

Company: Caerus Operating LLC

Well: Puckett 11A-26 697

Field: Grand Valley

County: Garfield State: Colorado

Cement Bond Log
RST Sigma Log
Gamma Ray/ Collar LogCounty: Garfield
Field: Grand Valley
Location: Lat 39.30°07.76" N Long 108.11° 18.38"W
Well: Puckett 11A-26 697
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		
Log Measured From:		Kelly Bushing	30.00 ft	8432.00 f
Drilling Measured From:		Kelly Bushing		above Perm.Datum
API Serial No.	05045233720000	Section:	23	Township:
				6S
				Range:
				97W

Logging Date 22-Dec-2017

Run Number One

Depth Driller 9216.00 ft

Schlumberger Depth 9206.00 ft

Bottom Log Interval 9206.00 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 7.88 in

From 30.00 ft

To 9216.00 ft

Casing/Tubing Size 4.5 in

Weight 11.6 lbm/ft

Grade P110

From 30.00 ft

To 9216.00 ft

Max Recorded Temperatures 234 degF

Logger on Bottom 30-Dec-1899

Unit Number 3003

Recorded By Beatriz Guaita

Witnessed By Ryan Tompkins

Disclaimer

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- One Sigma Main Pass
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8.5 Parameter Listing

9. One CBL Free Pipe

9.1 Integration Summary

9.2 Software Version

9.3 Composite Summary

9.4 Log (SCMT_Amp_VDL)

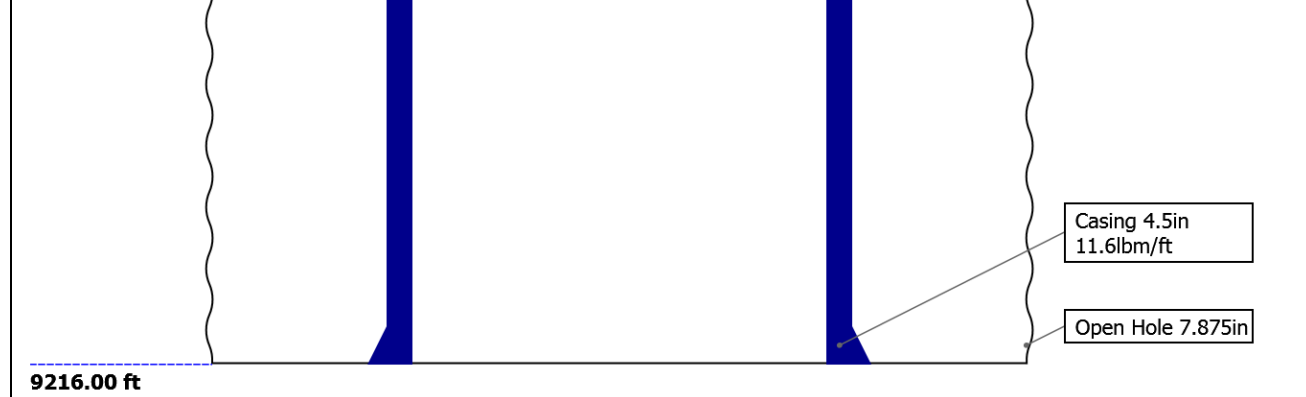
9.5 Parameter Listing

Well Sketch

Driller Depth

30.00 ft



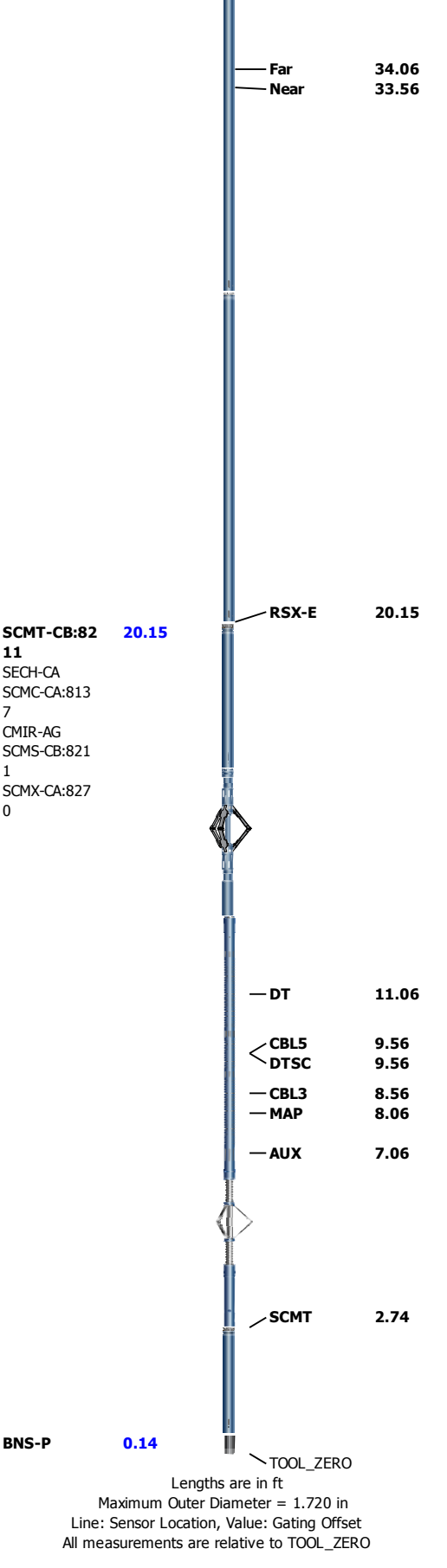


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	30					
Top Logger (ft)	30					
Bottom Driller (ft)	9216					
Bottom Logger (ft)	9216					
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)	9216					
Bottom Logger (ft)	9216					

Remarks and Equipment Summary

One: Toolstring				One: Remarks
Equip name PEH-EF	Length 54.08	MP name	Offset	Tool ran as per Tool Sketch.
				Max Temp of 234 DegF.
				Max Pressure 3815 psi.
				Log Correlated with the Down Log.
				TD tagged at 9206ft.
				Short Joints at 6820'-6830'
AH-38 PSTP-A:3823 PSC-A:3733 PSTC-A:3733 PBMS-A:3823 Sapphire 10kP SI	51.72 51.44	GR PSTC PSTC Tool String Bottom Temperature Sapphire Pressure CCL PBMS	47.74 47.44 0.00 44.65 44.54 43.92 43.17	
RST-C:309 RSCH-A:277 RSC-E:277 RSS-A:373 MNTR-F RSXH-A:309 RSX-E:309	43.17			
		RSC-E	36.82	



One

CBL Main Pass

Software Version

Acquisition System

Maxwell 2017 SP3

Version

7.3.92069.3100

Pass Summary

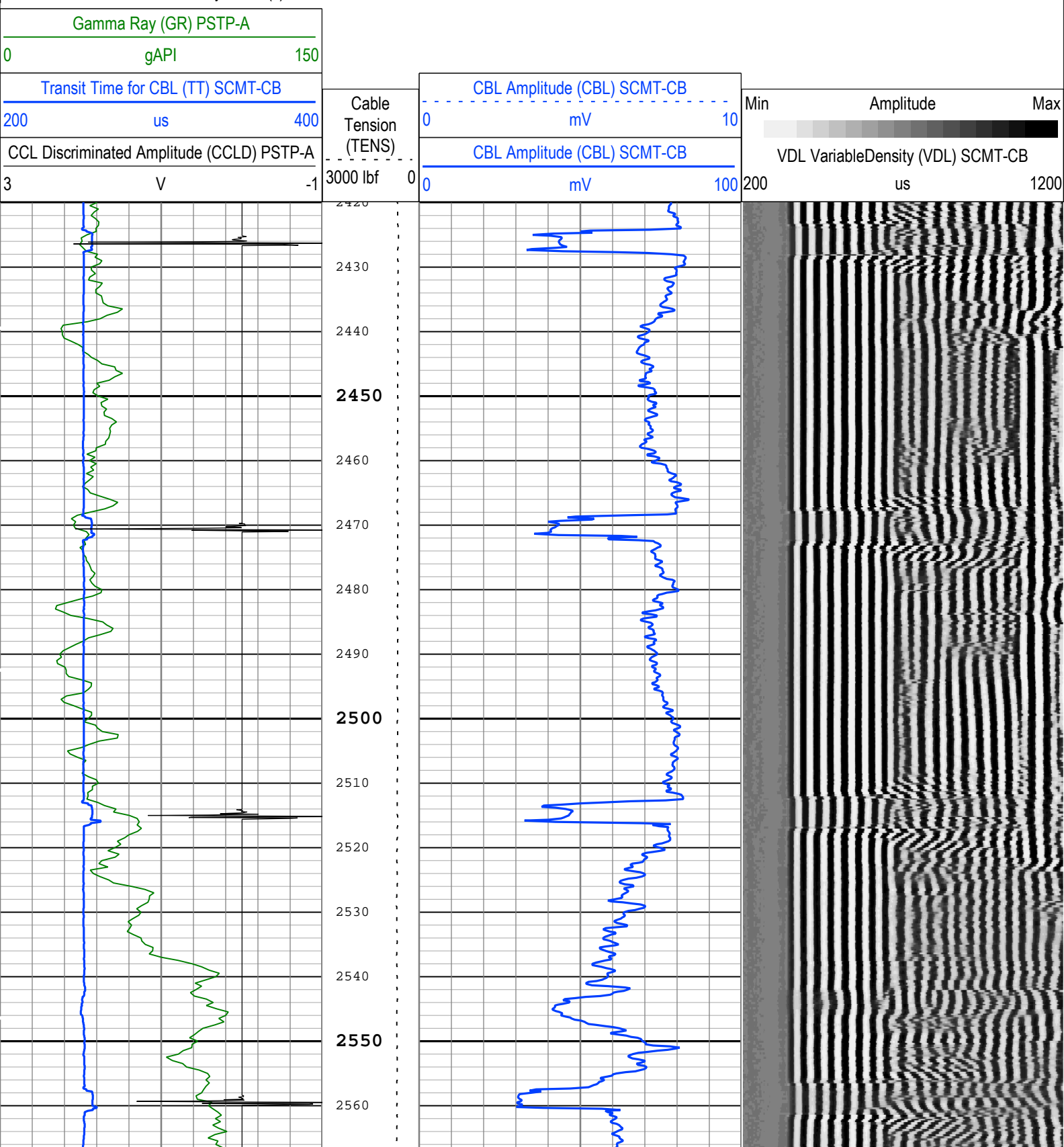
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
One	Log[6]:Up	Up	2416.63 ft	9222.26 ft	22-Dec-2017 3:39:52 AM	22-Dec-2017 5:55:24 AM	ON	6.36 ft	Yes

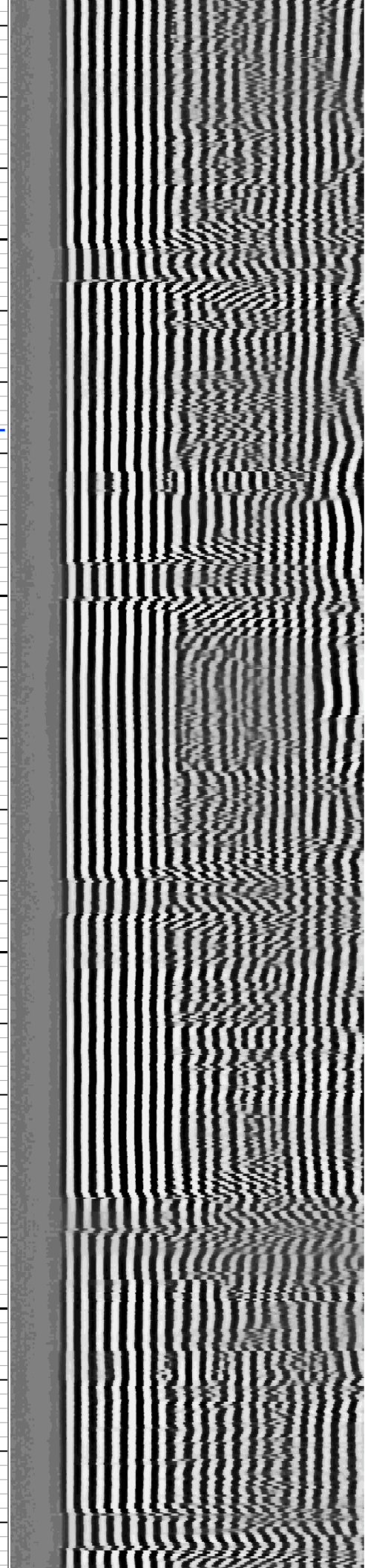
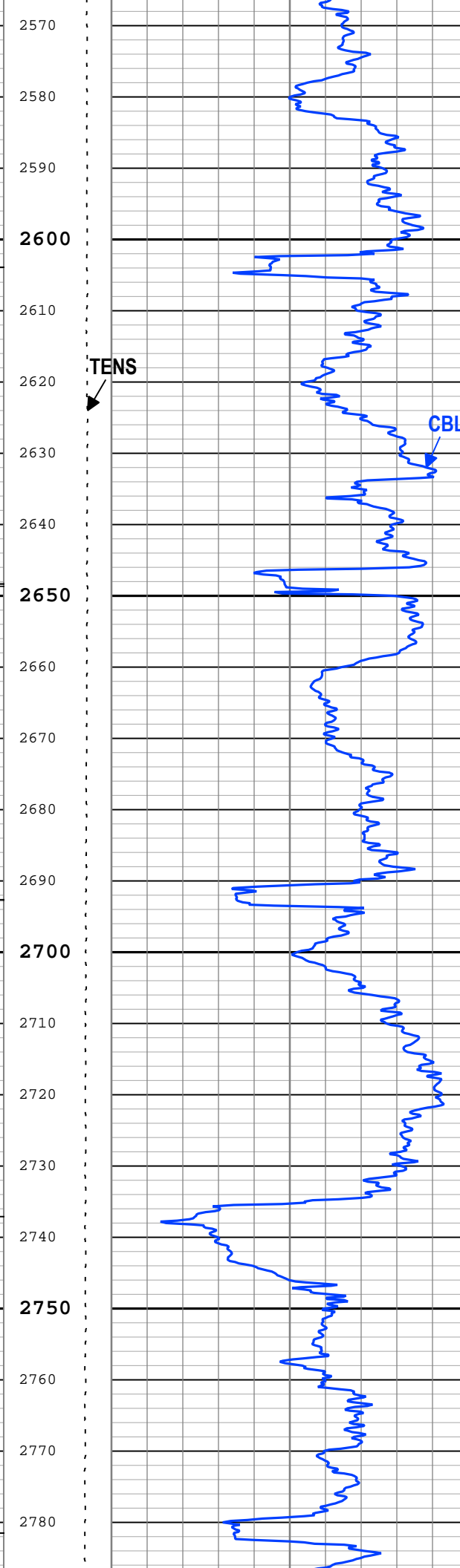
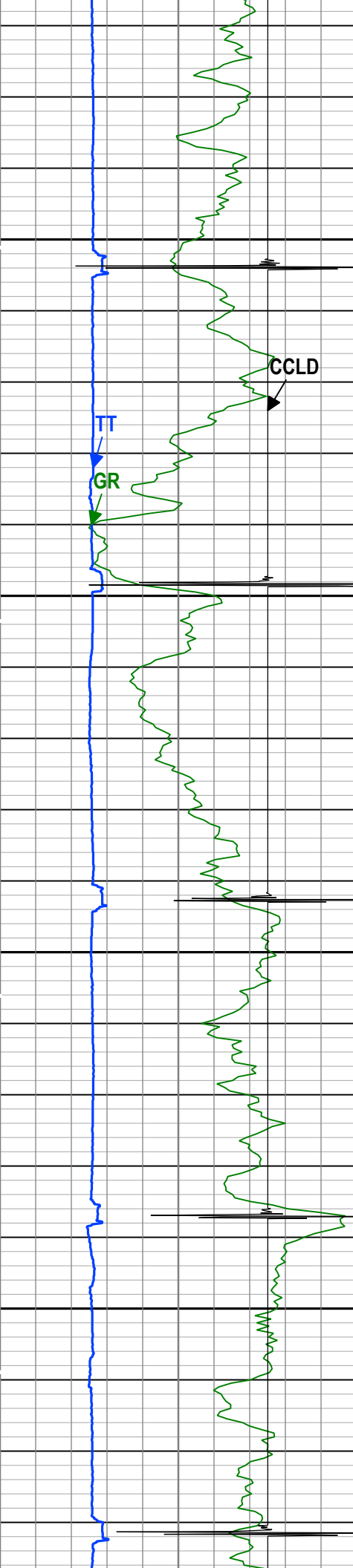
All depths are referenced to toolstring zero

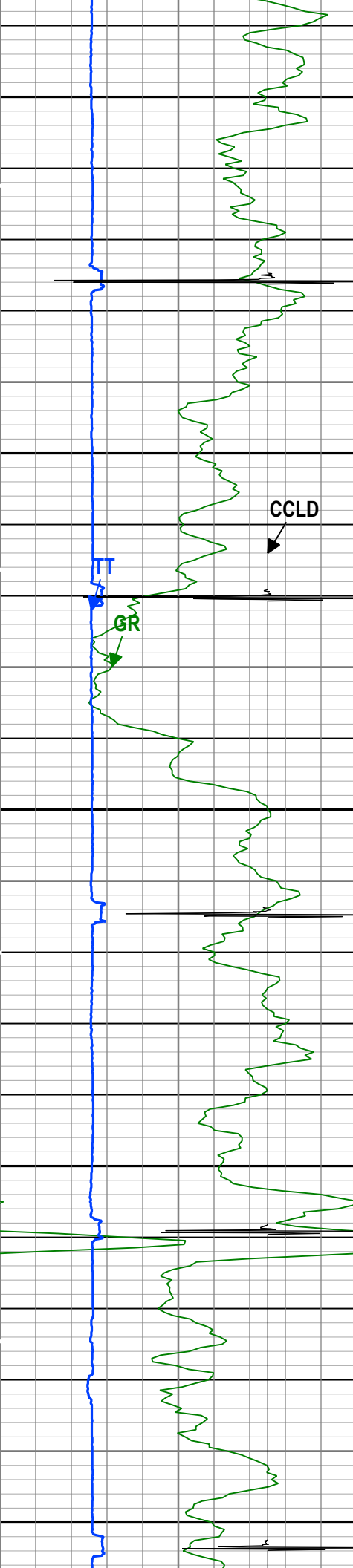
Log	Company:Caerus Operating LLC	Well:Puckett 11A-26 697
		One: Log[6]:Up:S007

Description: SCMT Amplitudes and VDL Format: Log (SCMT_Amp_VDL) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
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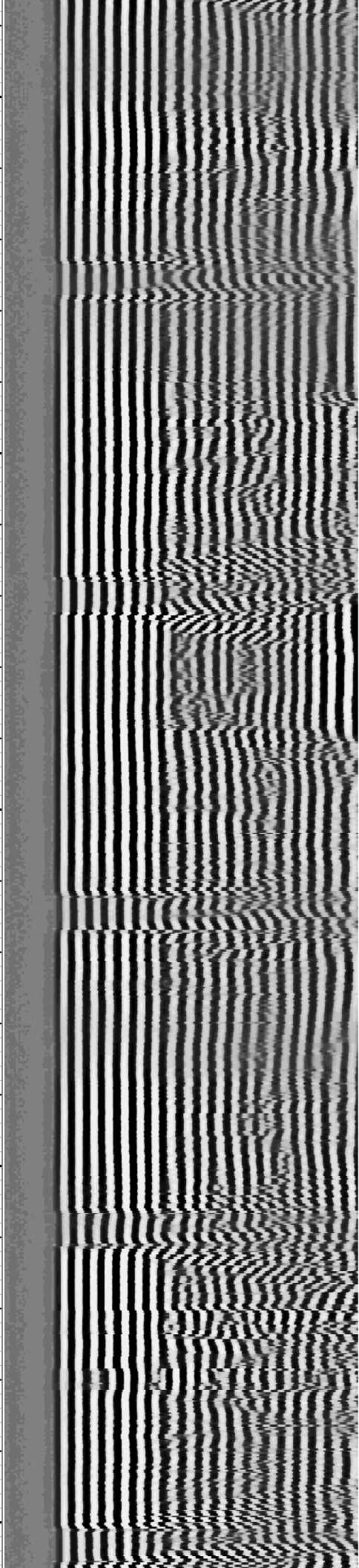
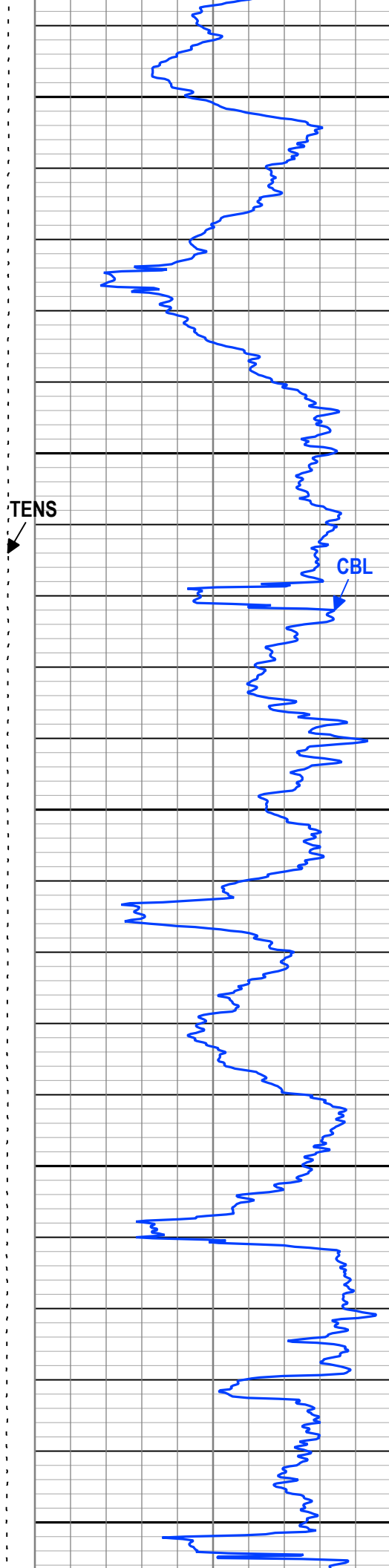
TIME_1900 - Time Marked every 60.00 (s)

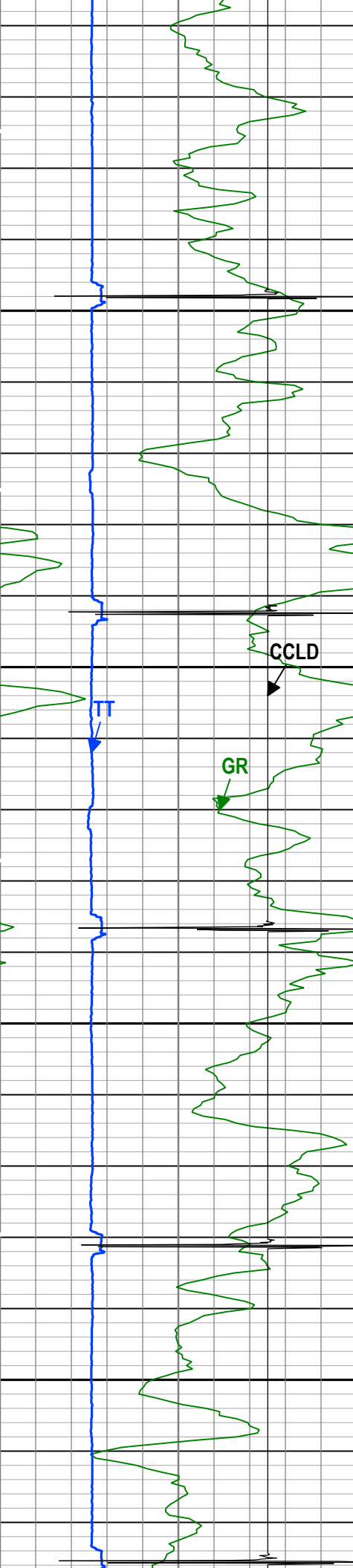




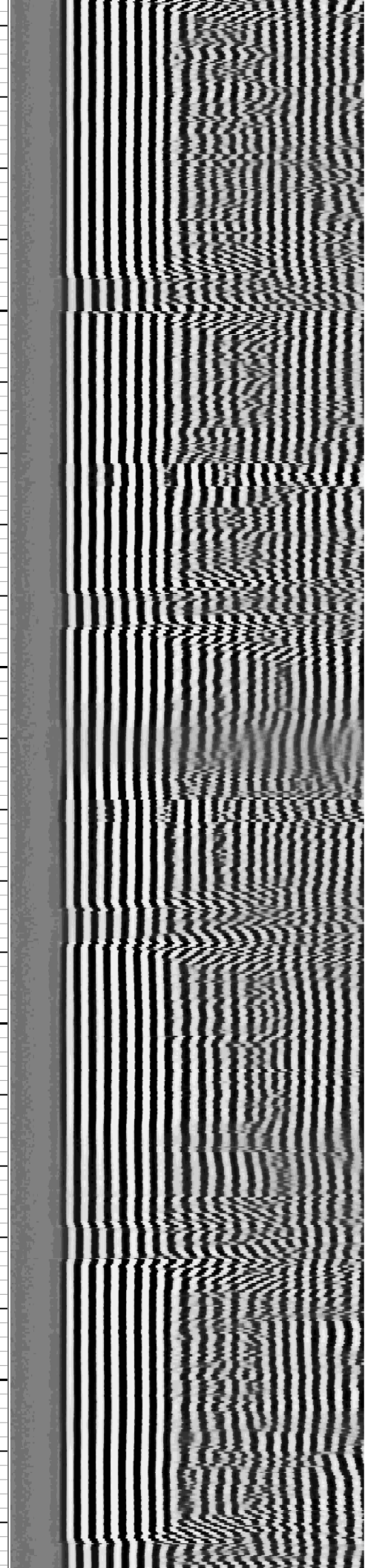
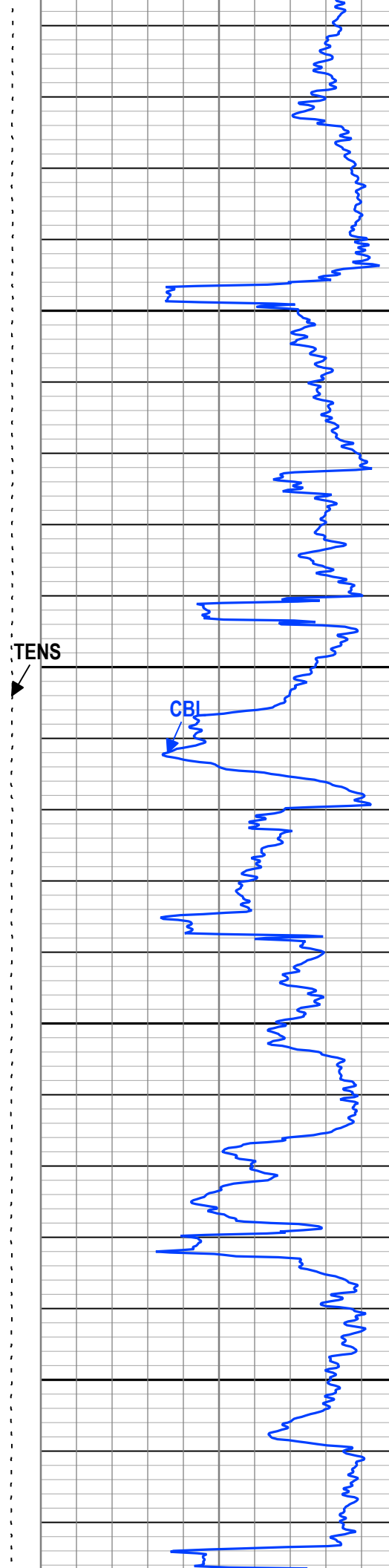


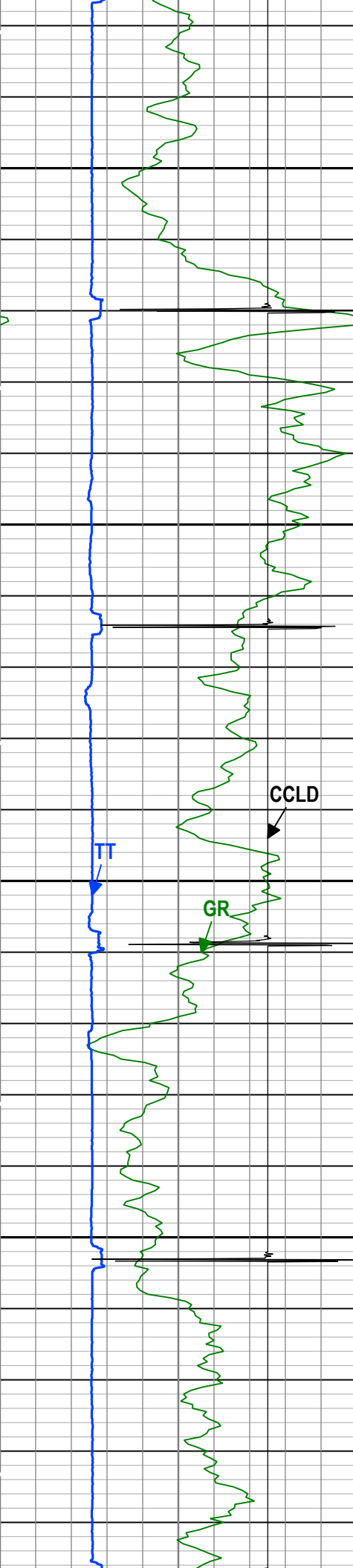
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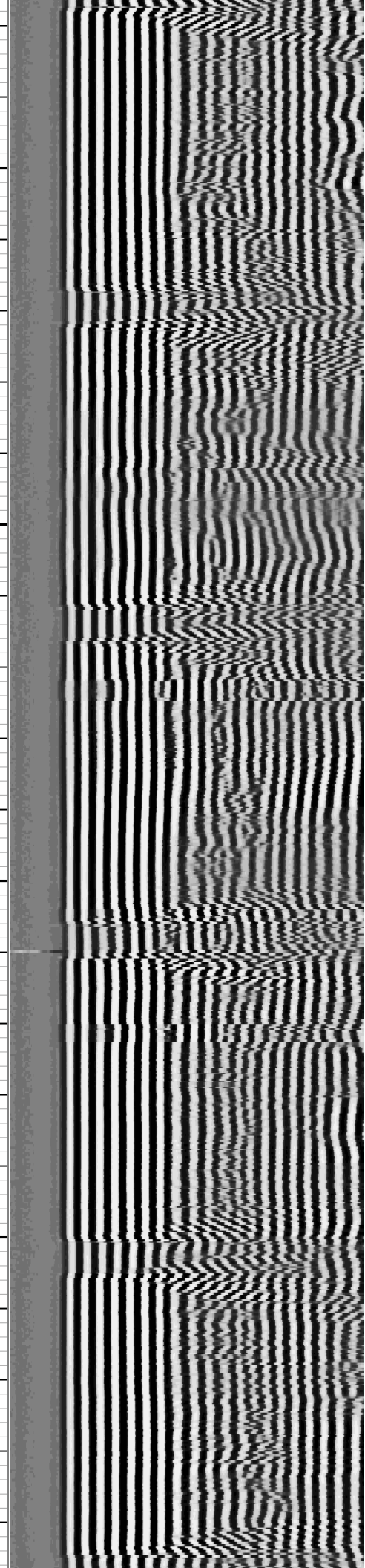
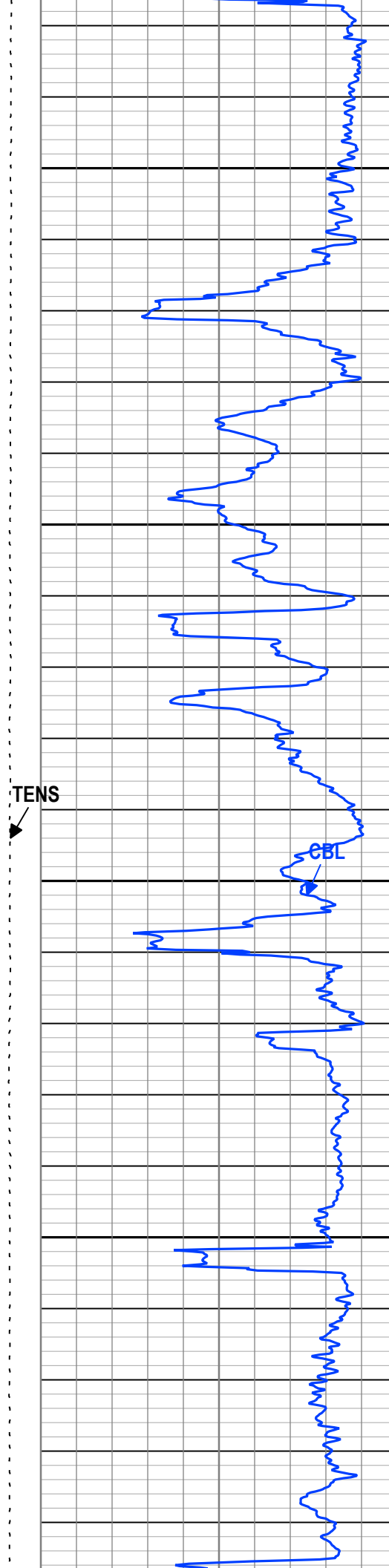


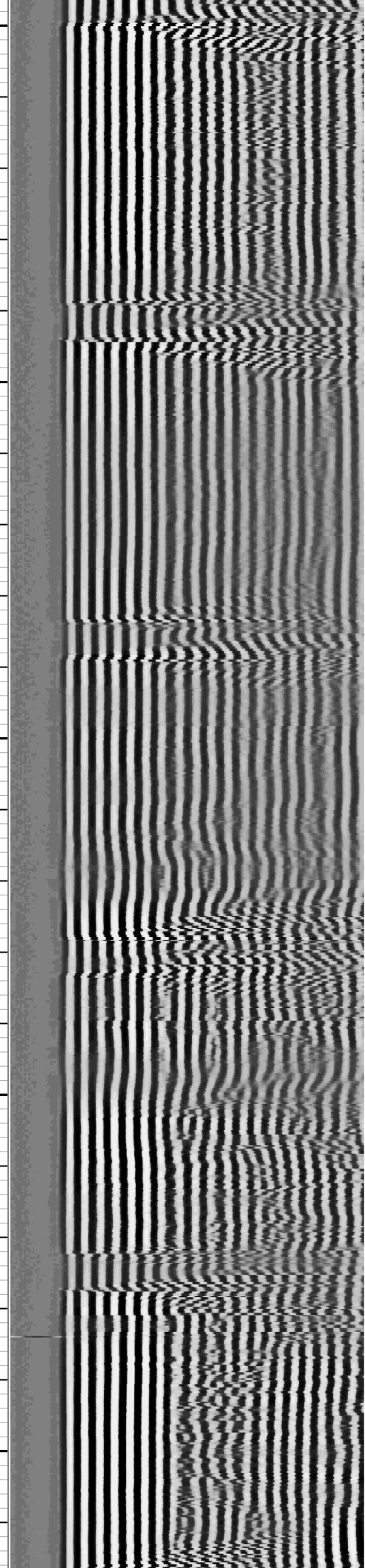
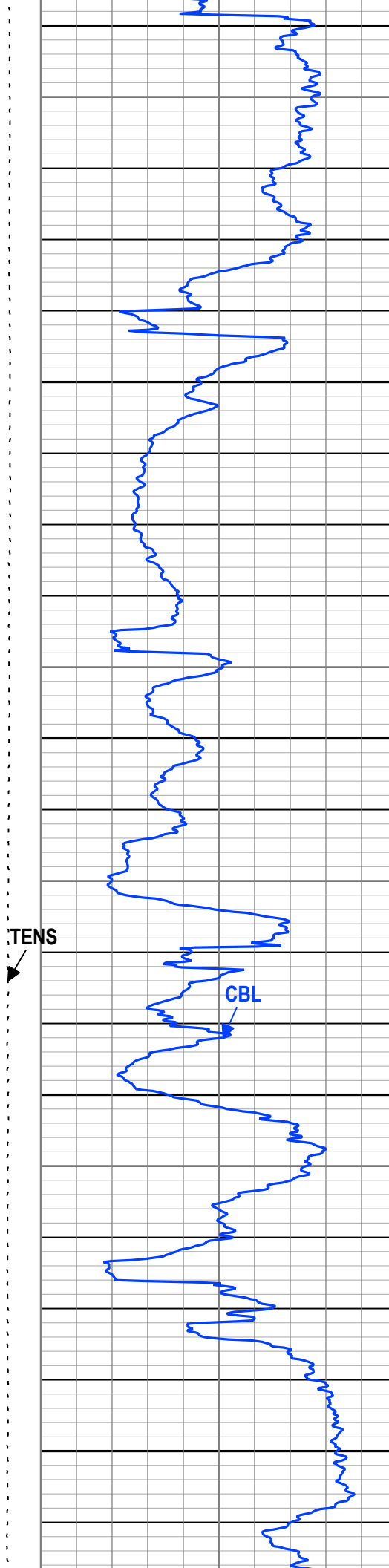
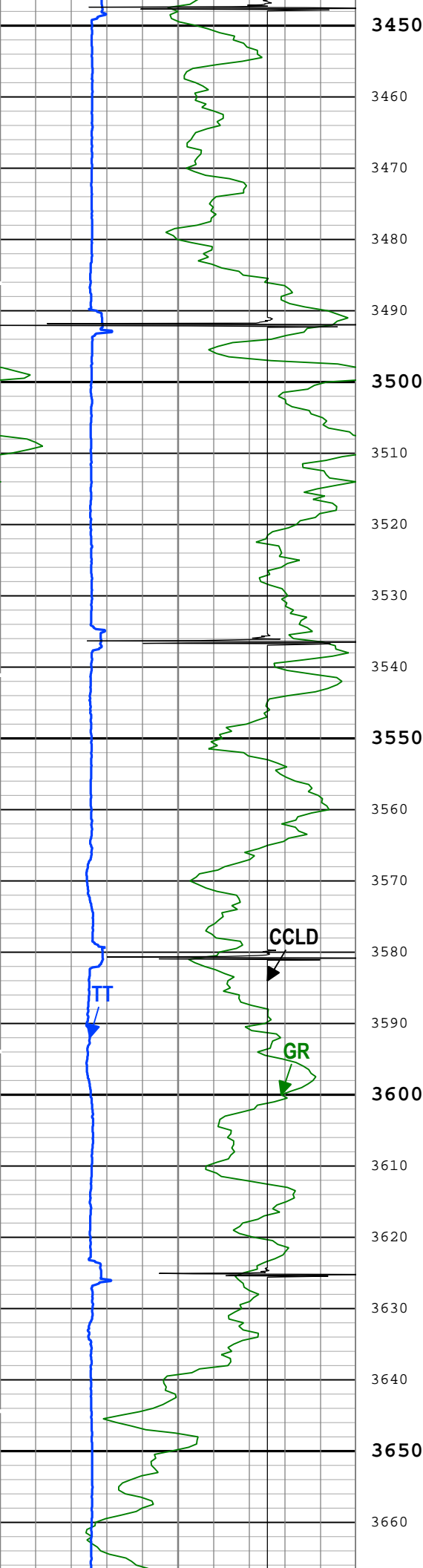
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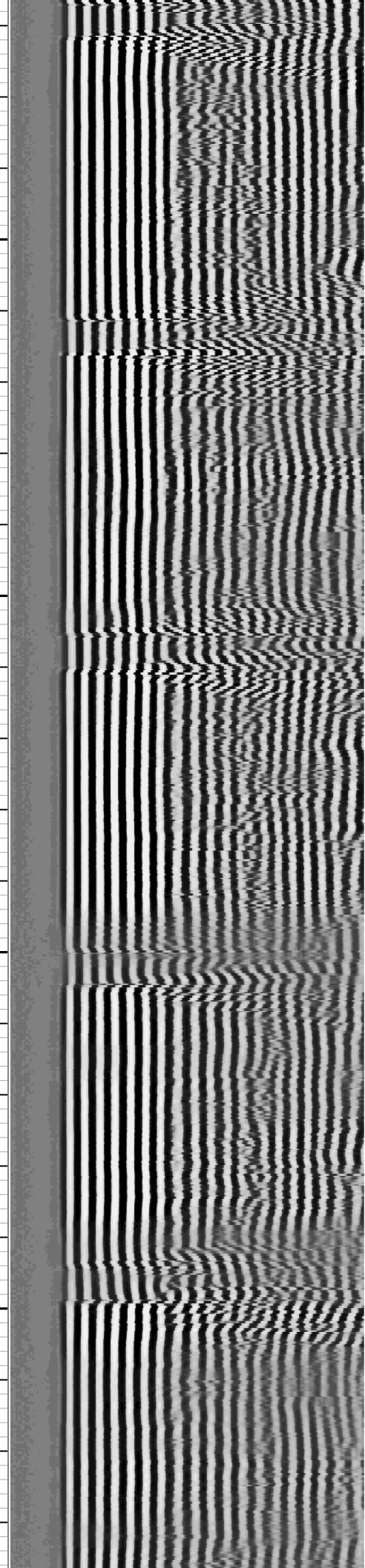
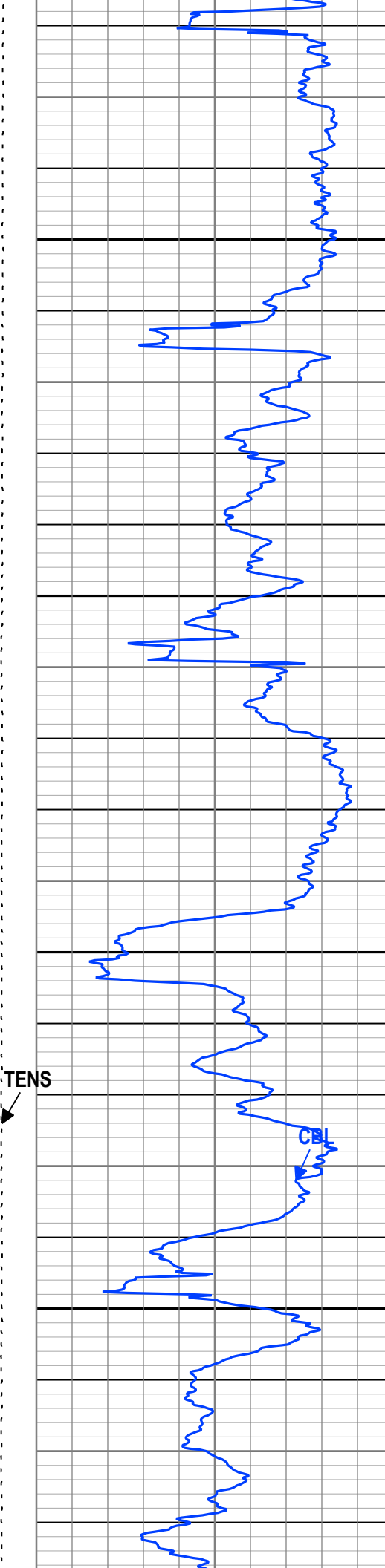
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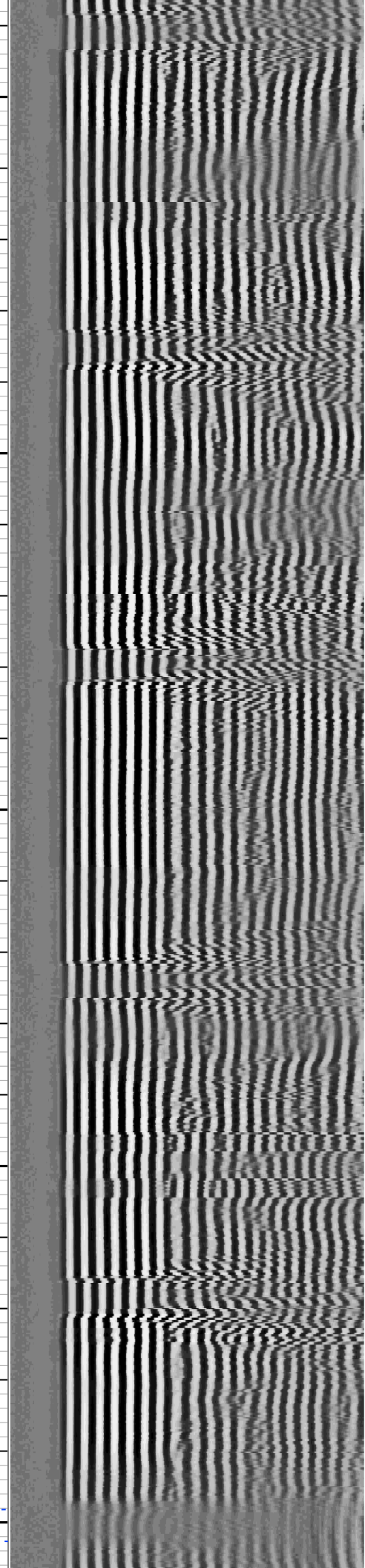
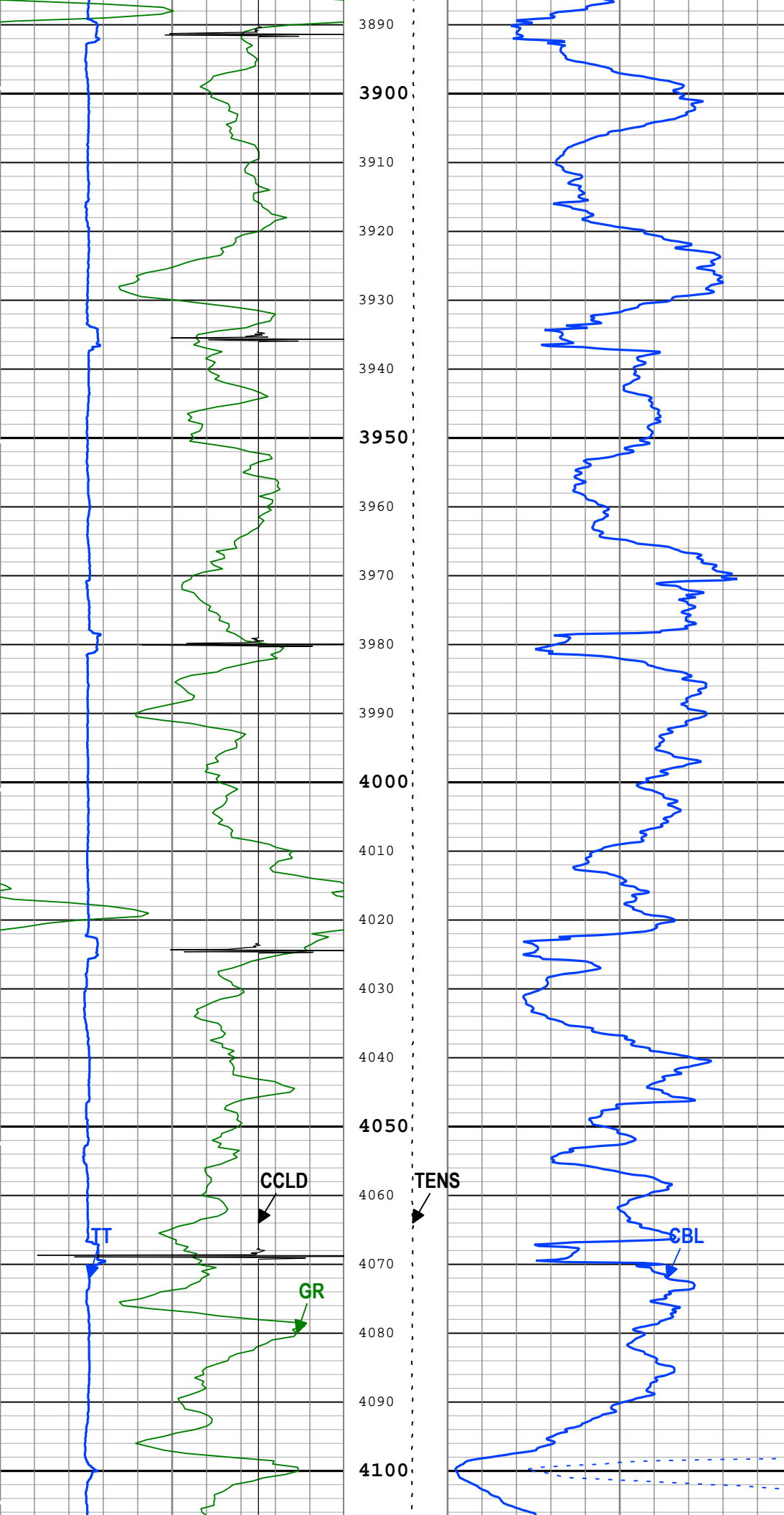


