



LWD MEMORY LOG

Gamma Ray

Company: Noble Energy

Well: Guttersen D10-745

Field: Wattenberg

County: Weld Country: United States

State: Colorado

Driller's Depth

Other Services:

Status: Final Print

Latitude:

40° 15' 46.908" N

Longitude:

104° 32' 01.716" W

API No: 05-123-48918-00

SEC: 34

TWN: 4N

RGE: 64W

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

Elevation: 0.00 ft

Above P.D.: 4727.00 ft

Elev. KB: 4727.00 ft

Elev. DF: 4697.00 ft

Log Measured From: Rig Floor

Dates

From: 2022-02-20

To: 2022-02-21

Sput: 2022-02-02

Drilled (ft) 1959.00

Logged (ft) 1959.00

Azi Reference North: 66.57

Top: 1959.00

Bottom: 17252.00

Total Magnetic Field Strength: (nT)

Mag to Reference North Correction: (deg)

51771

7.25

Borehole Record

Casing Record

Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
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13.500	30.00	1959.00	9.625	36.00	30.00	1949.00
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8.500	1959.00	17252.00				
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Mud Record

Deviation Record

Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)
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Oil Based Mud	1959.00	17252.01	8.500	15293.01	0.13 31.38	90.37 179.30
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Acquisition System

Software Version

Other

Cadence	RT 6.3	Rig: H&P 517
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Plot Studio	6.3.9444.1	Contractor: Helmerich & Payne Drilling Co
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		District: RMA
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Unit: D&E

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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	8.500	PDC	3.00	AutoTrak Curve	1959.00	17239.00	1959.00	17252.00	2022-02-18 08:57	2022-02-20 10:11	45.60

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Tien Bui	2022-02-17	2022-02-21						

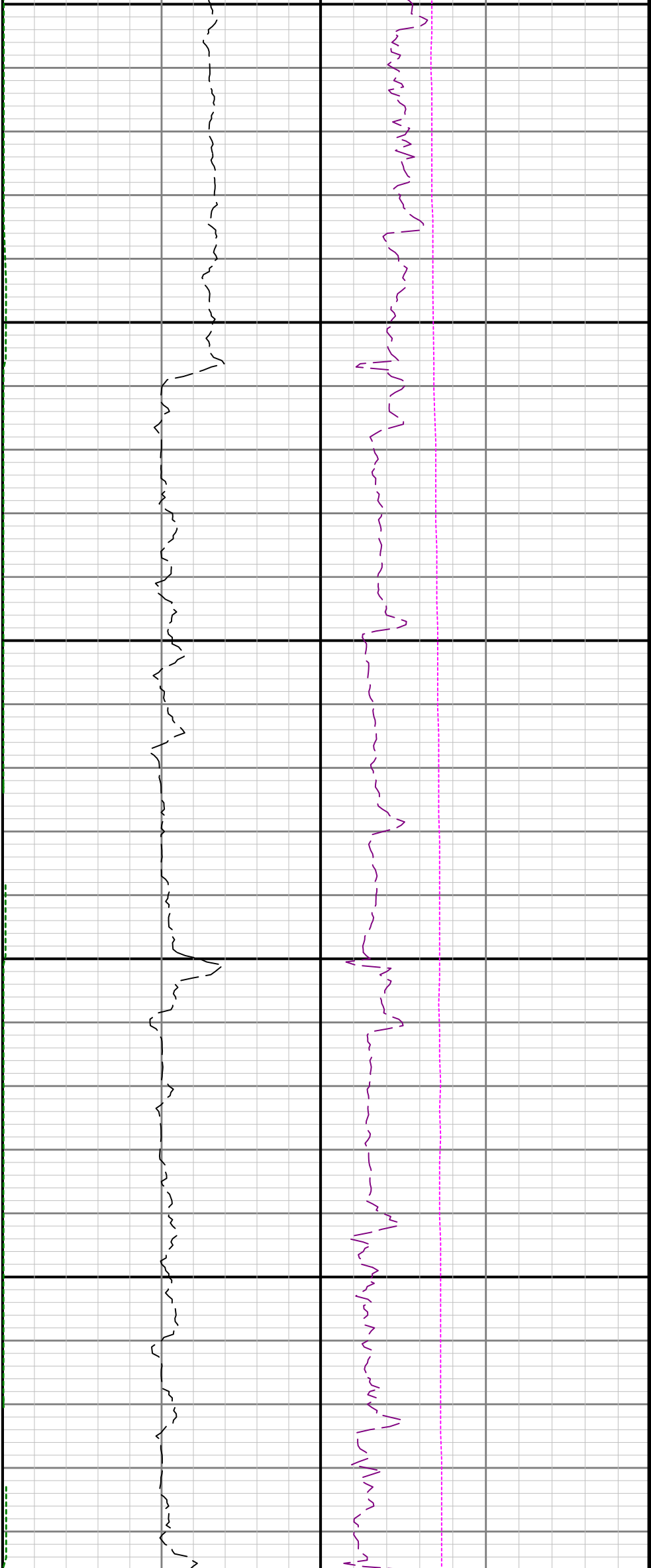
Mud Properties Record

Date / Time	Run No.	Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2022-02-17 16:09	1	1959.00	Oil Based Mud	9.3	11	N/A	18.0	79.5/20.5	Active Pit	25000	0.00
2022-02-19 09:10	1	9342.00	Oil Based Mud	10.1	13	N/A	16.5	79.3/20.7	Active Pit	29000	0.00
2022-02-20 09:22	1	15690.00	Oil Based Mud	10.1	16	N/A	18.7	80.3/19.7	Active Pit	25000	0.00

Equipment and Service Data

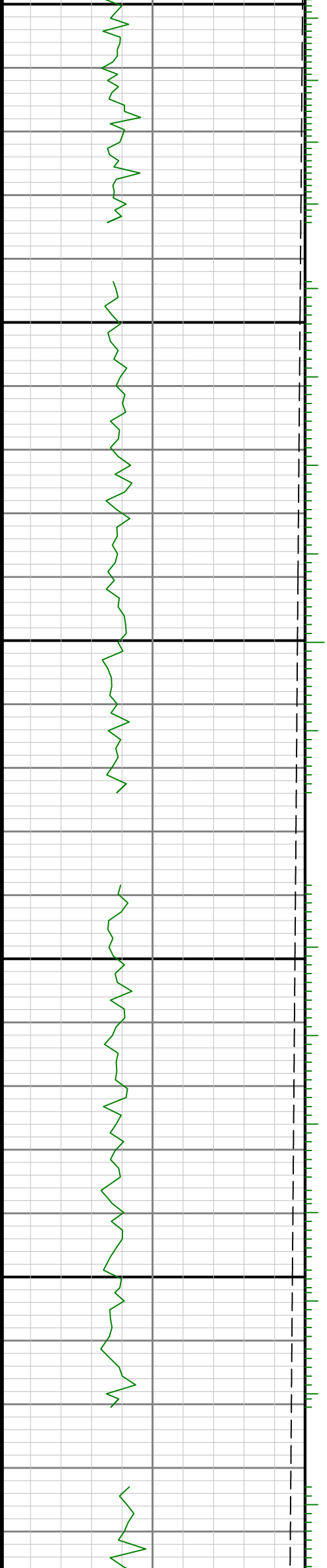
Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	AutoTrak Curve Steering Unit	14547137	Near Bit VSS	5.93	6.78	6.750	4.330
1	AutoTrak Curve Steering Unit	14547137	Near Bit Inclination	5.93	6.78	6.750	4.330
1	AutoTrak Curve MWD	12200463	Gamma (single)	2.78	12.95	6.750	3.250
1	AutoTrak Curve MWD	12200463	Directional (mag)	12.27	22.44	6.750	3.250

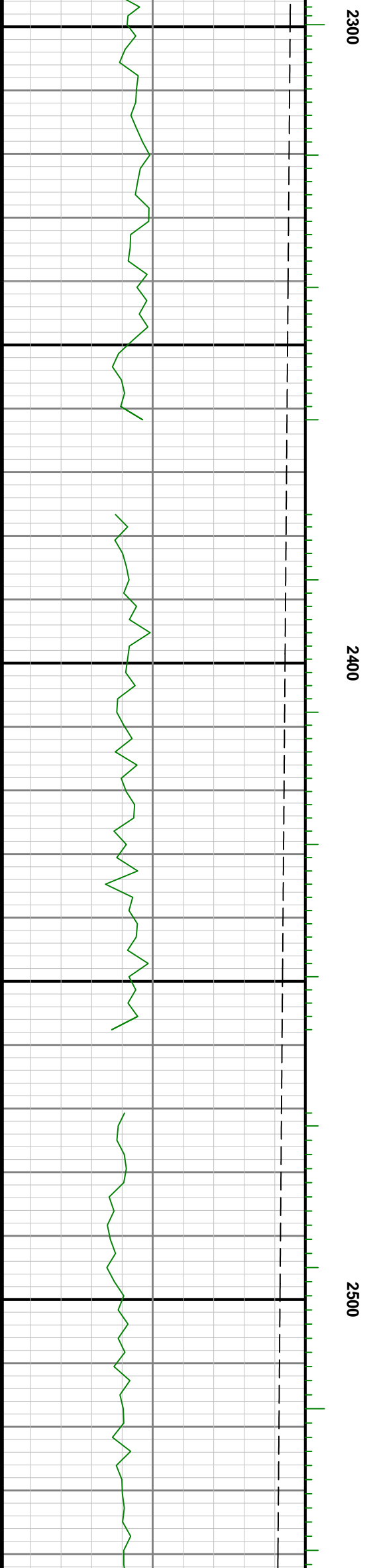
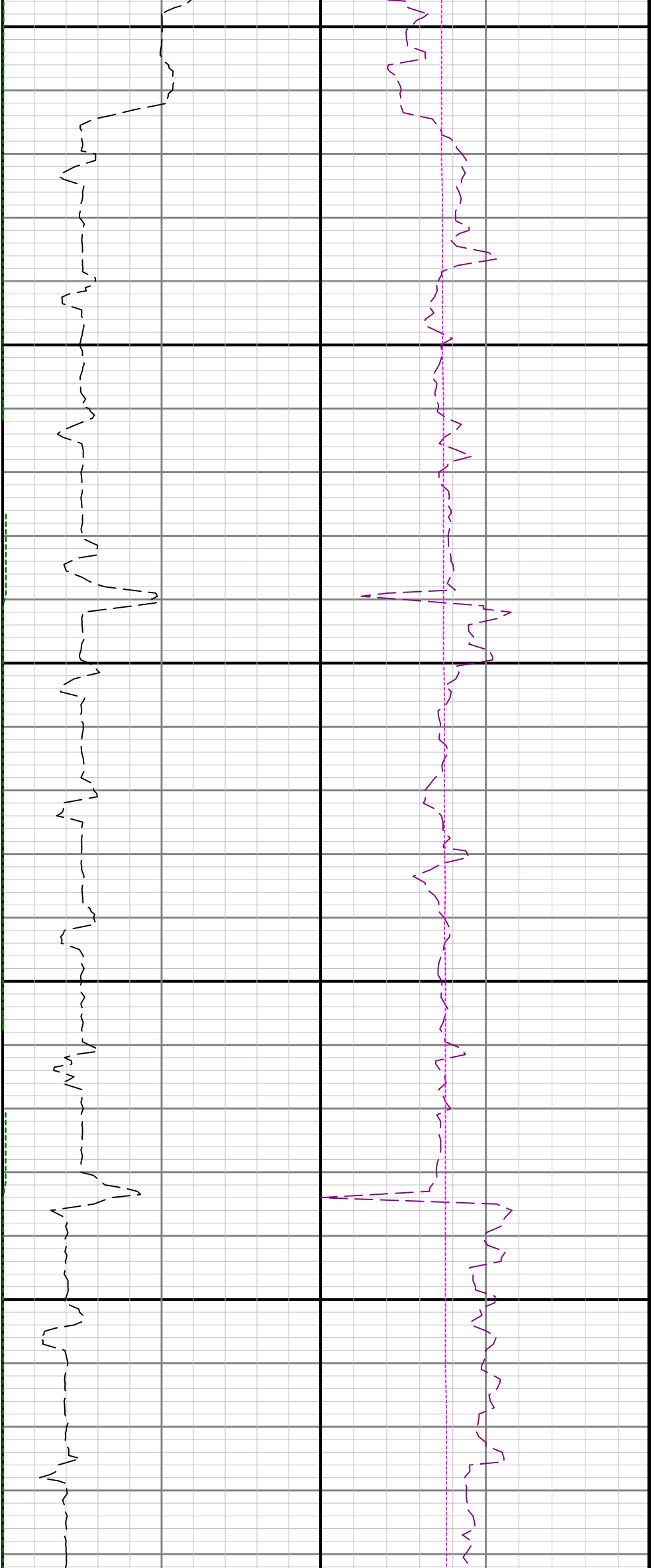
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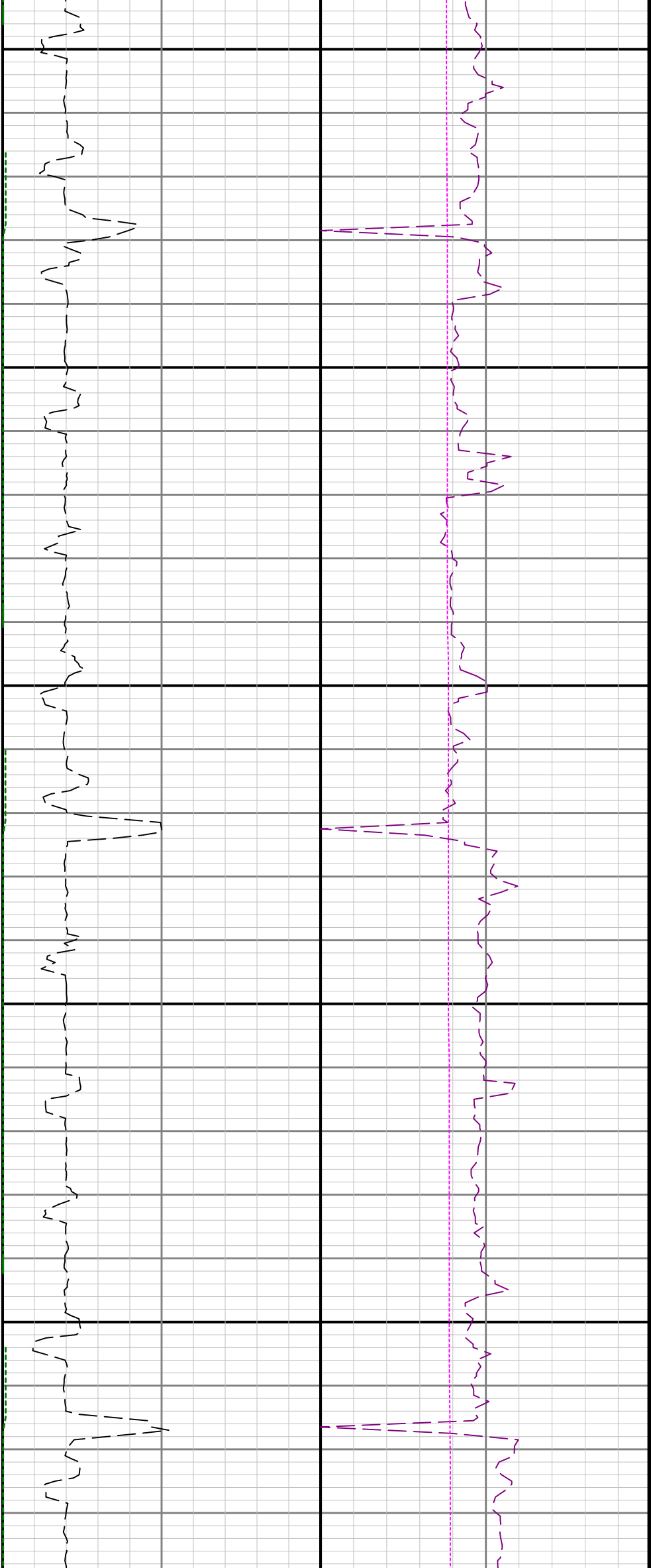


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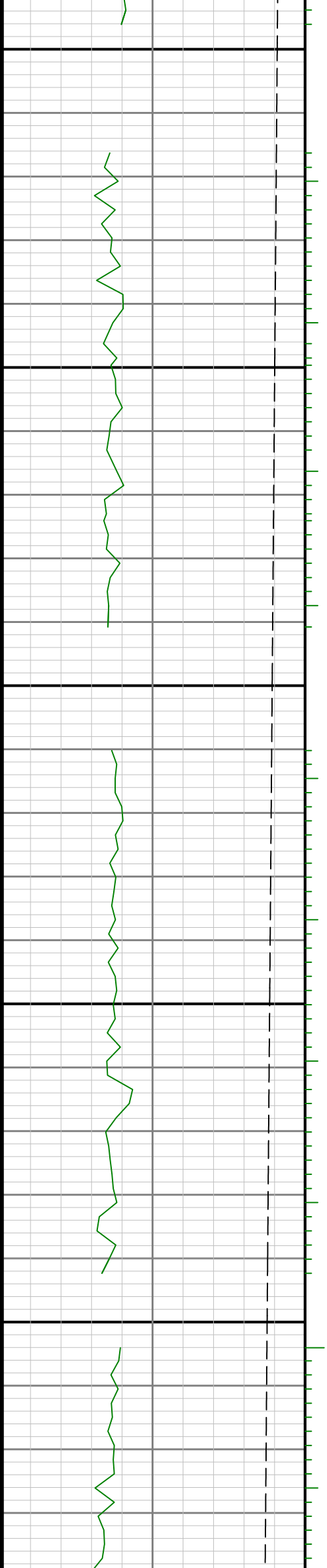


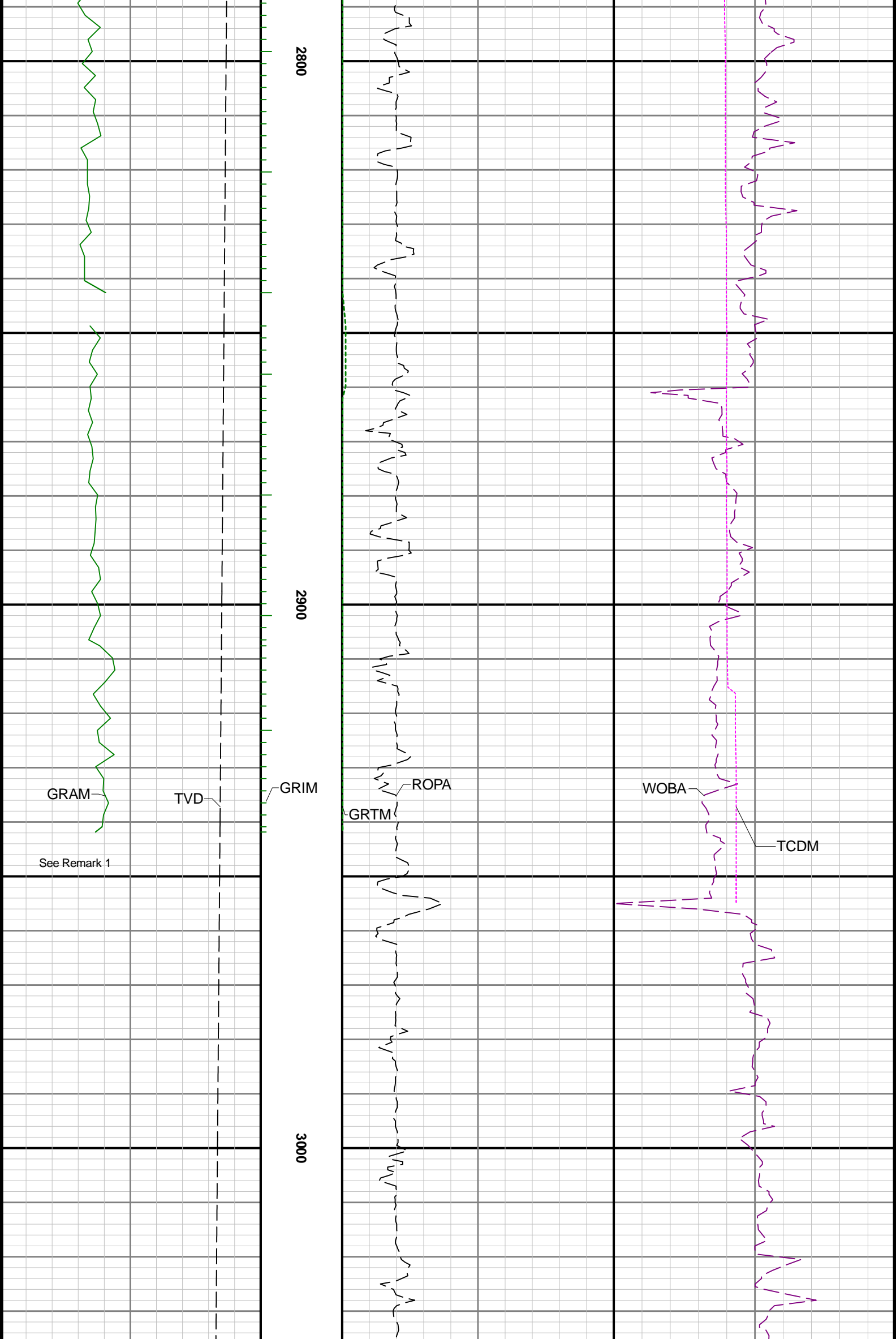


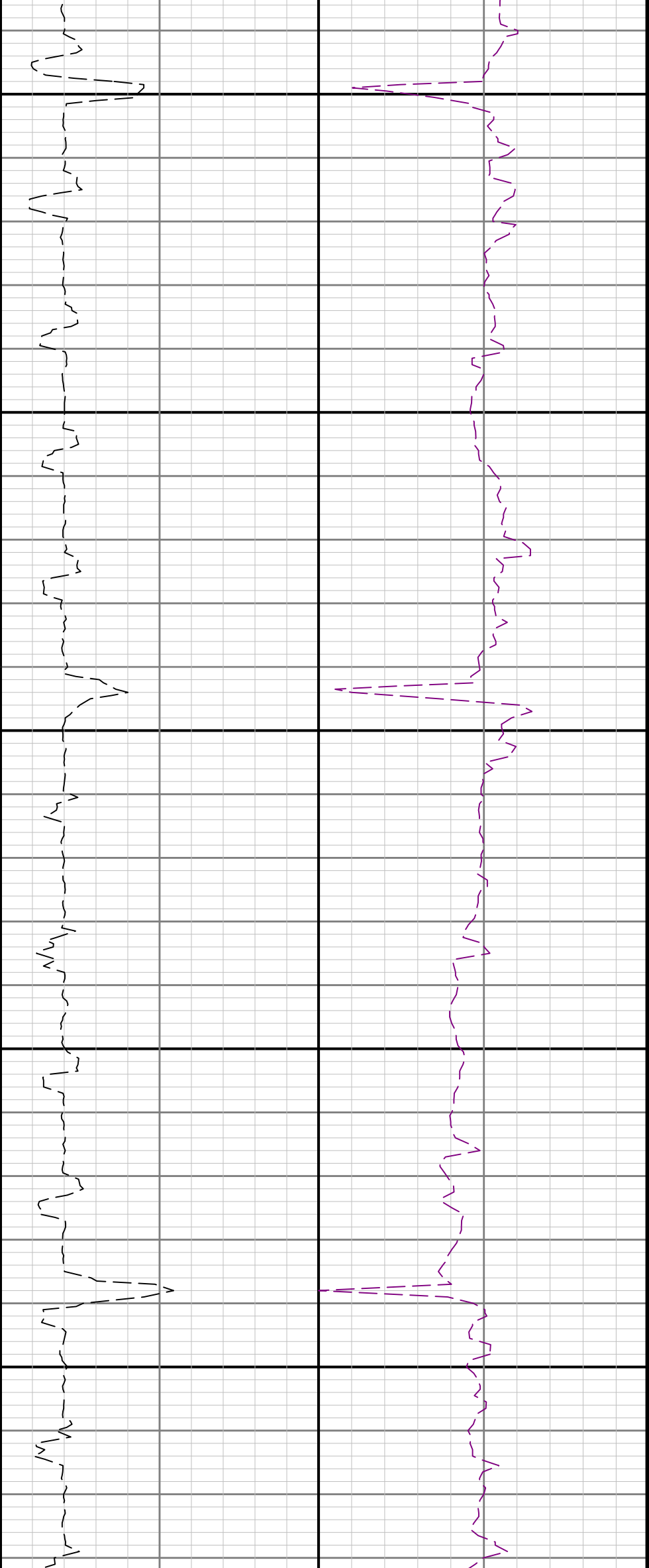


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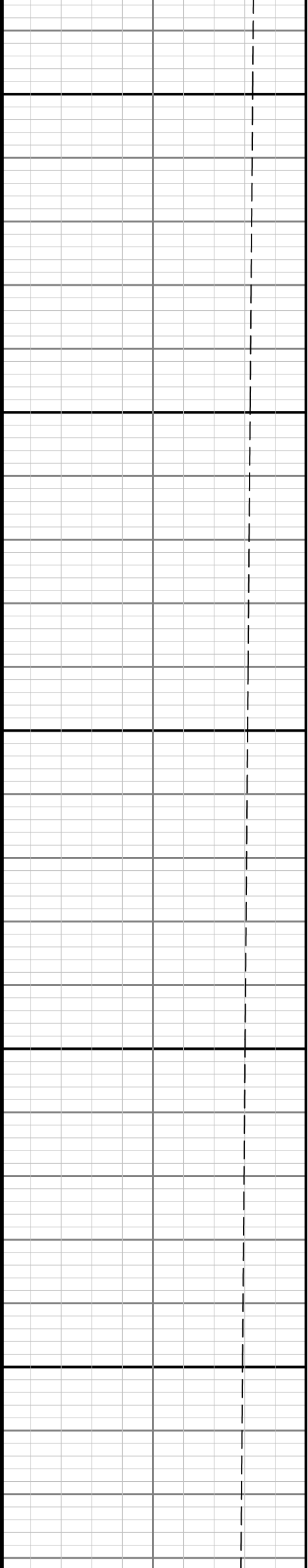


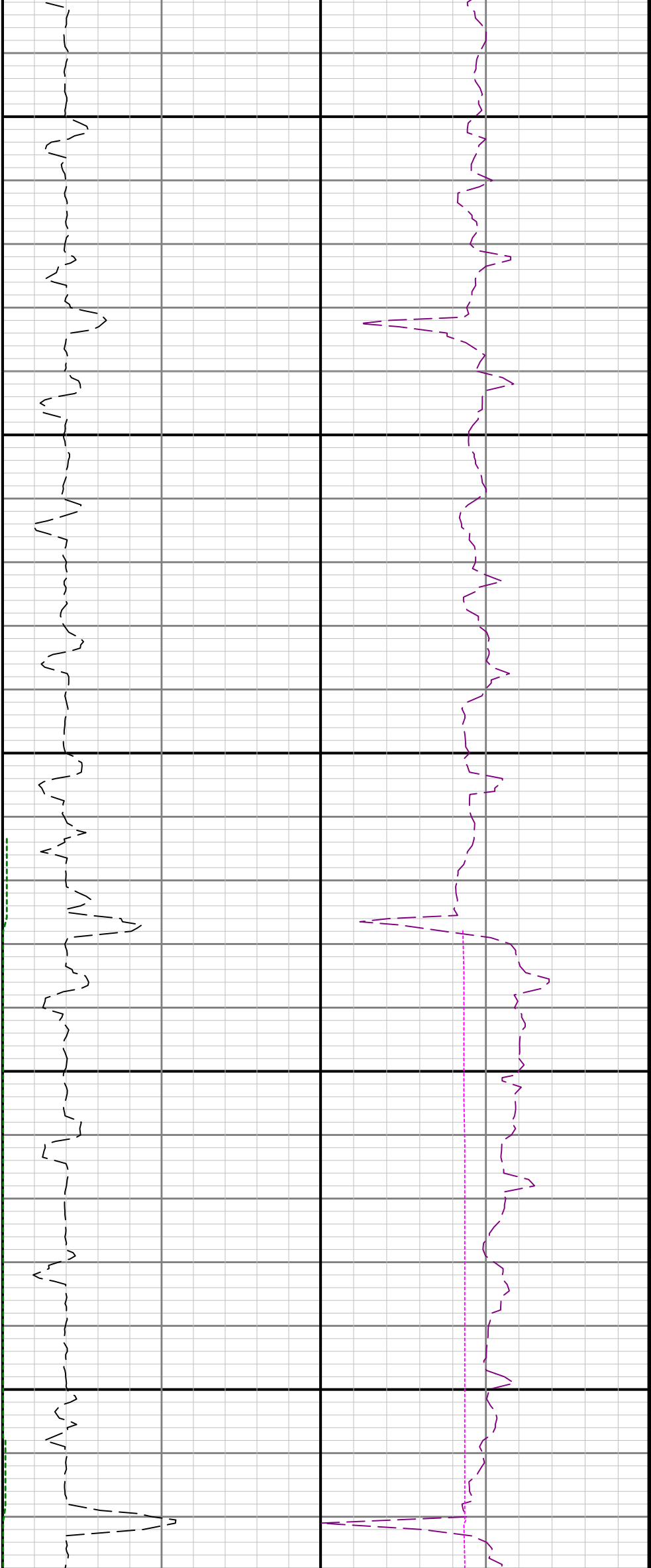




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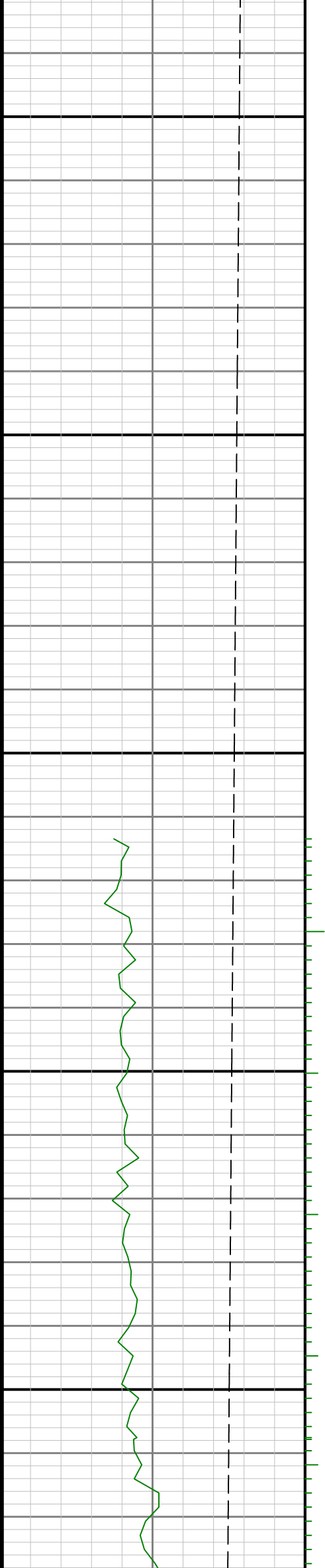


