


<div></div> <div>PHOENIX TECHNOLOGY SERVICES</div>		TVD 1:240 Feet
MWD Gamma / ROP (5")		
Client: Whiting Oil & Gas Corporation		
Well Name: Razor Federal #12F-1301A		
API/UWID: 05-123-38709		Field: Wildcat
County: Weld		
Permit #: 400503038		
State: Colorado		Country: USA
Longitude: 103° 49' 6.23108 W Latitude: 40° 51' 16.04828 N		Personnel
Rig Name: Unit 409 Job Number: 1524097		
Ground Level: 4936.80 ft Kelly Bushing: 4957.80 ft		
Permanent Datum: Mean Sea Level Drilling Measured From: Kelly Bushing		
Spud Date: -		
Bottom Hole Temp: 235.4 °F Log Start Depth: 0.00 ft Log End Depth: 6067.00 ft		MWD Operator(s) Robert Davis Jaso Dubose
Comments: -		Main Leg
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Operational Run Summary

1524097

	Run 1	Run 2	Run 3	Run 4	Run 5	
Run Start Depth (ft)	0.00	1867.36	6649.07	9425.43	13191.91	
Run End Depth (ft)	1867.36	6649.07	9425.43	13191.91	14150.65	
Run Start Date	10/2/2015	10/3/2015	10/5/2015	10/6/2015	10/8/2015	
Run Start Time	11:10 AM	5:37 PM	7:36 AM	9:25 PM	9:38 PM	
Run End Date	10/3/2015	10/4/2015	10/6/2015	10/8/2015	10/9/2015	
Run End Time	4:41 AM	8:50 PM	5:57 PM	2:47 PM	8:53 PM	

Tool Information Summary

1524097

	Run 1	Run 2	Run 3	Run 4	Run 5	
Gamma Probe Serial No		EGNF0094	EGNF0024	EGNF-0094	G0616	
Probe Cal Ratio	1	1	1	1.38	1.38	
Gamma Scale Factor	1	3.377778	3.378	3.859	6.5	
Tool Carrier ID (in)	3.500	2.750	3.630	3.000	2.688	
Tool Carrier OD (in)	8.000	6.500	5.130	5.125	4.750	
Survey-to-Bit (PTB) (ft)	49.86	61.52	53.77	53.77	56.21	
Gamma-to-Bit (GTB) (ft)	0.00	60.33	52.58	52.58	44.52	
Annular Pressure-to-Bit (APTb) (ft)	0.00	0.00	0.00	0.00	0.00	

Borehole Fluids and Measurements Summary

1524097

	Run 1	Run 2	Run 3	Run 4	Run 5	
Hole Size (in)	13.50	8.75	6.00	6.00	6.00	
Casing Start Depth (ft)	0.00	0.00	0.00	0.00	0.00	
Casing End Depth (ft)	0.00	1850.00	6616.00	6616.00	6616.00	
Casing ID Size (in)	0.000	0.625	7.000	7.000	7.000	

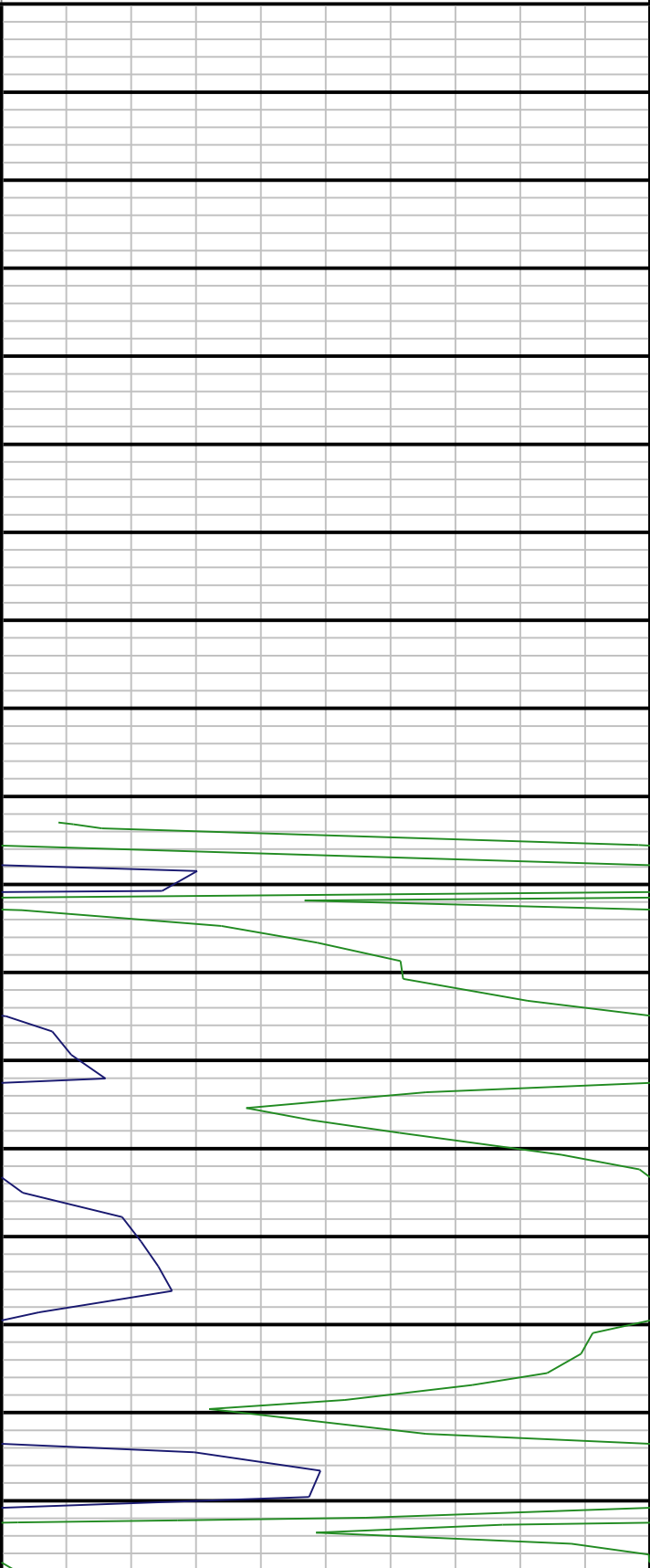
Casing Size (in)	0.000	9.625	7.000	7.000	7.000	
Mud Type	Fresh Water	Water-Based Mud (WBM)	Water-Based Mud (WBM)	Water-Based Mud (WBM)	Water-Based Mud (WBM)	
Mud Weight (lb/gal)	8.3	9.9	10.1	10.0	10.1	
Mud Viscosity (s)	28	40	40	42	40	
Weighting Agent	Light Mud	Barite	Barite	Barite	Barite	
Mud KCL Content (%)	0.000	0.000	0.000	0.000	0.000	

Log

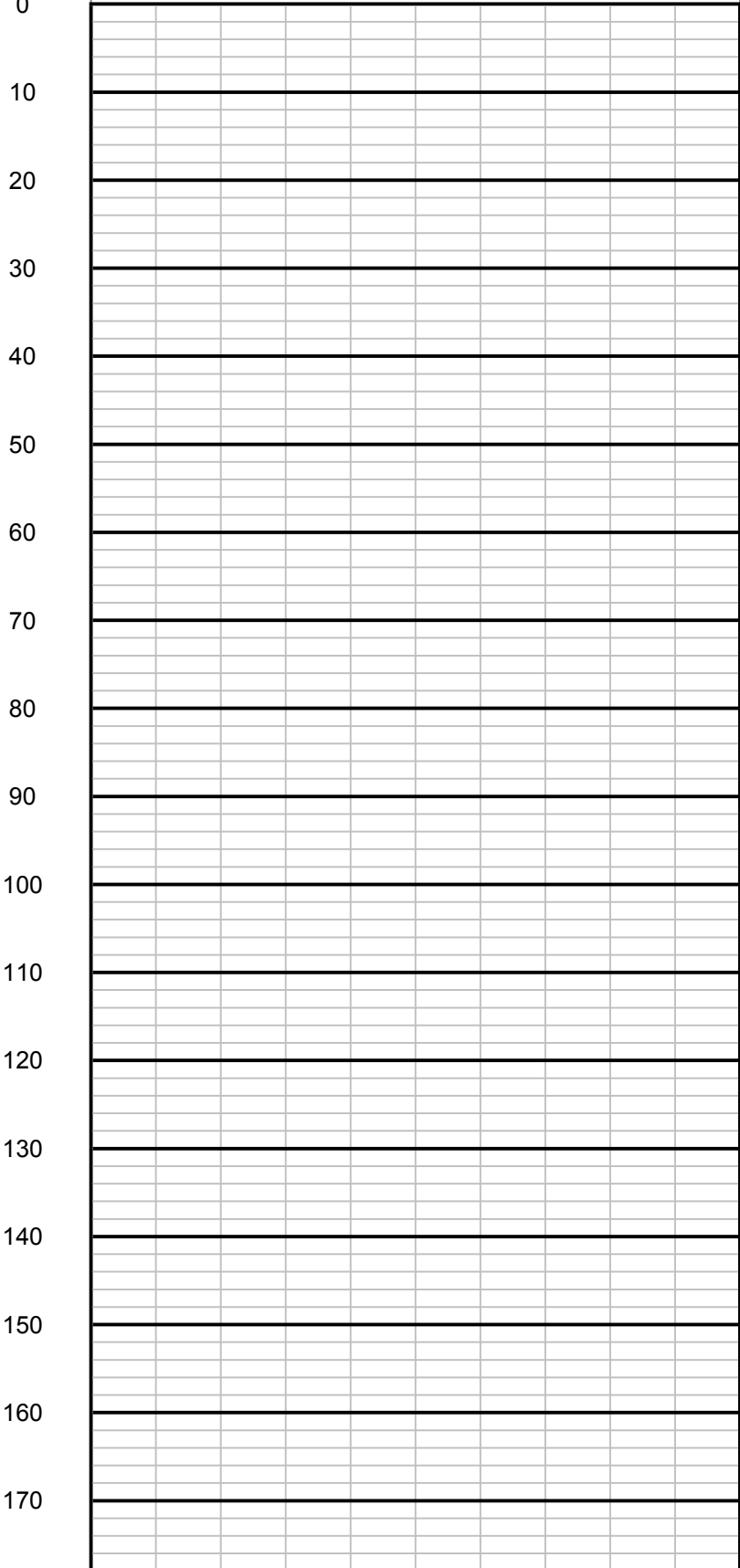
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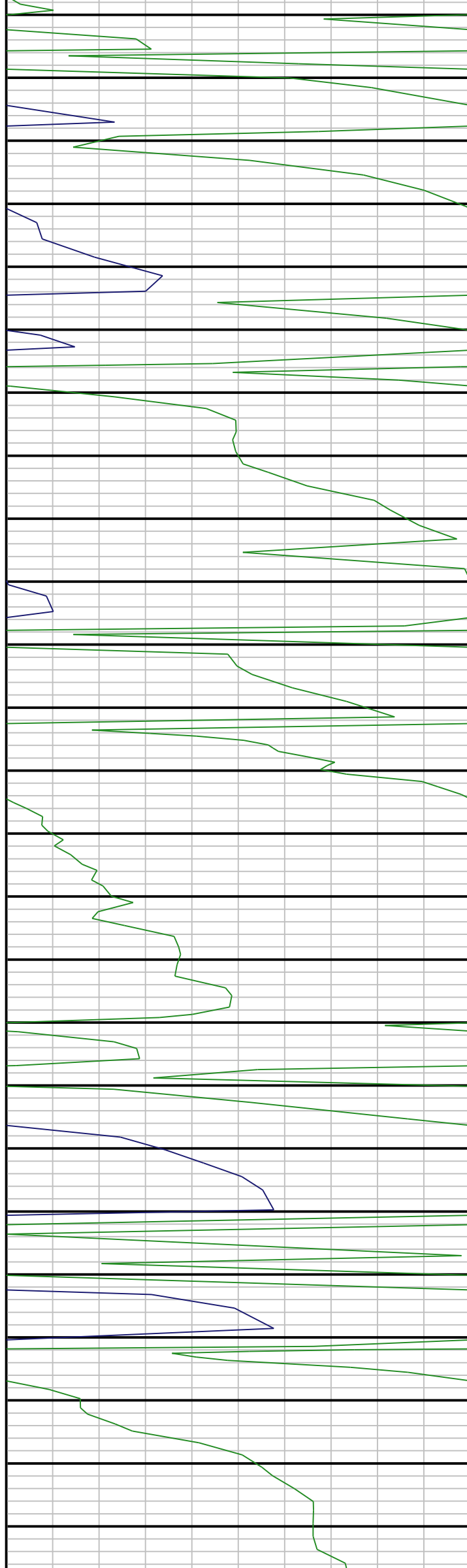
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	ROP	ROP
300	ft/hr	600
	ROP	ROP
600	ft/hr	900
	ROP	ROP
900	ft/hr	1200