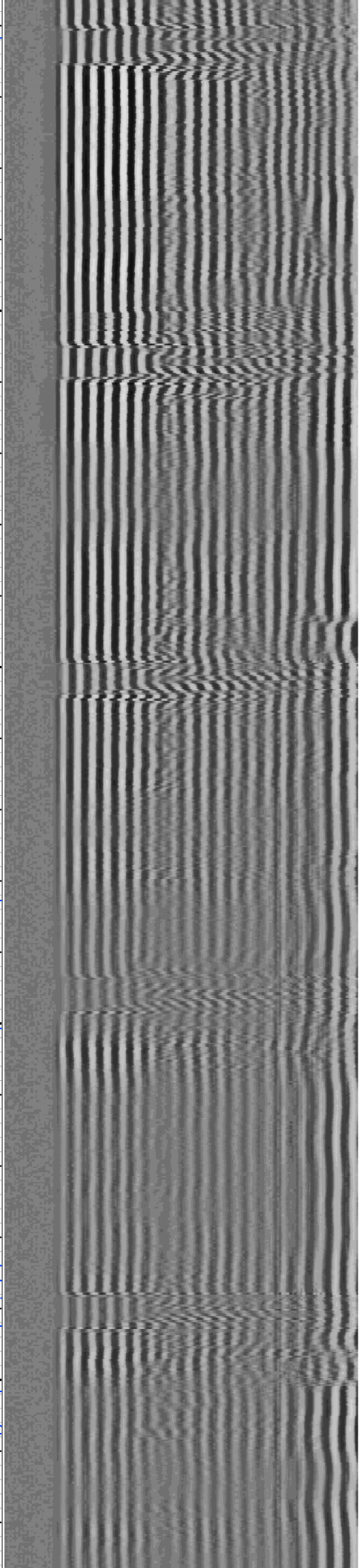
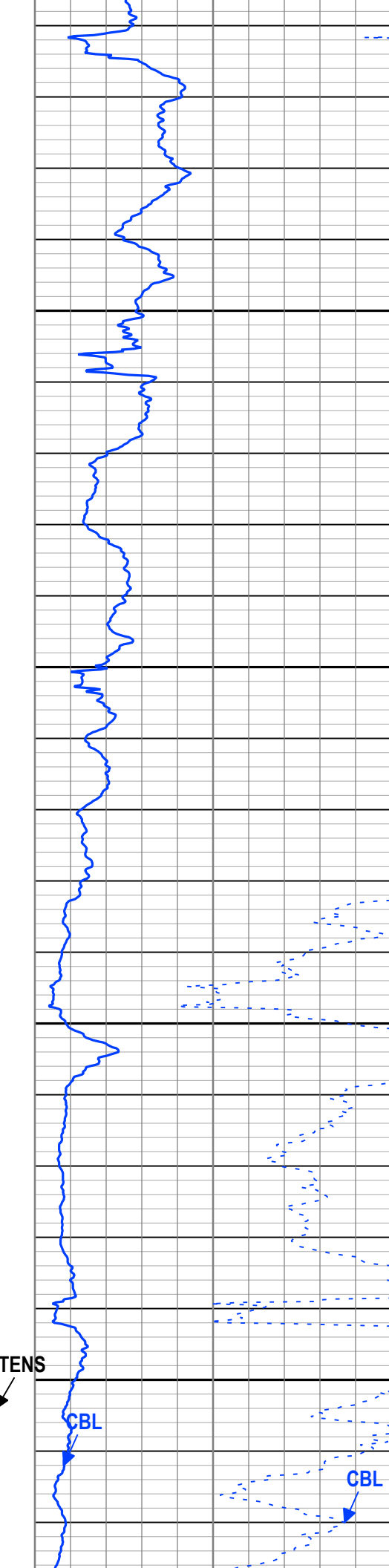
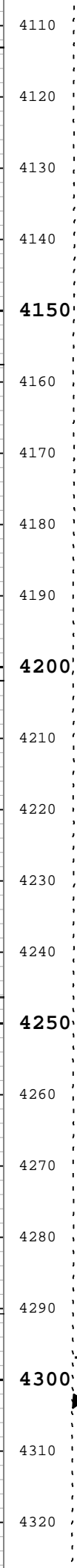
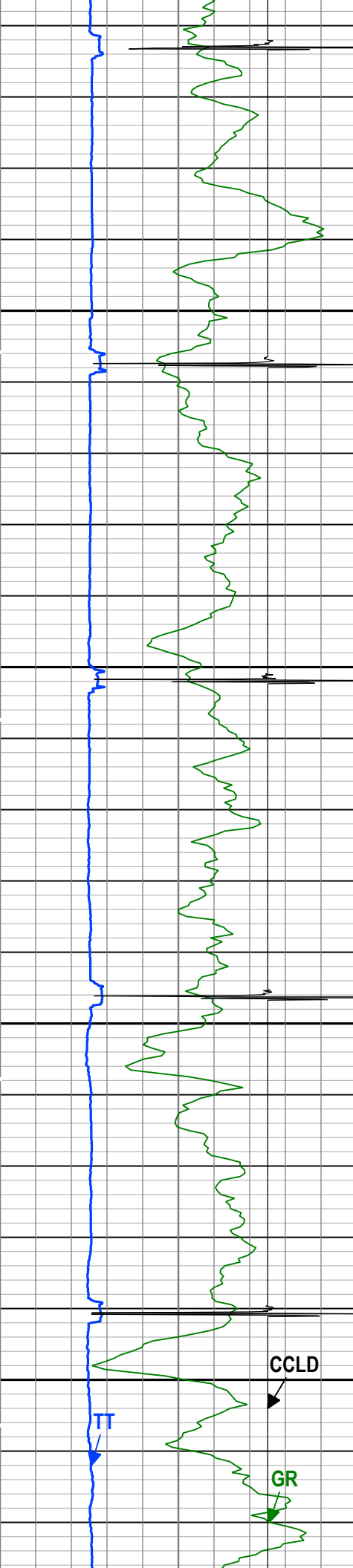




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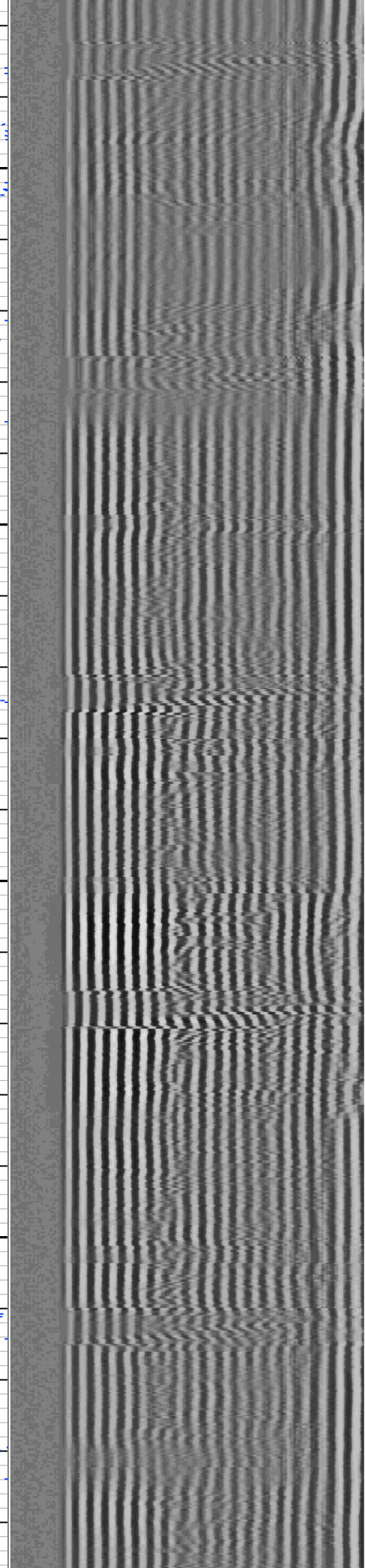
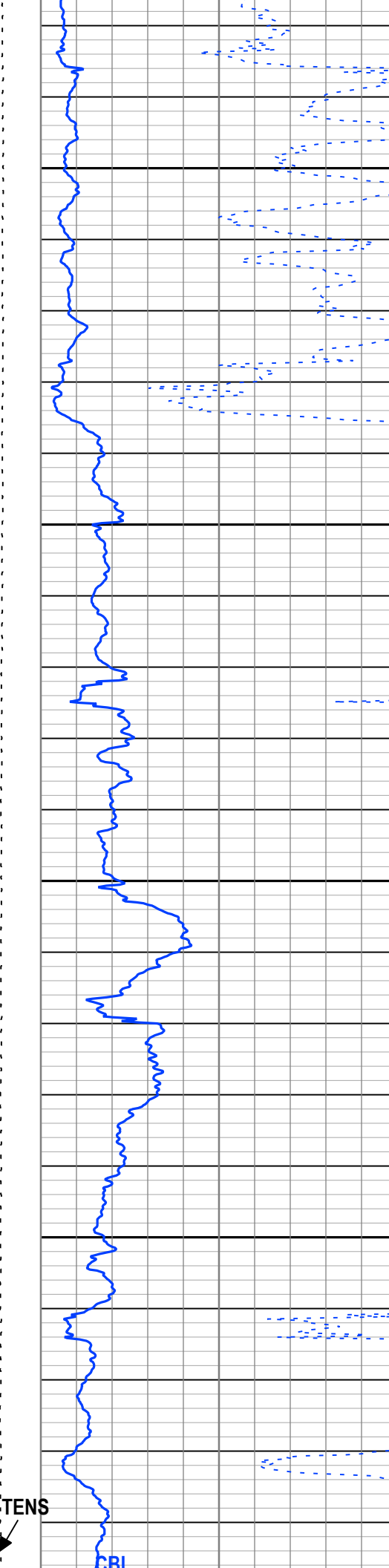








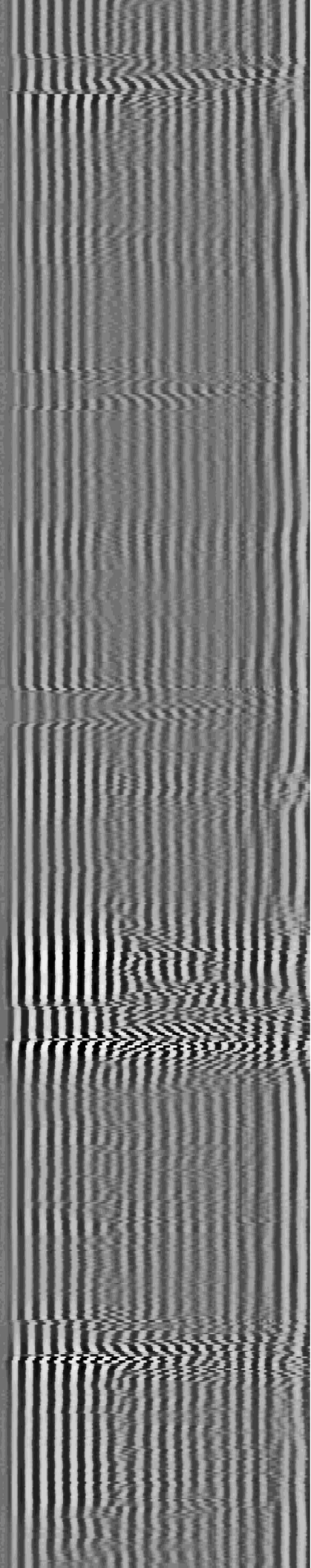
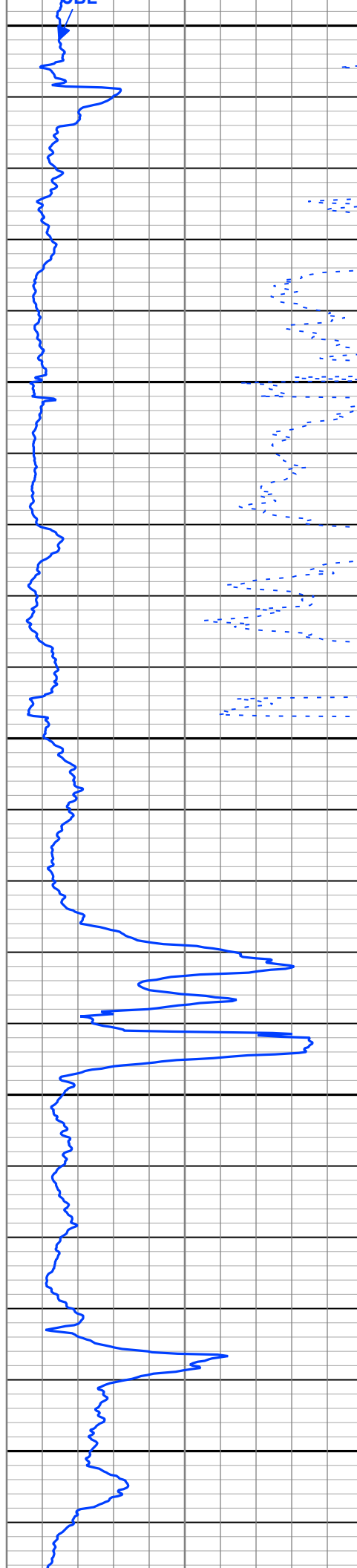
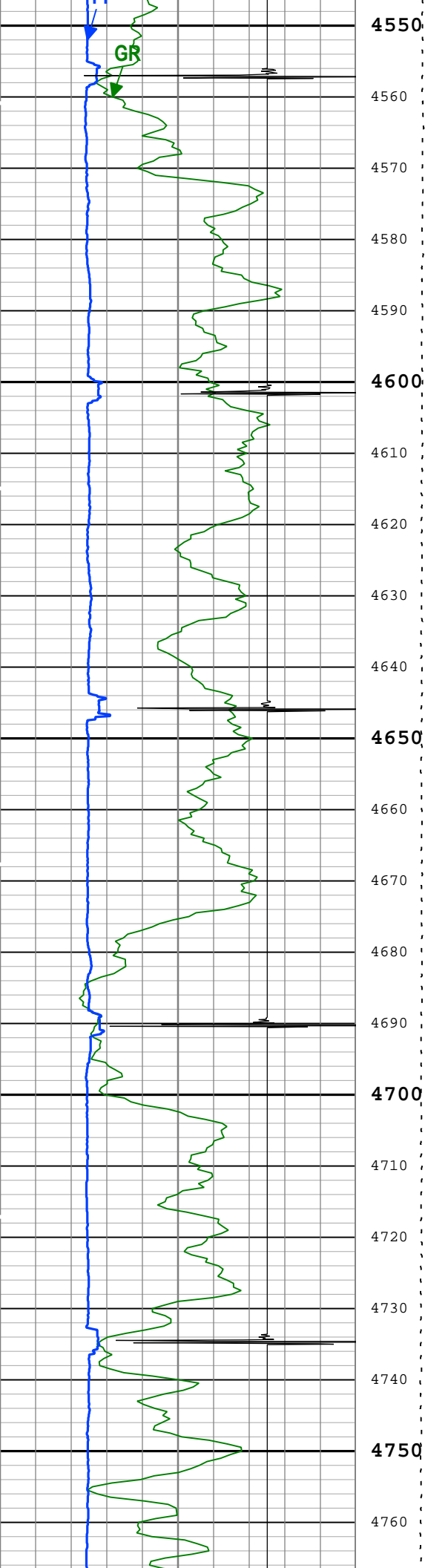
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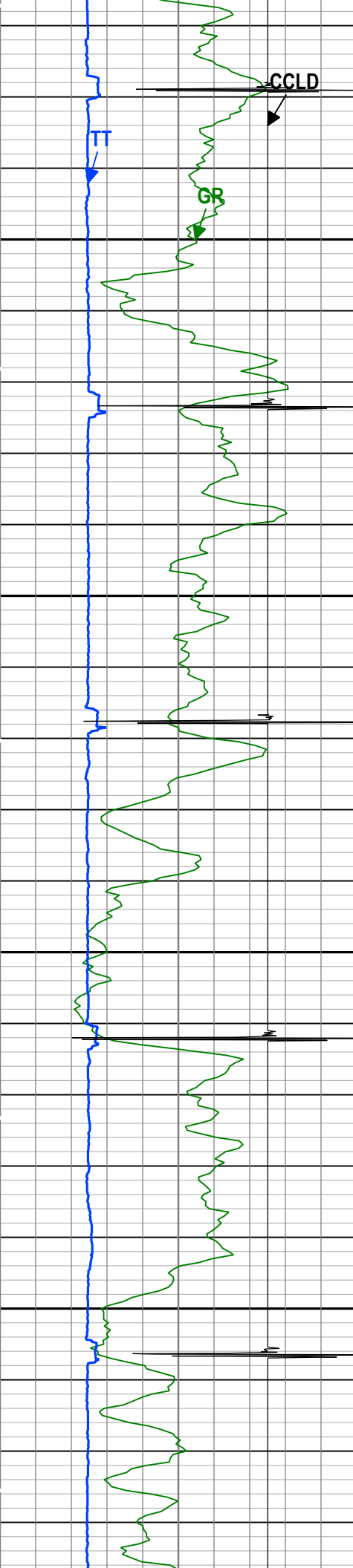


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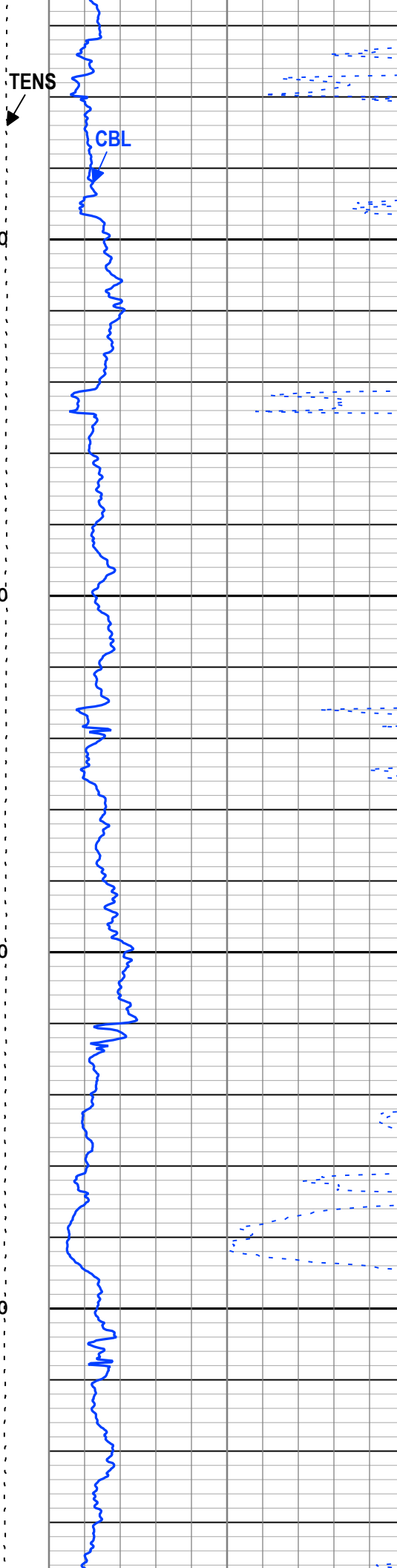
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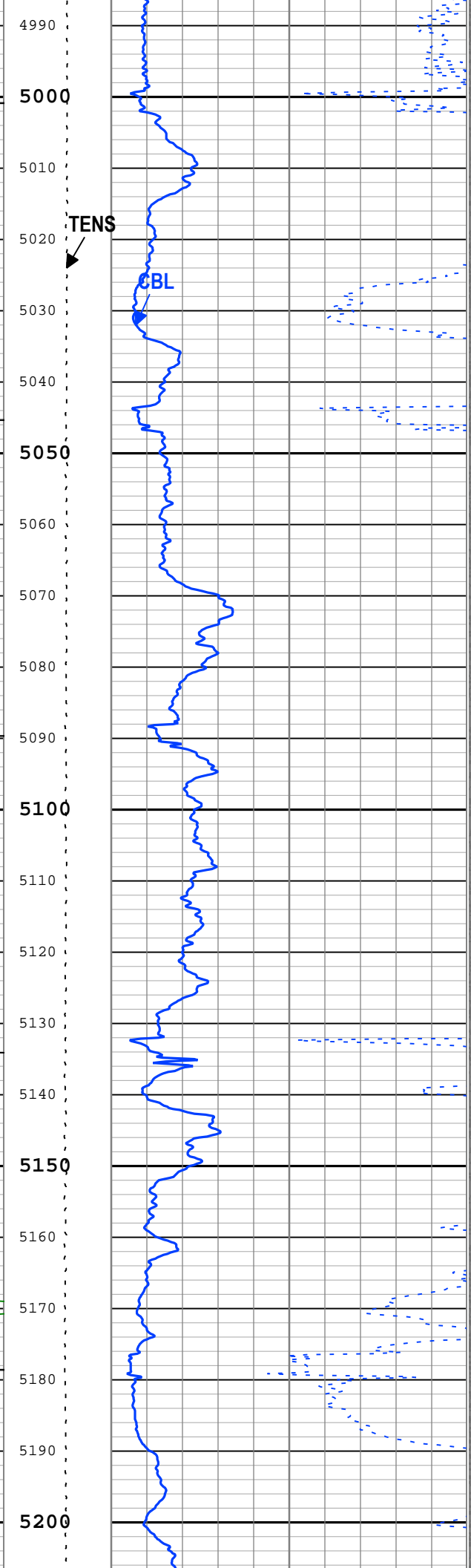
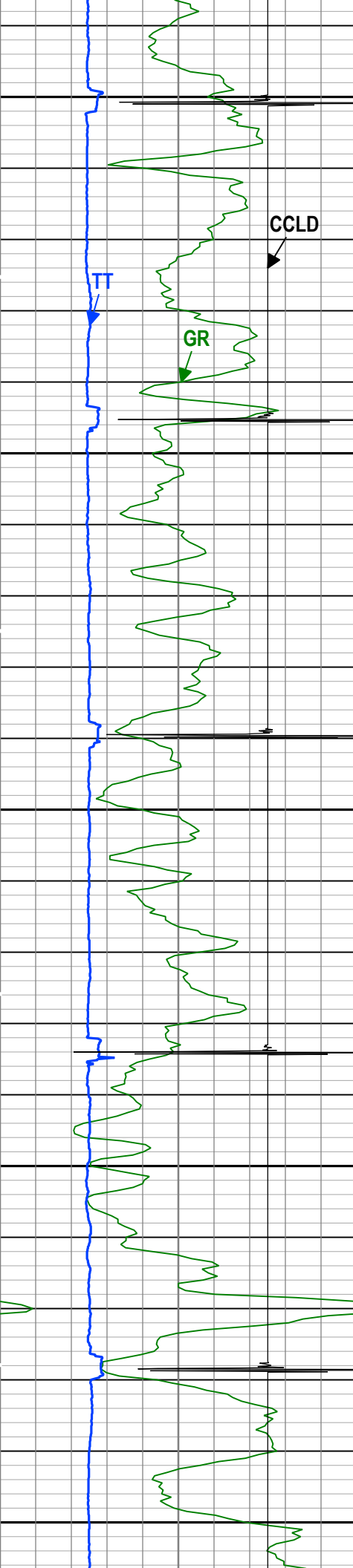
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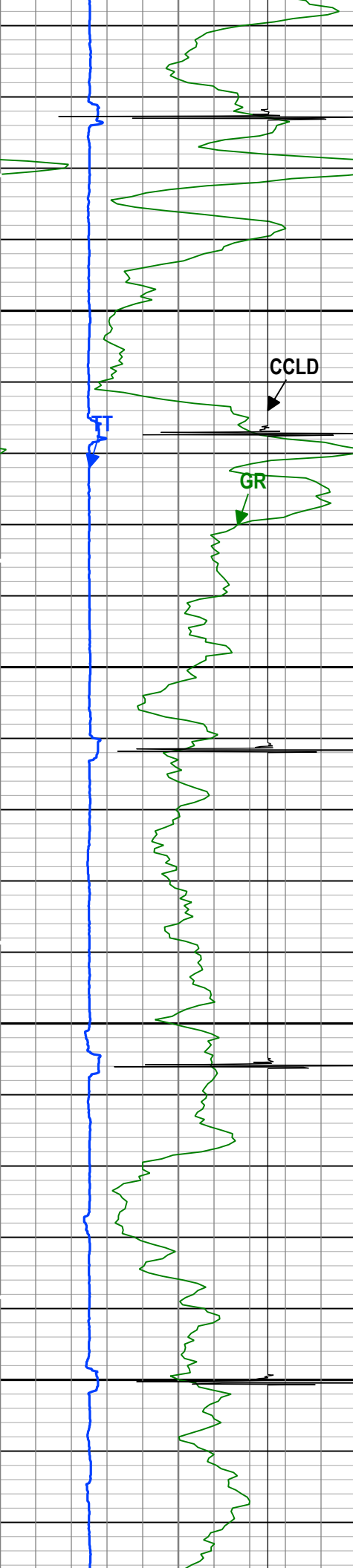




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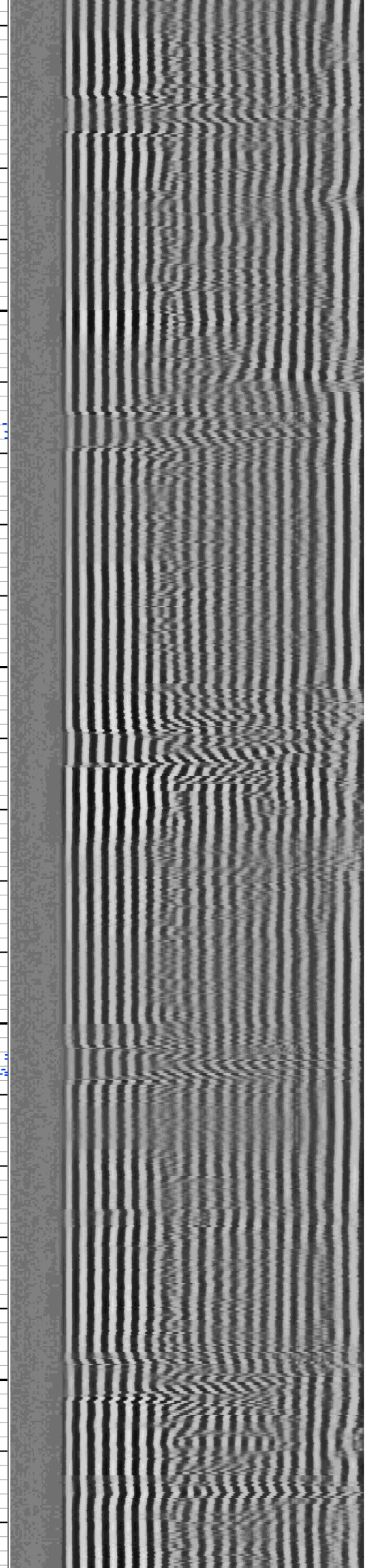
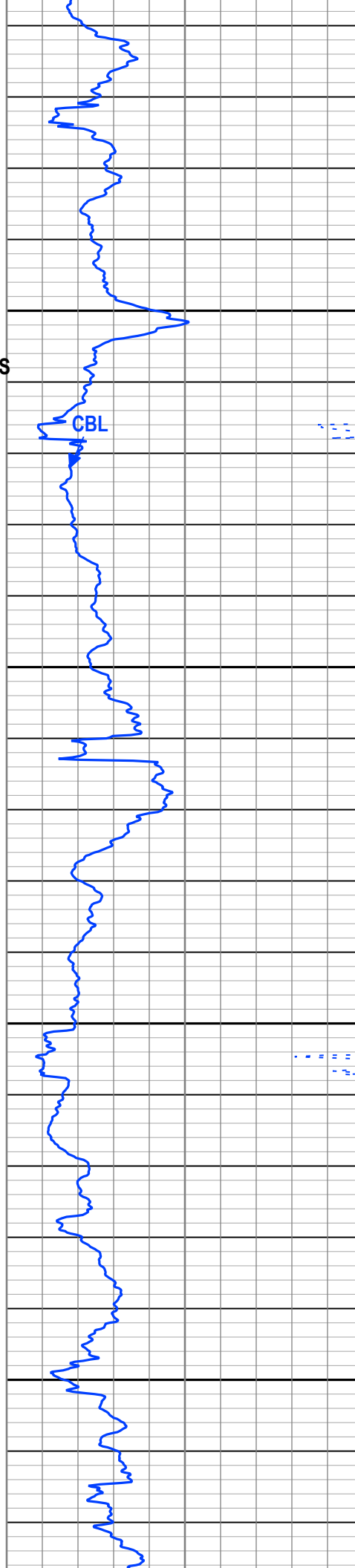


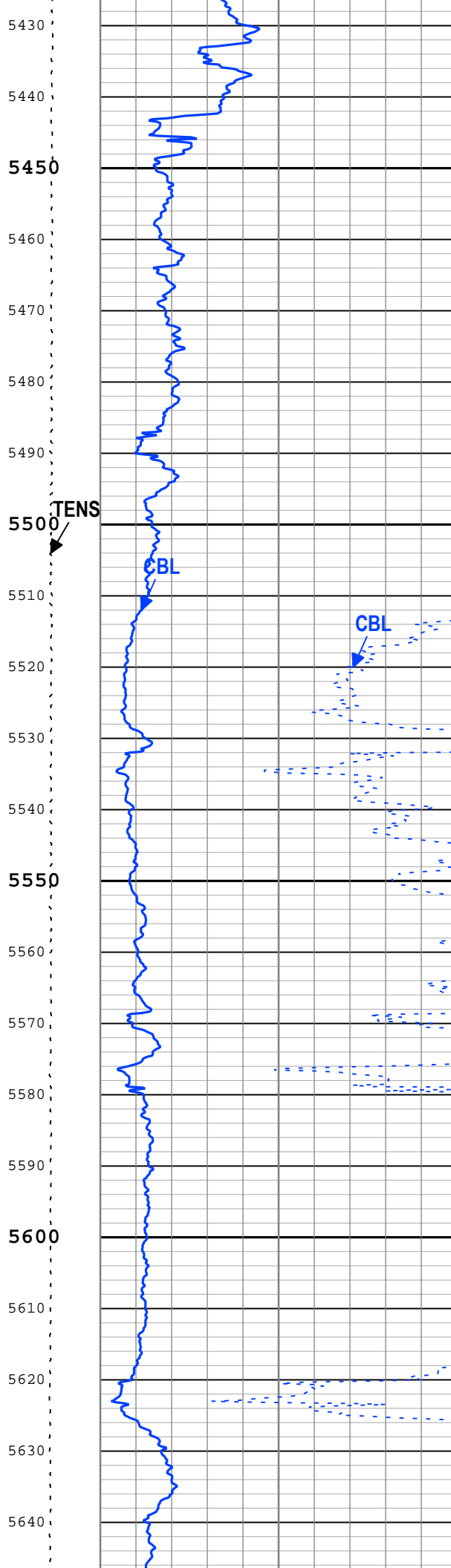
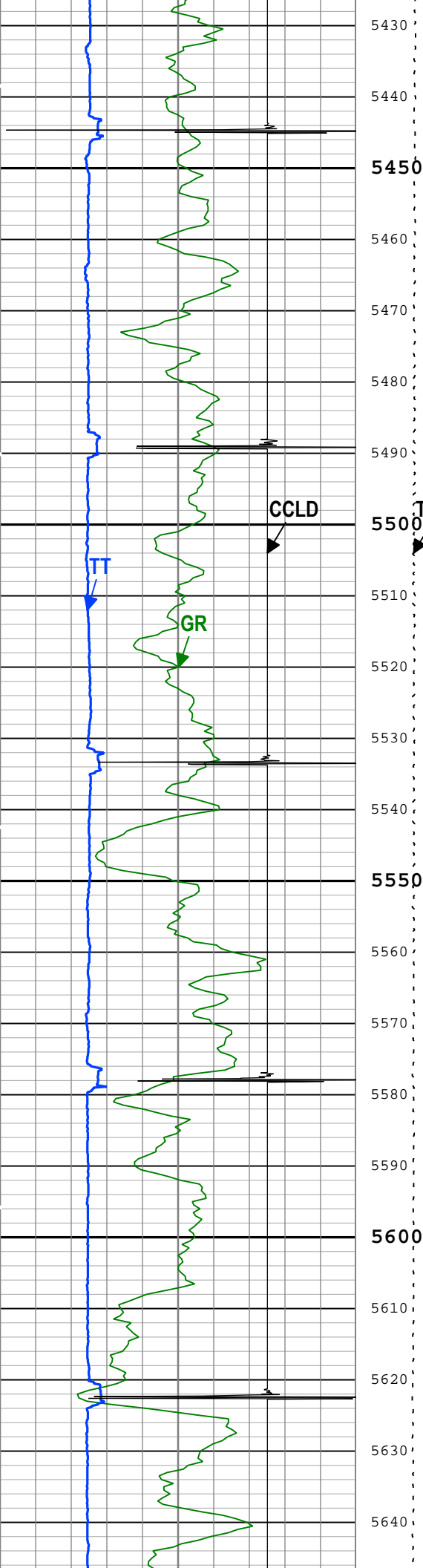


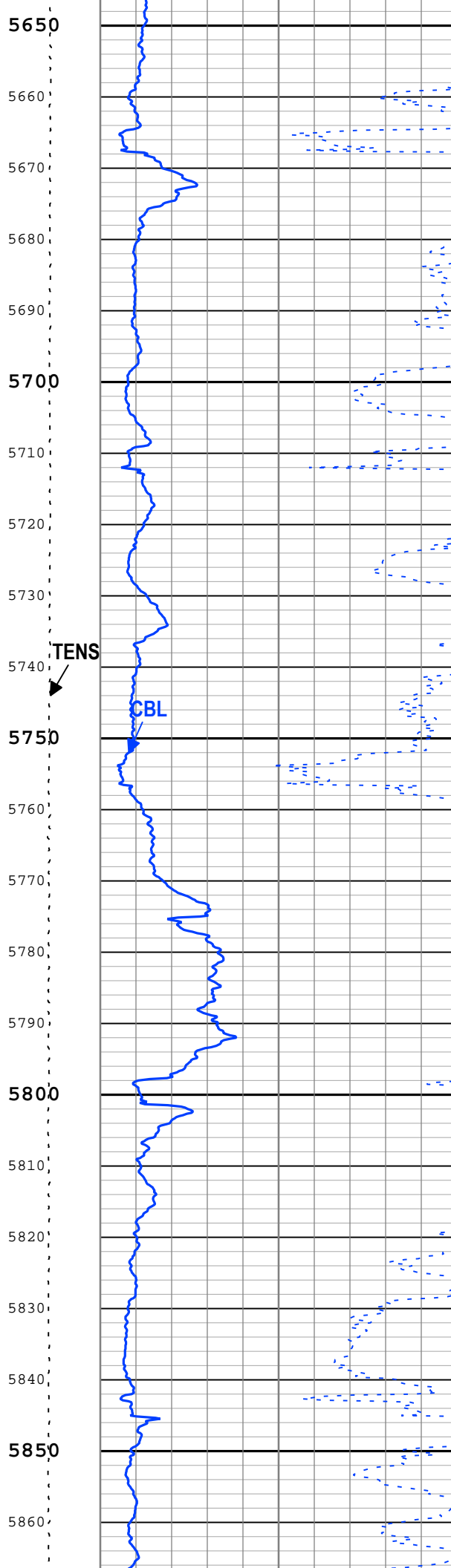
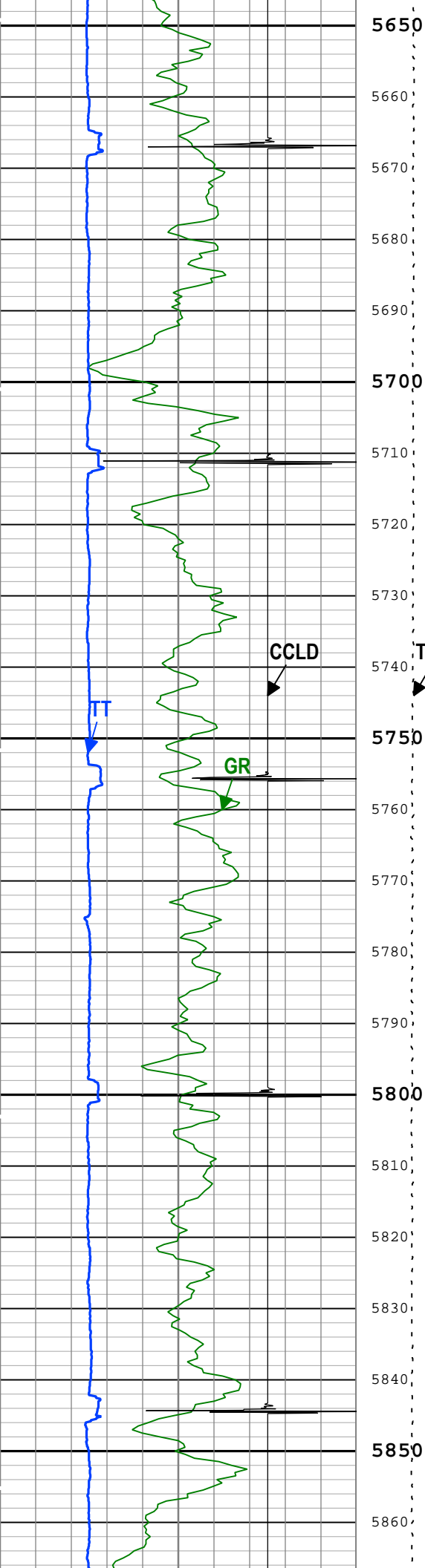
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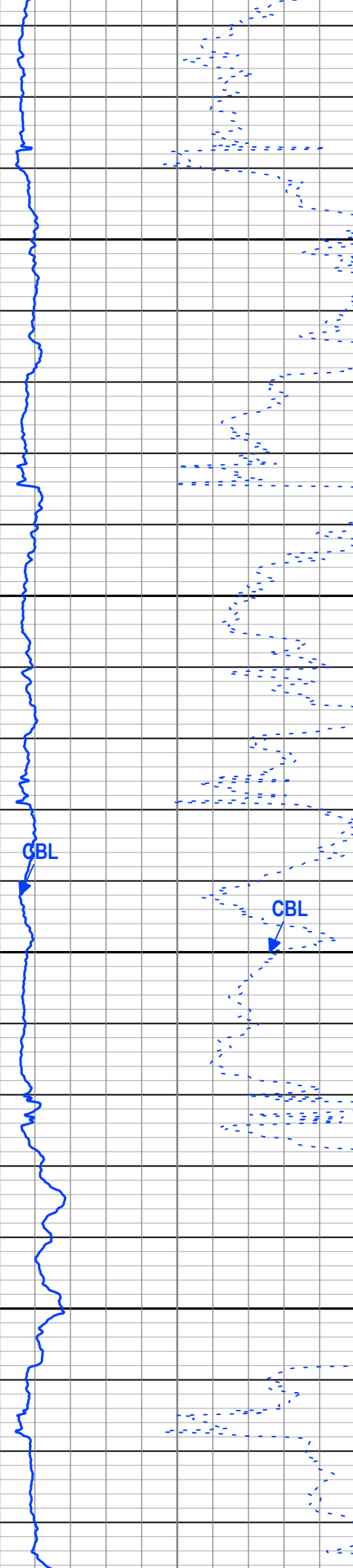
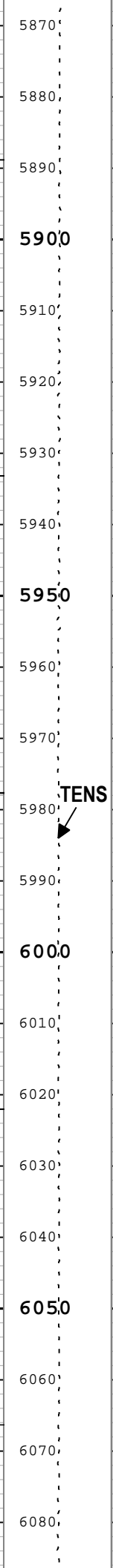
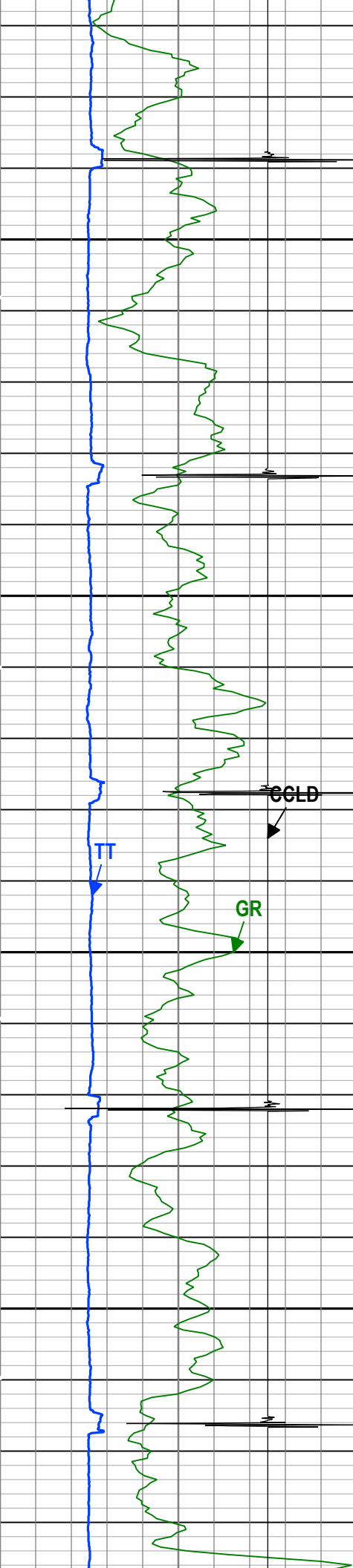
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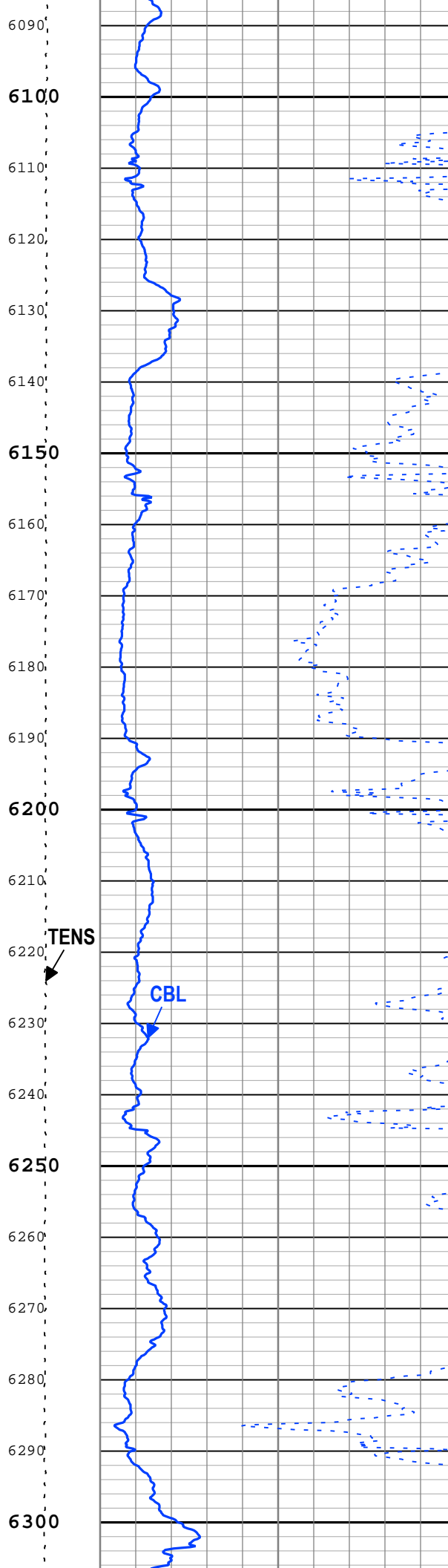
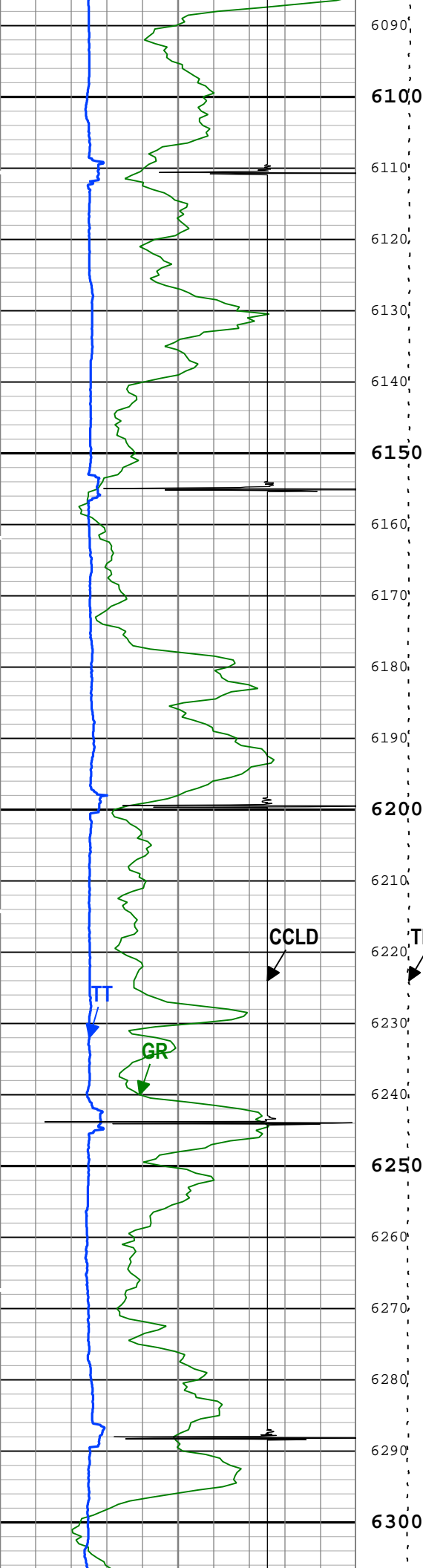
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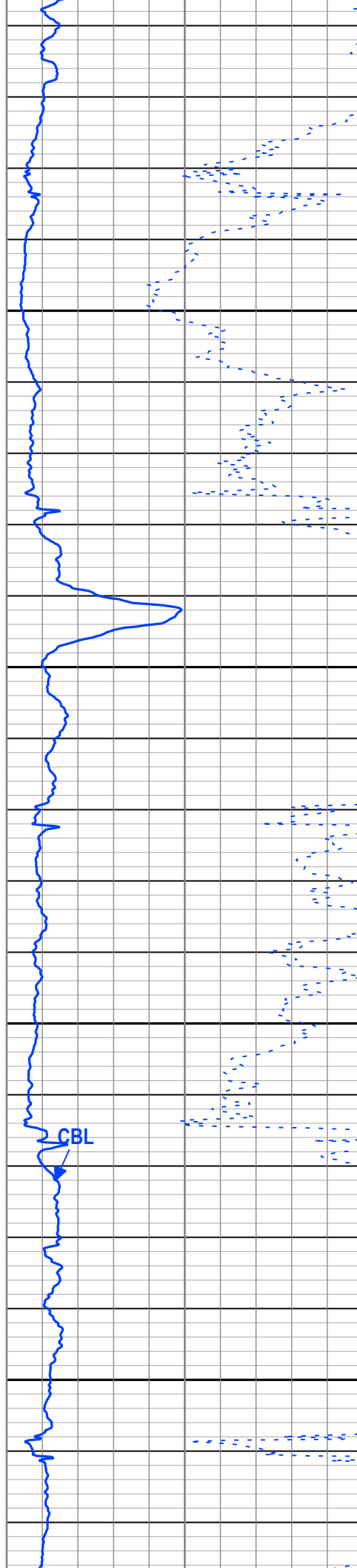
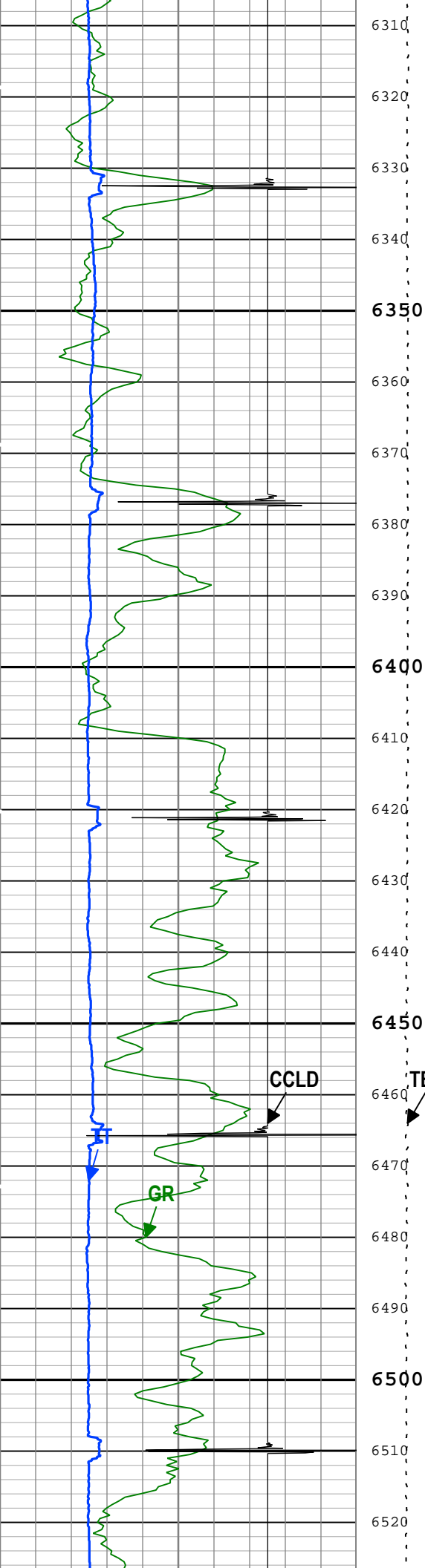


