



LWD REALTIME/MEMORY LOG - 8.750" SECTION

Gamma Ray

Scale:

1:240 MD

Company: Noble Energy

Well: Wells Ranch AA11-632

Depth Reference:

Field: DU Basin

Driller's Depth

County: Weld Country: United States

Status:

Final Print

Surface Location:

Latitude: 30° 45' 41.11" N

Other Services:

API No: 05-123-41256

Longitude:

98° 15' 45.66" W

Job ID: 7285446

SEC: 11

TWN: 6N

RGE: 63W

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

Elevation:

0.00 ft

Log Measured From: Rig Floor

Above P.D.

4884.00 ft

KB:

DF:

GL:

4884.00 ft

4884.00 ft

Dates

Interval Logged

Magnetic Field Reference

Date From: 2015-06-10

Top: (ft)

1800.00

Azi Reference North:

Grid

Dip Angle: (deg)

67.12

Date To: 2015-06-14

Bottom: (ft)

13885.00

Total Magnetic Field Strength: (nT)

52728

Spud Date: 2015-06-05

Mag to Reference North Correction: (deg)

7.65 E

Borehole Record

Casing Record

Hole Size (in)

From (ft)

To (ft)

Size (in)

Weight (lb/ft)

From (ft)

To (ft)

8.750

1853.00

13885.07

9.625

32.00

30.00

1840.00

Mud Record

Deviation Record

Type

From (ft)

To (ft)

Hole Size (in)

Interval (ft)

Inc | Az (Start)

Inc | Az (End)

Water Based Mud

1853.00

13885.07

8.750

12032.07

0.54 |

50.04

89.75 | 265.43

Acquisition System

Software Version

Other

Baker Hughes Cadence

1.0.6955.1

Rig:

H&P 326

Prior Studio

1.0.7056.2

Contractor:

Helmerich & Payne Drilling Co

Unit:

NA

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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	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	8.750	PDC	2.00	Motor	1808.26	6046.47	1853.00	6091.21	2015-06-10 09:36	2015-06-10 23:50	10.98
2	2	8.750	PDC	4.00	AutoTrak Curve	6078.76	13878.24	6091.21	13885.07	2015-06-11 09:44	2015-06-14 03:05	57.62

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Adam Schlenz	2015-06-08	2015-06-15	Greg Rudolph	2015-06-08	2015-06-15	Nathan Leopold	2015-06-08	2015-06-15
Juan Chaparro	2015-06-10	2015-06-11	Lari Scarborough	2015-06-11	2015-06-14			

Equipment and Service Data

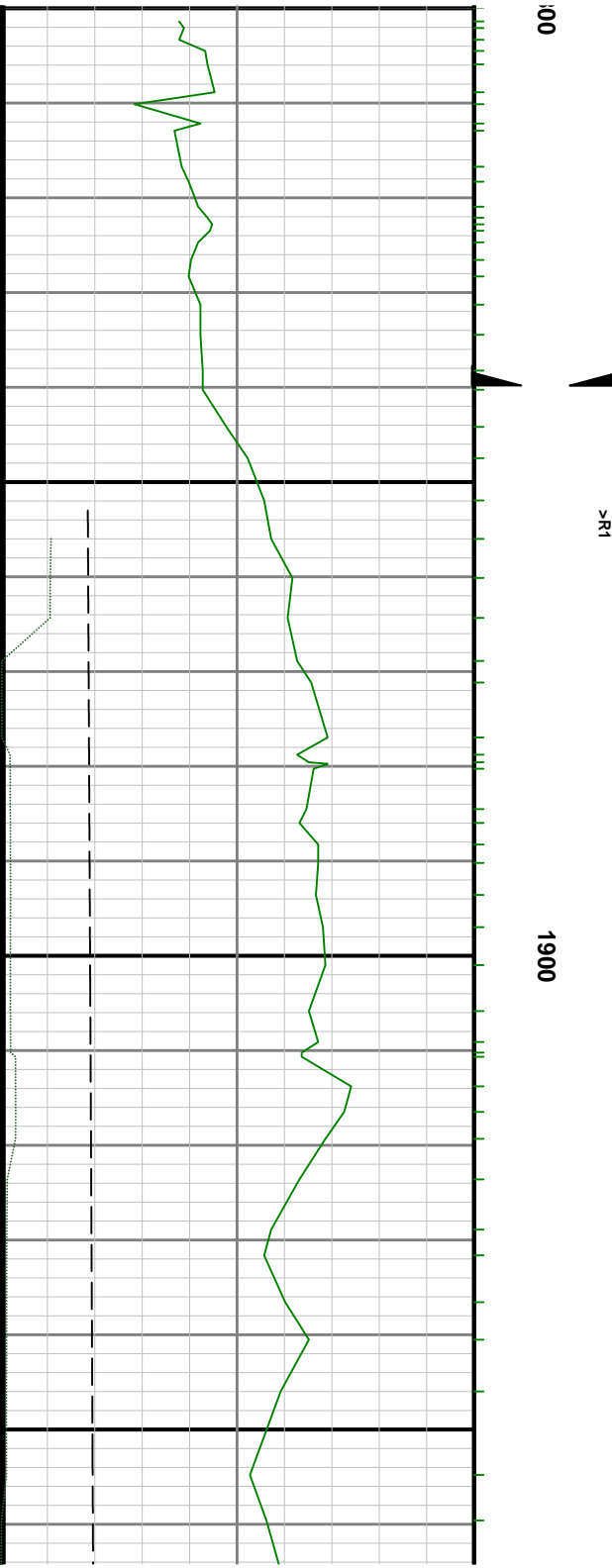
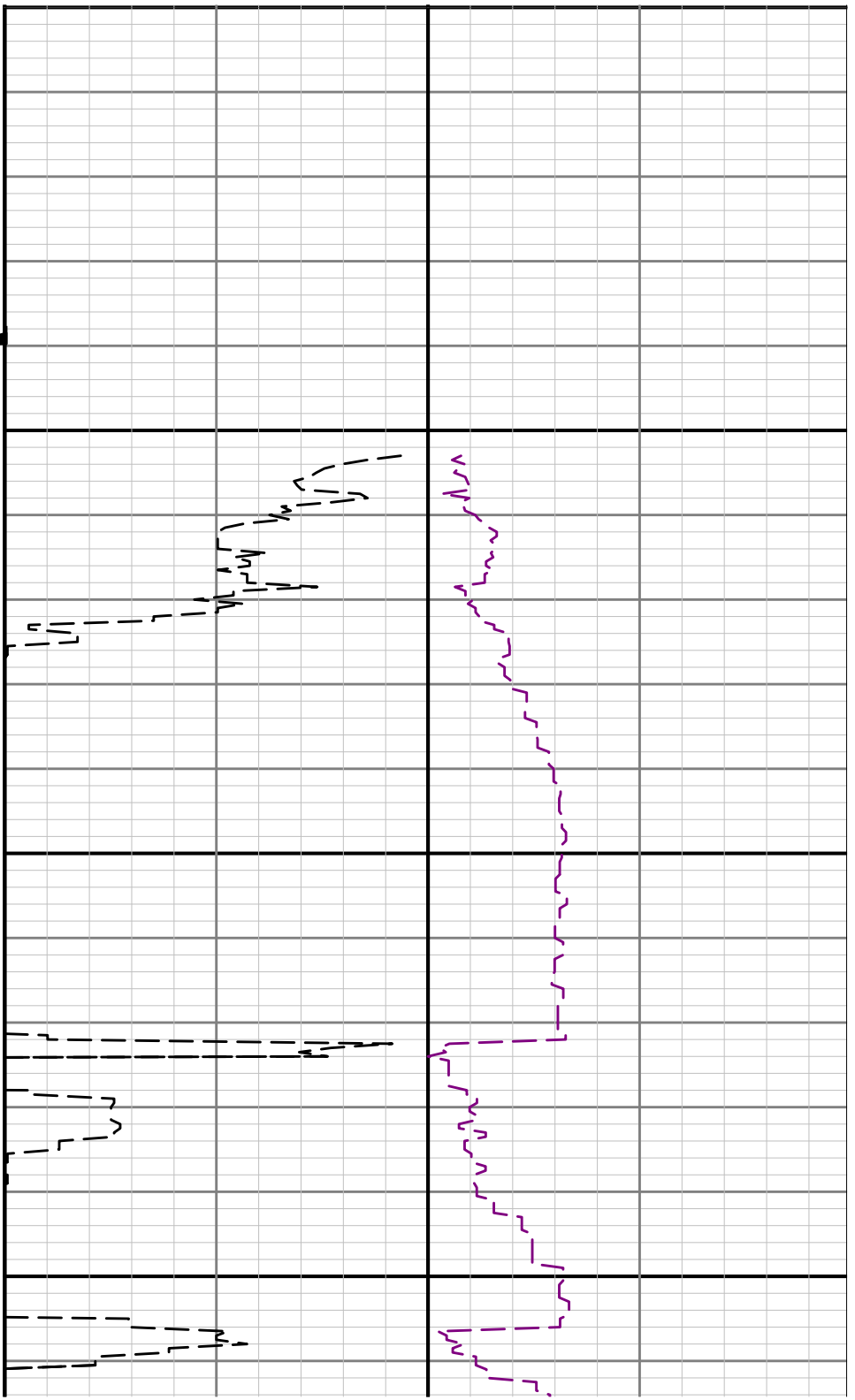
Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	NaviGamma	10481478	Gamma (single)	12.95	44.74	6.750	3.313
1	NaviGamma	10481478	VSS	16.33	48.12	6.750	3.313
1	NaviGamma	10481478	Directional (mag)	16.33	48.12	6.750	3.313
2	ATC_SU	12296367	Near Bit Inclination	5.93	6.83	7.000	4.330
2	ATC_MWD	12651936	Gamma (single)	2.22	12.45	7.000	3.250
2	ATC_MWD	12651936	Directional (mag)	12.29	22.52	7.000	3.250

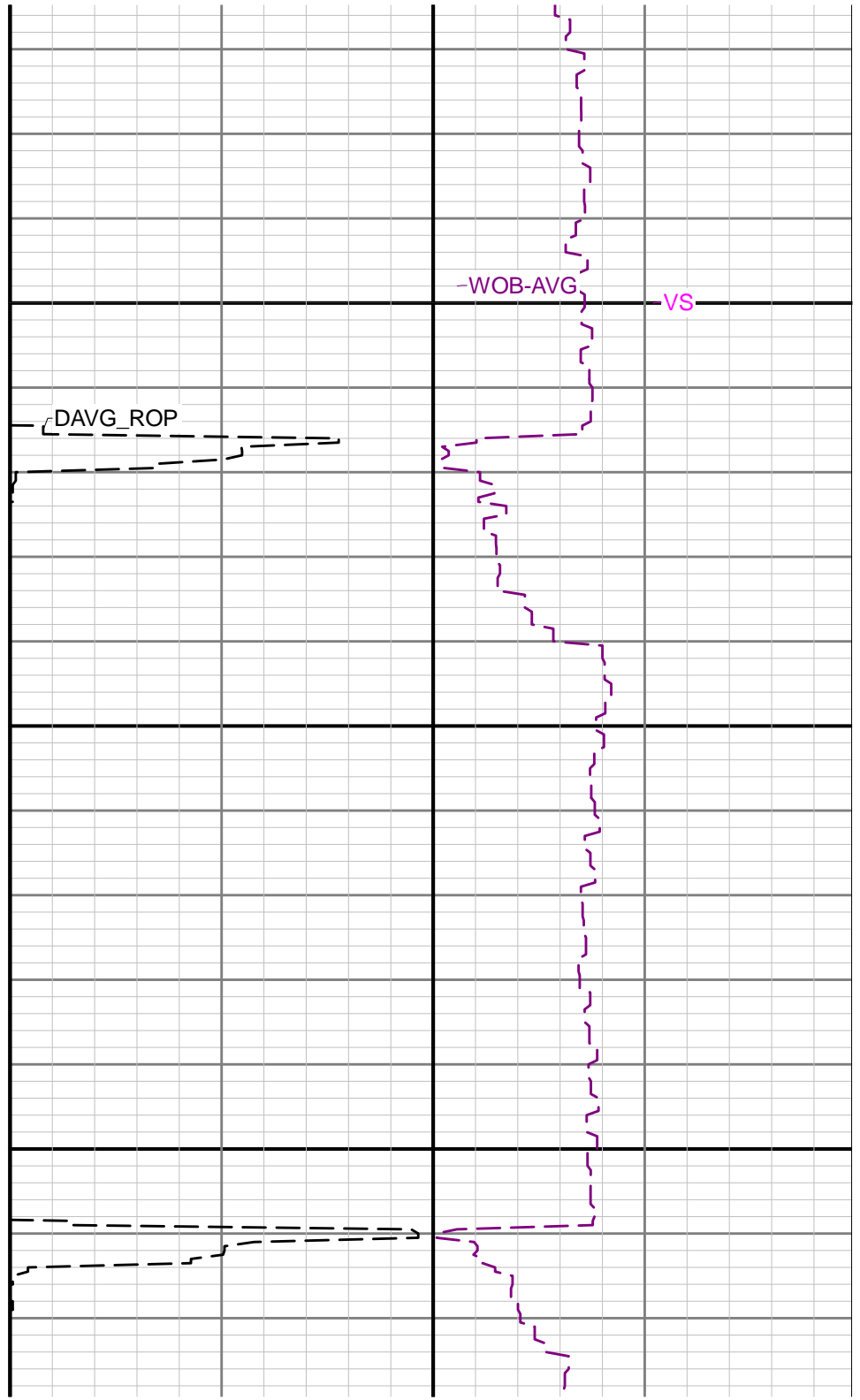
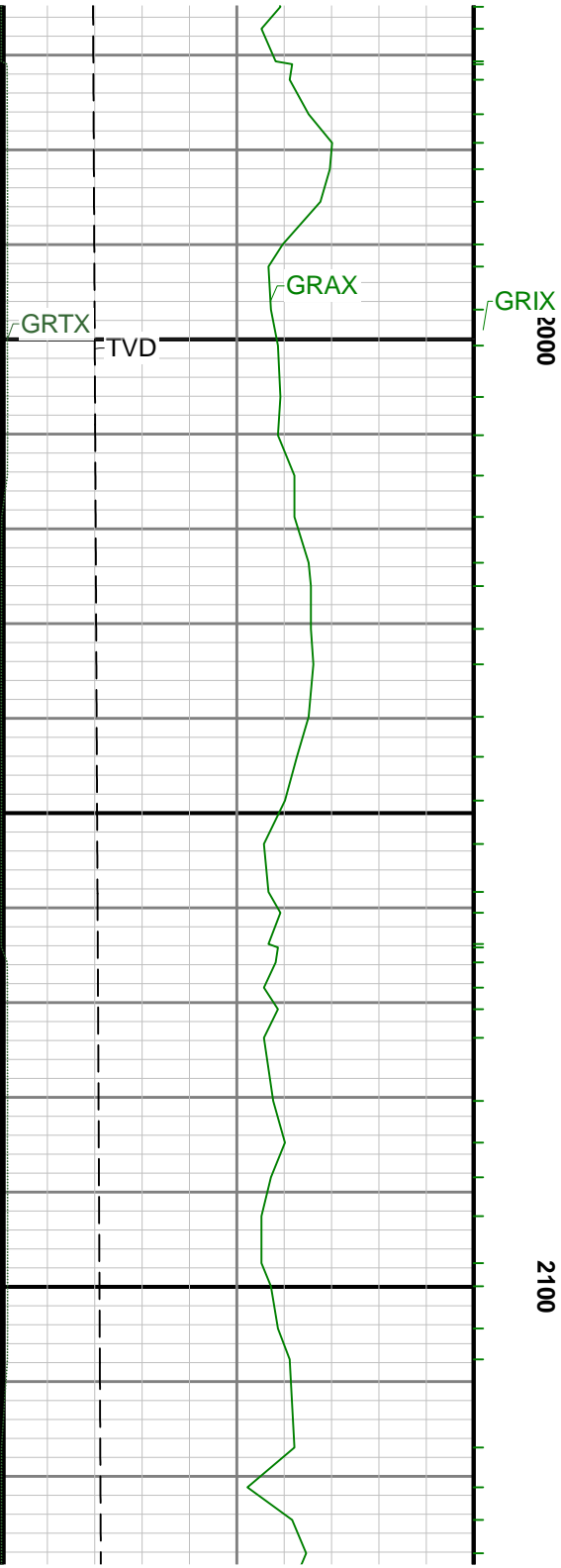
Service and Tool Mnemonics

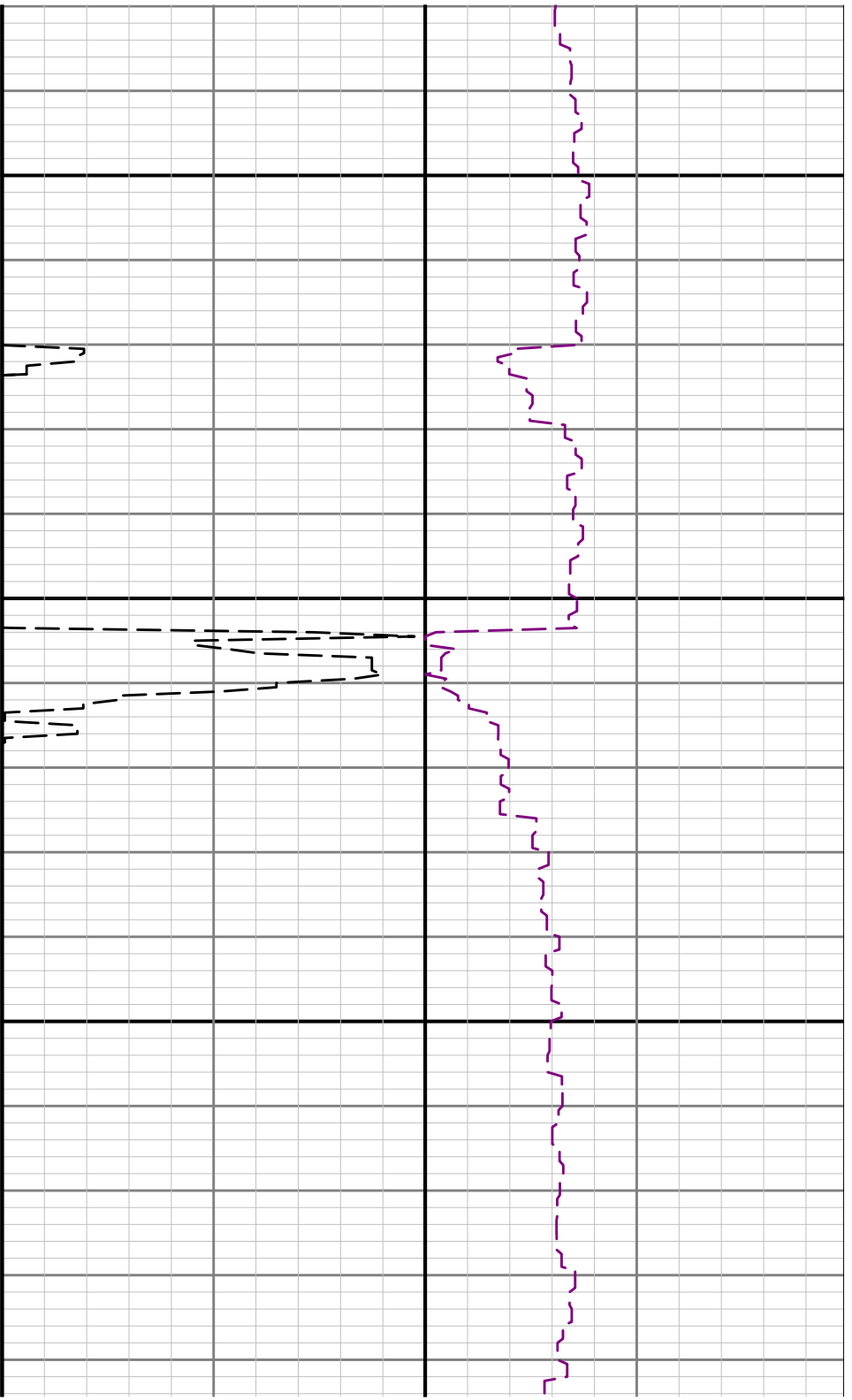
Mnemonic	Name	Description
GAM	NaviGamma	Probe Based Gamma Module, NaviTrak Platform
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

Remarks

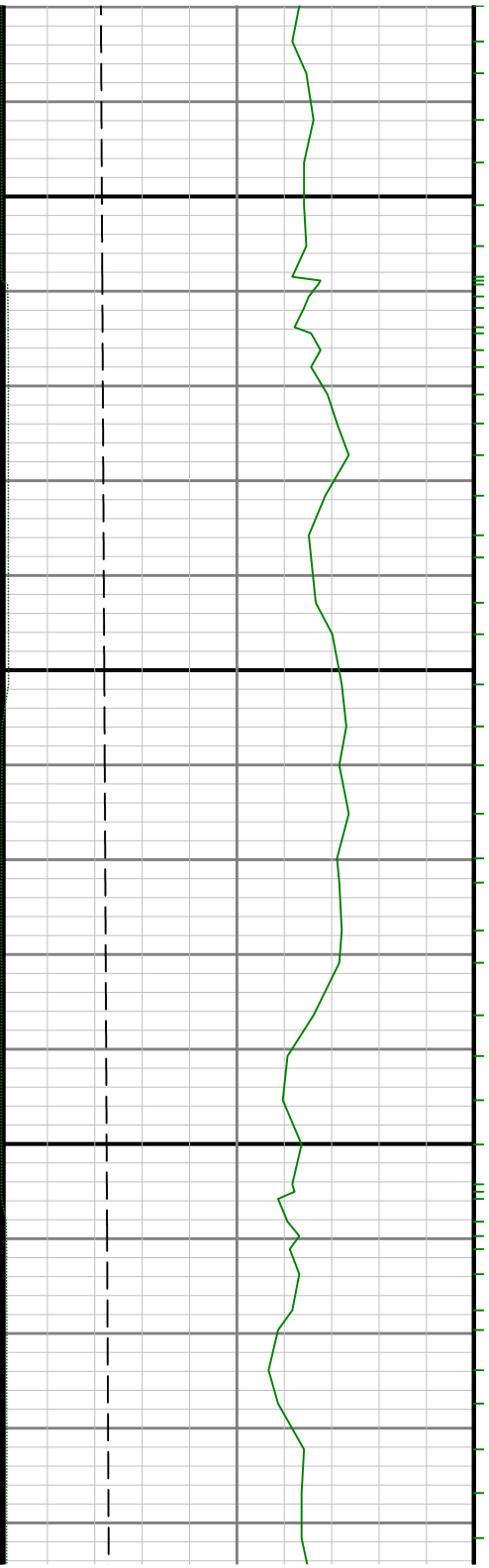
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	8814.79	8.750	2	Gap in Gamma Ray due to downlinking while drilling
2	10000.04	8.750	2	2 ft casing cemented between 10000-10000 Feet MD (8750 Feet TVD)

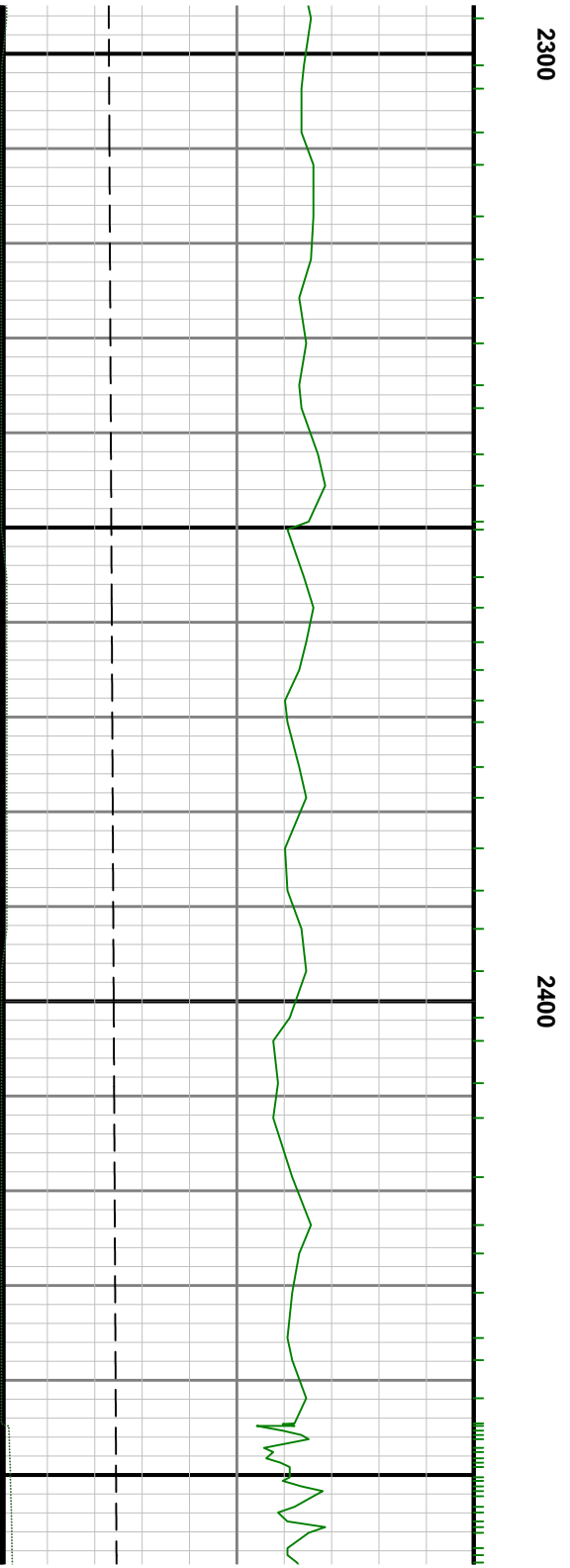
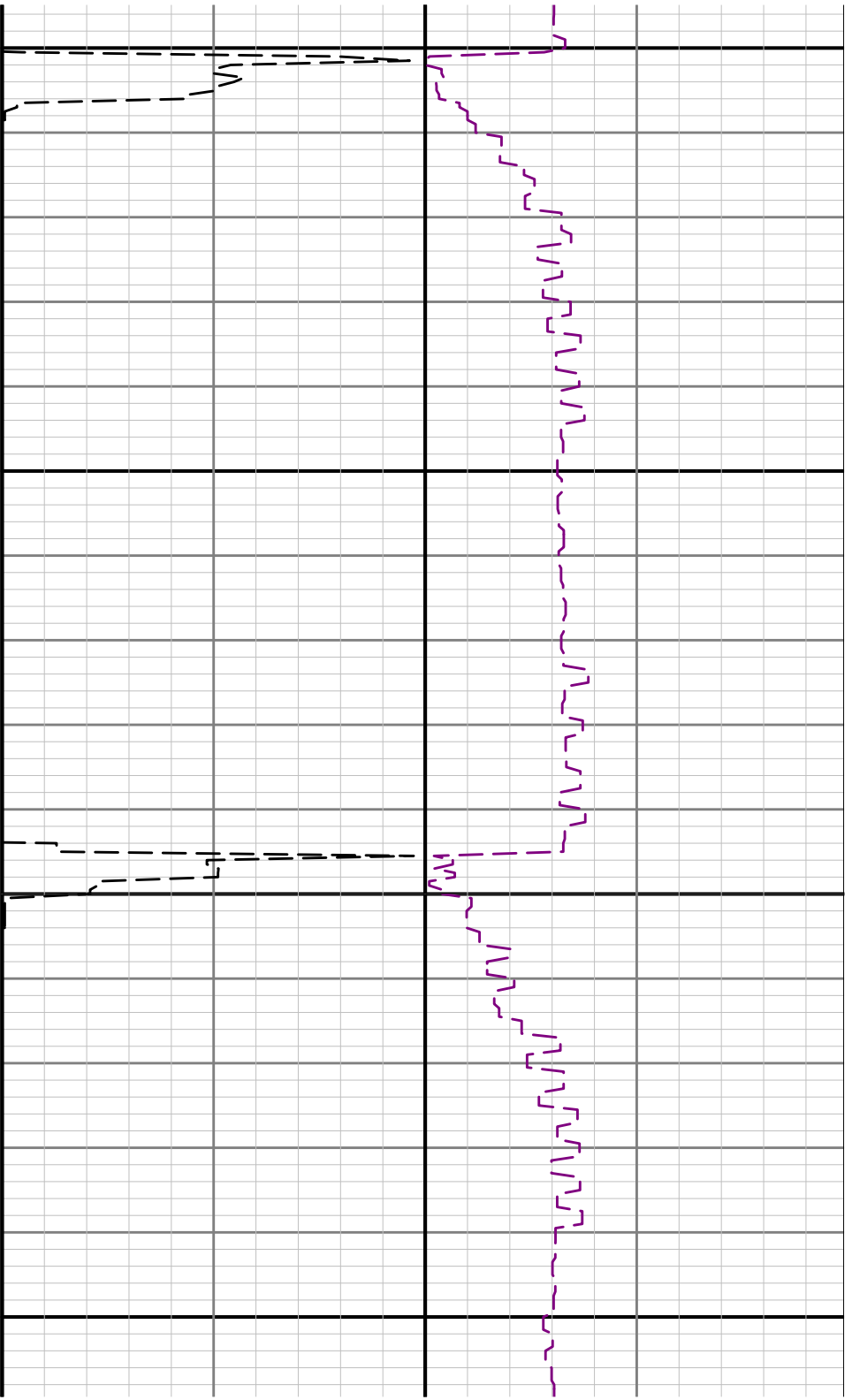


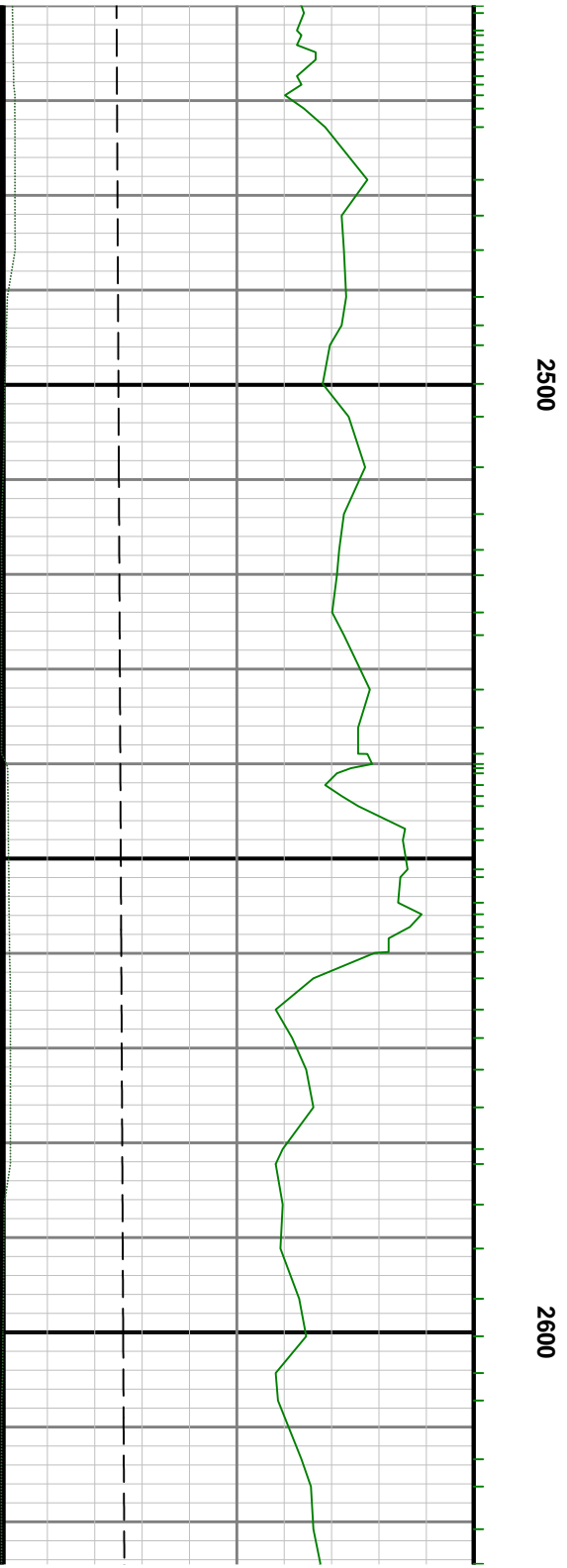
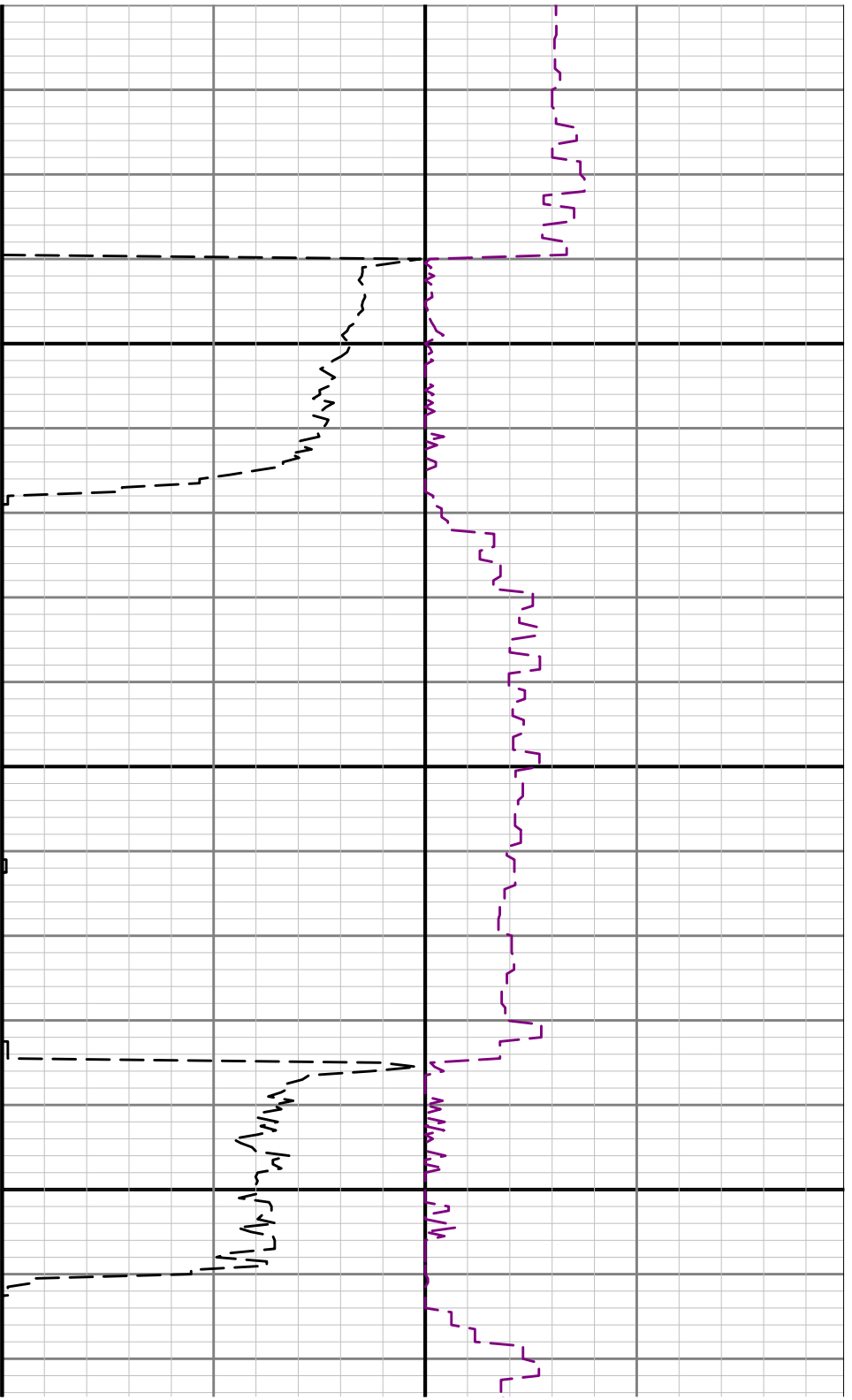


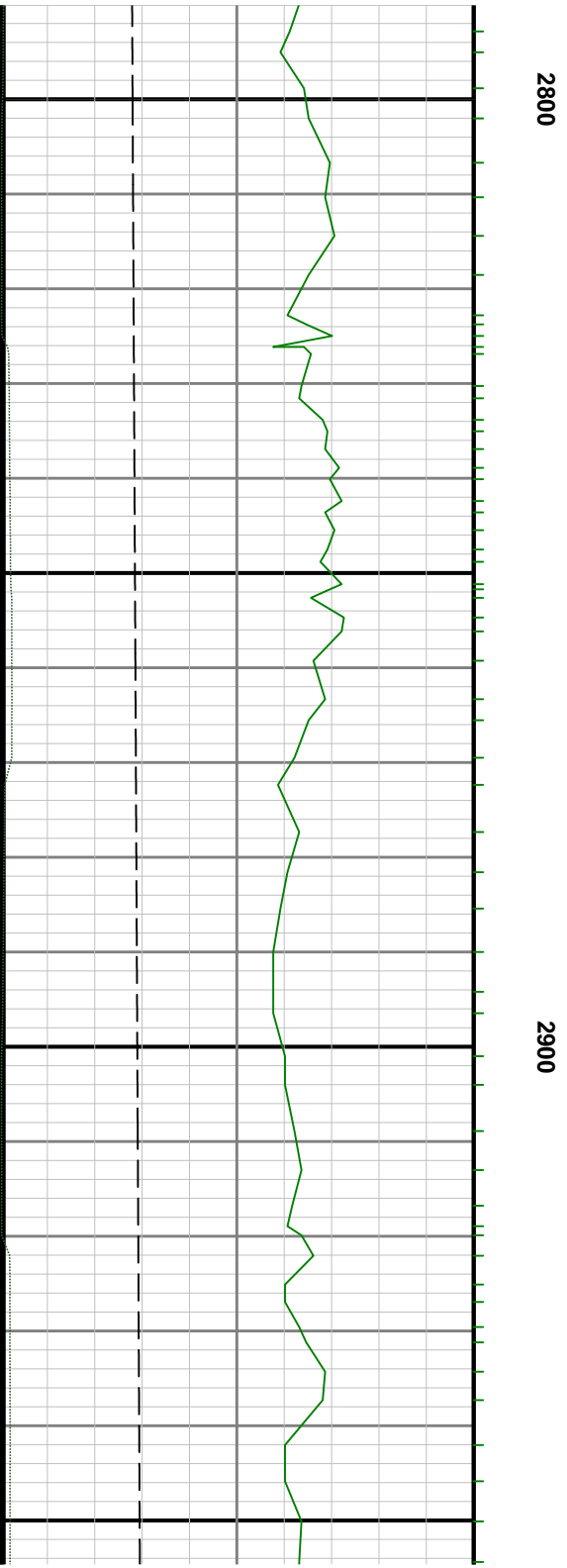
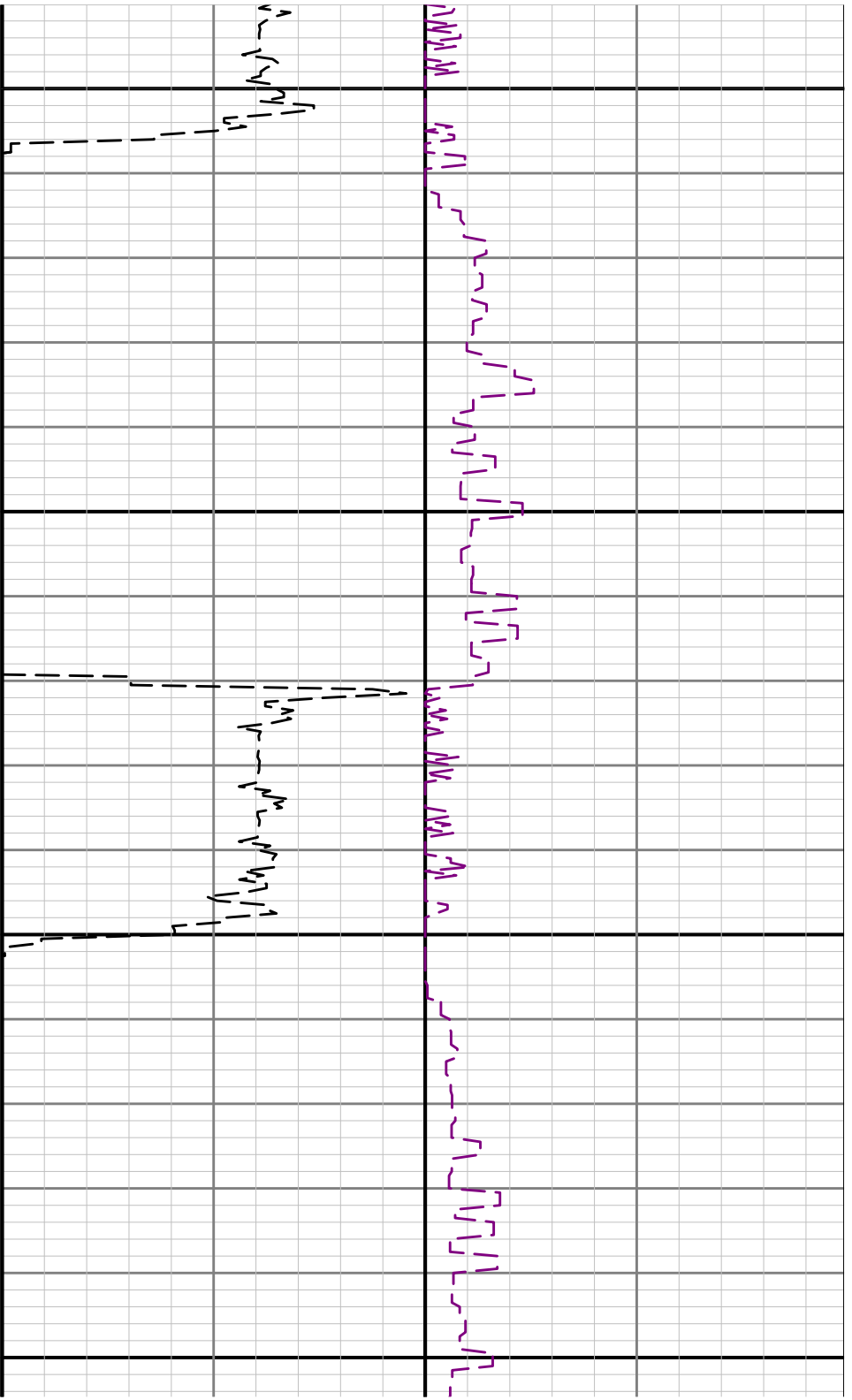


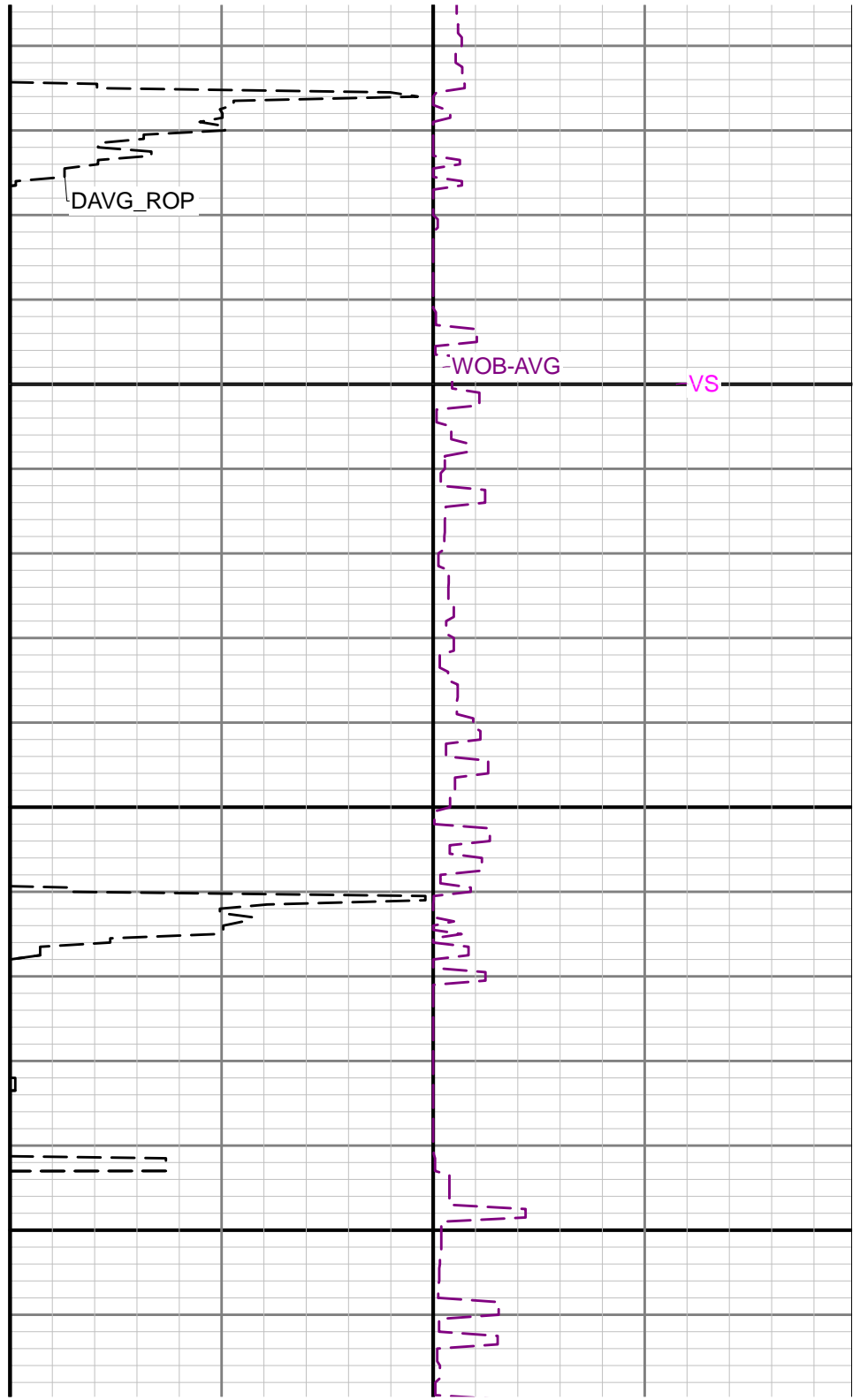
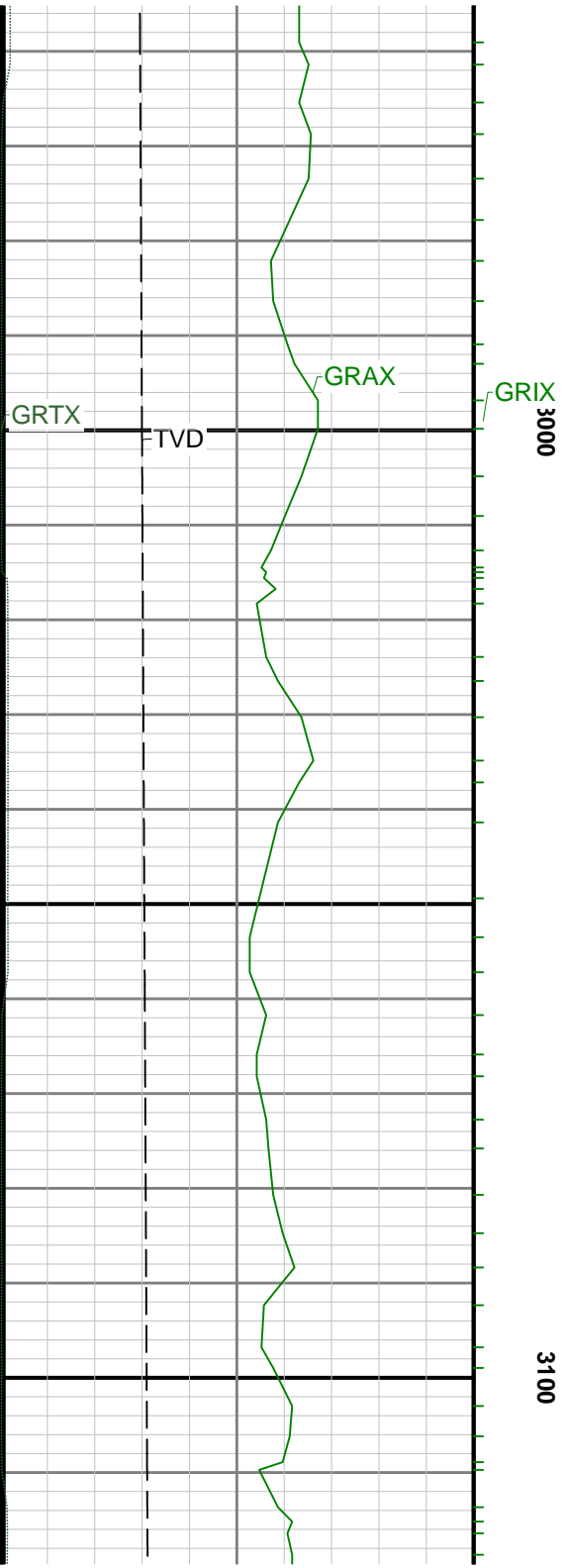
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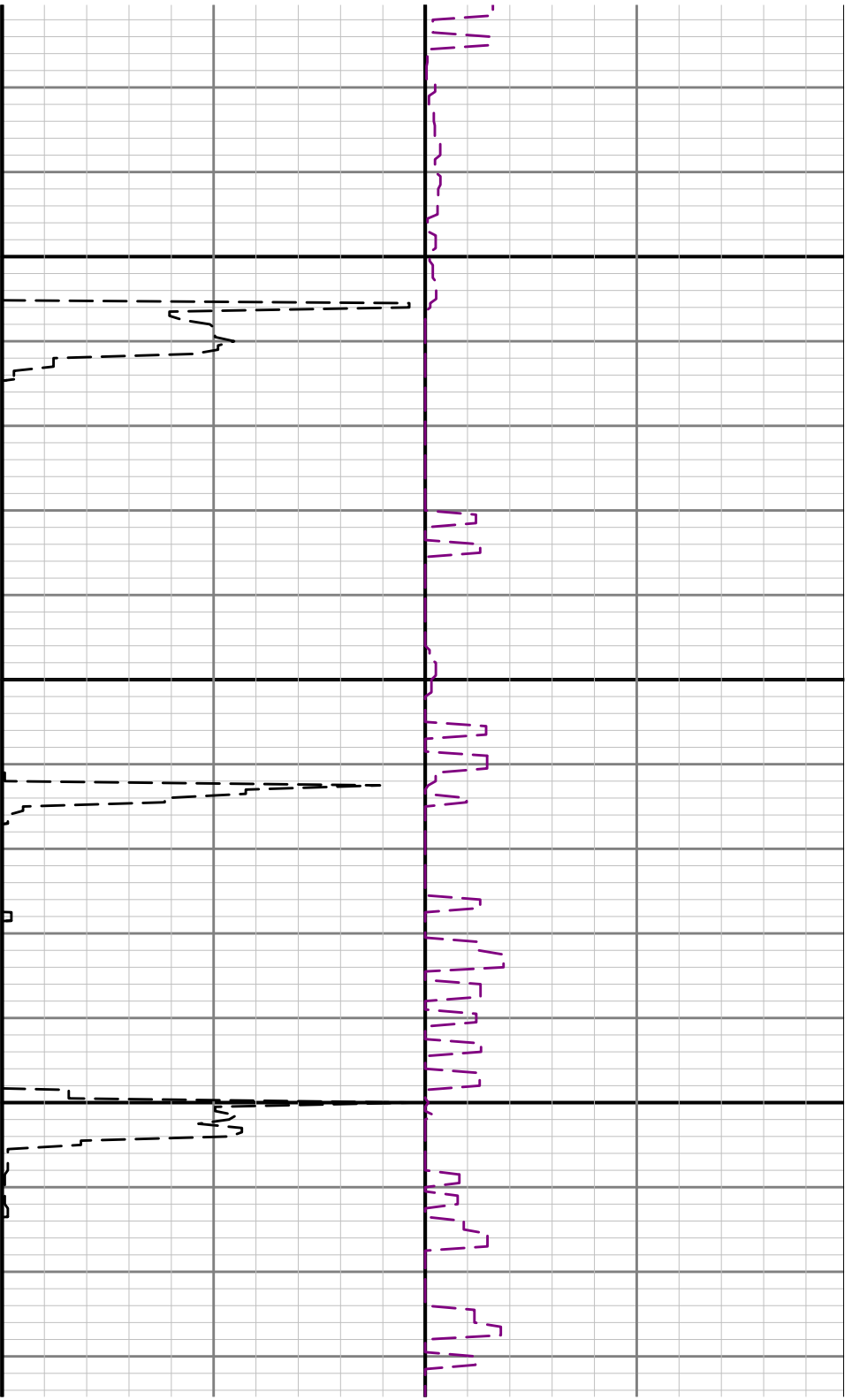