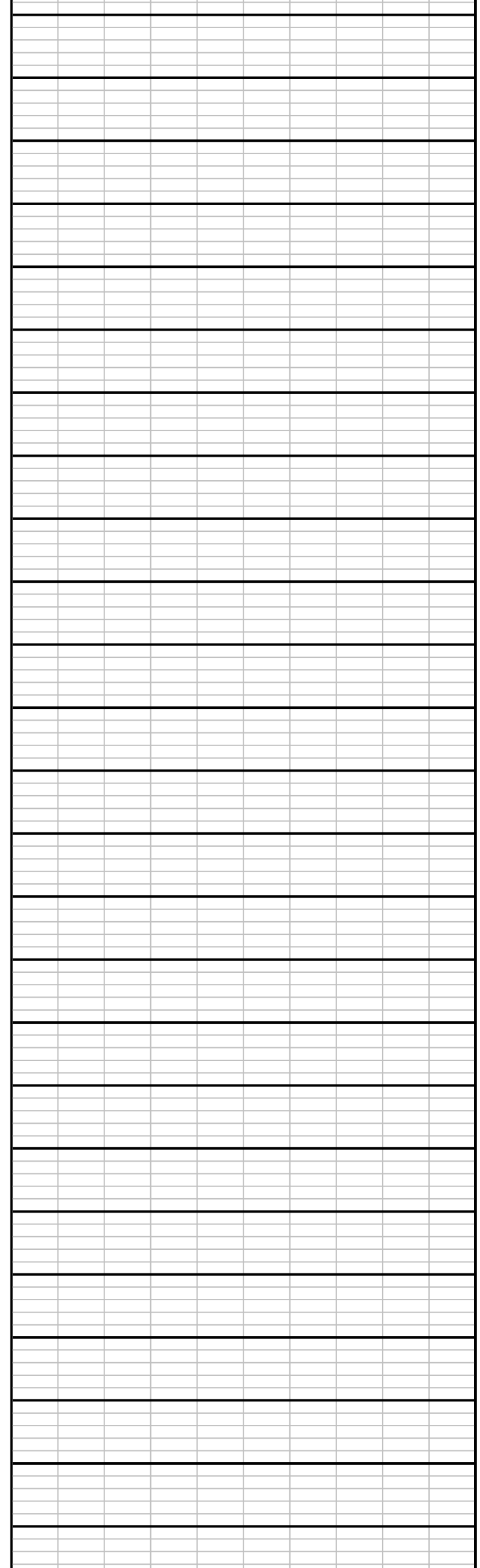


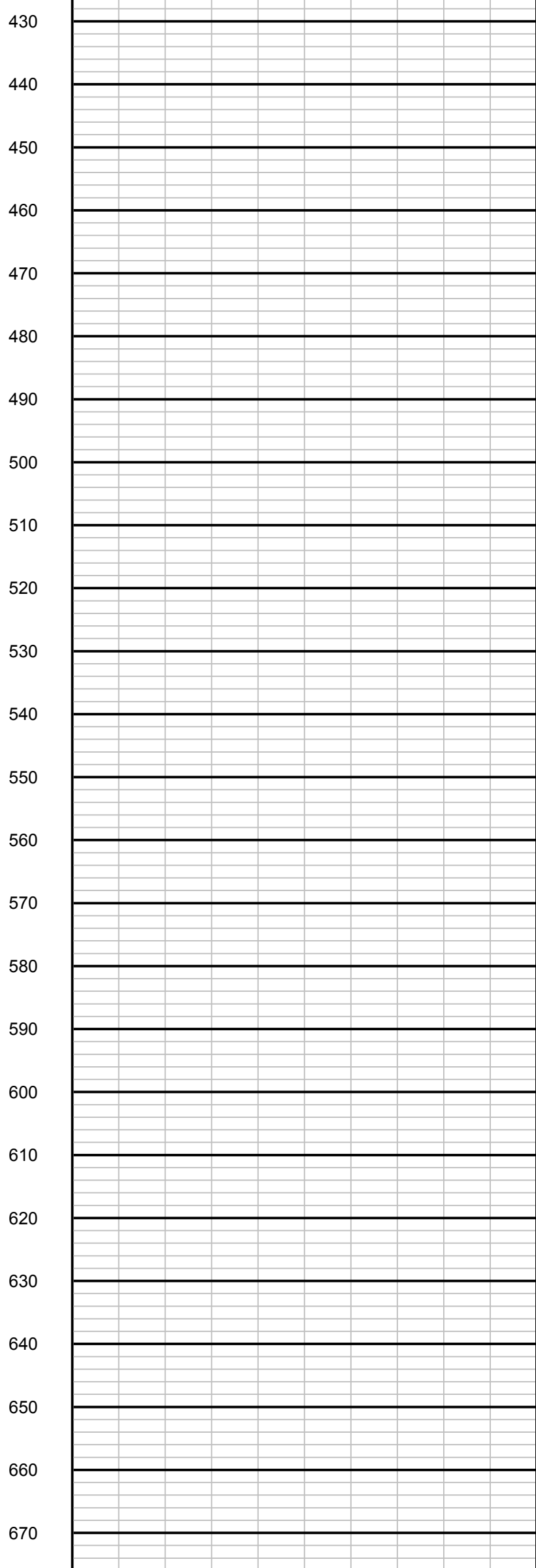
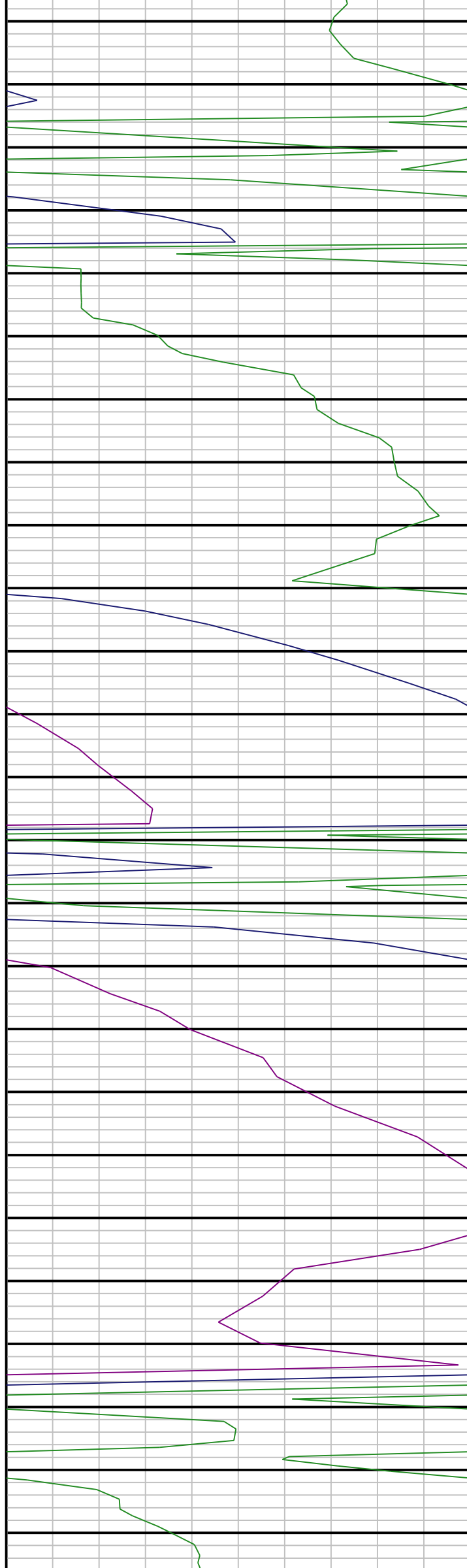
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150	AAPI	300
	Gamma	Gama
300	AAPI	450
	Gamma	Gama
450	AAPI	600

