



LWD MEMORY LOG

Gamma Ray

Scale:		Company: Verdad Oil & Gas Corporation					
1:240 MD		Well:		Homestead 17			
Depth Reference:		Field:		Weld County			
Driller's Depth		County:		Weld		Country: United States	
Status:		State:		Colorado			
Final Print		Surface Location:		Other Services:			
API No: 05-123-44643		Latitude:		040° 00' 25.920" N			
Job ID: 8560020		Longitude:		104° 45' 26.964" W			
Permanent Datum (P.D.):		SEC:		34	TWN: 1N	RGE: 66W	
Ground Level		Elevation:		5131.00 ft			
Rig Floor		Above P.D.		16.00 ft			
Log Measured From:		Elev. KB:		N/A			
		Elev. DF:		5147.00 ft			
		Elev. GL:		5131.00 ft			
Dates		Interval Logged		Magnetic Field Reference			
Date From: 2017-05-30		Top: (ft)		1764.00		Azi Reference North: True	
Date To: 2017-07-16		Bottom: (ft)		14815.00		Dip Angle: (deg) 66.58	
Spud Date: 2017-05-29						Total Magnetic Field Strength: (nT) 52242	
						Mag to Reference North Correction: (deg) 8.35 E	
Borehole Record				Casing Record			
Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)	
13.500	16.00	1764.00	9.625	36.00	16.00	1758.00	
8.500	1764.00	14815.00					
Mud Record							
Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)	
Oil Based Mud	16.00	14815.00	13.500	1687.00	0.48 340.67	4.16 300.62	
			8.500	13051.00	4.16 300.62	89.85 169.54	
Acquisition System							
Baker Hughes Cadence	Software Version		RT4.1		Rig: Xtreme 20		
PlotStudio	4.1.7763.3		Contractor: Xtreme Drilling		District: RMA		
			Unit: D & E				

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Log Run Summary

Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
2	2	8.500	PDC	3.00	AutoTrak Curve	1751.00	14803.00	1764.00	14815.00	2017-07-12 23:18	2017-07-16 15:51	76.33

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
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	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Eugen Egwe	2017-07-12	2017-07-17	Garrett Gerdson	2017-07-12	2017-07-17	Marcos Favela	2017-07-12	2017-07-17

Mud Properties Record

Date / Time	Run No.	Measured Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2017-07-12 14:46	2	1764.00	Oil Based Mud	9.6	16	N/A	6.0	79/21	Active Pit	38351	0.00
2017-07-14 12:49	2	6429.00	Oil Based Mud	9.7	20	N/A	12.0	75/25	Active Pit	35000	0.00
2017-07-15 13:54	2	9634.00	Oil Based Mud	9.4	14	N/A	8.5	79/21	Active Pit	34500	0.00
2017-07-16 16:35	2	12896.00	Oil Based Mud	10.0	15	N/A	8.5	78/22	Active Pit	38000	0.00

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
2	ATC_SU	14190607	Near Bit Inclination	5.93	6.68	7.000	4.330
2	ATC_SU	14190607	Near Bit VSS	5.93	6.68	7.000	4.330
2	ATC_MWD	14179564	Gamma (single)	2.75	12.85	7.000	3.250
2	ATC_MWD	14179564	Directional (mag)	12.26	22.36	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

Comments

1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD Run 2 utilized 6 3/4 inch Navigamma services (Gamma Ray and Directional) behind an 8 1/2 inch bit and rotary steerable assembly from 1764 to 14815 feet MD (1757 to 7721 feet TVD).

Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	1764.00	8.500	2	Baker Hughes LWD began logging services at 1764 feet MD (1757 feet TVD) per client request.
2	14815.00	8.500	2	The interval from 14803 to 14815 feet MD (7721 feet TVD) was not logged due to sensor to bit offset at well TD.

Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	OnTrak - Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	OnTrak - Gamma Ray - Data Point Indicator - Memory	unitless
GRTM	OnTrak - Gamma Ray - Time Since Drilled - Memory	min
GRADM	OnTrak - Gamma Ray - Apparent - Down Quadrant - Memory 0.5 ft Average	API
GRAUM	OnTrak - Gamma Ray - Apparent - Up Quadrant - Memory 0.5 ft Average	API
TCDM	Downhole Temperature	degF



Company
Well

Interval

Created

Verdad Oil & Gas Corporation
Homestead 17

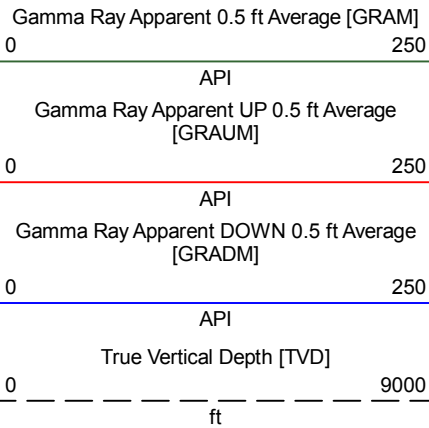
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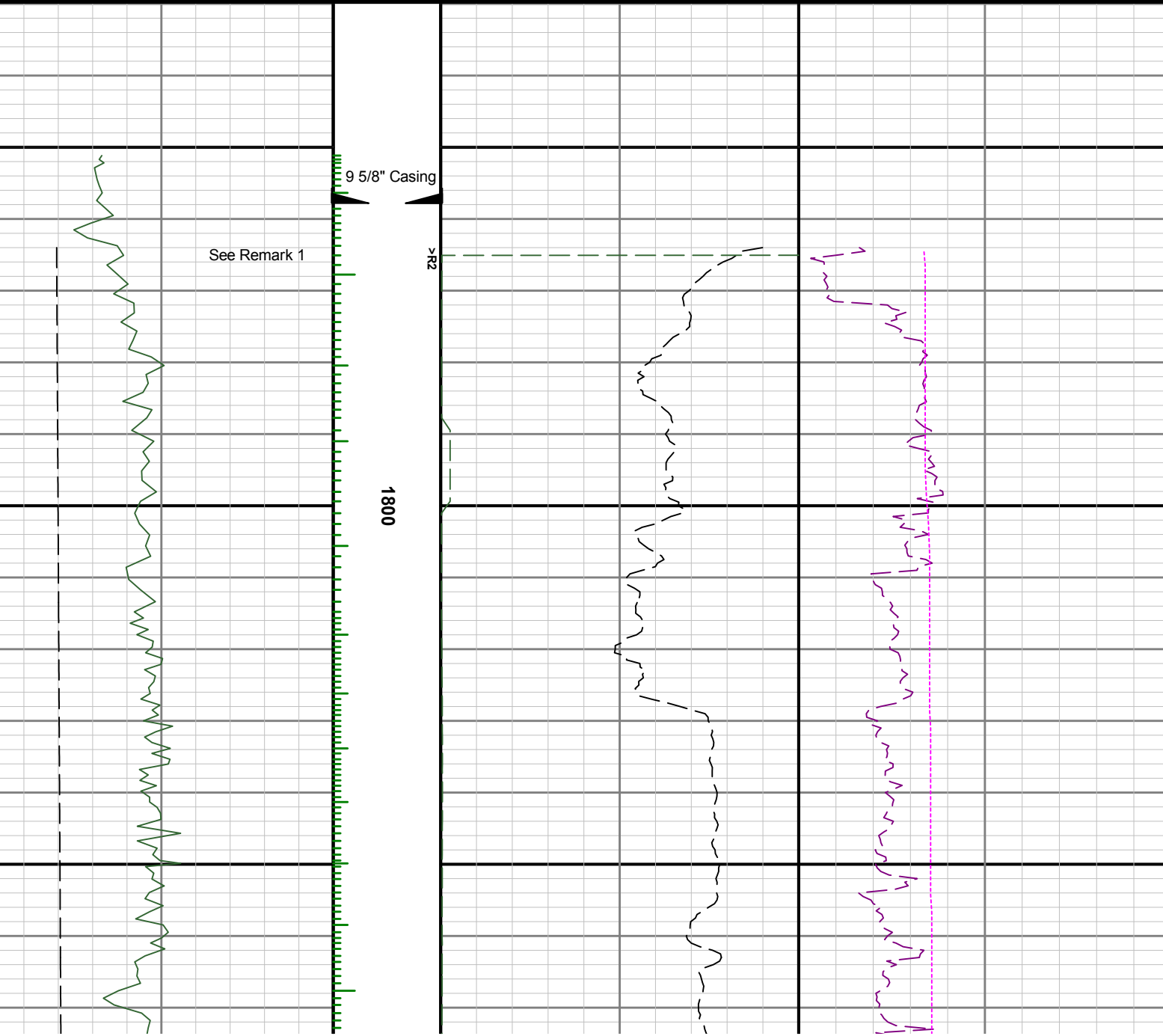
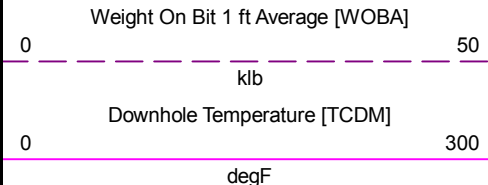
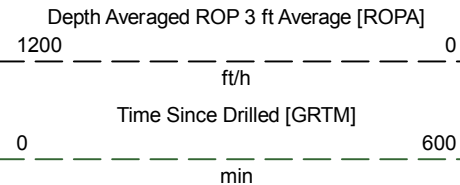
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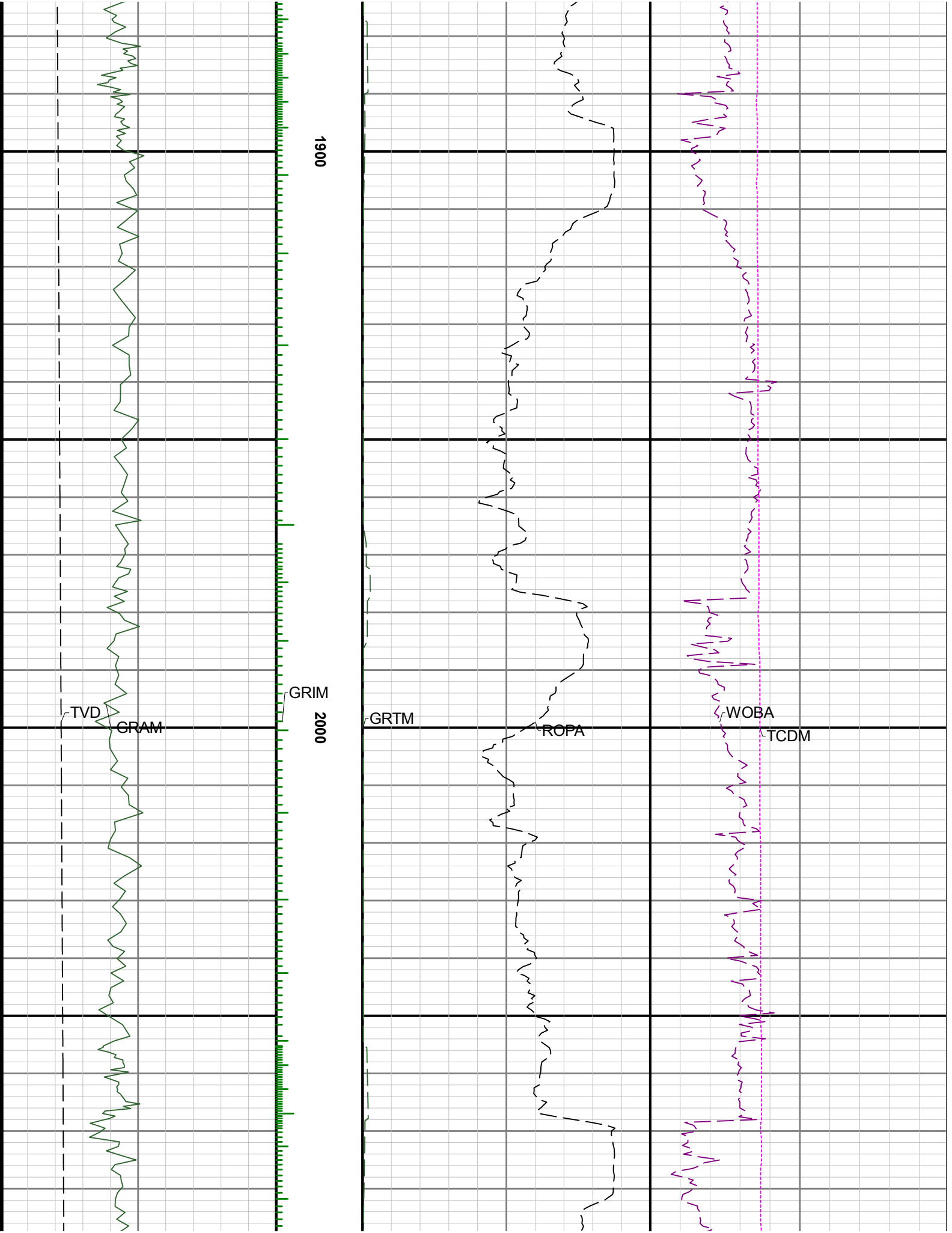
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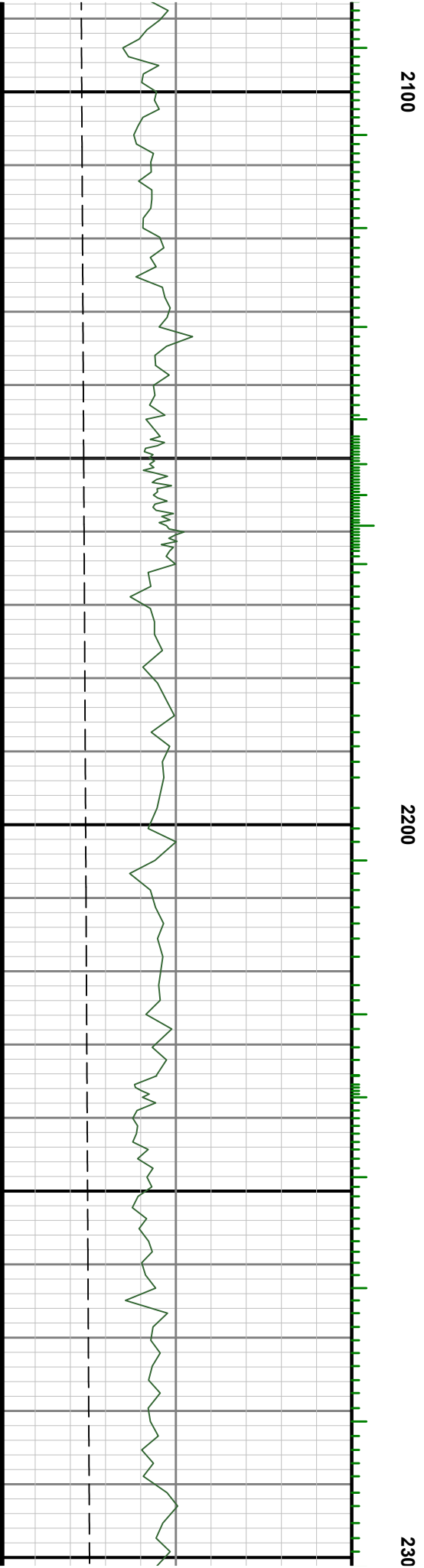
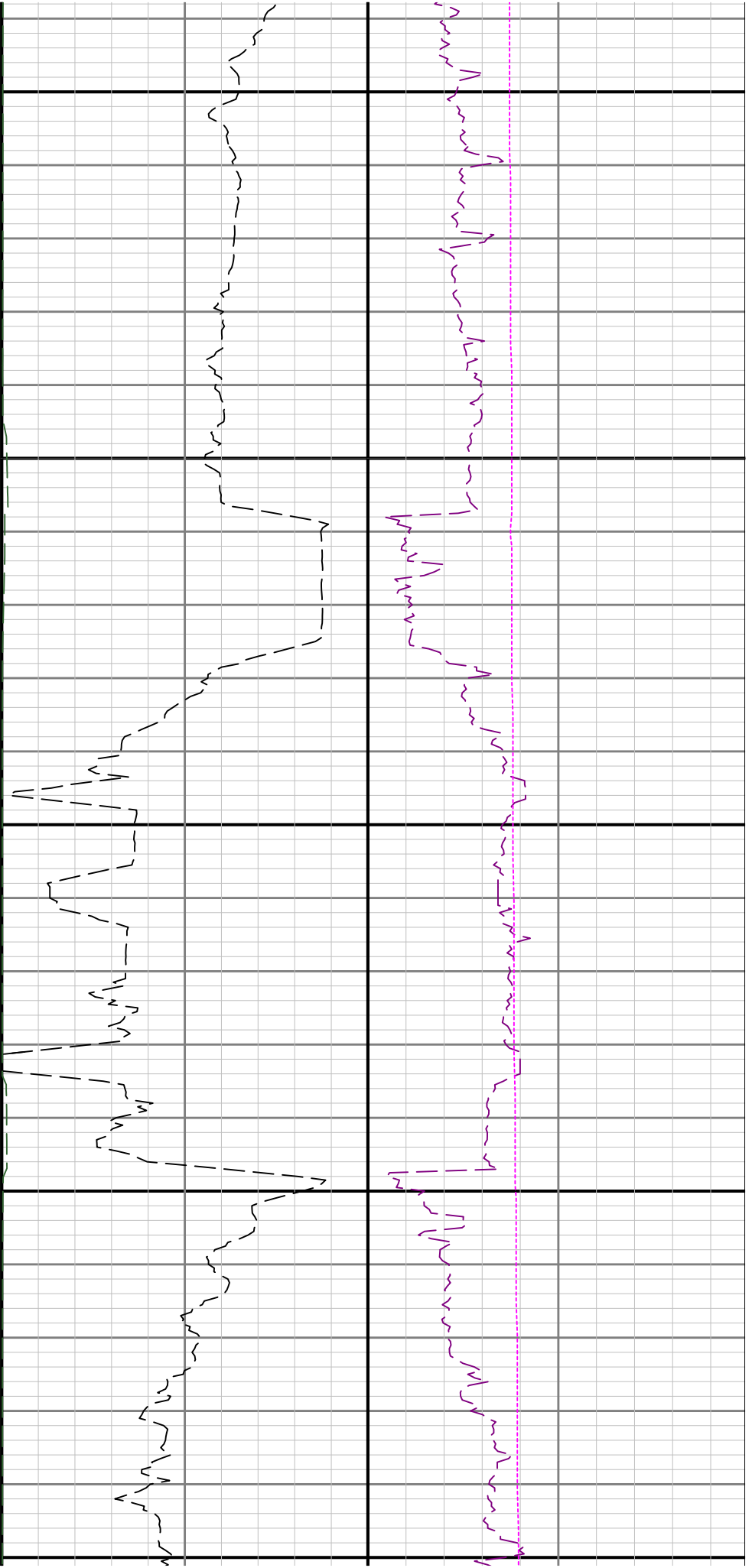
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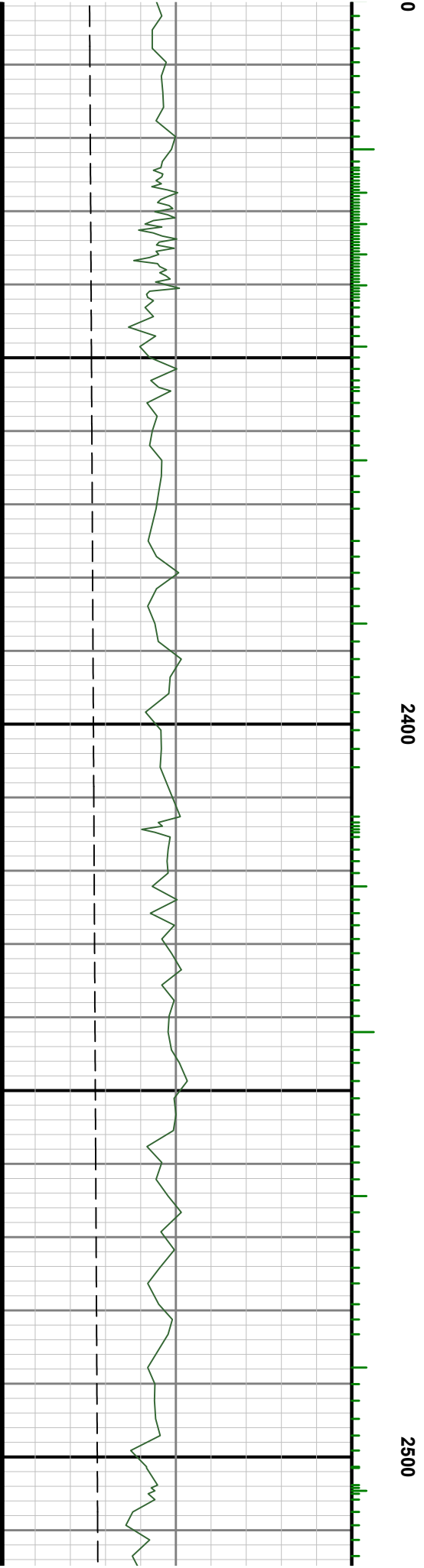
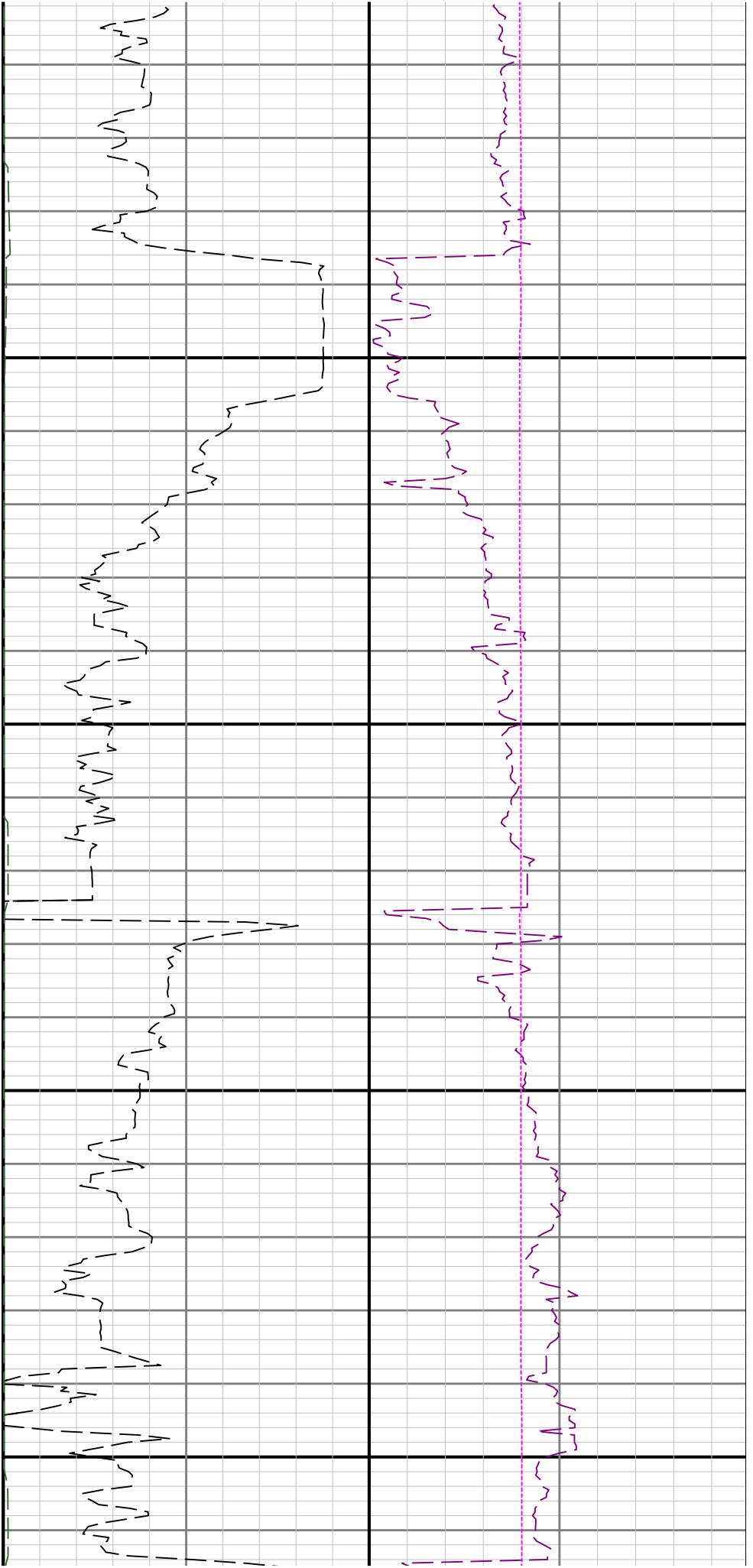


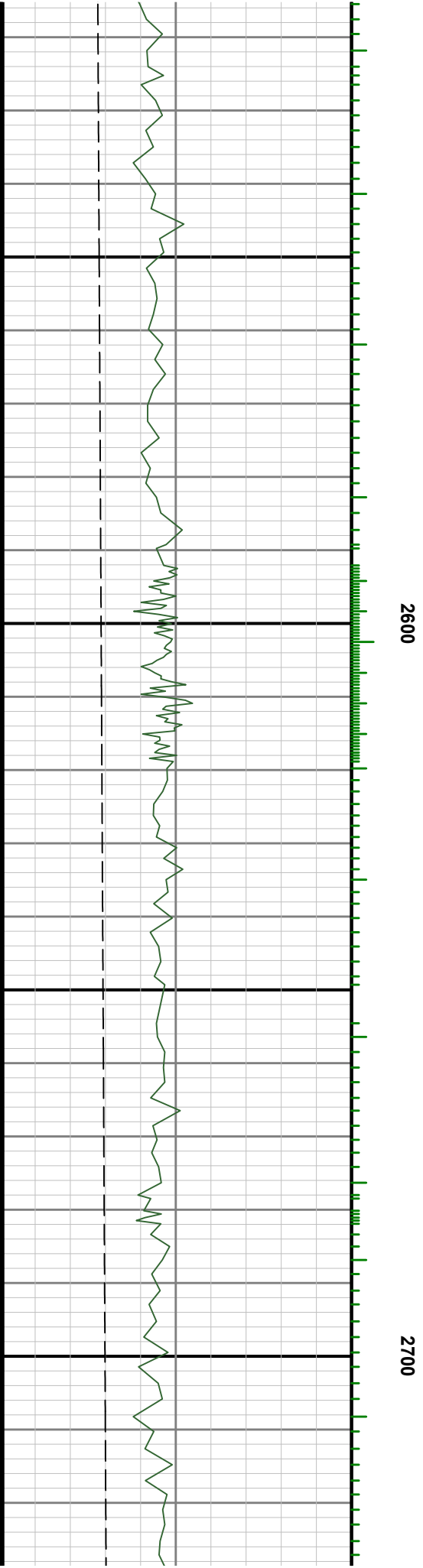
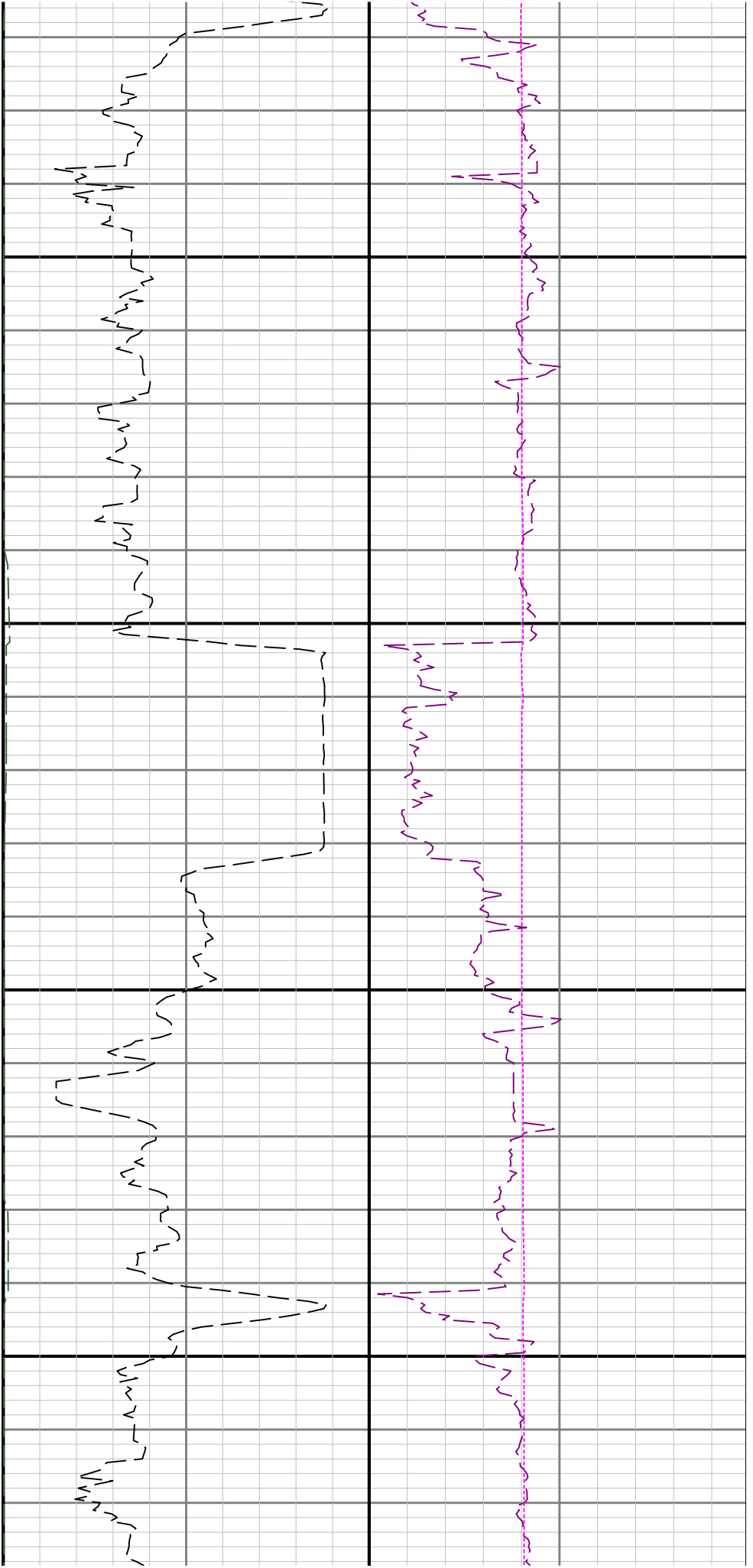
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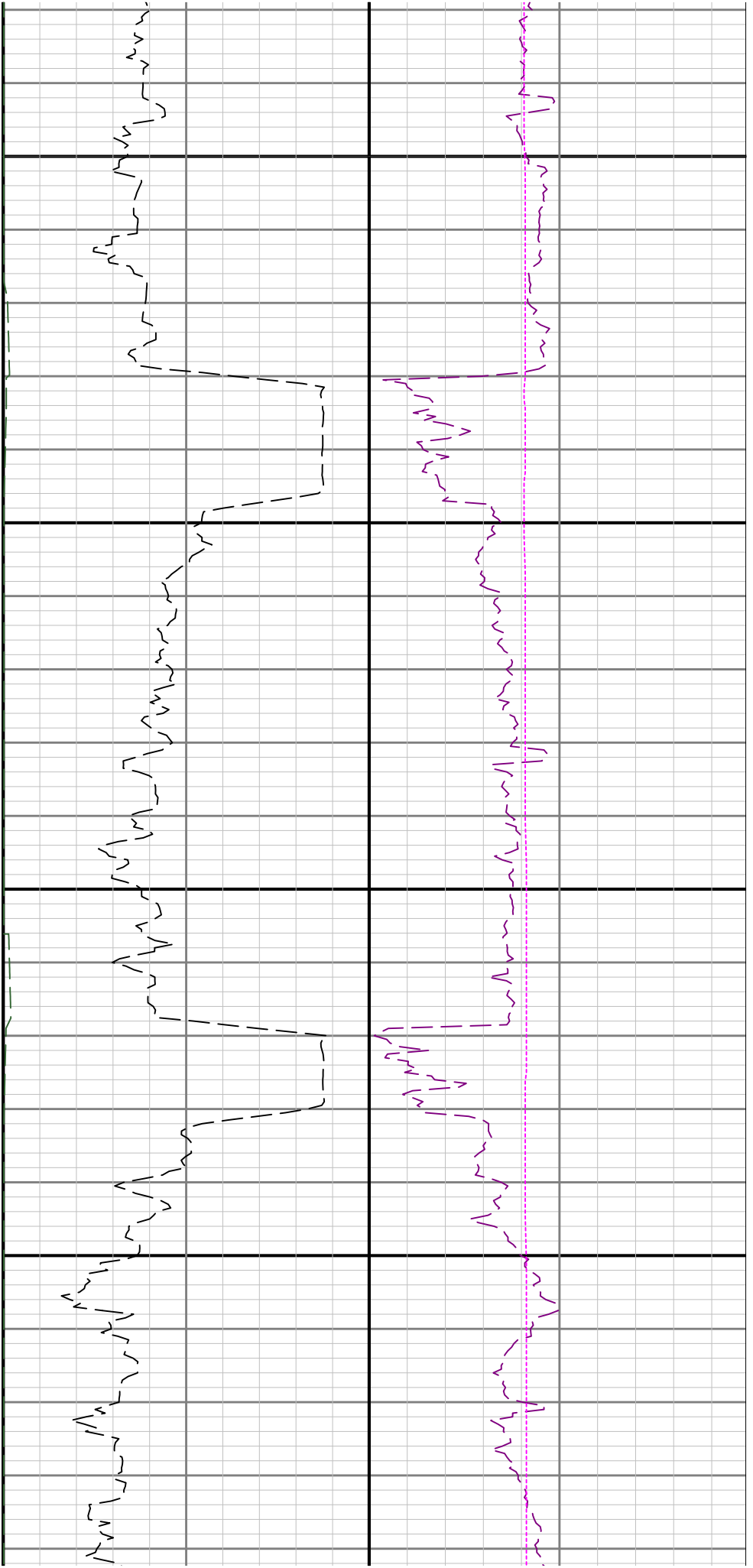