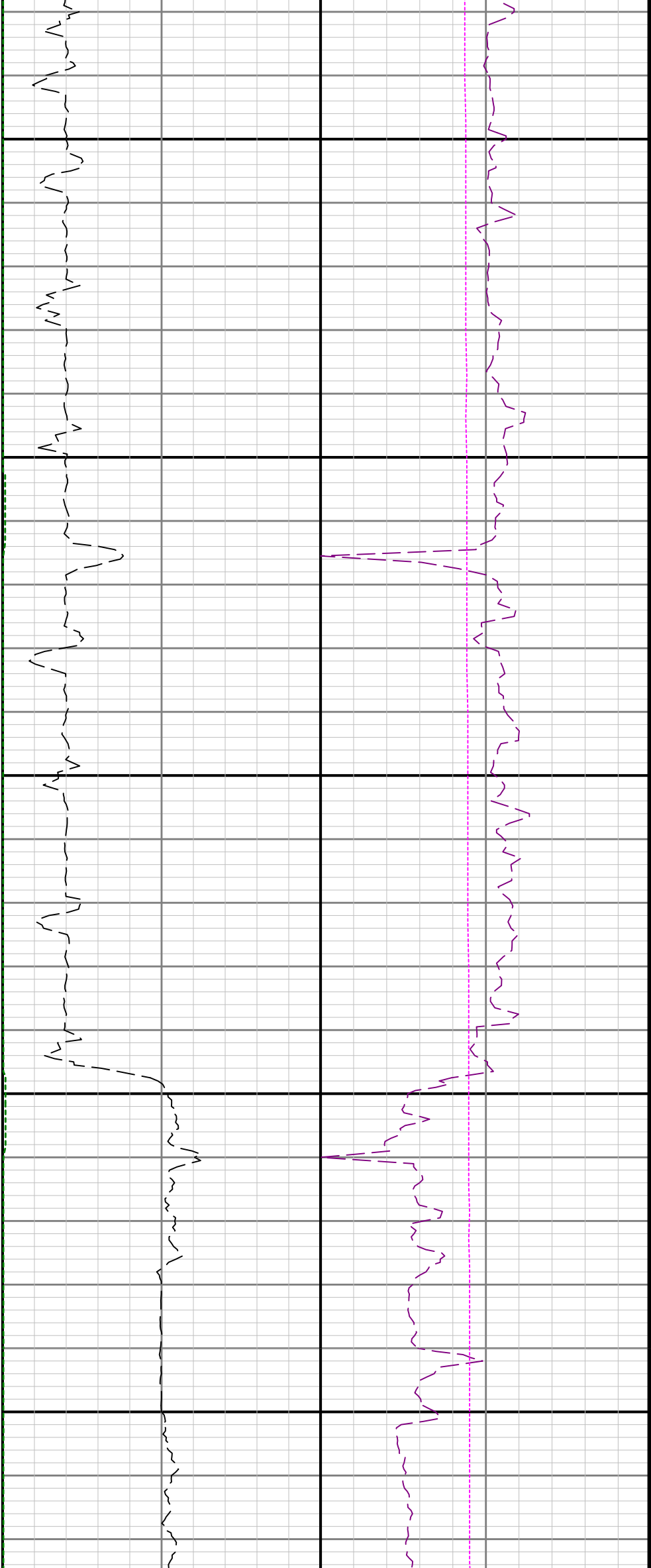


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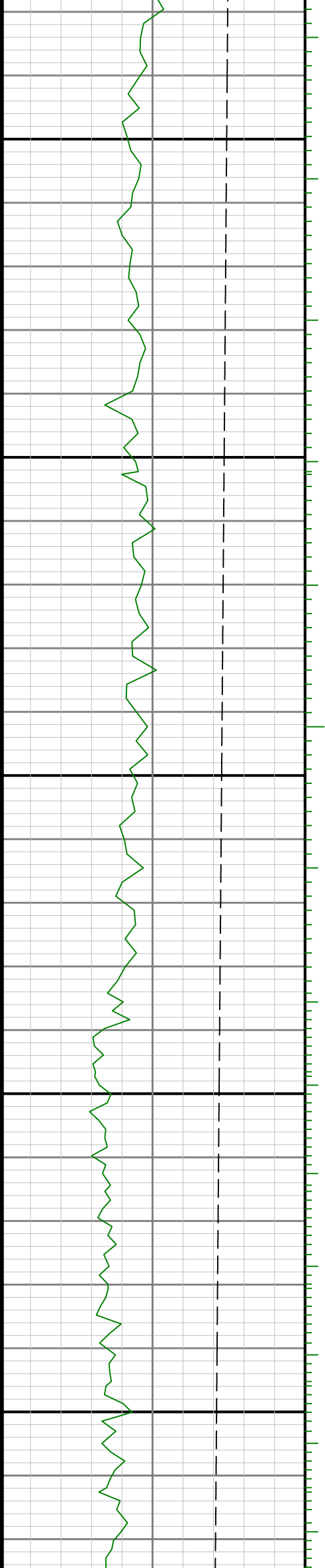
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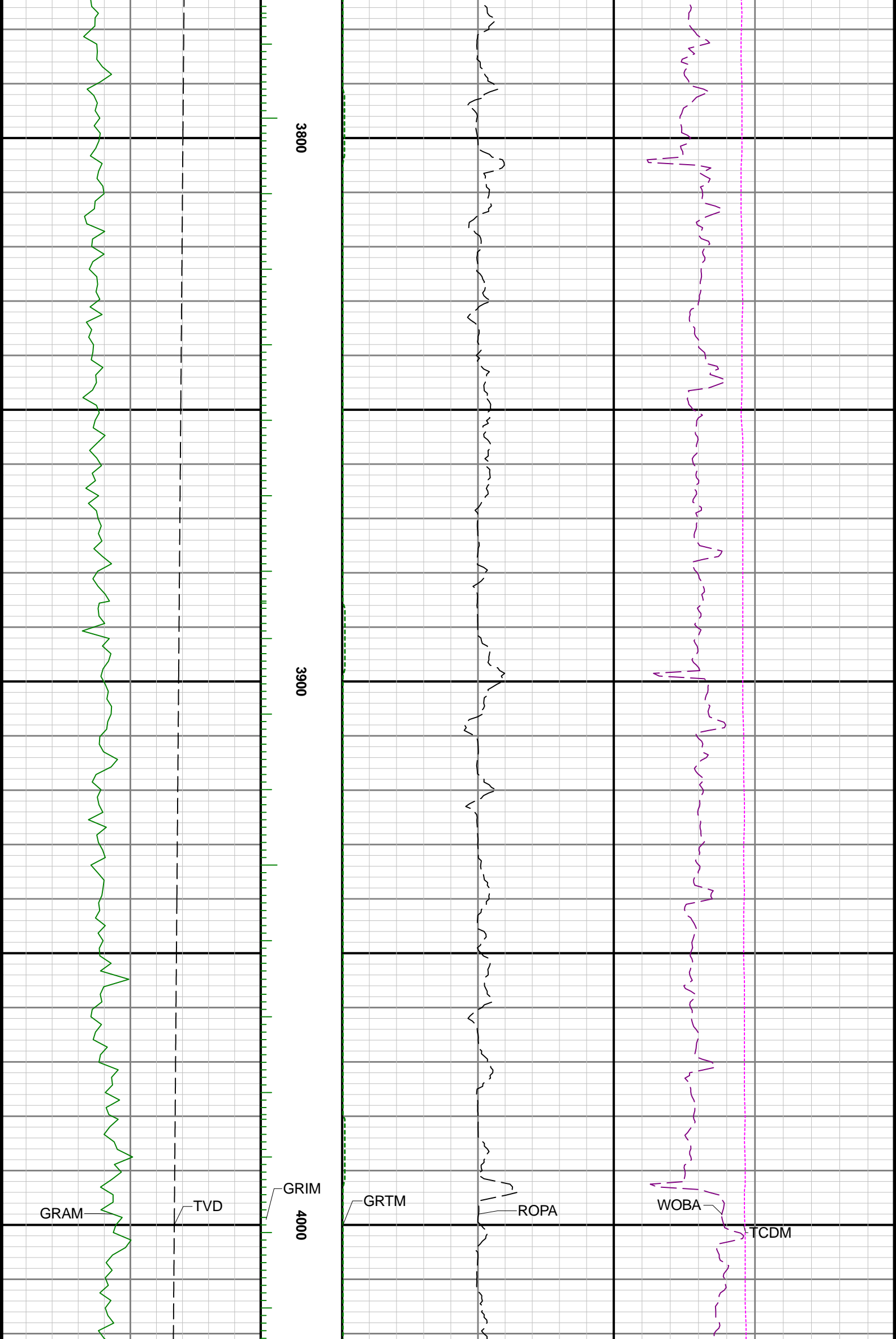


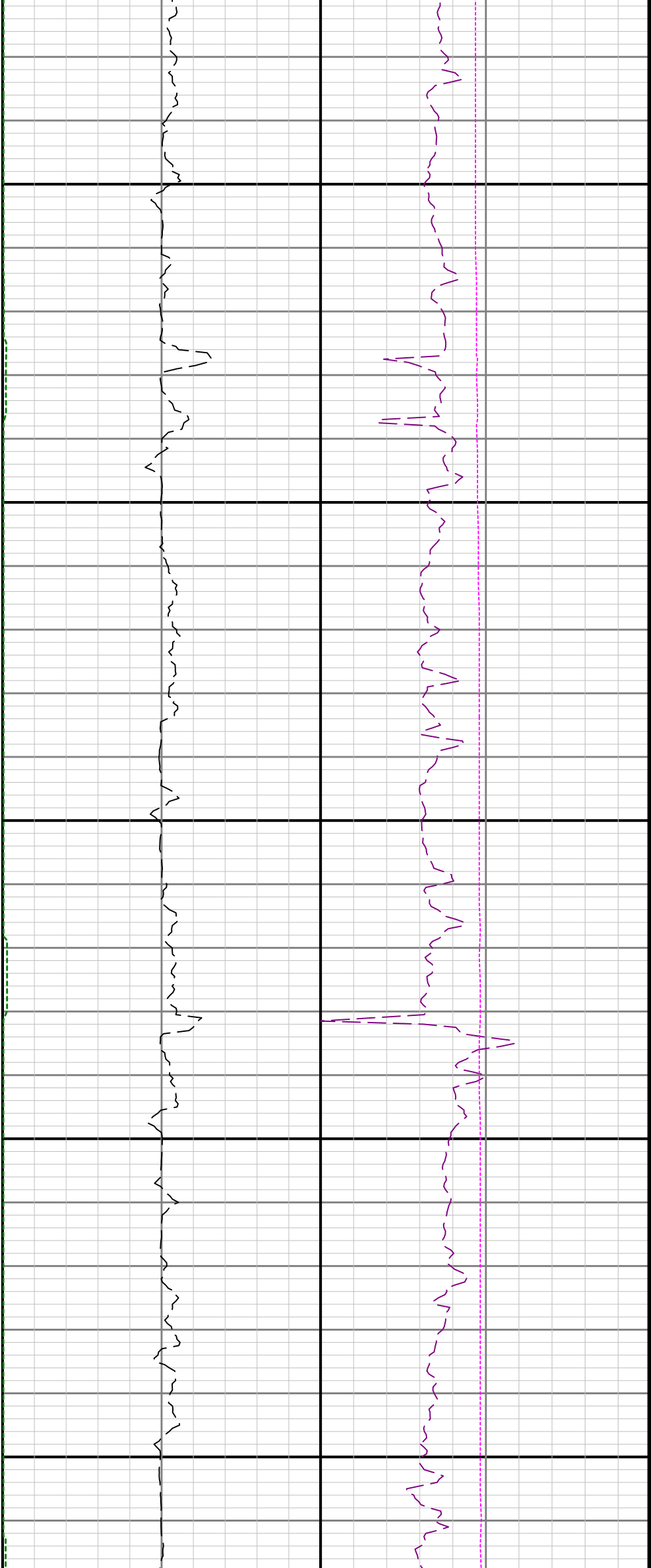


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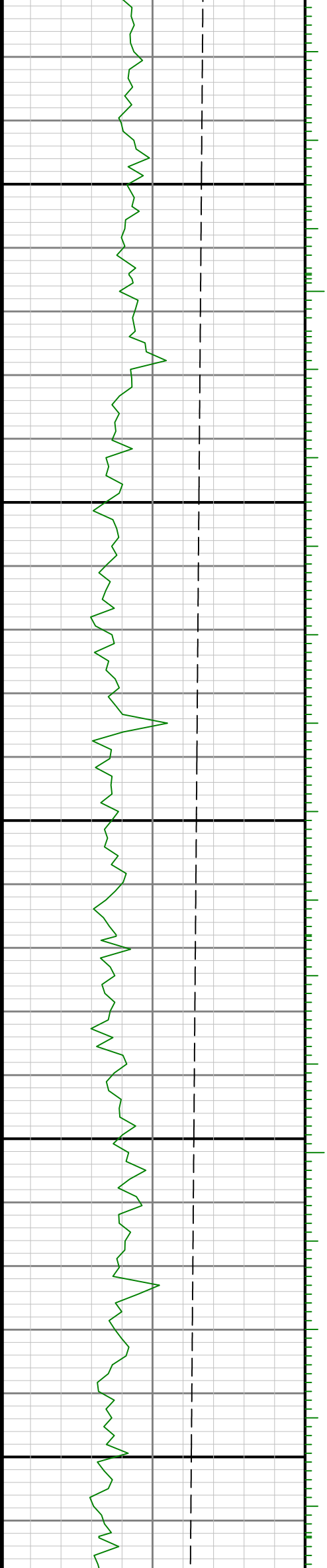


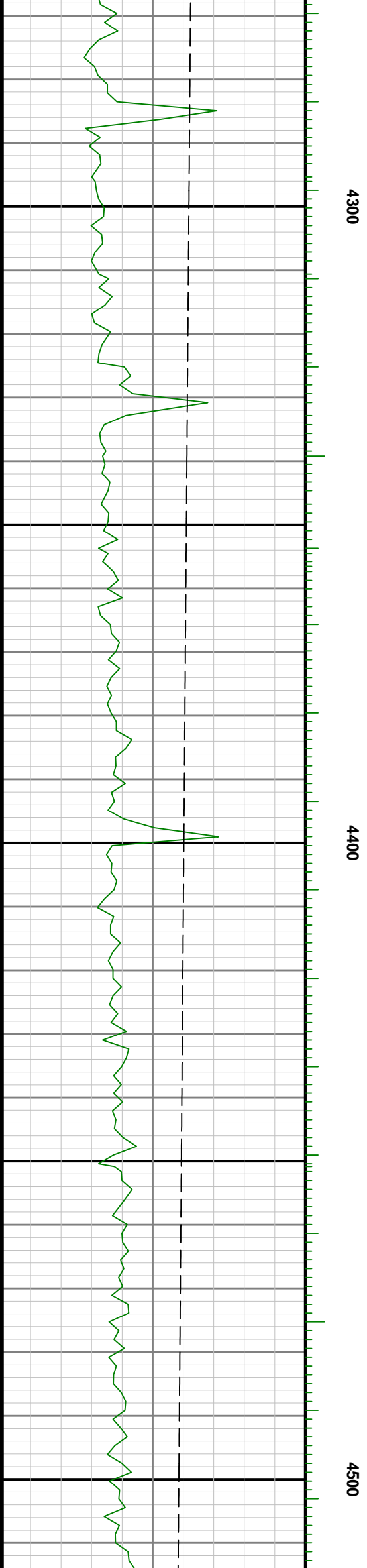
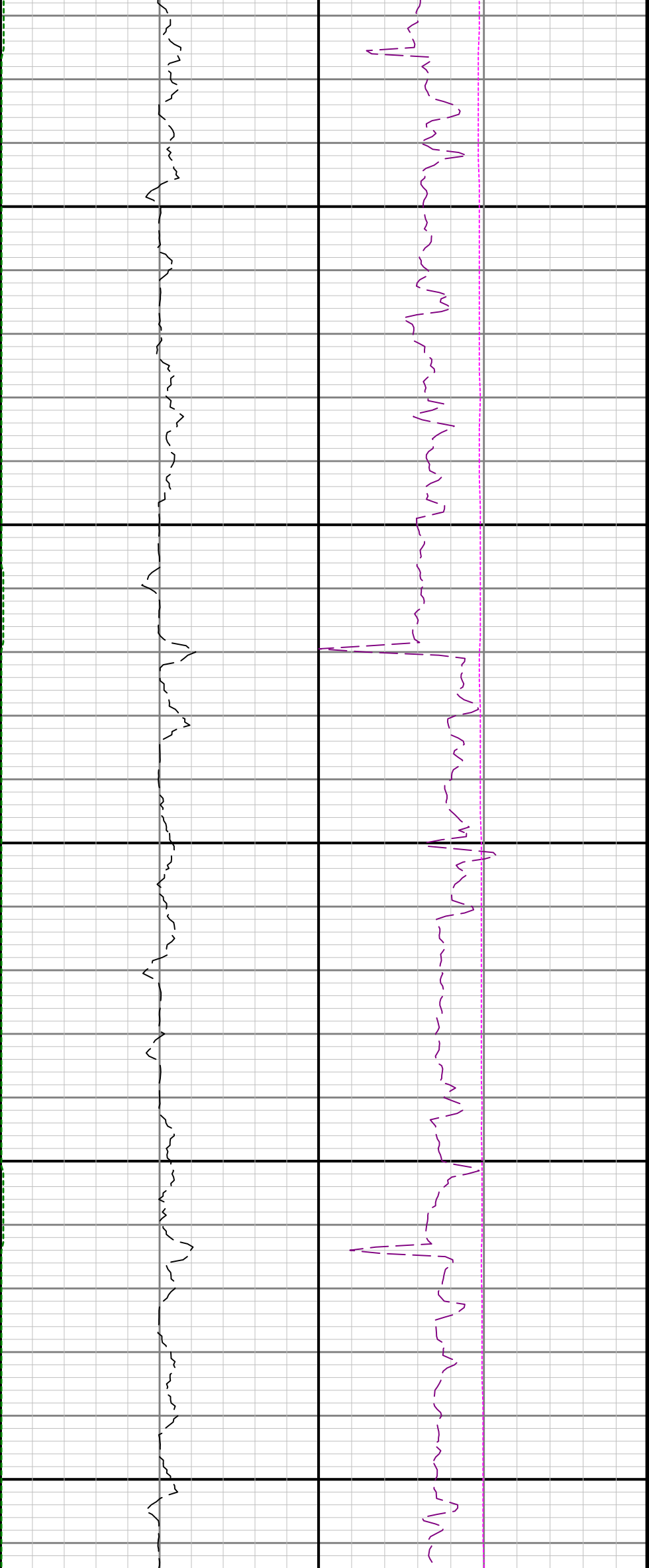


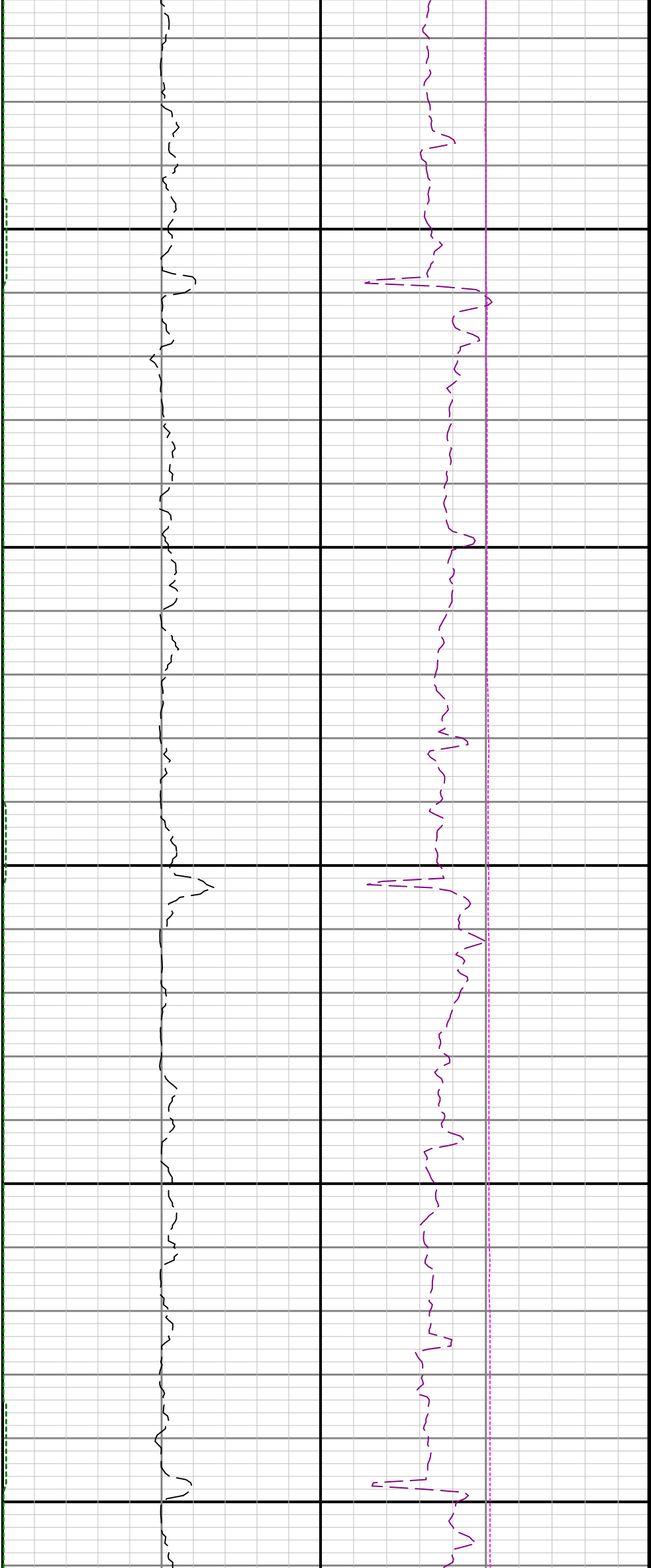


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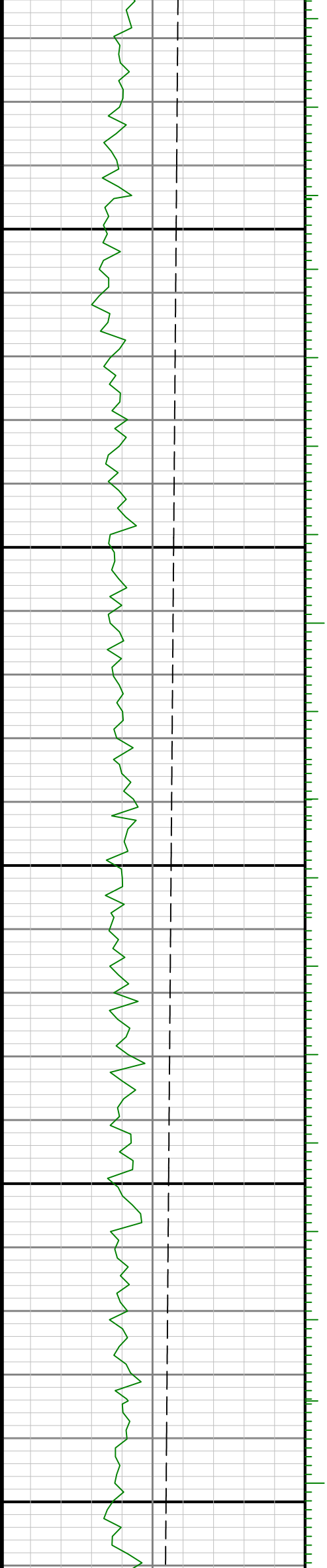


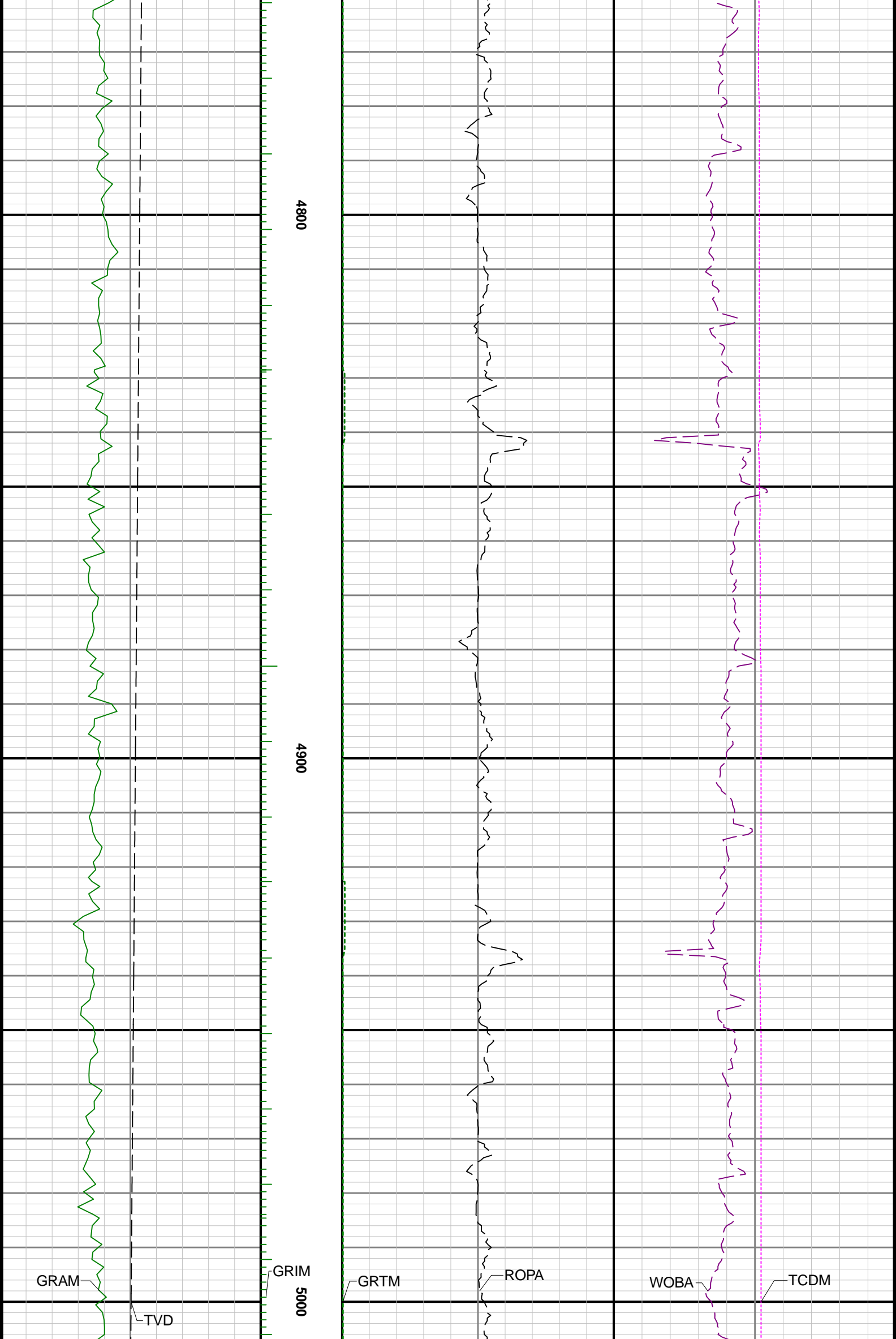


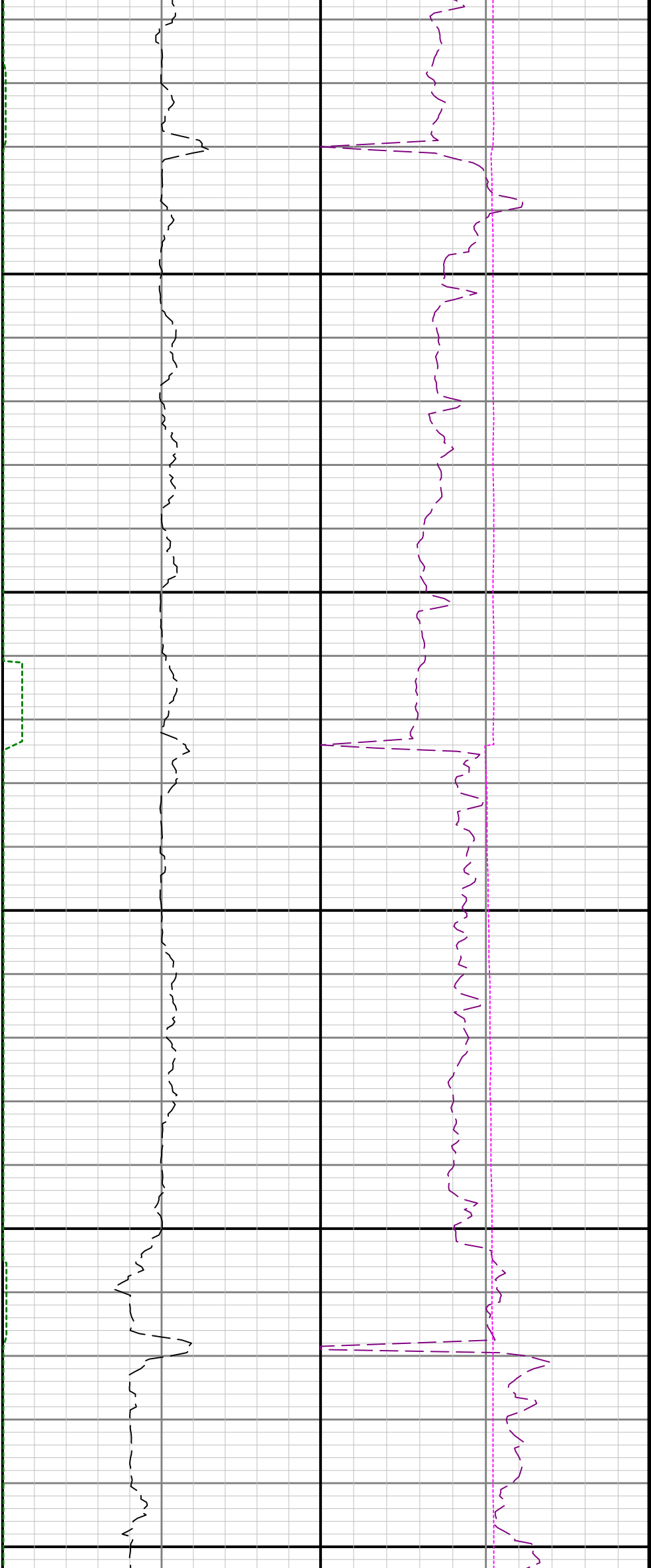


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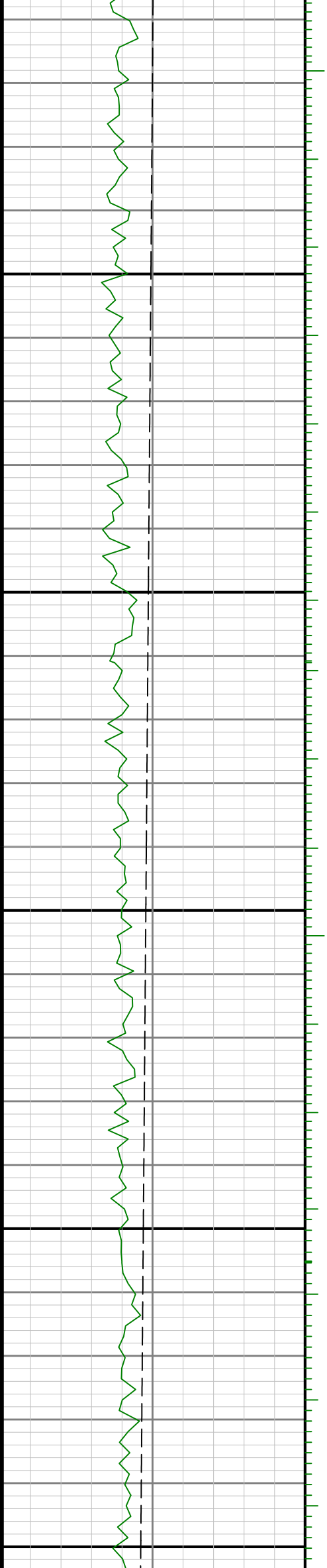