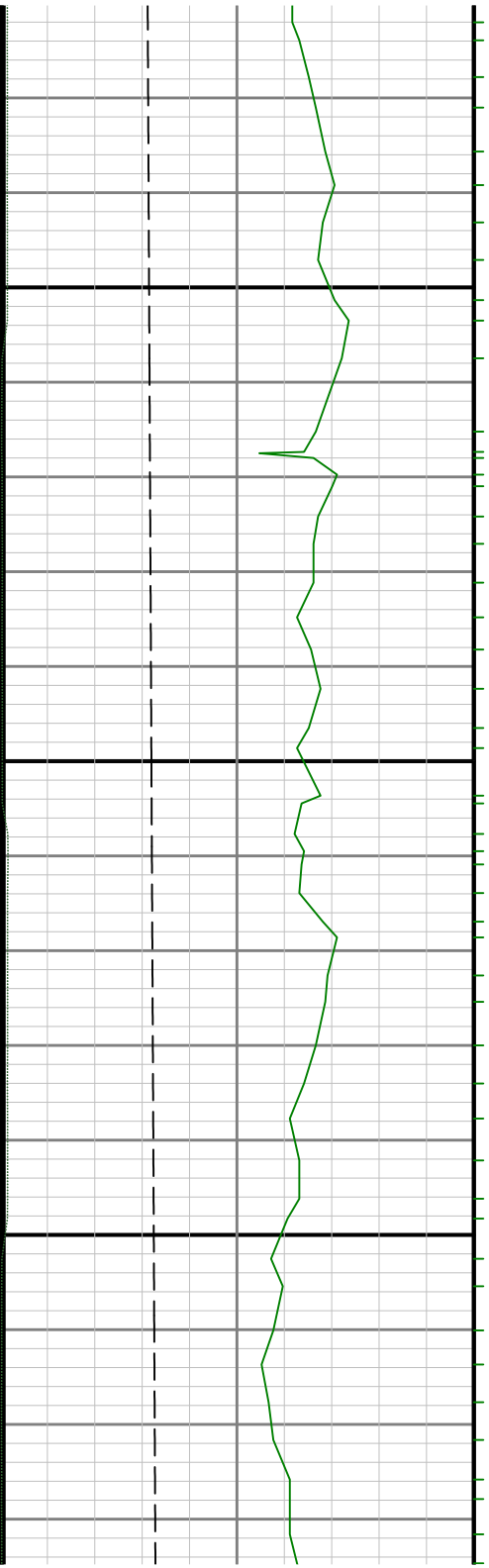


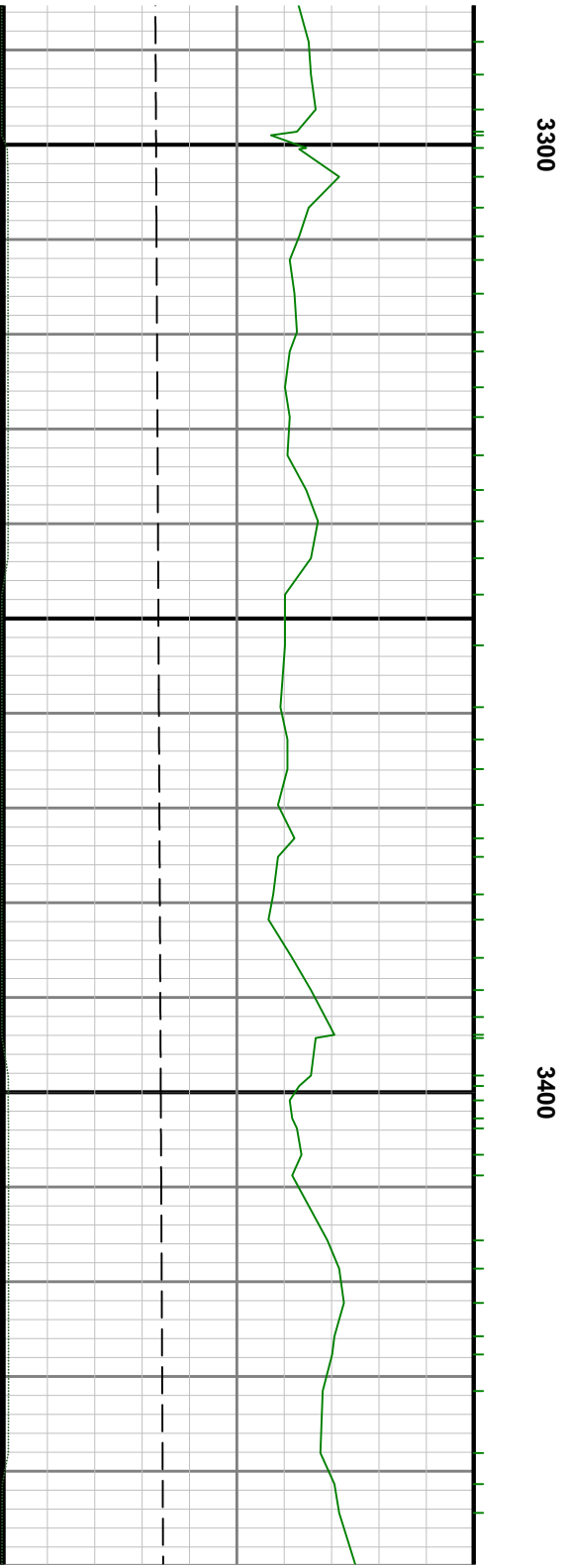
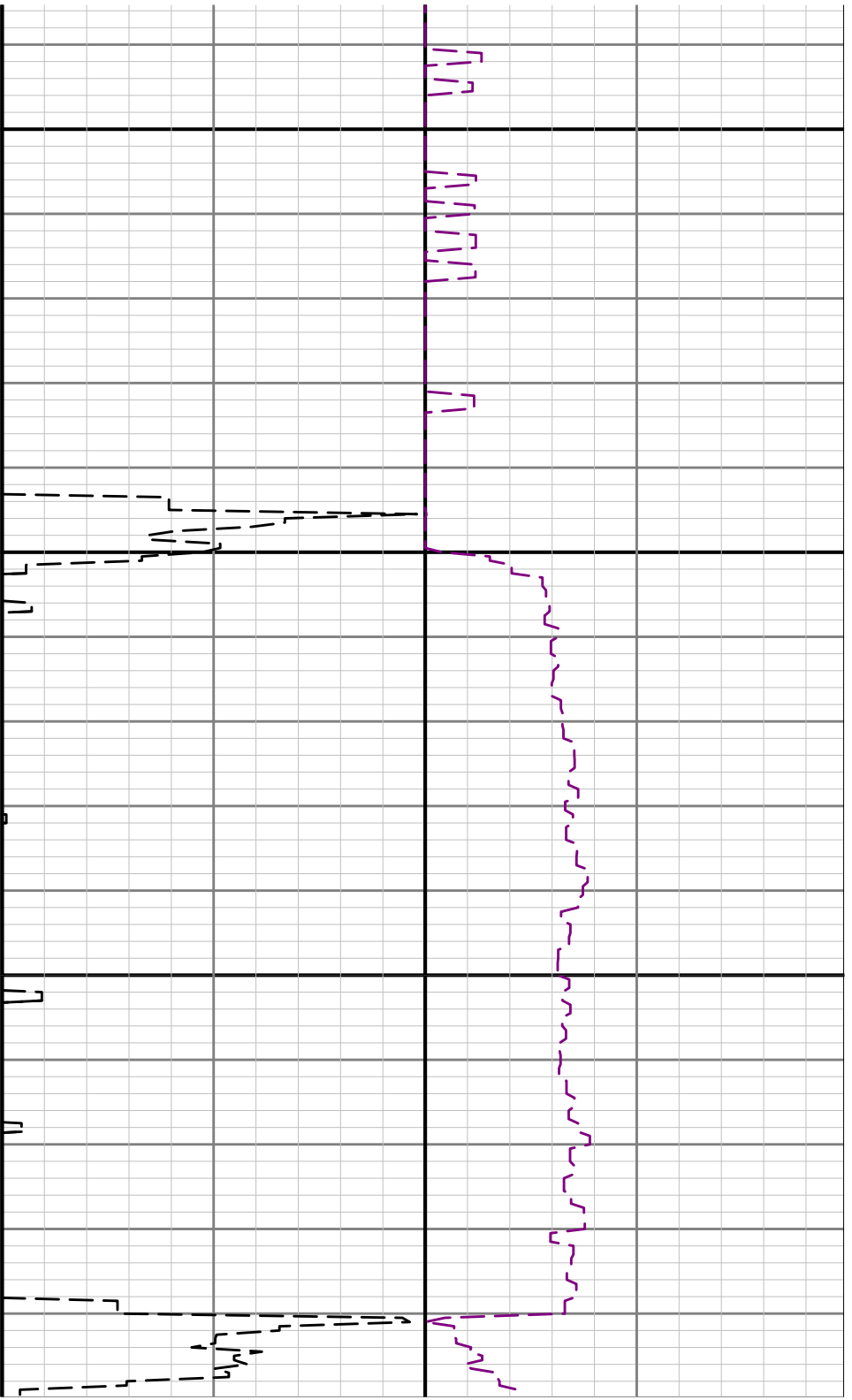


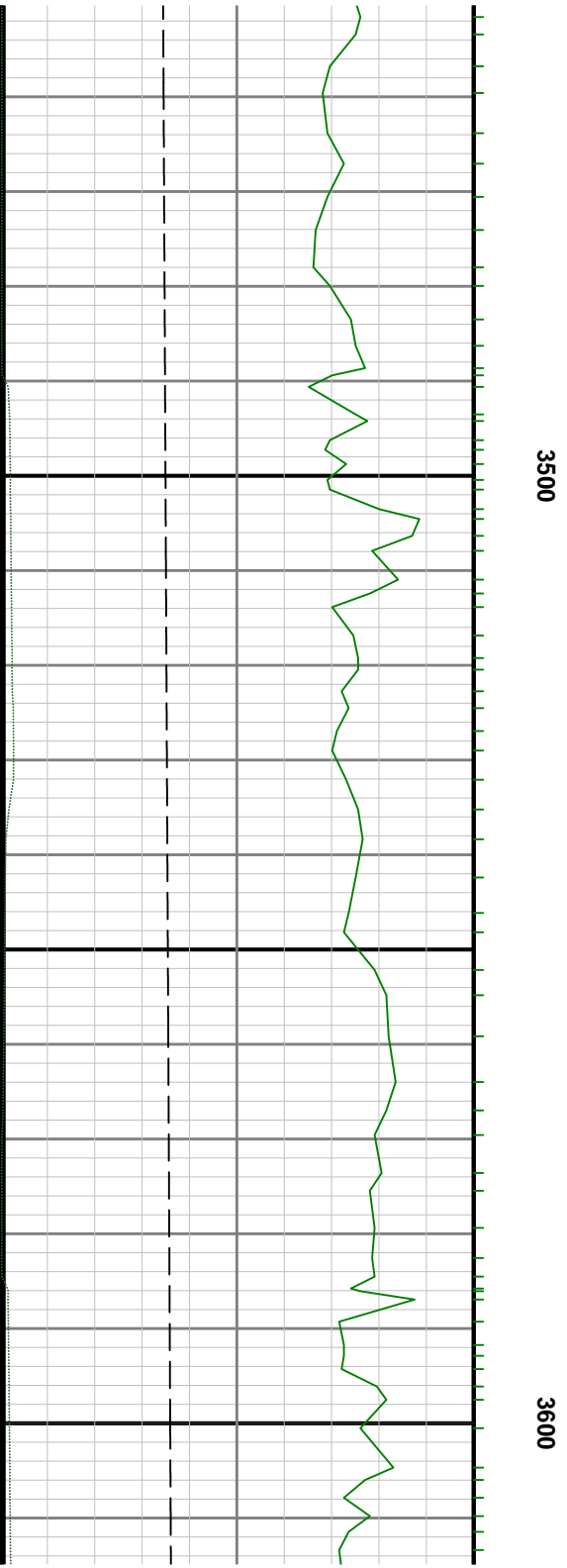
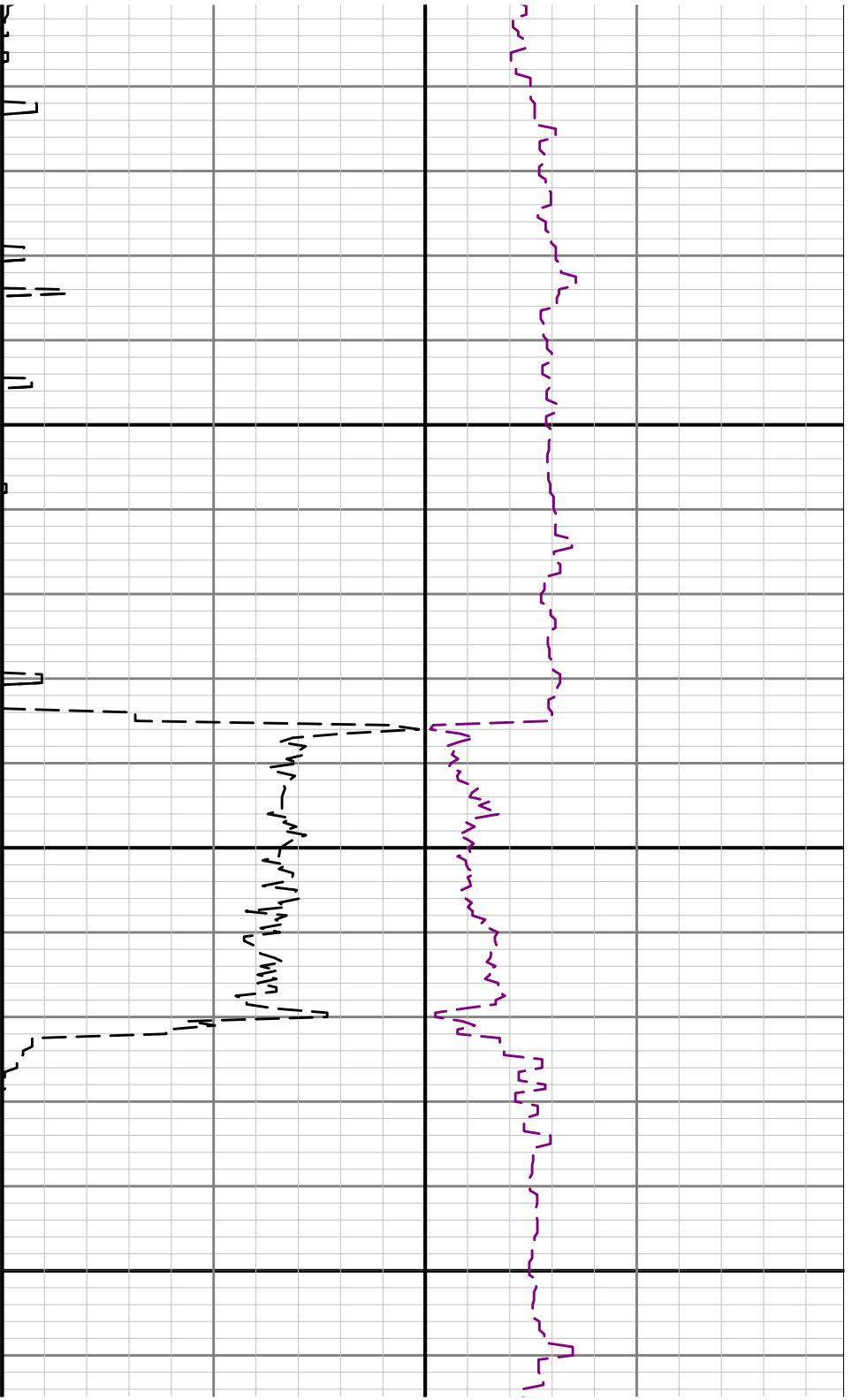


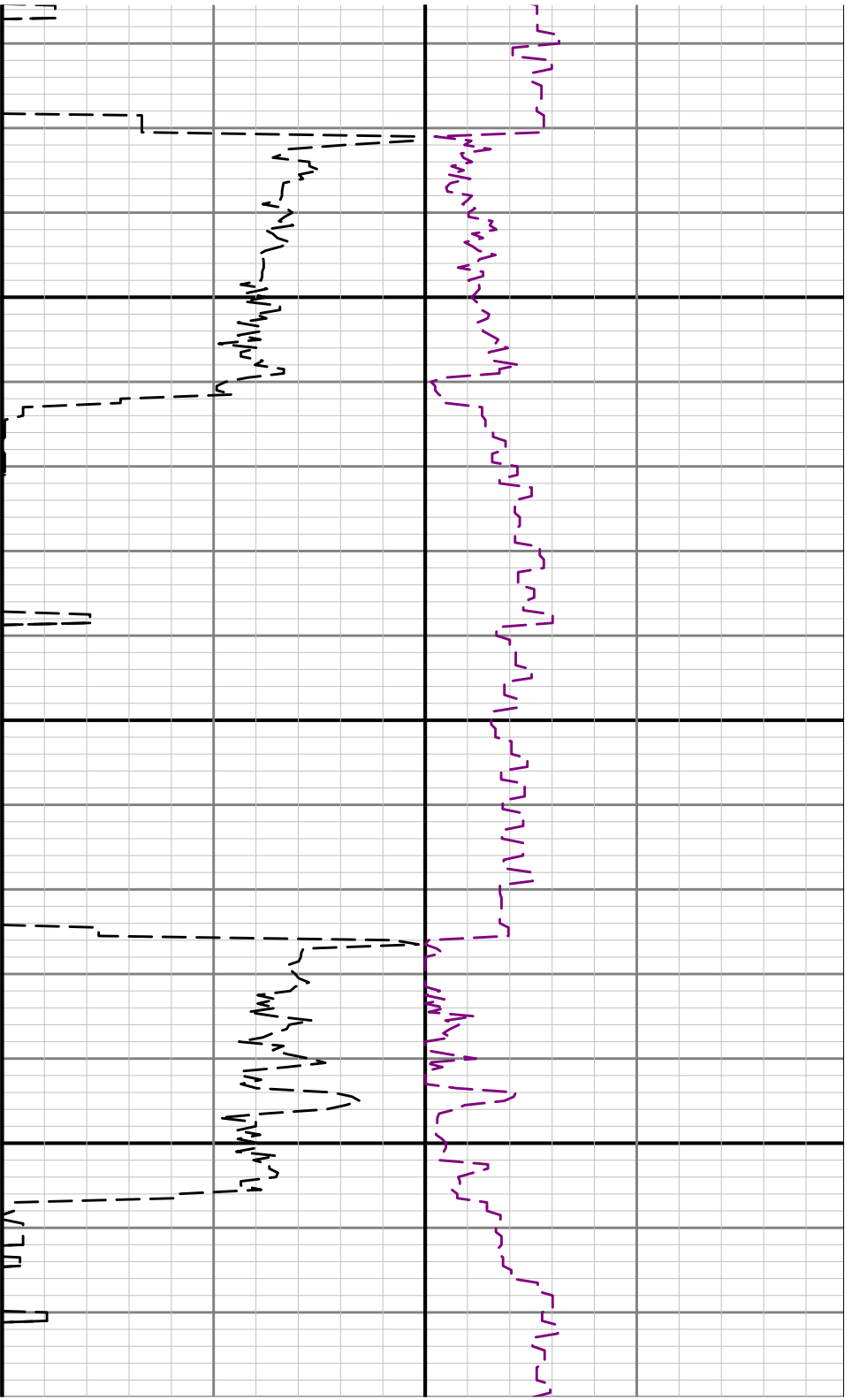


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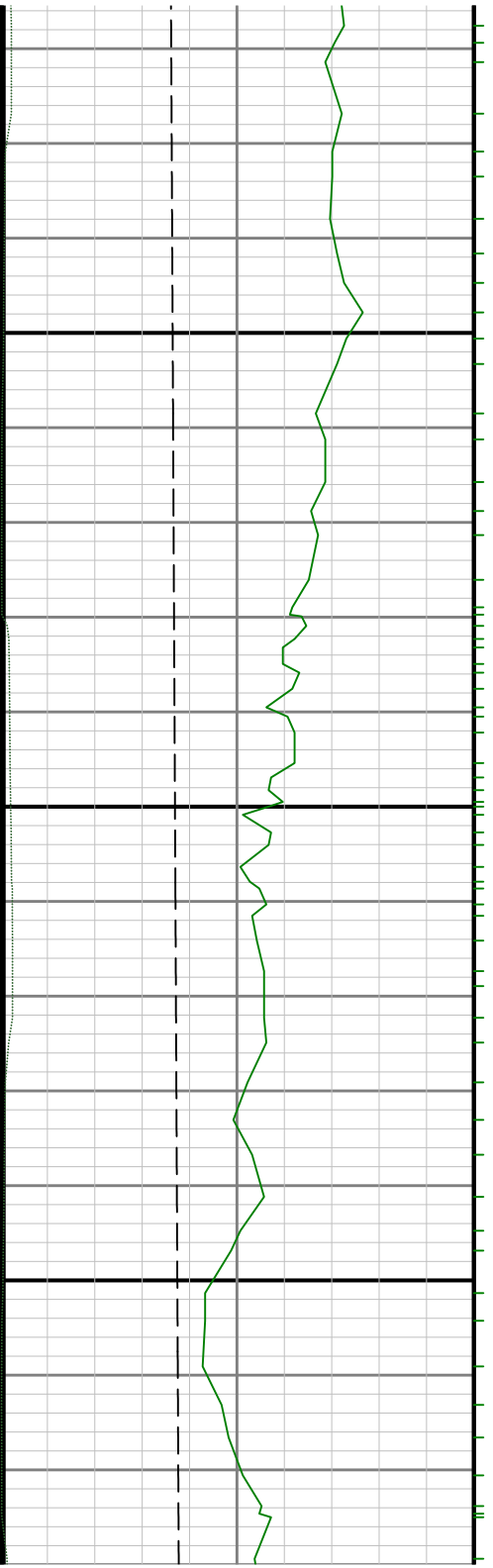


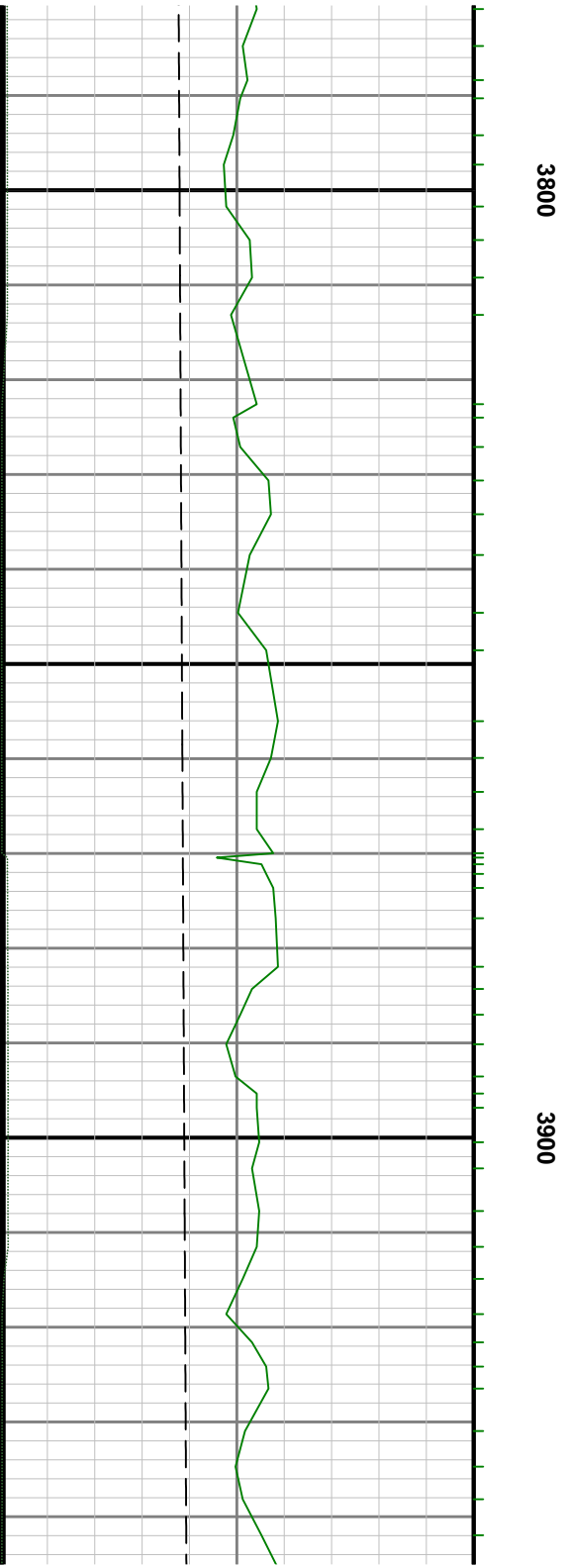
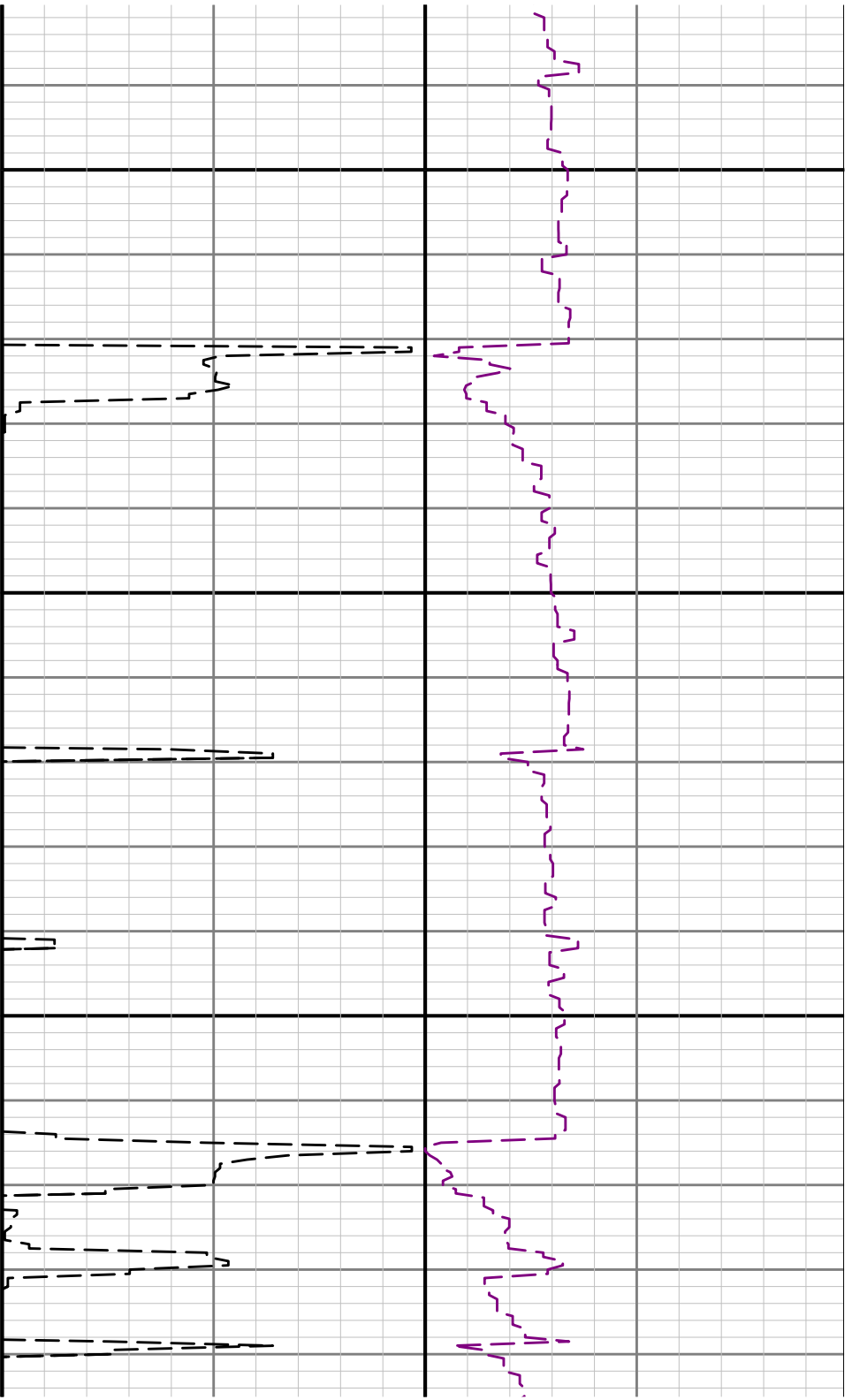


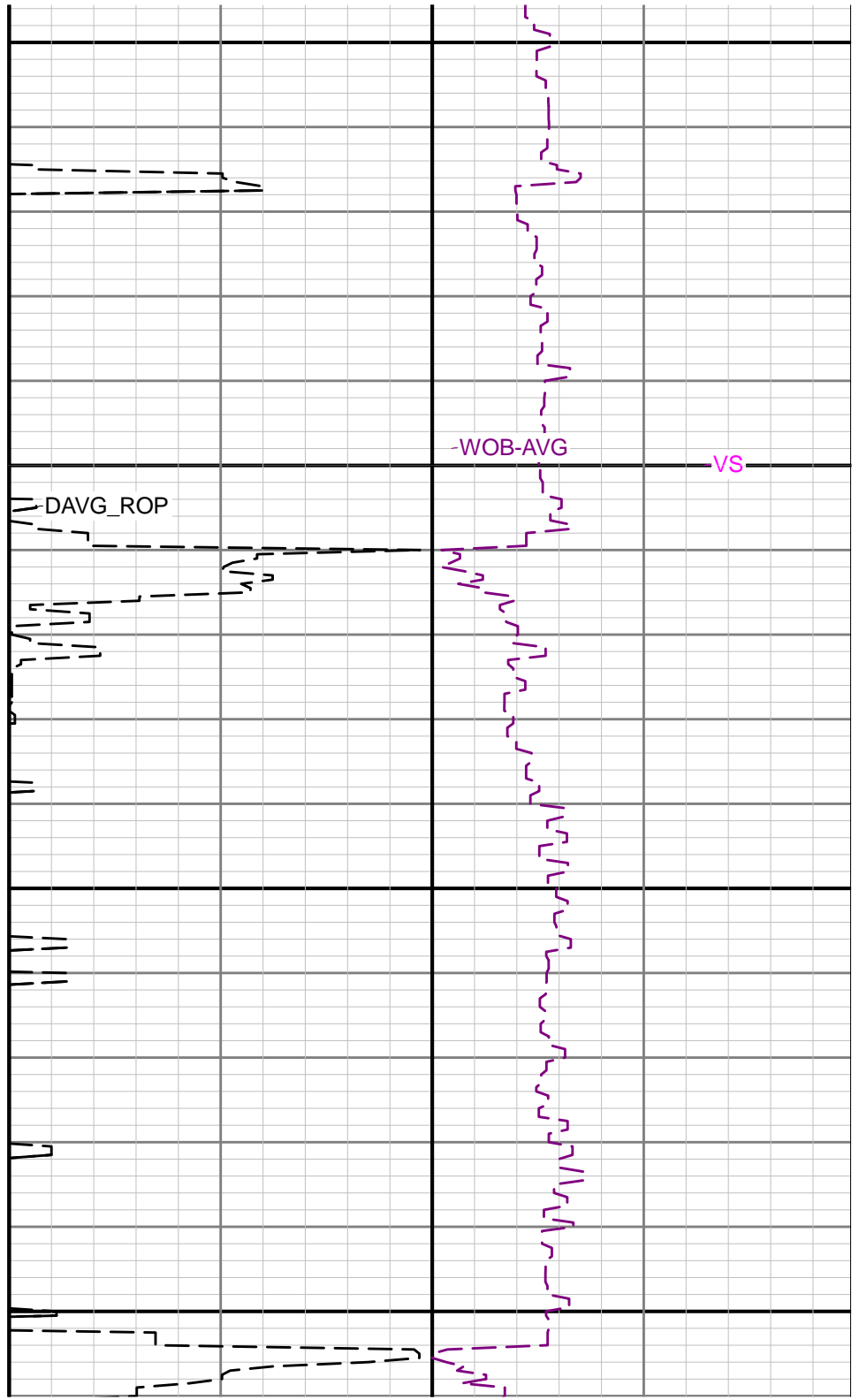
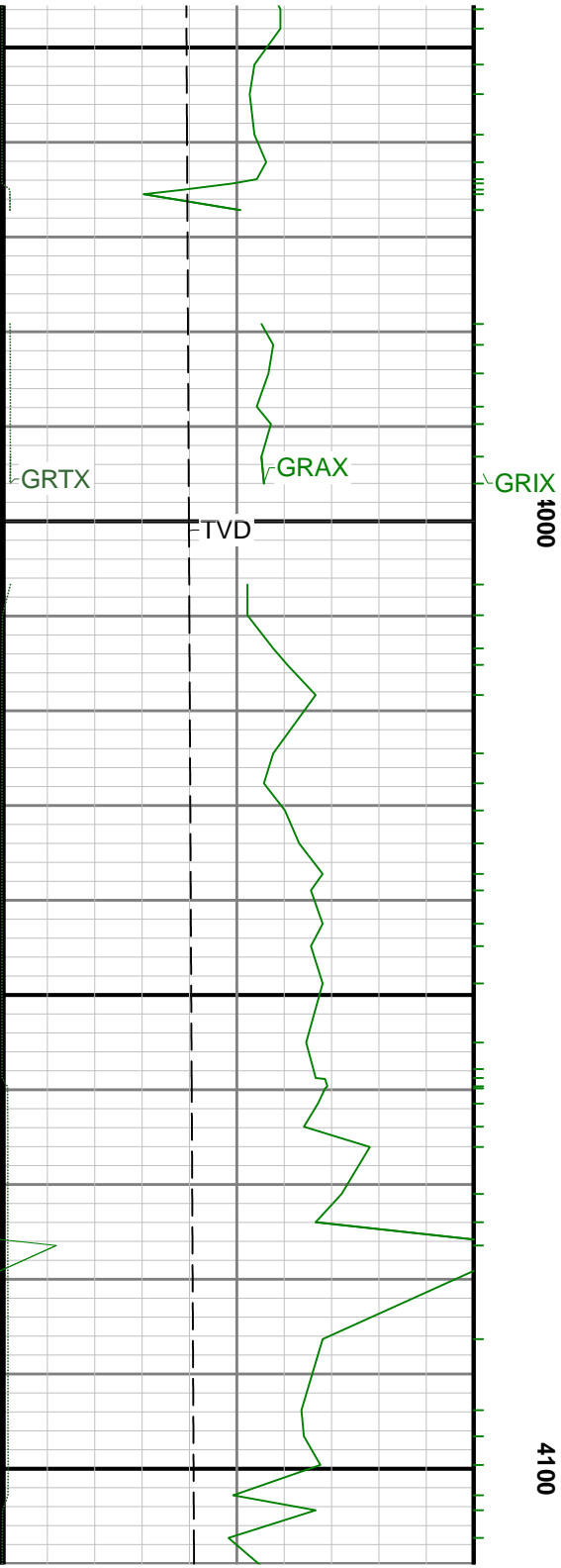


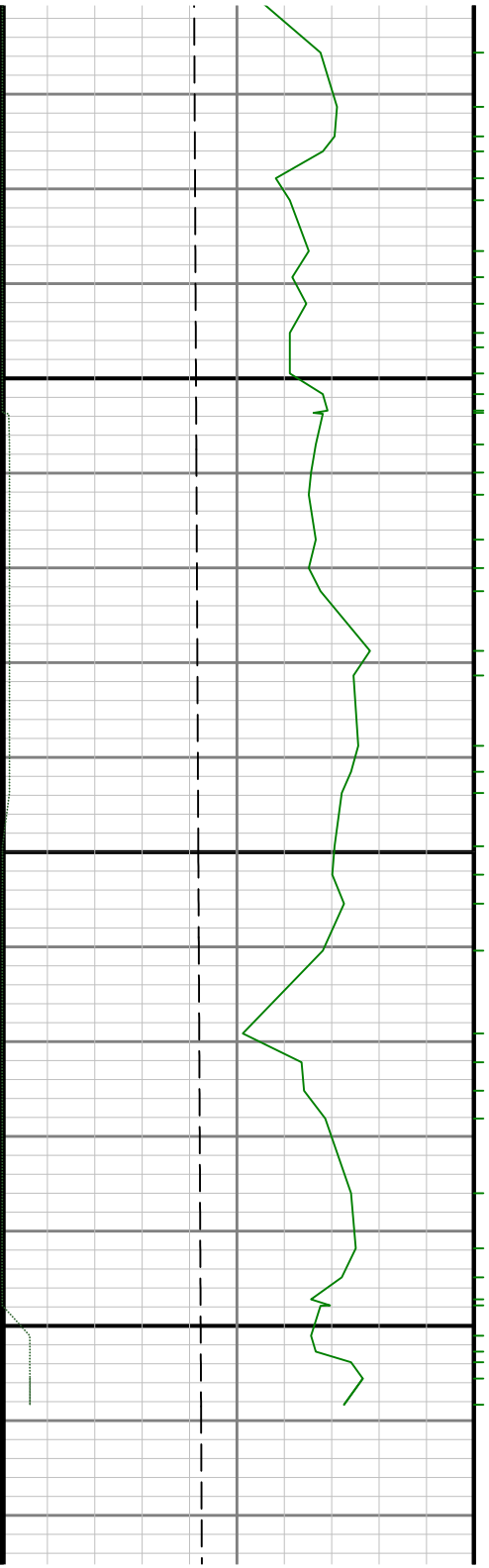
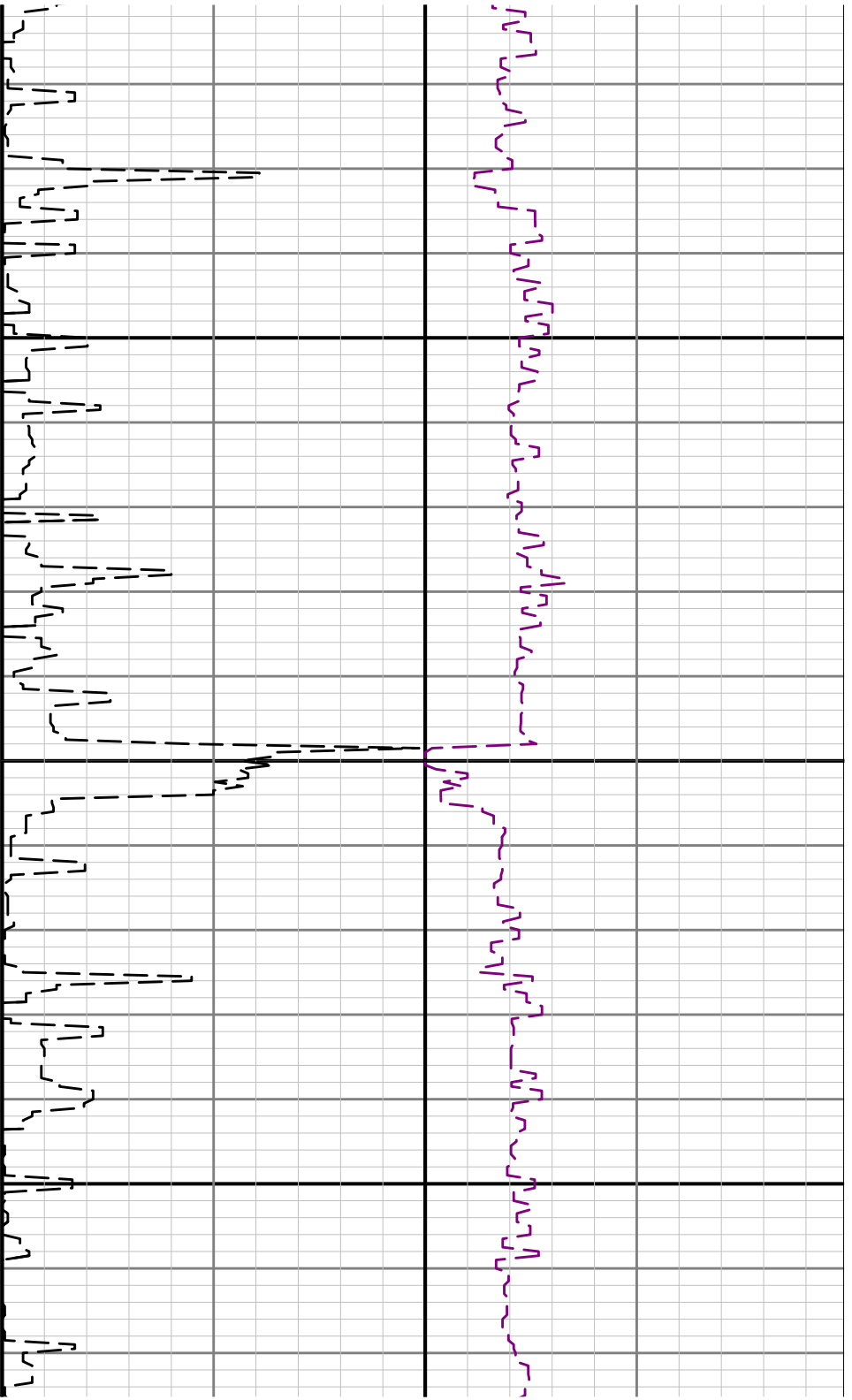


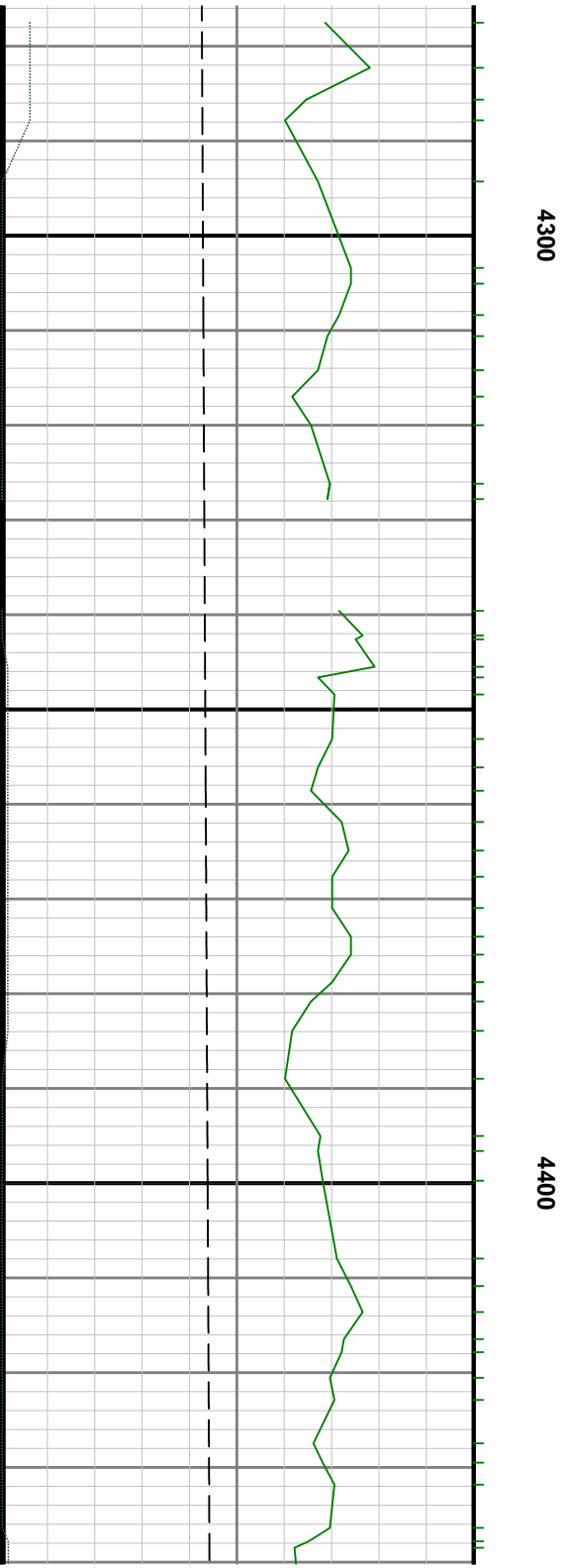
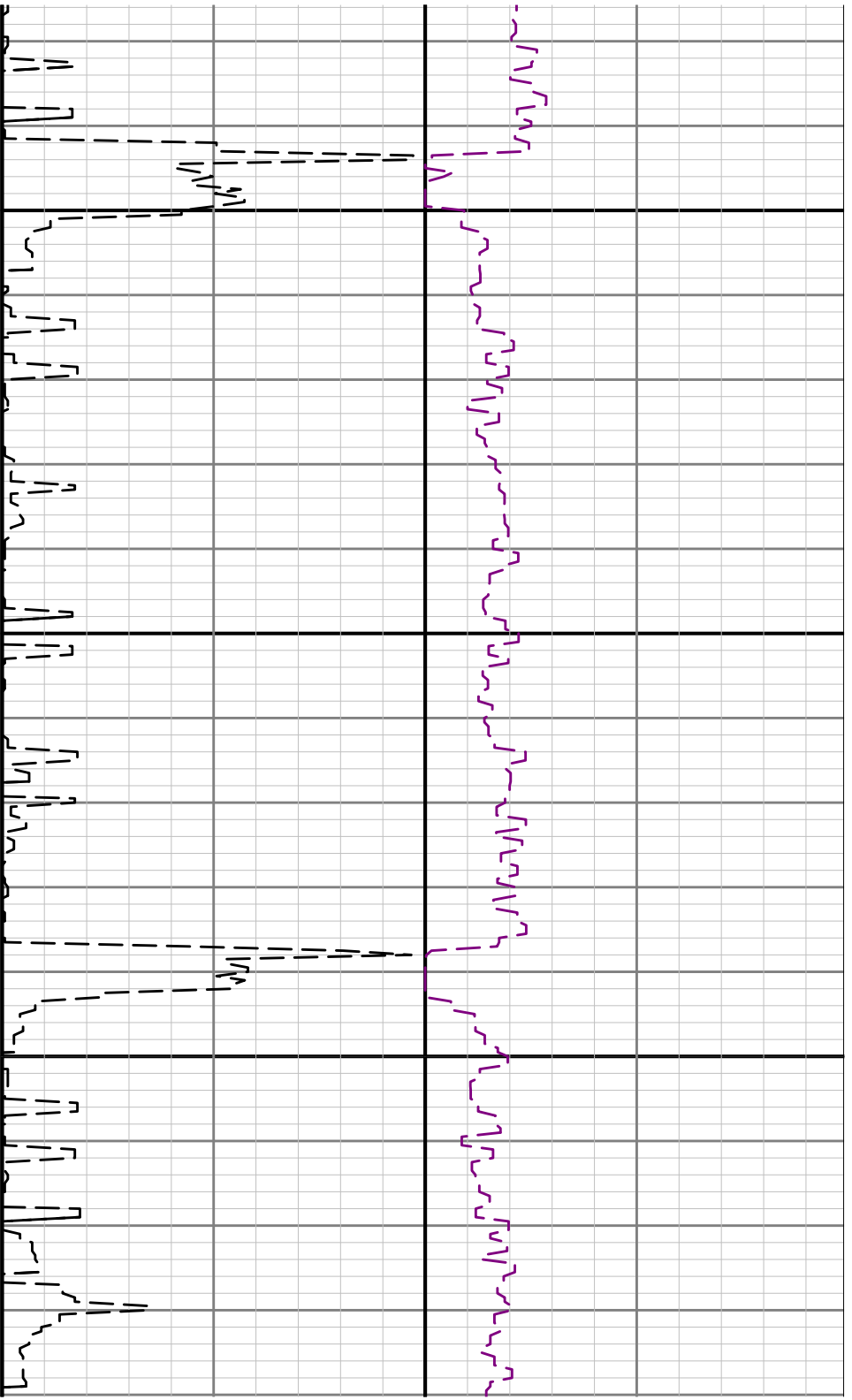
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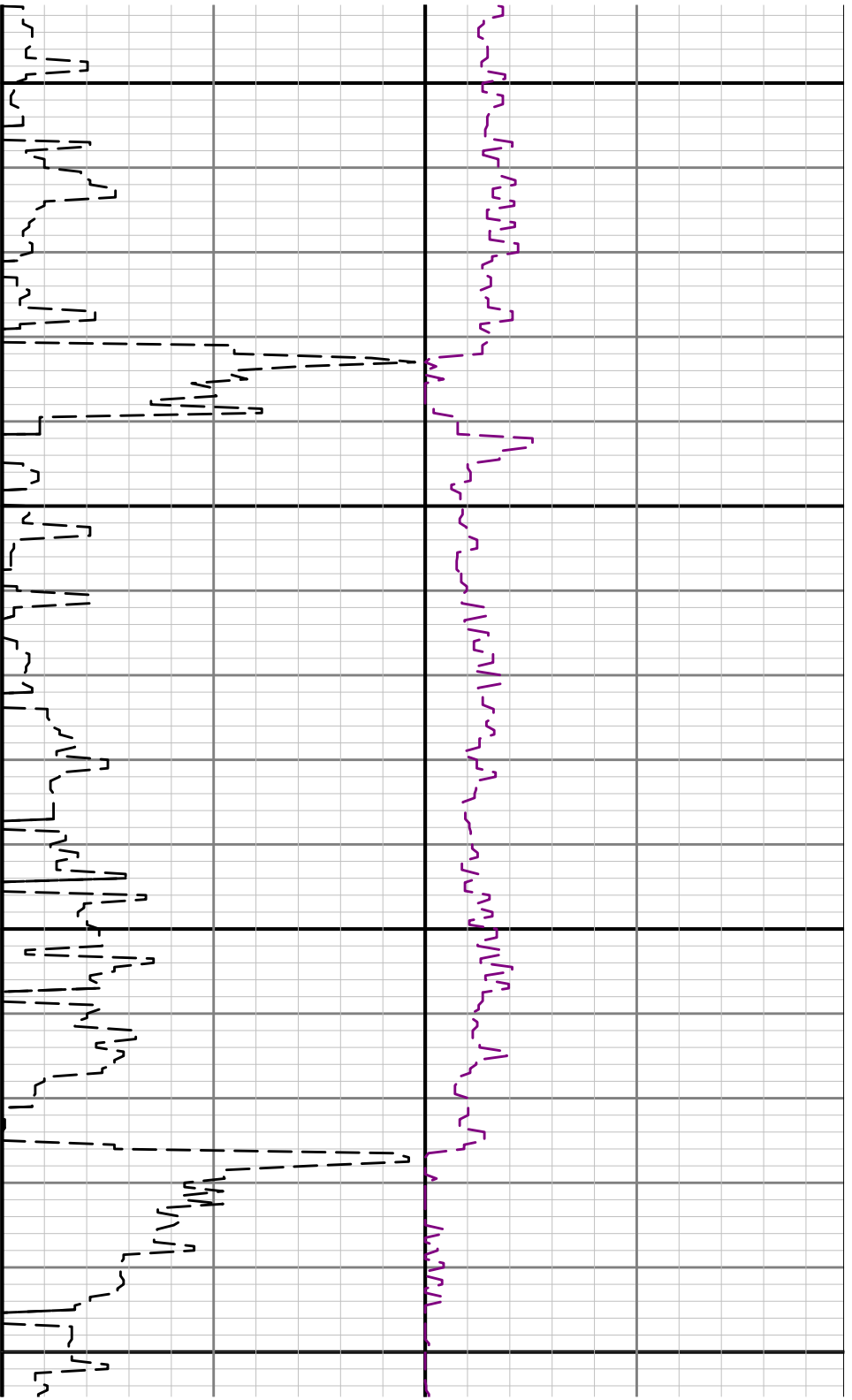