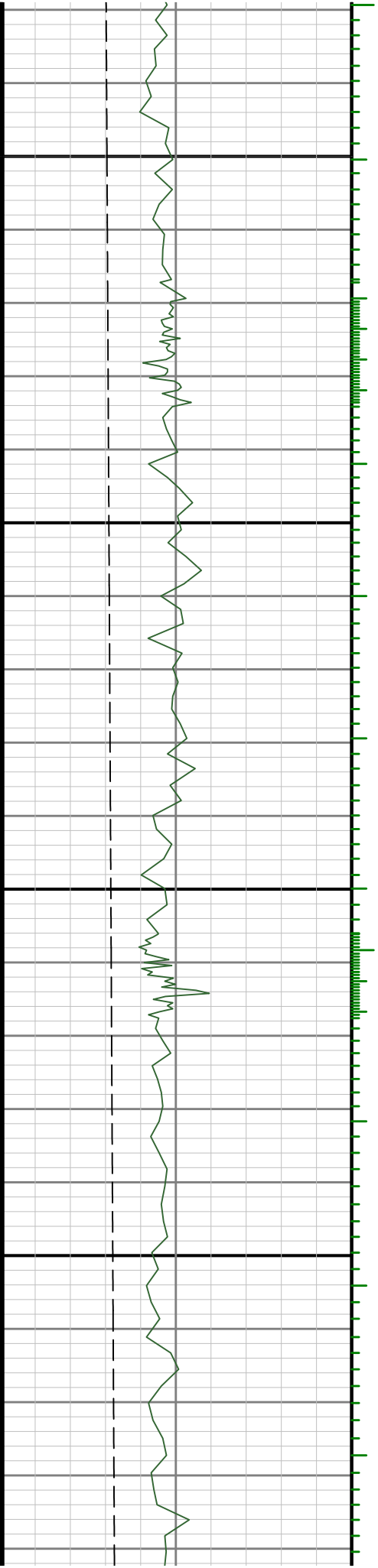


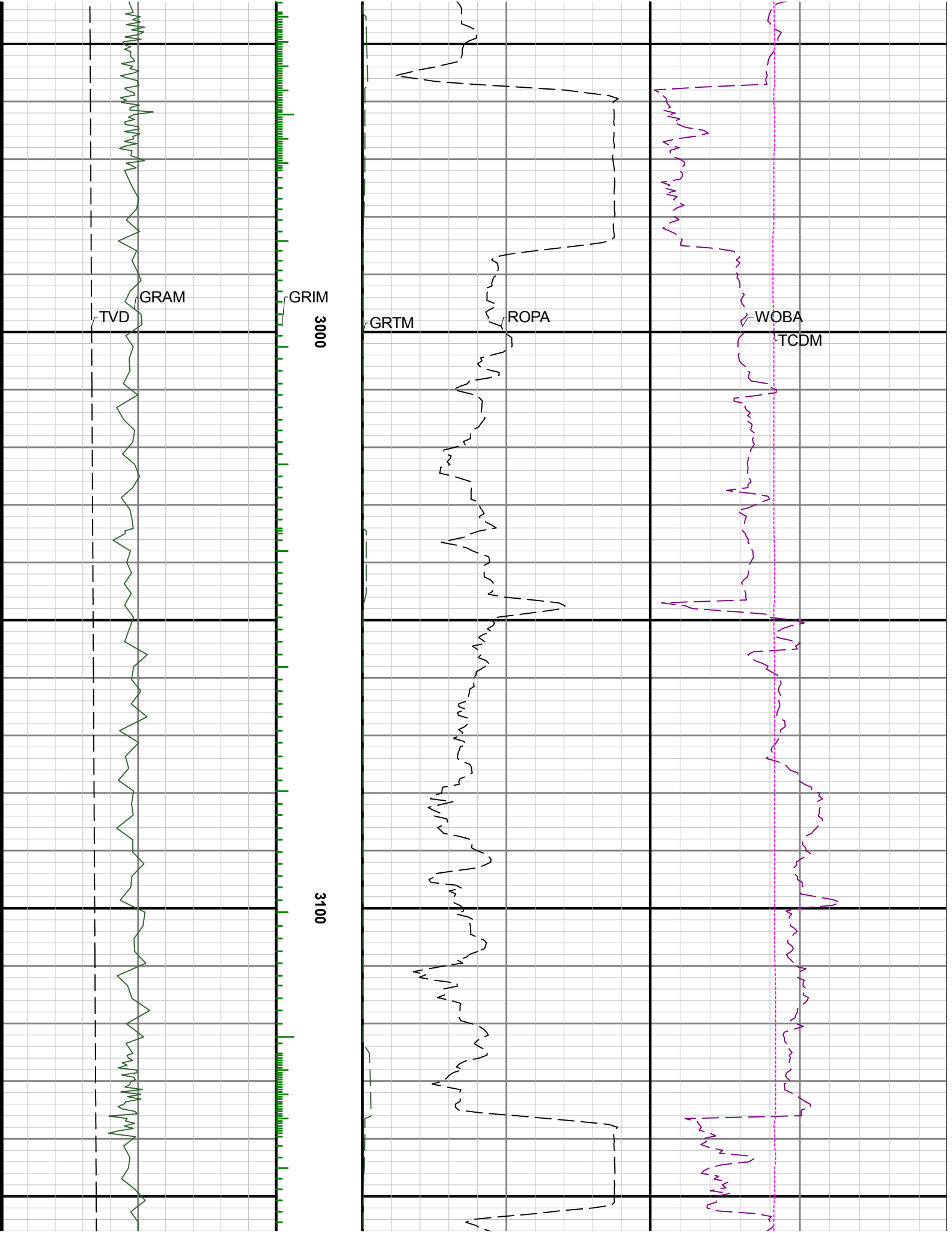


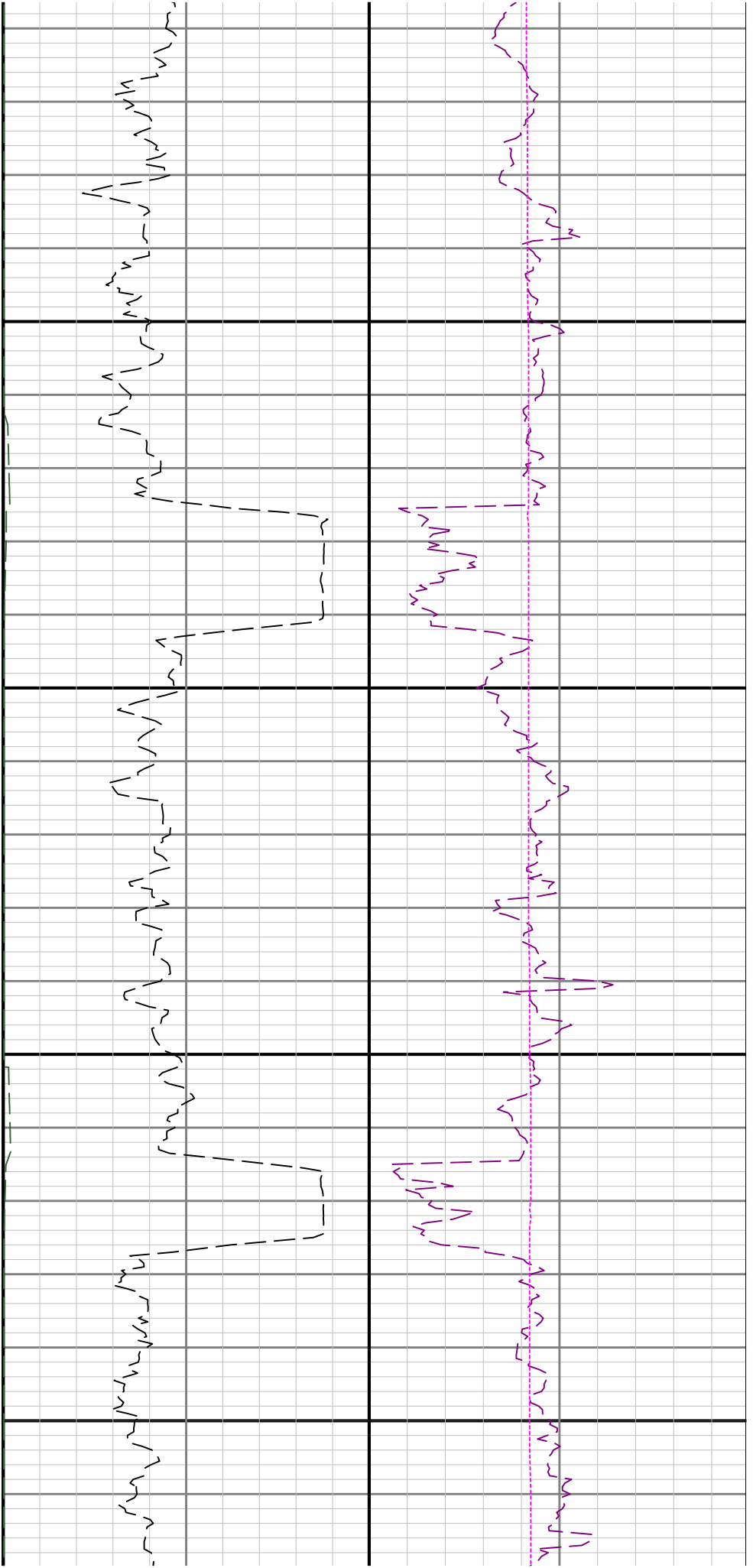


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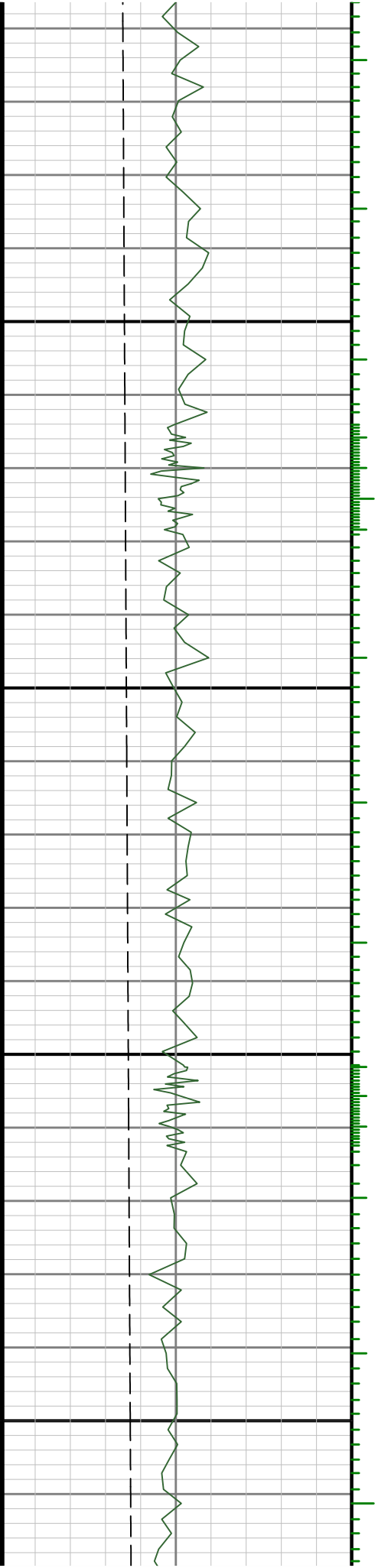


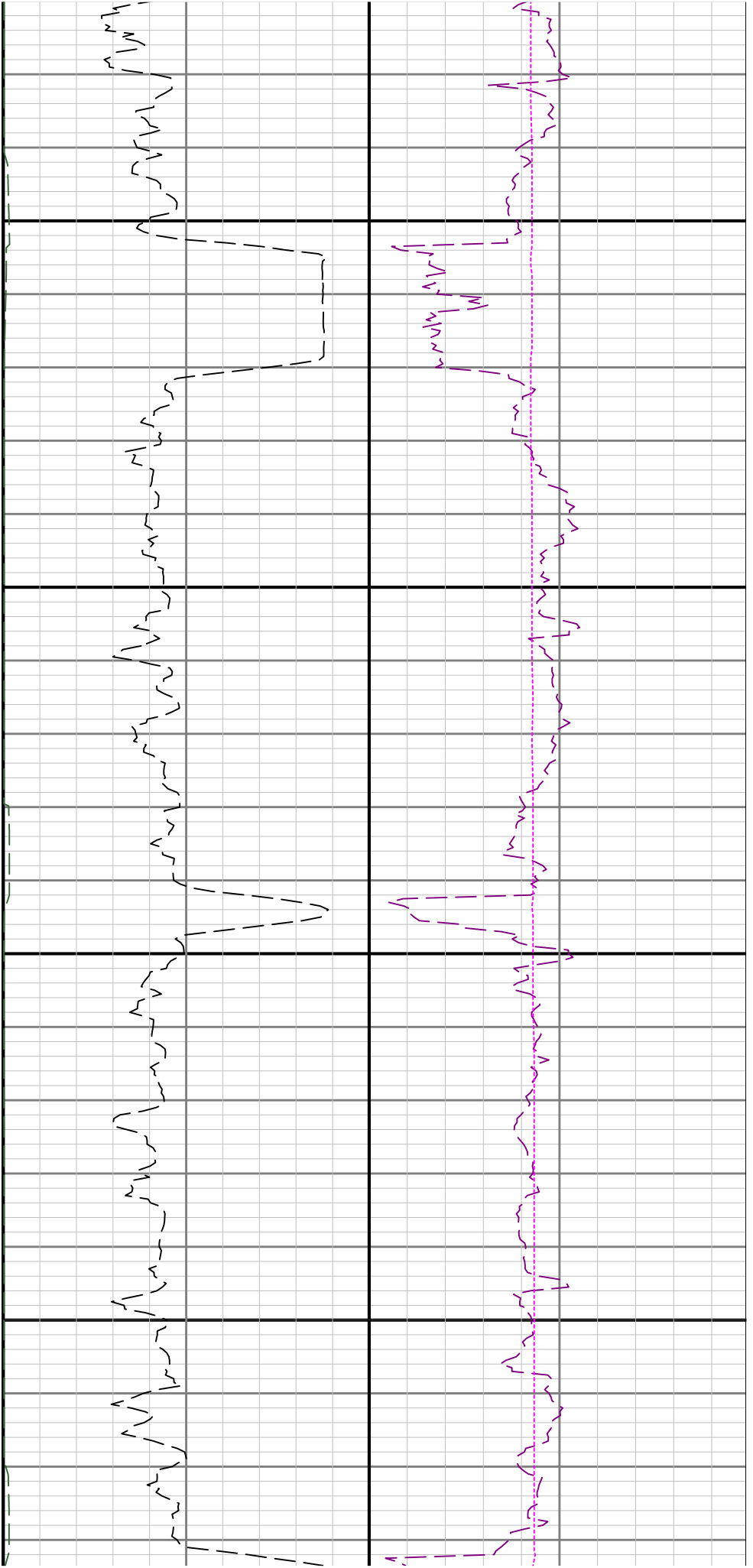




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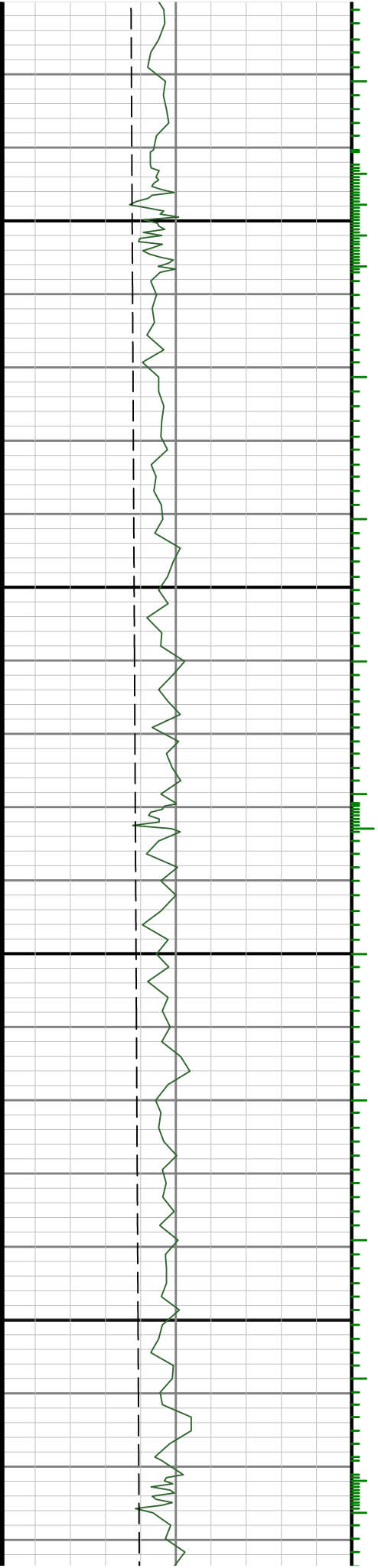
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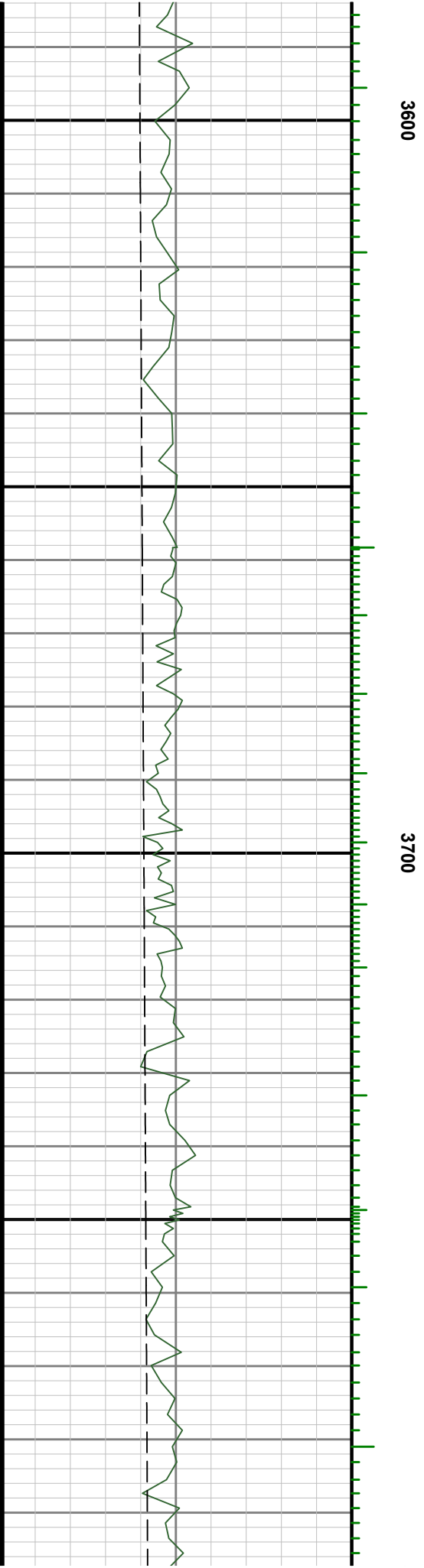
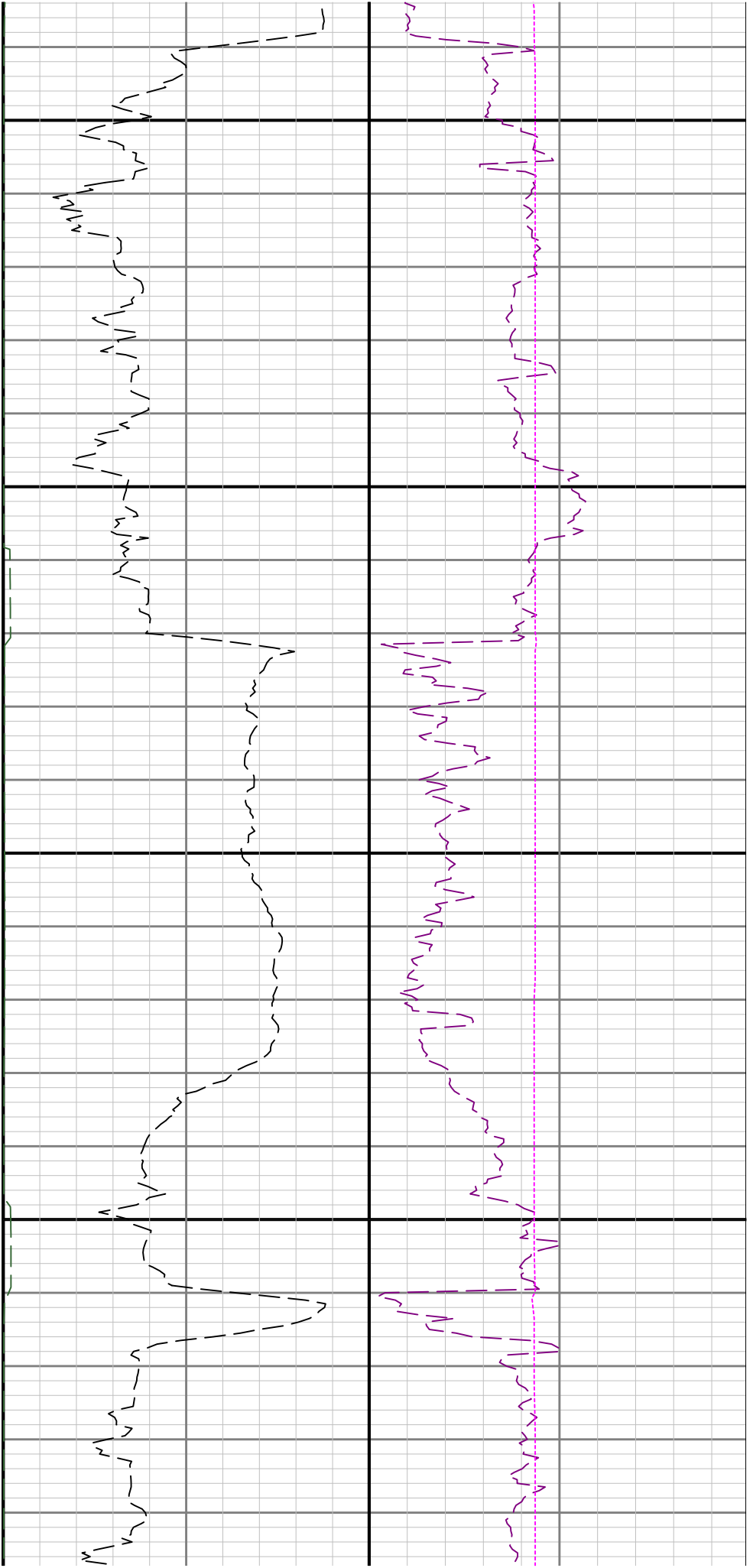


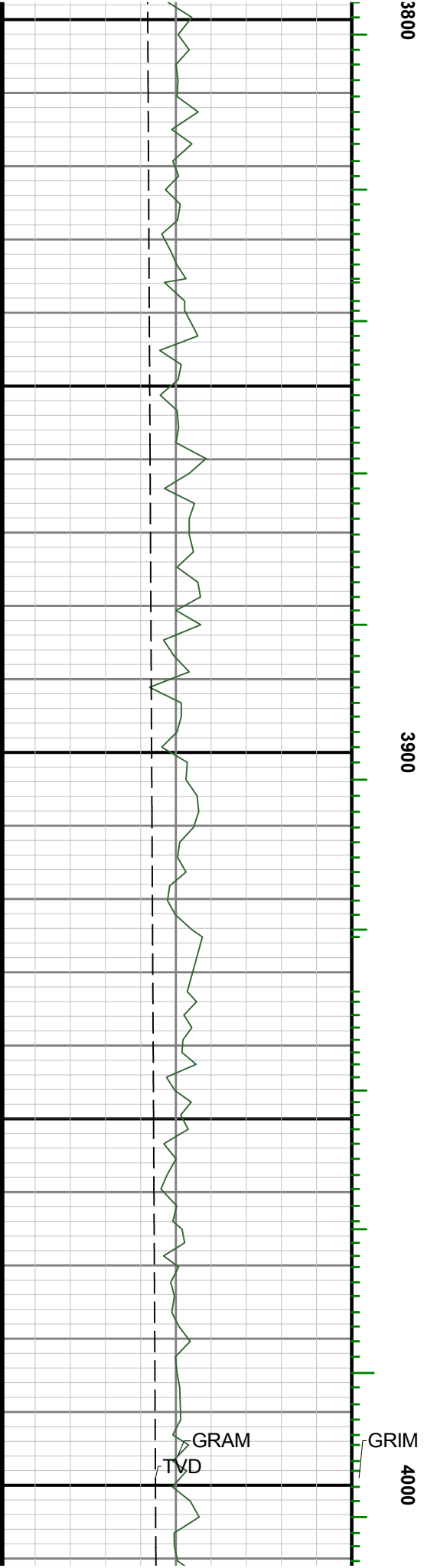
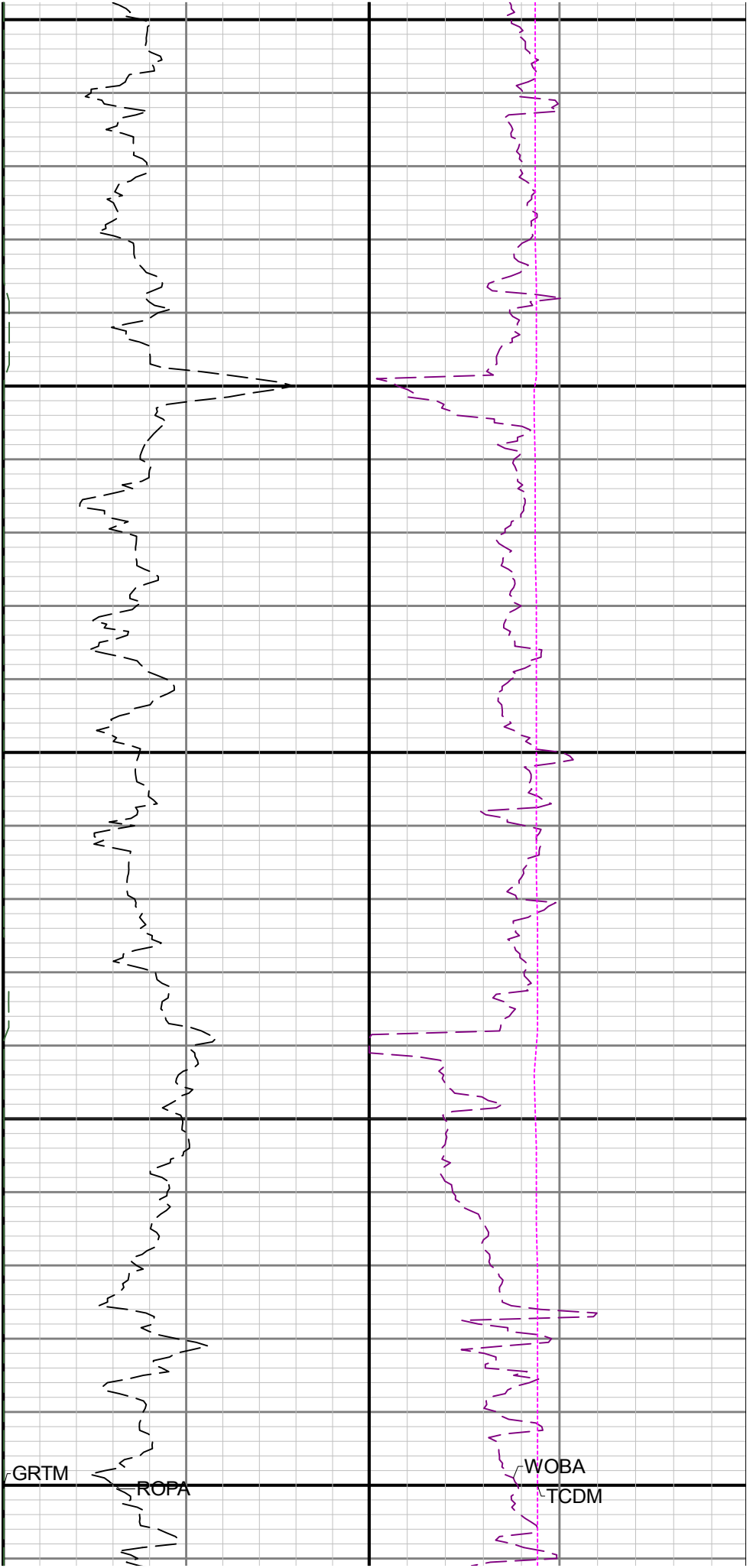


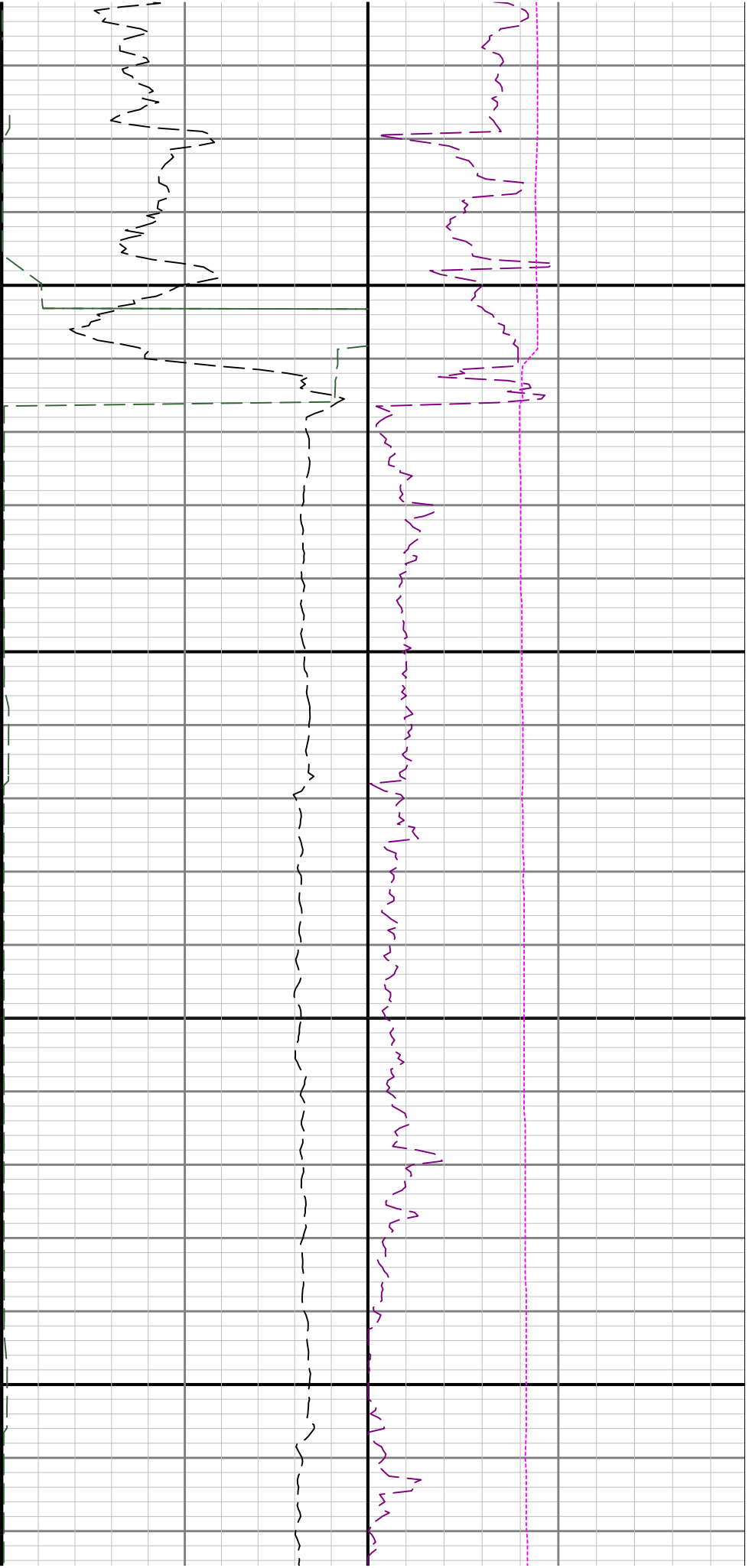
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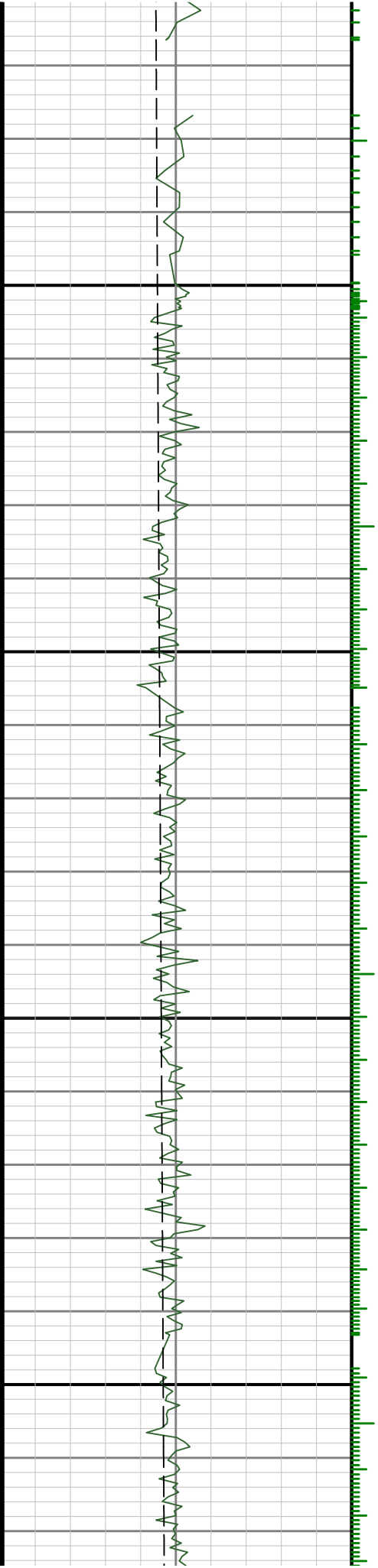


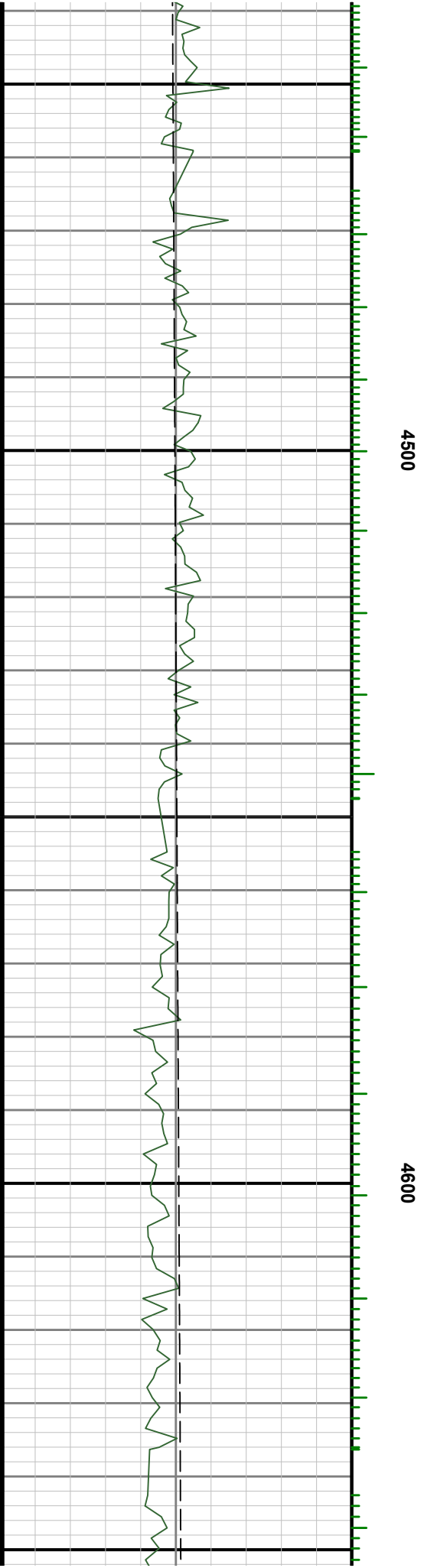
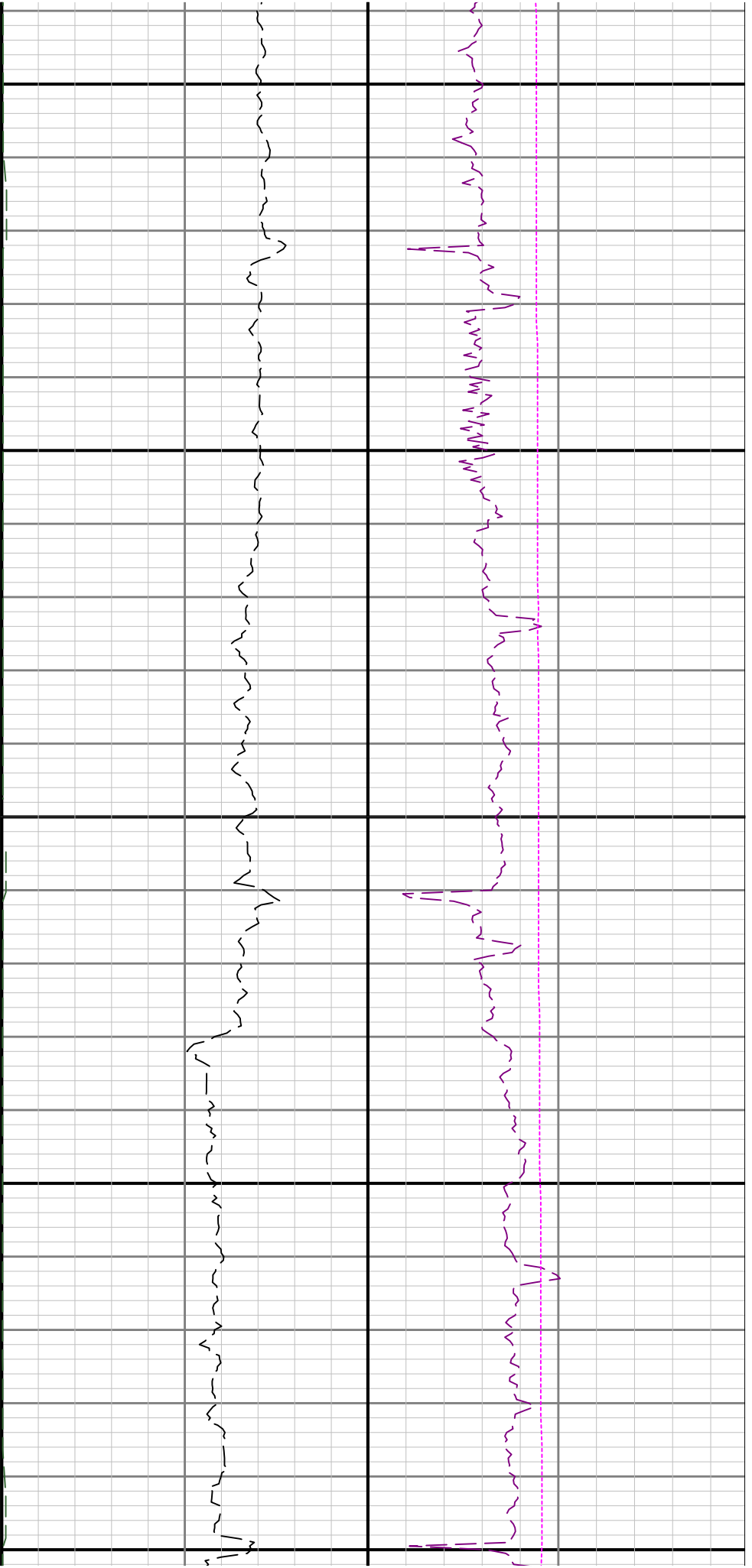