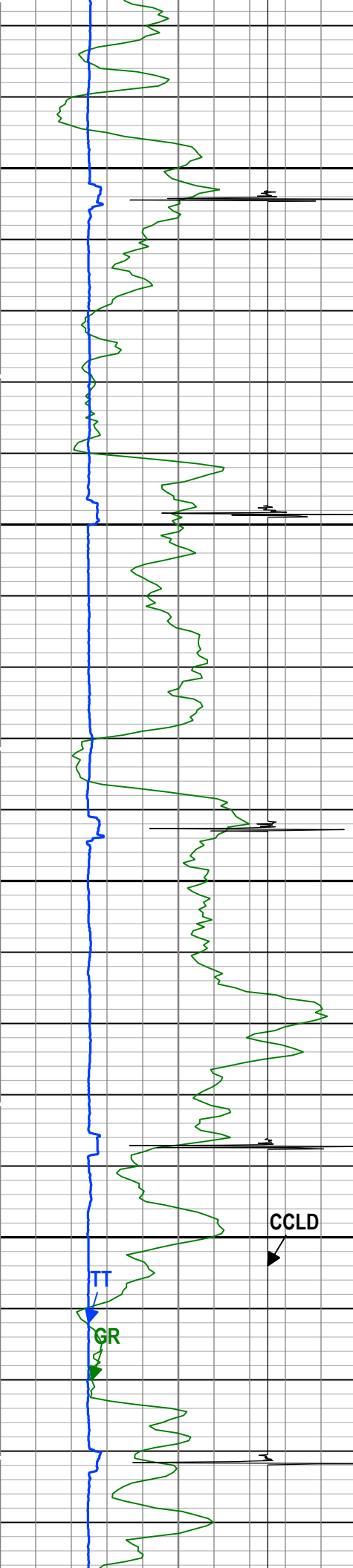




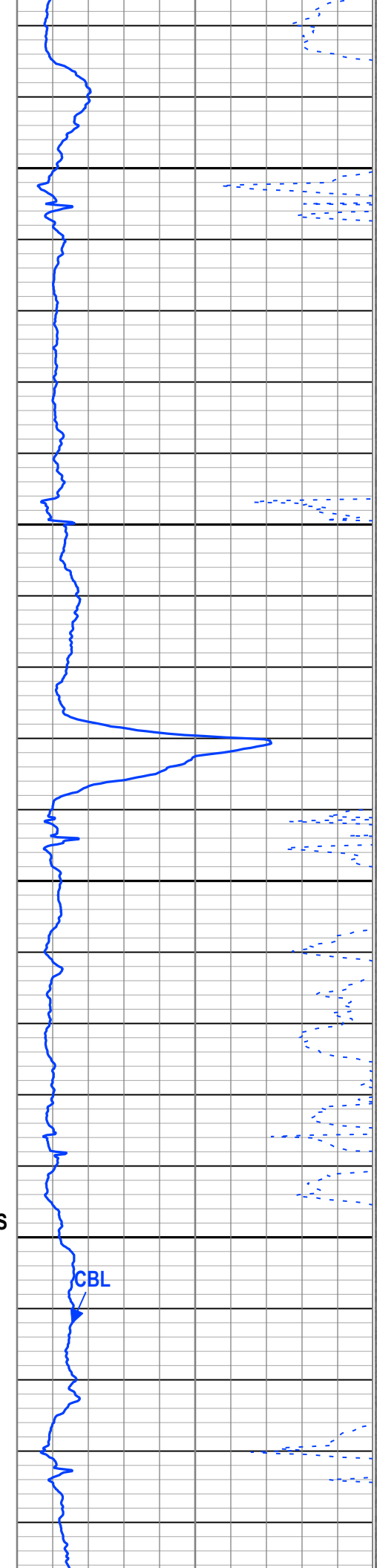




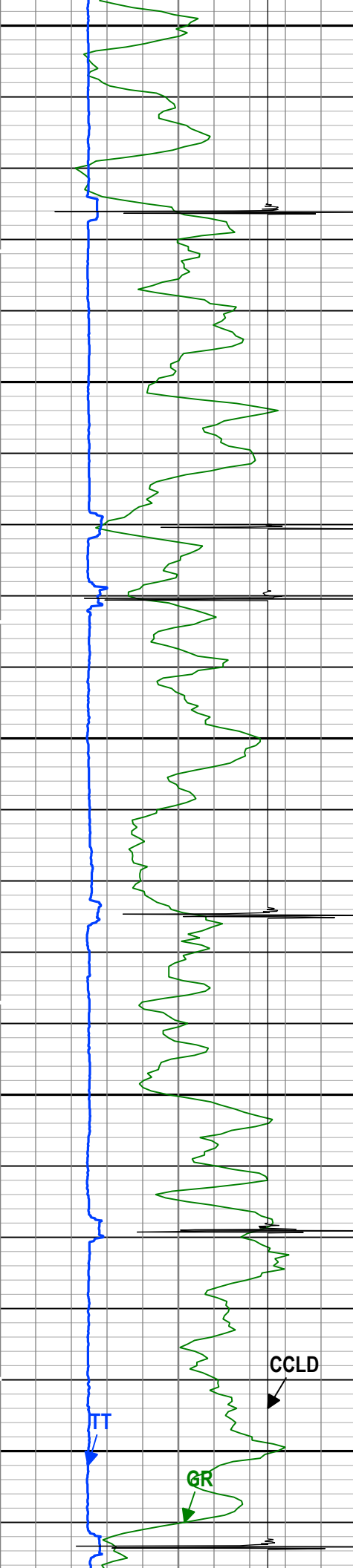




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Short Joint 6820'-6830'

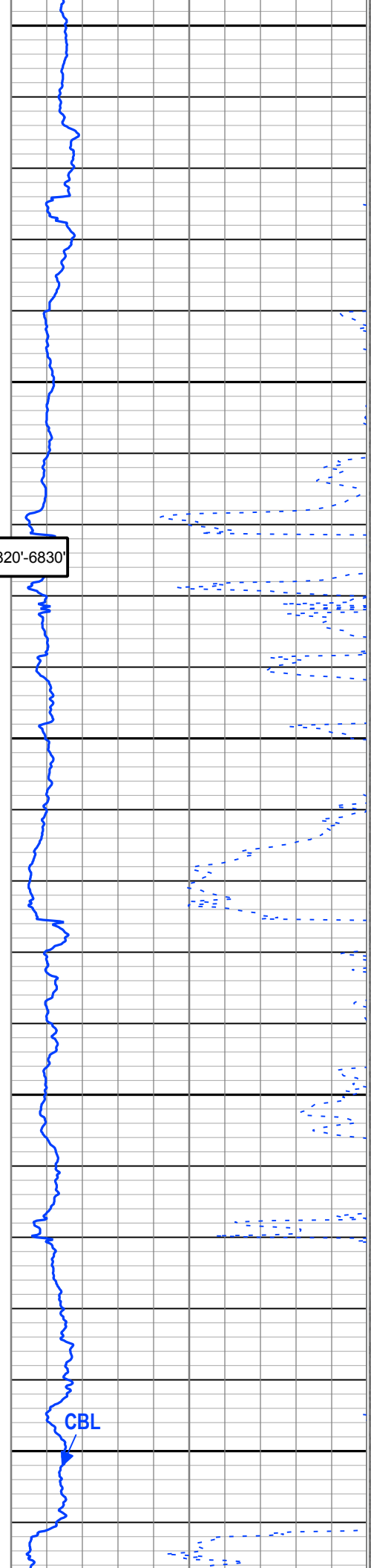
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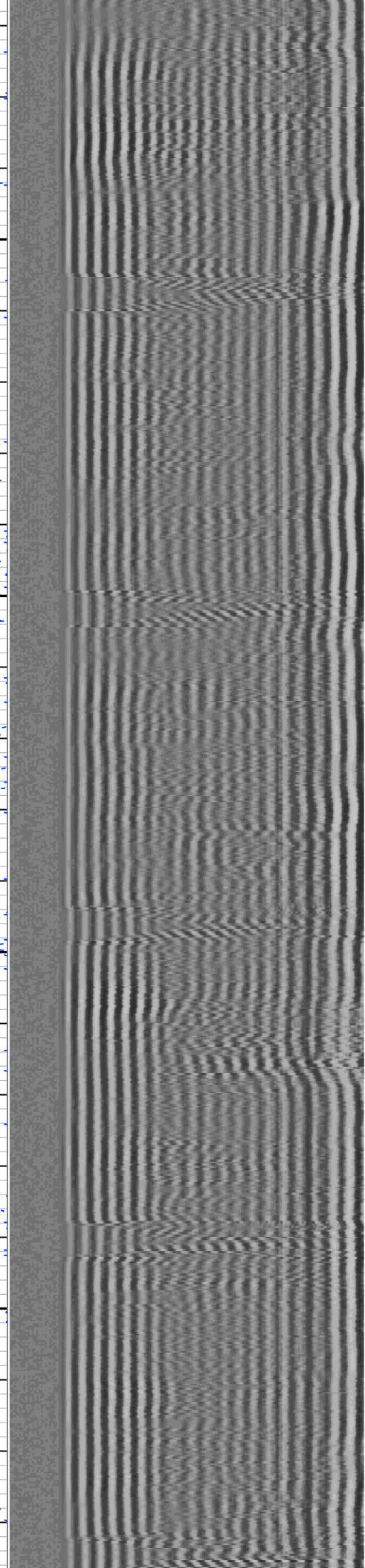
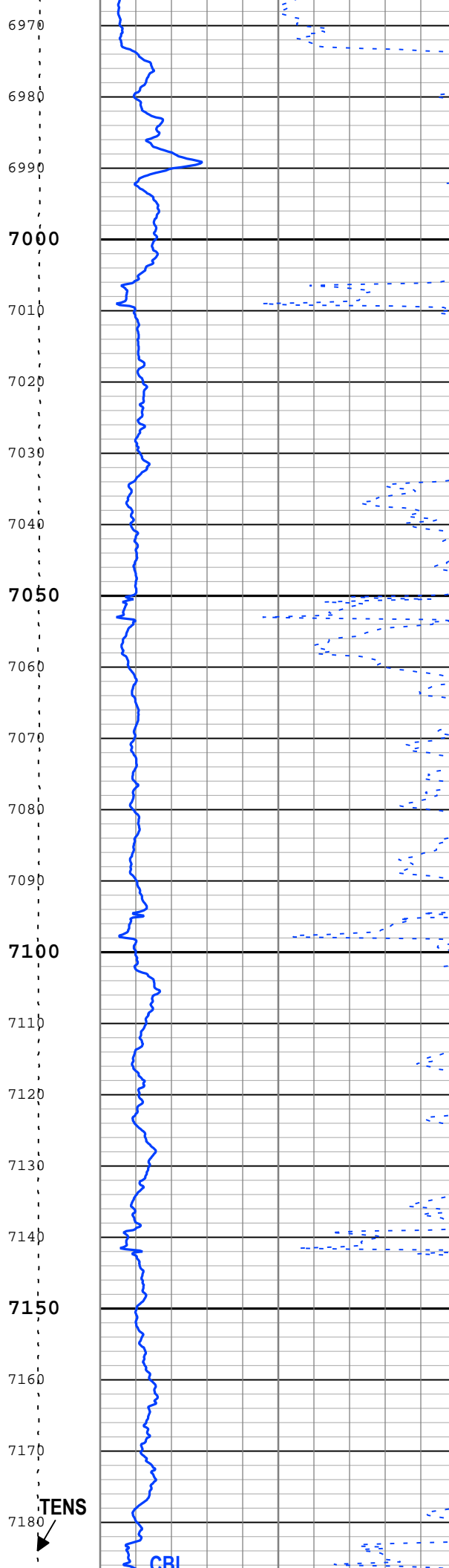
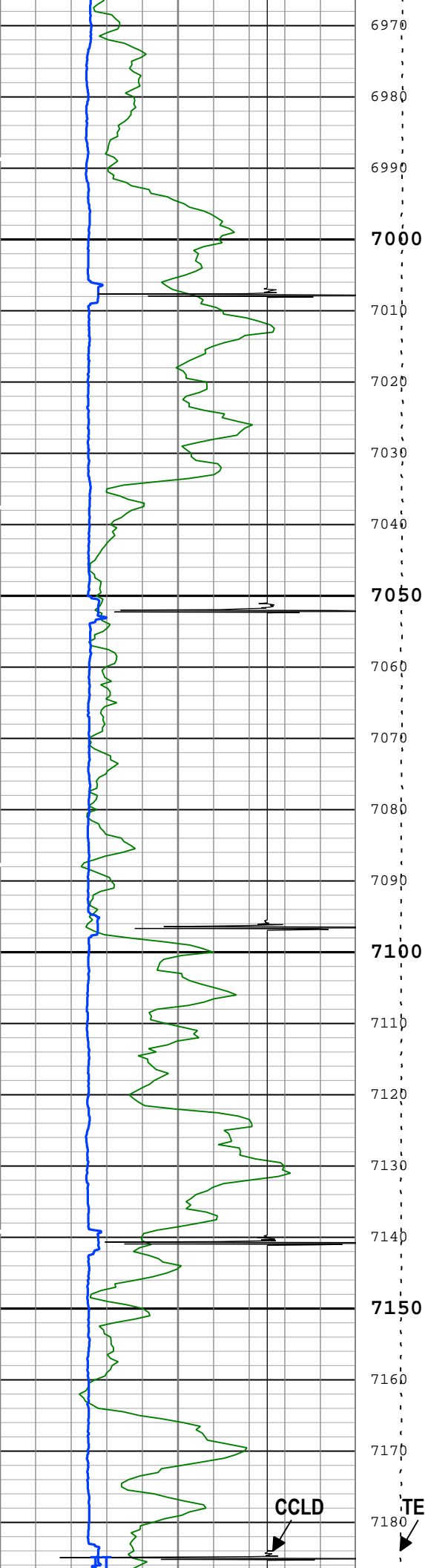
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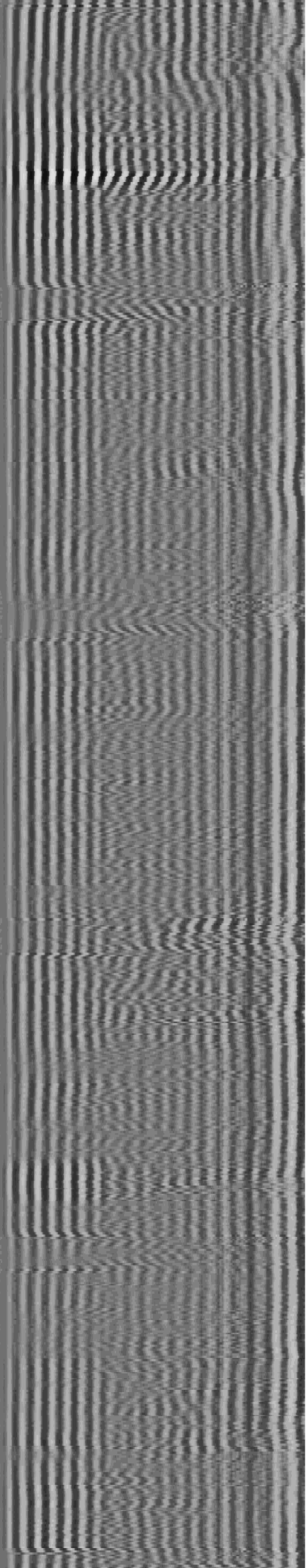
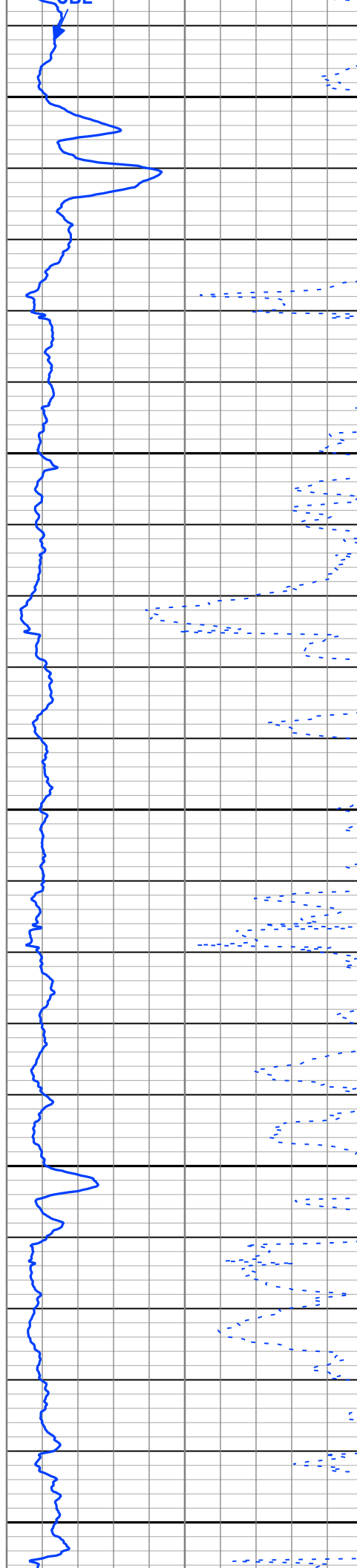
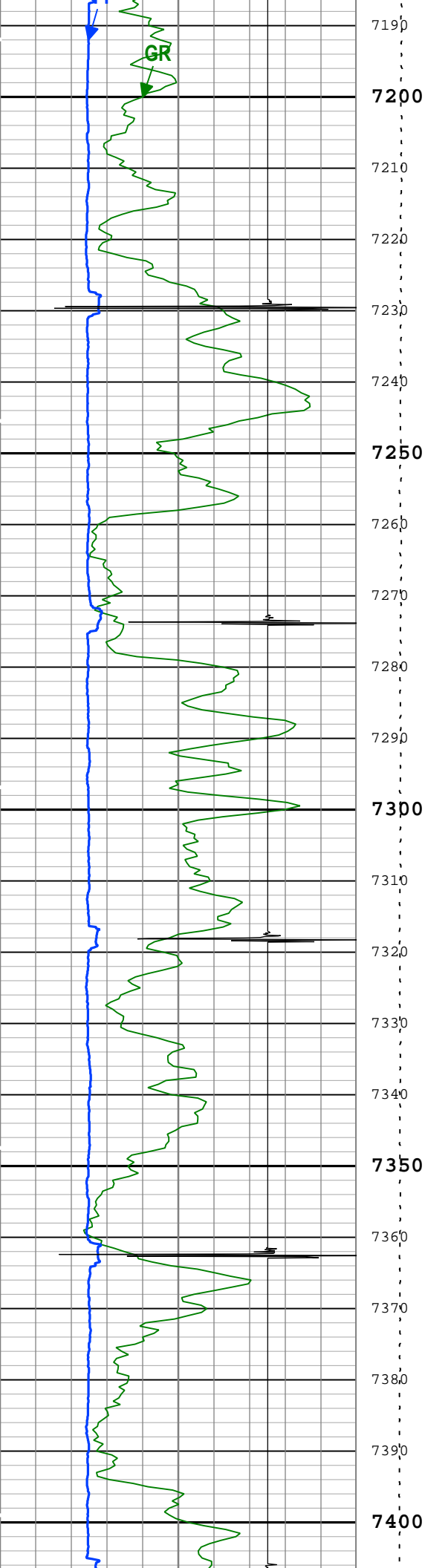
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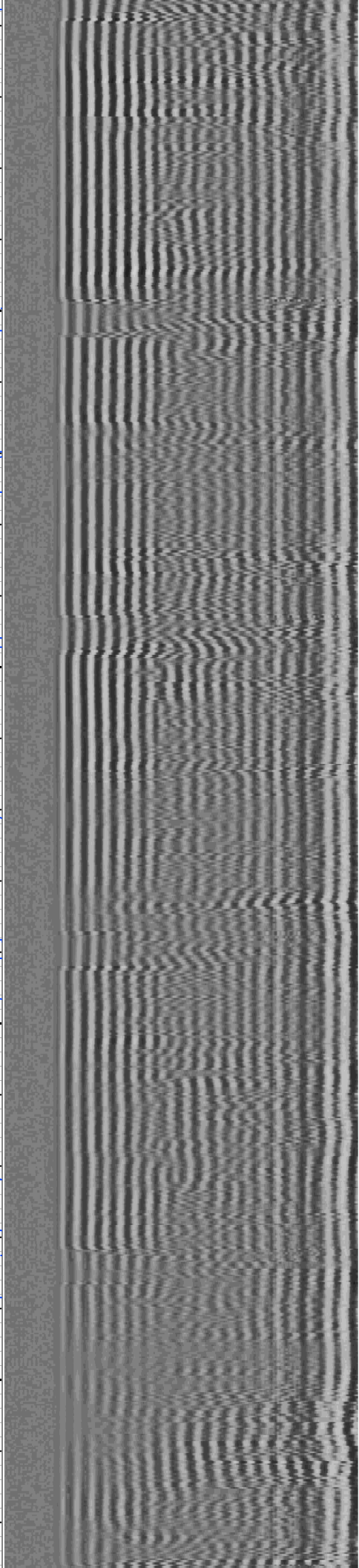
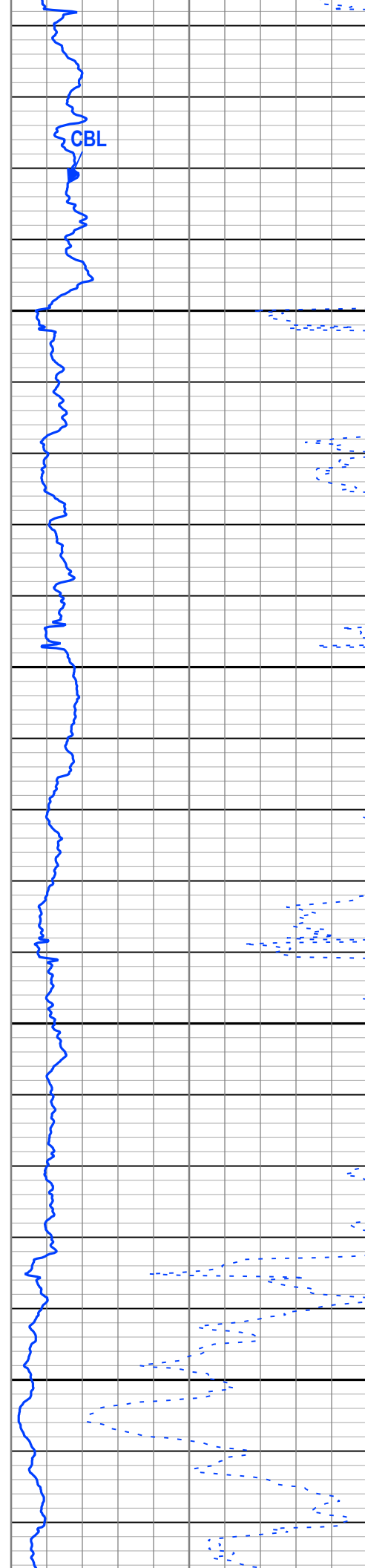
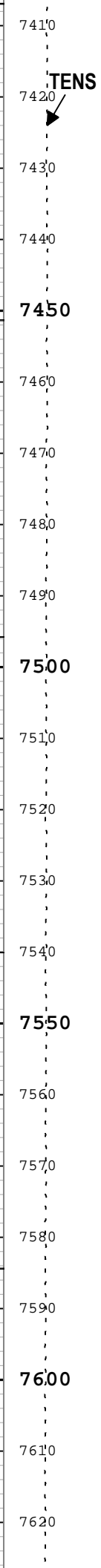
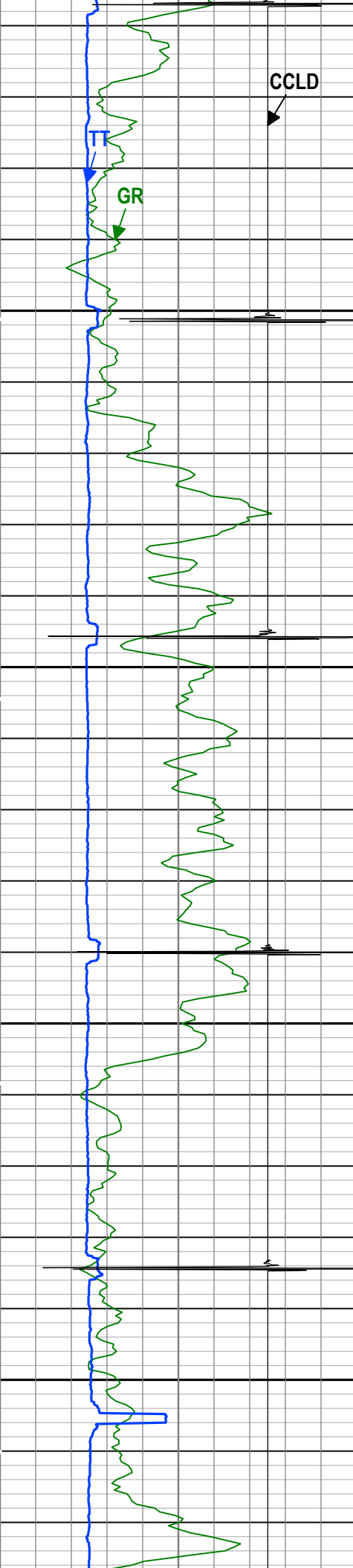
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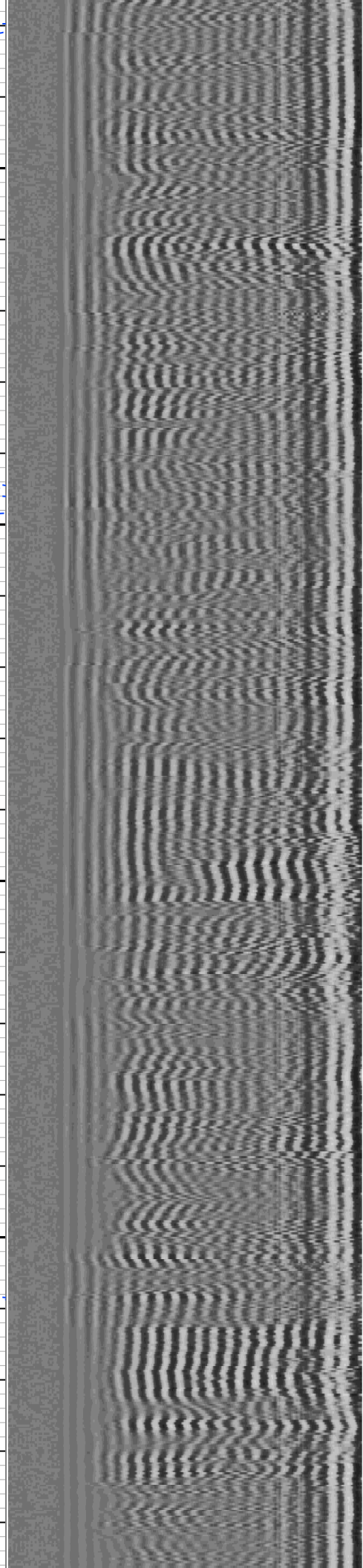
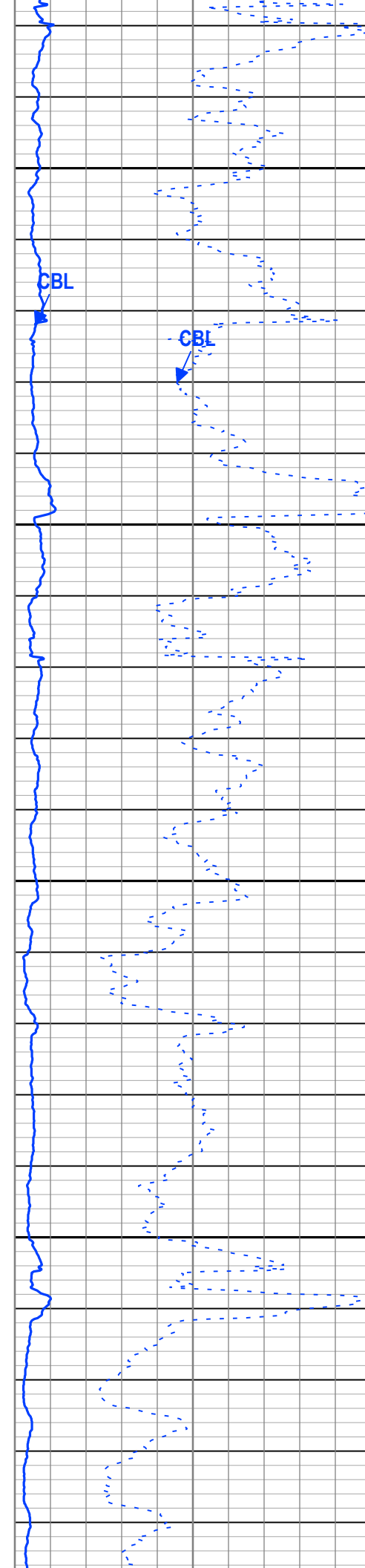
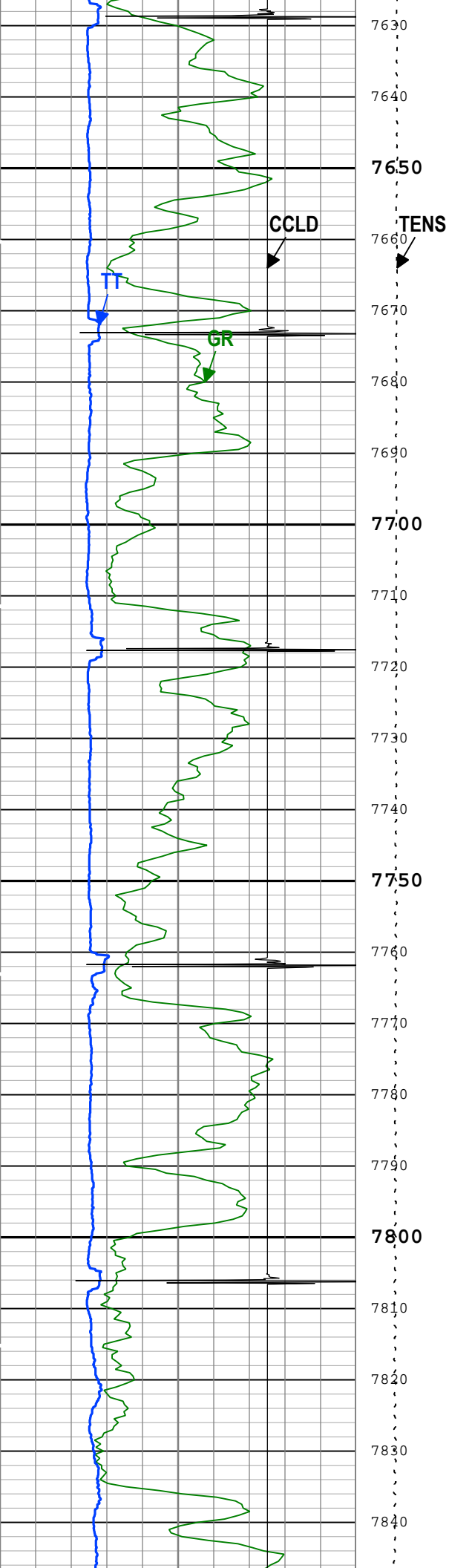
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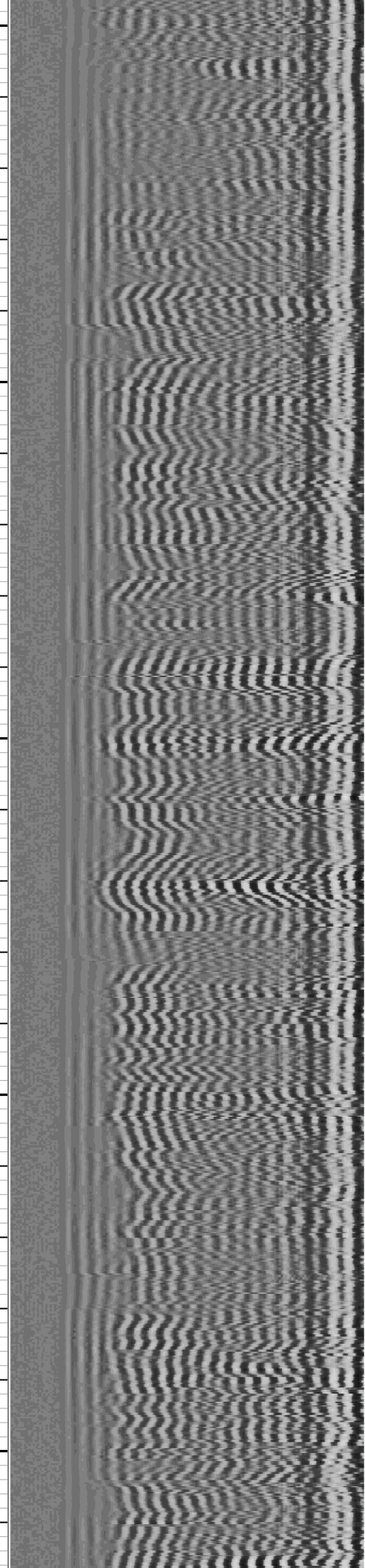
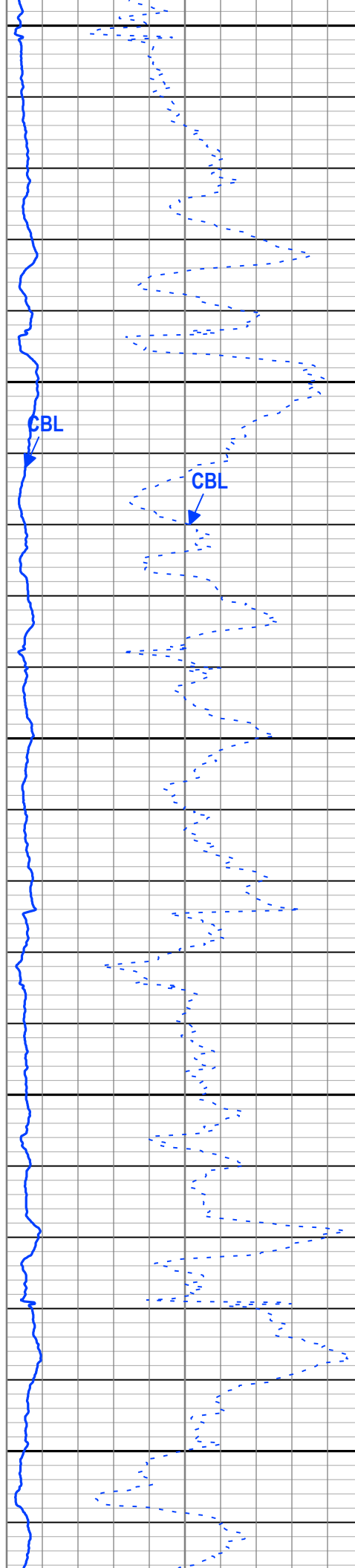
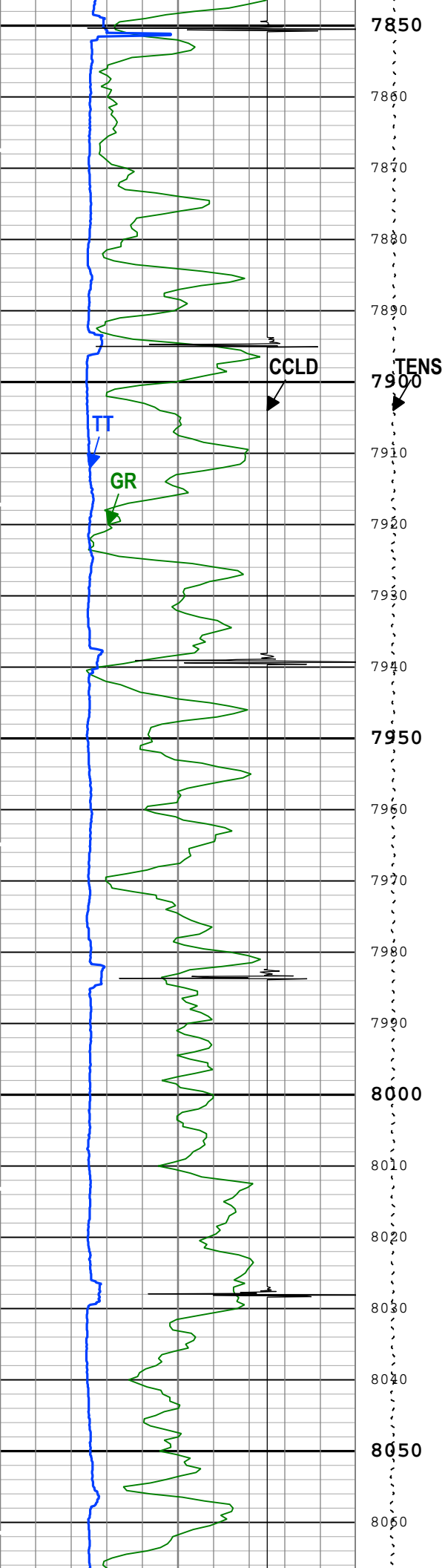