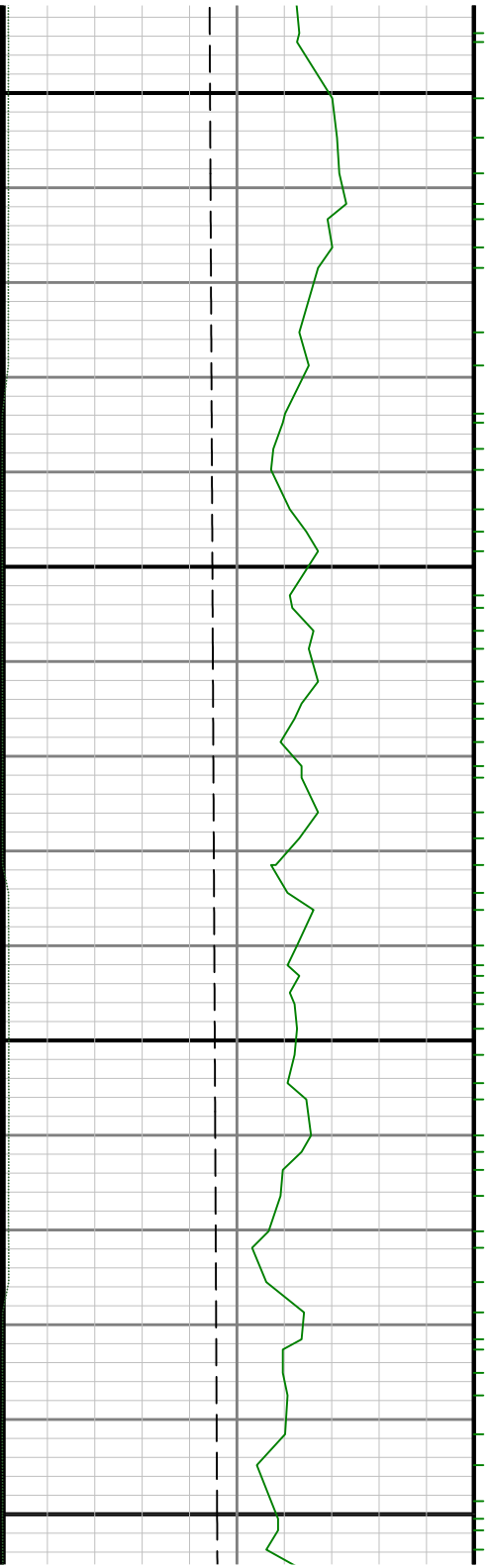


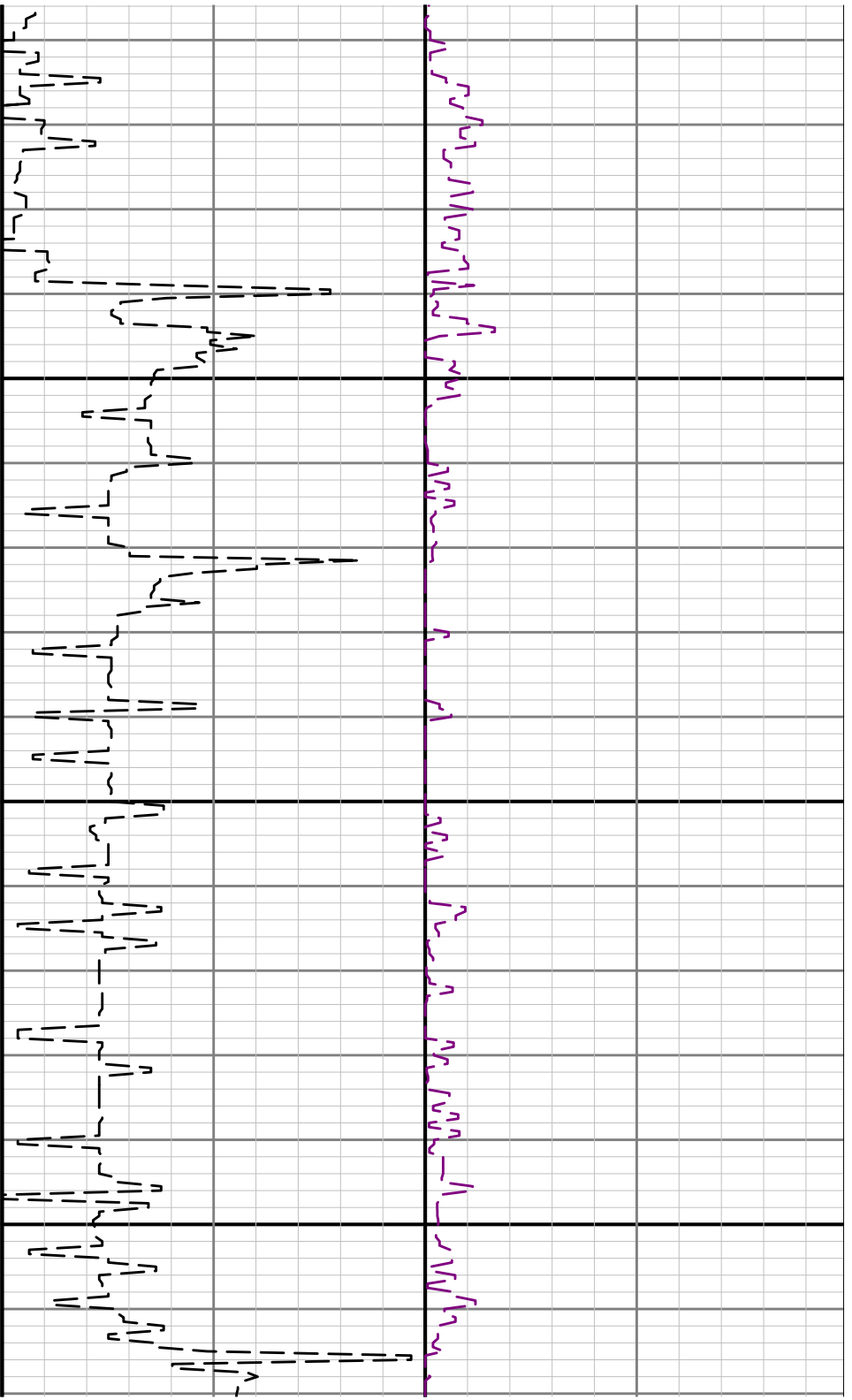




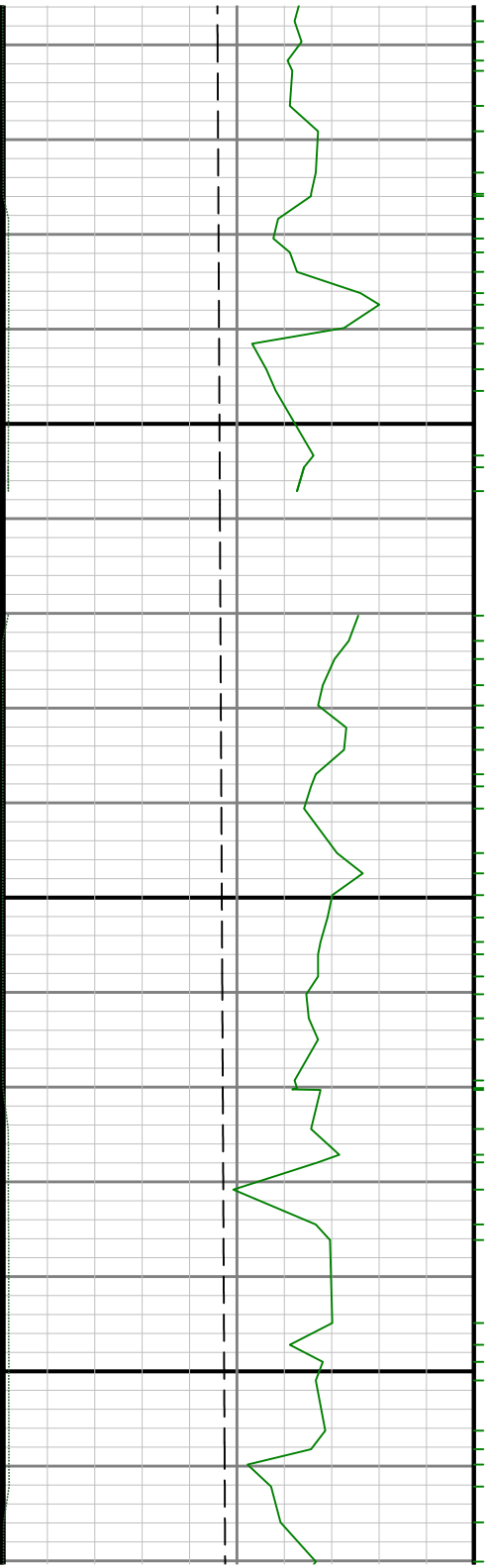
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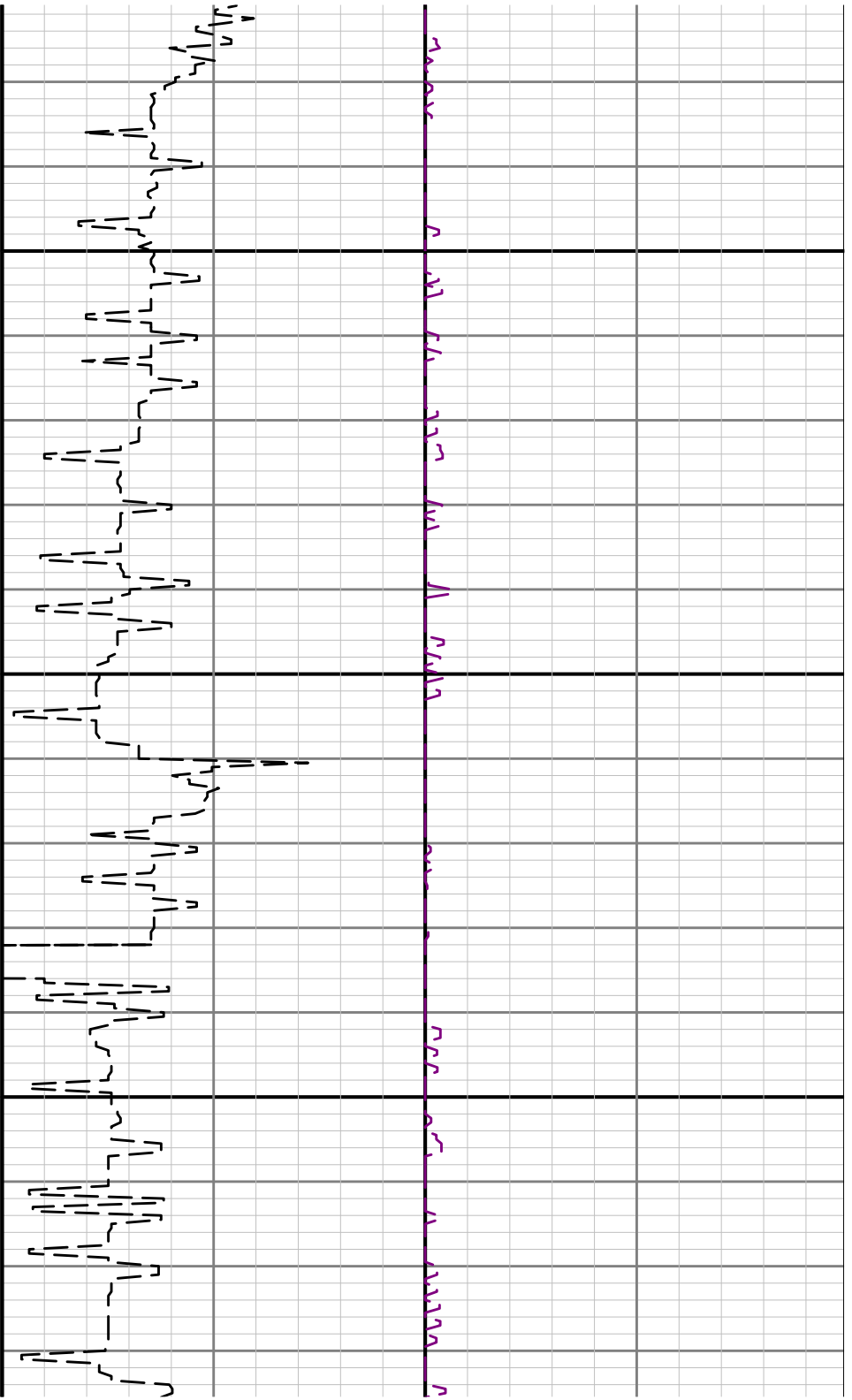
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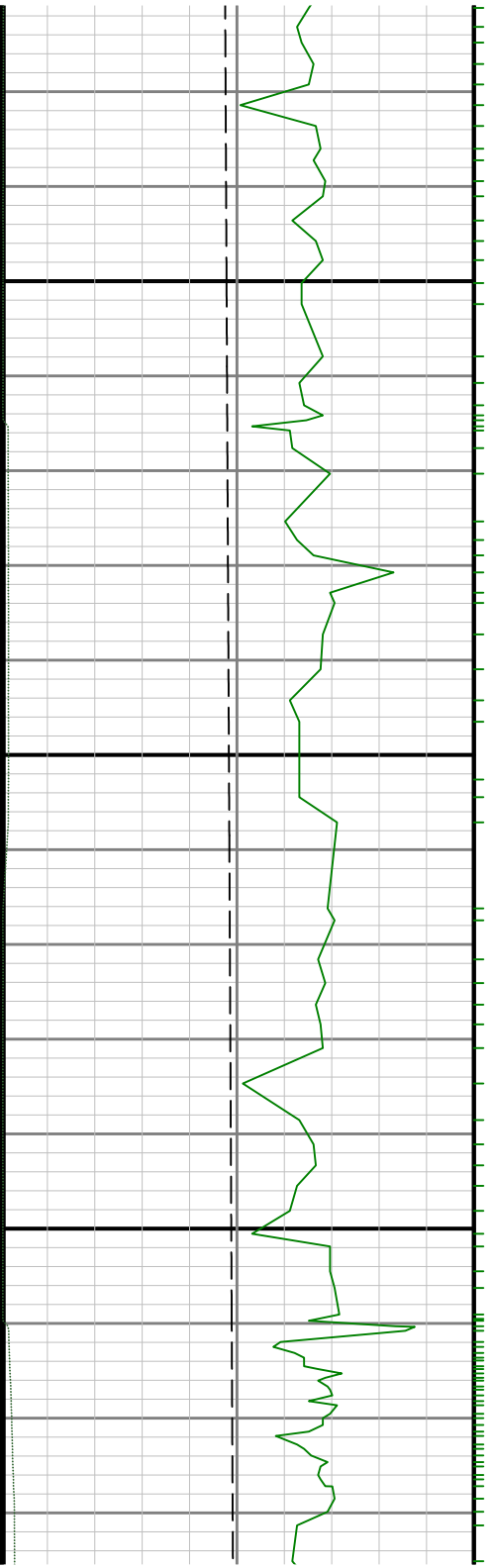
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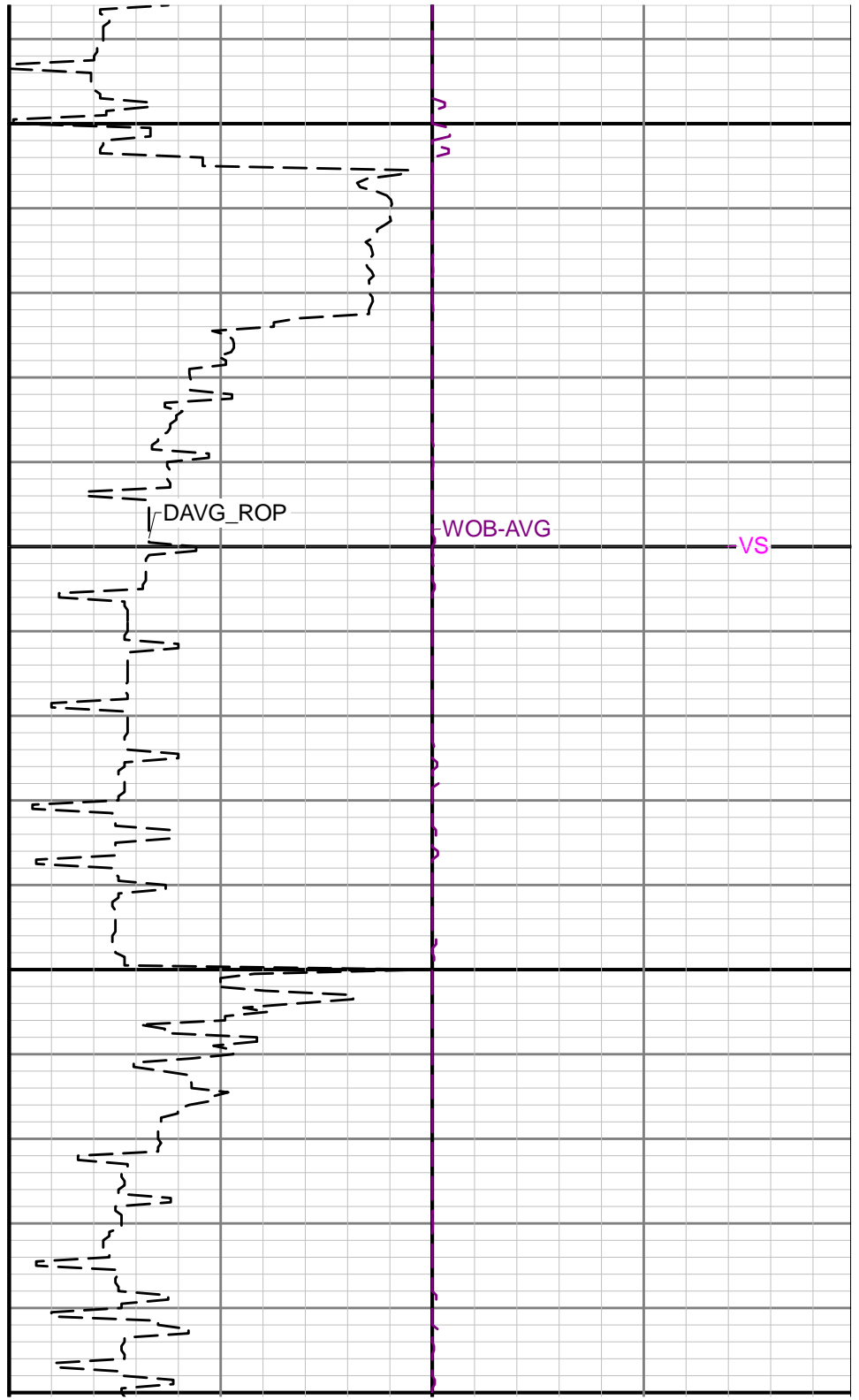
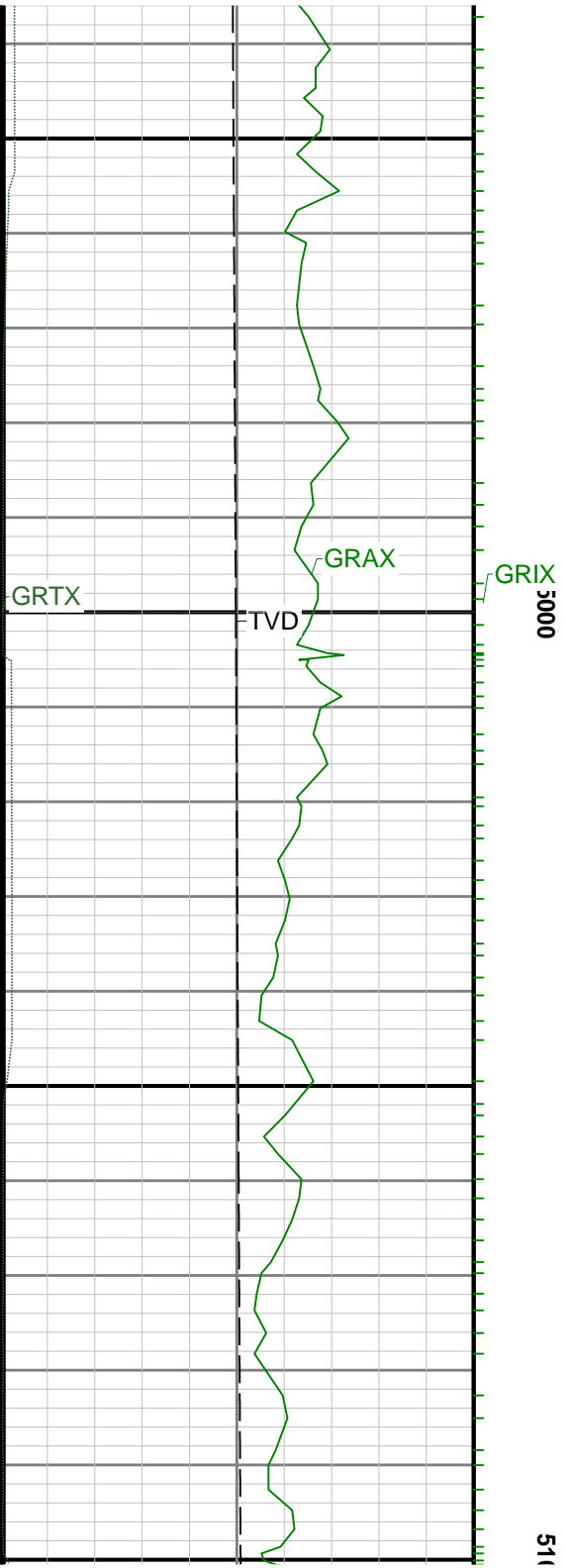


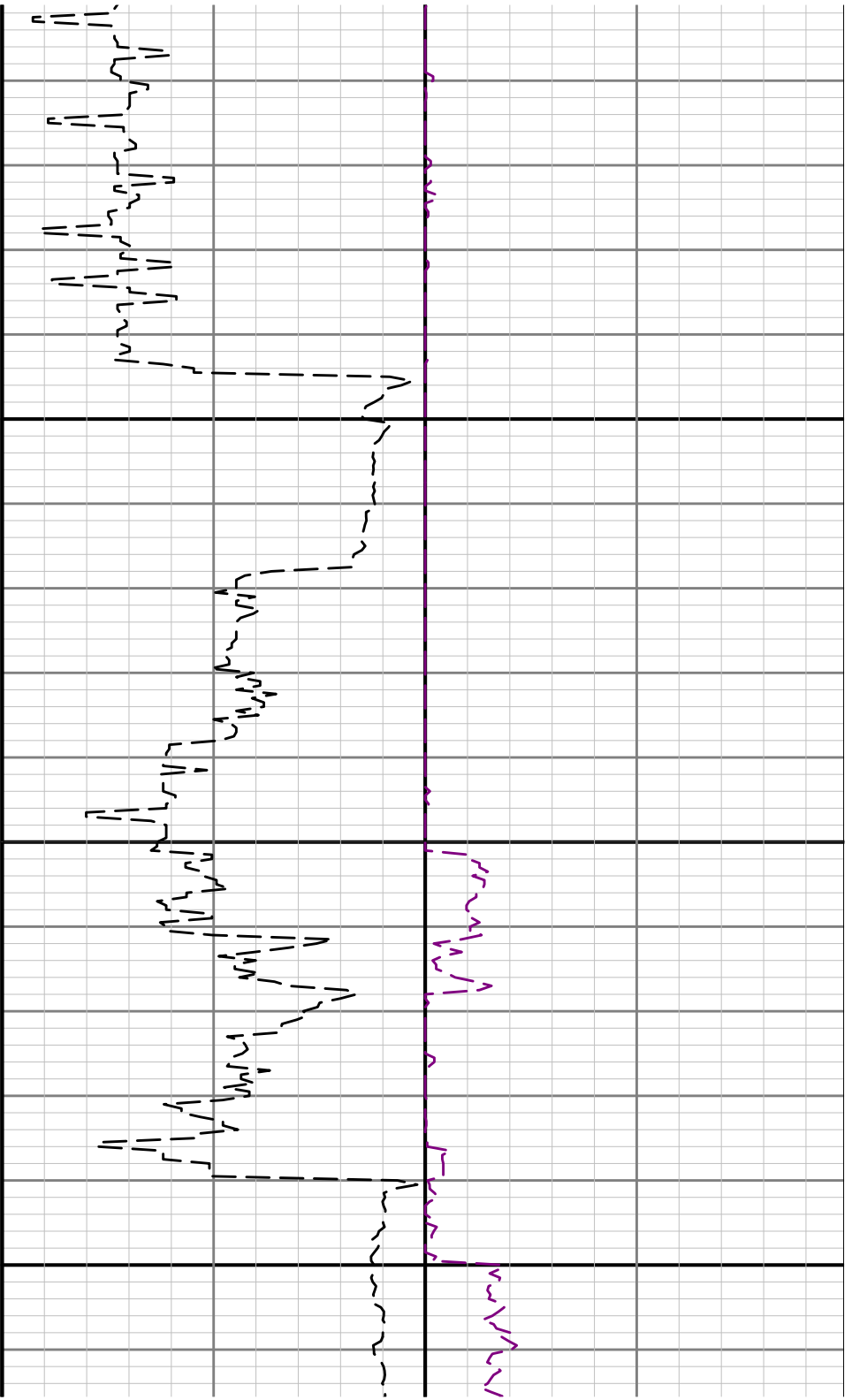


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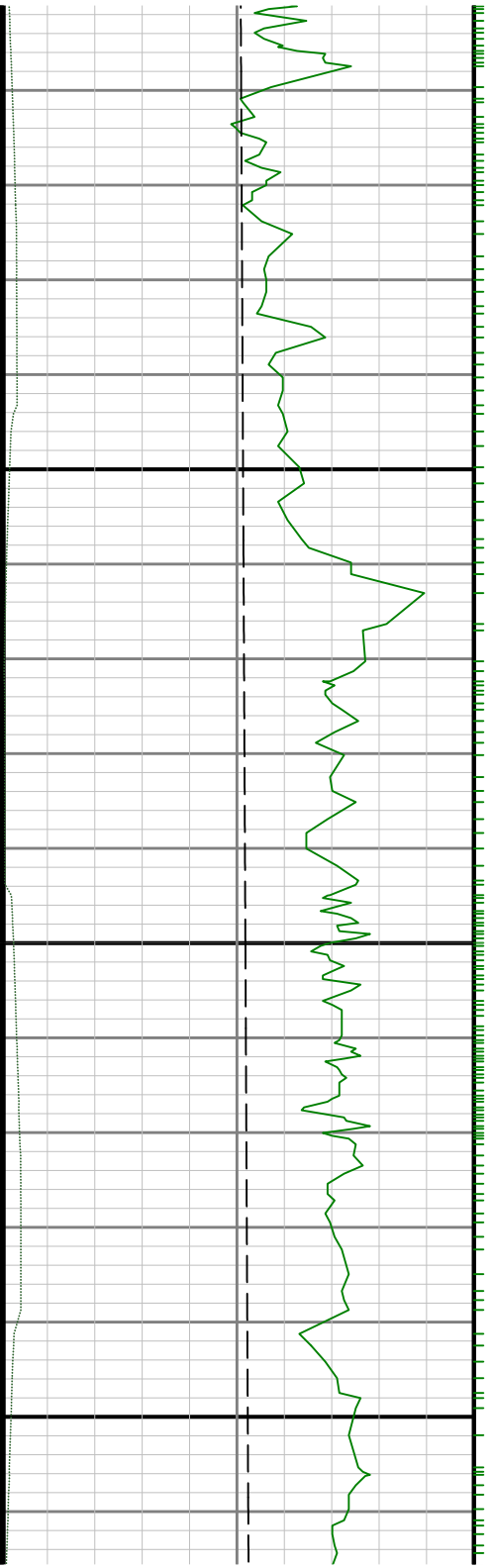


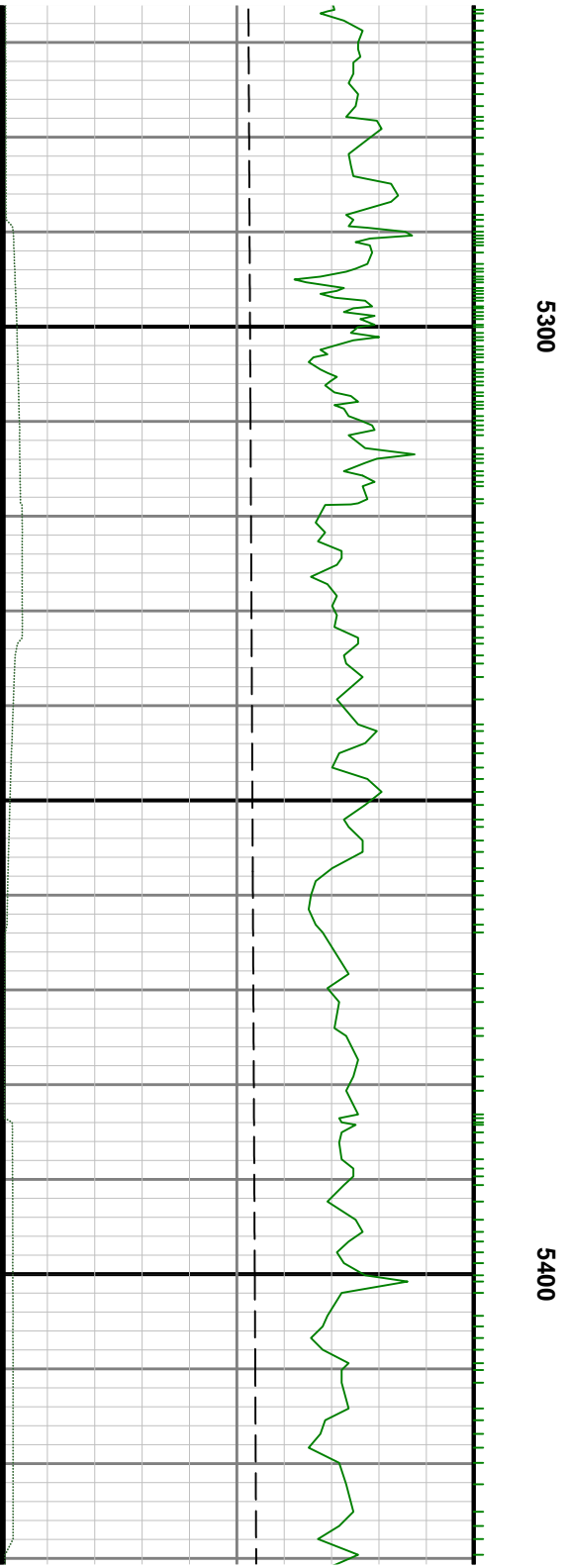
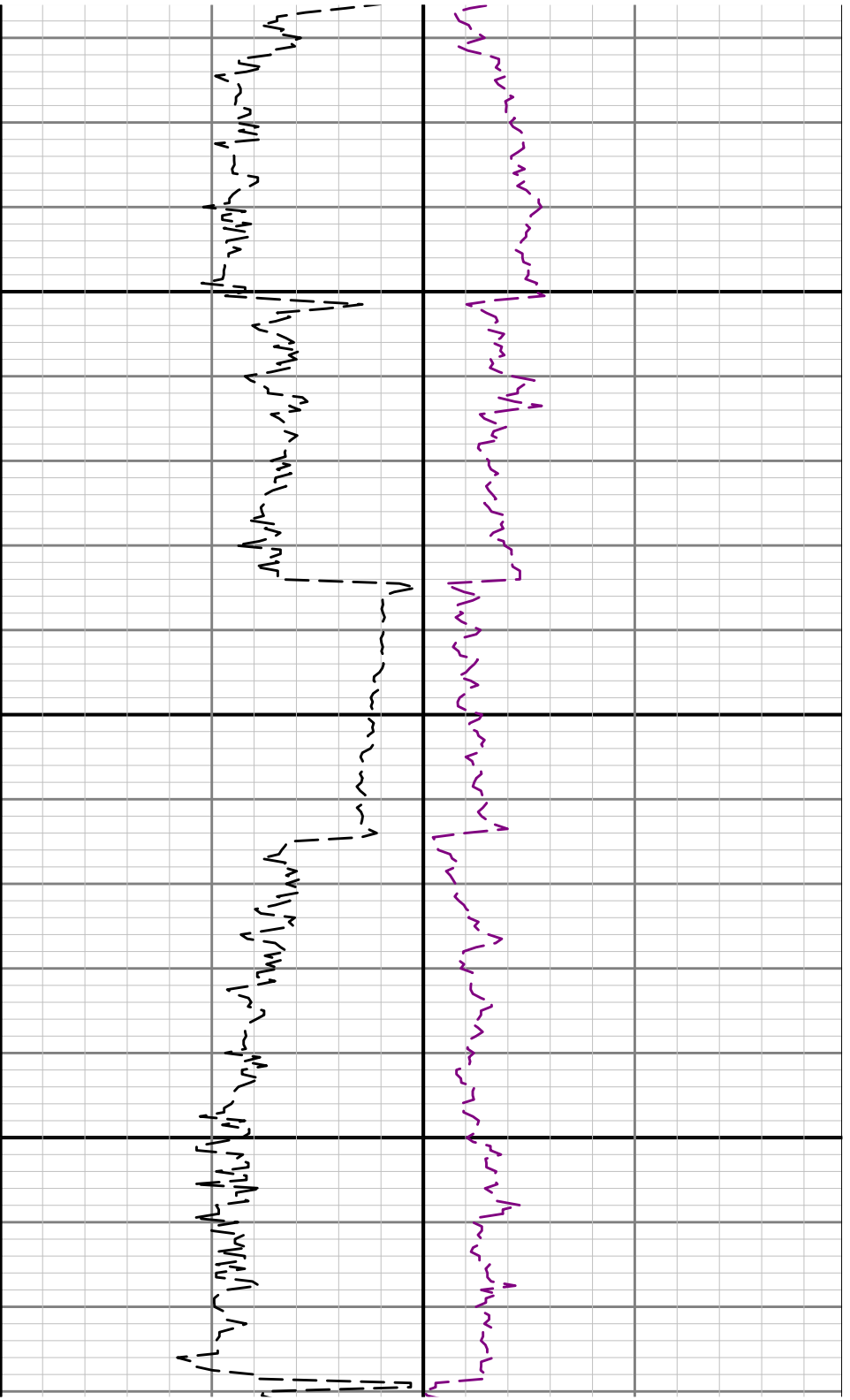


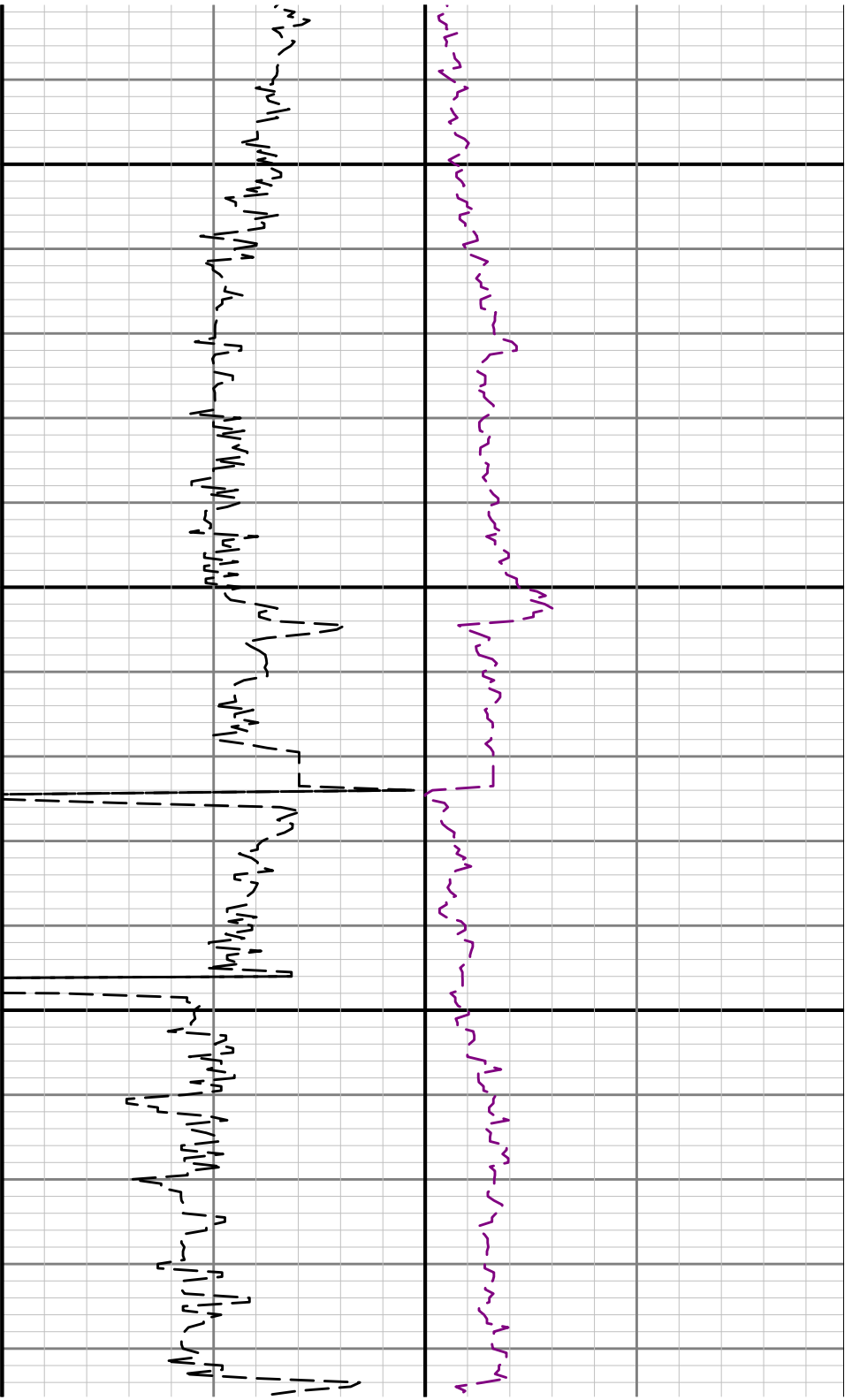


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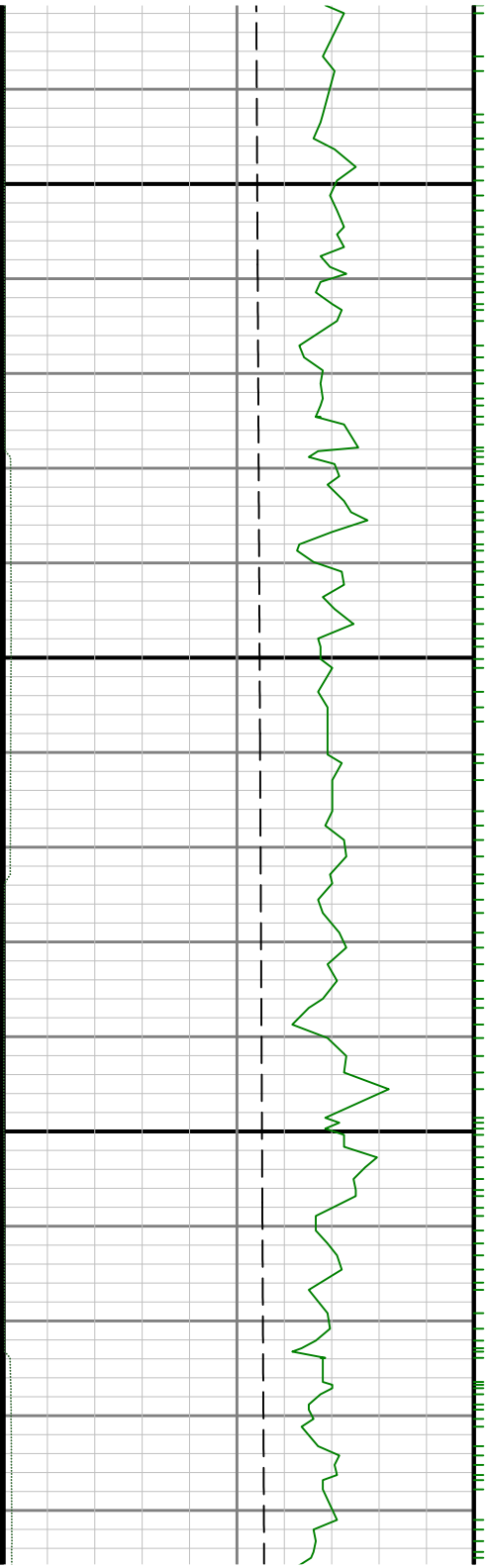
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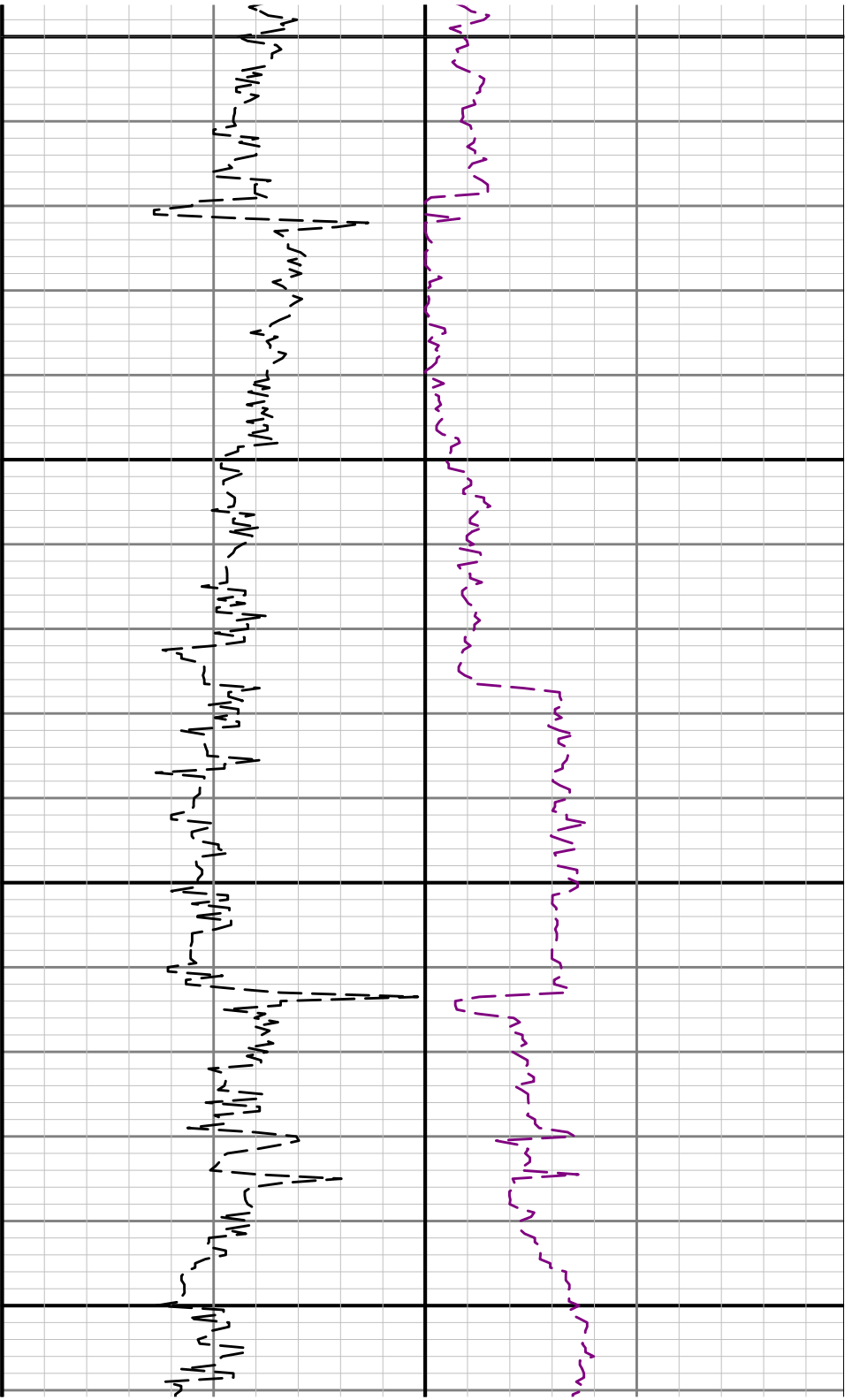






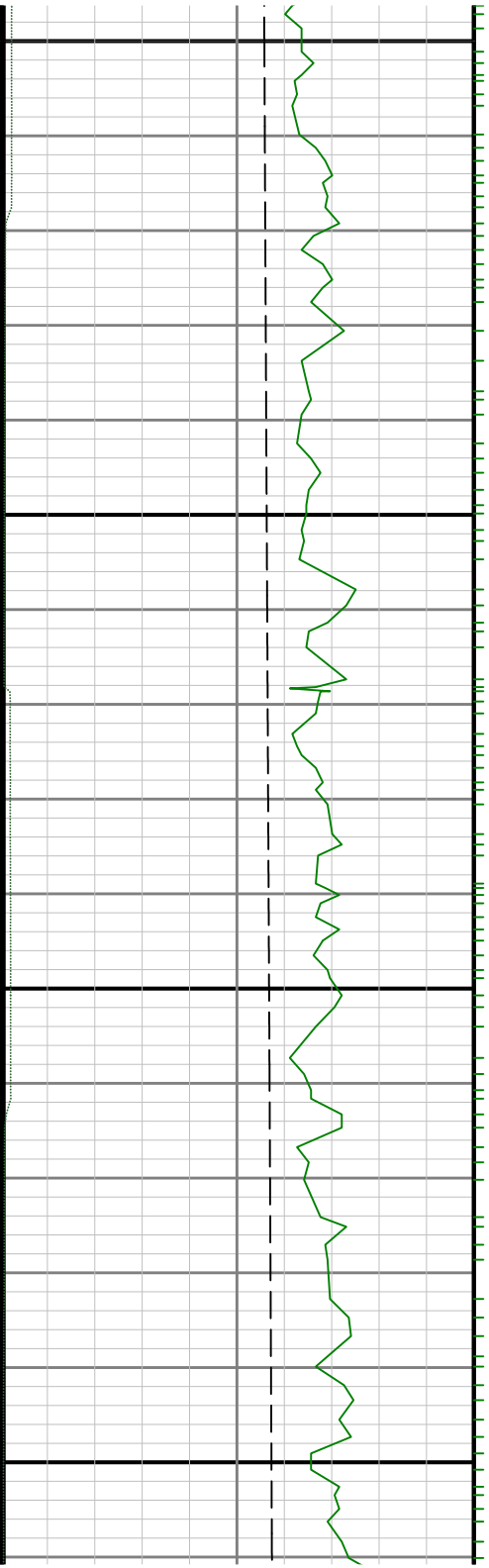
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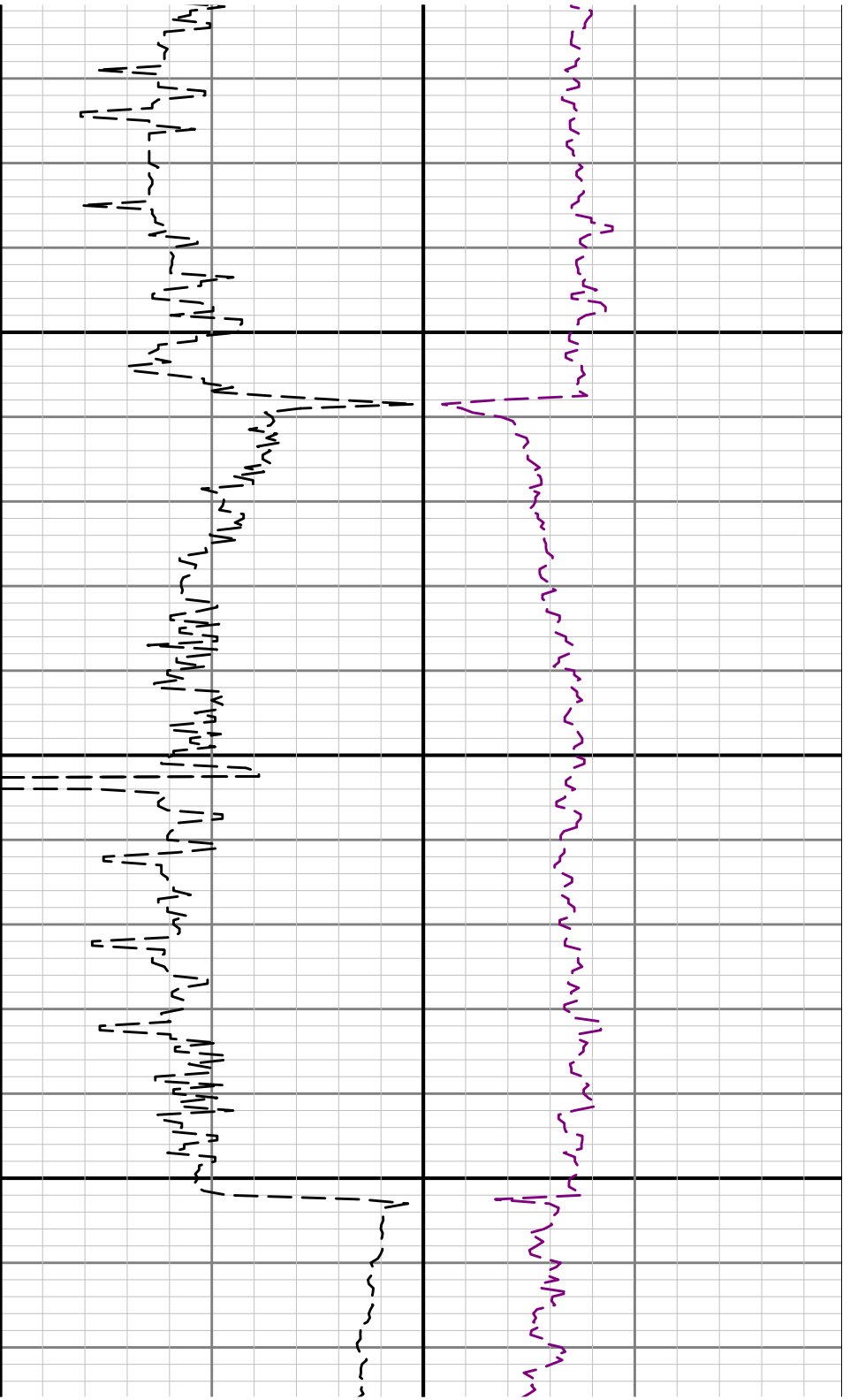




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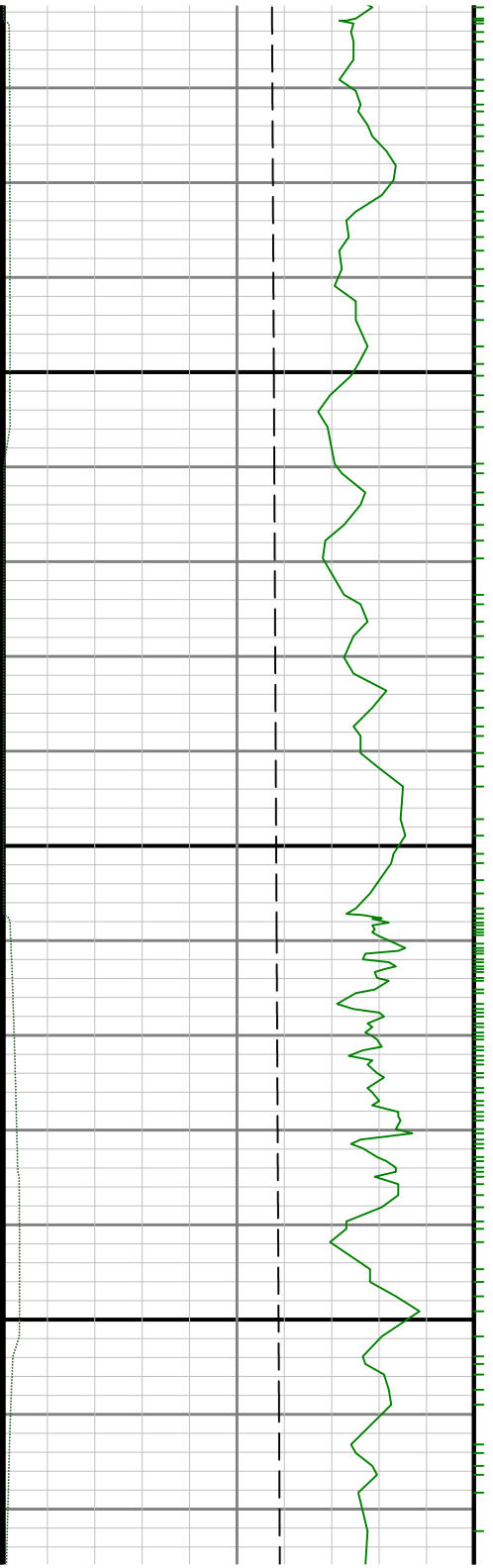
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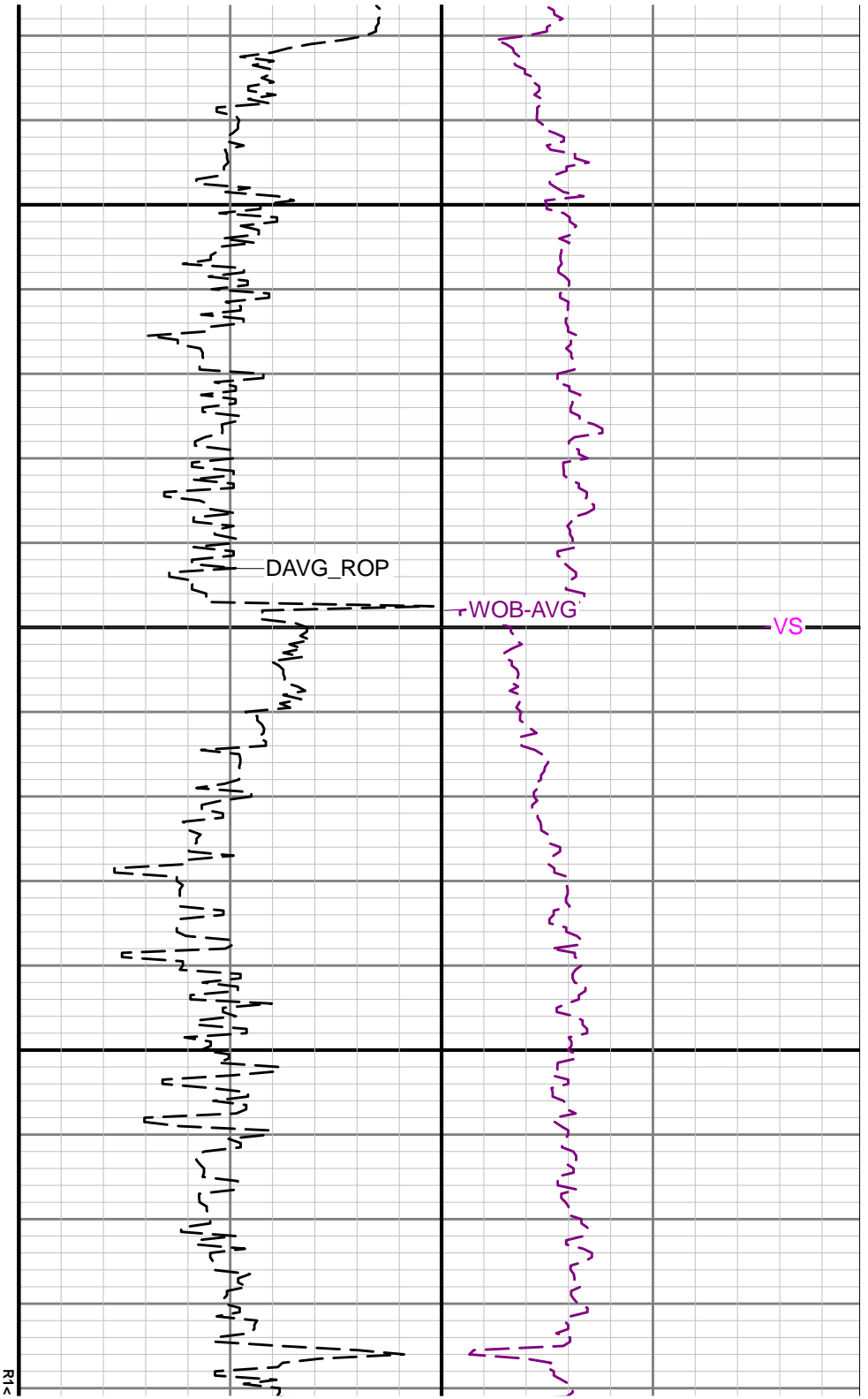
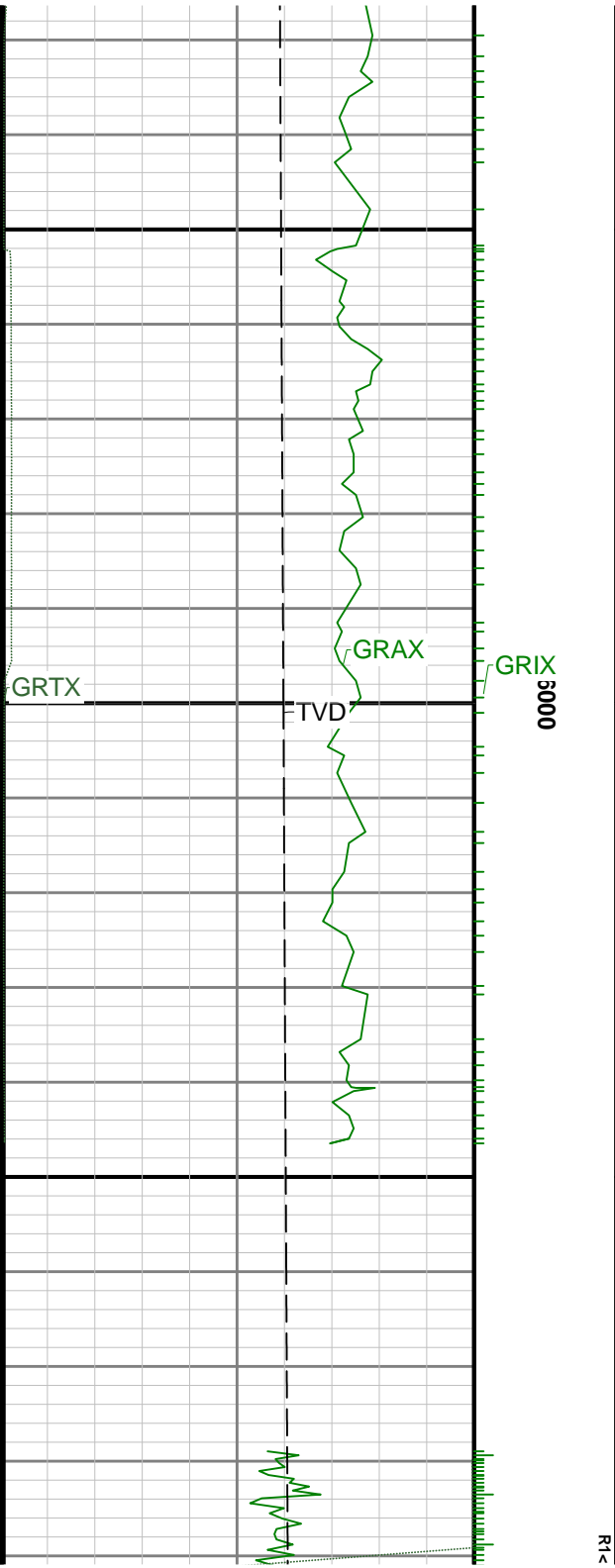


