


<div></div> <div>PHOENIX TECHNOLOGY SERVICES</div>		MD 1:240 Feet	
		MWD Gamma / ROP (5")	
Client: Whiting Oil and Gas			
Well Name: Razor #12 0105A			
API/UWID: 001		Field: Wildcat	
County: Weld			
Permit #: 01			
State: Colorado		Country: USA	
Longitude: 103° 49' 4.50073 W Latitude: 40° 51' 16.77612 N		Personnel	
Rig Name: Unit 409 Job Number: 1524095 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: 59.0 °F Log Start Depth: 0.00 ft Log End Depth: 13590.00 ft		Company Representative Kenny Wilkerson Geologist Directional Driller(s) Makrk Gentry Chris Ewing Brandon Davis MWD Operator(s) Larry Seebeck Jason DuBose	
Comments: -		Main Leg	
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Operational Run Summary

1524095

	Run 1	Run 2	Run 3	Run 4	Run 5	
Run Start Depth (ft)	0.00	1895.24	6091.38	6445.93	9882.21	
Run End Depth (ft)	1895.24	6091.38	6445.93	9882.21	13582.09	
Run Start Date	11/3/2015	11/5/2015	11/6/2015	11/7/2015	11/8/2015	
Run Start Time	8:17 PM	4:13 PM	12:22 PM	3:45 PM	7:47 PM	
Run End Date	11/4/2015	11/6/2015	11/7/2015	11/8/2015	11/10/2015	
Run End Time	11:00 PM	10:02 AM	3:21 AM	4:52 PM	12:39 PM	

Tool Information Summary

1524095

	Run 1	Run 2	Run 3	Run 4	Run 5	
Gamma Probe Serial No		G0111	G0616	G0109	G0275	
Probe Cal Ratio	1	1.4	1.38	1.52	1.51	
Gamma Scale Factor	1	8.948	8.82	4.097	4.024	
Tool Carrier ID (in)	2.750	2.750	2.750	2.688	2.688	
Tool Carrier OD (in)	8.000	6.500	6.500	4.630	4.630	
Survey-to-Bit (PTB) (ft)	56.86	54.28	54.28	55.74	56.09	
Gamma-to-Bit (GTB) (ft)	0.00	41.55	41.55	43.01	43.36	
Annular Pressure-to-Bit (APTB) (ft)	0.00	0.00	0.00	0.00	0.00	

Borehole Fluids and Measurements Summary

1524095

	Run 1	Run 2	Run 3	Run 4	Run 5	
Hole Size (in)	13.50	8.75	8.75	6.00	6.00	
Casing Start Depth (ft)	0.00	0.00	0.00	0.00	0.00	
Casing End Depth (ft)	0.00	1877.00	1877.00	6440.00	6440.00	
Casing ID Size (in)	0.000	0.625	0.625	7.000	7.000	

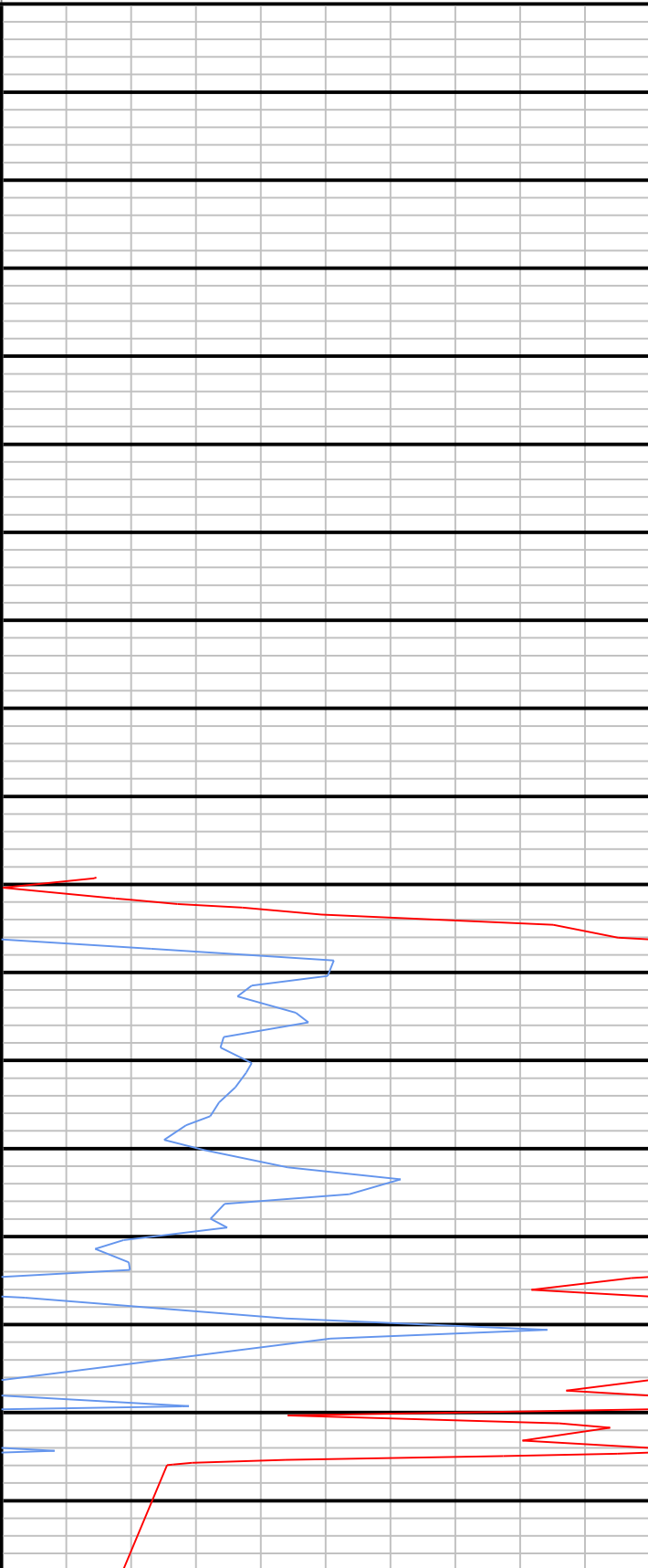
Casing Size (in)	0.000	9.625	9.625	7.000	7.000	
Mud Type	Fresh Water	Water-Based Mud (WBM)	Water-Based Mud (WBM)	Water-Based Mud (WBM)	WBM	
Mud Weight (lb/gal)	8.5	10.5	10.5	10.5	10.5	
Mud Viscosity (s)	30	45	40	40	59	
Weighting Agent	Barite	Barite	Barite	Barite	Barite	
Mud KCL Content (%)	0.000	0.000	0.000	0.000	0.000	

Log

1:240

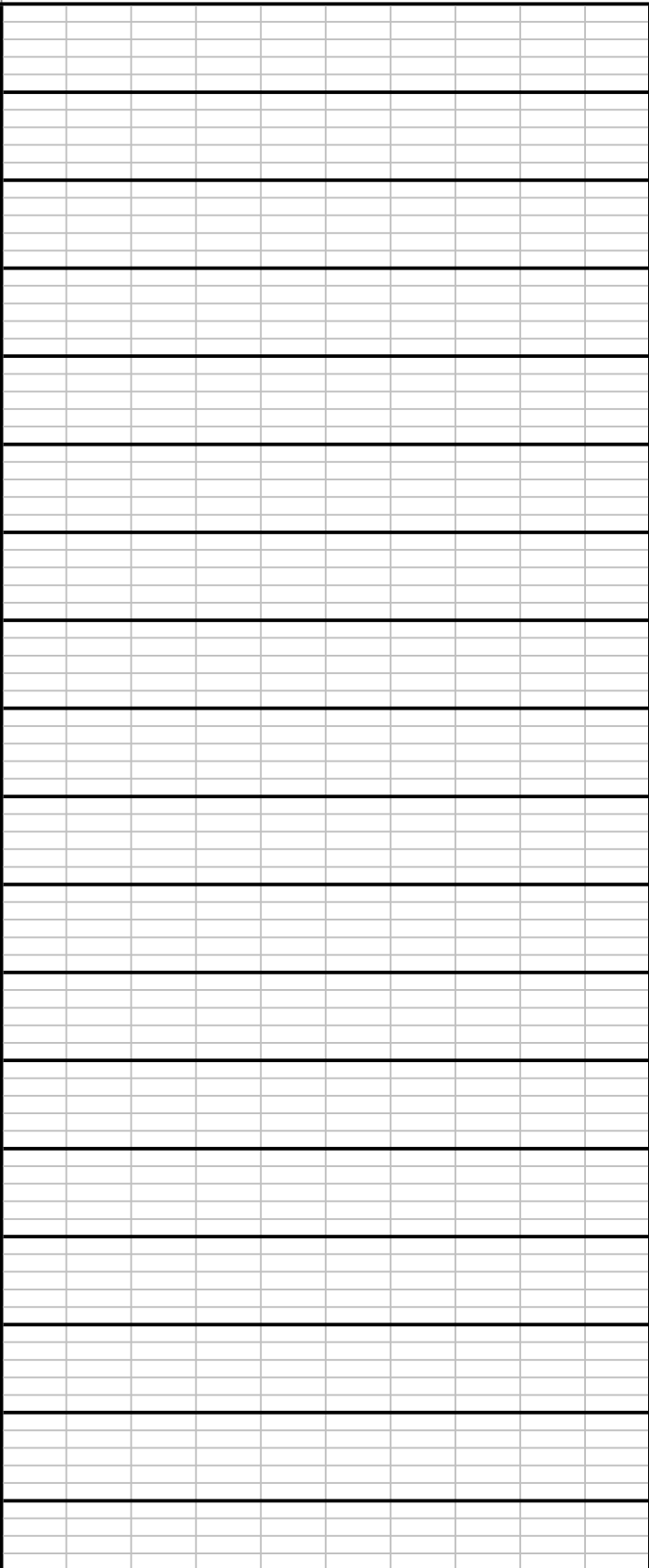
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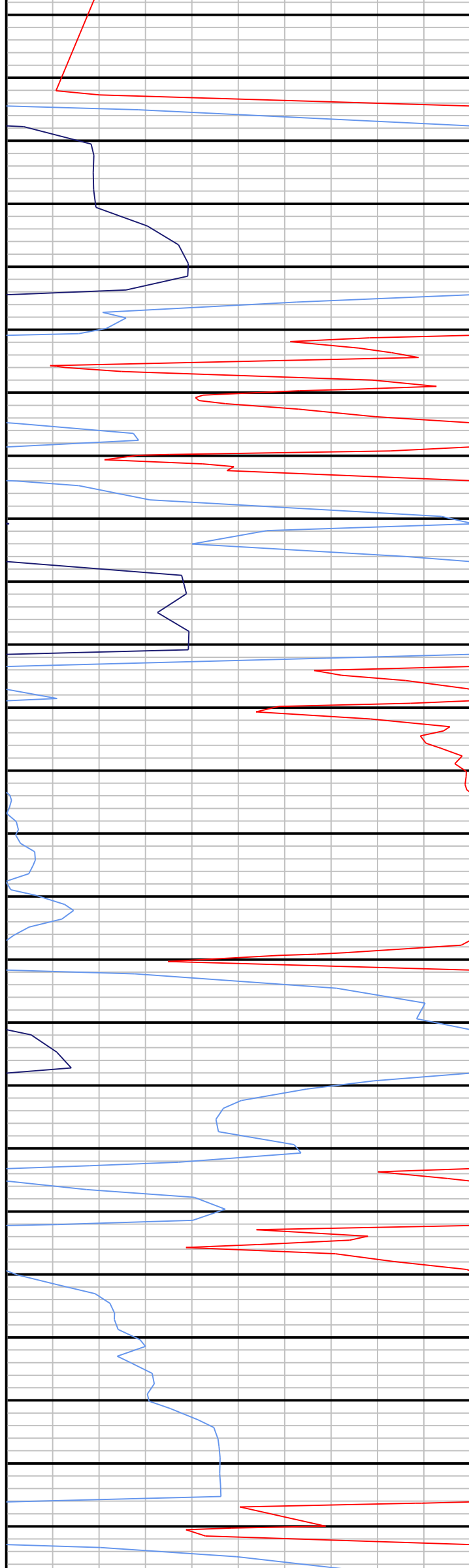
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	ROP	ROP
300	ft/hr	600
	ROP	ROP
600	ft/hr	900
	ROP	ROP
900	ft/hr	1200



	Gamma	Gama
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	Gamma	Gama
150	AAP	300
	Gamma	Gama
300	AAP	450
	Gamma	Gama
450	AAP	600

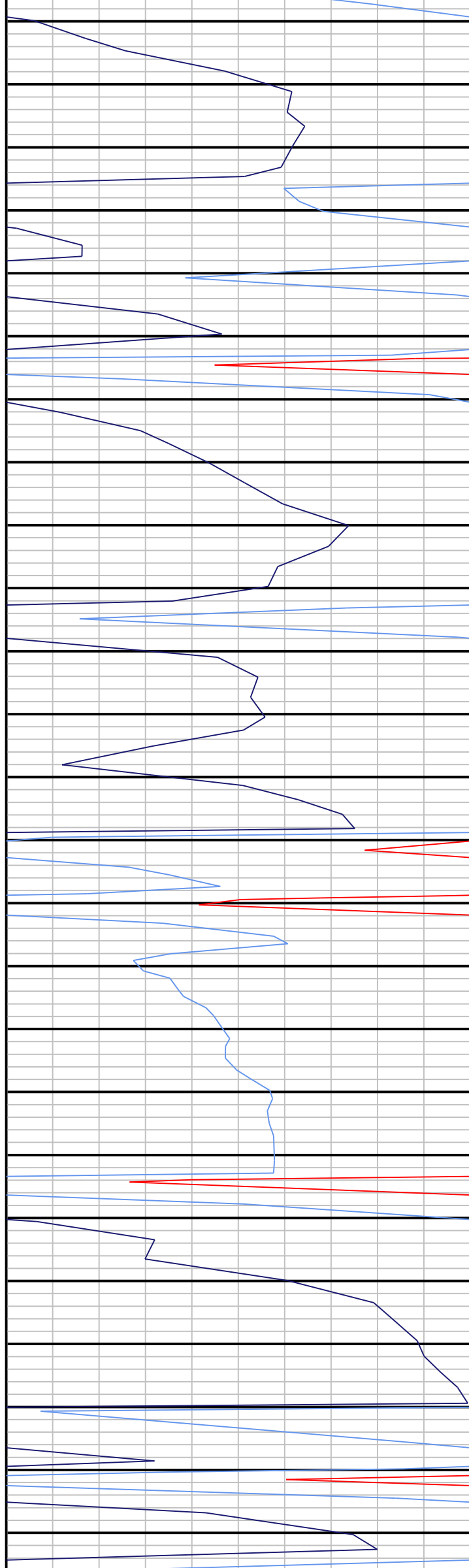
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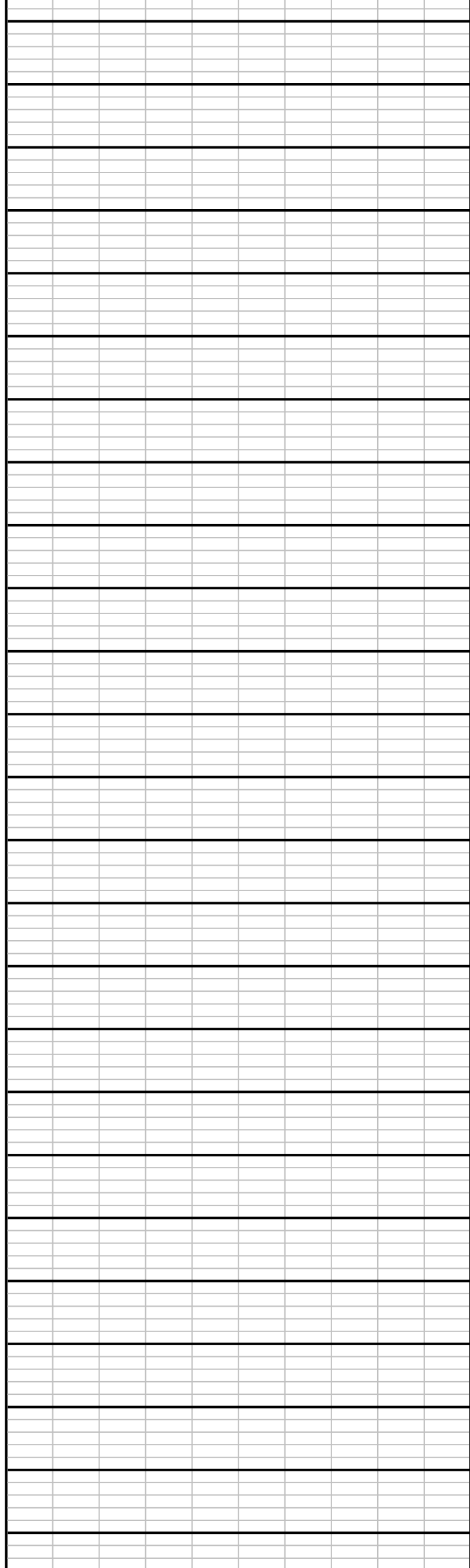
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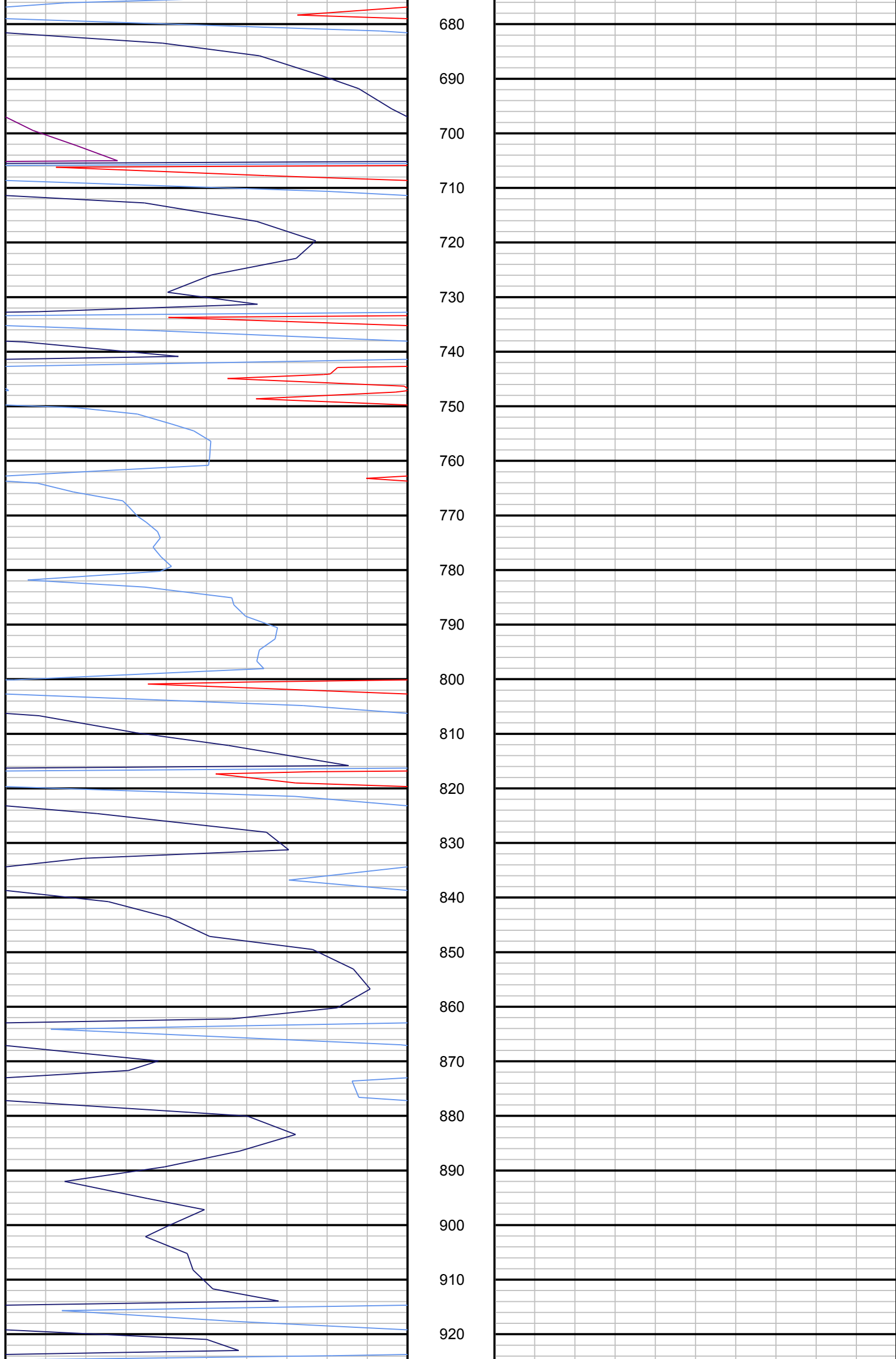
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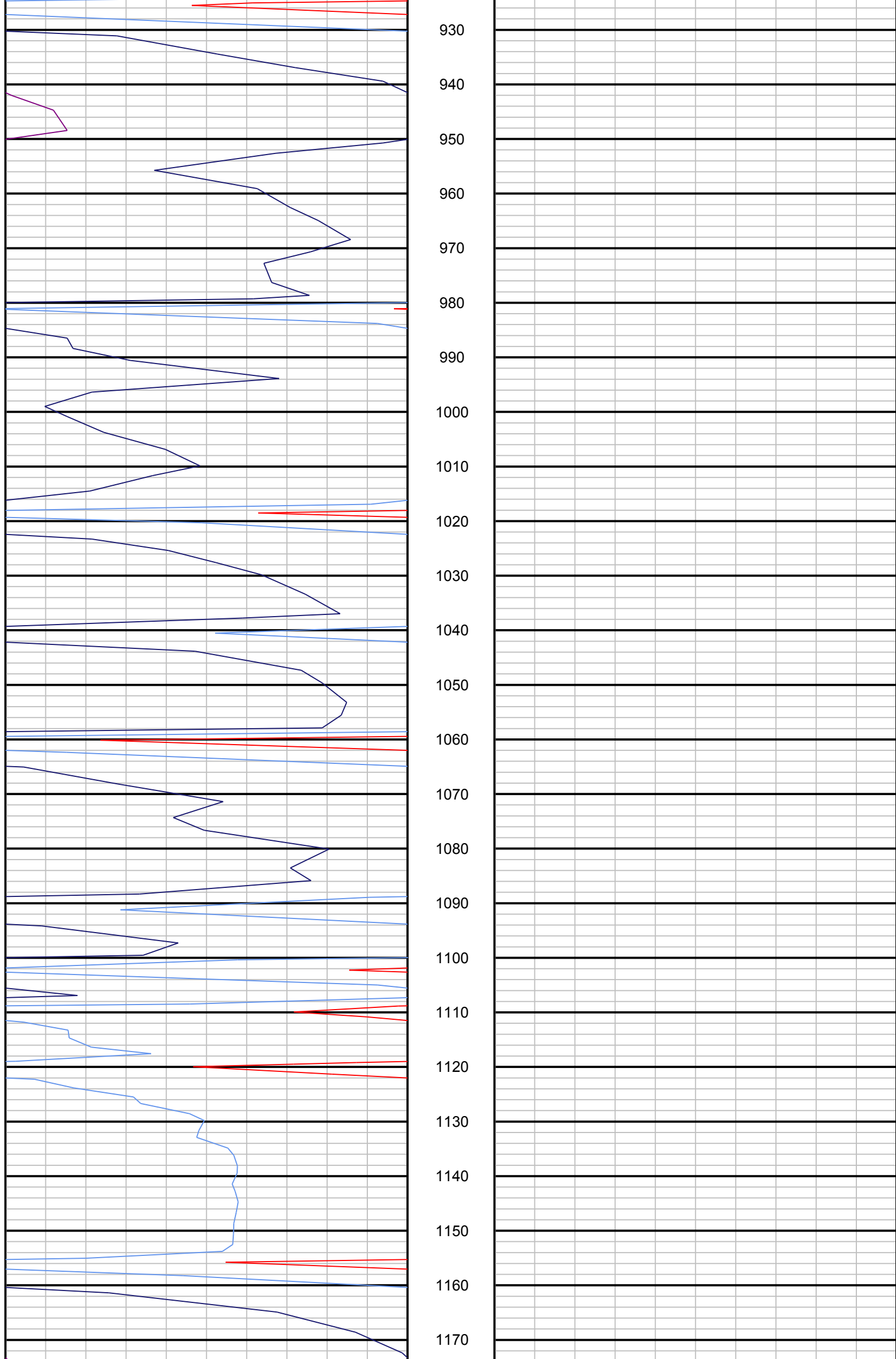
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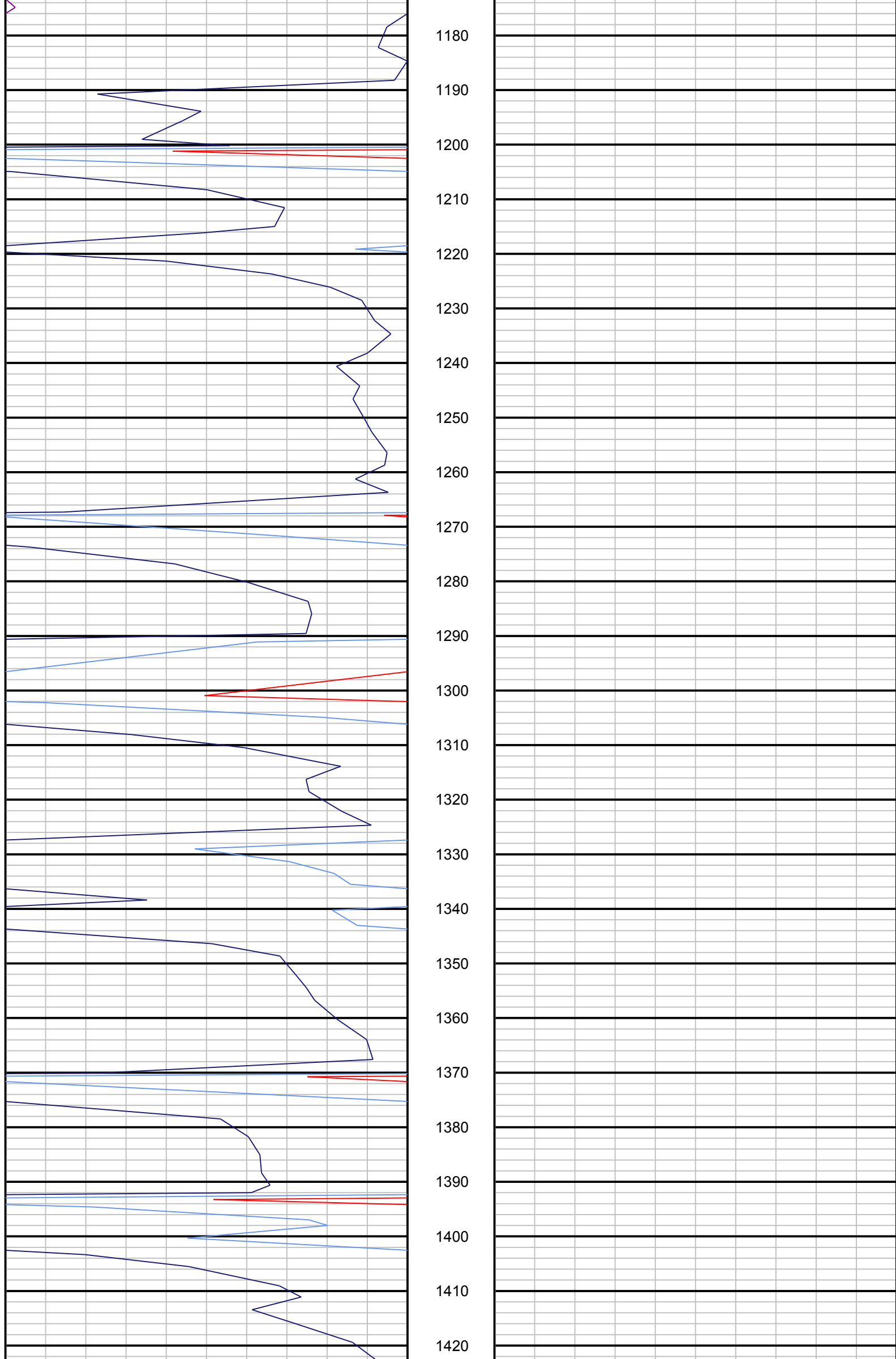
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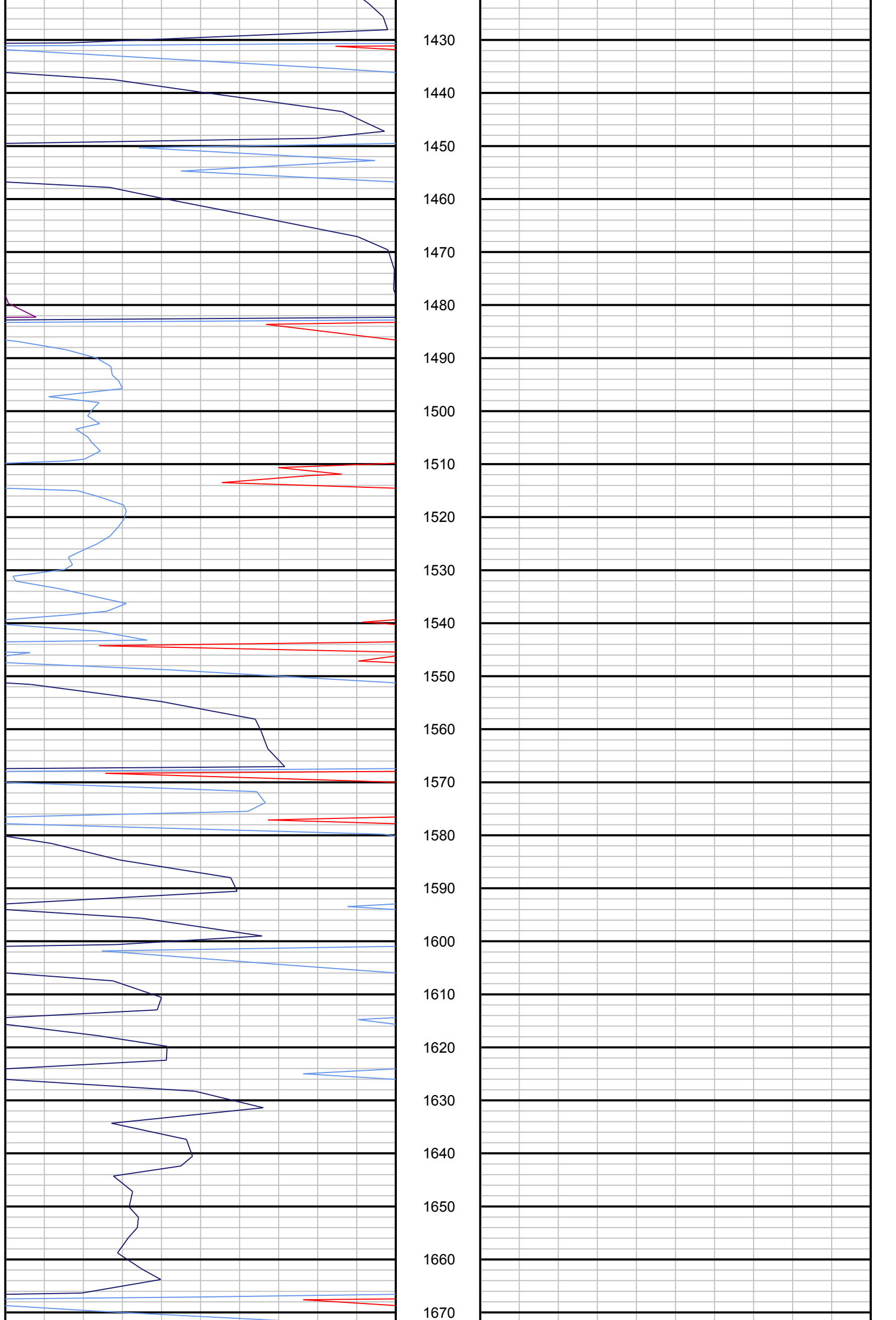
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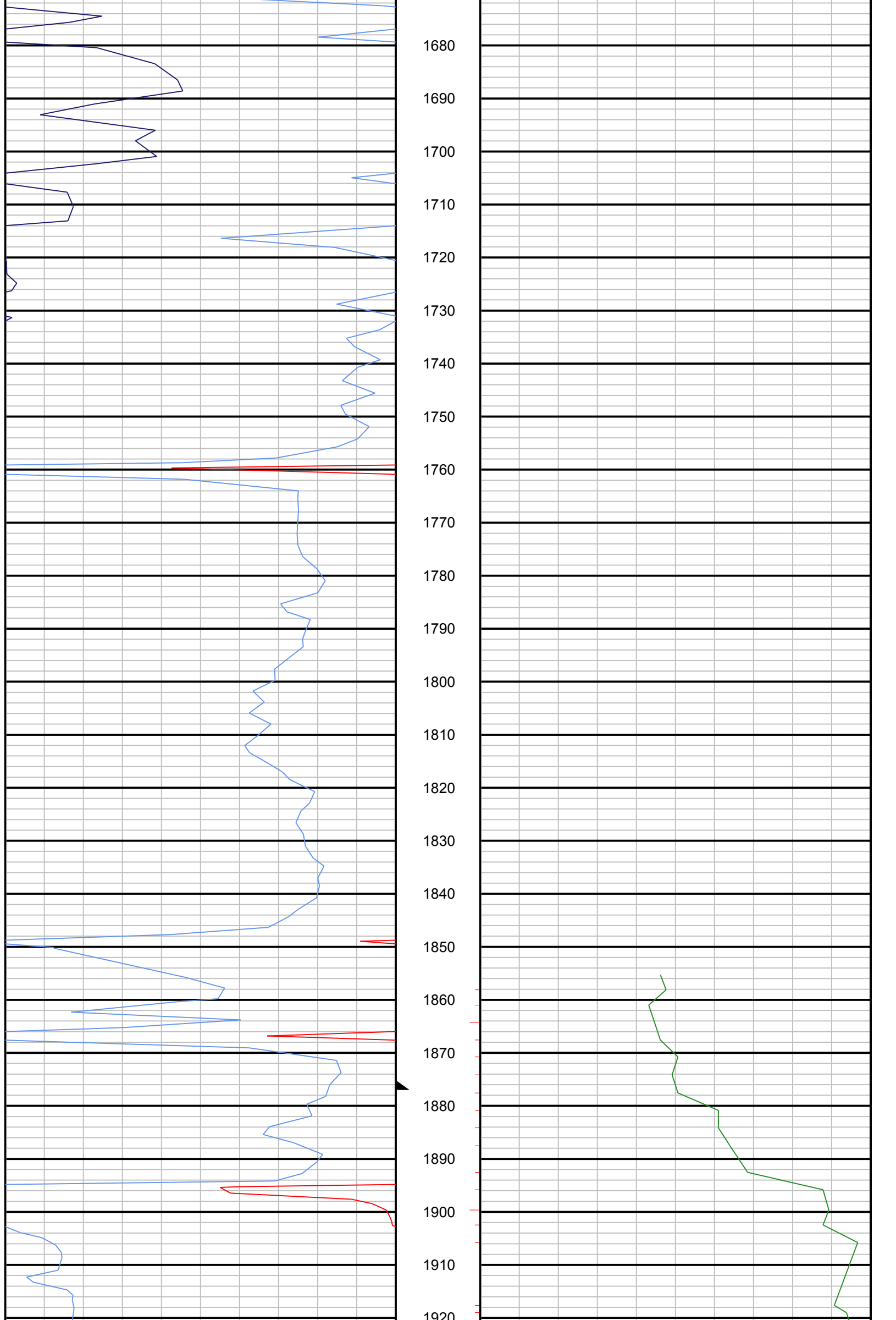


