



Weatherford®

6 3/4 & 4 3/4 in. WeatherfordM/LWD™
Gamma Ray
1 in. & 5 in. MEASURED DEPTH
RECORDED DATA
FINAL PRINT

Company: Anadarko
Well: Thomsen 36N-18HZ
Field: Wattenburg
Rig: H&P 307
County: Weld

Location

Latitude: 40.153758° N x = 3221038 ft Mag Decl: 8.50°
Longitude: 104.709538° W y = 1299842 ft Mag Dip: 66.94°

Other Services: Spectral Azimuthal Gamma Ray and Directional

COMPANY Anadarko
WELL Thomsen 36N-18HZ
FIELD Wattenburg
RIG H&P 307
COUNTY Weld STATE Colorado
API # 05-123-36872-00

Permanent Datum: Mean Sea Level

Log Measured From: Drill Floor Elev: 4977.0 ft above perm. datum

Depth Reference: Drillers Tally Total Depth: 14693 ft

Depth Logged: 6450 ft to 14693 ft Runs: 4

Date Logged: 31-May-13 to 9-Jun-13 Spud Date: 29-May-13

Elevation
K.B. Top Drive
G.L. 4952.0 ft
D.F. 4977.0 ft
W.D. Land

Borehole Record

Casing Record

Hole Size	From	To	Size	Weight	From	To
8.750 in.	977 ft	7734 ft	7.000 in.	26.0 lb/ft	Surface	7699 ft
6.125 in.	7734 ft	14693 ft				

Borehole Deviation Record

Mud Record

Hole Size	Min. Inc.	Max. Inc.	Type	Weight	From	To
8.750 in.	0.30°	91.96°	WBM	8.60 - 10.80 ppq	977 ft	14693 ft
6.125 in.	86.43°	92.90°				

All interpretations of log data are opinions based on inferences from electrical or other measurements. Weatherford International does not guarantee the accuracy or correctness of any interpretation or recommendation and we shall not be liable or responsible for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretation or recommendation made by any of our employees or agents.

RUN SUMMARY							
M/LWD Run Number		1	2	3	4		
Bit Size	in.	8.750	8.750	6.125	6.125		
Bit Type		PDC	PDC	PDC	PDC		
Bit TFA	sq.in.	1.242	0.982	1.243	1.243		
Bit Start Depth	ft	977	5970	7734	13609		
Bit End Depth	ft	5970	7734	13609	14693		
Top Log Interval	ft	N/A	6450	7697	13573		
Bottom Log Interval	ft	N/A	7734	13609	14693		
Begin Log Time	hrs	N/A	18:00	16:39	17:53		
Begin Log Date	DD-MMM-YY	N/A	31-May-13	3-Jun-13	8-Jun-13		
End Log Time	hrs	N/A	21:45	16:19	7:39		
End Log Date	DD-MMM-YY	N/A	1-Jun-13	7-Jun-13	9-Jun-13		
Drill or Wipe		Drill	Drill	Drill	Drill		
Flow Rate	gal/min	595	590	297	298		
Max AV / CV @ MWD	ft/min	473 / 140	466 / 321	487 / 363	487 / 339		
Min Inc @ Depth	deg @ ft	0.30 @ 1375	8.34 @ 6354	86.43 @ 11866	89.32 @ 14376		
Max Inc @ Depth	deg @ ft	11.17 @ 4178	91.96 @ 7672	92.90 @ 11508	91.79 @ 13997		
MUD DATA							
Depth	ft	5970	7734	13609	14693		
Fluid Type		WBM	WBM	WBM	WBM		
Mud Weight	ppg	8.80	9.95	10.70	10.80		
Plastic Viscosity	cP	1	15	12	11		
Solids / Sand	%	0.7 / 0.1	8.0 / 0.3	11.2 / 0.3	11.1 / 0.3		
NaCl Equiv. Chlorides	ppm	1485	1650	1485	1485		
pH		8.8	9	9.2	9.2		
Oil:Water Ratio	% Vol	1.2 : 98.8	10.0 : 90.0	15.7 : 84.3	15.0 : 85.0		
KCl	% Vol	0	0	0	0		
Client Representative		C. Jones	C. Jones	P. Cain	P. Cain		
WeatherfordLWD Engineer		F.J. Harmych	F.J. Harmych	M. Chisam	M. Chisam		

EQUIPMENT SUMMARY					
M/LWD Run Number	1	2	3	4	
BTR / CDS Serial Number	849 / 983	849 / 983	N/A	N/A	
Battery Serial Number	403716789	403716789	N/A	N/A	
Gamma Ray Serial Number	2657	2657	N/A	N/A	
CMS Serial Number	1929	1929	N/A	N/A	
Pulser Serial Number	43919	43919	N/A	N/A	
Inclination Sonde Serial Number	44418	44418	N/A	N/A	
HEL Serial Number	N/A	N/A	NW131376PDBBI4.75	NW131376PDBBI4.75	
SAGR Serial Number	N/A	N/A	NW130895JB4.75-M1	NW130895JB4.75-M1	
Sensor to Bit Offsets / Acquisition Rates					
Directional	ft / sec	59.95 / RT	59.29 / RT	51.37 / RT	52.06 / RT
Gamma Ray	ft / sec	45.74 / 18	45.08 / 18	36.84 / 5	37.53 / 5
Other Information					
Total BHA Length	ft	98.30	97.43	2026.56	2027.25
BHA Assembly Type		Steerable	Steerable	Steerable	Steerable
Stabilizer Location	ft	N/A	N/A	25.03	25.97
Stabilizer Location	ft	N/A	N/A	65.17	65.86
Stabilizer Location	ft	N/A	N/A	N/A	N/A
Run Circulating Time	hr	38.21	28.79	85.97	32.24
Run Drilling Time	hr	22.39	16.28	46.17	8.62

MUD SUMMARY

Date and Time	Run	Bit Depth	Mud Weight	% K	Rm @ Temp	Rmf @ Temp	Rmc @ Temp	BHCT
31 May 13 @ 00:00	01	5970 ft	8.80 ppg	0	N/A	N/A	N/A	161 F
01 Jun 13 @ 21:45	02	7734 ft	9.95 ppg	0	N/A	N/A	N/A	182 F
07 Jun 13 @ 16:39	03	13609 ft	10.70 ppg	0	N/A	N/A	N/A	246 F
09 Jun 13 @ 07:39	04	14693 ft	10.80 ppg	0	N/A	N/A	N/A	253 F

M/LWD RUN REMARKS

Run Number: 1 :: No Logging Data

WFT Services Provided:

No Logging Services provided during Run 01.

Directional Services: On demand Inclination and Azimuth.

Run Number: 2 :: REAL-TIME DATA LOG

WFT Services Provided:

Real Time Logging: Gamma Ray and Temperature.

Directional Services: On demand Inclination and Azimuth.

Borehole and Environmental Correction:

Hole Size: 8.750 in.

Gamma Ray: Hole size, mudweight, Collar O.D., Collar I.D. and K1 factor.

Mud Weight: 9.95 ppg

Collar O.D.: 6.750 in.

K1 Factor: 3.958

Collar I.D.: 3.250 in.

Run Number: 3 :: RECORDED DATA LOG

WFT Services Provided:

Recorded and Real Time Logging: Spectral Azimuthal Gamma Ray and Temperature.

Directional Services: On demand Inclination and Azimuth.

Borehole and Environmental Correction:

Hole Size: 6.125 in.

Gamma Ray: Corrected for mud weight, hole size and KCl concentration.

Mud Weight: 10.70 ppg

KCl Concentration: 0%

Run Number: 4 :: RECORDED DATA LOG

WFT Services Provided:

Recorded and Real Time Logging: Spectral Azimuthal Gamma Ray and Temperature.

Directional Services: On demand Inclination and Azimuth.

Borehole and Environmental Correction:

Hole Size: 6.125 in.

Gamma Ray: Corrected for mud weight, hole size and KCl concentration.

