



Realtime Log

Natural Formation Evaluation
Gamma Ray

Scale:

1:240

Measured Depth

Company: Bonanza Creek

Well: Pronghorn D-X-9HNB

Field: Weld County

Region: RMD Country: U.S.A.

Status:

Field Print

Surface Location:

Latitude: 40° 24' 42.984" N

Longitude: 104° 13' 21.828" W

Other Services:

Directional
VSS

API Number:

Section: 09 TWN: 5N Range: 61W

Permanent Datum (P.D.): Ground Level Elevation: 4654.00 ft.

Elevations: 17.00 ft. N/A

Log Measured From: Kelly Bushing 17.00 ft. Above P.D.

Depth Reference: Driller's Depth

KB: 17.00 ft. N/A
DF: N/A
GL: 4654.00 ft.

Interval Logged

Dates

Magnetic Field Reference

Top: 5480.0 ft. Date From: 21/Jul/14 Date To: 27/Jul/14 Dip Angle: 67.03 ° Azl Reference North: True

Bottom: 10669.0 ft. Date To: 27/Jul/14 Total Mag to Reference

Spud Date: 21/Jul/14 Field Strength: 52766.1 nT North Correction: 8.24 °

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
8.750 in.	Surface	6567.0 ft.	7.000 in.	32.00 lb/ft	Surface	6548.0 ft.
6.125 in.	6567.0 ft.	10738.0 ft.				

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	5530.0 ft.	10738.0 ft.	8.750 in.	95.0 ft.	0.7 ° / 54.3 °	82.6 ° / 88.9 °
			6.125 in.	95.0 ft.	82.6 ° / 88.9 °	91.3 ° / 92.4 °
					/	/
					/	/
					/	/
					/	/
					/	/
					/	/

Mud Record

Deviation Record

Type	From	To	Hole Size	Interval	Inc / Az (Start)	Inc / Az (End)
Water Based	5530.0 ft.	10738.0 ft.	8.750 in.	95.0 ft.	0.7 ° / 54.3 °	82.6 ° / 88.9 °
			6.125 in.	95.0 ft.	82.6 ° / 88.9 °	91.3 ° / 92.4 °
					/	/
					/	/
					/	/
					/	/
					/	/
					/	/

Acquisition System Software Version

Other

Advantage	2.20U4	Rig / Contractor:	Cade 22	/ Bonanza Creek
PATS	6.4.1.34	Job No:	6502503	/ D&E
		District / Unit:	RMD	

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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	4.000	Steerable	N/A	N/A	511.0	5530.0	21/Jul/14	17:58	22/Jul/14	23:18	17.5
2	2	2	8.750	Tri-Cone	4.000	Steerable	5480.0	6499.0	5530.0	6568.0	23/Jul/14	07:14	24/Jul/15	6:56	18.7
3	3	3	6.125	PDC	4.000	Steerable	6499.0	10669.0	6568.0	10738.0	25/Jul/14	12:59	07/Jul/15	09:20	31.1

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Nicholas Gerard	20/July/14	27/Jul/14	Nate Krehmeyer	20/July/14	27/Jul/14	Kenneth Moten	20/July/14	24/July/14
			Josh Nunn	20/July/14	27/Jul/14	Mary Ronat	25/Jul/14	27/Jul/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/July/14	2	5529.0	KCL Water Based	9.3	38	7.6	N/A	1/94	Mud Tanks	9000	N/A
25/July/14	3	6567.0	KCL Water Based	8.9	39	8.4	N/A	1/94	Mud Tanks	8000	N/A

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg	API
GRIX	Gamma Ray Data Density	points
GRSI	Gamma Ray Sliding Indicator	unitless
GRTX	Gamma Ray Time Since Drilled	mins
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft./hr.
TCDX	Downhole Temperature	degF
TVD	True Vertical Depth	ft.
WOBA	Surface Weight on Bit, 1.0 ft. Avg.	klbs

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft.)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	11958754	Directional	67.19	6.750	3.250
1	SRIG	12554661	Gamma	63.82	6.750	3.250
2	DIR	11958754	Directional	58.69	6.750	3.250
2	SRIG	12554661	Gamma	55.32	6.750	3.250
3	DIR	1185175	Directional	72.27	4.750	2.813
3	SRIG	10585205	Gamma	68.89	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

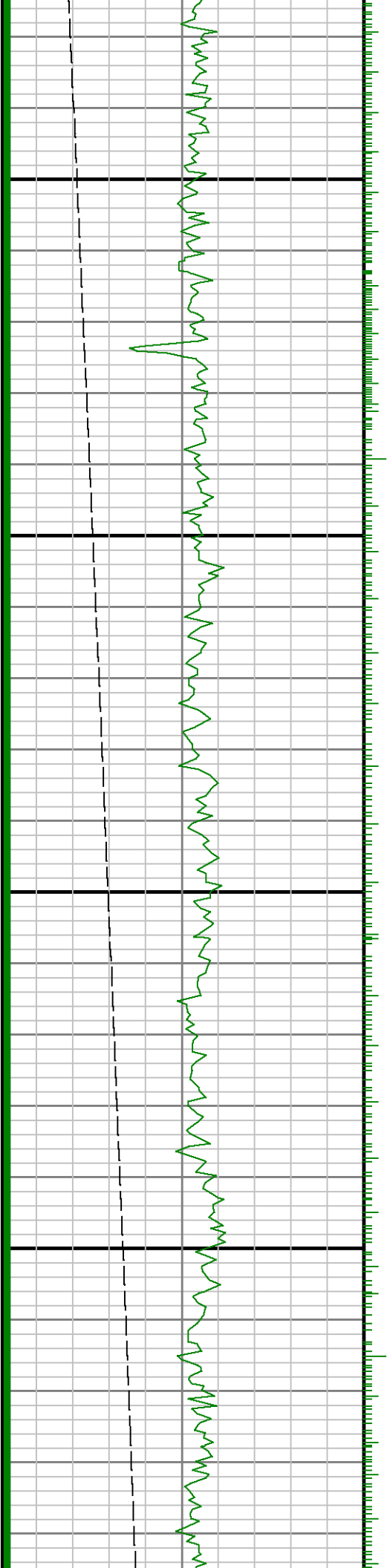
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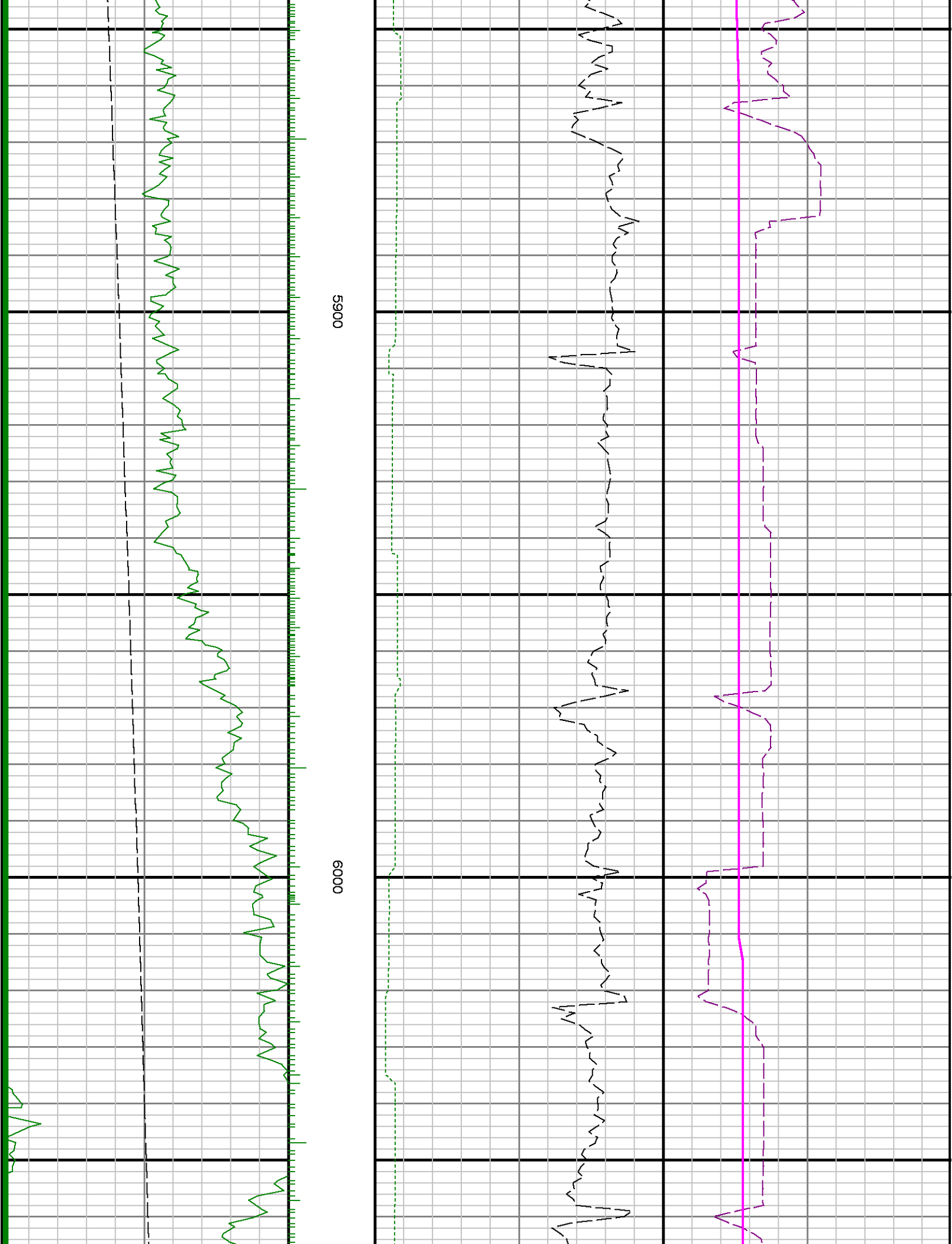
- 1) Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes INTEQ. Due to a lack of control by Baker Hughes INTEQ logging engineers depth calibration and measurements could not be independently verified.
- 2) A sliding indicator is shown on the left side of track 1 as a heavy line. This indicator has been shifted to the Gamma Ray sensor offset to correspond with Gamma Ray data aquired while sliding.
- 3) Baker Hughes INTEQ runs 1 and 2 utilized a 6.75 inch NaviGamma (Directional and Gamma Ray) tool behind a 8.75 inch bit and steerable assembly from 511 to 6568 feet MD (511 to 6111 feet TVD).
- 4) Baker Hughes INTEQ run 3 utilized a 4.75 inch NaviGamma (Directional and Gamma Ray) tool behind a 6.125 inch bit and steerable assembly from 6568 to 10738 feet MD (6111 to 6104 feet TVD).