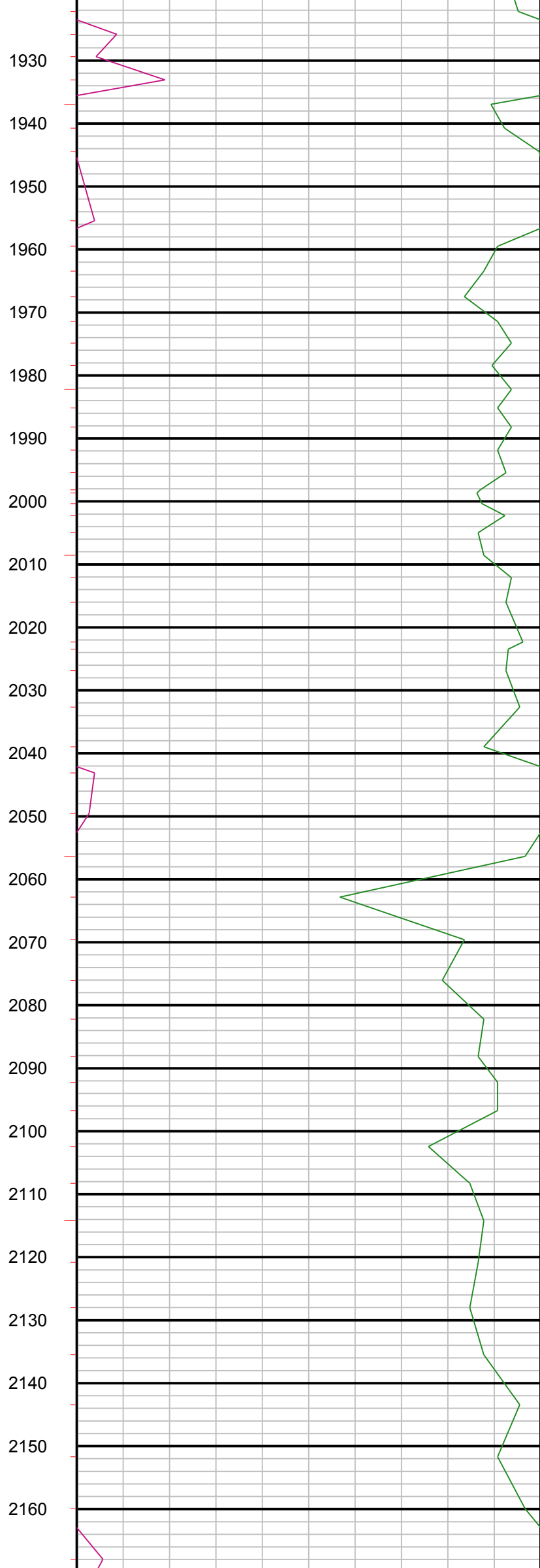
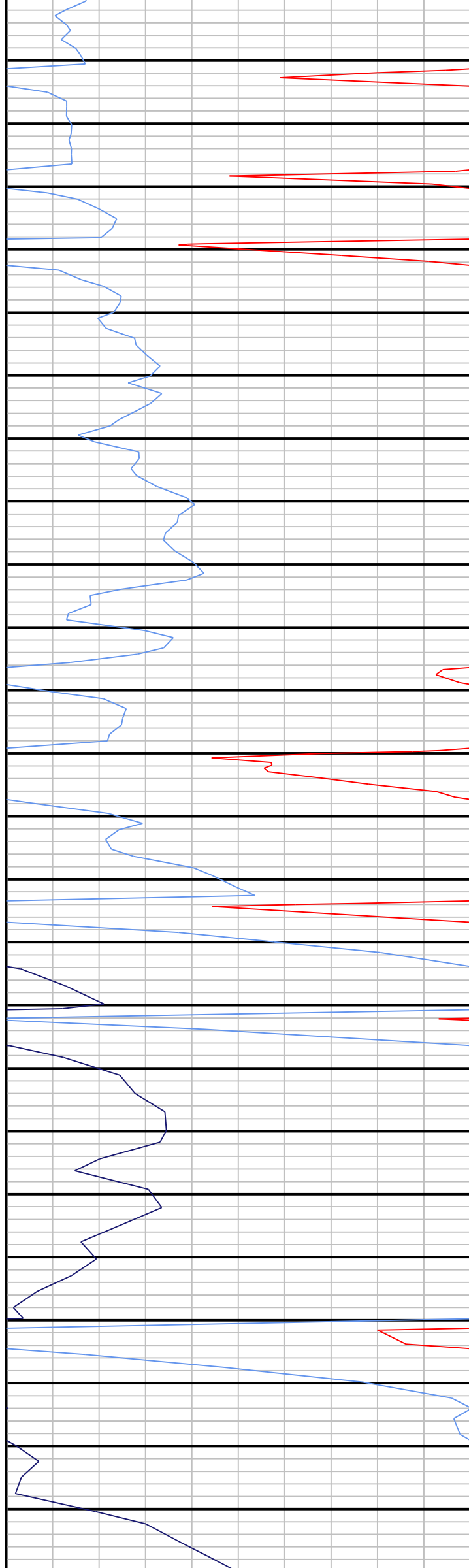


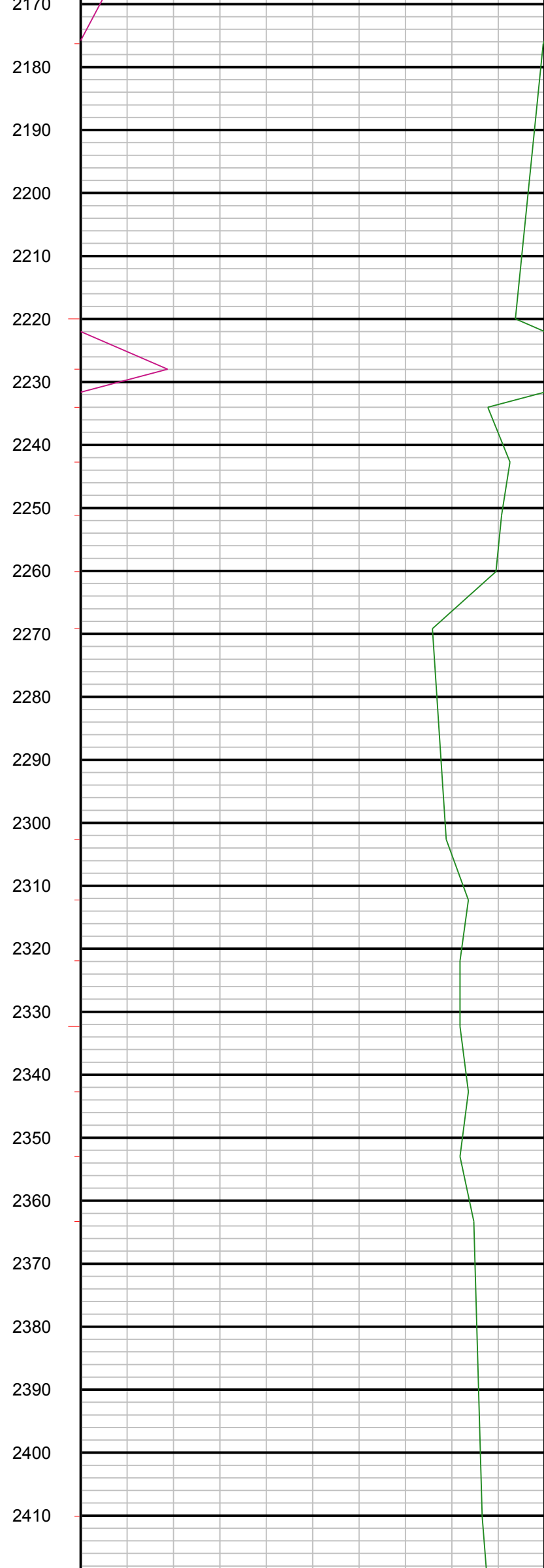
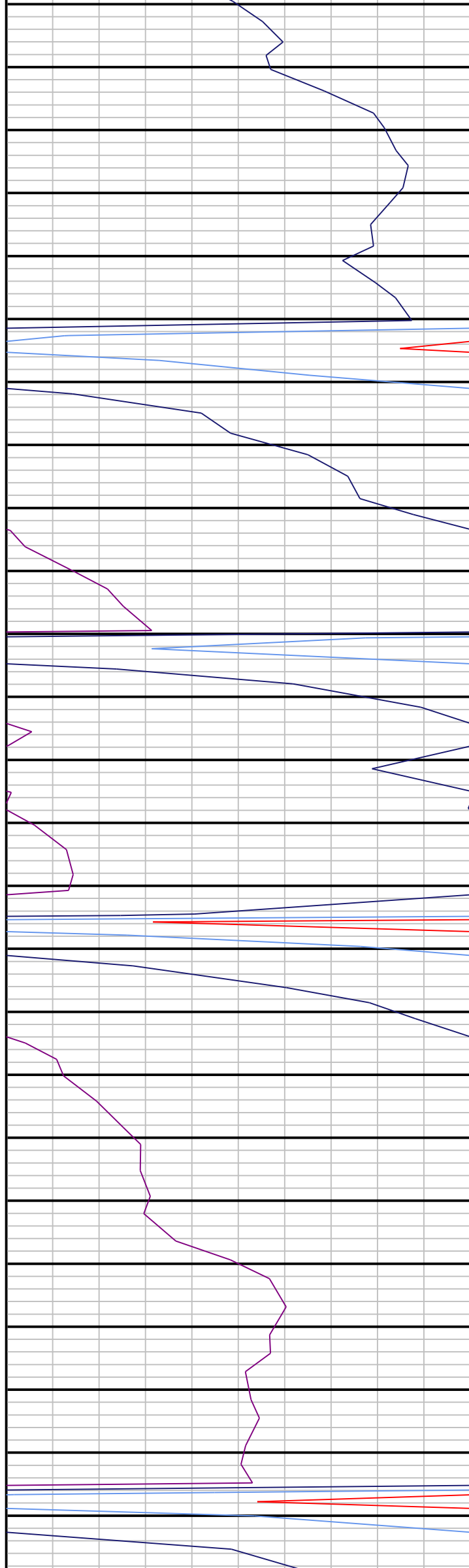