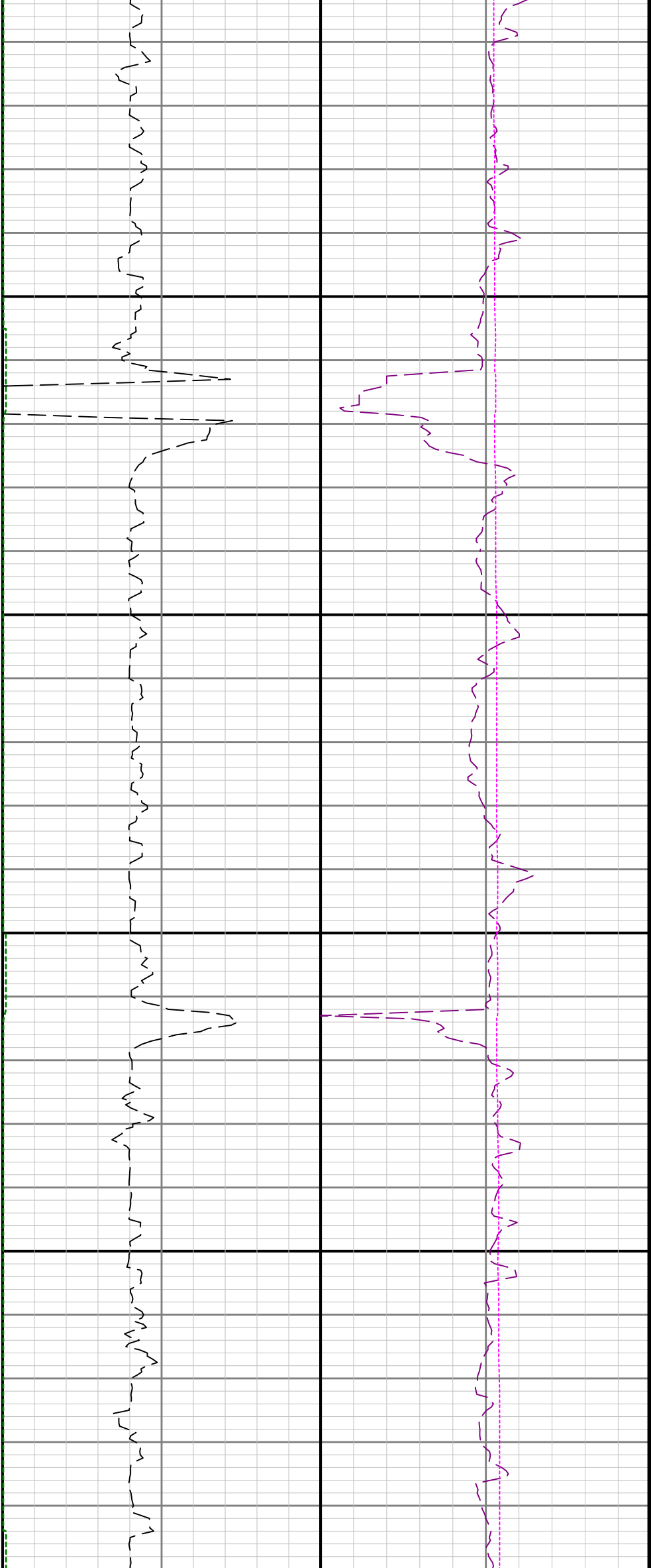




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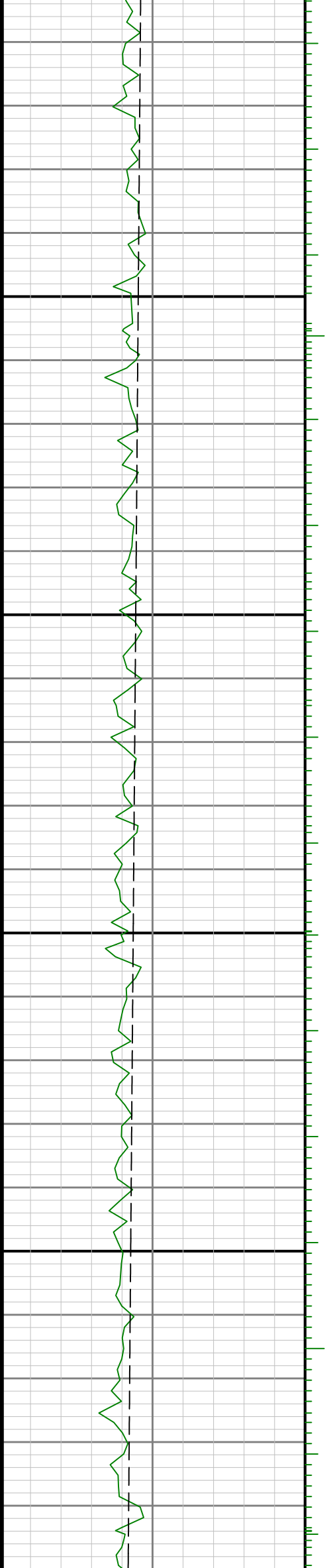


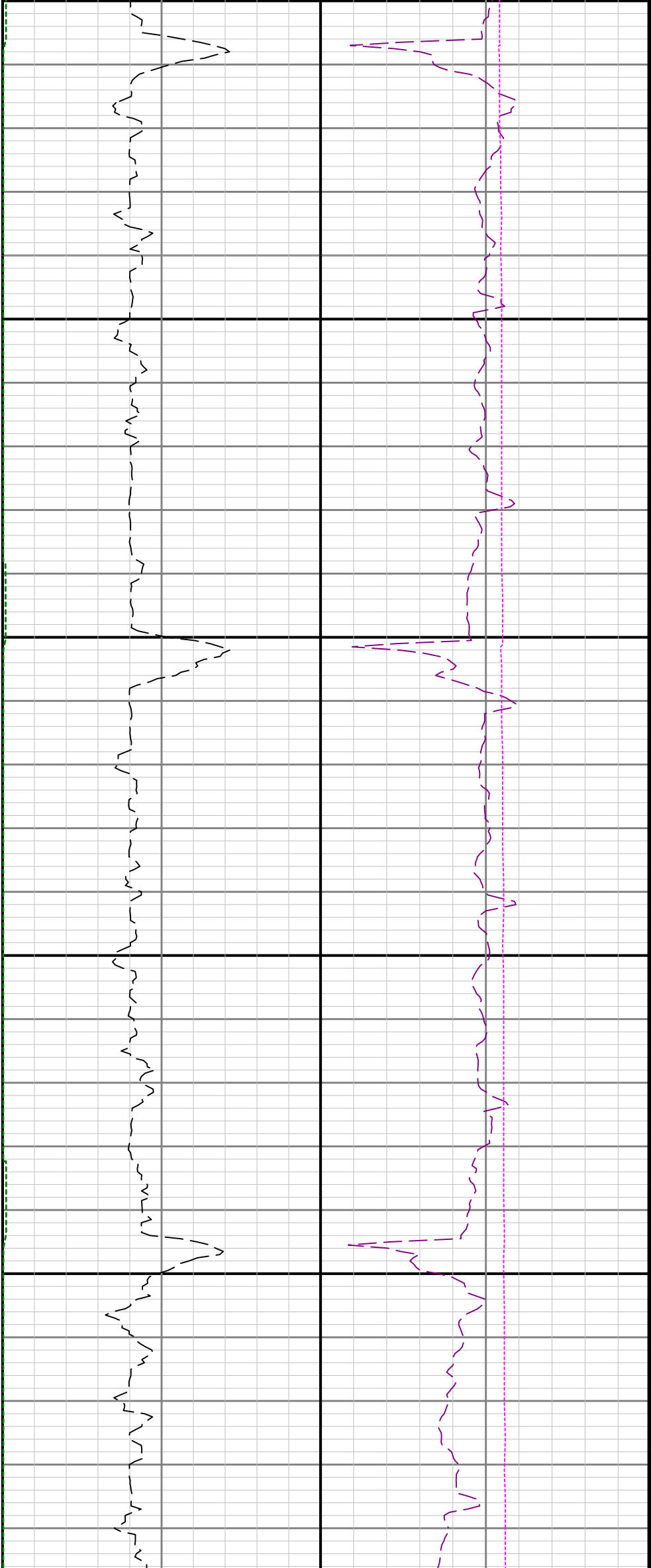


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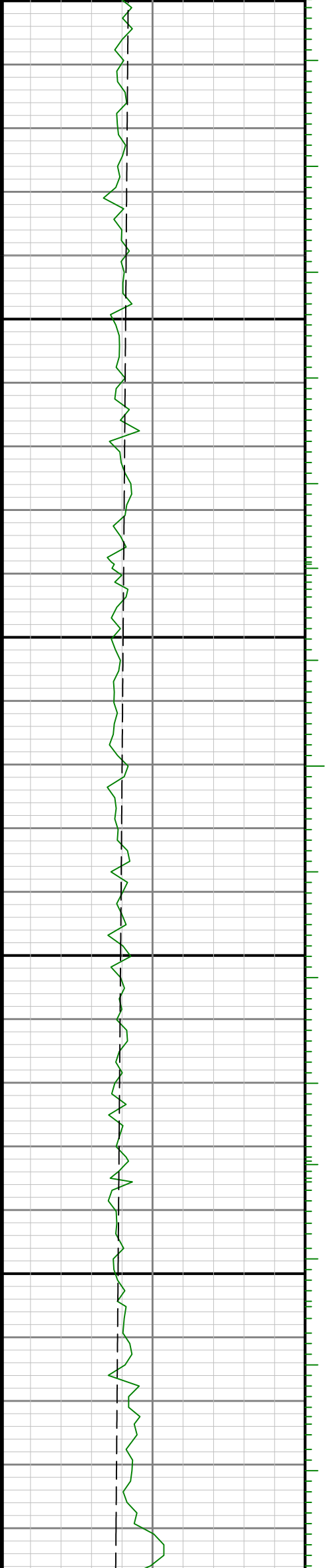


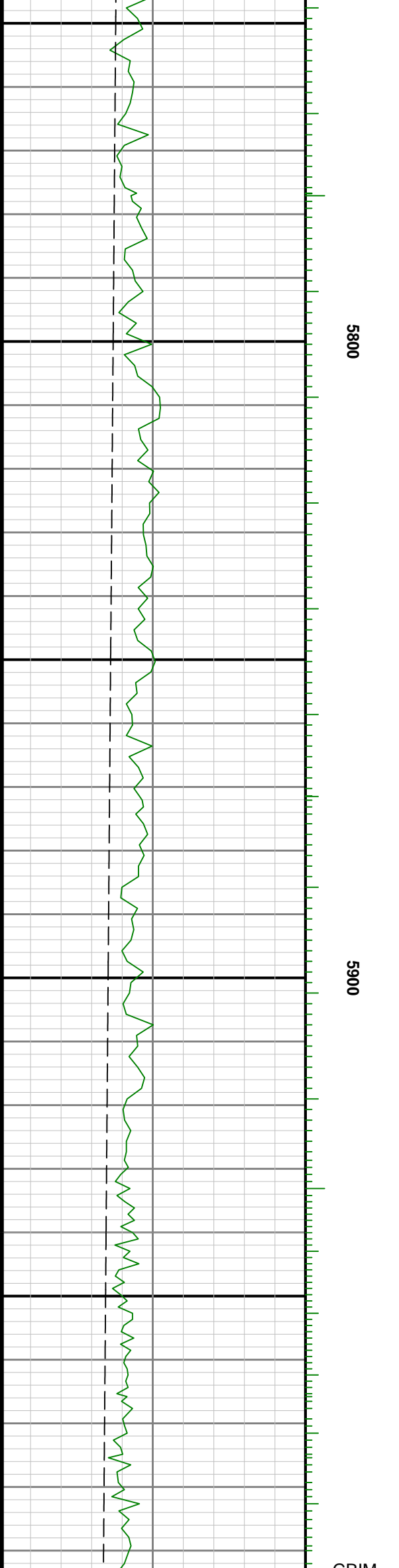


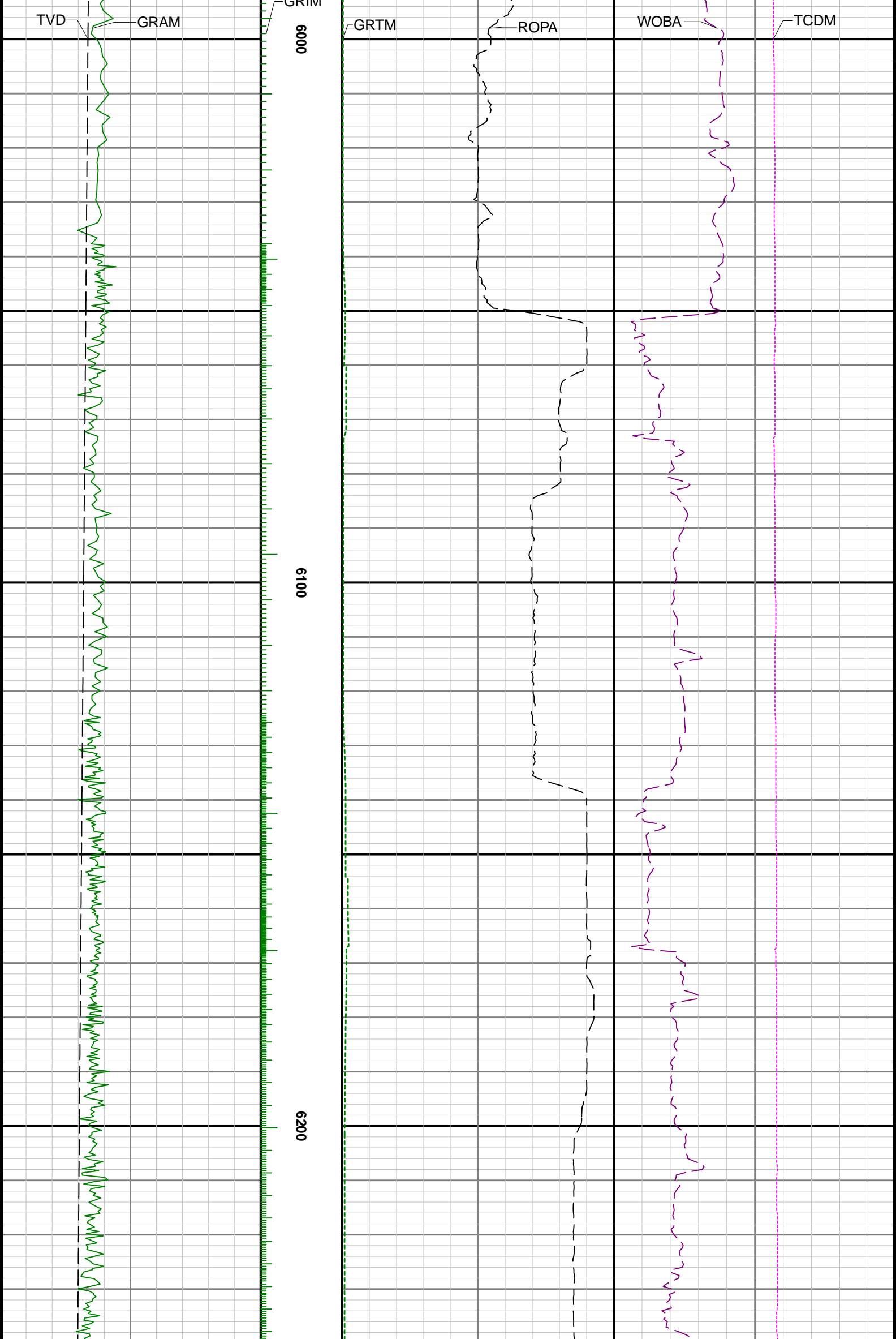
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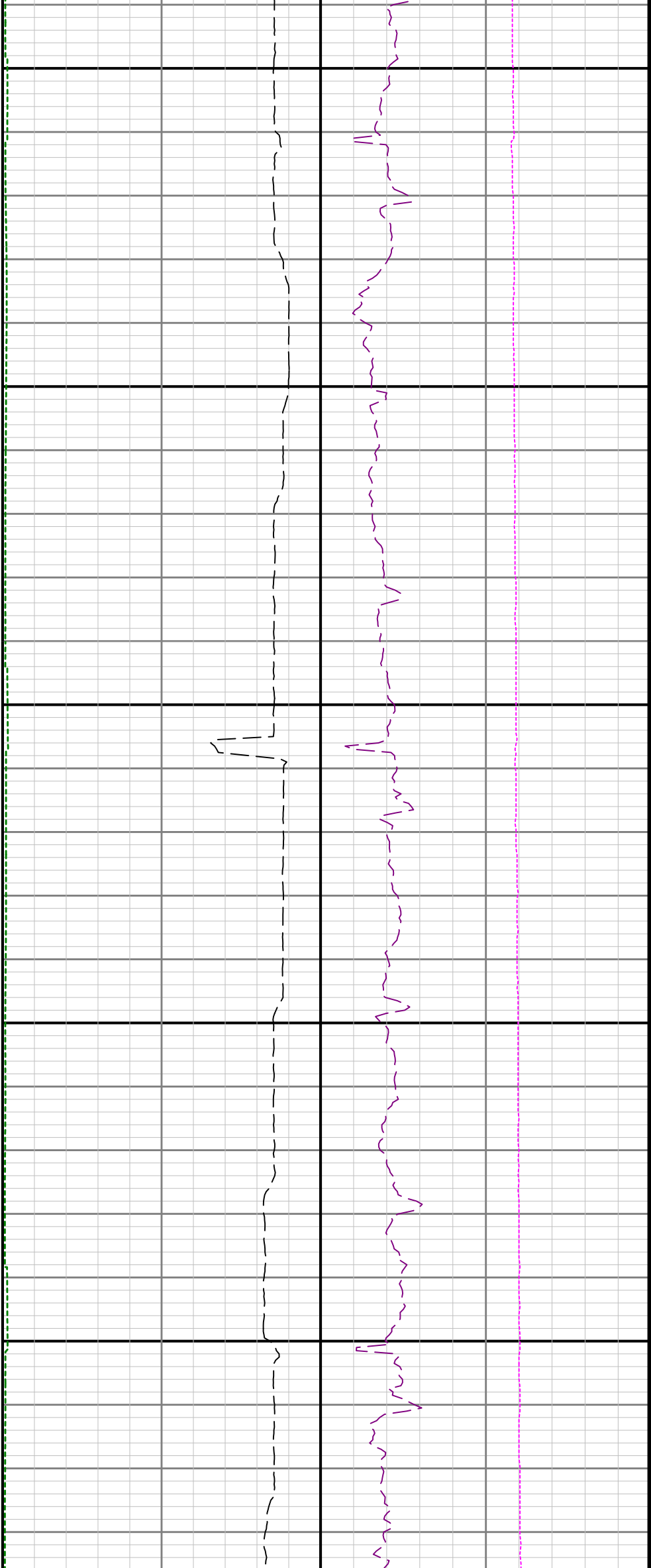
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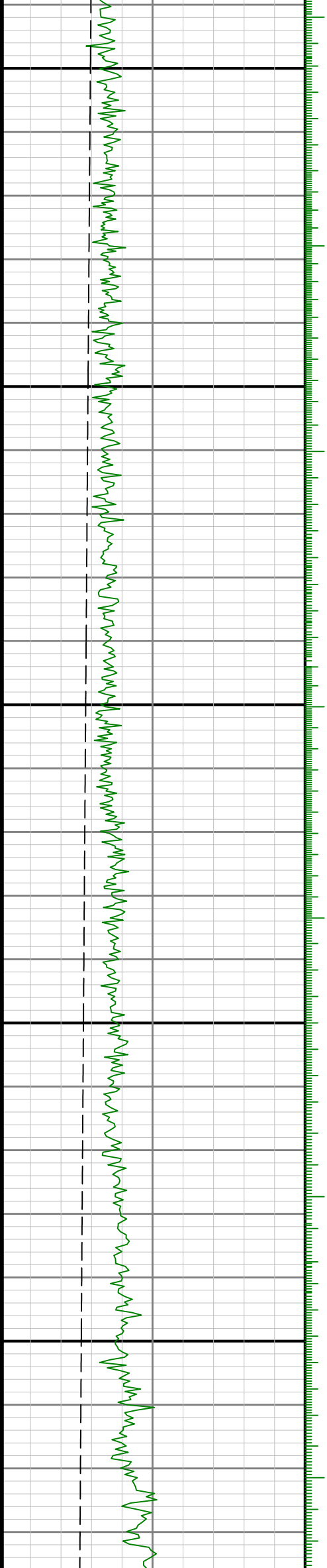


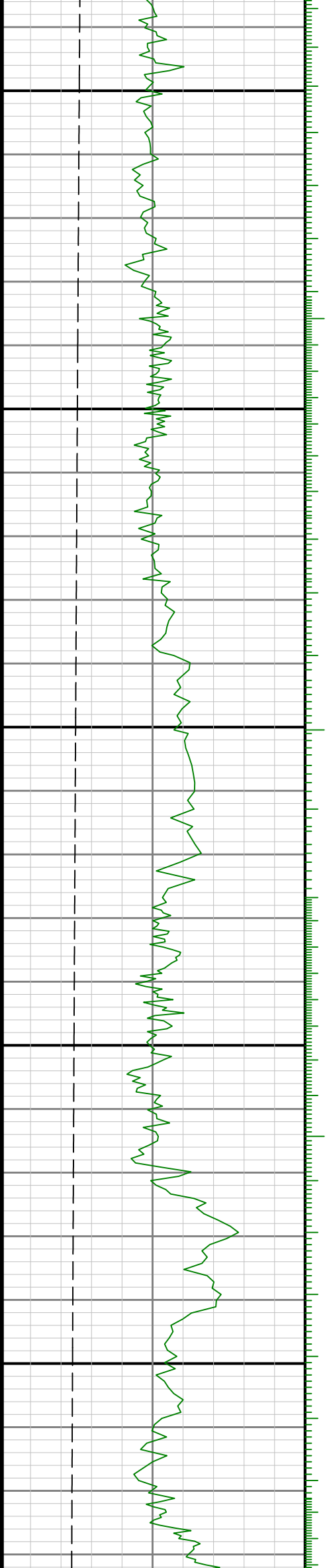




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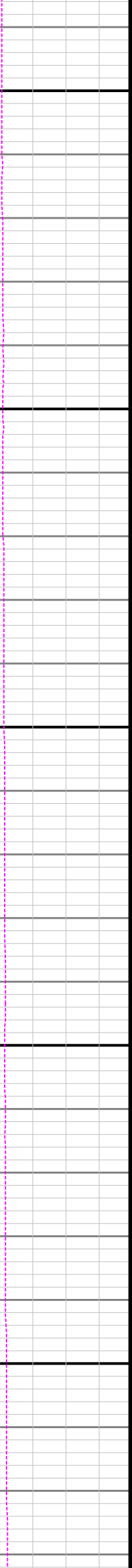
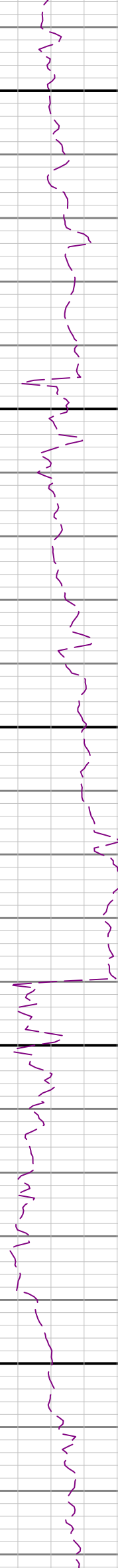
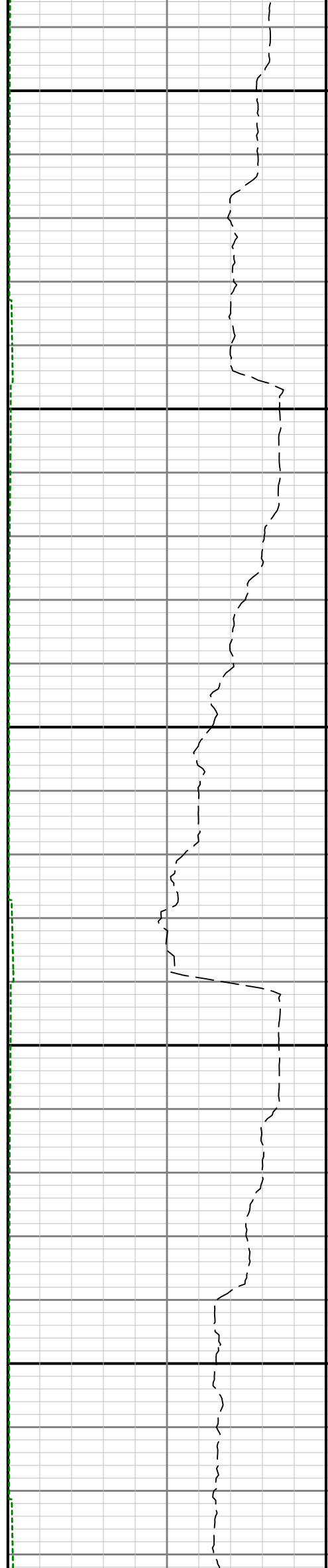


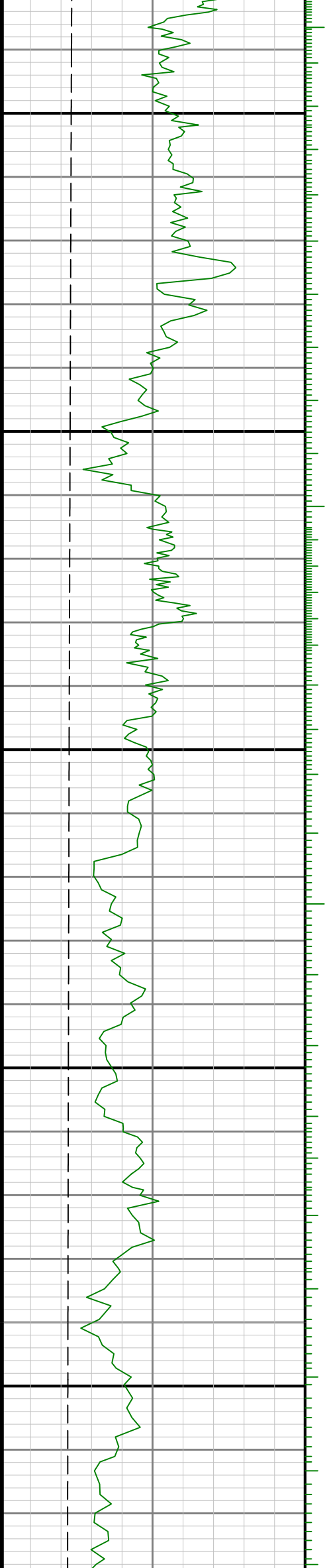


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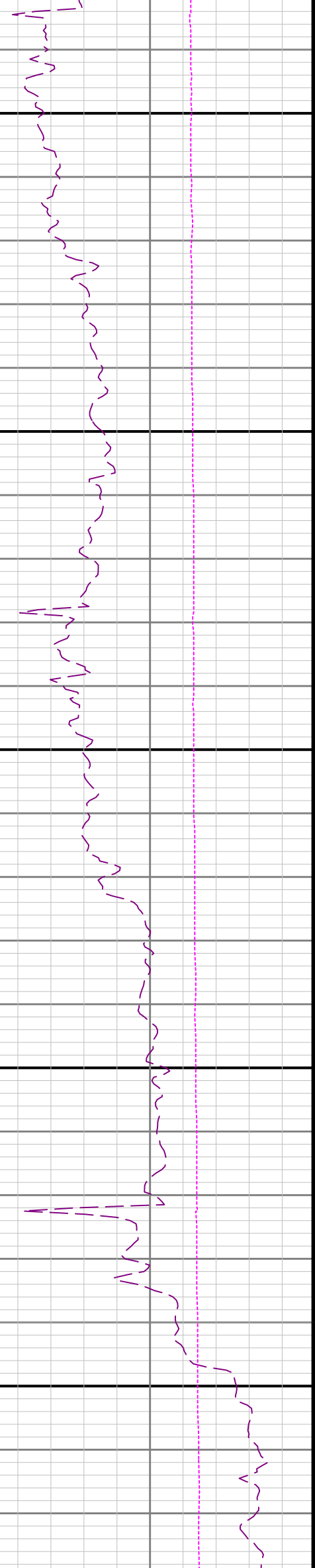
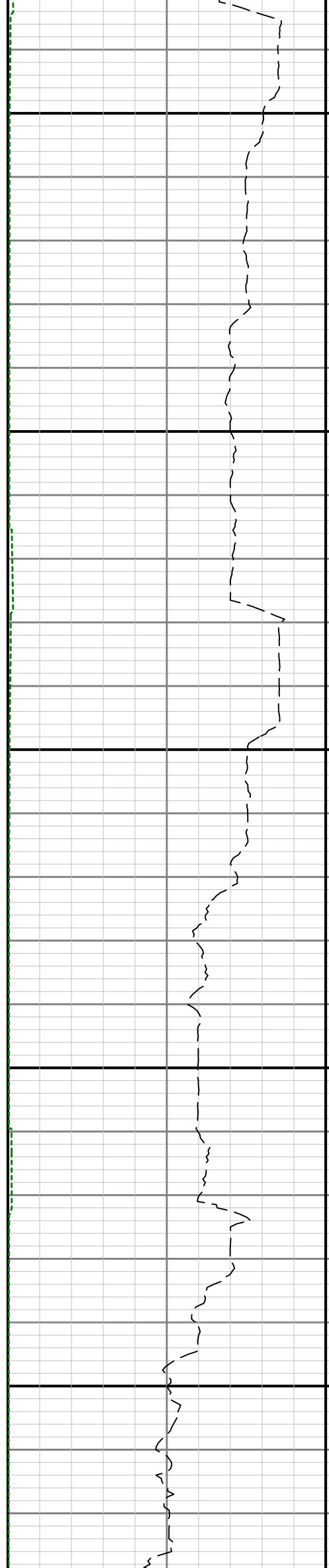
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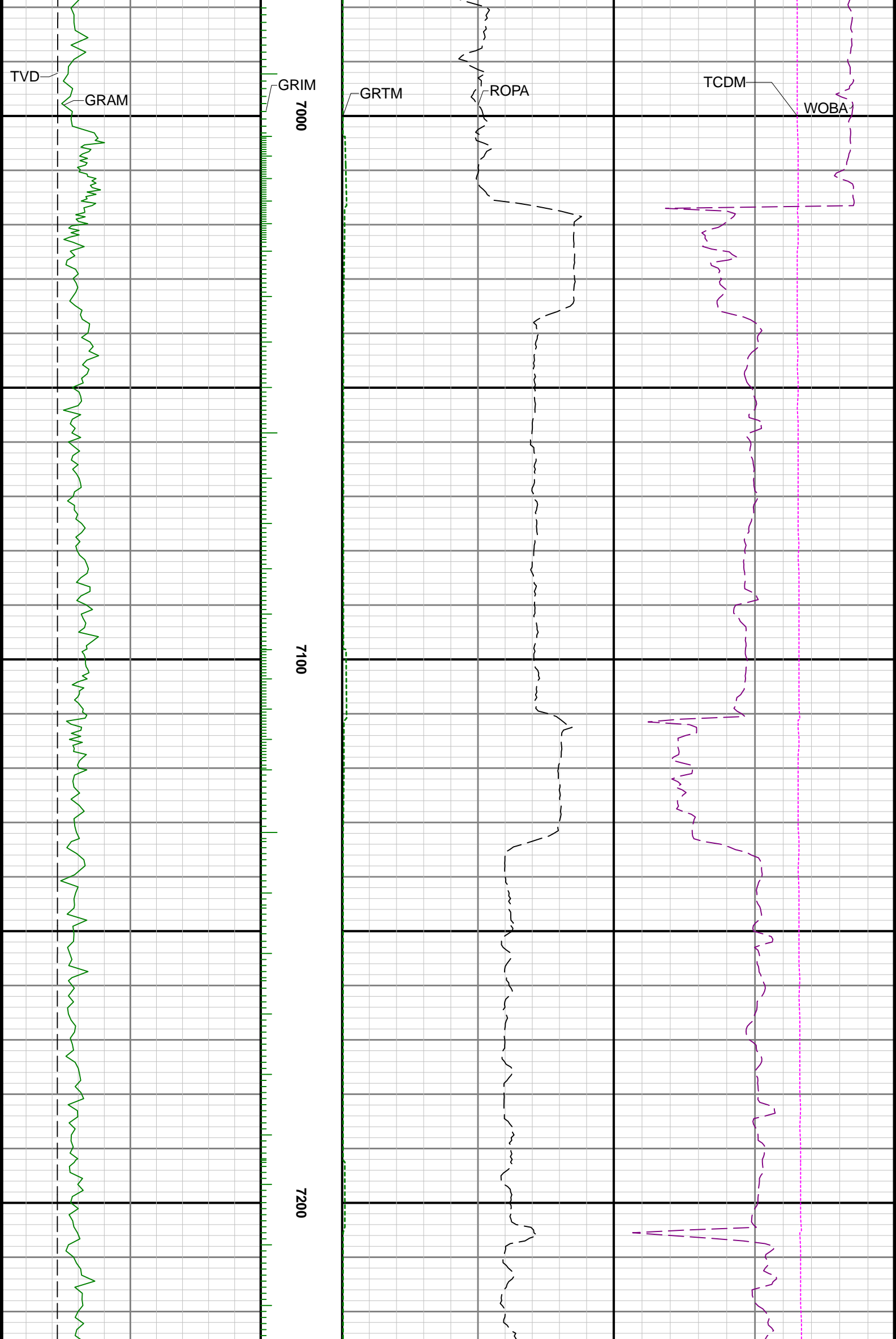


