



Gamma Ray

Scale: Company: SRC Energy

1:240 MD

Well: Falken 31N-14B-S

Depth Reference: Field: Weld County

Driller's Depth County: Weld County Country: United States

State: Colorado

Status: Surface Location: 040° 30' 00.497" N Other Services:

Final Print

Latitude: 040° 30' 00.497" N Longitude: 104° 44' 09.427" W

API No: 05-123-45121

Longitude: 104° 44' 09.427" W

Job ID: 8728797

SEC: 11 TWN: 6N RGE: 66W

Permanent Datum (P.D.): Ground Level Elevation: 4810.00 ft Elev KB: N/A

Log Measured From: Rig Floor Above P.D. 25.00 ft Elev DF: 4835.00 ft Elev GL: 4810.00 ft

Dates Interval Logged Magnetic Field Reference

Date From: 2017-12-11 Top: (ft) 1818.00 Azi Reference North: True Dip Angle: (deg) 66.92

Date To: 2017-12-14 Bottom: (ft) 13368.09 Total Magnetic Field Strength: (nT) 52594

Spud Date: 2017-09-04 Mag to Reference North Correction: (deg) 7.36 E

Borehole Record

Casing Record

Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
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13.500	40.00	1818.00	9.625	36.00		1805.00
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8.500	1818.00	13368.00				
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Mud Record

Deviation Record

Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc   Az (Start)	Inc   Az (End)
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Oil Based Mud		0.00	13.500	1693.00	1.68   259.40	24.77   154.51
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			8.500	11550.09	24.77   154.51	89.94   270.06
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Acquisition System Software Version

Other

Baker Hughes Cadence

RT4.1 4.1.7763.3

PlotStudio

Rig: PD562 Contractor: Precision Drilling District: RMA Unit: D&E

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Log Run Summary

Run No	Bit Run	Bit Size	Bit Type	Bit Gauge	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours
						Top	Bottom	From	To	Start Logging	End Logging	

	No.	(in)		Length (in)		(ft)	(ft)	(ft)	(ft)			(h)
2	2	8.500	PDC	3.00	Steerable	1818.00	6391.00	1818.00	6452.00	2017-12-11 06:23	2017-12-12 09:23	24.38
3	3	8.500	PDC	3.00	AutoTrak Curve	6439.00	13355.00	6452.00	13368.00	2017-12-12 21:52	2017-12-14 16:31	36.53

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Garrett Gerdson	2017-12-11	2017-12-15						

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+ (%)
2017-12-11 04:00	2	1805.00	Oil Based Mud	10.1	27	N/A	10.0	70/30	Active Pit	40000	0.00
2017-12-11 16:00	2	4455.00	Oil Based Mud	10.0	50	N/A	8.0	72/28	Active Pit	40000	0.00
2017-12-12 04:00	2	5985.00	Oil Based Mud	10.0	50	N/A	8.0	71/29	Active Pit	39000	0.00
2017-12-13 03:00	3	7225.00	Oil Based Mud	10.0	48	N/A	8.5	72/28	Active Pit	40000	0.00
2017-12-14 03:00	3	10412.00	Oil Based Mud	10.1	51	N/A	10.0	71/29	Active Pit	35000	0.00
2017-12-15 03:00	3	13368.00	Oil Based Mud	10.2	56	N/A	10.0	72/28	Active Pit	37000	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	NaviGamma	12366174	Gamma (single)	8.61	60.69	6.750	3.250
2	NaviGamma	12366174	VSS	11.11	63.19	6.750	3.250
2	NaviGamma	12366174	Directional (mag)	11.11	63.19	6.750	3.250
3	ATC_SU	12161973	Near Bit VSS	5.93	6.73	7.000	4.330
3	ATC_SU	12161973	Near Bit Inclination	5.93	6.73	7.000	4.330
3	ATC_MWD	14179563	Gamma (single)	2.76	12.90	7.000	3.250
3	ATC_MWD	14179563	Directional (mag)	12.27	22.41	7.000	3.250

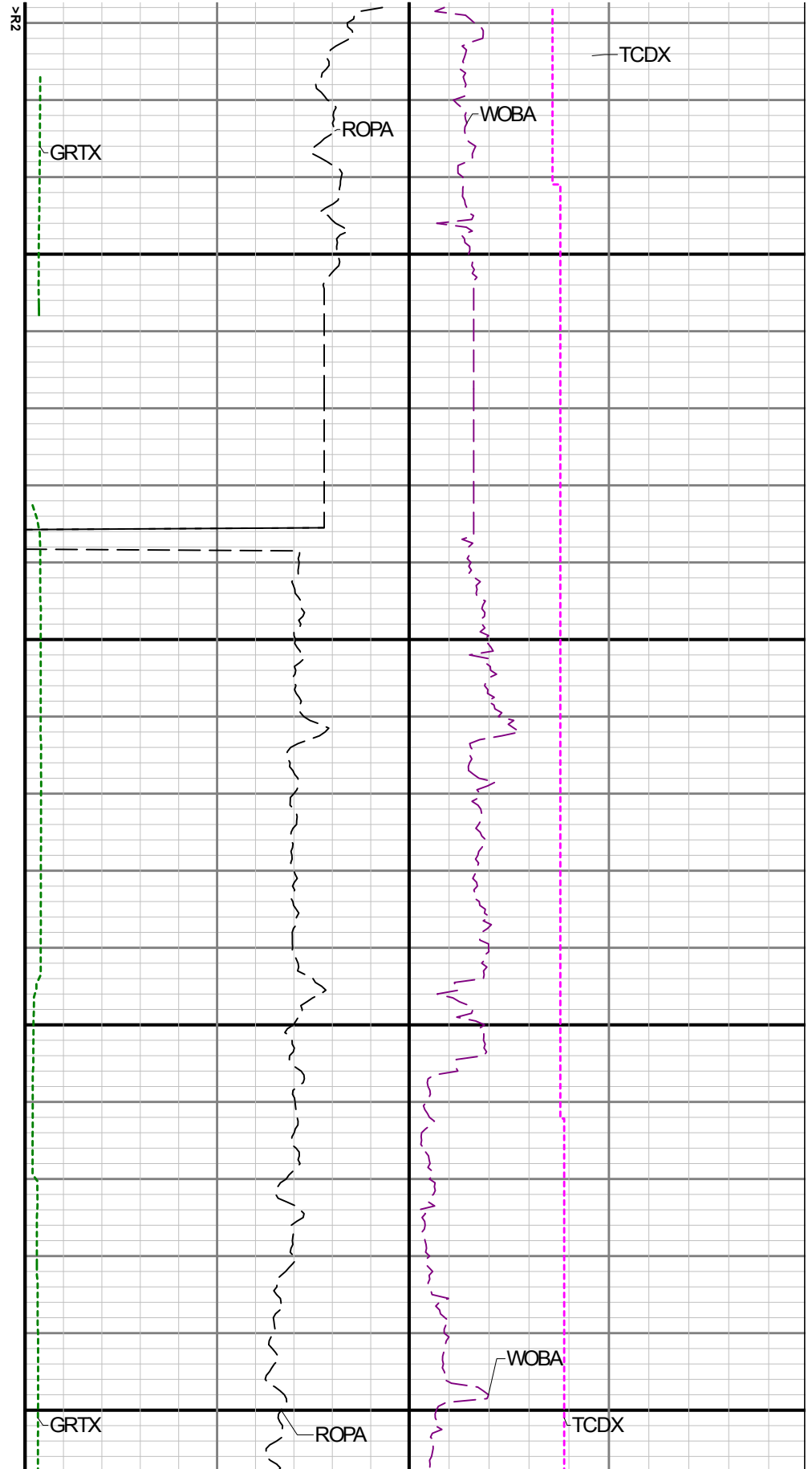
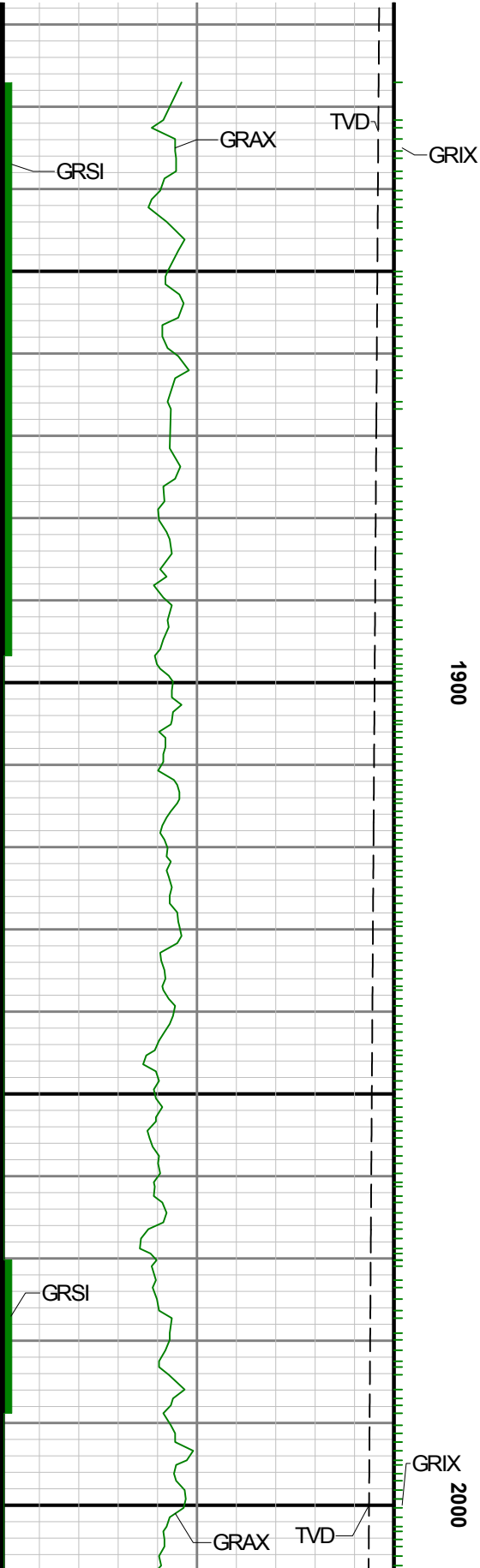
Service and Tool Mnemonics

Mnemonic	Name	Description
GAM	NaviGamma	Probe Based Gamma Module, NaviTrak Platform
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 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 1 utilized 8 inch NaviTrak service (Directional only) behind a 13 1/2 inch bit and steerable assembly from surface to 1818 feet MD (surface to 1744 feet TVD). No logging data was acquired during this run.
3	Baker Hughes LWD Run 2 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 1/2 inch bit and steerable assembly from 1818 to 6452 feet MD (1744 to 5923 feet TVD).
4	Baker Hughes LWD Run 3 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 1/2 inch bit and rotary steerable assembly from 6452 to 13368 feet MD (5923 to 7098 feet TVD).

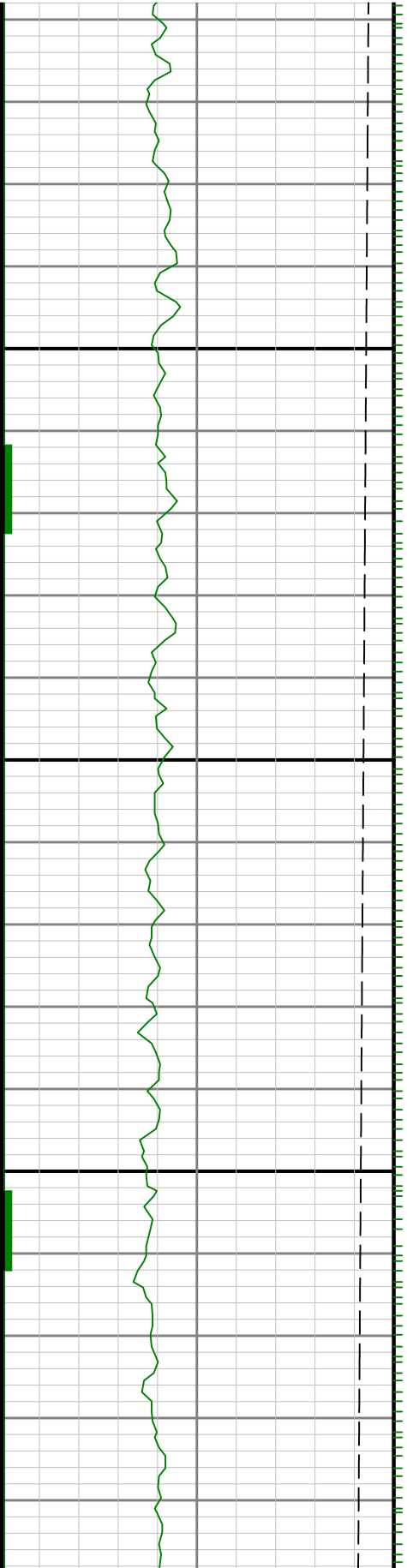


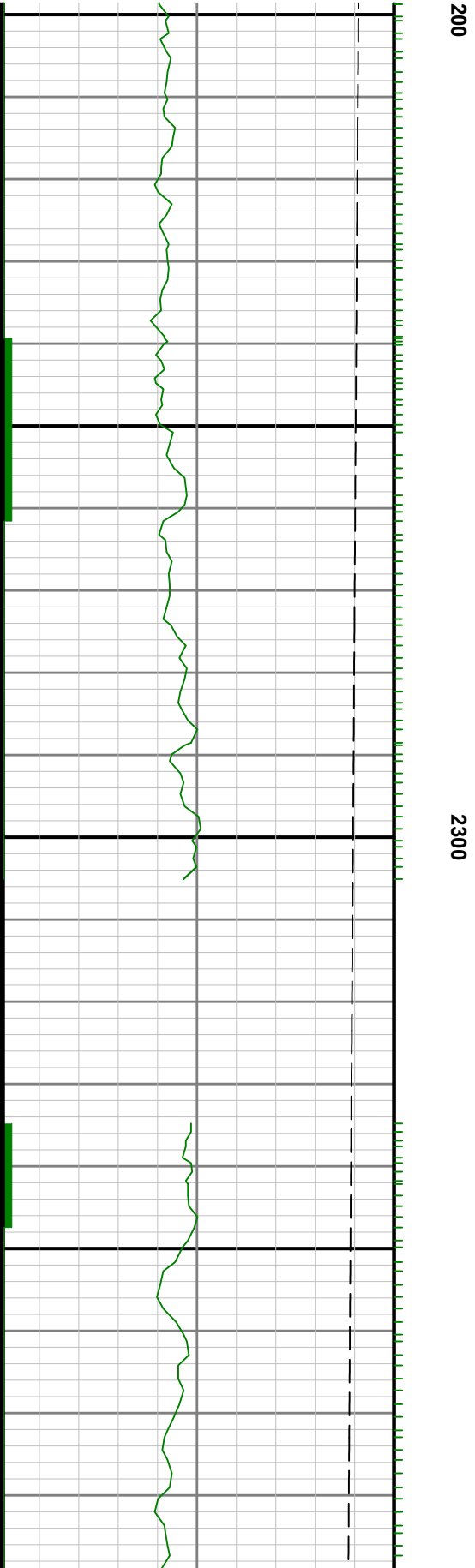
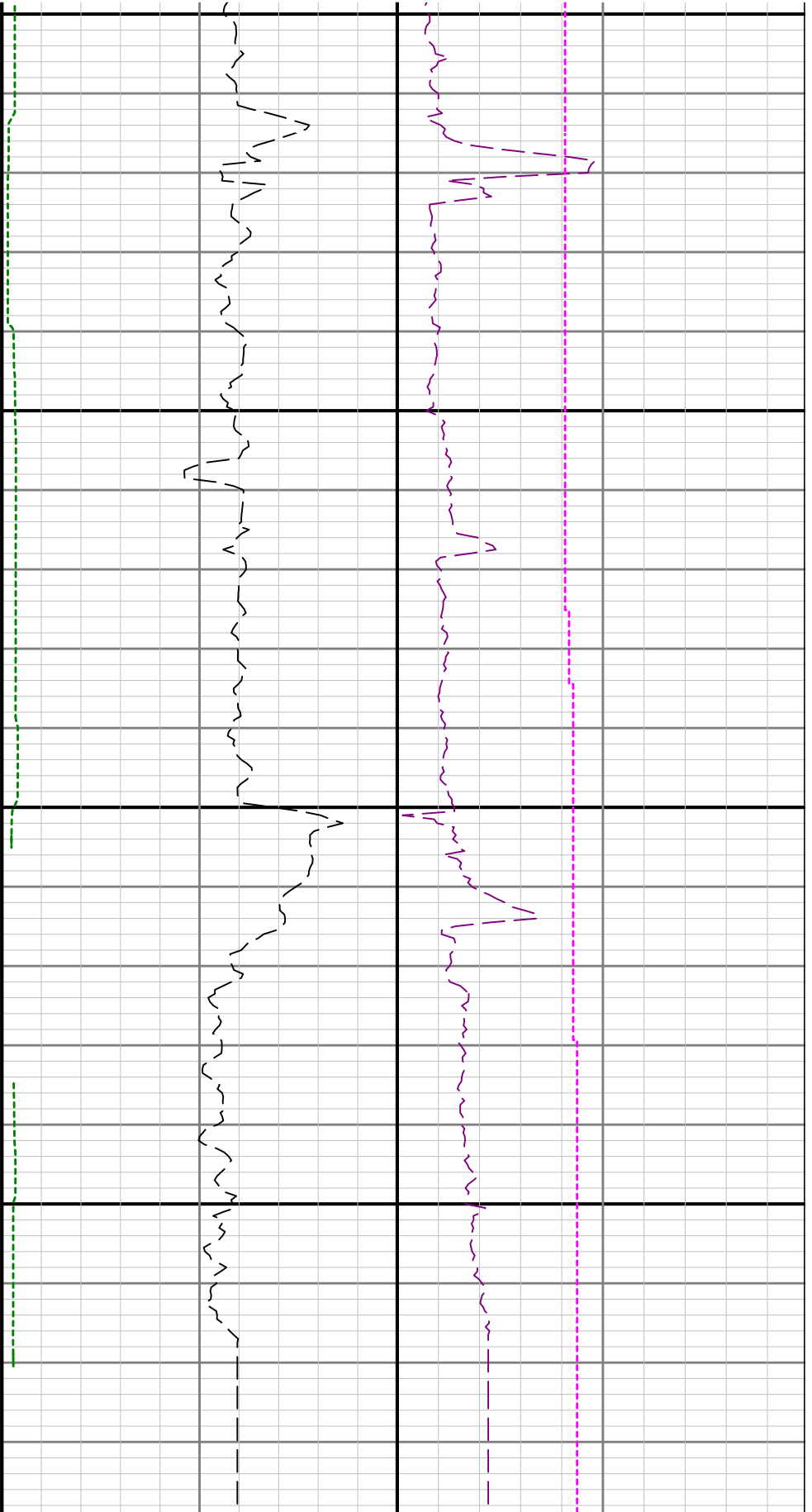


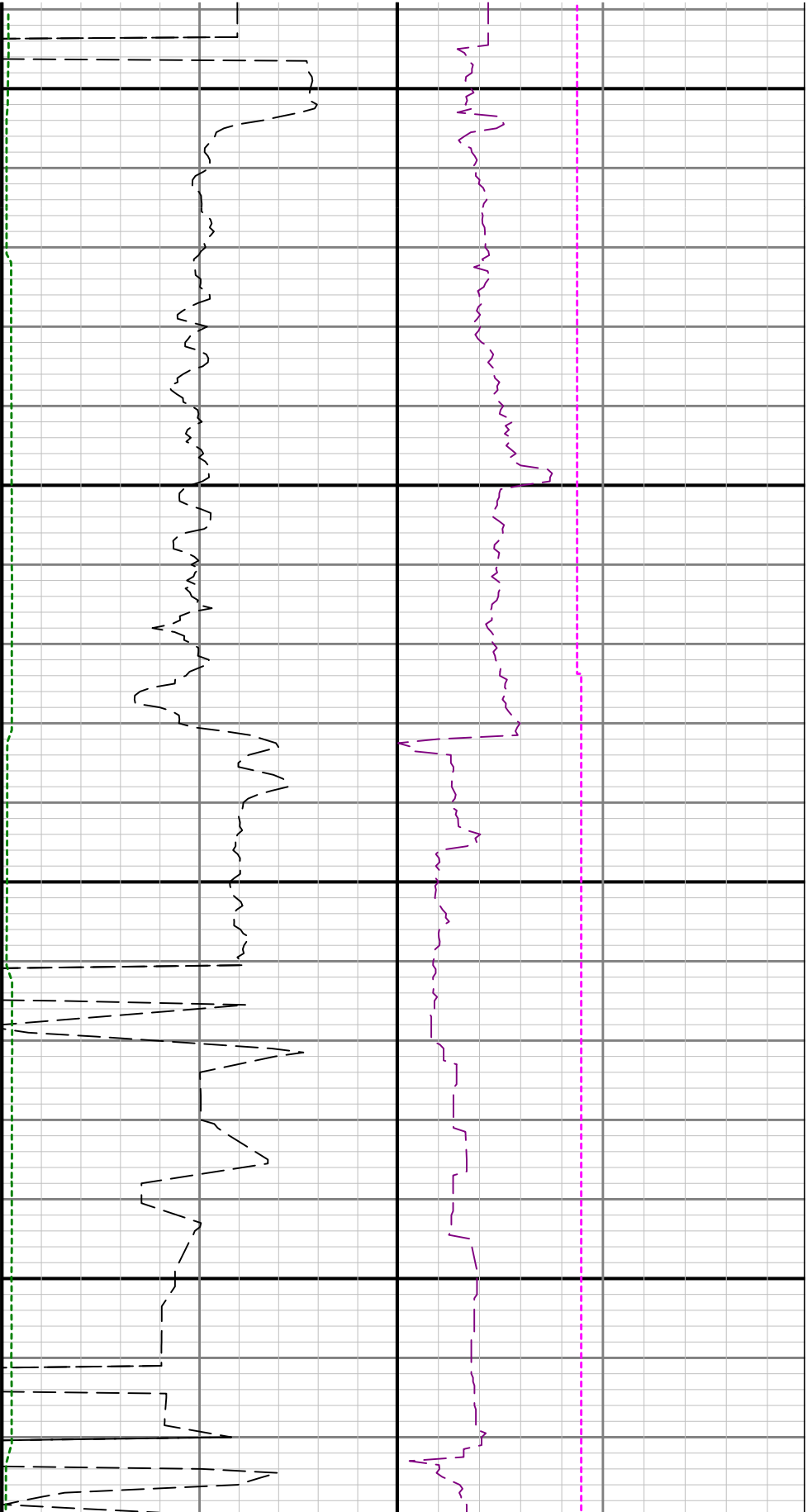


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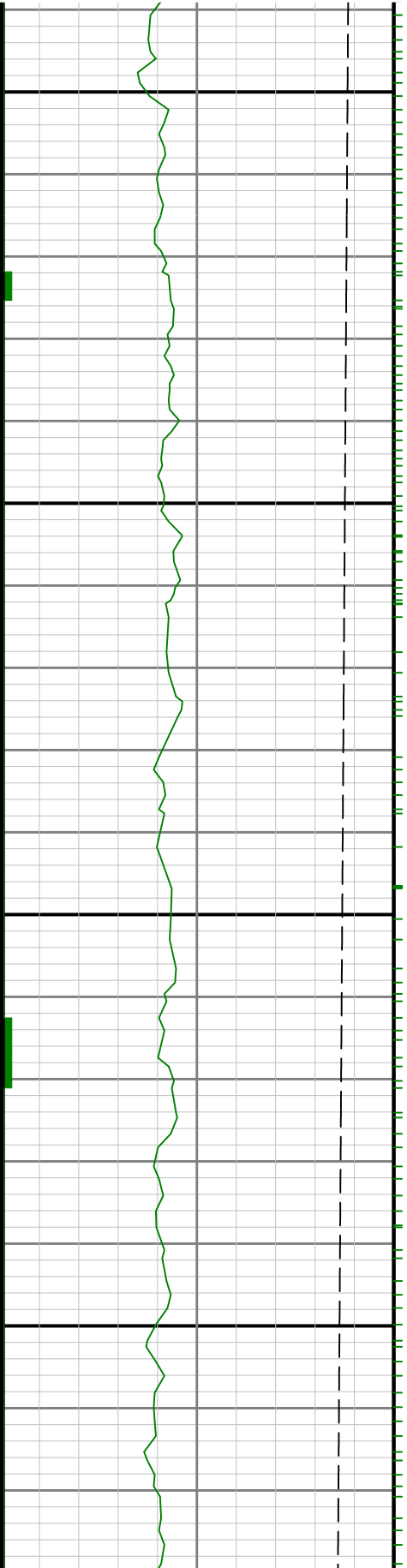


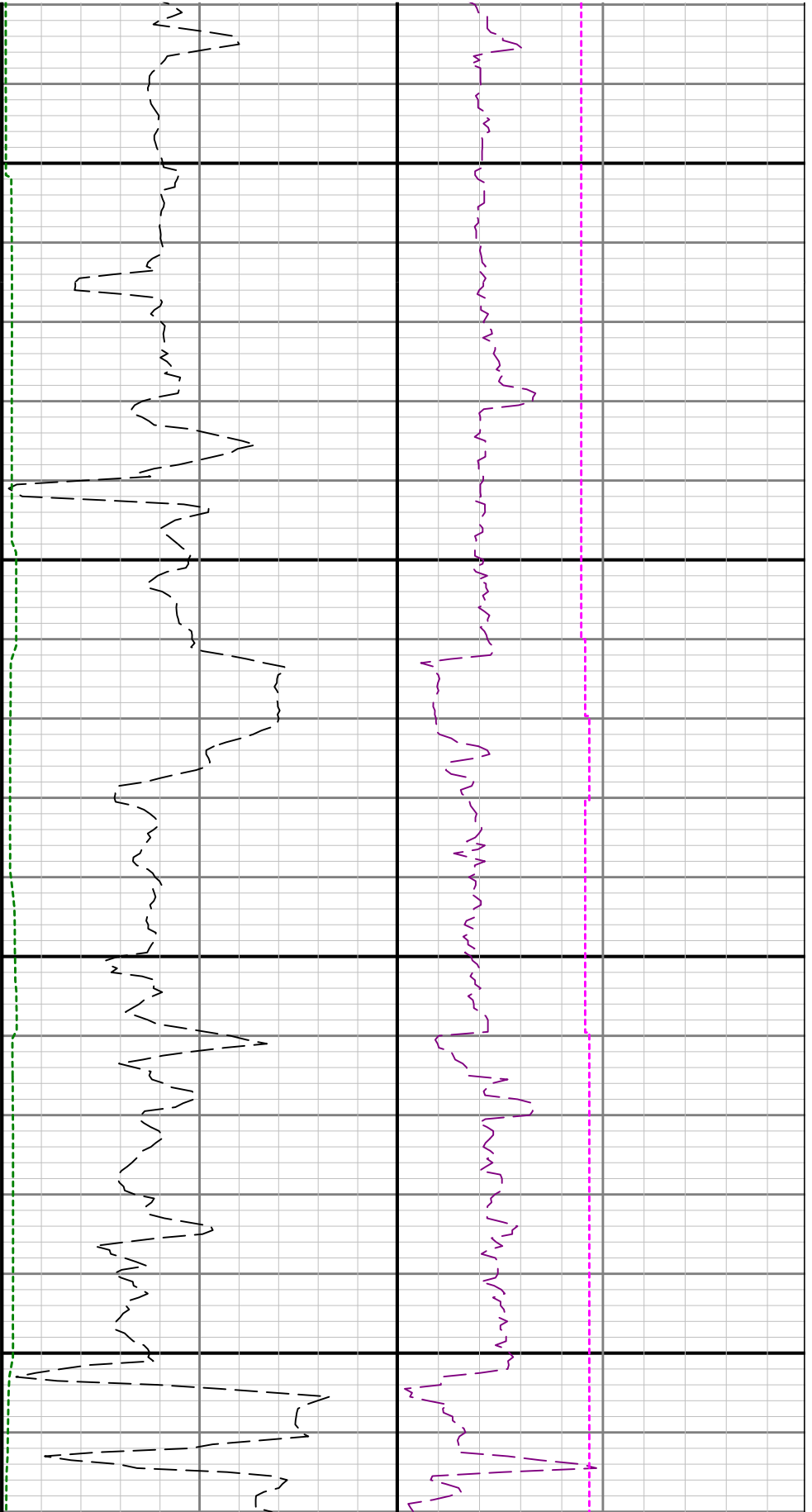




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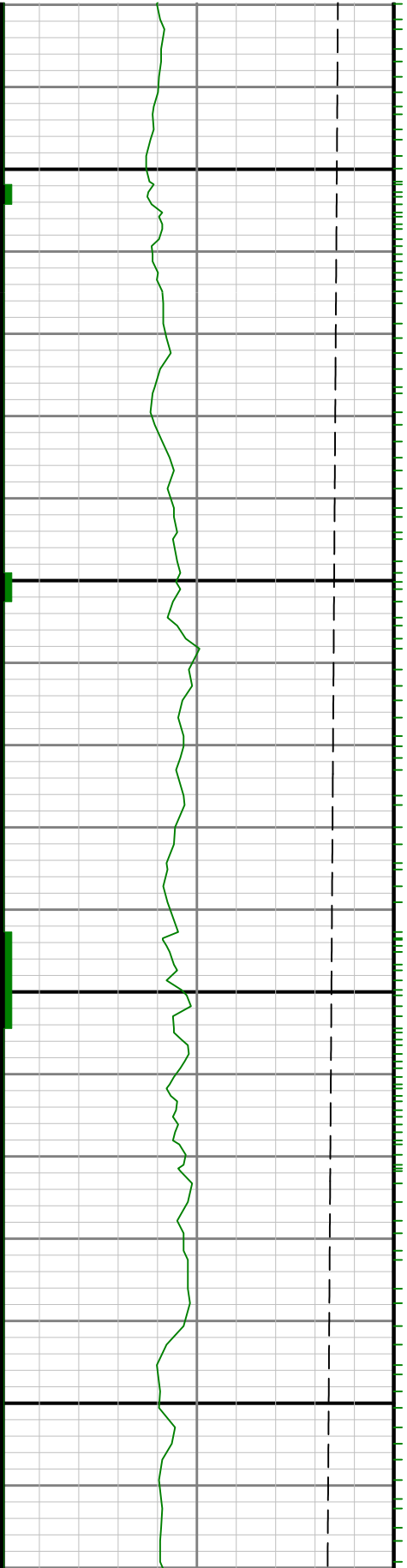
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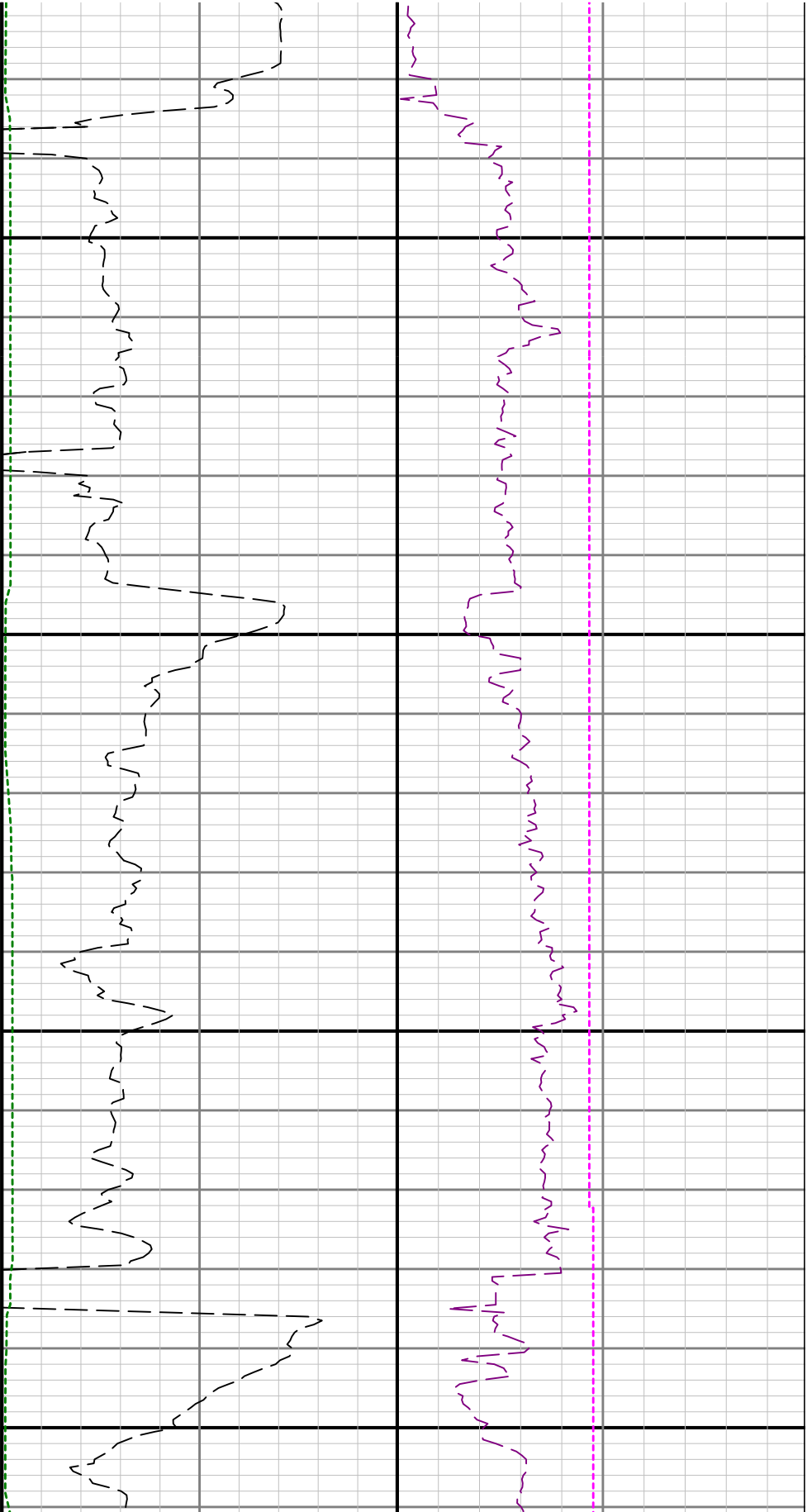