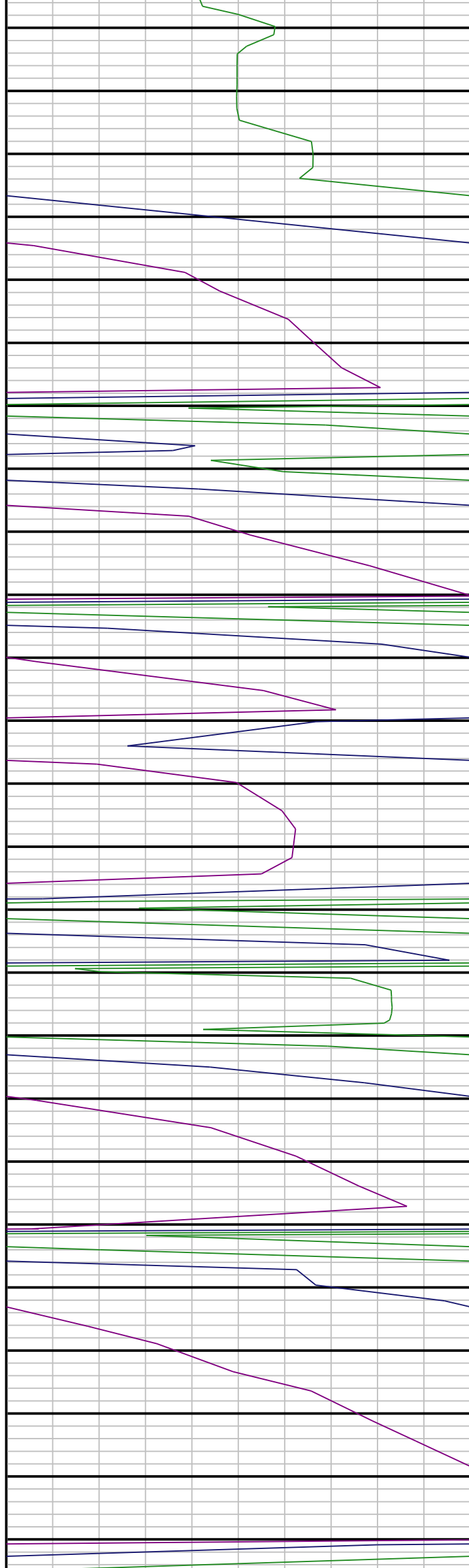




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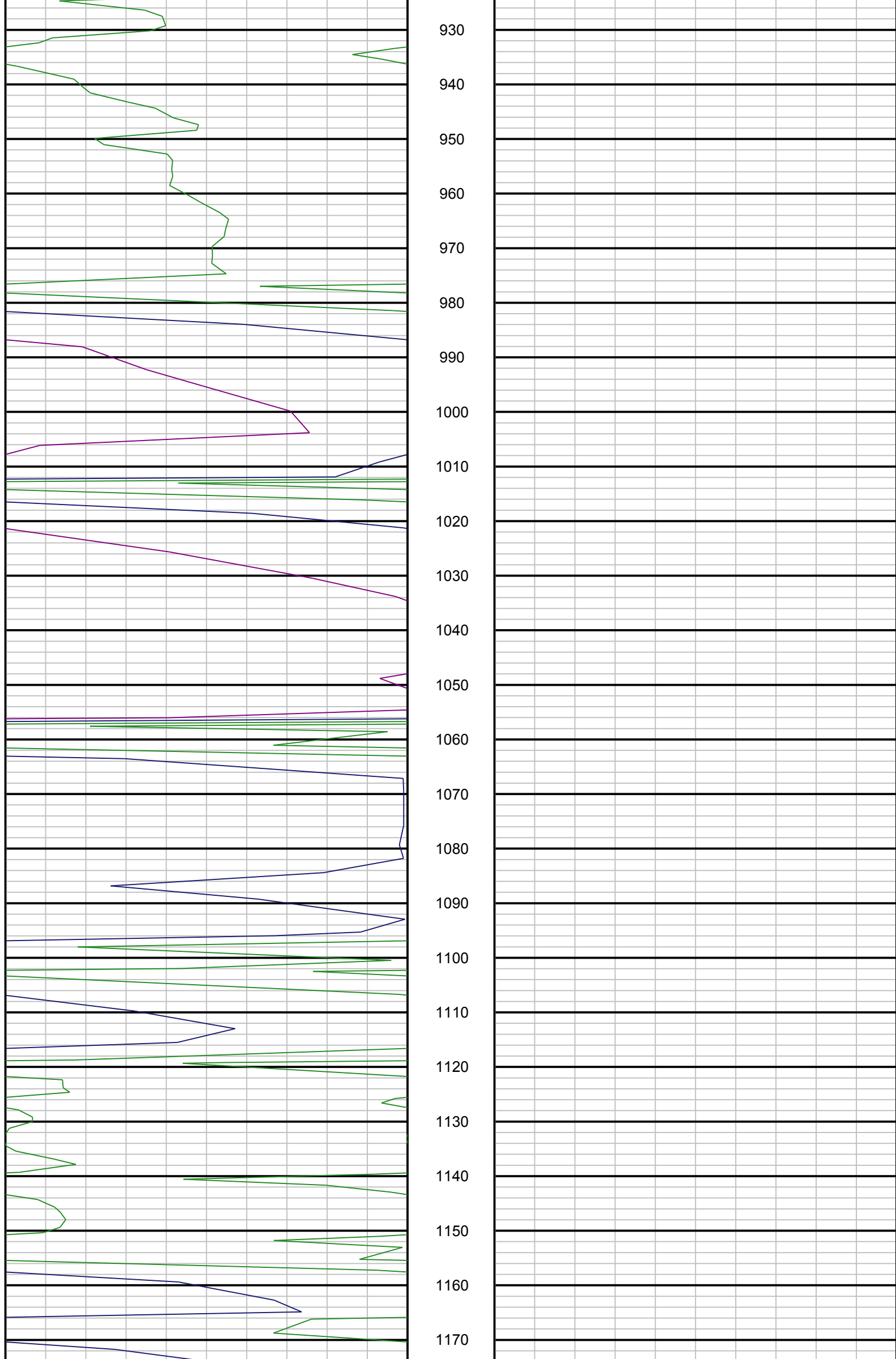
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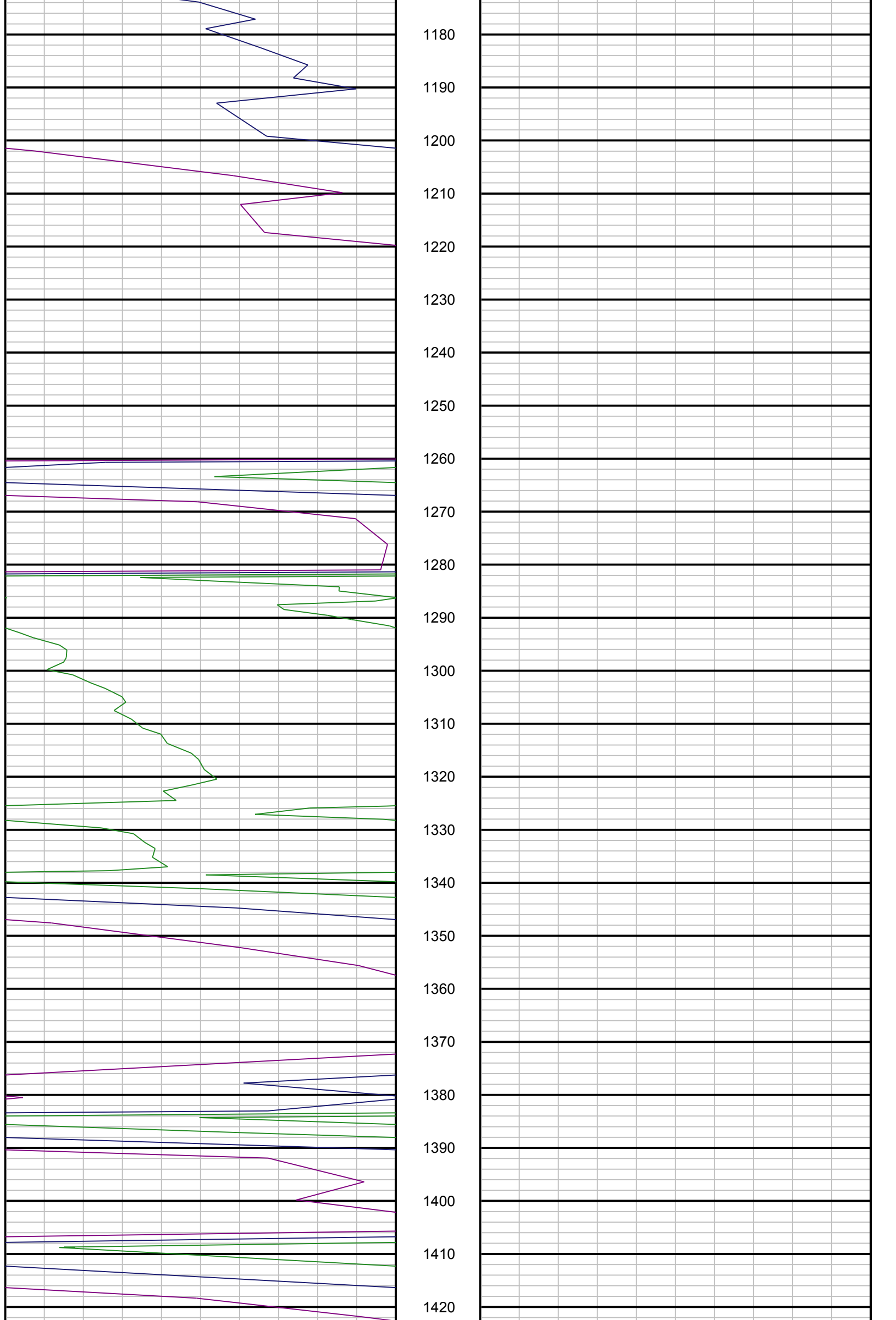
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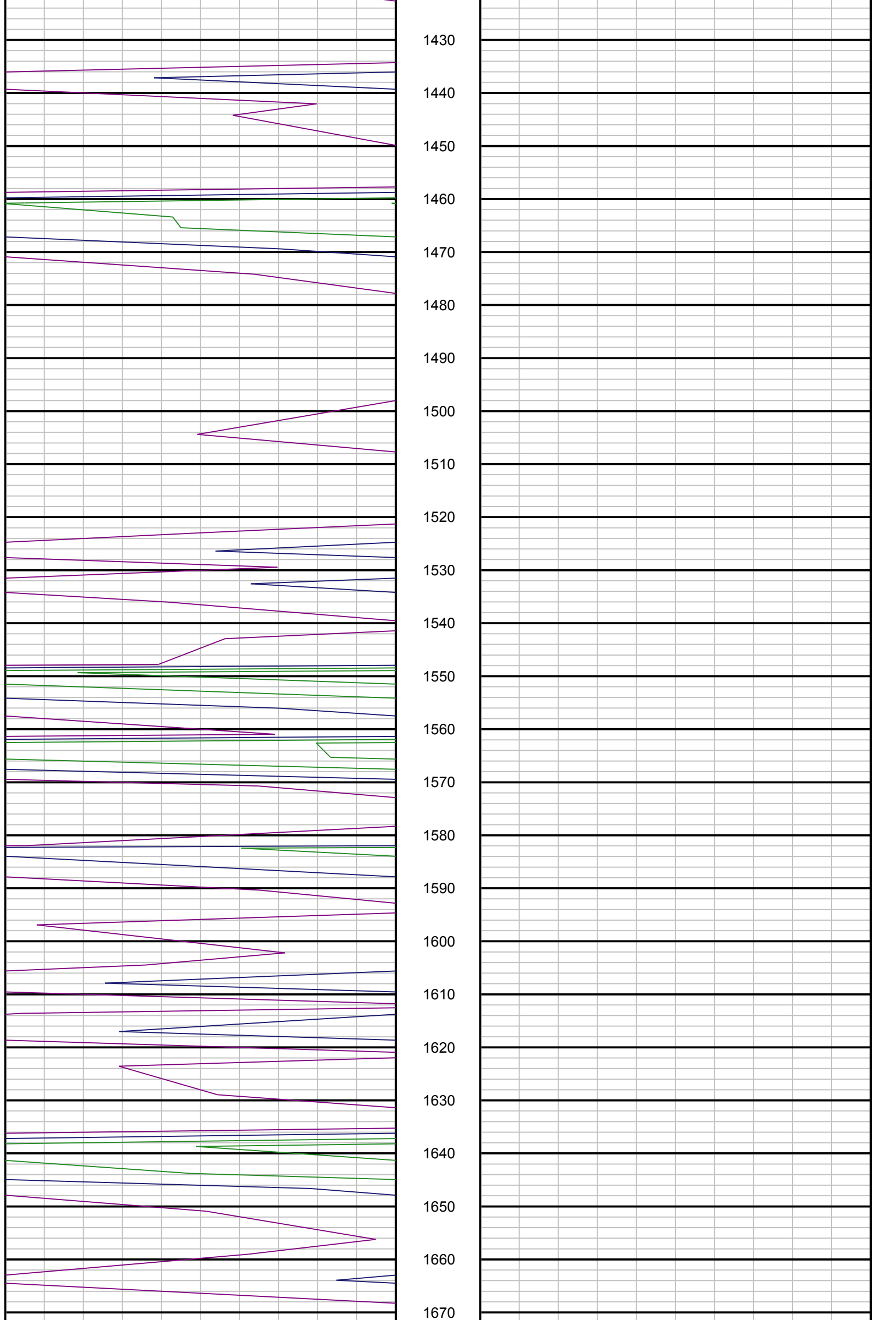
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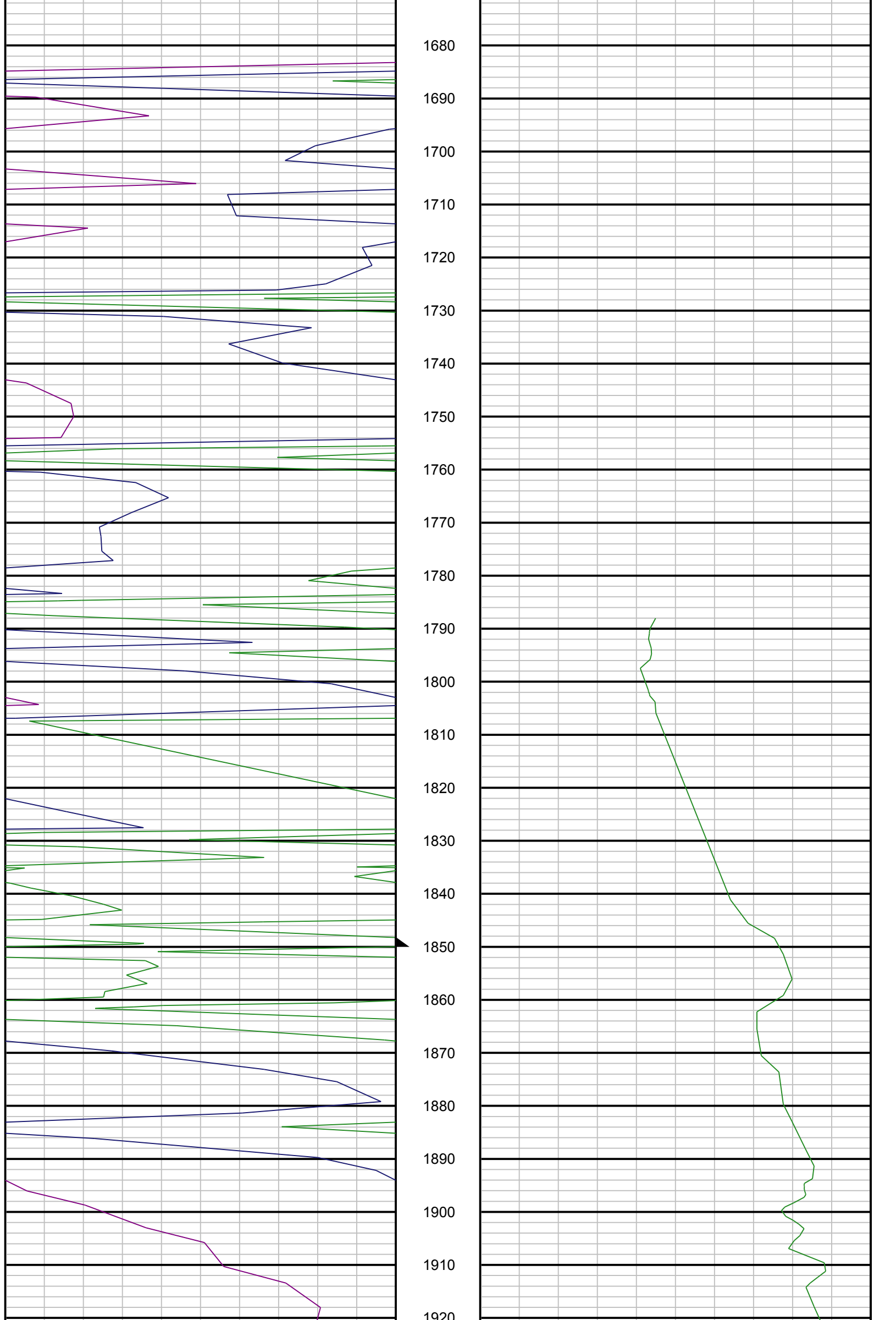
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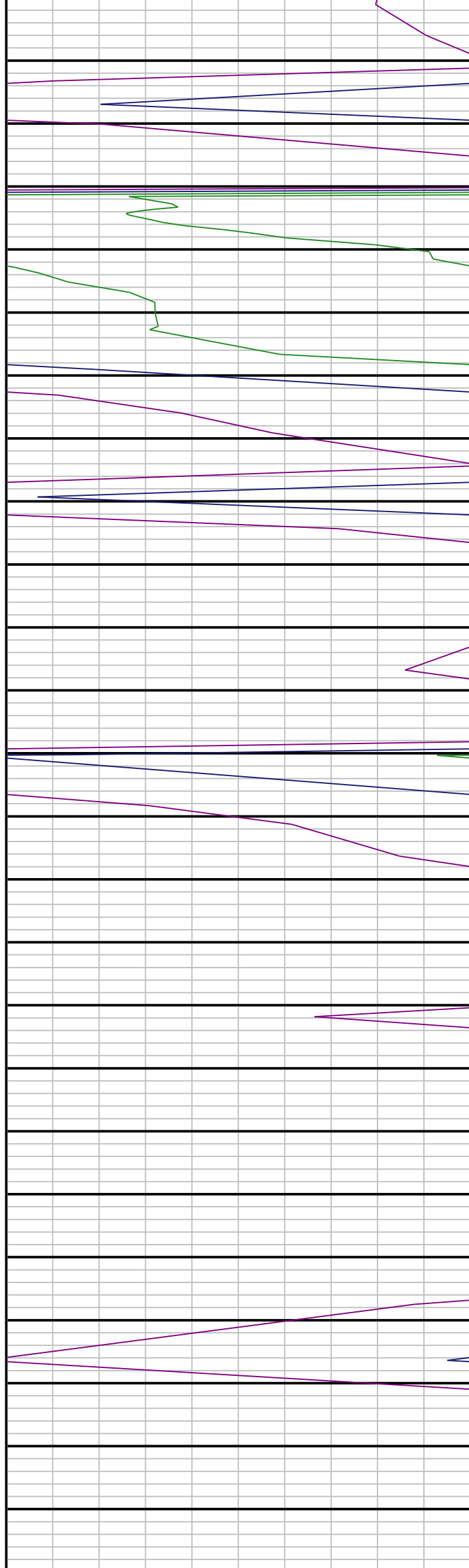