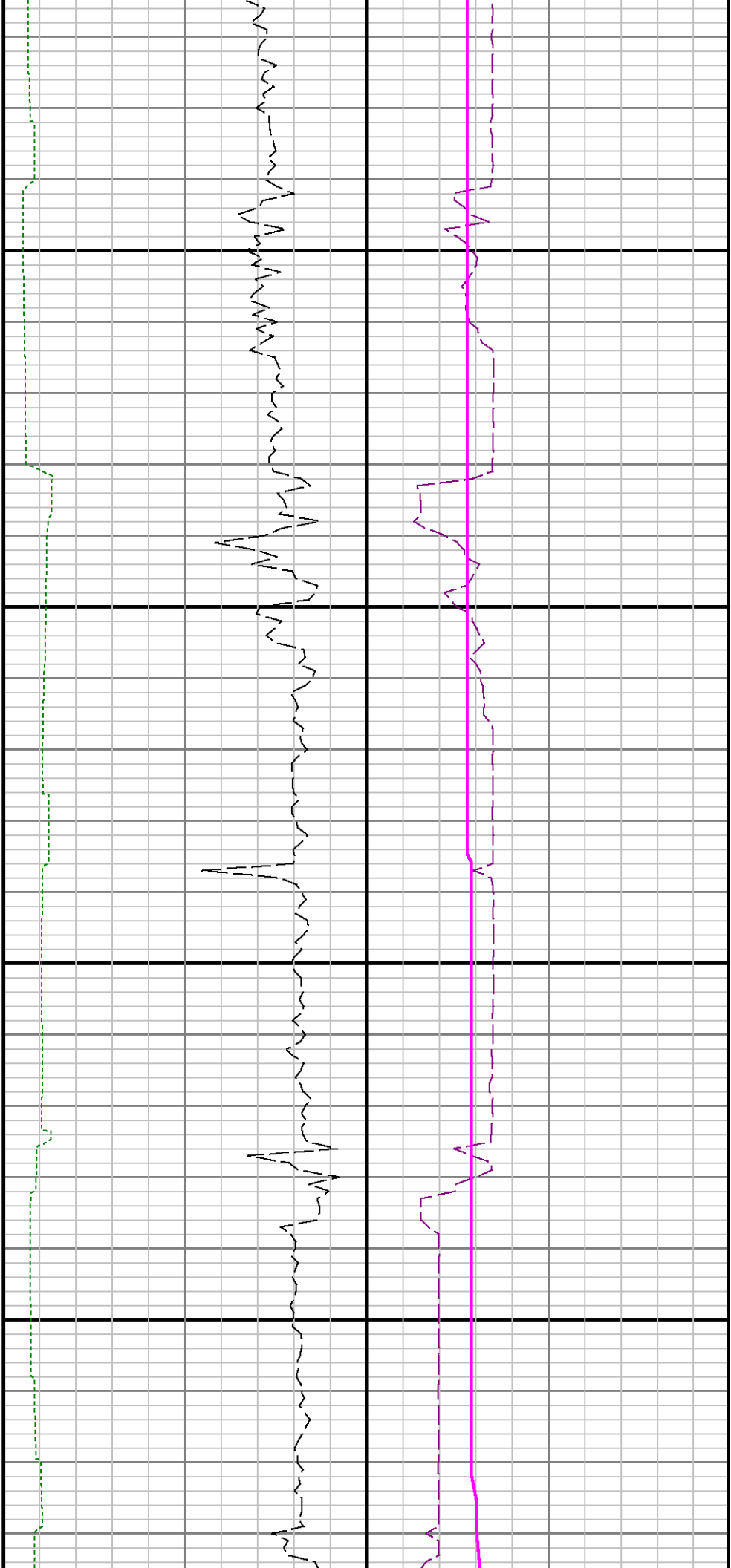


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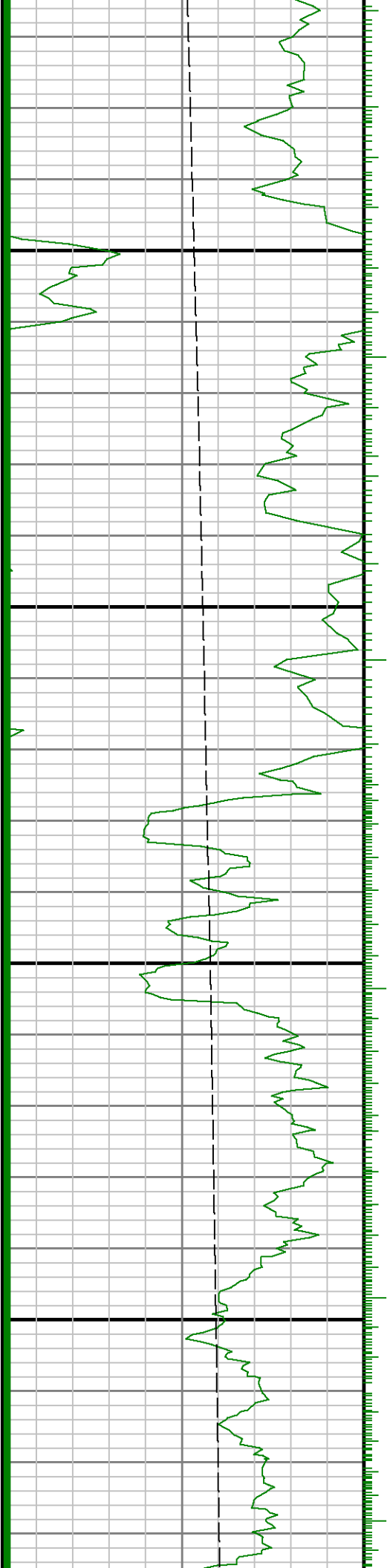


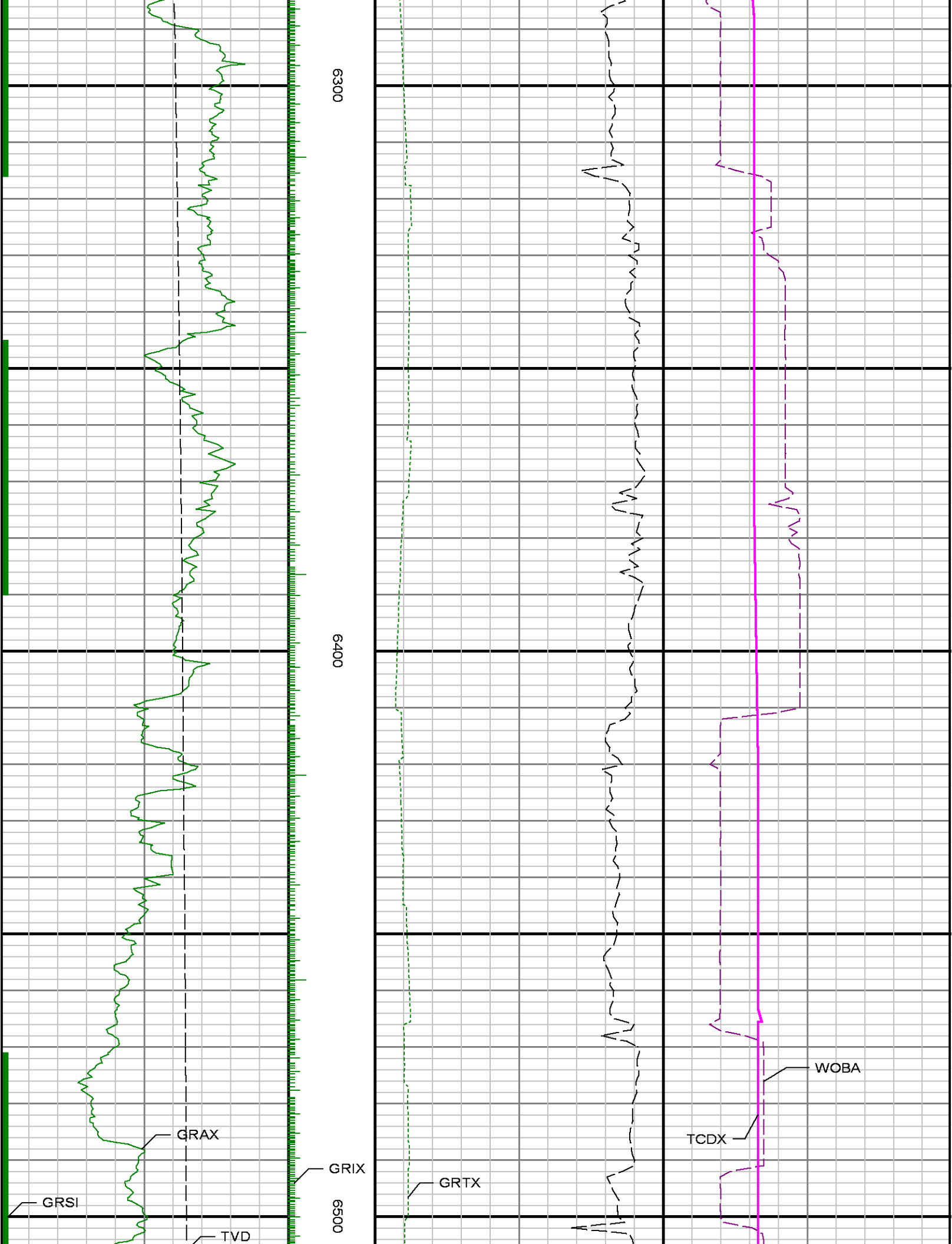


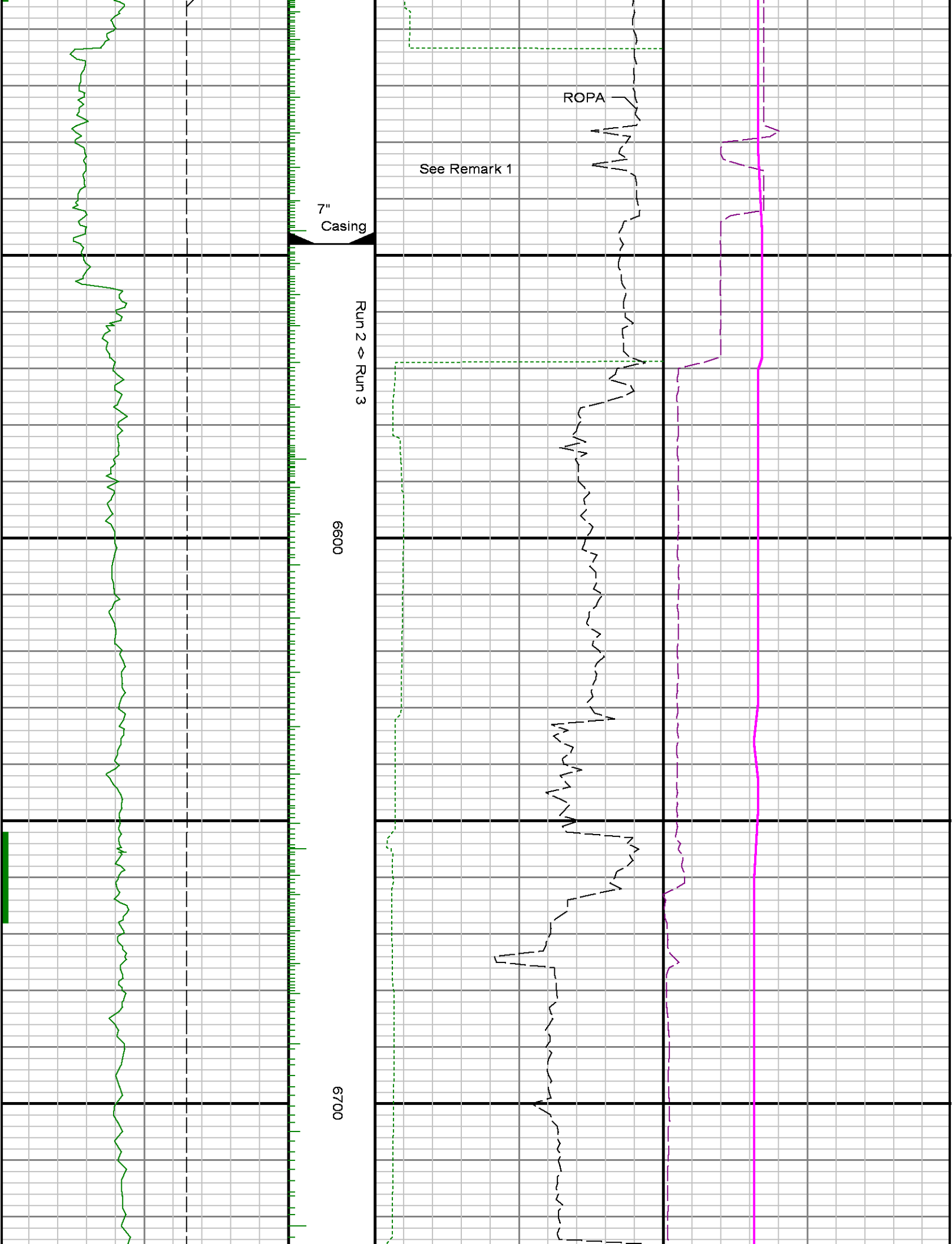


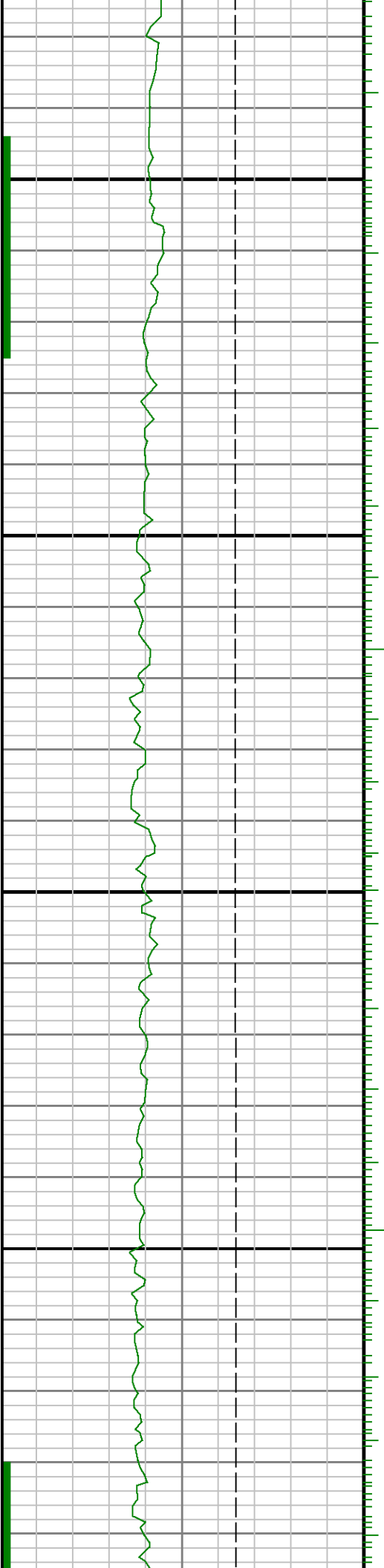
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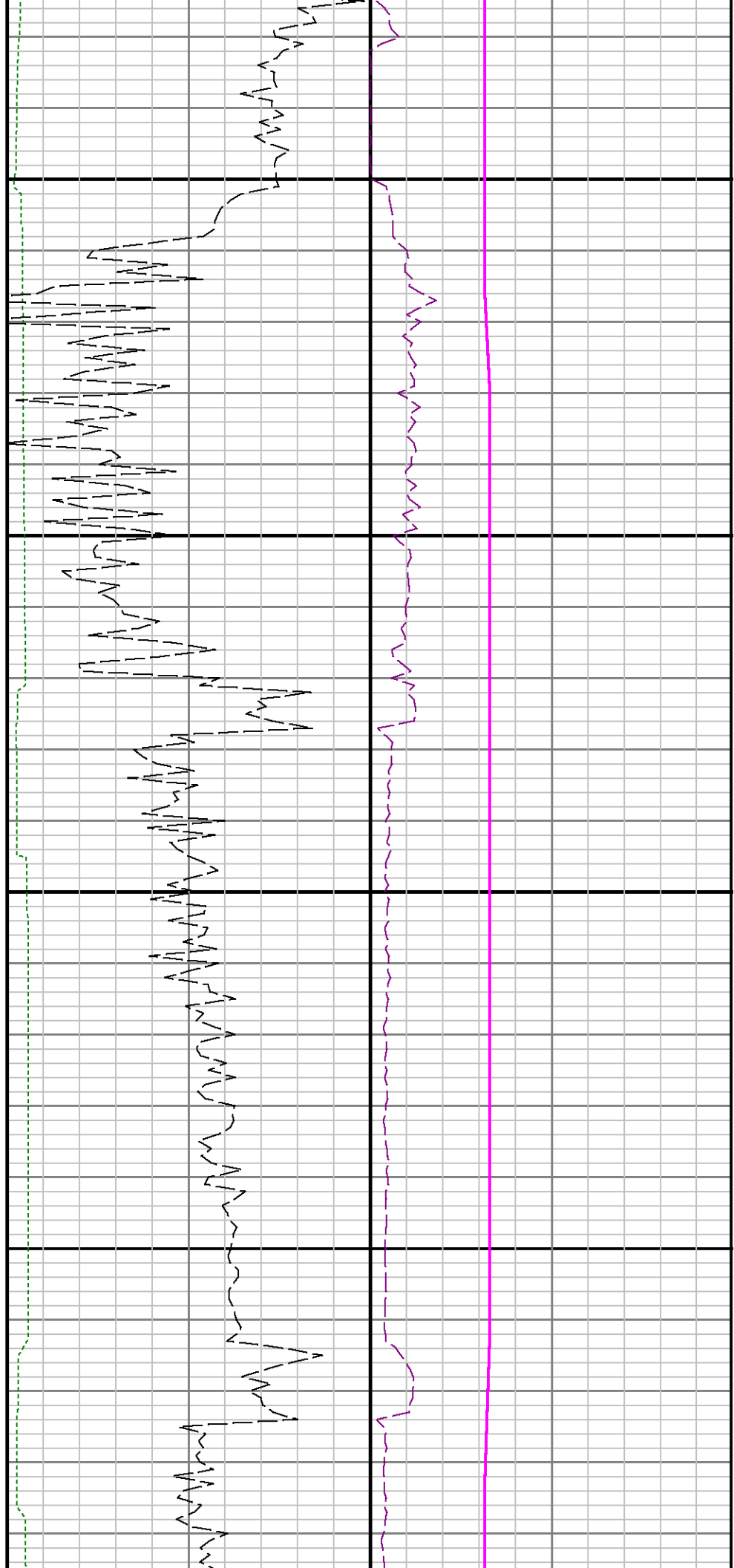