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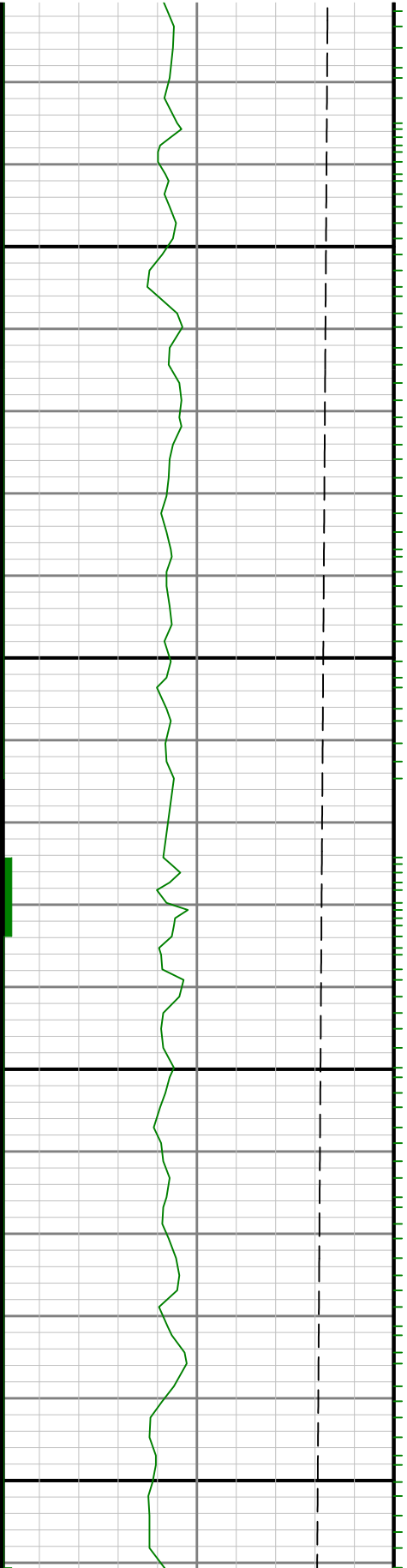
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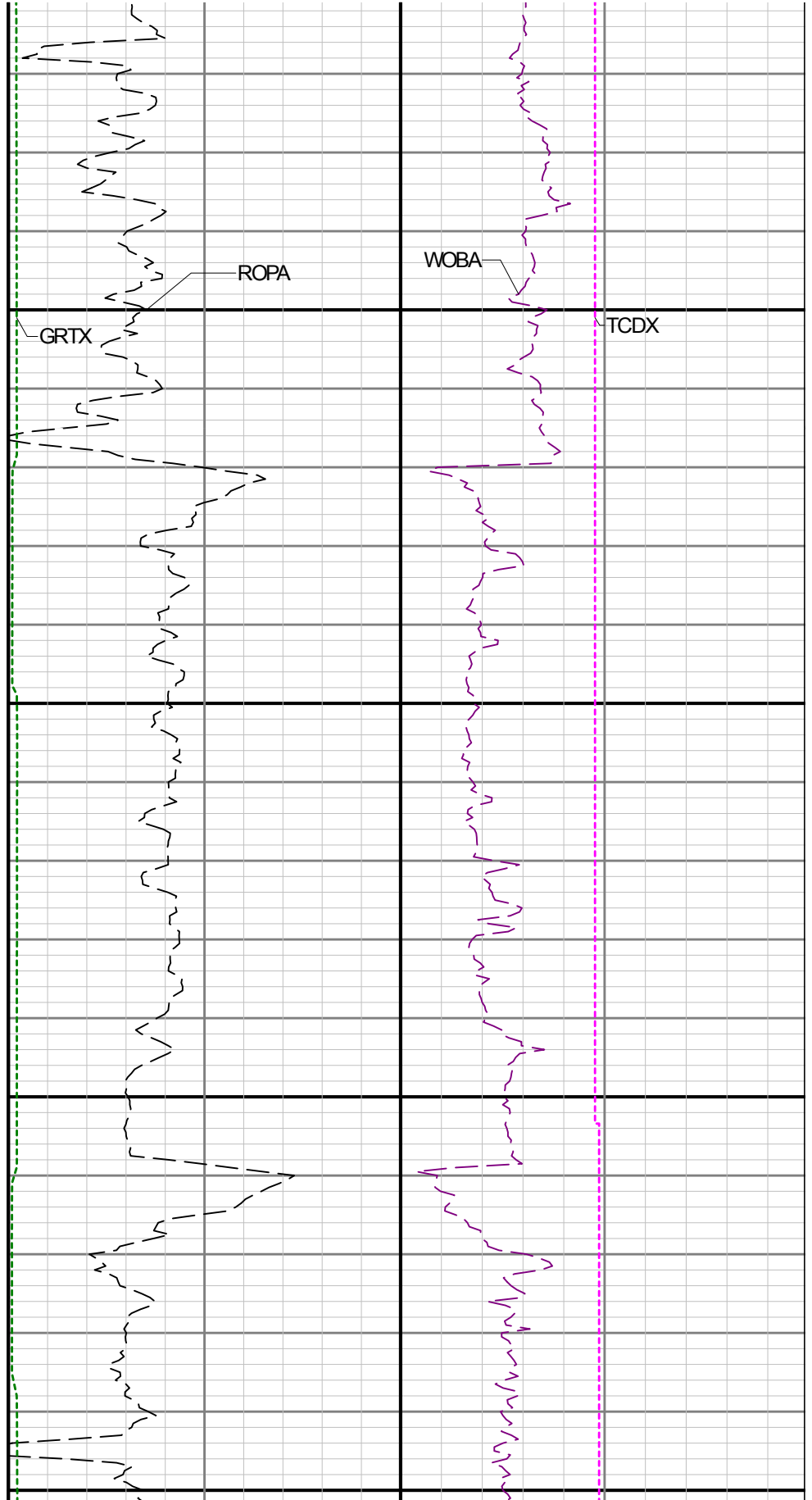
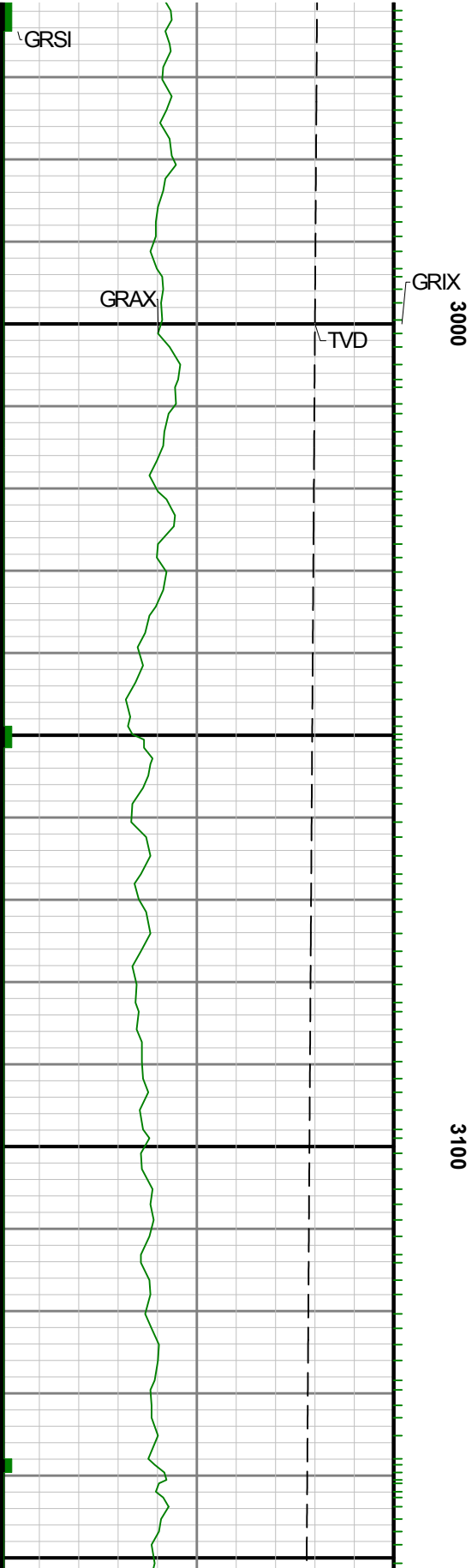


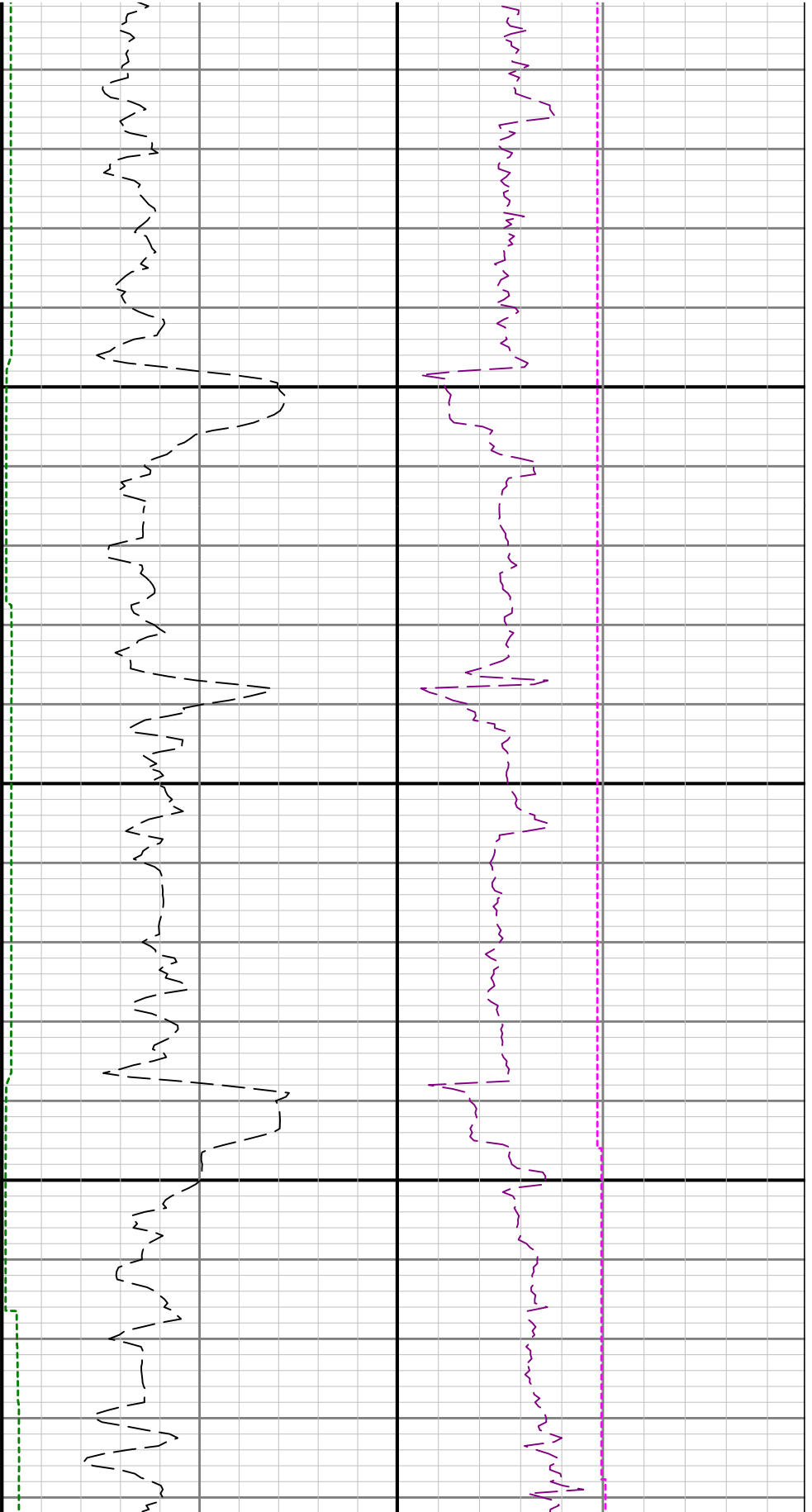


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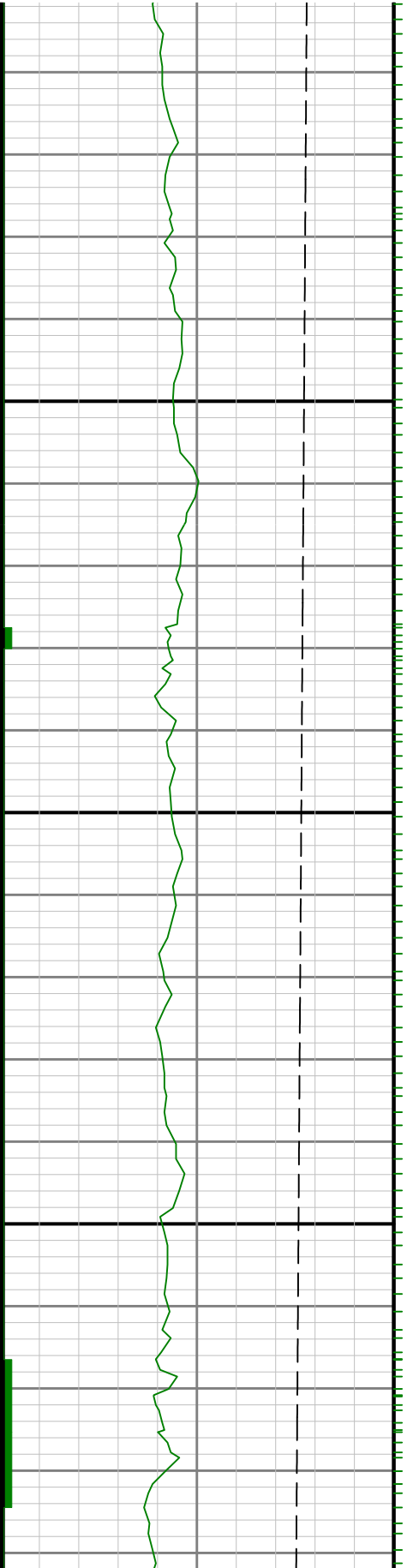




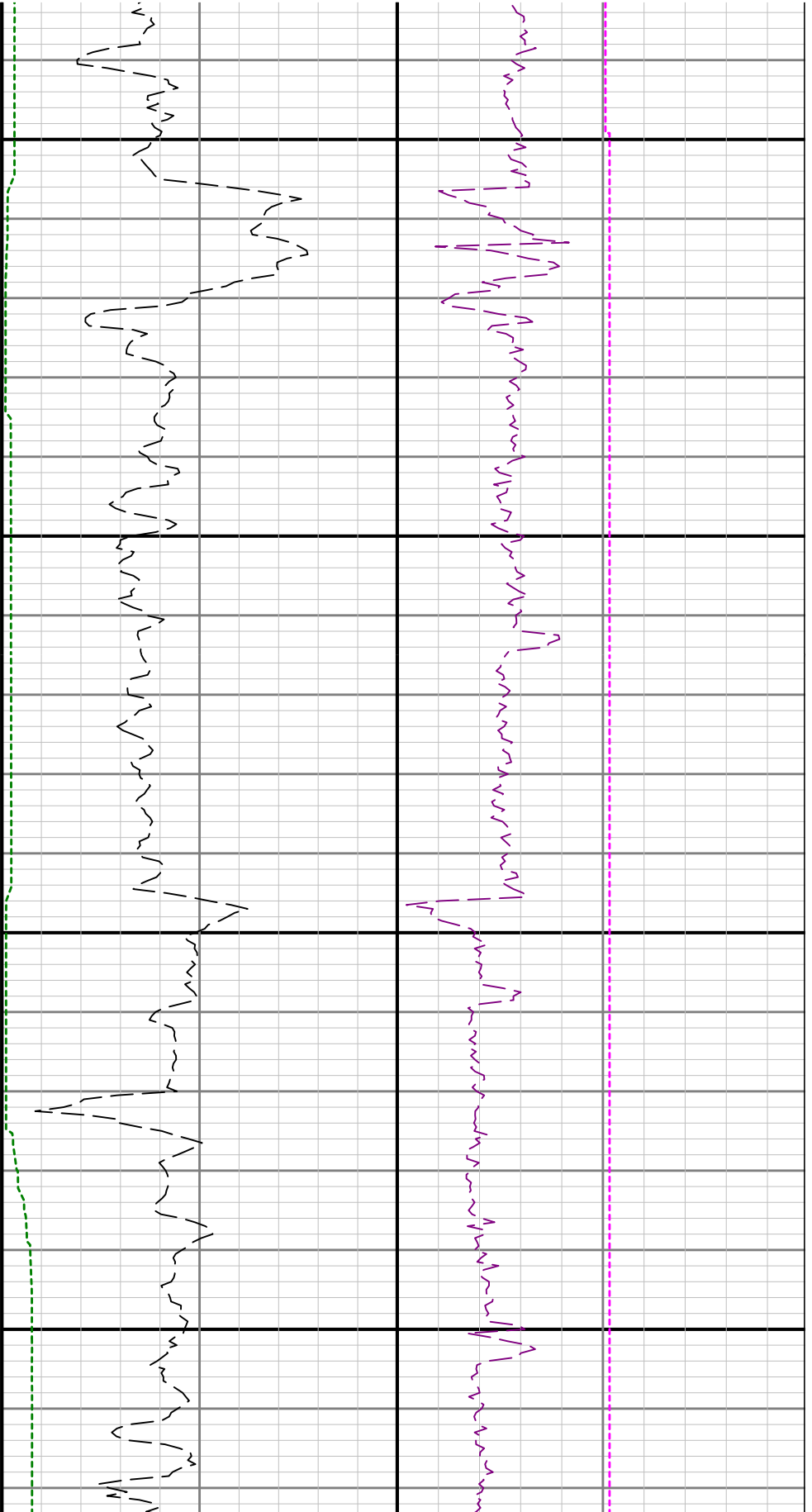


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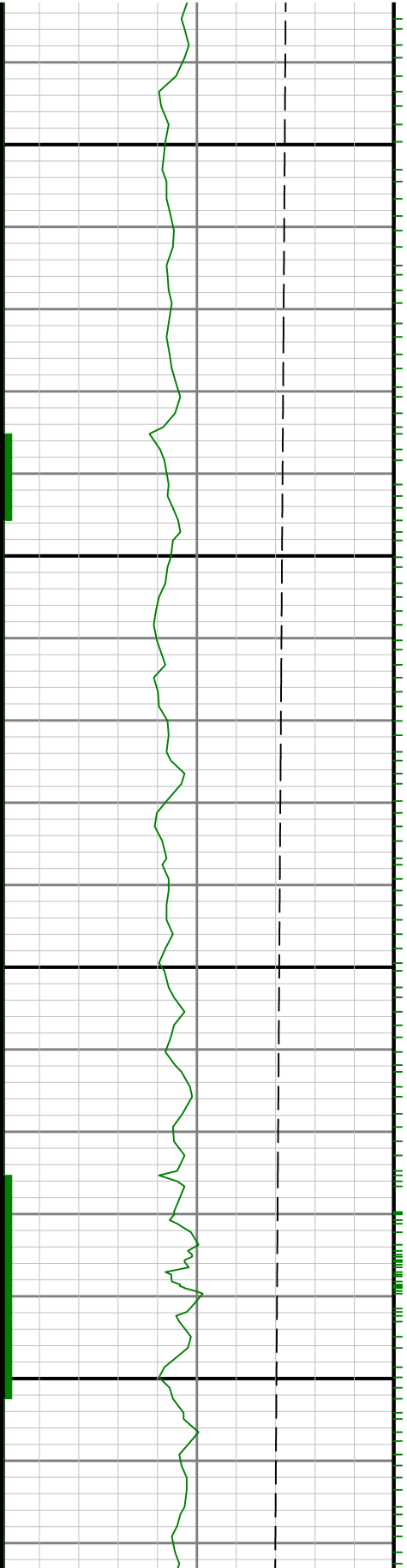


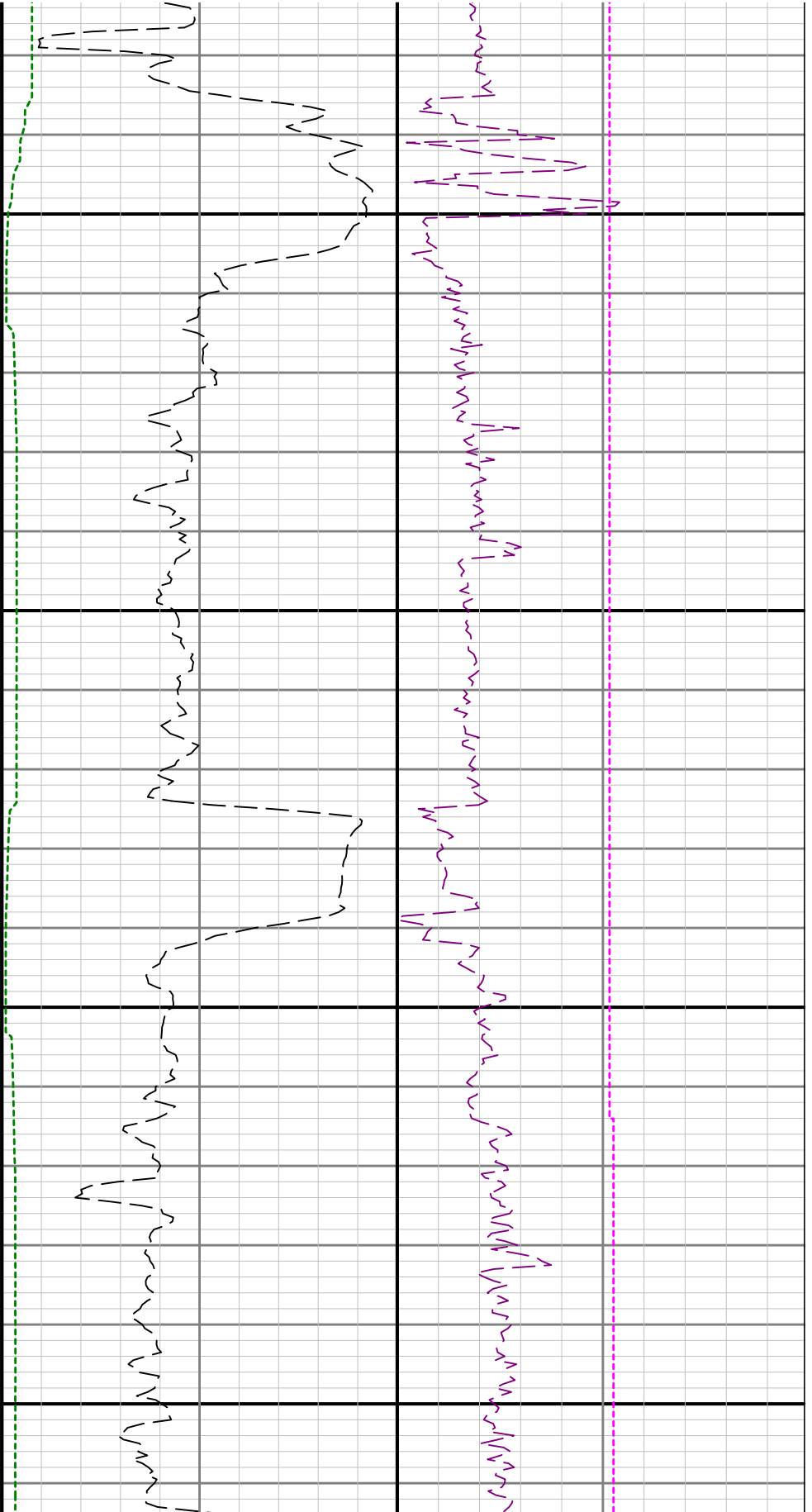




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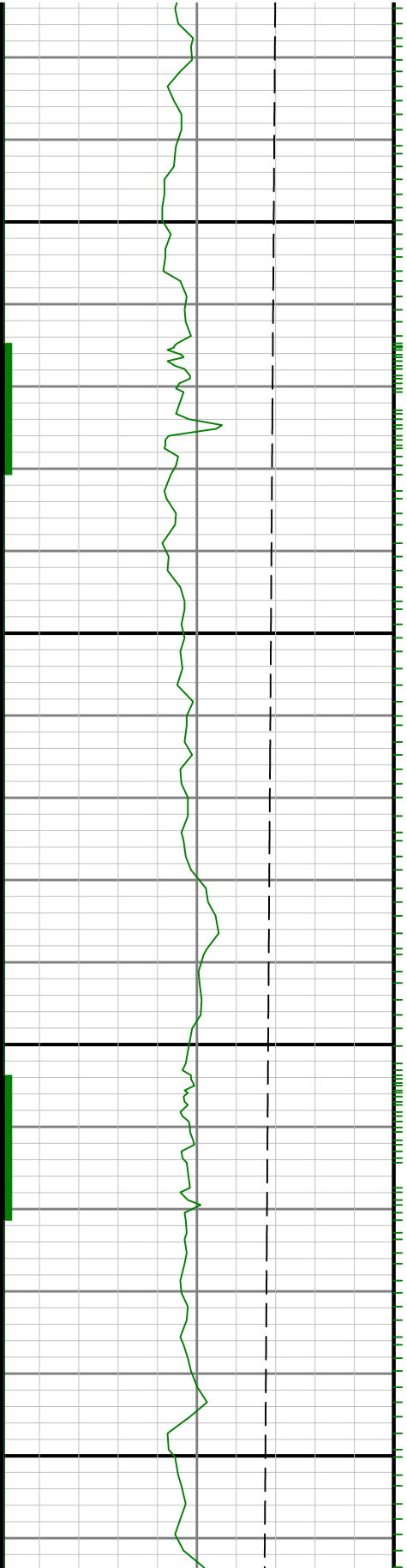
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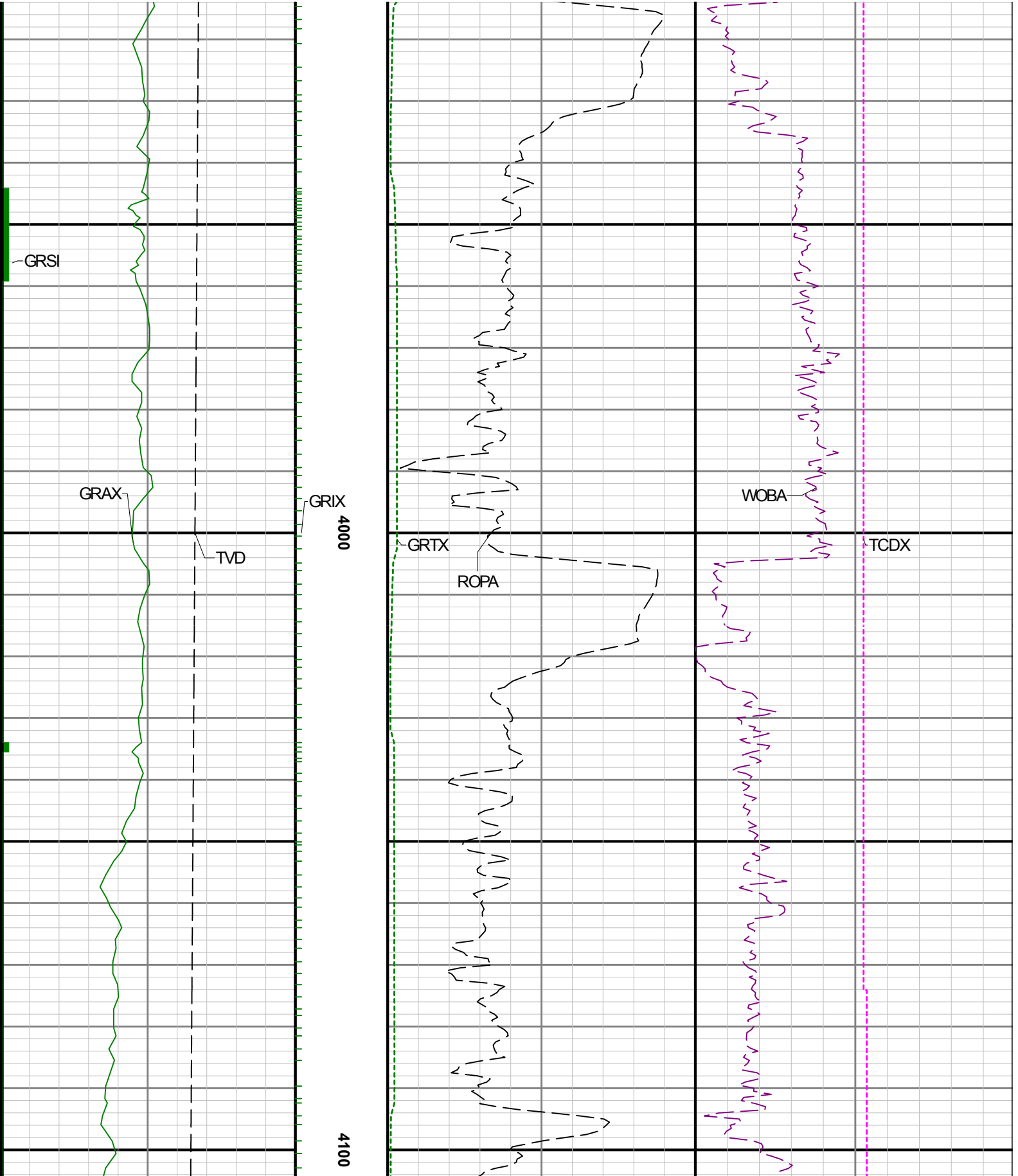


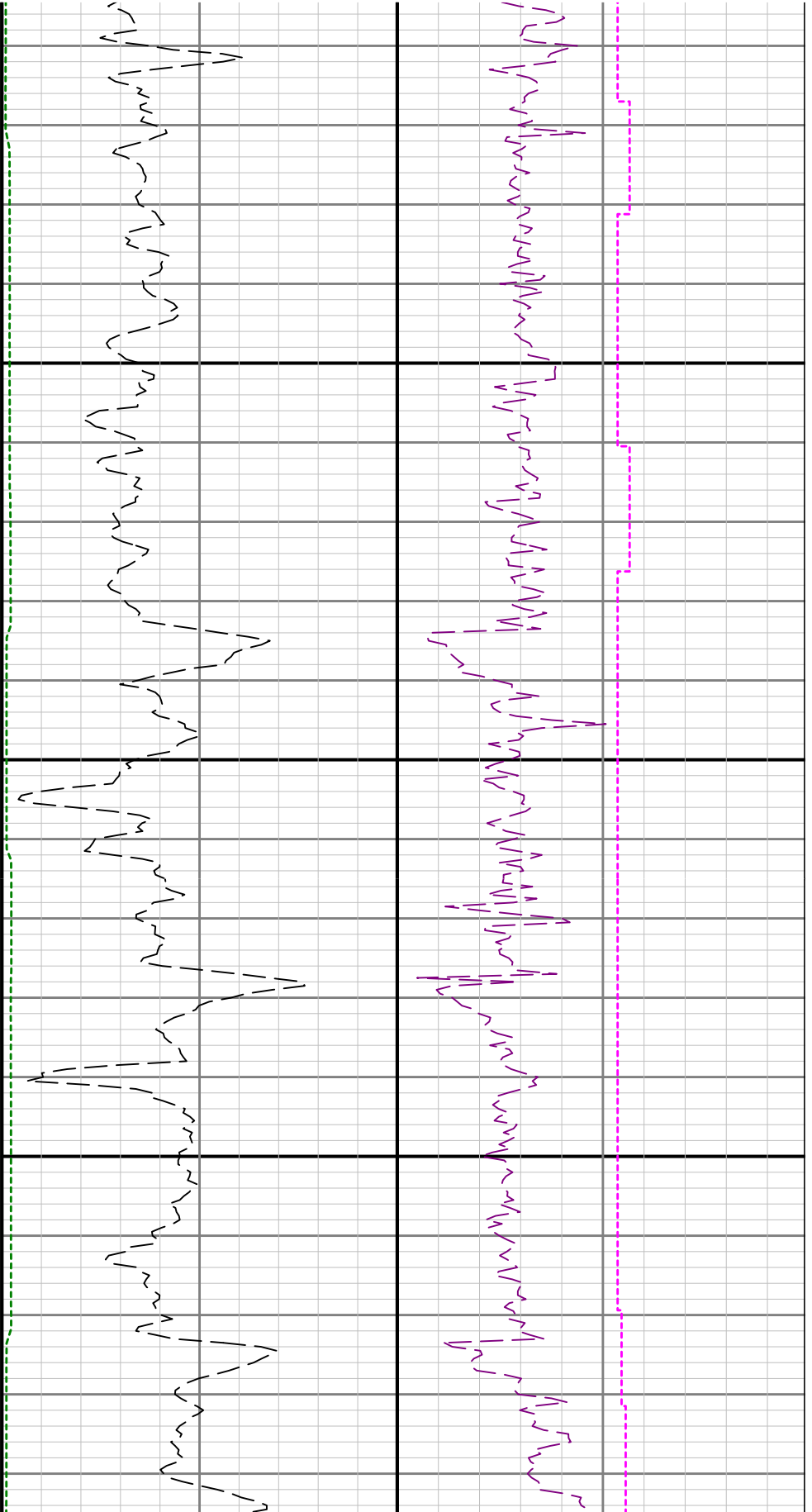


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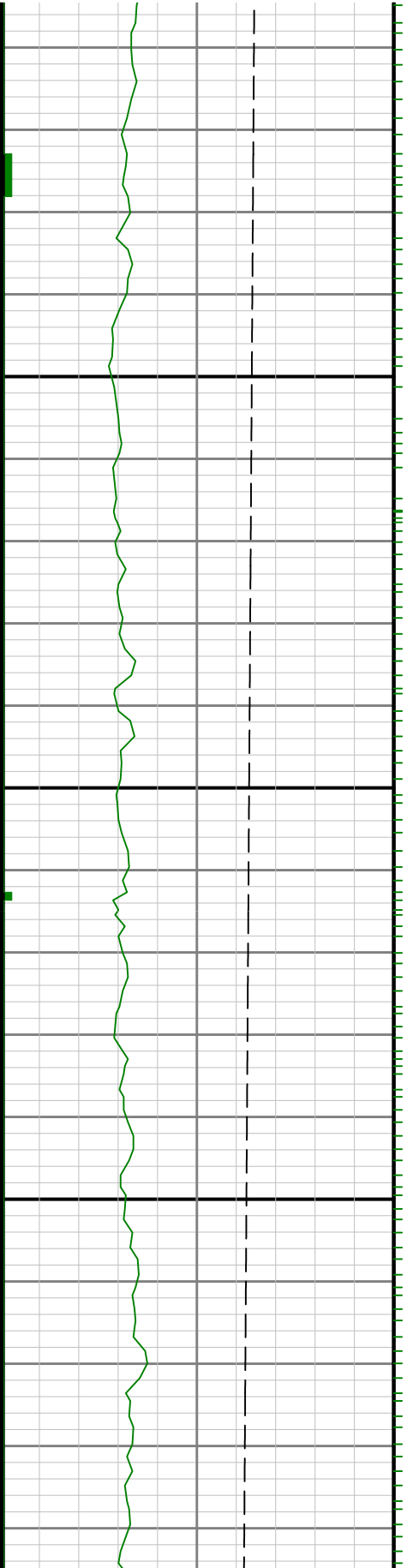
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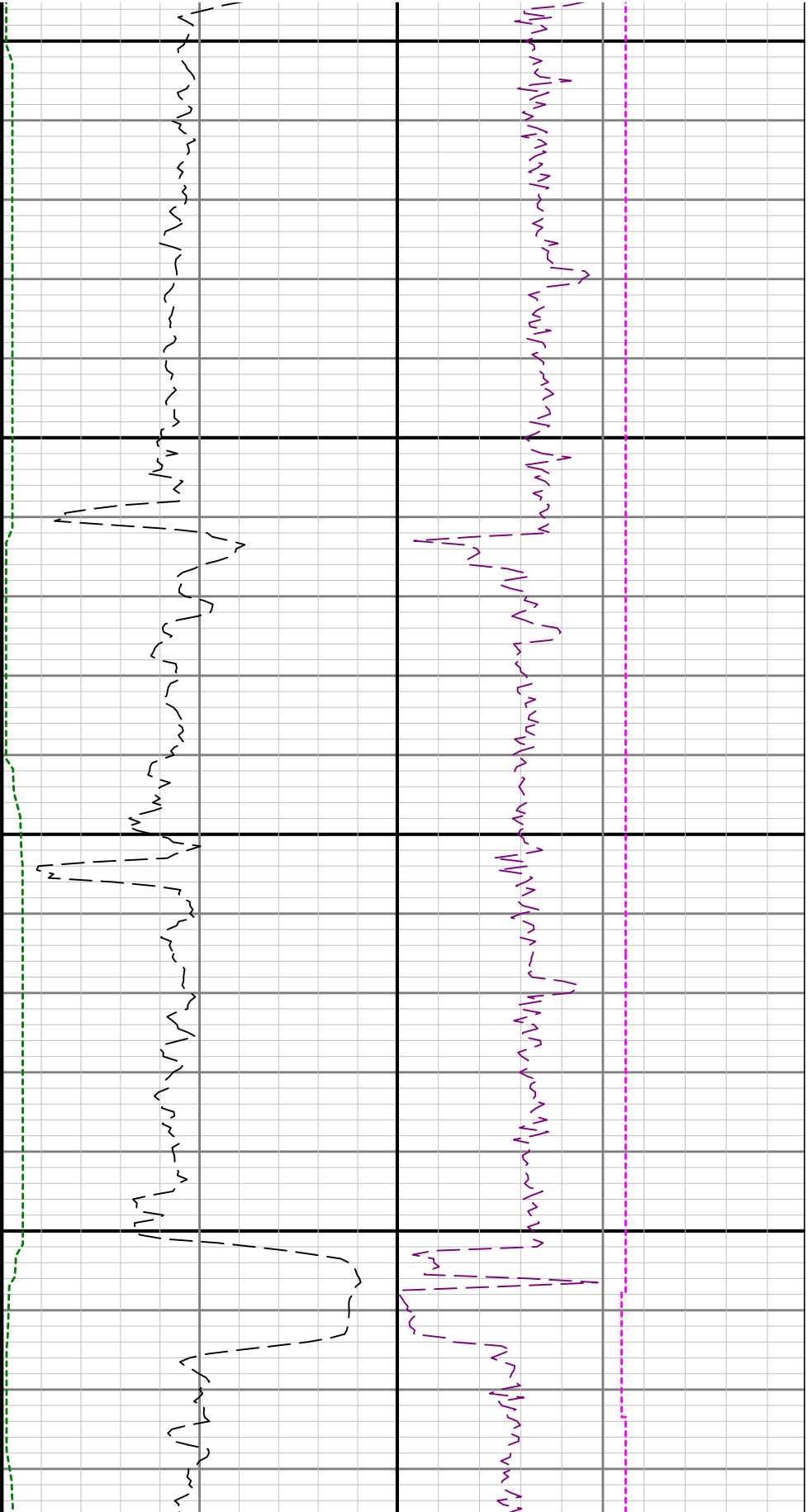






