



Gamma Ray

LWD REALTIME LOG COMPOSITE

Scale:

1:240 MD

Depth Reference:

Driller's Depth

Company: Verdad Oil & Gas Corporation

Well: Jackson 33-7H

Field: Weld County

County: Weld County Country: United States

State: Colorado Block: 1

Status:

Final Print

Surface Location:
Latitude: 39° 41' 06" N
Longitude: 106° 44' 51" W

Other Services:

API No: 05-123-46494

Job ID: 9084236

SEC: 33 TWN: 2N RGE: 64W

Permanent Datum (P.D.): Mean Sea Level

Elevation:

0.00 ft

Elev. KB: 5032.00 ft
Elev. DF: 5032.00 ft
Elev. GL: 5016.00 ft

Log Measured From: Rig Floor

Above P.D.

5032.00 ft

5016.00 ft

Dates

Interval Logged

Magnetic Field Reference

Date From: 2018-03-28

Top: (ft)

0.00

Azi Reference North: True Dip Angle: (deg) 66.63

Date To: 2018-04-06

Bottom: (ft)

13010.00

Total Magnetic Field Strength: (nT) 52208

Spud Date: 2018-03-27

Mag to Reference North Correction: (deg) 8.19 E

Borehole Record

Casing Record

Hole Size (in)

From (ft)

To (ft)

Size (in)

Weight (lb/ft)

From (ft)

To (ft)

8.500

1718.00

13010.00

9.625

32.00

16.00

1718.00

Mud Record

Deviation Record

Type

From (ft)

To (ft)

Hole Size (in)

Interval (ft)

Inc | Az (Start)

Inc | Az (End)

Water Based Mud

0.00

1731.08

13.500

1731.00

0.85 | 282.74

15.01 | 46.95

Oil Based Mud

1731.00

13010.00

8.500

11279.00

15.01 | 46.95

89.97 | 175.66

Acquisition System

Software Version

Other

Baker Hughes Cadence

RT4.1

Rig: Xtreme 24

Contractor: Xtreme

Unit: RMA

PlotStudio

4.1.7763.3

District: D&E

©"4239"Dcmgt"Jwijgu."c"IG"eqorcp{"NNE"ó"Cnn"tkijvu"tgugtngxgf0"Dcmgt"Jwijgu."c"IG"eqorcp{"NNE"cpf"kvu"chhknkcvgu"ôDJIGö+rtqxkfgu"vjku"kphqtocvkqp"qp"cp"ôcu"kuö"dcuku"hqt"igpgtcn"kphqtocvkqp" purposes and believes it to be accurate as of the date of publication. BHGE does not make any representation as to the accuracy or completeness of the information and makes no warranties of any kind, specific, implied or oral, to the fullest extent permissible by law, including those of merchantability and fitness for a particular purpose or use. BHGE hereby disclaims any and all liability for any direct, indirect, consequential or special damages, claims for lost profits, or third party claims arising from the use of the information, whether a claim is asserted in contract, tort, or otherwise. The BHGE logo is a trademark of Baker Hughes, a GE company, LLC. GE and the GE monogram are trademarks of General Electric Company used under trademark license.

Log Run Summary

Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
1	1	13.500	PDC	4.00	Steerable	0.00	1731.01	0.00	1731.01	2018-03-28 00:42	2018-03-28 14:28	8.50
2	2	8.500	PDC	3.00	AutoTrak Curve	1718.19	12997.11	1731.08	13010.00	2018-04-04 05:29	2018-04-06 14:44	52.79

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Andrew Chersin	2018-03-26	2018-04-07						

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+ (%)
2018-03-27 16:46	1	200.00	Water Based Mud	8.8	17	N/A	N/A	3/97	Active Pit	31000	0.00
2018-04-03 17:59	2	1731.00	Oil Based Mud	9.4	21	N/A	N/A	67/33	Active Pit	32000	0.00
2018-04-05 09:08	2	7824.00	Oil Based Mud	9.8	17	N/A	N/A	62/38	Active Pit	44000	0.00
2018-04-06 17:36	2	13010.00	Oil Based Mud	9.8	17	N/A	N/A	62/38	Active Pit	47000	0.00

Mud Resistivity Record

Date / Time	Run No.	Measured Depth (ft)	Surface Temp (degF)	Surface			BHCT (degF)	Downhole		
				Rm (ohm.m)	Rmf (ohm.m)	Rmc (ohm.m)		Rm @ BHCT (ohm.m)	Rmf @ BHCT (ohm.m)	Rmc @ BHCT (ohm.m)
2018-04-06 05:22	2	11136.50	55.0	100.000	N/A	N/A	220.0	100.000	N/A	N/A
2018-04-06 17:37	2	13010.00	21.0	100.000	N/A	N/A	223.0	100.000	N/A	N/A

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	NaviTrak	12813115	VSS	15.51	58.60	8.000	3.250
1	NaviTrak	12813115	Directional (mag)	15.51	58.60	8.000	3.250
2	ATC_SU	11747241	Near Bit Inclination	5.93	6.72	7.000	4.330
2	ATC_SU	11747241	Near Bit VSS	5.93	6.72	7.000	4.330
2	ATC_MWD	12141354	Gamma (single)	2.75	12.89	7.000	3.250
2	ATC_MWD	12141354	Directional (mag)	12.27	22.41	7.000	3.250

Service and Tool Mnemonics


Mnemonic	Name	Description
NTK	NaviTrak	Probe Based Directional 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
BCPM	BCPM	Bi-Directional Communication and Power Module, OnTrak Platform

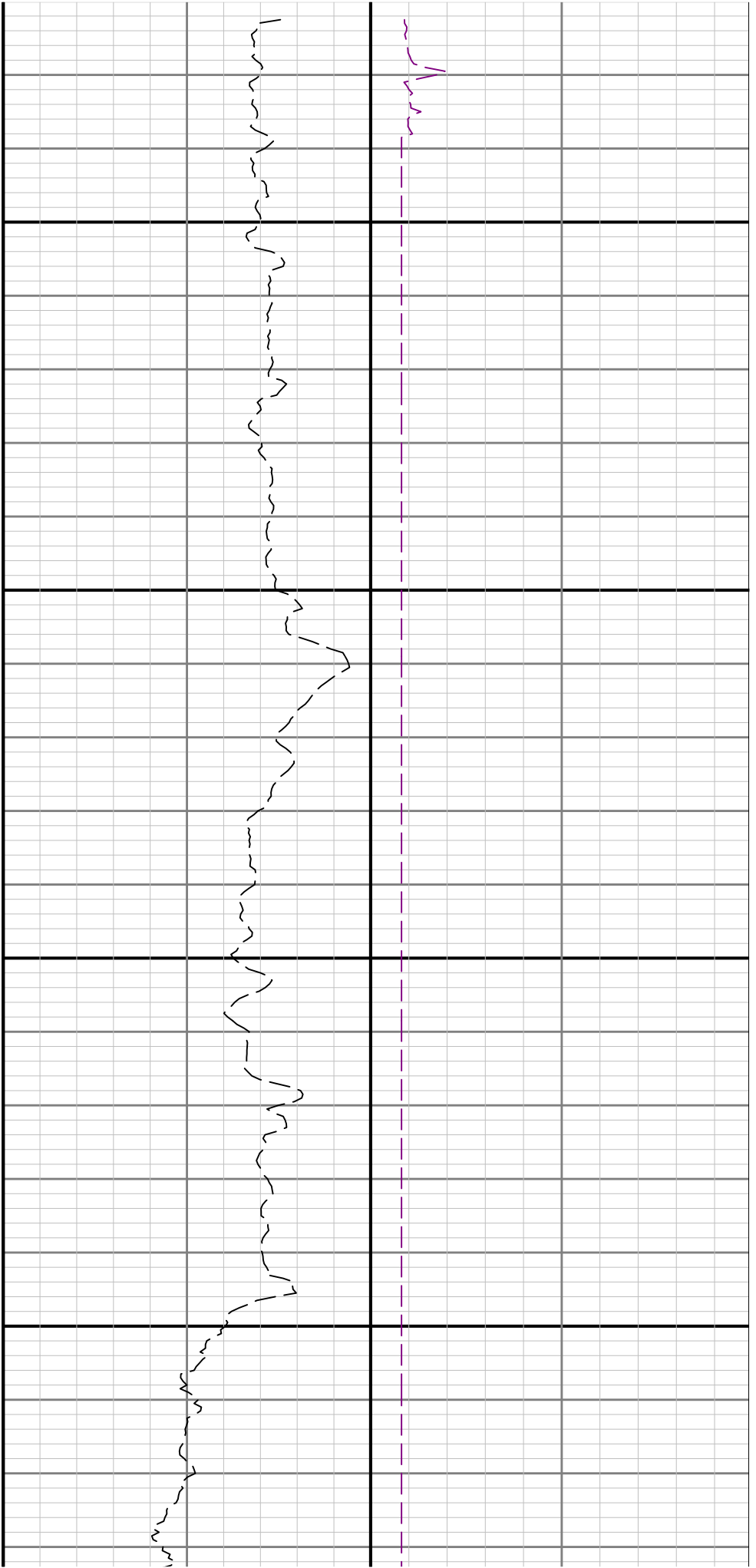
Comments

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 drilling services run 1 utilized an 8 inch Navitrak service (Directional only) behind a 13 1/2 inch bit and steerable assembly from 80 to 1731 feet MD (80 to 1693 feet TVD)
3	Baker Hughes drilling services run 2 utilized a 6 3/4 inch Navigamma service (Directional and Gamma Ray) behind an 8 1/2 inch bit and rotary steerable assembly from 1731 to 13010 feet MD (1693 to 7213 feet TVD)

Remarks

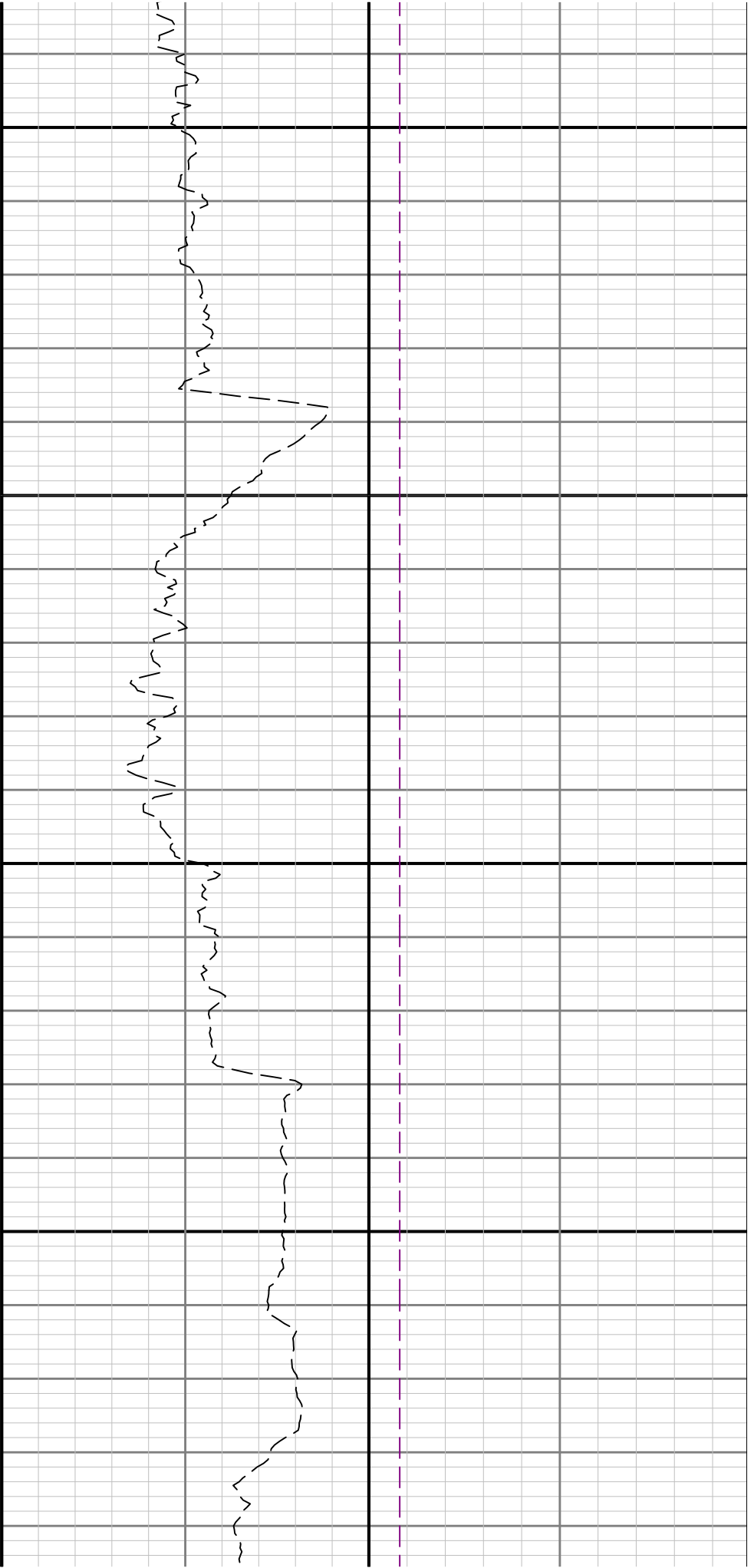
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	2170.00	8.500	2	A gap is present in all curves from 2153 to 2248 feet measured depth (2100 to 2196 feet TVD) due to an error in the surface accusation system.

2	13000.00	8.500	2	The interval from 12997 to 13010 feet MD (7213 feet TVD) was not logged due to sensor to bit offset at TD.																				
<div><div><div><div>BAKER HUGHES</div><div>a GE company</div></div><div></div></div><div><div>Company</div><div>Well</div><div>Interval</div><div>Created</div></div></div>				Verdad Oil & Gas Corporation																				
				Jackson 33-7H																				
				Date From:				2018-03-28 00:42:46				Top:				0.00								
				Date To:				2018-04-06 14:44:15				Bottom:				13010.00								
Created				2018-04-07 10:17:47																				
Gamma Ray - Apparent 0.5 ft Average GRAM 0300								MD 1:240 feet	Gamma Time Since Drilled GRTM 0600								Weight On Bit, Average 1 ft Average WOBA 050							
API Azimuthal Gamma Ray - Apparent - Up Quadrant 0.5 ft Average GRAUM 0300									min Depth Averaged ROP 3 ft Average ROPA 10000								klb Downhole Temperature TCDM 0300							
API Azimuthal Gamma Ray - Apparent - Down Quadrant 0.5 ft Average GRADM 0300									ft/h								degF							
API True Vertical Depth TVD 80006000																								
ft																								
								0 100																



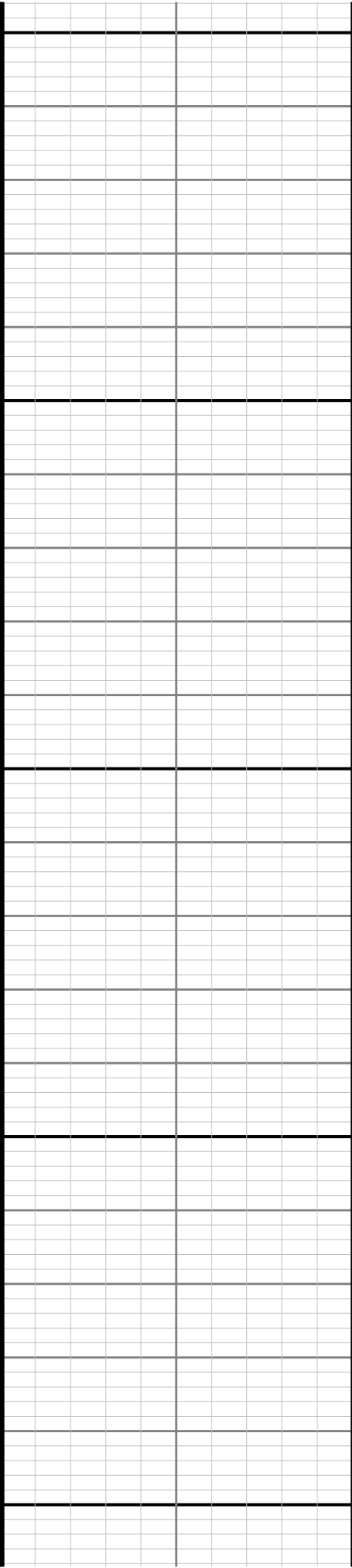
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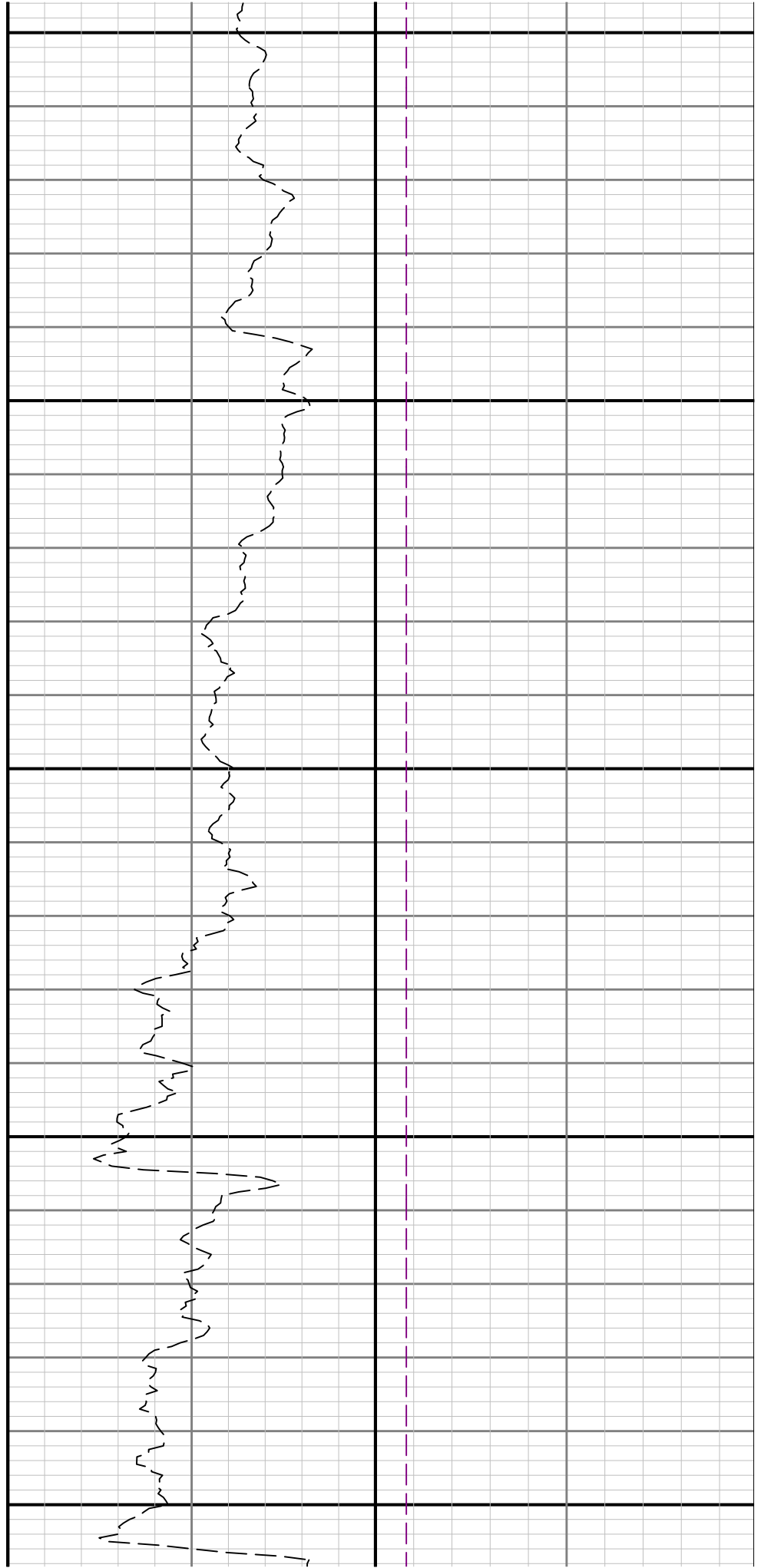
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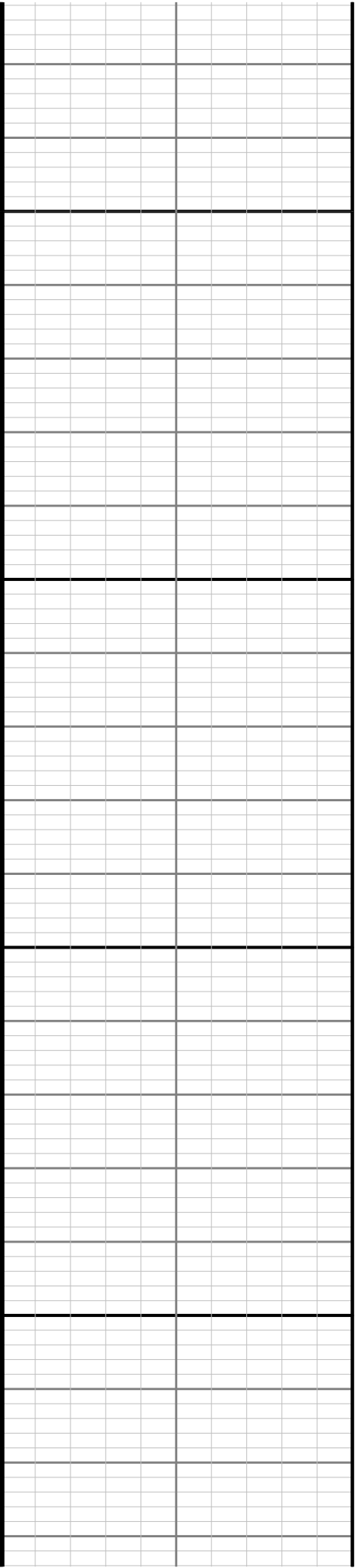
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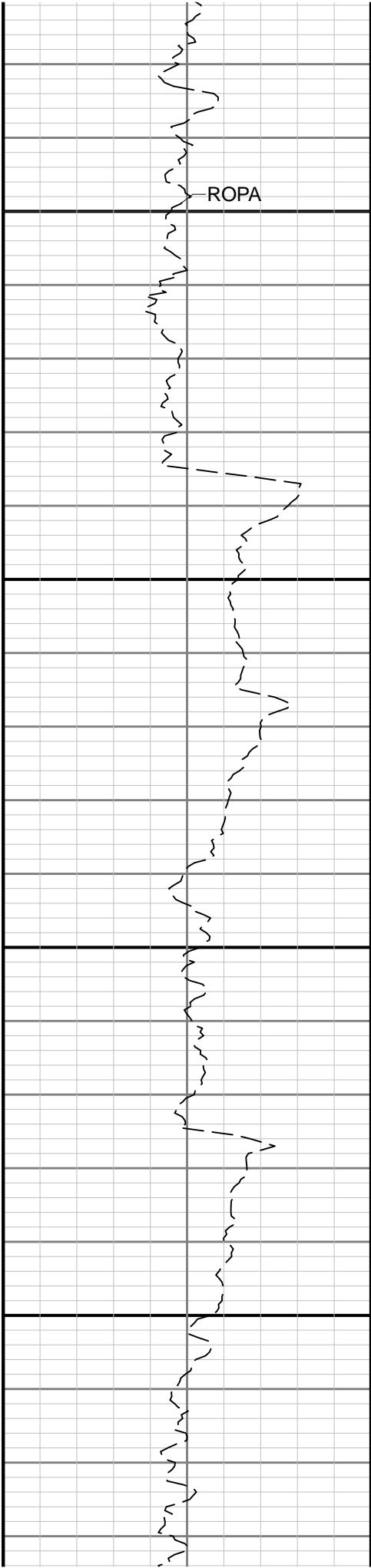
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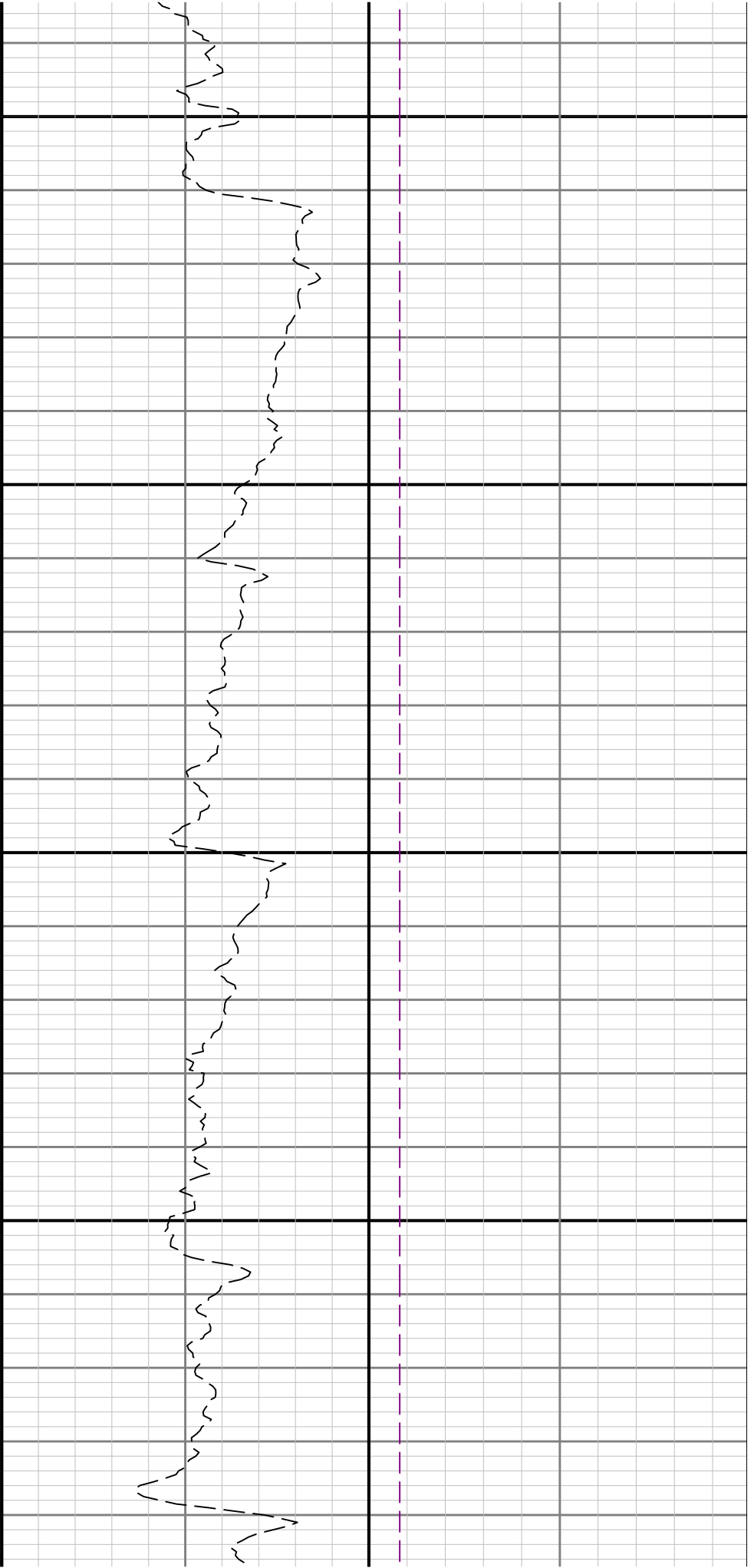
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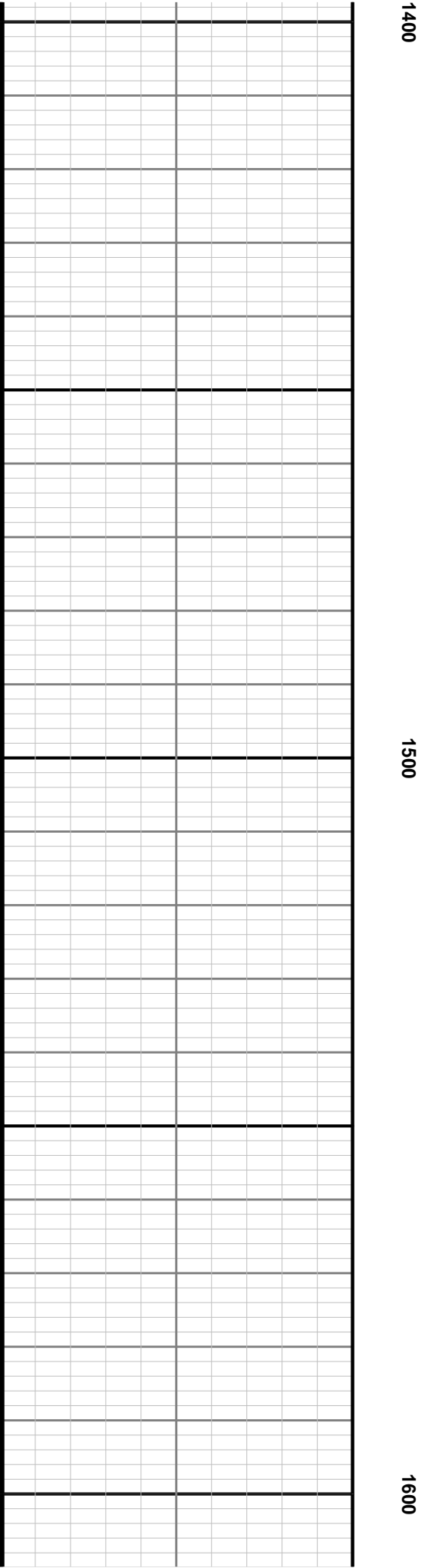
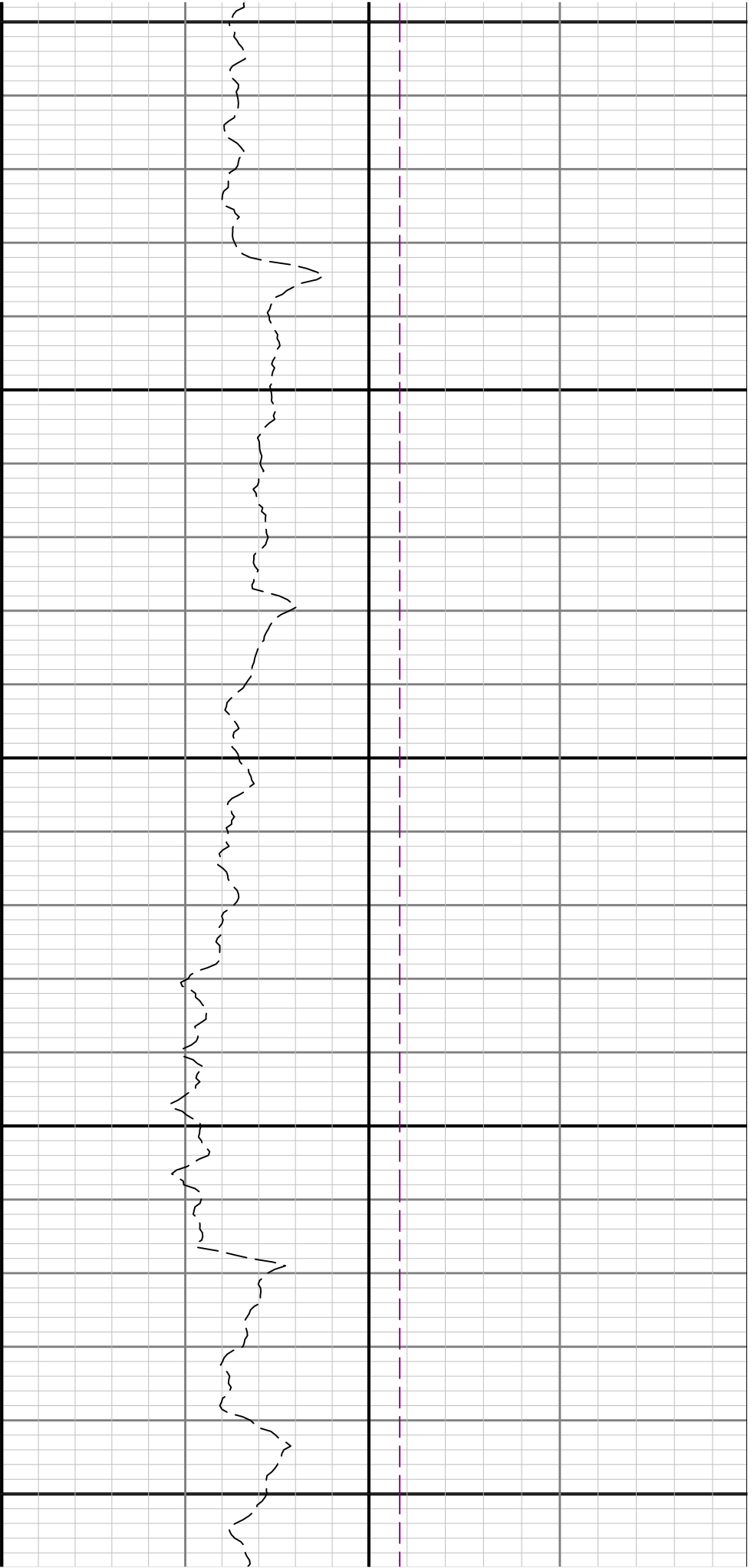
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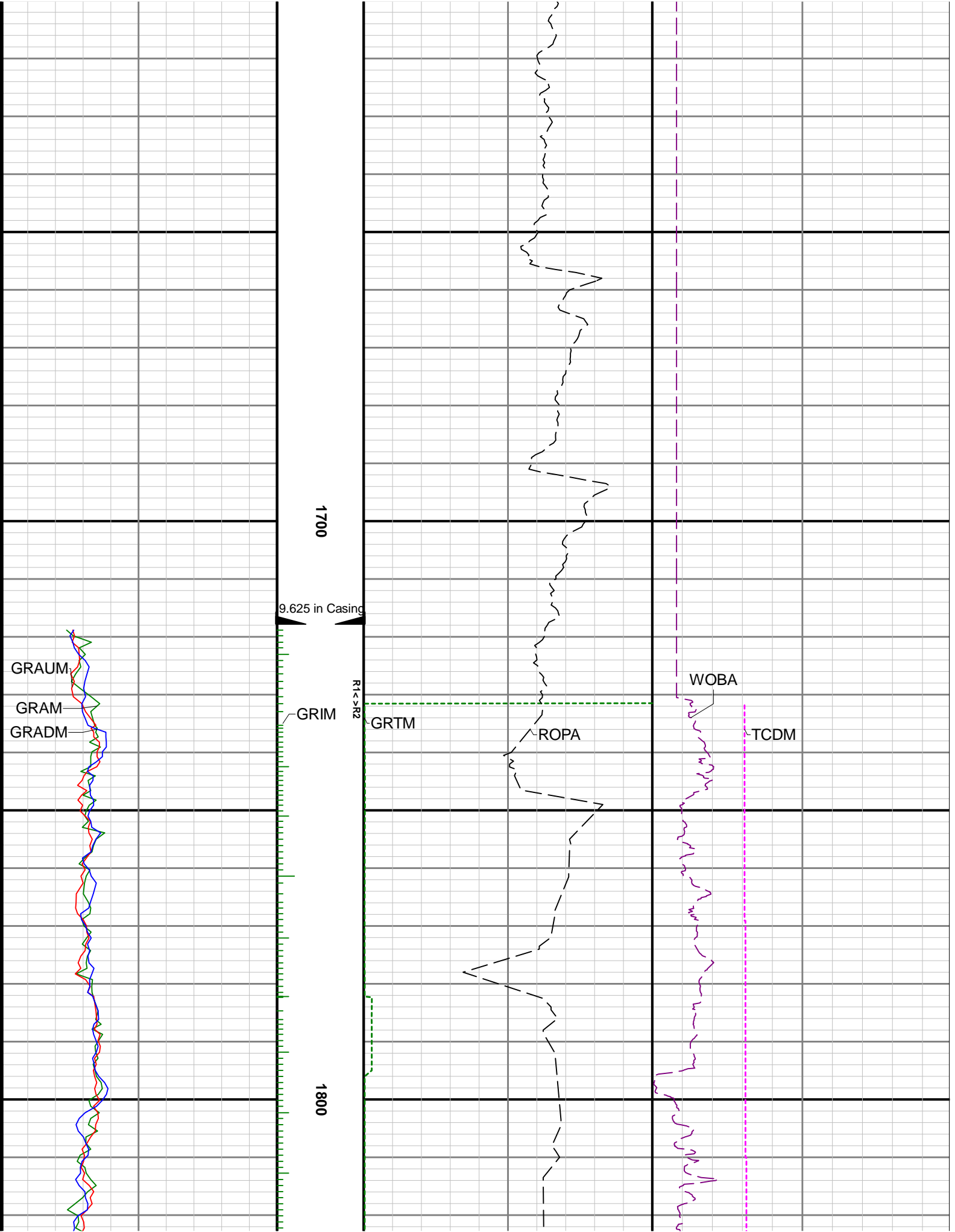
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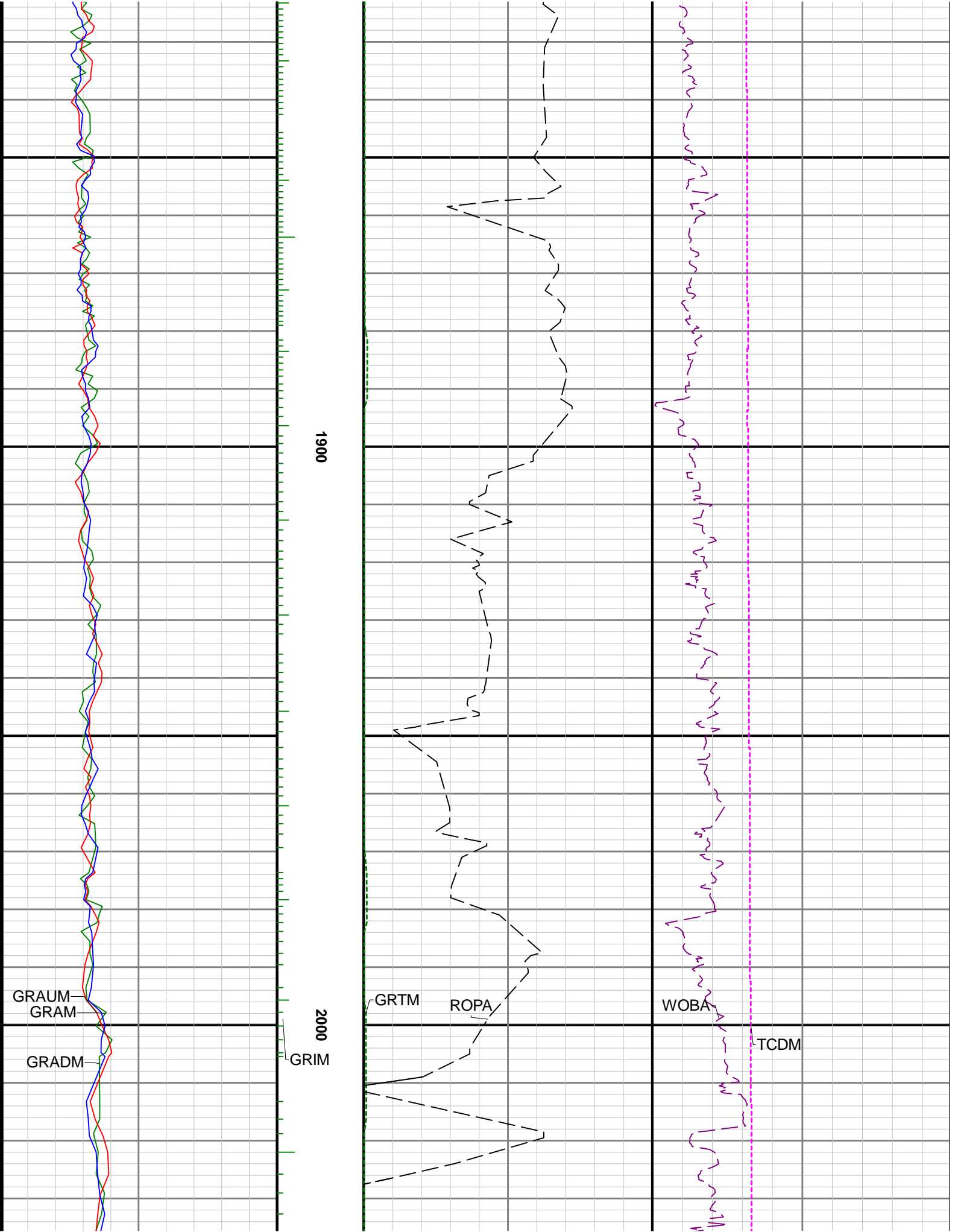