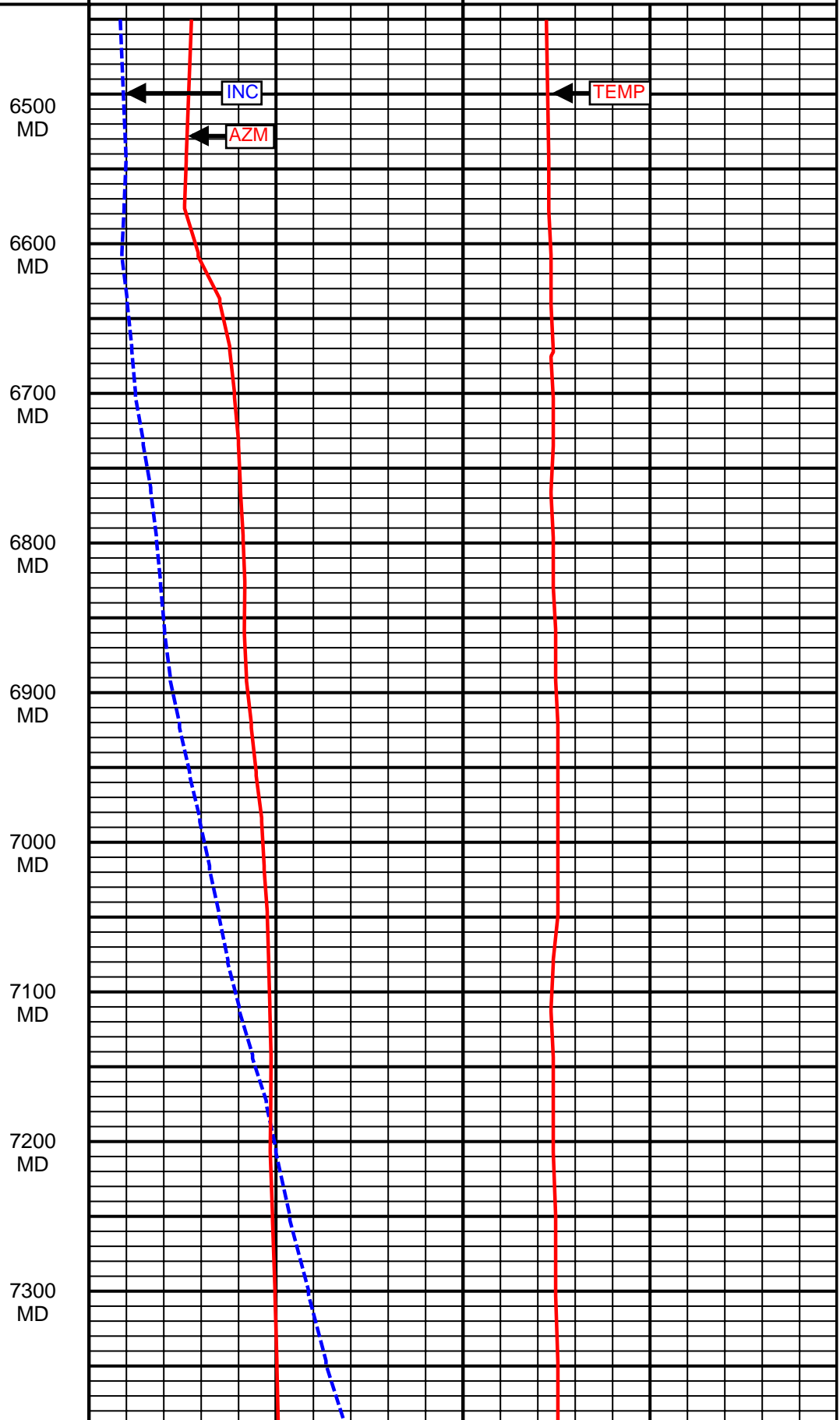
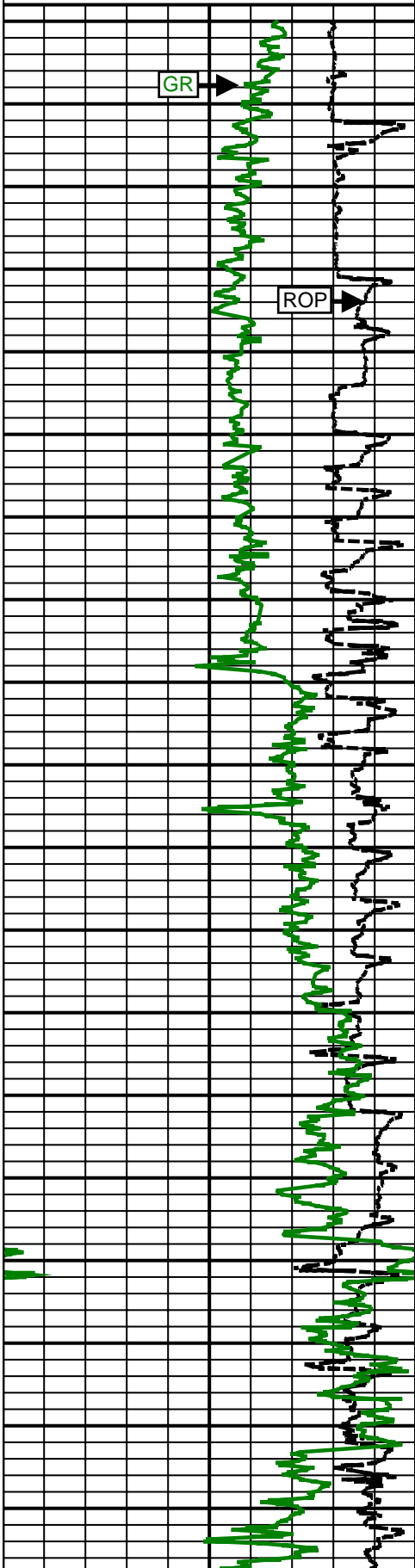
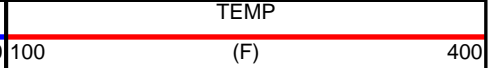
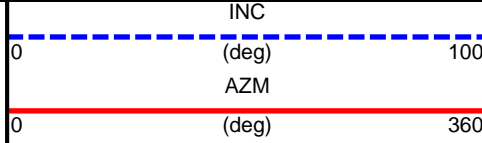
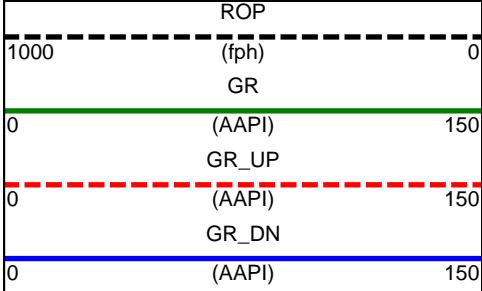
Mud Weight: 10.80 ppg

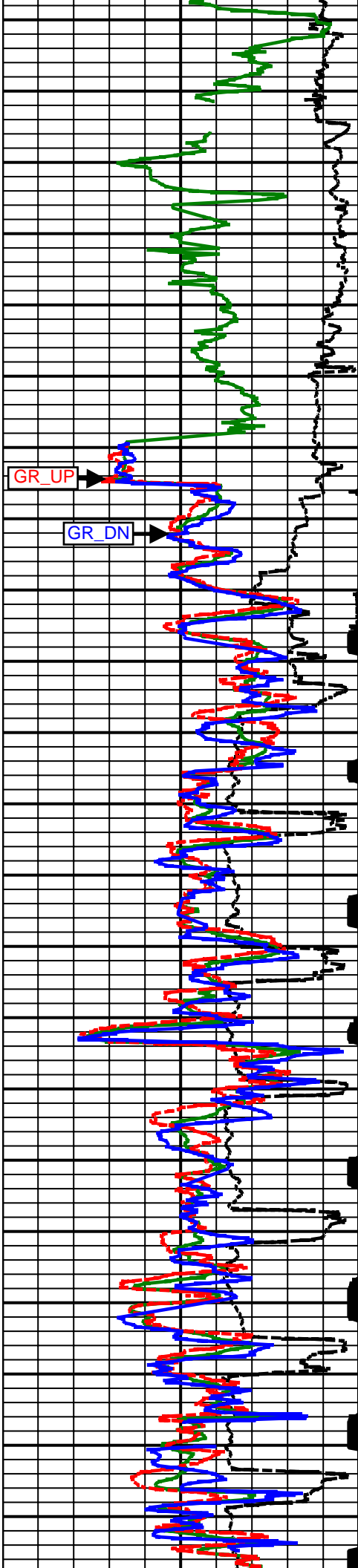
KCl Concentration: 0%

M/LWD LOG COMMENTS	
Comment No. 1-1	No Logging Services Provided for Run 01.
Comment No. 2-1	REAL-TIME DATA LOG Start of MWD Drilling Run 02 Weatherford International provided 6 3/4 in. Directional, Gamma Ray, and Temperature for Run 02. Run 02 started formation drilling May 31, 2013 at 18:00 at 5970 MD /5929 TVD. Weatherford International logged the 8.750 in. borehole. The WBM at the start of drilling was 9.30 ppg.
Comment No. 2-2	End of MWD Drilling Run 02 Run 02 ended drilling formation June 1, 2013 at 21:45 at 7734 MD / 7220 TVD. The WBM at the end of drilling was 9.95 ppg.
Comment No. 3-1	RECORDED DATA LOG Start of LWD Drilling Run 03 Weatherford International provided 4 3/4 in. Directional, Spectral Azimuthal Gamma Ray, and Temperature for Run 03. Run 03 started formation drilling June 3, 2013 at 16:39 at 7734 MD / 7221 TVD. Weatherford International logged the 6.125 in. borehole. The WBM at the start of drilling was 10.10 ppg.
Comment No. 3-2	End of LWD Drilling Run 03 Run 03 ended drilling formation June 7, 2013 at 16:19 at 13609 MD / 7238 TVD. The WBM at the end of drilling was 10.70 ppg.
Comment No. 4-1	RECORDED DATA LOG Start of LWD Drilling Run 04 Weatherford International provided 4 3/4 in. Directional, Spectral Azimuthal Gamma Ray, and Temperature for Run 04. Run 04 started formation drilling June 8, 2013 at 17:53 at 13609 MD / 7238 TVD. Weatherford International logged the 6.125 in. borehole. The WBM at the start of drilling was 10.70 ppg.
Comment No. 4-2	End of LWD Drilling Run 04 Run 04 ended drilling formation June 9, 2013 at 7:39 at 14693 MD / 7227 TVD. The WBM at the end of drilling was 10.80 ppg.