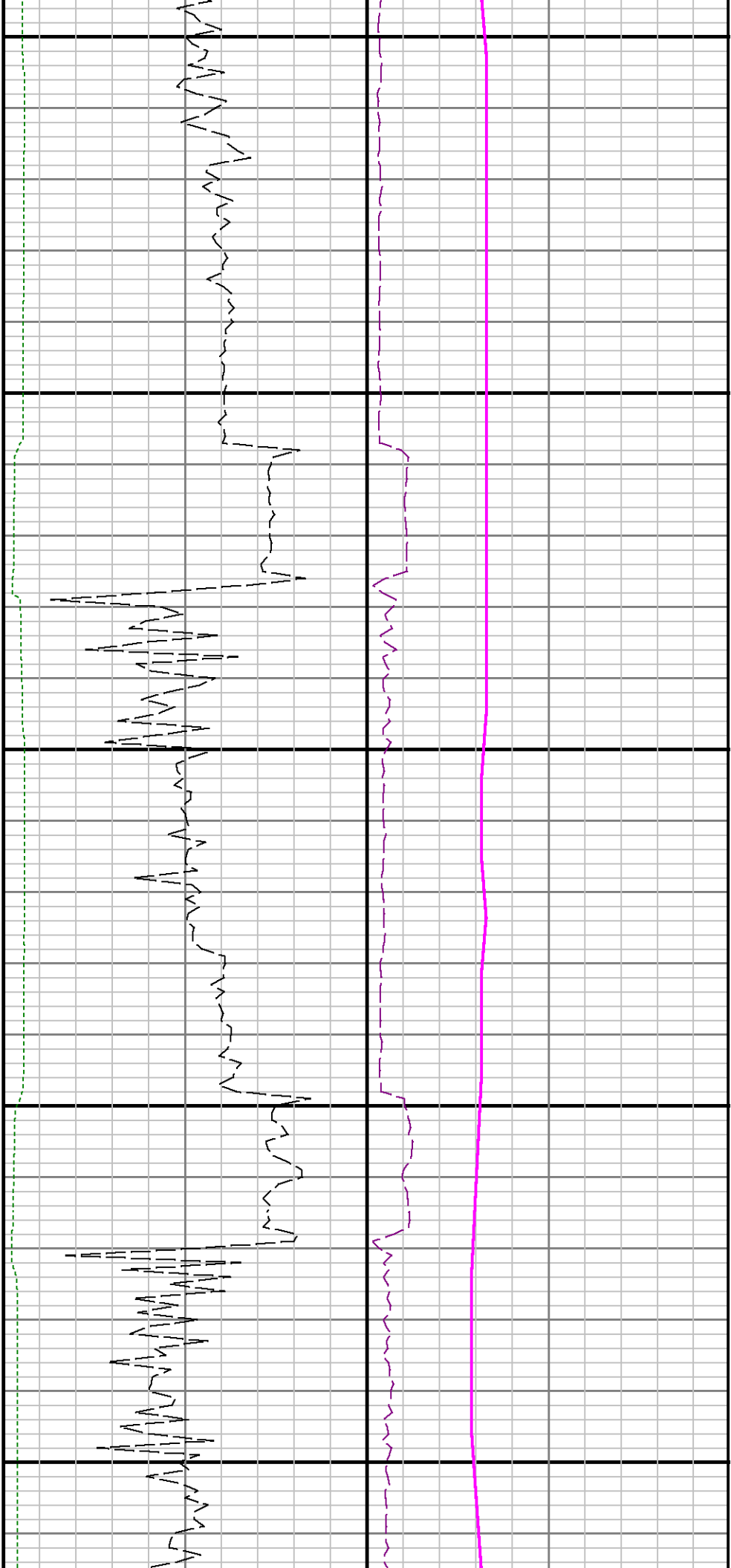




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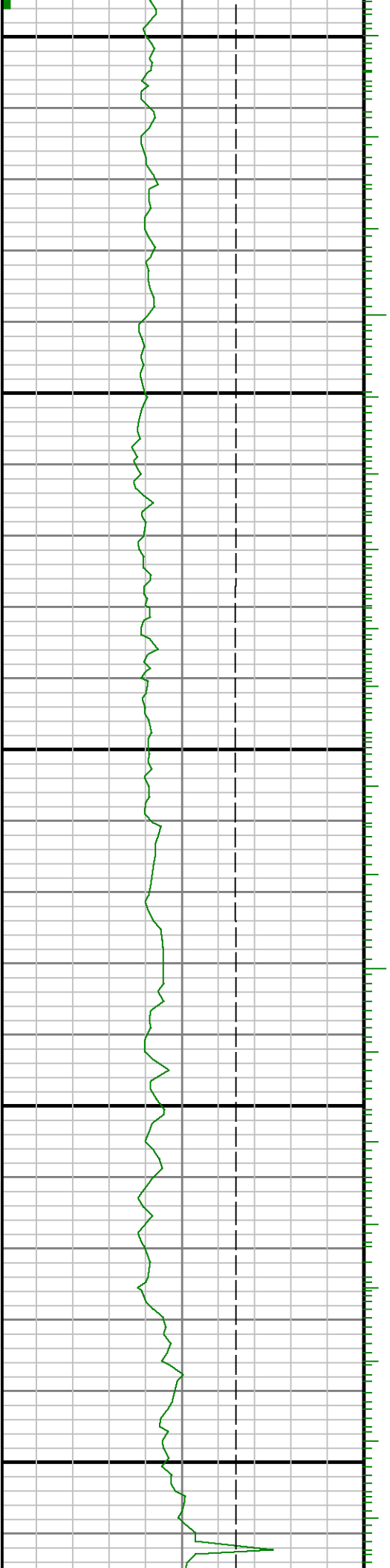
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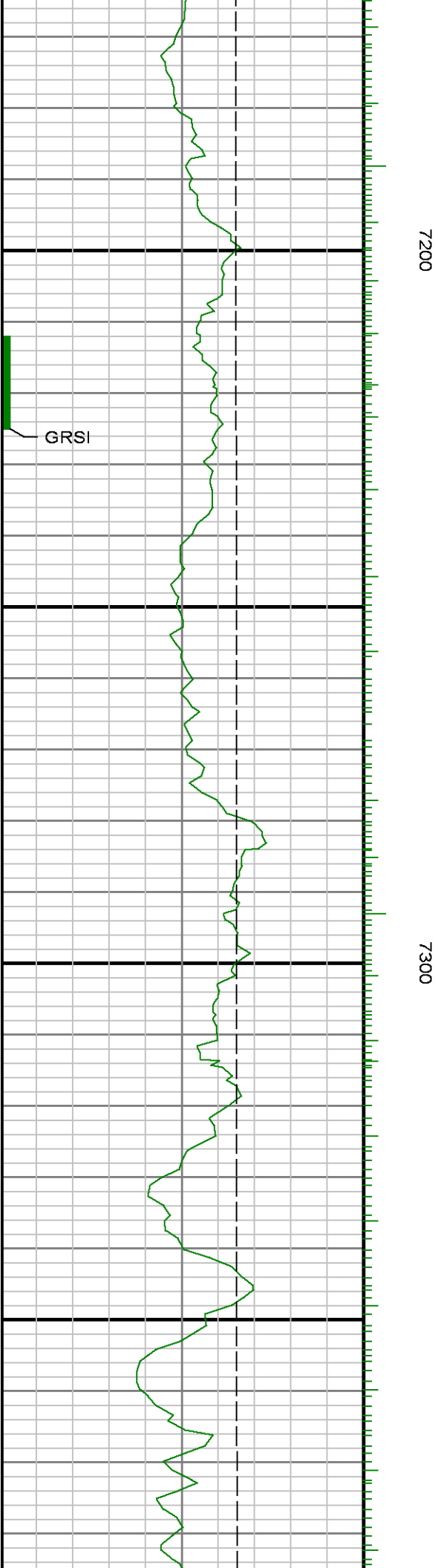
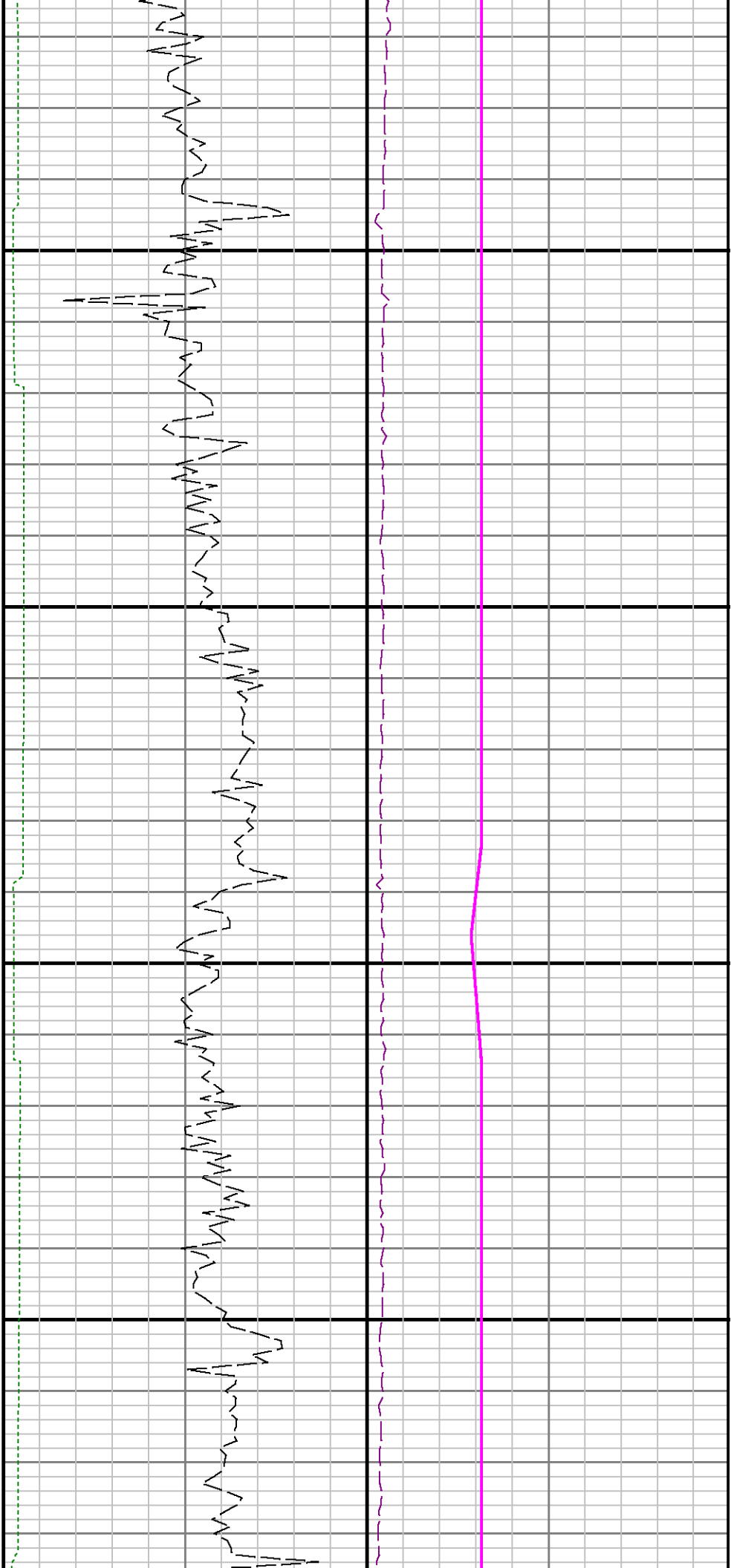


