



Gamma Ray

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+ (%)

2017-10-08 02:00	1	2060.00	Oil Based Mud	9.1	15	N/A	17.0	74/26	Active Pit	20000	0.00
2017-10-08 13:00	1	3175.00	Oil Based Mud	8.9	12	N/A	17.0	72.8/27.2	Active Pit	25000	0.00
2017-10-09 02:00	1	7008.00	Oil Based Mud	8.9	10	N/A	17.0	75/25	Active Pit	26000	0.00
2017-10-09 13:00	1	10322.00	Oil Based Mud	9.2	12	N/A	17.0	74/26	Active Pit	26000	0.00
2017-10-10 02:00	1	14209.00	Oil Based Mud	9.2	13	N/A	18.0	74.8/25.2	Active Pit	26000	0.00

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	ATC_SU	12099238	Near Bit Inclination	5.93	6.73	7.000	4.330
1	ATC_SU	12099238	Near Bit VSS	5.93	6.73	7.000	4.330
1	ATC_MWD	14191725	Gamma (single)	2.74	12.90	7.000	3.250
1	ATC_MWD	14191725	Directional (mag)	12.27	22.43	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
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

Comments


1	Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD run 1 utilized a 6.75 inch NaviGamma service (Directional and Gamma Ray) behind a 8.5 inch bit and rotary steerable assembly from 2060 to 17112 feet MD (2060 to 6900 feet TVD).
3	VOA of 2060 to 17112 feet MD (6900 feet TVD) was not logged after being drilled due to sensor to bit offset at well TD.

Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	17112.00	8.500	1	The interval from 17099 to 17112 feet MD (6900 feet TVD) was not logged after being drilled due to sensor to bit offset at well TD.

Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	OnTrak - Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	OnTrak - Gamma Ray - Data Point Indicator - Memory	unitless
GRTM	OnTrak - Gamma Ray - Time Since Drilled - Memory	min
TCDM	Downhole Temperature	degF



Company

Well

Interval

Created

Noble Energy

Hullabaloo Y21-756

Date From: 2017-10-08 01:39:41

Date To: 2017-10-10 05:46:15

2017-10-11 02:46:08

Top: 2060.00

Bottom: 17112.00

Gamma Ray - Apparent 0.5 ft Average GRAM

0300

API

True Vertical Depth TVD

70006000

ft

MD 1:240 feet

Depth Averaged ROP 3 ft Average ROPA

10000

ft/h

Gamma Time Since Drilled GRTM

0600

min

Weight On Bit, Average 1 ft Average WOBA

050

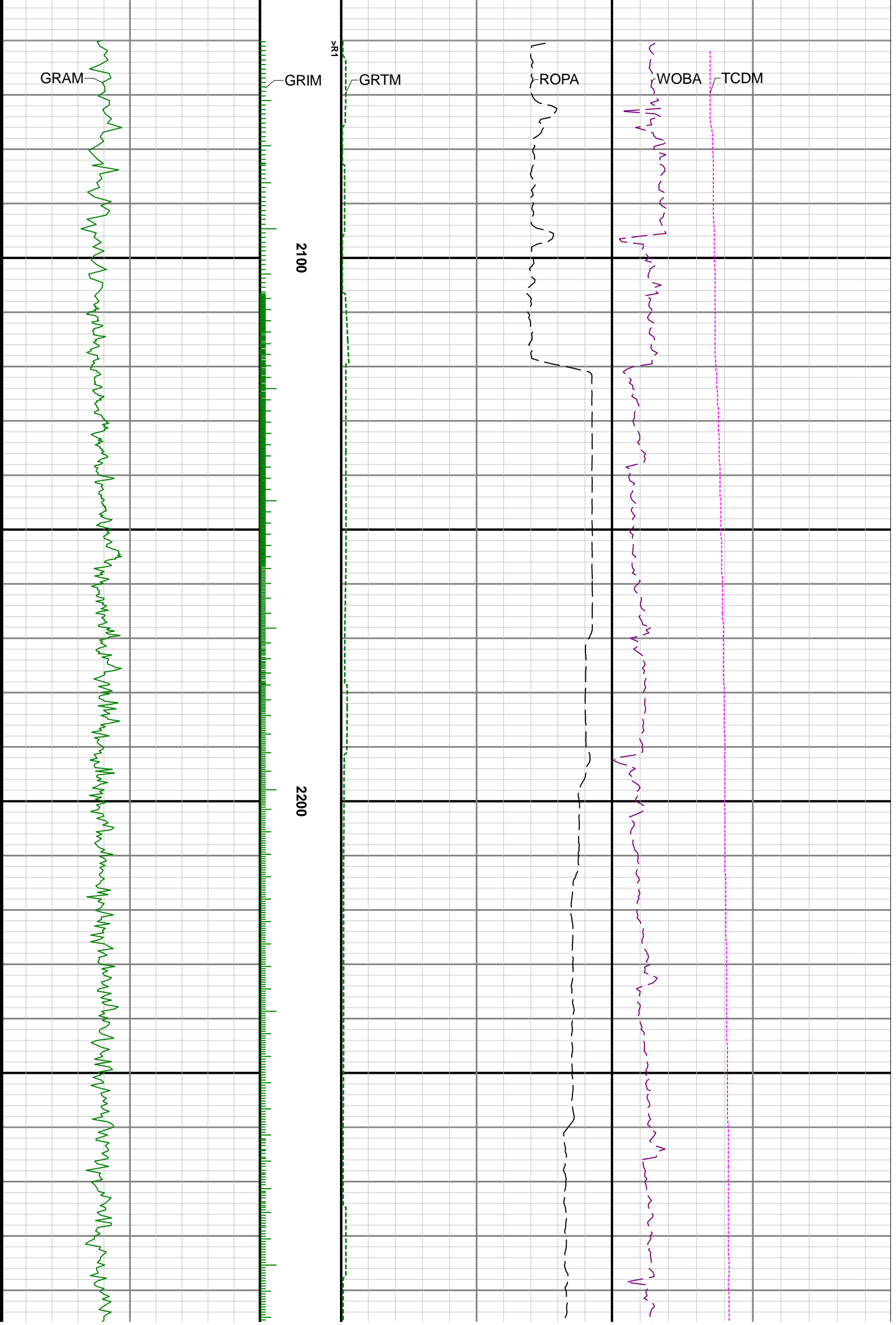
klb

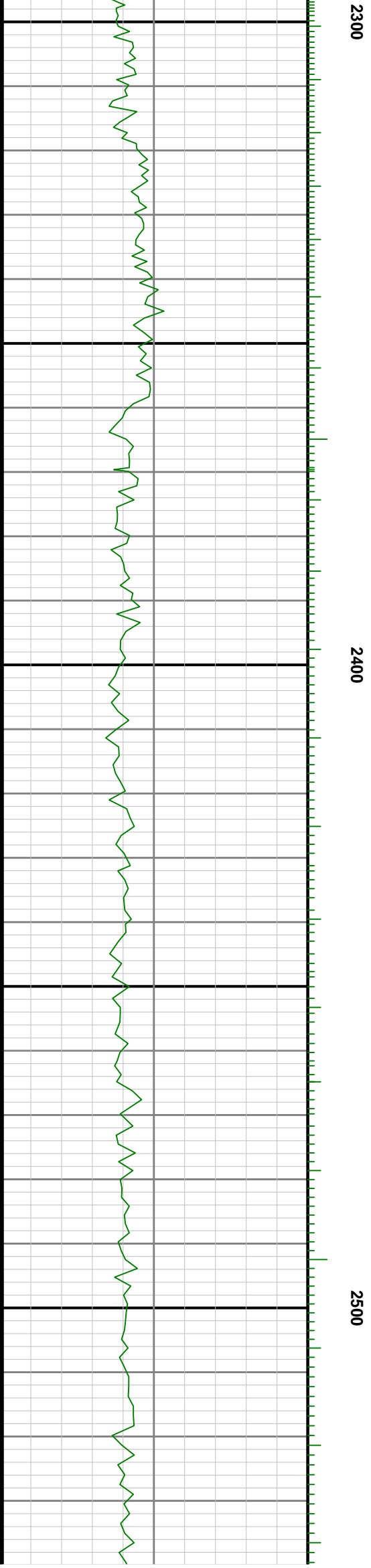
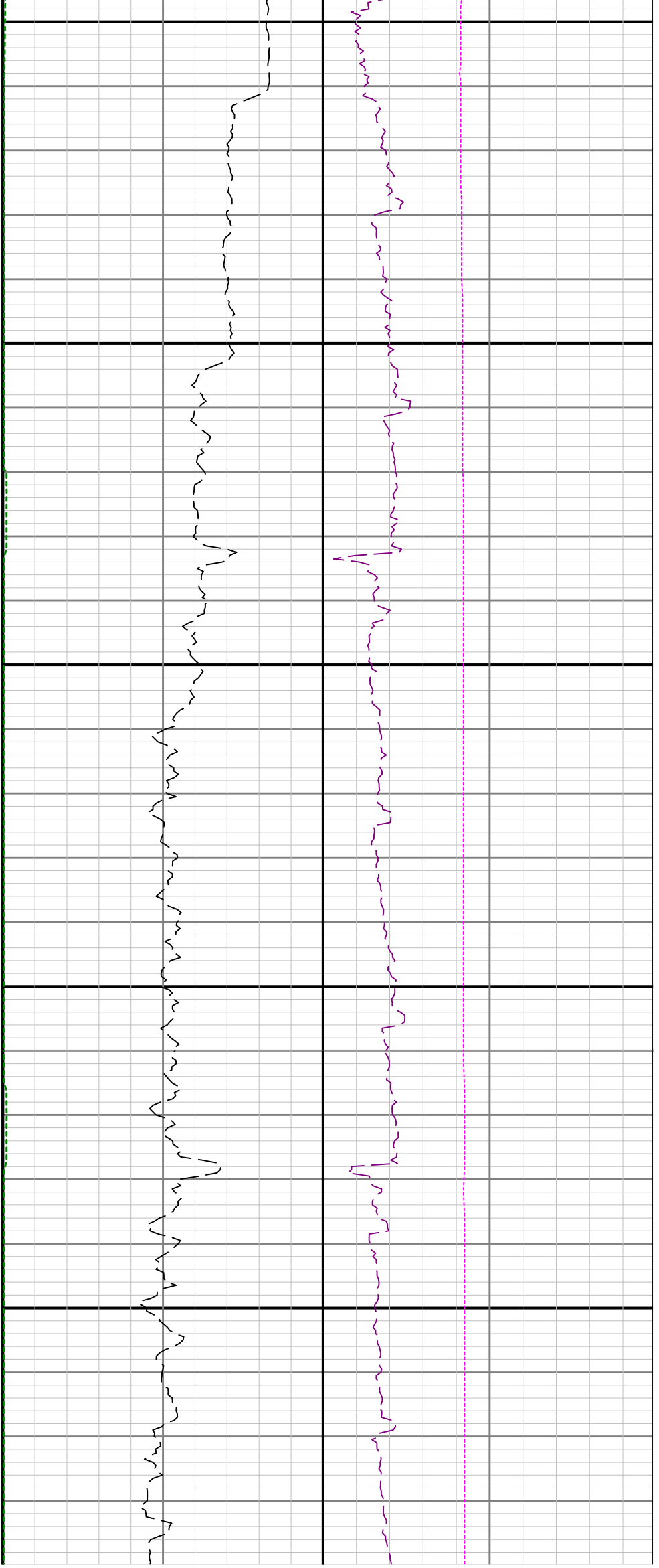
Downhole Temperature TCDM

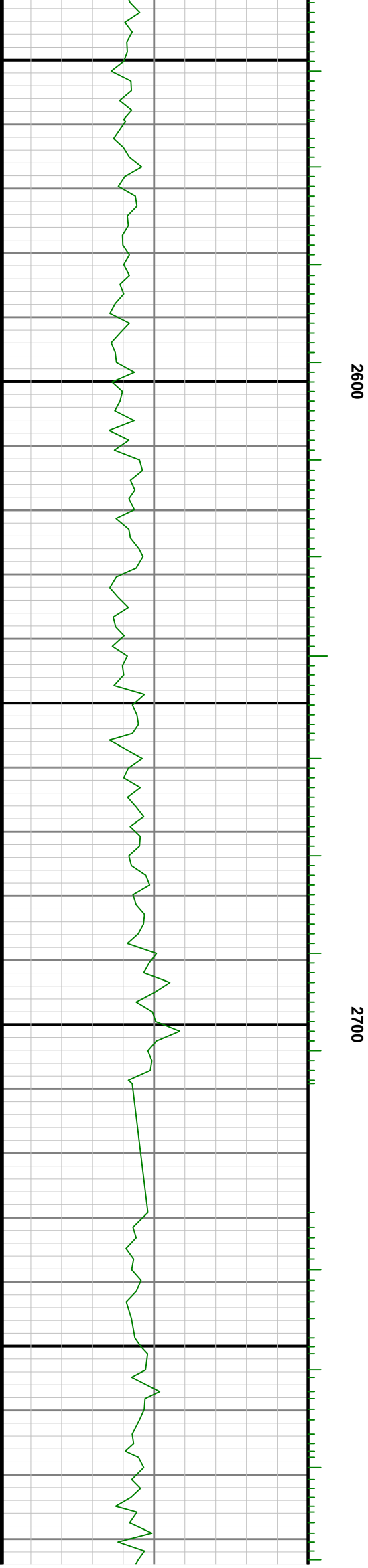
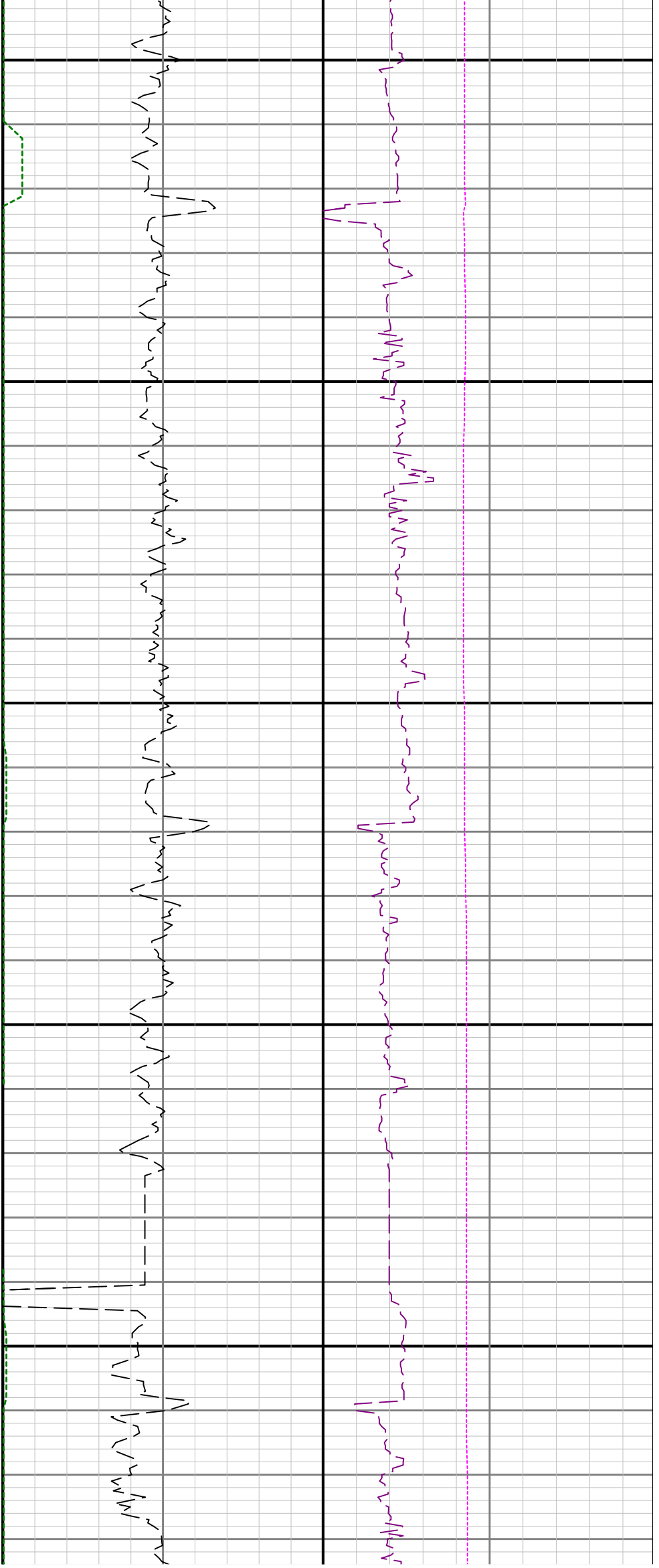
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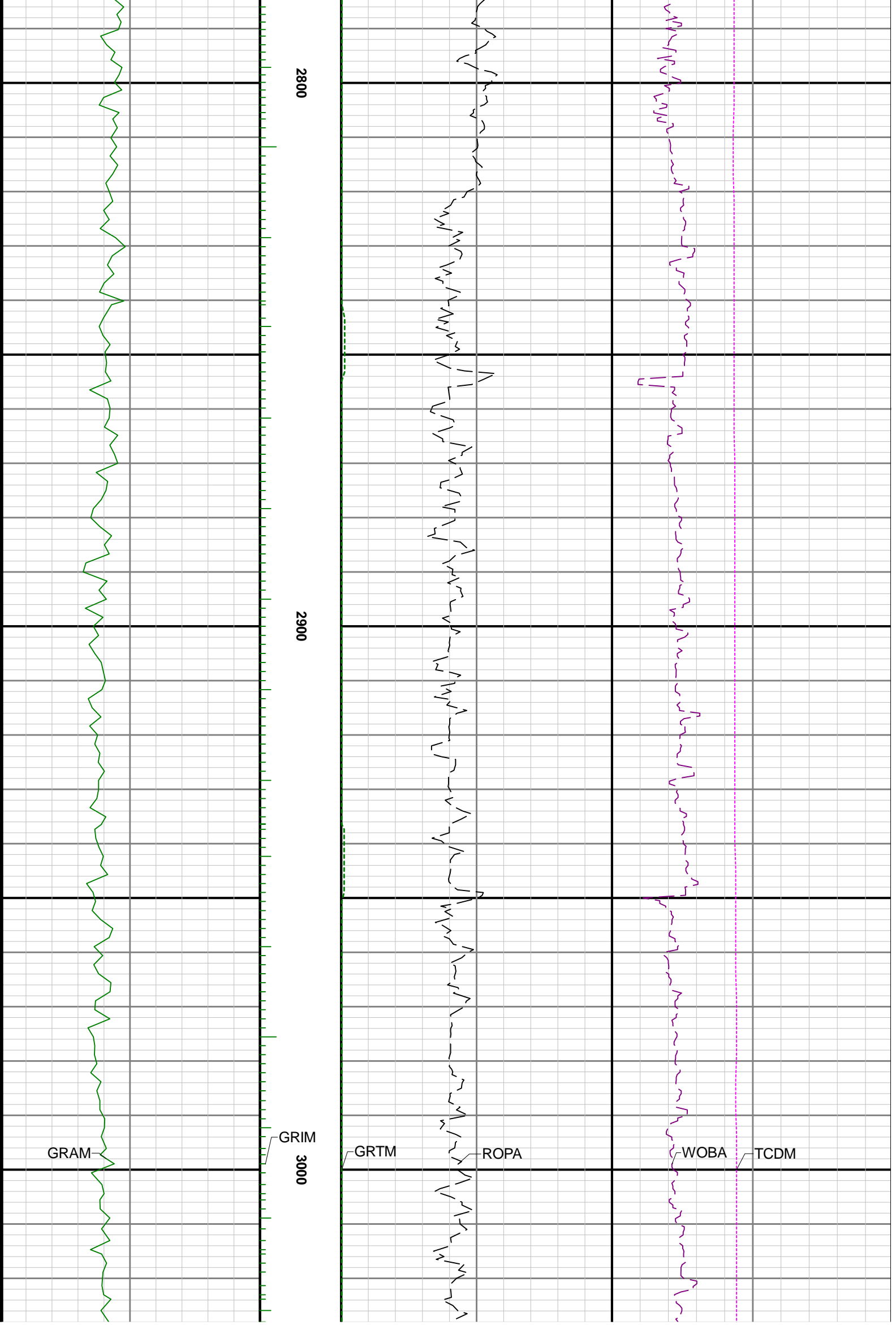
degF

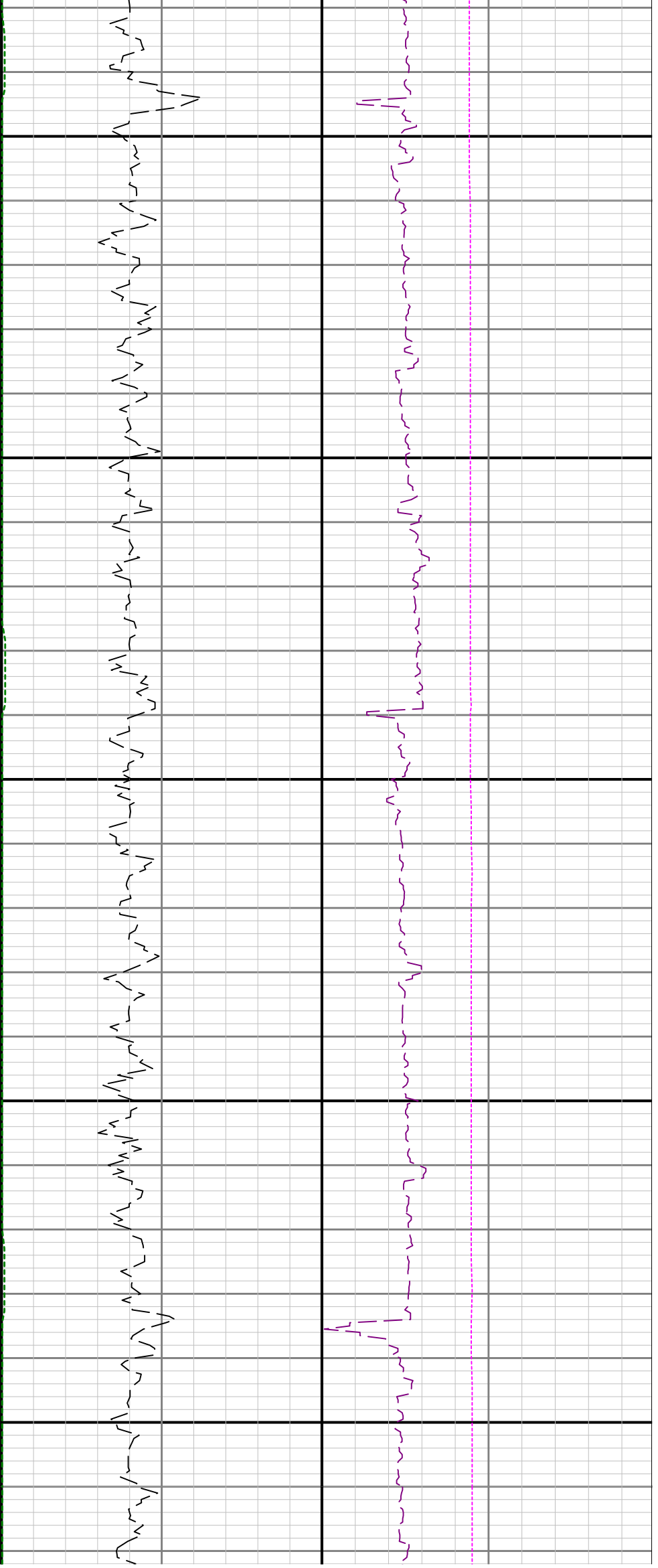
9 5/8" Casing





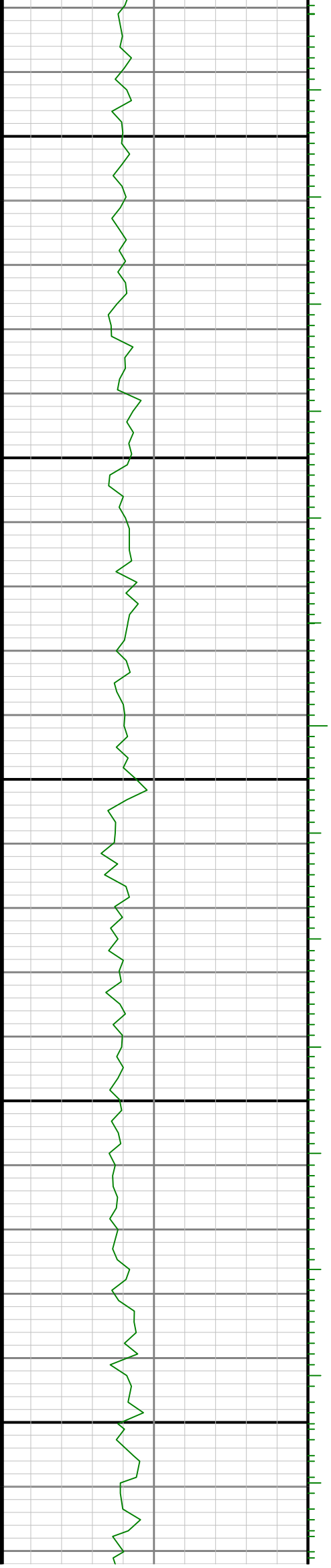


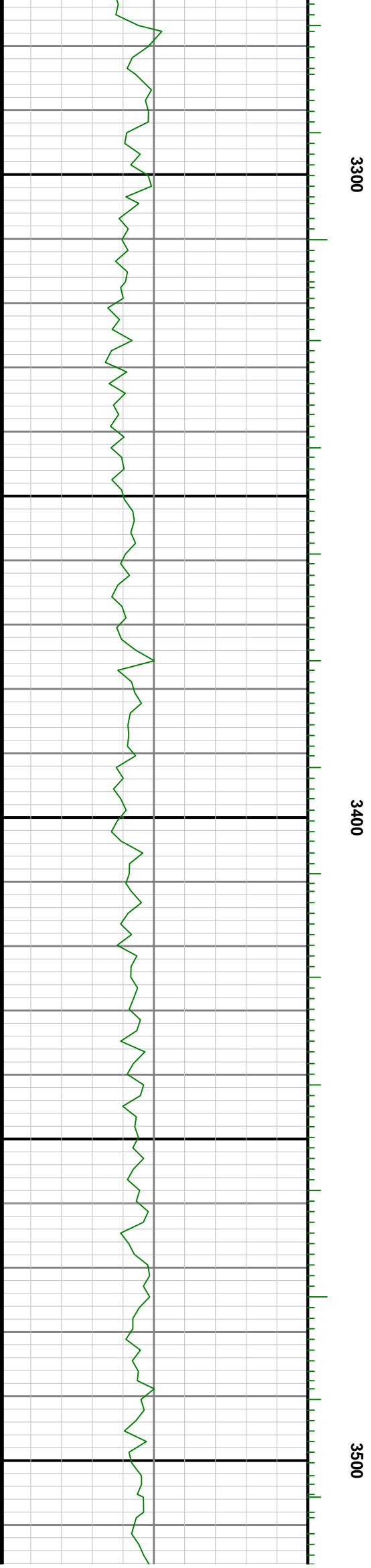
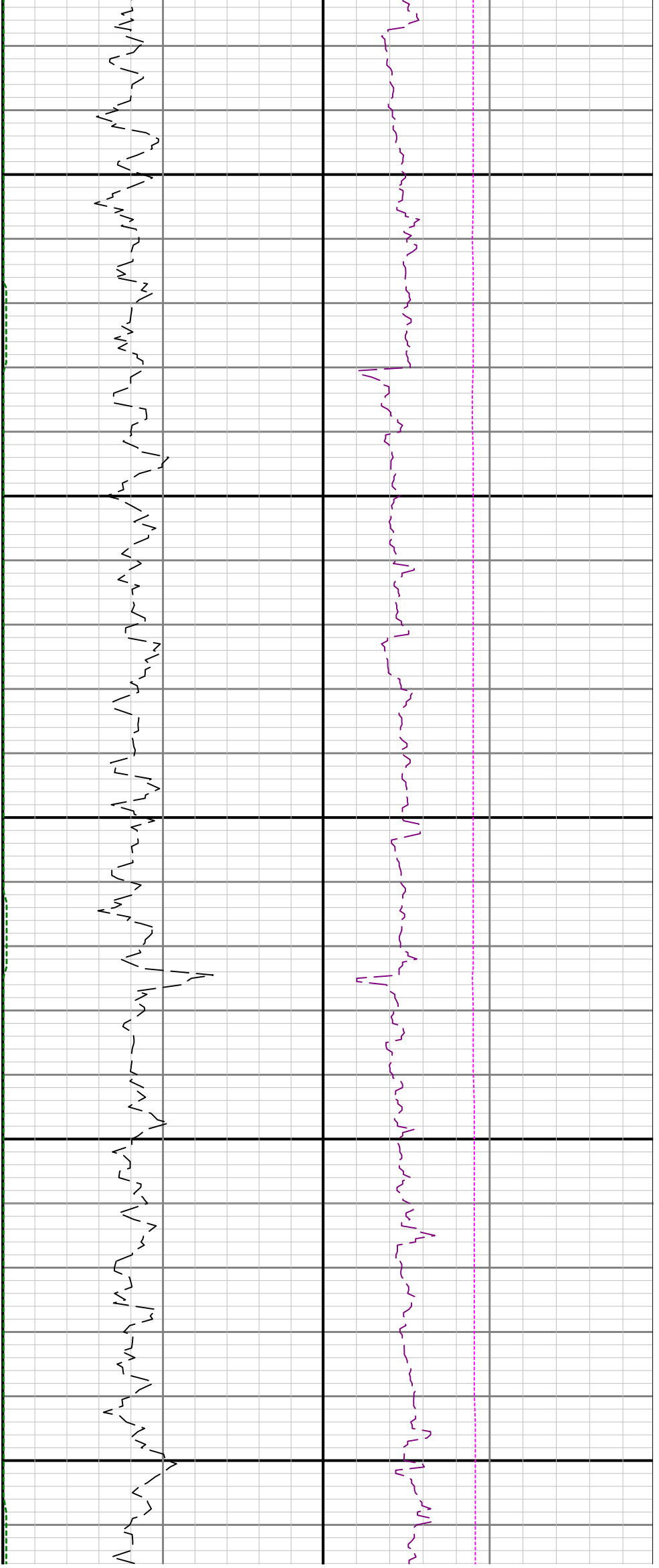


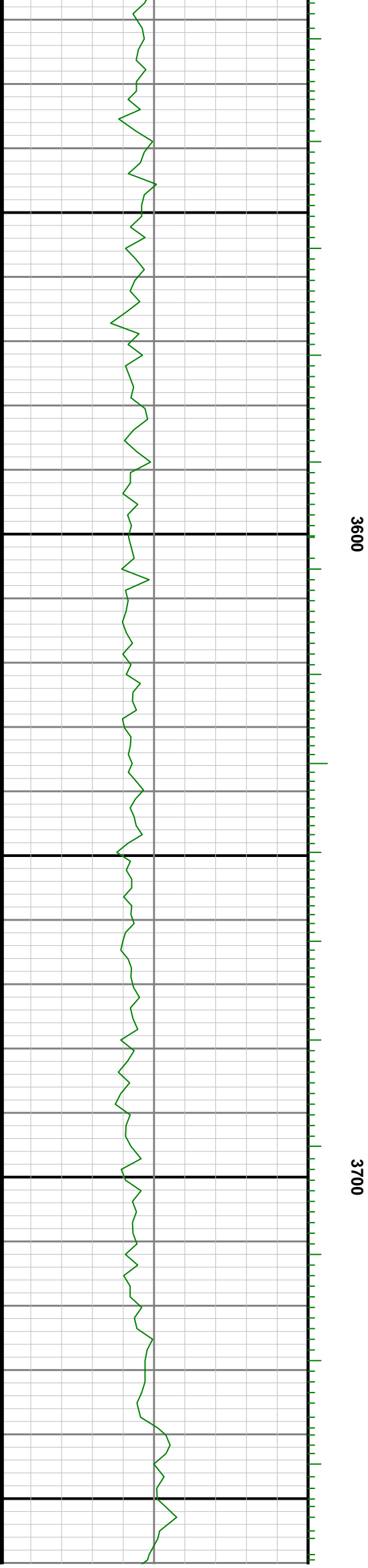
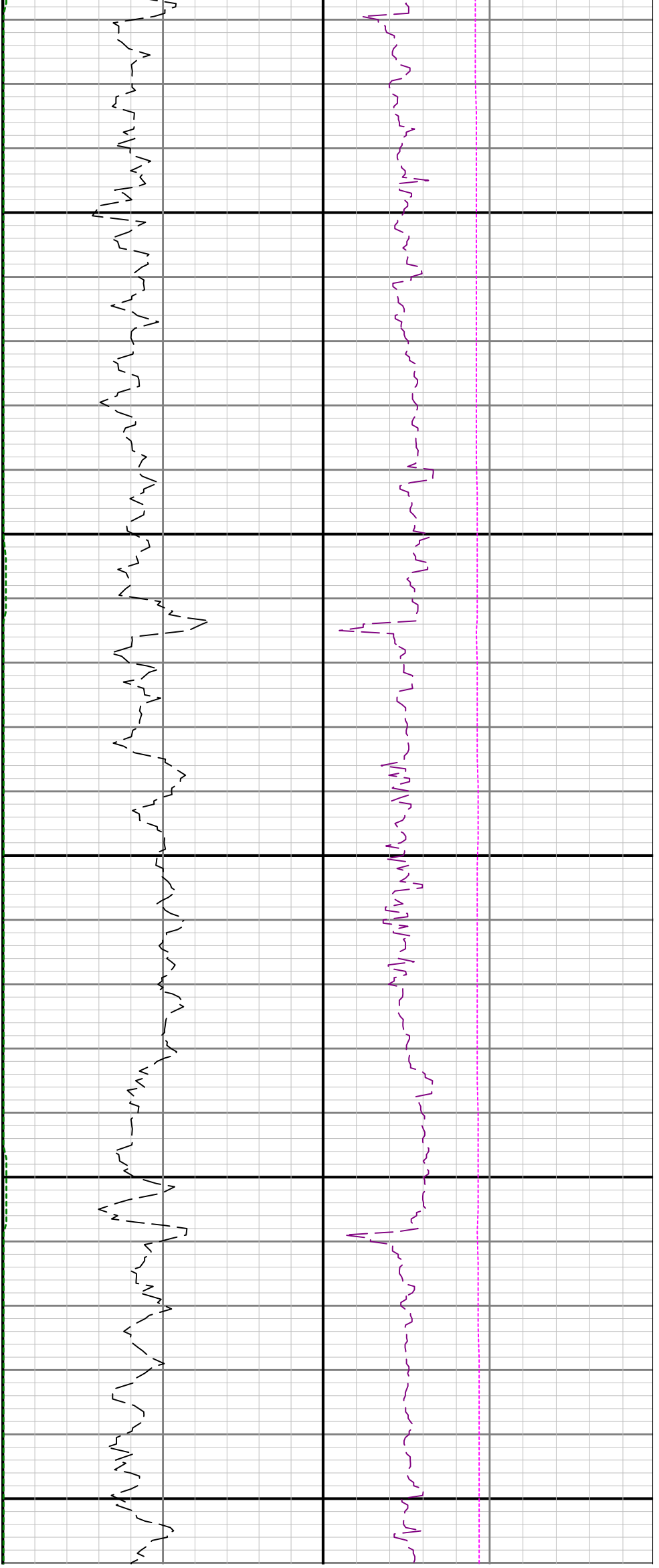