CURVE SPECIFICATIONS				
CURVE TYPE	MNEMONIC	UNITS	COMMENTS	CORRECTIONS
Rate of Penetration	ROP	fph	Rate of Penetration 3.0 ft window 0.5 ft Exponential Smoothing	None
Gamma Ray	GR	AAPI	Gamma Ray 3.0 ft window 0.5 ft Exponential Smoothing	See M/LWD Run Remarks
Gamma Ray Up	GR_UP	AAPI	Gamma Ray 3.0 ft window 0.5 ft Exponential Smoothing	
Gamma Ray Down	GR_DN	AAPI	Gamma Ray 3.0 ft window 0.5 ft Exponential Smoothing	
Inclination	INC	deg	Survey Inclination No Smoothing	None
Azimuth	AZM	deg	Survey Azimuth No Smoothing	
Temperature	TEMP	F	Borehole Temperature 3.0 ft window 0.5 ft Exponential Smoothing	

1 Inch - Measured Depth





7400 MD

7500 MD

7600 MD

7700 MD

7800 MD

7900 MD

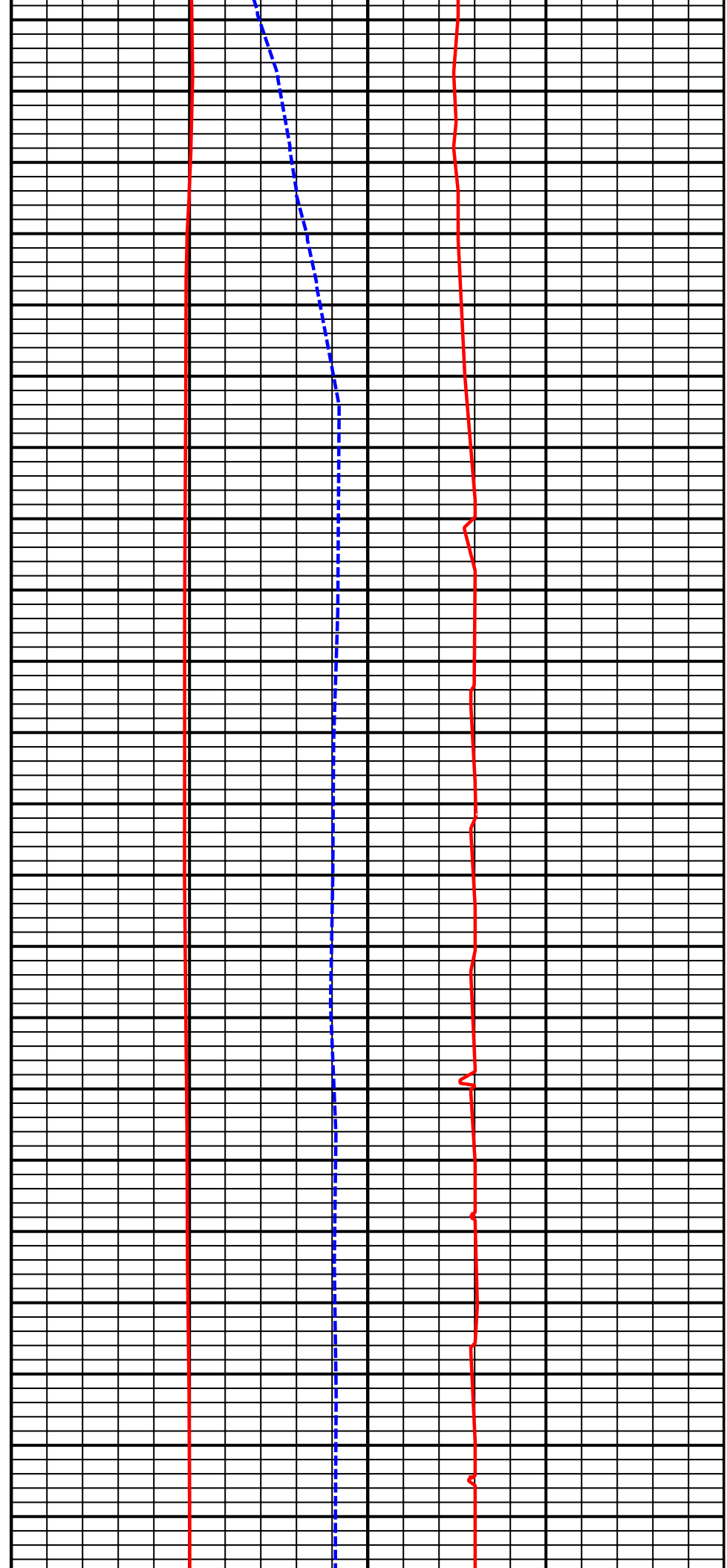
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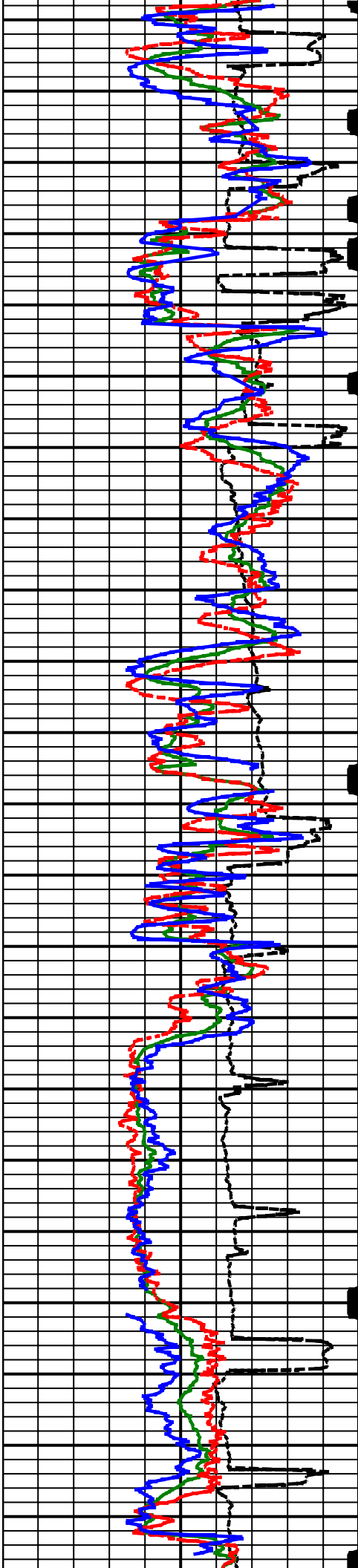
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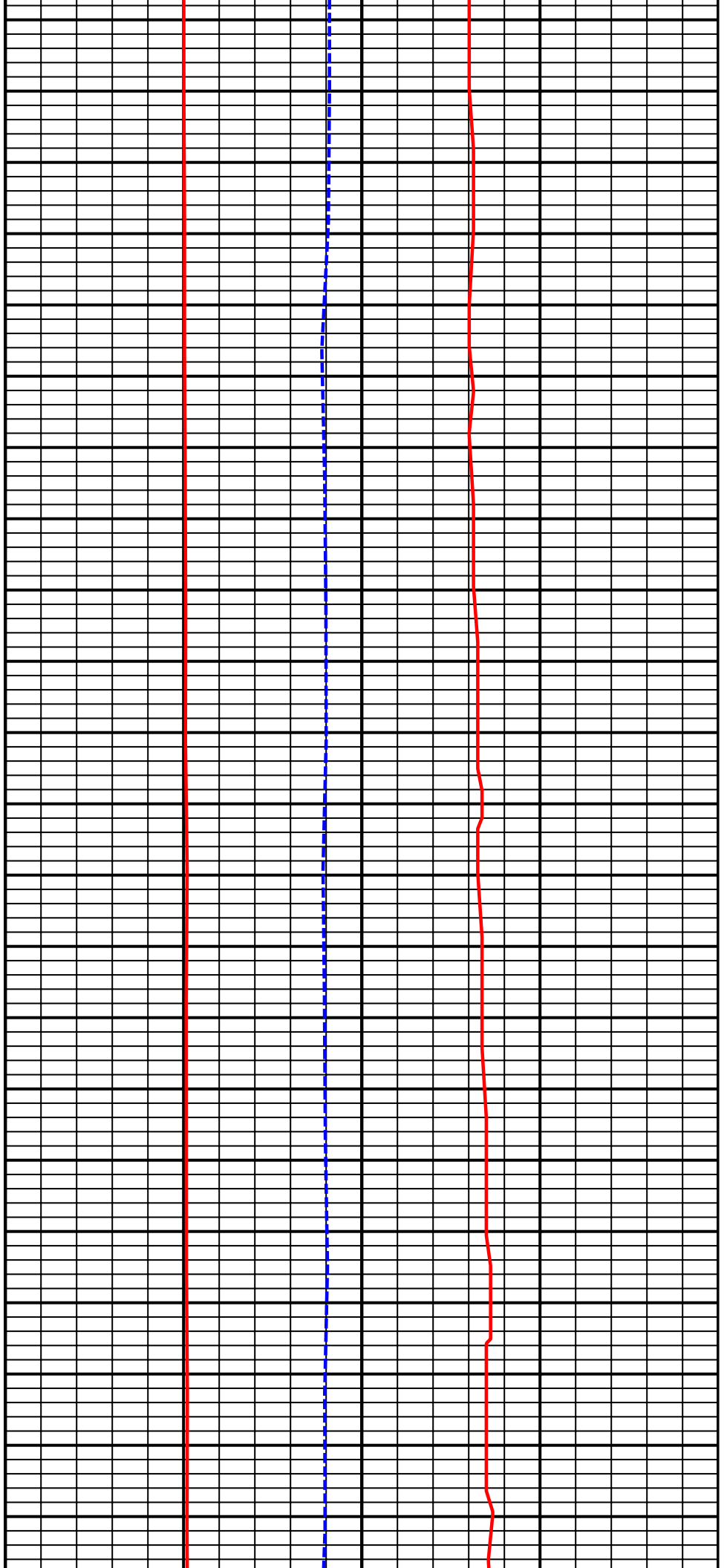
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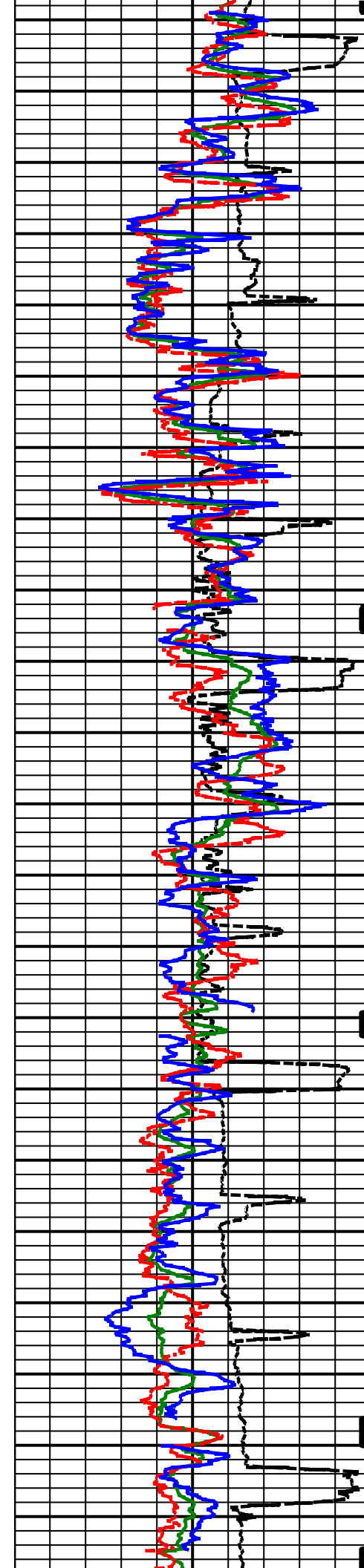
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8500 MD
8600 MD
8700 MD
8800 MD
8900 MD
9000 MD
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9200 MD
9300 MD
9400 MD
9500 MD