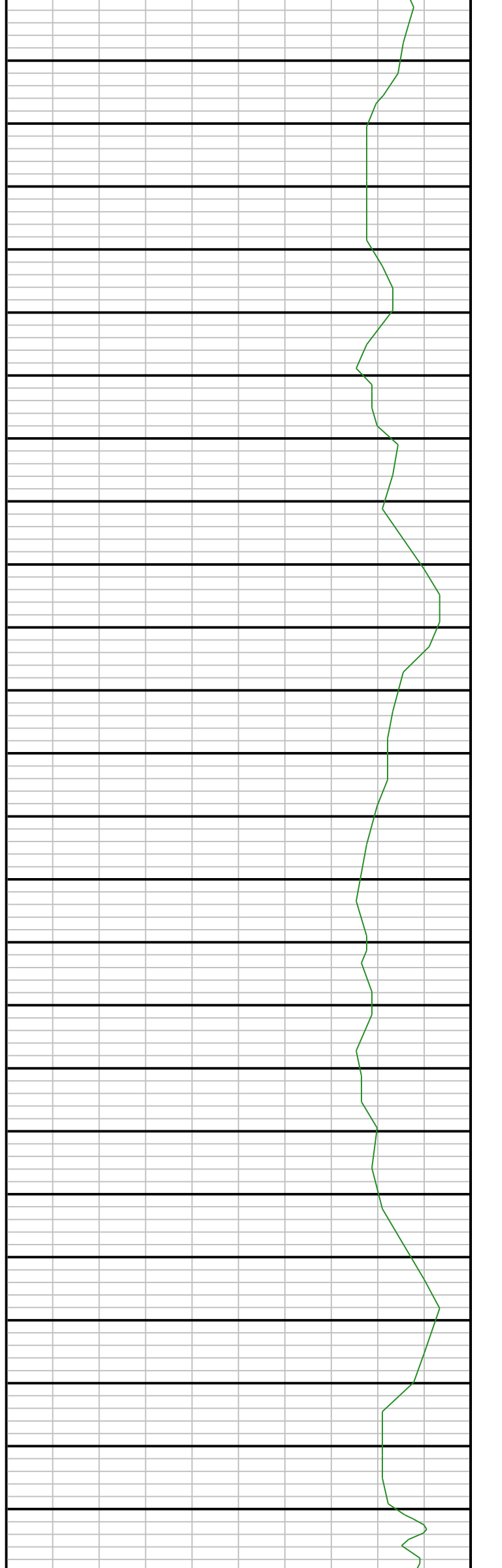


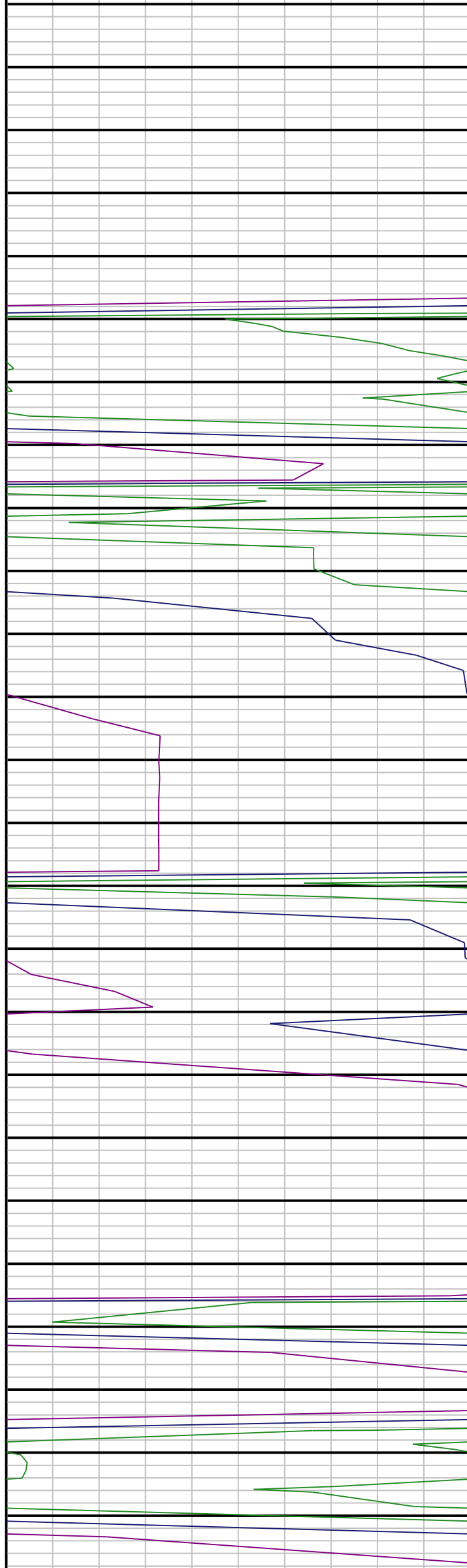


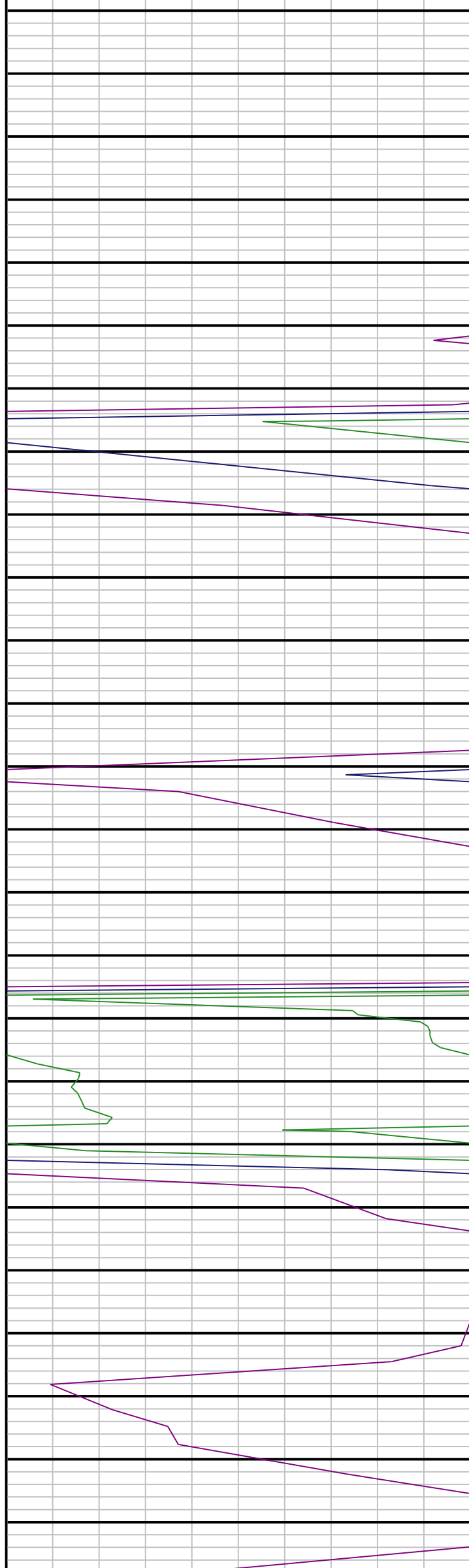




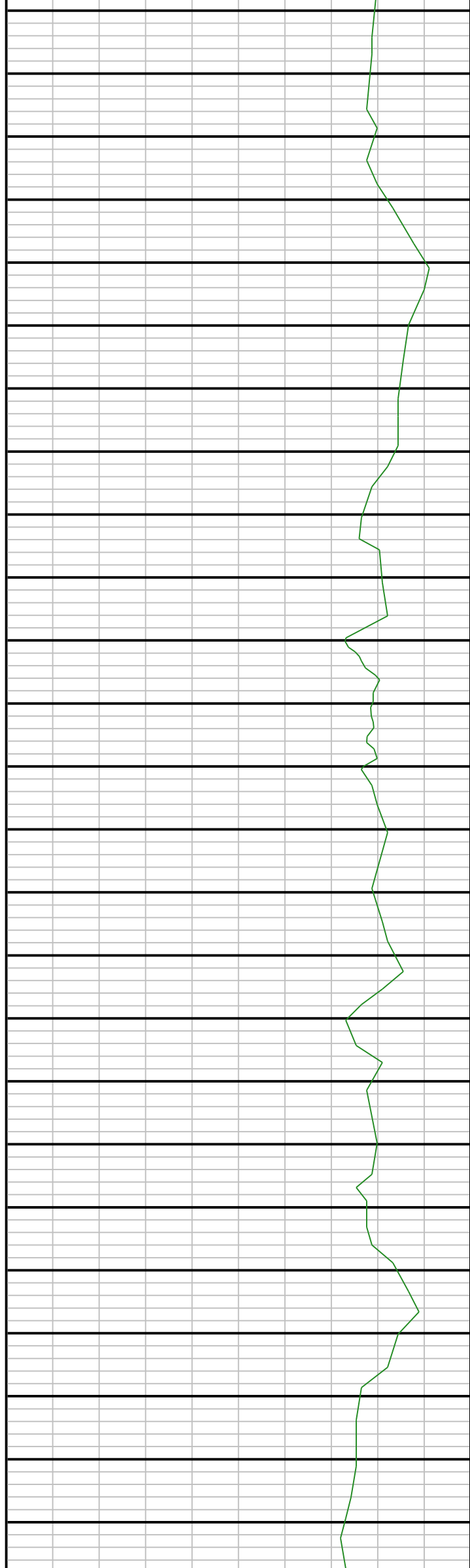
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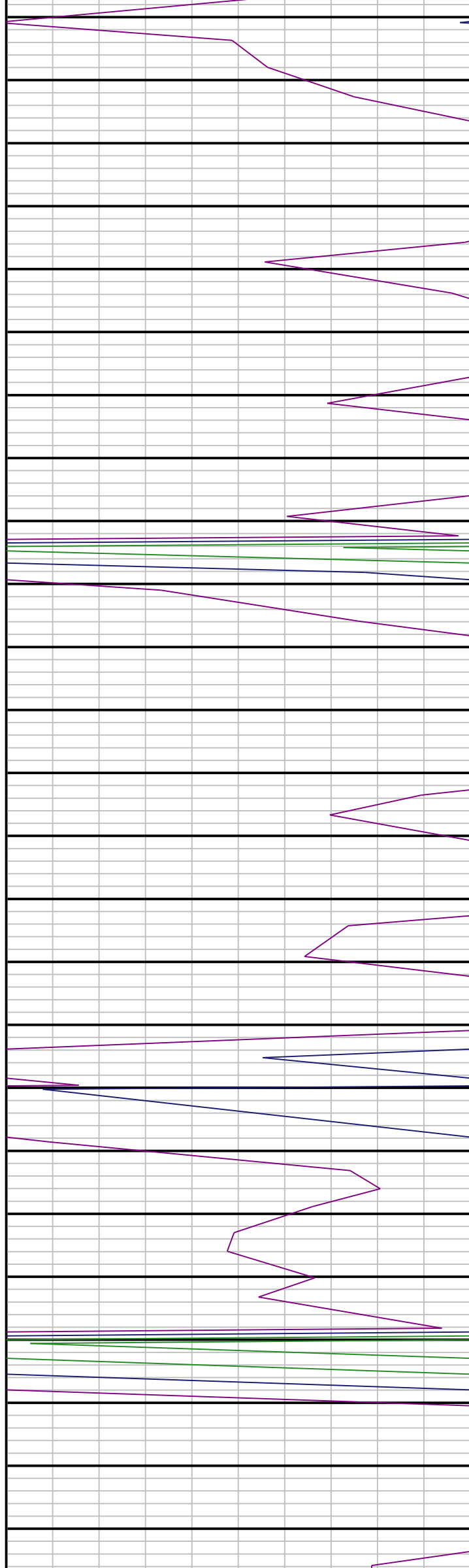






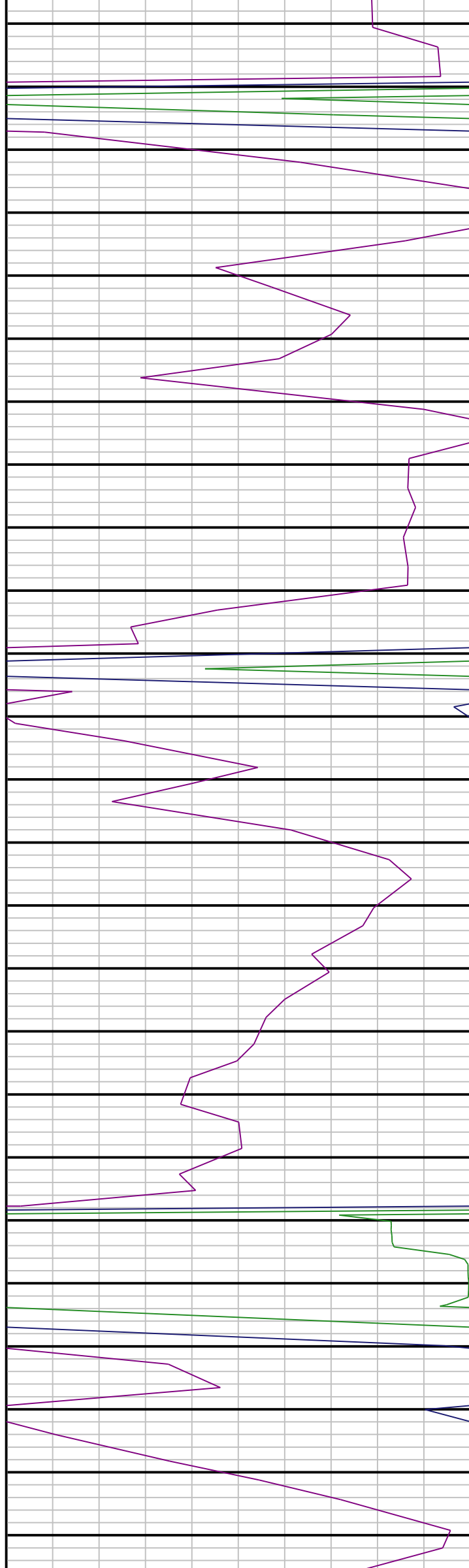
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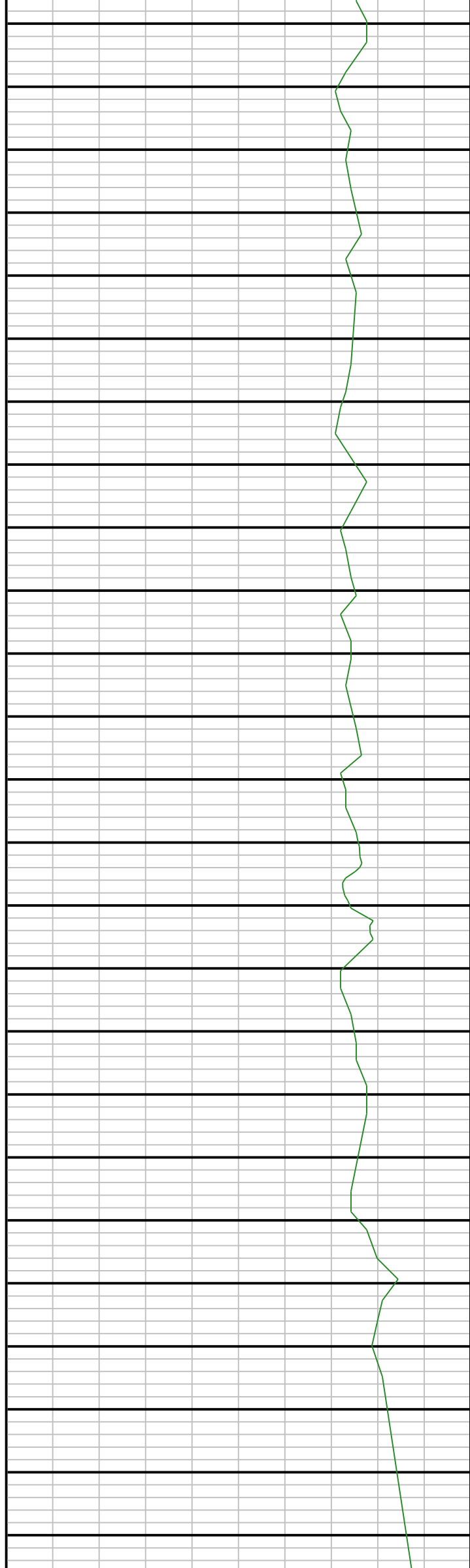


