



Natural Formation Evaluation
Gamma Ray

Realtime Log

Scale: Company: Kerr-McGee Oil & Gas Onshore LP

1:240 Well: Barclay 27C-11HZ

Measured Depth Field: Weld County (Kerr McGee)

Region: Continental US Country: United States

Status: Surface Location: Other Services:

Field Print Latitude: 40° 7' 56.624" N

API Number: 05123389530000 Longitude: 104° 51' 16.561" W

Section: 14 TWN: 2S Range: 67W

Directional
VSS

Permanent Datum (P.D.): Ground Level Elevation: 4925.00 ft.

Log Measured From: Rig Floor 25.00 ft. Above P.D.

Depth Reference: Driller's Depth Elevations: N/A

KB: 4950.00 ft.
DF: 4925.00 ft.
GL:

Interval Logged Dates Magnetic Field Reference

Top: 6900 ft. Date From: 09/Feb/15 Date To: 21/Feb/15 Dip Angle: 66.93 ° Azl Reference North: True

Bottom: 17314 ft. Date To: 21/Feb/15 Total Mag to Reference

Spud Date: 21/Jan/15 Field Strength: 52711.2 nT North Correction: 8.55 °

Borehole Record Casing Record

Hole Size	From	To	Size	Weight	From	To
11,000 in.	Surface	918 ft.	9.625 in.	36.00 lb/ft	Surface	918 ft.
8,750 in.	953 ft.	7955 ft.	7,000 in.	26.00 lb/ft	Surface	7945 ft.
6,125 in.	7955 ft.	17314 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	953 ft.	17314 ft.	8,750 in.	7002 ft.	0.7 ° / 352.9 °	88.7 ° / 1.8 °
			6,125 in.	9359 ft.	88.7 ° / 1.8 °	90.6 ° / 356.4 °
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig / Contractor:	Precision 595	/ Precision Drilling
PLATS	6.4.1.34	Job No:	6991790	
		District / Unit:	RMD	/ D&E

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Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size (in.)	Bit Type	Bit Gauge Length (in.)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time				Circ. Time (hrs.)
							Top	Bottom	From	To	Start		End		
1	1	1	8.750	PDC	3.500	Steerable	918	7908	953	7958	09/Feb/2015 16:40	12/Feb/2015 04:30		36	
2	2	2	6.125	PDC	5.500	Steerable	7908	9628	7955	9679	14/Feb/2015 05:00	15/Feb/2015 13:00		16.8	
3	3	3	6.125	PDC	4.500	Steerable	9628	17264	9680	17314	15/Feb/2015 14:45	21/Feb/2015 9:00		93	

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Jason Cross	10/Feb/2015	21/Feb/2015	Matthew Leopold	10/Feb/2015	21/Feb/2015	Jason McMahon	10/Feb/2015	20/Feb/2015
Hans Cary	10/Feb/2015	21/Feb/2015	Kevin McGuire	10/Feb/2015	21/Feb/2015			

Mud Properties Record

Date / Time	LWD Run No.	Measured Depth (ft.)	Mud Type	Density (sg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
10/Feb/2015 20:10	1	953	Water Based	28.0	1	9.1	N/A	0 / 99	Active Mud Pit	2500	N/A
12/Feb/2015 00:33	1	5488	Water Based	27.0	1	8.8	N/A	0 / 98	Active Mud Pit	1700	N/A
12/Feb/2015 20:50	1	7911	Water Based	10.2	16	9.5	4.8	3 / 88	Active Mud Pit	2300	N/A
13/Feb/2015 23:41	1	7955	Water Based	10.2	16	9.5	4.8	3 / 88	Active Mud Pit	2300	N/A
14/Feb/2015 20:50	2	8544	Water Based	9.5	10	9.6	5.0	3 / 91	Active Mud Pit	2200	N/A
15/Feb/2015 22:12	3	9675	Water Based	9.6	17	9.7	5.6	3 / 90	Active Mud Pit	2100	N/A
16/Feb/2015 21:34	3	12289	Water Based	9.5	16	9.5	5.0	3 / 91	Active Mud Pit	2100	N/A
17/Feb/2015 20:03	3	14426	Water Based	9.6	13	9.4	4.8	3 / 90	Active Mud Pit	2200	N/A
18/Feb/2015 00:23	3	16441	Water Based	9.7	12	9.6	4.6	3 / 90	Active Mud Pit	2200	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRTX	Gamma Ray Time Since Drilled	Min.
GRIX	Gamma Ray Data Density	Unitless
GRSI	Gamma Ray Slide Indicator	Unitless
ROPA	Rate of Penetration, 3.0 ft. Avg.	Ft./Hr.
TCDX	Downhole Temperature	Deg. F.
TVD	True Vertical Depth	Ft.
WOBA	Surface Weight on Bit, 1.0 ft. Avg.	K. lbs.

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	11685175	Directional	45.36	6.750	3.250
1	SRIG	10662886	Gamma	41.99	6.750	3.250
2	DIR	12093881	Directional	53.72	4.750	2.750
2	SRIG	12600749	Gamma	50.30	4.750	2.750
3	DIR	12093881	Directional	53.55	4.750	2.750
3	SRIG	12600749	Gamma	50.13	4.750	2.750

Service and Tool Mnemonics

Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

Comments

1) Baker Hughes INTEQ run 1 utilized a 6.75 inch NaviGamma (Directional and Gamma Ray) tool ran behind an 8.75 inch bit with a steerable assembly from 953 to 7955 feet MD (953 to 7488 feet TVD)

2) Baker Hughes INTEQ runs 2 and 3 utilized a 4.75 inch NaviGamma (Directional and Gamma Ray) tool ran behind an 6.125 inch bit with a steerable assembly from 7955 to 17314 feet MD (7488 to 7464 feet TVD).

3) A sliding indicator is shown on the left side of track 1 as a heavy line. The indicator has been shifted to the Gamma Ray sensor offset to correspond with Gamma Ray data acquired while sliding.

4) Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes INTEQ. Due to lack of control by Baker Hughes INTEQ logging engineers, depth calibration and measurements could not be independently verified.

5) The interval from 953 to 6900 feet MD was not logged due to directional only services being provided through the surface and vertical-hole sections for Baker Hughes run 1.

Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	7913	6.125	2	The interval from 7905 to 7959 feet MD (7487 feet TVD) was logged up to 44 hours after being drilled due to trip out of hole to change BHA, Casing and Cement Operations
2	9635	6.125	3	The interval from 9628 to 9679 feet MD (7481 feet TVD) was logged up to 17 hours after being drilled due to trip out of hole to change Motor and Bit per Company Man due to low ROP.
3	17275	6.125	3	The interval from 17264 to 17314 feet MD (7464 feet TVD) has no GRAX, GRIX or GRTX due to the Gamma Ray sensor offset to bit.

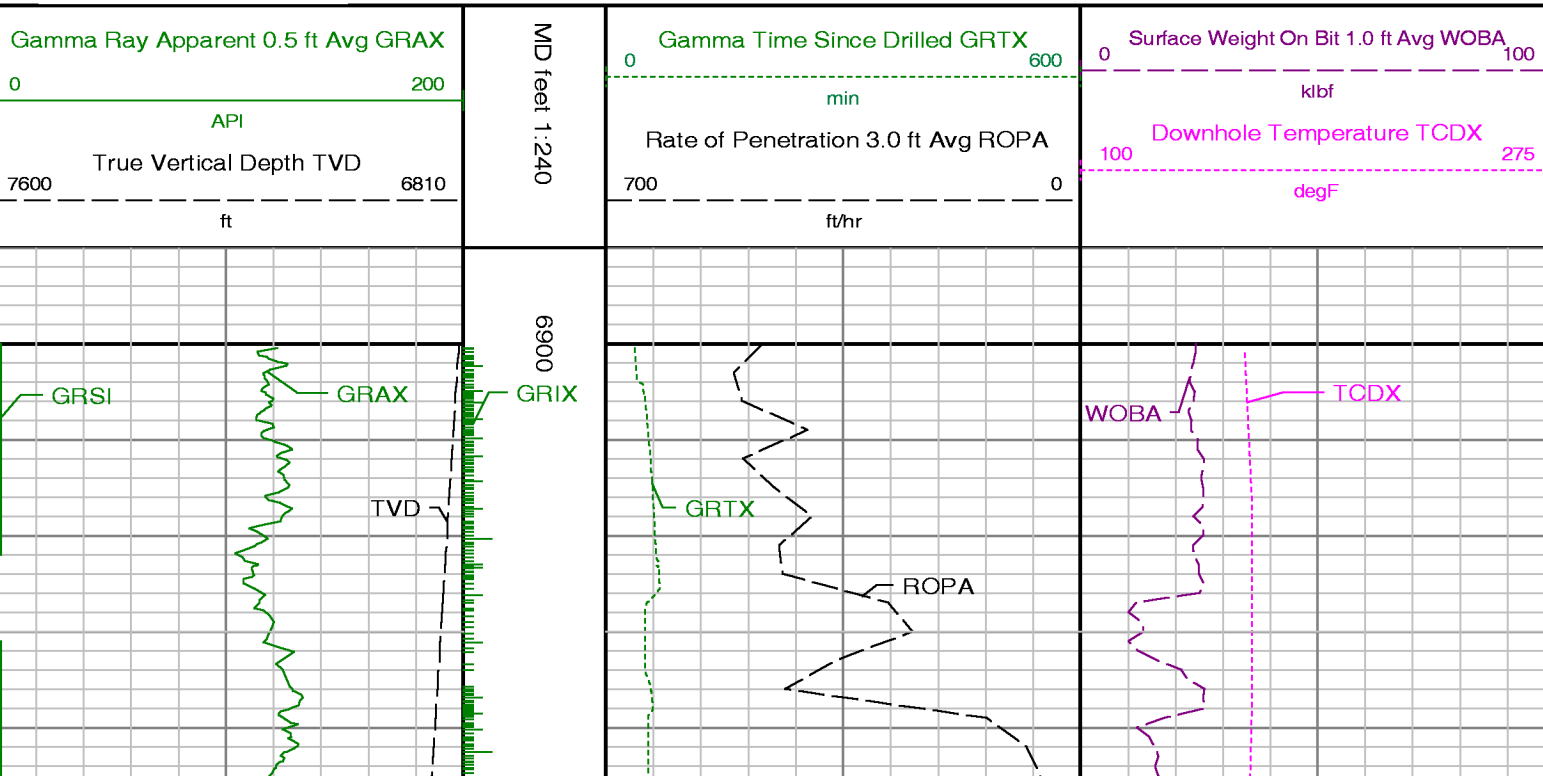


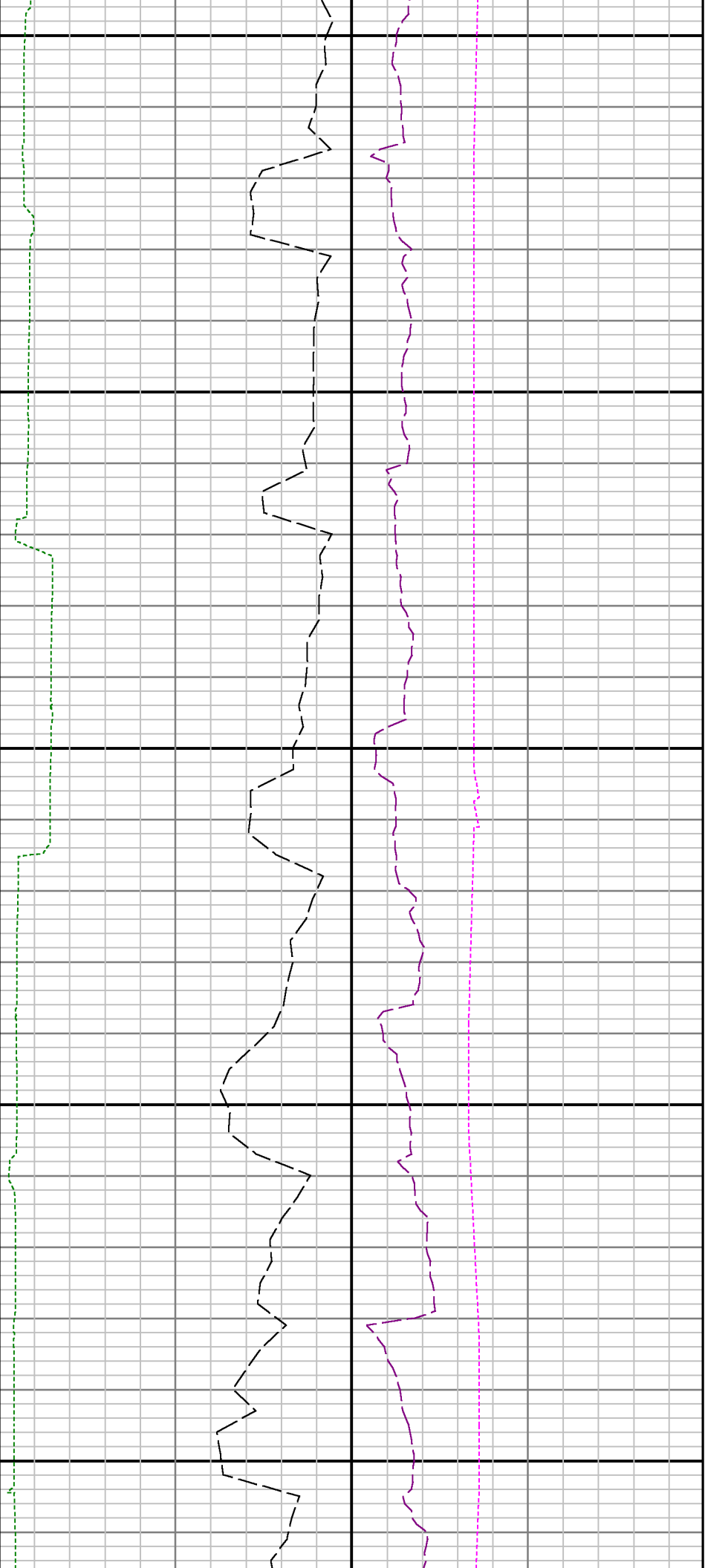
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Well : Barclay 27C-11HZ

Interval : 6890.00 - 17320.00 feet

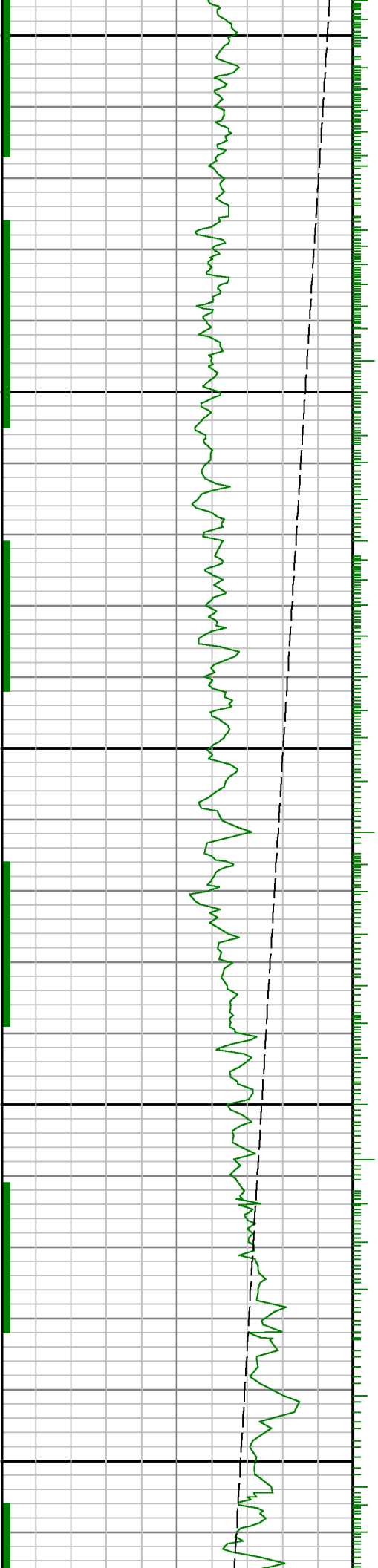
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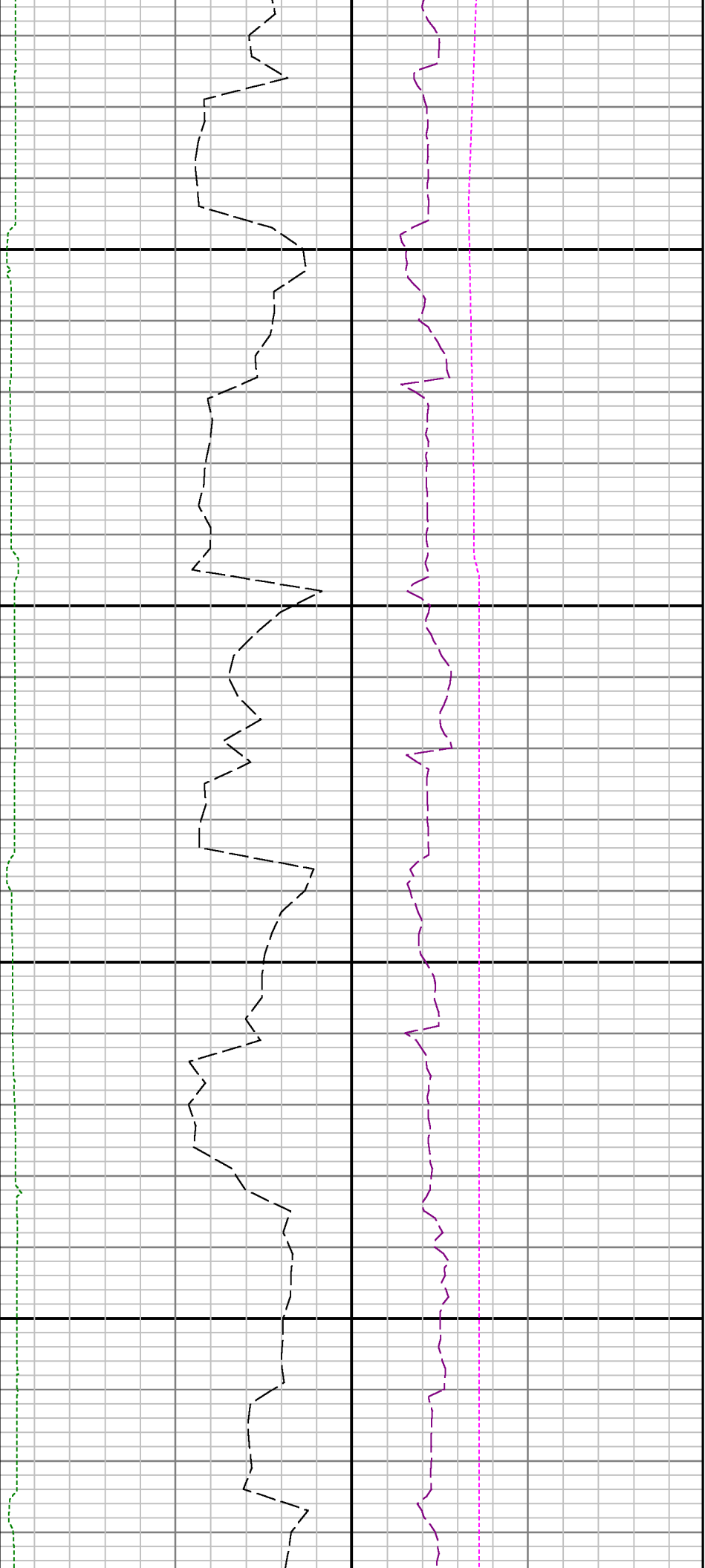