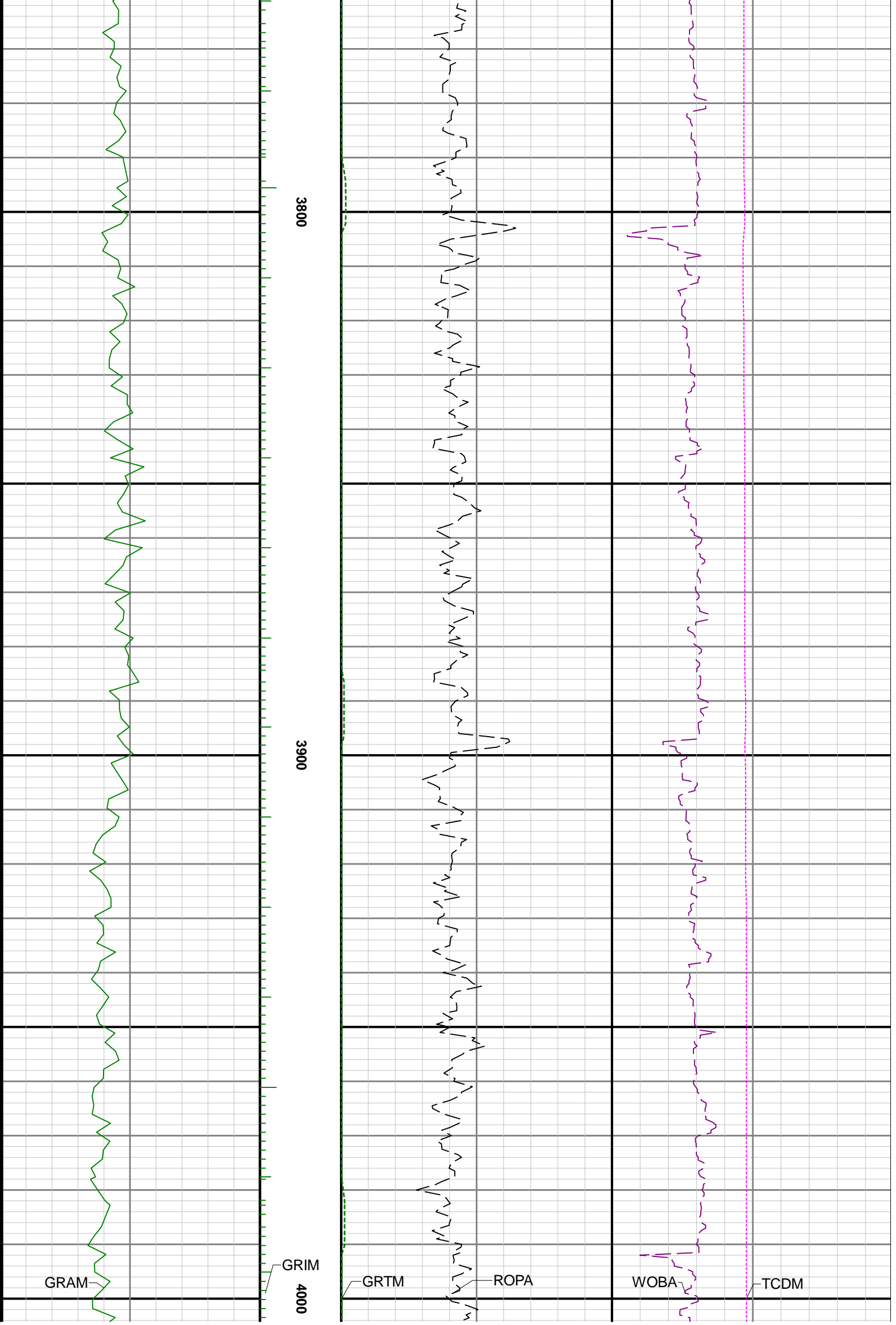
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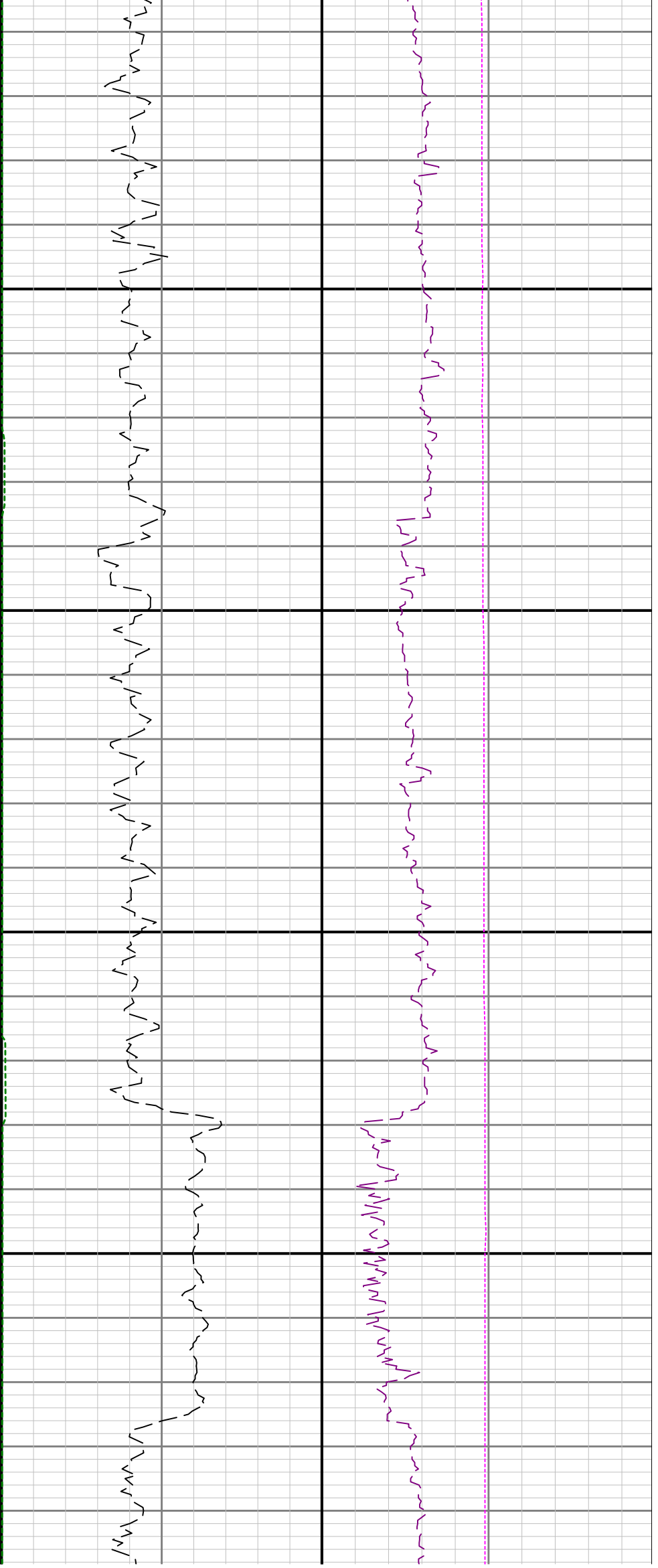
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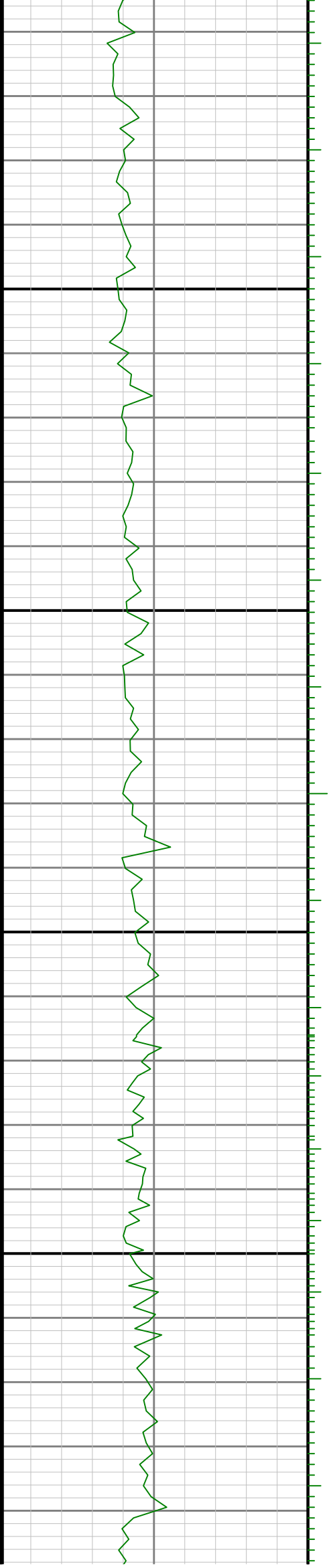


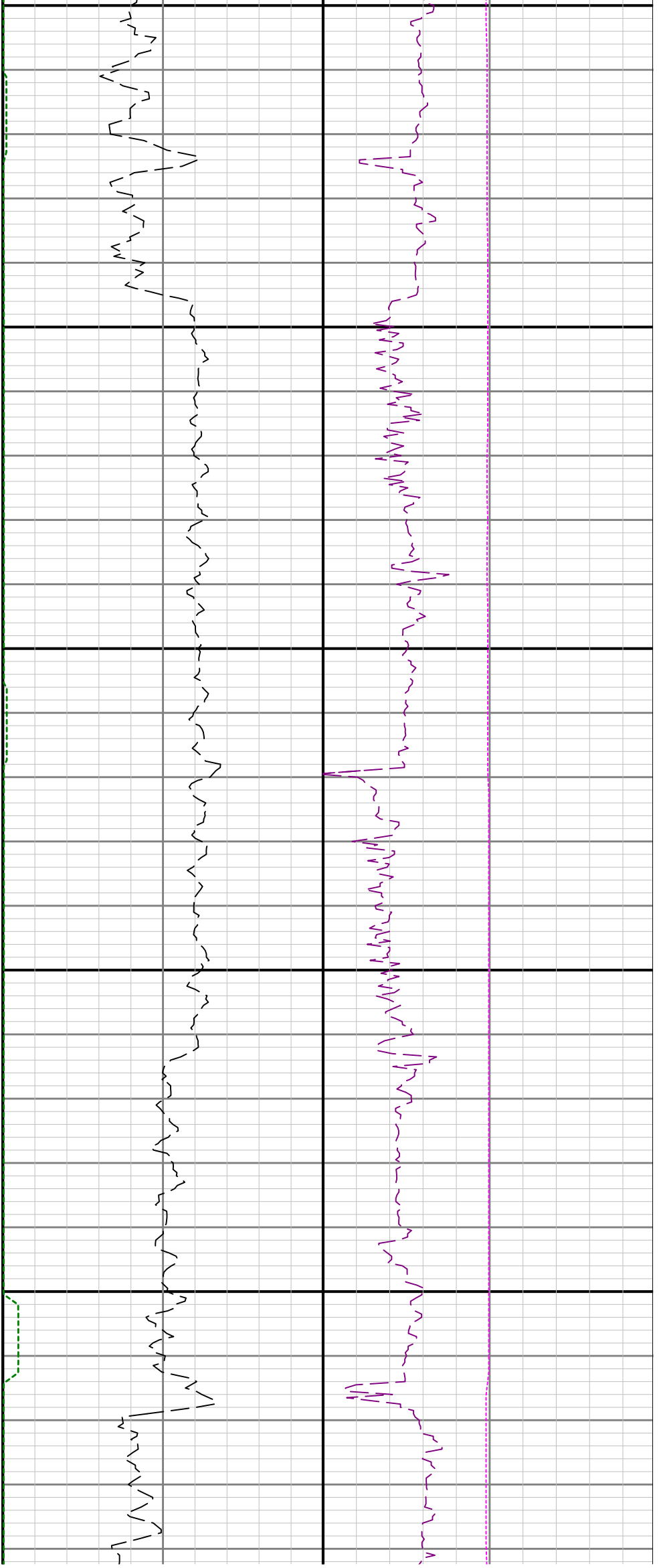




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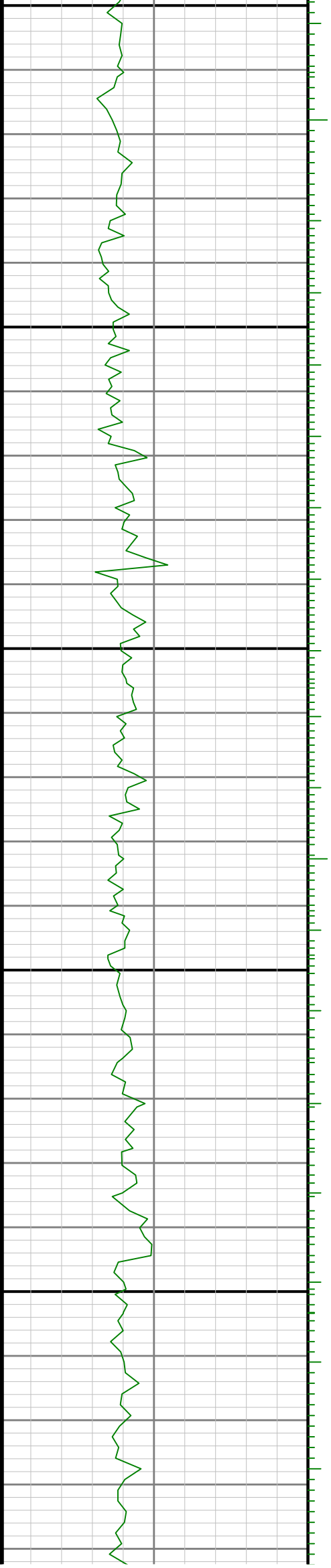
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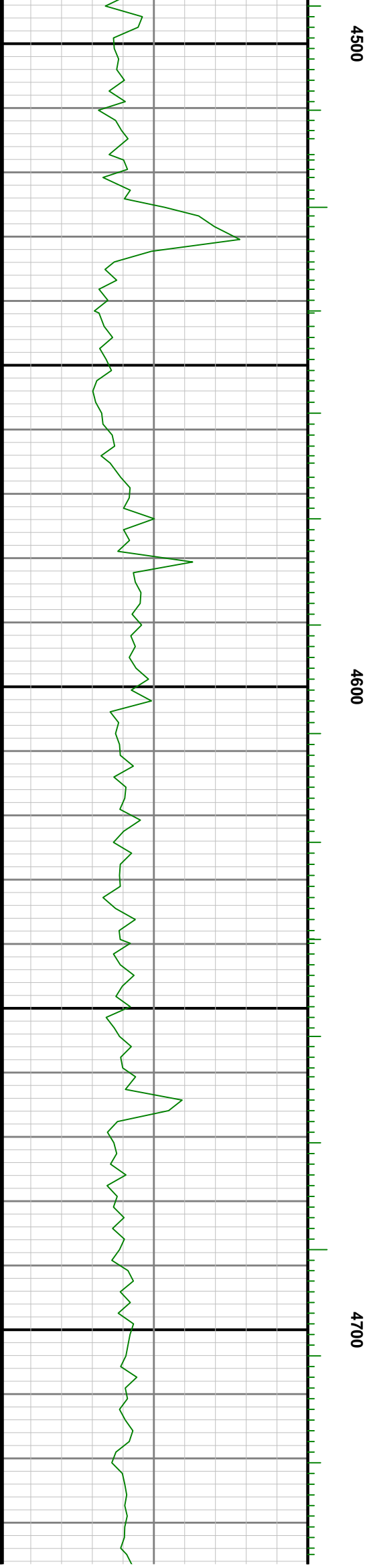
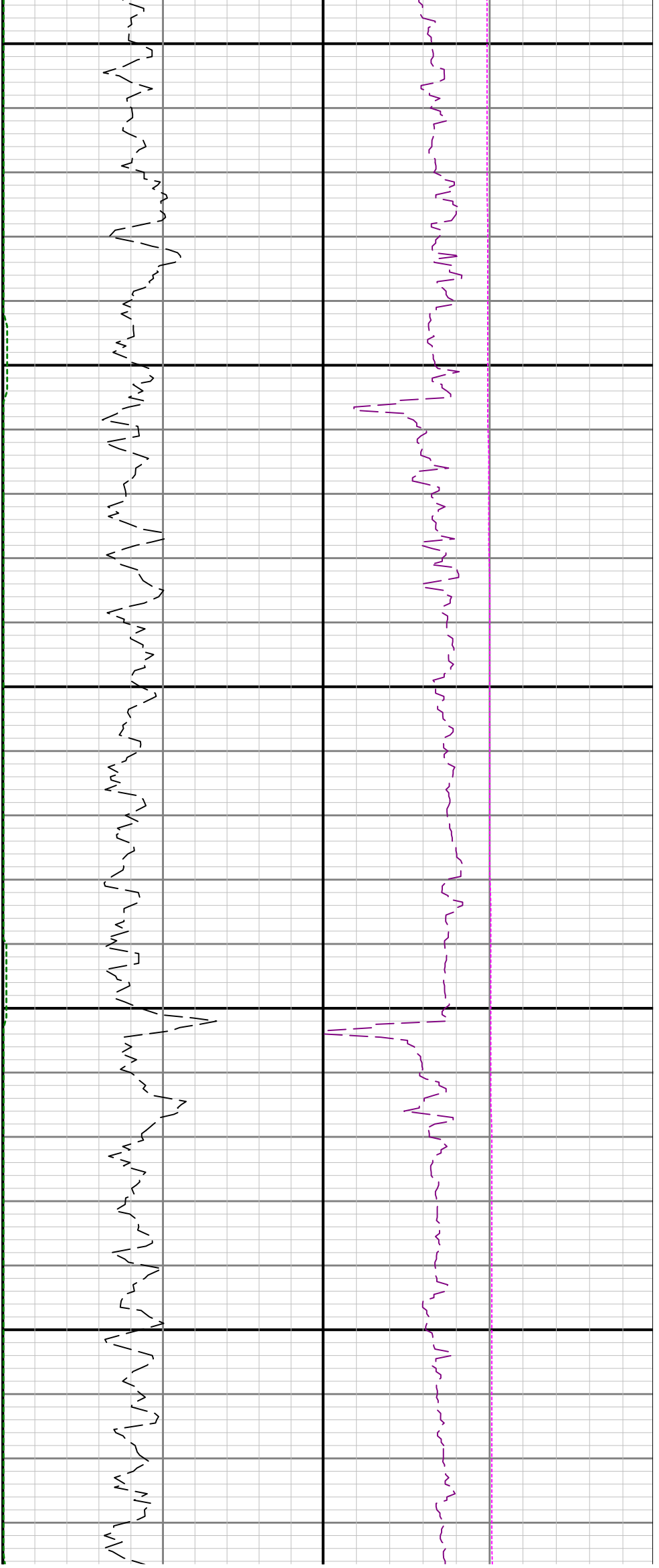


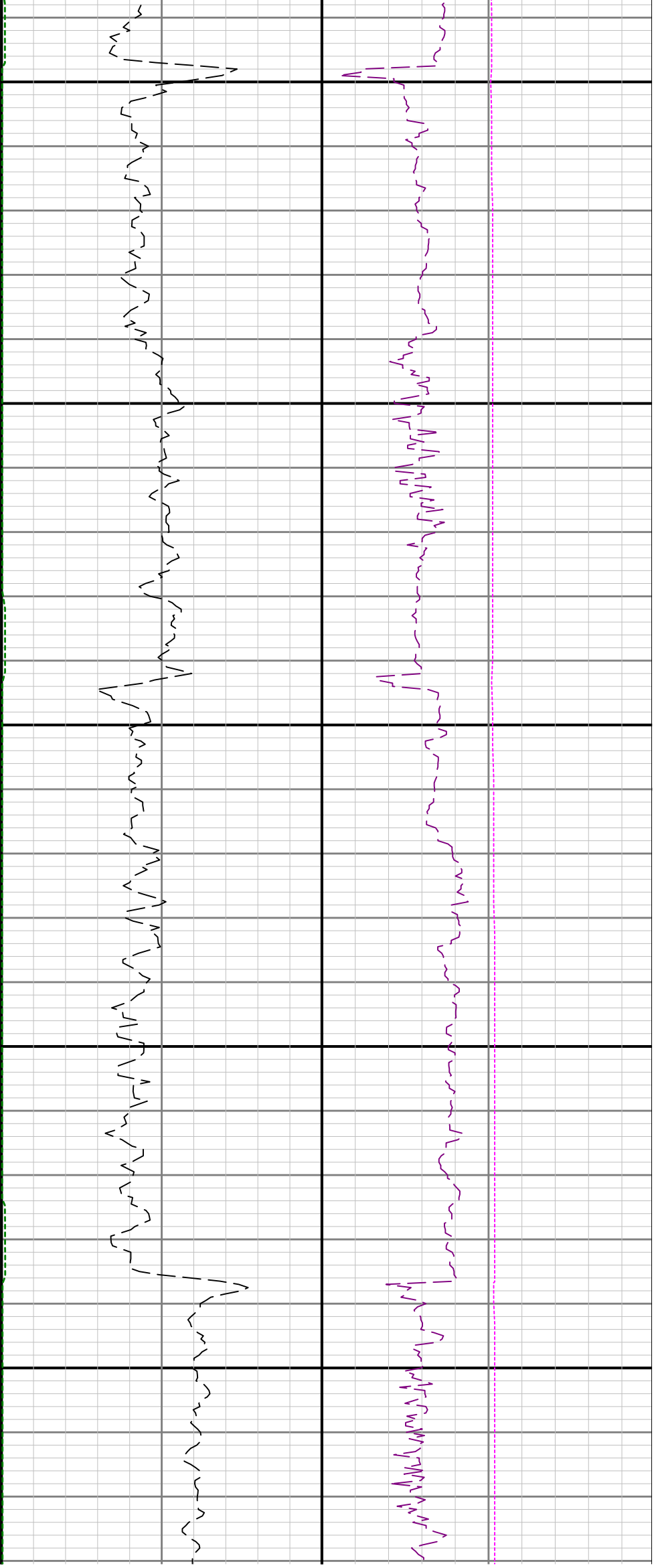


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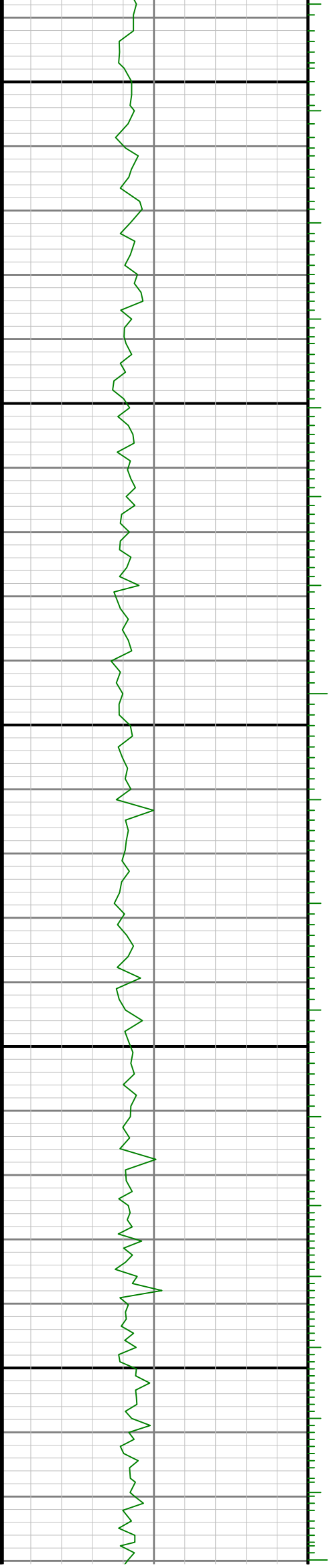


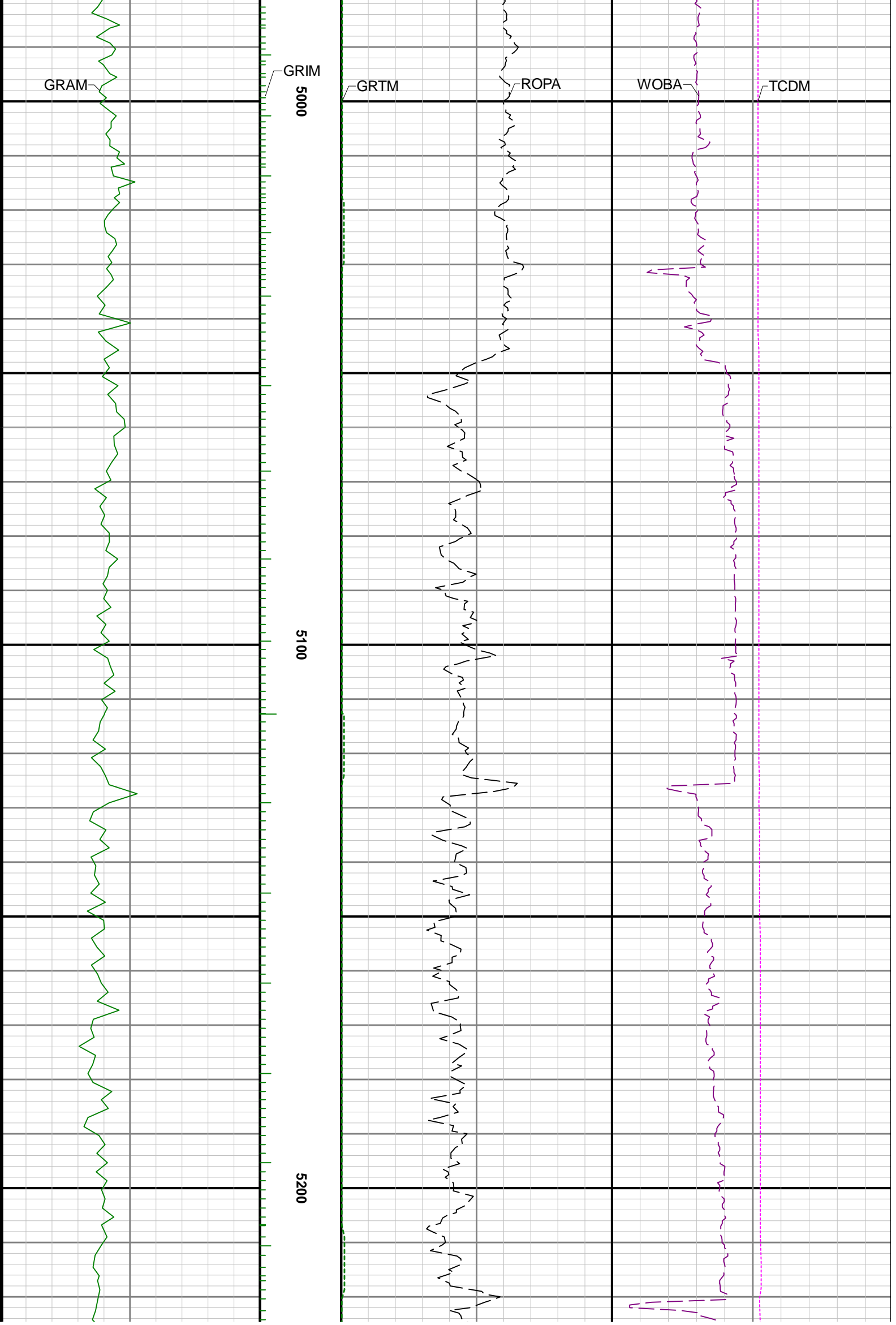


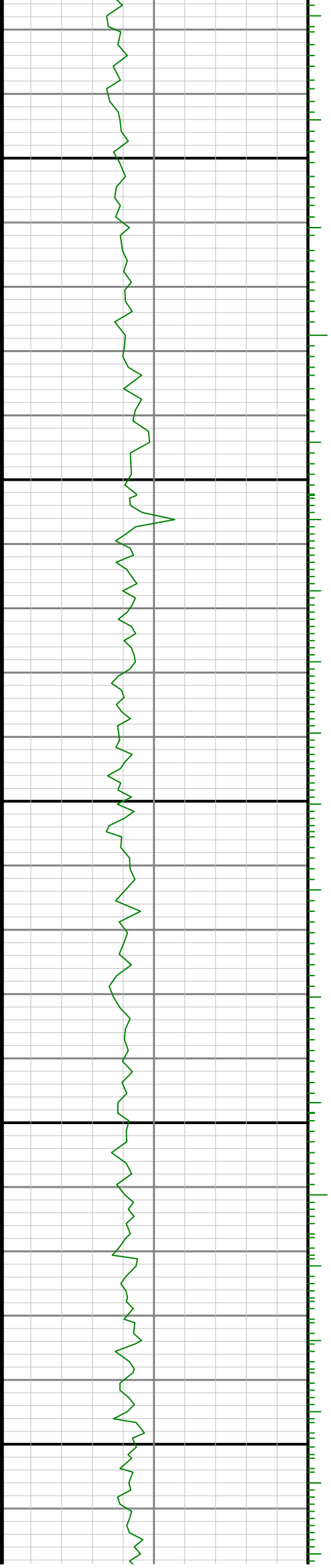
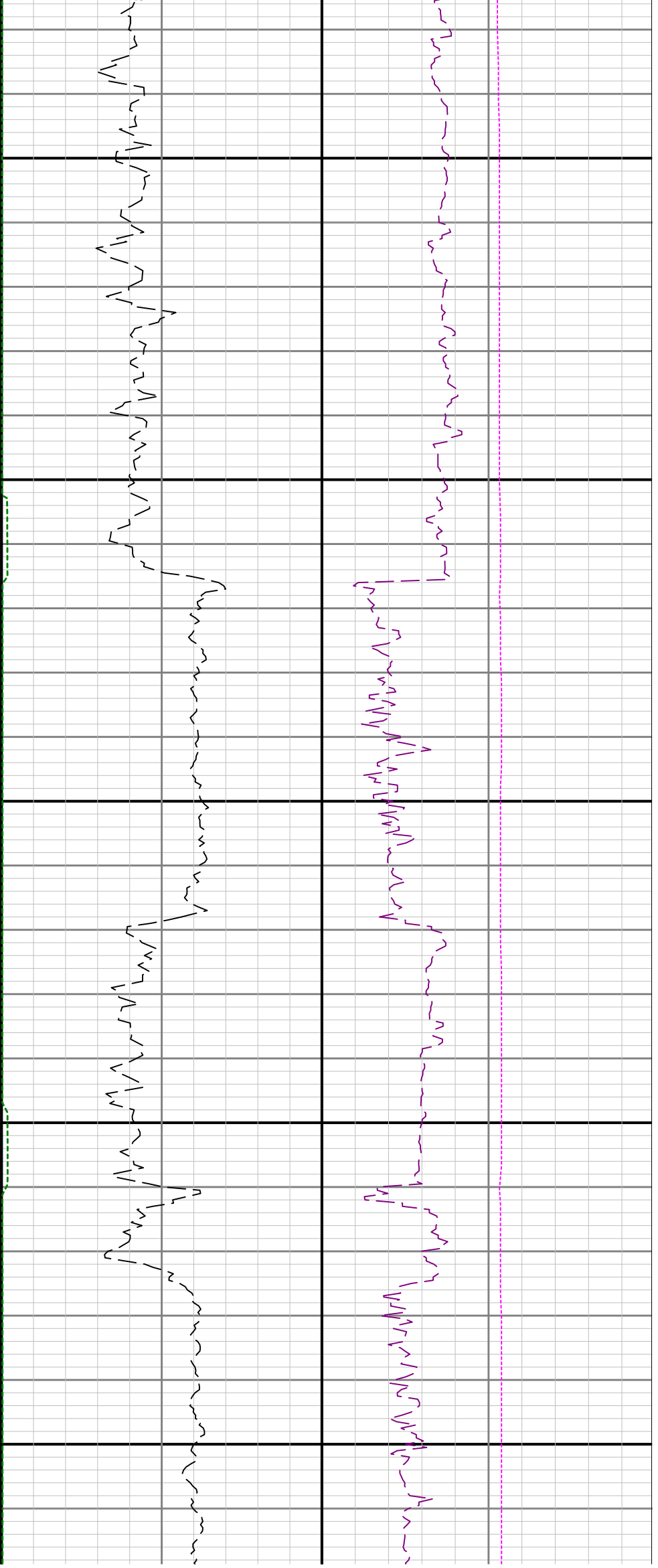


