



Realtime Log

Natural Formation Evaluation
Gamma Ray

Scale: Company: Anadarko

1:240 Well: GRENEMYER 36N-3HZ

Measured Depth Field: WELD COUNTY (KERR MCGEE)

Status: Region: Rocky Mountains State: Colorado

Surface Location: Other Services:

Field Print Latitude: 40° 0' 47.160" N

Longitude: 104° 52' 35.047" W

API Number: 05123384150000 SEC: 34 TWP: 1N RNG: 67E

Permanent Datum (P.D.): Ground Level Elevation: 5049.00 ft.

Log Measured From: Rig Floor 16.00 ft. Above P.D.

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

Interval Logged Dates Magnetic Field Reference

Top: 6840.0 ft. Date From: 28/Dec/2013 Dip Angle: 66.26° Azi Reference North: True

Bottom: 15110.0 ft. Date To: 02/Jan/2014 Total Mag to Reference

Spud Date: 26/Dec/2013 Field Strength: 52571.0 nT North Correction: 8.49°

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
8.750 in.	11107.0 ft.	7985.0 ft.	9.625 in.	36.00 lb/ft	Surface	1094.0 ft.
6.125 in.	7985.0 ft.	15163.0 ft.	7.000 in.	26.00 lb/ft	Surface	7973.0 ft.

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
LSND	Surface	15163.0 ft.	8.750 in.	85.0 ft.	0.2° / 258.4°	7.2° / 95.0°
			8.750 in.	45.0 ft.	7.2° / 95.0°	84.6° / 176.3°
			6.125 in.	85.0 ft.	84.6° / 176.3°	91.9° / 180.3°
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig:	Xtreme 24	/ Advance Drilling
PATS	6.4.1.34	Job No:	6003666	
		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 (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End	
1	1	1	8.750	PDC	2.000	Steerable	6840.0	7932.0	6840.0	7985.0	28/Dec/2013 01:35	28/Dec/2014 19:45	39.4
2	2	2	6.125	PDC	6.000	Steerable	7932.0	15110.0	7985.0	15163.0	30/Dec/2013 18:50	02/Jan/2014 18:30	0

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Marcus Boucher	26/Dec/2013	03/Jan/2014	Austin Small	31/Dec/2013	03/Jan/2014	Osagie Otoikhine	26/Dec/2013	31/Dec/2013

Mud Properties Record

Date / Time		LWD	Measured	Mud	Density	Viscosity	pH	Fluid	Oil /	Source	Total	K+
		Run No.	Depth (ft.)	Type	(ppg)	(cp)		Loss (cc)	Water		Chlorides (ppm)	(%)
28/Dec/2013	06:00	1	7137.0	LSND	9.8	14	8.1	N/A	0.0/91.0	Active	1400	N/A
28/Dec/2013	18:00	1	7801.0	LSND	9.8	13	9.1	N/A	0.0/91.3	Active	1100	N/A
30/Dec/2013	18:00	2	7985.0	Invert	9.0	19	N/A	N/A	57.0/36.0	Active	65000	N/A
31/Dec/2013	18:00	2	10,800	Invert	9.2	18	N/A	N/A	55.5/36.0	Active	65000	N/A
01/Jan/2014	06:00	2	12,001	Invert	9.2	18	N/A	N/A	54.0/36.0	Active	85000	N/A
01/Jan/2014	18:00	2	13,101	Invert	9.2	18	N/A	N/A	54.0/36.0	Active	80000	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent 0.5 ft. Avg.	API
GRIX	Gamma Ray Density	Points
GRSI	Gamma Ray Slide Indicator	Unitless
GRTX	Gamma Ray Time Since Drilled	min
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.	klbf

Equipment and Service Data

LWD	Tool	Serial	Measurement	Bit	Max	Min
Run		Number		Offset	O.D.	I.D.
No.				(ft)	(in.)	(in.)
1	DIR	12546344	Directional	55.62	6.750	3.250
1	SRIG	10658453	Gamma	52.25	6.750	3.250
2	DIR	11625186	Directional	55.05	4.750	2.813
2	SRIG	10585205	Gamma	51.67	4.750	2.813

Service and Tool Mnemonics

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

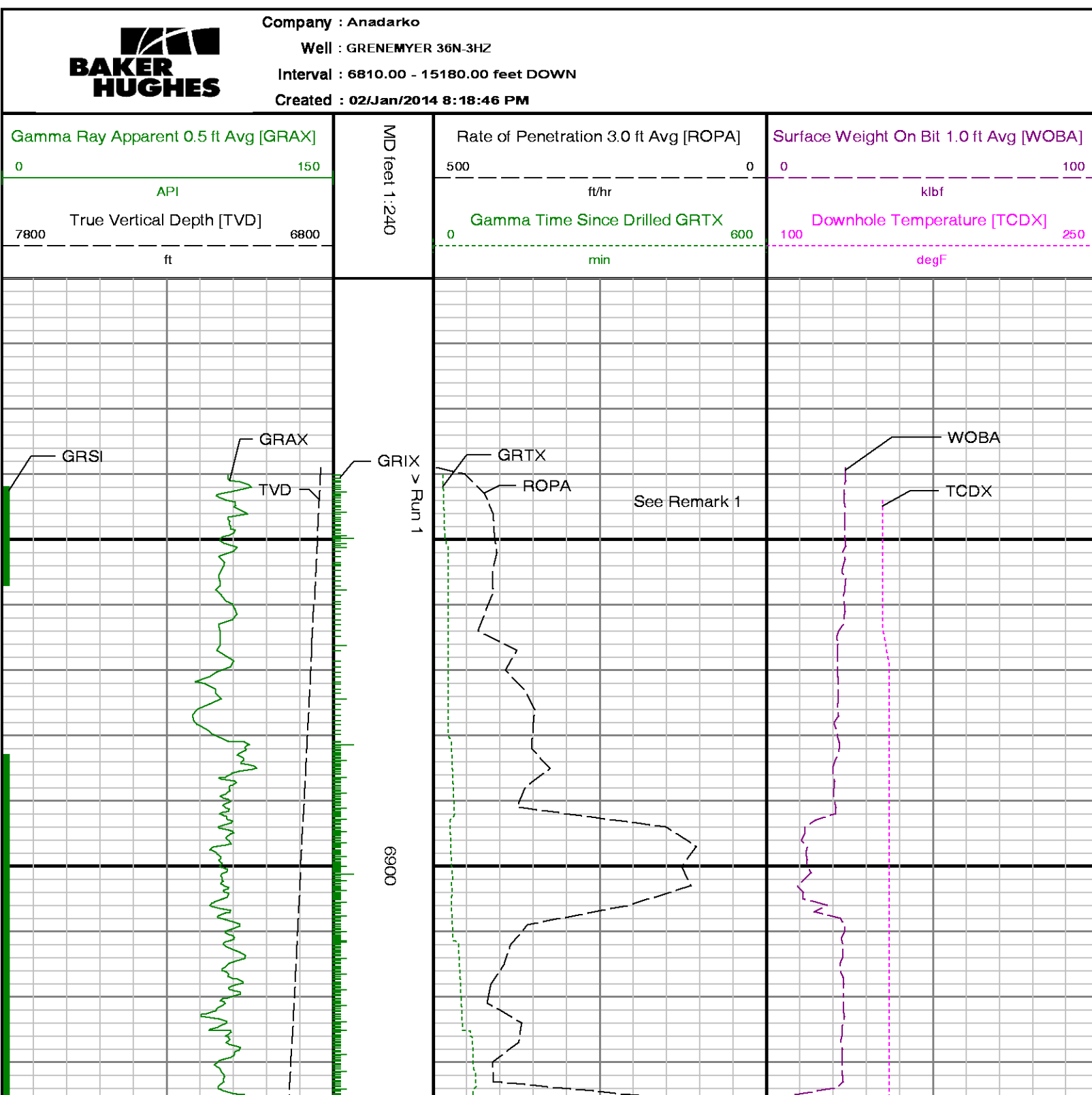
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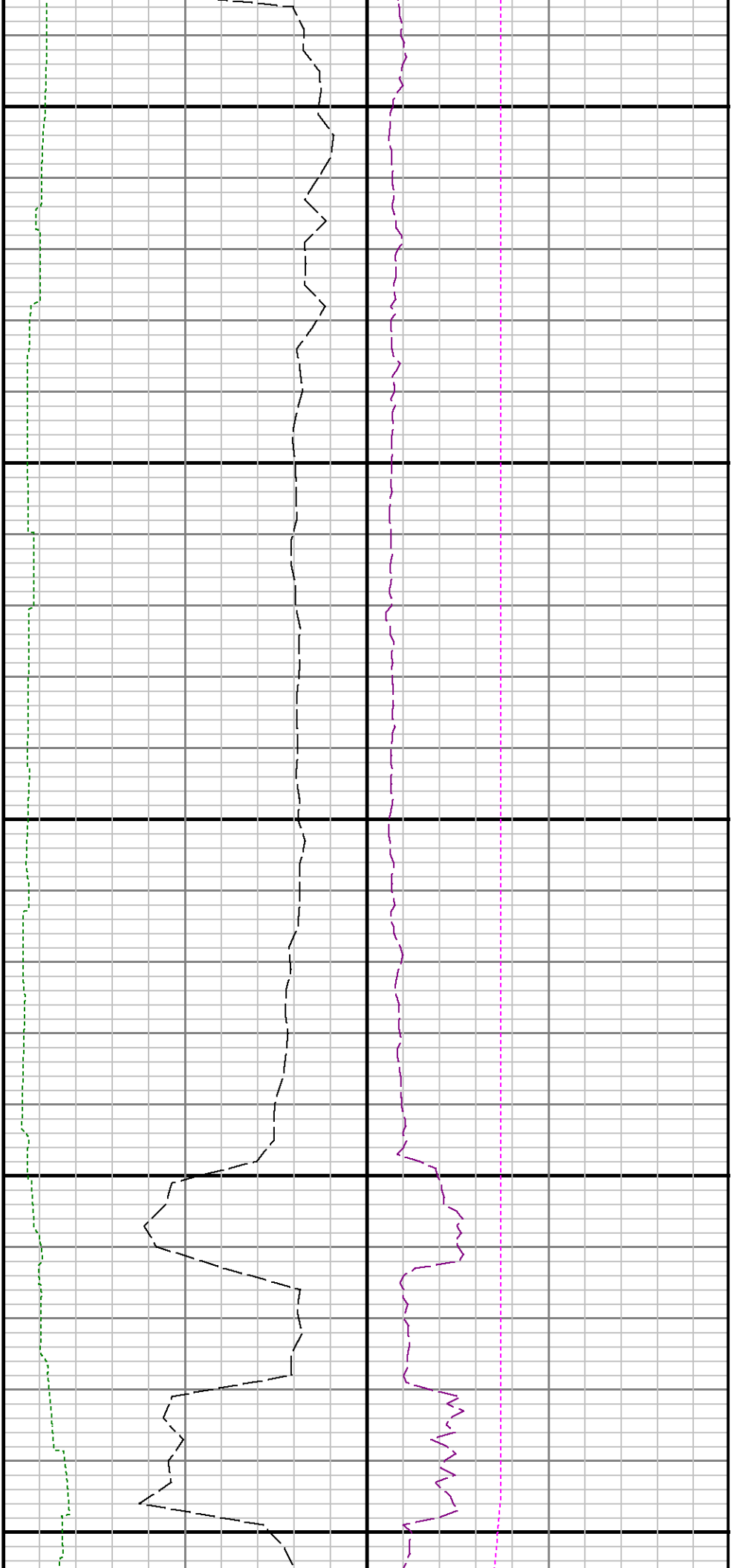
<p>1) Baker Hughes INTEQ run 1 utilized 6 1/2 inch NaviGamma(Gamma Ray and Directional) behind a 8 3/4 inch bit and steerable assembly from 6840 feet to 7985 feet MD (6838 feet to 7559 feet TVD).40</p> <p>2) Baker Hughes INTEQ run 2 utilized 4 3/4 inch NaviGamma(Gamma Ray and Directional) behind a 6 1/8 inch bit and steerable assembly from 7985 feet to 15163 feet MD (7559 feet to 7548 feet TVD).</p> <p>3) A sliding indicator is shown to the left edge of track 1 as a heavy line. The indicator has been depth-shifted to the gamma sensor offset to correspond with gamma data acquired while sliding.</p>
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Remarks

Number	Measured	Hole	LWD	Remark
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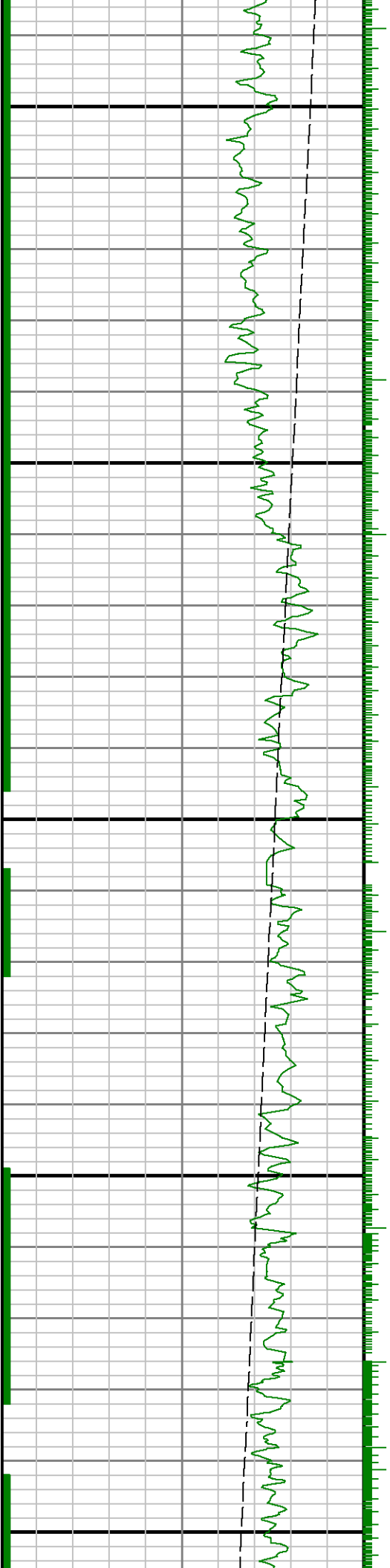
	Depth (ft)	Section (in.)	Run No.	
1		8.750	1	The interval from surface to 6901 feet MD (6851 feet TVD) was not logged since logging services began at kick off point.
2		8.750	2	Interval from 7848 feet to 7901 feet MD (7519 feet to 7521 feet TVD) was logged more than 44 hours after drilling due to tripping for casing and cementing operations and picking up lateral BHA.
3		6.125	2	Interval from 14634 feet to 14682 feet MD (7442 feet to 7439 feet TVD) was not logged due to gamma ray sensor offset at well TD.