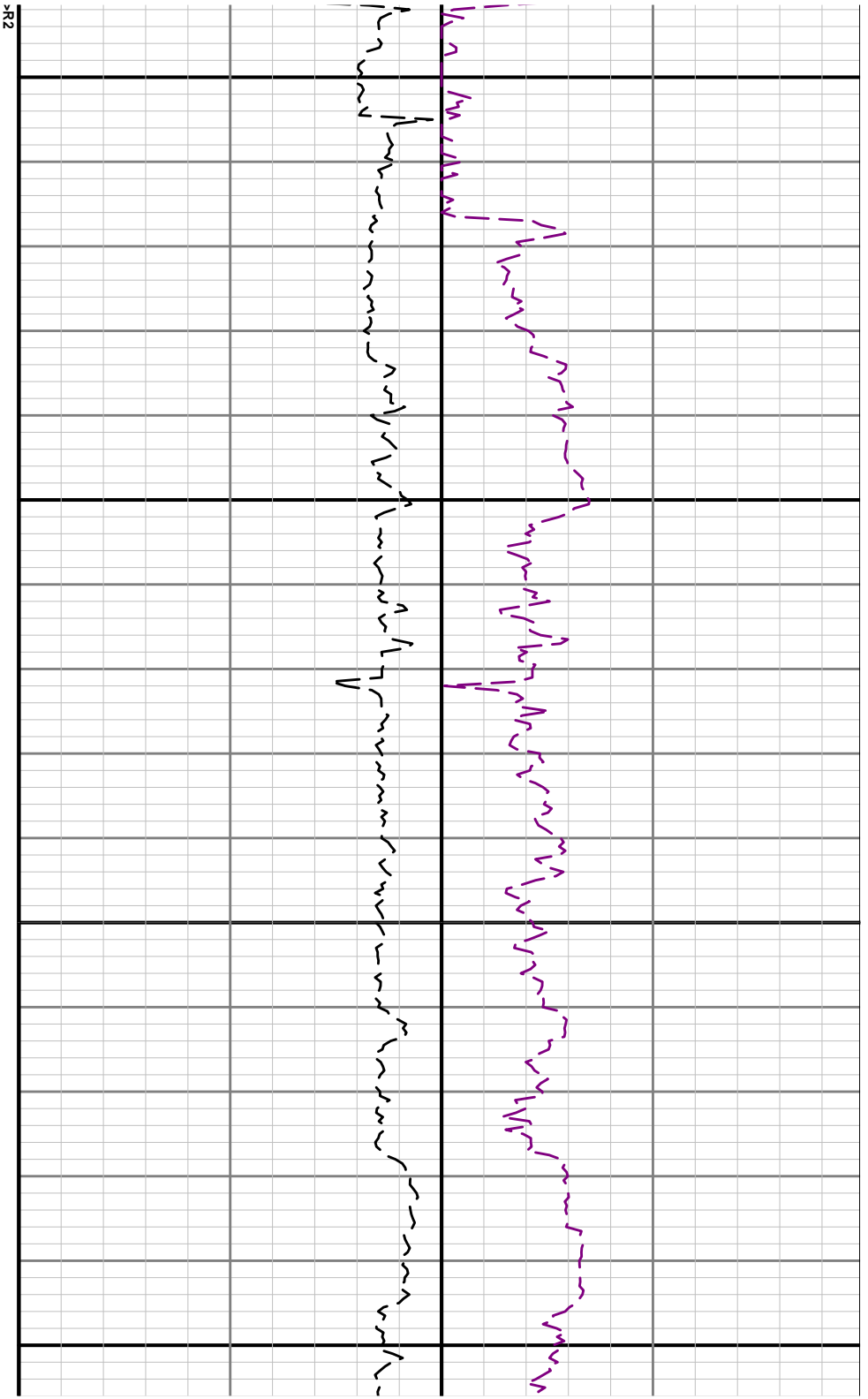


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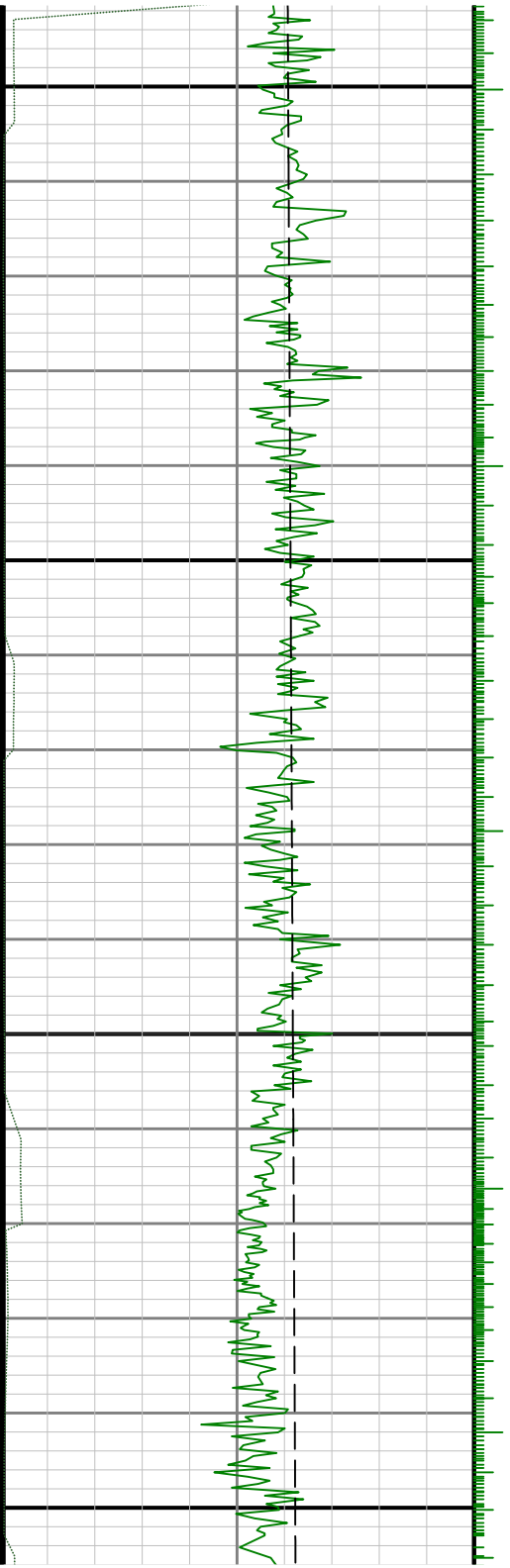


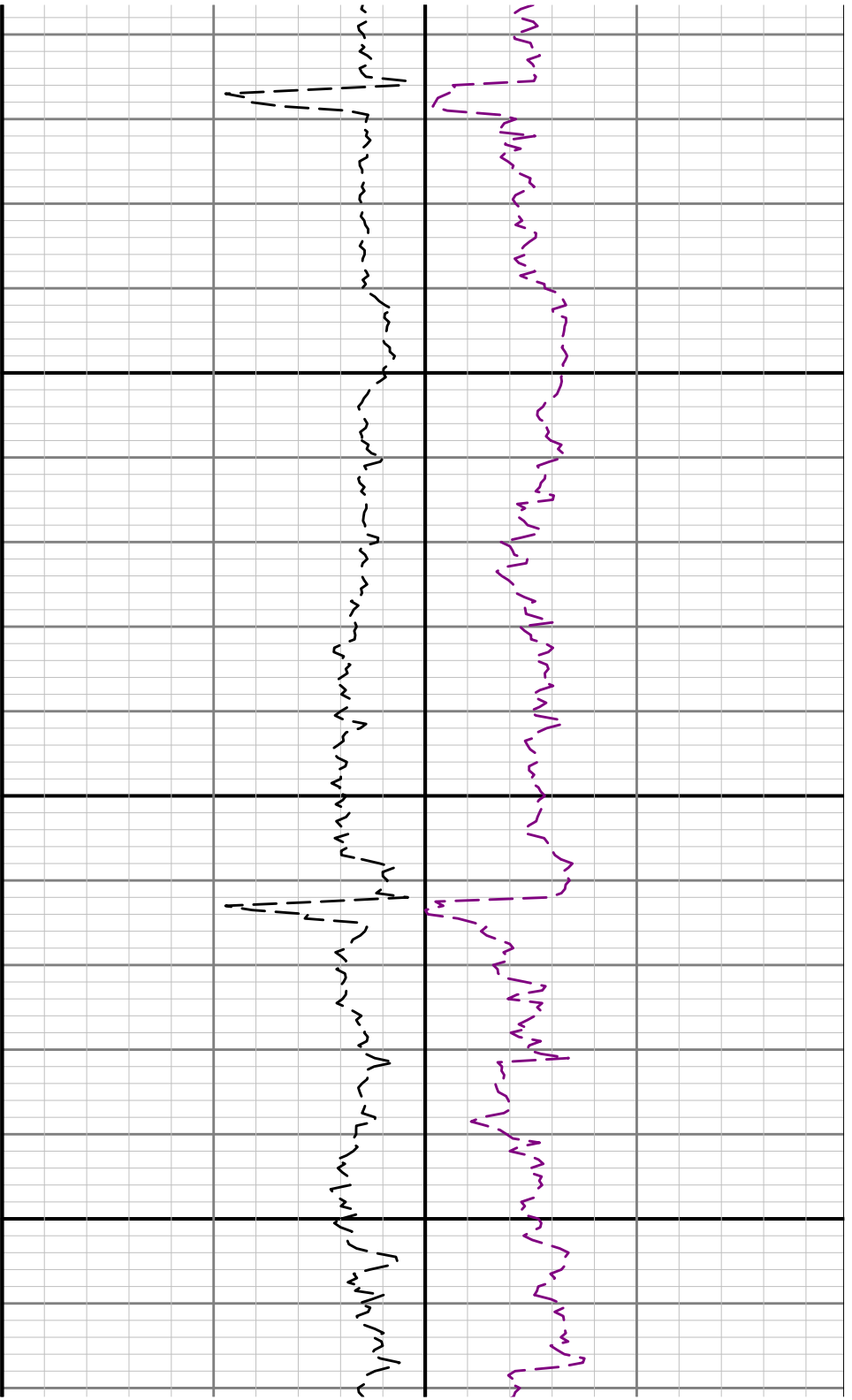




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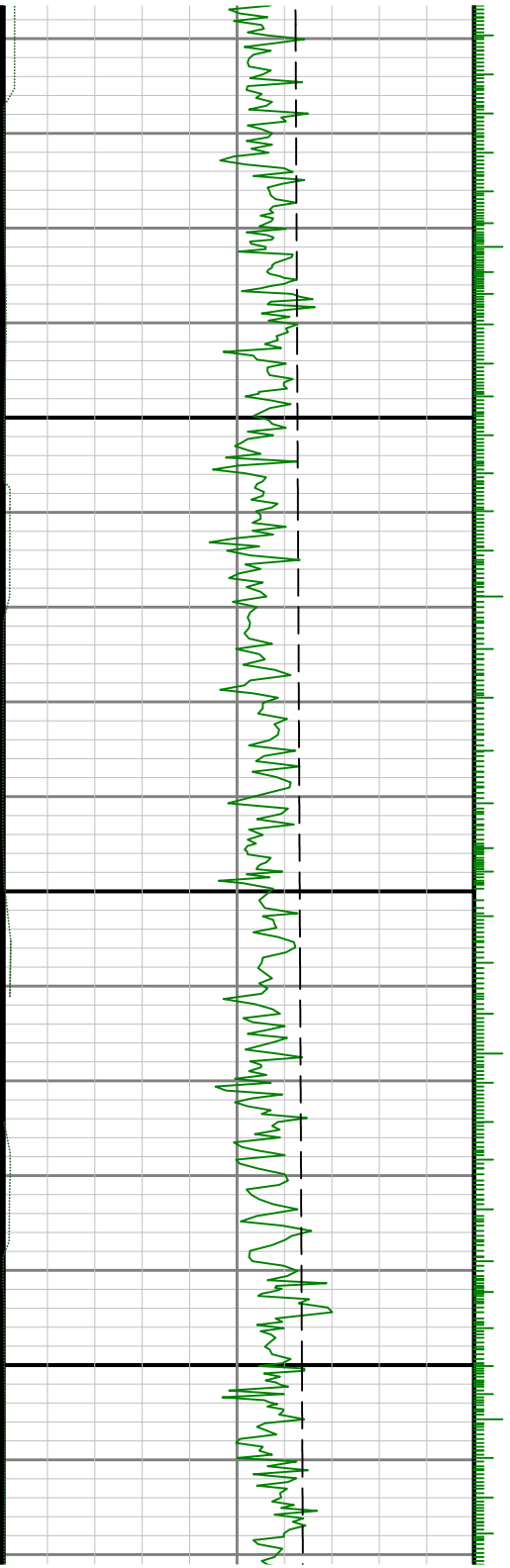
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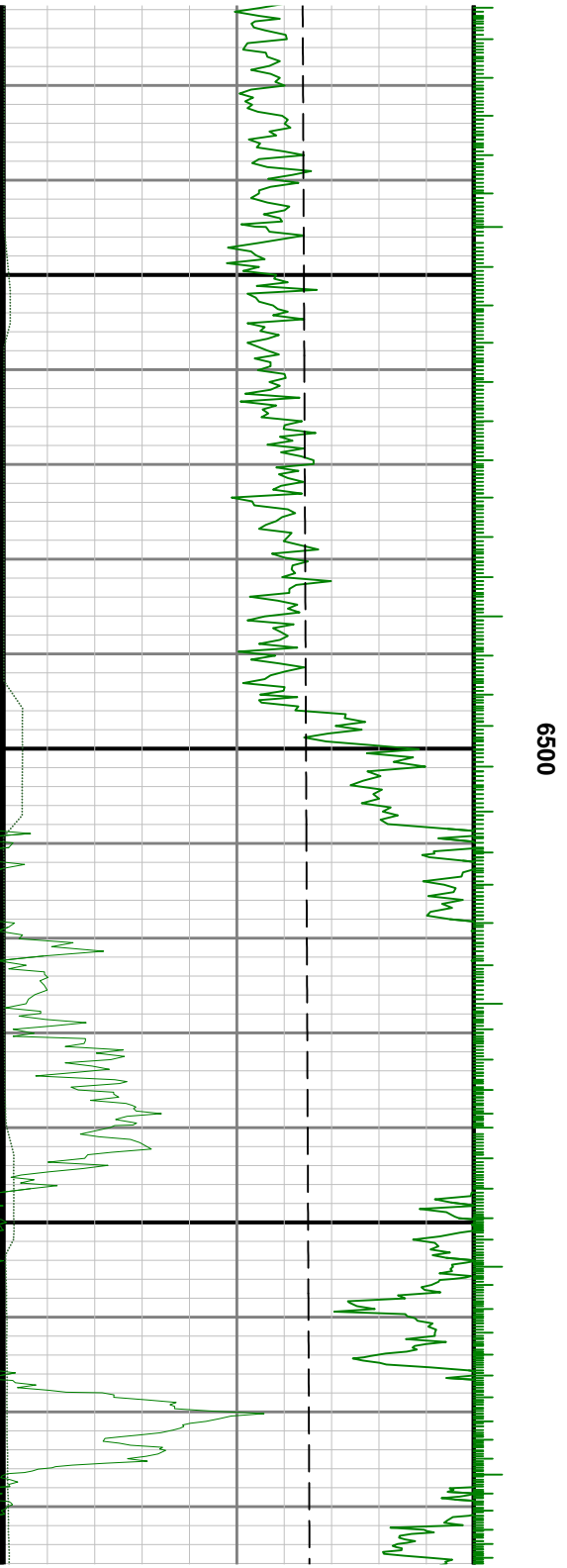
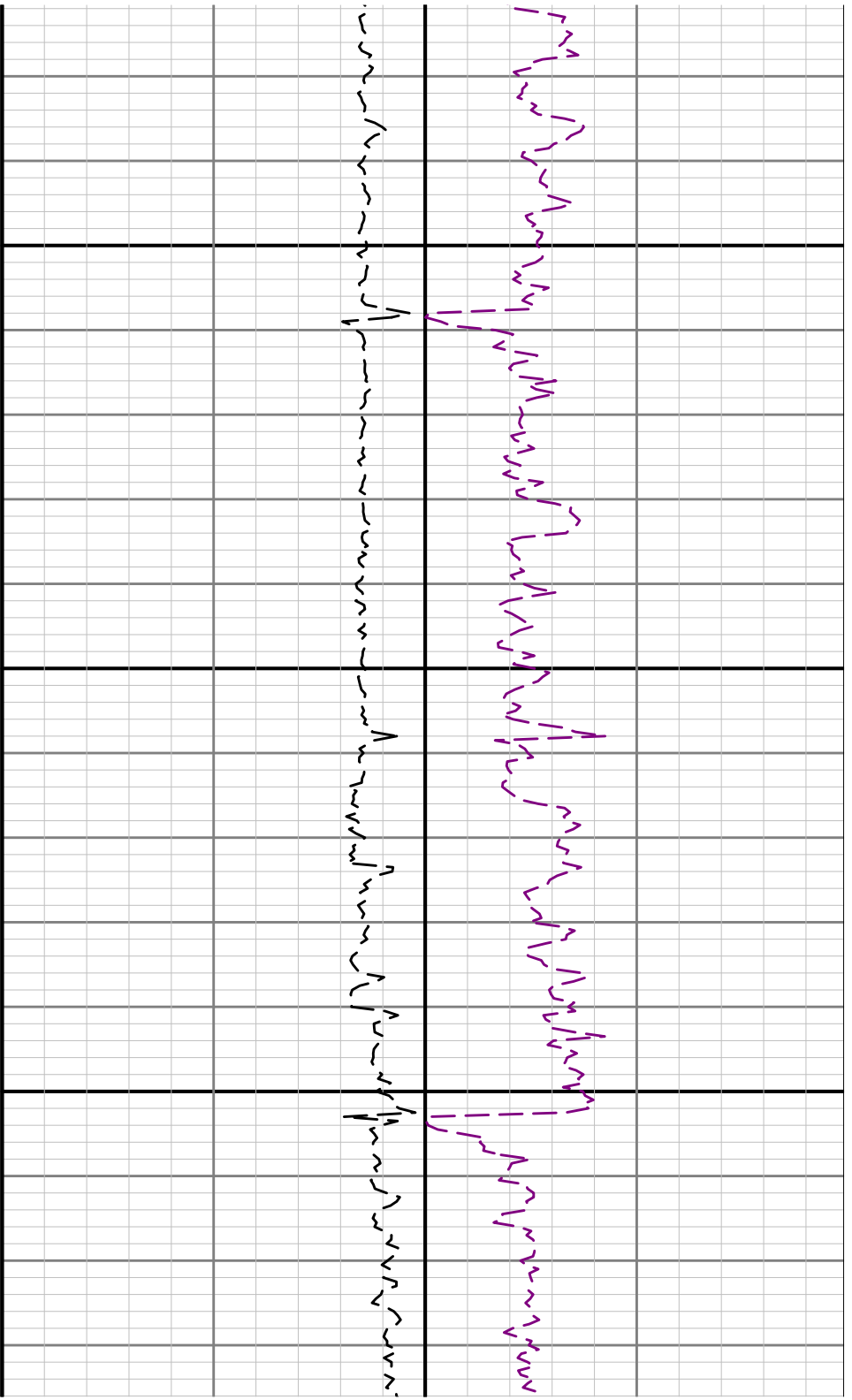


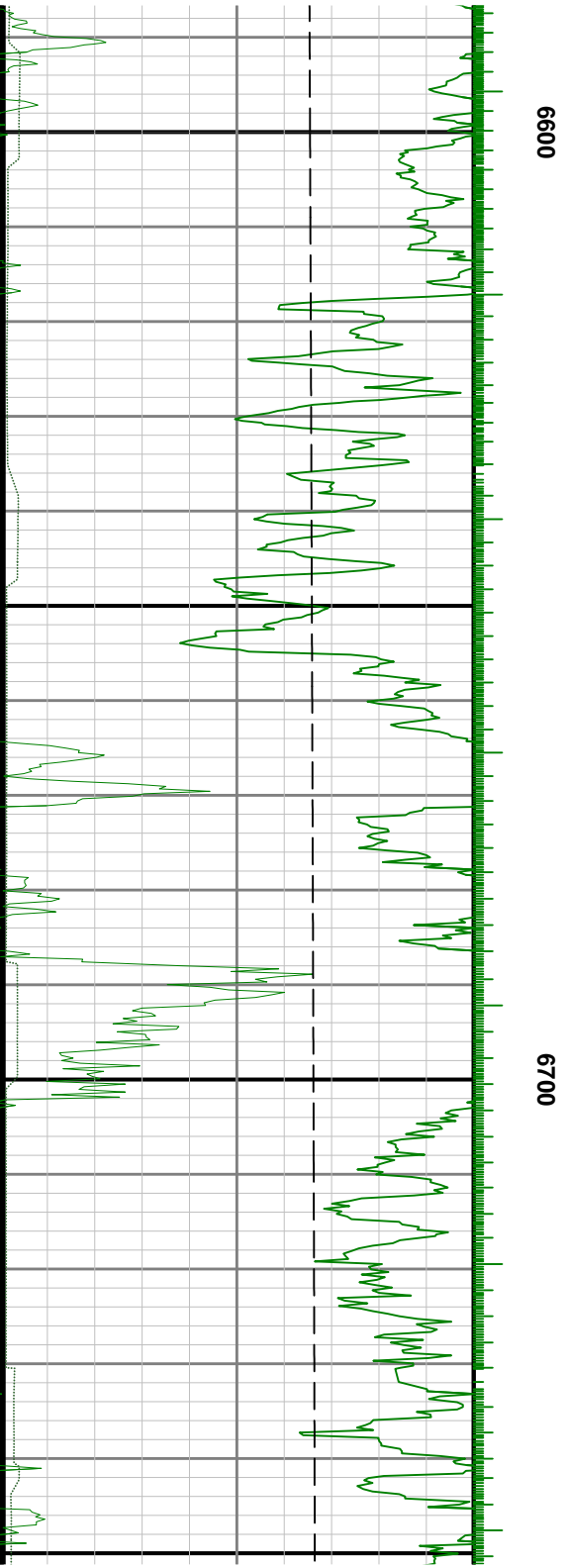
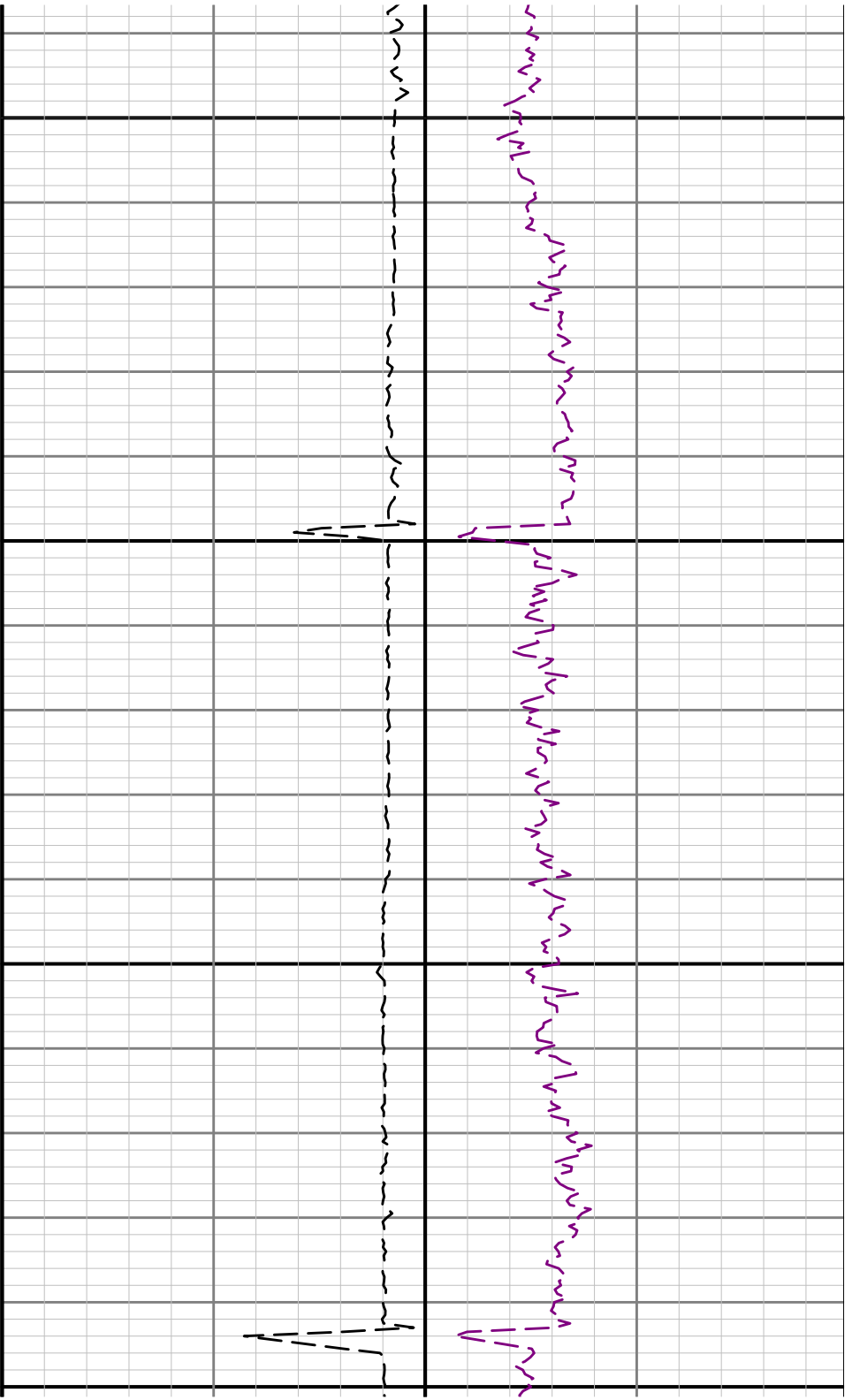


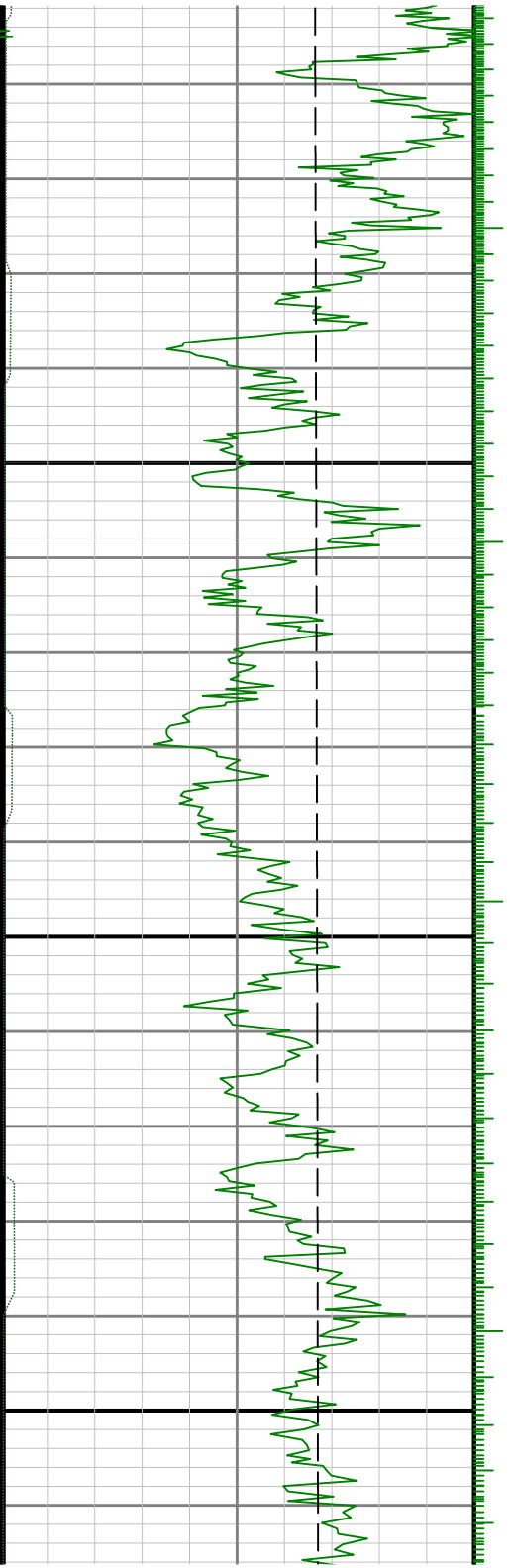
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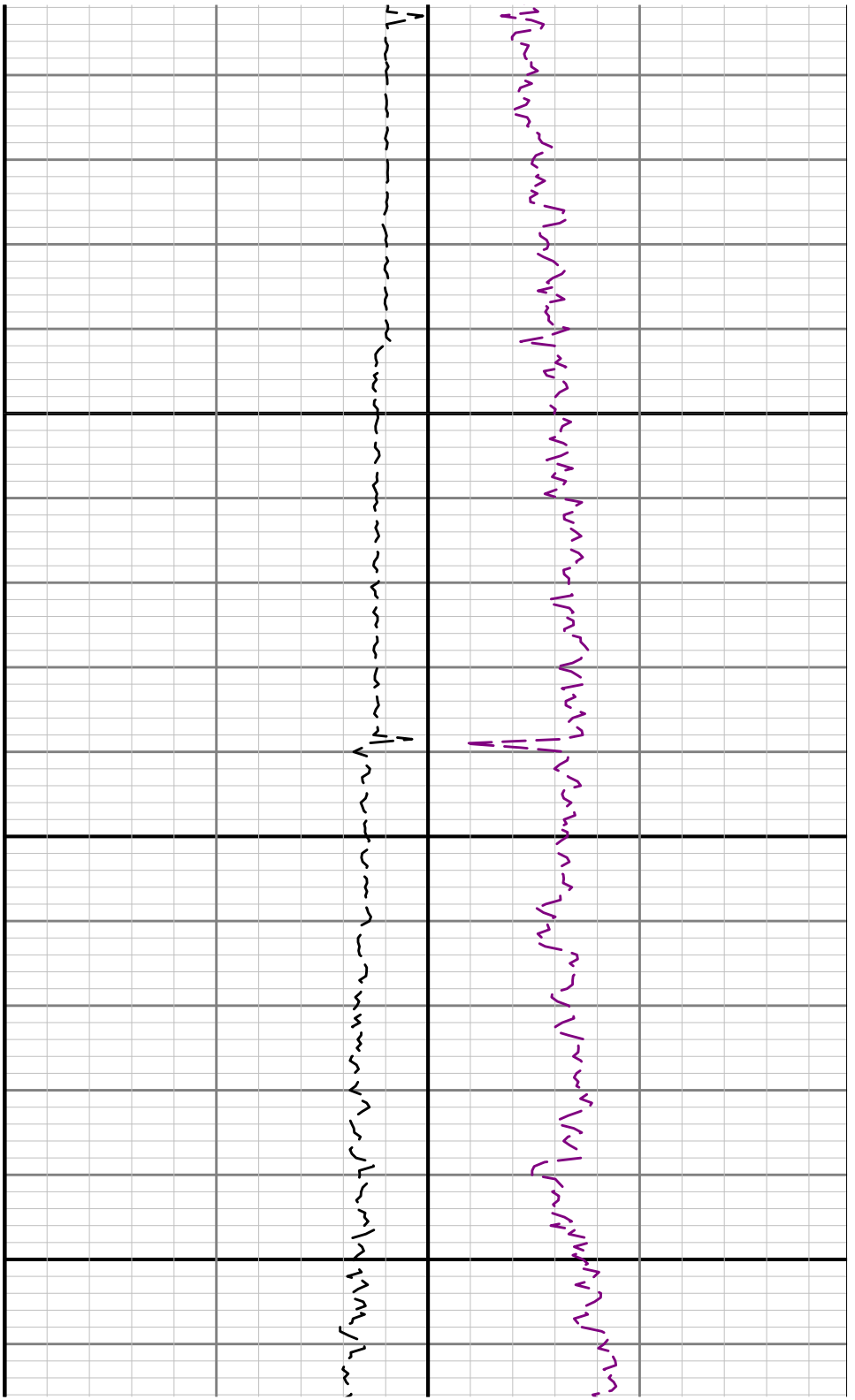


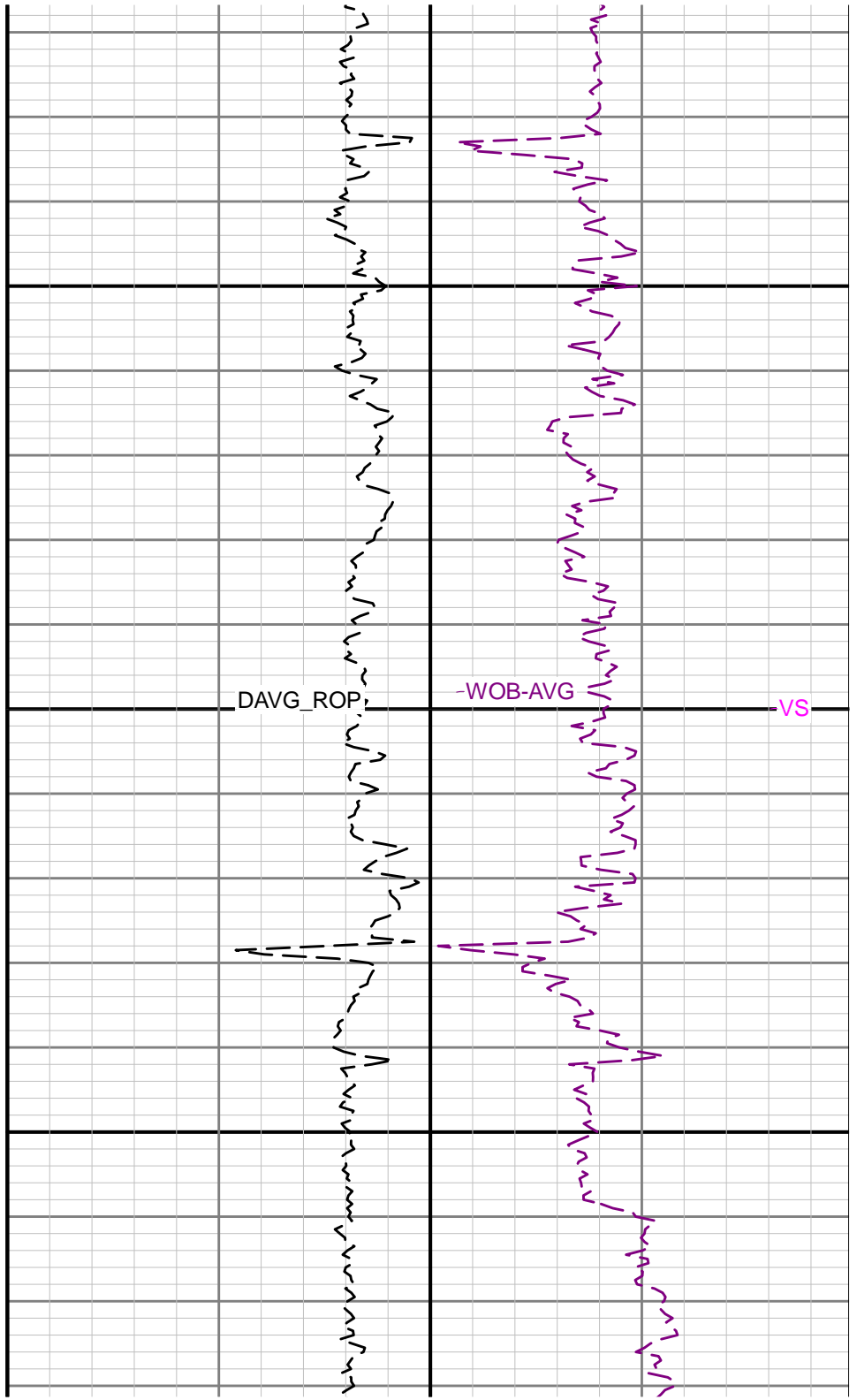
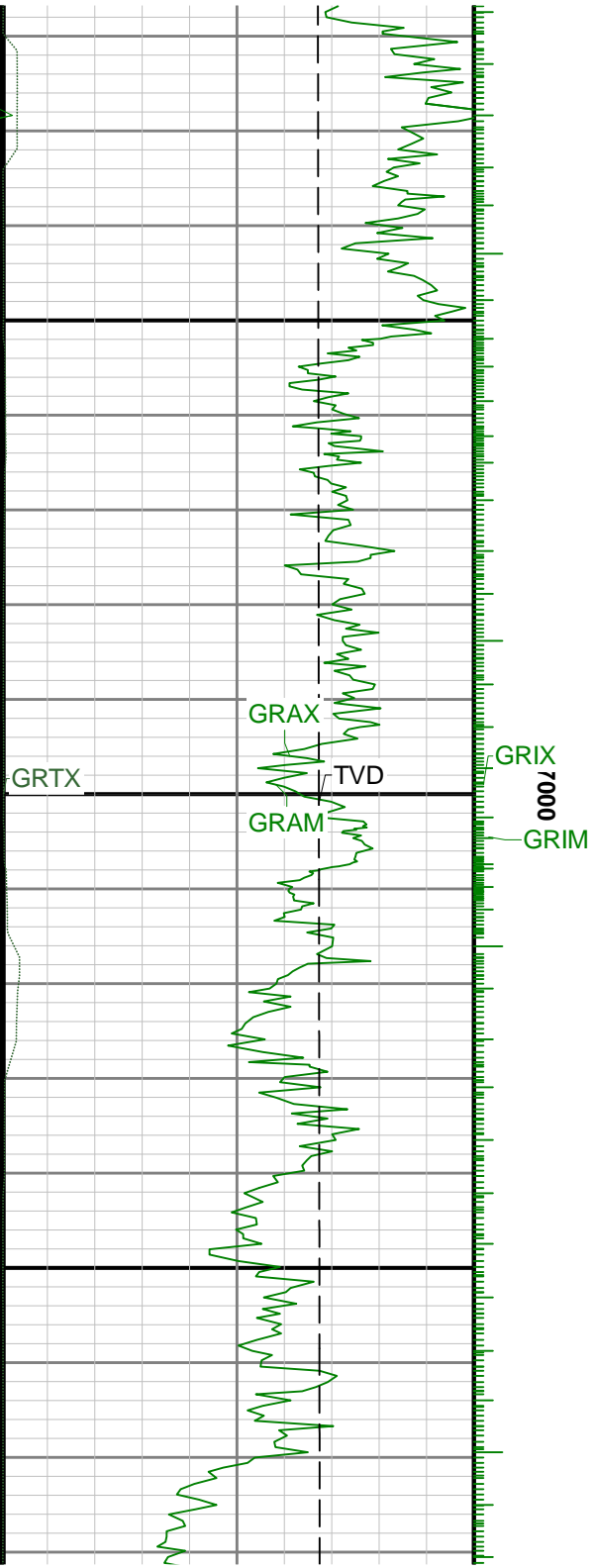


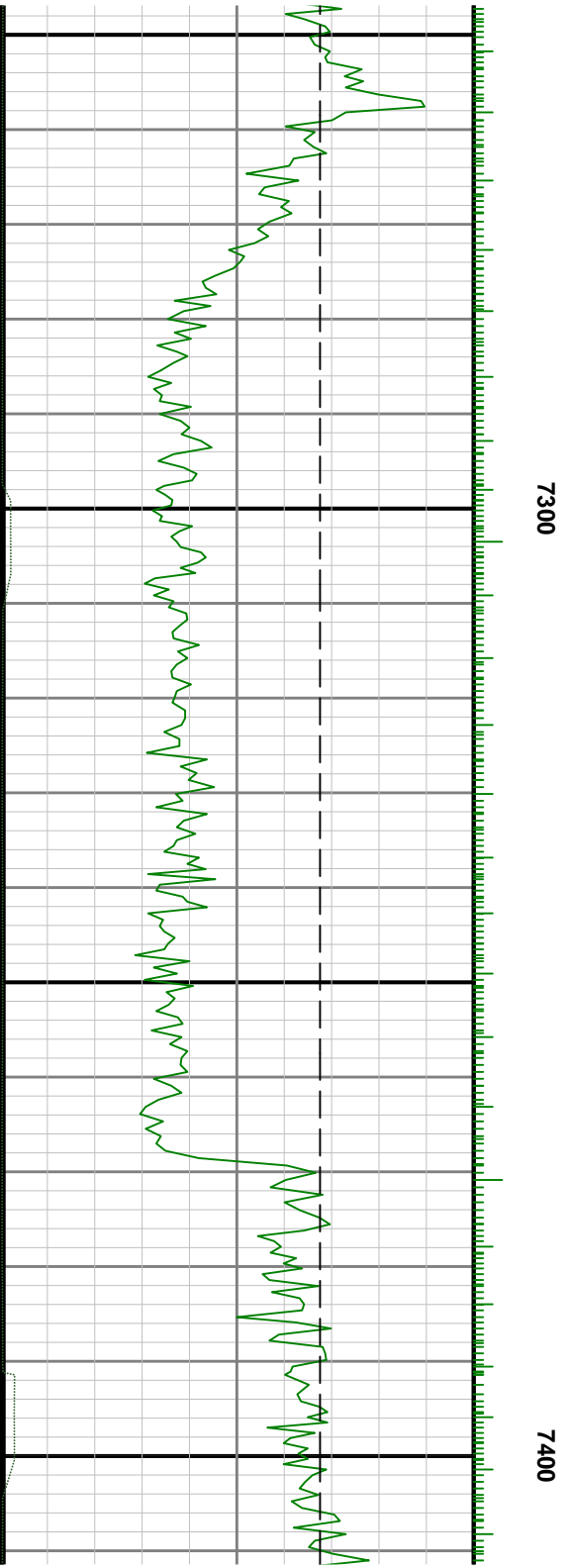
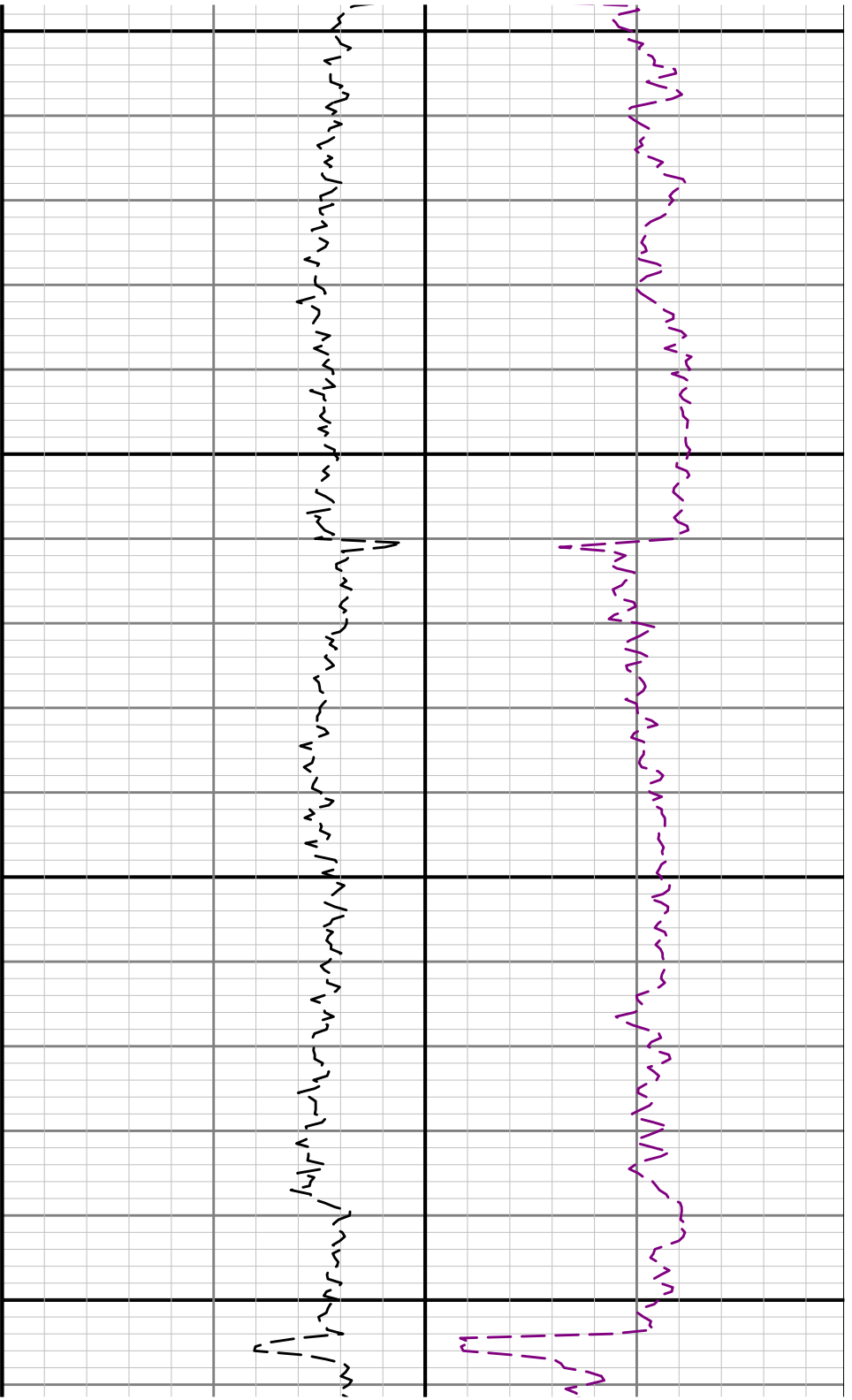


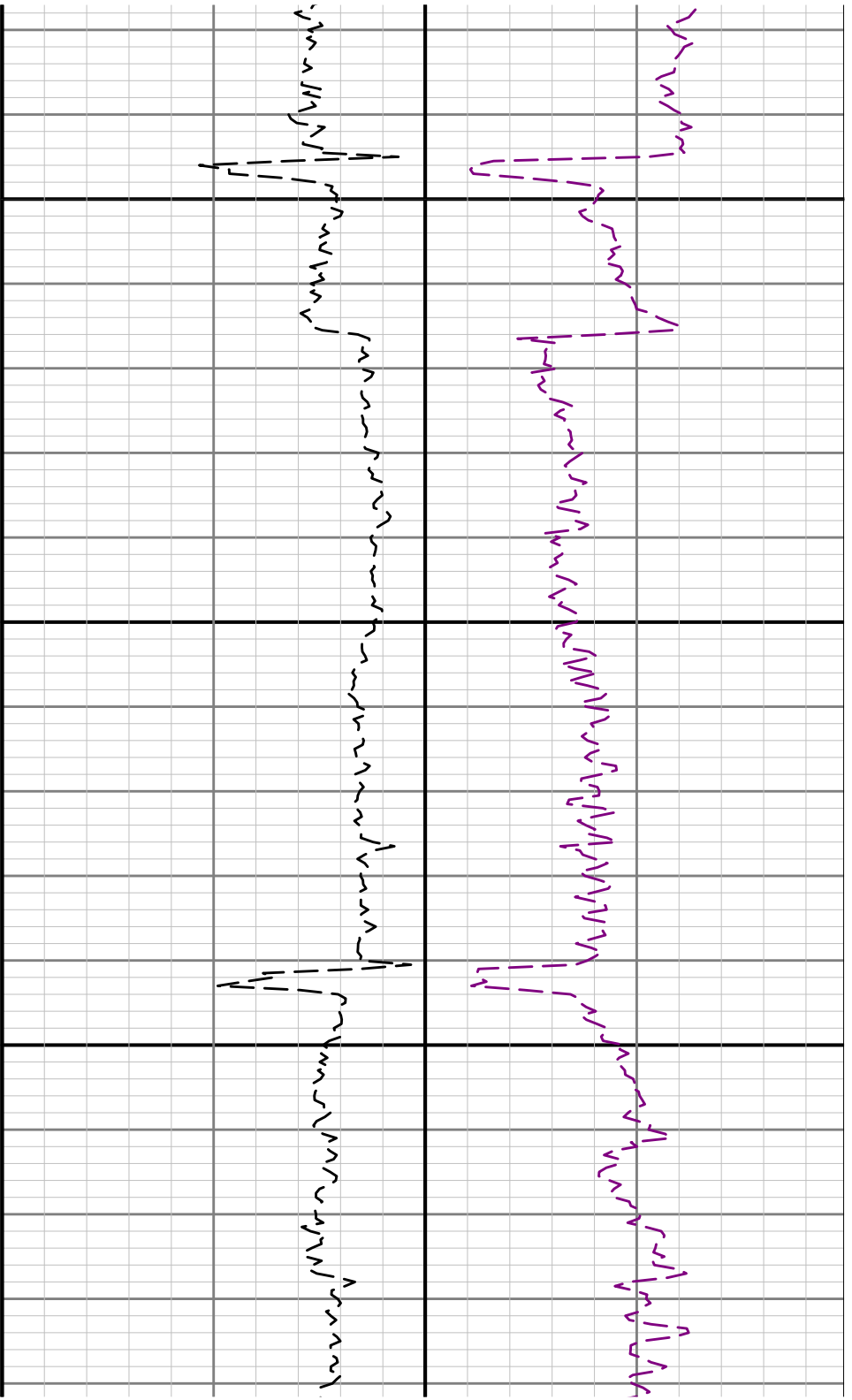
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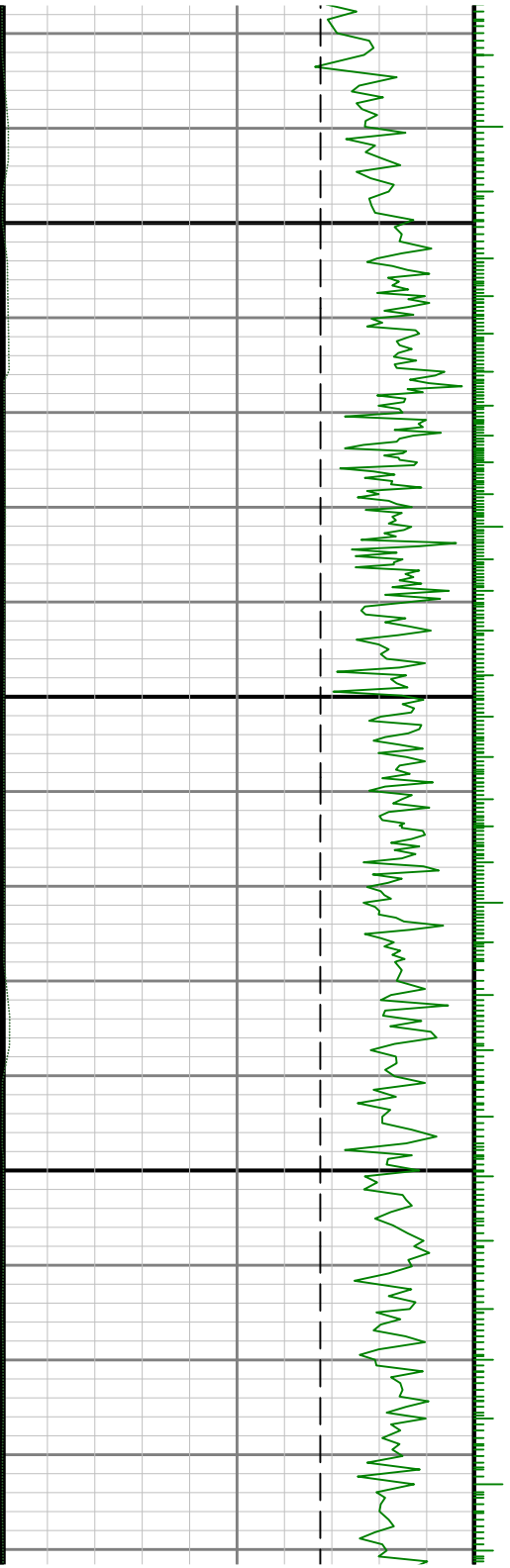


