



Realtime Logs

Natural Formation Evaluation
Gamma Ray

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

1:240 Well: Steward 13C-6HZ

Measured Depth Field: Weld County (Kerr McGee)

Region: RMA Country: U.S.A

Status: Surface Location: Other Services:

Final Print Latitude: 40 ° 3' 35.474" N

API Number: 051233959600 Longitude: 104 ° 42' 38.927" W

Section: 7 TWN: 1N Range: 65E

Permanent Datum (P.D.): Ground Level Elevation: 5021.00 ft.

Log Measured From: Rig Floor 17.00 ft. Above P.D. Elevations: N/A

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

DF: N/A

GL: 5004.00 ft.

Interval Logged Dates Magnetic Field Reference

Top: 6800.0 ft. Date From: 23 Nov 14 Dip Angle: 66.50 ° Azi Reference North: True

Bottom: 12773.0 ft. Date To: 01 Dec 14 Total Mag to Reference

Spud Date: 23 Nov 14 Field Strength: 52776.0 nT North Correction: 8.07 °

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
13,500 in.	Surface	1624.0 ft.	9,600 in.	36.00 lb/ft	Surface	1613.0 ft.
8,750 in.	1624.0 ft.	7915.0 ft.	7,000 in.	36.00 lb/ft	Surface	7903.0 ft.
6,125 in.	7915.0 ft.	12832.0 ft.				

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Base	Surface	12832.0 ft.	13,500 in.	1624.0 ft.	0.0 ° / 0.0 °	0.4 ° / 259.4 °
			8,750 in.	6289.0 ft.	0.4 ° / 259.4 °	85.7 ° / 358.1 °
			6,125 in.	4919.0 ft.	85.7 ° / 358.1 °	88.6 ° / 359.4 °
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig / Contractor:	Xtreme 8	/	Xtreme Coil Drilling
PATS	6.4.1.34	Job No:	6742280		
		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		
							(ft.)	(ft.)	(ft.)	(ft.)					
1	1	1	8.750	PDC	N/A	Mud Motor	6800.0	7859.0	1624.0	7915.0	23 Nov 14	12:20	26 Nov 14	01:04	46.92
2	2	2	6.125	PDC	N/A	Mud Motor	7859.0	12773.0	7915.0	12832.0	30 Nov 14	02:35	02 Dec 14	07:00	36.8

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Adewale Adededeji	23 Nov 14	02 Dec 14	Shirley Arimah	23 Nov 14	02 Dec 14			

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+ (%)
23 Nov 14	21:30	1	3373.0	Water-Based	8.5	28	8.4	N/A	1/98	Active Pits	1900	N/A
24 Nov 14	21:45	1	5623.0	Water-Based	9.5	34	9.7	N/A	1/93	Active Pits	2000	N/A
25 Nov 14	21:00	1	7650.0	Water-Based	10.0	52	9.3	N/A	2/89	Active Pits	2100	N/A
29 Nov 14	18:00	2	7913.0	Water-Based	9.5	40	8.5	N/A	1/92	Active Pits	2100	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent	API 0.5 ft. avg.
GRIX	Gamma Ray Density	Points
ROPA	Rate of Penetration	ft/hr 3.0 ft. avg.
TCDX	Downhole Temperature	deg F
TVD	True Vertical Depth	ft.
WOB_AVG	Surface Weight On Bit	klbf 1.0 ft. avg.

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	11670150	Directional	58.13	6.750	3.310
1	SRIG	11734848	Gamma	54.76	6.750	3.310
2	DIR	12093879	Directional	64.46	4.750	2.880
2	SRIG	12131378	Gamma	61.08	4.750	2.880

Service and Tool Mnemonics

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

Comments

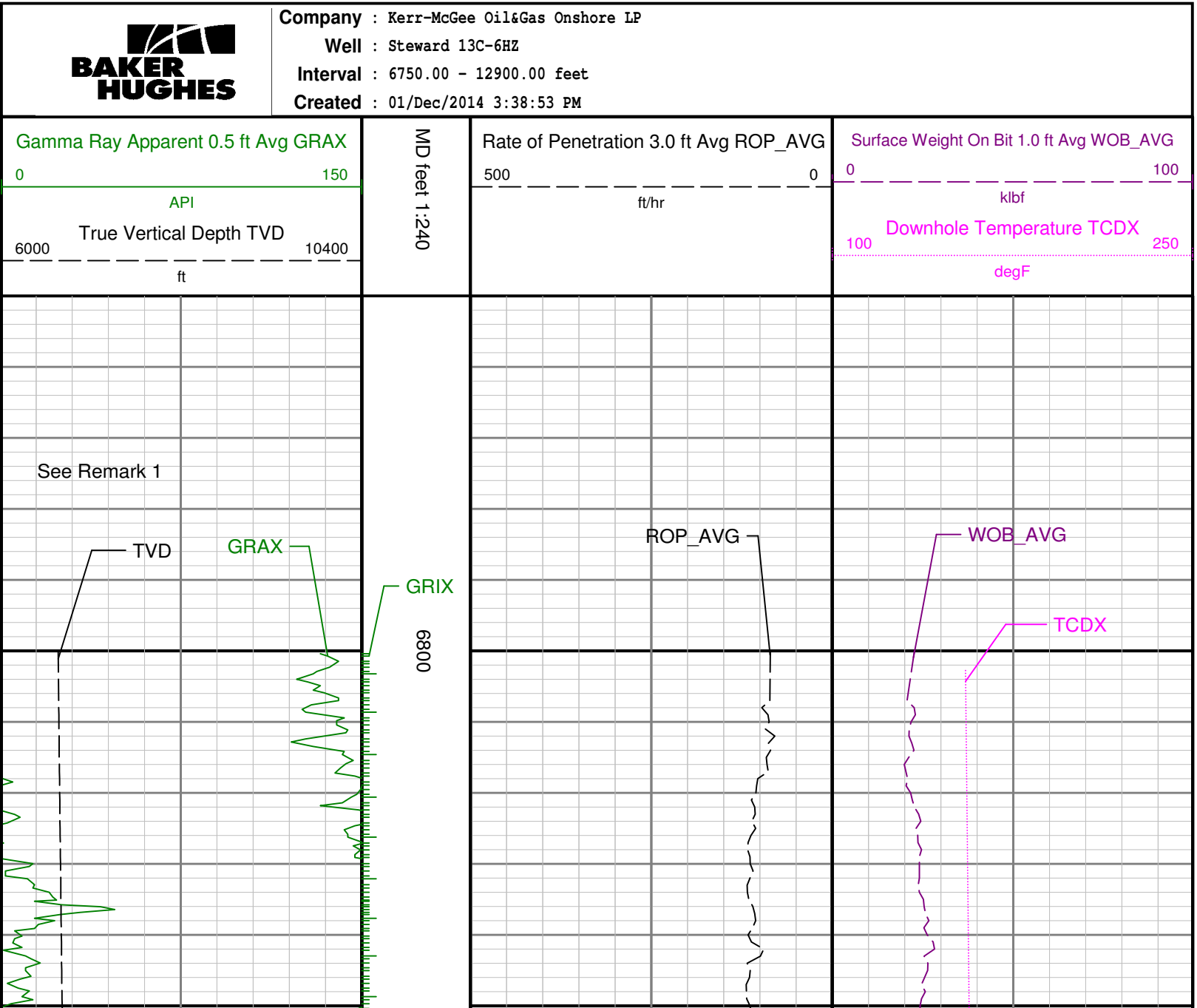
<p>1) Baker Hughes INTEQ run 1 utilized a 6.5 inch NaviGamma (Gamma Ray and Directional) tool behind a 8 3/4inch bit and steerable assembly from surface to 7915 ft. MD (7394 ft. TVD).</p> <p>2) Baker Hughes INTEQ run 2 utilized a 4.75 inch NaviGamma (Gamma Ray and Directional) tool behind a 6 1/8 inch bit and steerable assembly from 7915 to 12832 ft. MD (7394 to 7405 ft. TVD).</p>

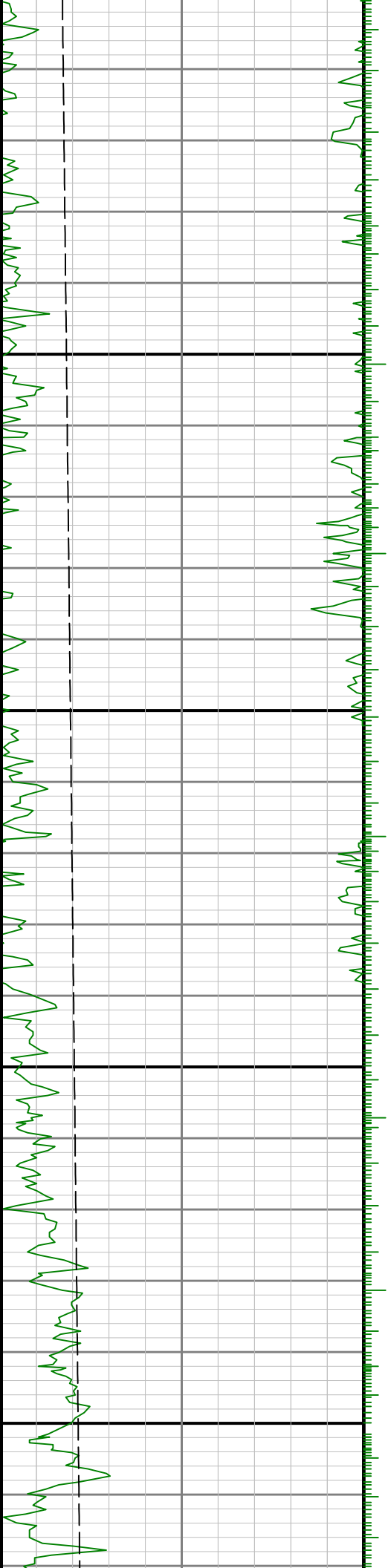
Remarks

Number	Measured Depth (ft.)	Hole Section (in.)	LWD Run No.	Remark
1	6800	8.750	1	The interval from surface to 6800 feet MD (6692 feet TVD) was not logged due to gamma logging services begining at the start of the curve.
2	7859	8.750	1	The interval from 7859 to 7915 feet MD (7391 to 7394 feet TVD) was logged up to 96 hours after drilling due to tripping out of the hole for a reaming run of the welbore, casing, cement operations and chaning of the BOP. Gamma data is attenuated due to logging behind casing.

3	12773	6.125	2	The interval from 12773 to 12832 feet MD (7404 to 7405 feet TVD) was not logged due to sensor offsets to bit at TD.
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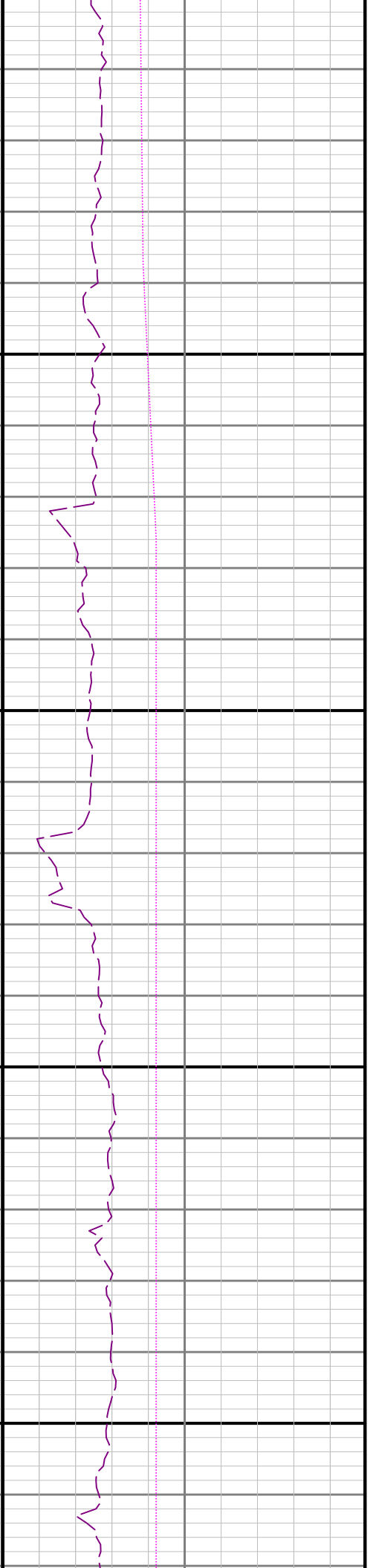
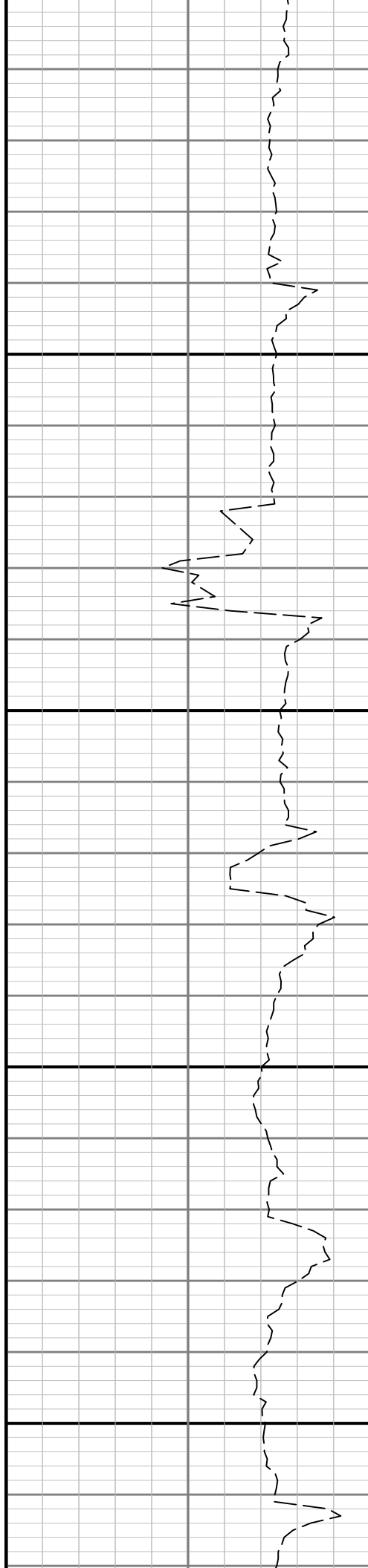
Curve Mnemonics		
Curve	Description	Units
GRAX	<i>Gamma Ray - Apparent</i>	<i>API</i>
GRIX	<i>Gamma Ray - Data Point Indicator</i>	<i>unitless</i>
ROP_AVG	<i>Depth Averaged ROP</i>	<i>ft/hr</i>
TCDX	<i>Downhole Temperature</i>	<i>degF</i>
TVD	<i>True Vertical Depth TVD</i>	<i>ft</i>
WOB_AVG	<i>AVERAGE Weight On Bit</i>	<i>klbf</i>