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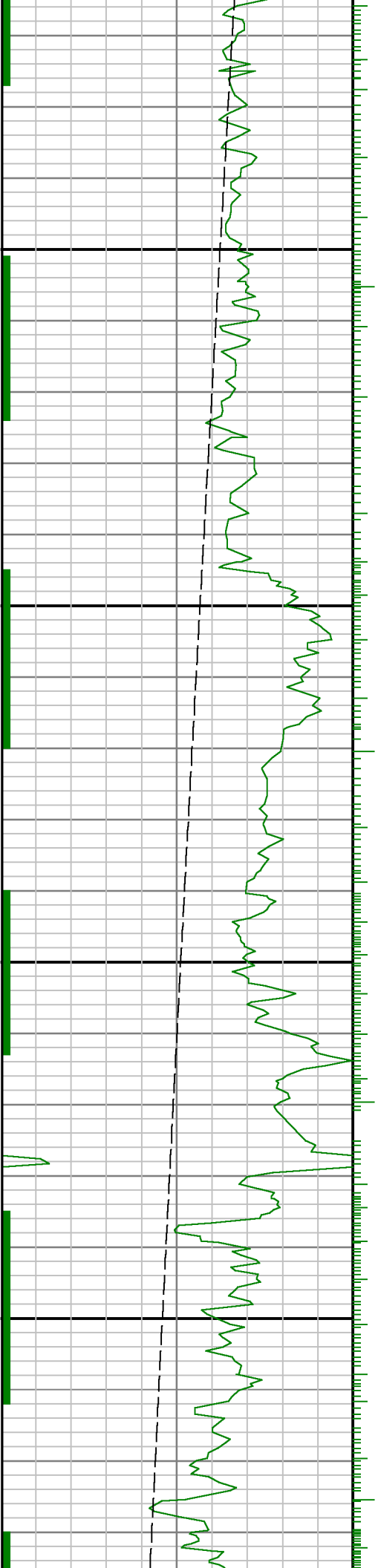
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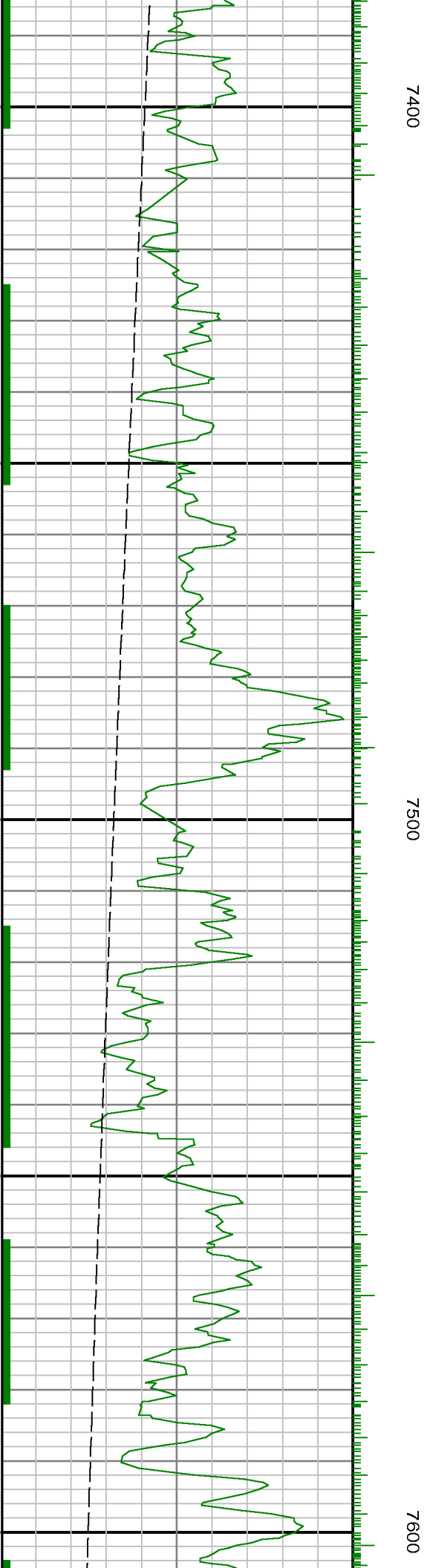
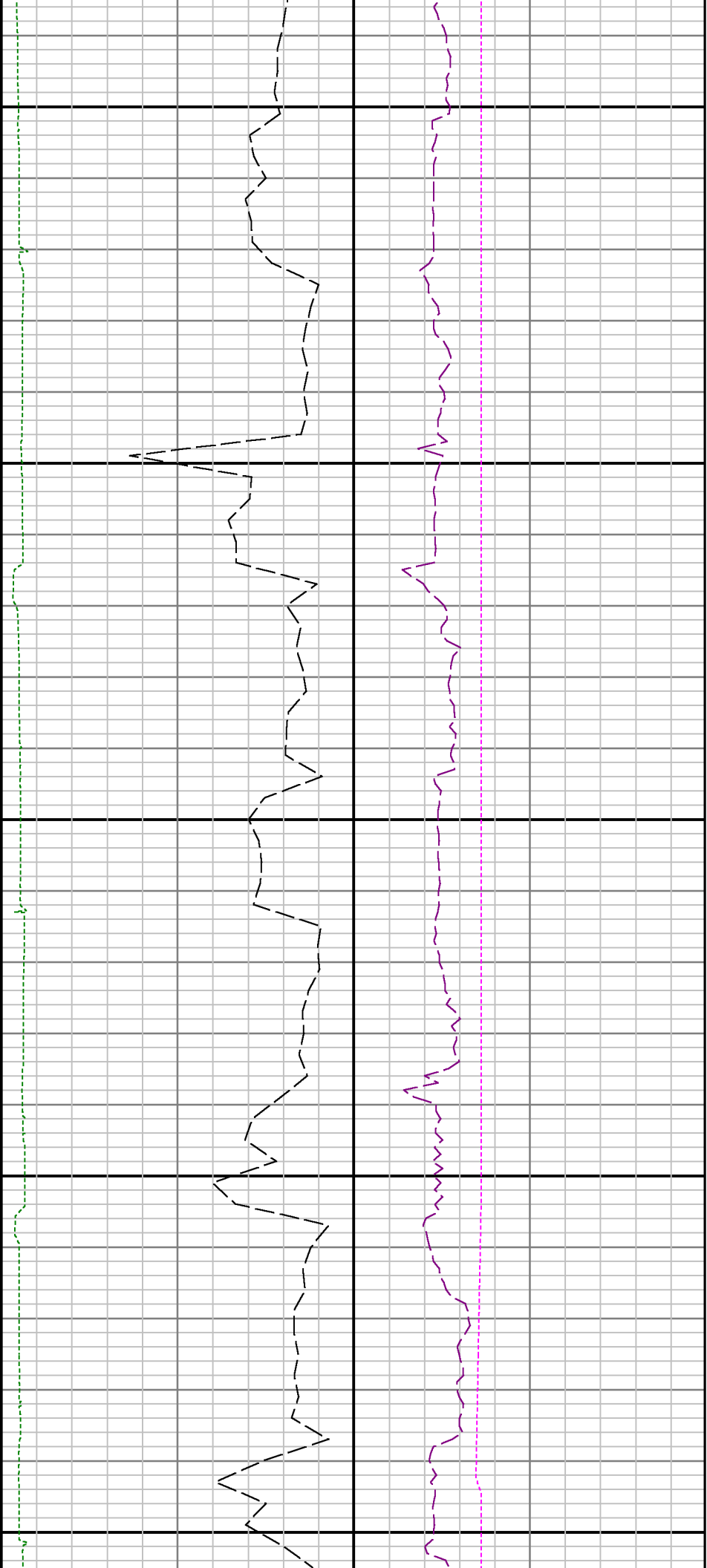


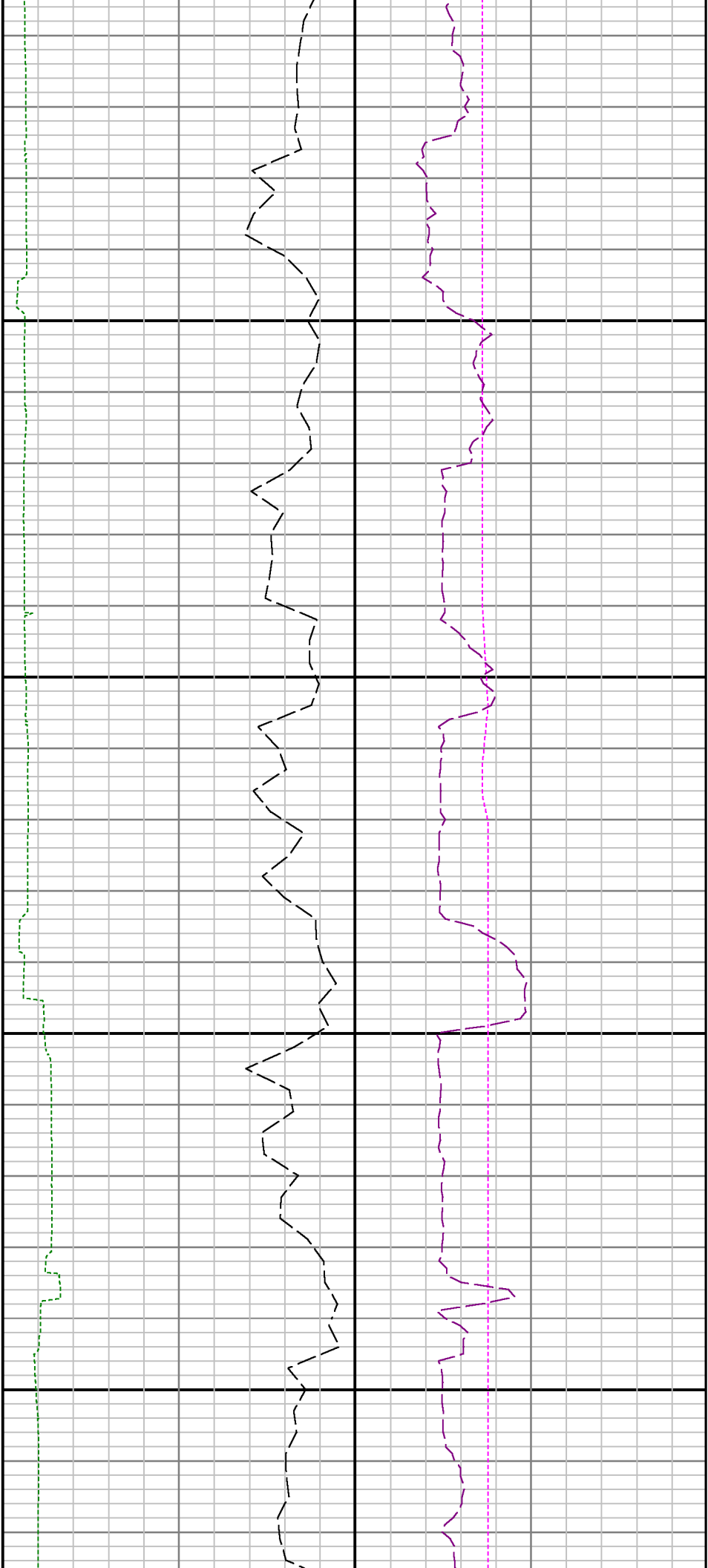


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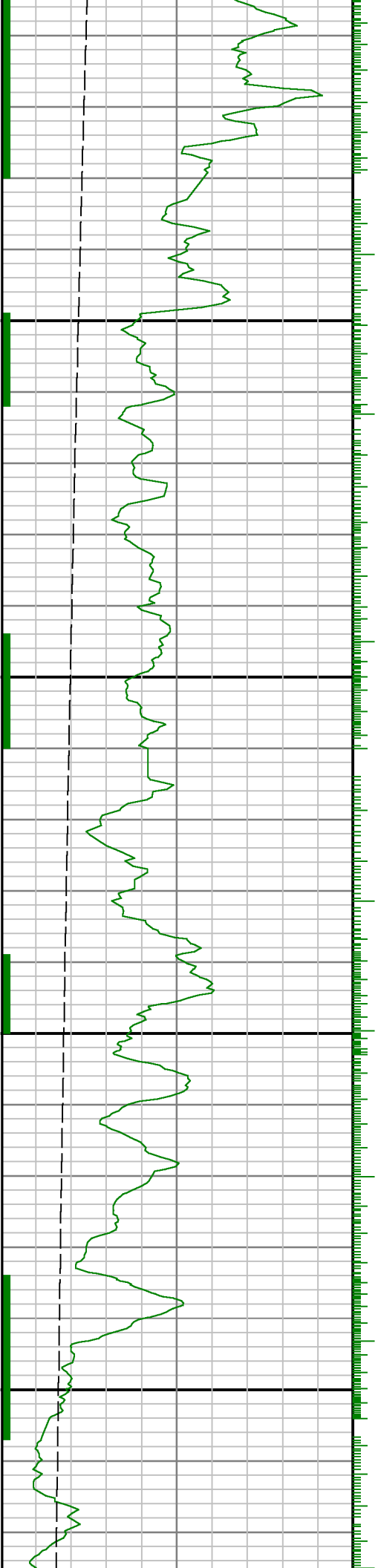


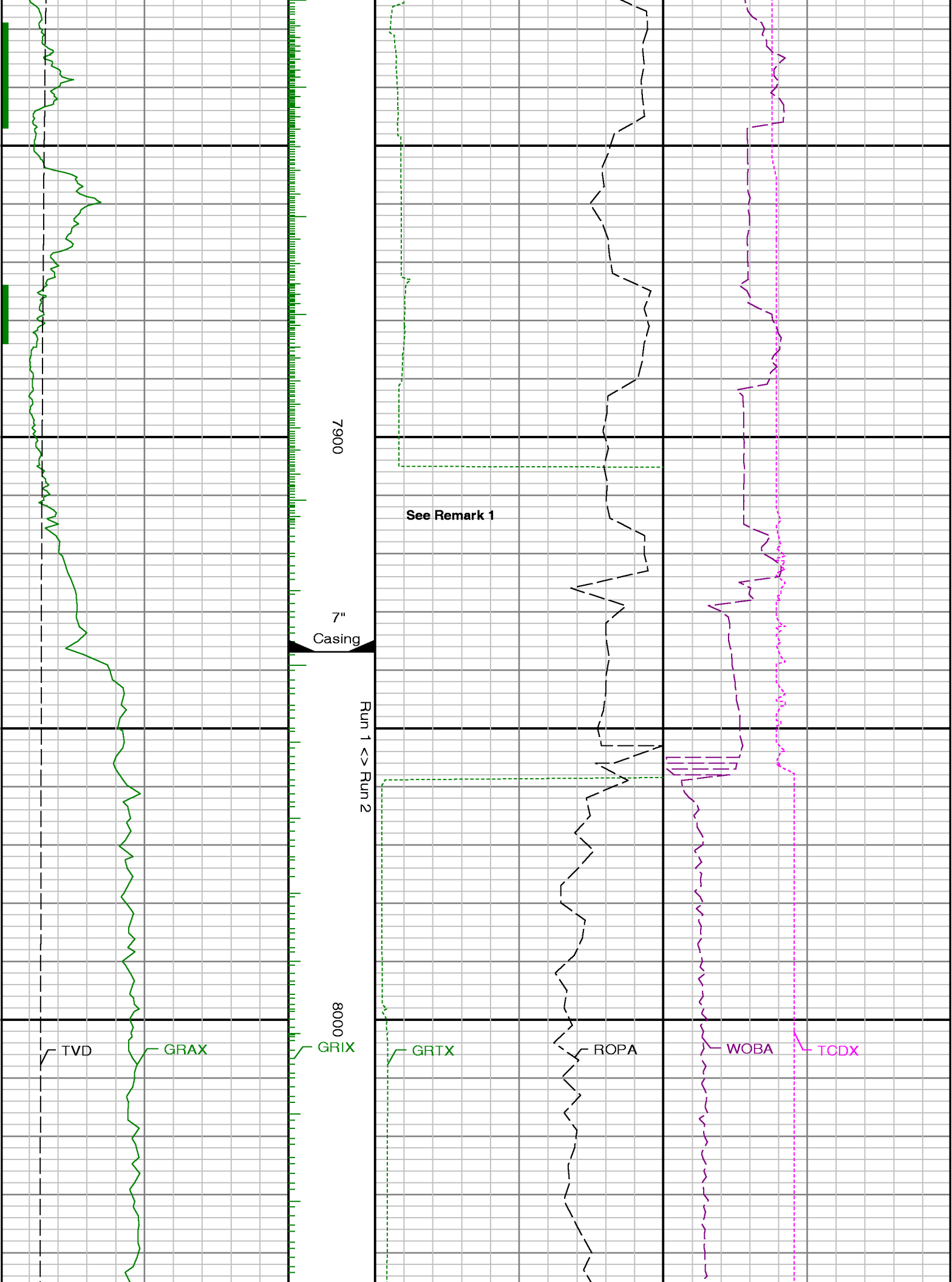




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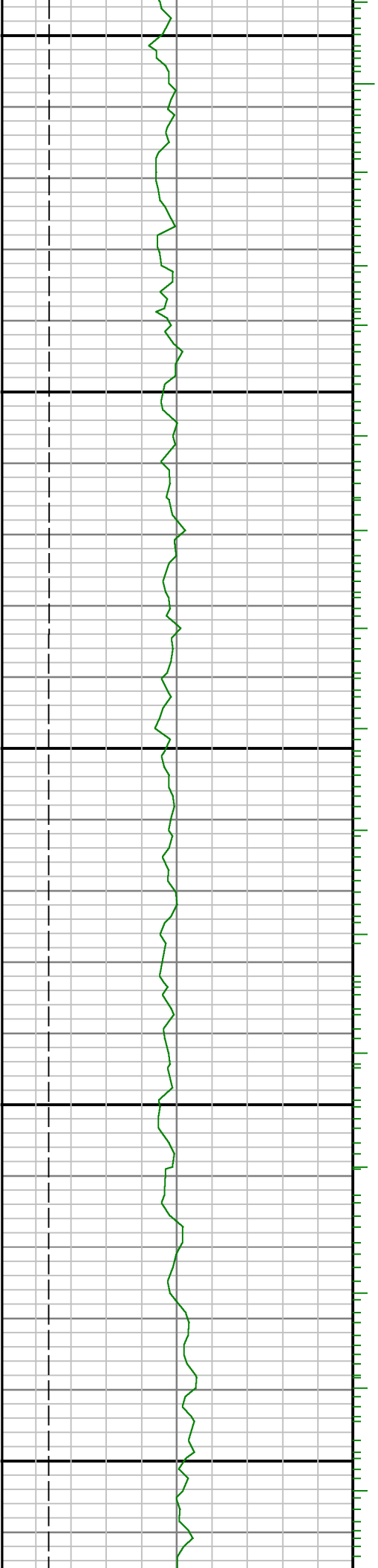


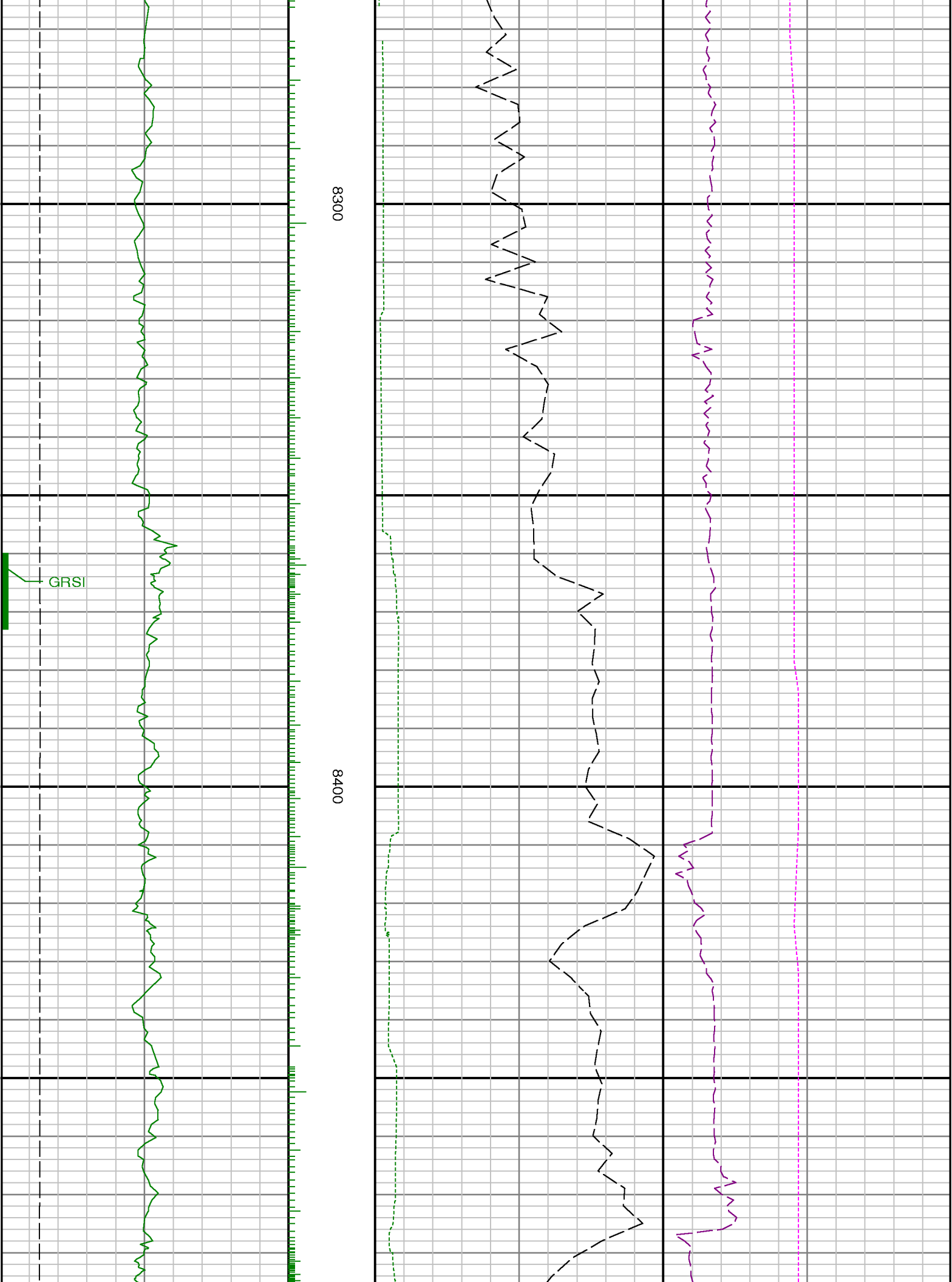




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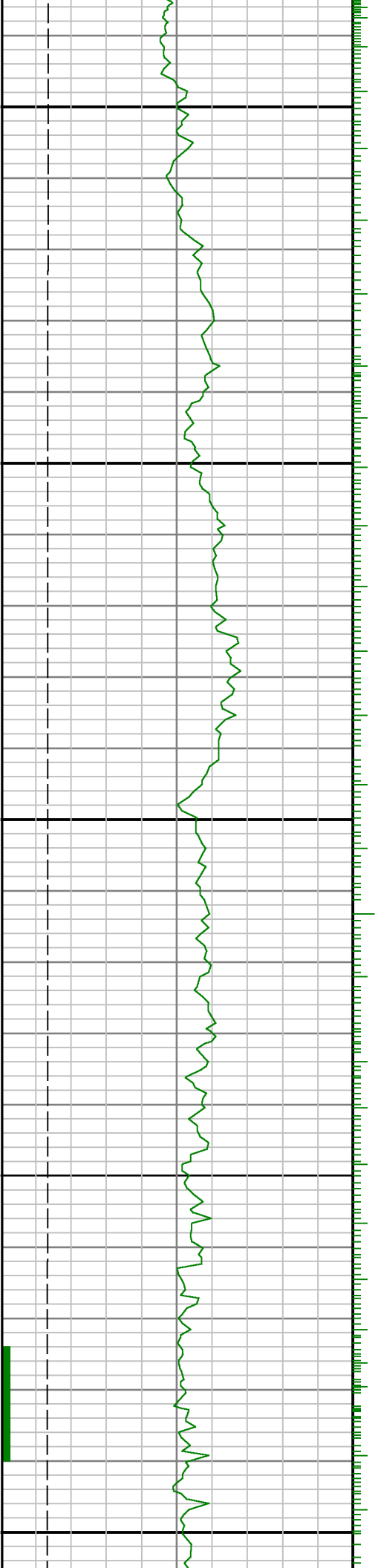