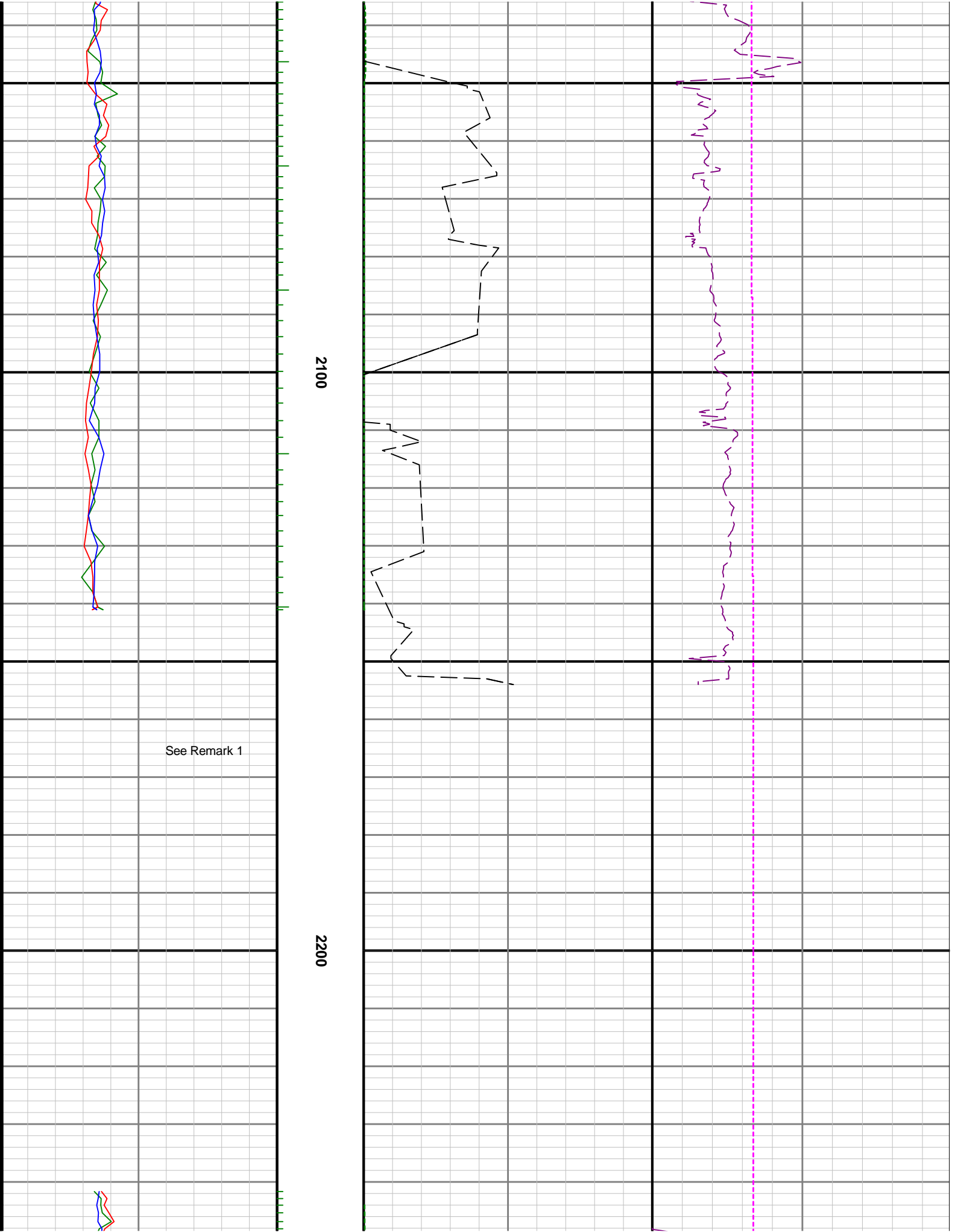
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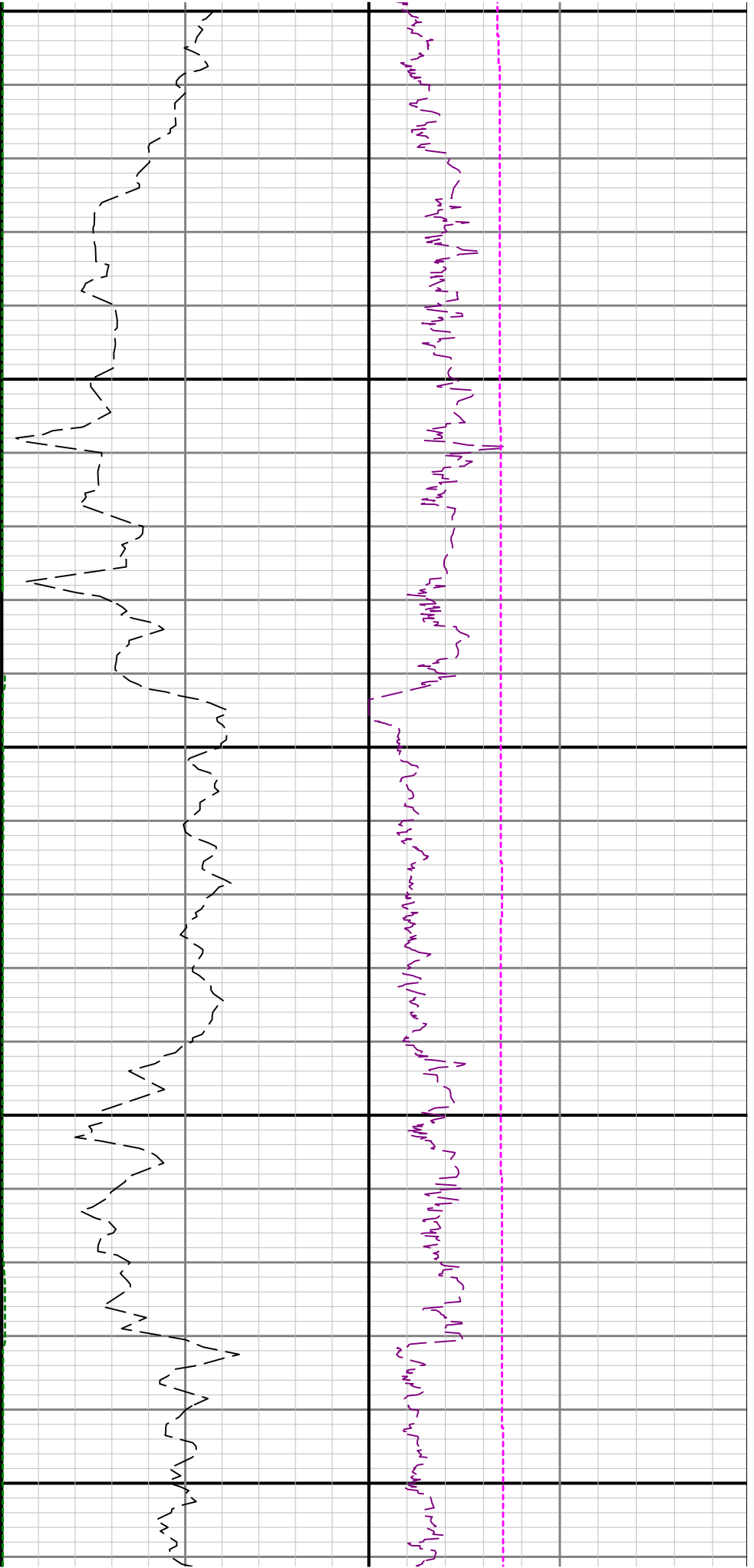
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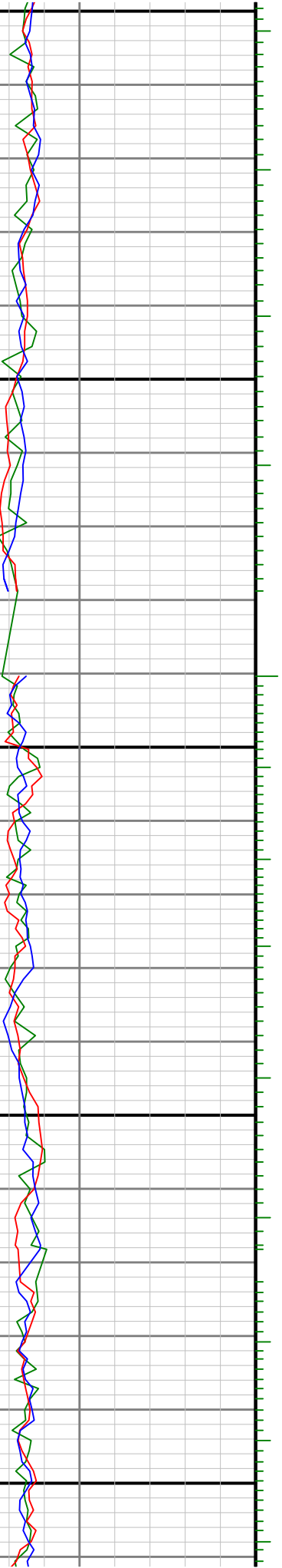


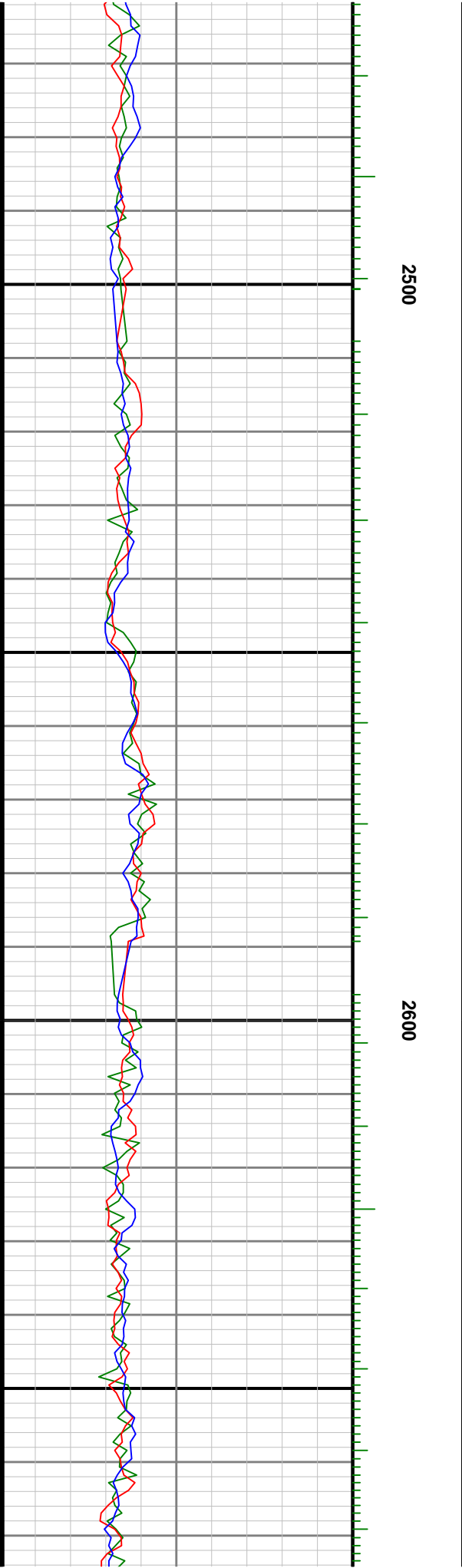
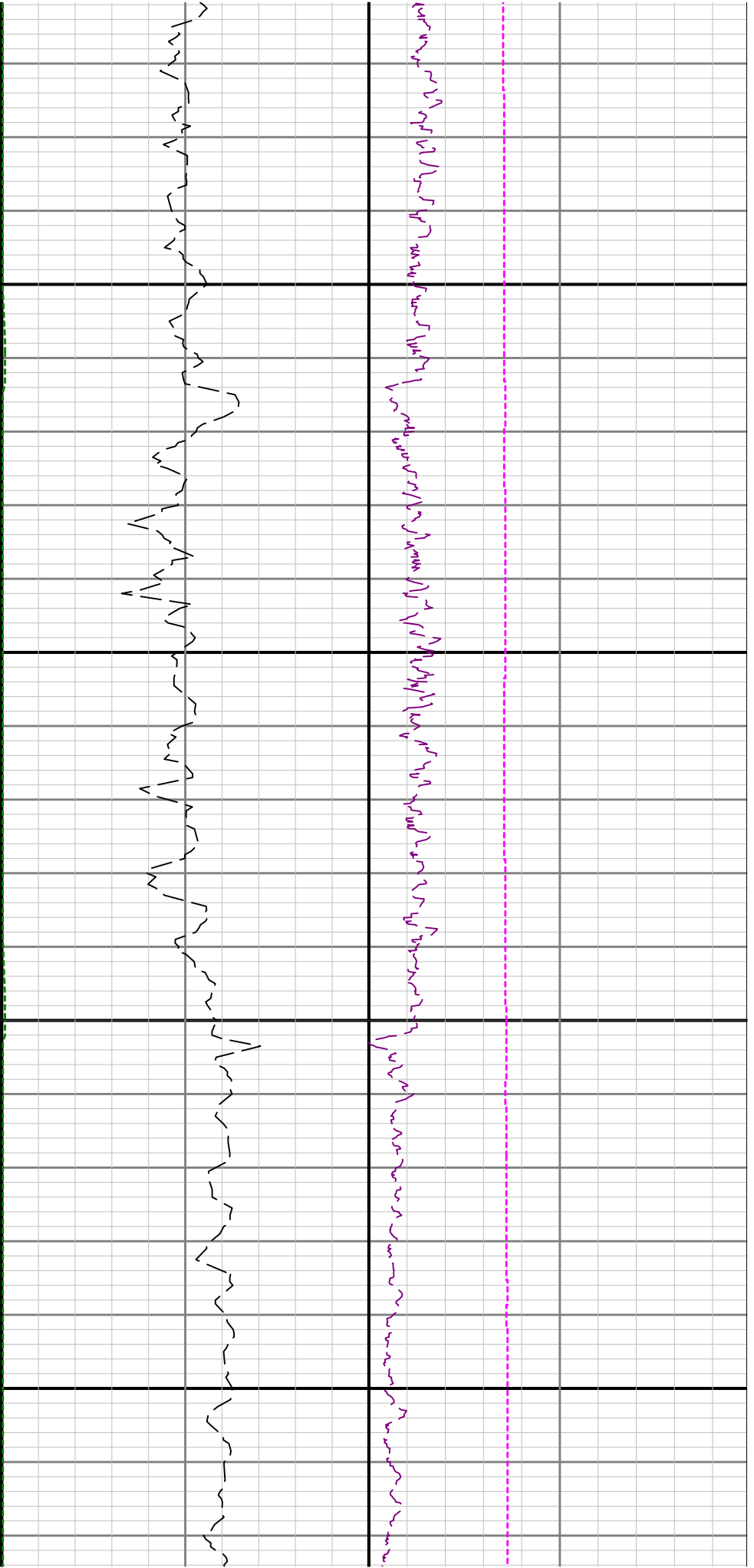


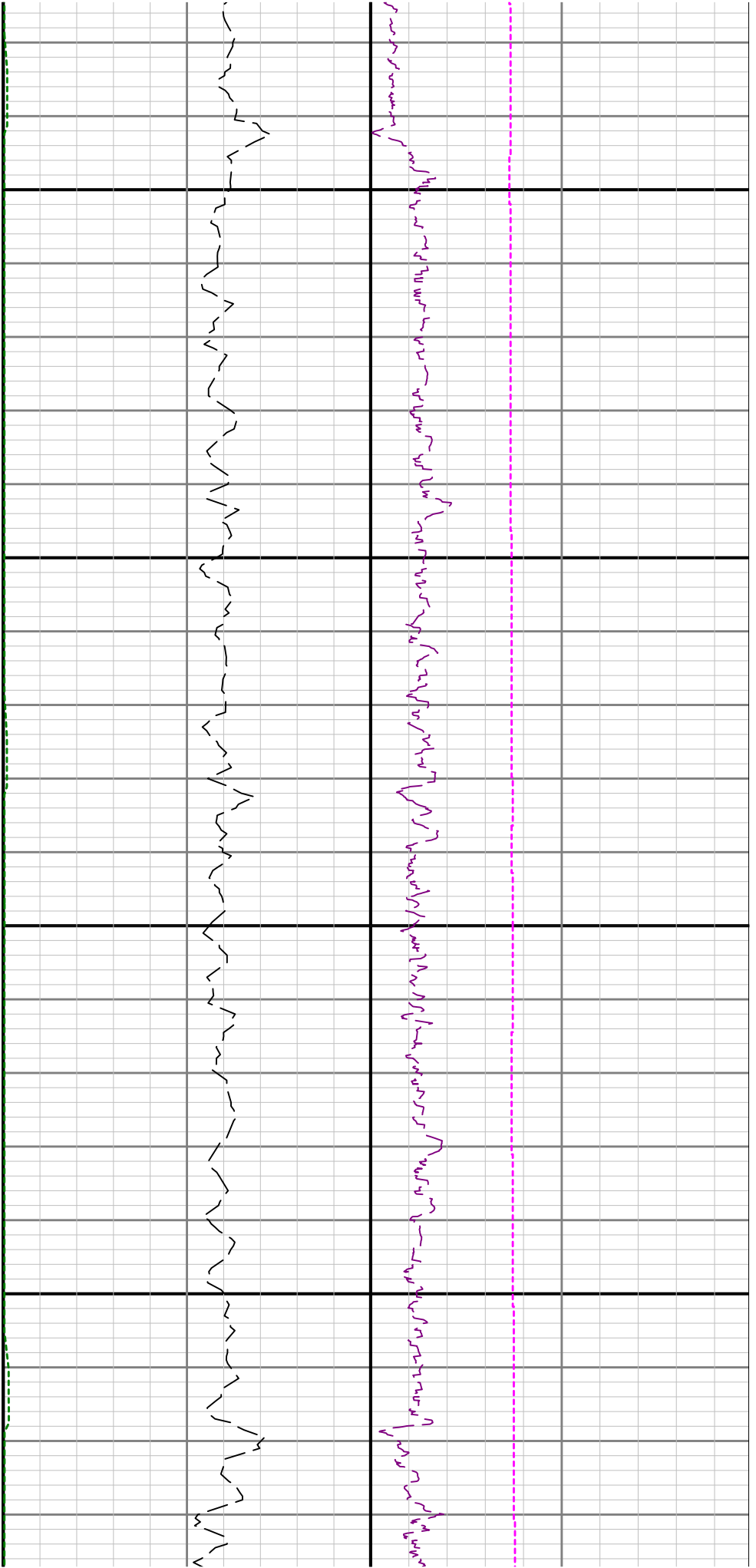


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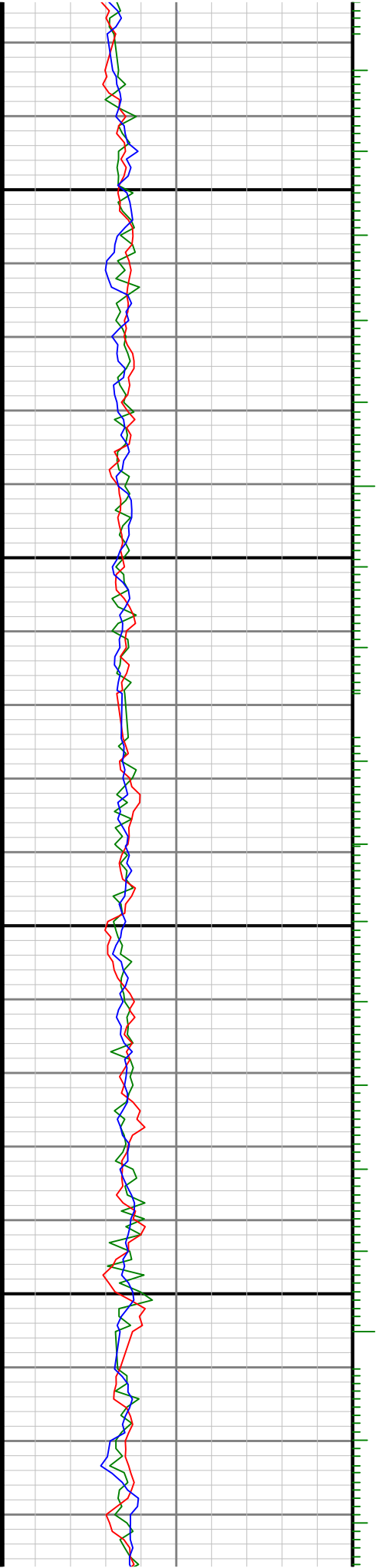


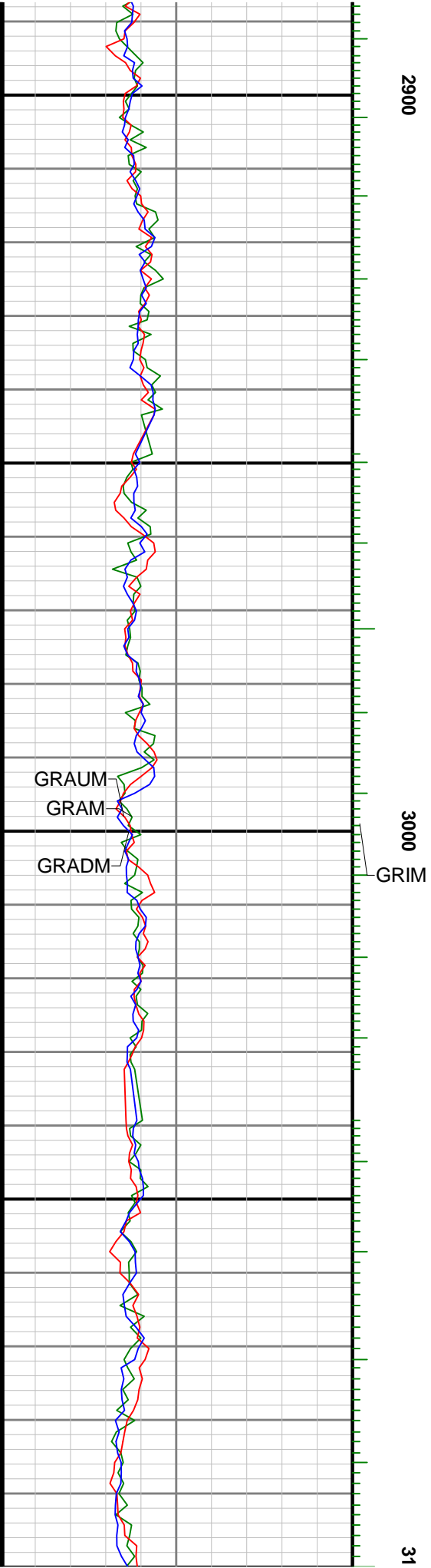
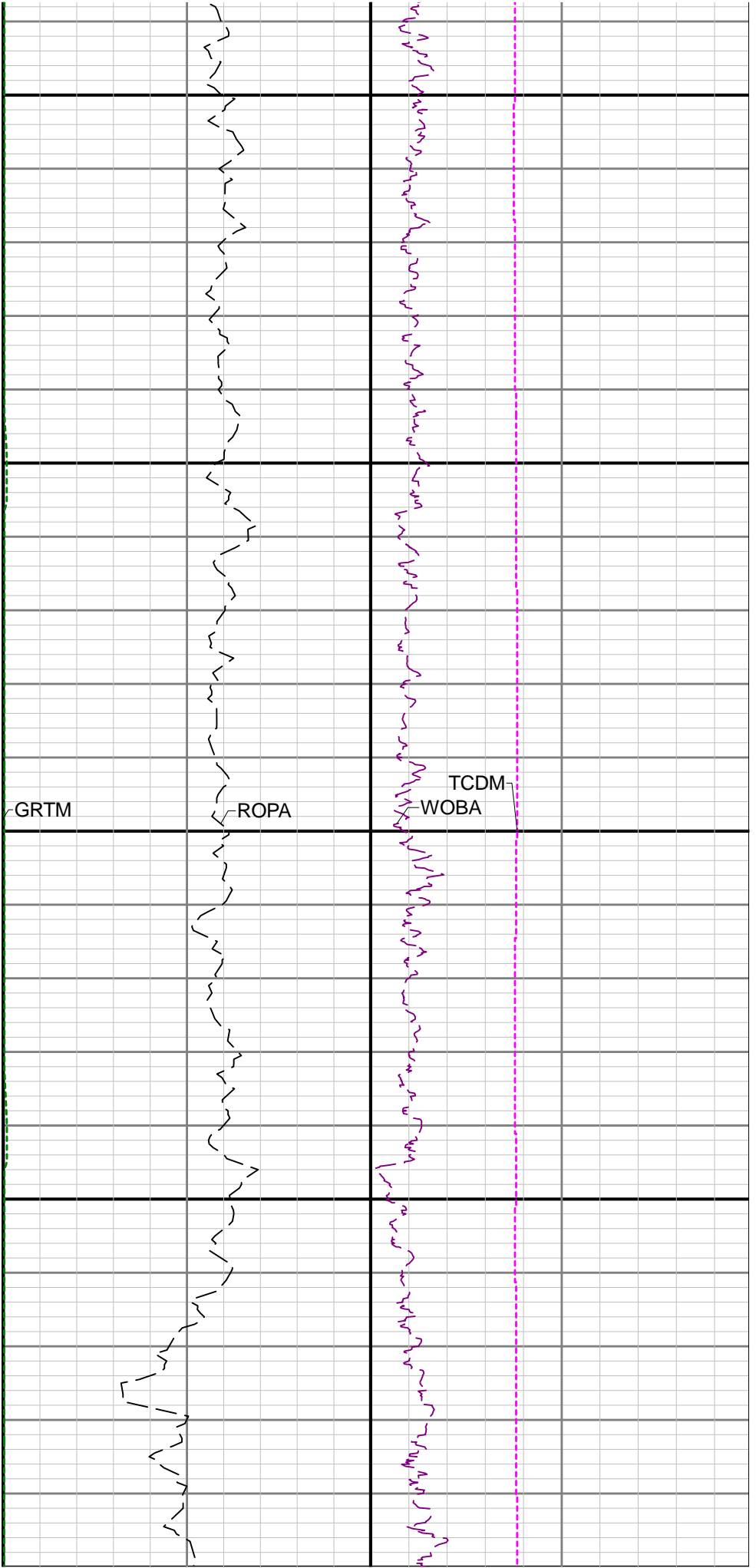


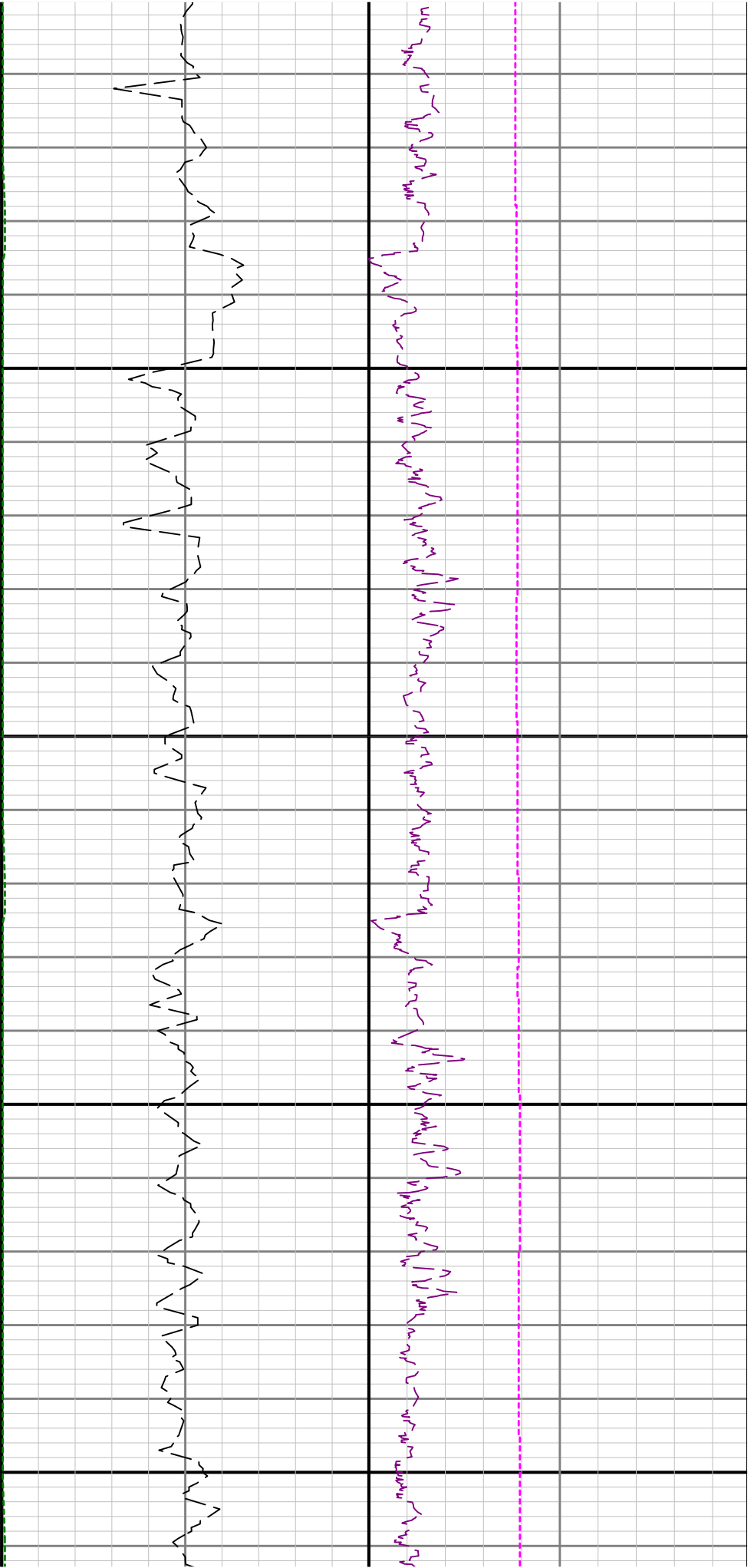


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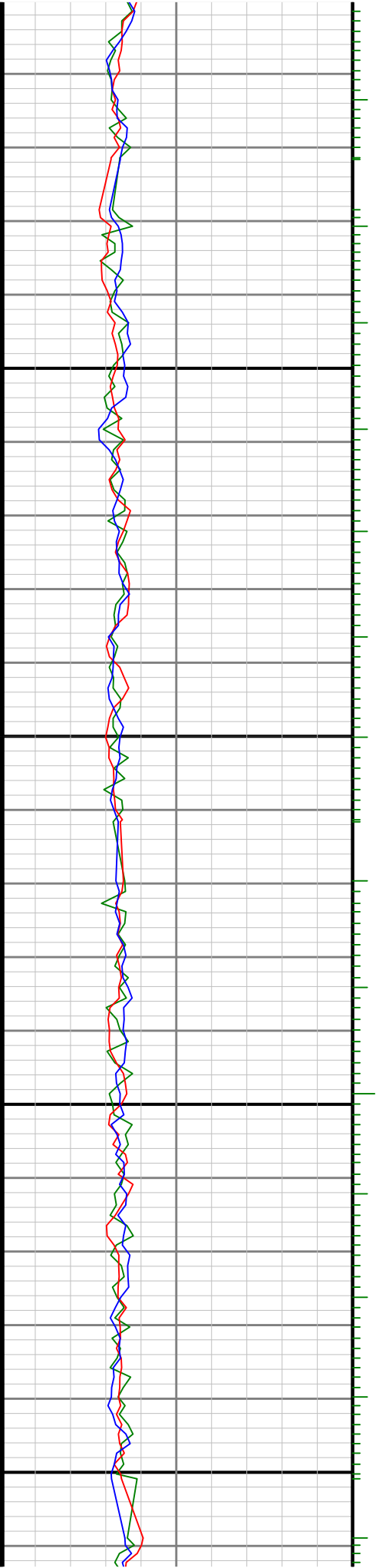