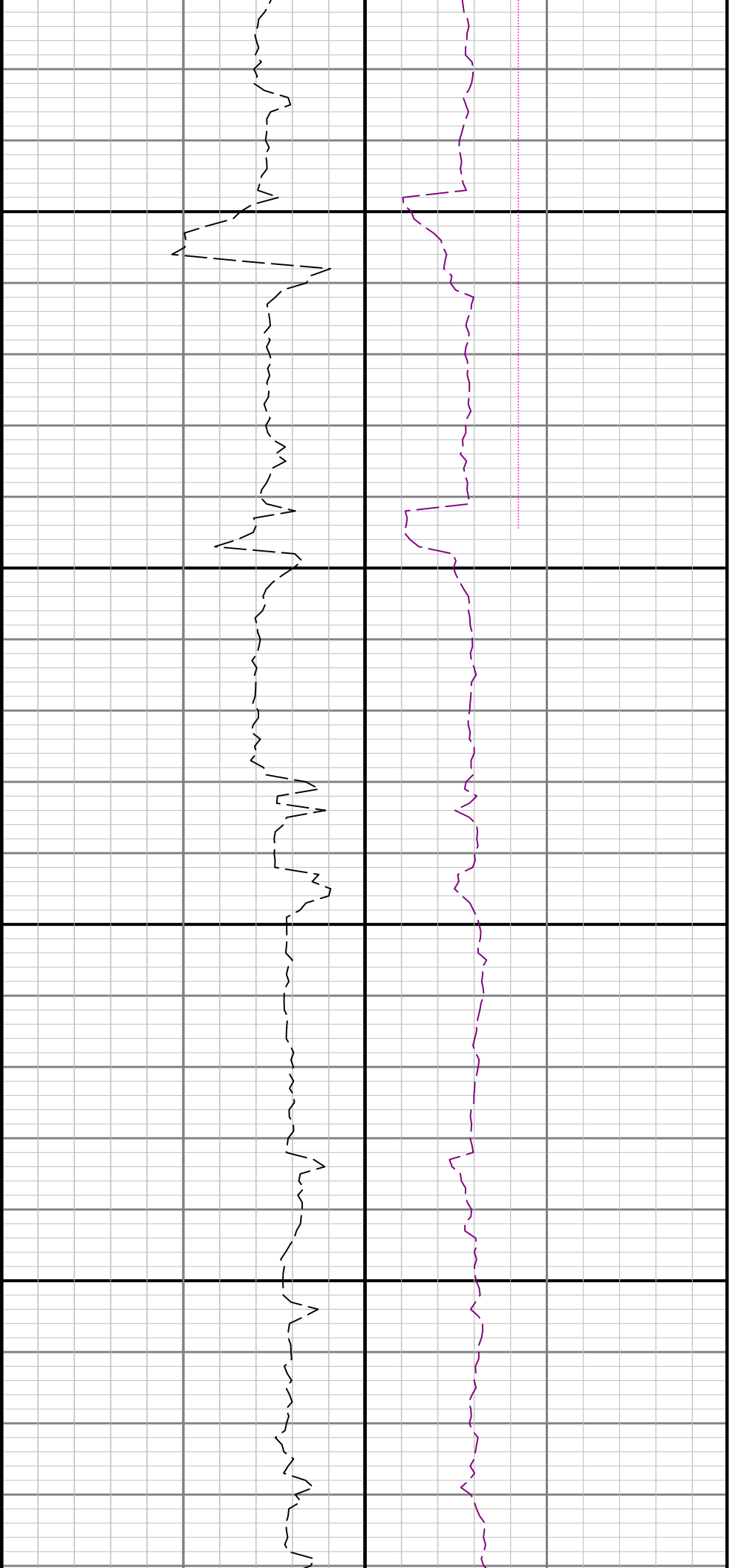




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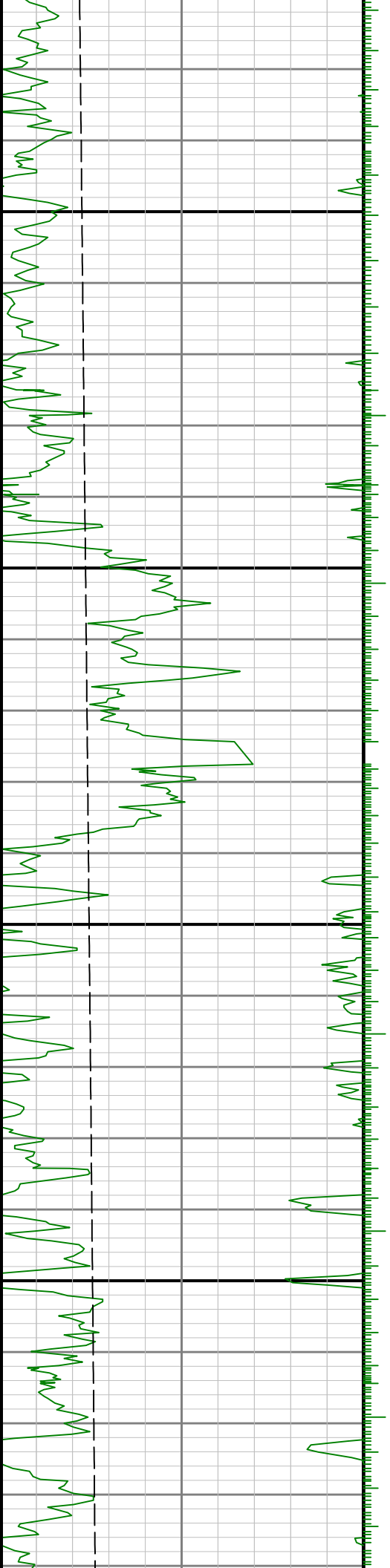
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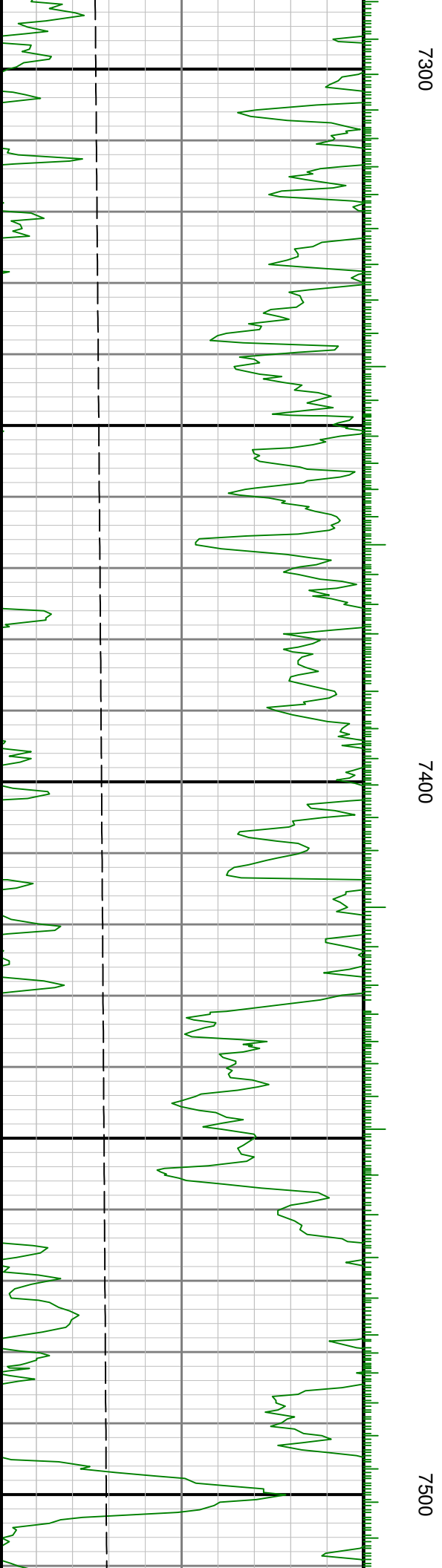
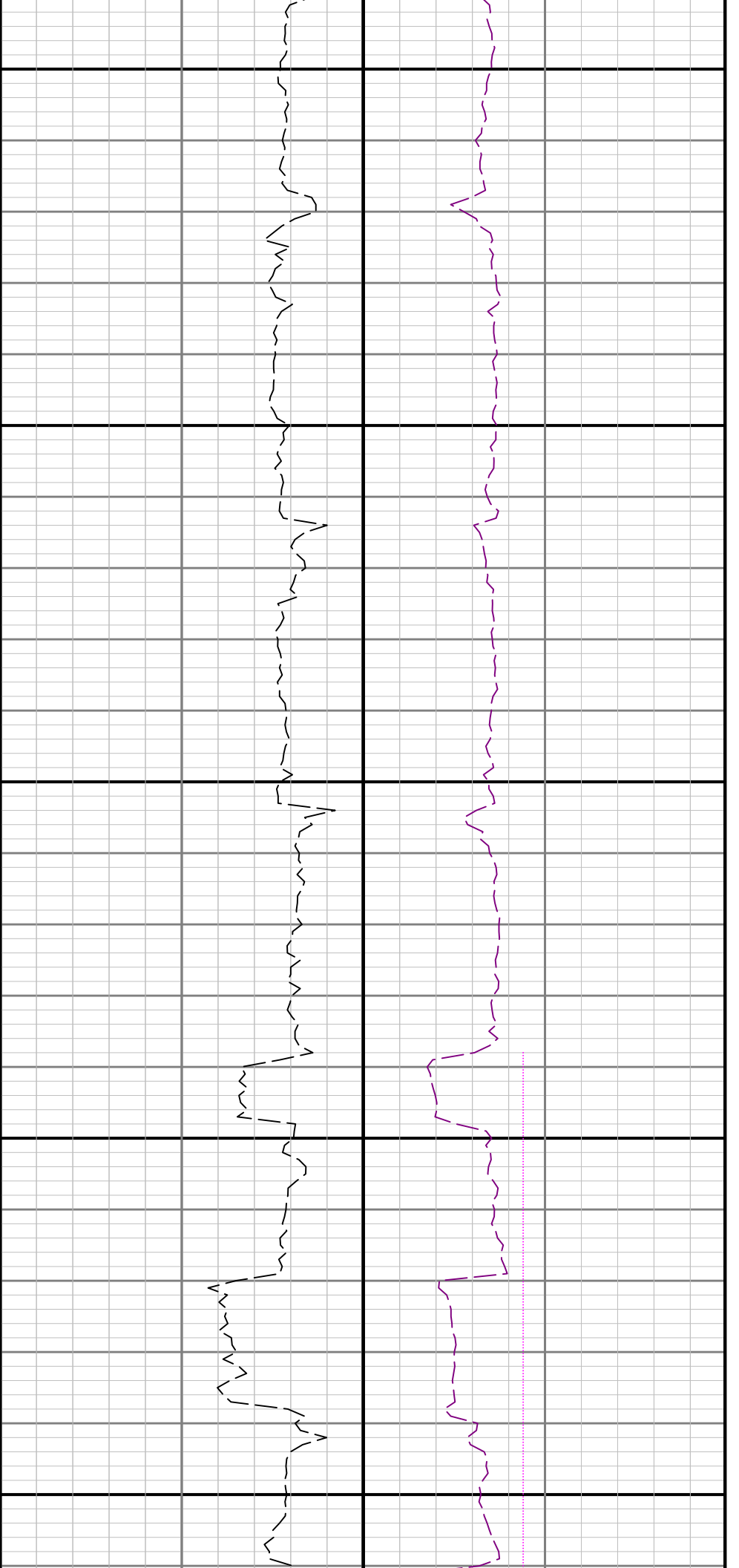