9600 MD

9700 MD

9800 MD

9900 MD

10000 MD

10100 MD

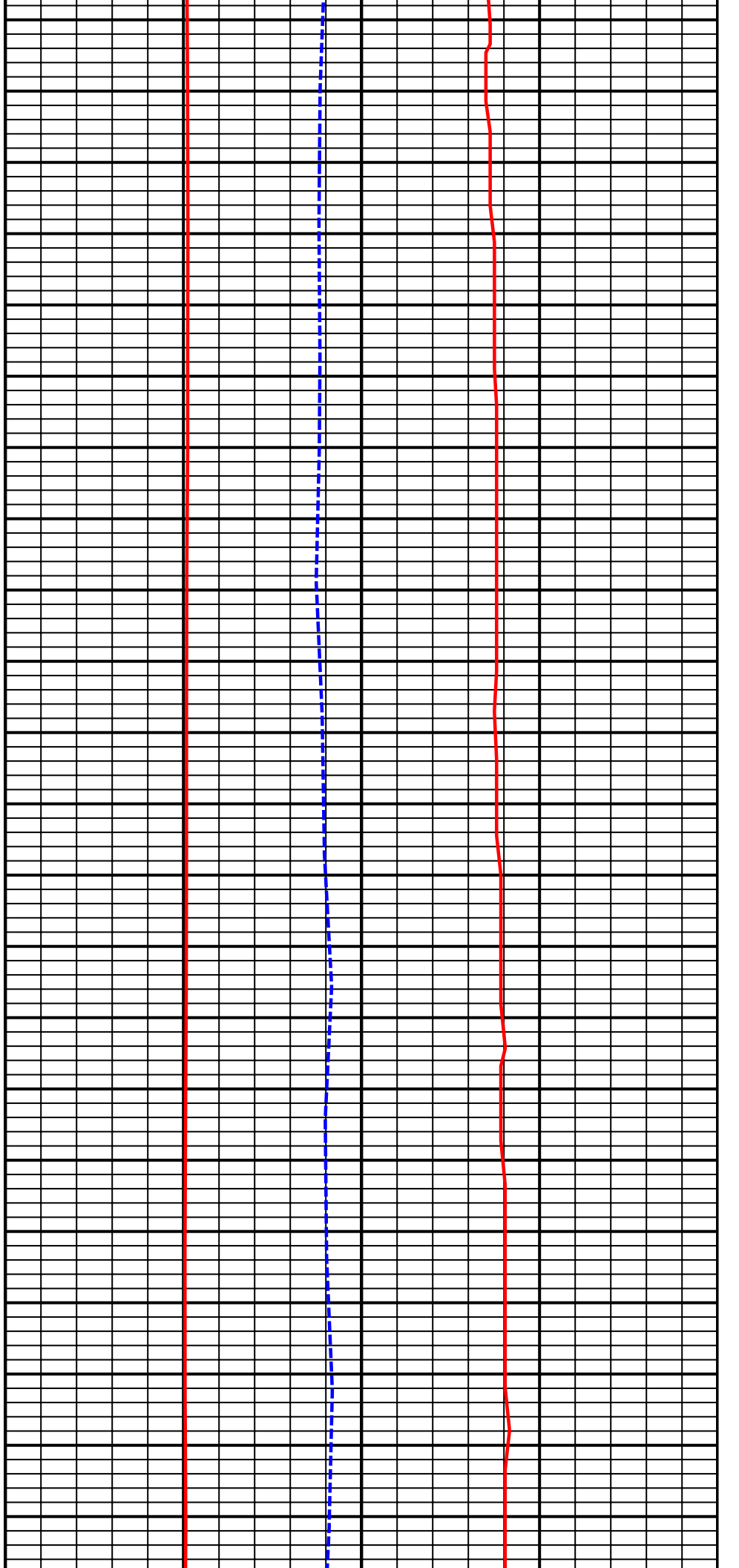
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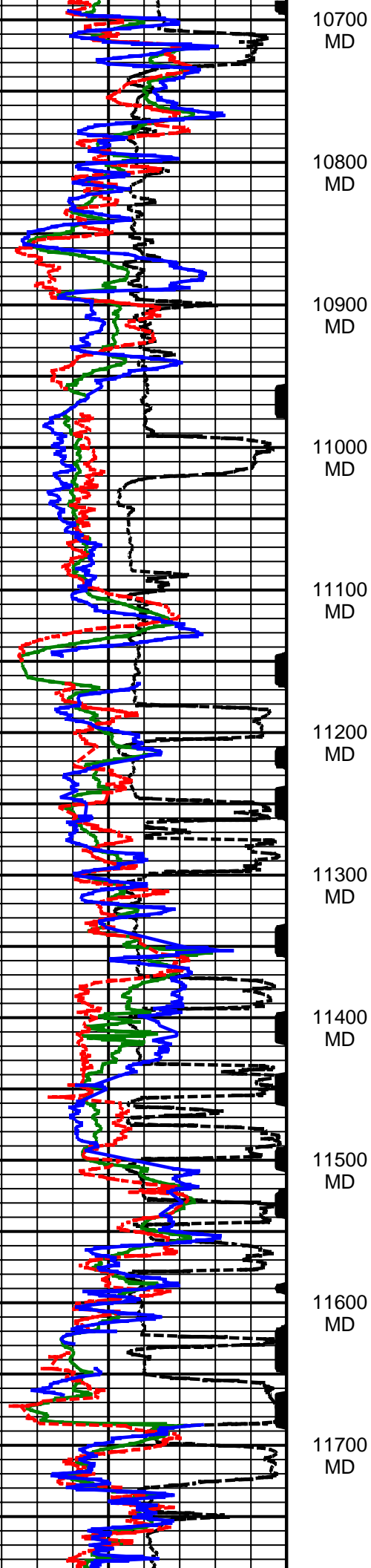
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10600 MD