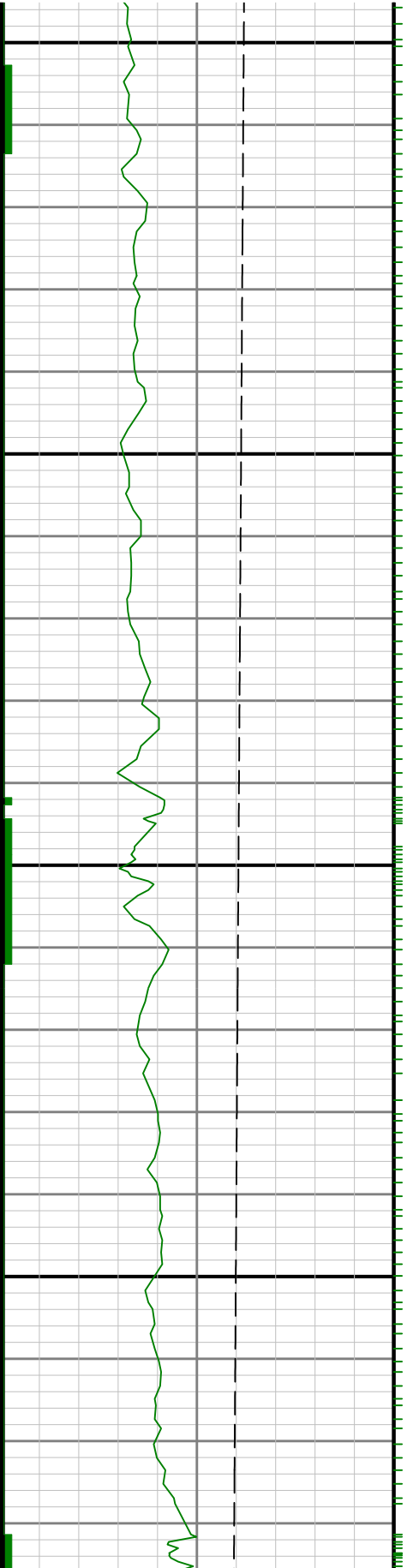
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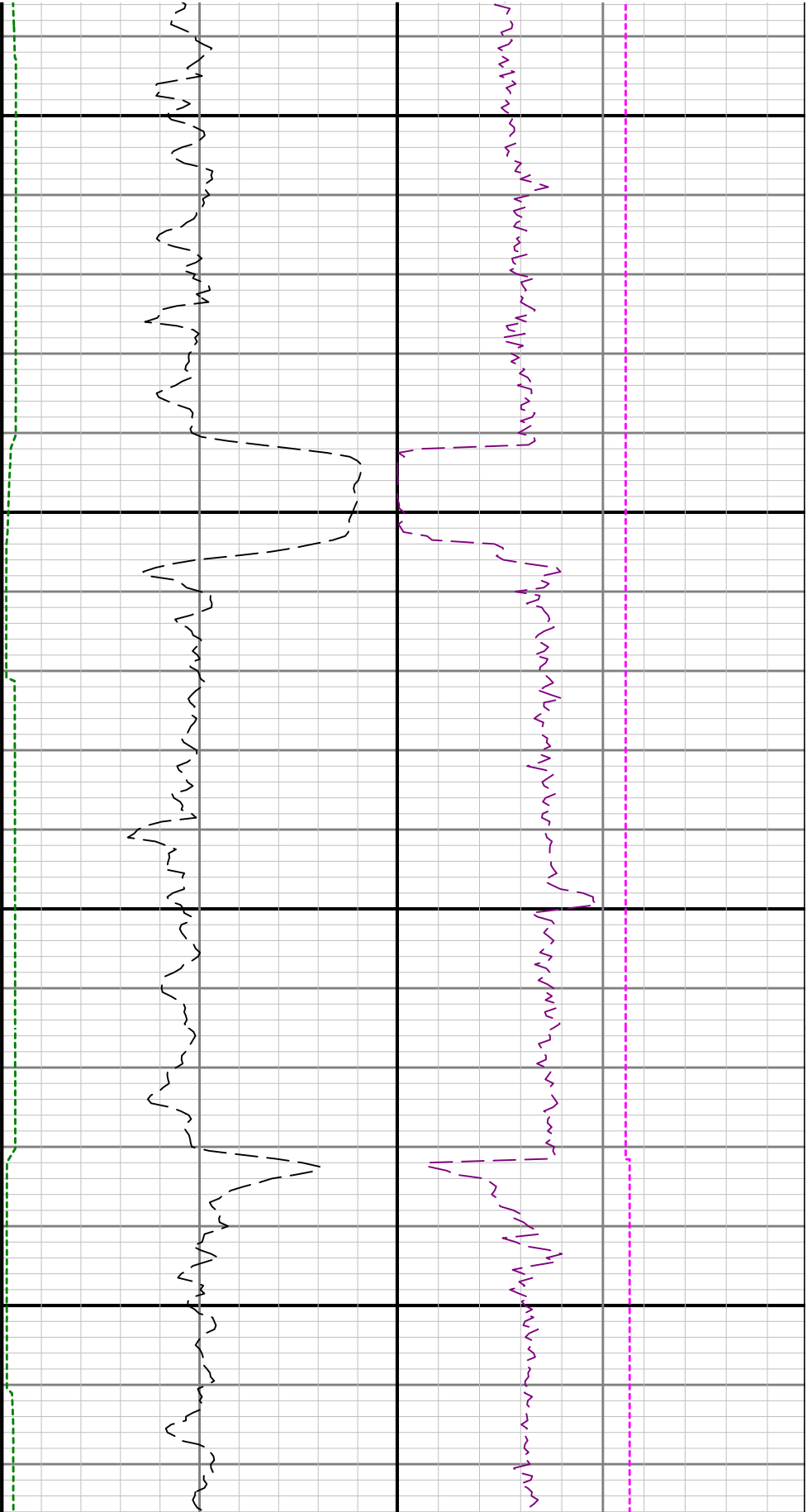




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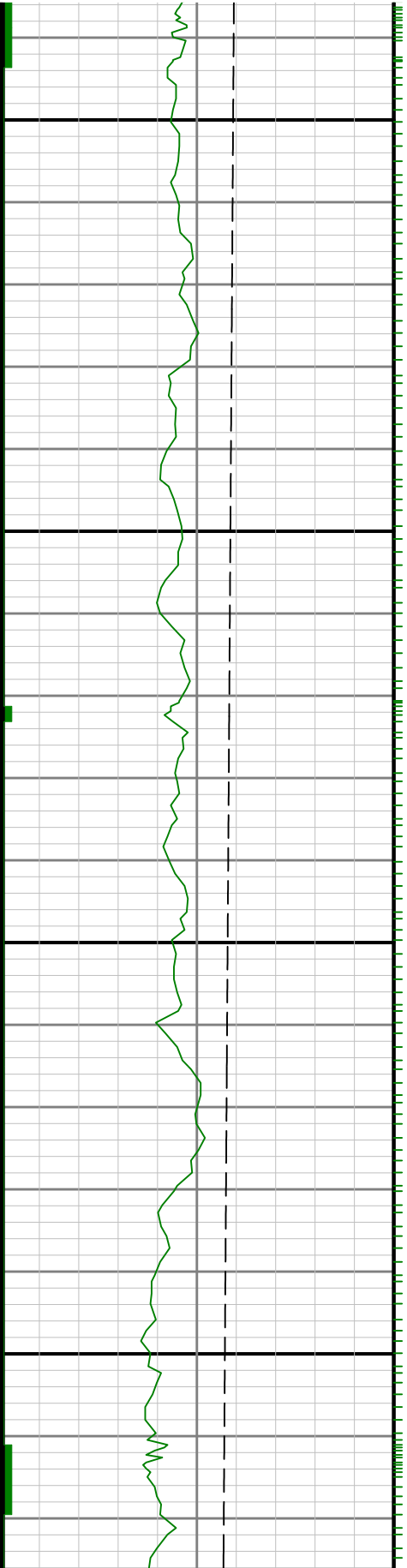
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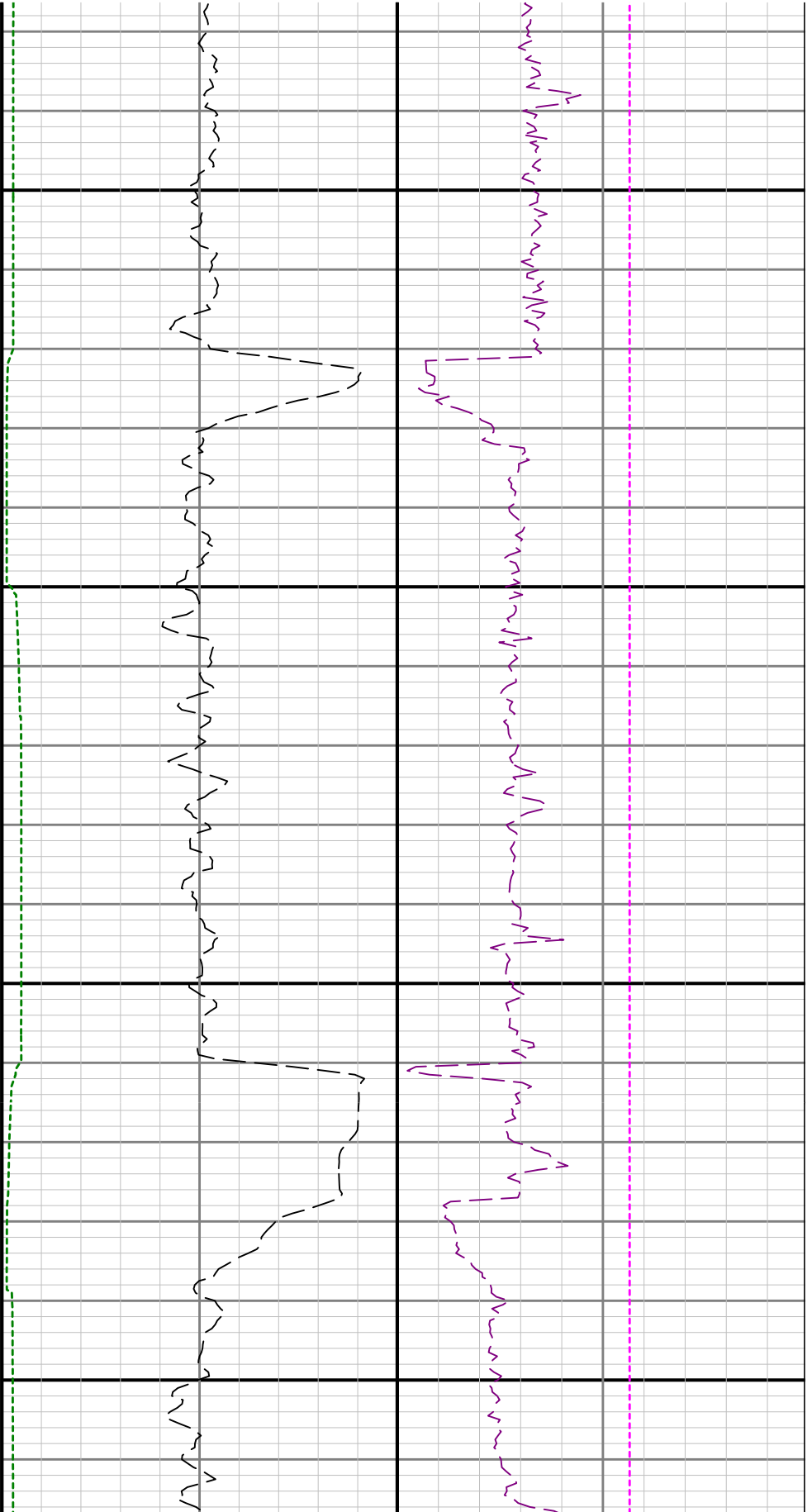




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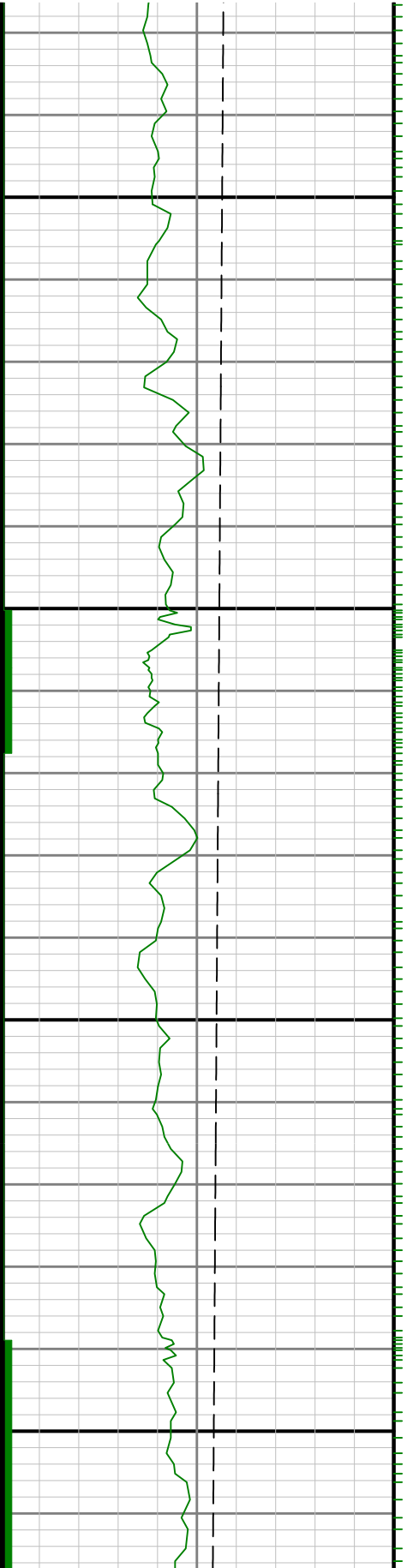
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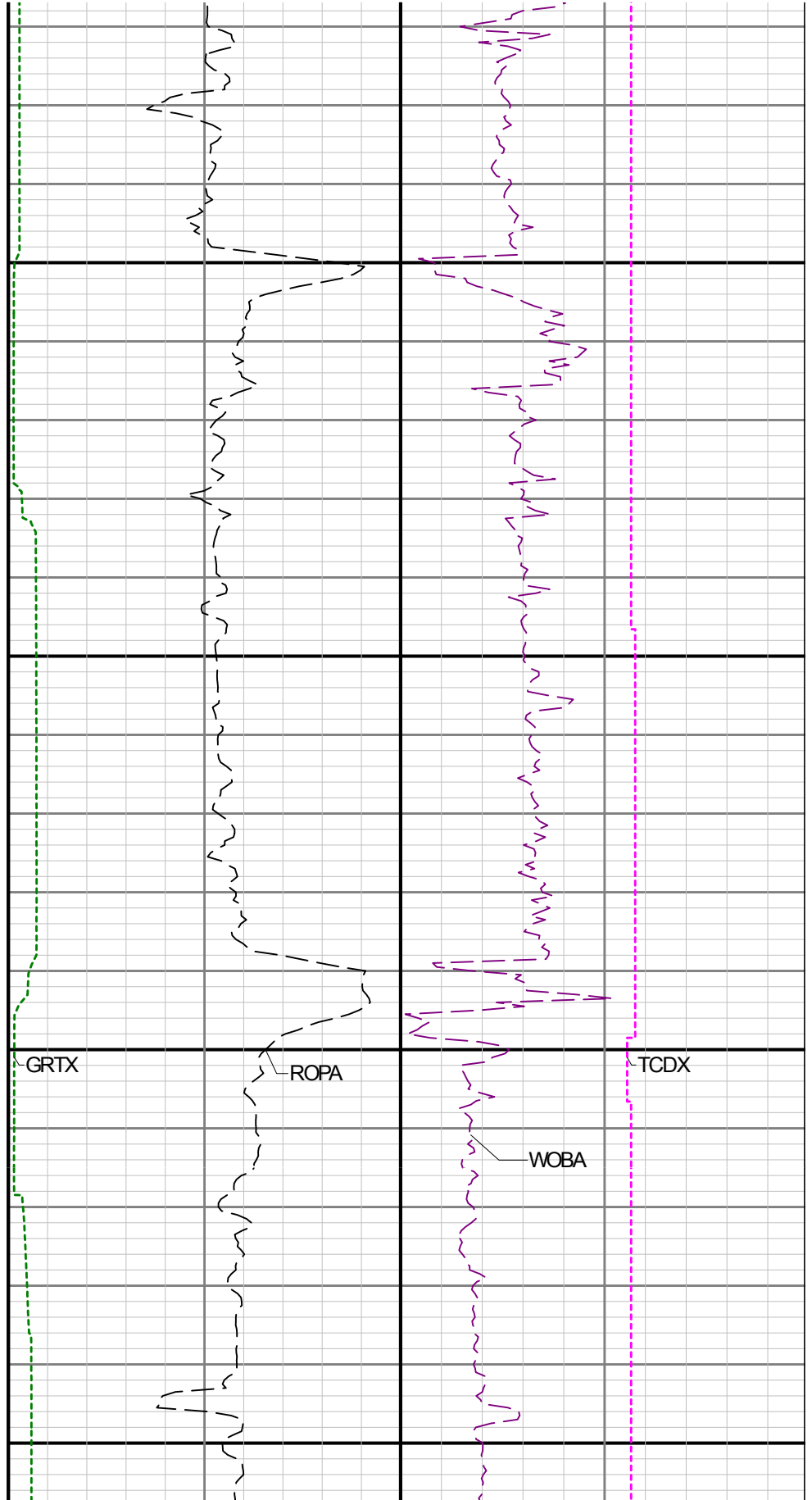
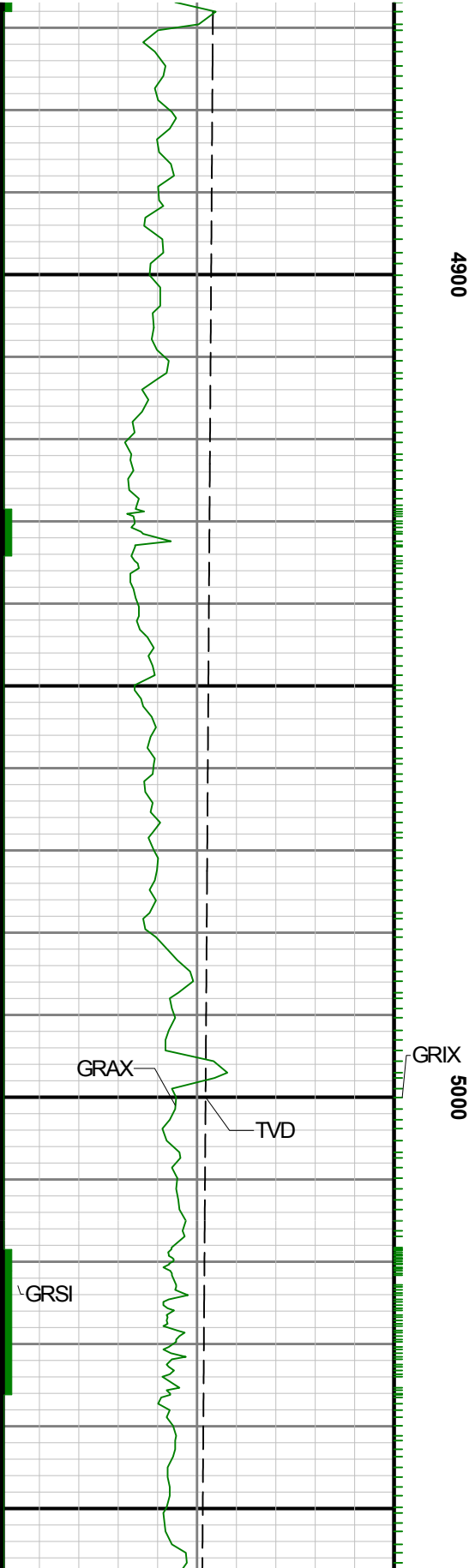


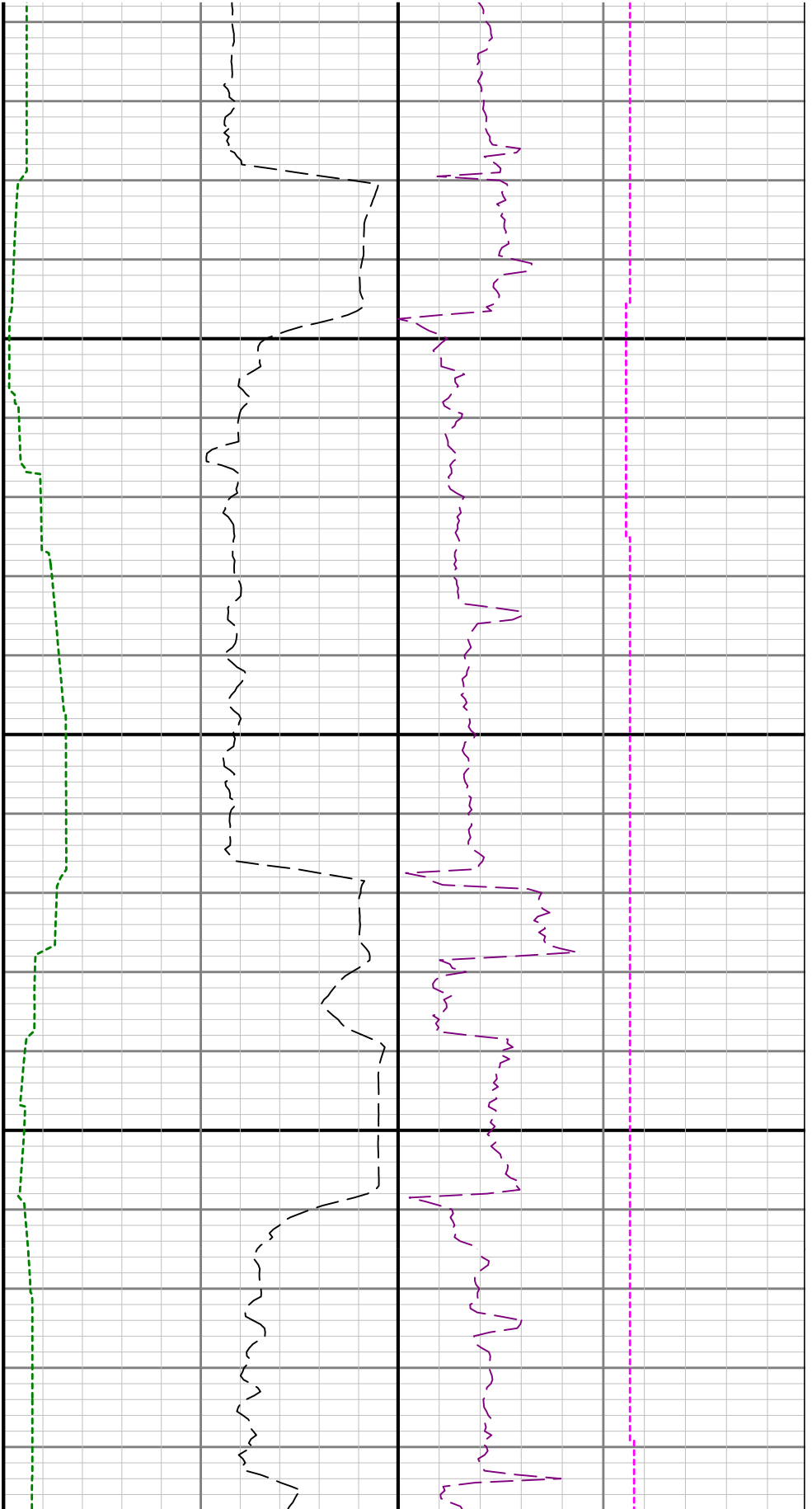


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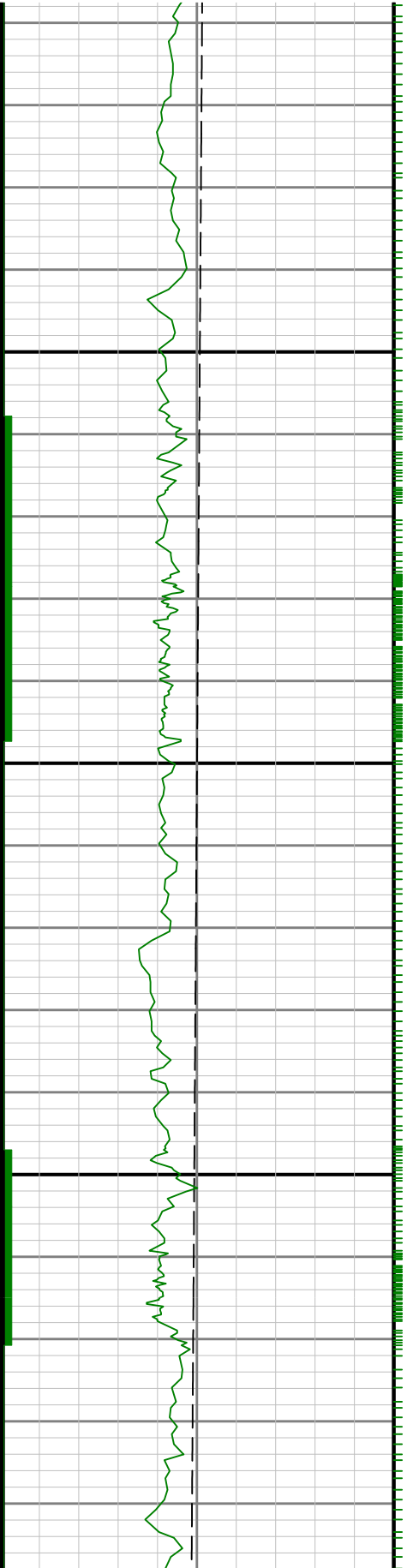


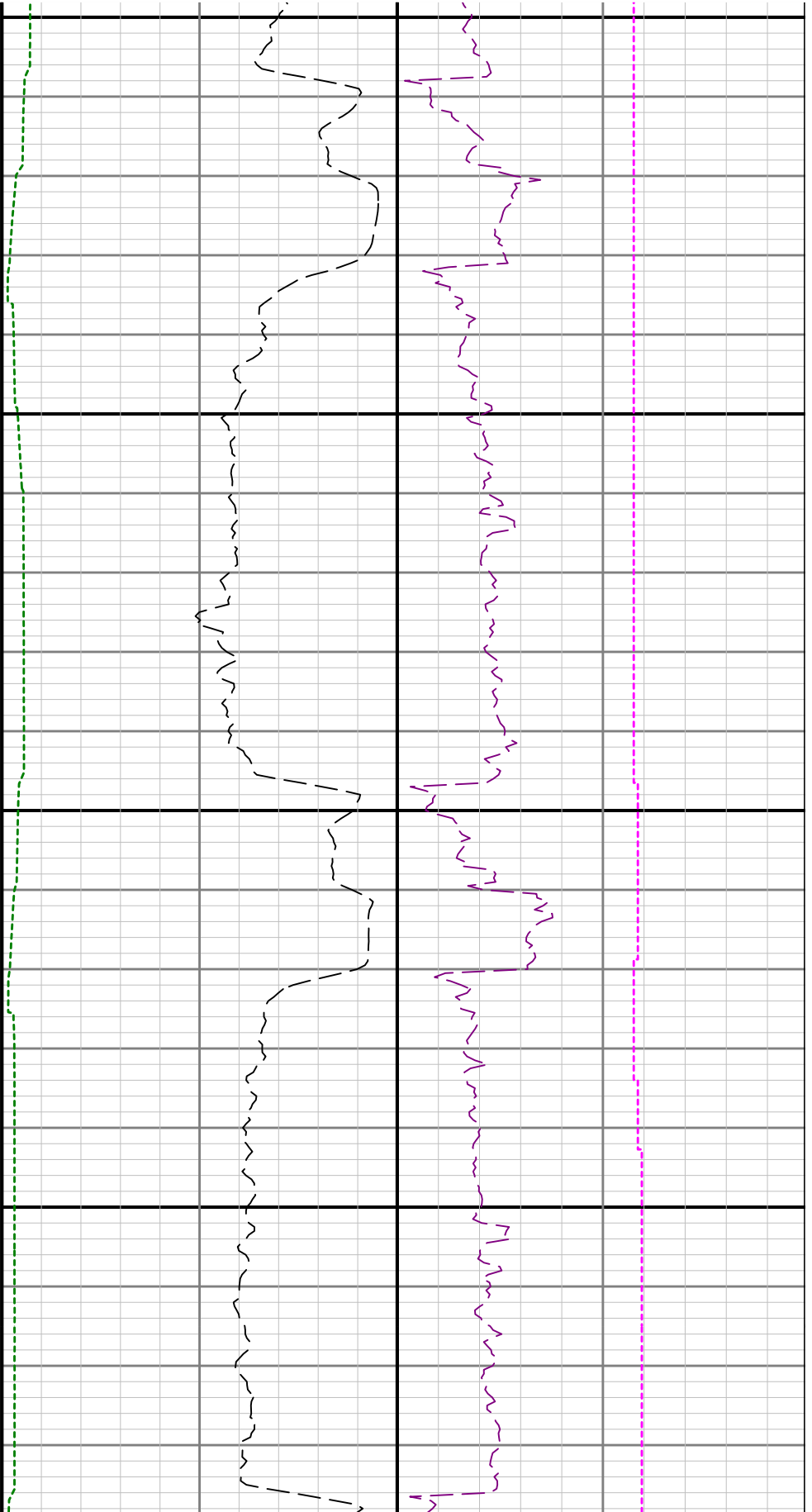




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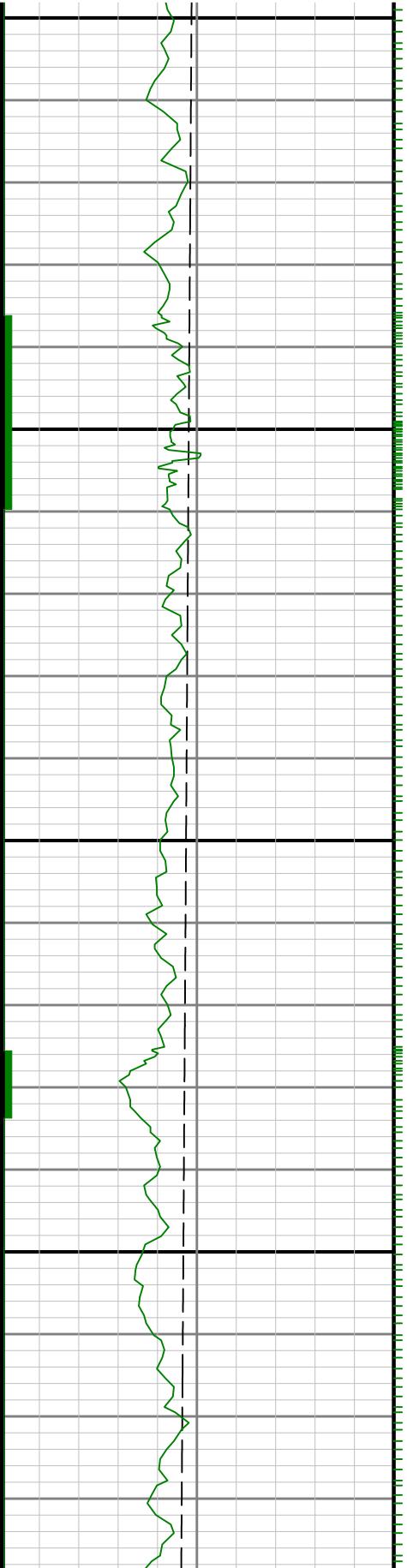
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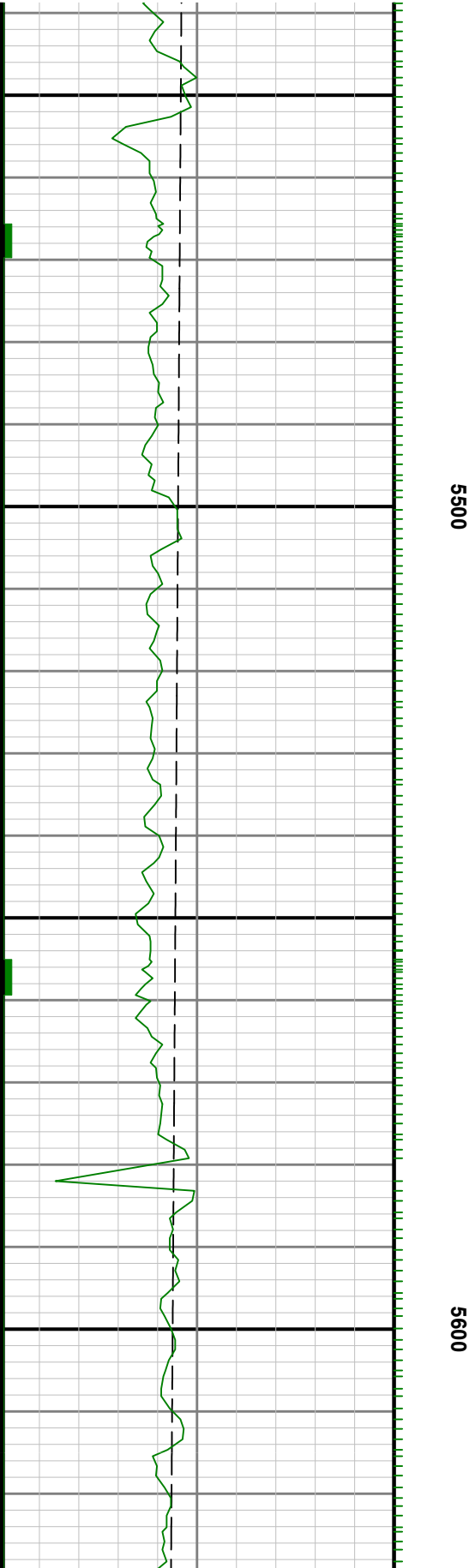
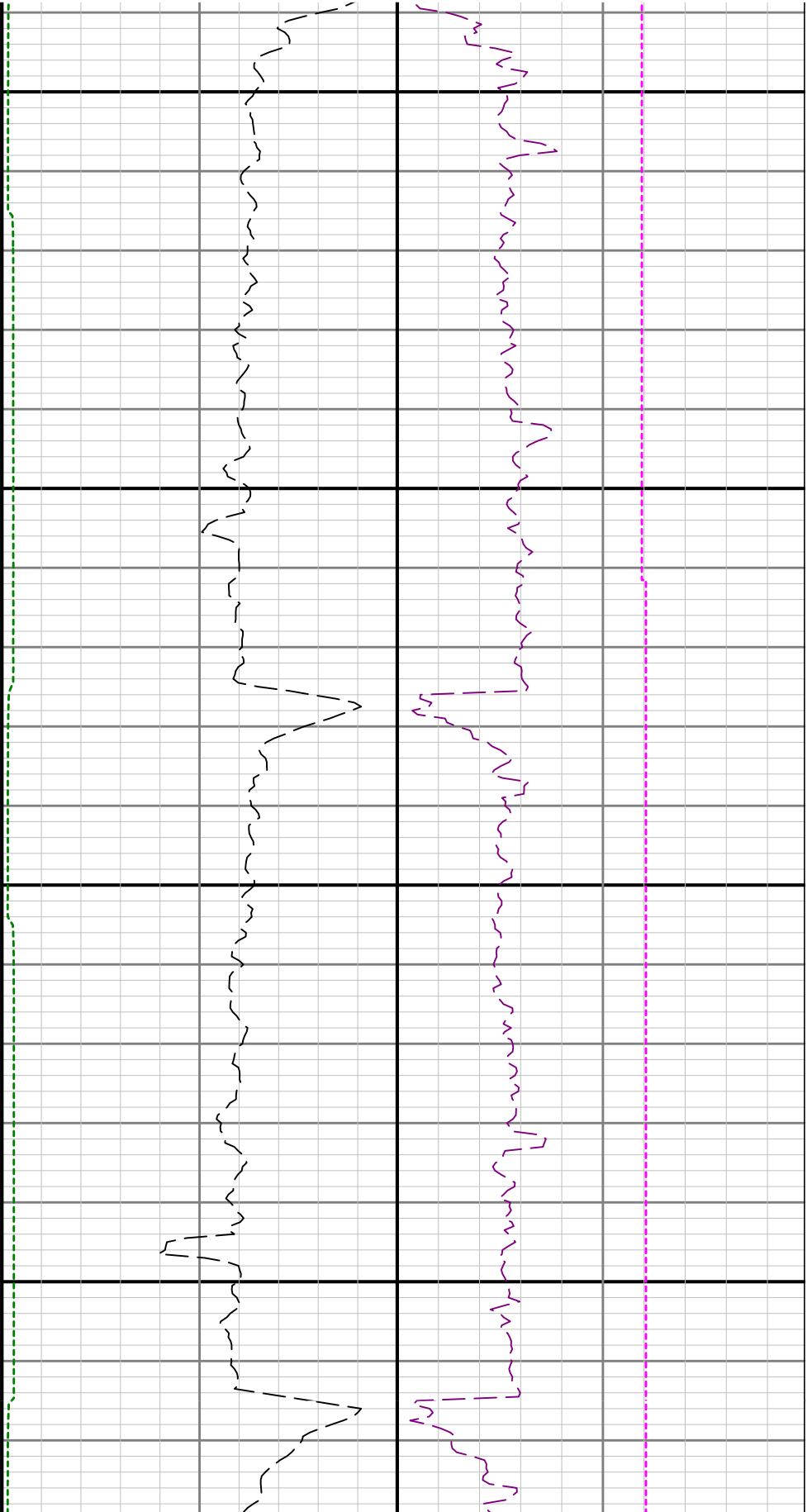