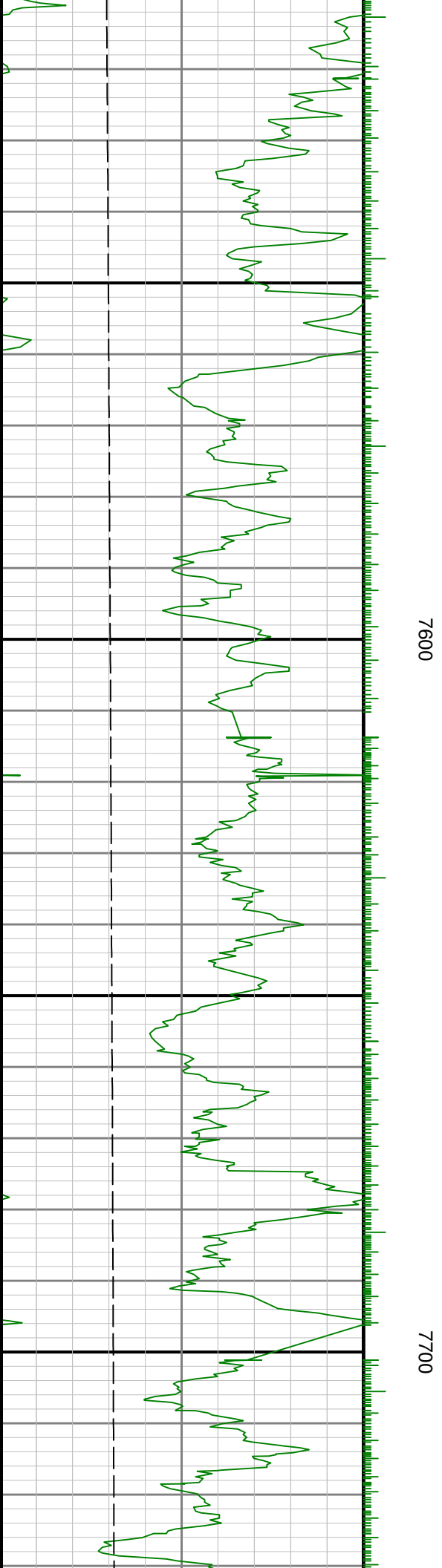
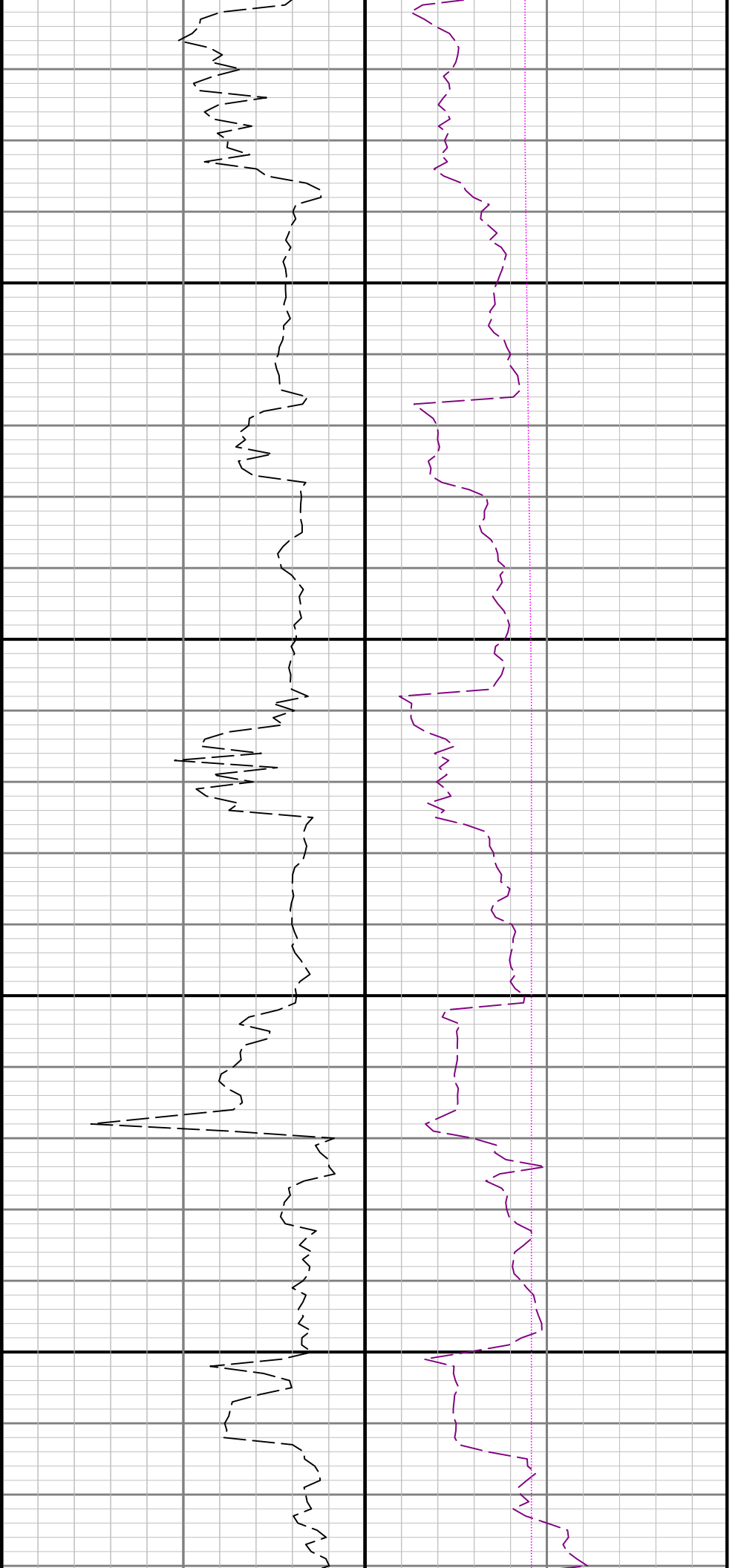


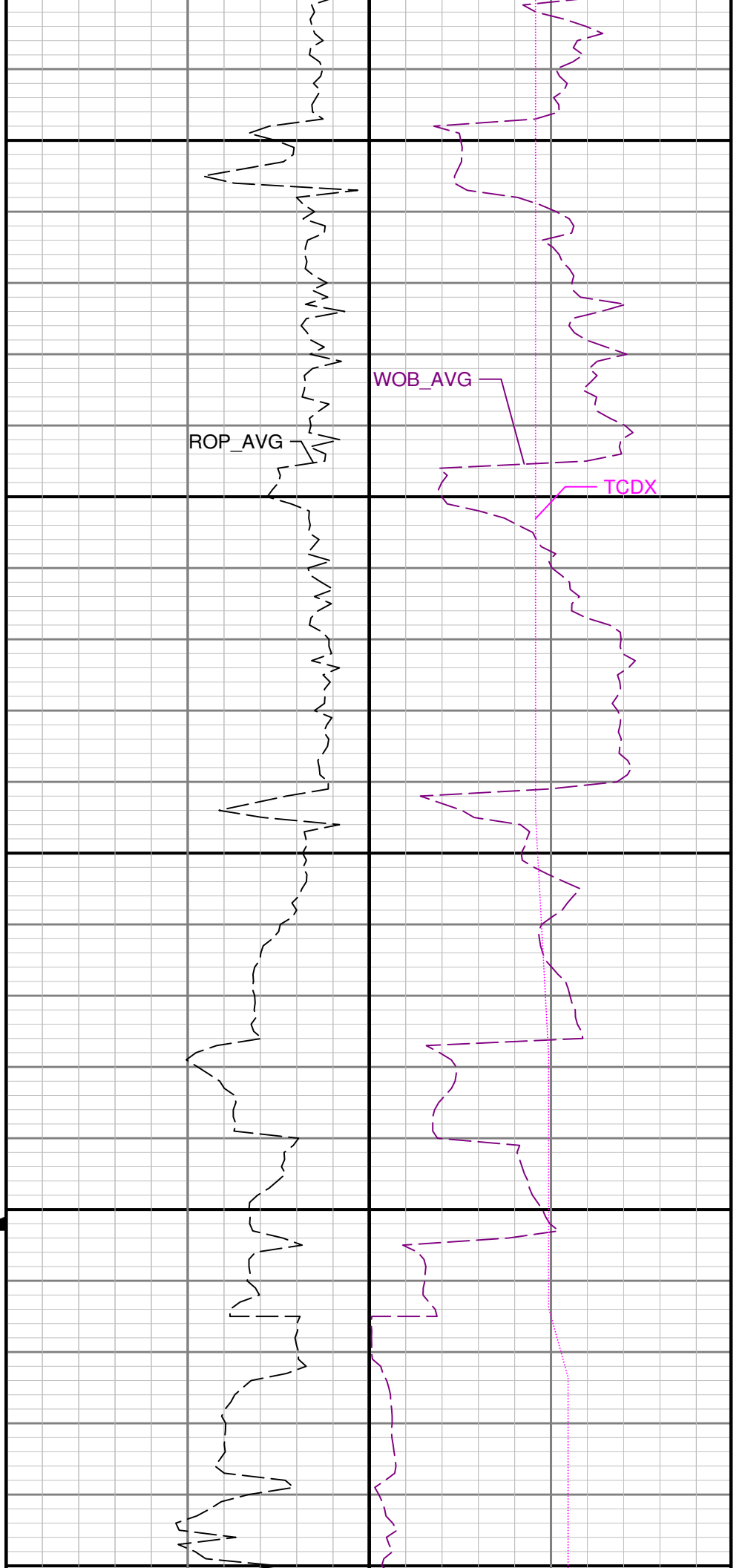
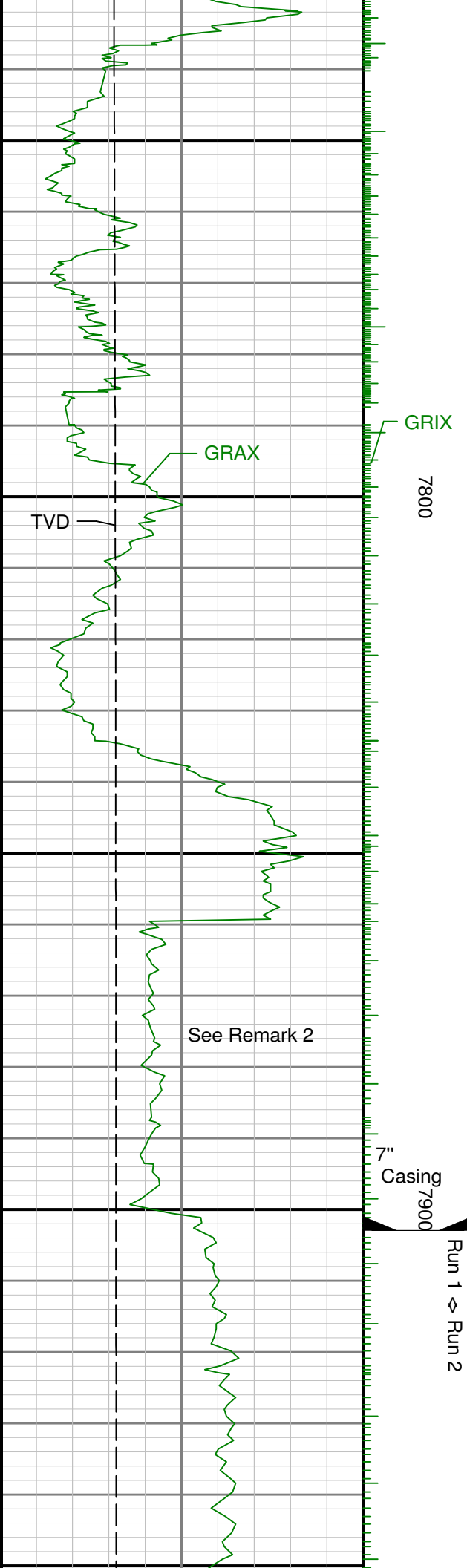
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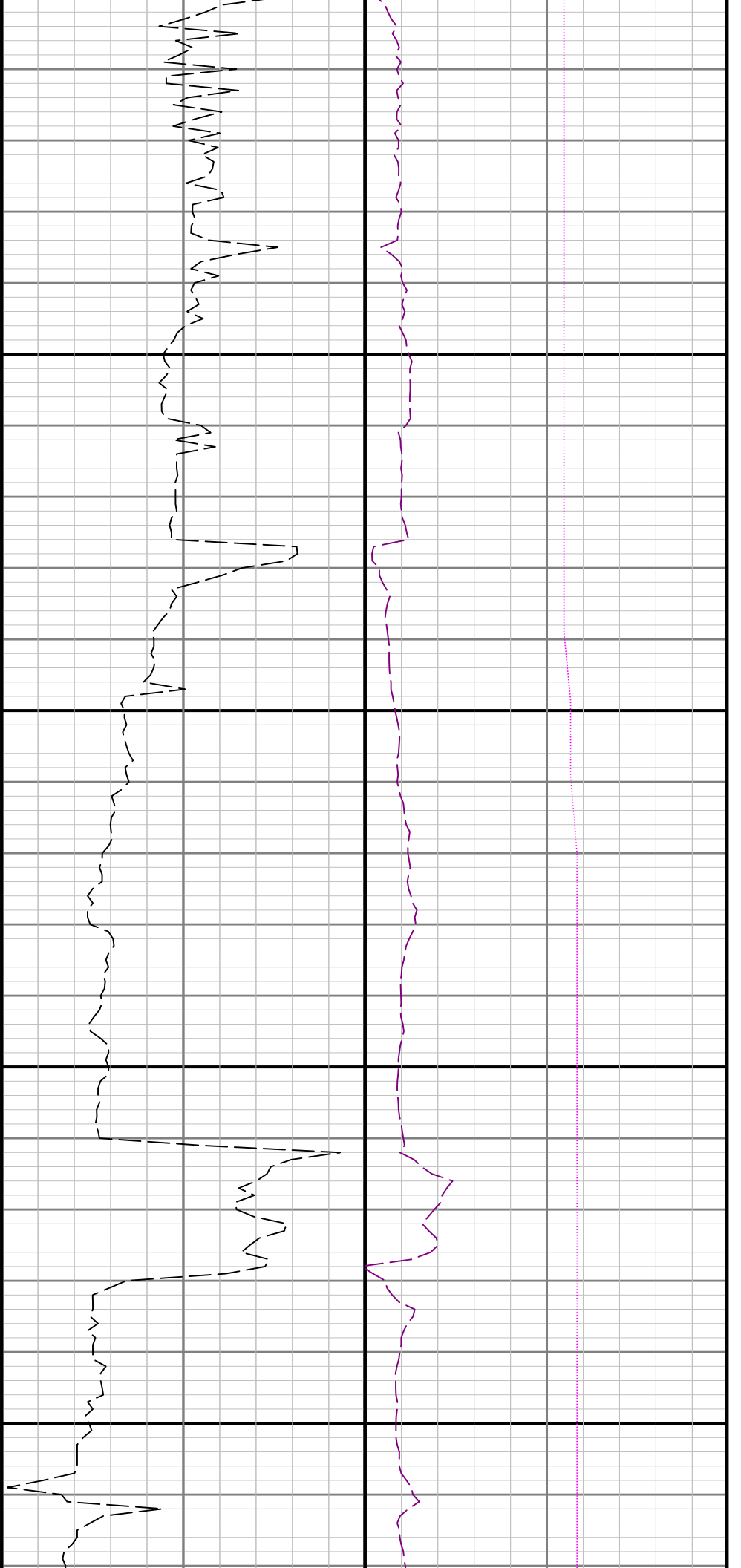
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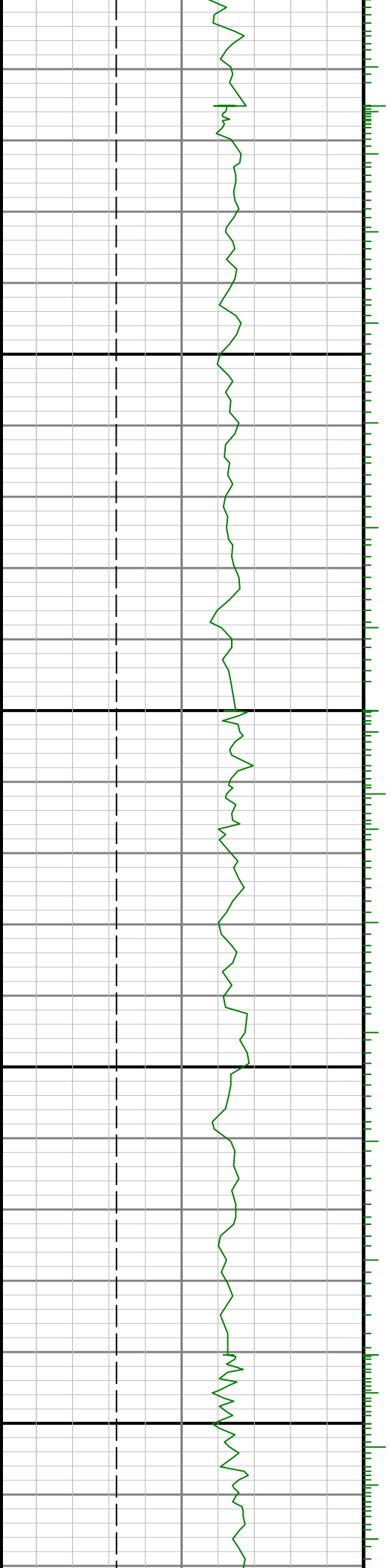