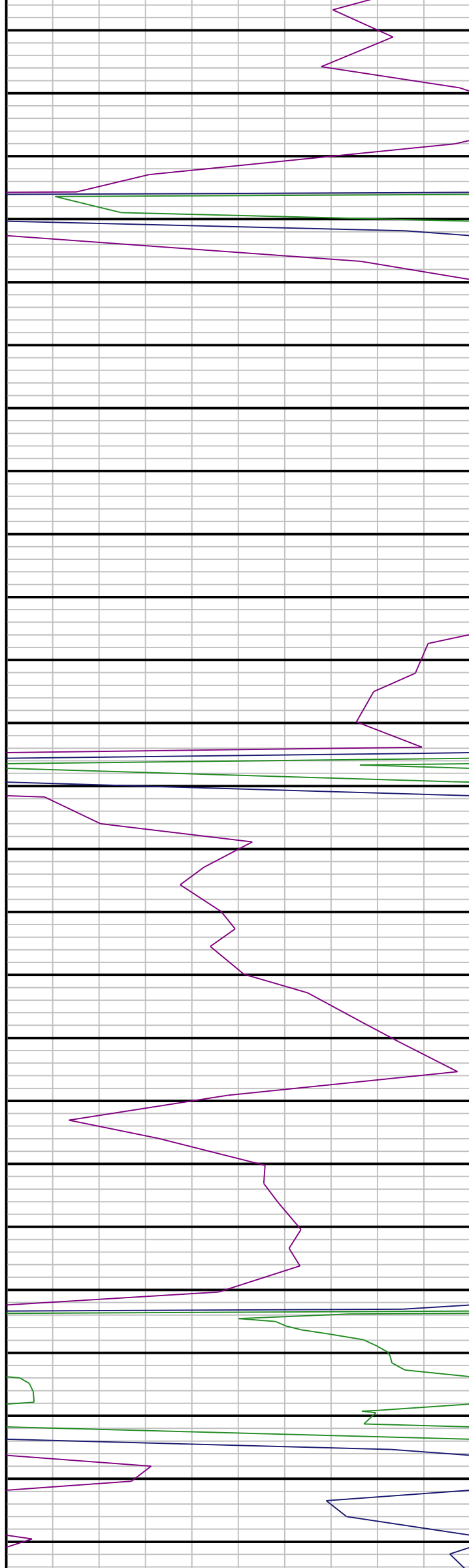
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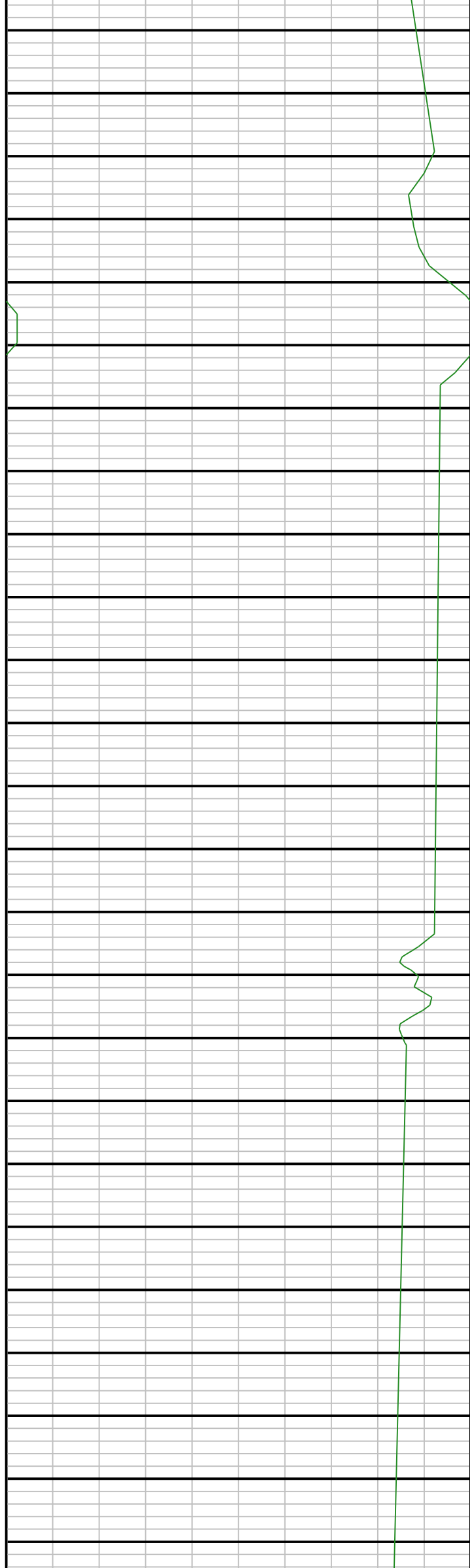


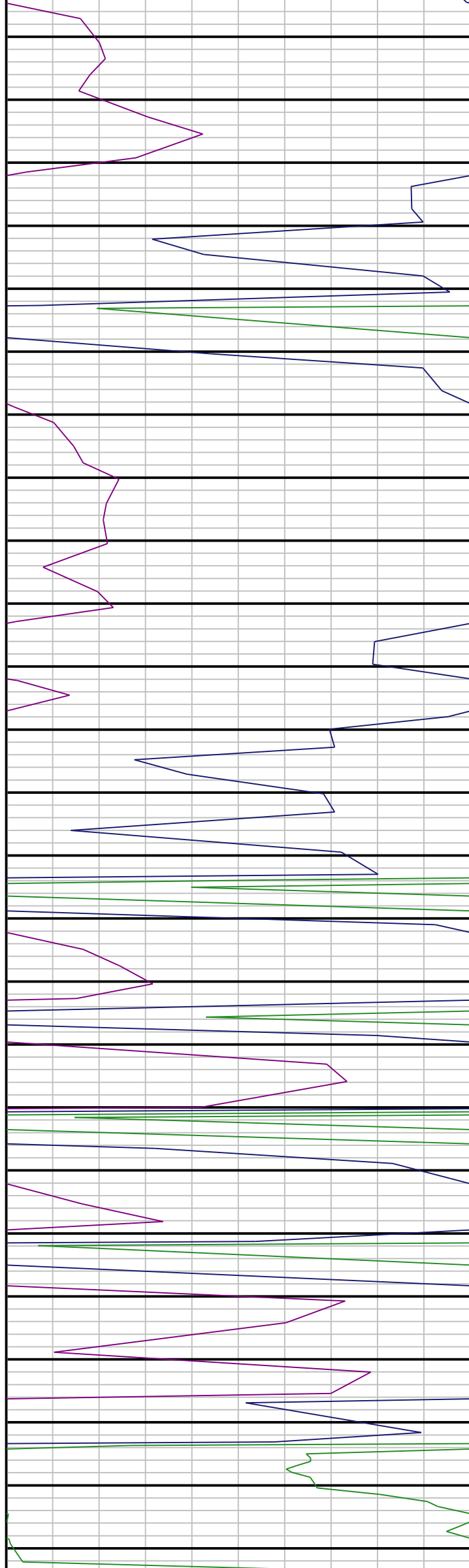
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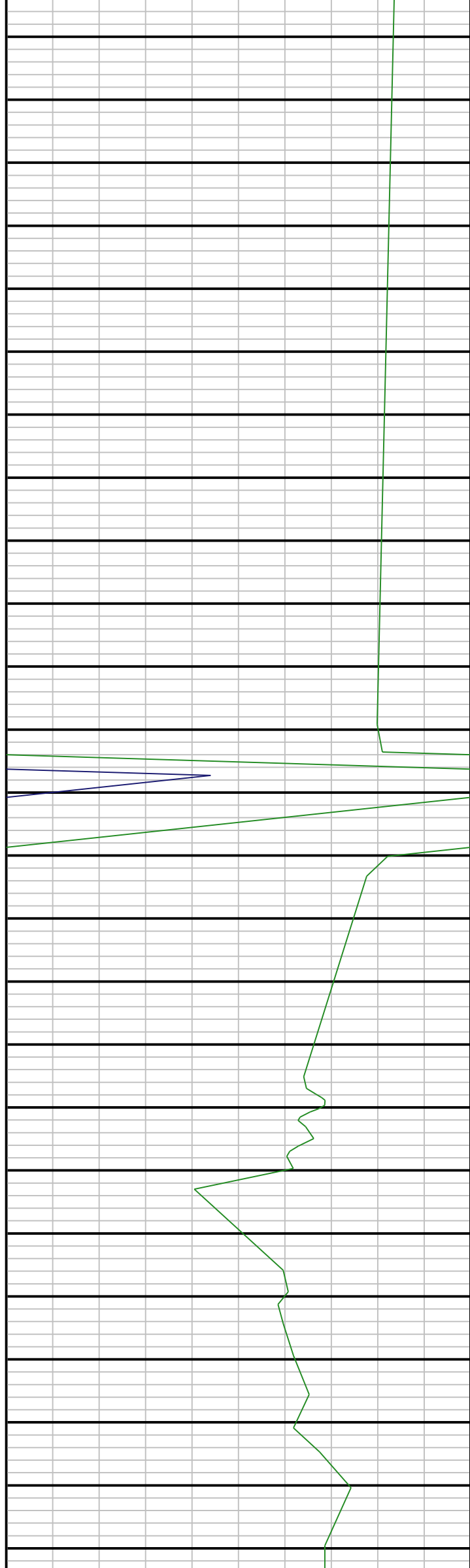


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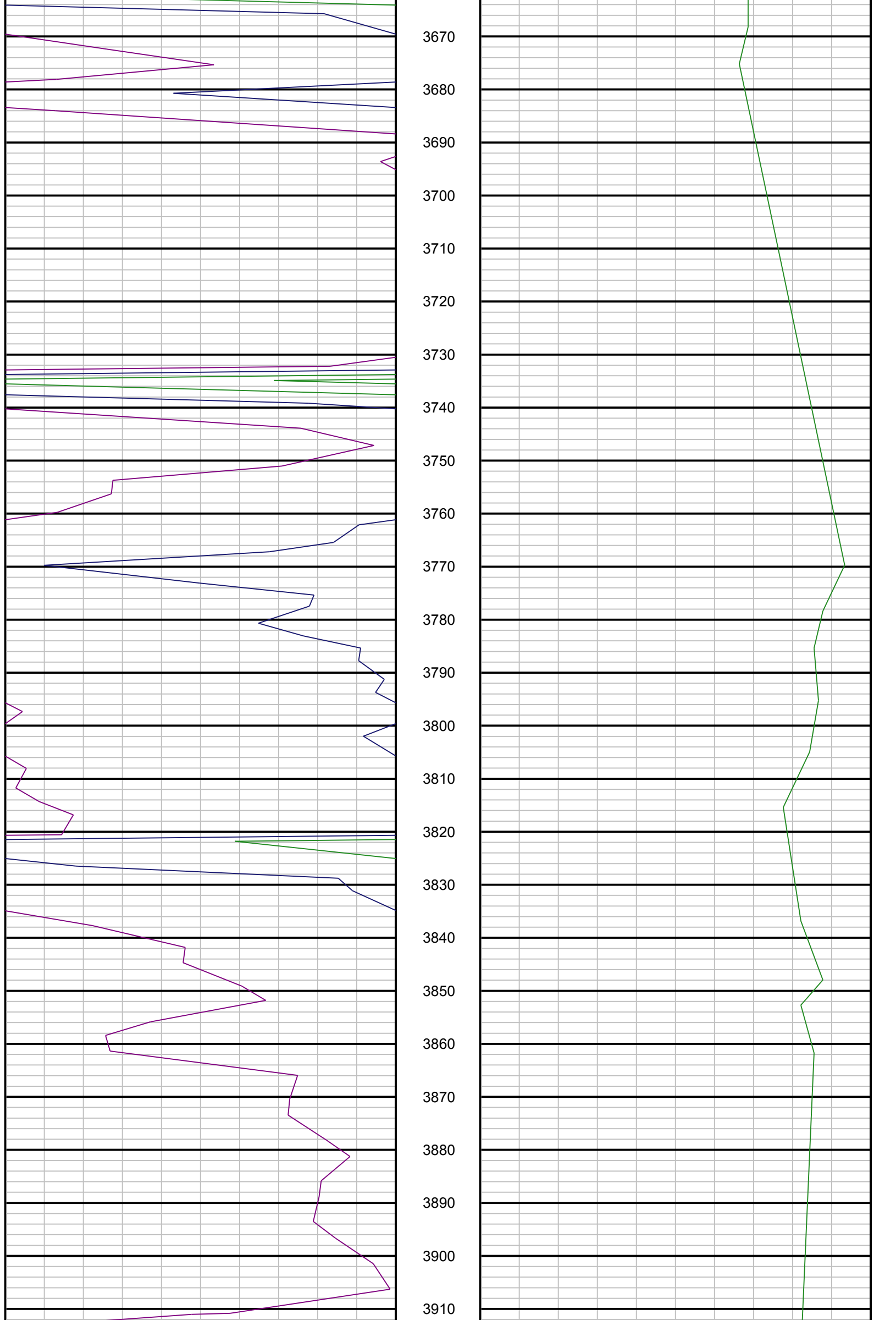