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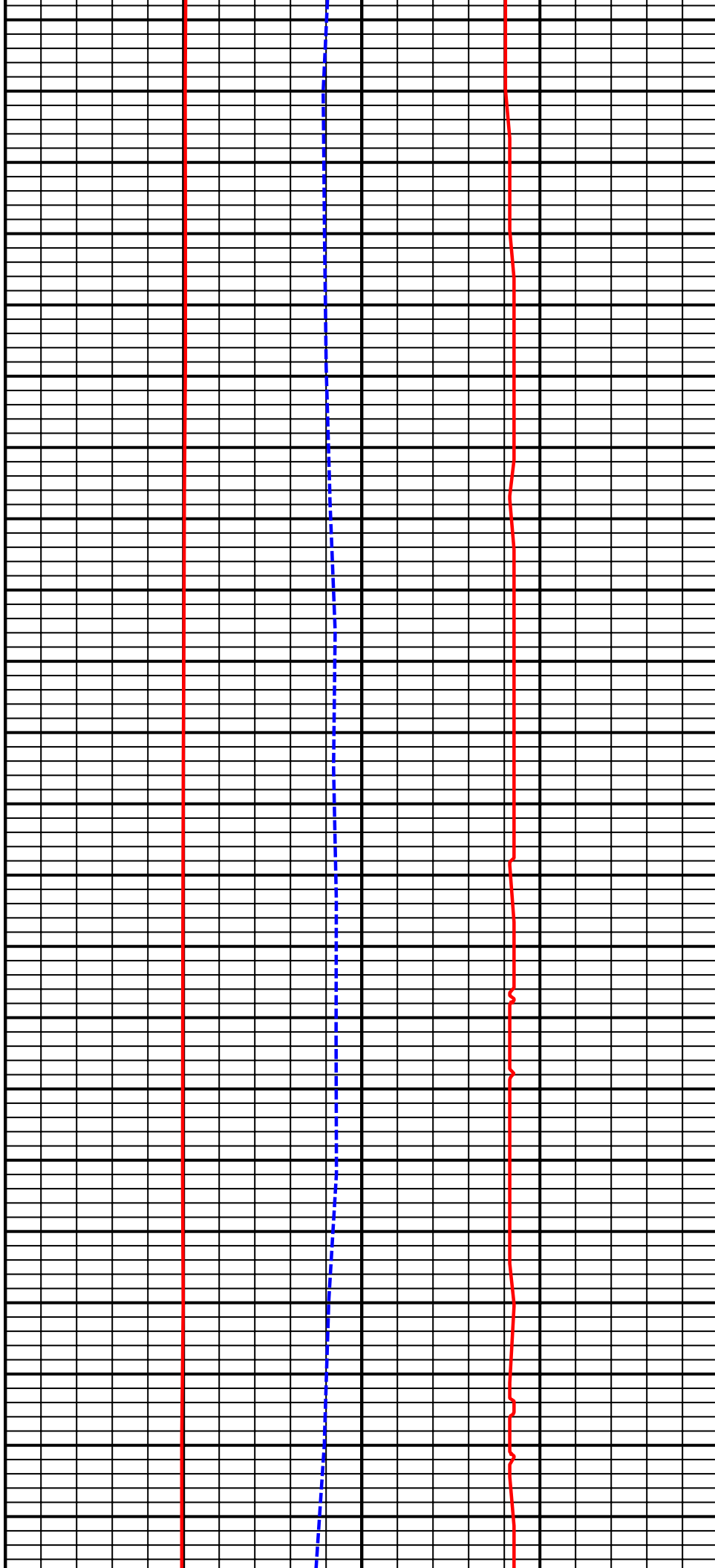
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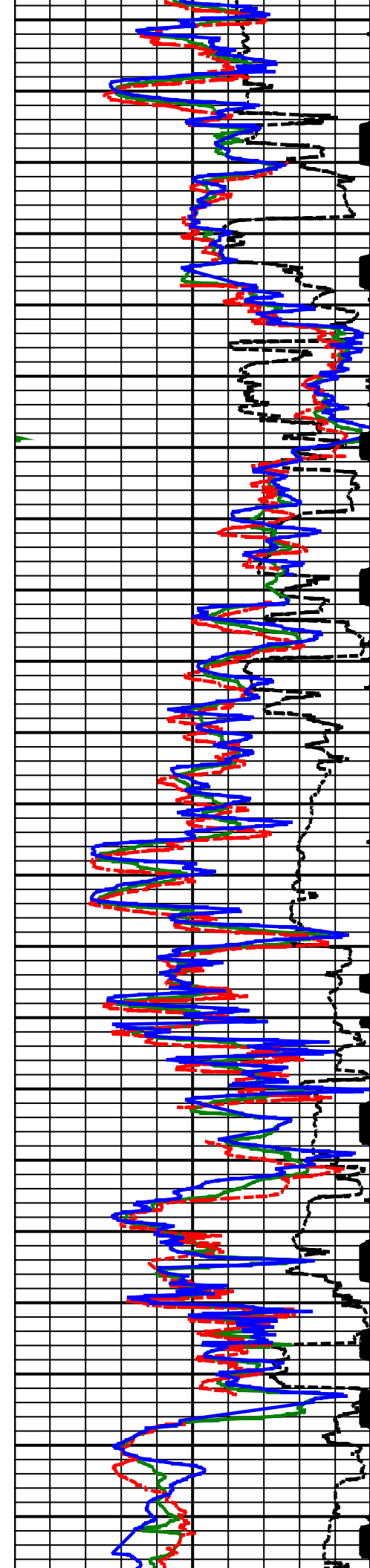
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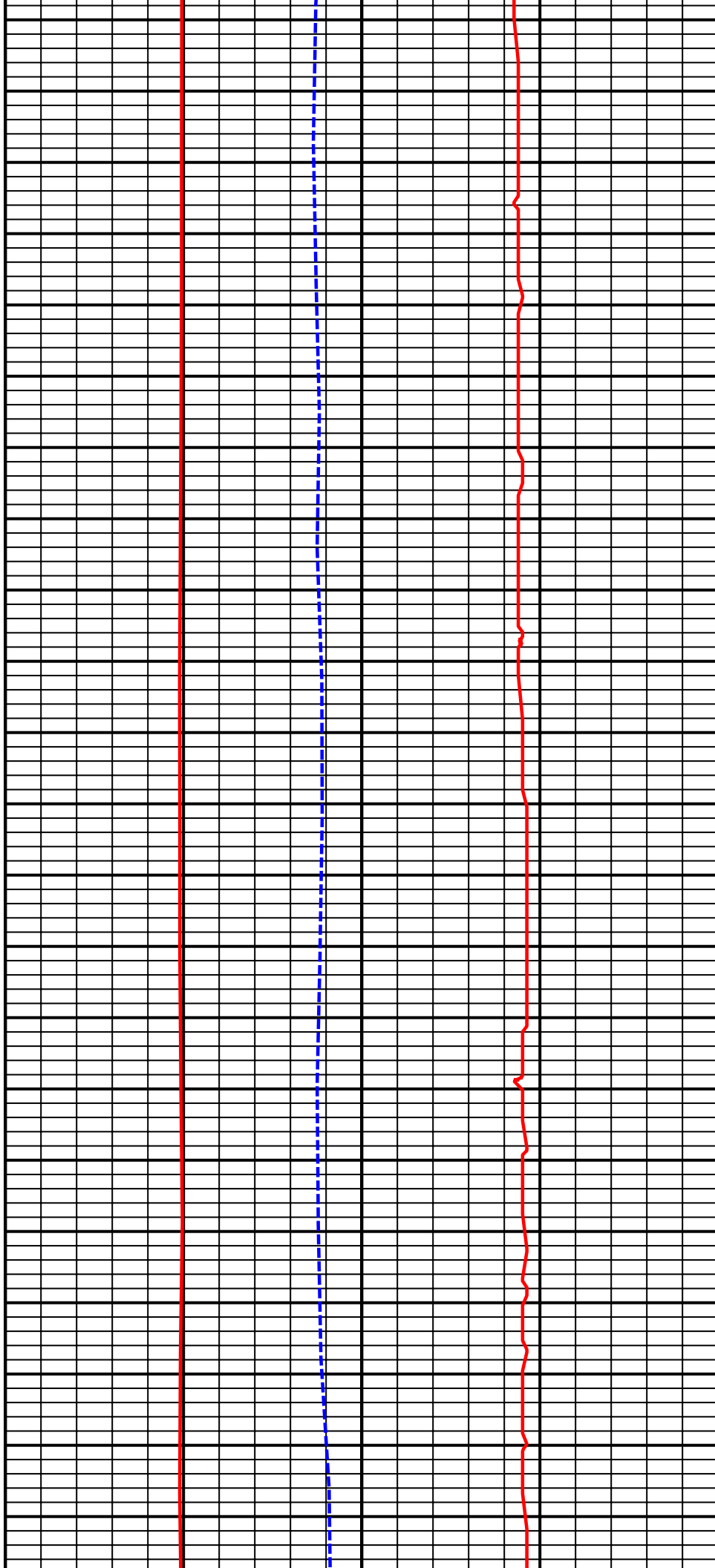