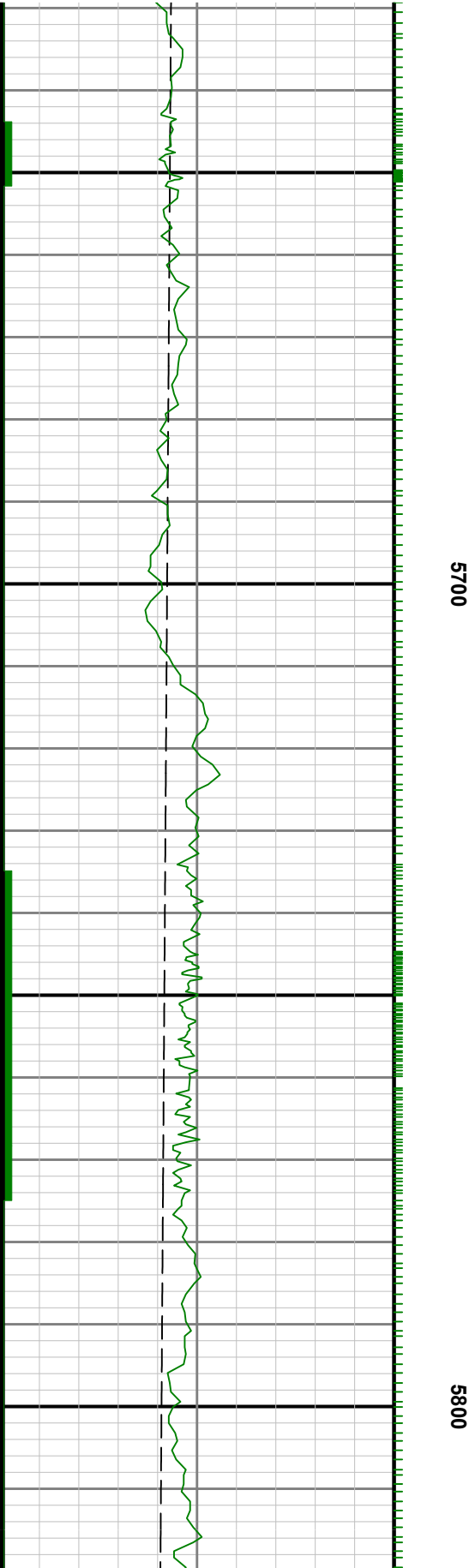
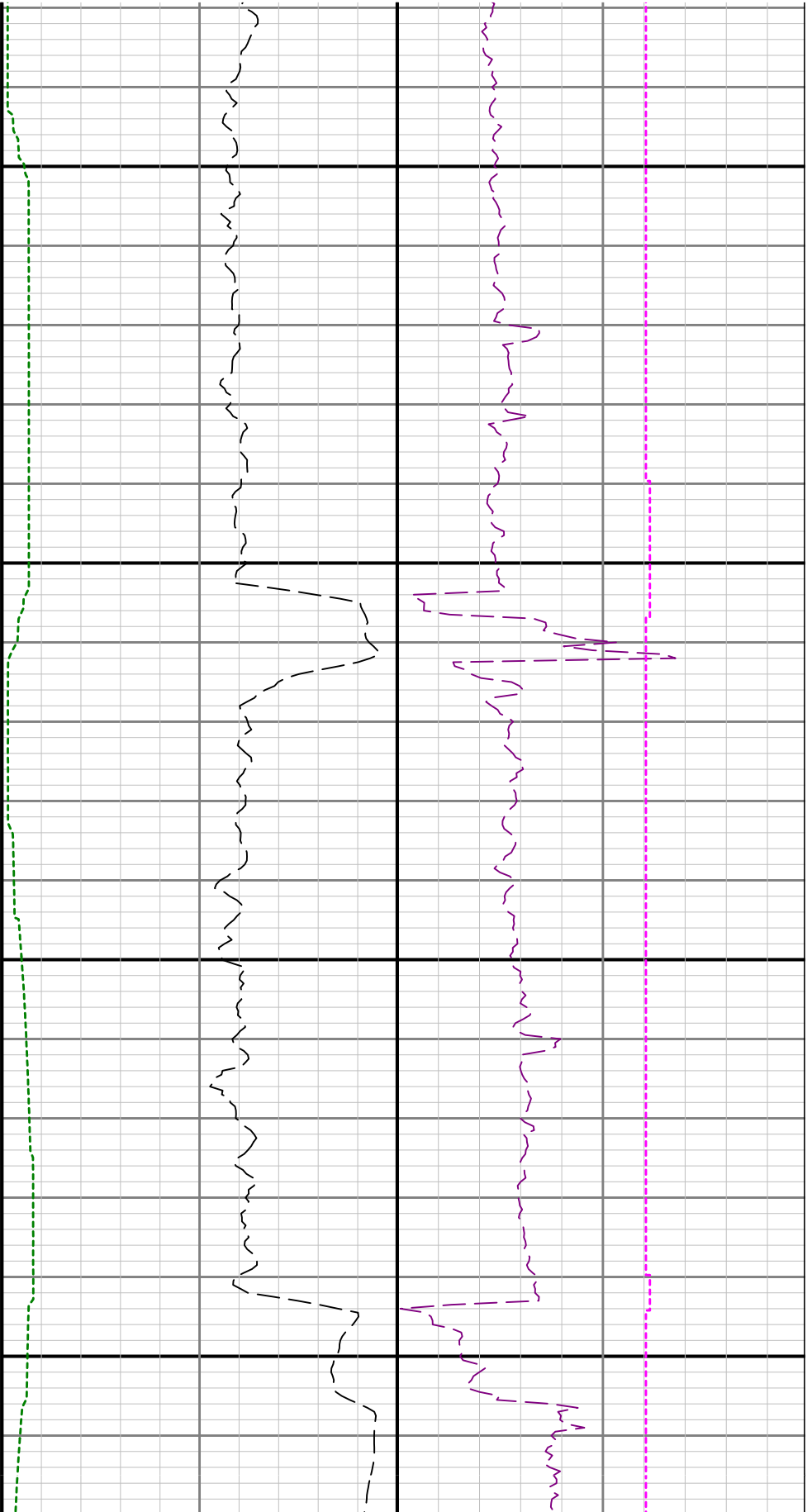


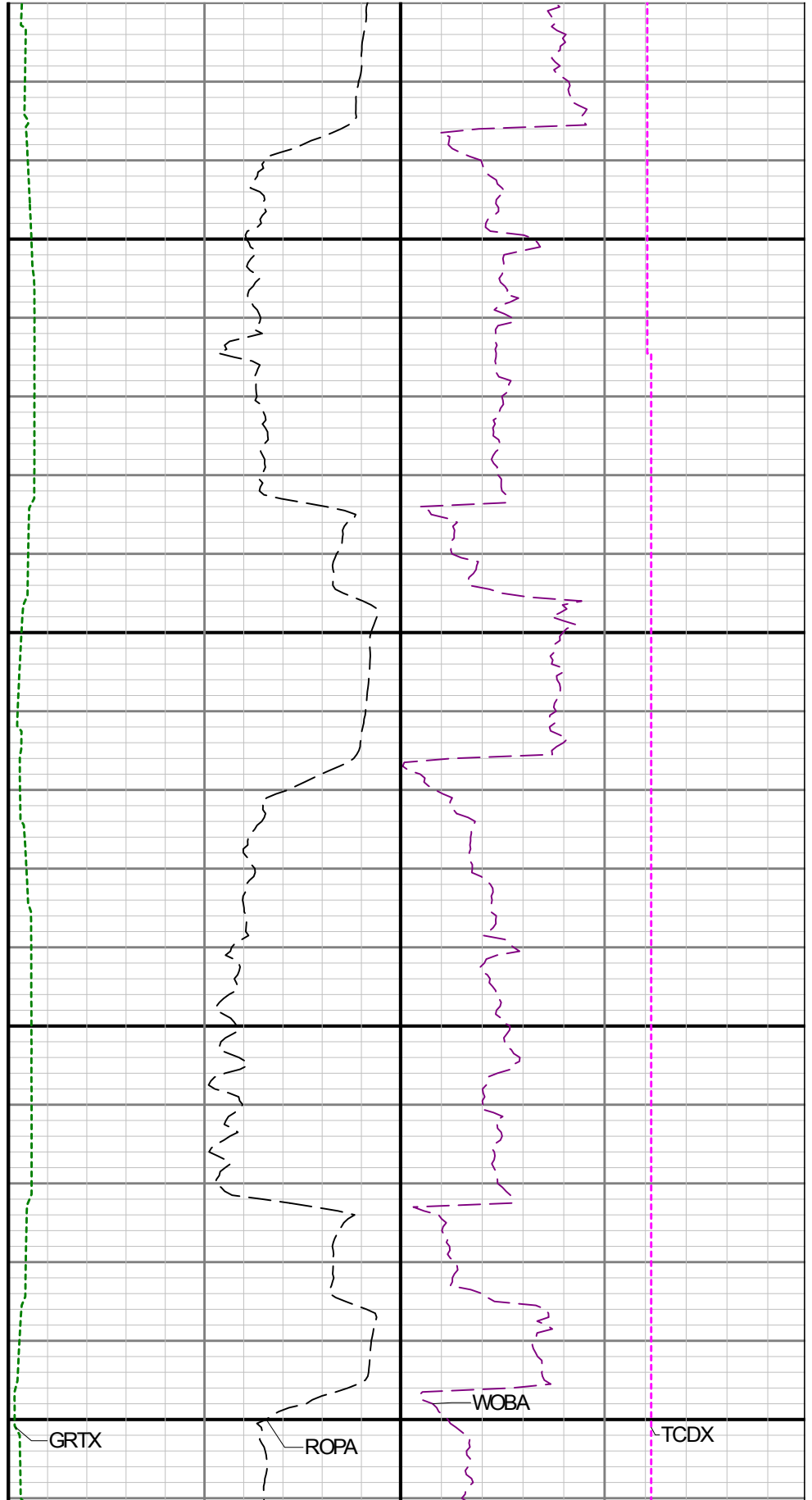
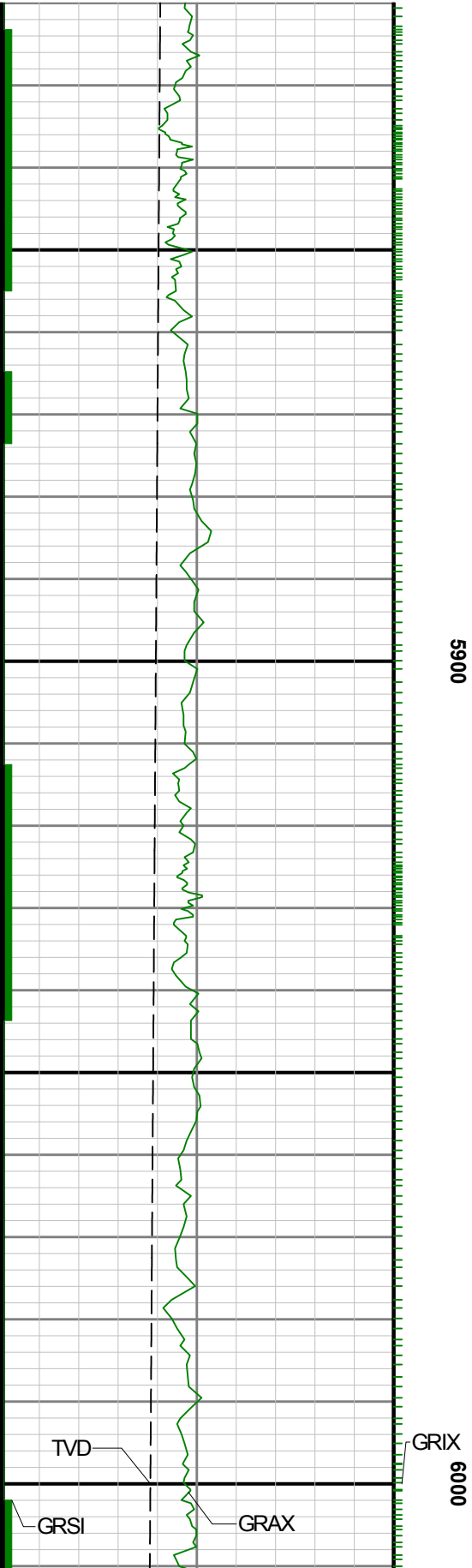
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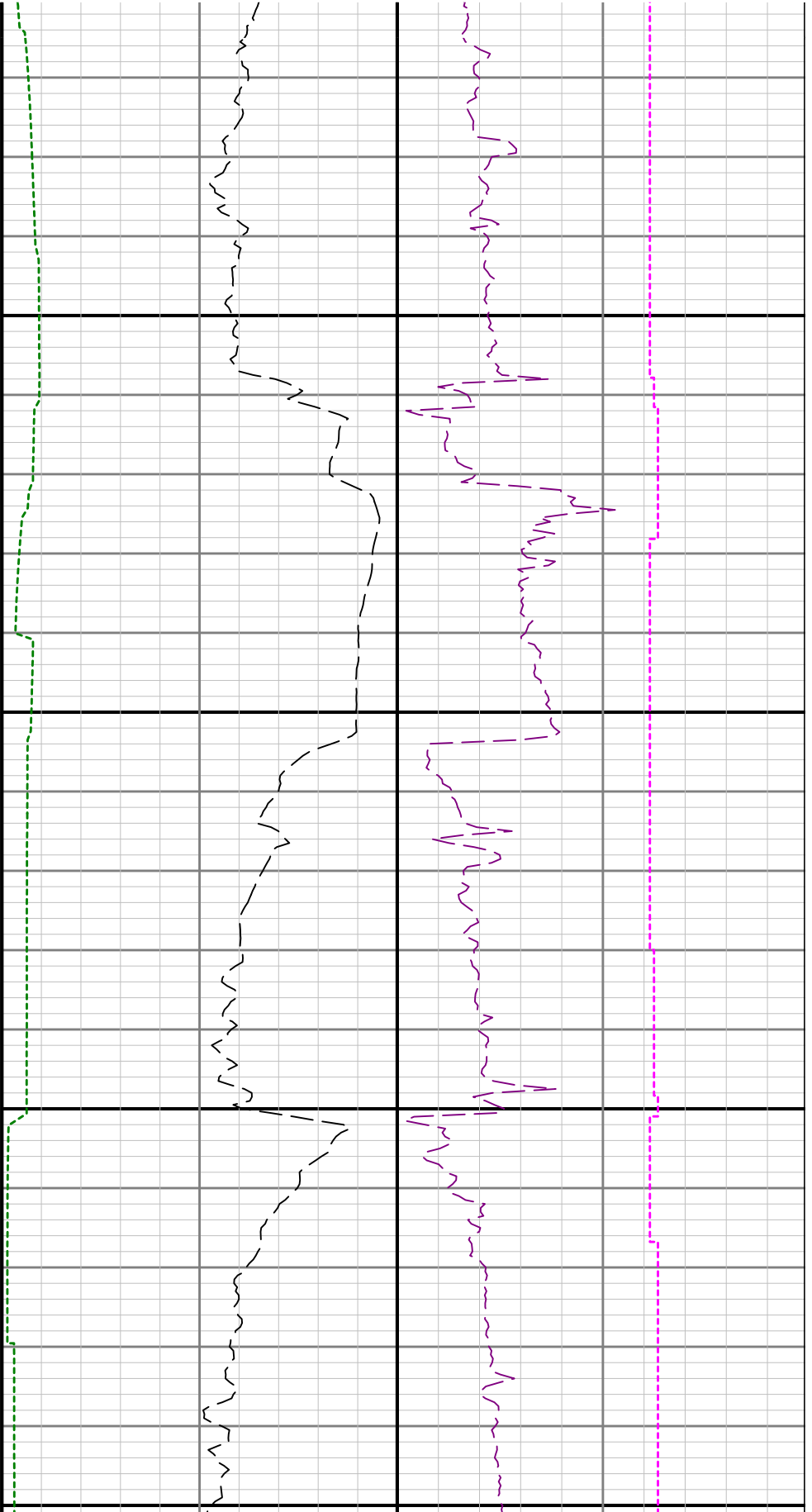
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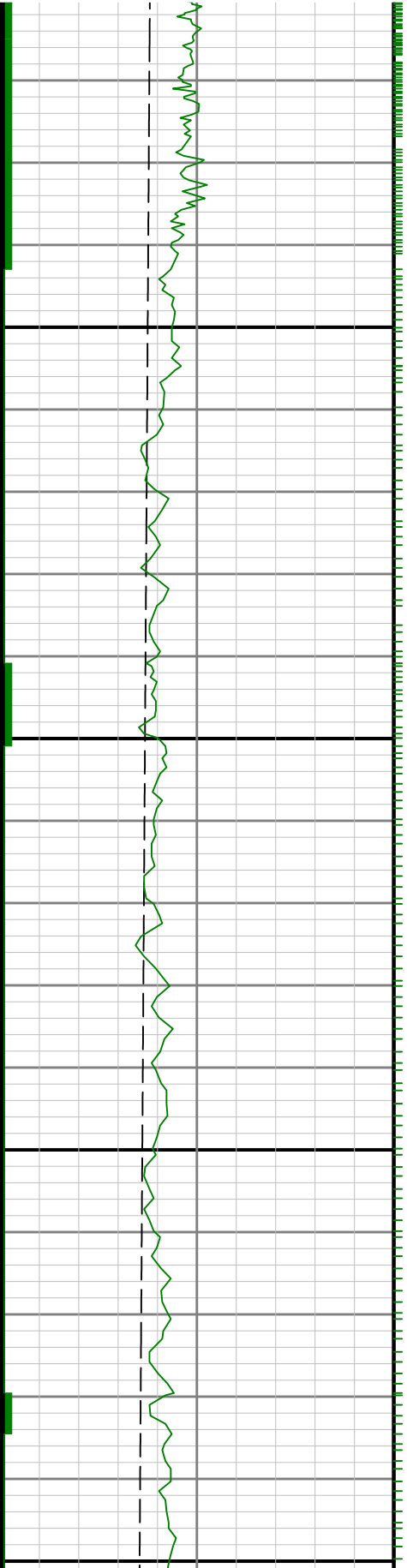


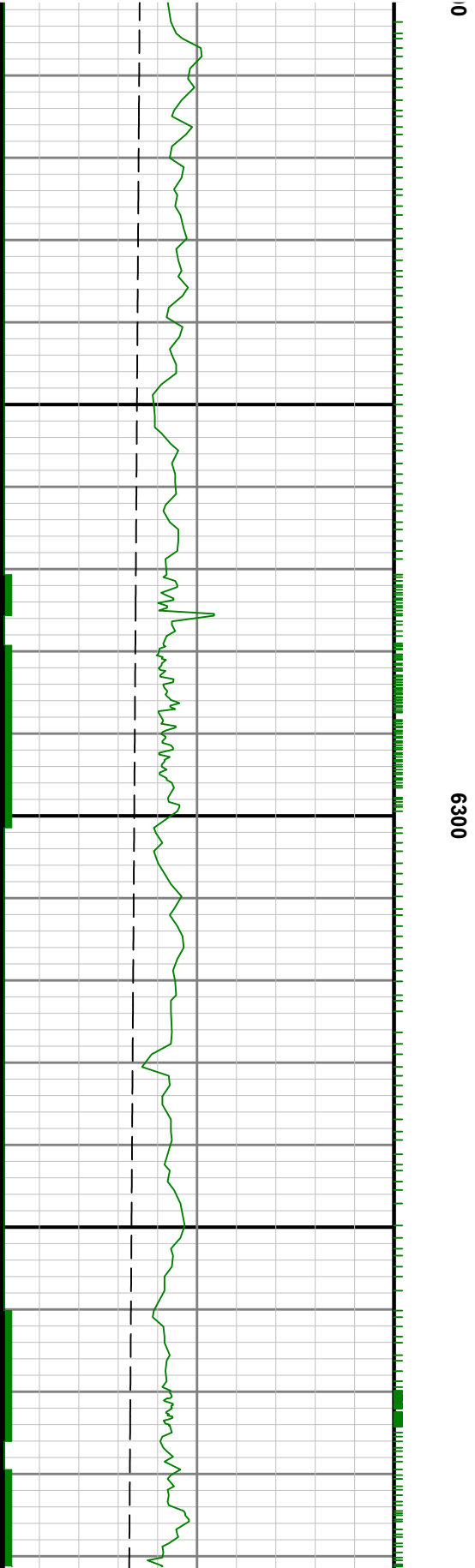
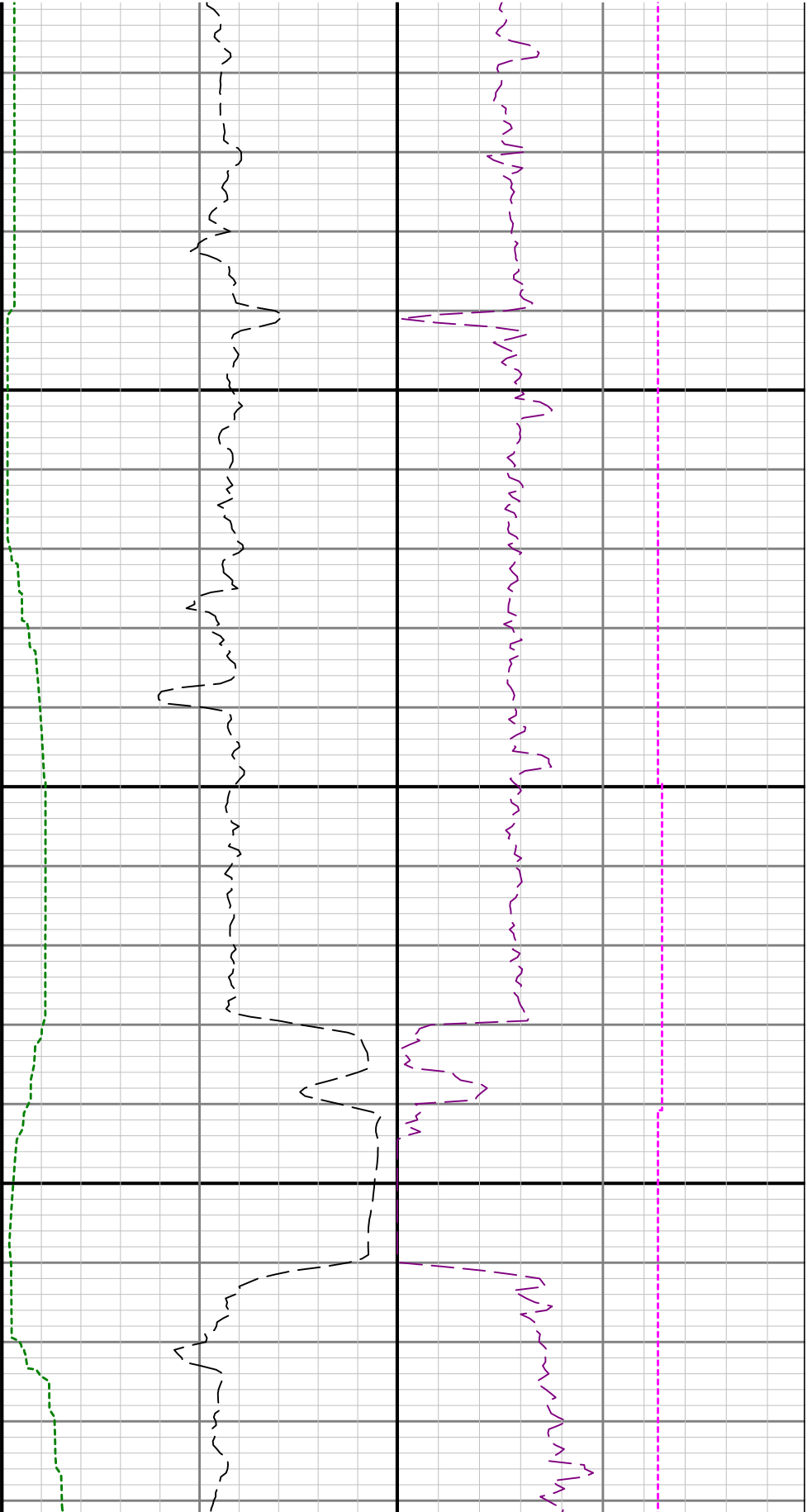


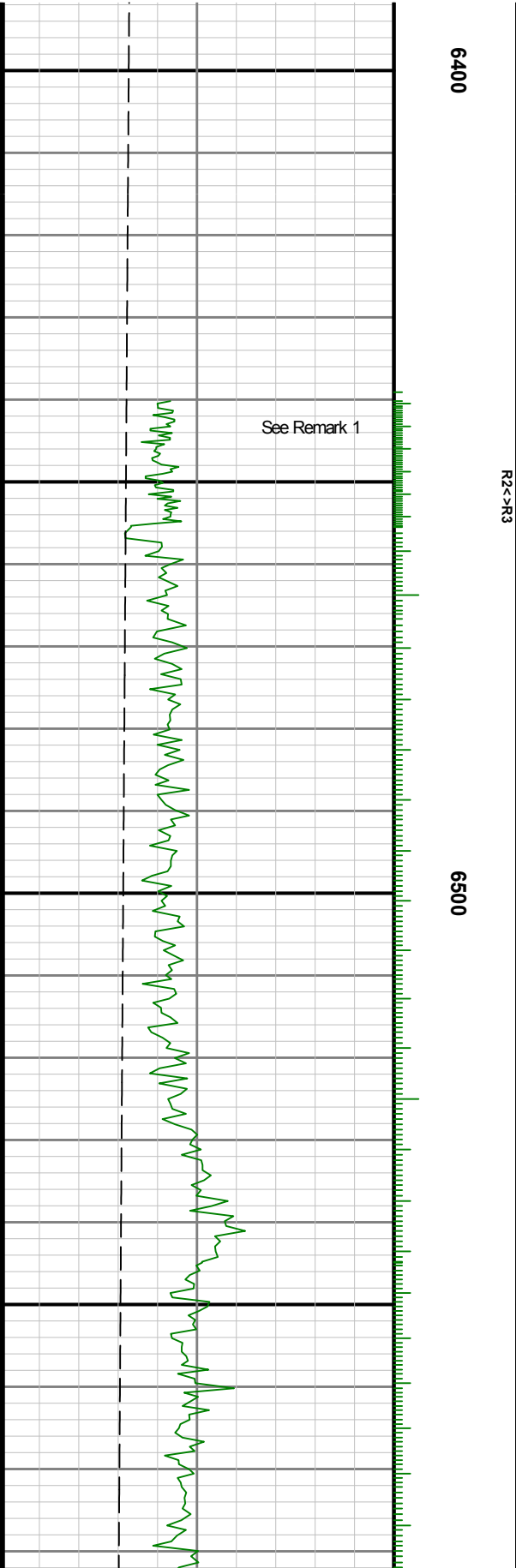
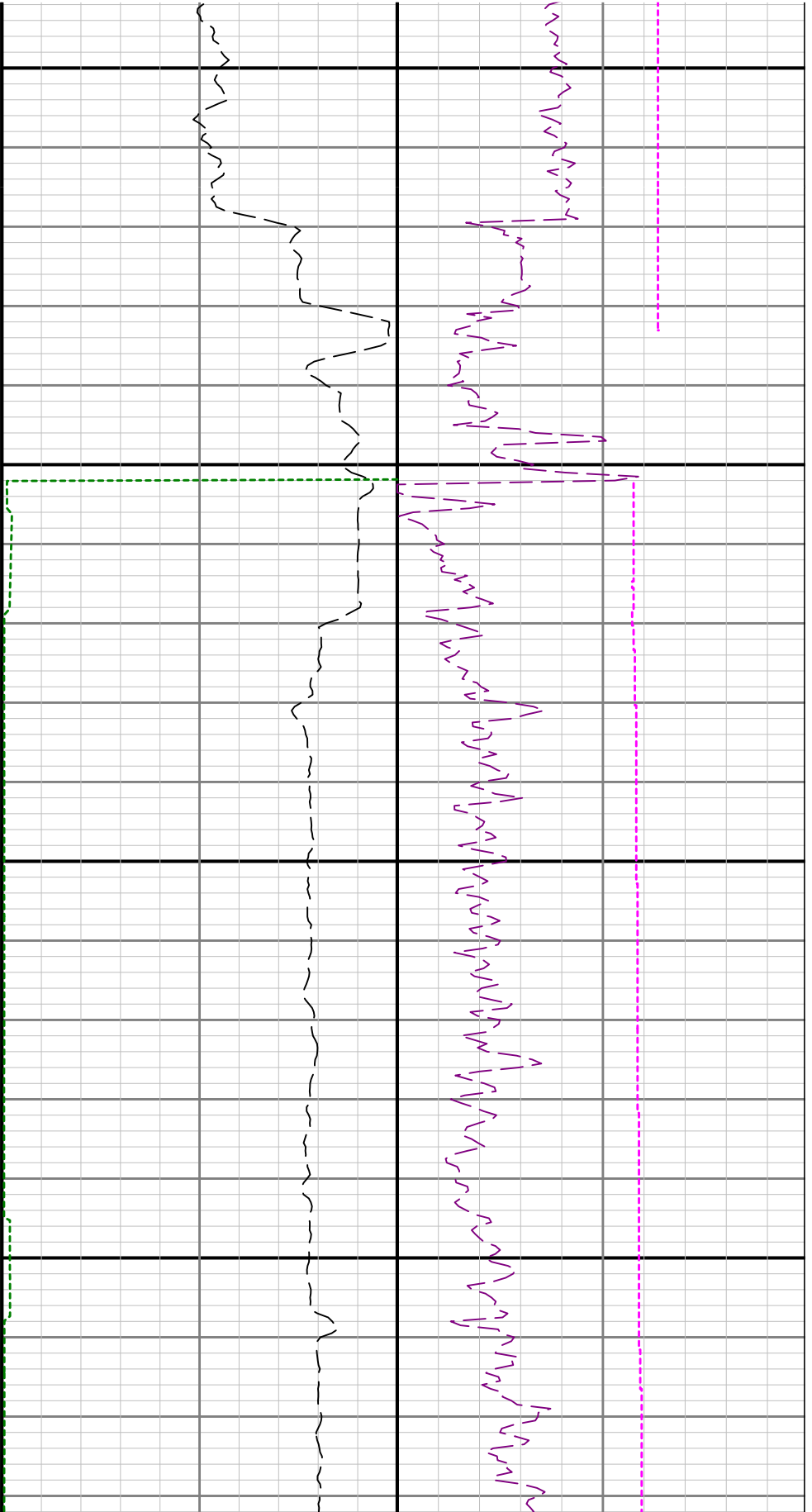


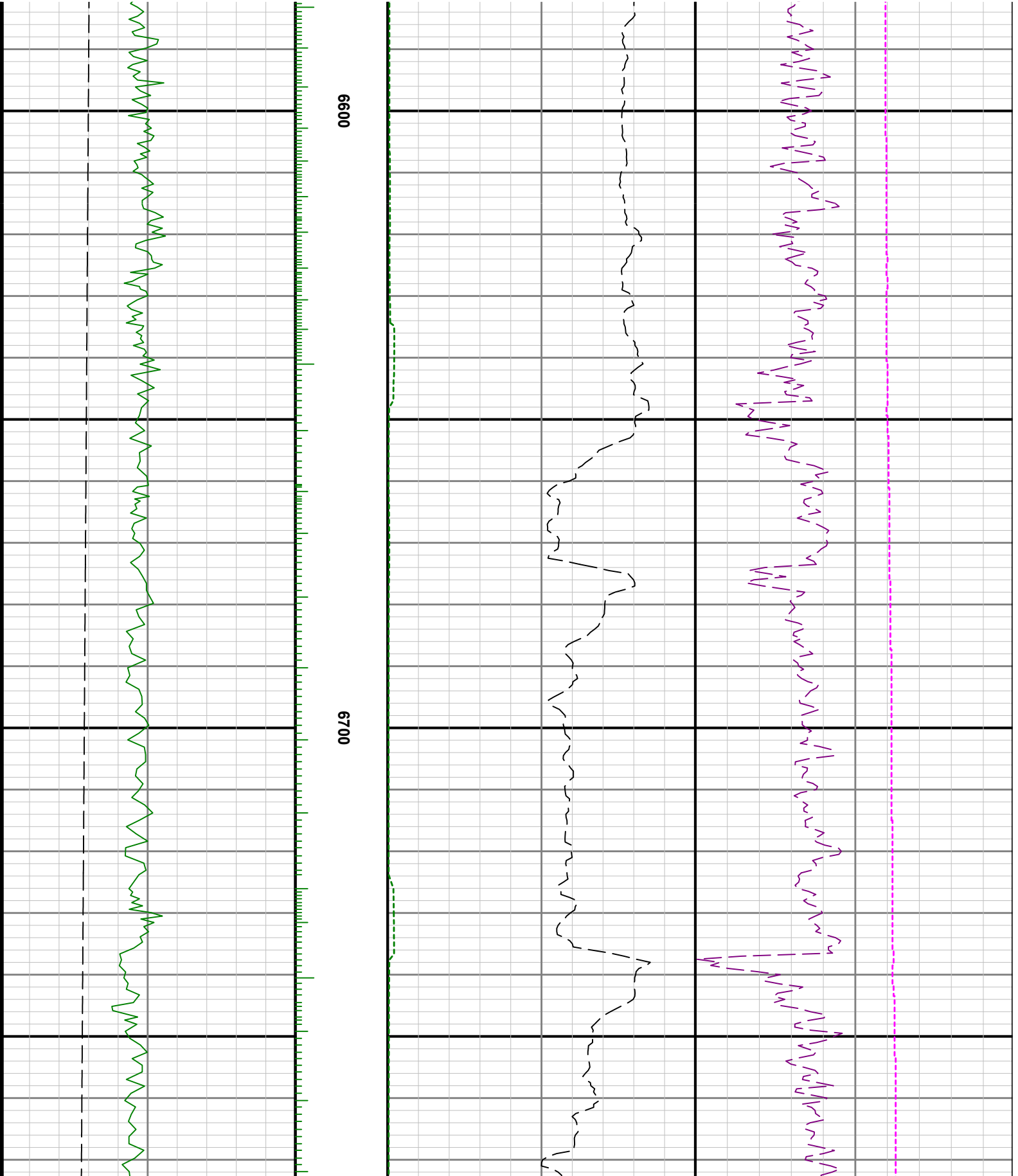
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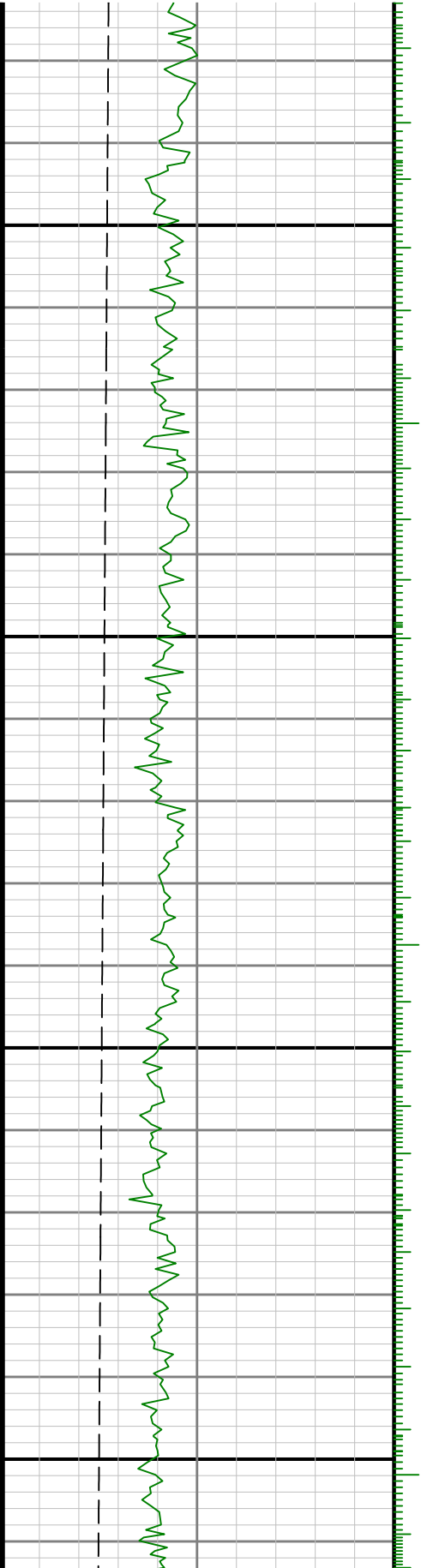
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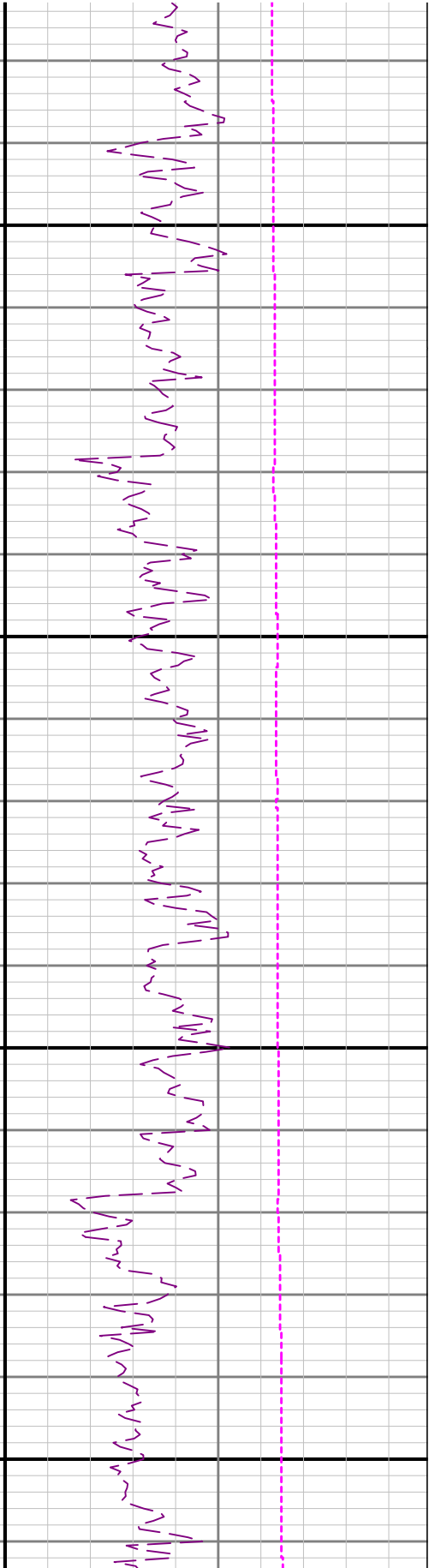
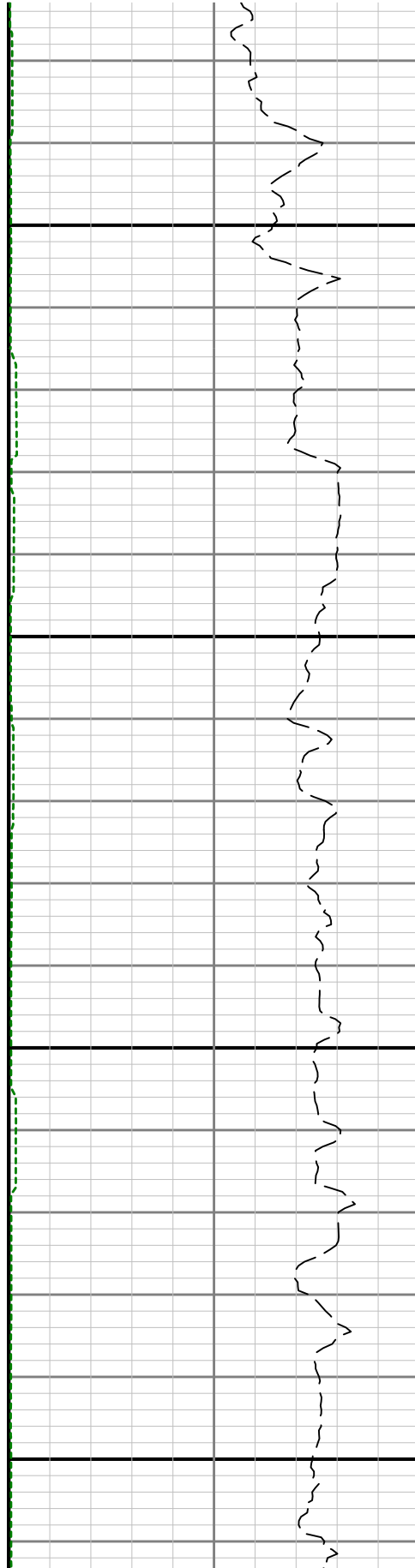