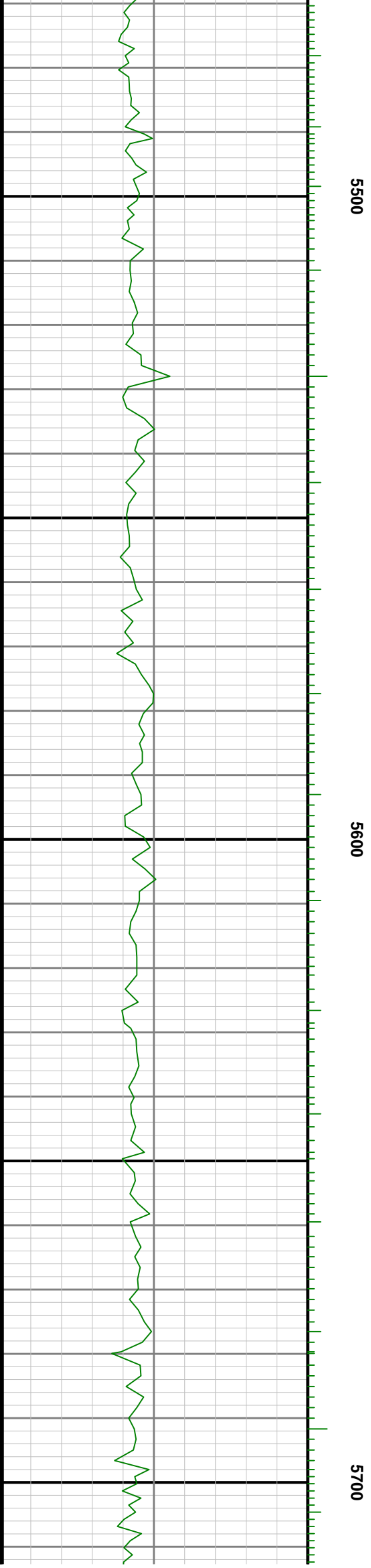
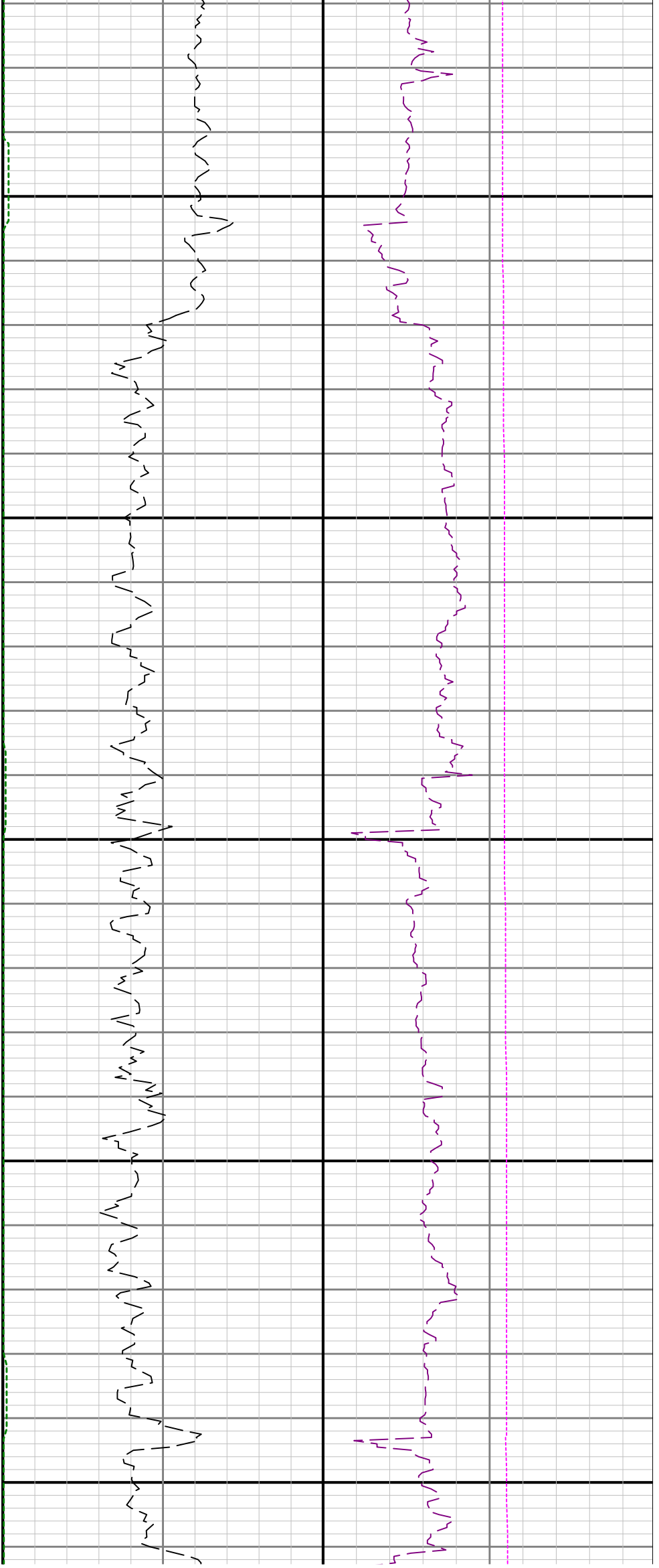
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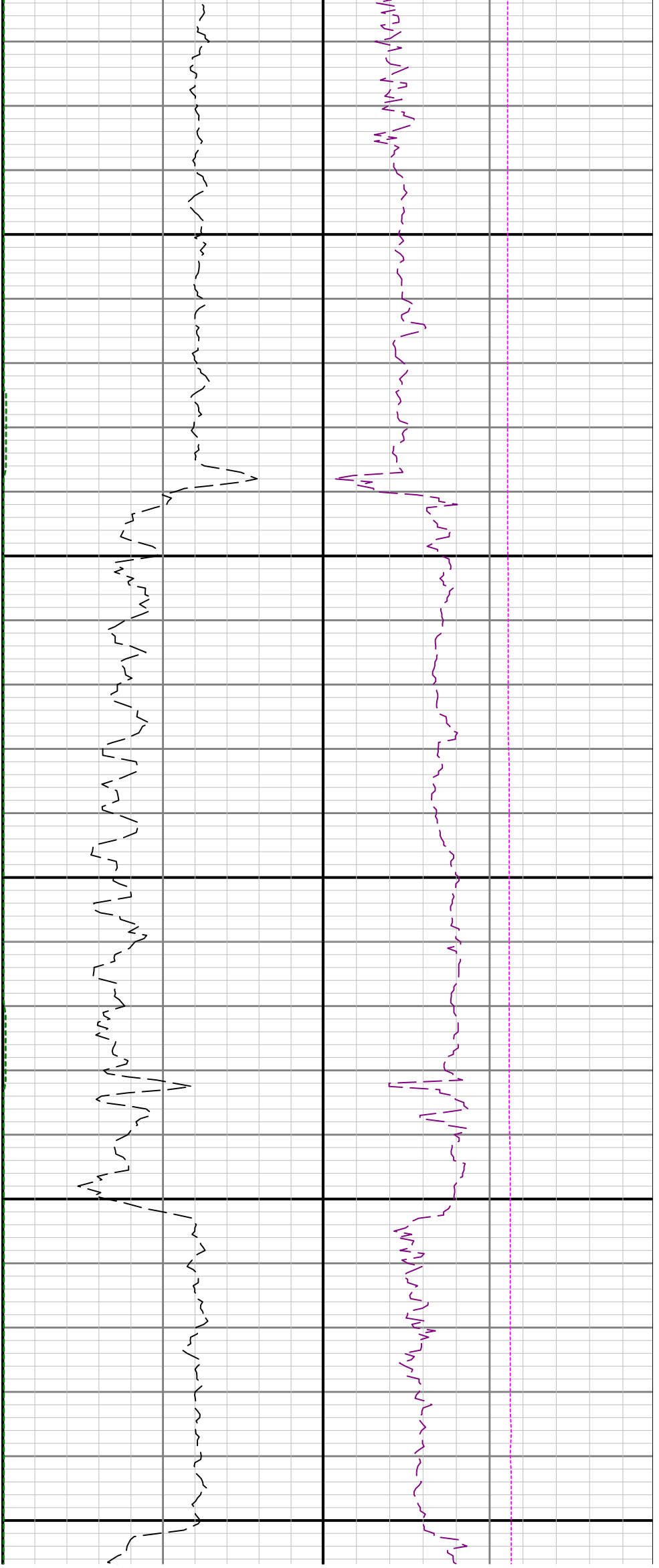
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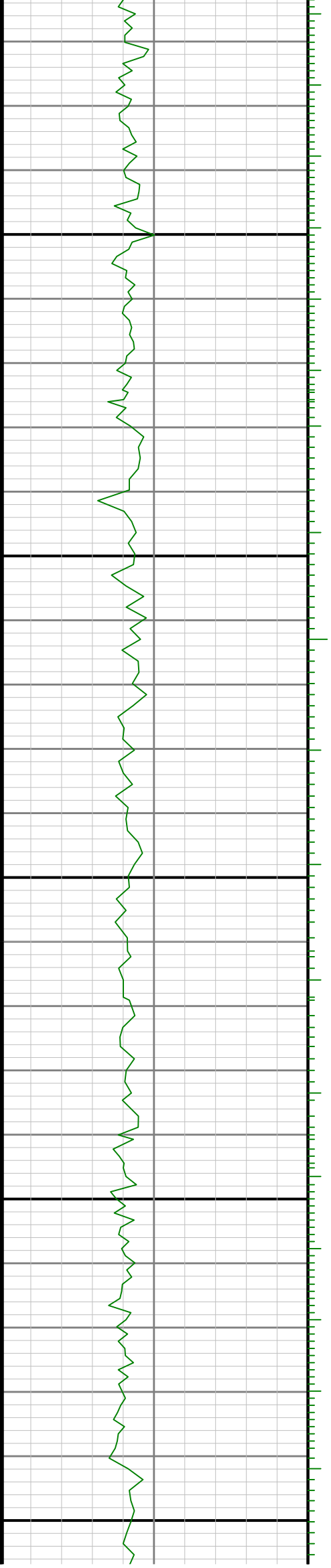


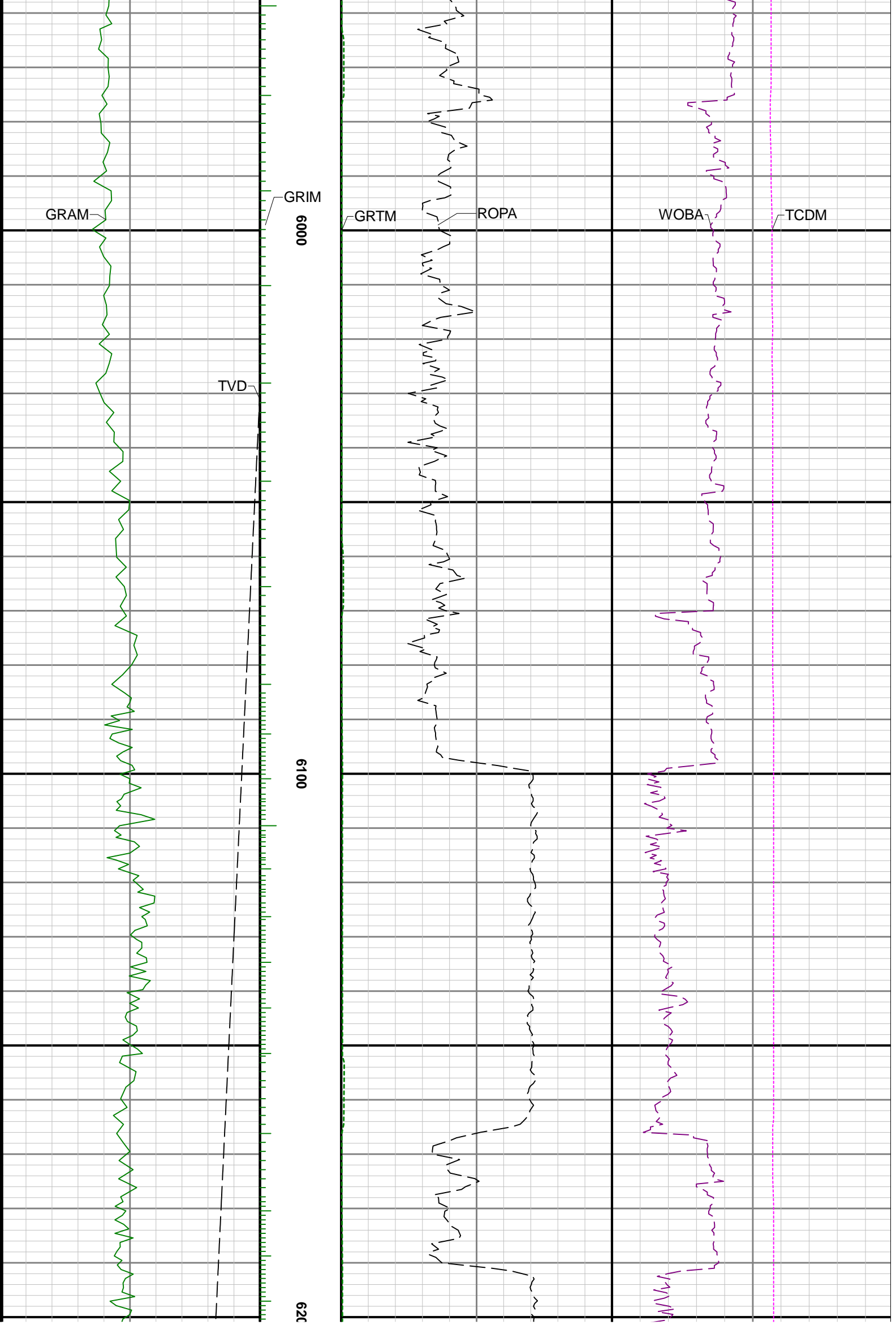


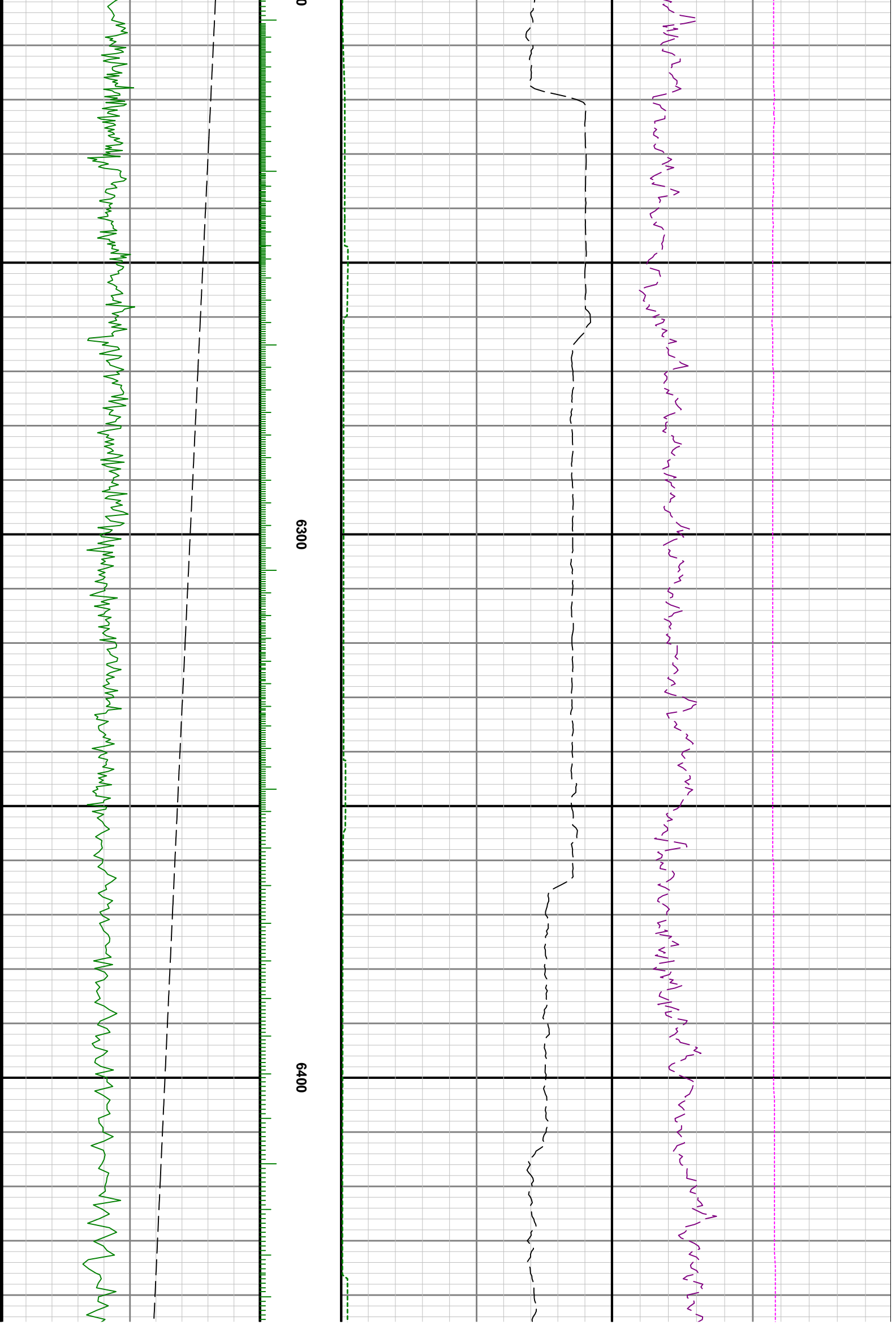


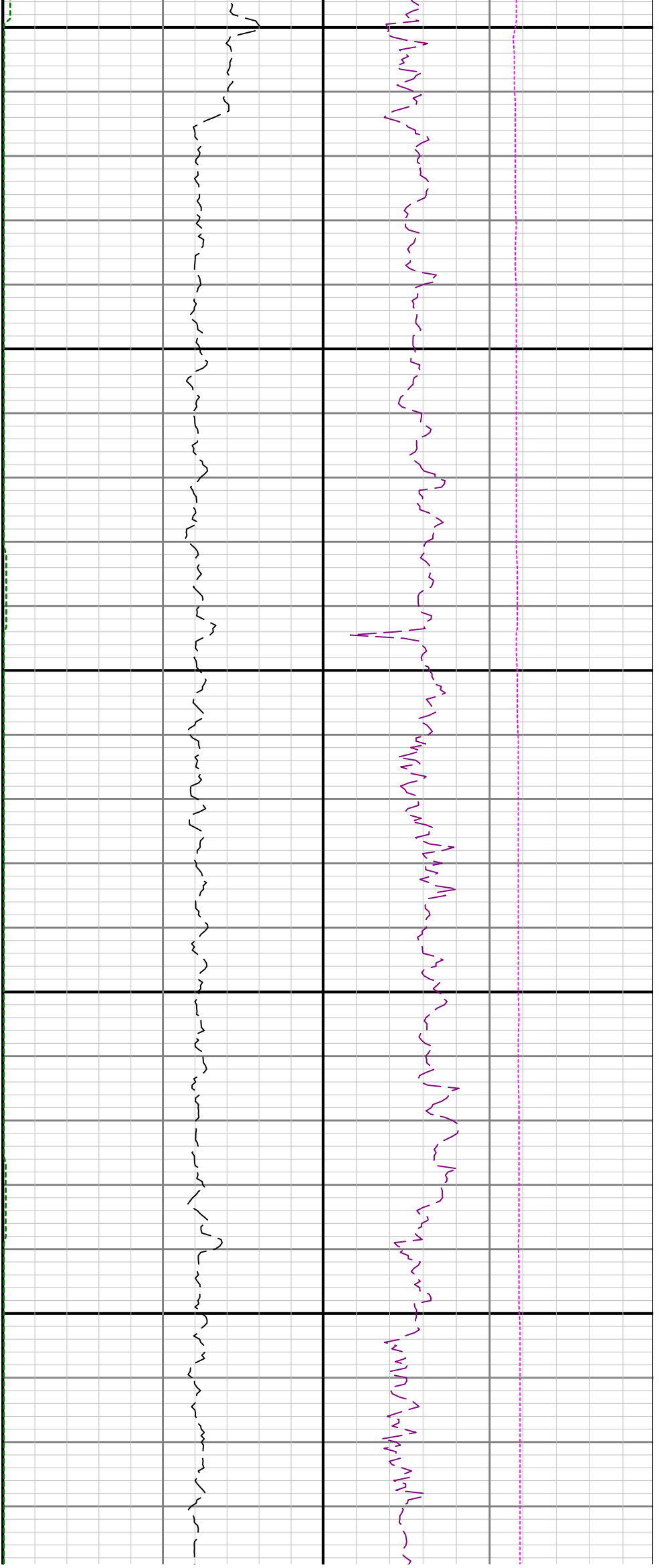
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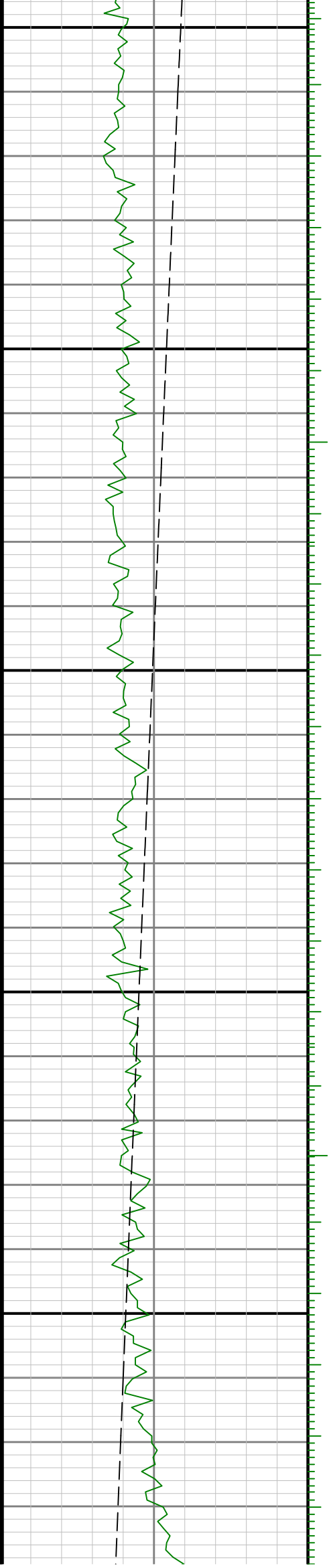


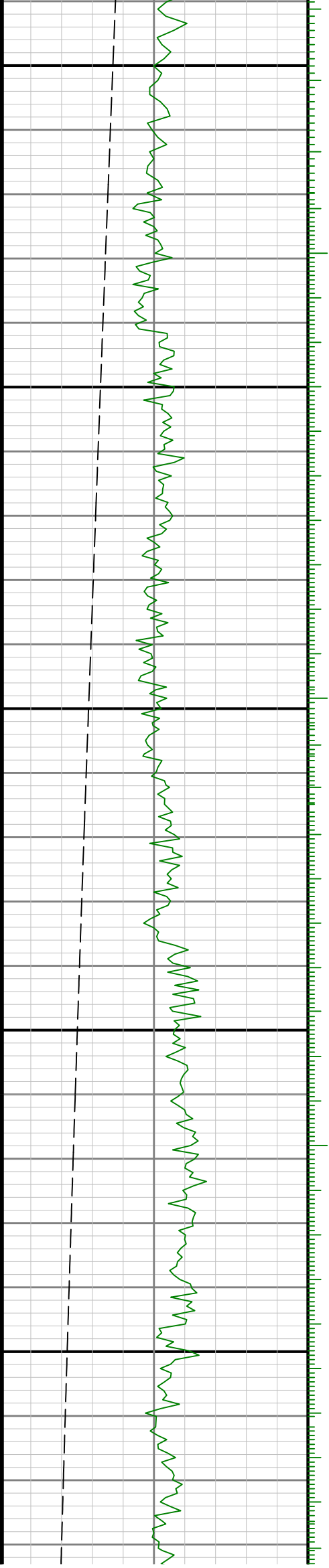




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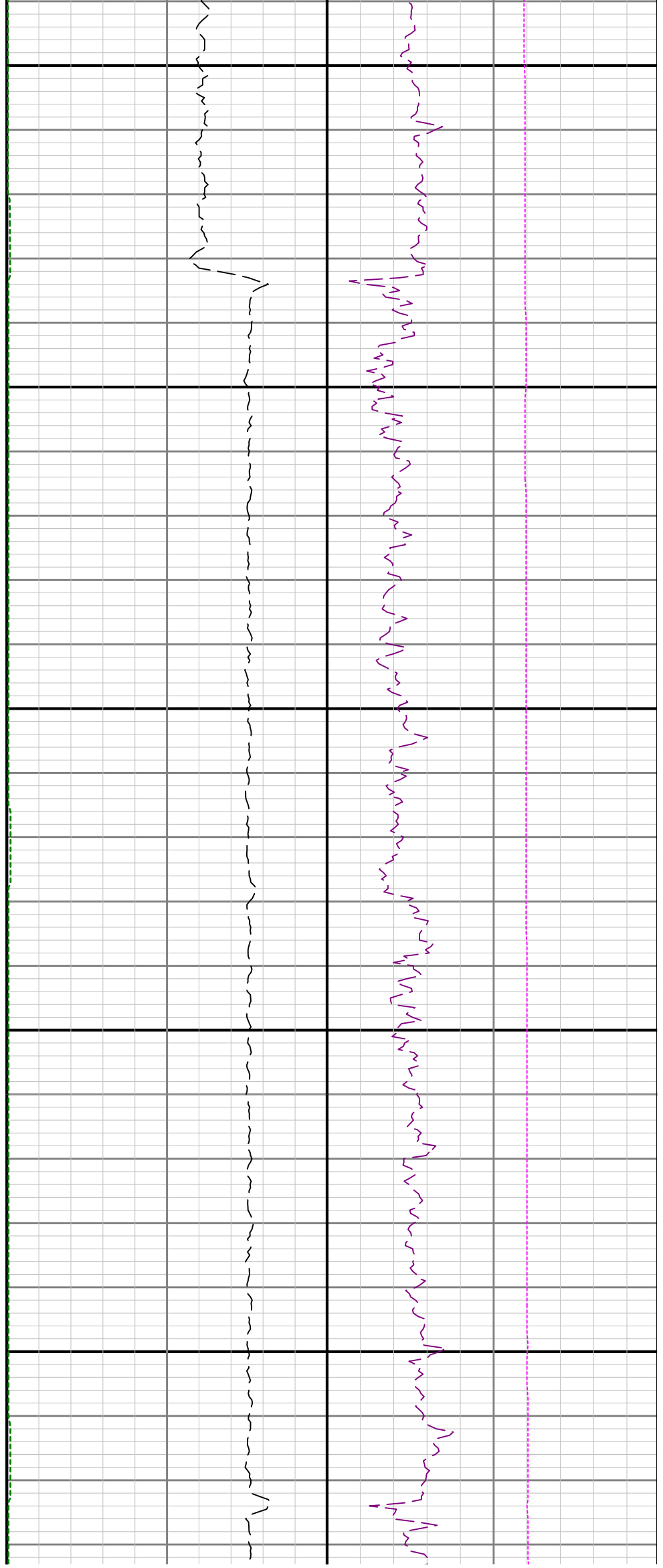