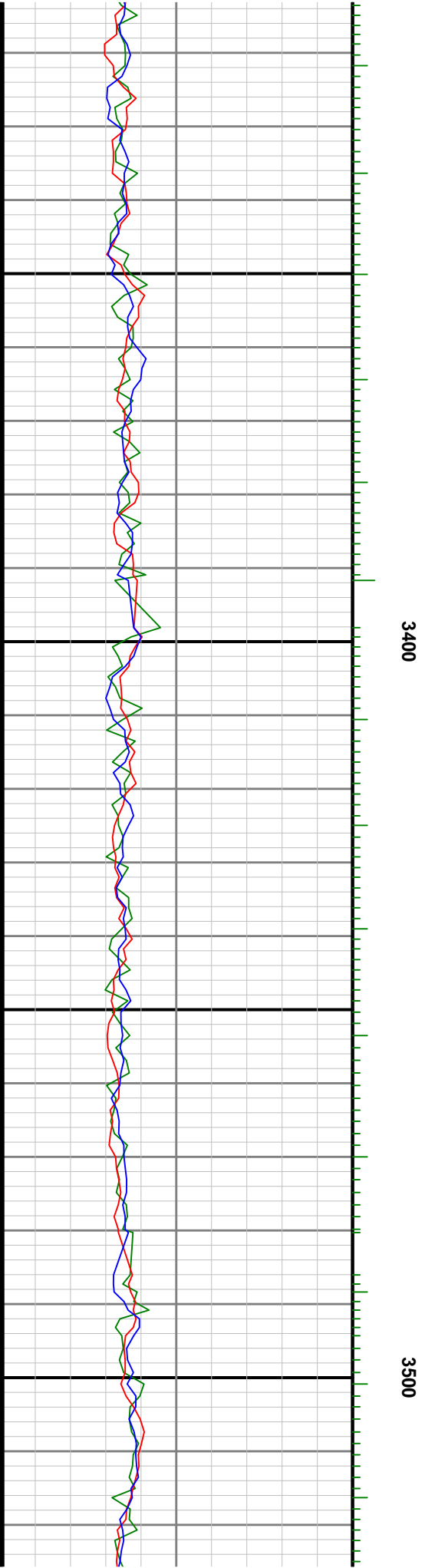
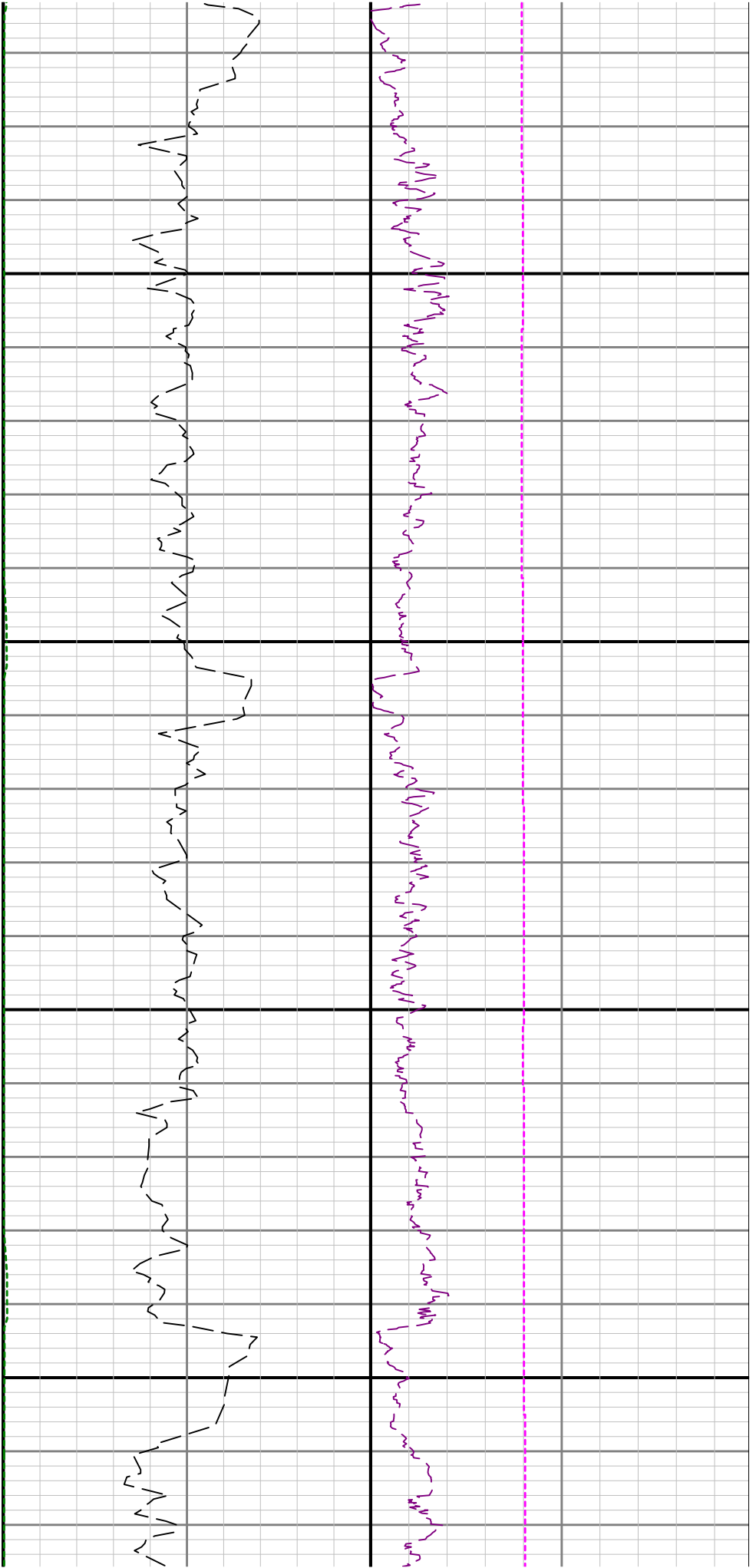


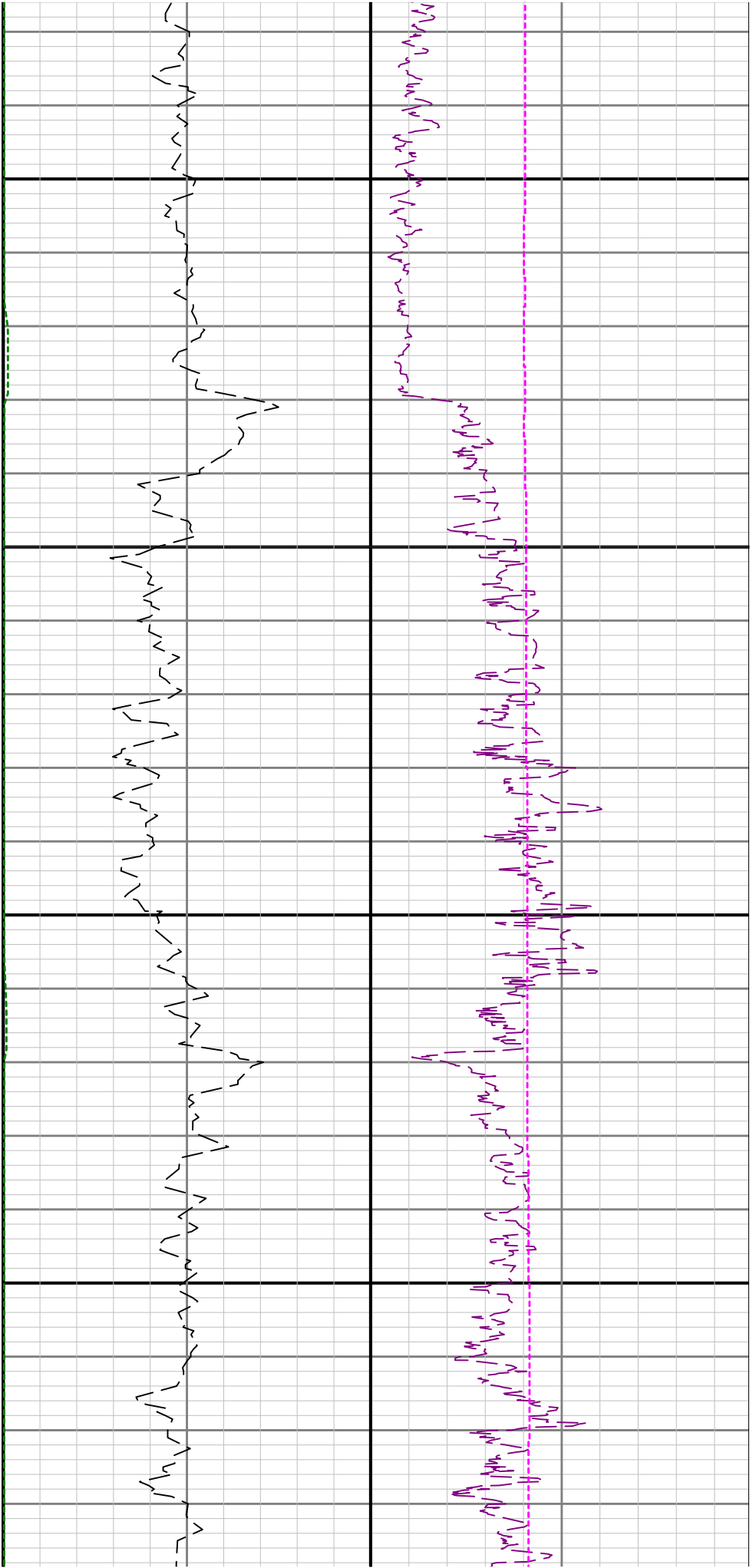
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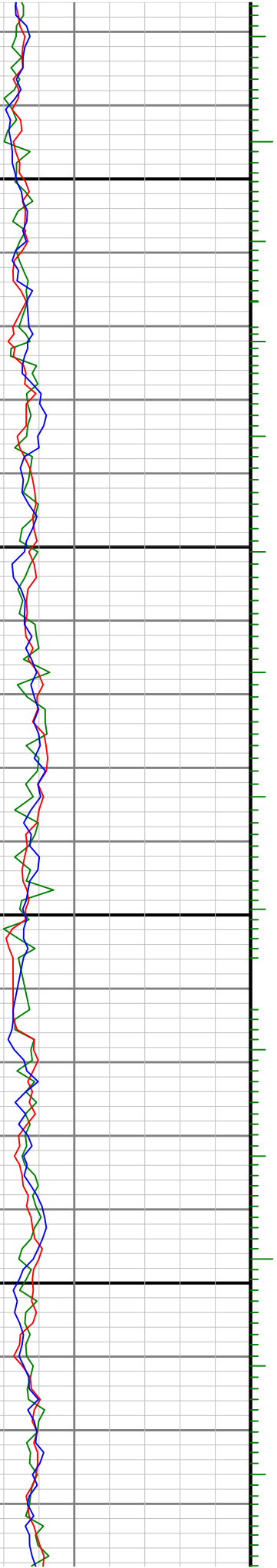


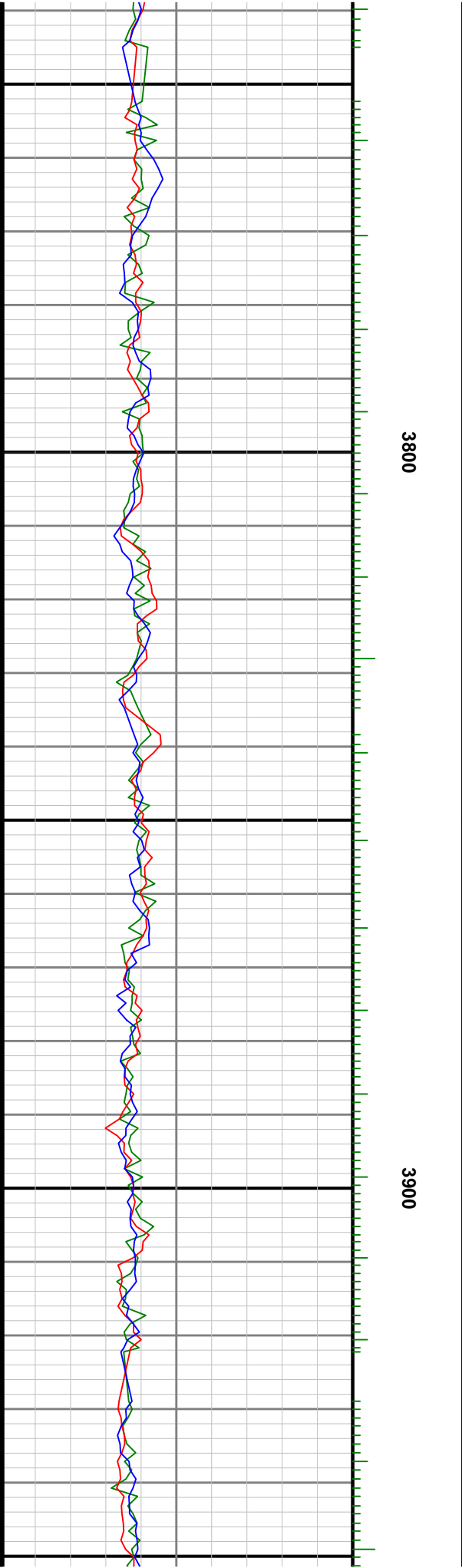


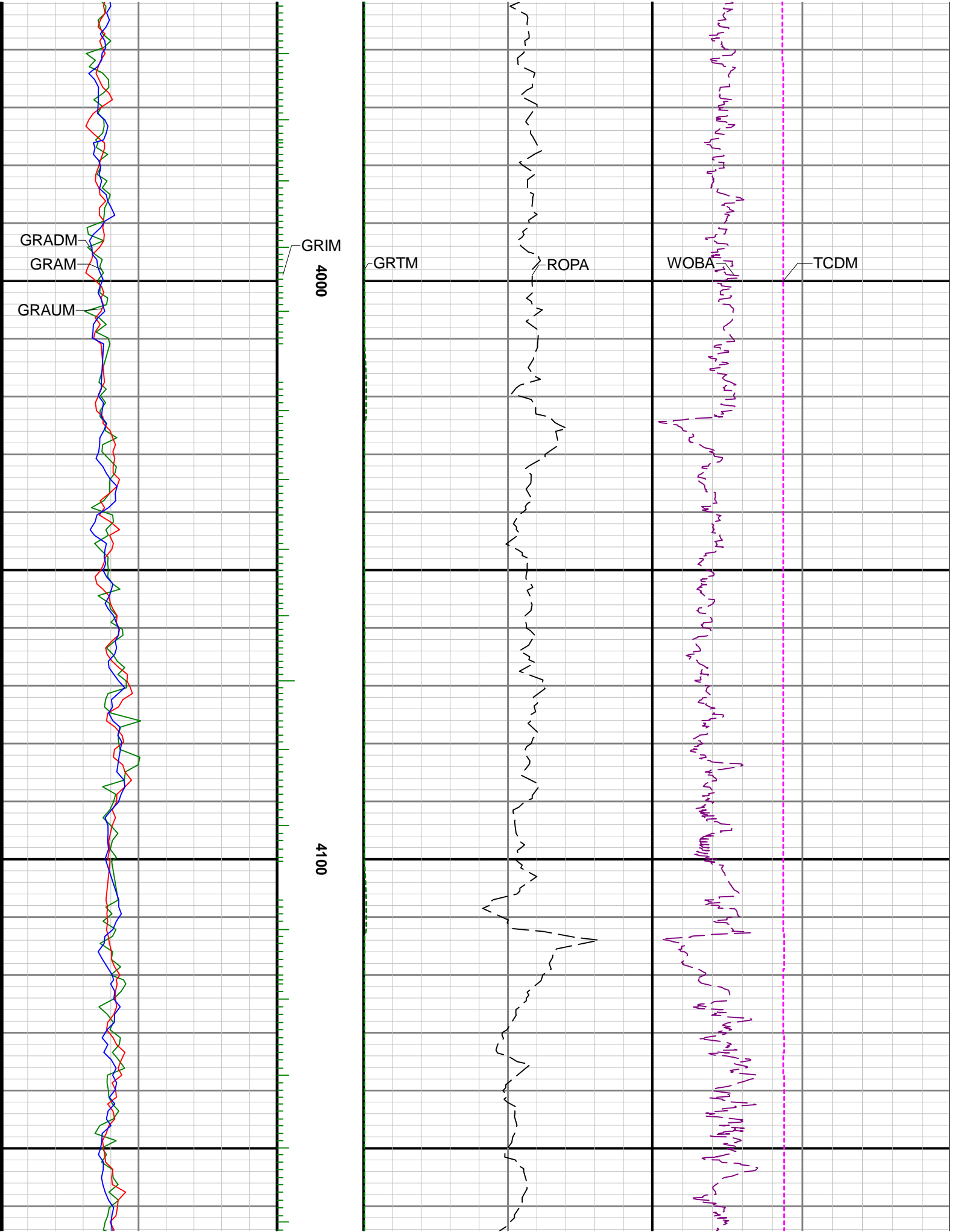


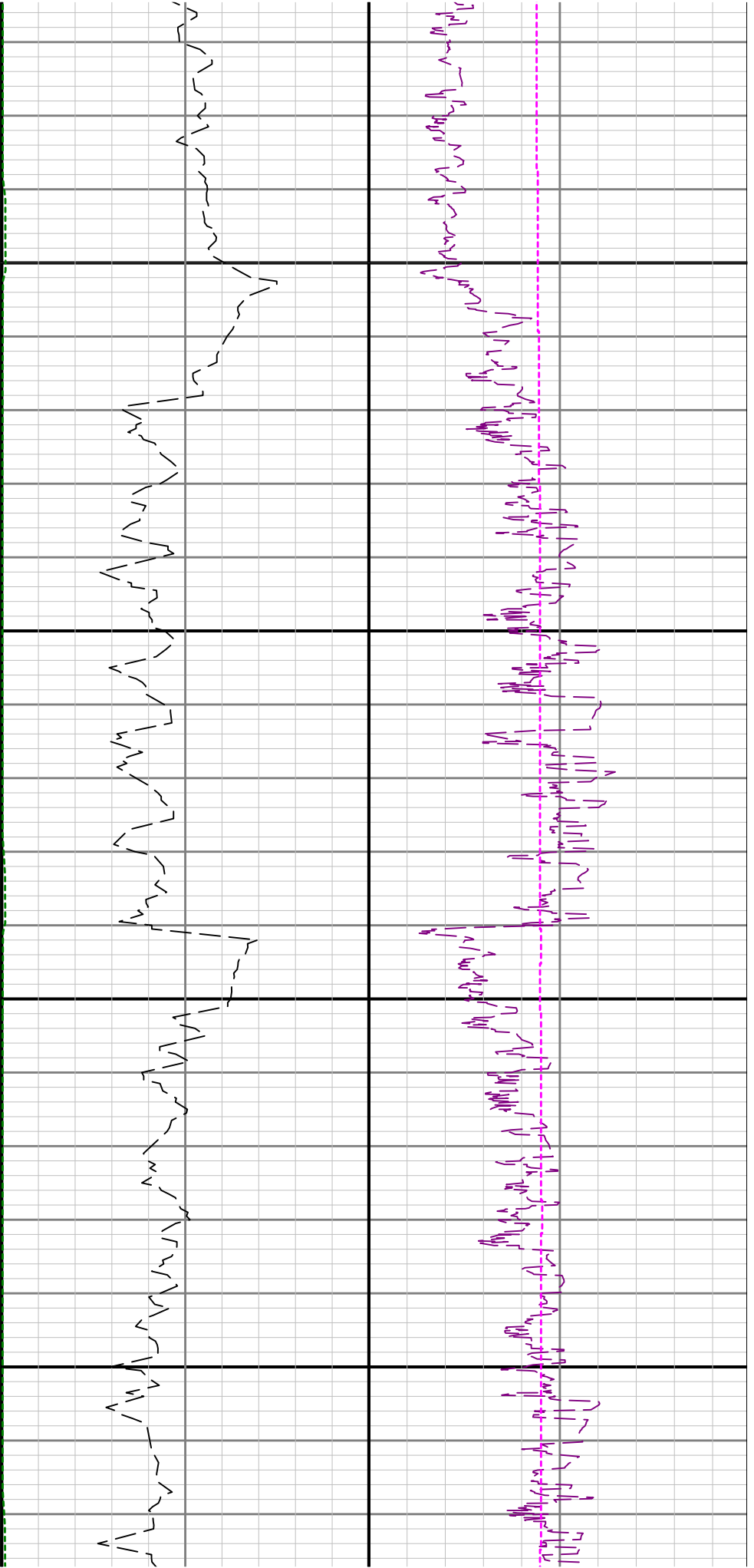
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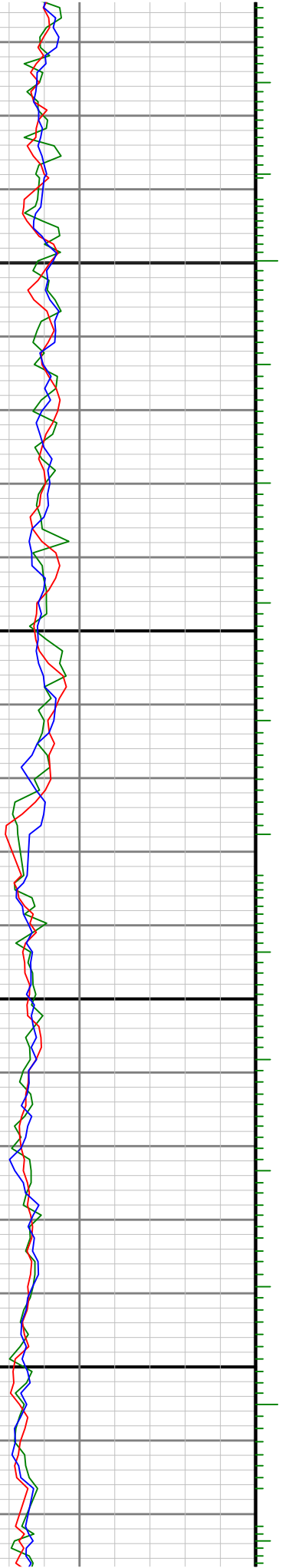


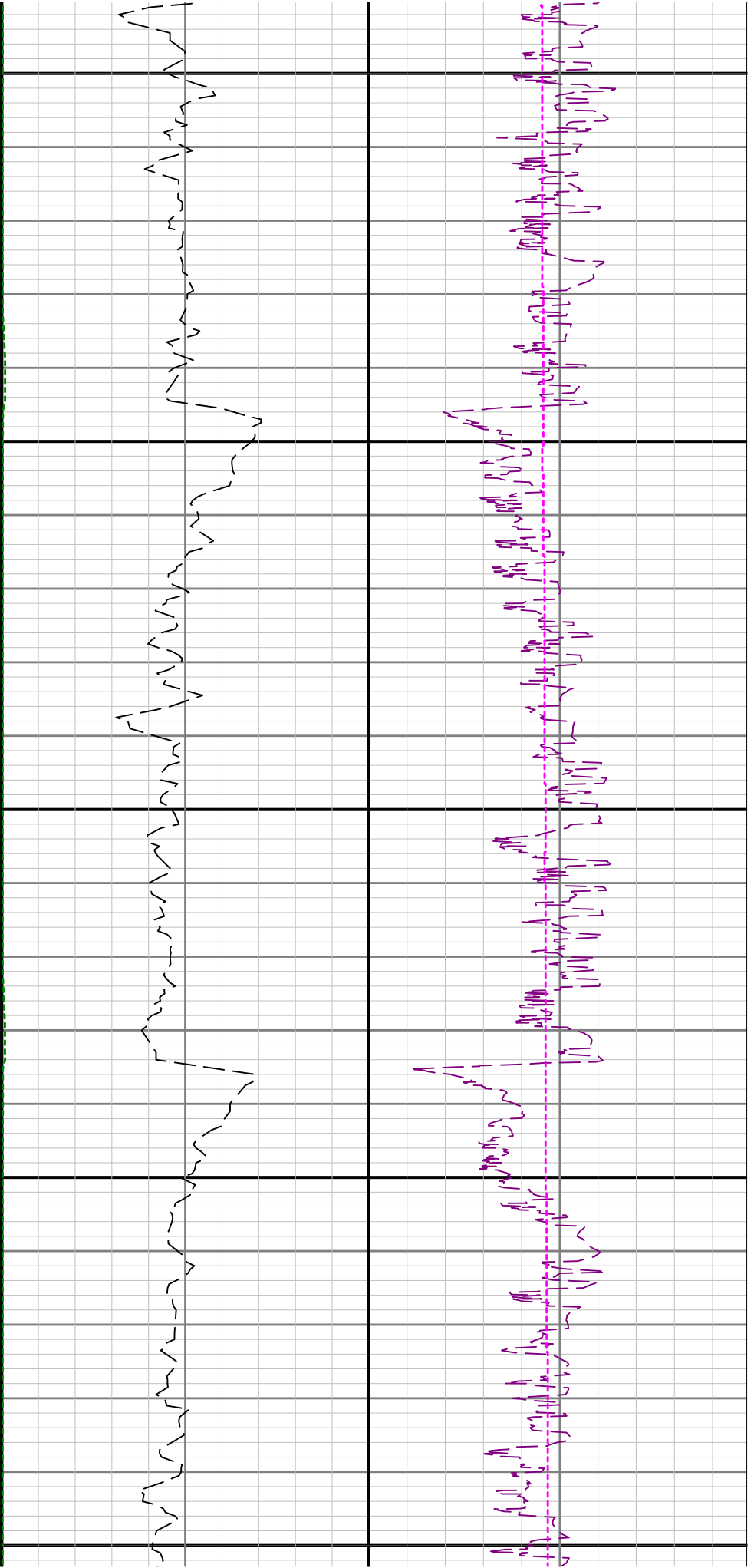




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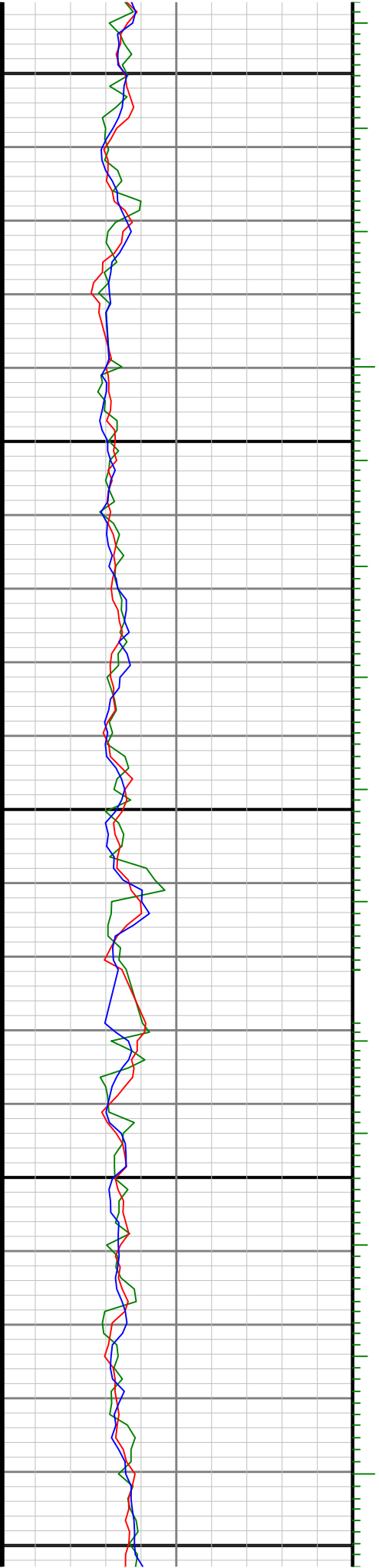


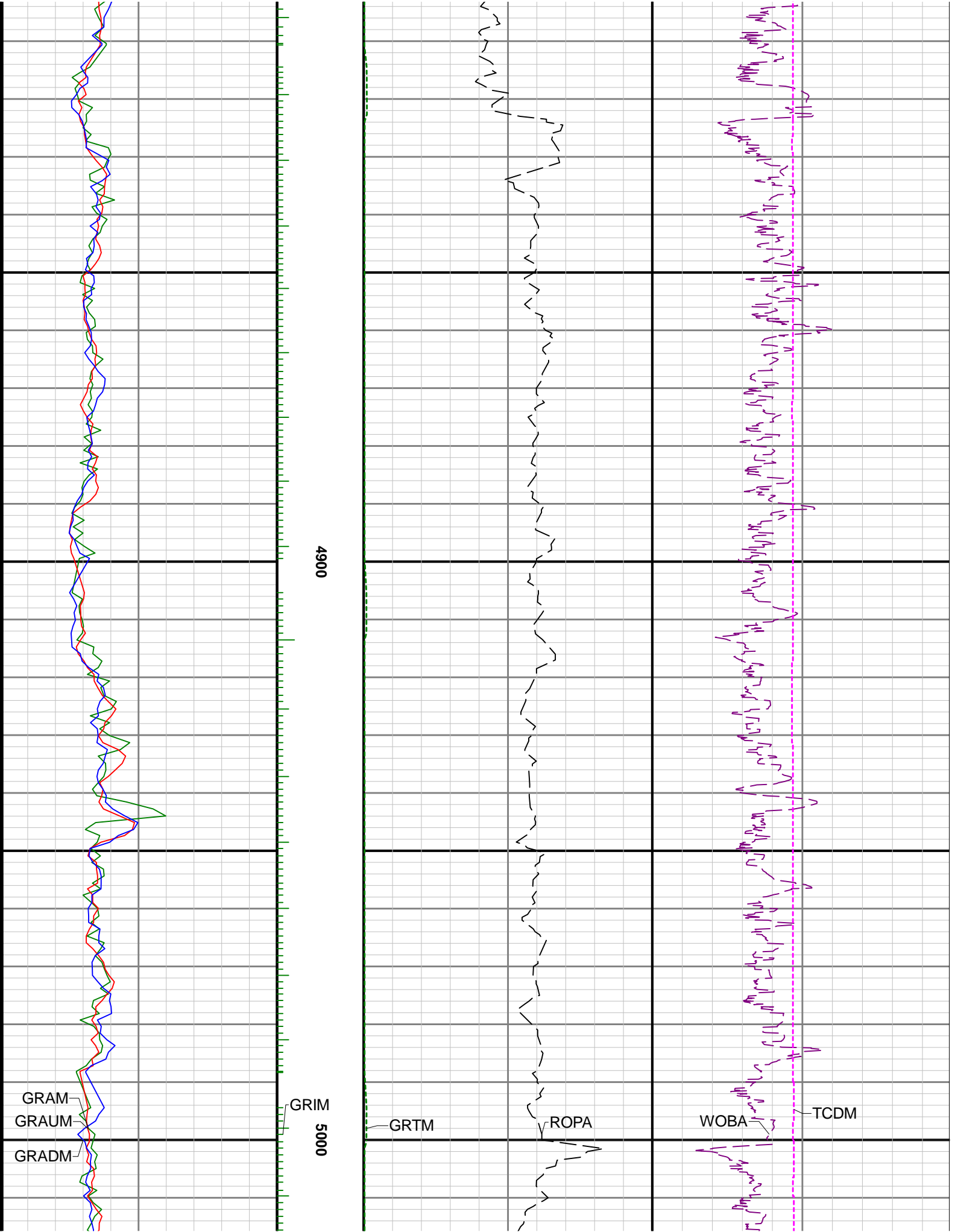


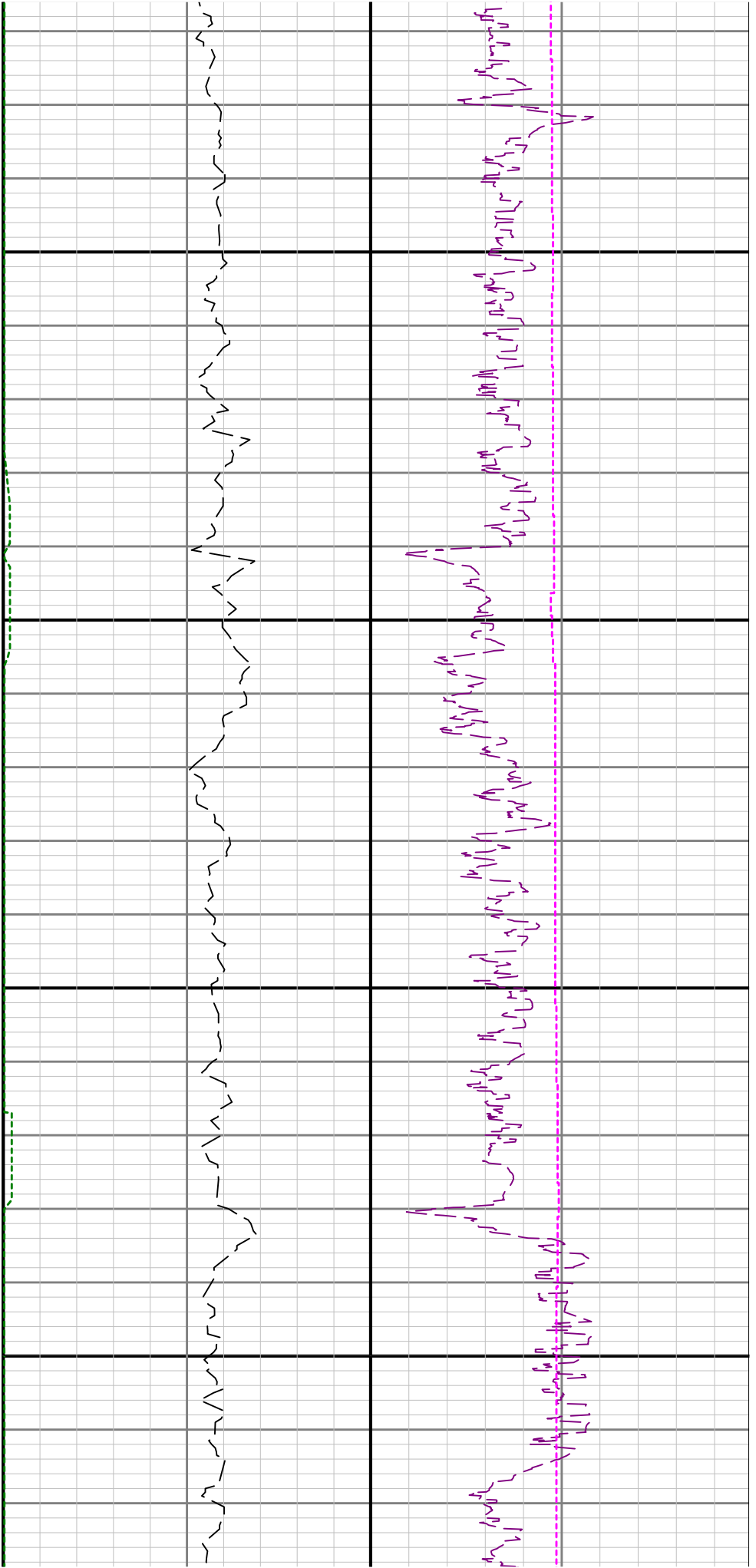
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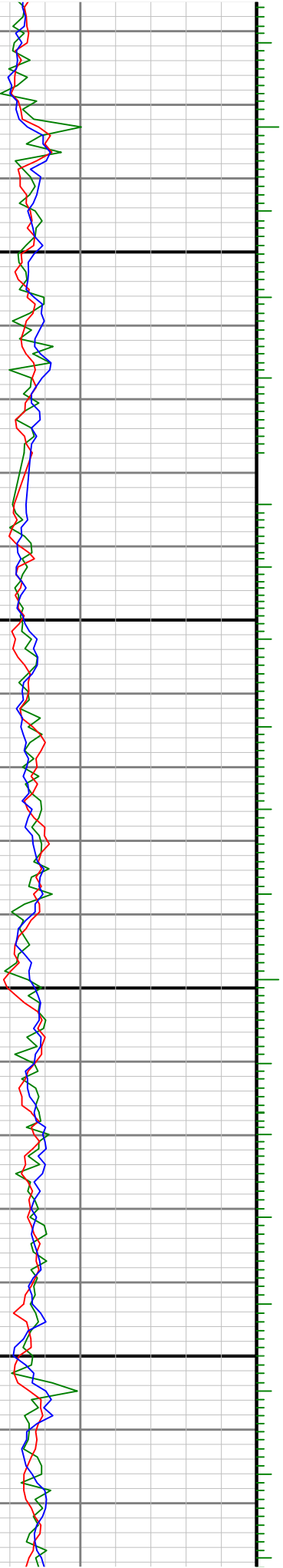