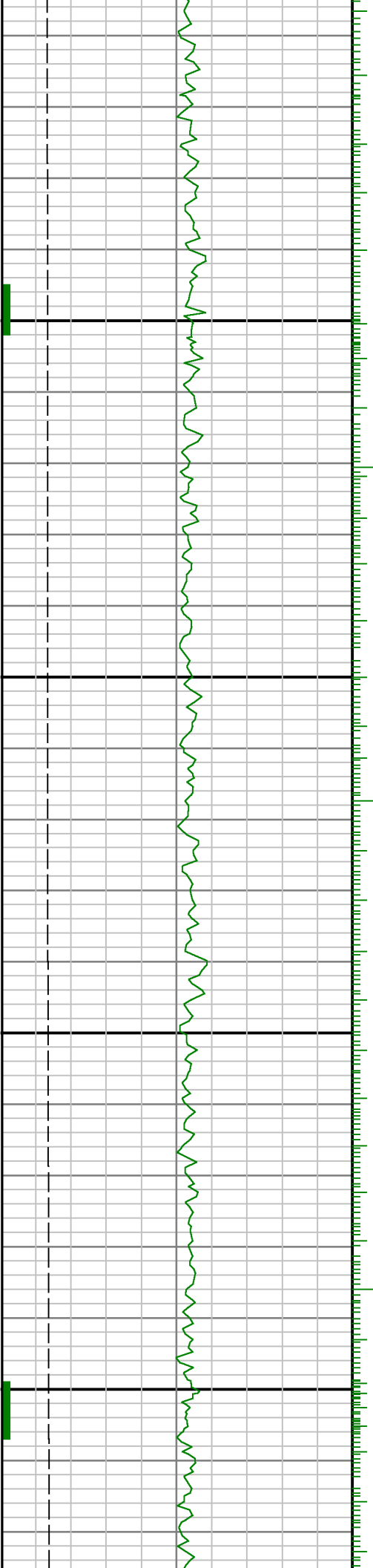


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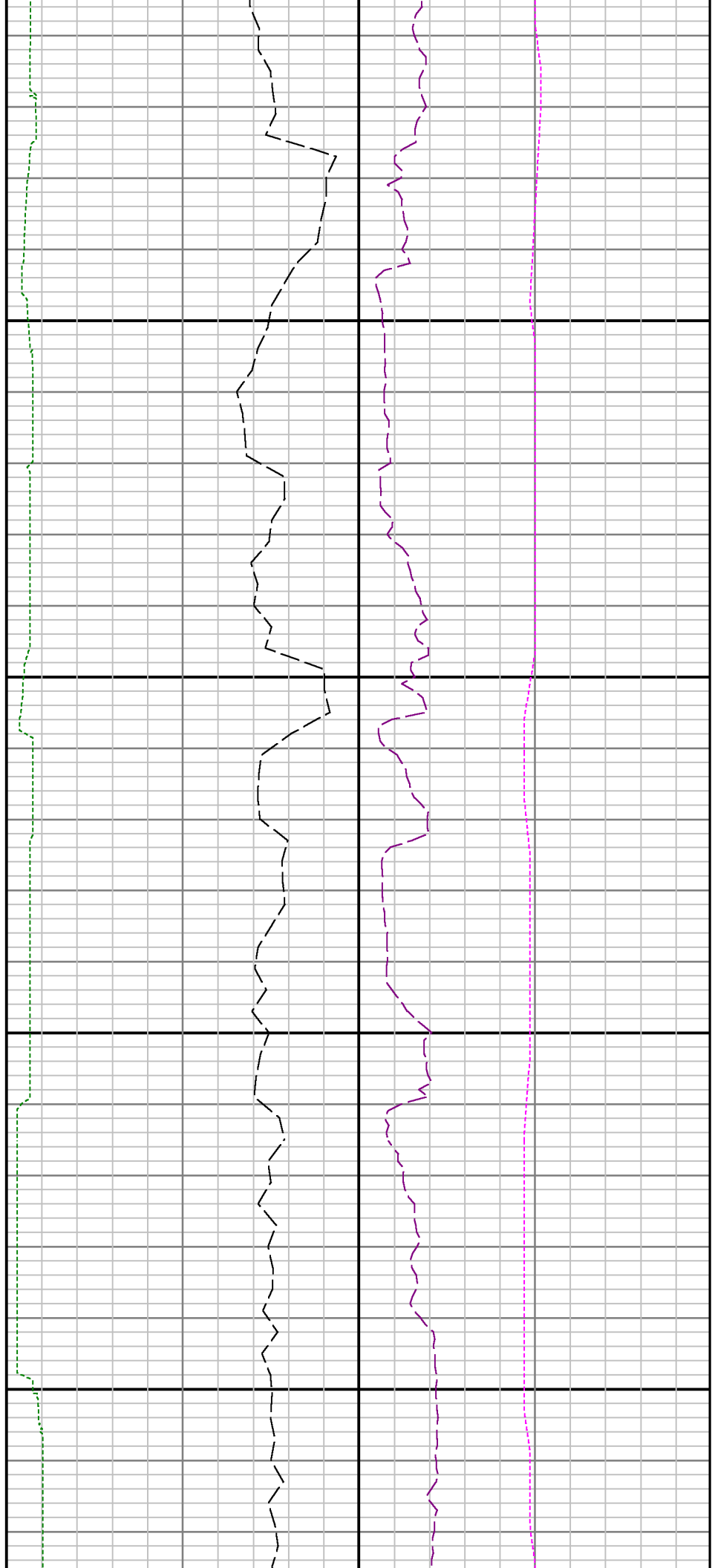


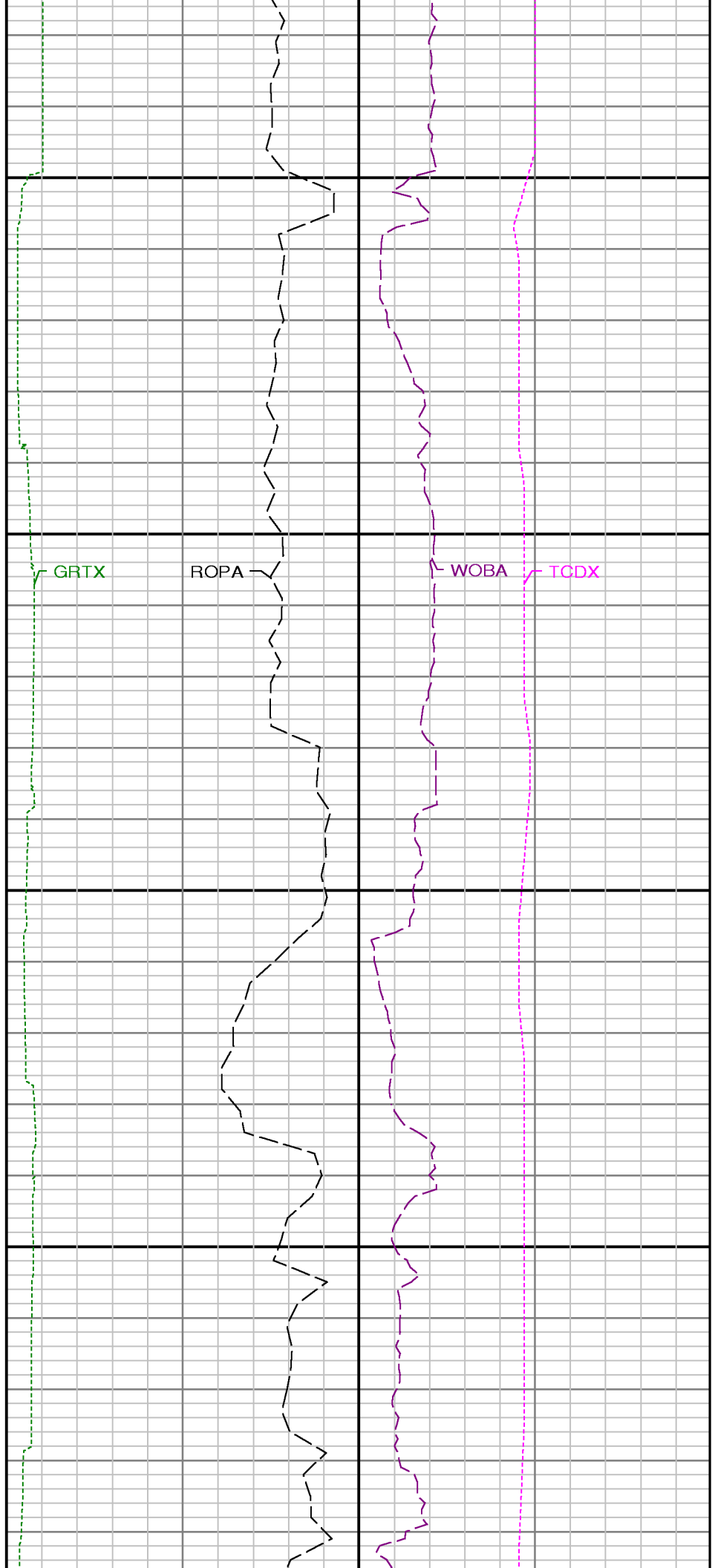
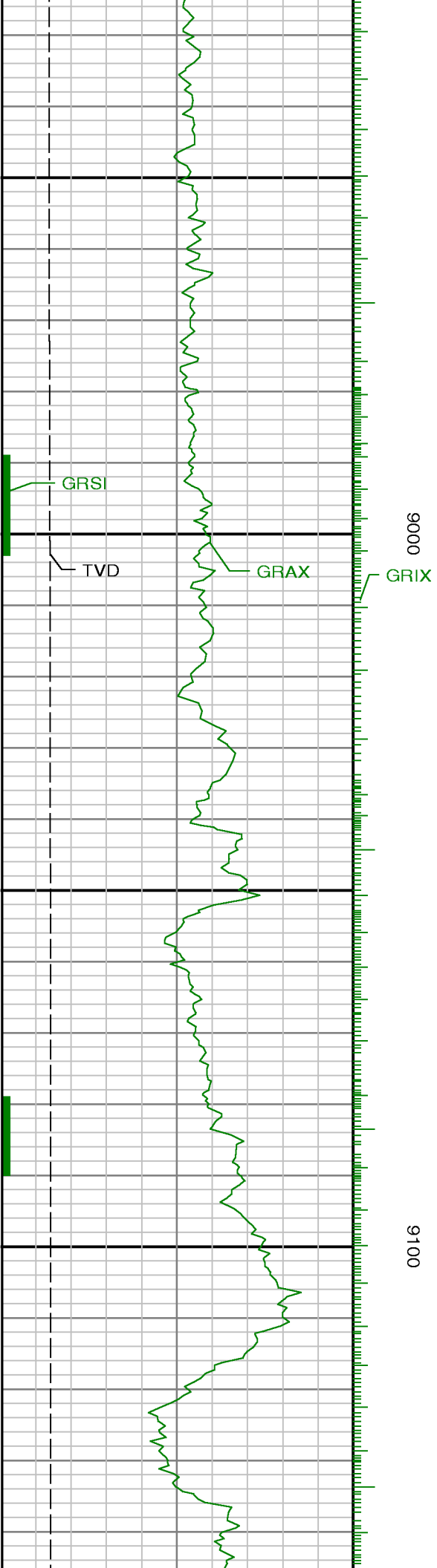


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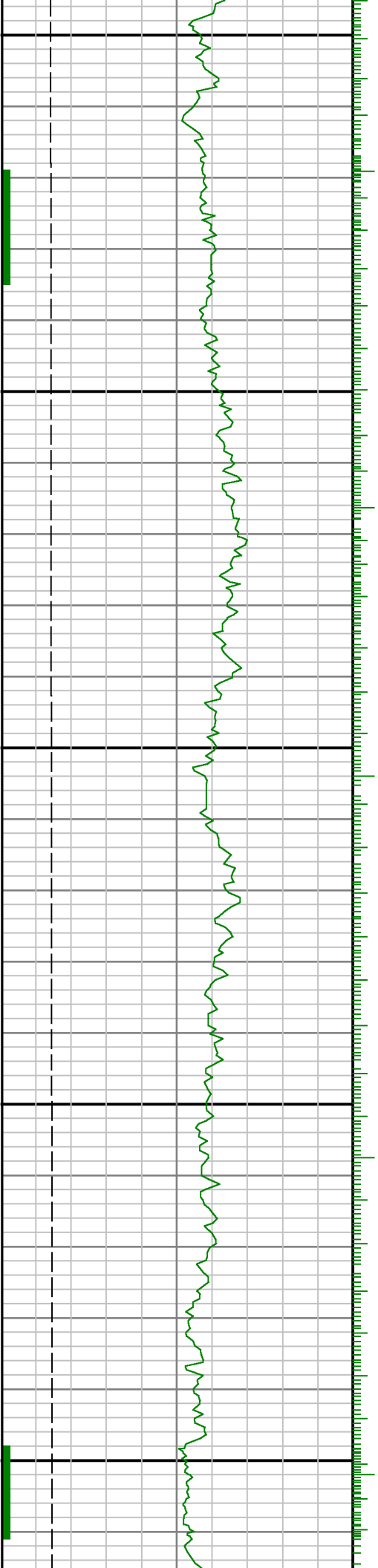






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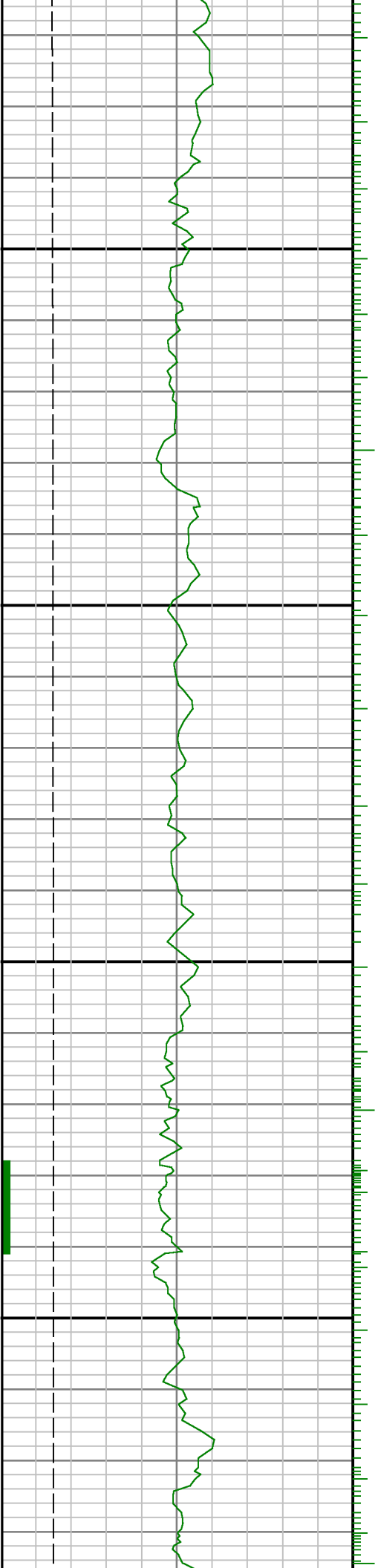
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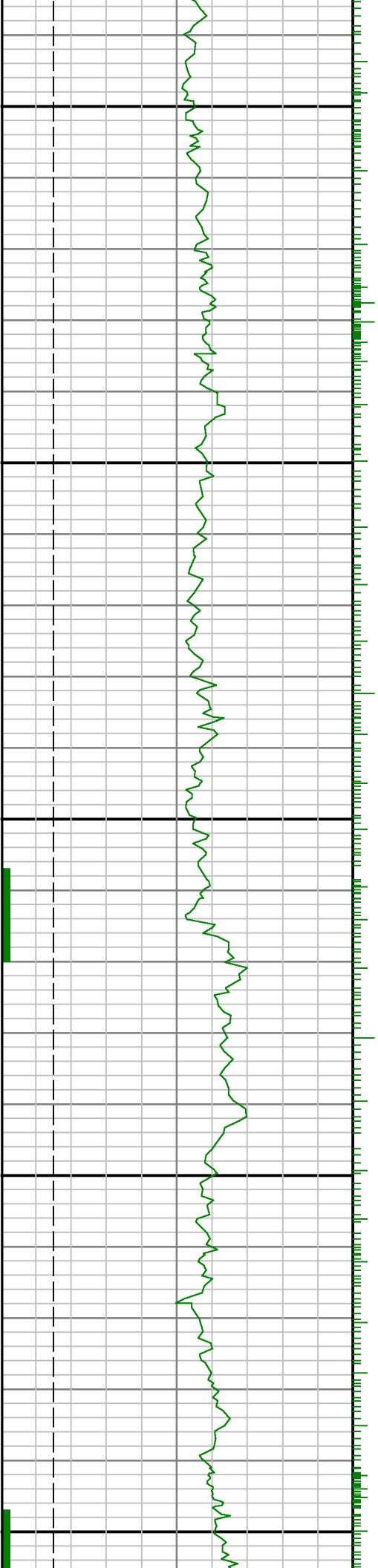
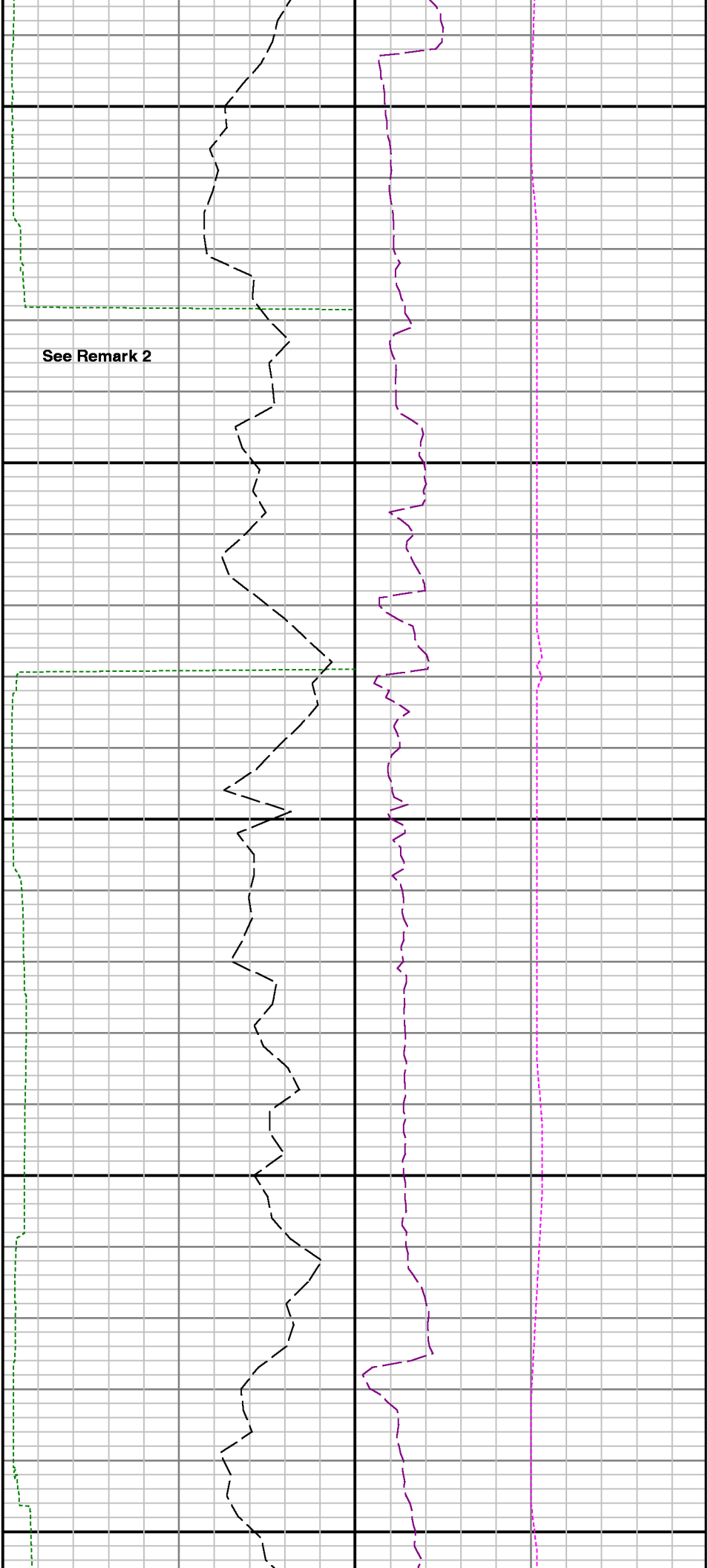