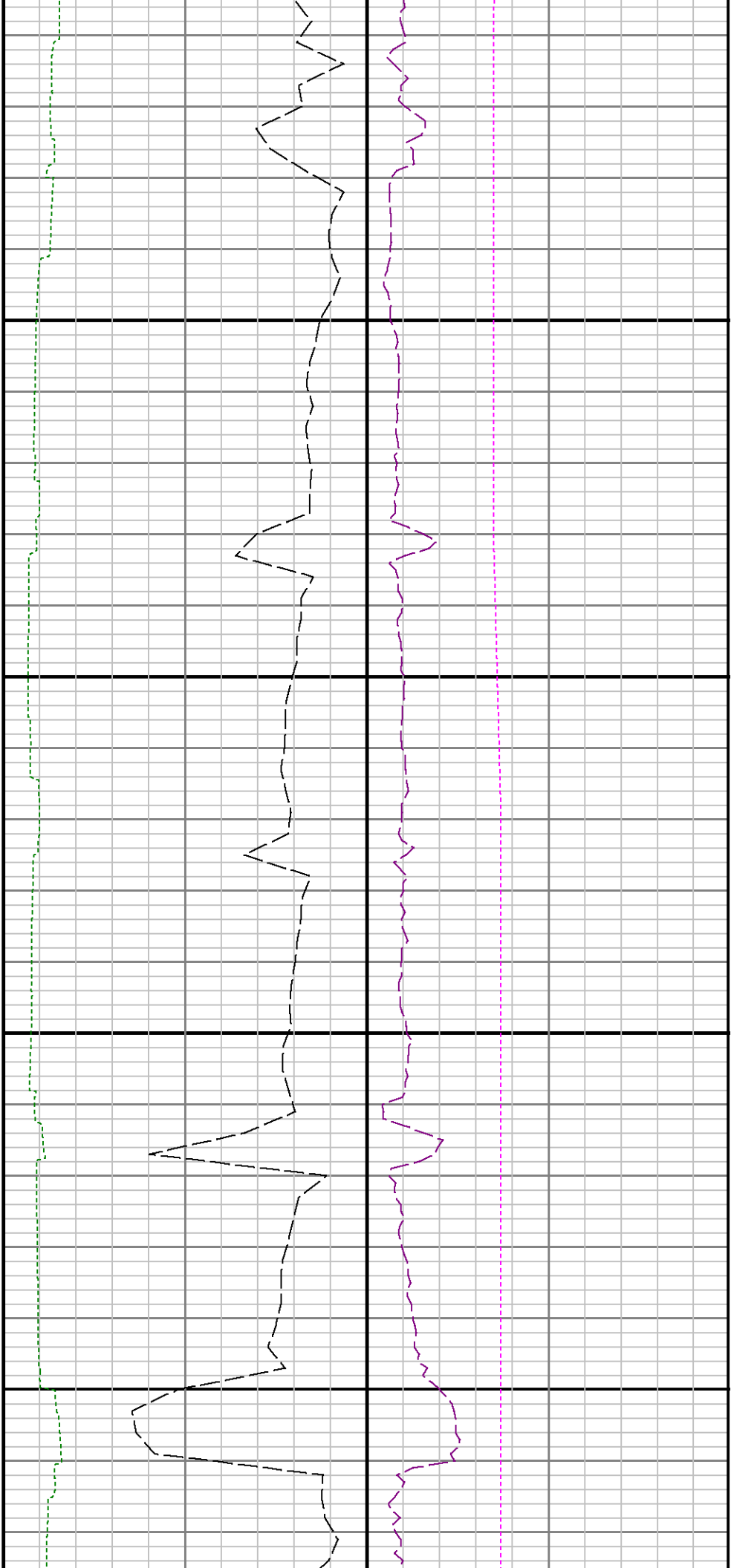




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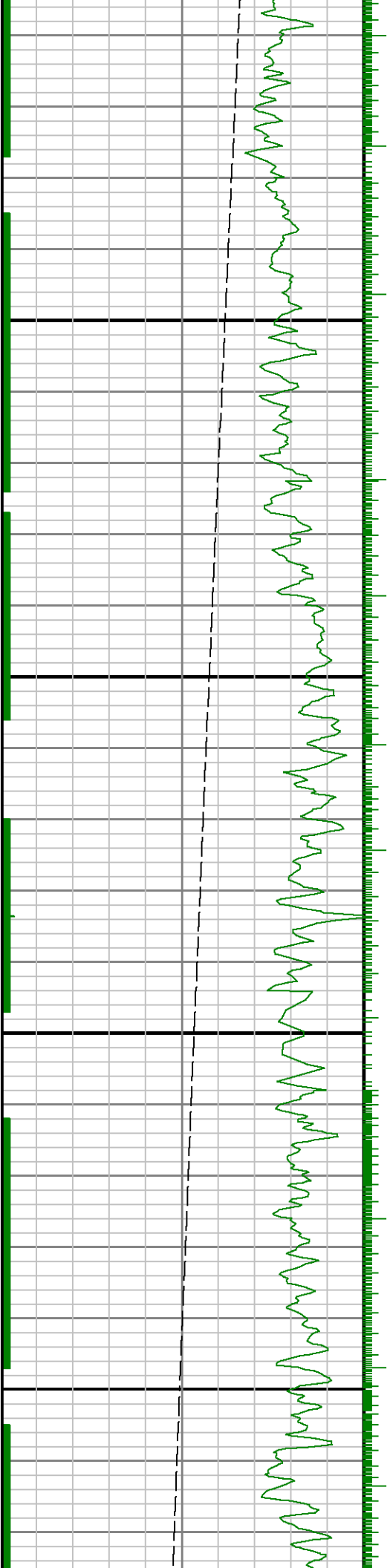
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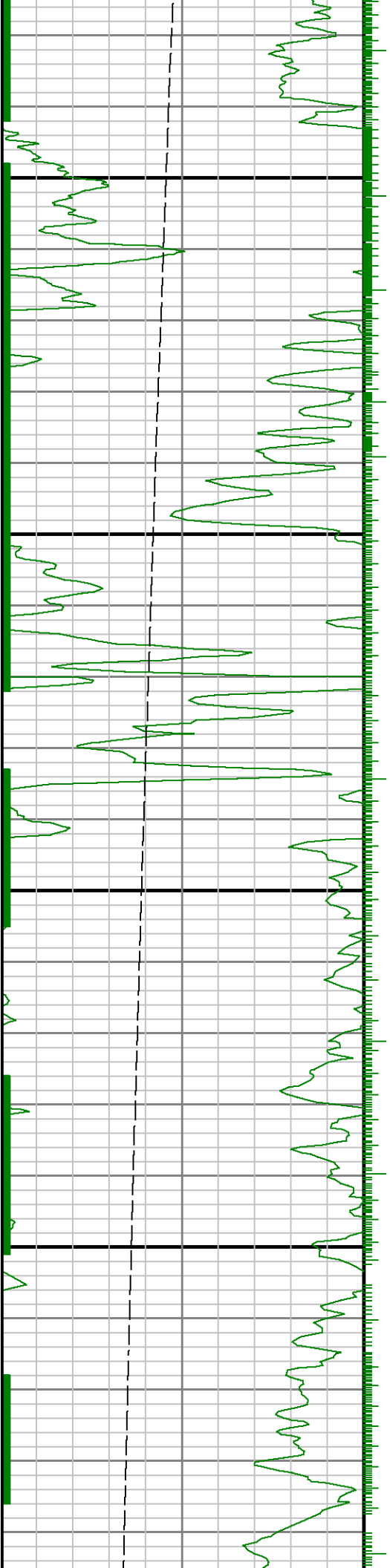




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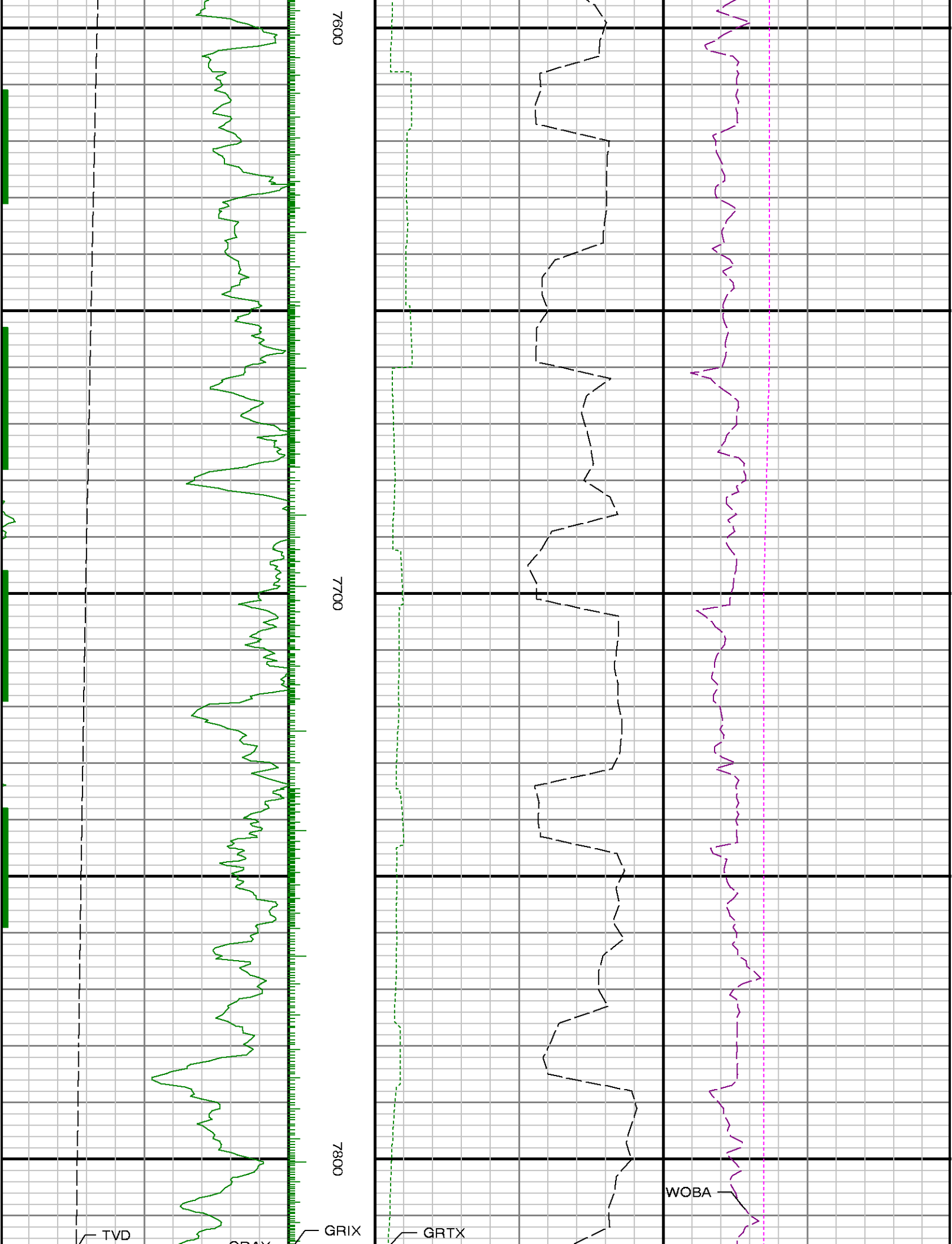