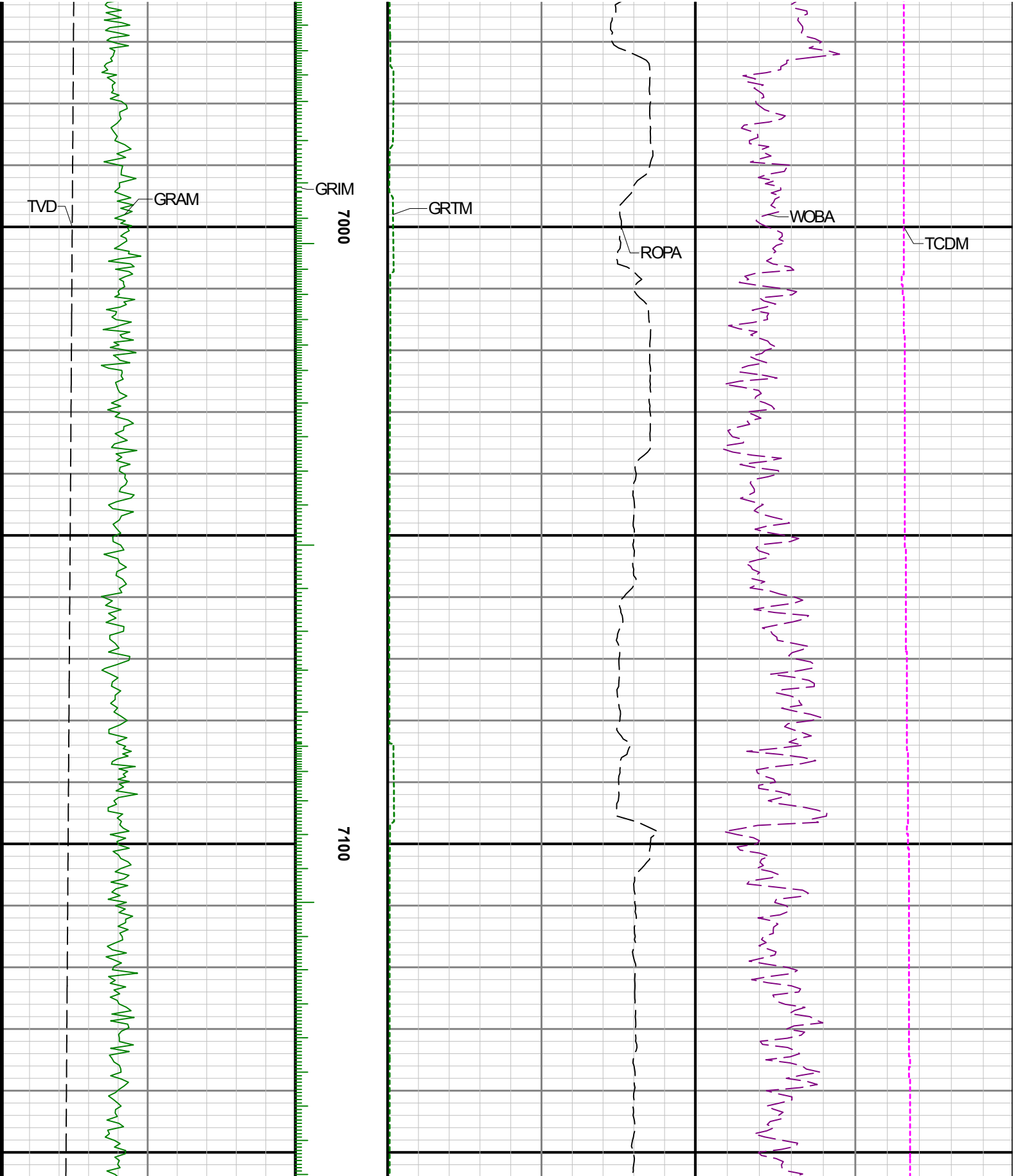


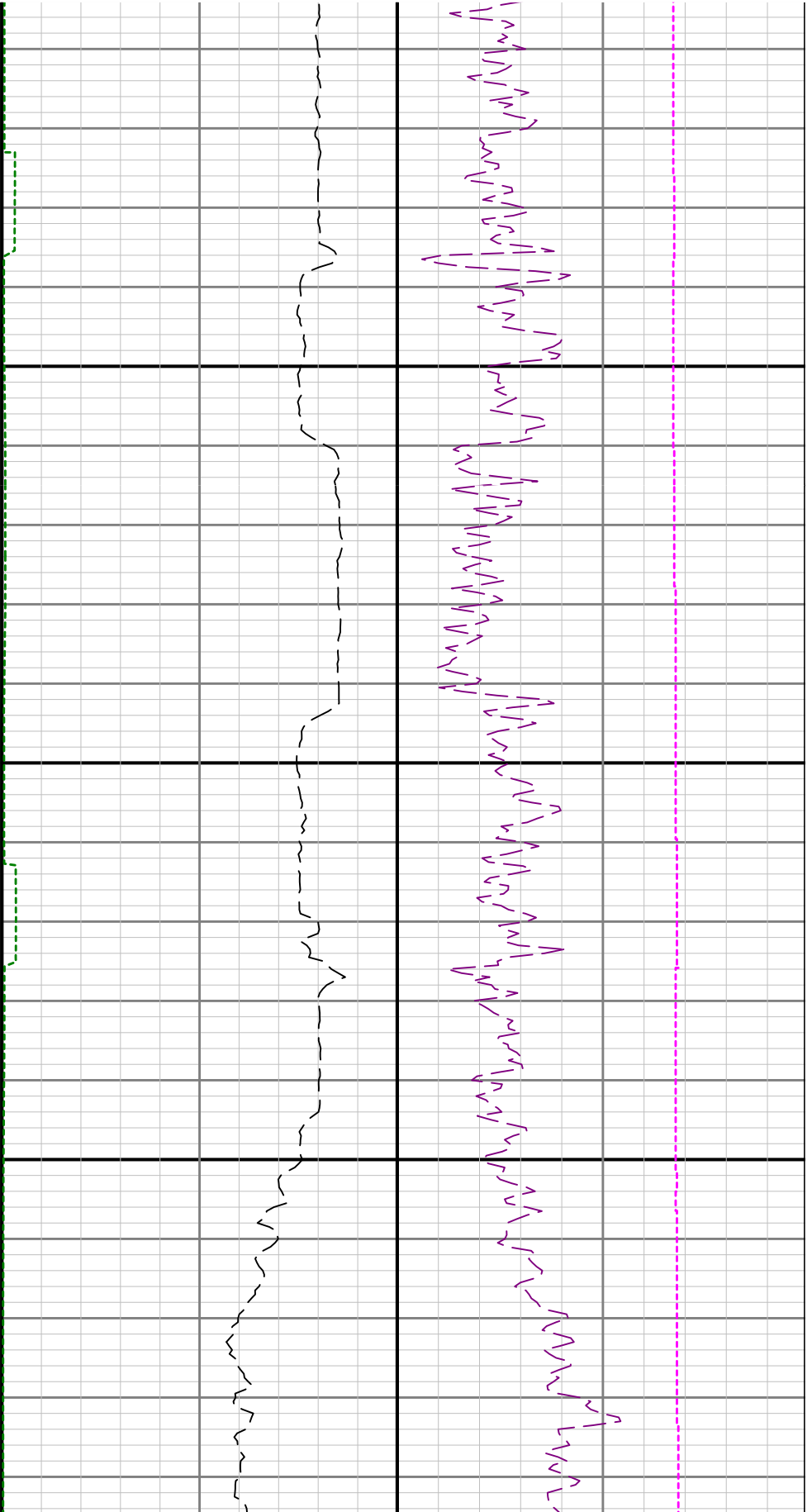


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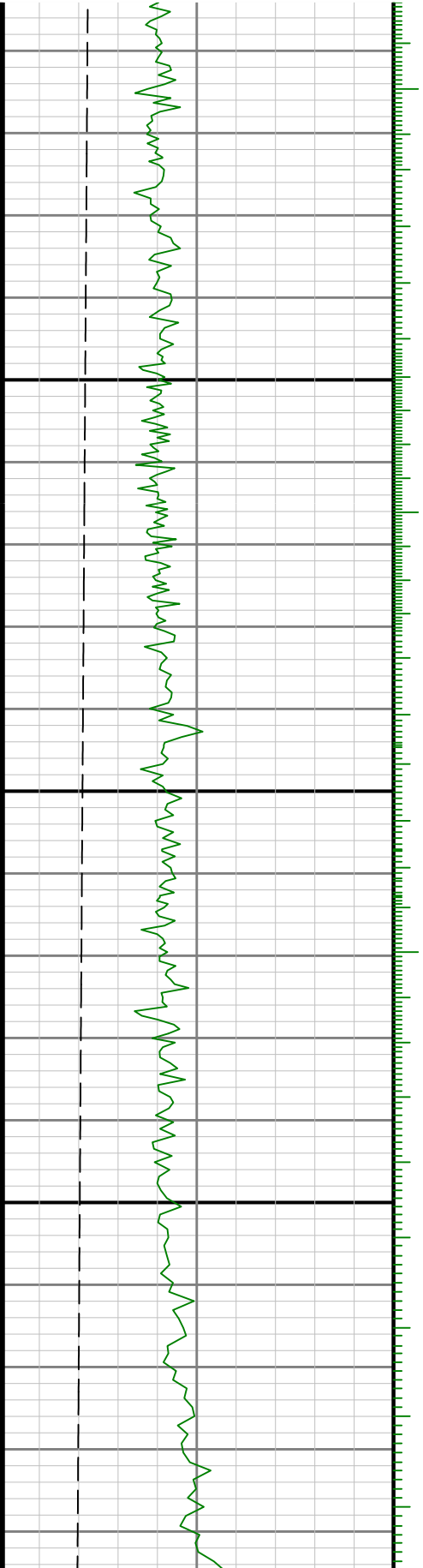


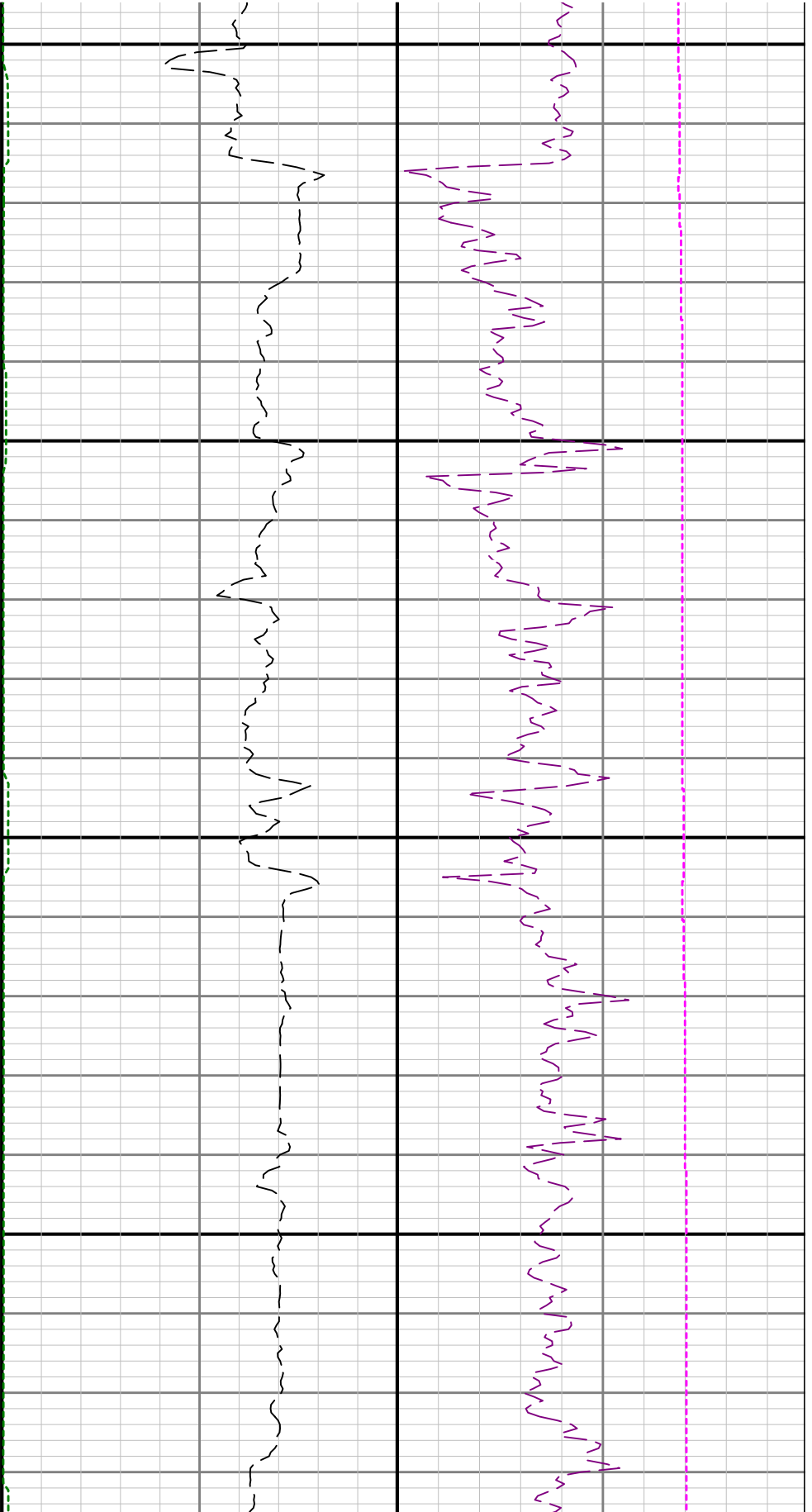




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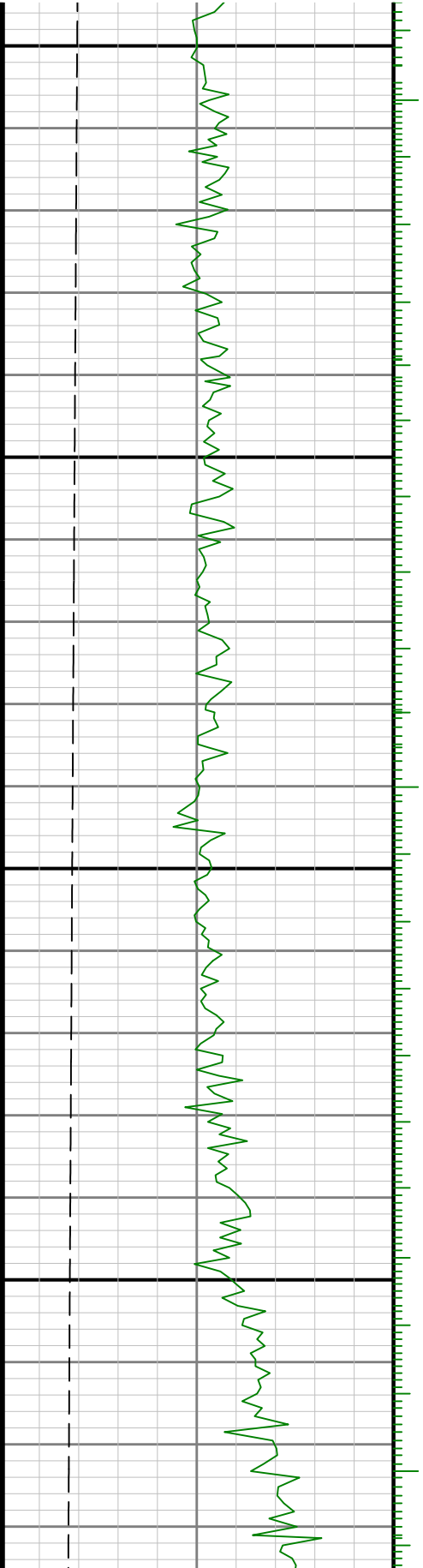
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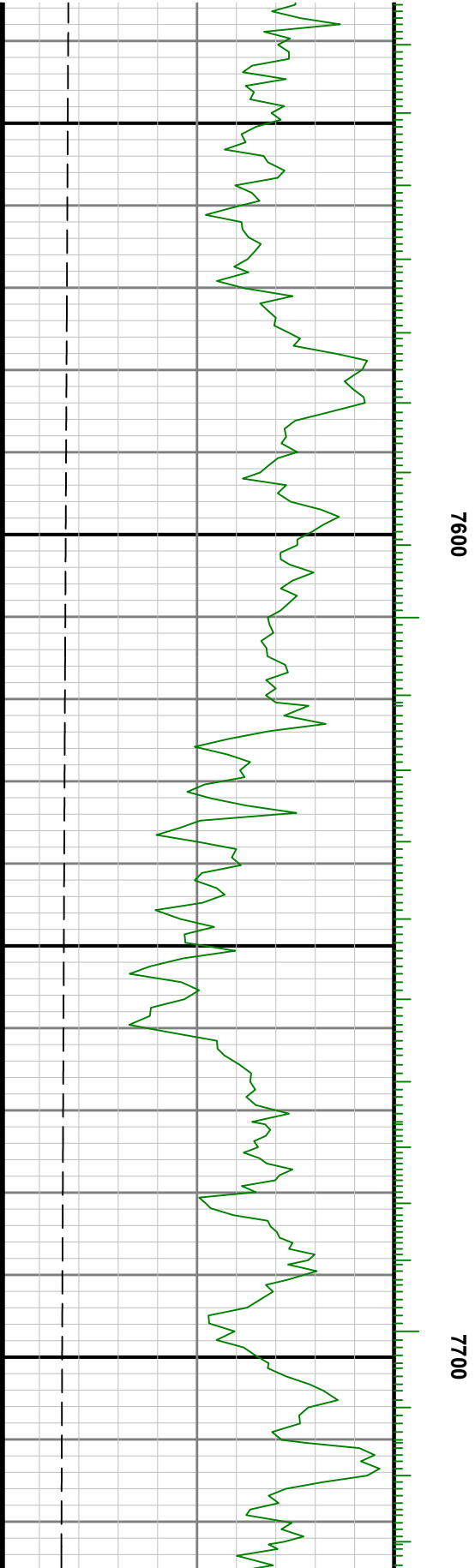
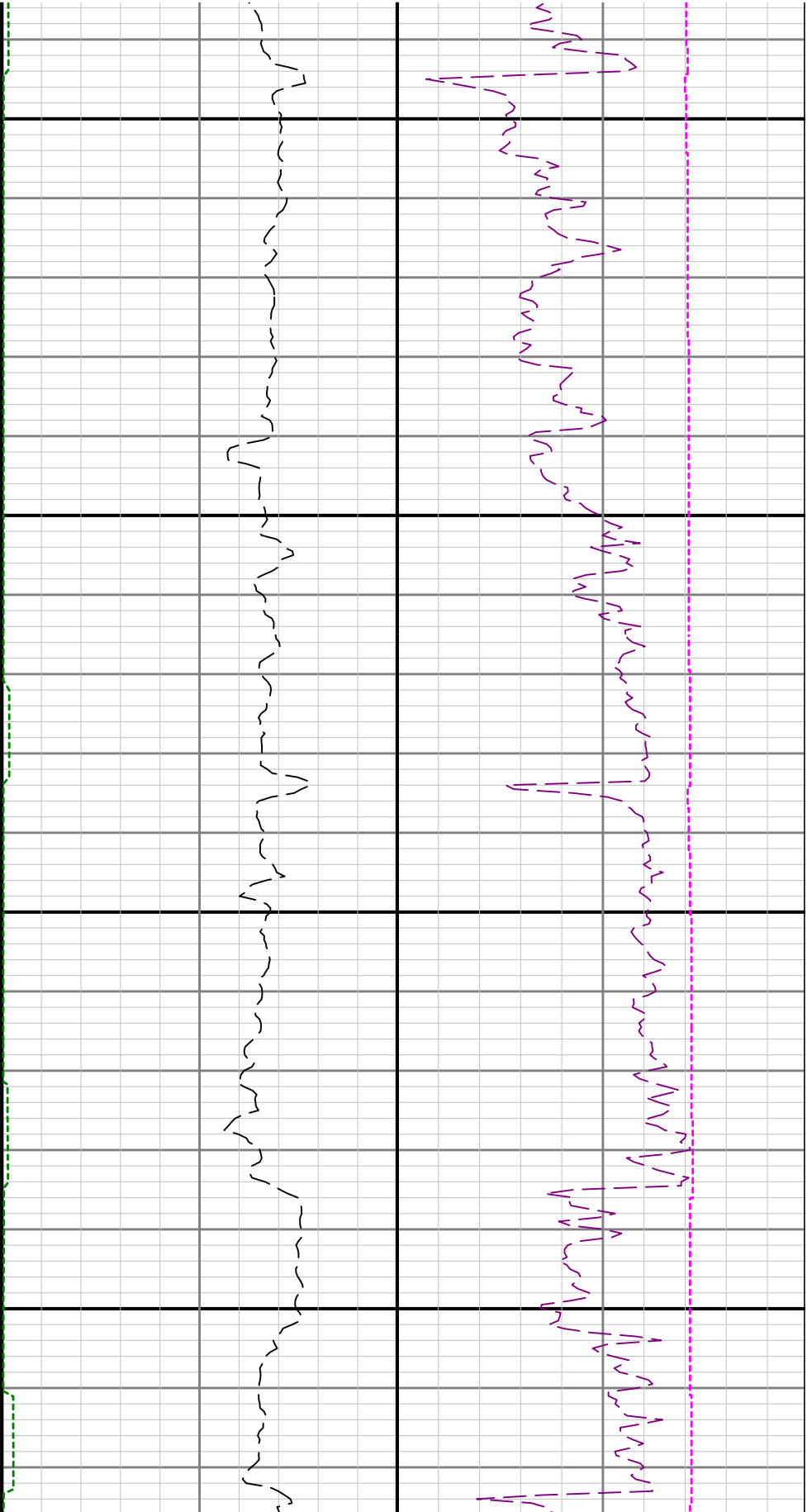


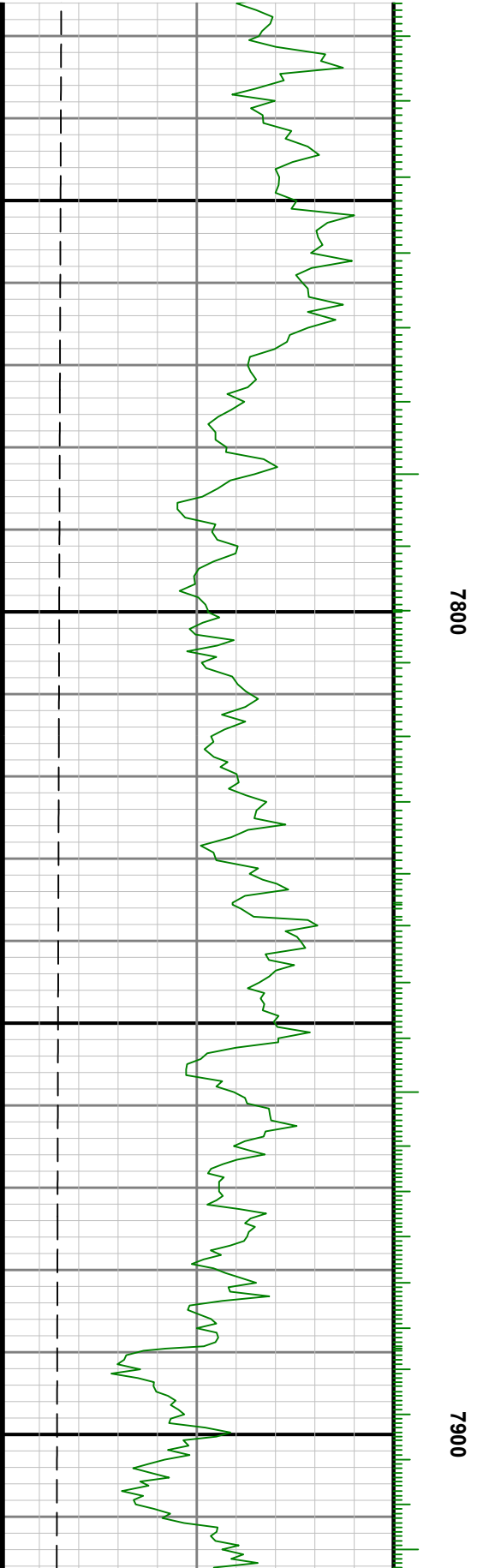
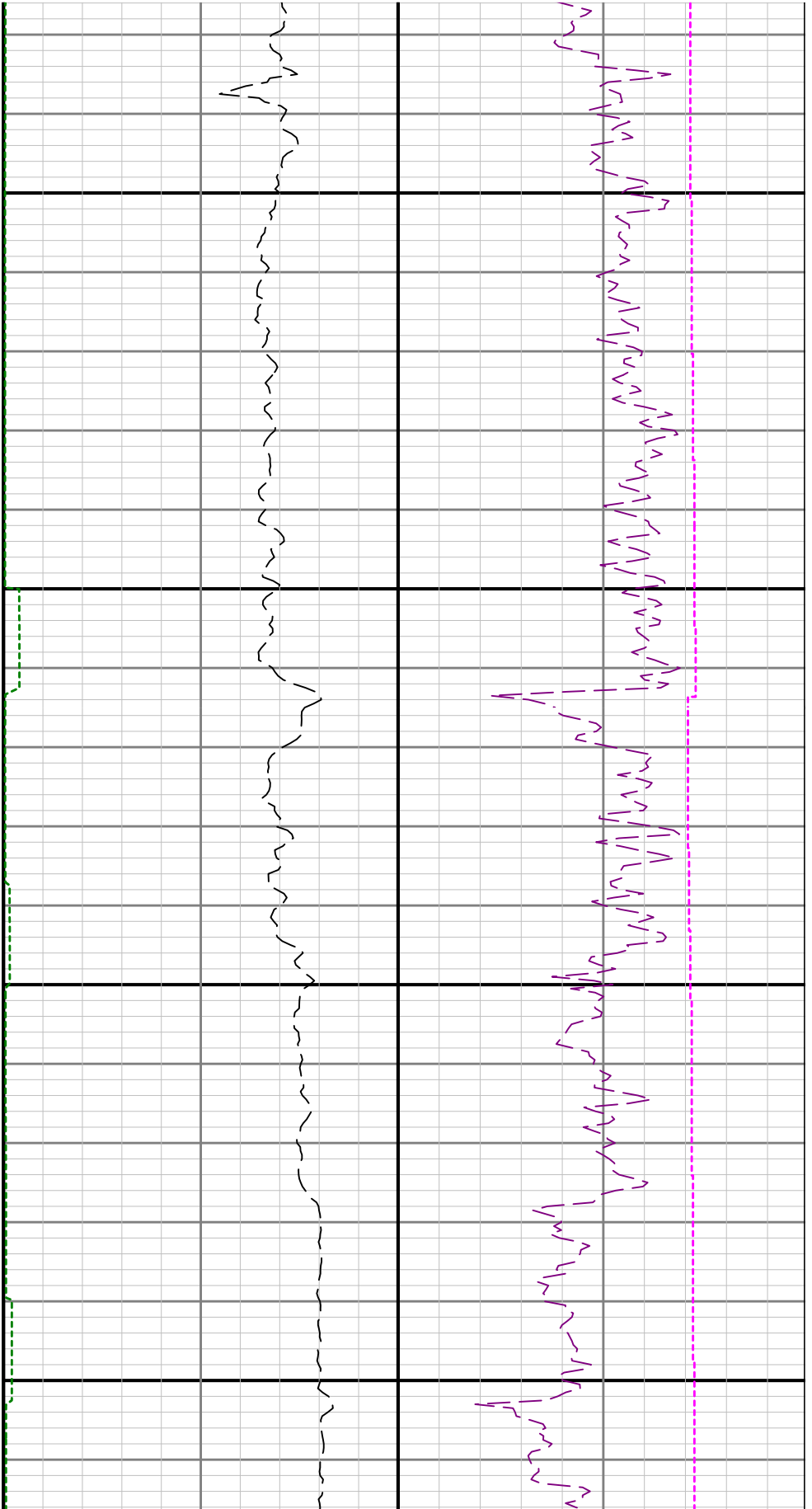


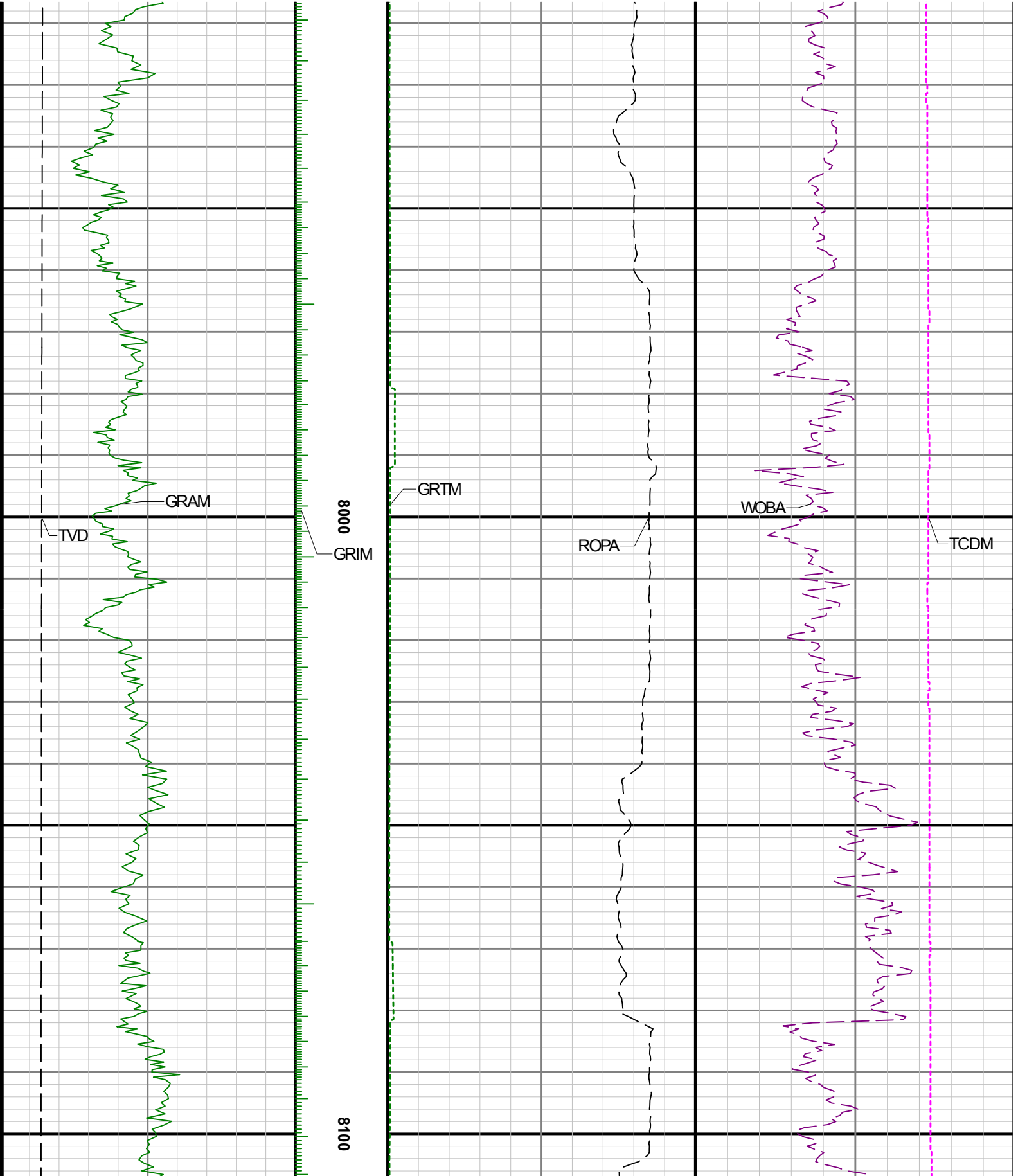
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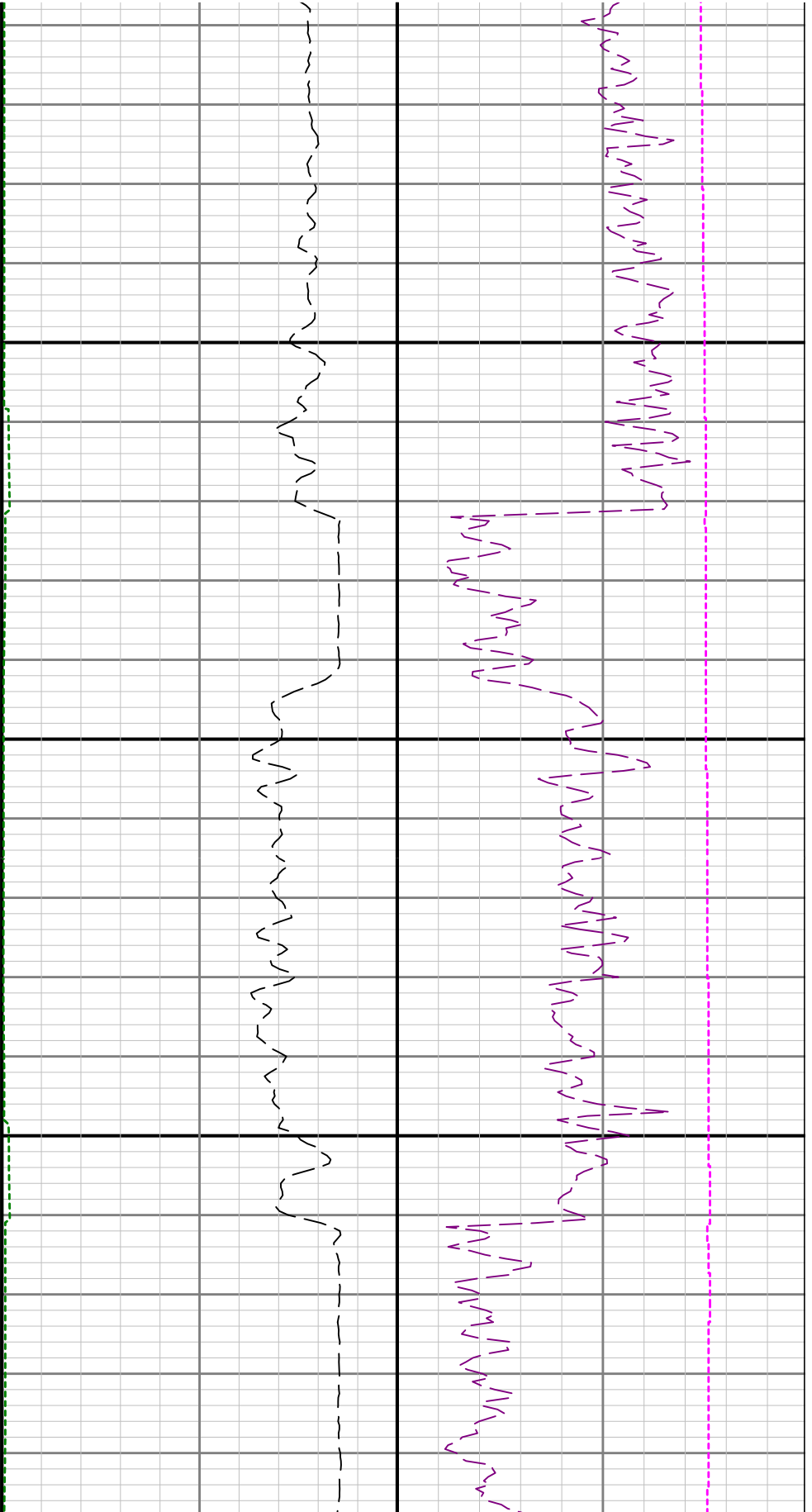
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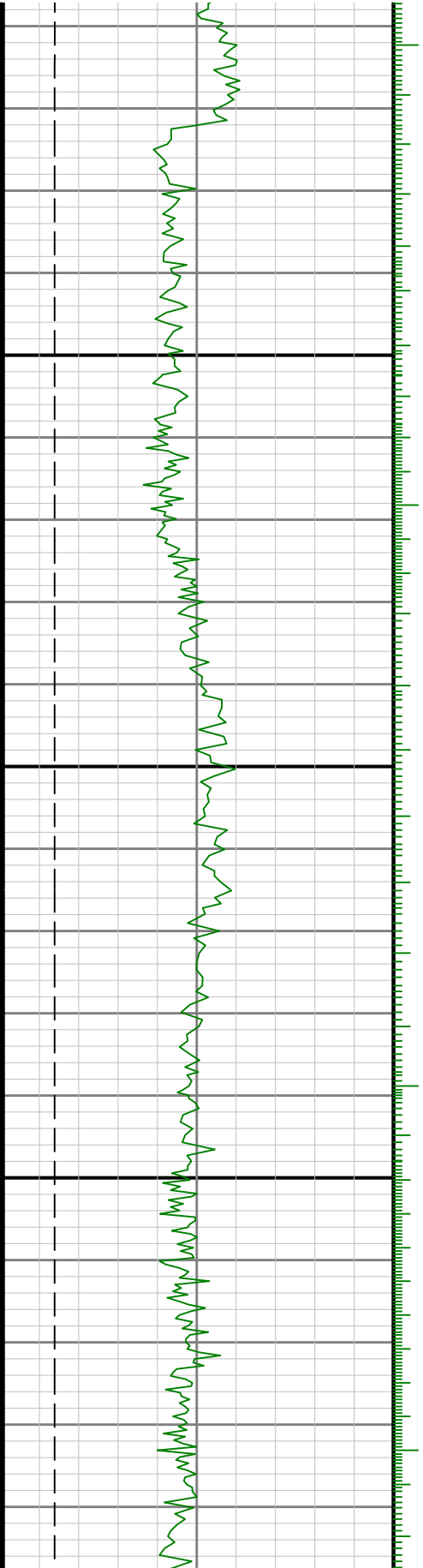


