

Company: Caerus Operating LLC

Well: Puckett 34B-23 697

Field: Grand Valley

County: Garfield State: Colorado

Cement Bond Log
RST Sigma Log
Gamma Ray/ Collar Log

County: Garfield
Field: Grand Valley
Location: Lat 39.30°07.76" N Long 108.11° 18.38"W
Well: Puckett 34B-23 697
Company: Caerus Operating LLC

Location:	Lat 39.30°07.76" N Long 108.11° 18.38"W	Elev.:	K.B.	8462.00 ft
			G.L.	8432.00 ft
			D.F.	8462.00 ft
	Permanent Datum:	Ground Level	Elev.:	8432.00 f
Log Measured From:	Drilling Measured From:	Kelly Bushing	30.00 ft	above Perm.Datum
		Kelly Bushing		
API Serial No.	Section:	Township:	Range:	
5045233840000	23	6S	97W	

Logging Date	23-Dec-2017		
Run Number	One		
Depth Driller	9344.00 ft		
Schlumberger Depth	9262.00 ft		
Bottom Log Interval	9262.00 ft		
Top Log Interval	2500.00 ft		
Casing Fluid Type	Water		
Salinity			
Density	8.6 lbm/gal		
Fluid Level	8.00 ft		
BIT/CASING/TUBING STRING			
Bit Size	8.75 in		
From	30.00 ft		
To	9344.00 ft		
Casing/Tubing Size	4.5 in		
Weight	11.6 lbm/ft		
Grade	P110		
From	30.00 ft		
To	9344.00 ft		
Max Recorded Temperatures	236 degF		
Logger on Bottom	23-Dec-2017	03:40:00	
Unit Number	3003	Evanston, Wyoming	
Recorded By	Beatriz Guaita		
Witnessed By	Ryan Tompkins		

Disclaimer

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9. One Free Pipe Pass

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9.2 Software Version

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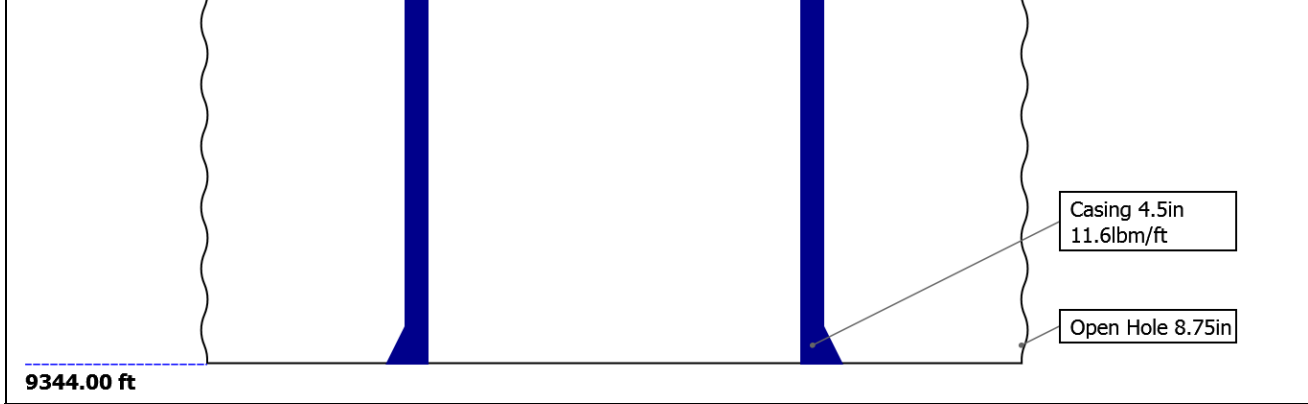
9.5 Parameter Listing

Well Sketch

Driller Depth

30.00 ft



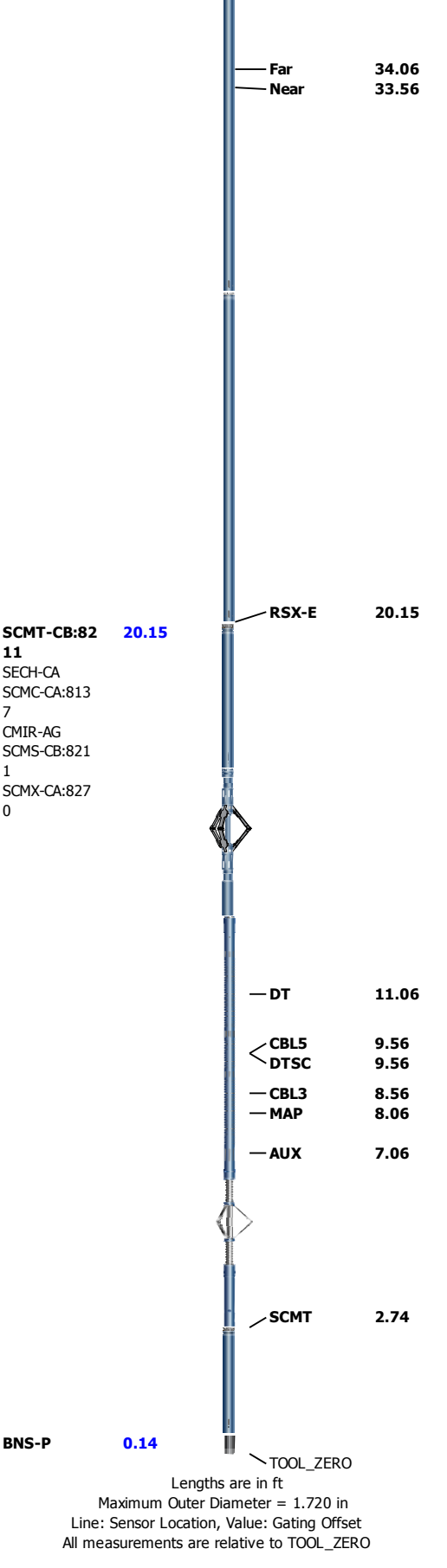


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	8.75					
Top Driller (ft)	30					
Top Logger (ft)	30					
Bottom Driller (ft)	9344					
Bottom Logger (ft)	9344					
Casing						
Size (in)	4.5					
Weight (lbm/ft)	11.6					
Inner Diameter (in)	4					
Grade	P110					
Top Driller (ft)	30					
Top Logger (ft)	30					
Bottom Driller (ft)	9344					
Bottom Logger (ft)	9344					

Remarks and Equipment Summary

One: Toolstring				One: Remarks		
Equip name	Length	MP name	Offset	Tool ran as per Tool Sketch.		
PEH-EF	54.08			Max Temp of 236 DegF.		
				Max Pressure of 3826 psi.		
AH-38	51.72			Log Correlated with Down Log.		
PSTP-A:3823	51.44			TD tagged at 9262 ft.		
PSC-A:3733		GR	47.74	Short Joint at 6814'-6824'		
PSTC-A:3733		PSTC	47.44			
PBMS-A:3823		PSTC Tool String Bottom	0.00			
Sapphire 10kP SI		Temperature	44.65			
		Sapphire Pressure	44.54			
		CCL	43.92			
		PBMS	43.17			
RST-C:309	43.17					
RSCH-A:277						
RSC-E:277						
RSS-A:373						
MNTR-F						
RSXH-A:309						
RSX-E:309						
		RSC-E	36.82			



One	
Main Pass	
Software Version	
Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[5]:Up	Up	2467.57 ft	9276.95 ft	23-Dec-2017 2:45:28 AM	23-Dec-2017 5:06:11 AM	ON	6.56 ft	Yes

All depths are referenced to toolstring zero

Log

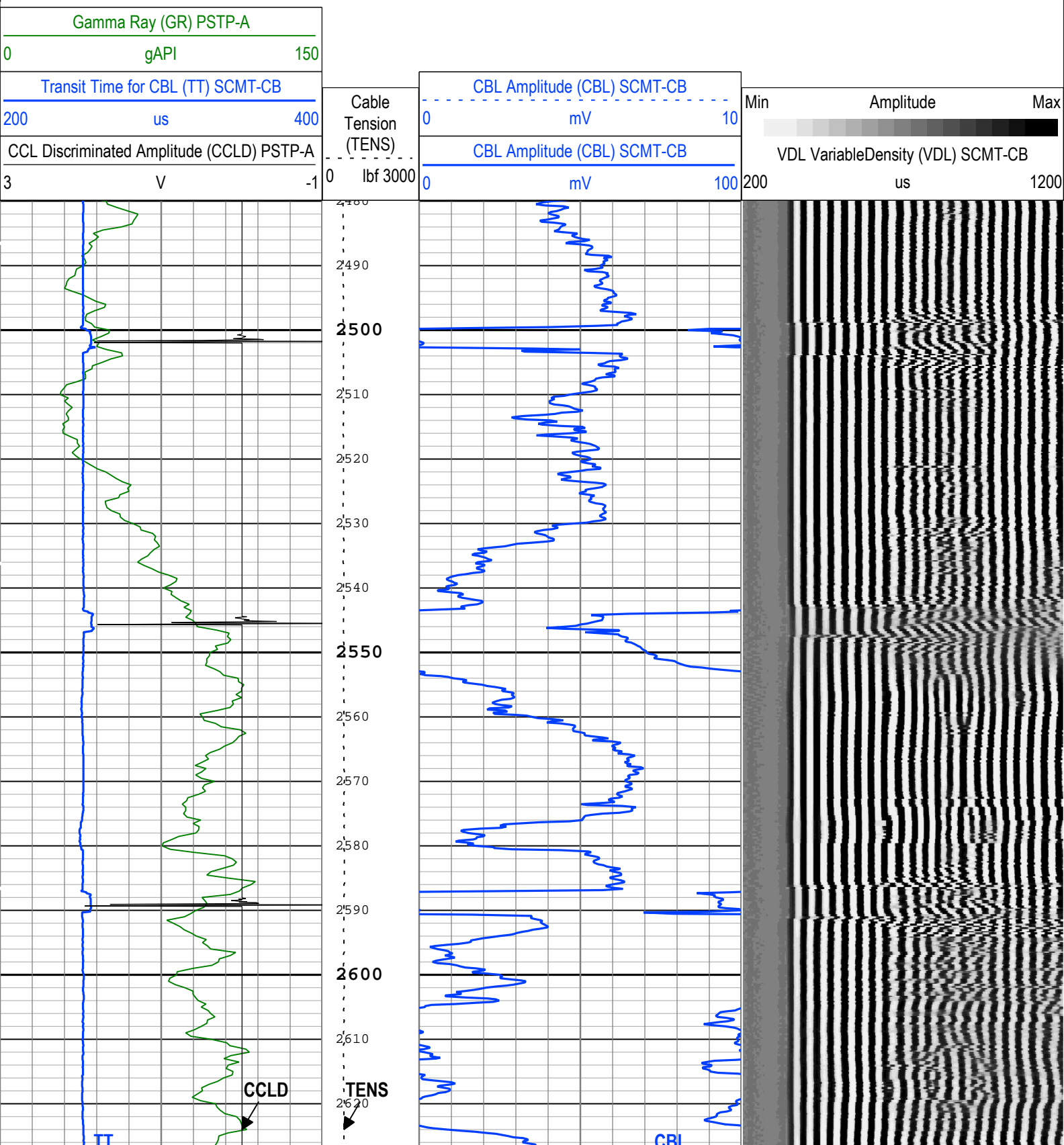
Company:Caerus Operating LLC

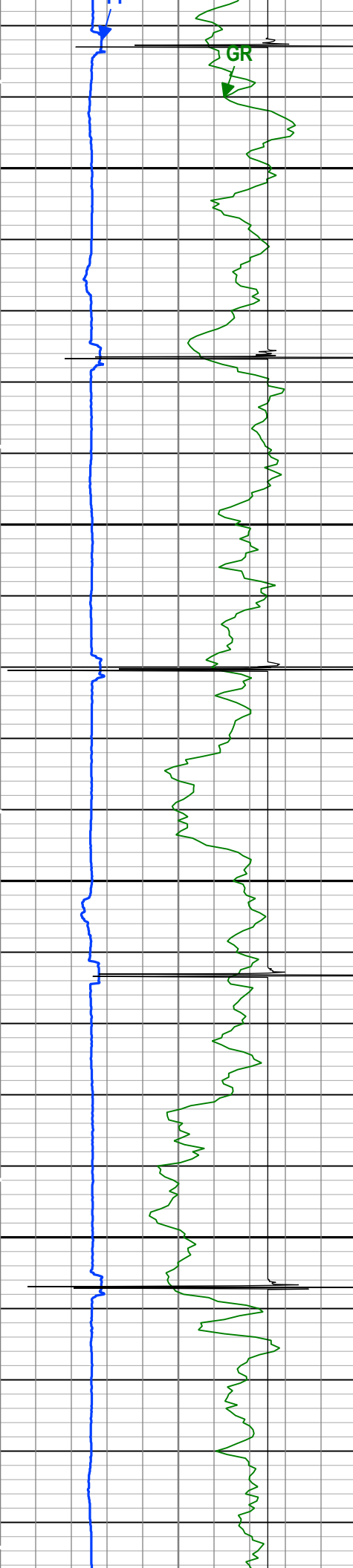
Well:Puckett 34B-23 697

One: Log[5]:Up:S004

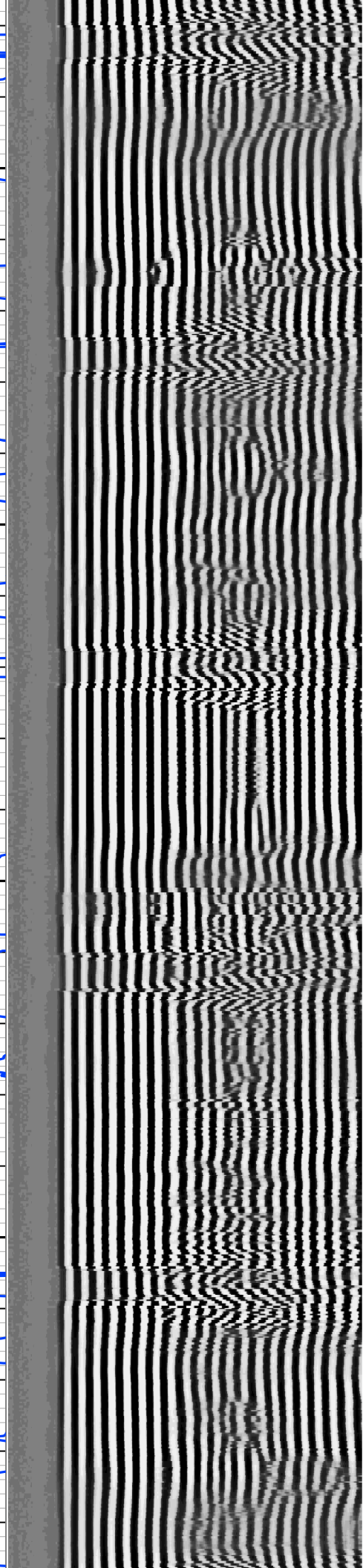
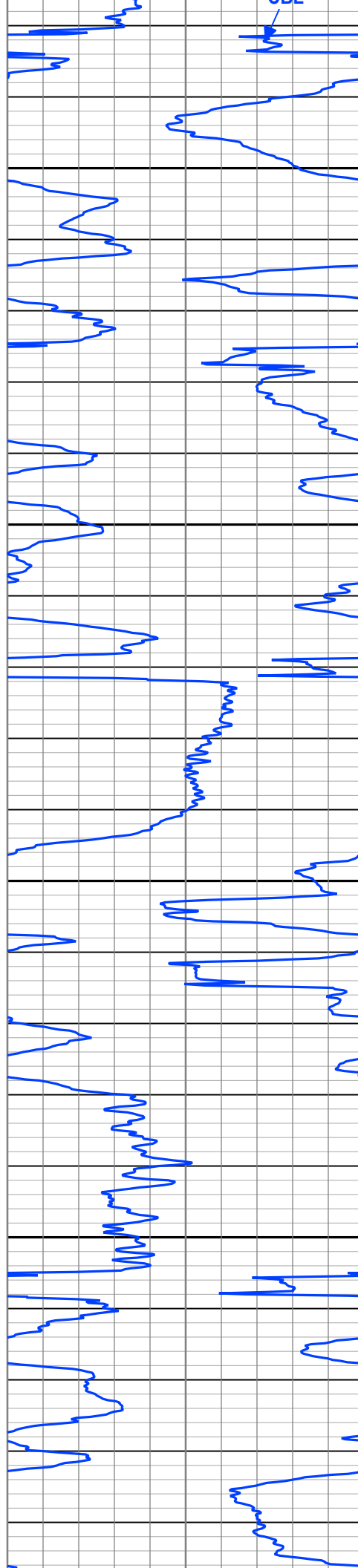
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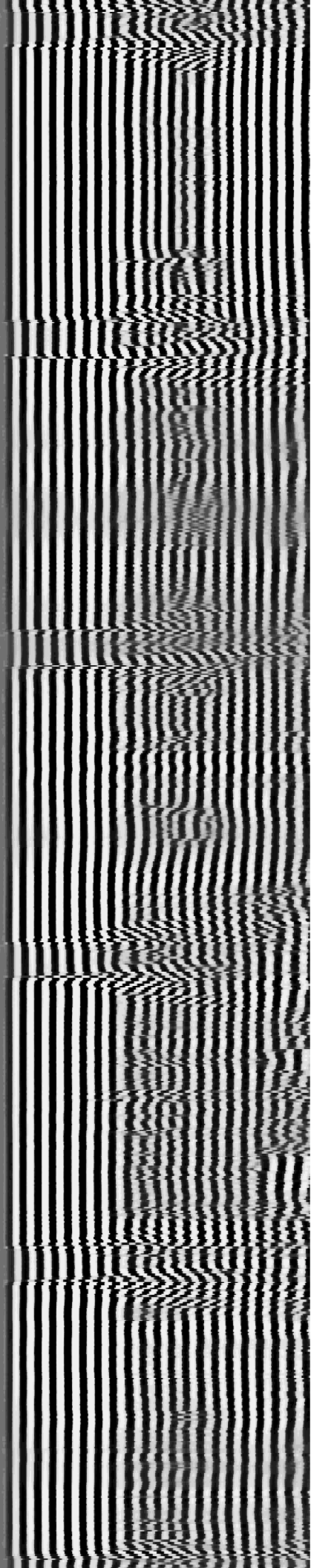
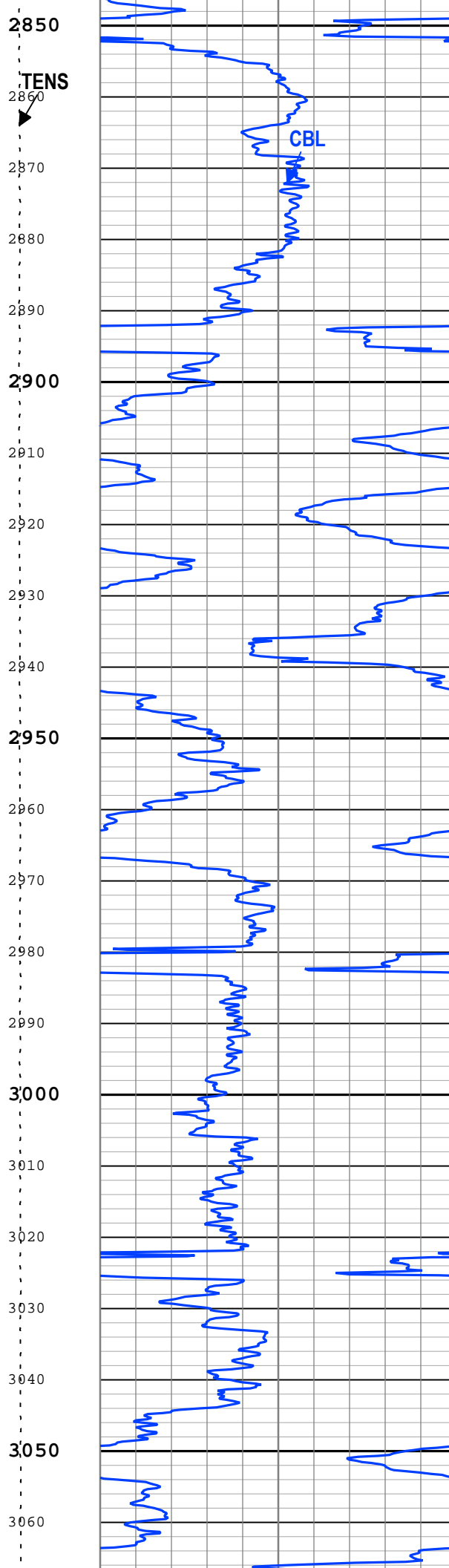
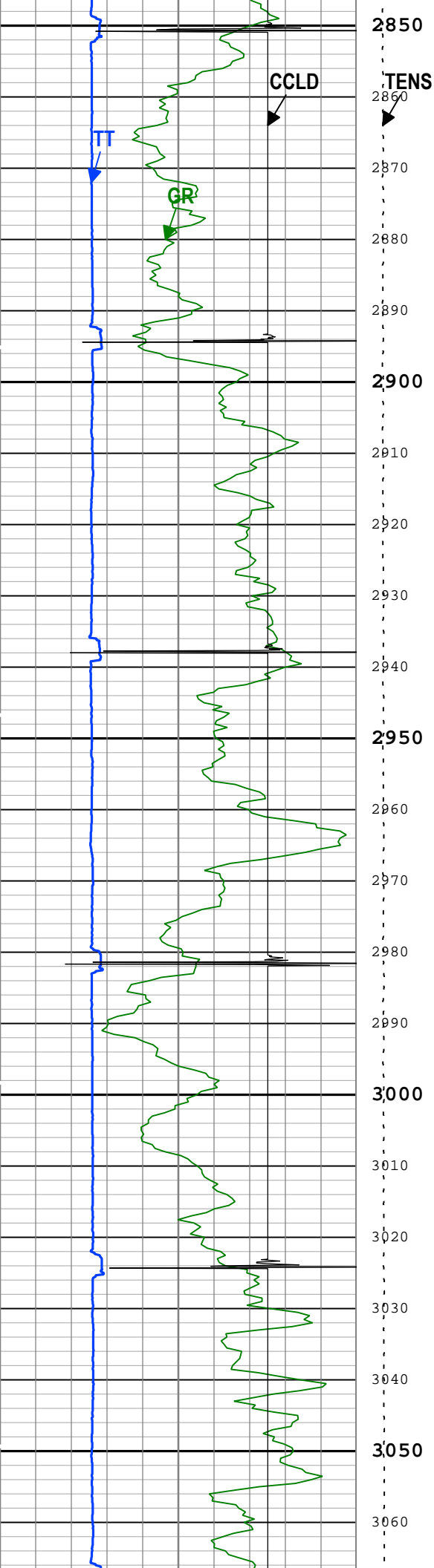
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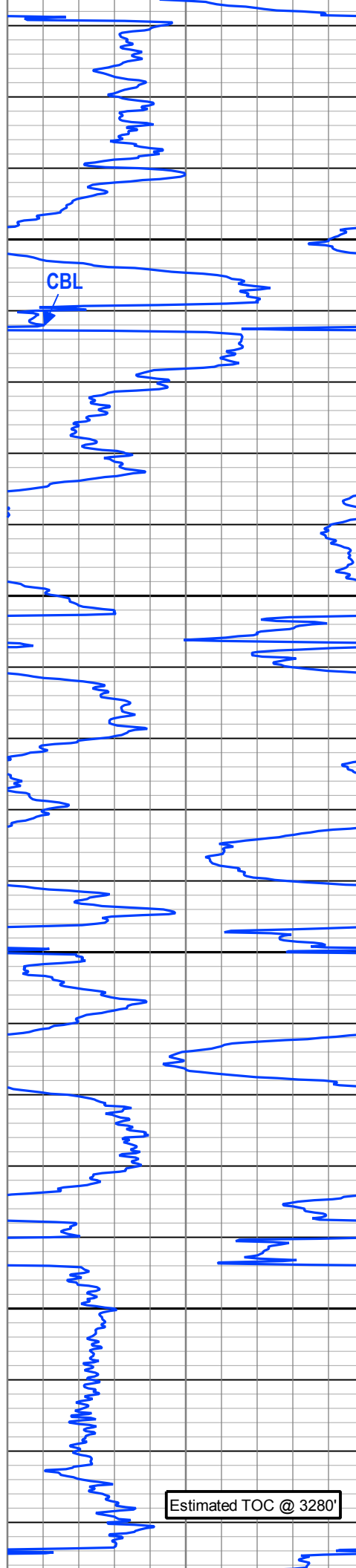
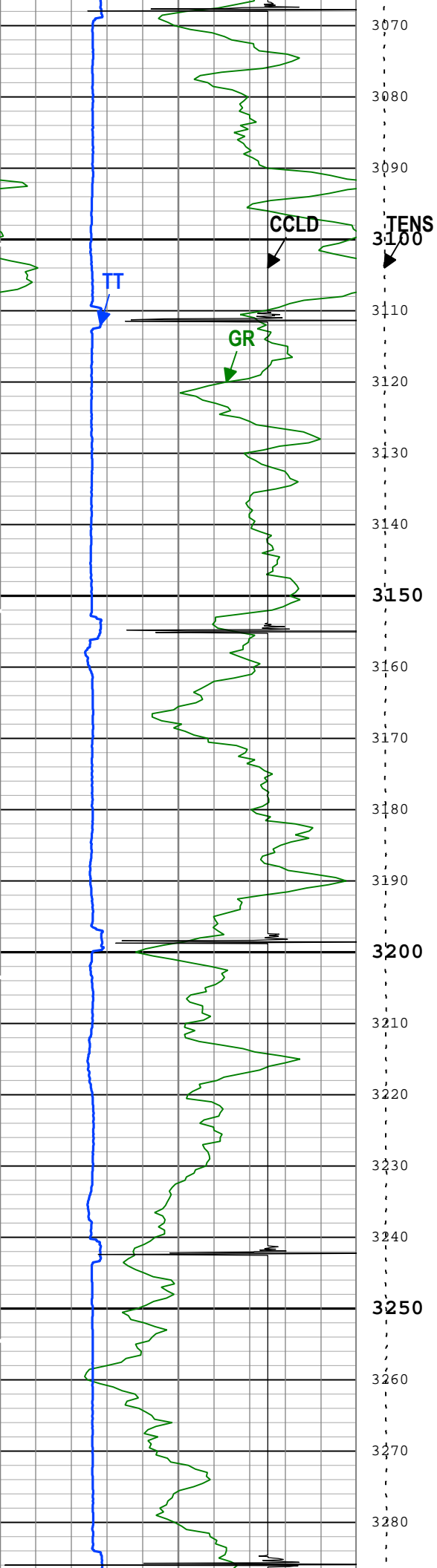




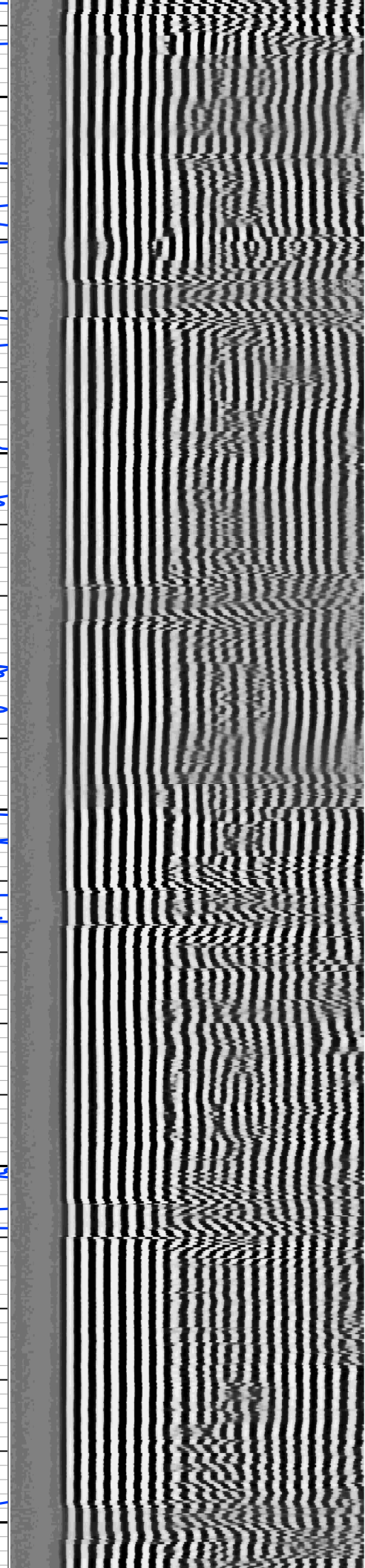
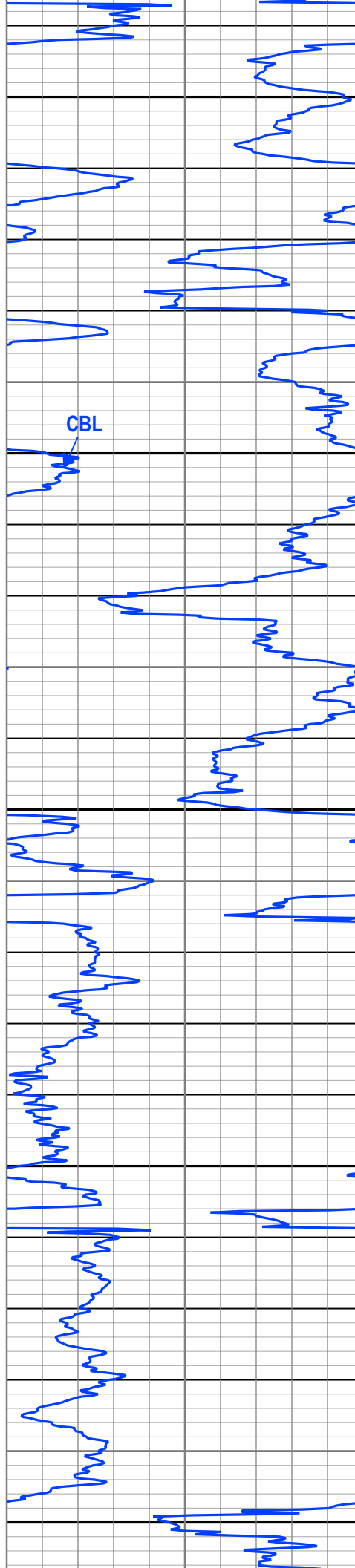
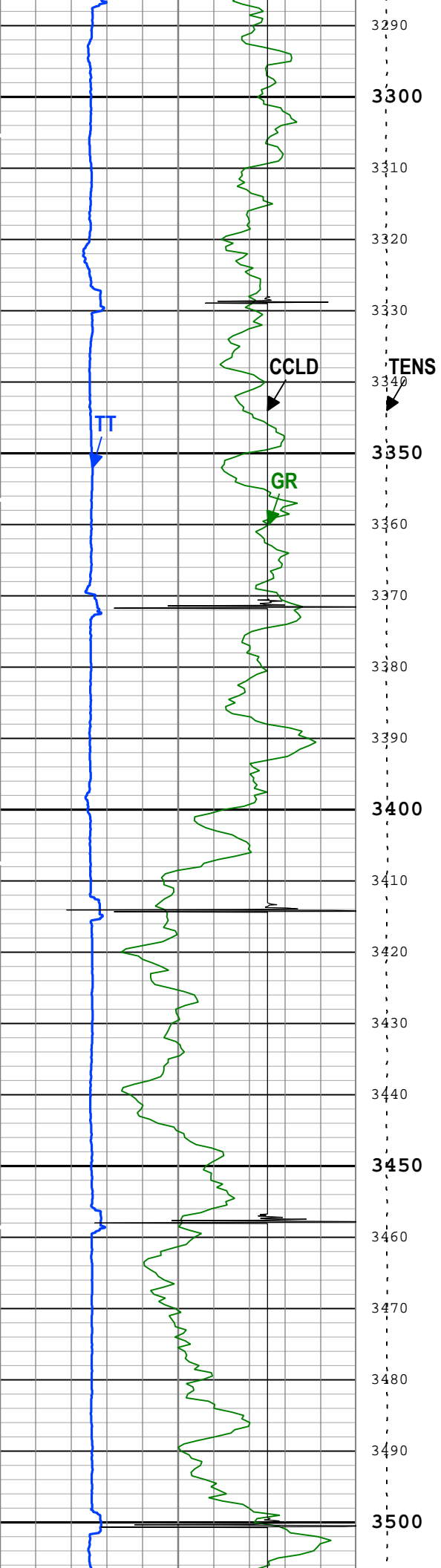
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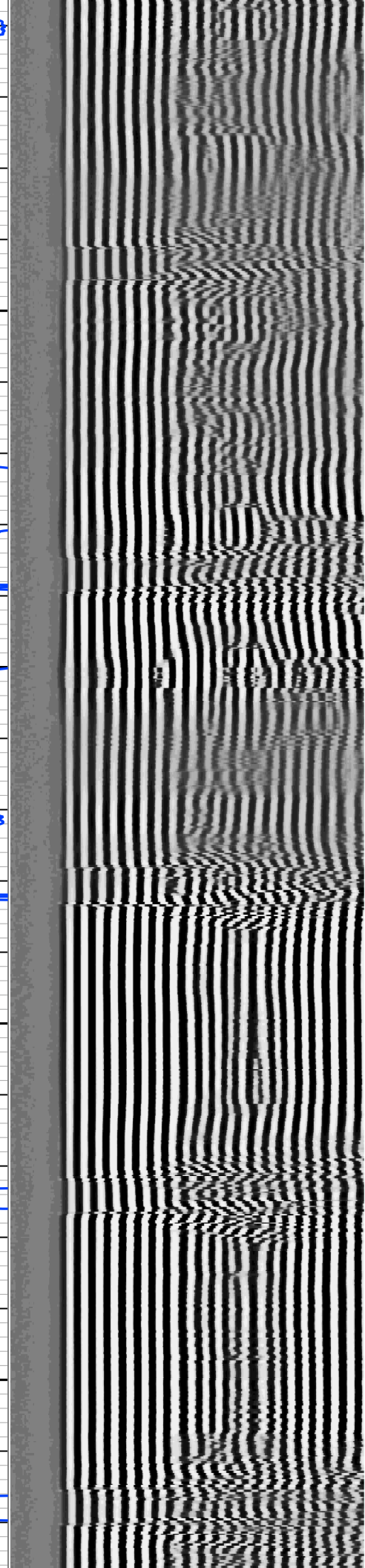
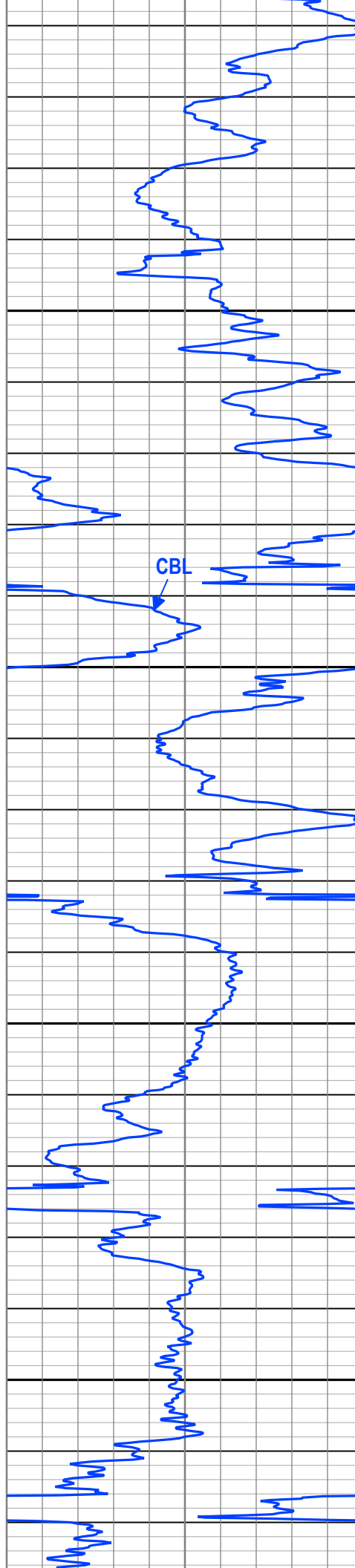
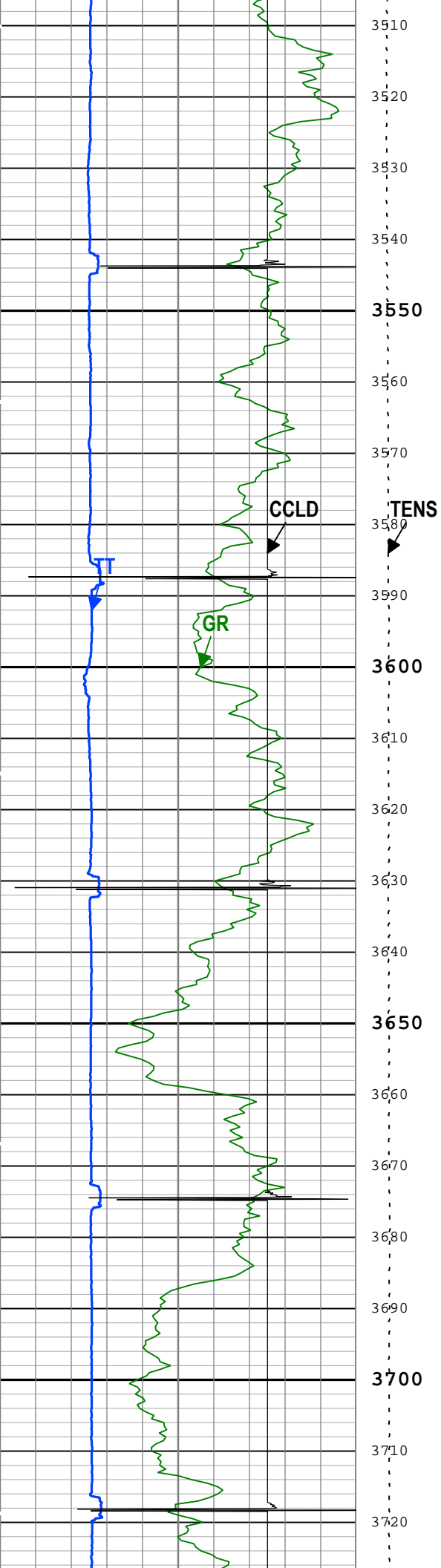


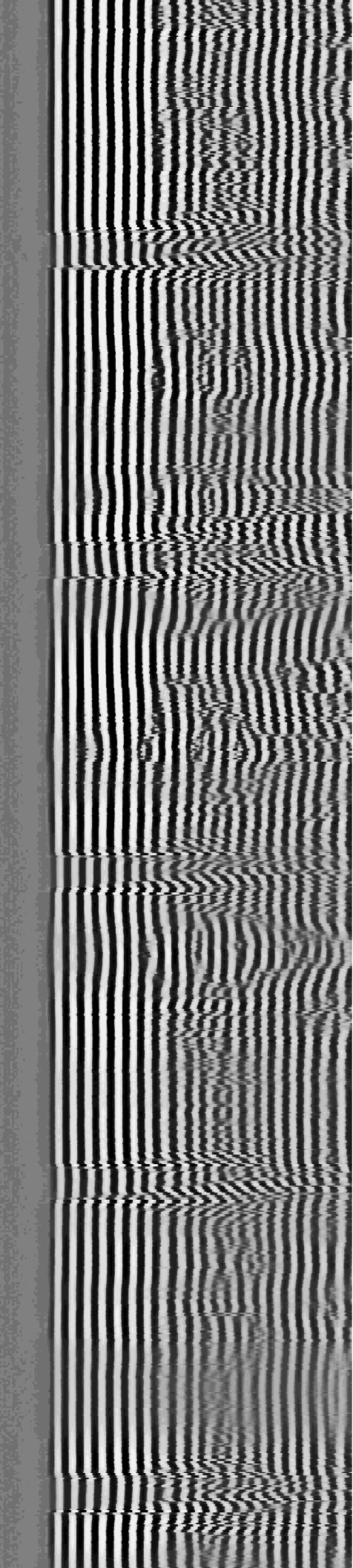
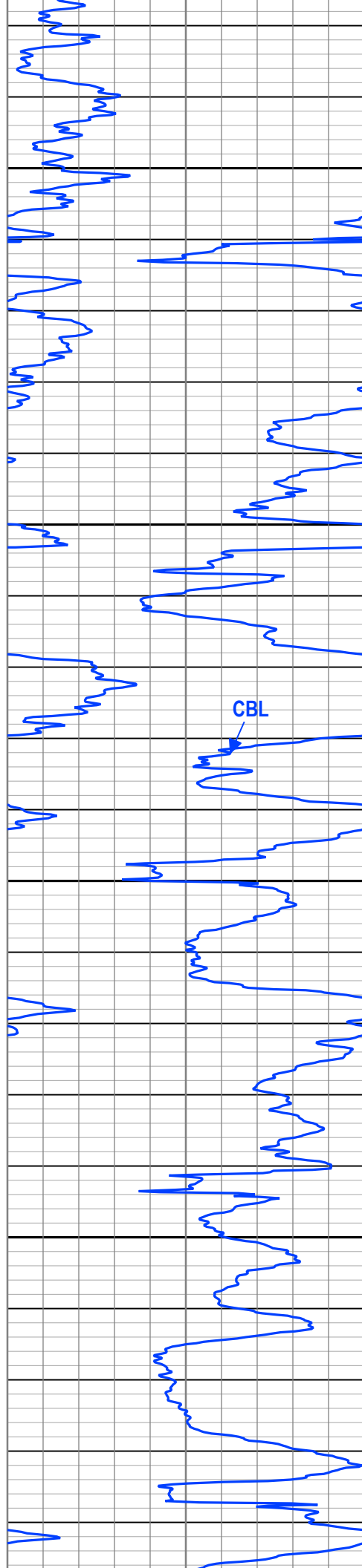
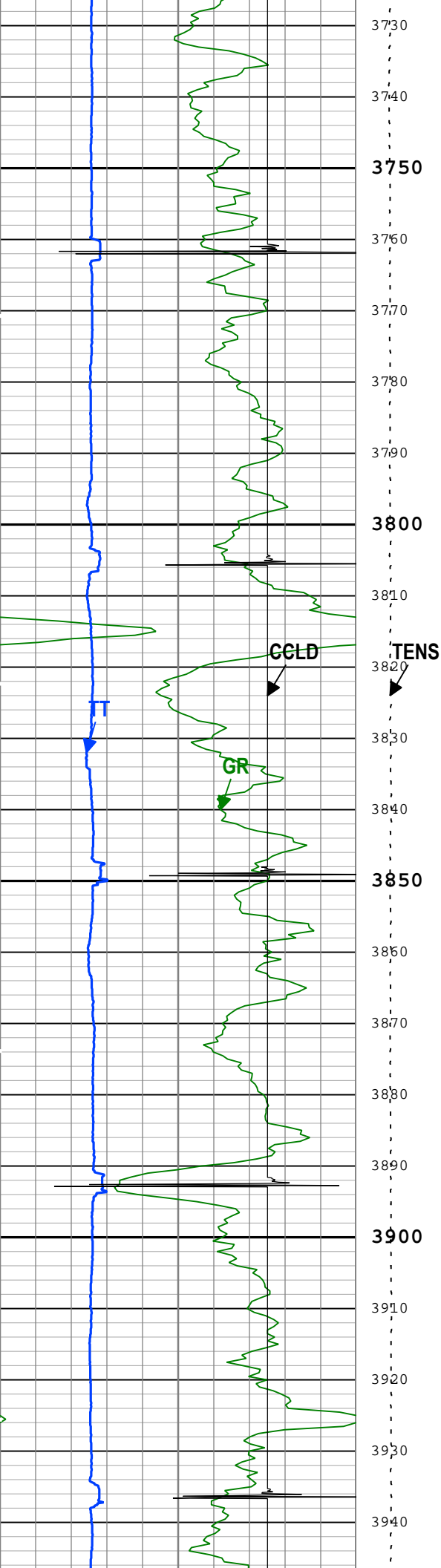