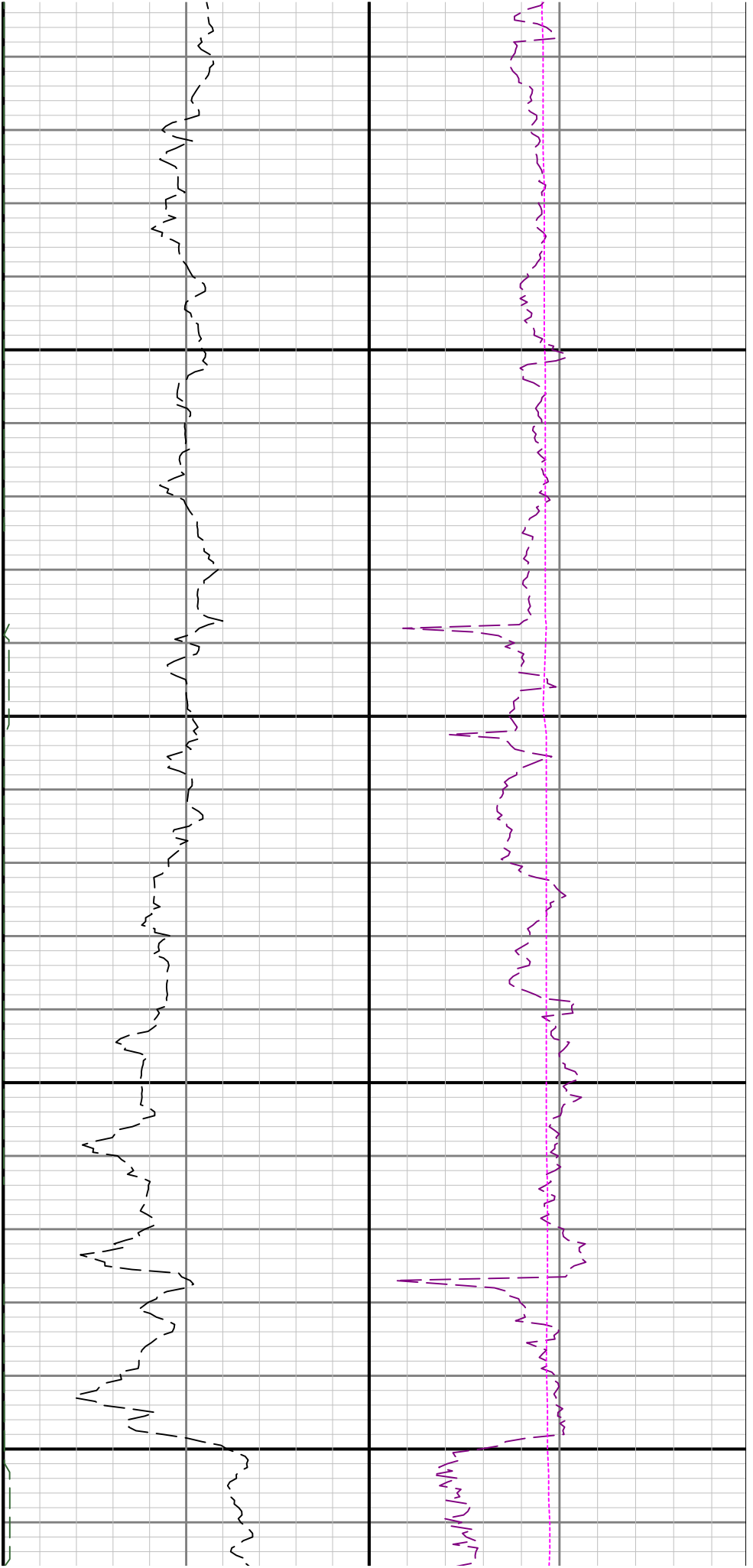


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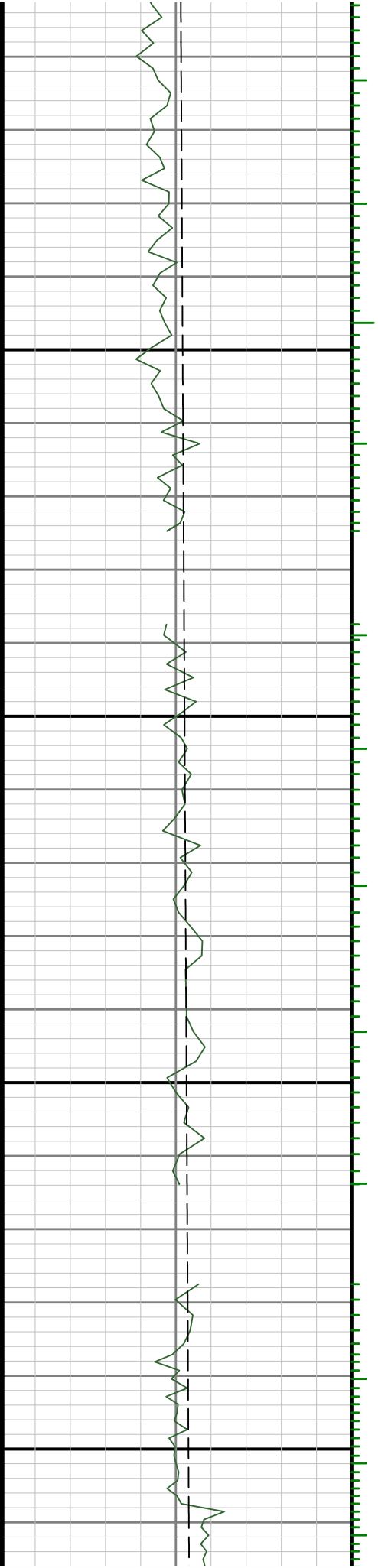


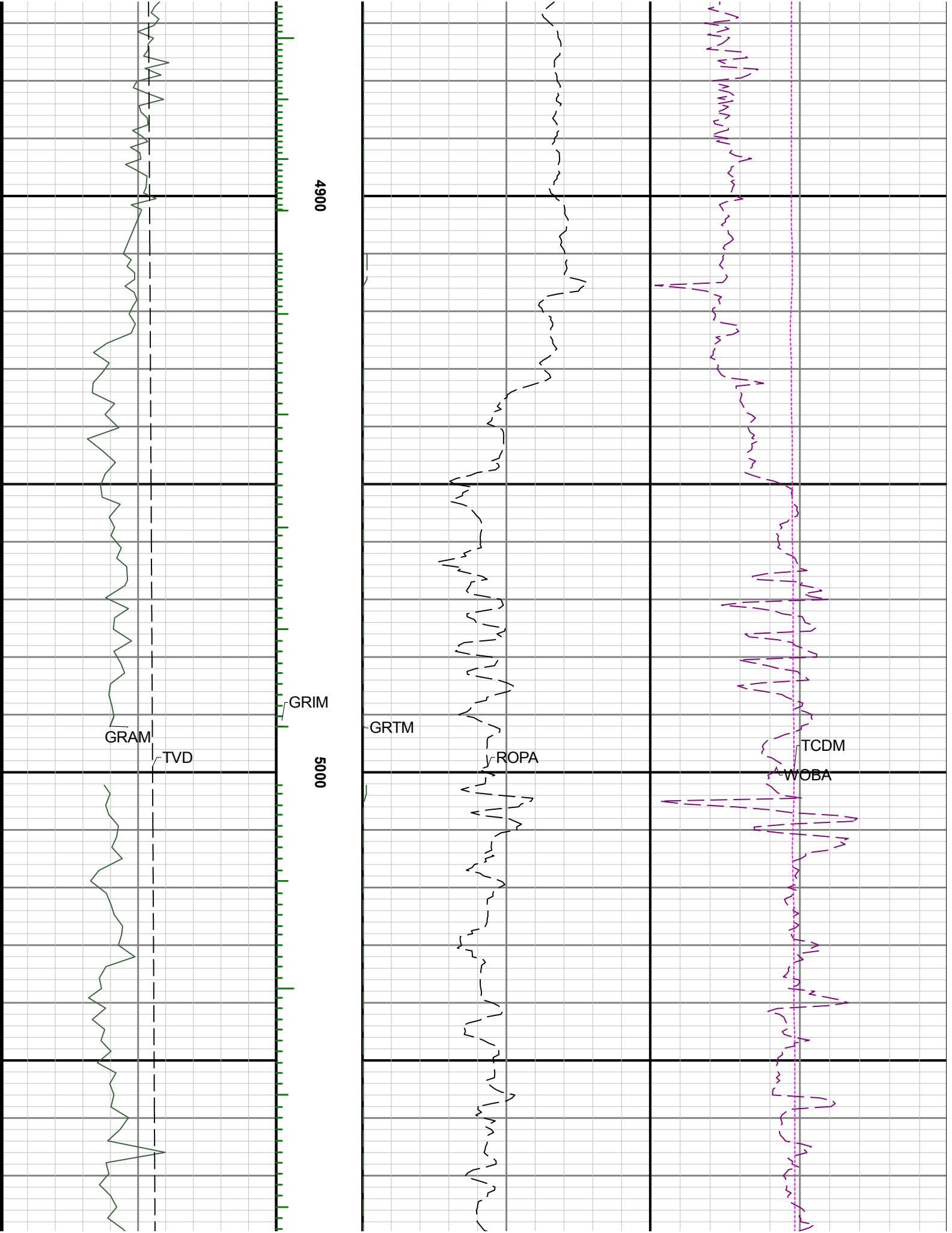


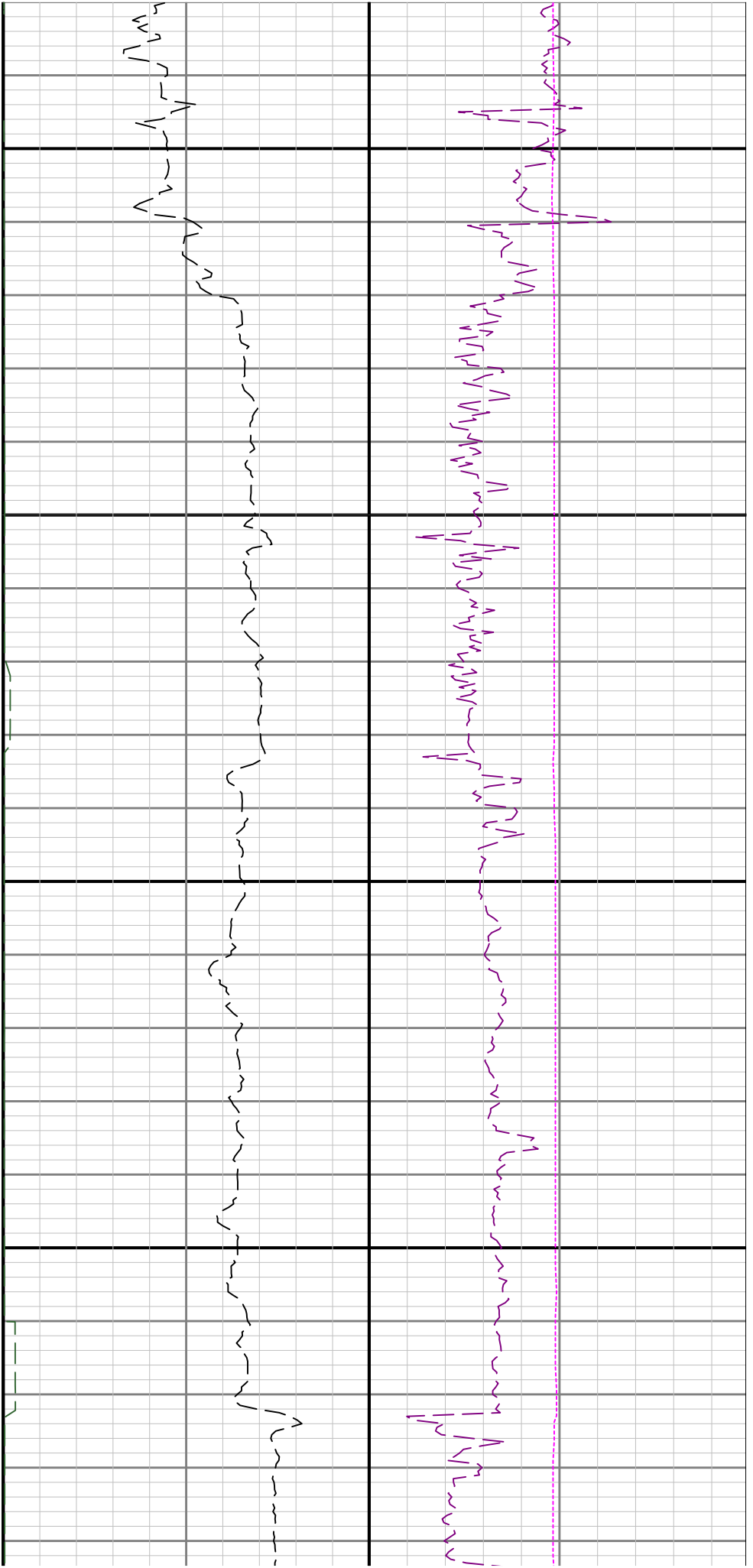


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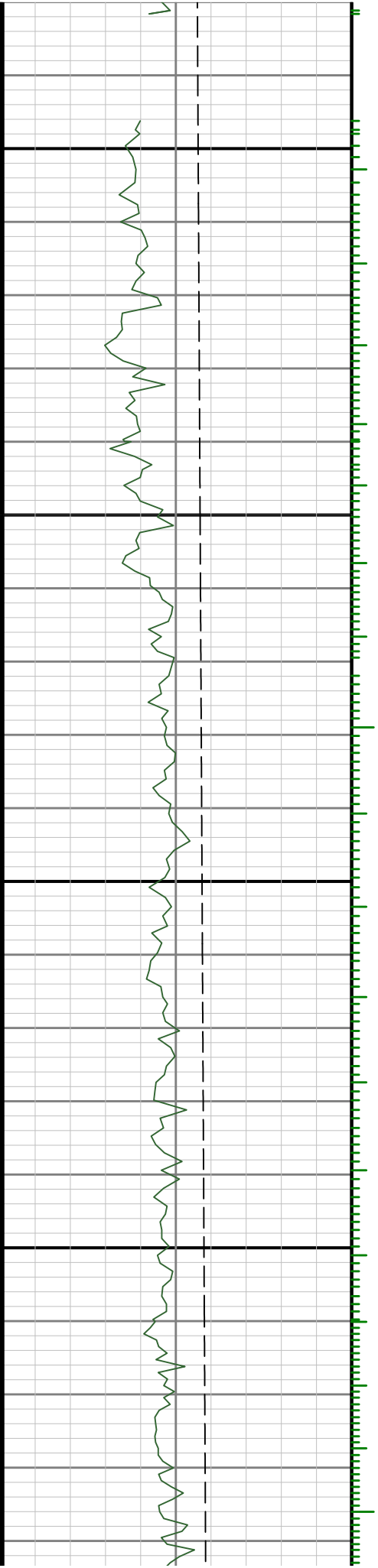


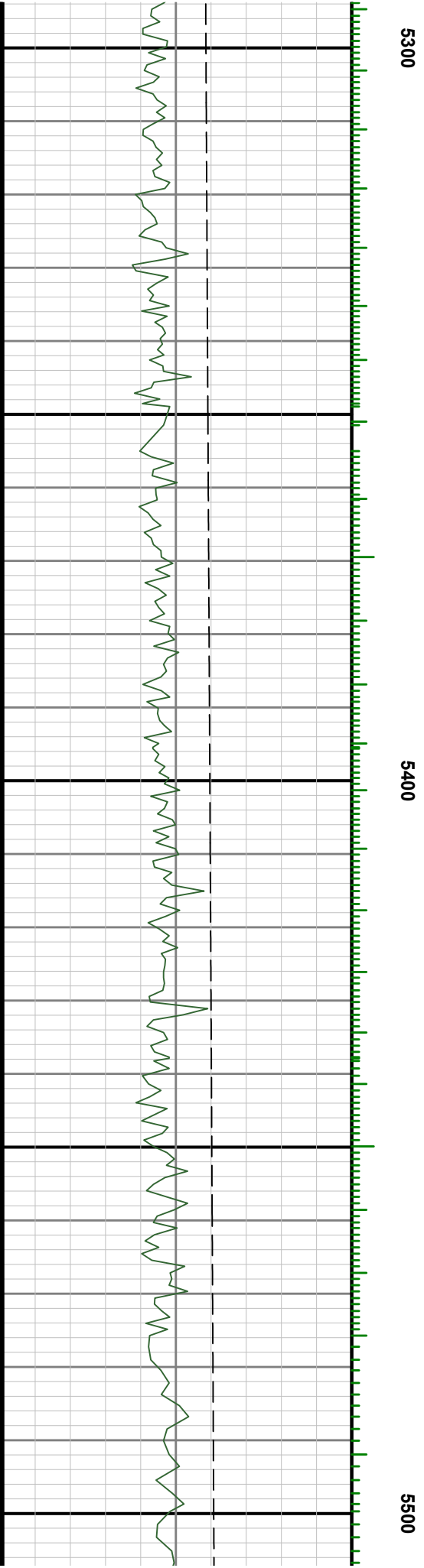
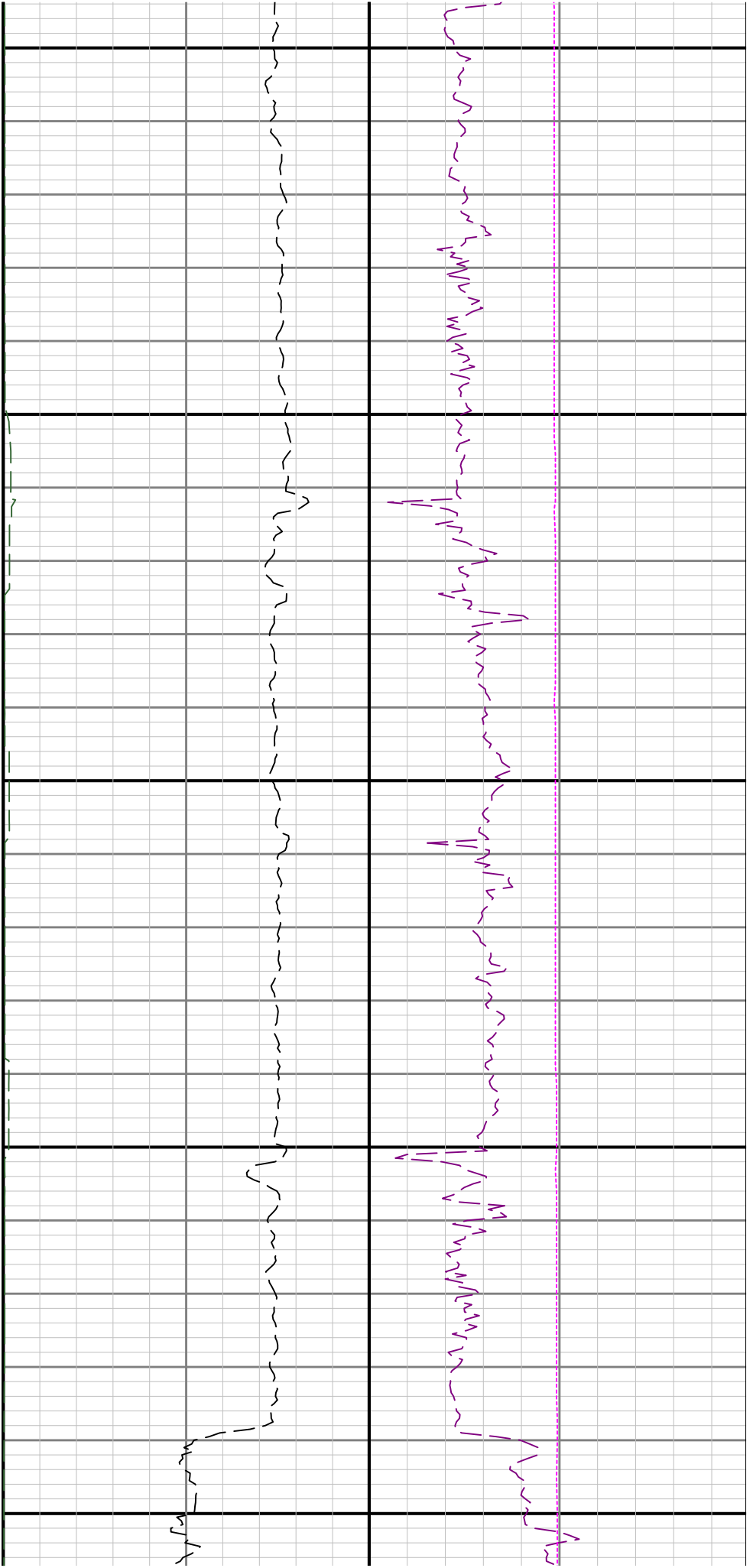


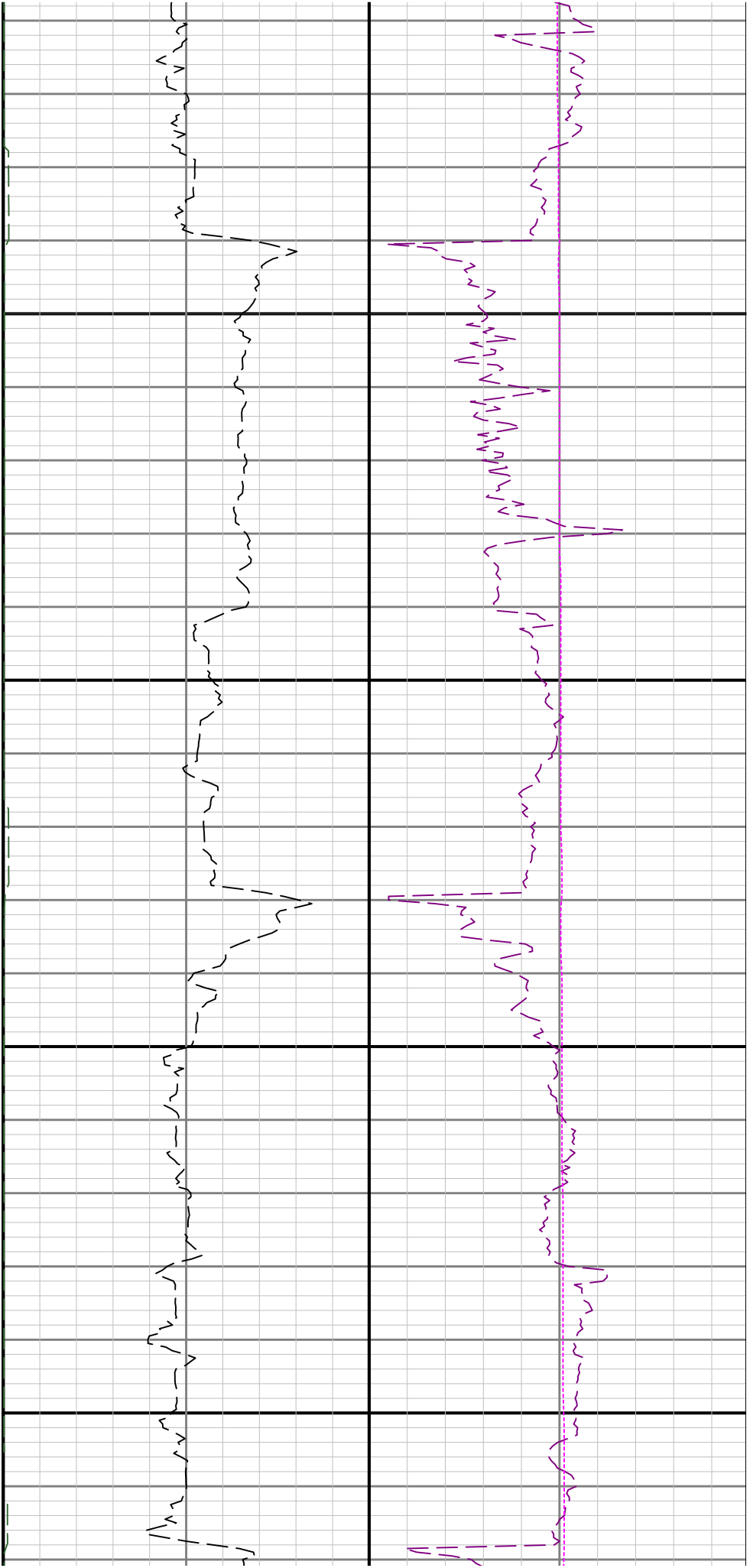


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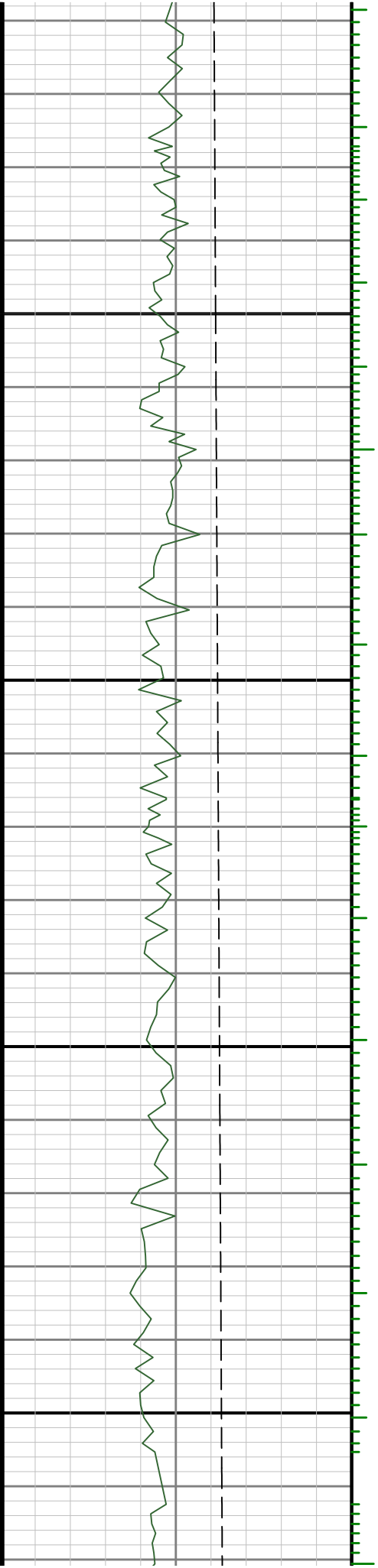


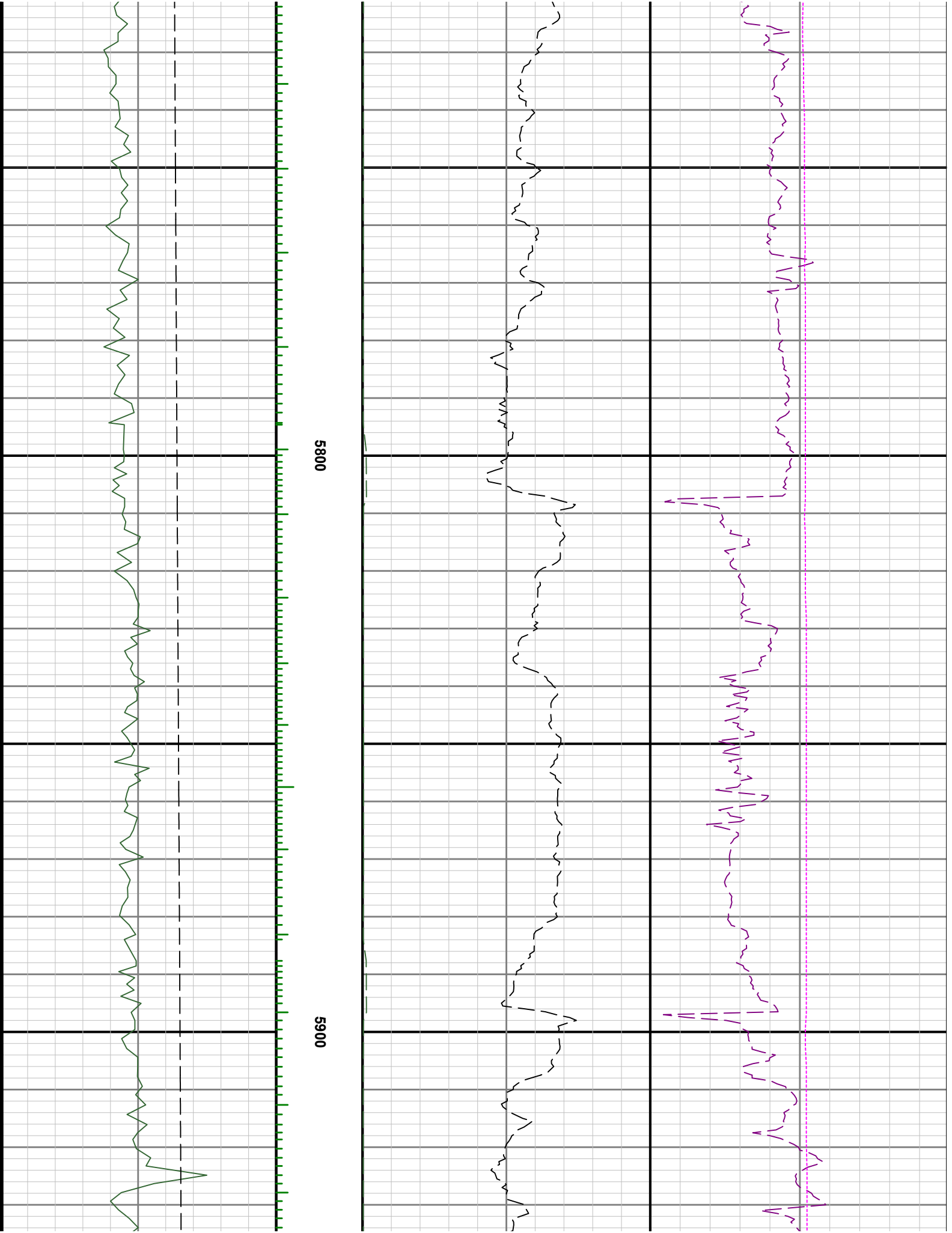


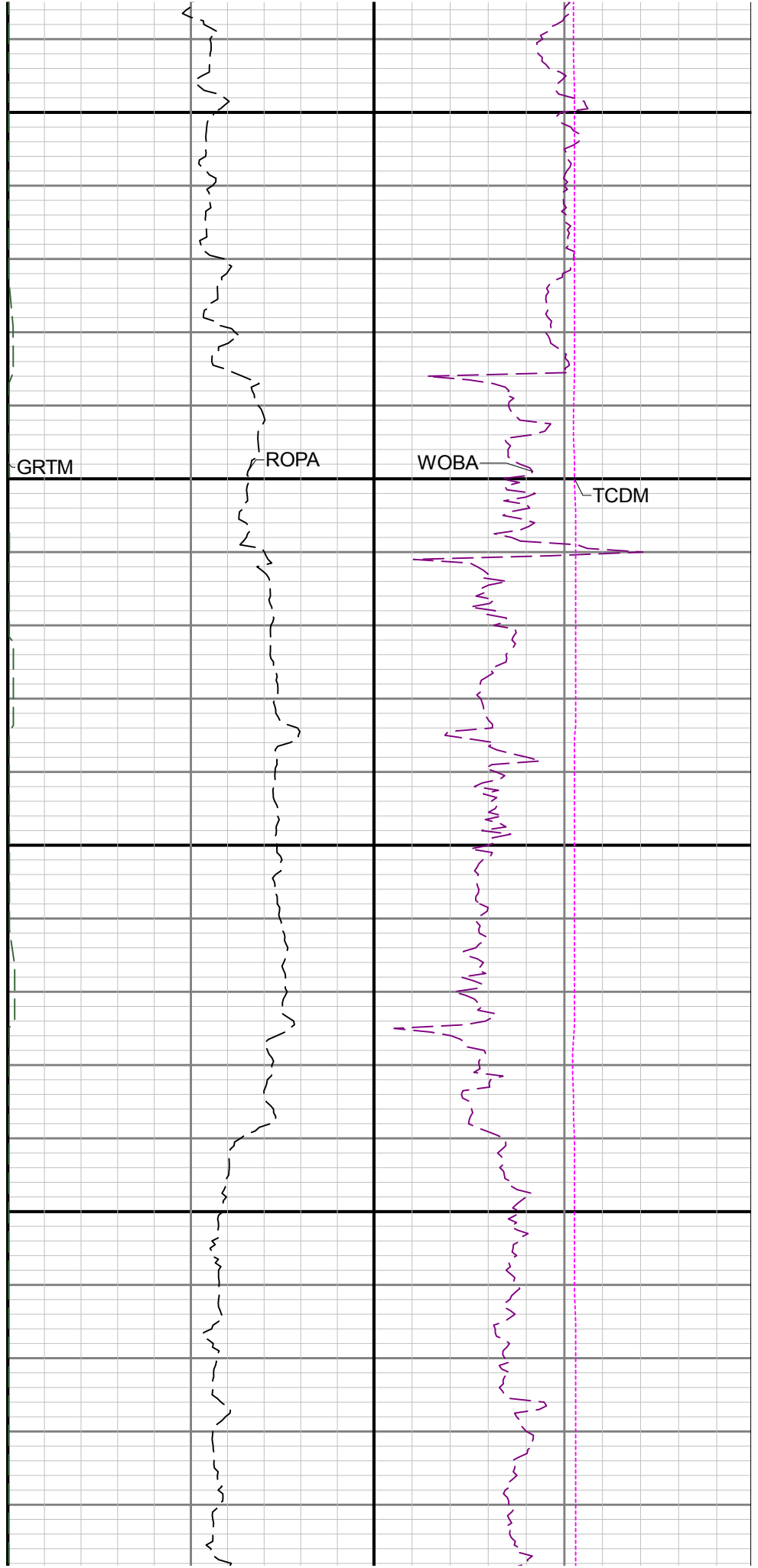
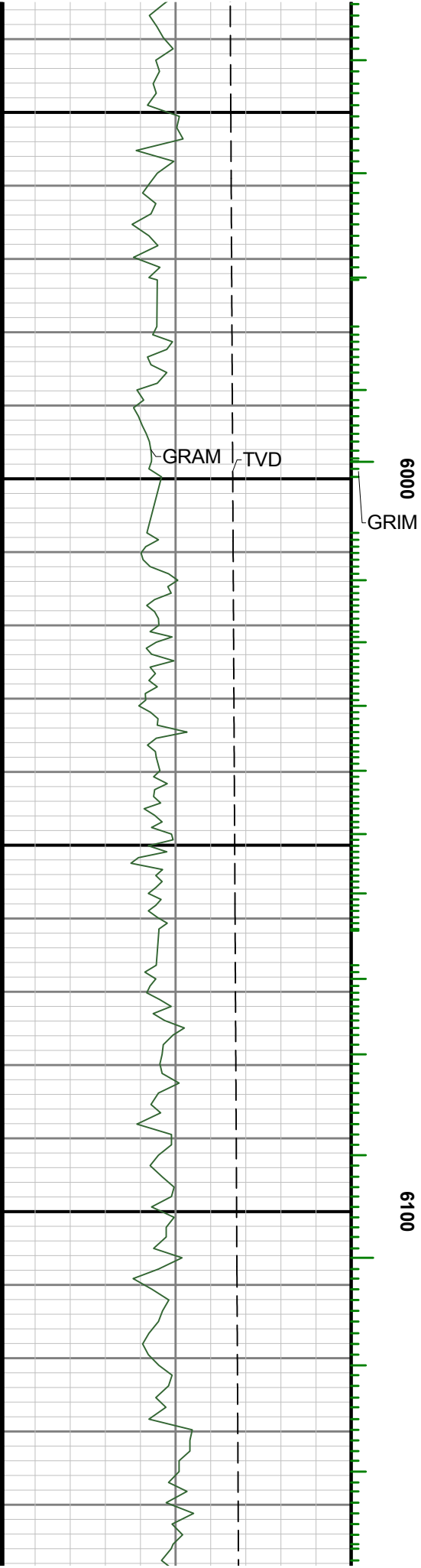