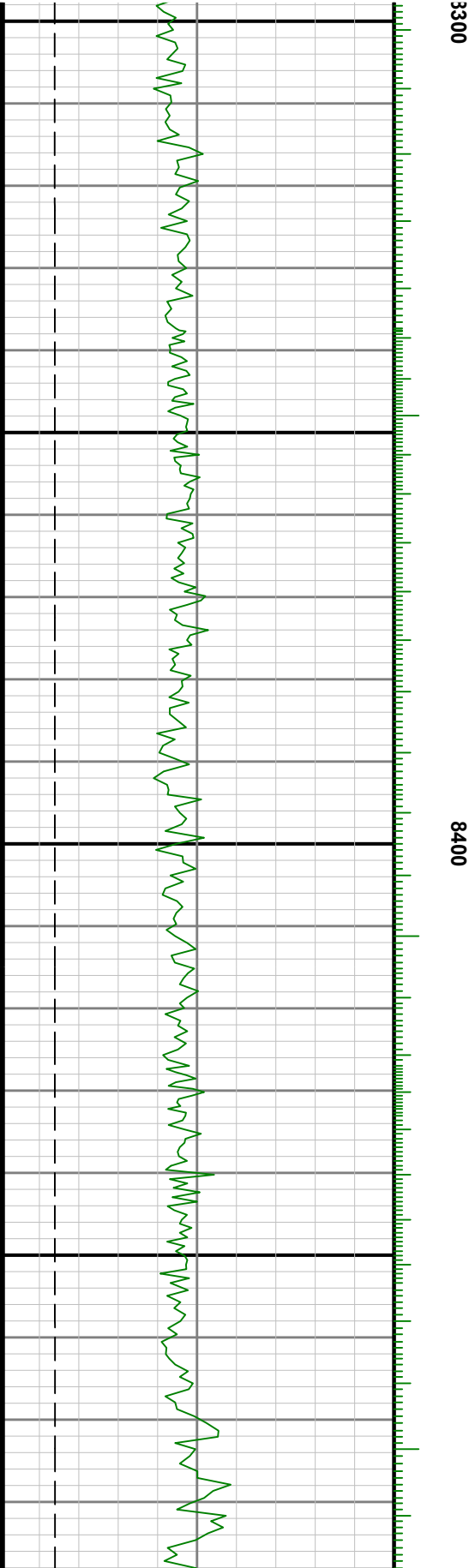
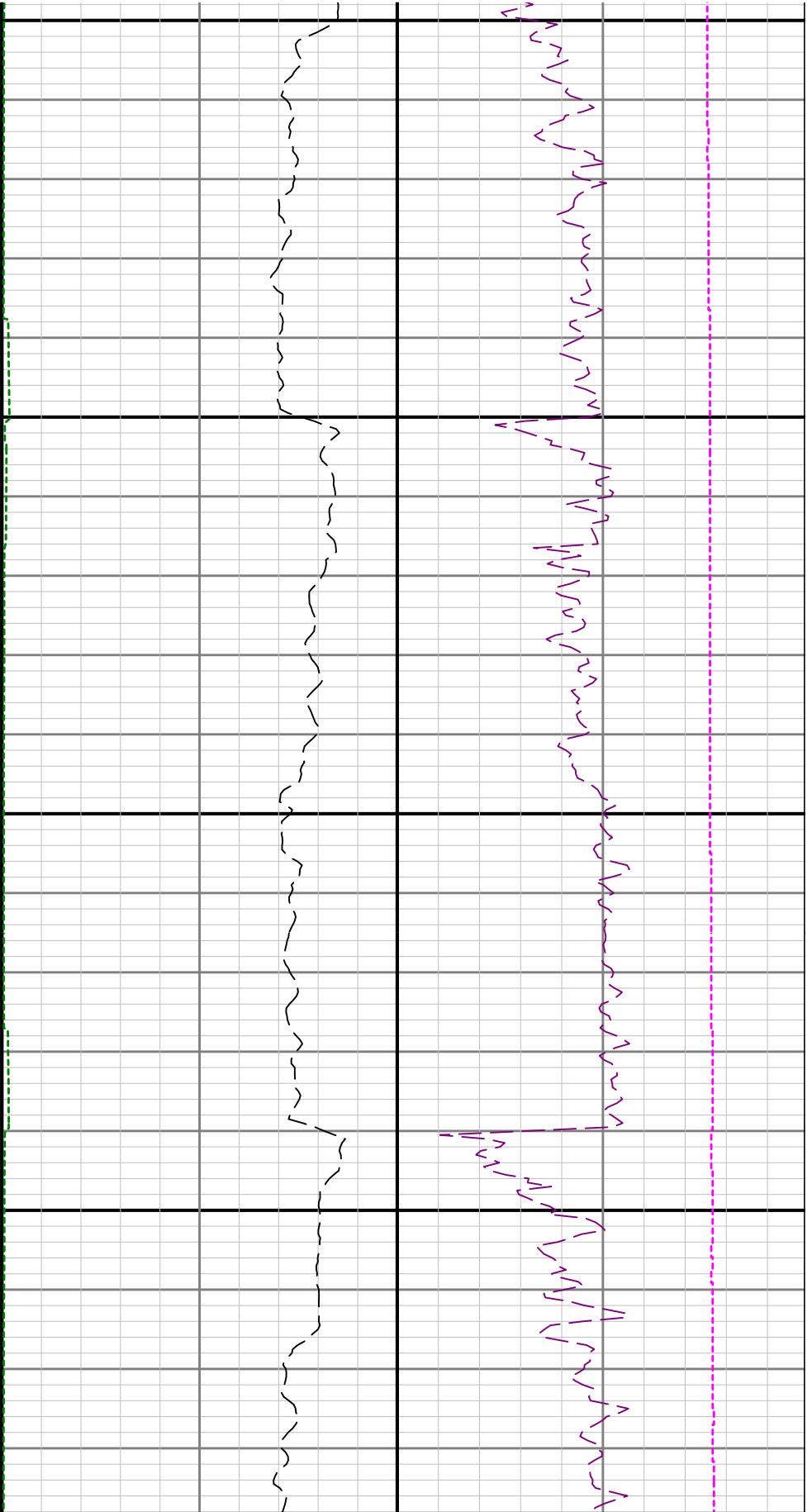


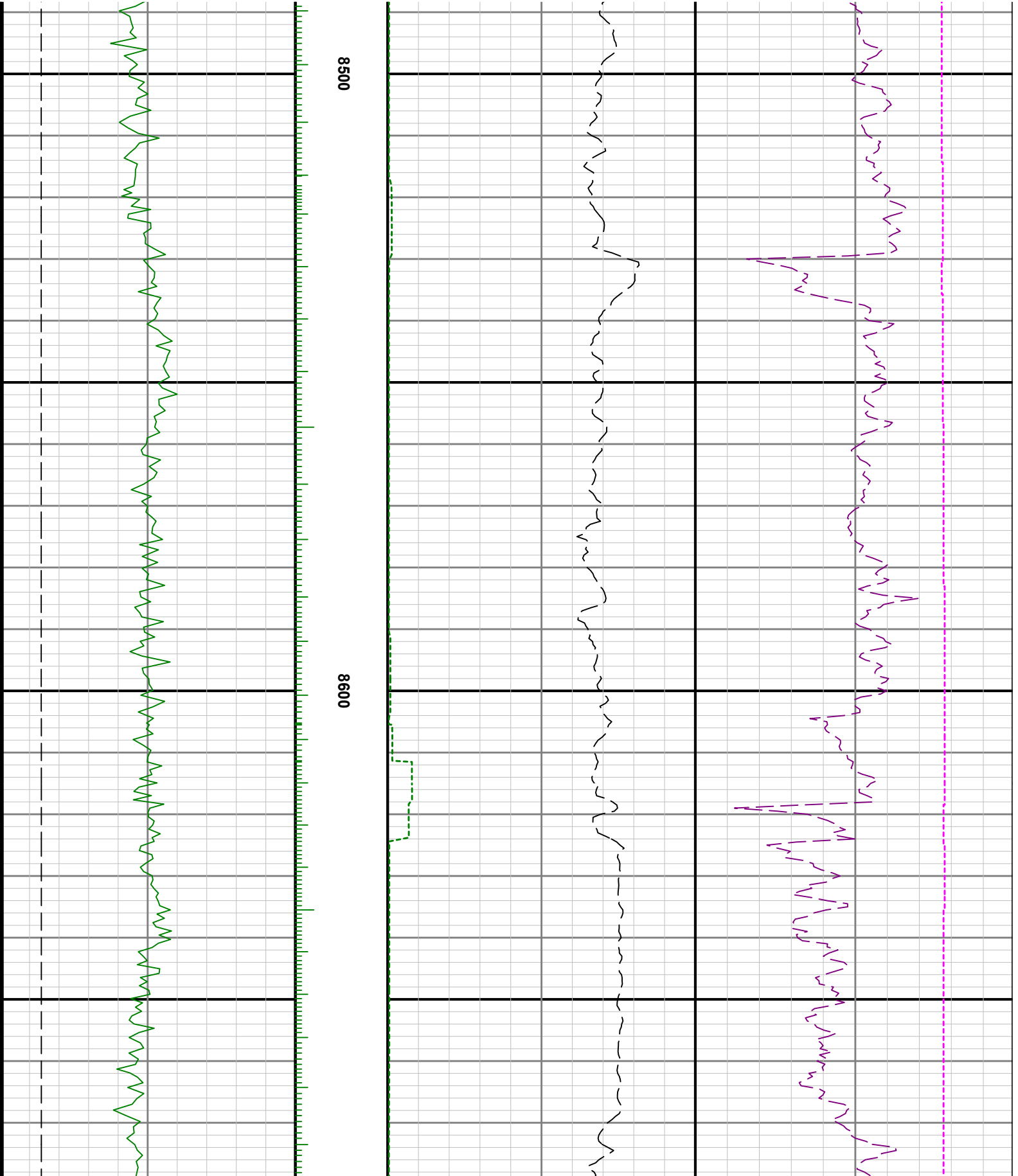


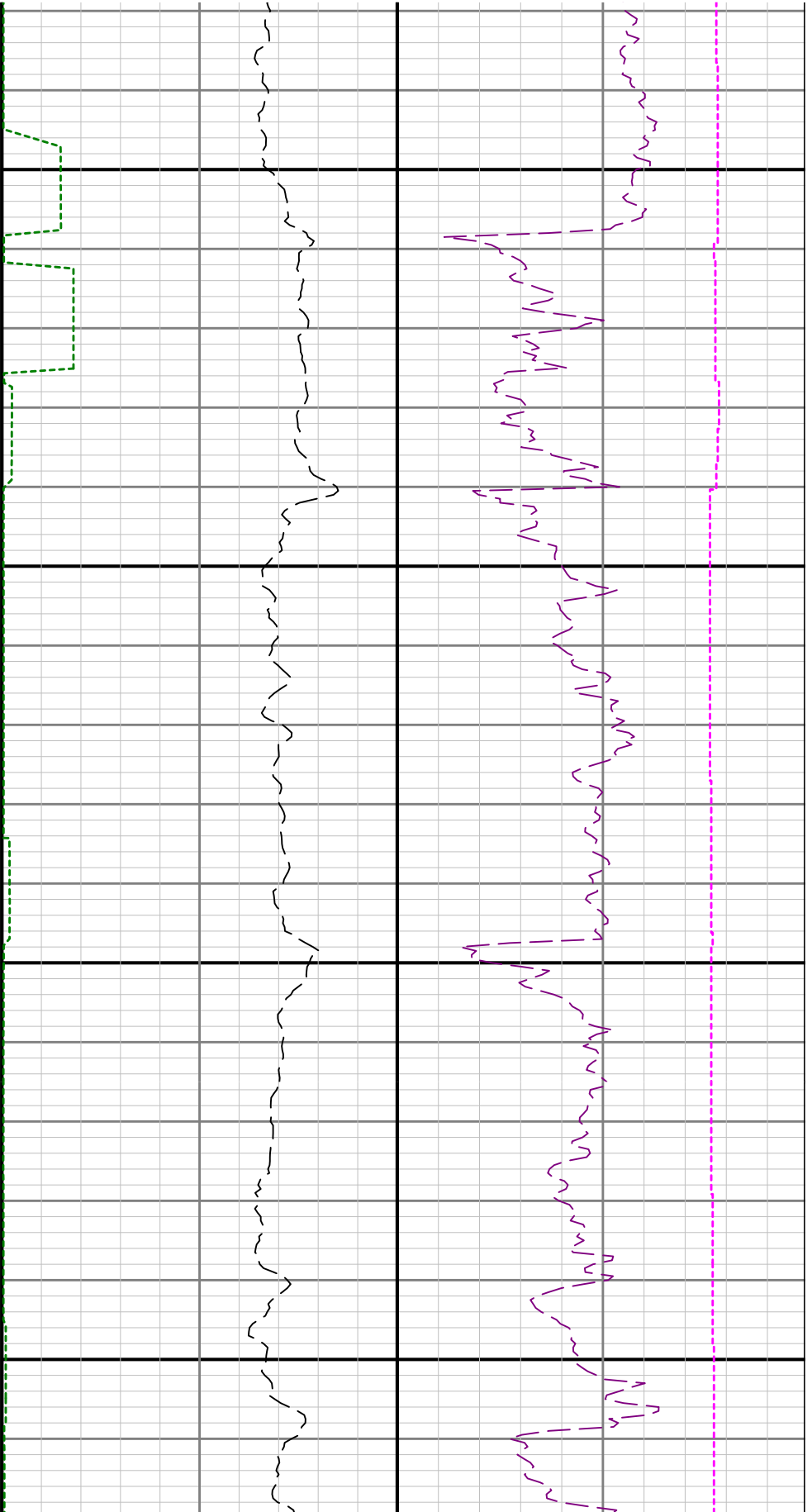


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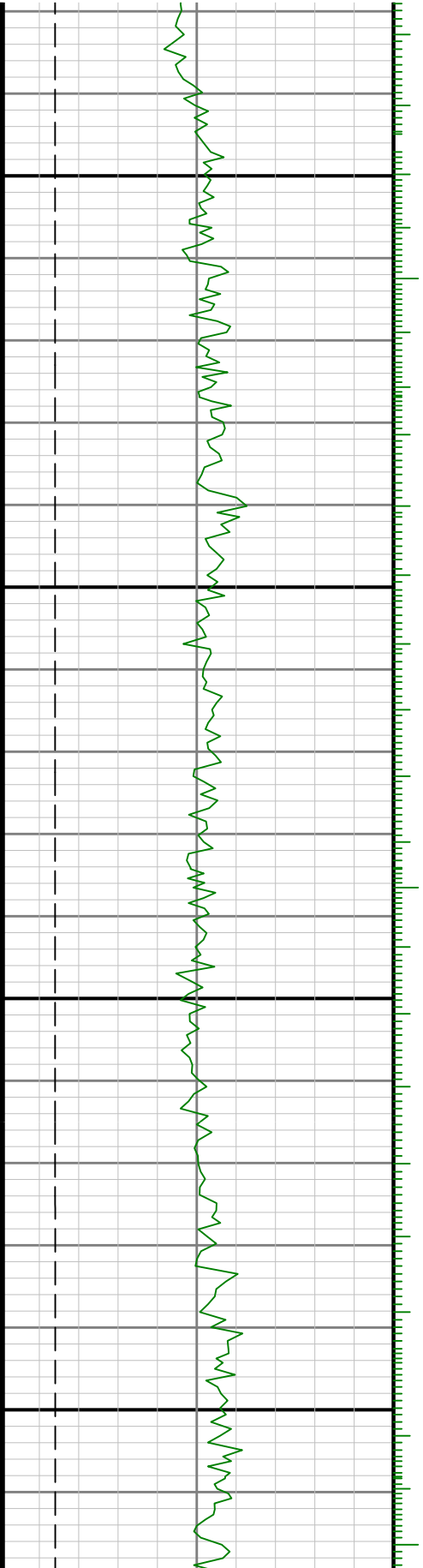


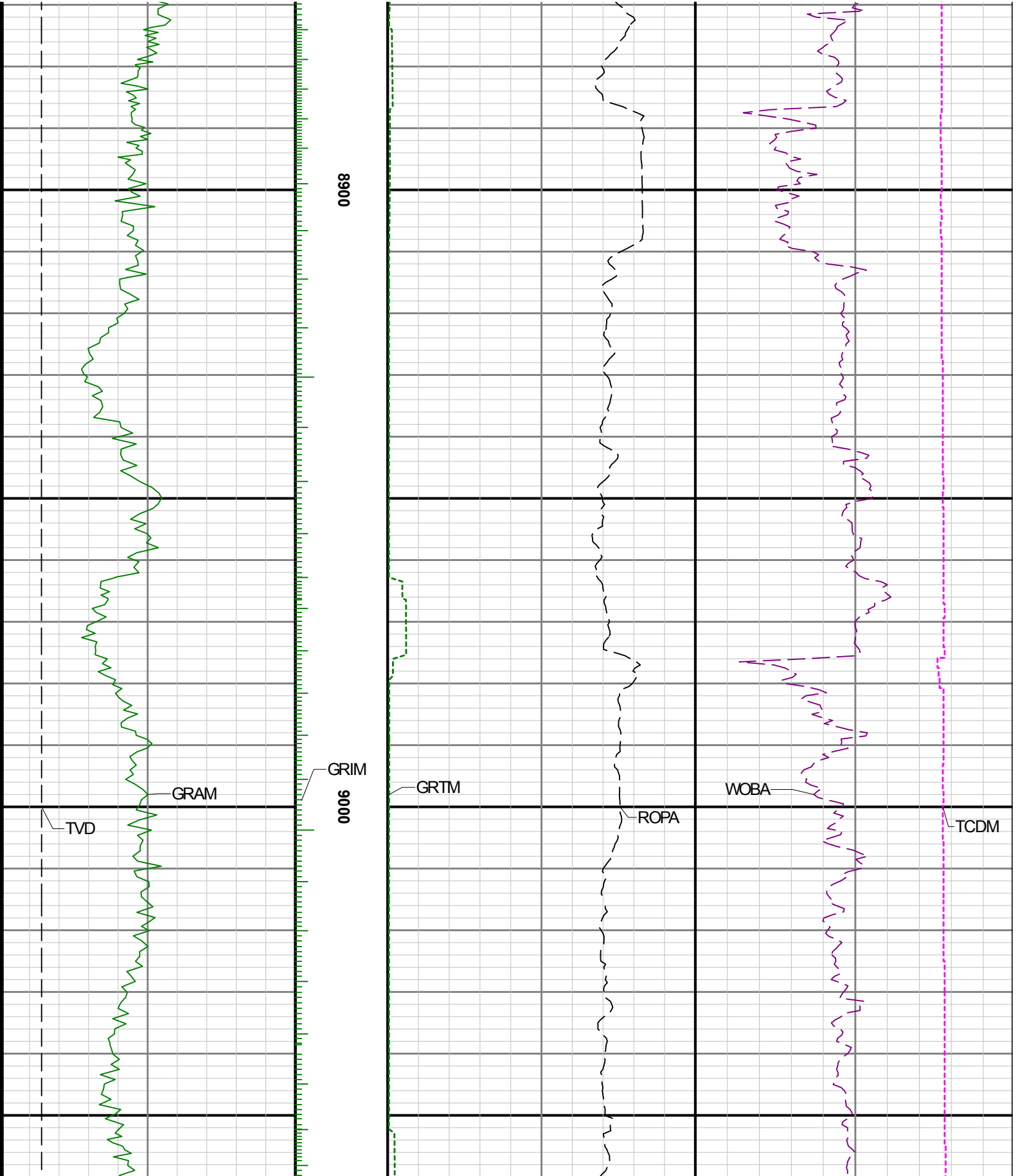




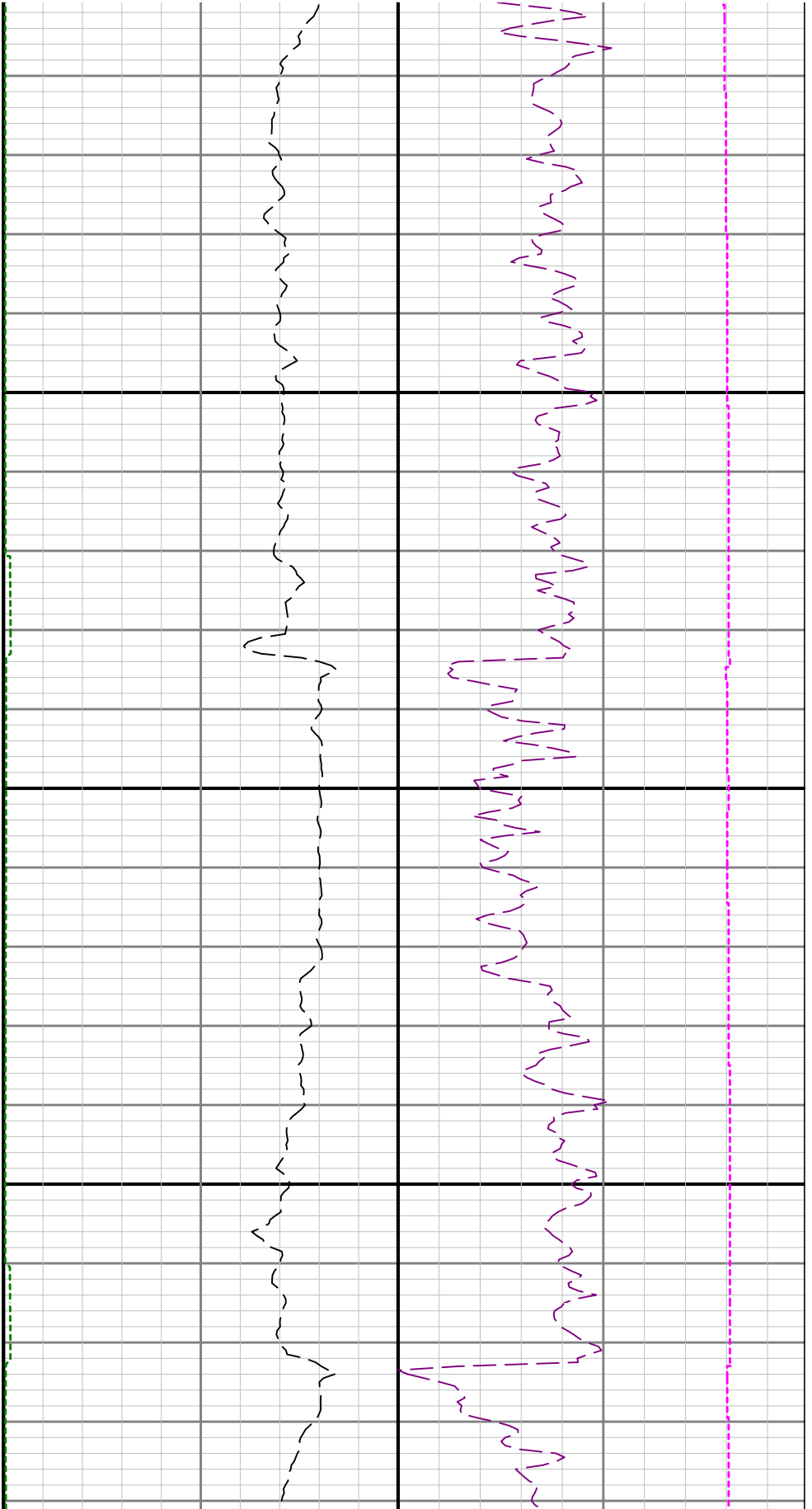
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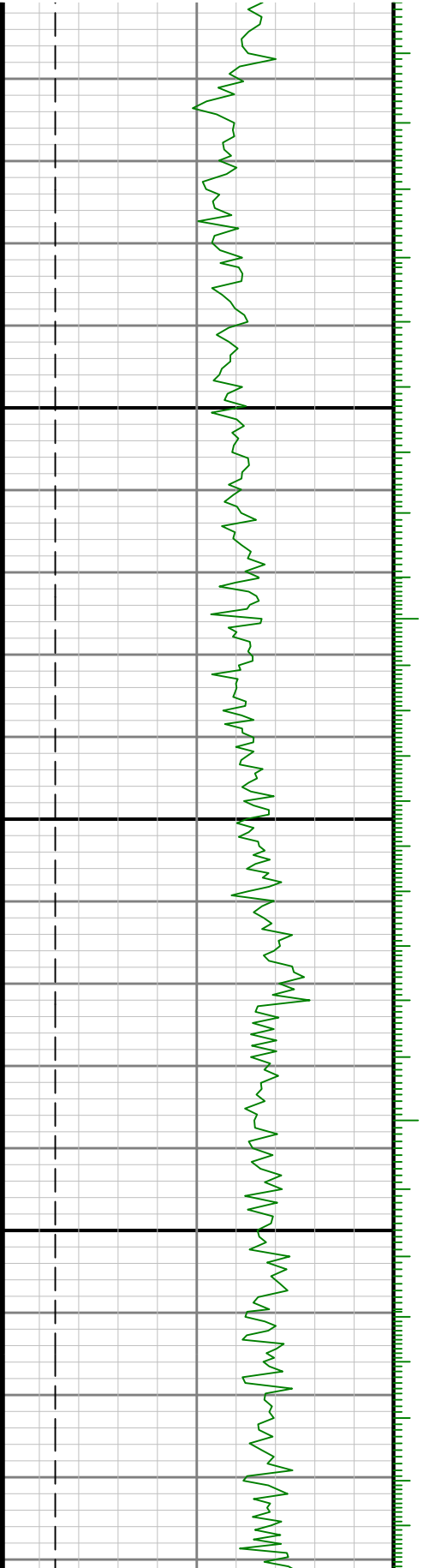


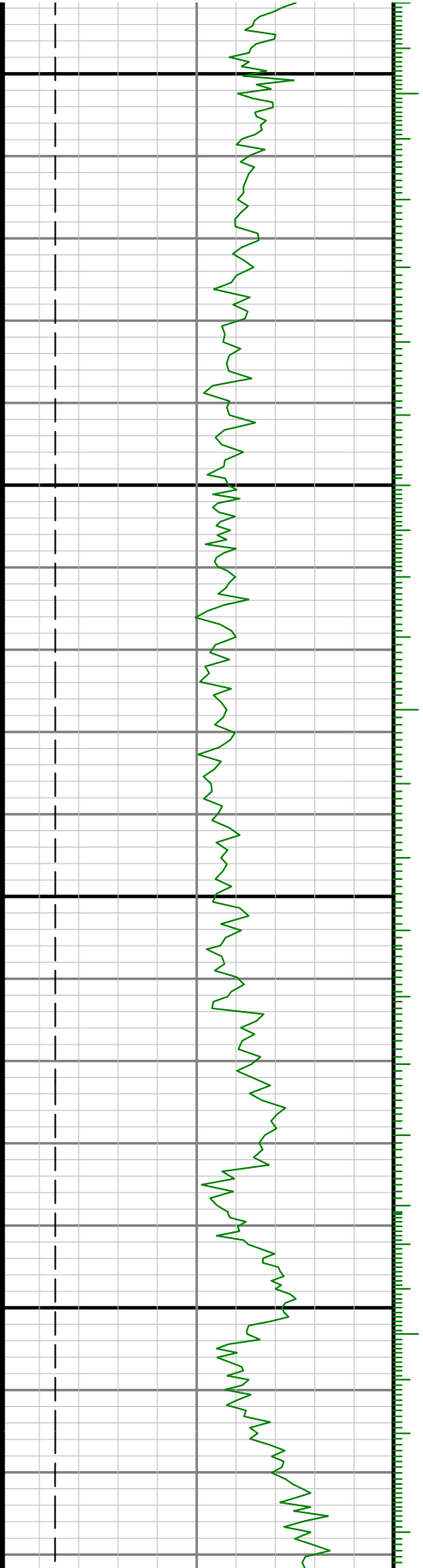




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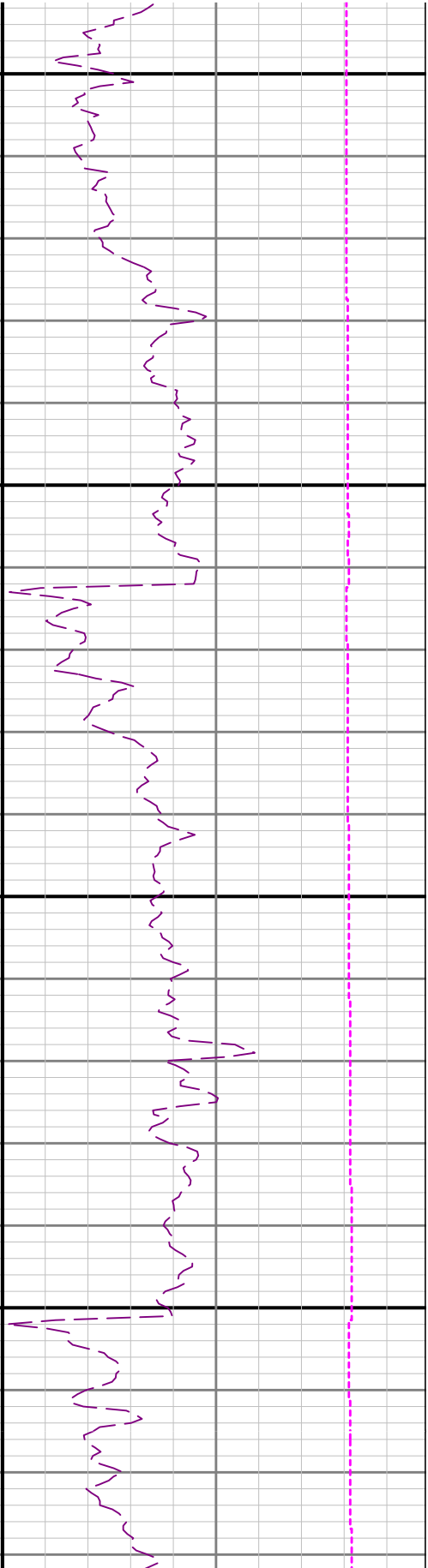
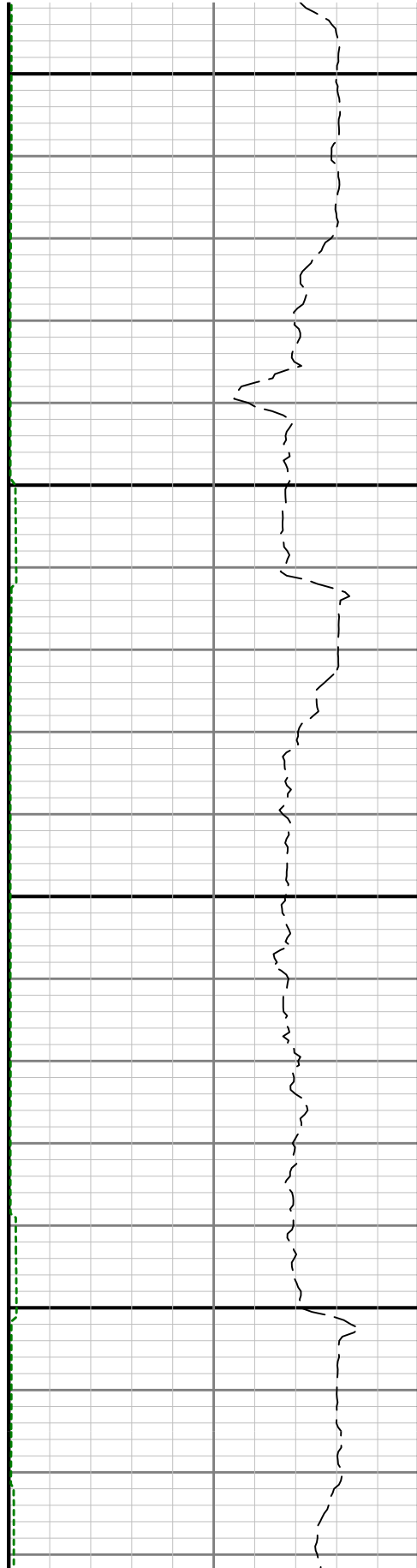
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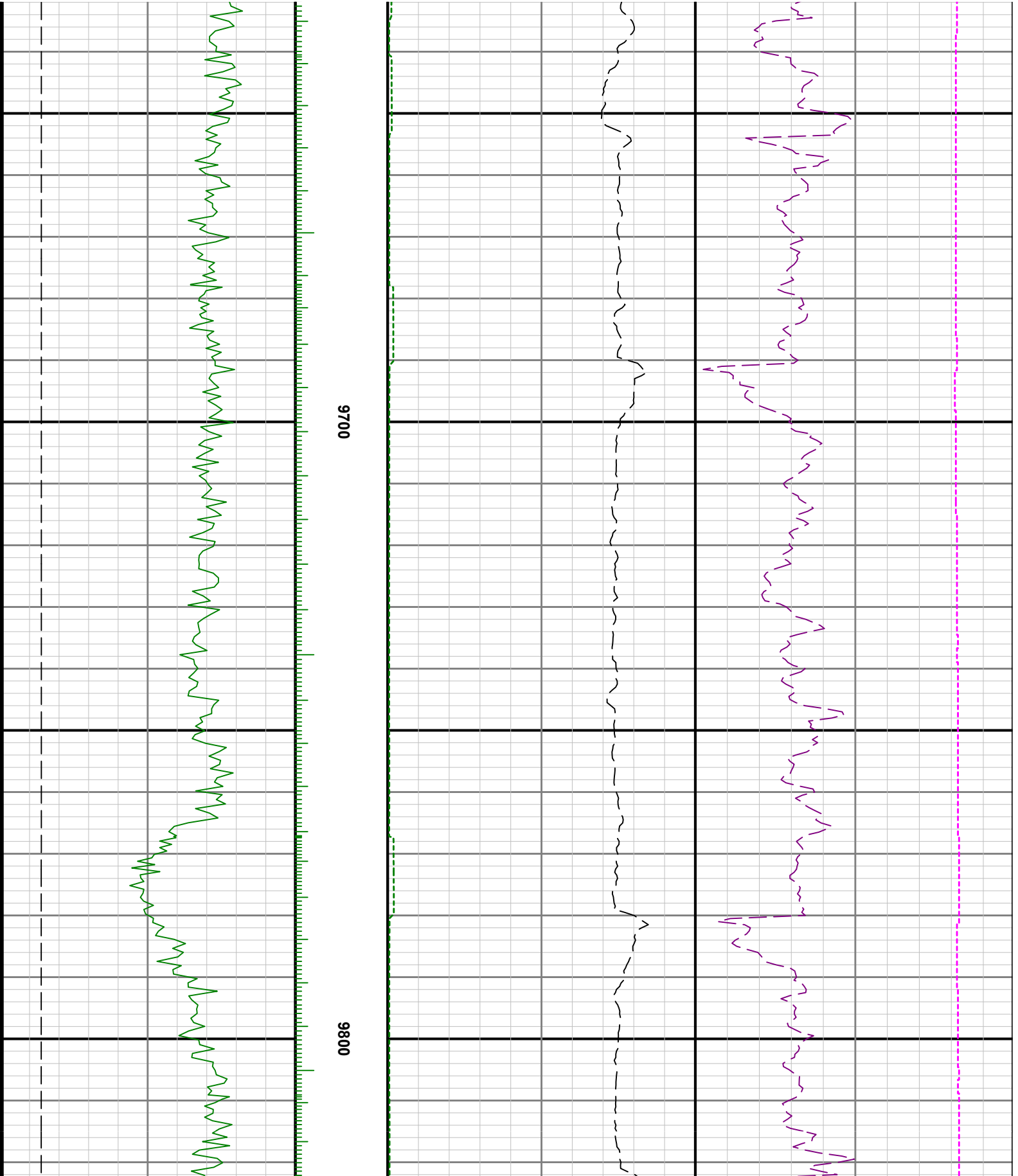