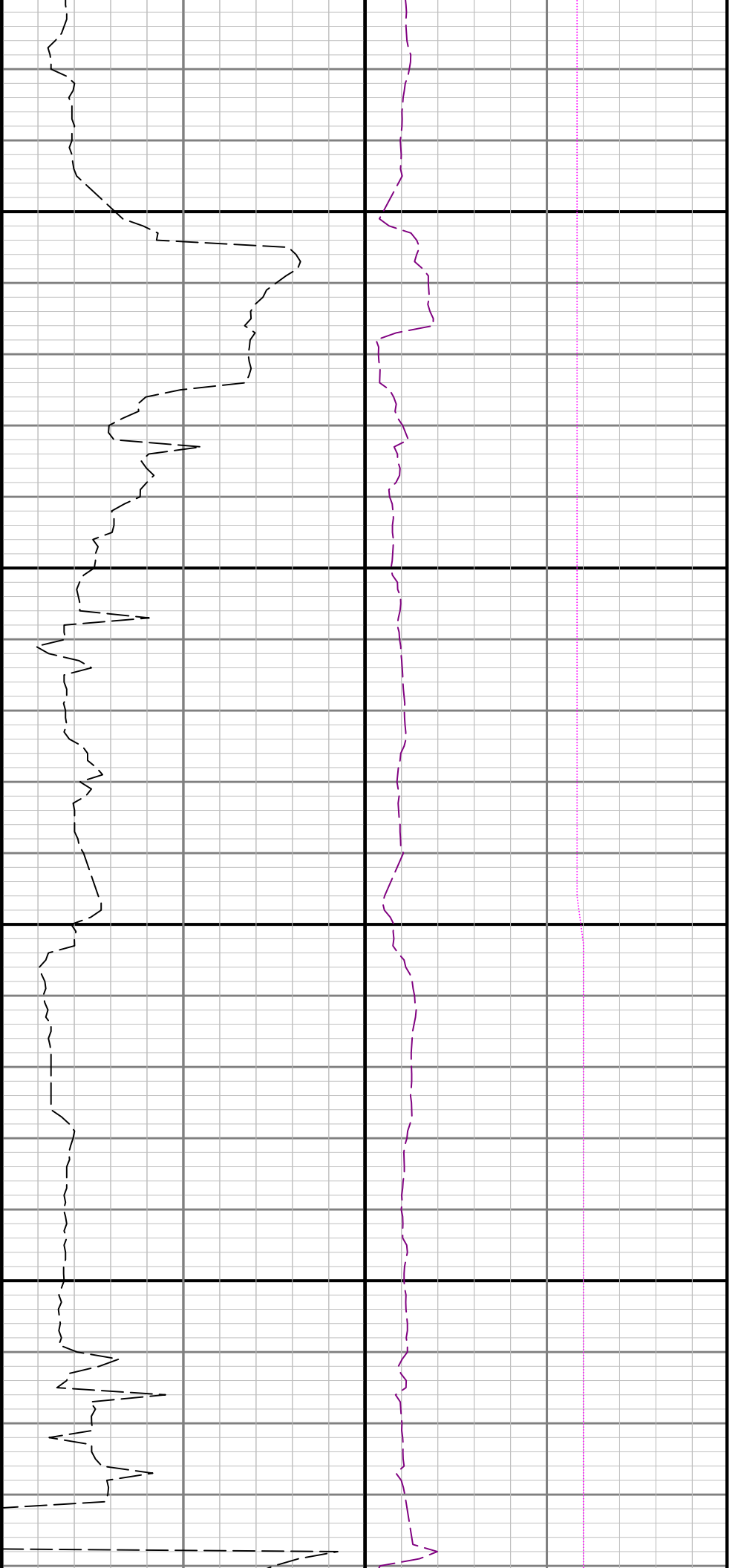




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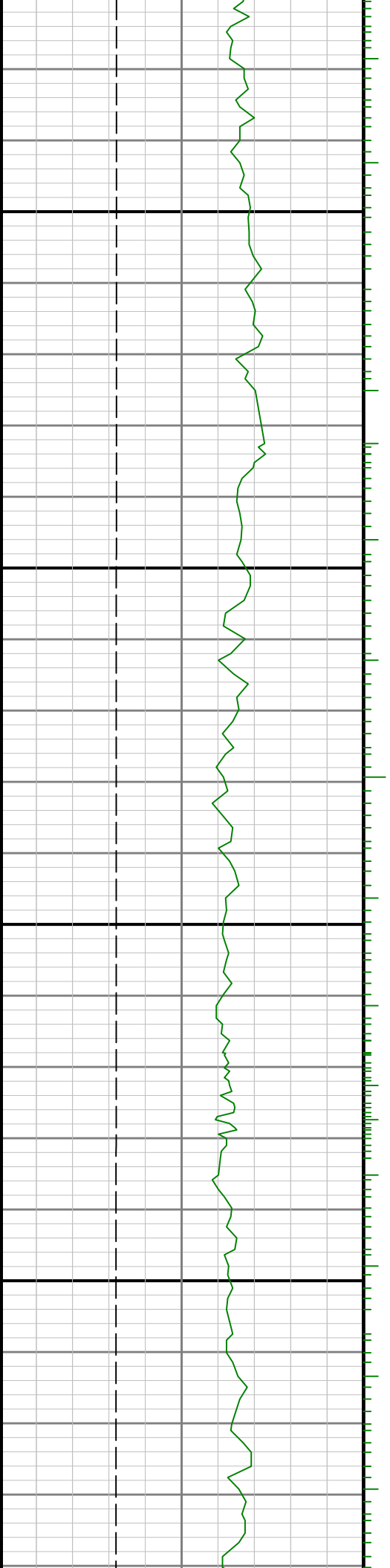
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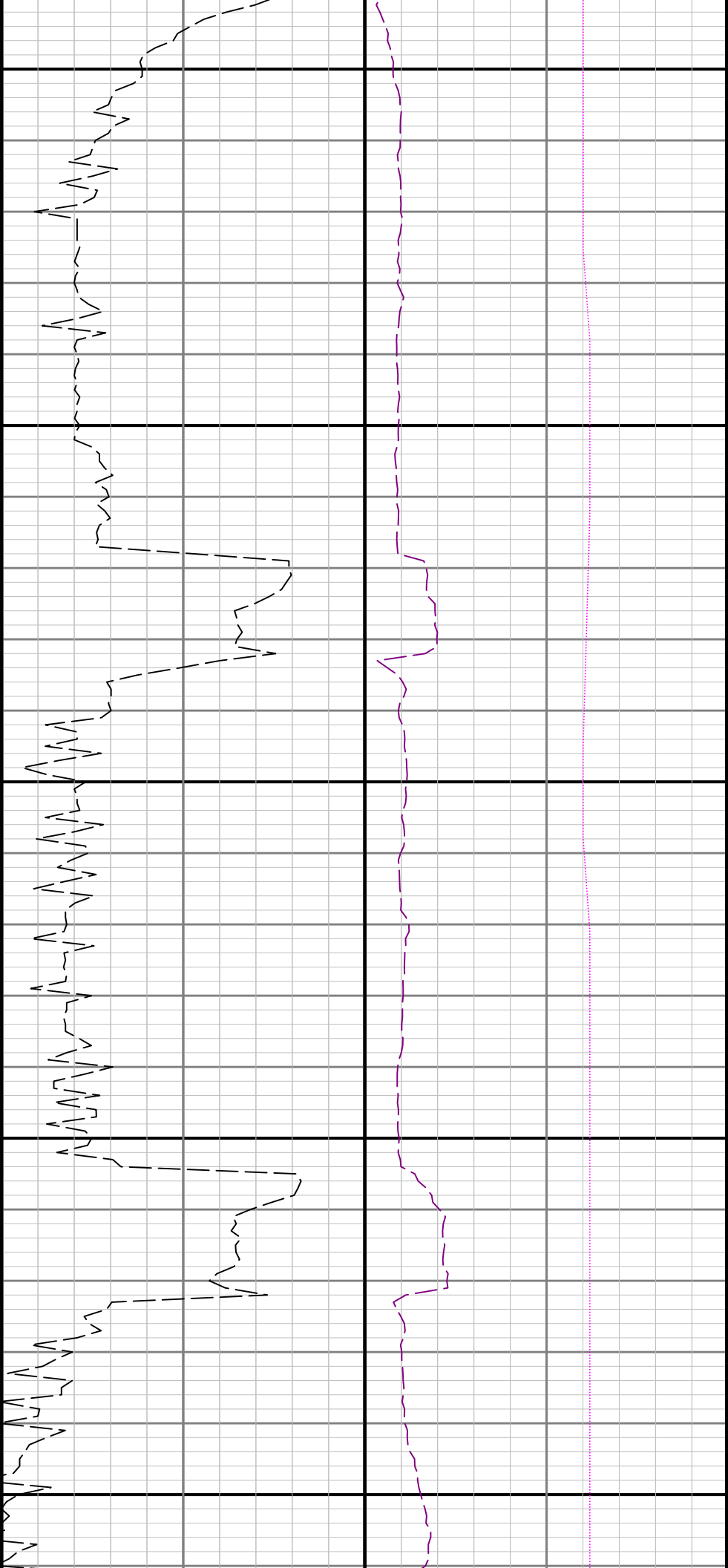




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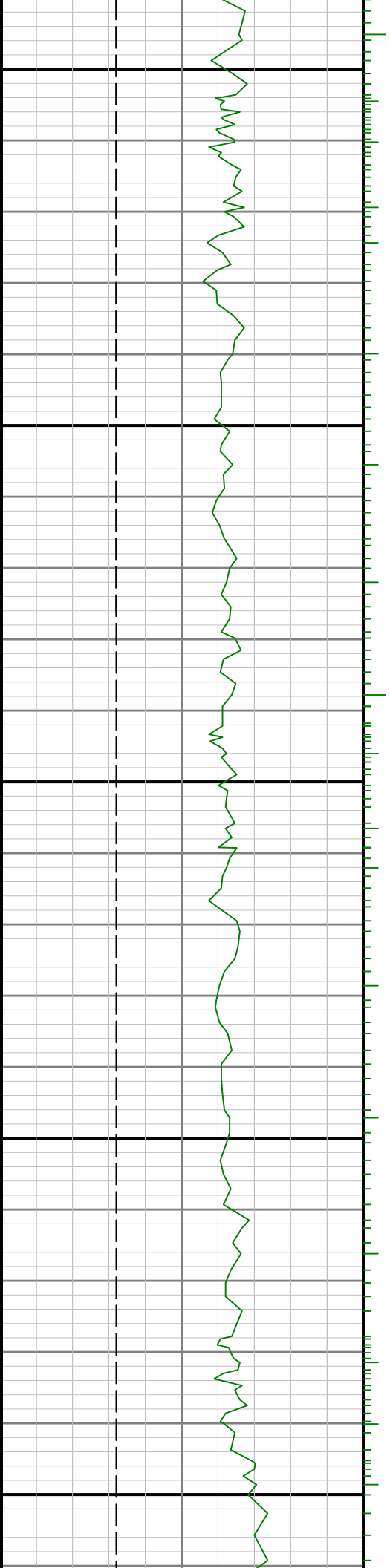