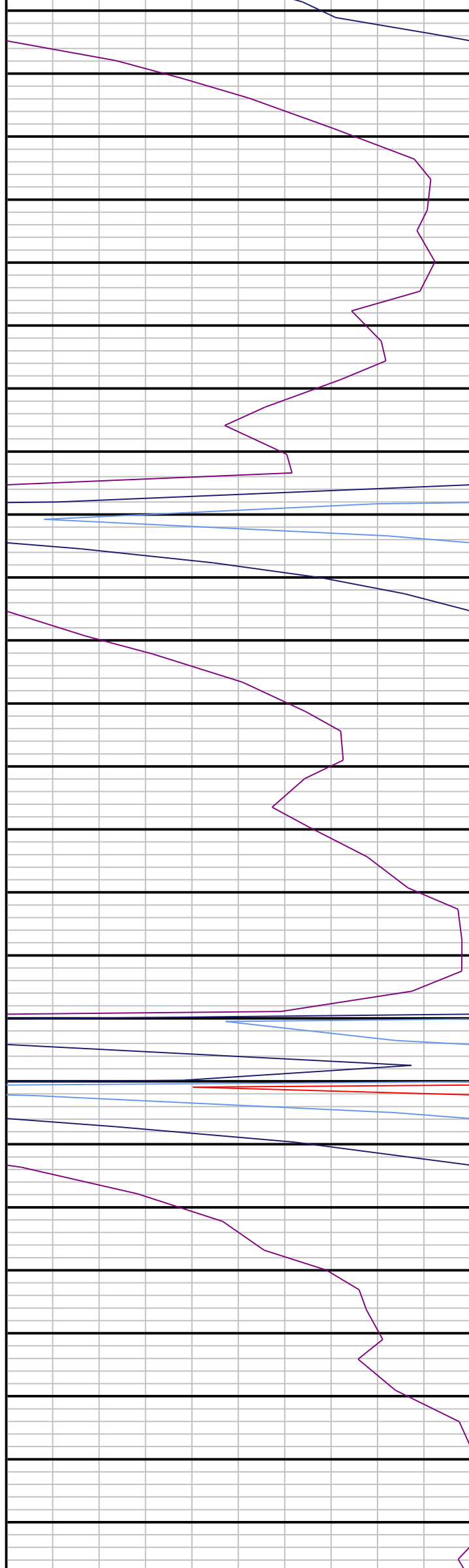




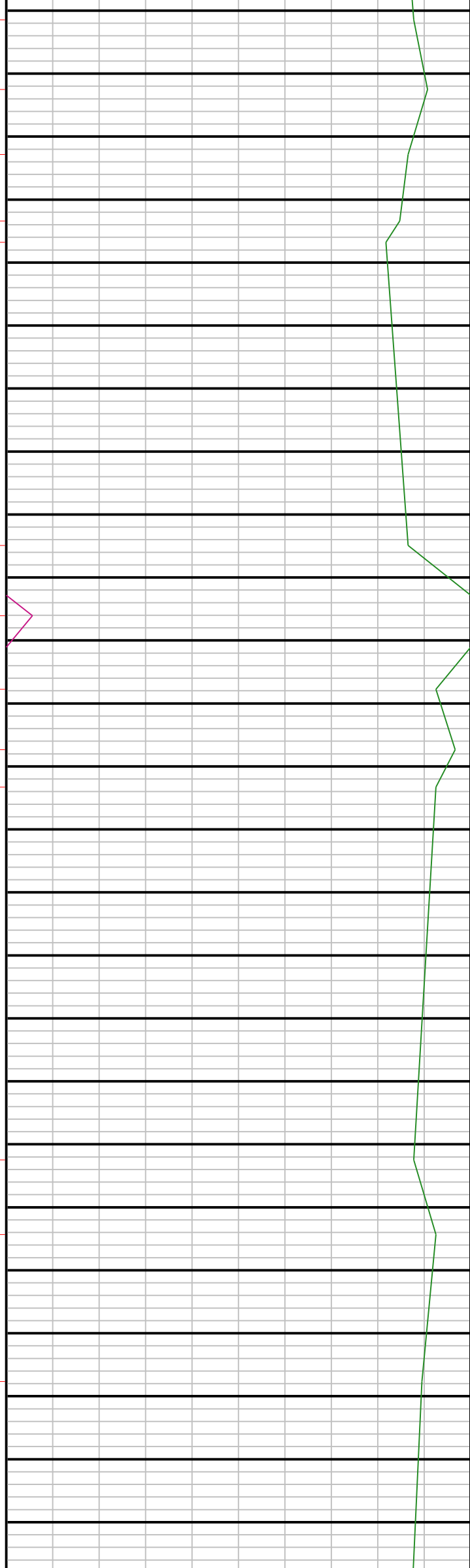


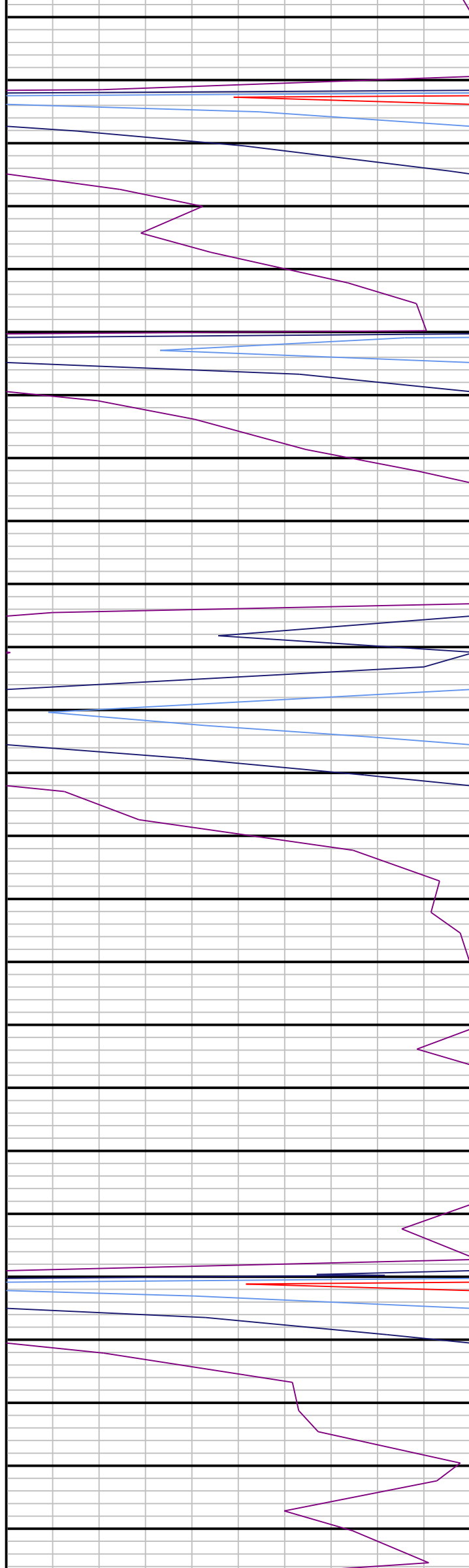




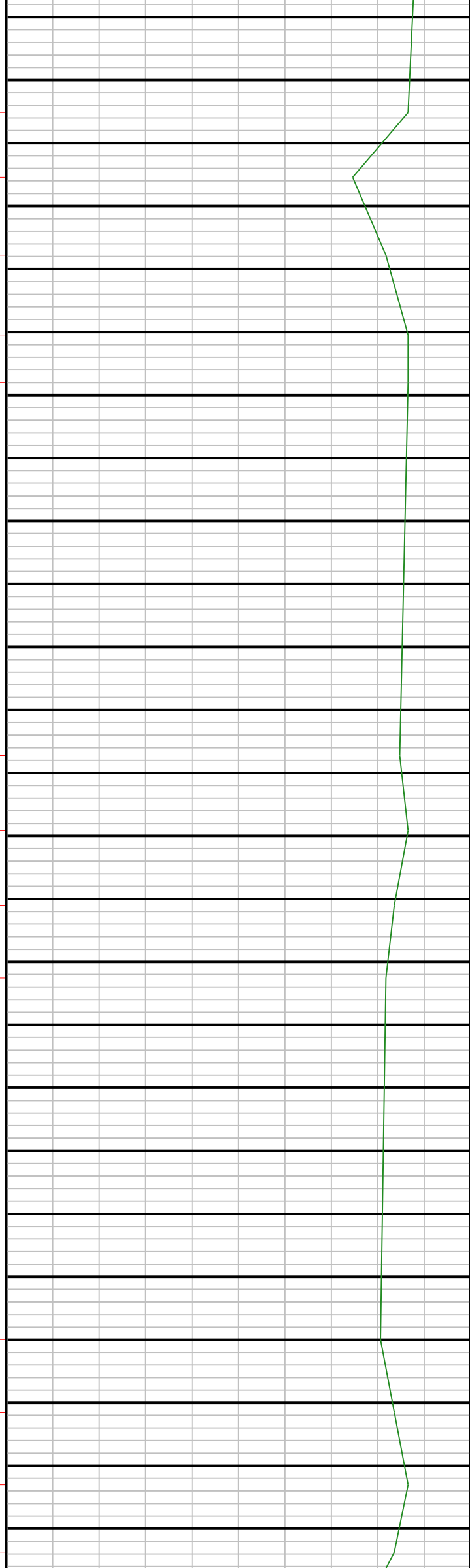


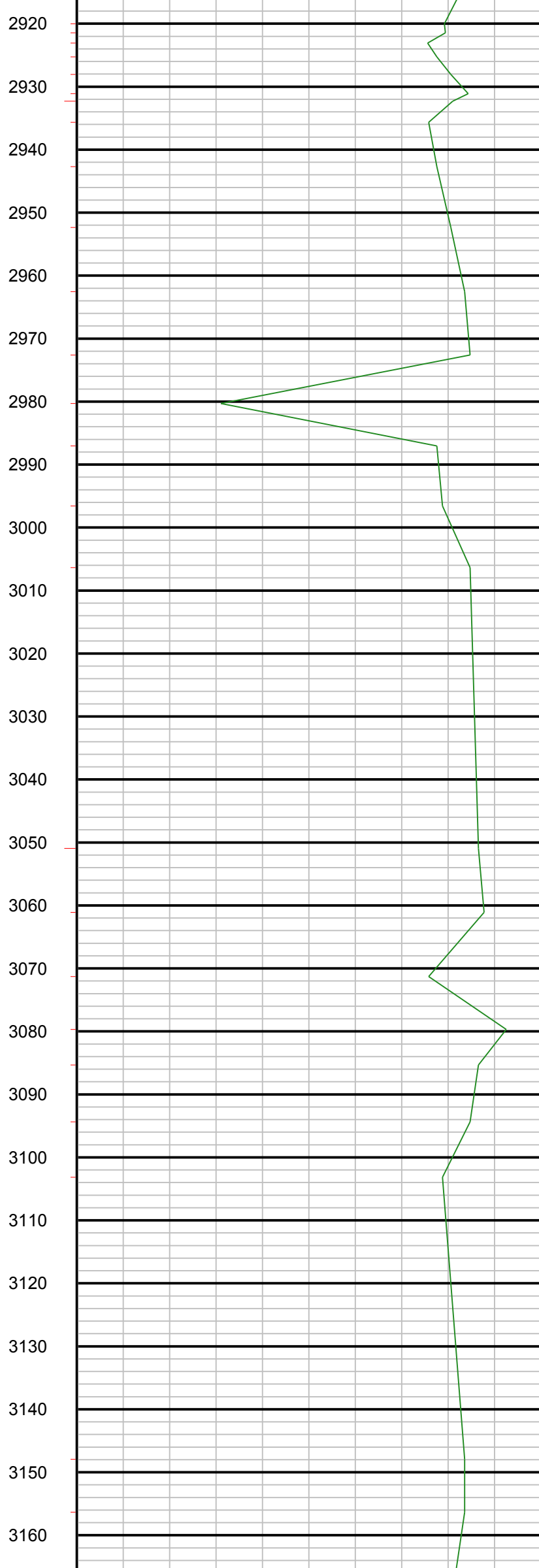
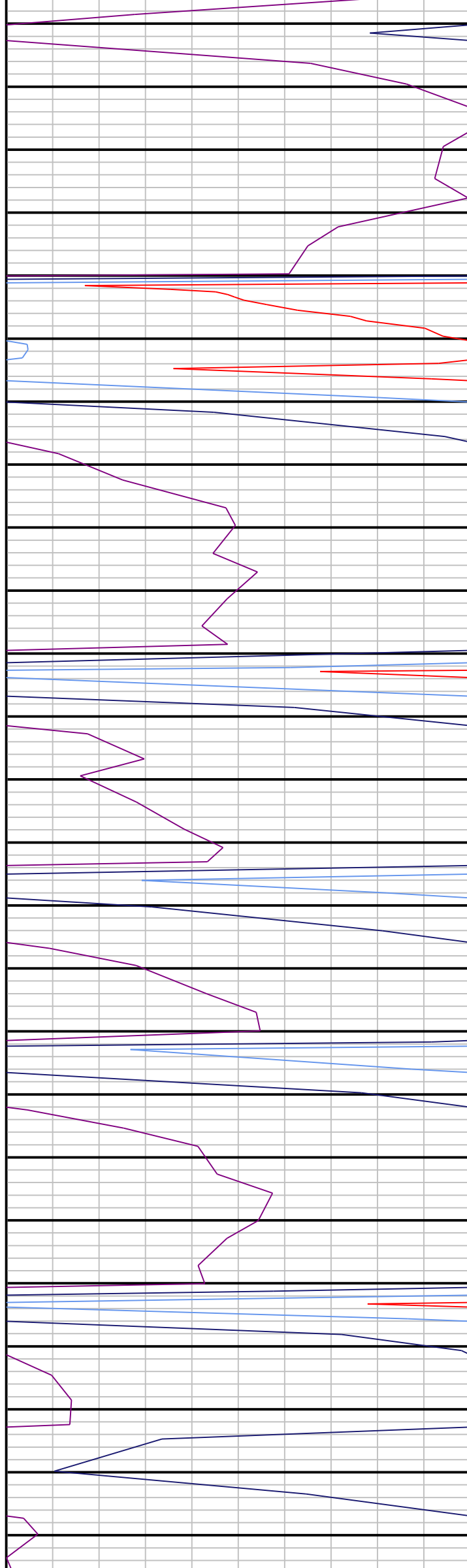
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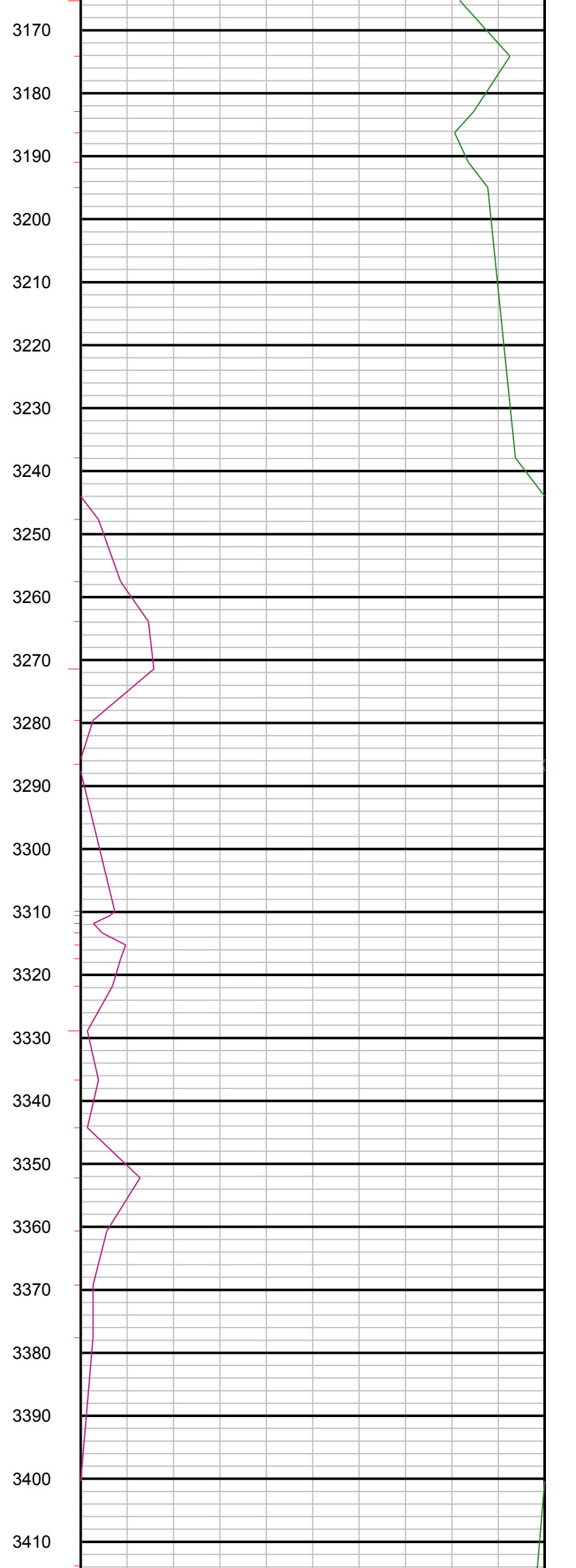
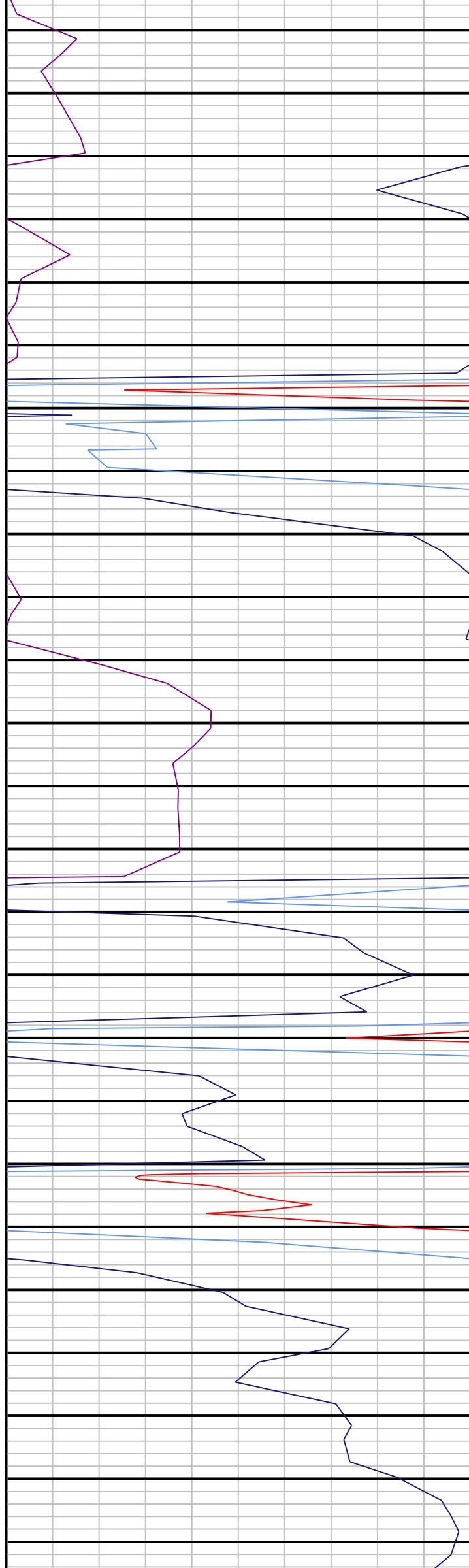


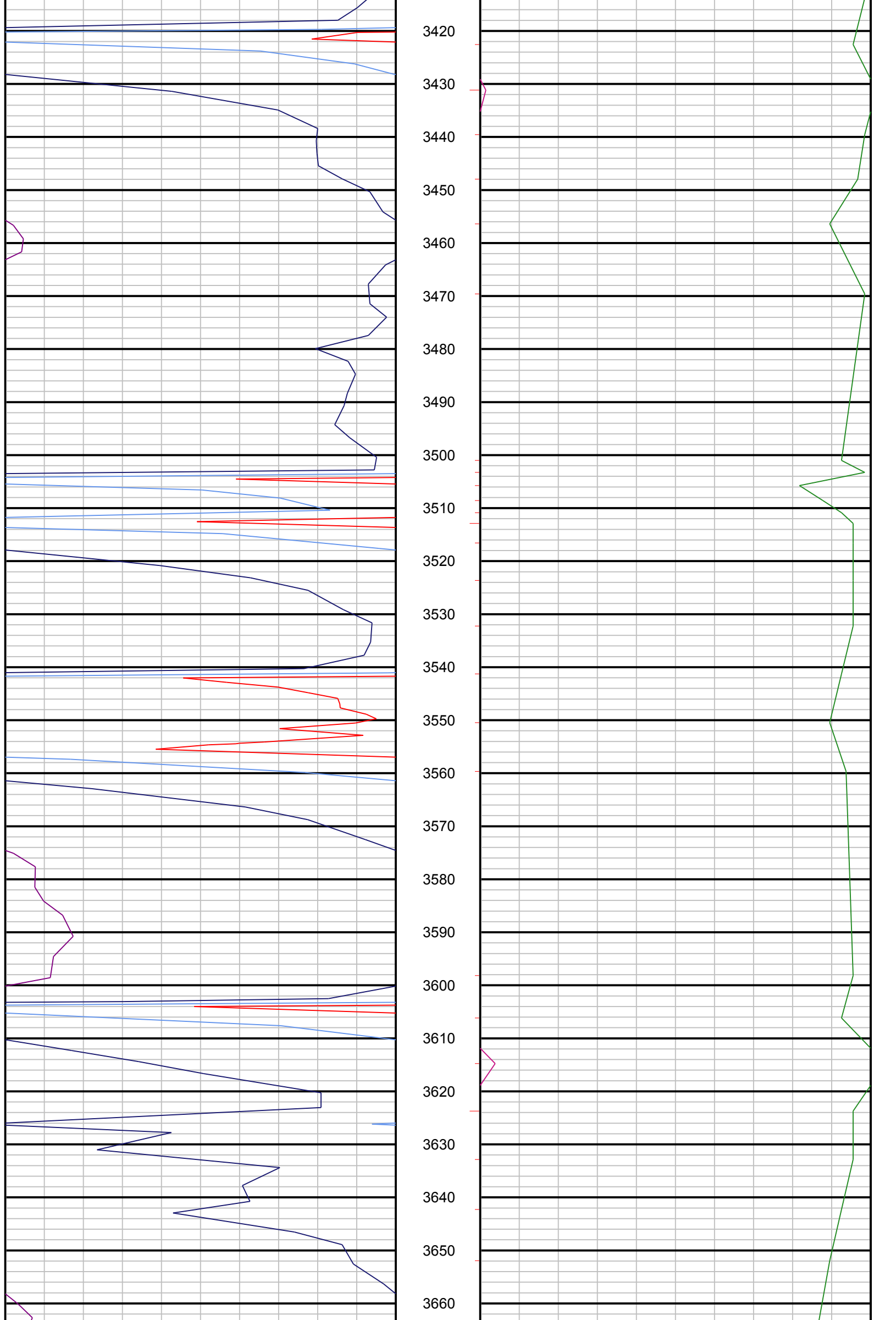


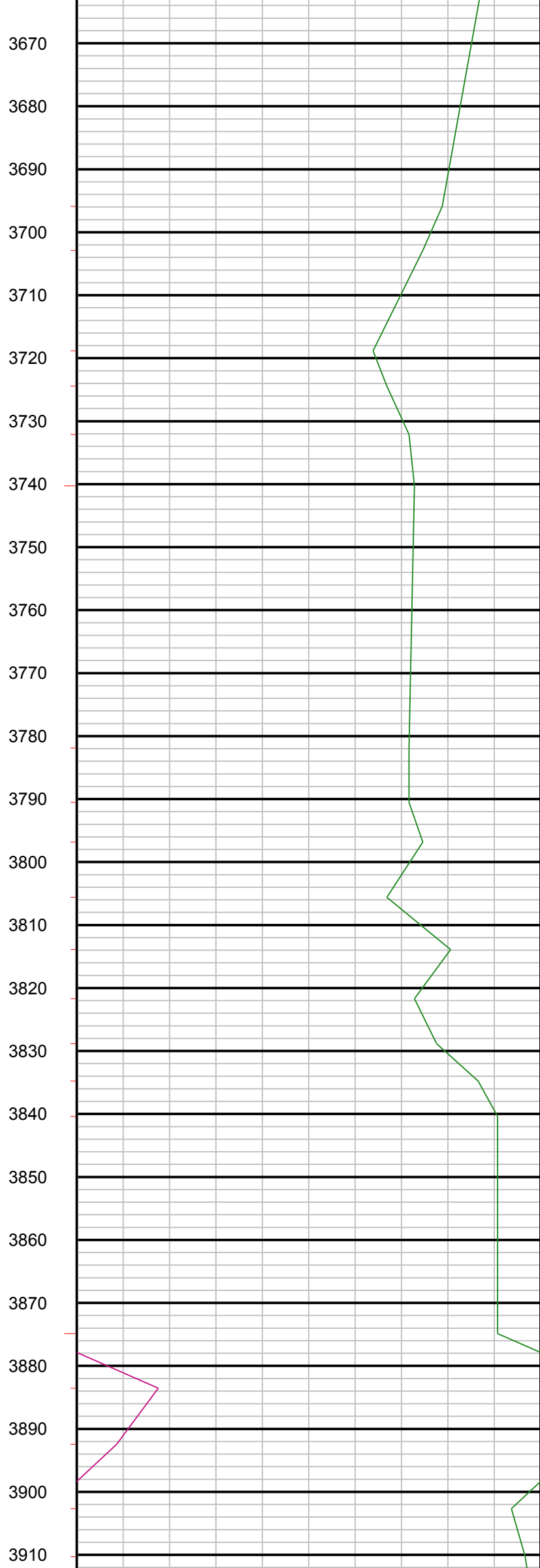
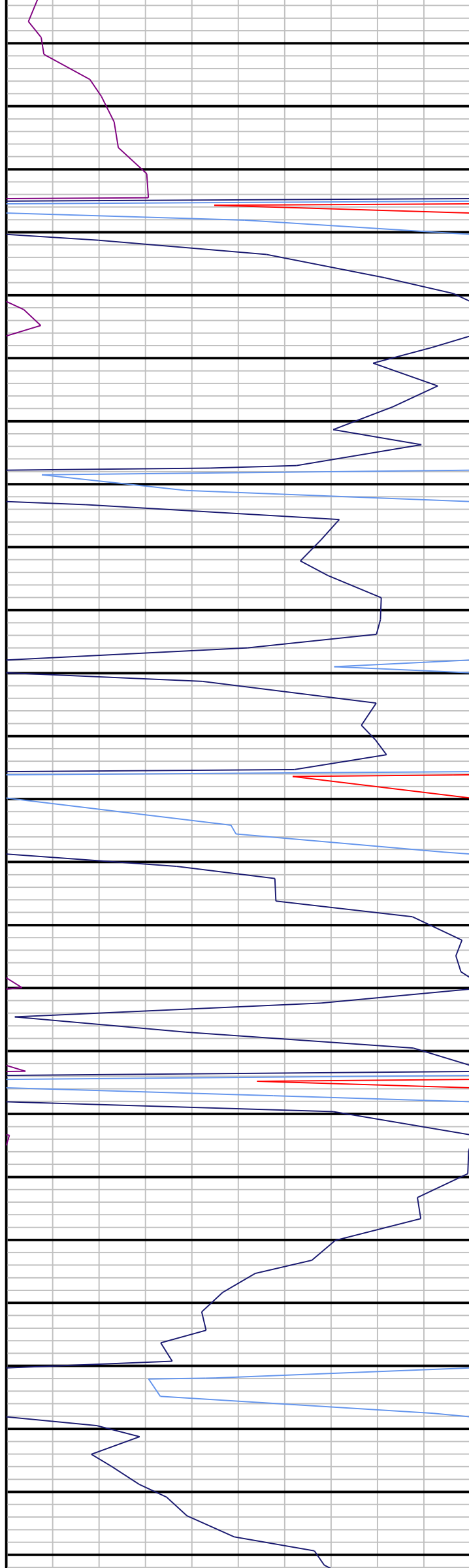
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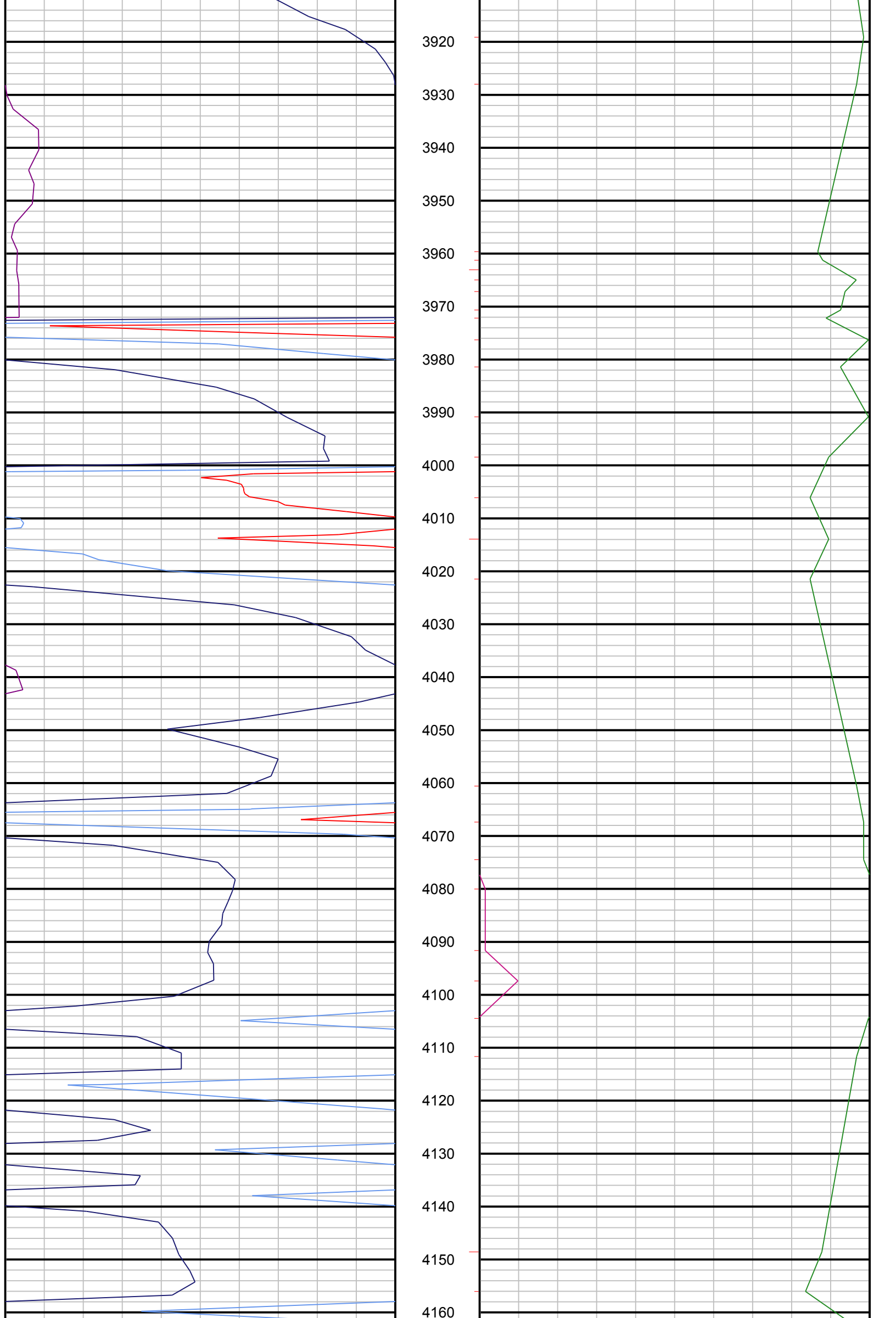


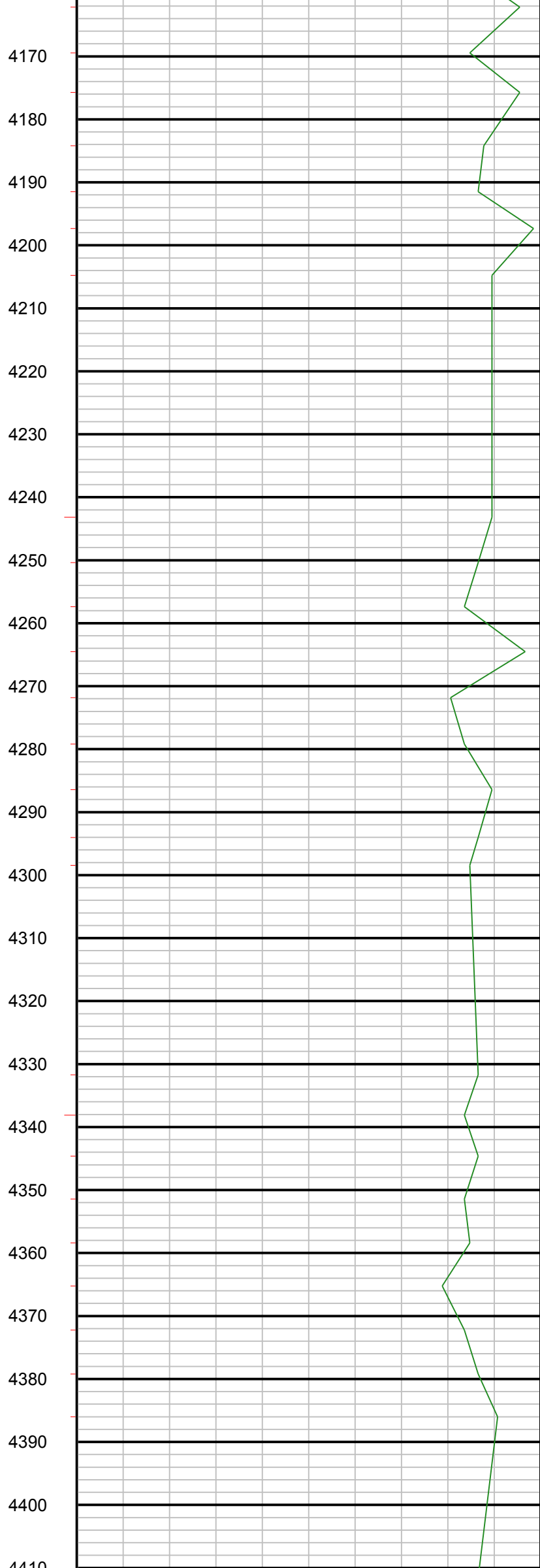


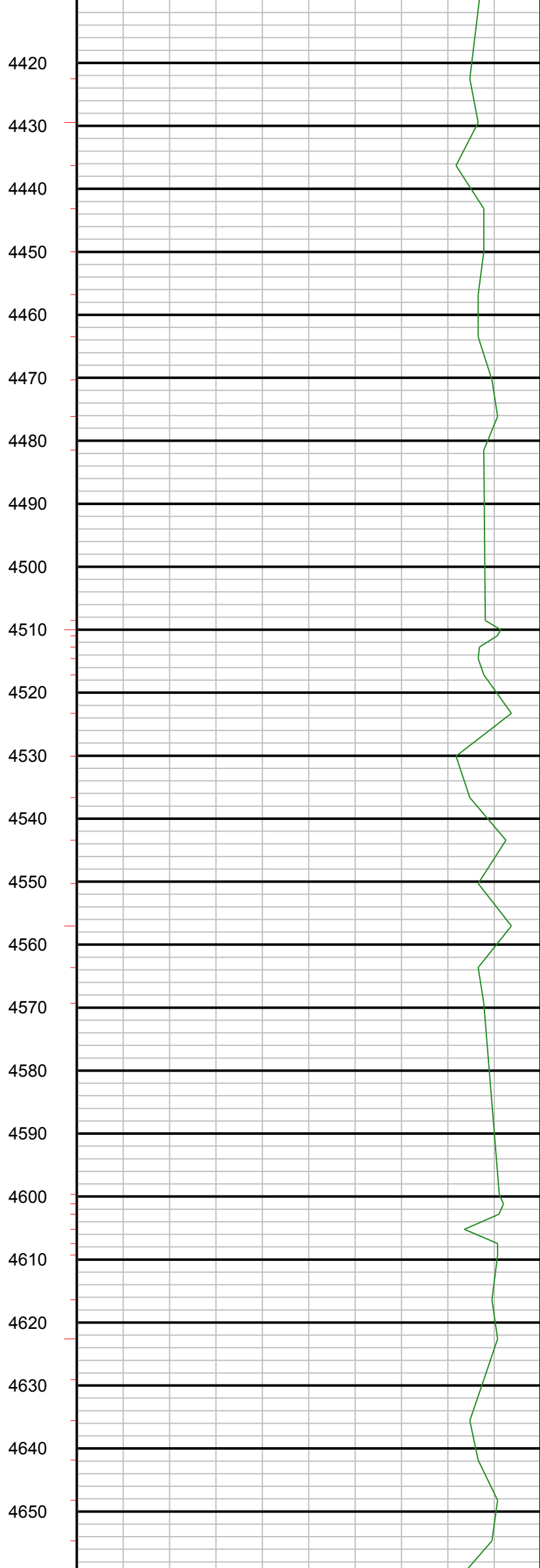
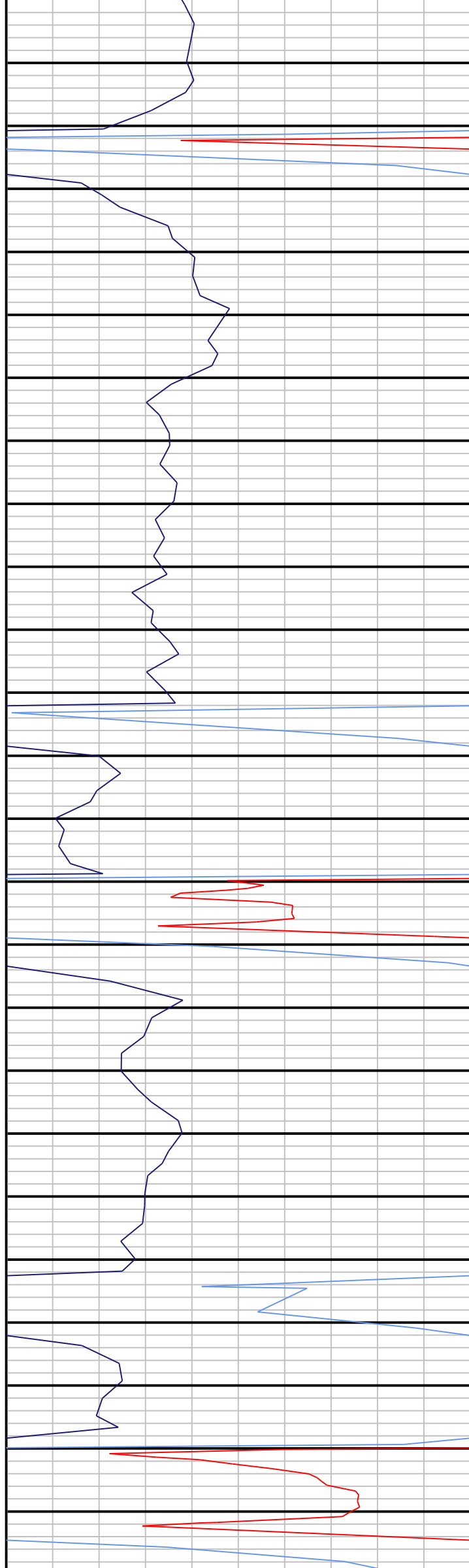


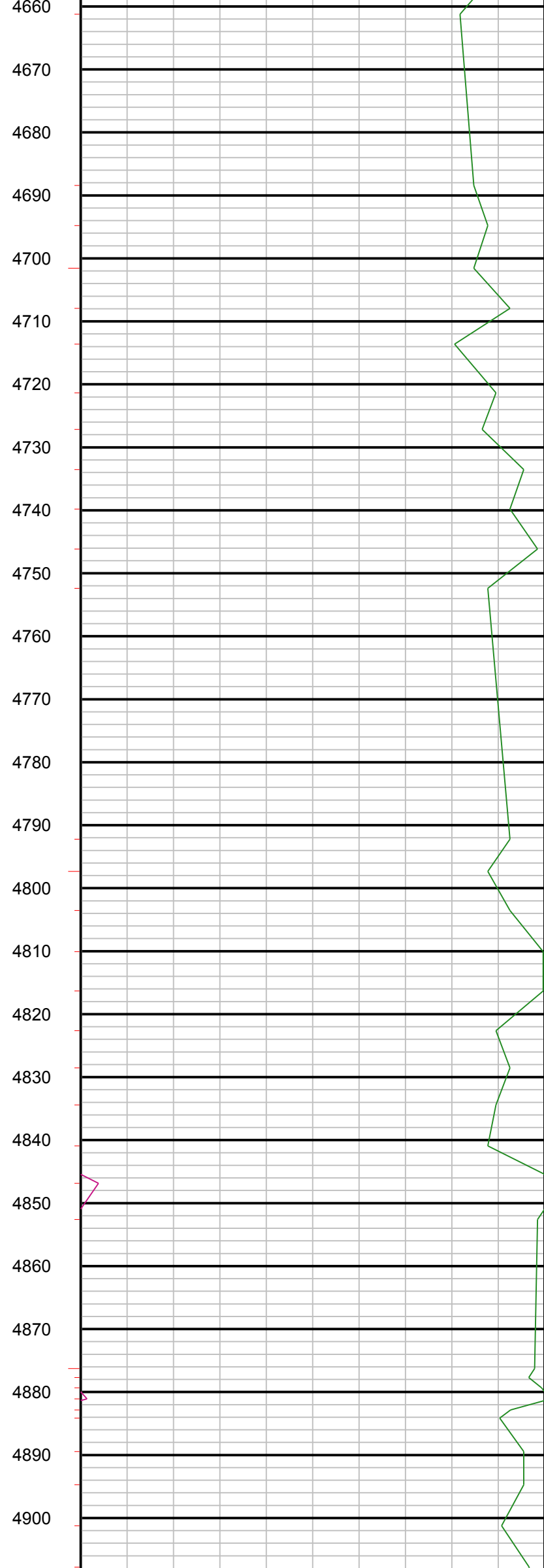
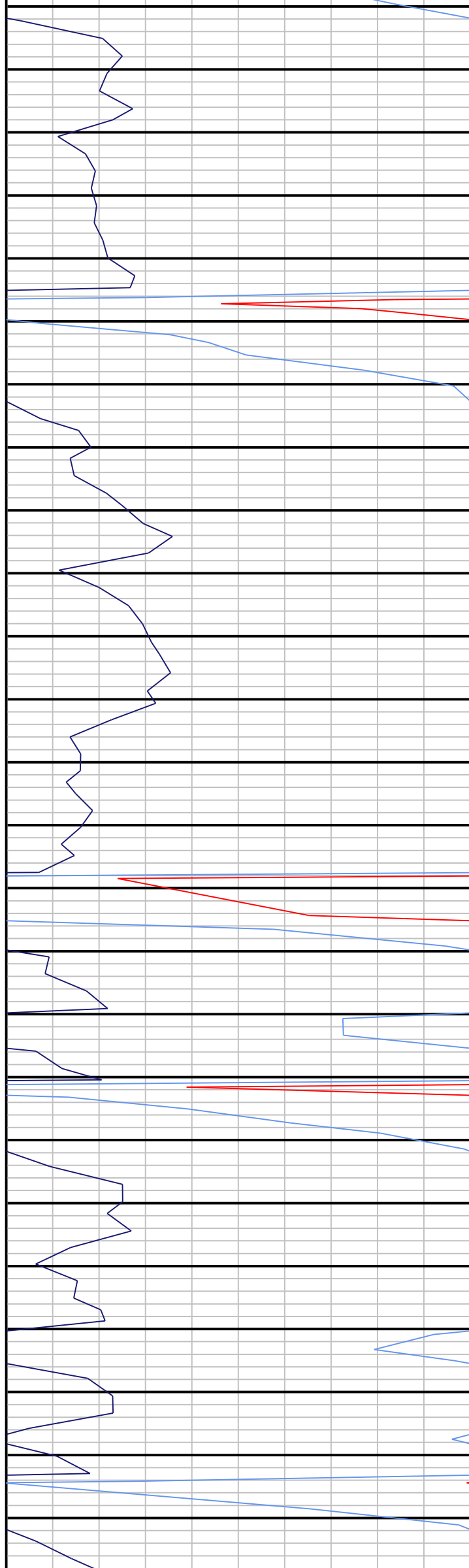