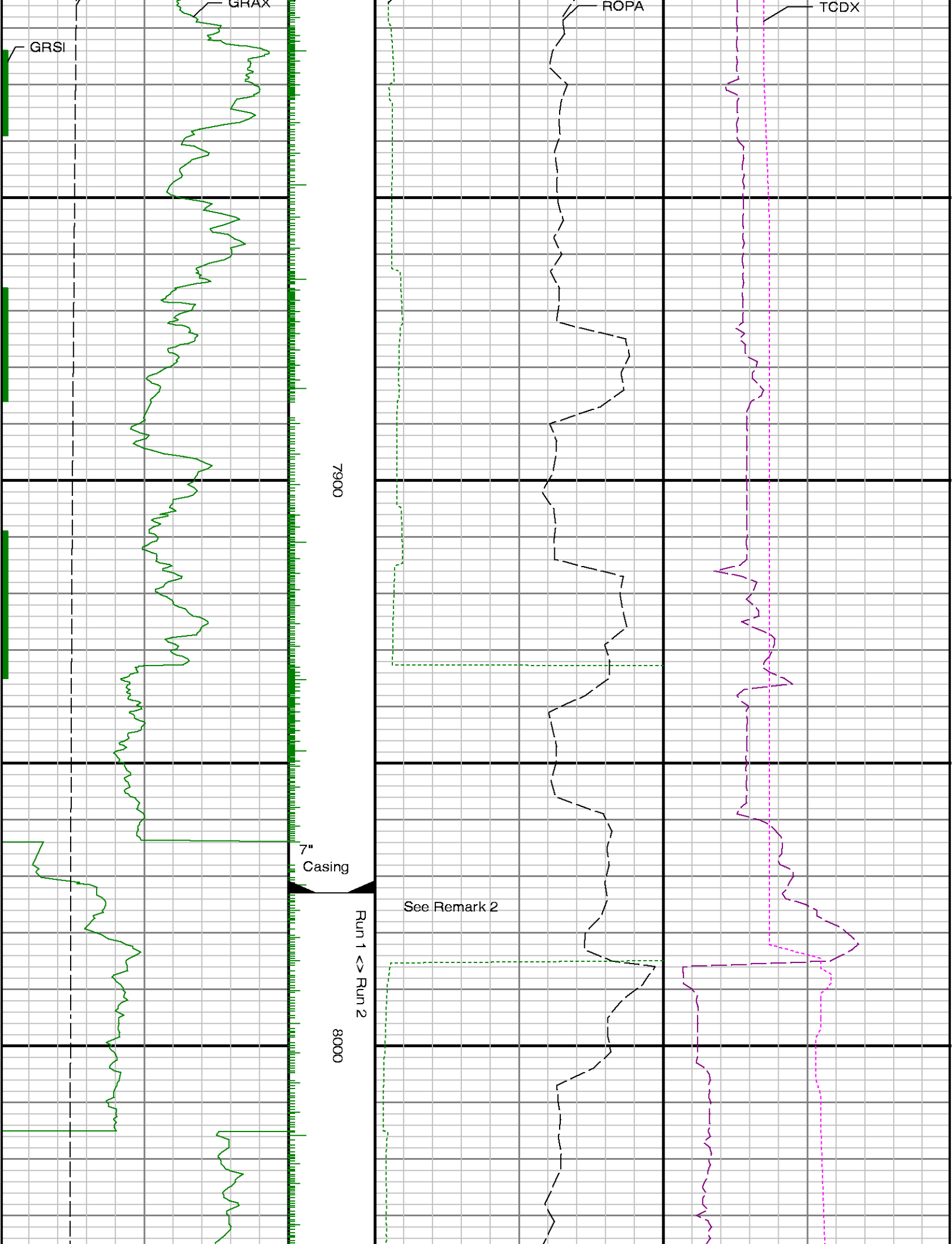


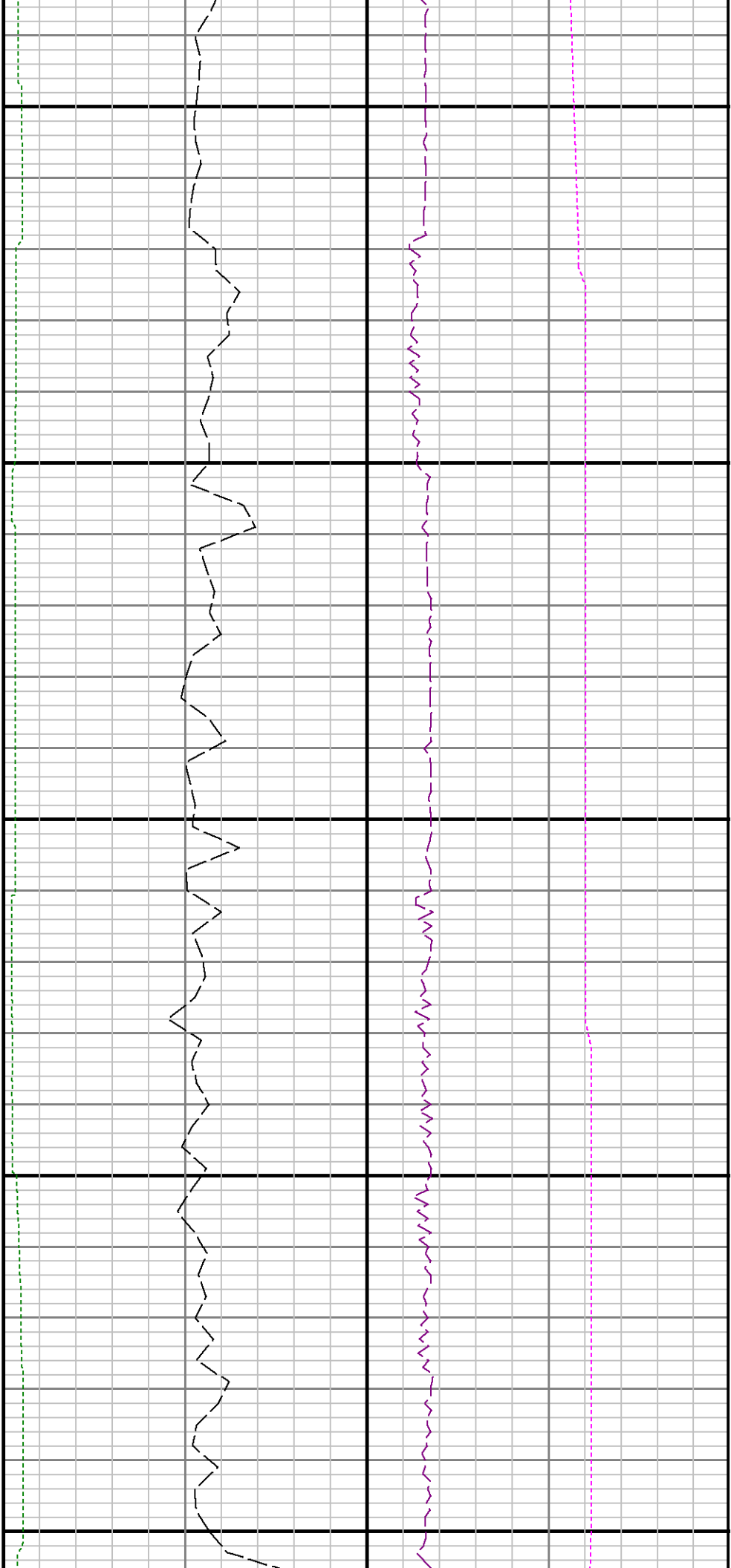
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7500