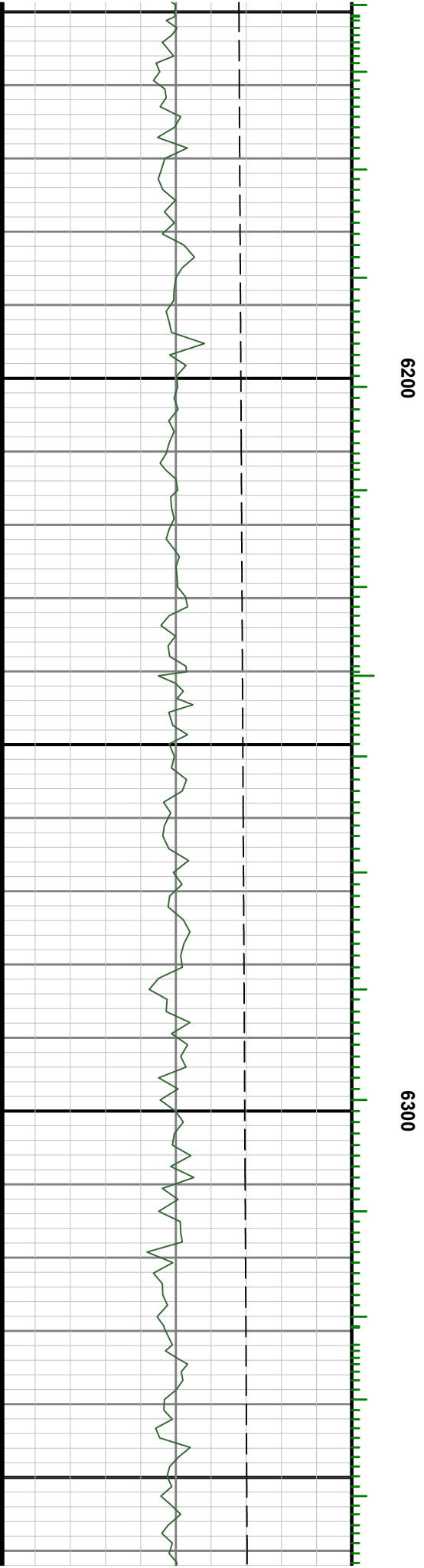
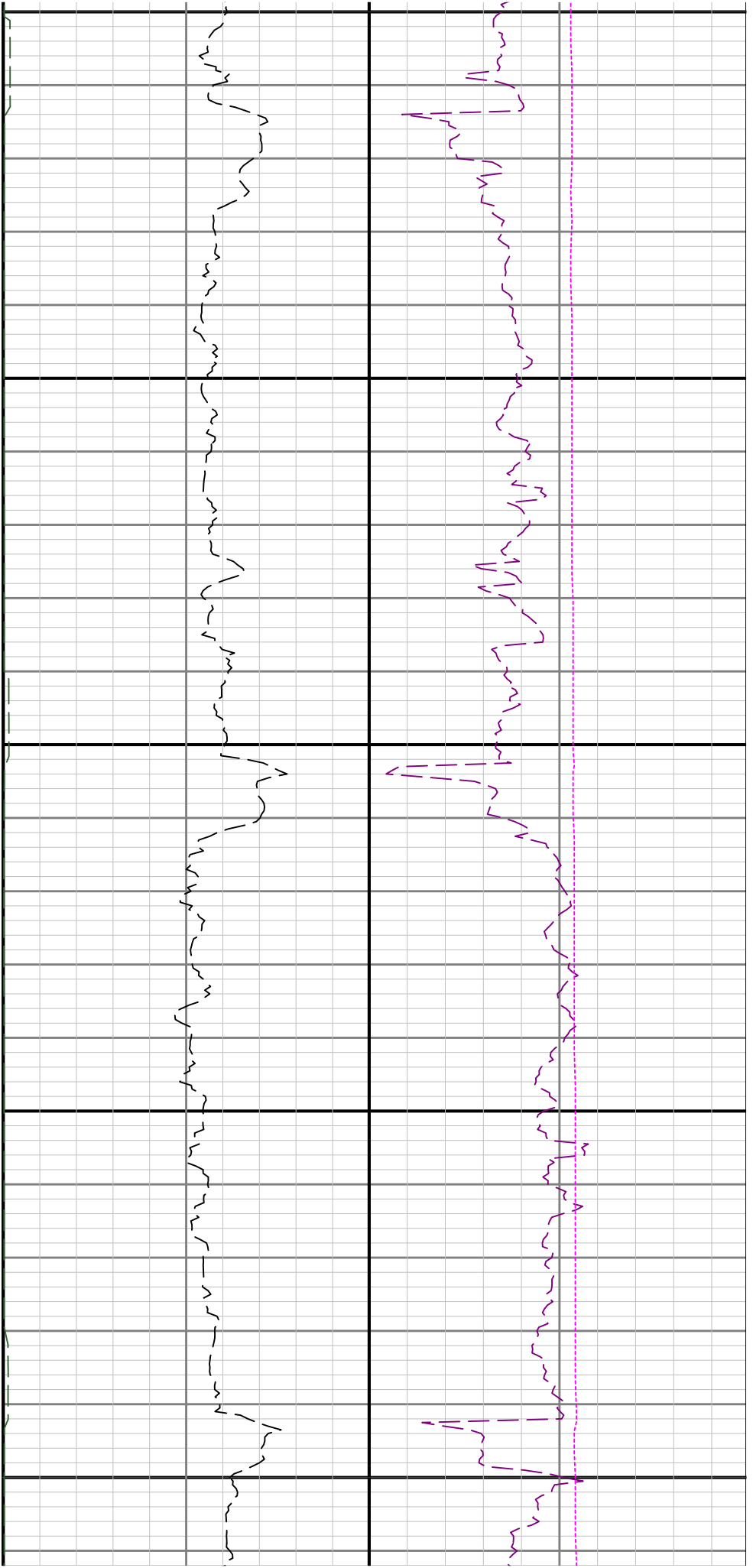
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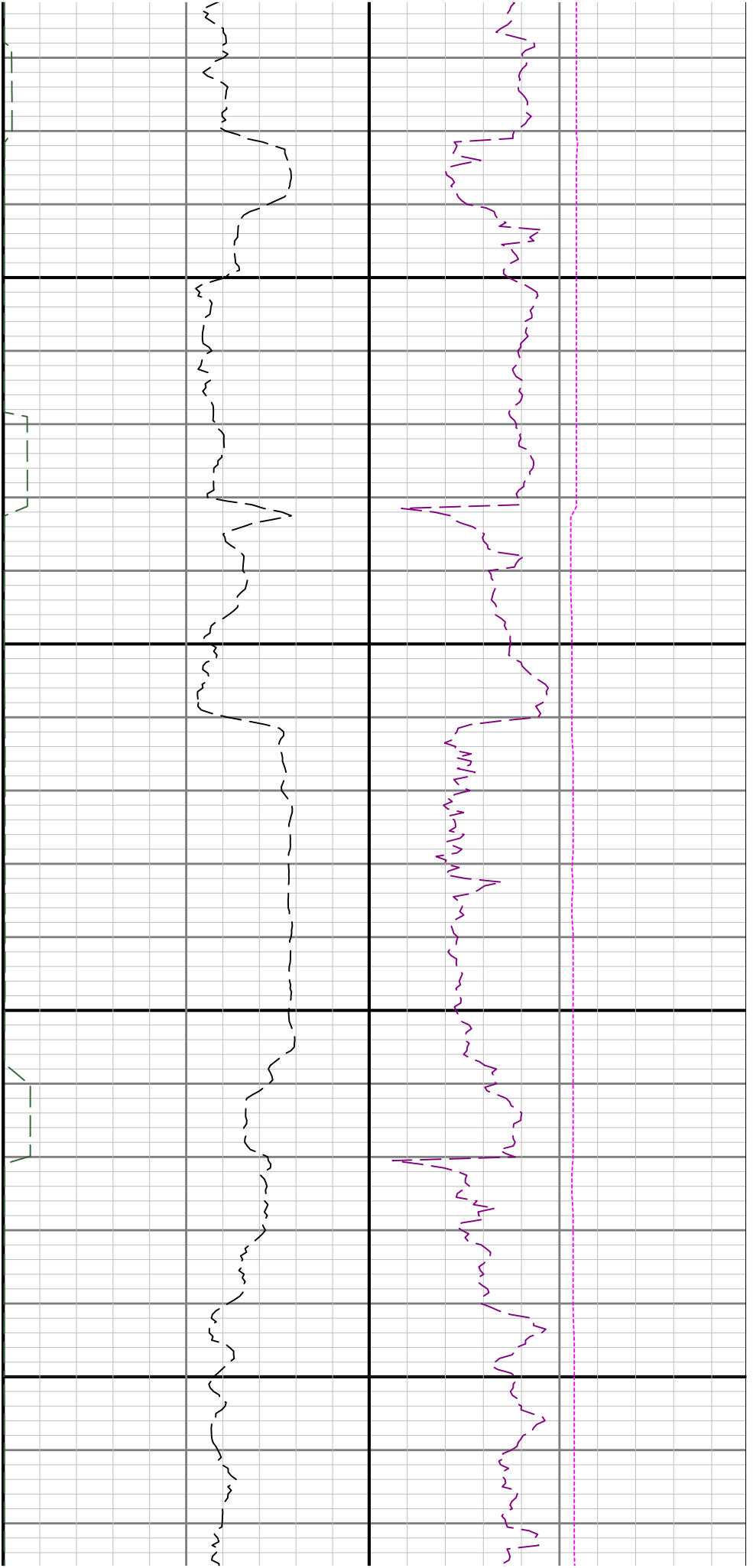
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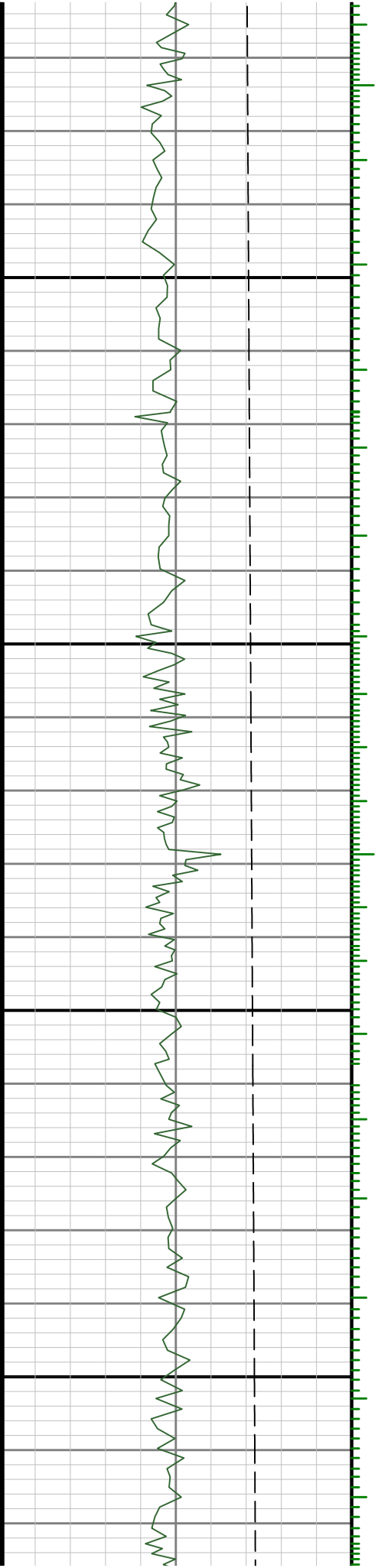


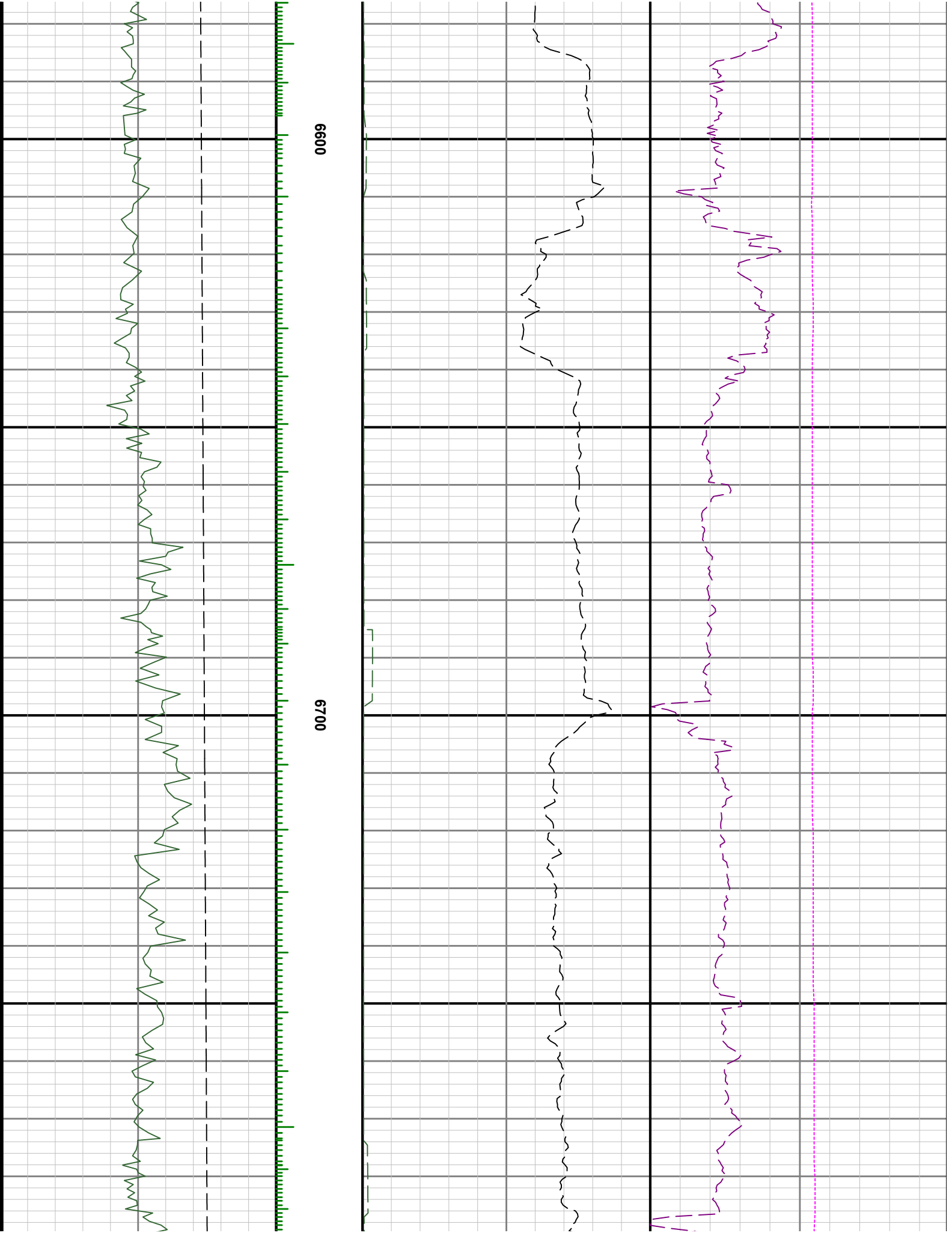


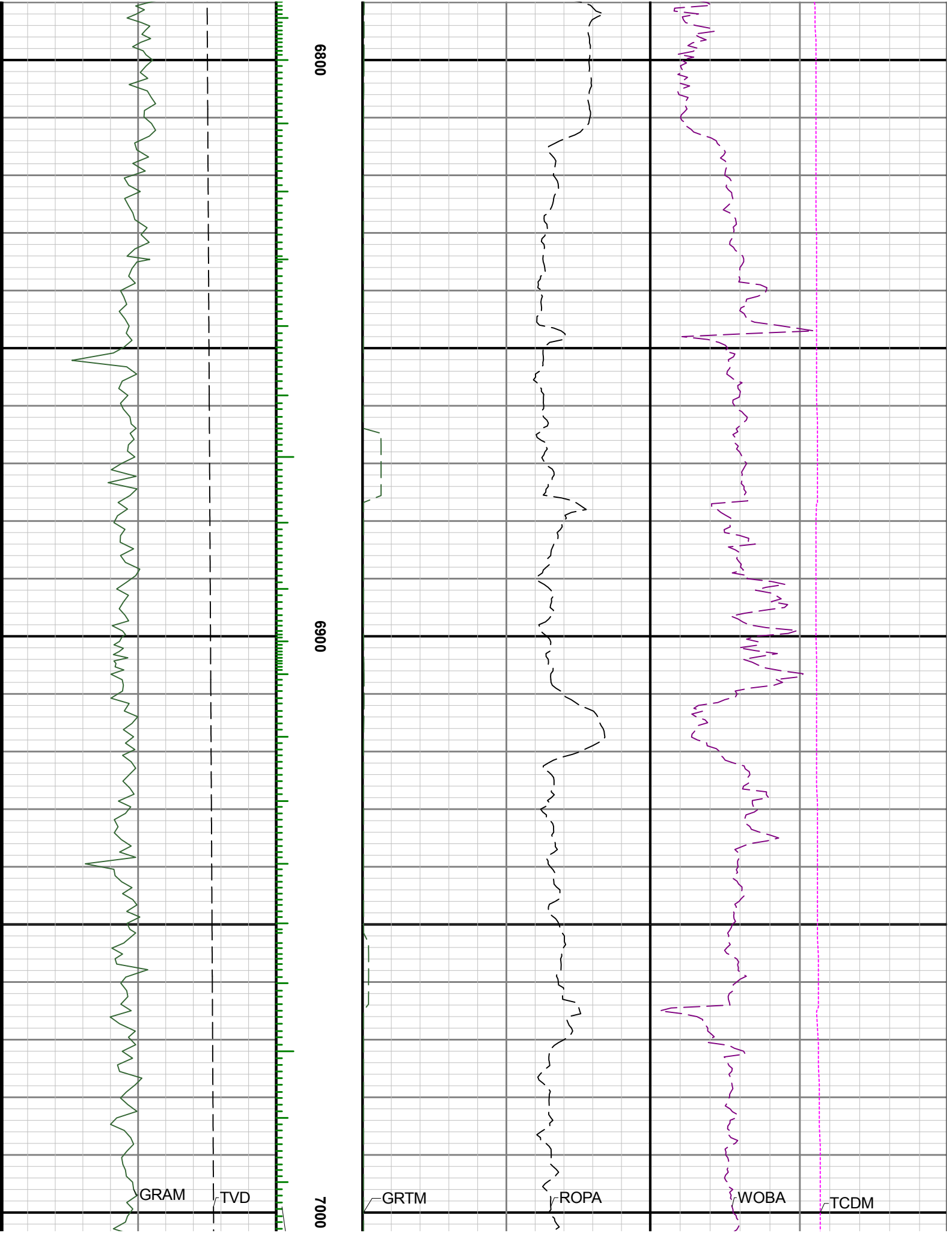


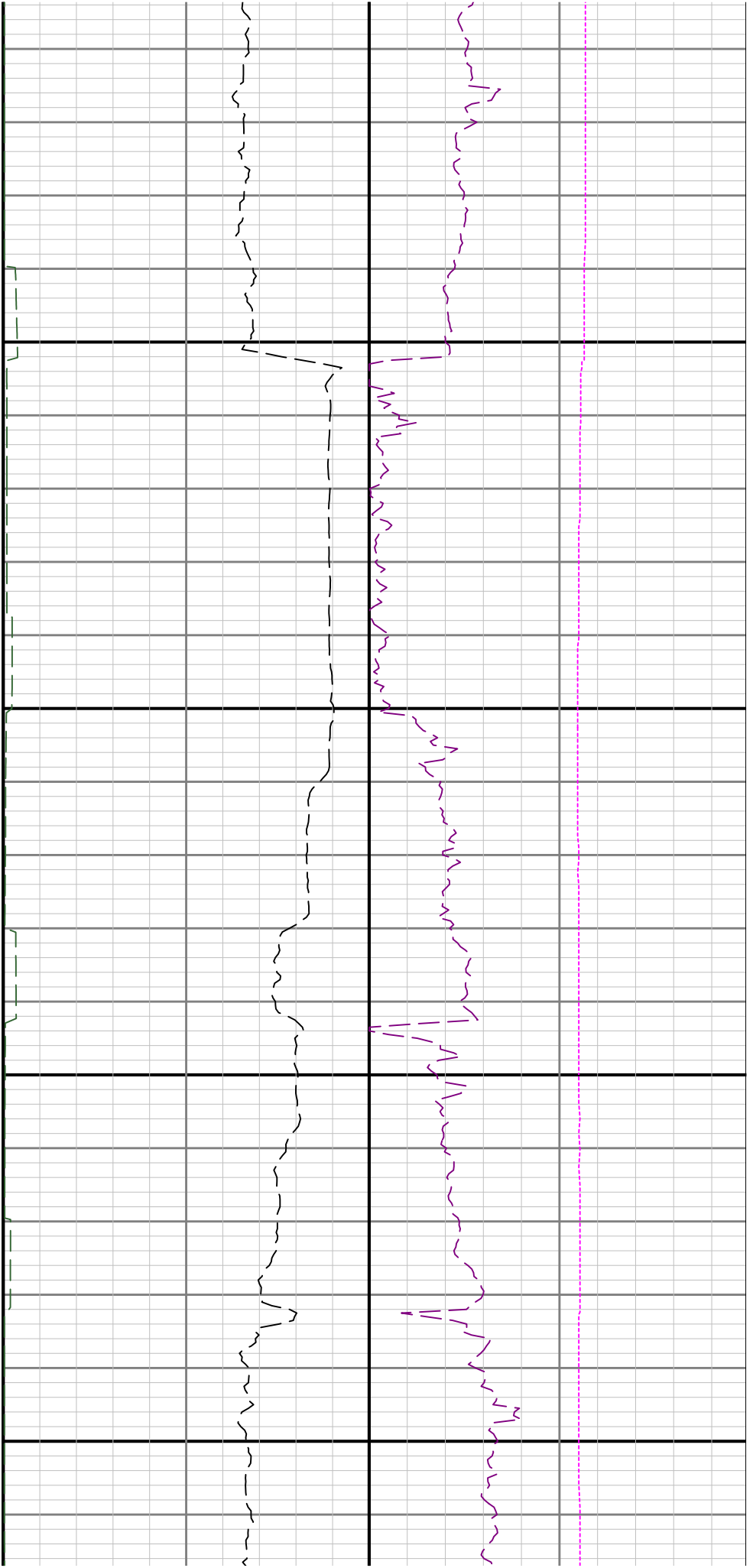
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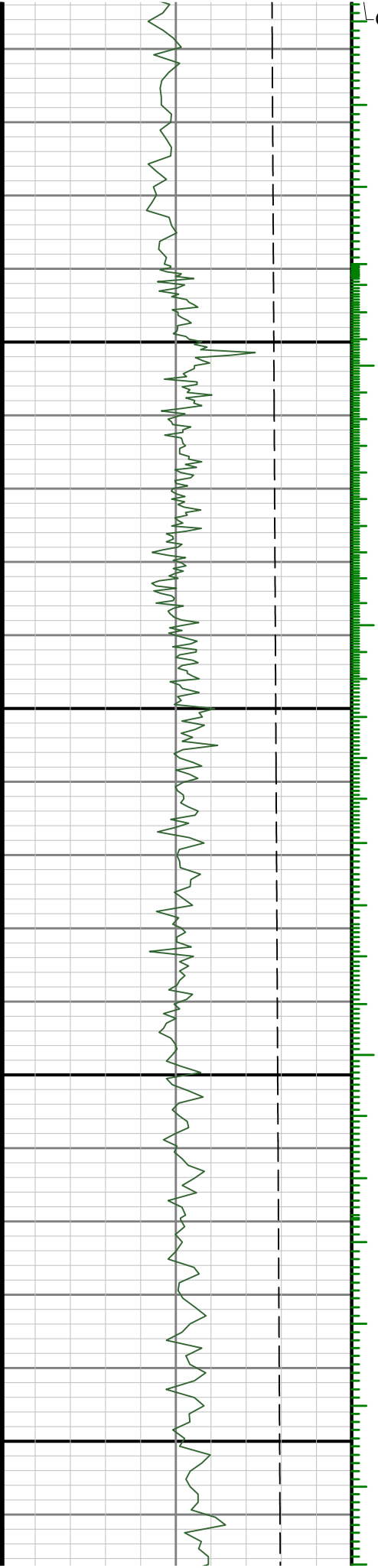


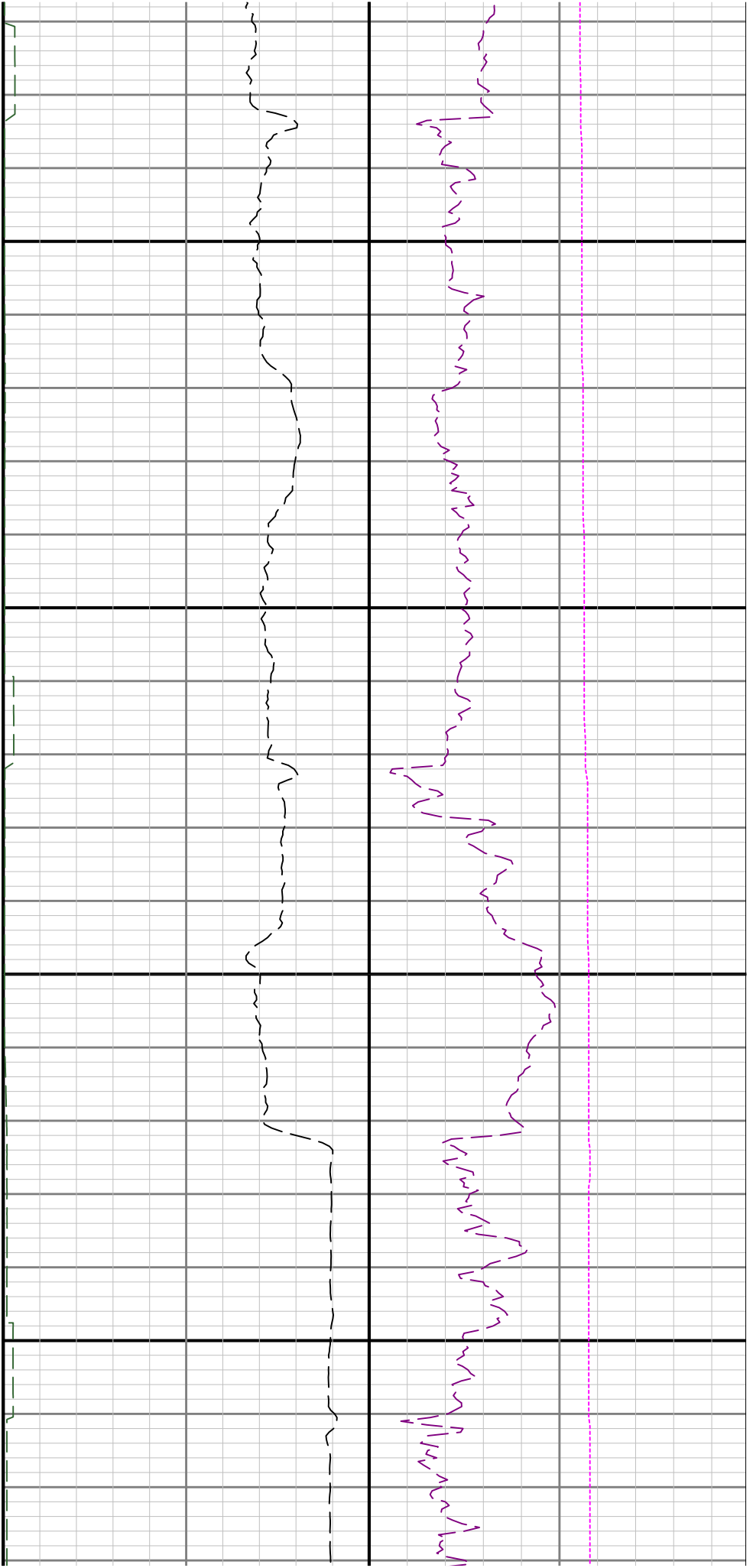


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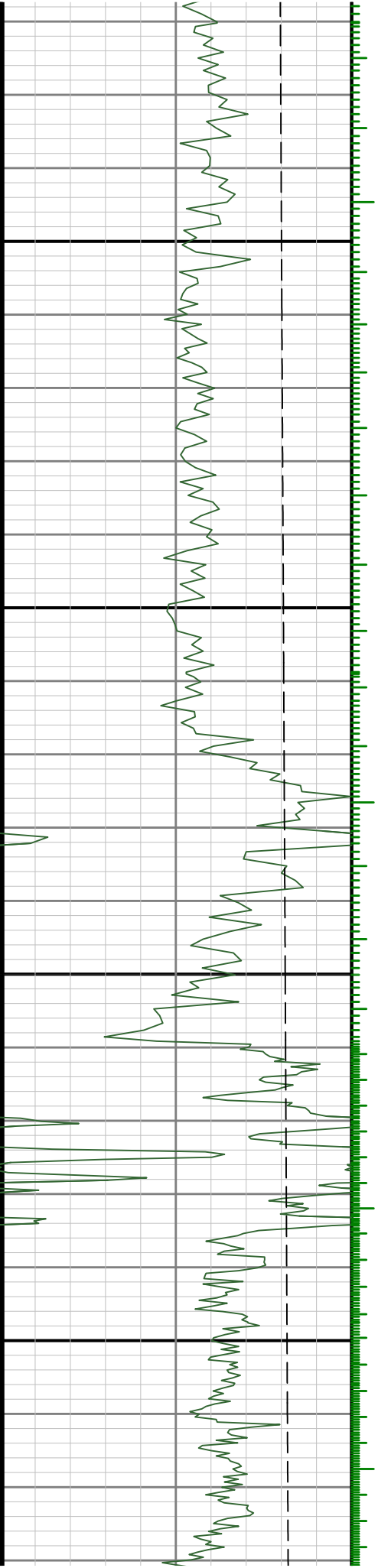
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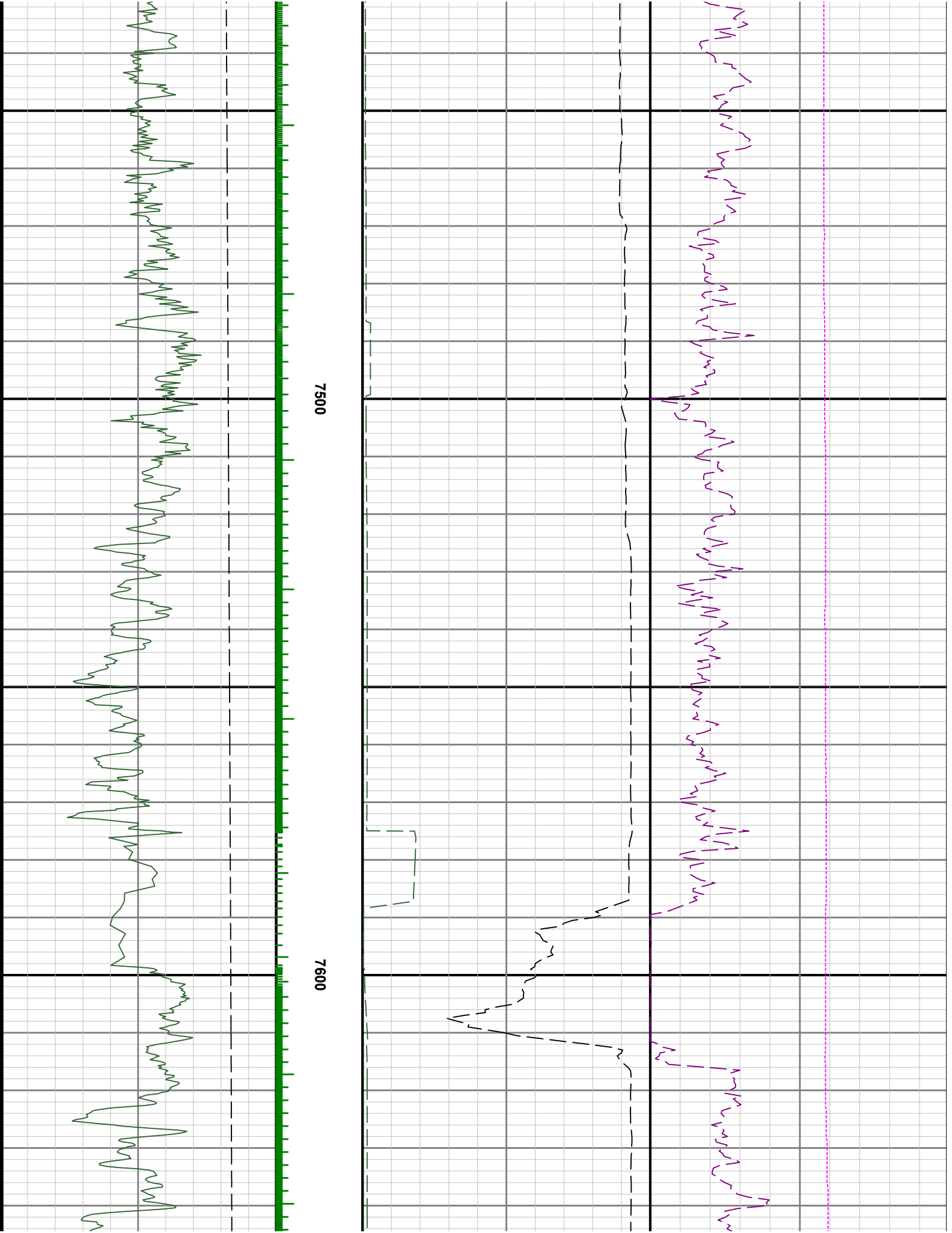