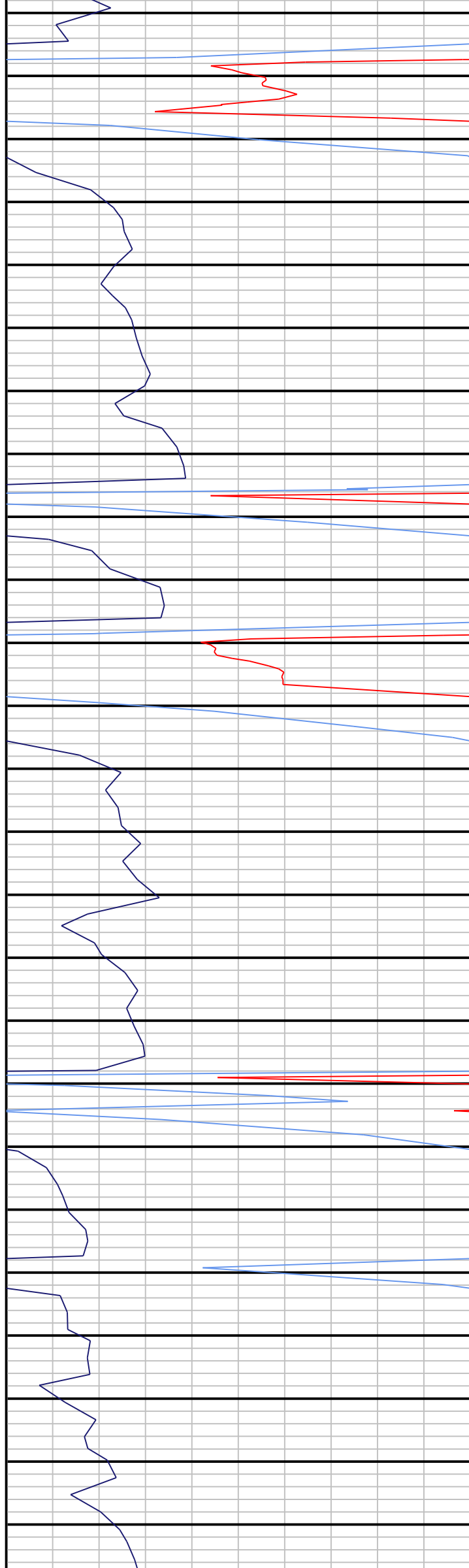




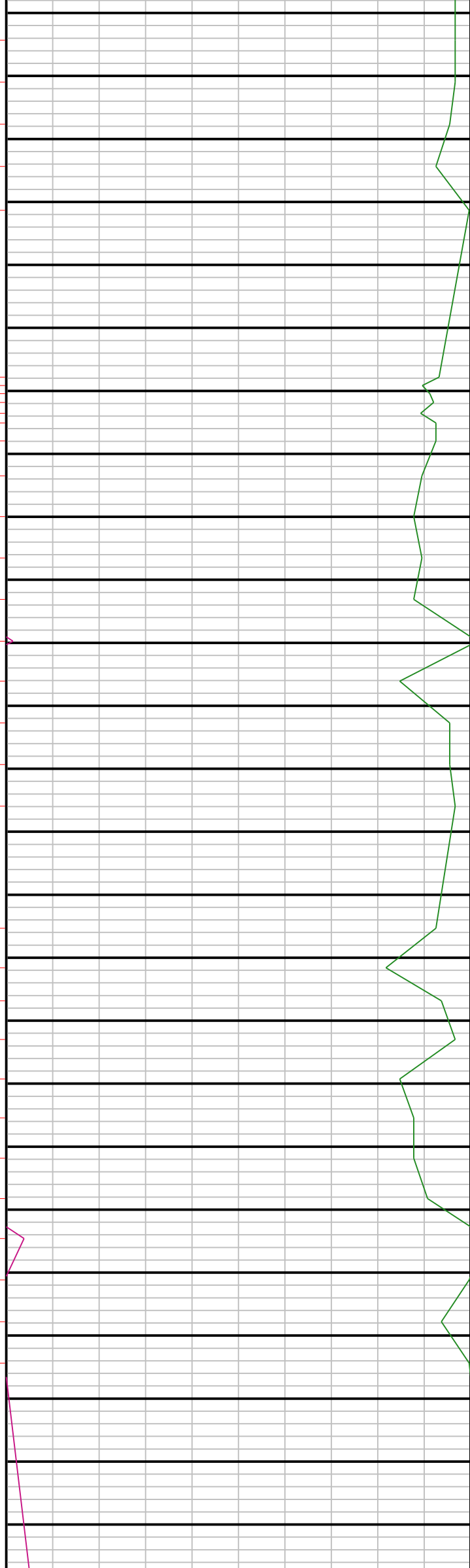


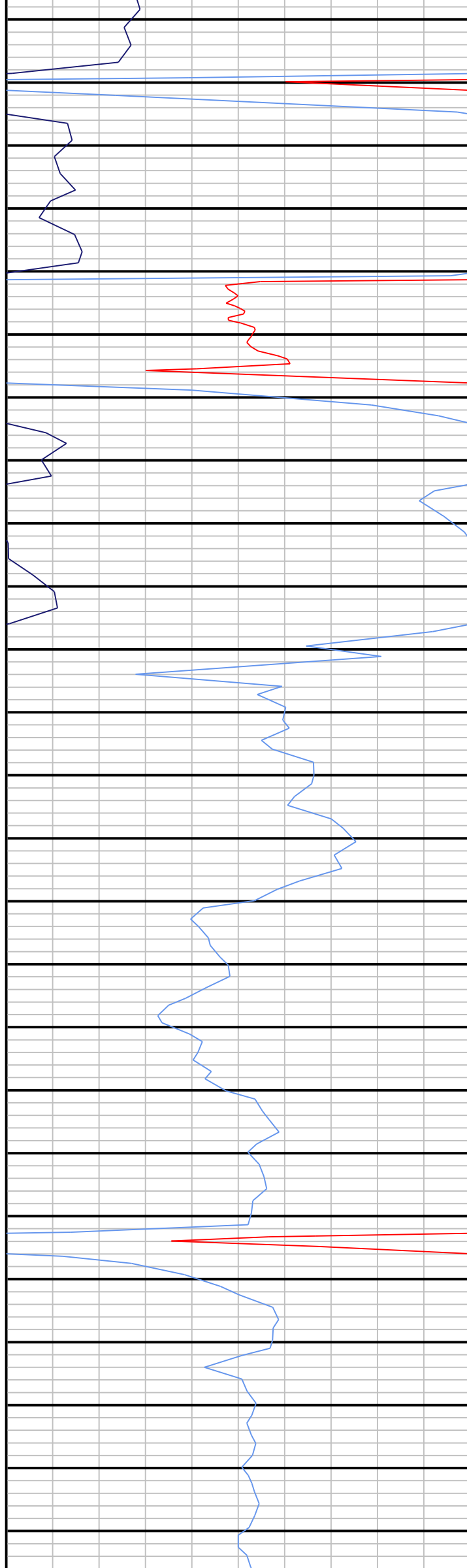




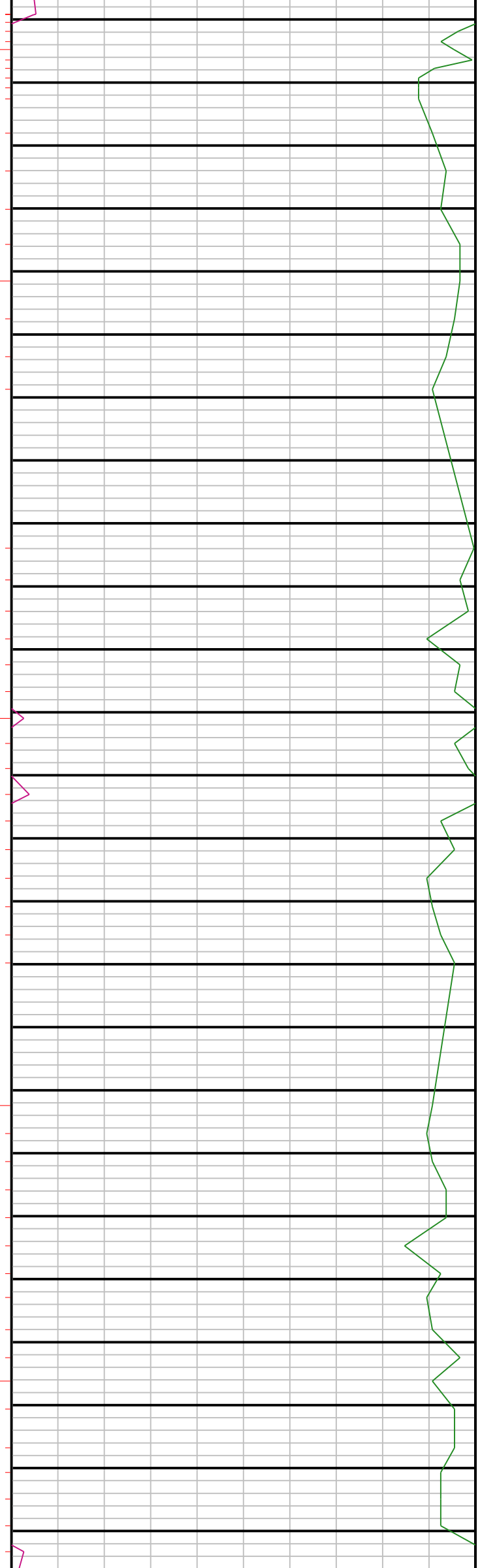


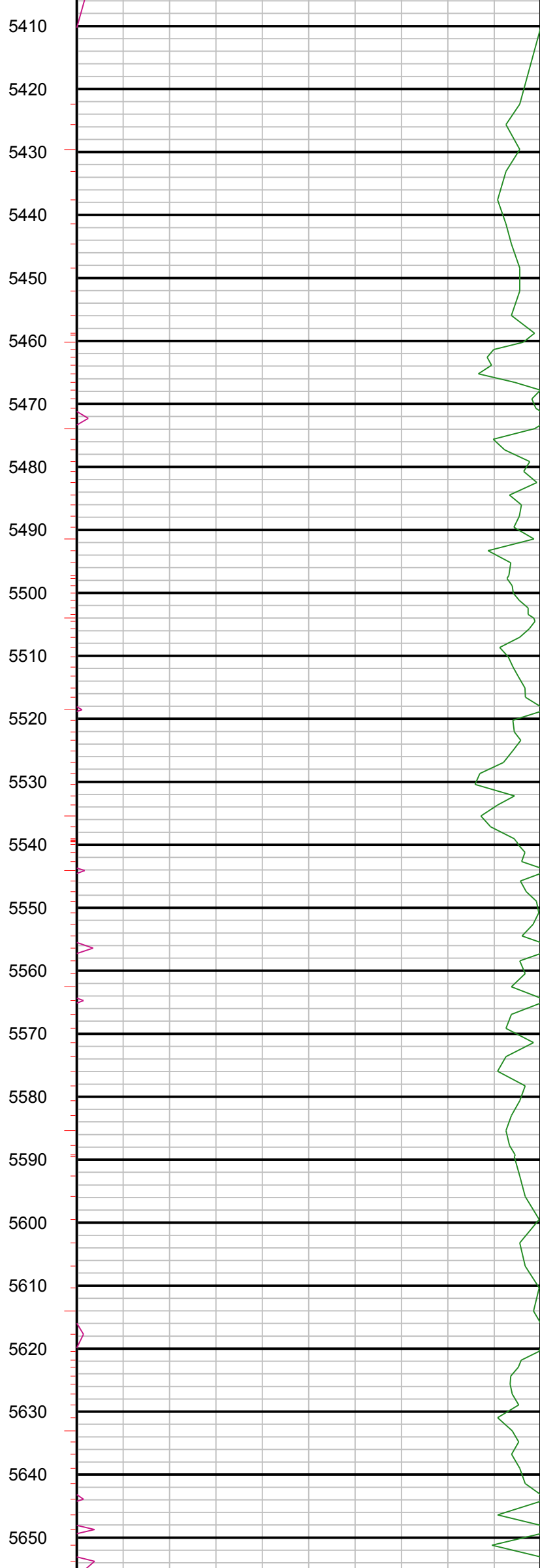
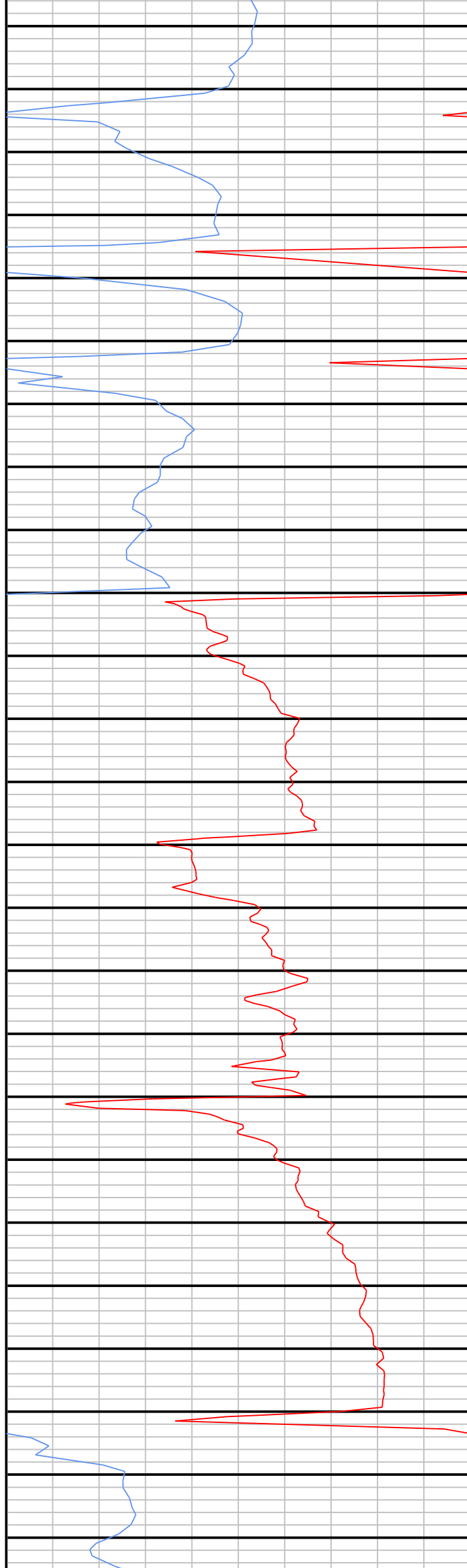
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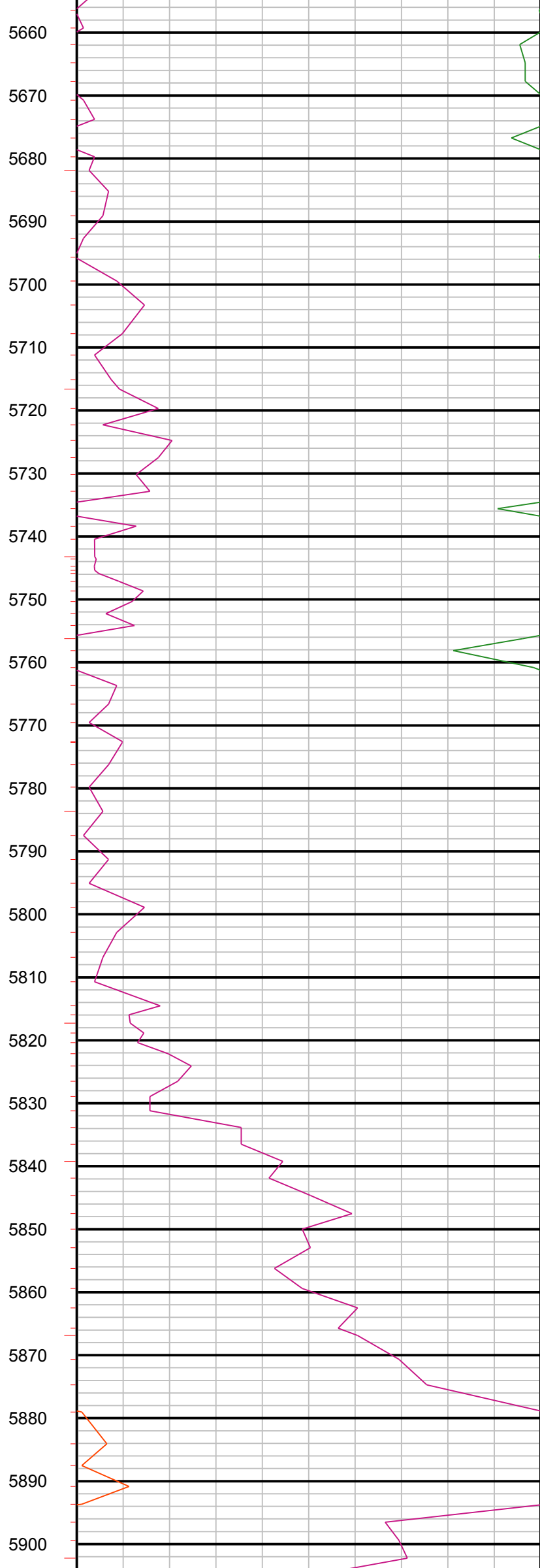
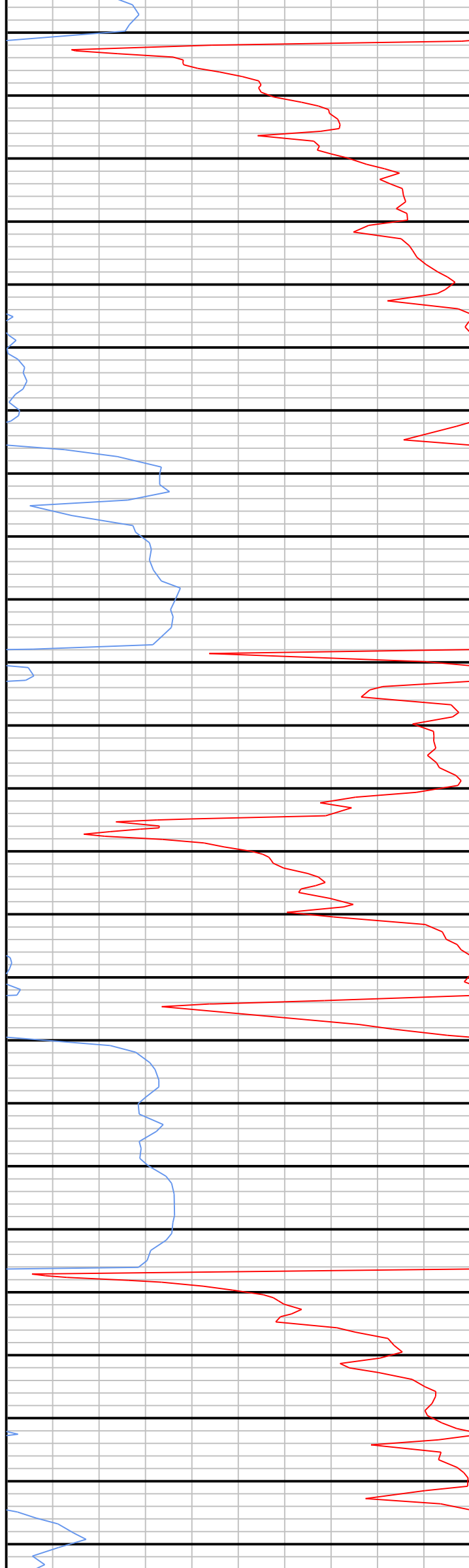