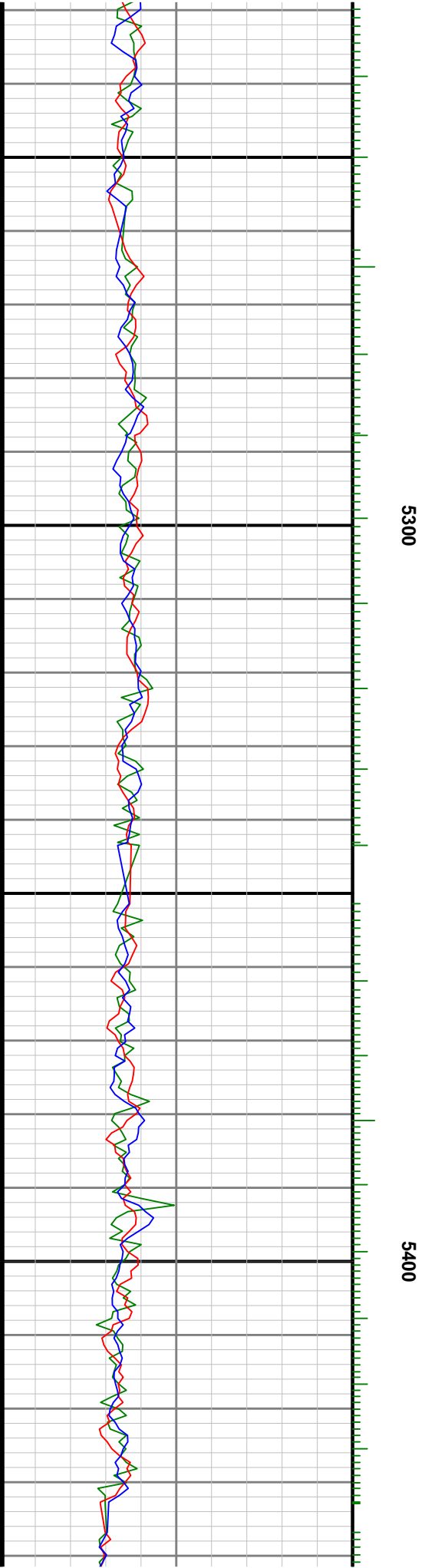
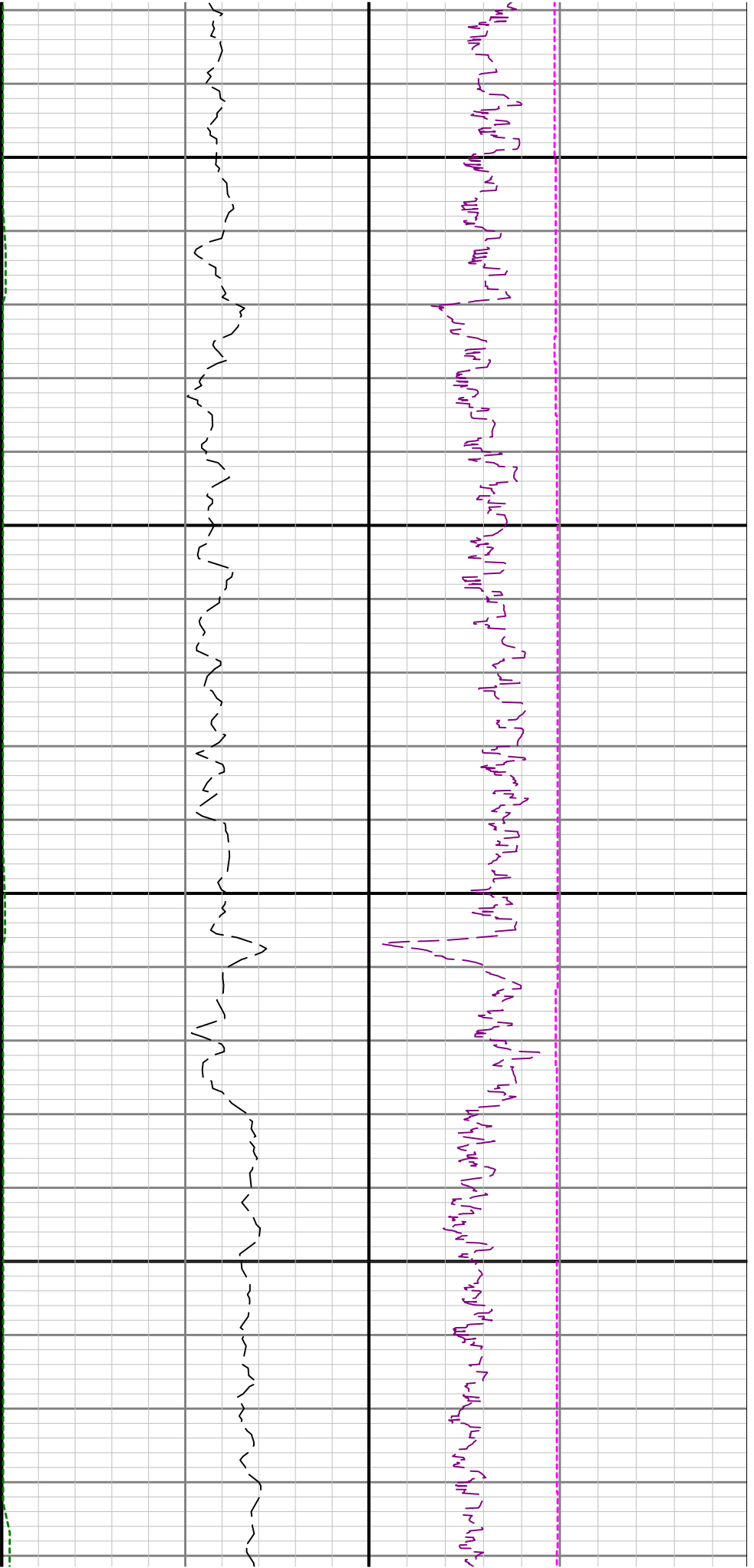


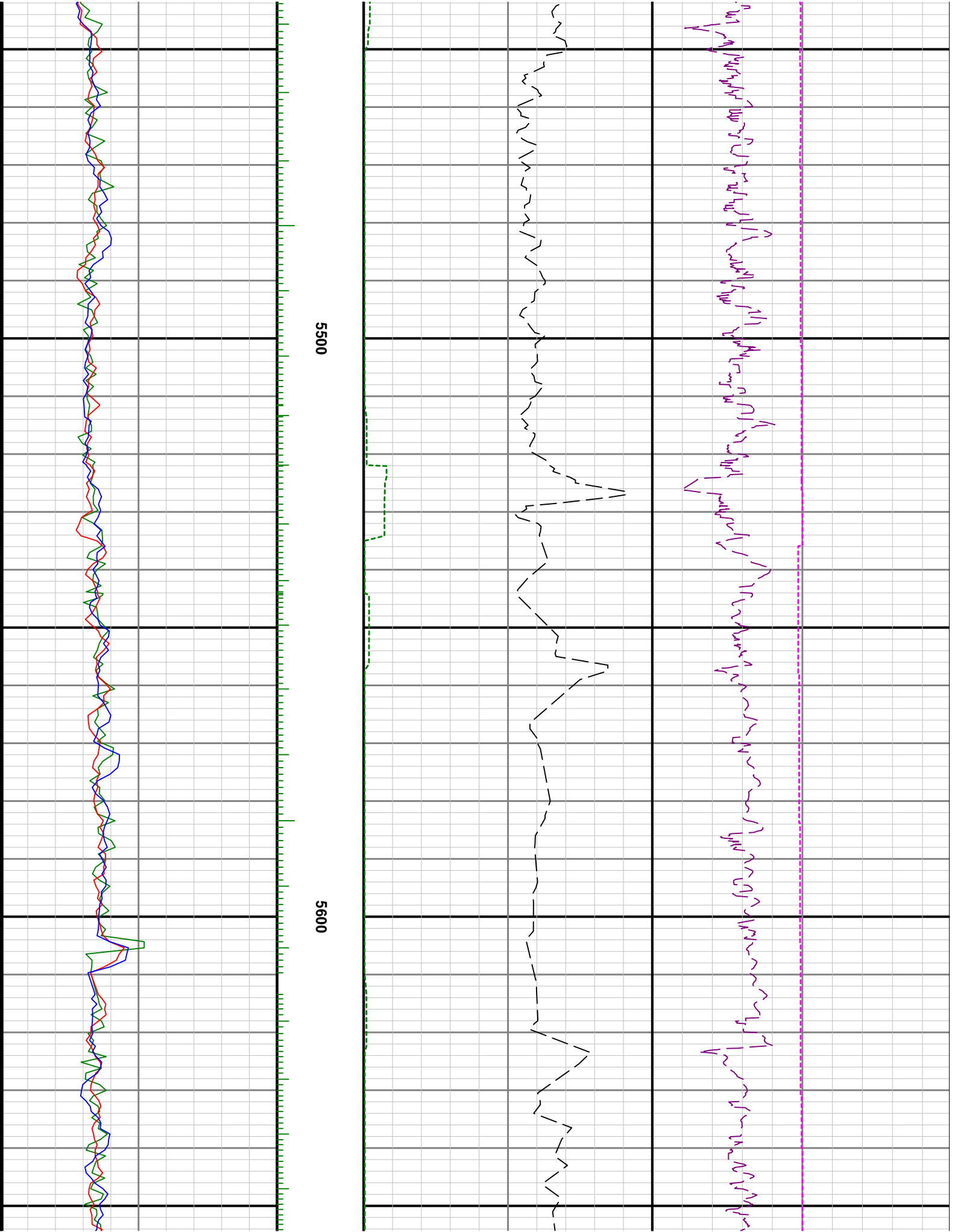


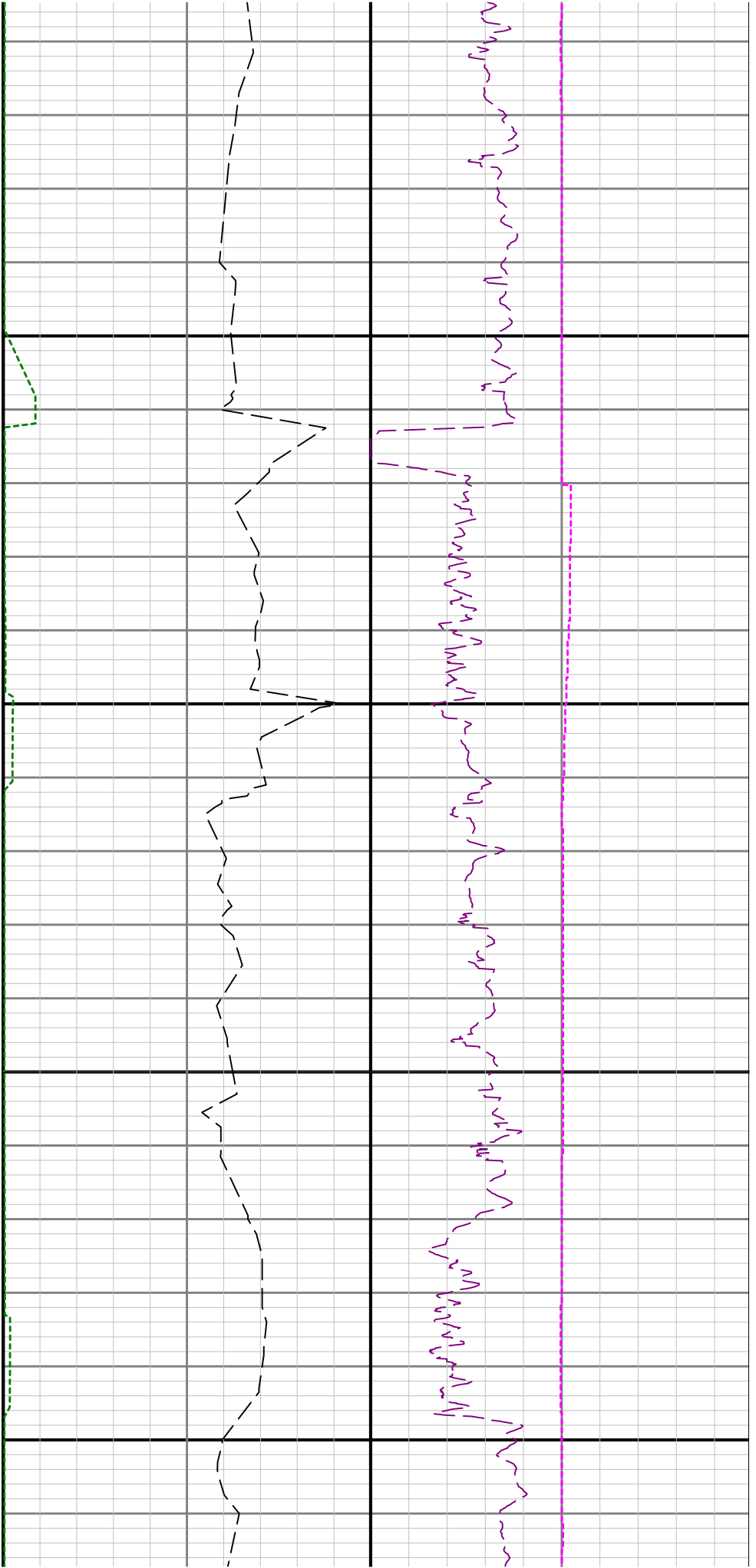
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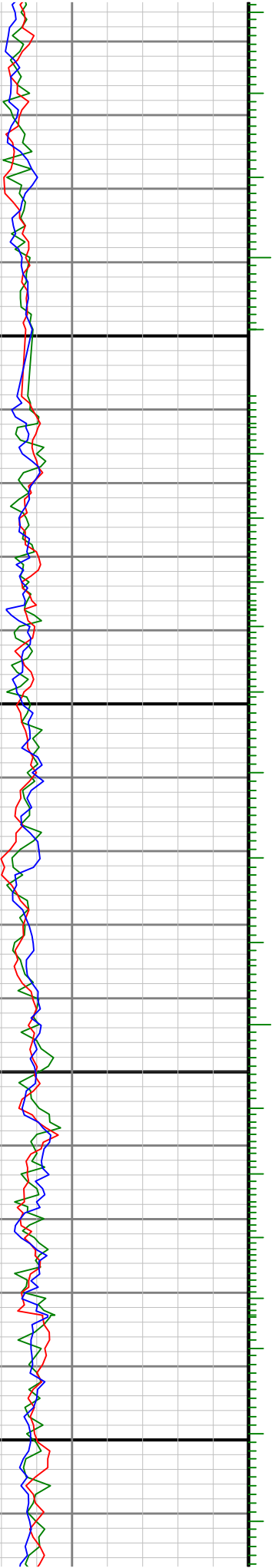


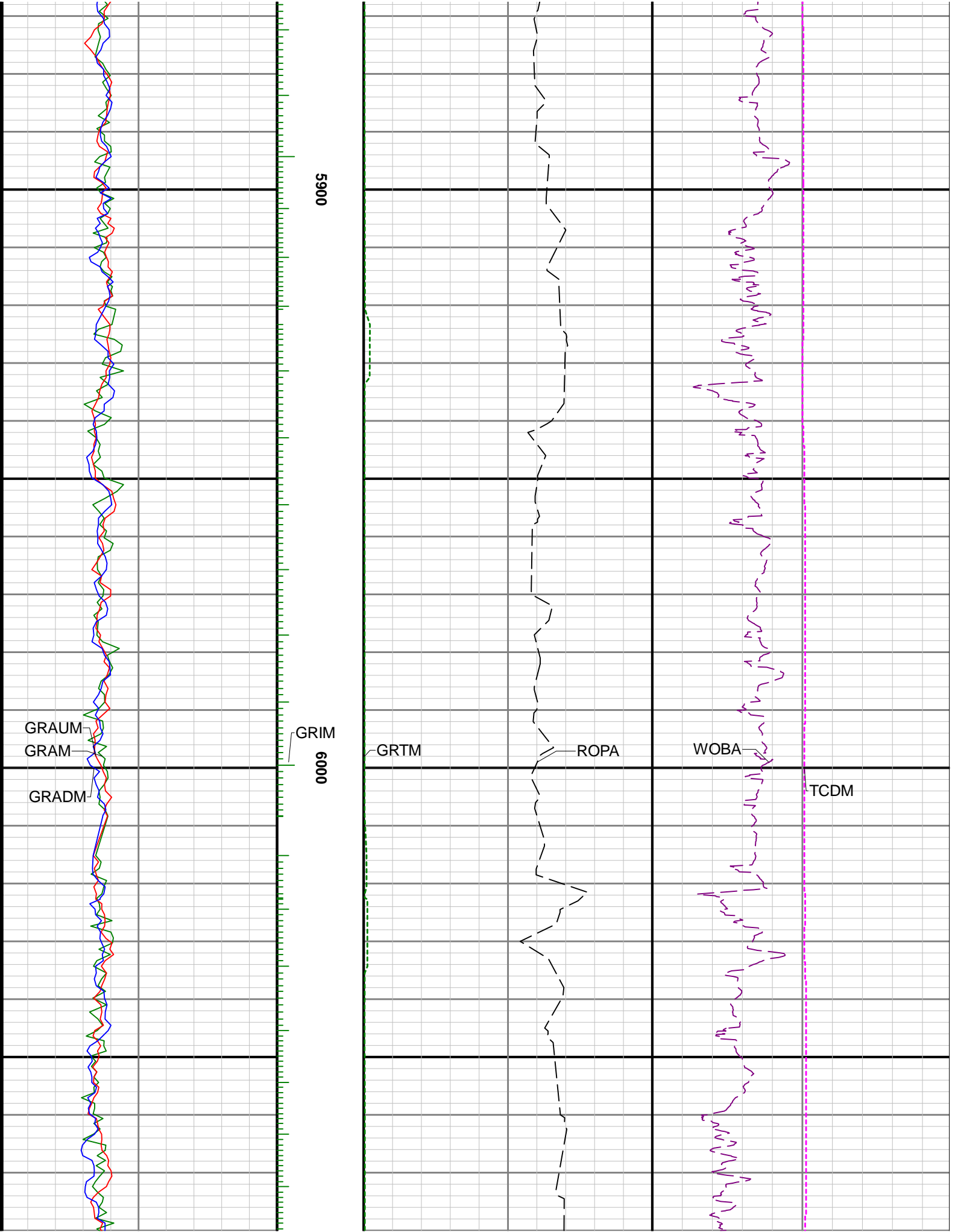


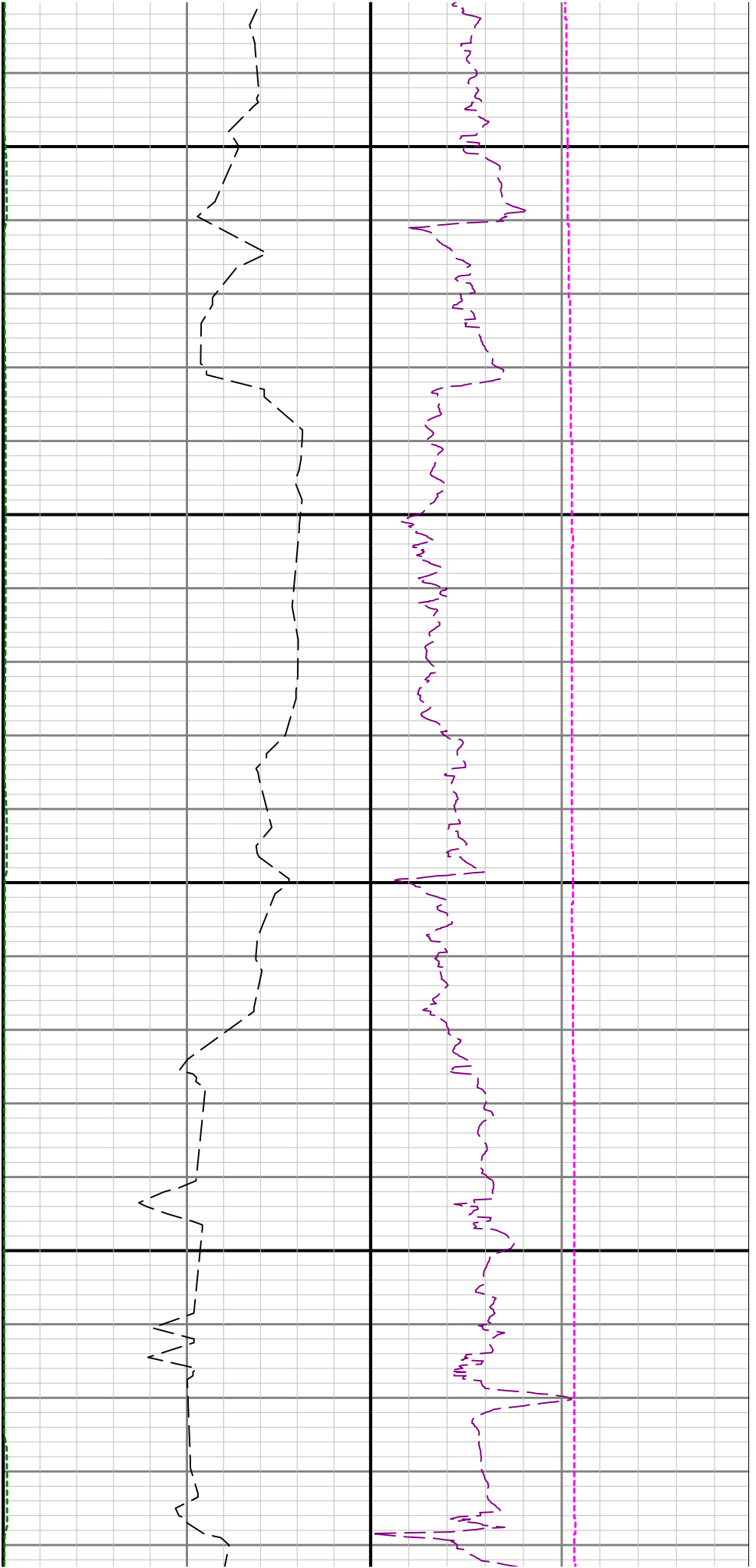


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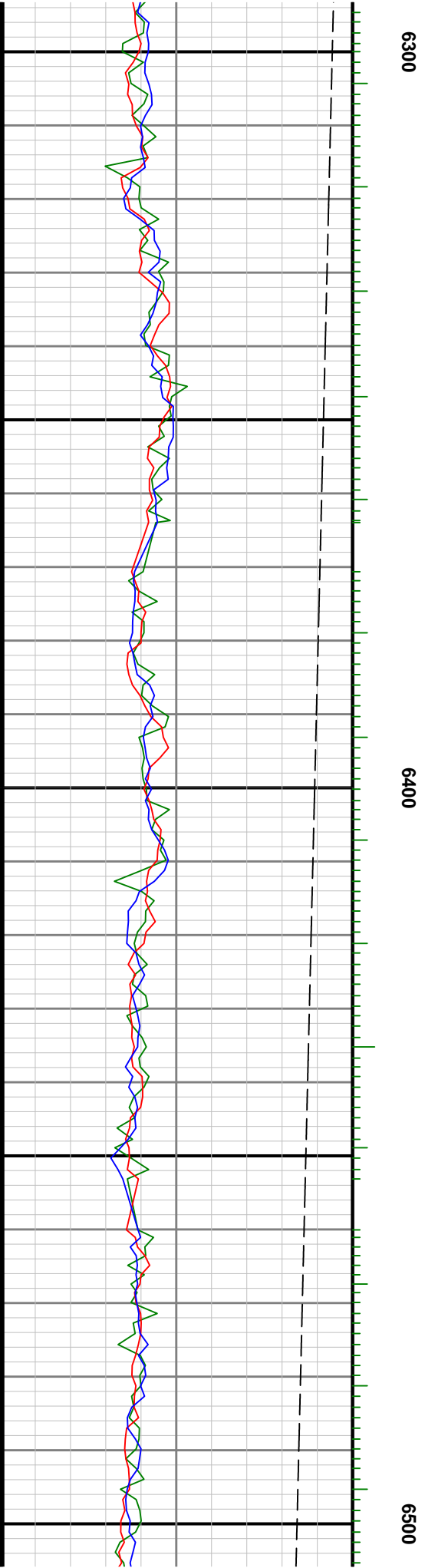
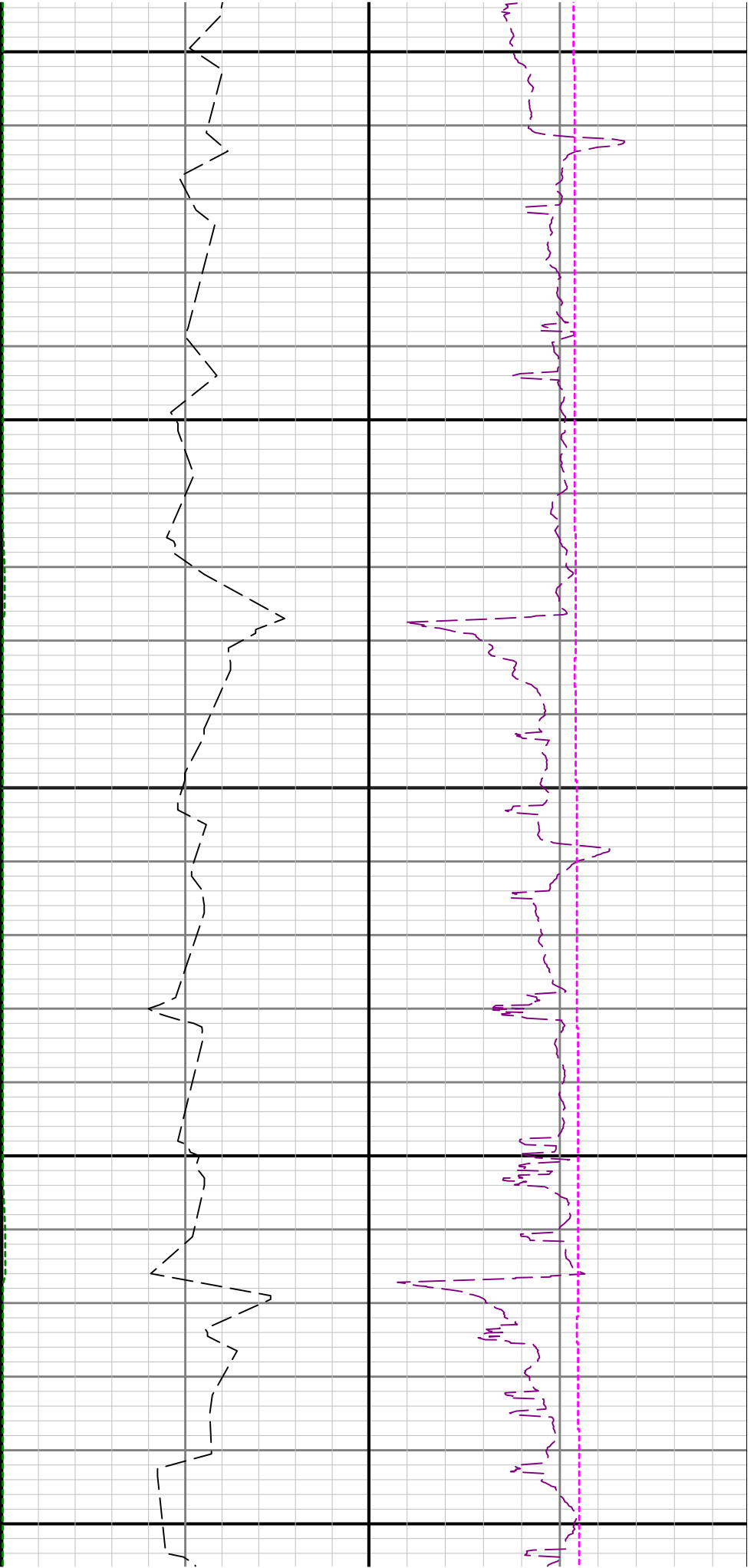


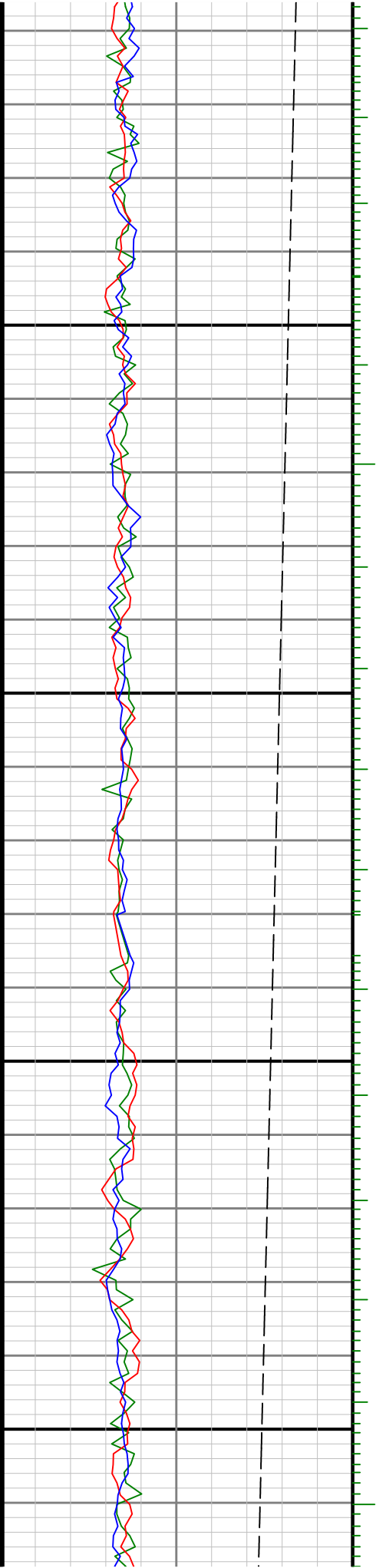




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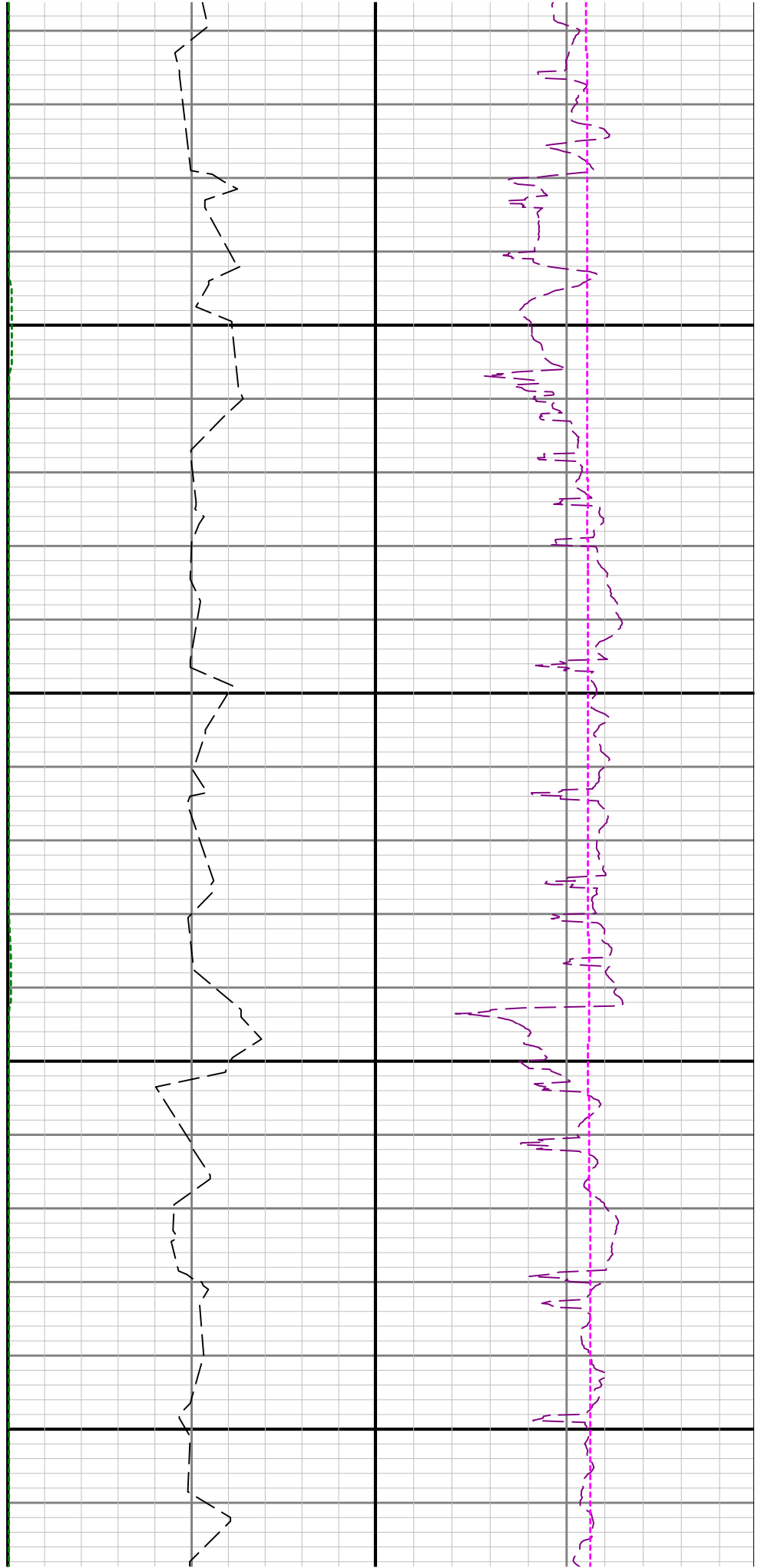
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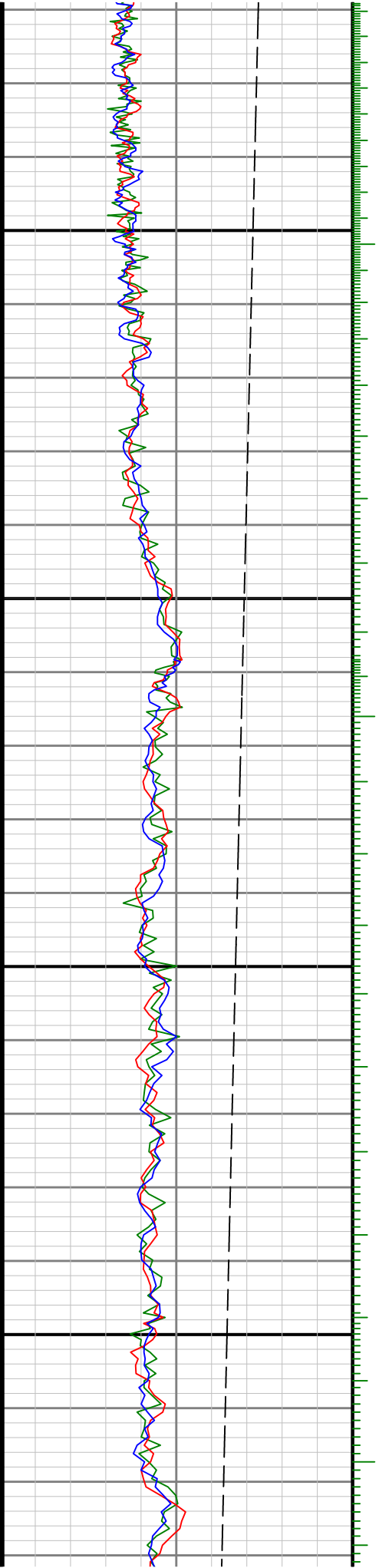