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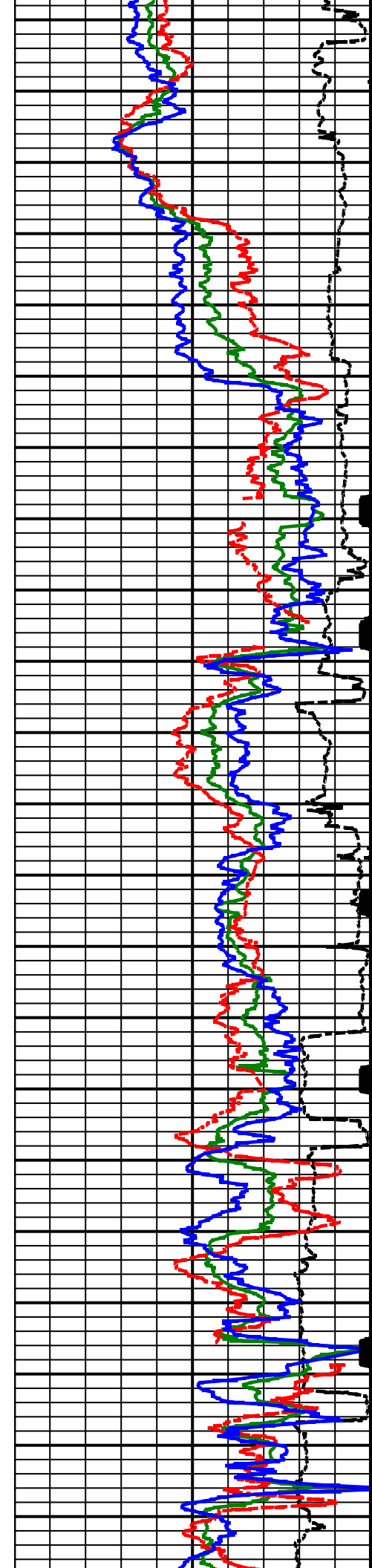
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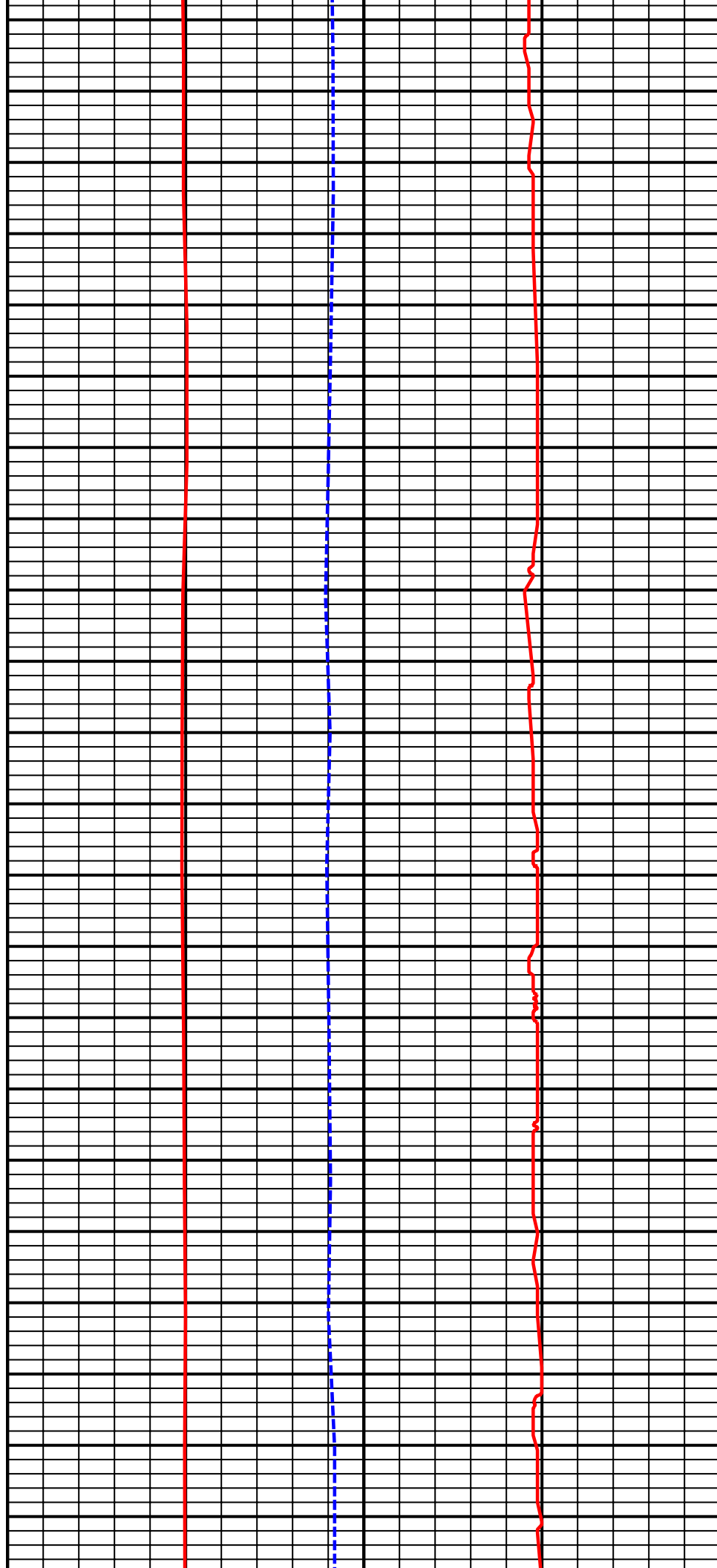
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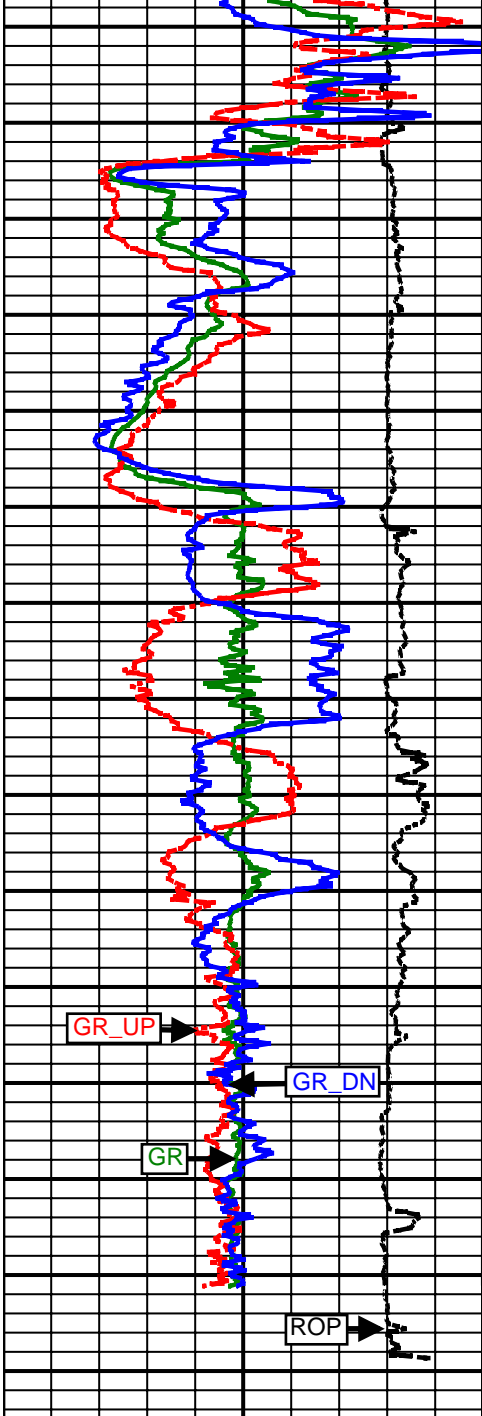
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14000 MD