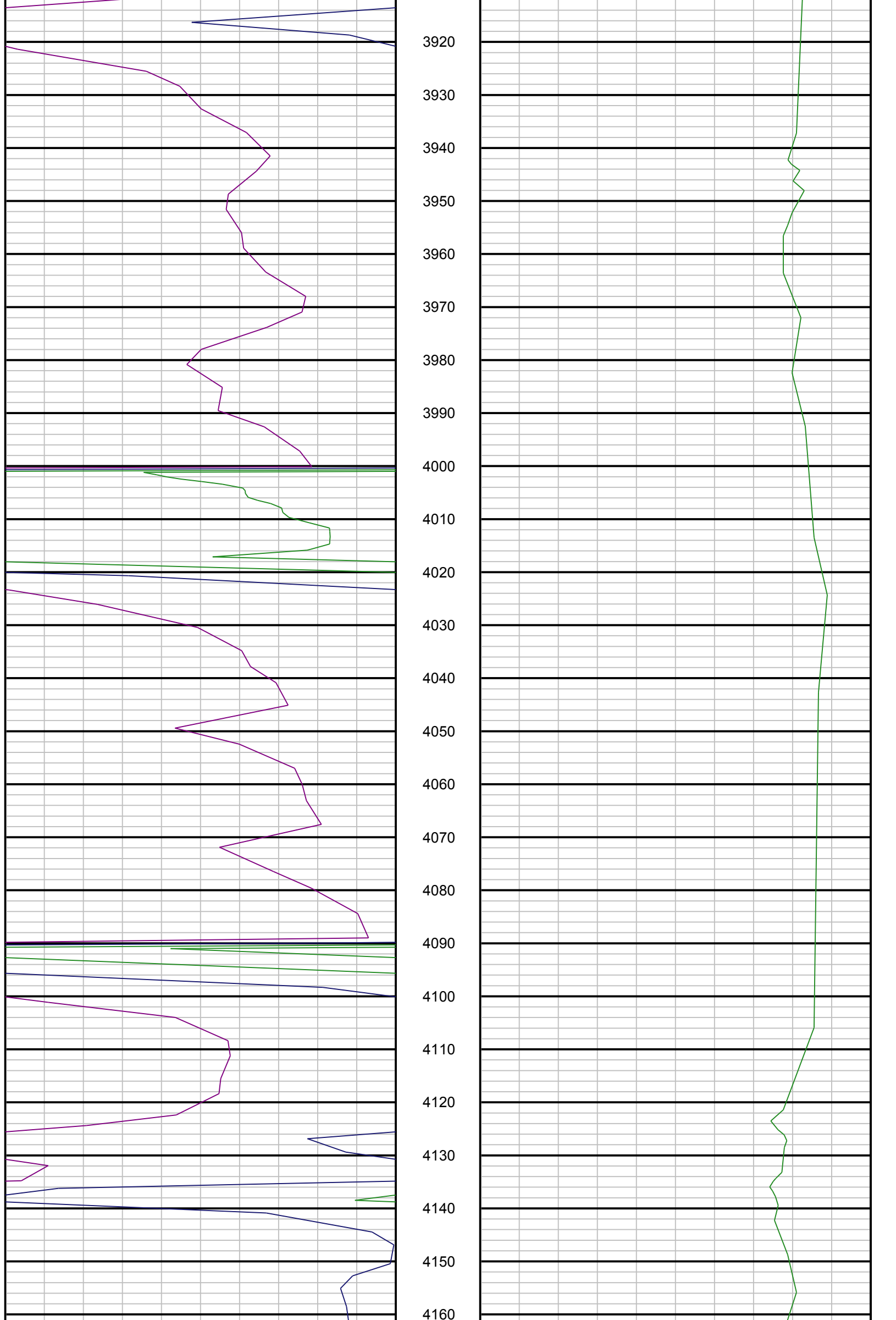


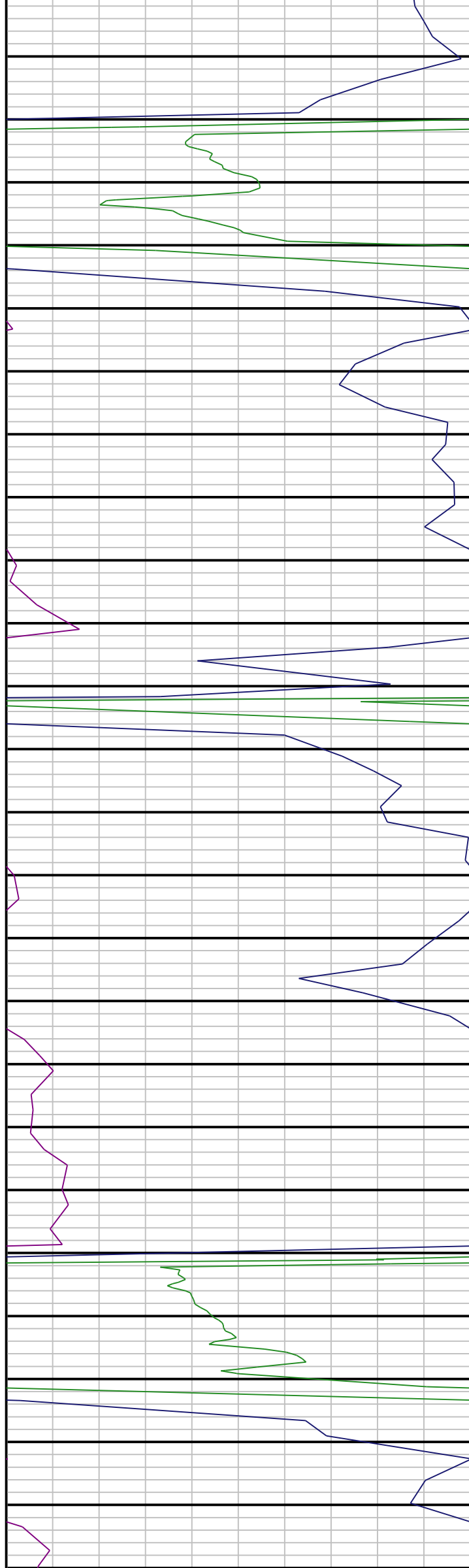
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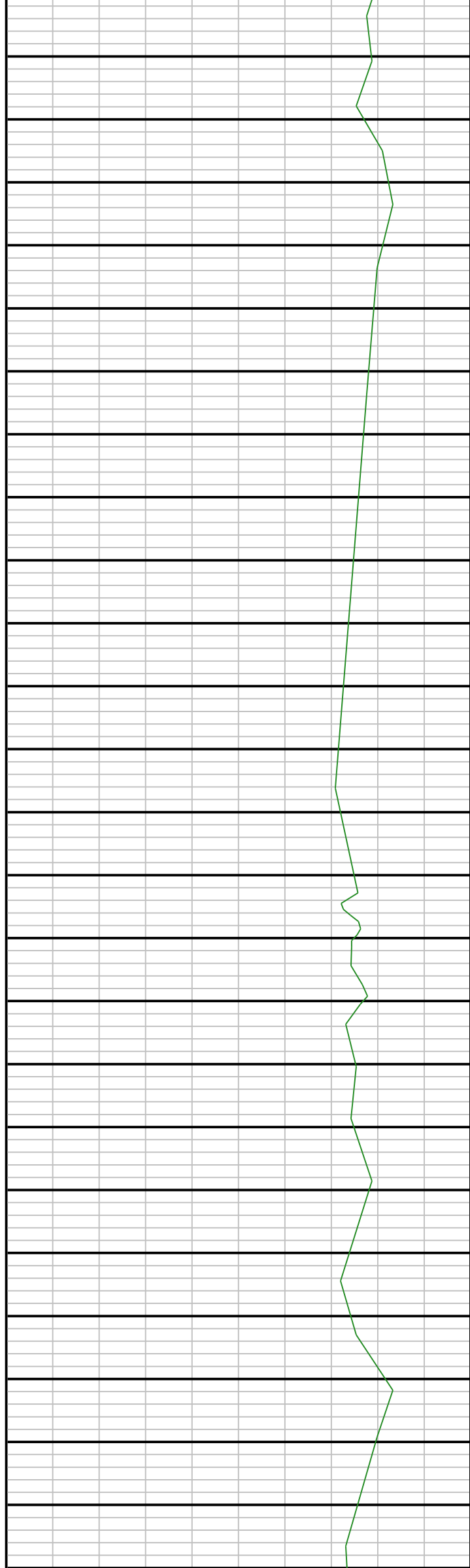
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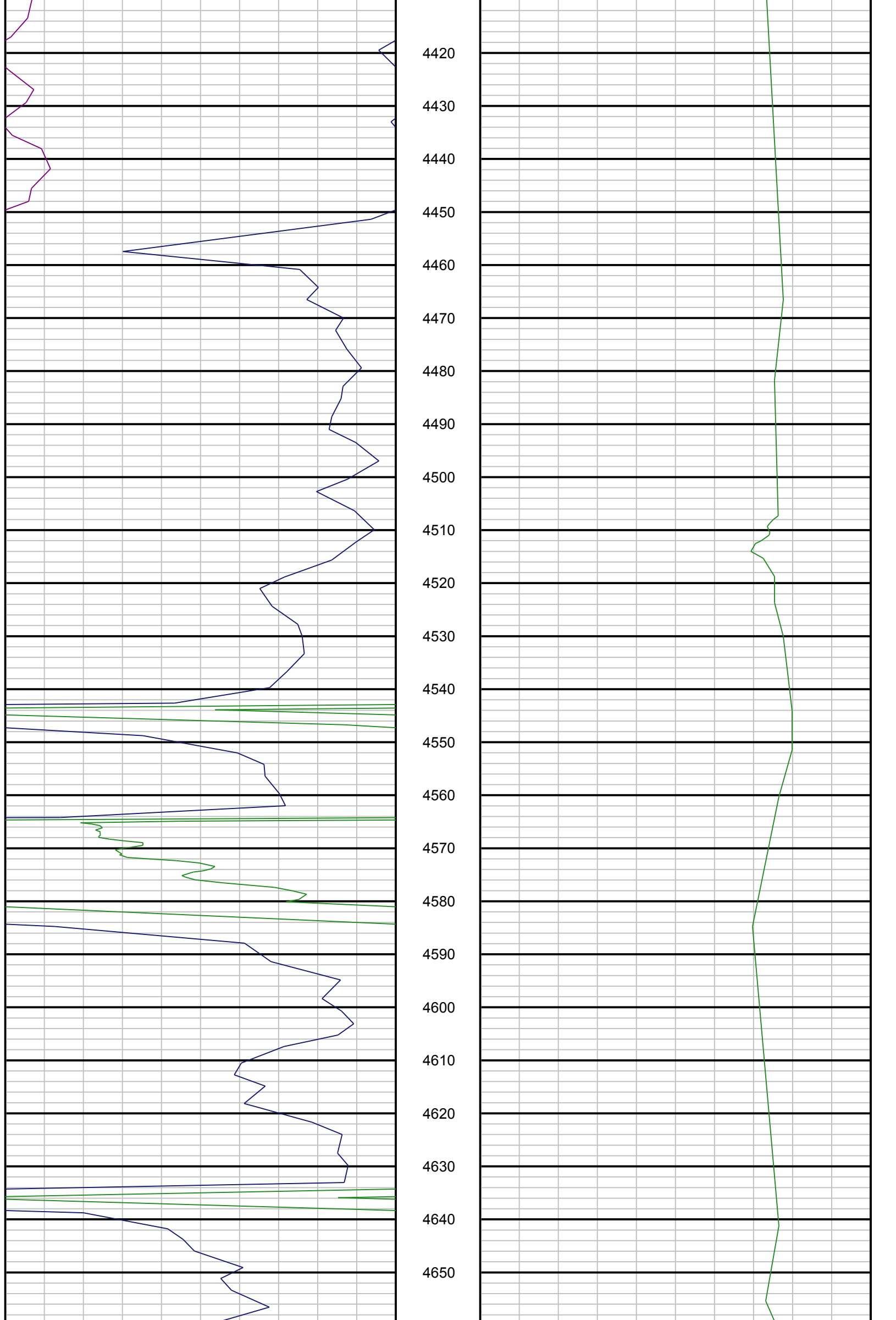
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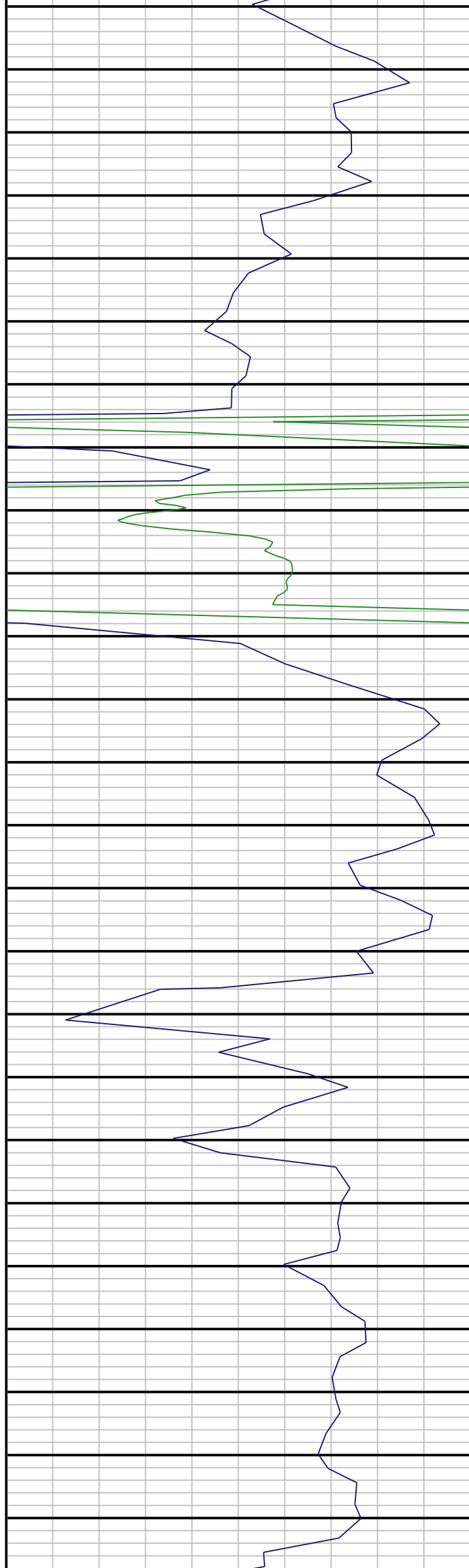
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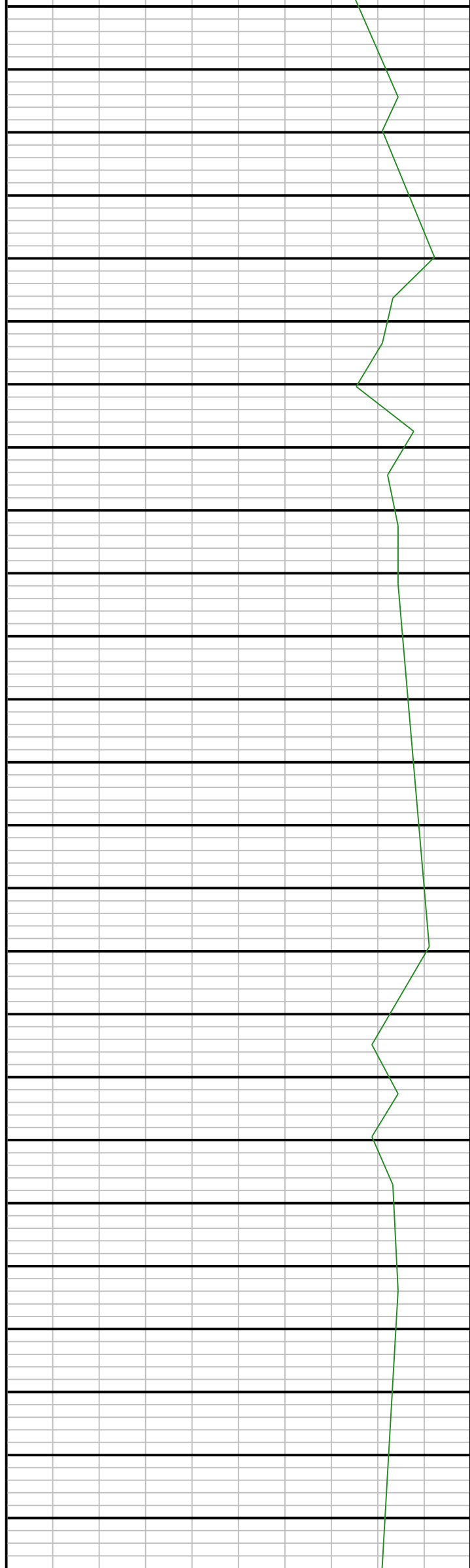
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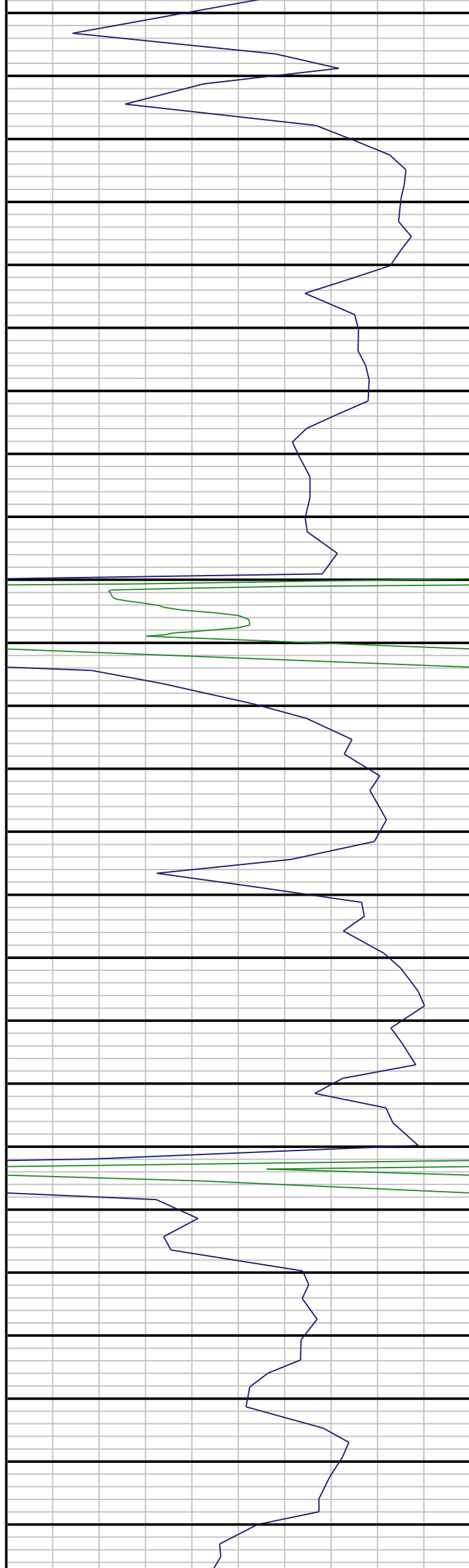