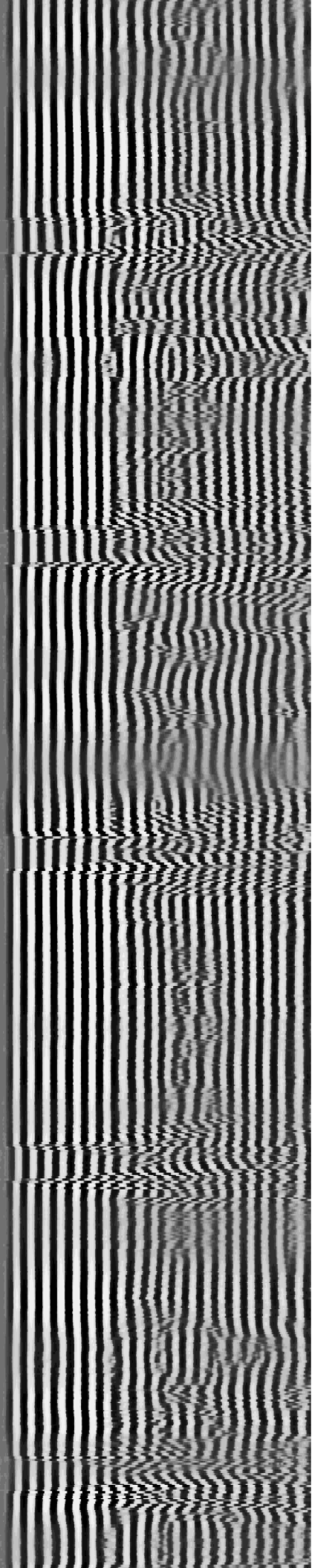
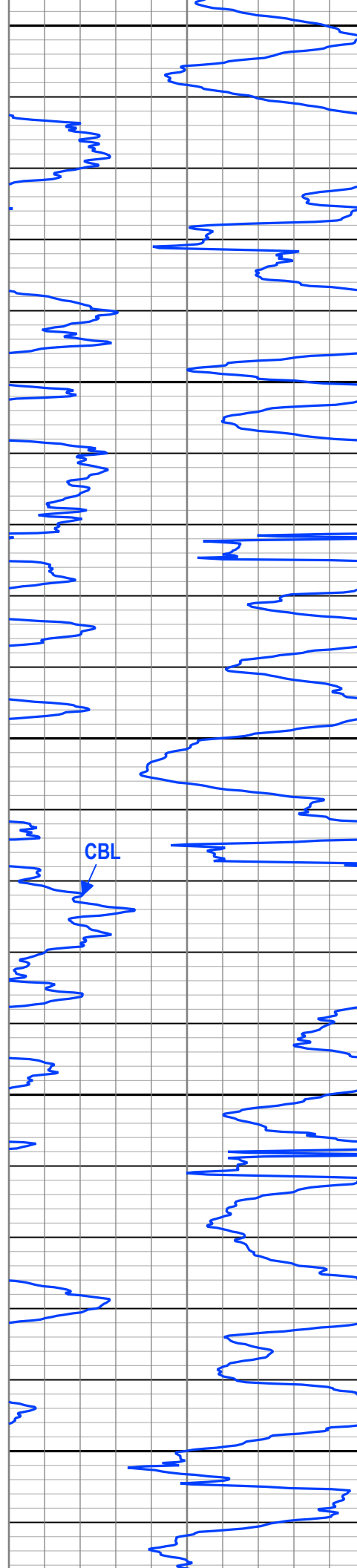
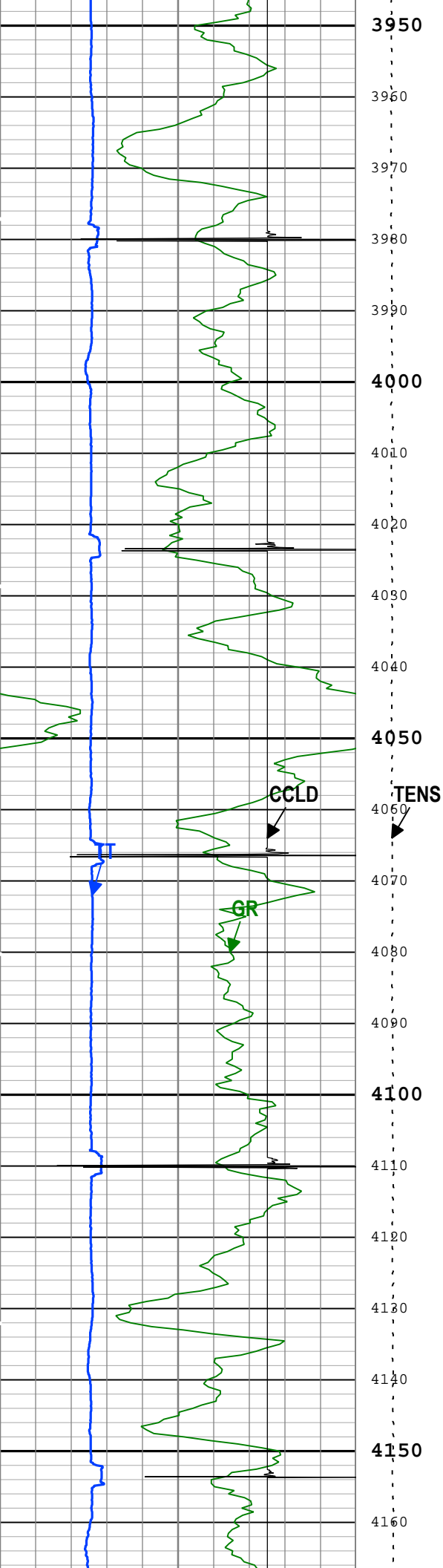


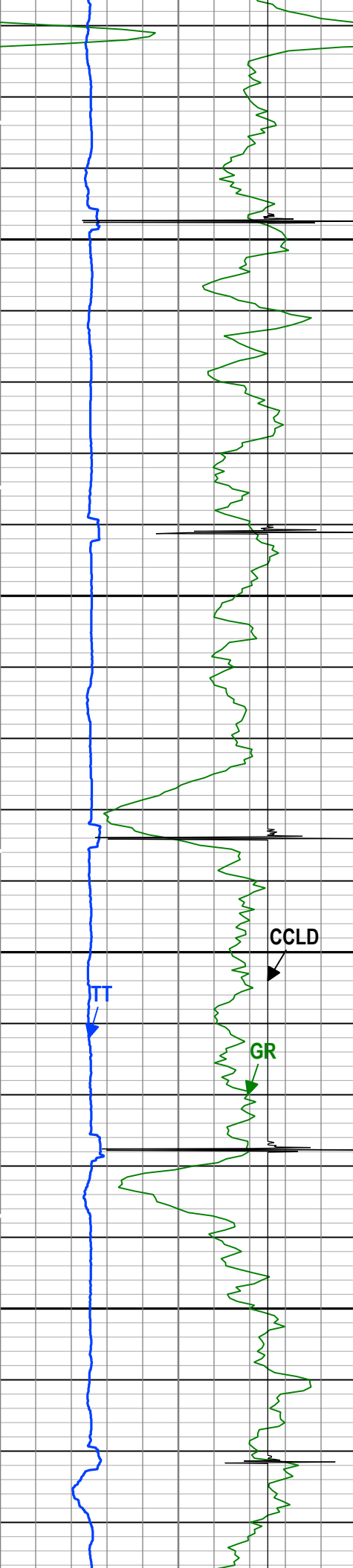
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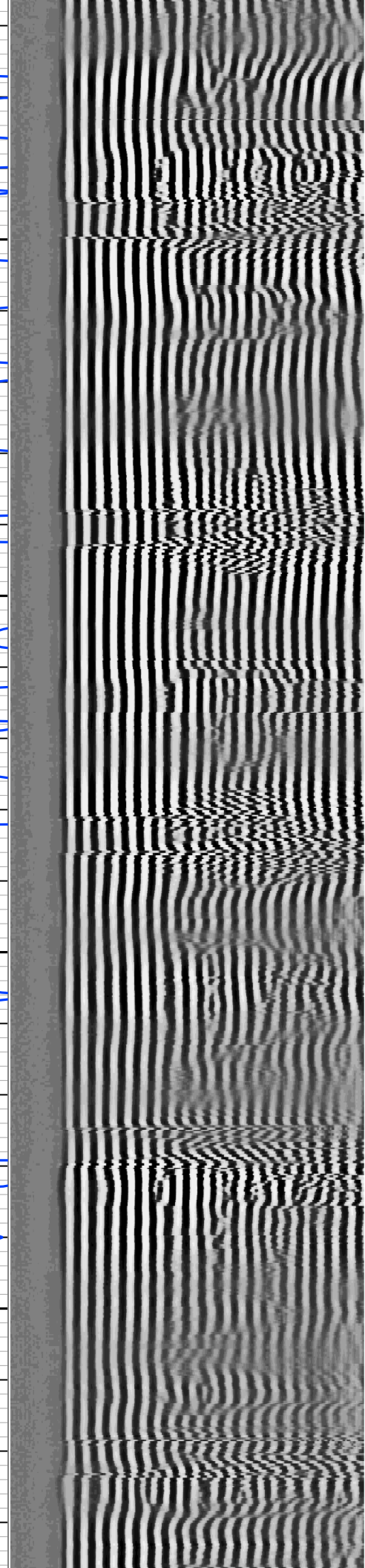
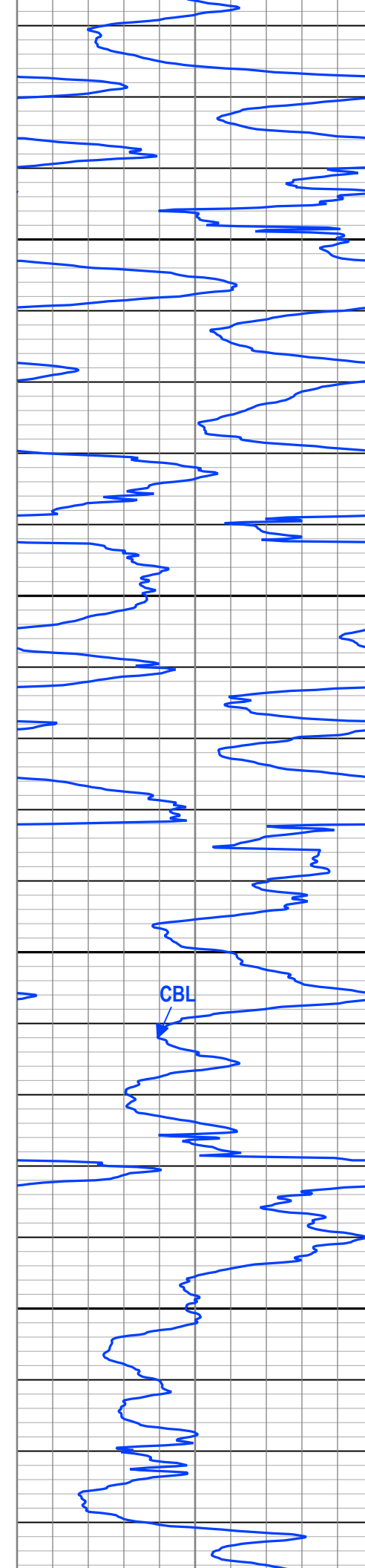


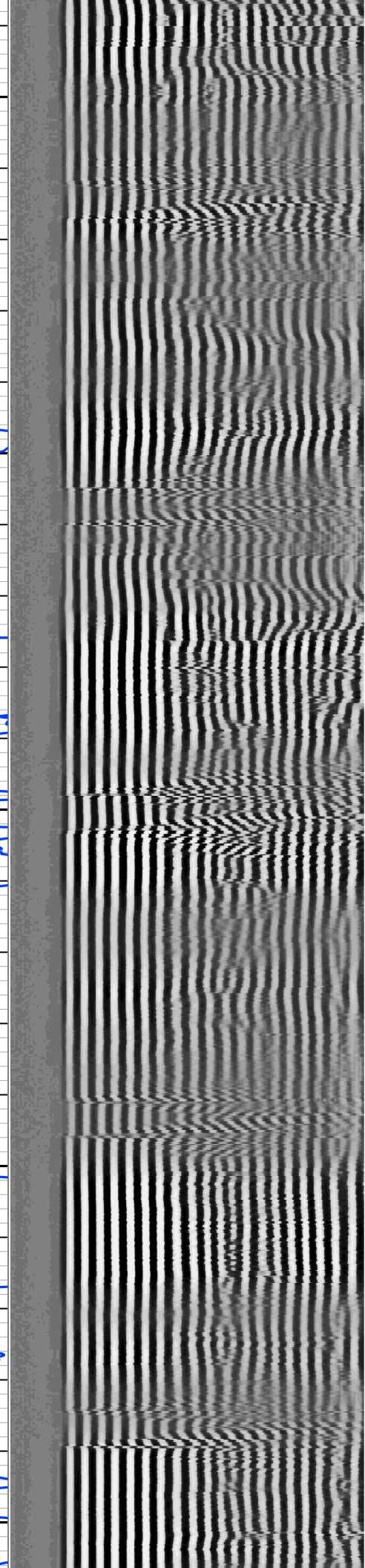
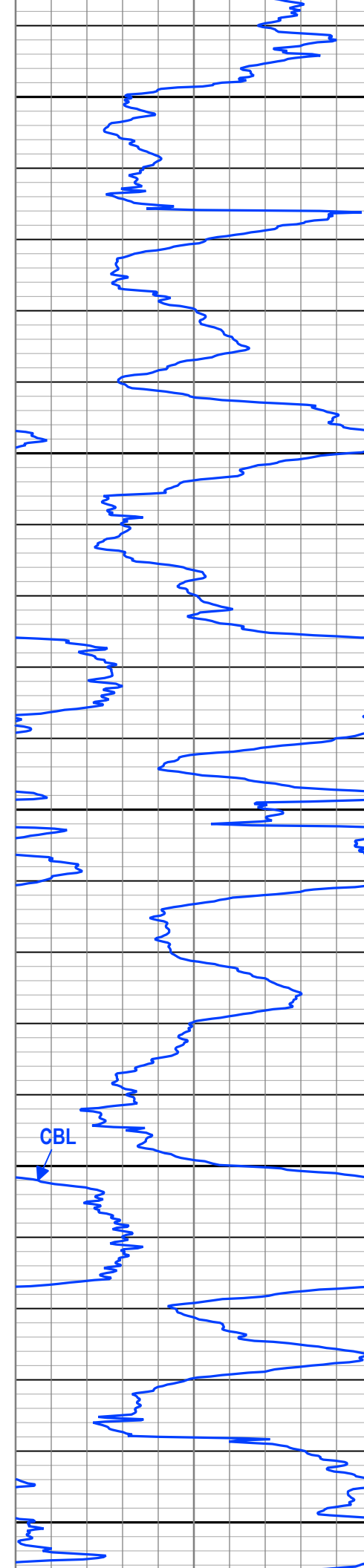
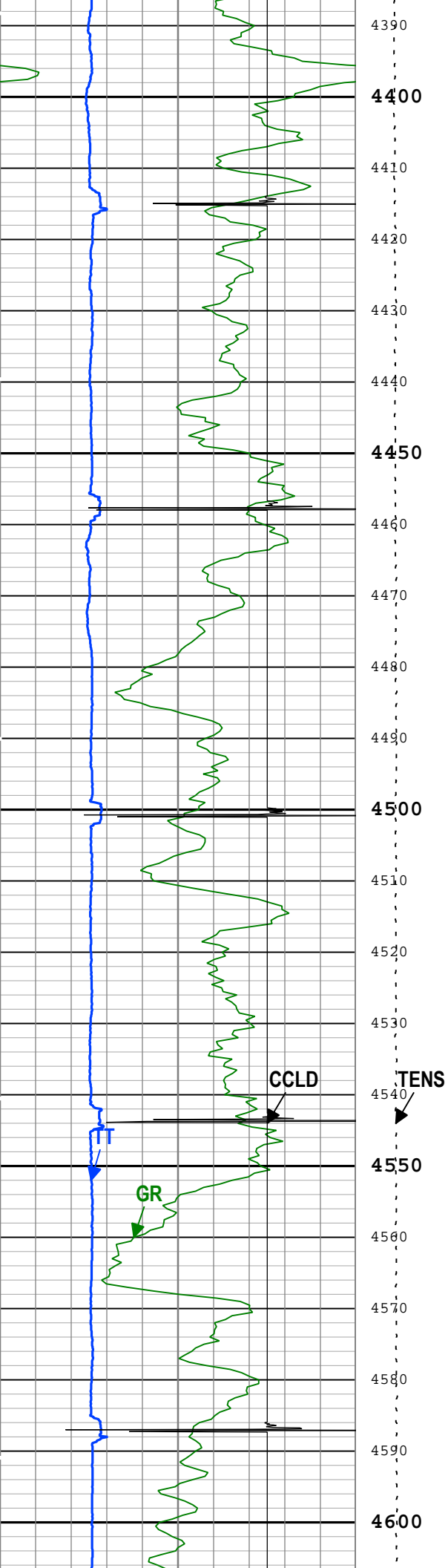


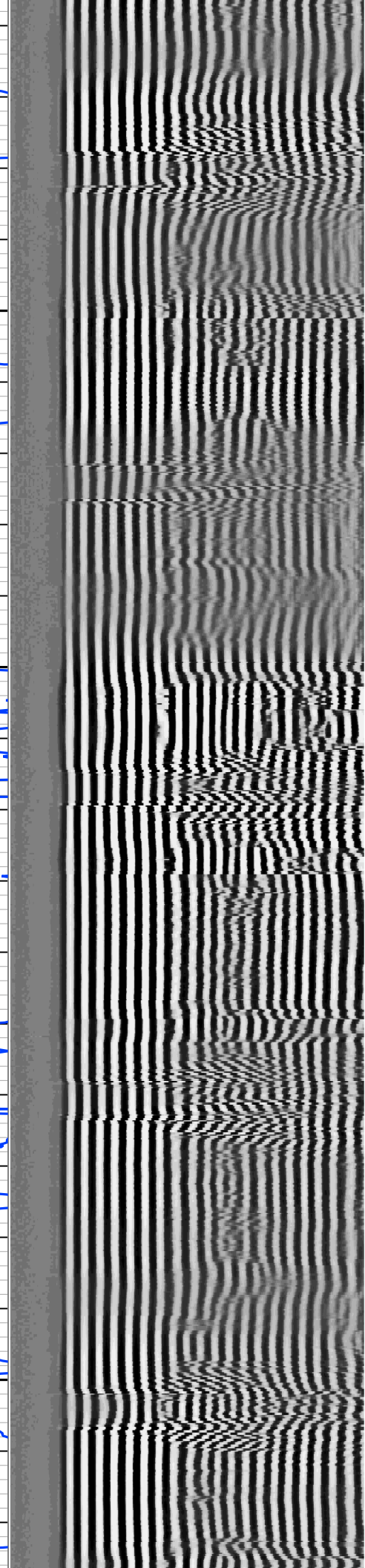
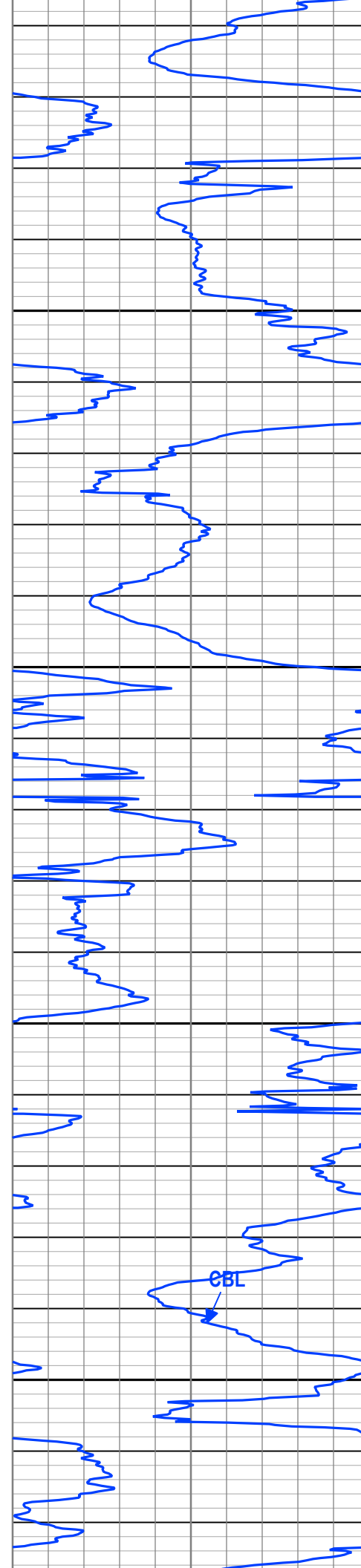
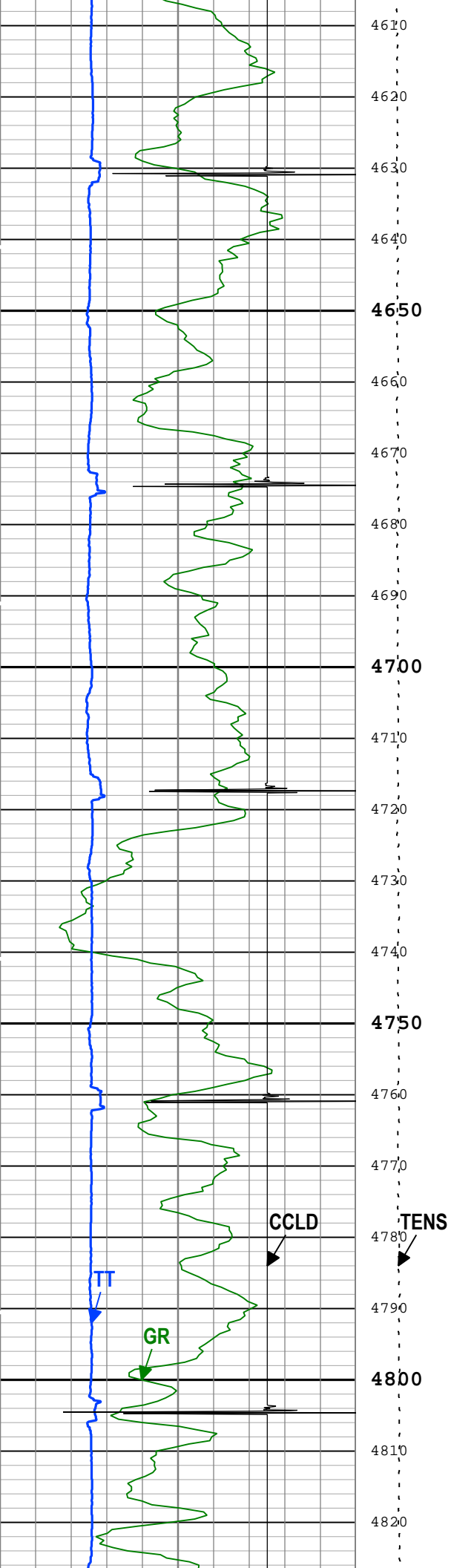


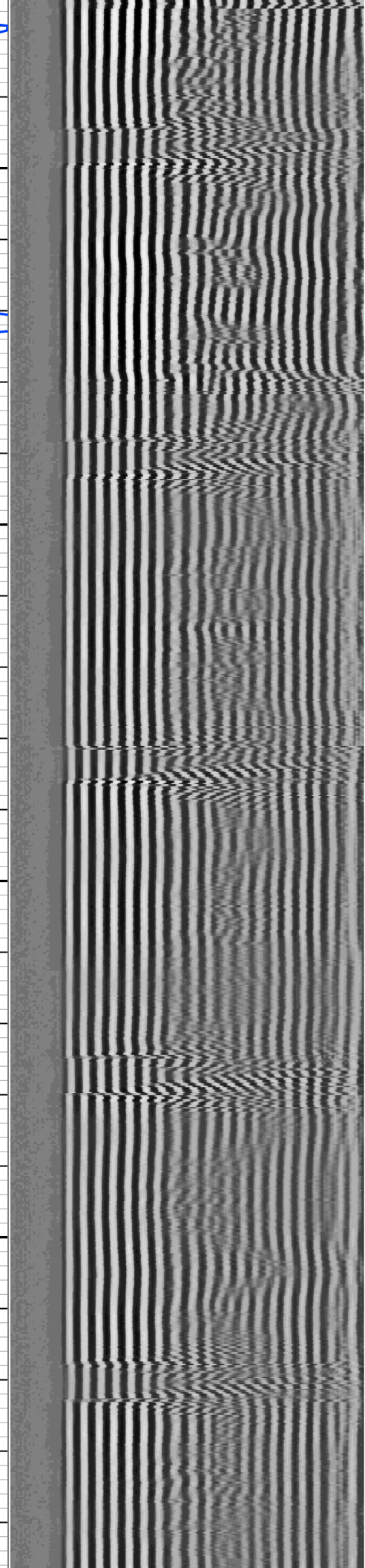
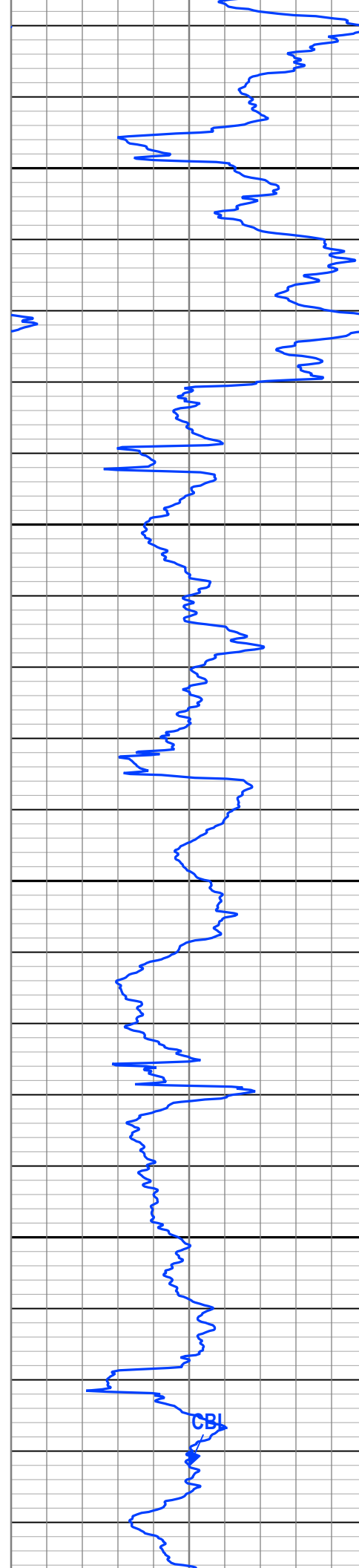
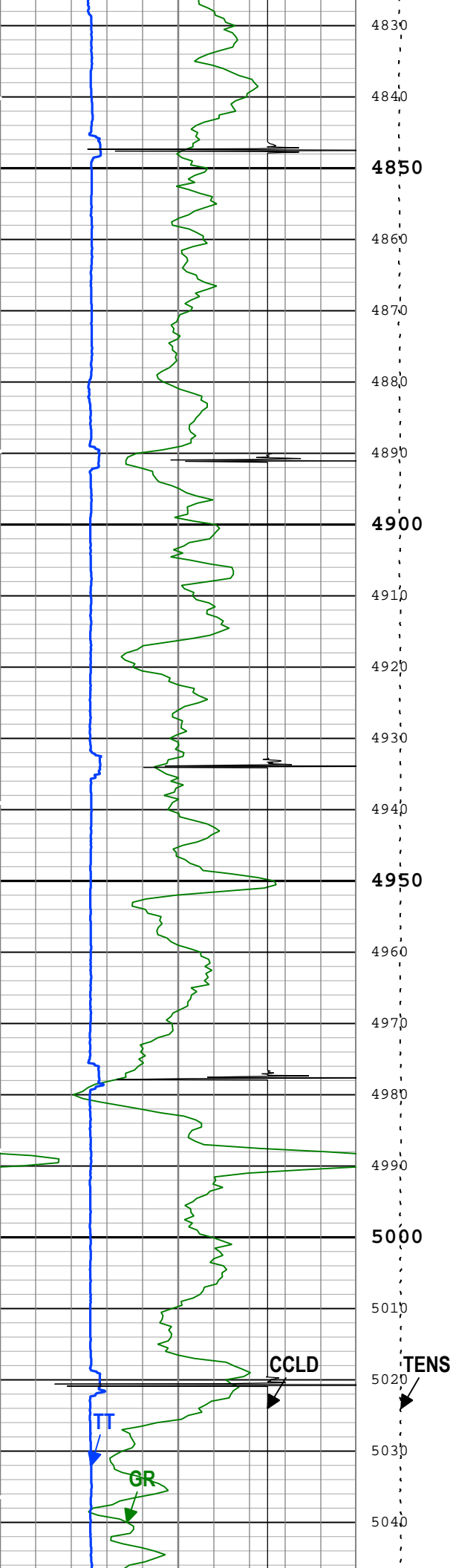


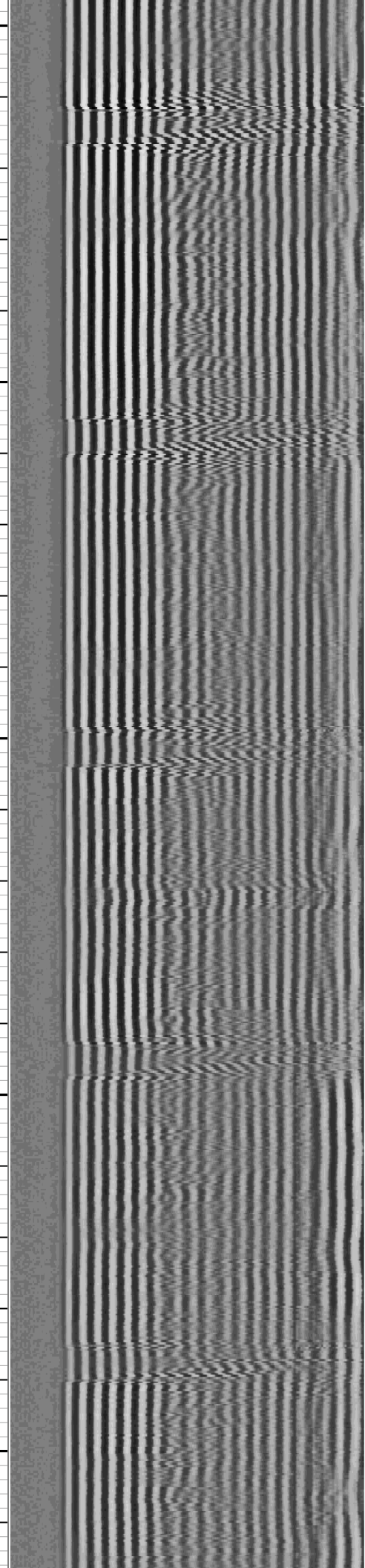
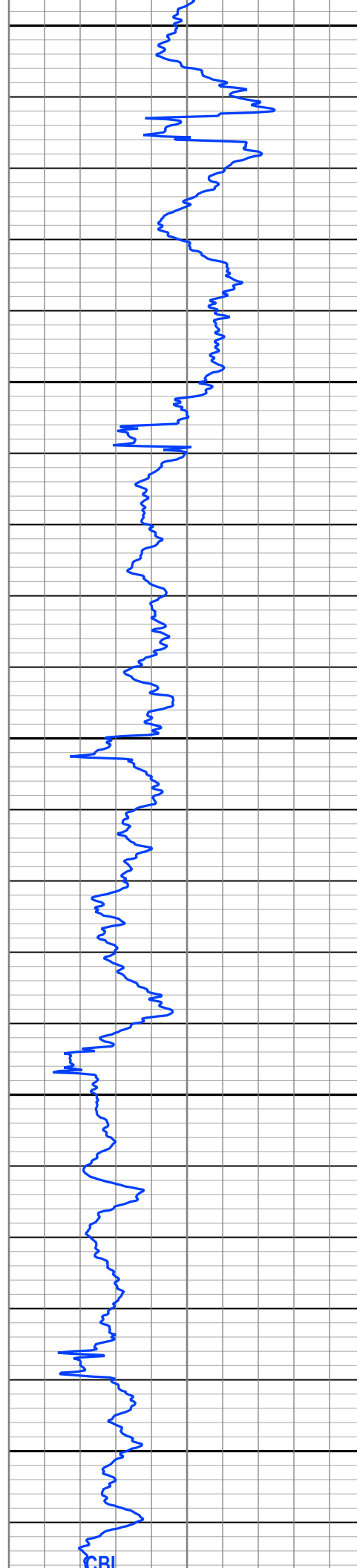
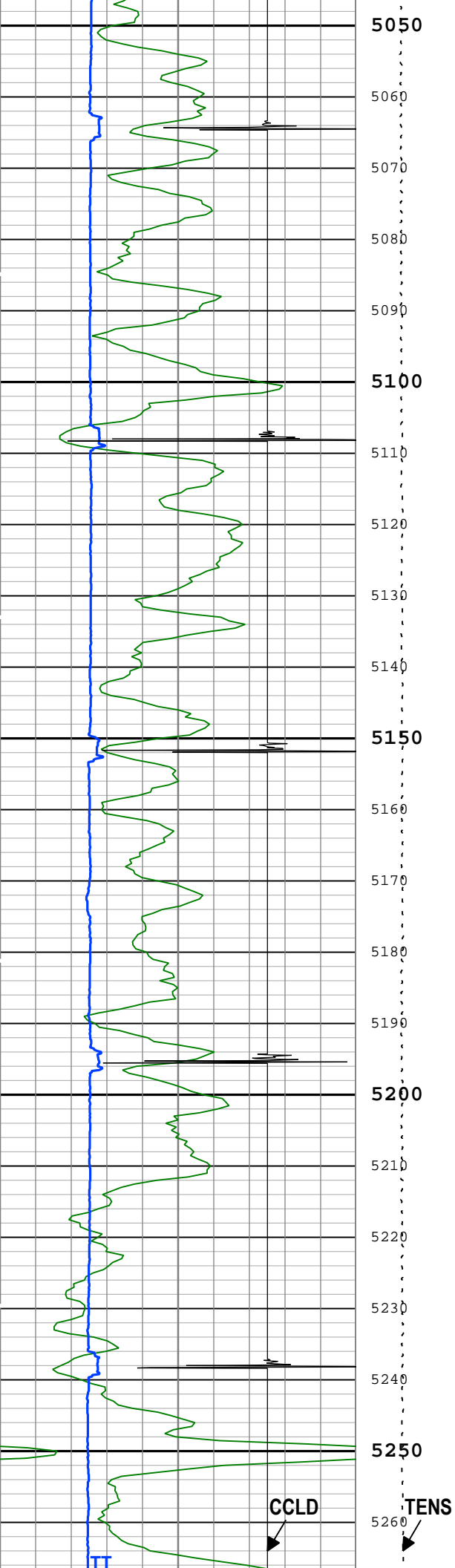
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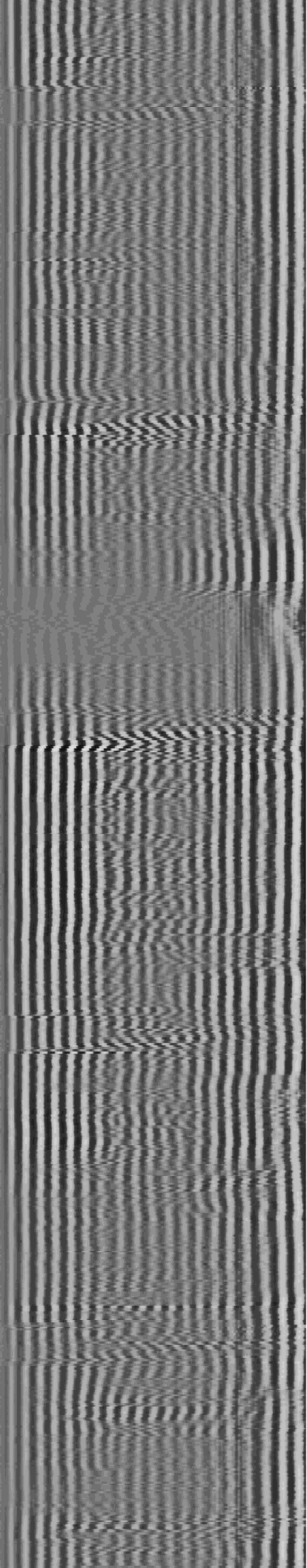
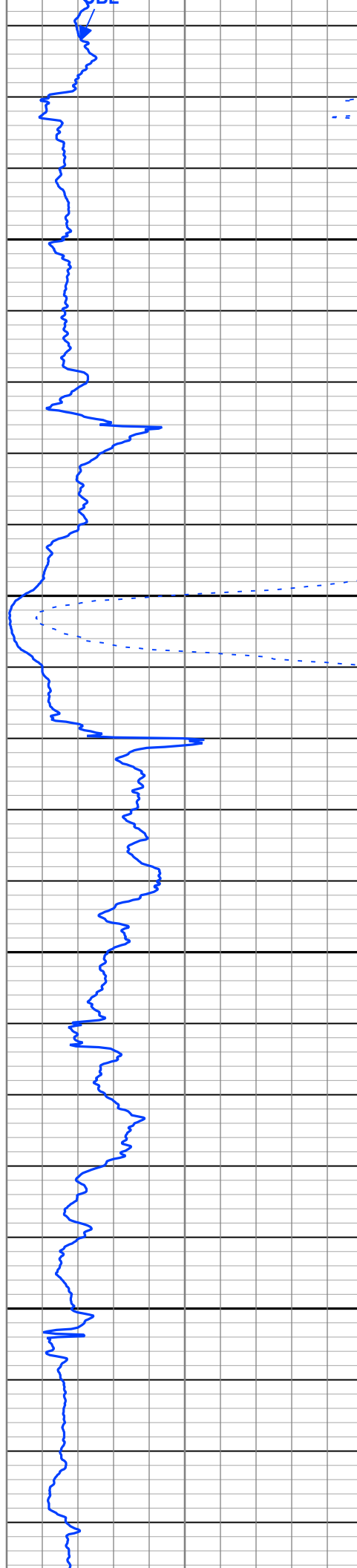
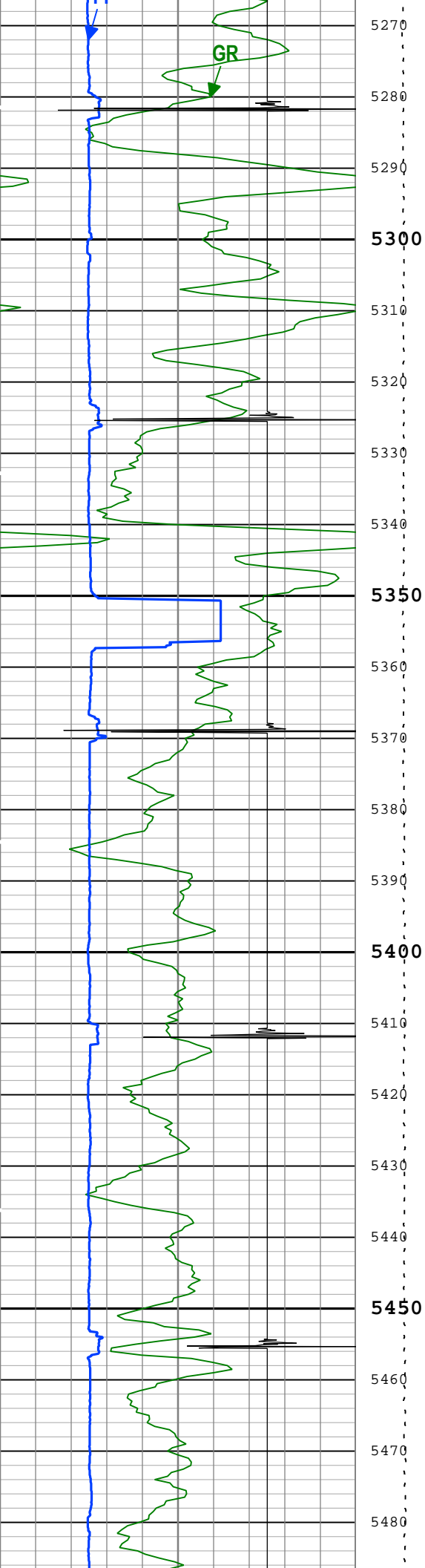


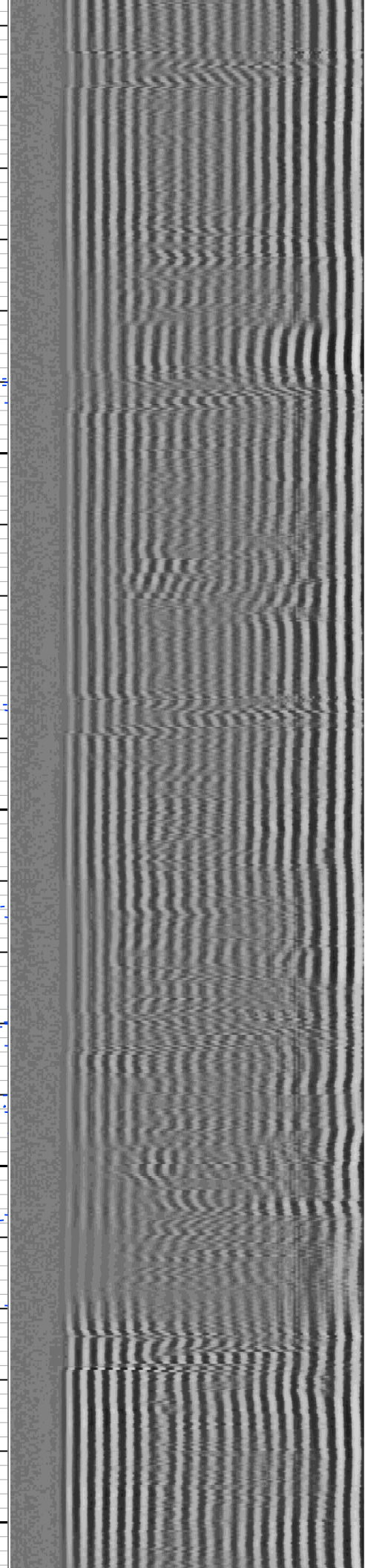
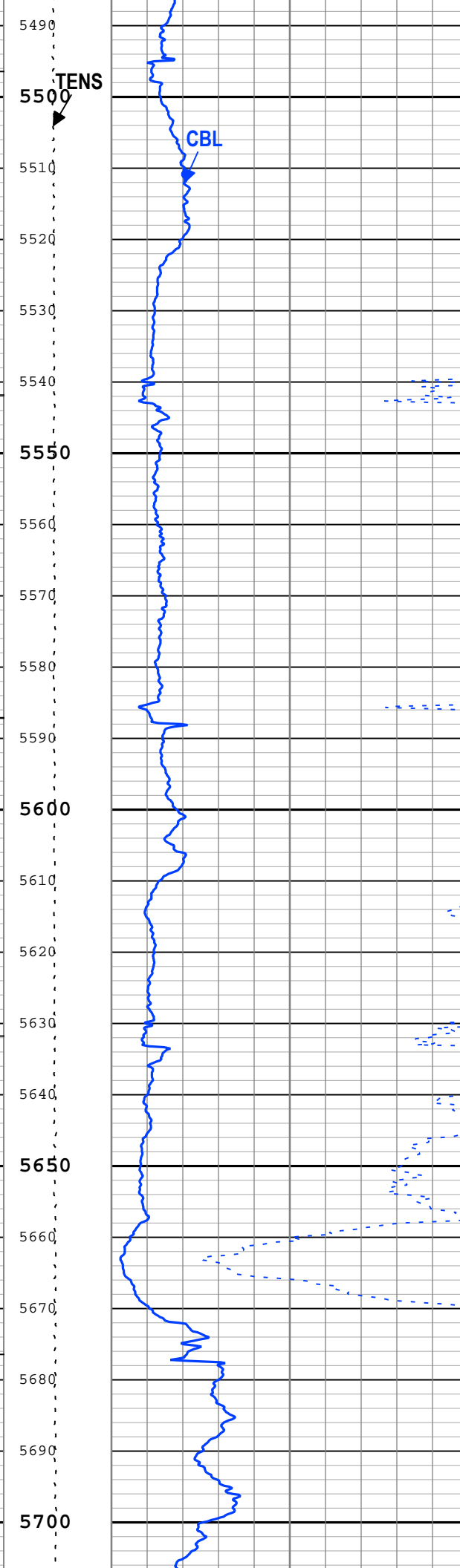
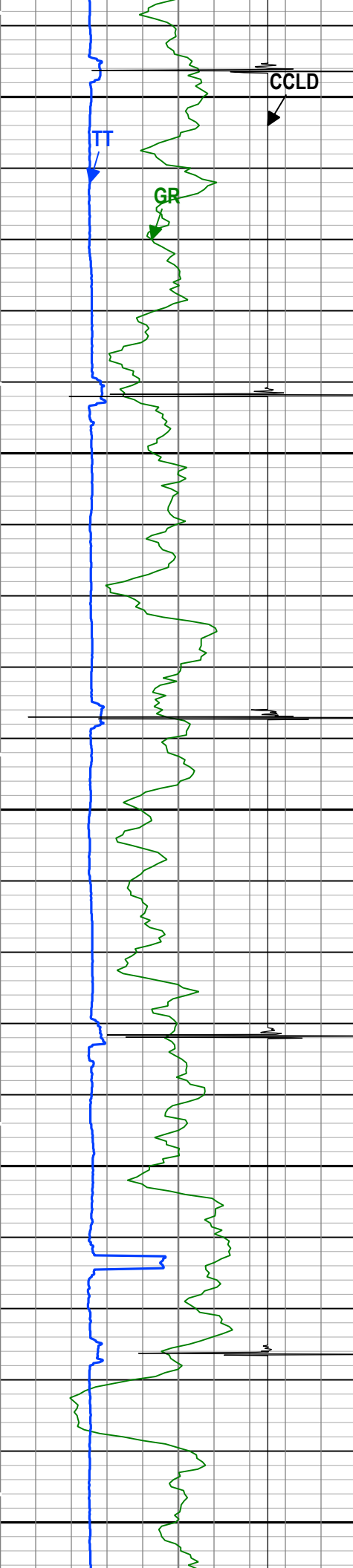