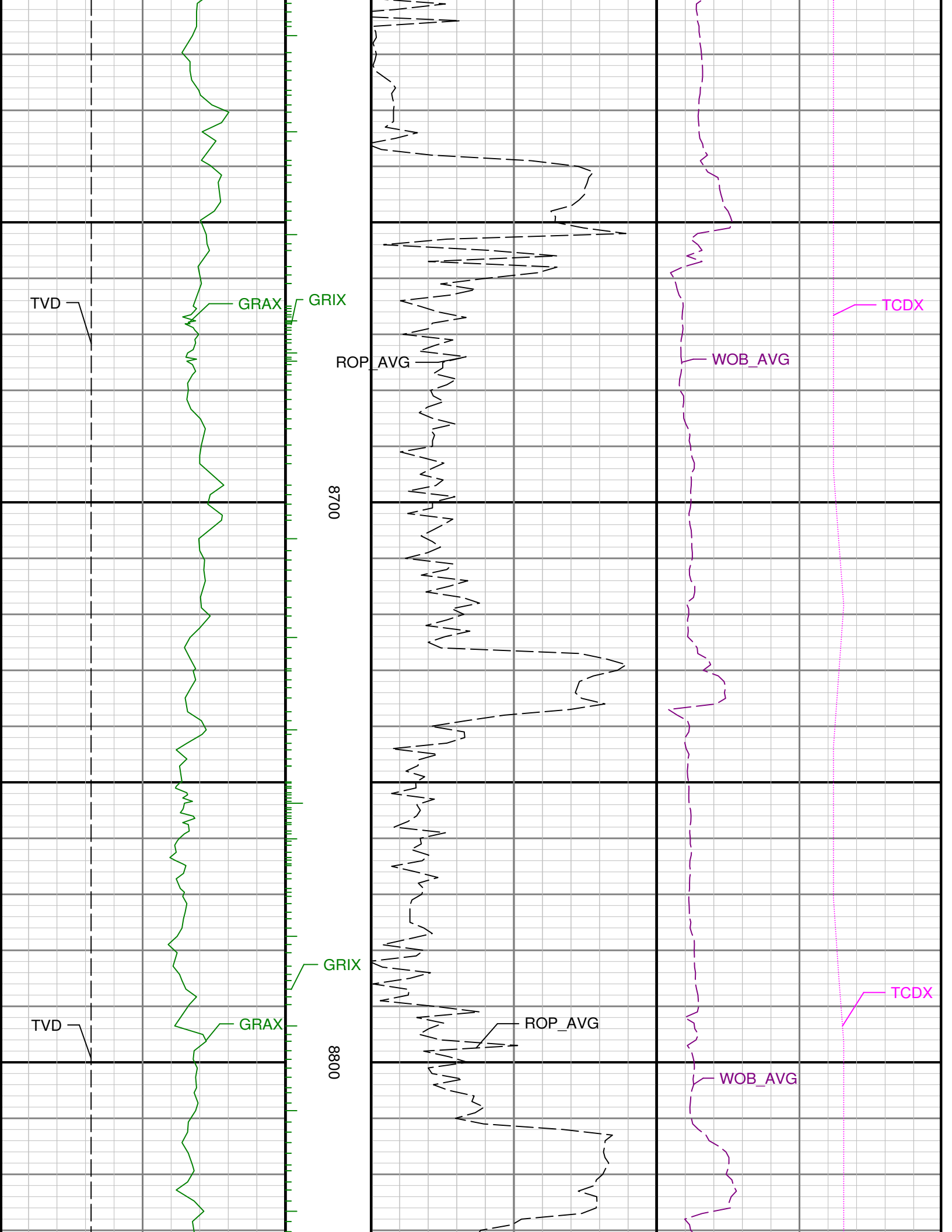


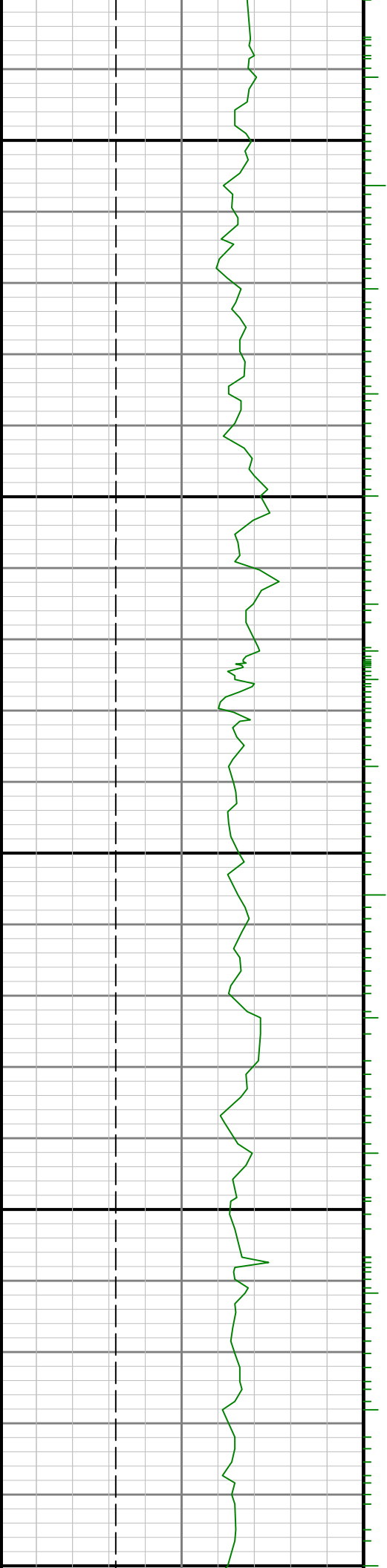
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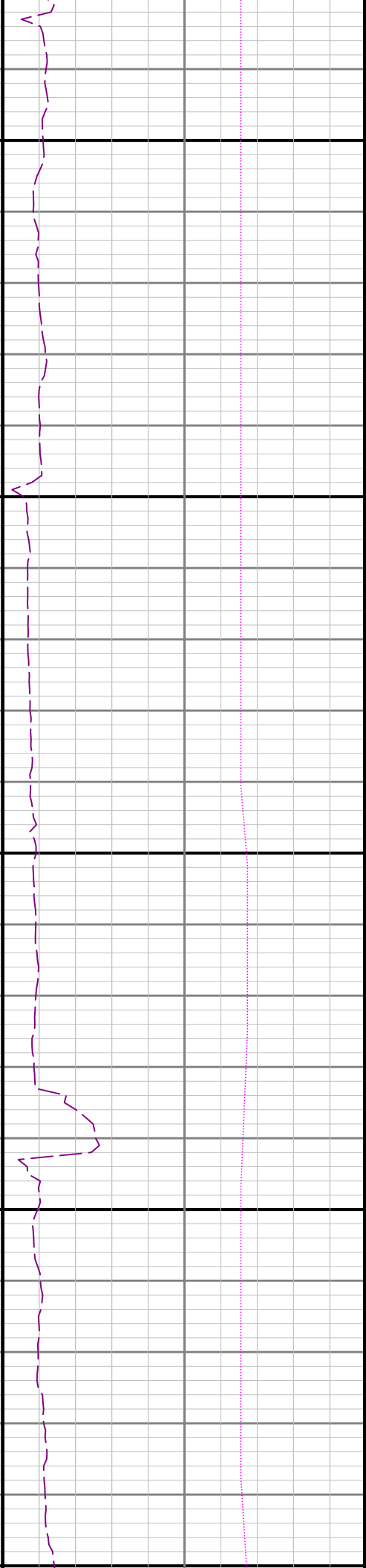
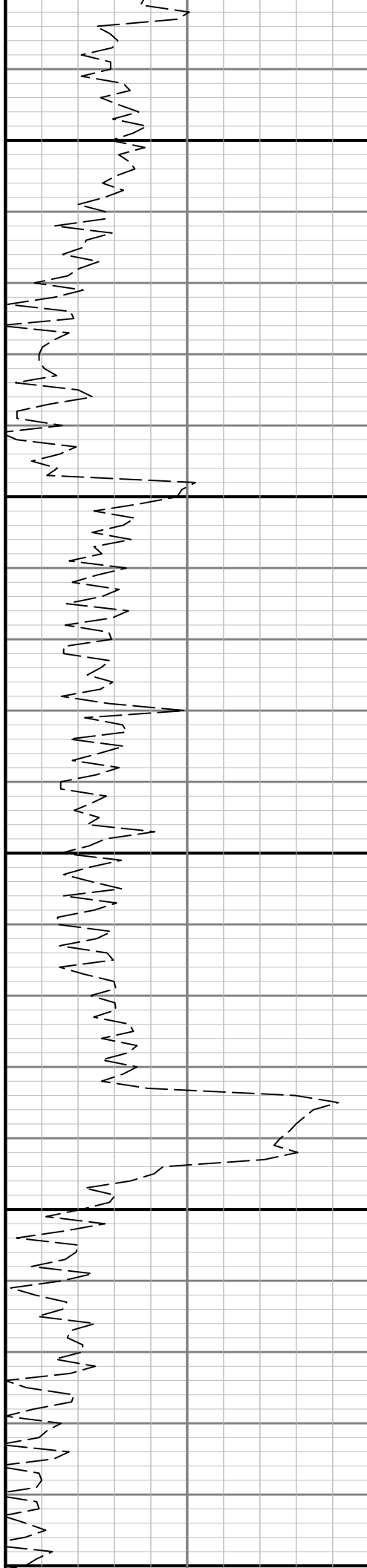


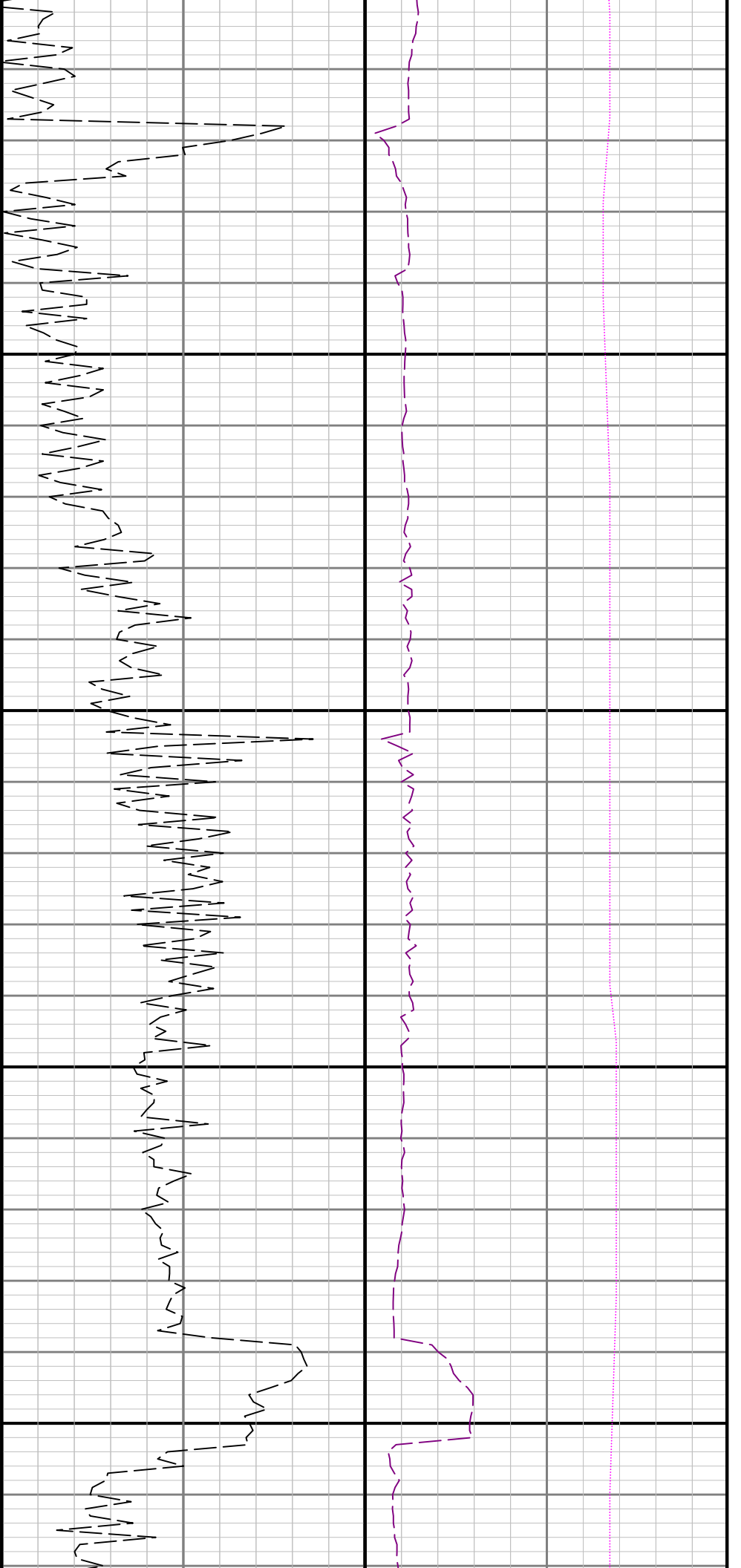




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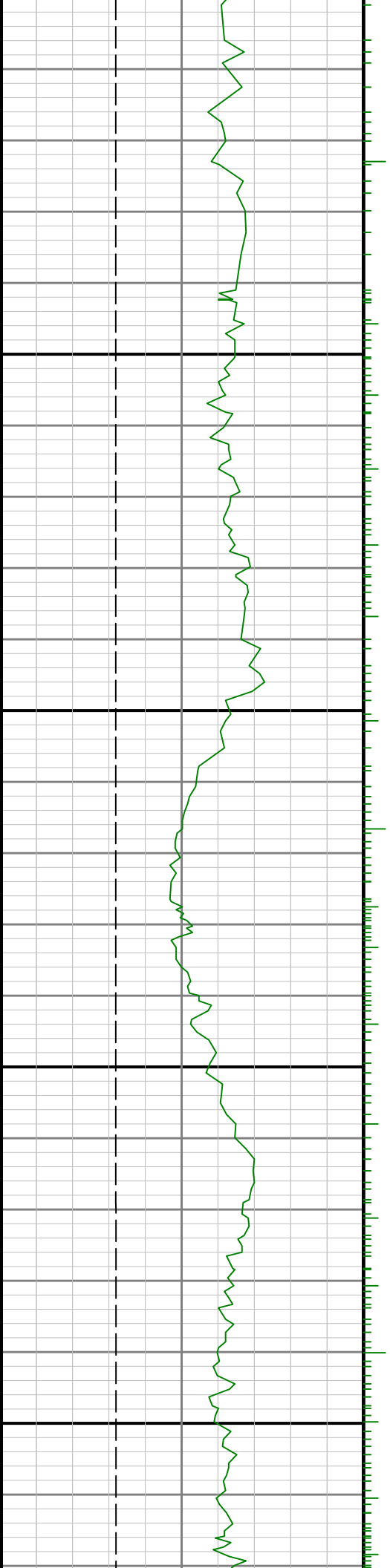
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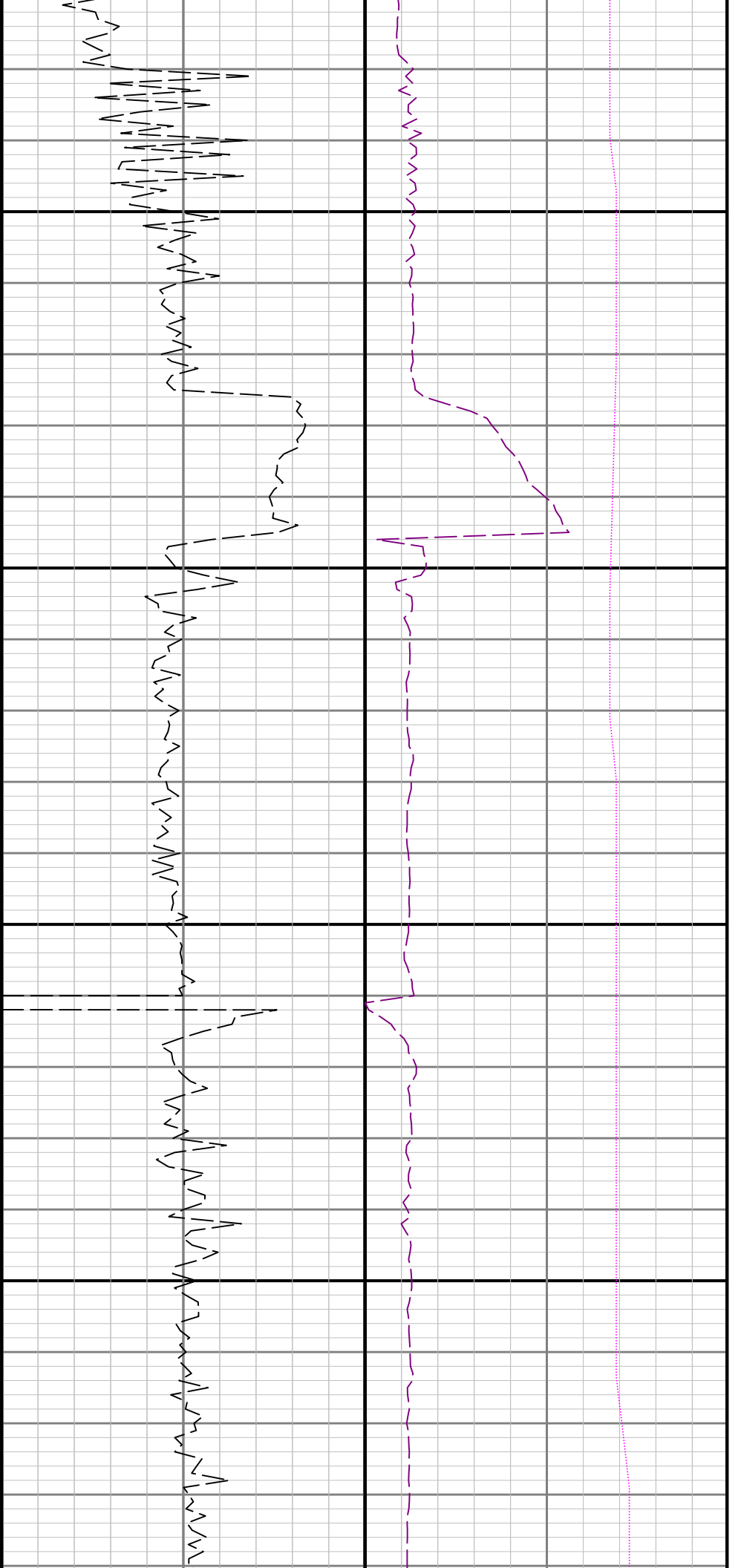