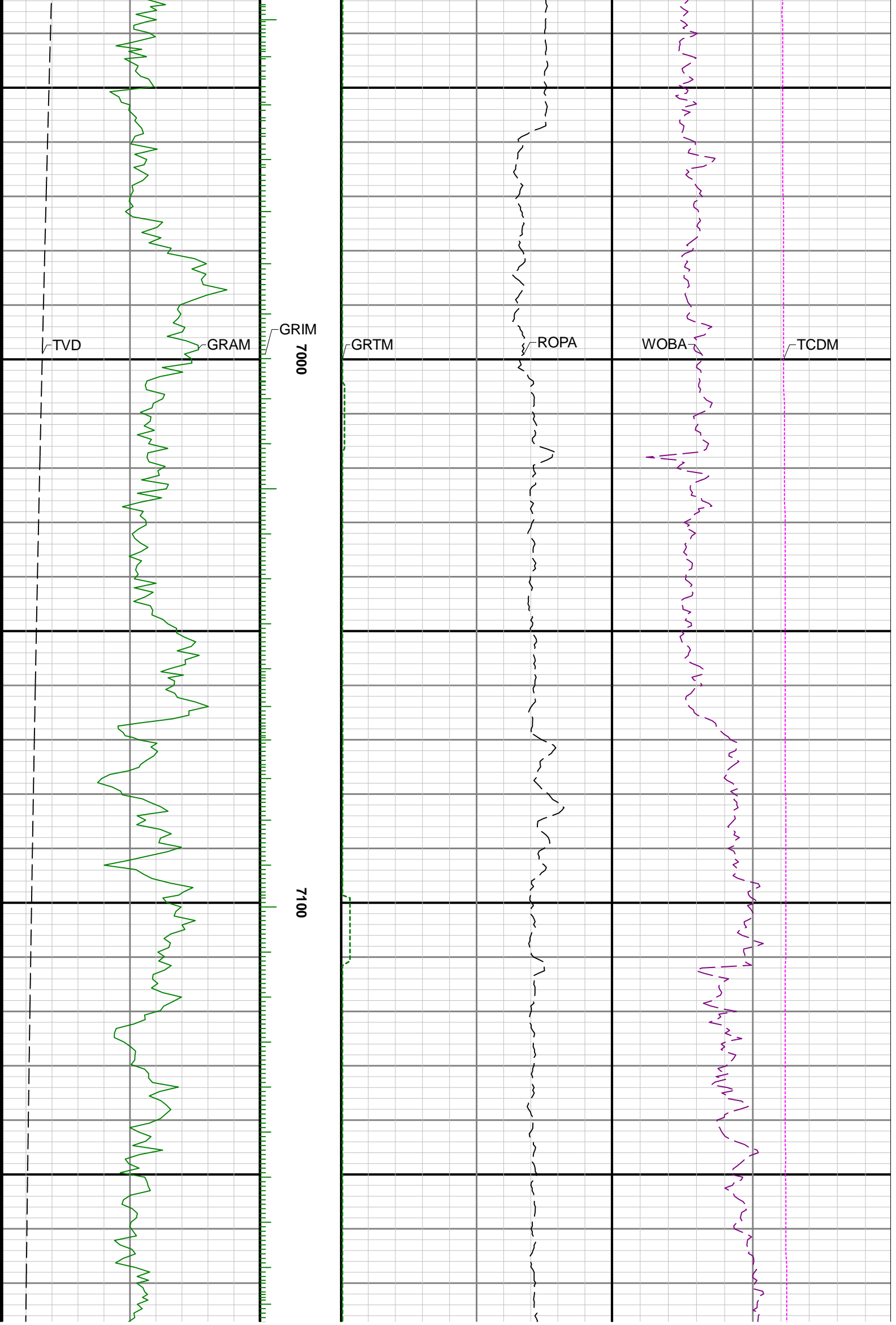


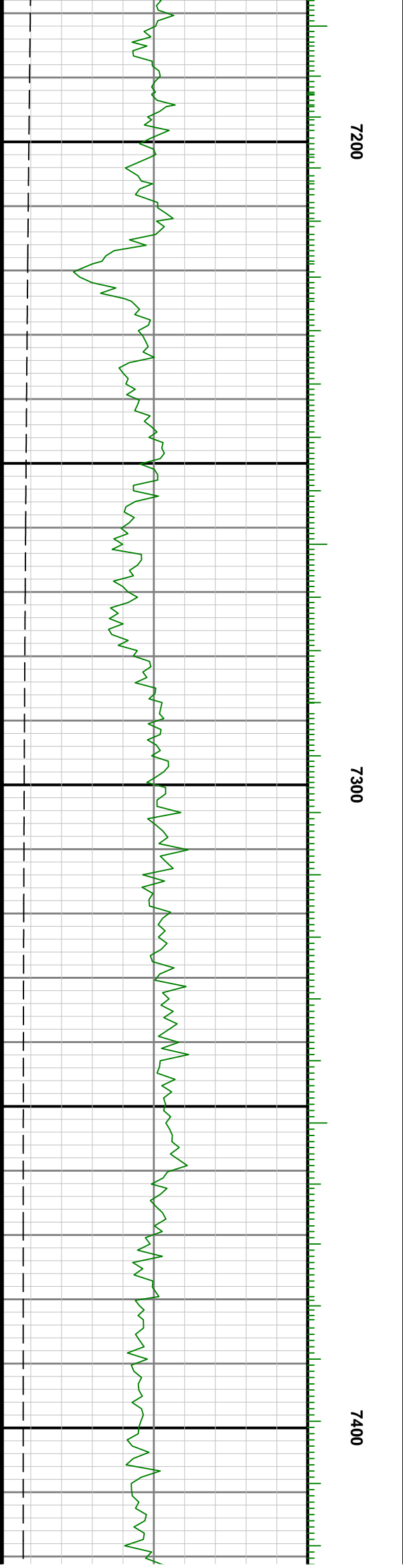
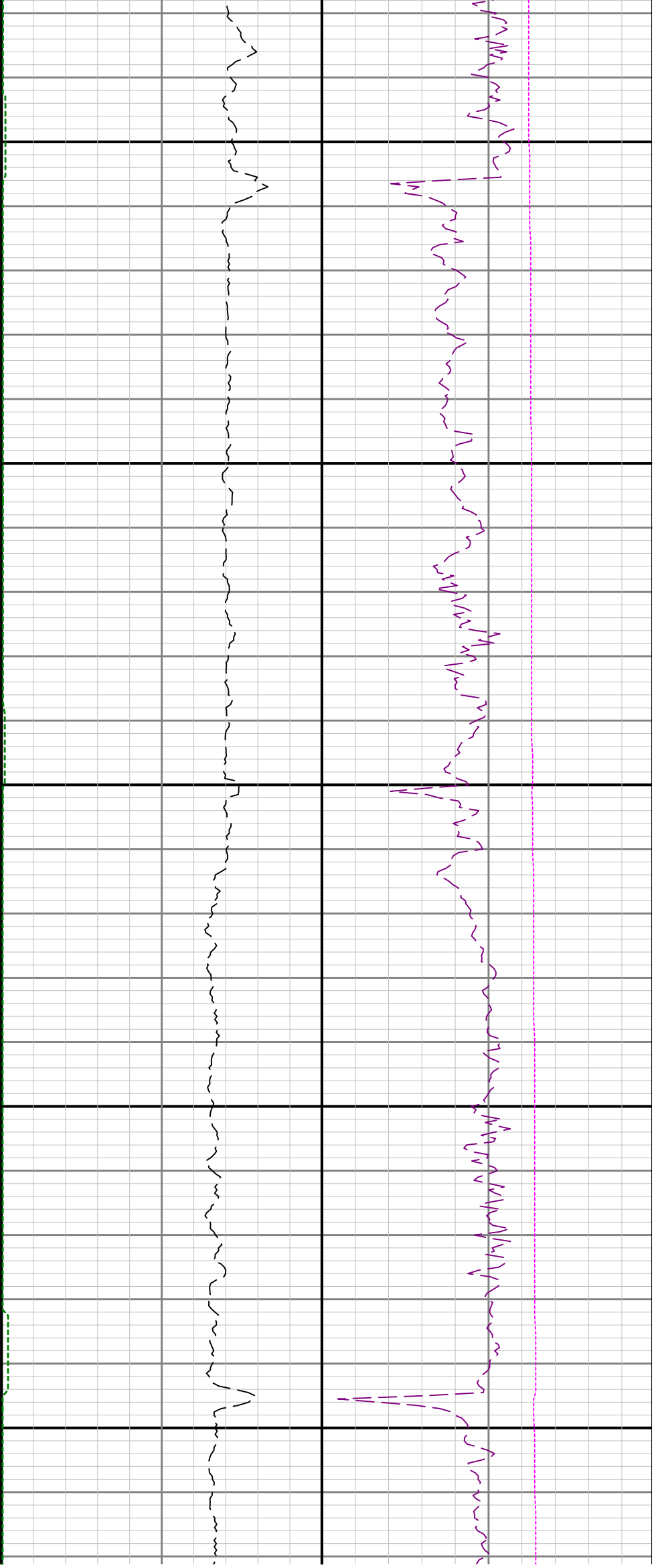
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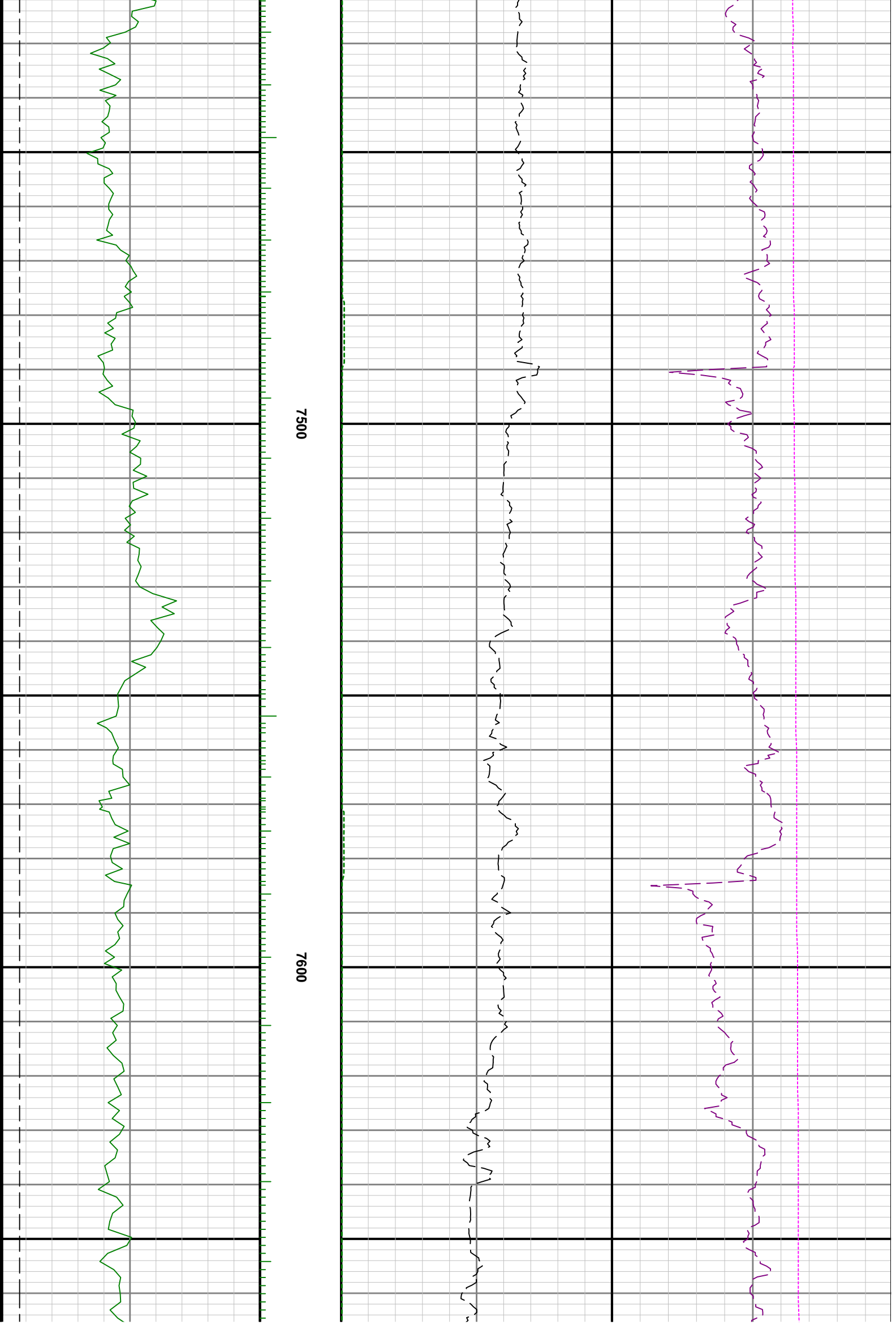
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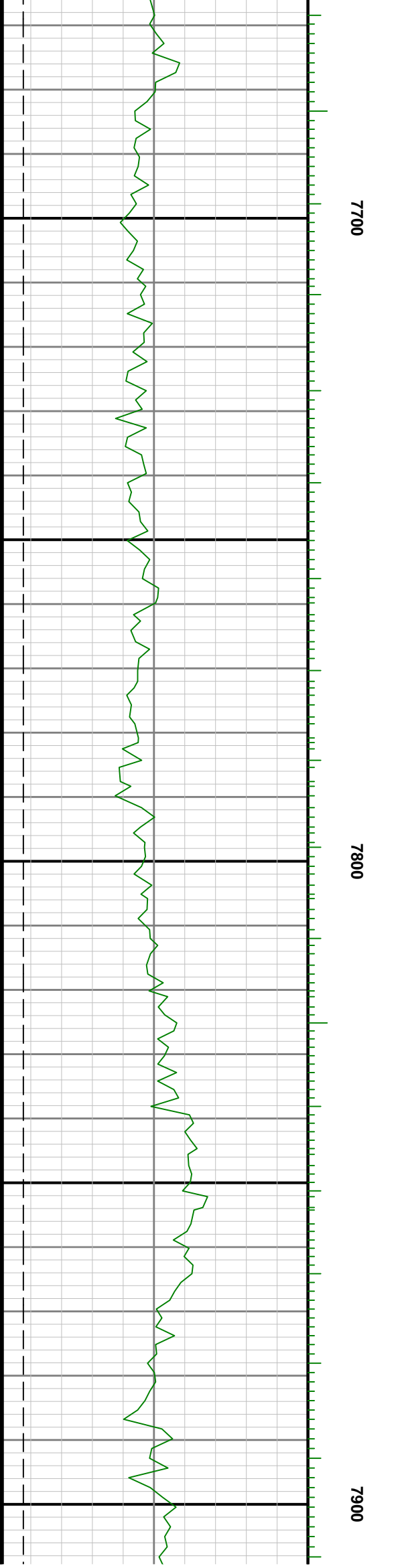
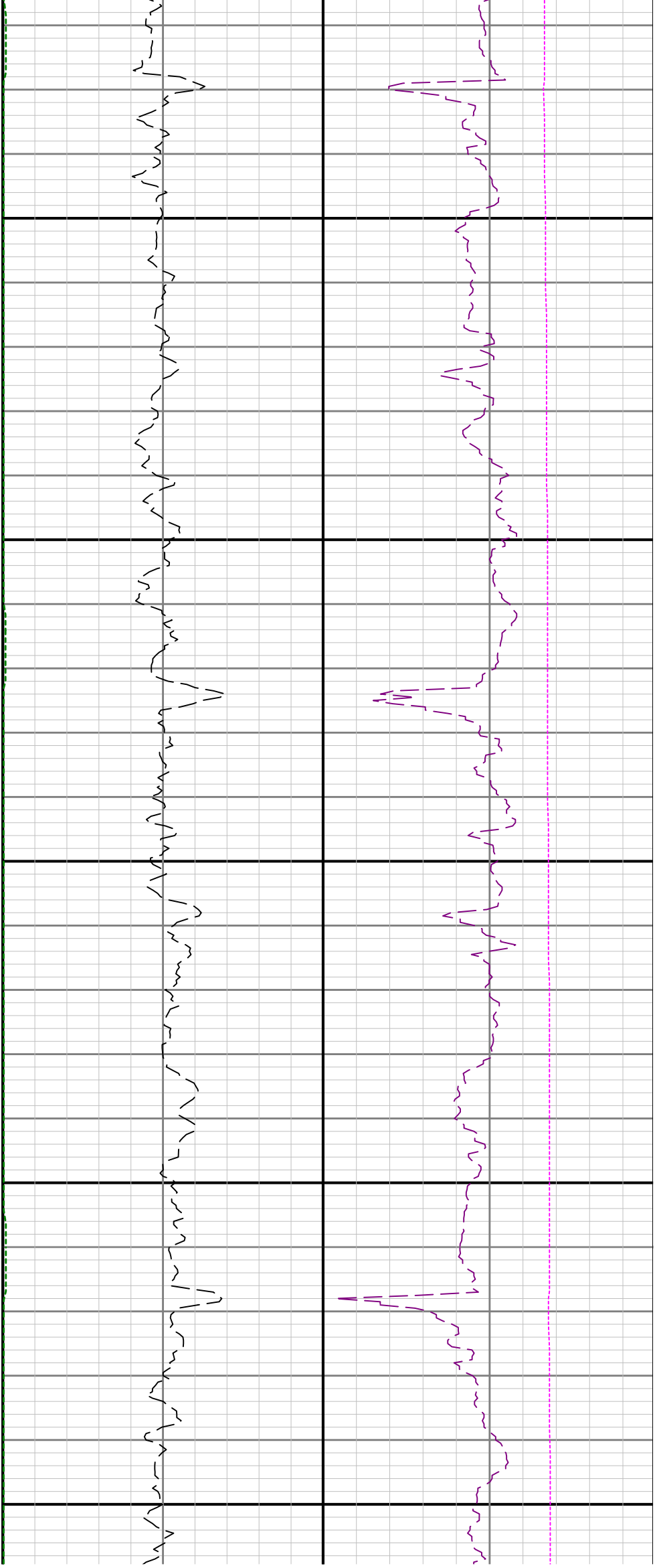
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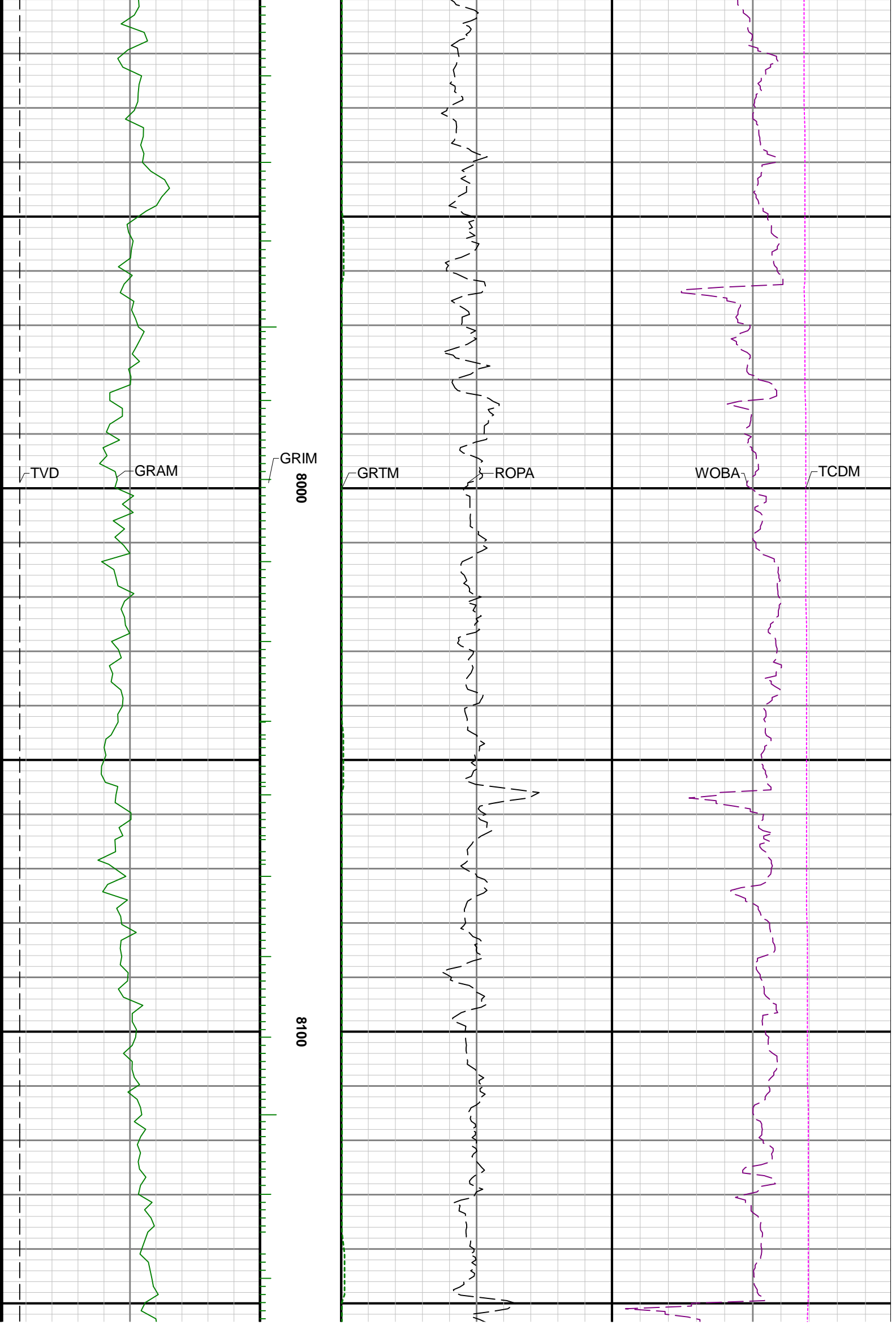








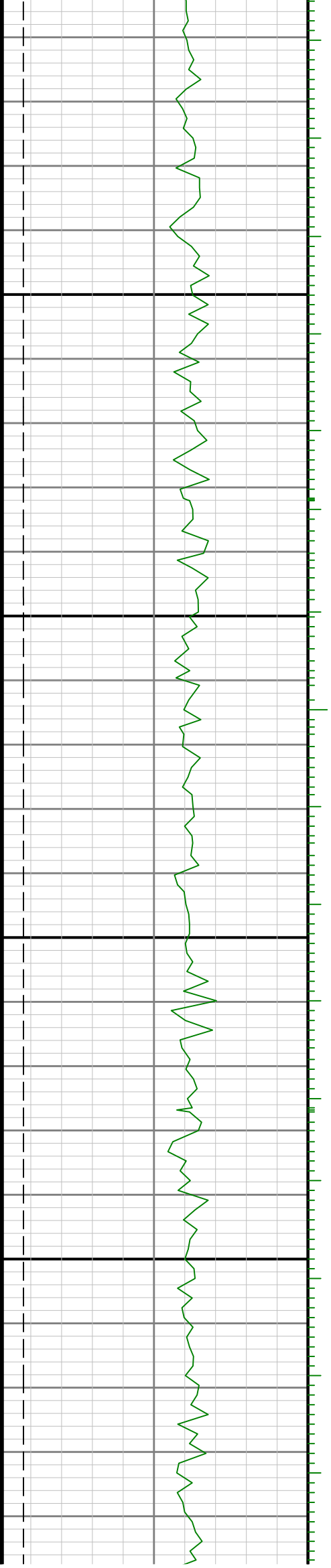


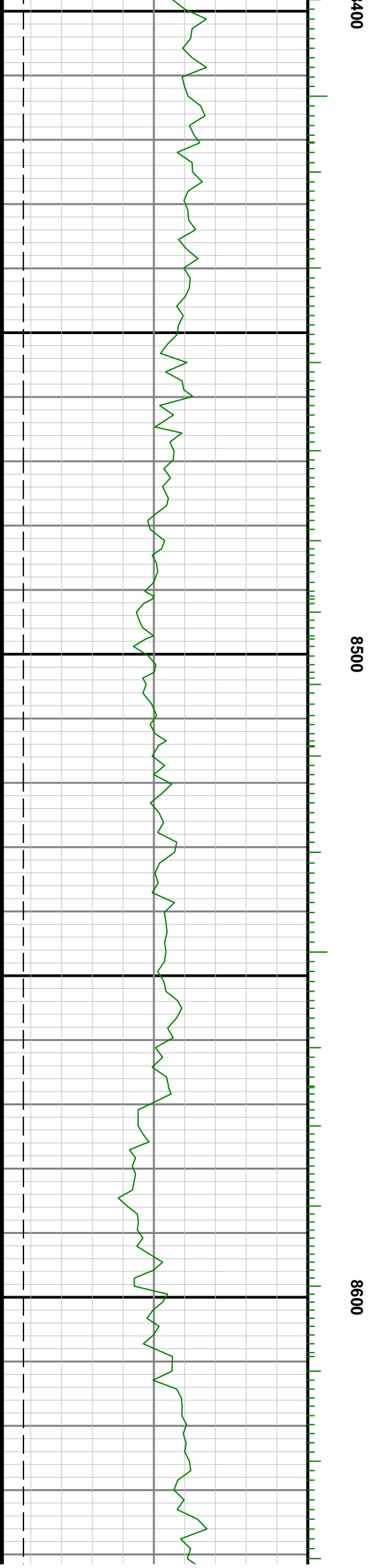
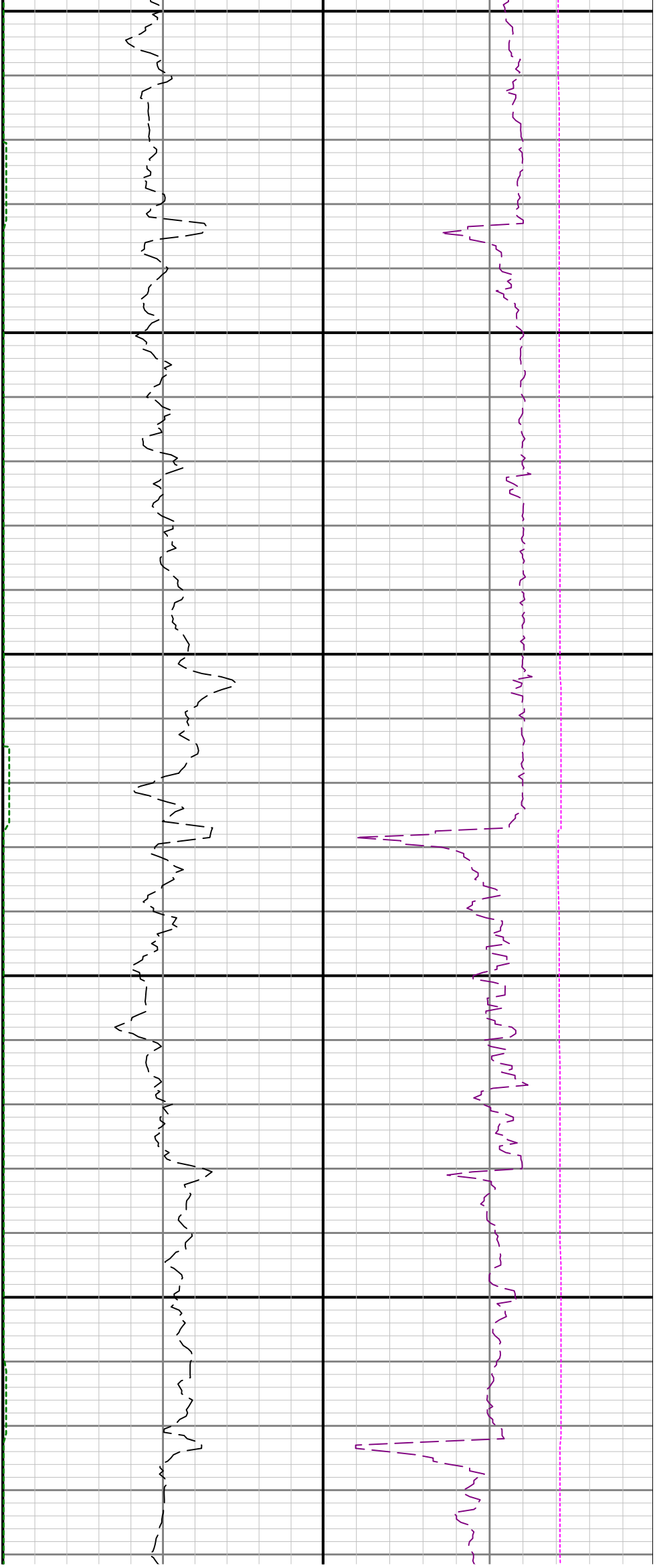


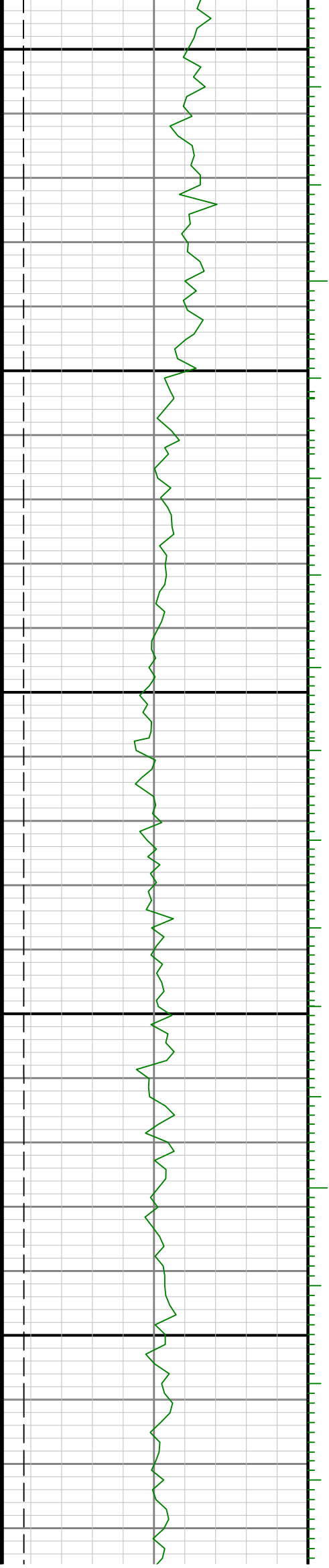


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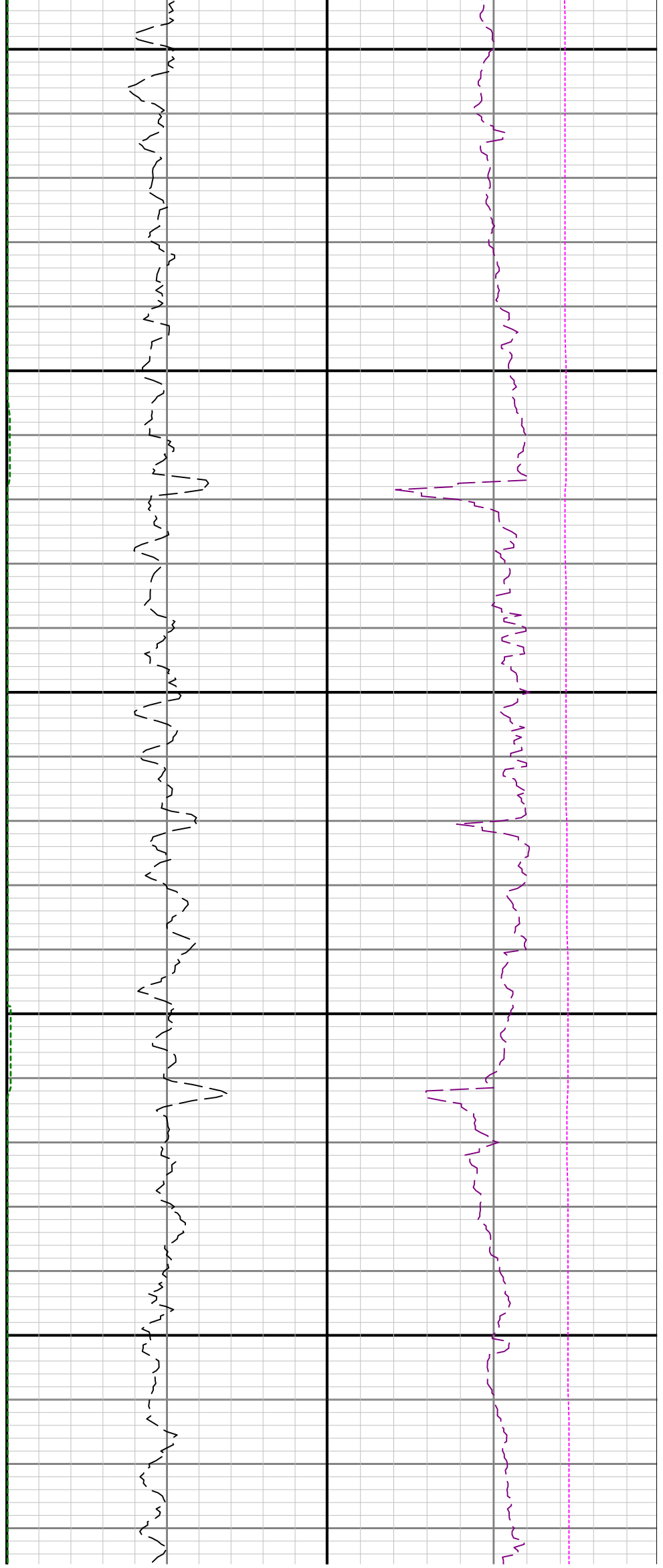
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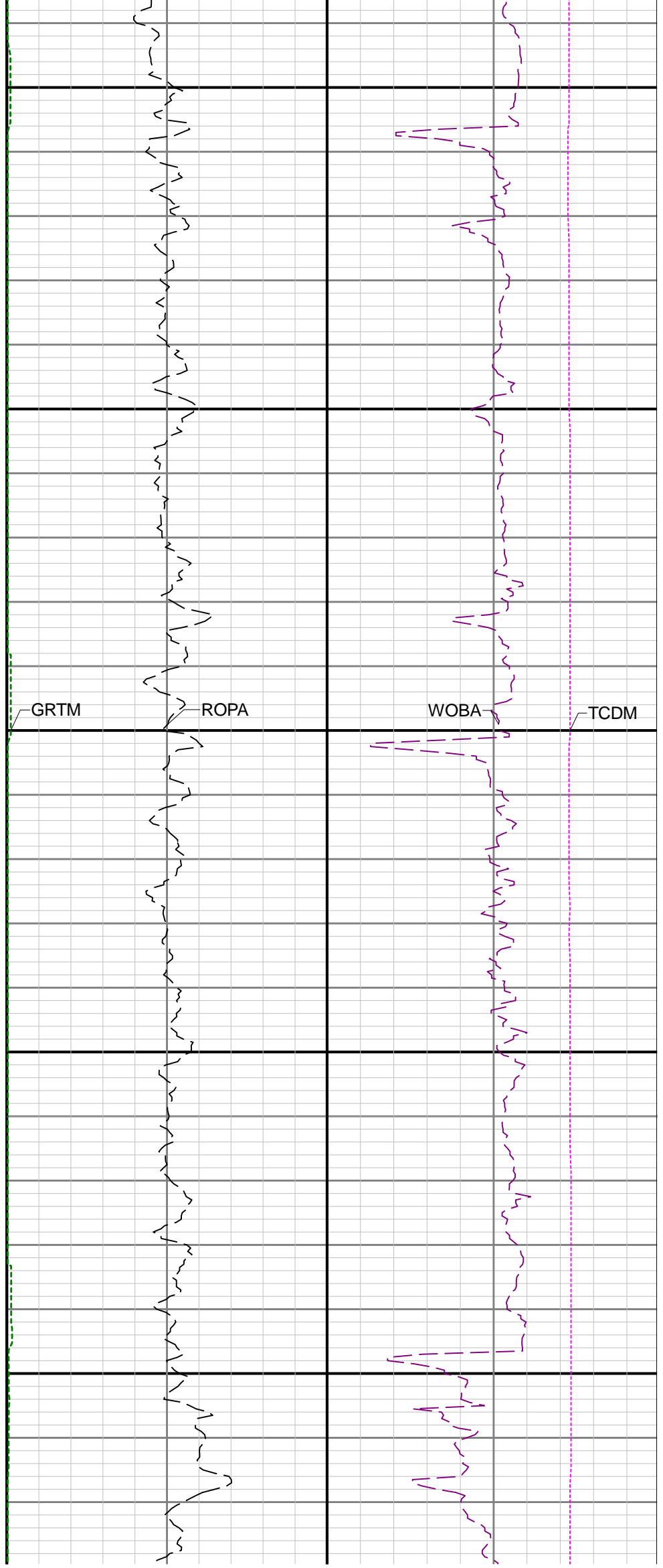
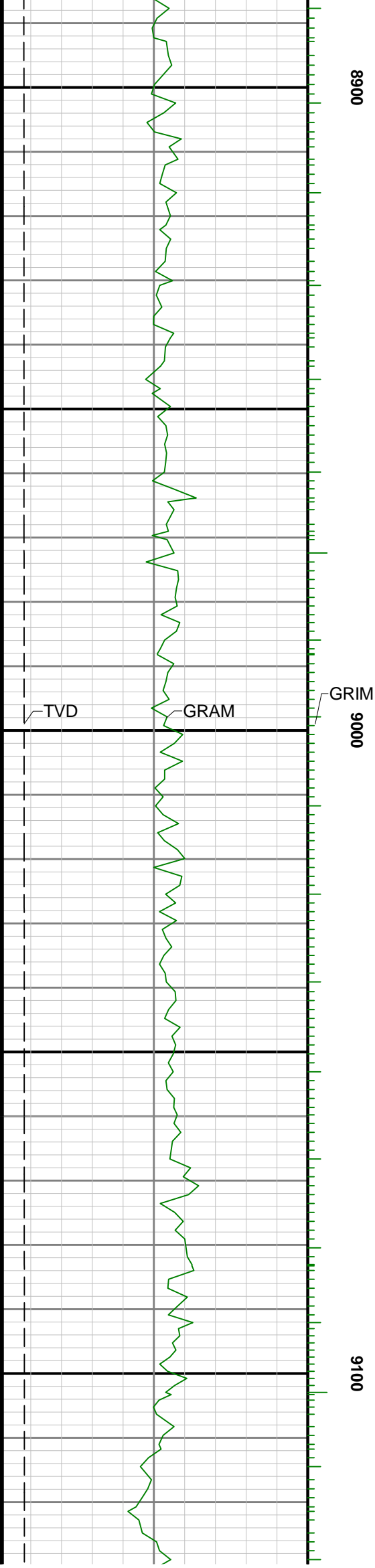