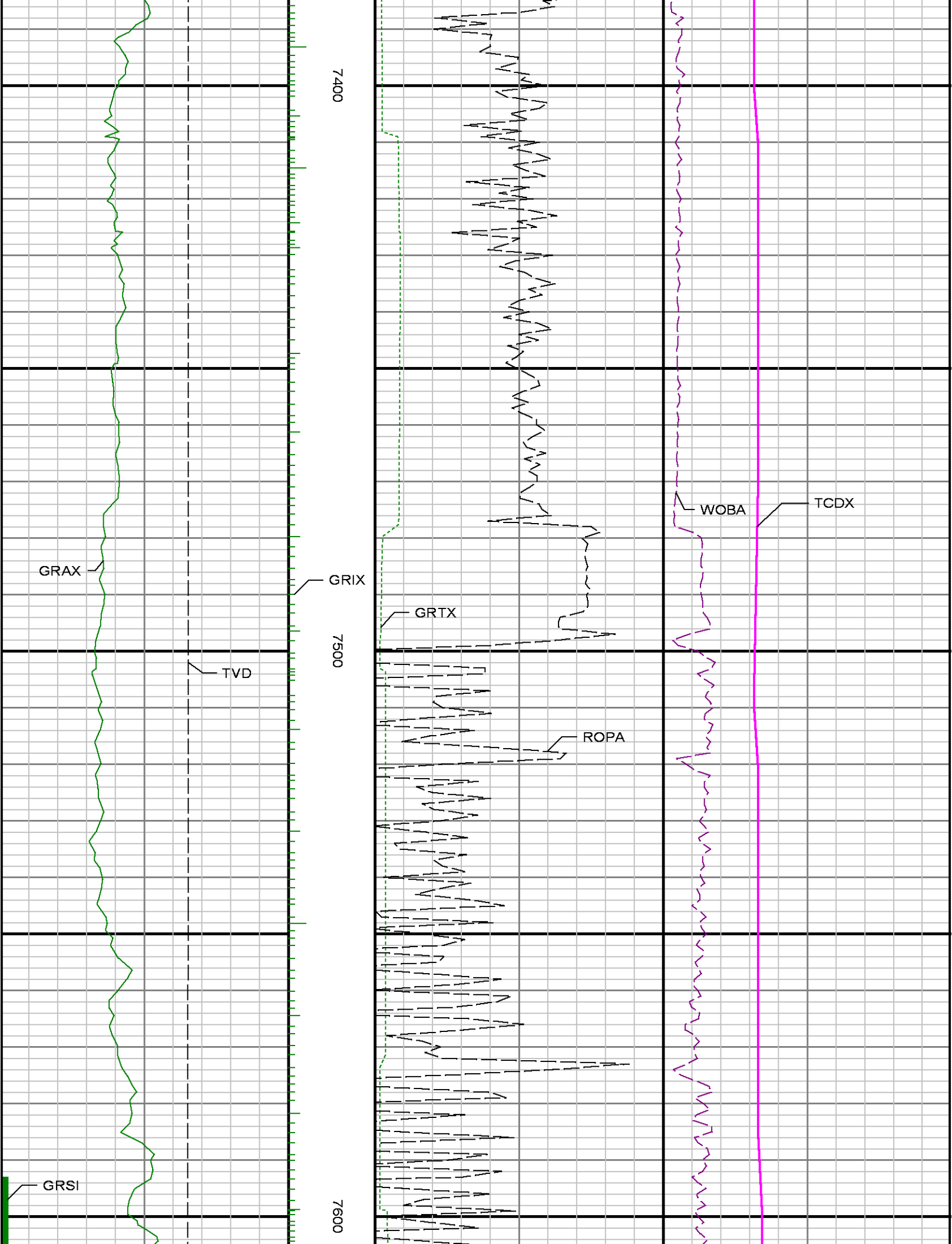


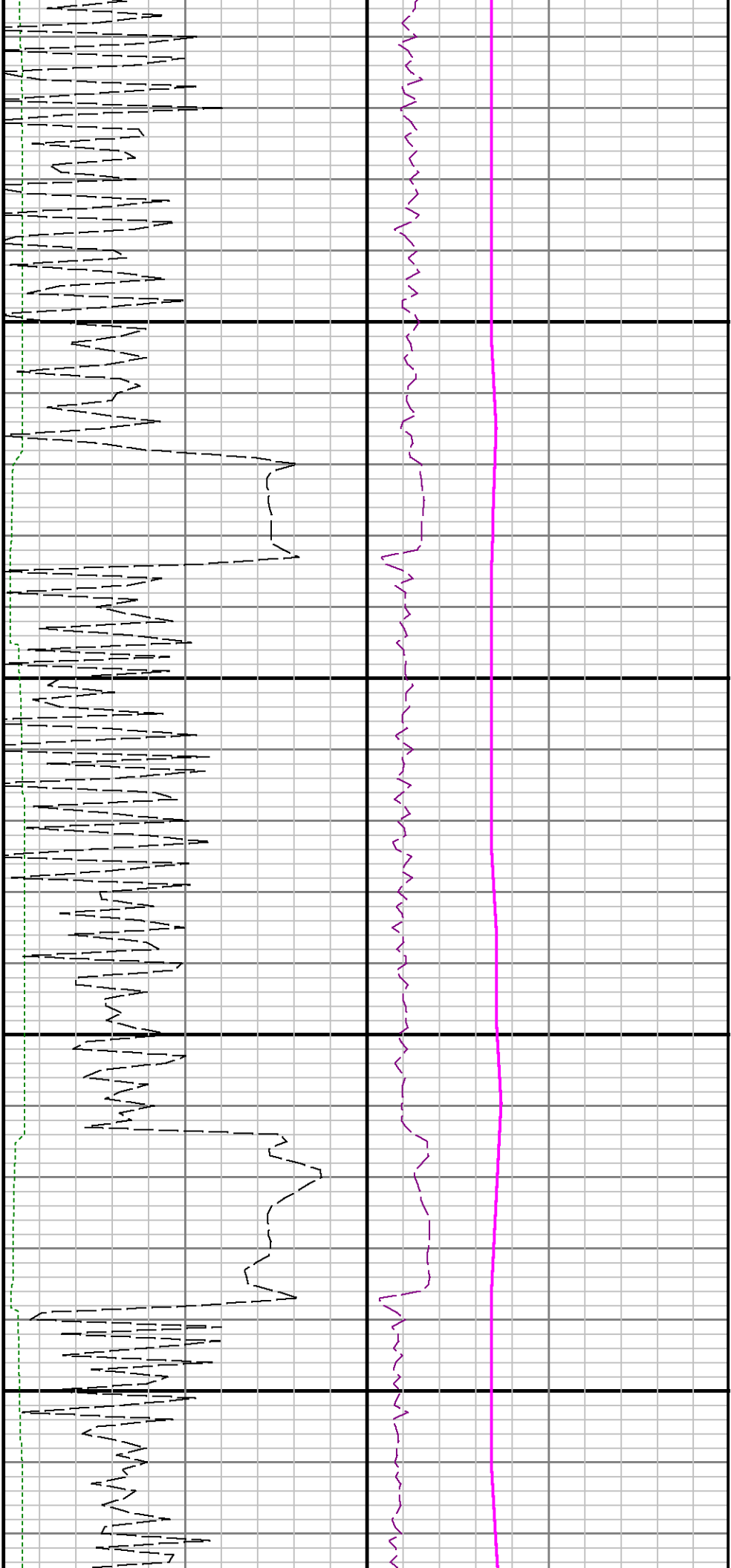
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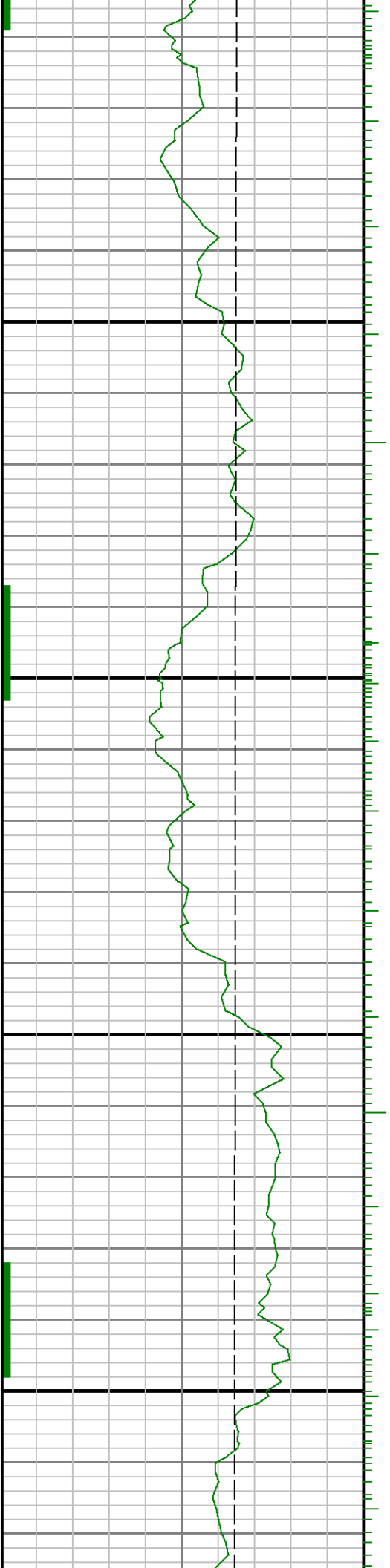