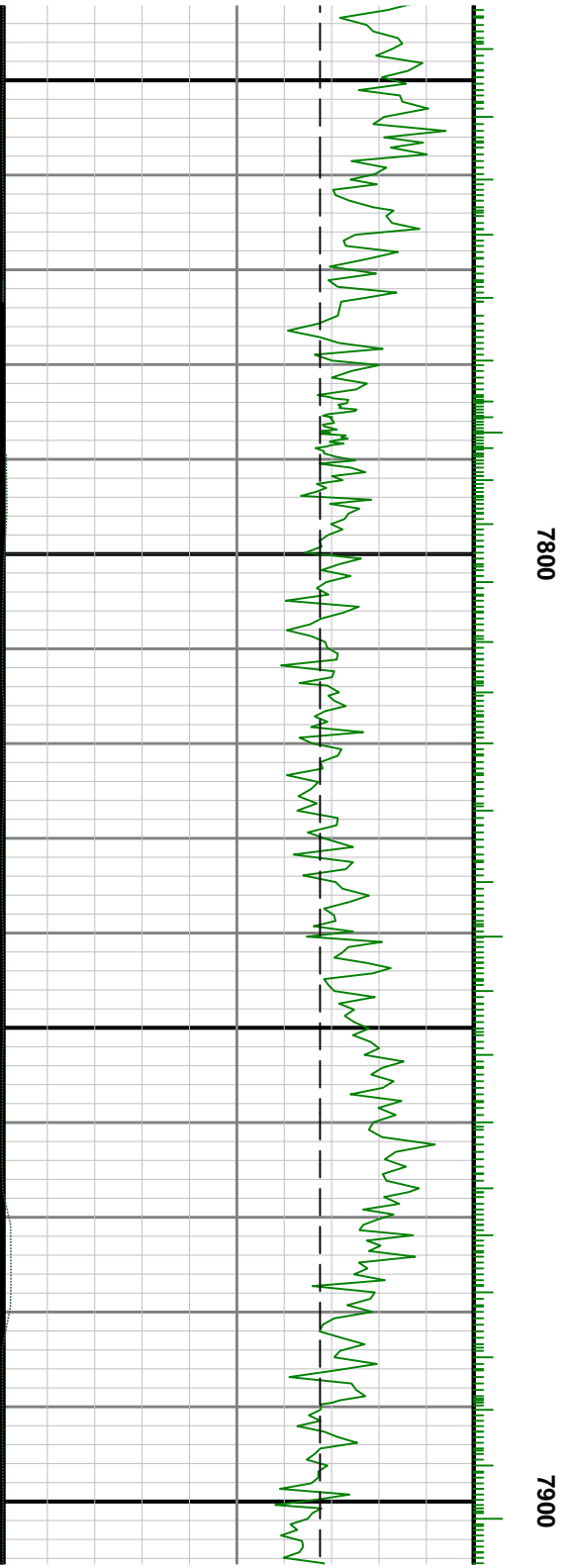
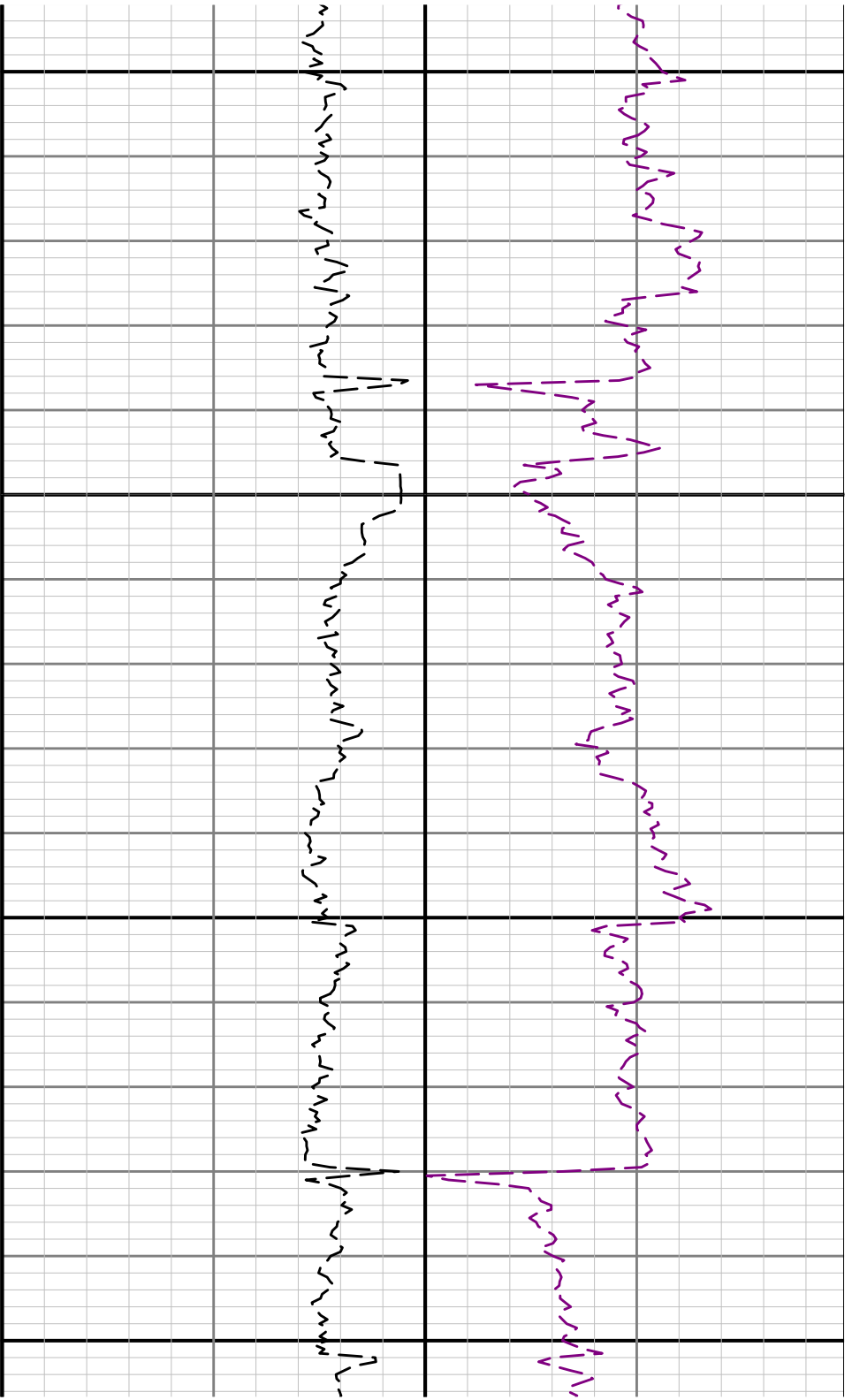


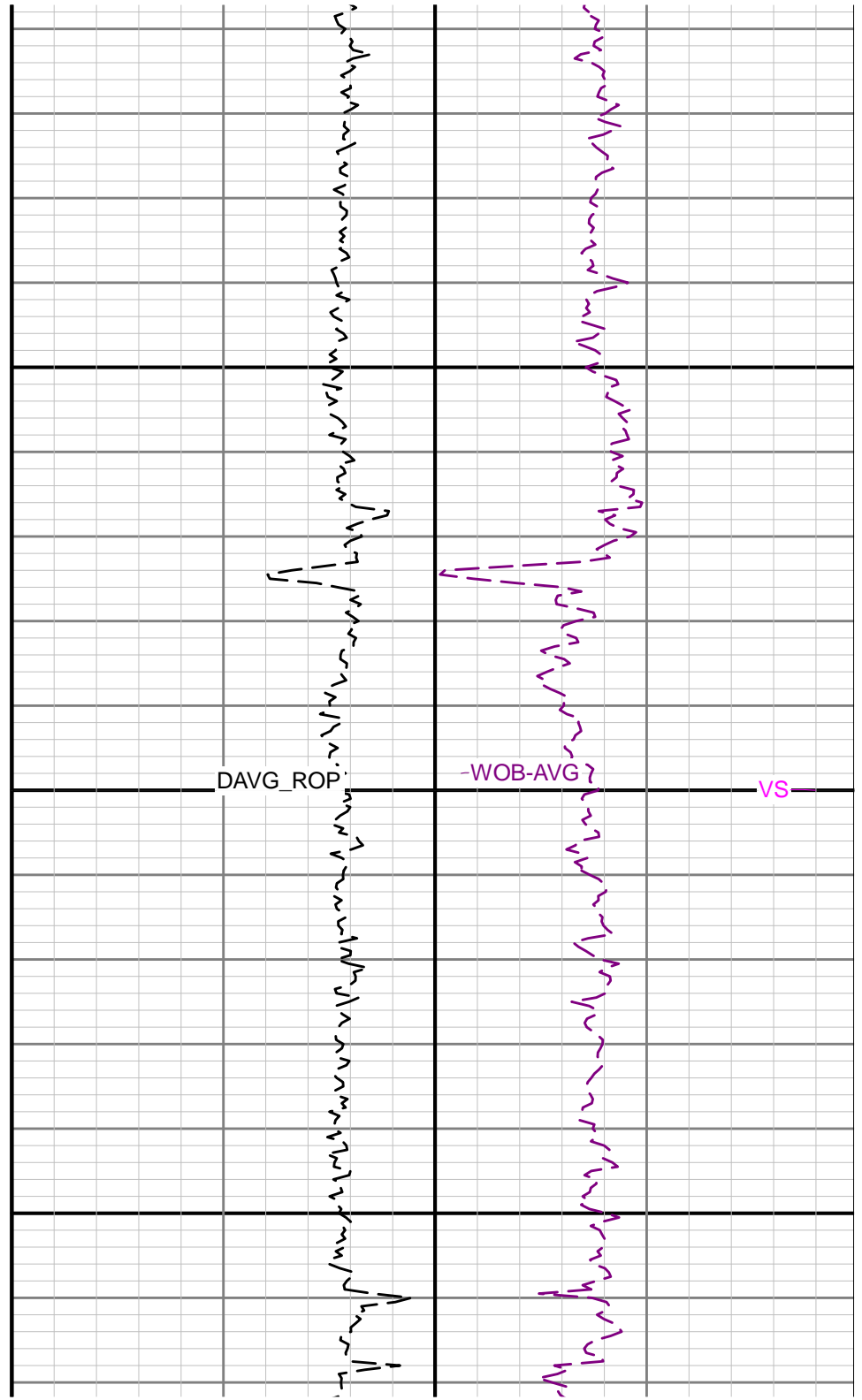
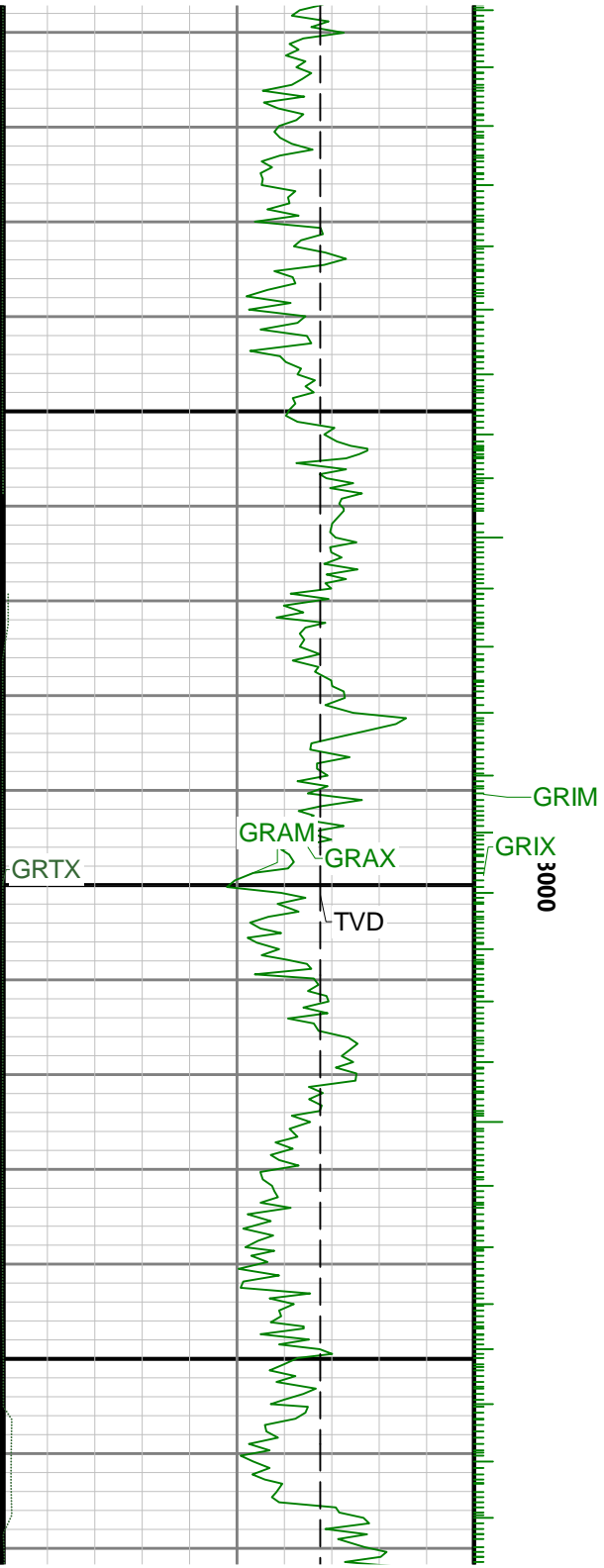


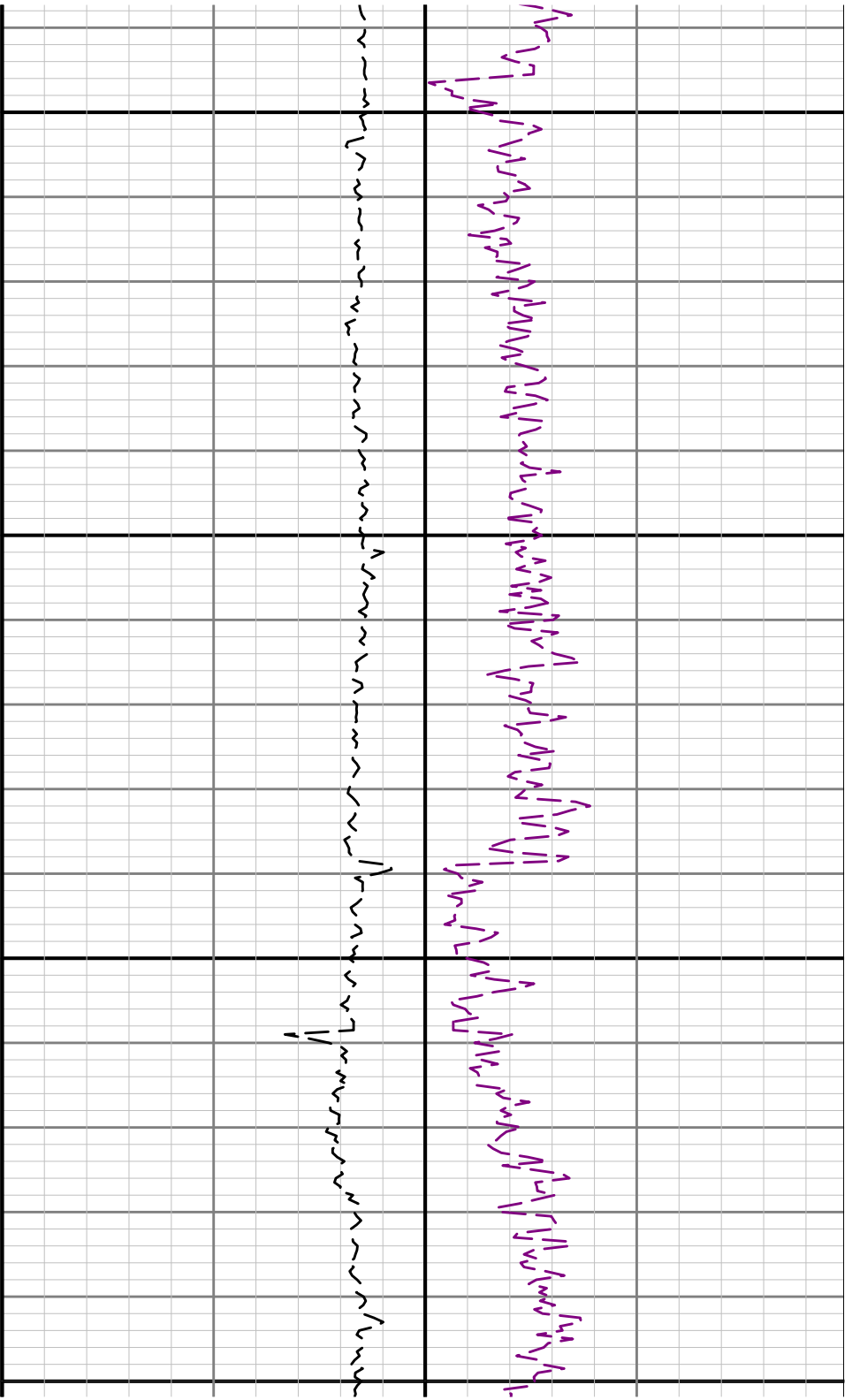
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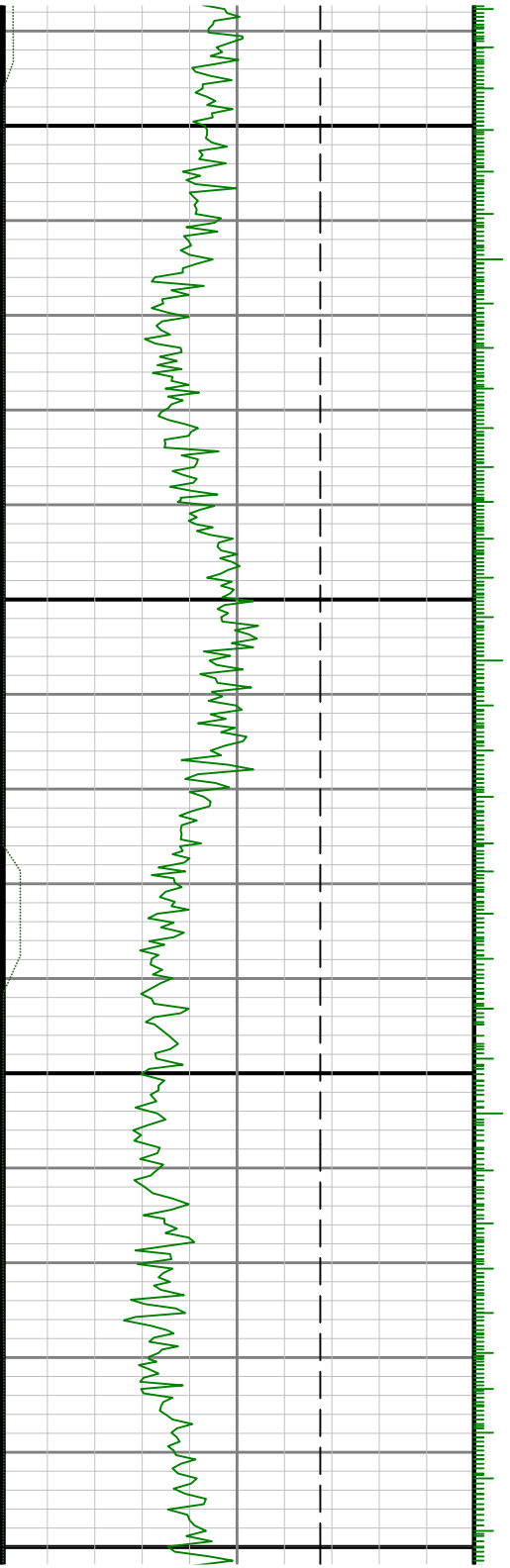


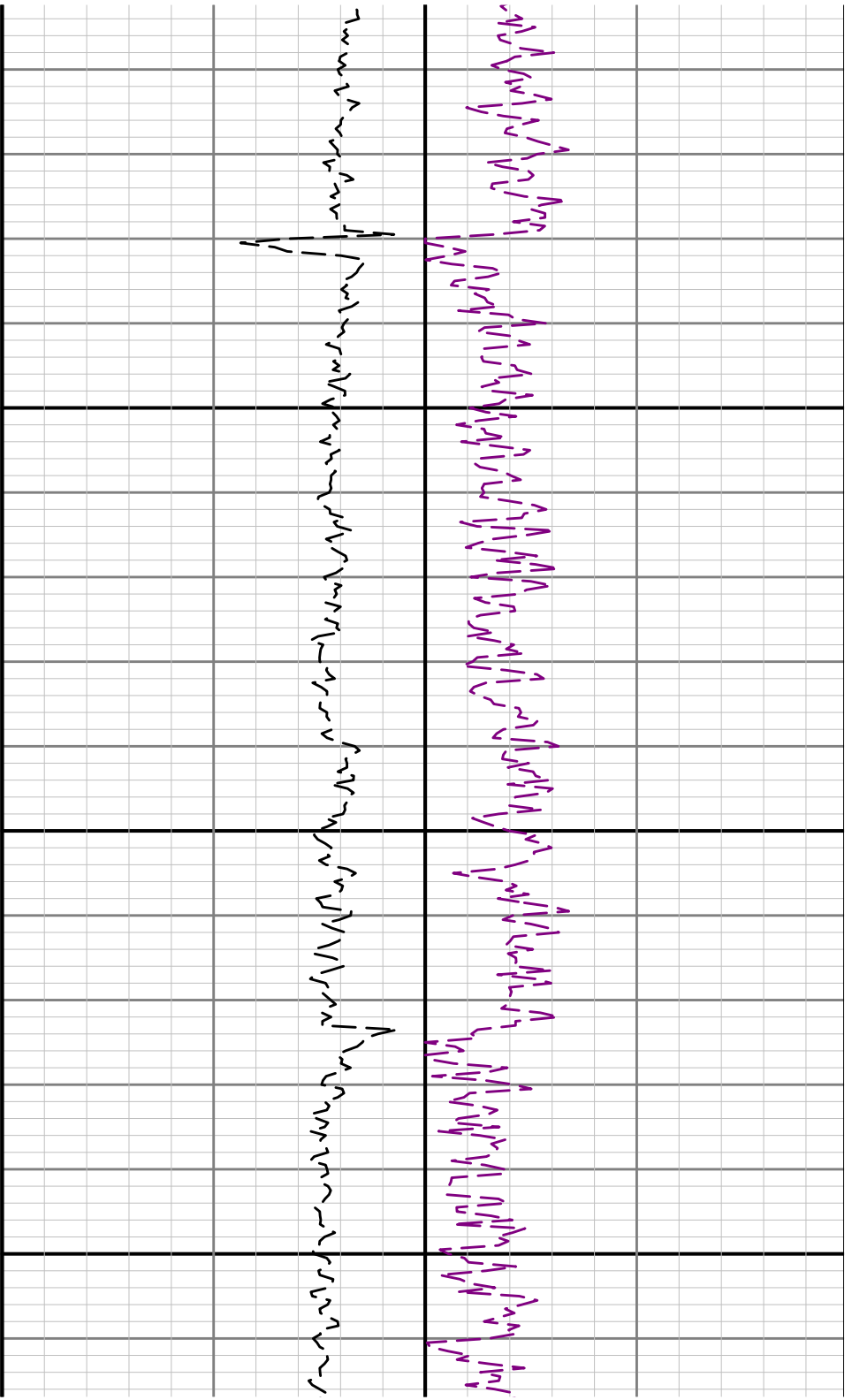




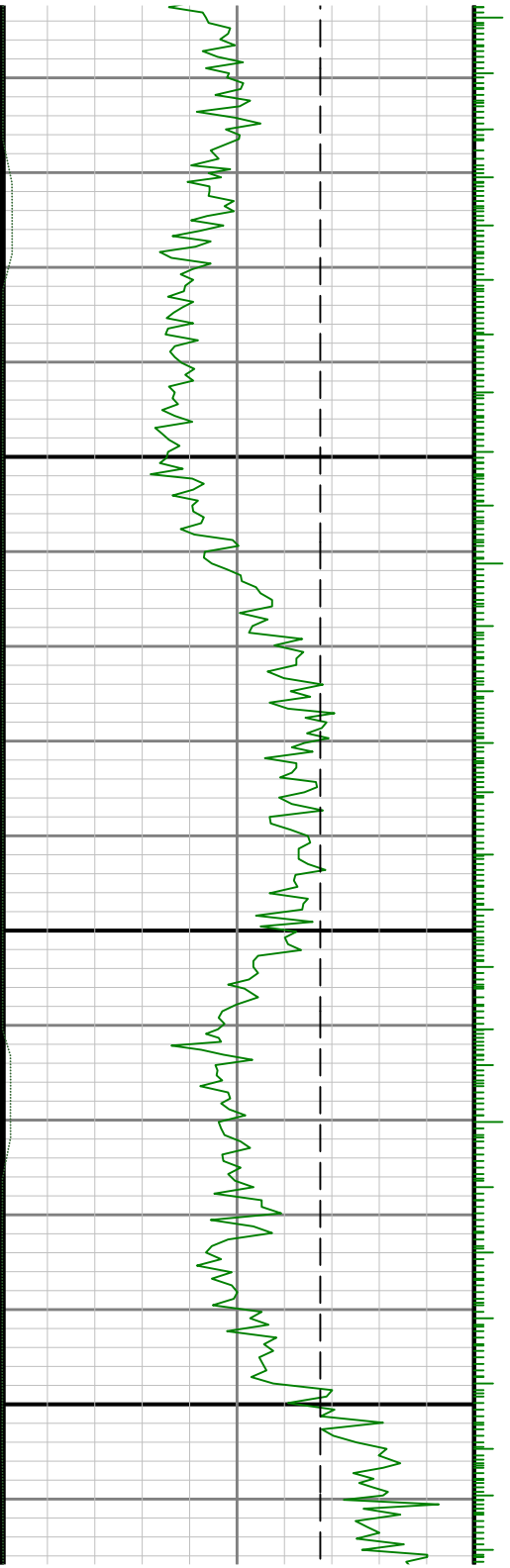
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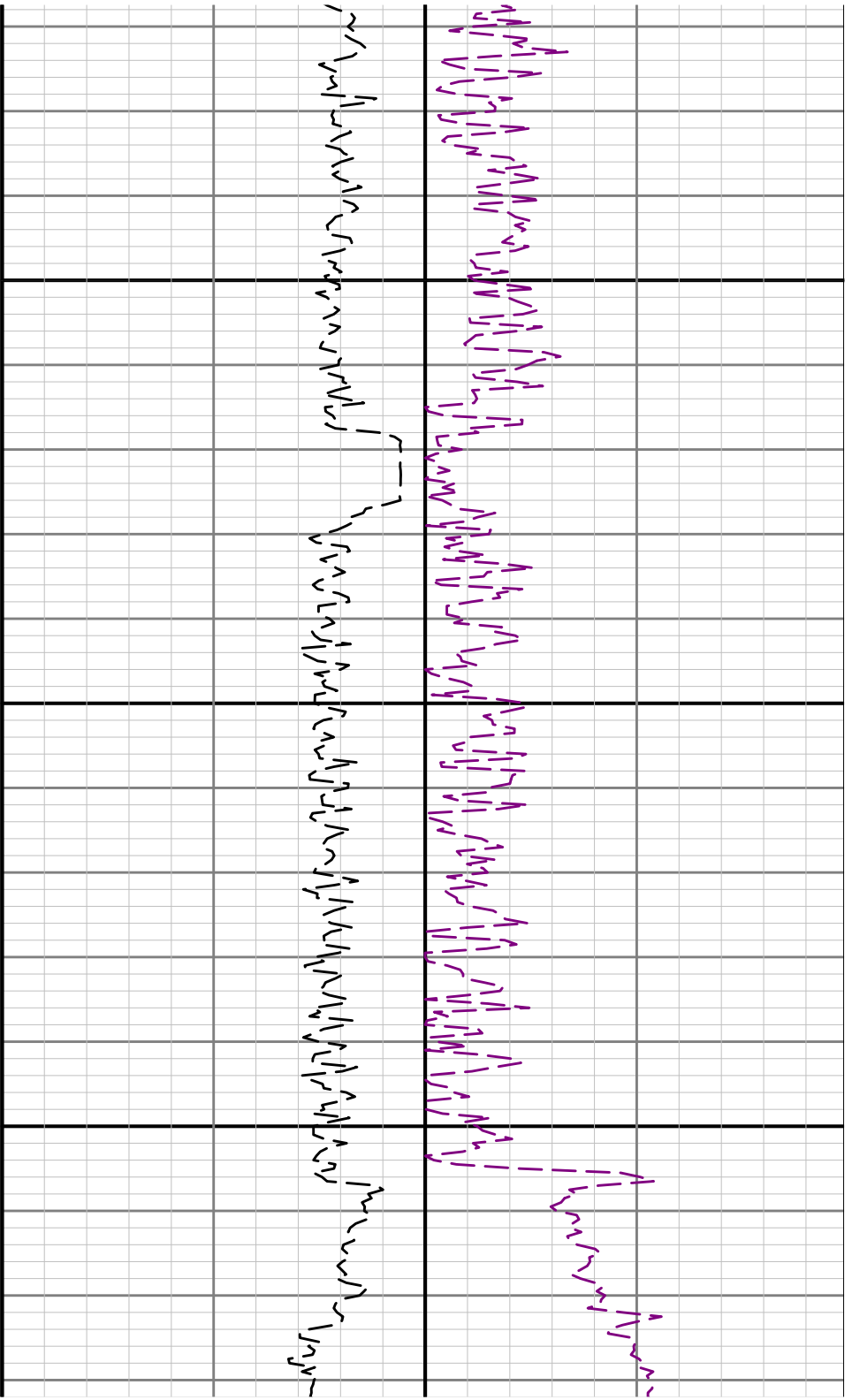
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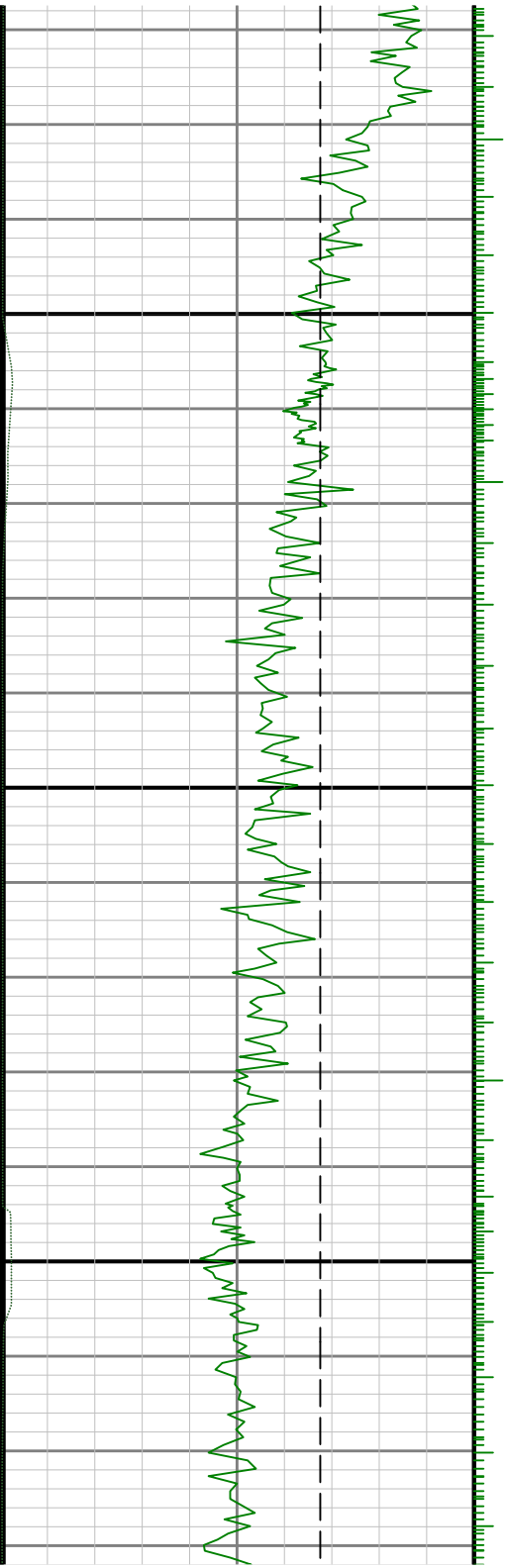
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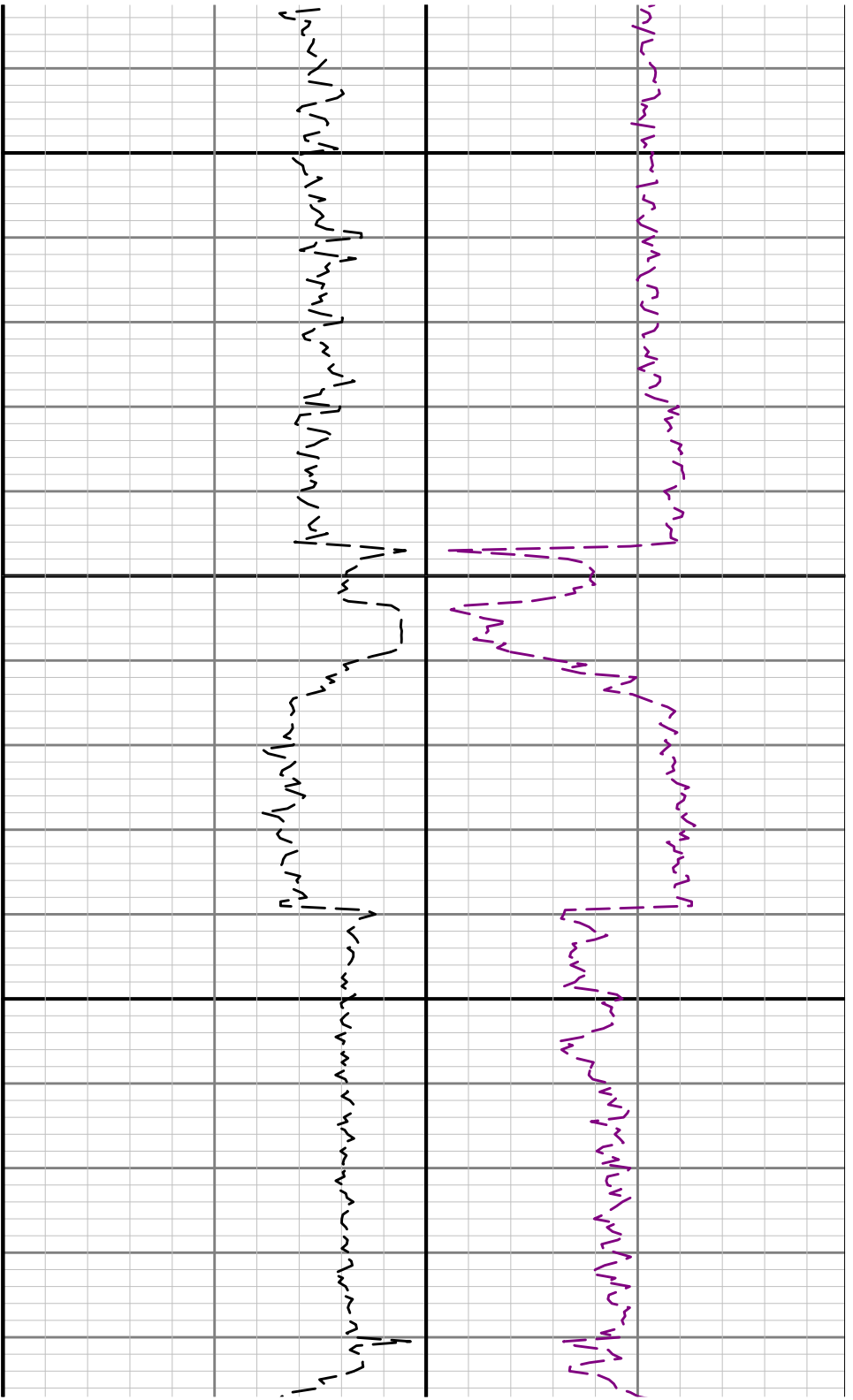
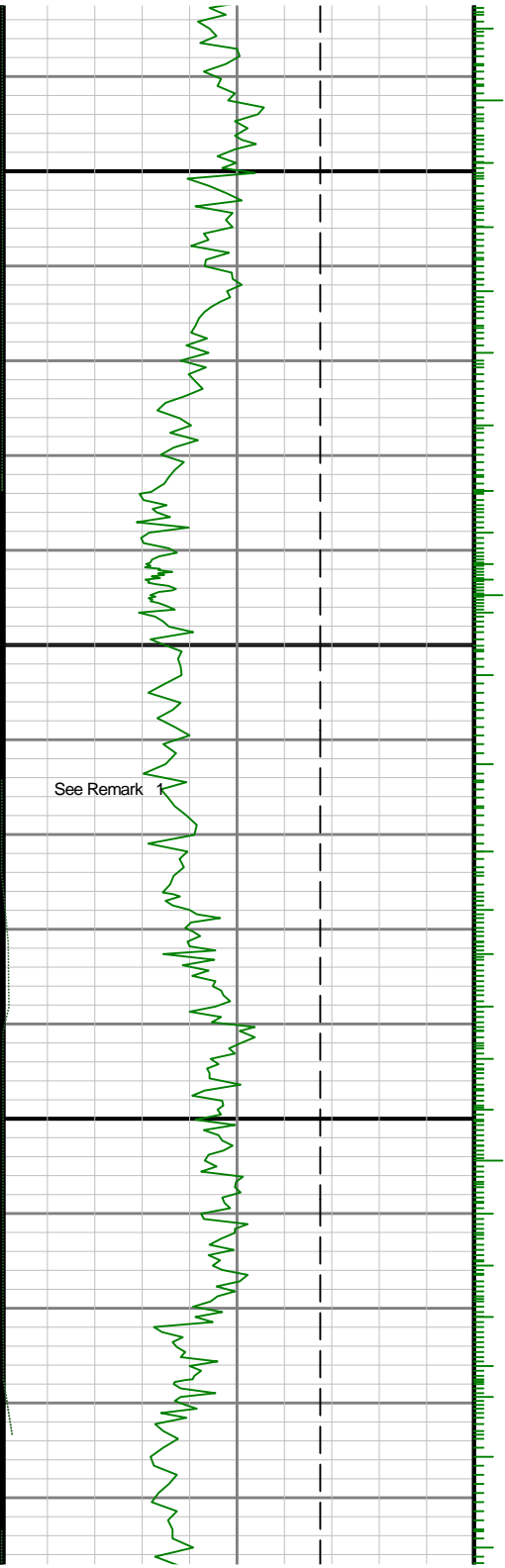
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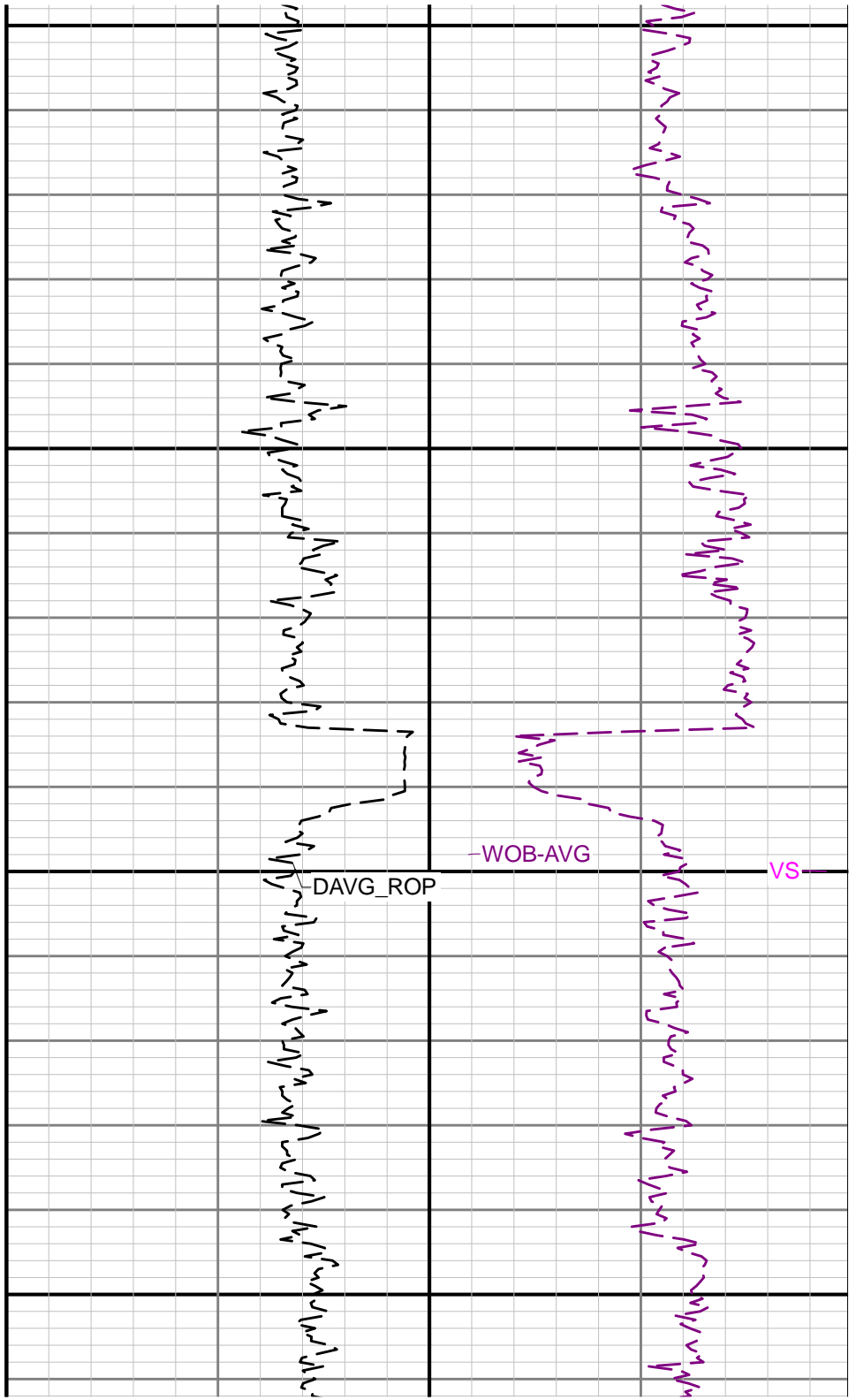
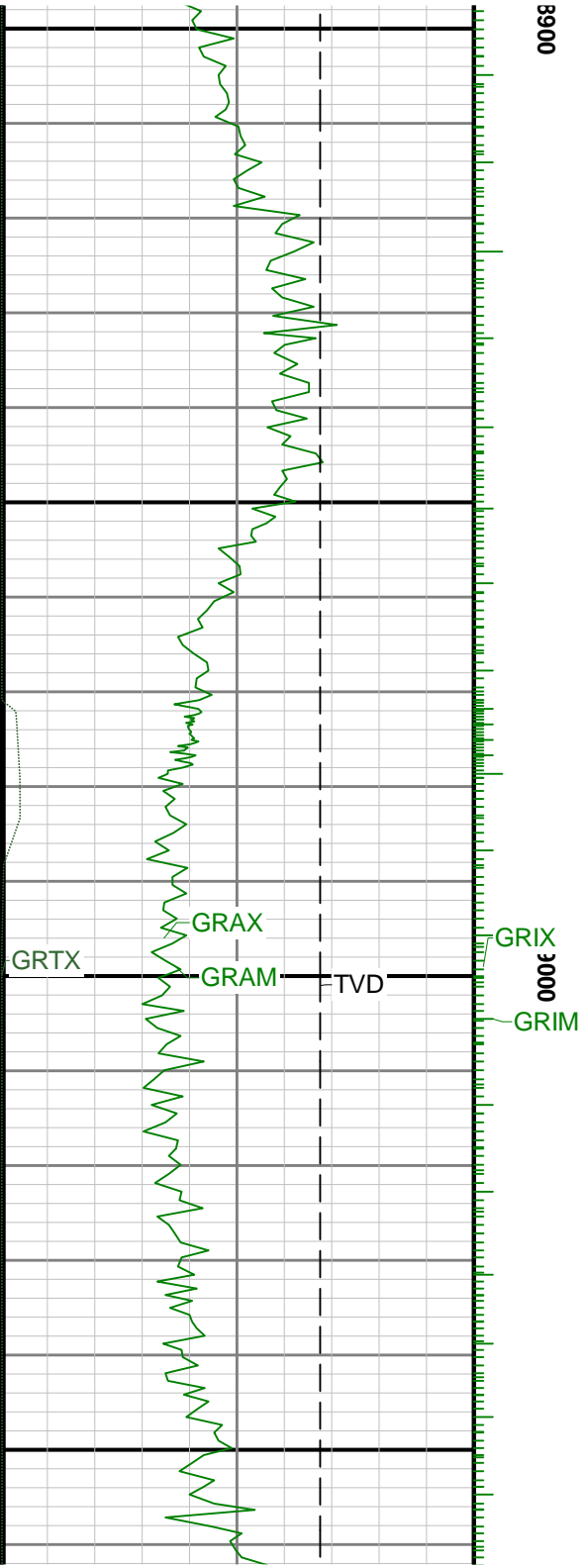
8700