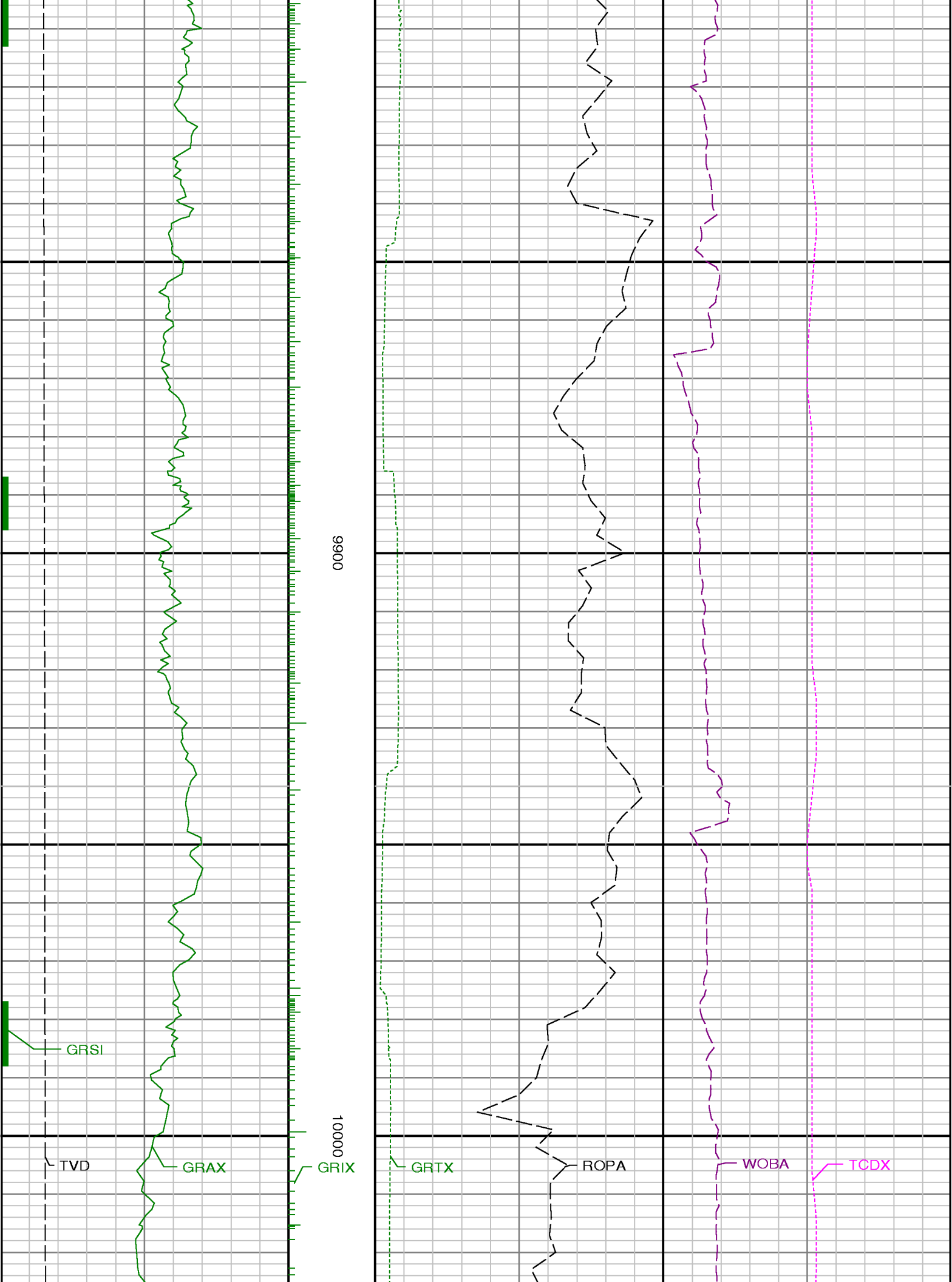


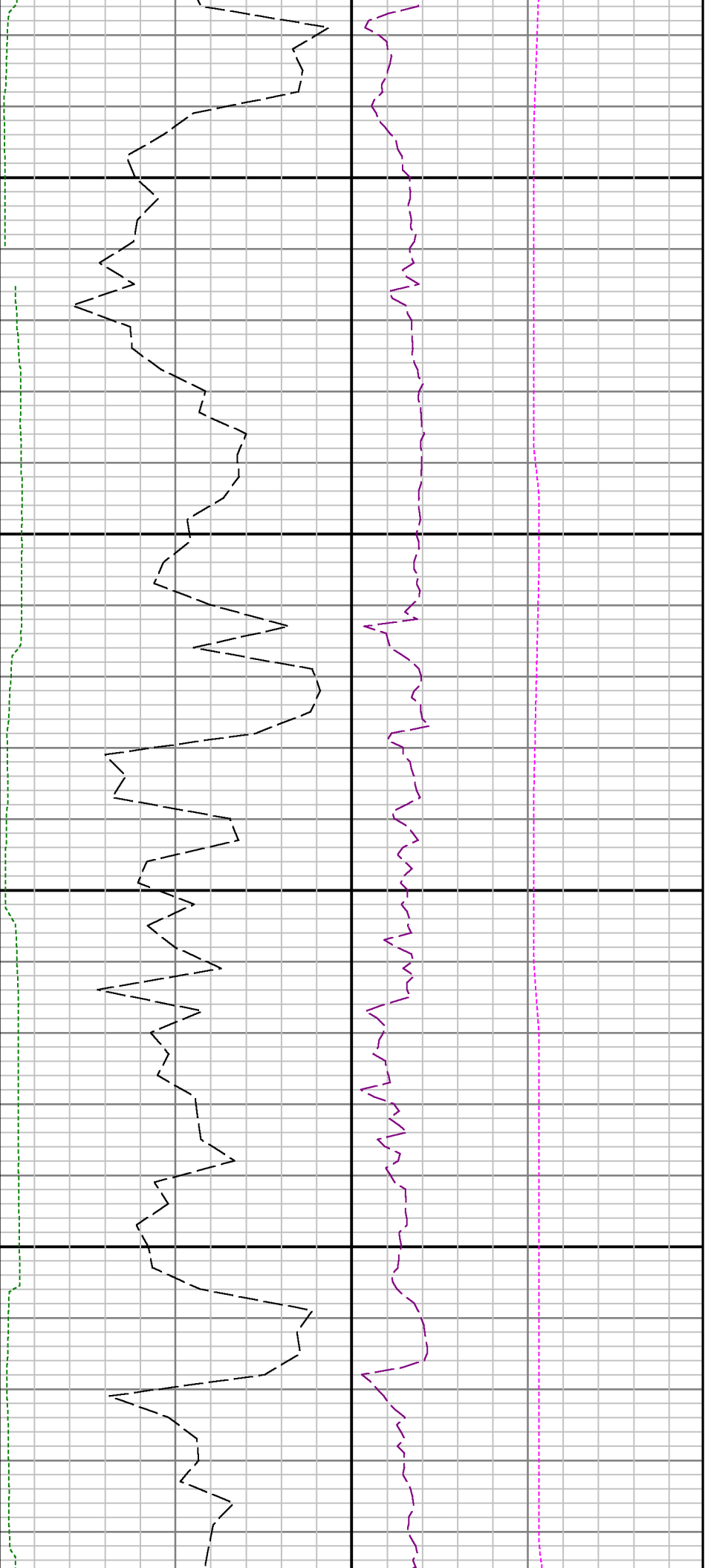
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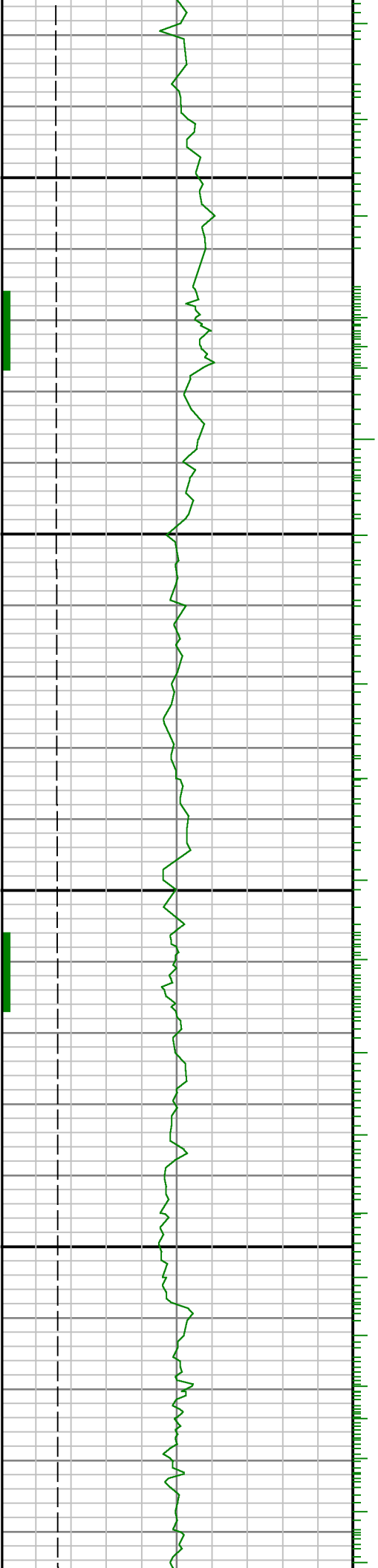


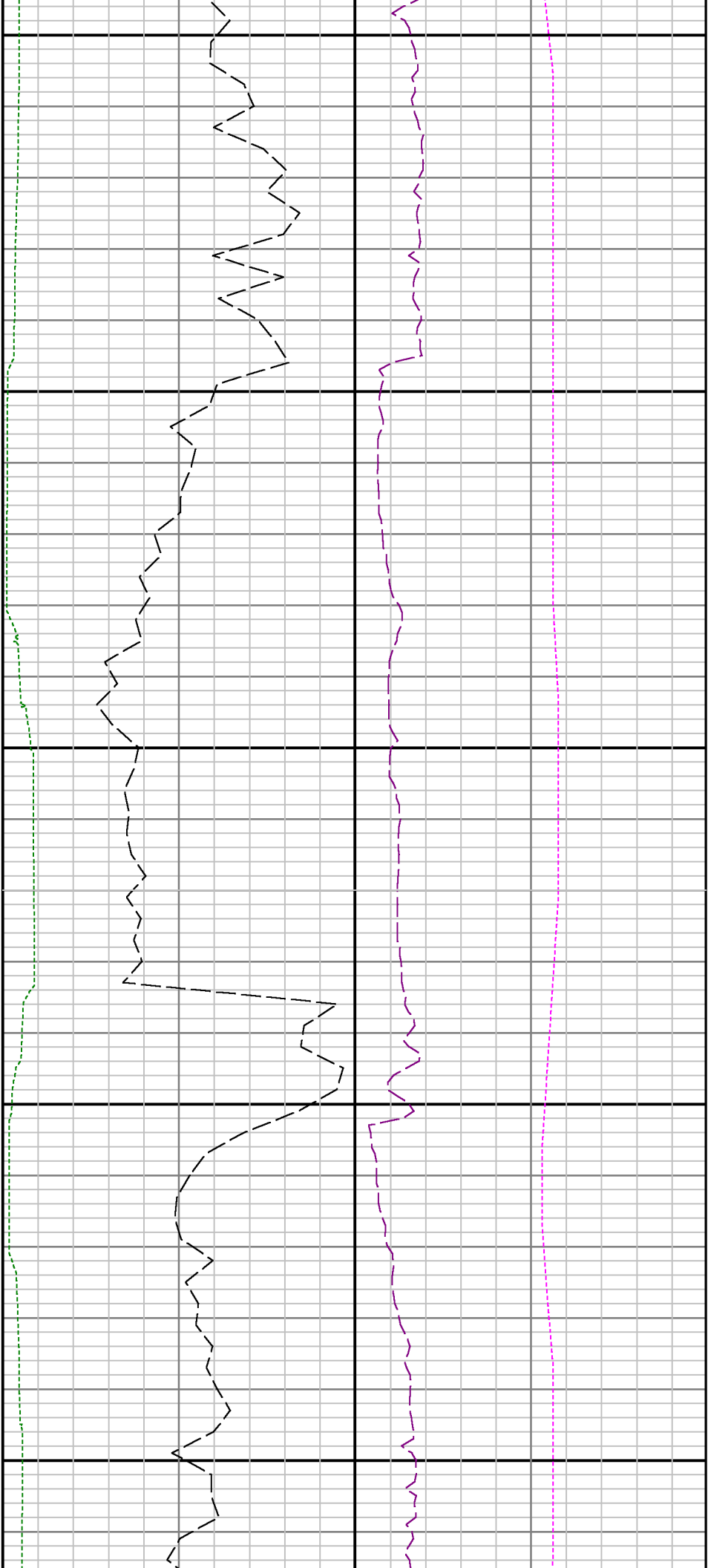




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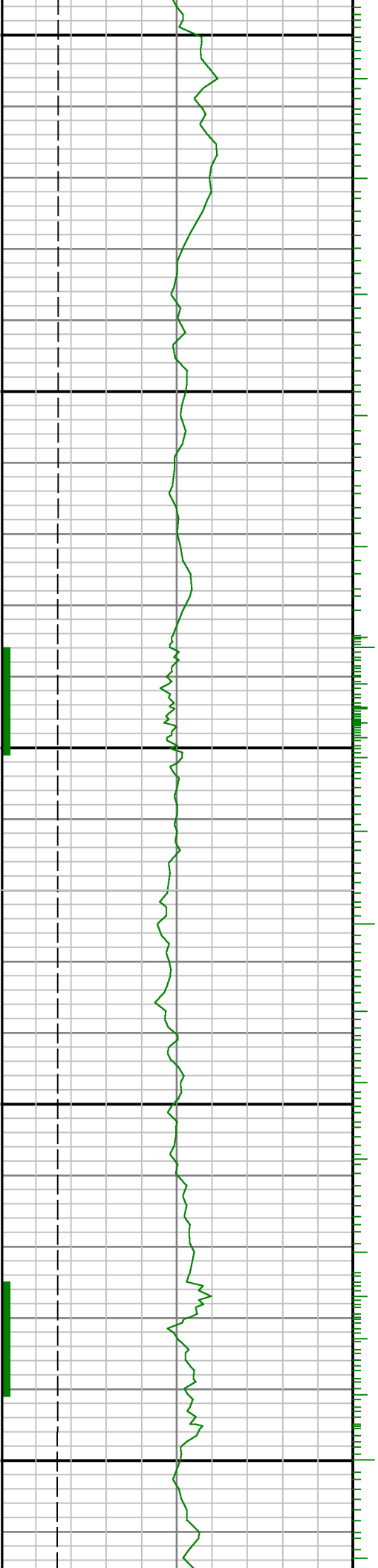
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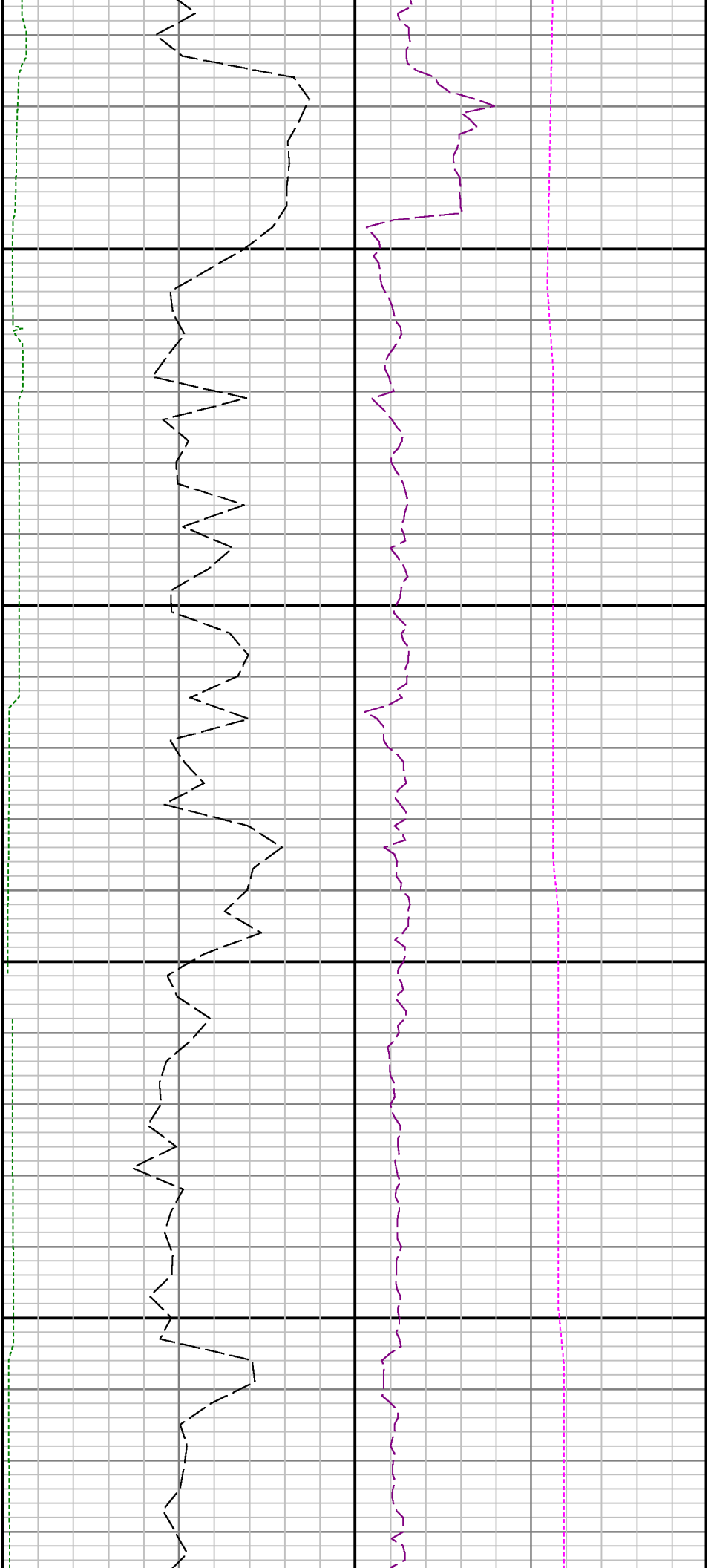