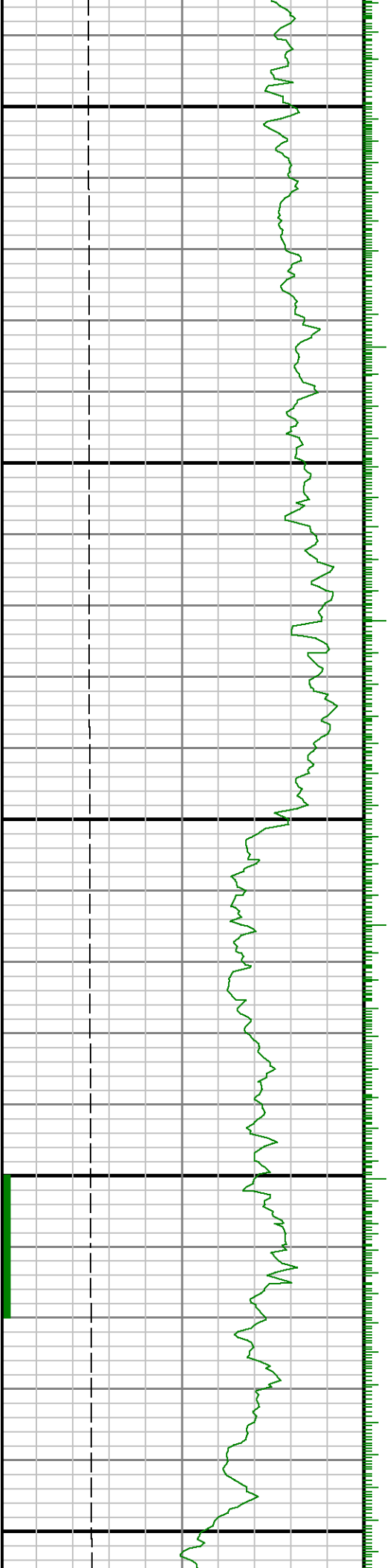


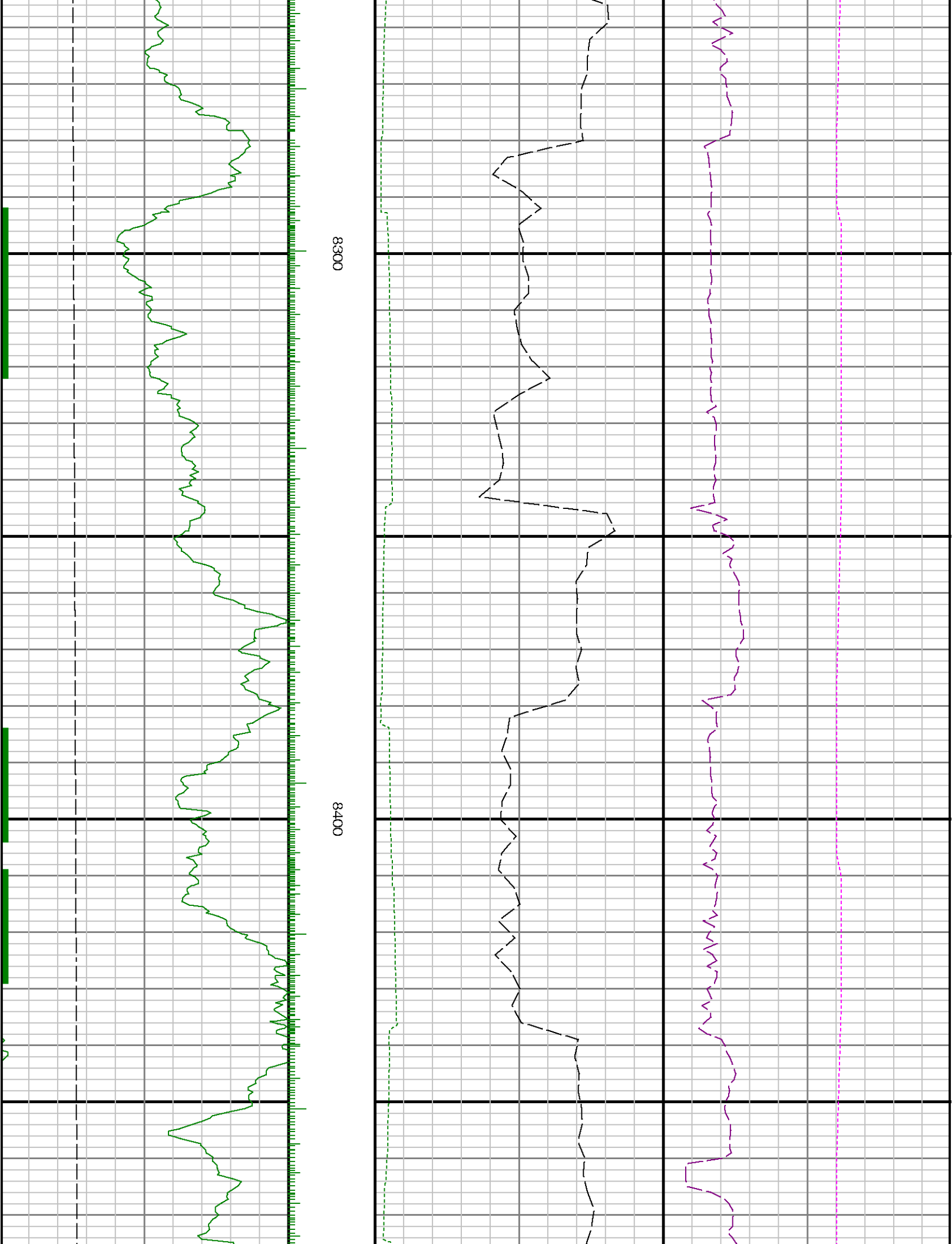


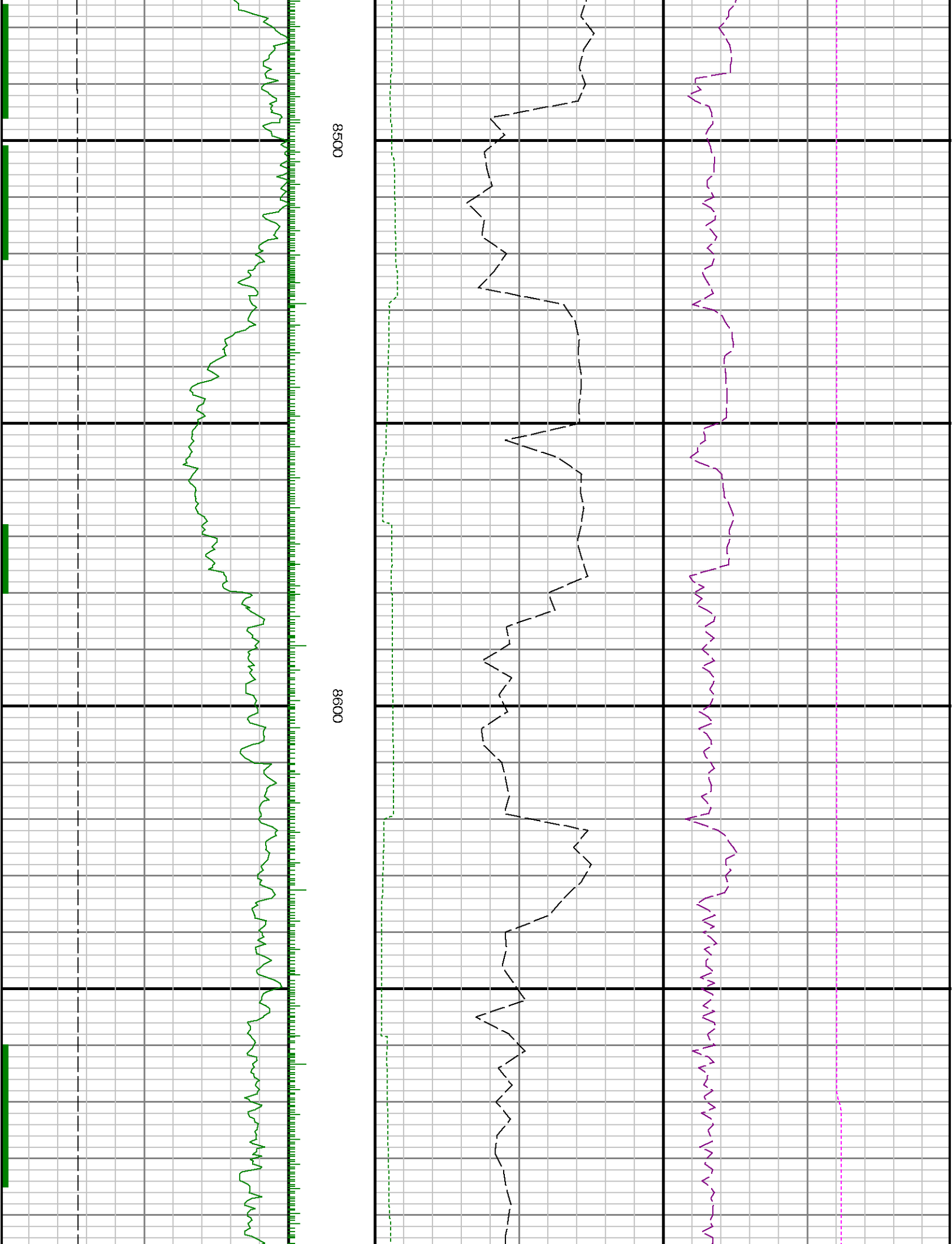


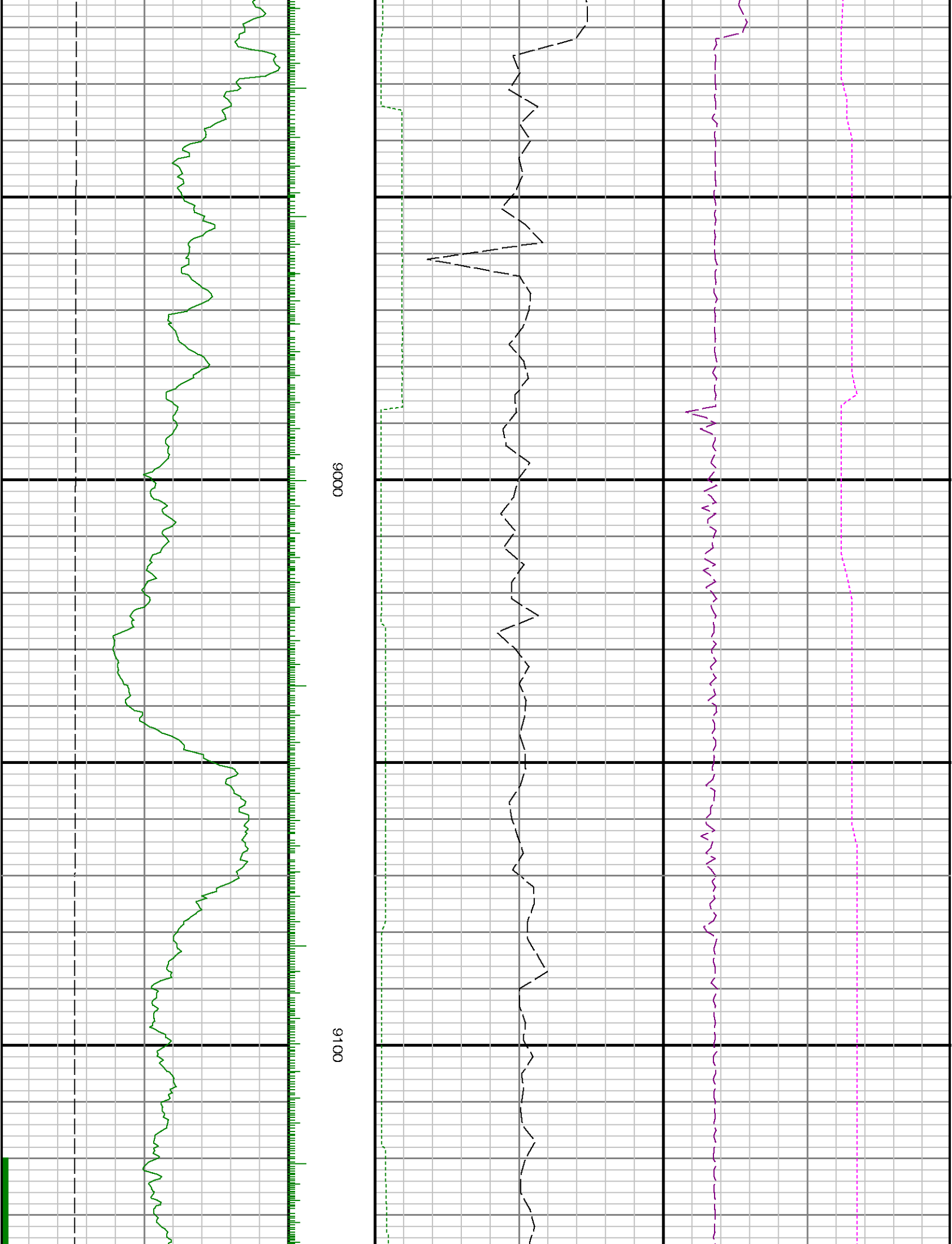
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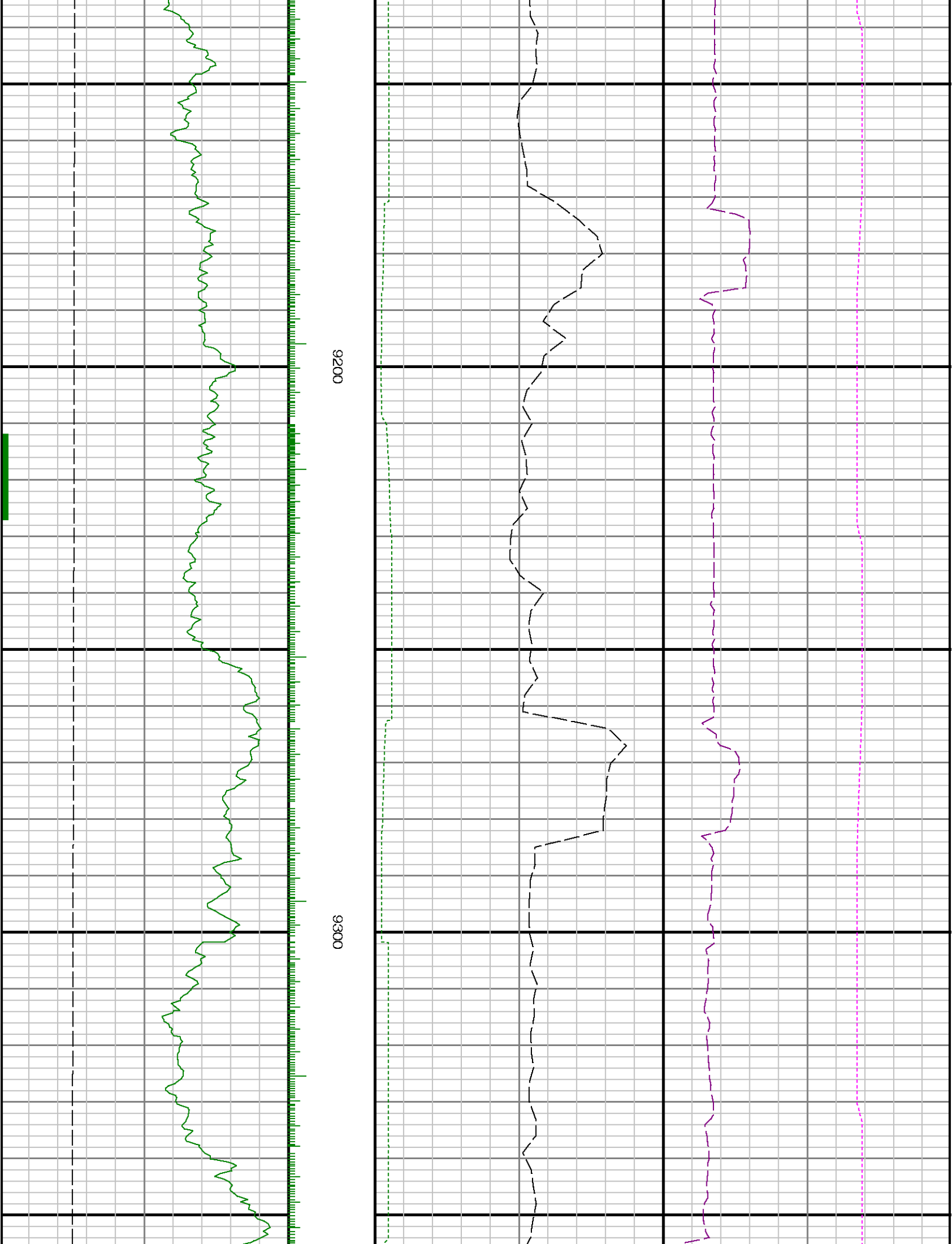
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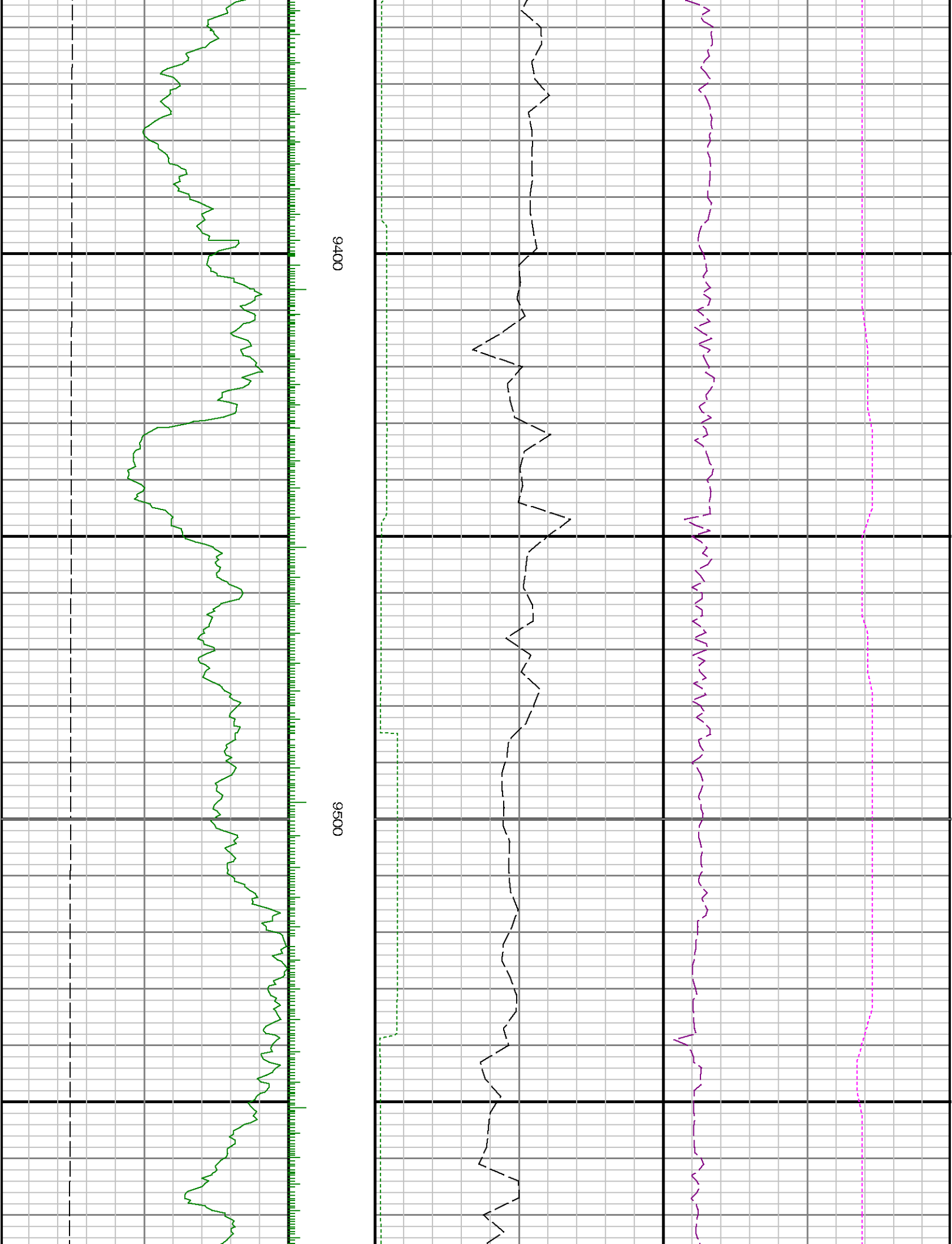