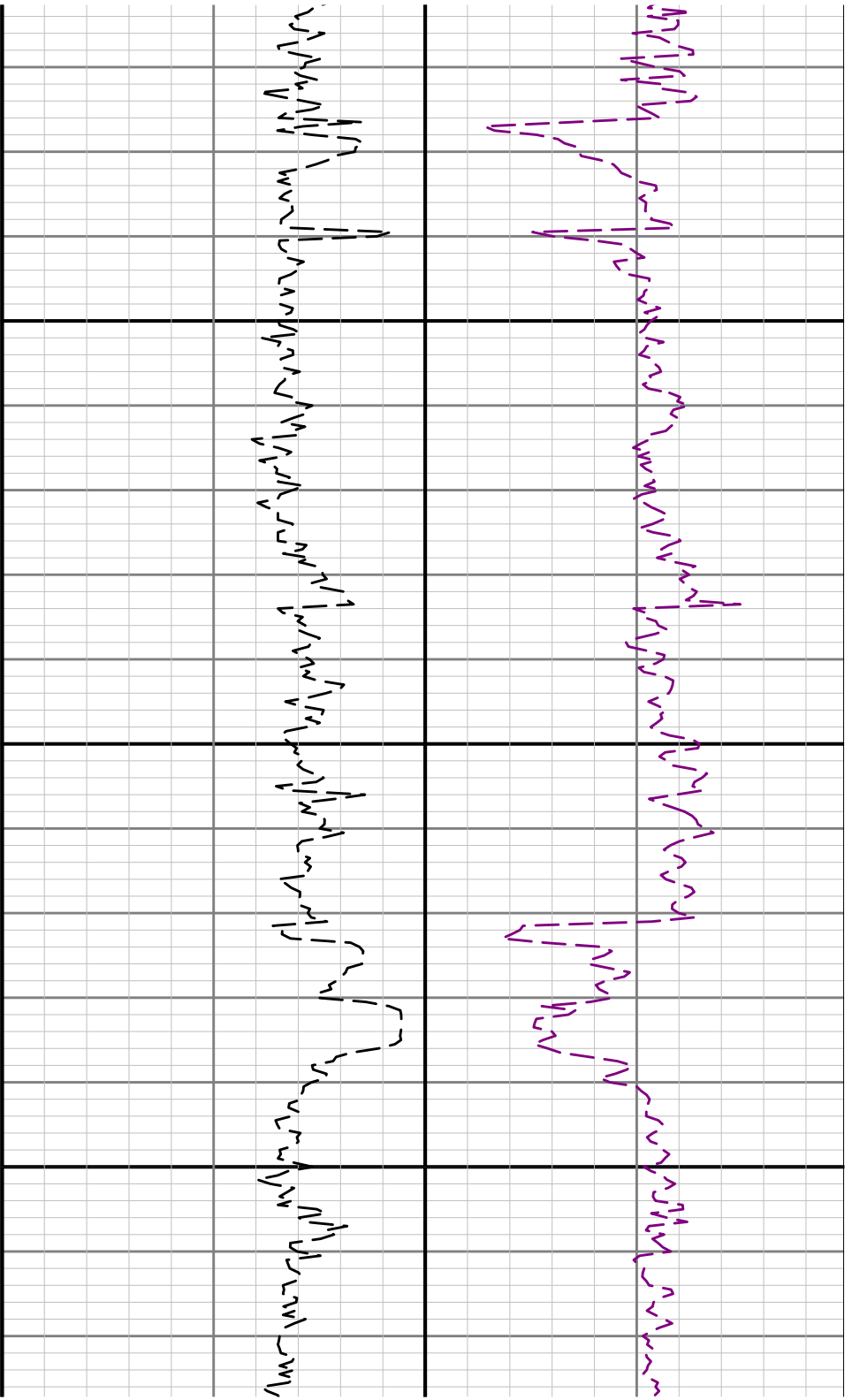


0088

See Remark

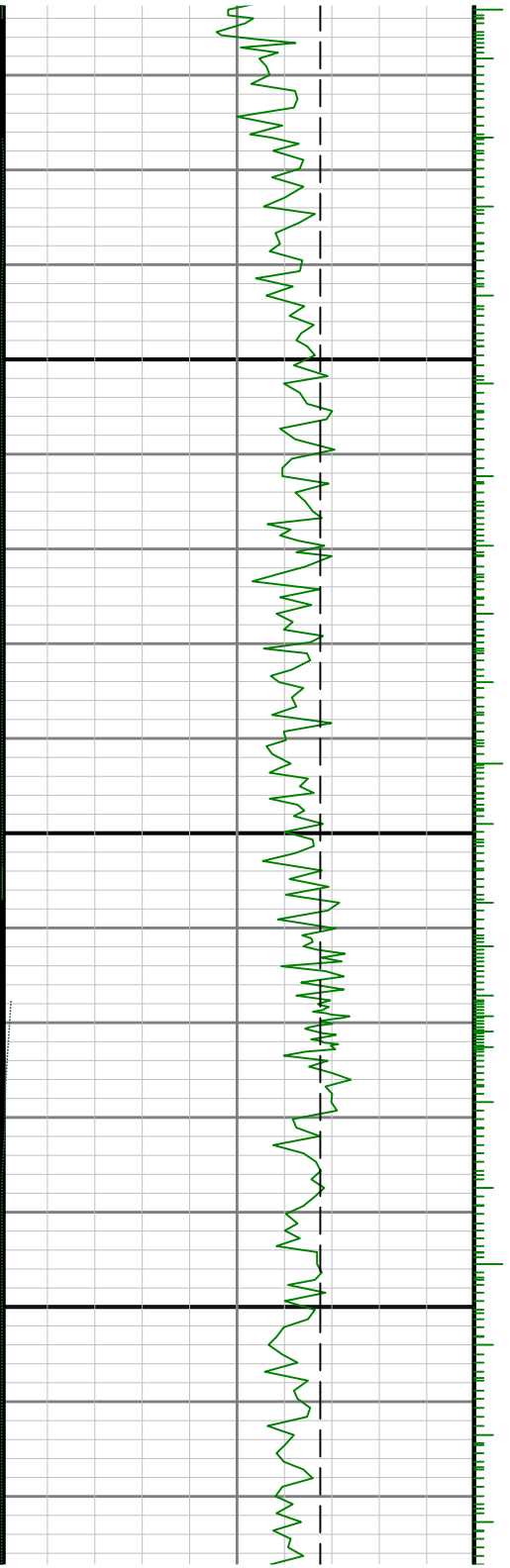


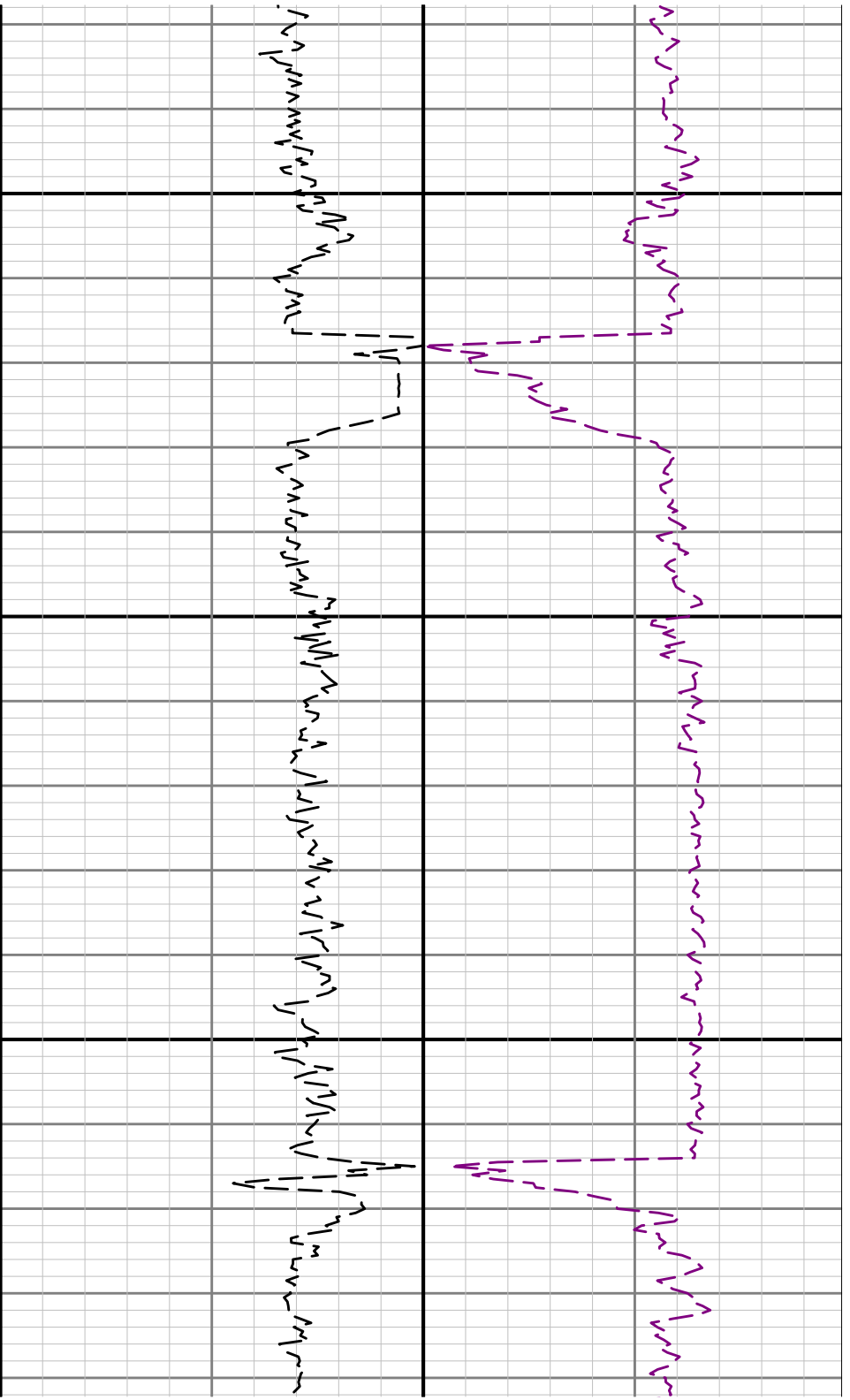




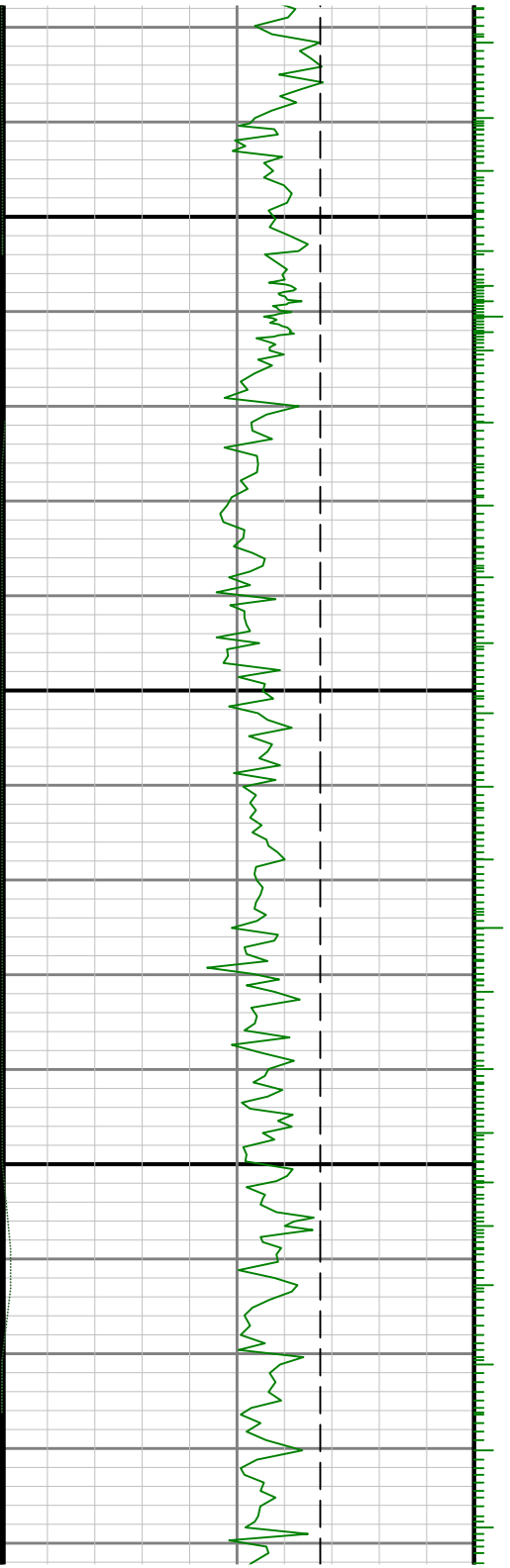
9100

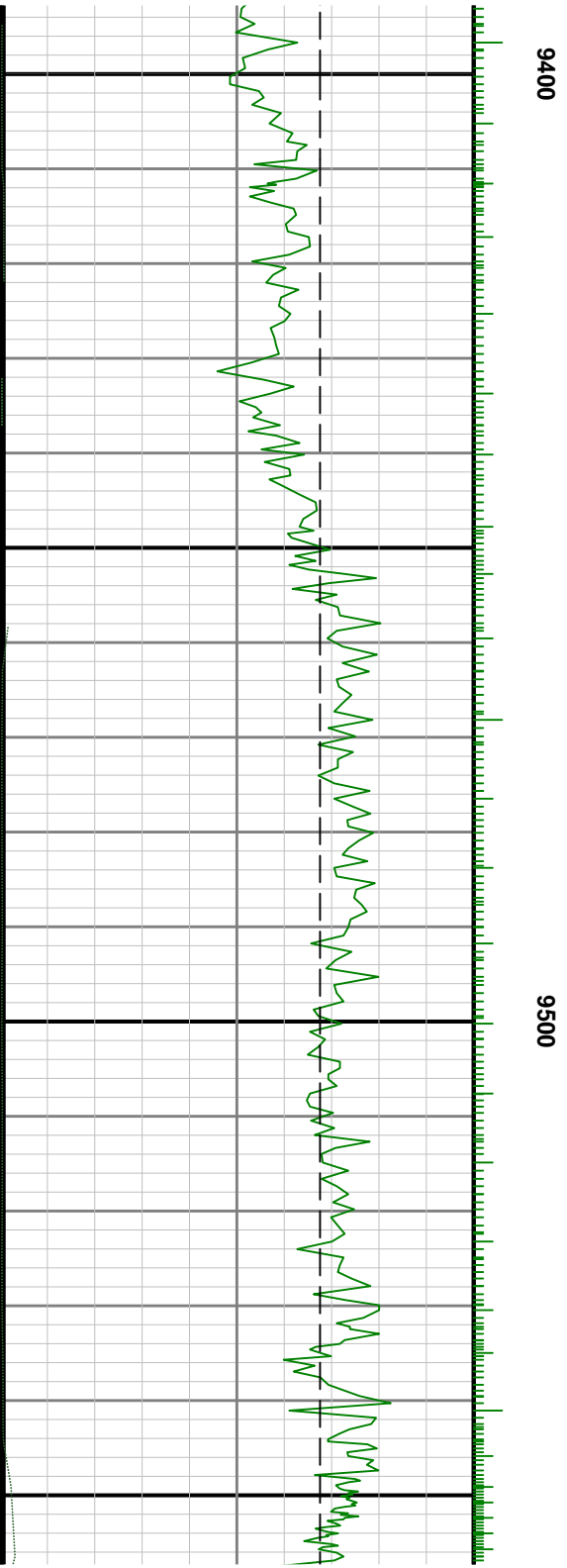
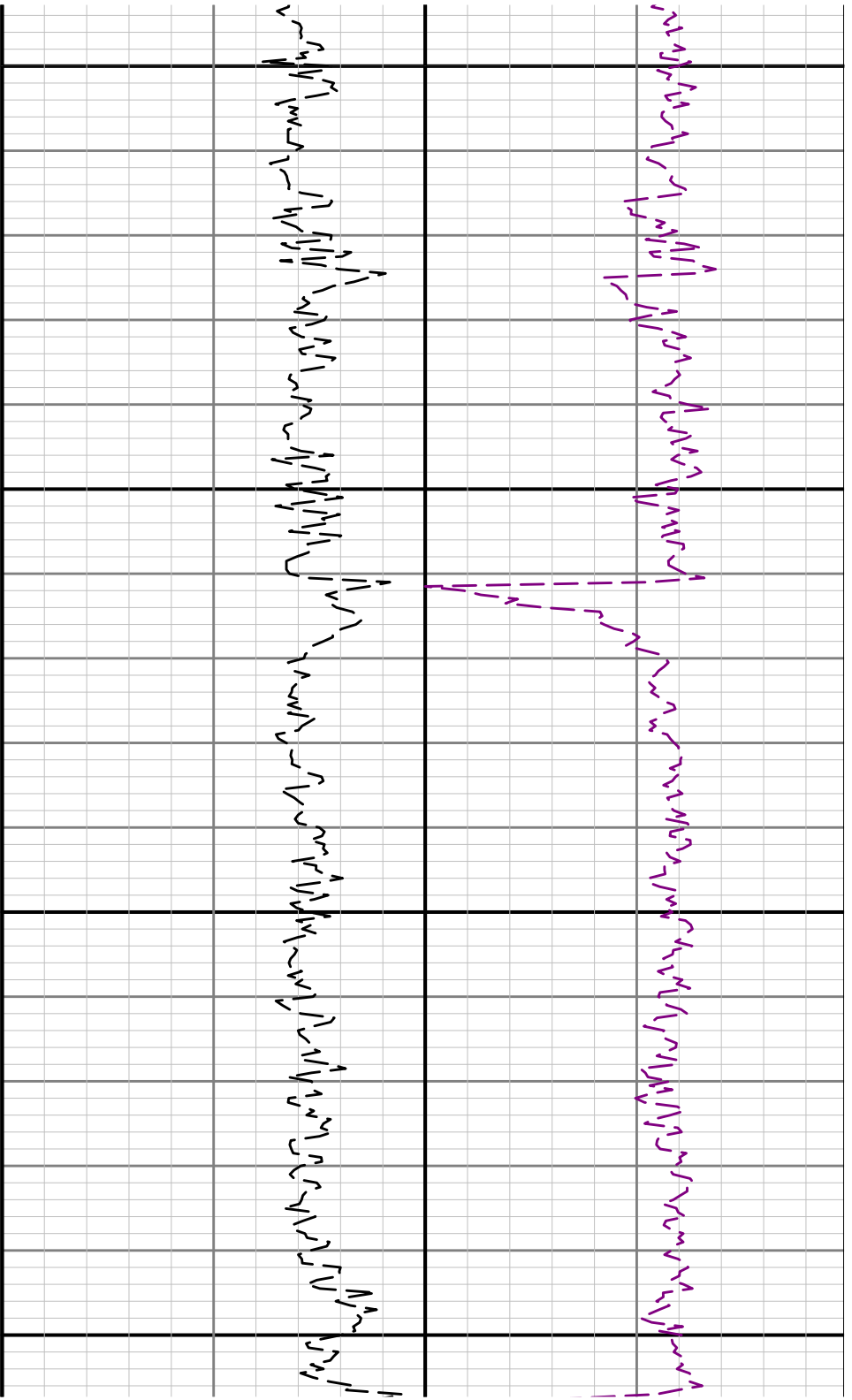
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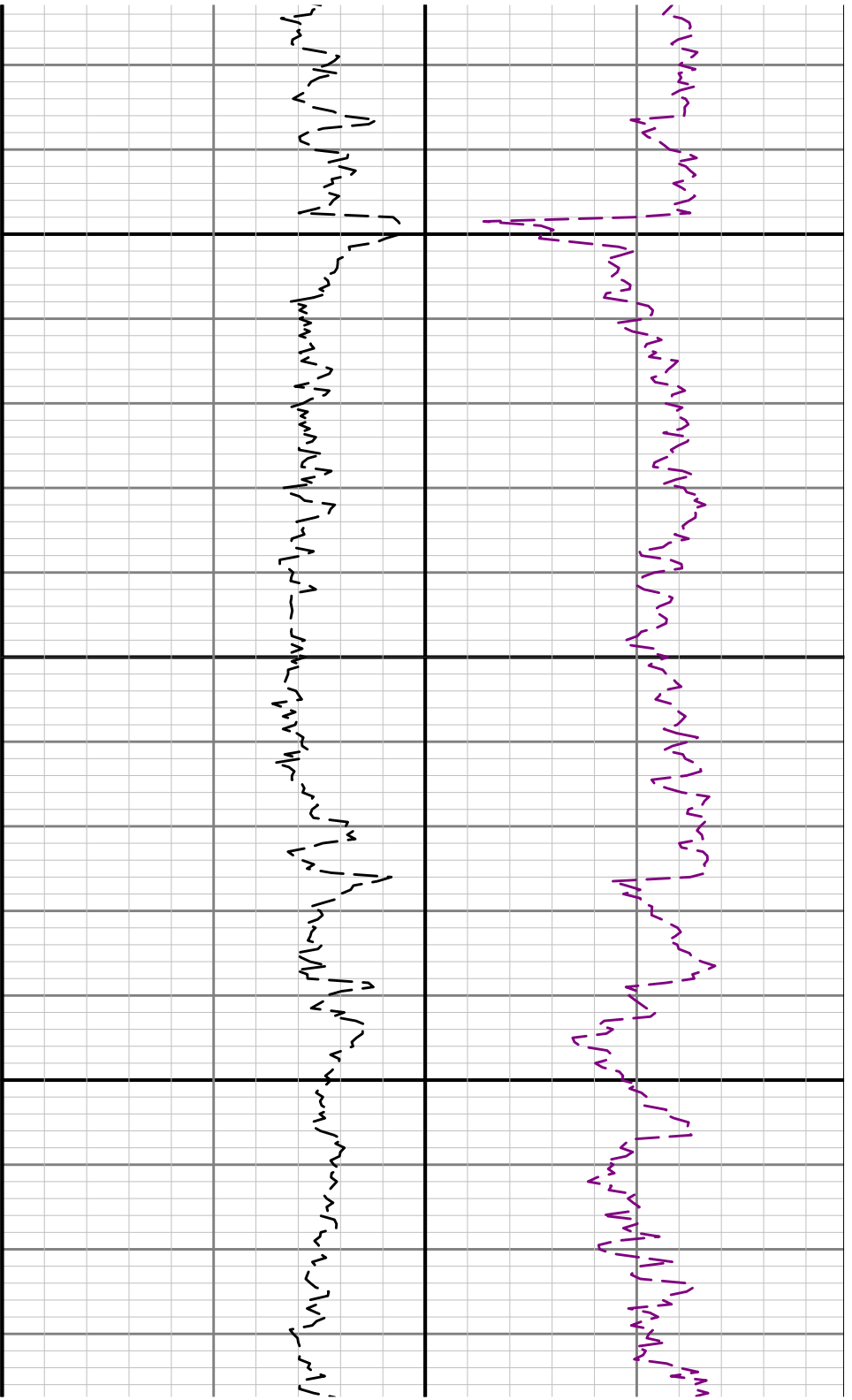




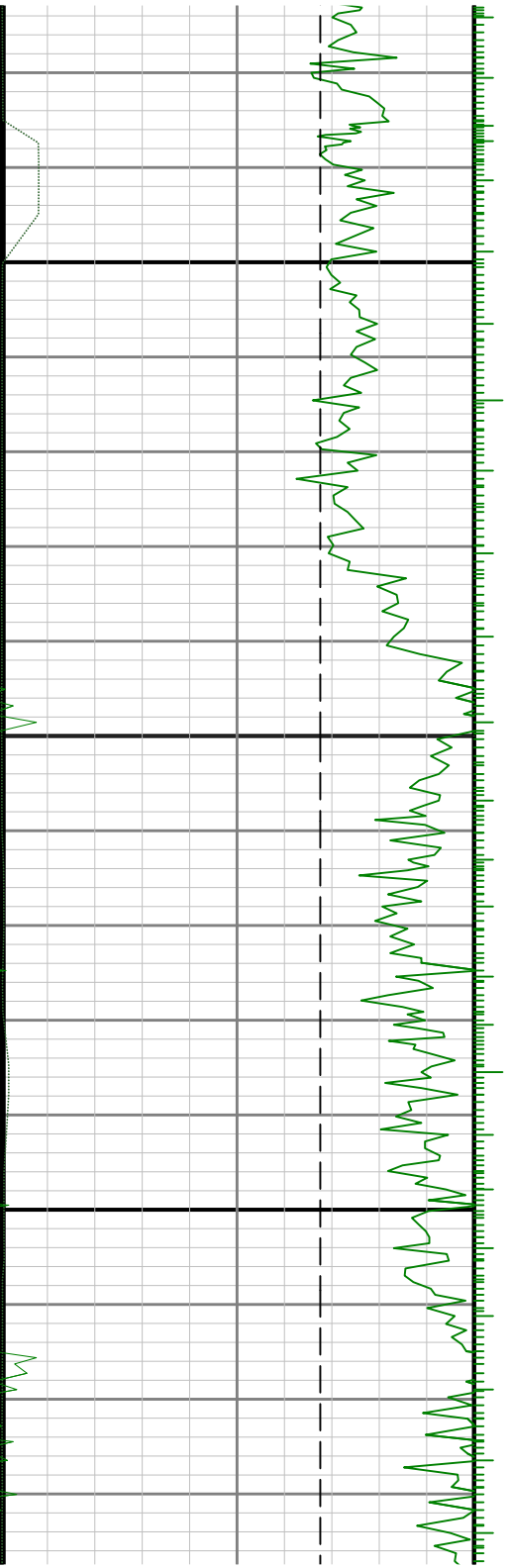
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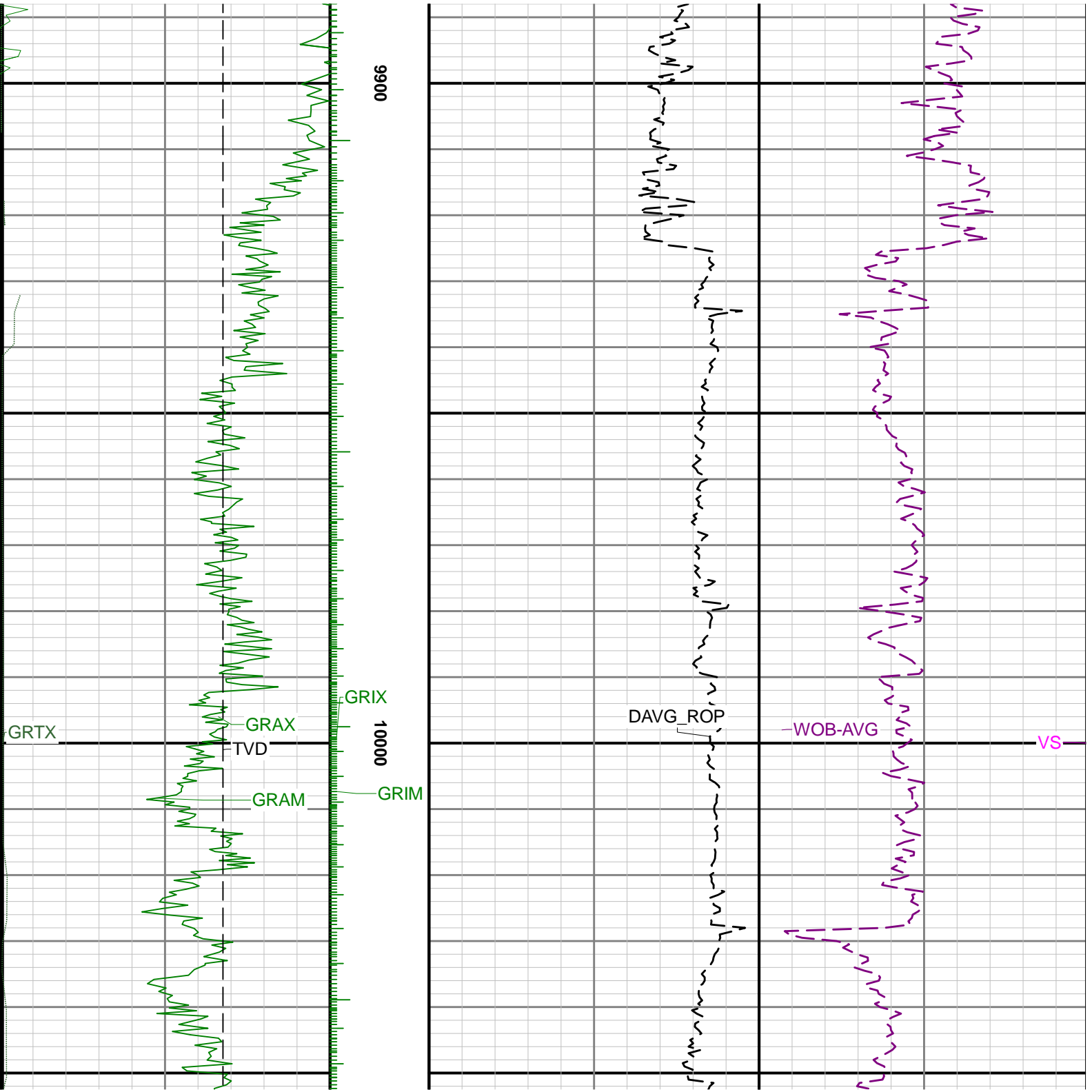


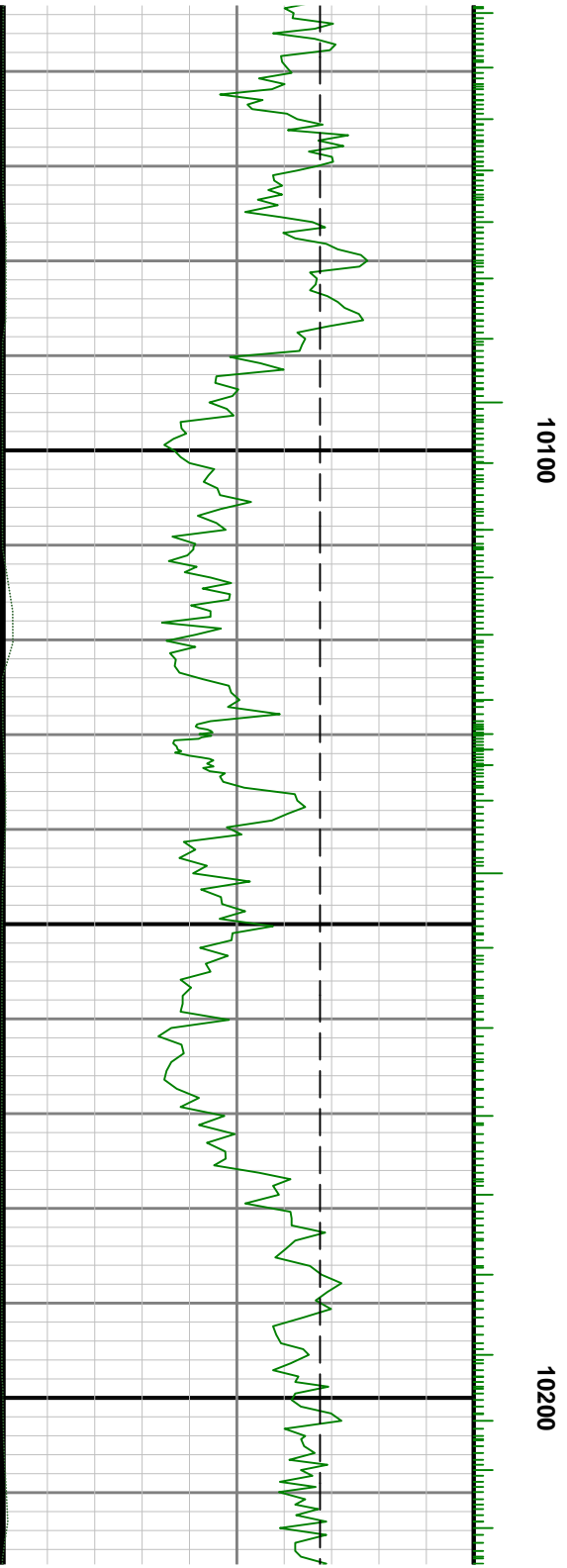
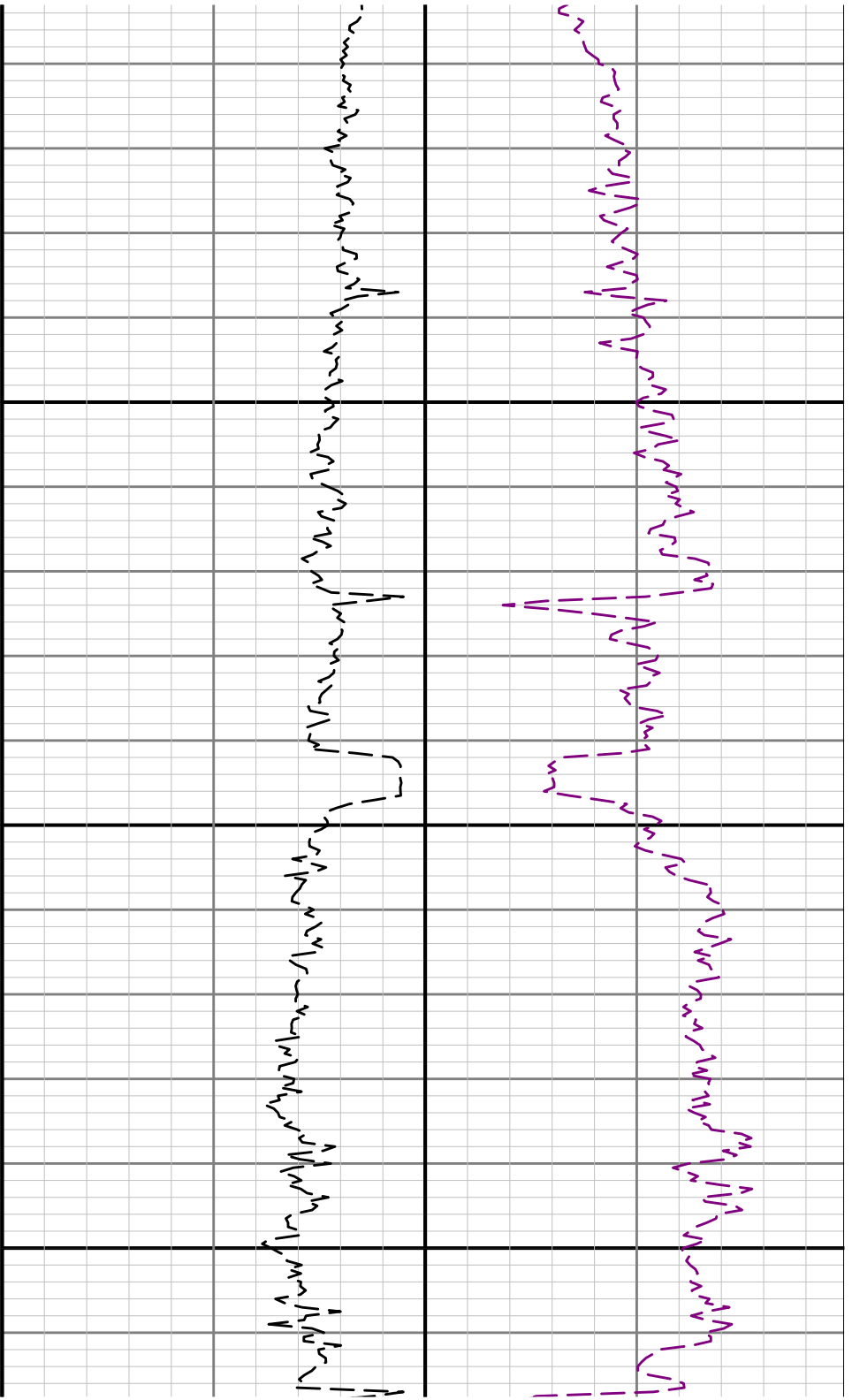


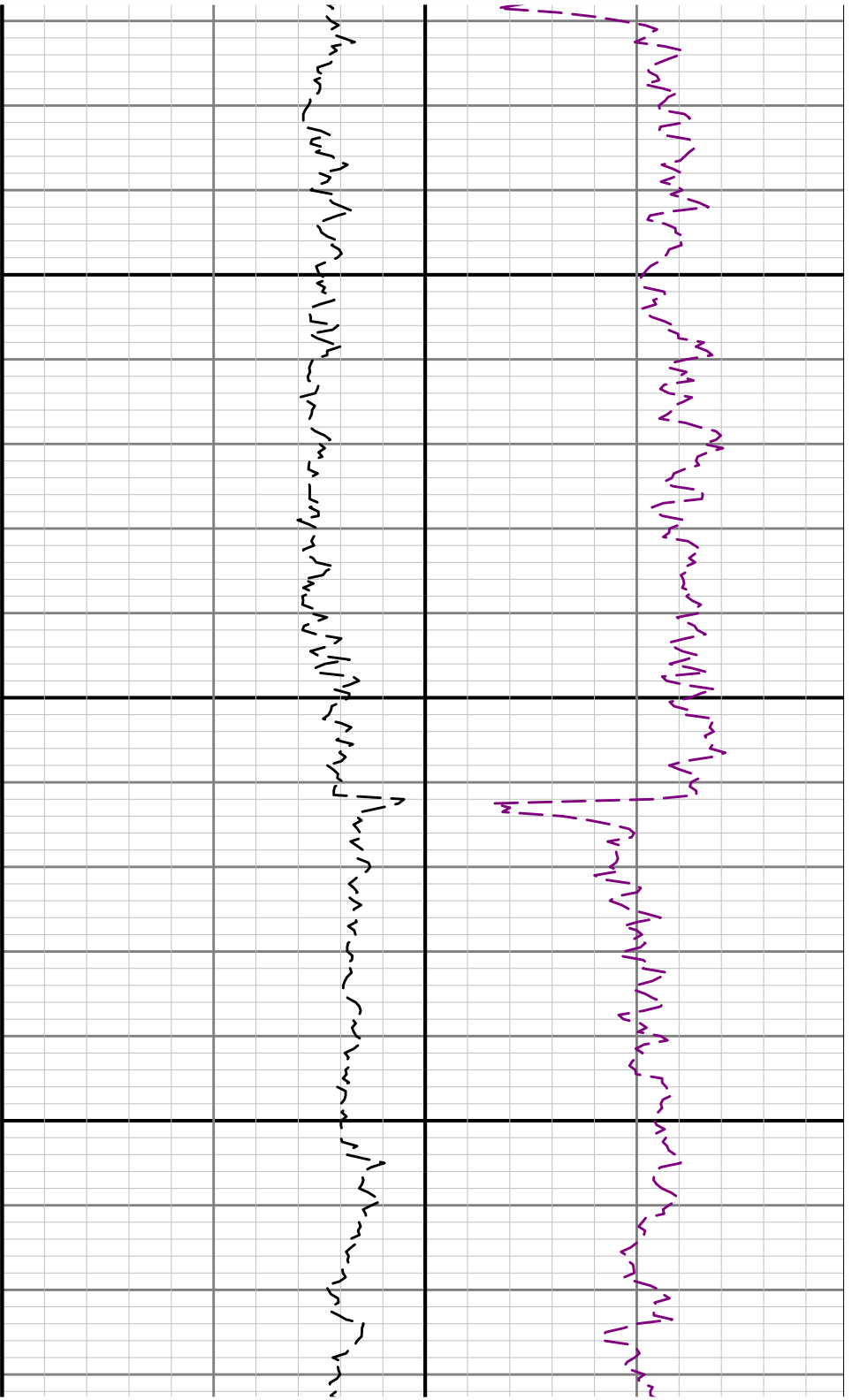


0086

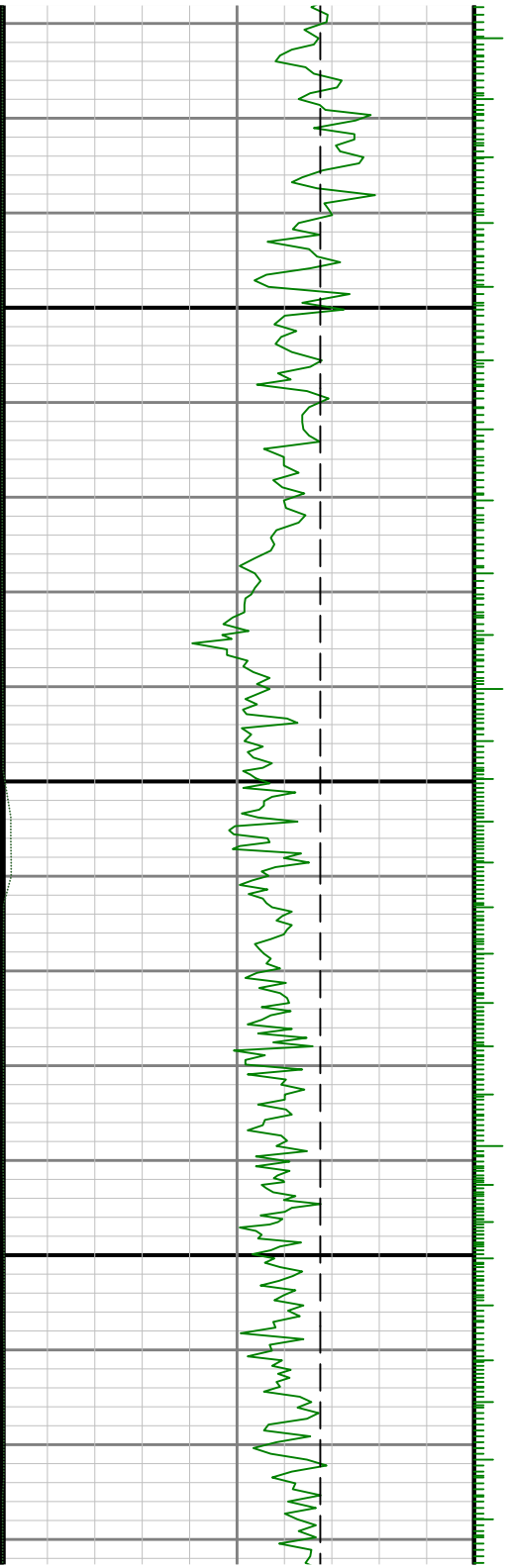


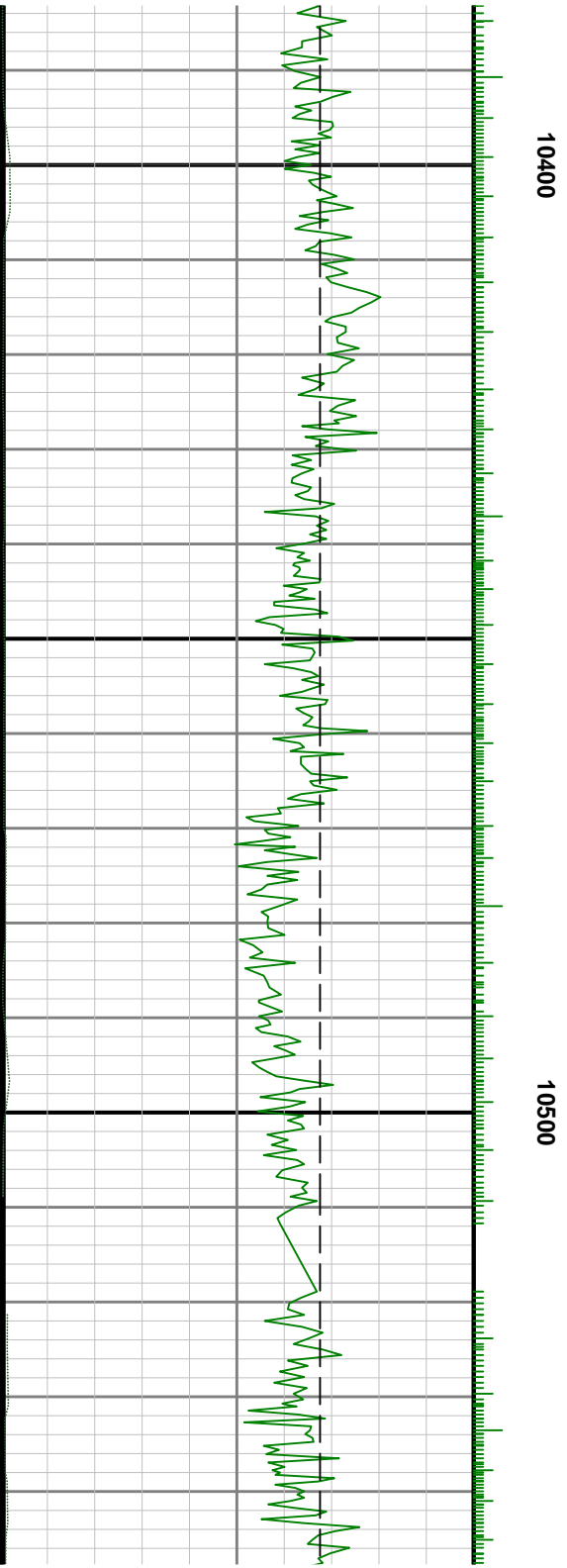
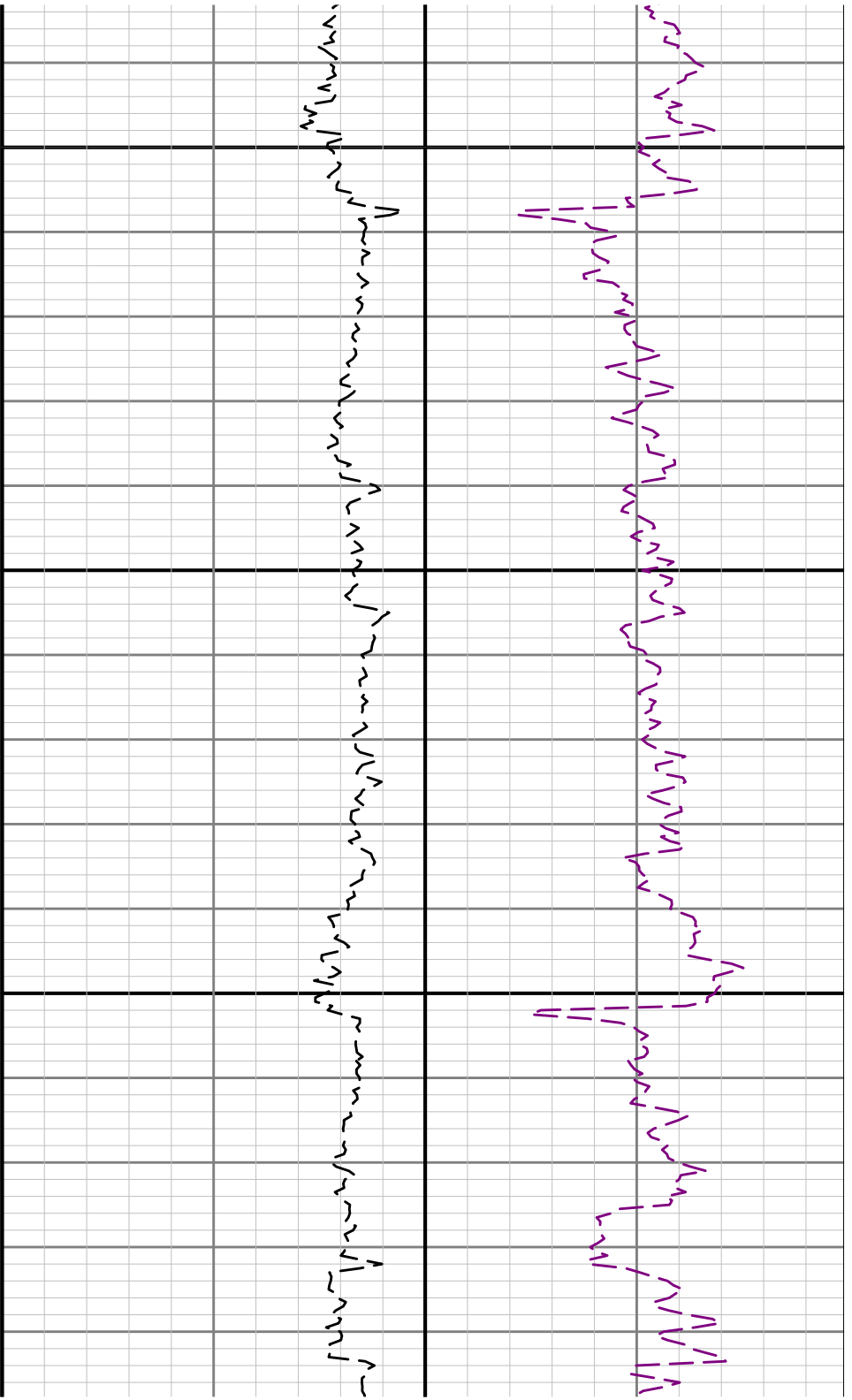


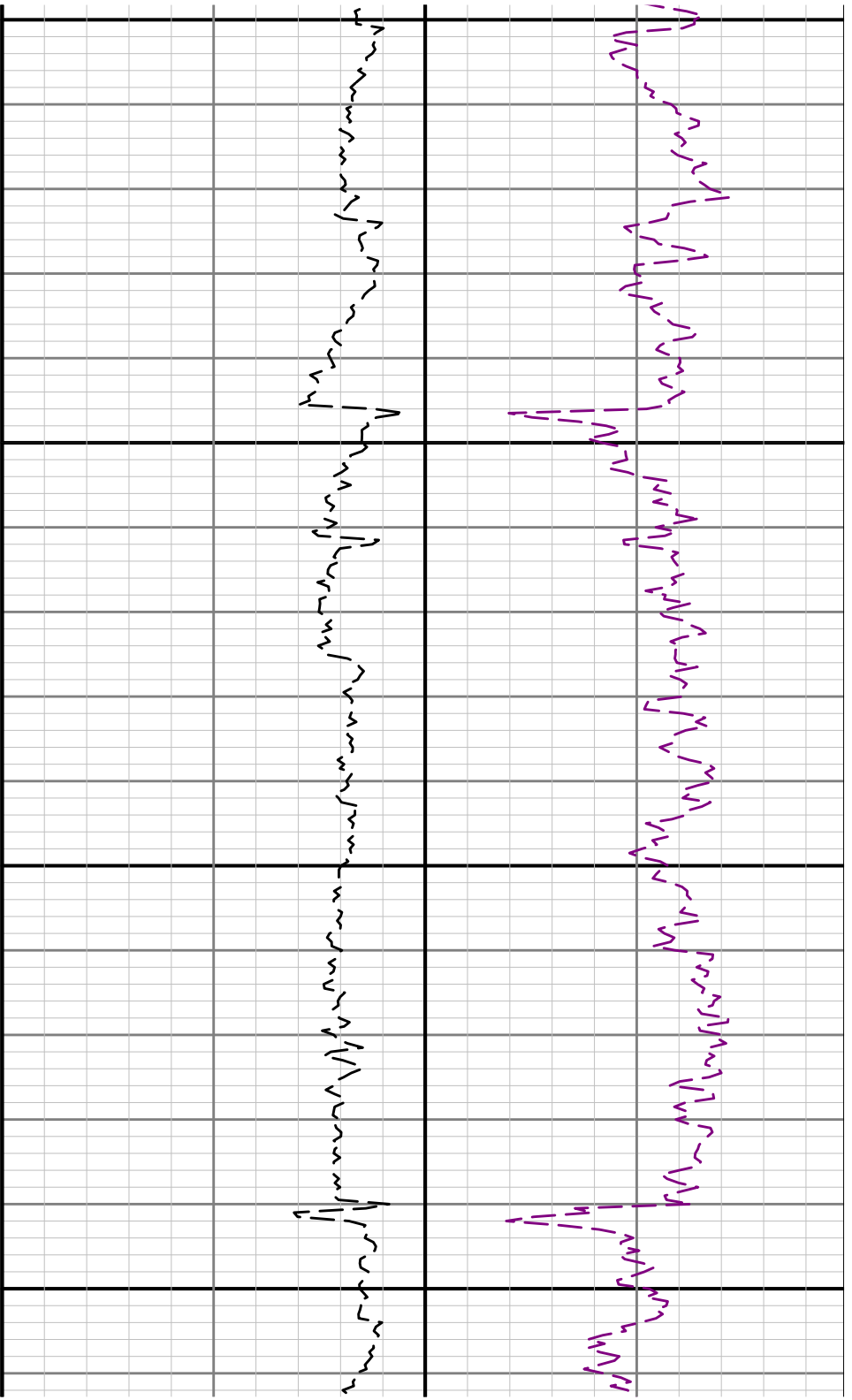




10300

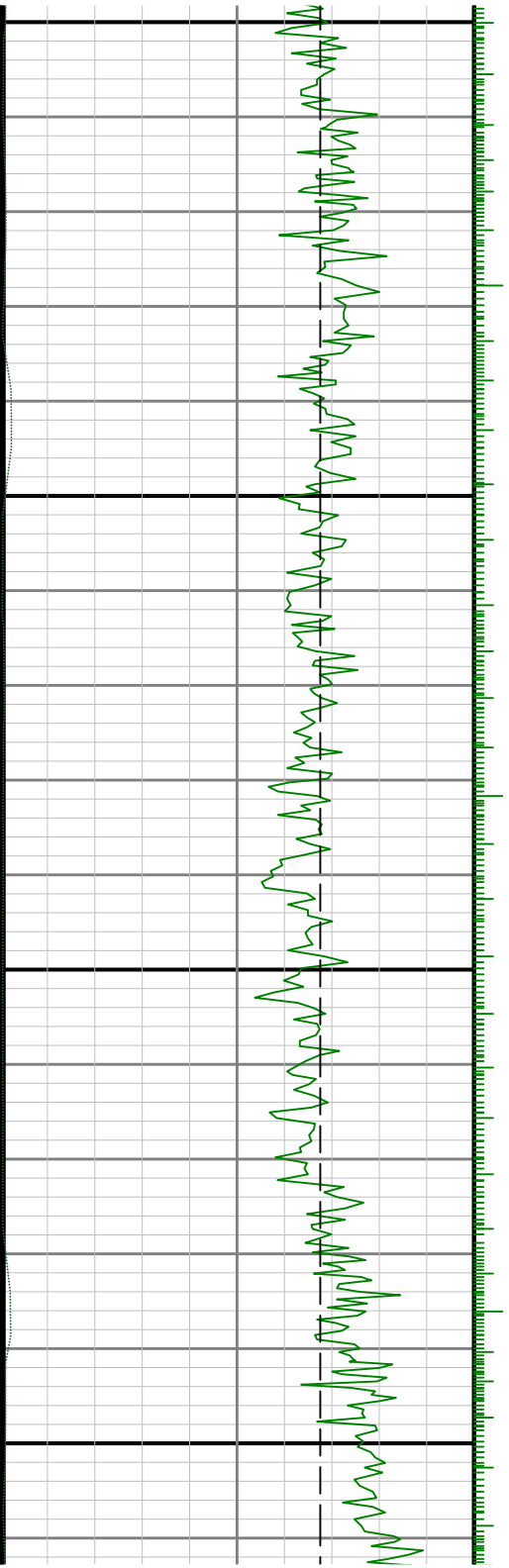


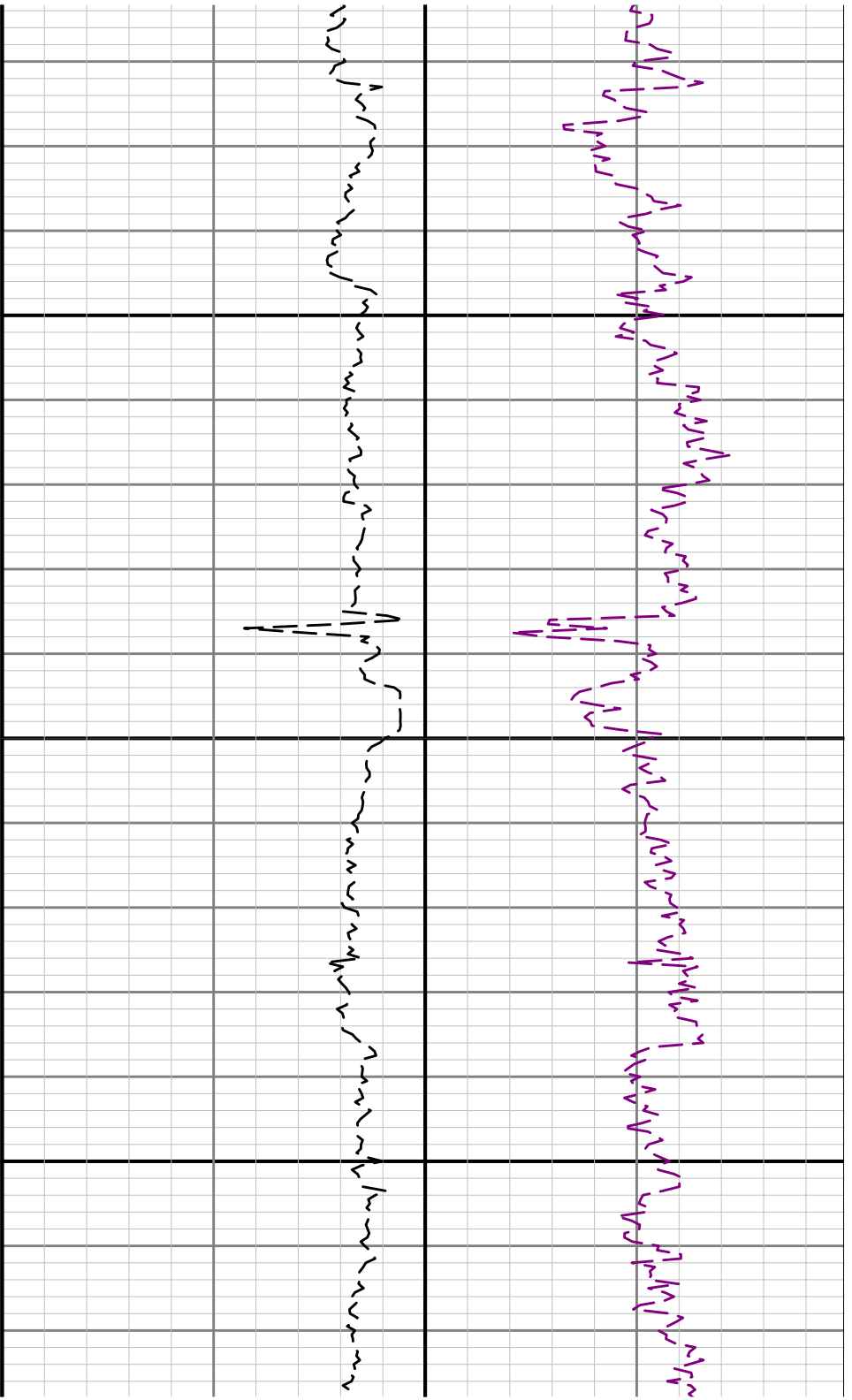




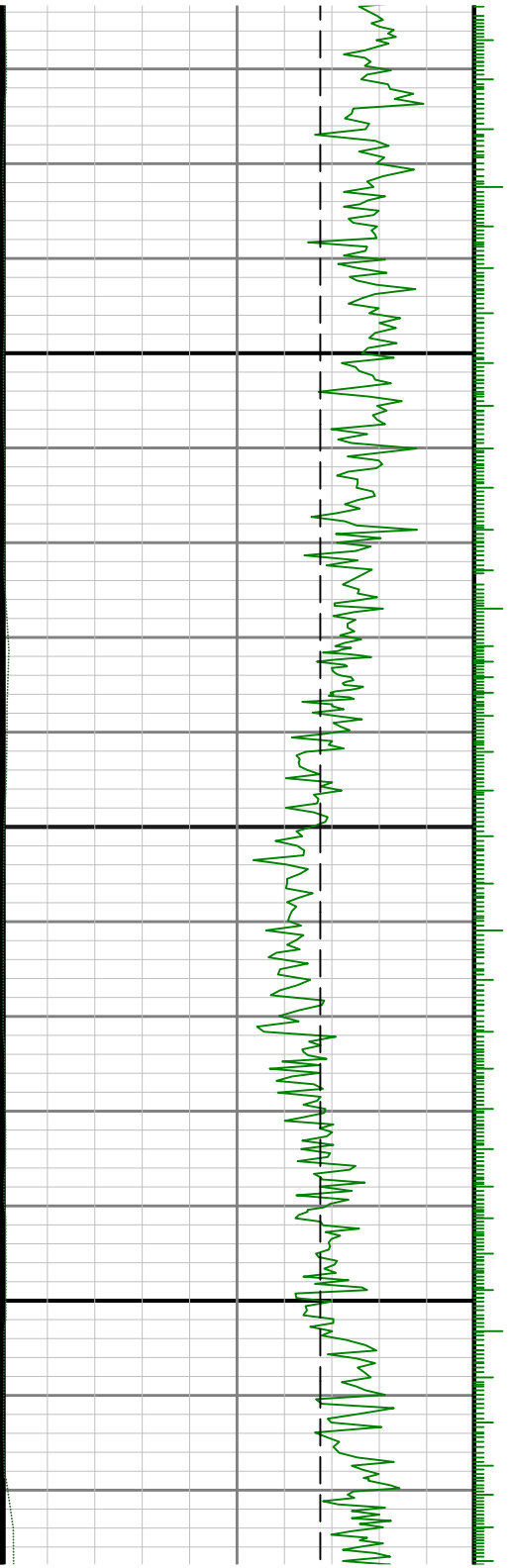
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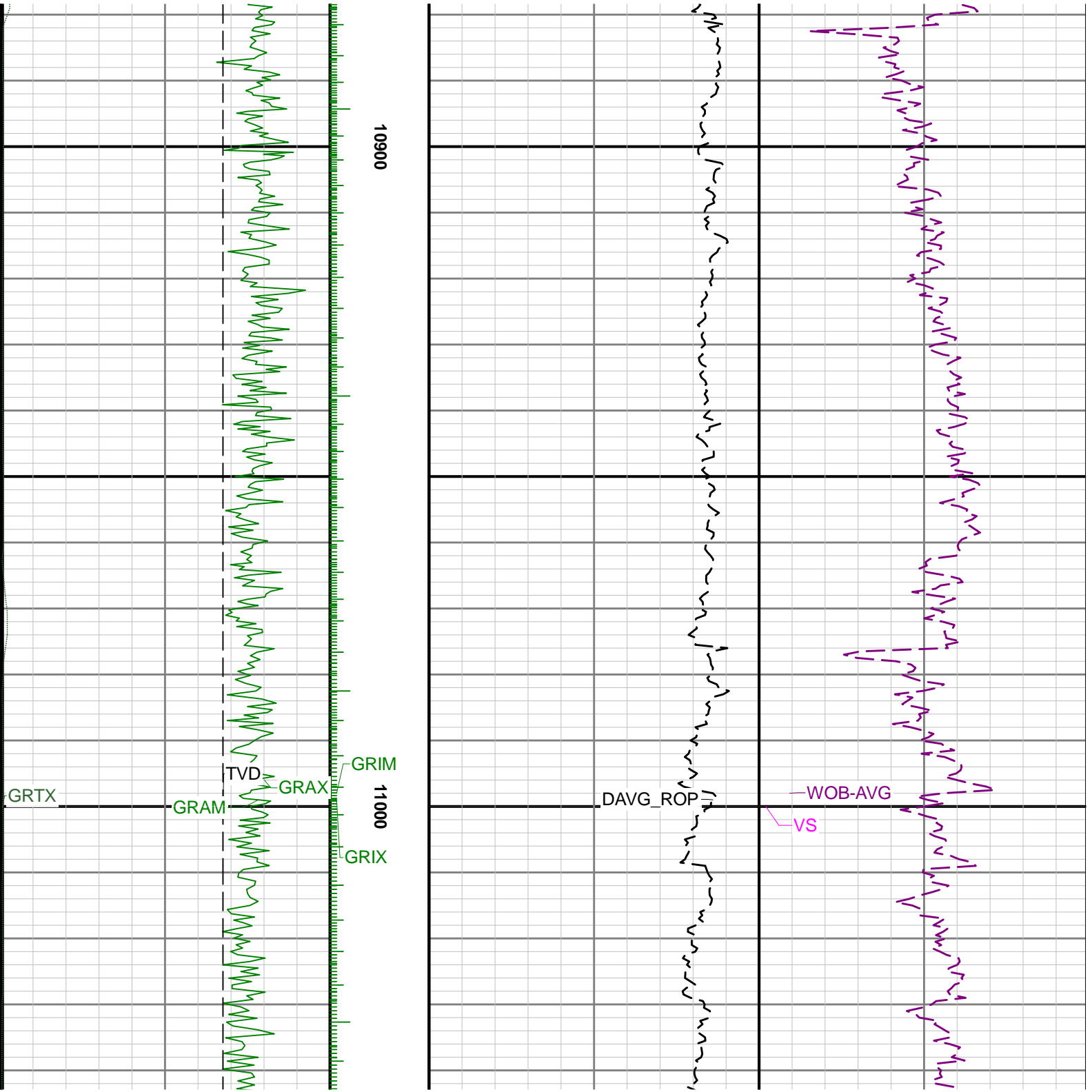
10700