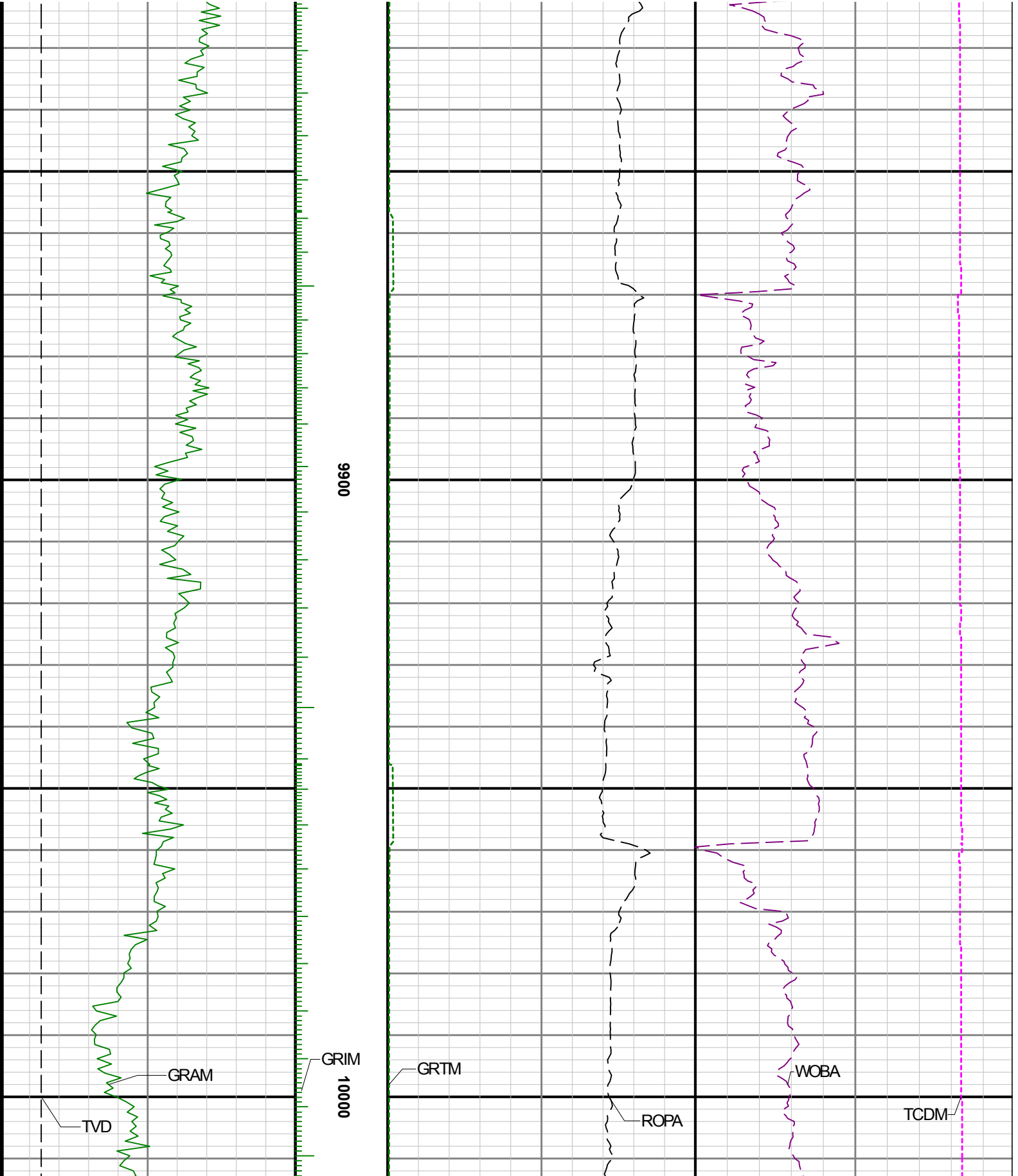


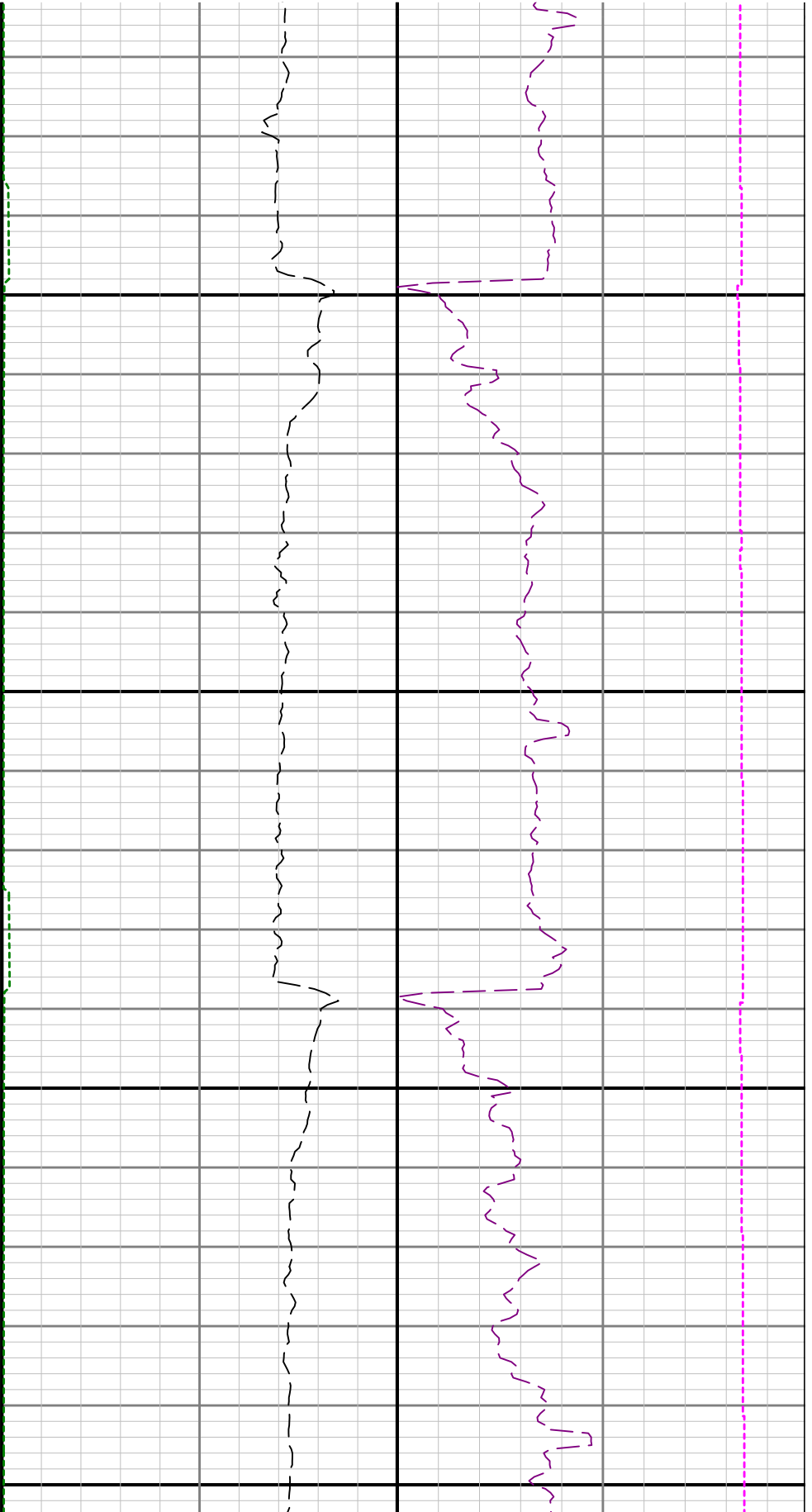
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9600



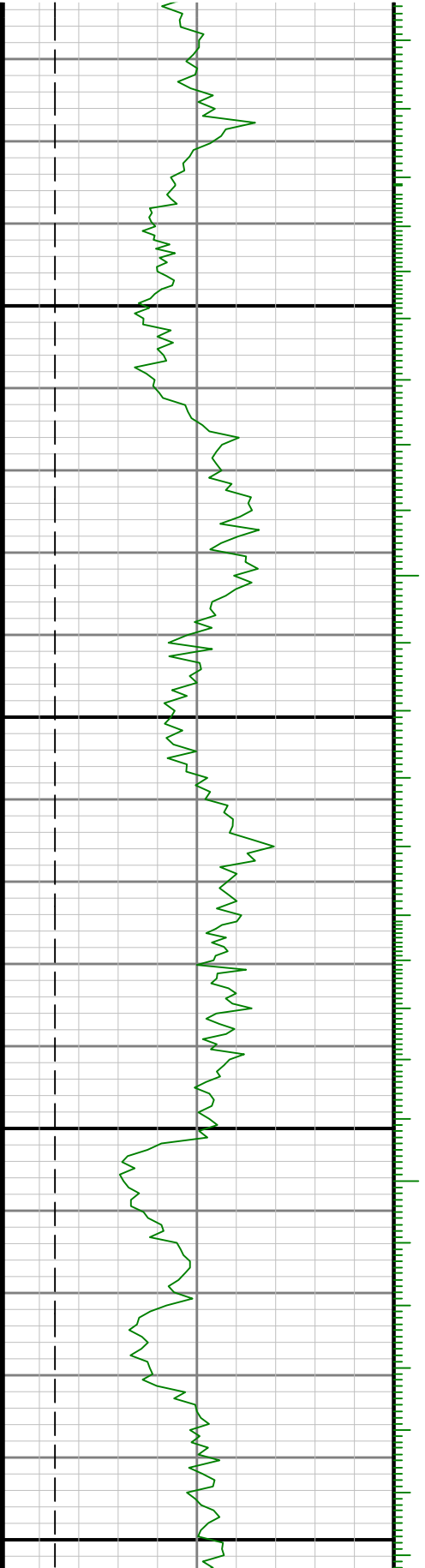


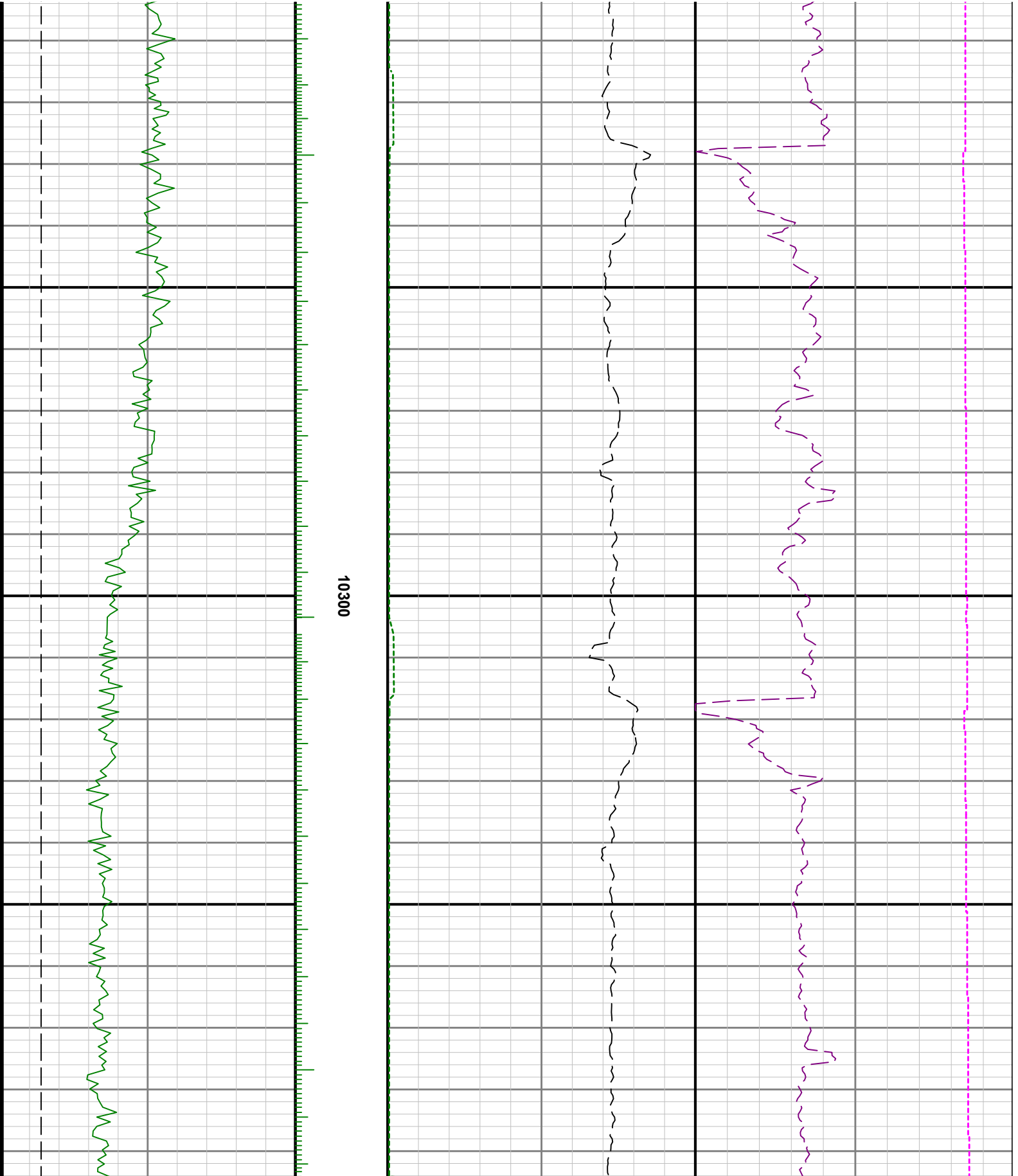


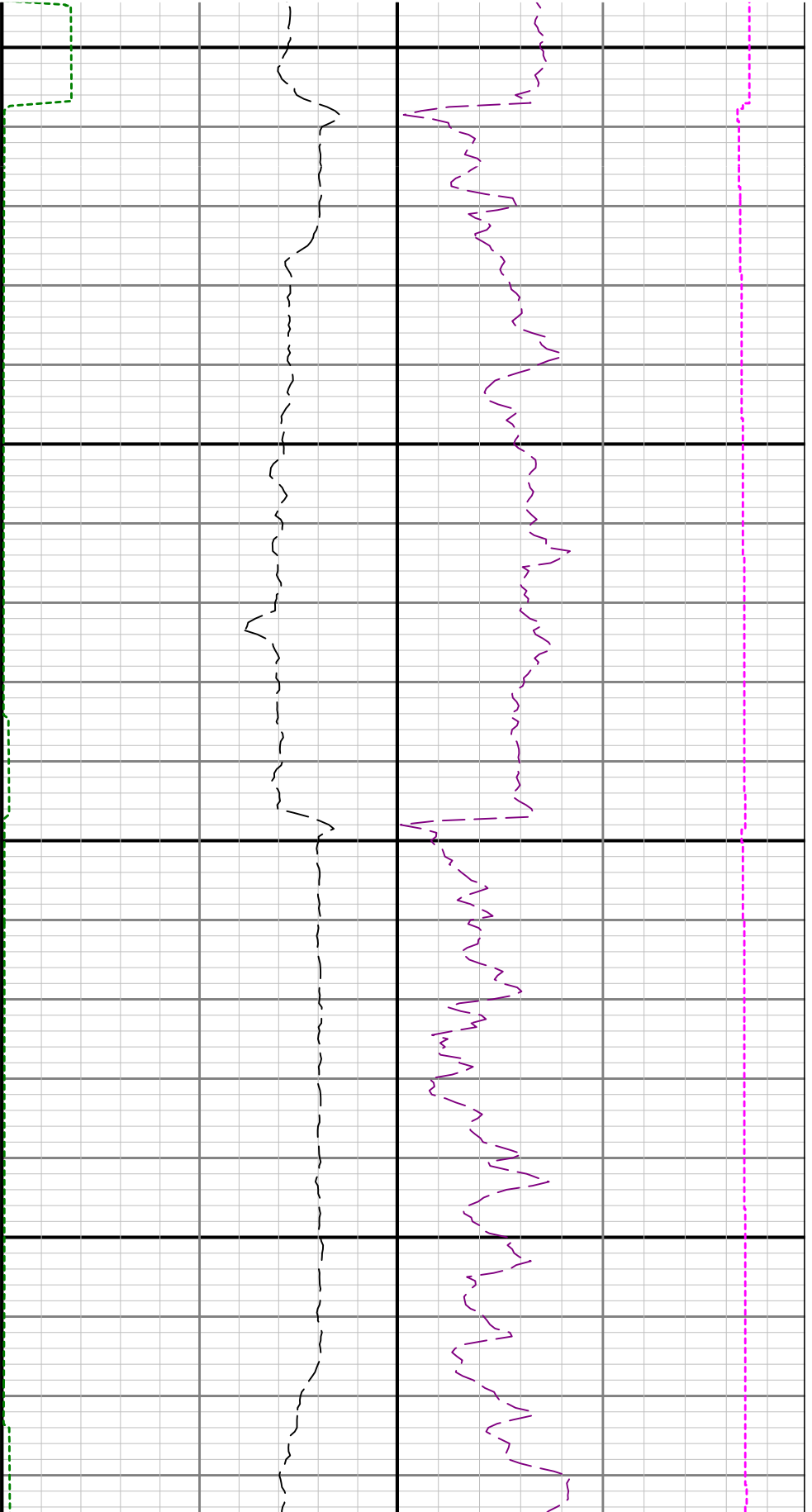


**10100**

**10200**

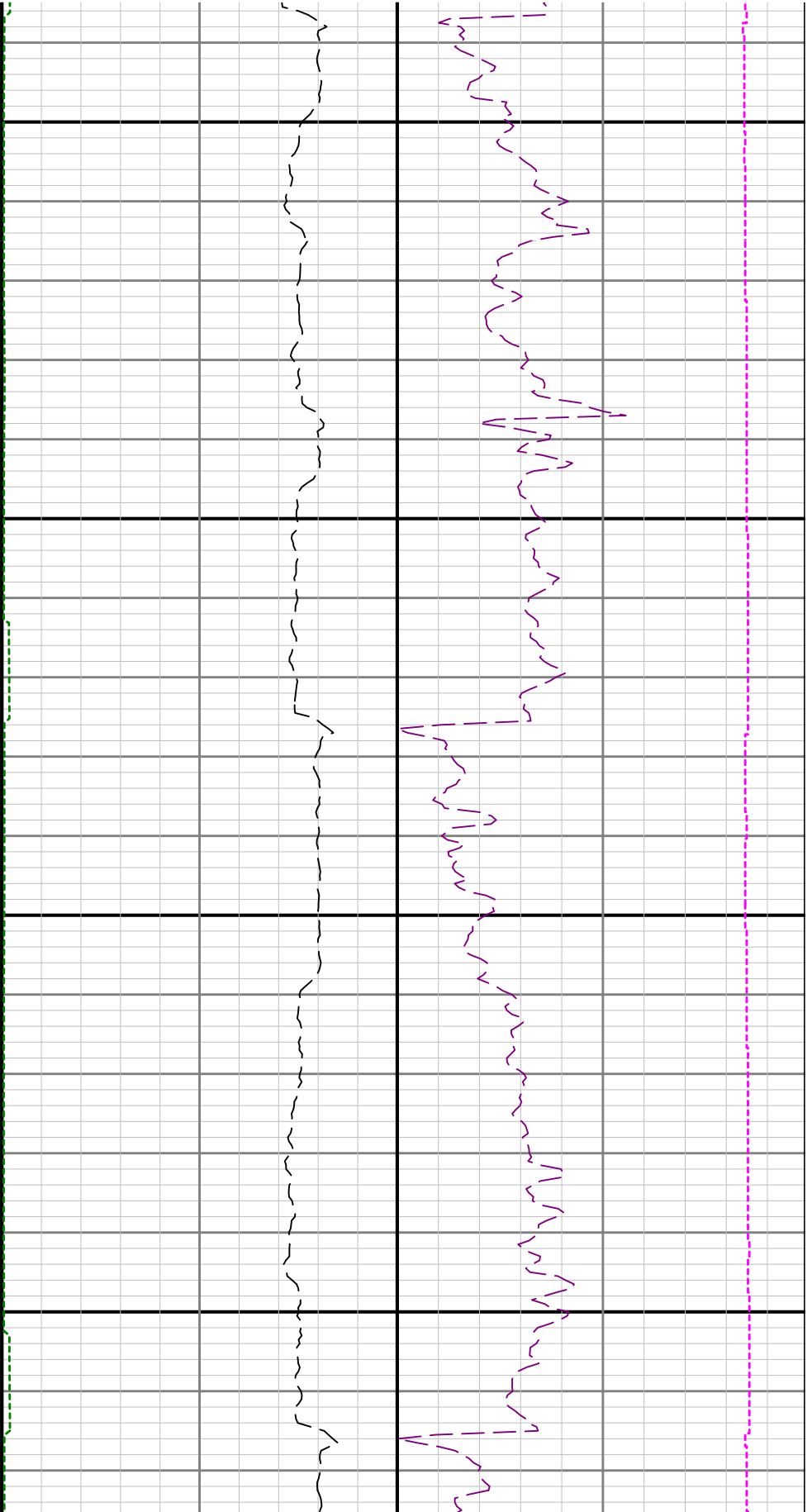






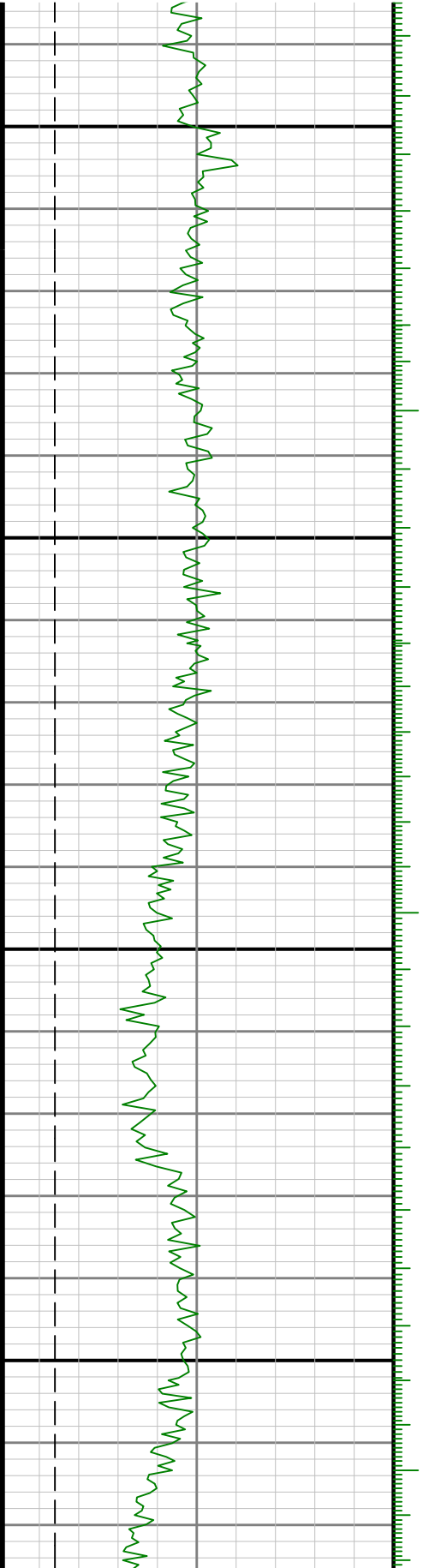
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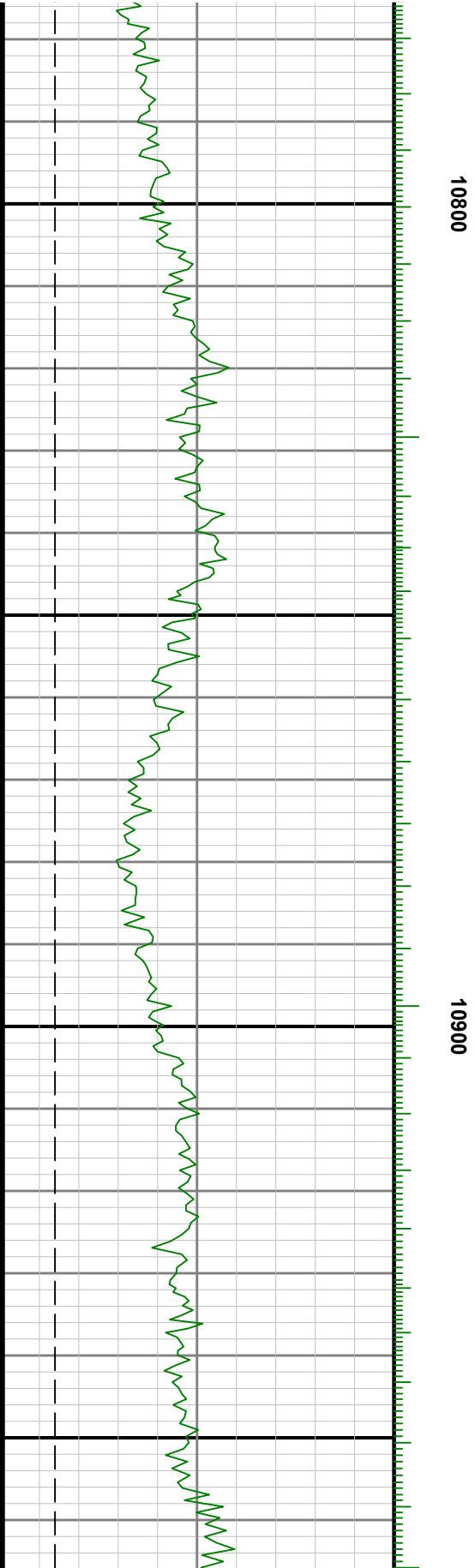
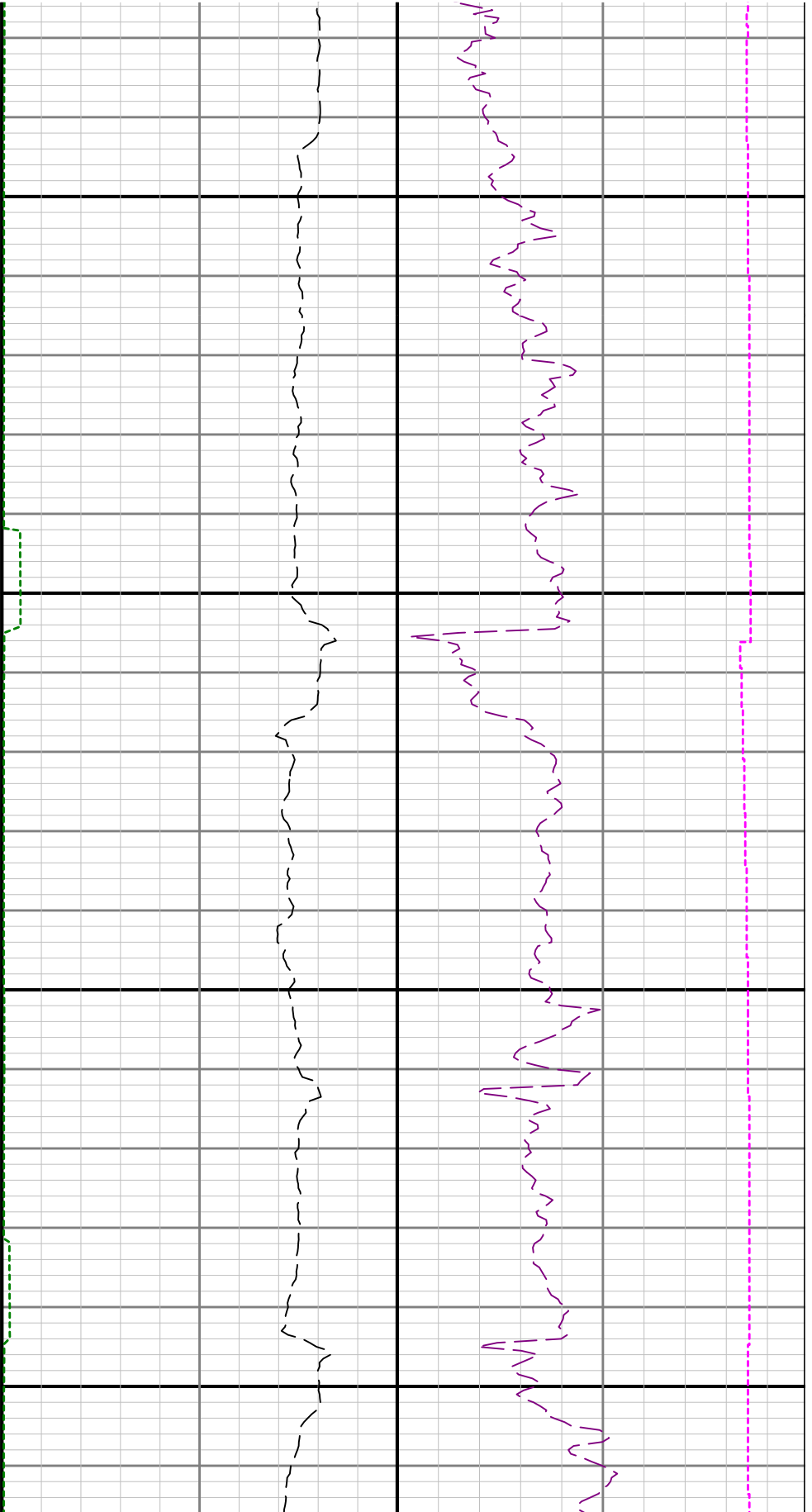
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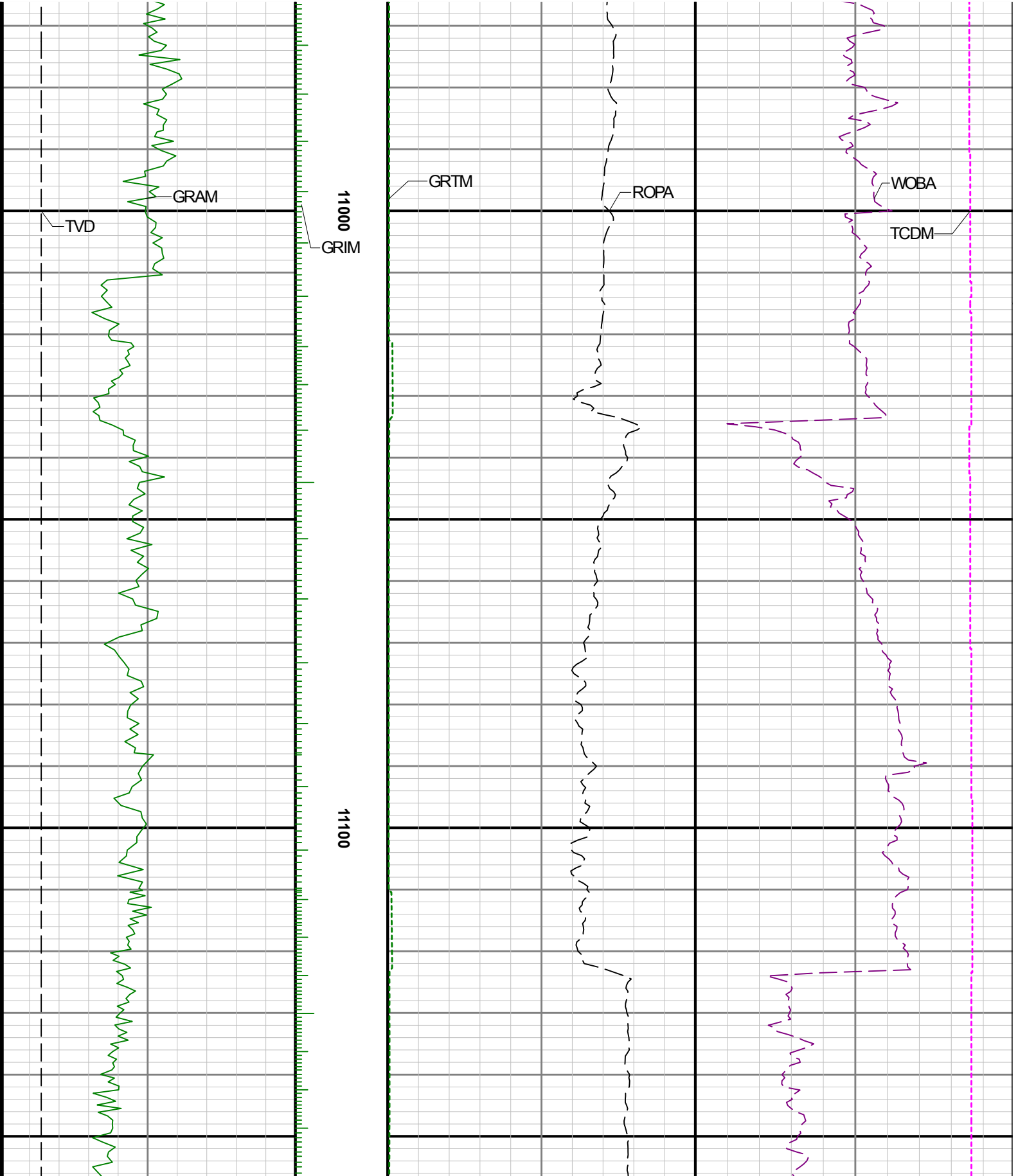


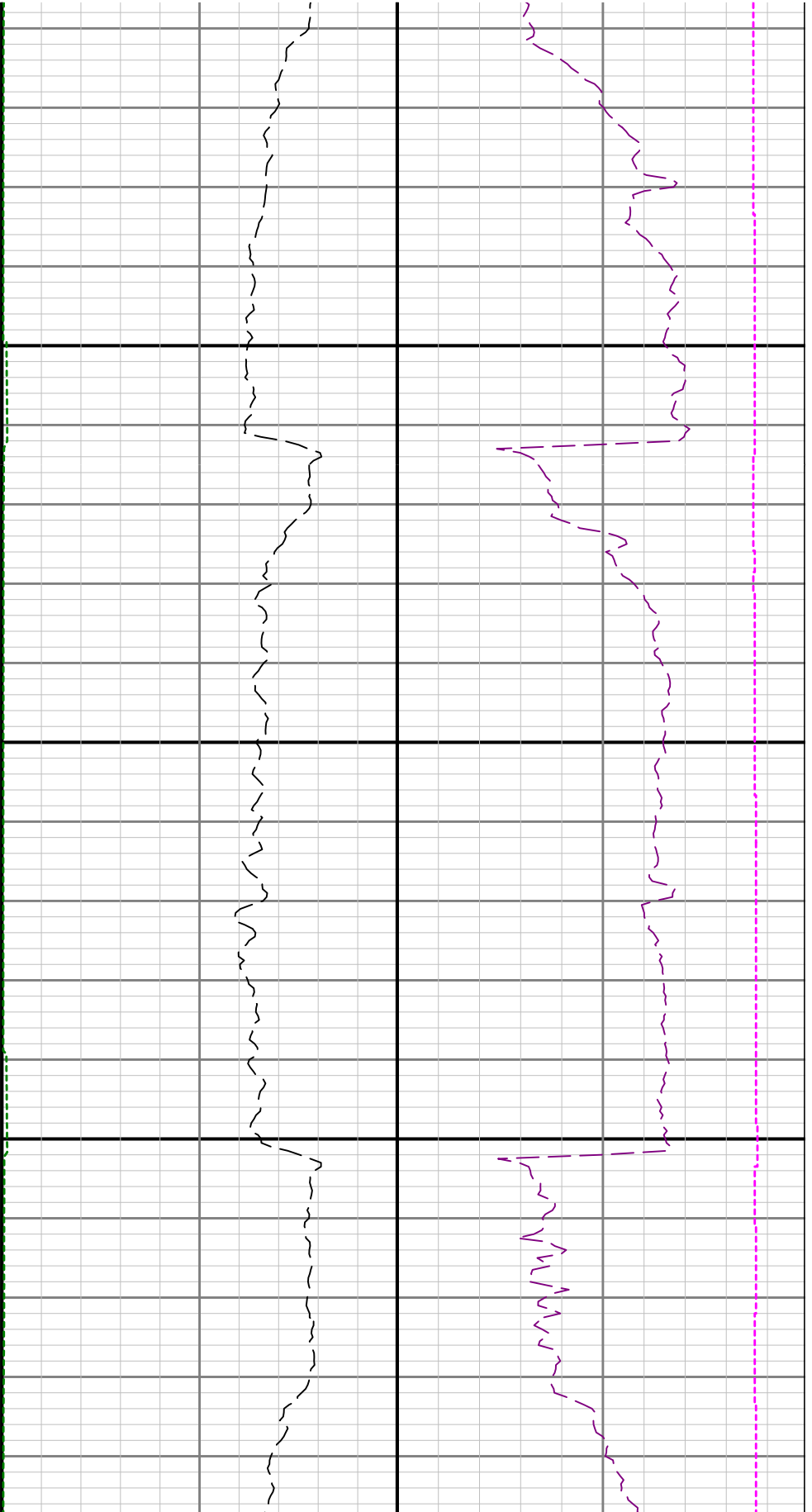
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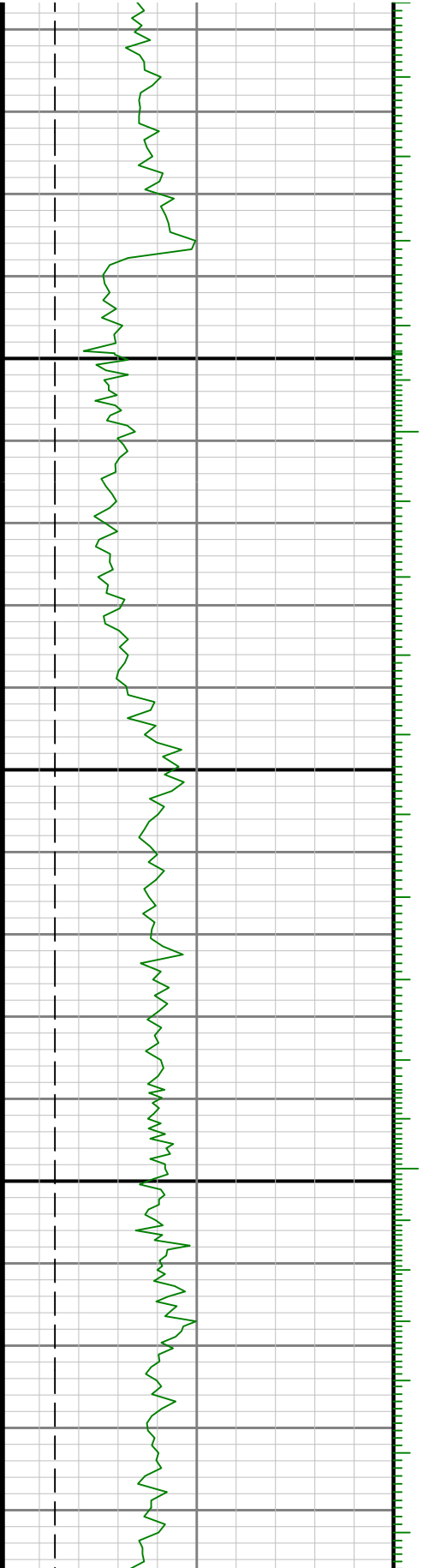