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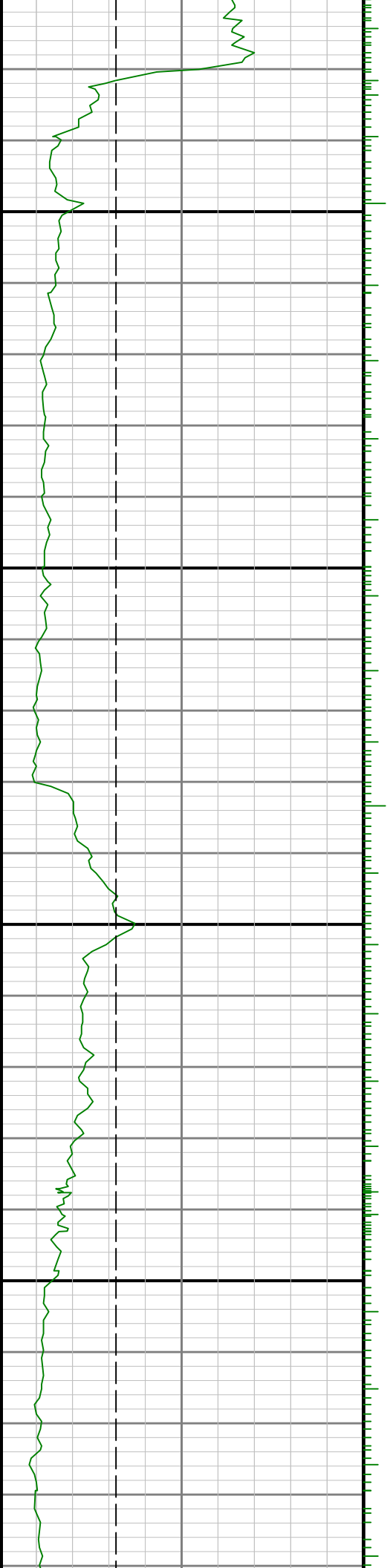
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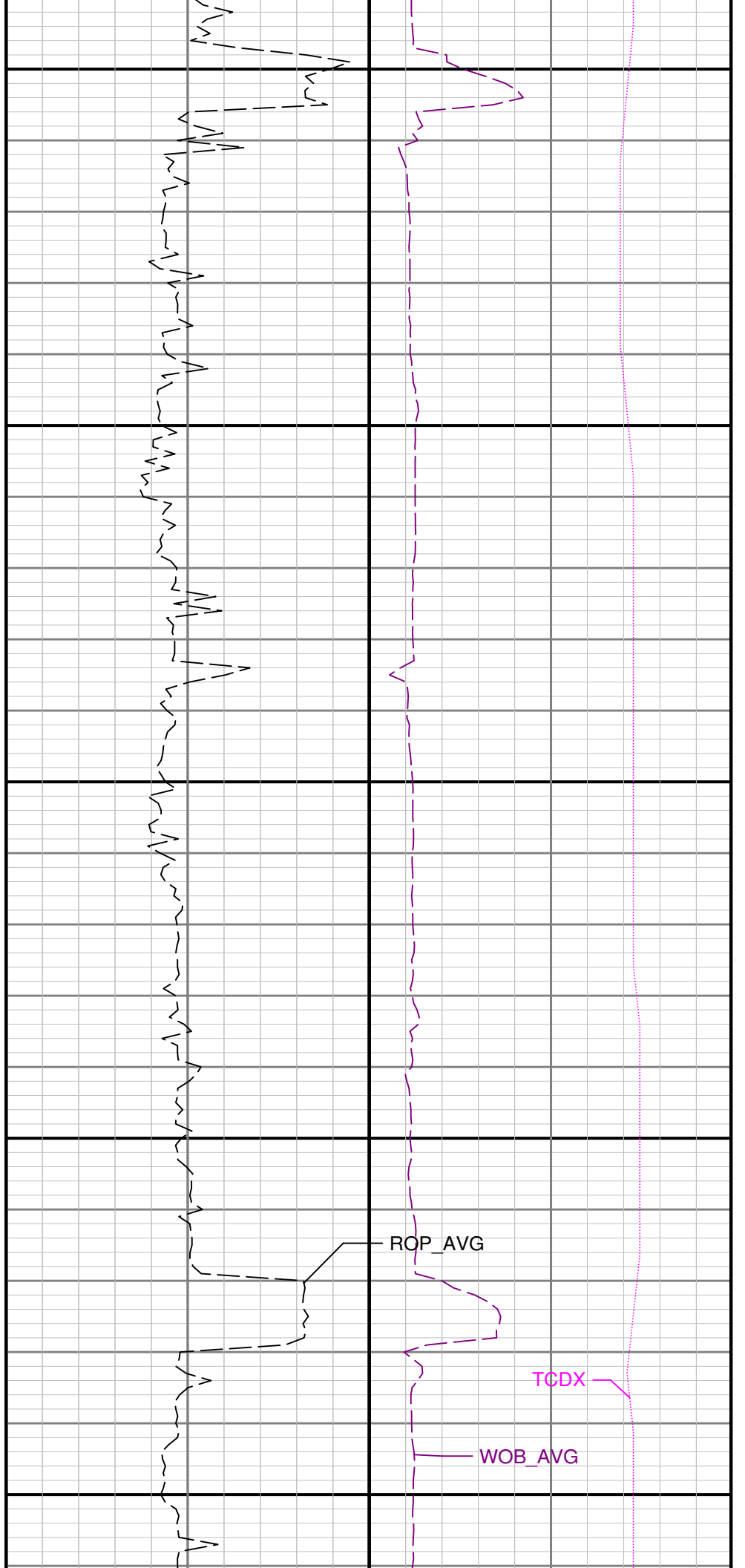
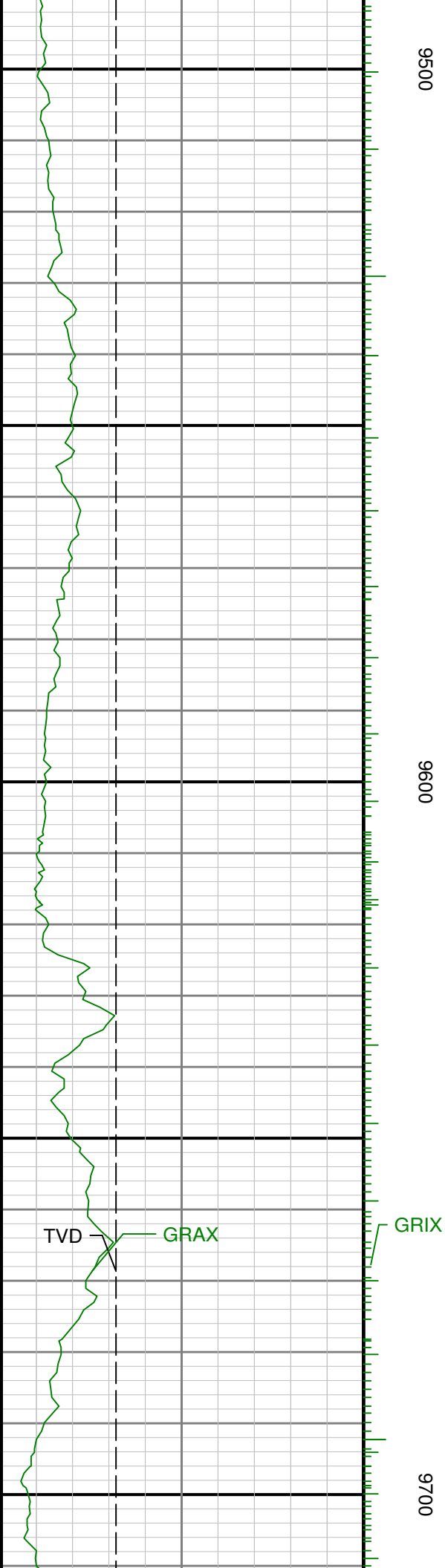


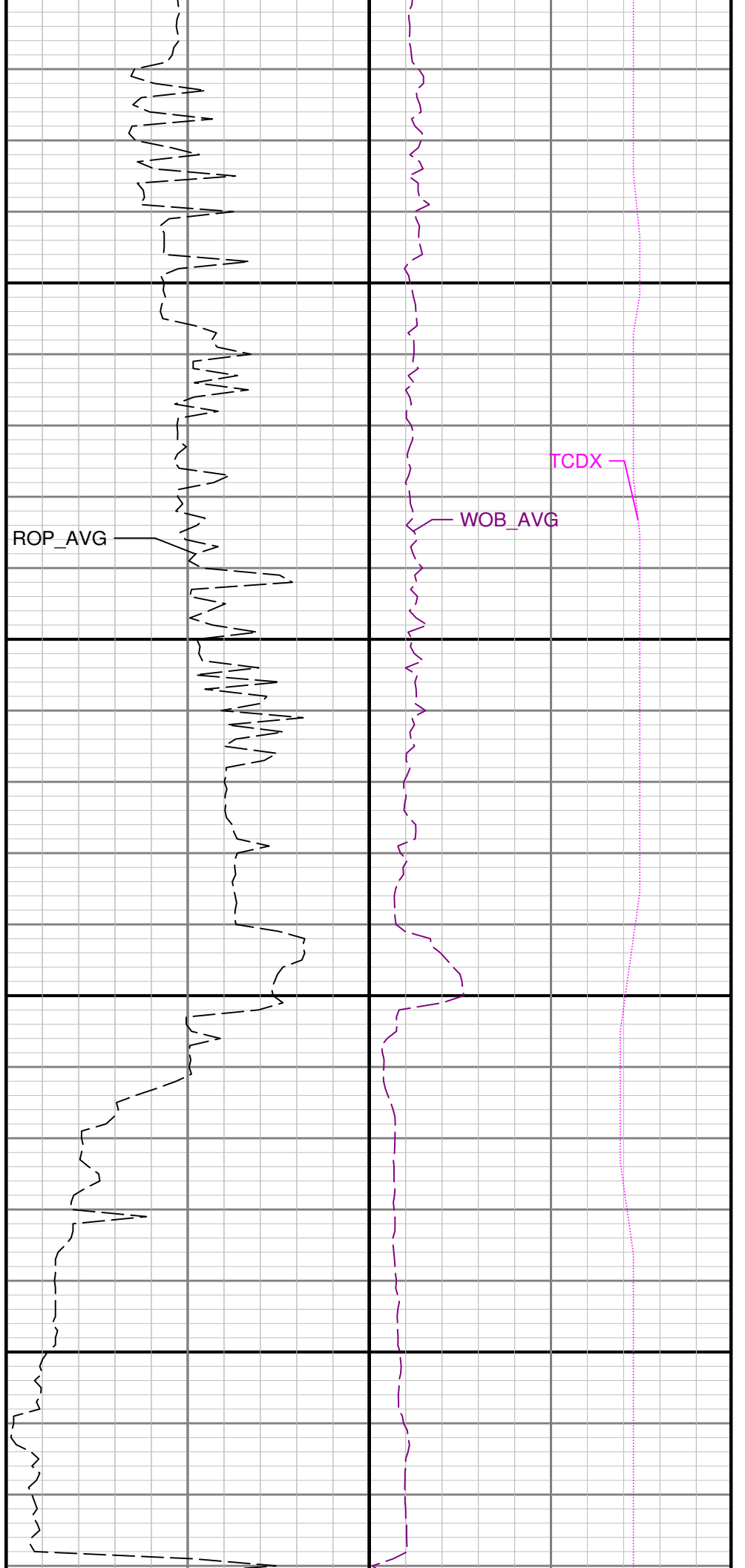
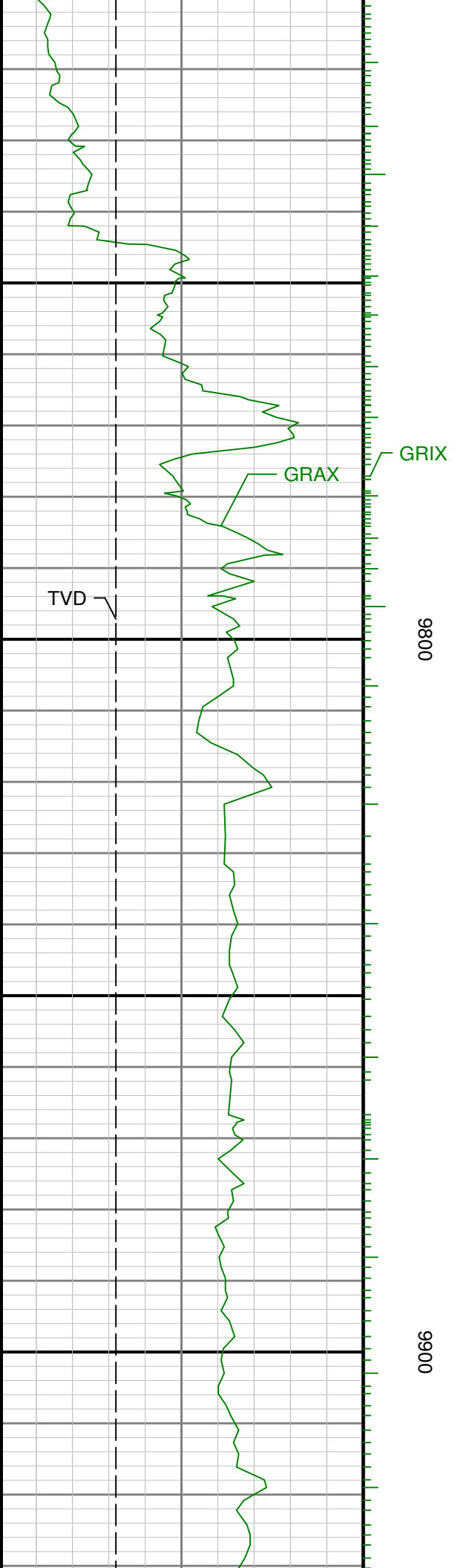