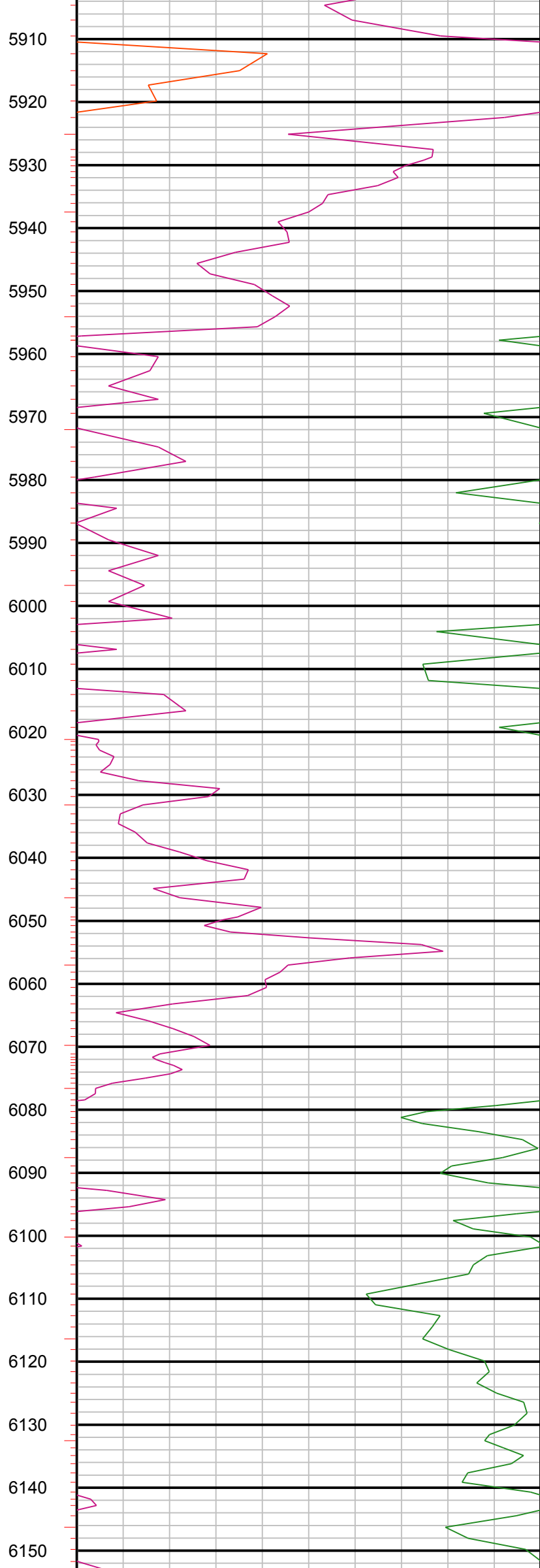


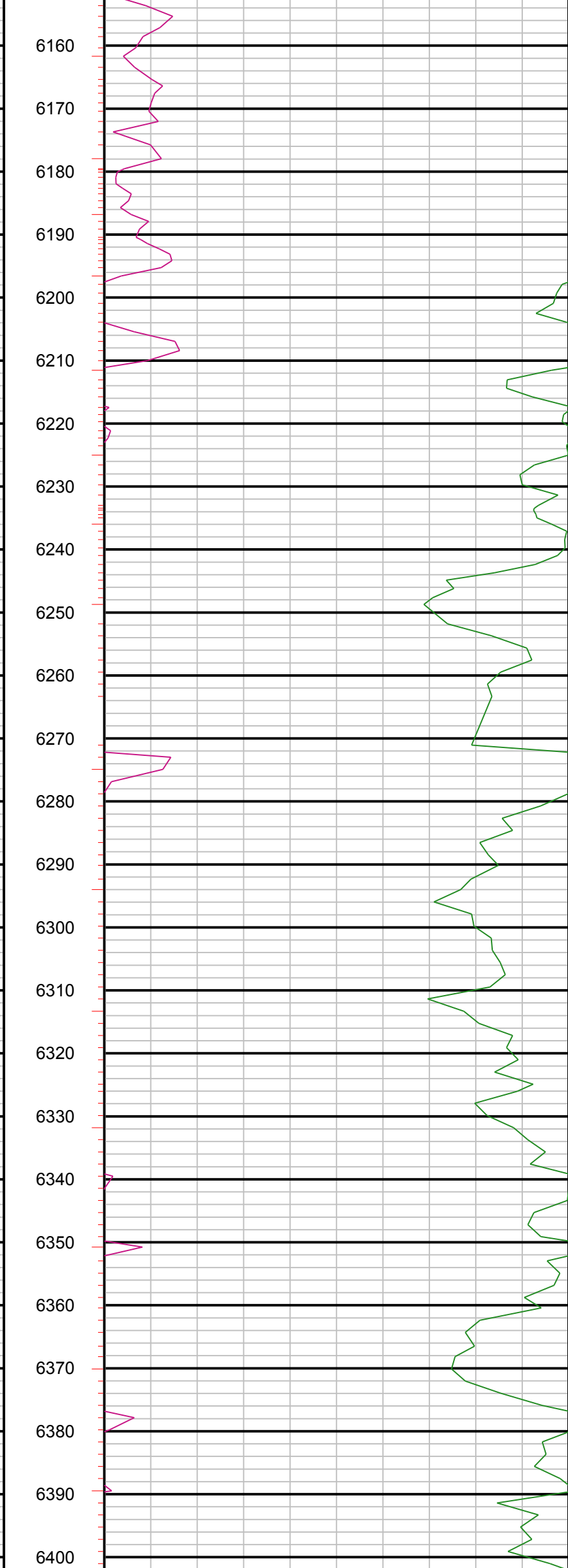
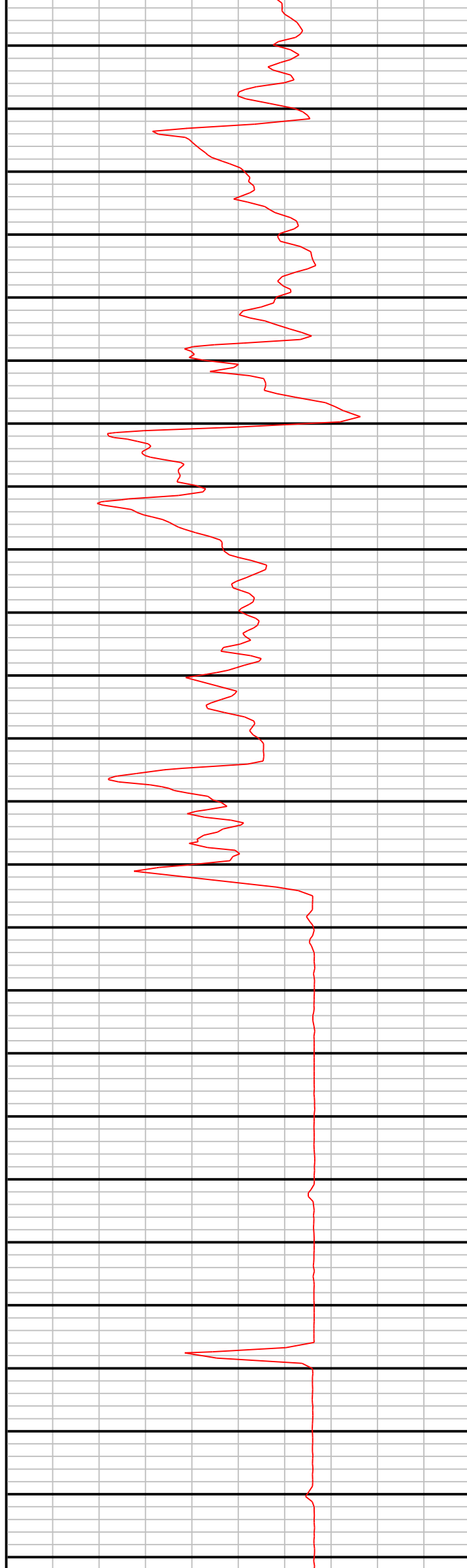
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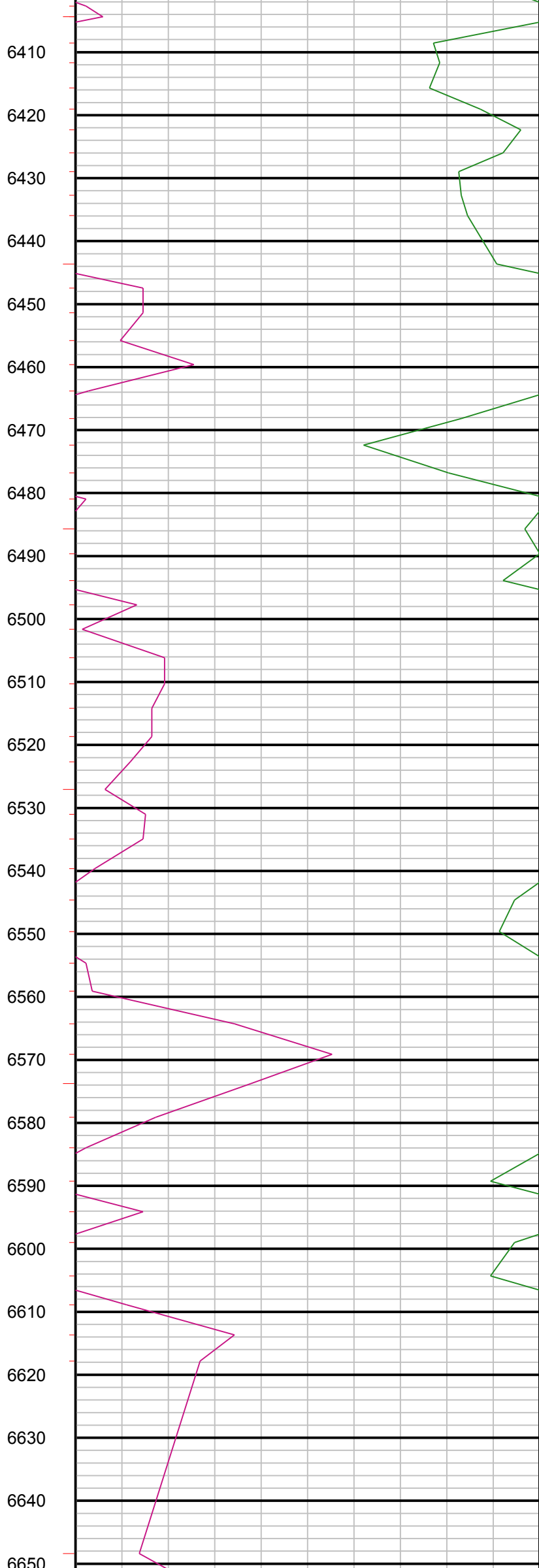
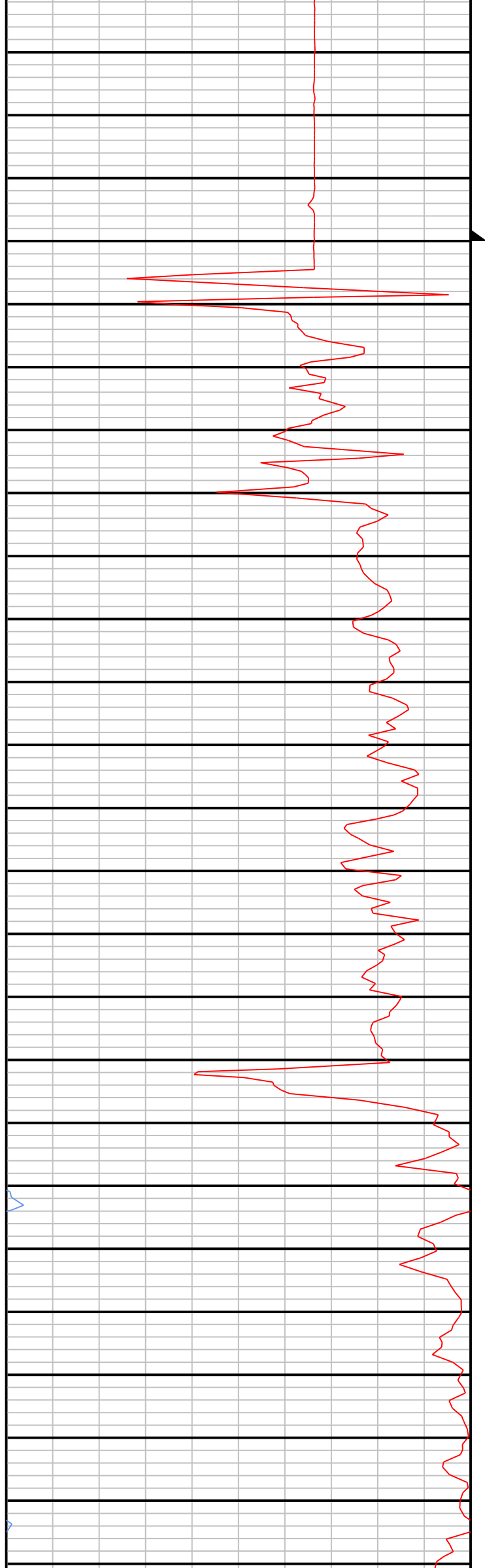


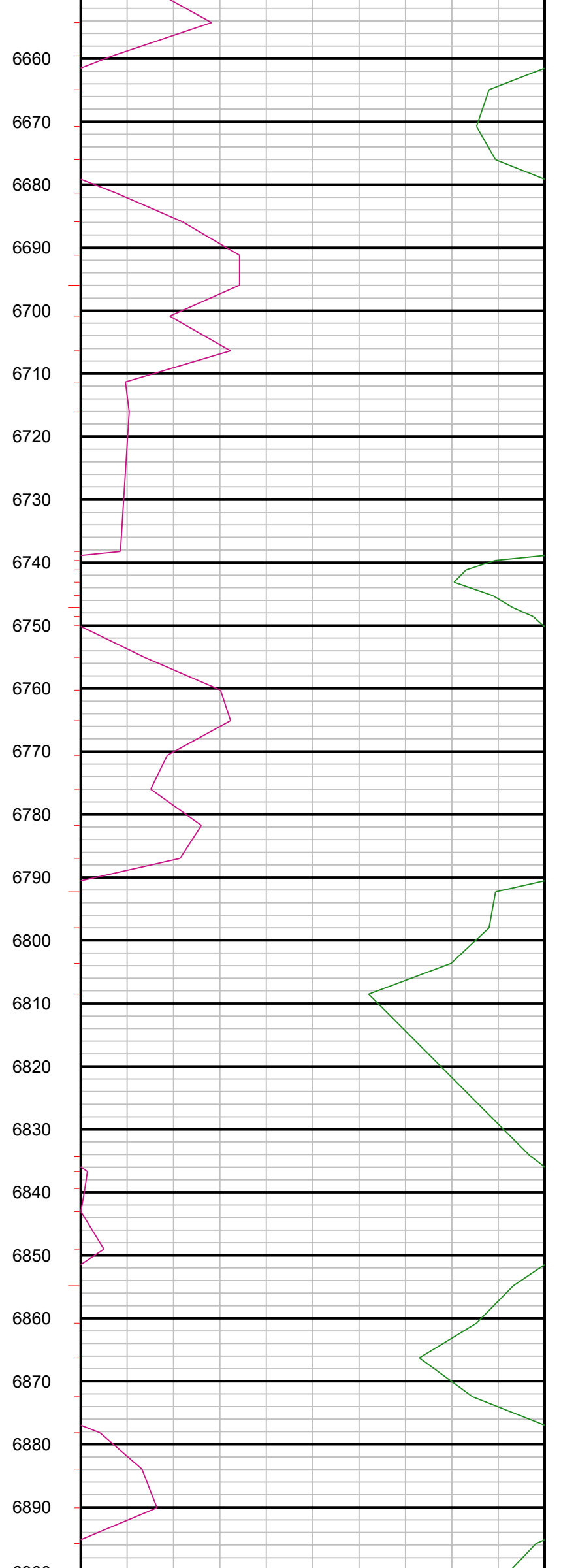
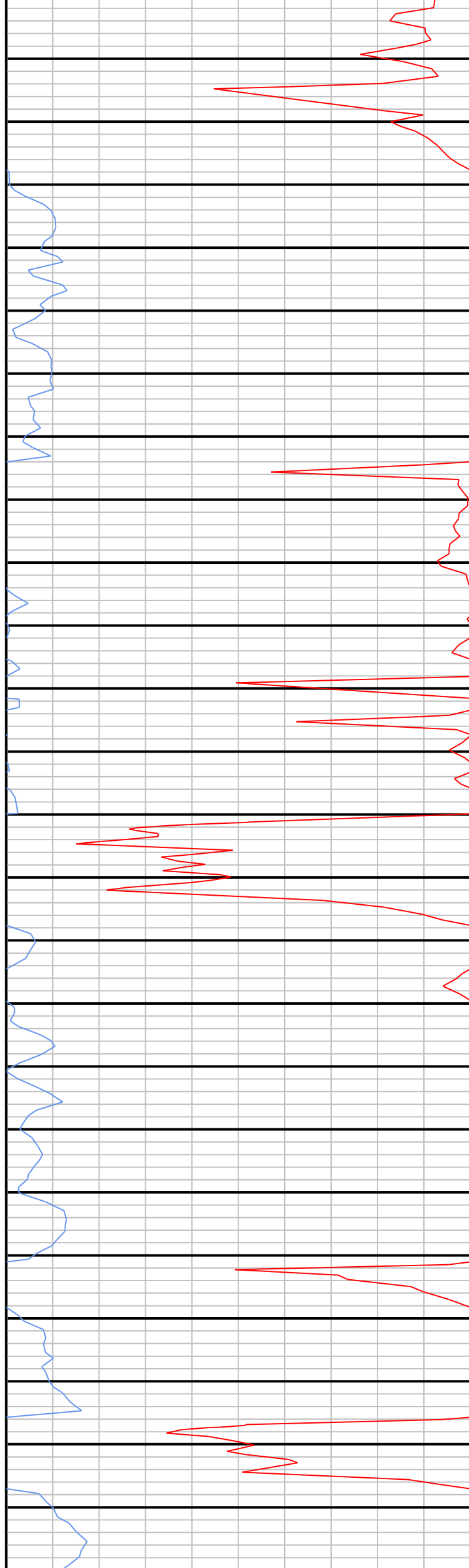


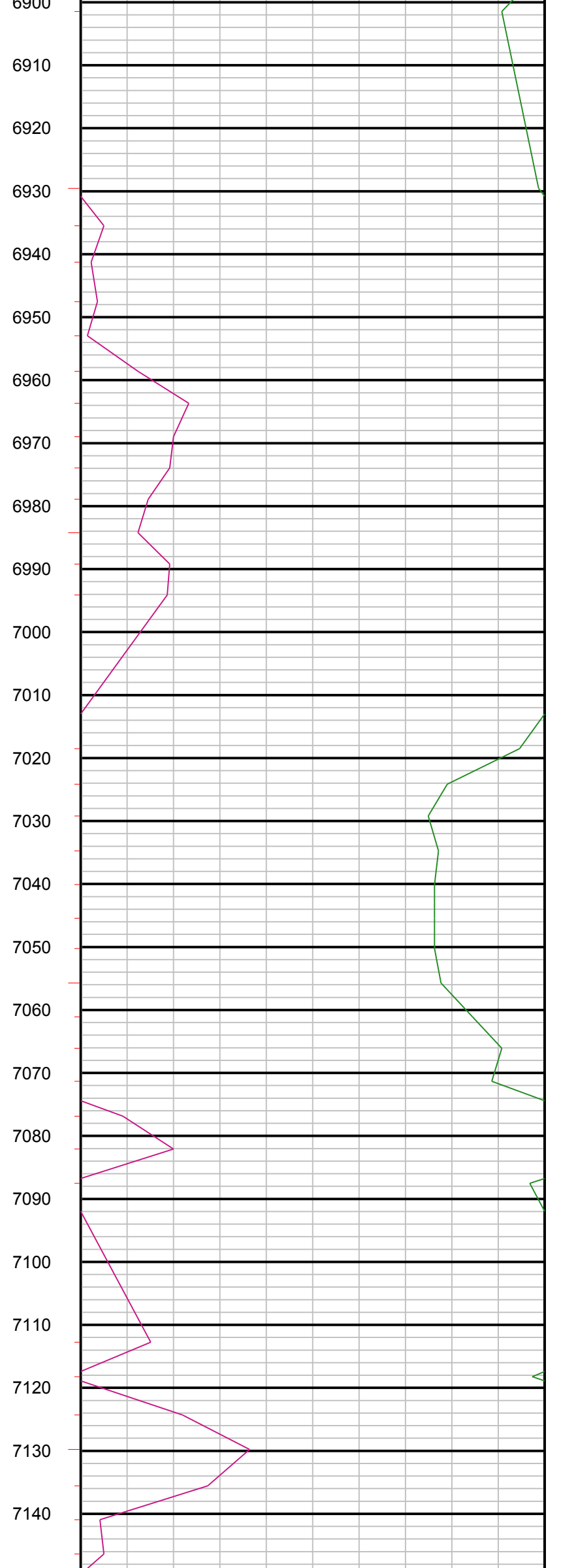
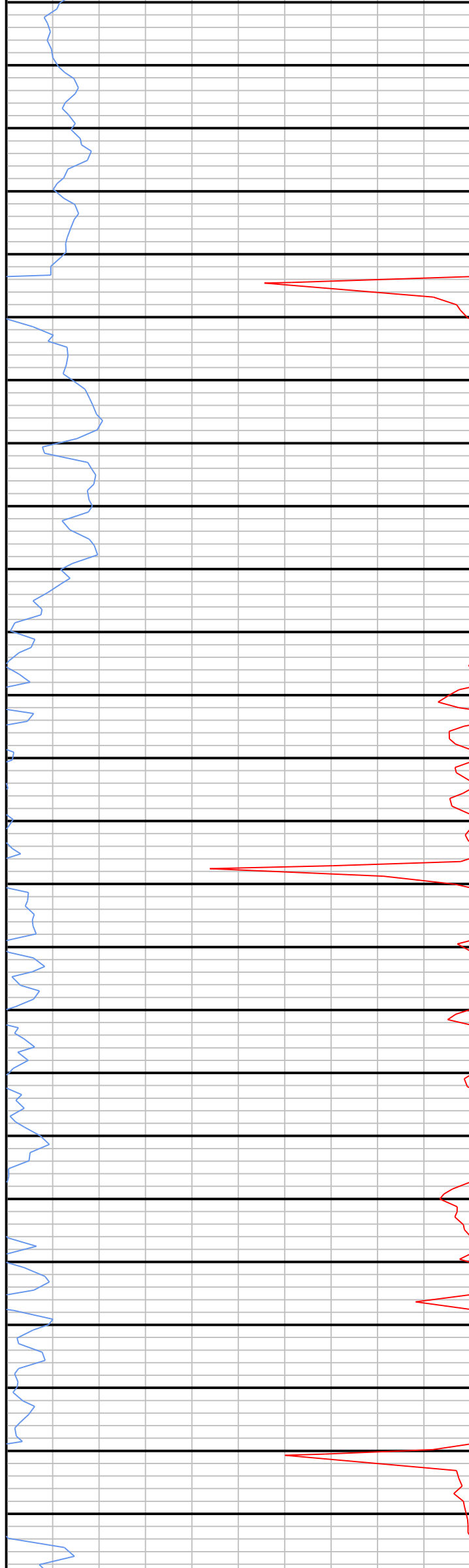


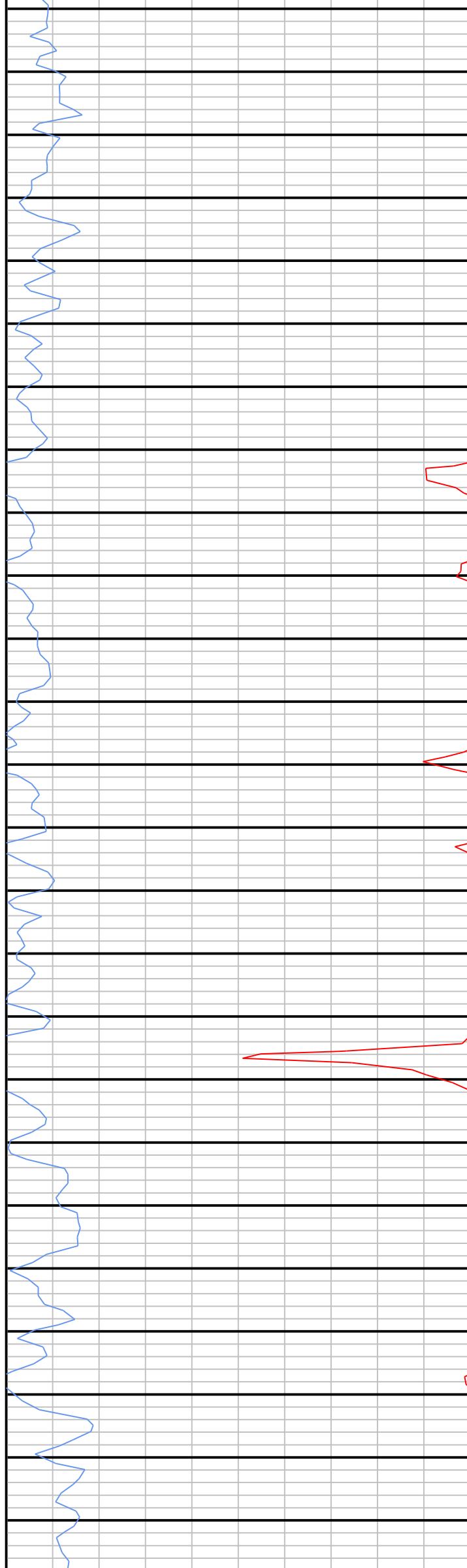


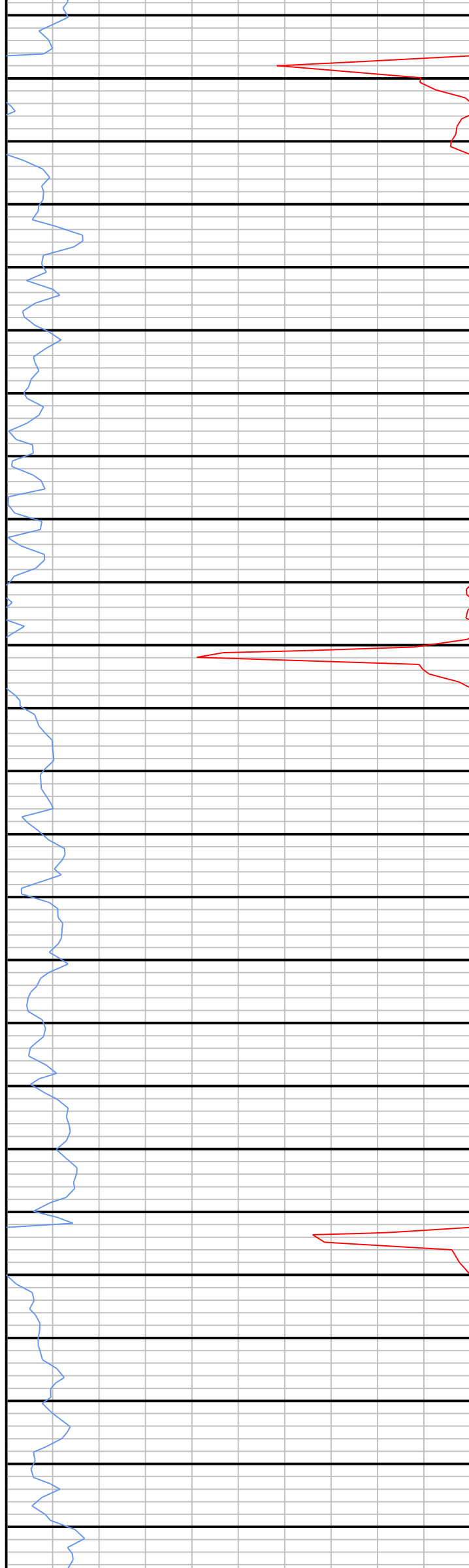


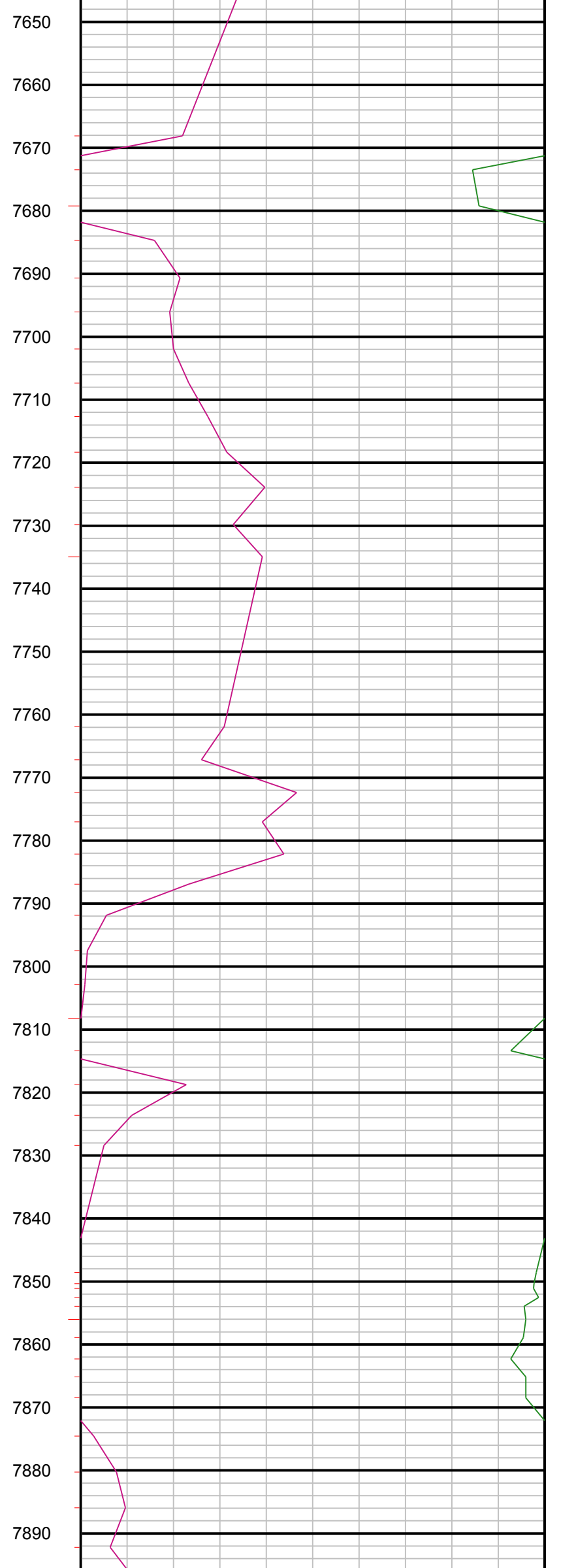
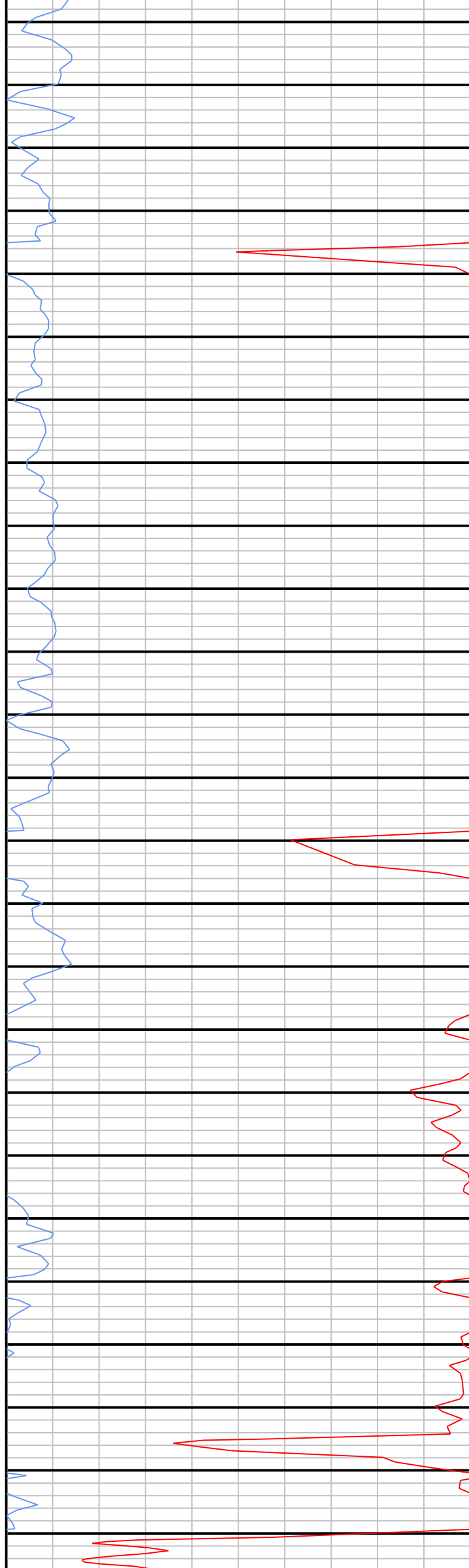


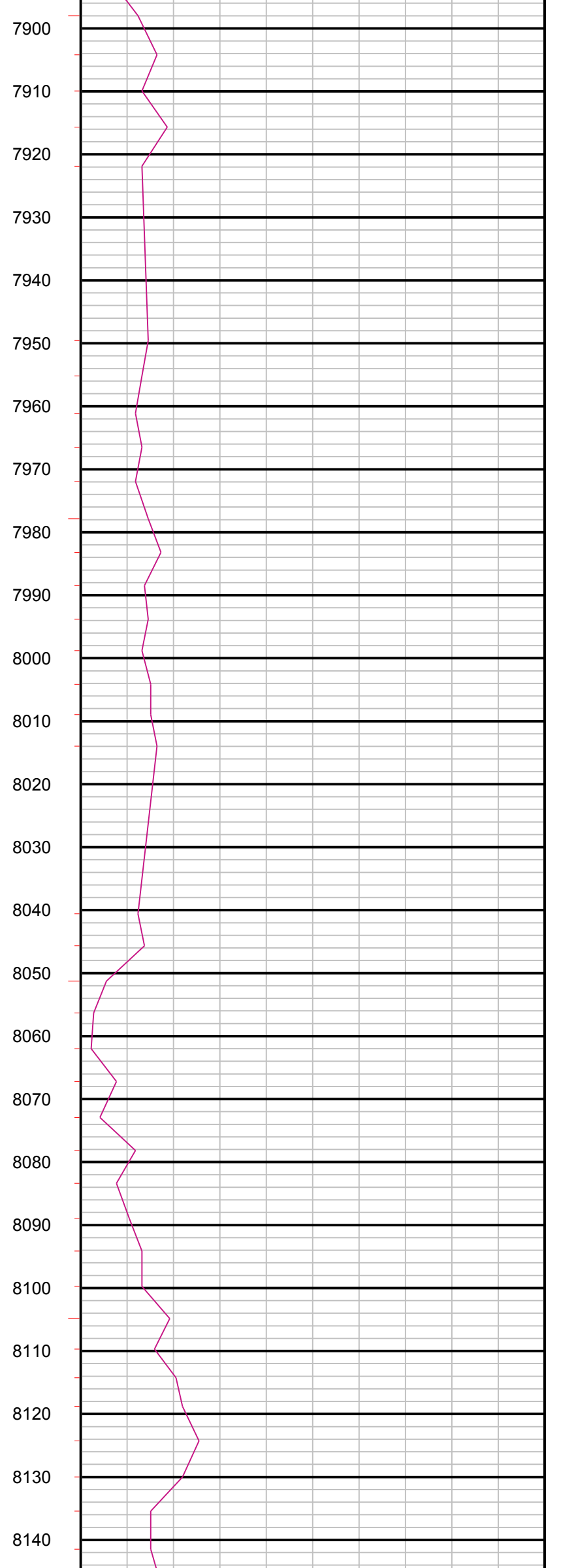
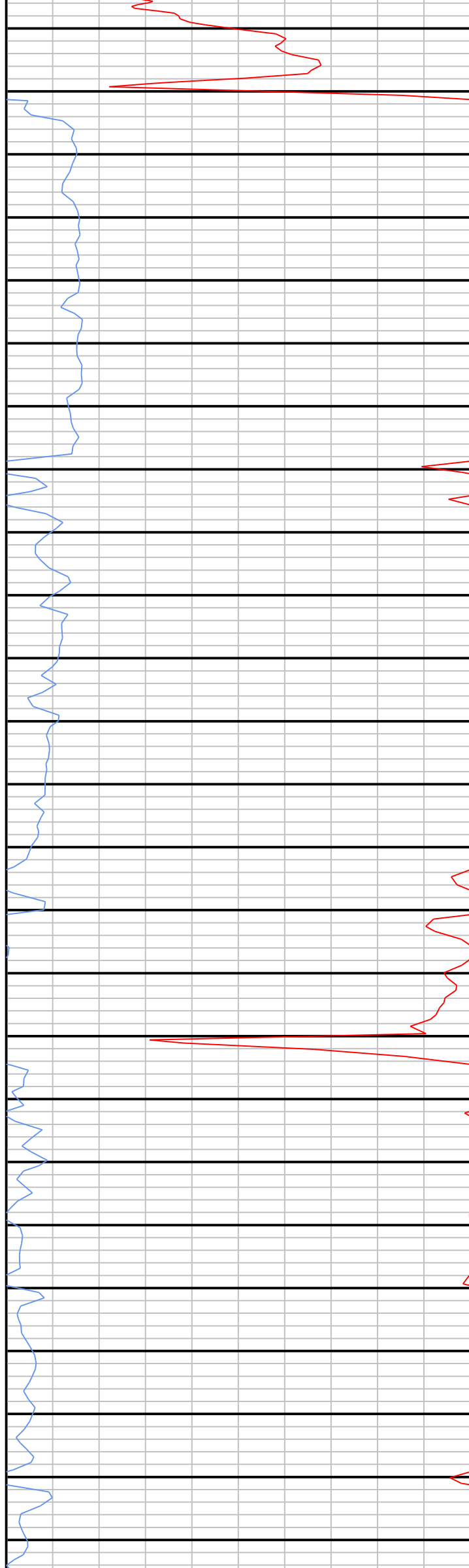