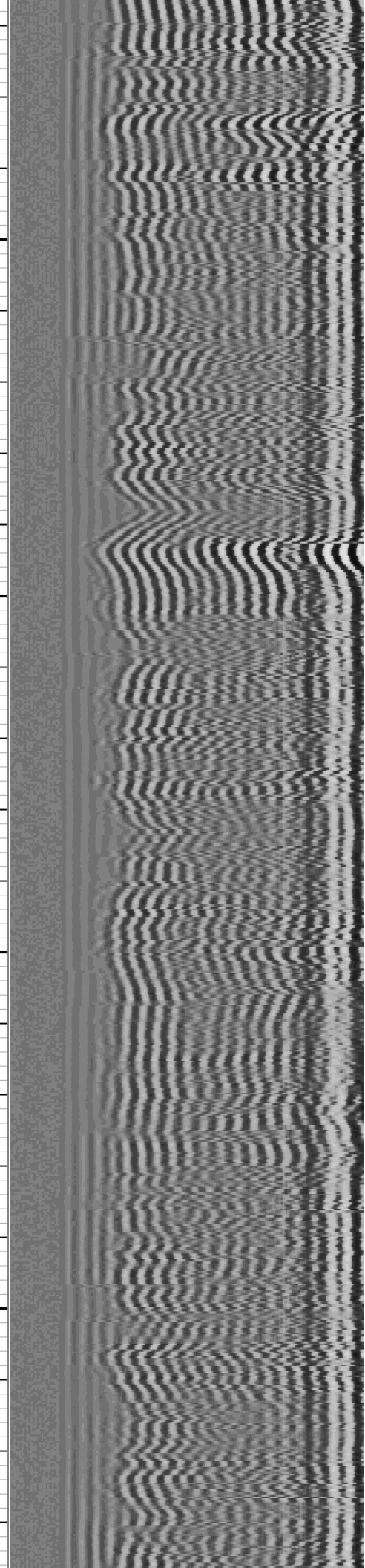
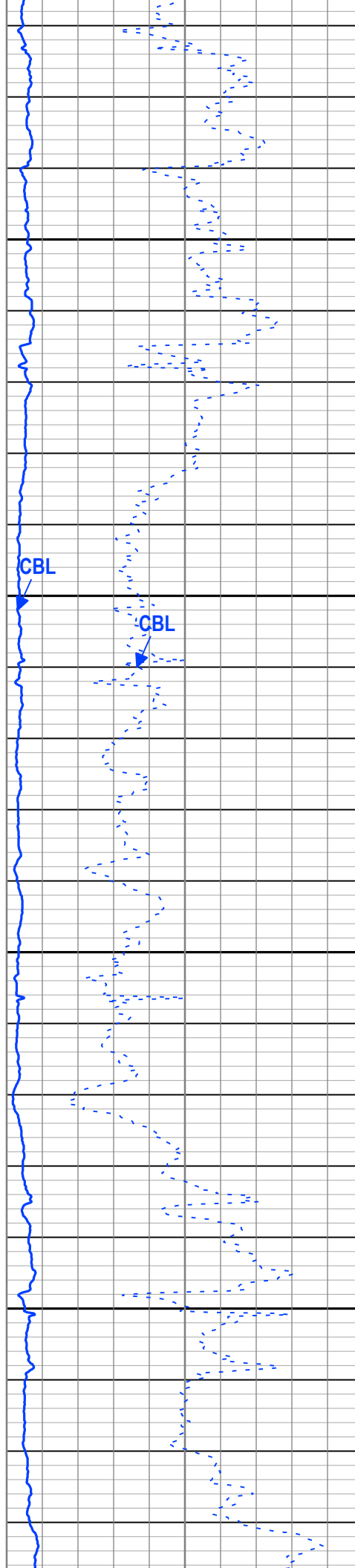
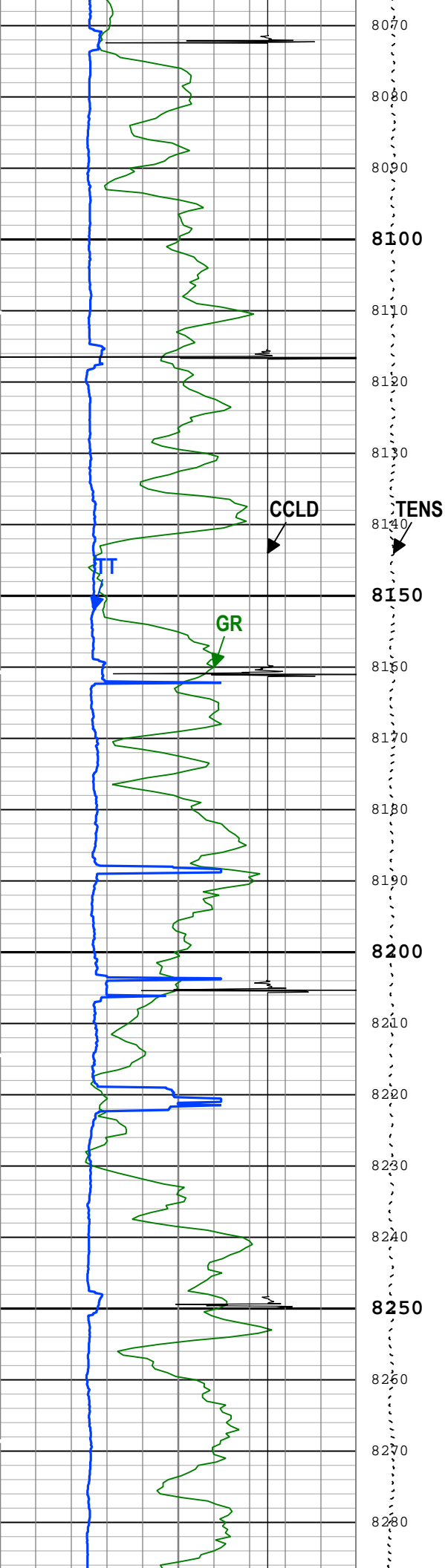


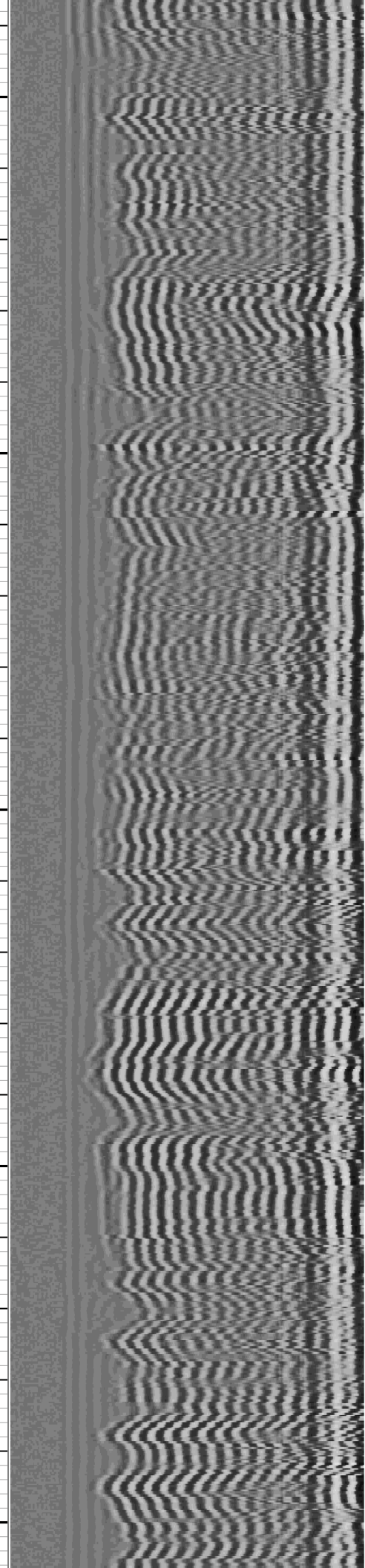
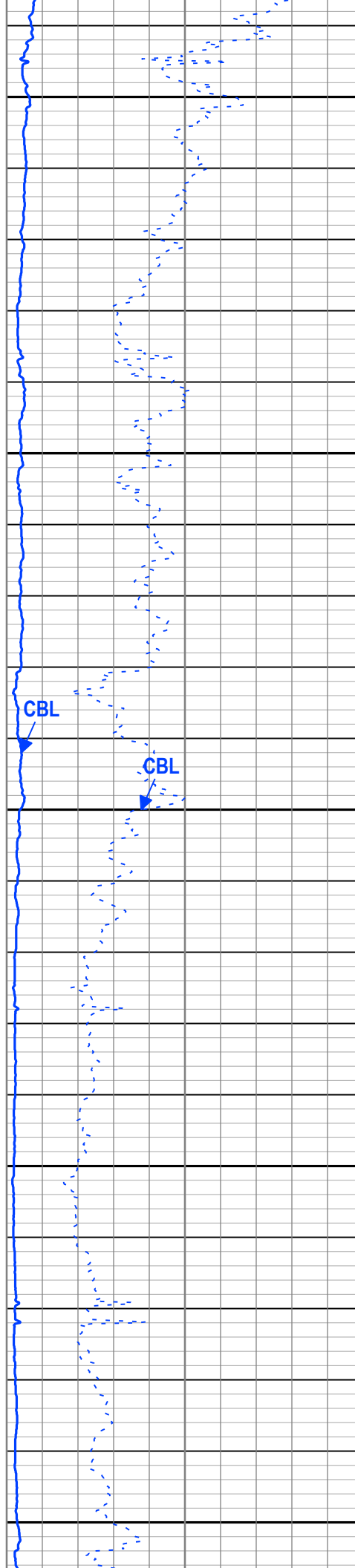
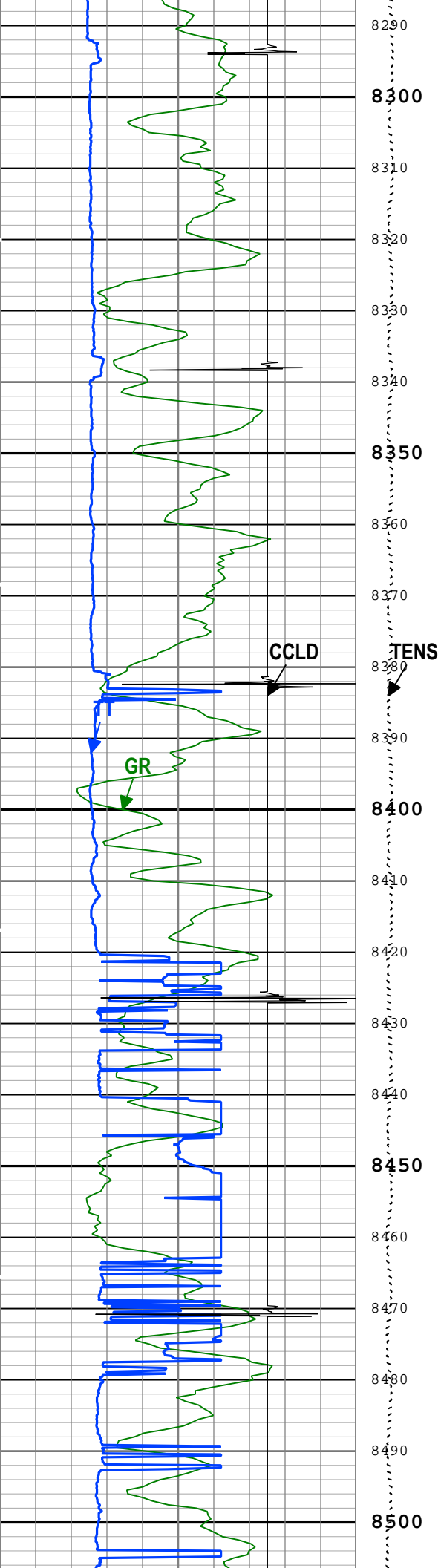


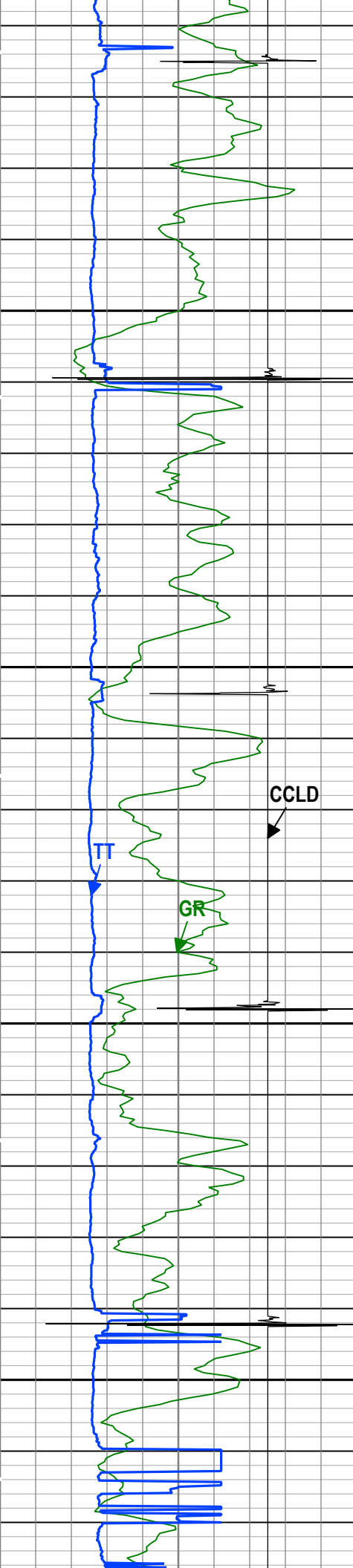




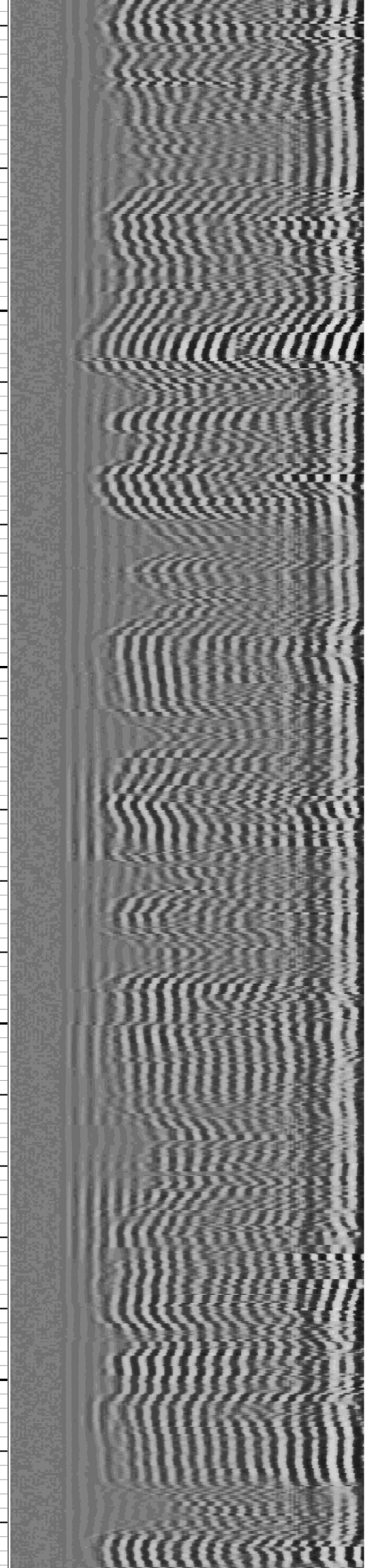
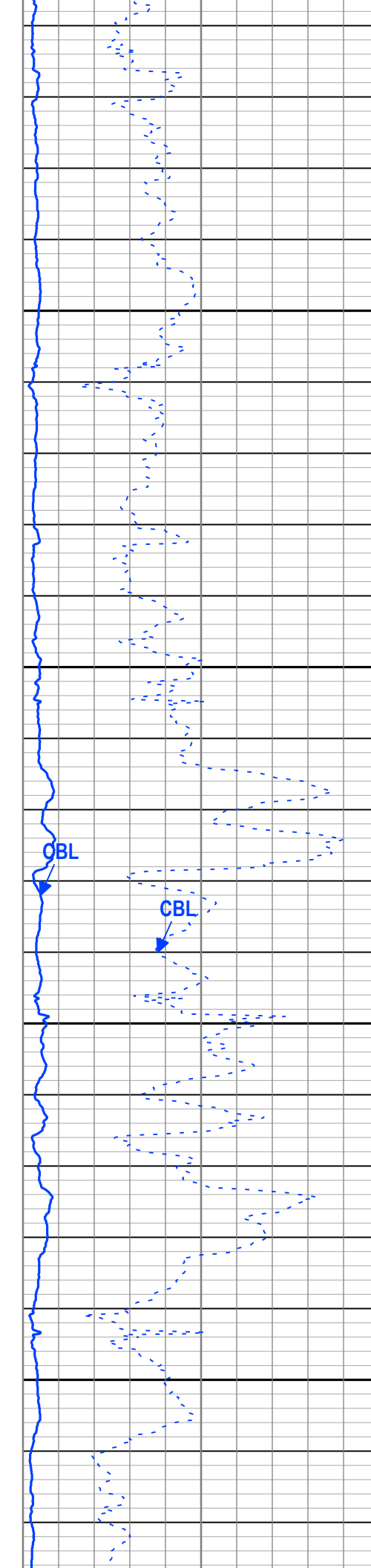


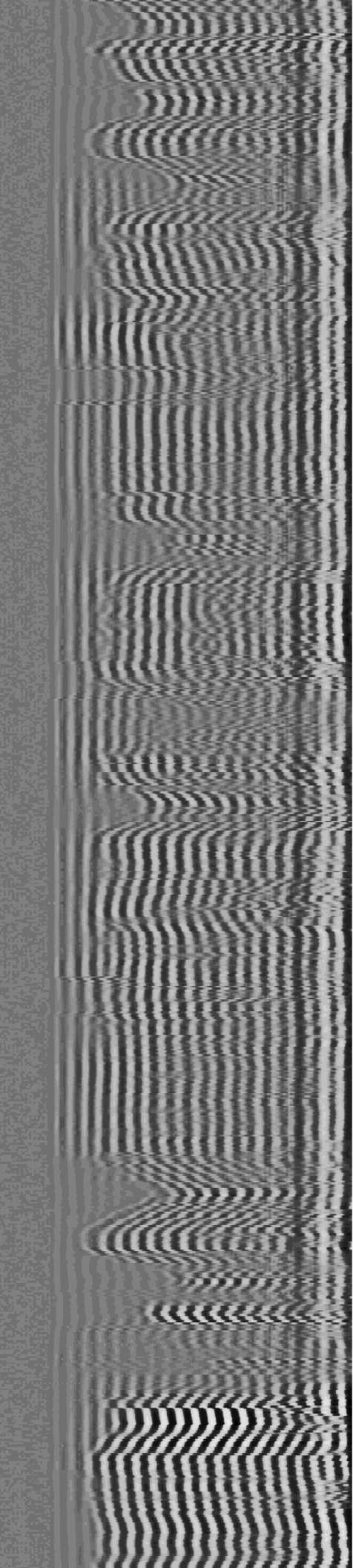
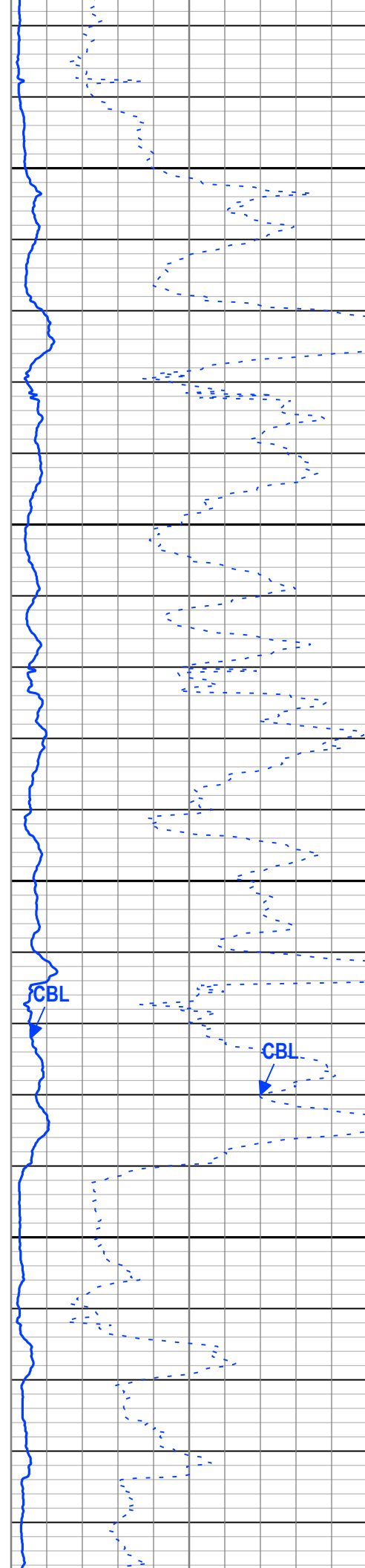
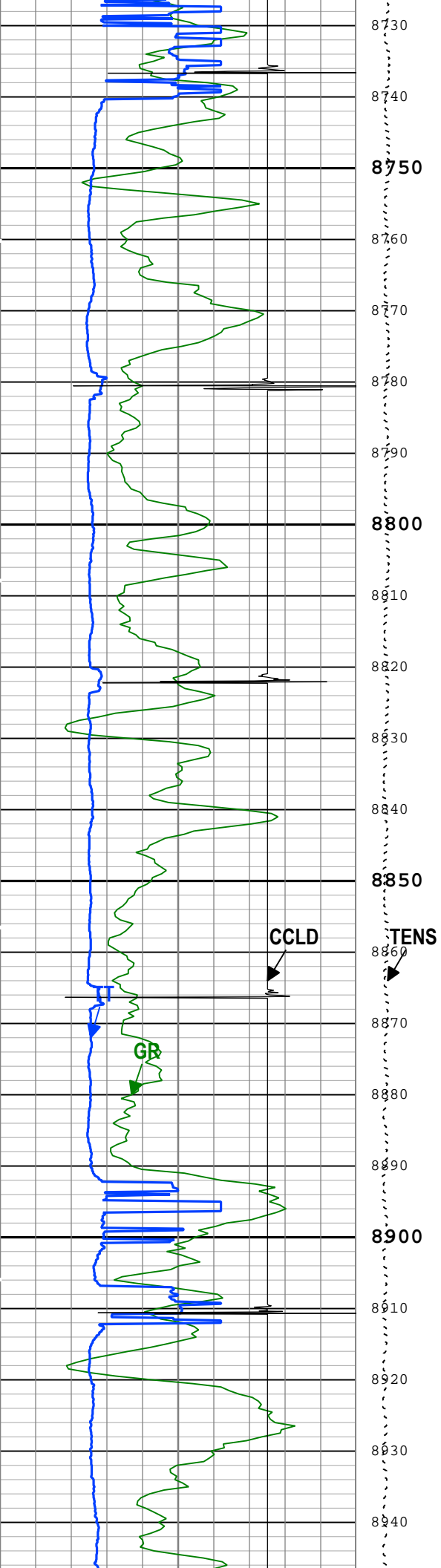


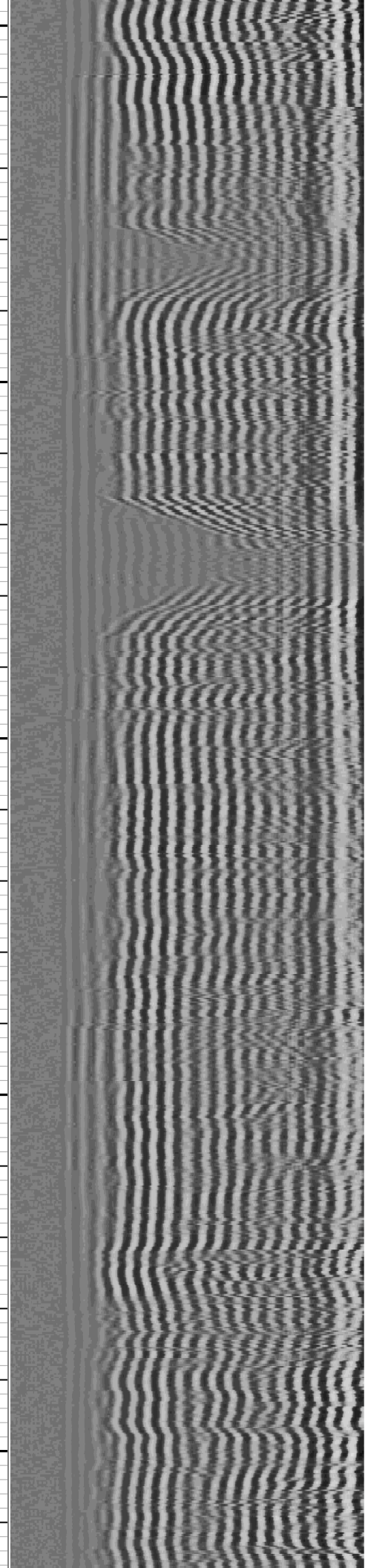
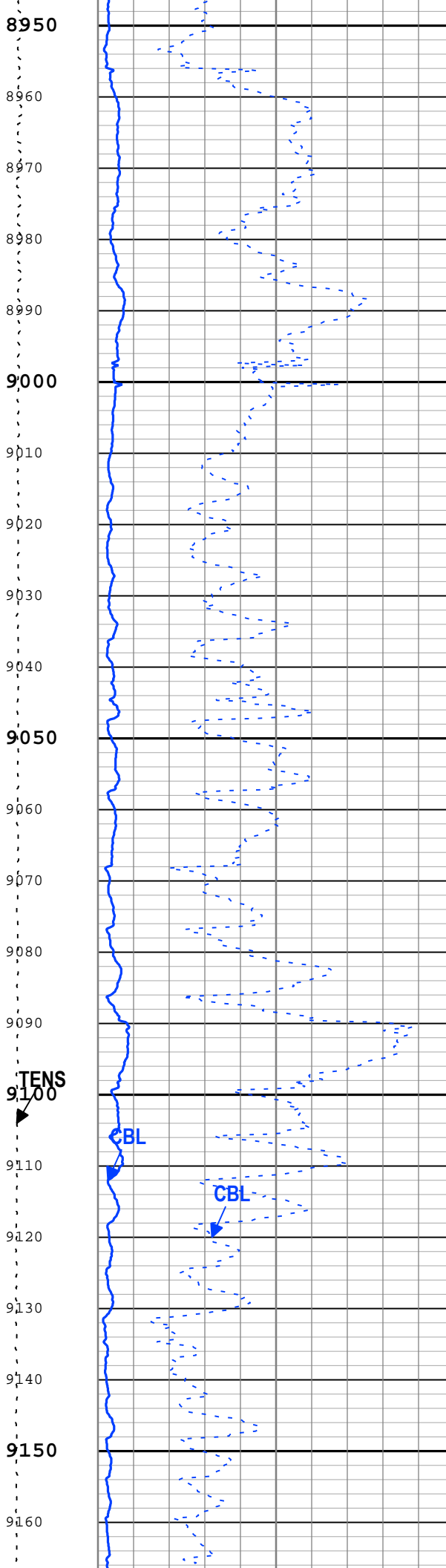
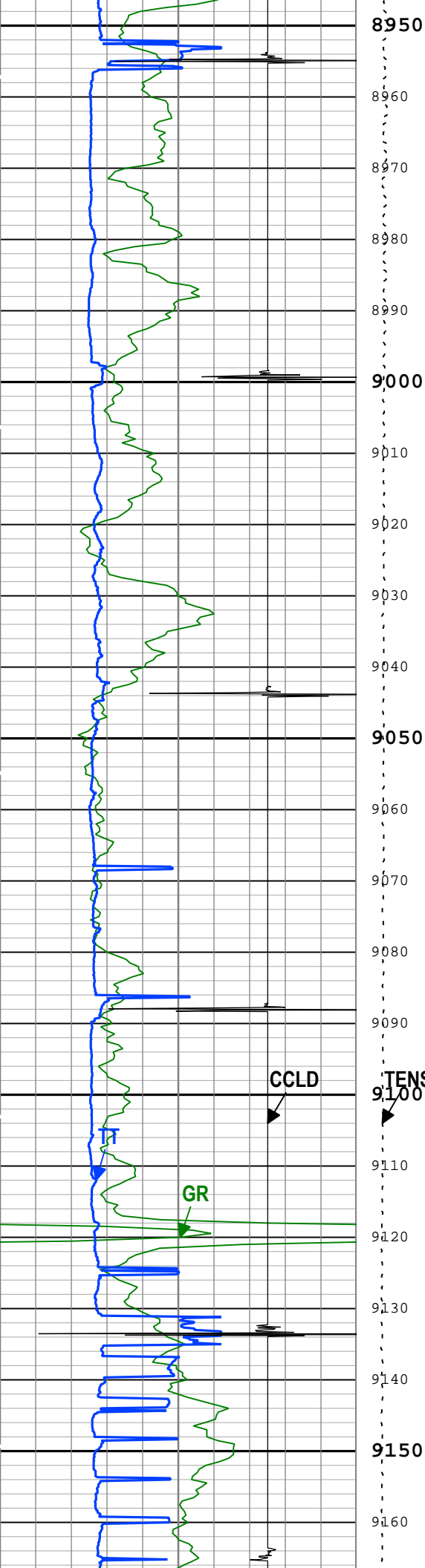


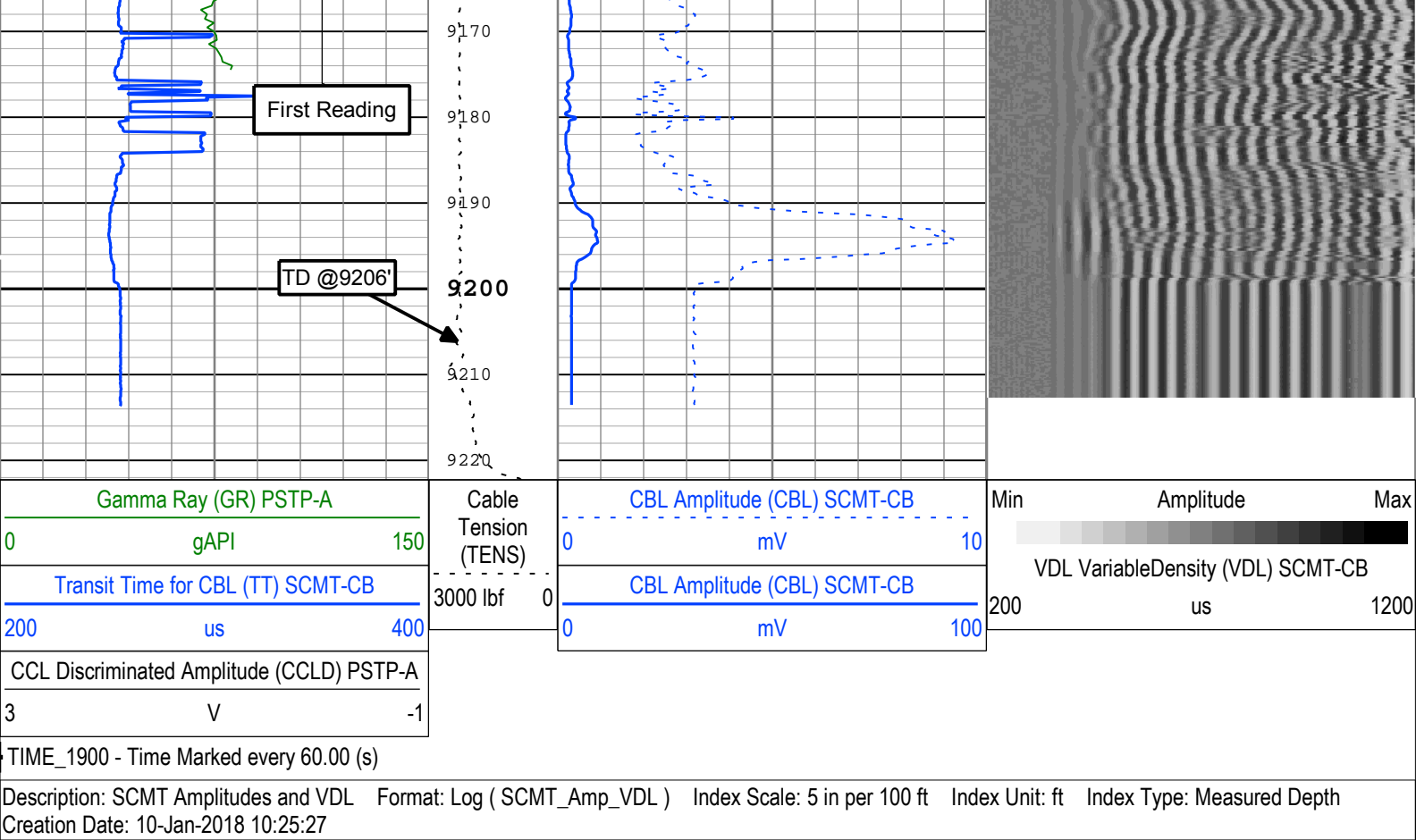


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Channel Processing Parameters

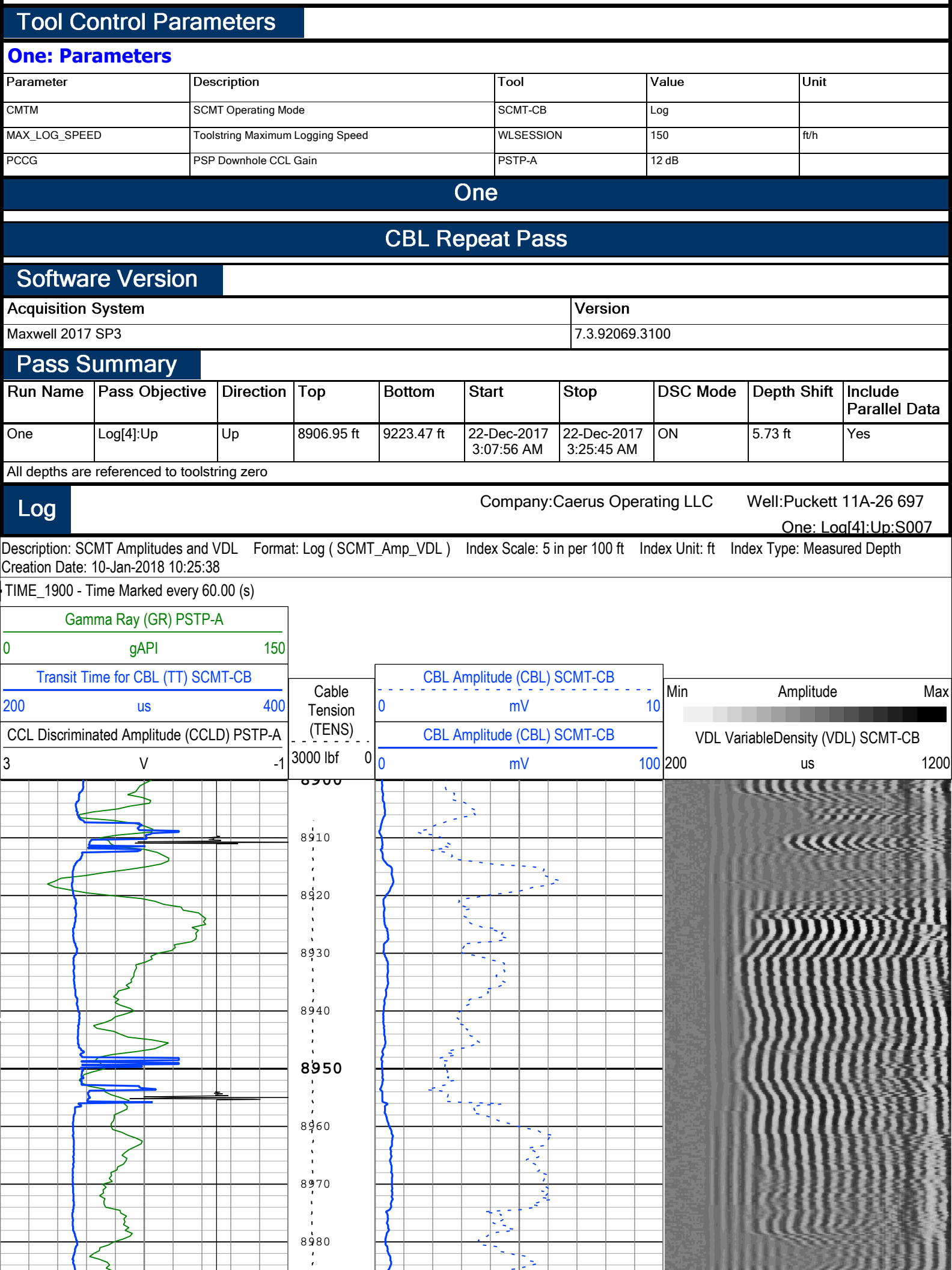
One: Parameters

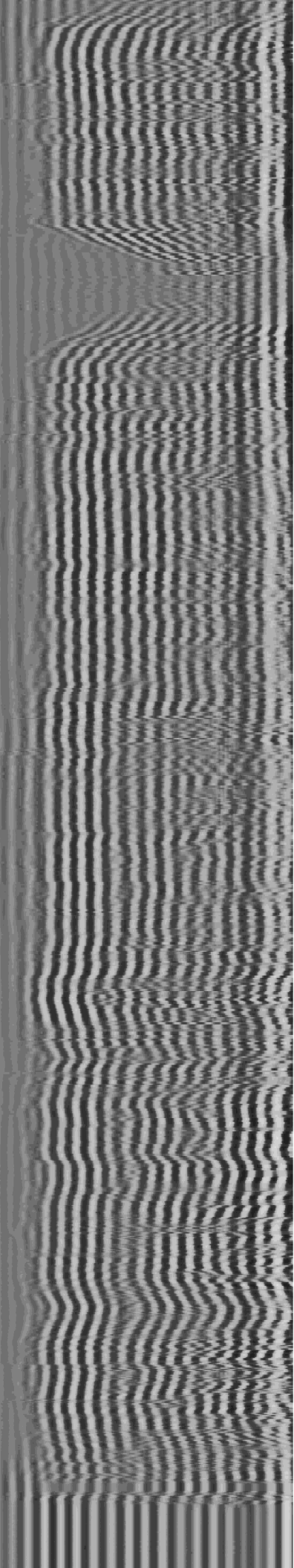
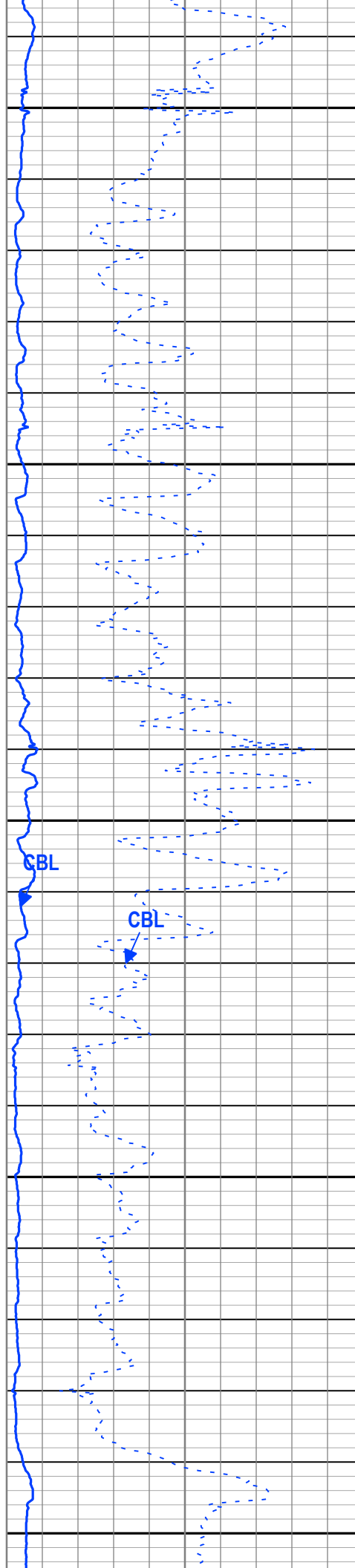
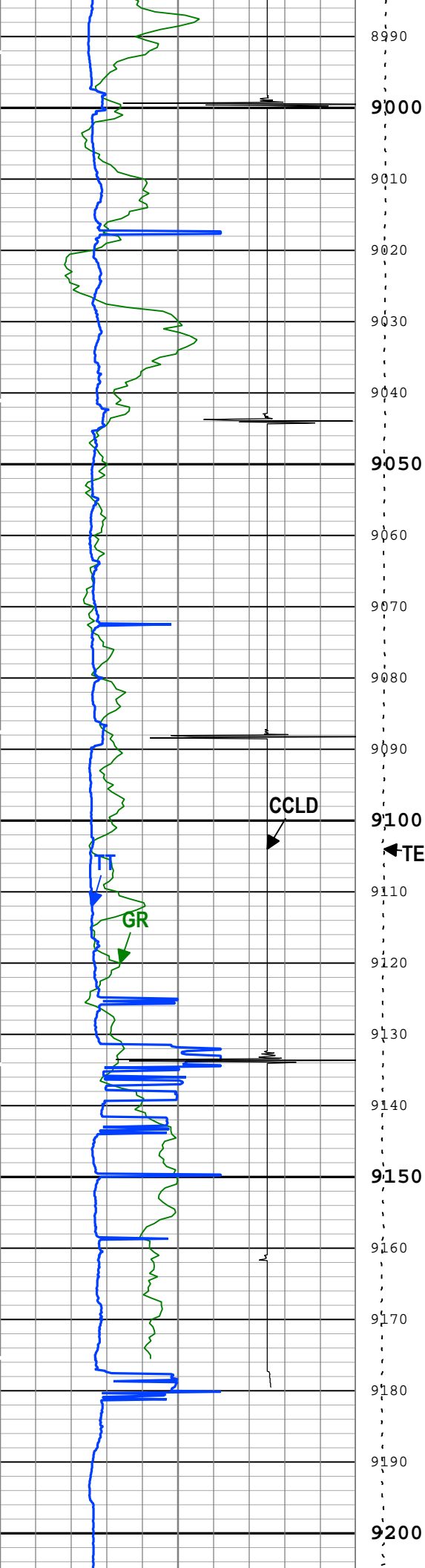
Parameter	Description	Tool	Value	Unit
BHT	Bottom Hole Temperature	Borehole	212	degF
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	SCMT-CB	224	us
CBLG	CBL Gate Width	SCMT-CB	40	us
CBRA	CBL LQC Reference Amplitude in Free Pipe	SCMT-CB	Depth Zoned	mV
THNO	Nominal Casing Thickness - Zoned along 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
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	Depth Zoned	mV
PDAT	Permanent Datum	WLSESSION	GL	
RUN_SNUM	Run Sequence Number	WSDRUN	1	
SHT	Surface Hole Temperature	Borehole	68	degF

Depth Zone Parameters

Parameter	Value	Start (ft)	Stop (ft)
CBRA	80	2420	9216
CBRA	0	9216	9222.25
MSA	0.51	2420	9216
MSA	0	9216	9222.25

All depth are actual.