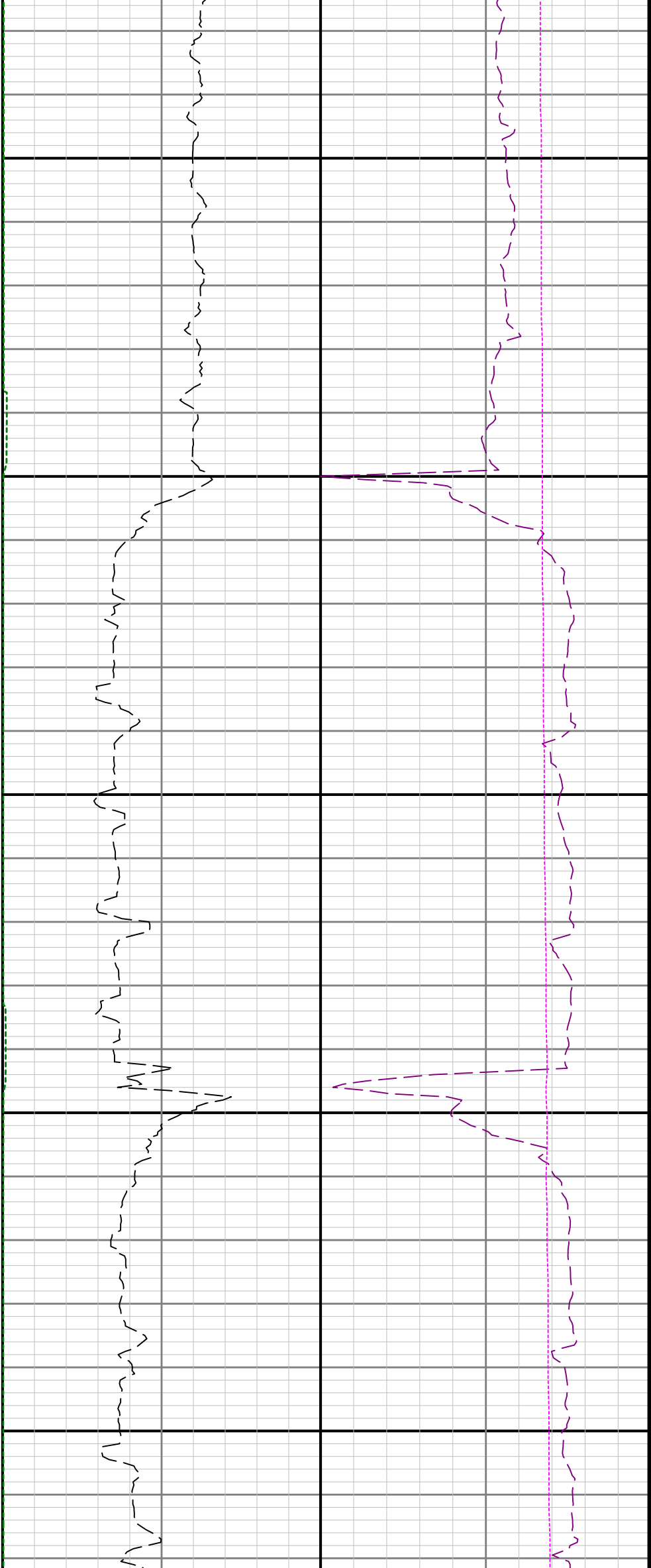


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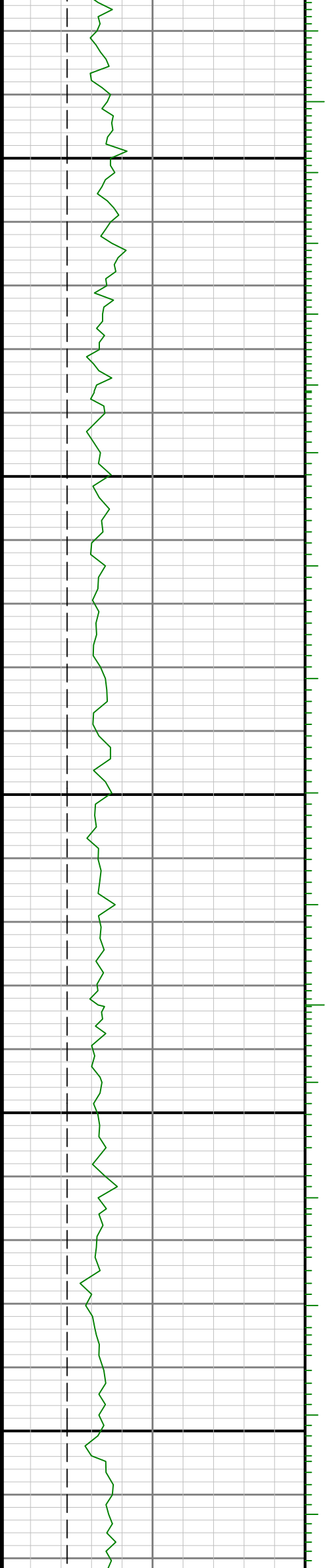


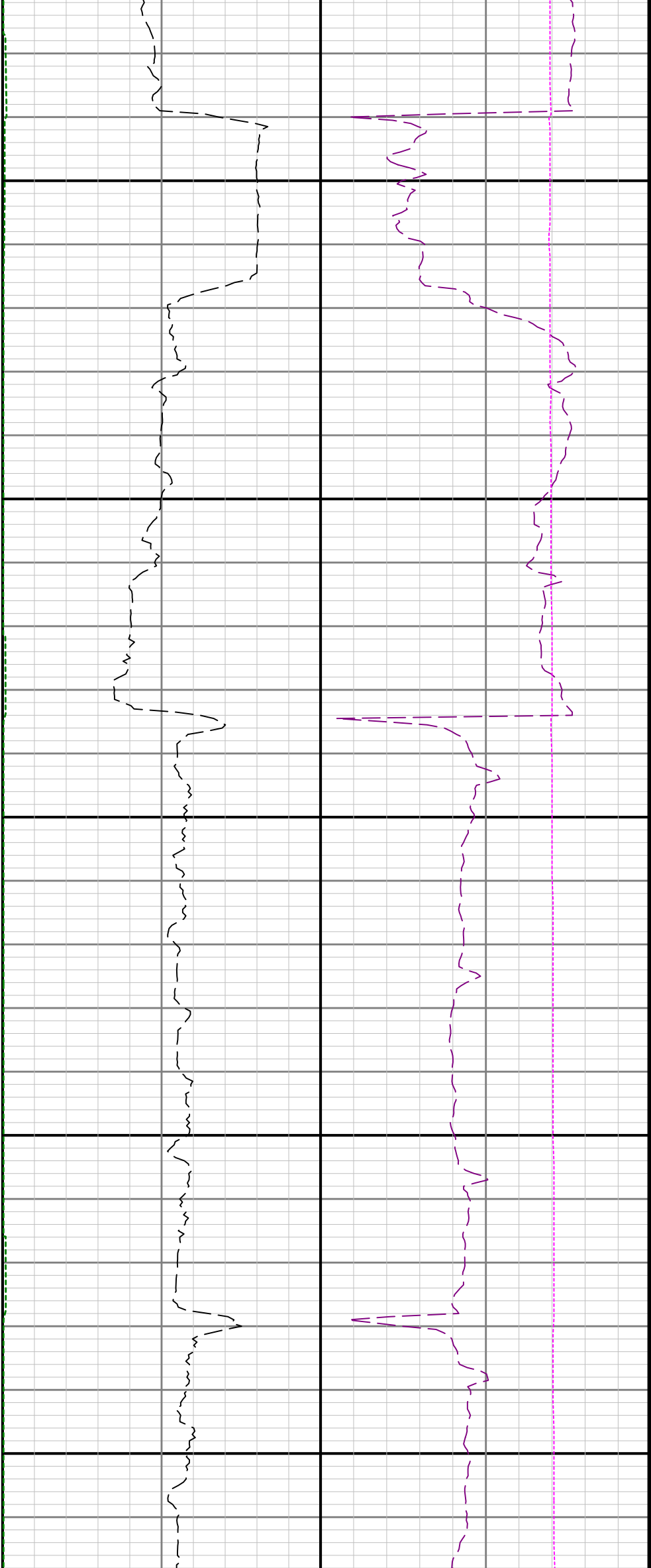




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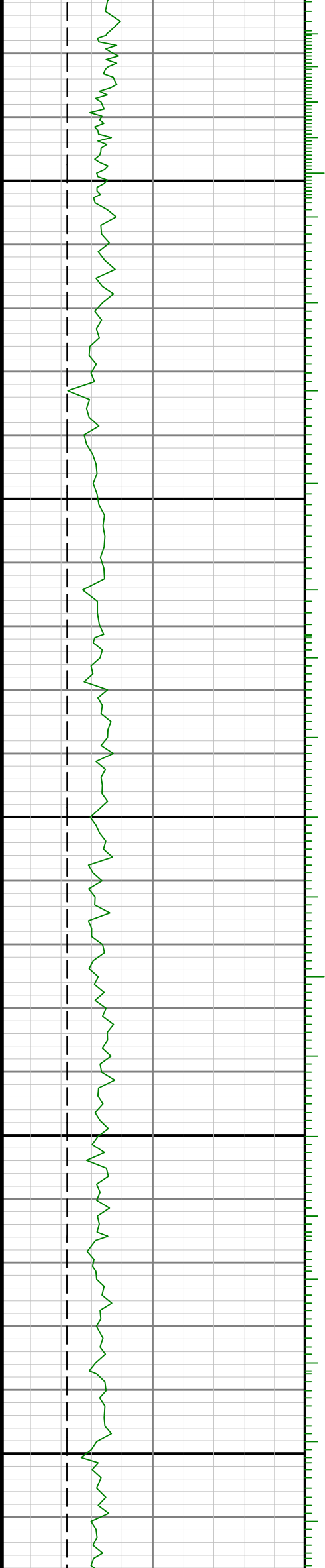


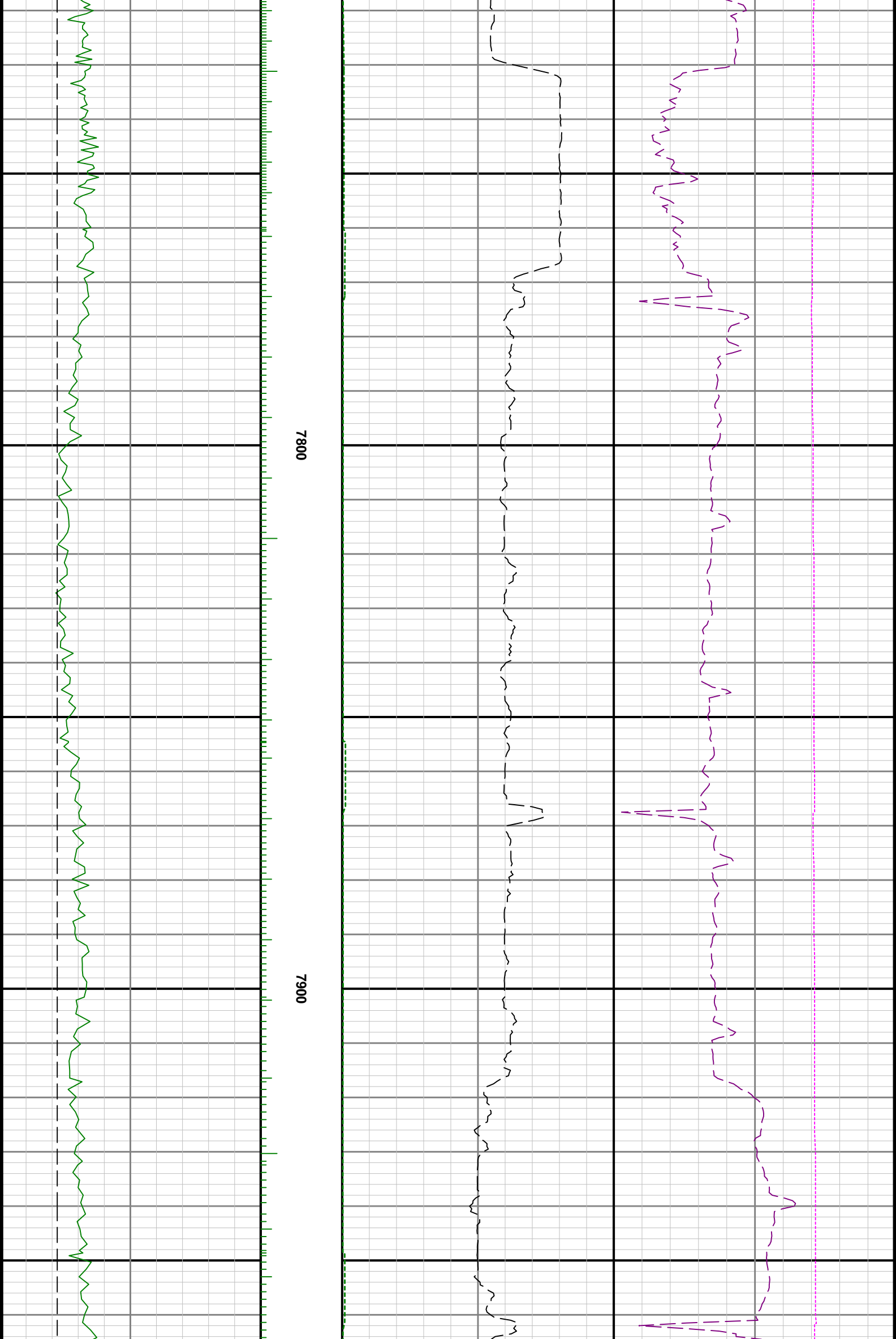


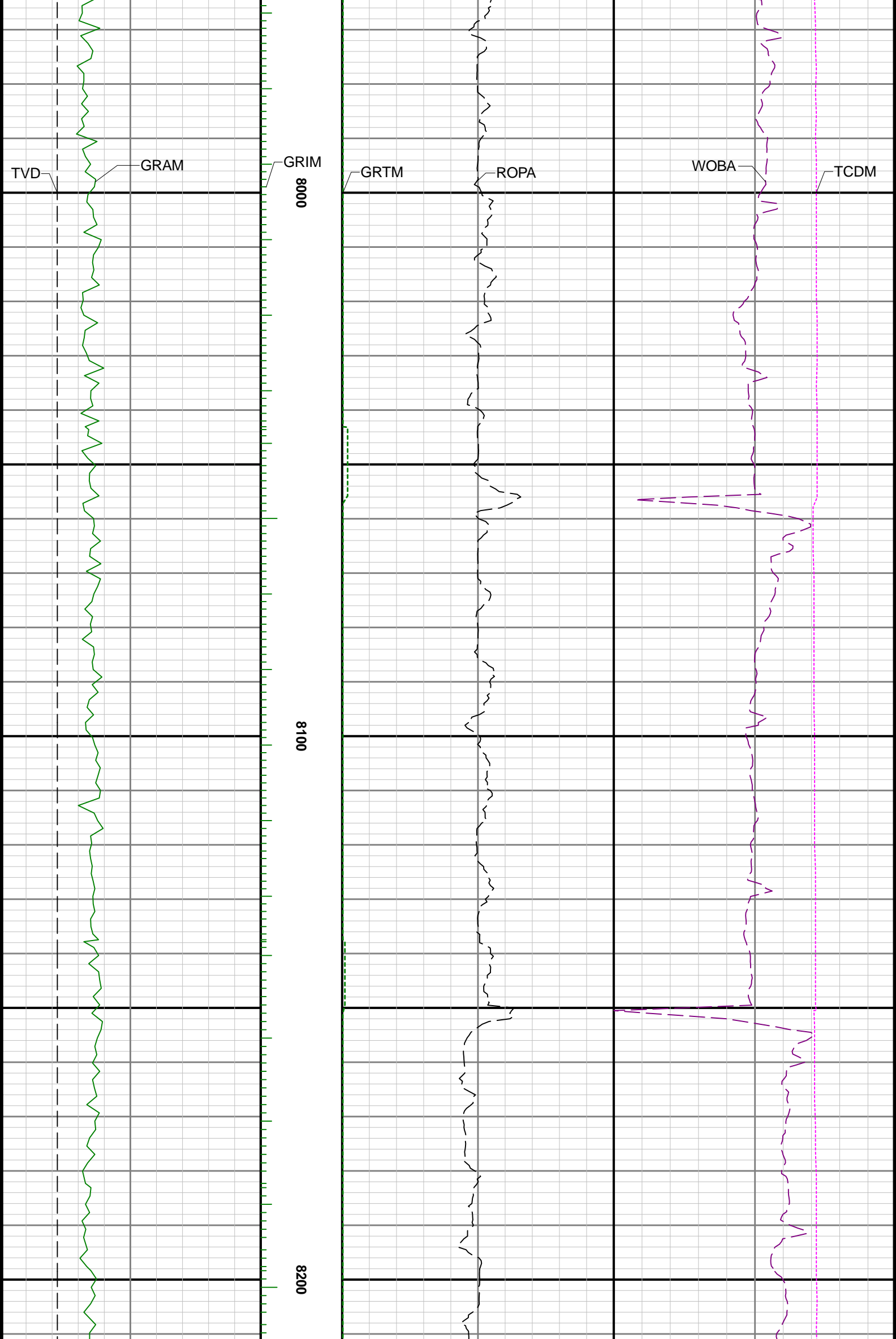
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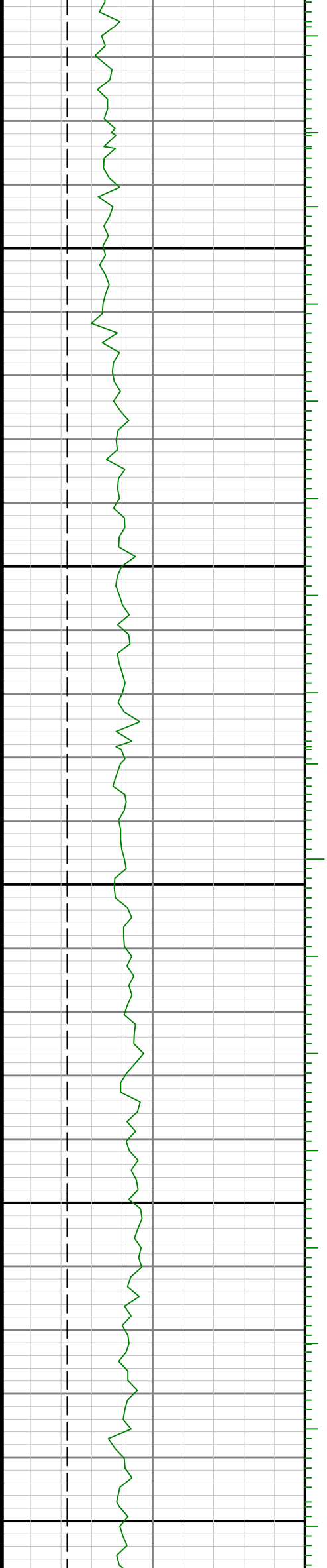






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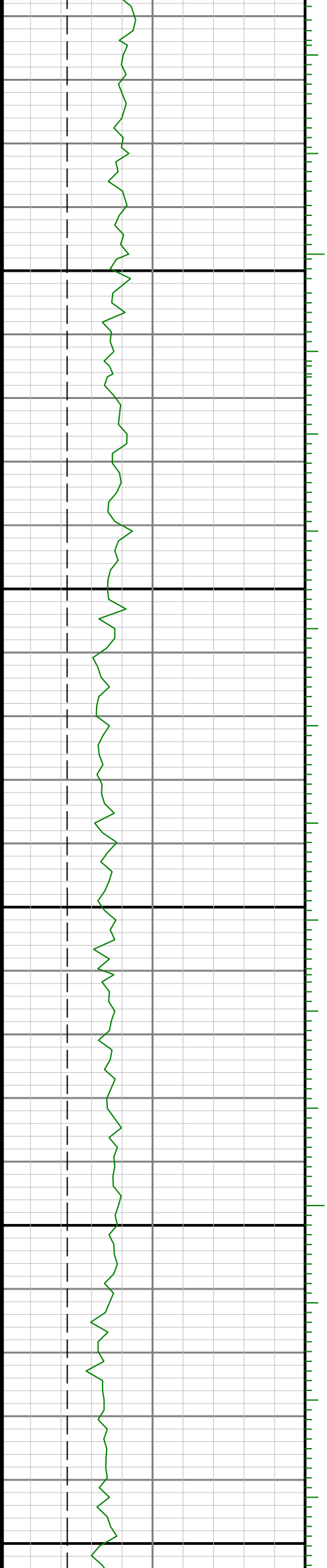


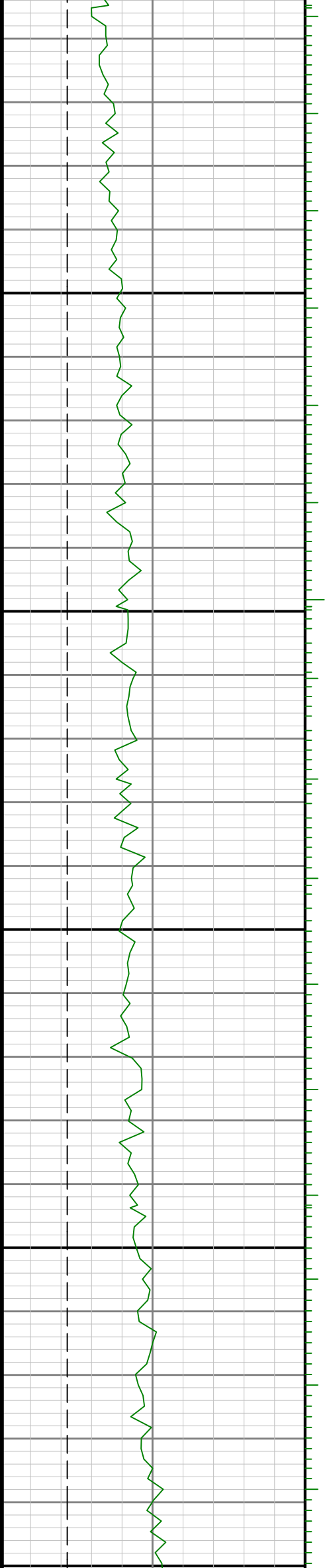


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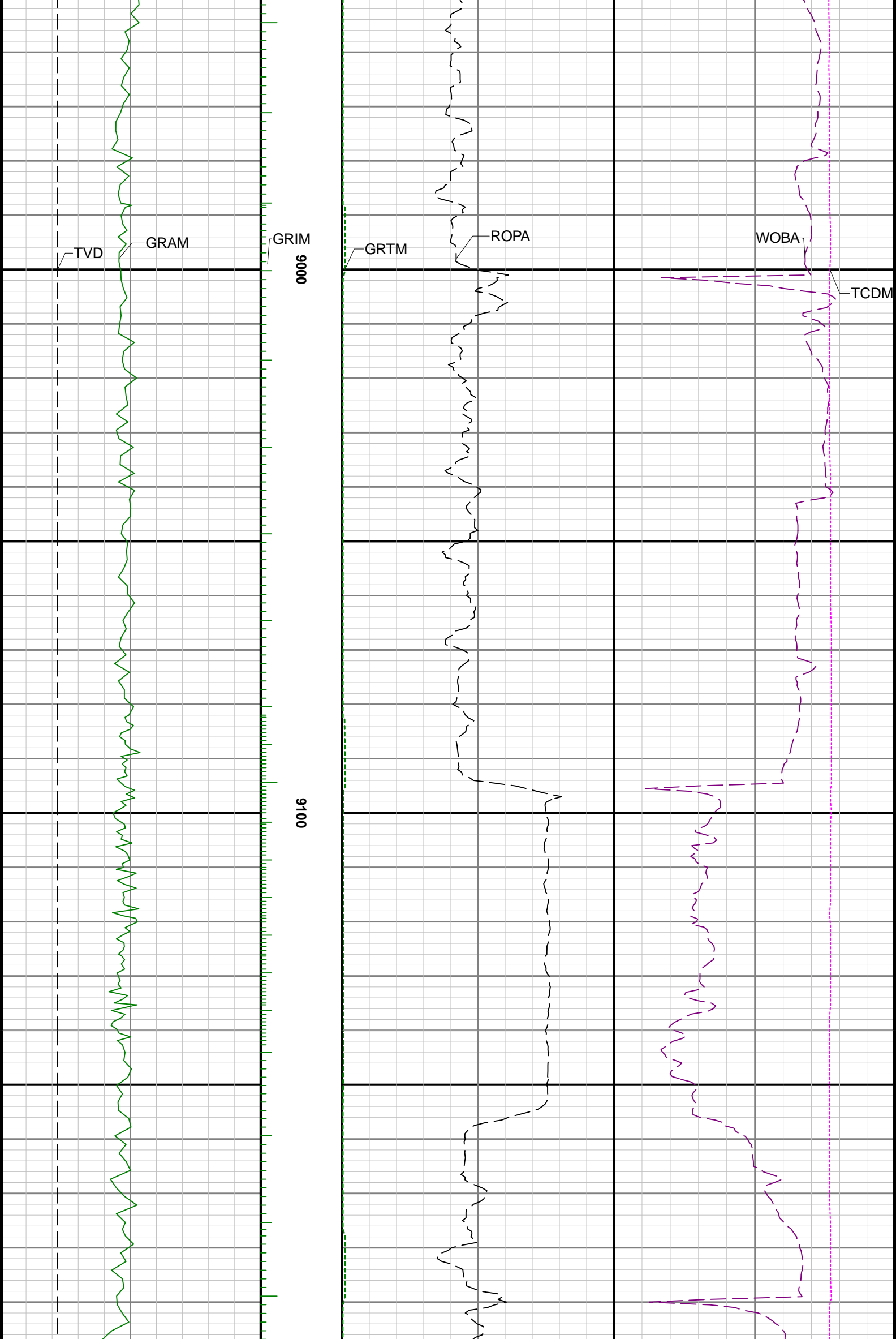


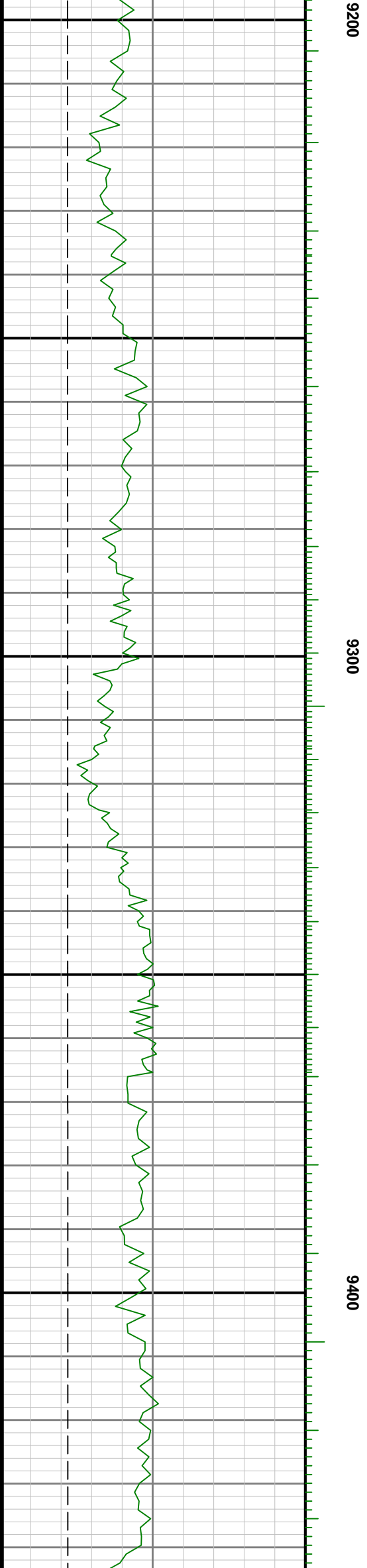
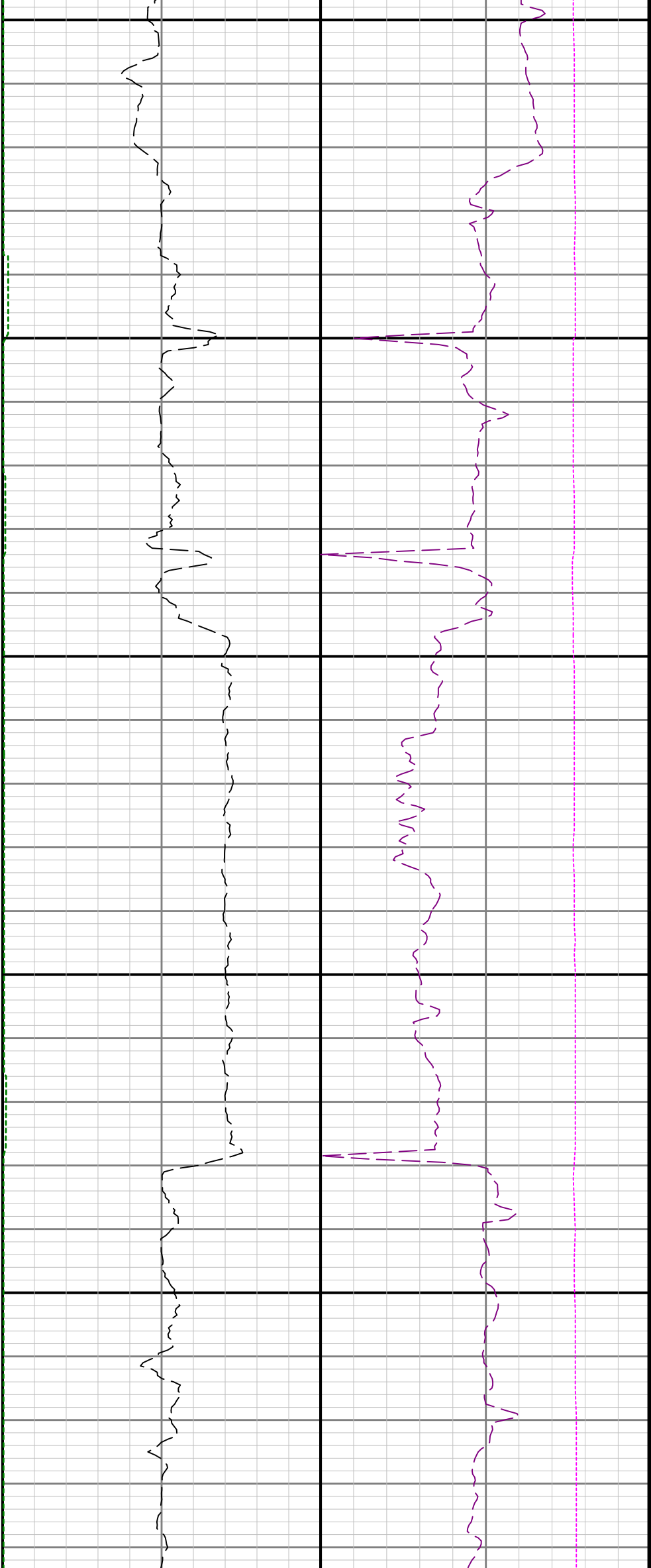


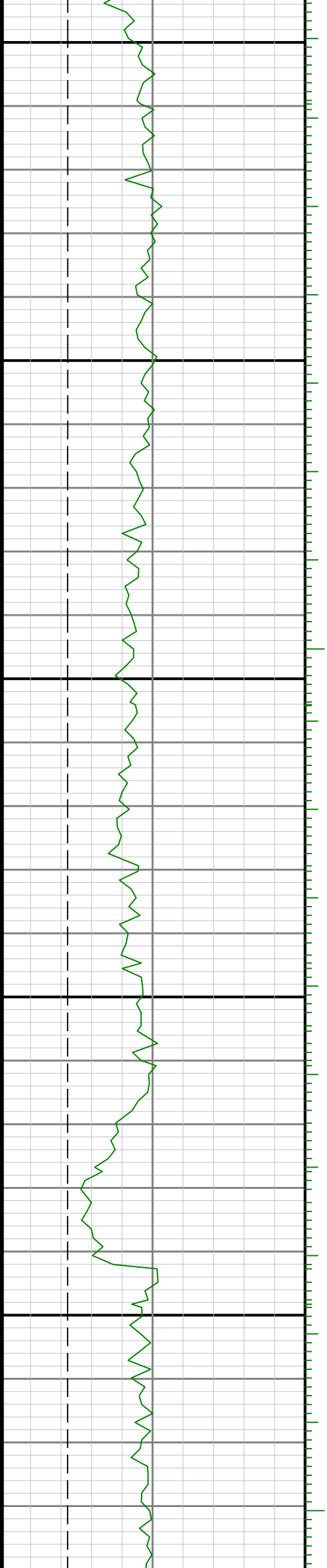
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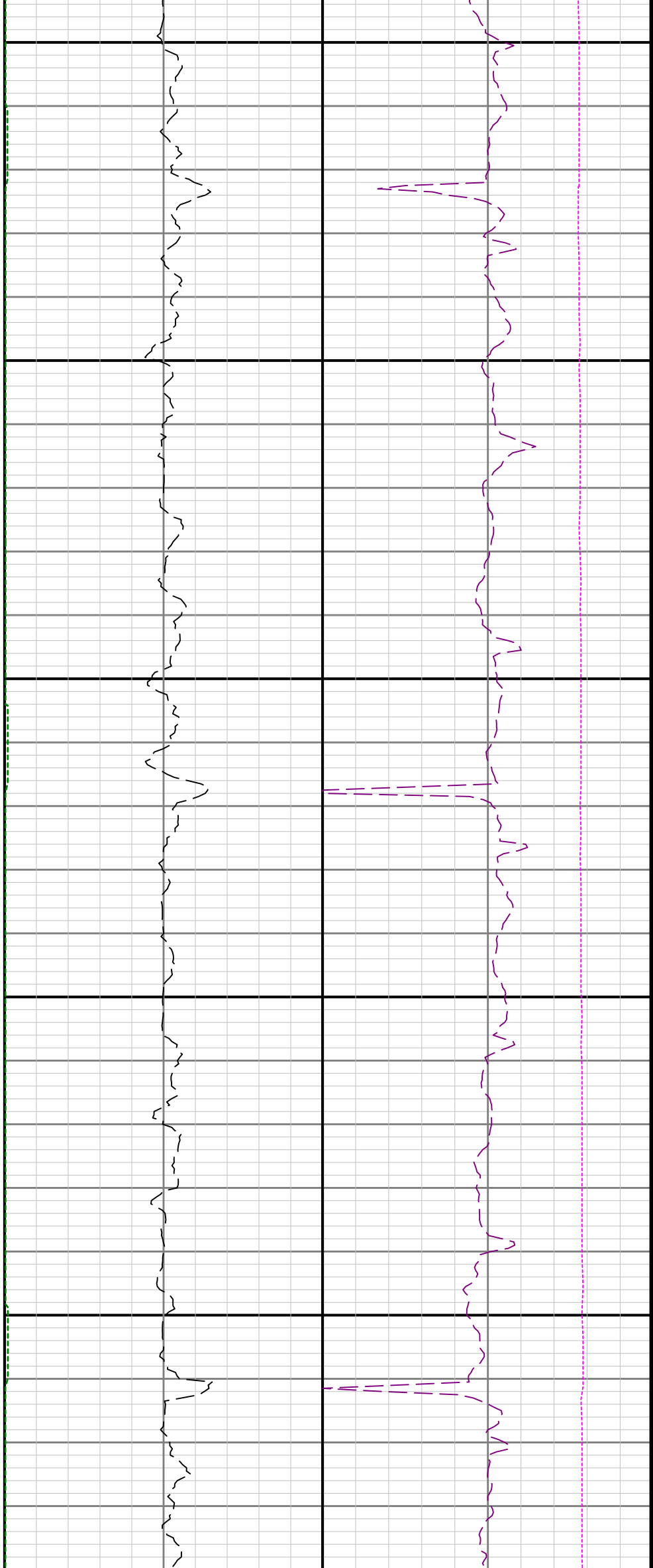