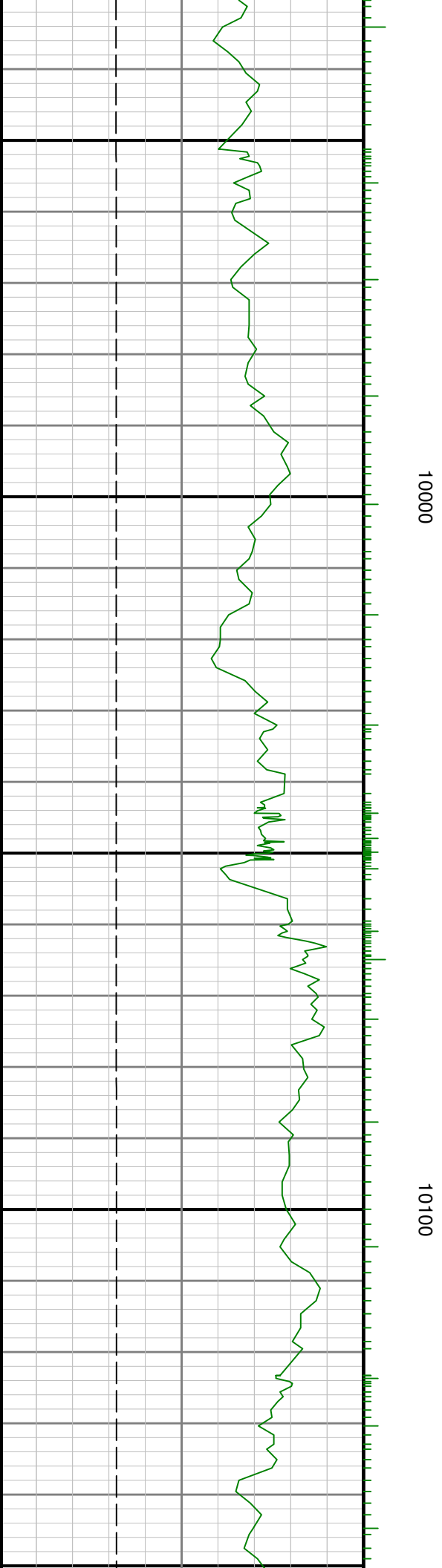
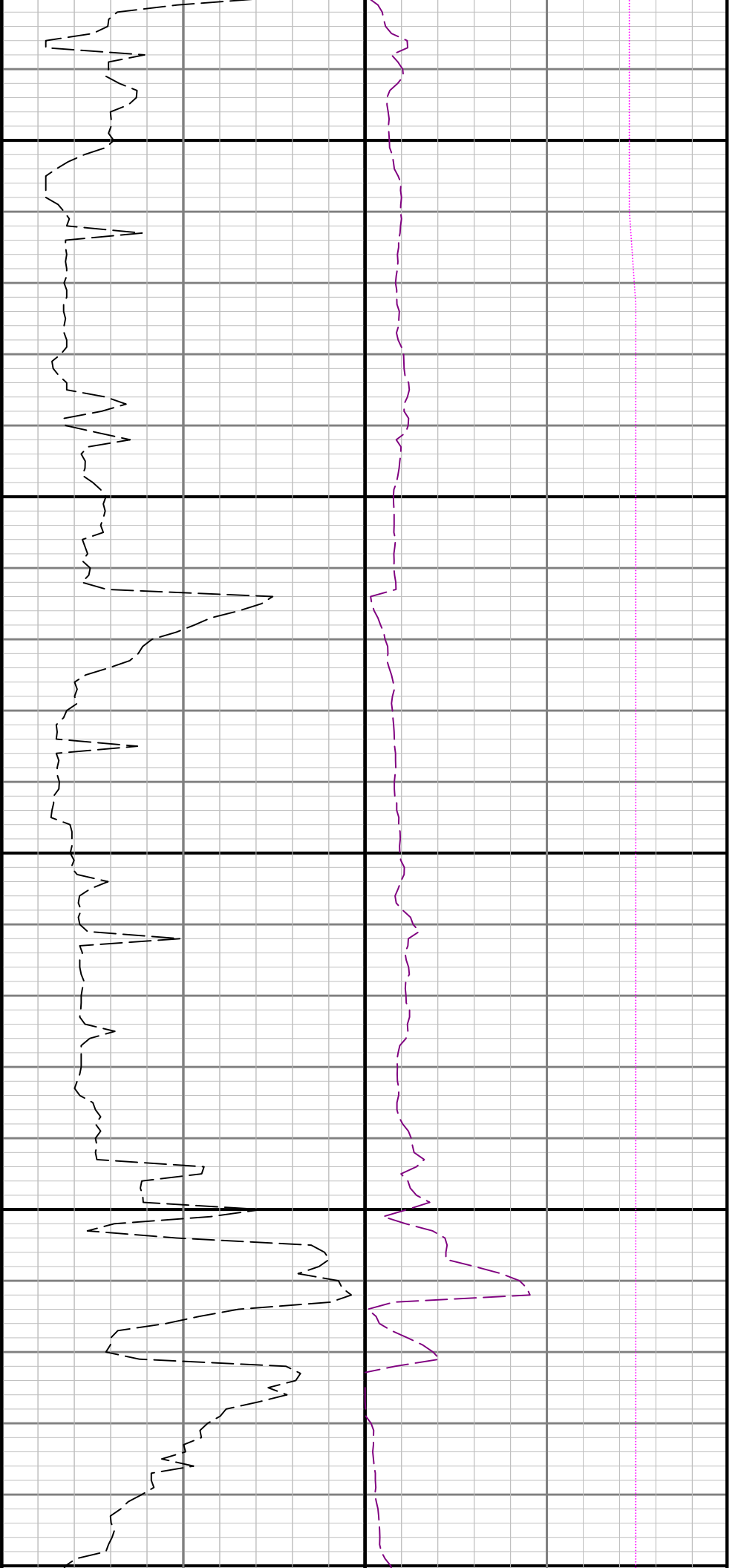
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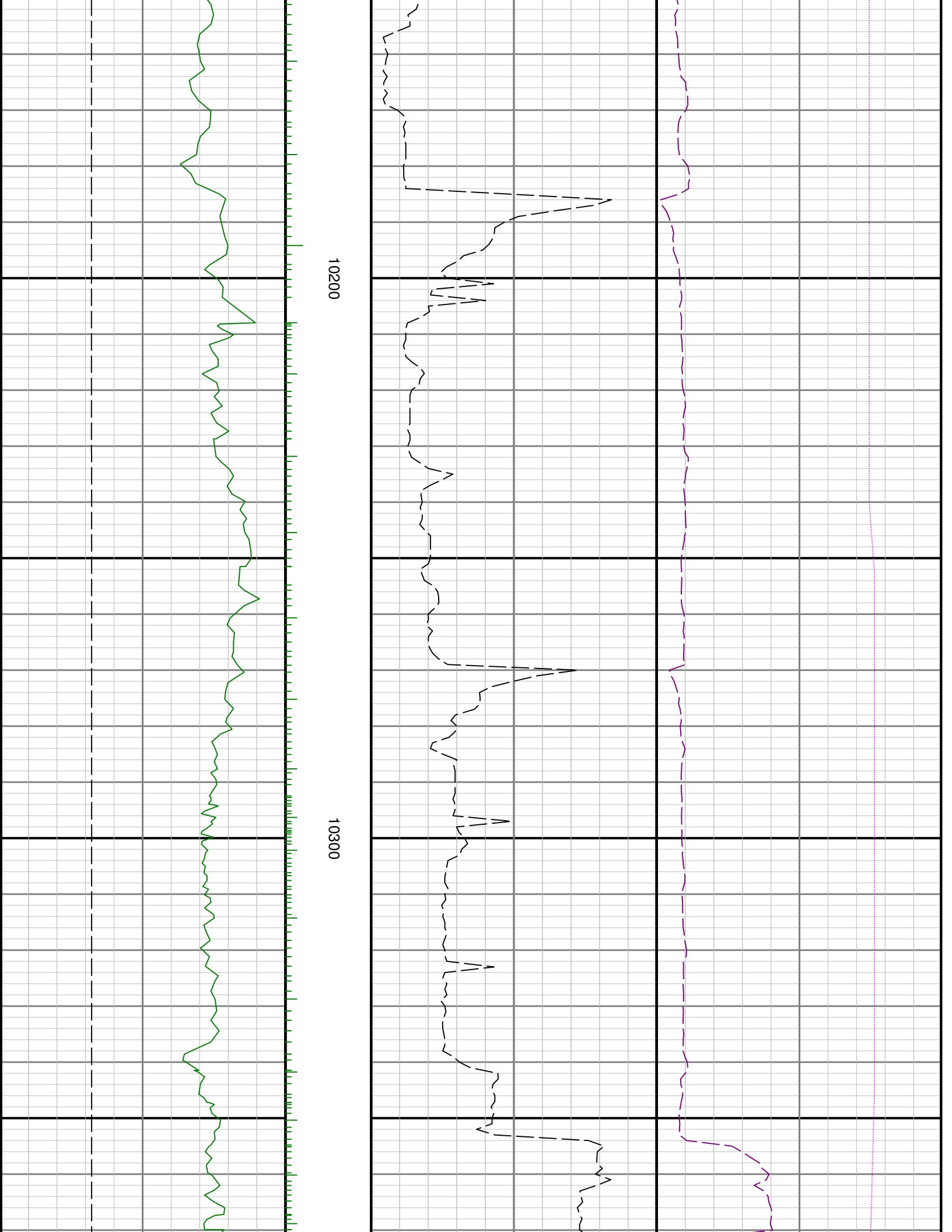
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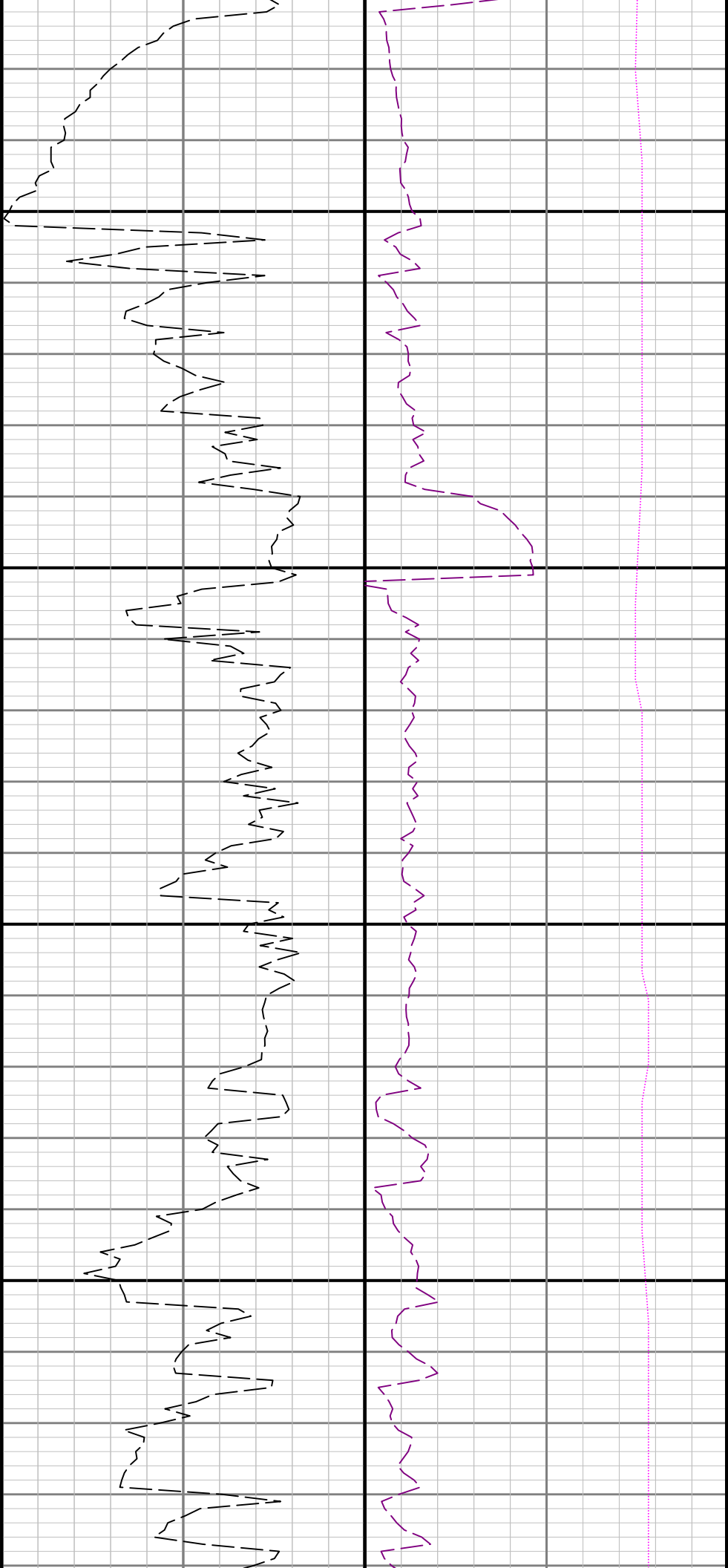