14100 MD

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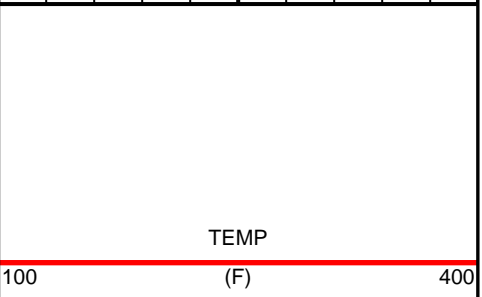
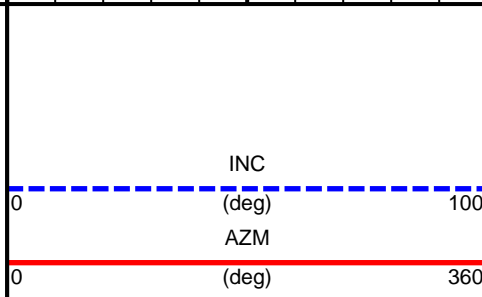
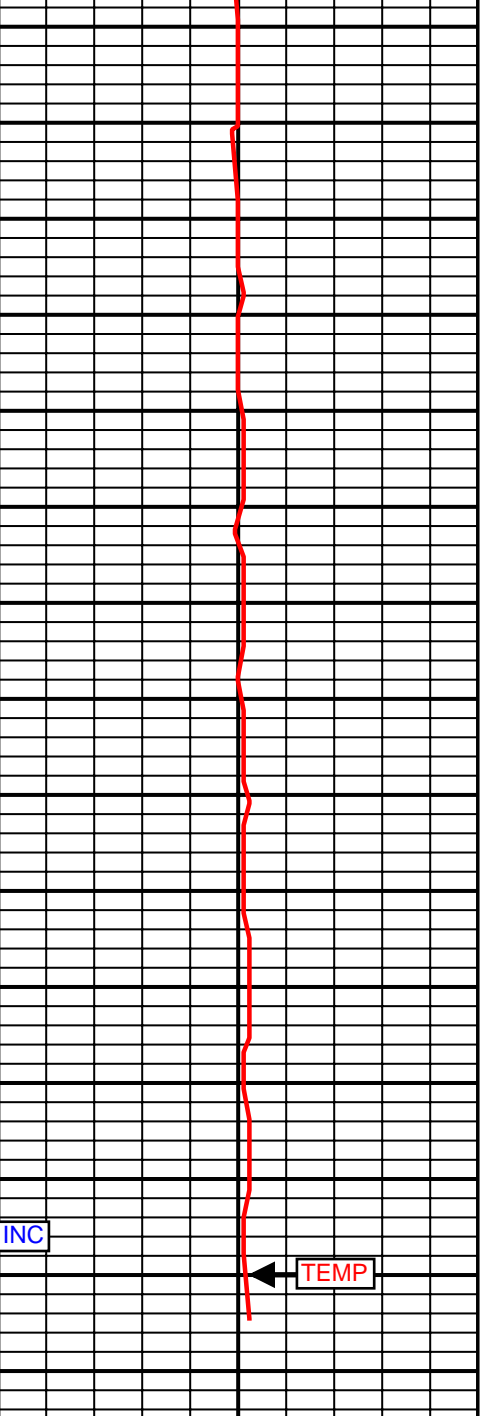
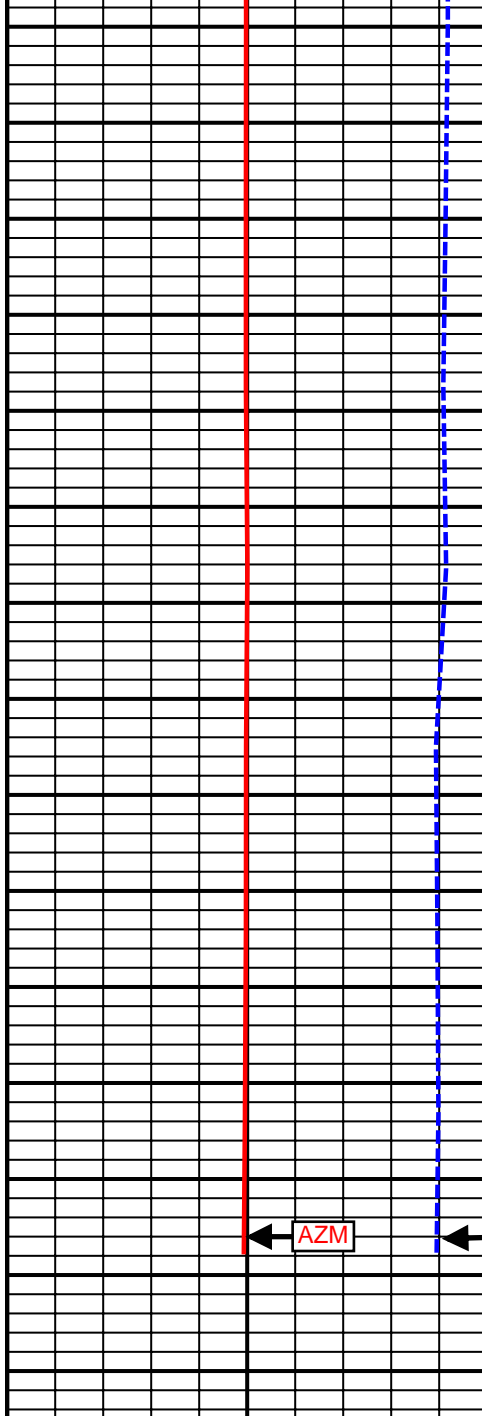
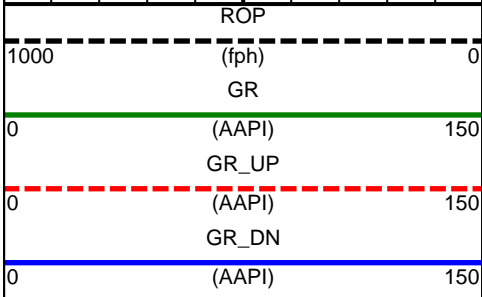
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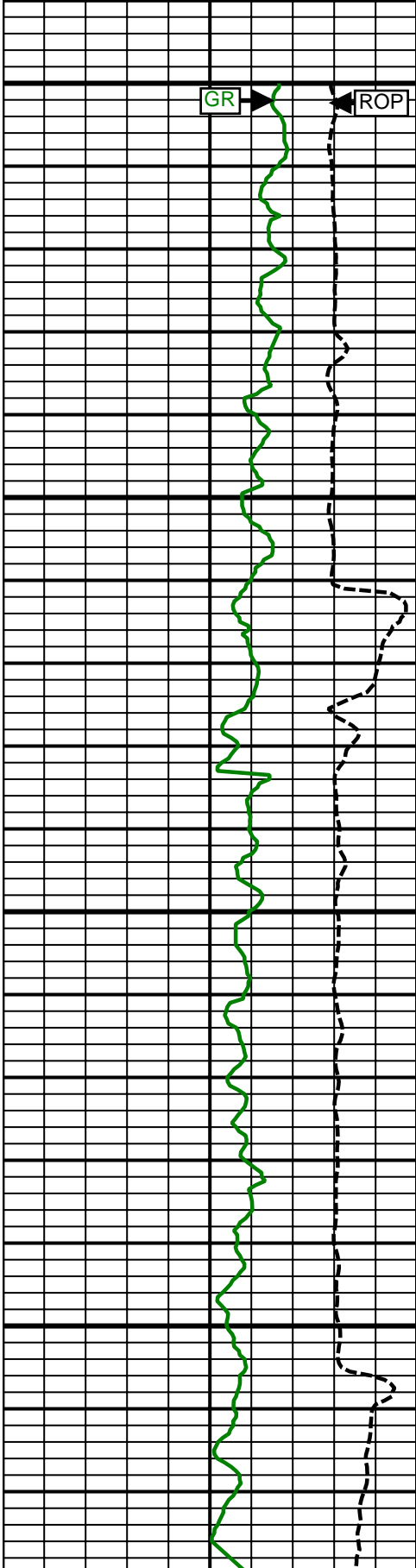
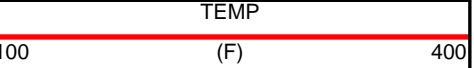
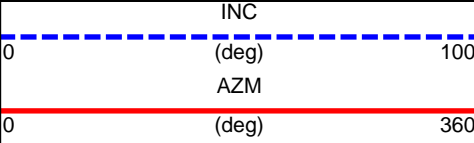
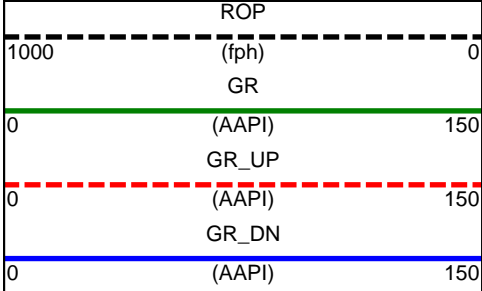
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14600 MD