CBL Free Pipe

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[2]:Up	Up	894.06 ft	1155.48 ft	22-Dec-2017 2:24:44 AM	22-Dec-2017 2:30:25 AM	ON	0.00 ft	Yes

All depths are referenced to toolstring zero

Log

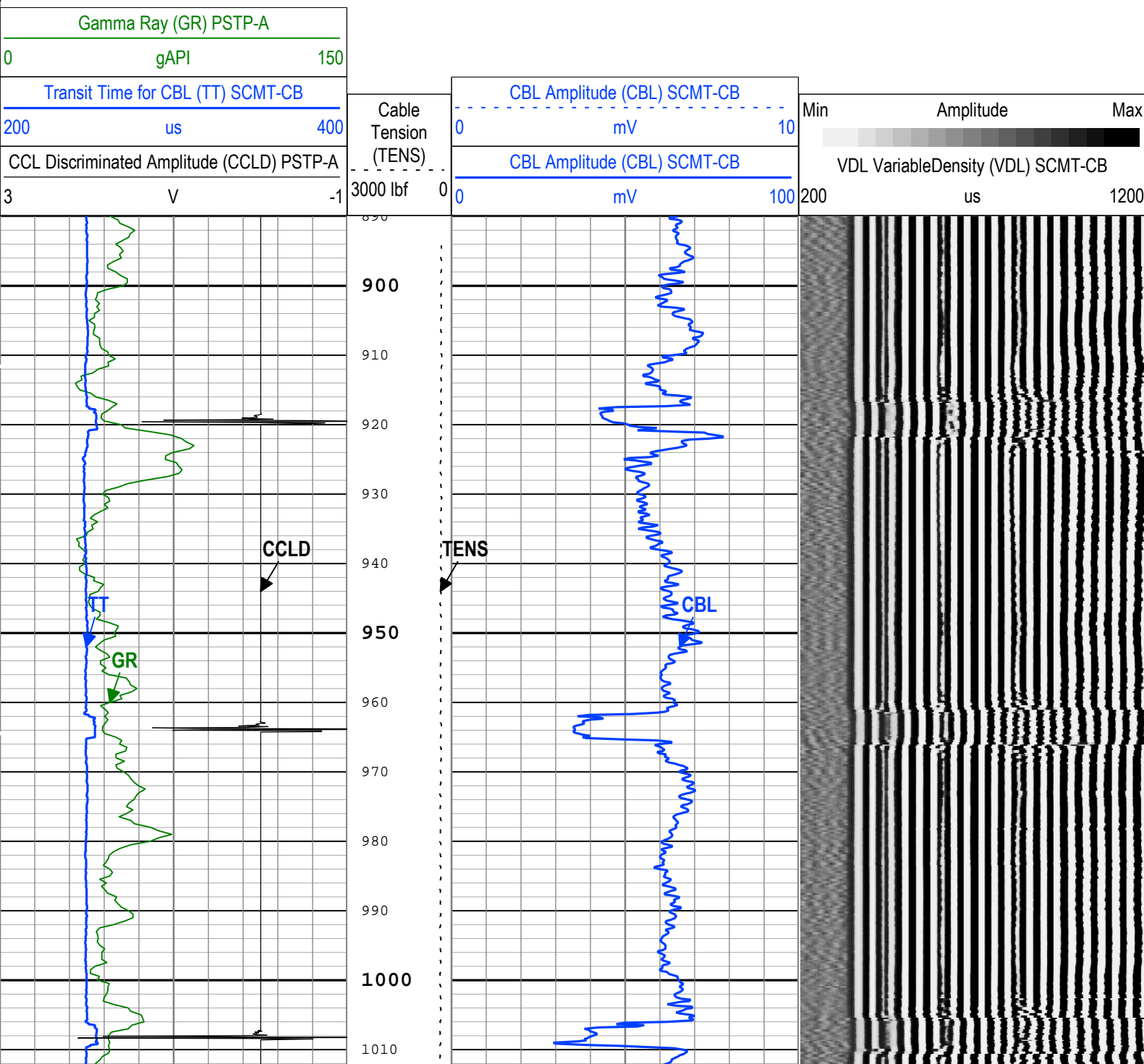
Company:Caerus Operating LLC

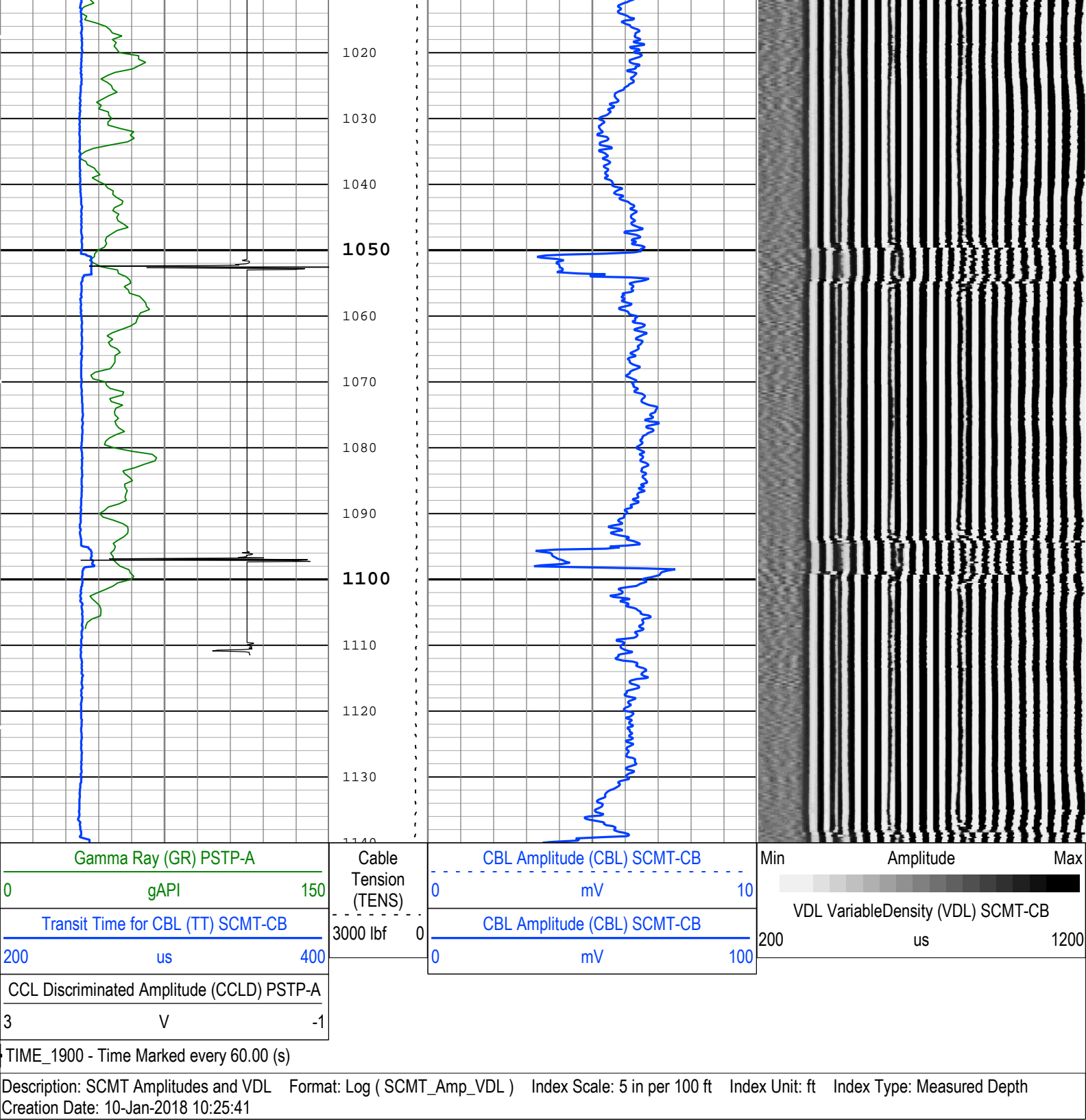
Well:Puckett 11A-26 697

One: Log[2]:Up:S007

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: 10-Jan-2018 10:25:41

TIME_1900 - Time Marked every 60.00 (s)





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
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[6]:Up	Up	2416.63 ft	9222.26 ft	22-Dec-2017 3:39:52 AM	22-Dec-2017 5:55:24 AM	ON	6.36 ft	Yes

All depths are referenced to toolstring zero

Log

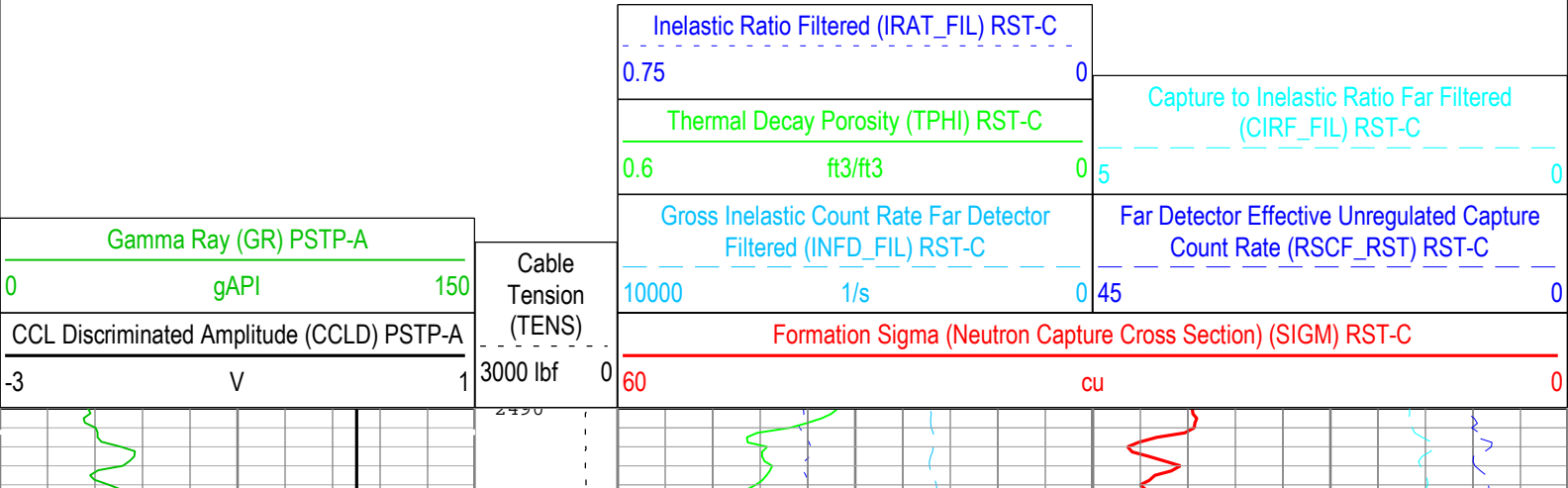
Company:Caerus Operating LLC Well:Puckett 11A-26 697

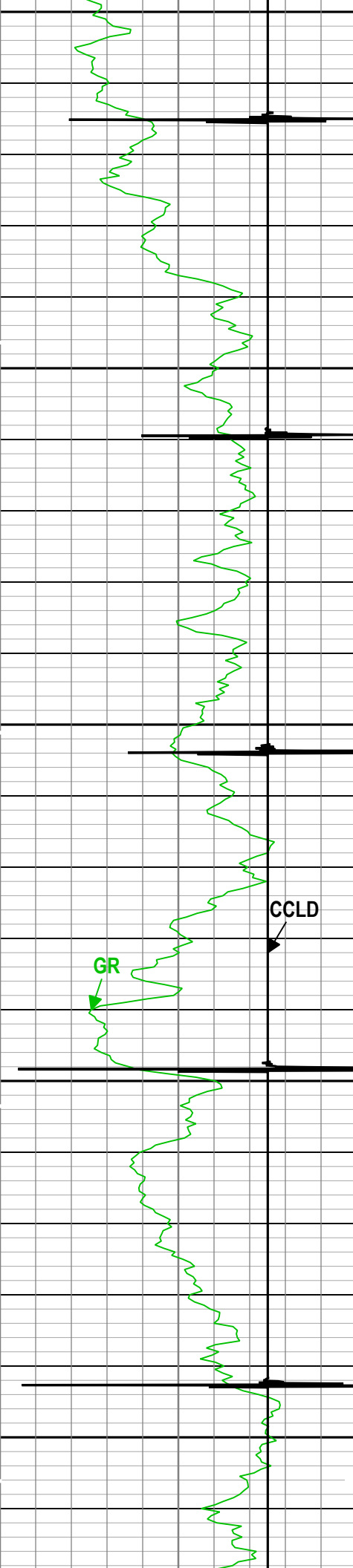
One: Log[6]:Up:S007

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: 10-Jan-2018 10:25:44

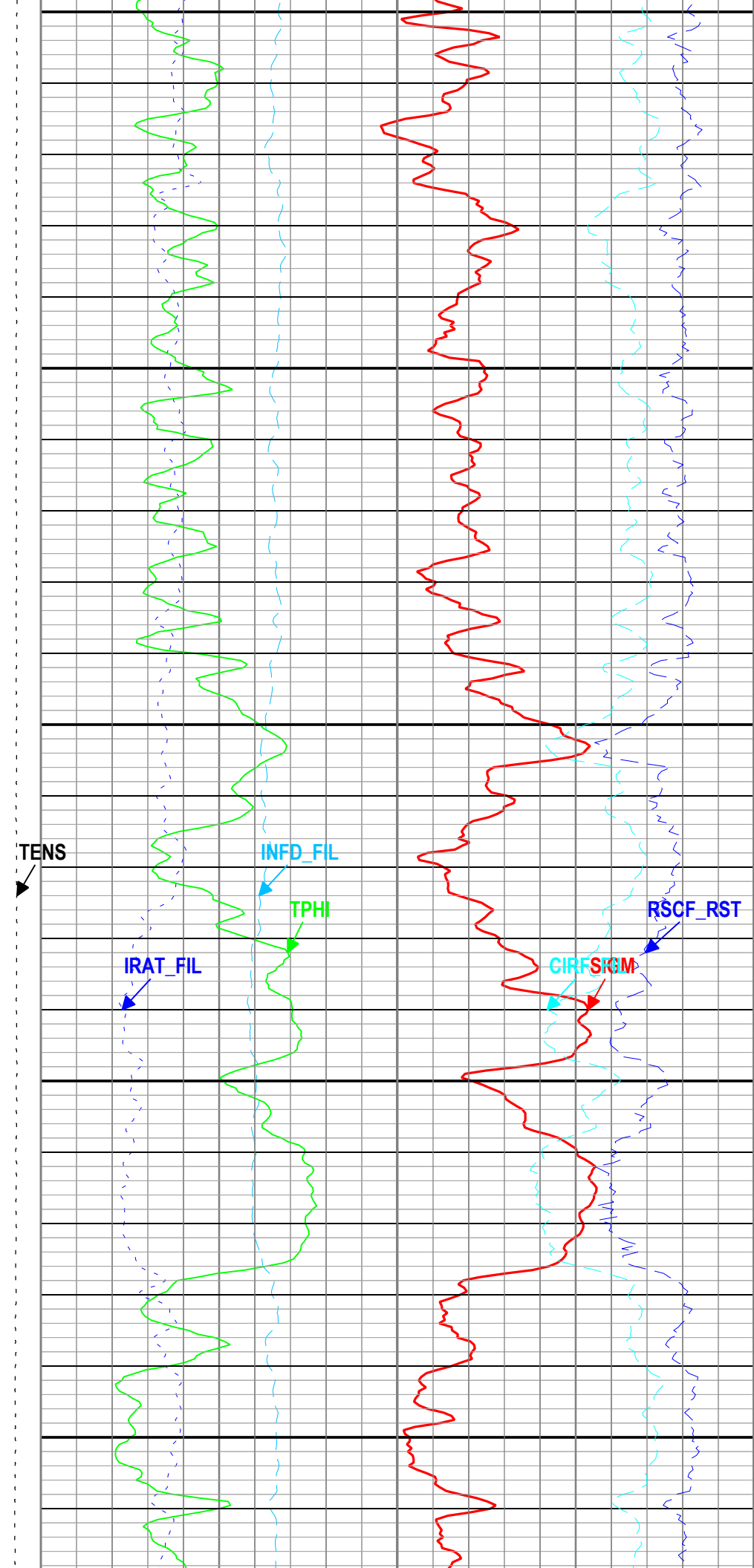
TIME_1900 - Time Marked every 60.00 (s)

- IHV - Integrated Hole Volume every 10.00 (ft3)
- IHV - Integrated Hole Volume every 100.00 (ft3)
- ICV - Integrated Cement Volume every 10.00 (ft3)
- TIME_1900 - Elapsed time since midnight, 30 December 1899 every 60.00 (s)
- ICV - Integrated Cement Volume every 100.00 (ft3)





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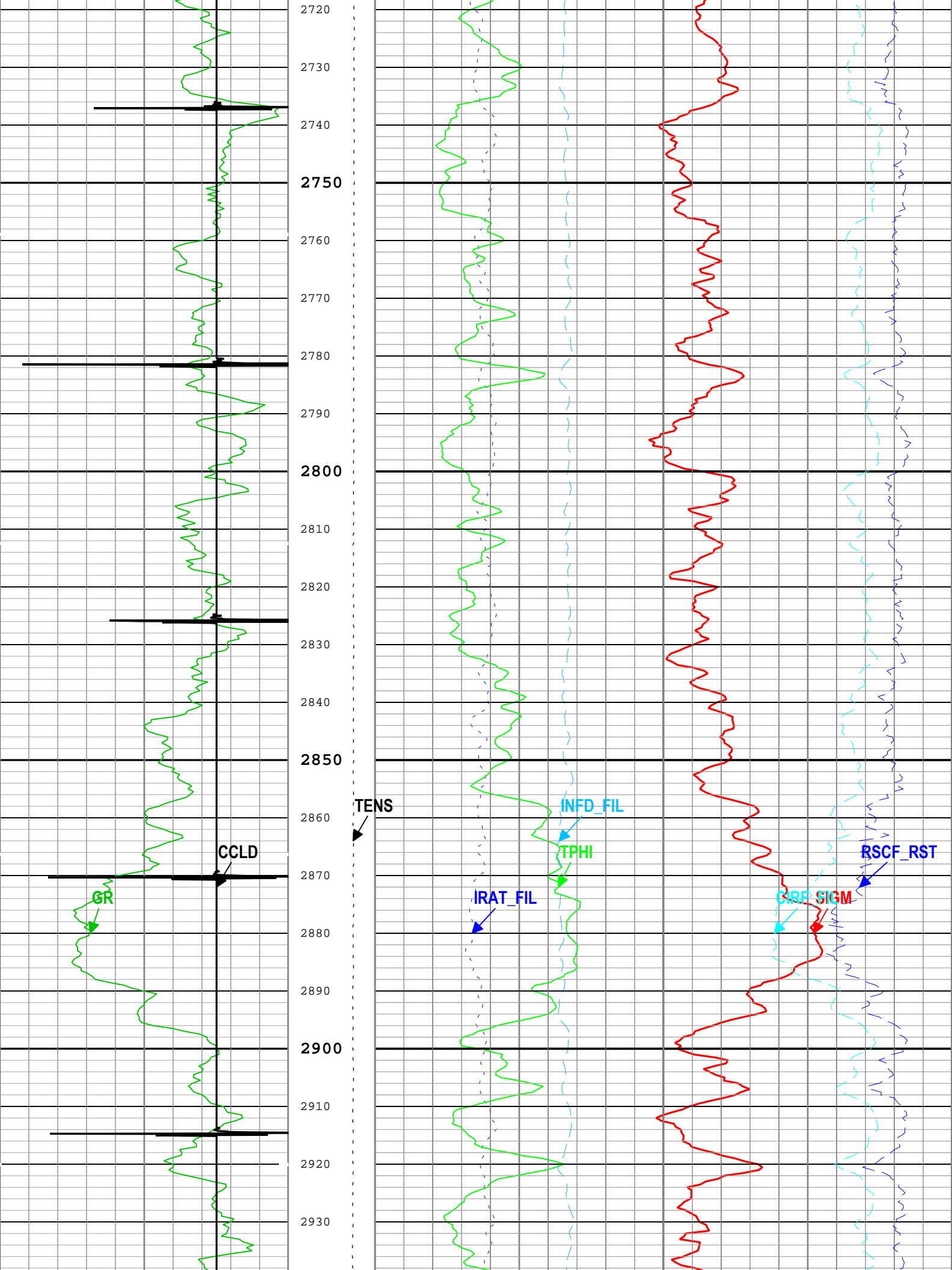
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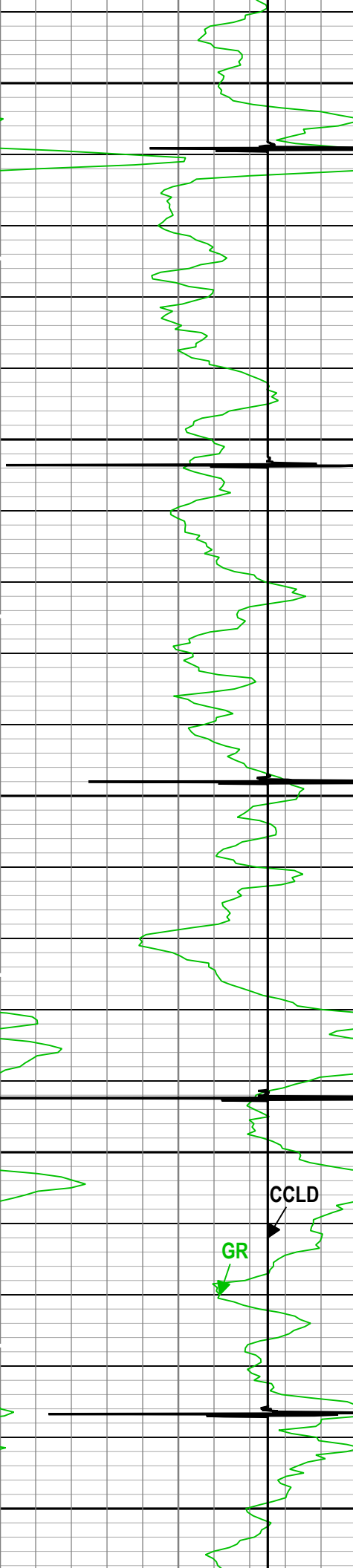
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IRAT_FIL

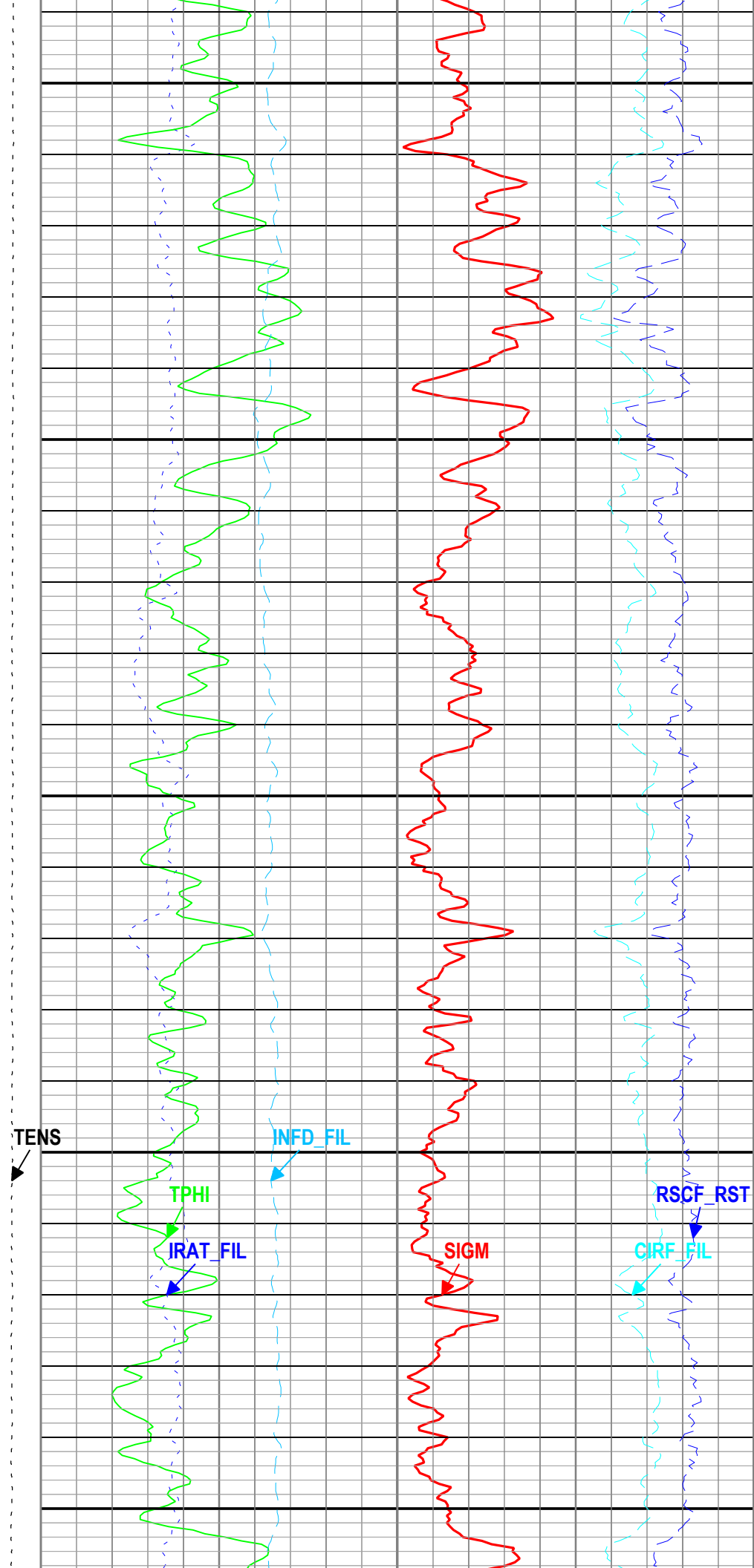
CIRCSTM

RSCF_RST





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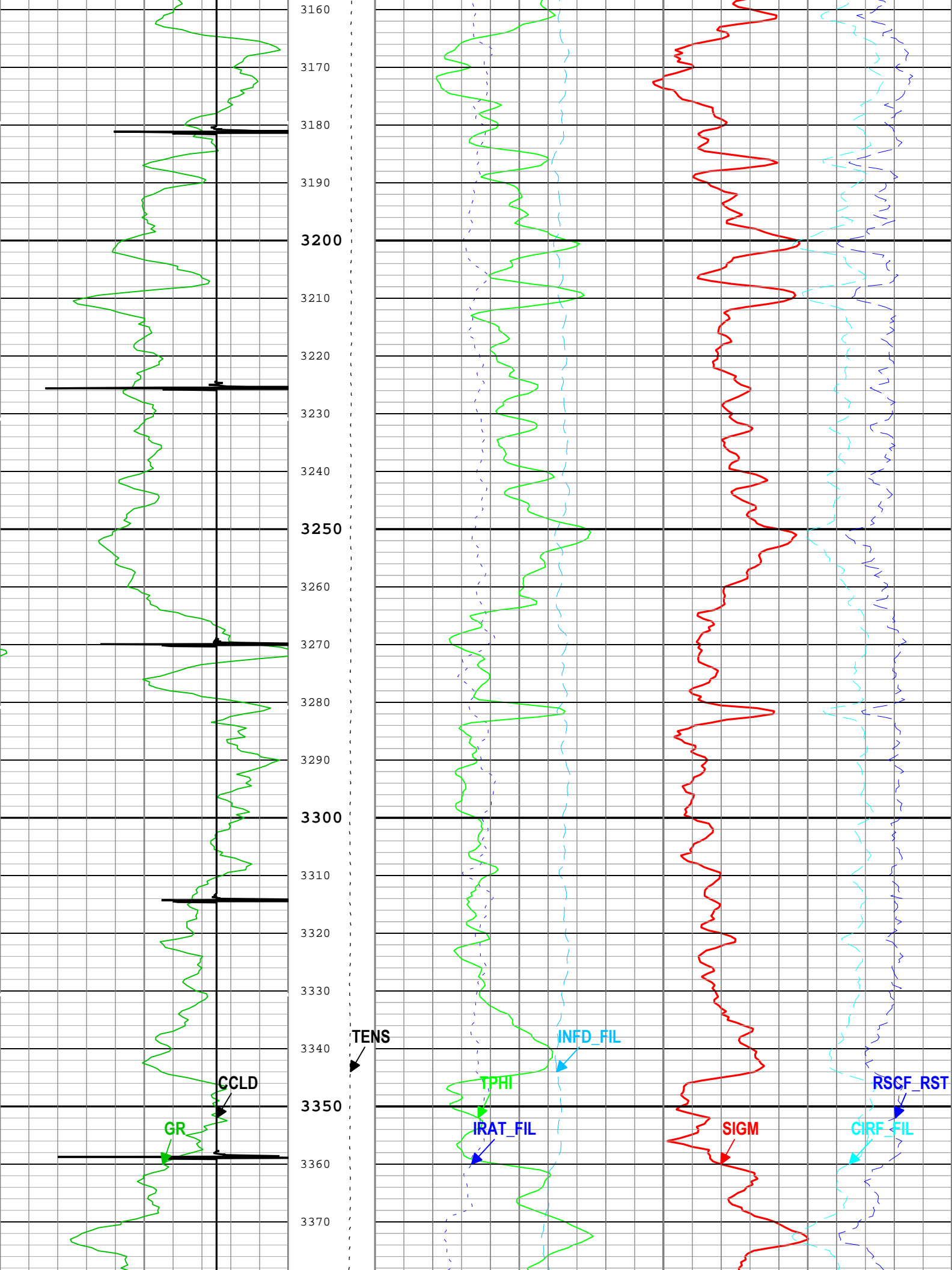
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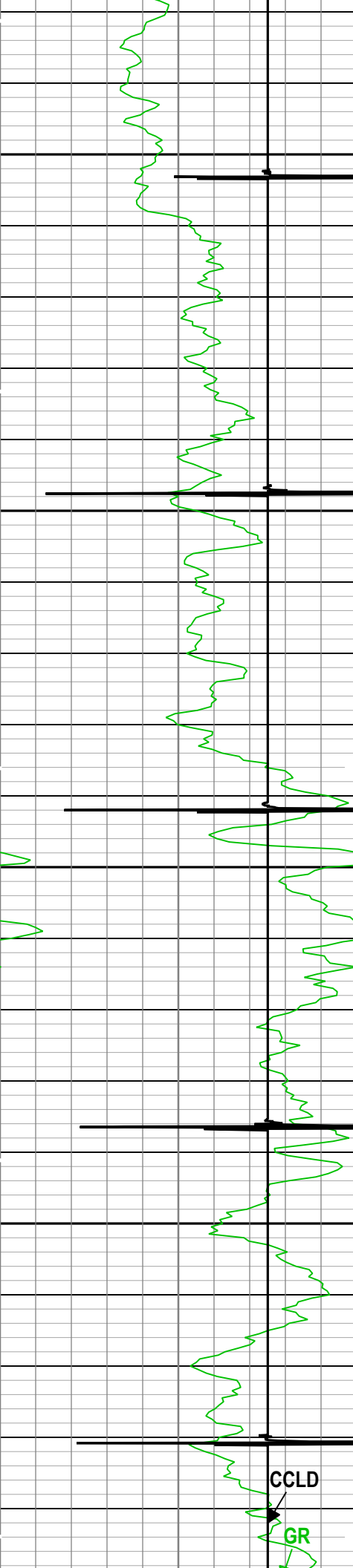
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INFD_FIL

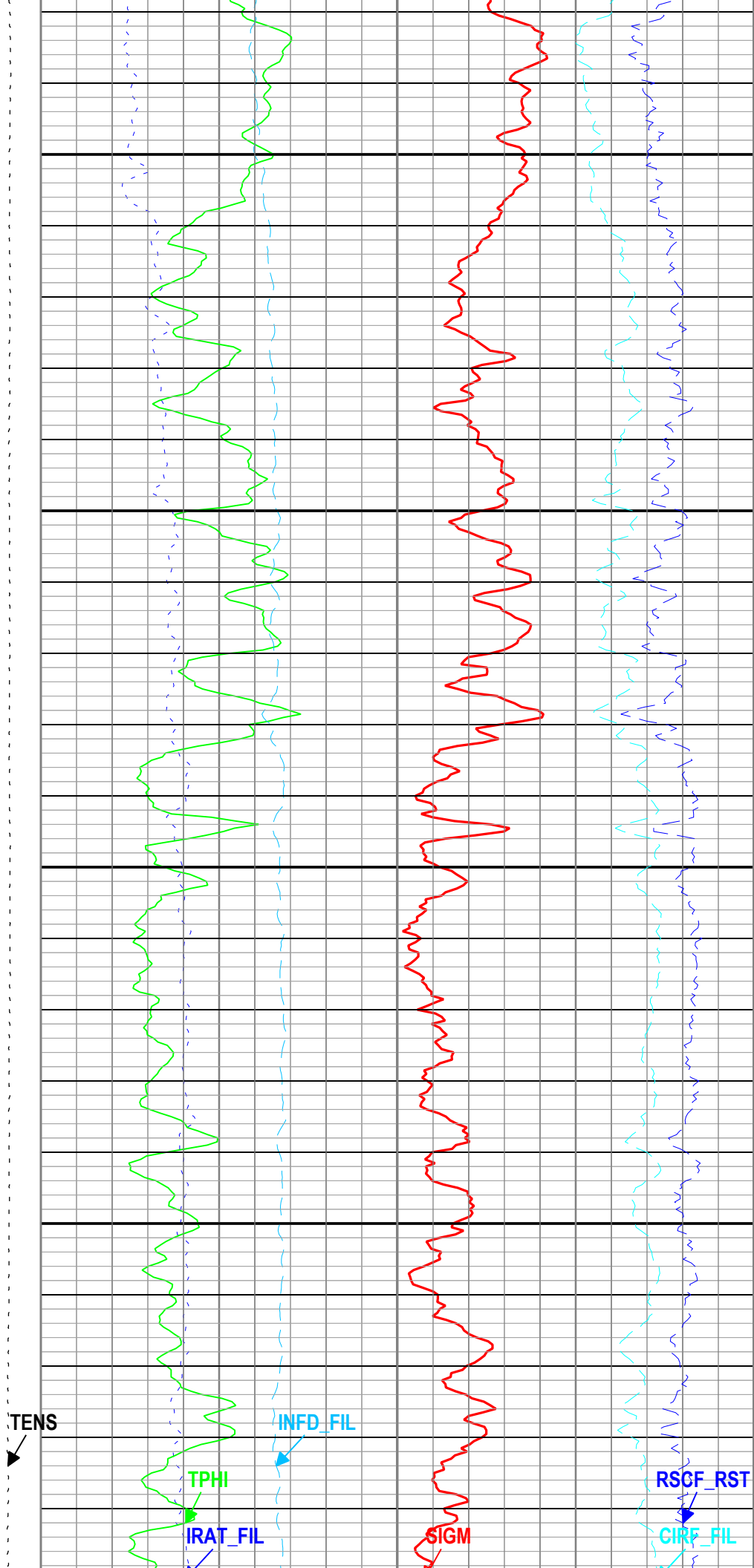
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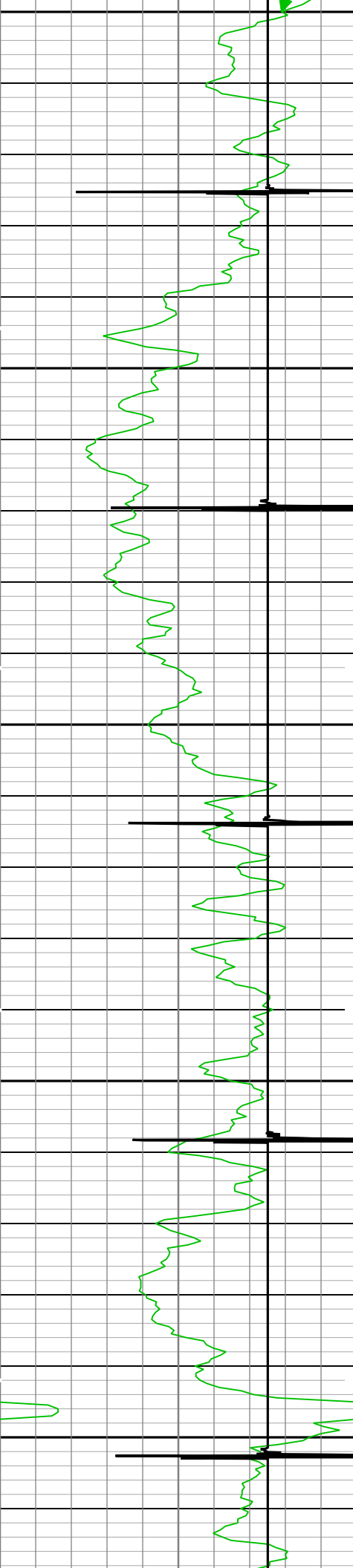
RSCF_RST
CIRF_FIL



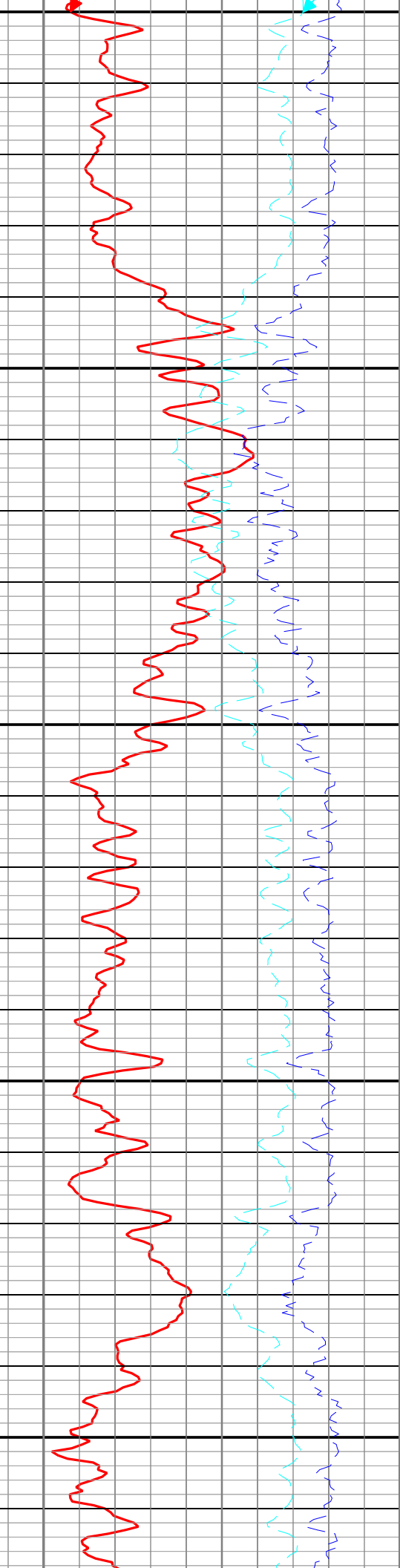
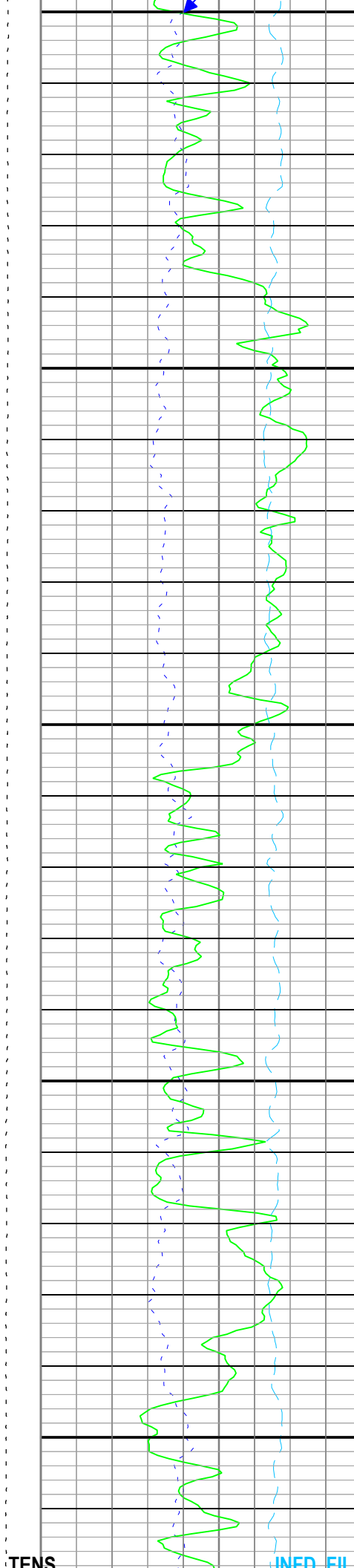


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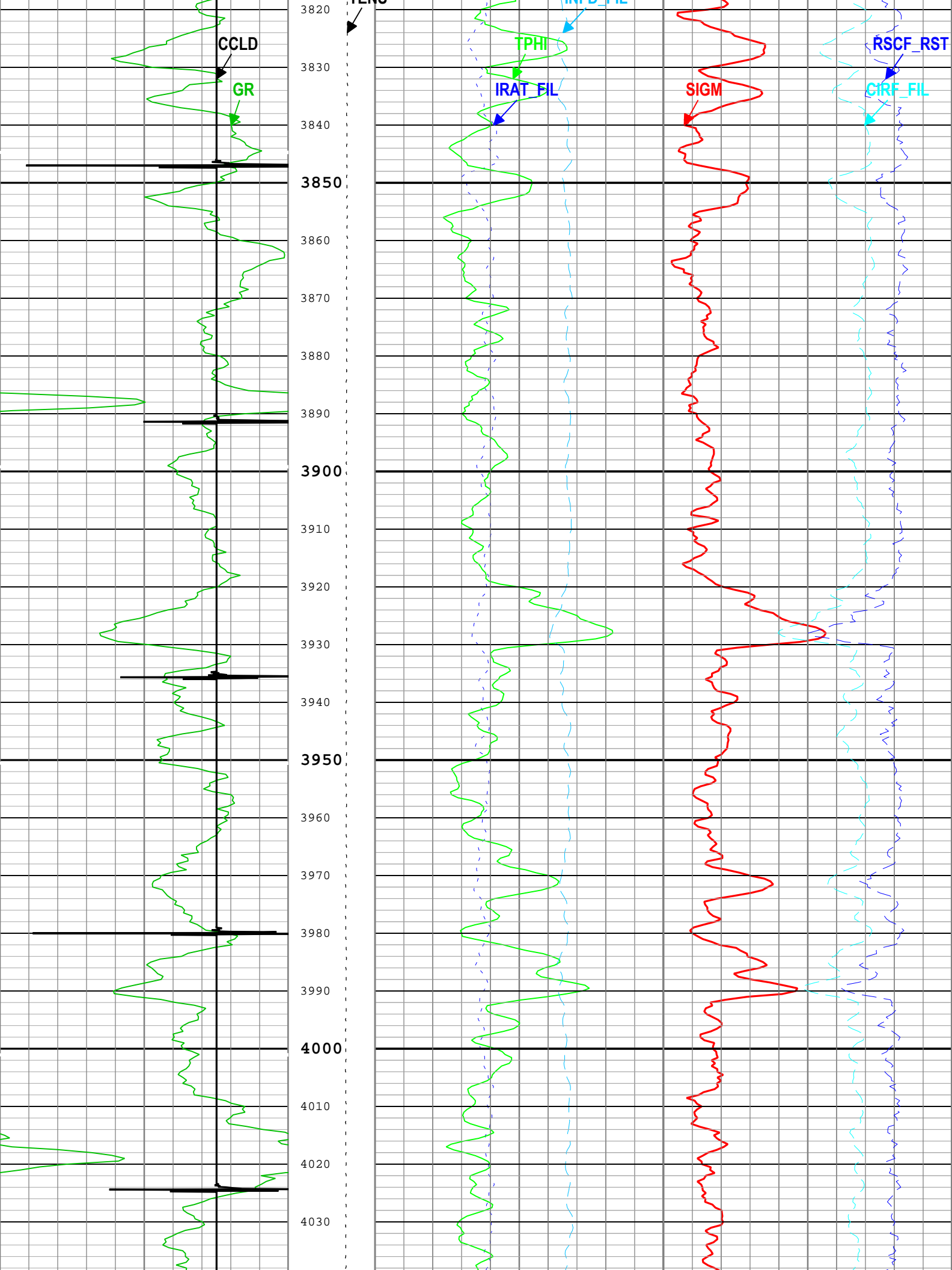


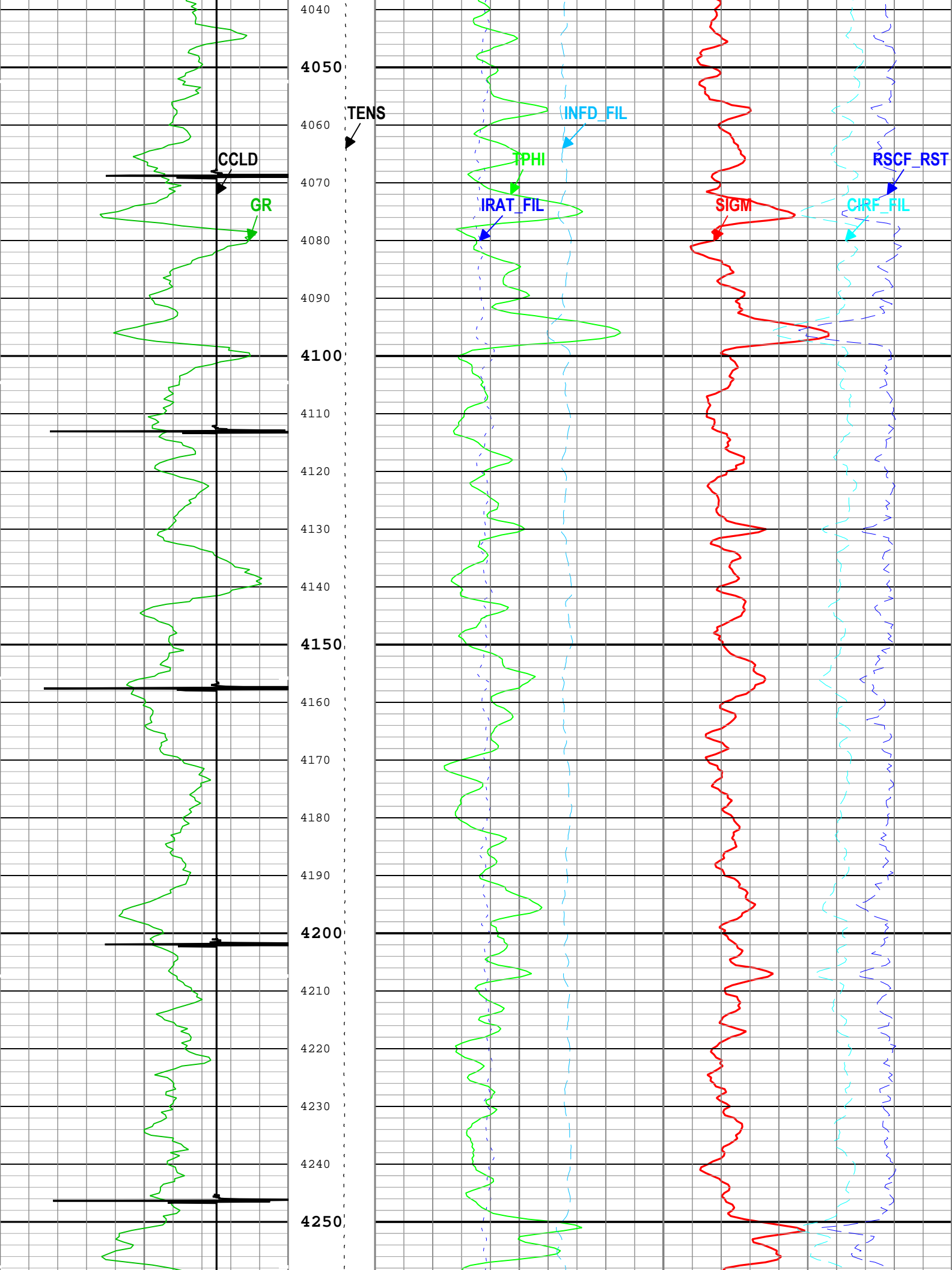
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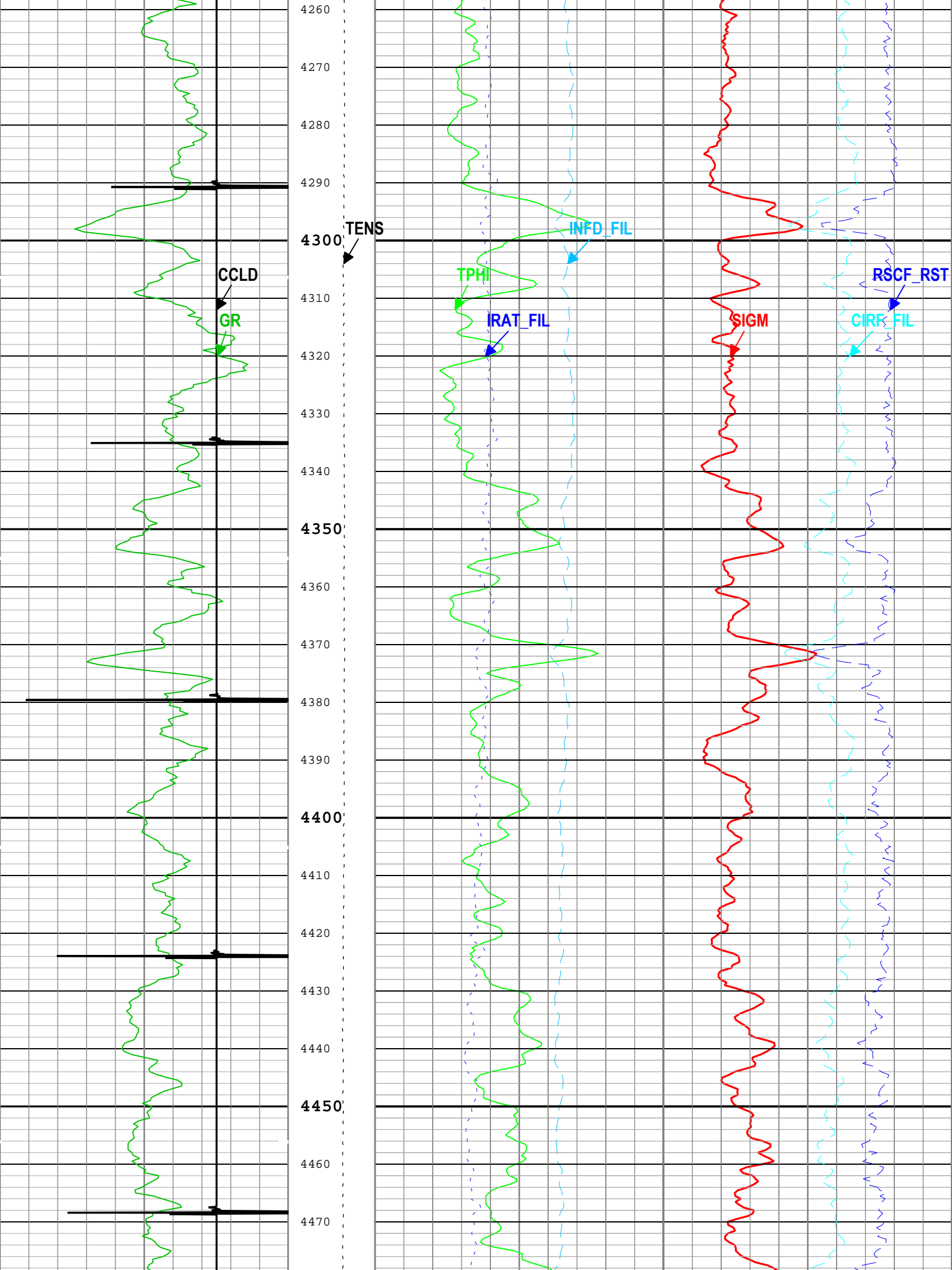