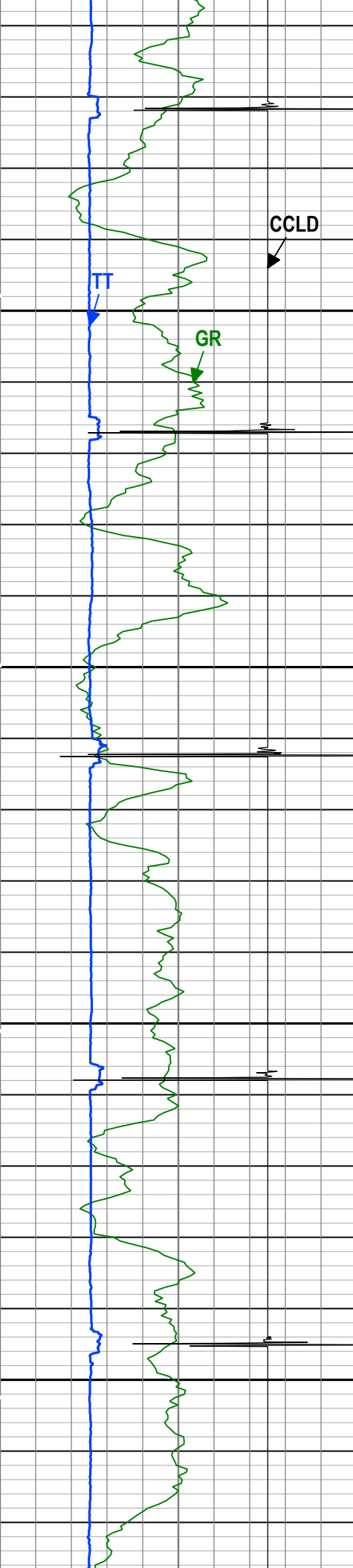








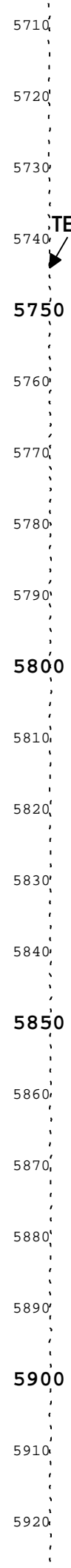




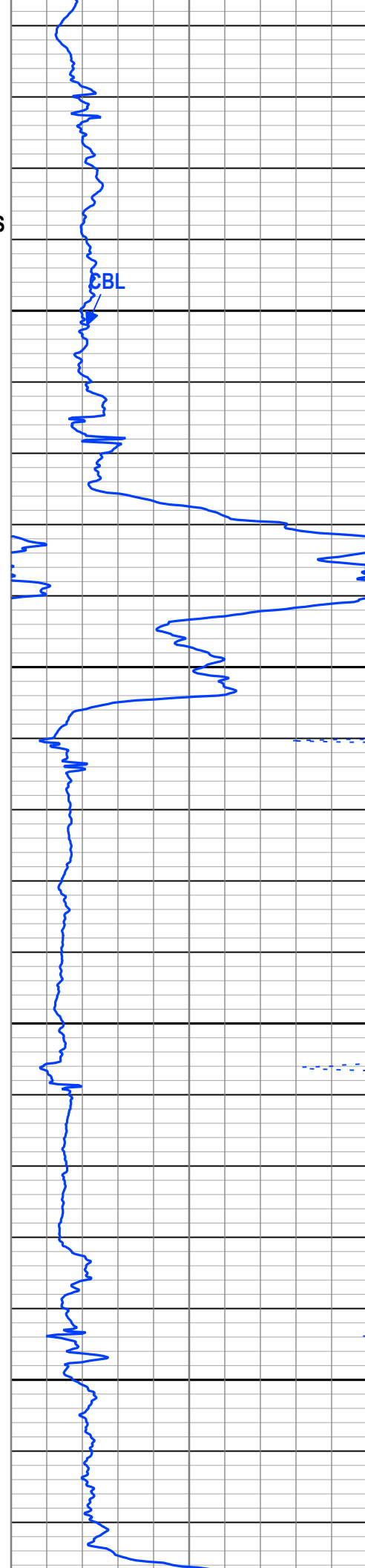
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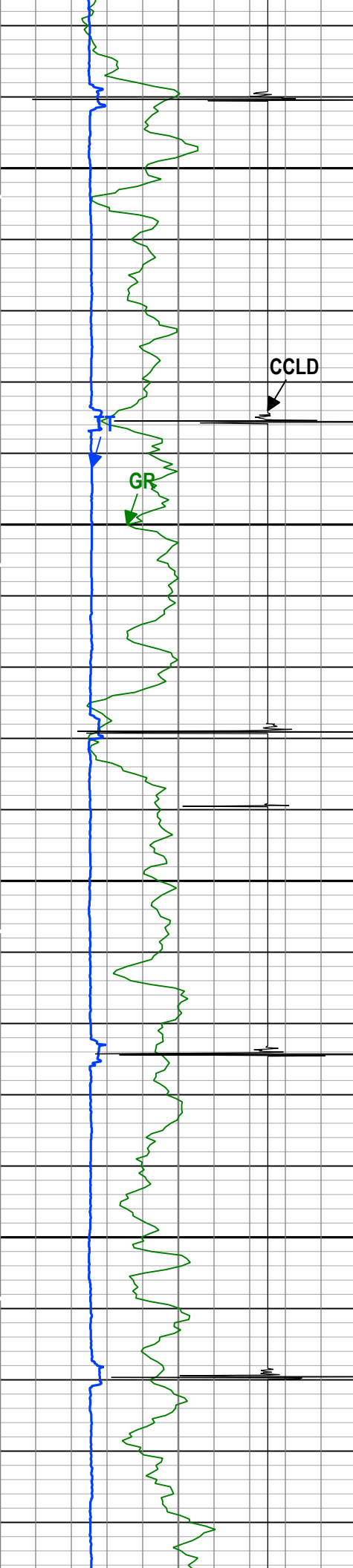
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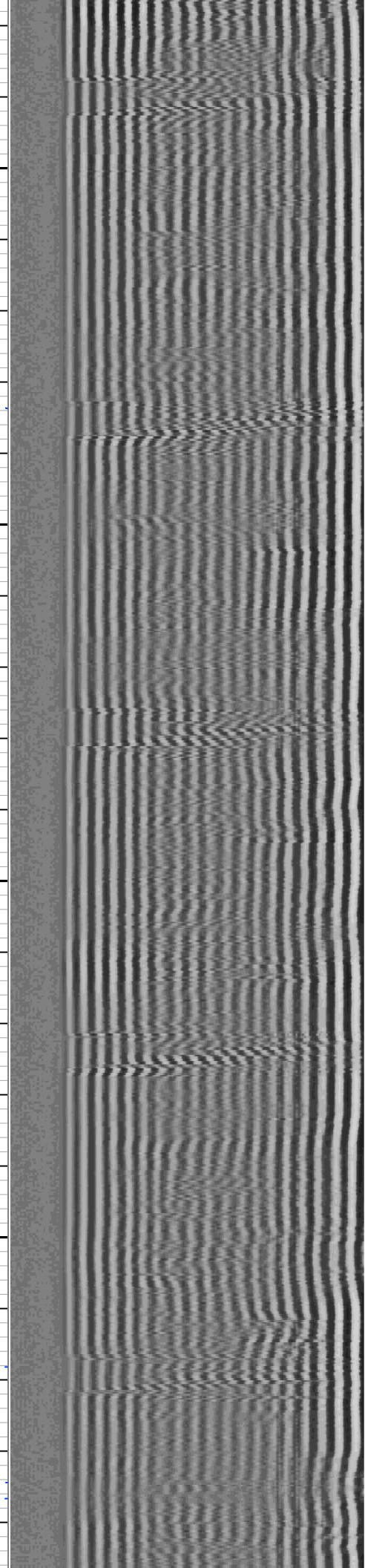
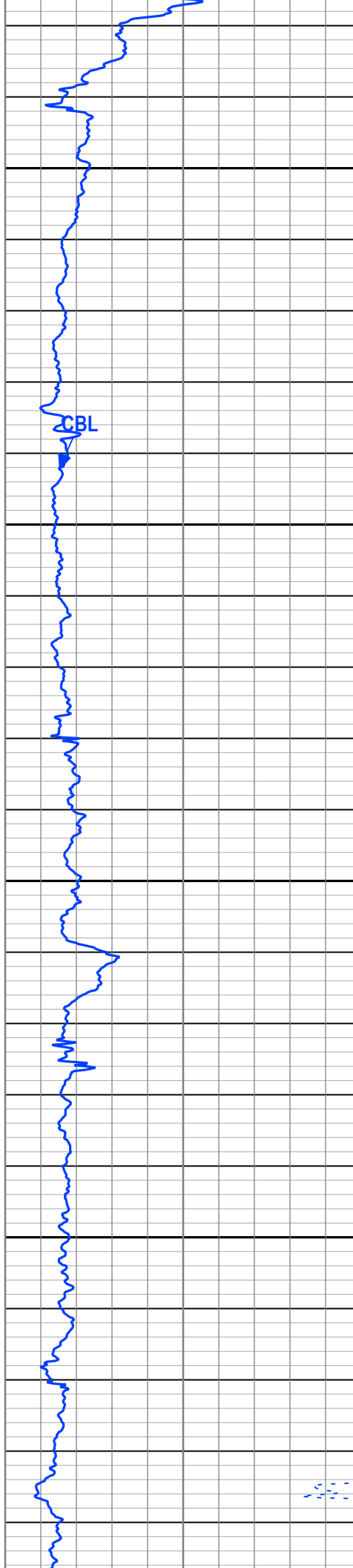
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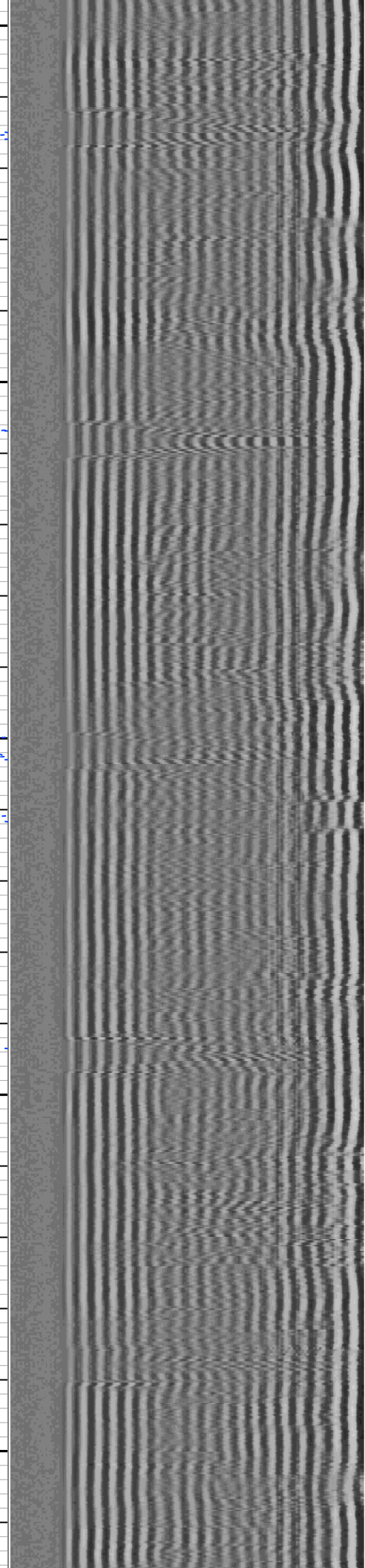
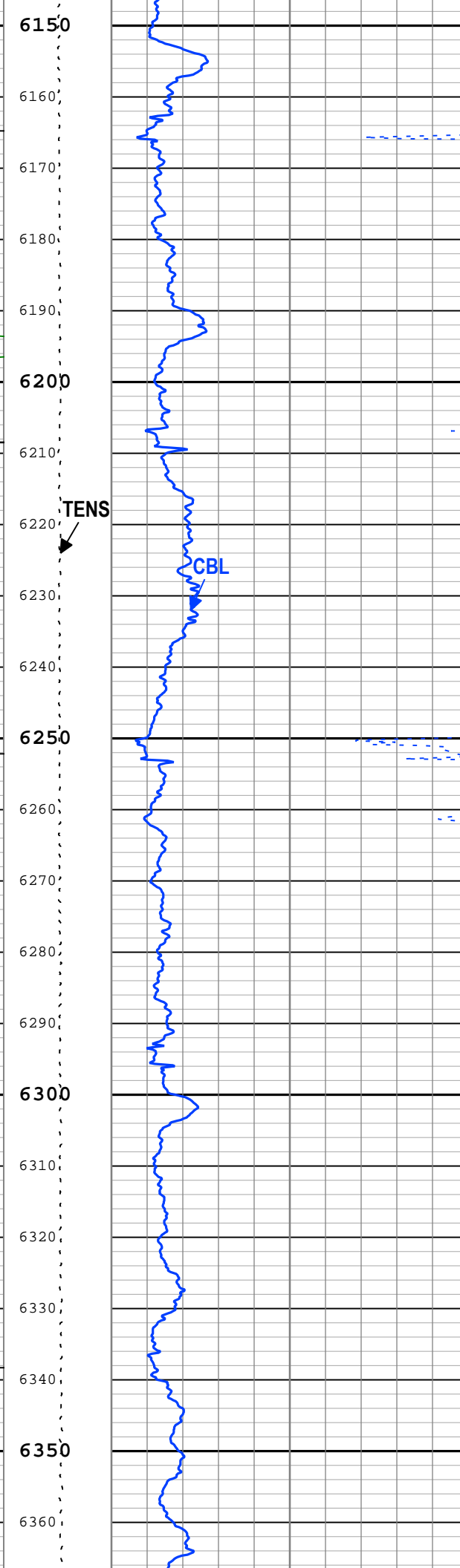
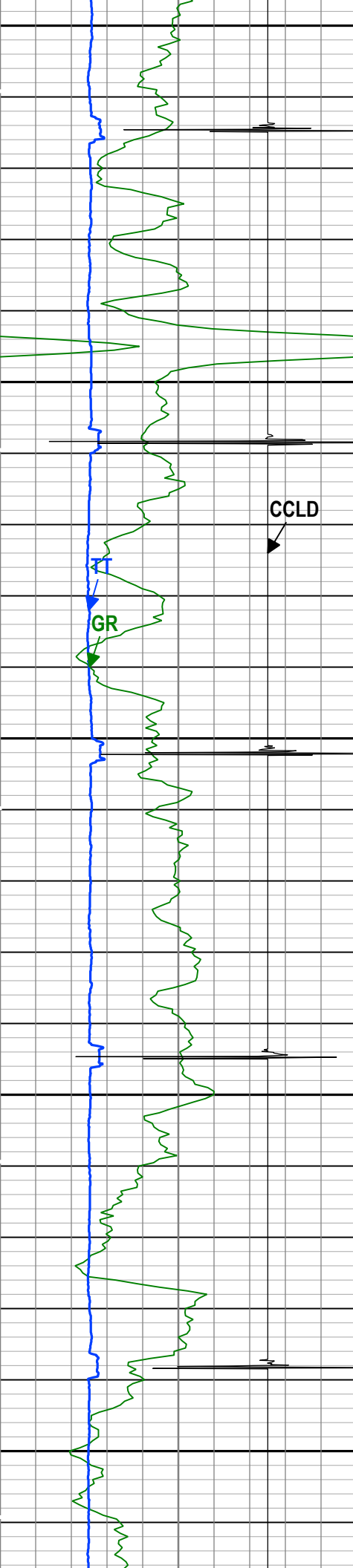


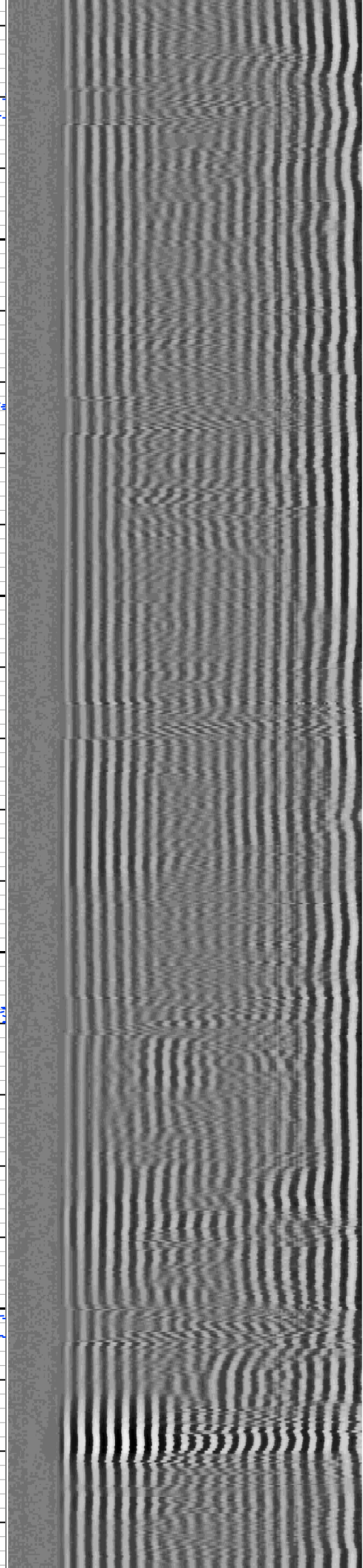
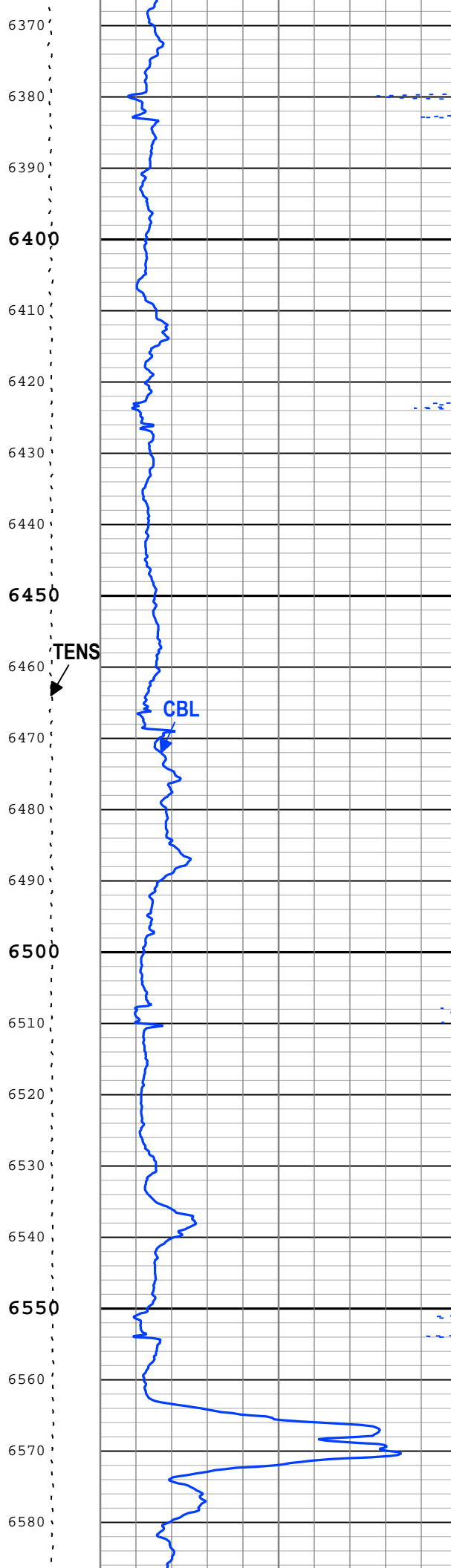
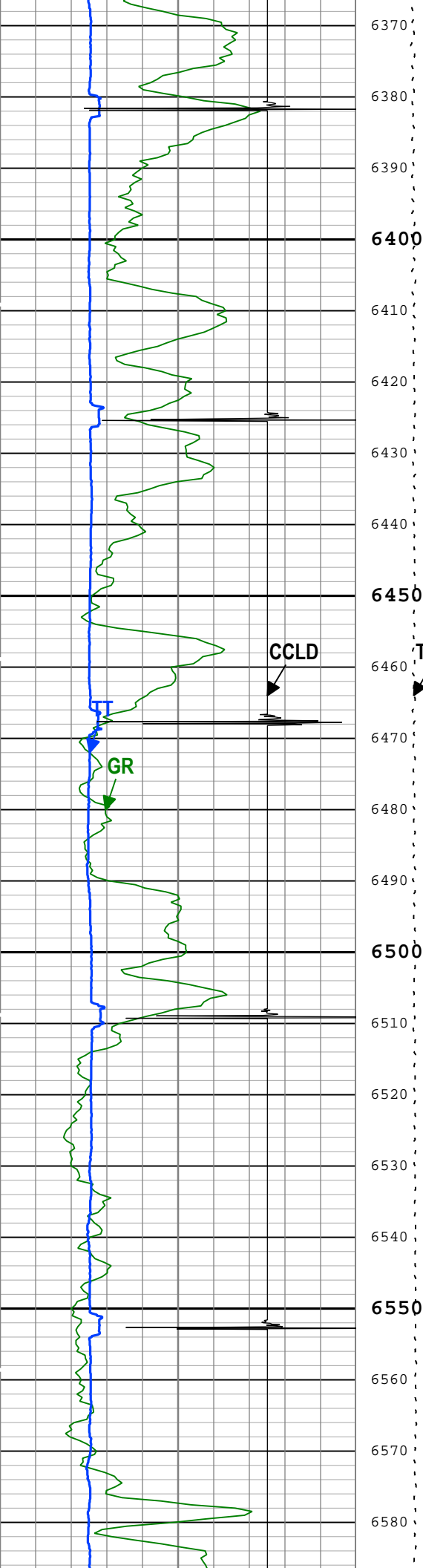
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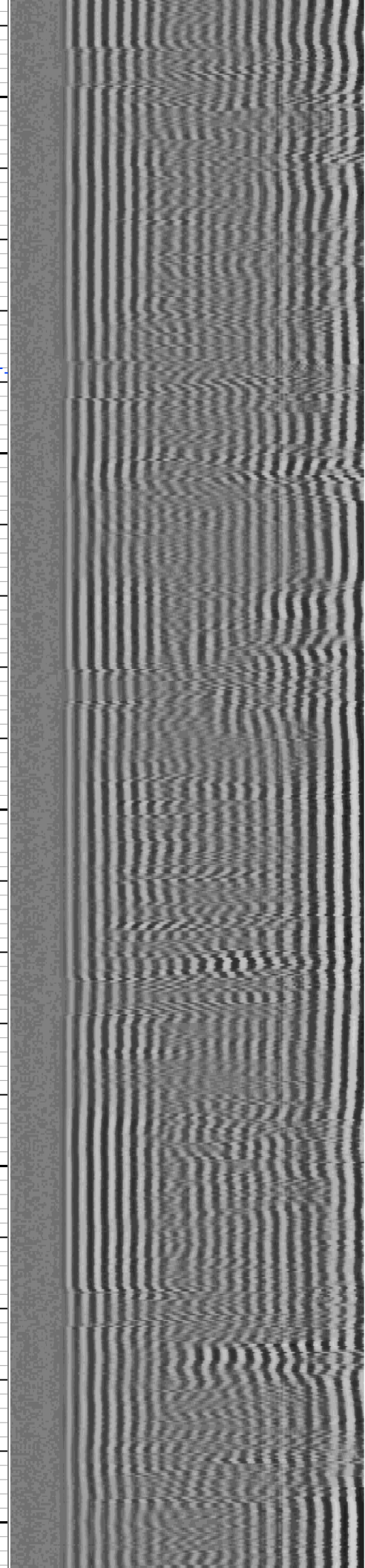
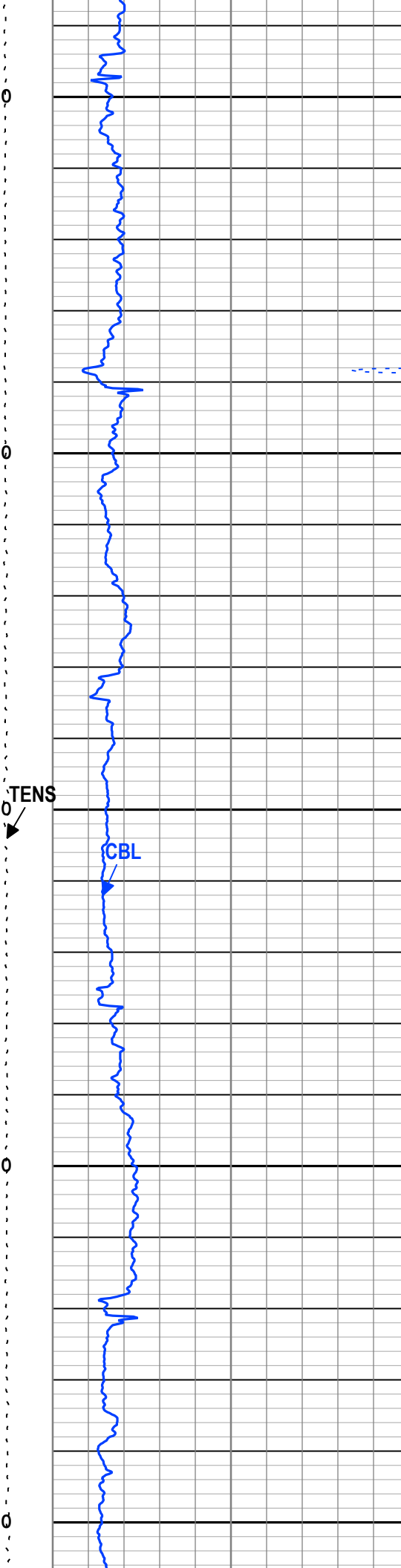
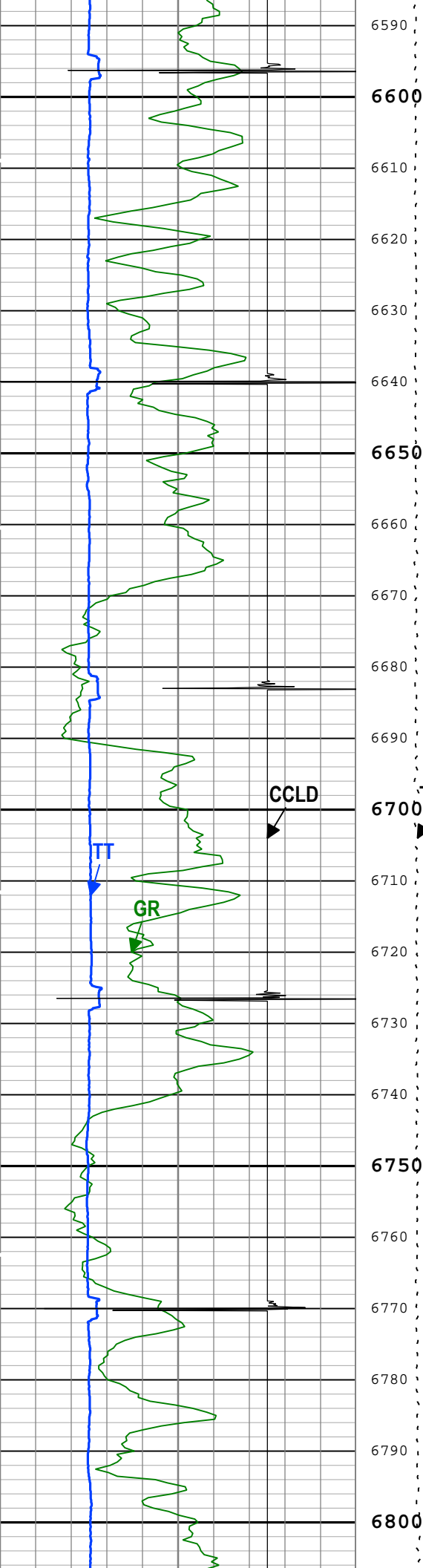


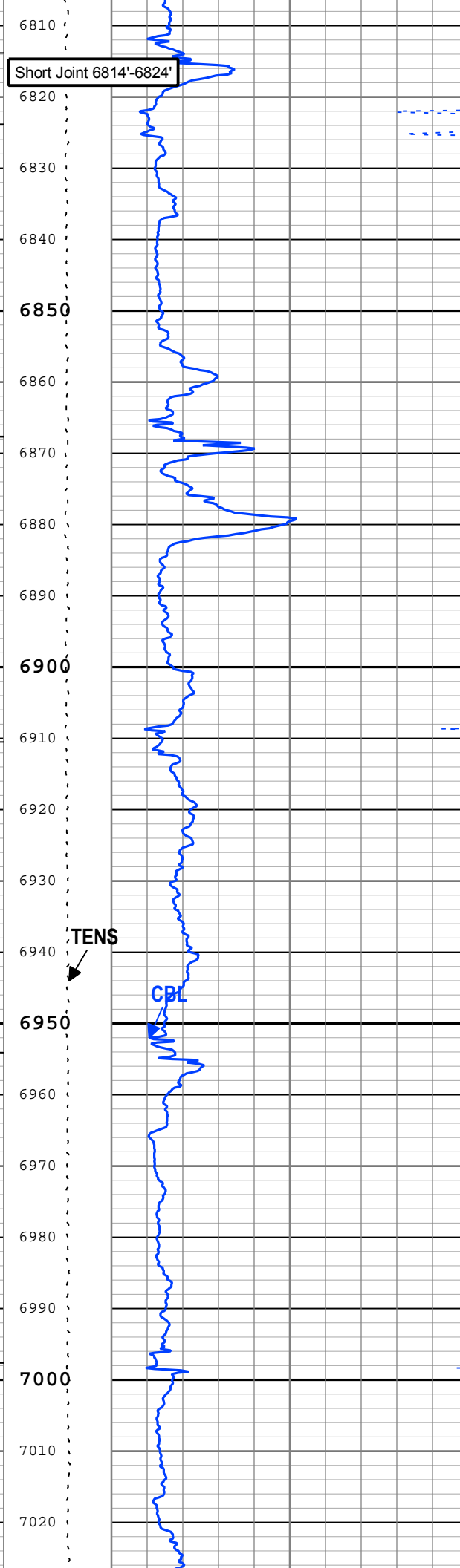
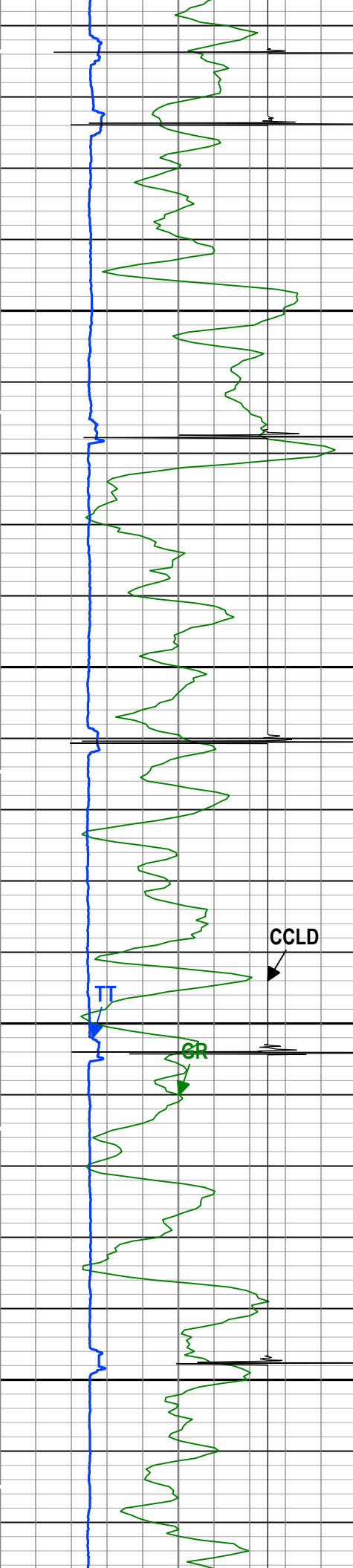
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Short Joint 6814'-6824'

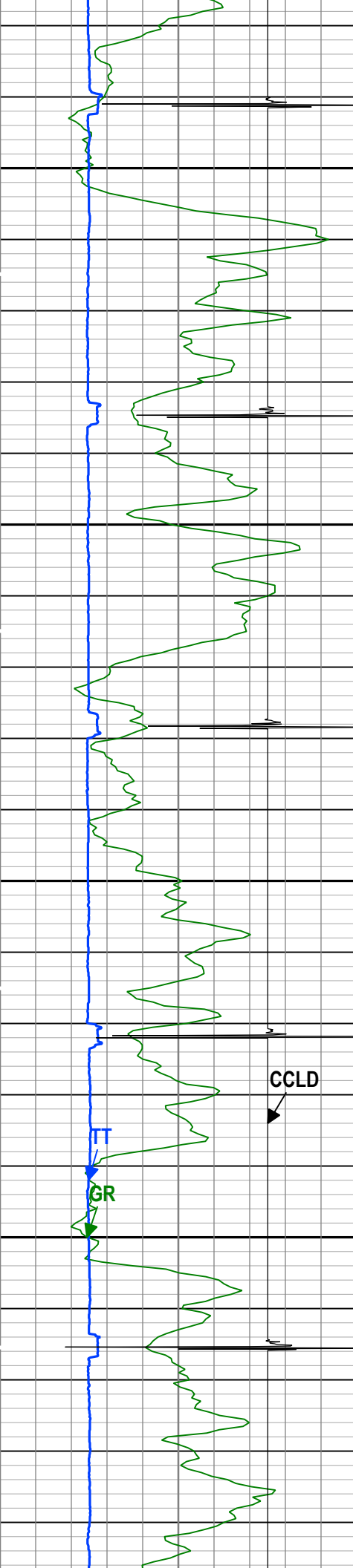
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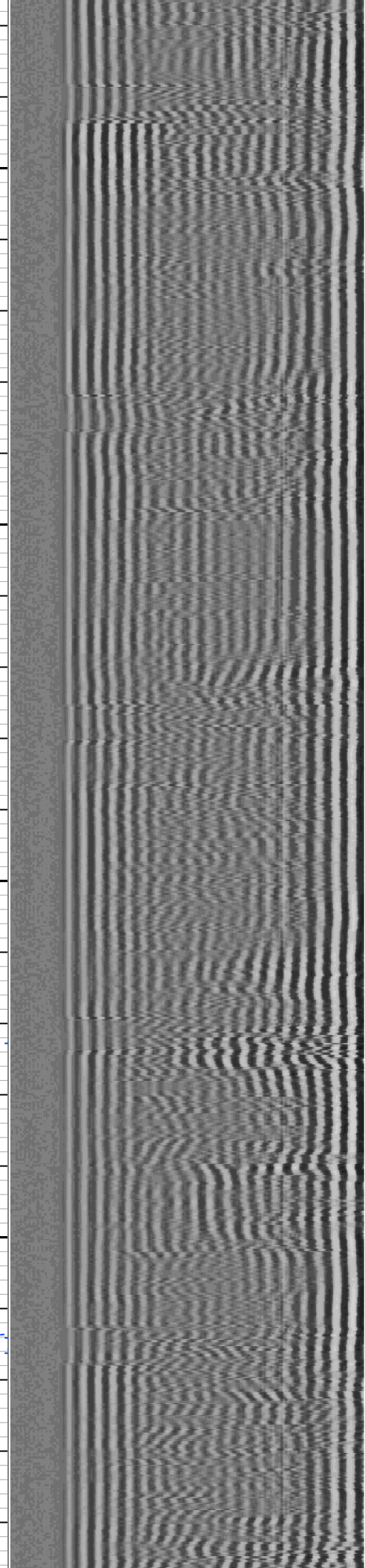
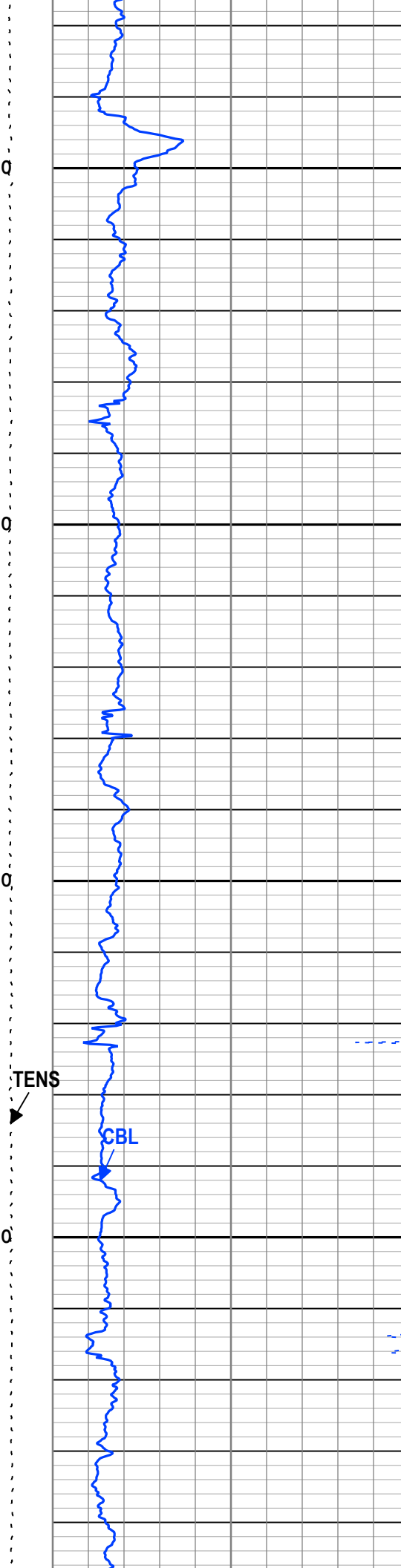
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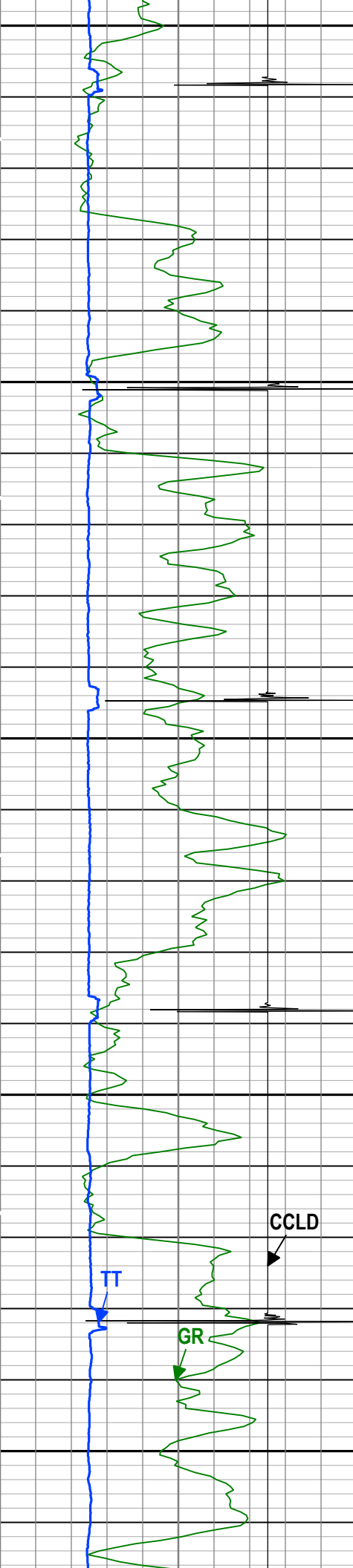
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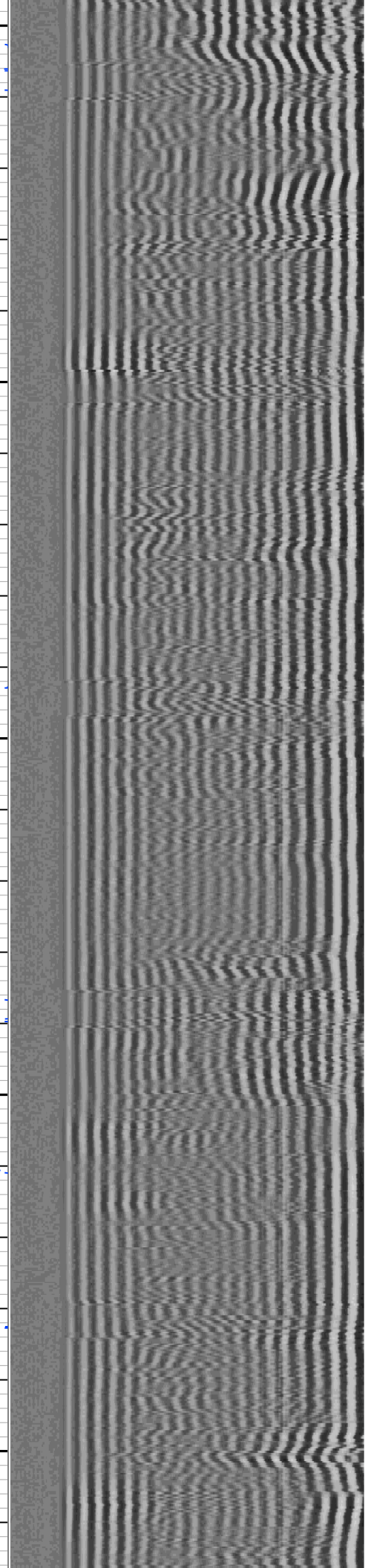
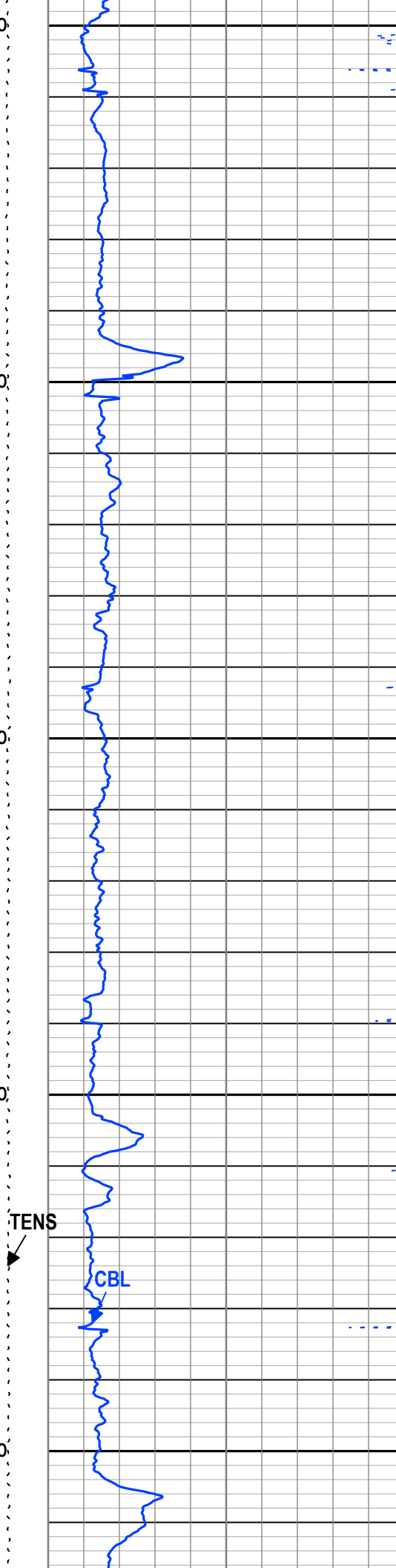