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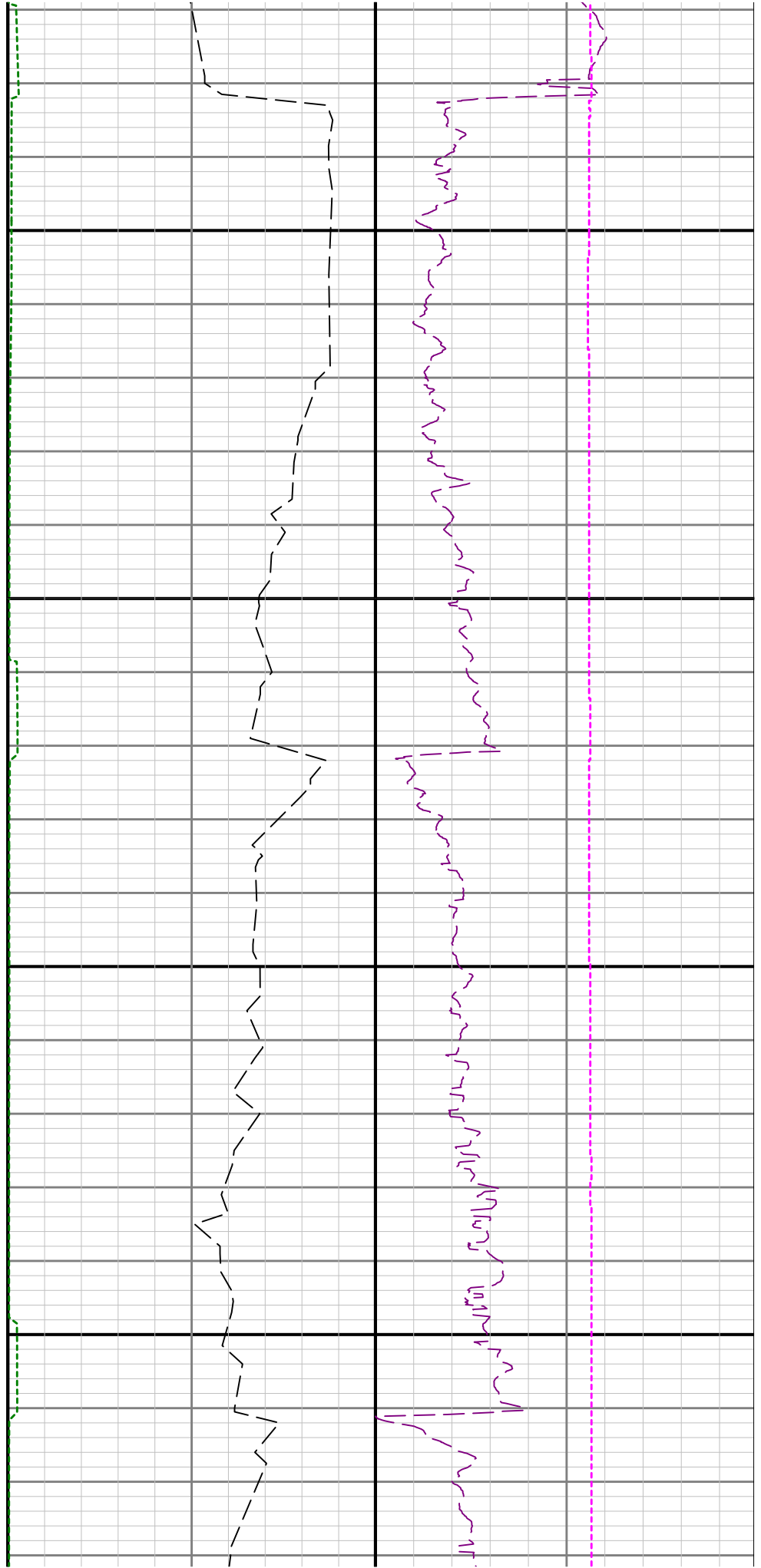
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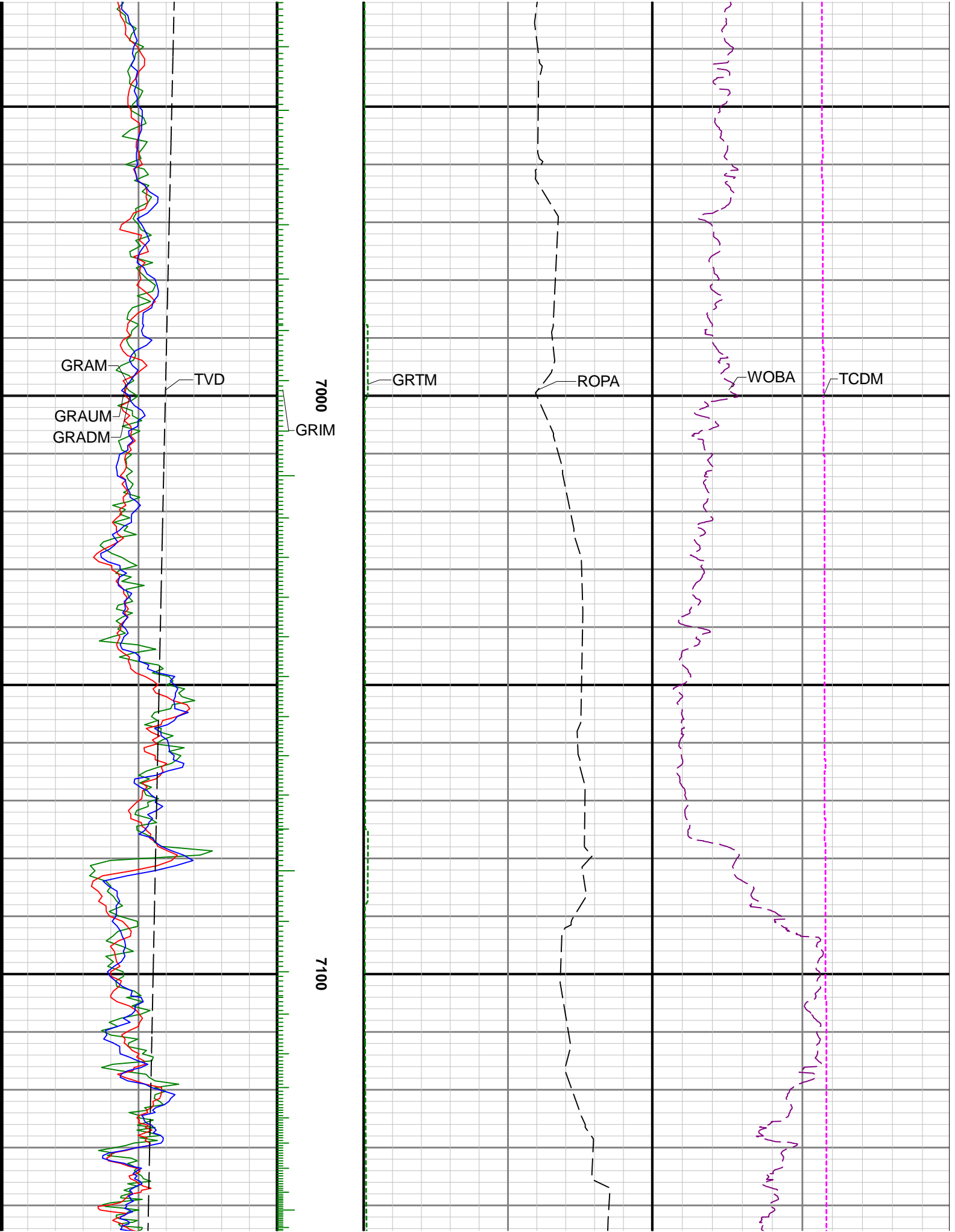


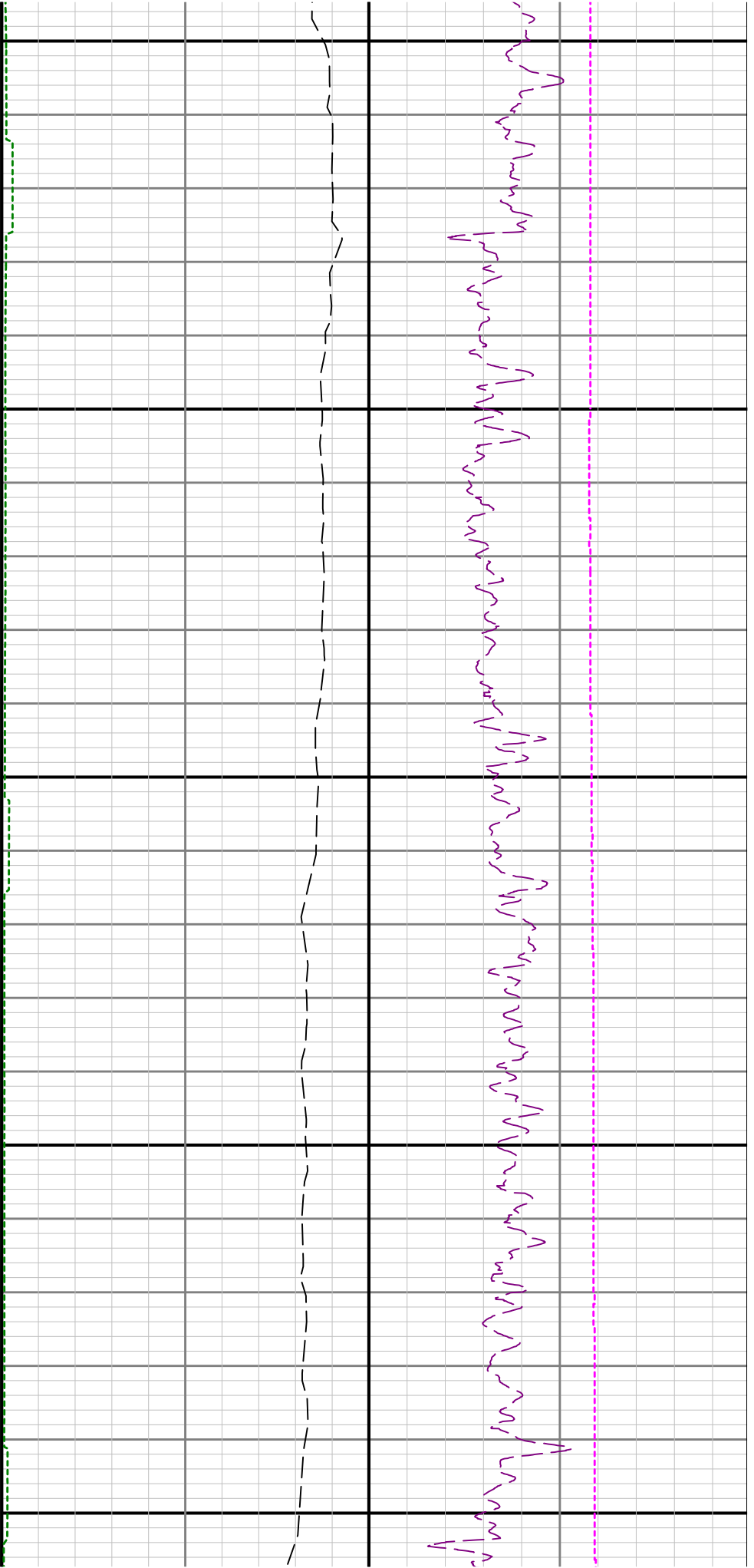


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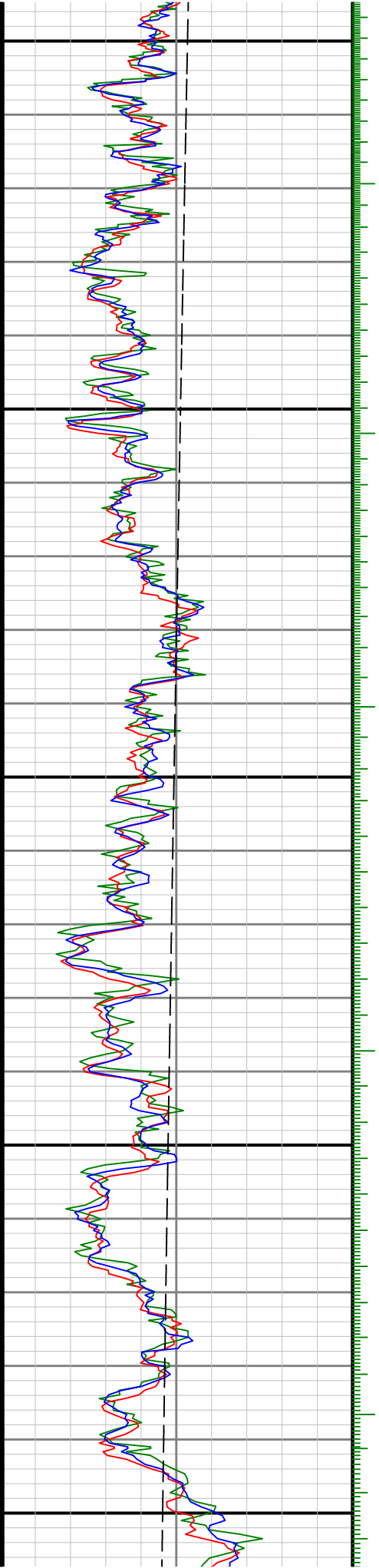


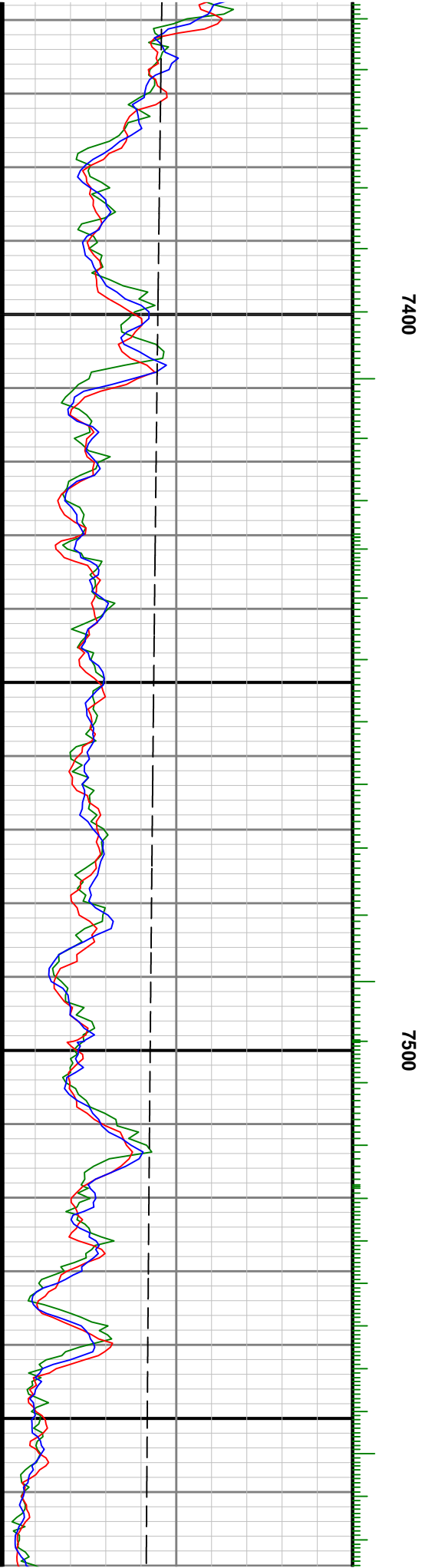
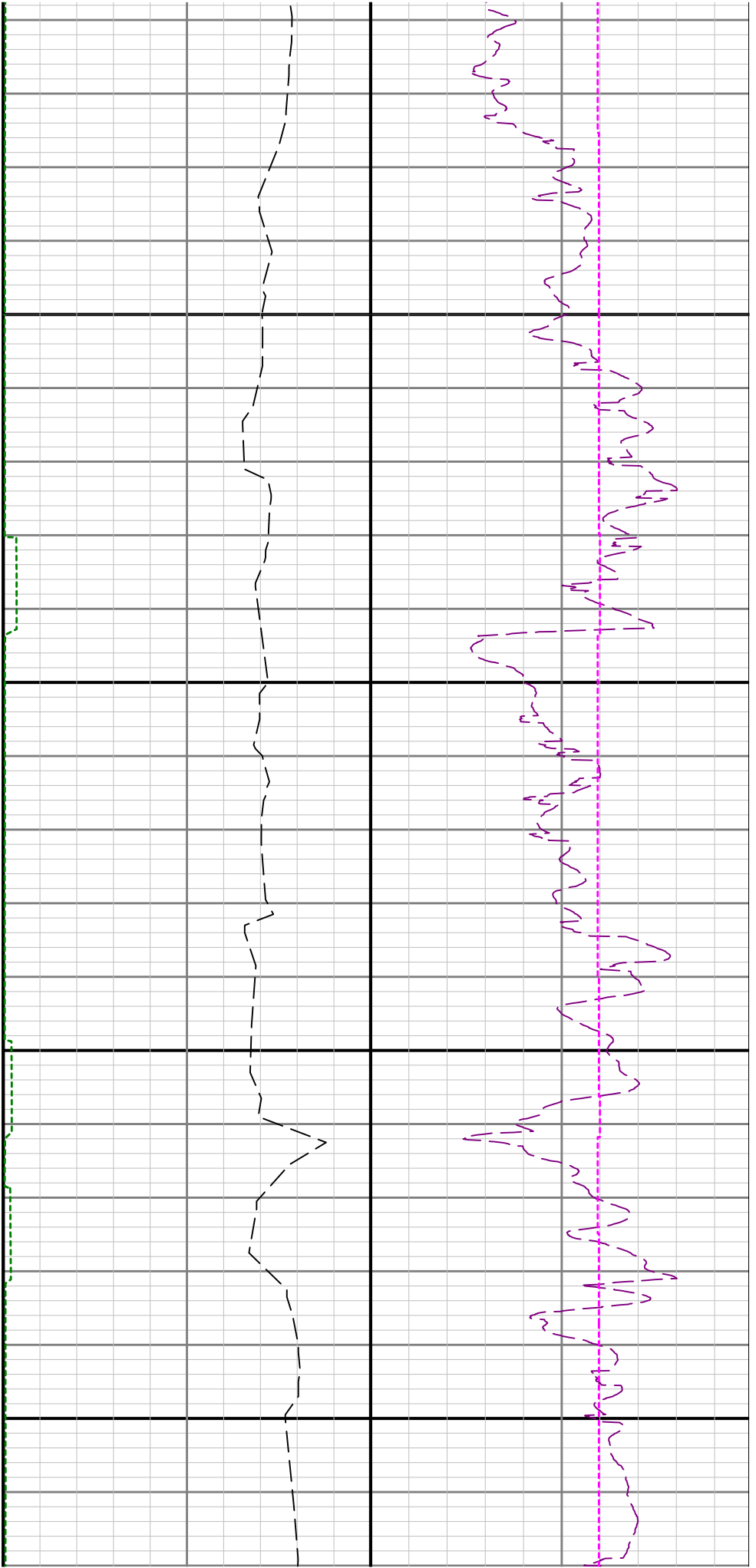


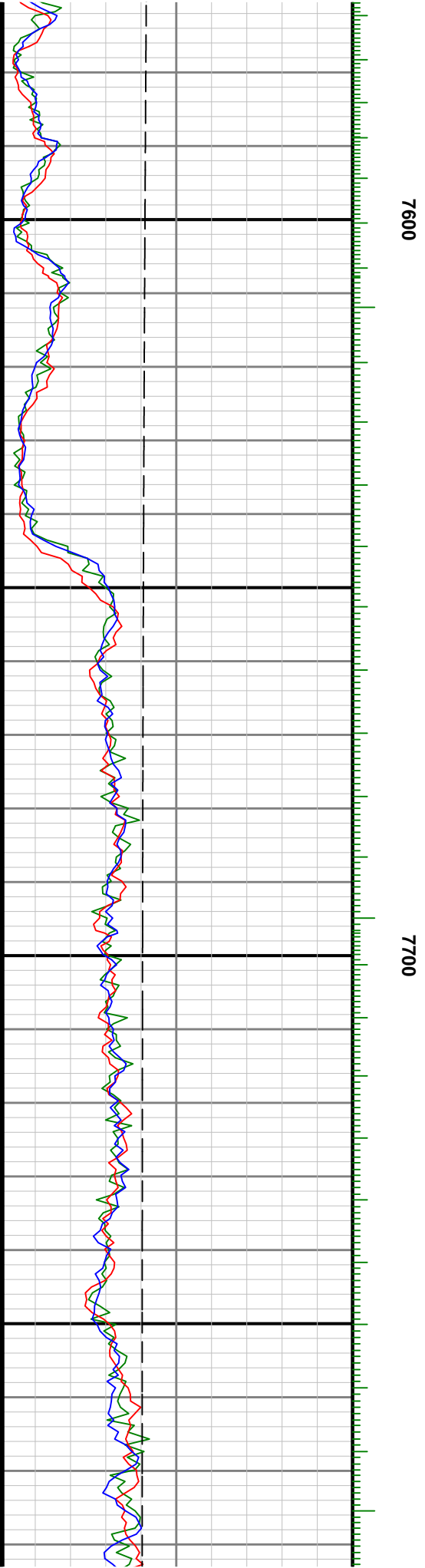
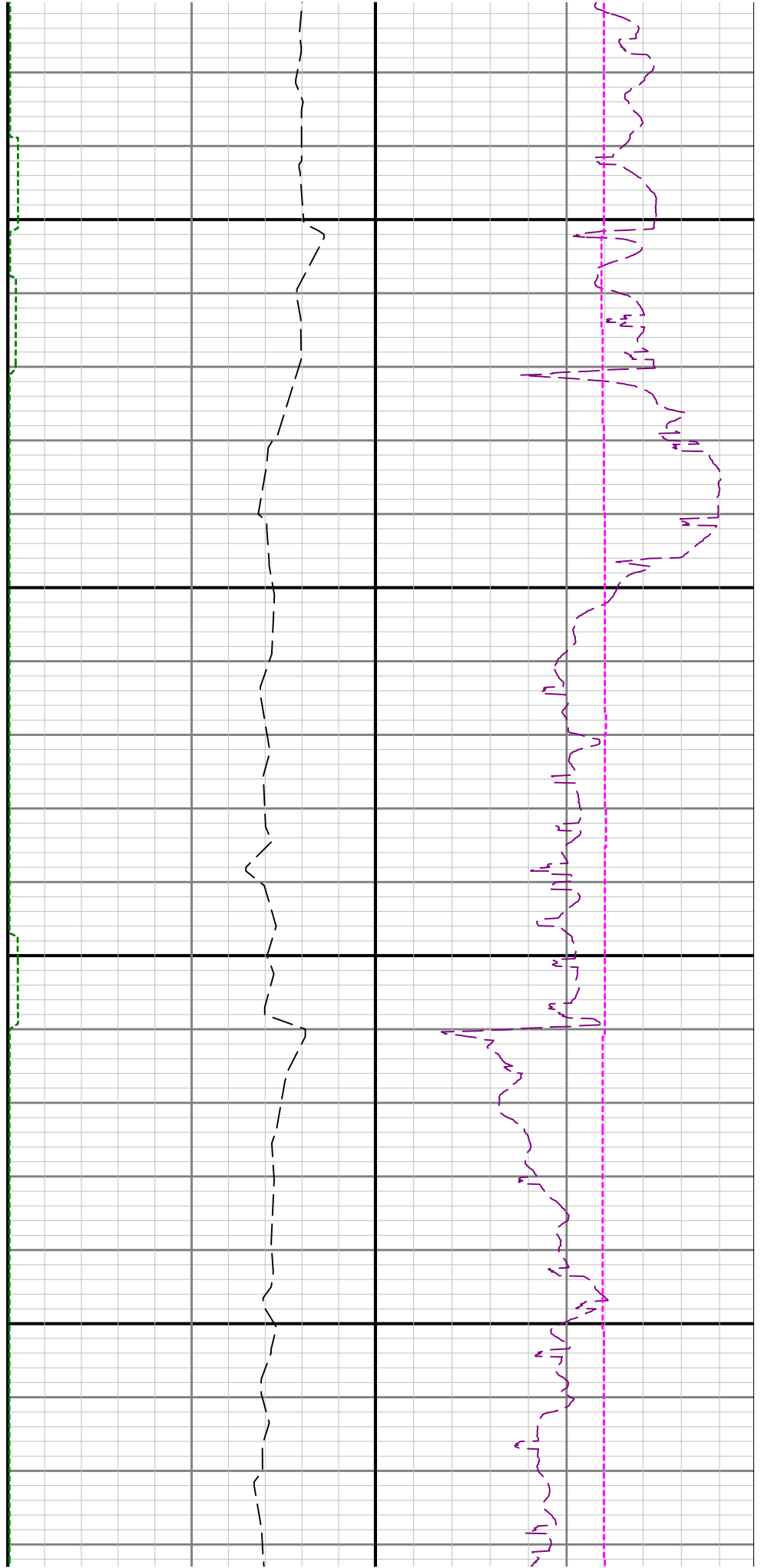


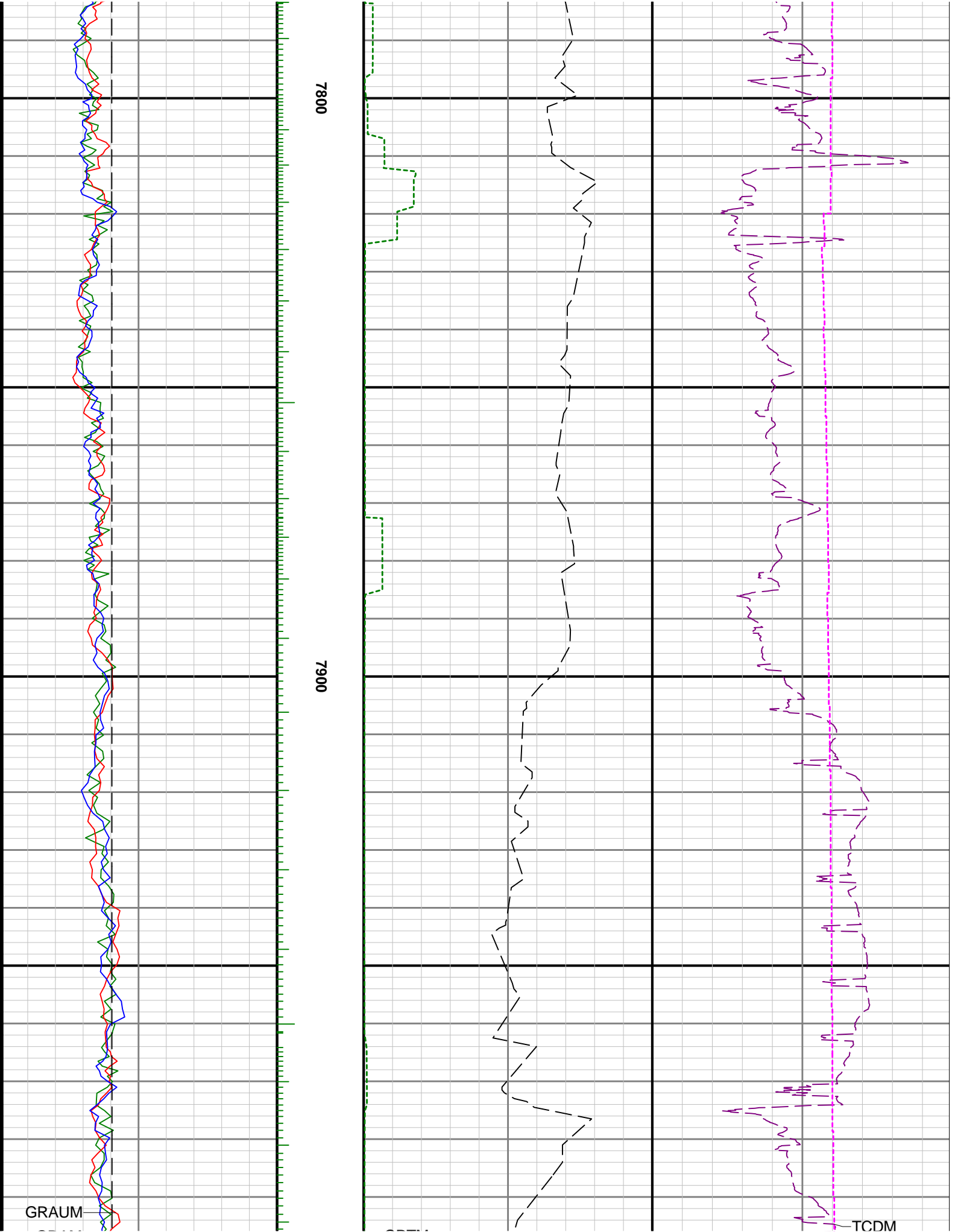
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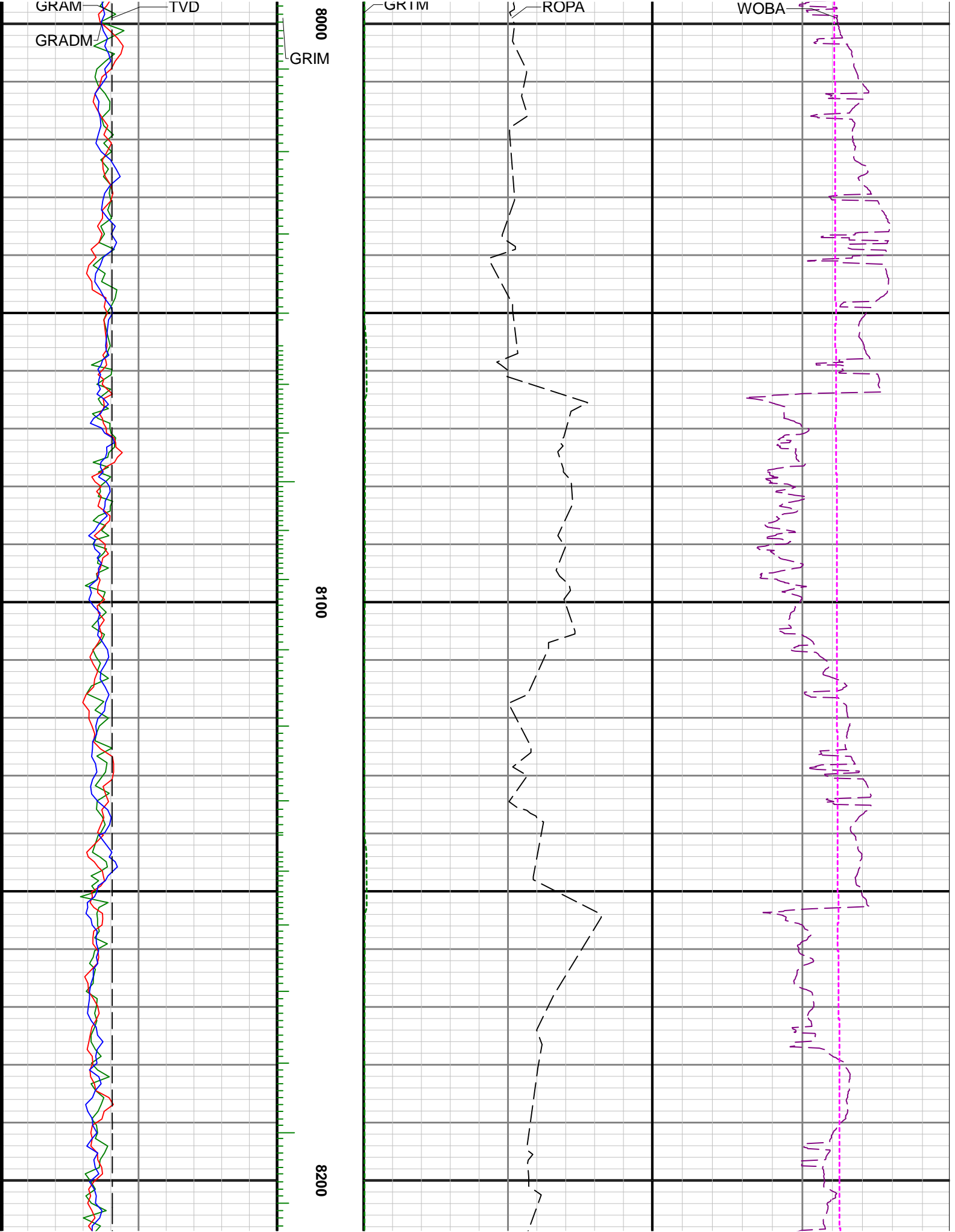
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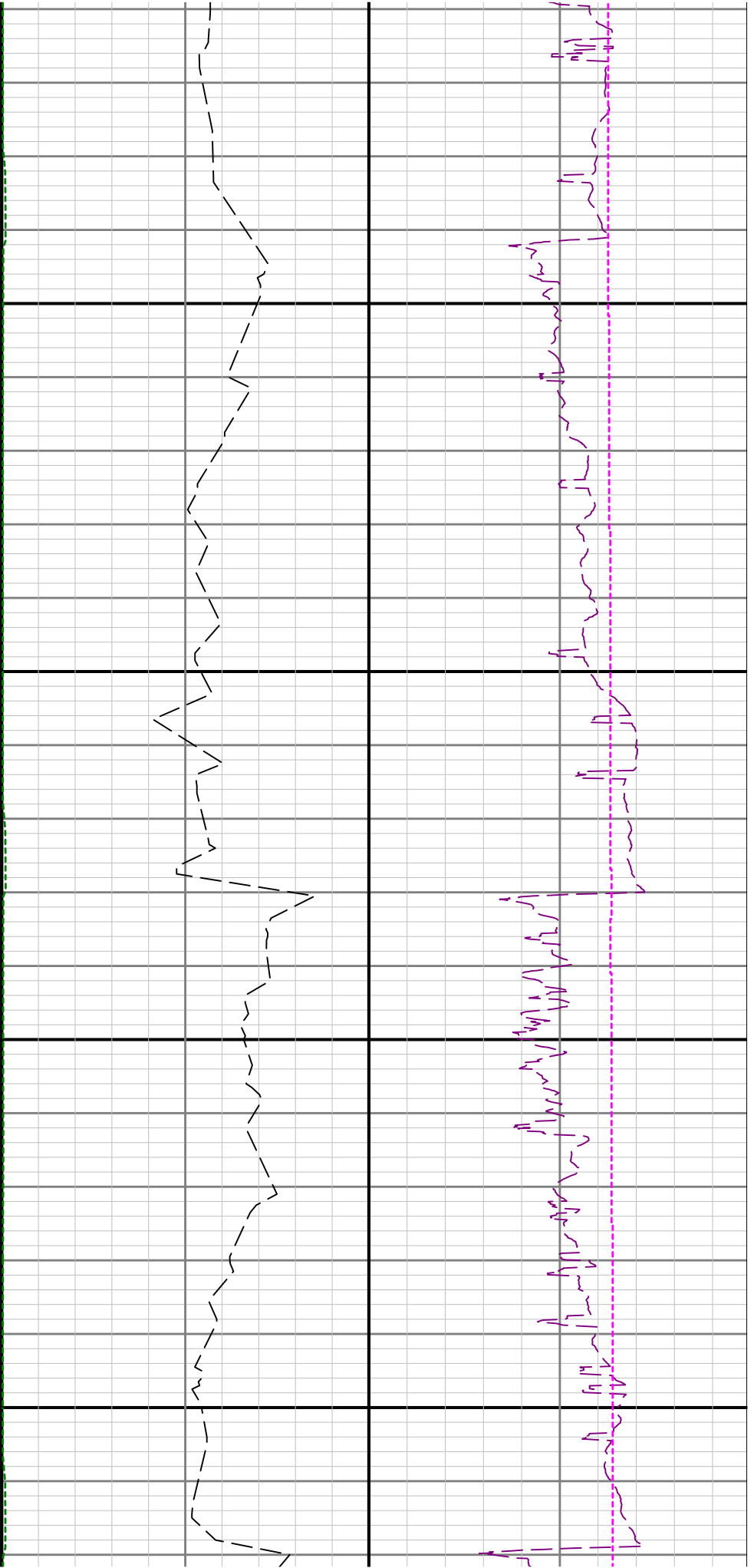