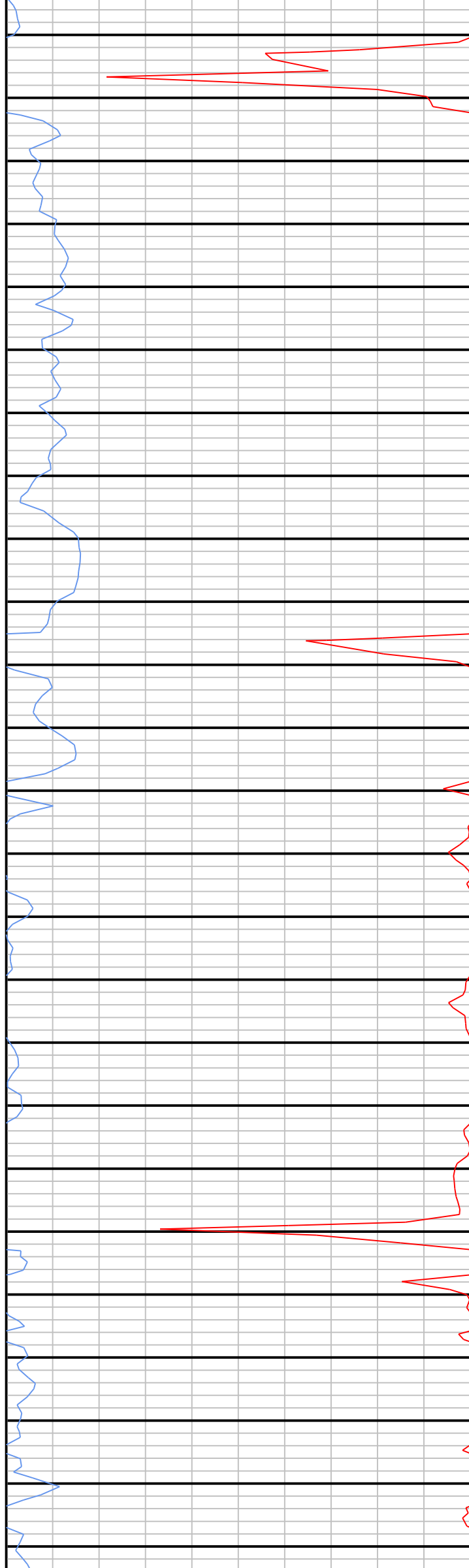






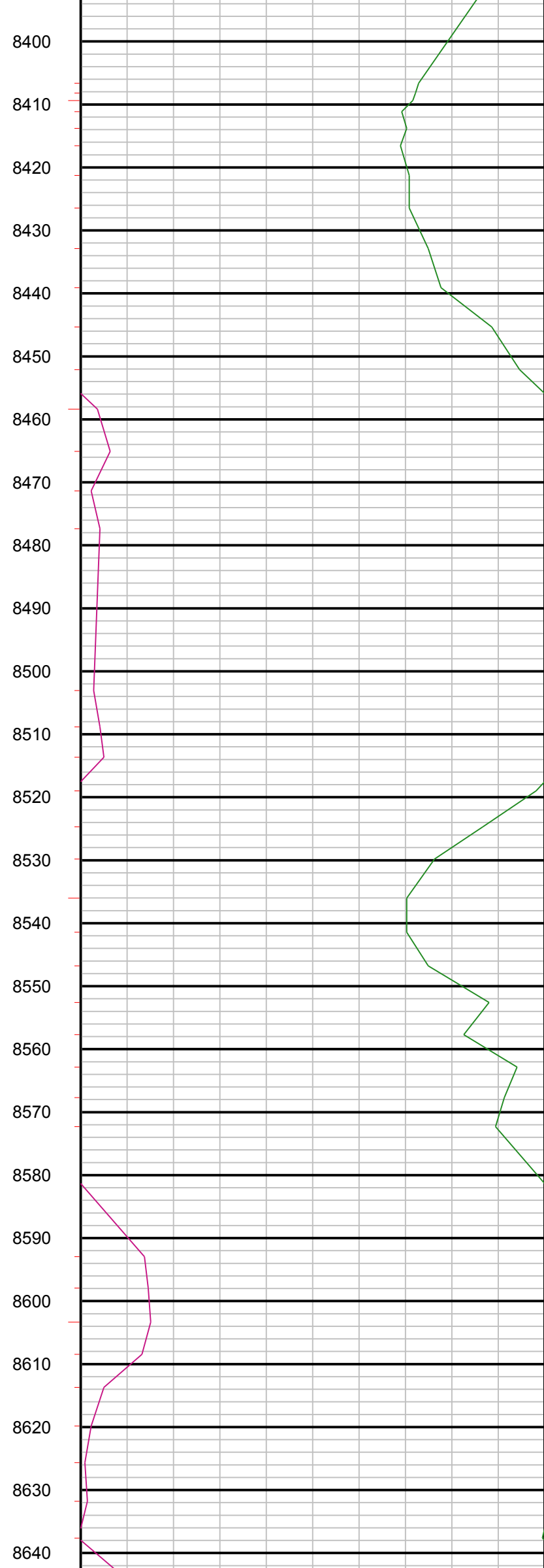
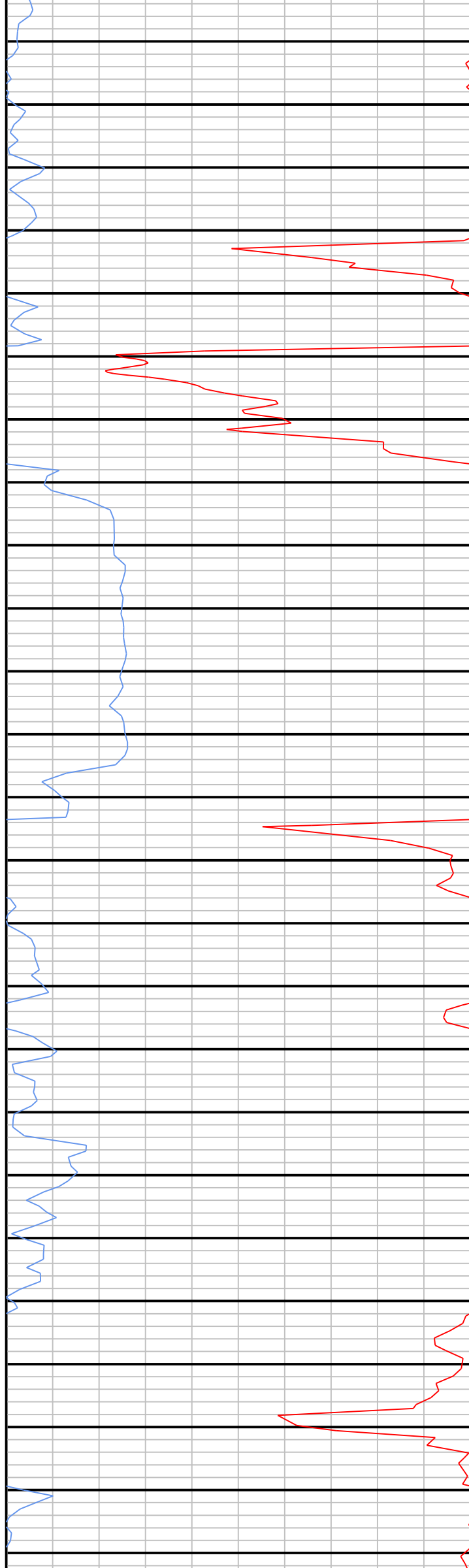


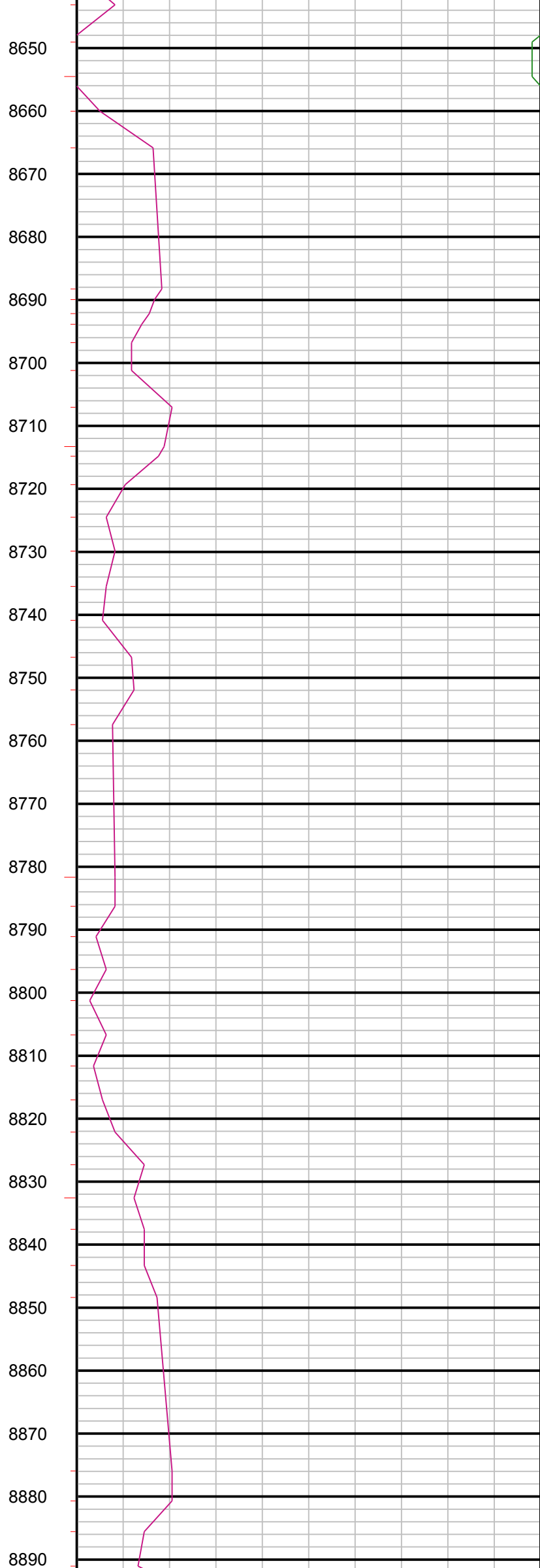
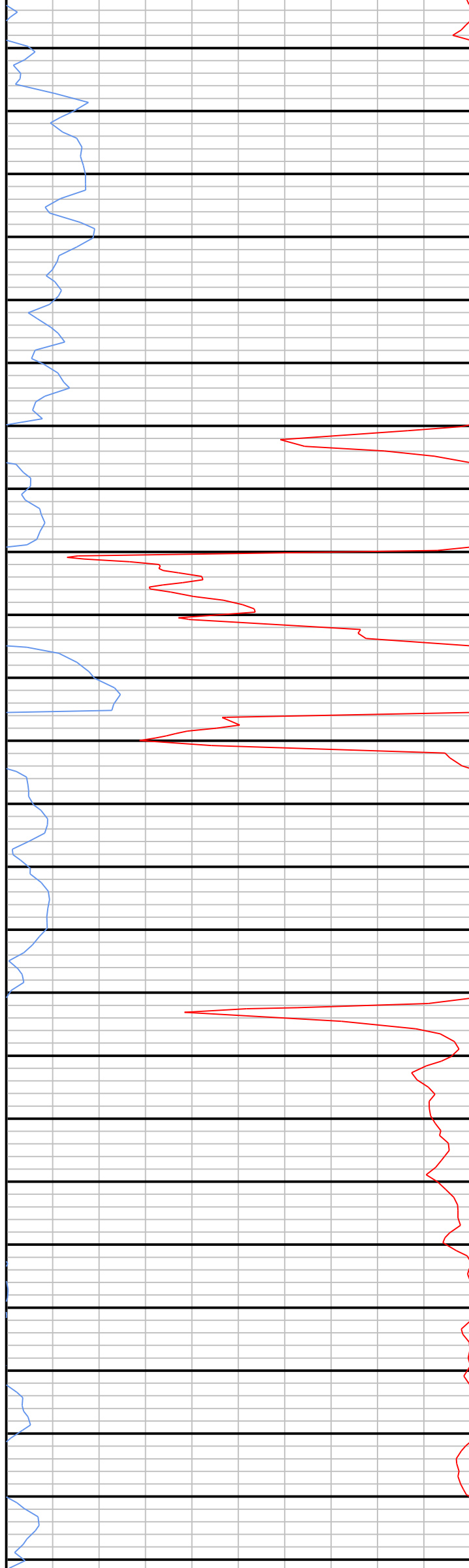


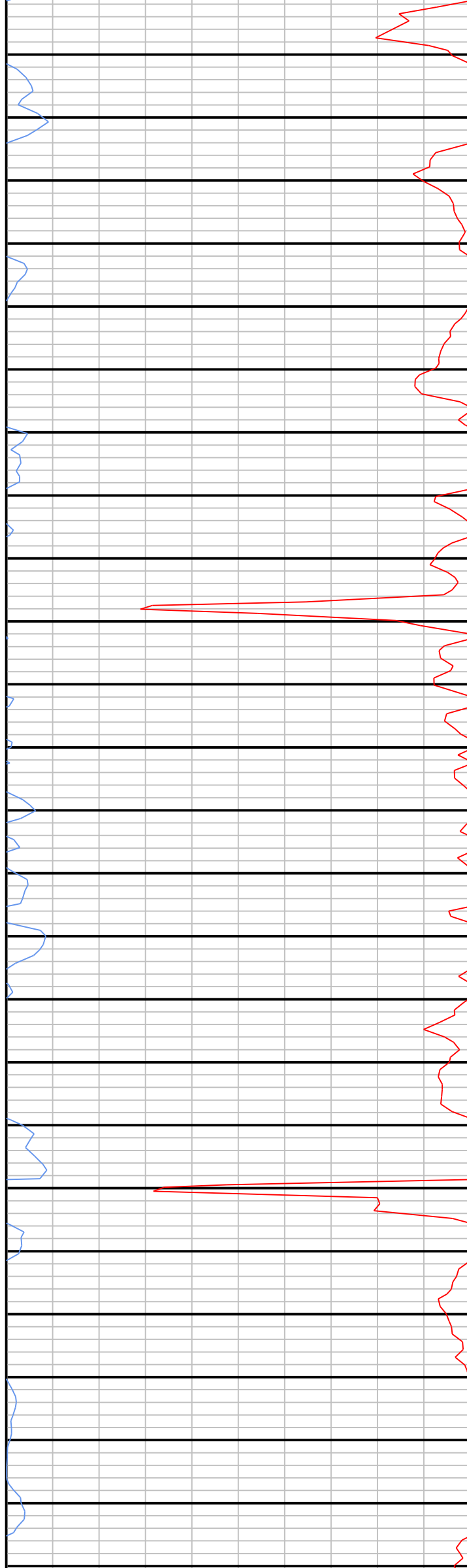


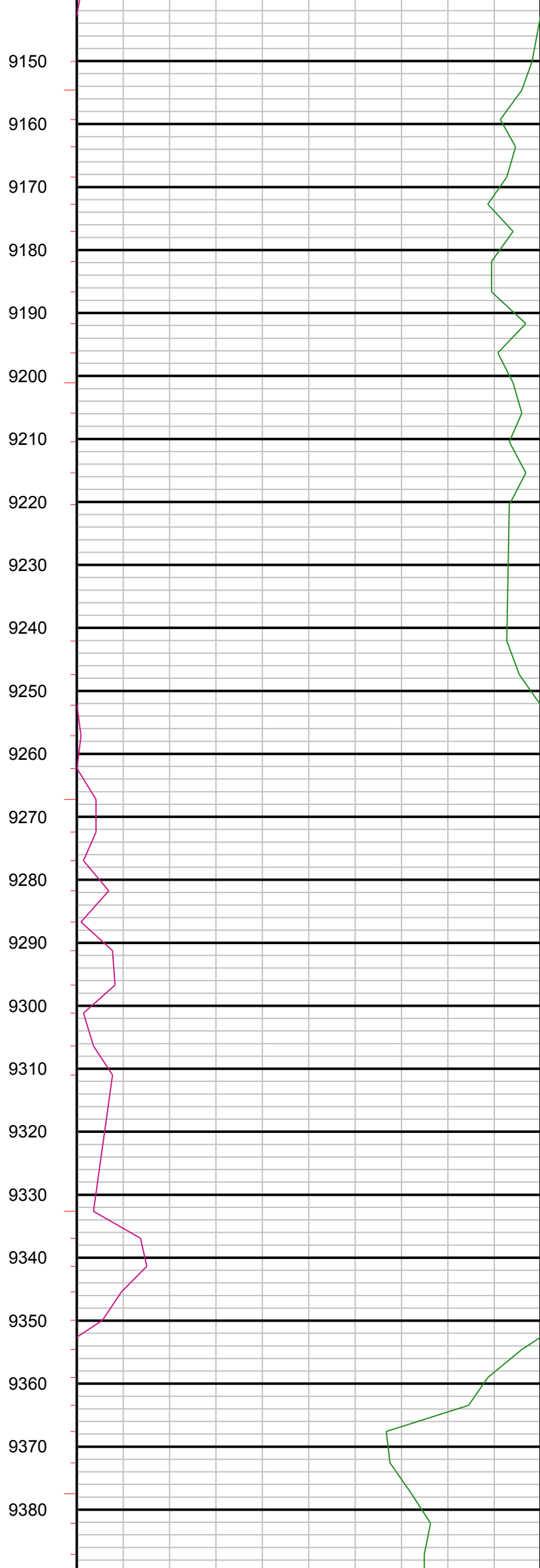
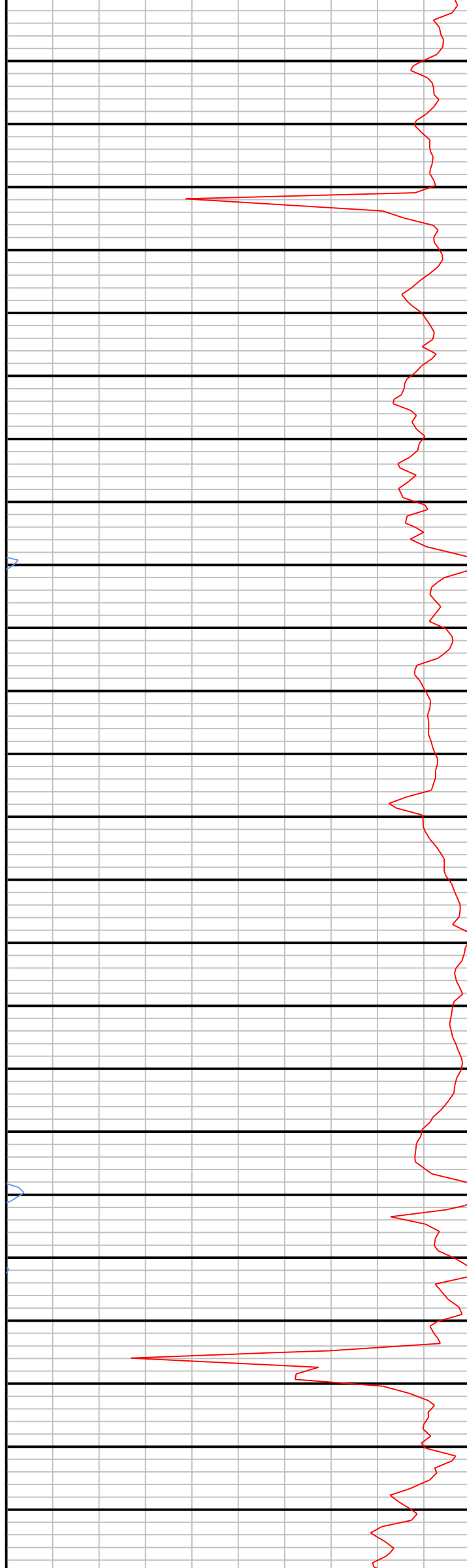
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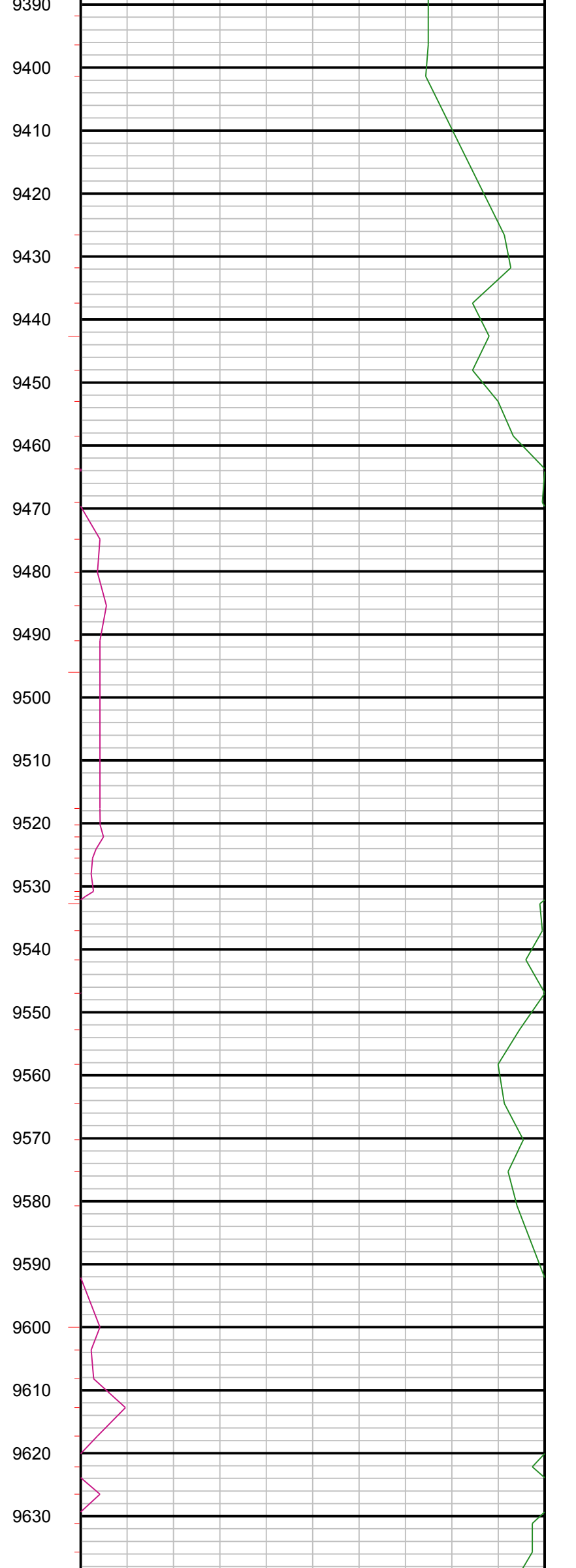
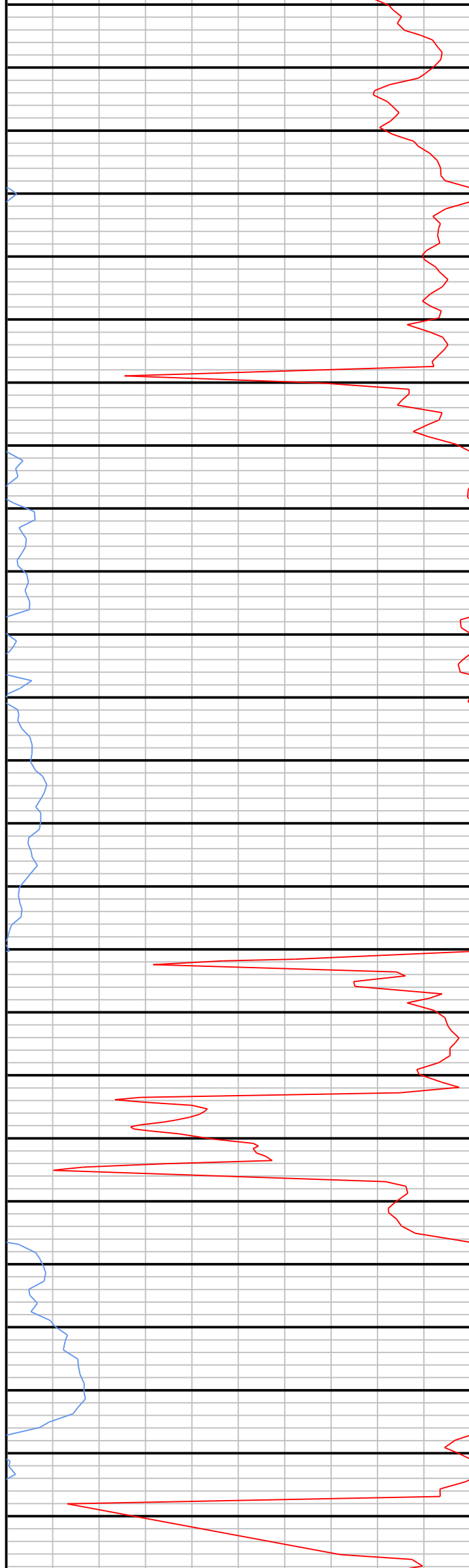