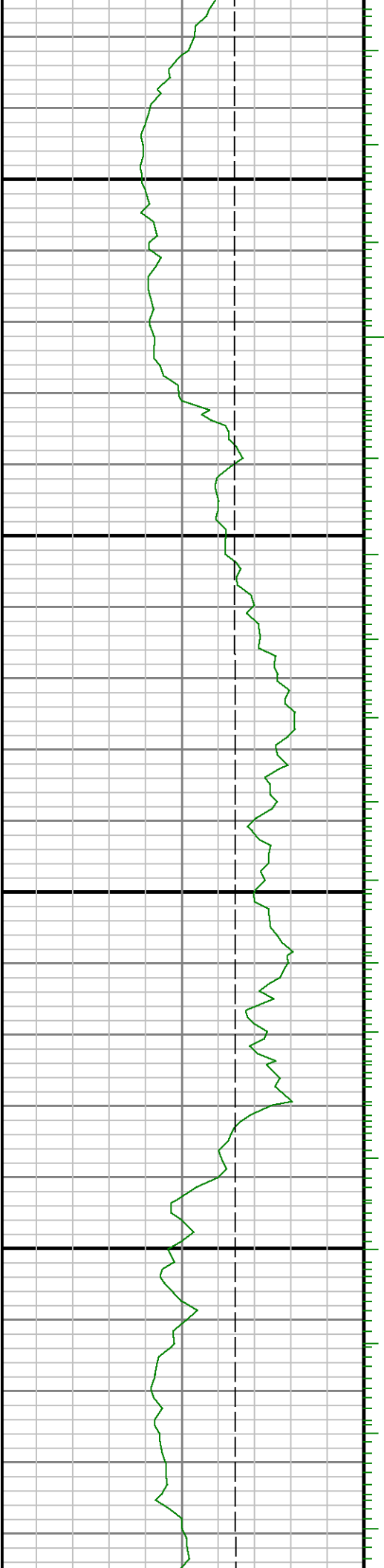




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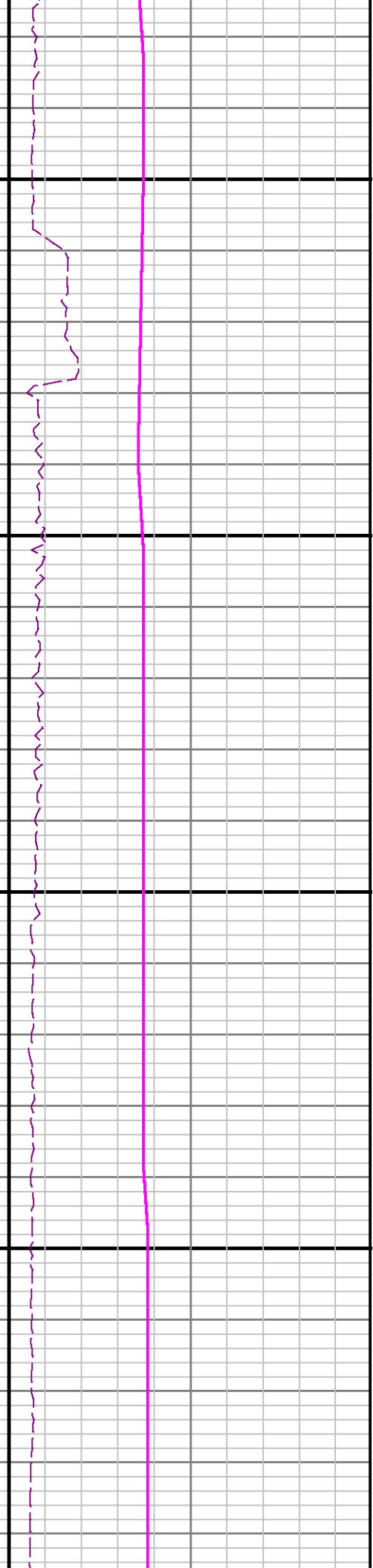
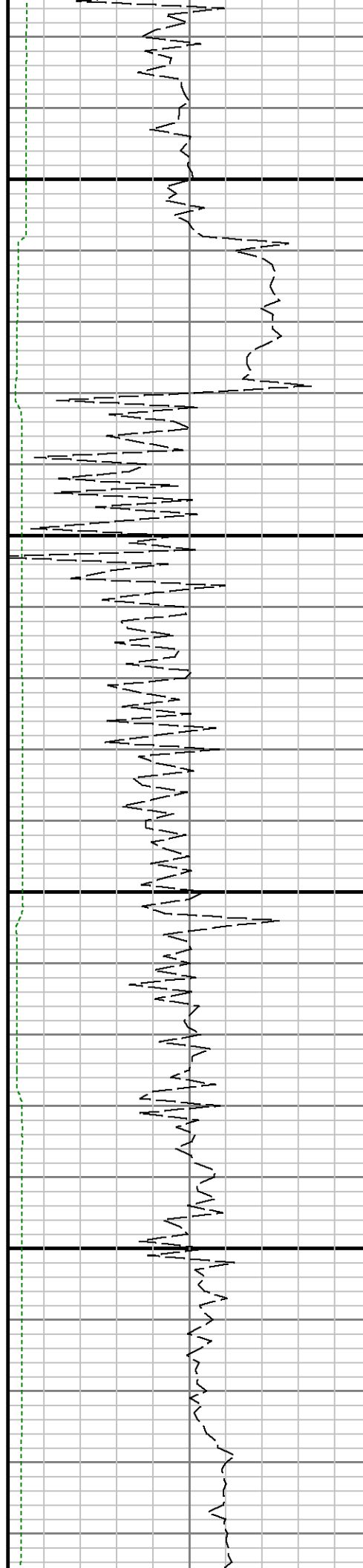
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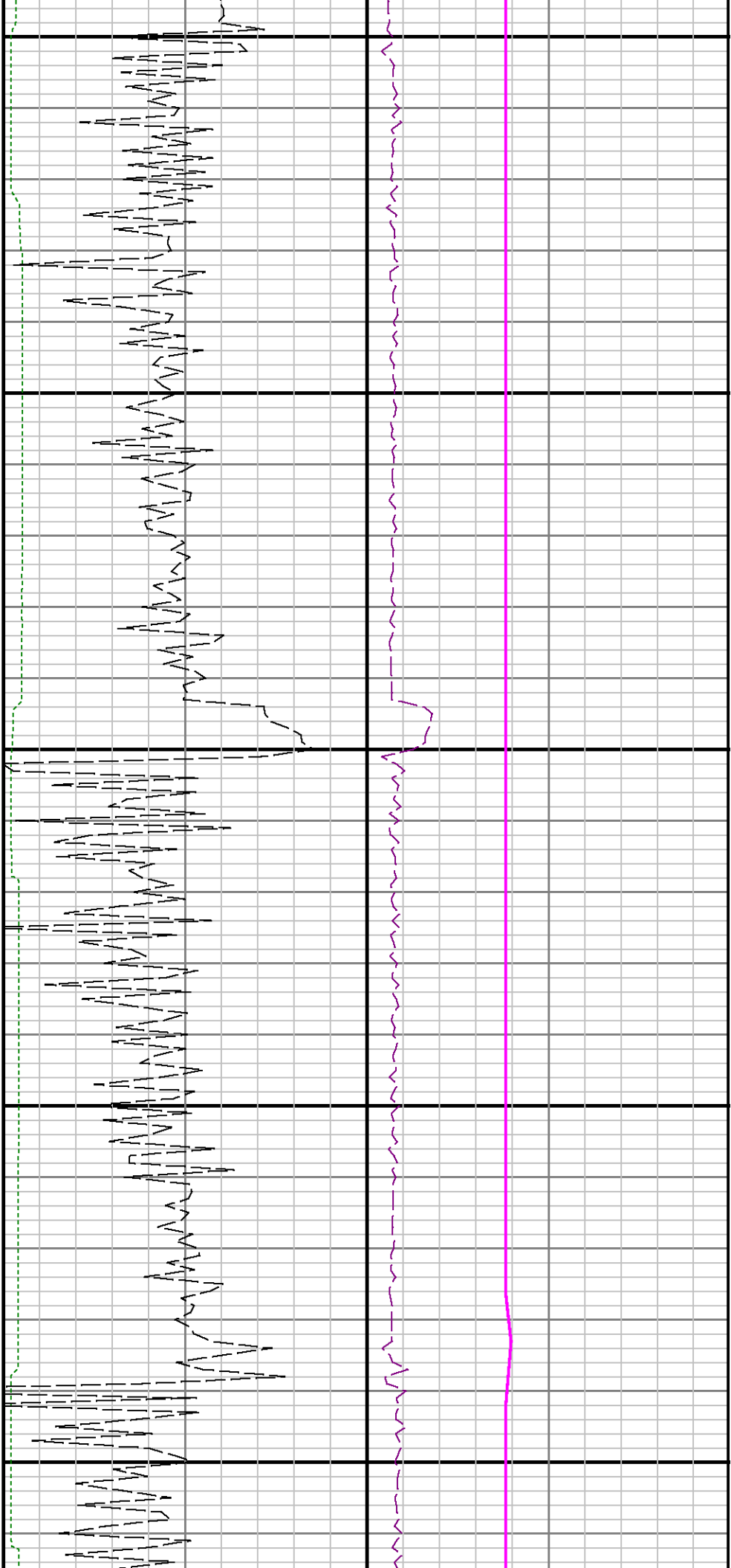




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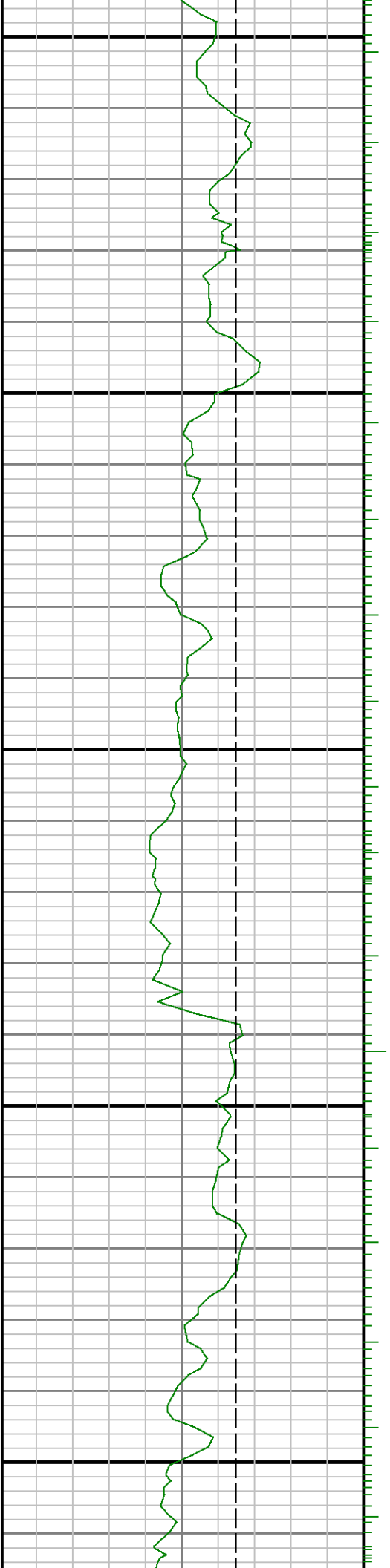
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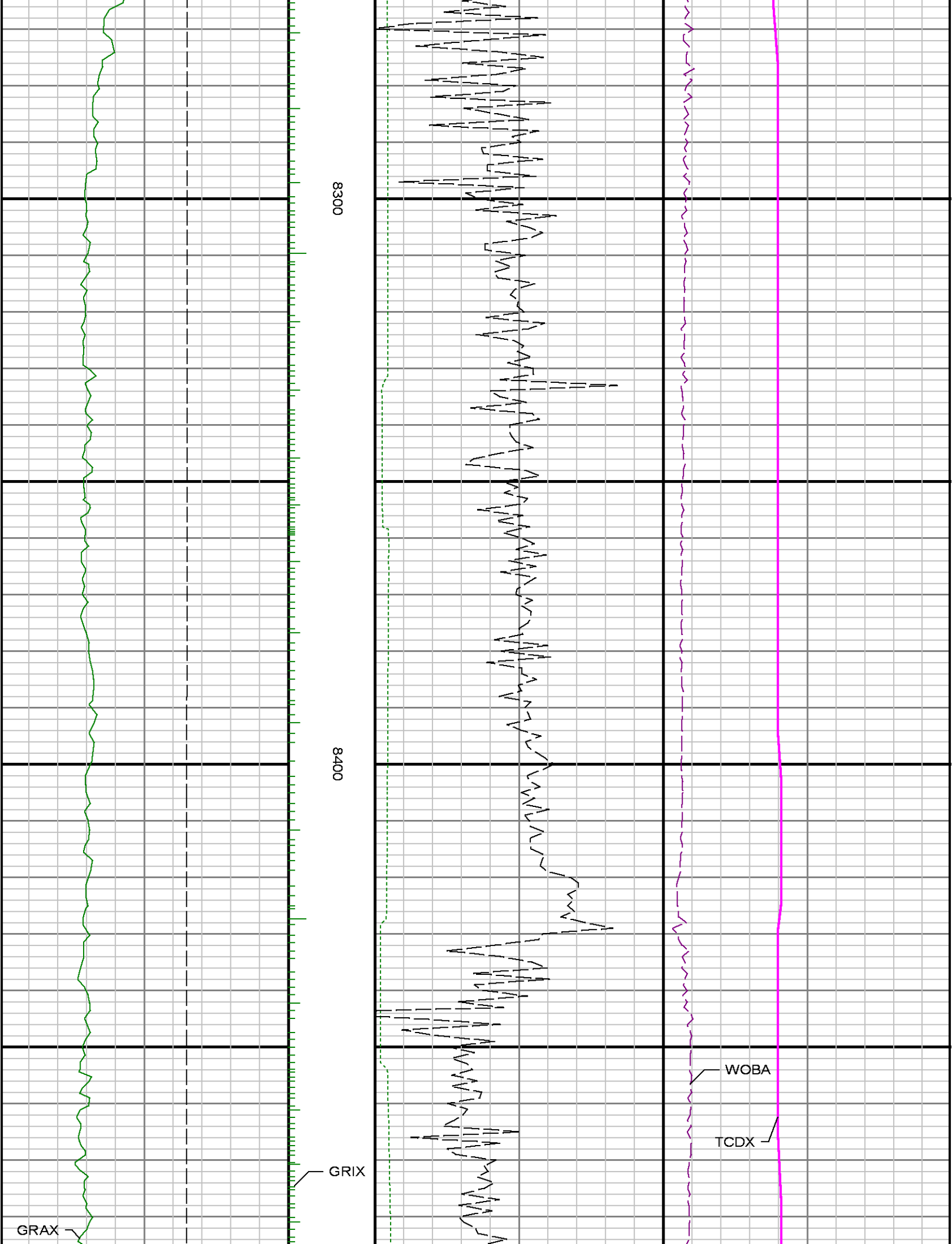


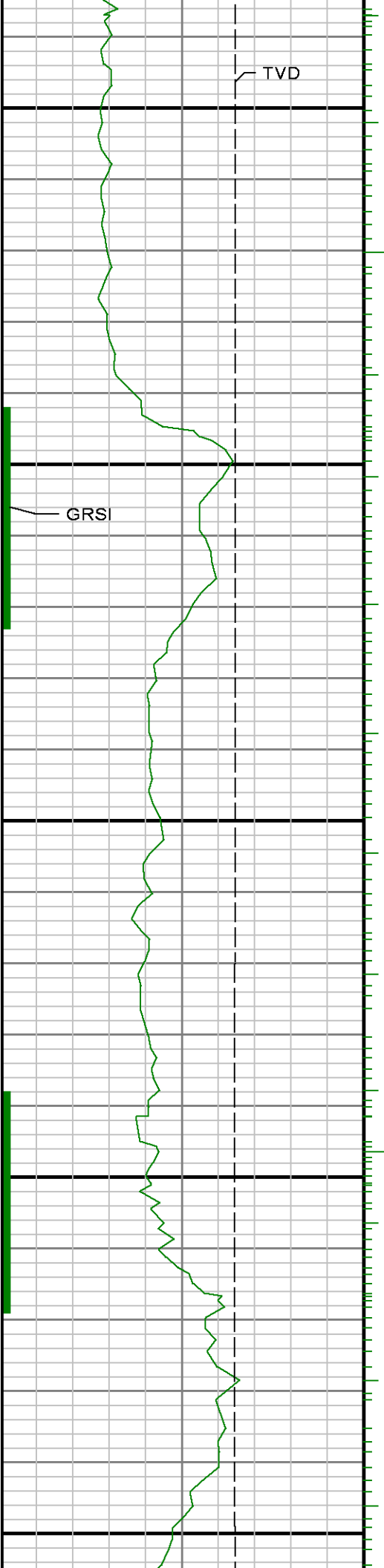


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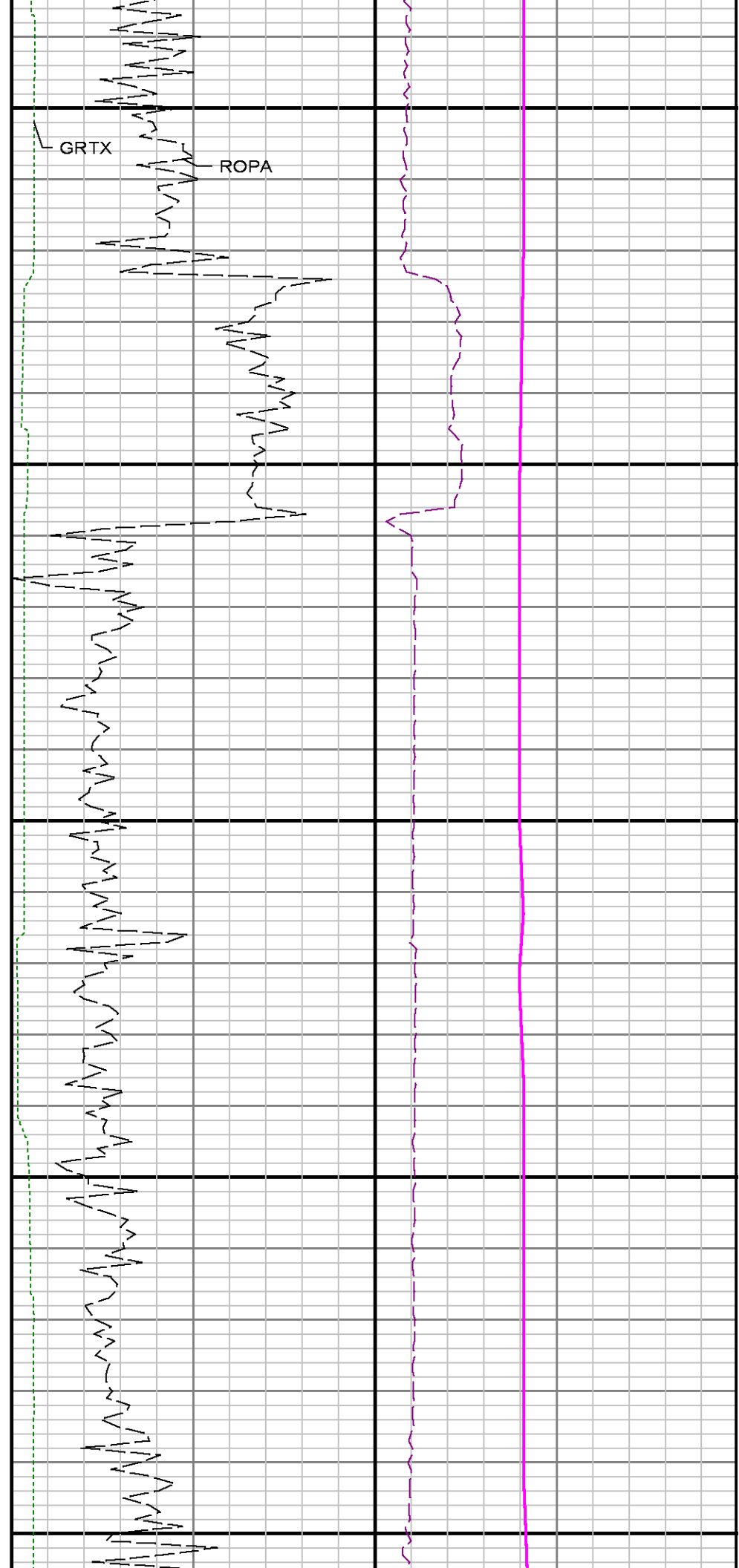