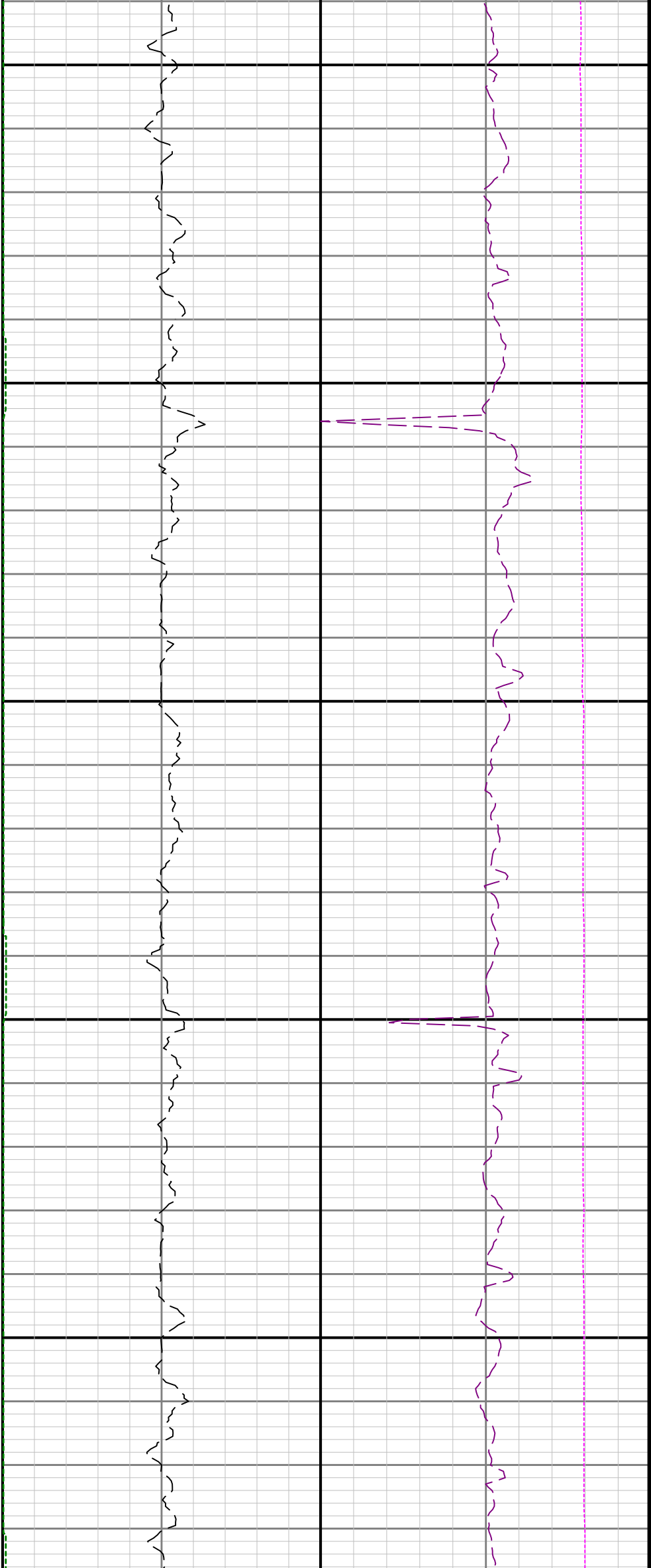




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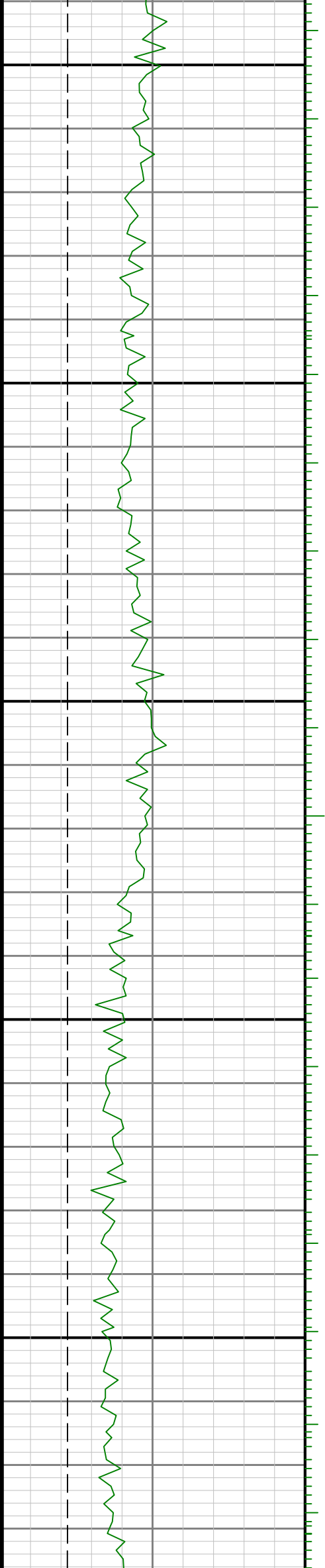


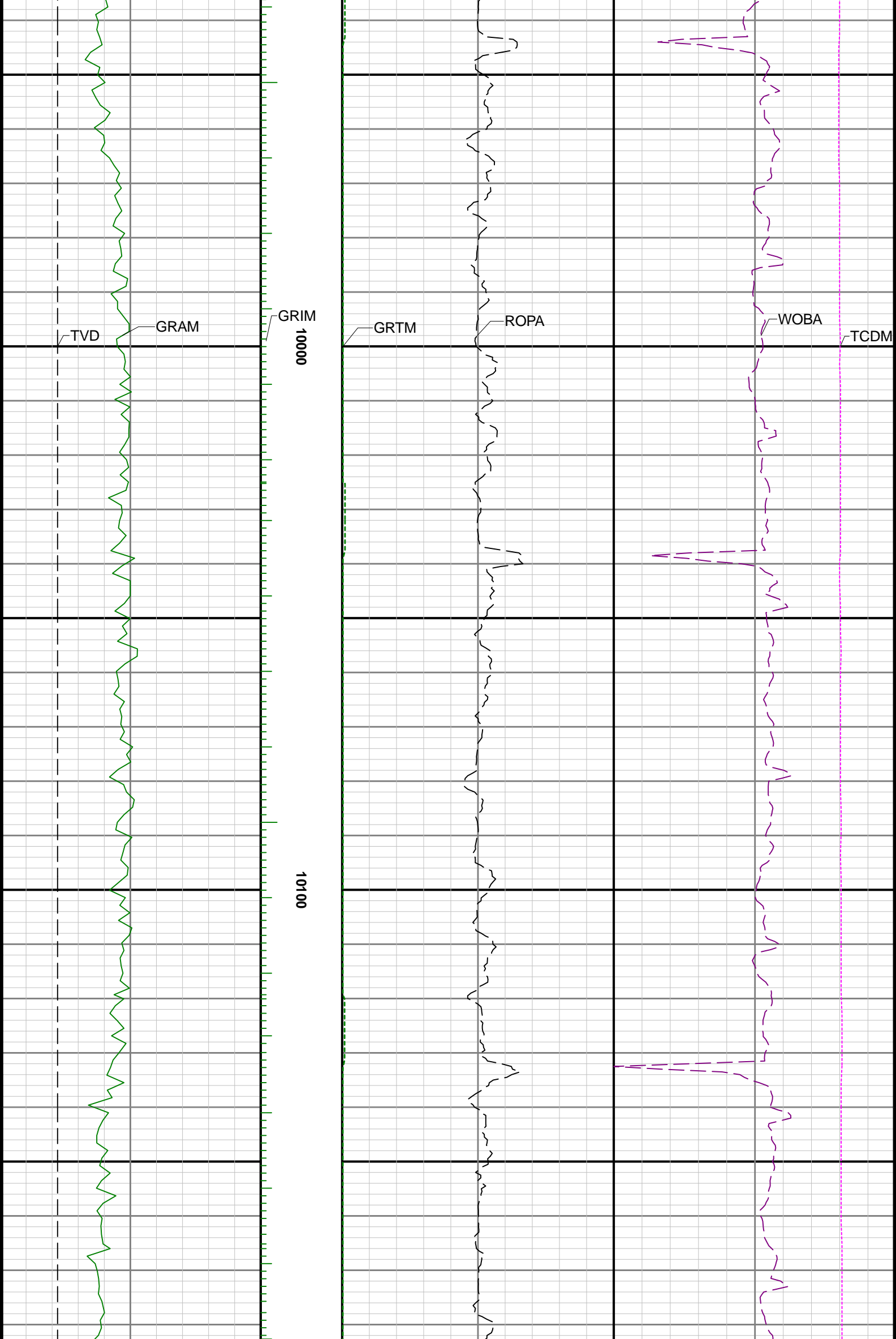


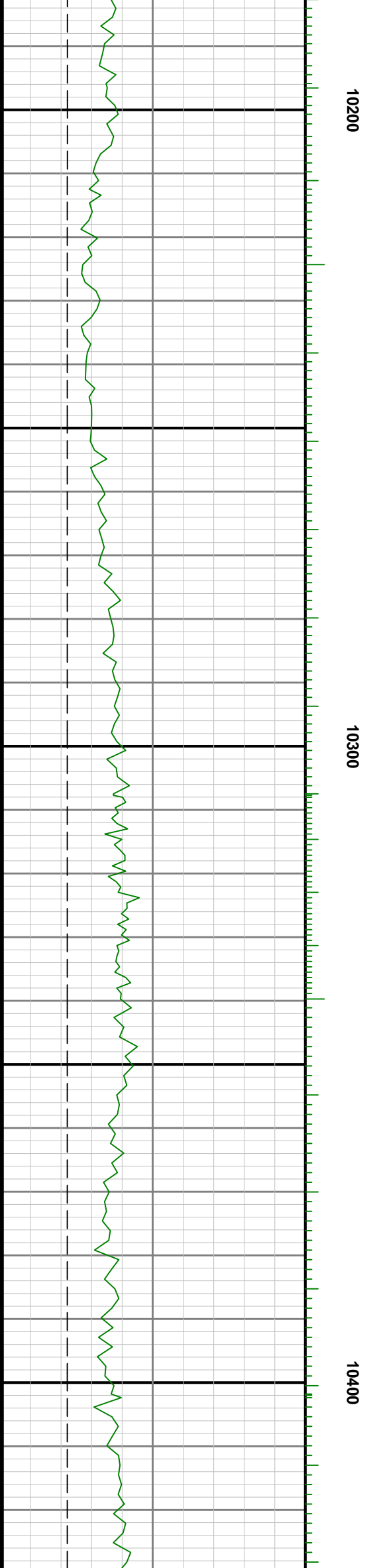
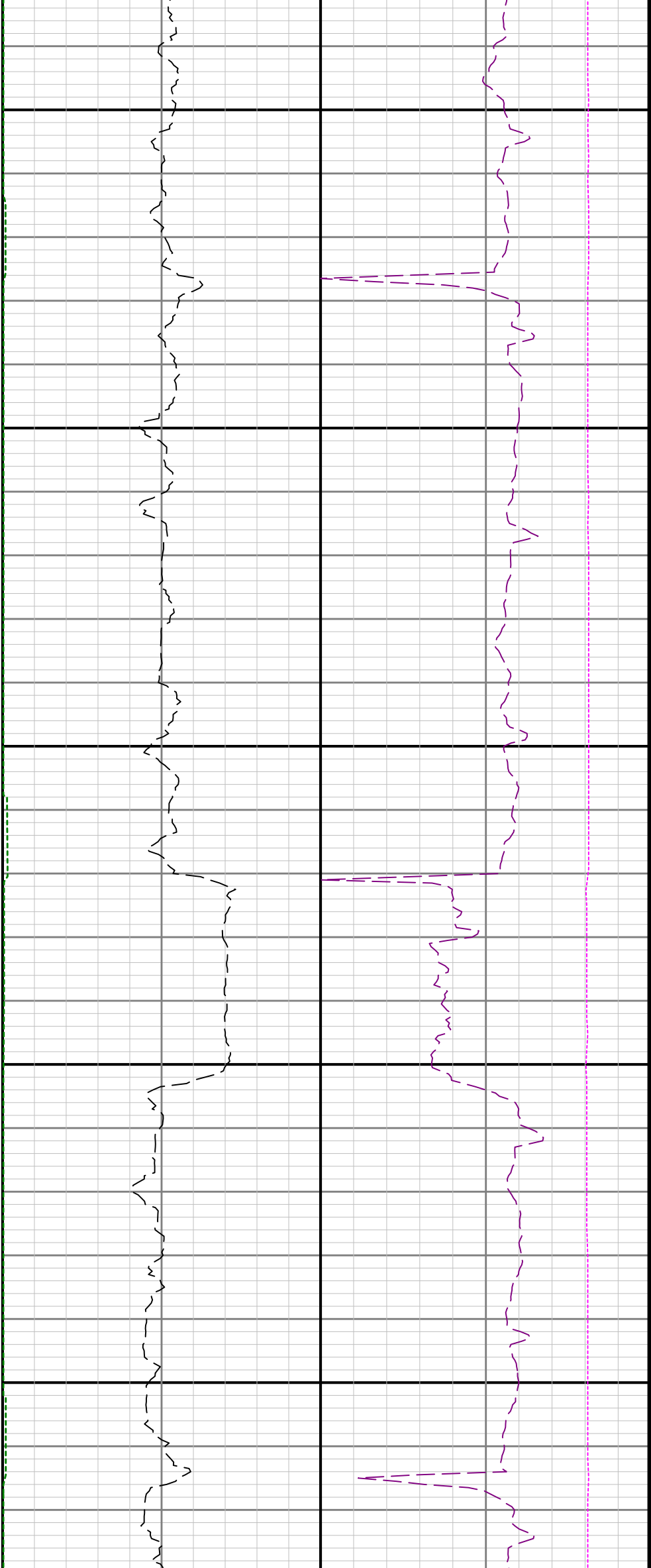
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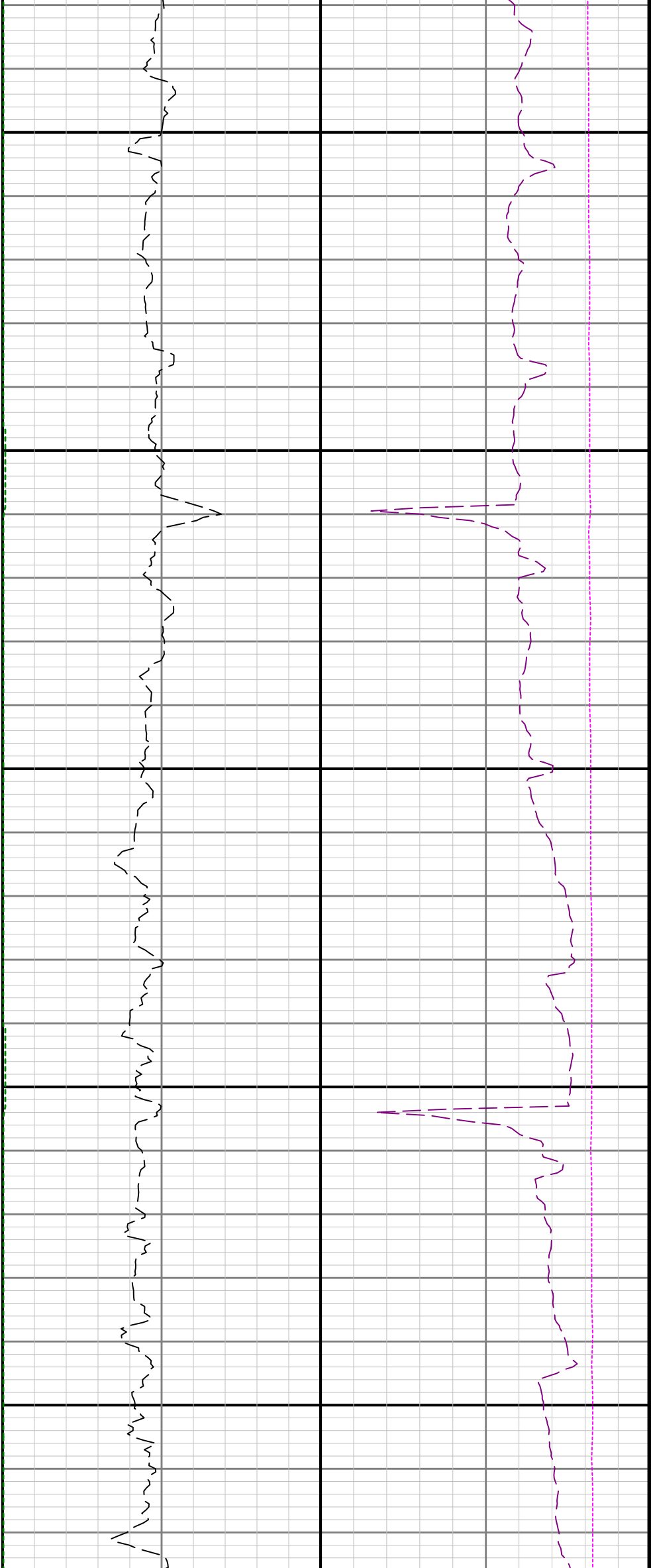
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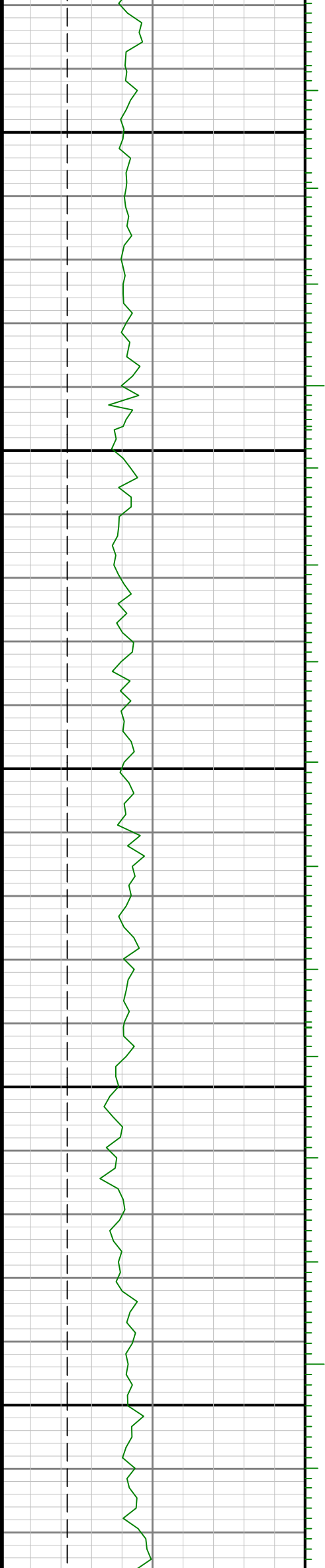


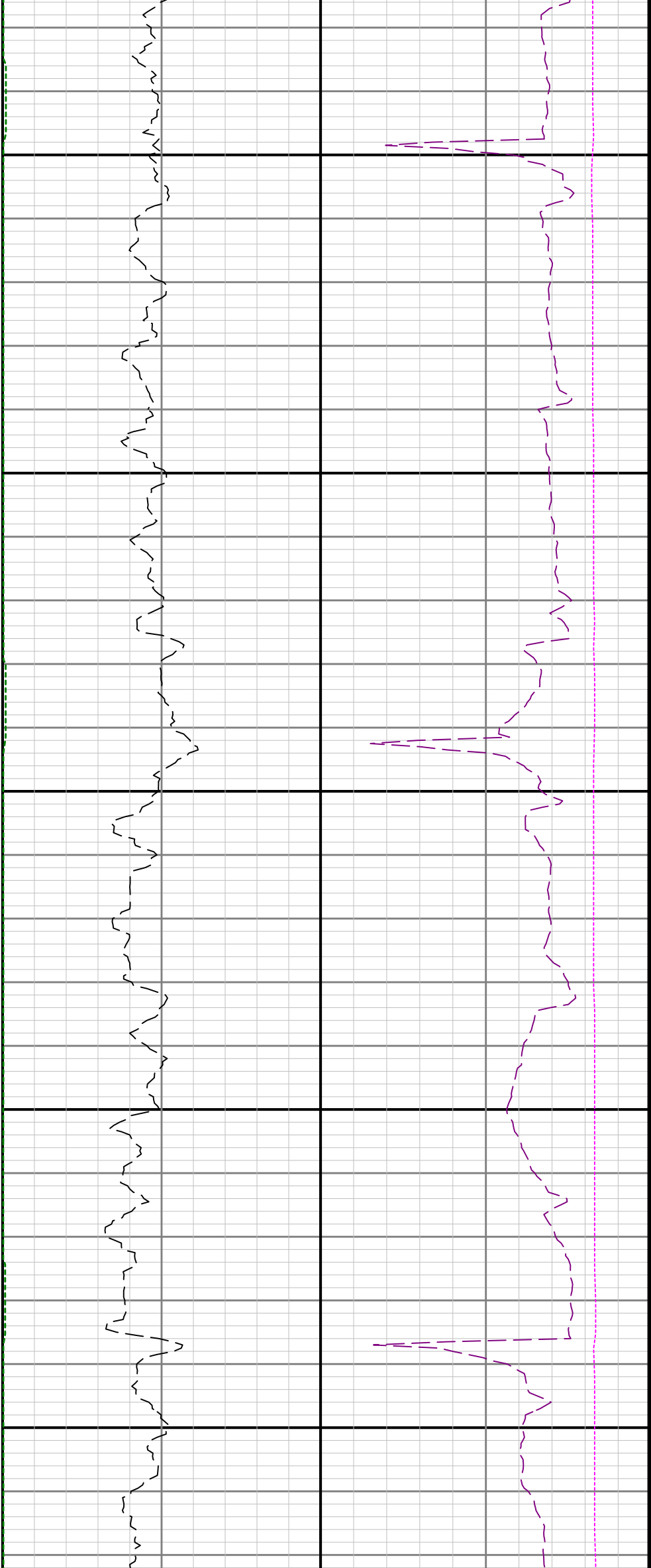




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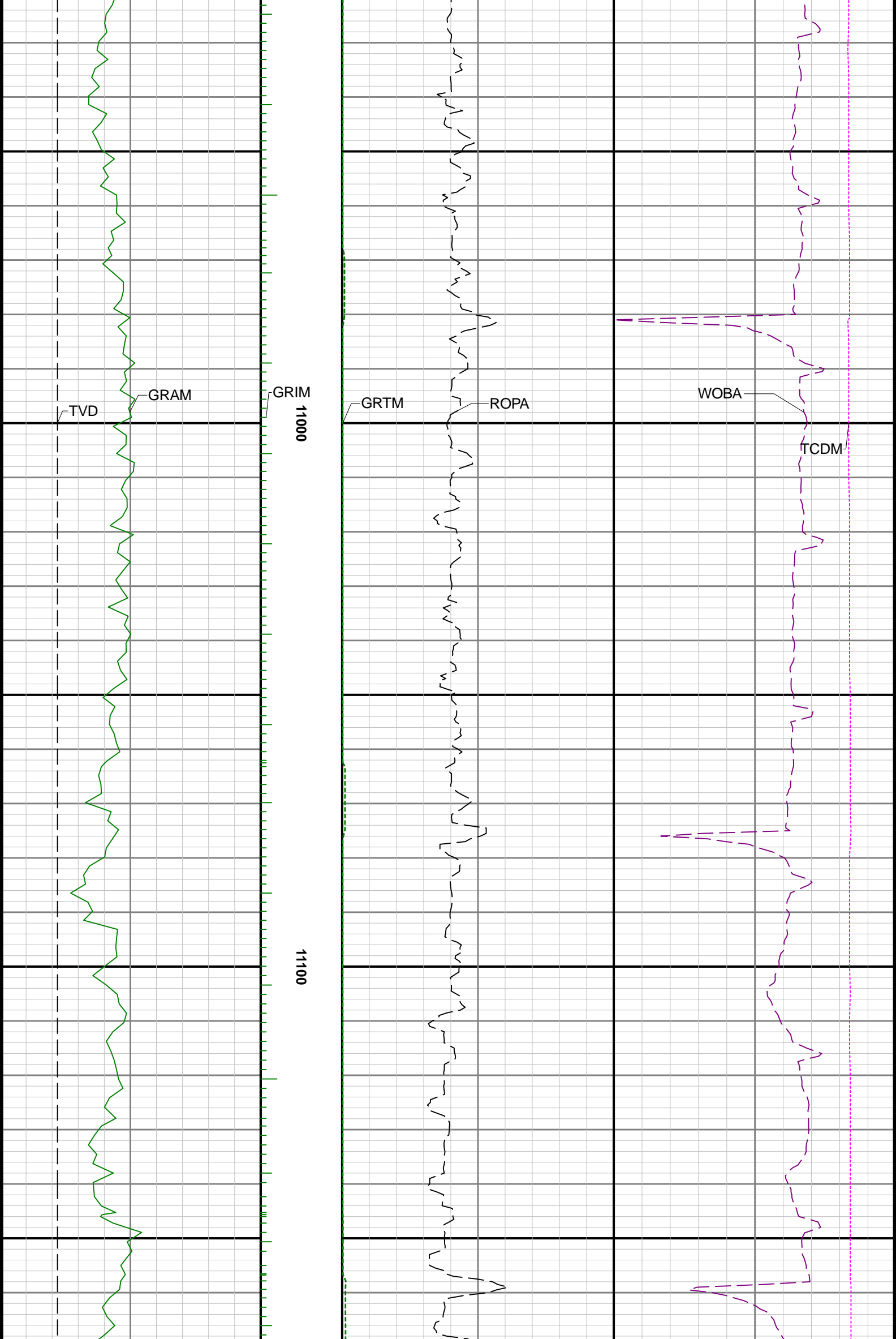


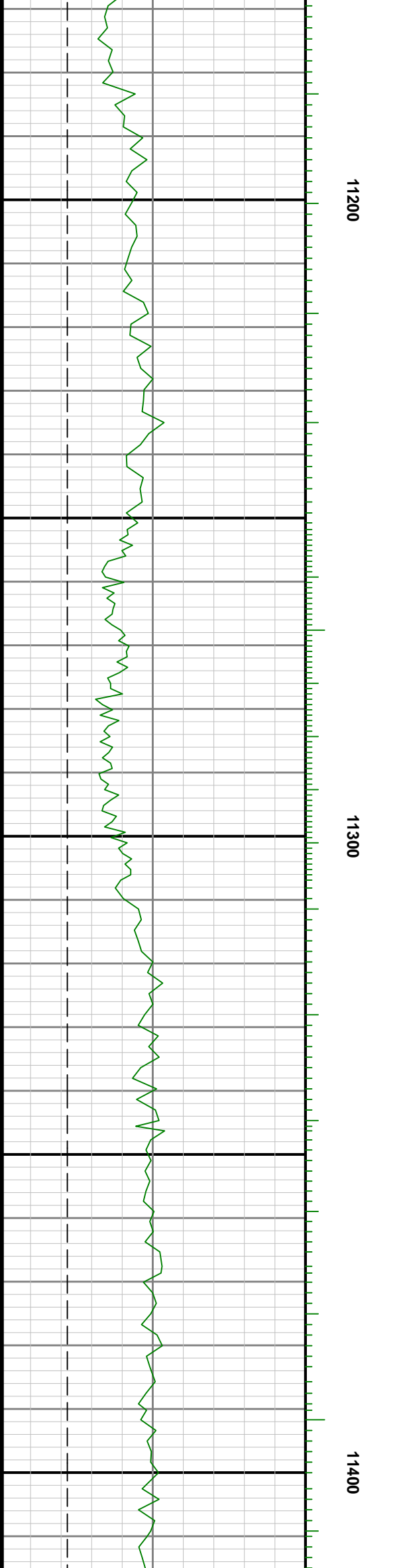
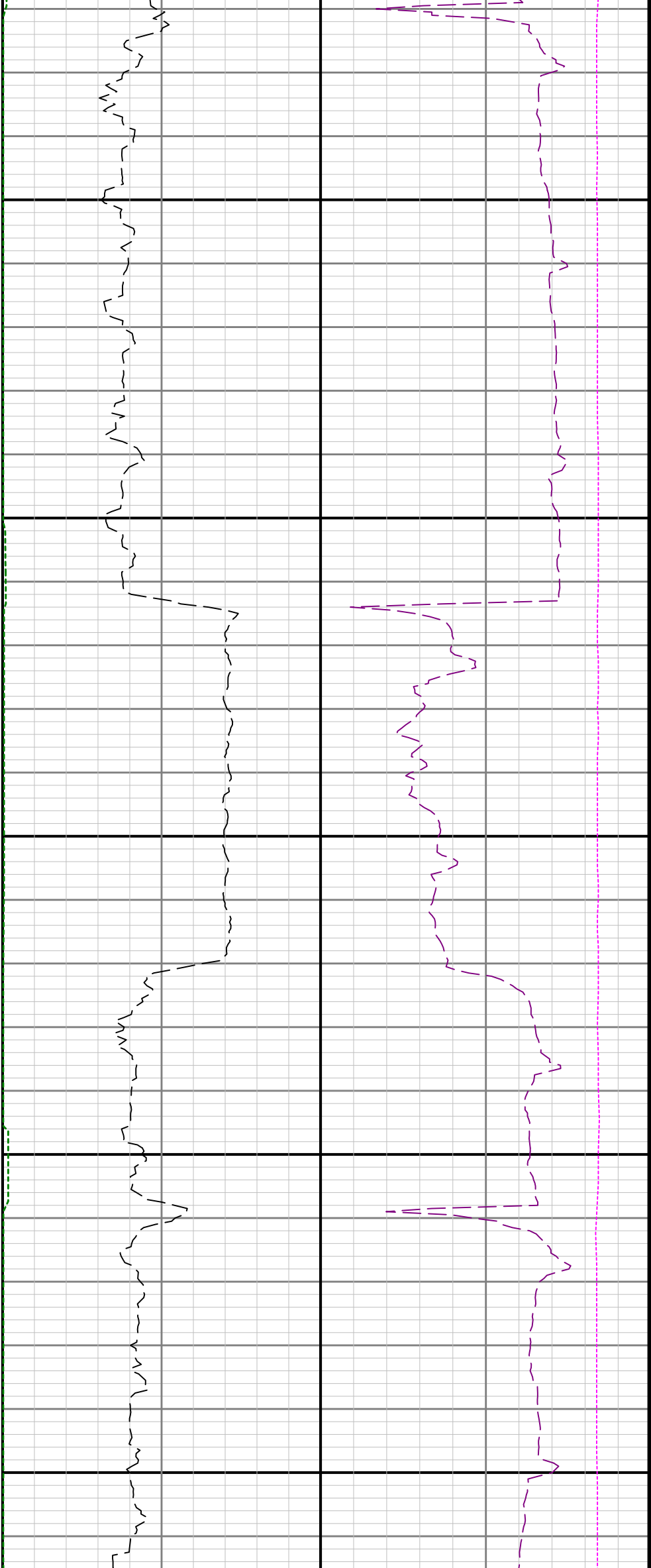