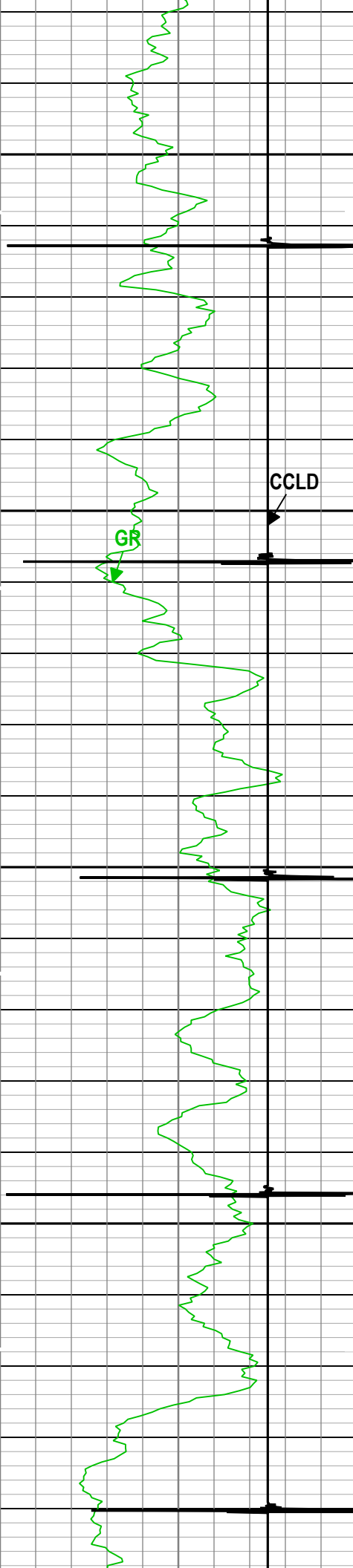
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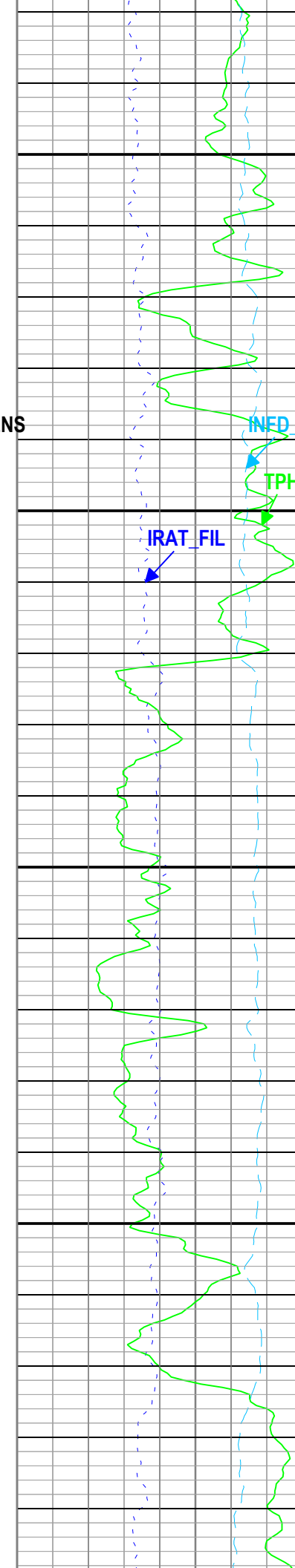


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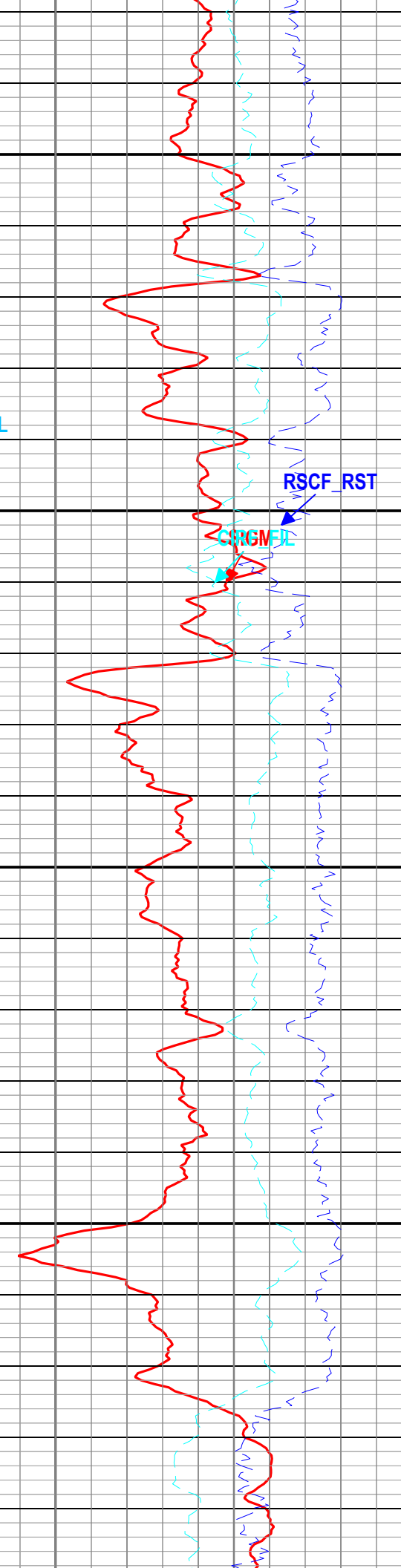
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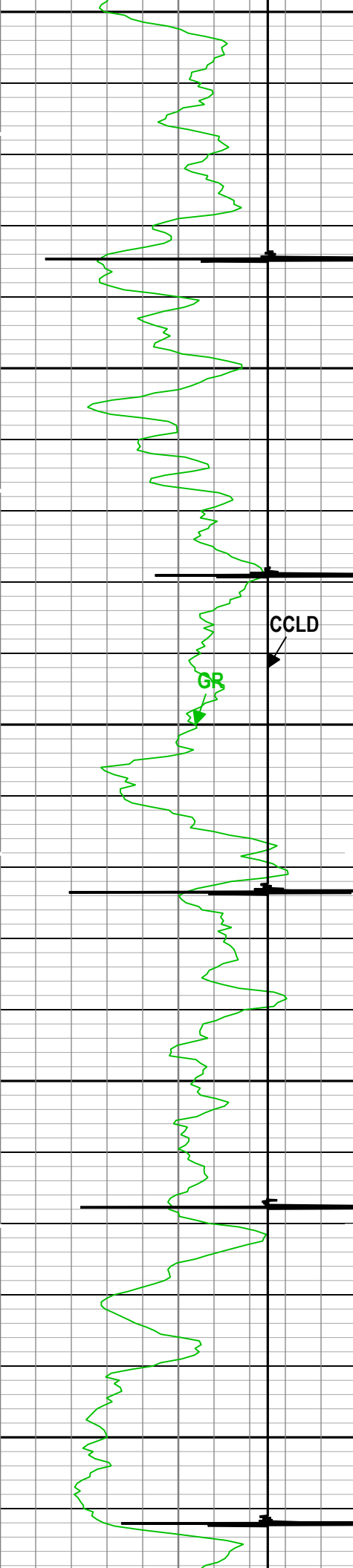
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IRAT_FIL



RSCF_RST

CIRGME

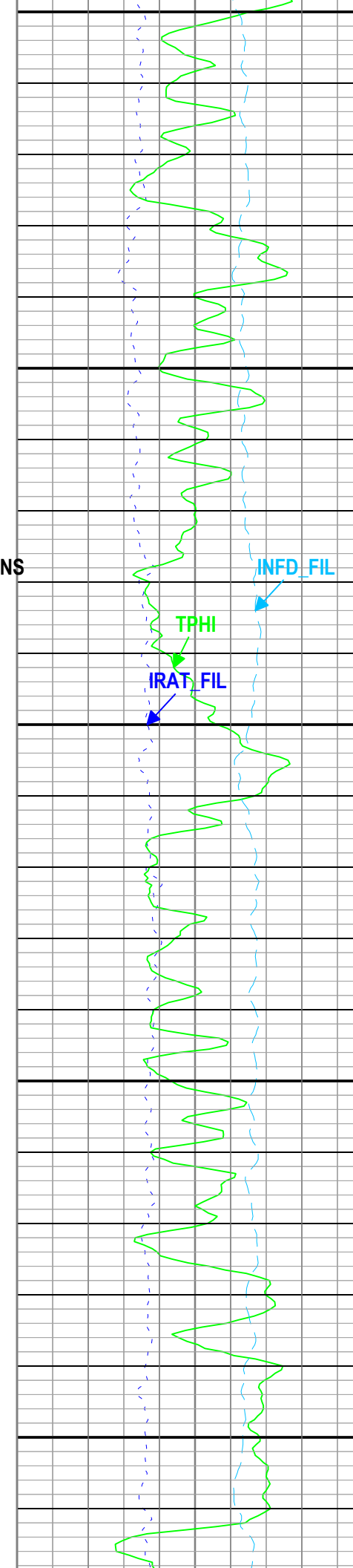


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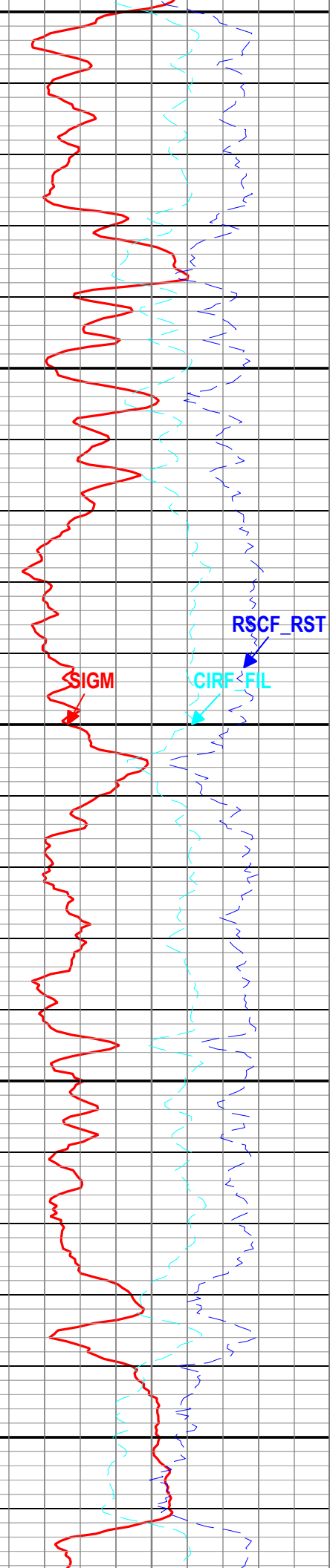
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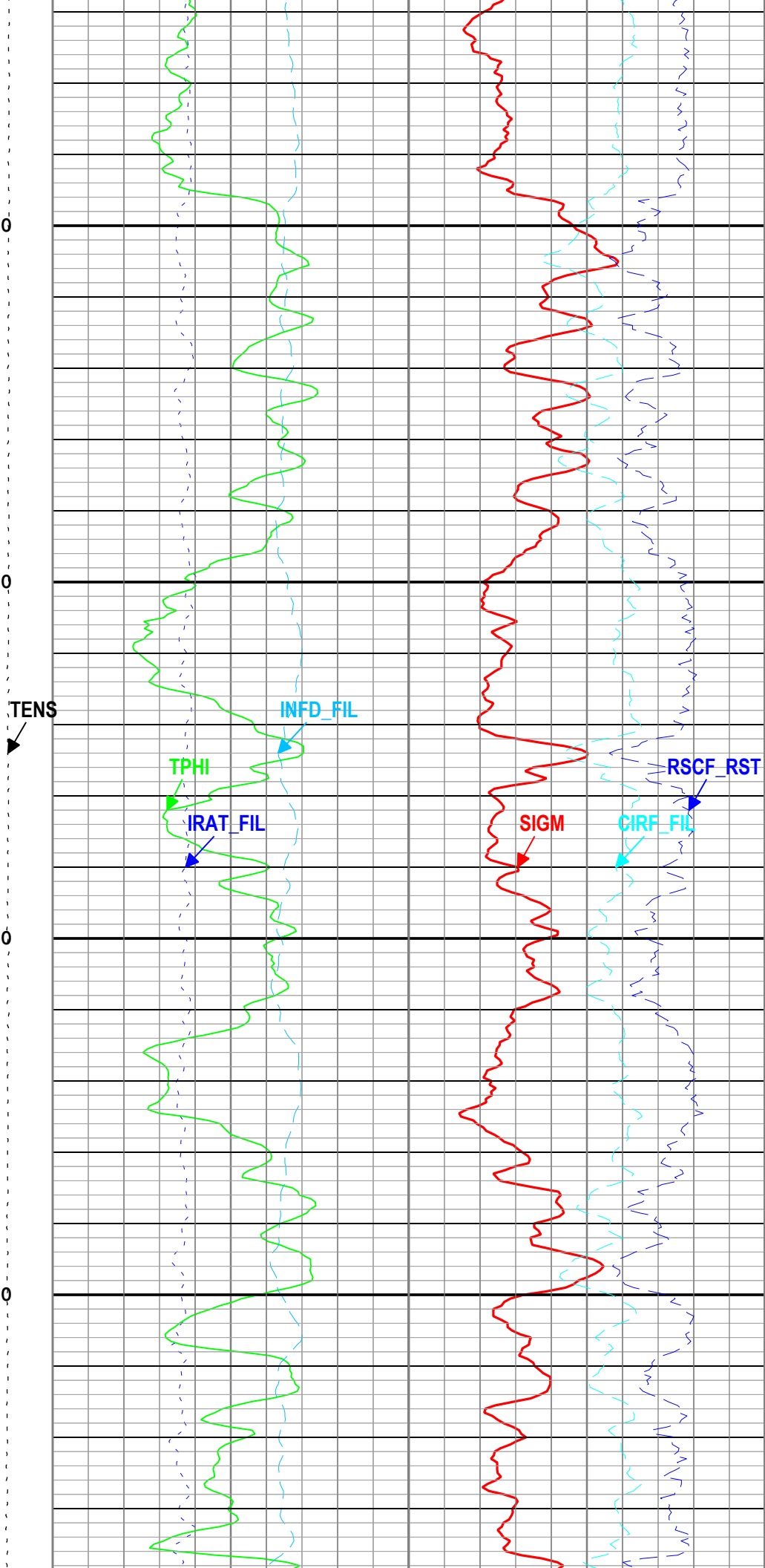
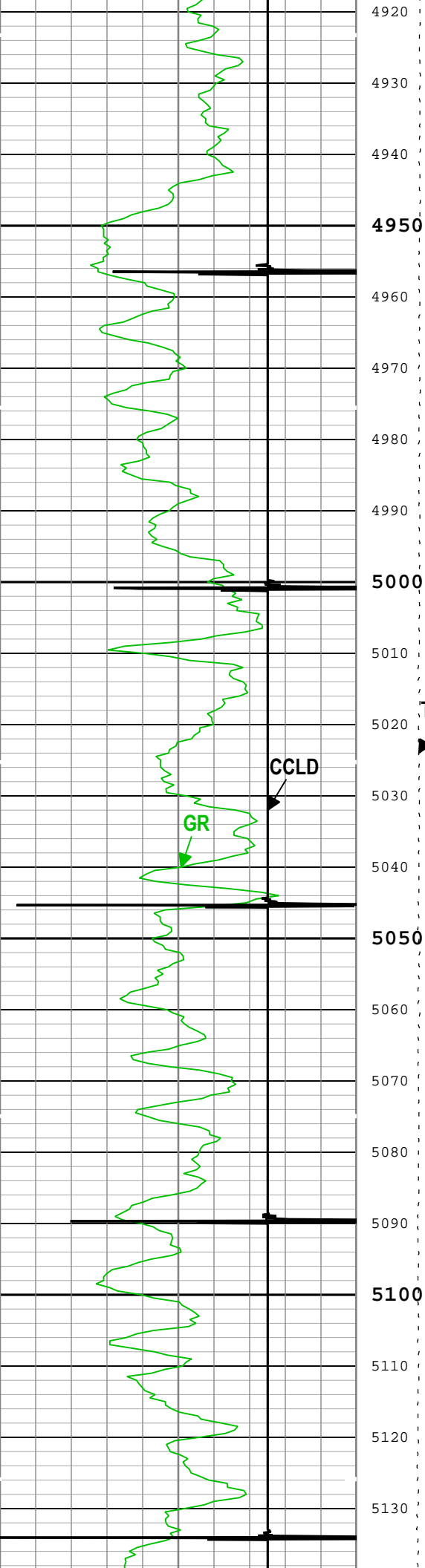
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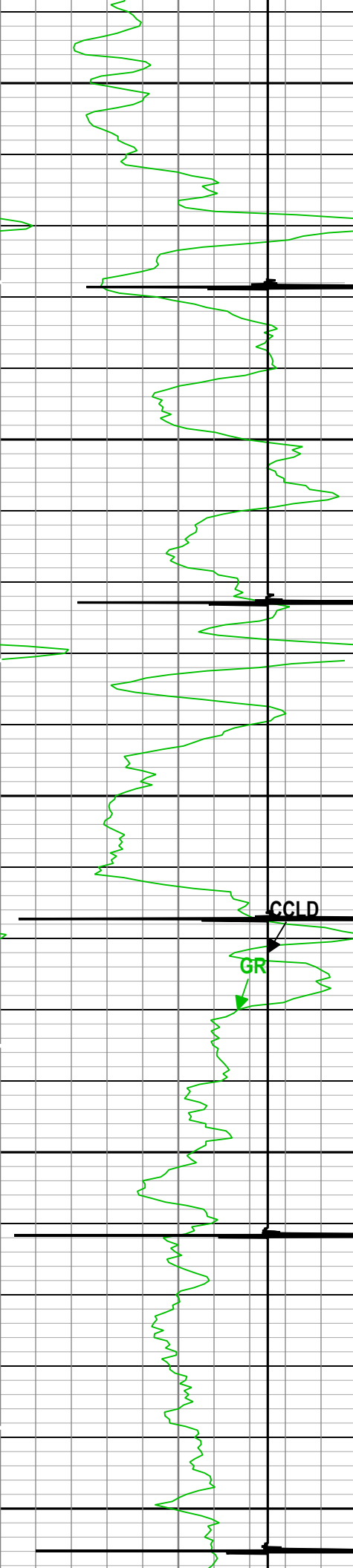


SIGM

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RSCF_RST



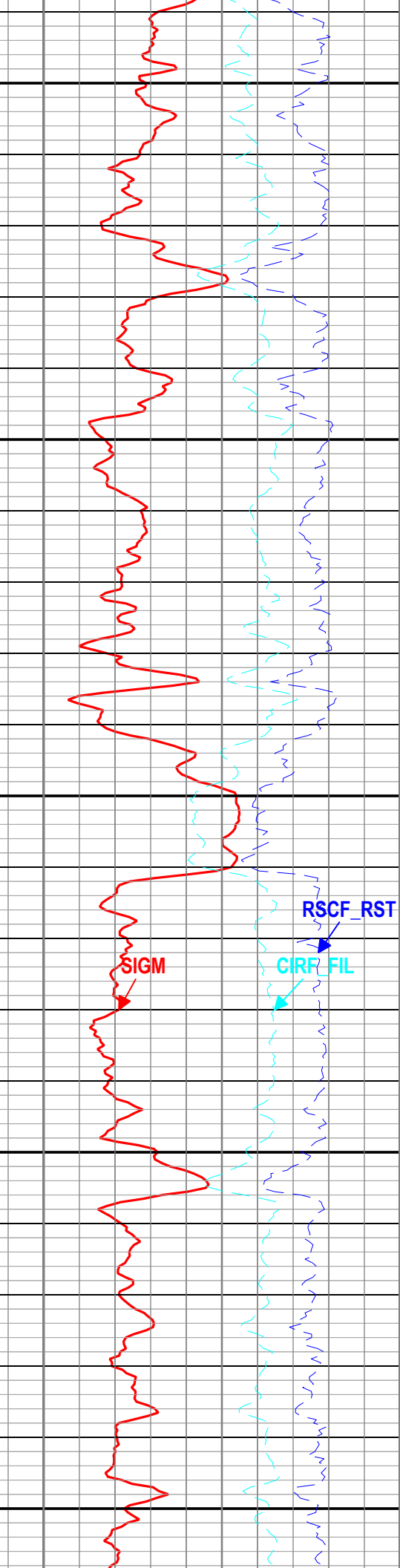
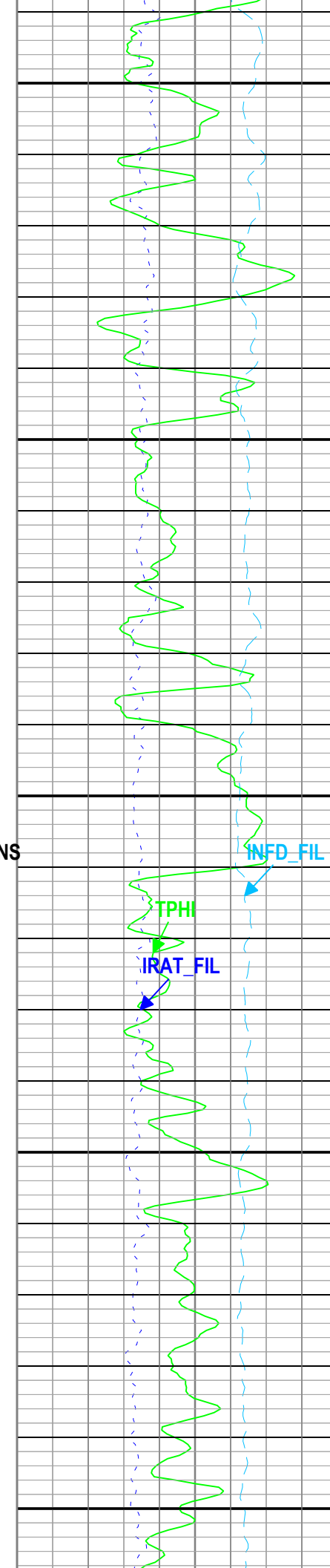


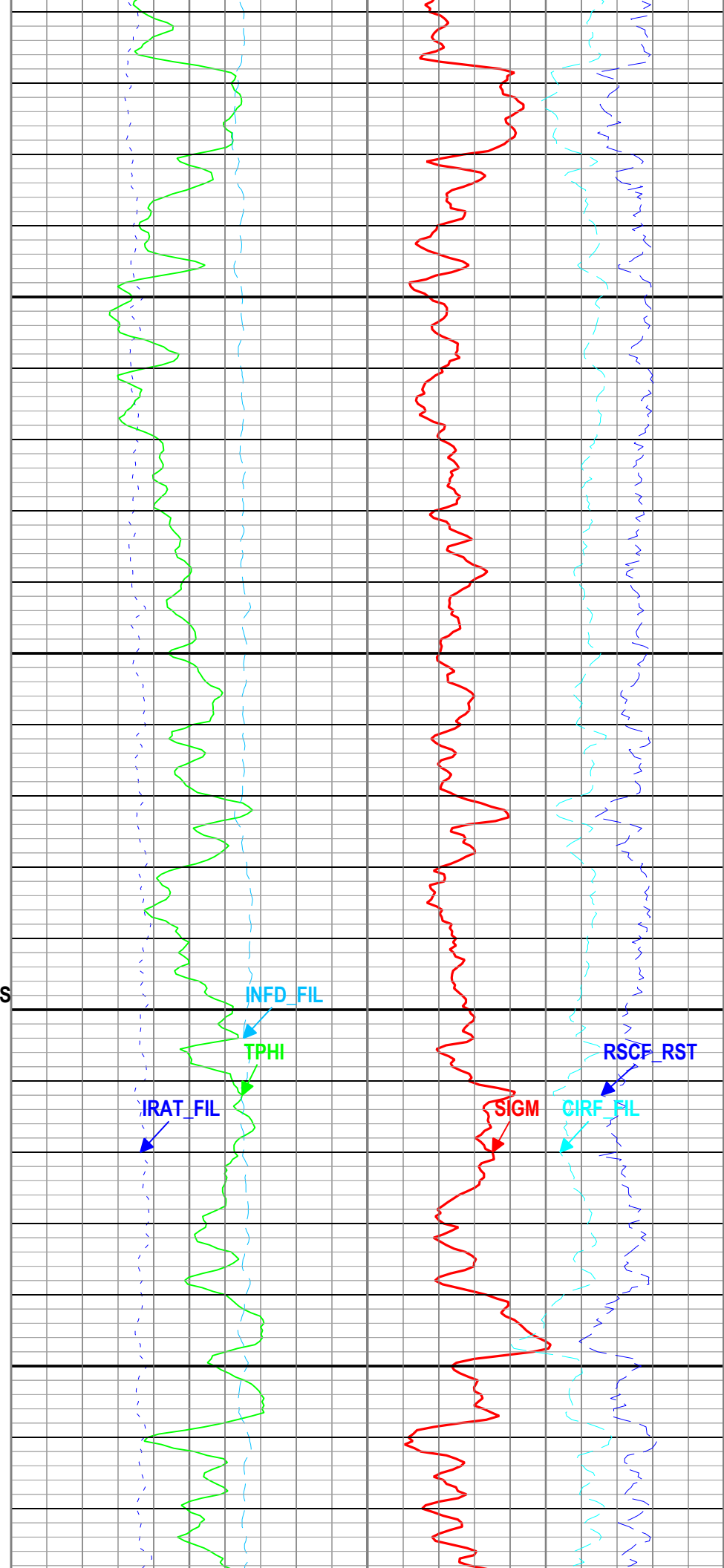
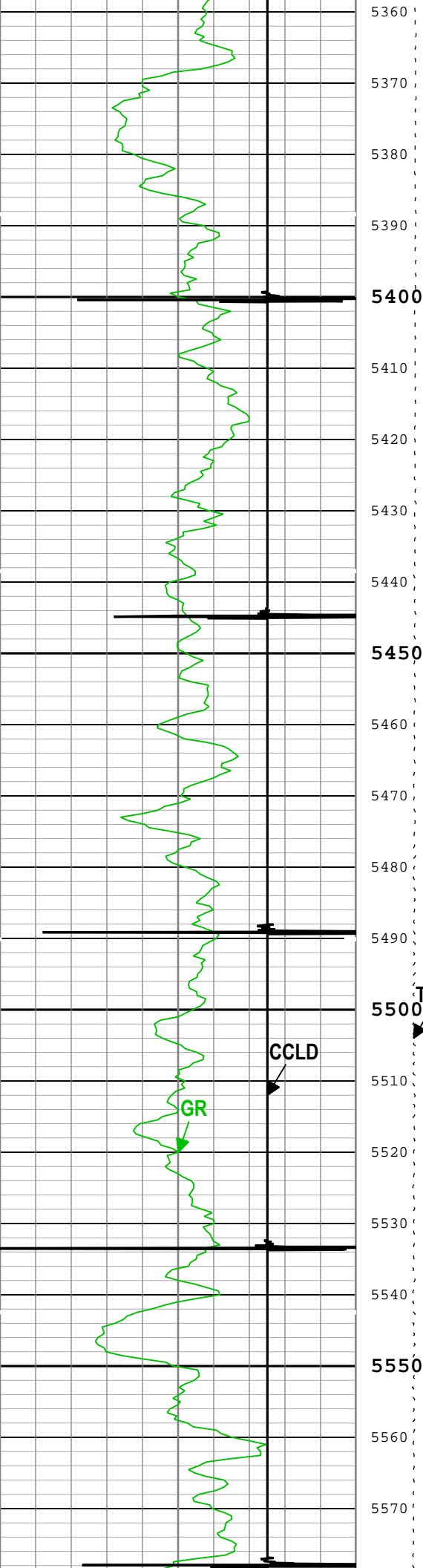
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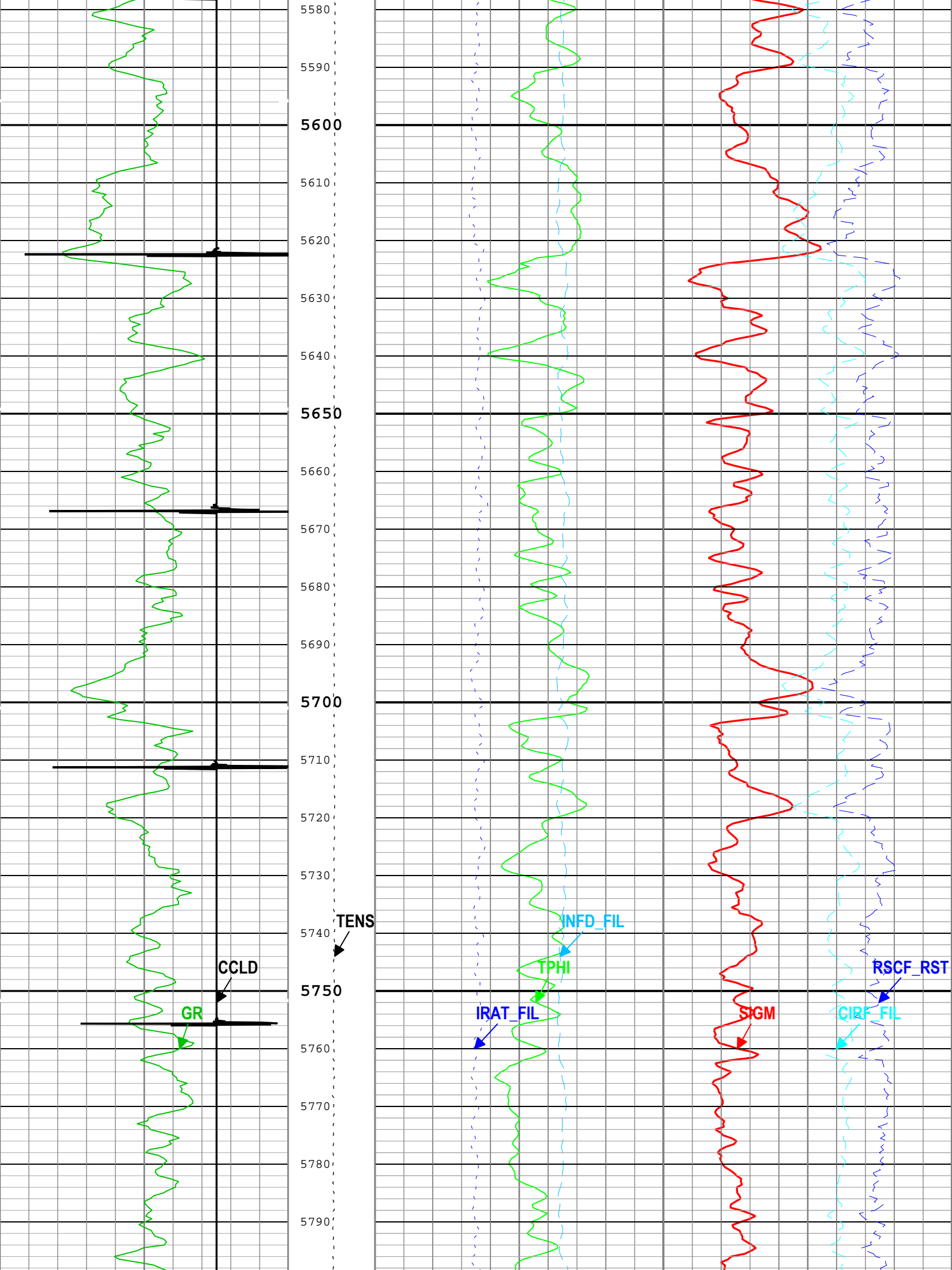
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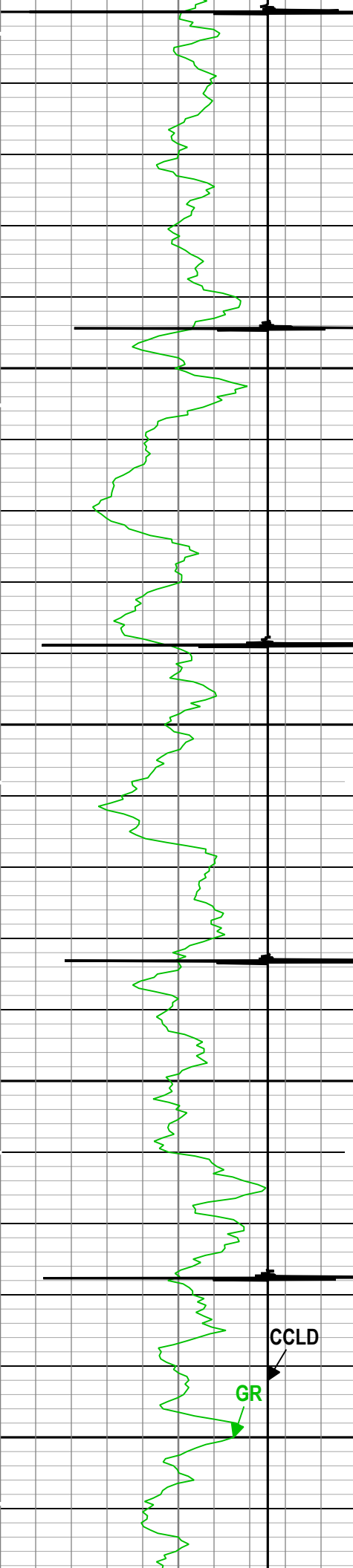
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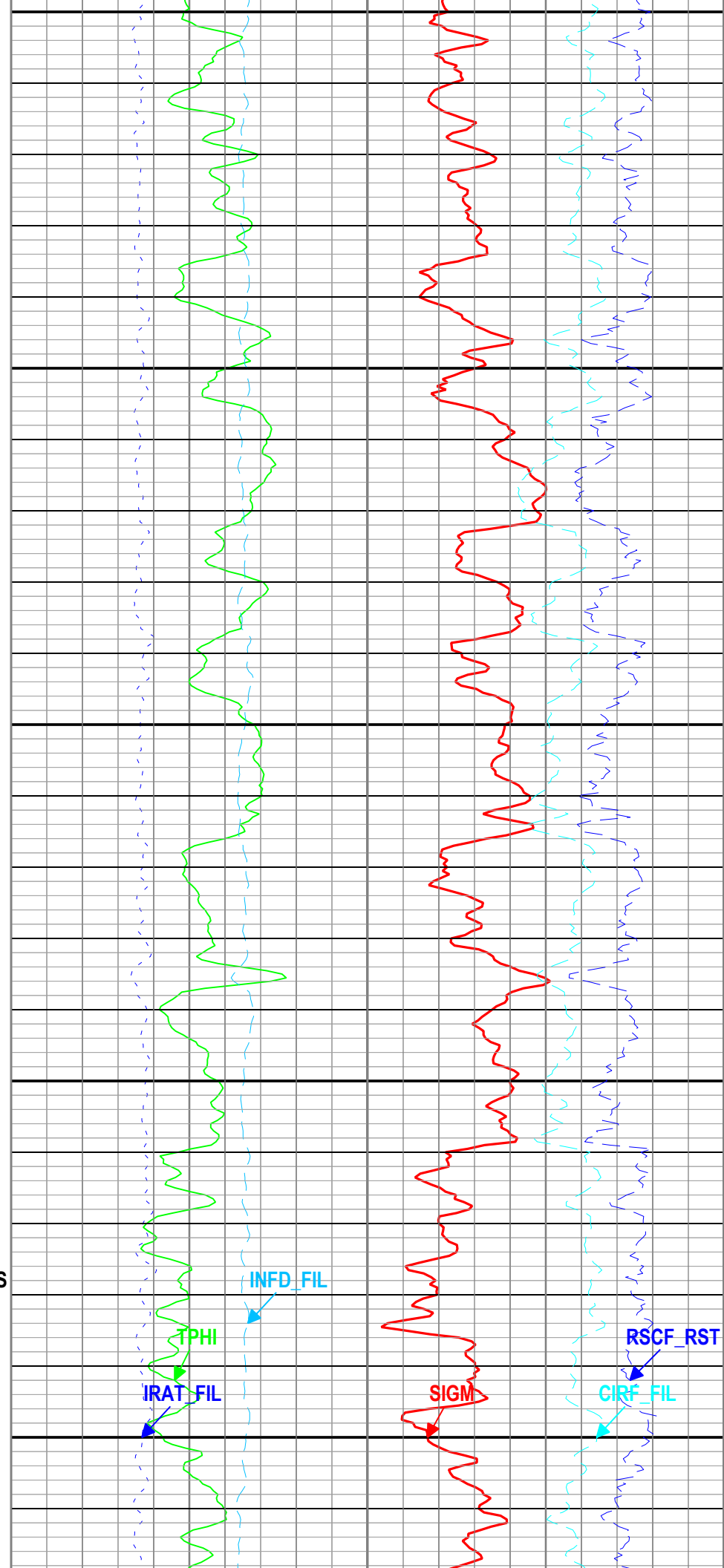


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TENS

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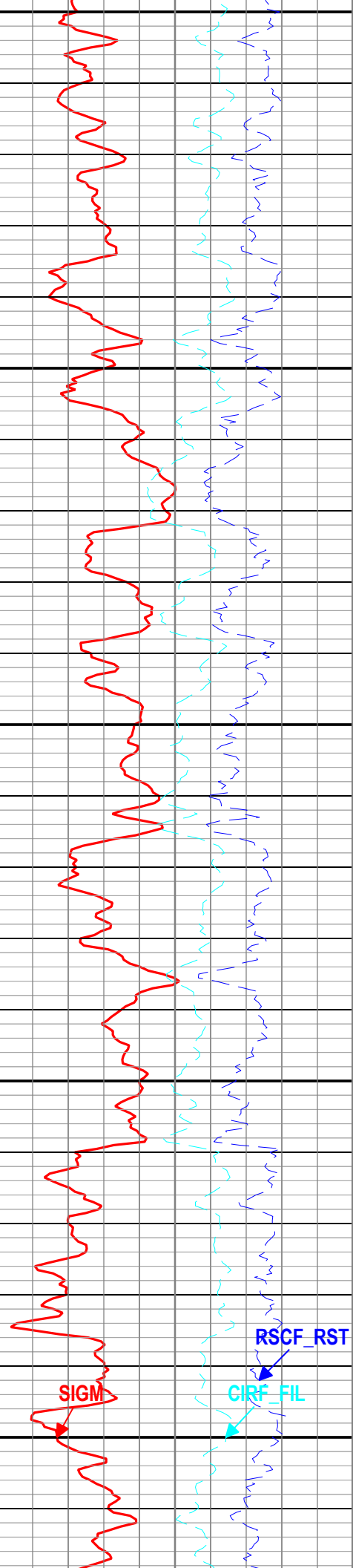
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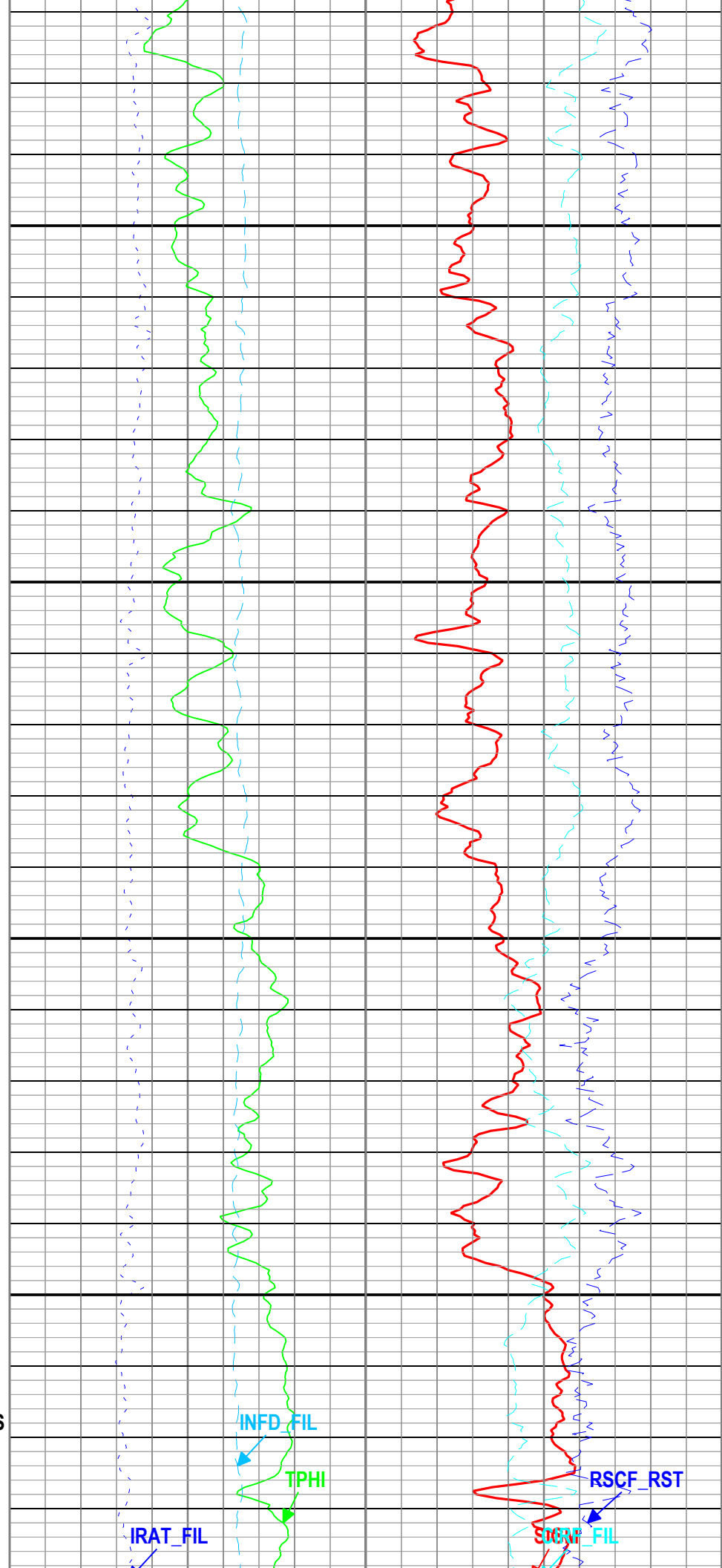
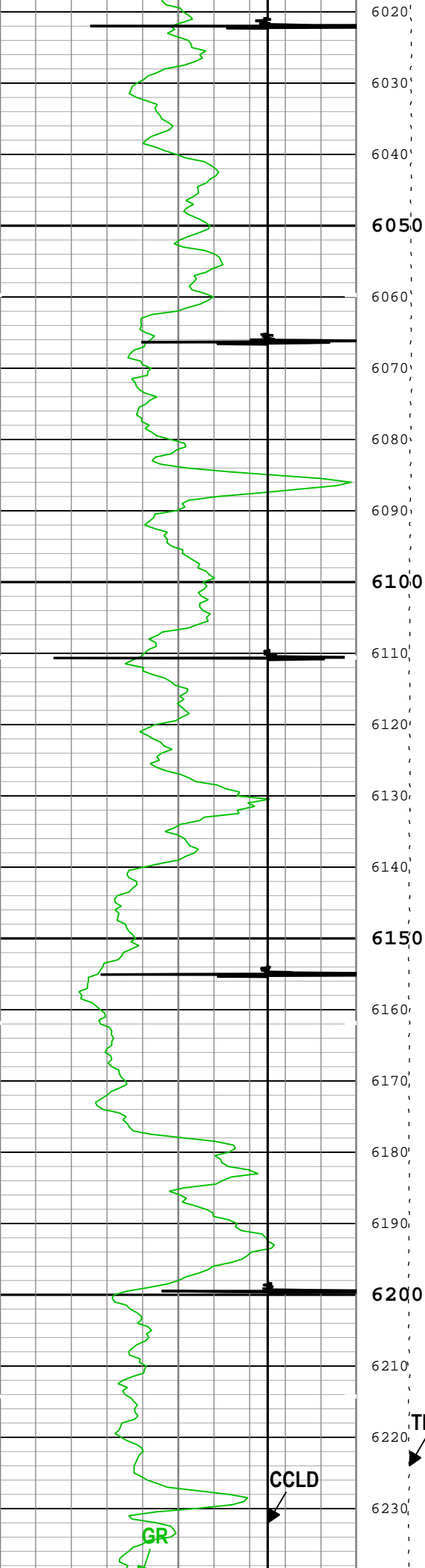
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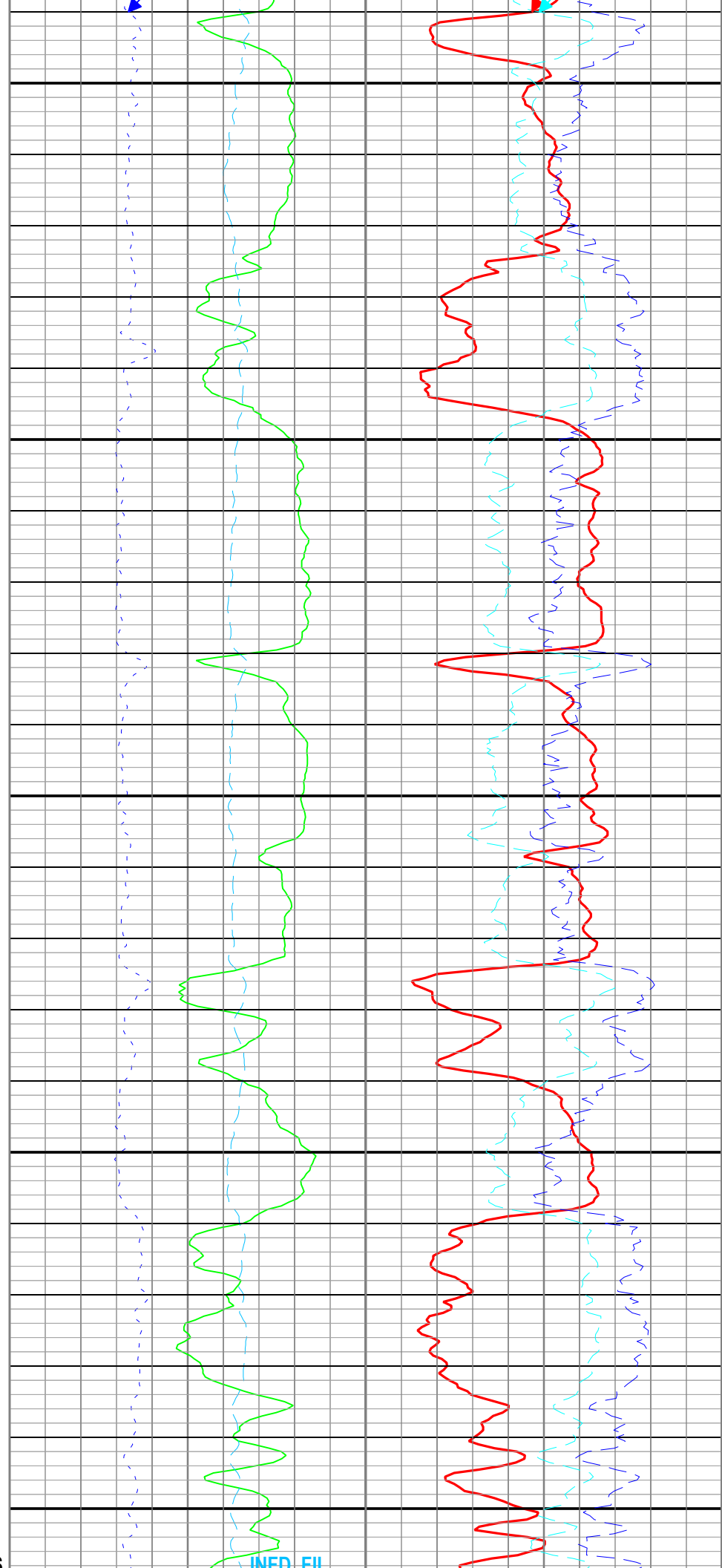
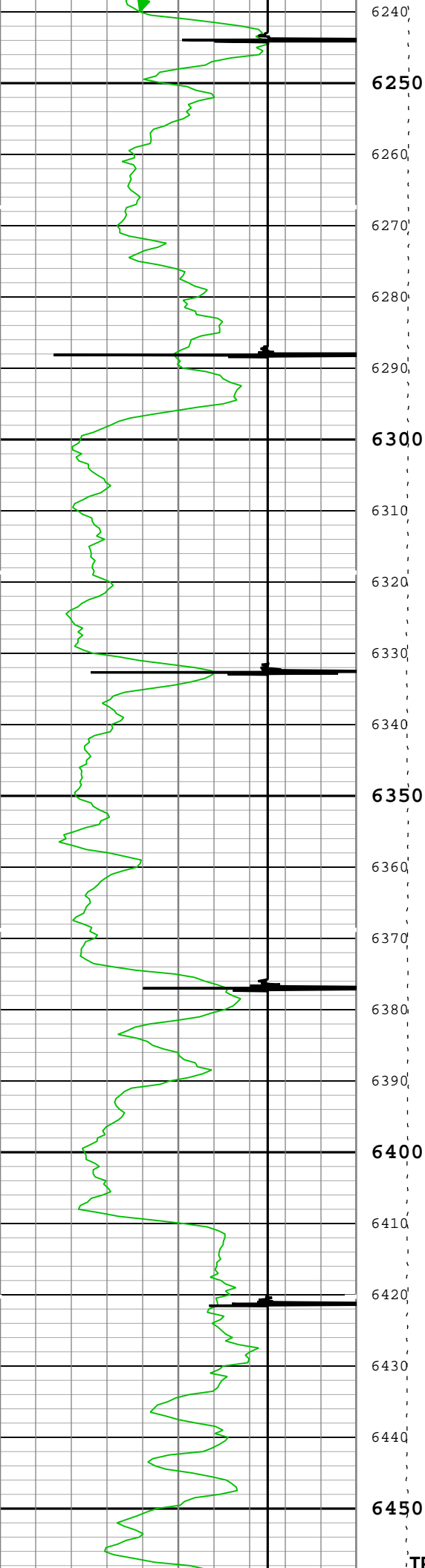