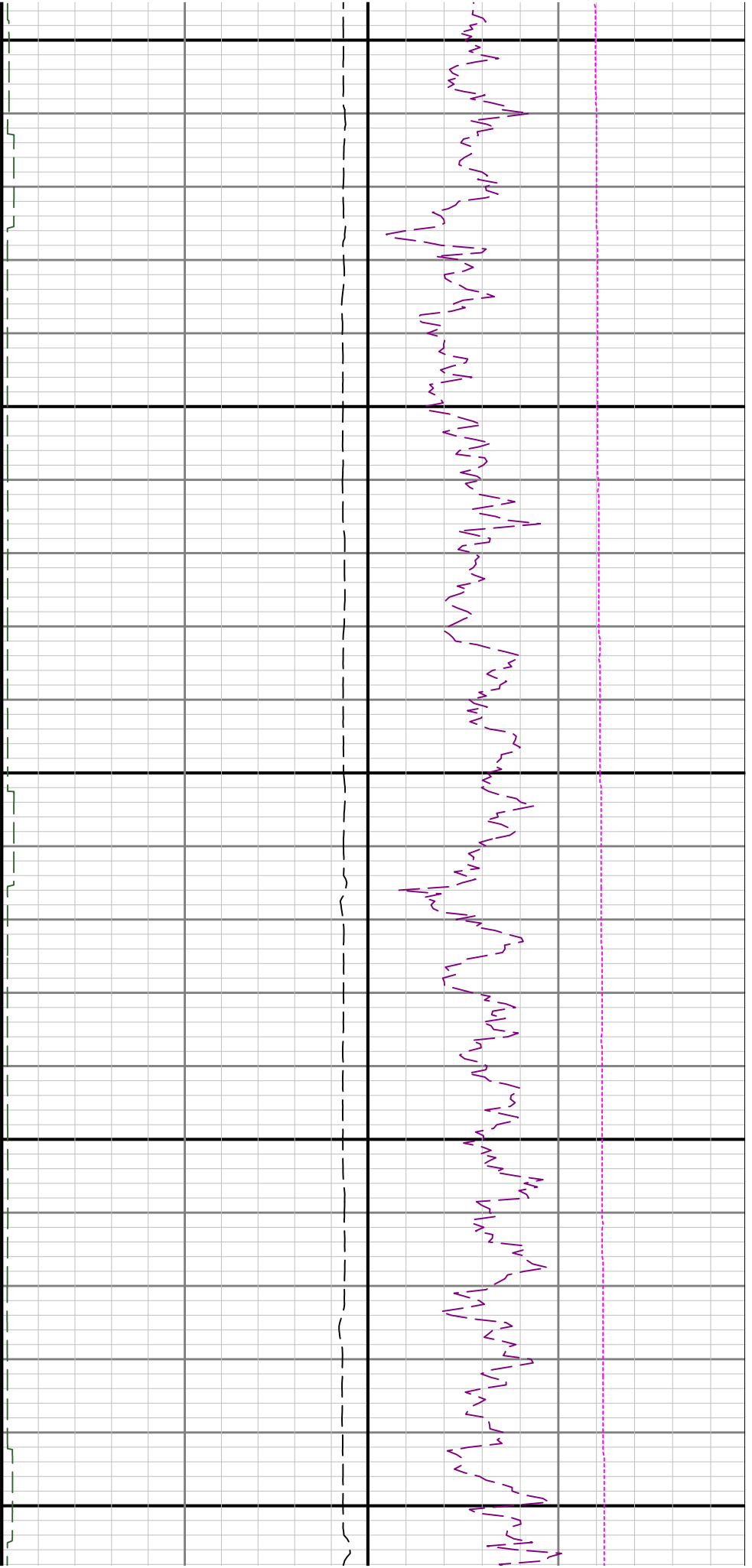


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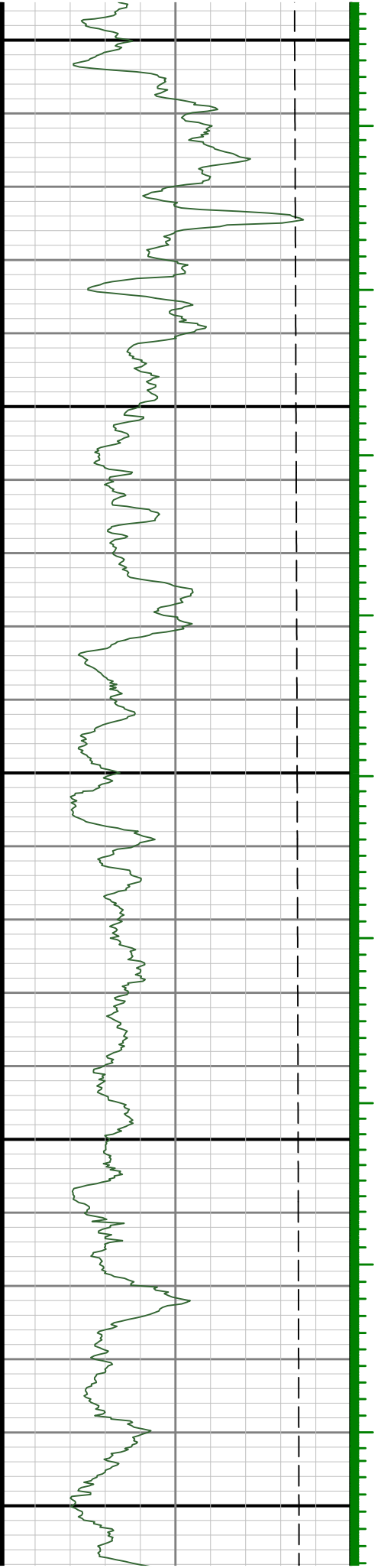


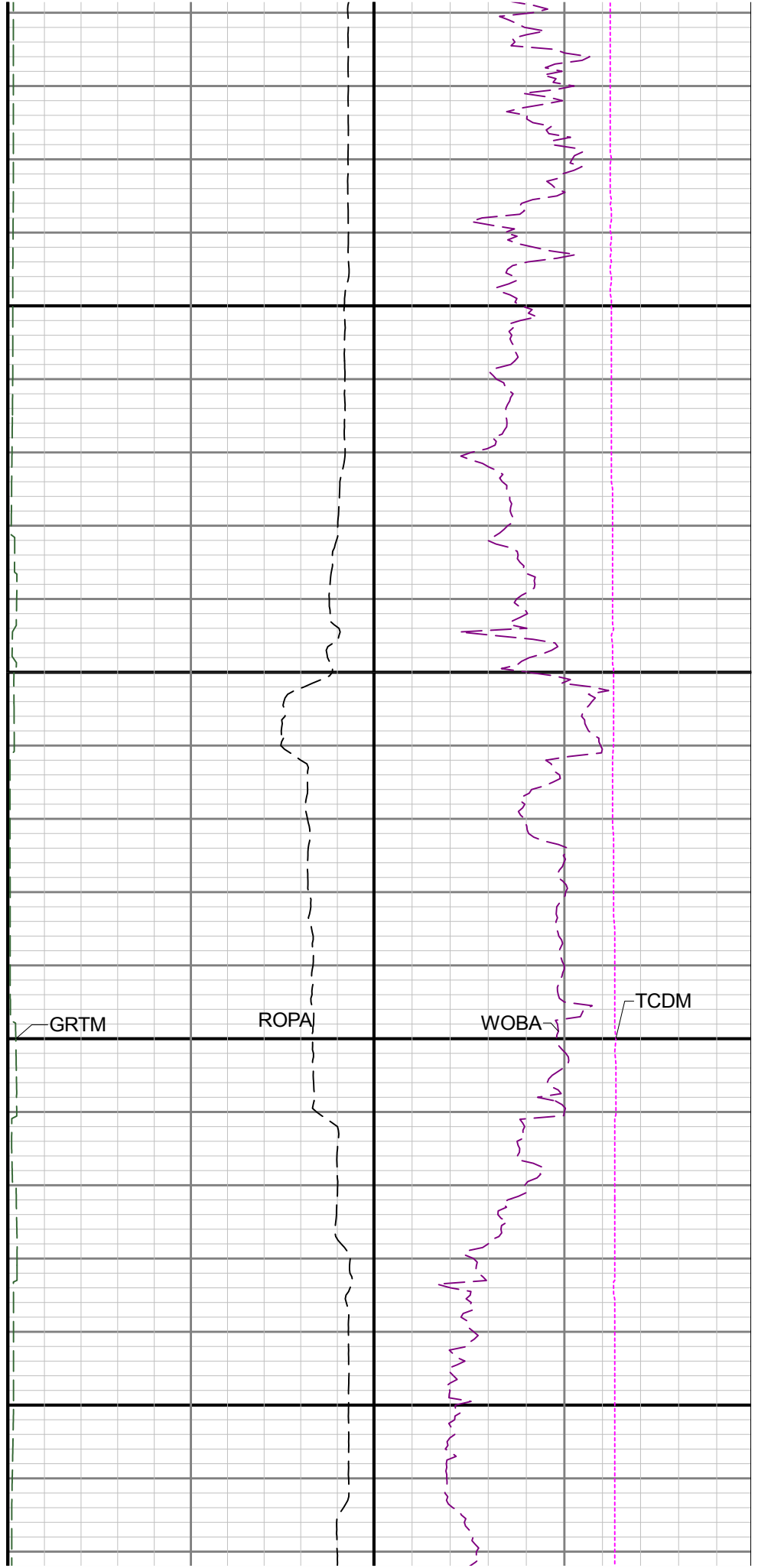
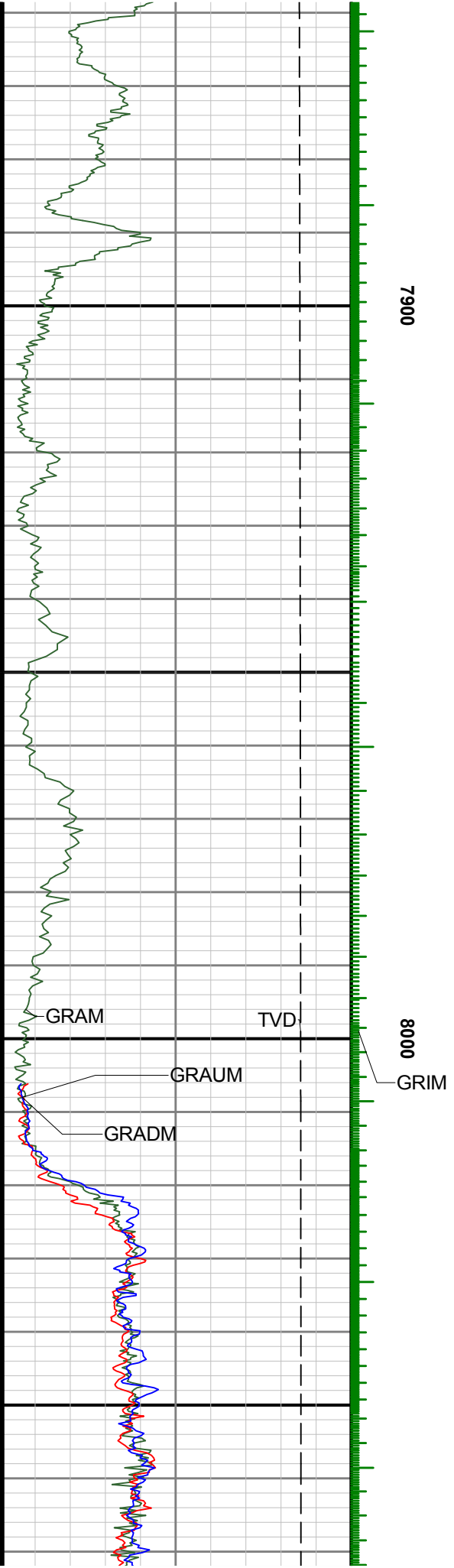


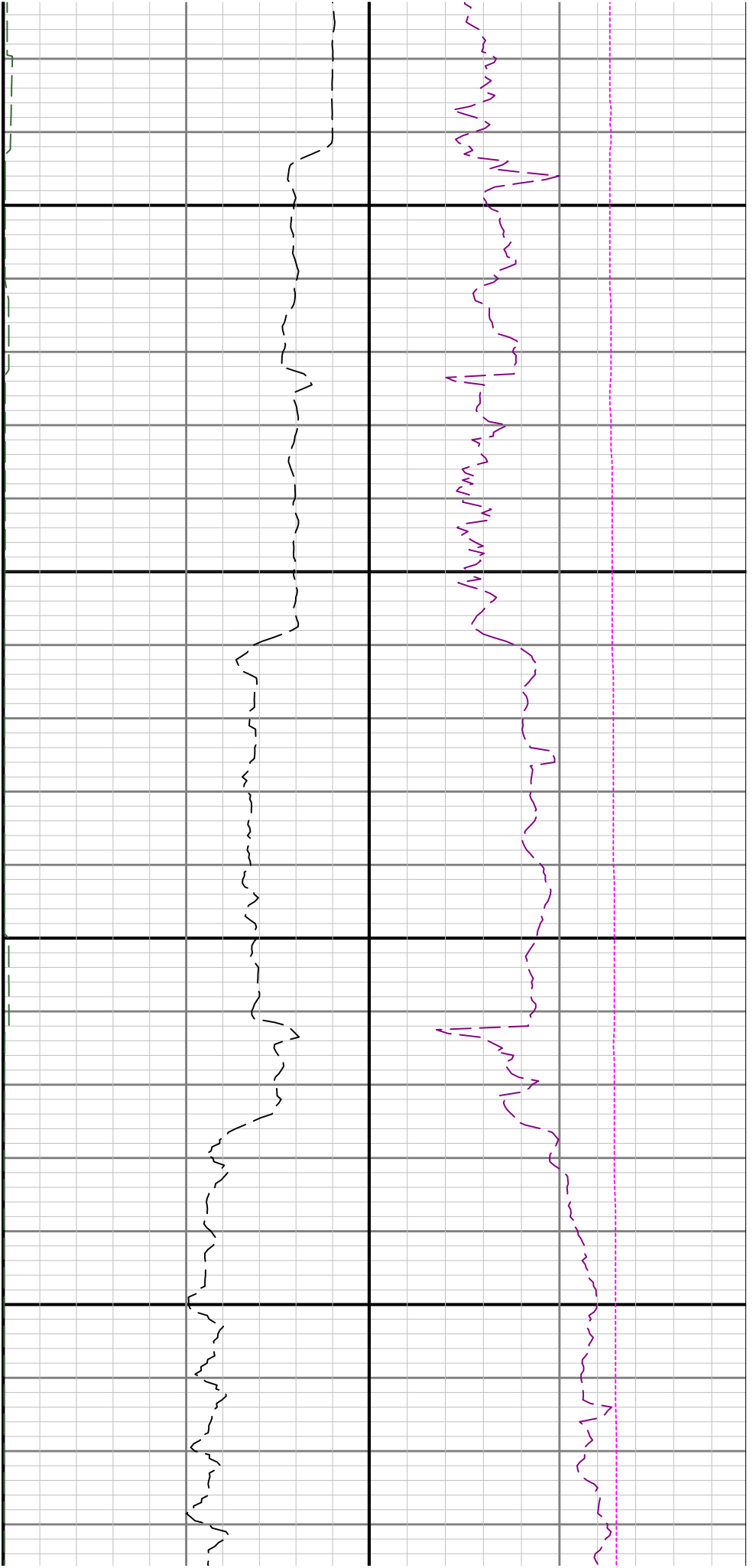


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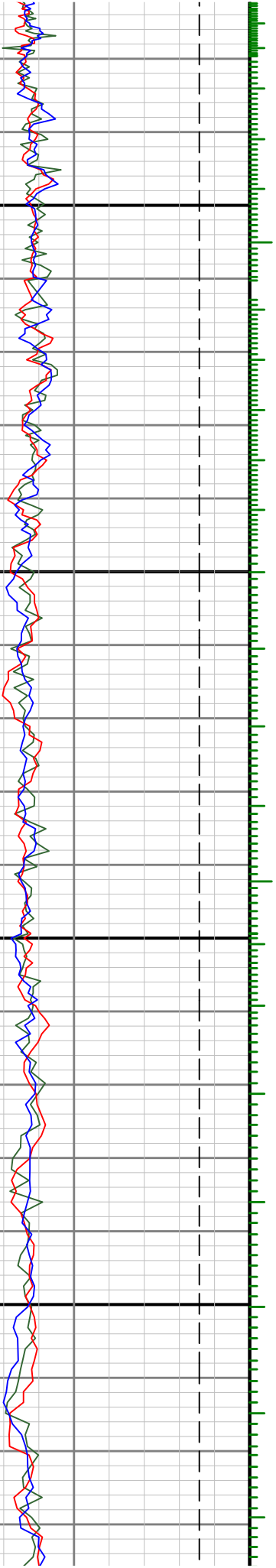


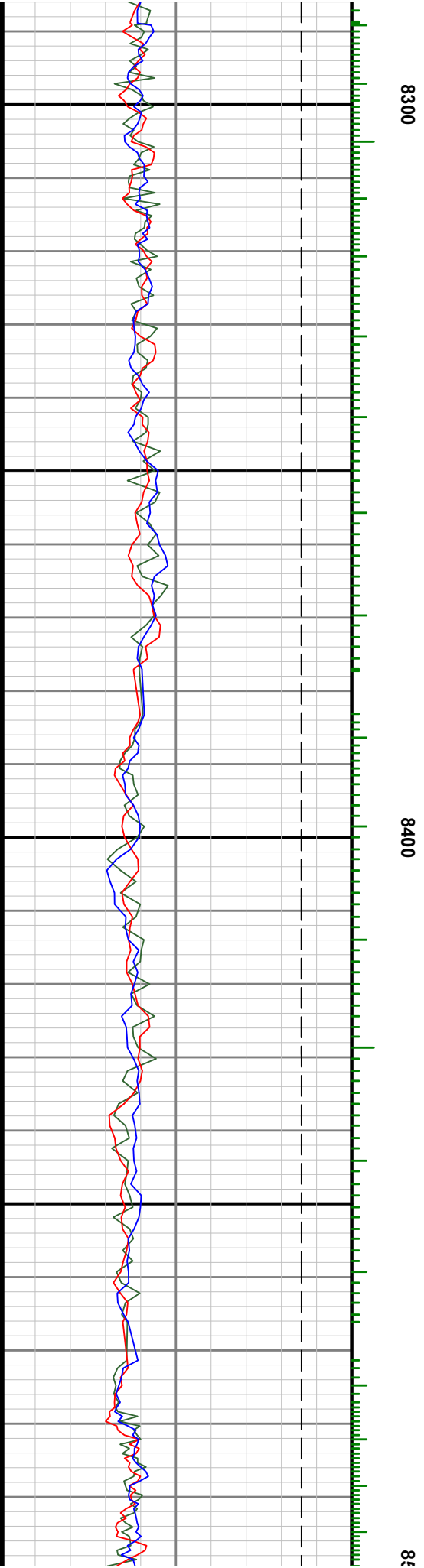
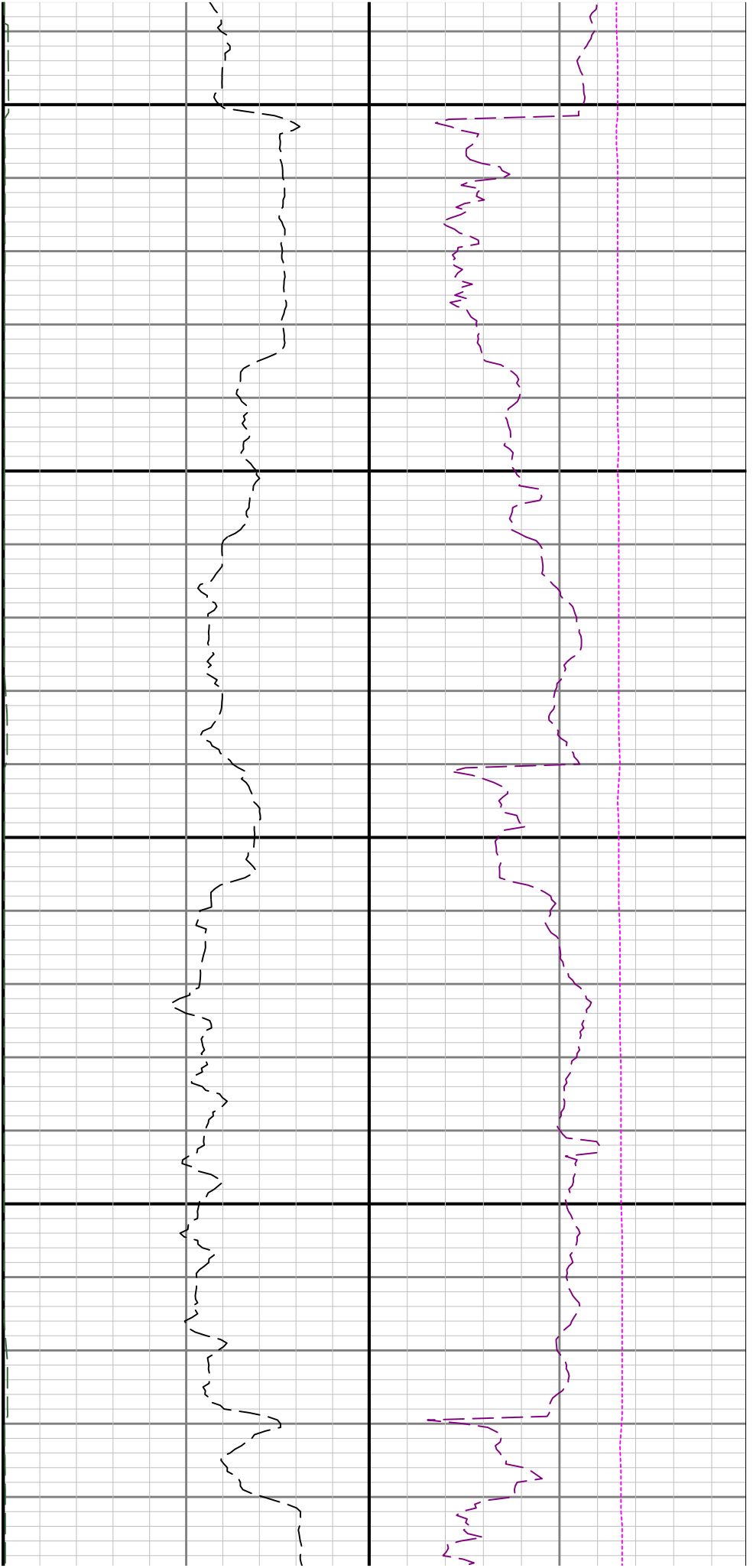


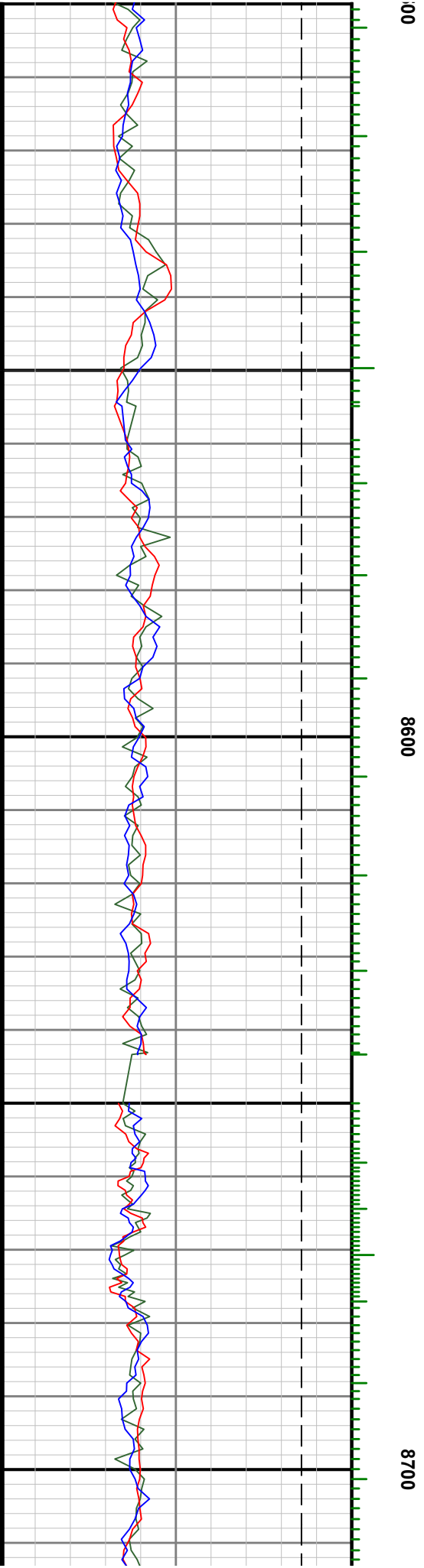
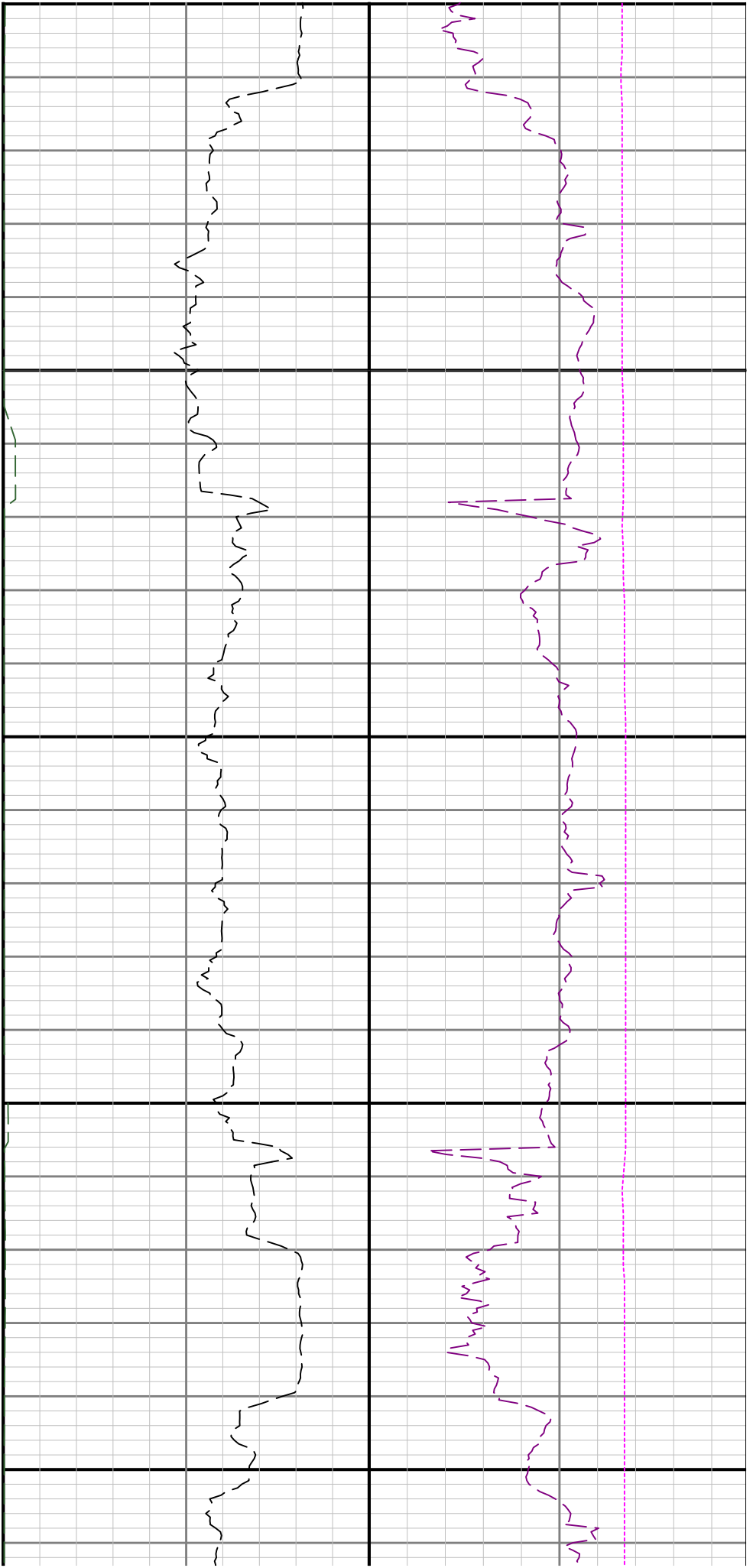


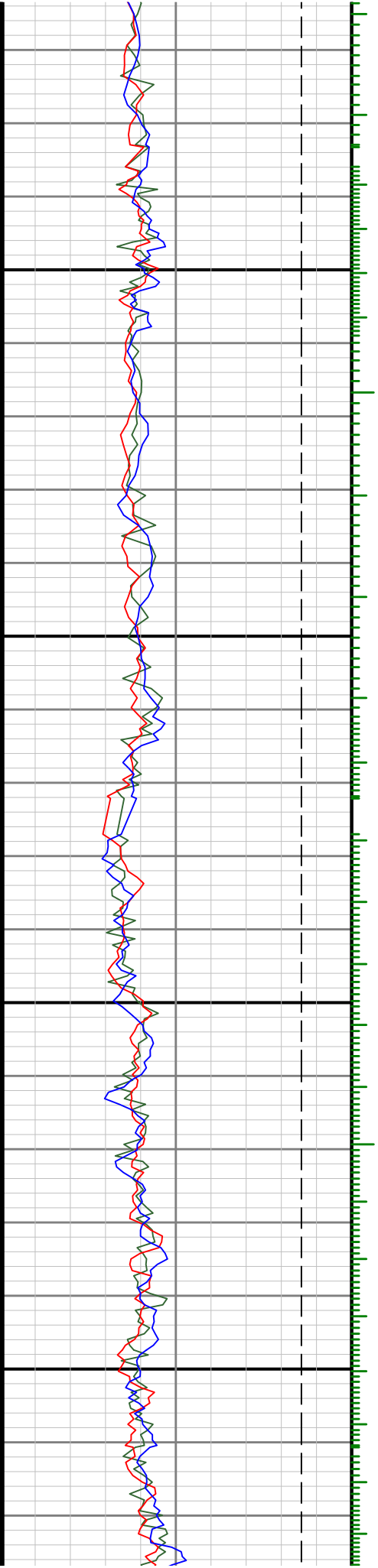
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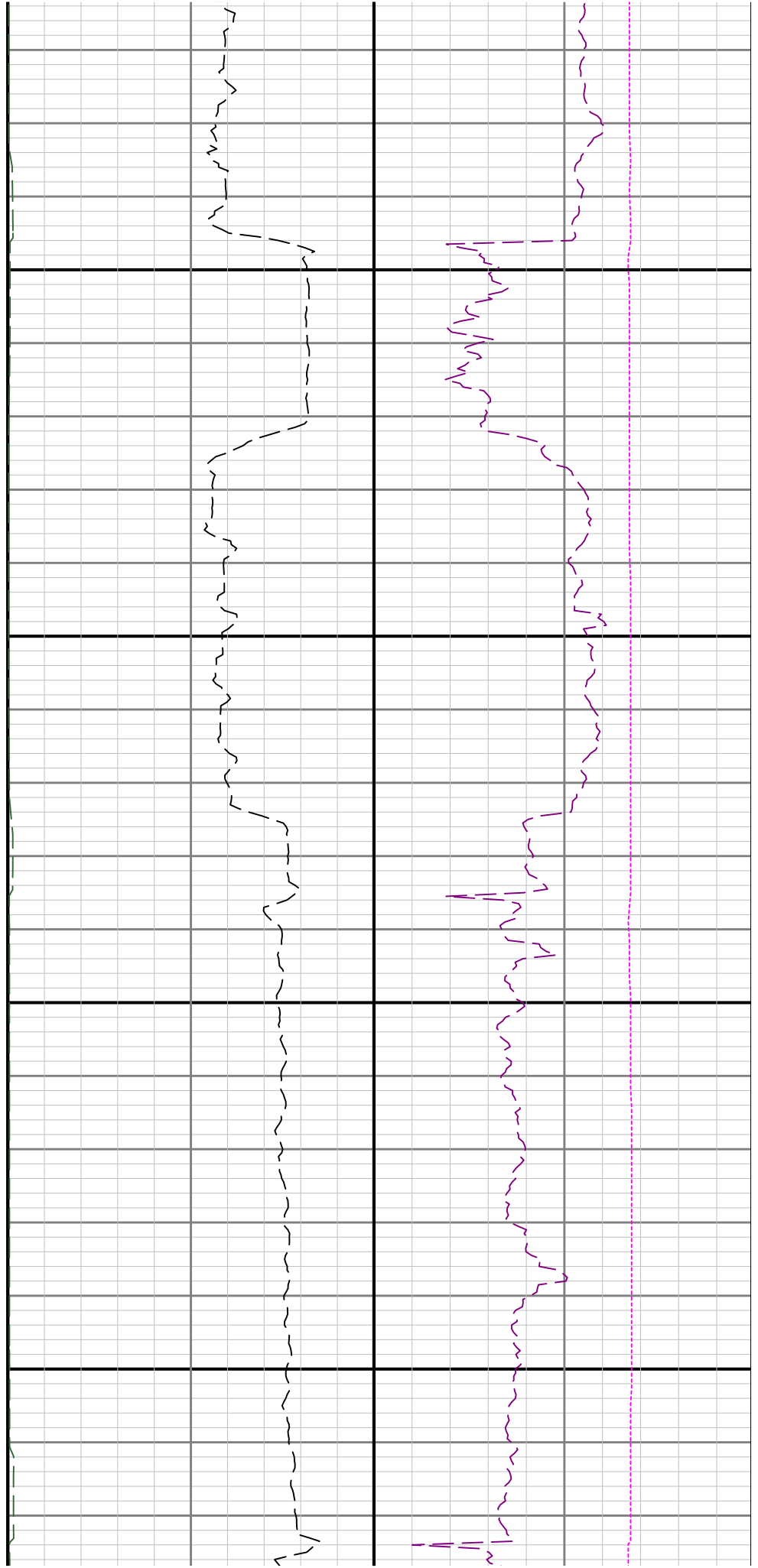