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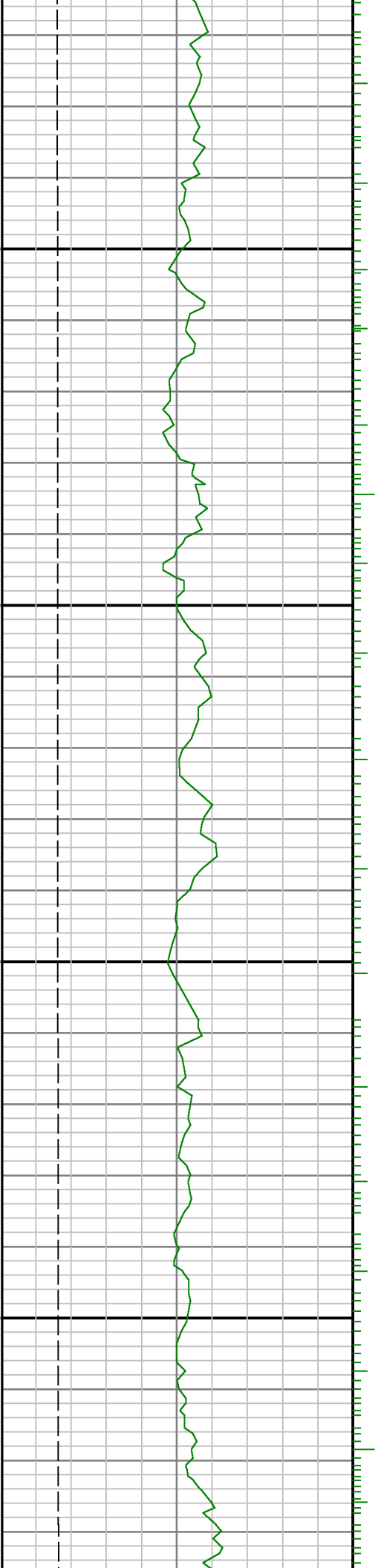
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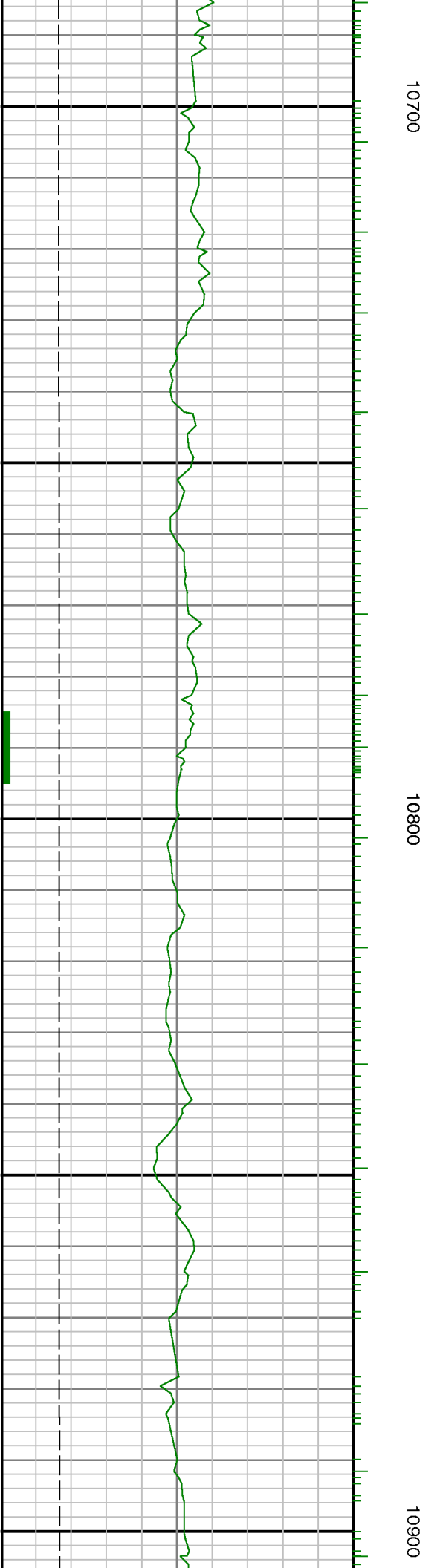
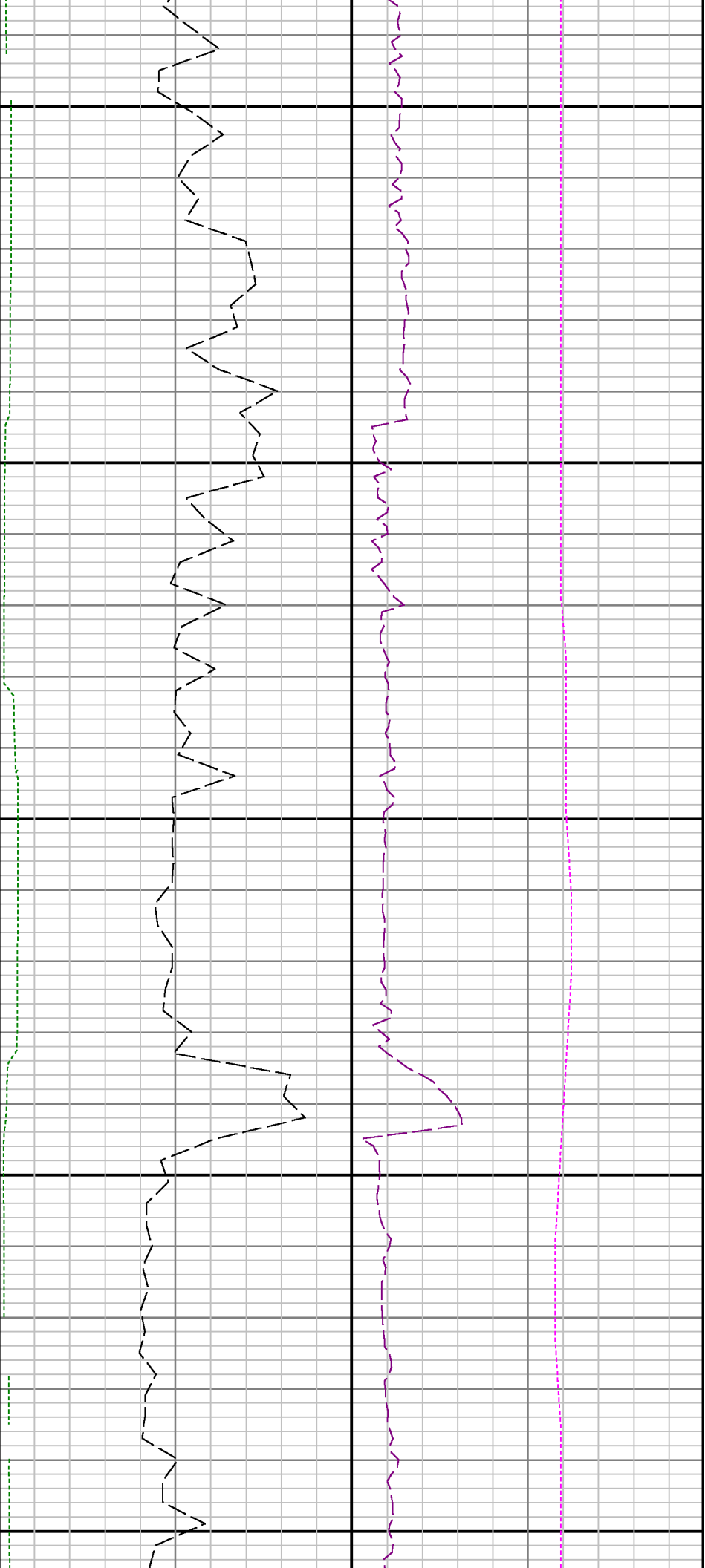


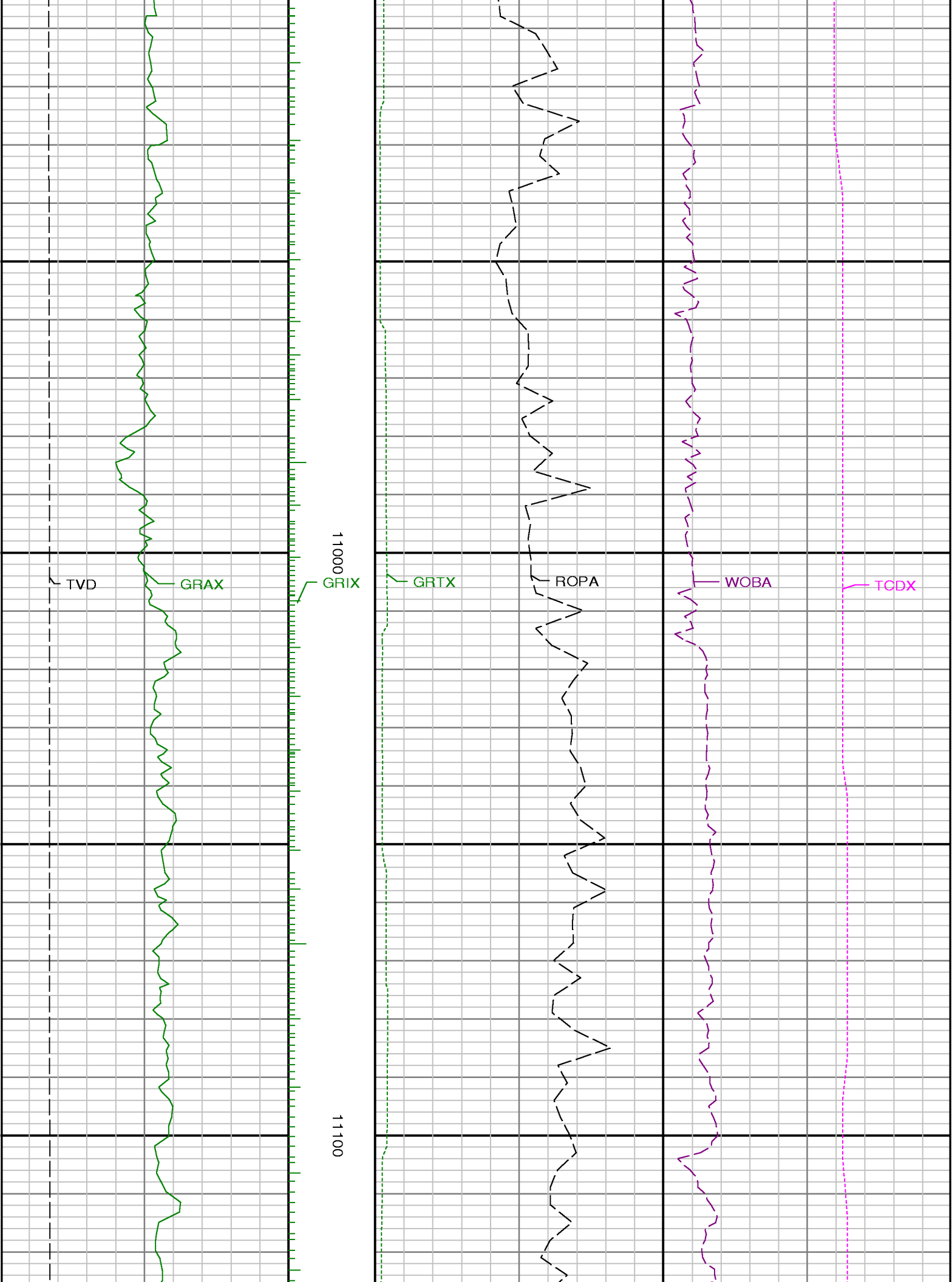


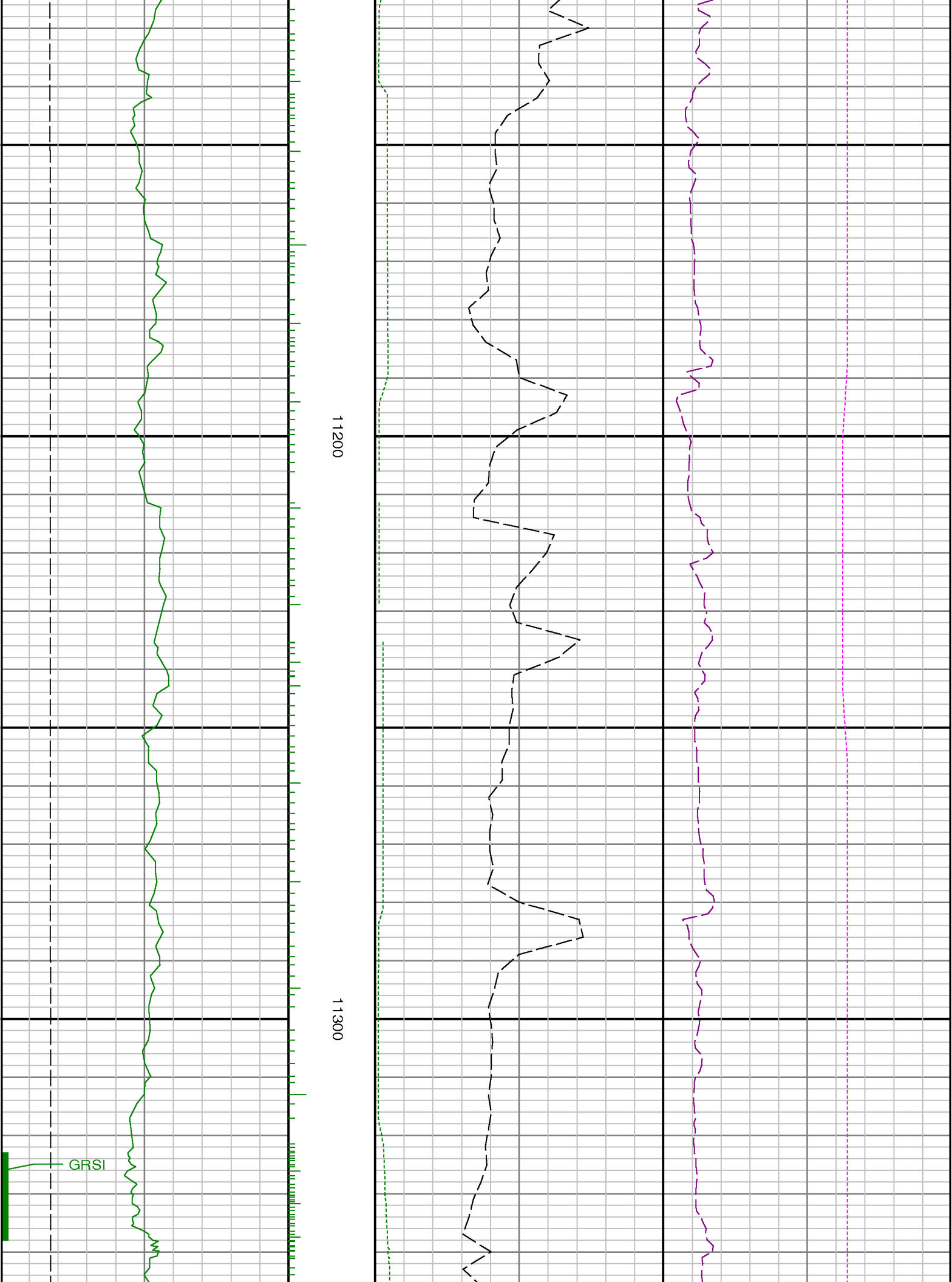
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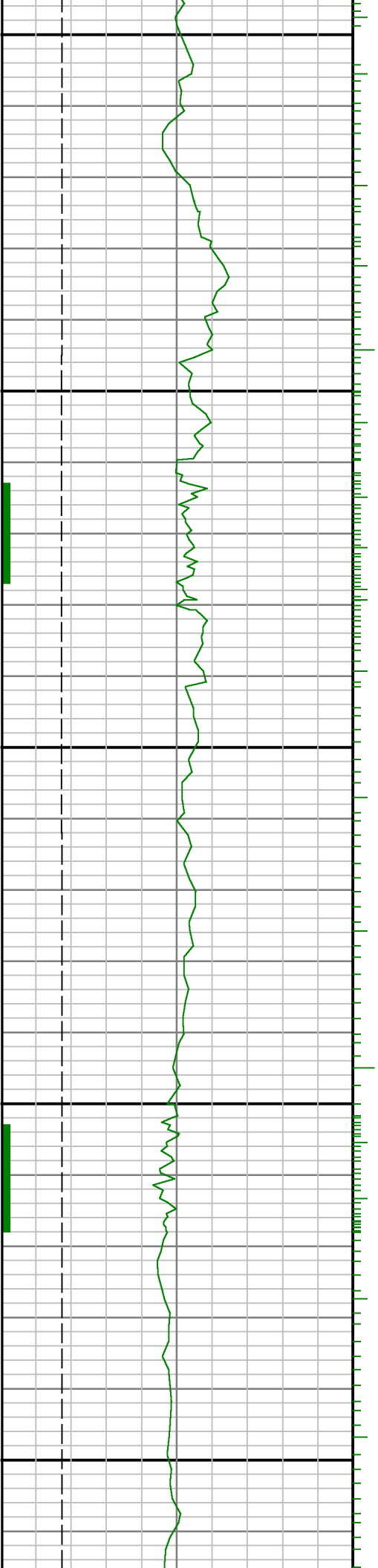