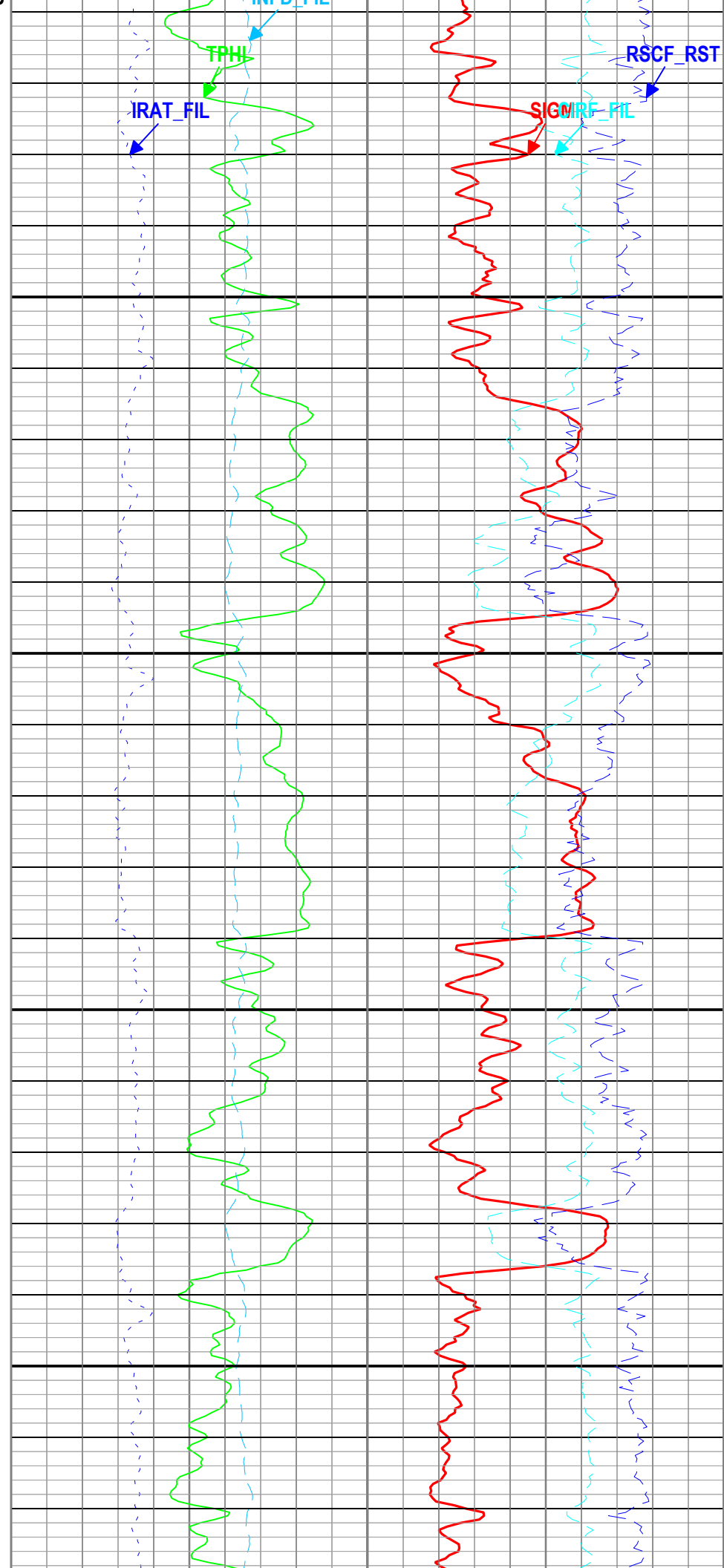
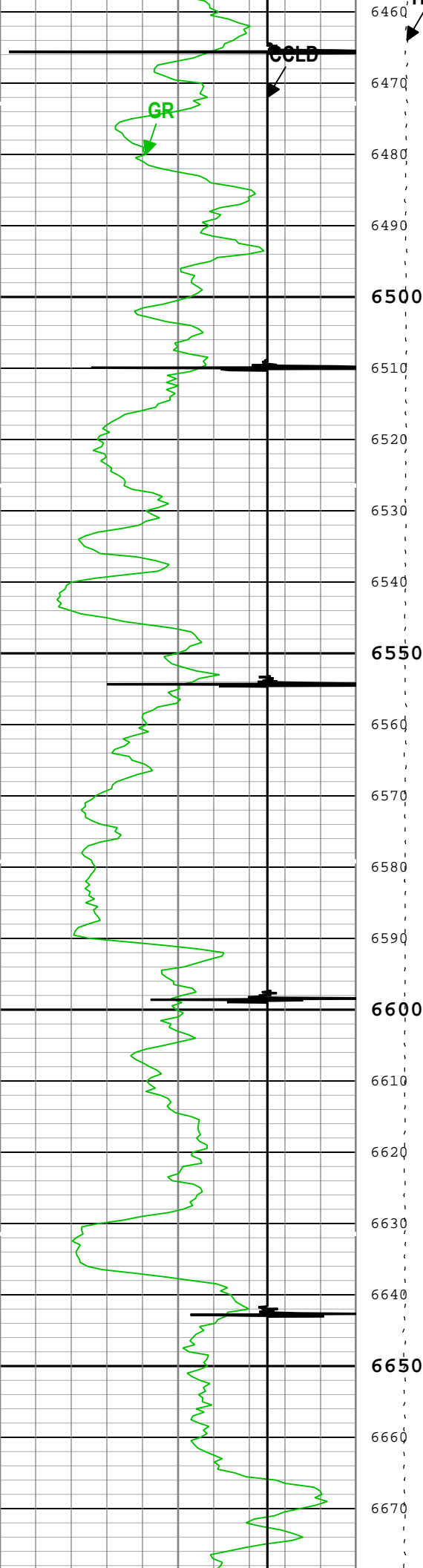
SIGM

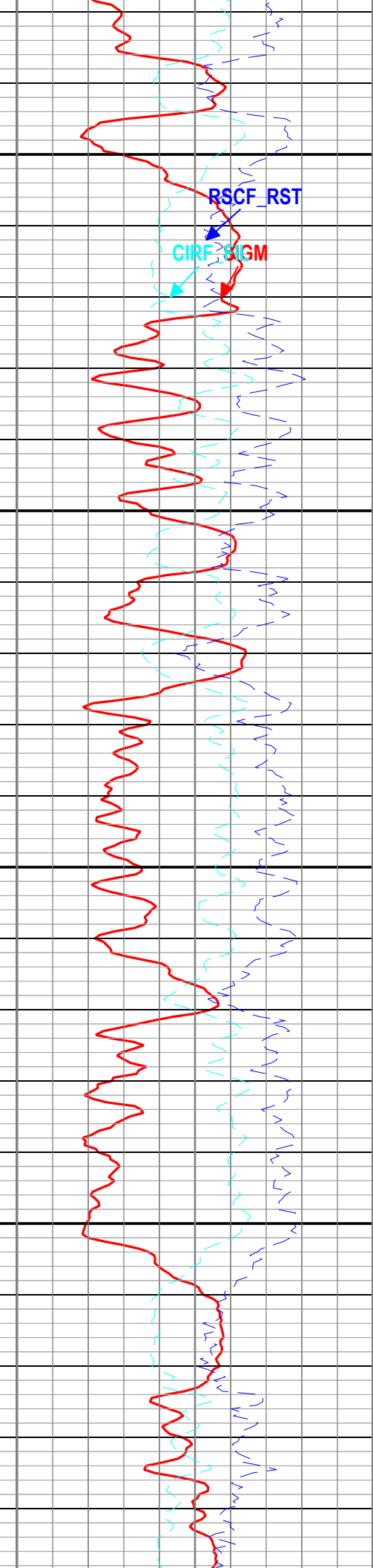
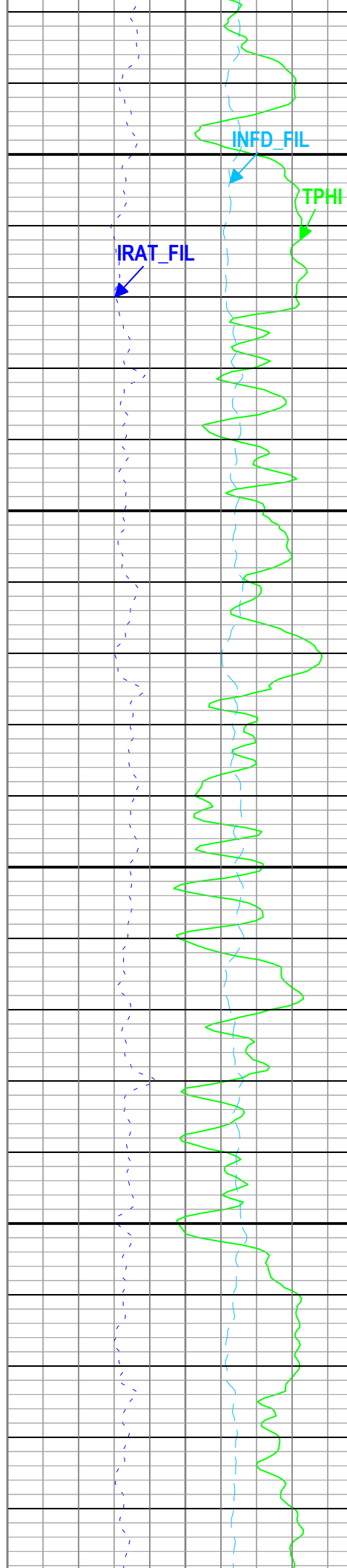
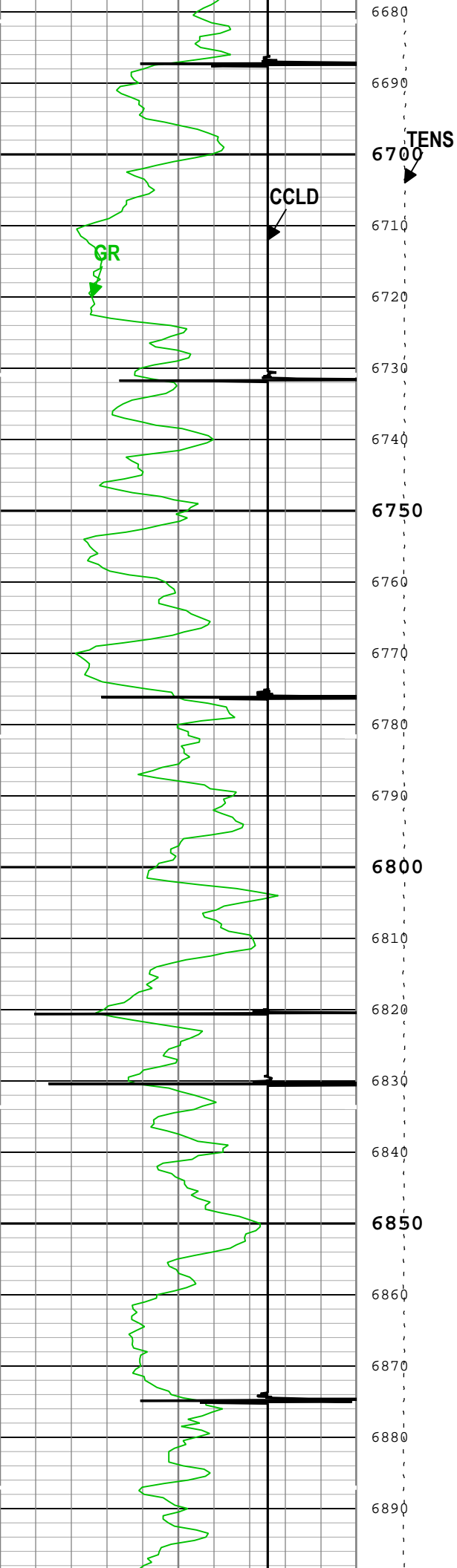
CIRF_FIL

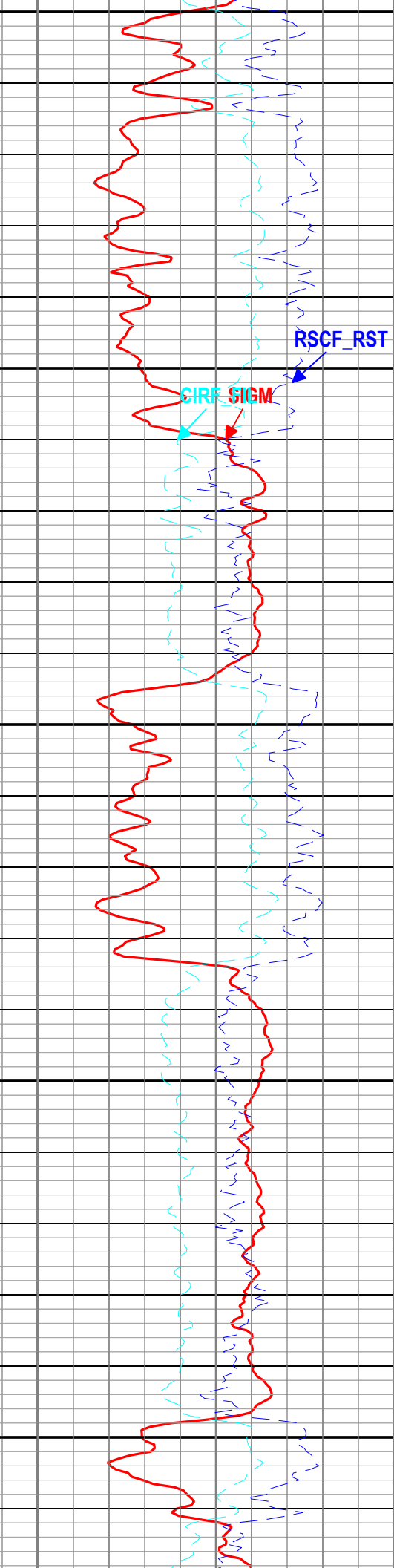
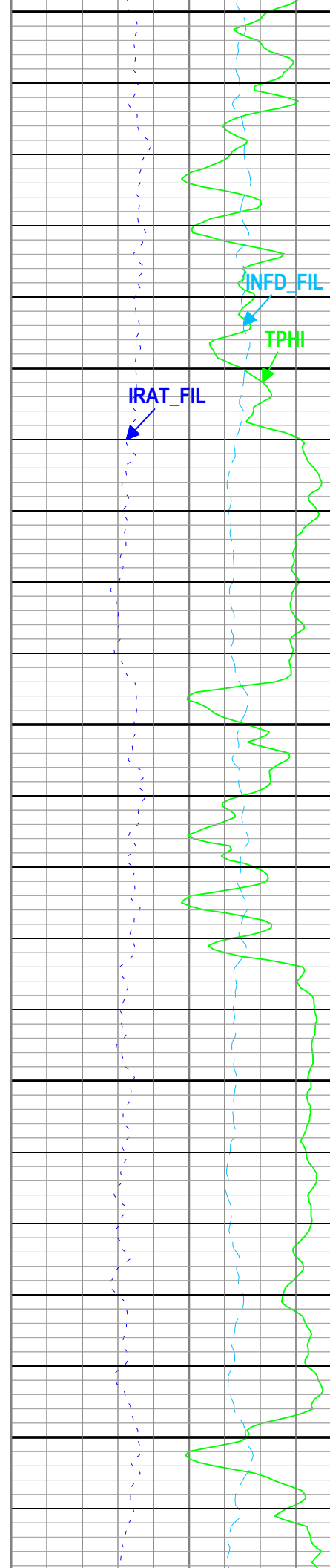
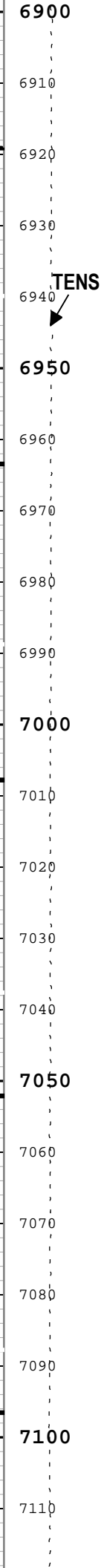
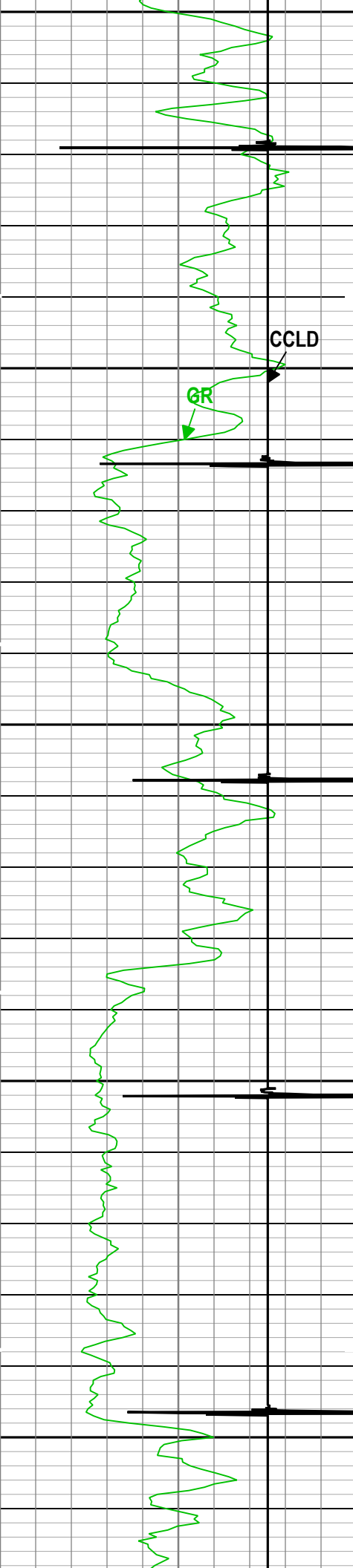
RSCF_RST

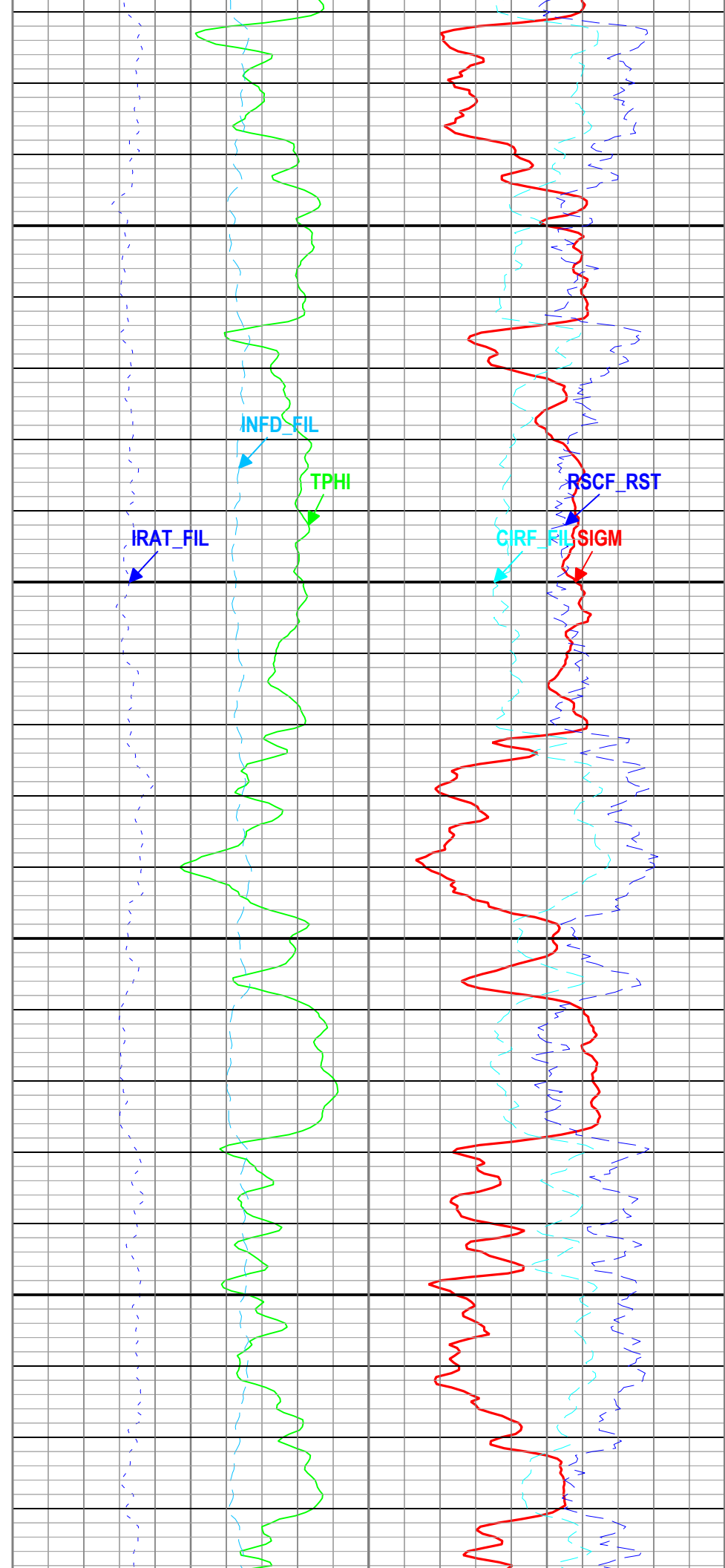
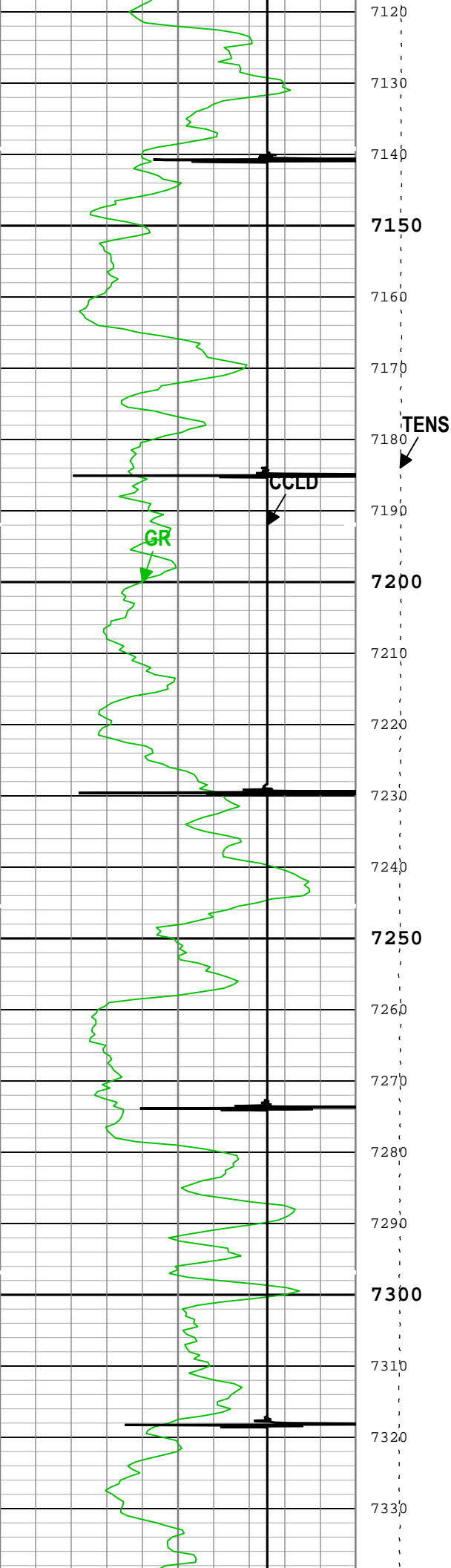


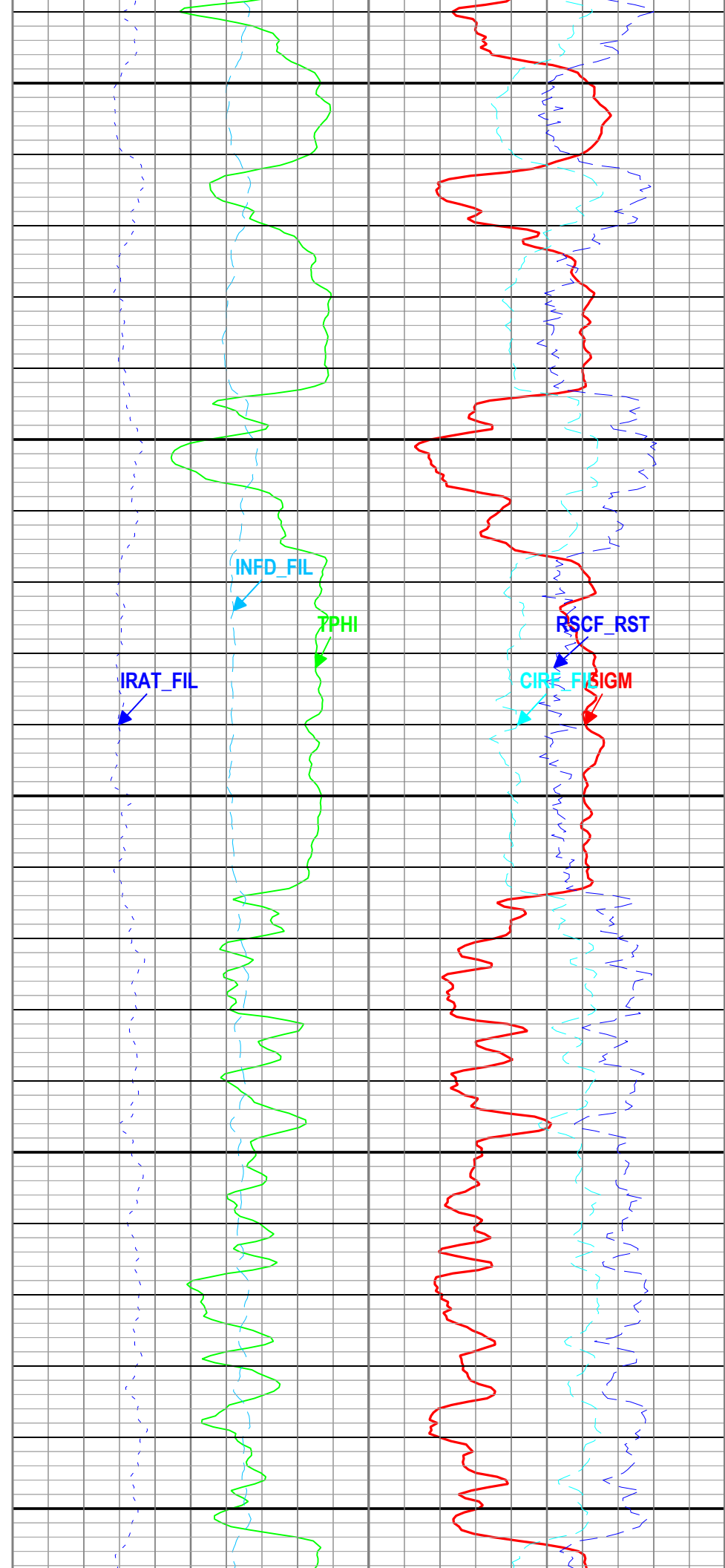
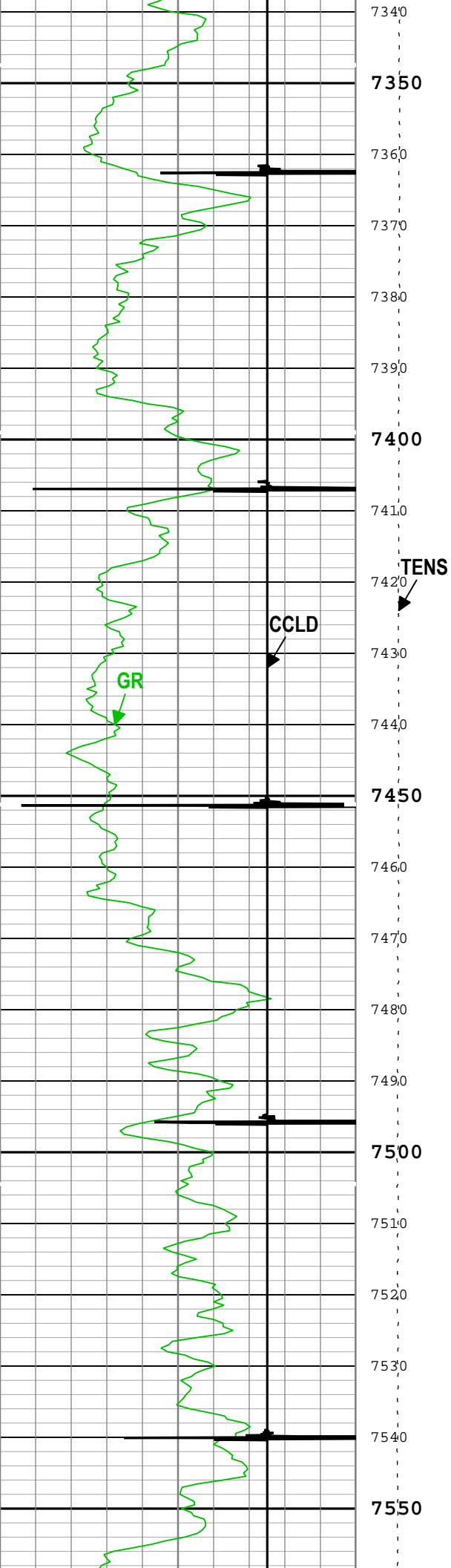


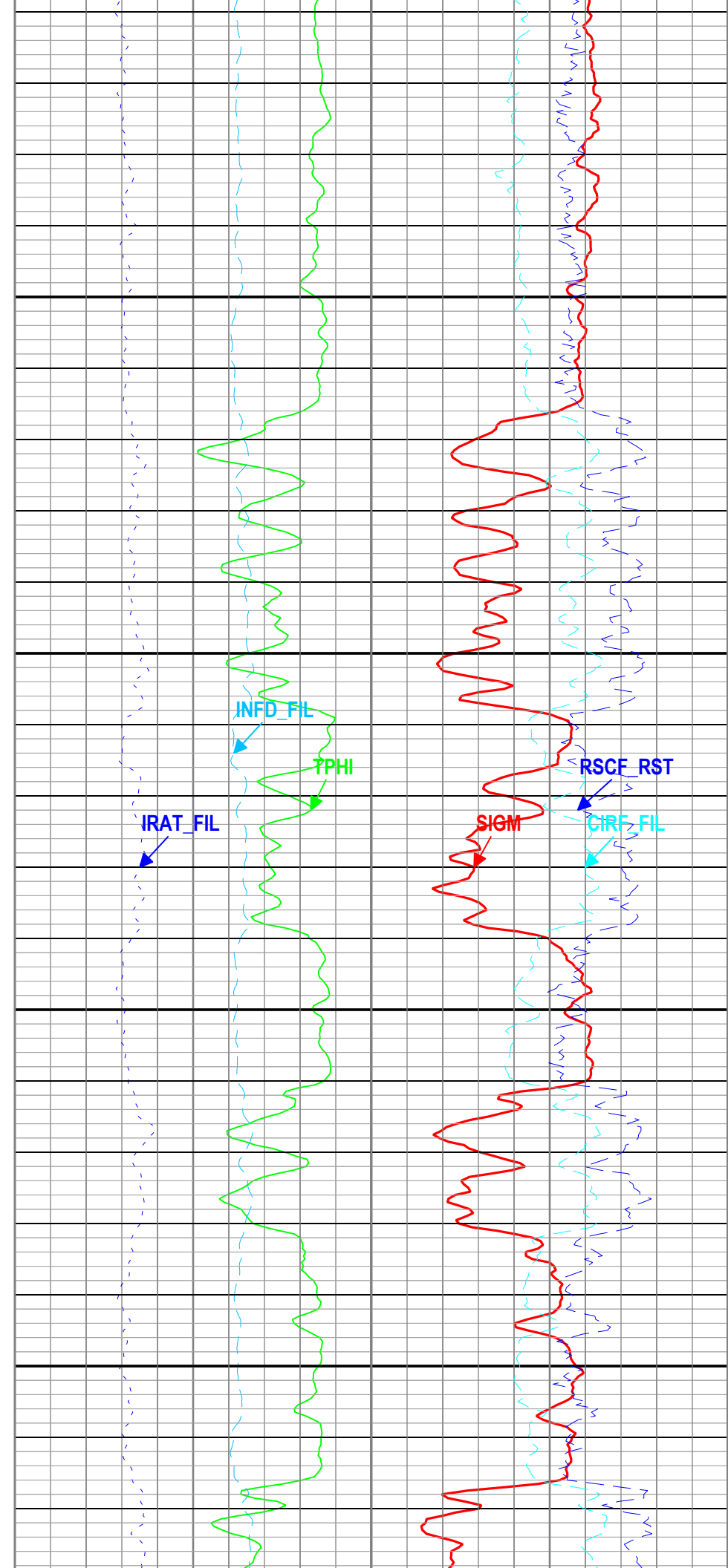
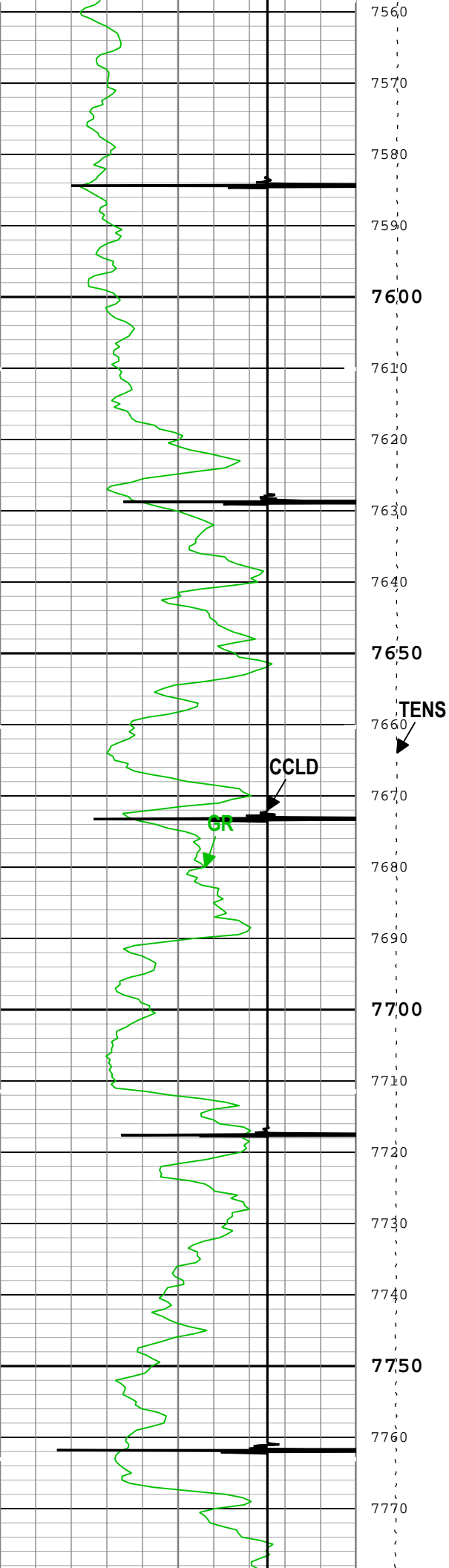


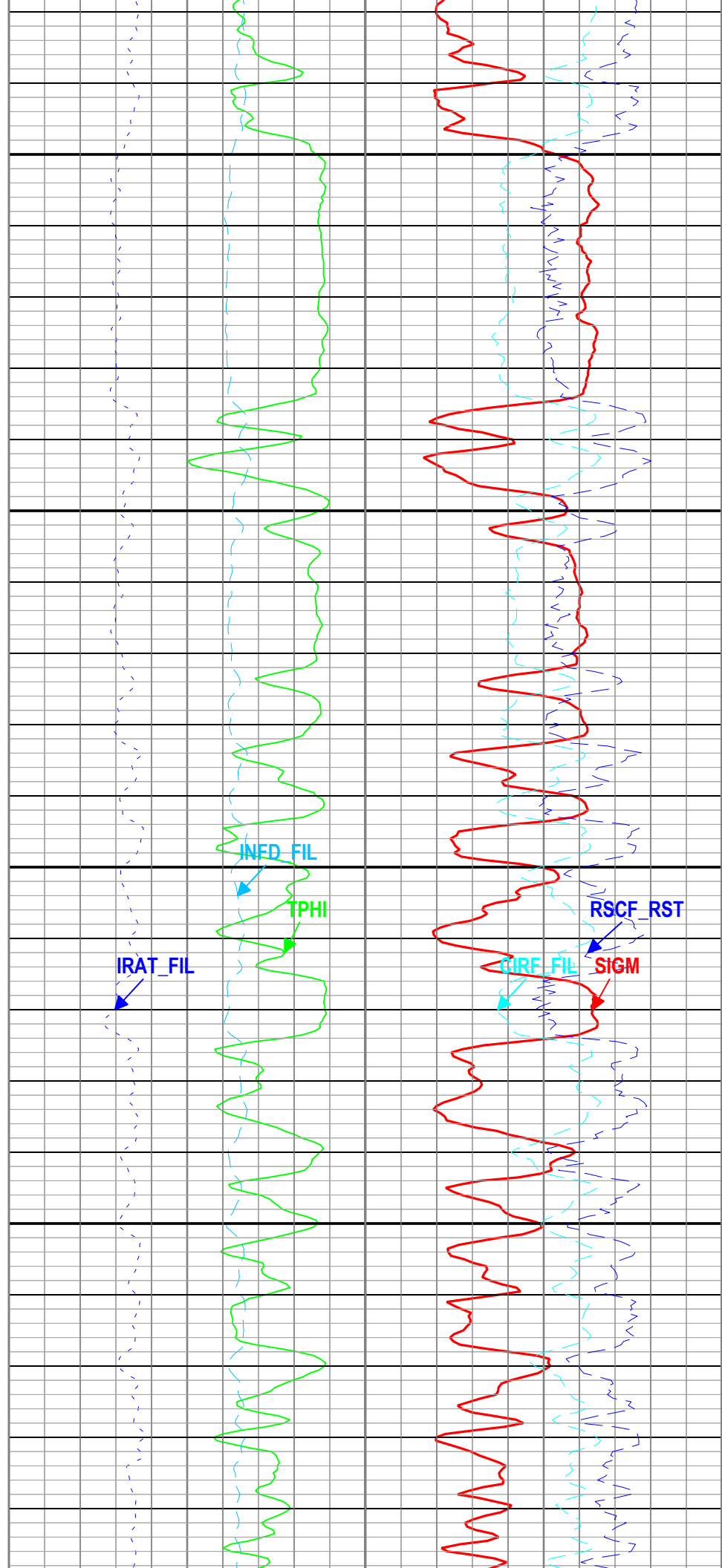
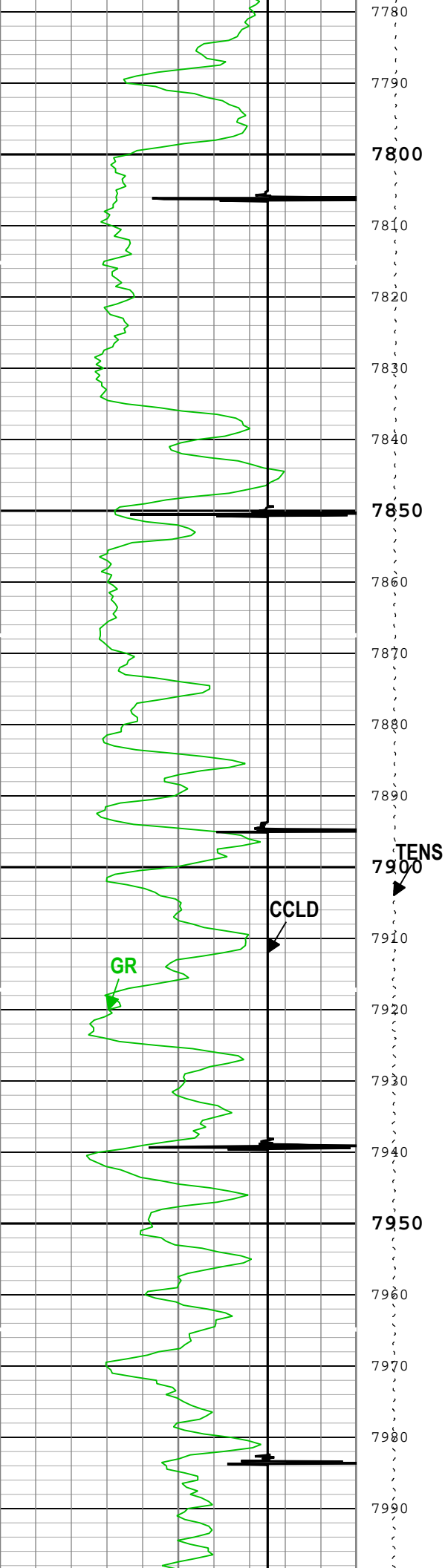