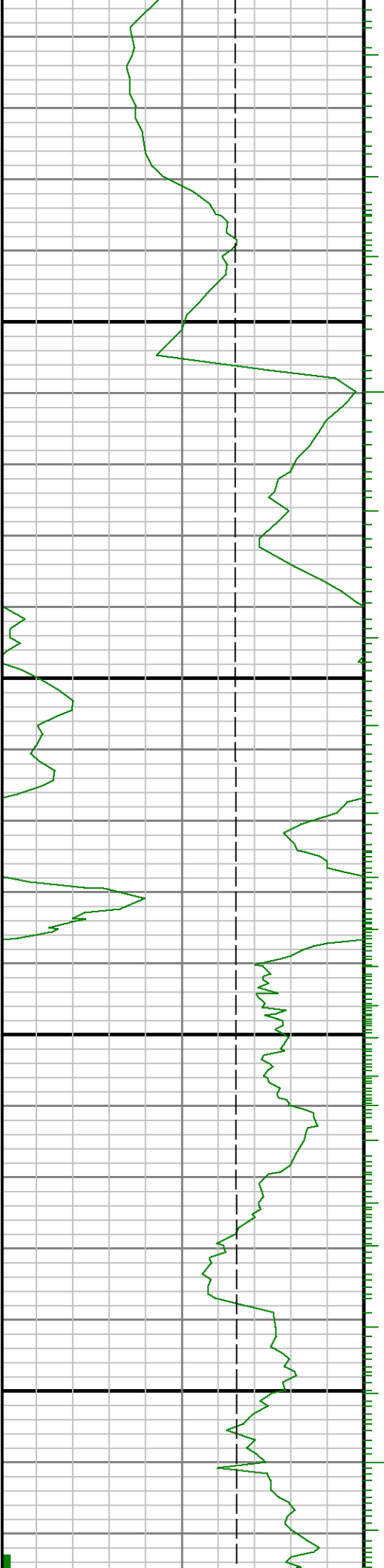


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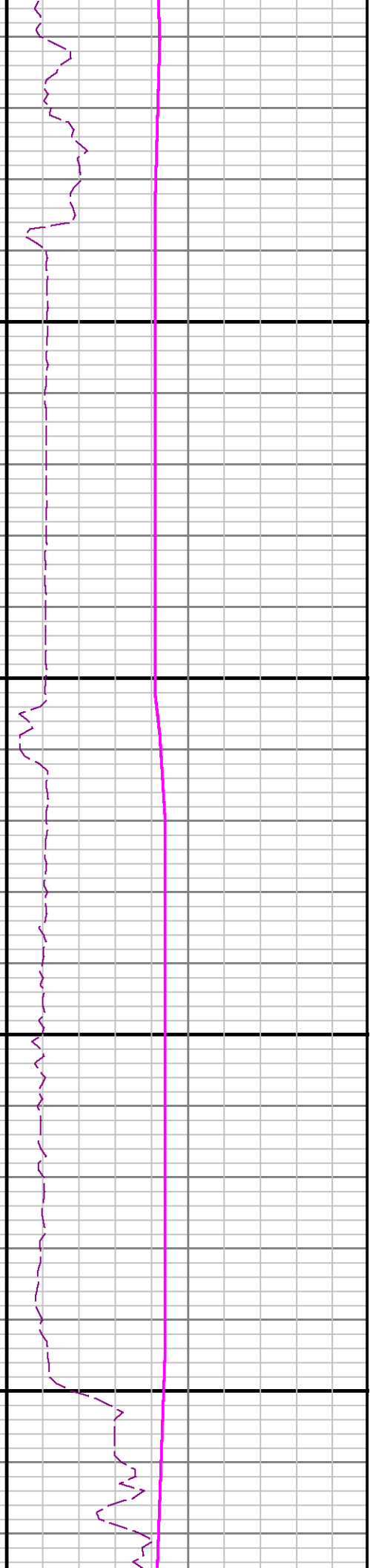
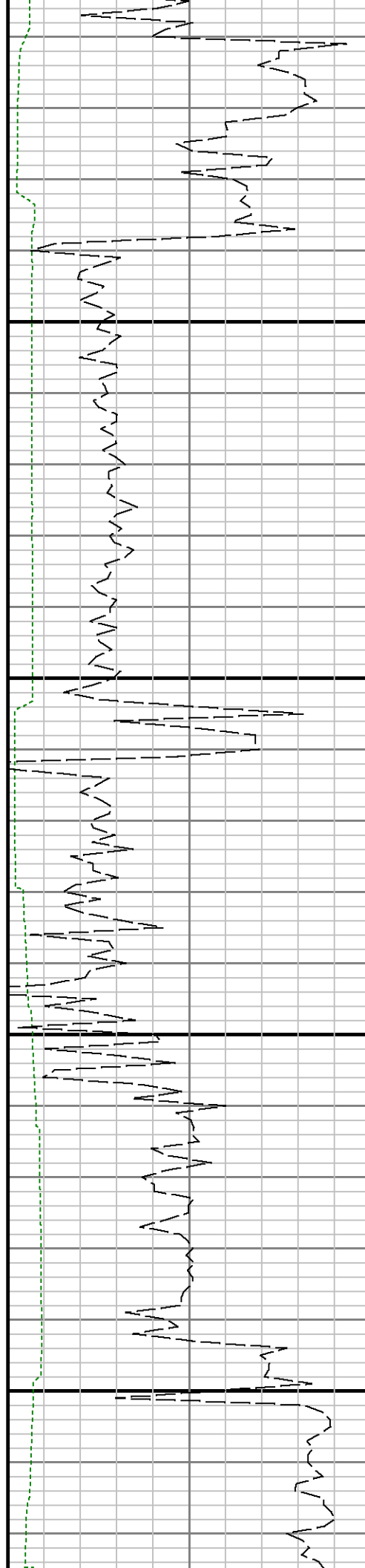
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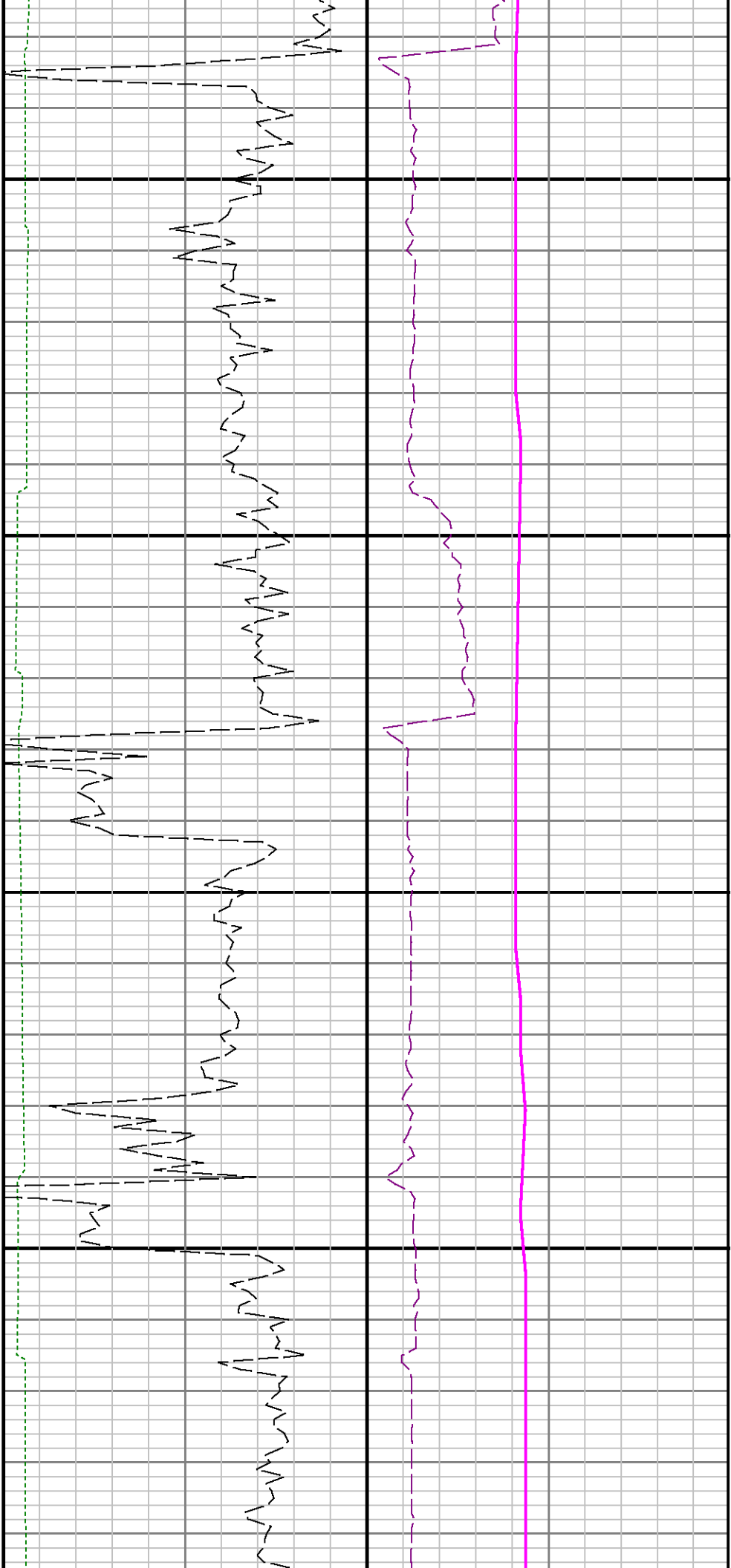