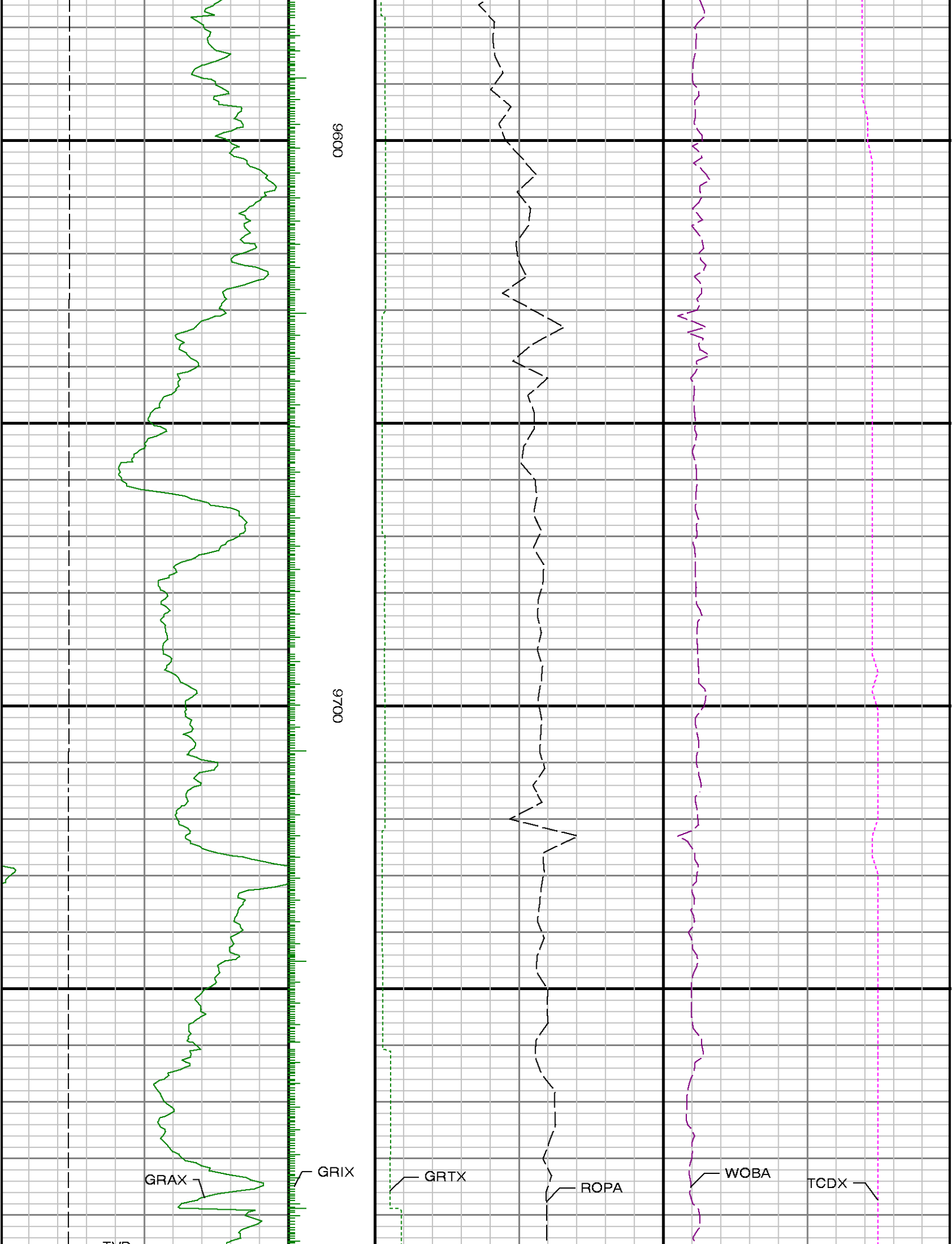


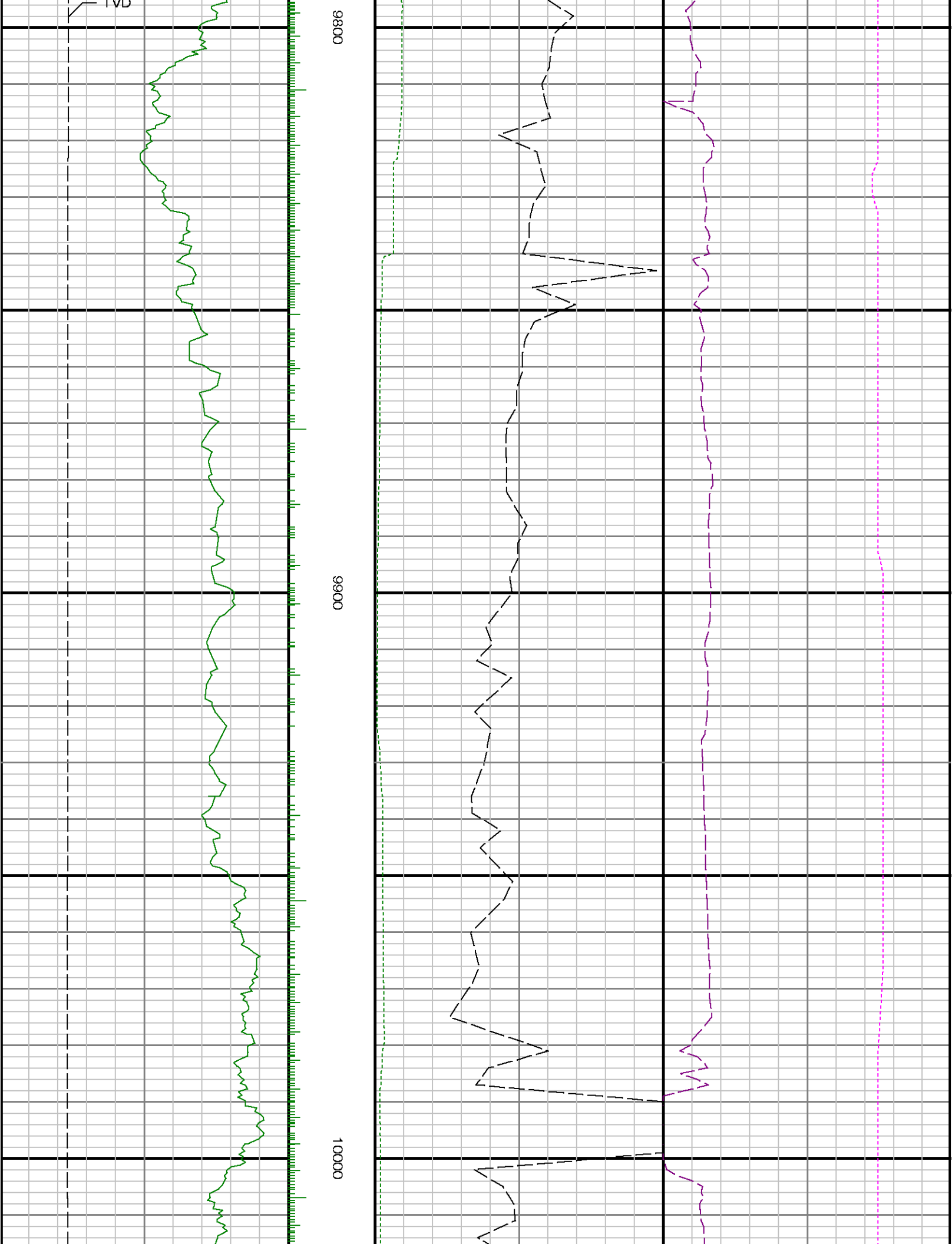


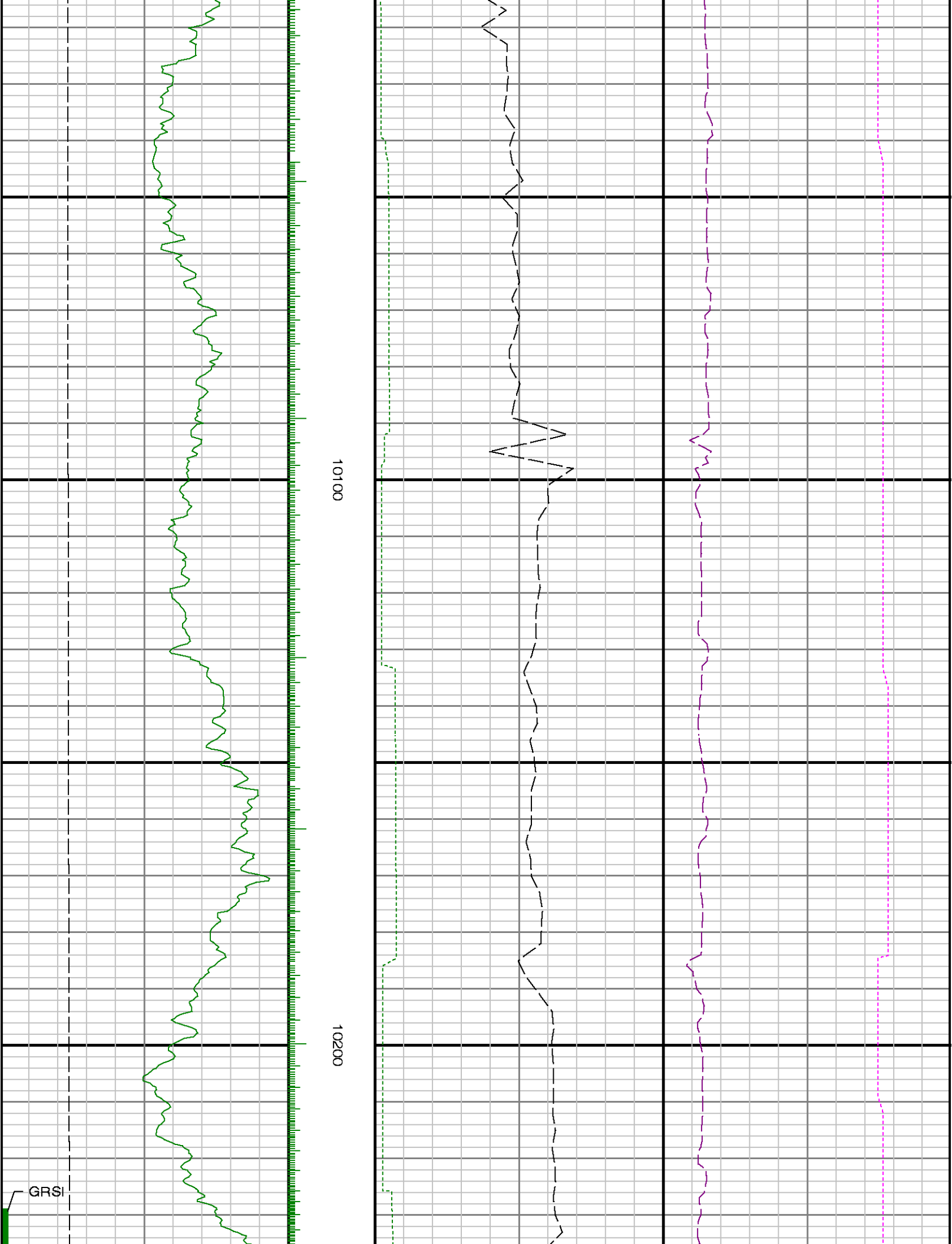


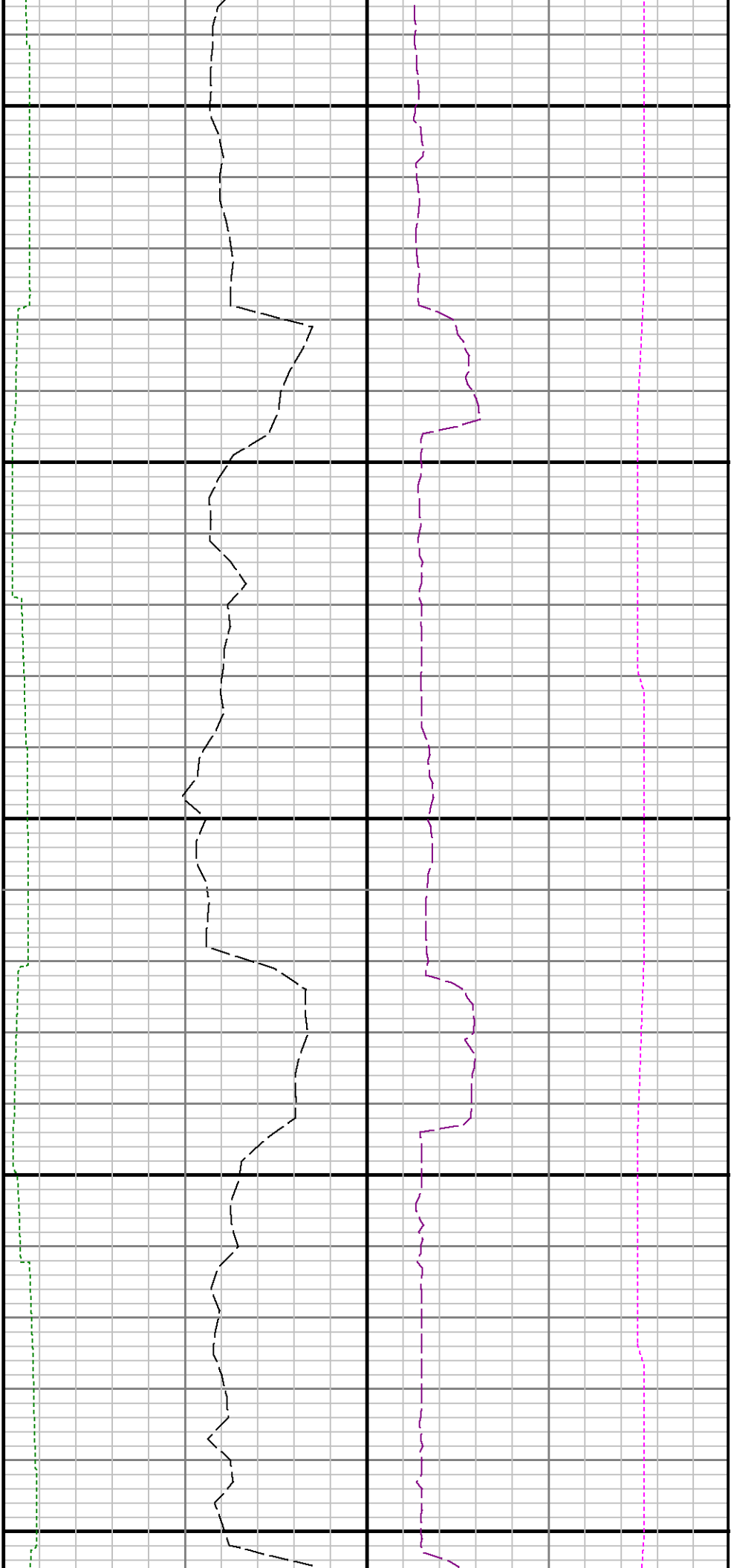






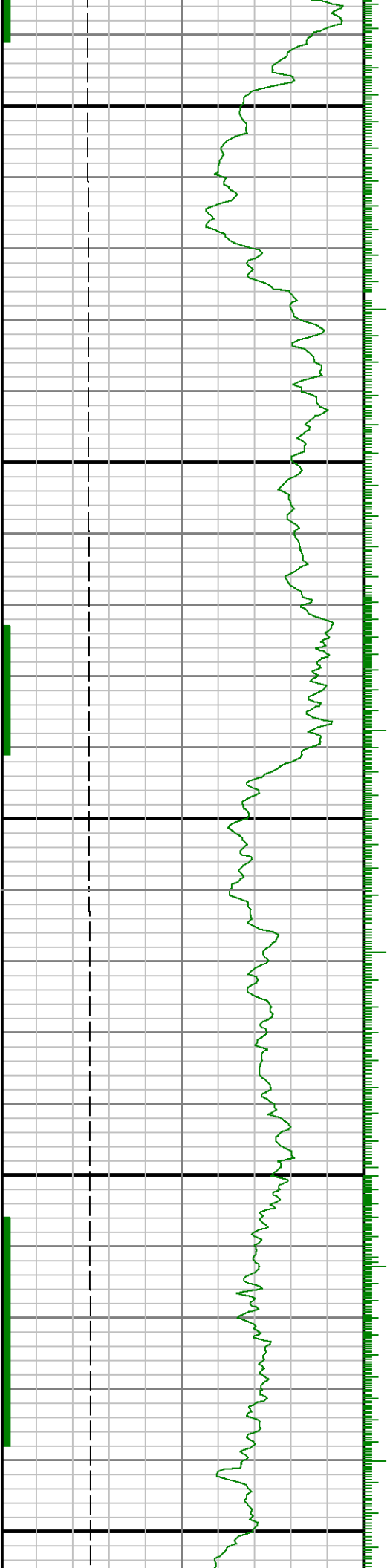


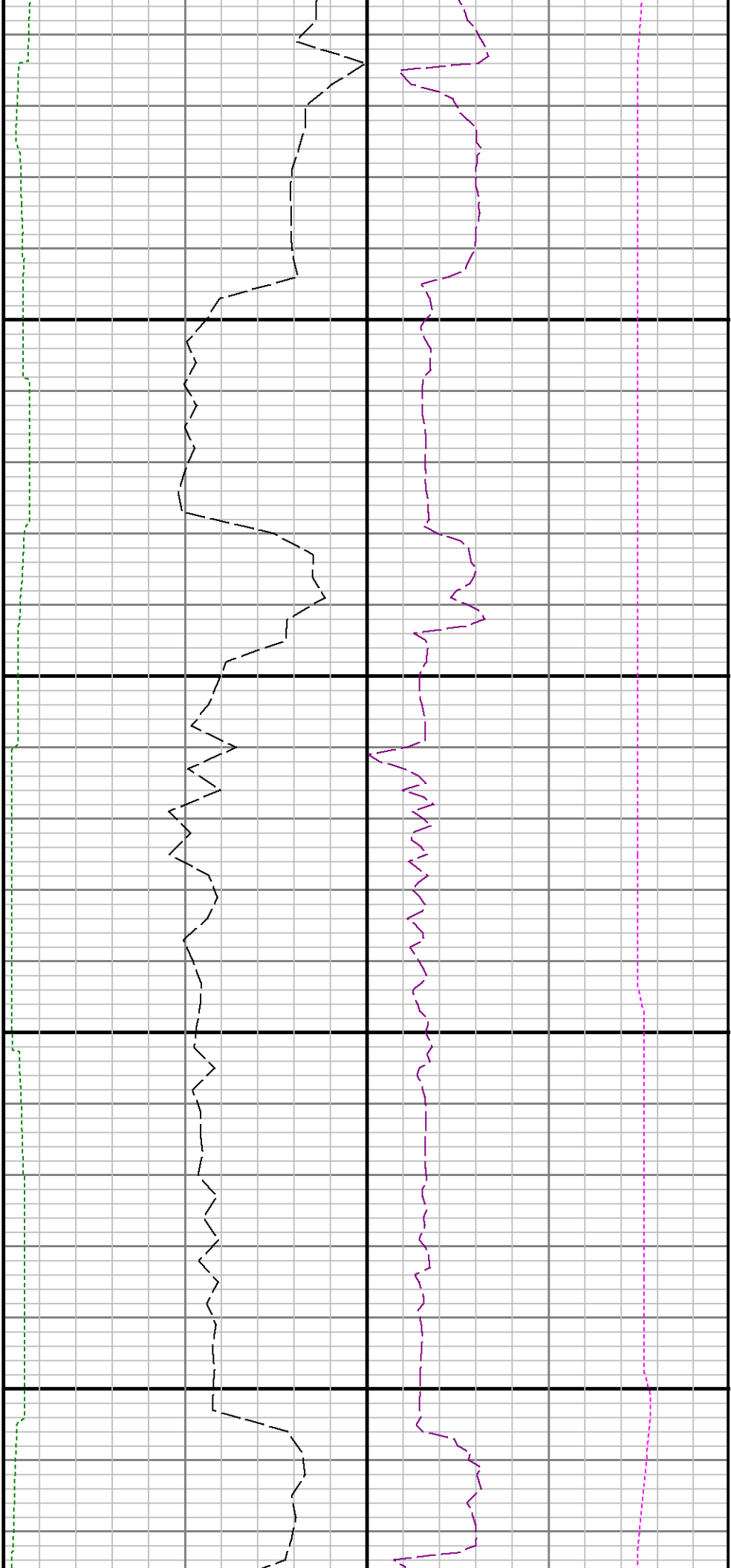




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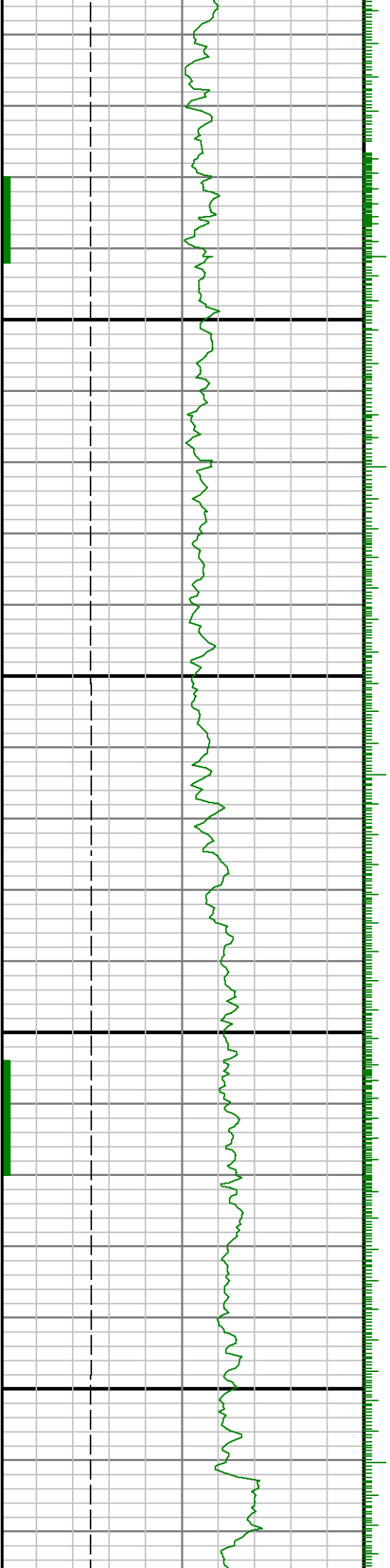
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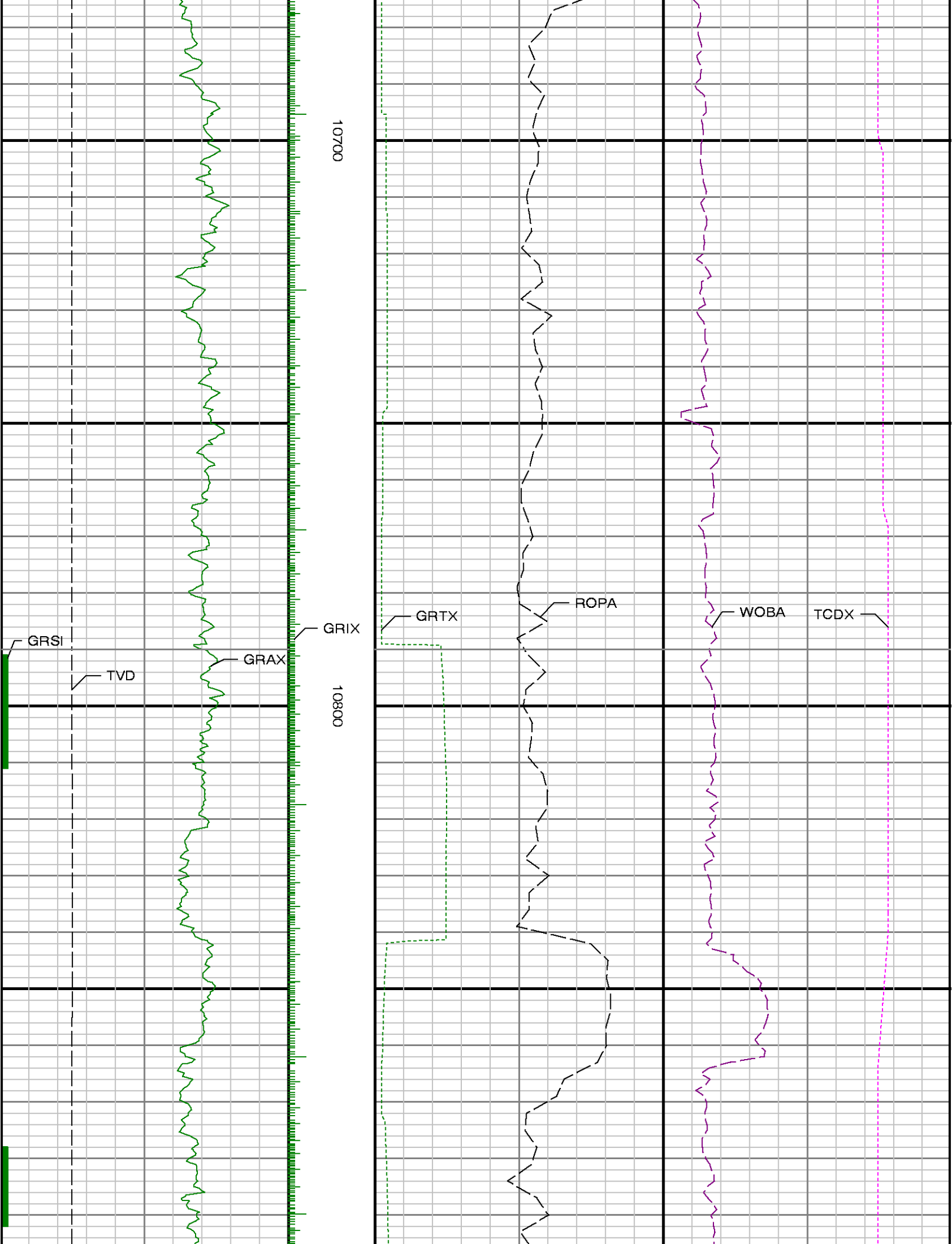