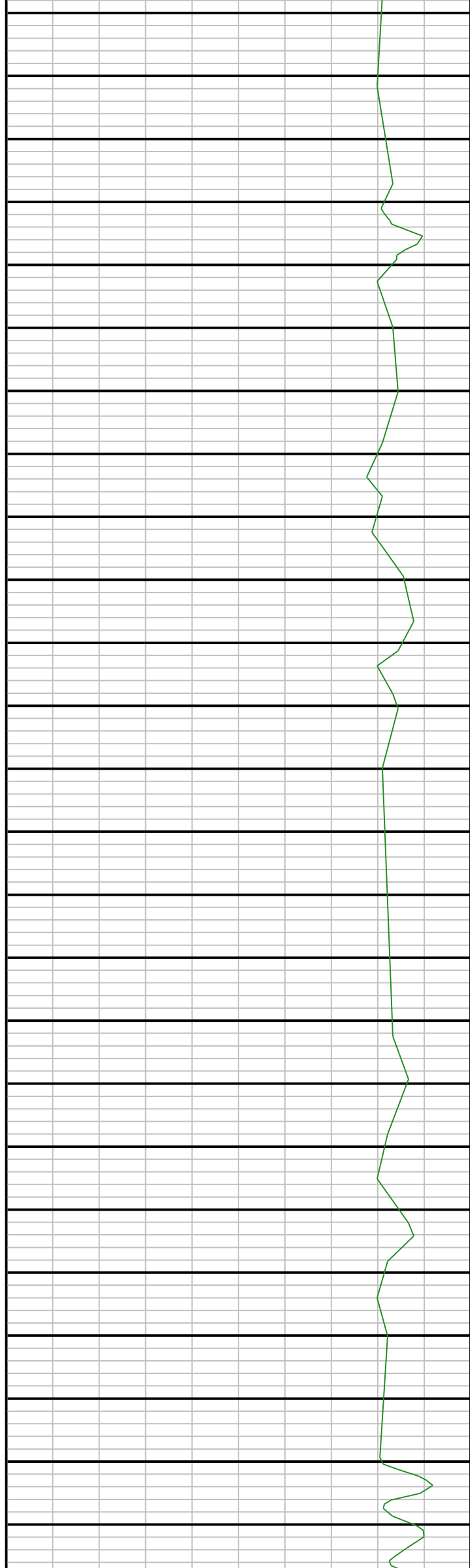


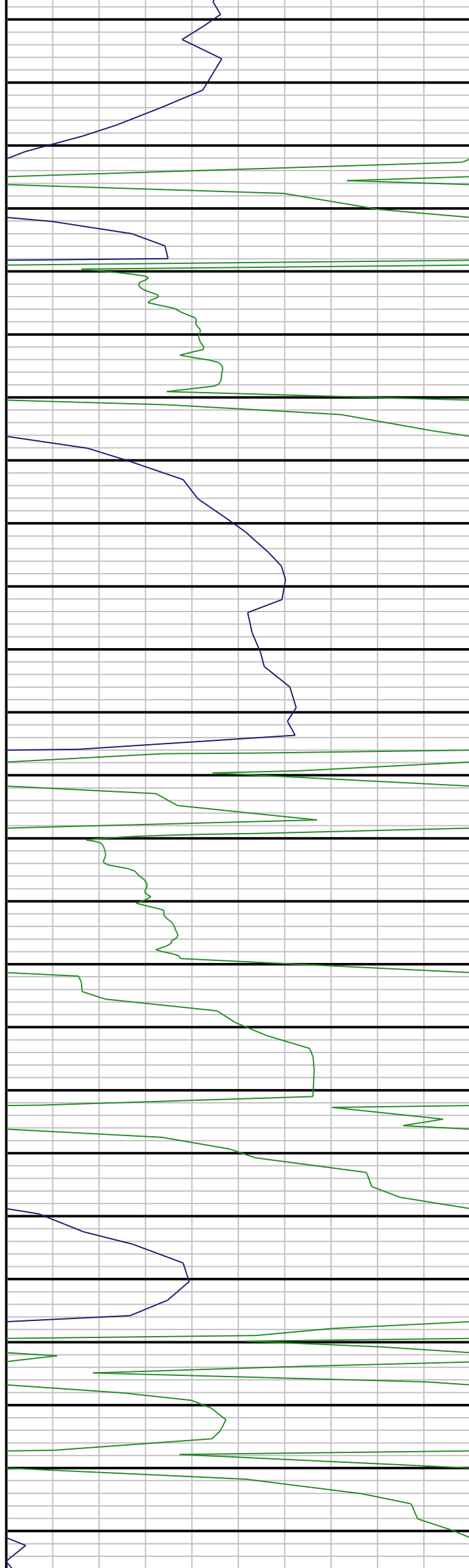
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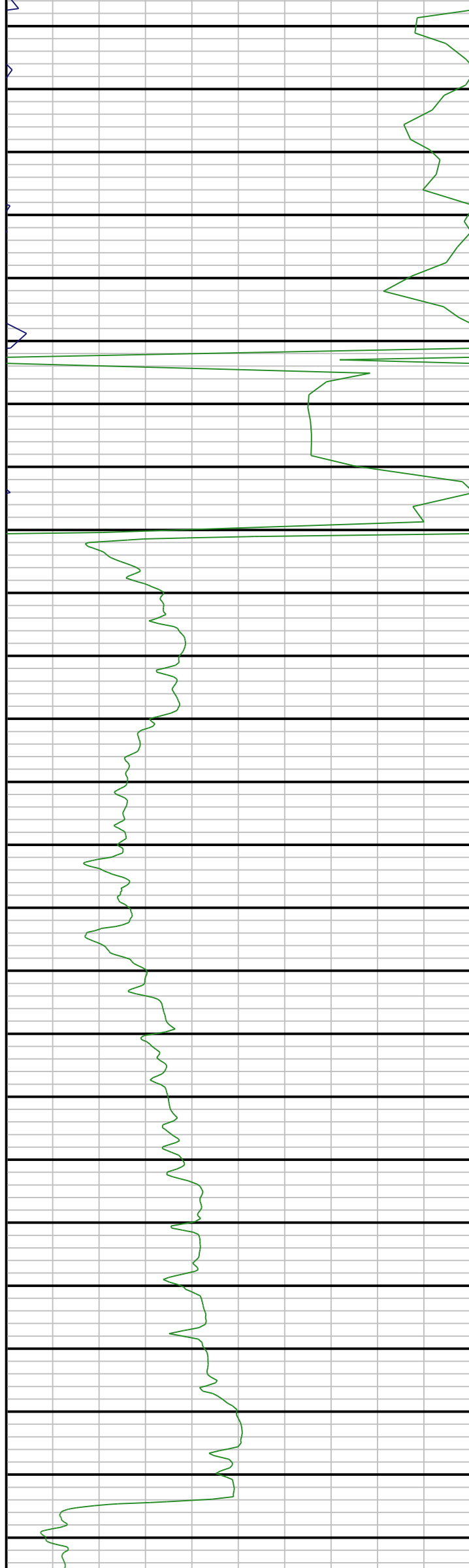
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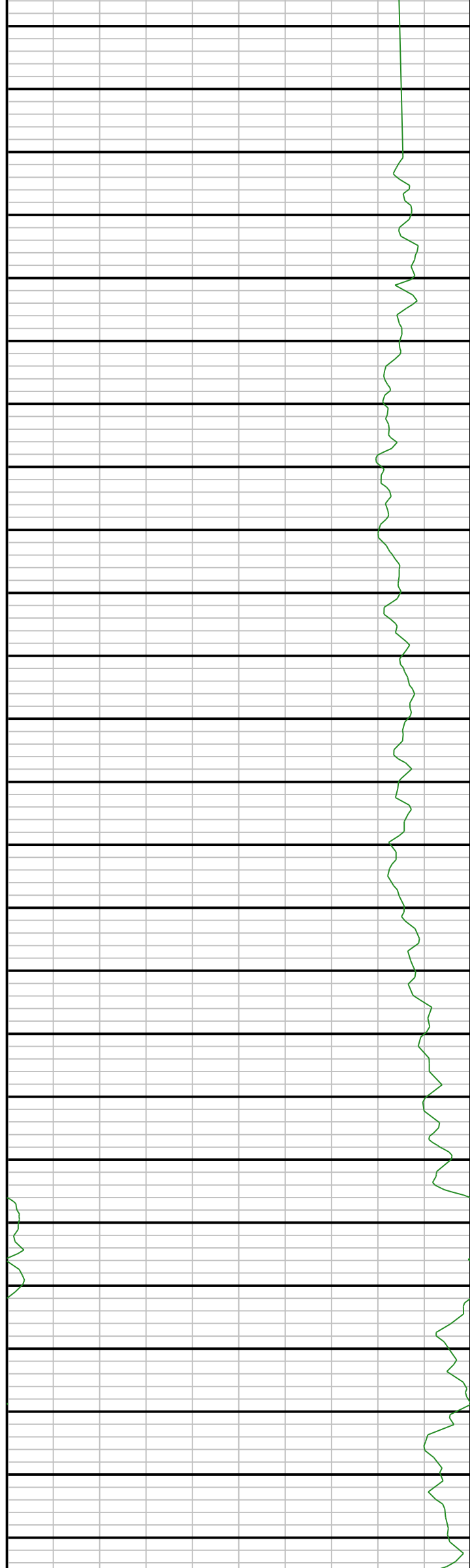