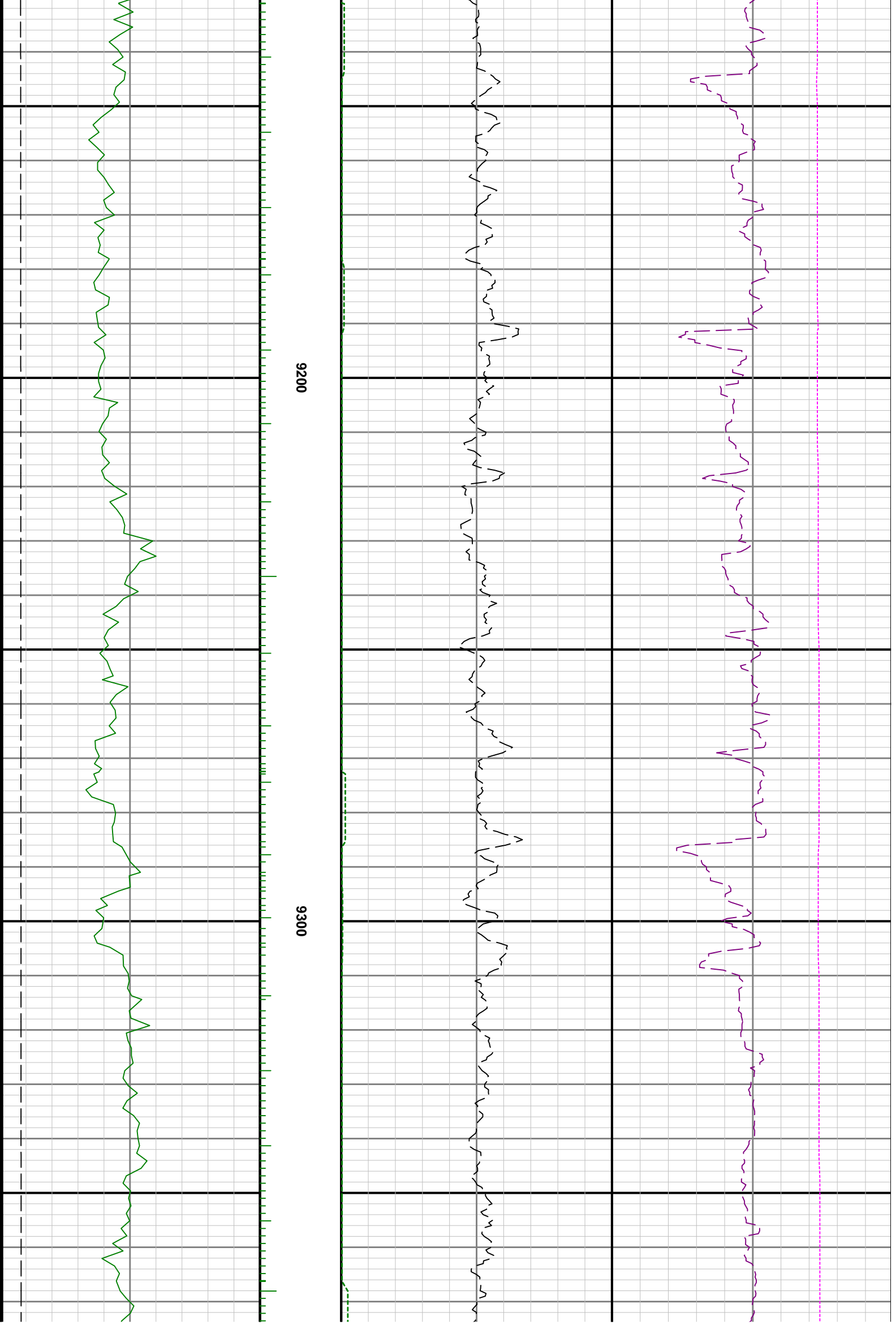


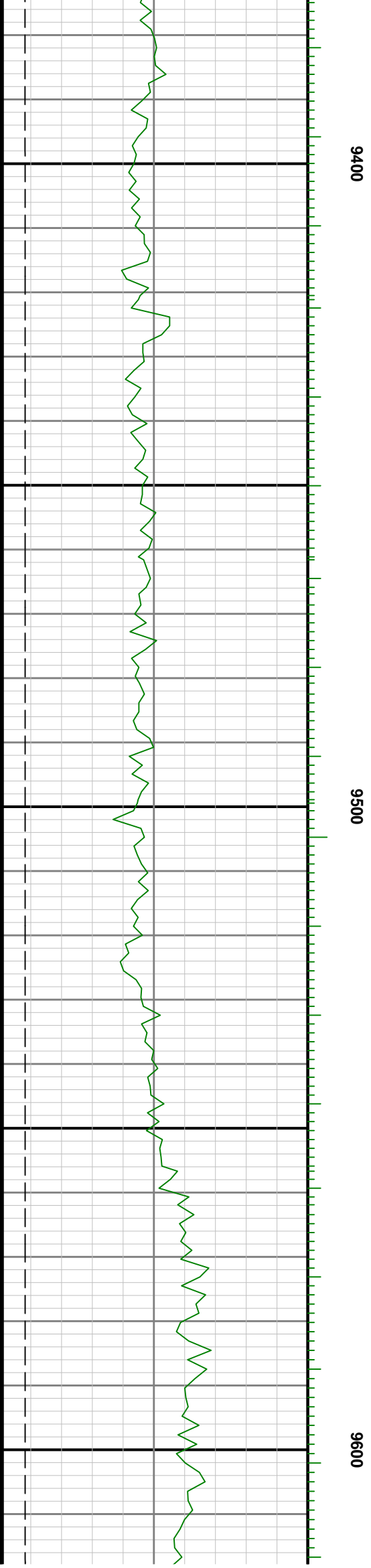
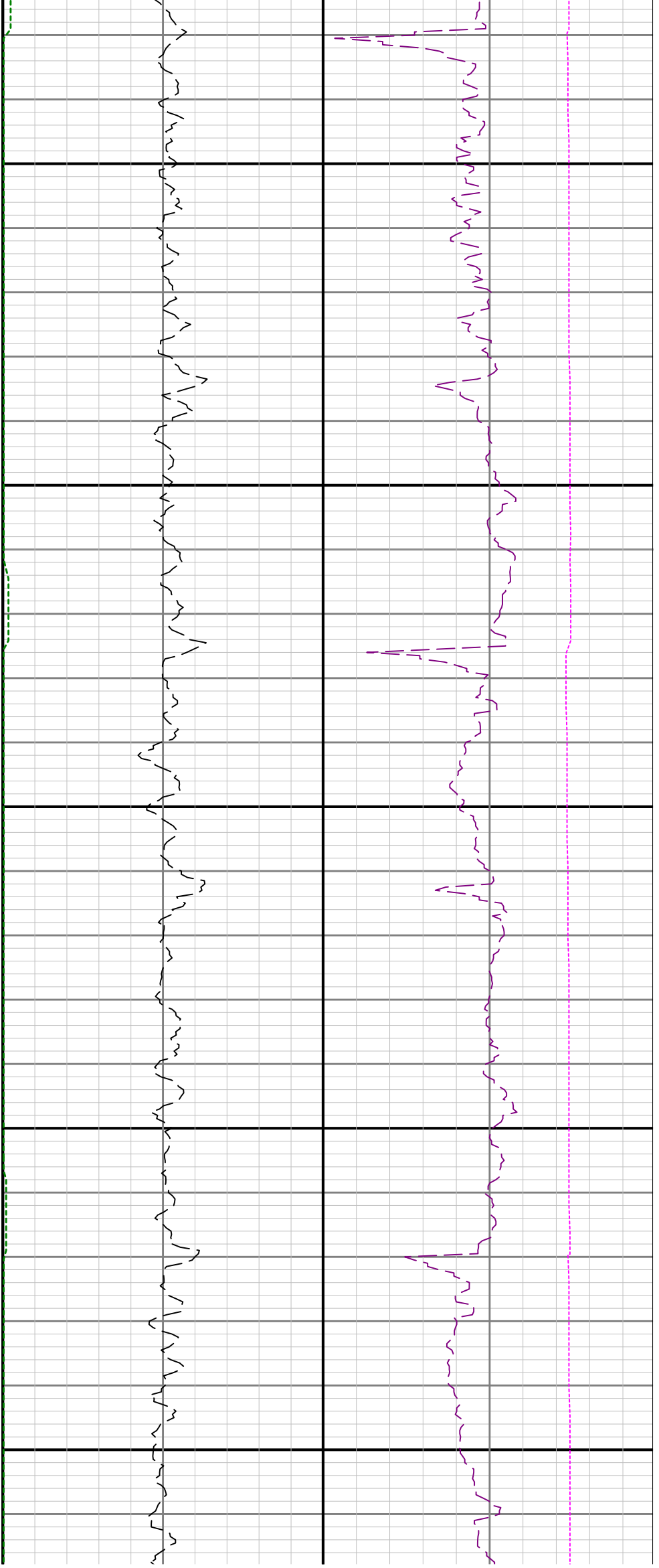


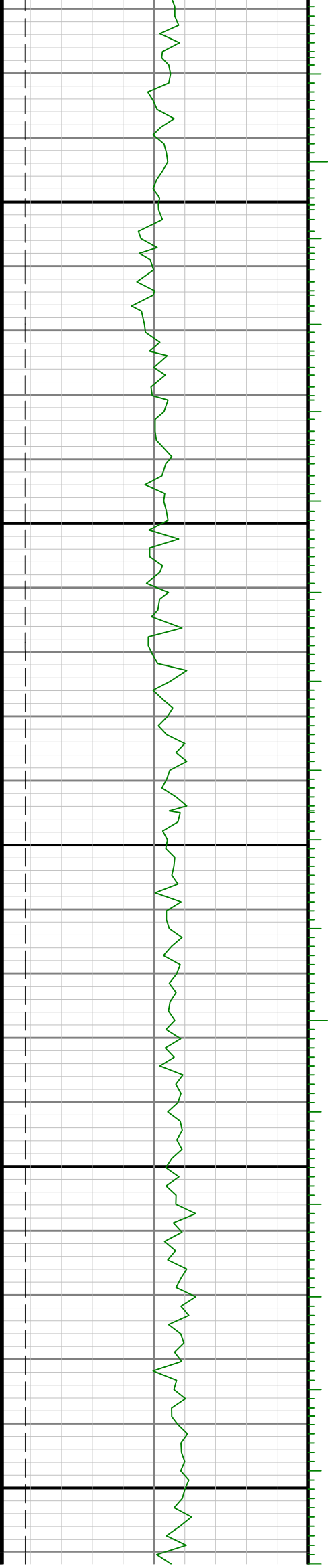
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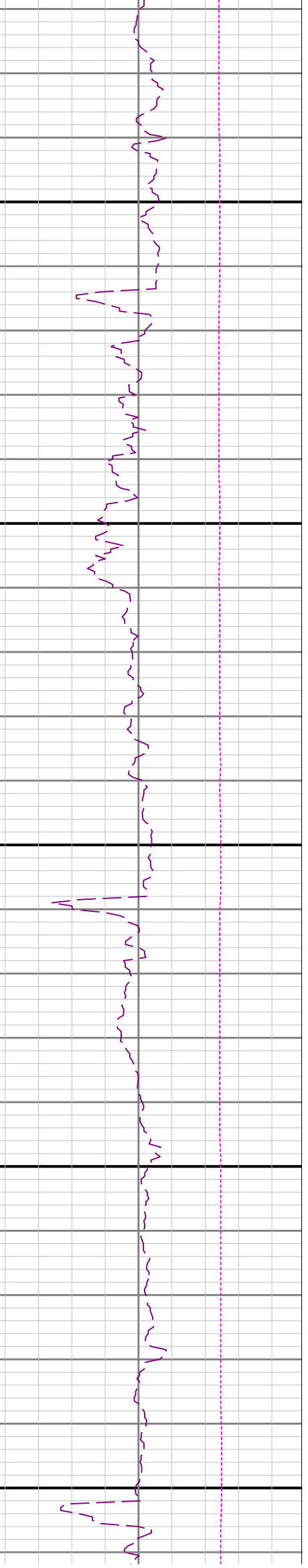
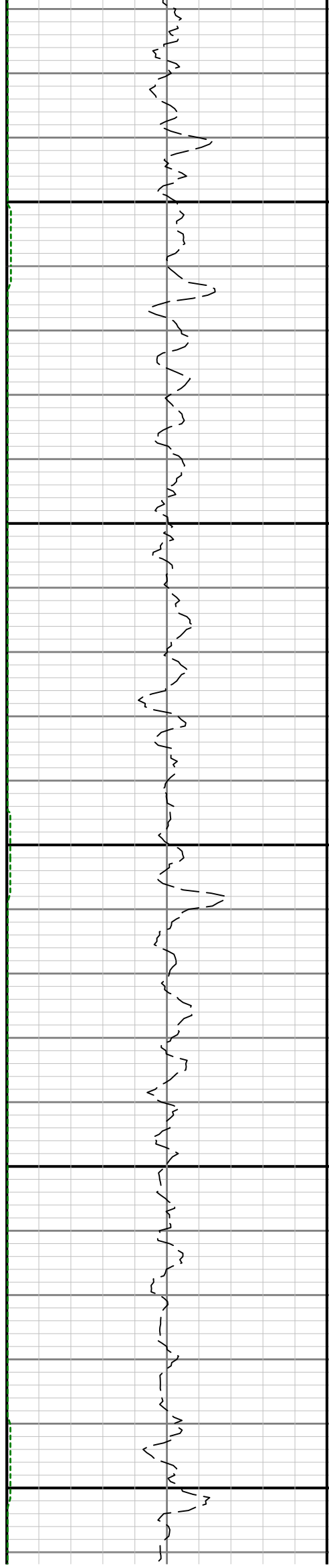


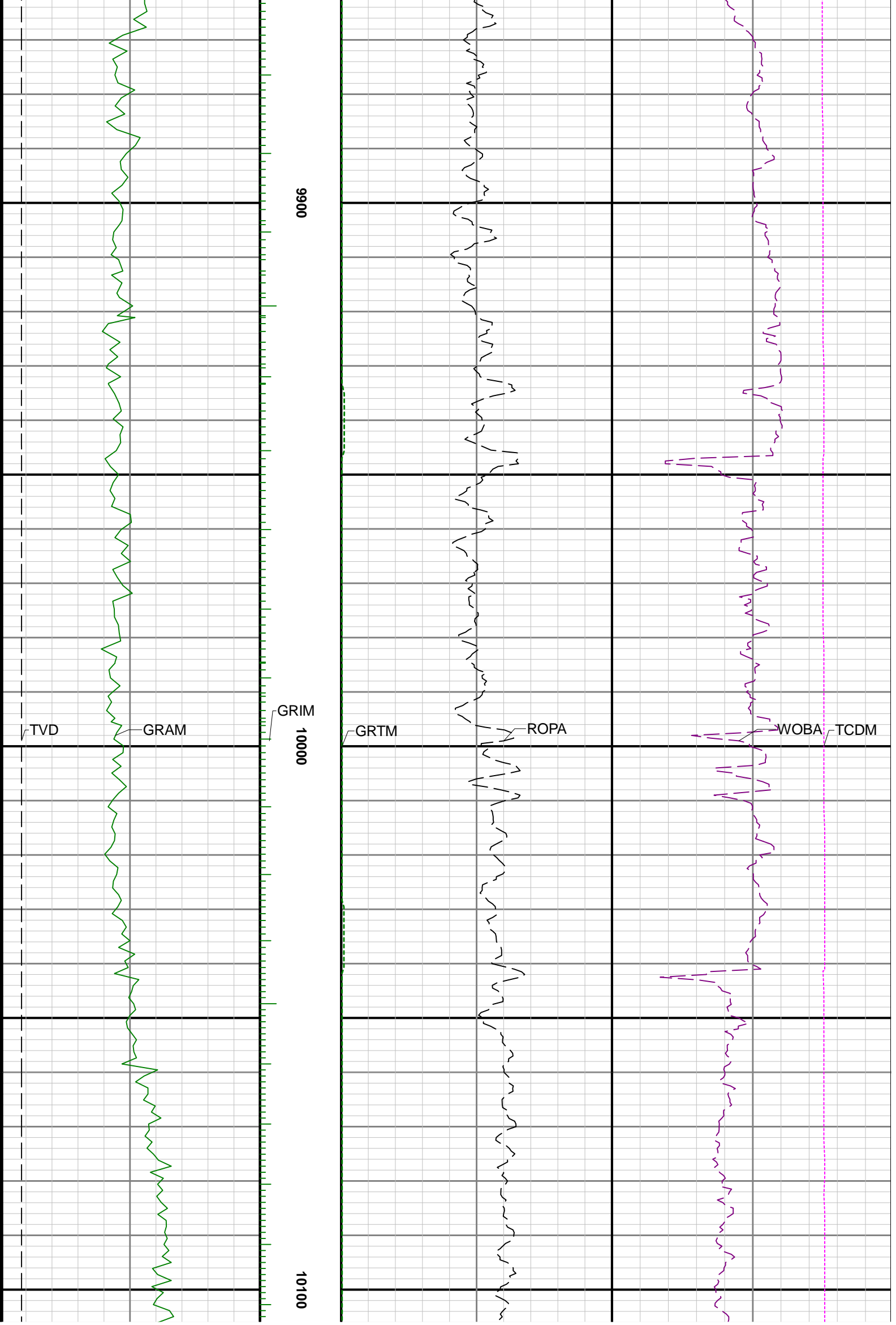


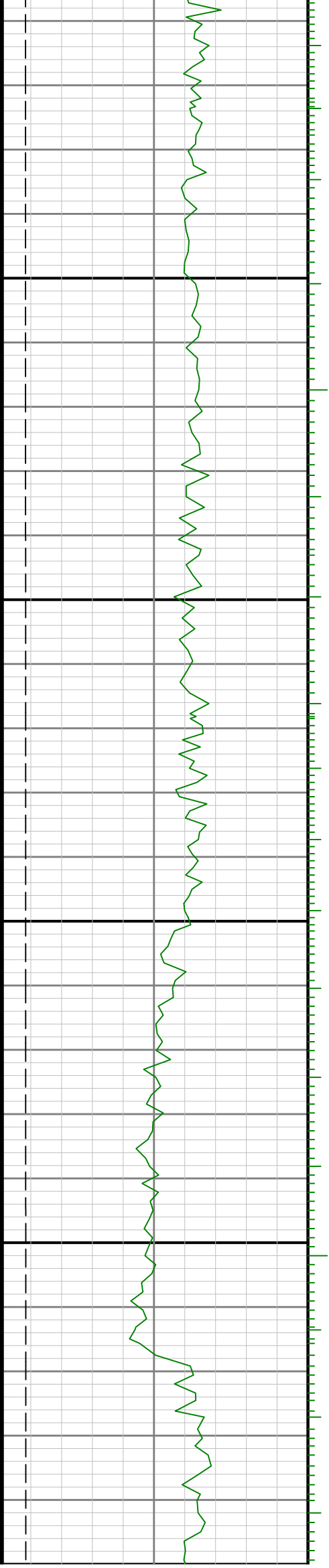
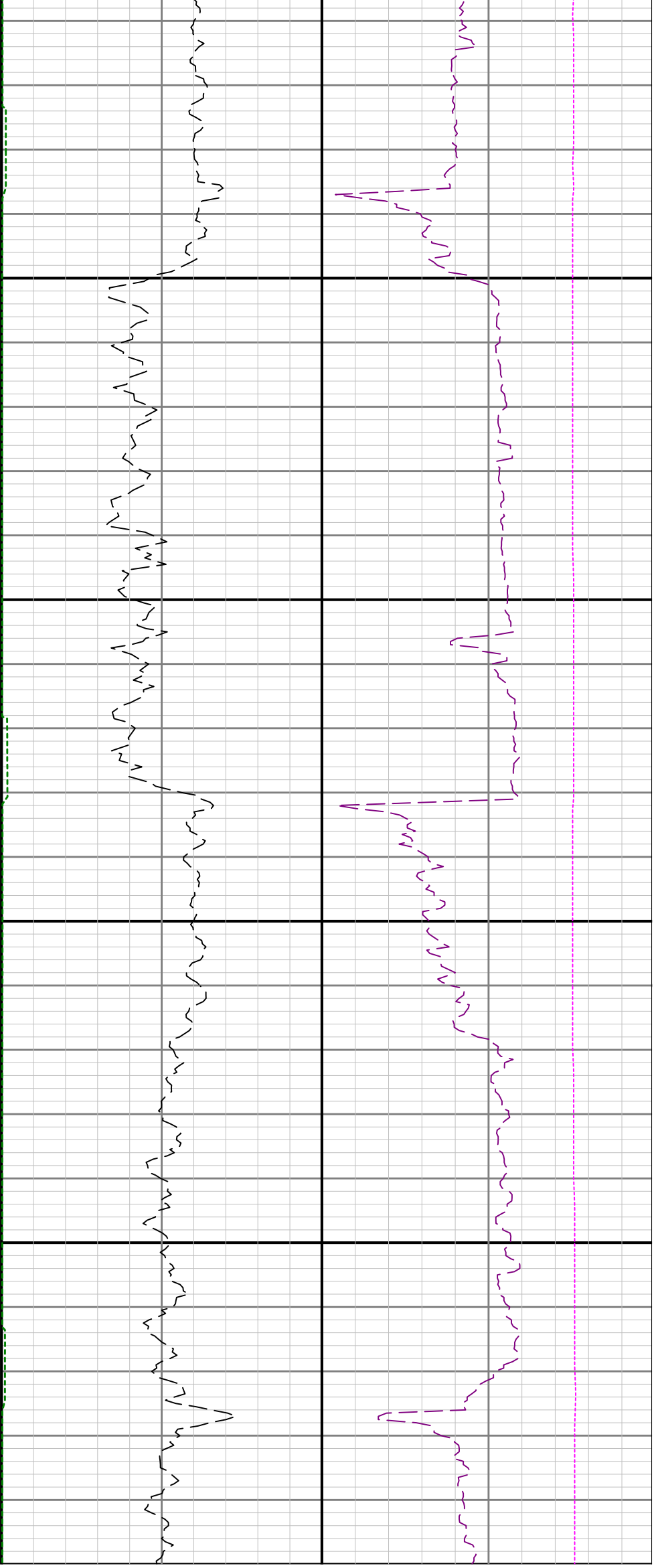


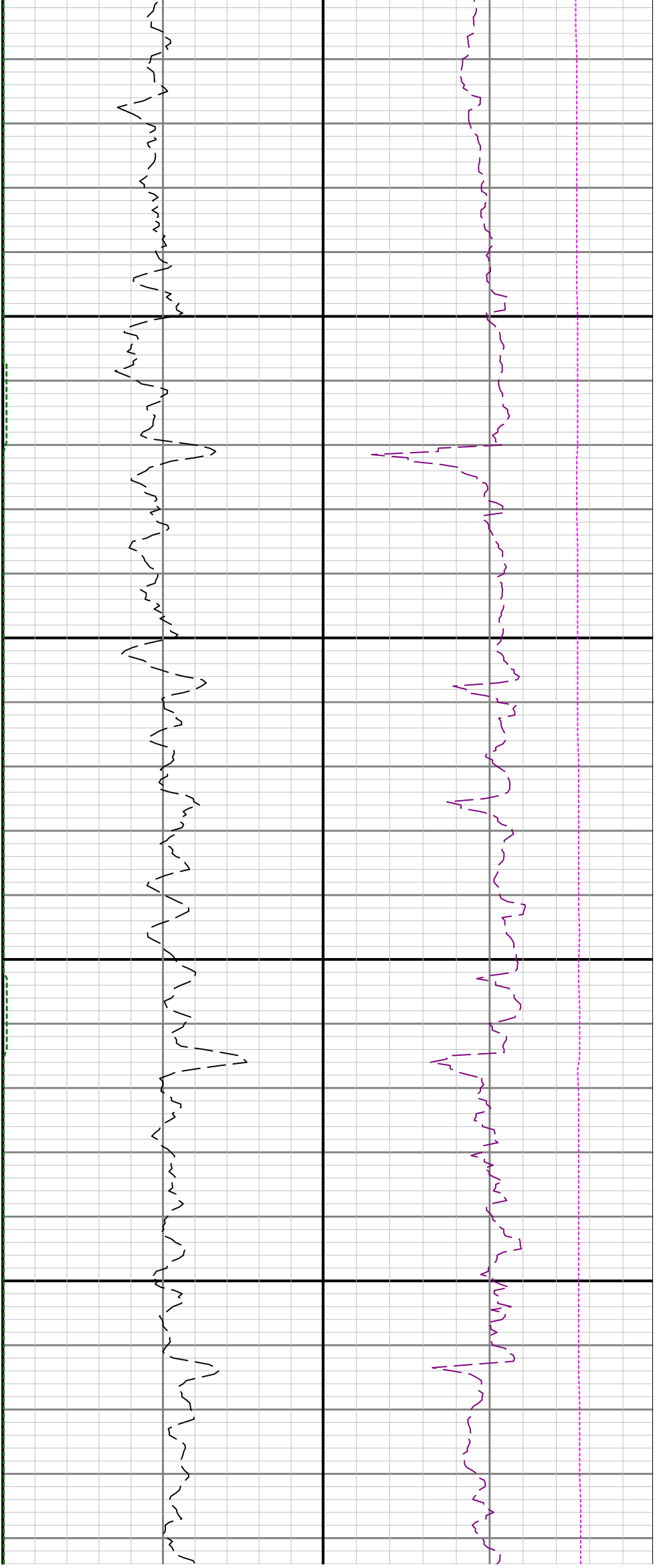
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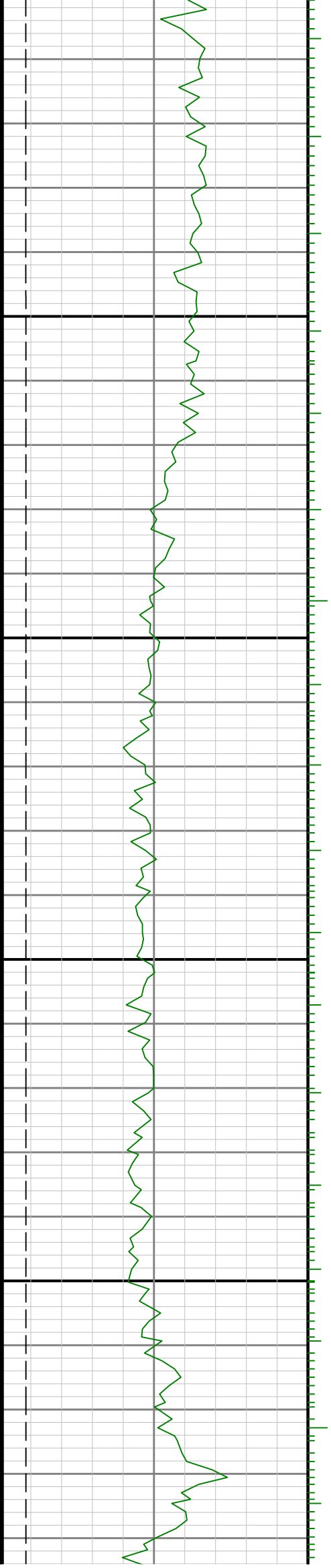


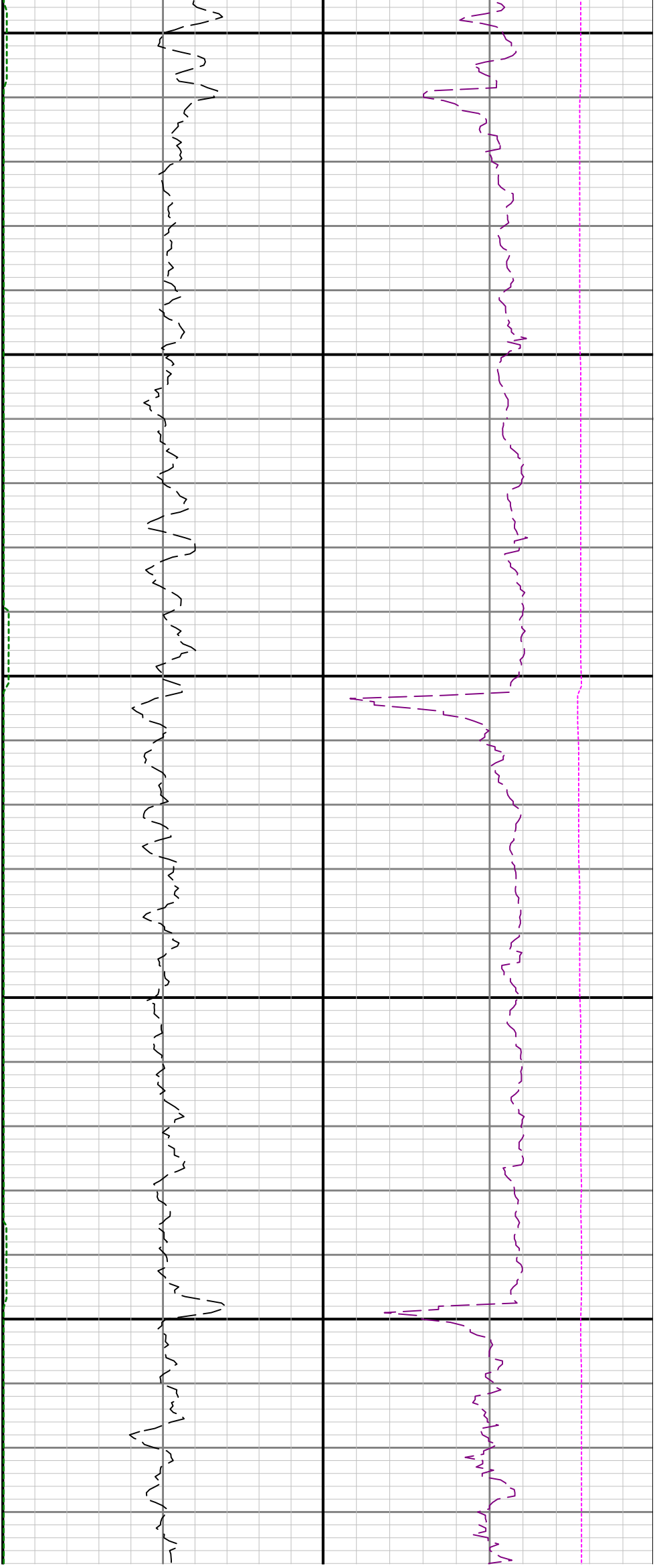




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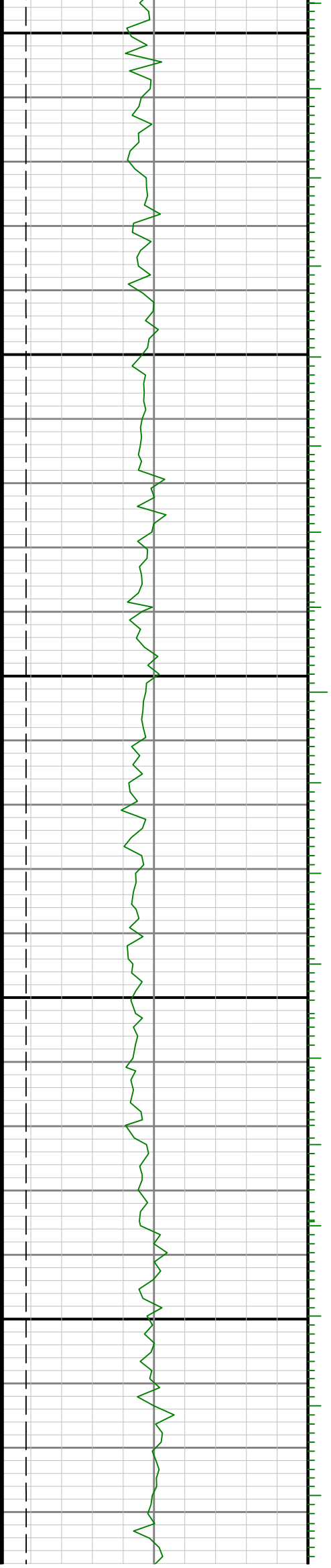