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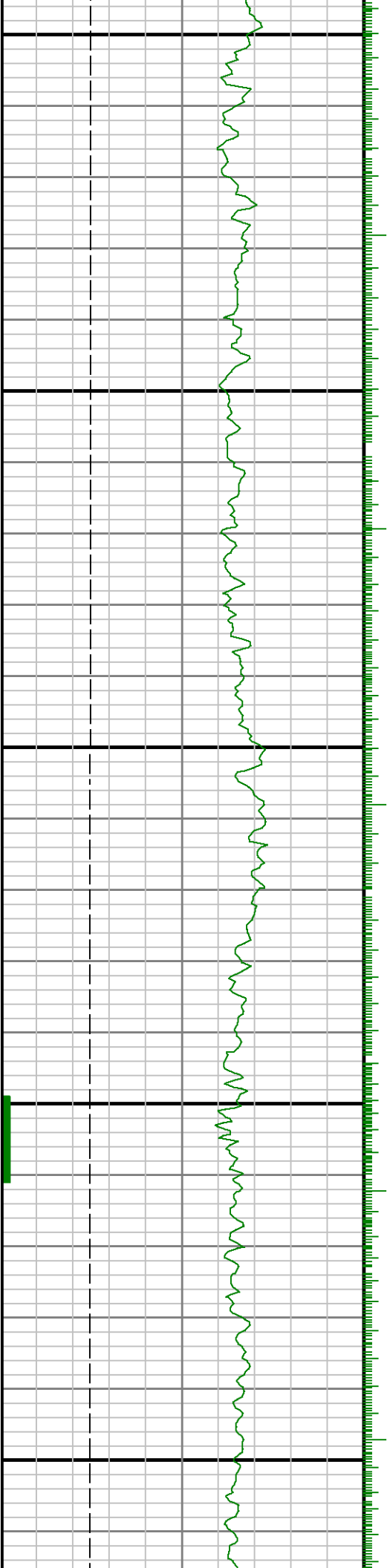




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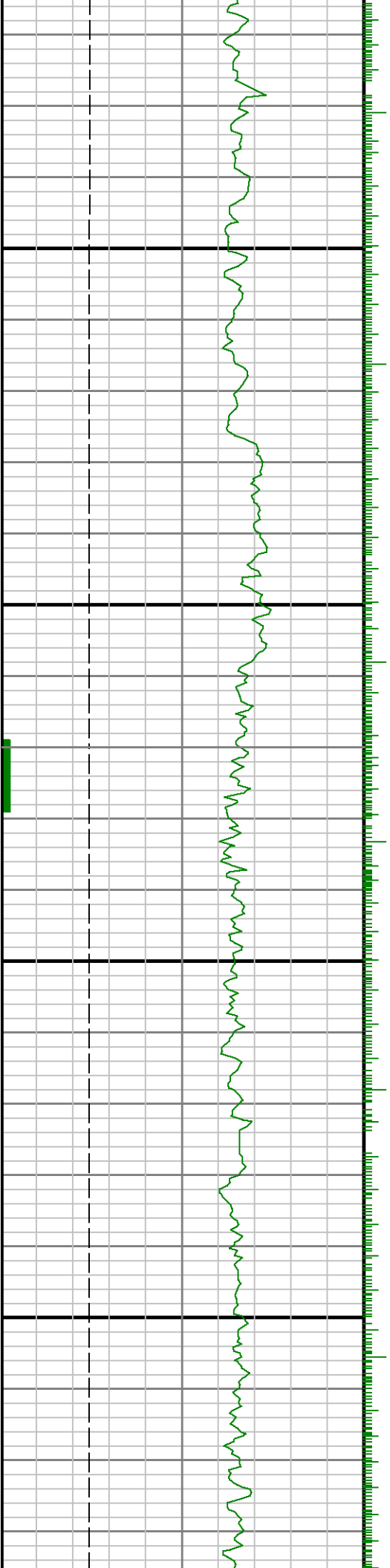
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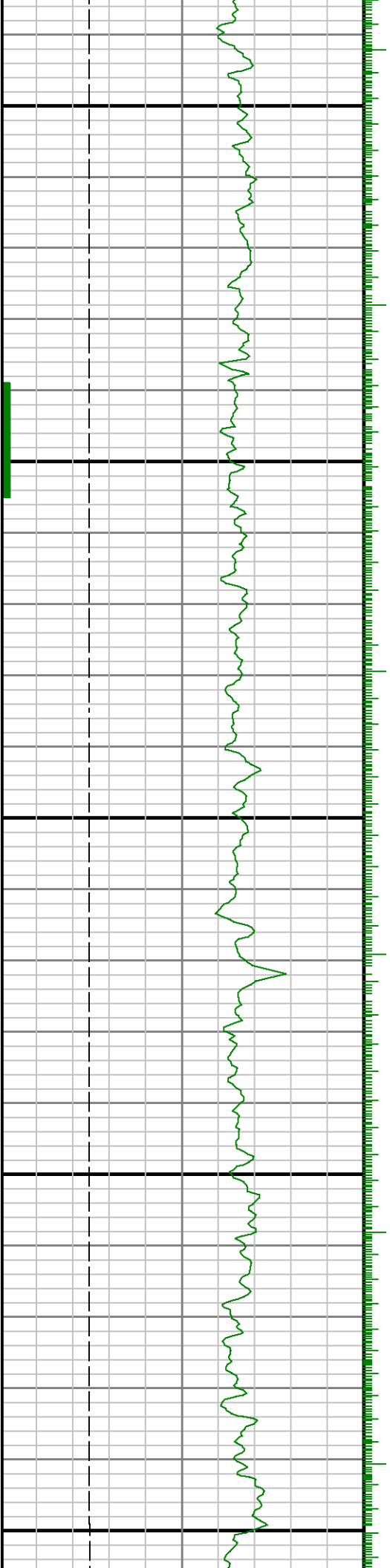
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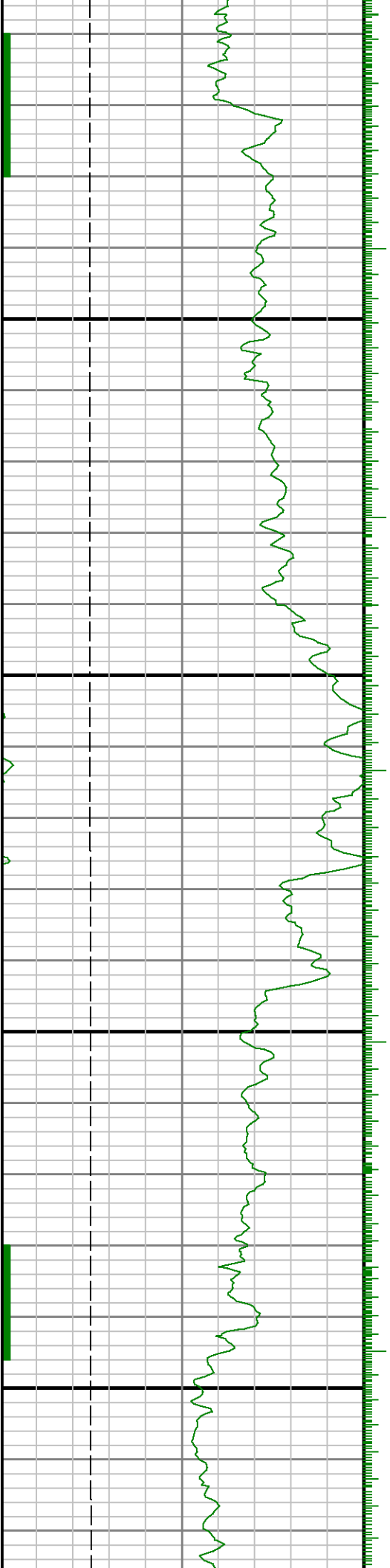
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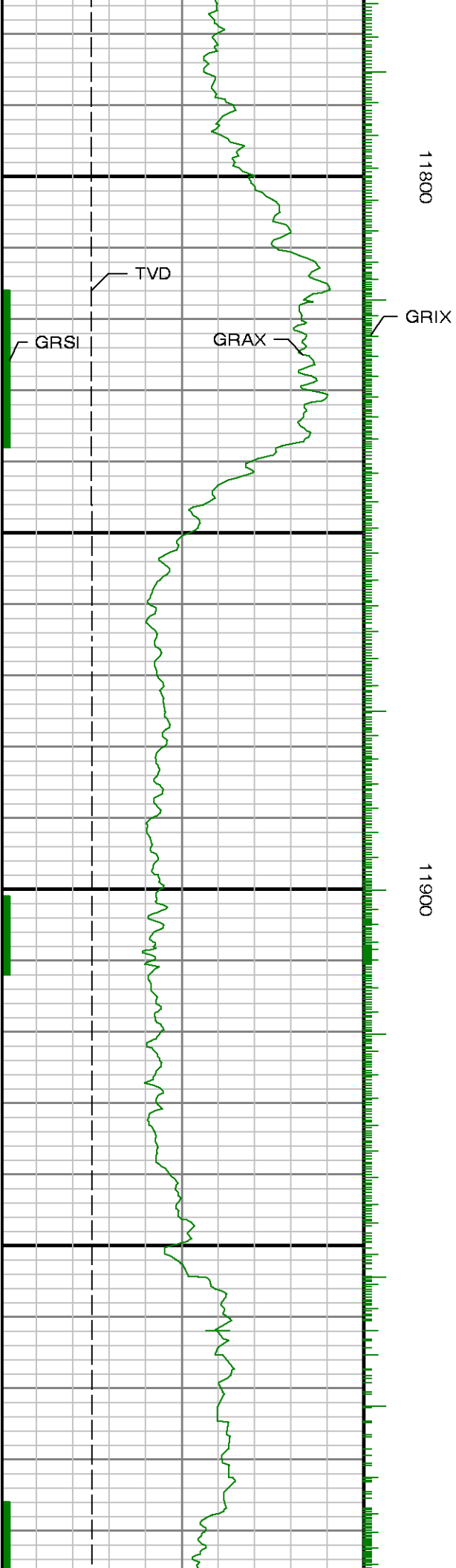