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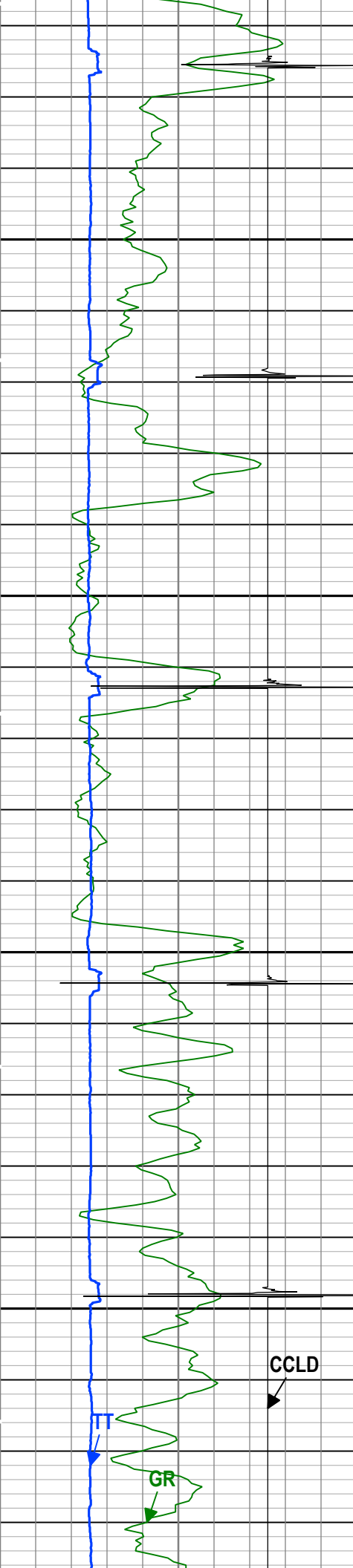
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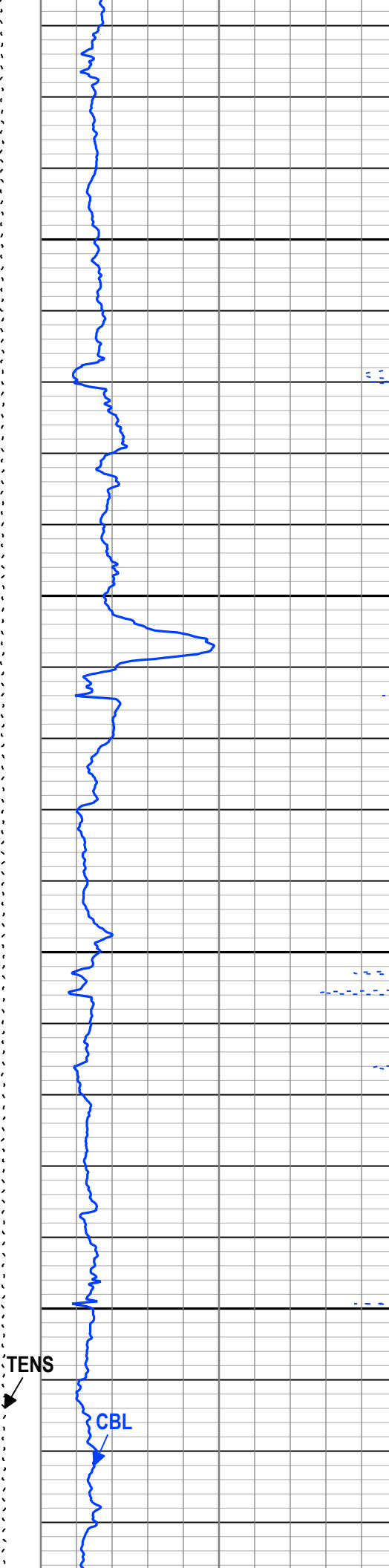
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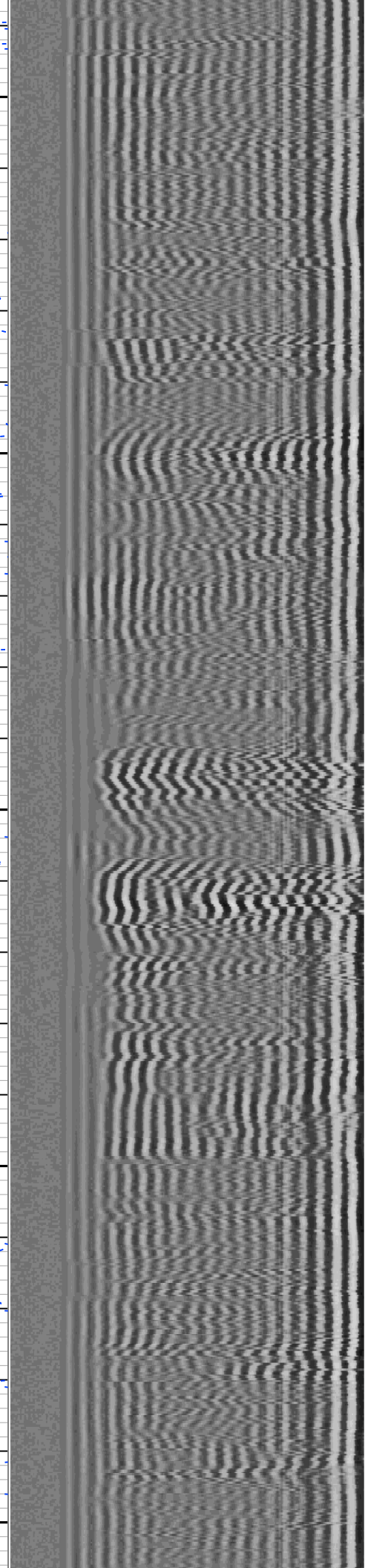
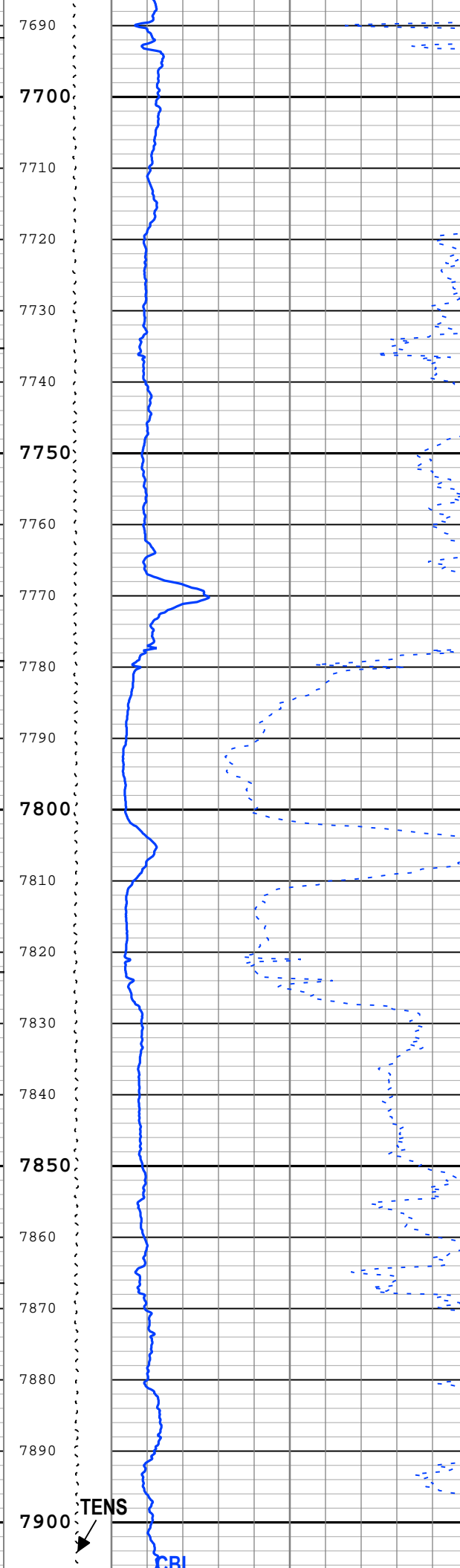
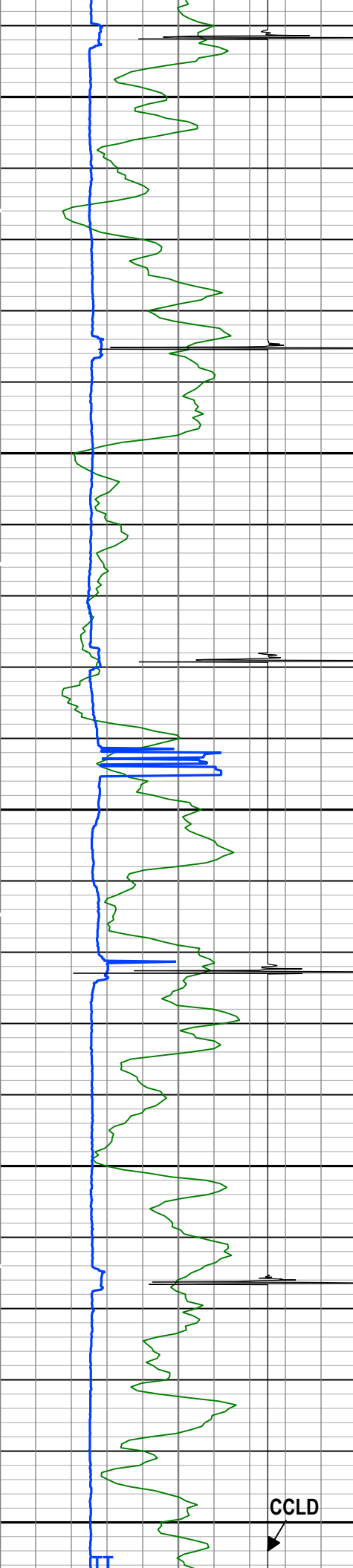
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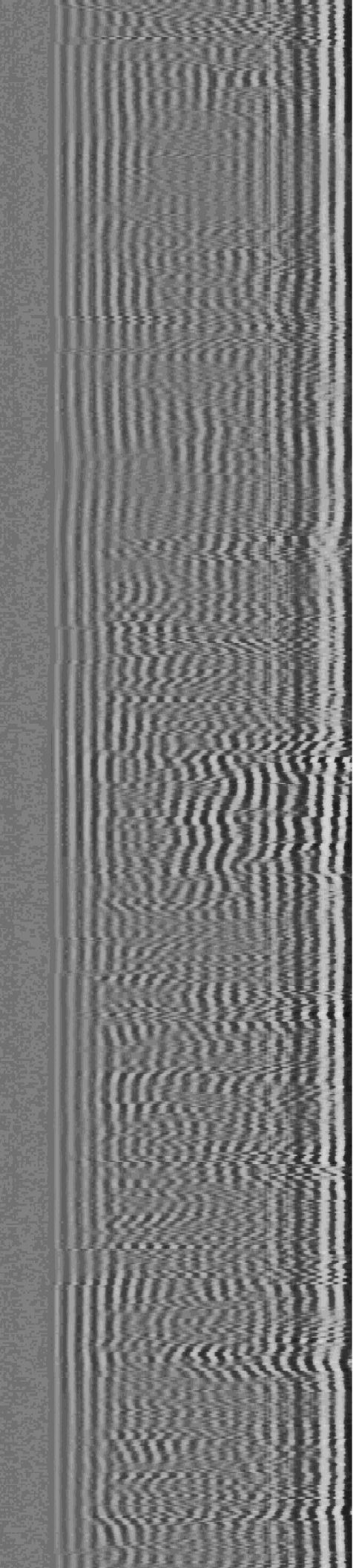
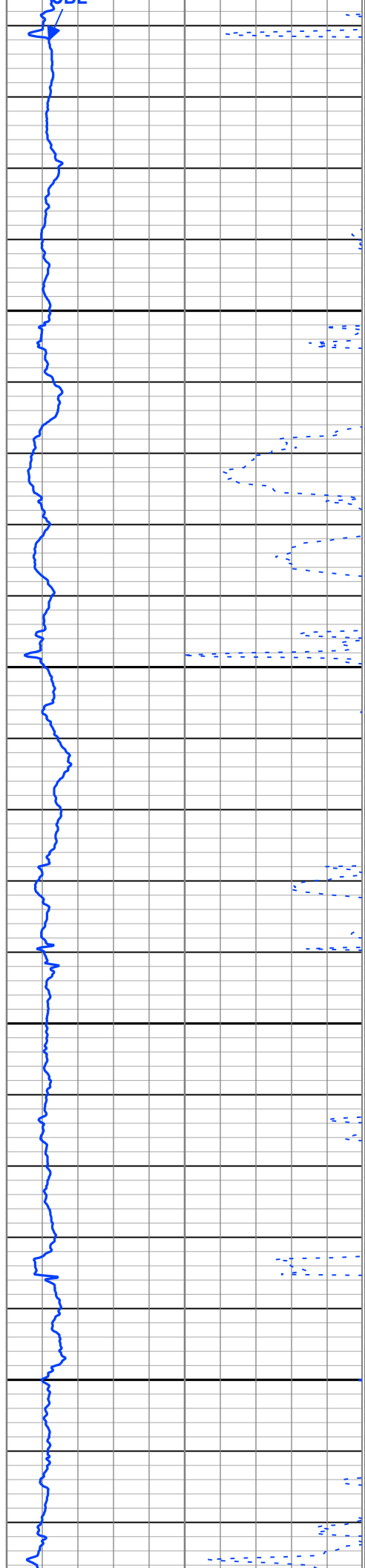
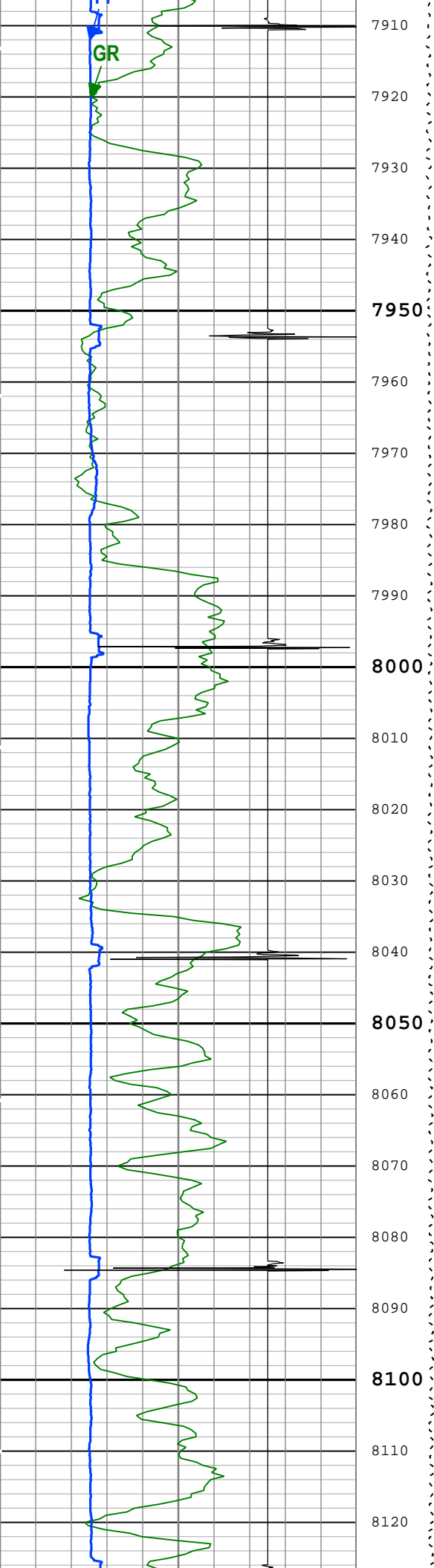
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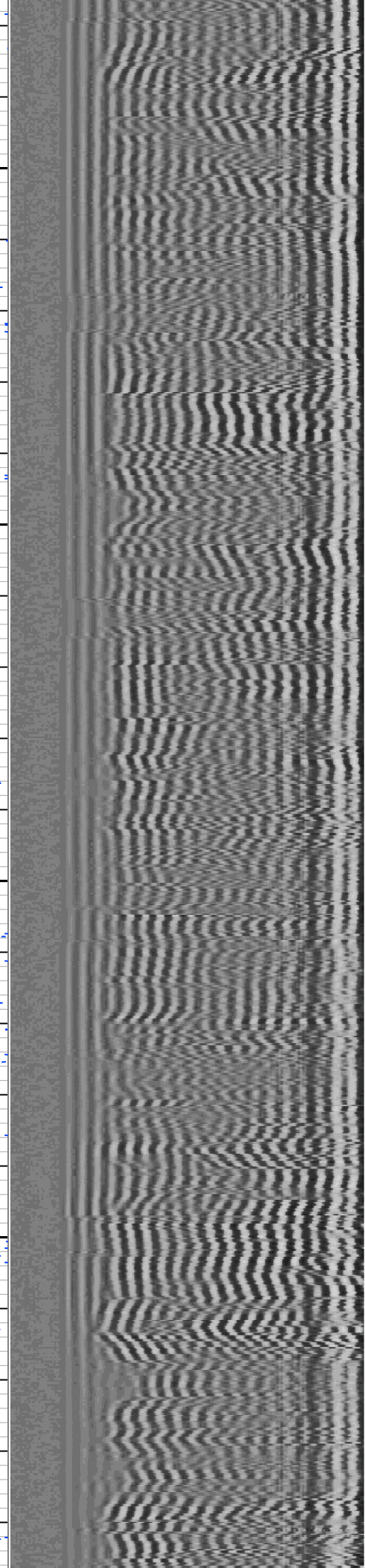
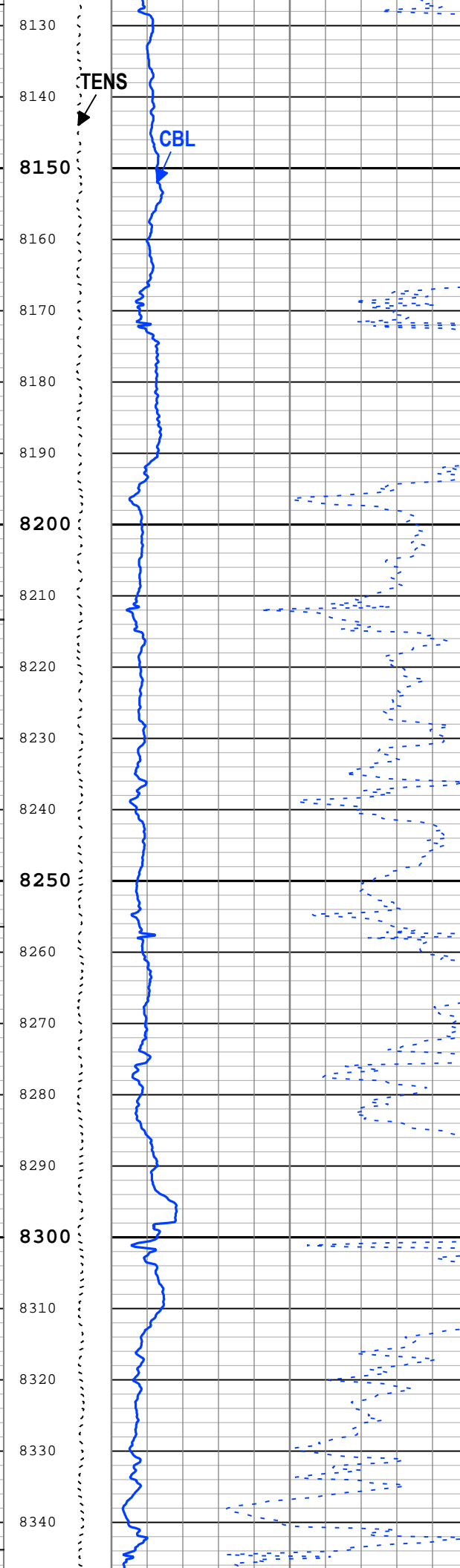
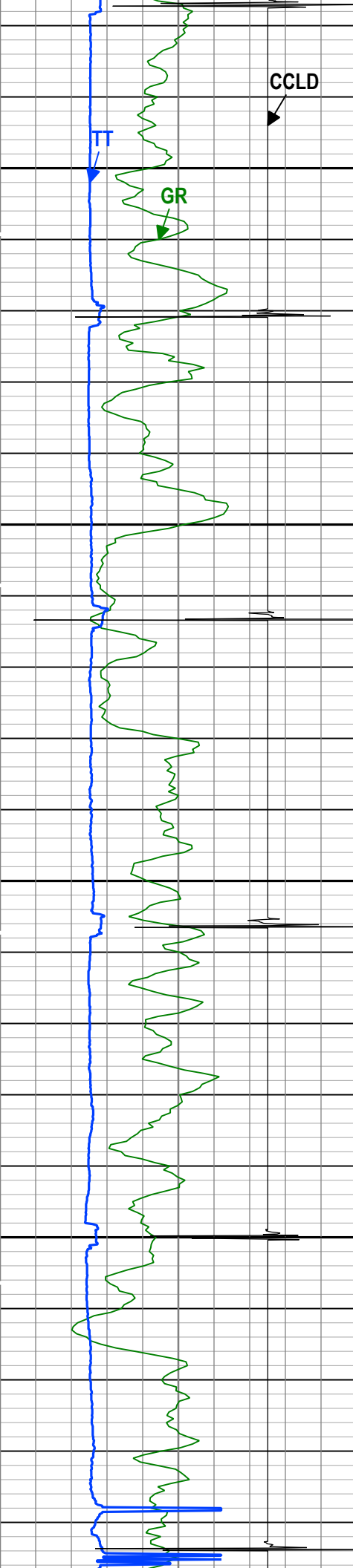


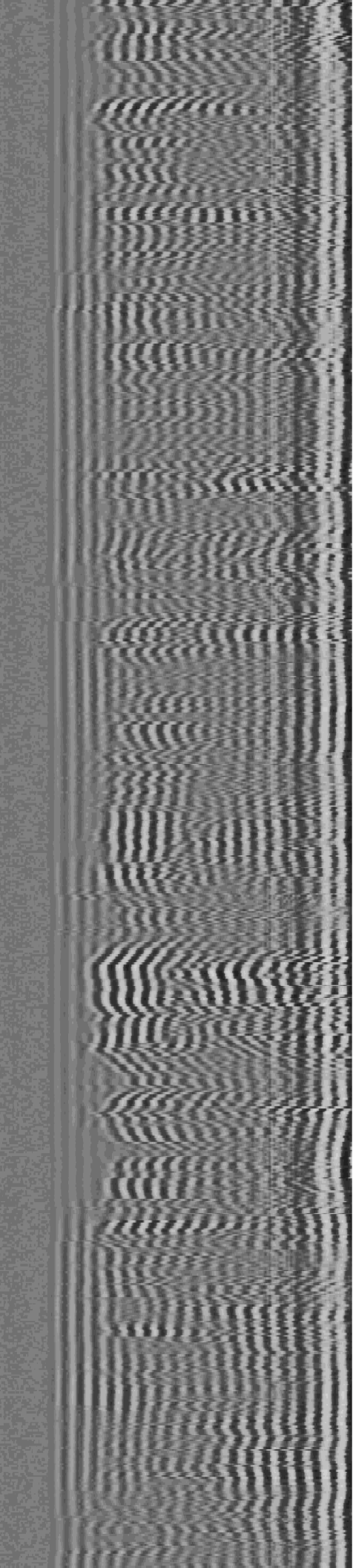
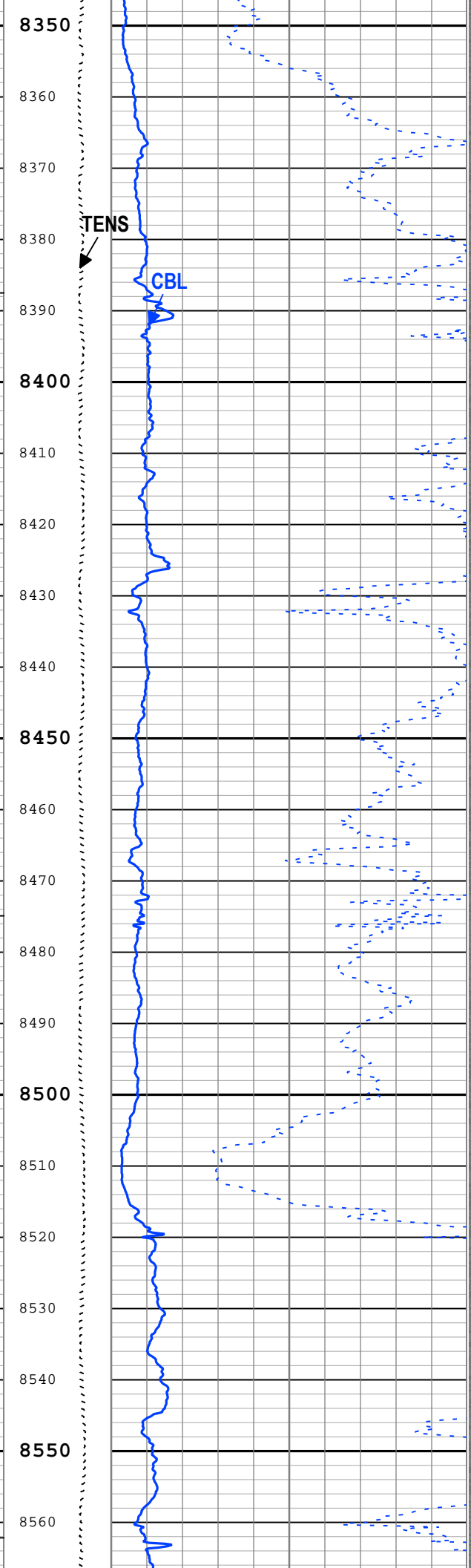
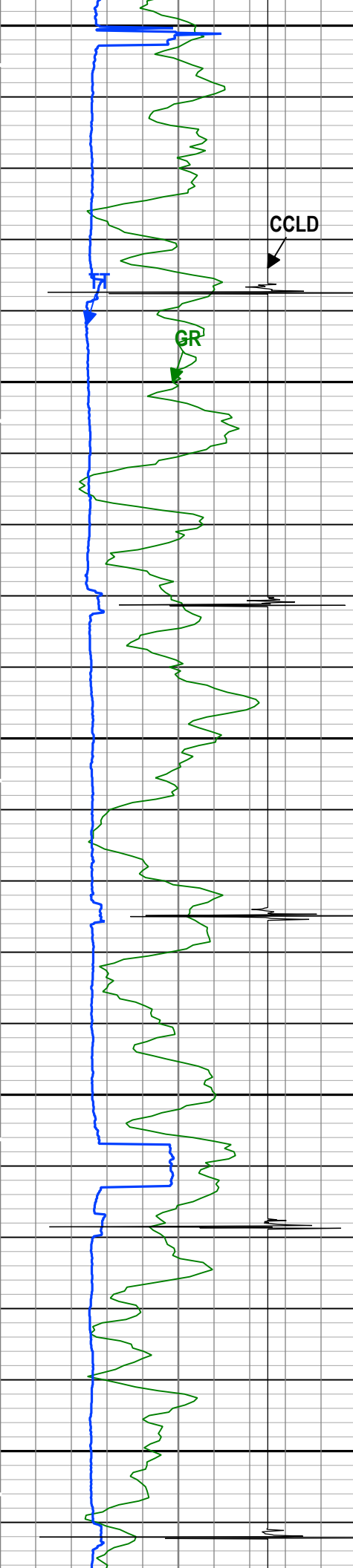
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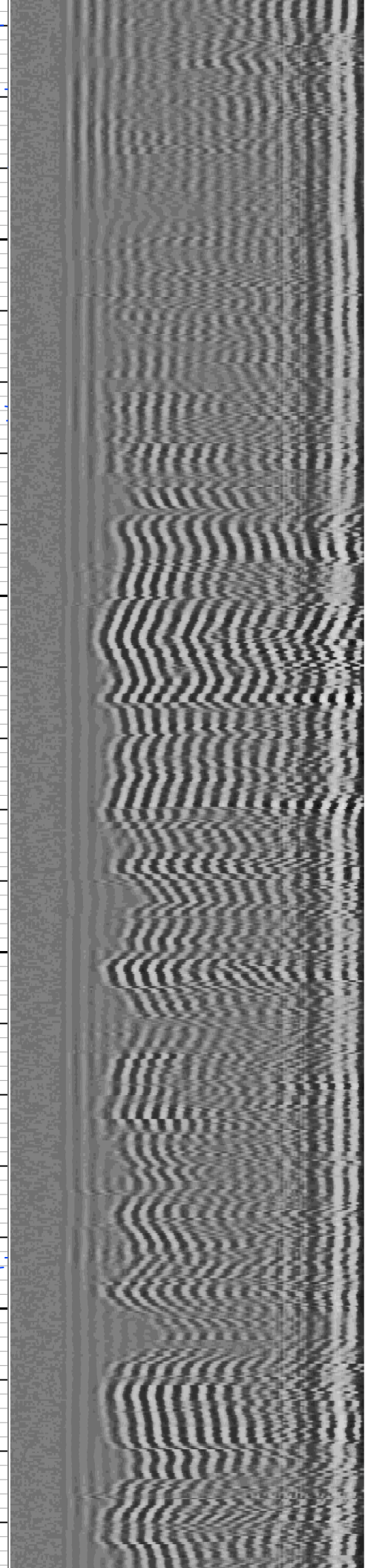
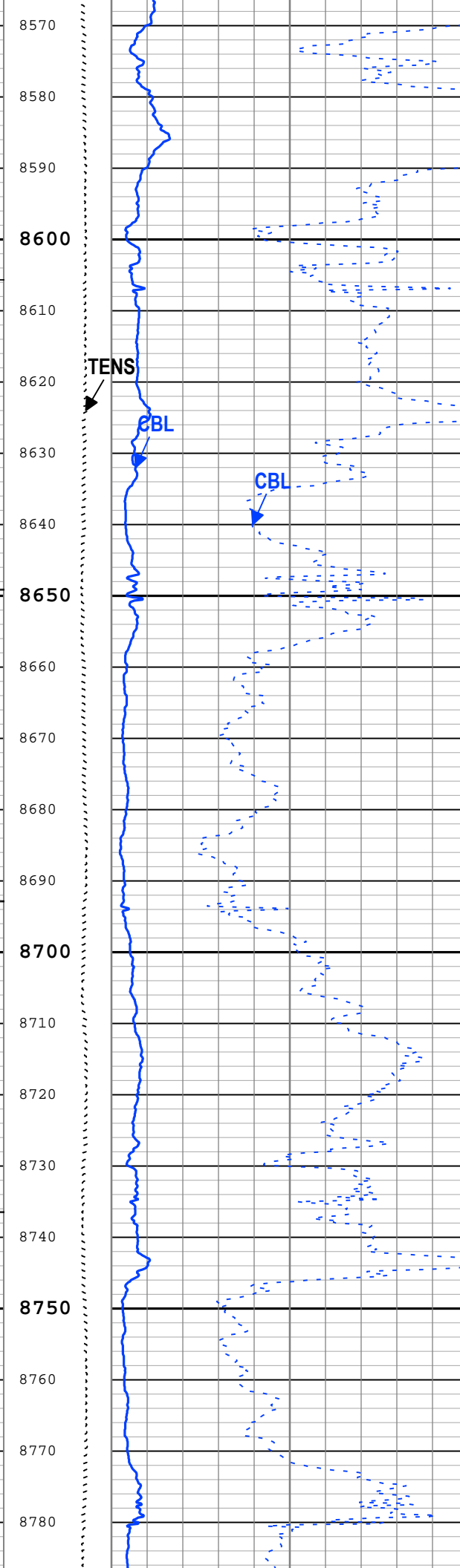
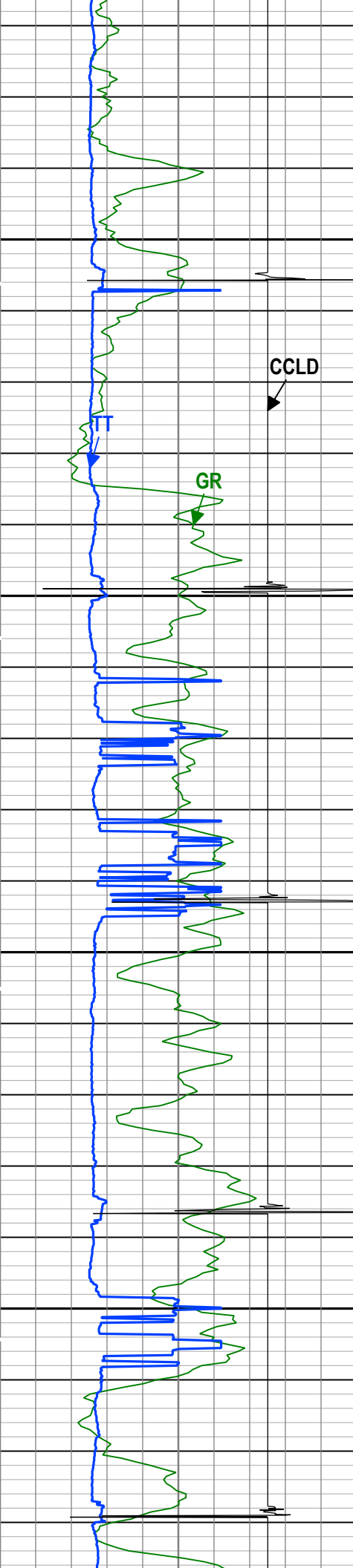


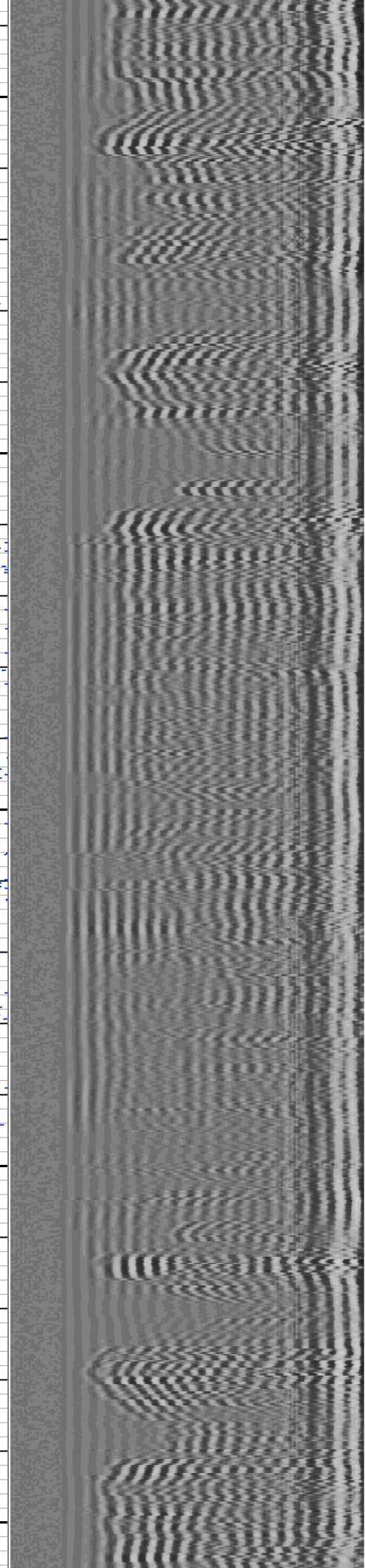
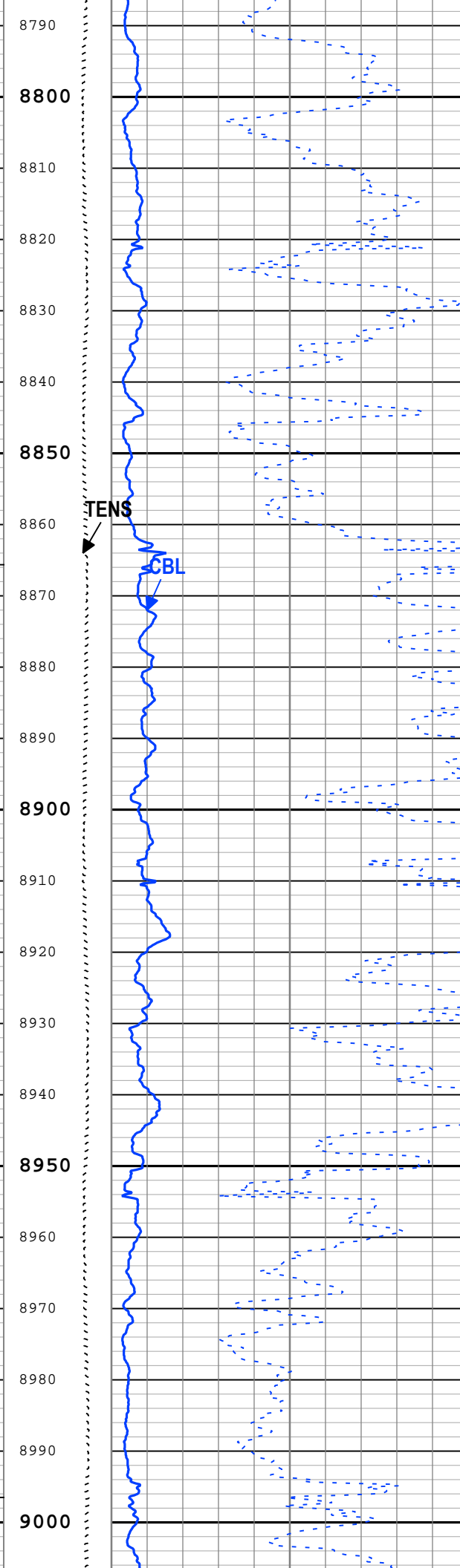
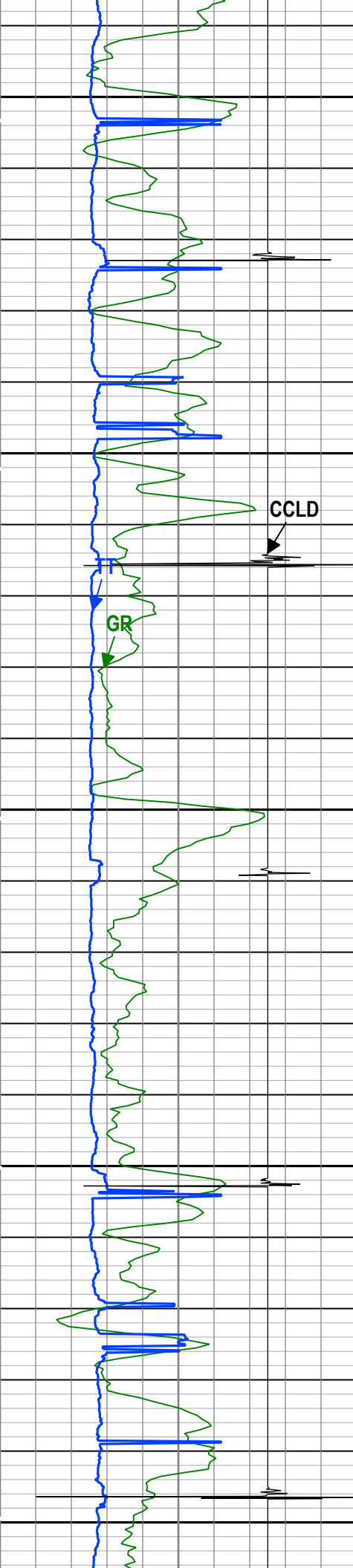


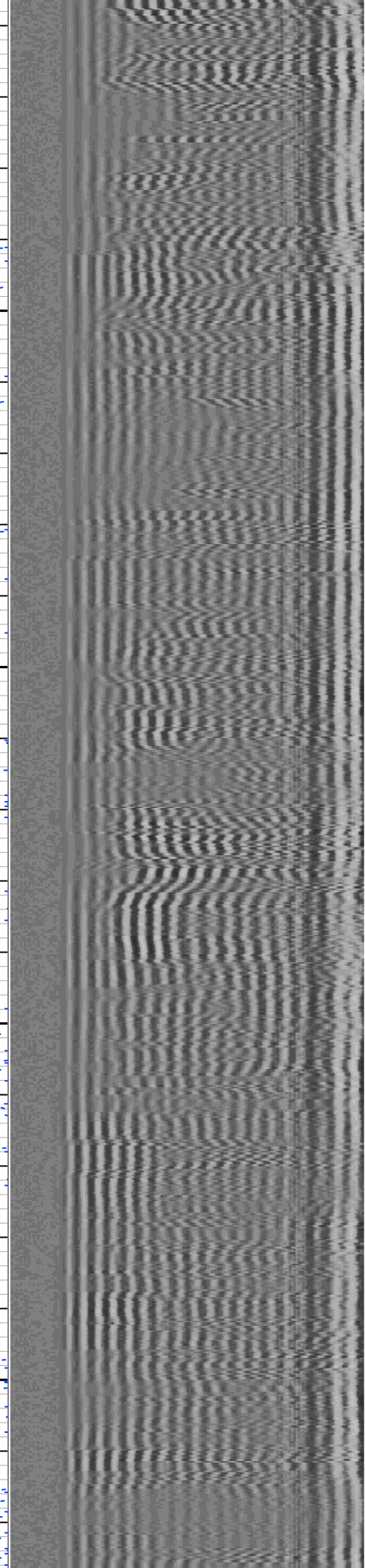
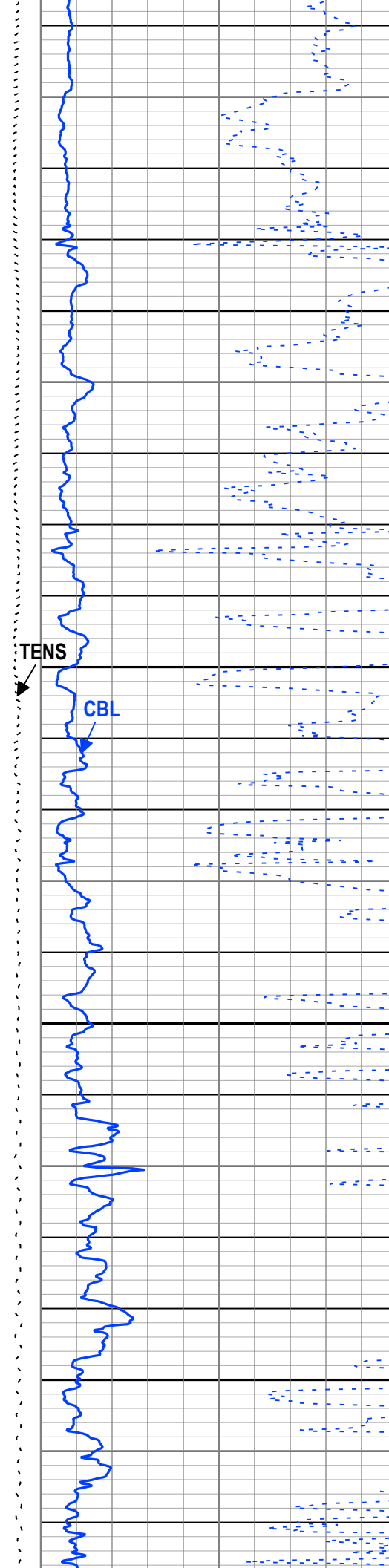
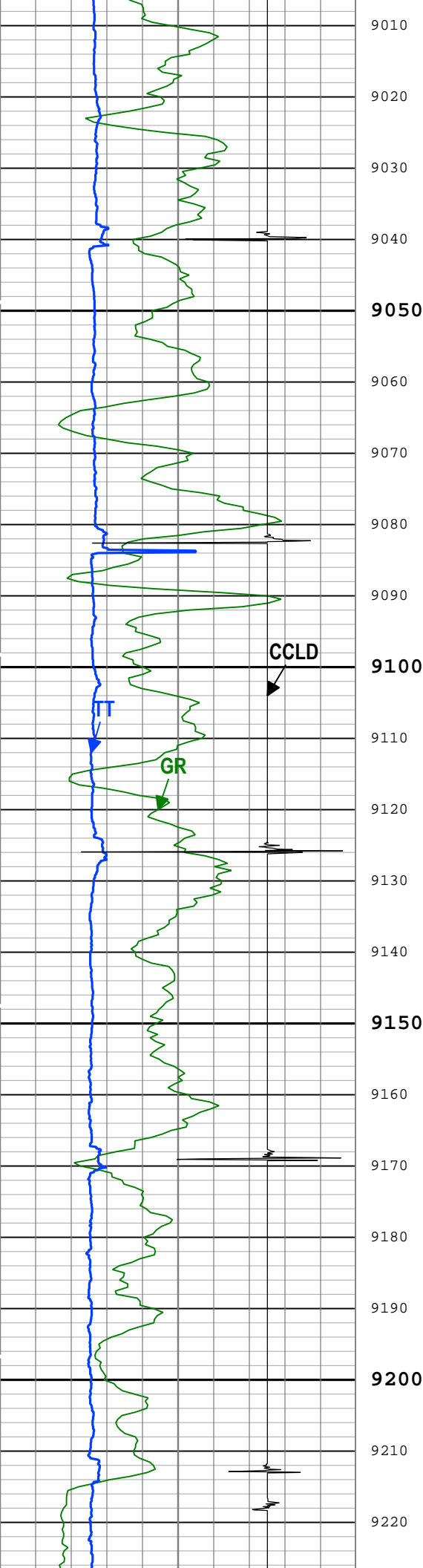


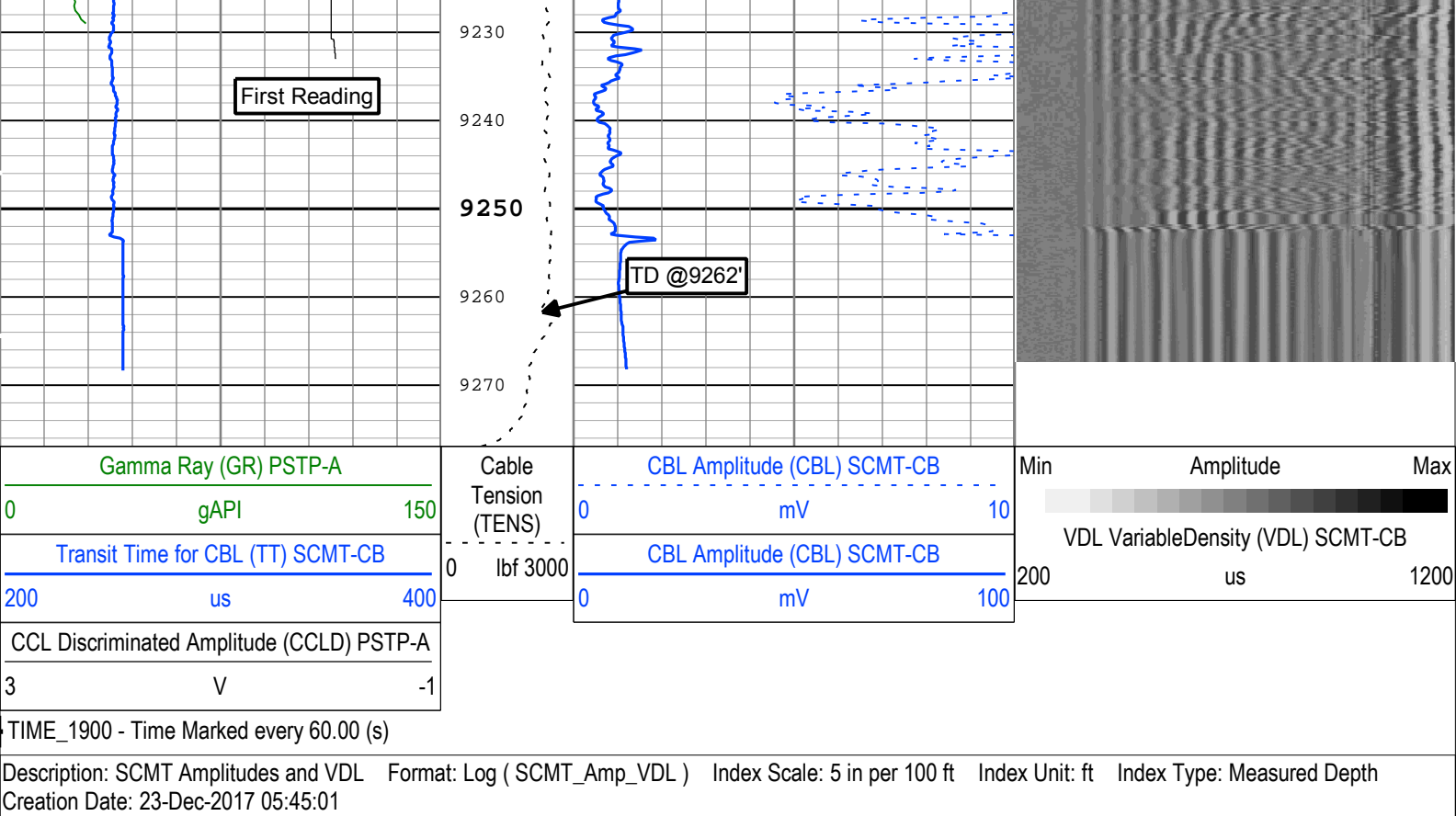












Repeat Pass

Software Version

Acquisition System

Maxwell 2017 SP3

Version

7.3.92069.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[4]:Up	Up	8949.28 ft	9275.80 ft	23-Dec-2017 2:30:31 AM	23-Dec-2017 2:41:07 AM	ON	6.25 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Caerus Operating LLC