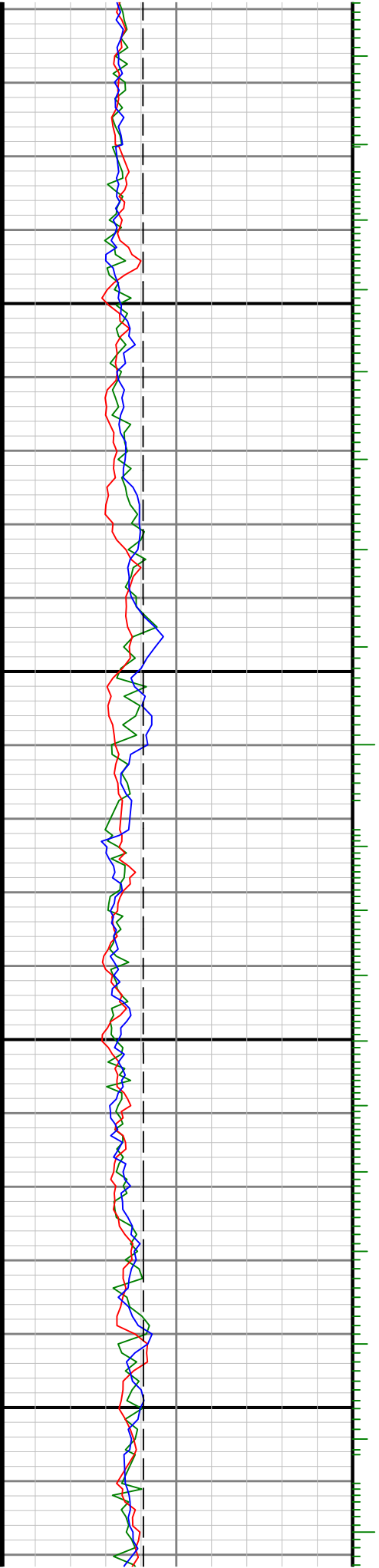


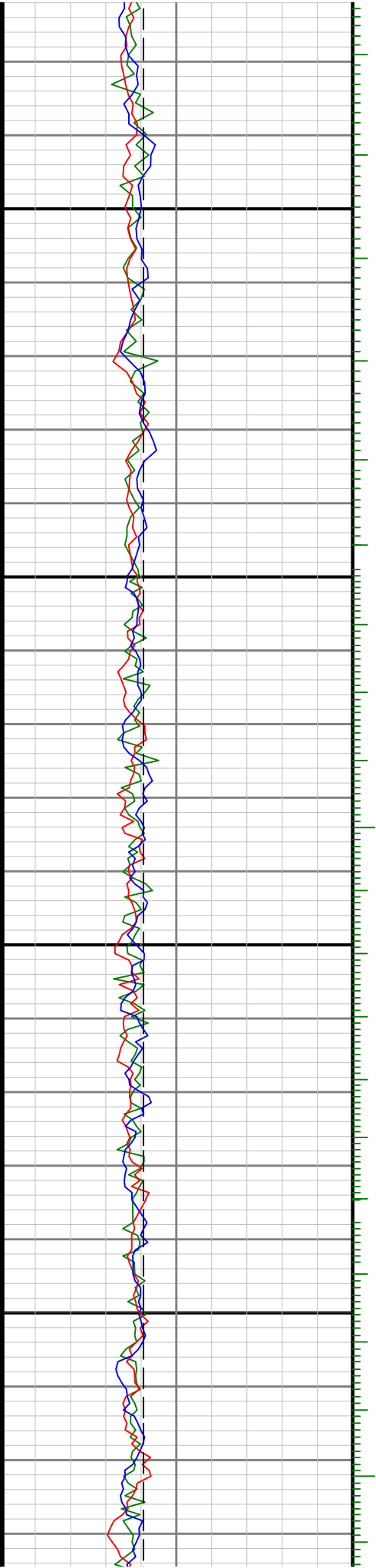




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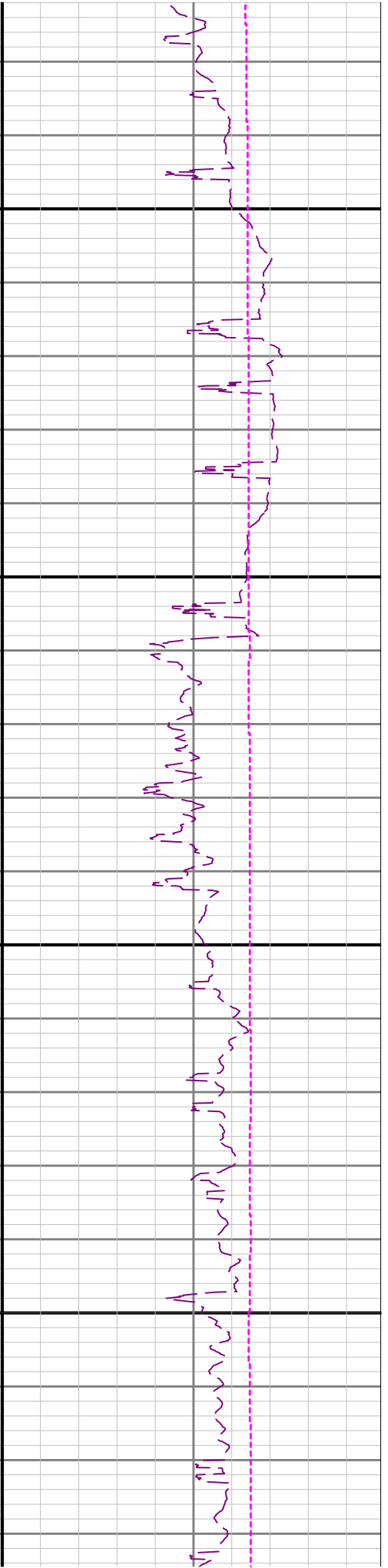
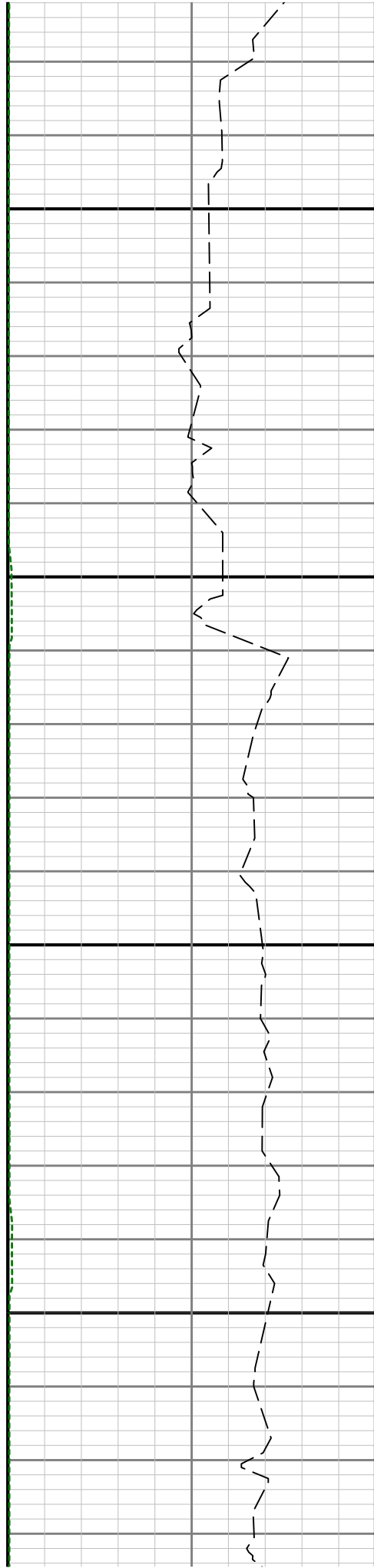
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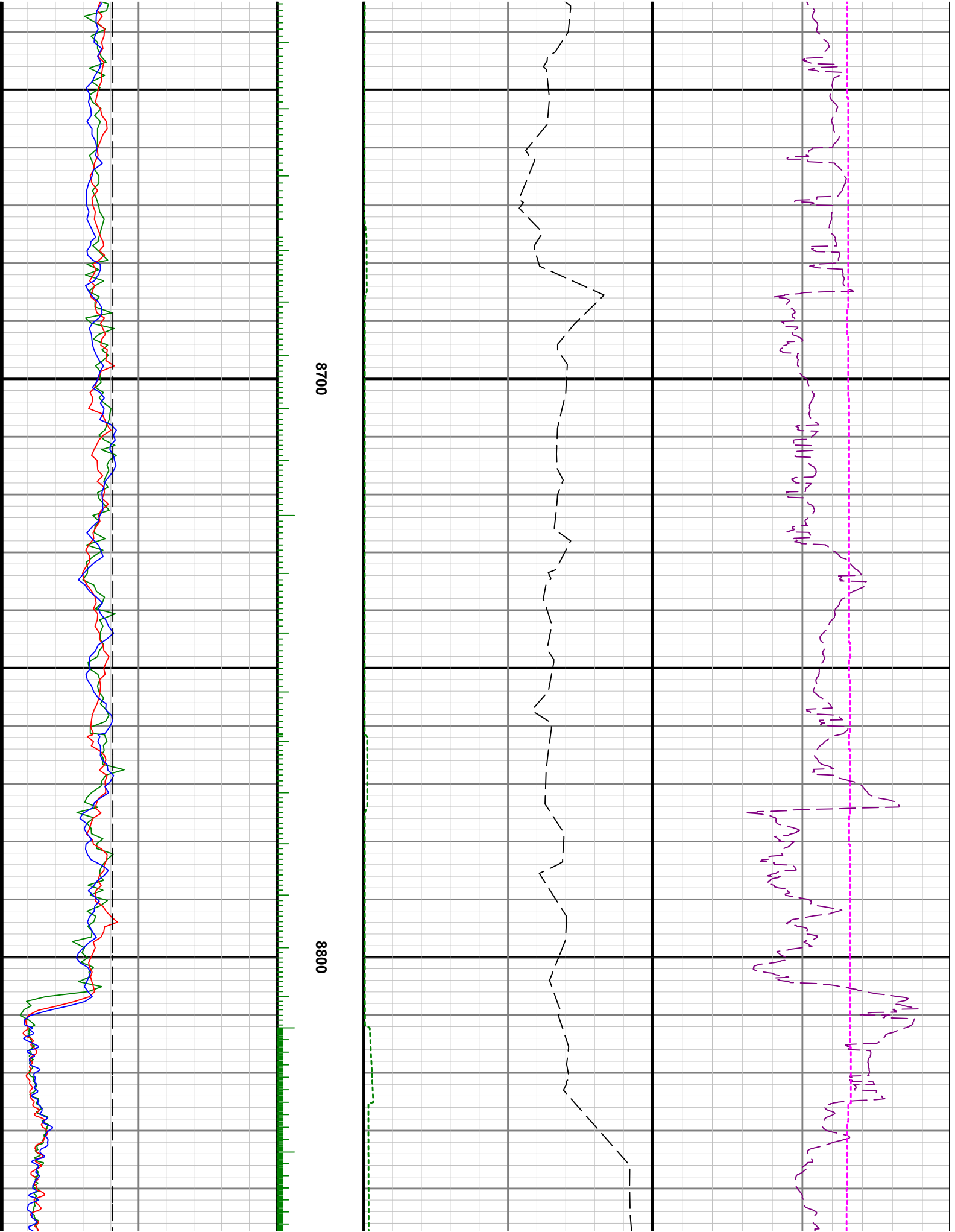


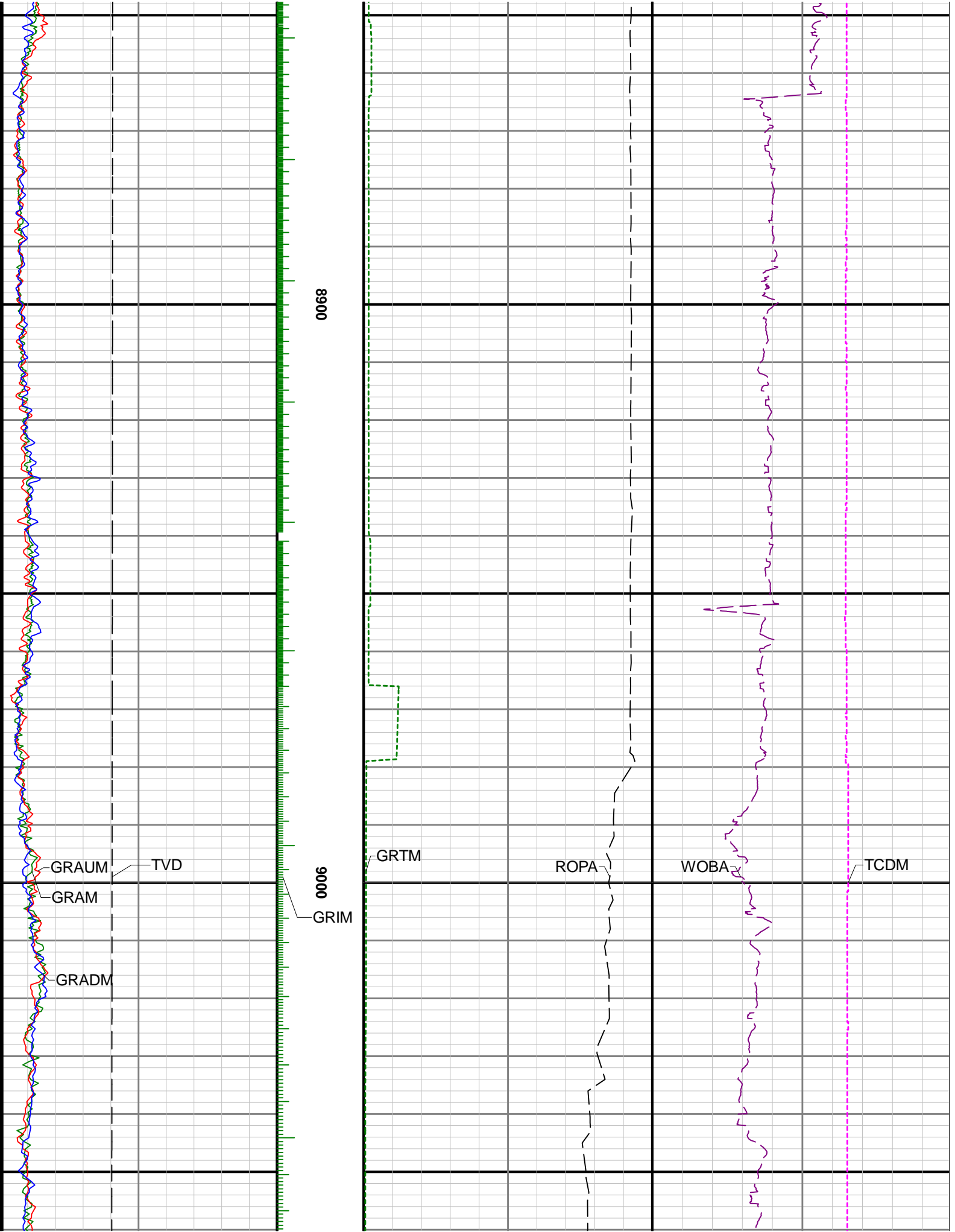


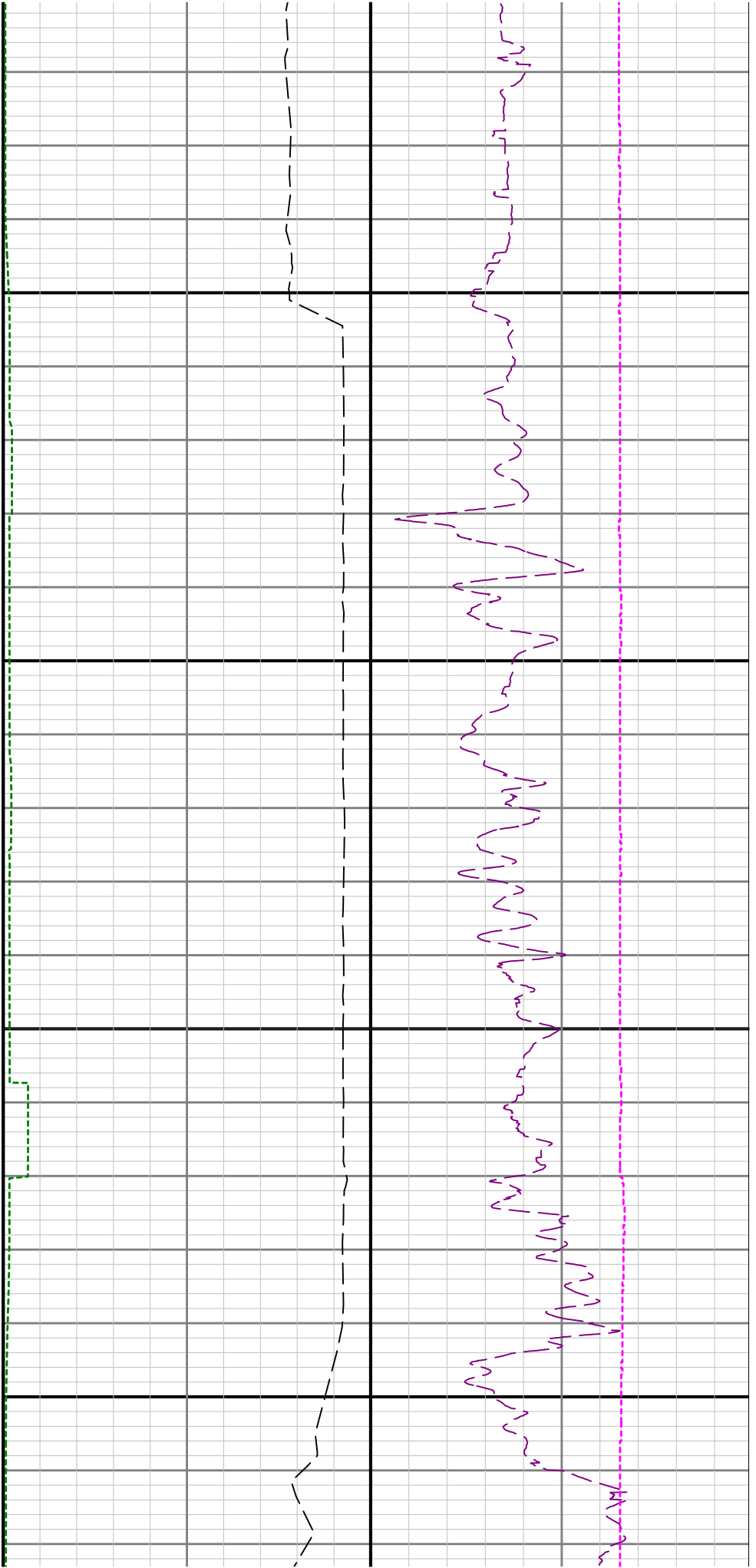
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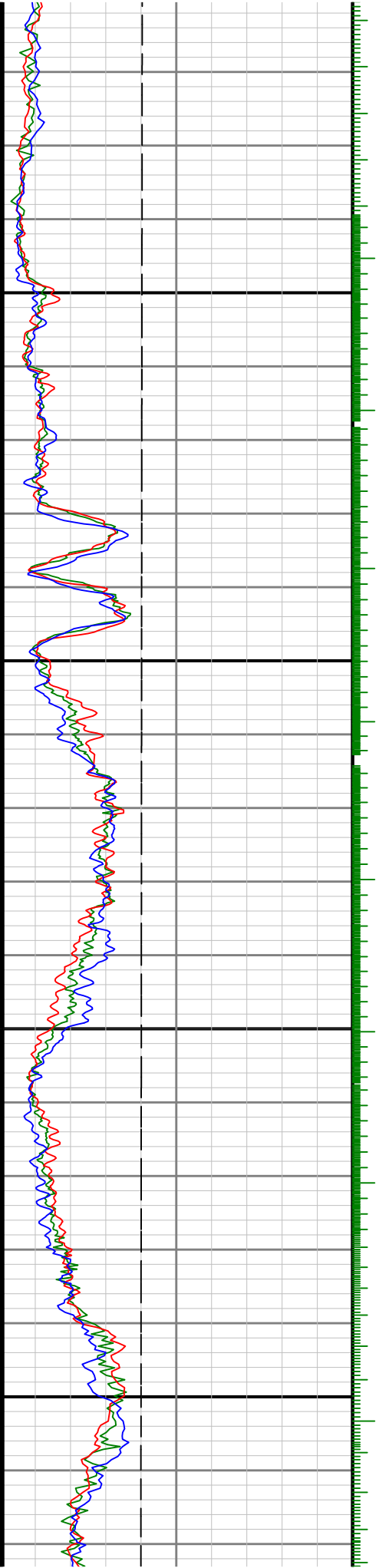


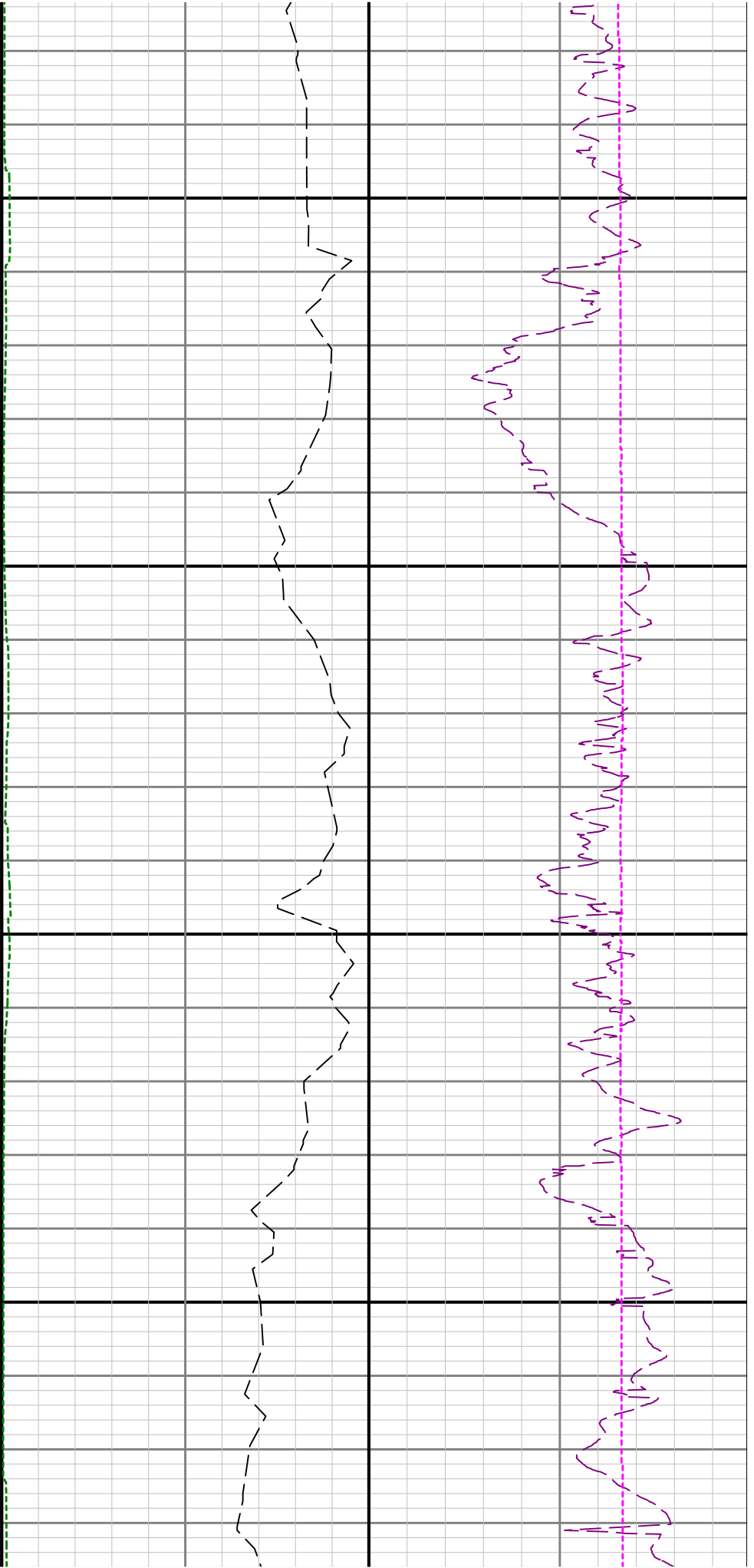




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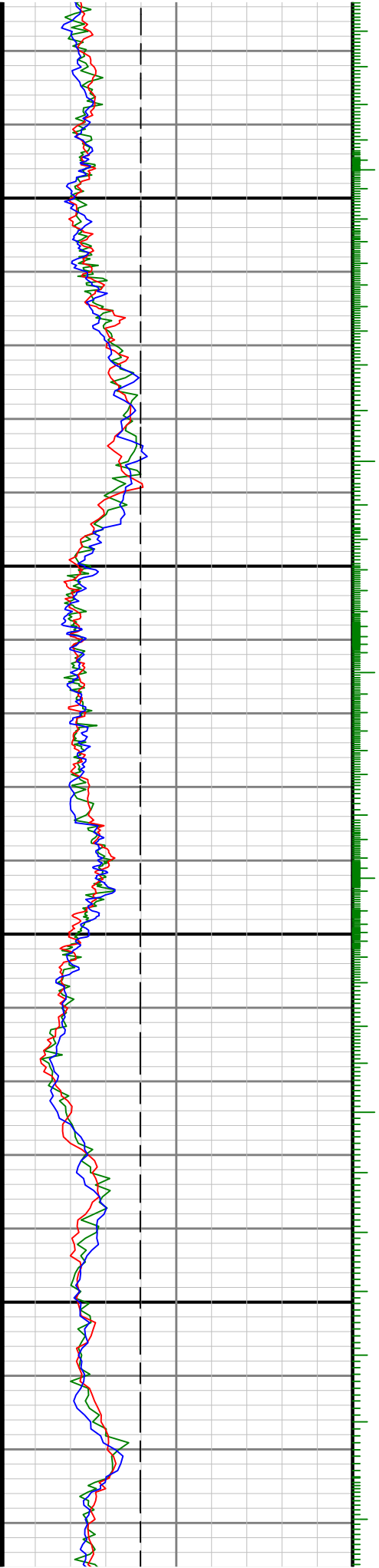
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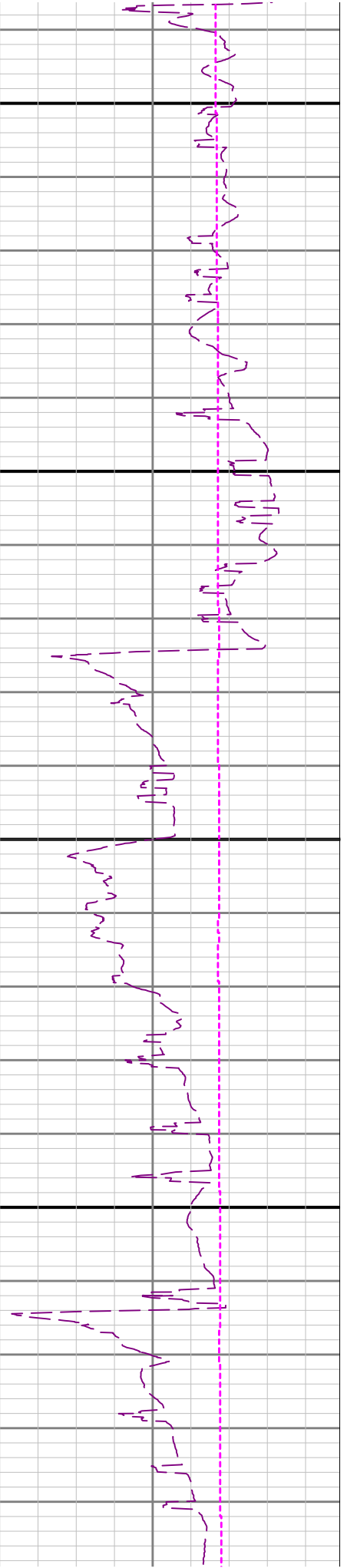
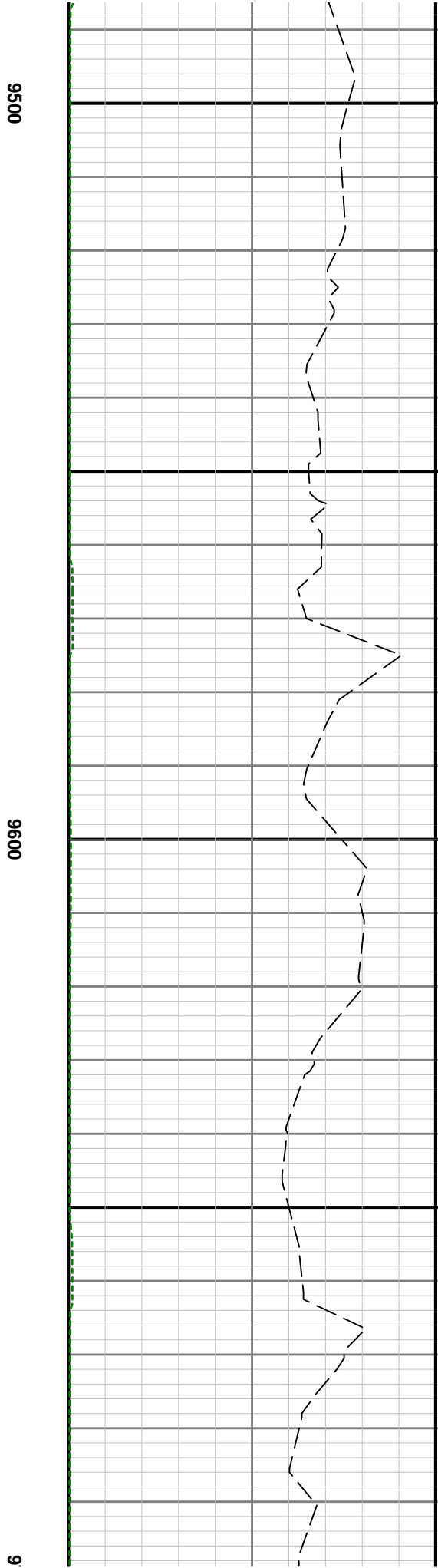
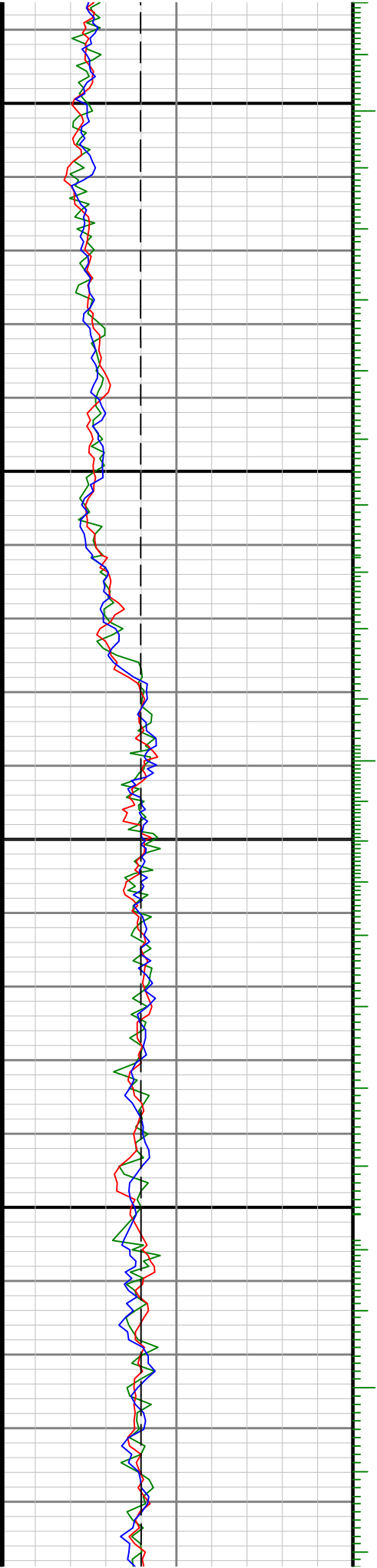


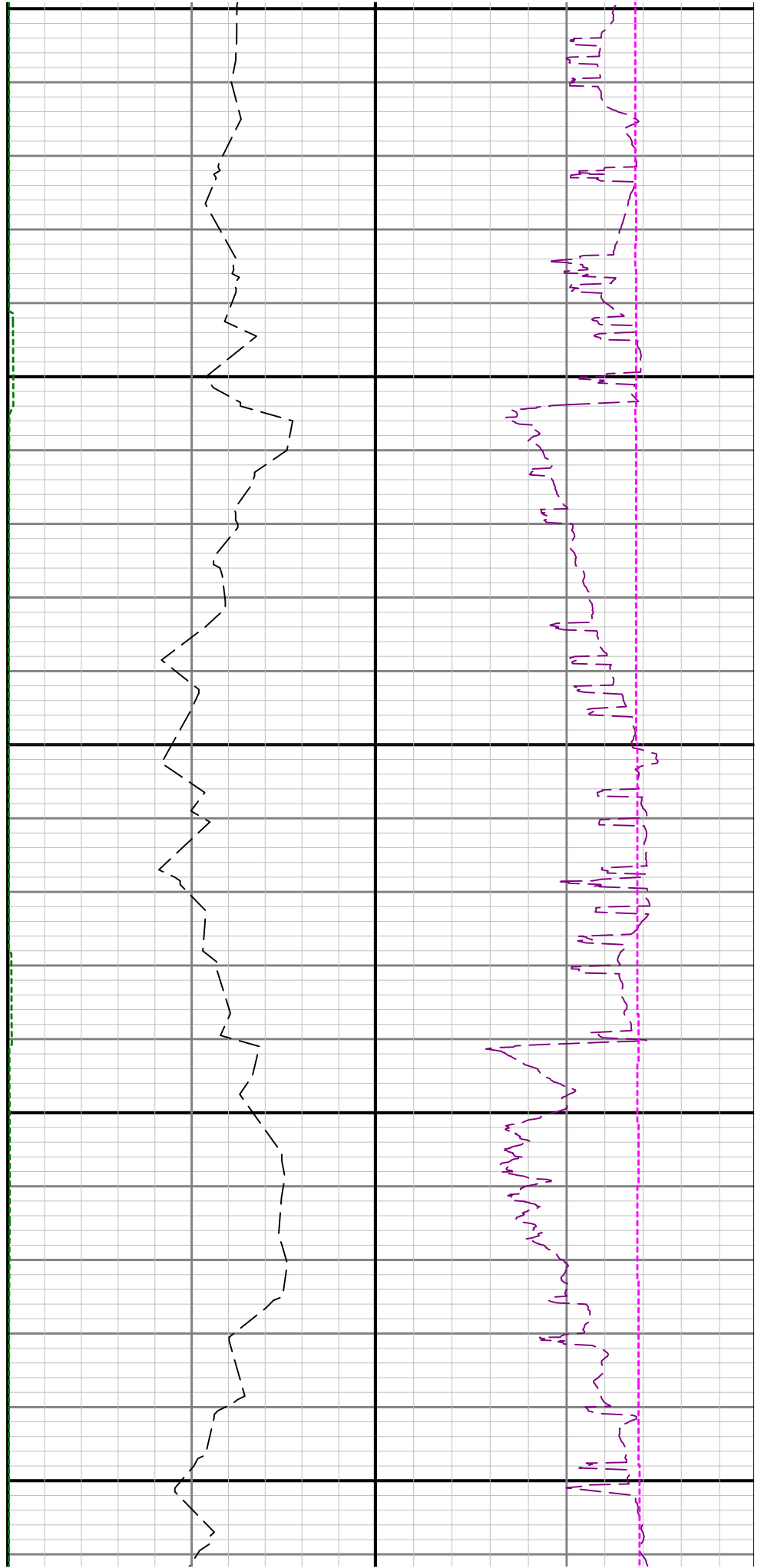
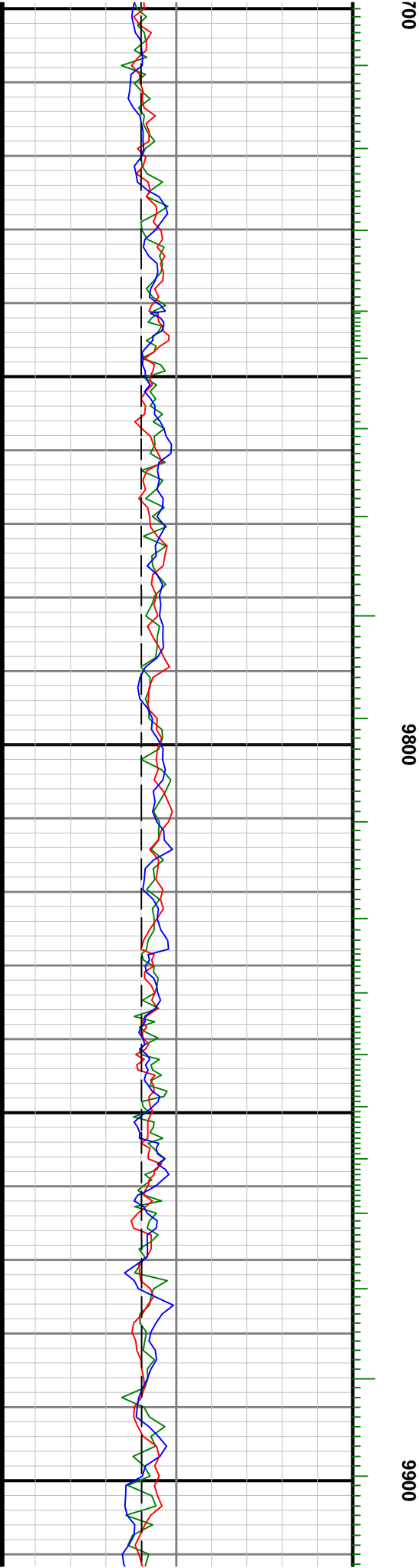