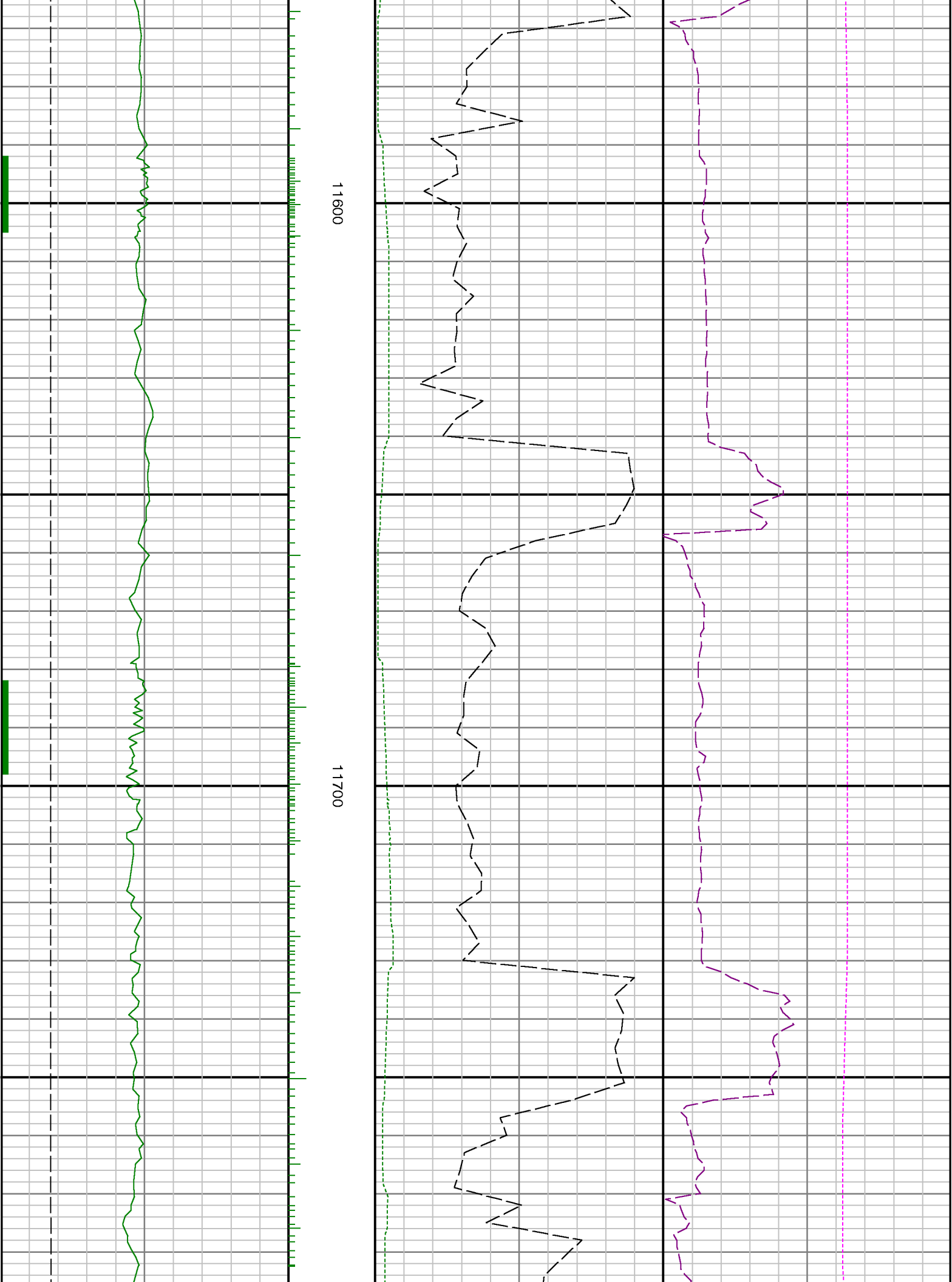




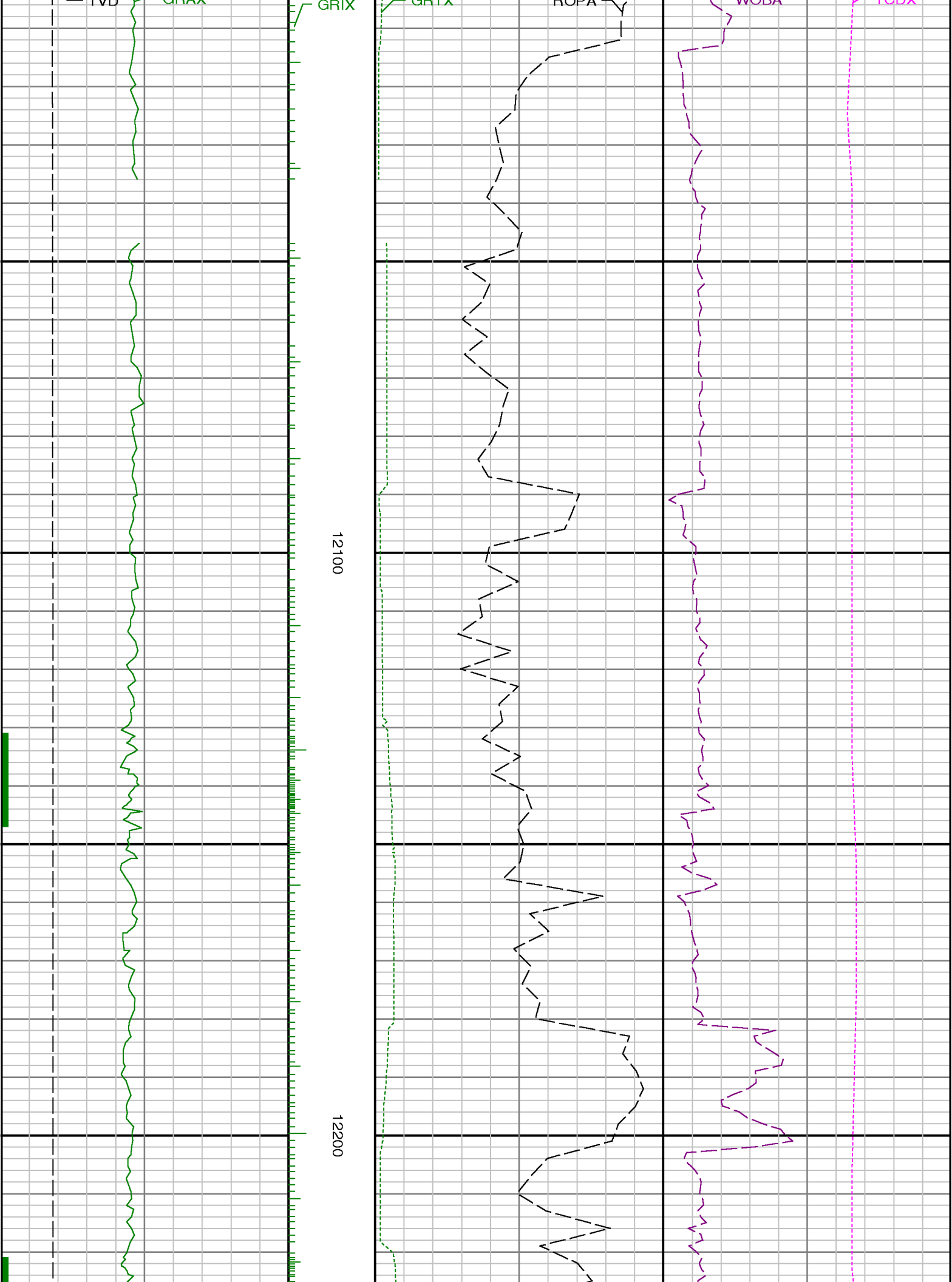
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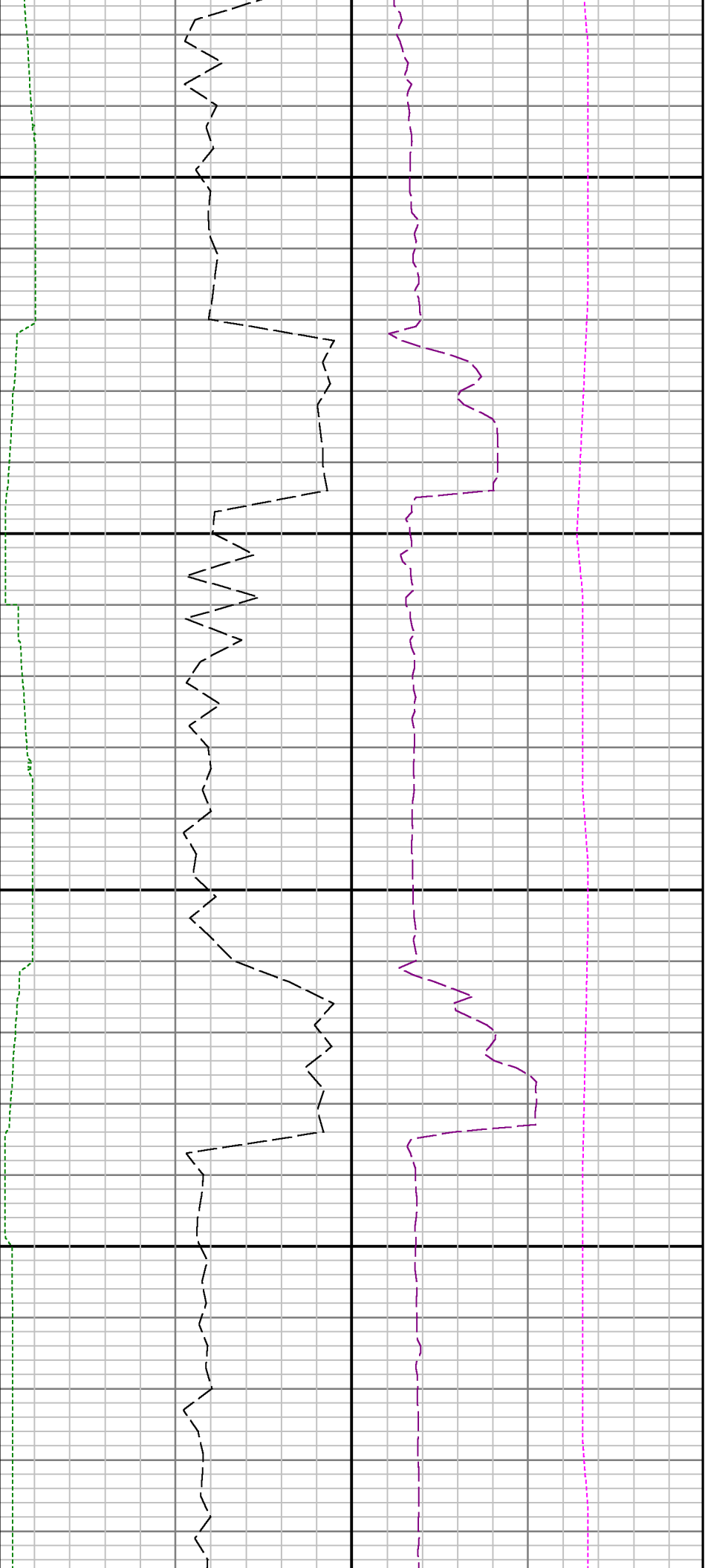
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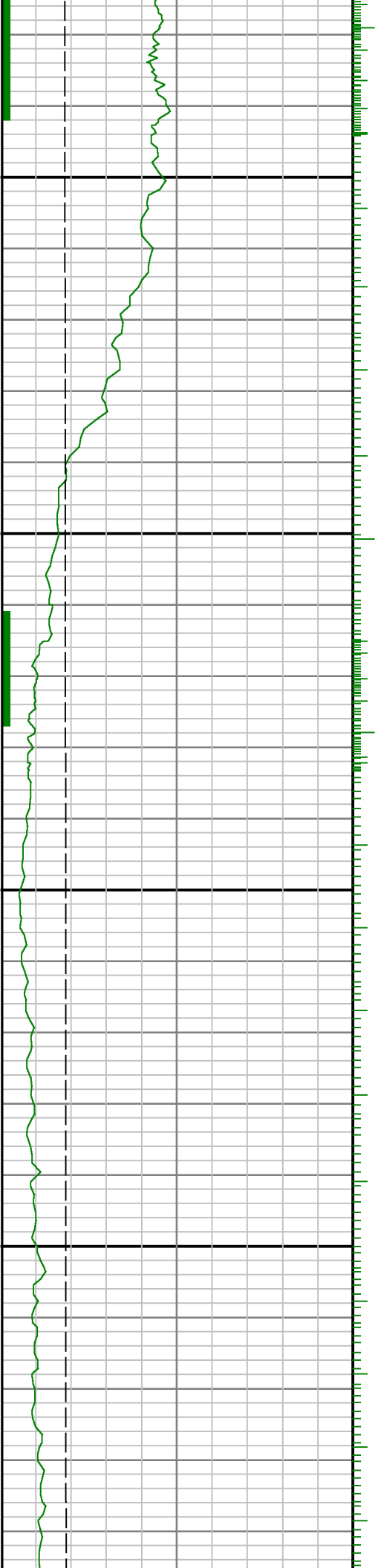


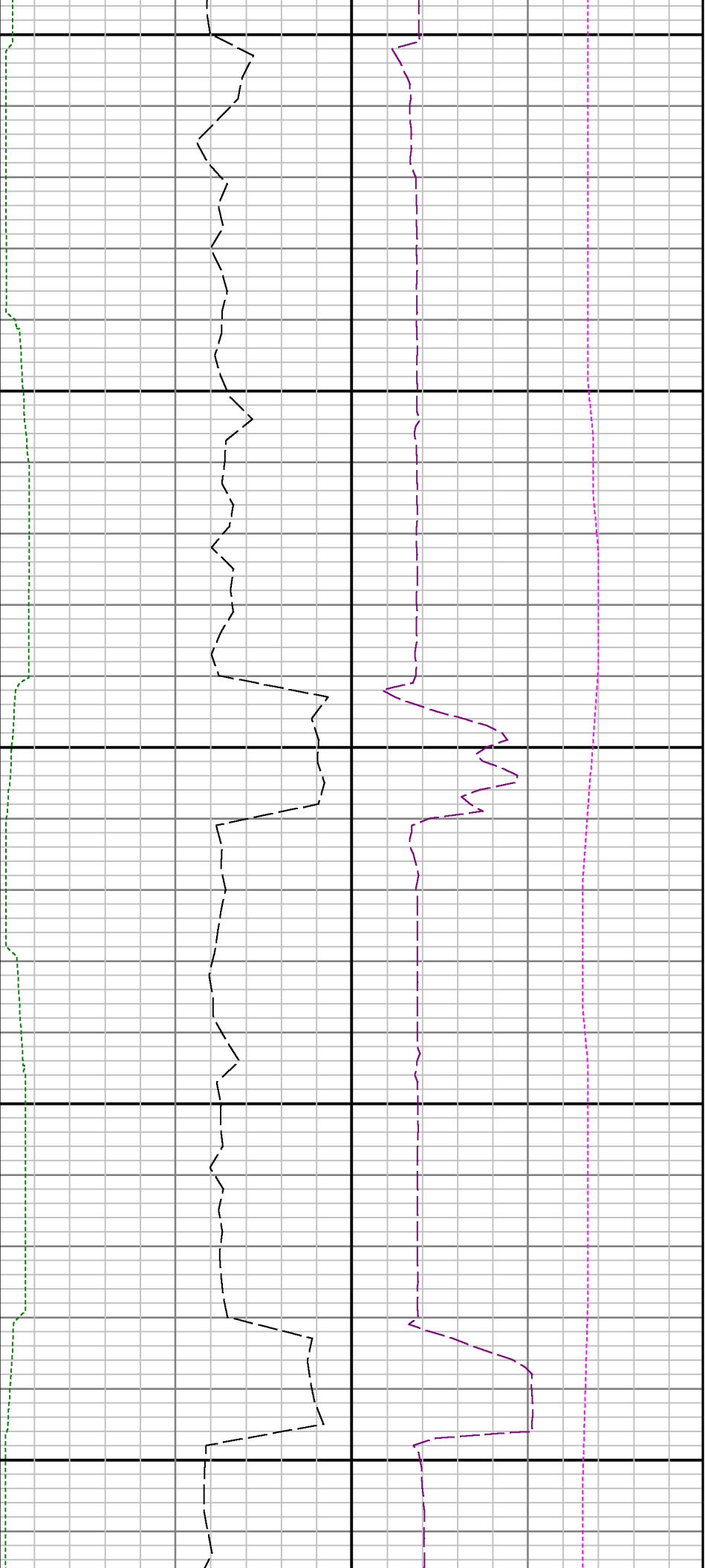




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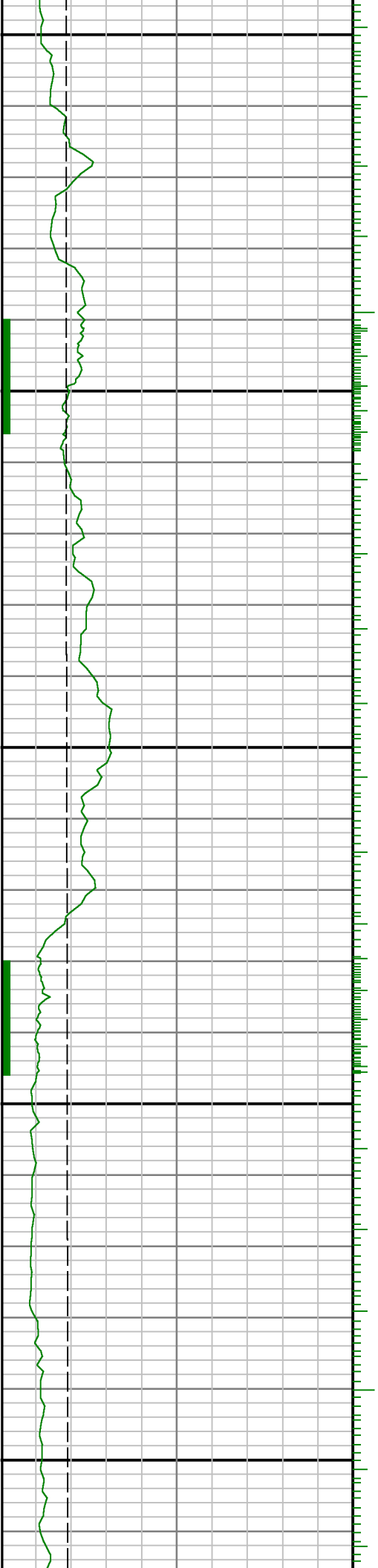
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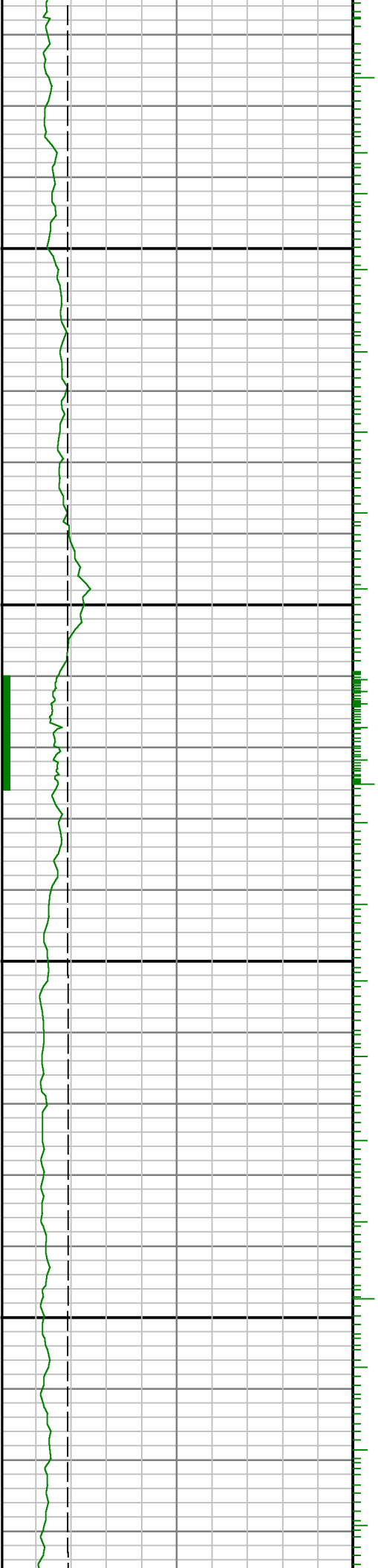
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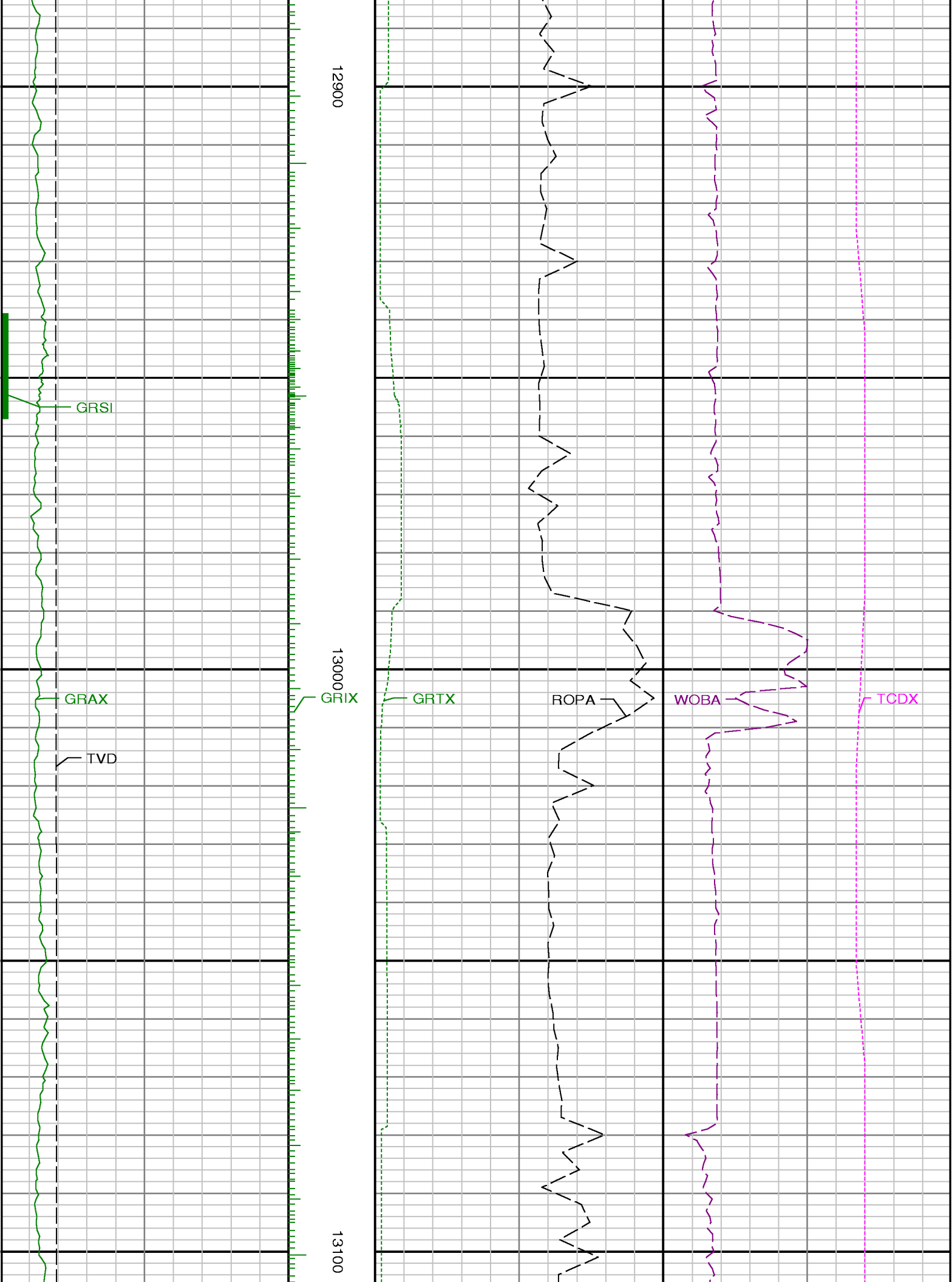