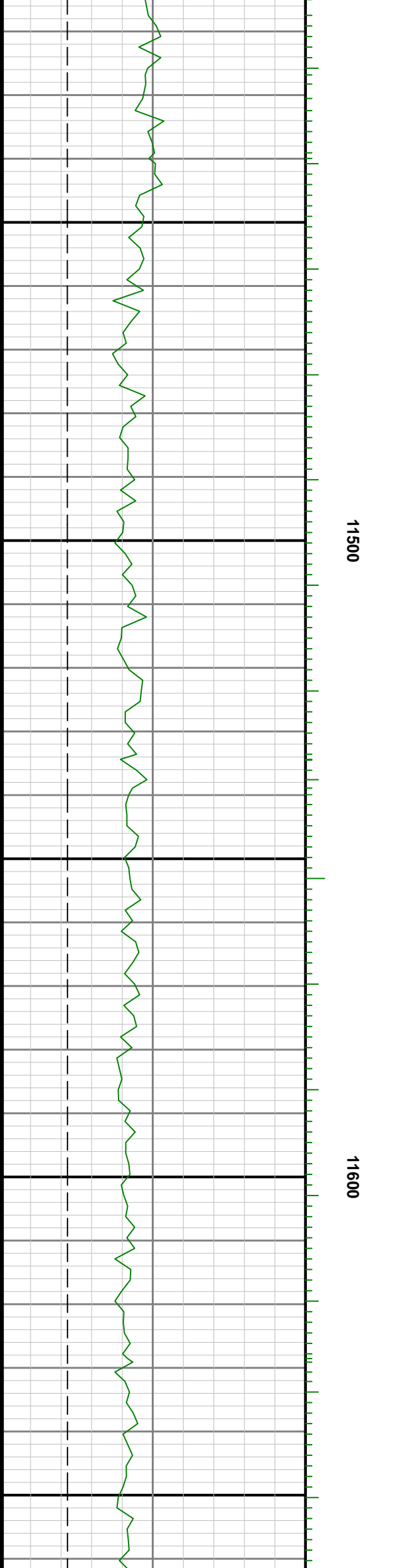
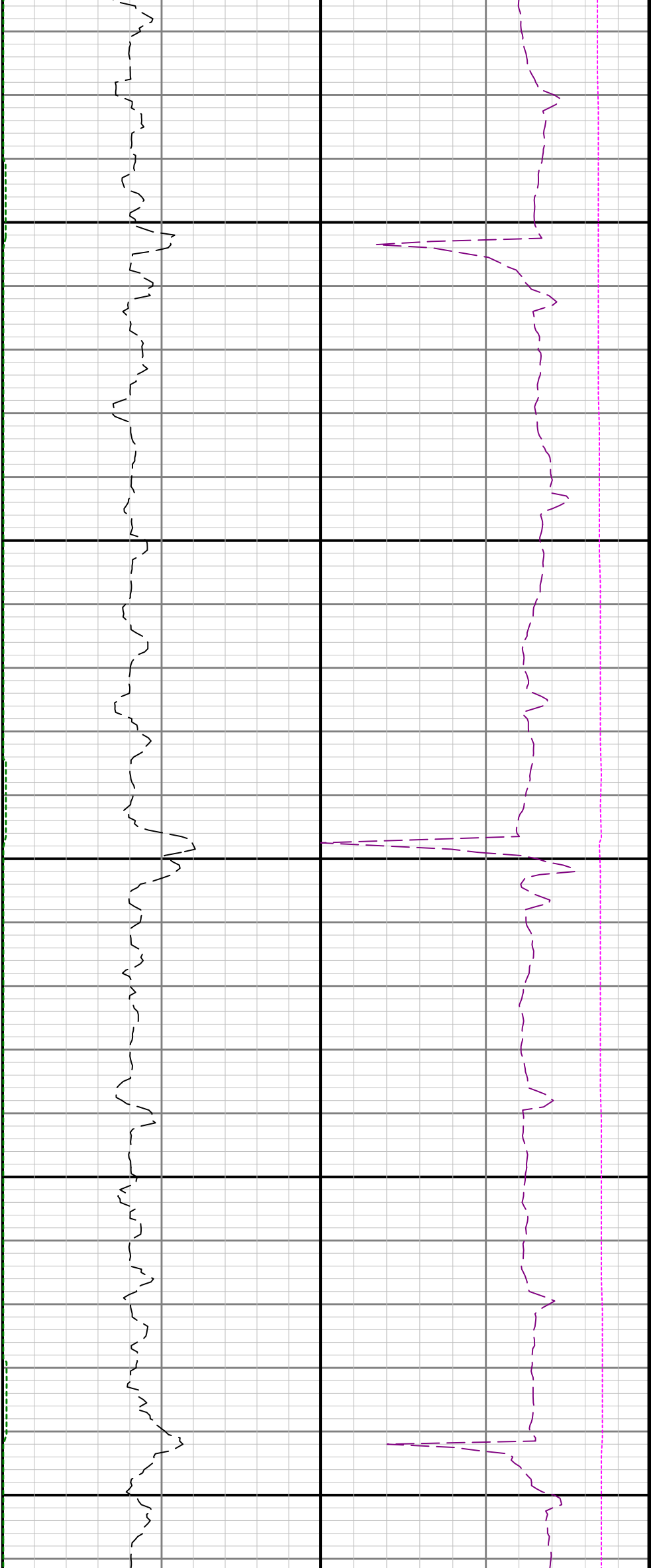
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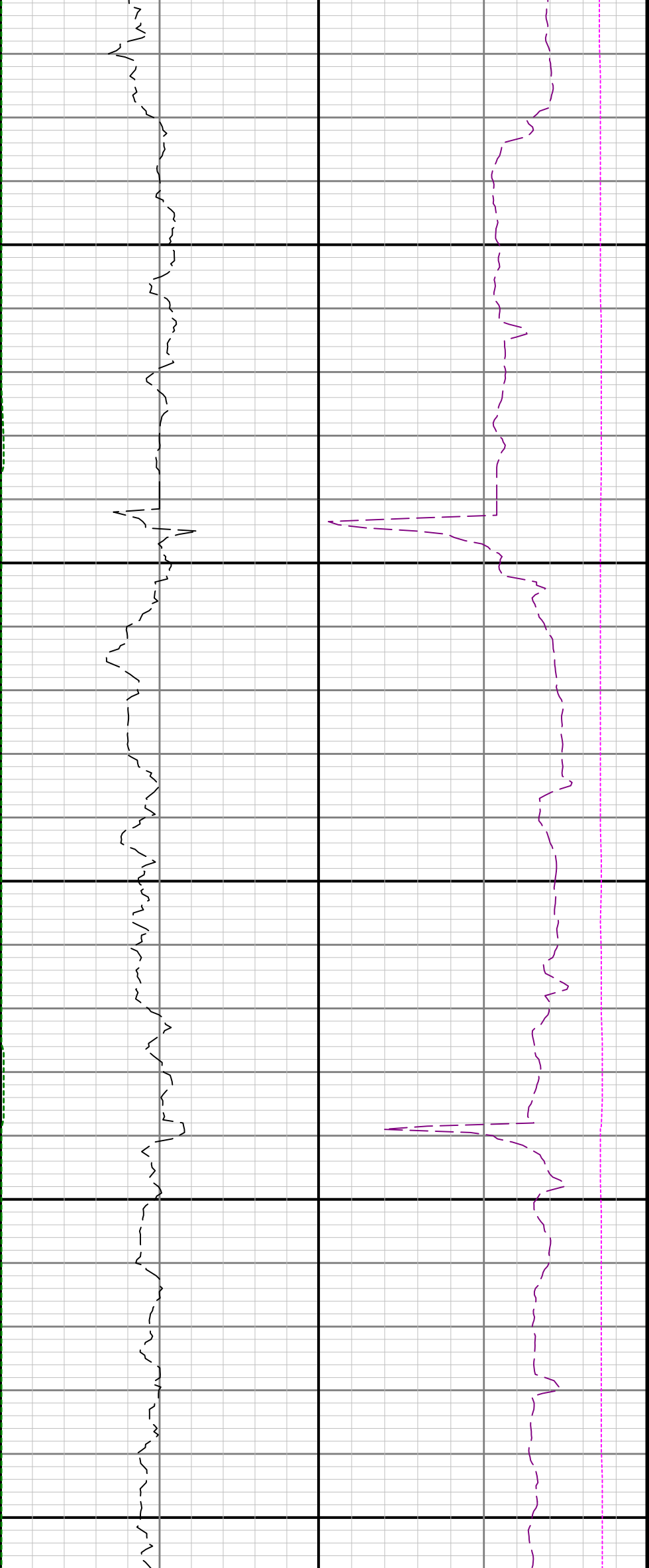
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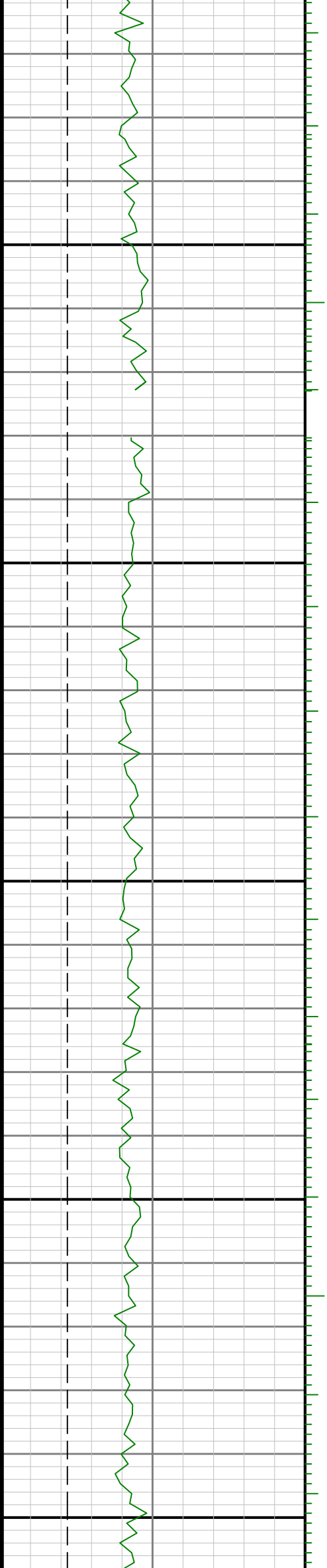


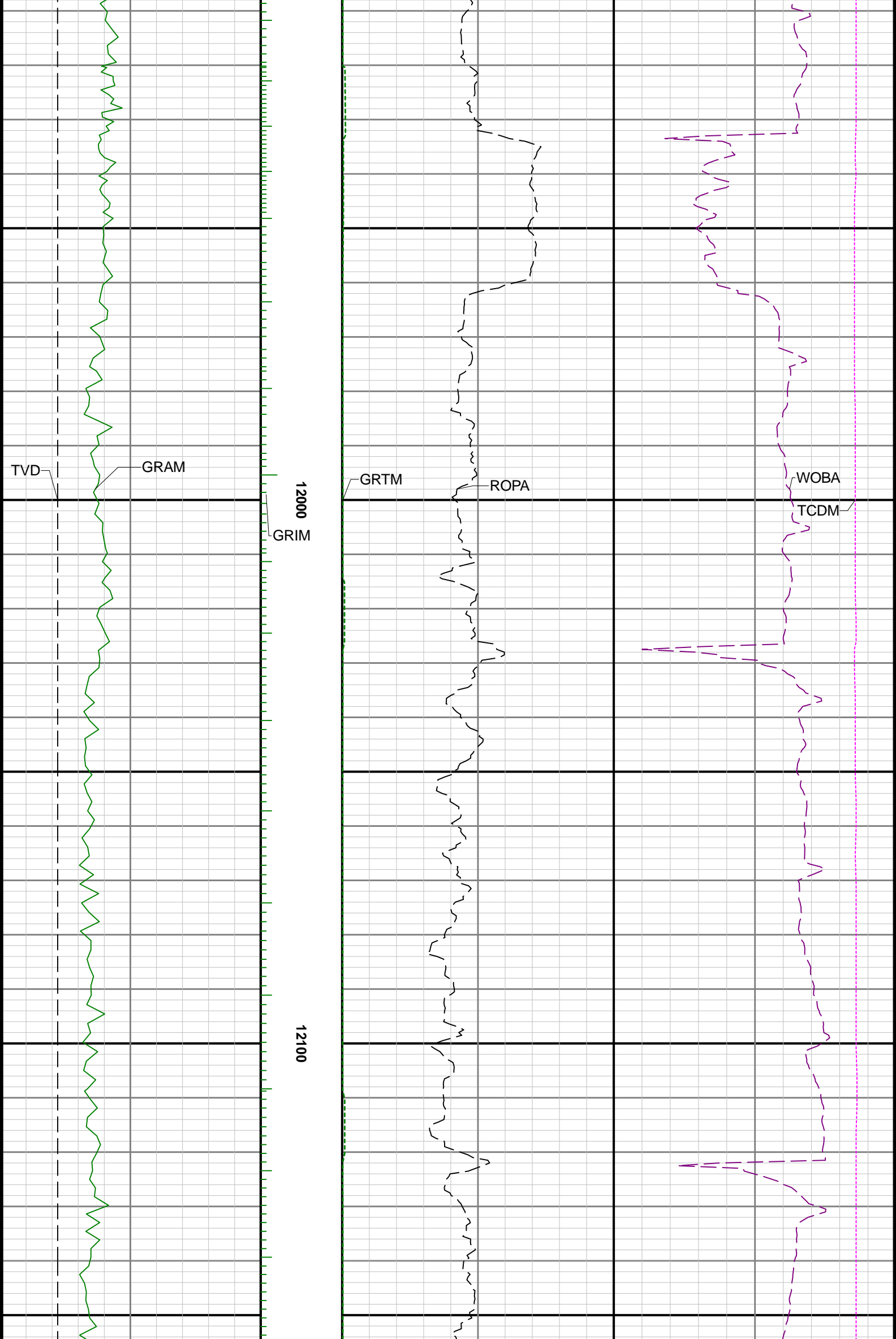


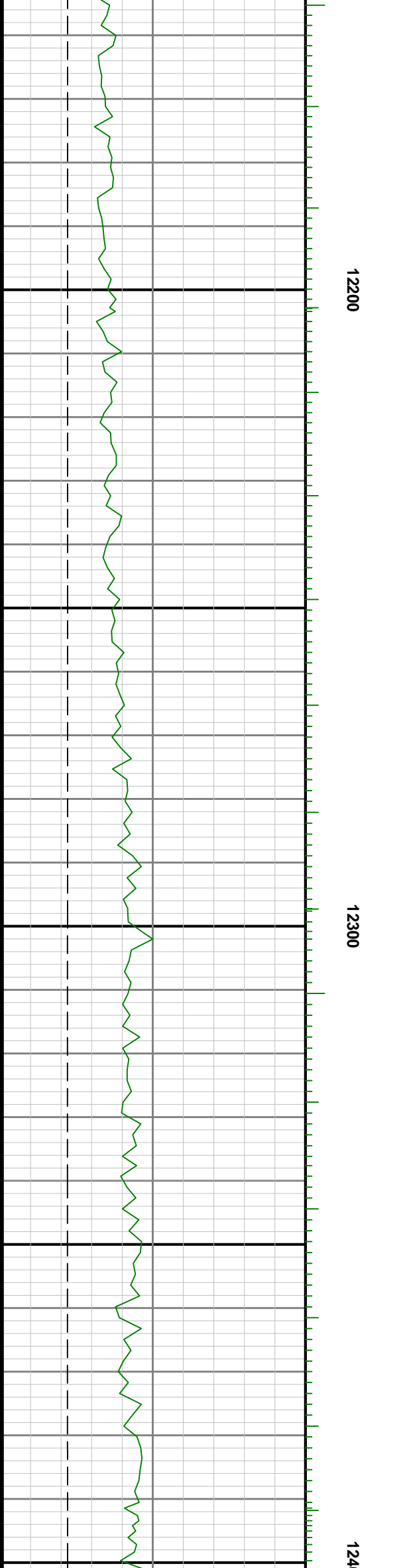
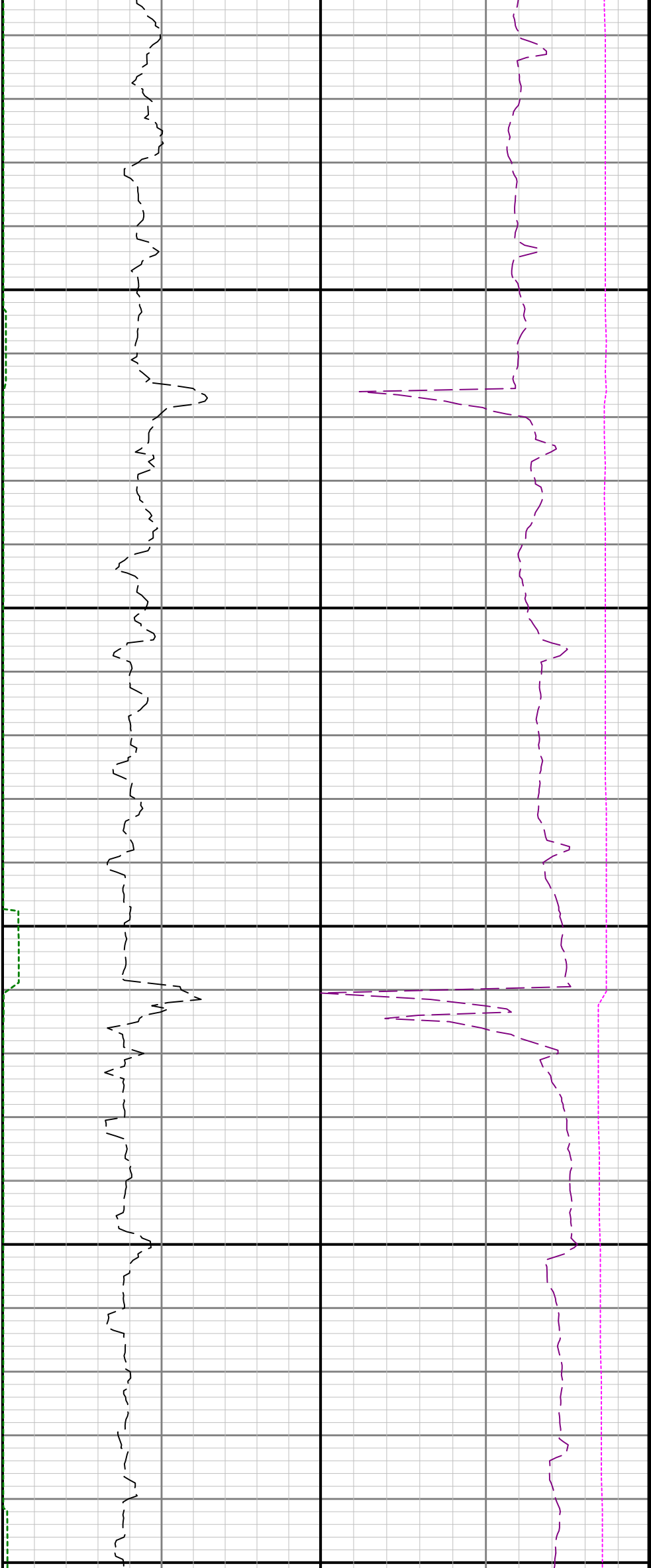
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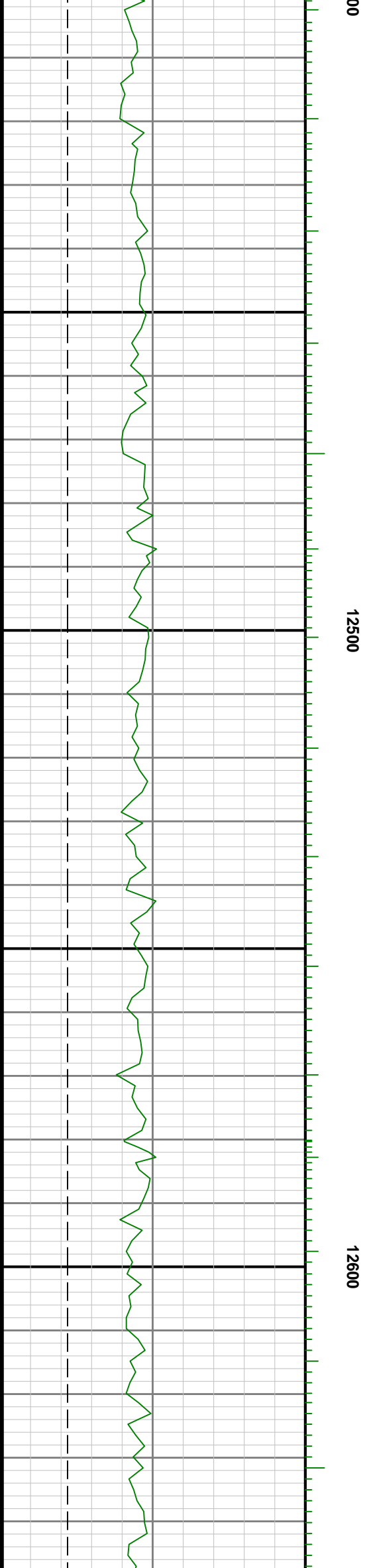
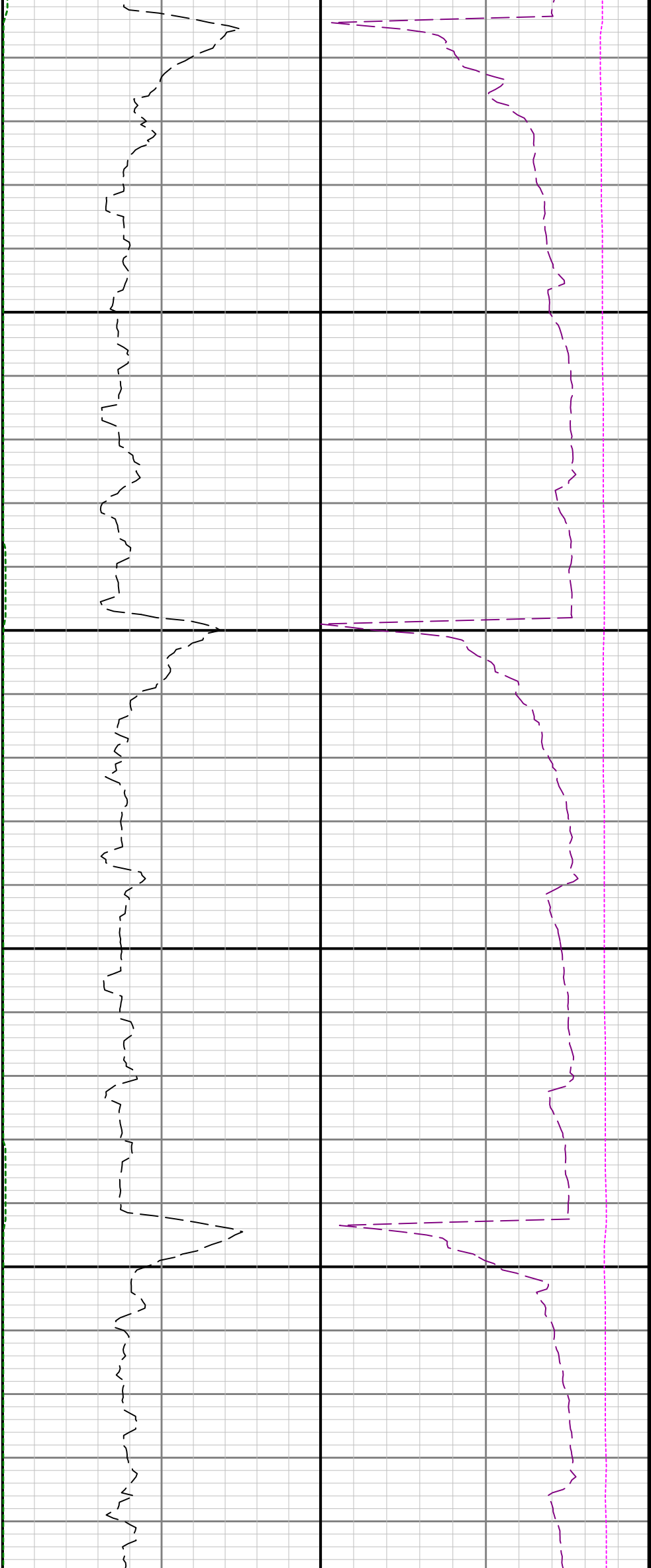
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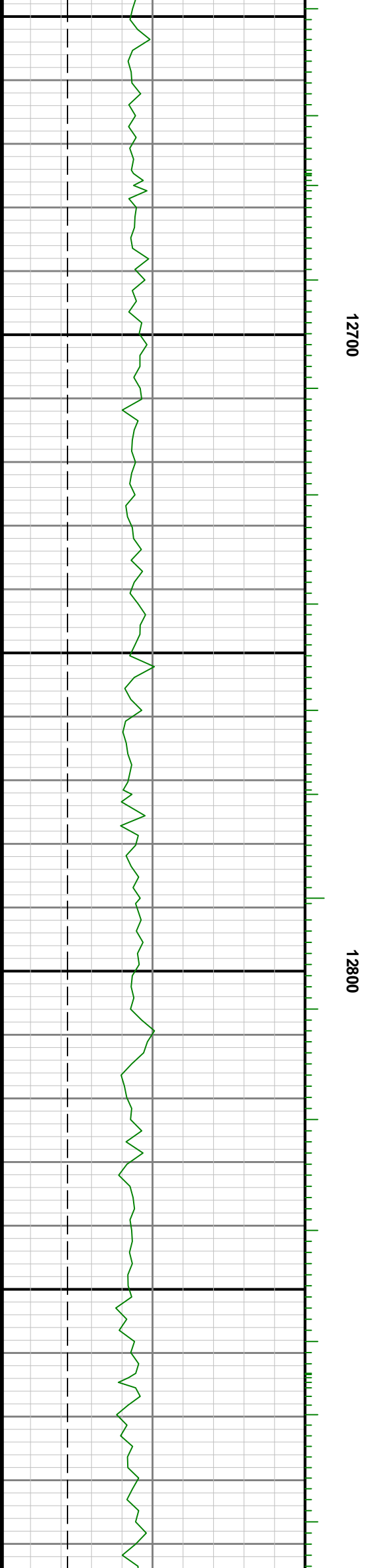
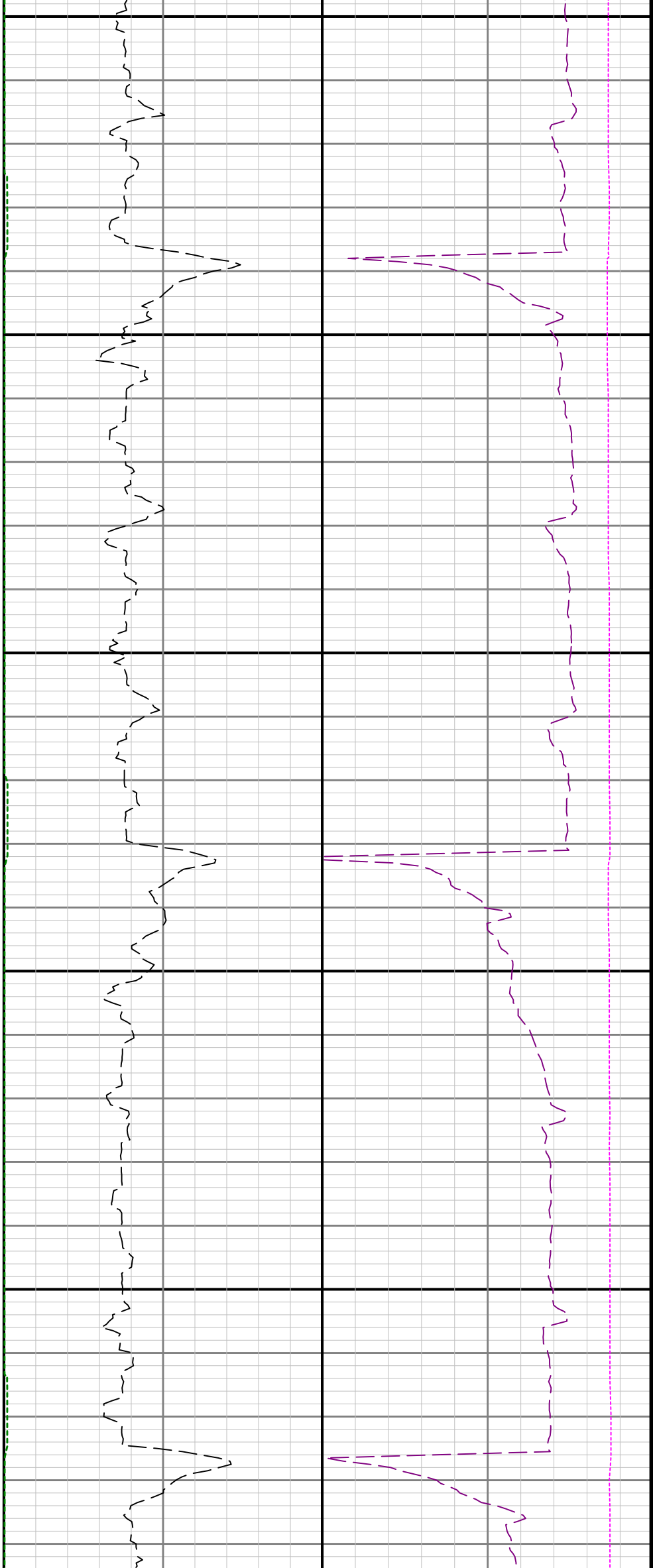
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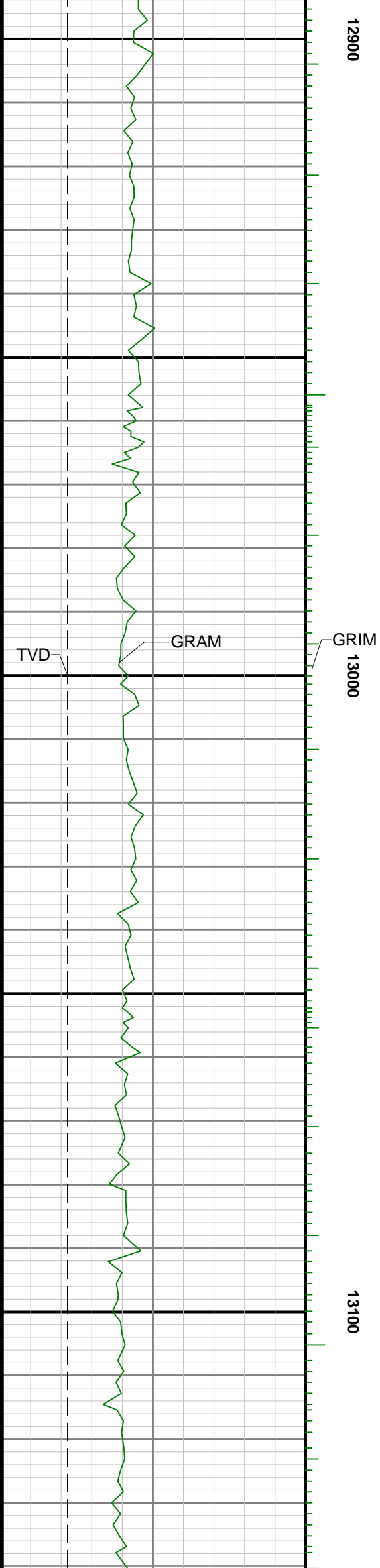
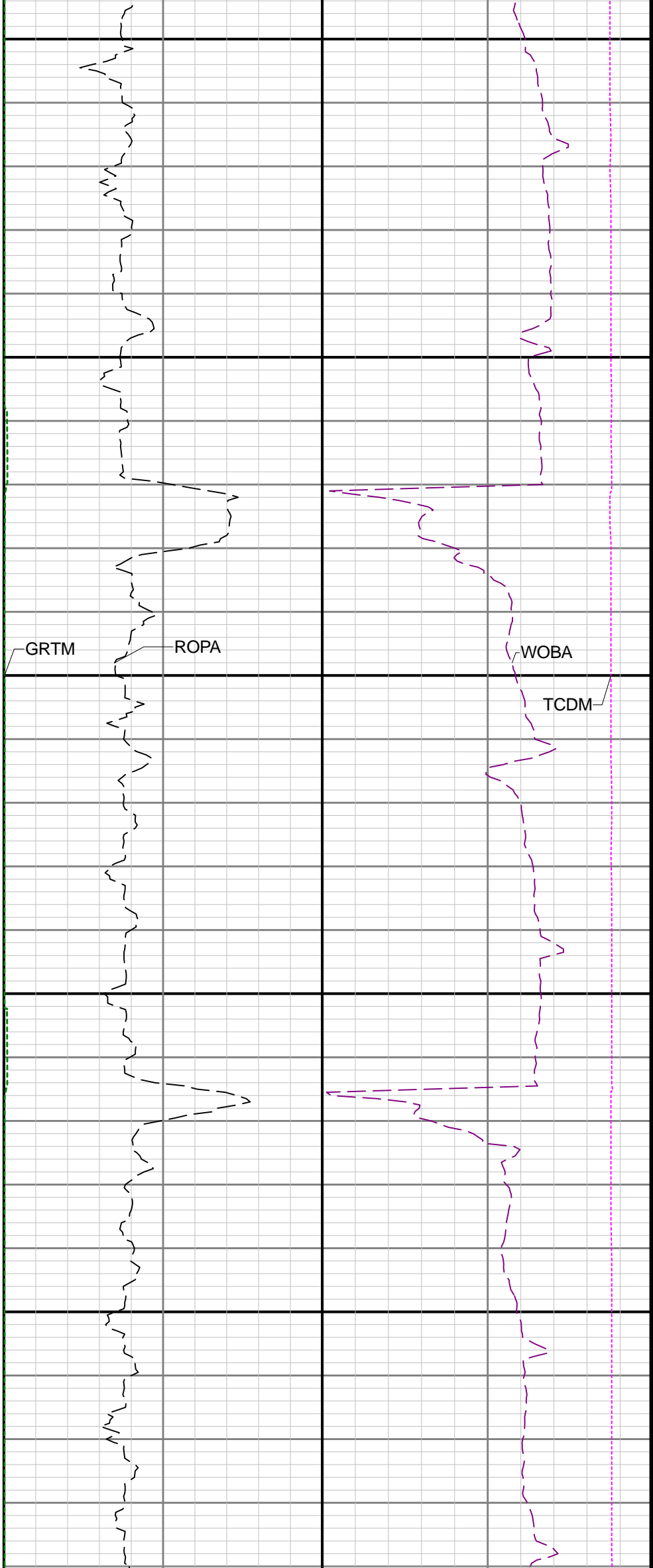