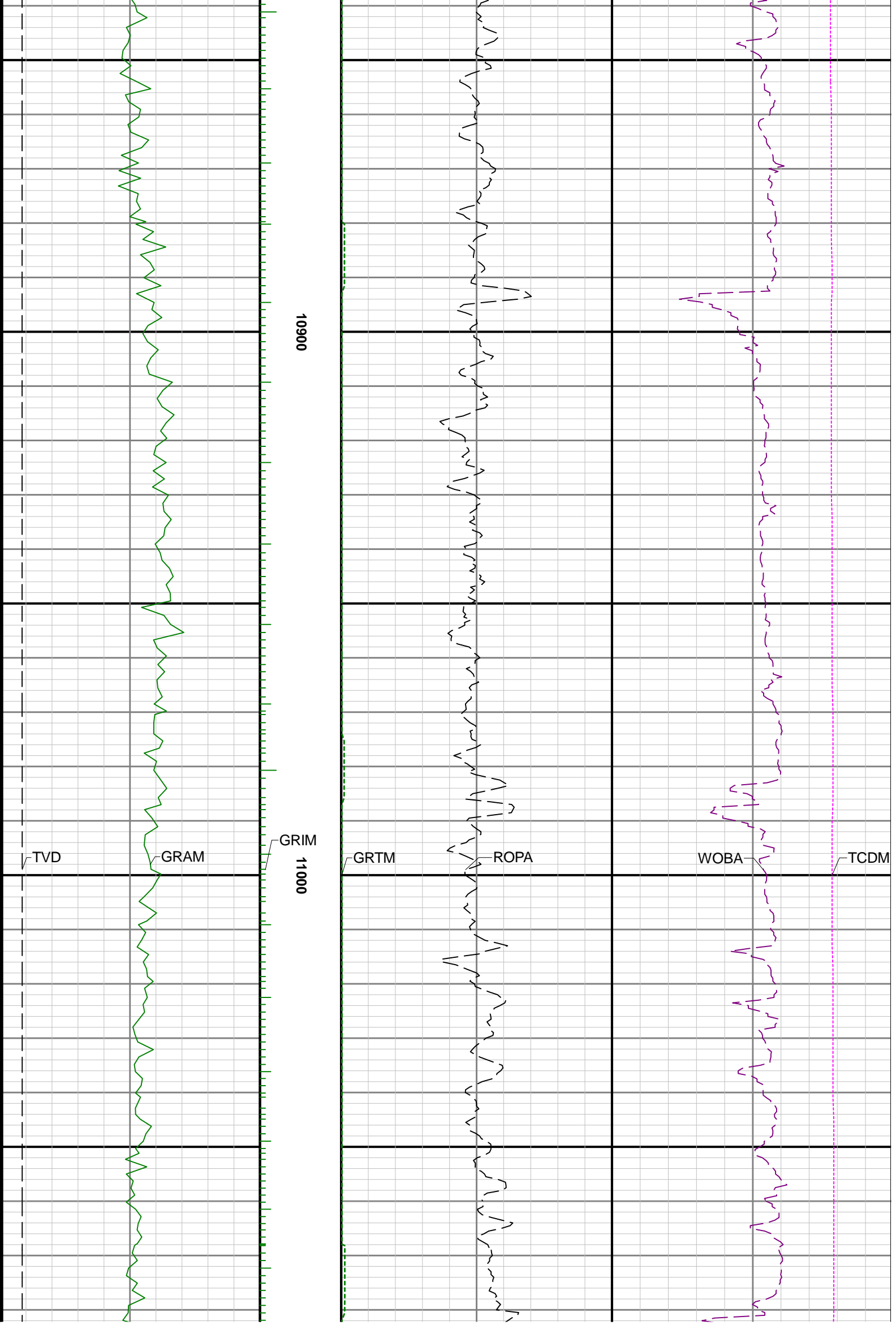


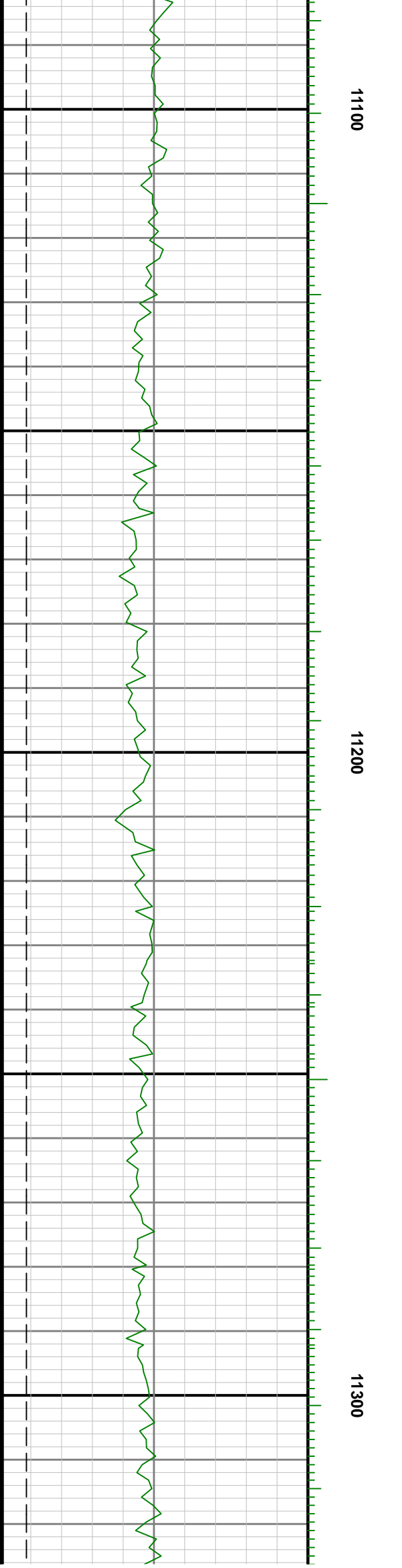
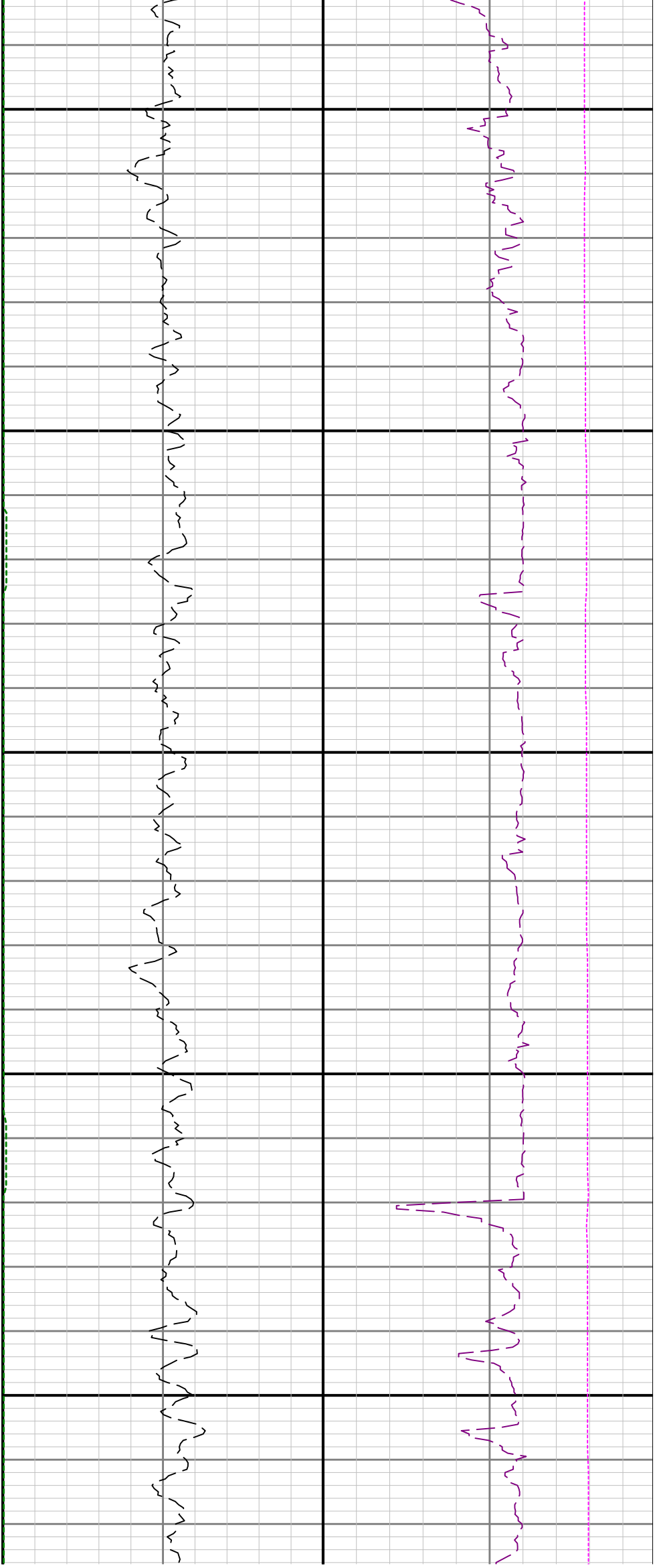
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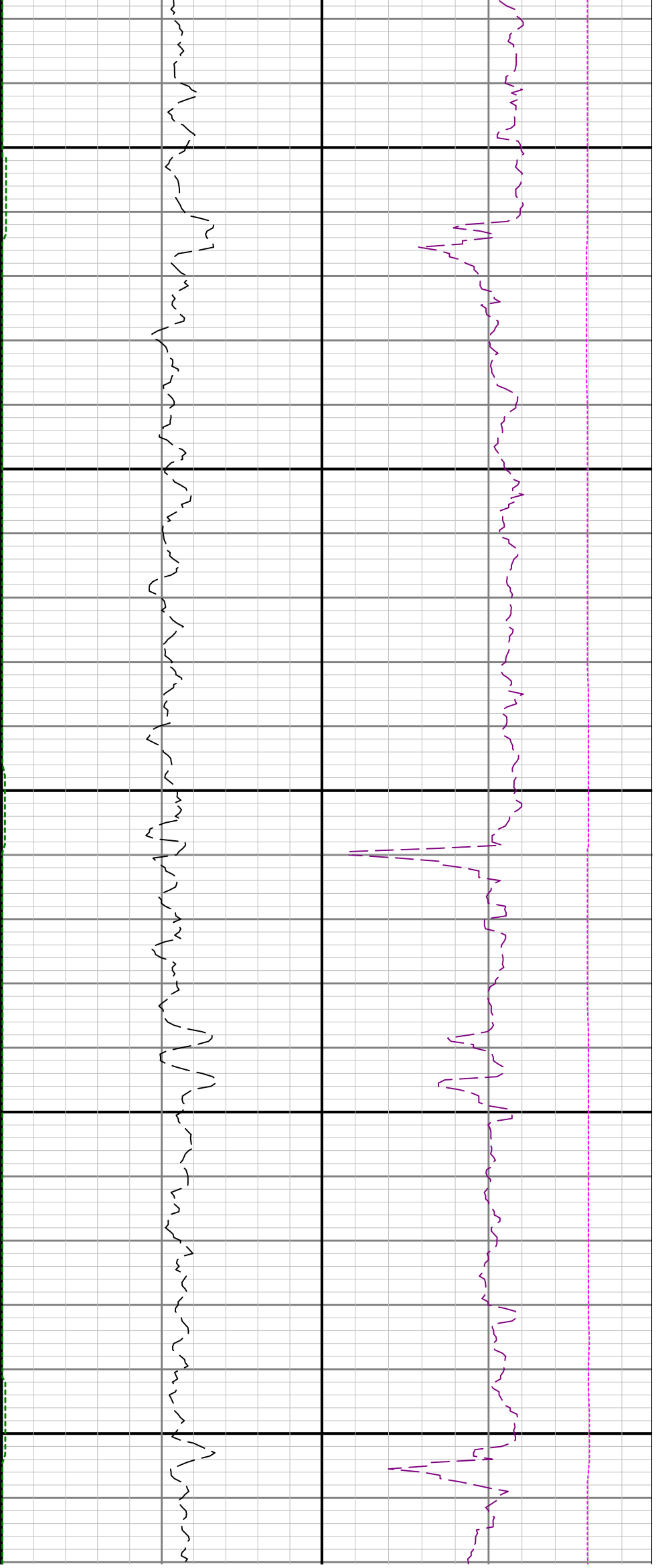
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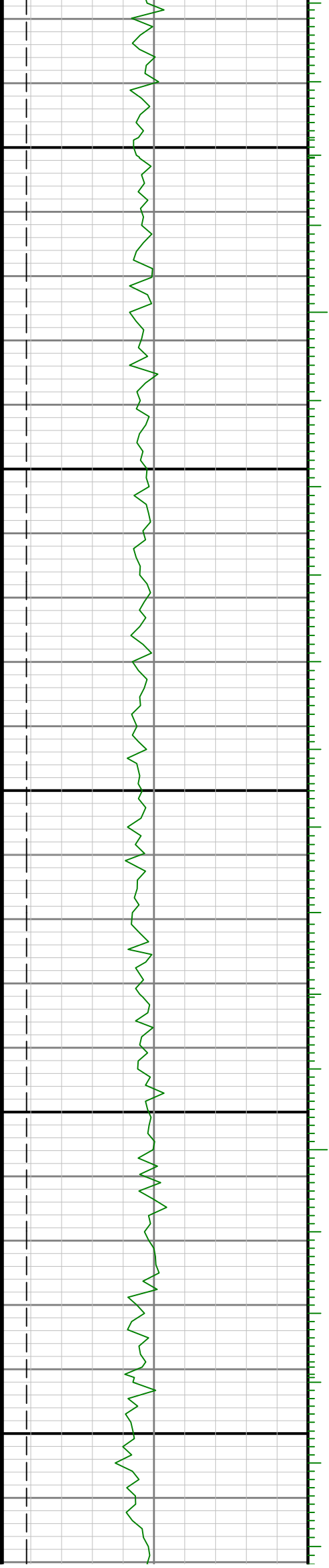


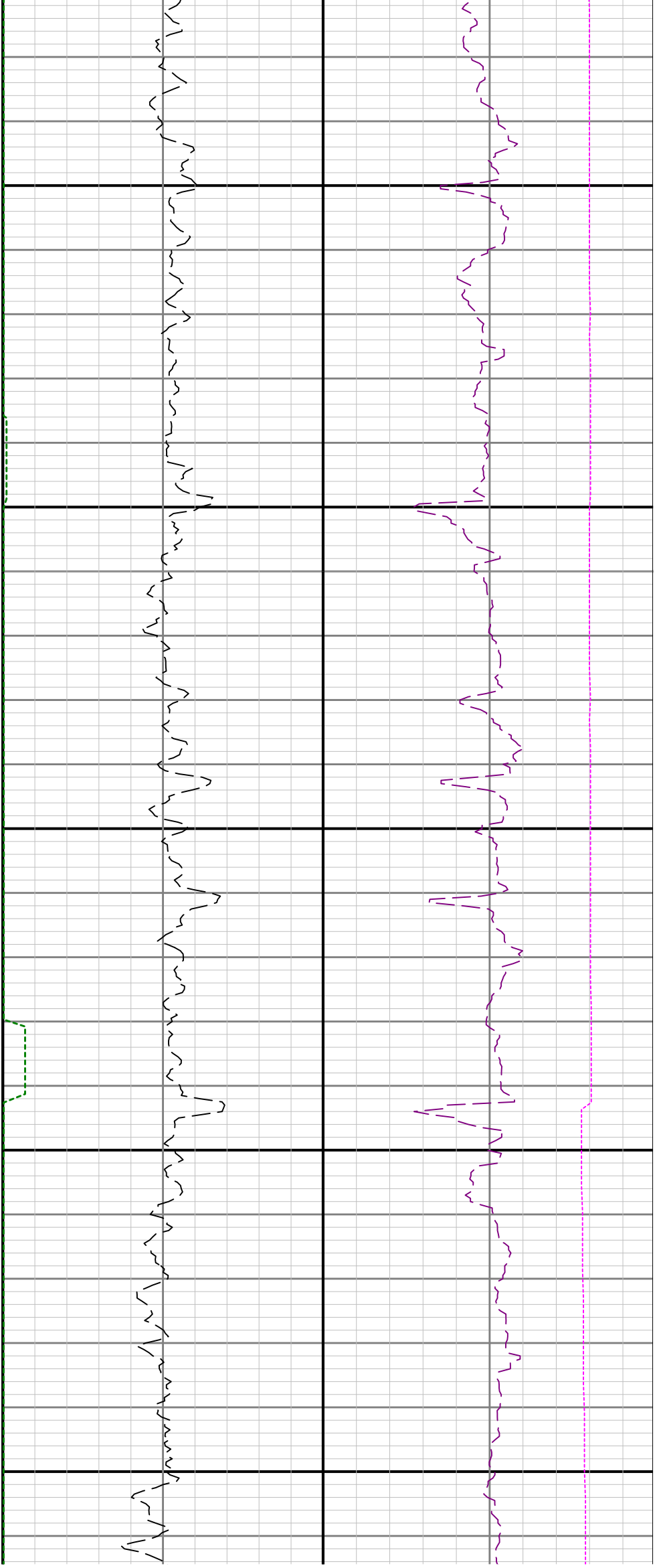




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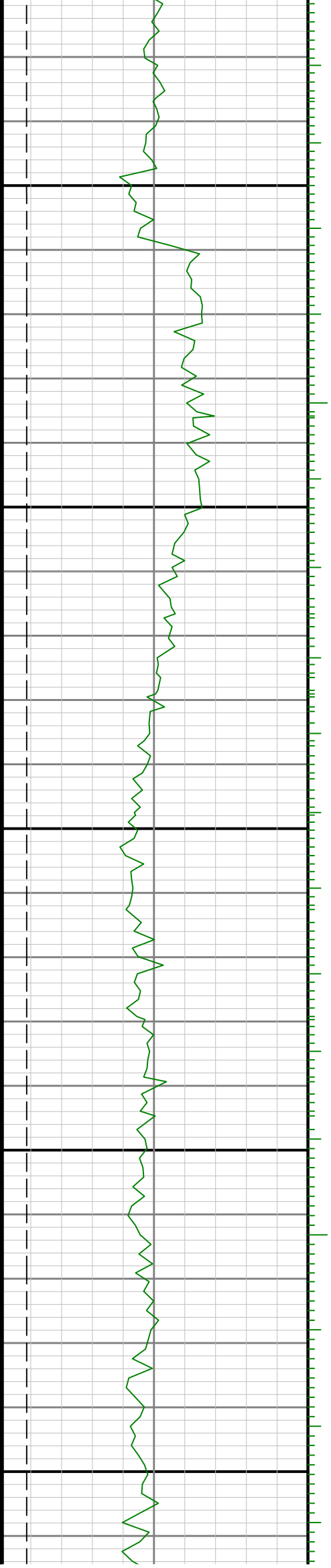


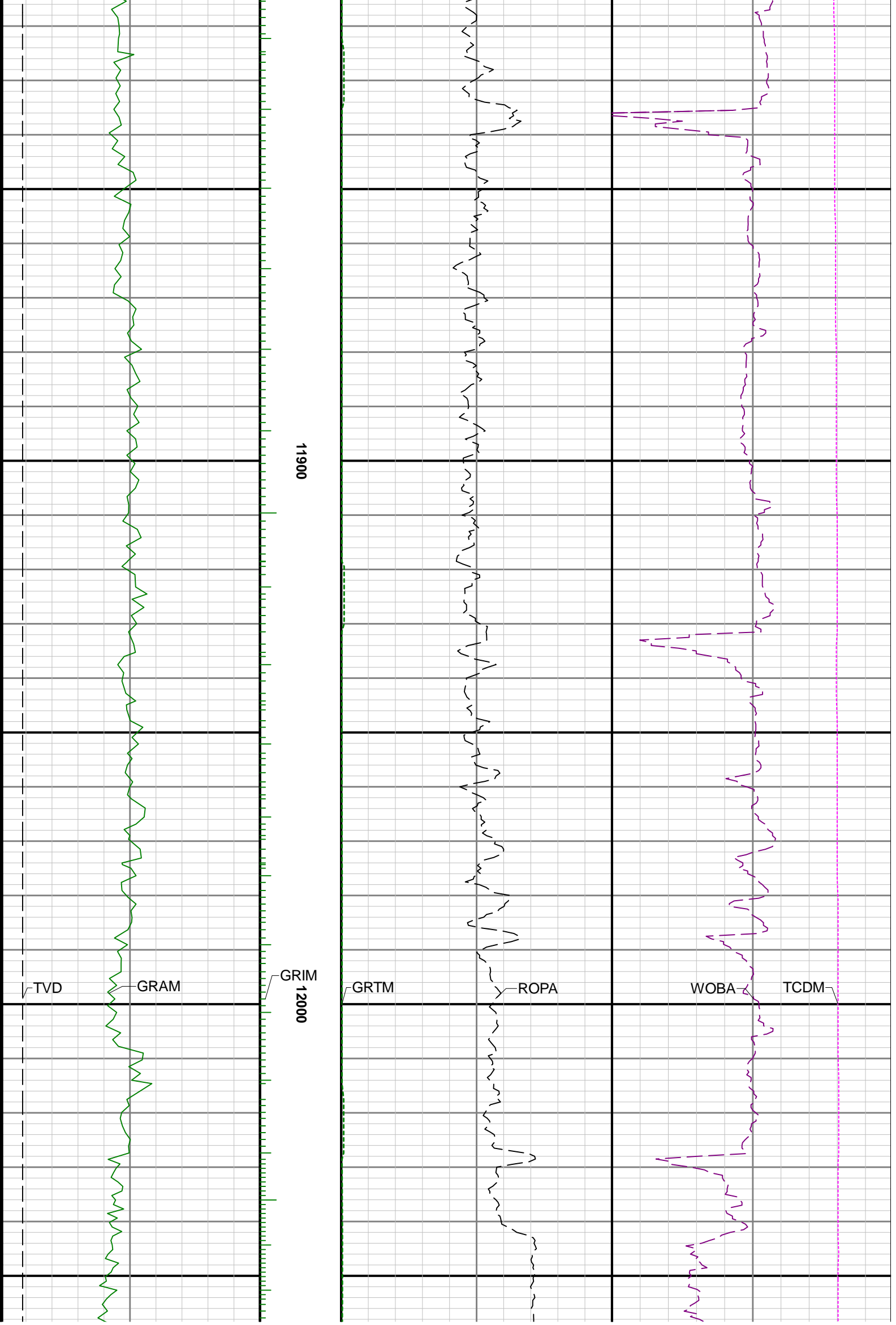


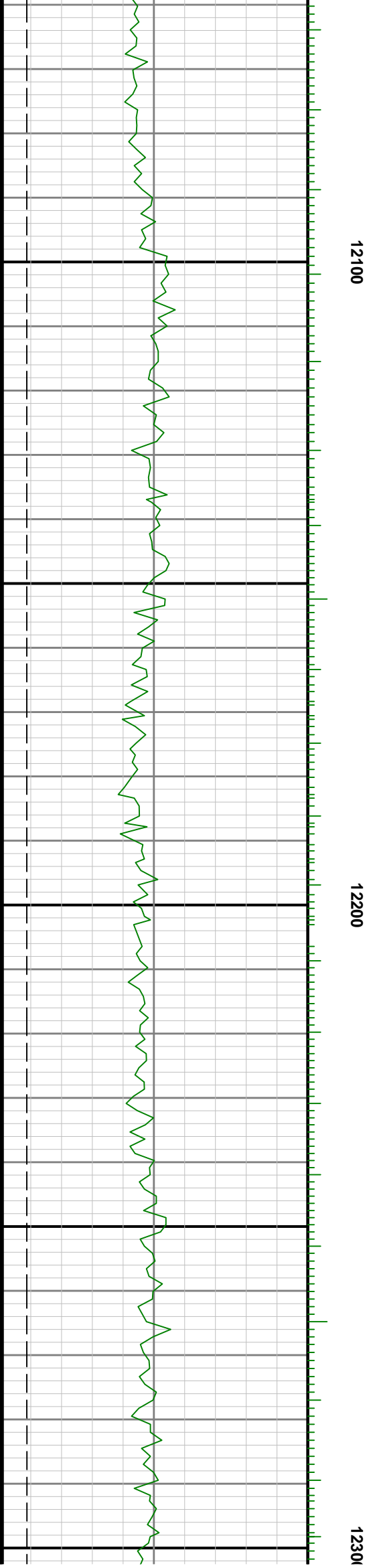
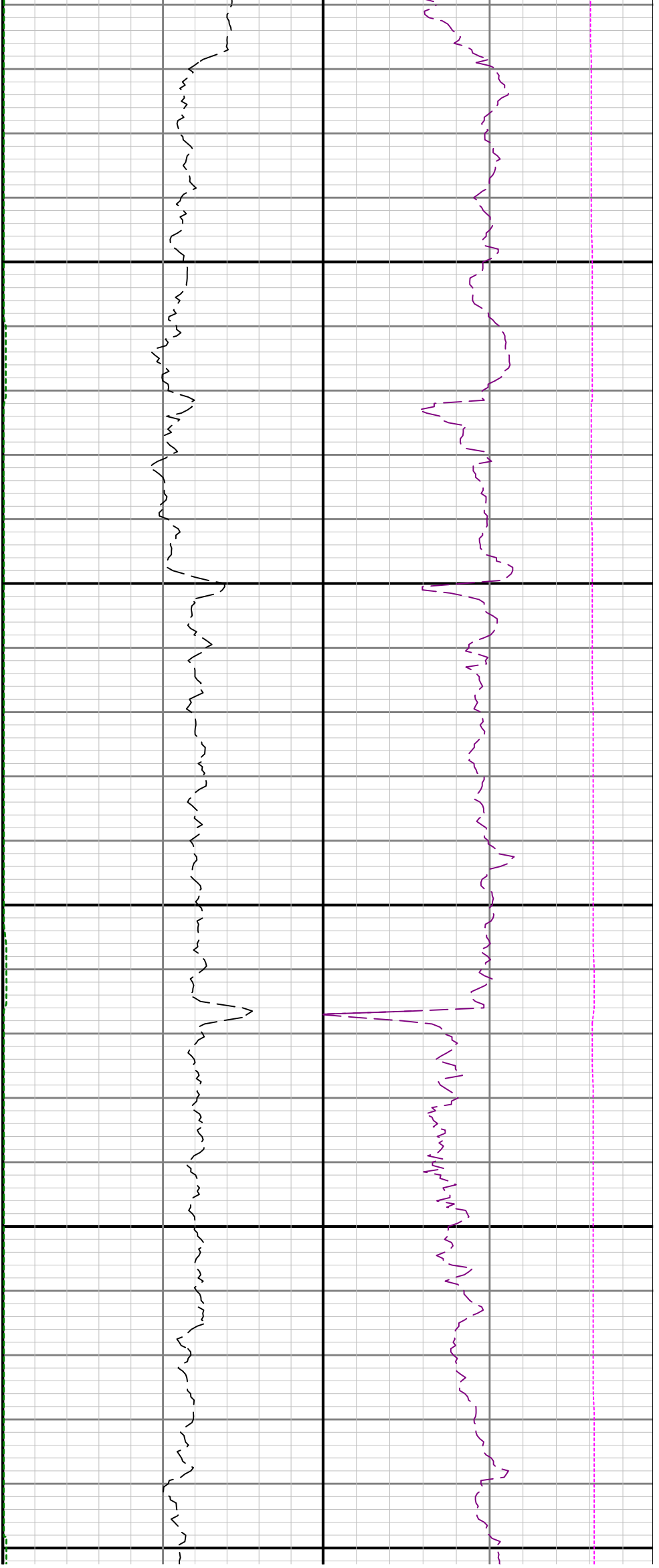
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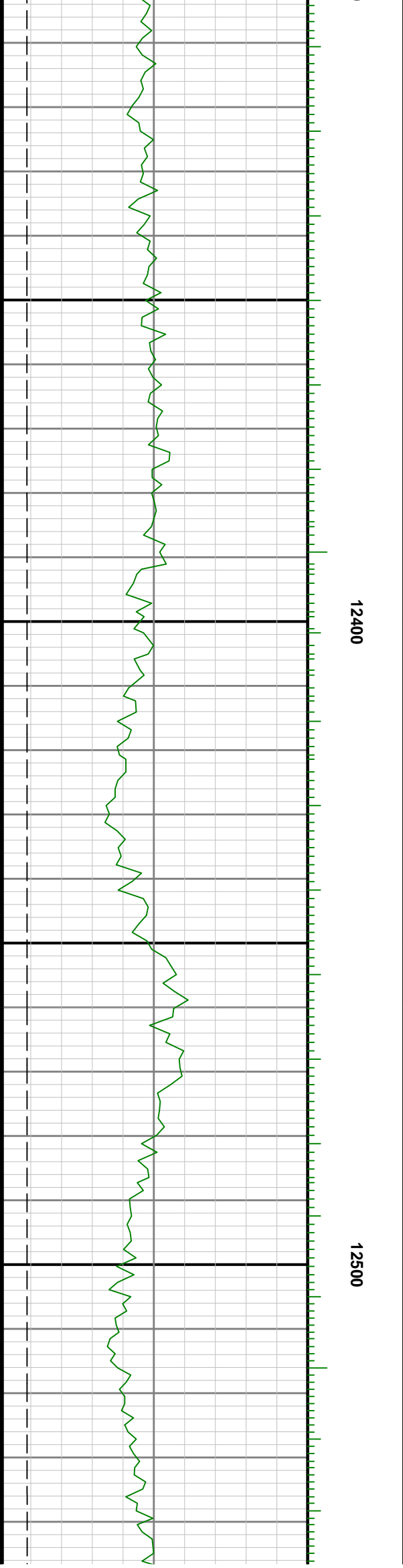
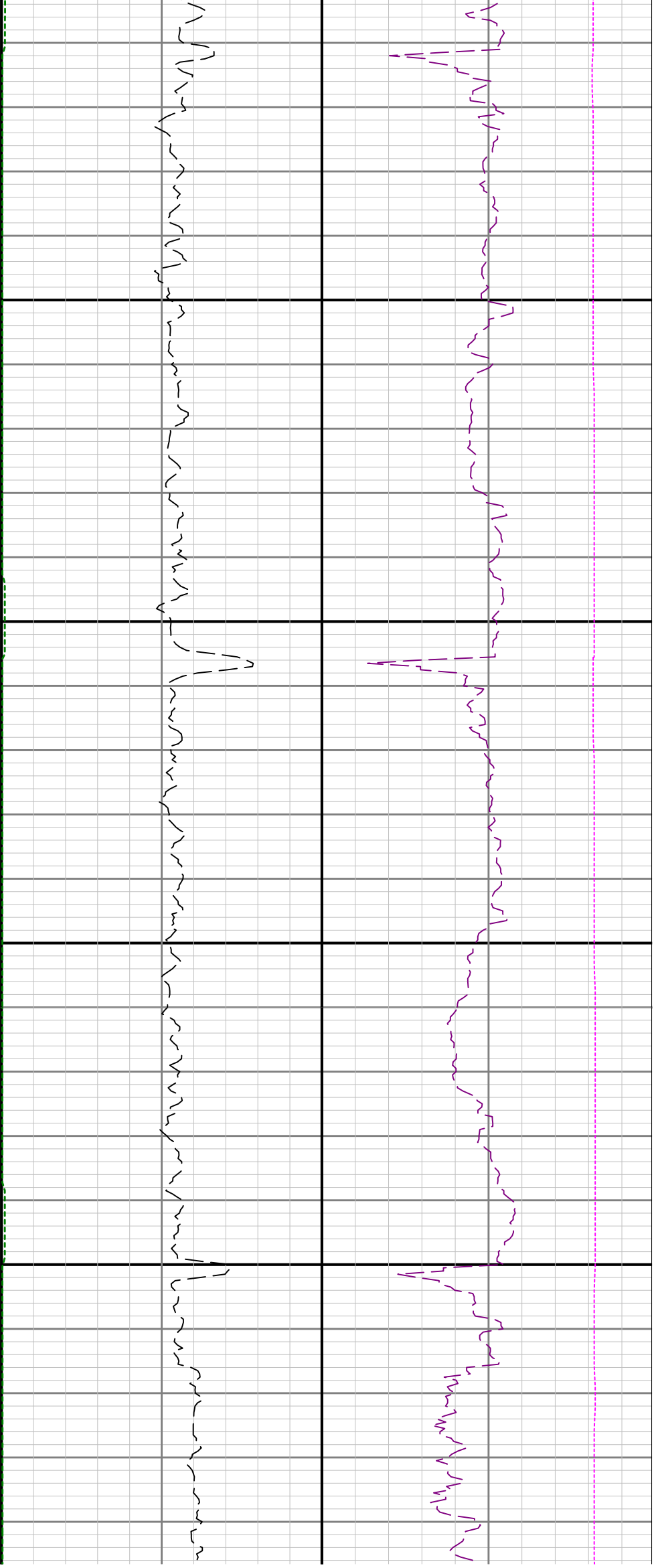
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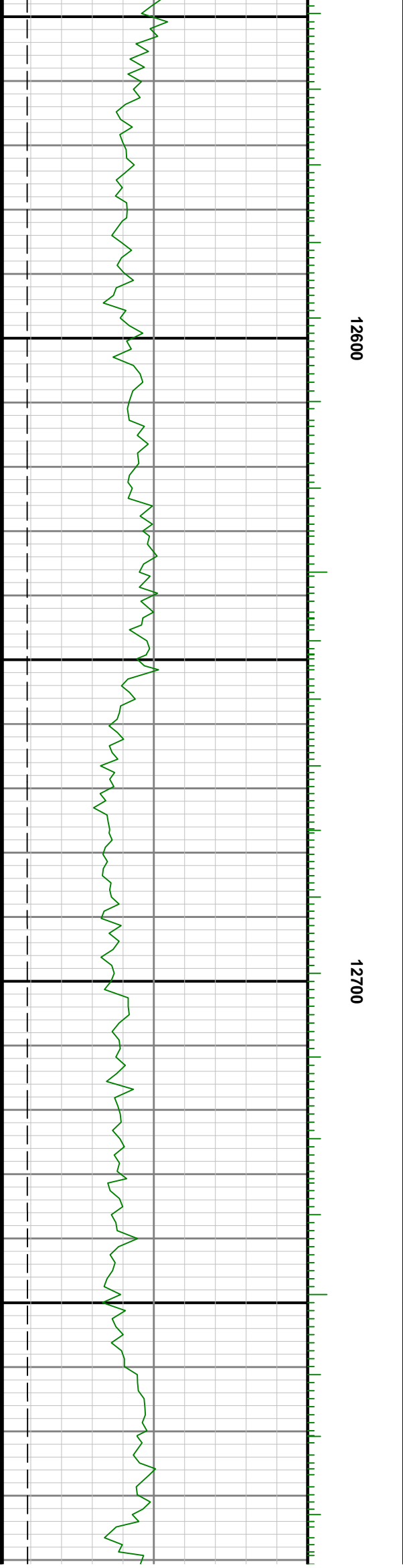
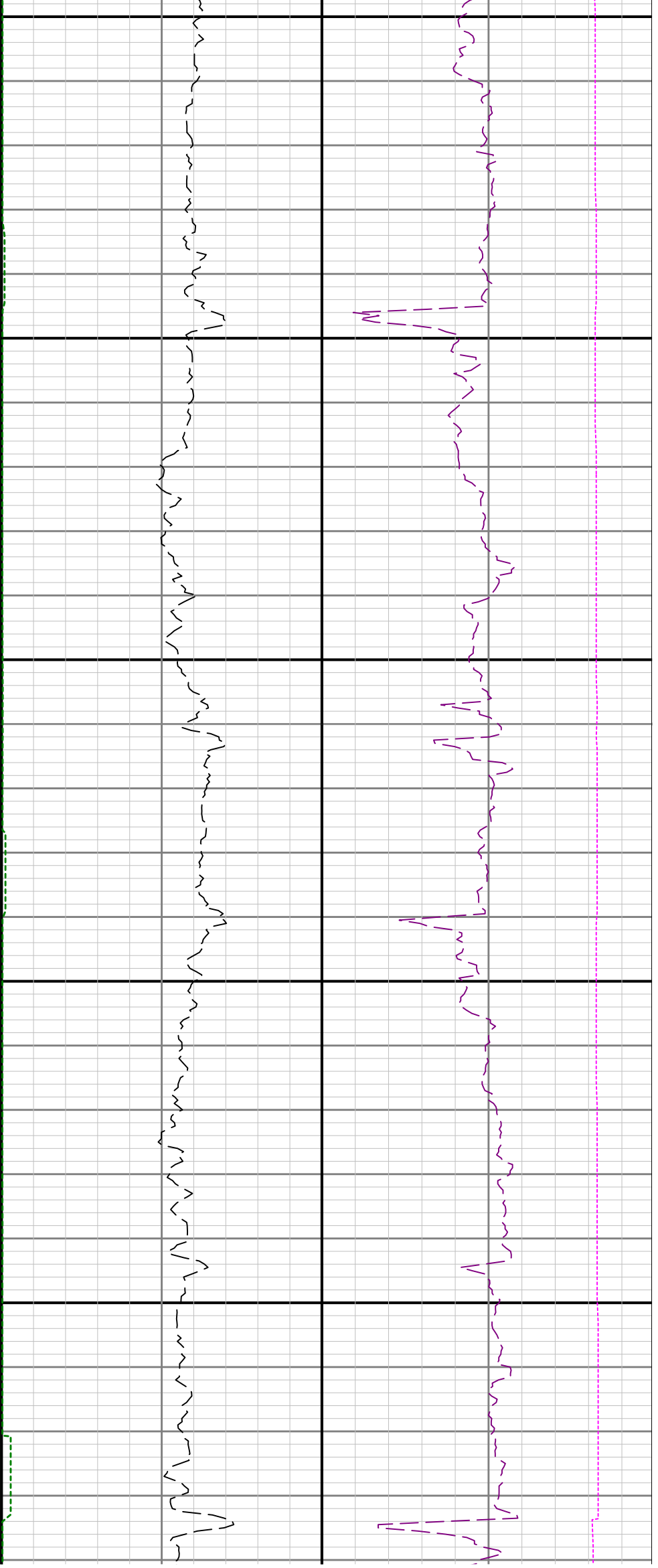
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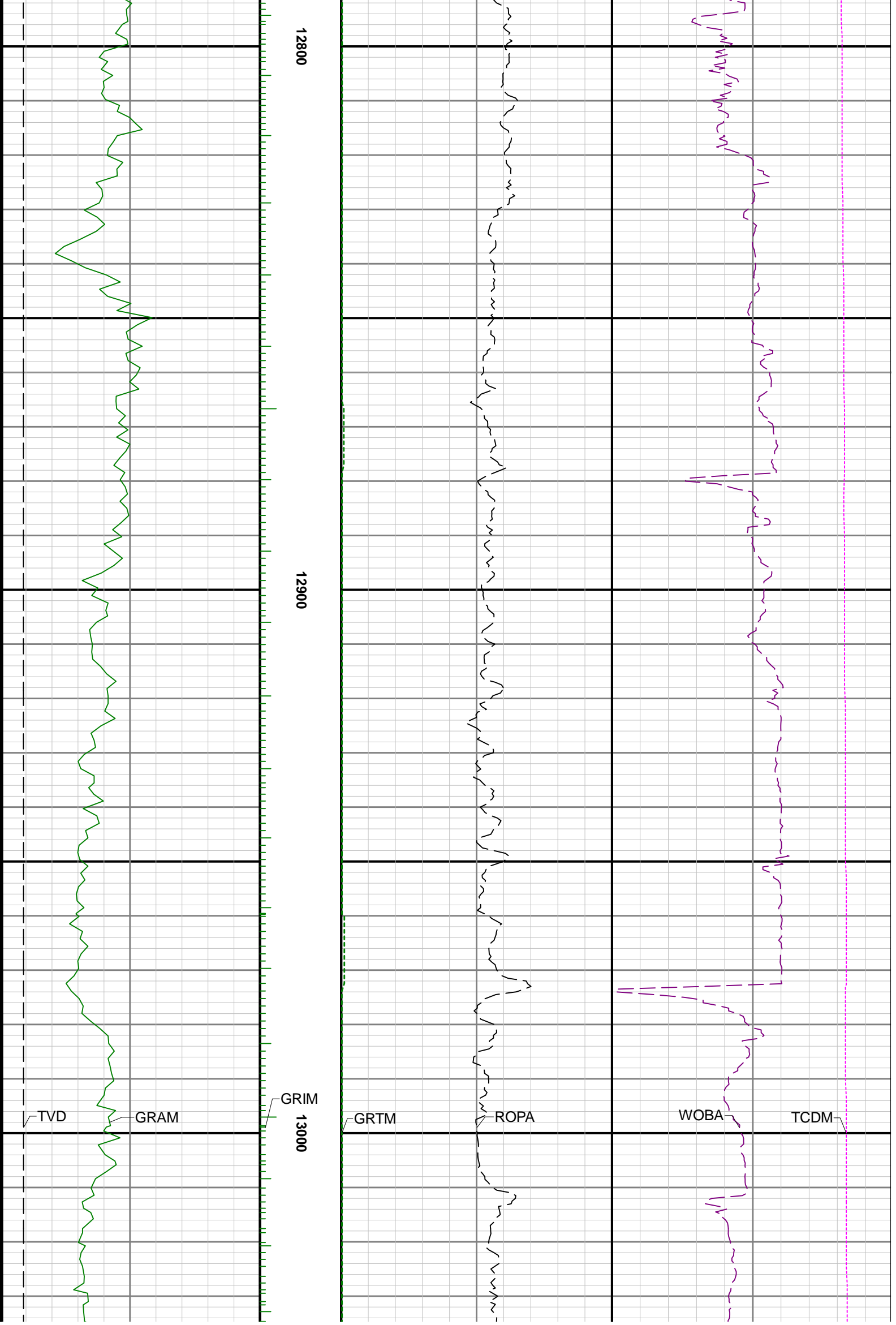