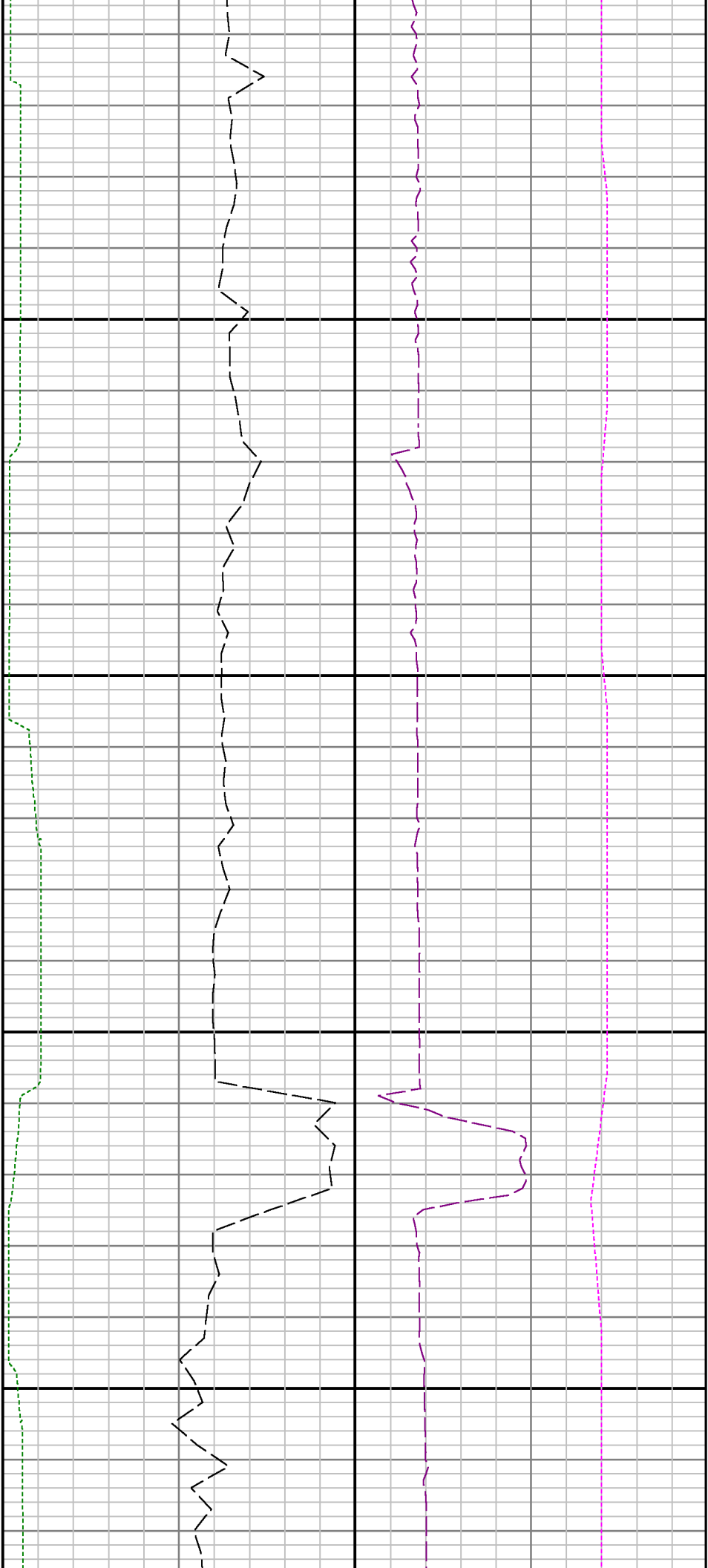


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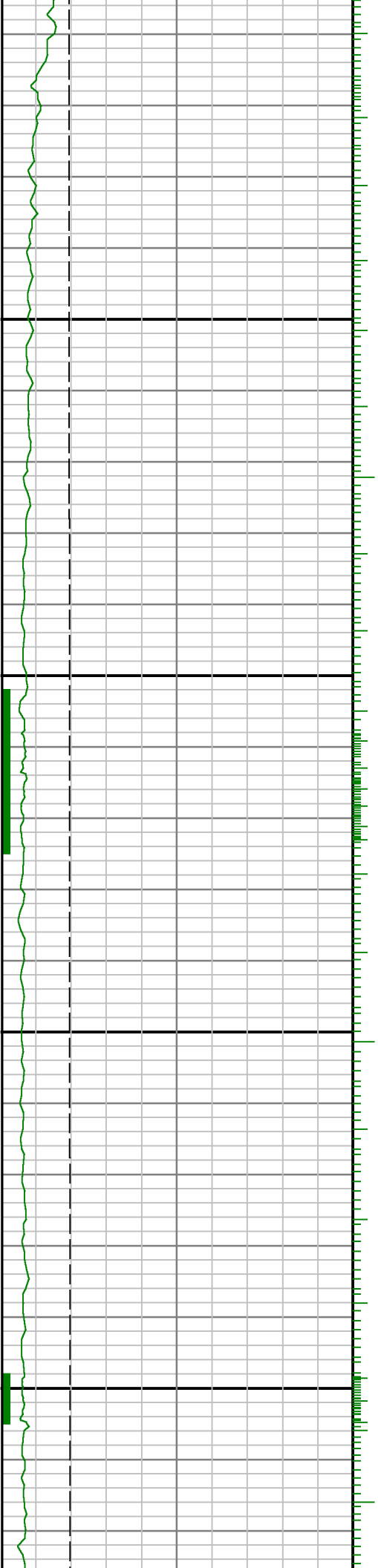


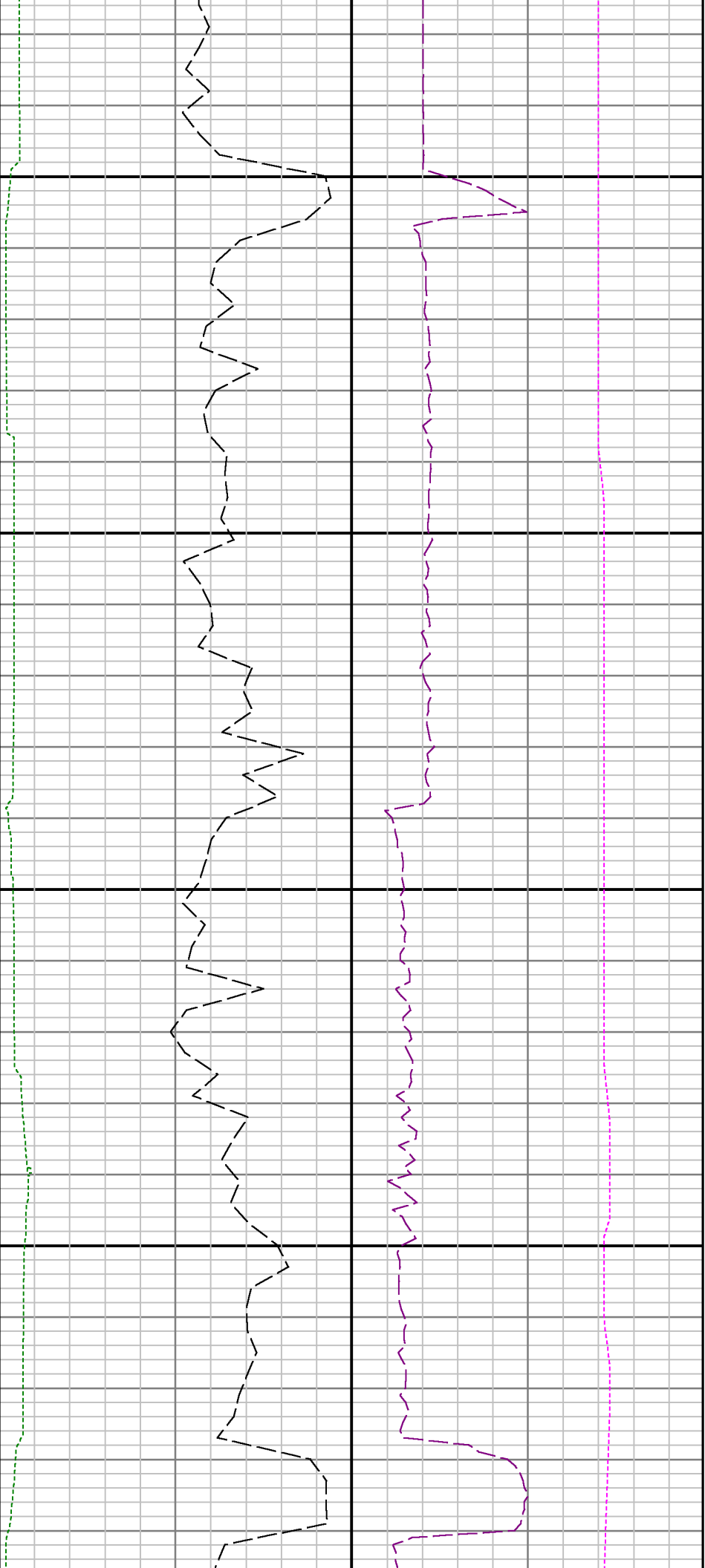




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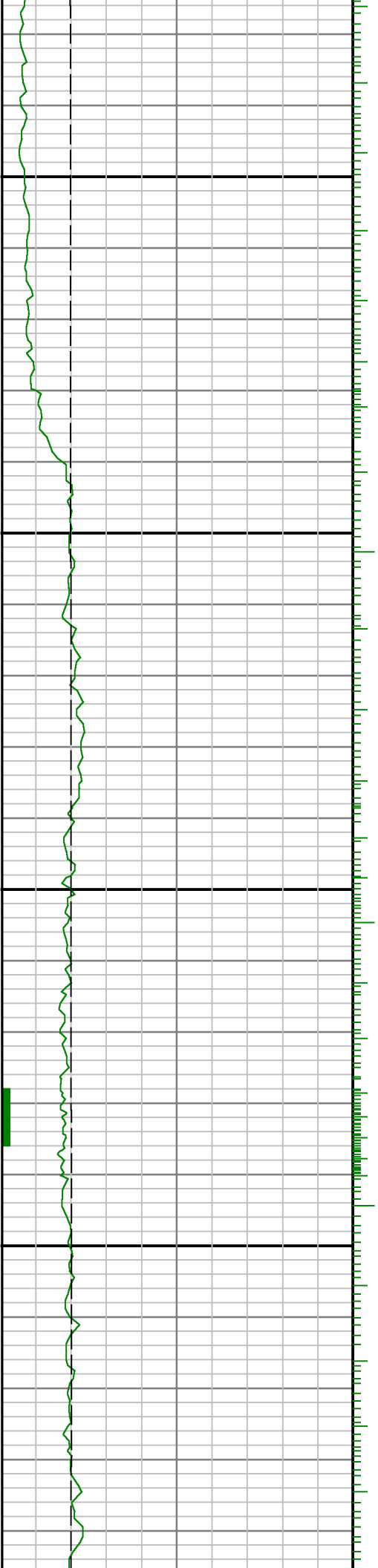
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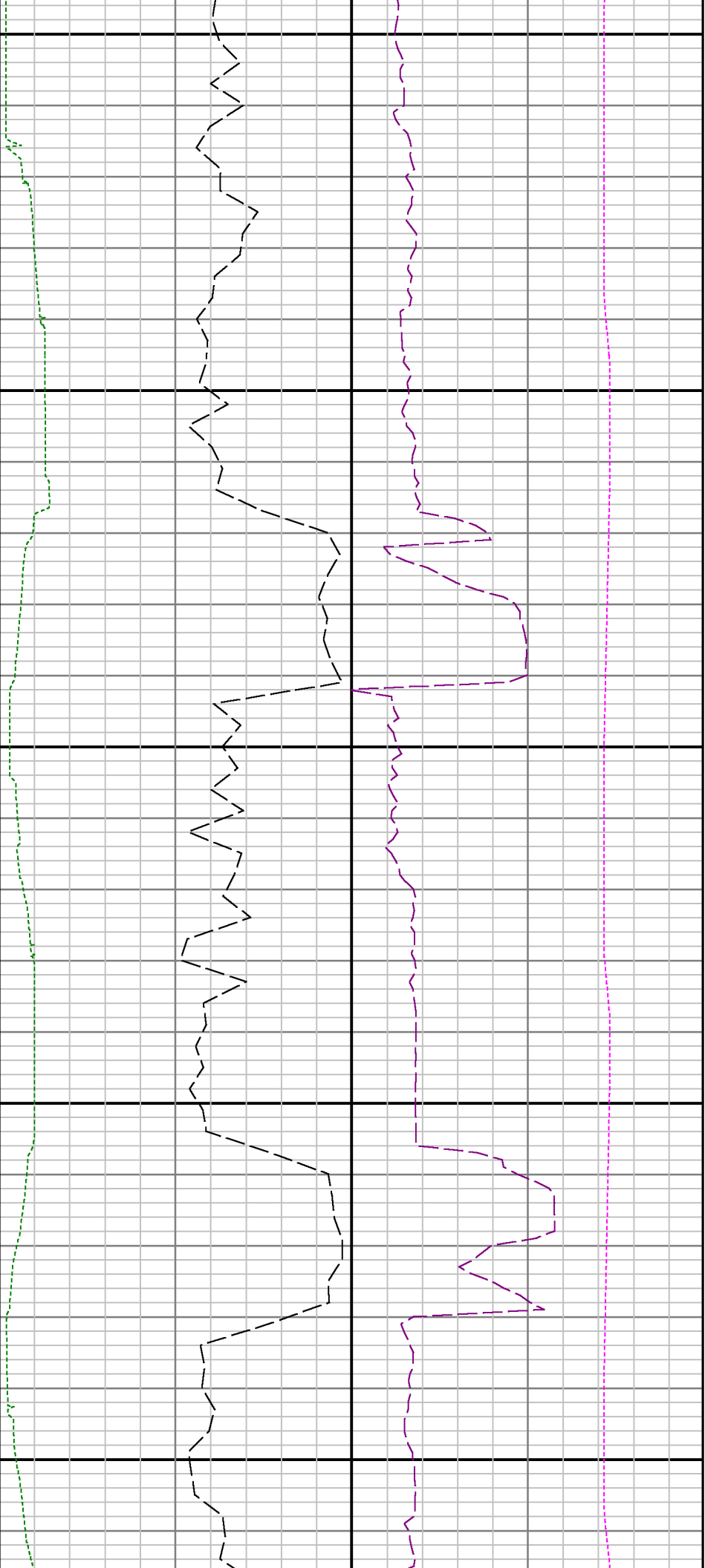




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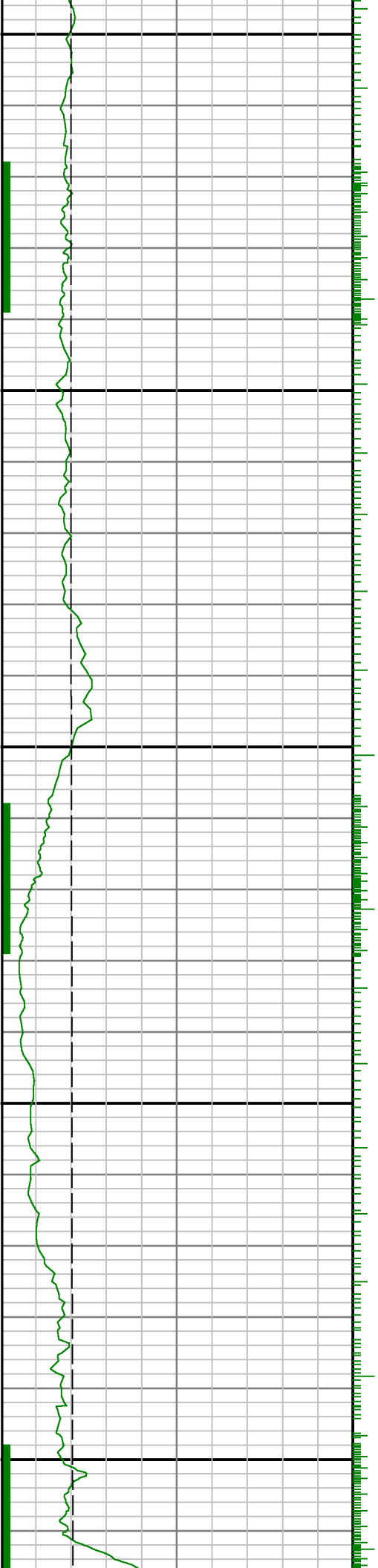
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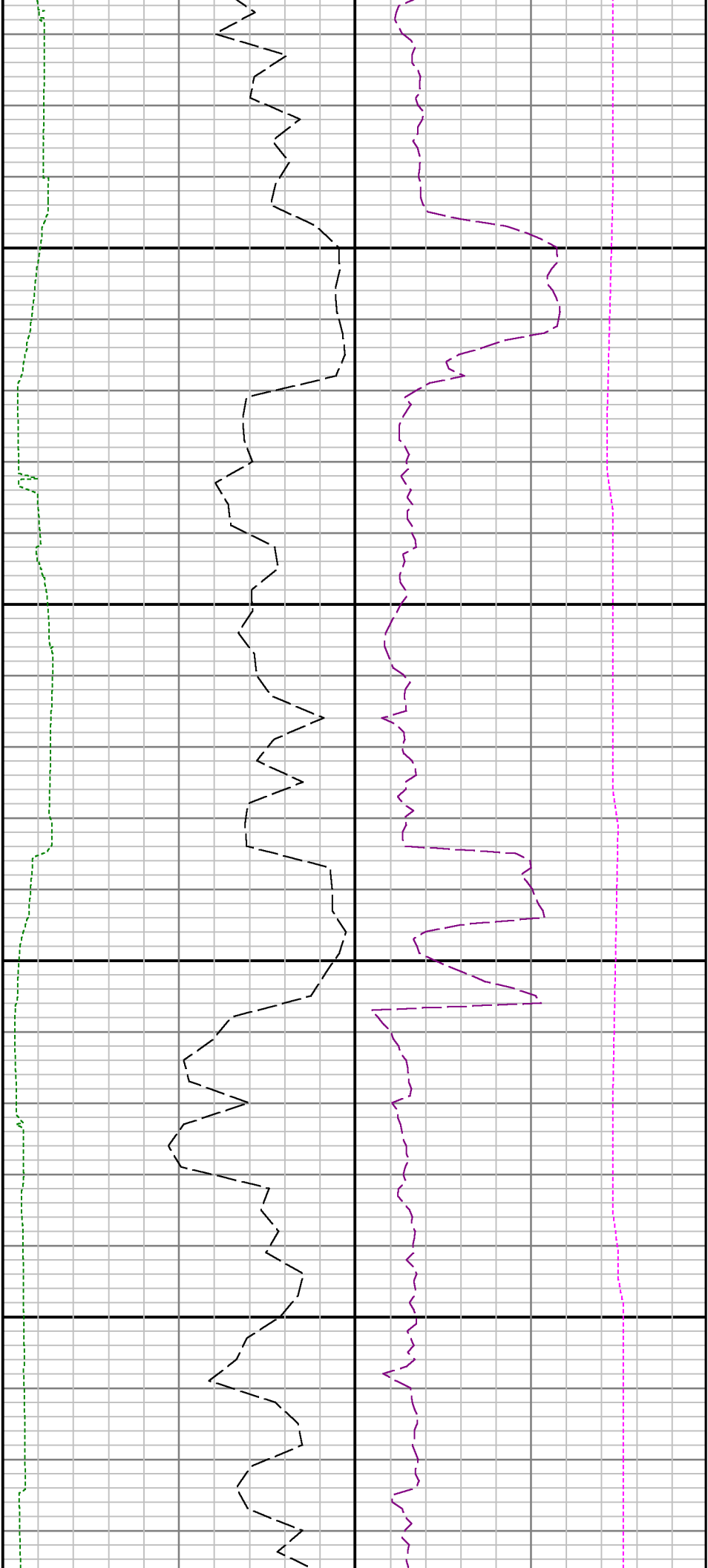