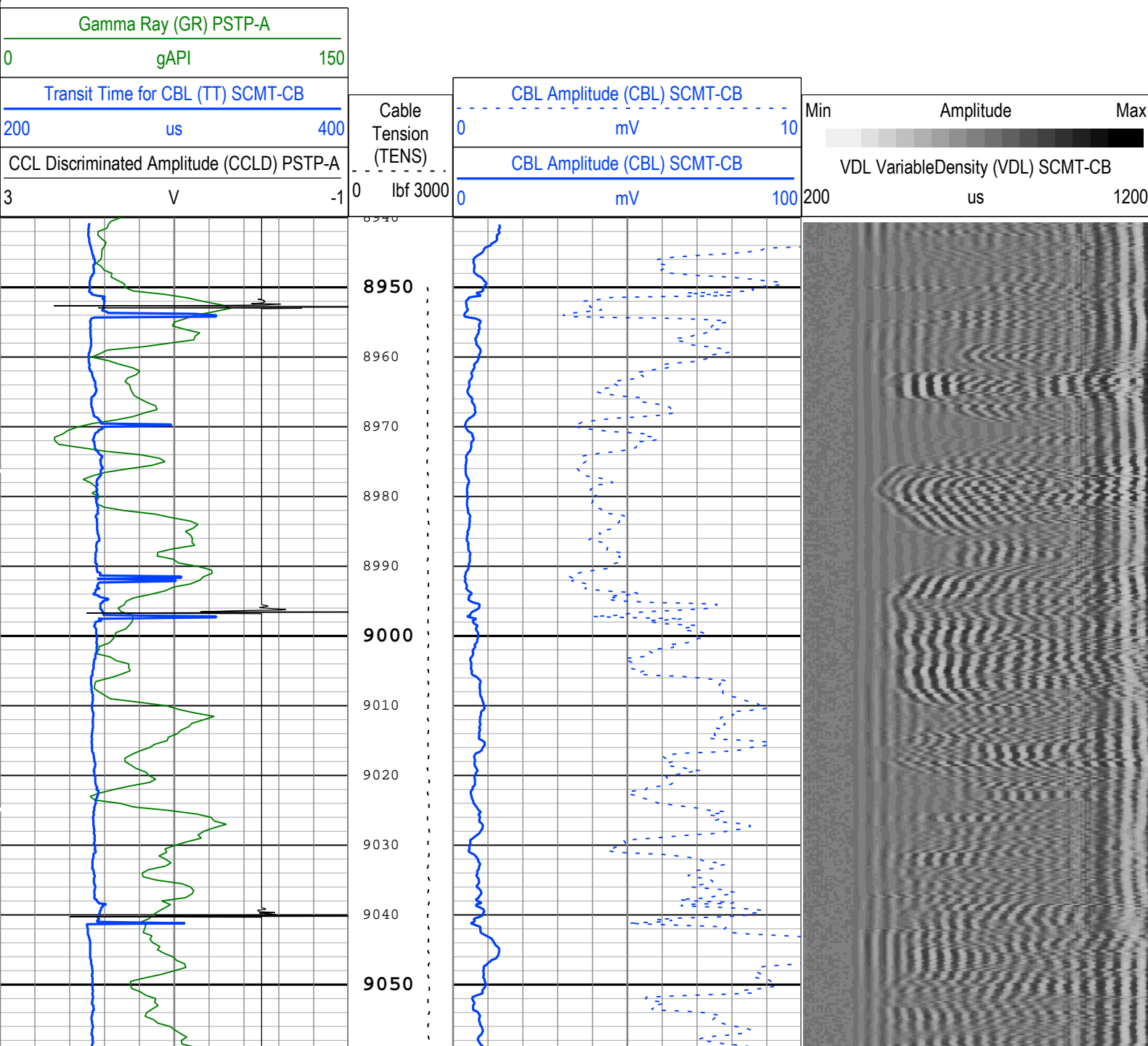
Well:Puckett 34B-23 697

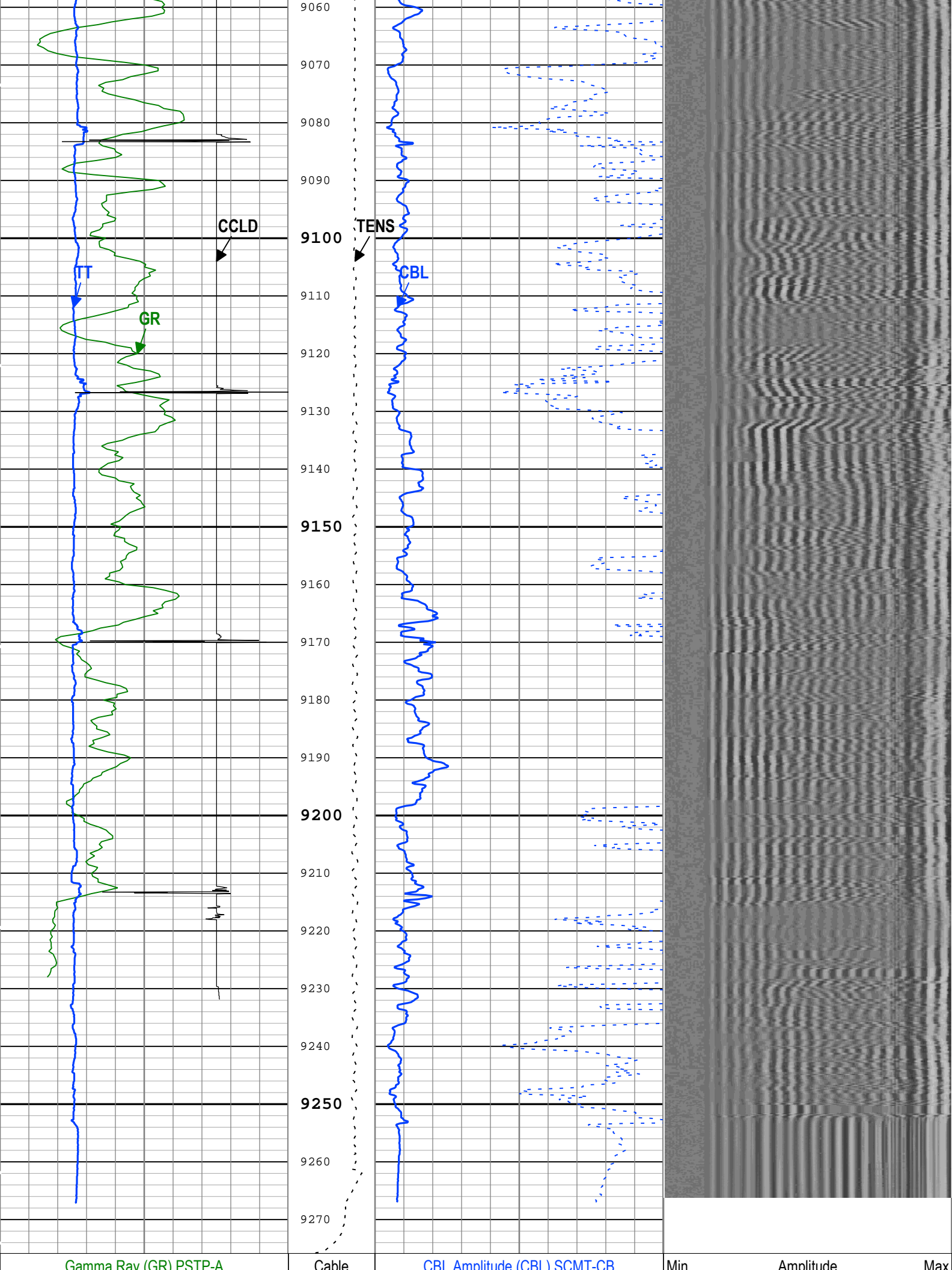
One: Log[4]:Up:S004

Description: SCMT Amplitudes and VDL Format: Log (SCMT_Amp_VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 23-Dec-2017 05:45:12

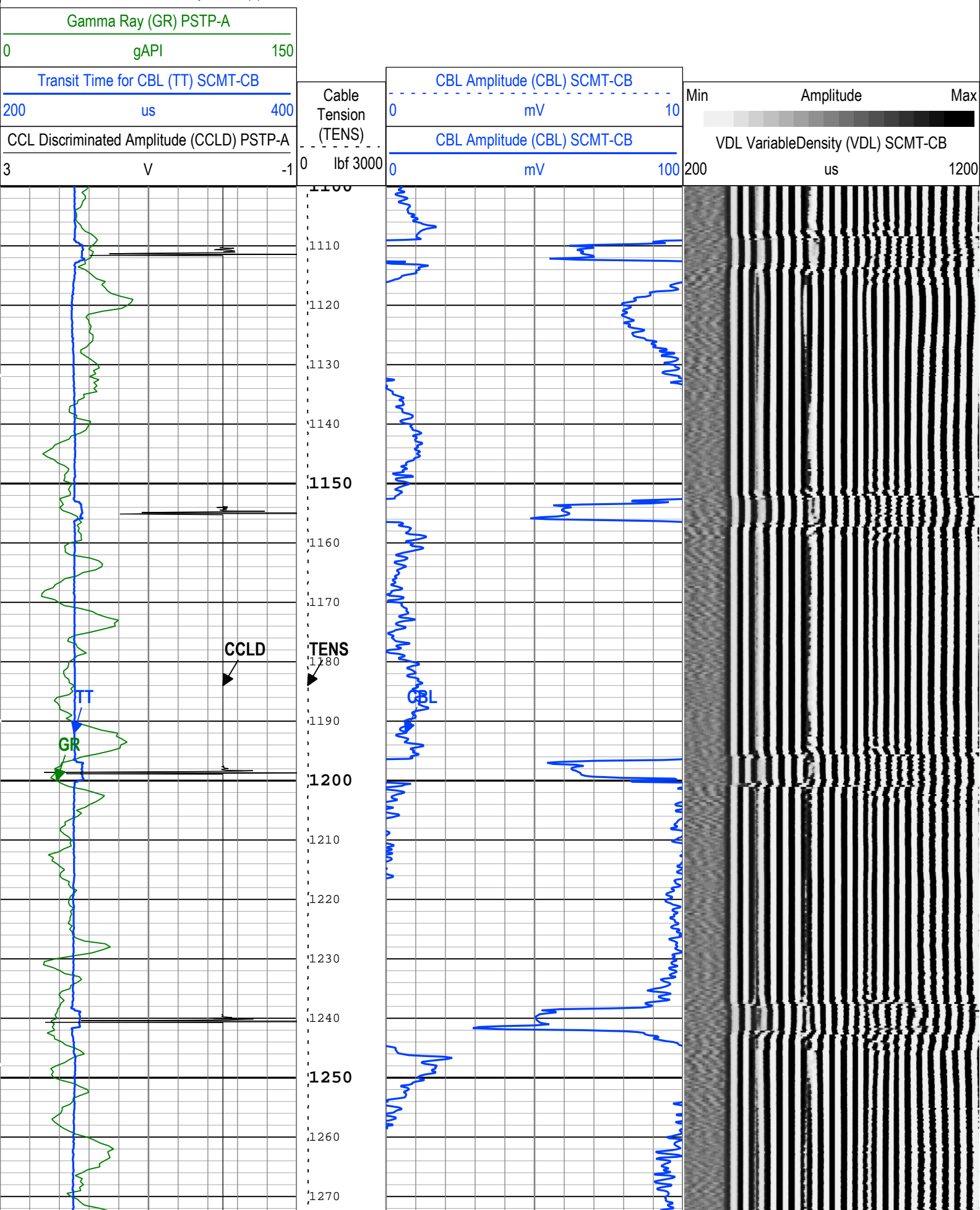
TIME_1900 - Time Marked every 60.00 (s)

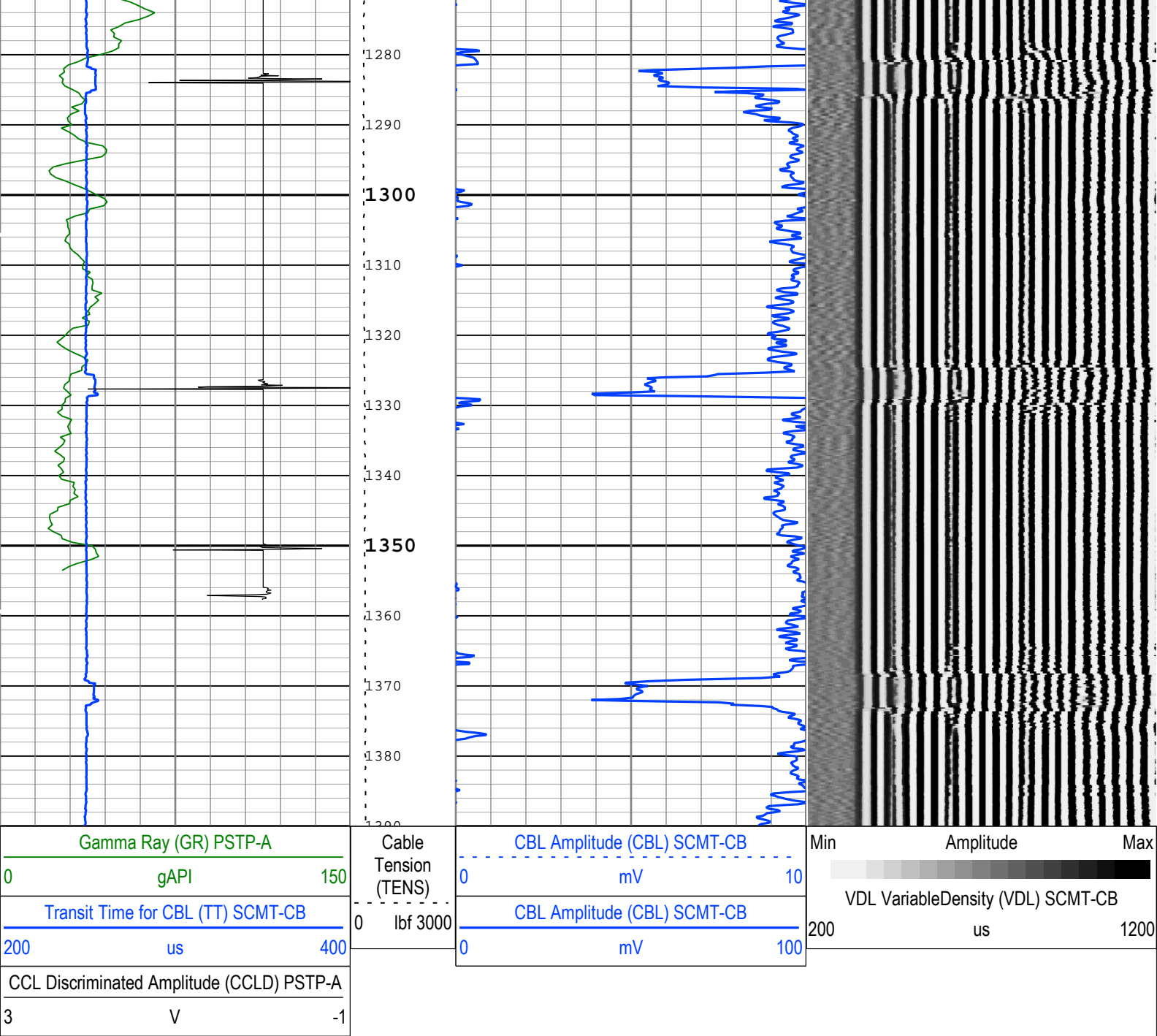




Description: SCMT Amplitudes and VDL Format: Log (SCMT_Amp_VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 23-Dec-2017 05:45:15

TIME_1900 - Time Marked every 60.00 (s)





TIME_1900 - Time Marked every 60.00 (s)

Description: SCMT Amplitudes and VDL Format: Log (SCMT_Amp_VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth

Creation Date: 23-Dec-2017 05:45:15

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	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
DFD	Drilling Fluid Density	Borehole	8.6	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	30	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	8432	ft

	Level			
FCF	CBL Fluid Compensation Factor	SCMT-CB	1	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	GTEM_LINEST(RT)	
MSA	Minimum Sonic Amplitude	SCMT-CB	0.51	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

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-A	12 dB	

One

Sigma Main Pass

Software Version

Acquisition System	Version
Maxwell 2017 SP3	7.3.92069.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[5]:Up	Up	2467.57 ft	9276.95 ft	23-Dec-2017 2:45:28 AM	23-Dec-2017 5:06:11 AM	ON	6.56 ft	Yes

All depths are referenced to toolstring zero

Log

Company:Caerus Operating LLC

Well:Puckett 34B-23 697

One: Log[5]:Up:S004

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: 23-Dec-2017 05:45:17

—IHV - Integrated Hole Volume every 10.00 (ft3)

—| IHV - Integrated Hole Volume every 100.00 (ft3)

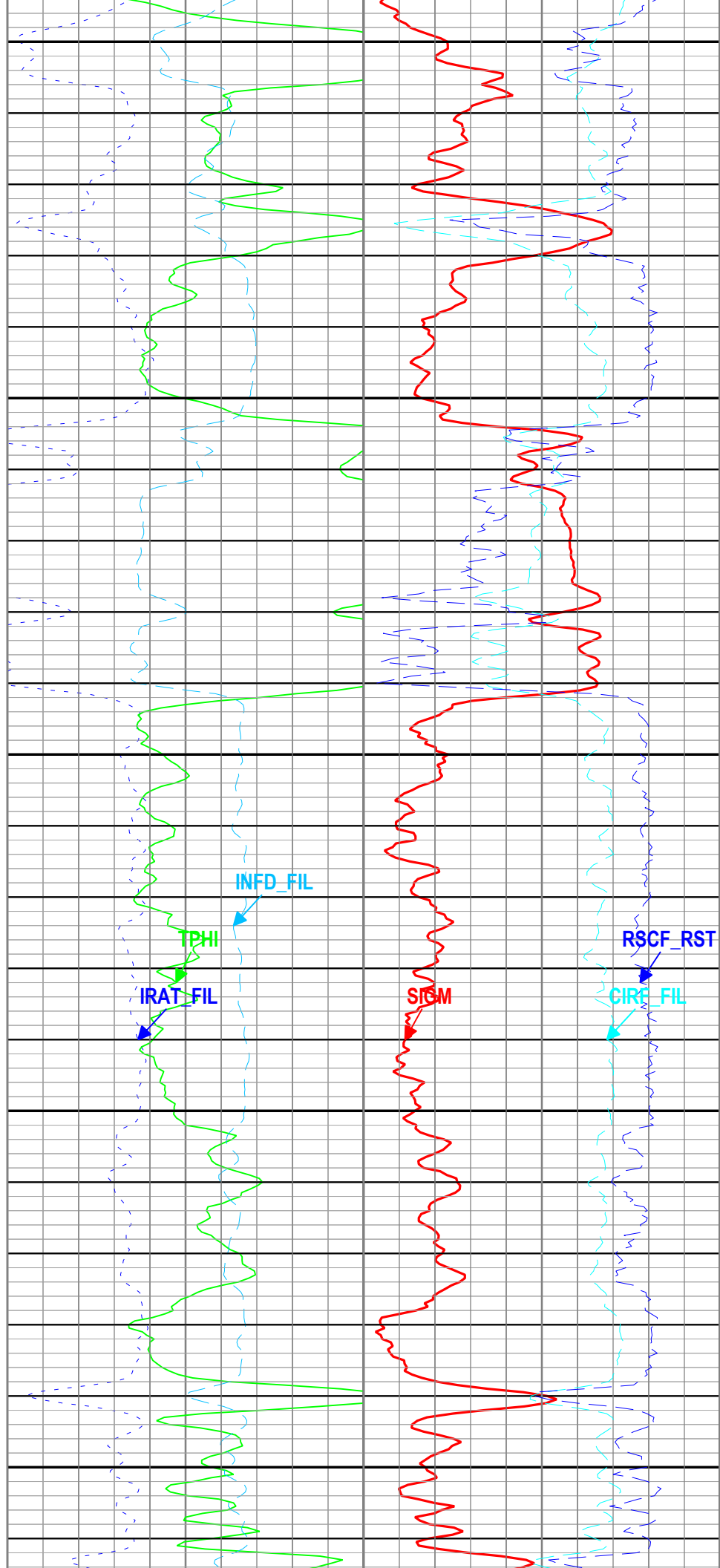
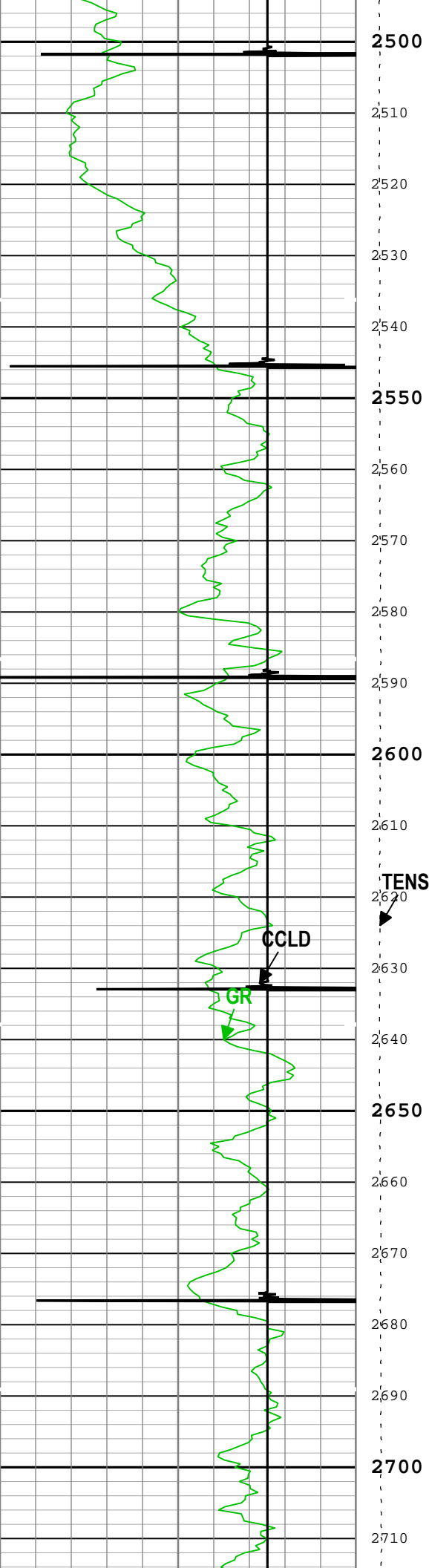
TIME 1900 - Time Marked every 60.00 (s)

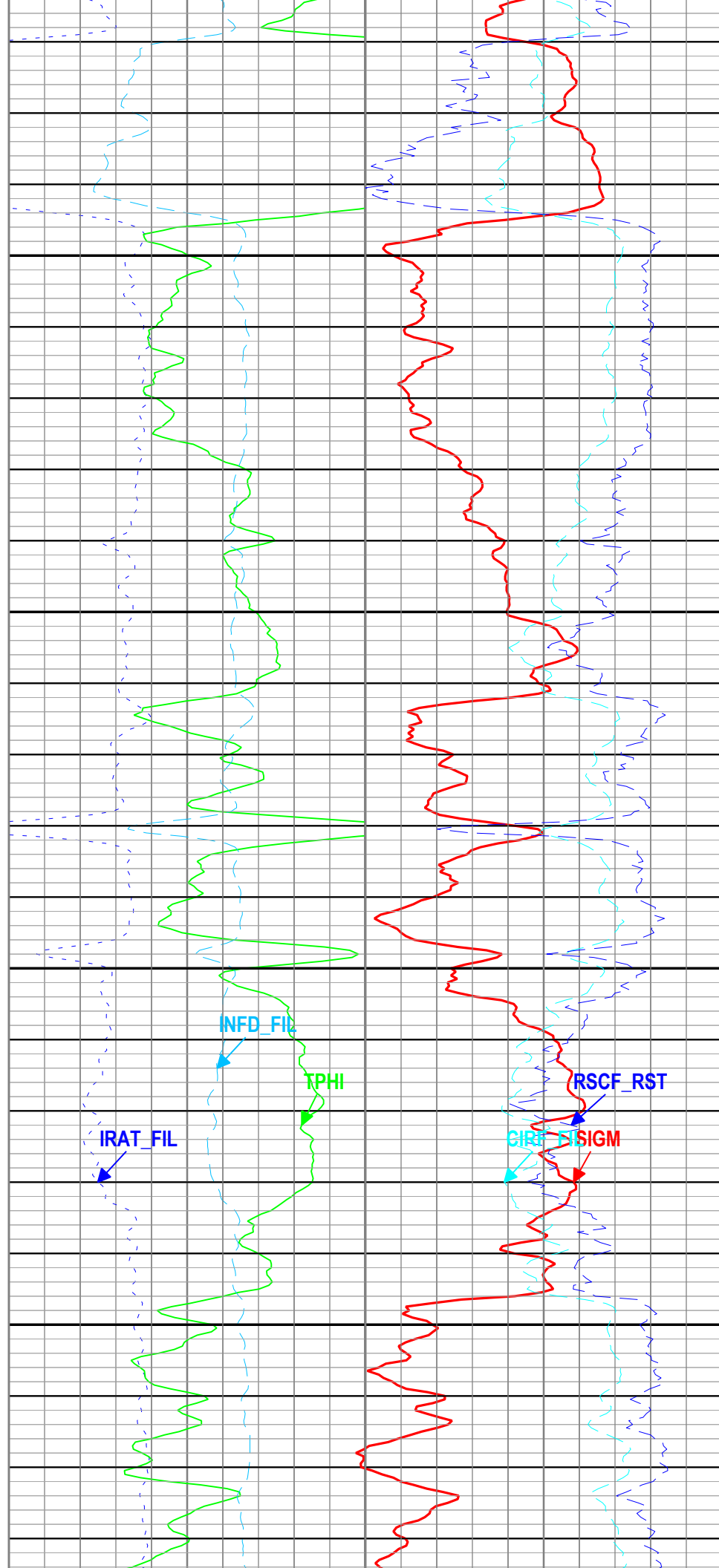
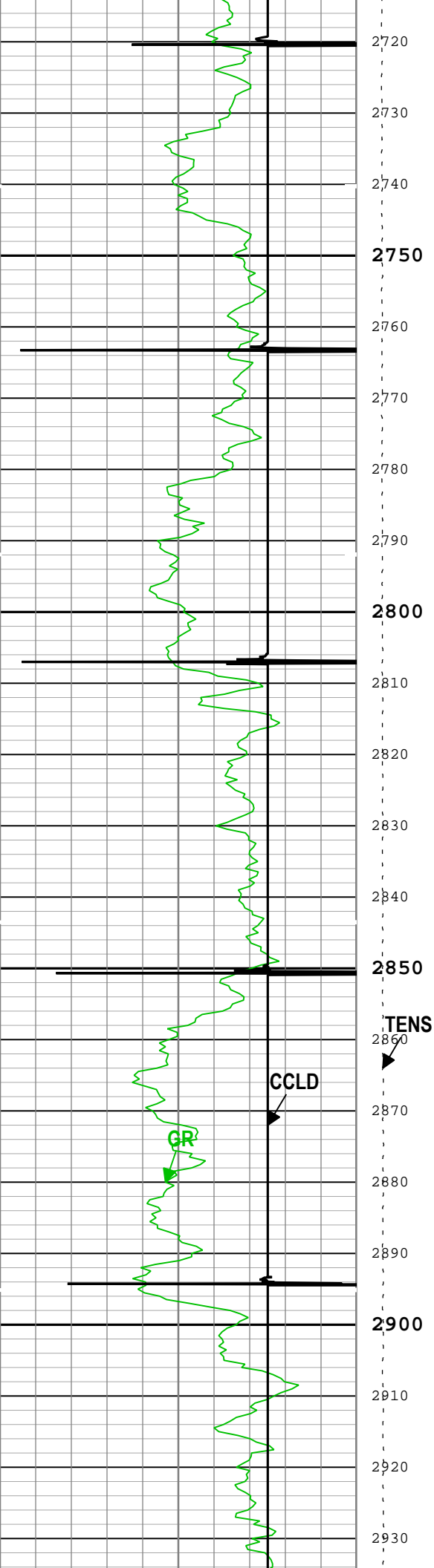
— ICV - Integrated Cement Volume every 10.00 (ft3)

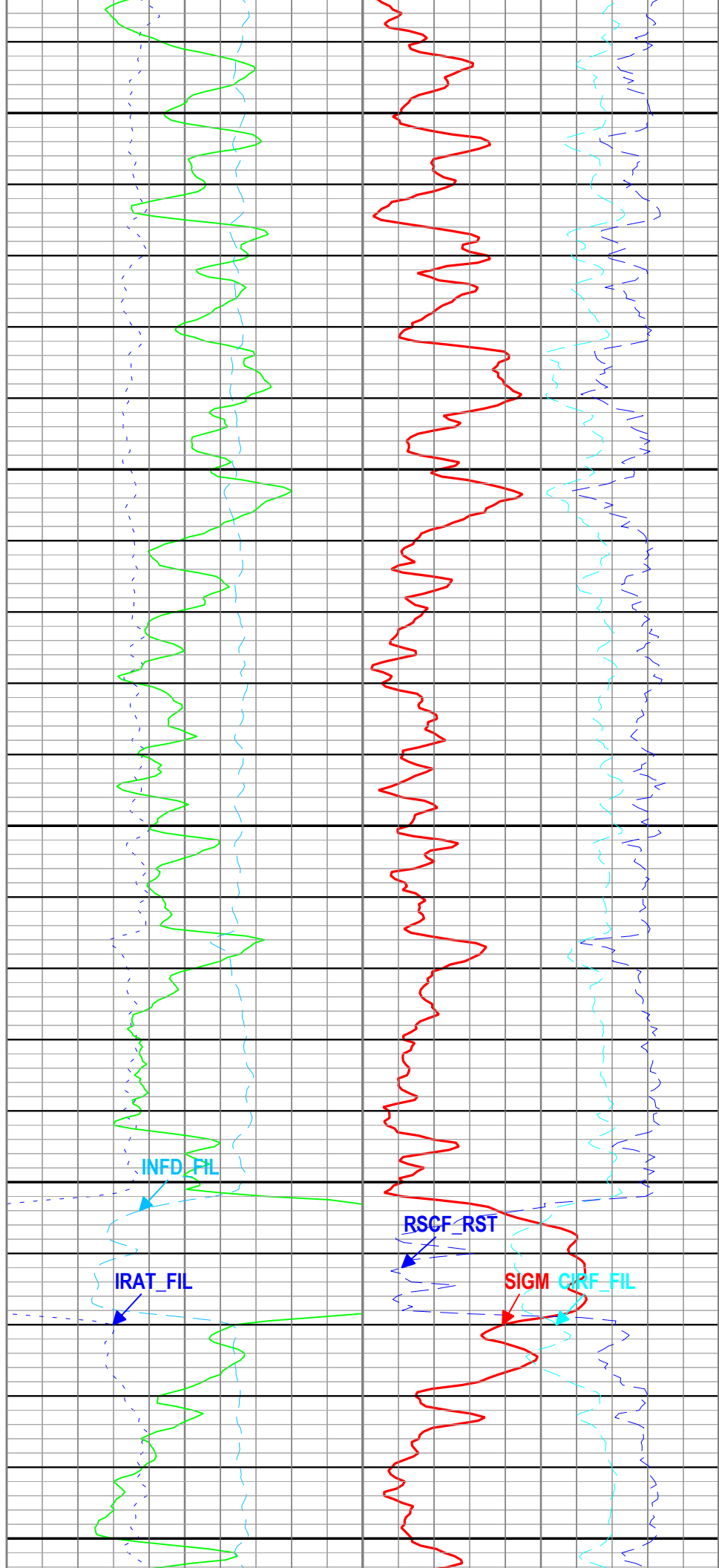
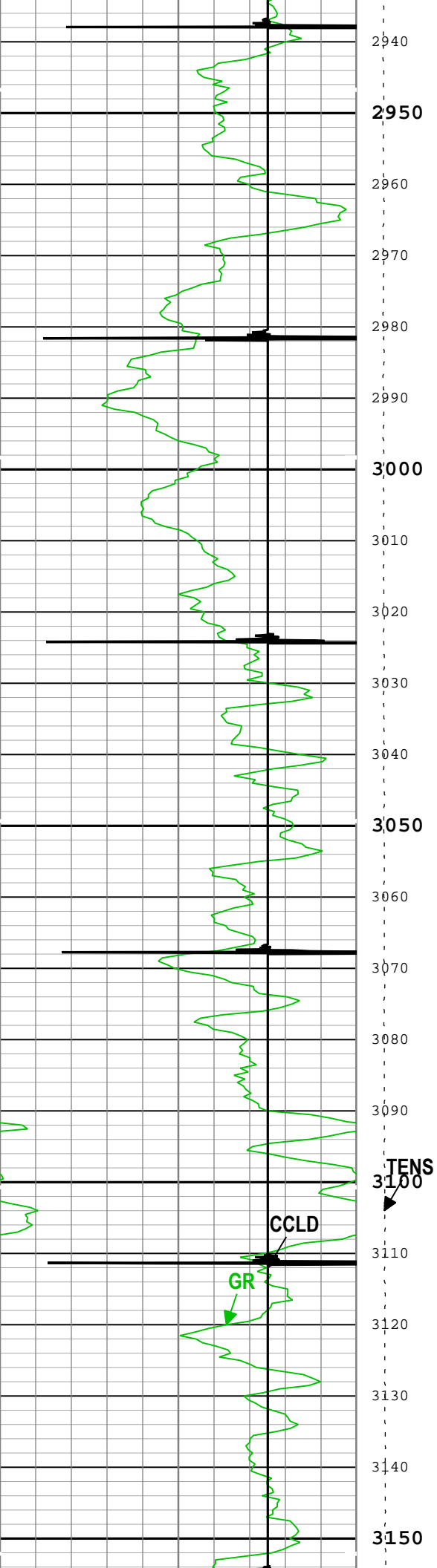
TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)

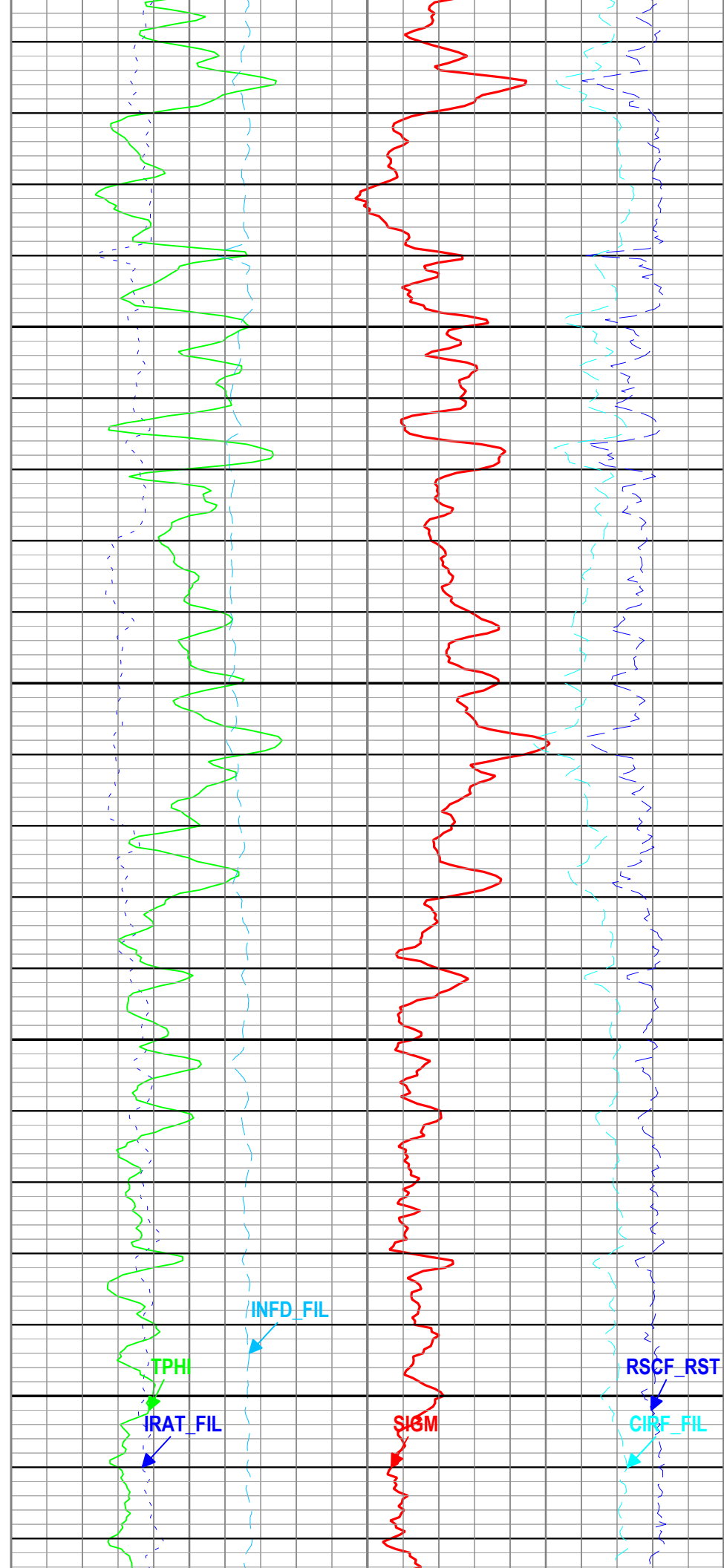
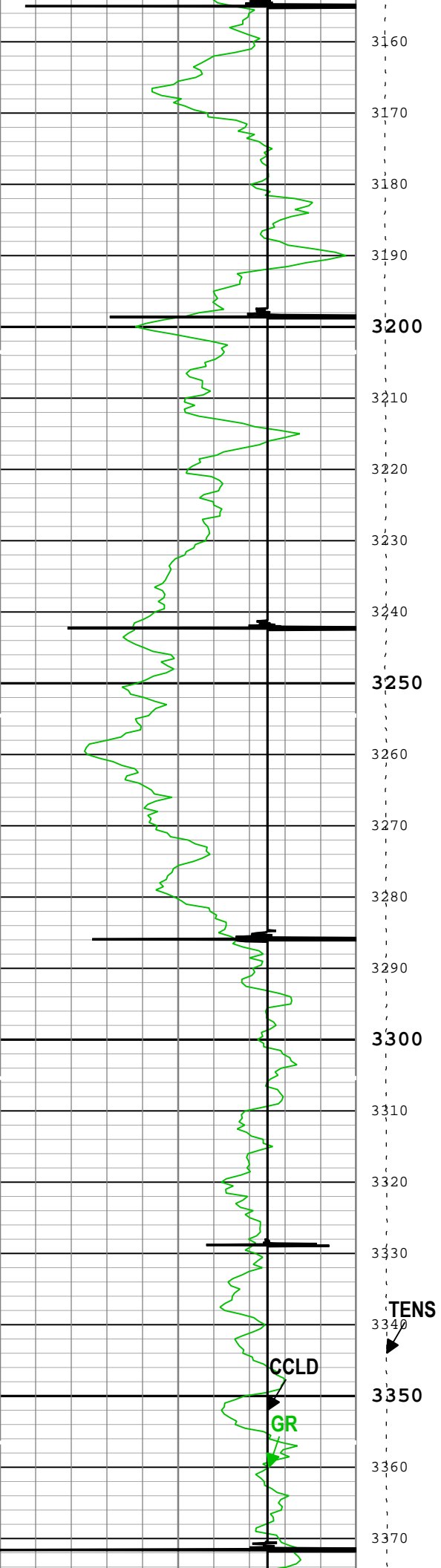
— ICV - Integrated Cement Volume every 100.00 (ft3)

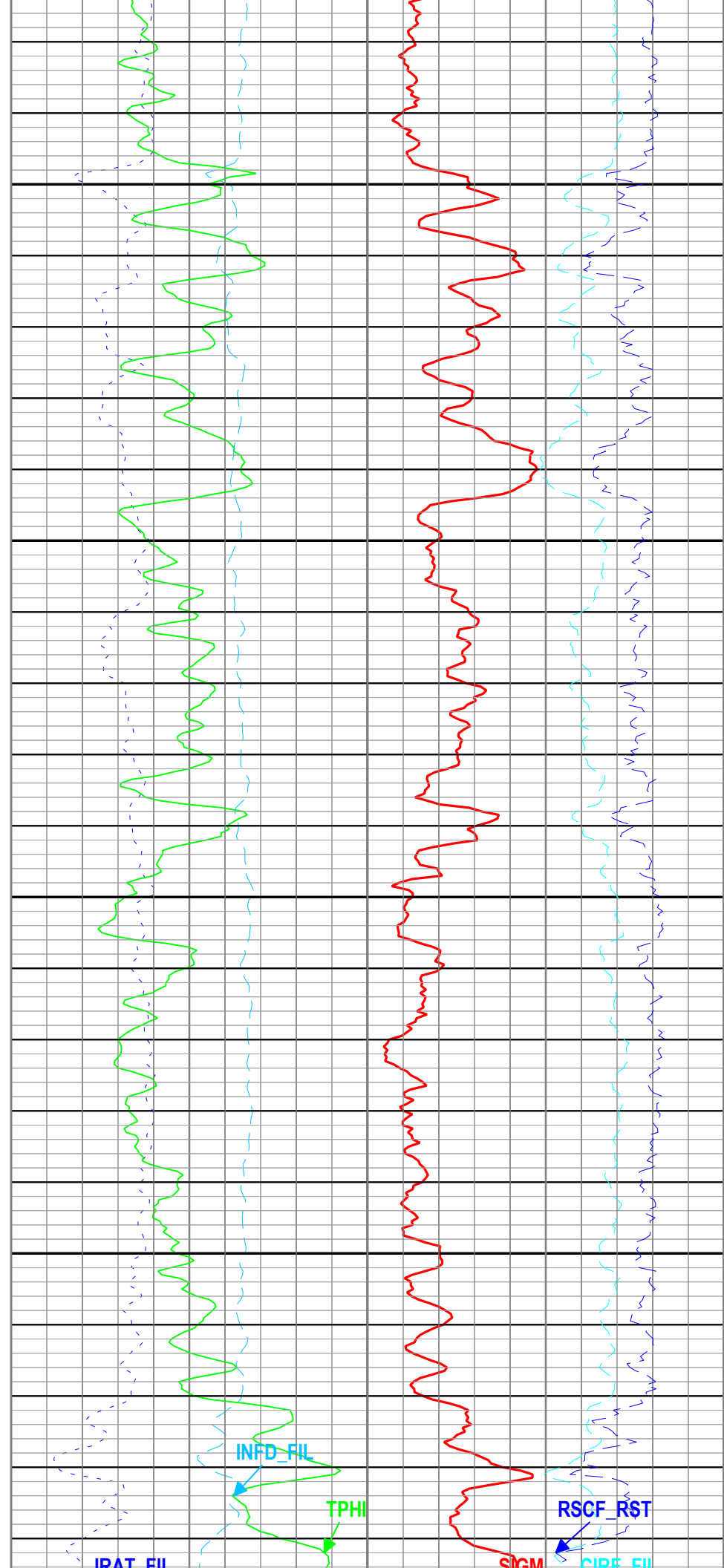
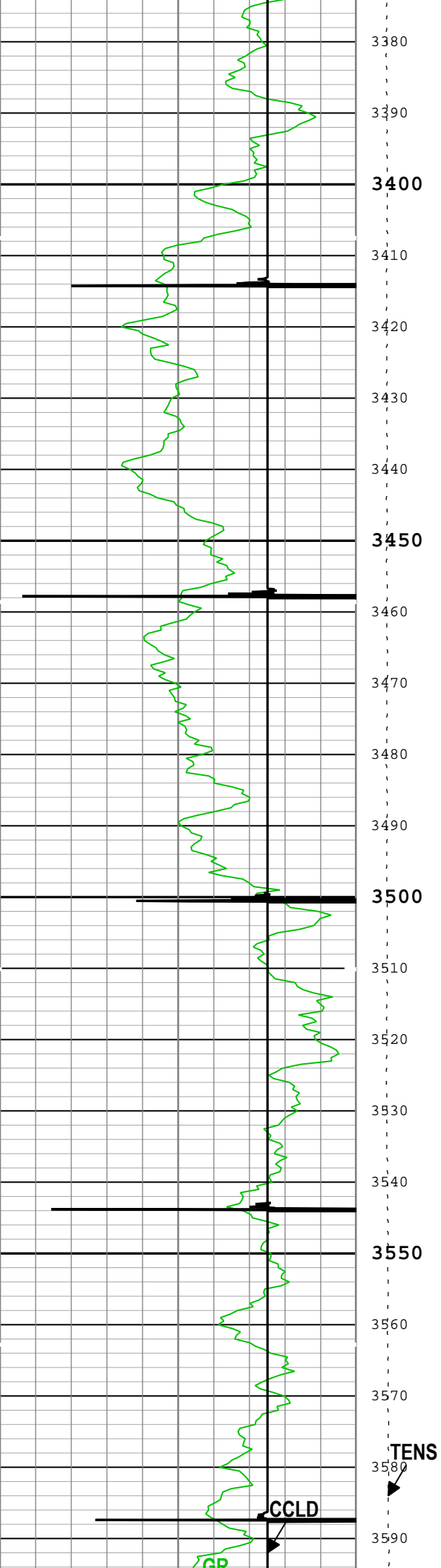
<p>Gamma Ray (GR) PSTP-A</p> <p>0 gAPI 150</p>		<p>Cable Tension (TENS)</p> <p>0 lbf 3000</p>	<p>Inelastic Ratio Filtered (IRAT_FIL) RST-C</p> <p>0.75 0</p>		<p>Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C</p> <p>5 0</p>
<p>CCL Discriminated Amplitude (CCLD) PSTP-A</p> <p>-3 V 1</p>			<p>Thermal Decay Porosity (TPHI) RST-C</p> <p>0.6 ft3/ft3 0</p>		
			<p>Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C</p> <p>10000 1/s 0 45</p>		<p>Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C</p> <p>0</p>
			<p>Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C</p> <p>60 cu 0</p>		

