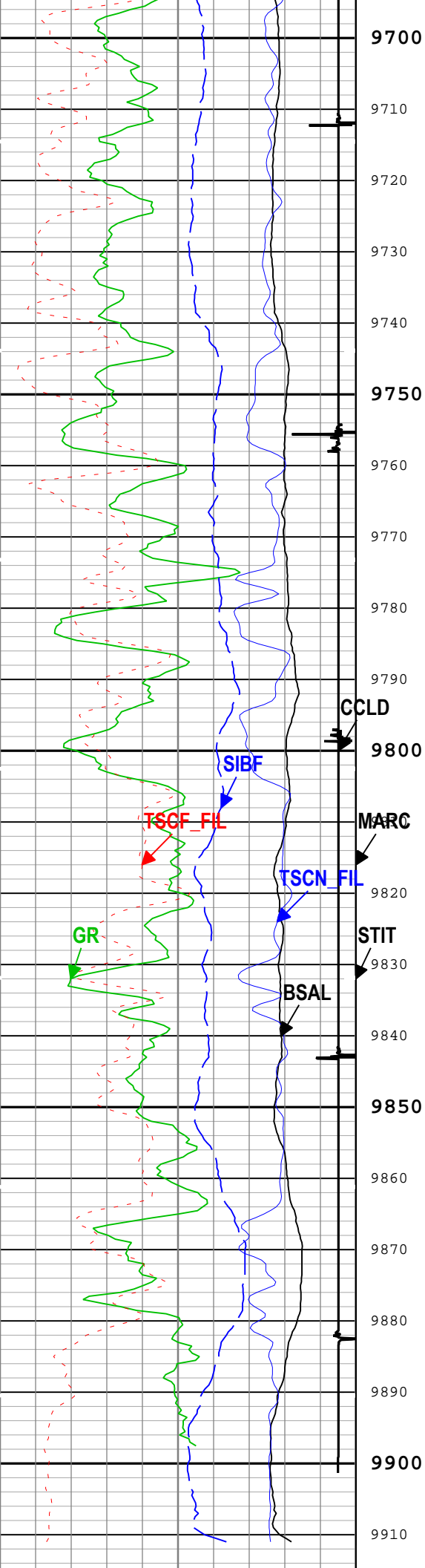
Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100
Application Patch	Wireline_Hotfix-RTDLIS-2017SP3_7.3.92363
	Wireline_Hotfix-SML-2017SP3_7.3.101161

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	9606.78 ft	9945.31 ft	12-Sep-2018 12:17:41 PM	12-Sep-2018 12:30:58 PM	ON	7.01 ft	Yes

Company: Caerus Operating | | C Well: NPB 22D-10 596

Description: RST SIGMA Answer Format: Log (RST SIGMA Answer) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-Sep-2018 21:02:23





Channel Processing Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	8.75	in
BSAL	Borehole Salinity	Borehole	0	ppm
BSALOPT	Borehole Salinity Option	RST-C	Unknown	
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	SANDSTONE	
TD	Total Measured Depth	Borehole	9928	ft
Tool Control Parameters				
ONE: Parameters				
Parameter	Description	Tool	Value	Unit

MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	150	ft/h
PCCG	PSP Downhole CCL Gain	PSTP-B	24 dB	
RST_DLM	Depth Log Mode	RST-C	Sigma	

Company:	Caerus Operating LLC	Schlumberger
Well:	NPR 22D-10 596	
Field:	NPR	
County:	Garfield	
State:	Colorado	
Cement Bond Log		
RST Sigma Log		
Gamma Ray - Collar Locator Log		