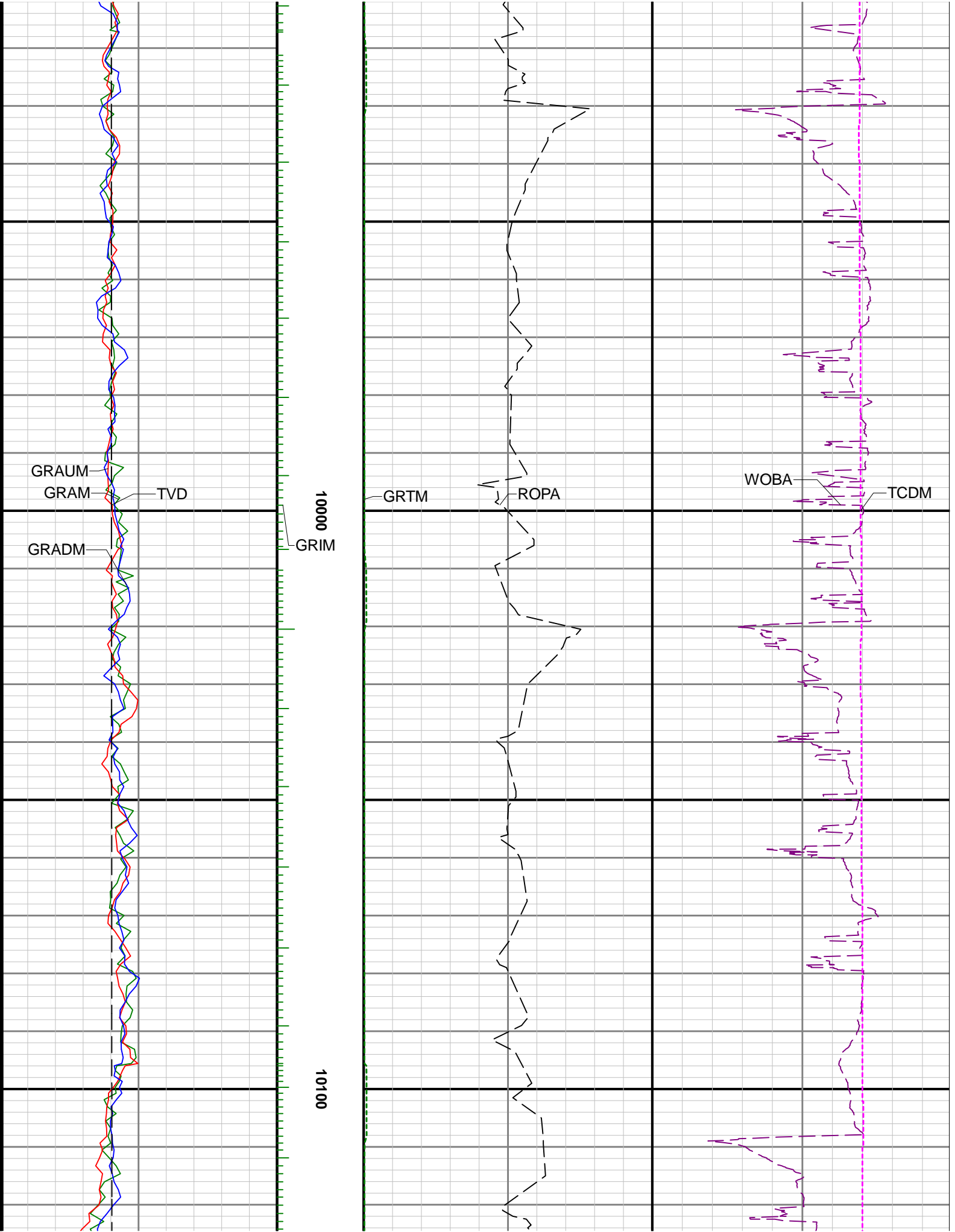
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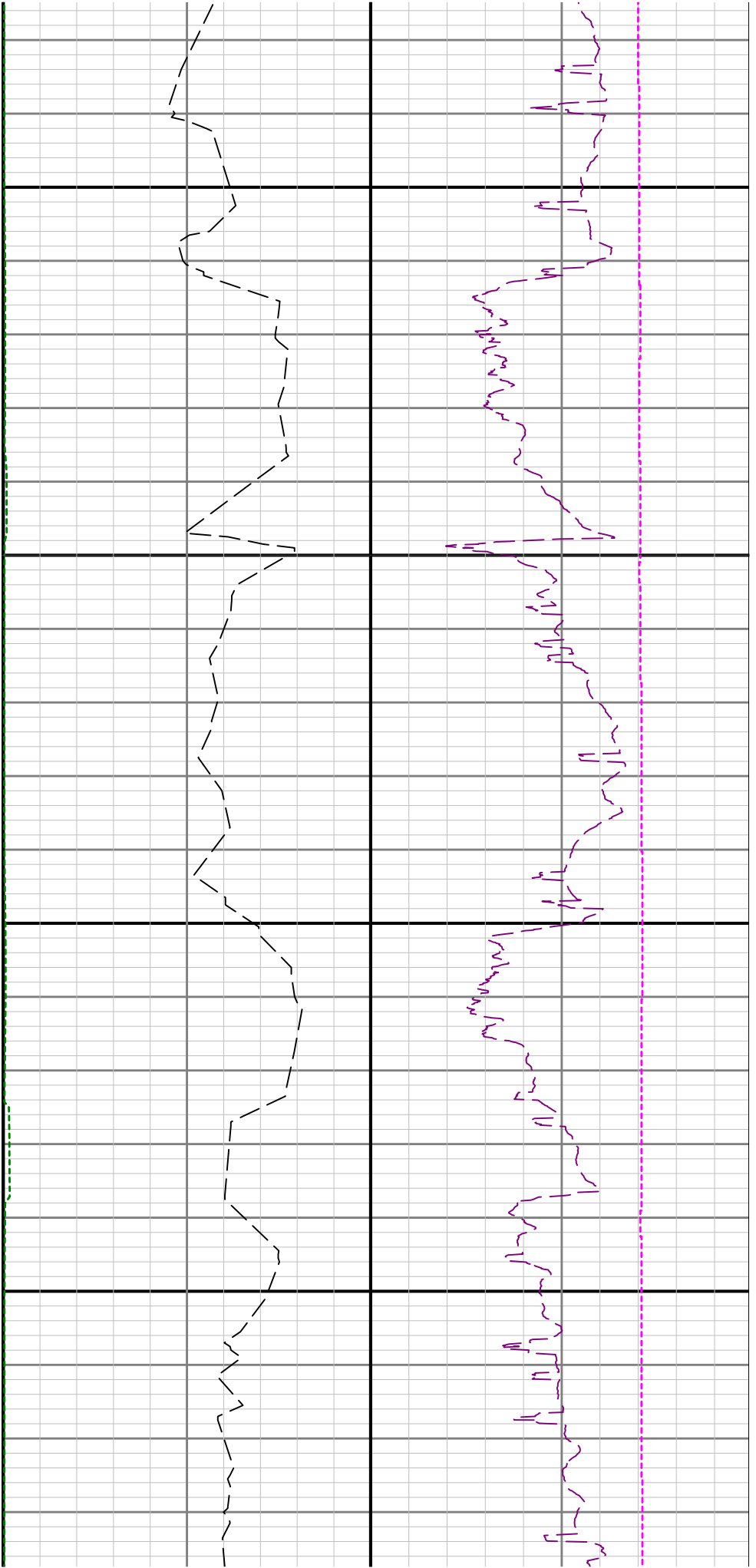
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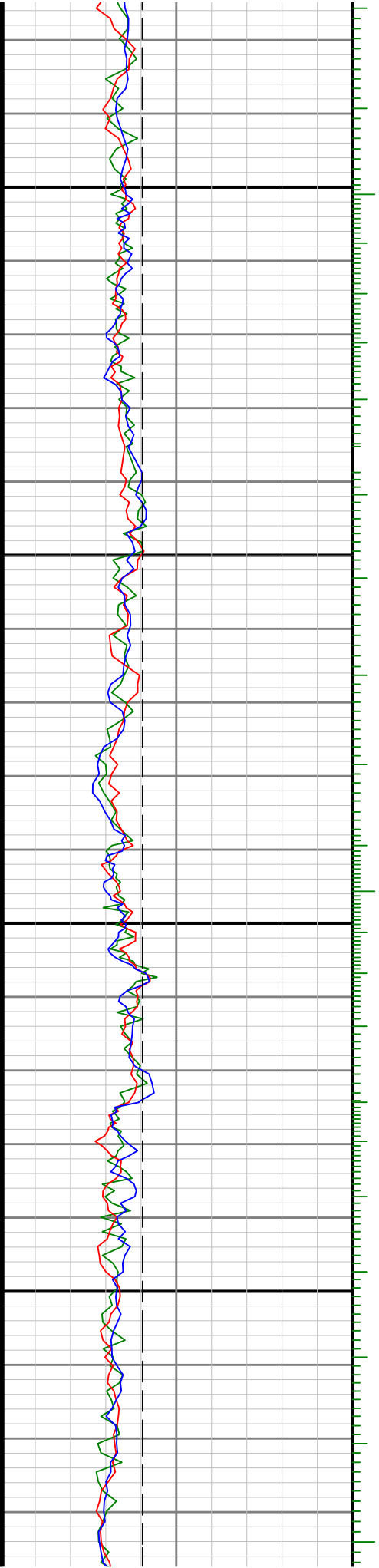


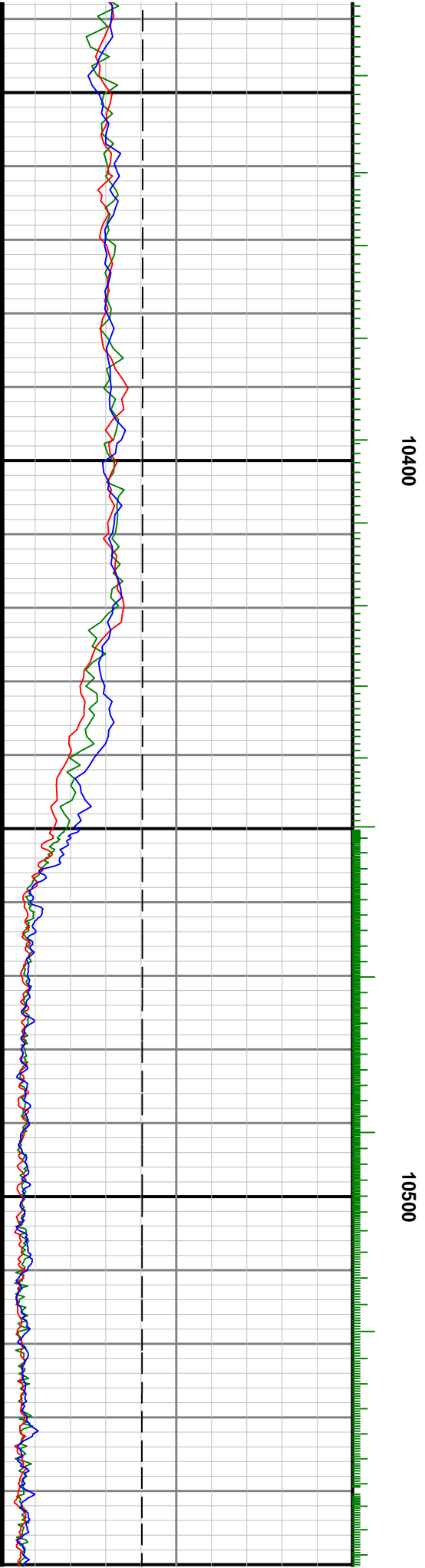
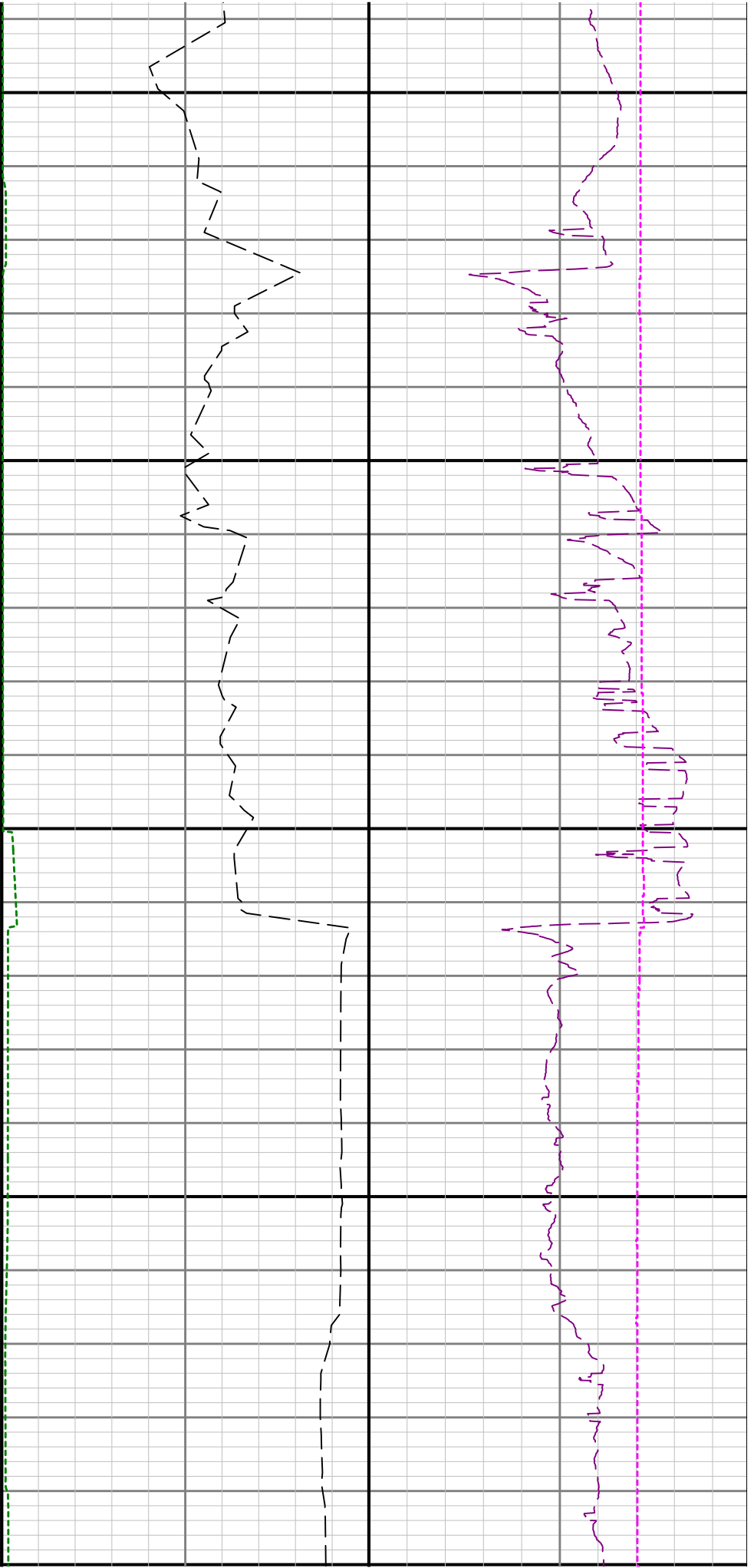


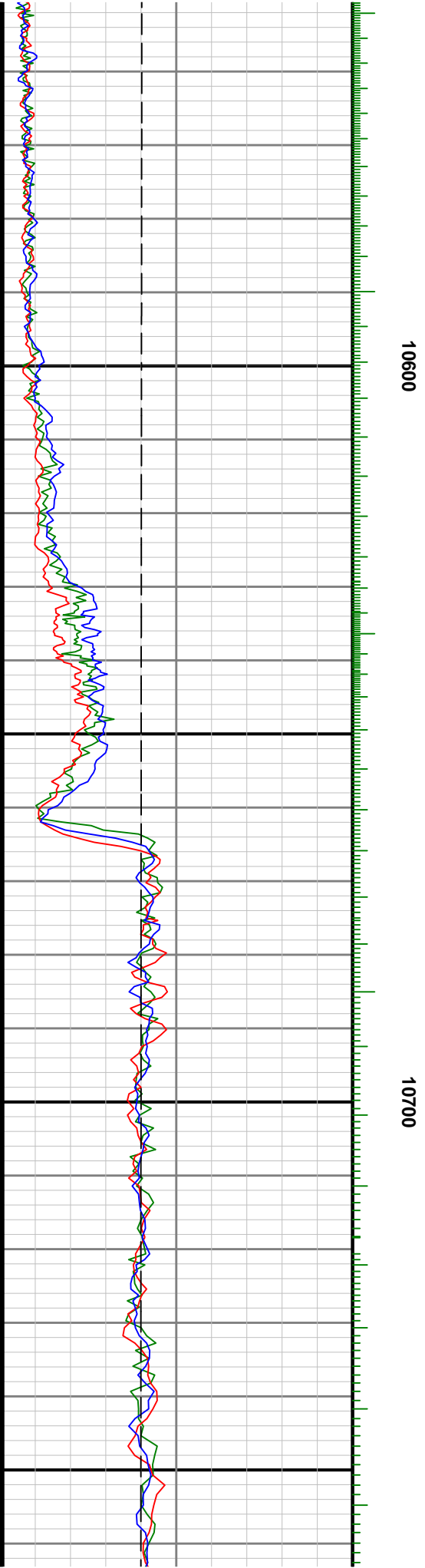
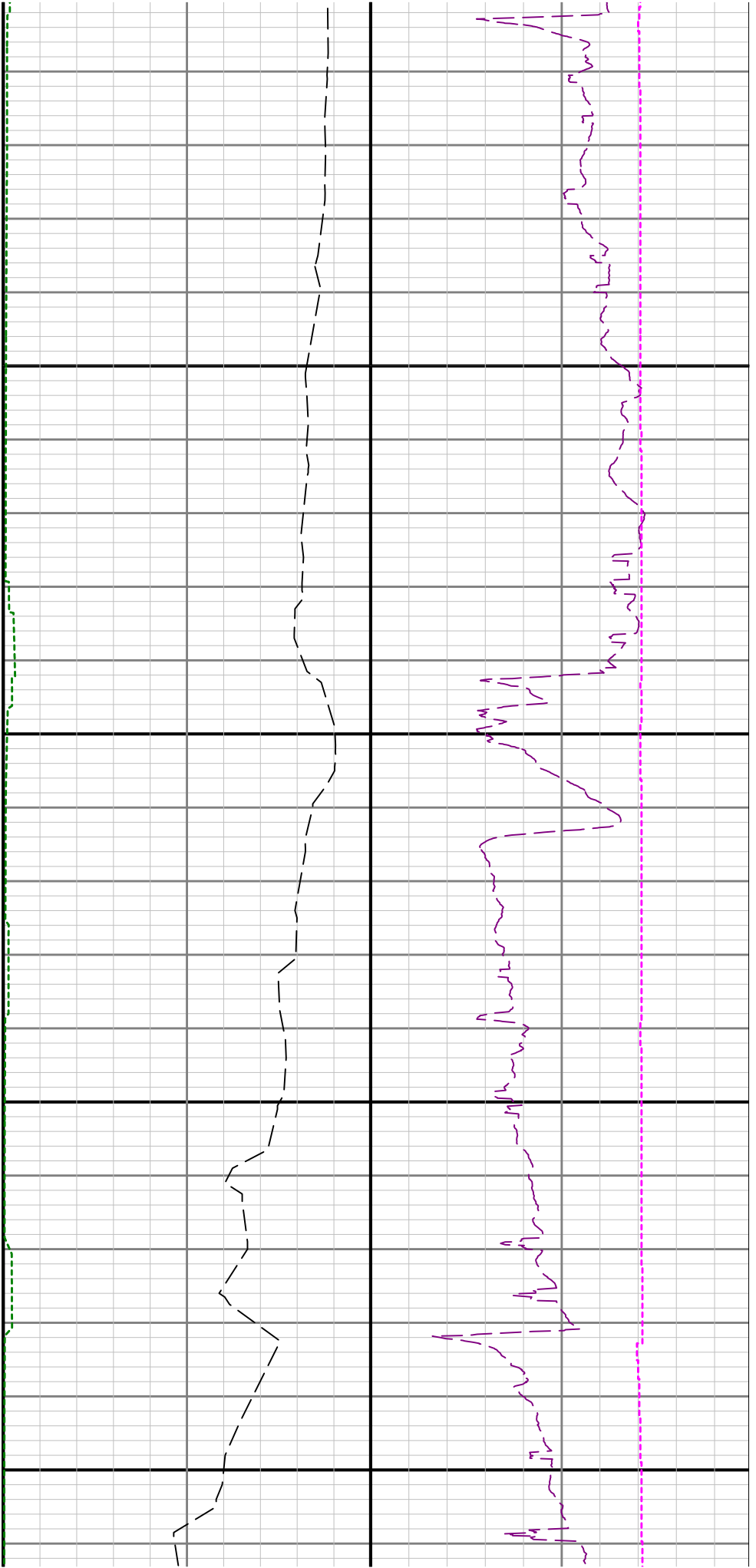


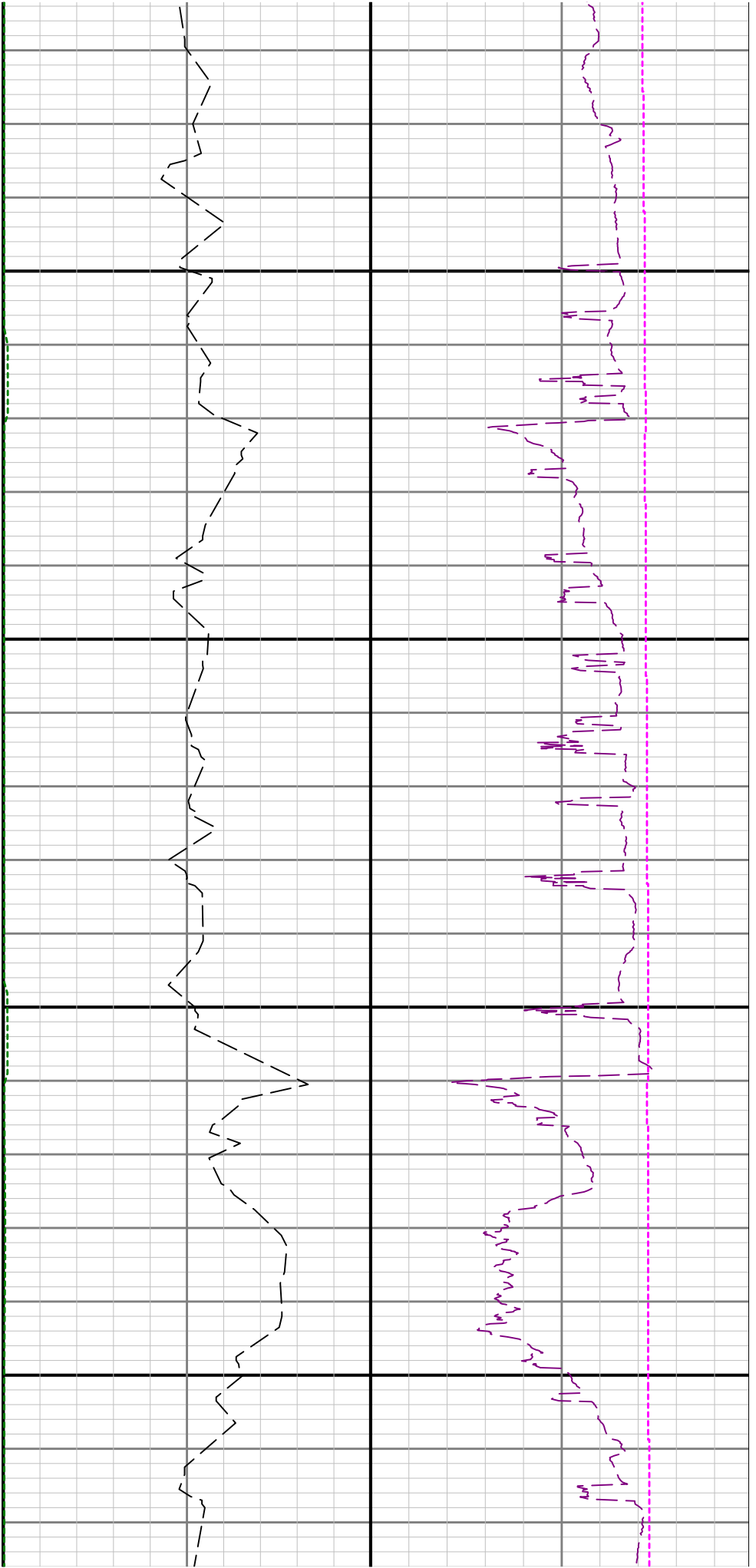
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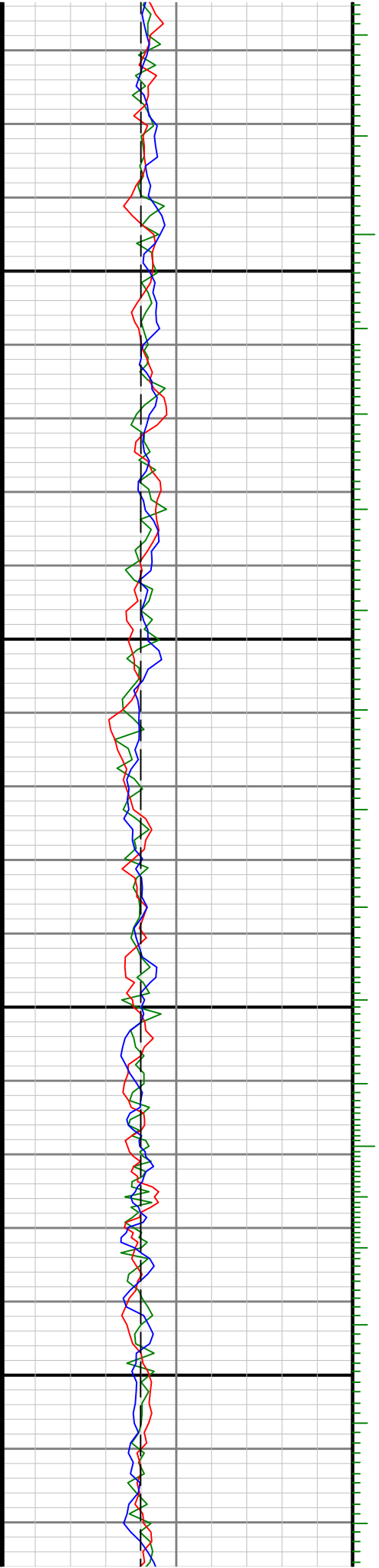