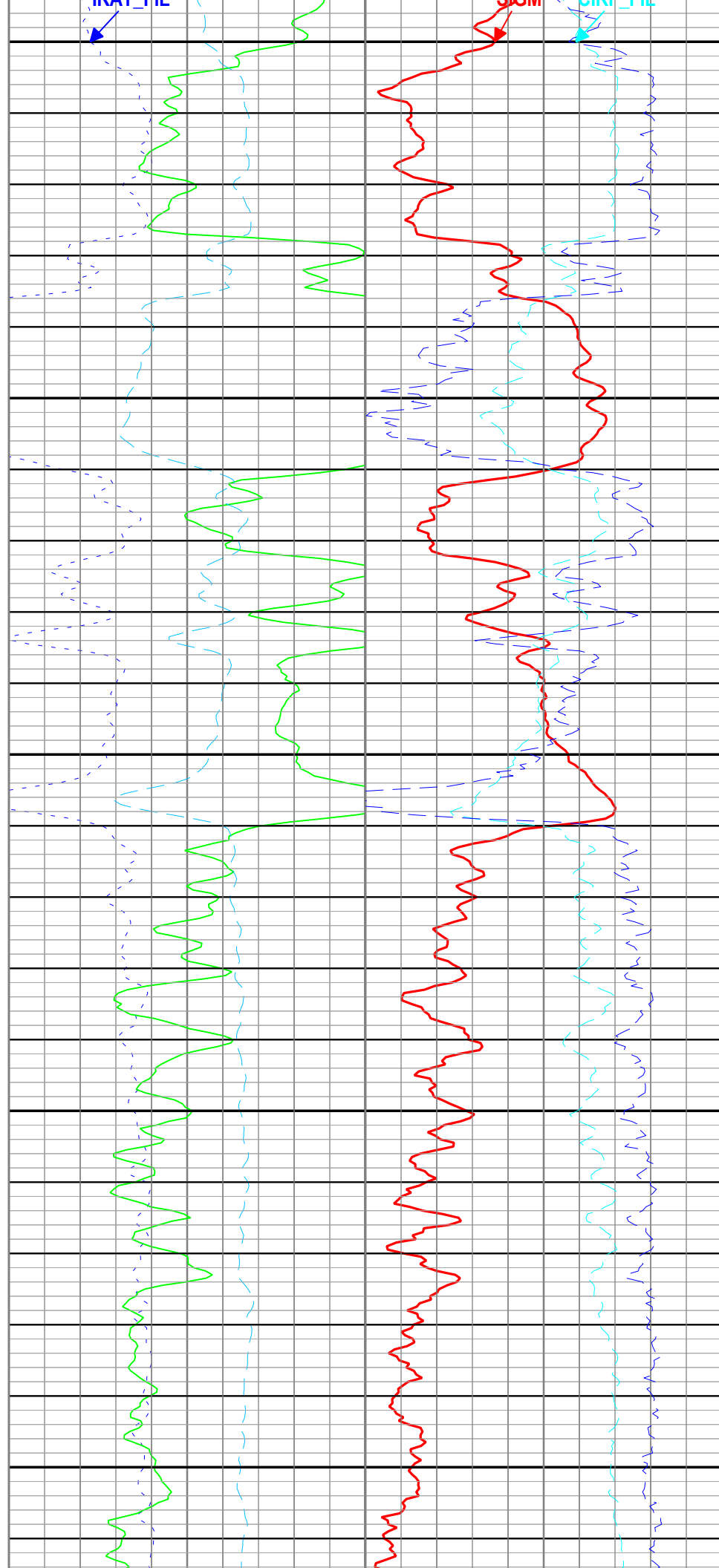
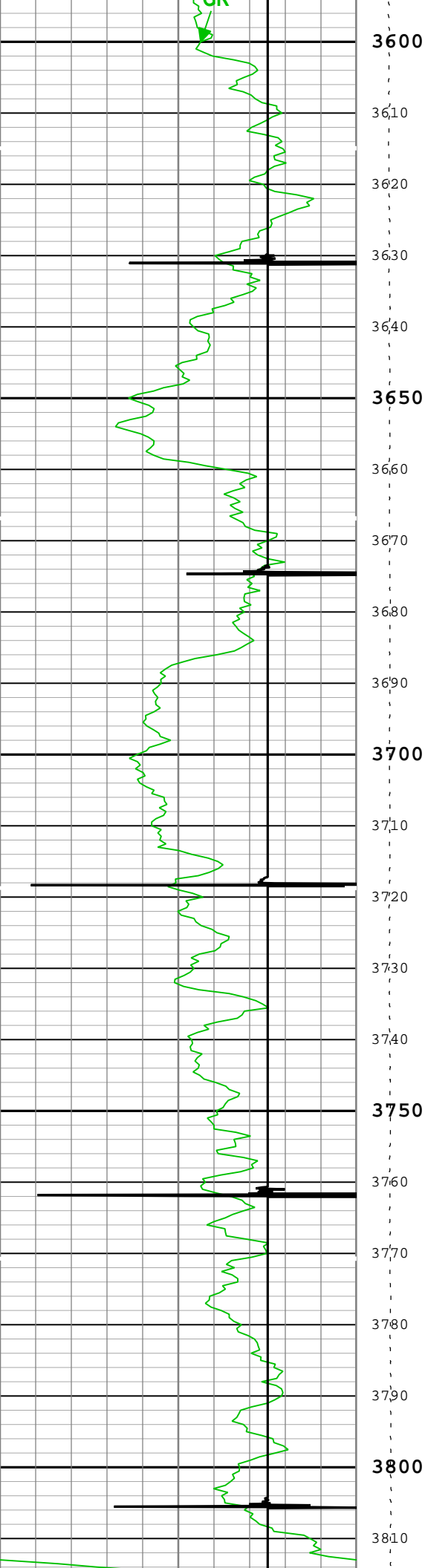


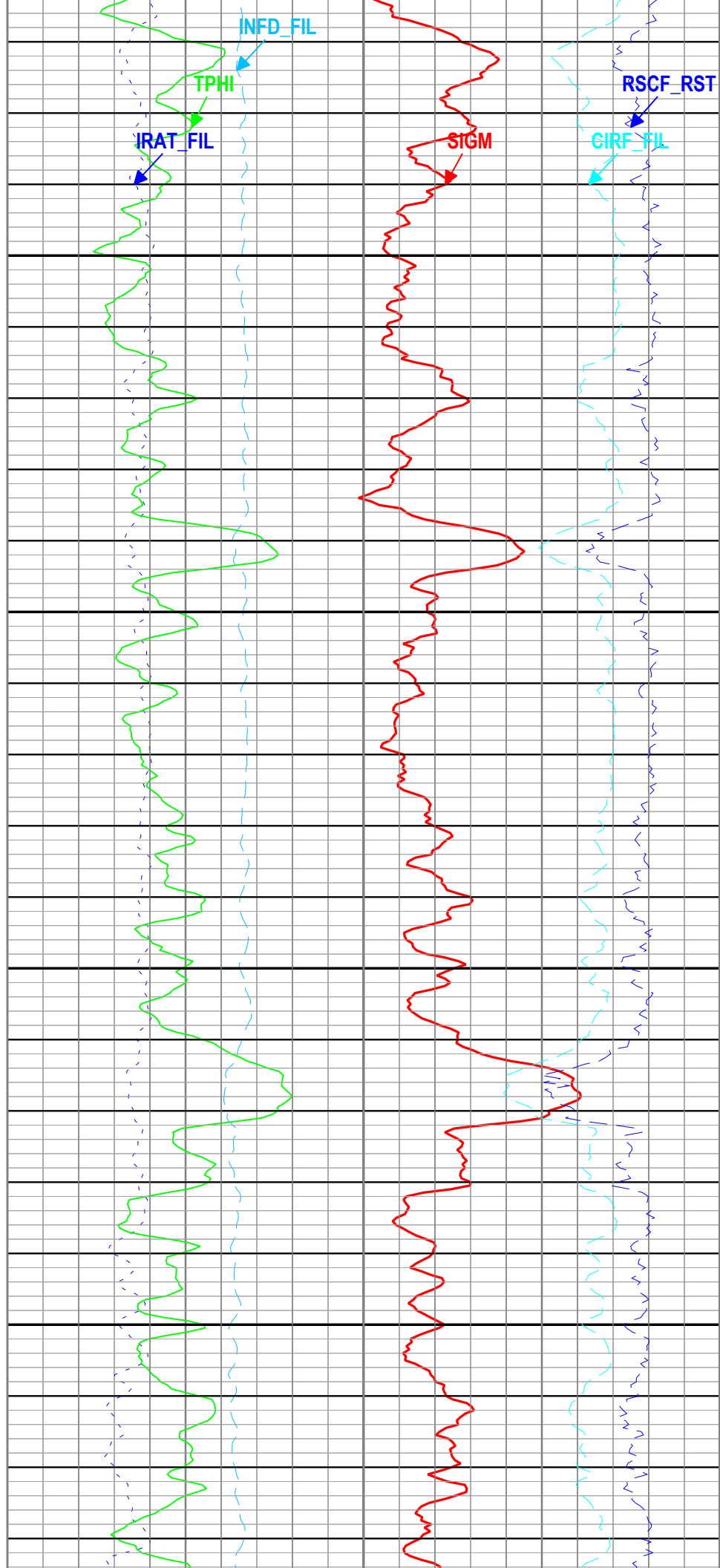
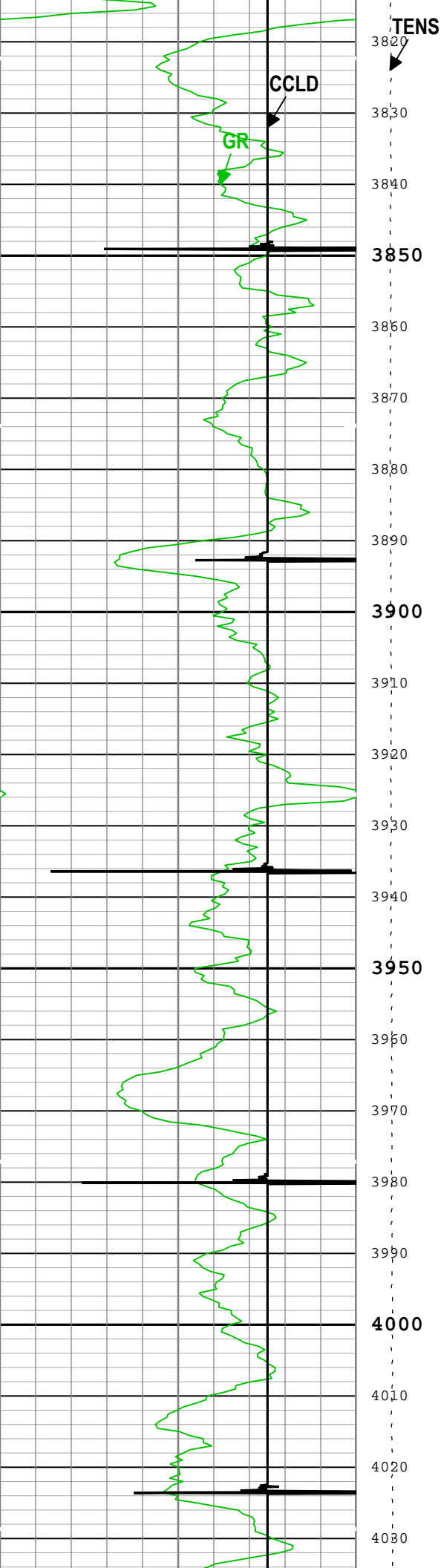


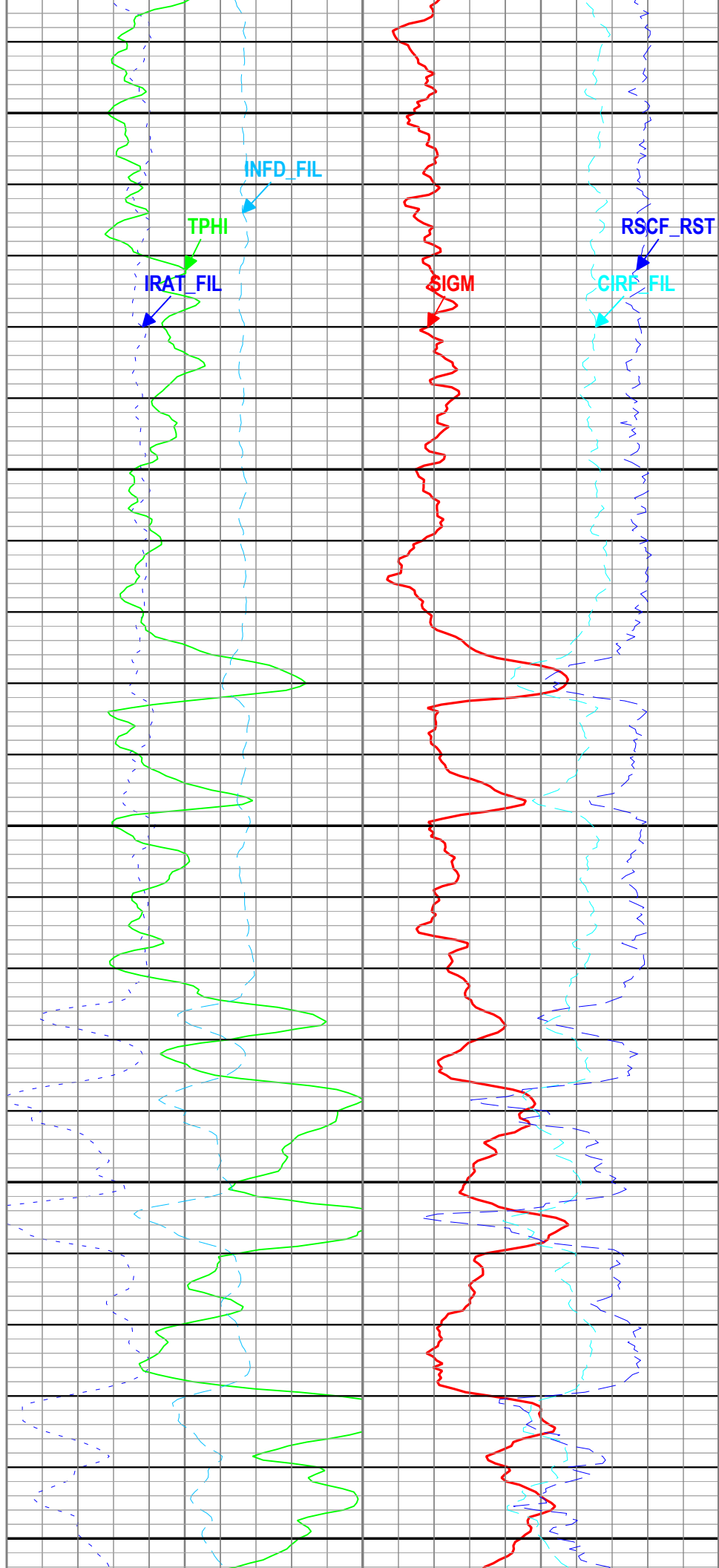
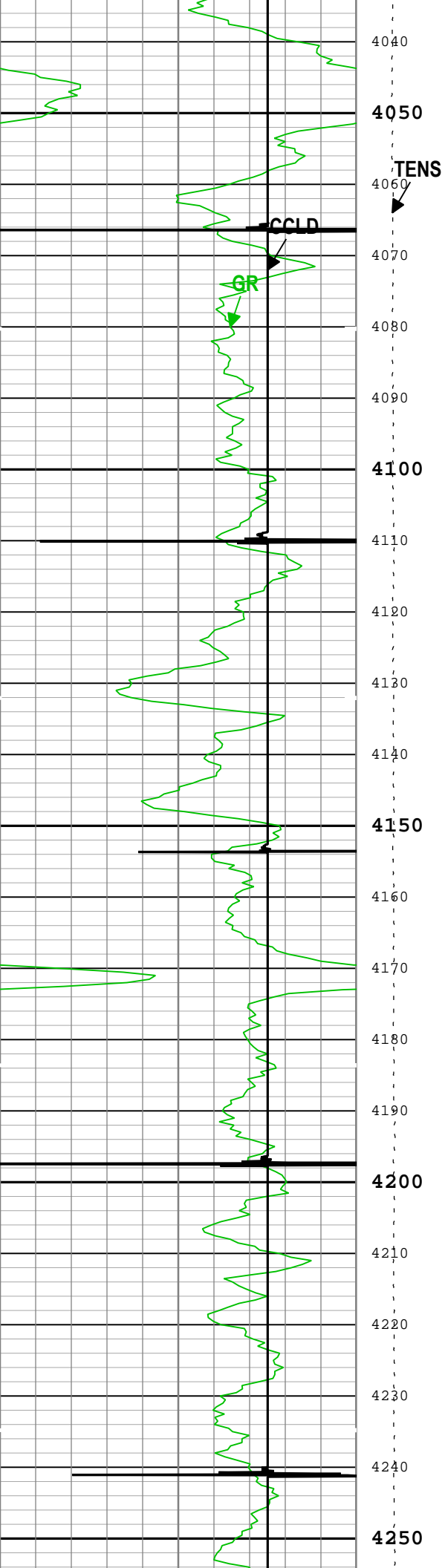


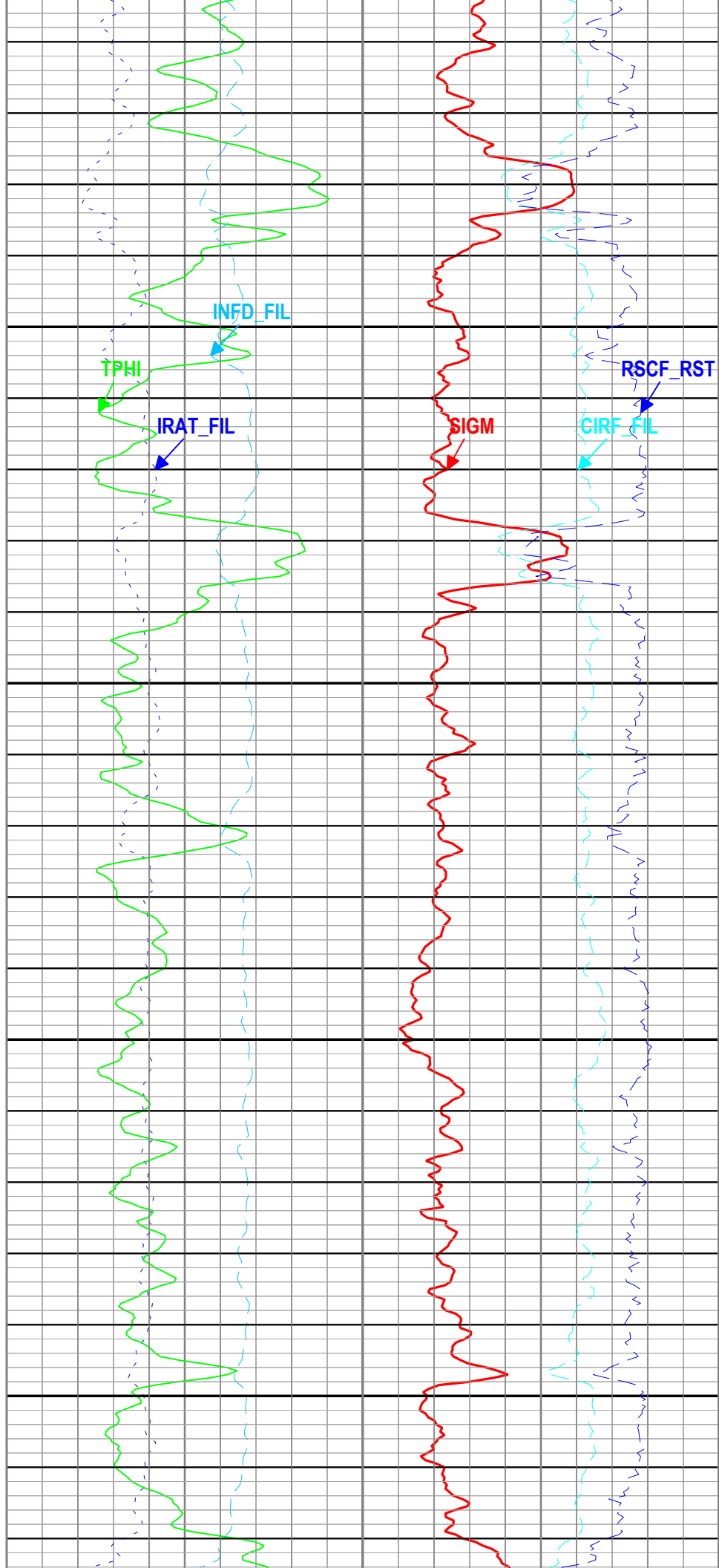
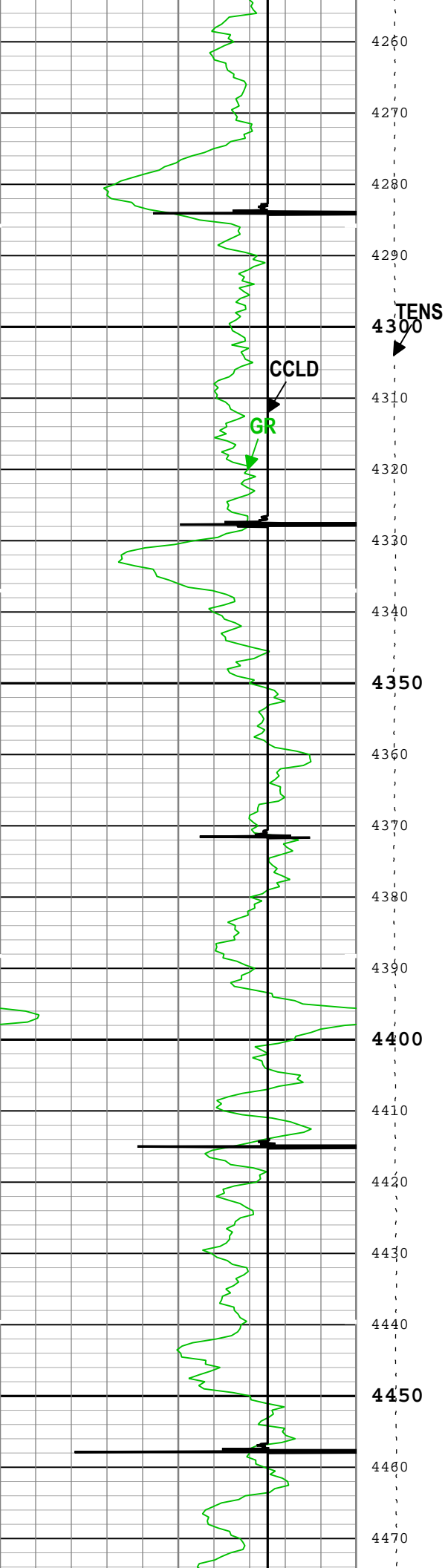


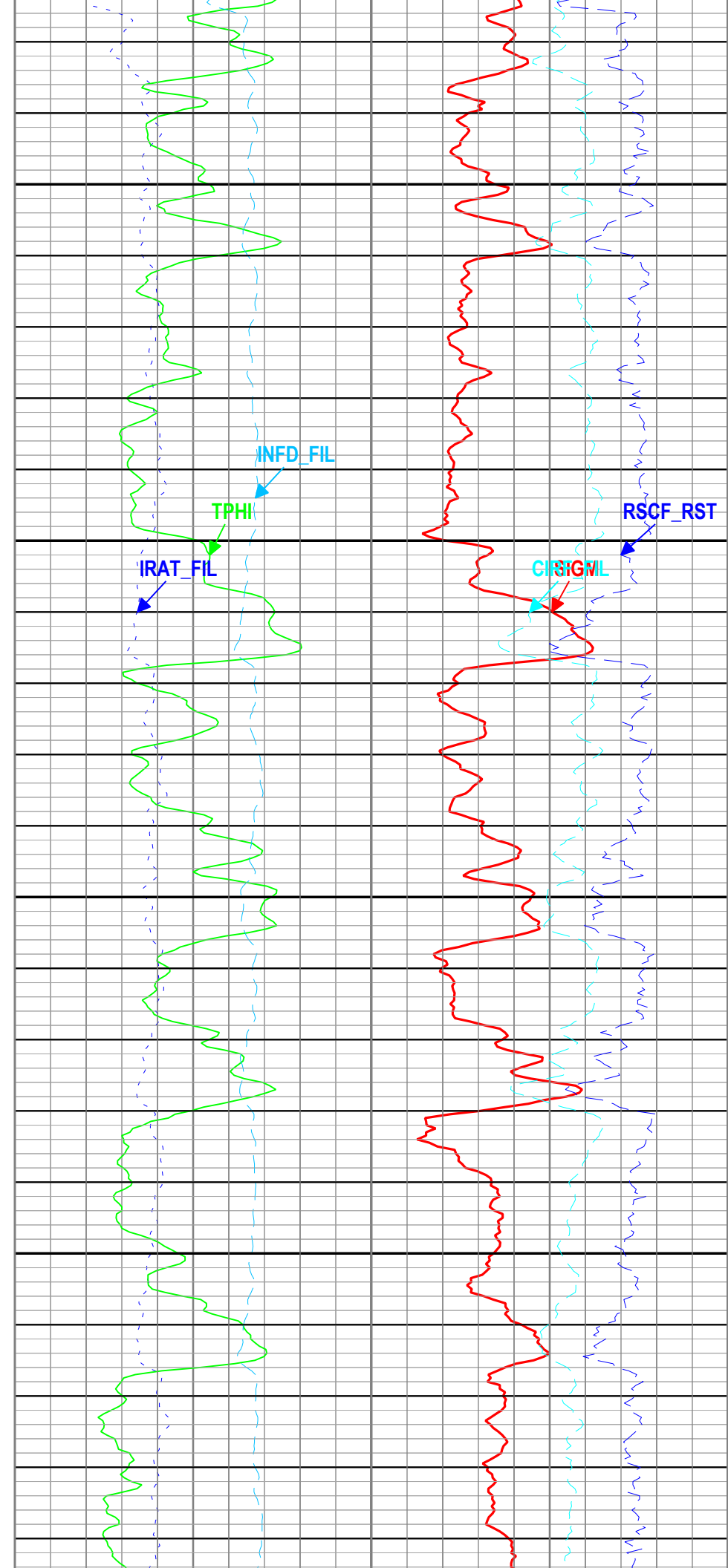
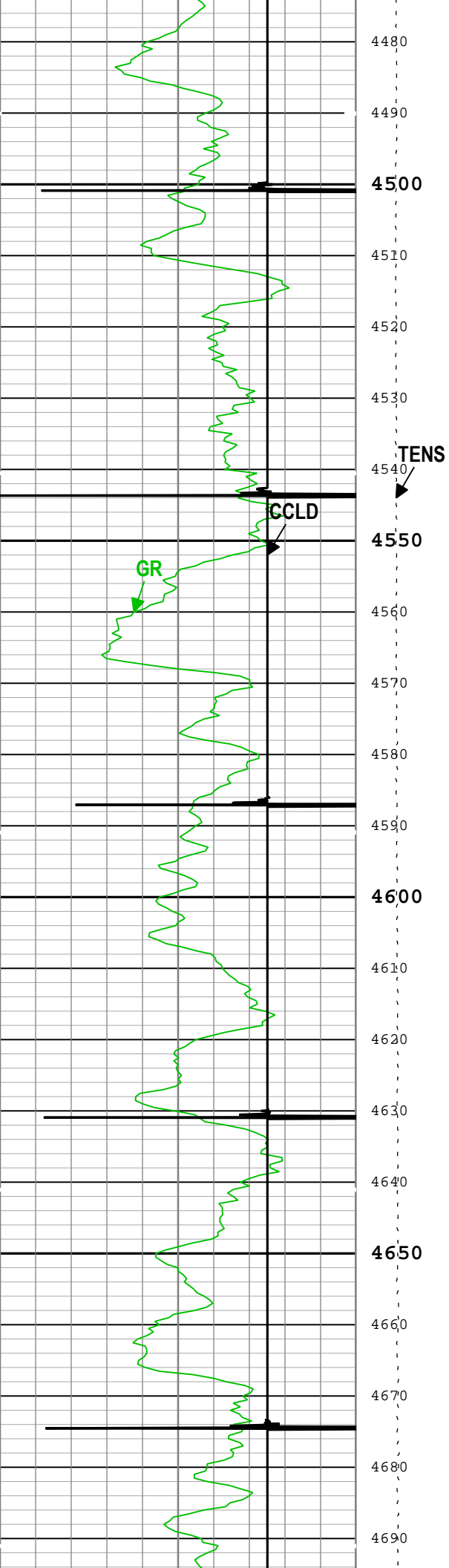


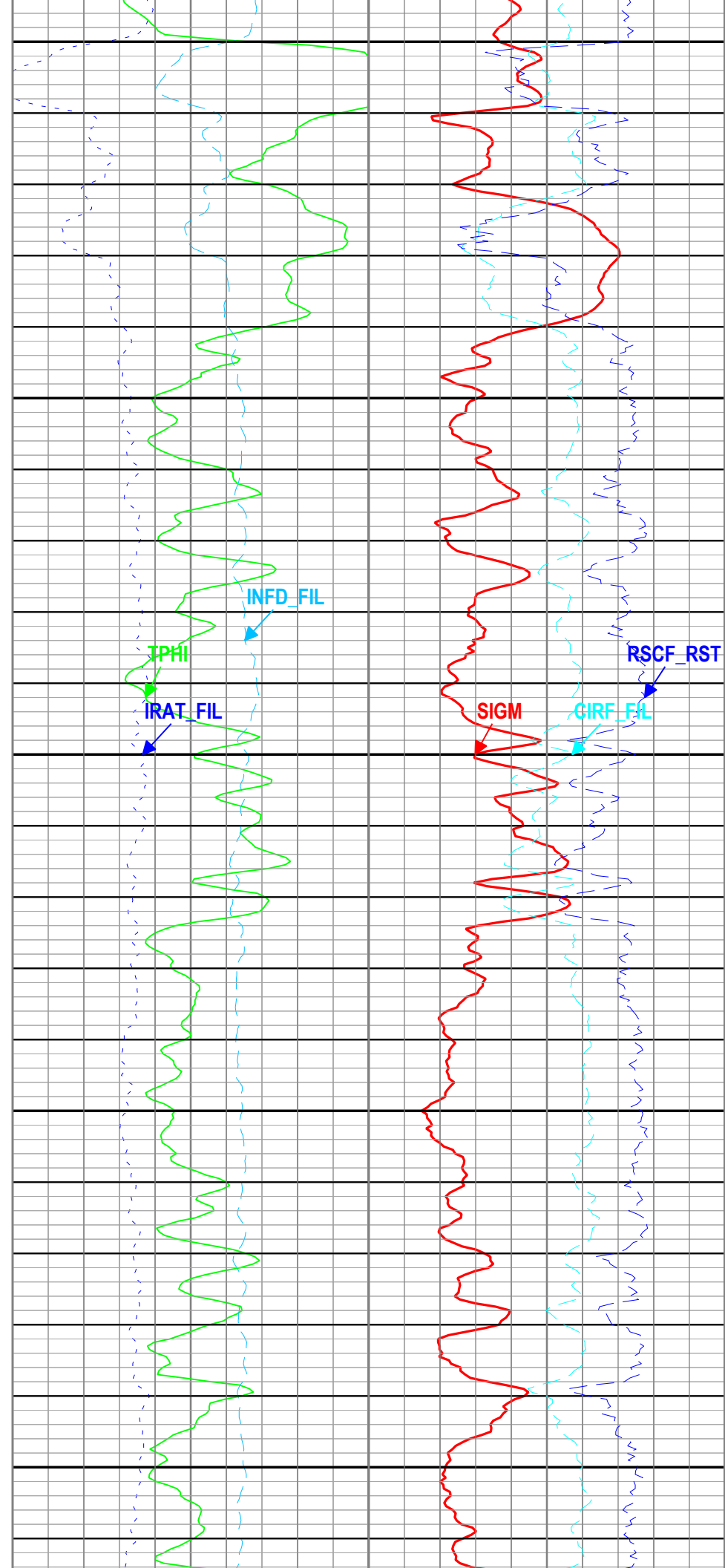
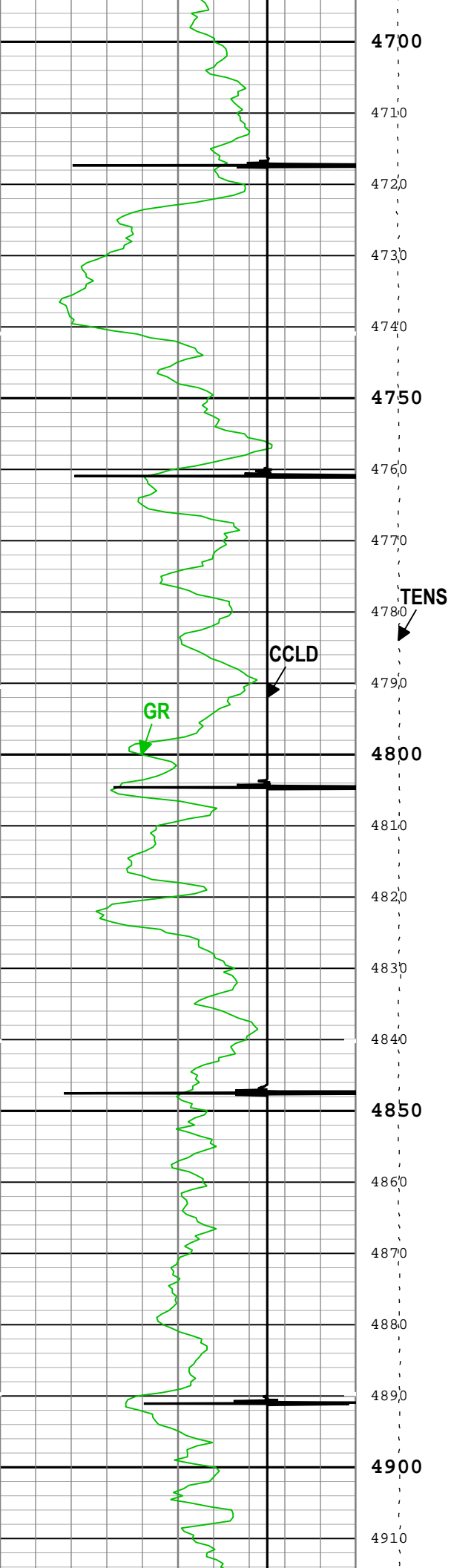


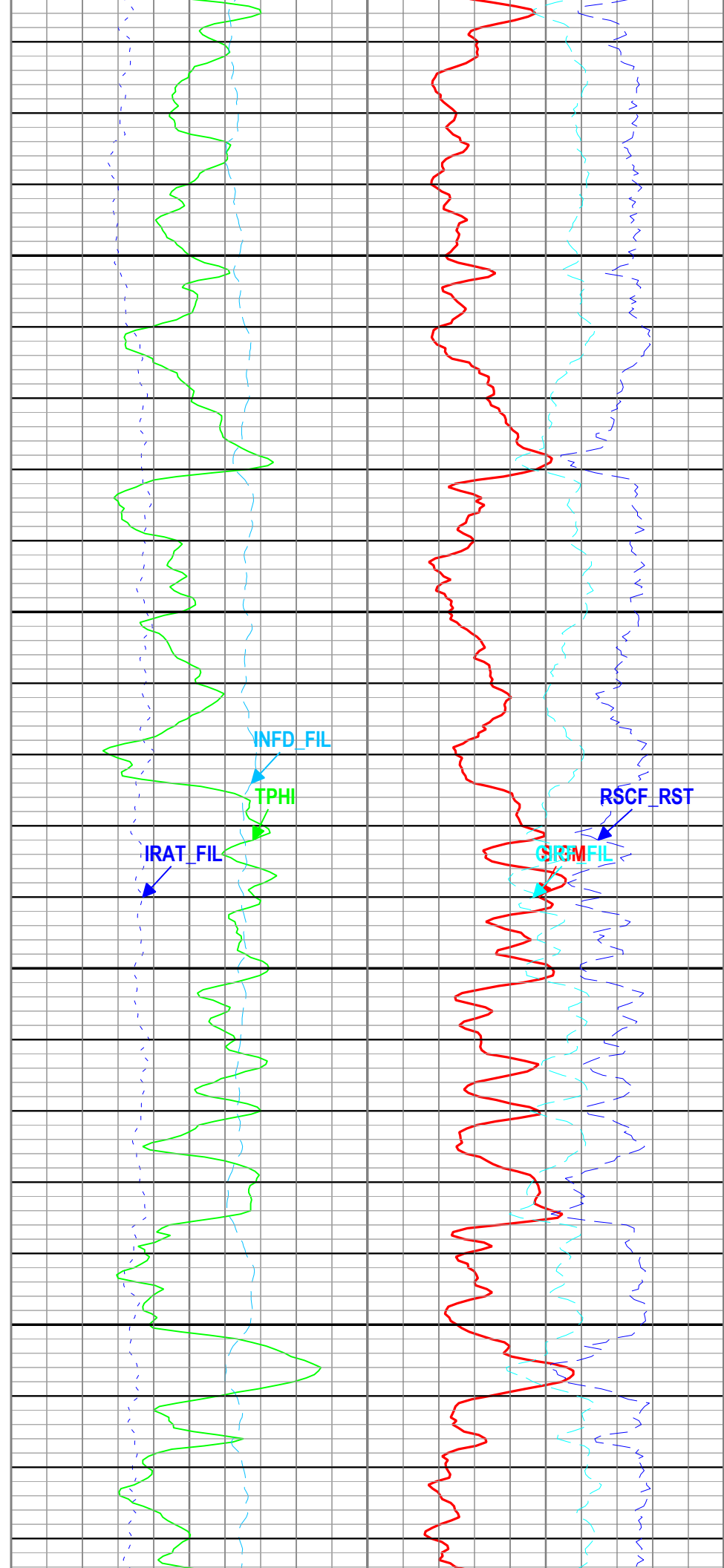
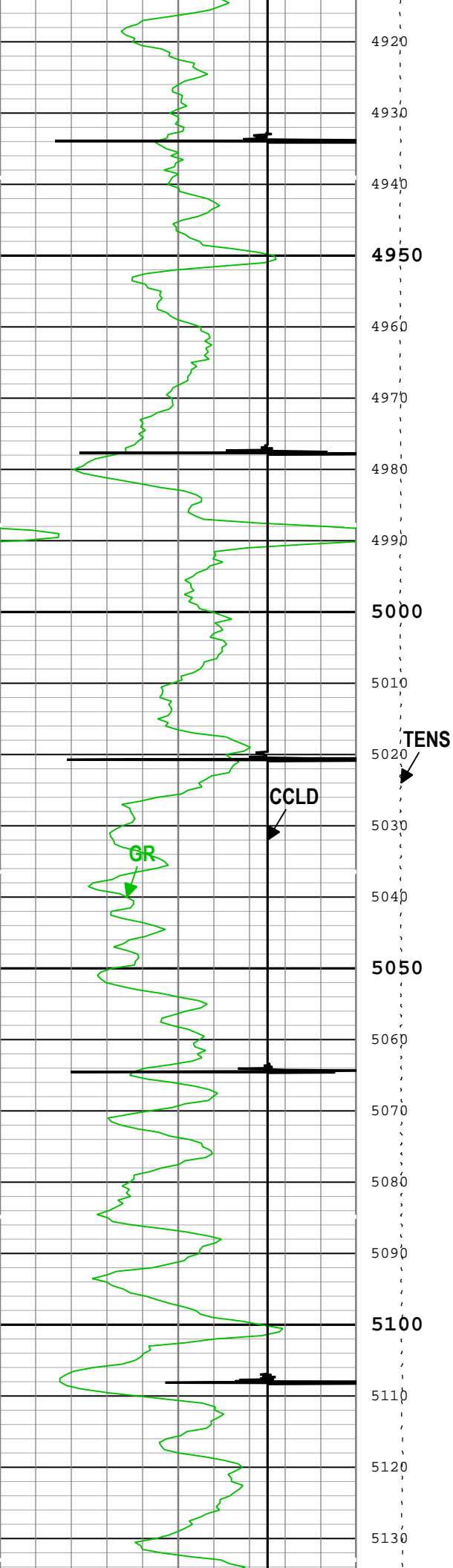


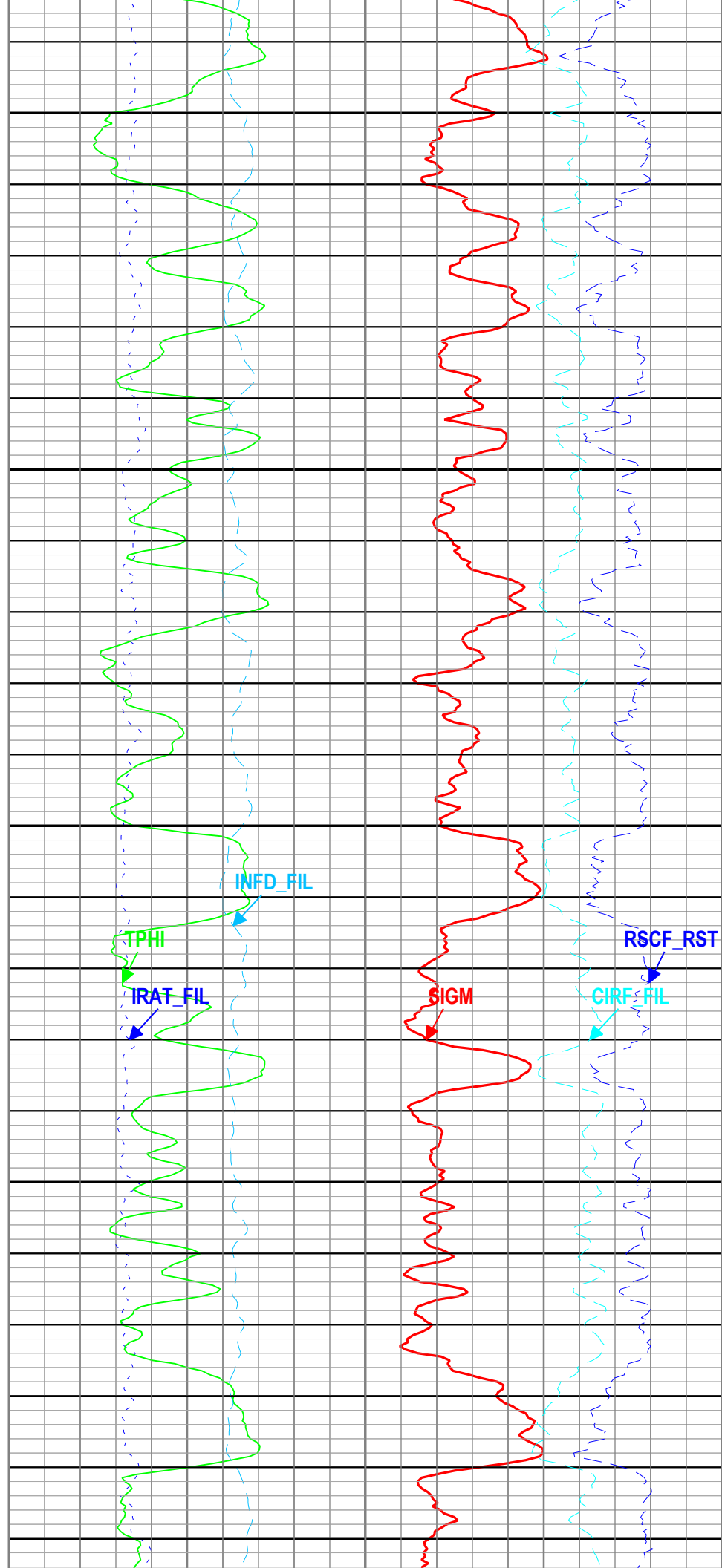
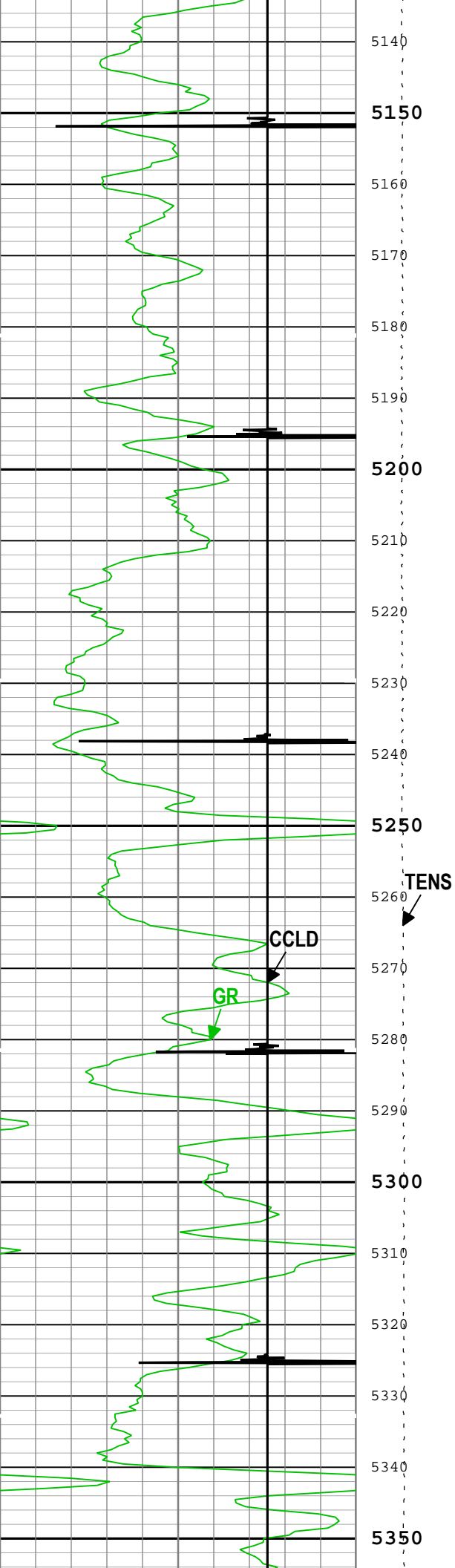