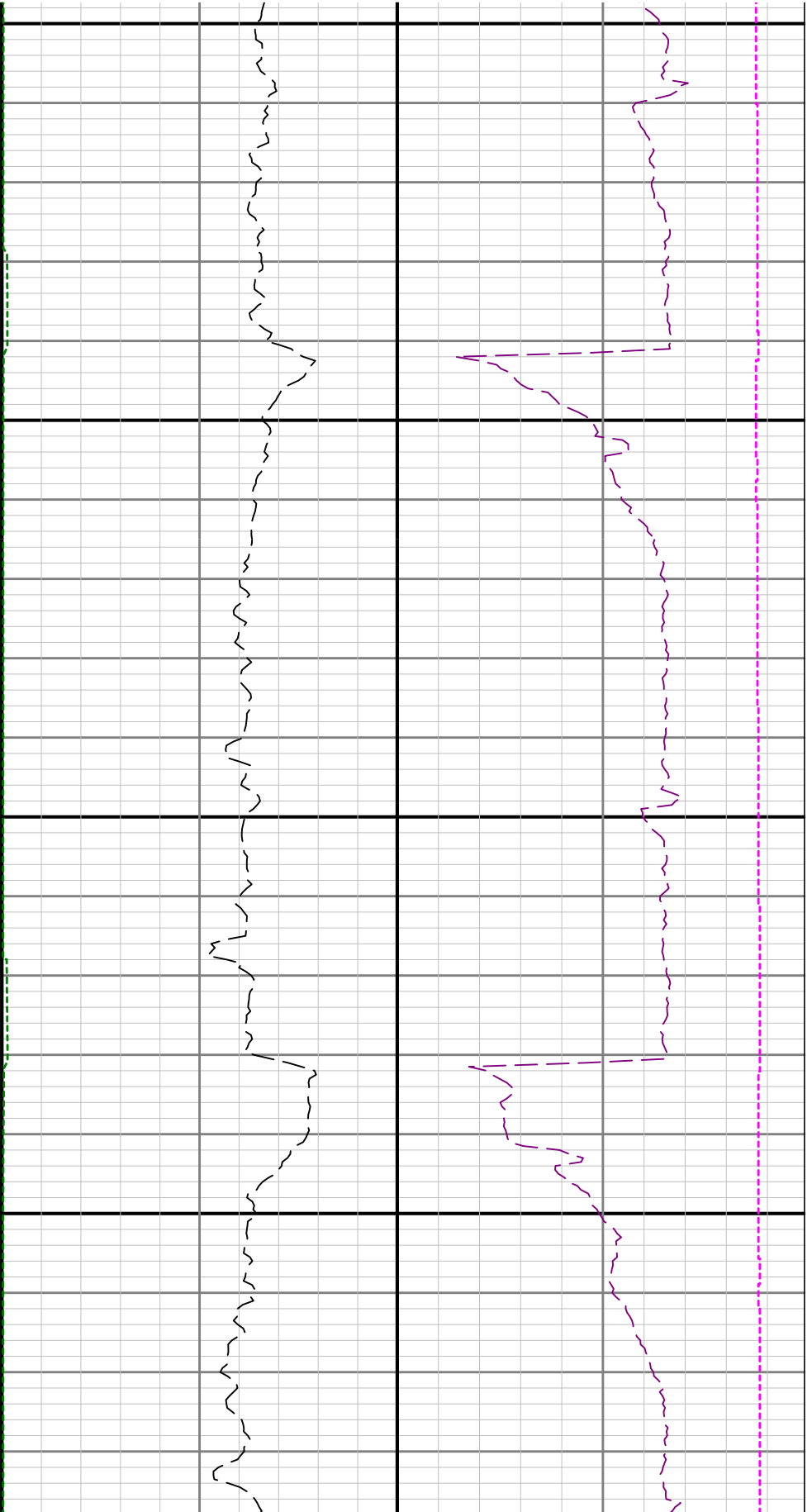




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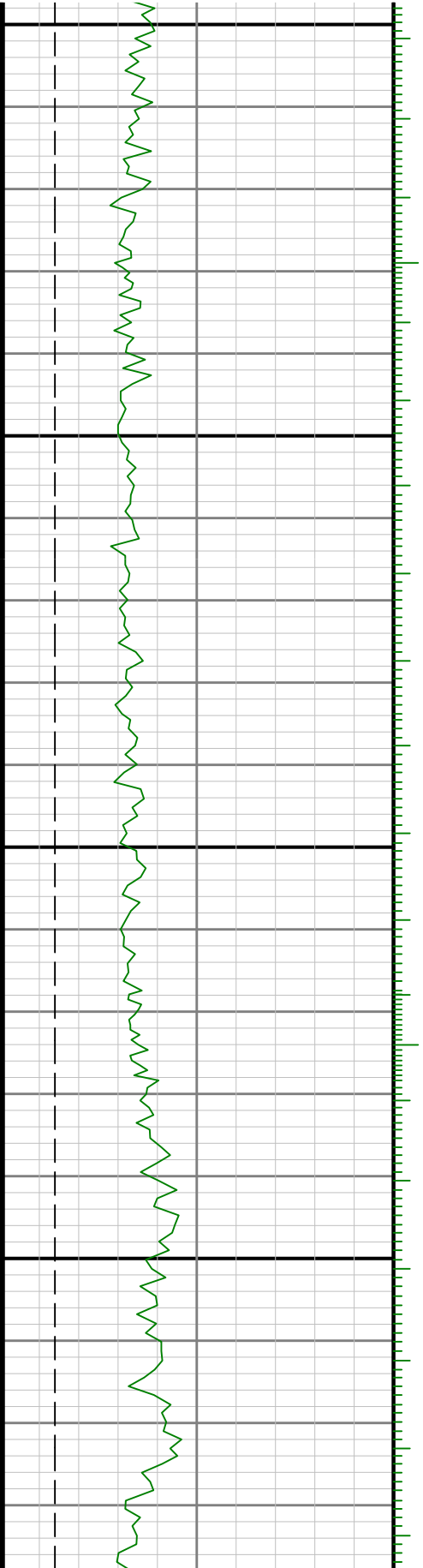
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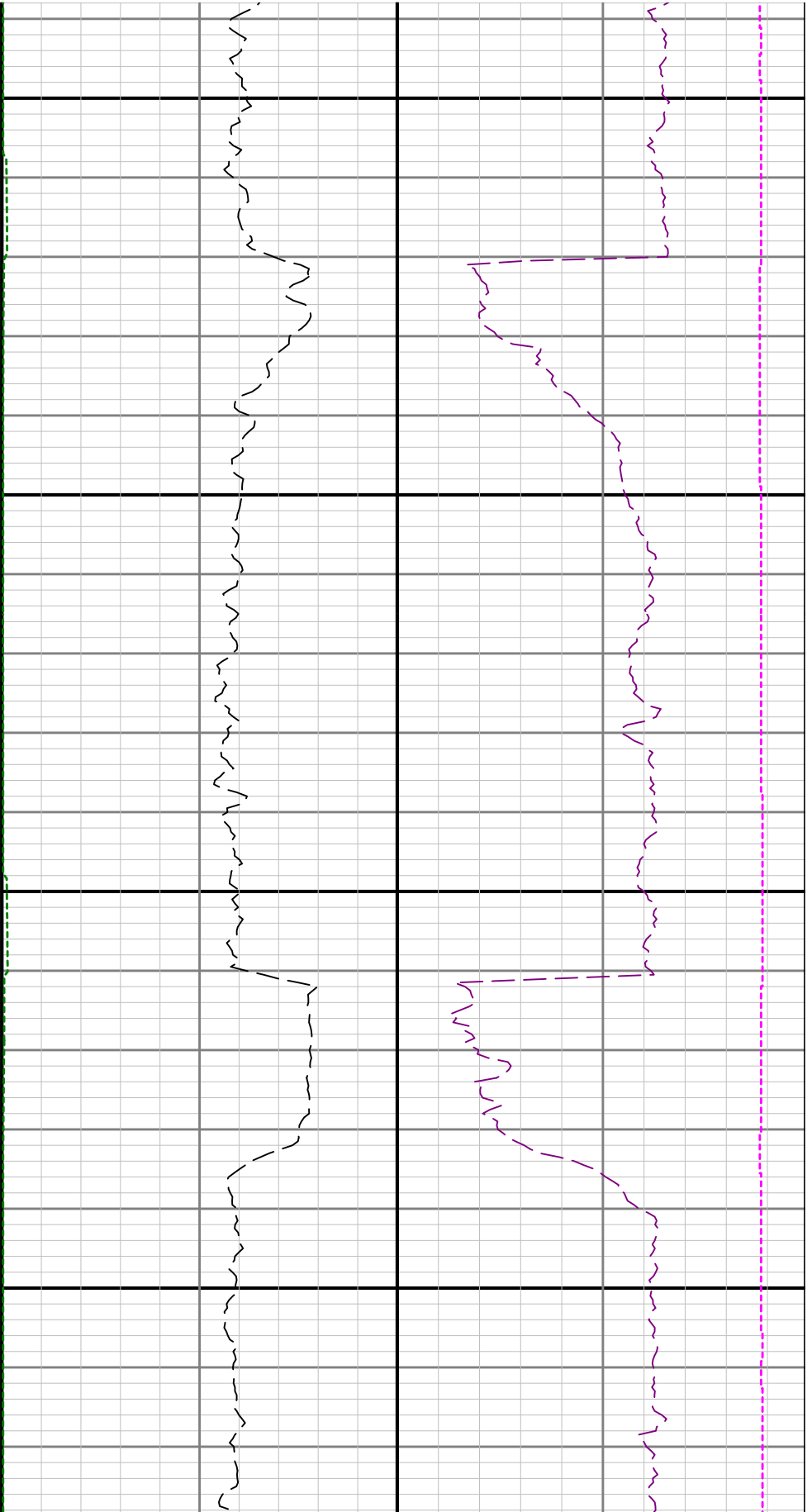




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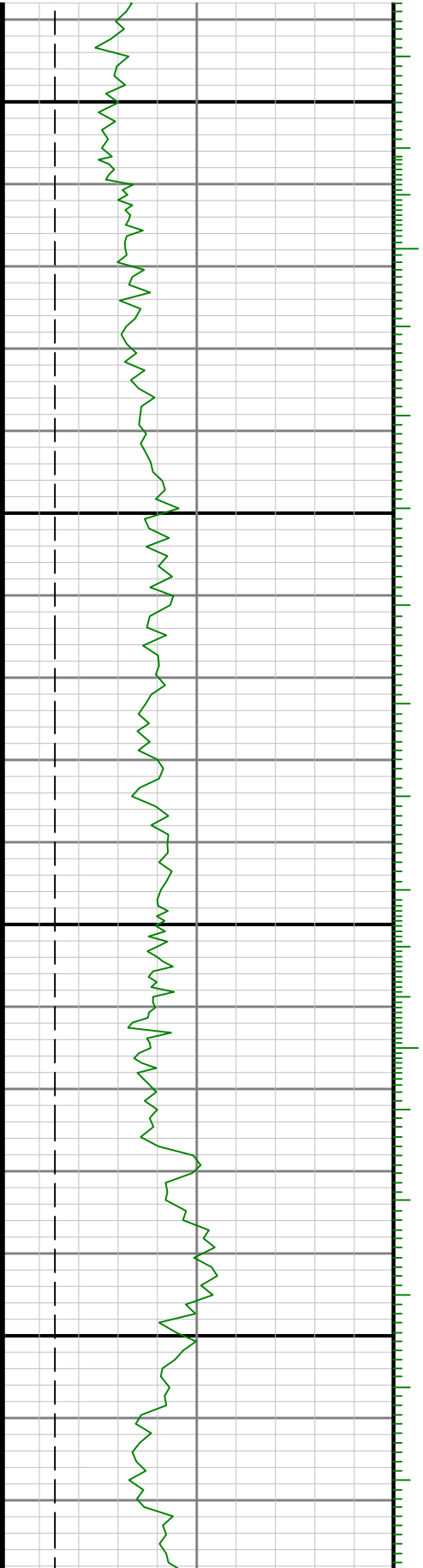
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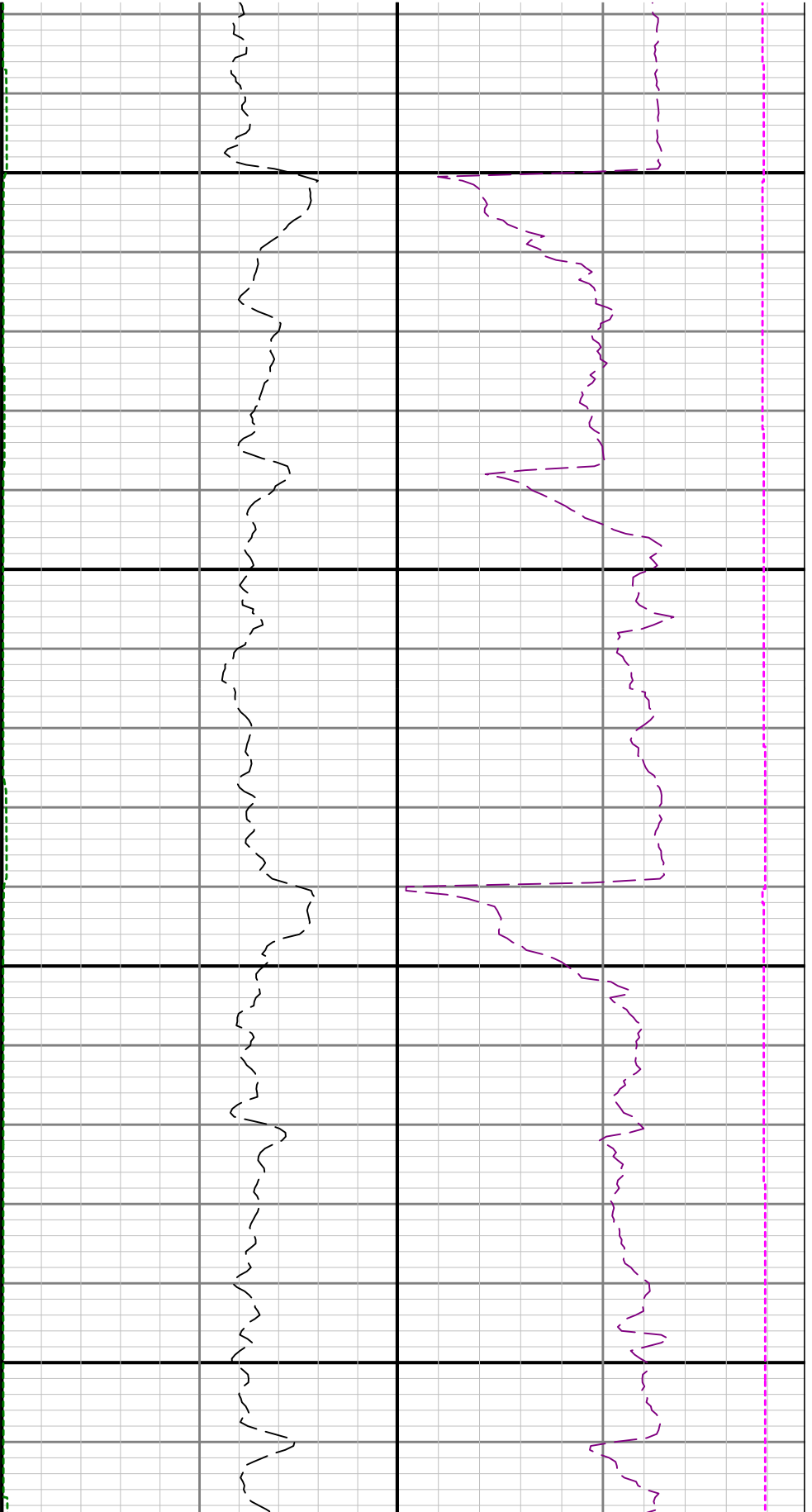




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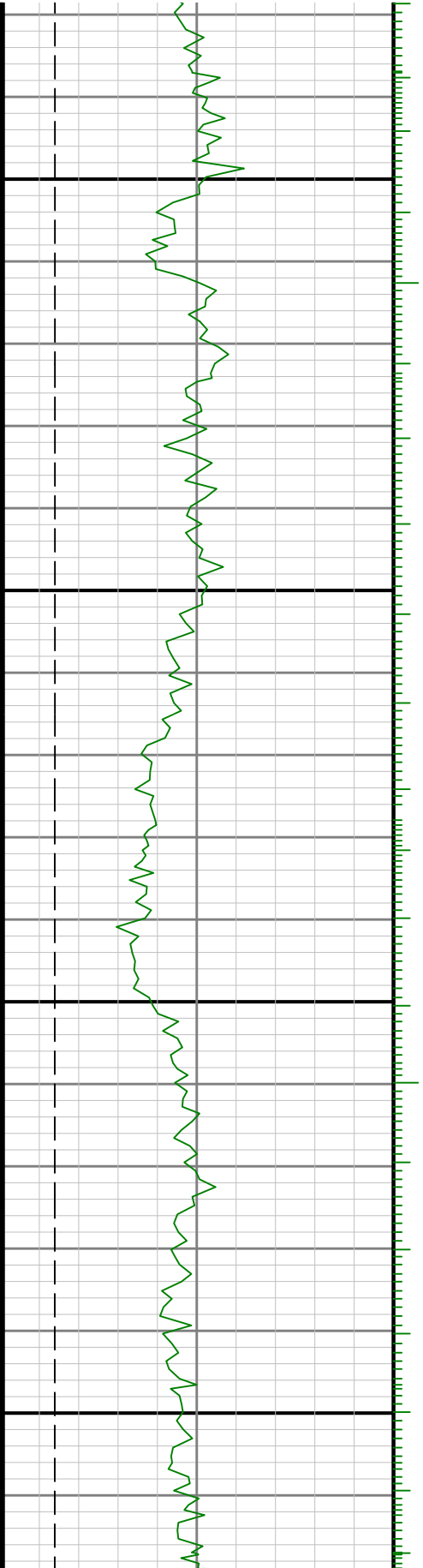
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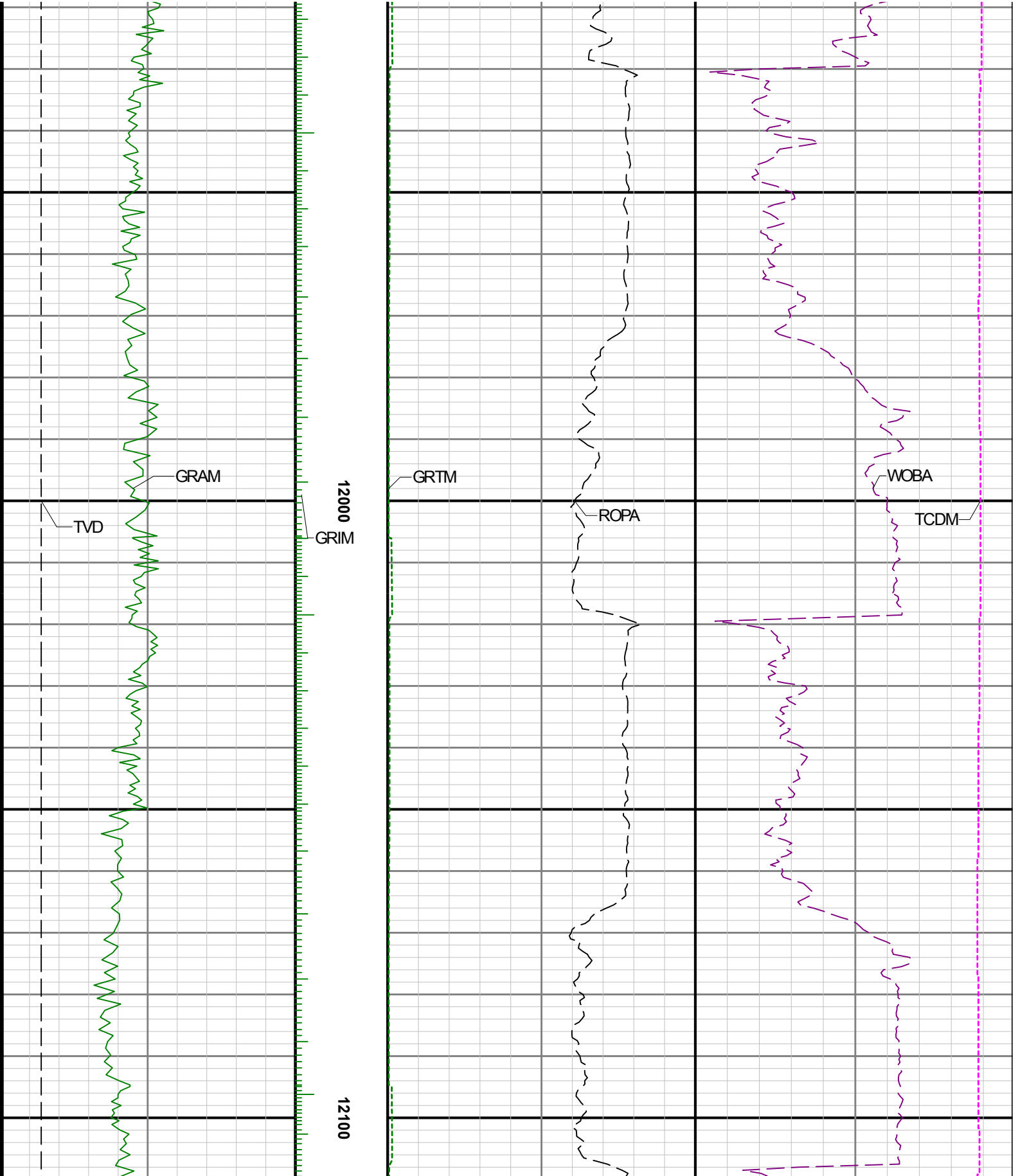


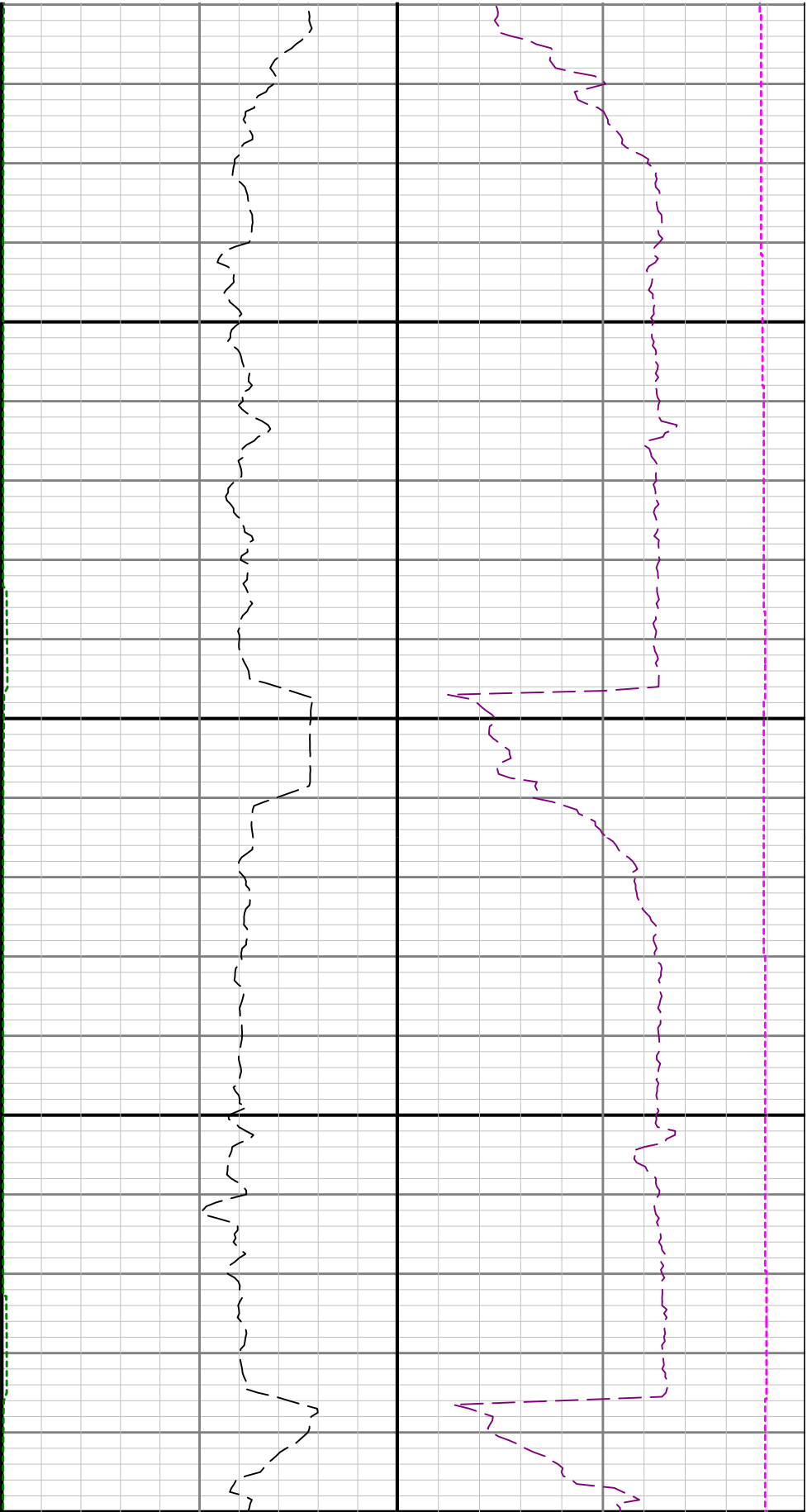


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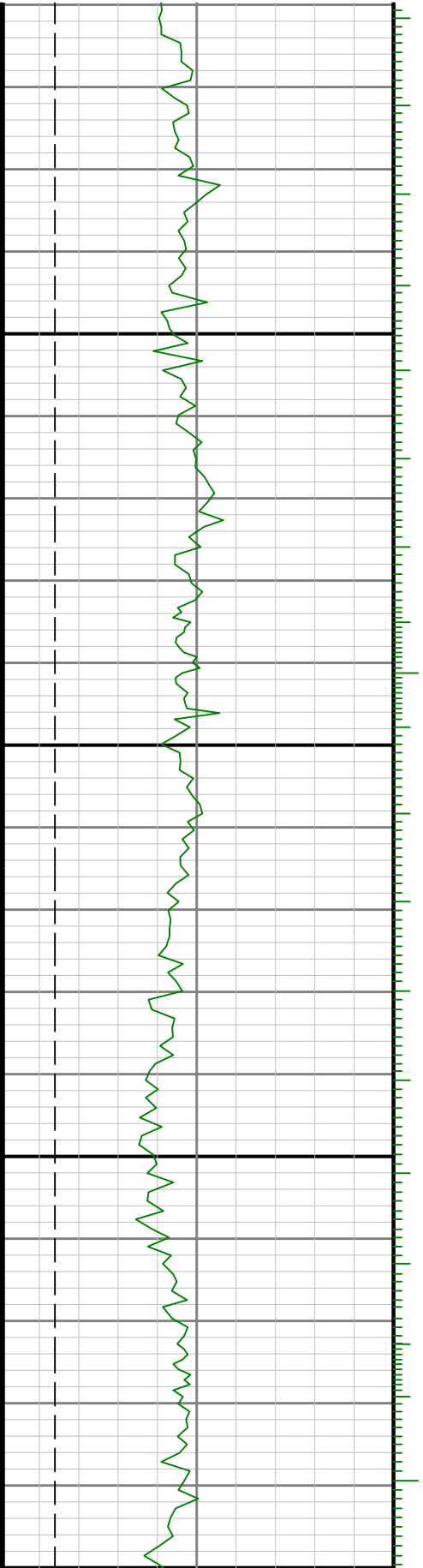




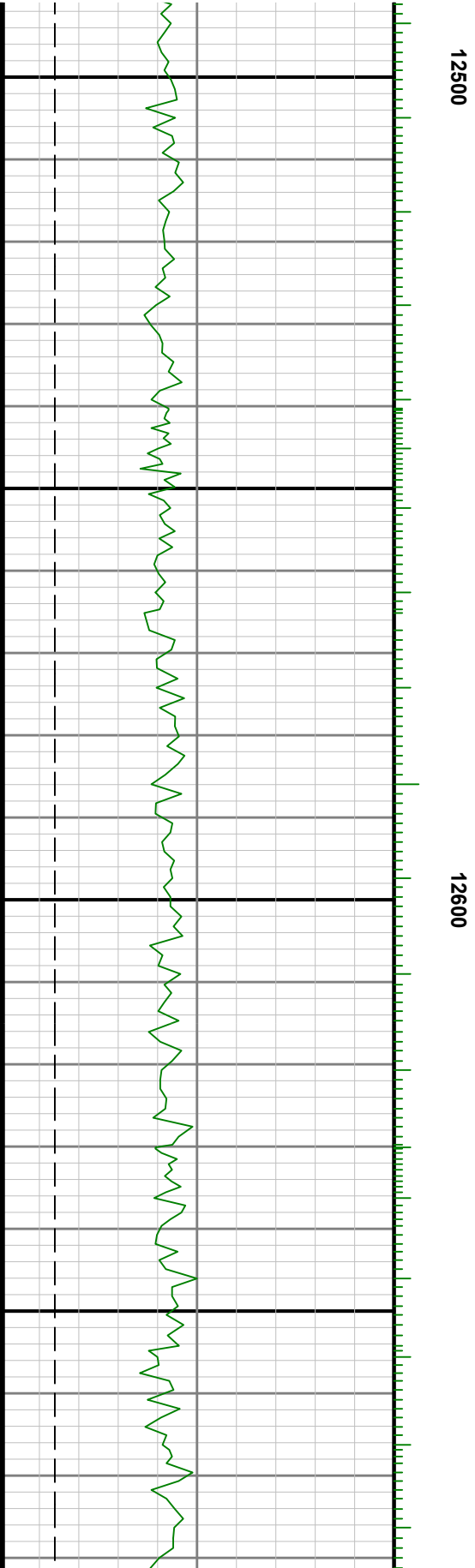
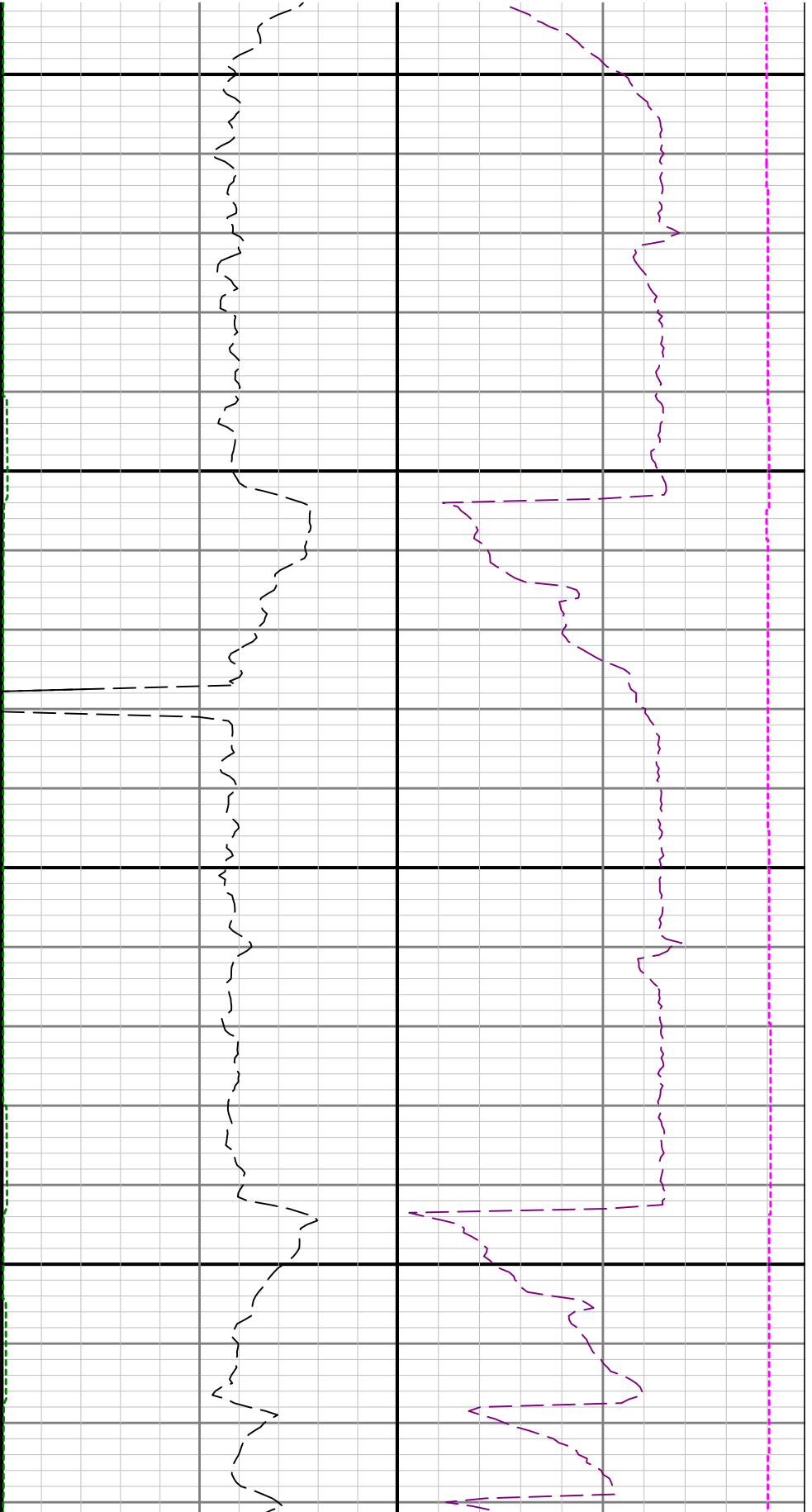


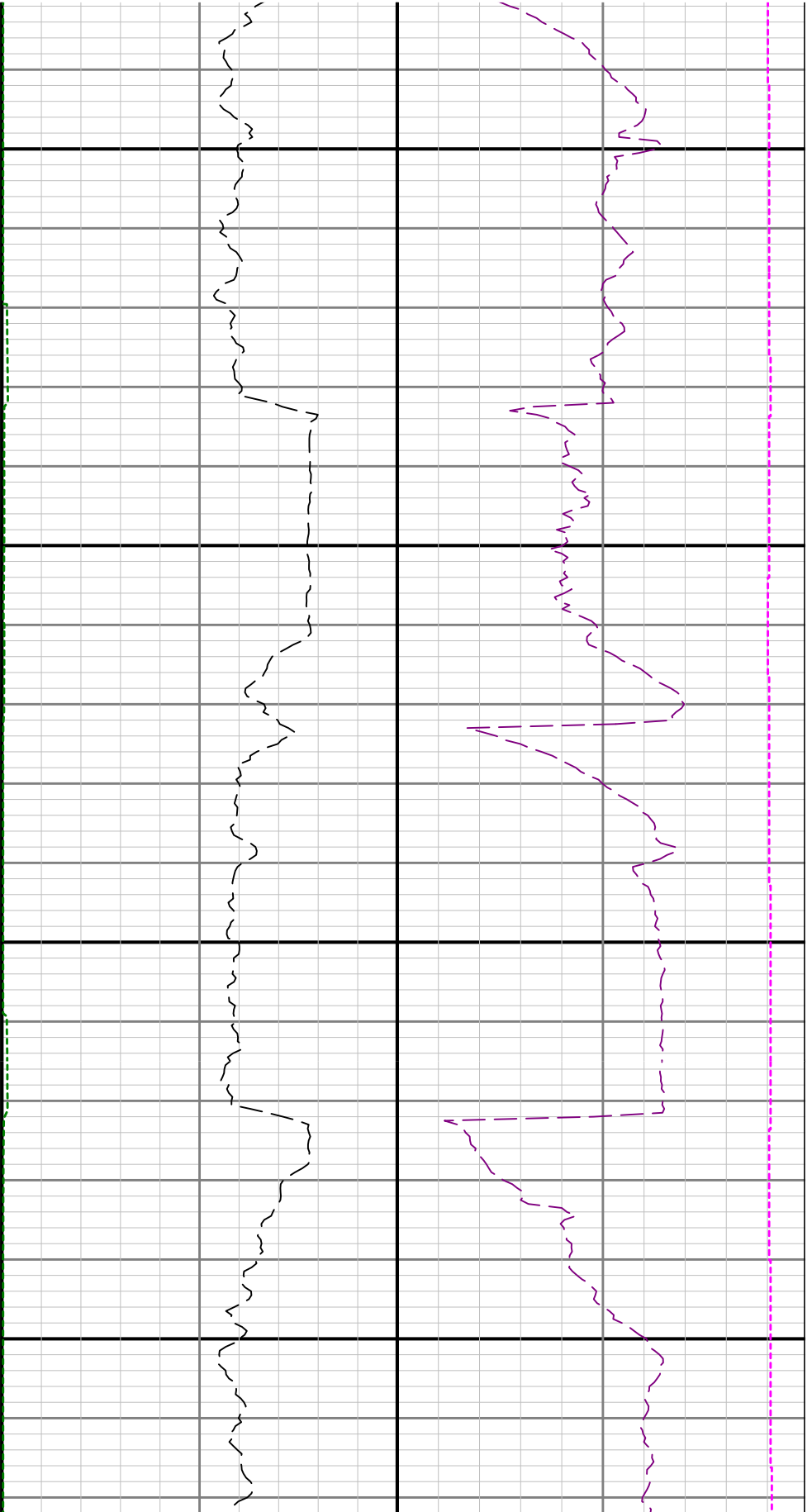
12200

12









12700

12800