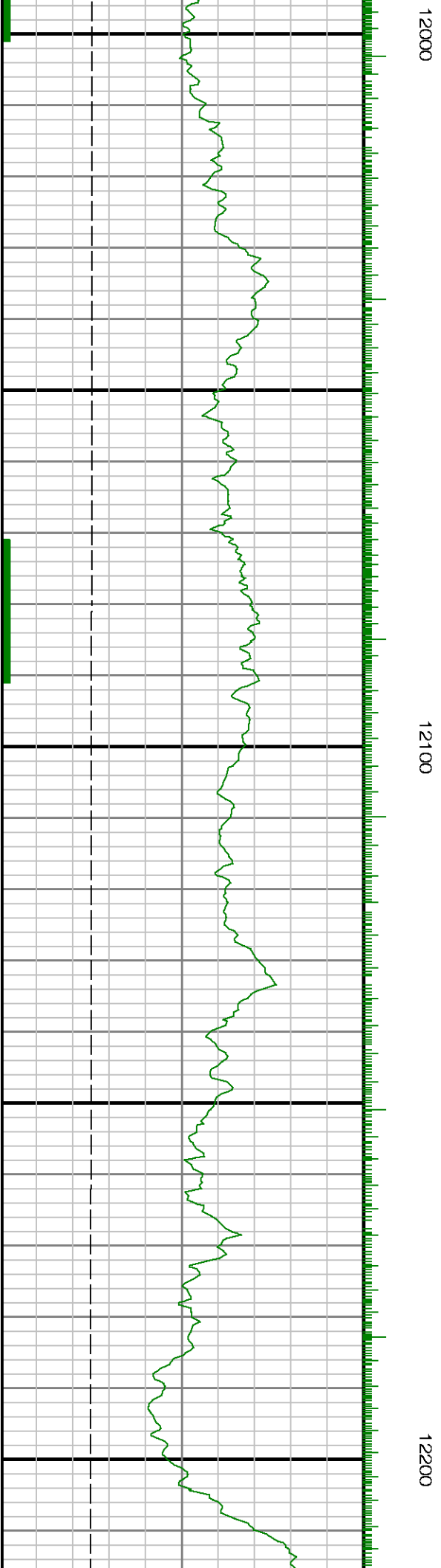
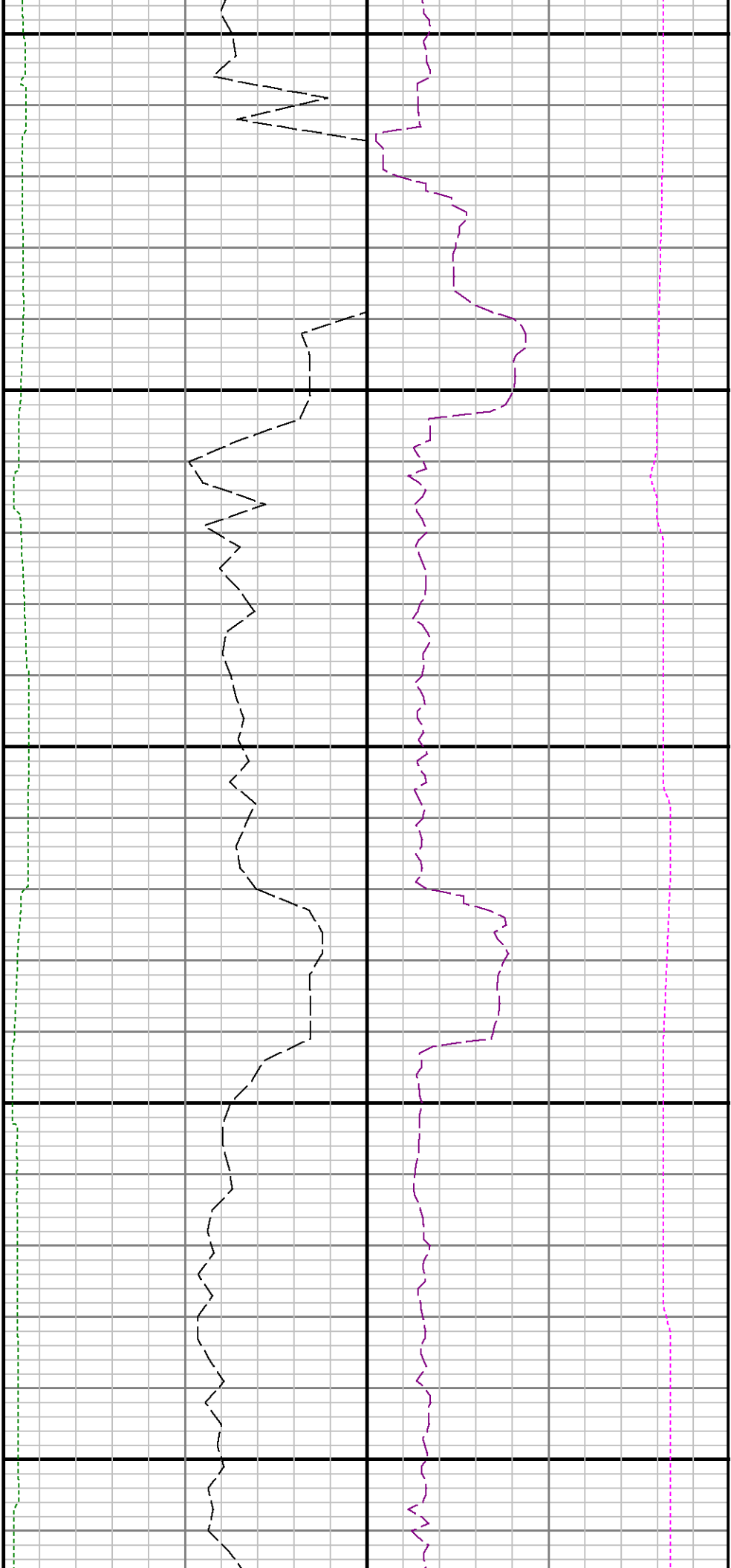


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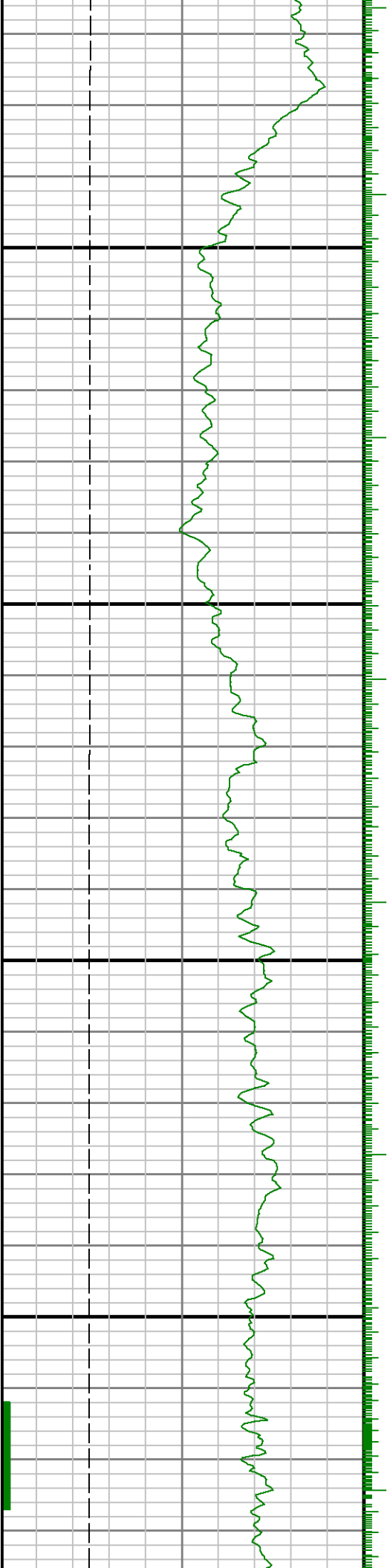