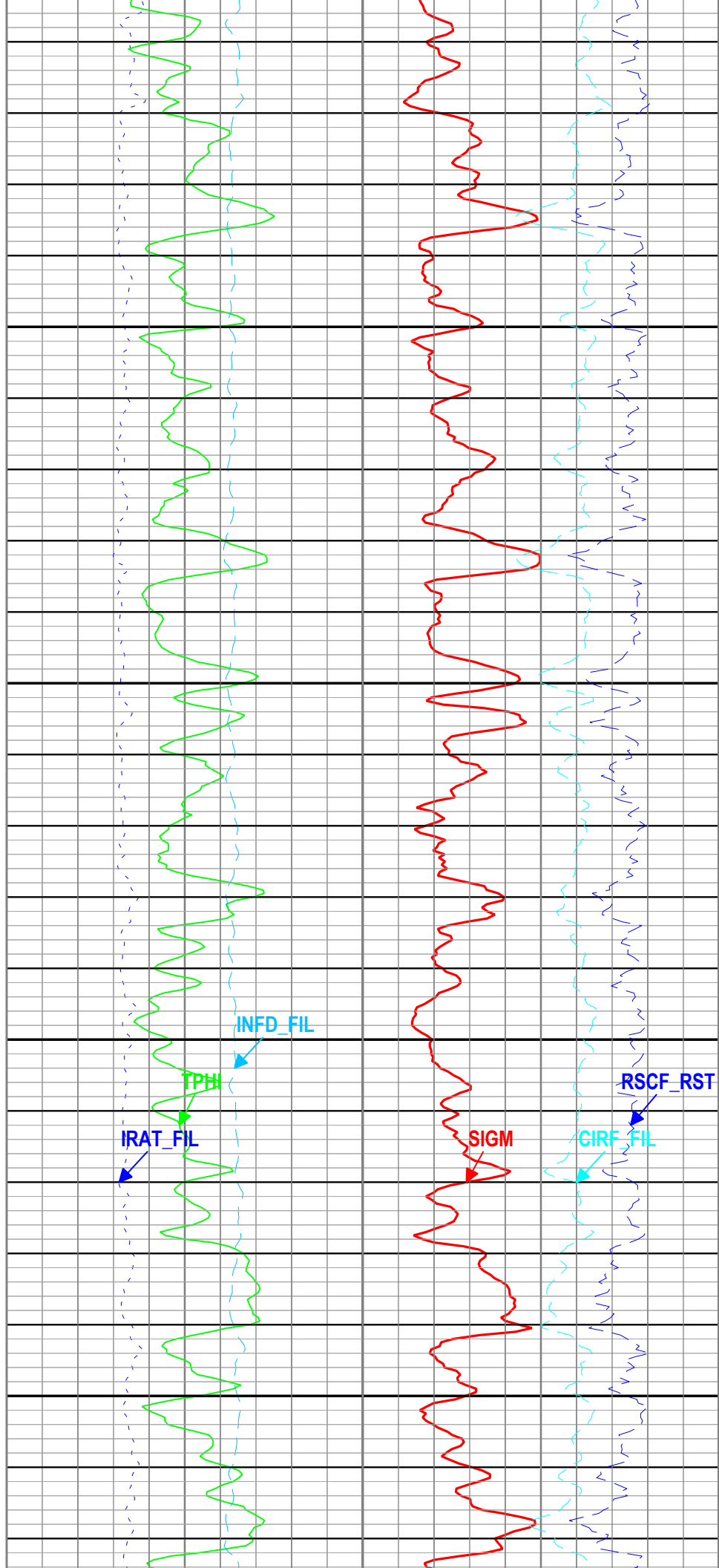
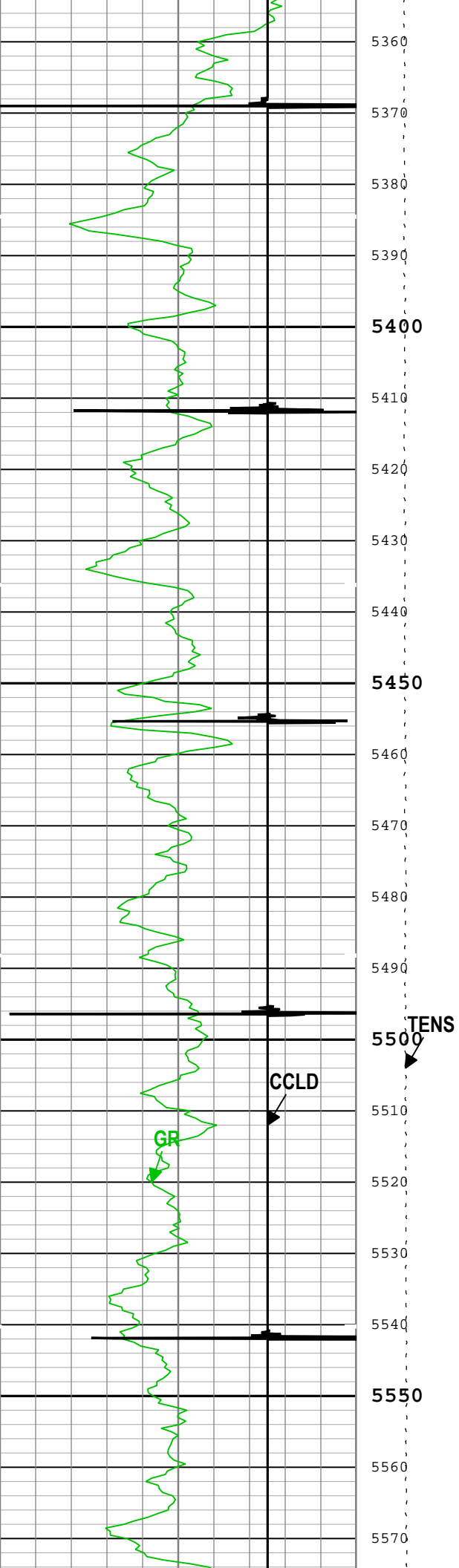


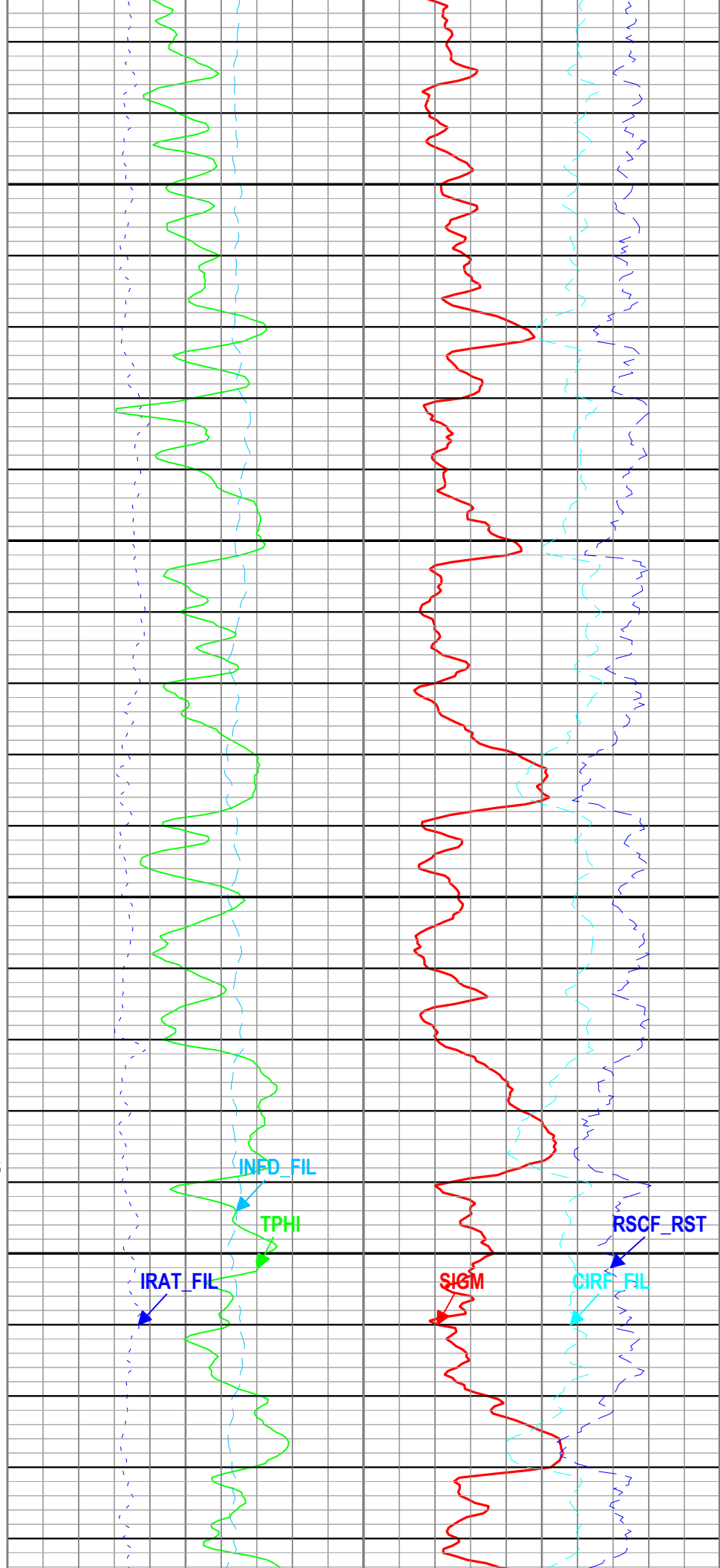
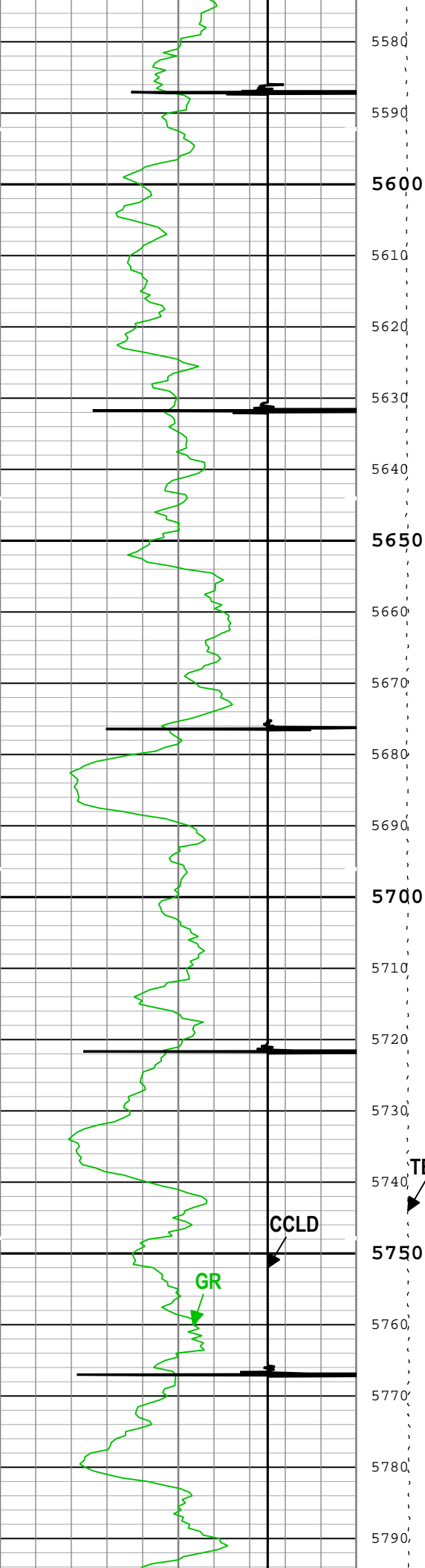


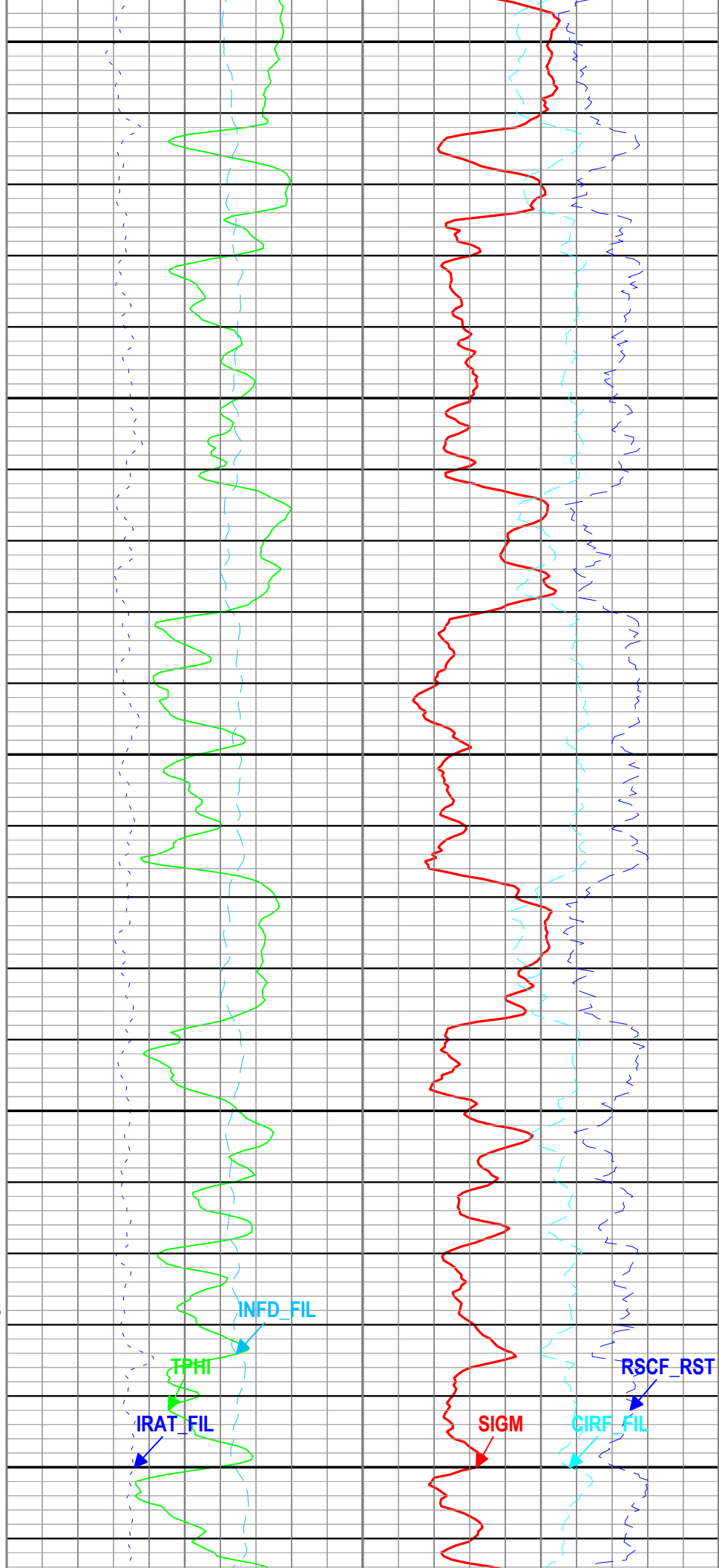
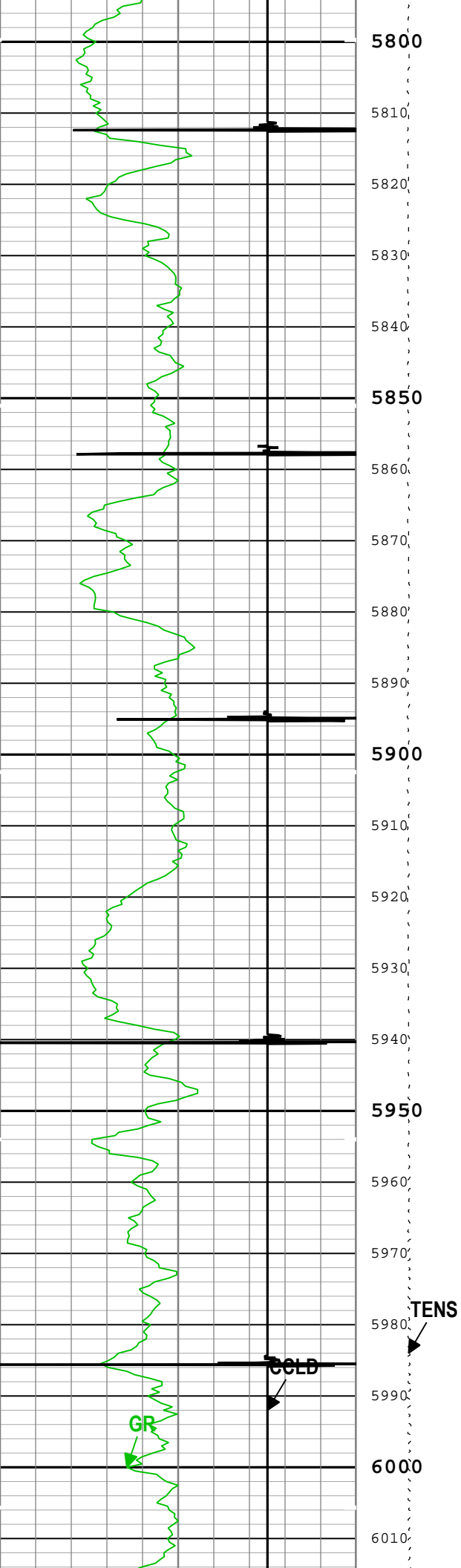


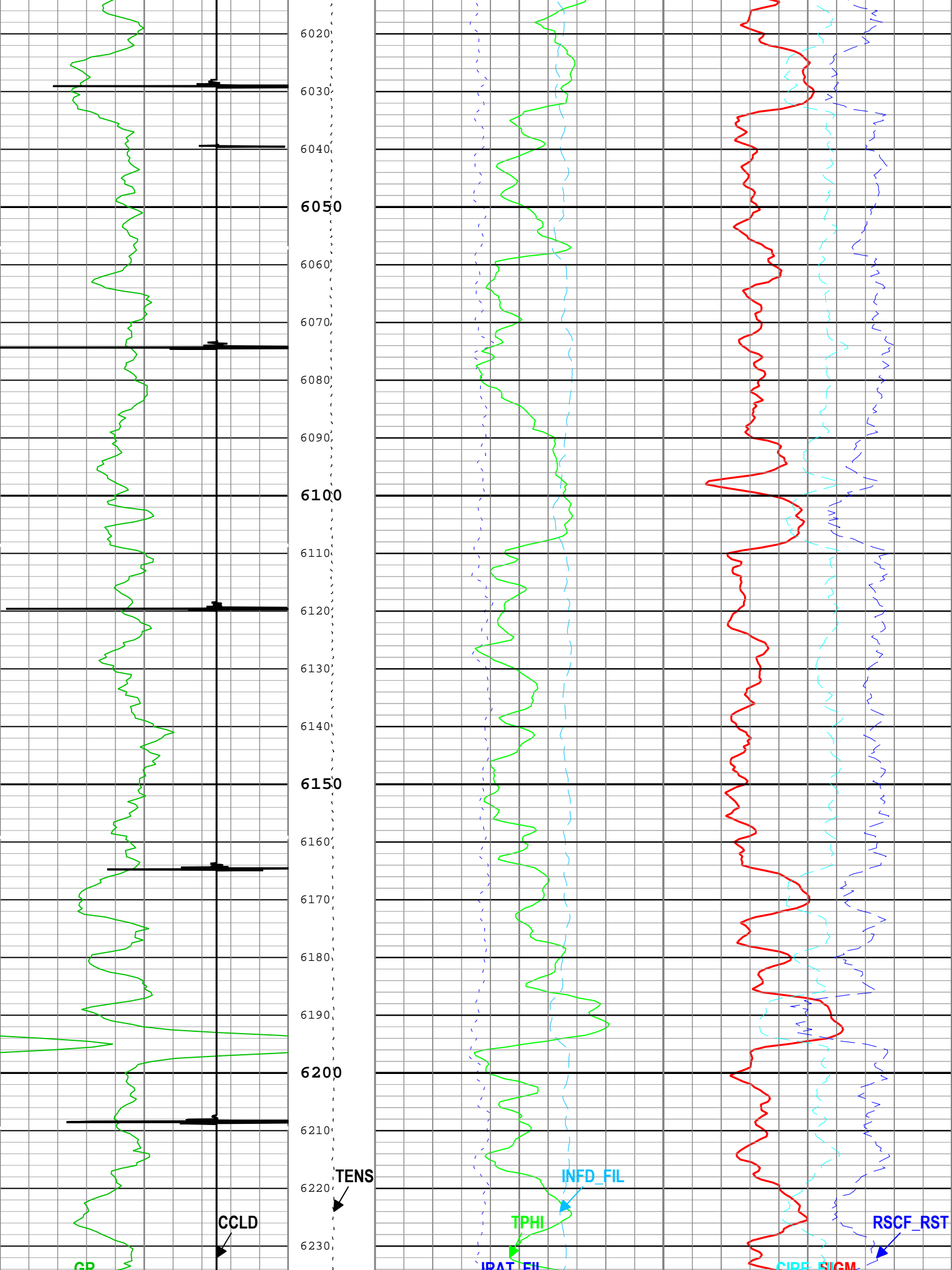


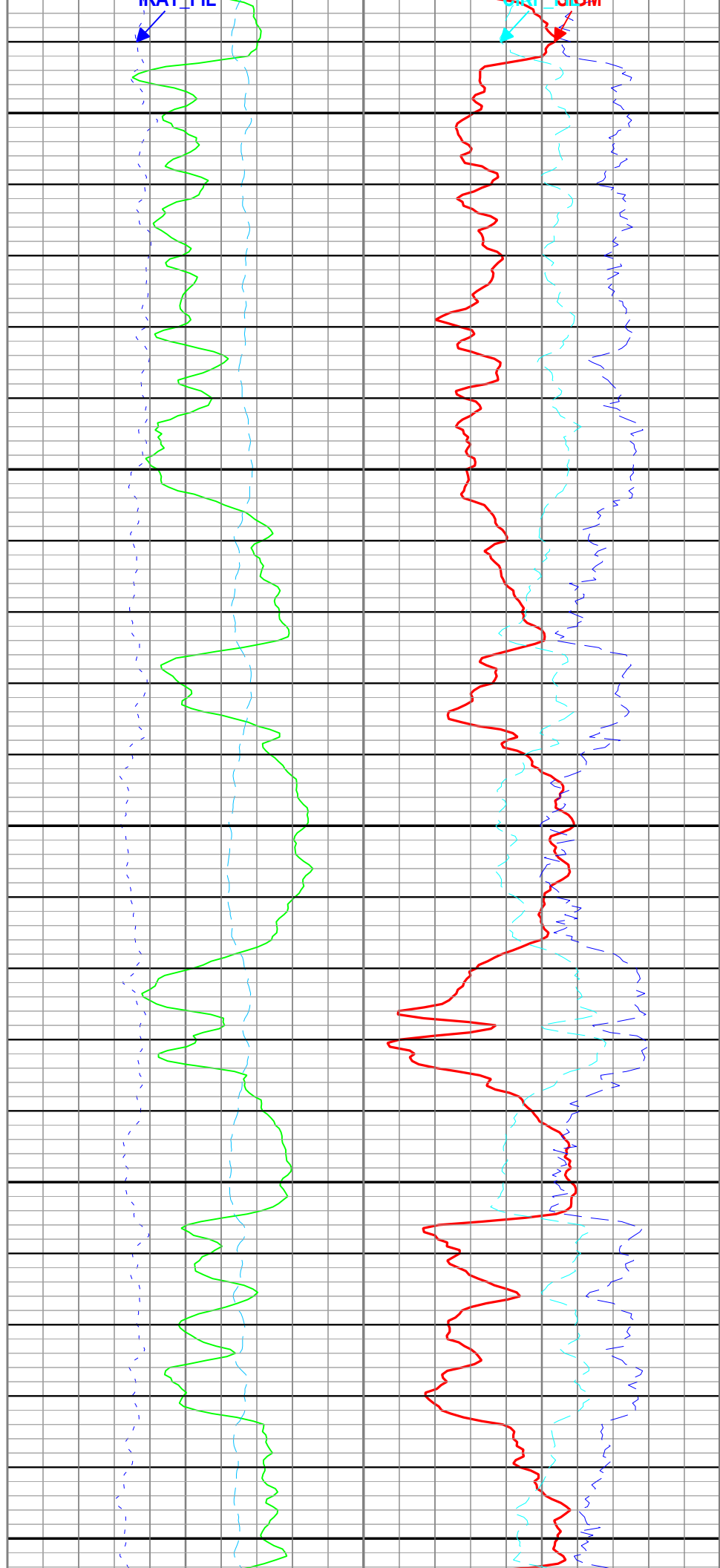
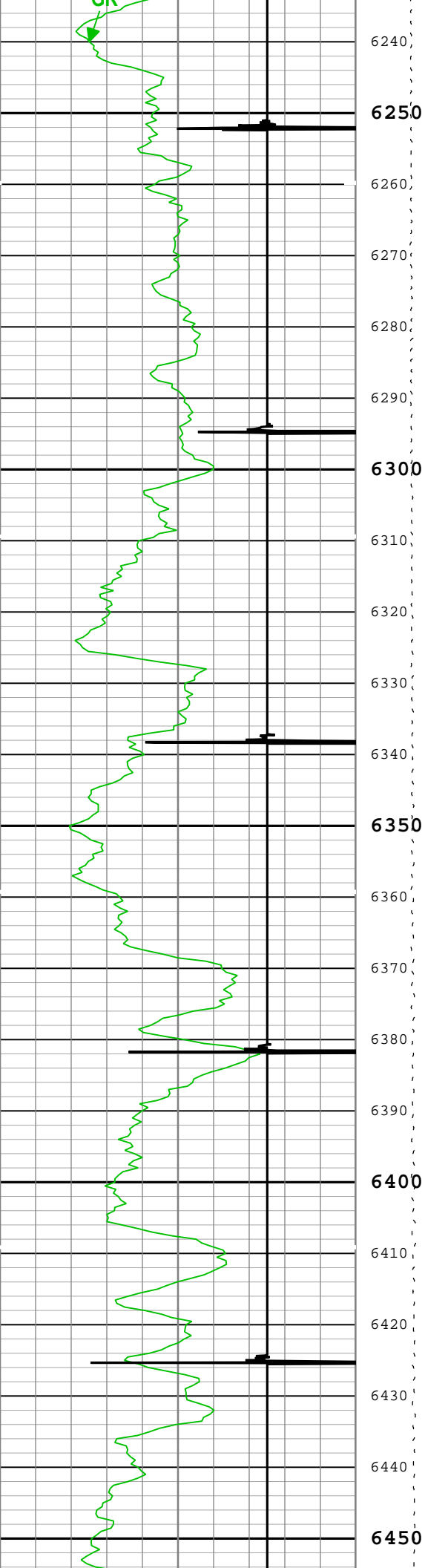


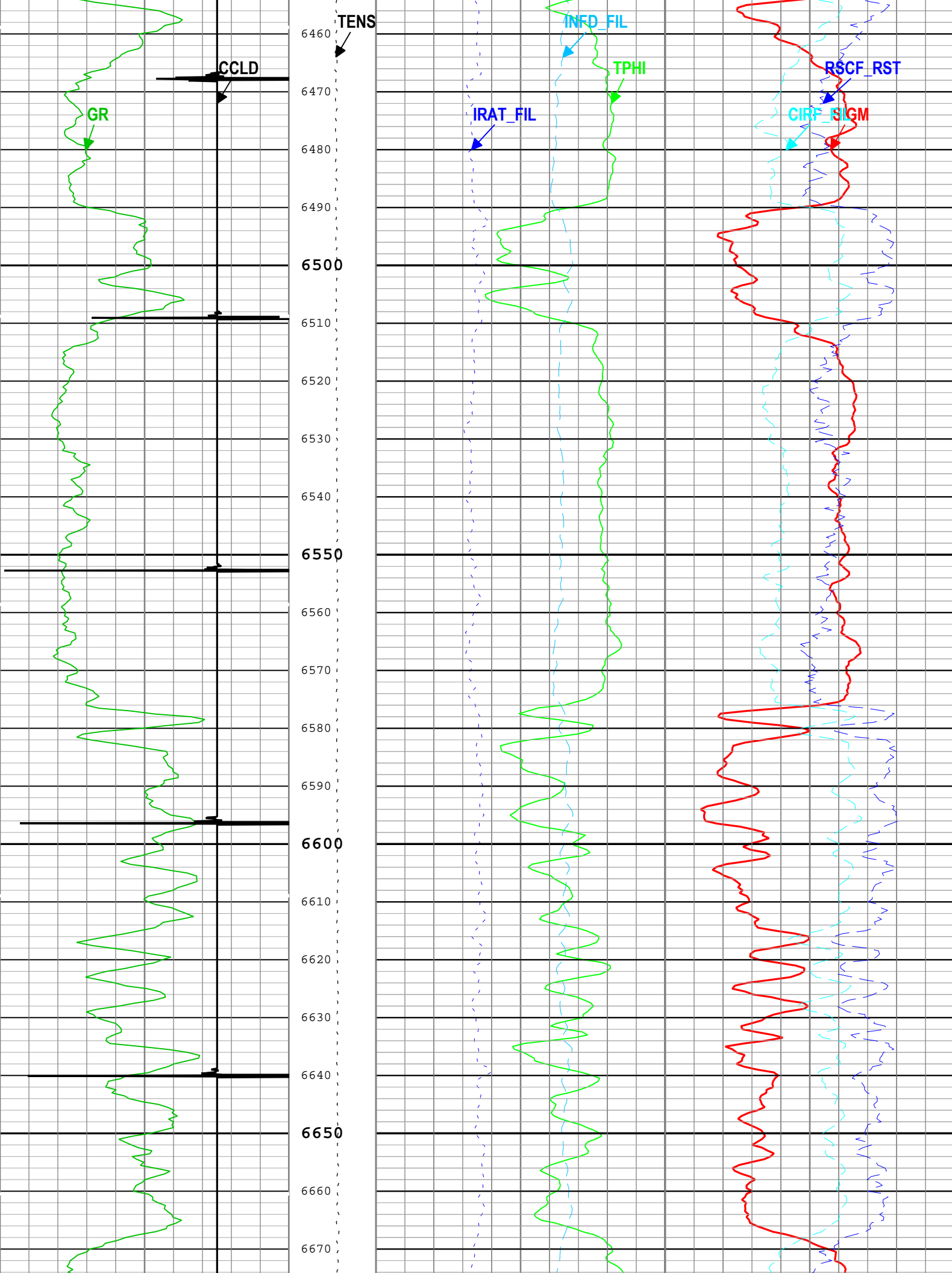


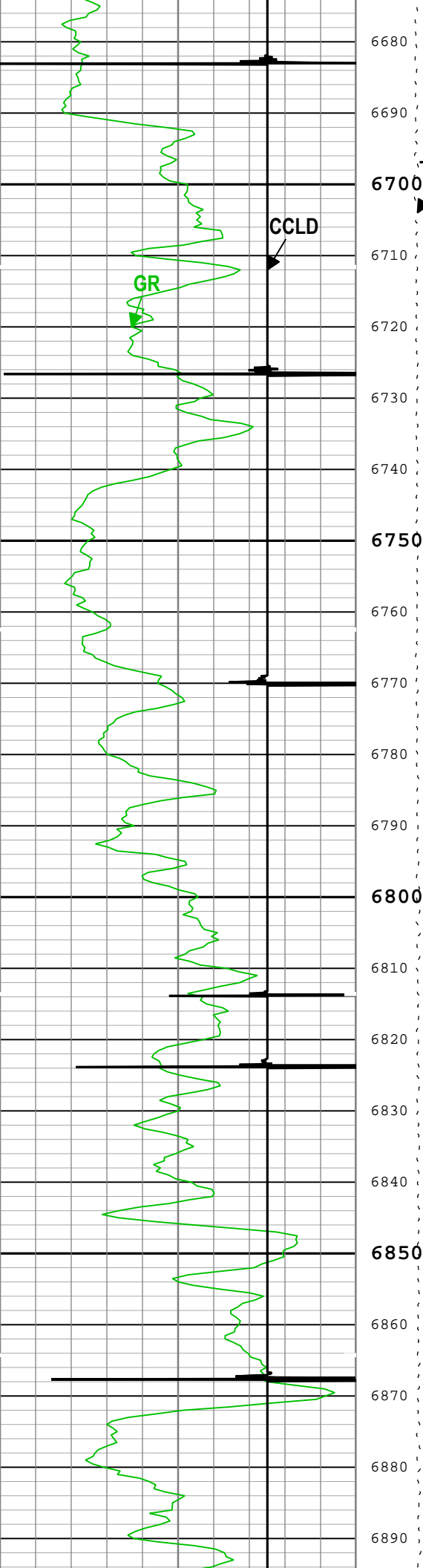








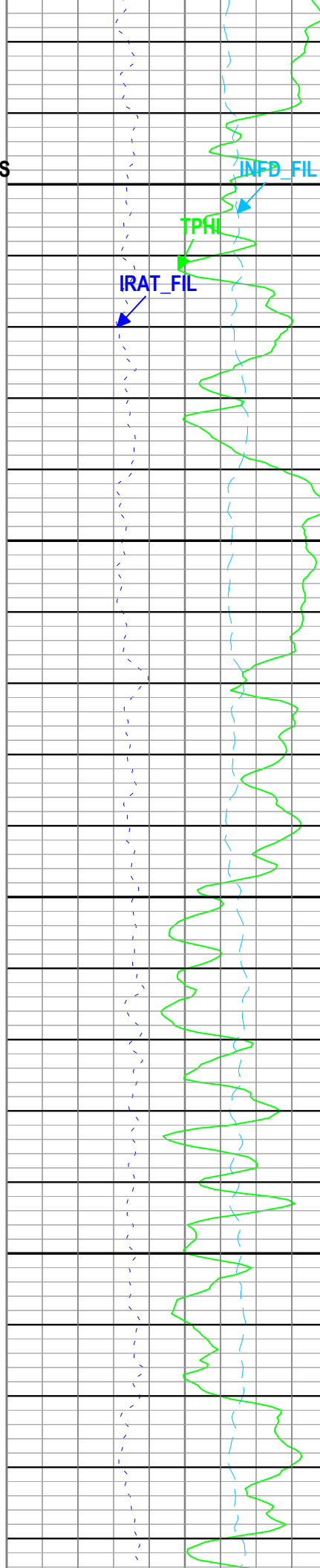




TENS

CCLD

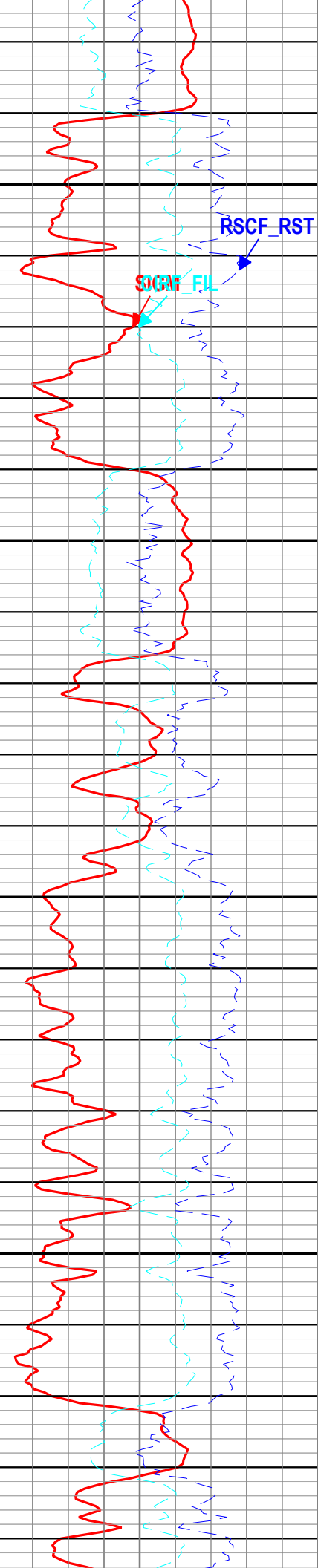
GR



INFO_FIL

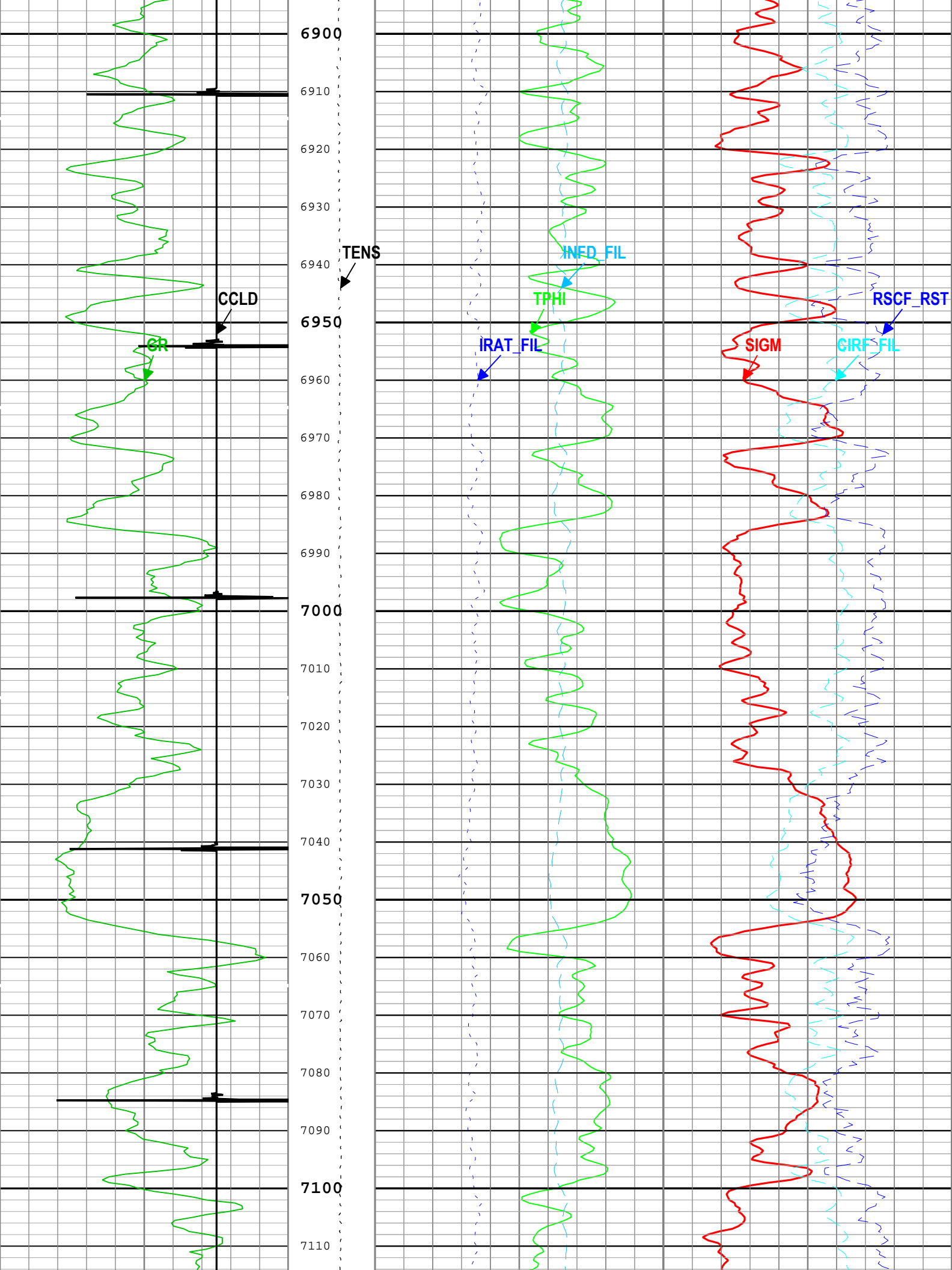
TPHI

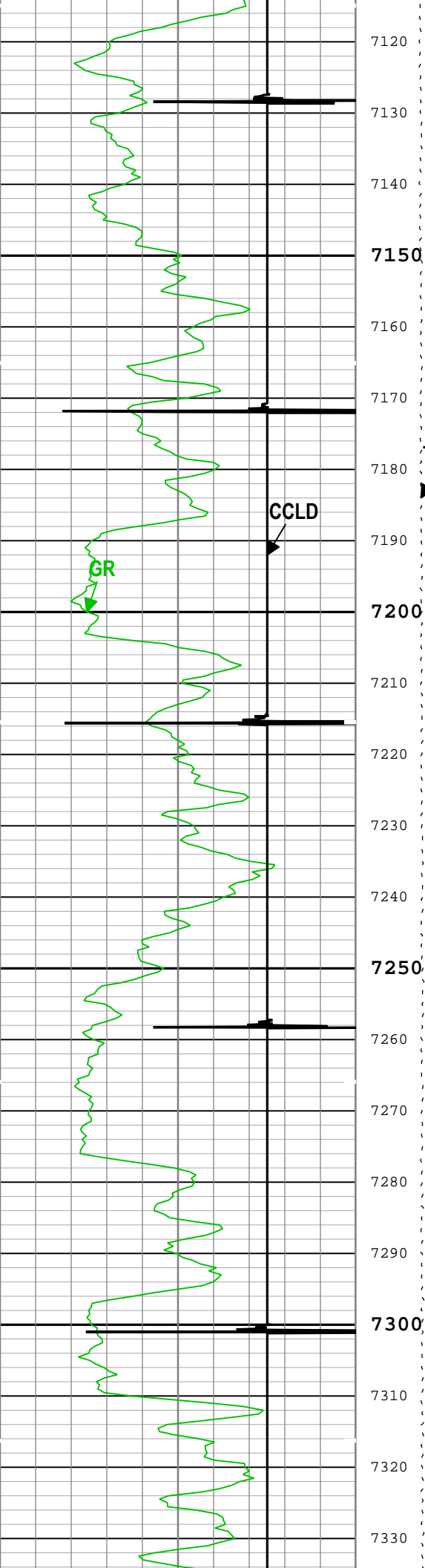
IRAT_FIL



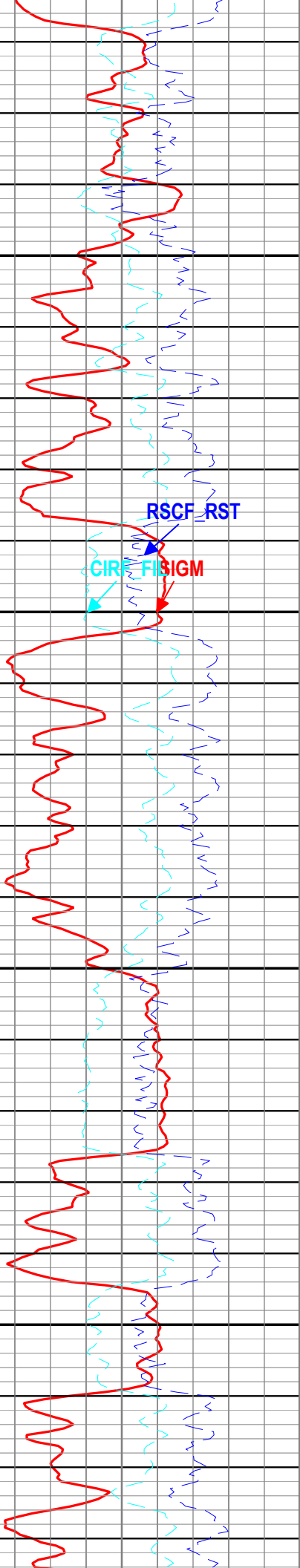
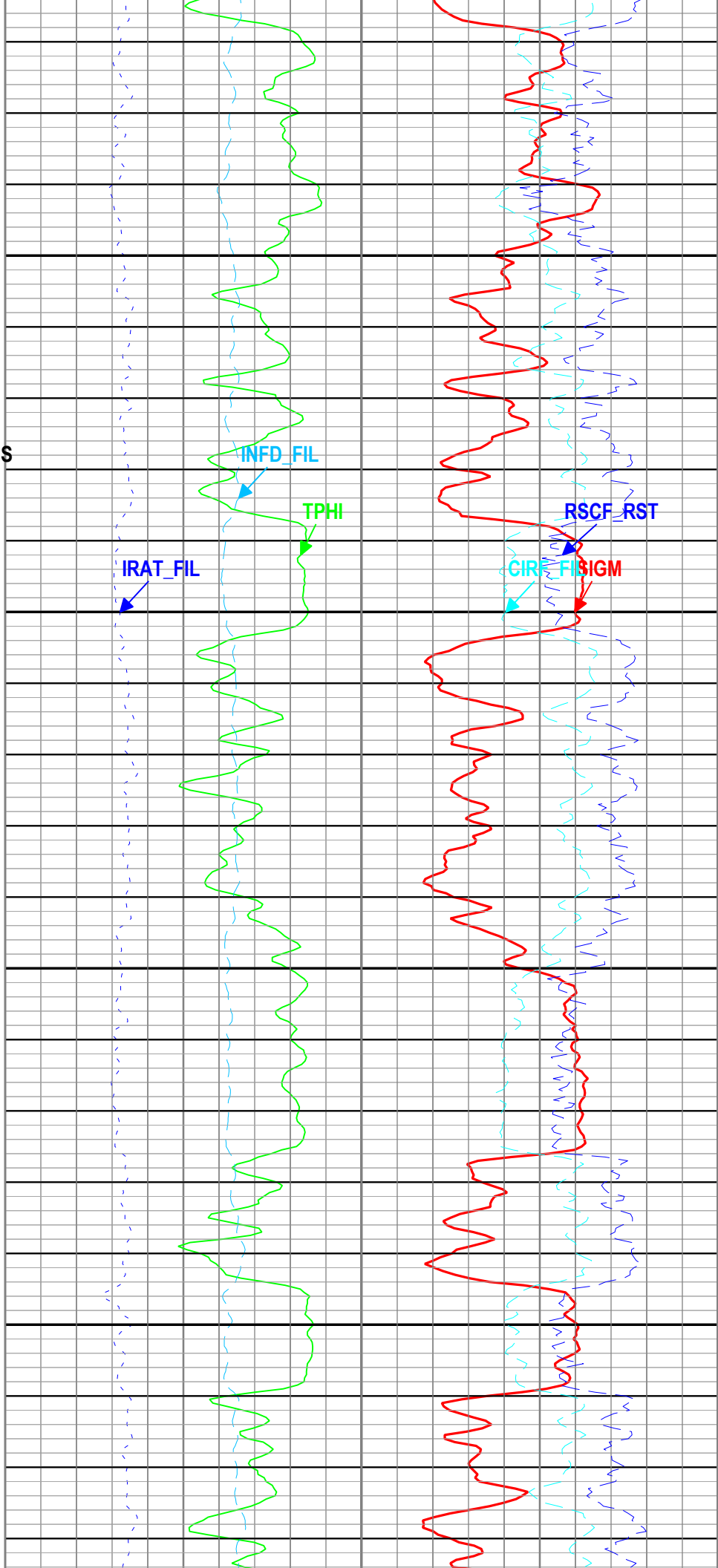
RSCF_RST