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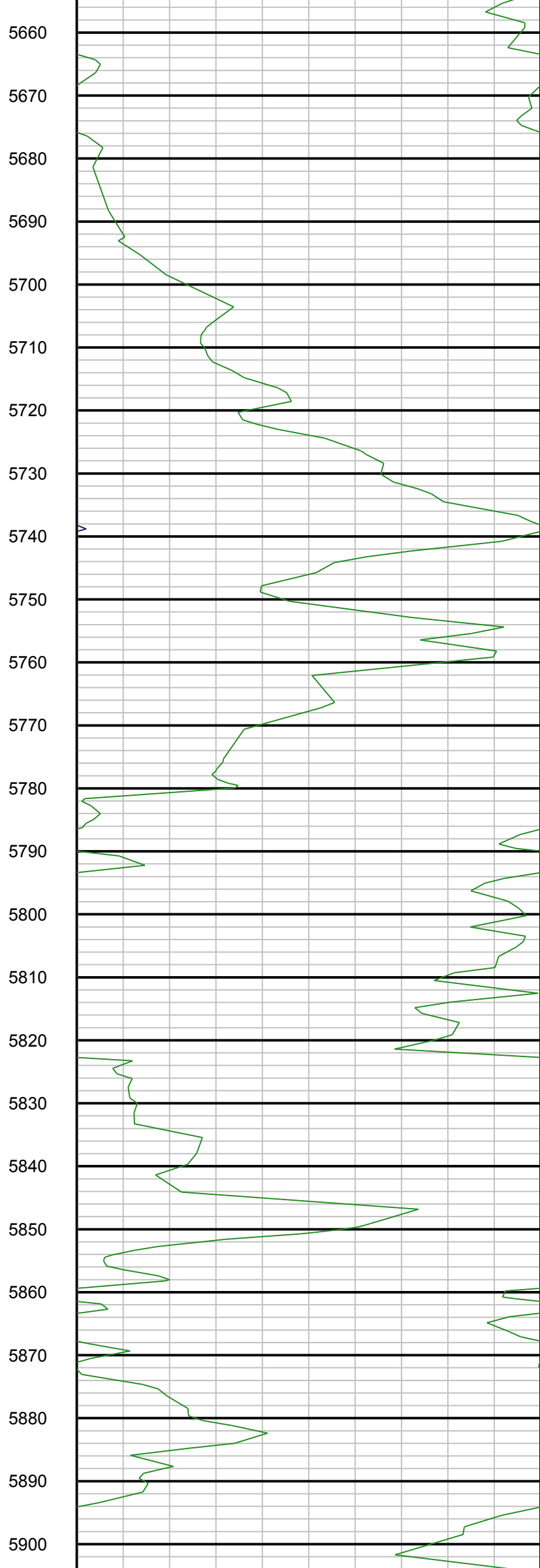
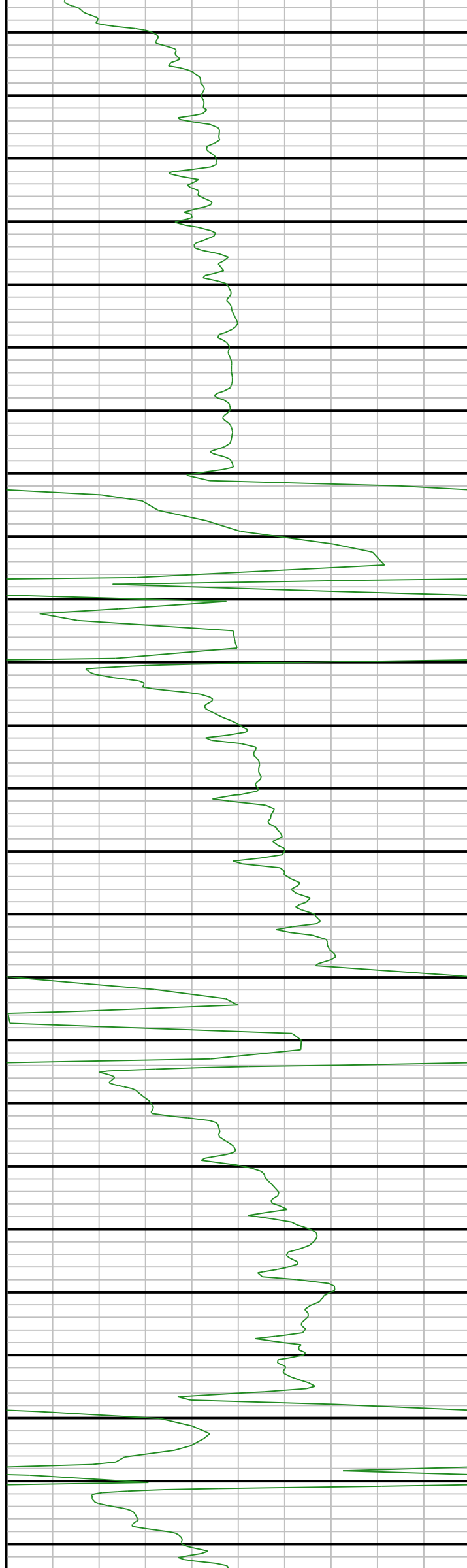


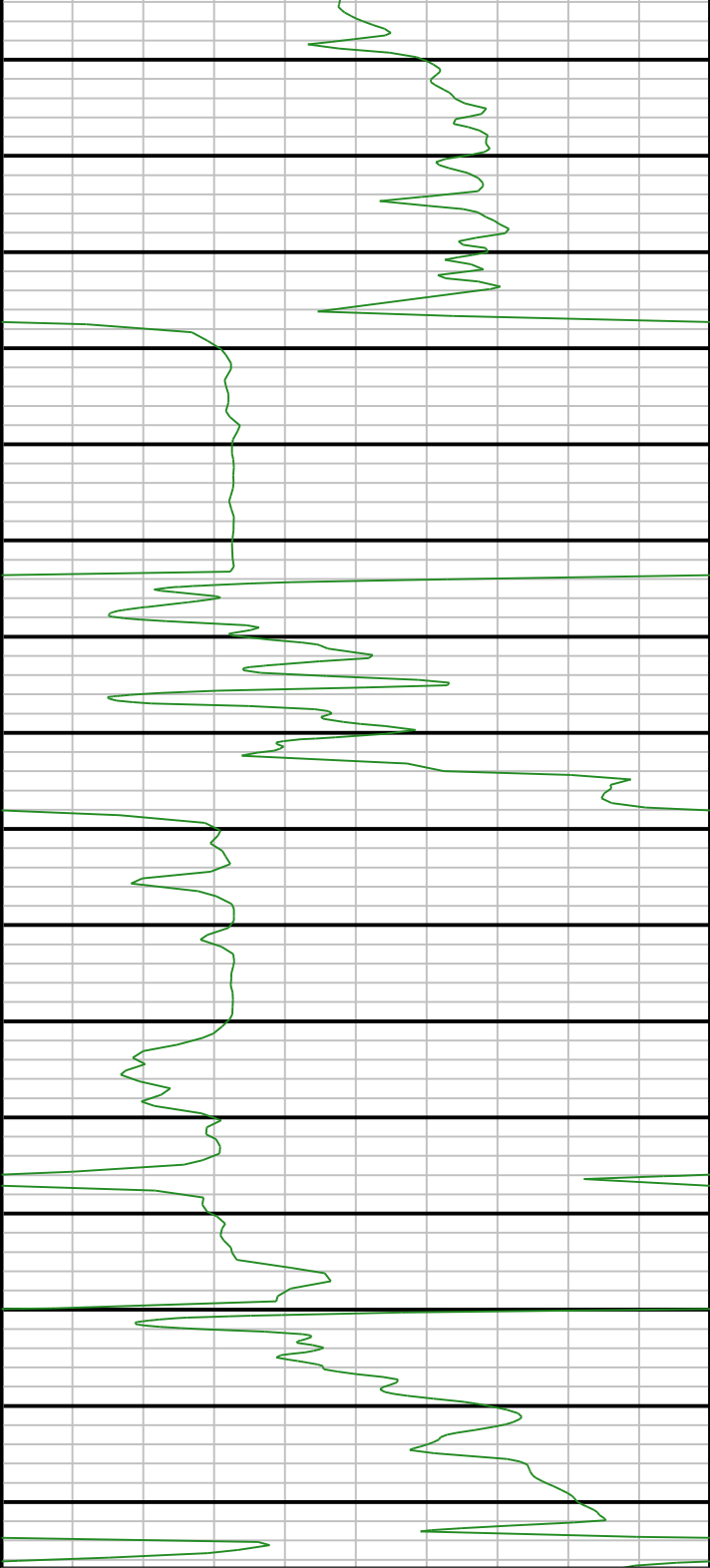


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ROP		ROP
0	ft/hr	300
ROP		ROP
300	ft/hr	600
ROP		ROP
600	ft/hr	900
ROP		ROP
900	ft/hr	1200

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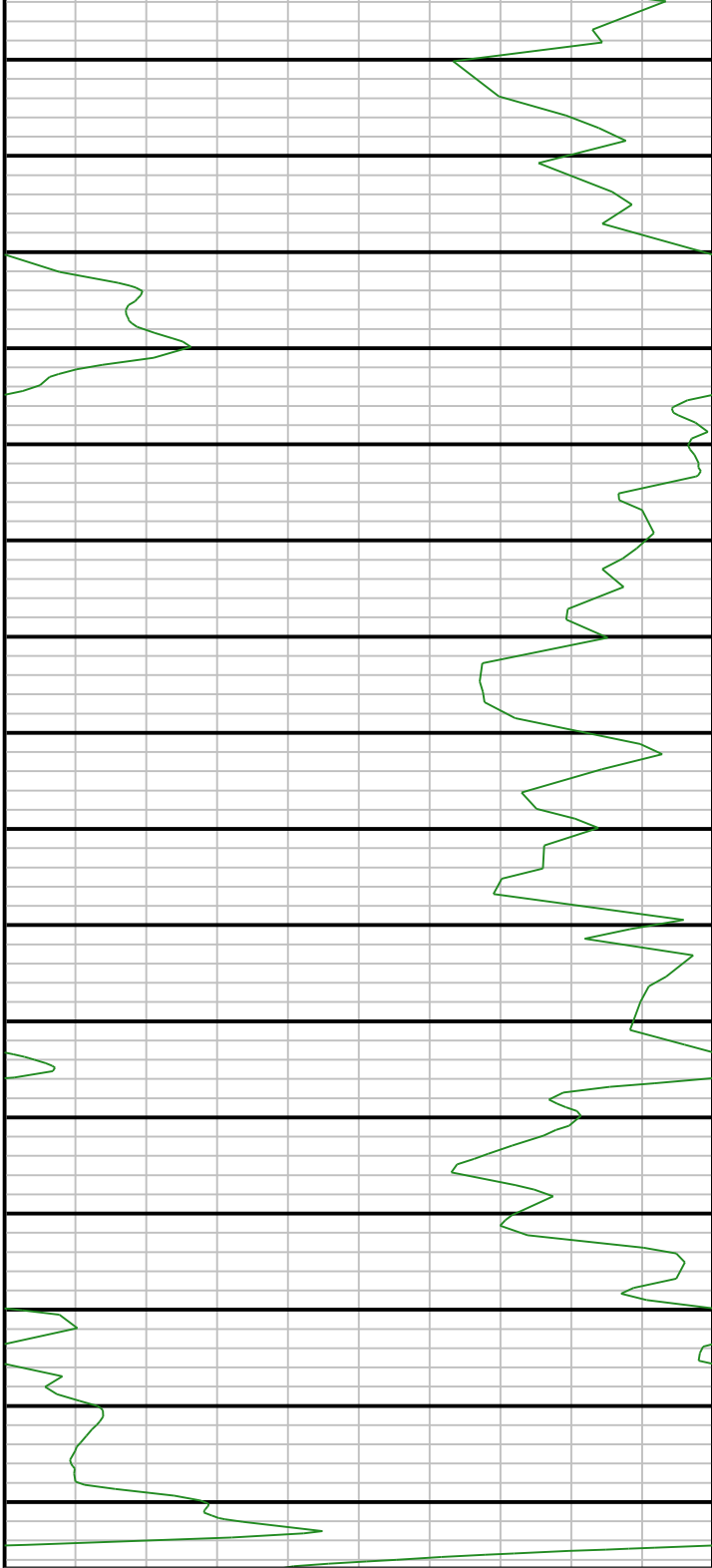
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Gamma		Gama
0	AAPI	150
Gamma		Gama
150	AAPI	300
Gamma		Gama
300	AAPI	450
Gamma		Gama
450	AAPI	600