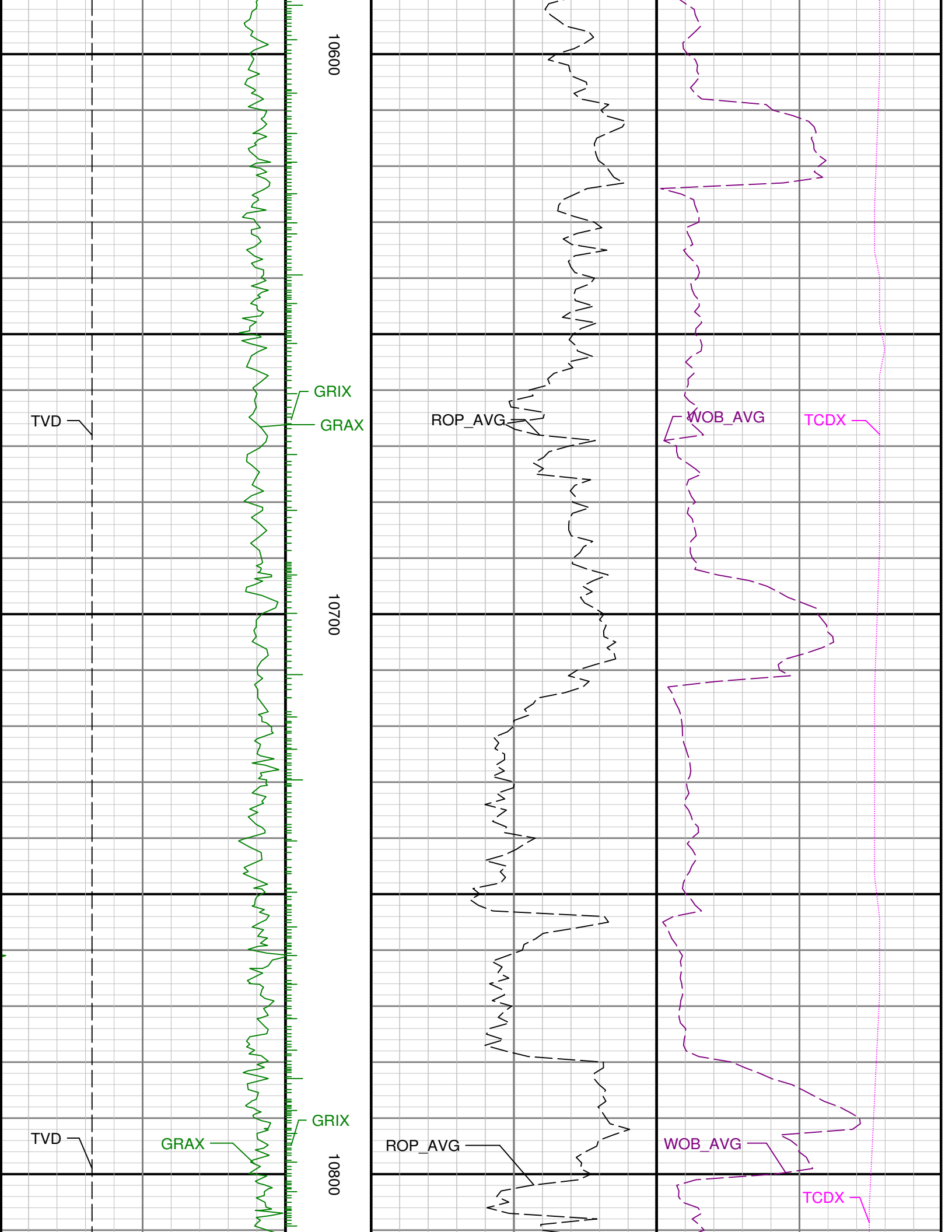


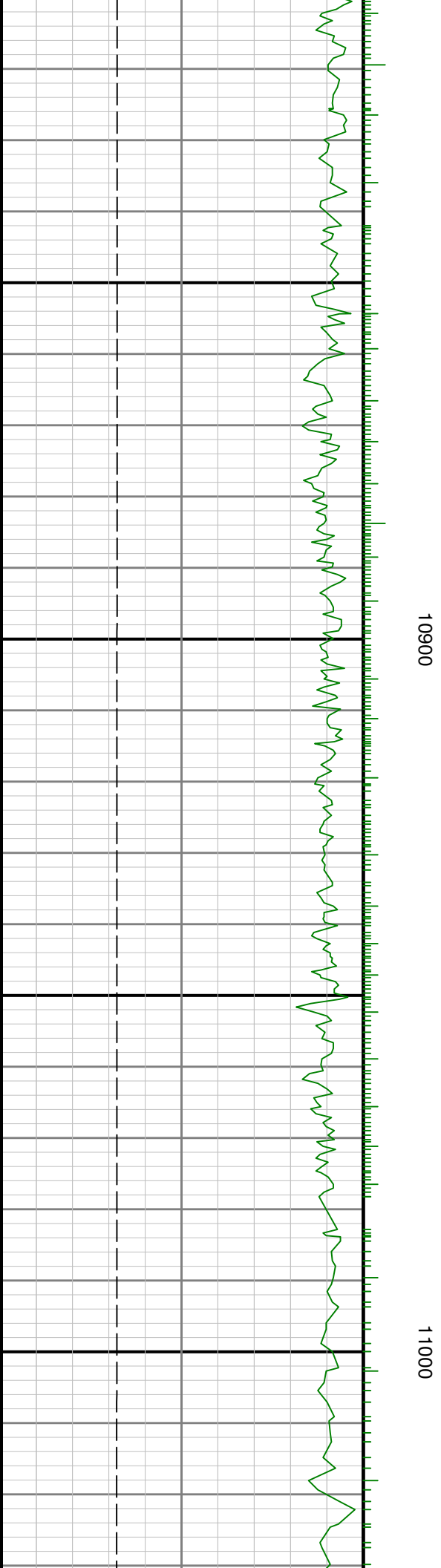
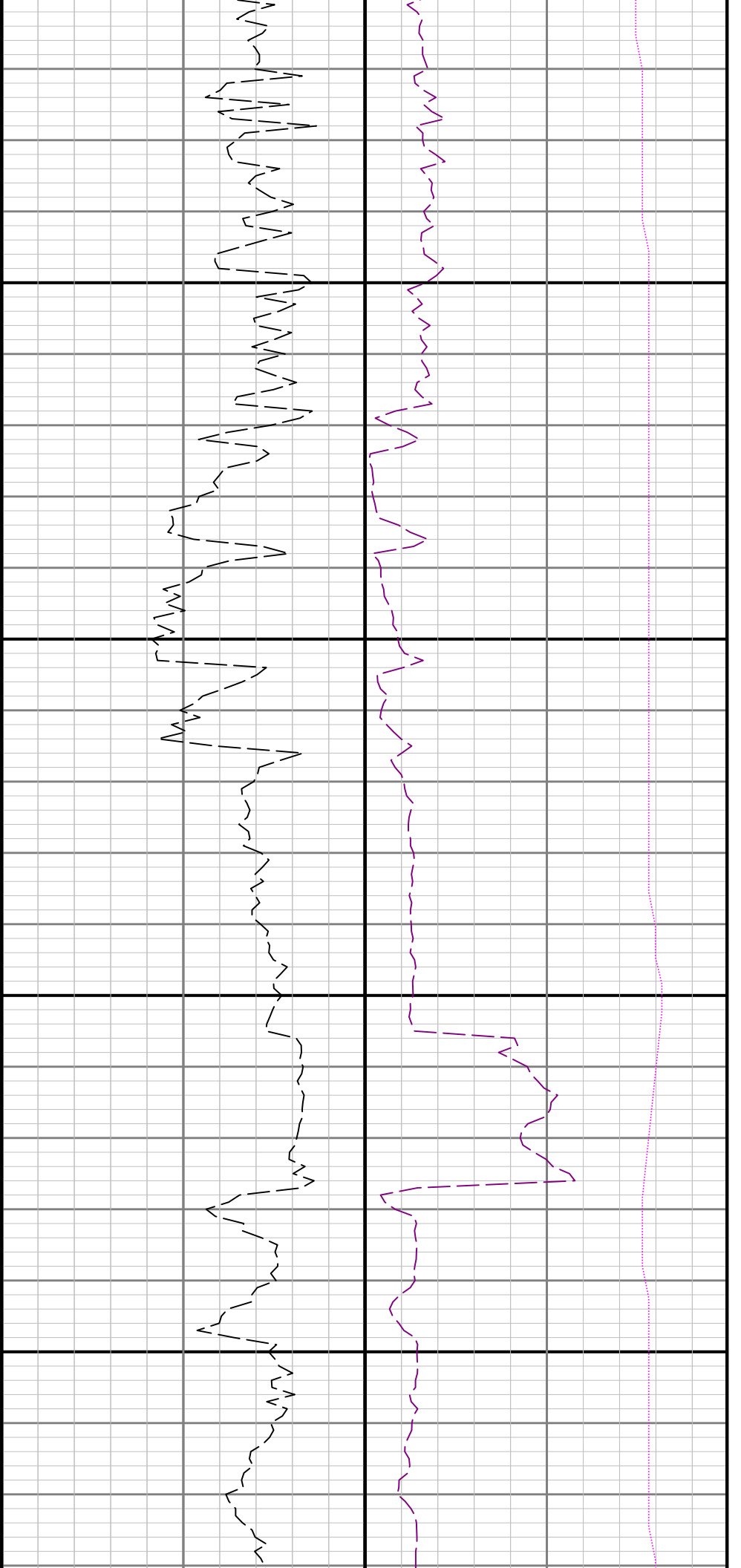


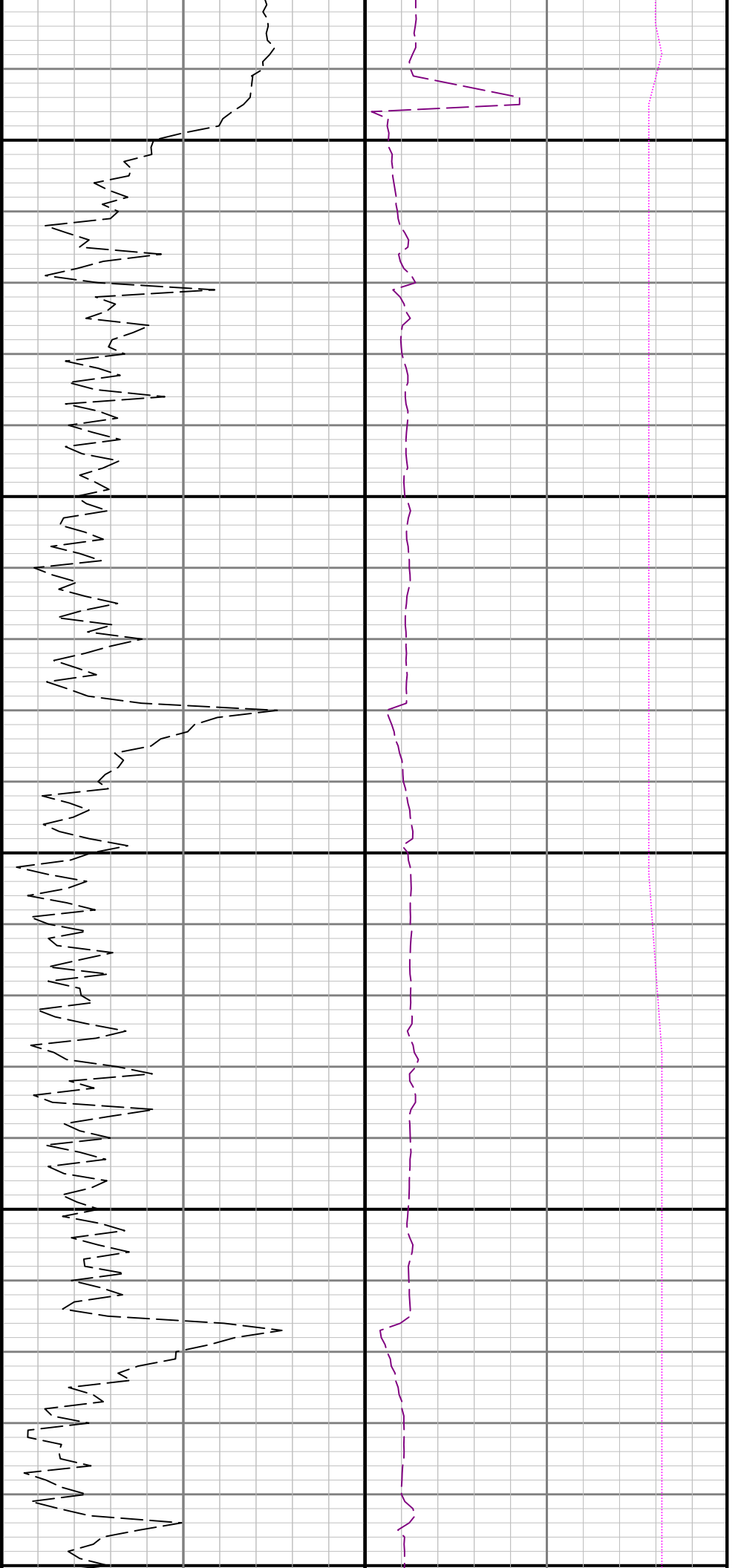


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