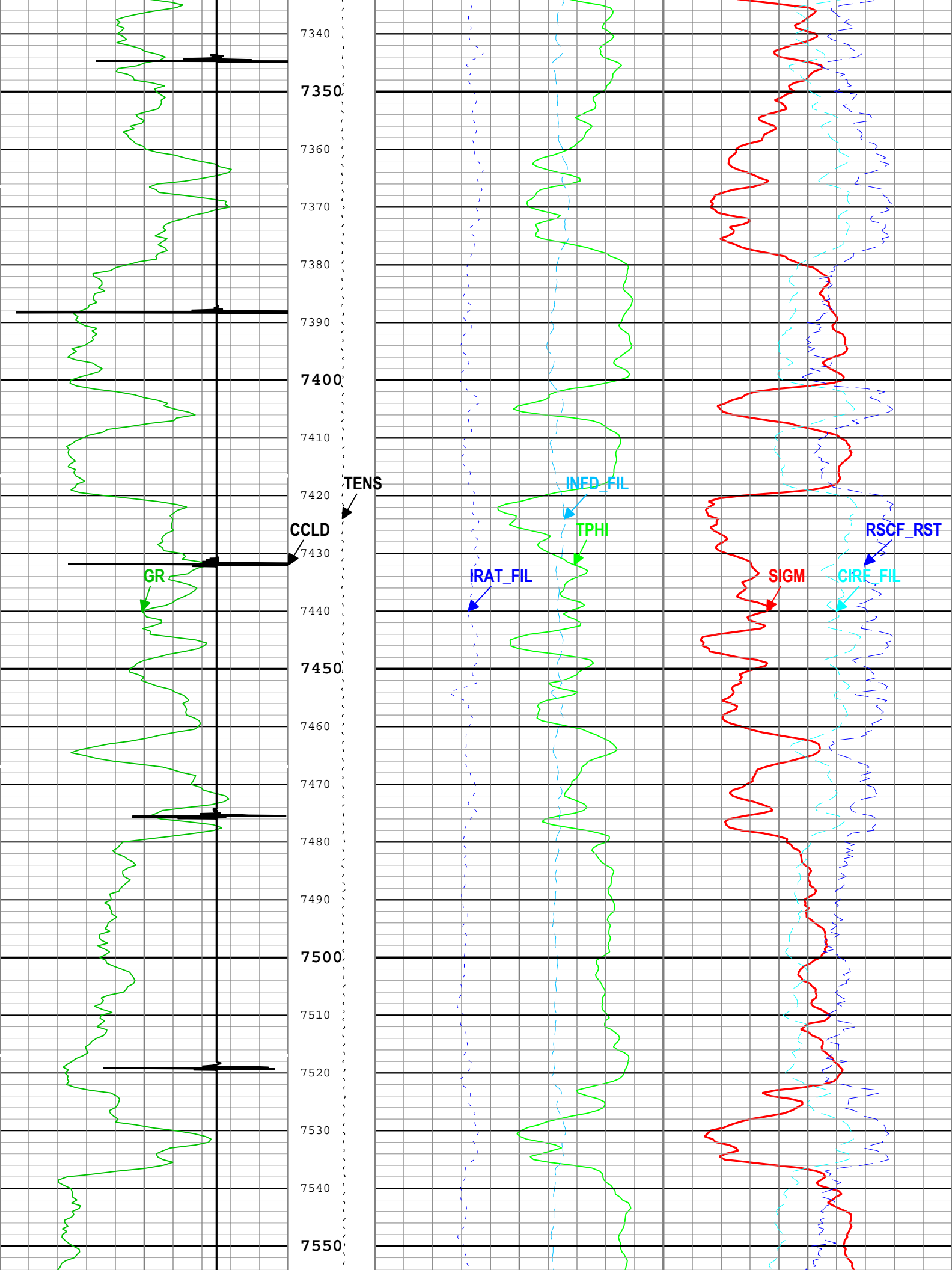
SGR_FIL

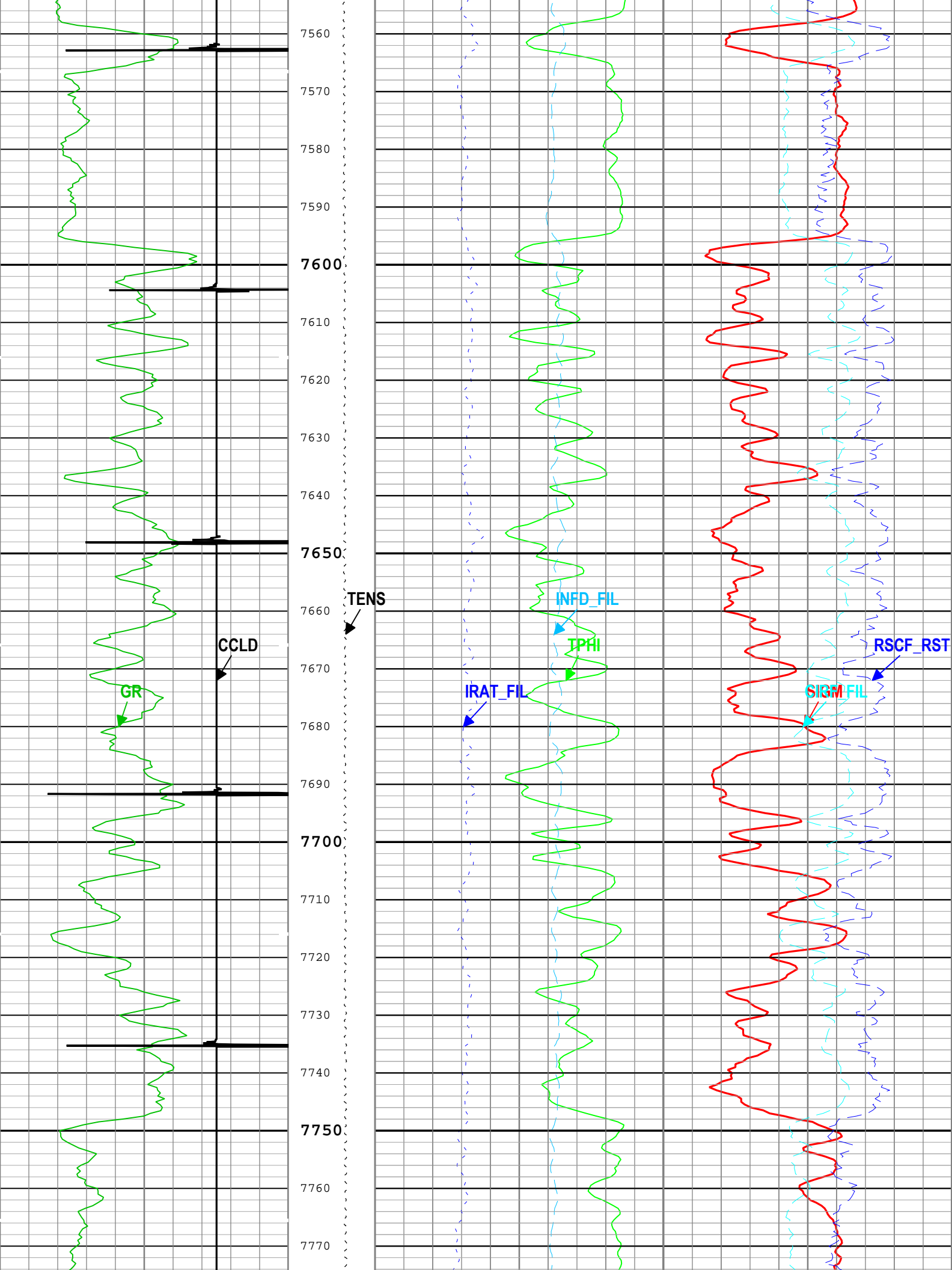


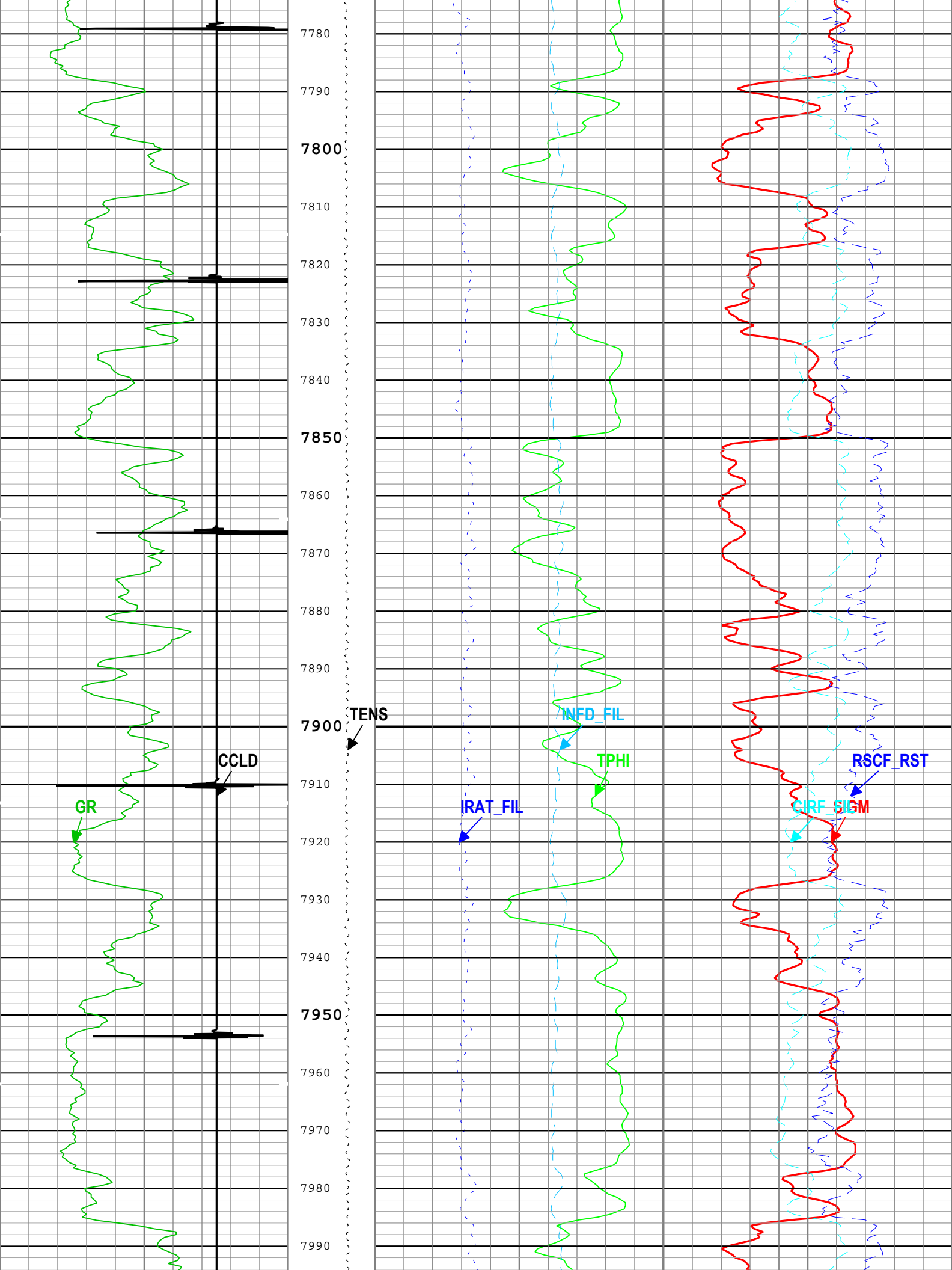


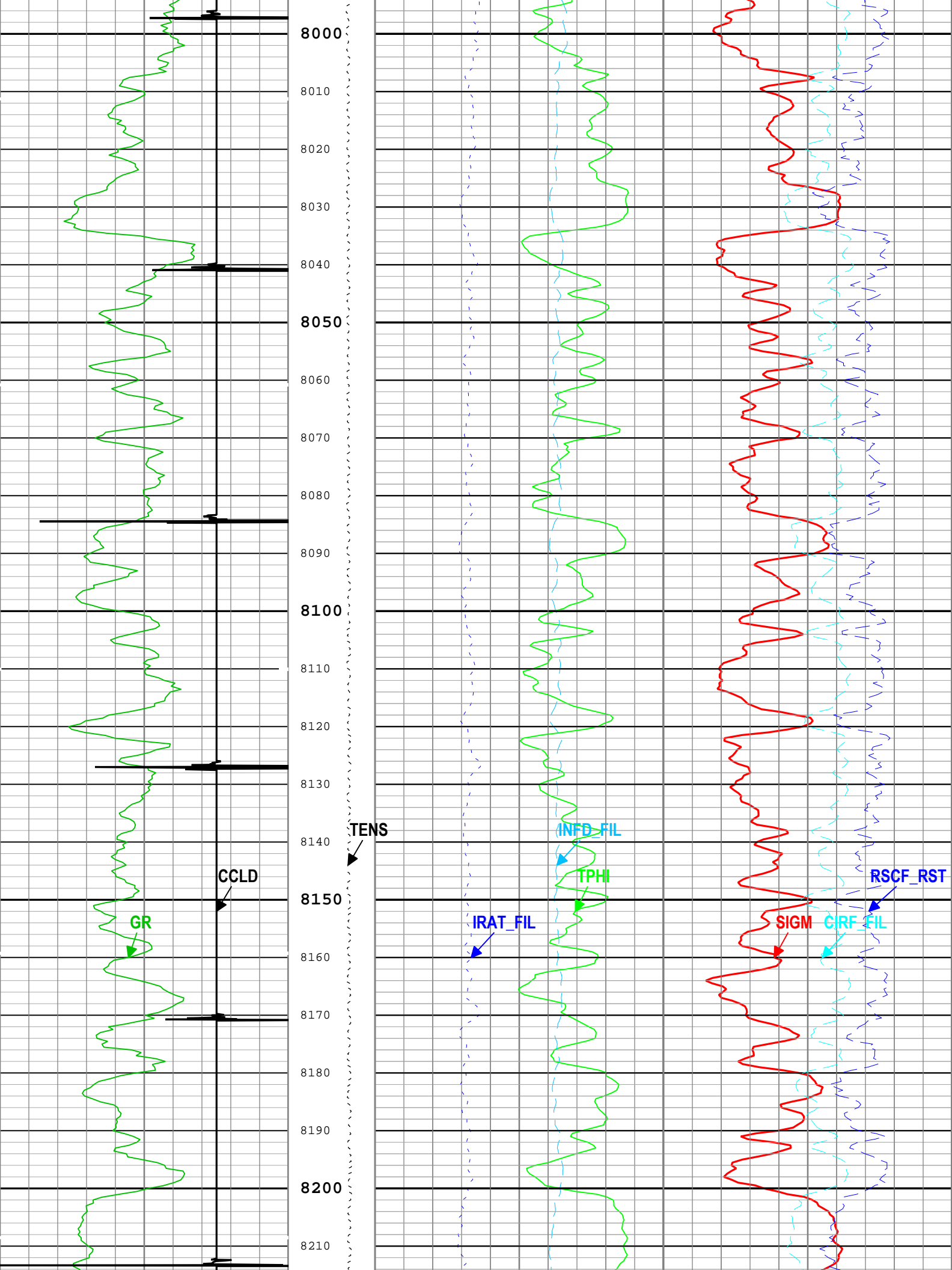
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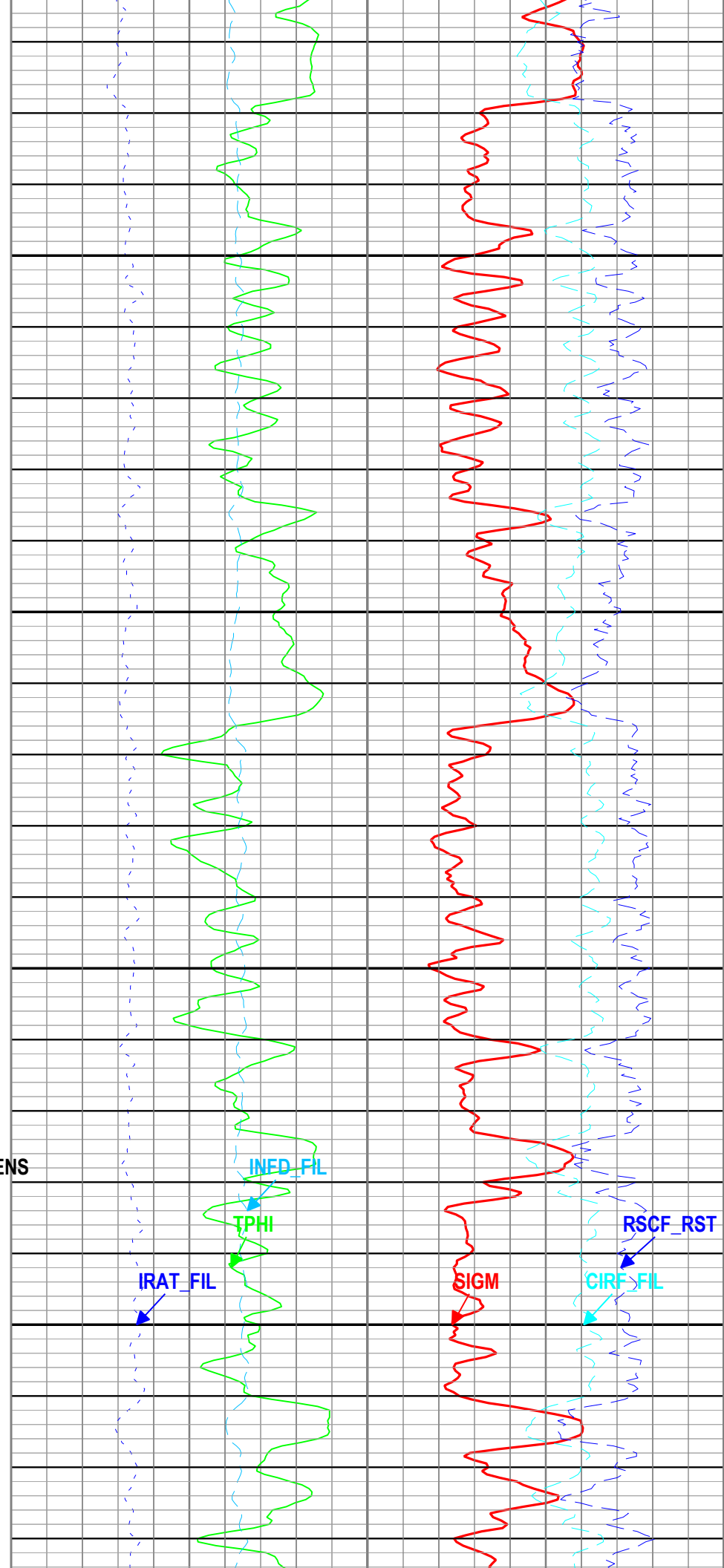
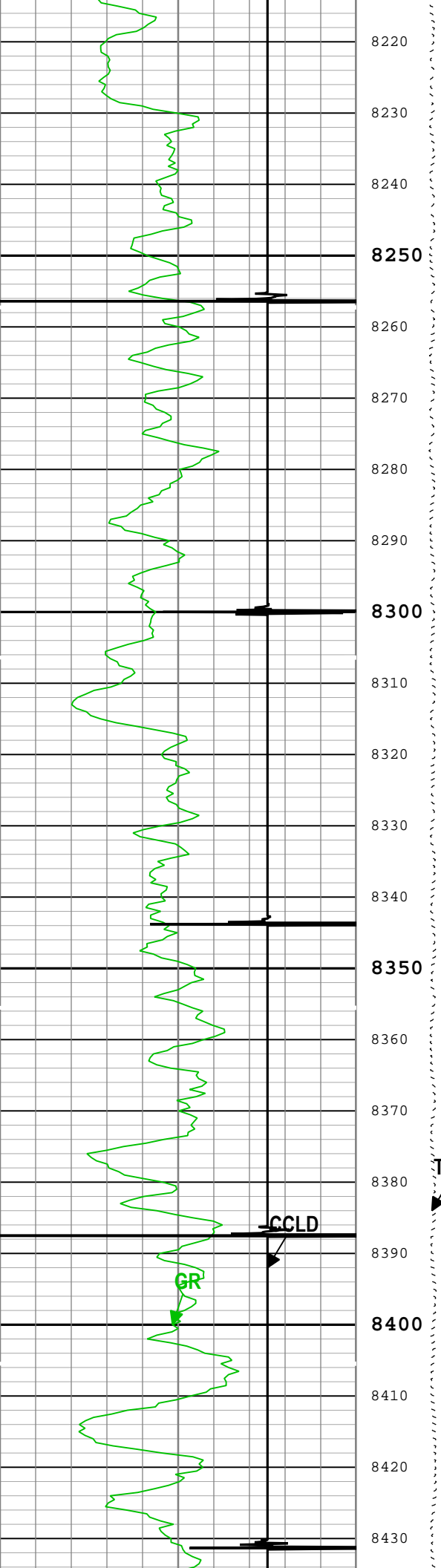


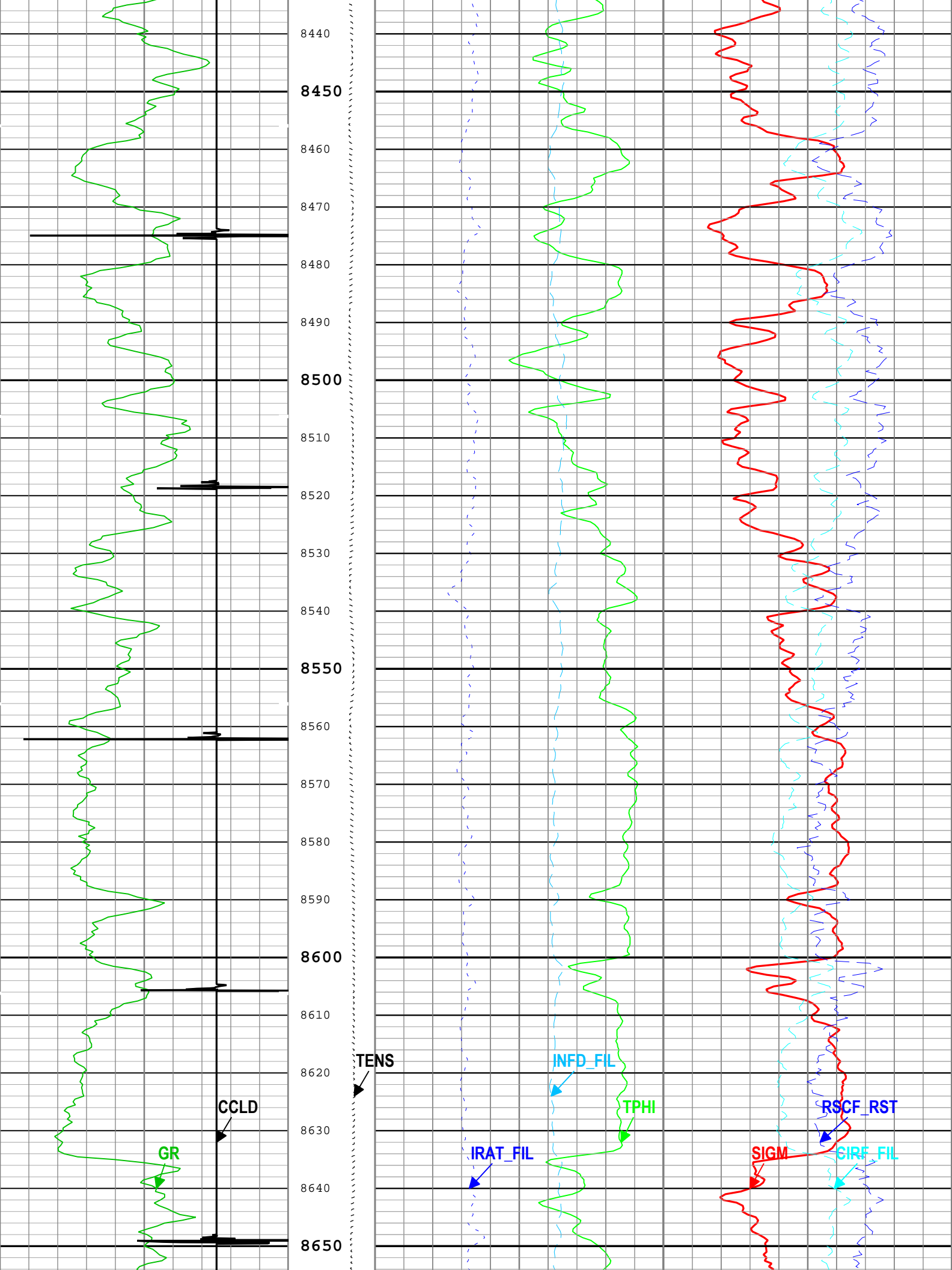


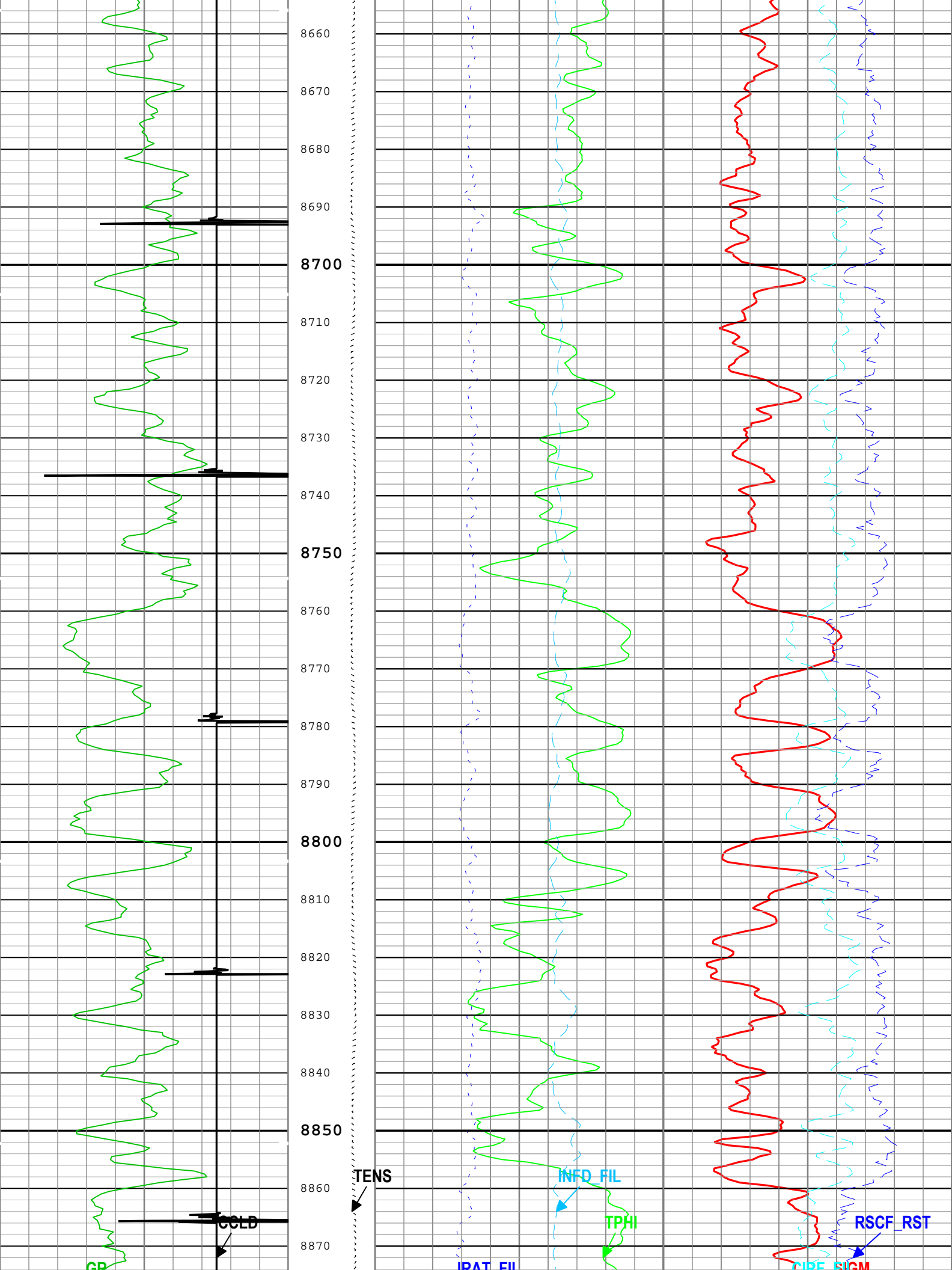


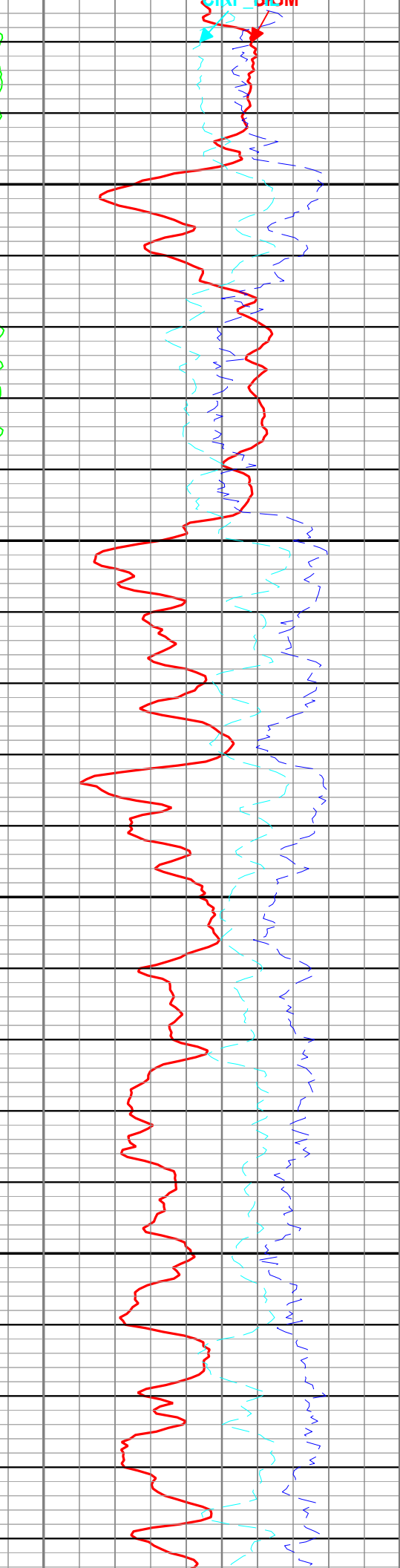
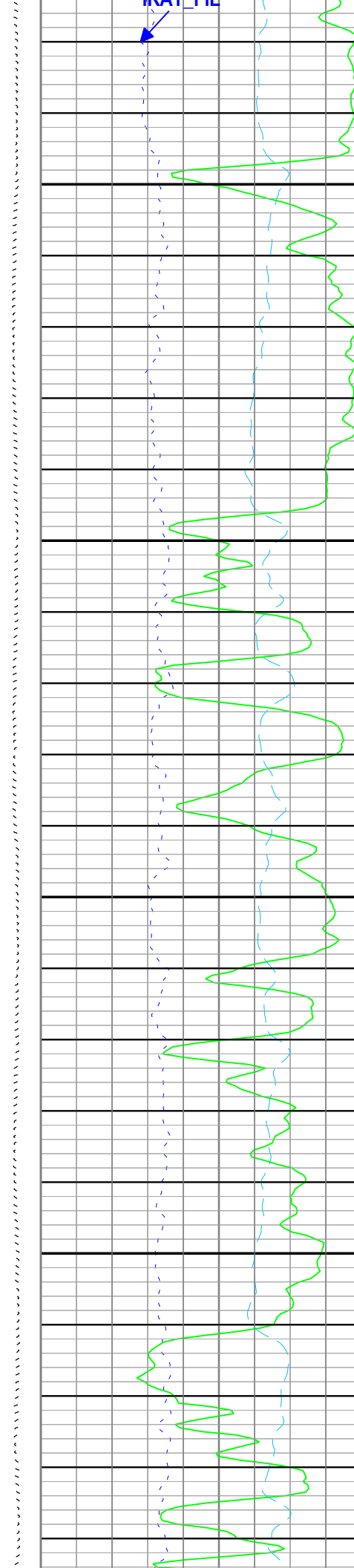
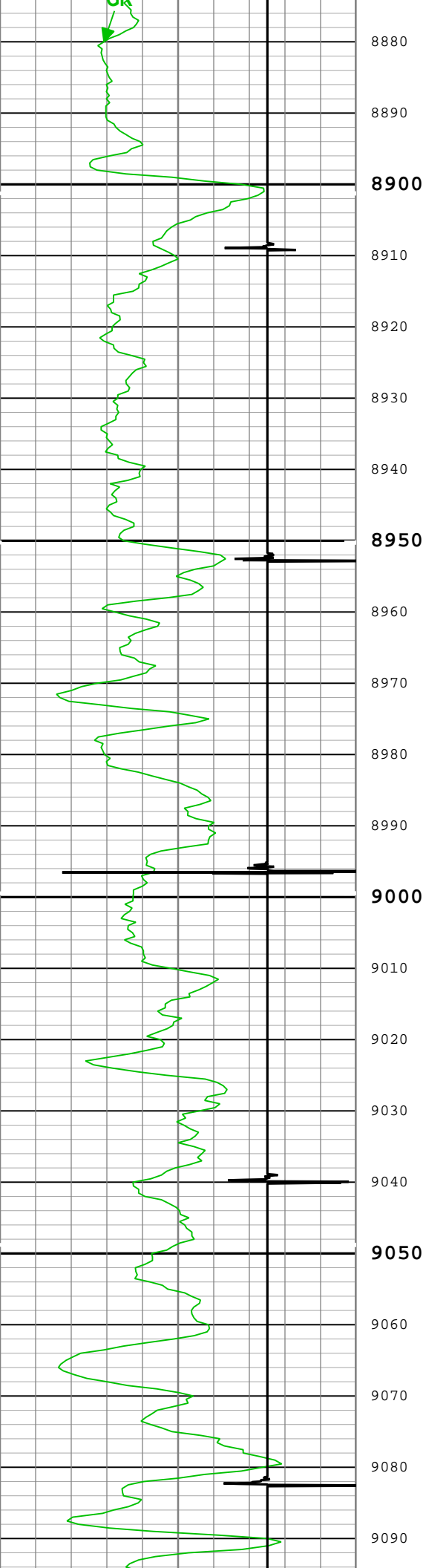


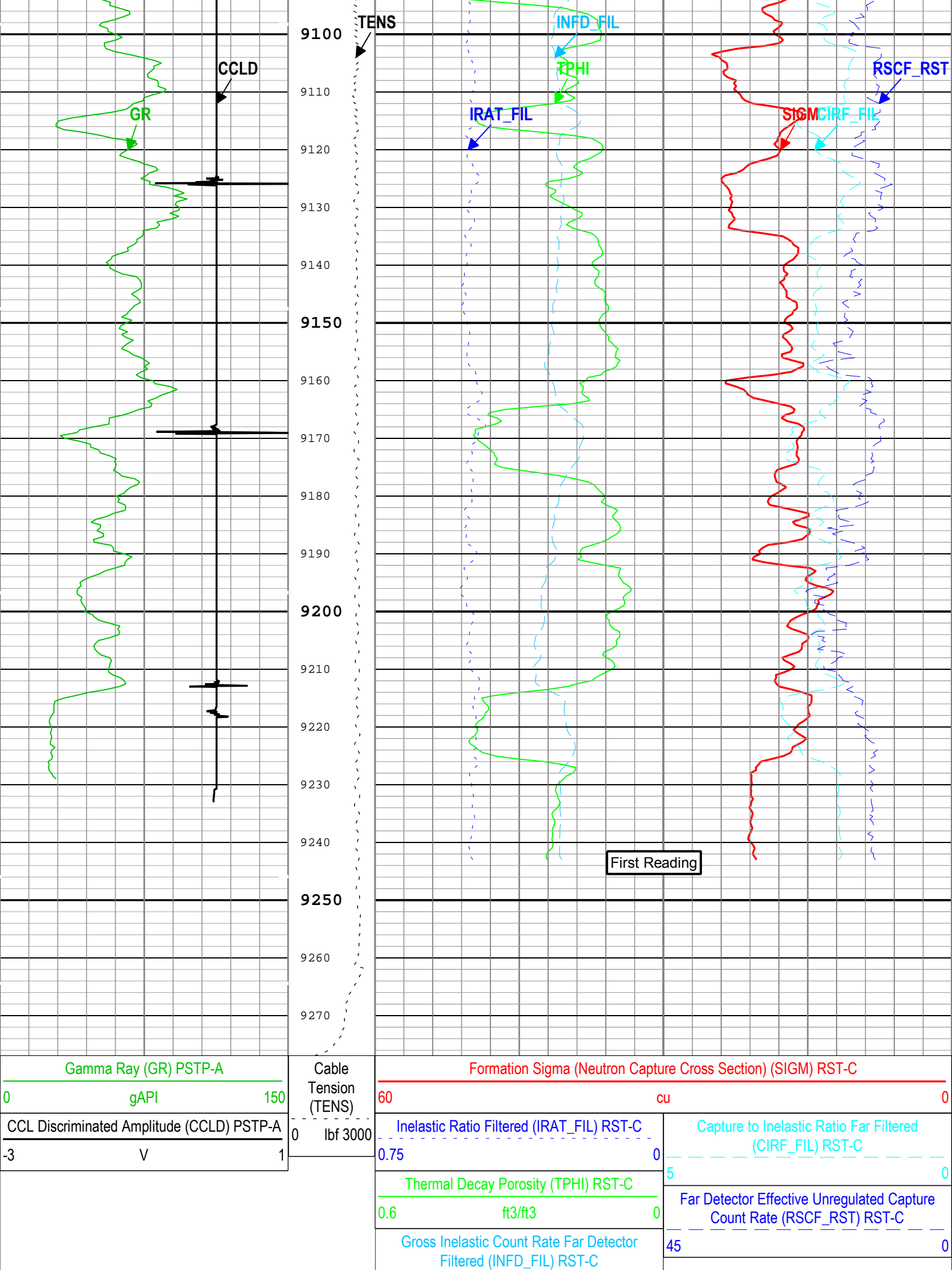












TIME_1900 - Time Marked every 60.00 (s)	<ul style="list-style-type: none"> ICV - Integrated Cement Volume every 100.00 (ft3) TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s) ICV - Integrated Cement Volume every 10.00 (ft3) IHV - Integrated Hole Volume every 100.00 (ft3) IHV - Integrated Hole Volume every 10.00 (ft3)
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: 23-Dec-2017 05:45:17	

One: Parameters

Tool Control Parameters

One: Parameters

One

Sigma Repeat Pass

Software Version

Pass Summary

All depths are referenced to toolstring zero

Log

Company:Caerus Operating LLC Well:Puckett 34B-23 697

One: Log[4]:Up:S004

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: 23-Dec-2017 05:45:23
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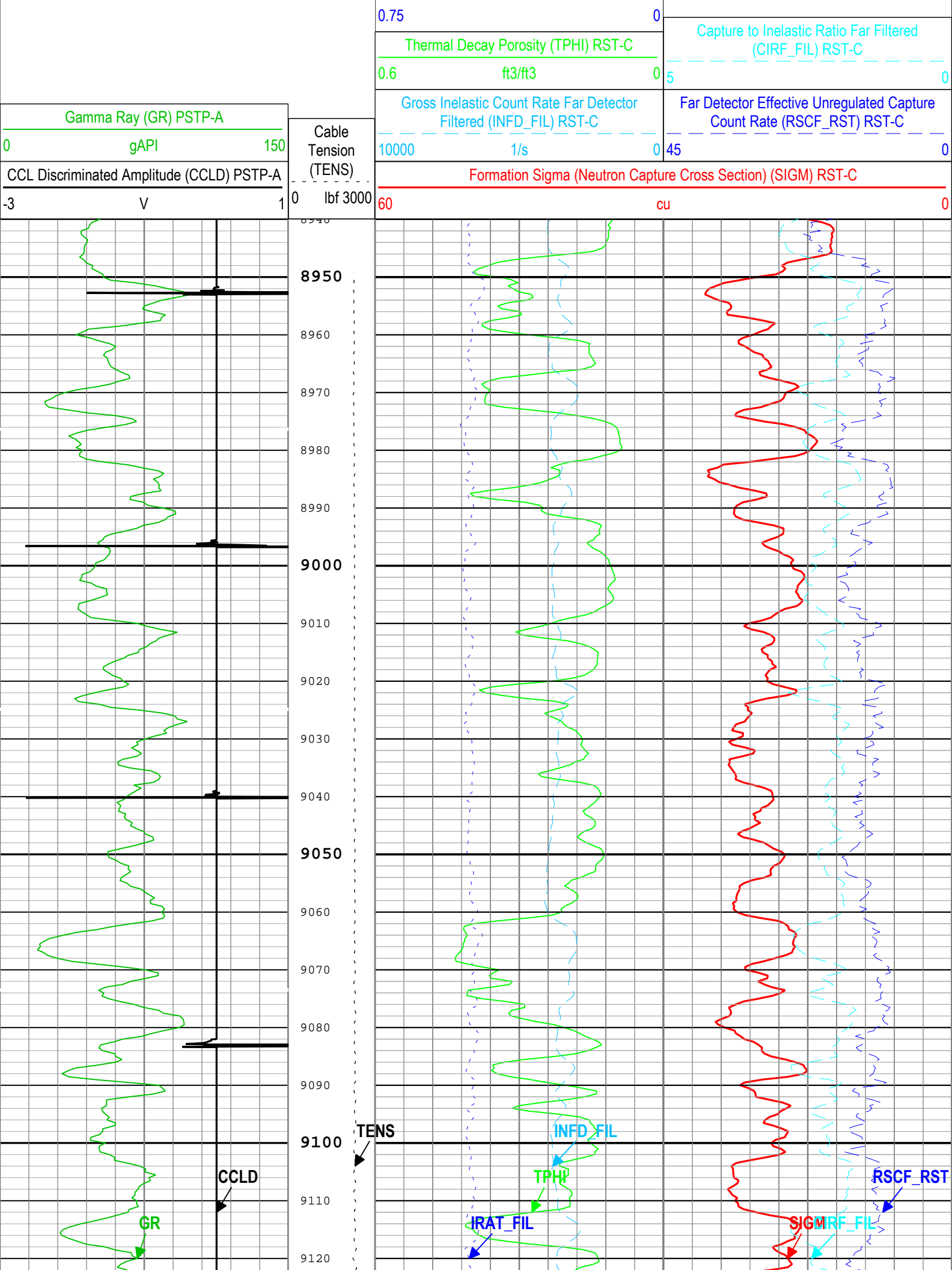
TIME_1900 - Time Marked every 60.00 (s)

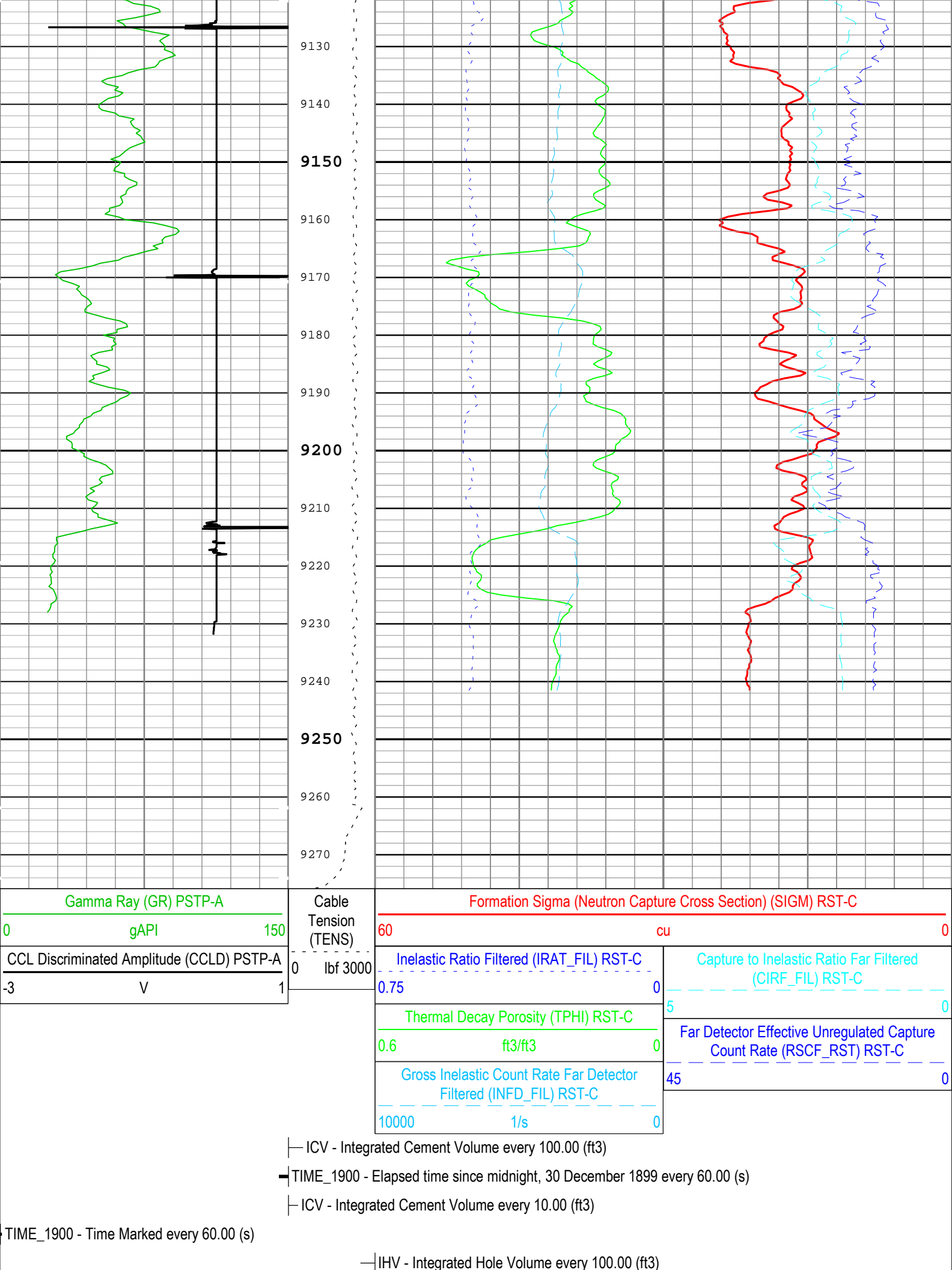
— ICV - Integrated Cement Volume every 10.00 (ft3)

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

— ICV - Integrated Cement Volume every 100.00 (ft3)

Inelastic Ratio Filtered (IRAT FIL) RST-C





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: 23-Dec-2017 05:45:23

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	
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	SANDSTONE	

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-A	12 dB	
RST_DLM	Depth Log Mode	RST-C	Sigma	

Well: Puckett 34B-23 697

Field: Grand Valley

County: Garfield

State: Colorado

Cement Bond Log

RST Sigma Log

Gamma Ray/ Collar Log