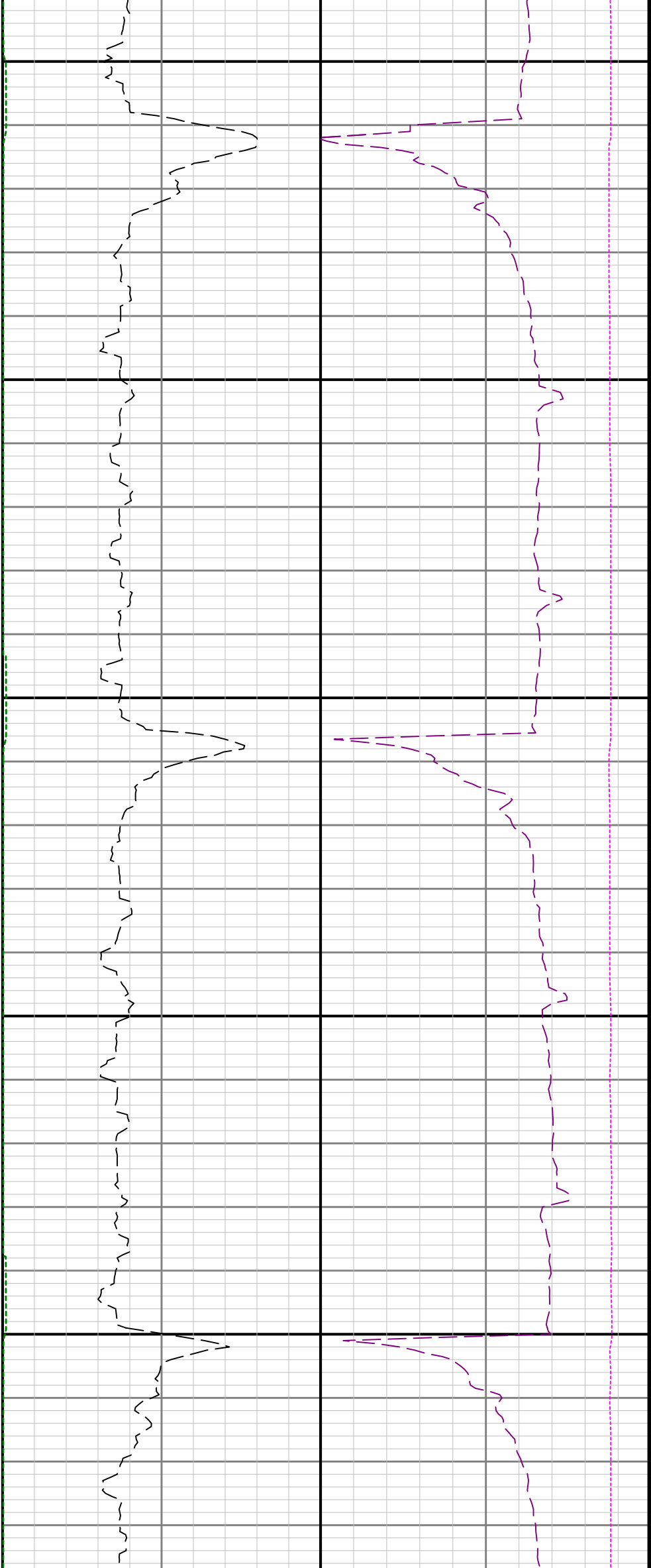












13200

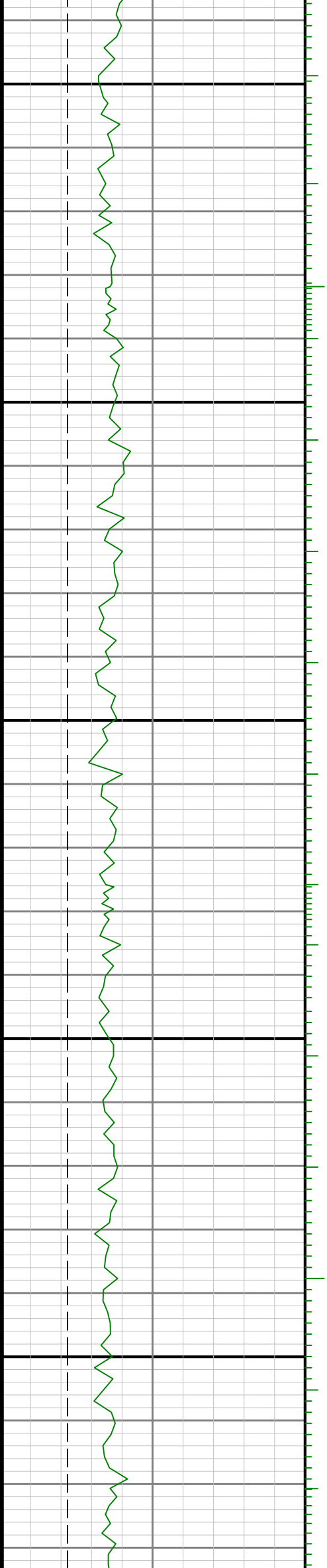
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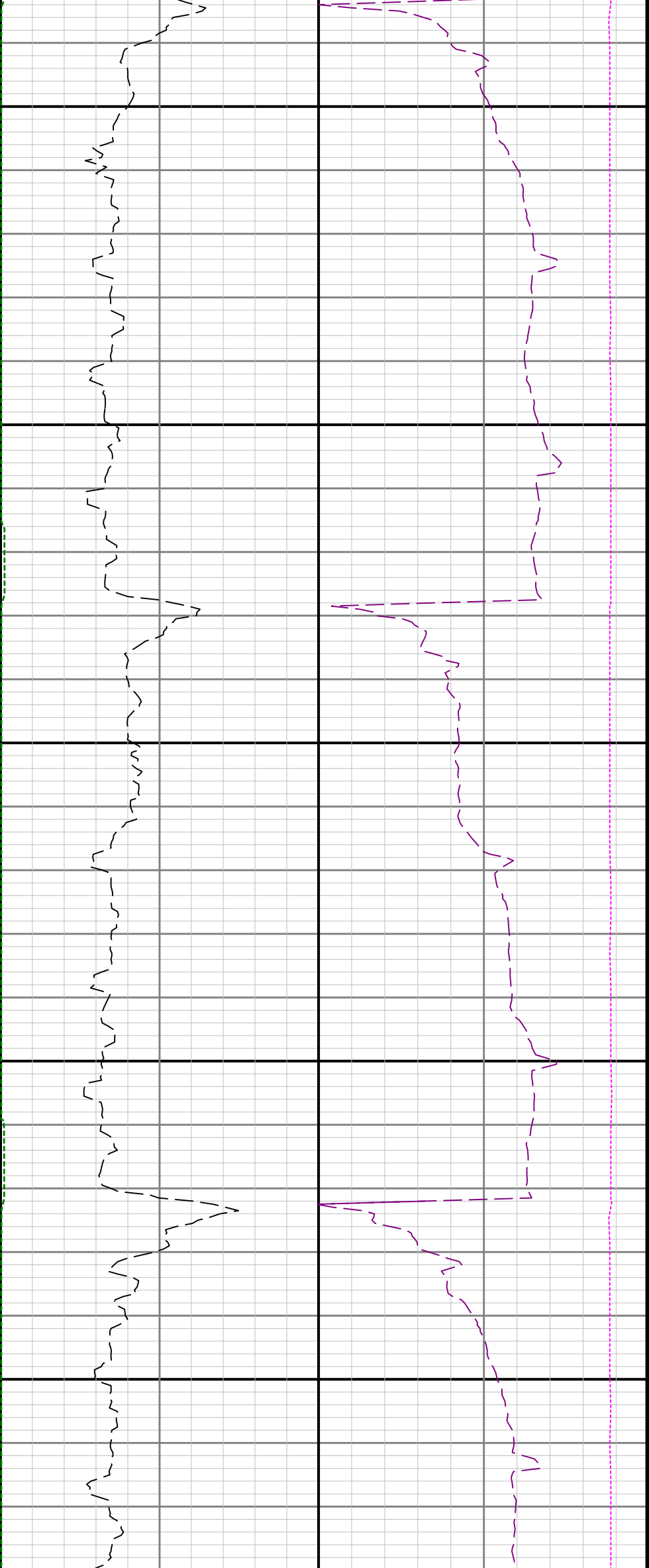


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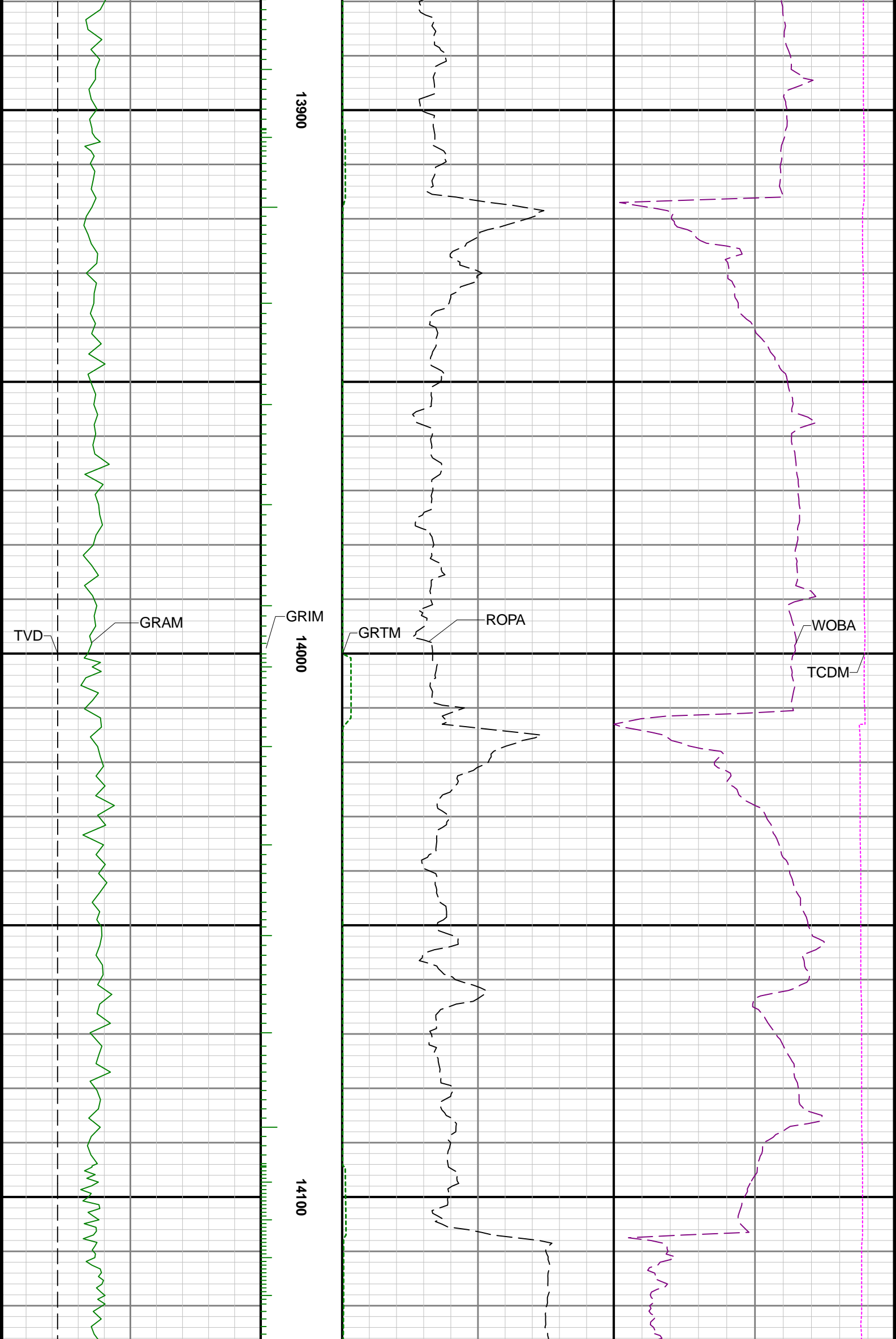
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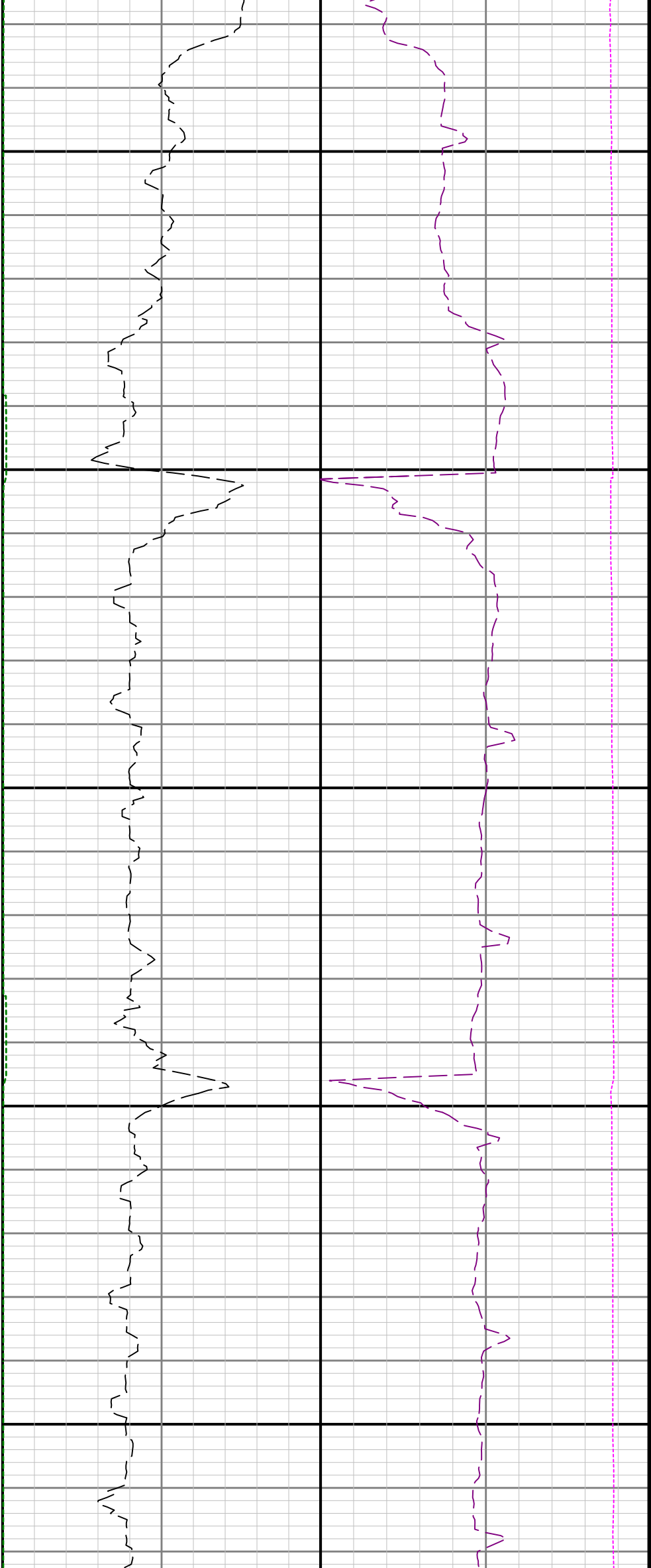




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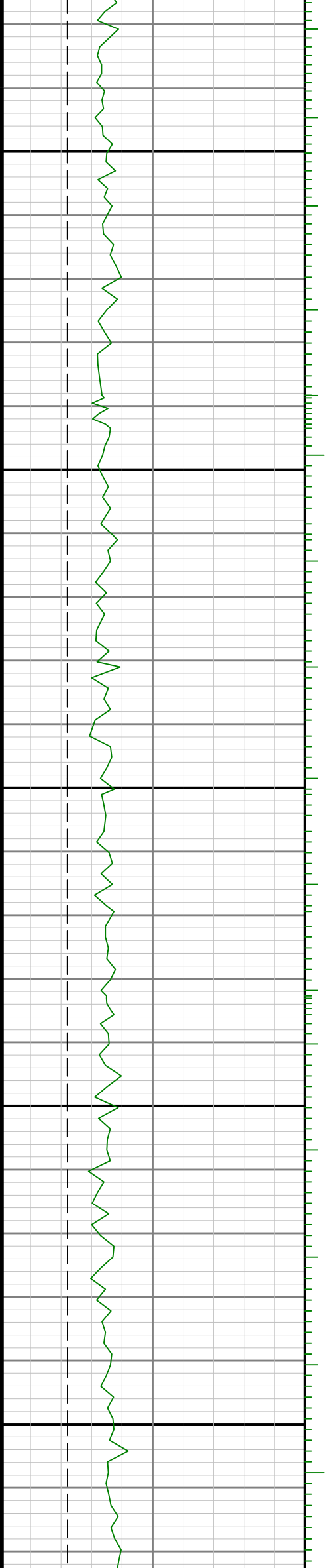
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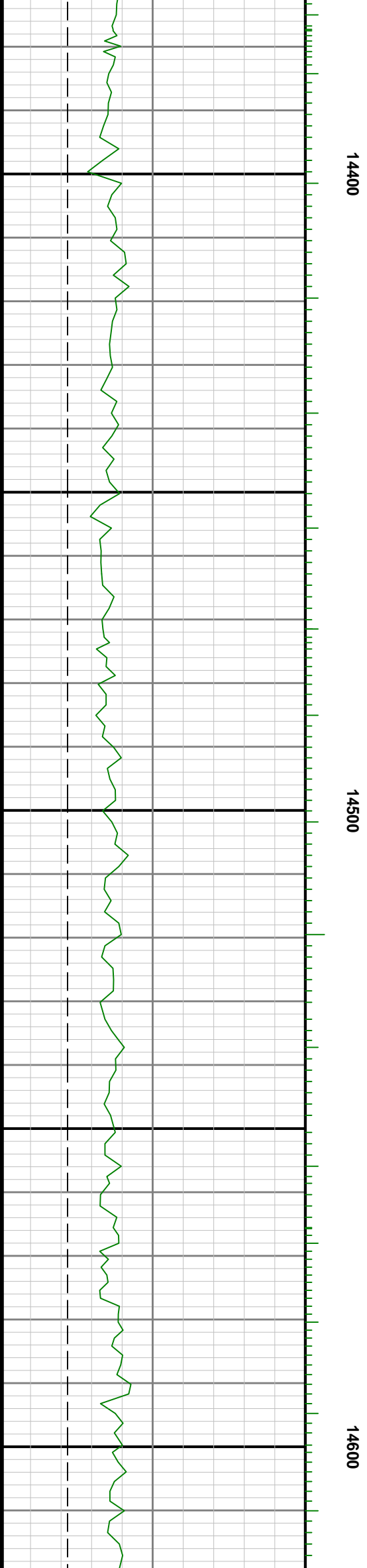
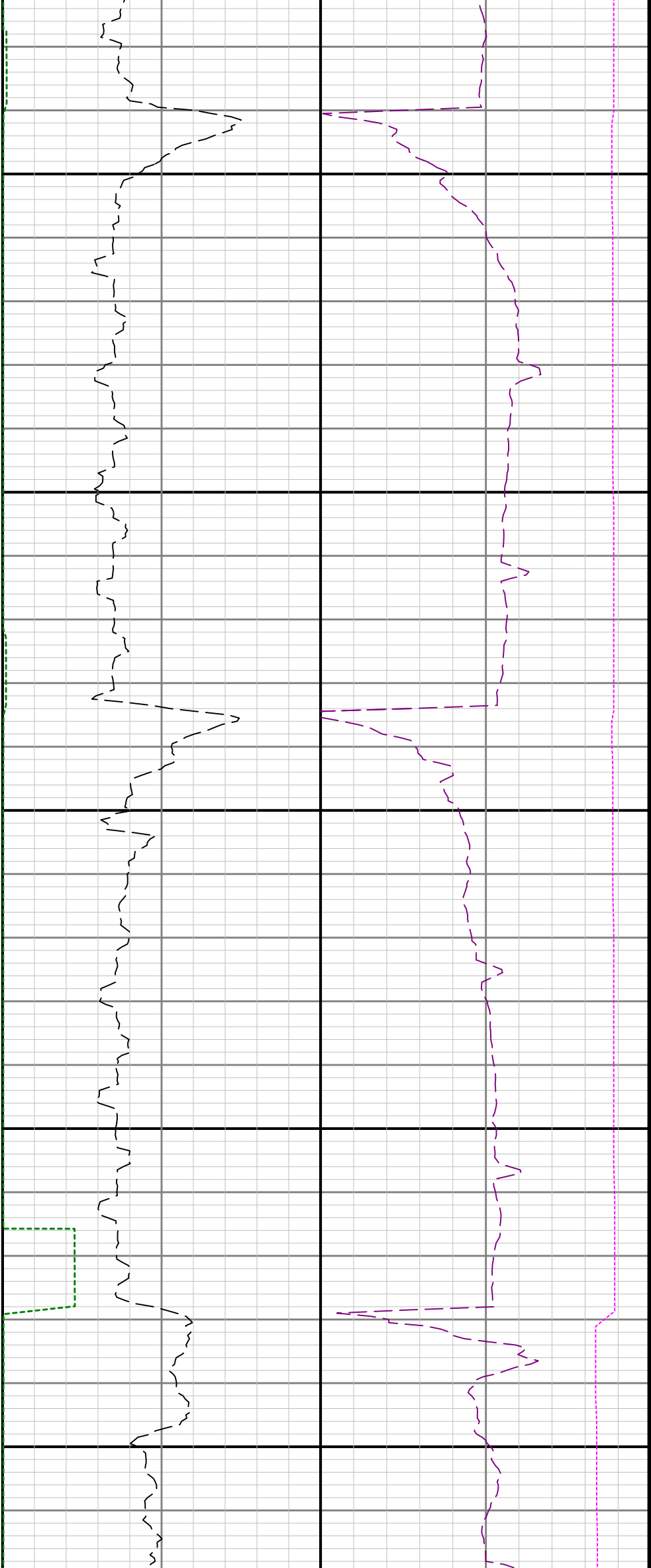


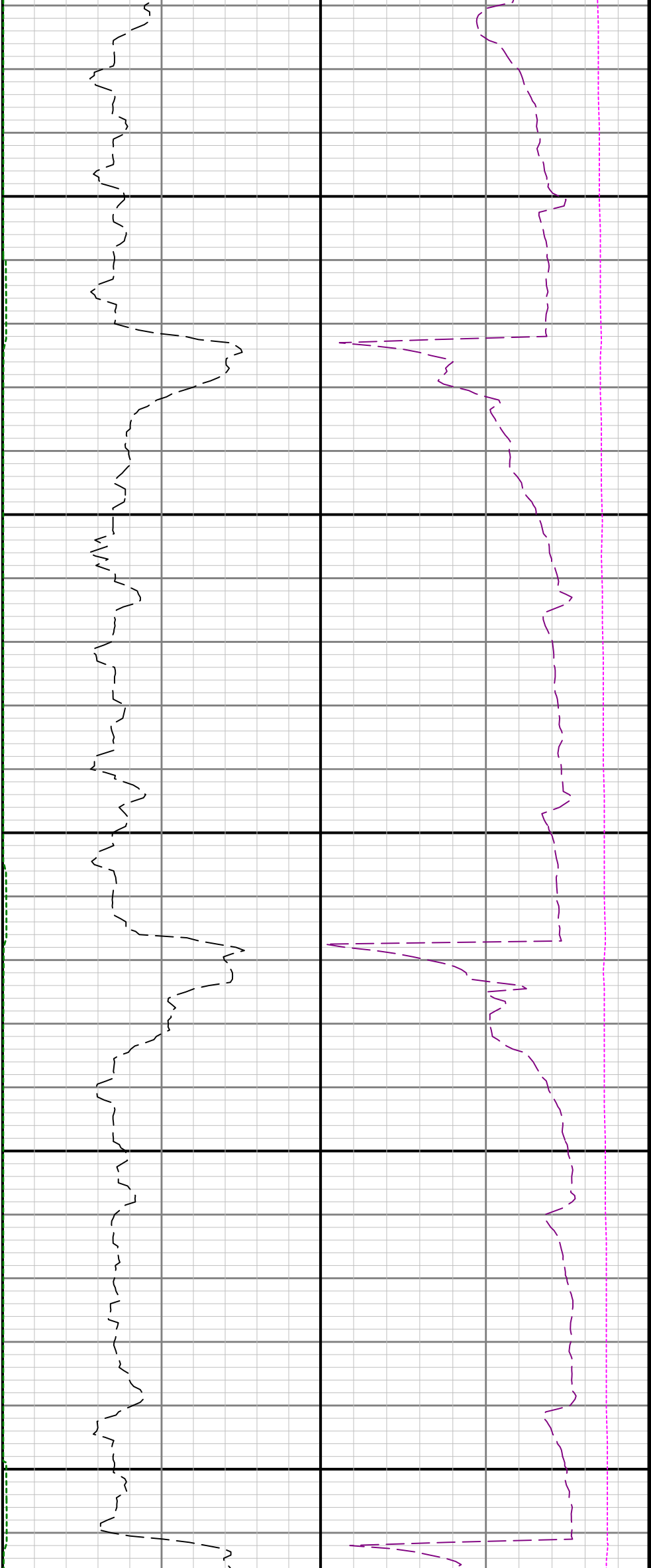


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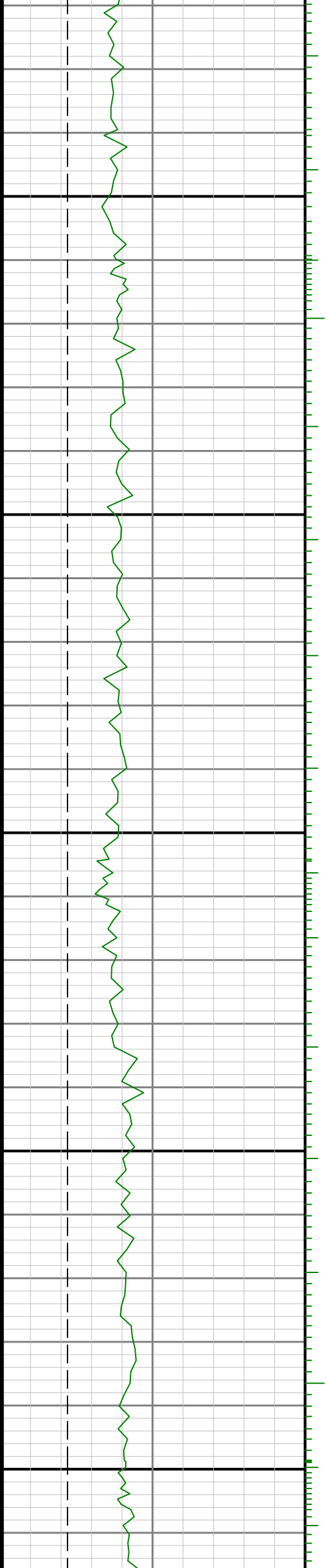