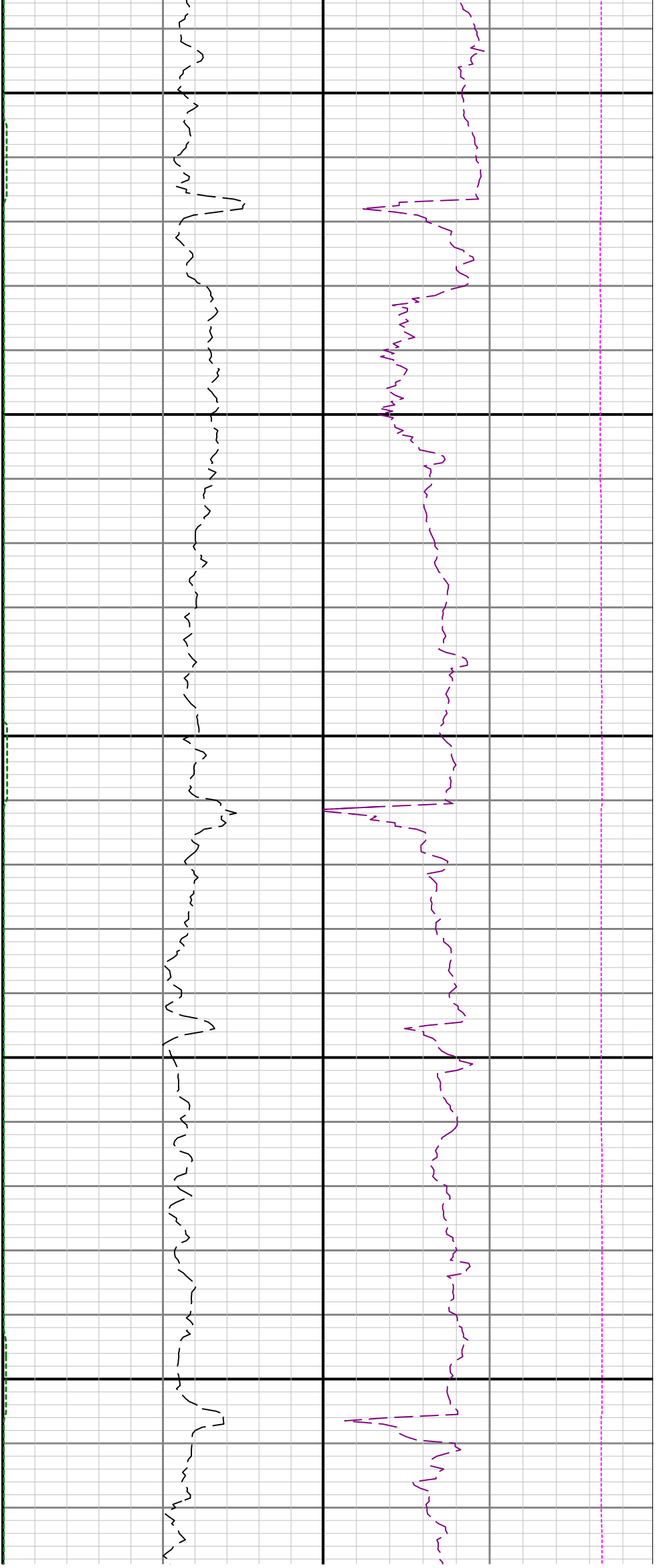






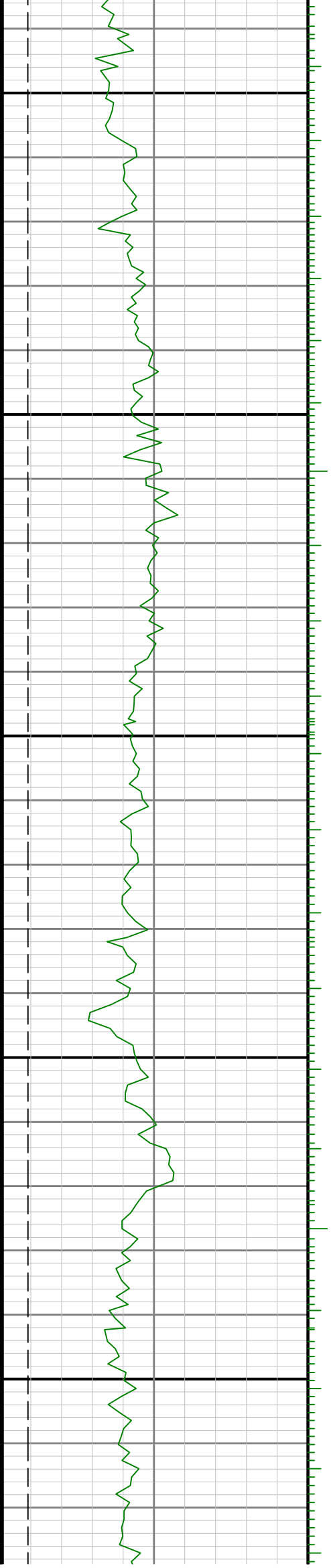


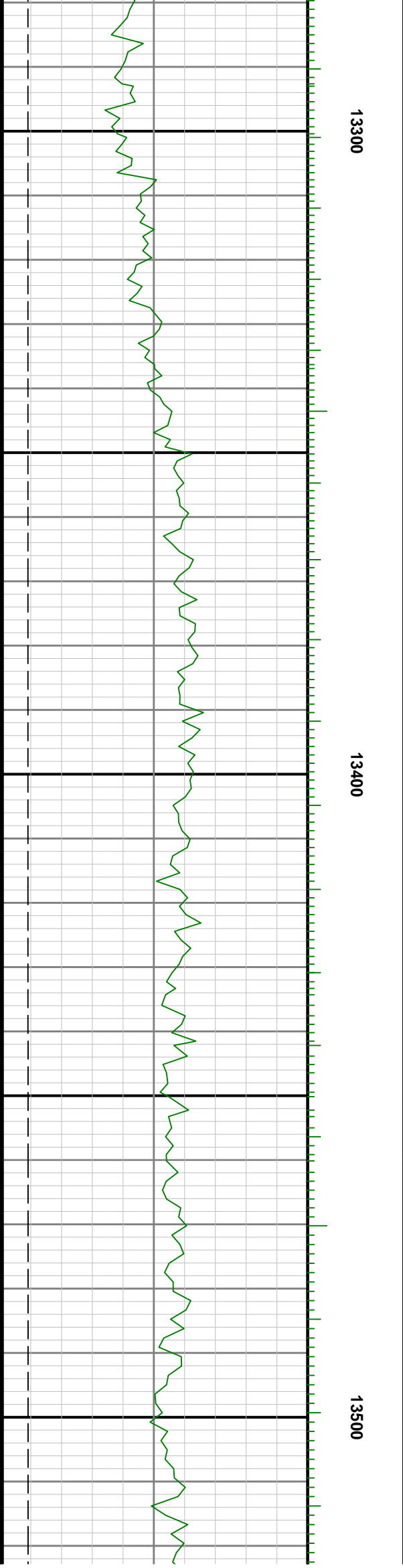


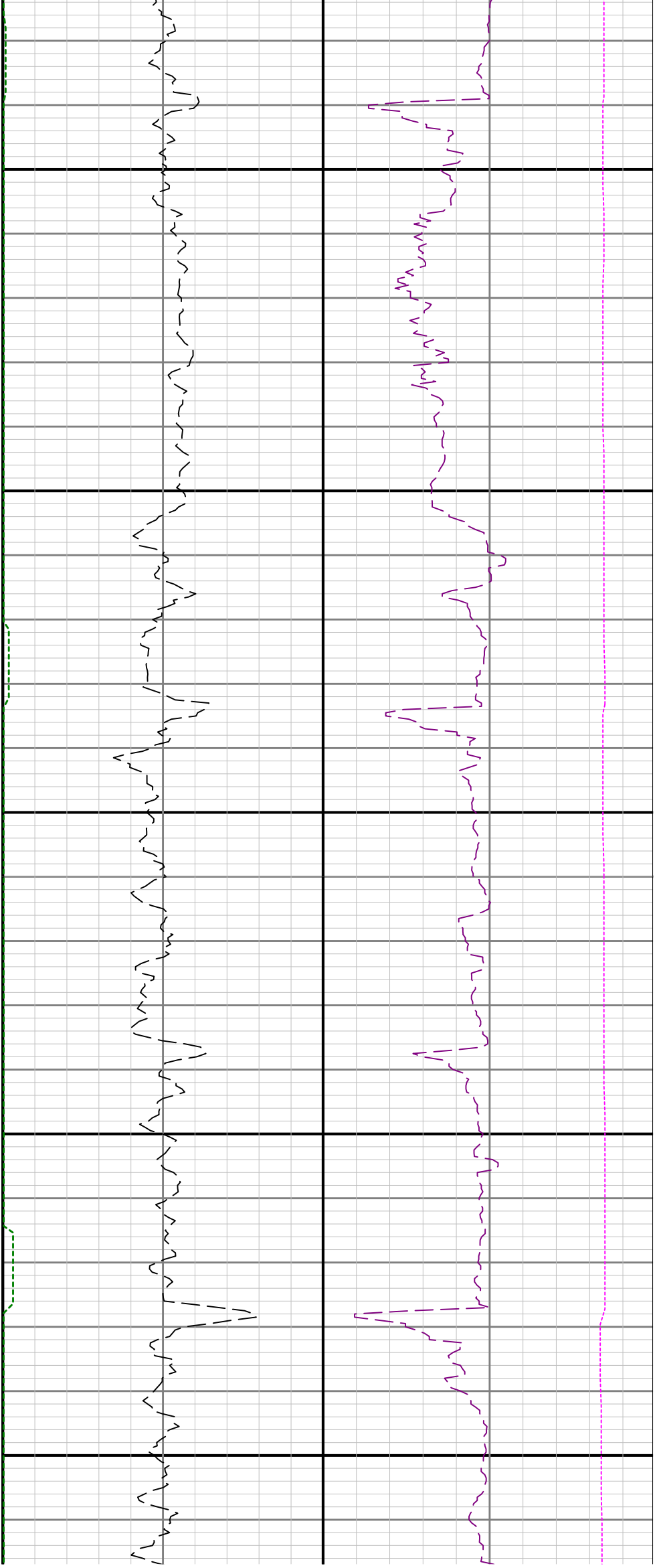


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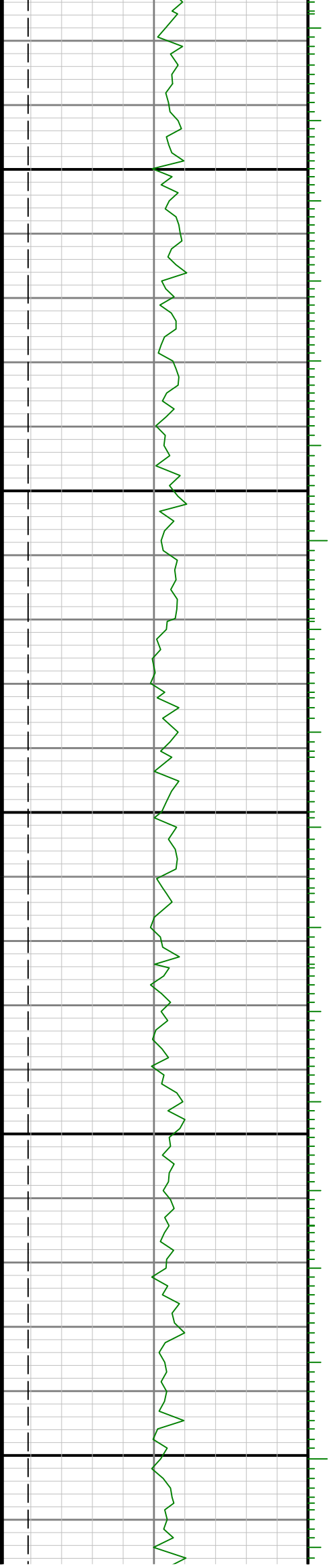


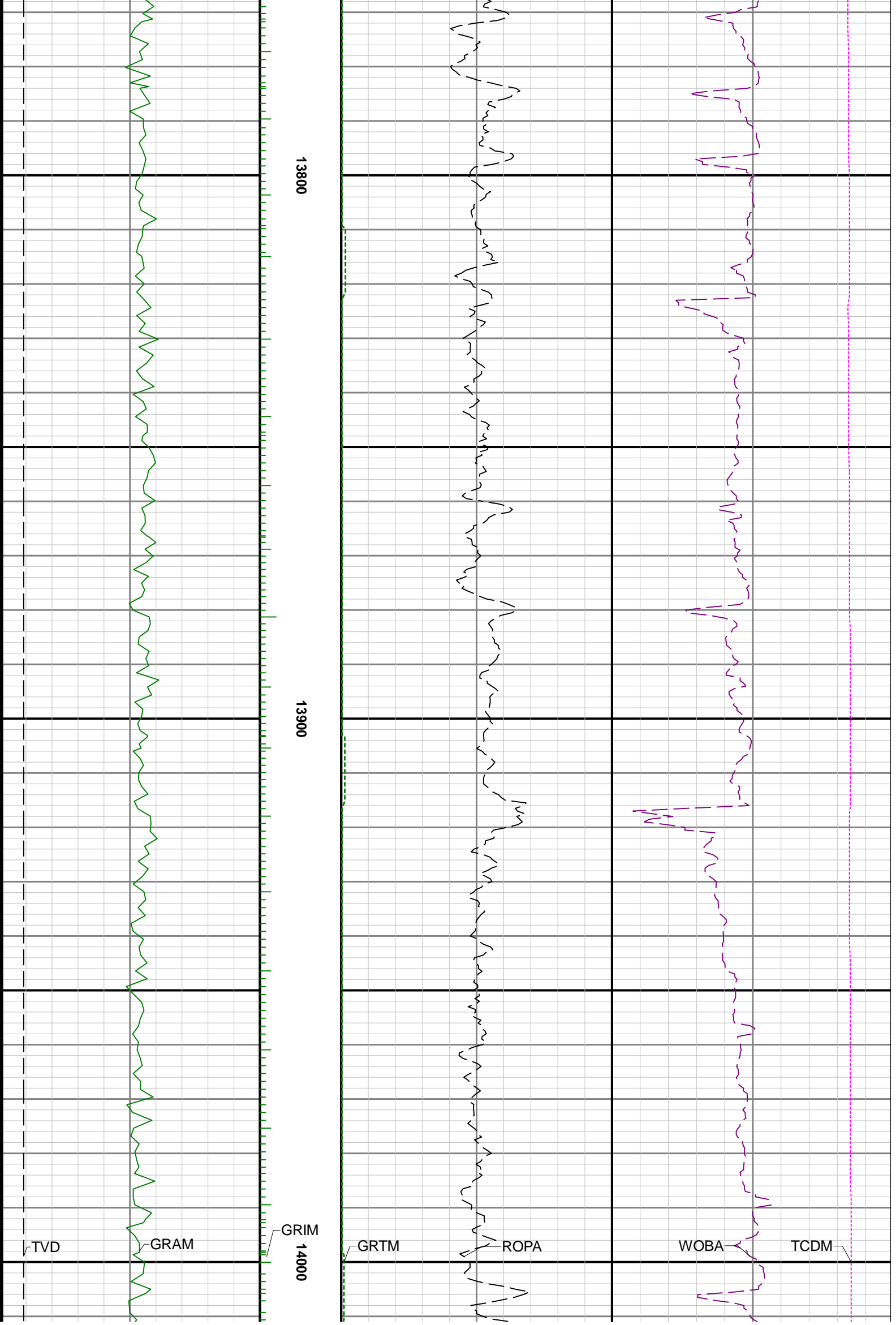


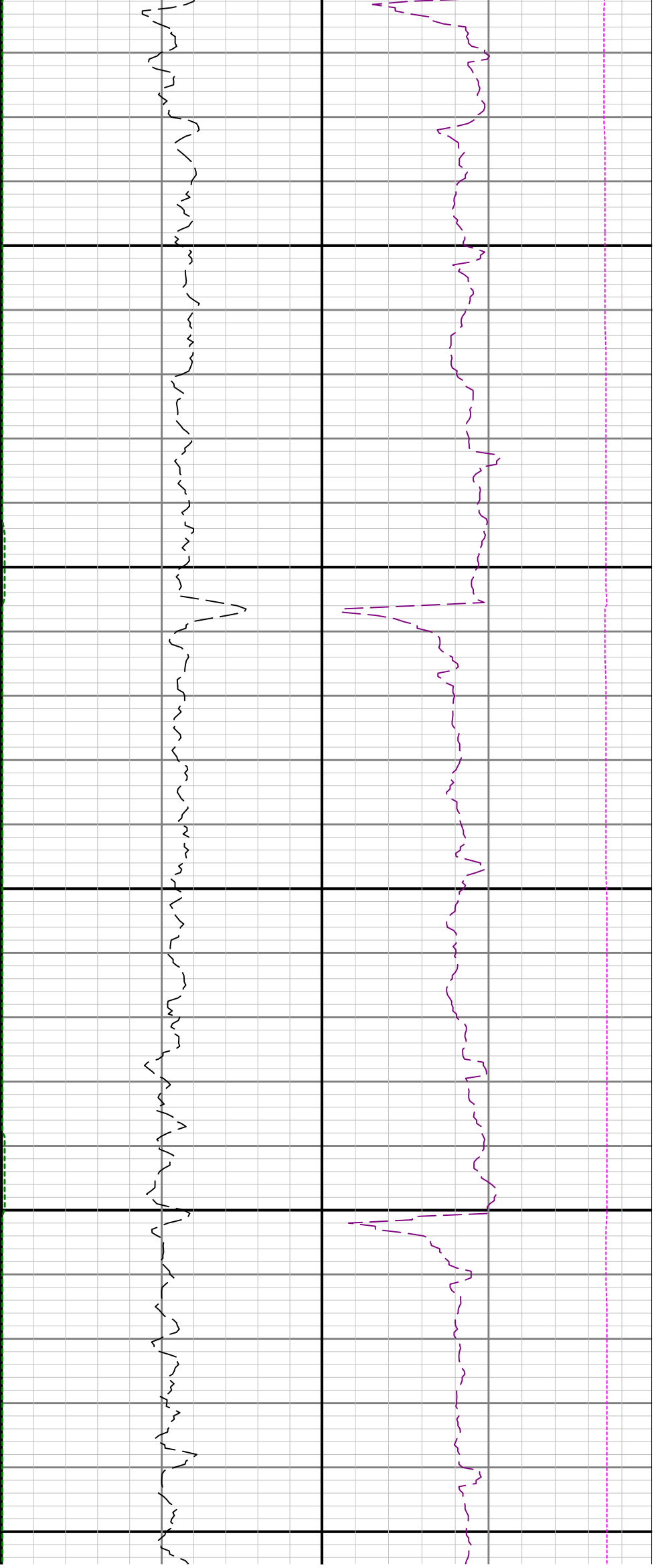


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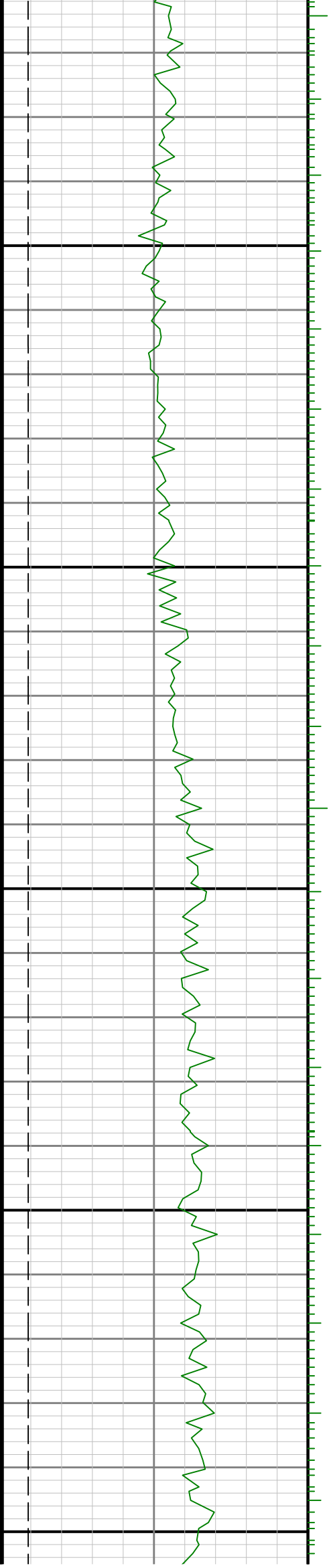


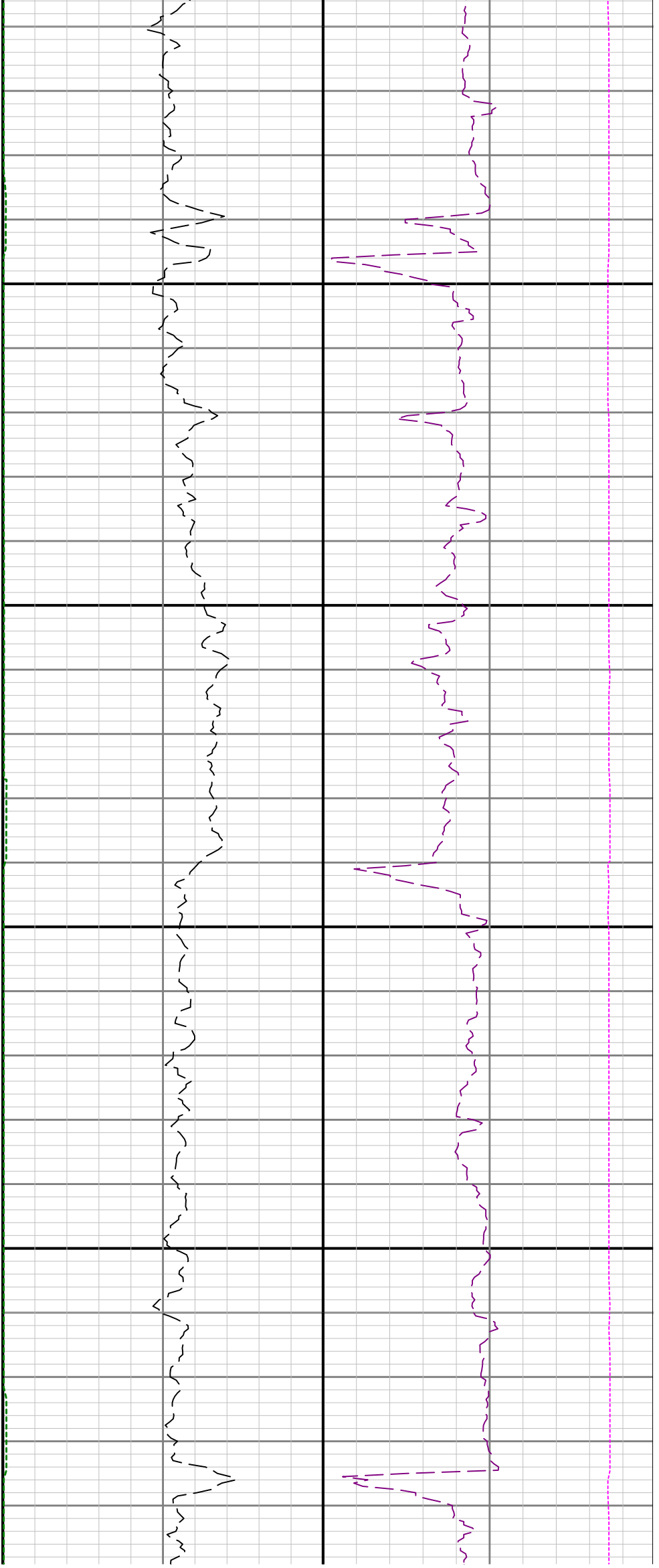




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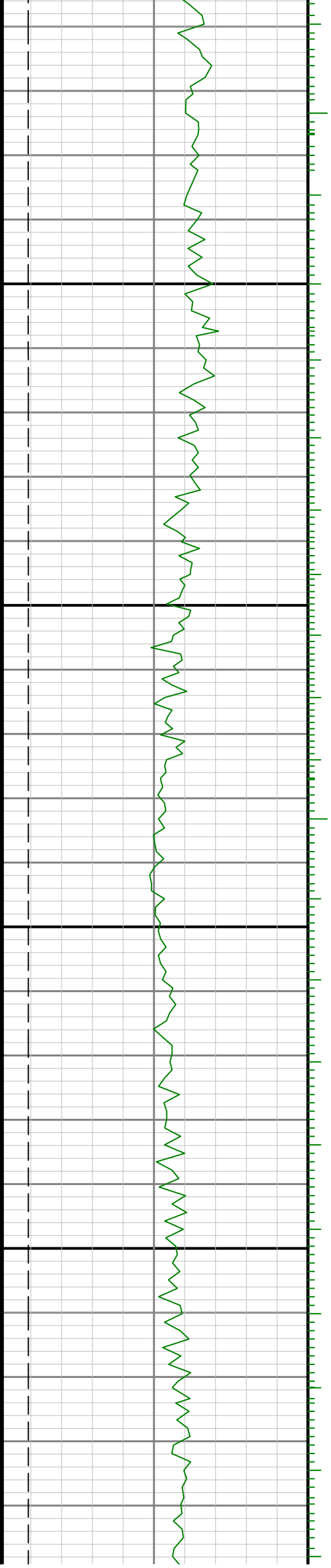


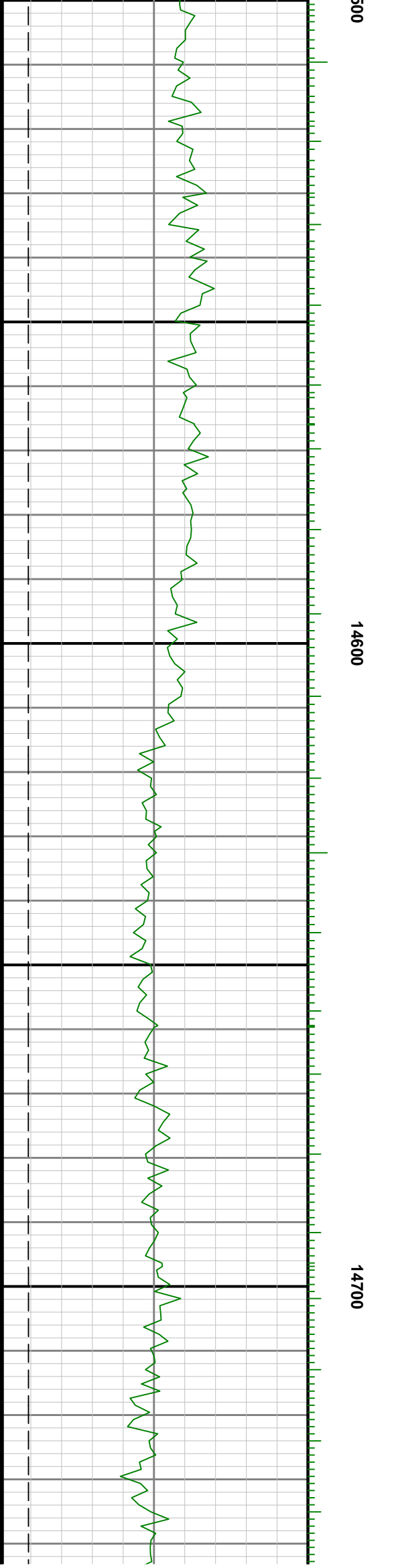
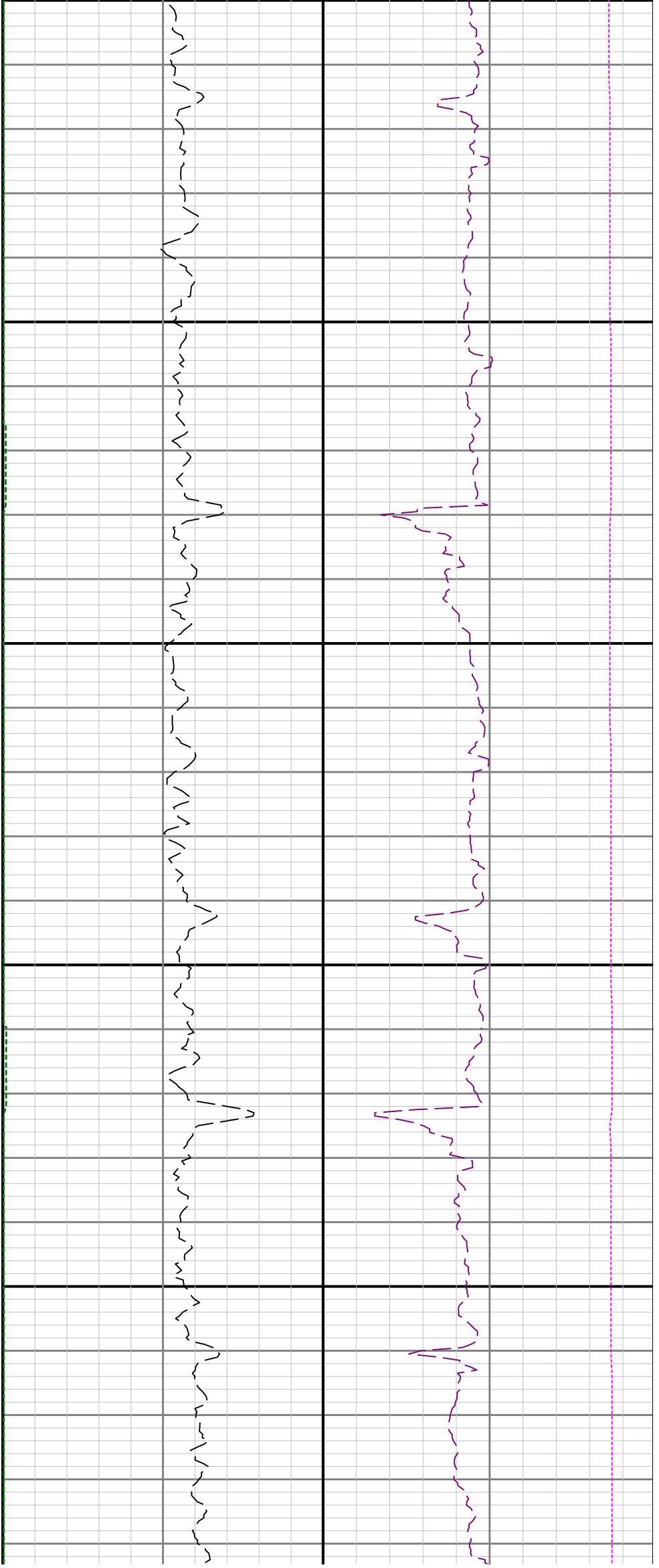