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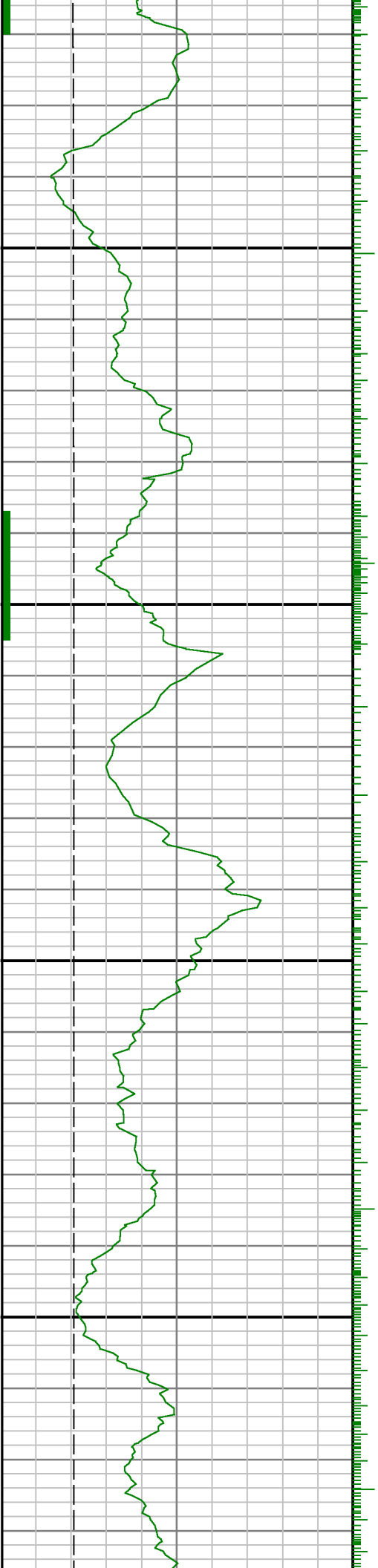
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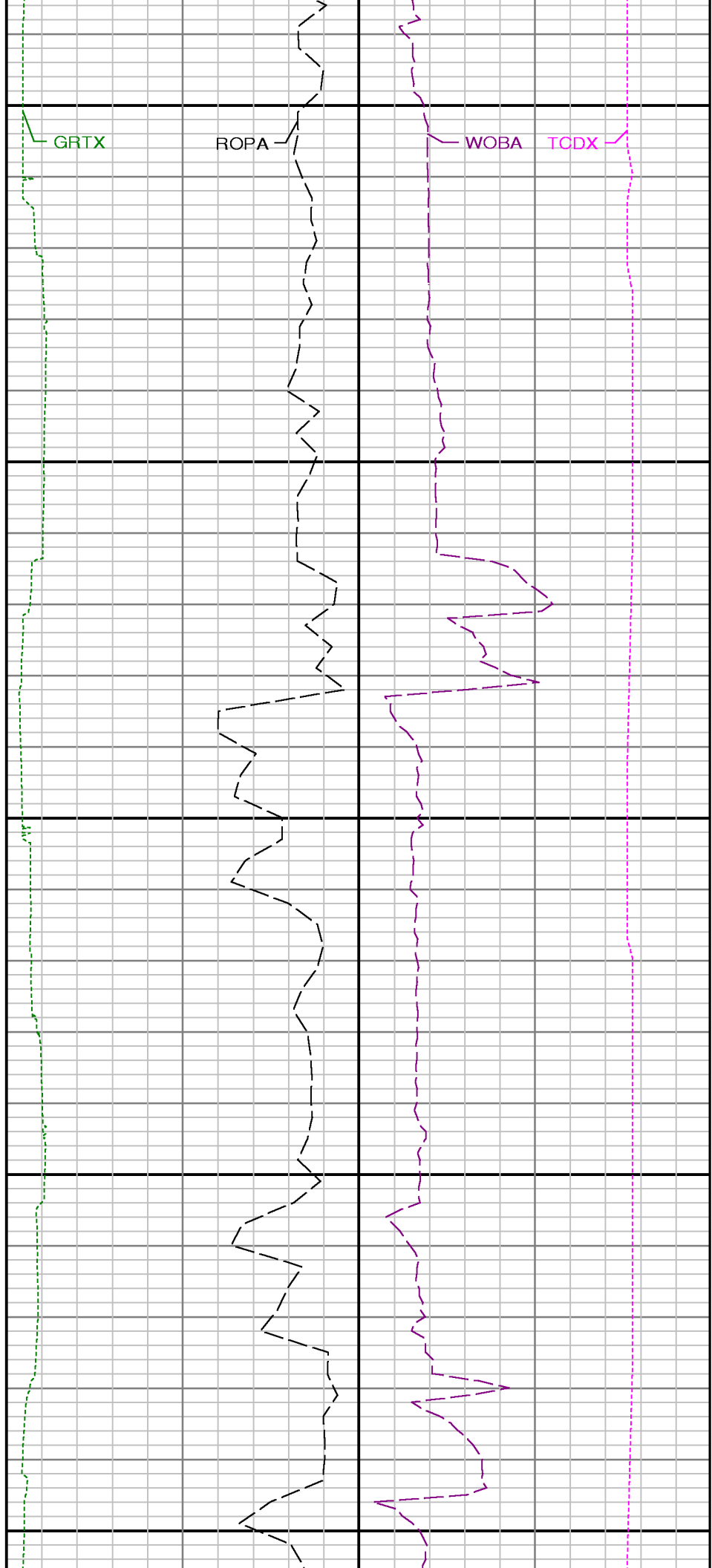
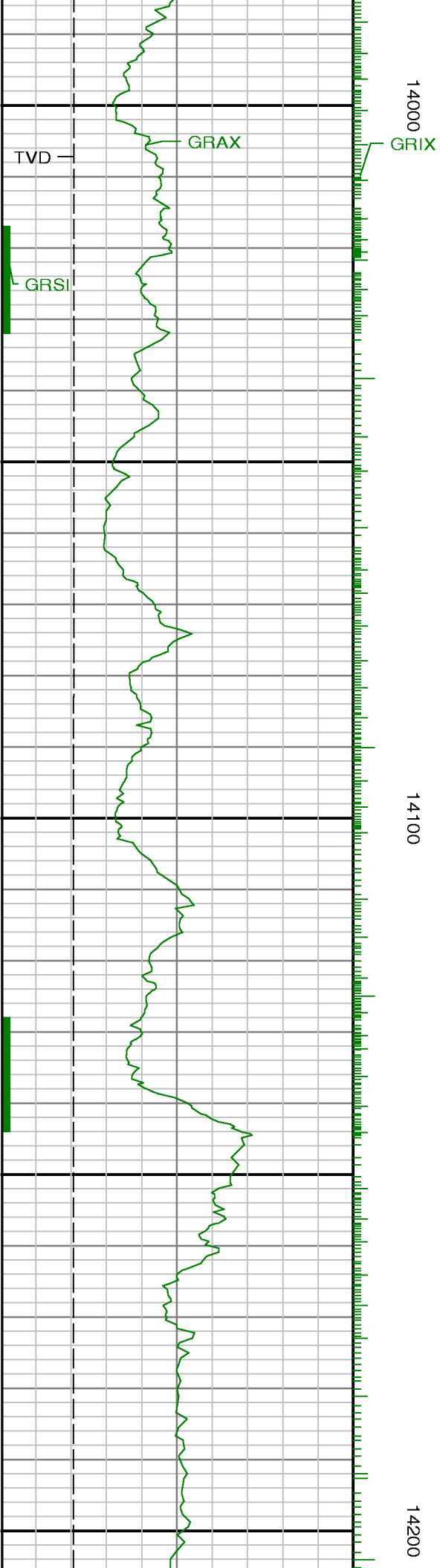


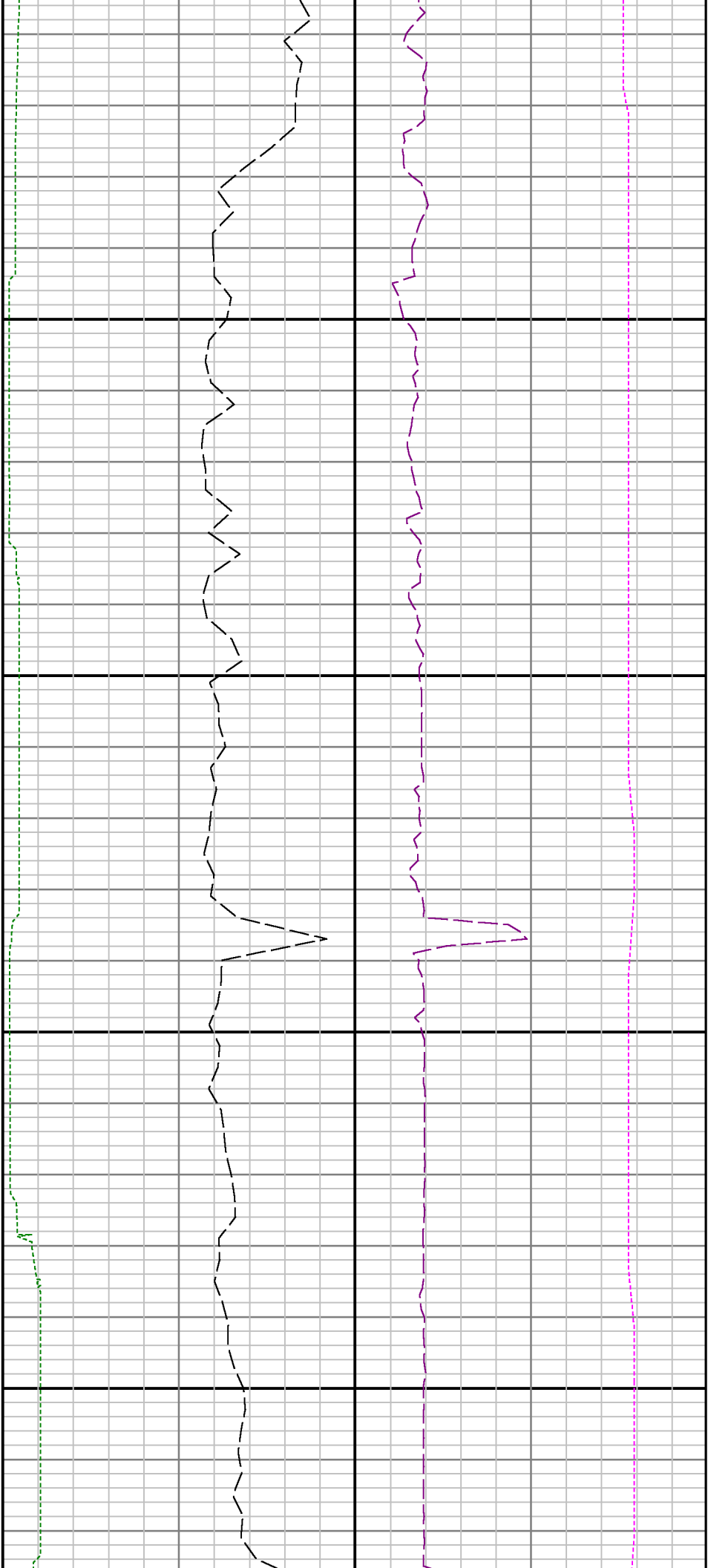


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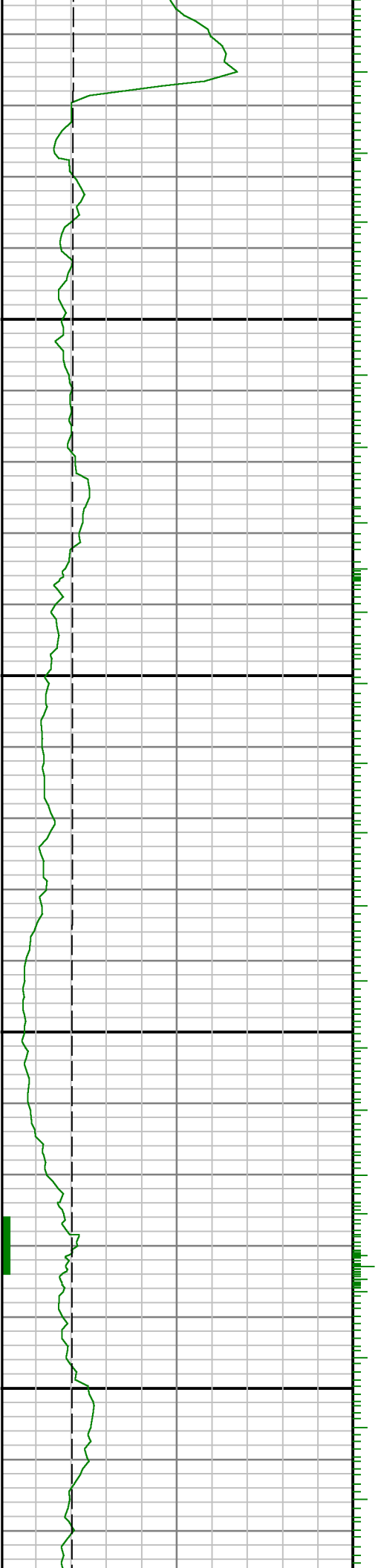


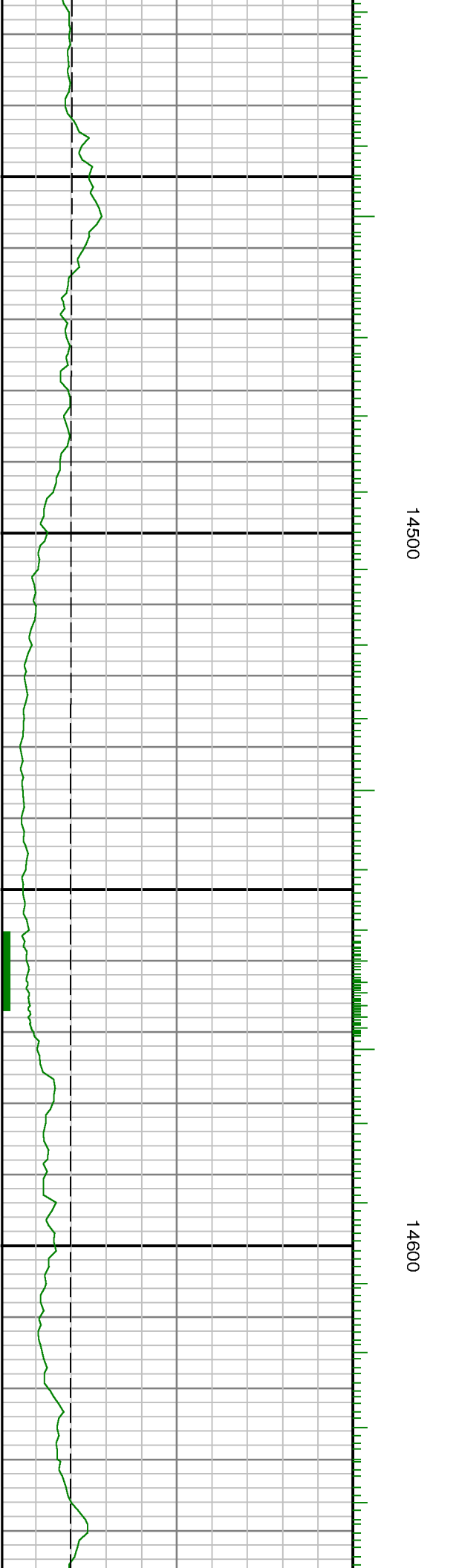
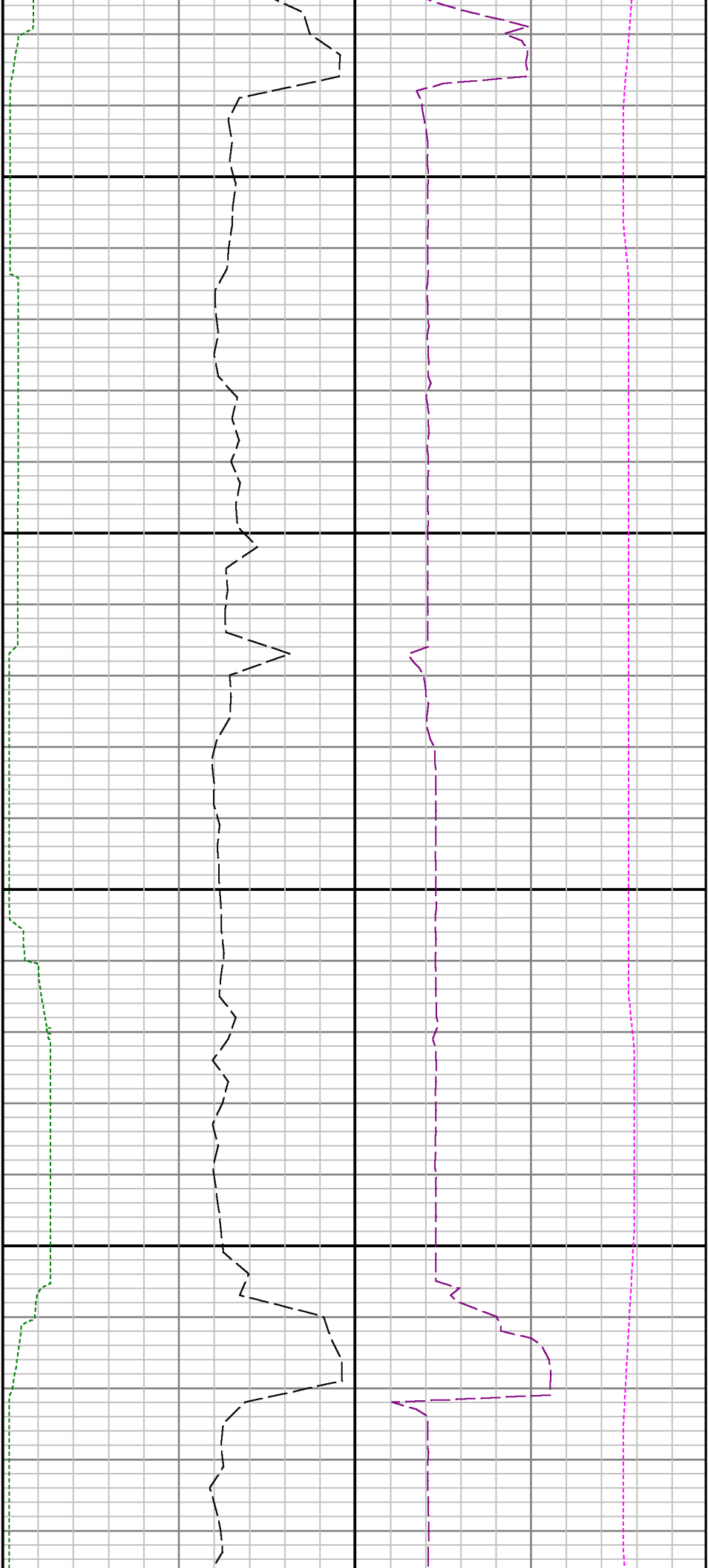


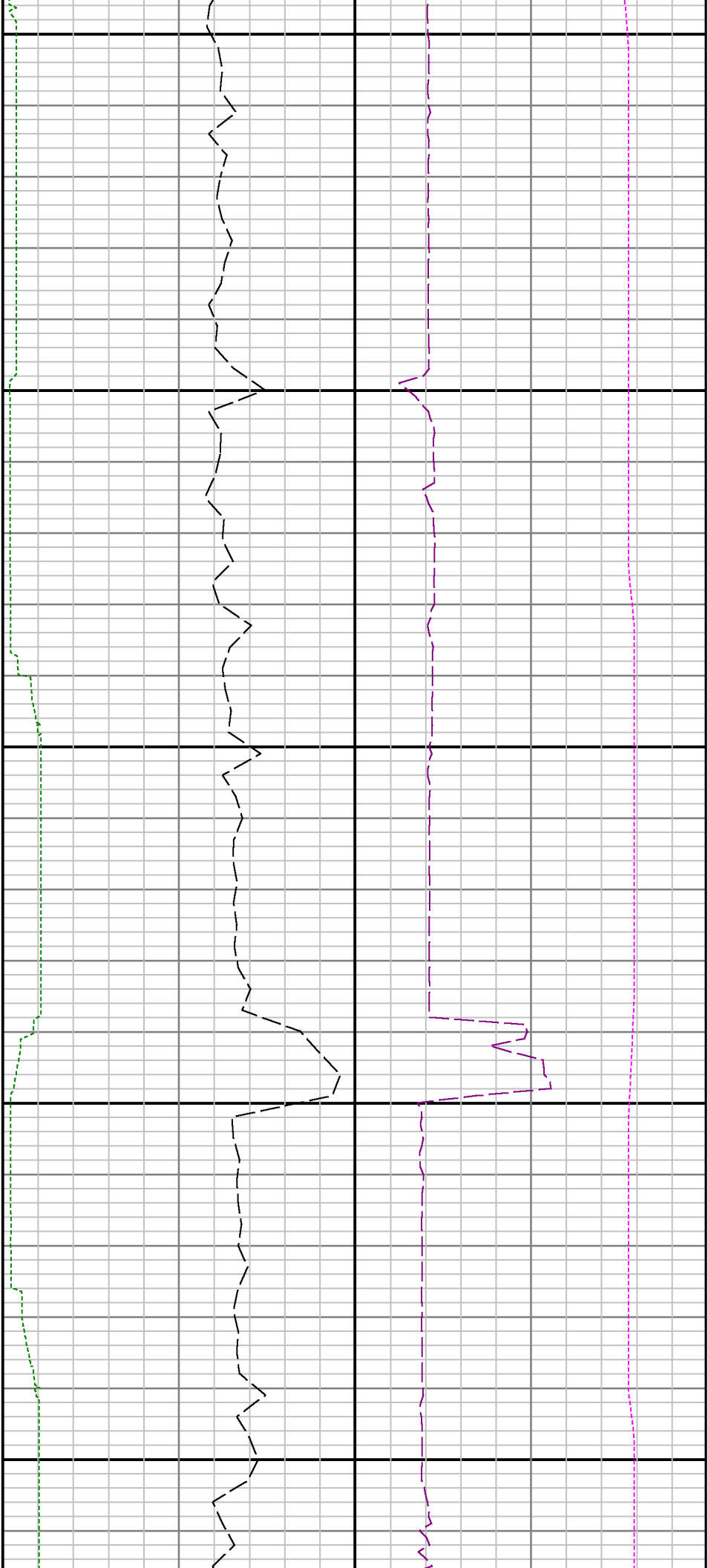


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