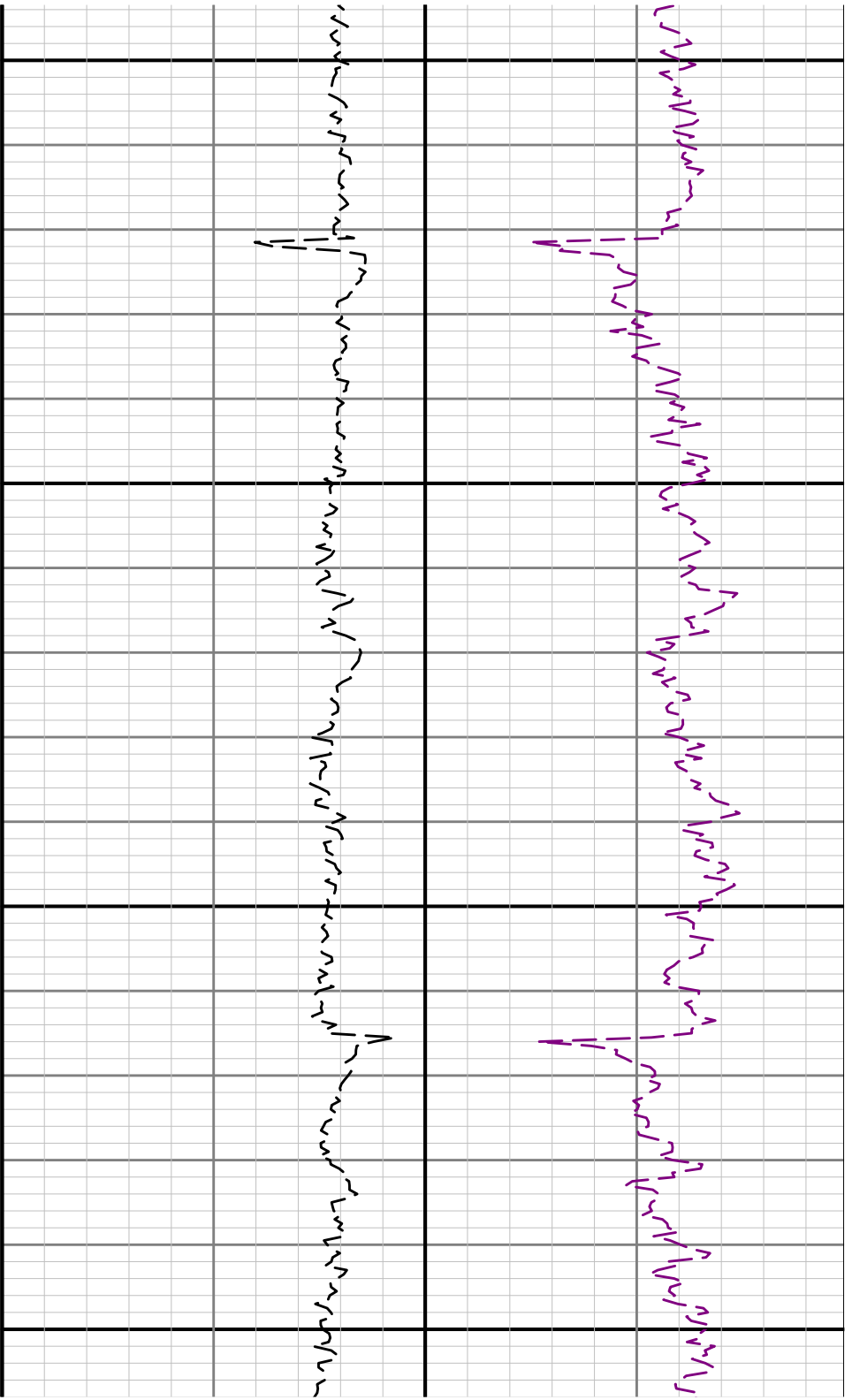




10800

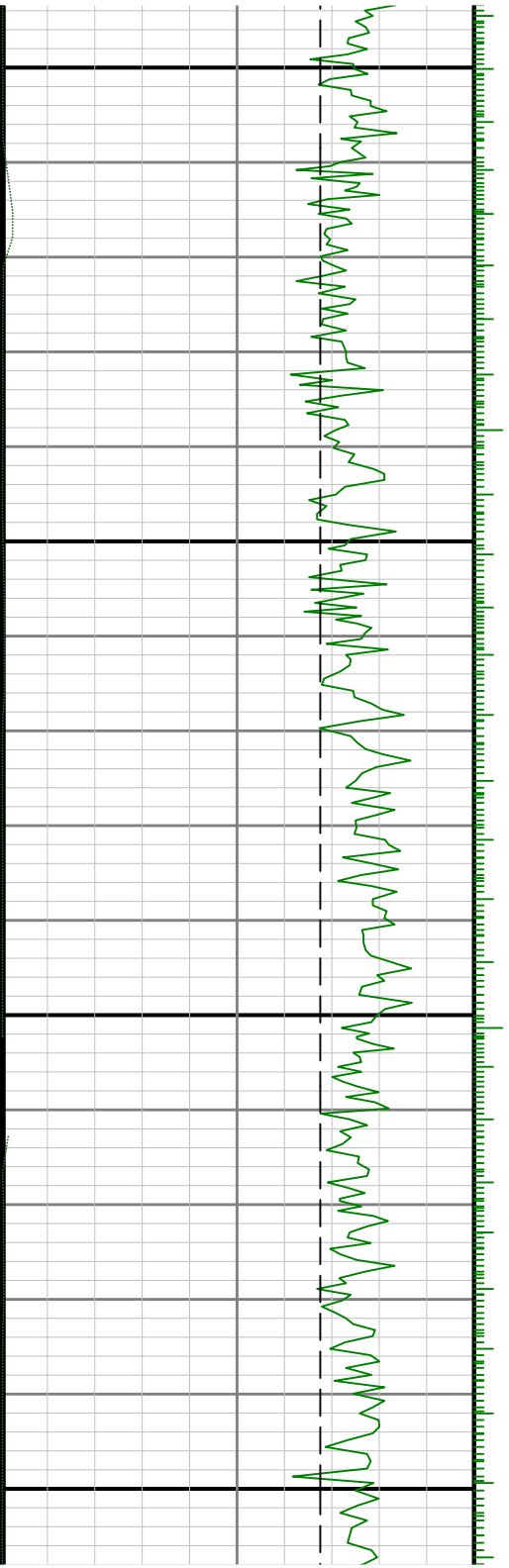


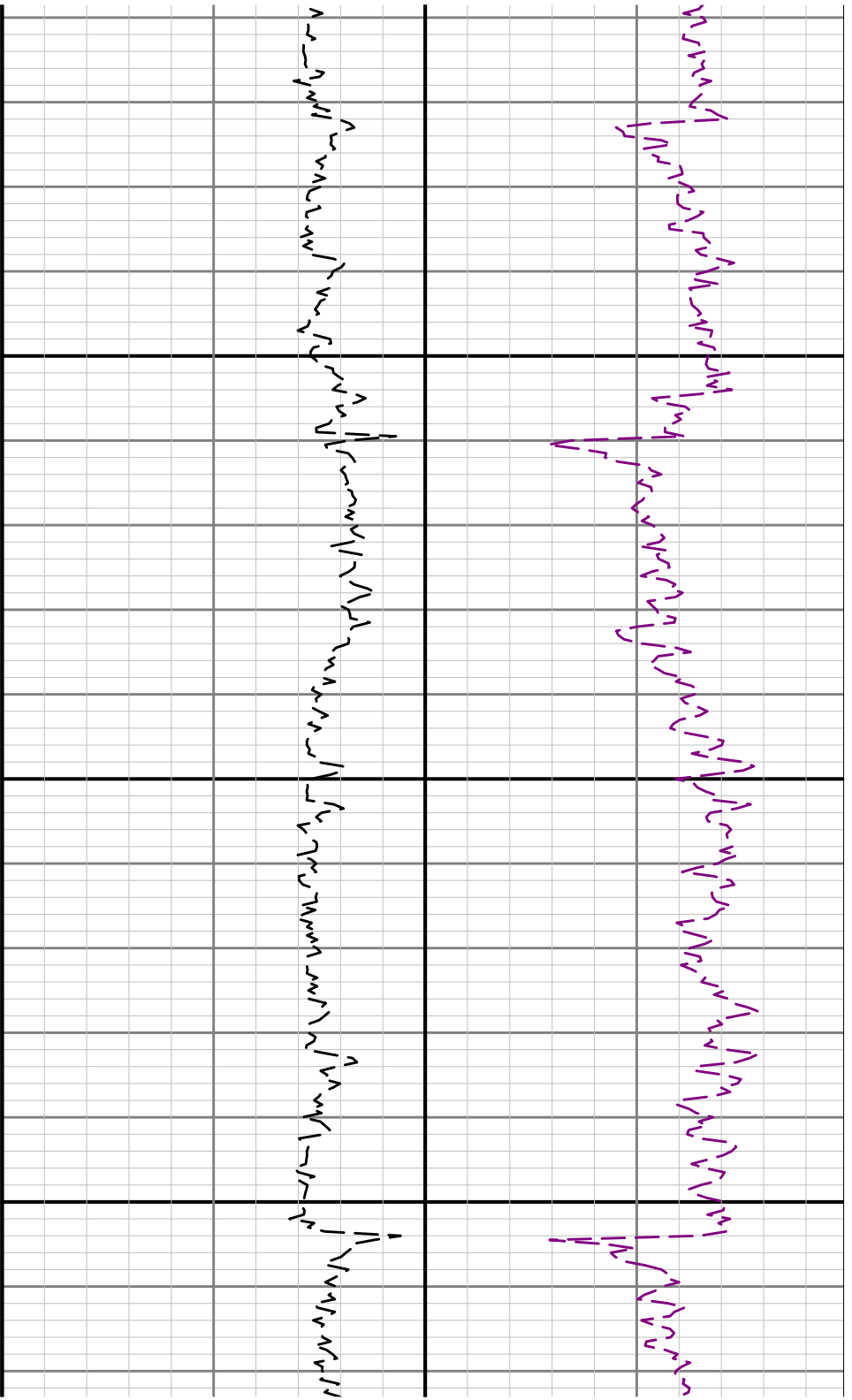




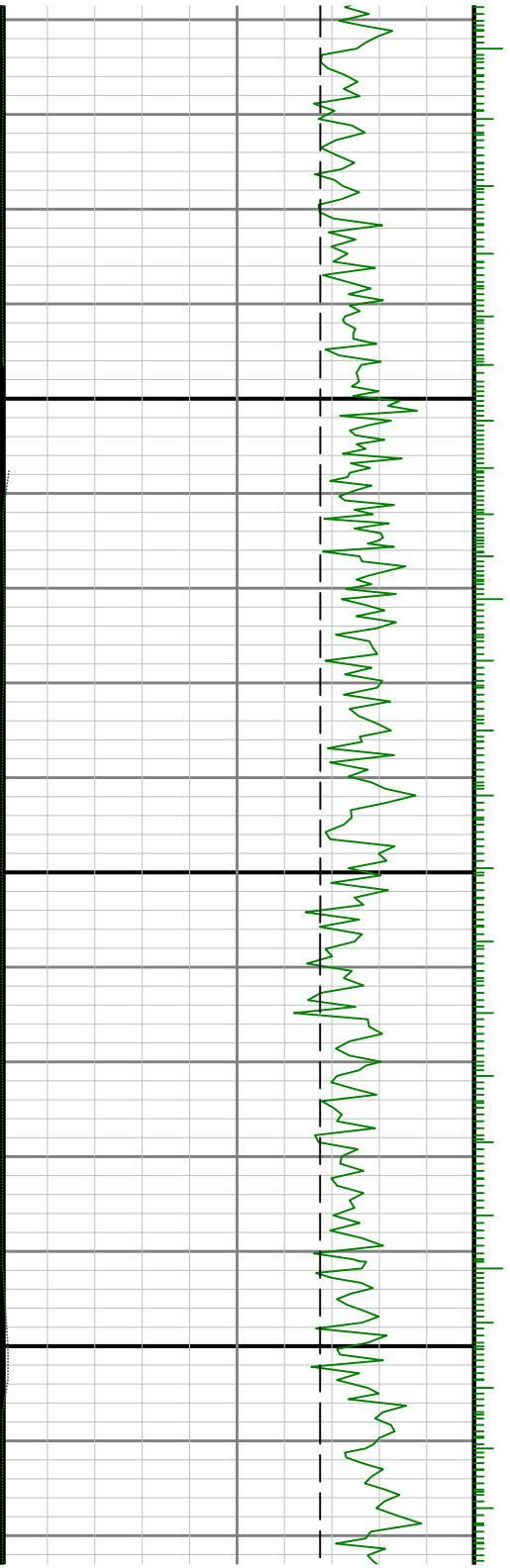
11100

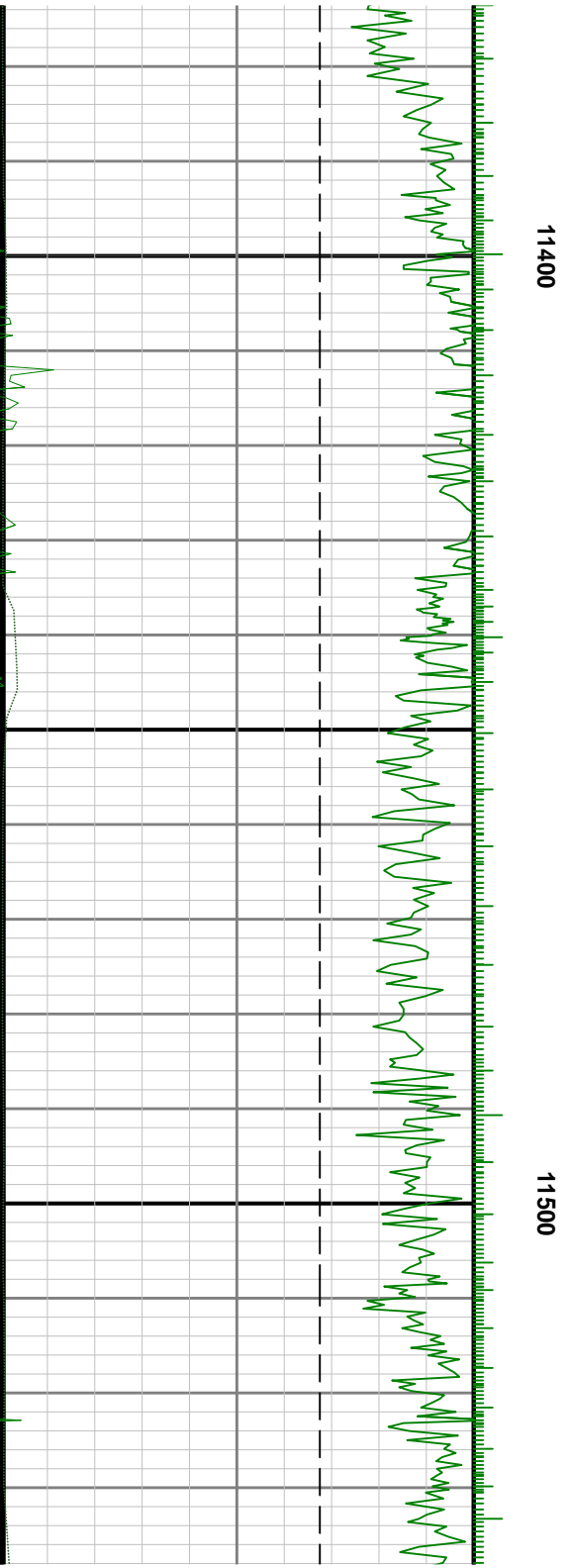
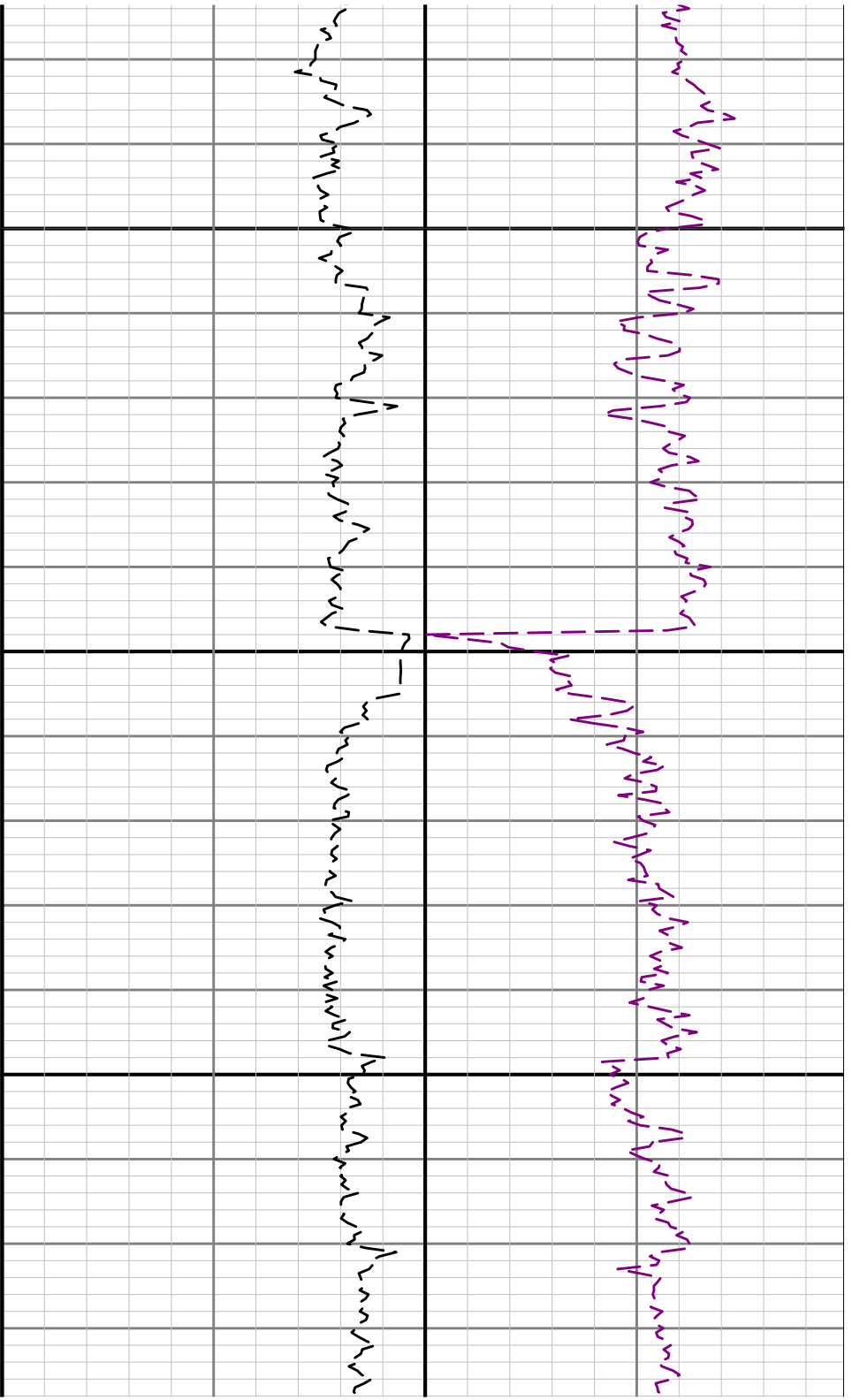
11200

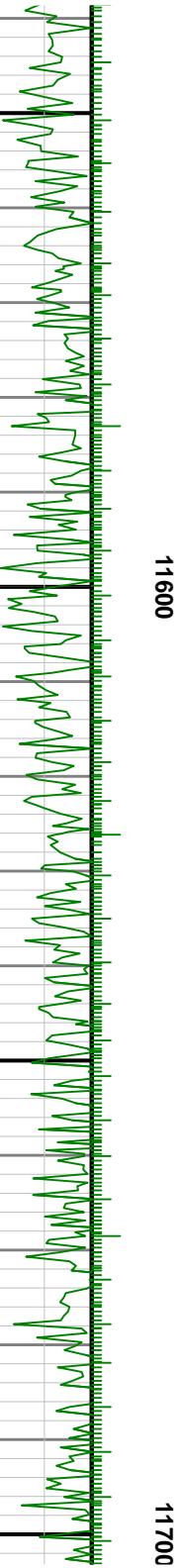
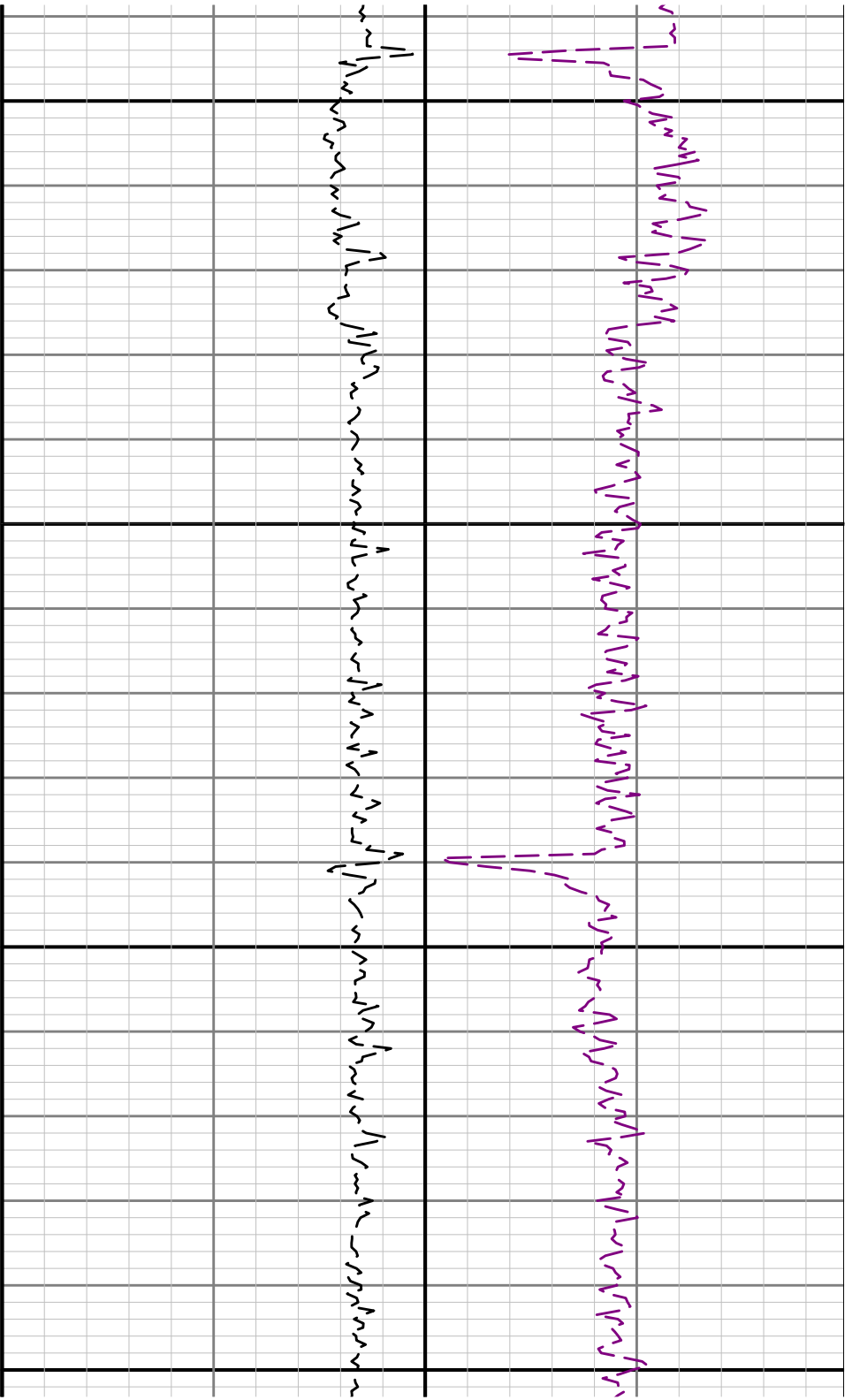




11300

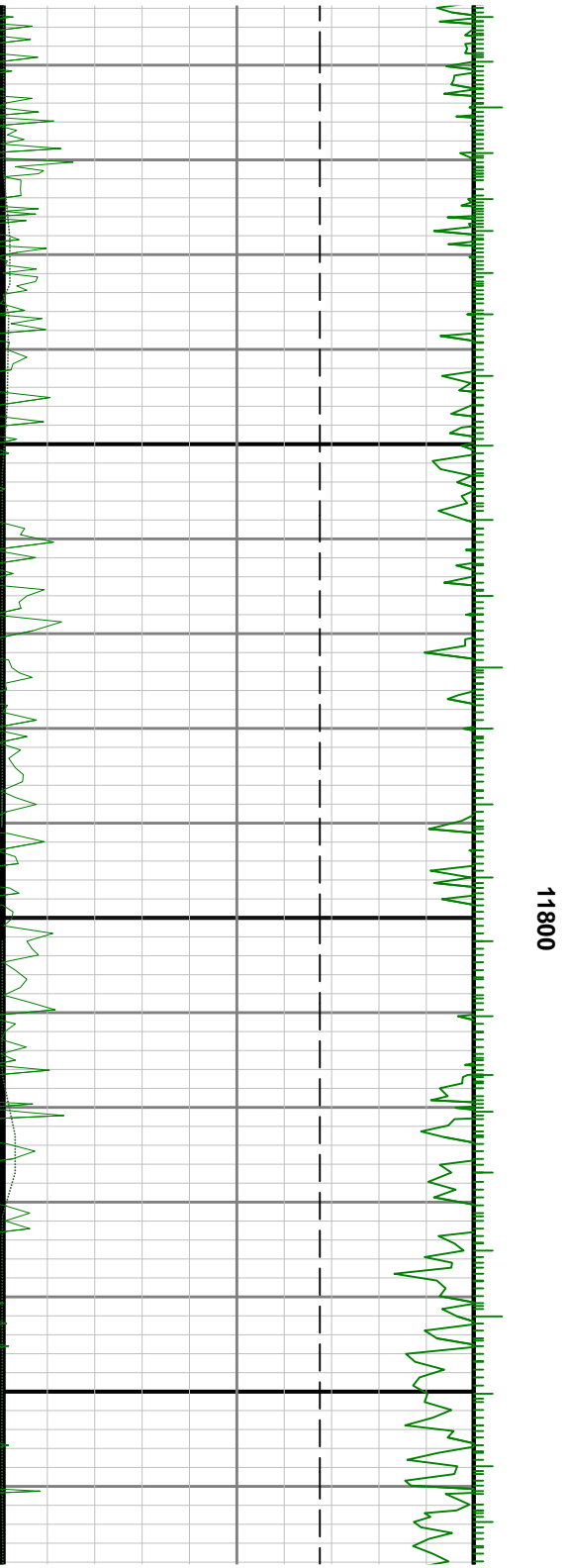
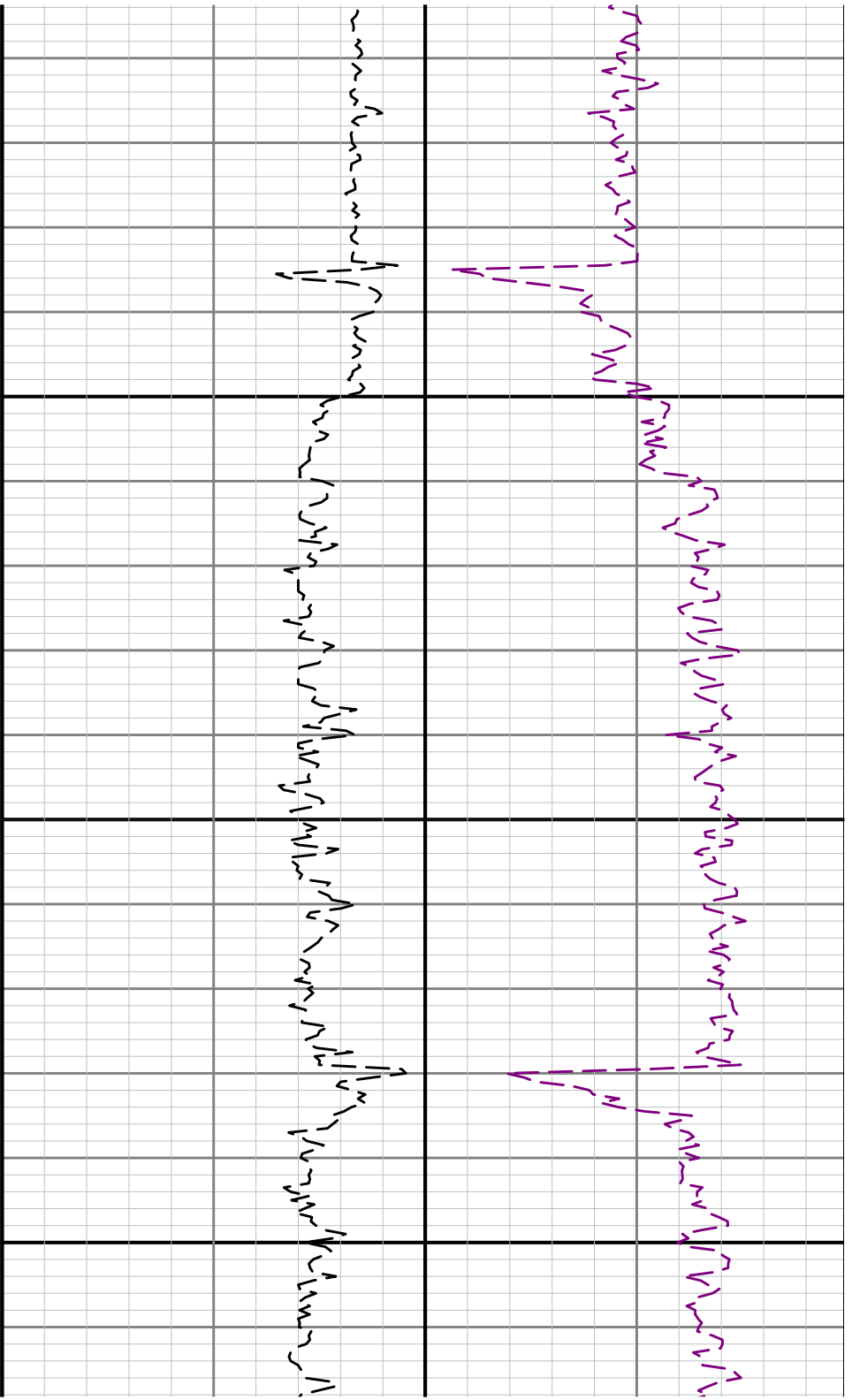


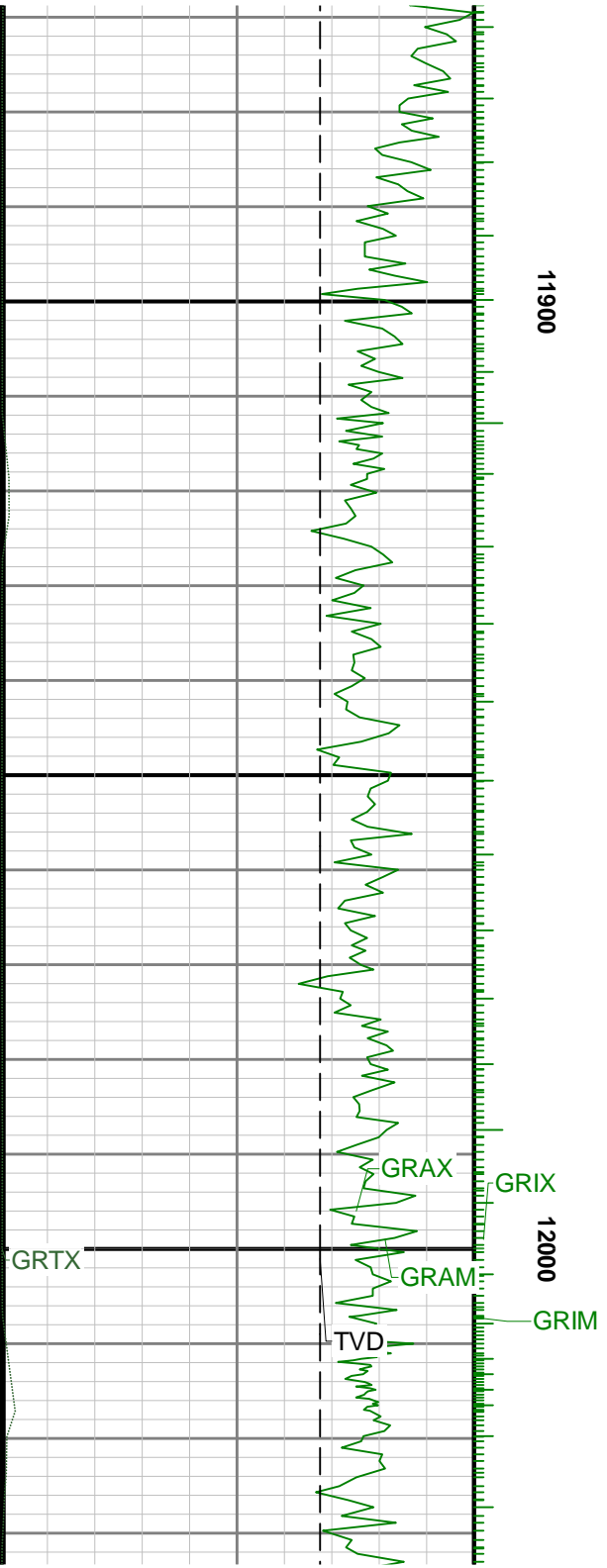
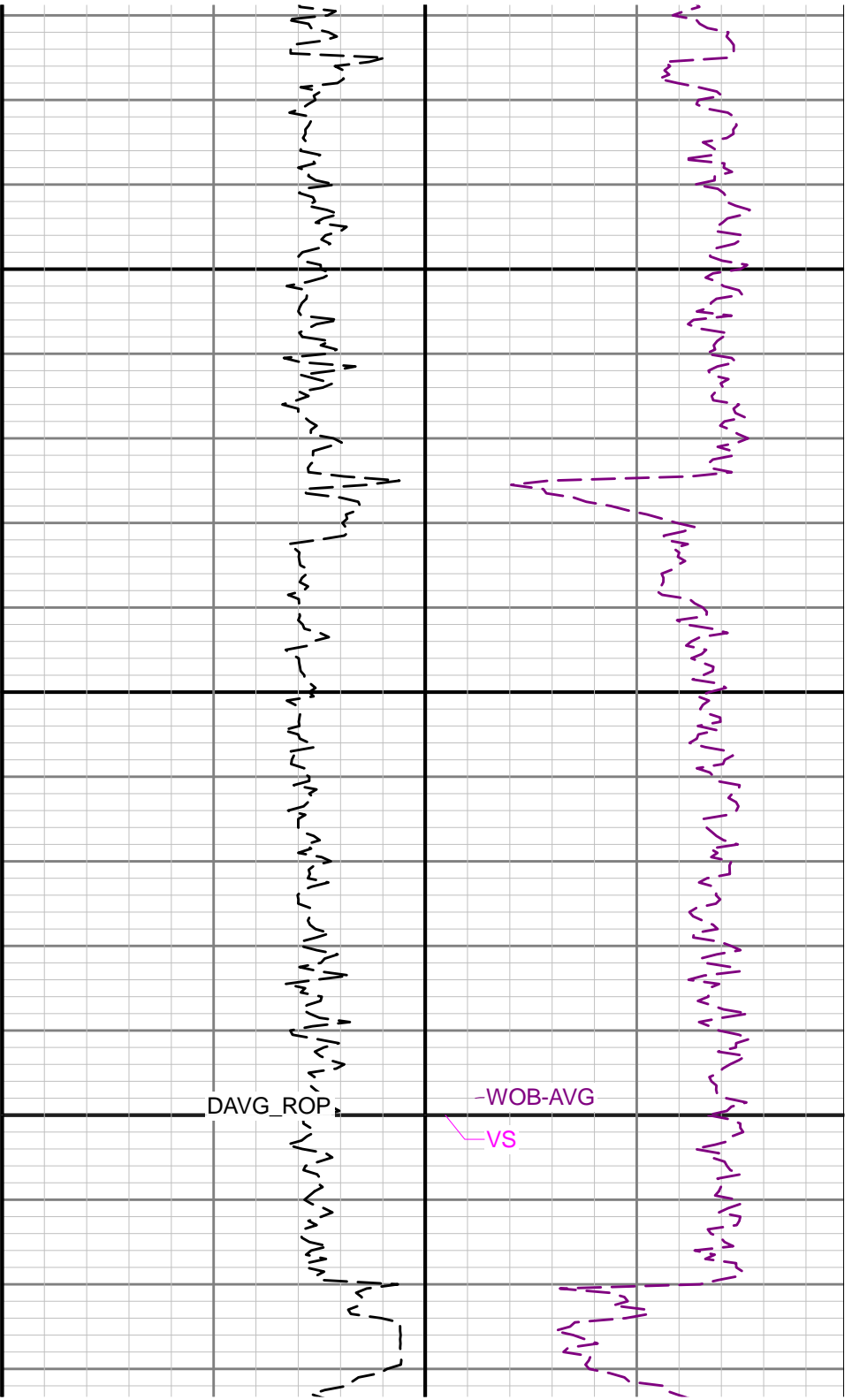