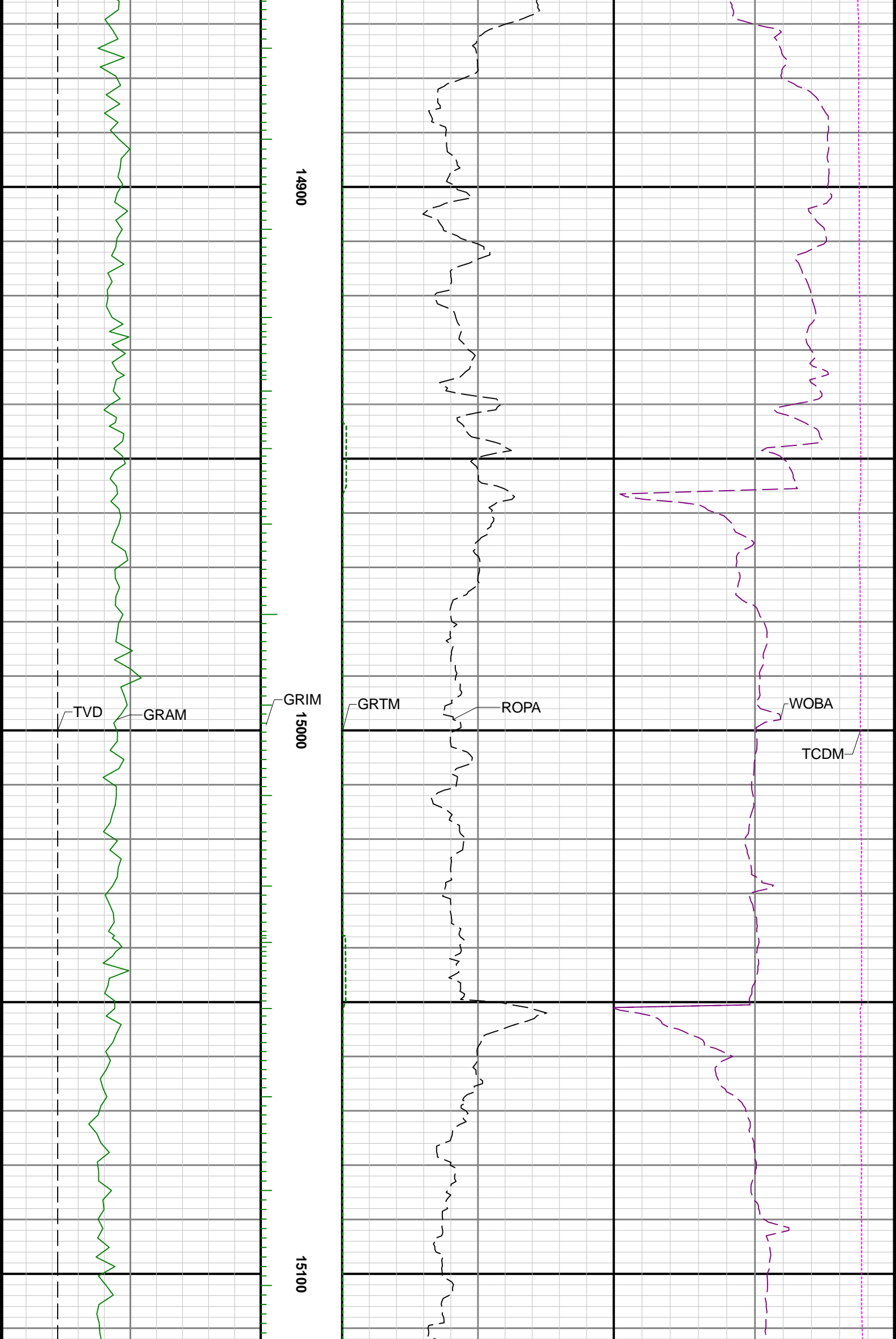


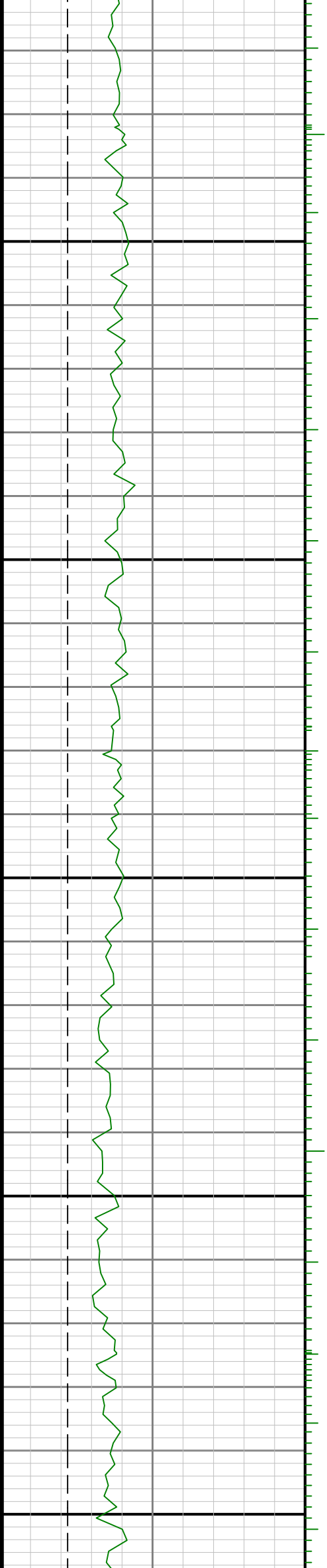
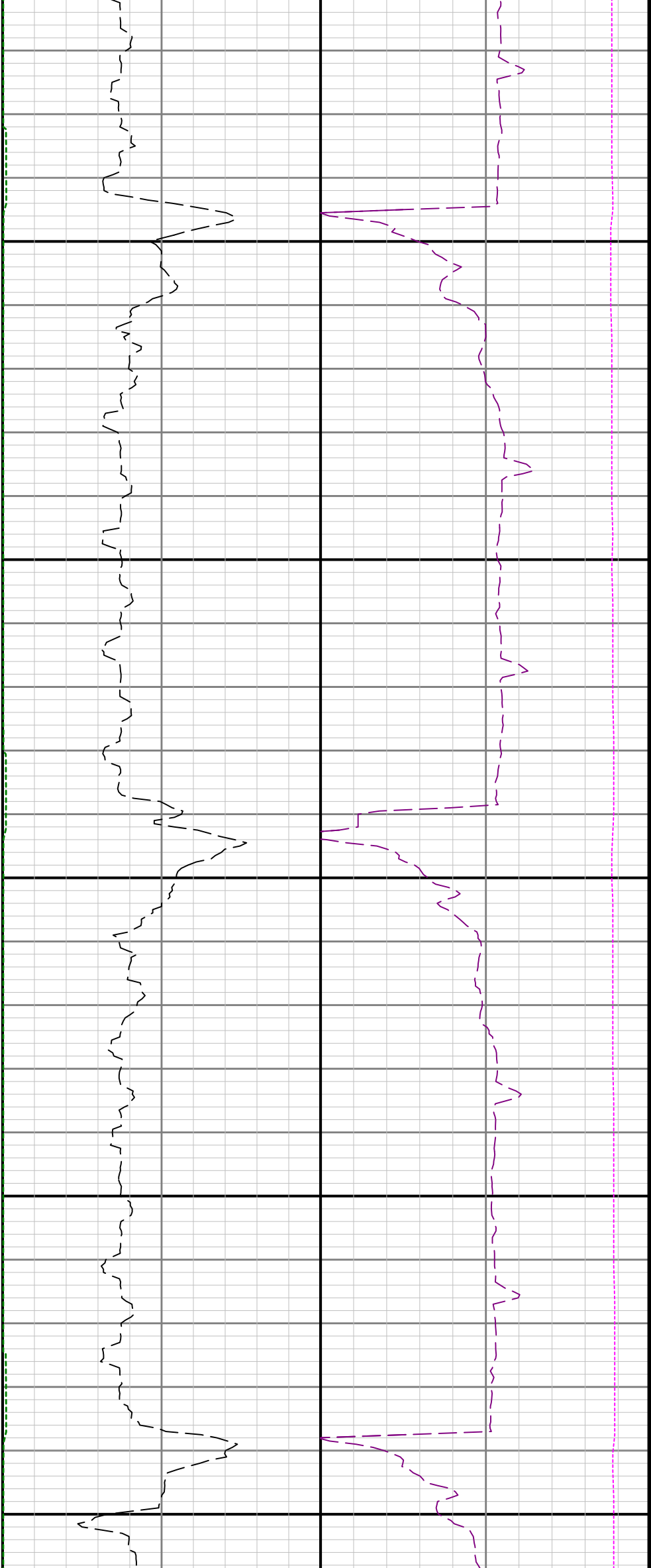


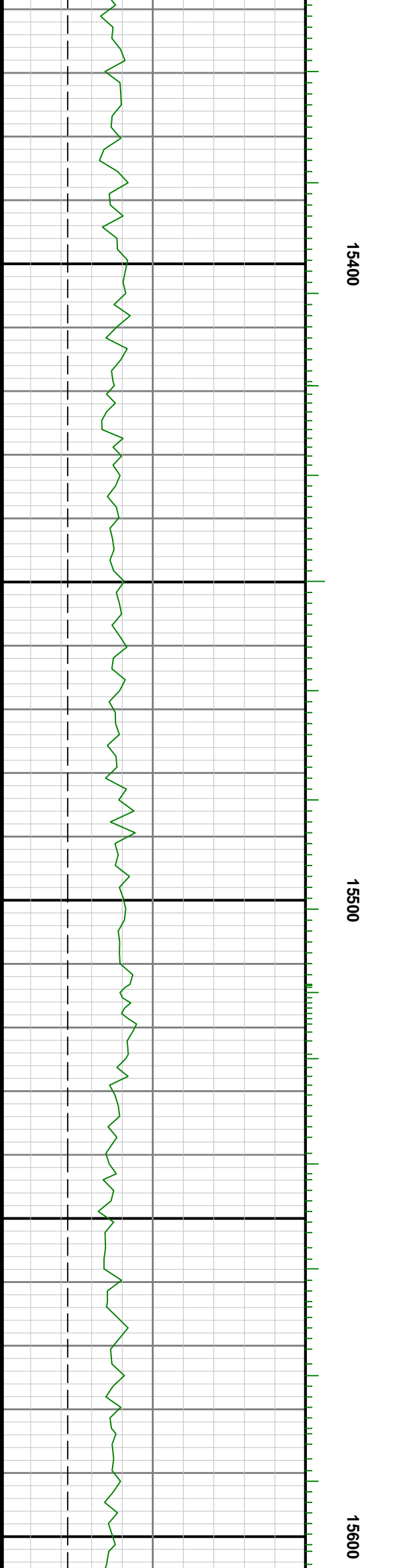
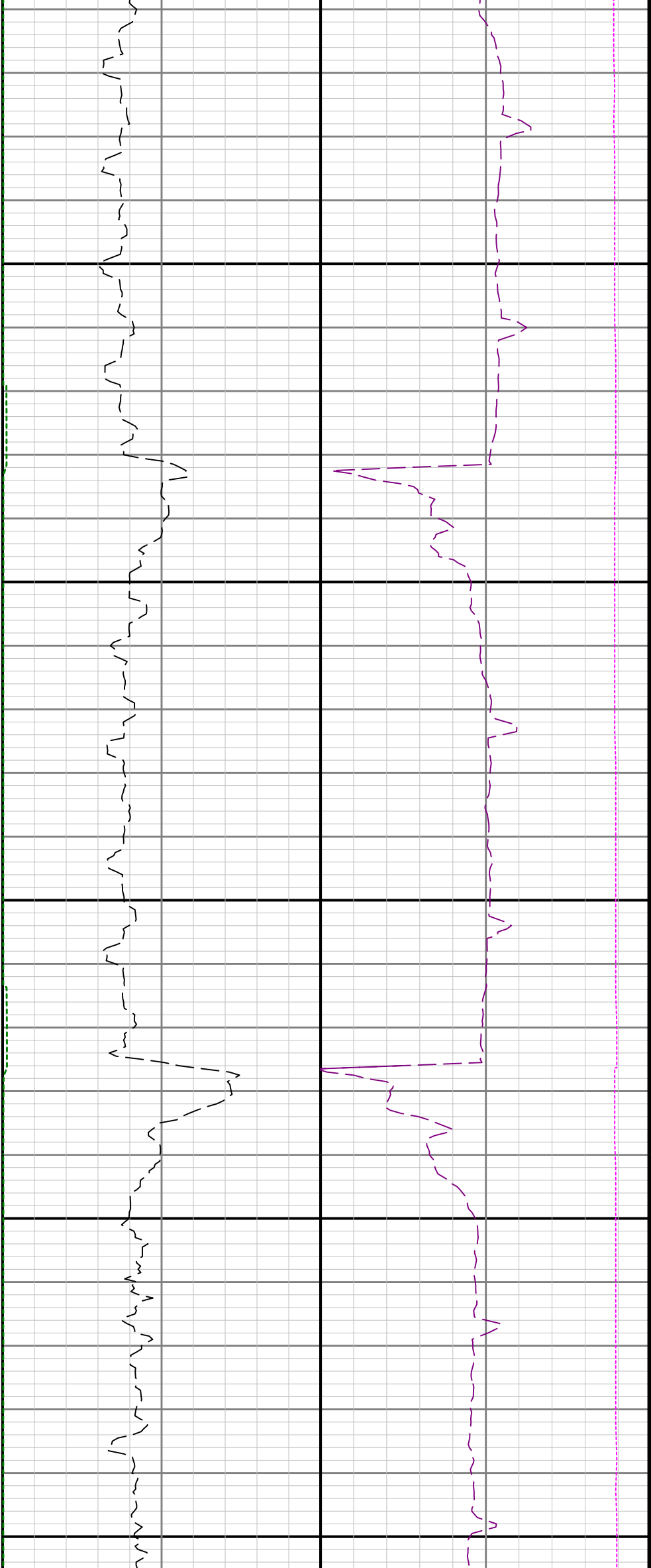
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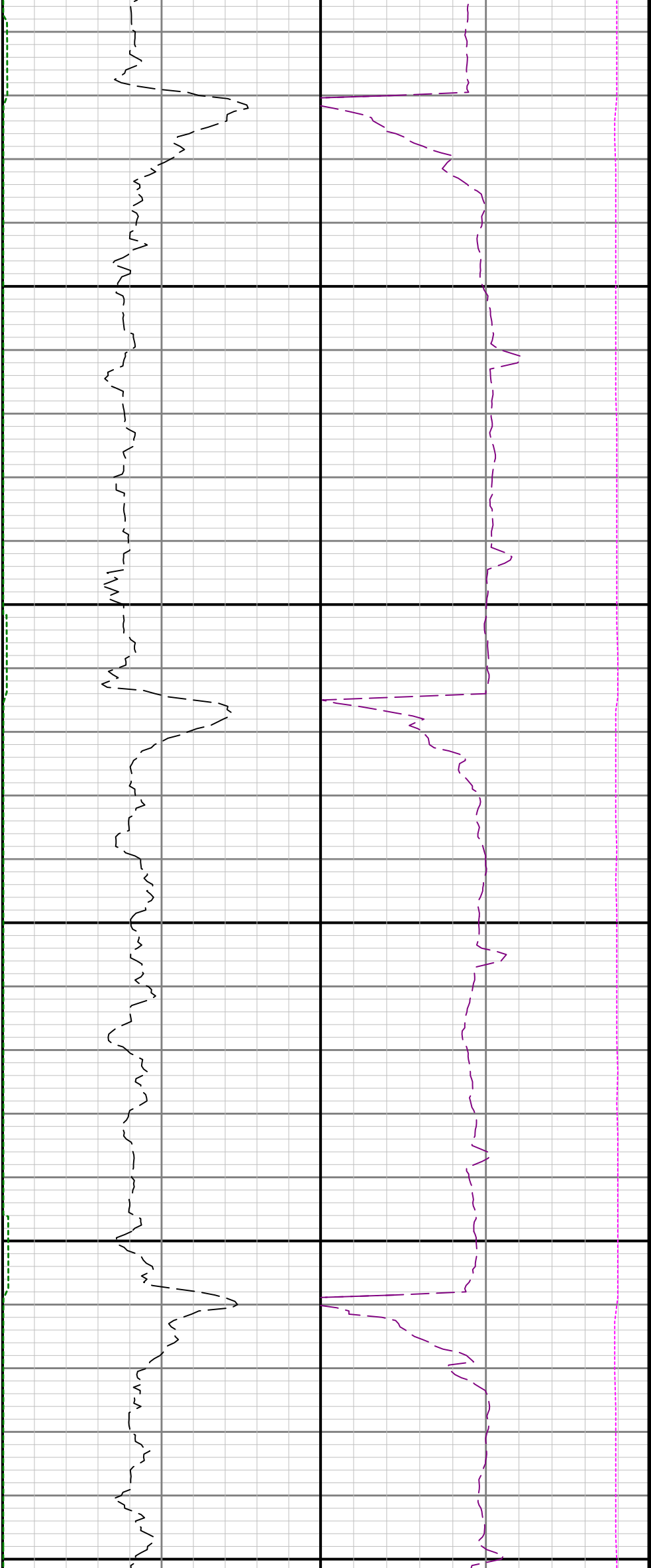
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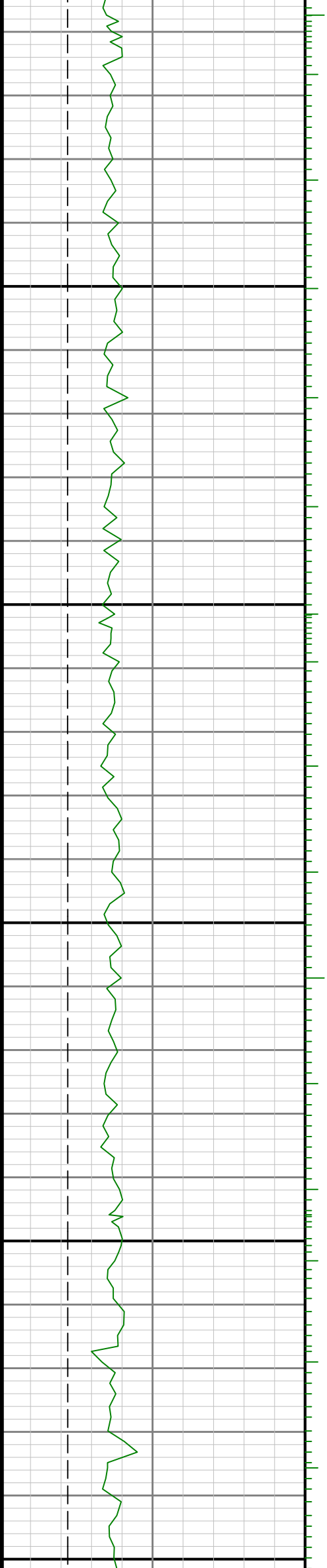


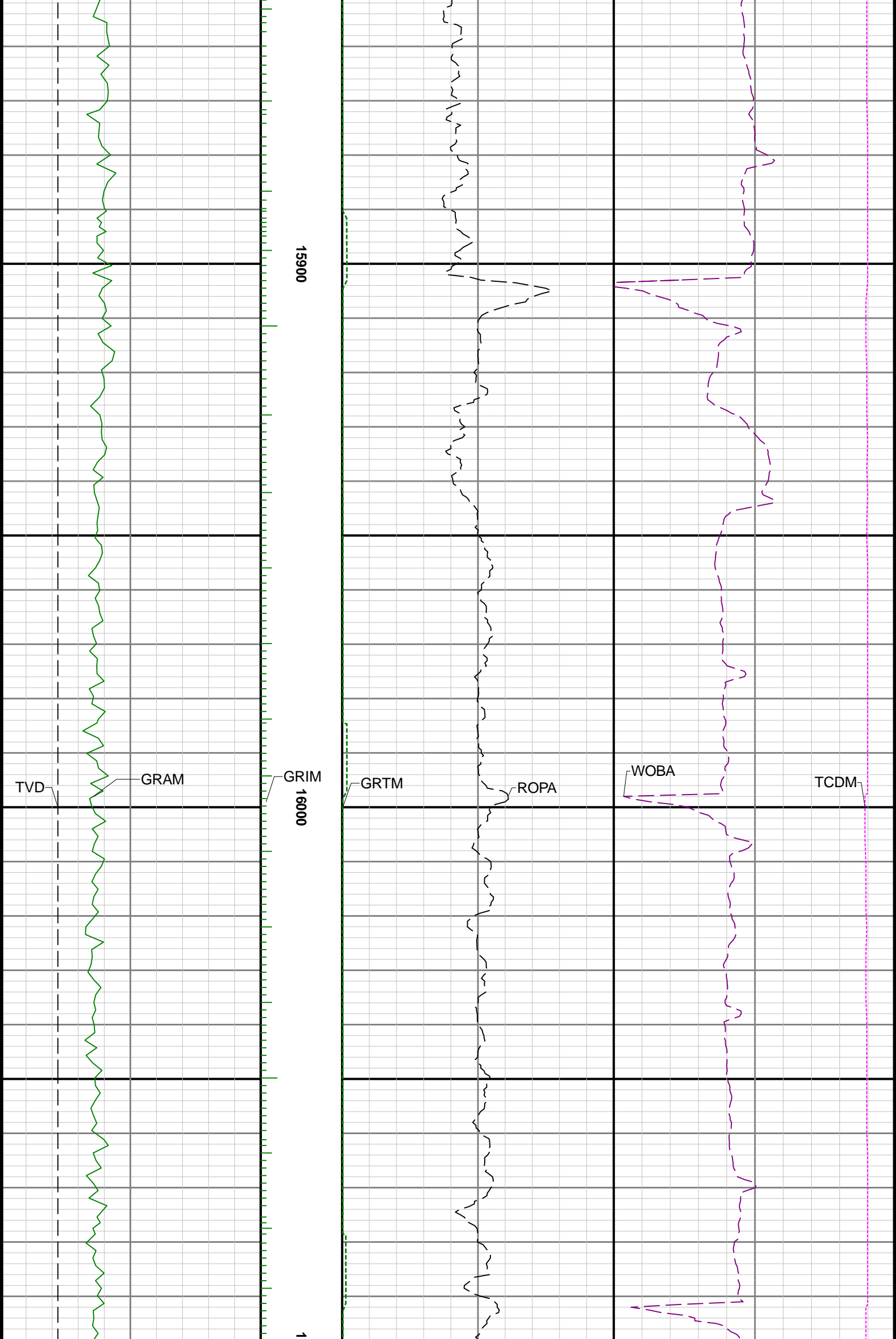


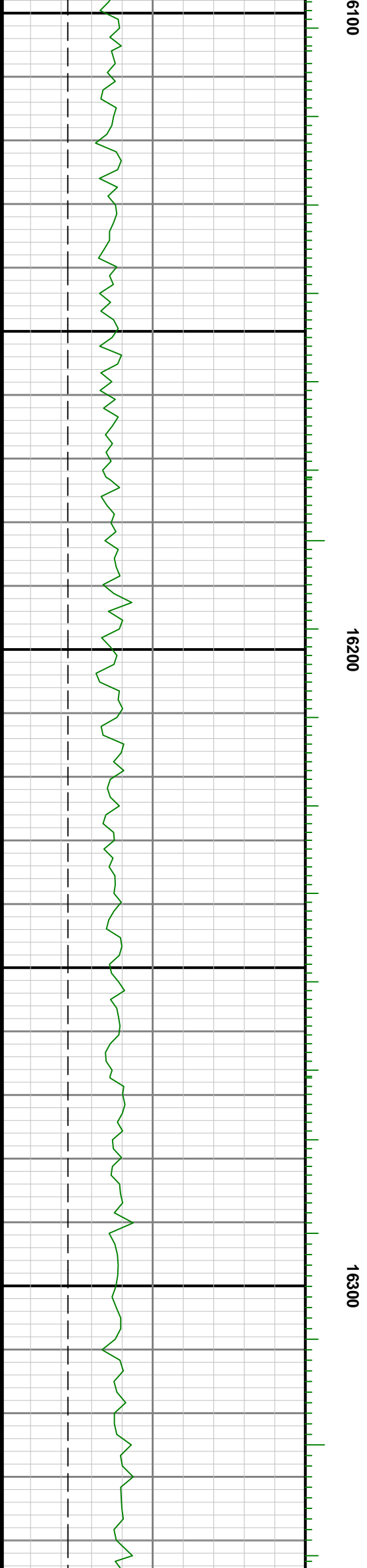
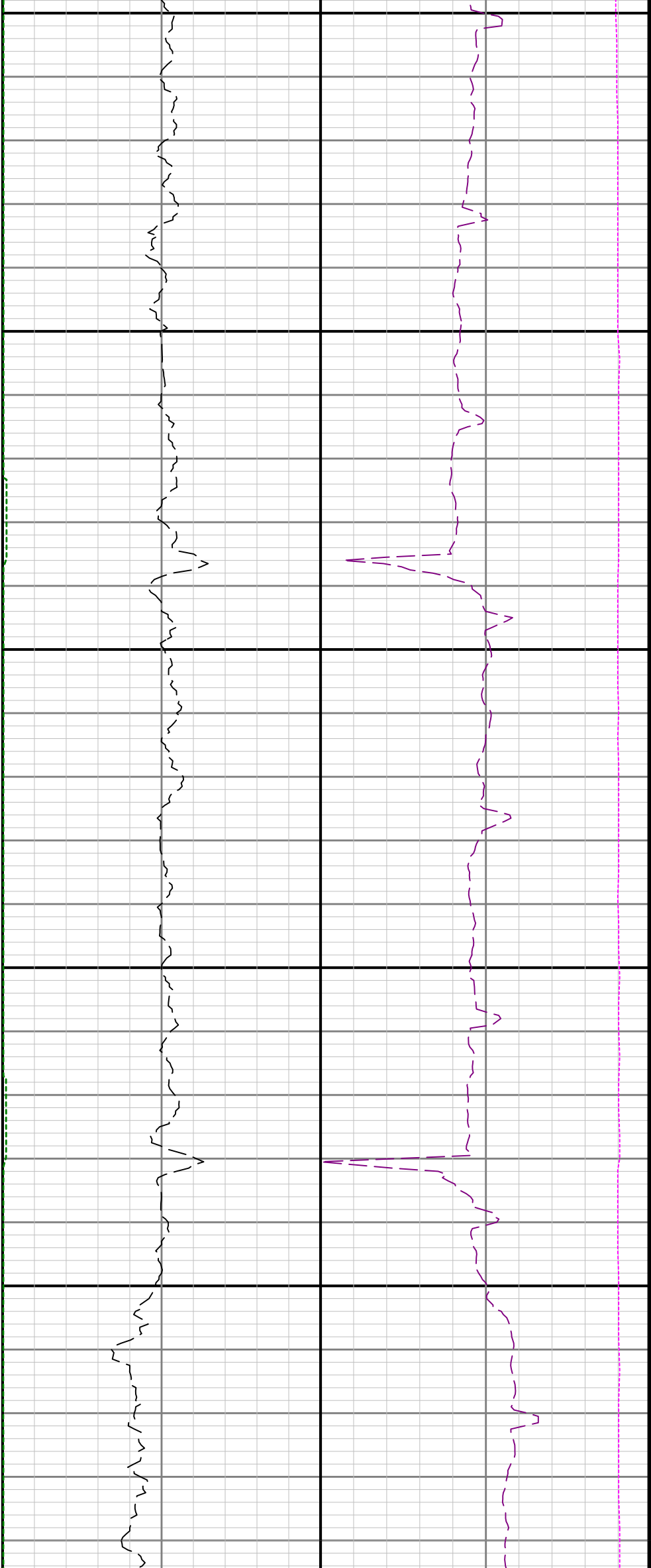


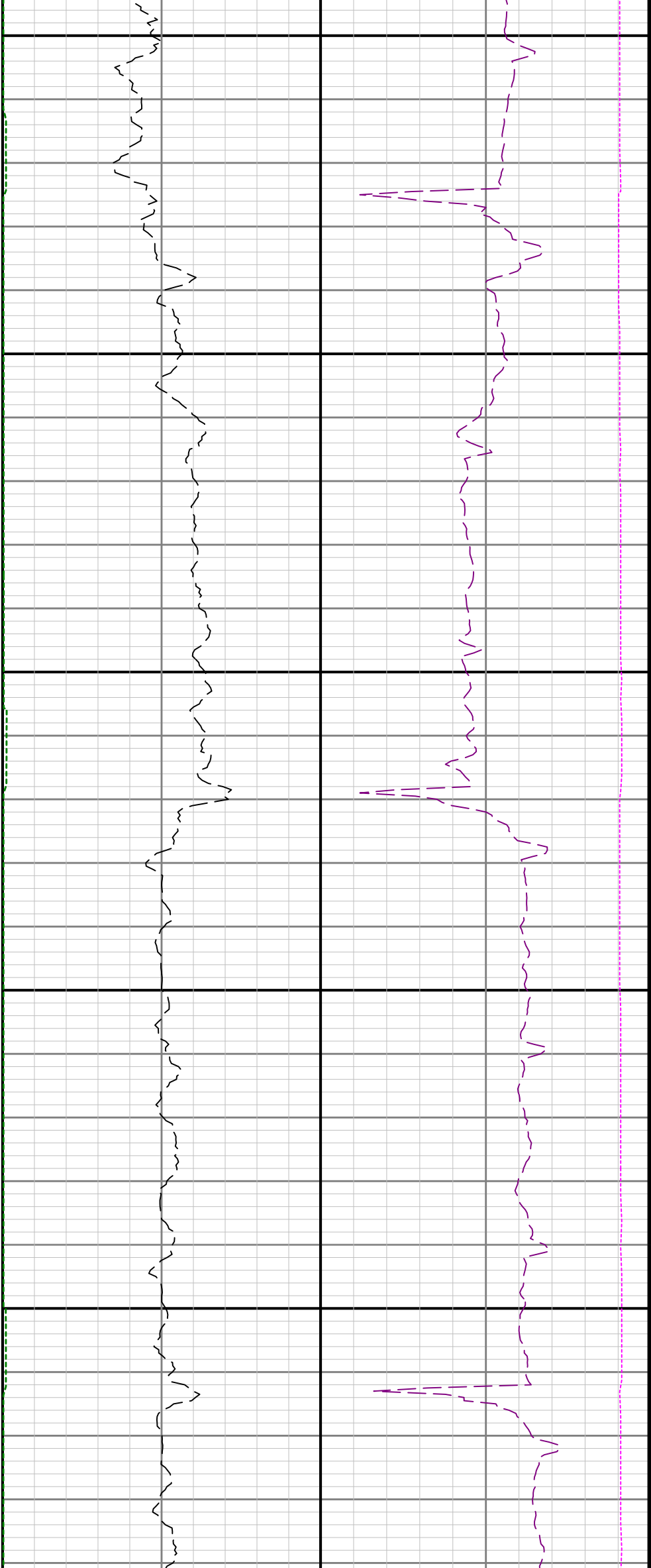
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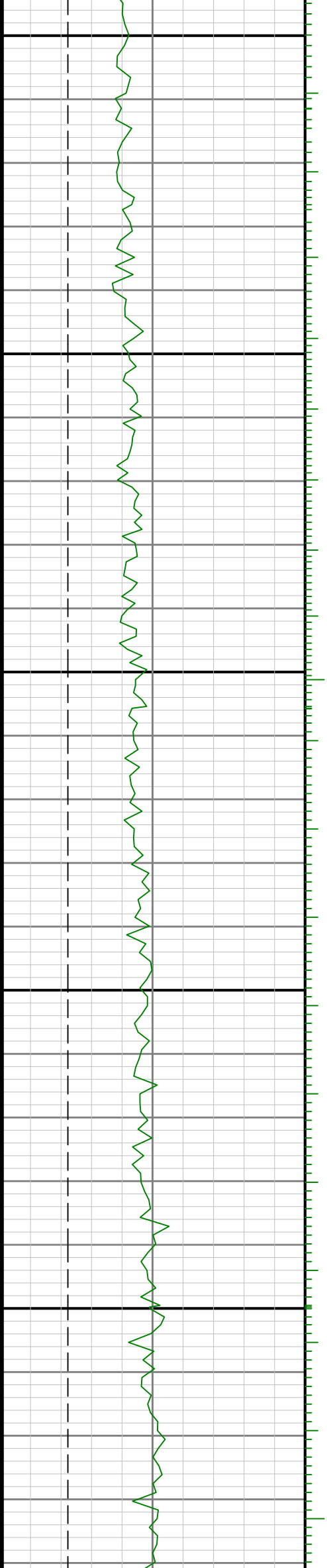


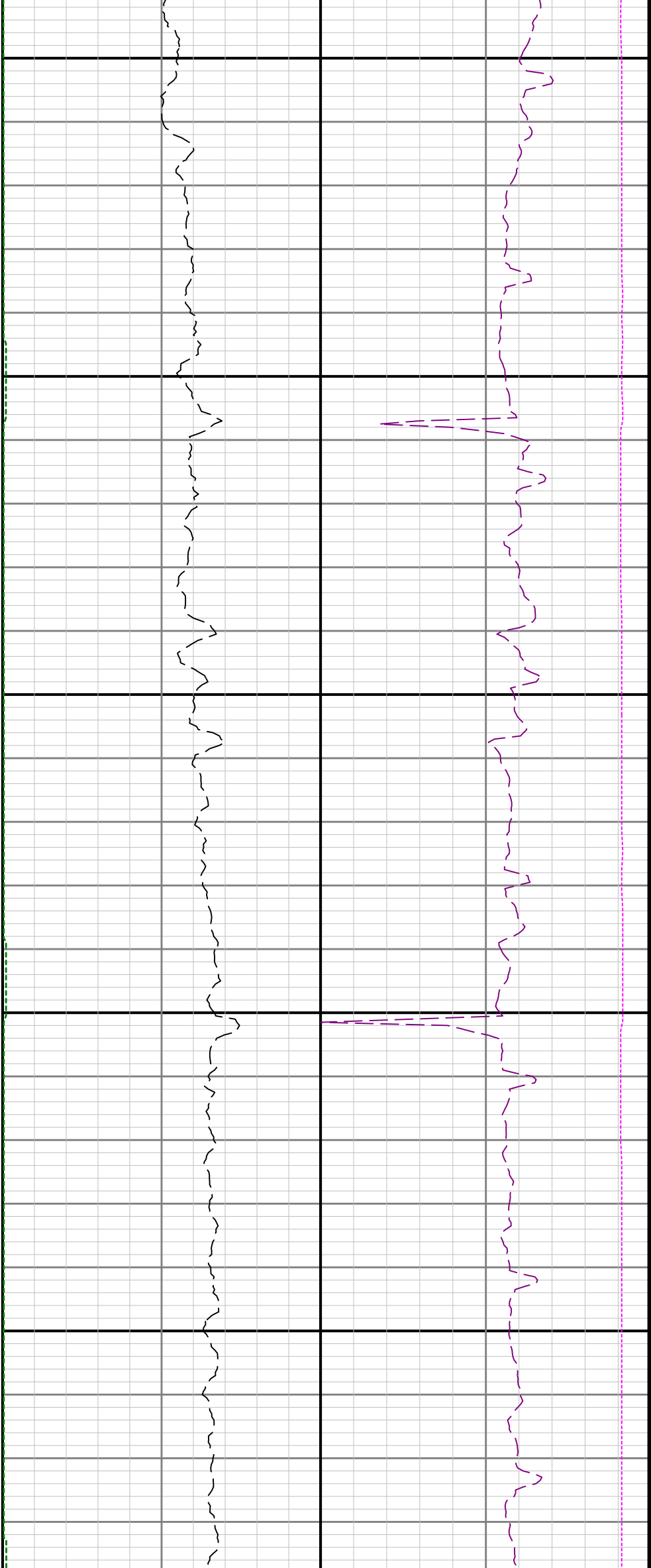




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