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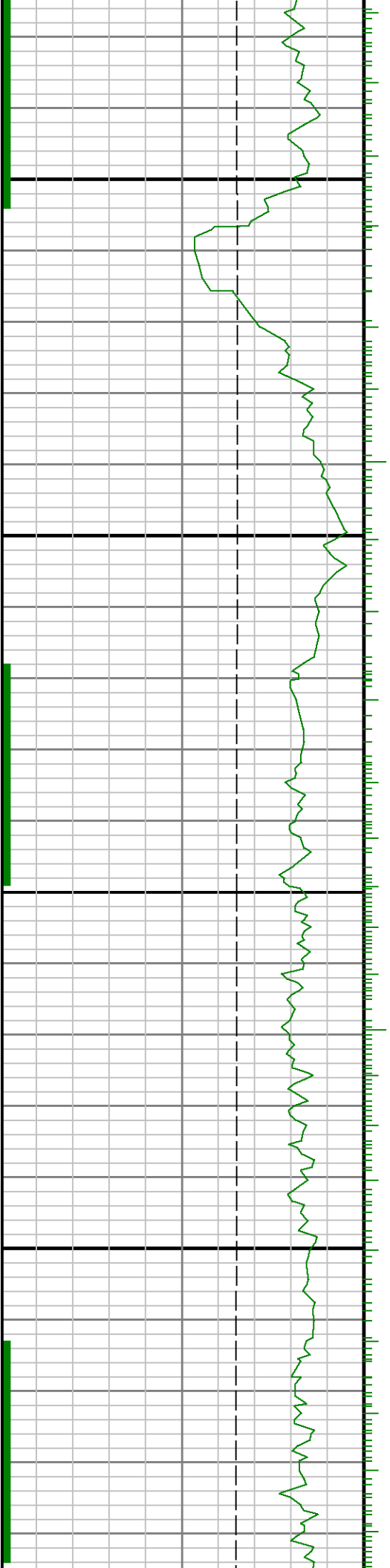
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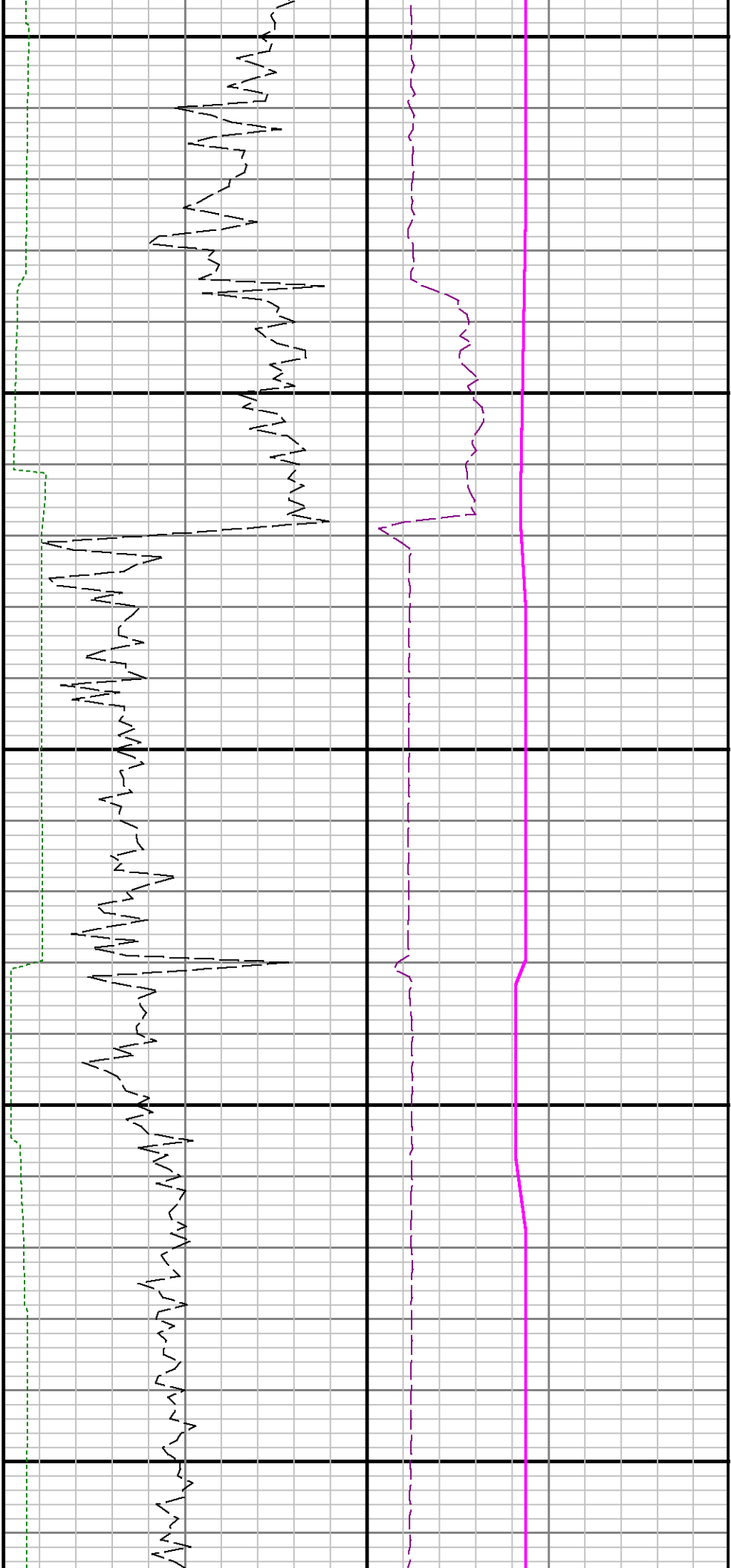




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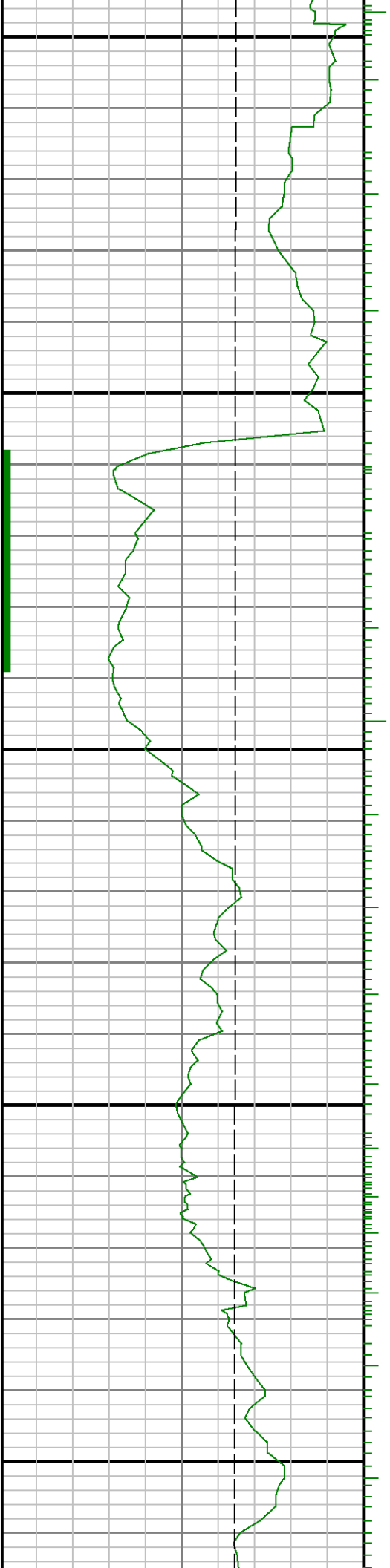
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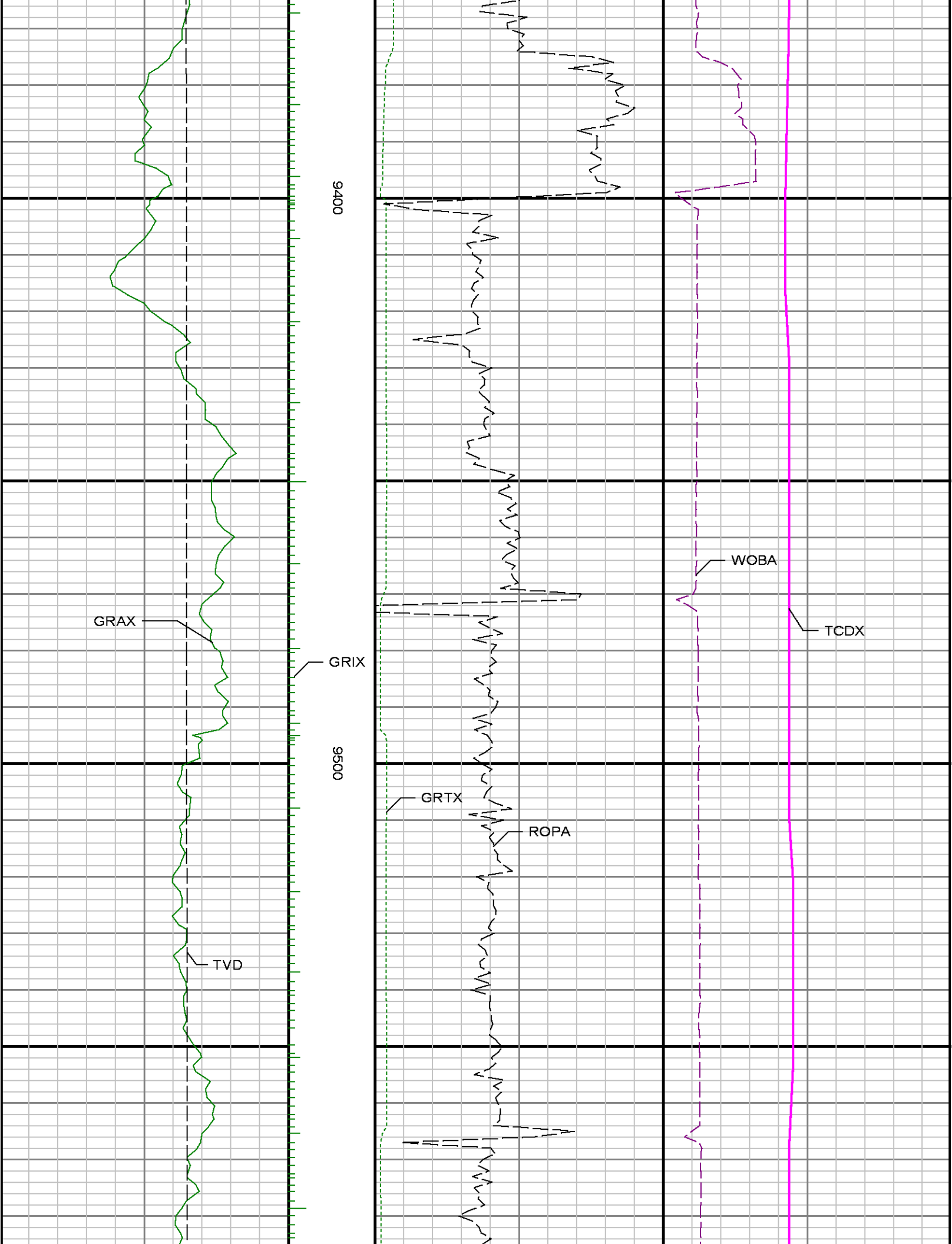


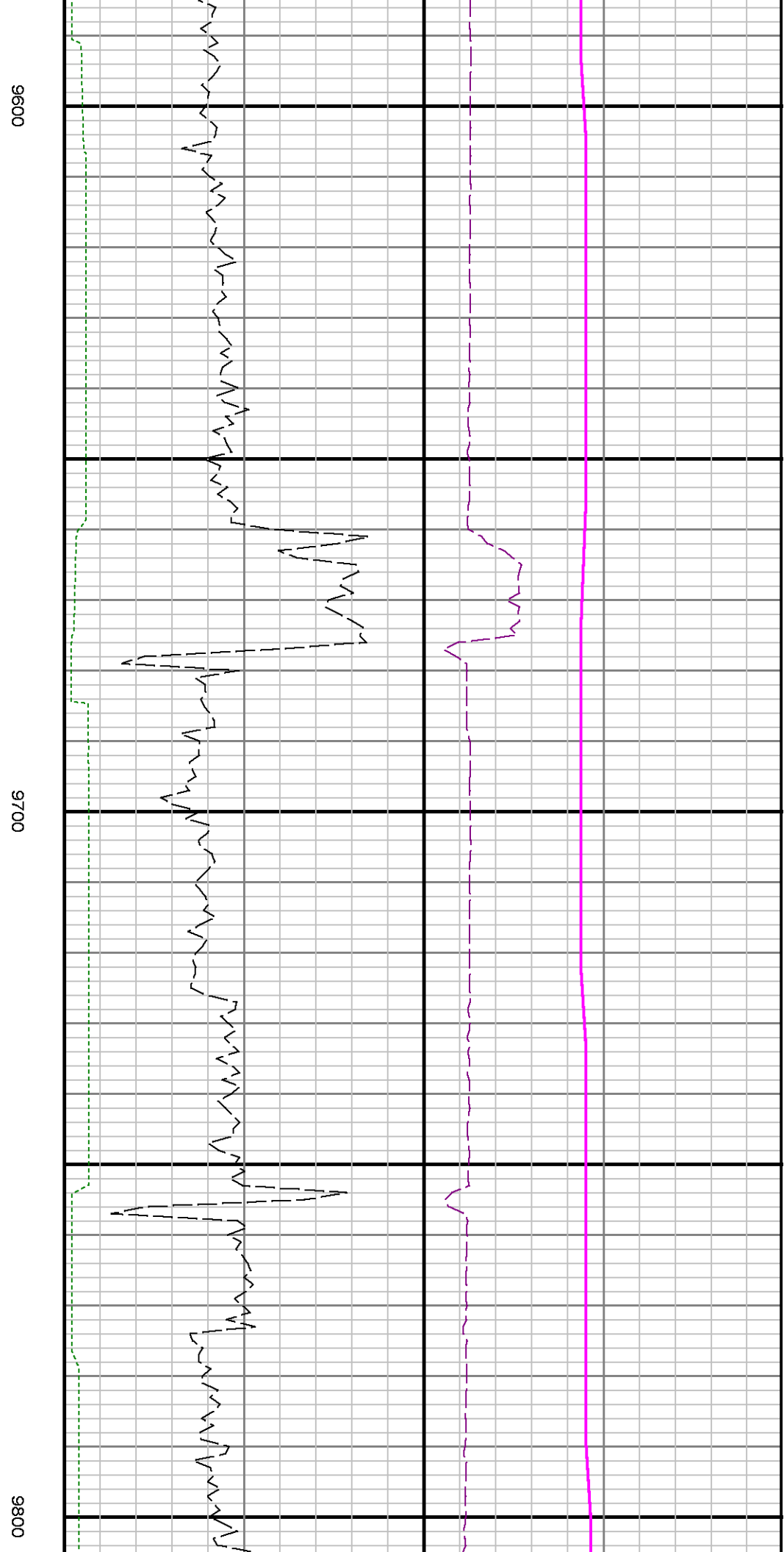
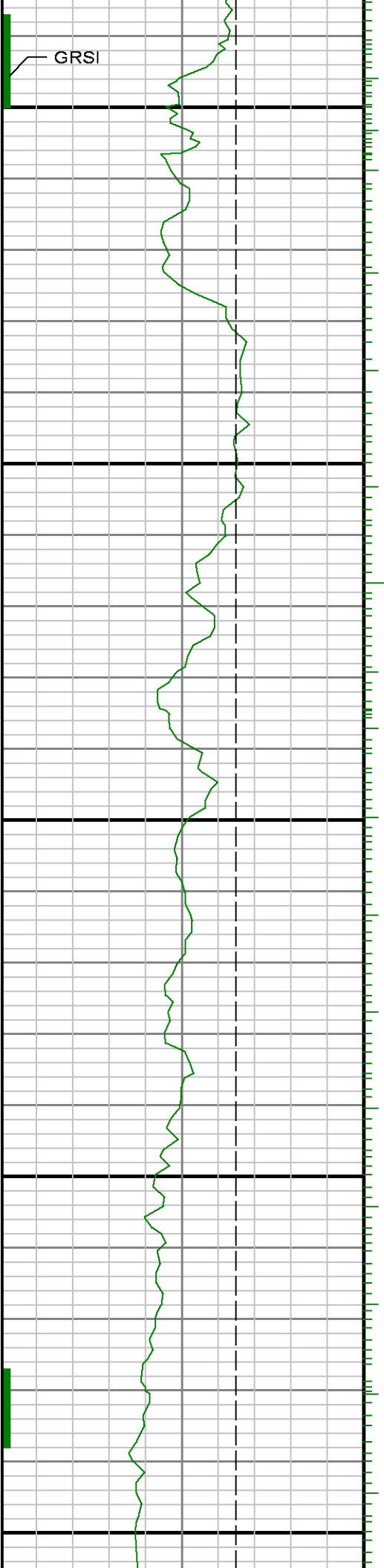