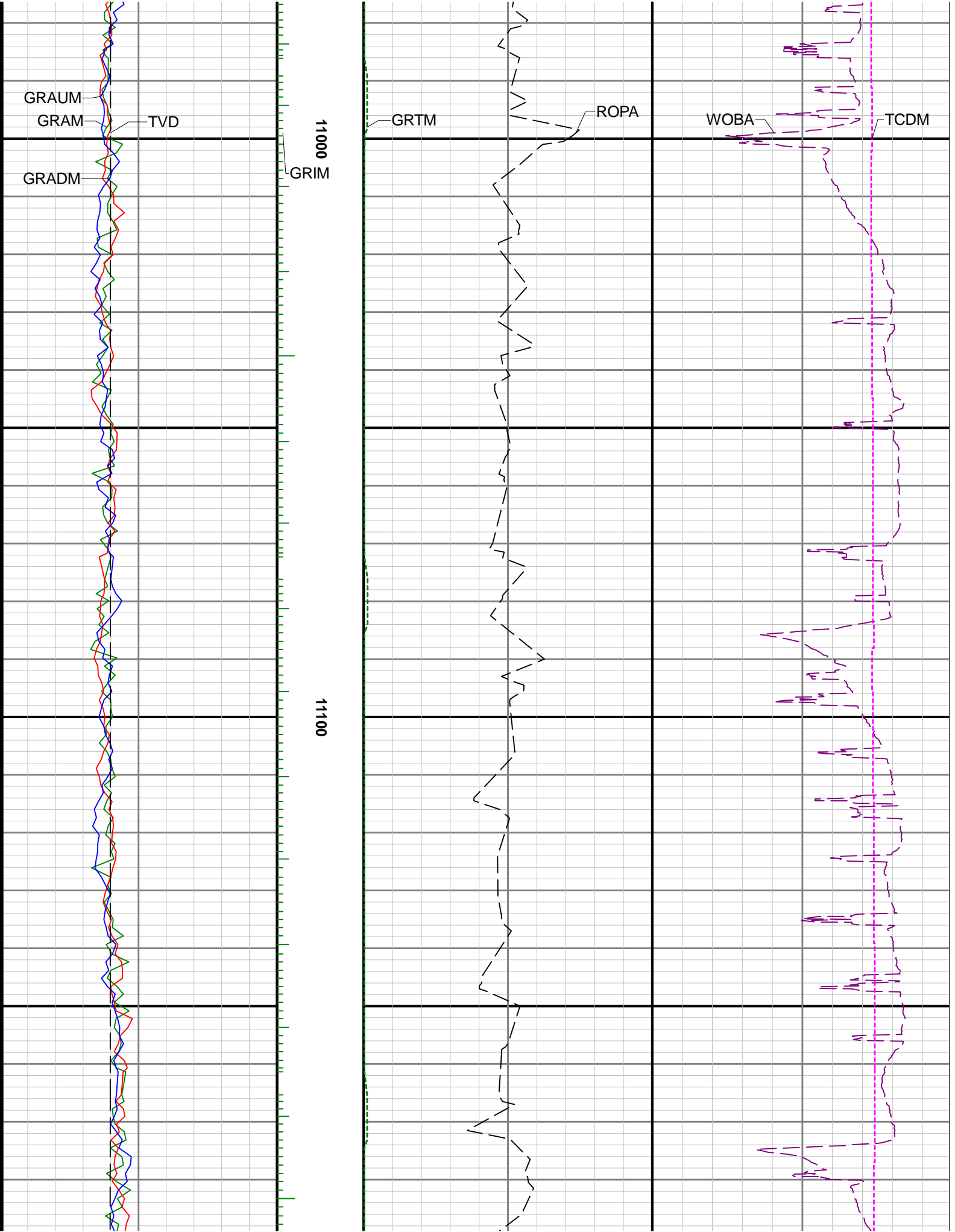


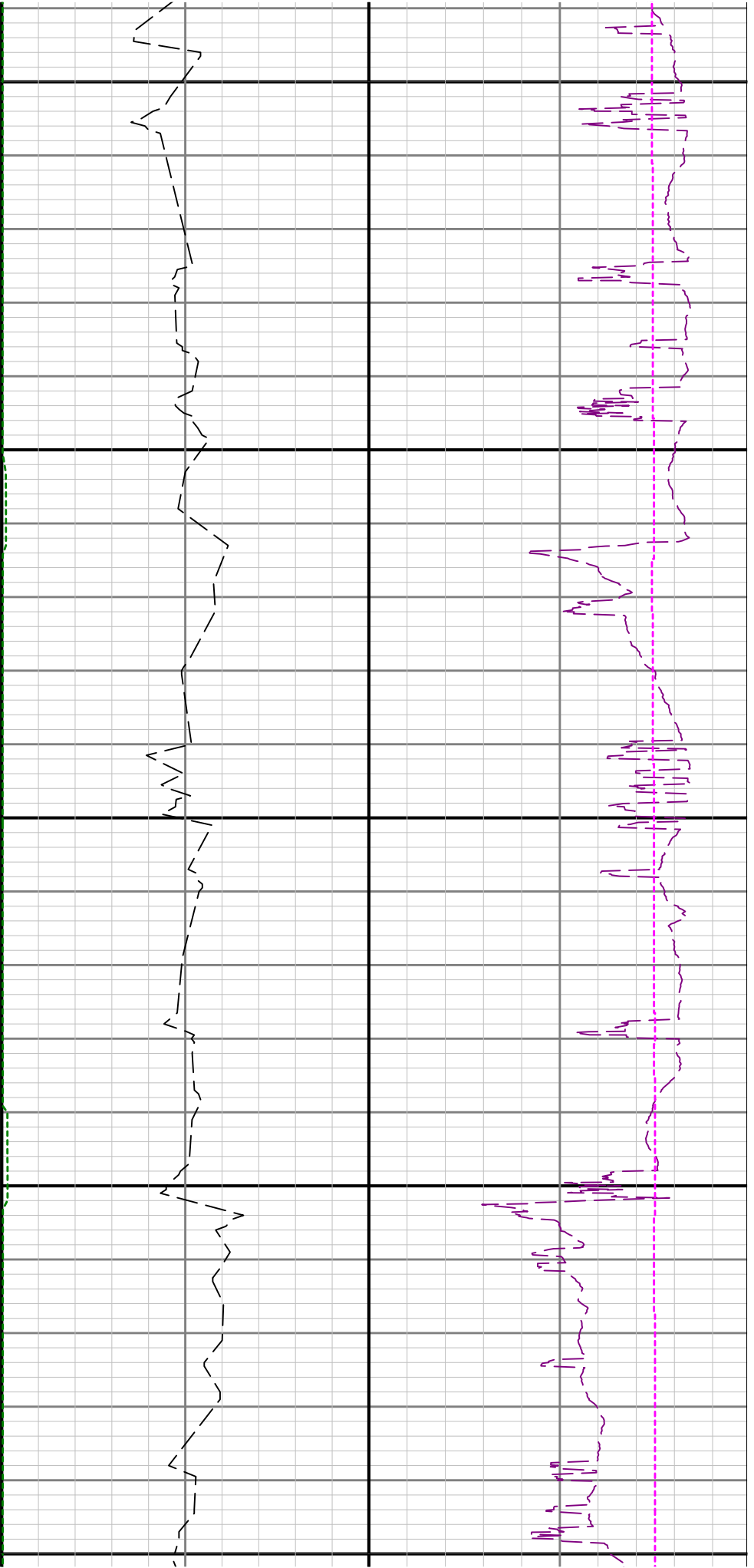


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10900



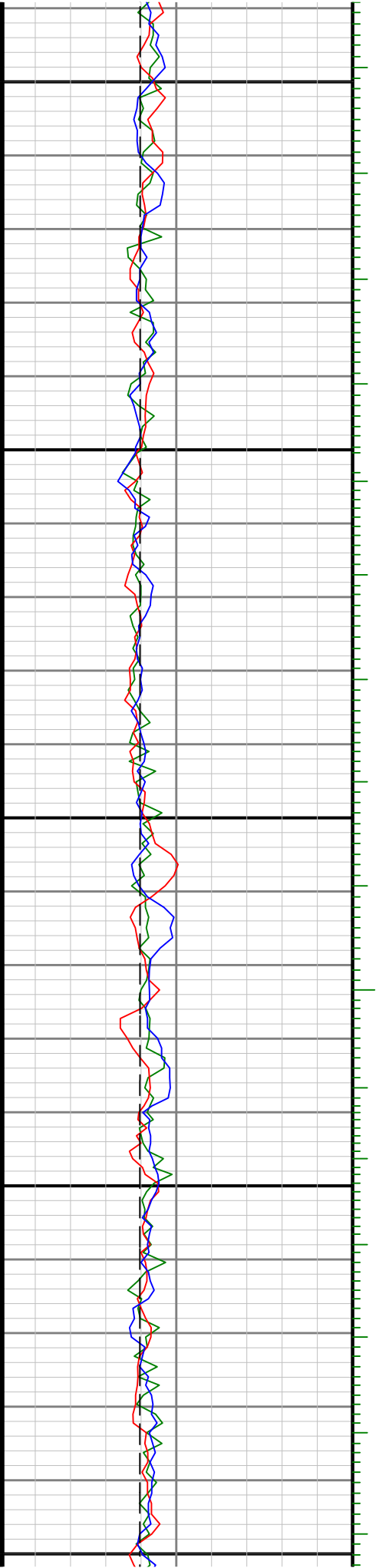


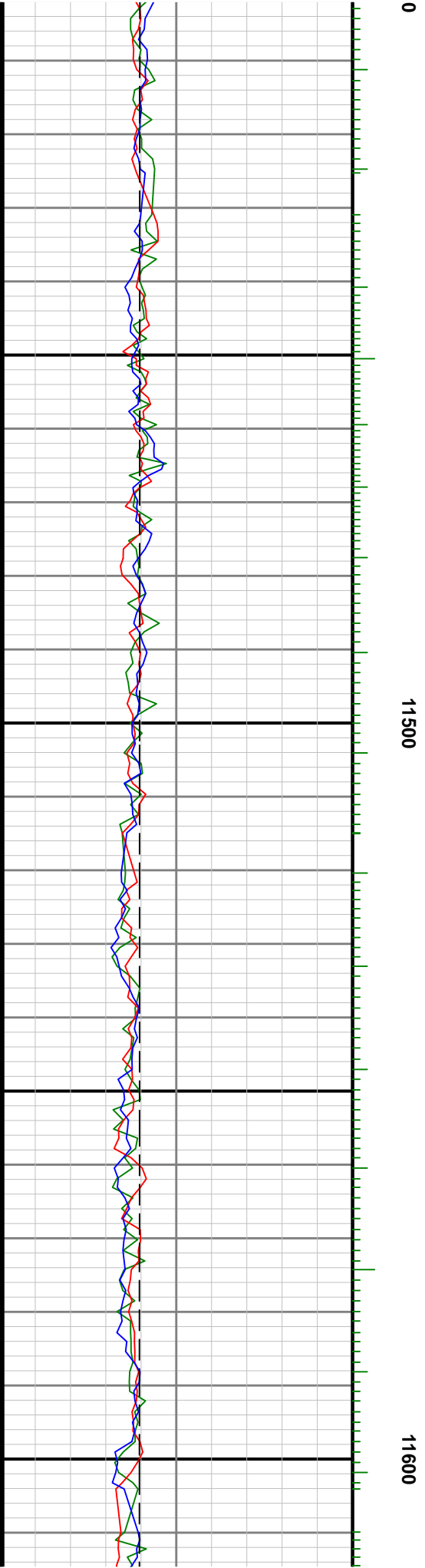
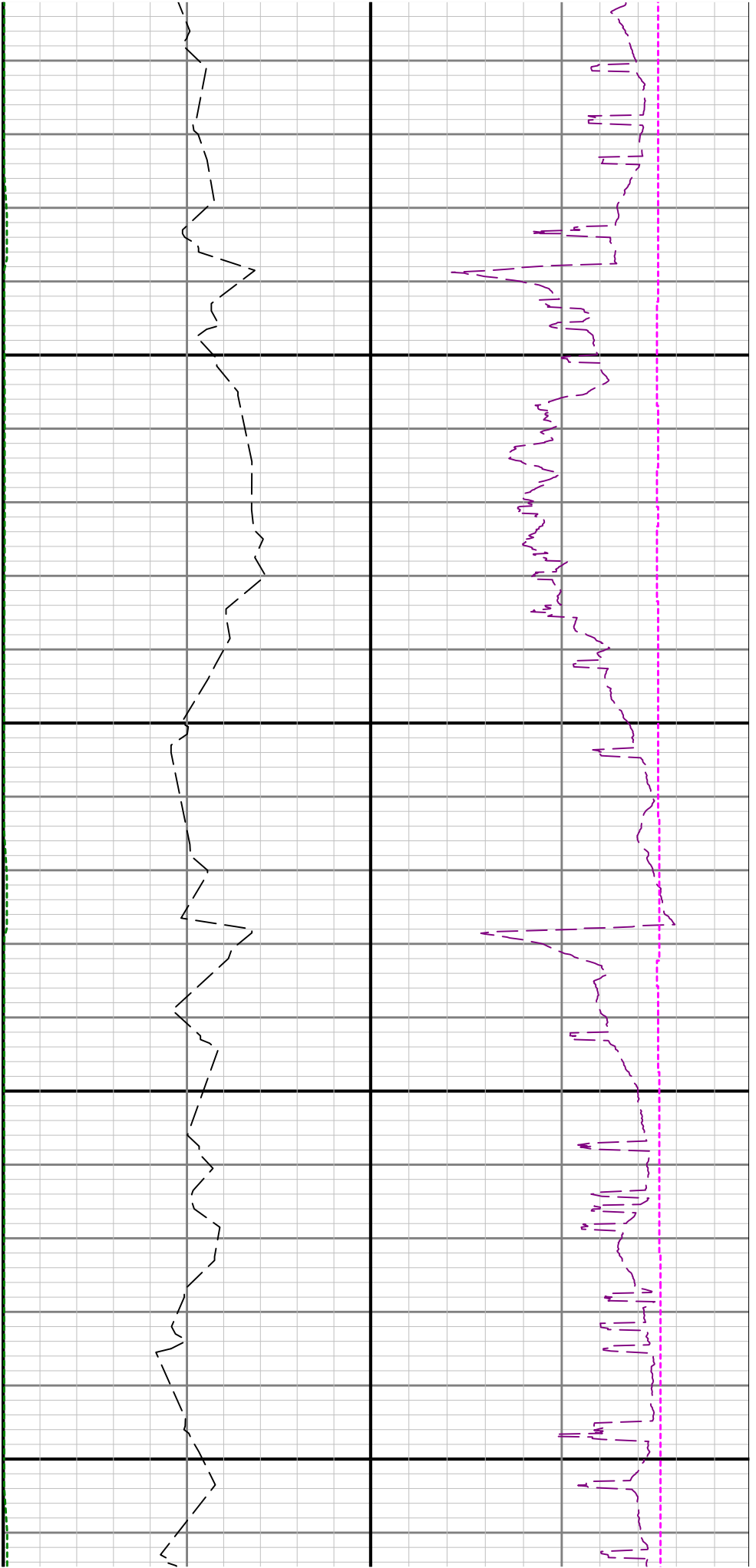


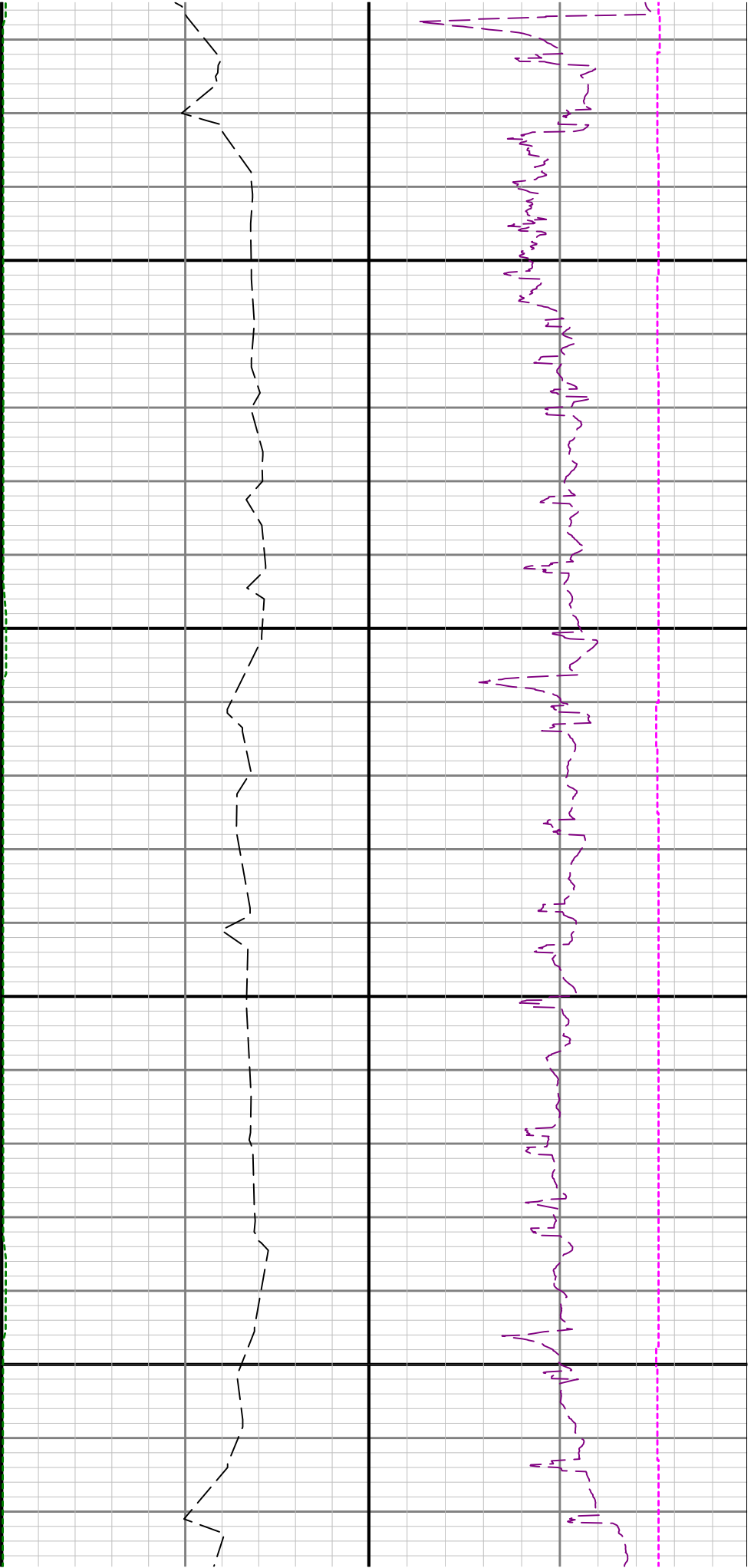
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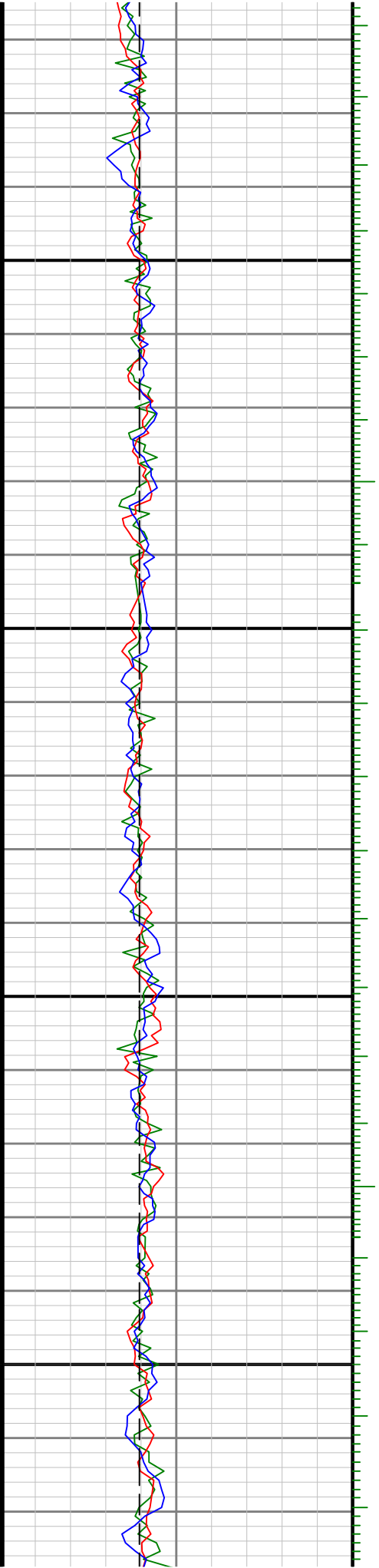


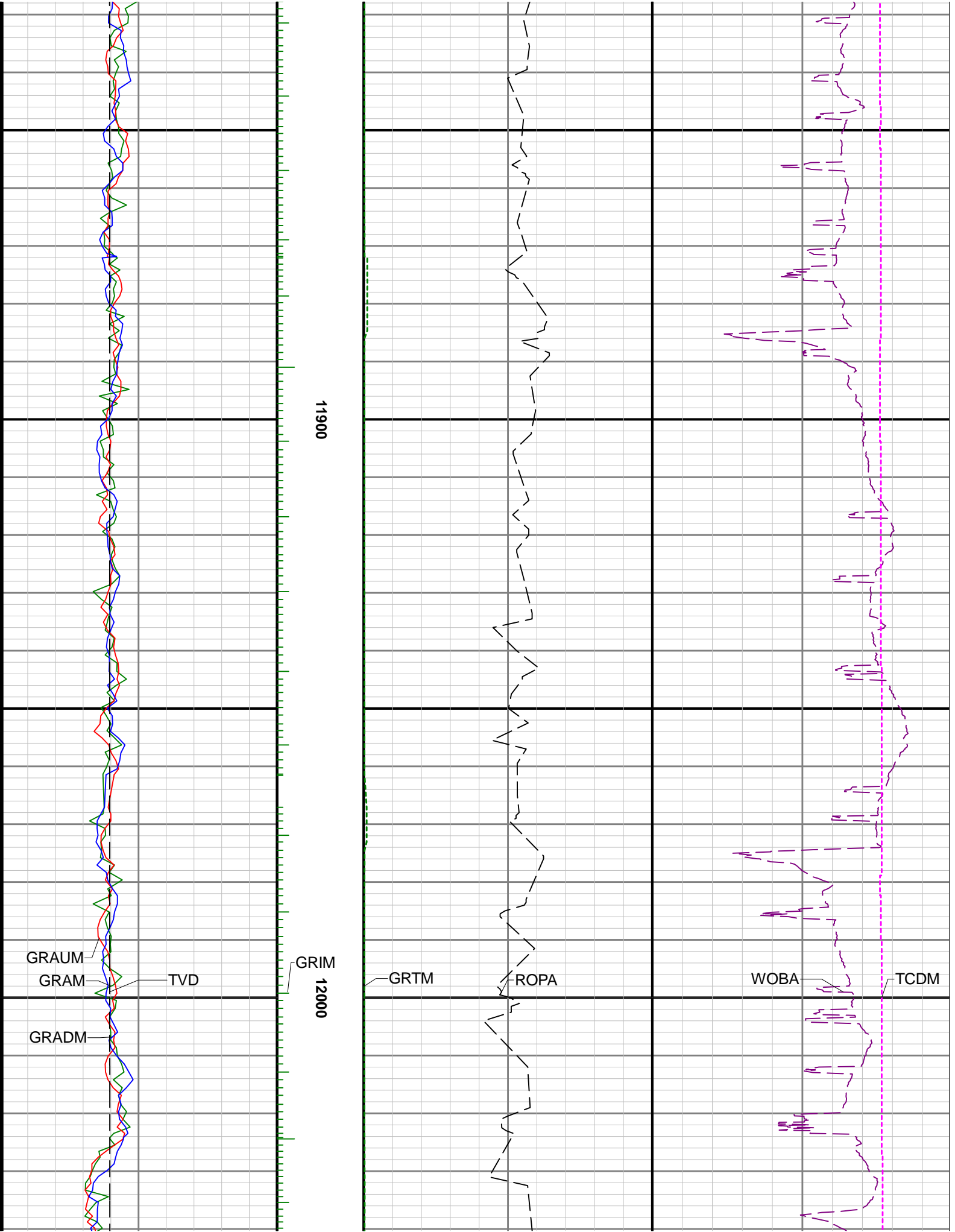


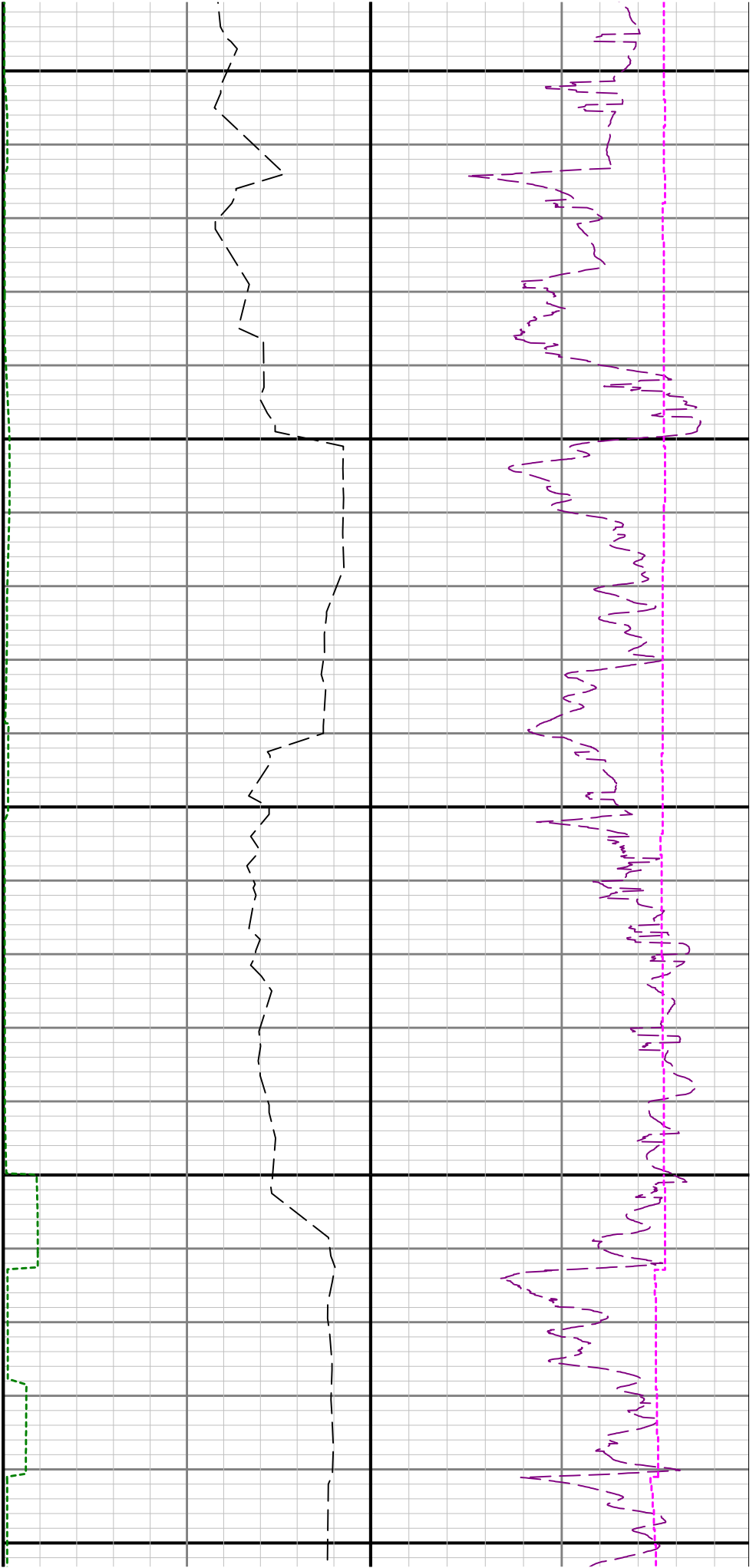


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11800

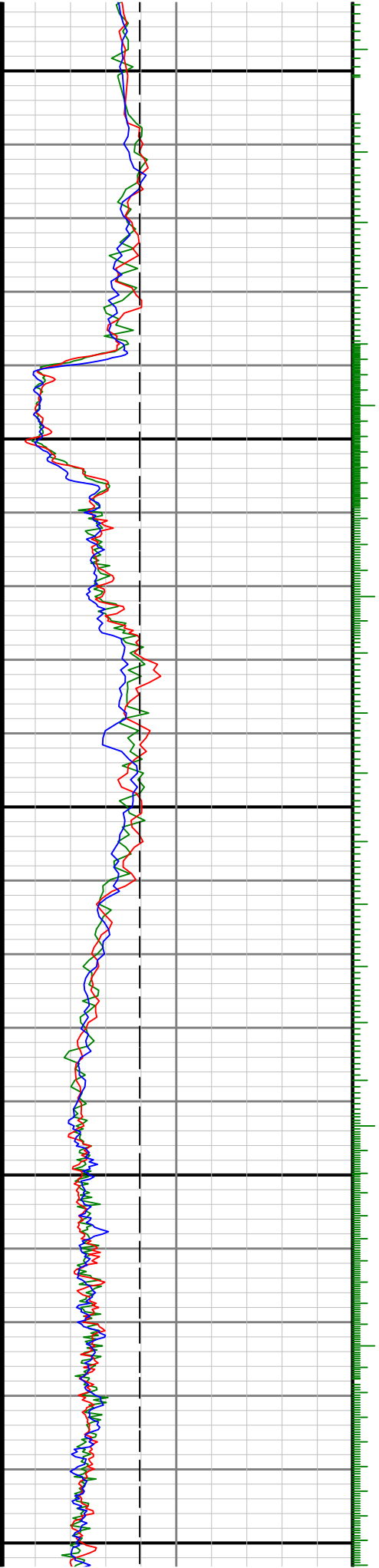


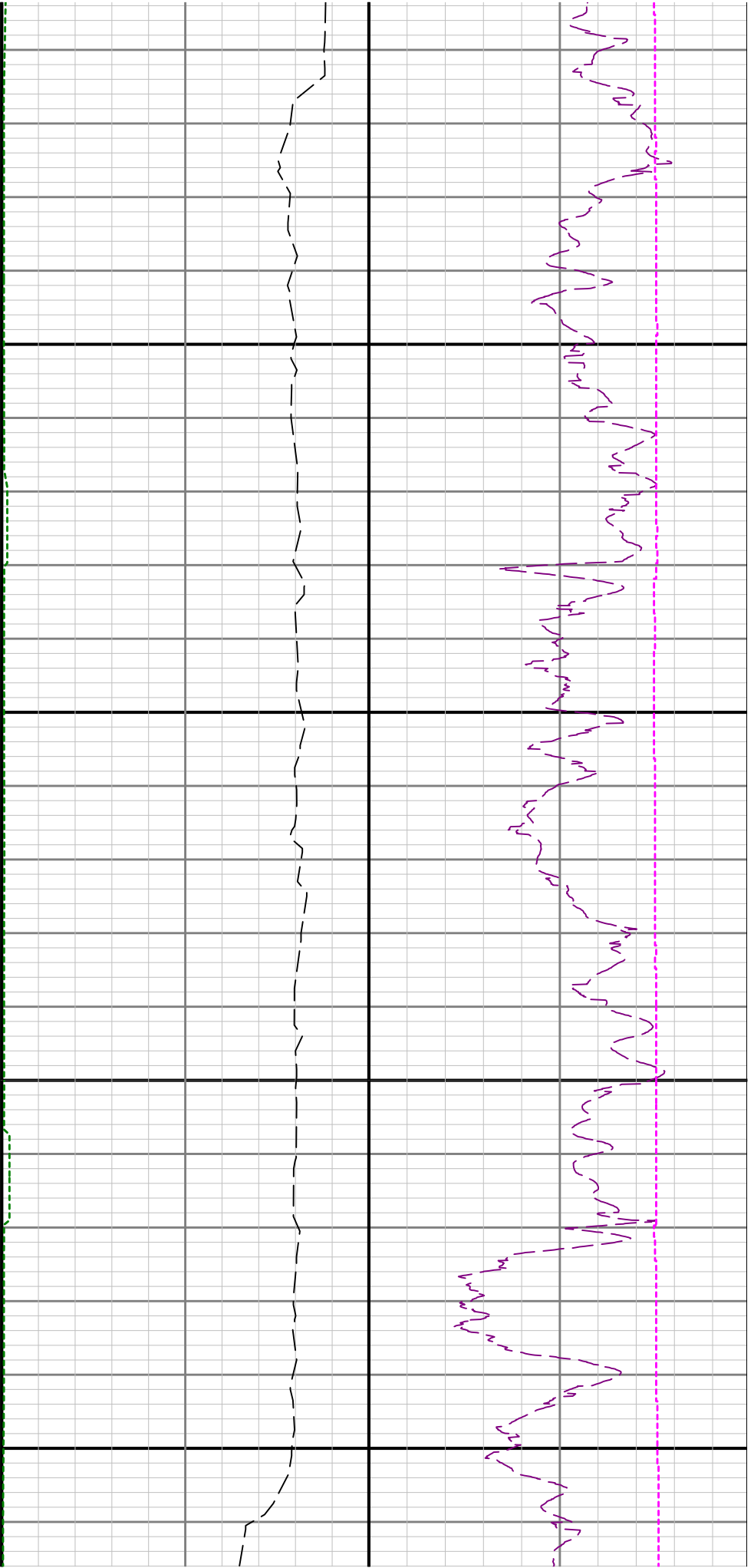




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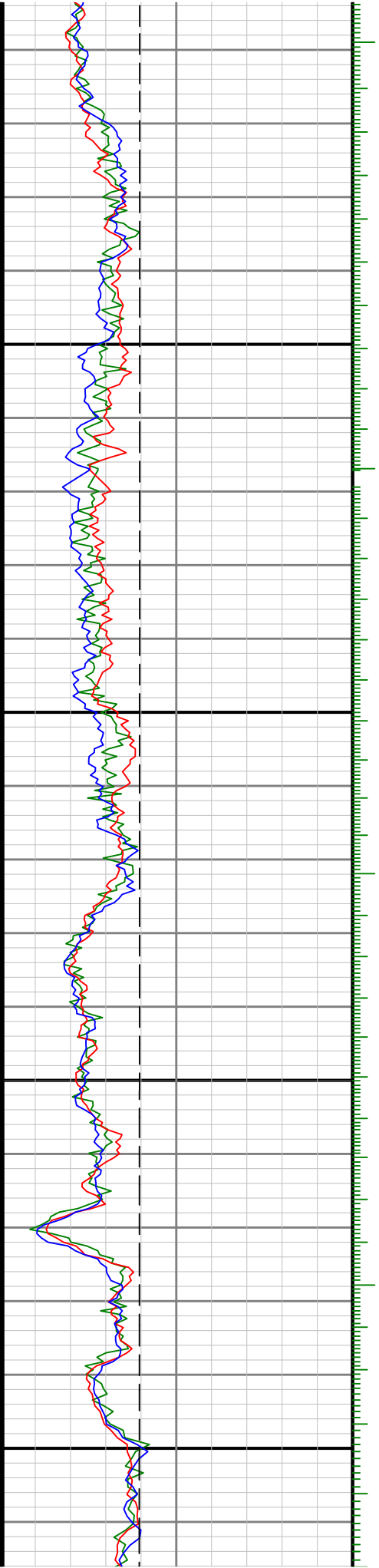
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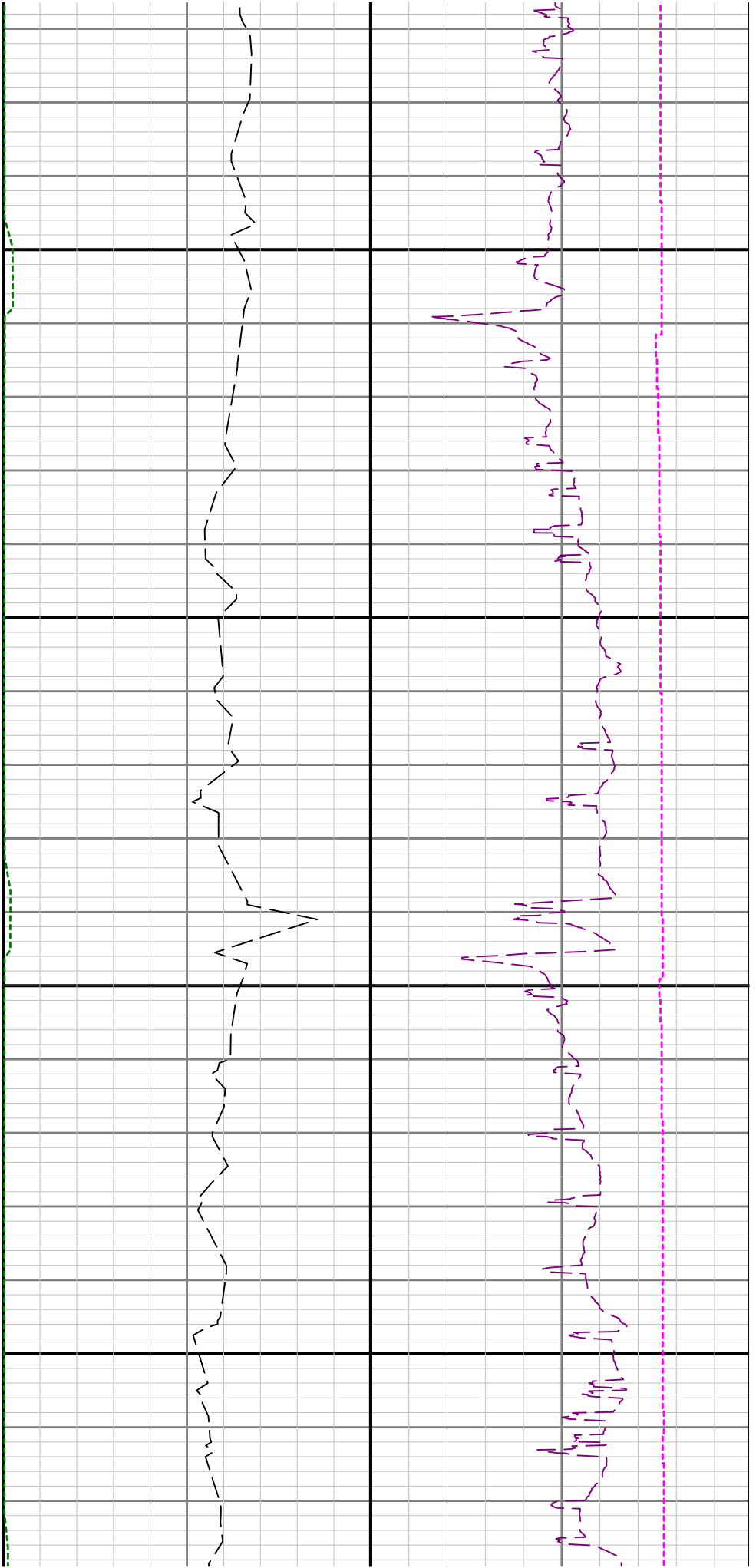




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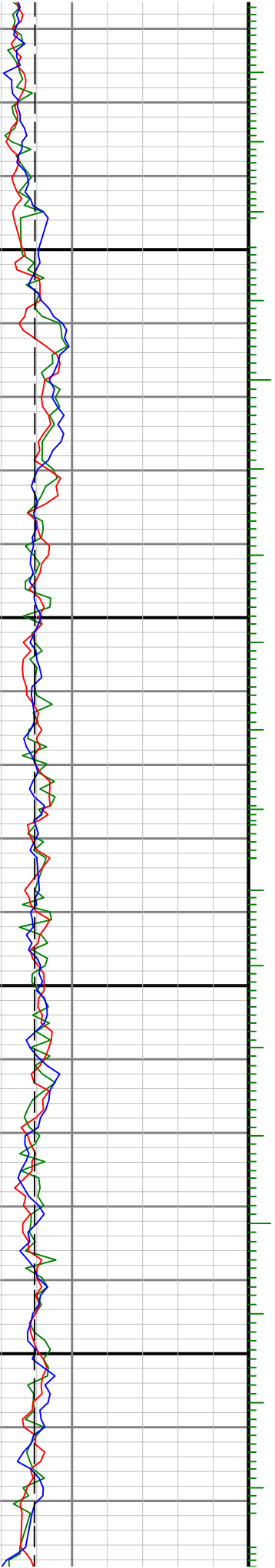
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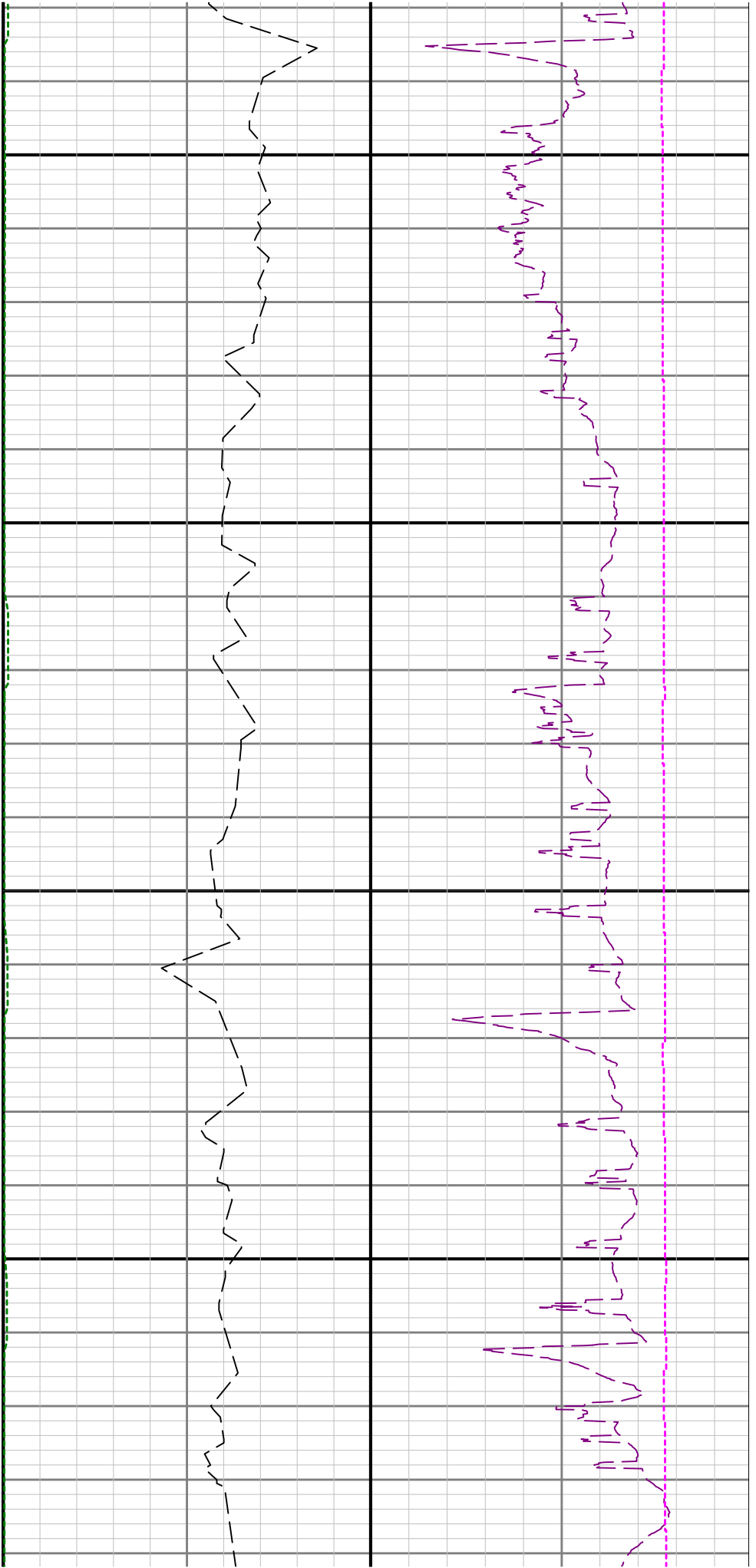




12500

12600





12700

12800