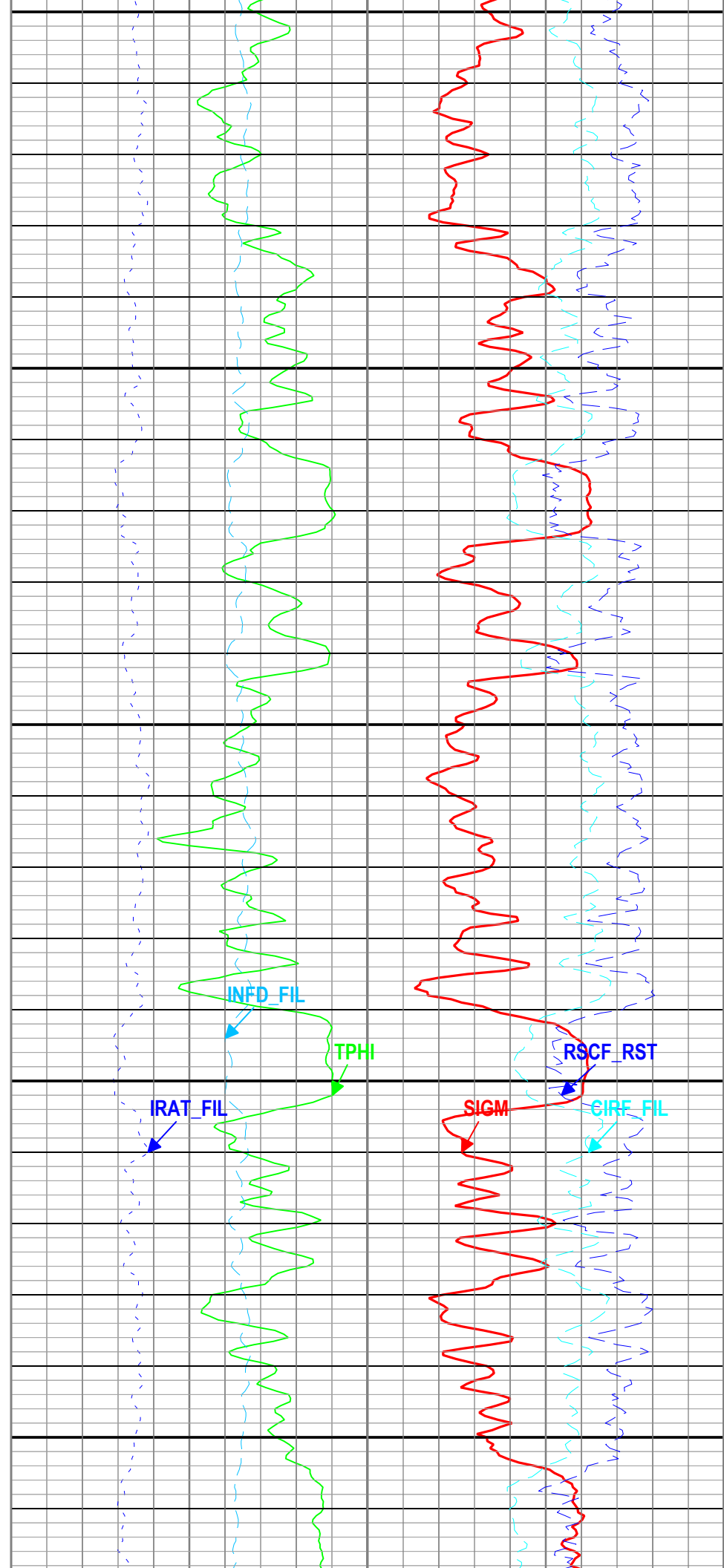
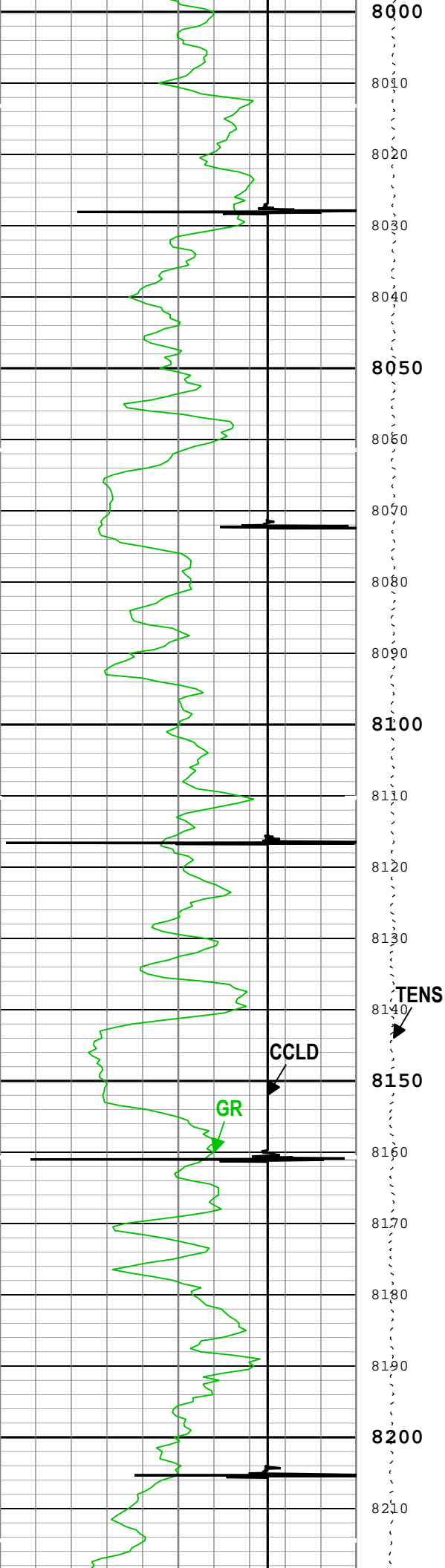


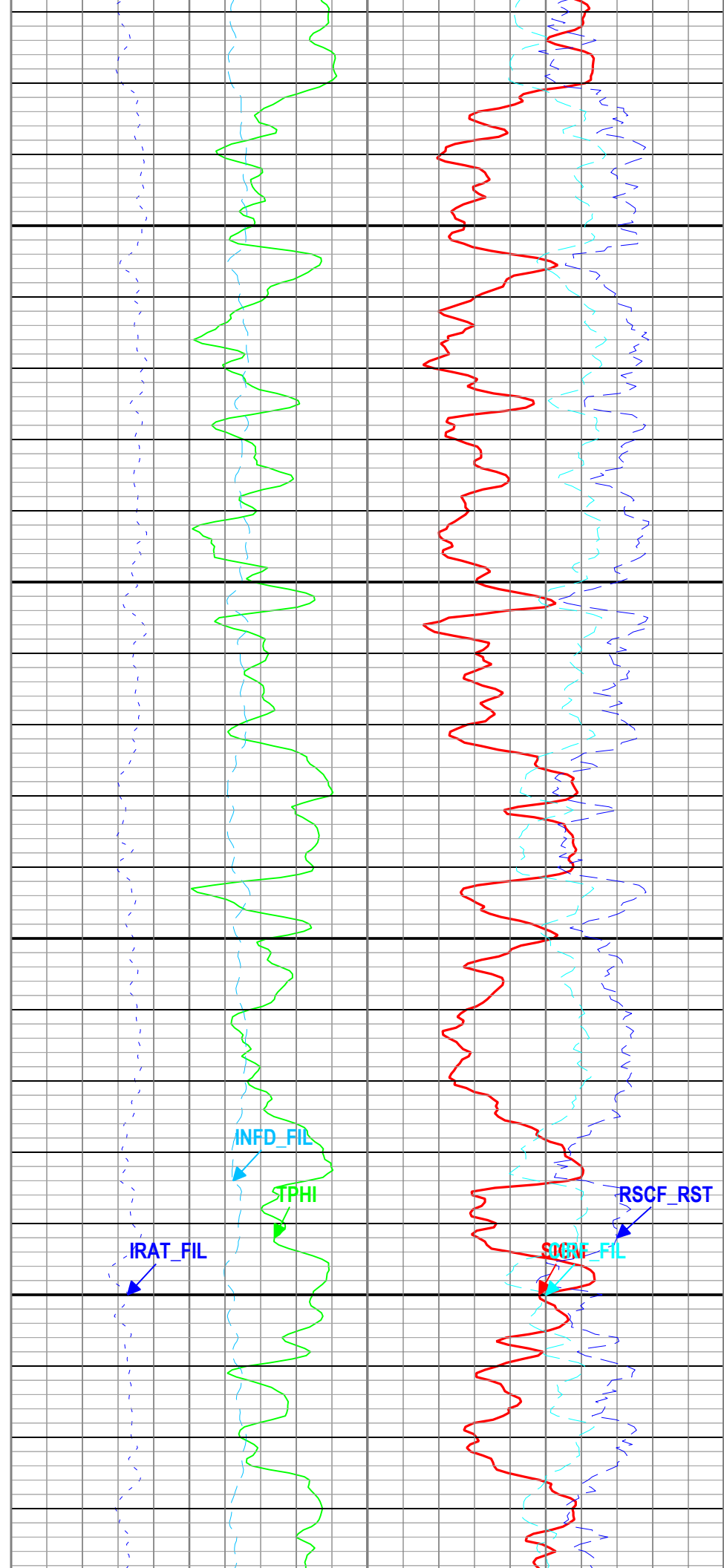
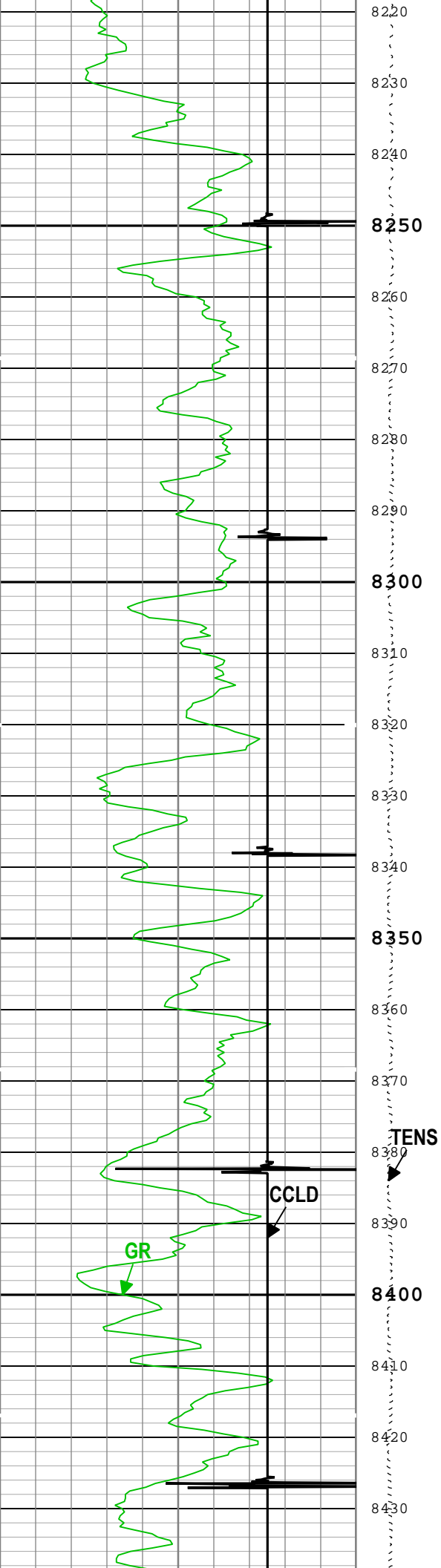


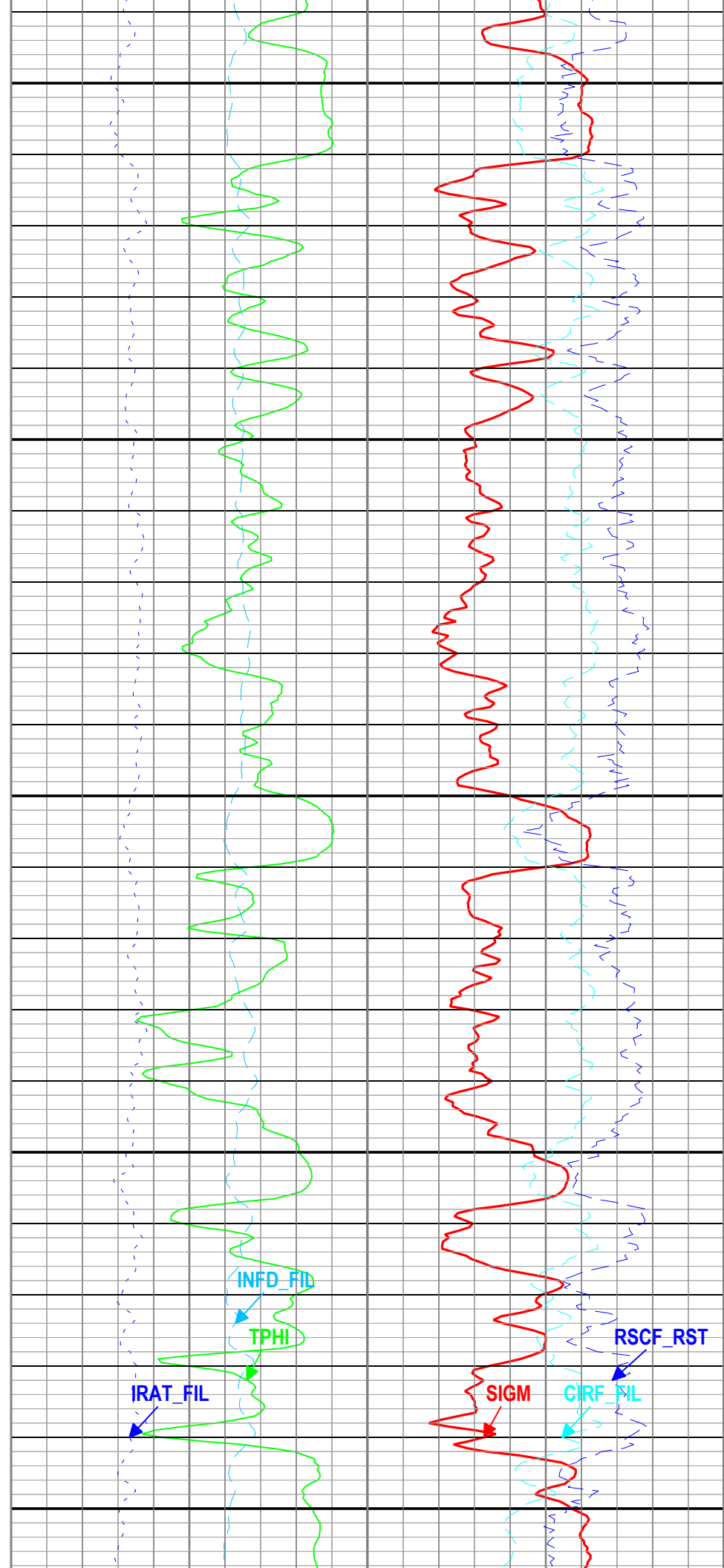
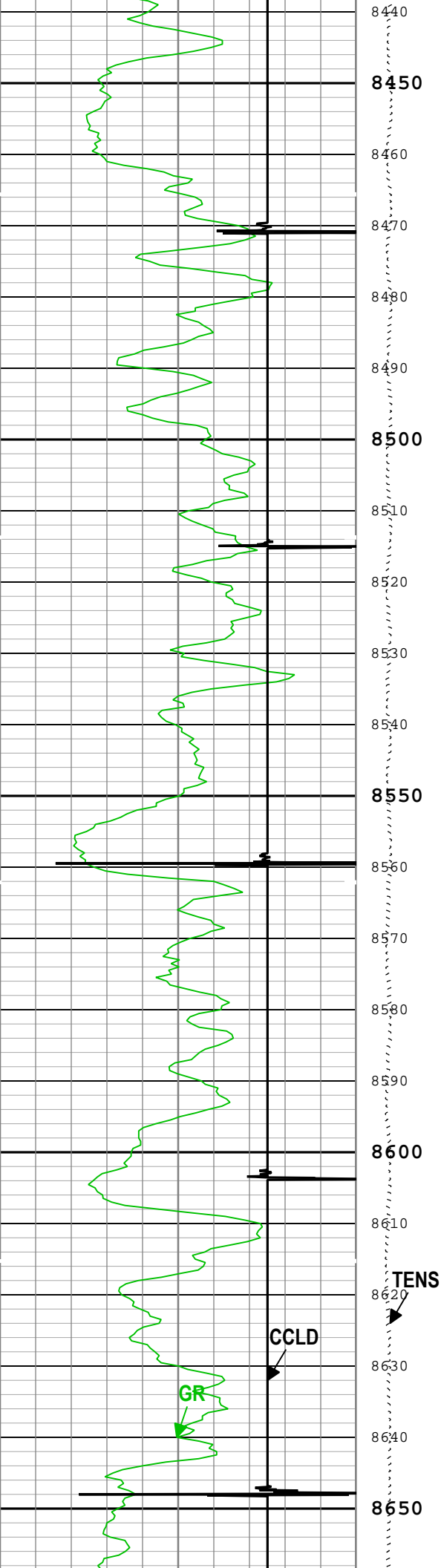


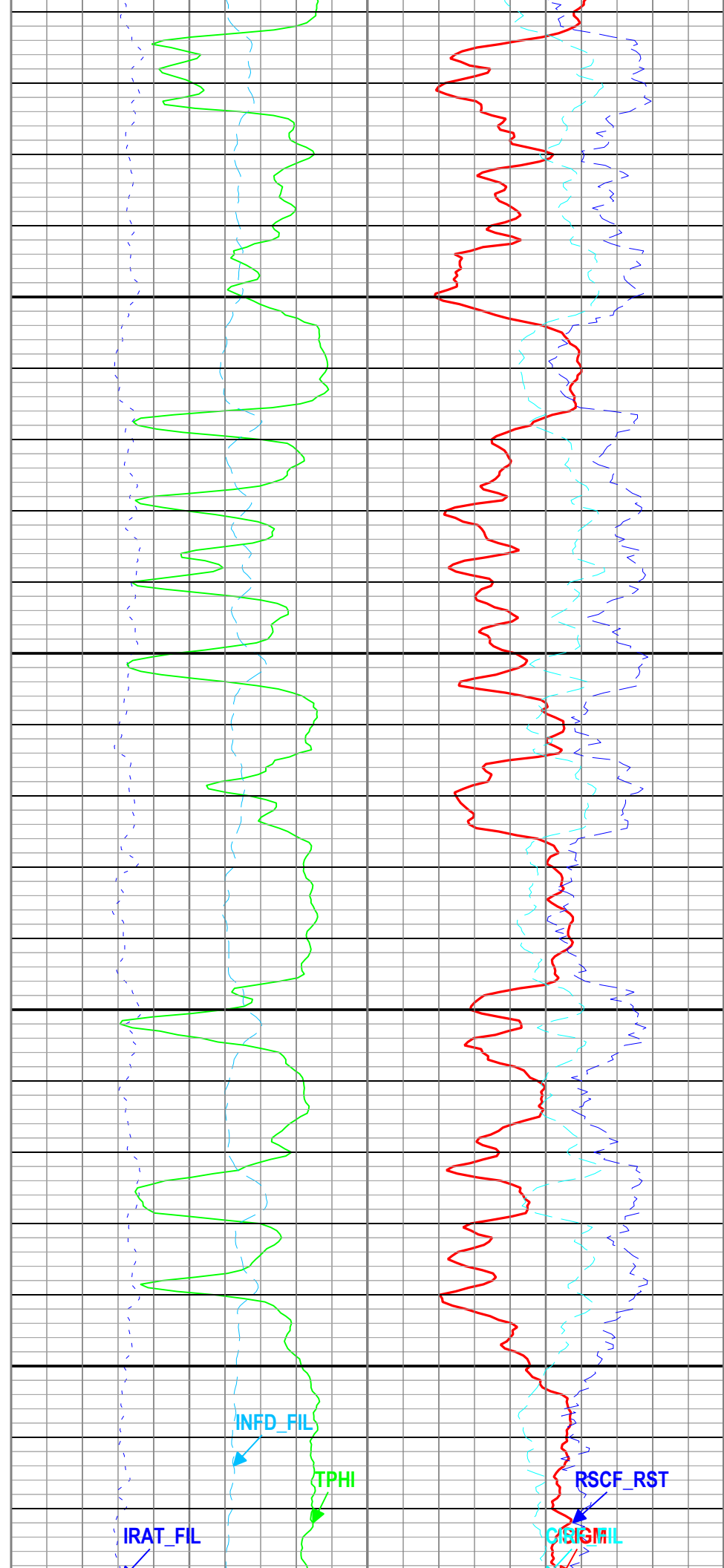
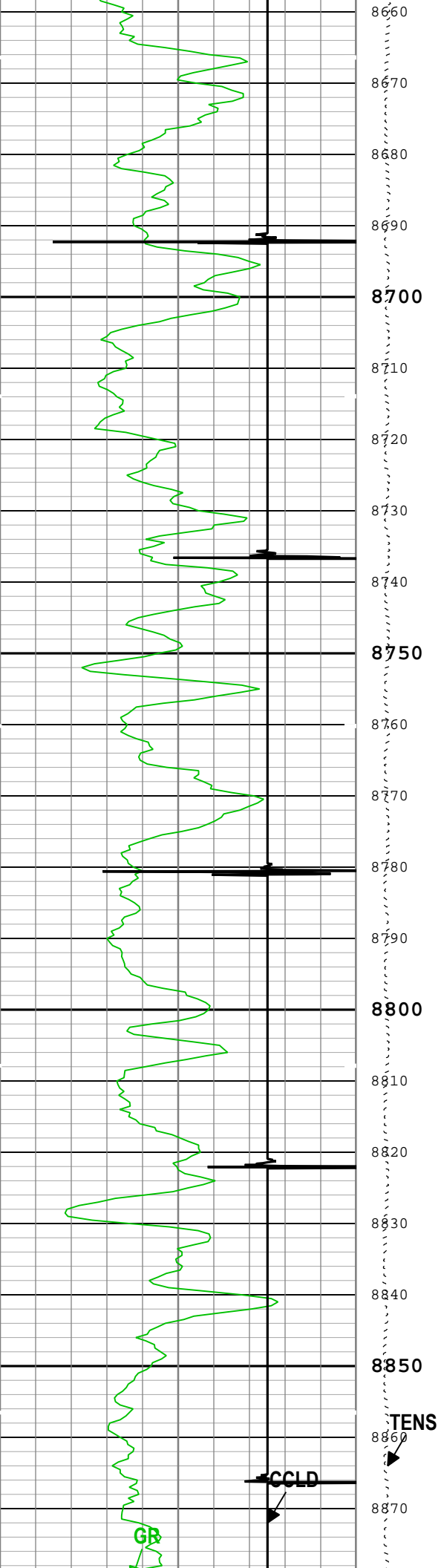


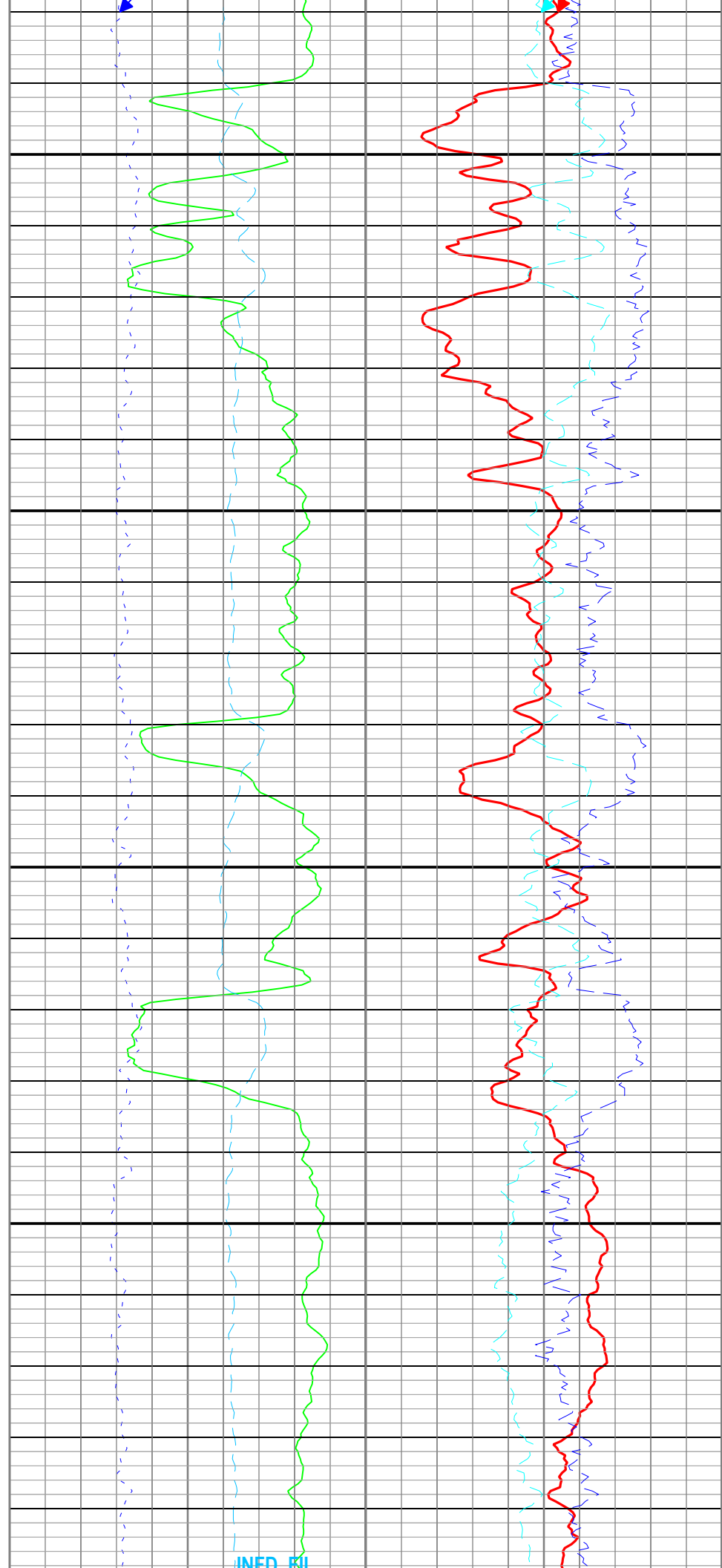
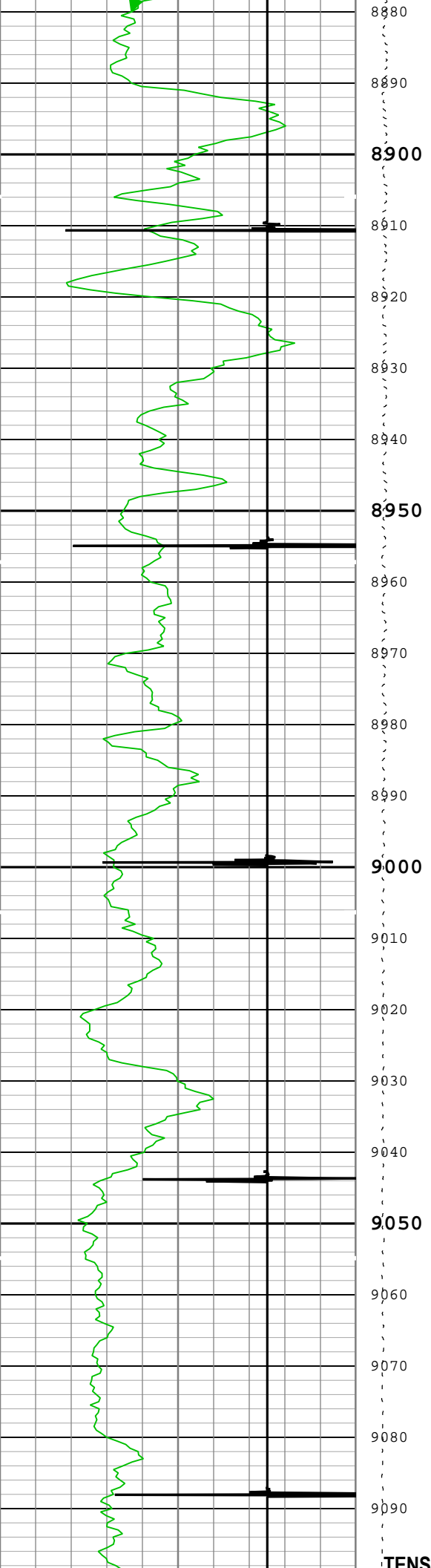


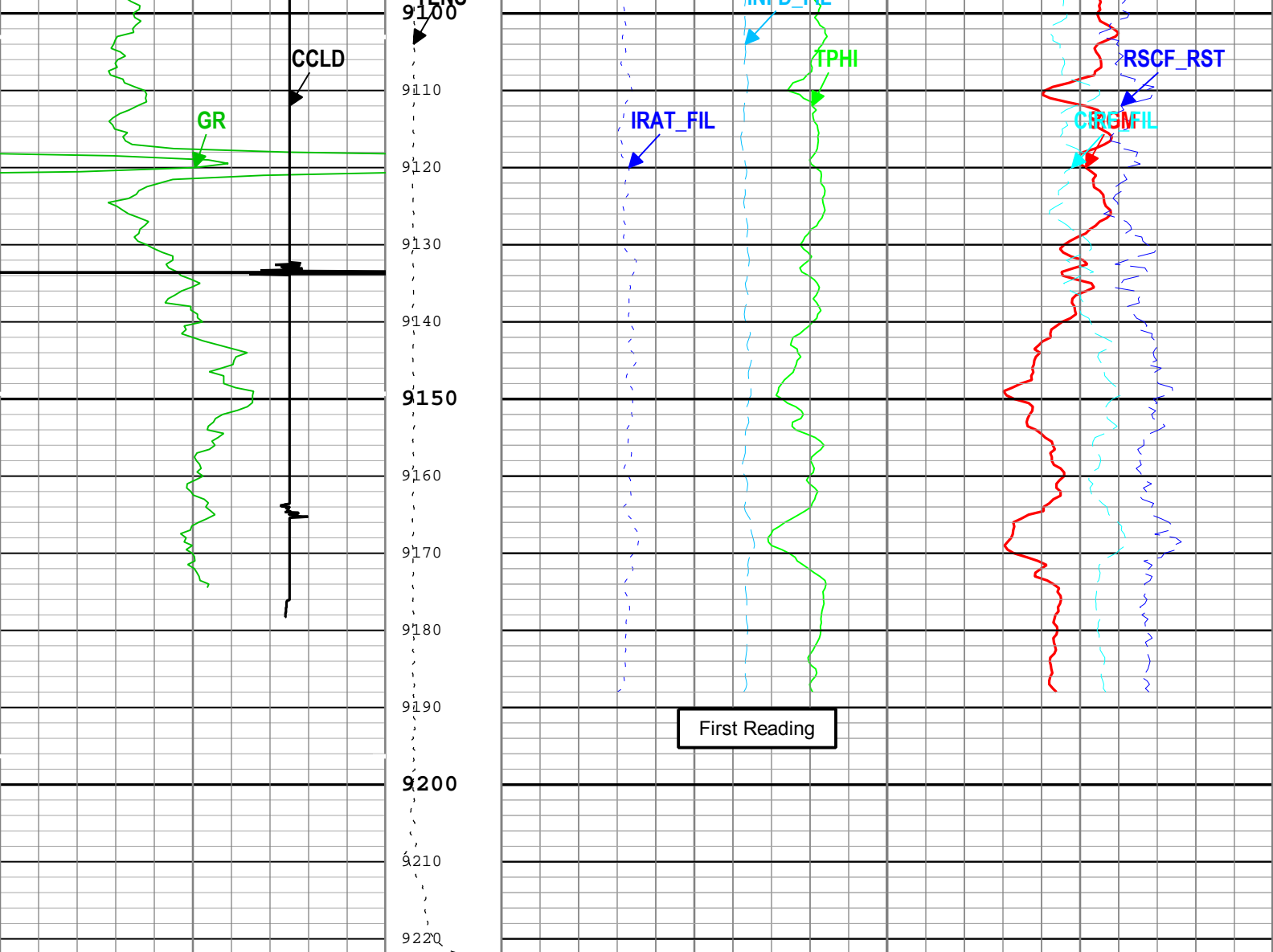












Gamma Ray (GR) PSTP-A			Cable Tension (TENS)	Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C		
0	gAPI	150		60	cu	0
CCL Discriminated Amplitude (CCLD) PSTP-A			3000 lbf	Inelastic Ratio Filtered (IRAT_FIL) RST-C	Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C	
-3	V	1		0.75	0	5
		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

—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)

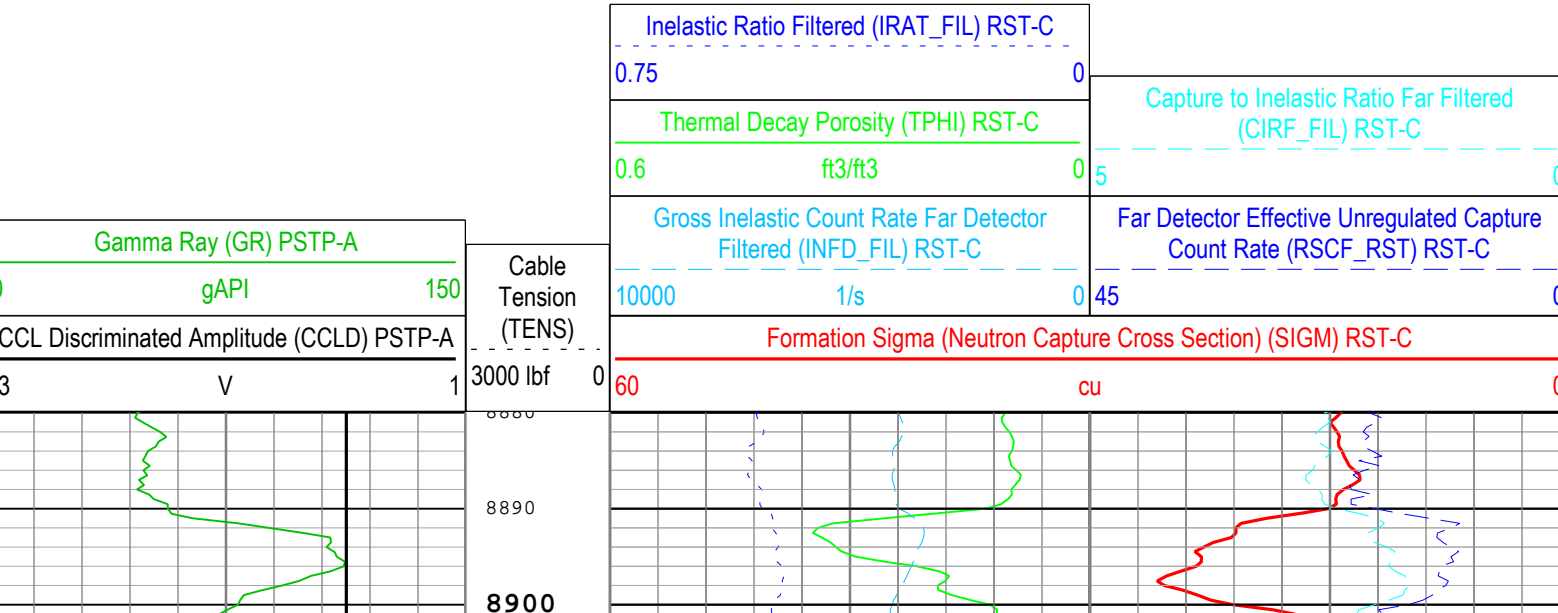
TIME_1900 - Time Marked every 60.00 (s)

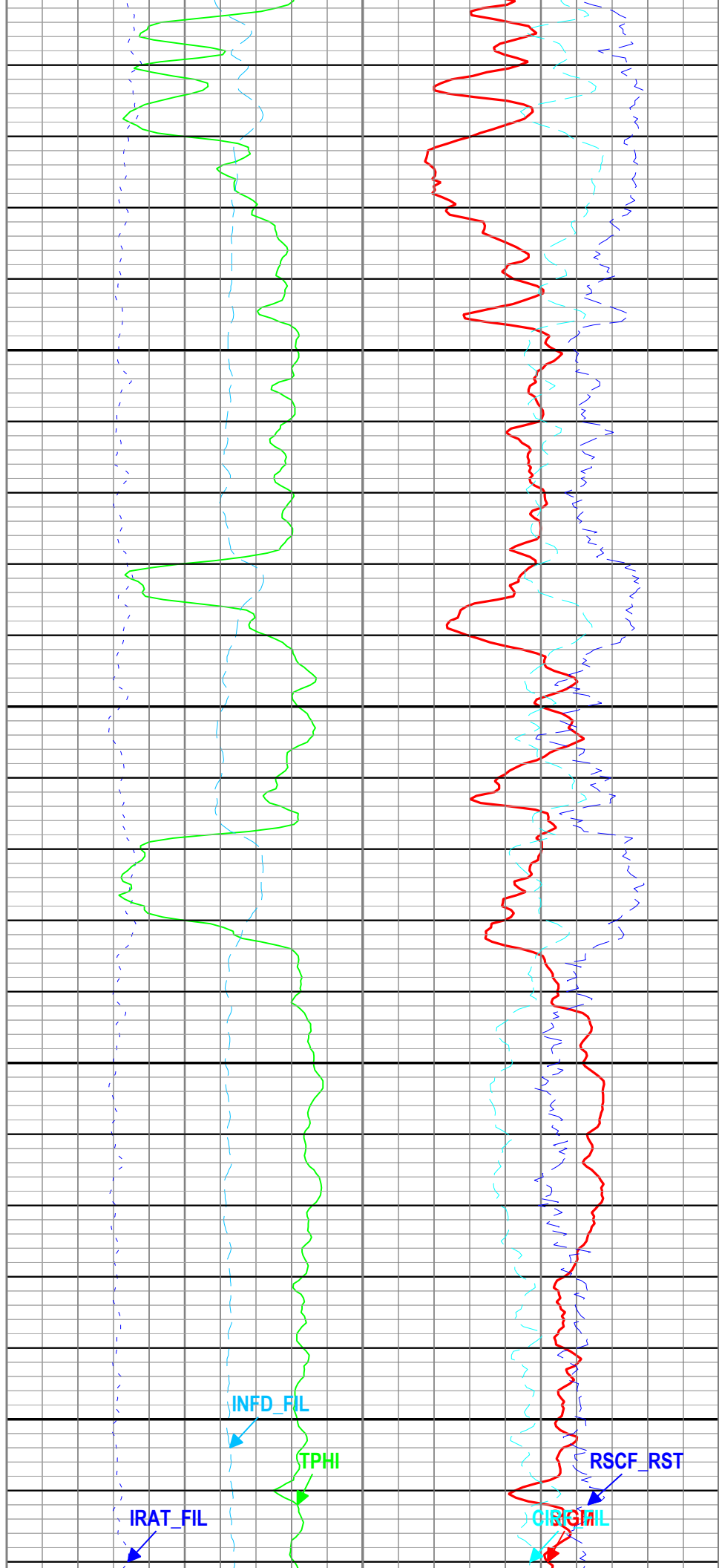
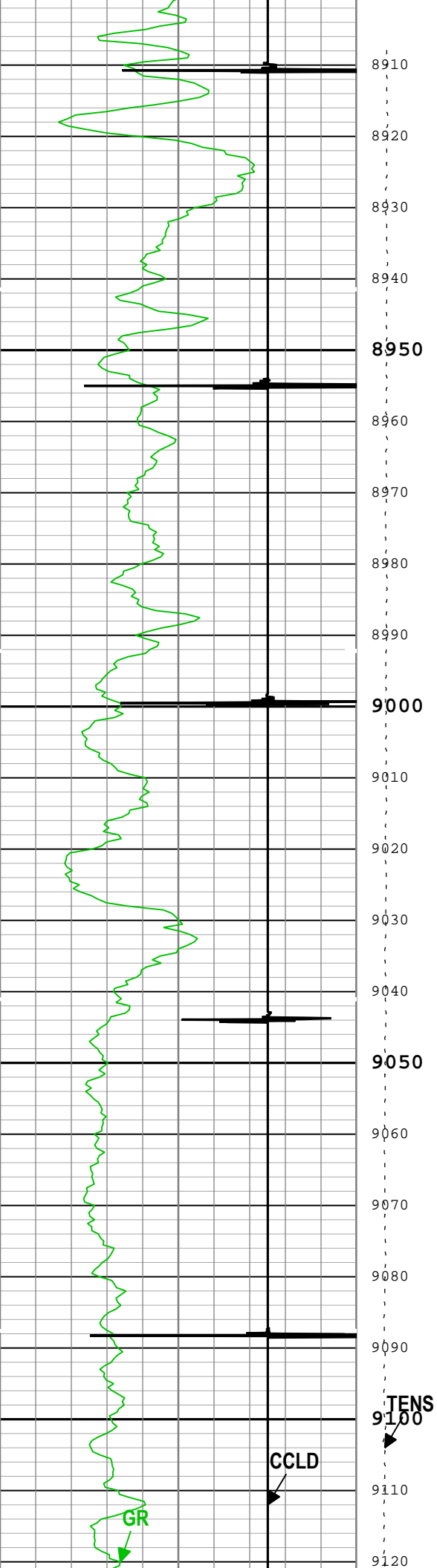
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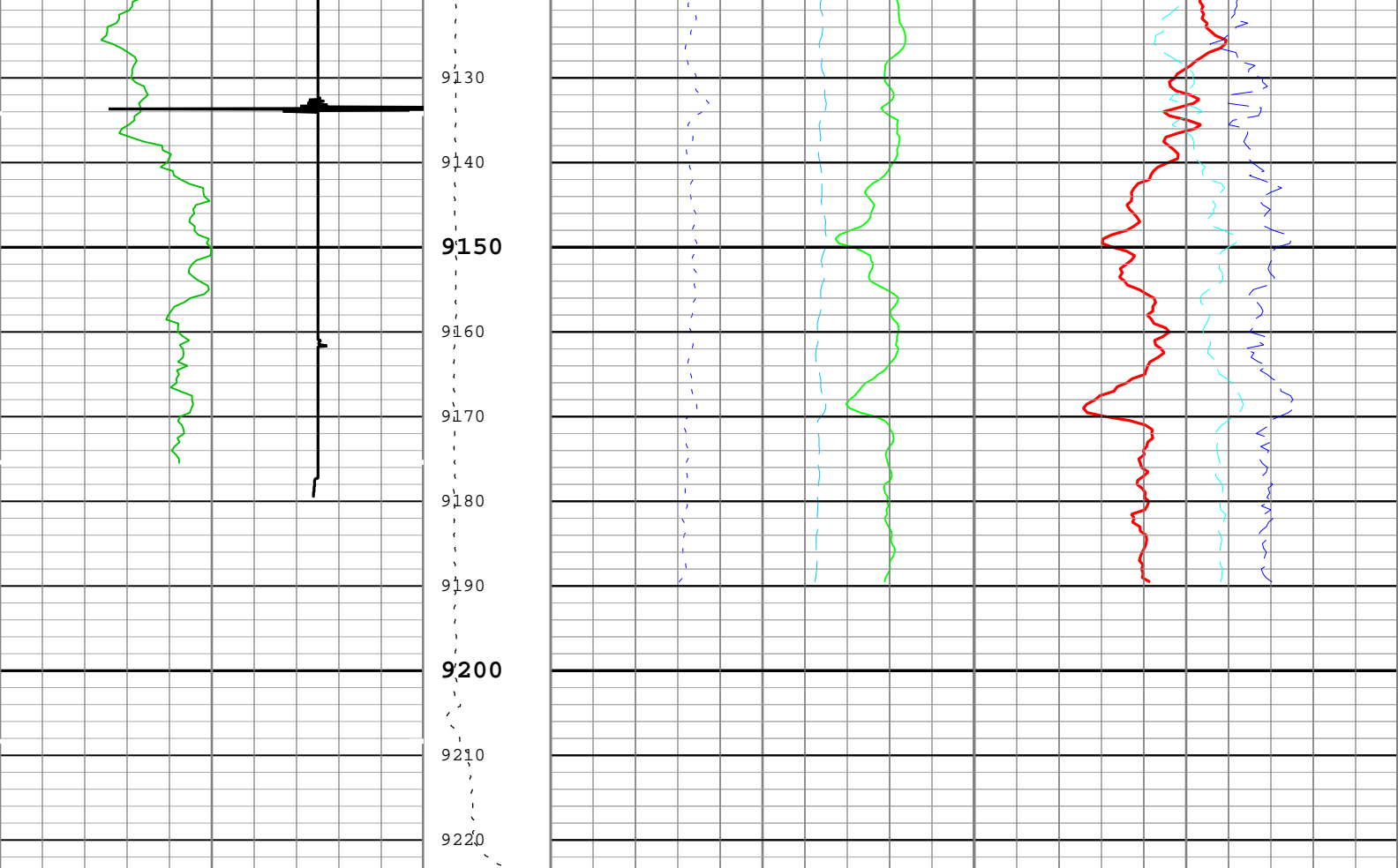
Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
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Gamma Ray (GR) PSTP-A			Cable Tension (TENS)	Formation Sigma (Neutron Capture Cross Section) (SIGM) RST-C		
0	gAPI	150		60	cu	0
CCL Discriminated Amplitude (CCLD) PSTP-A				Inelastic Ratio Filtered (IRAT_FIL) RST-C		Capture to Inelastic Ratio Far Filtered (CIRF_FIL) RST-C
-3	V	1		0.75	0	5

Thermal Decay Porosity (TPHI) RST-C			Gross Inelastic Count Rate Far Detector Filtered (INFD_FIL) RST-C	Far Detector Effective Unregulated Capture Count Rate (RSCF_RST) RST-C		
0.6	ft3/ft3	0		45	0	
10000	1/s	0				

- 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)
- TIME_1900 - Time Marked every 60.00 (s)
- 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: 10-Jan-2018 10:25:50

Channel Processing Parameters

One: Parameters

Parameter	Description	Tool	Value	Unit
BHS	Borehole Status (Open or Cased Hole)	Borehole	Cased	
BS	Bit Size	WLSESSION	7.875	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	
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Tool Control Parameters	
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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 11A-26 697
Field:	Grand Valley
County:	Garfield
State:	Colorado

Cement Bond Log

RST Sigma Log

Gamma Ray/ Collar Log