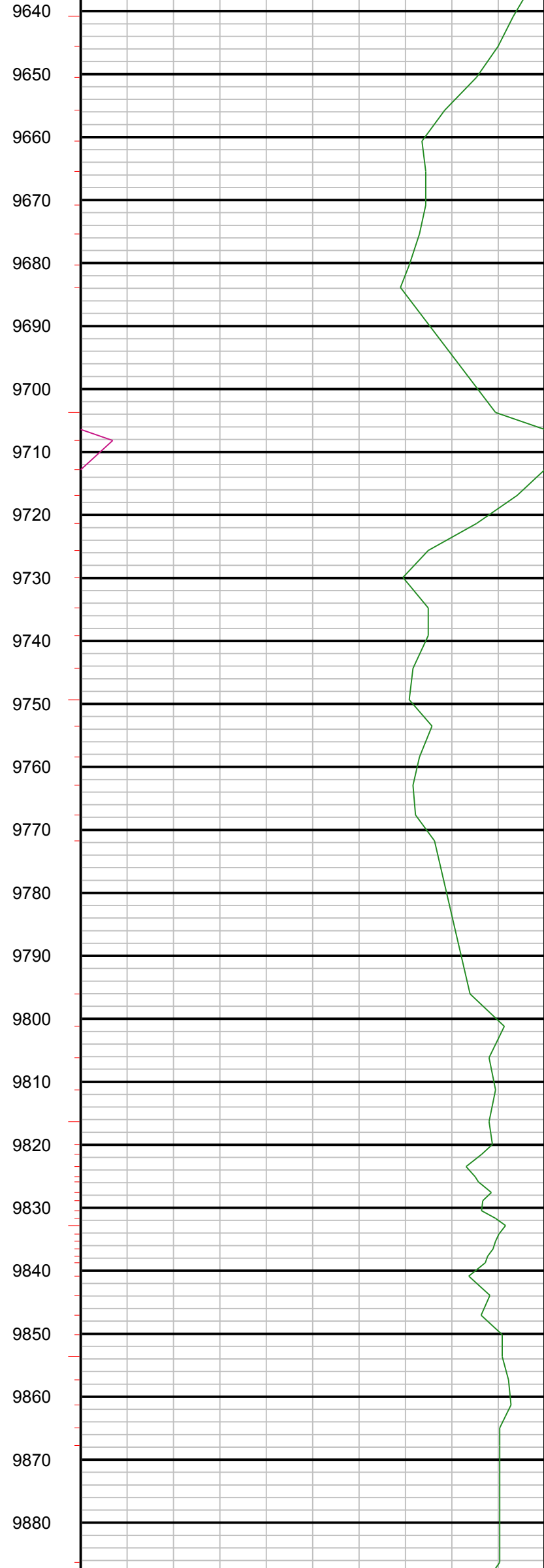


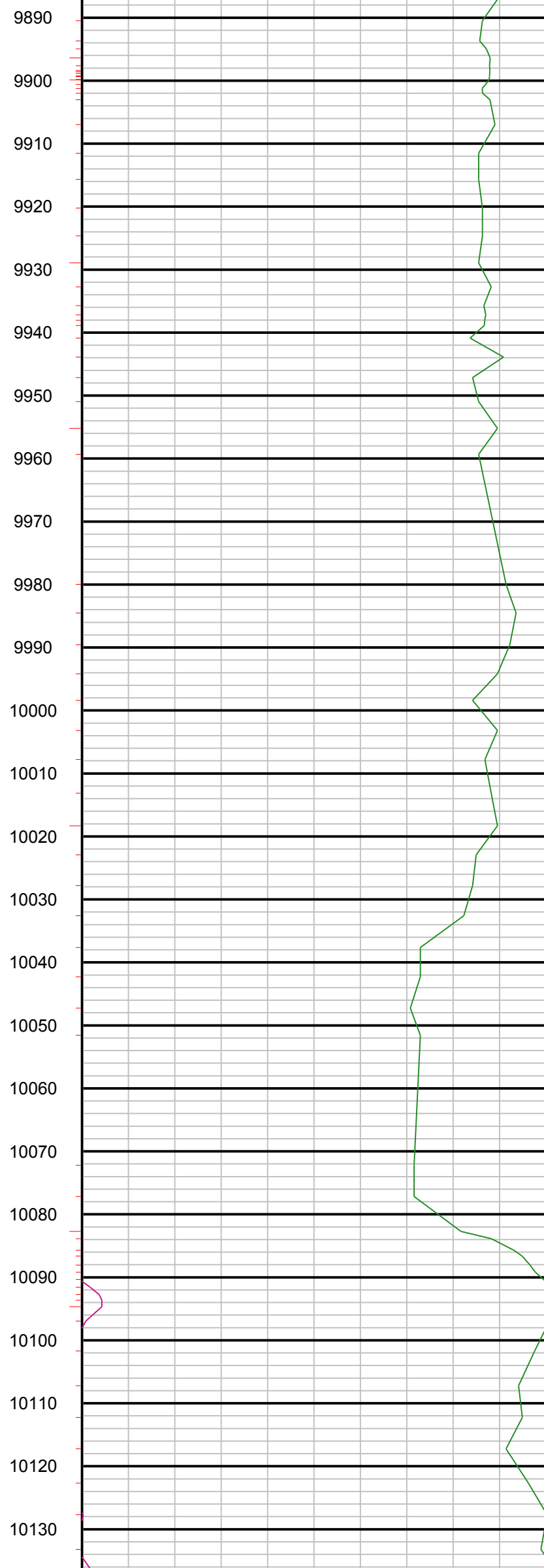
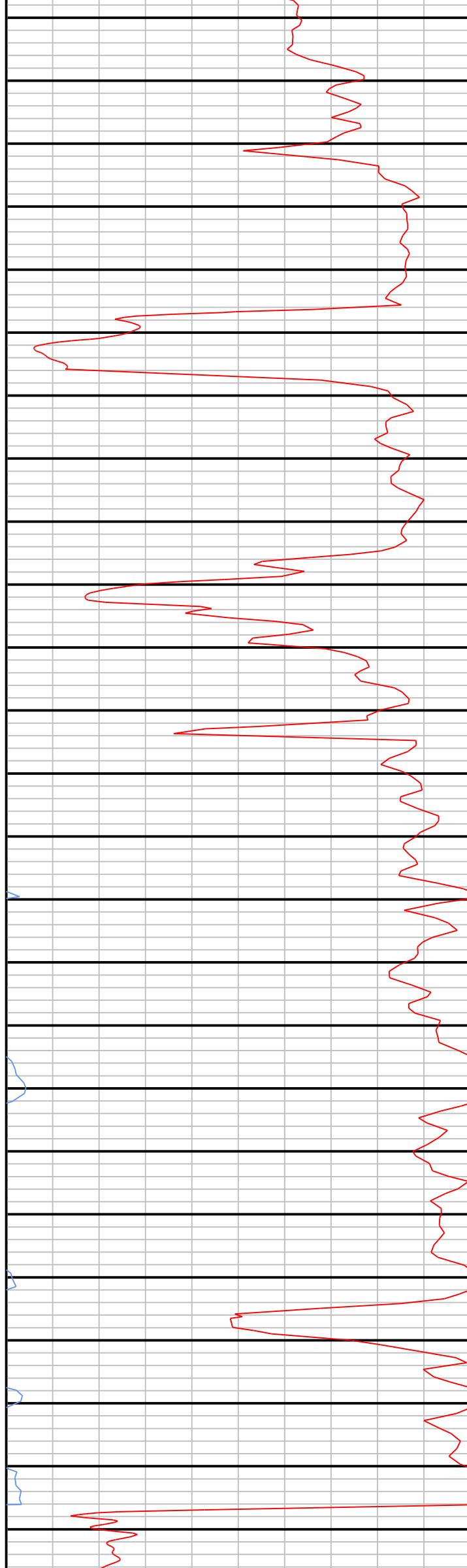


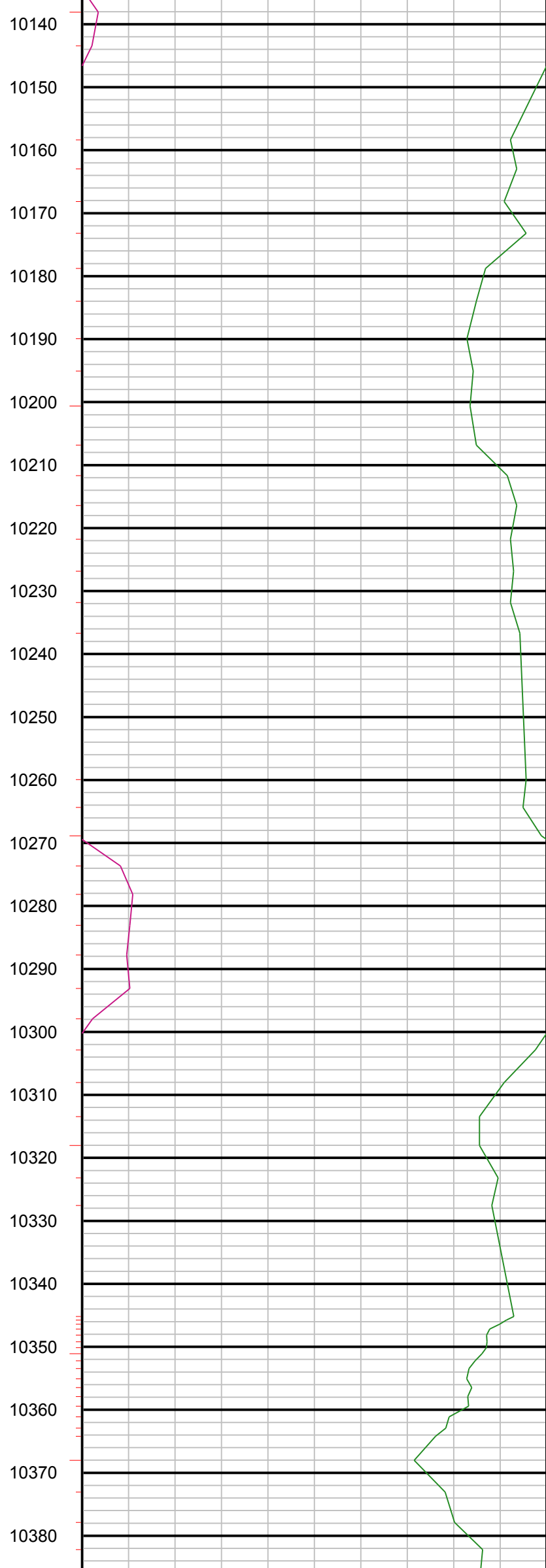
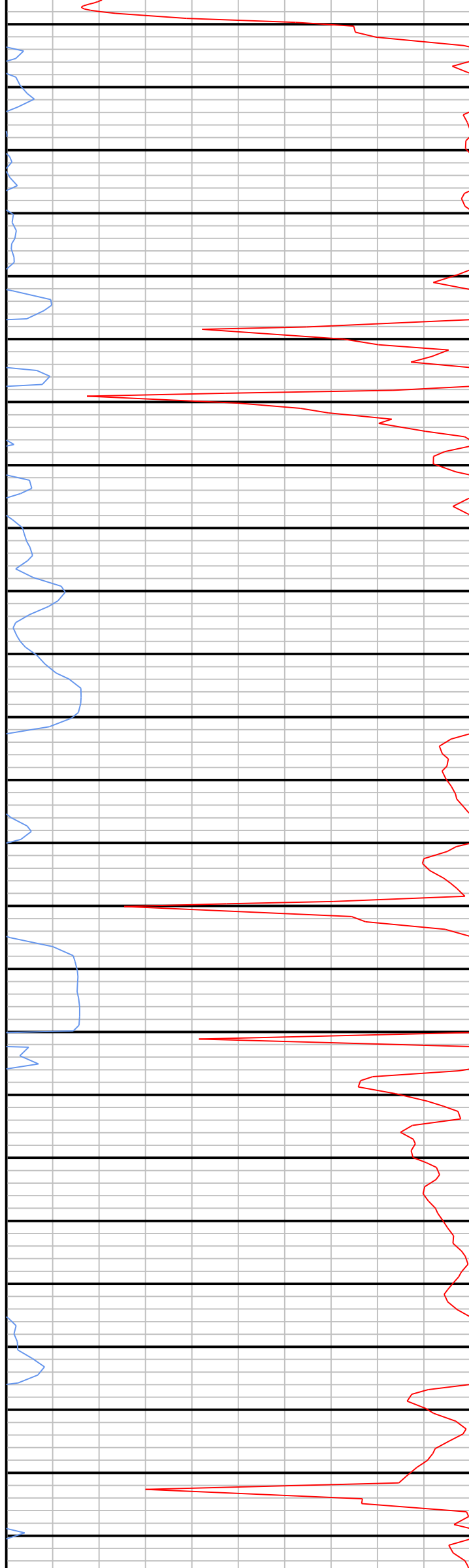


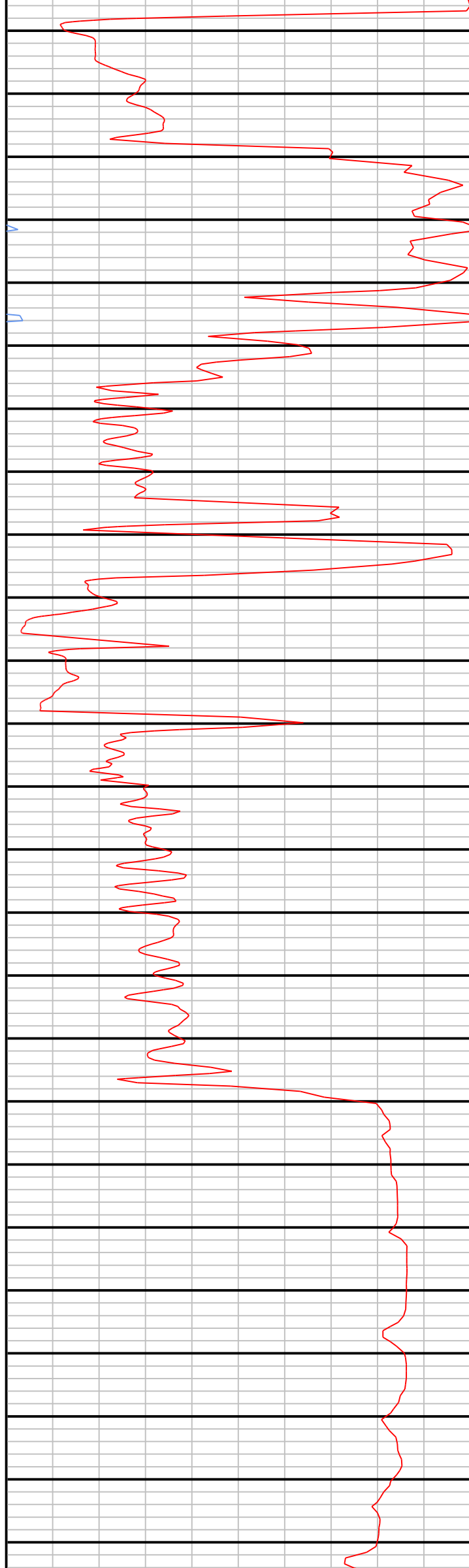


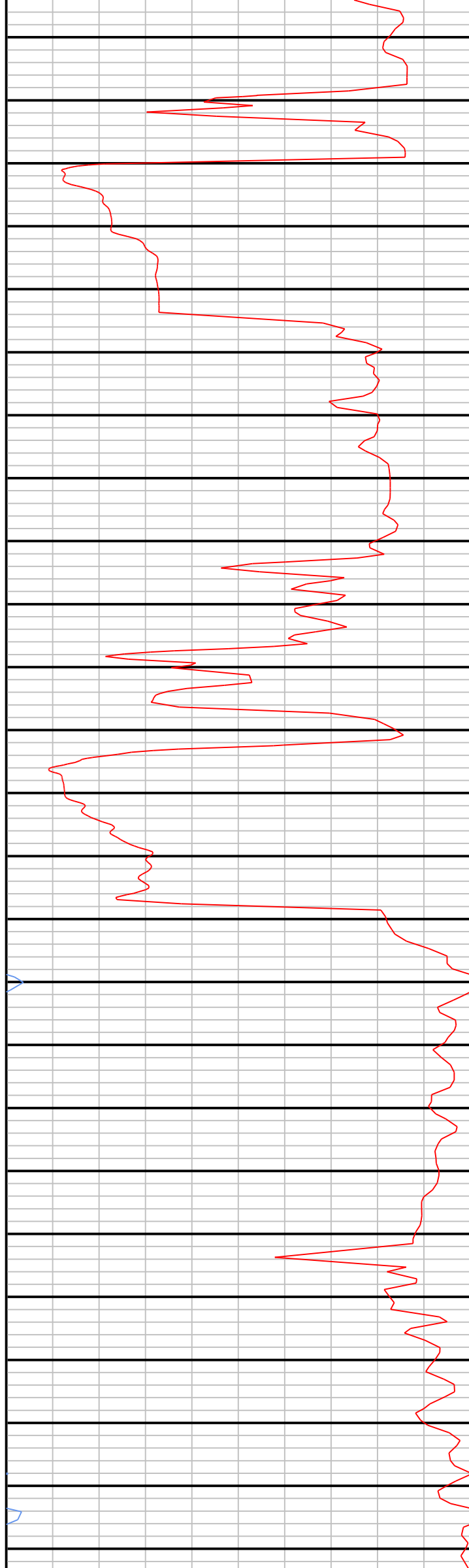






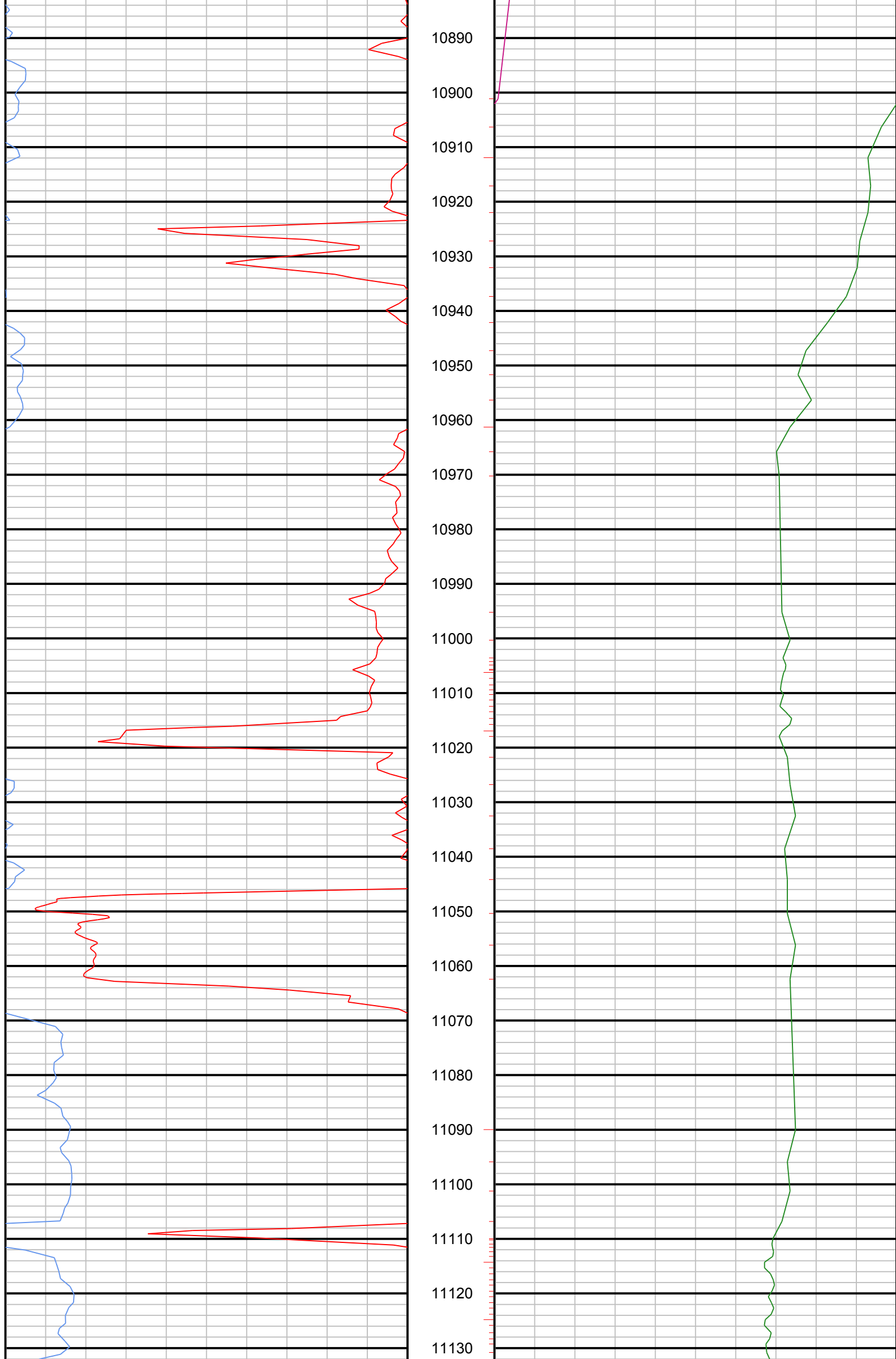


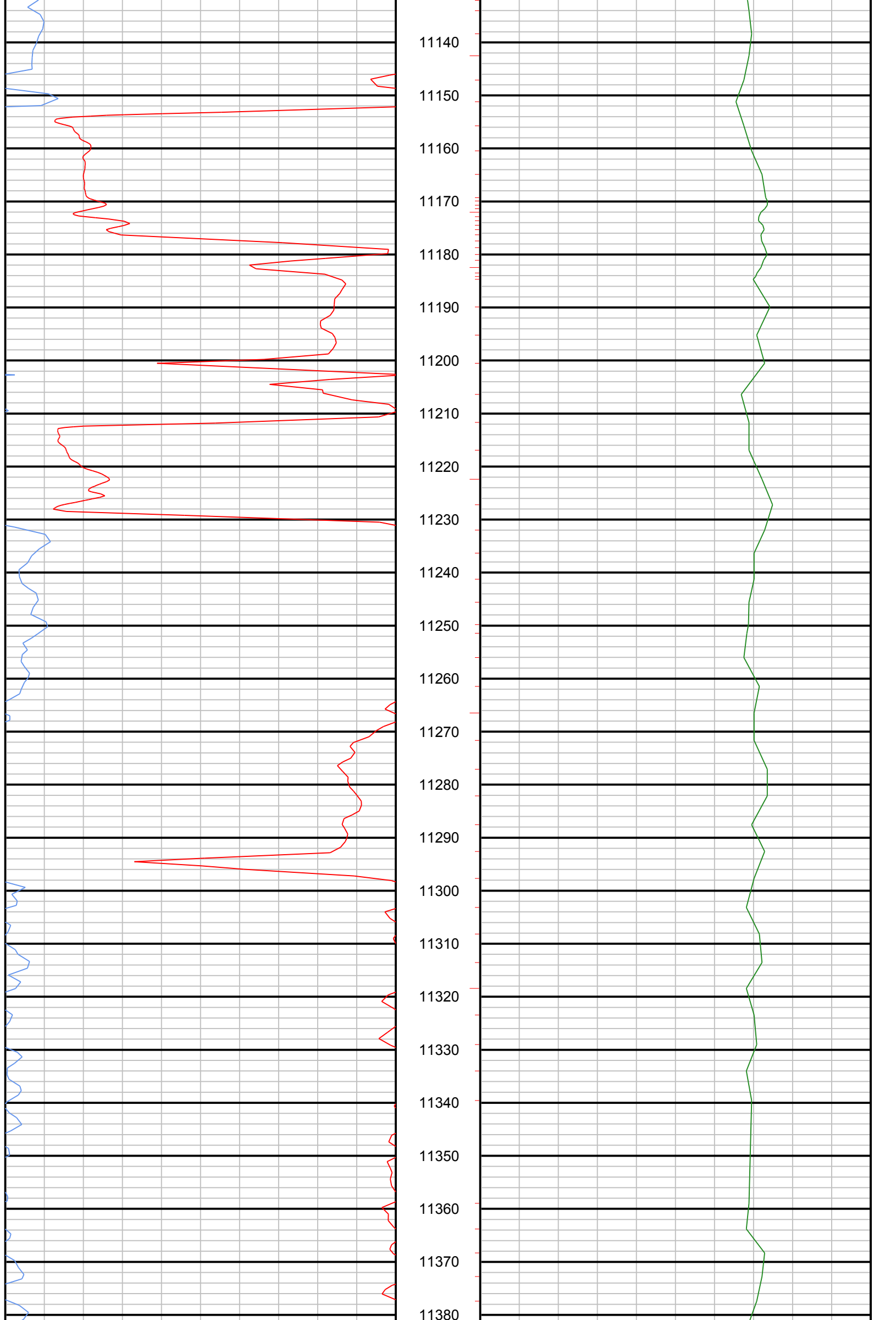


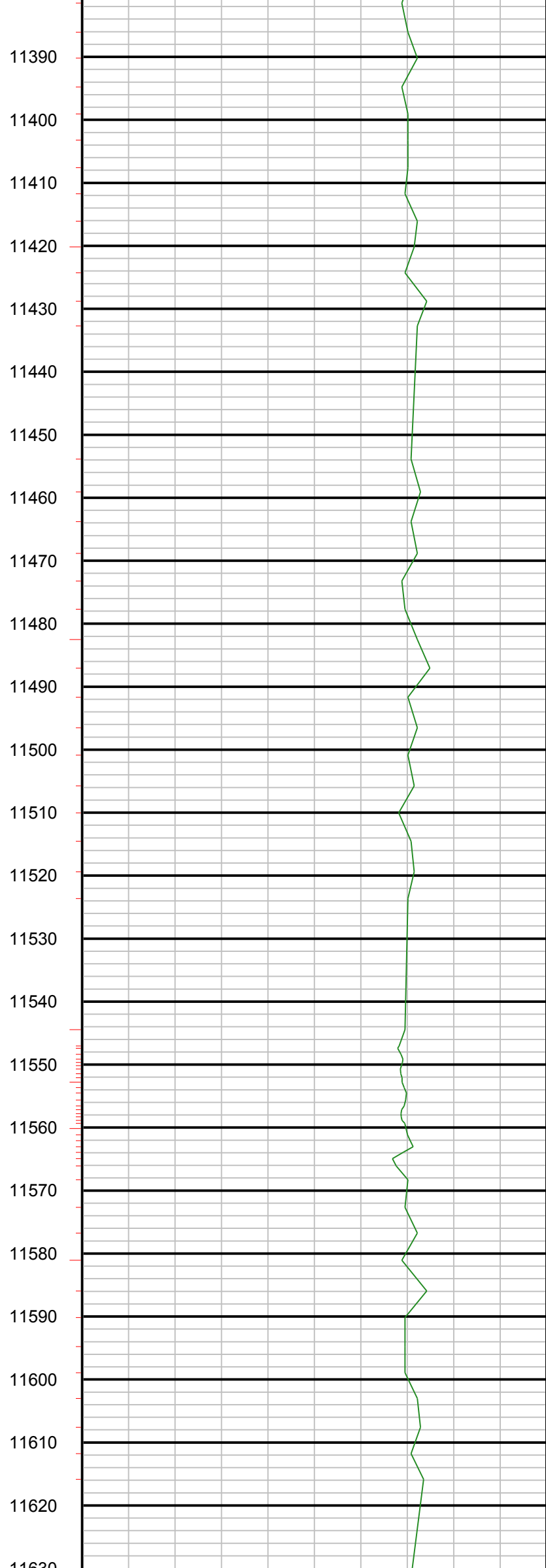


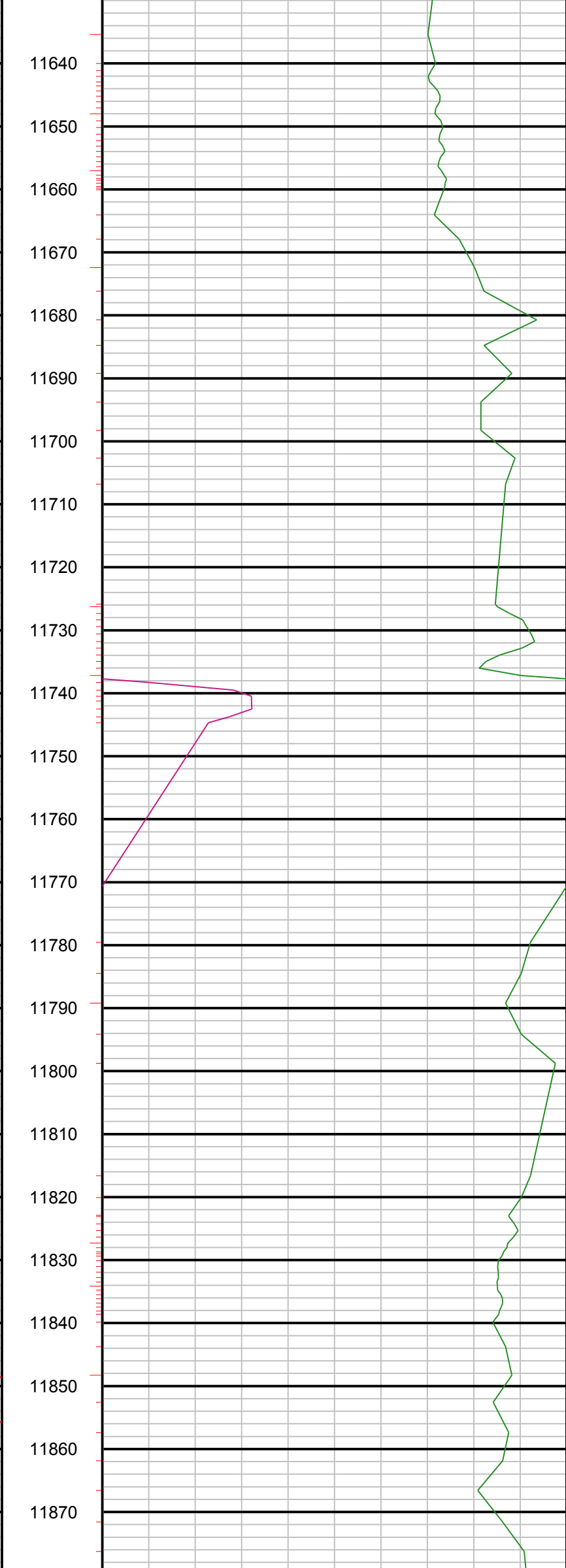
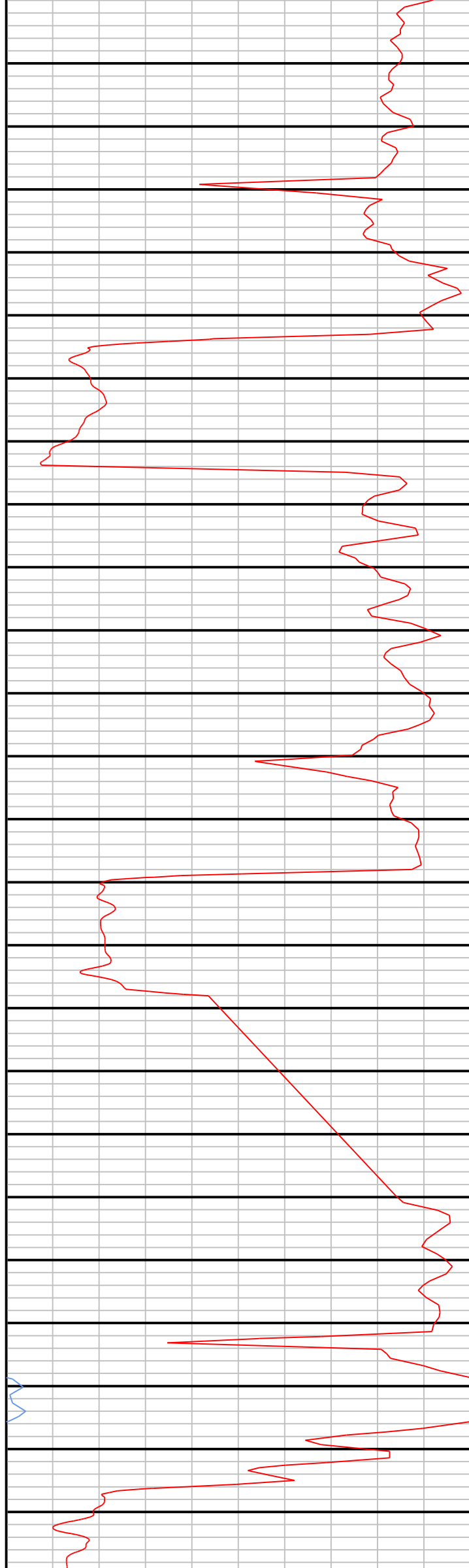
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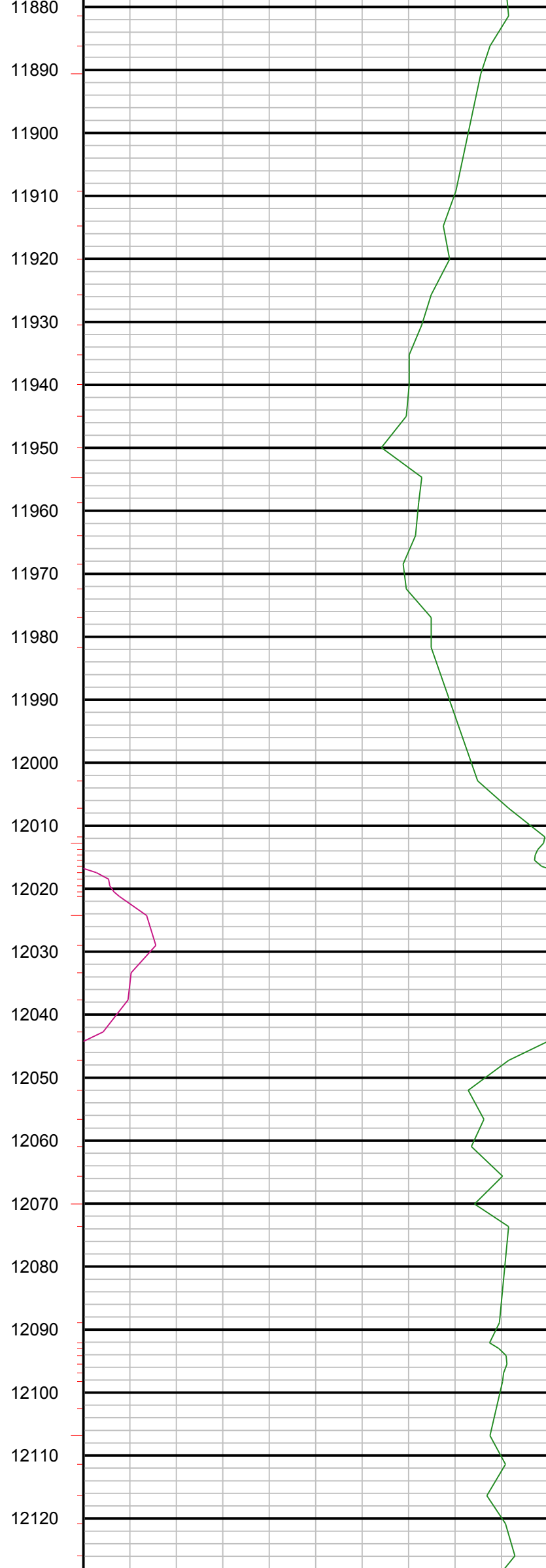
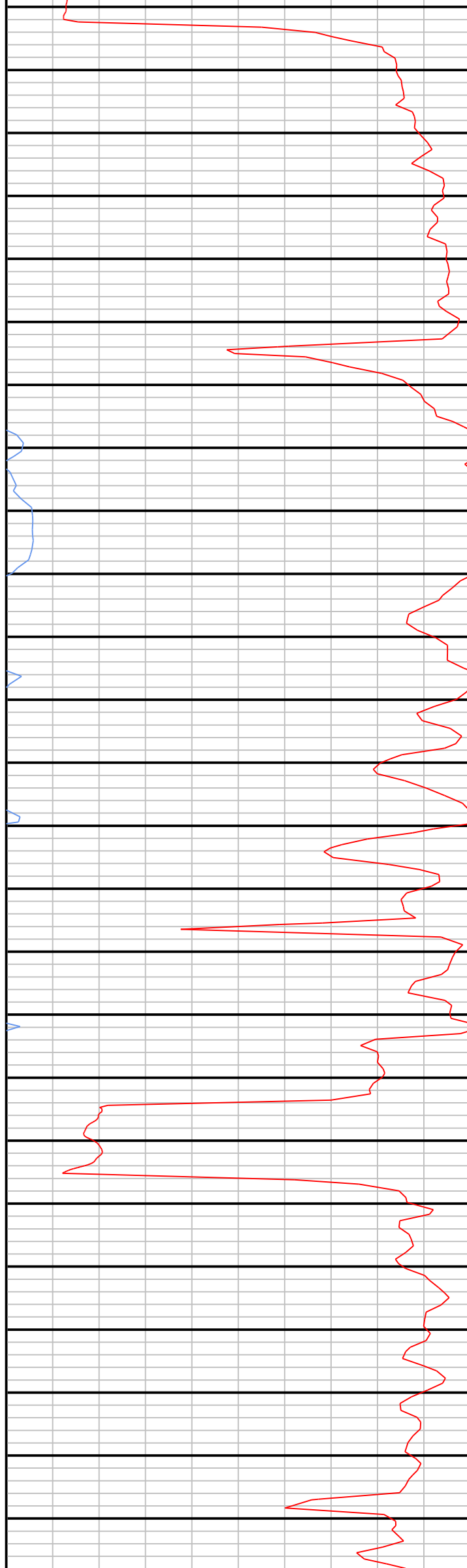