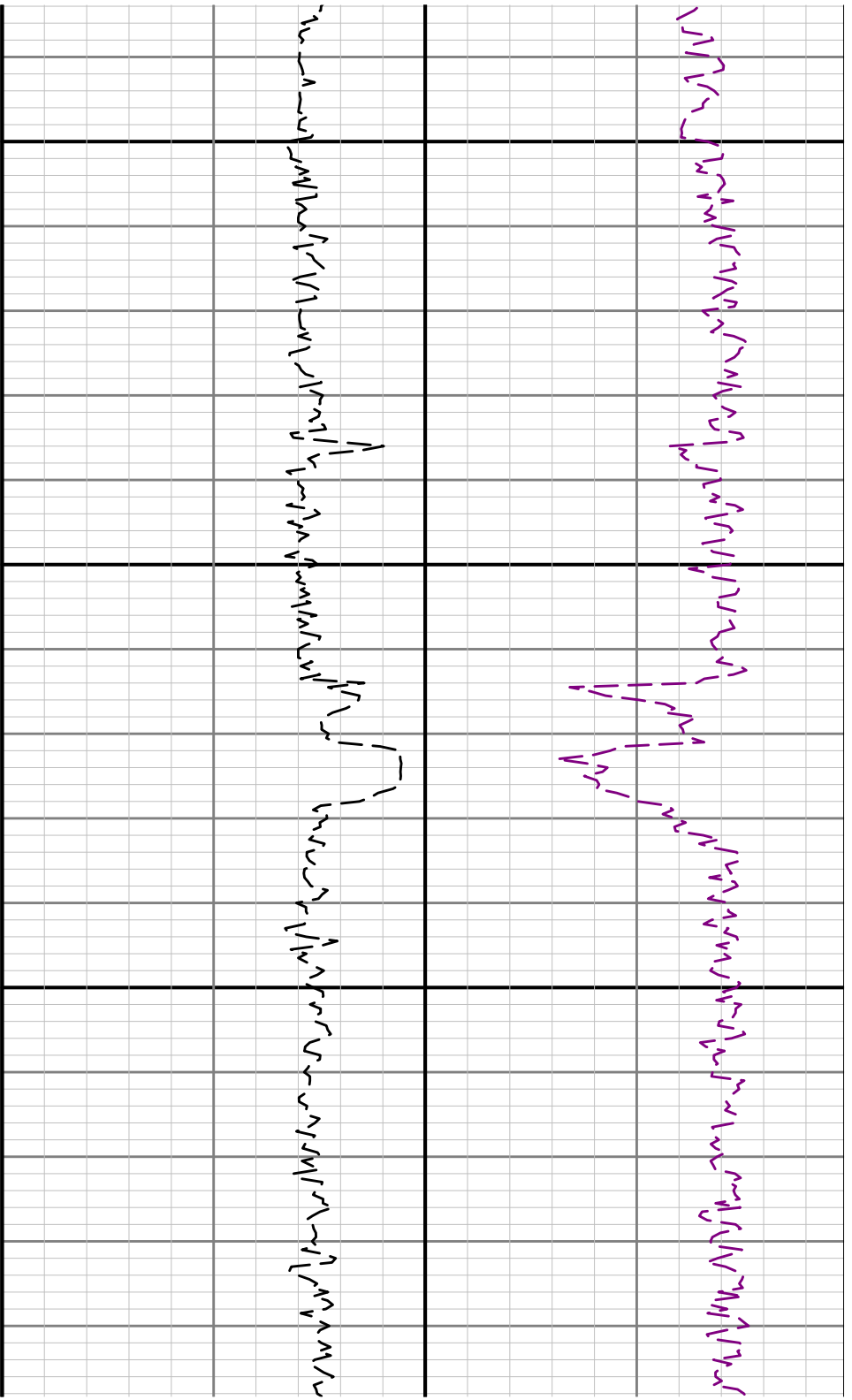


11600

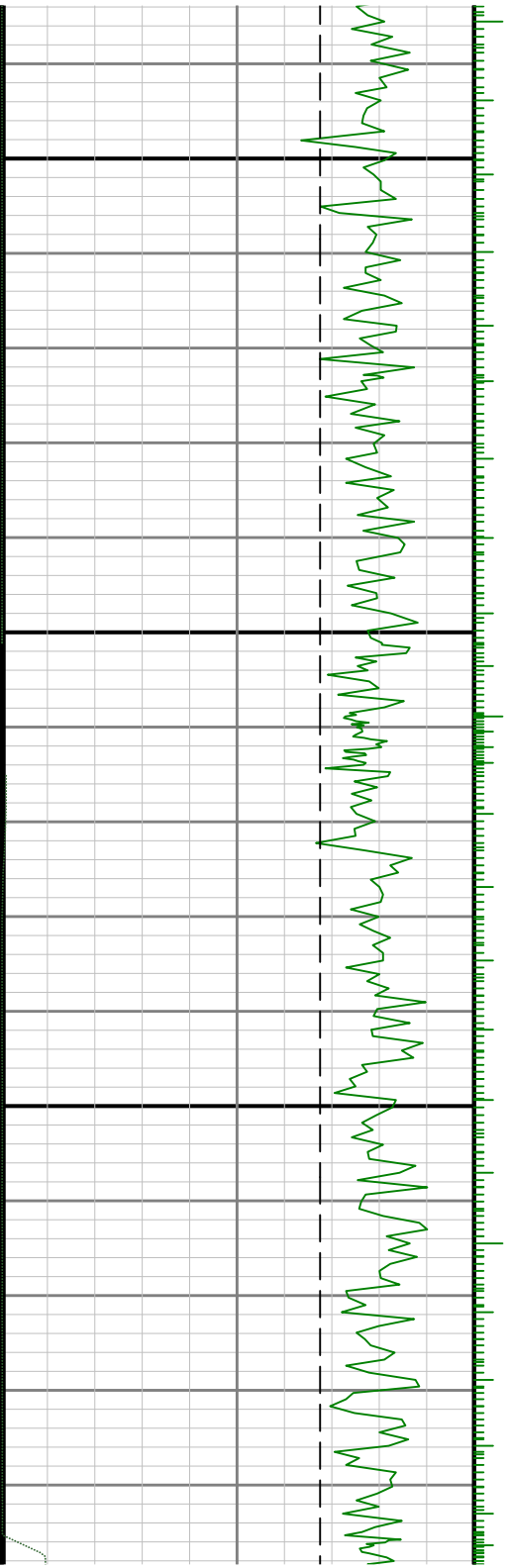
11700

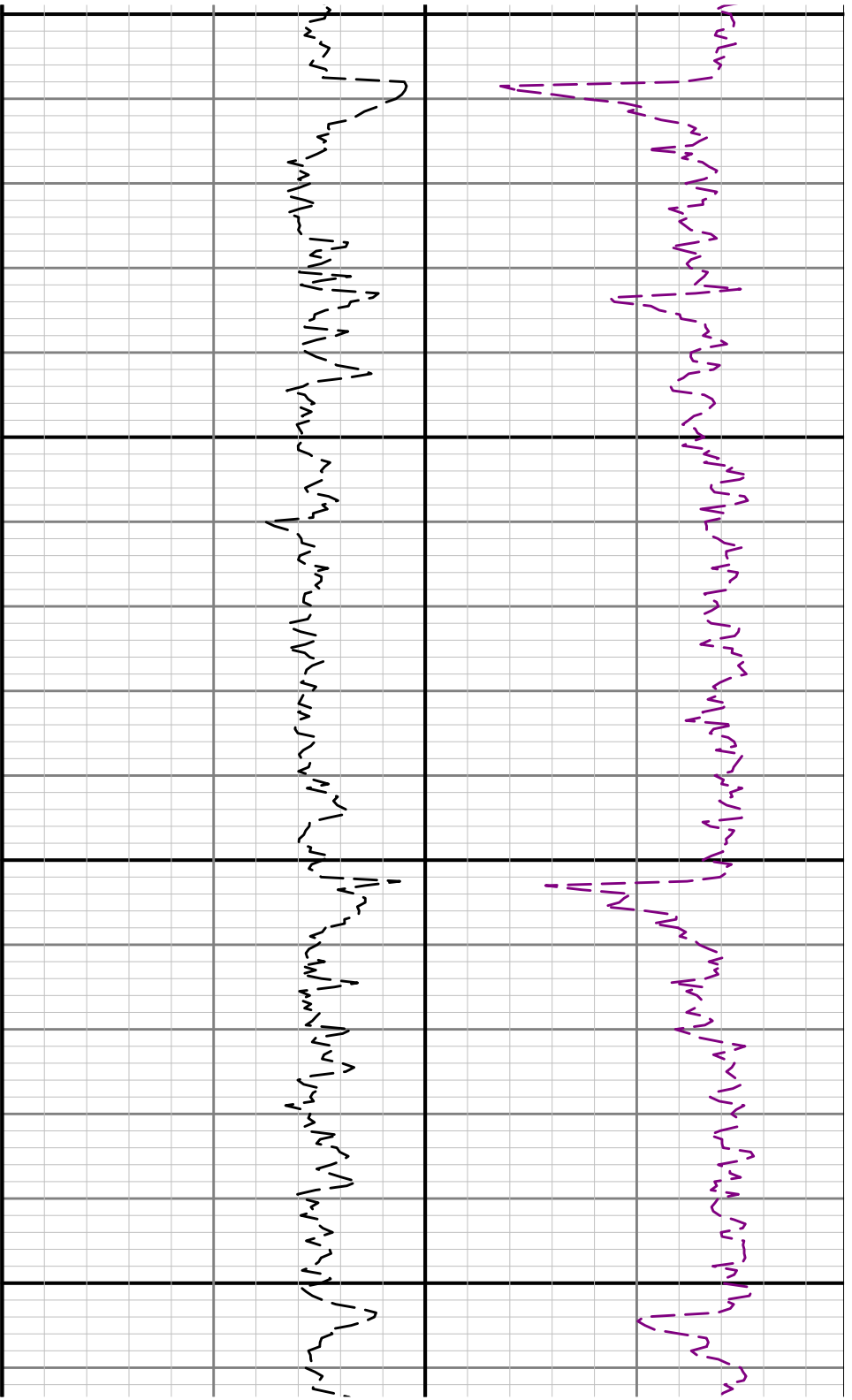






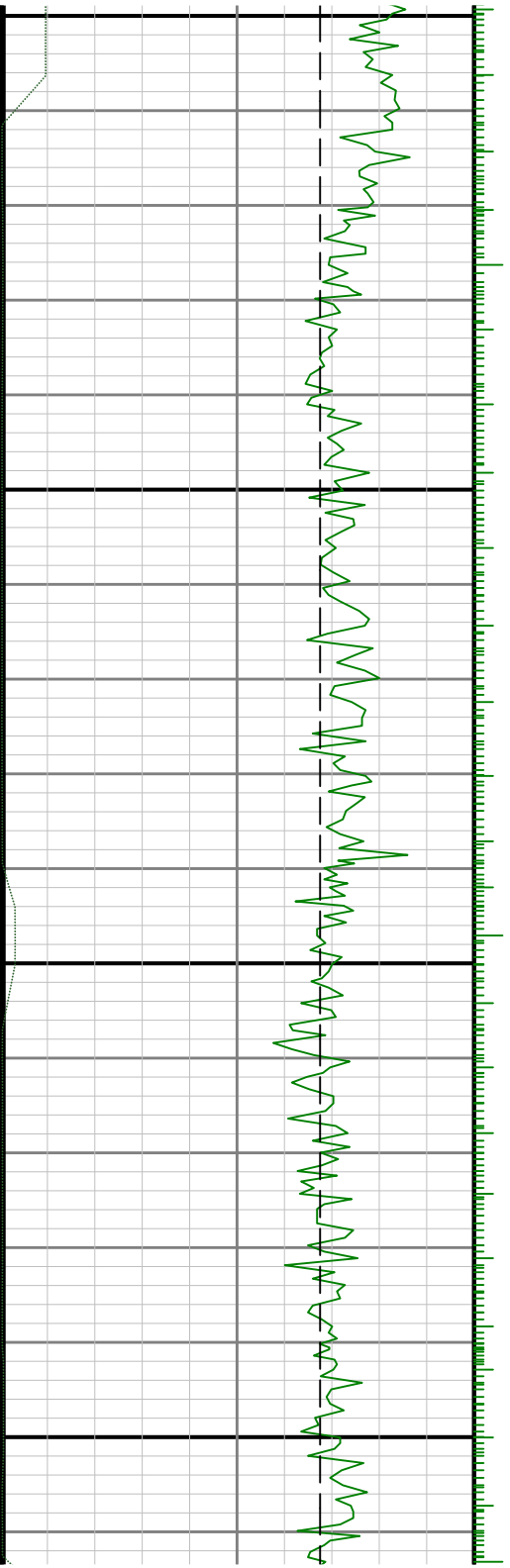
12100

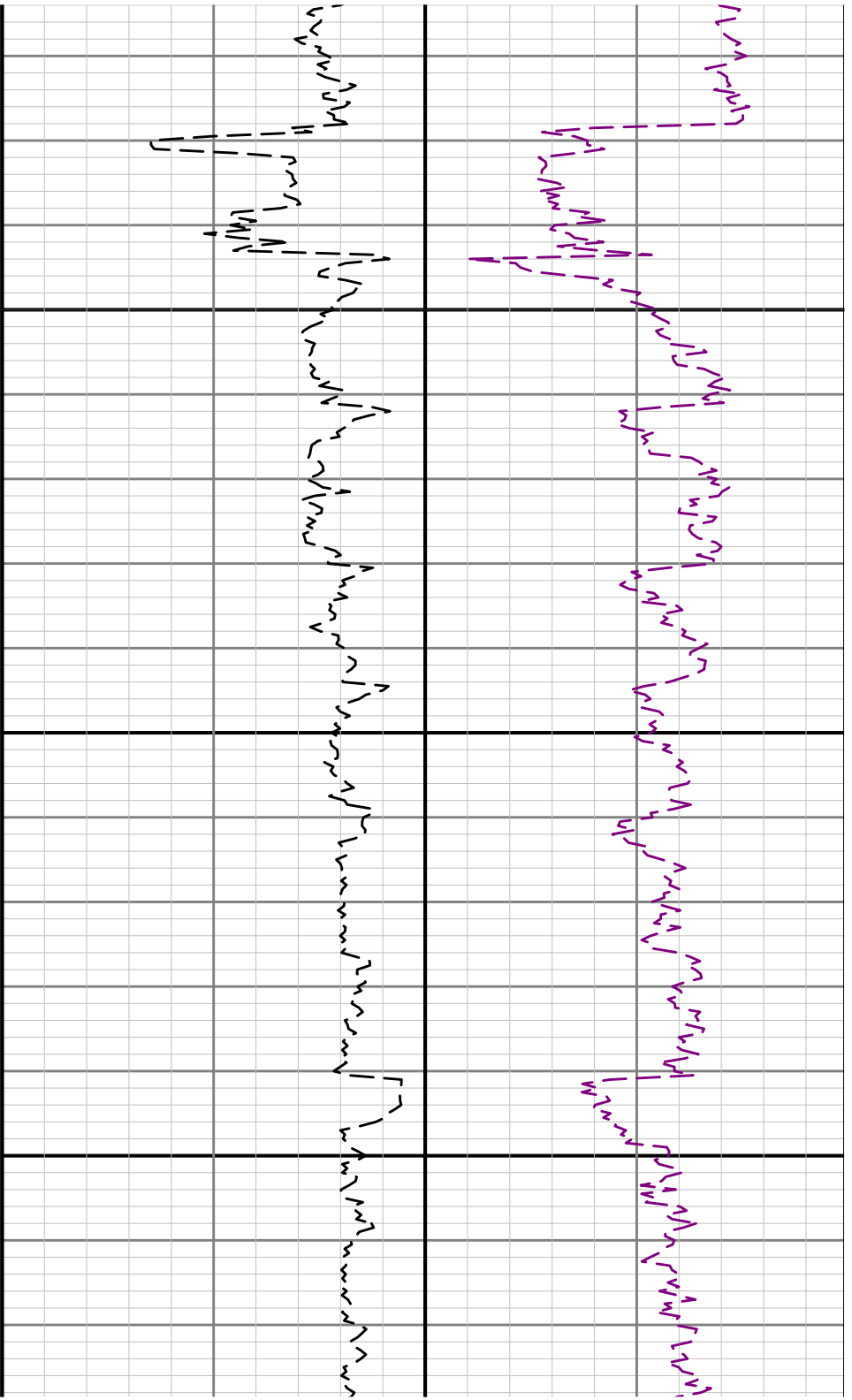




1200

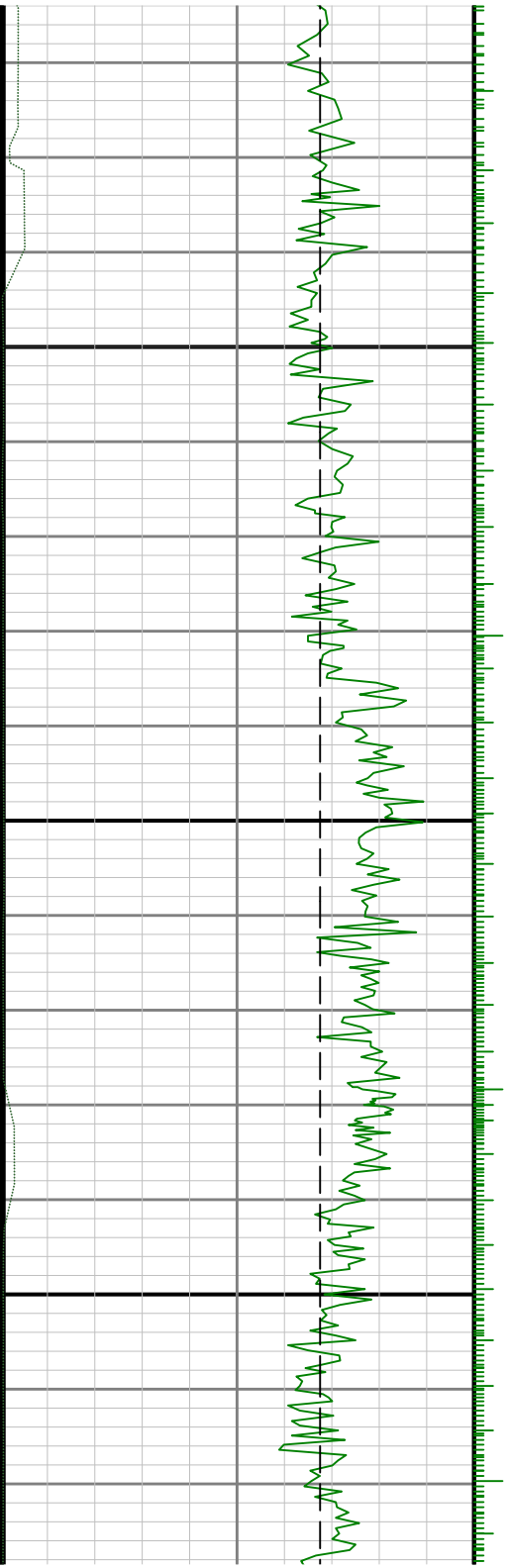
12300

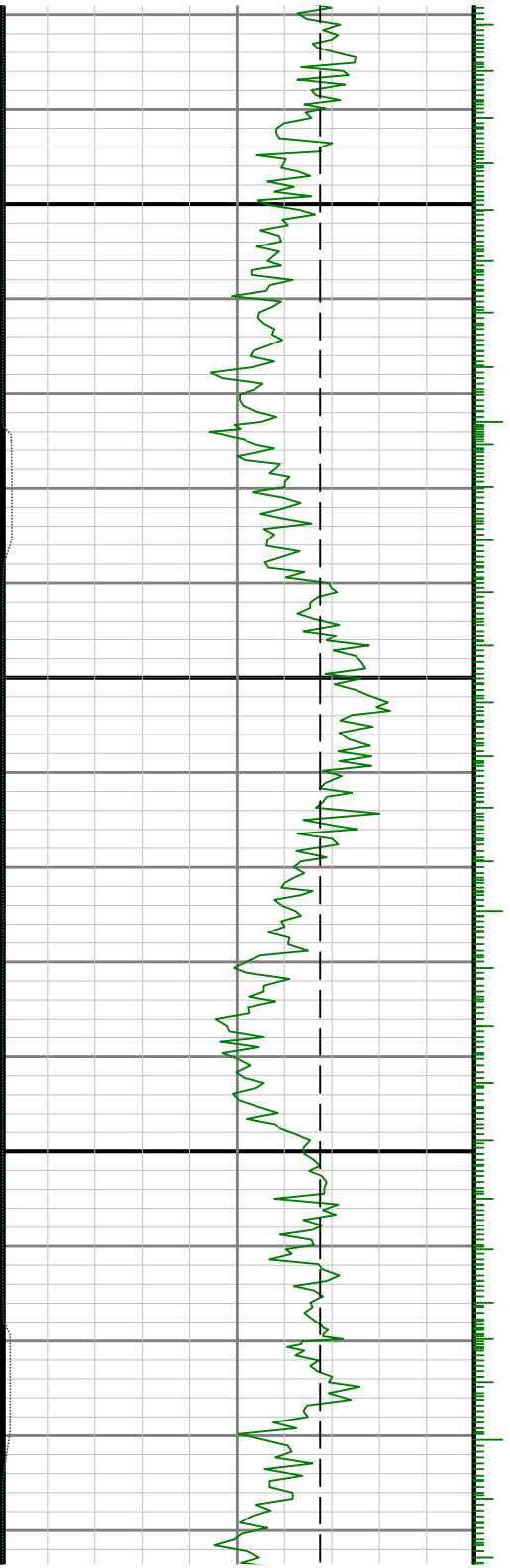
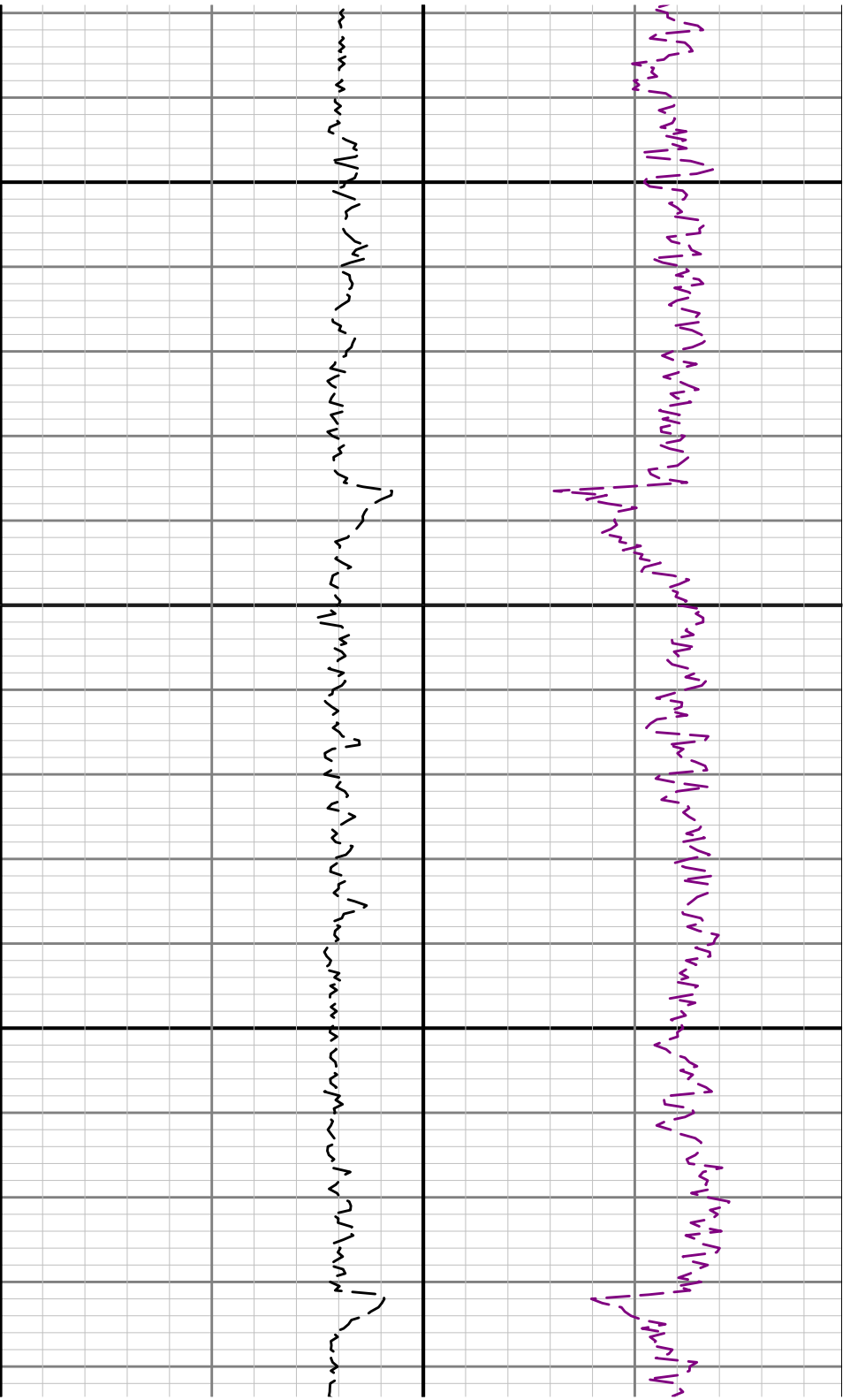


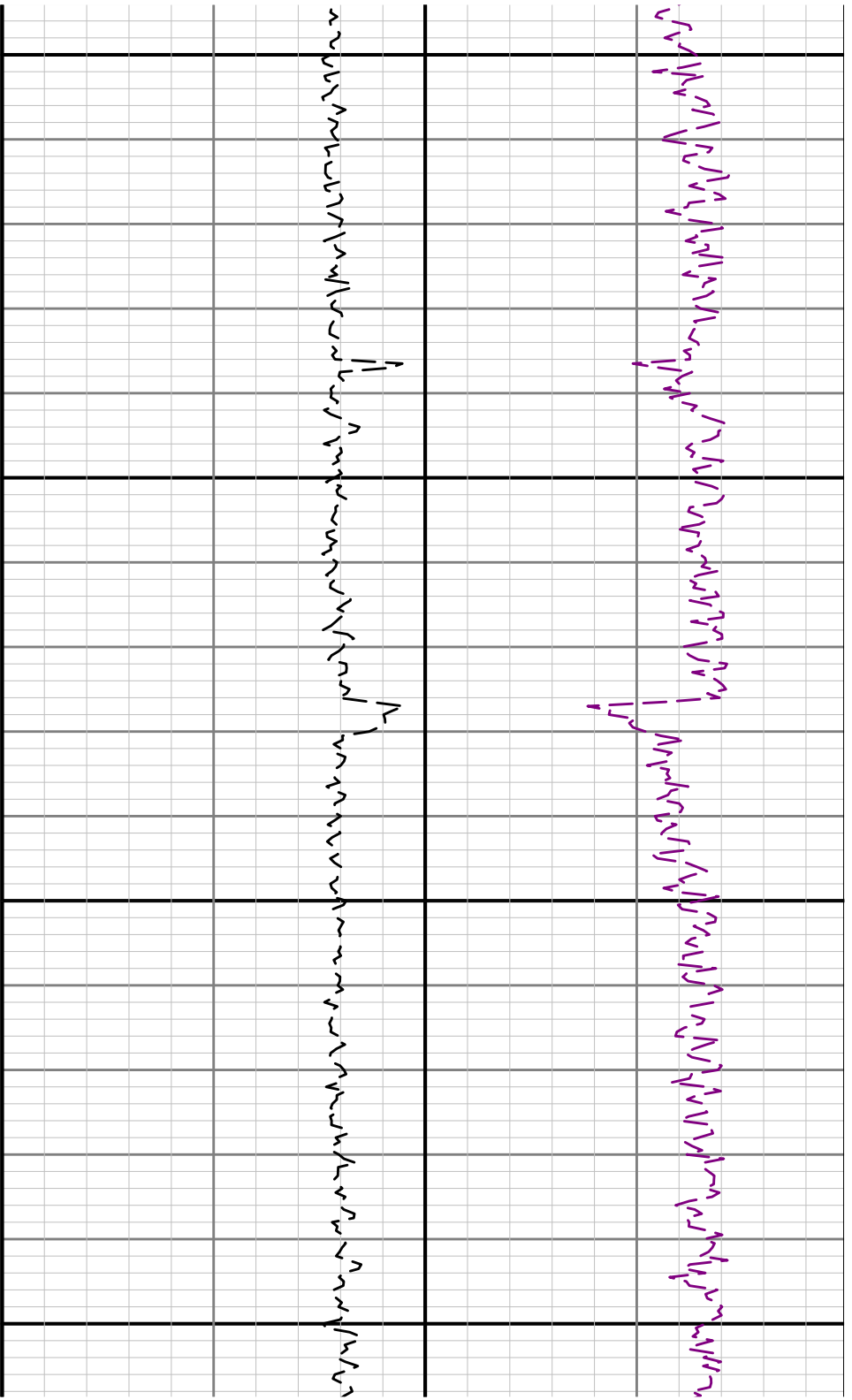


12400

12500

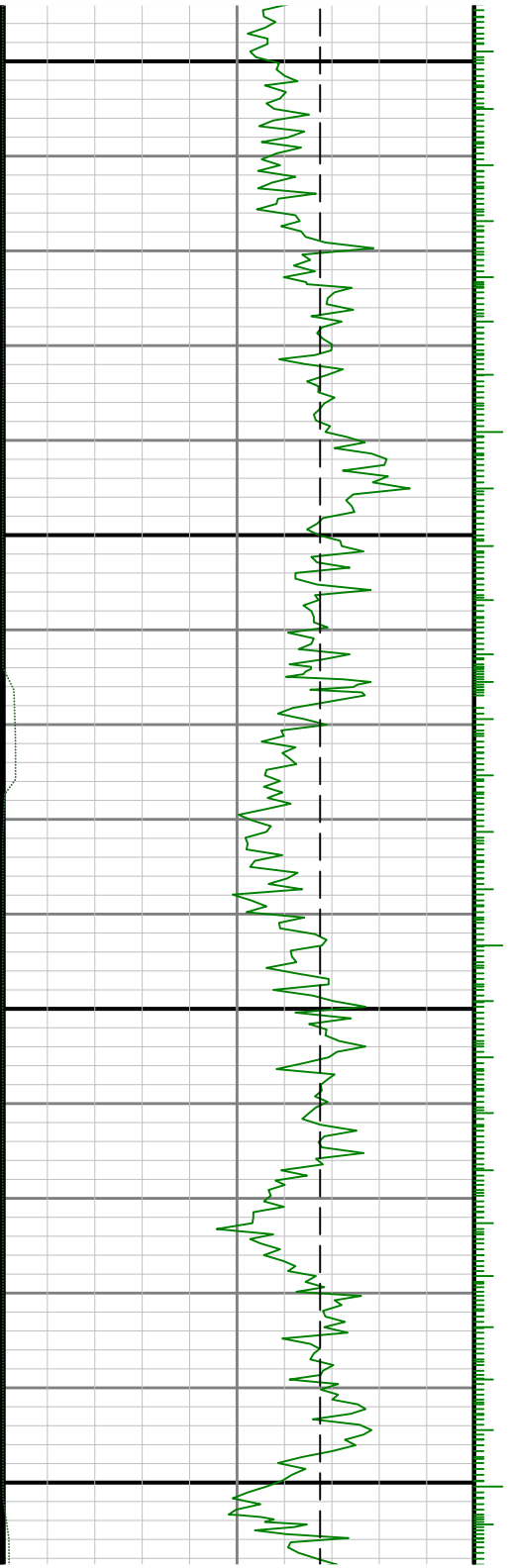


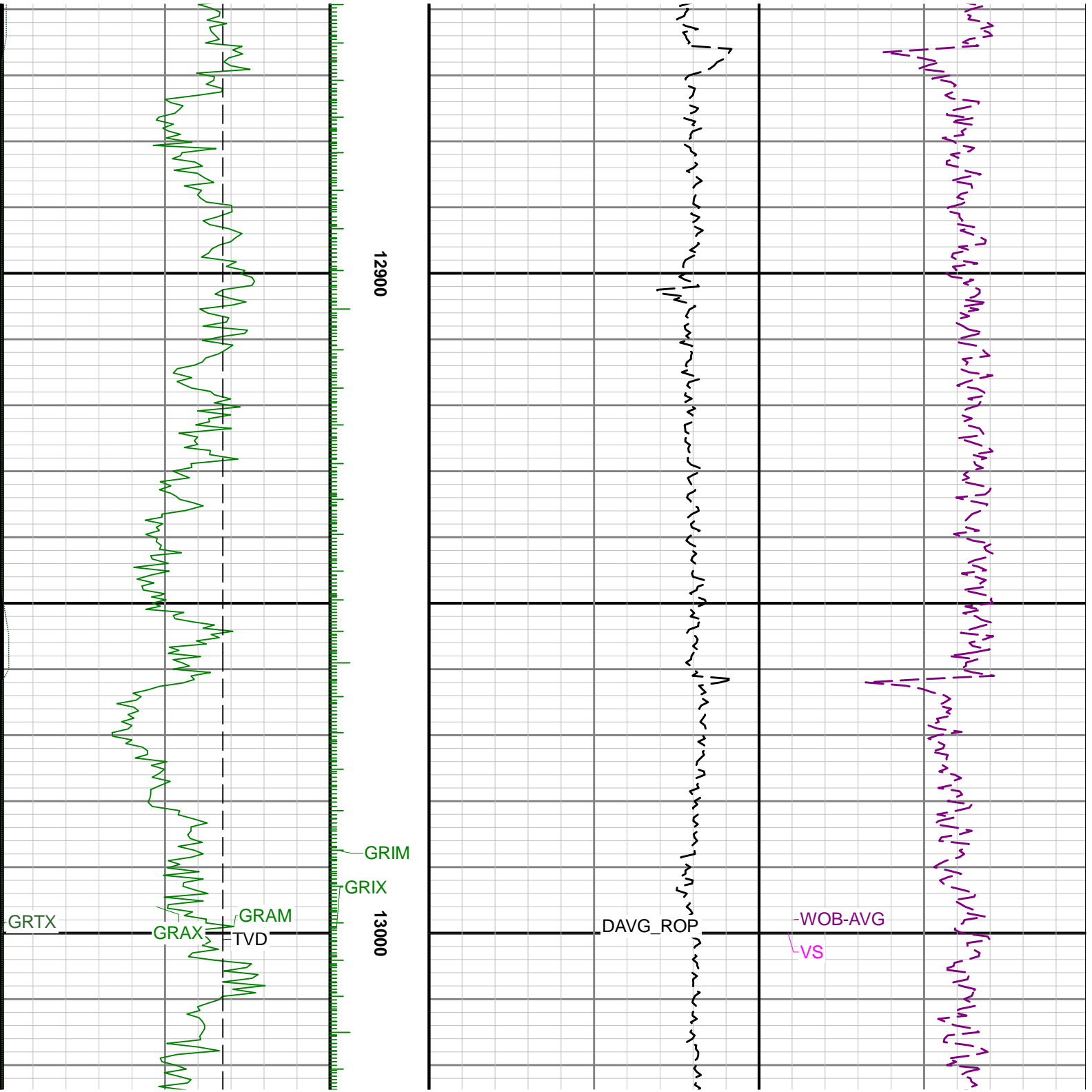


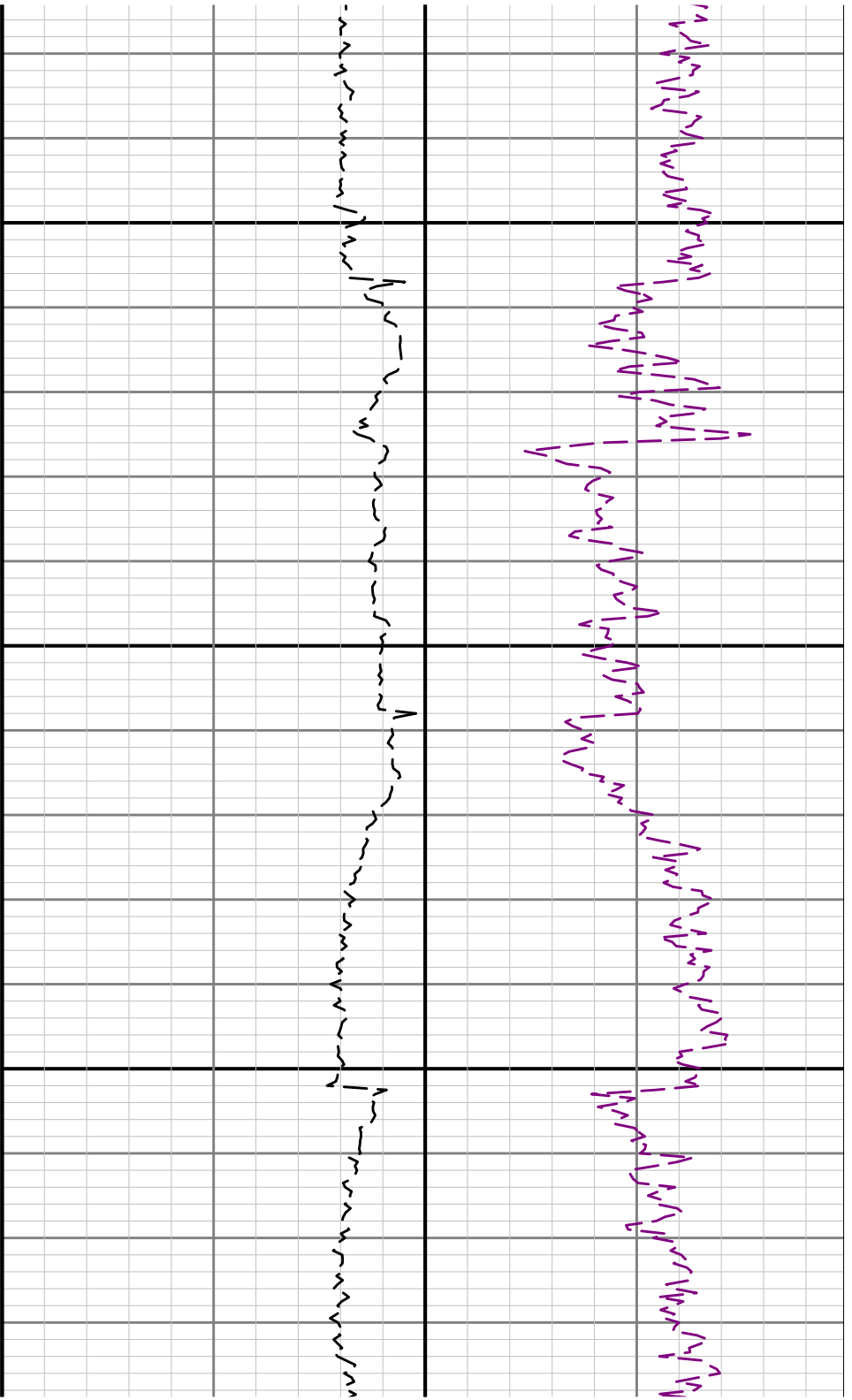


12700

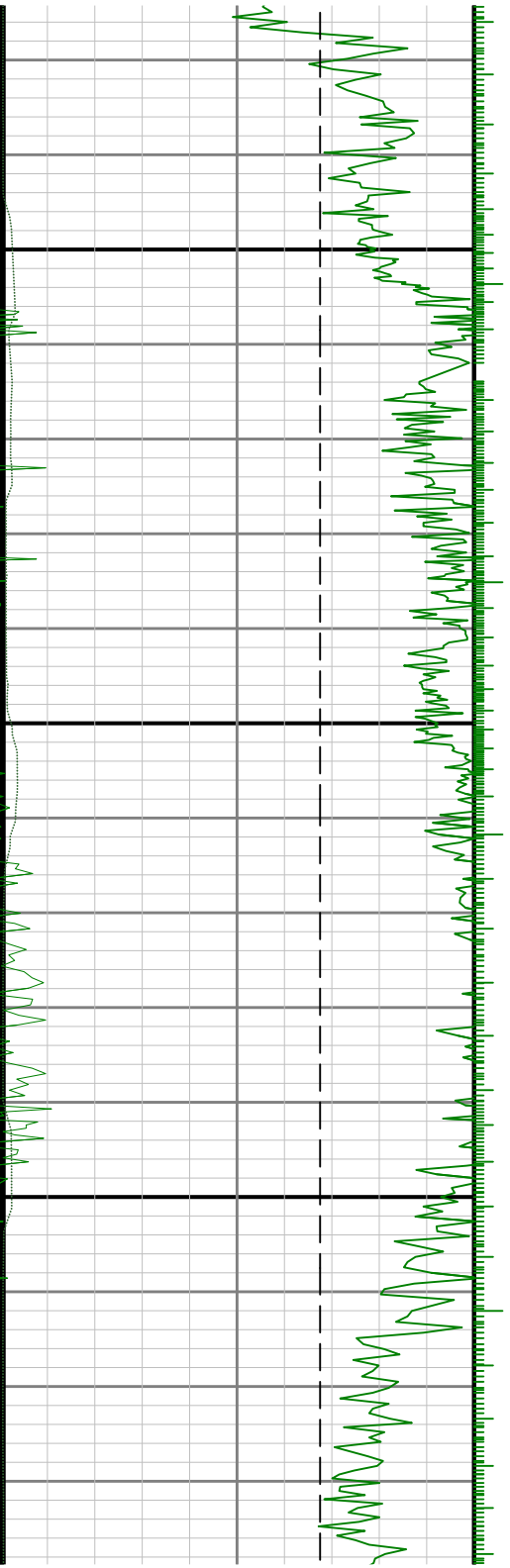
12800

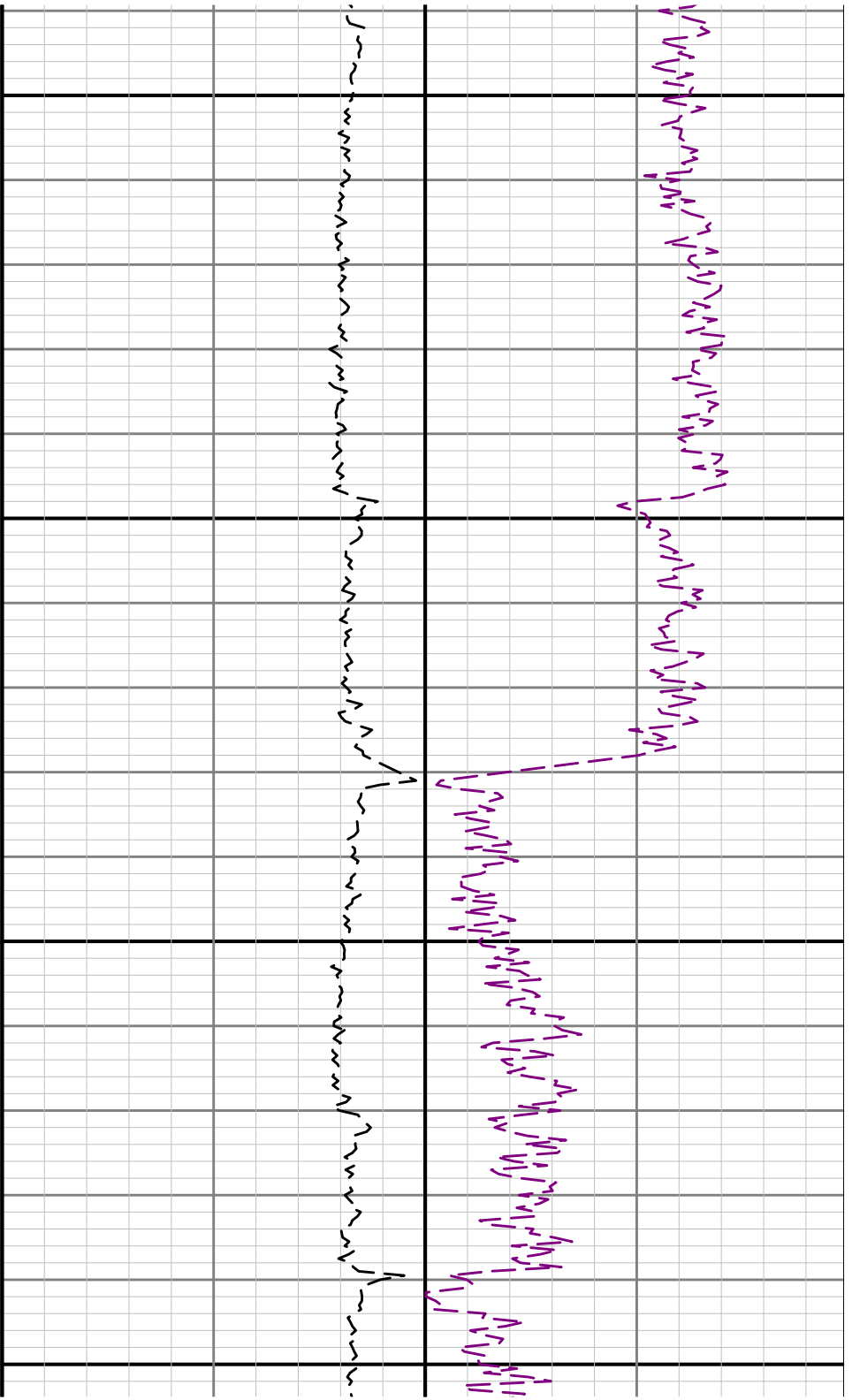






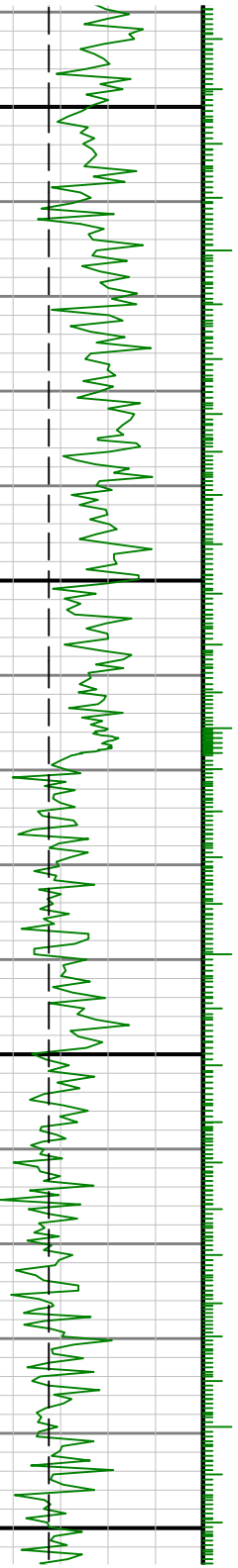
13100



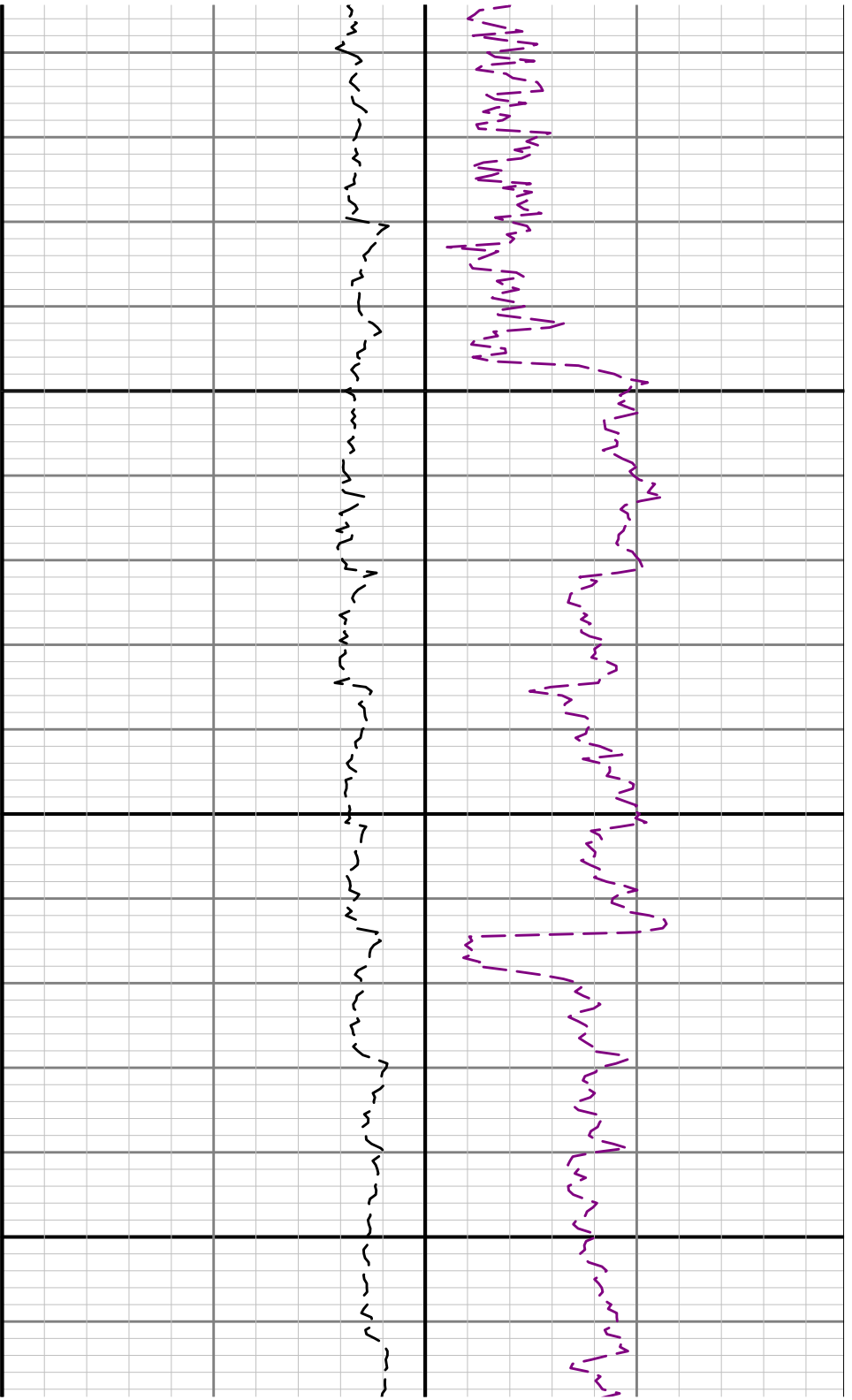


13200

13300

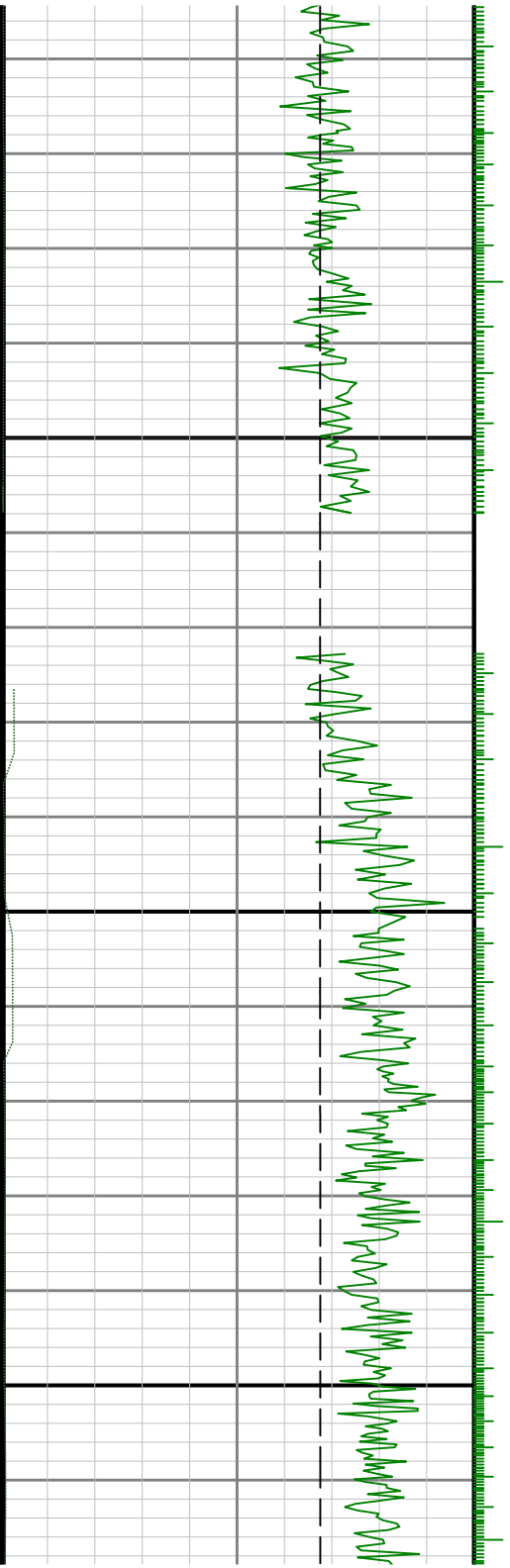


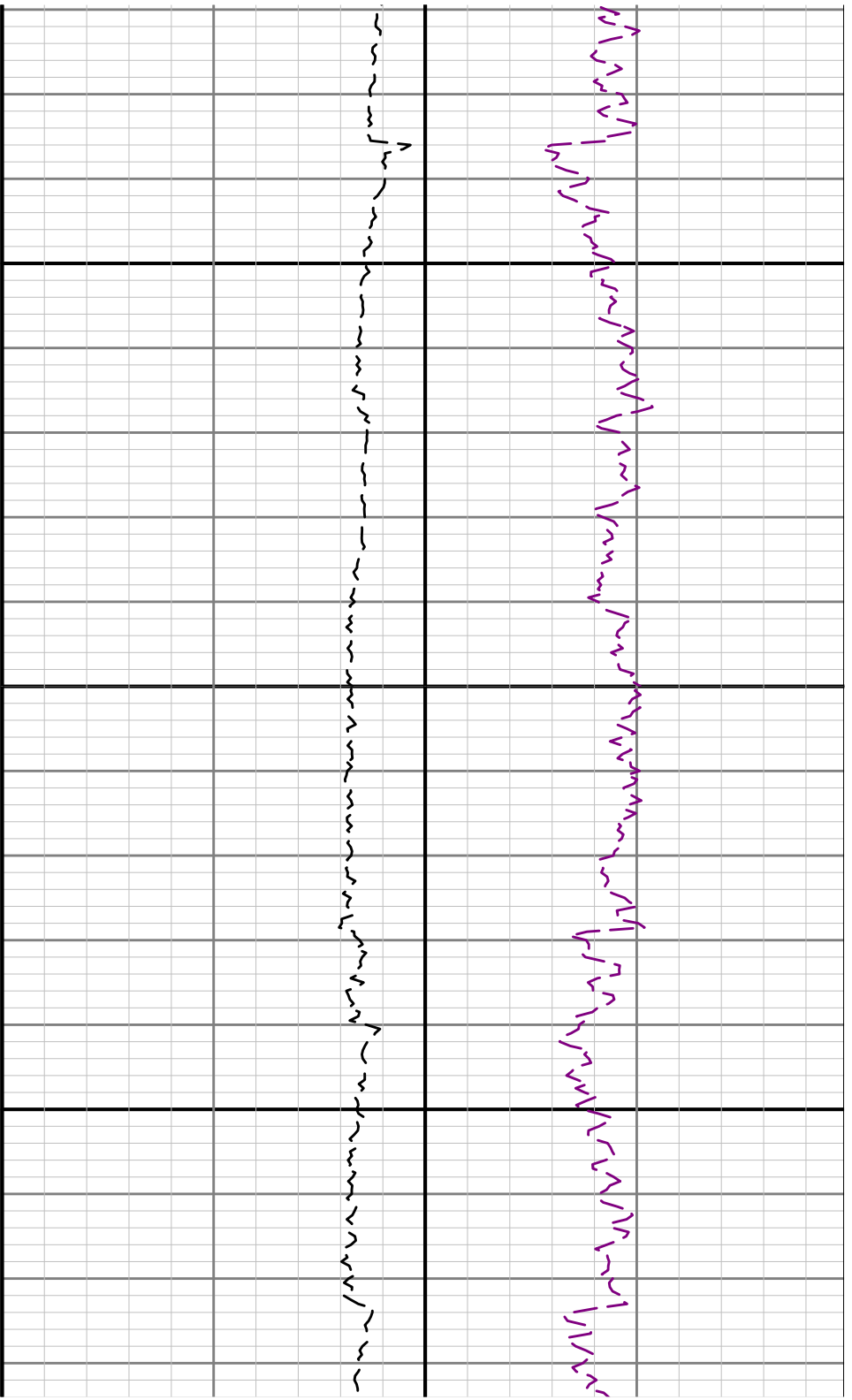
See Remark 2



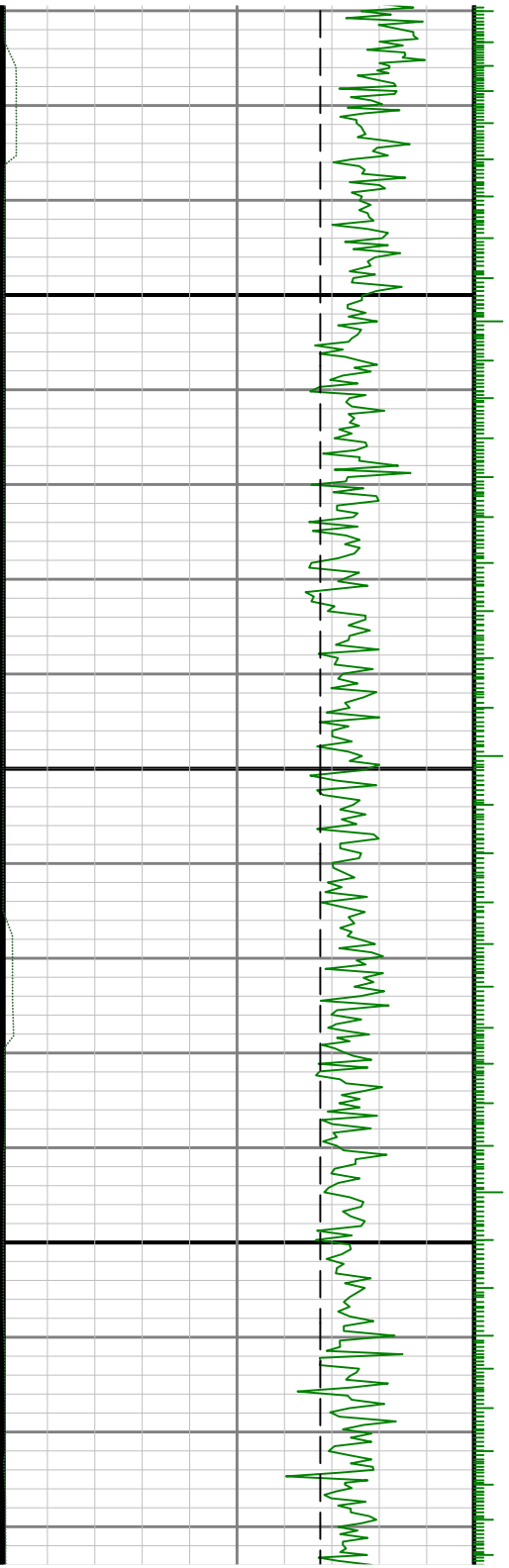
13400

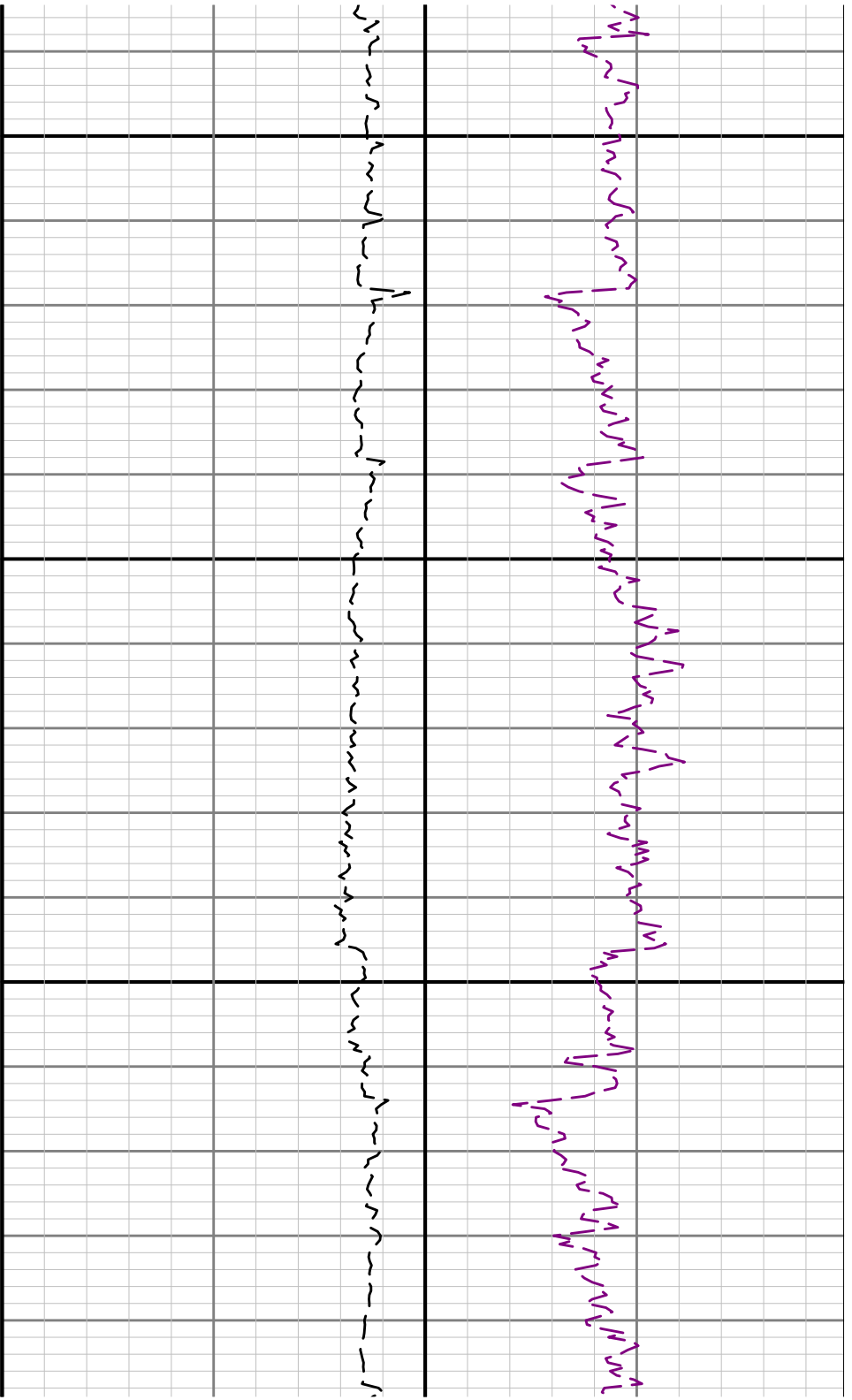
13500





13600





13700

13800