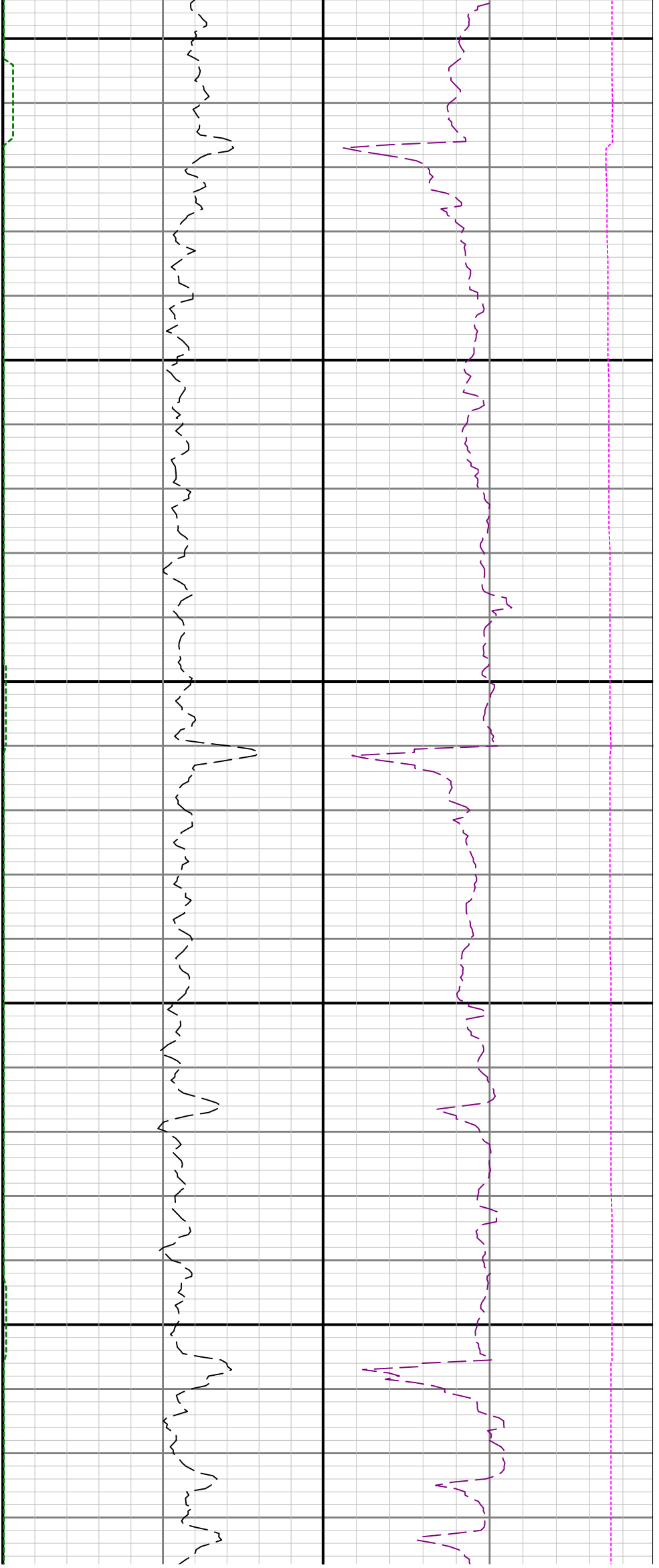
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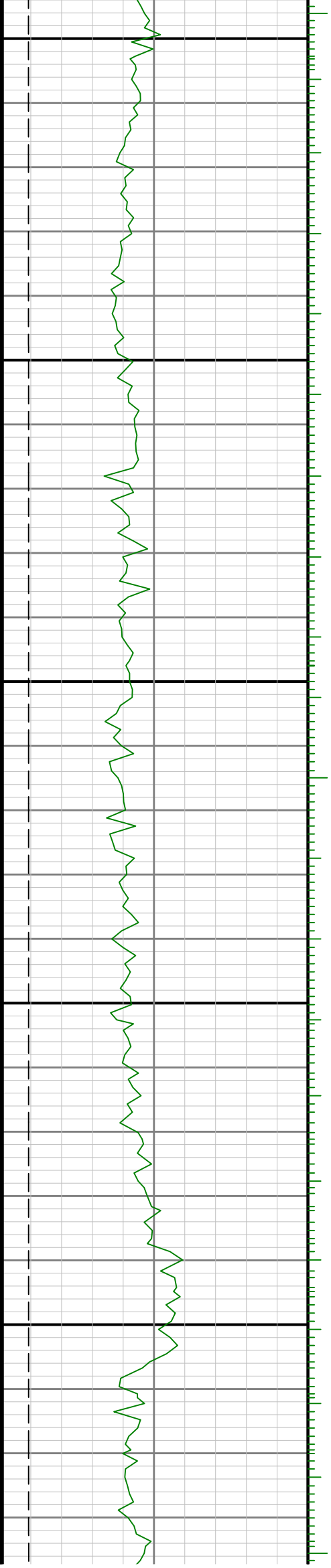


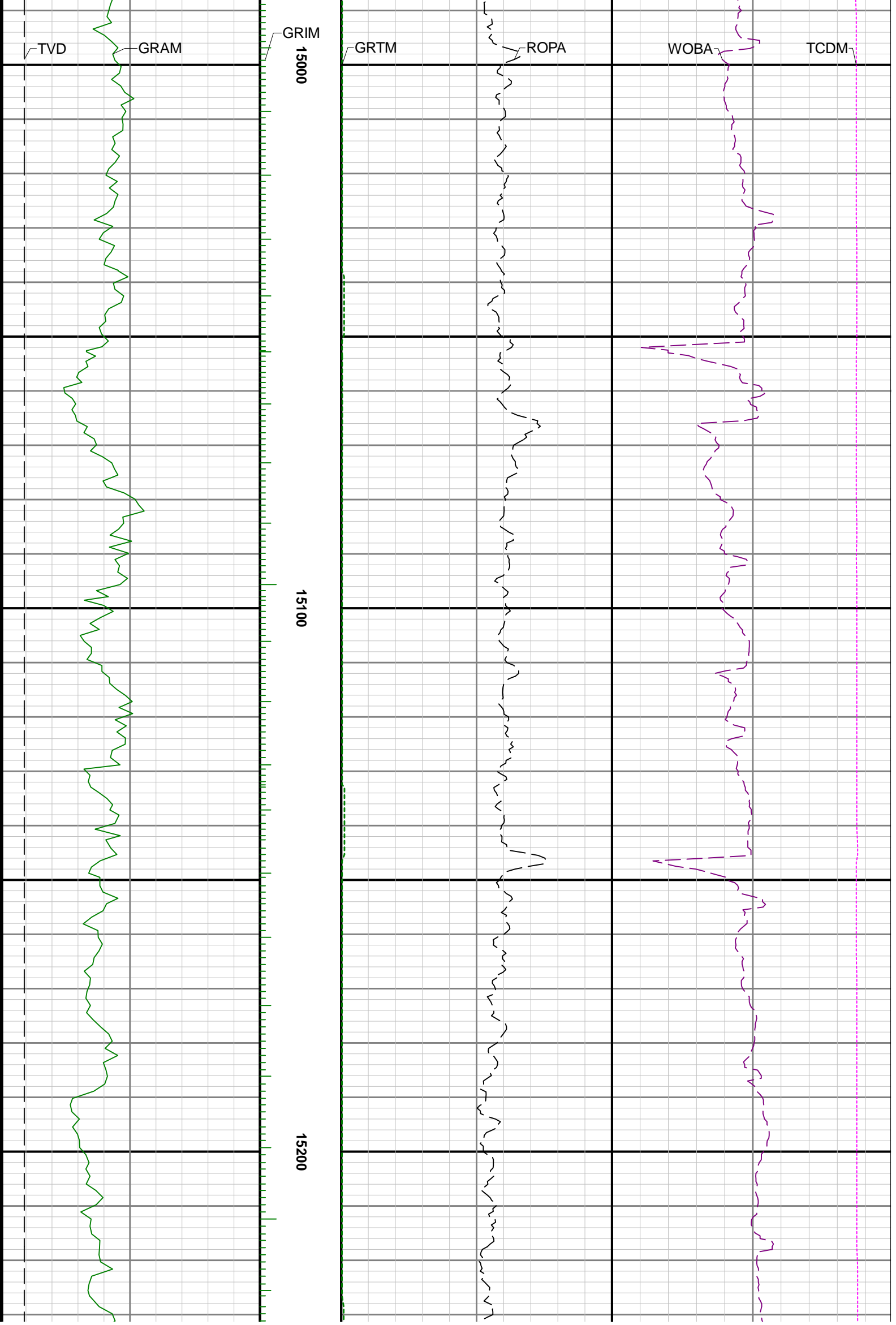


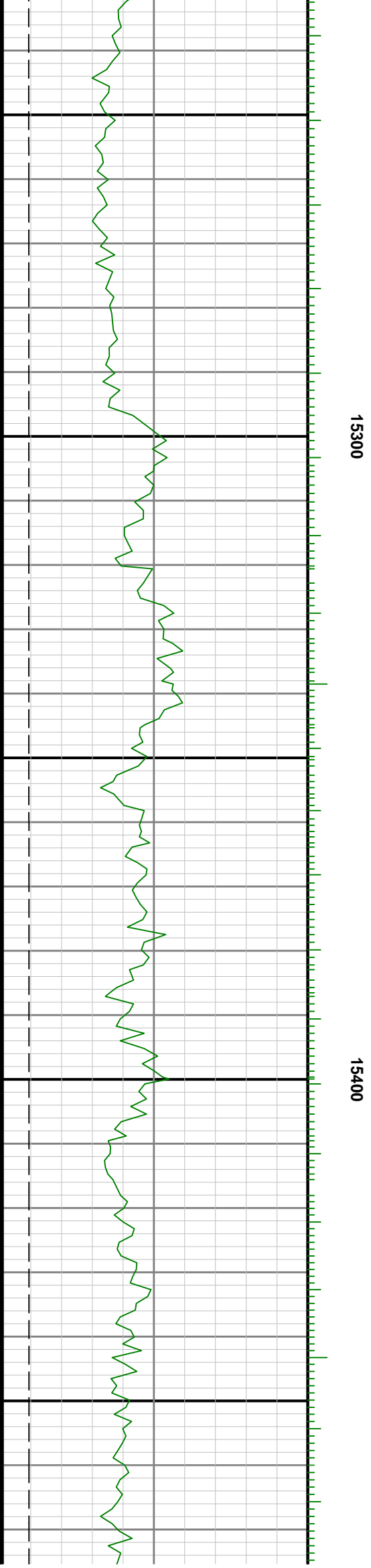
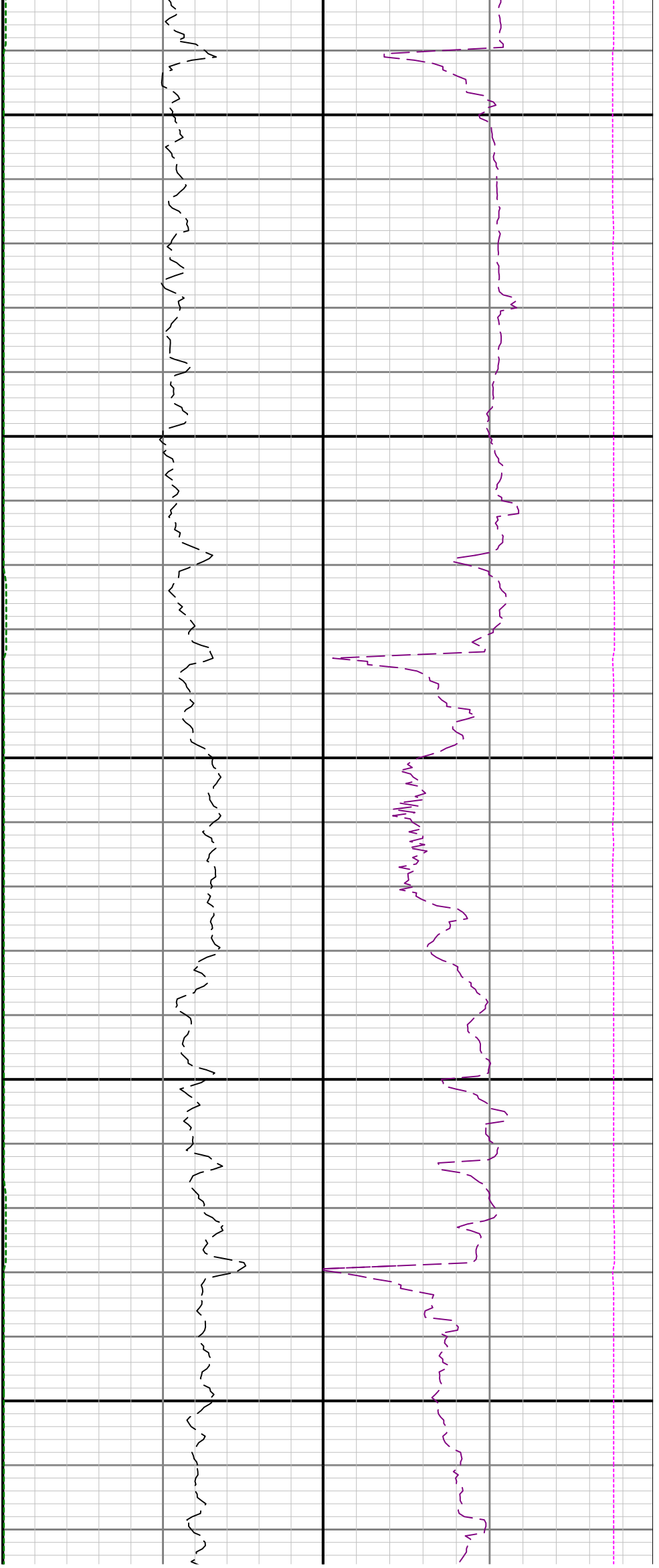


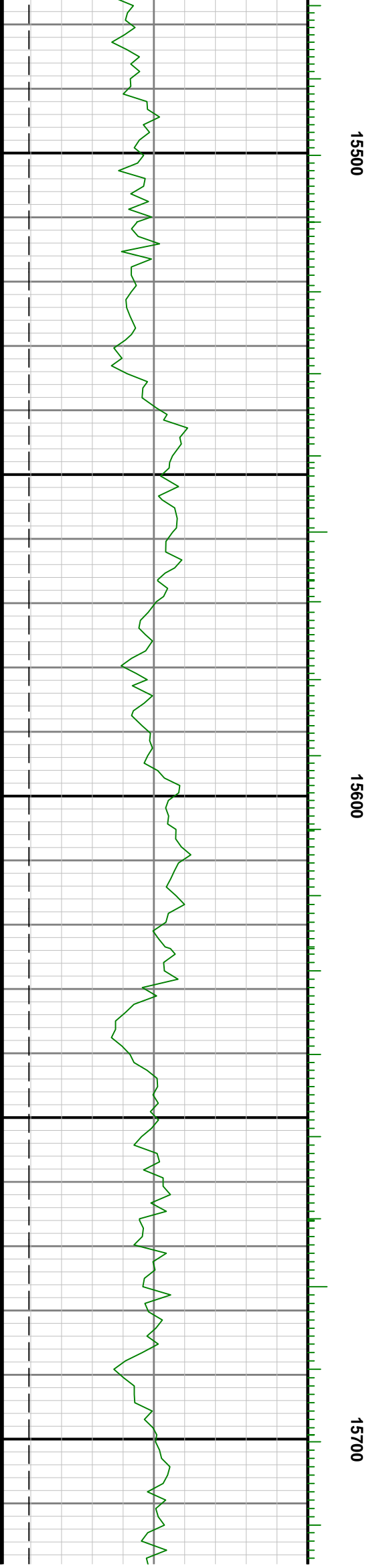
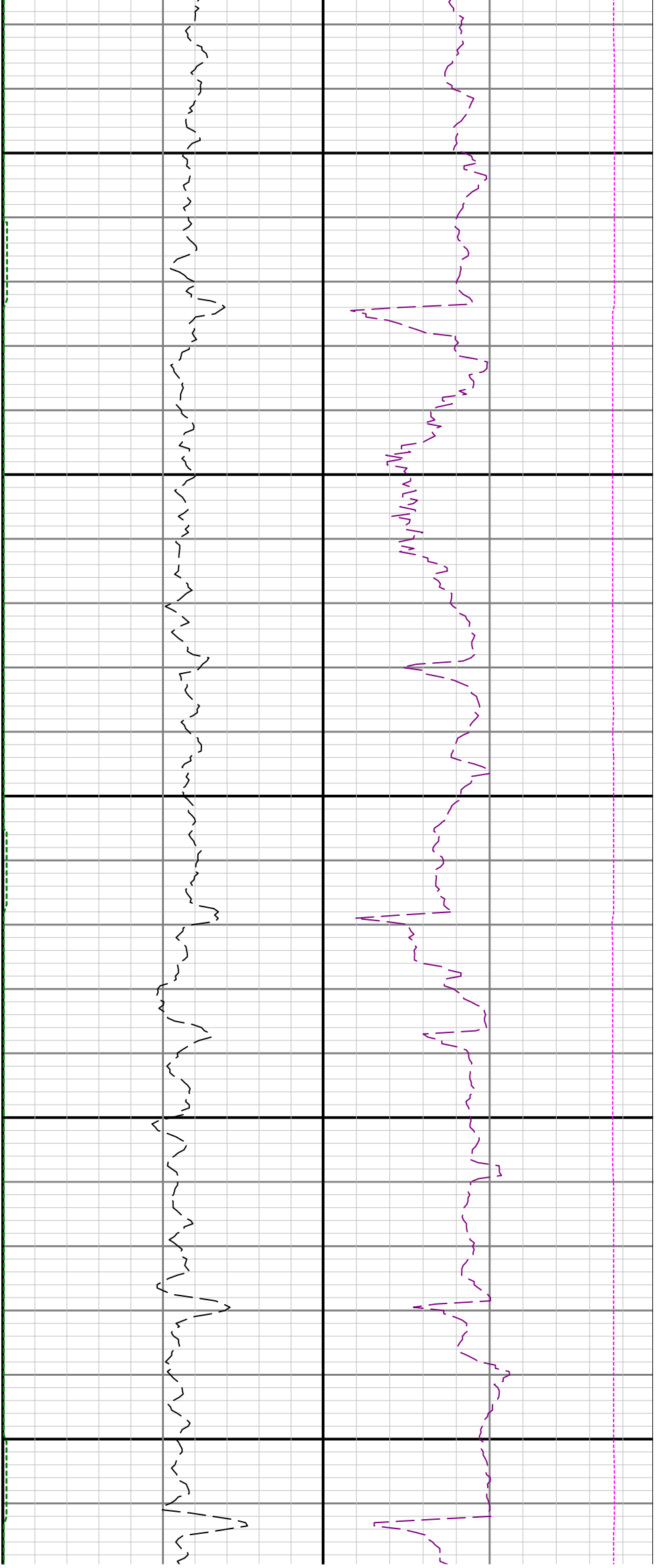
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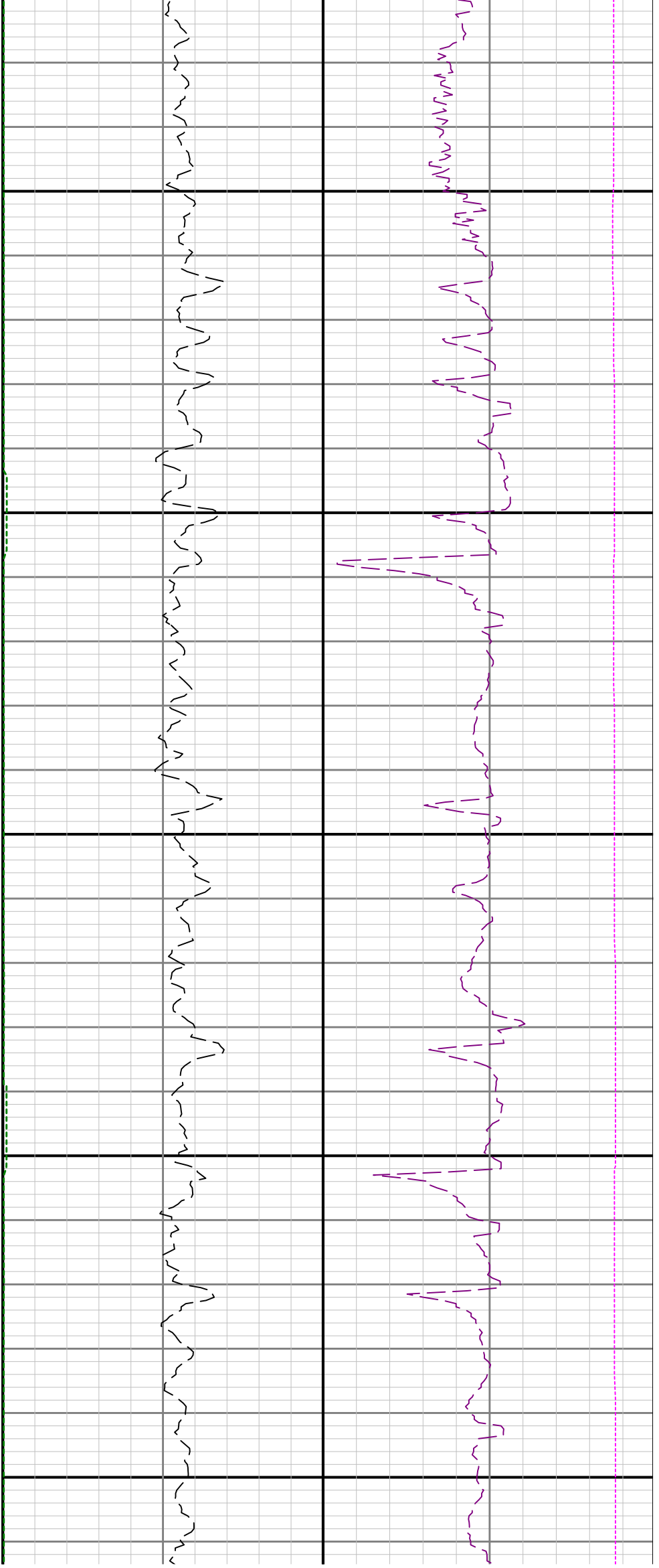
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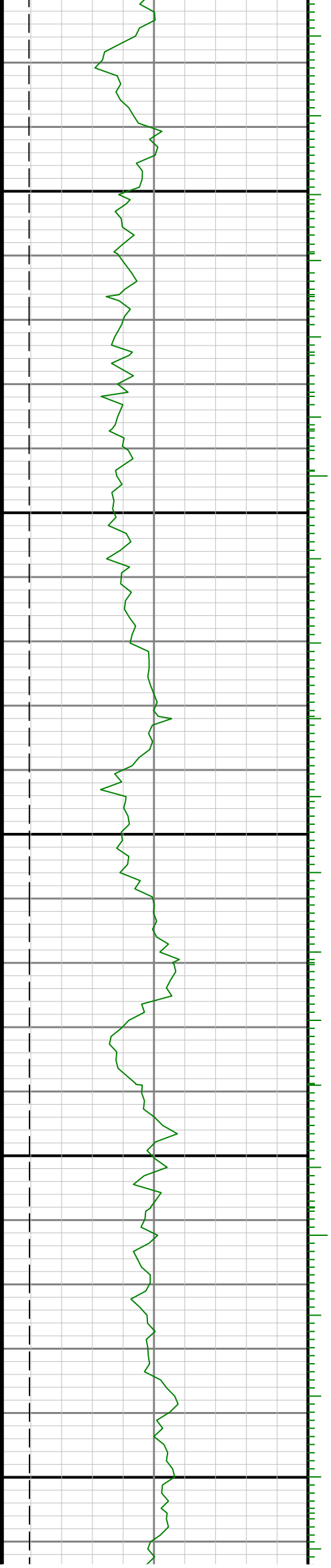


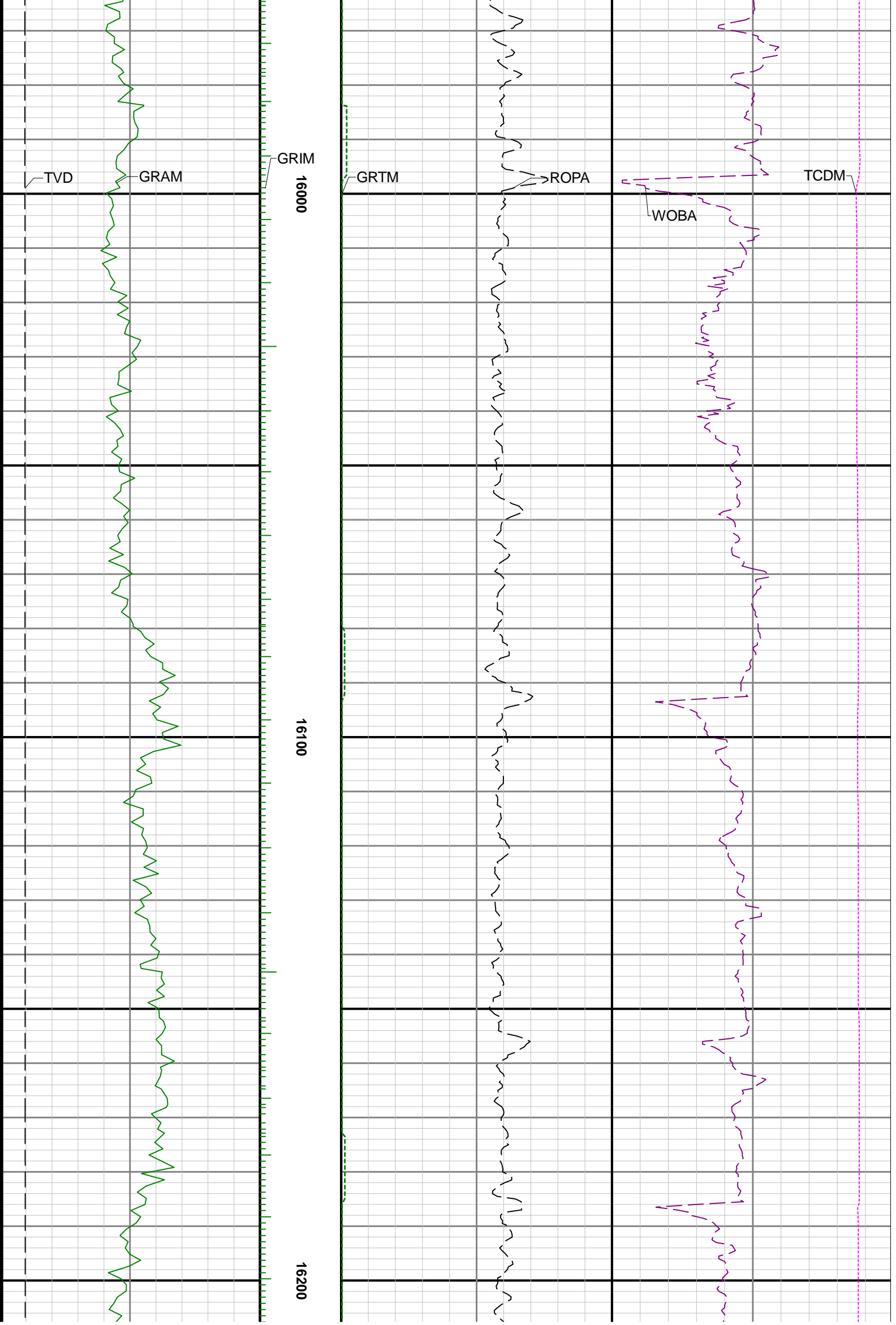


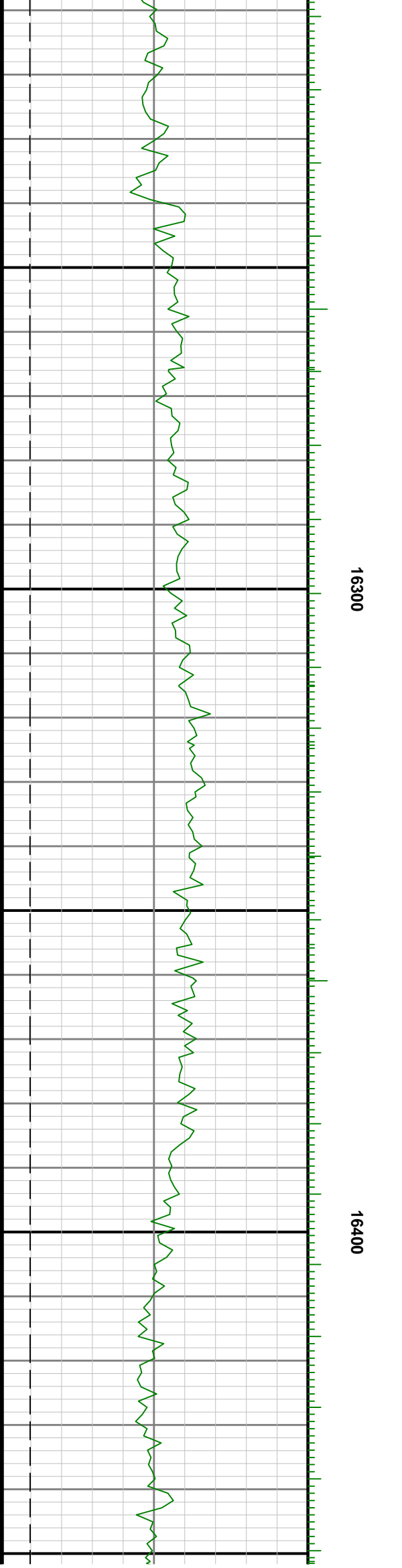
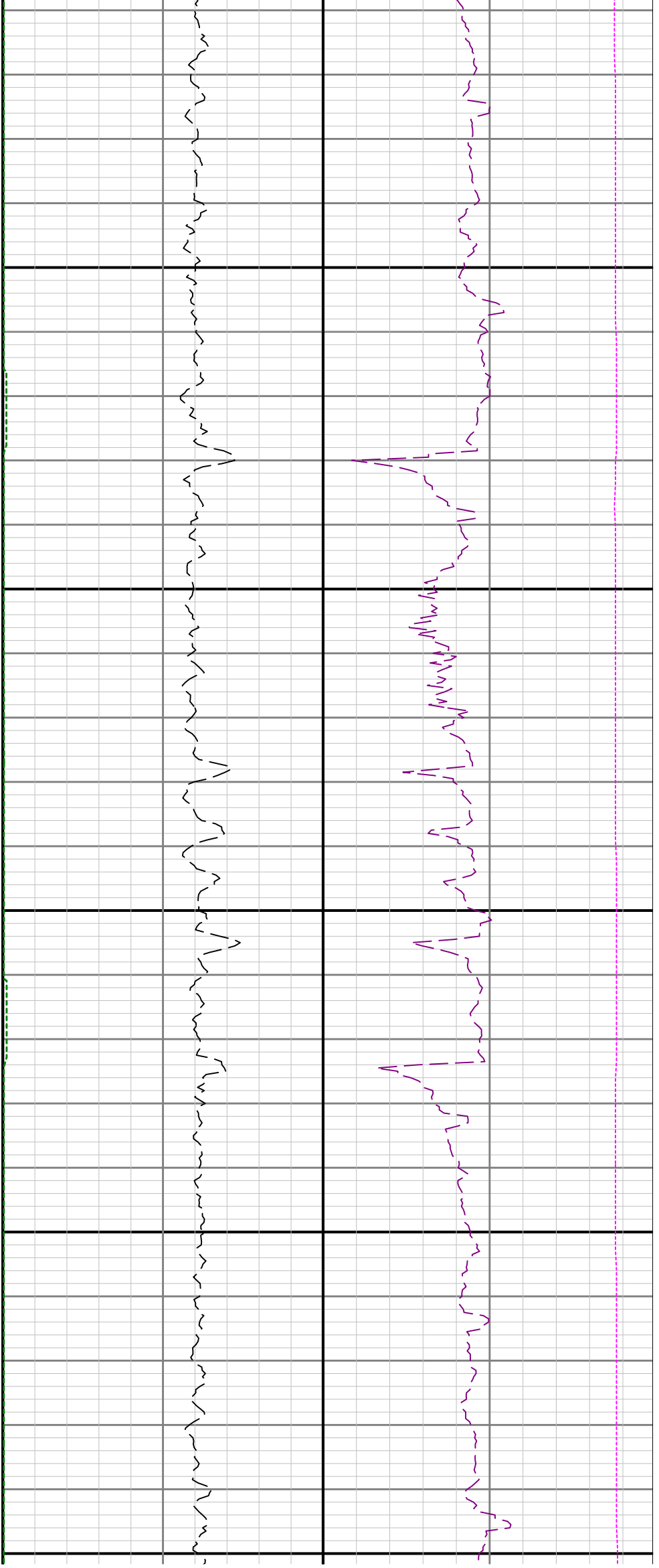


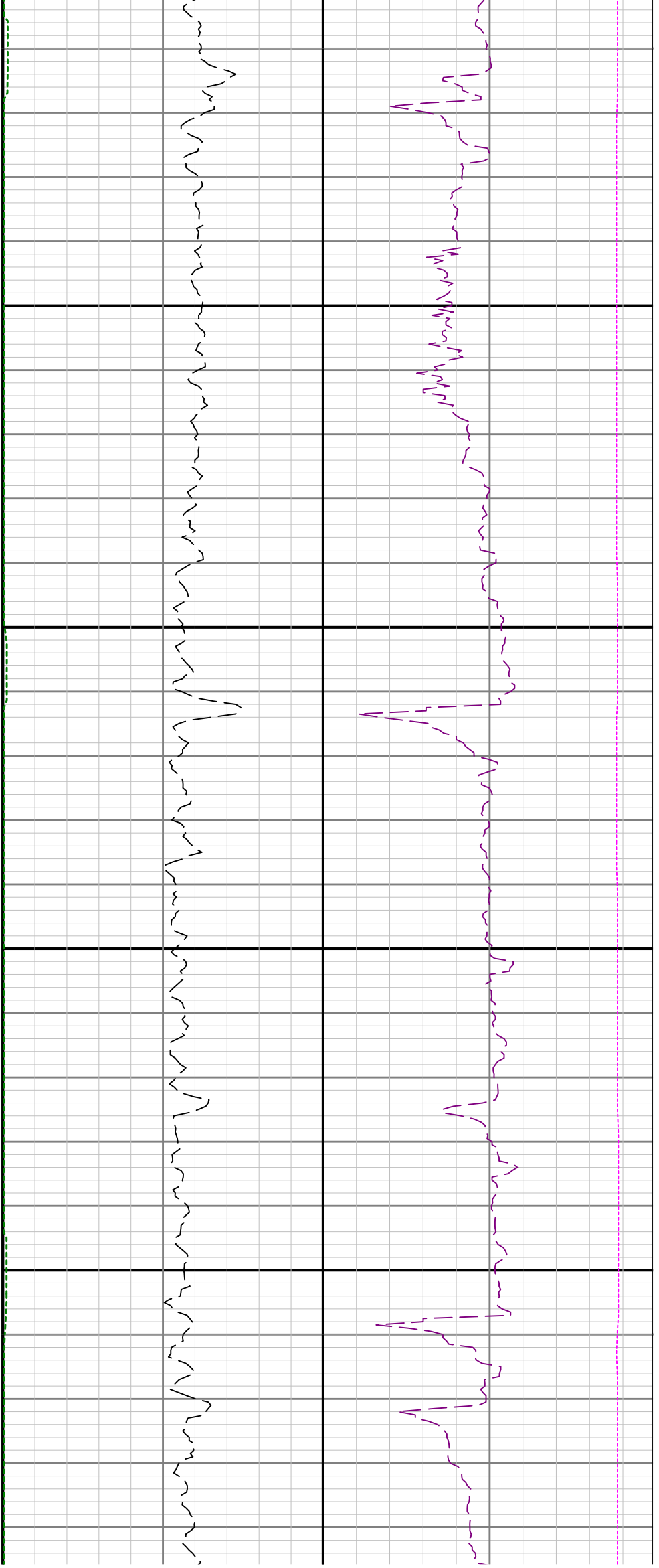
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16500

16600