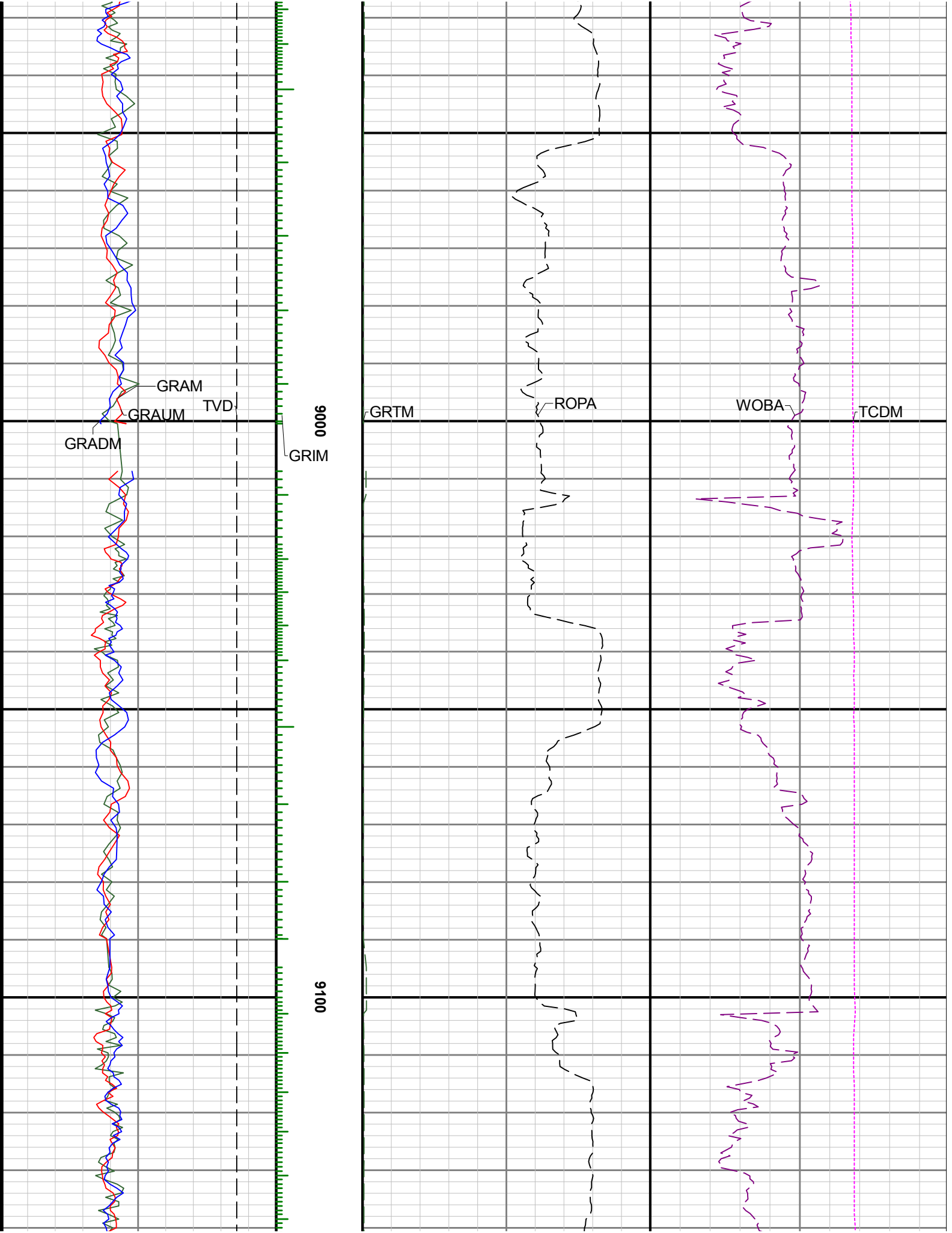


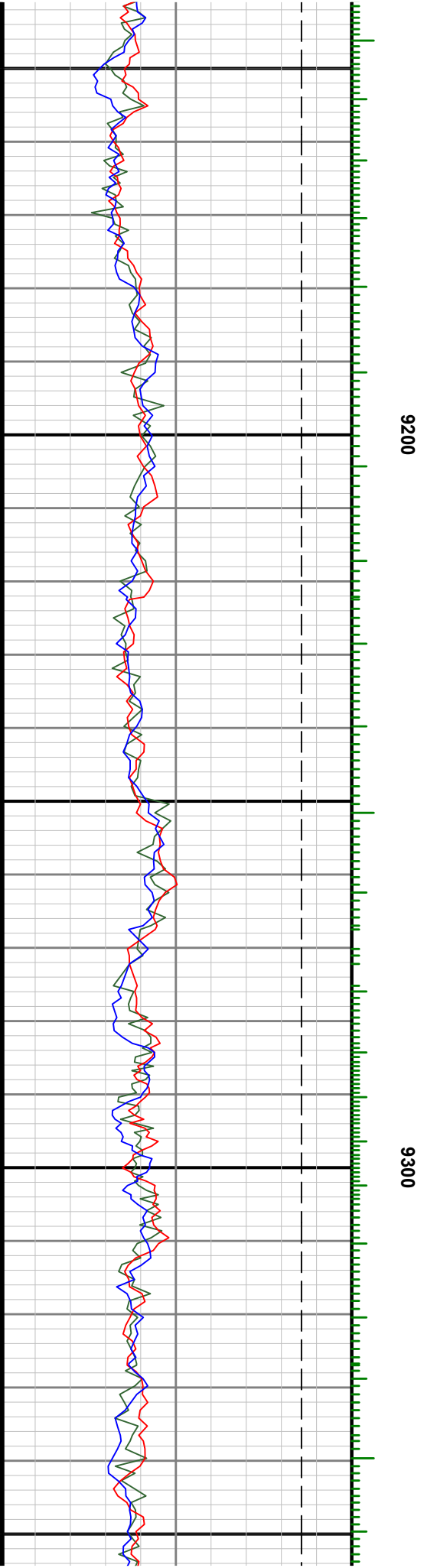
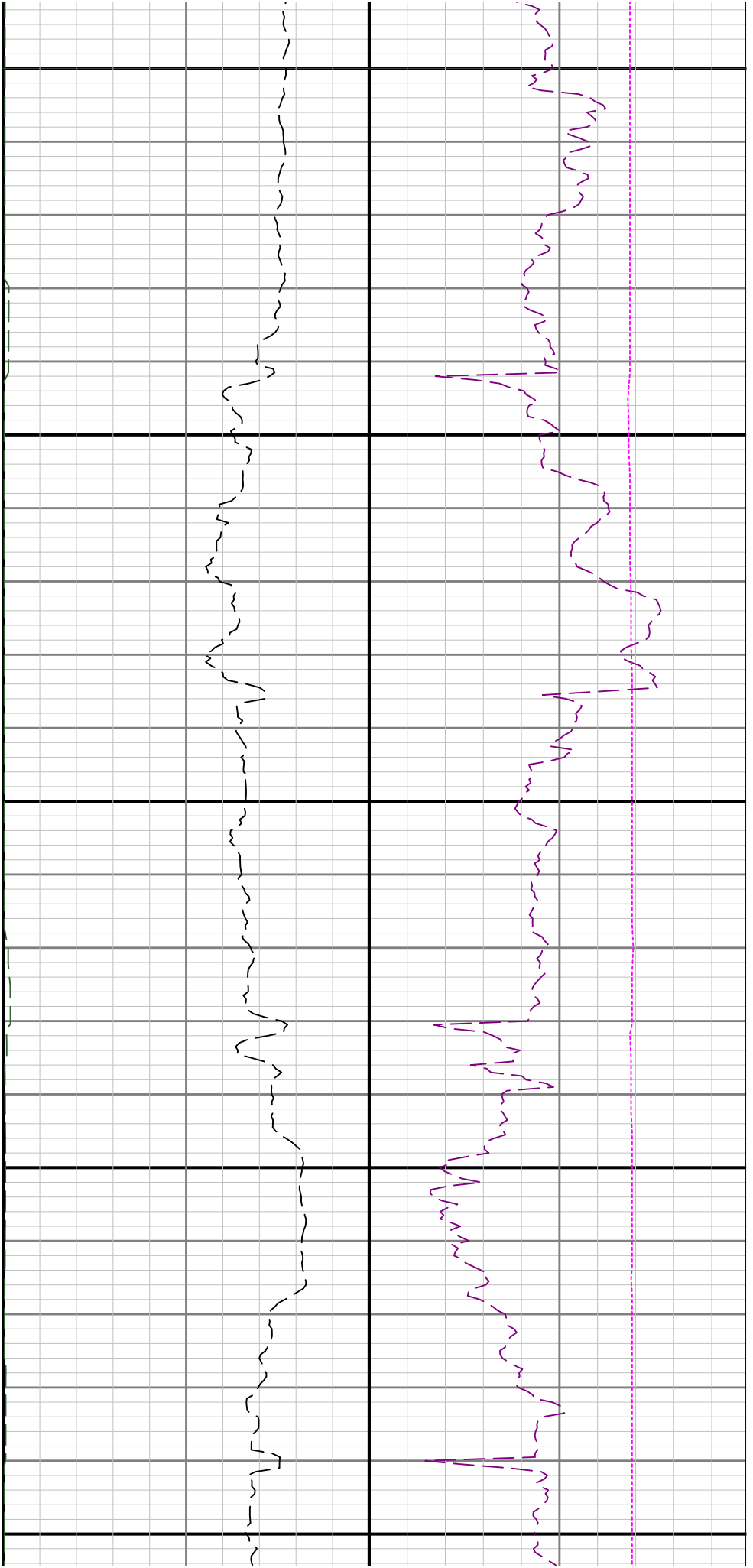


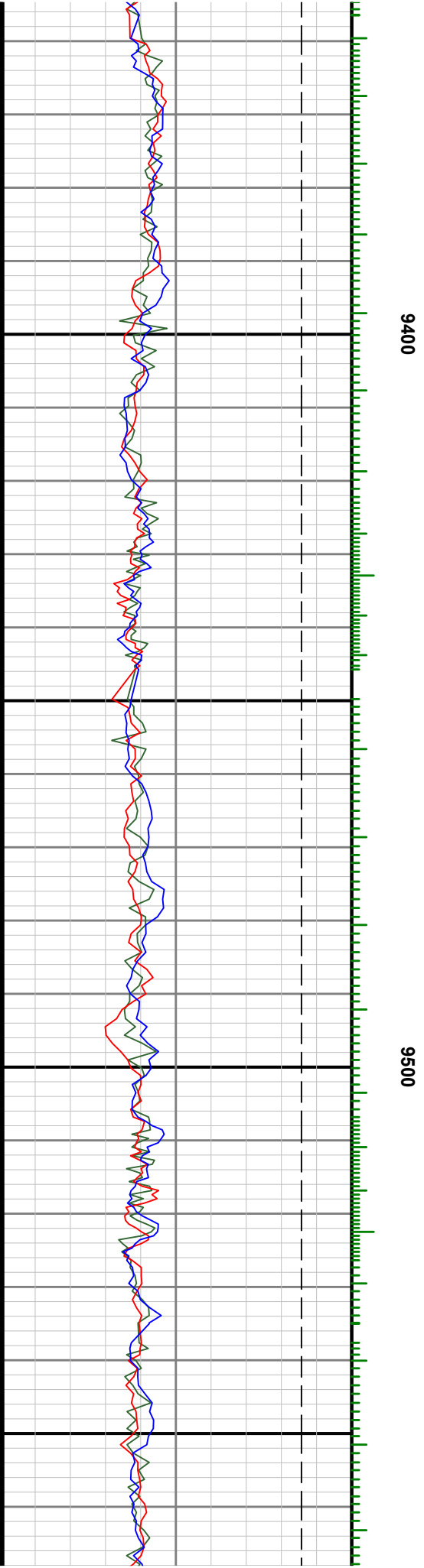
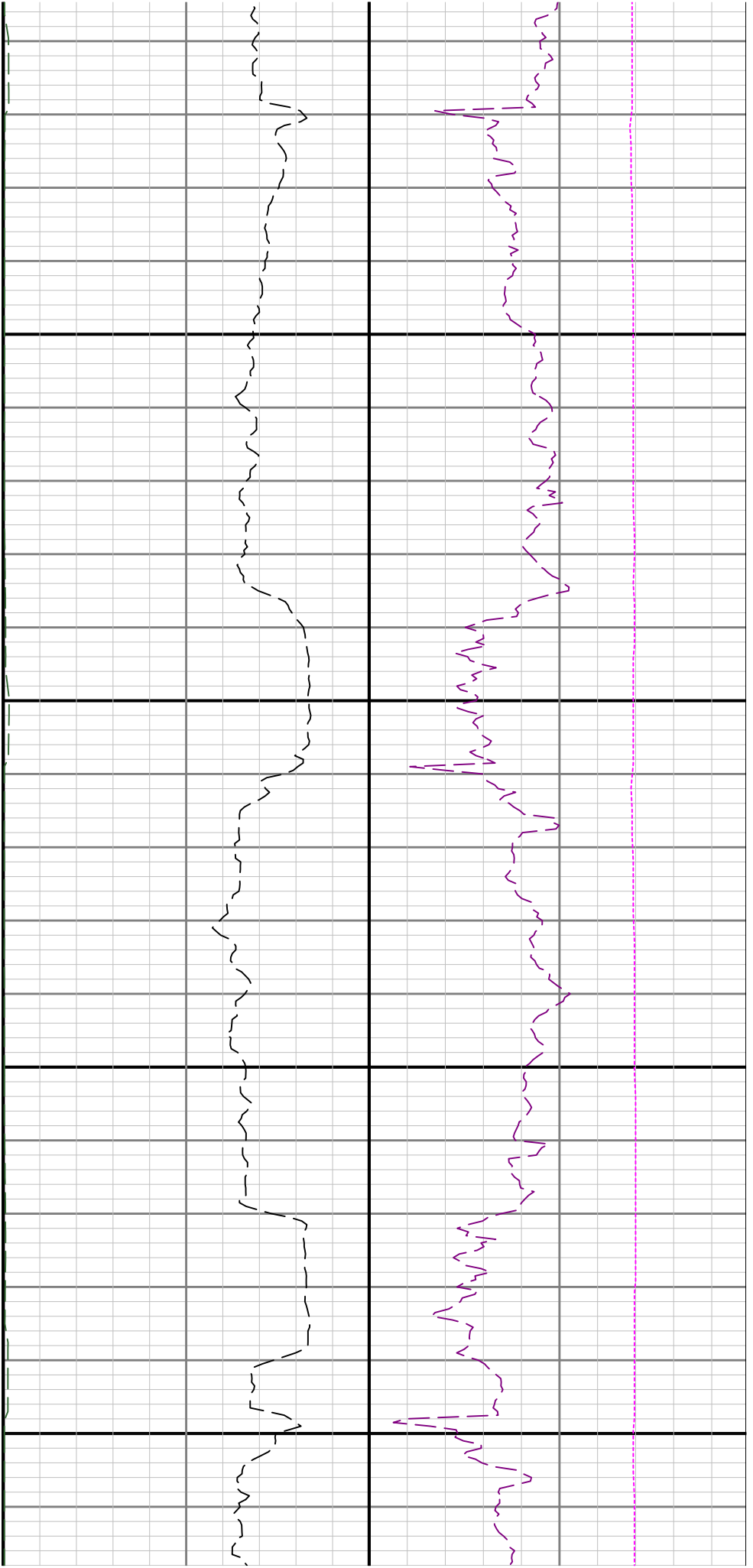
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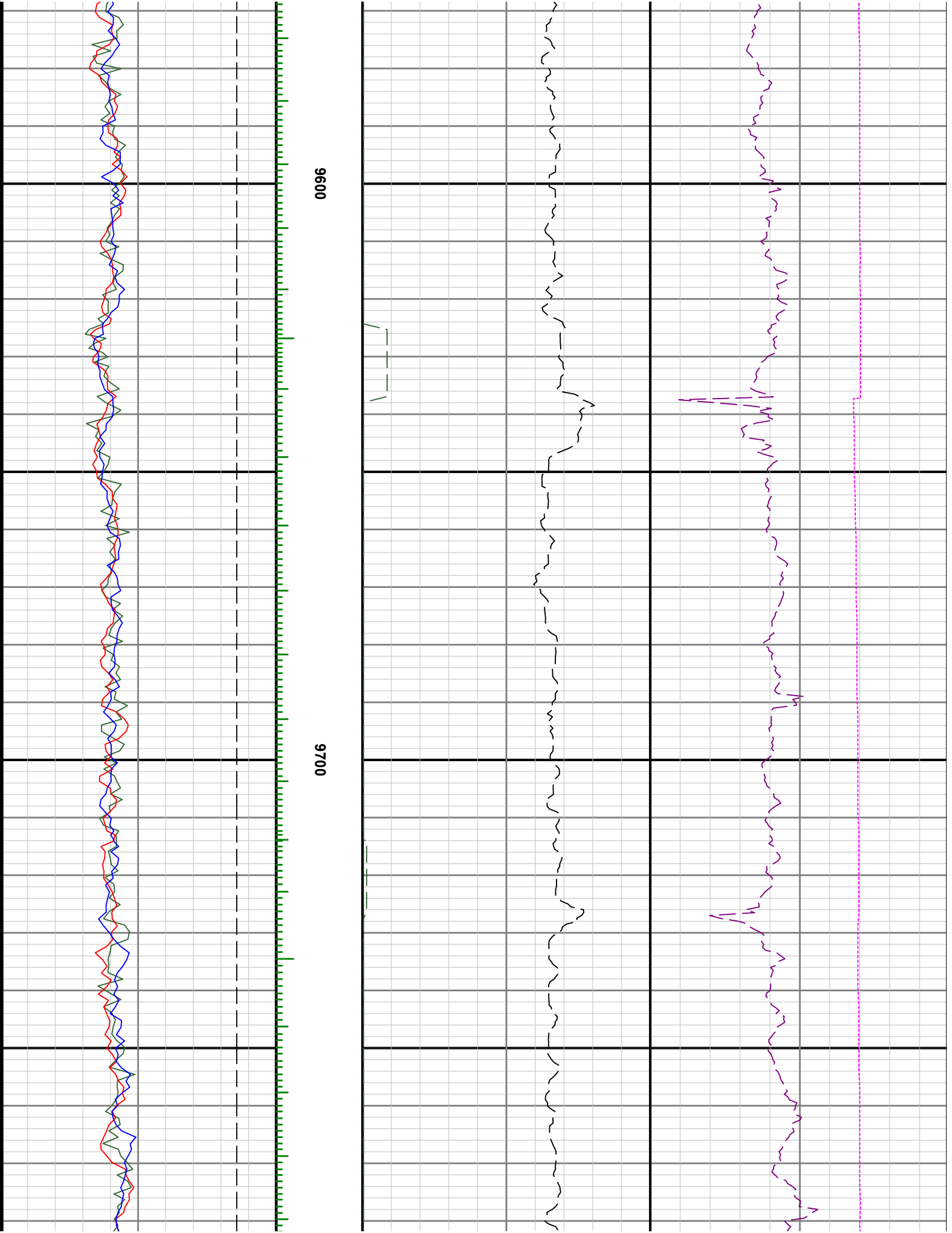
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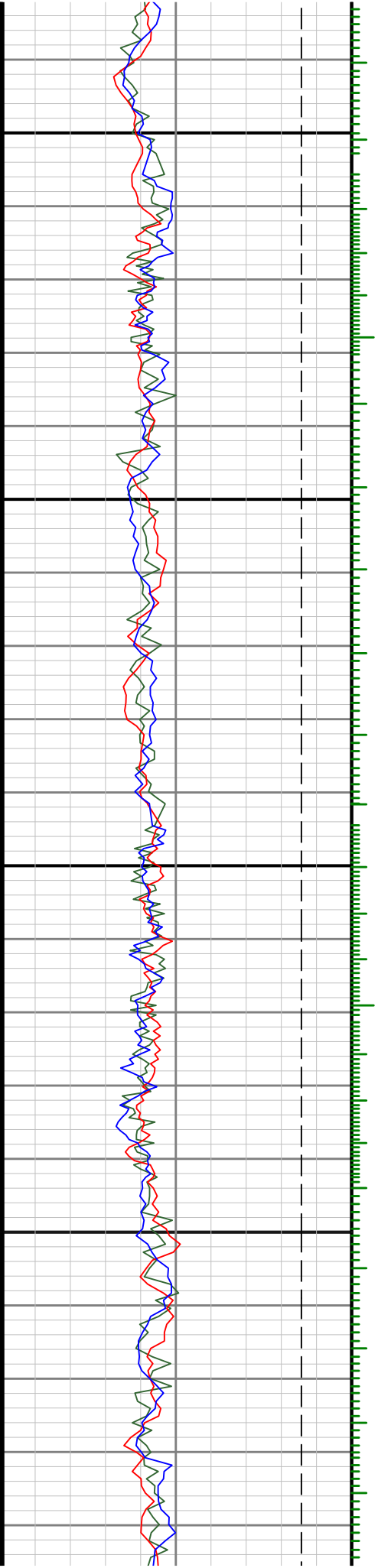






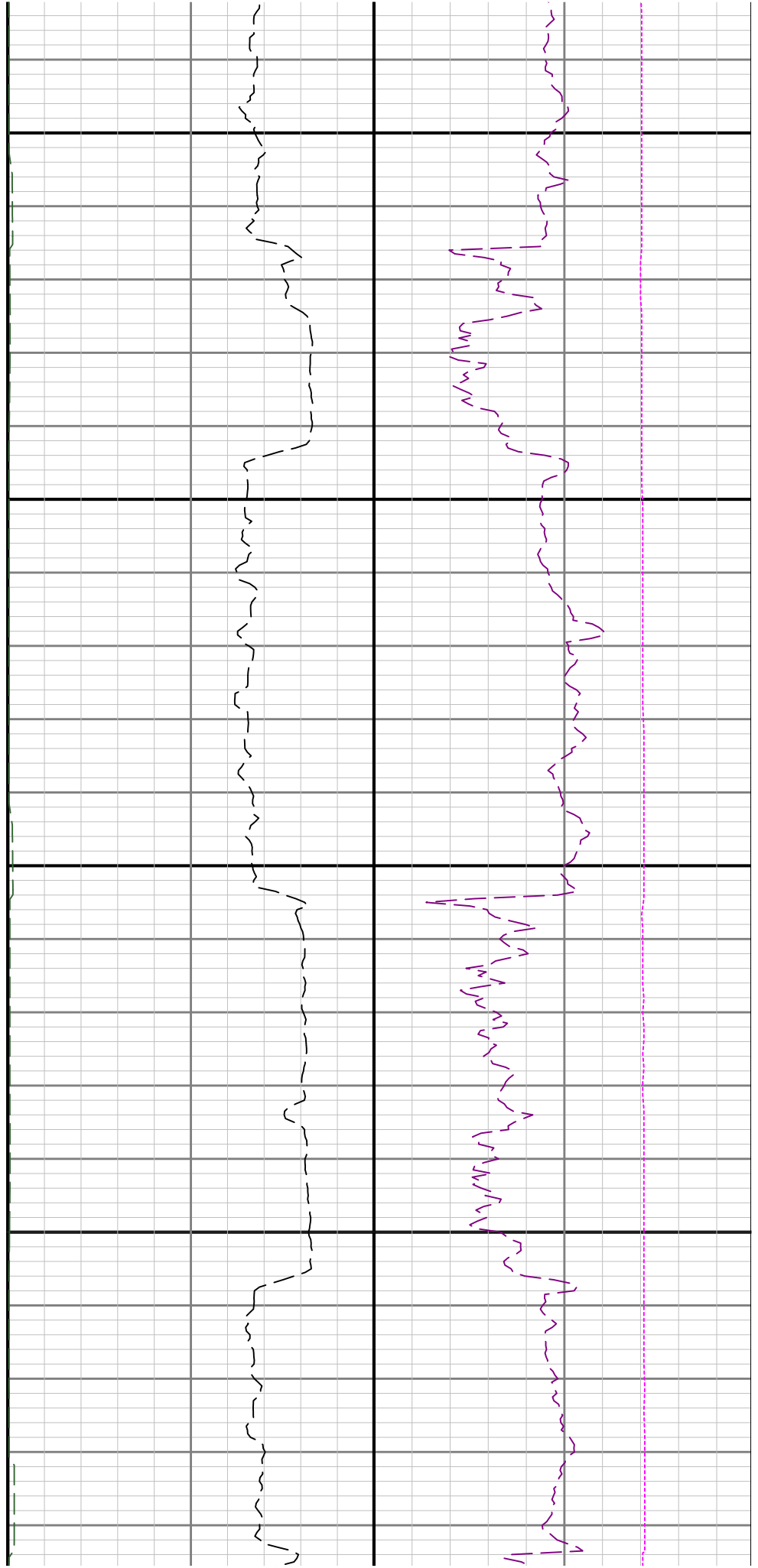


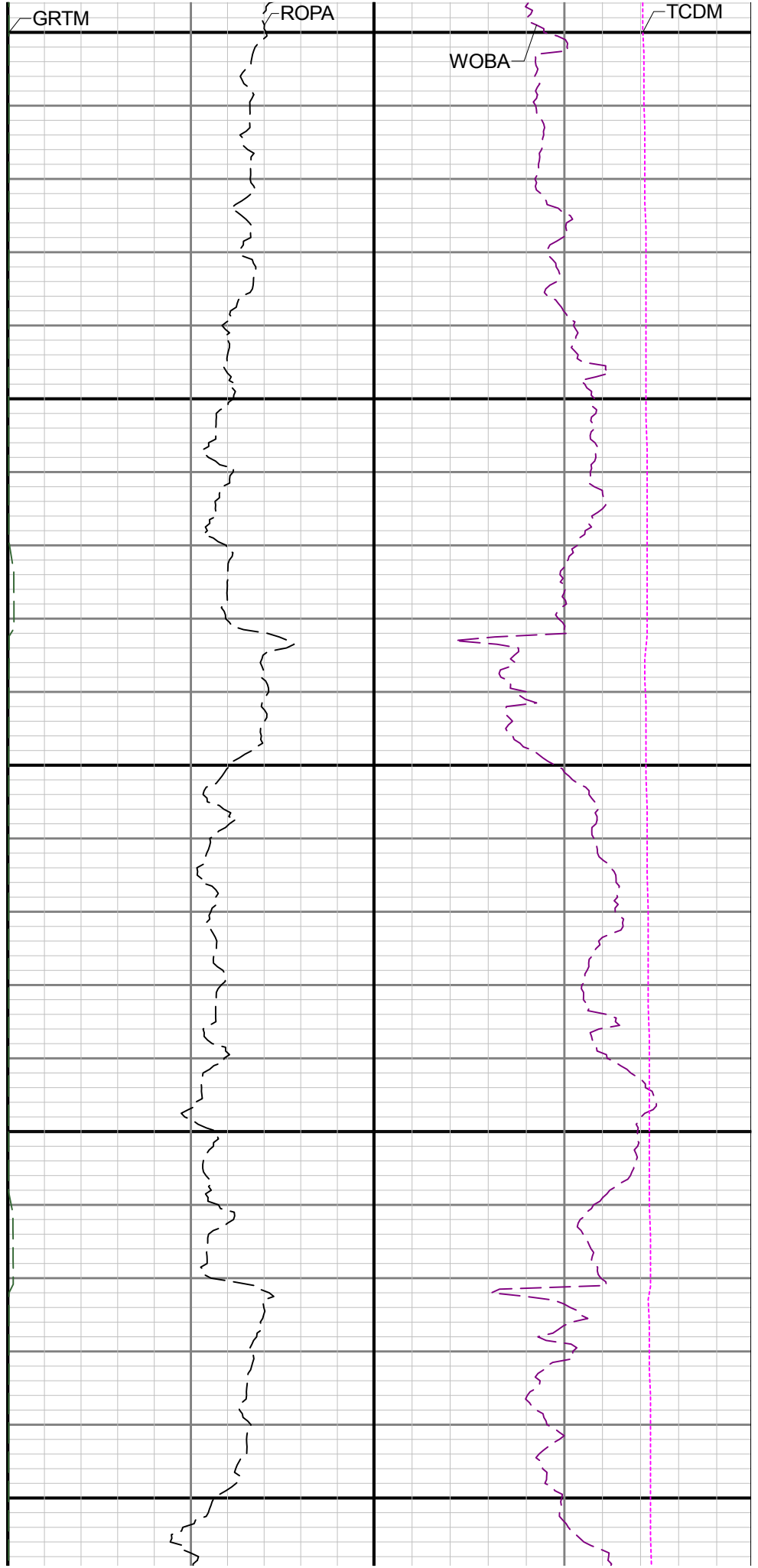
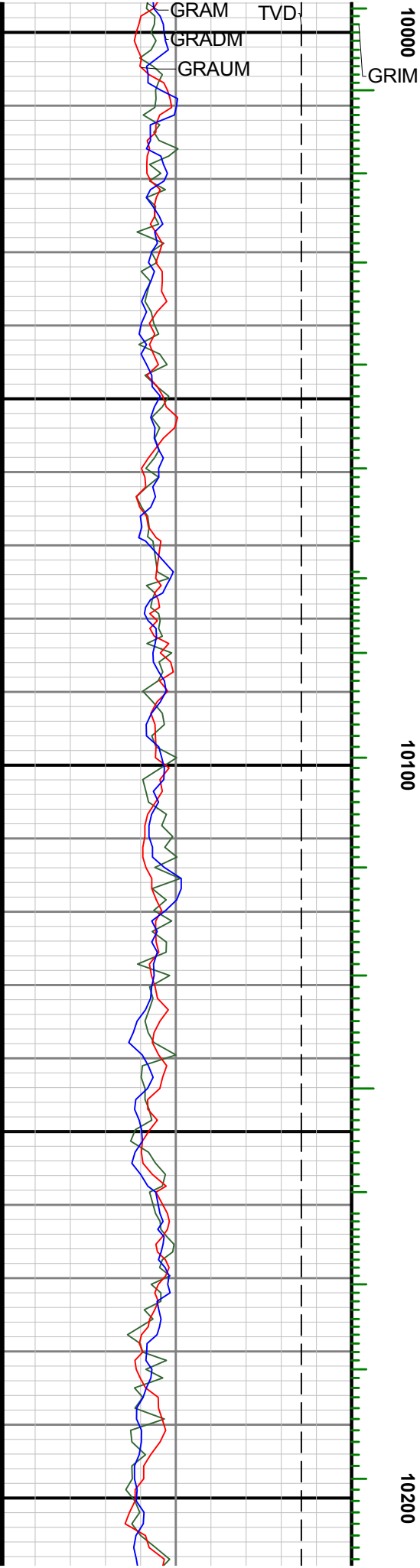


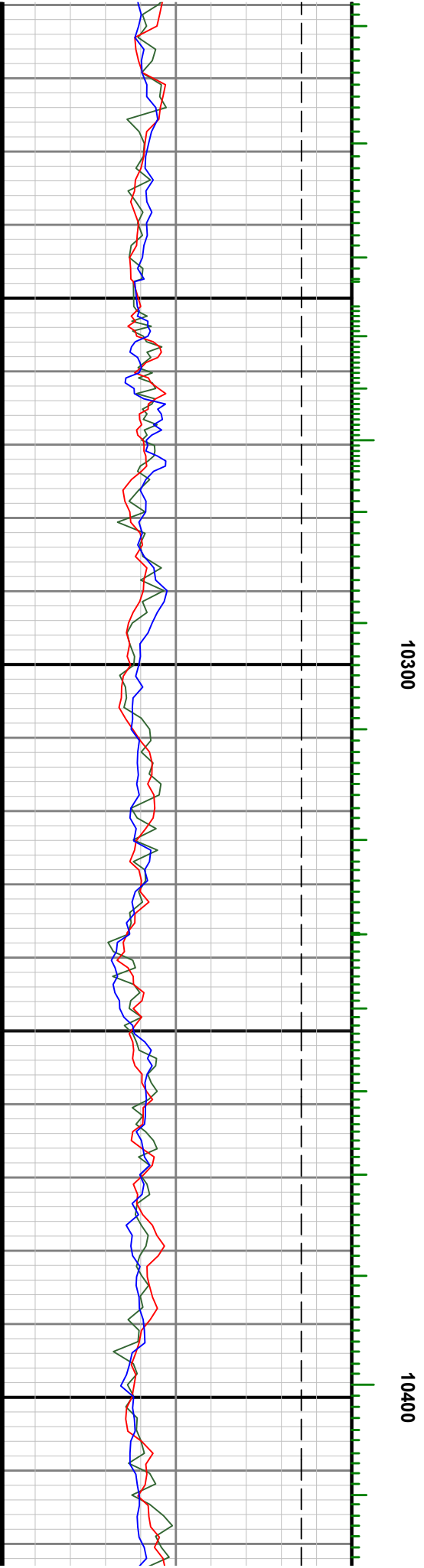
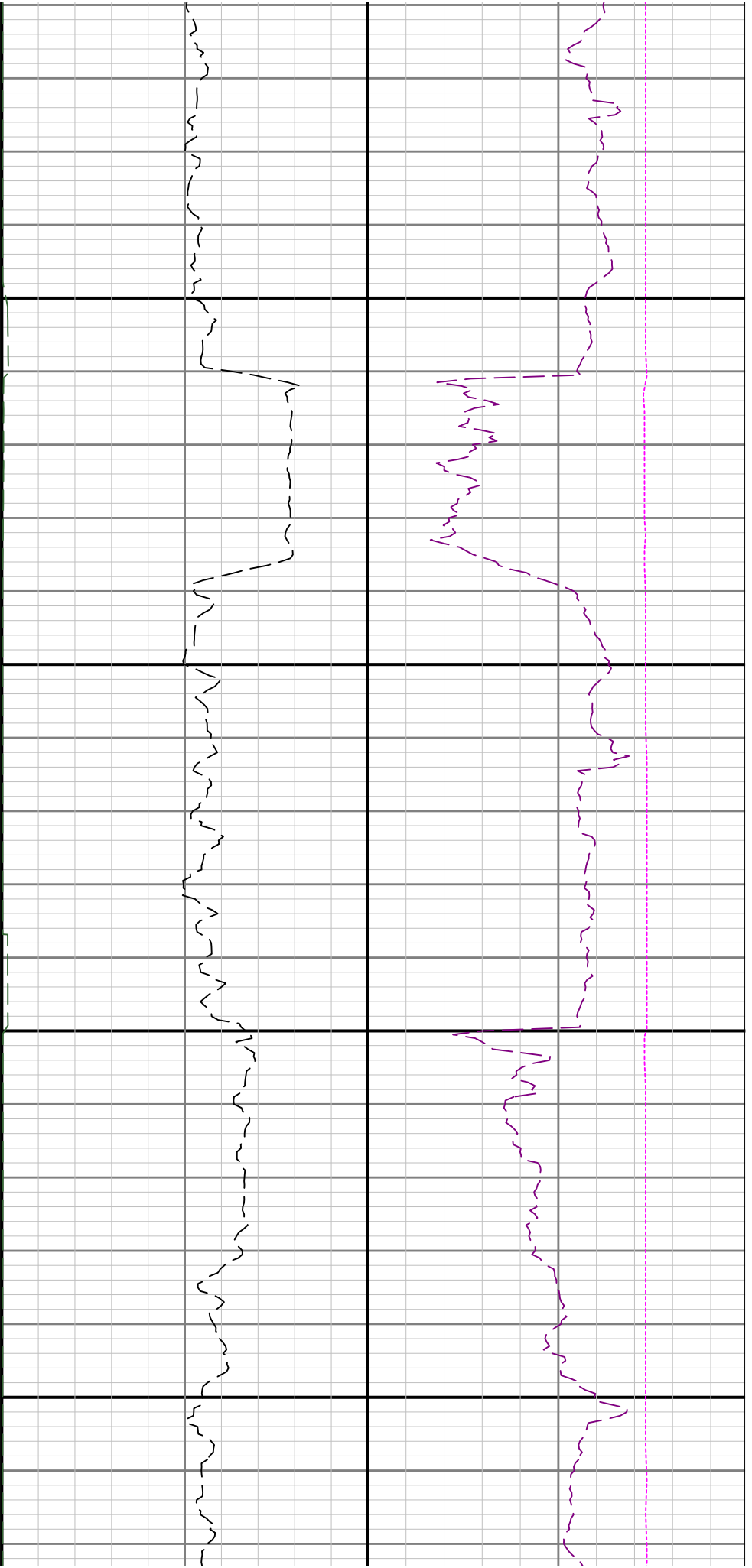