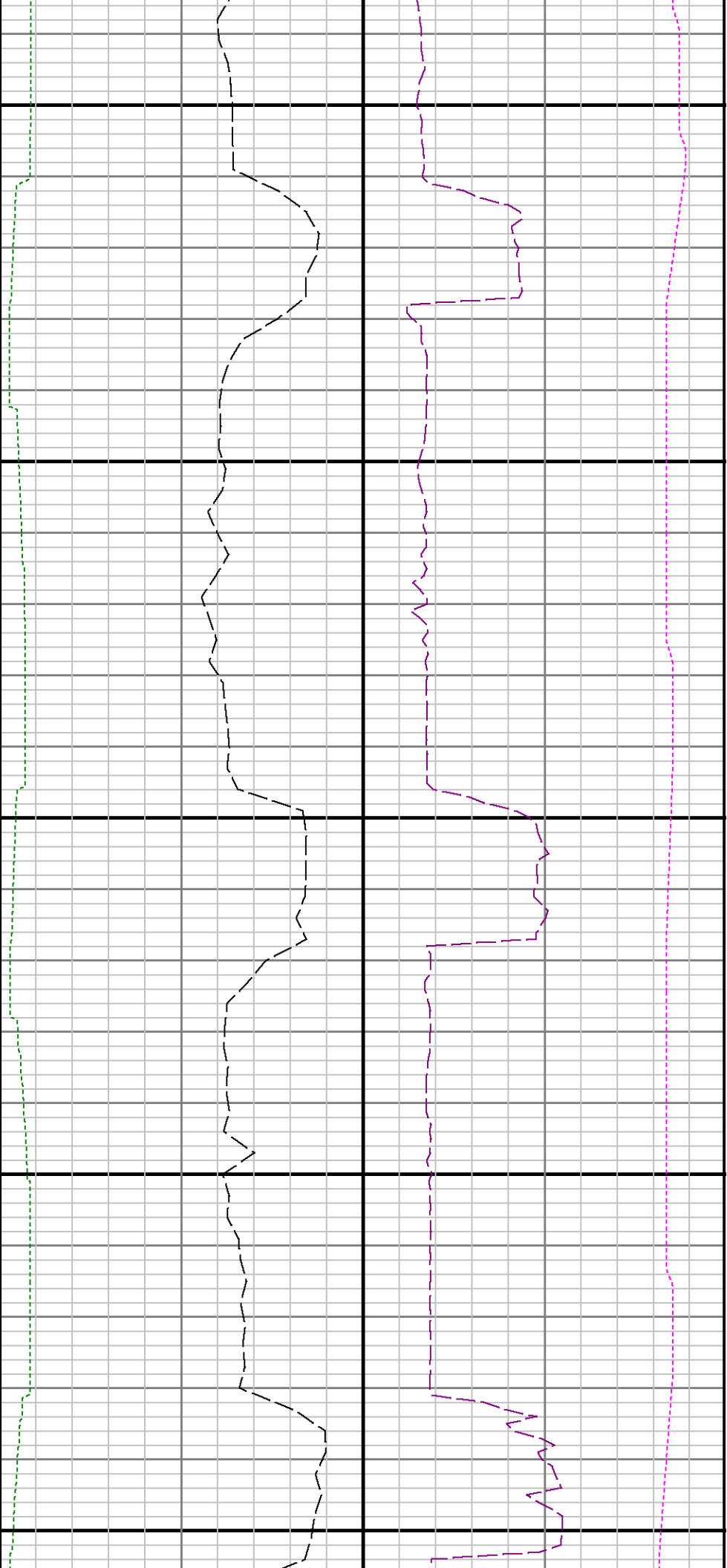




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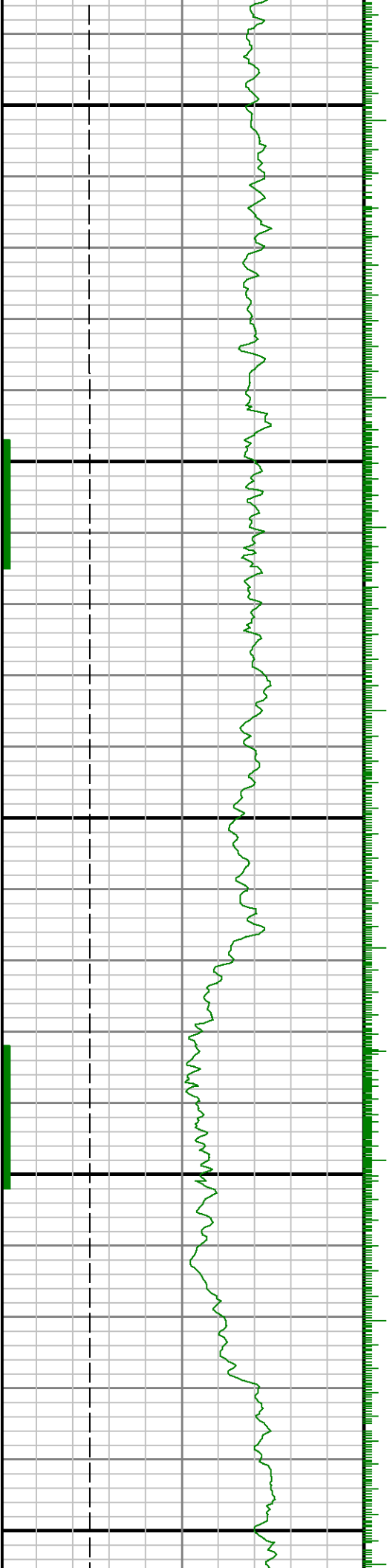
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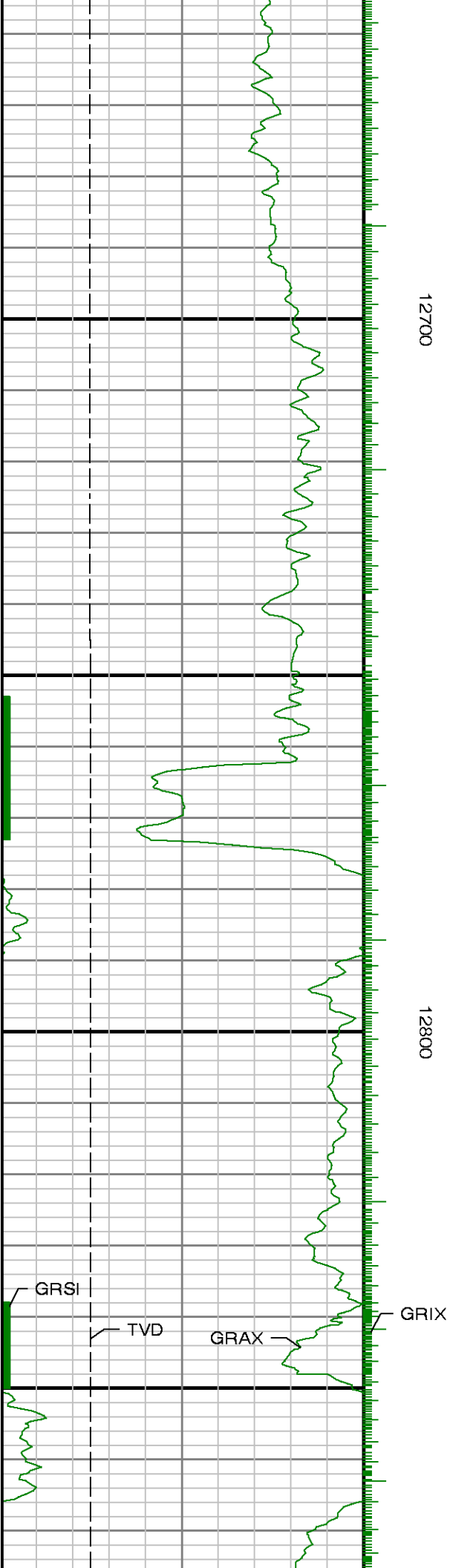


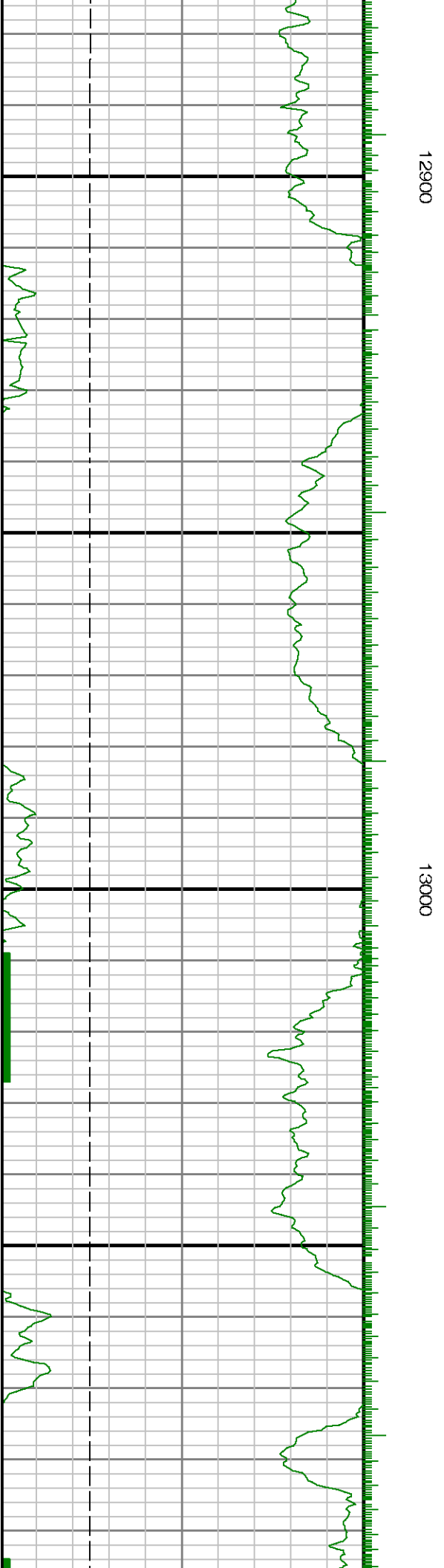


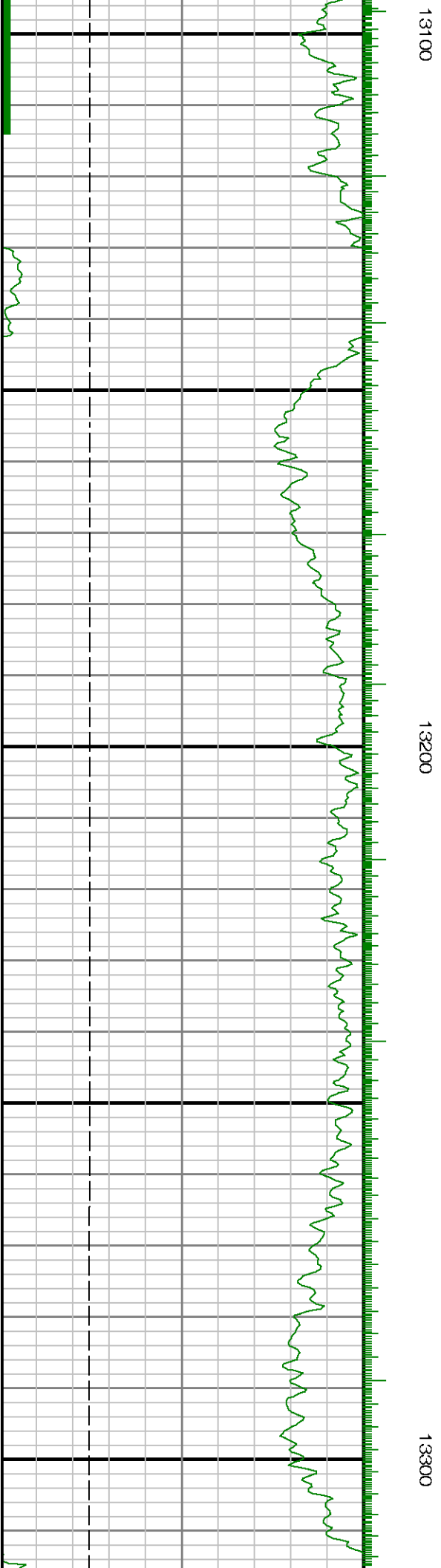
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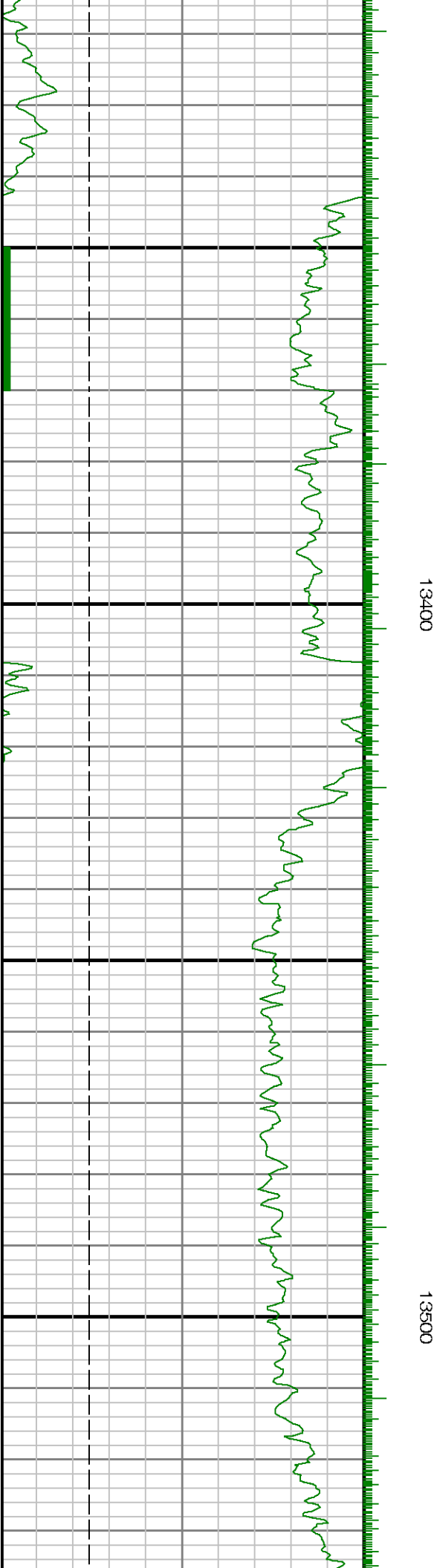
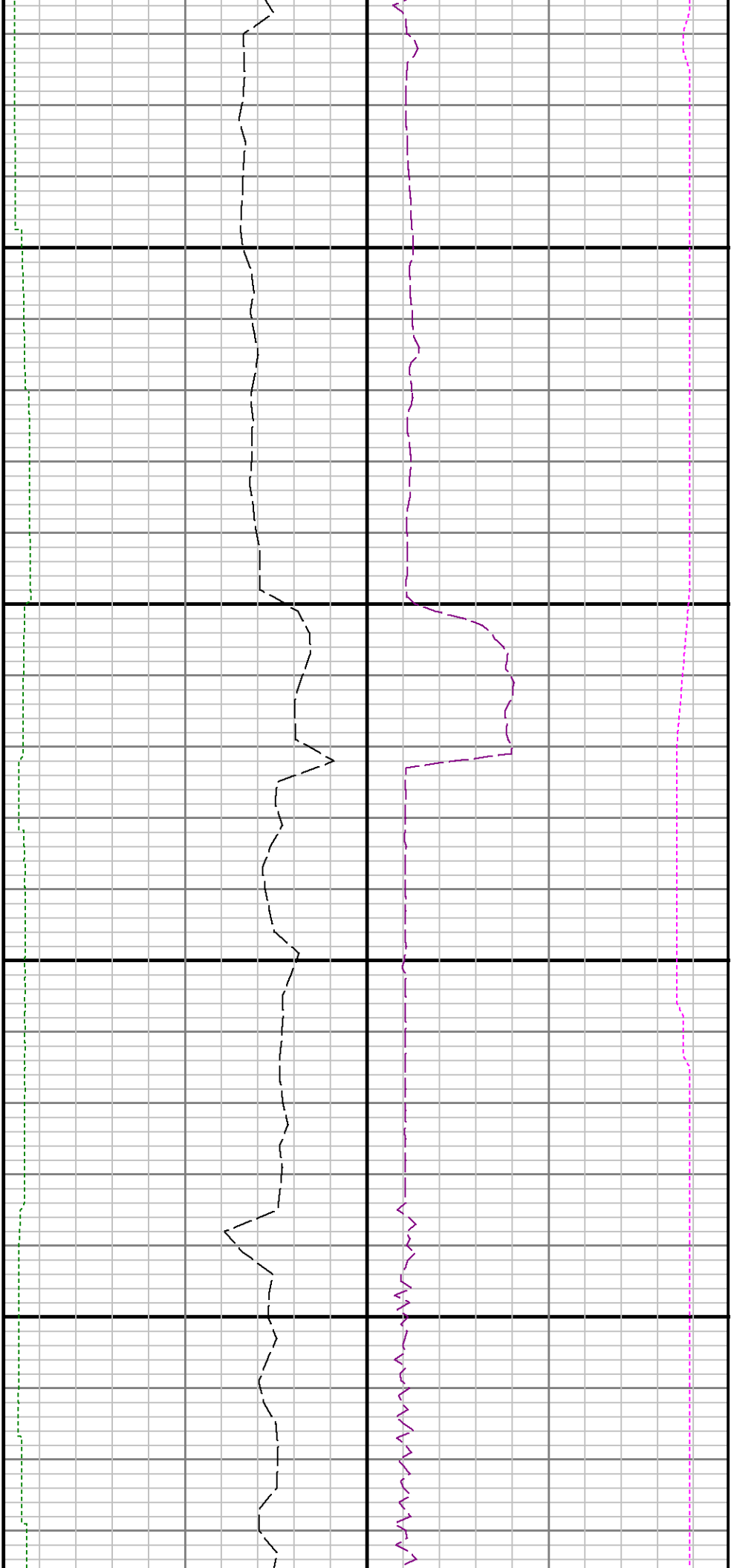
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13600

13700