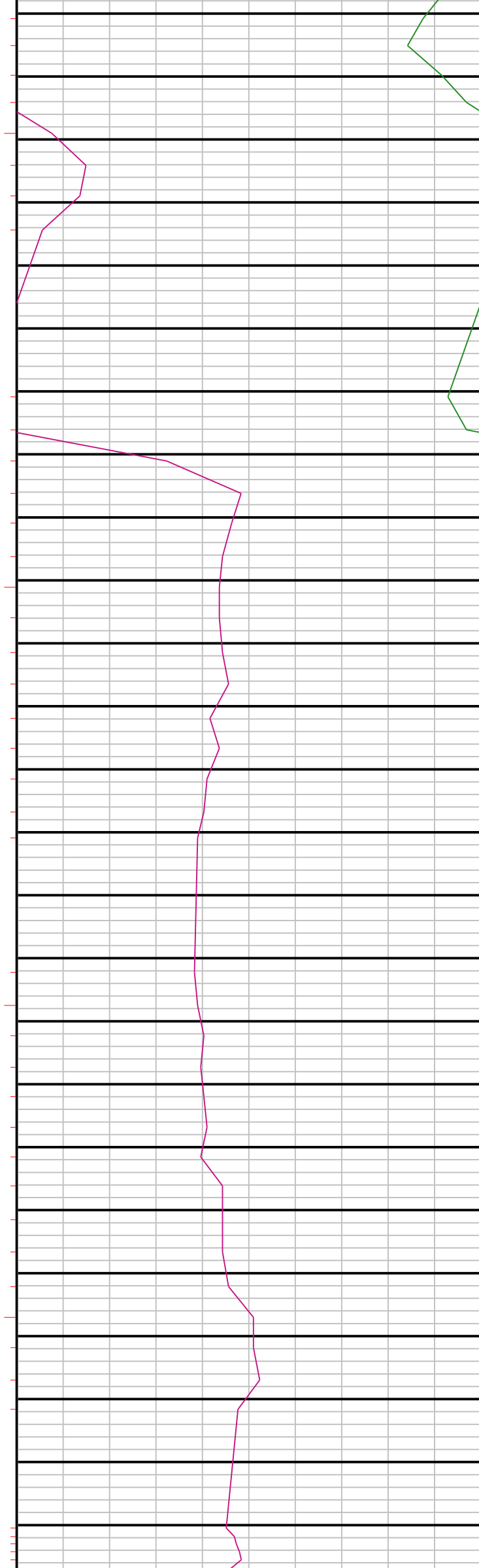
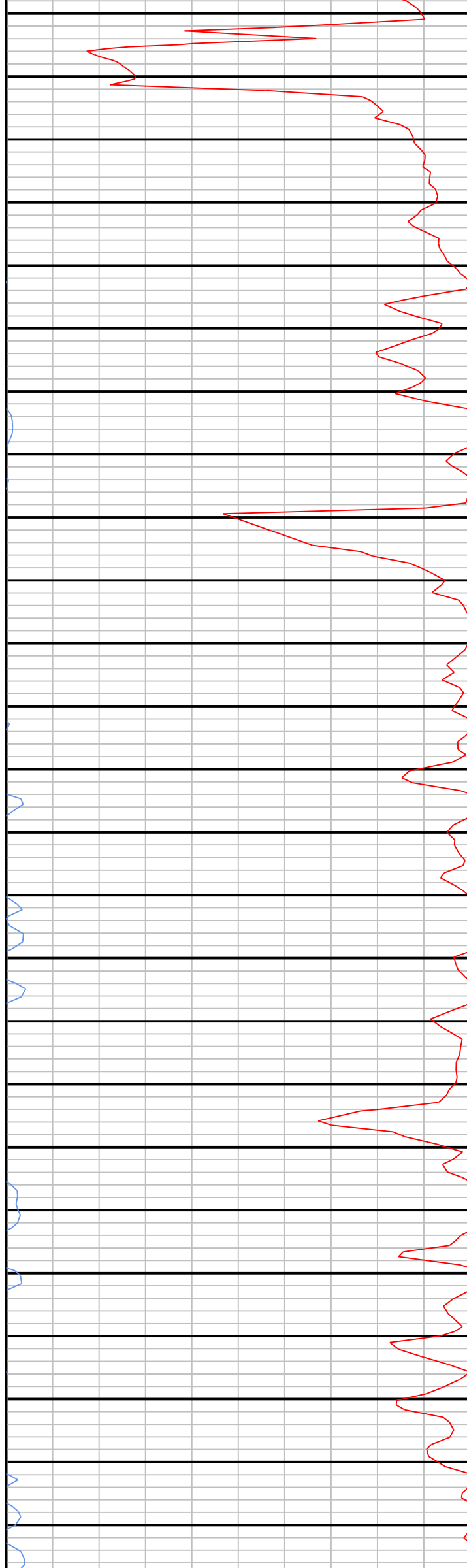


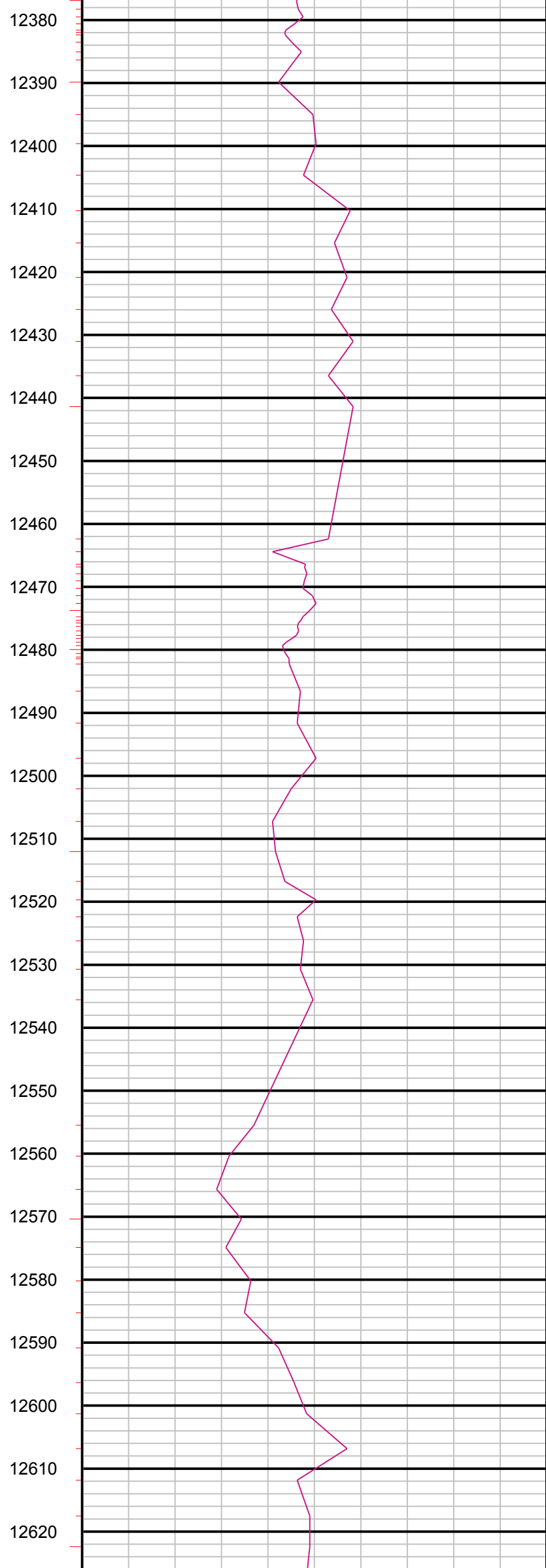
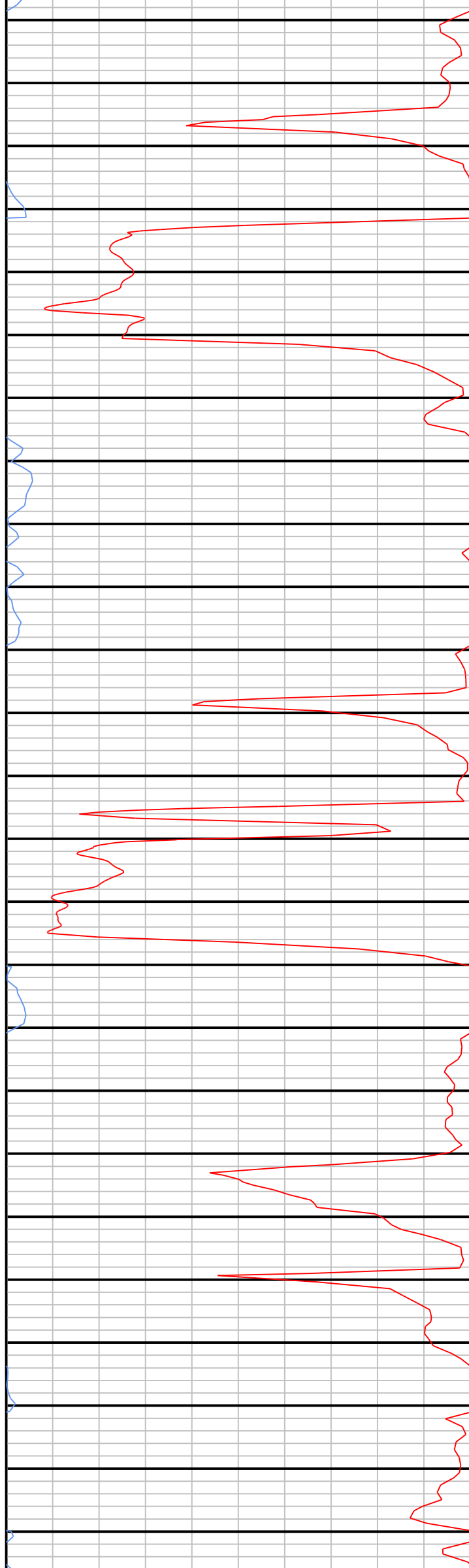


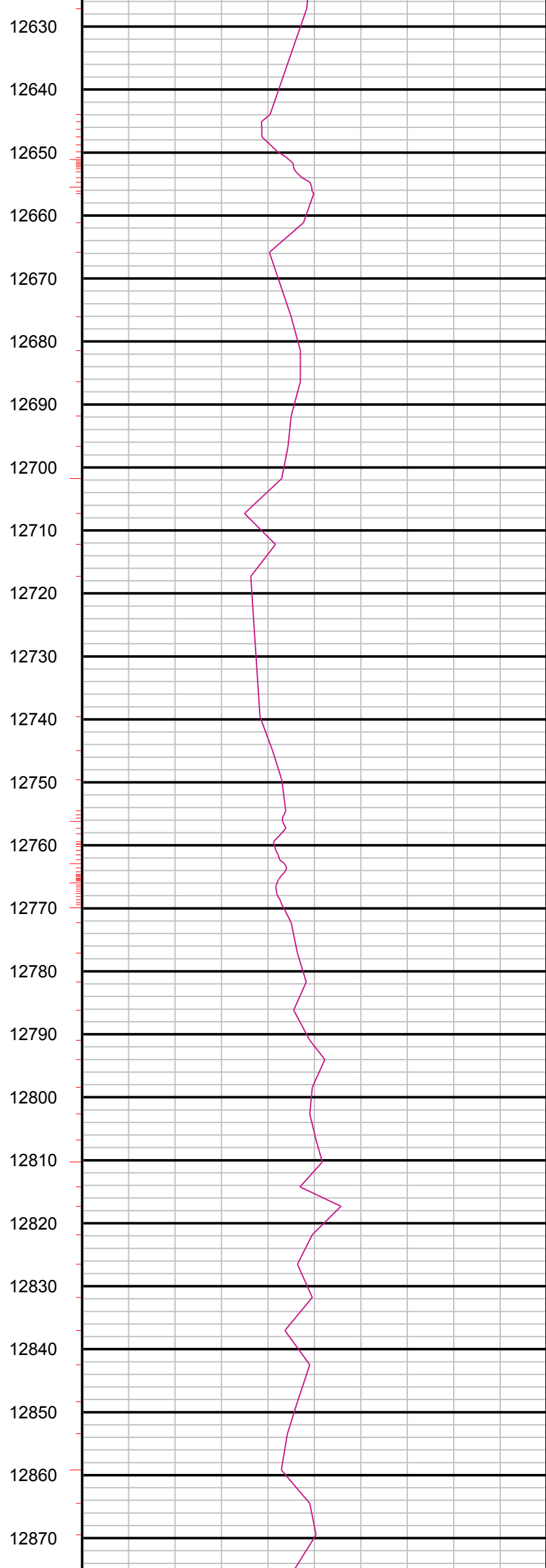


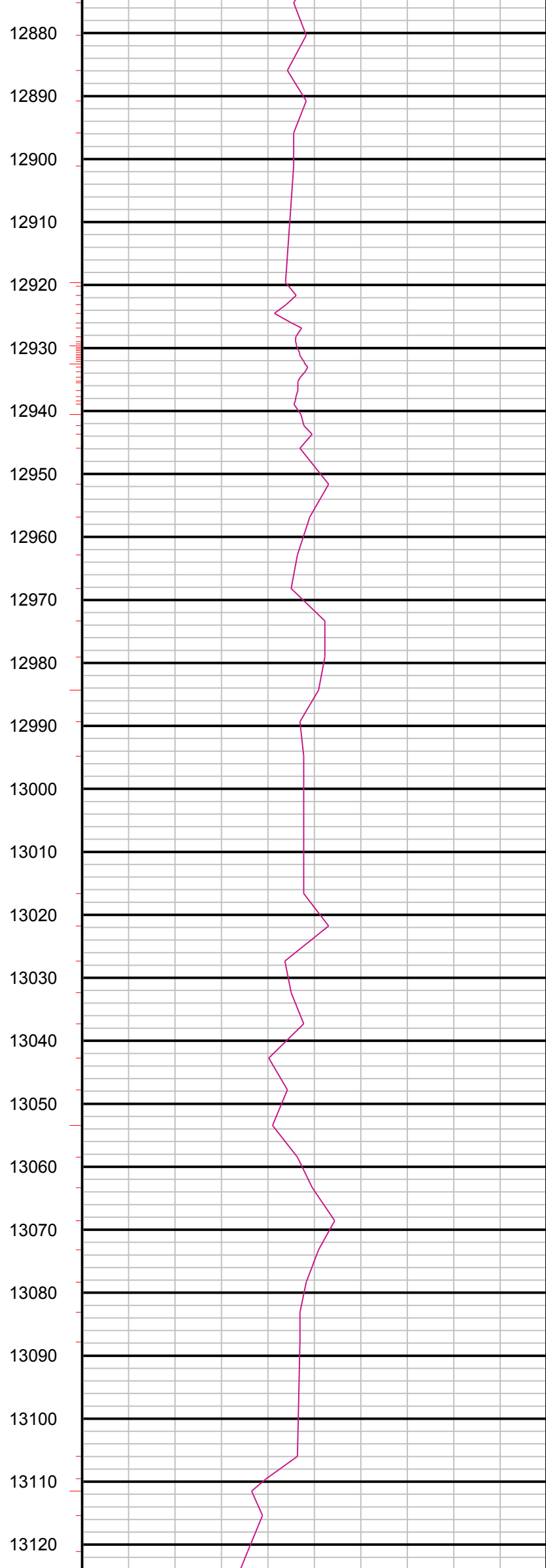
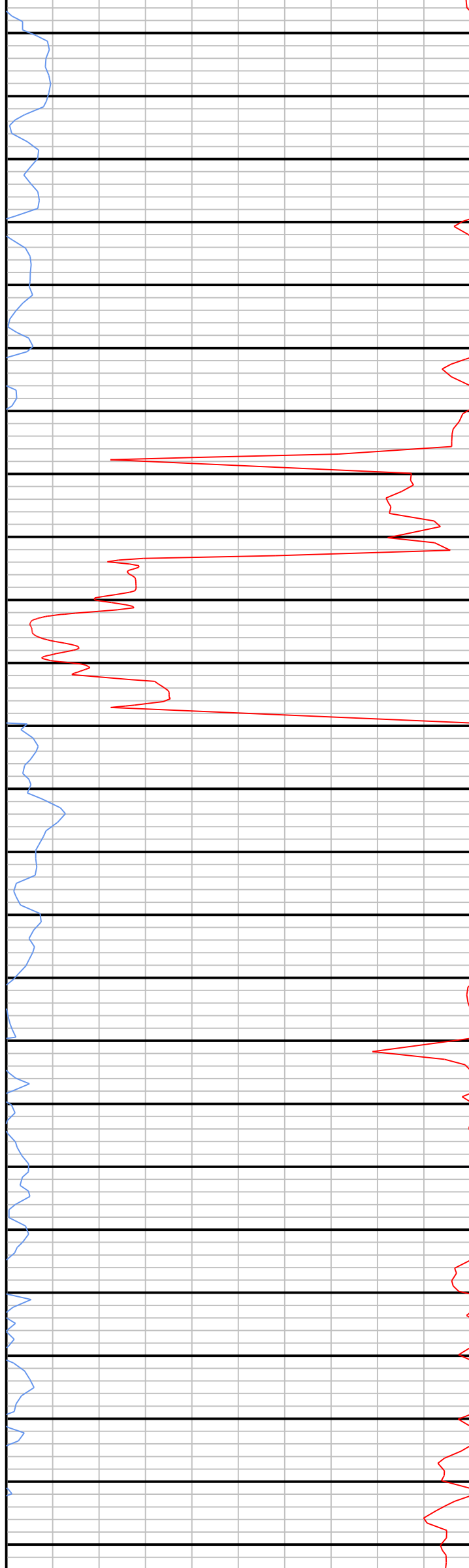


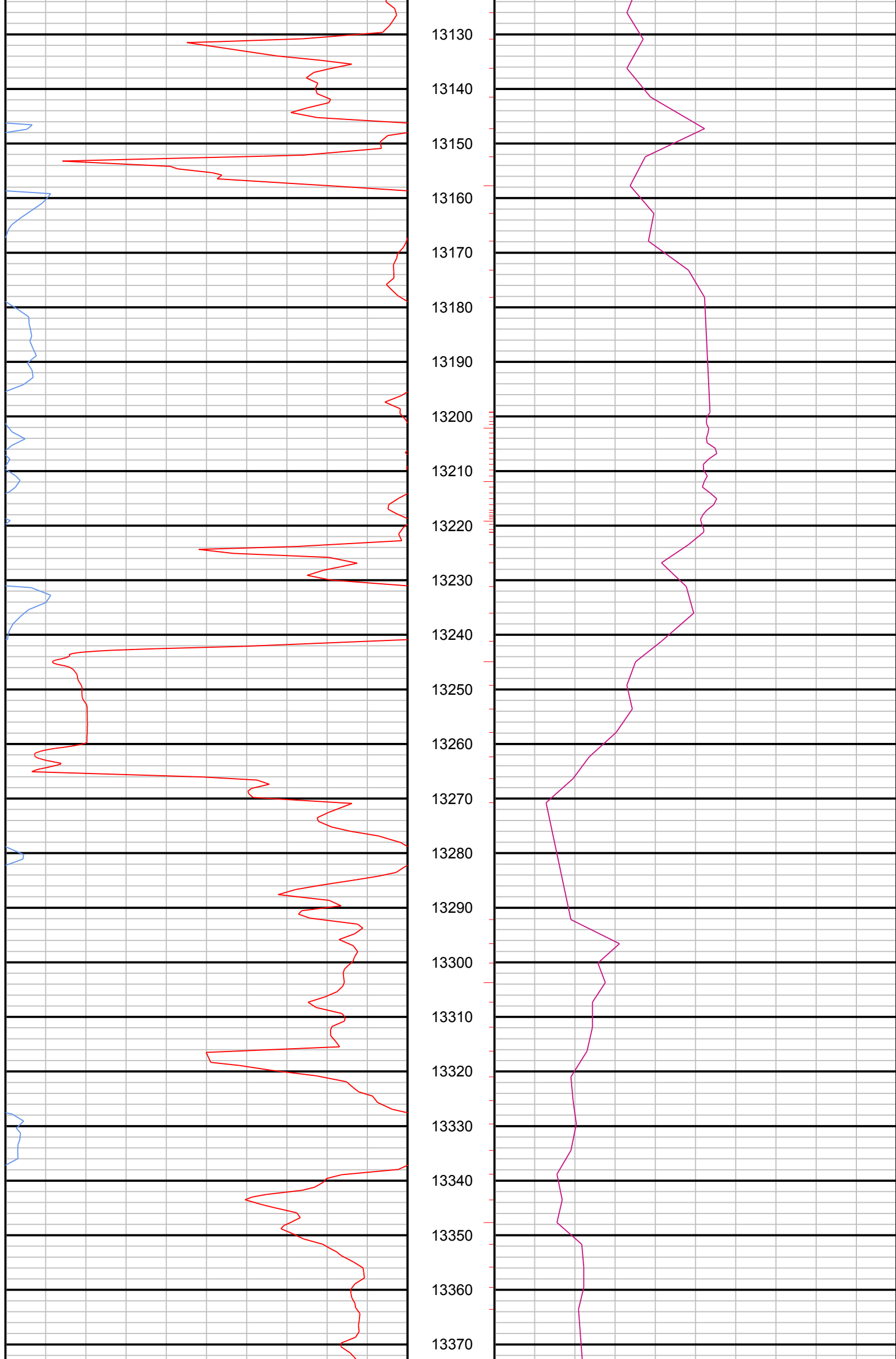


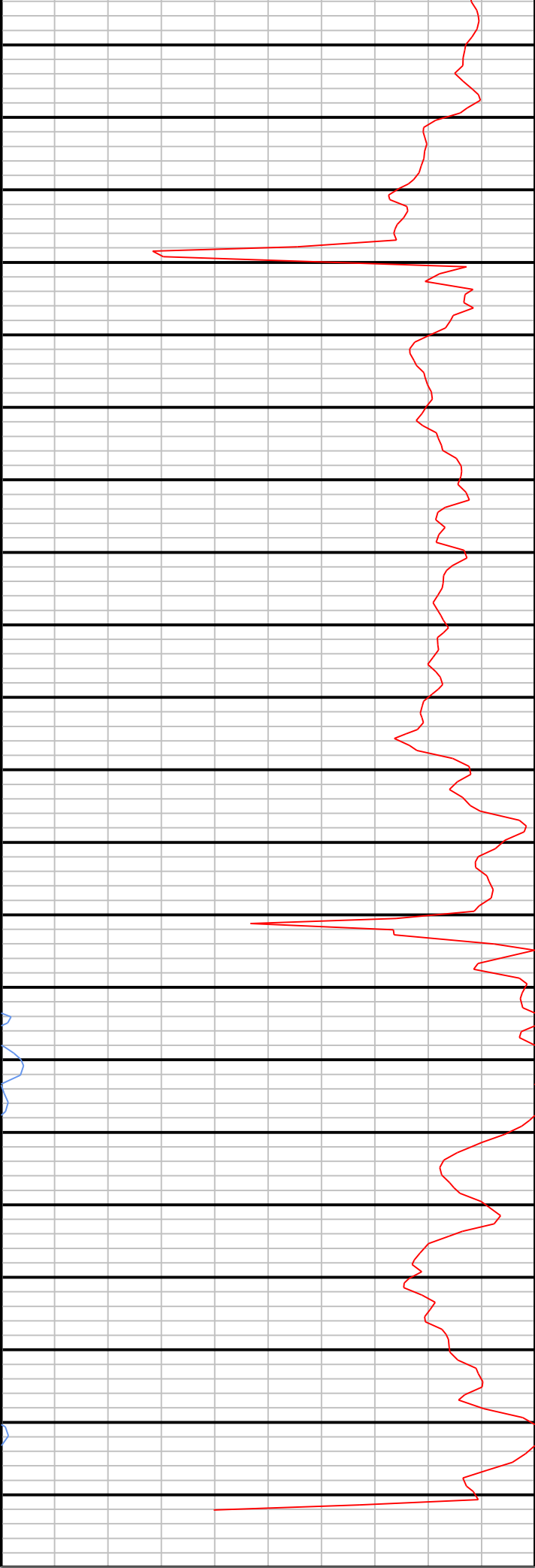




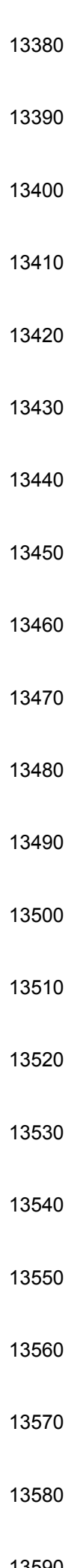








	ROP	ROP
0	ft/hr	300
	ROP	ROP
300	ft/hr	600
	ROP	ROP
600	ft/hr	900
	ROP	ROP
900	ft/hr	1200



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