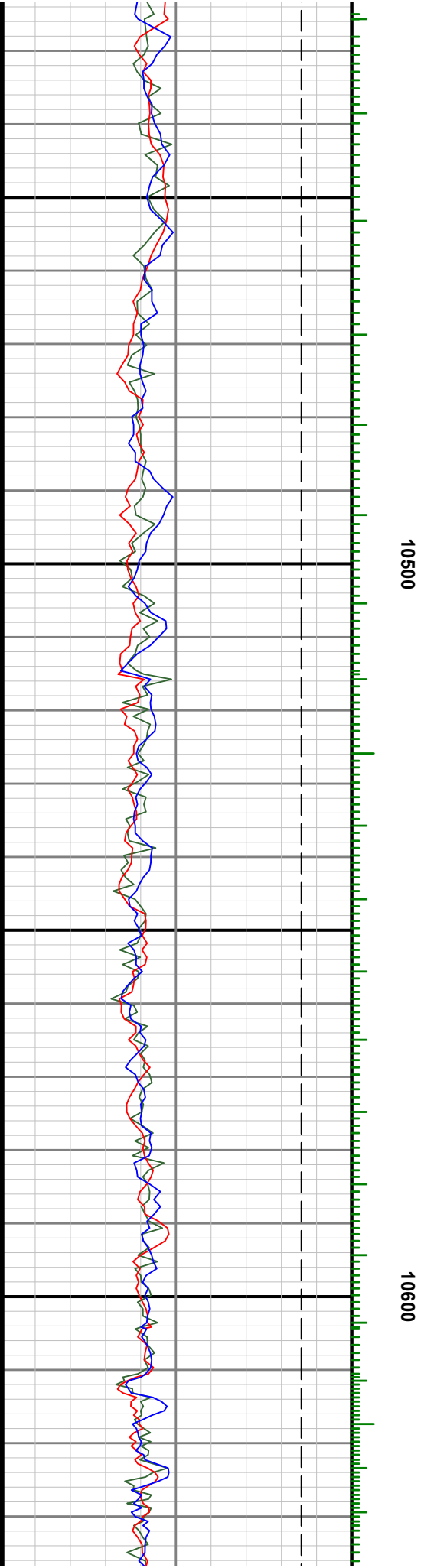
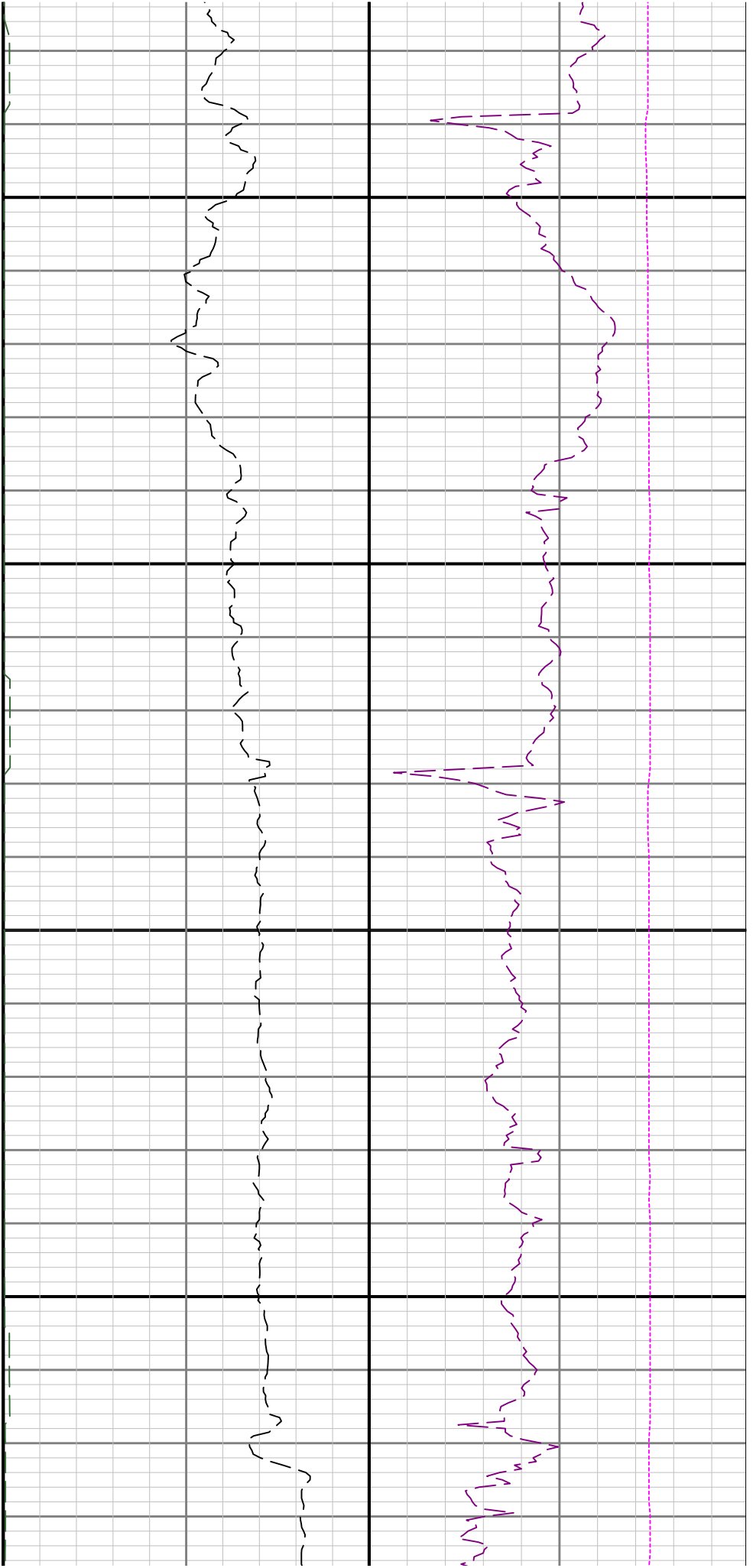
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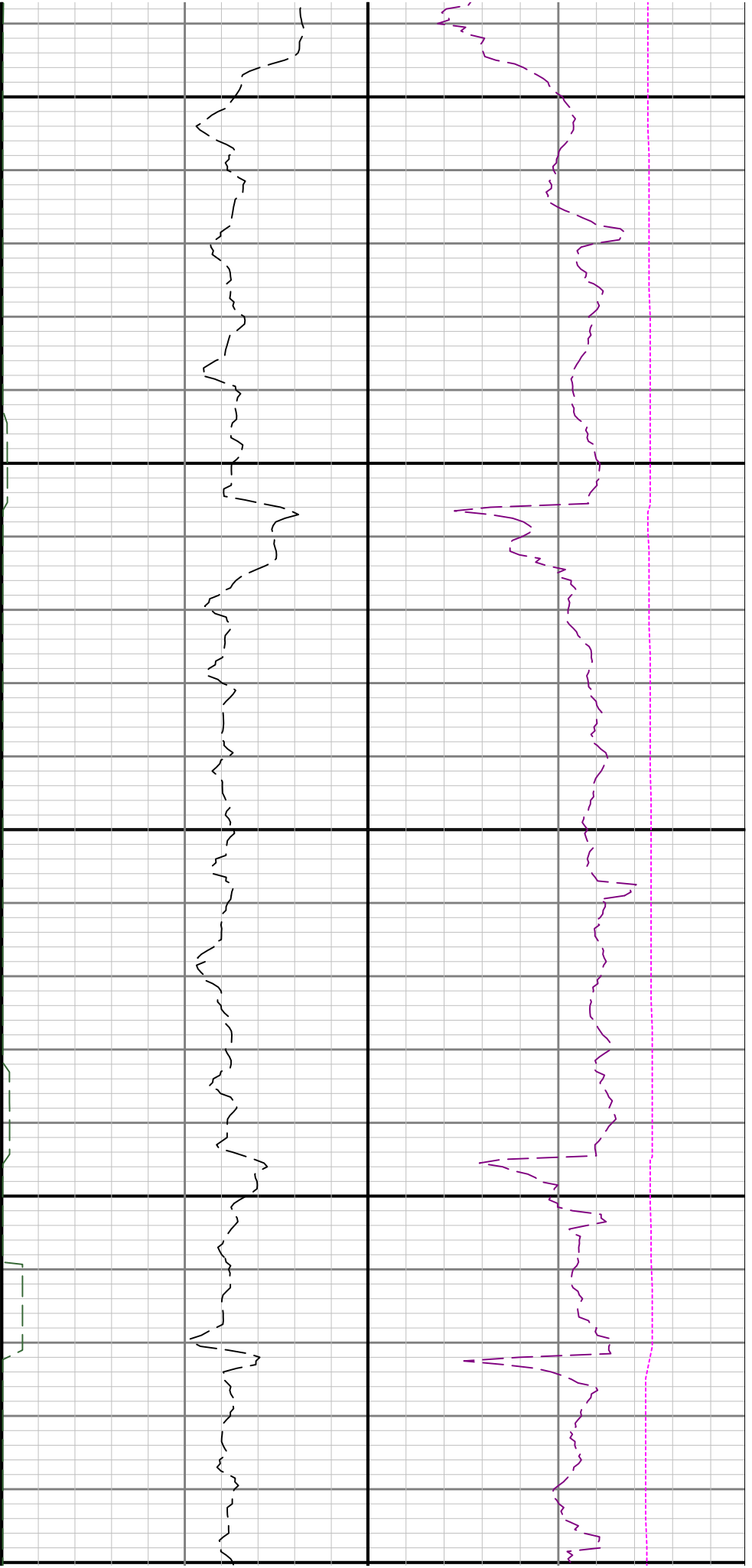
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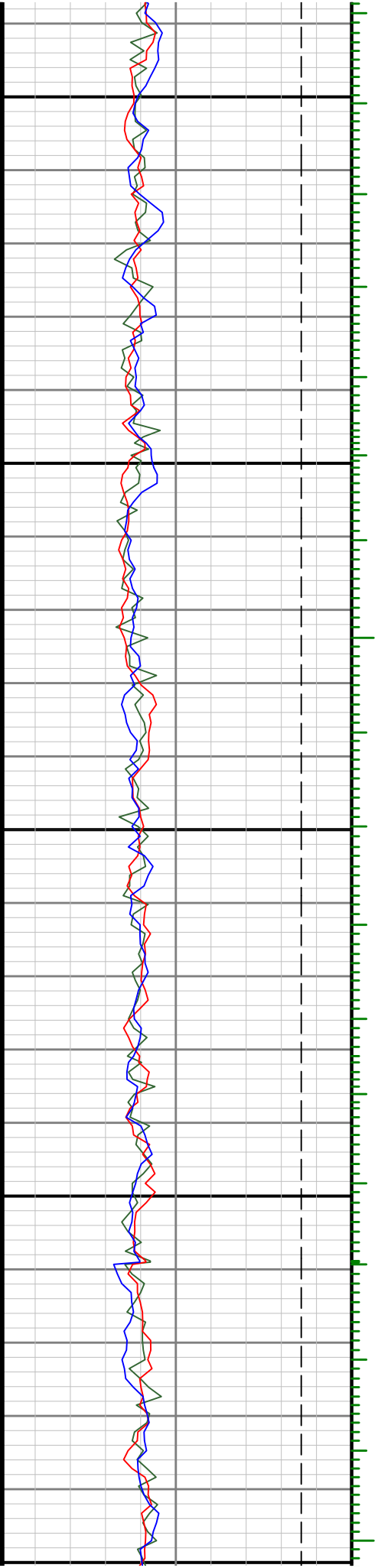


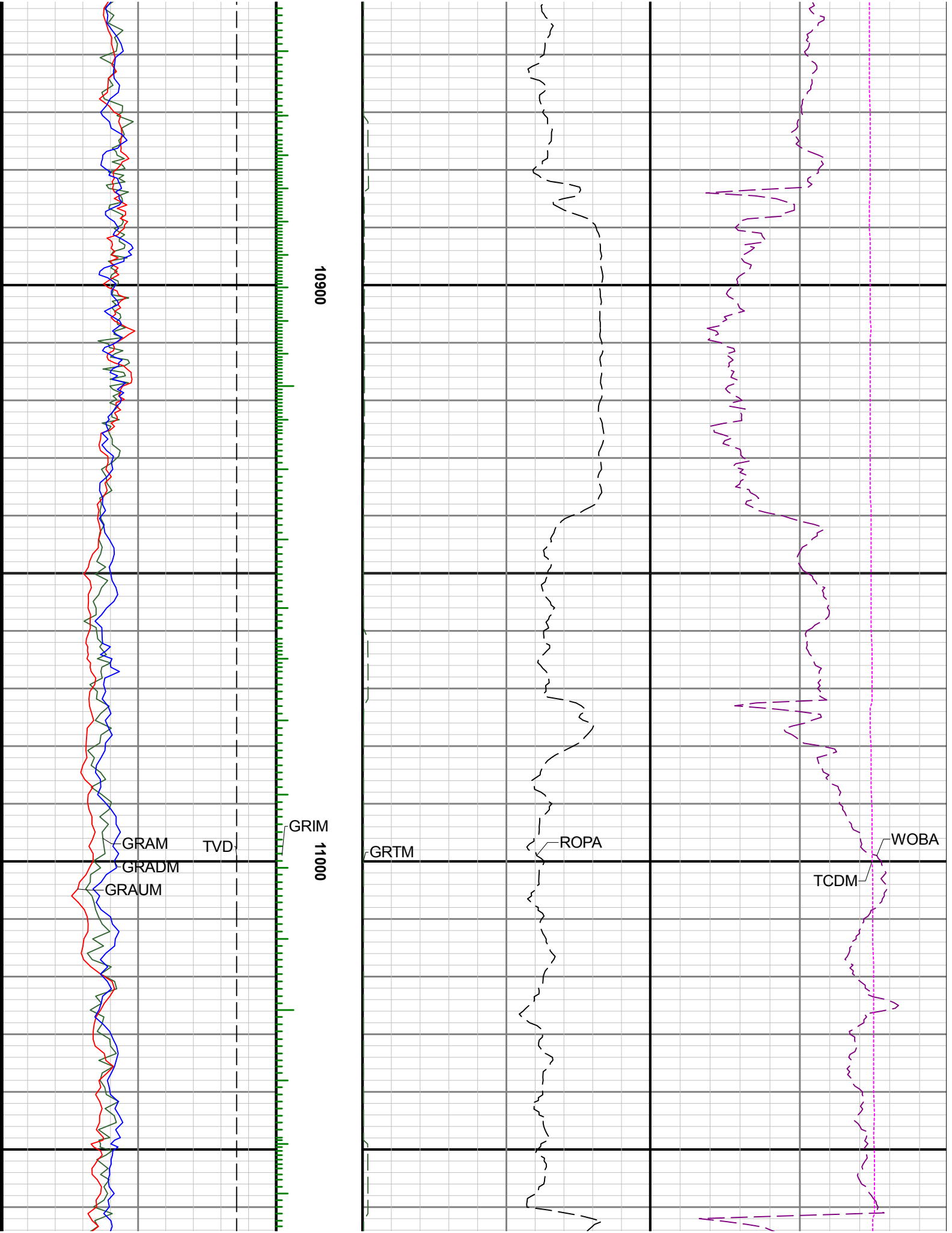


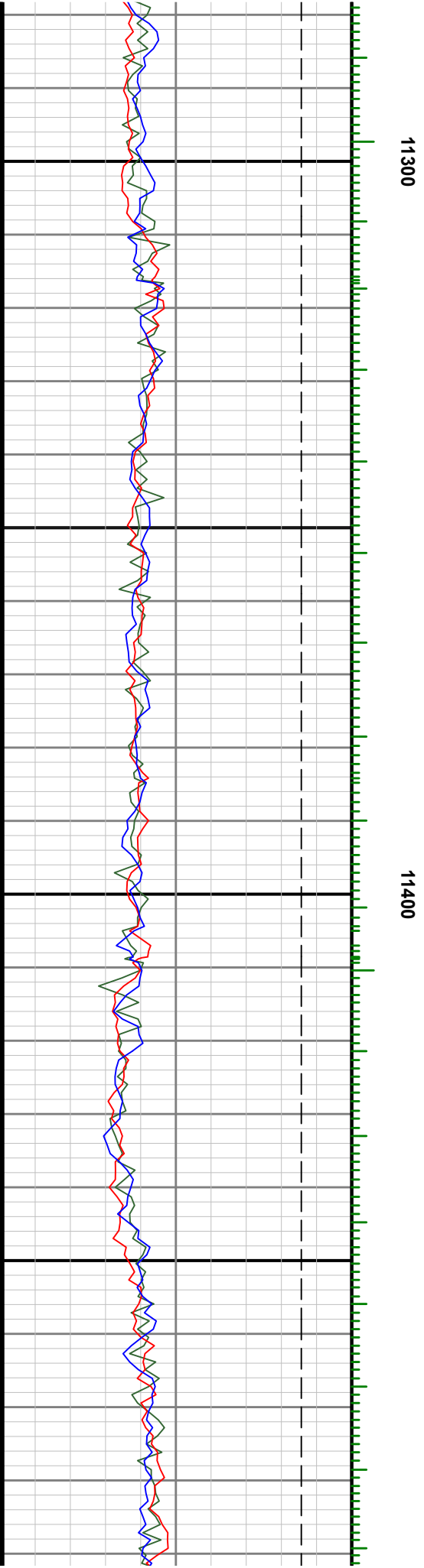
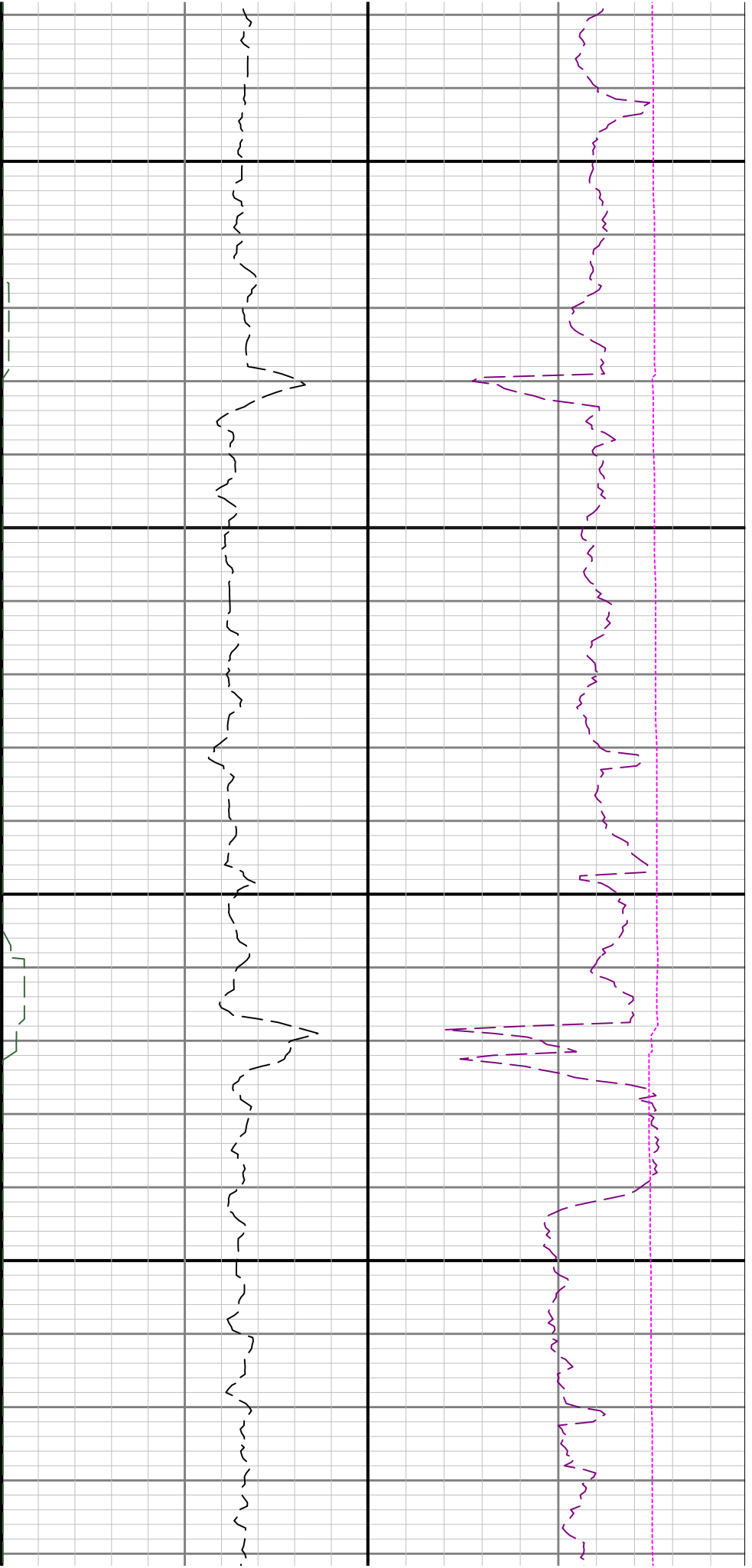


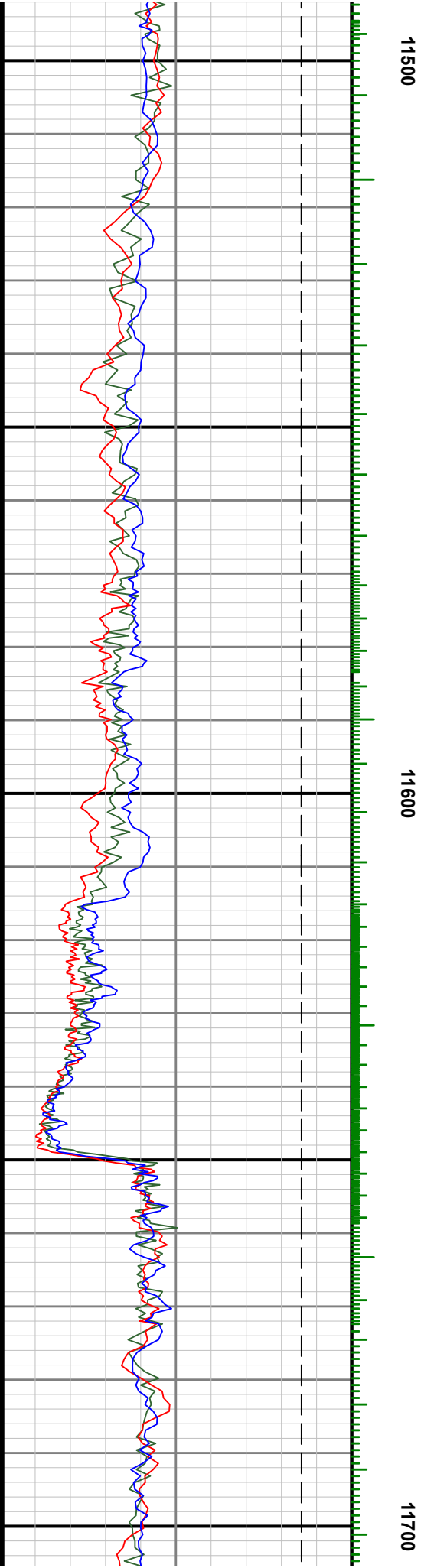
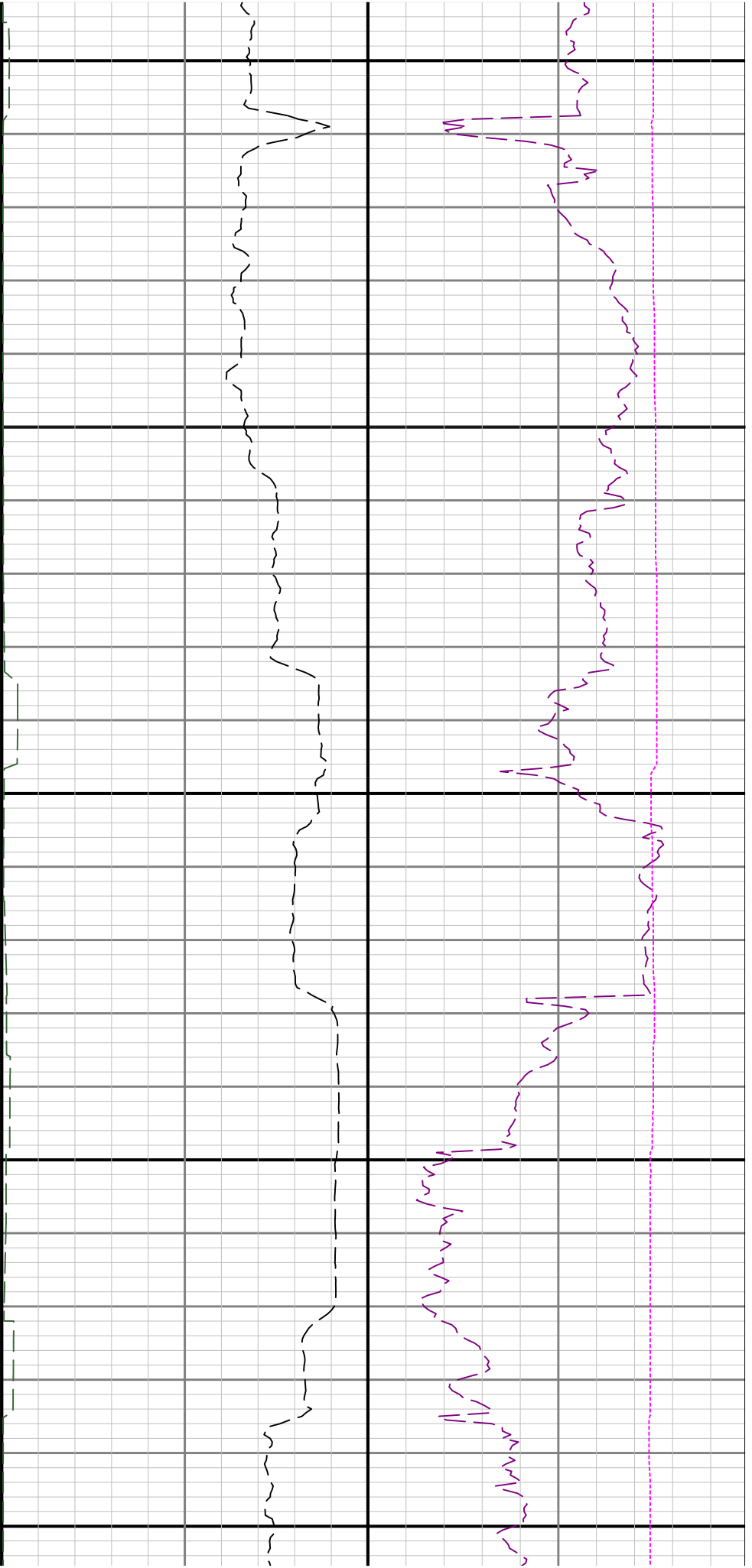
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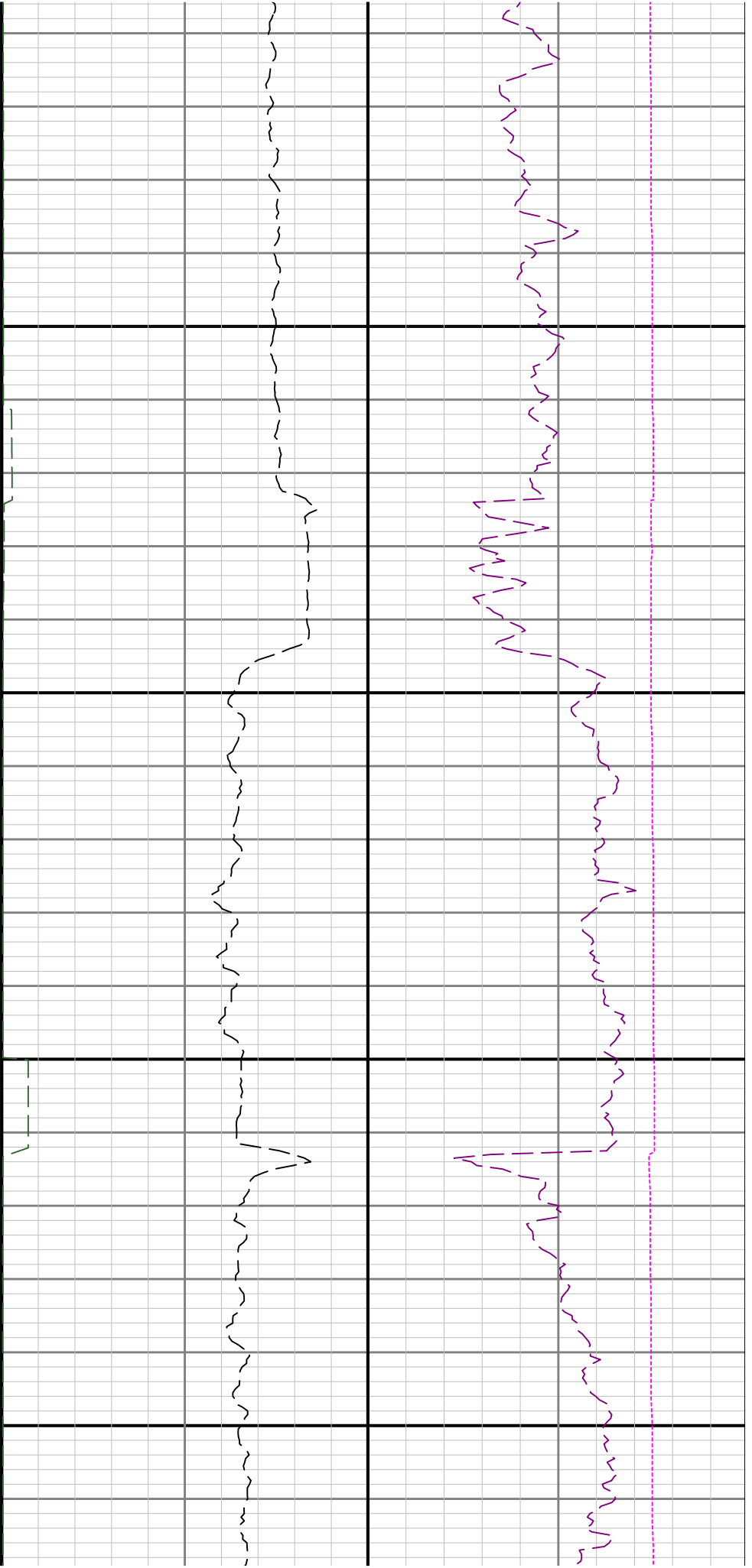
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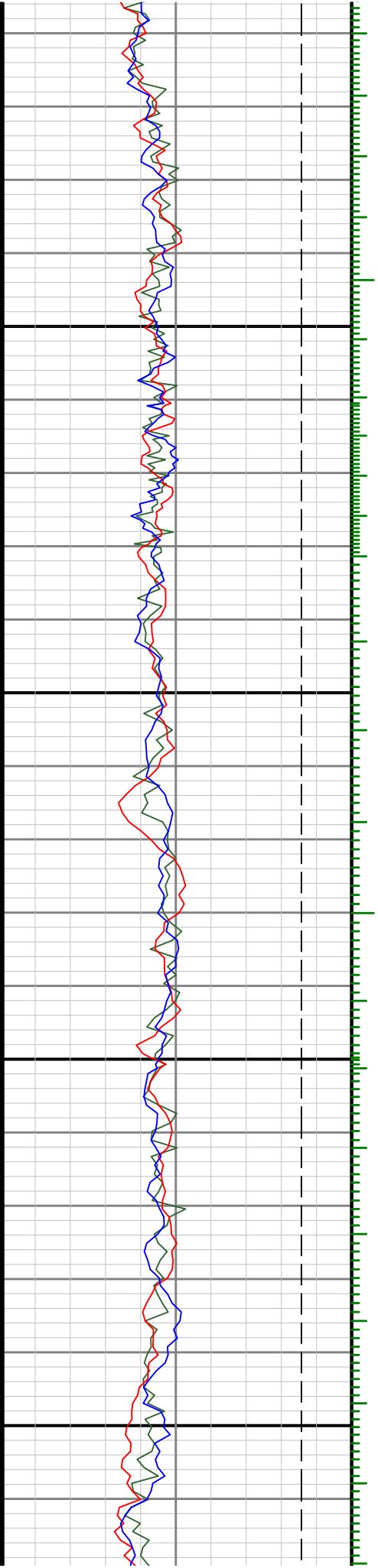


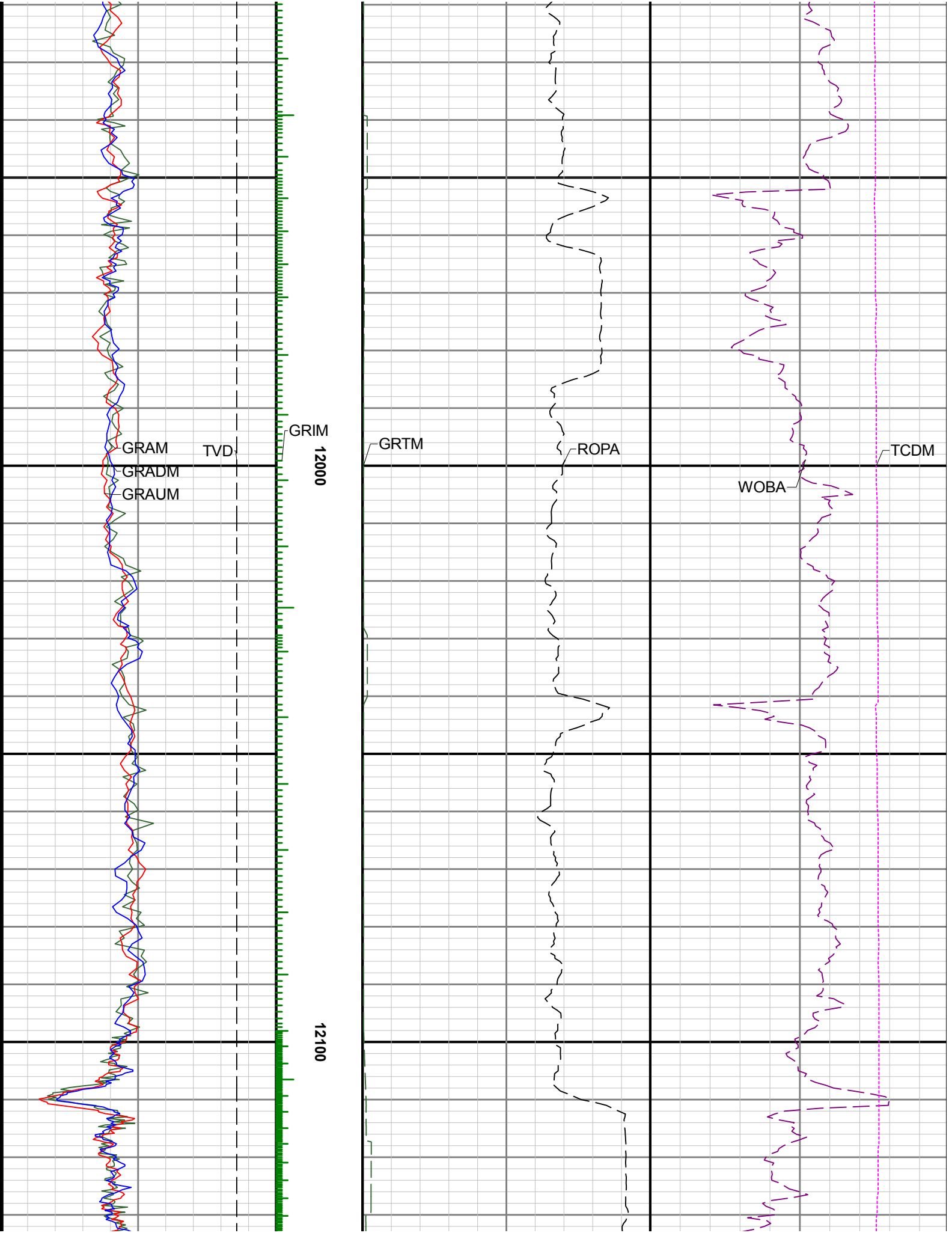


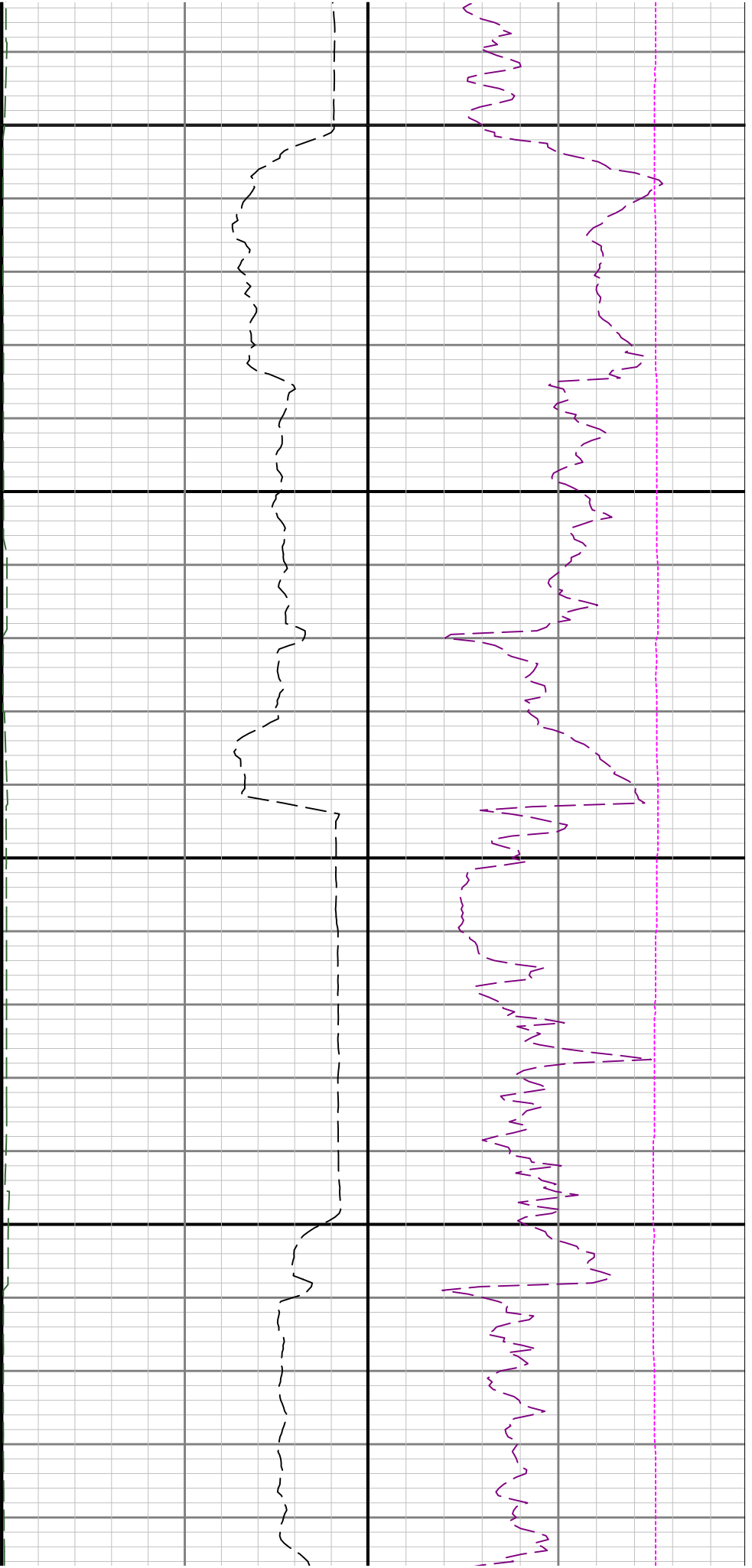


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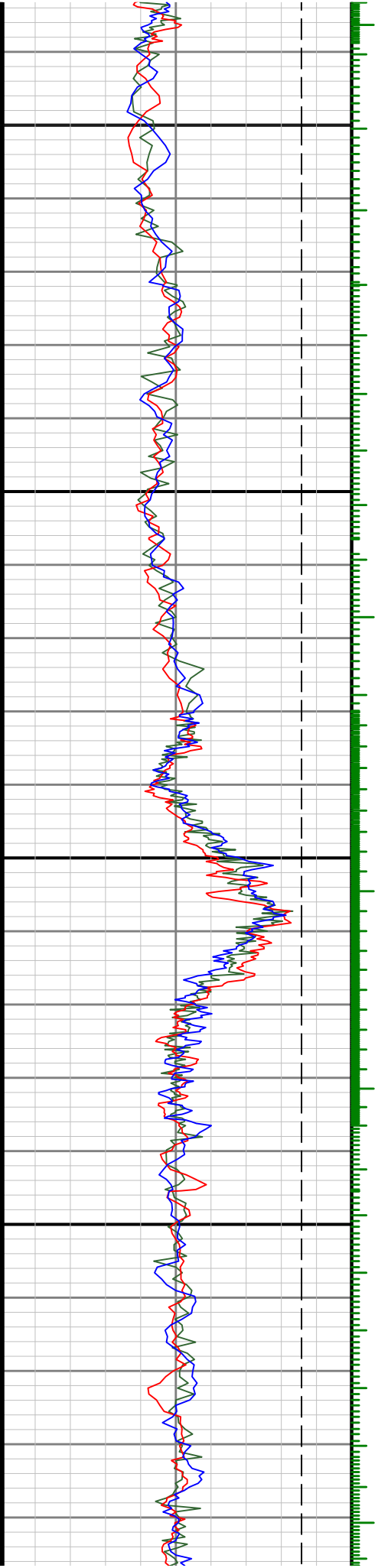