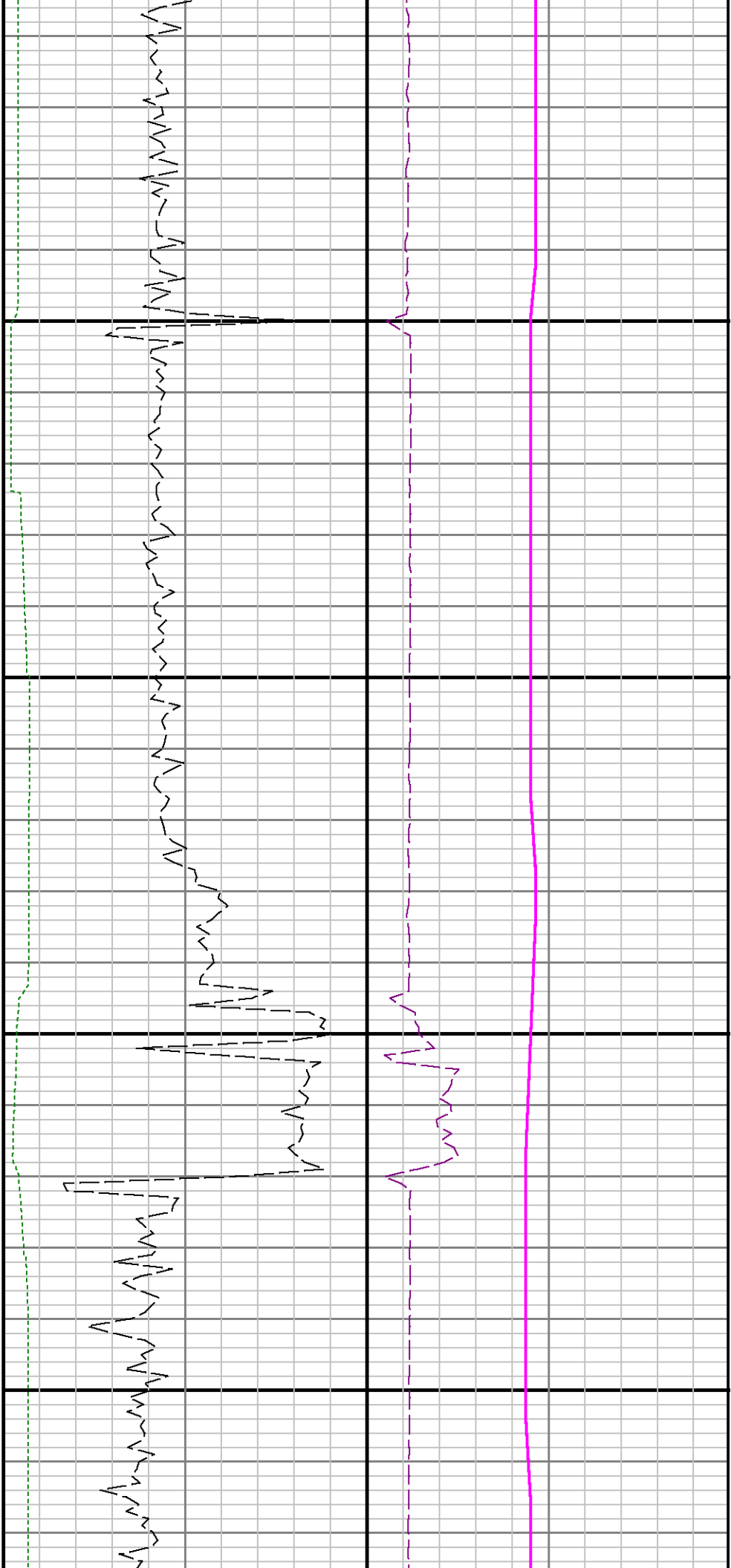
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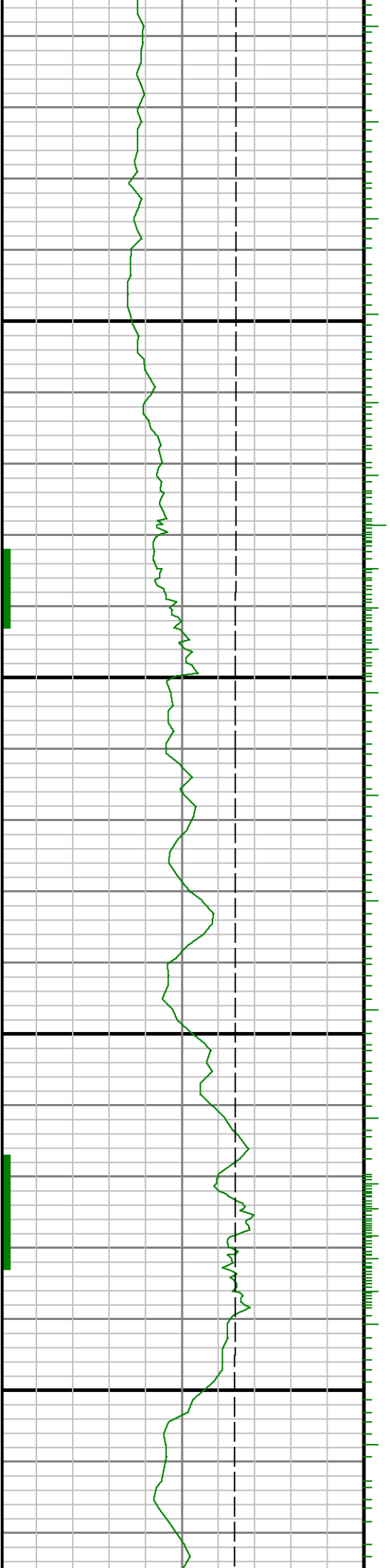


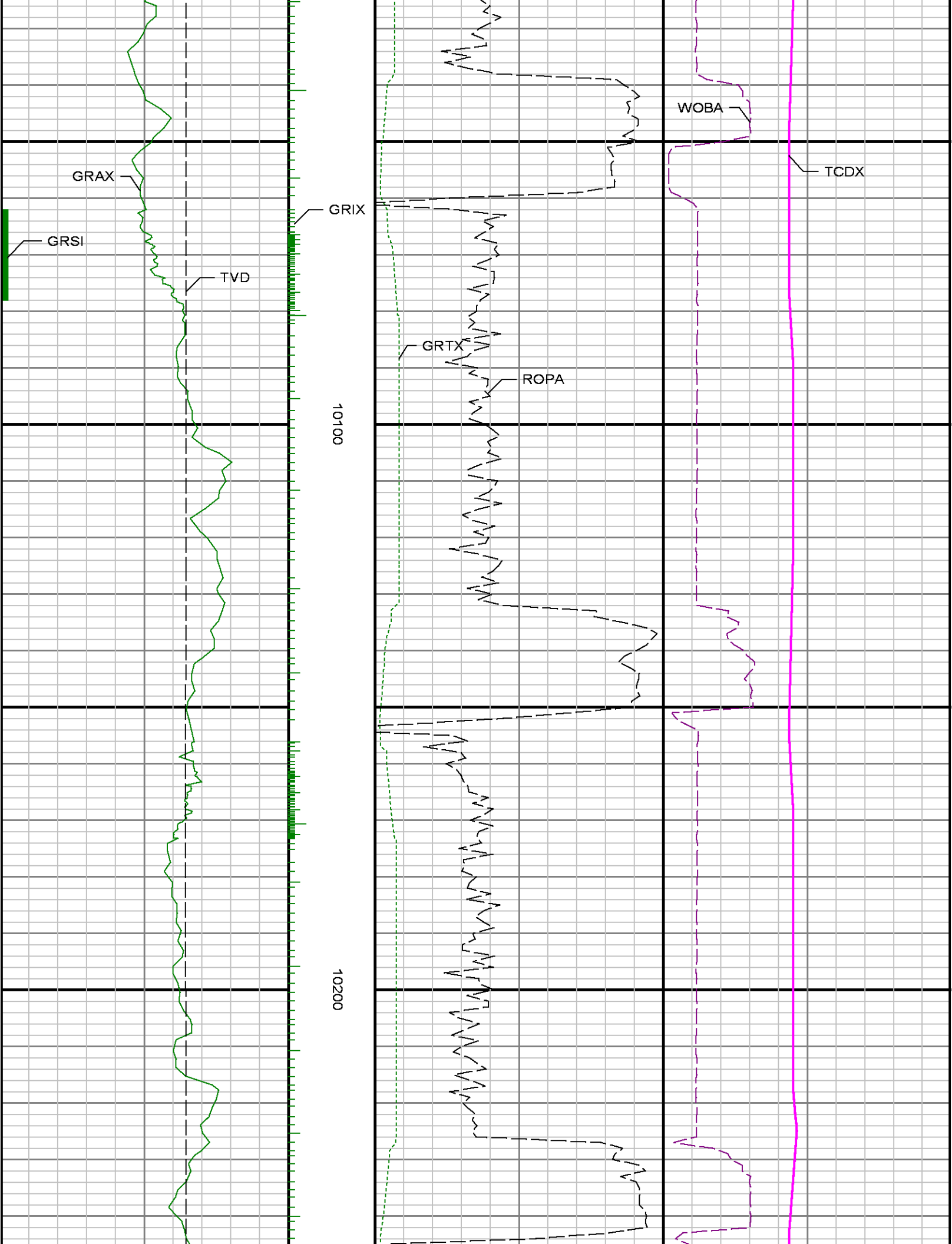


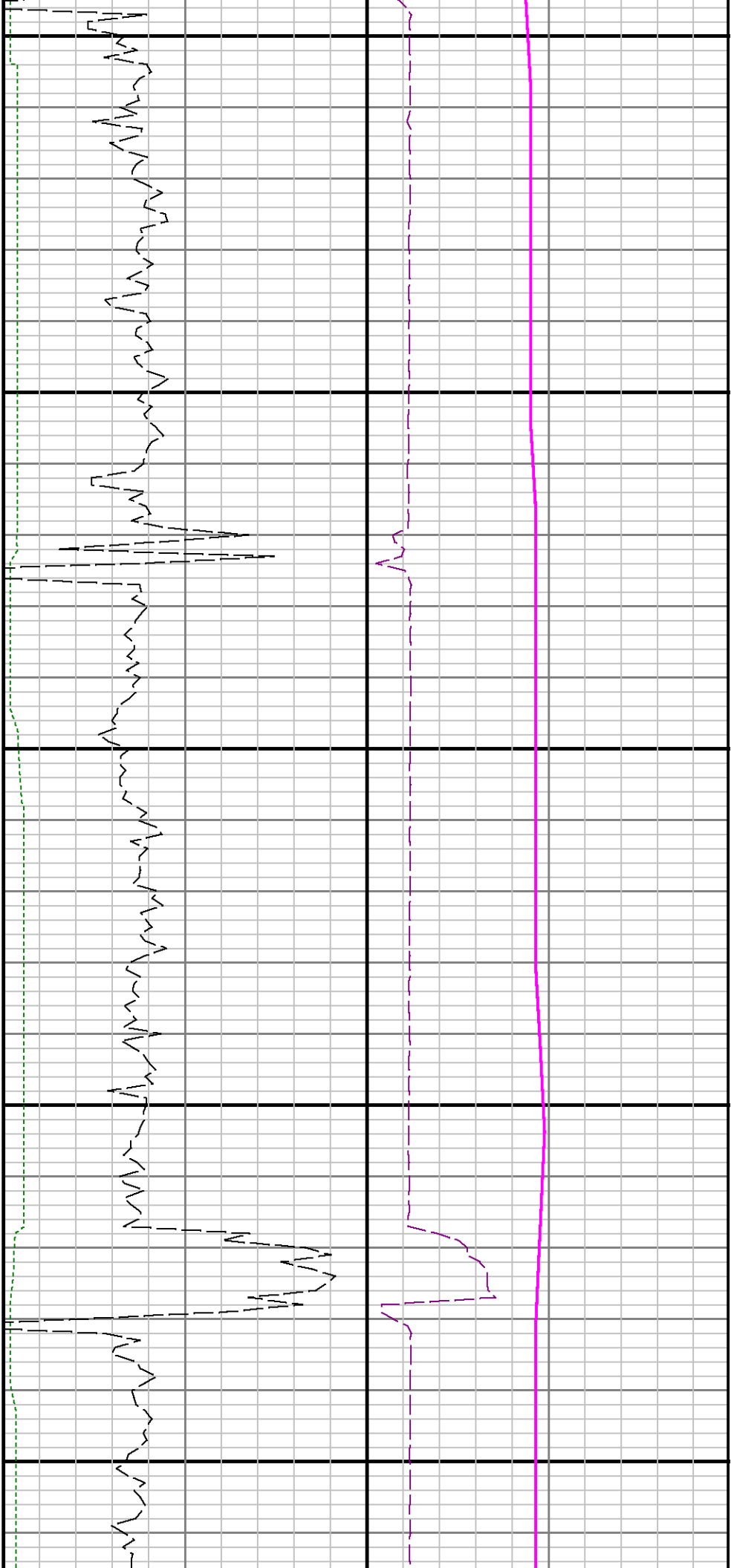


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