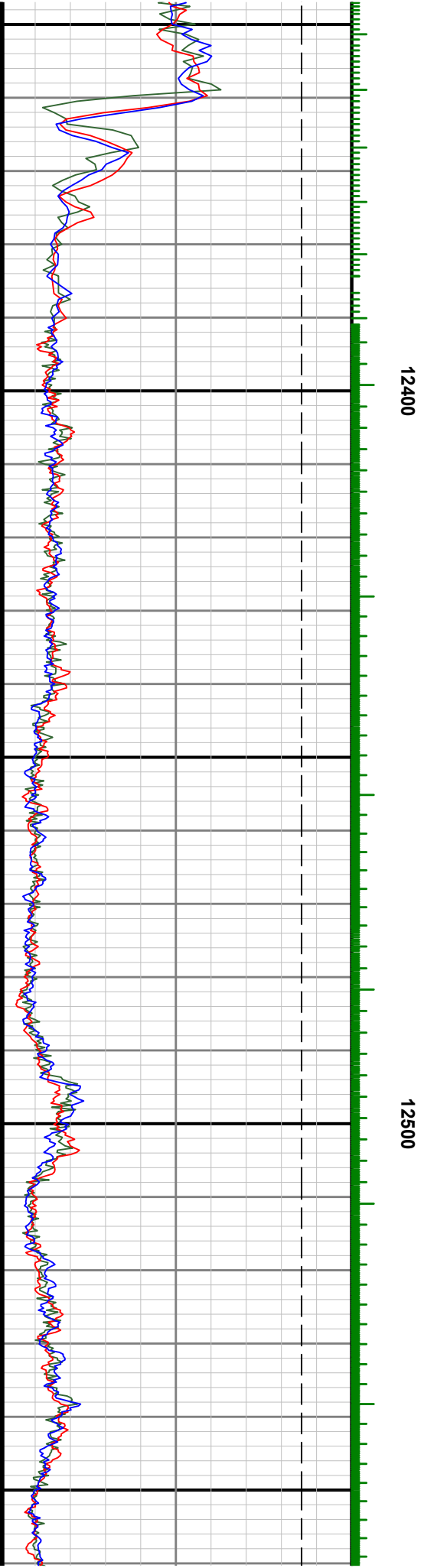


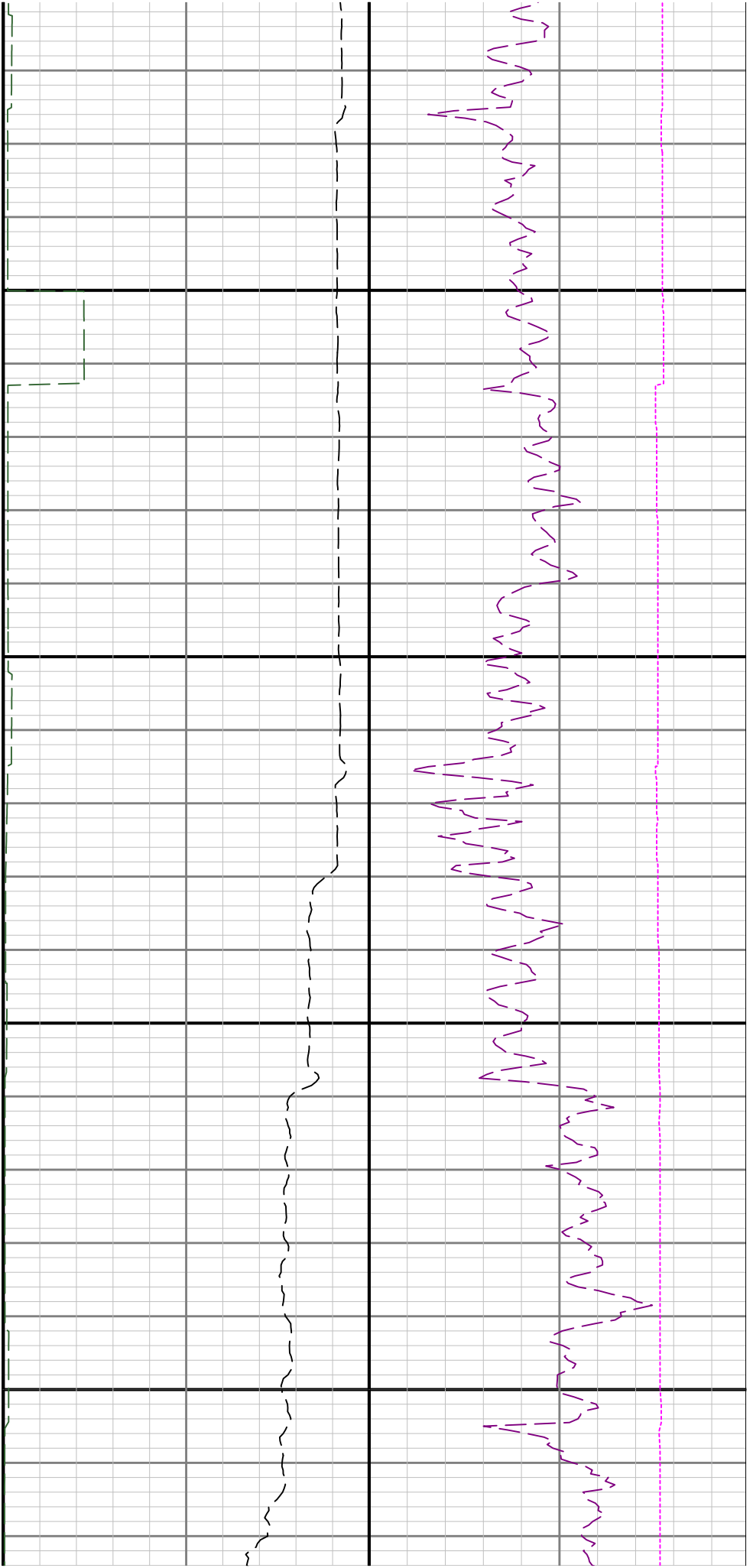


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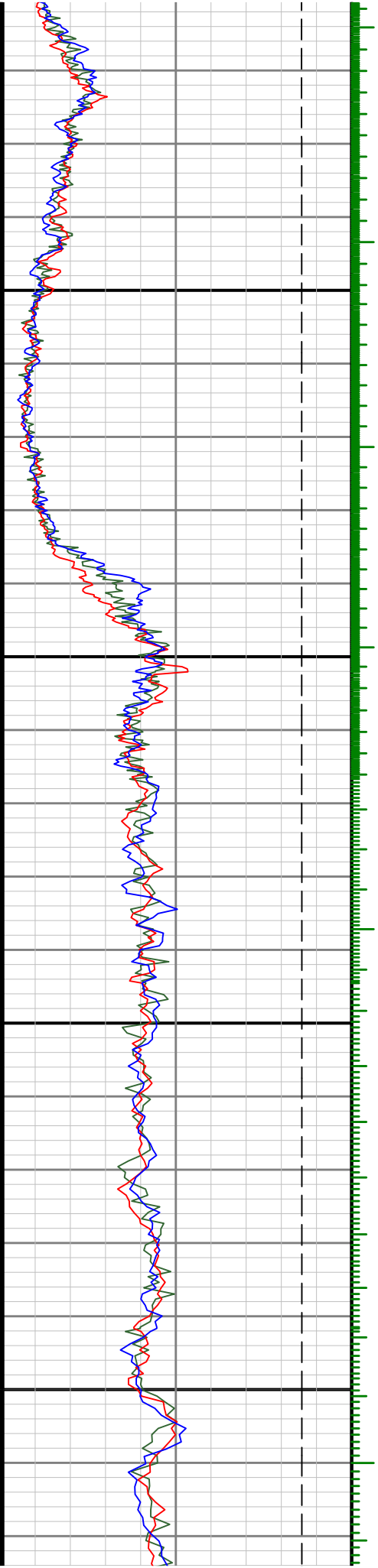


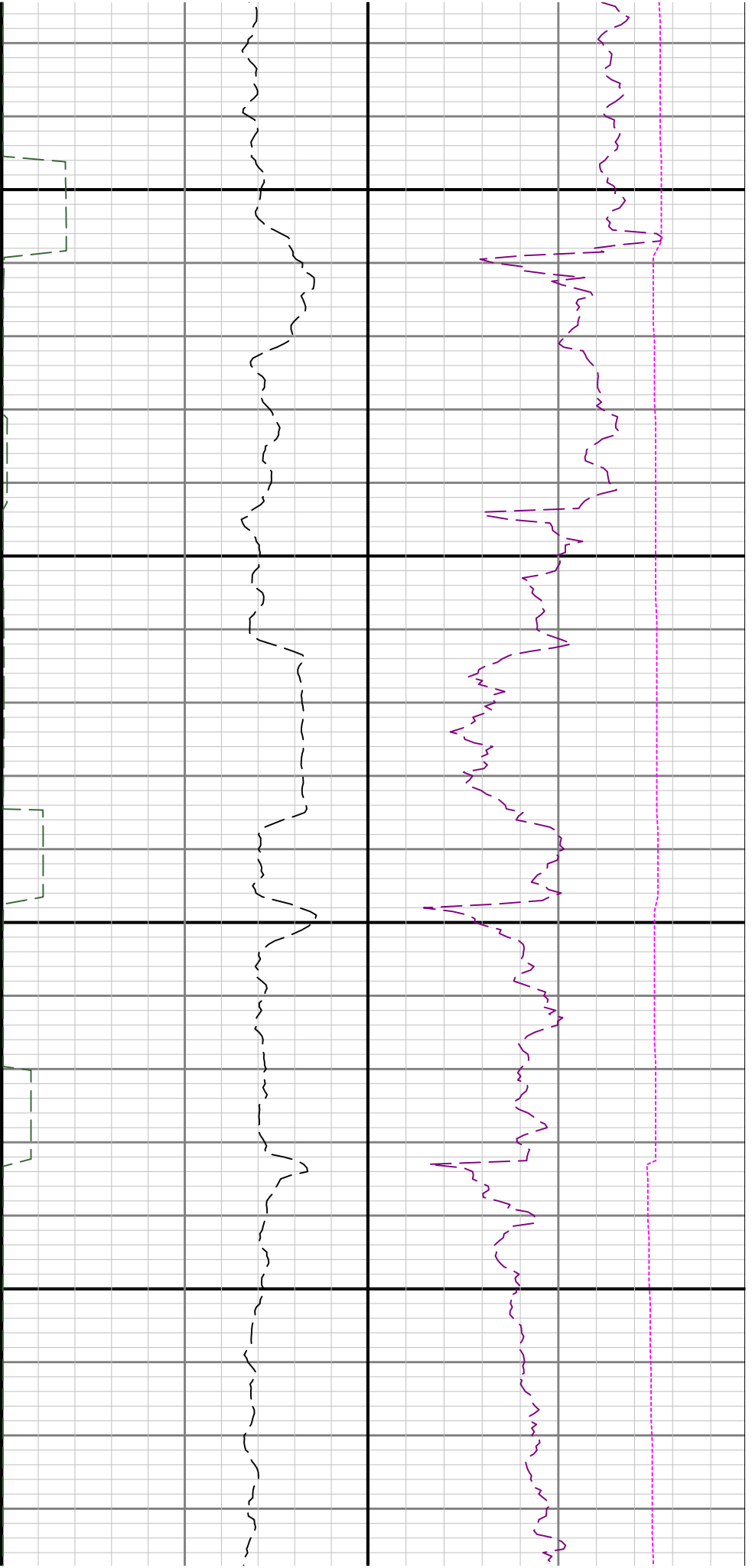




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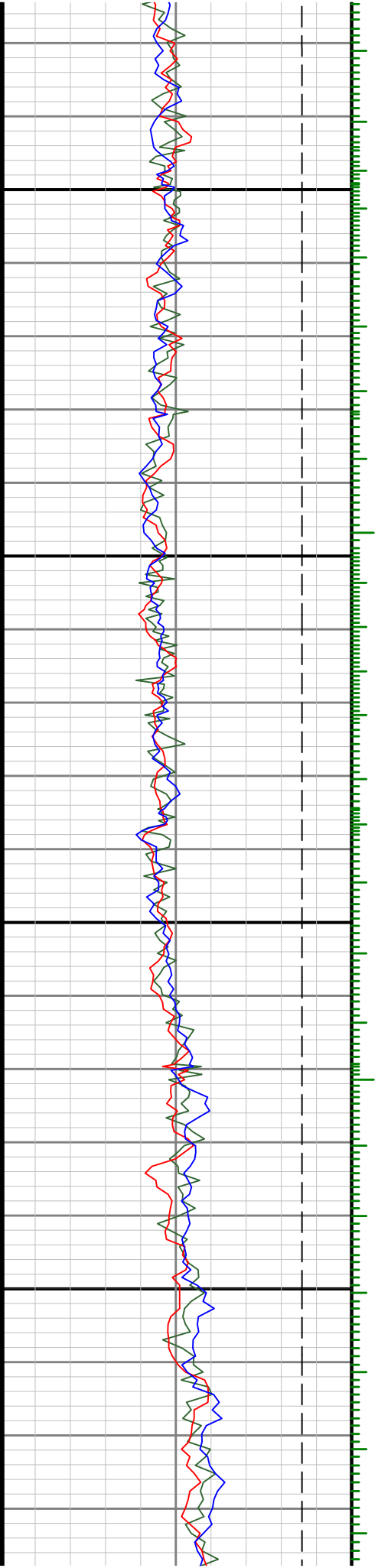
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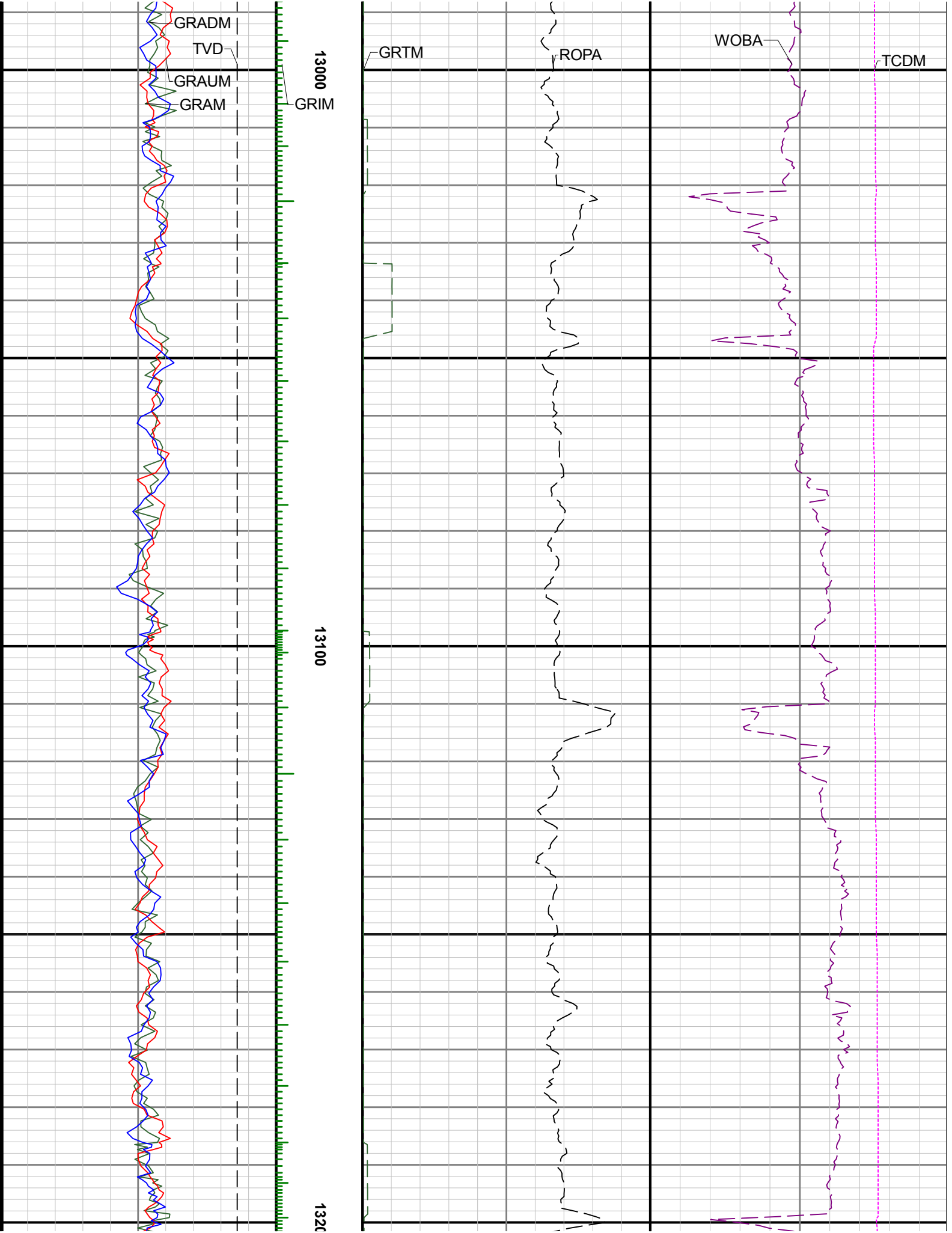


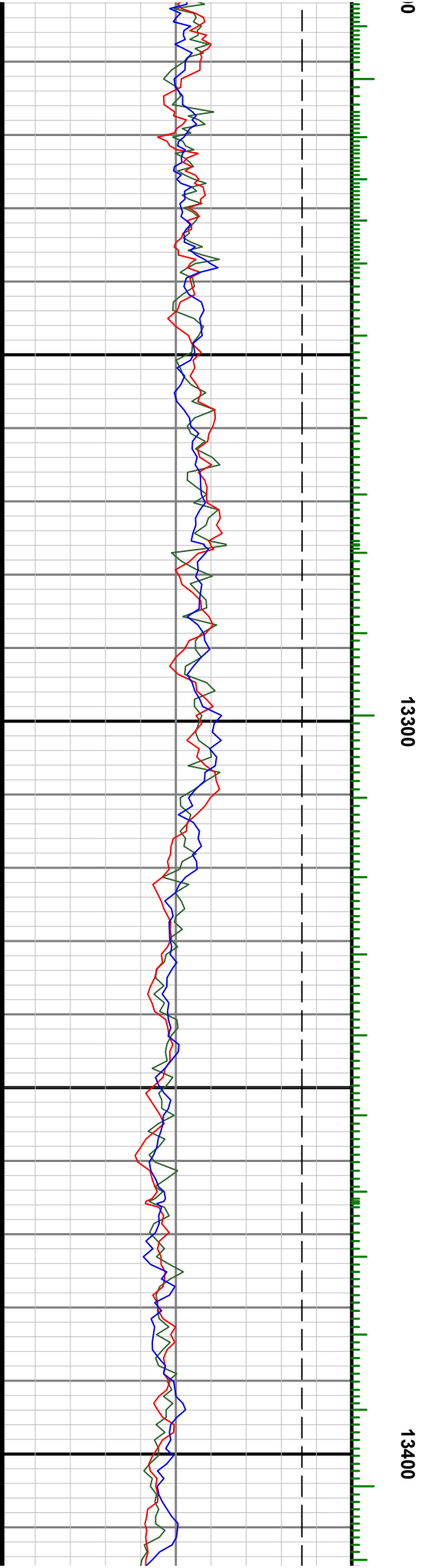
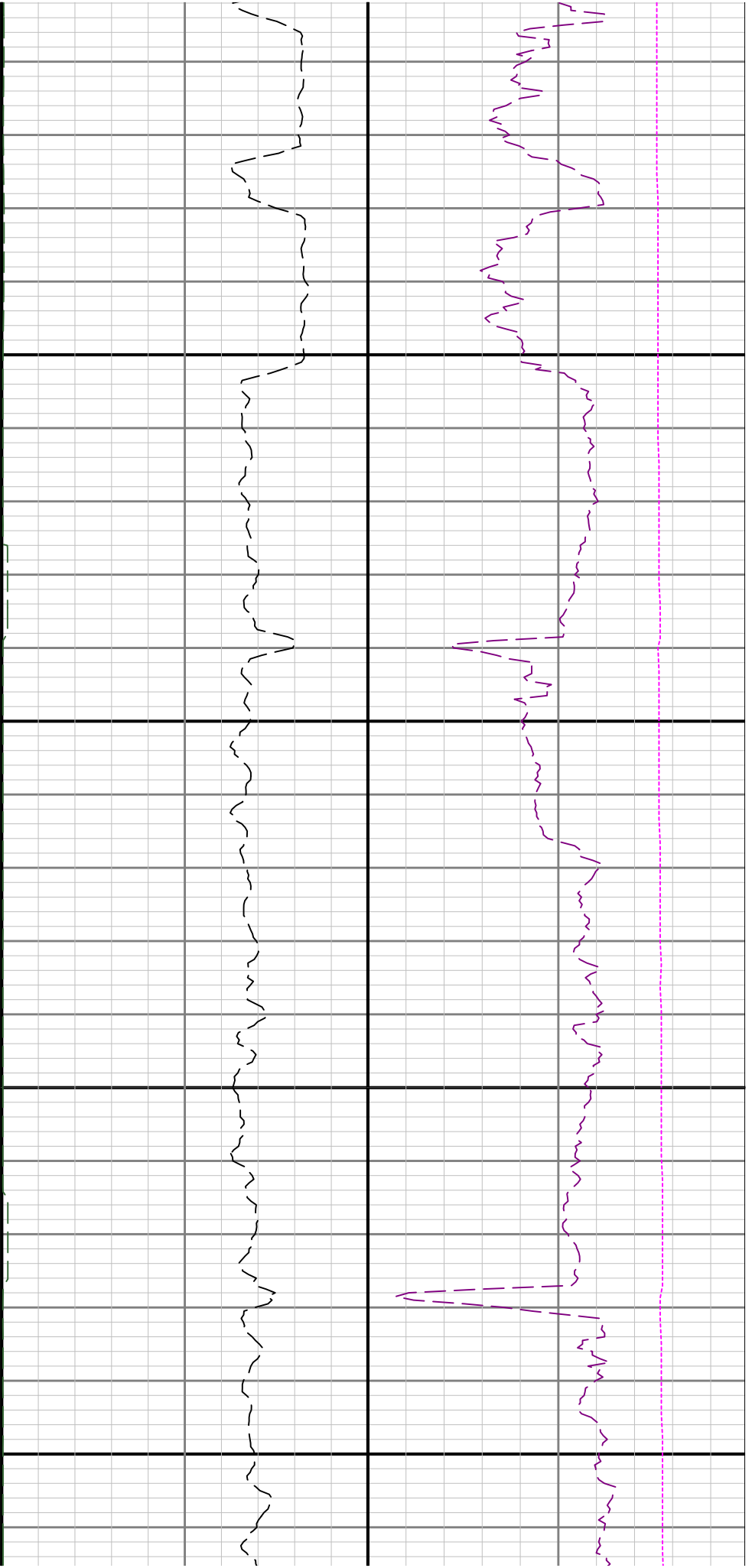


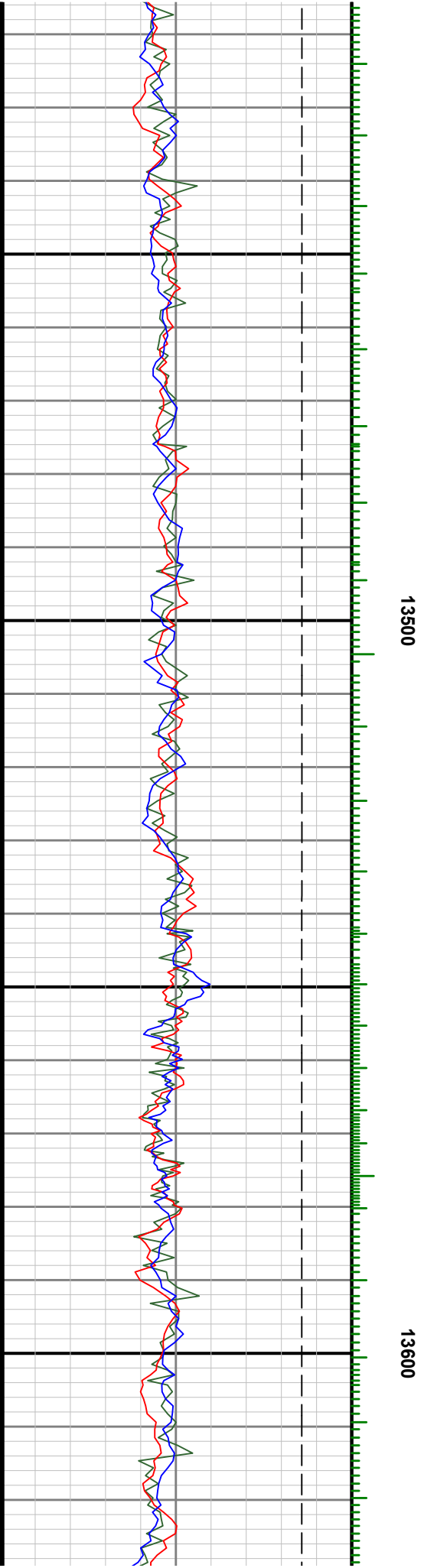
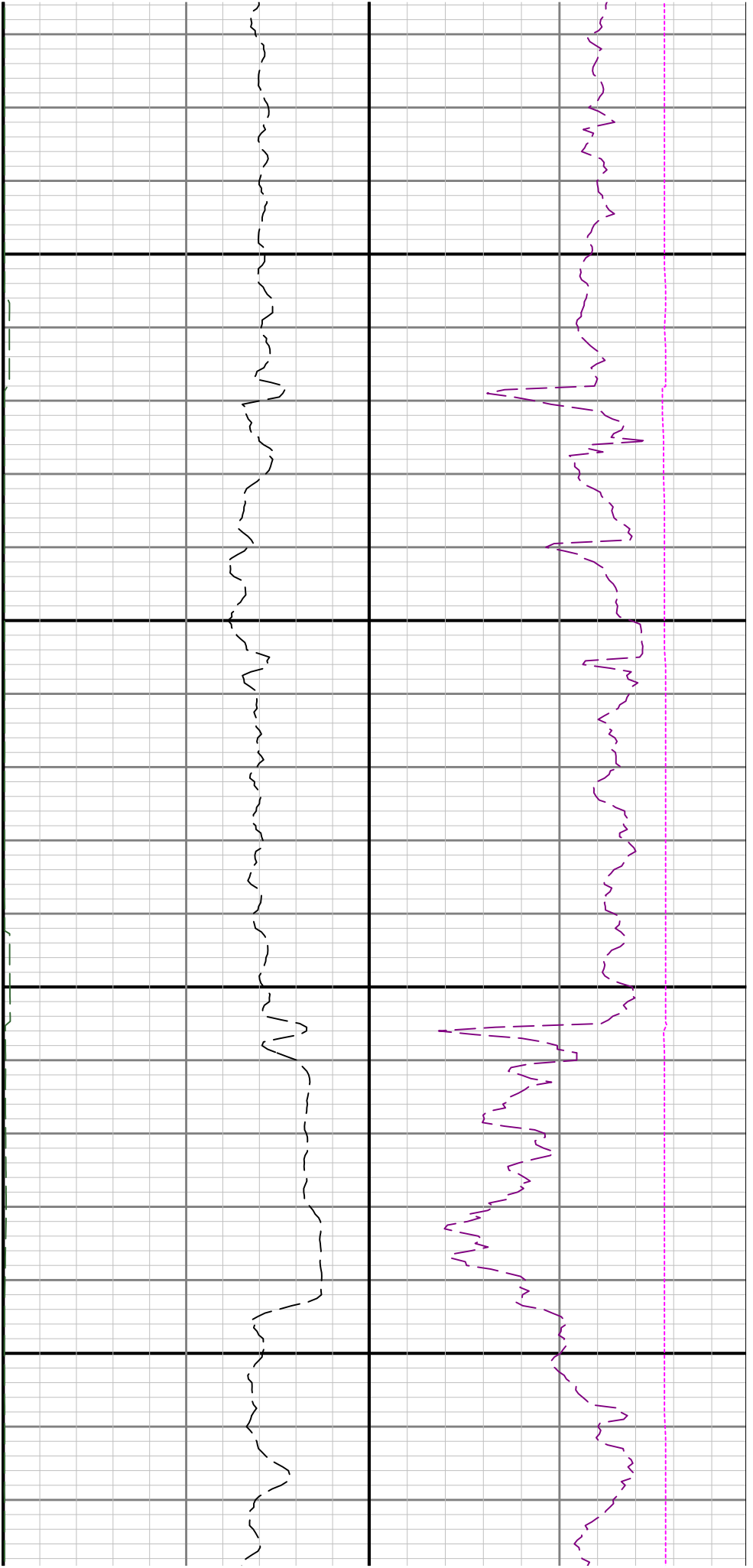
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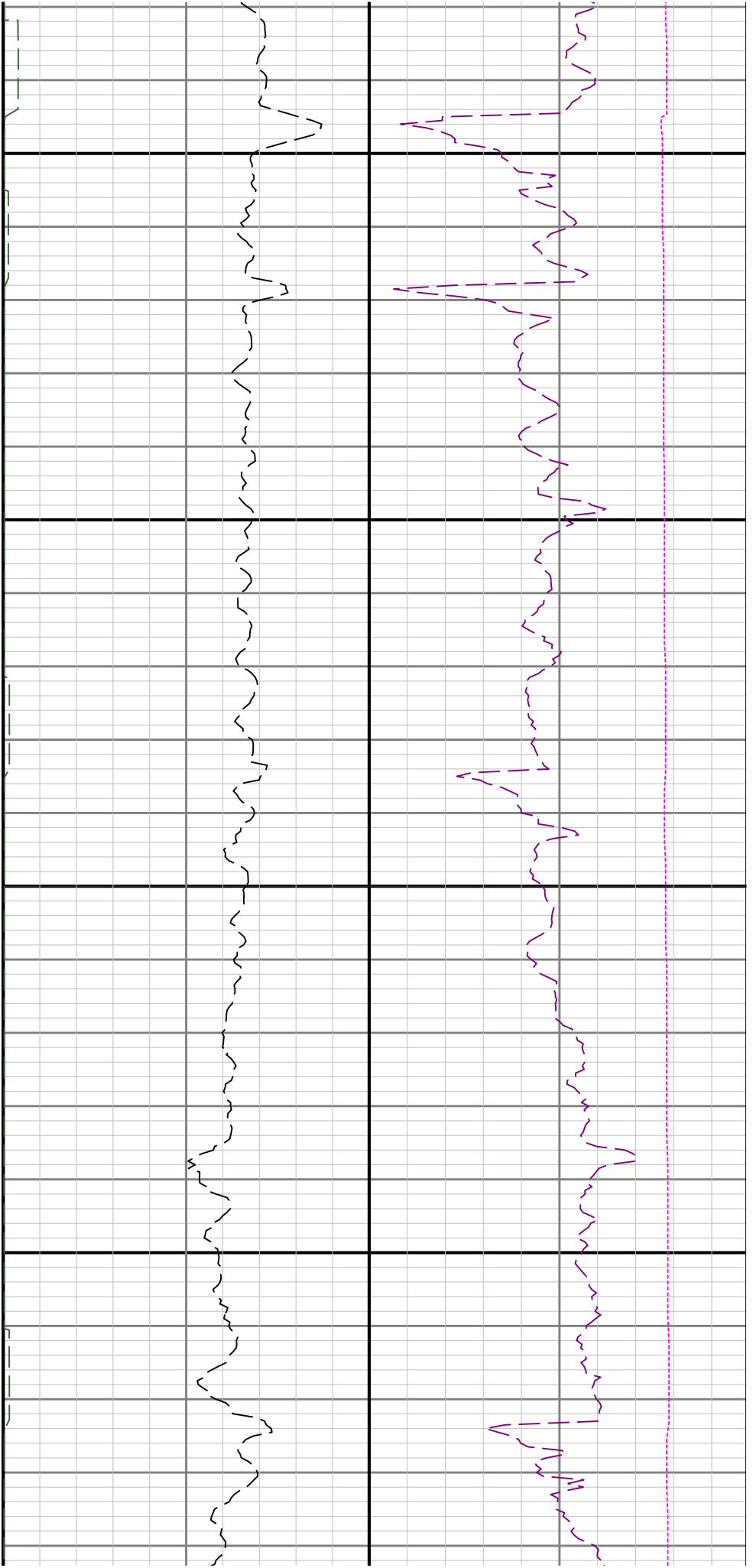
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13700

13800