14700 MD



5 Inch - Measured Depth

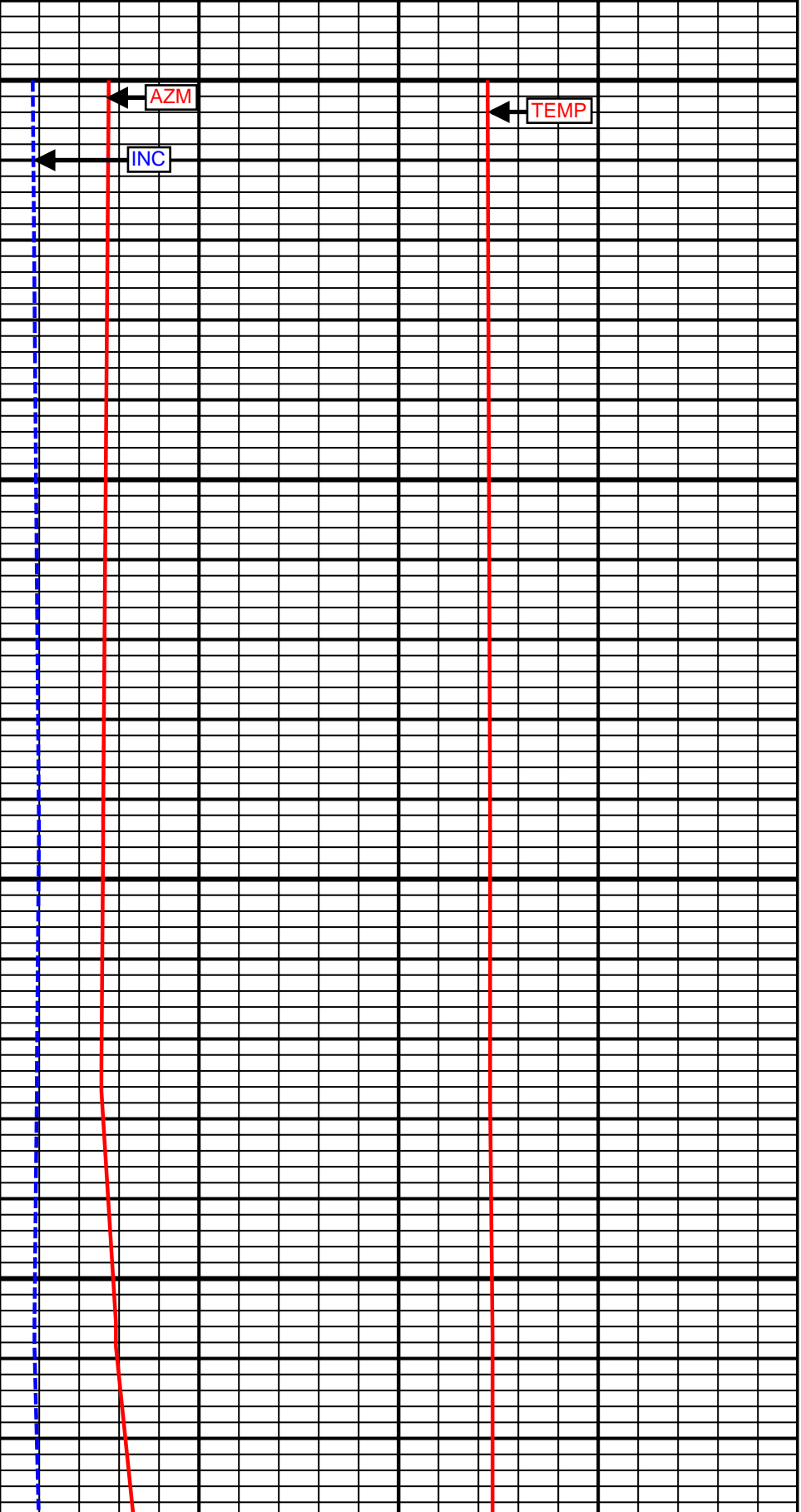


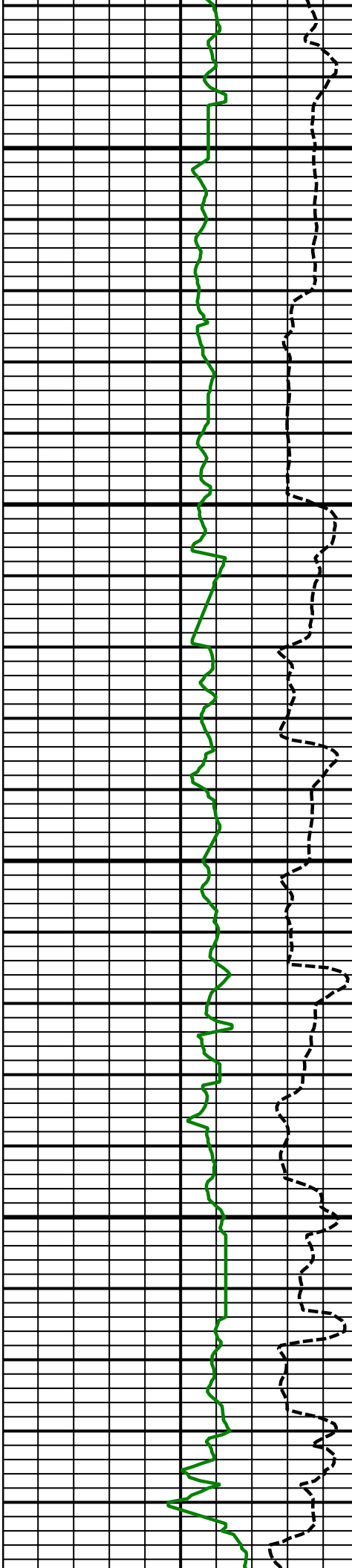
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Comment No. 2-1

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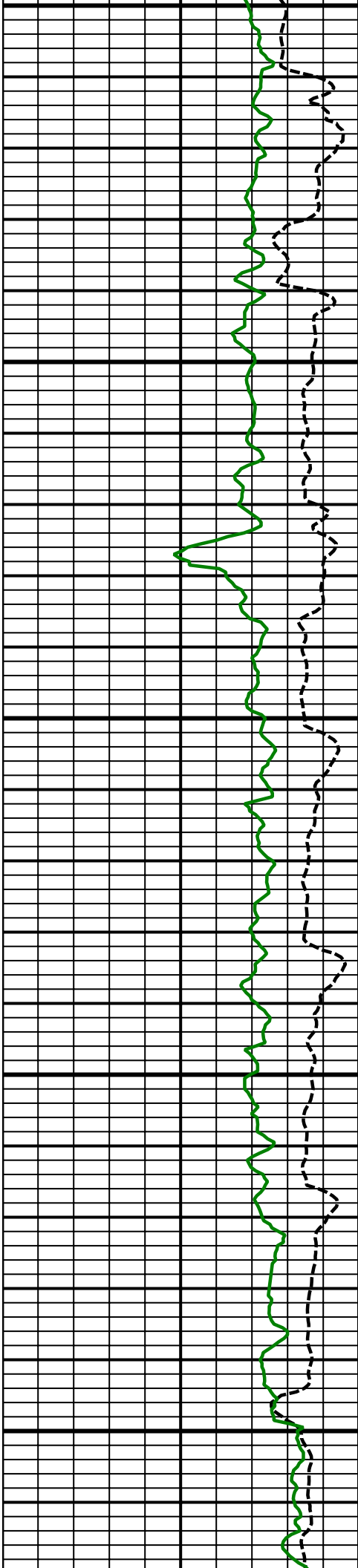
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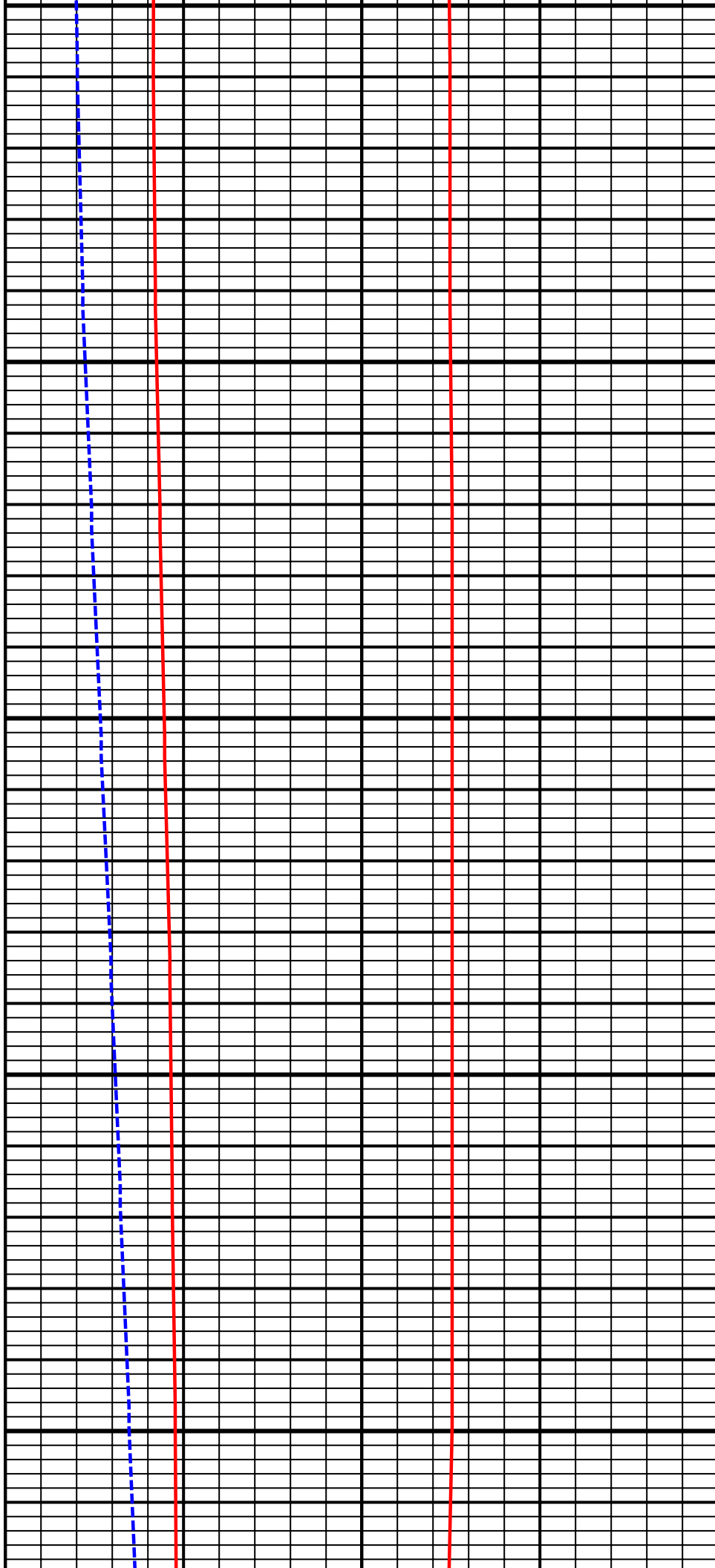
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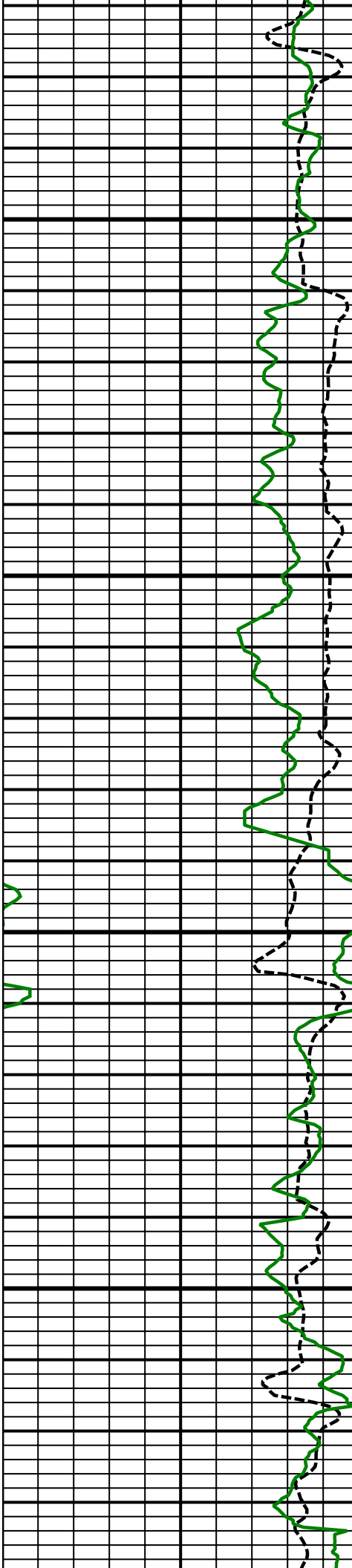
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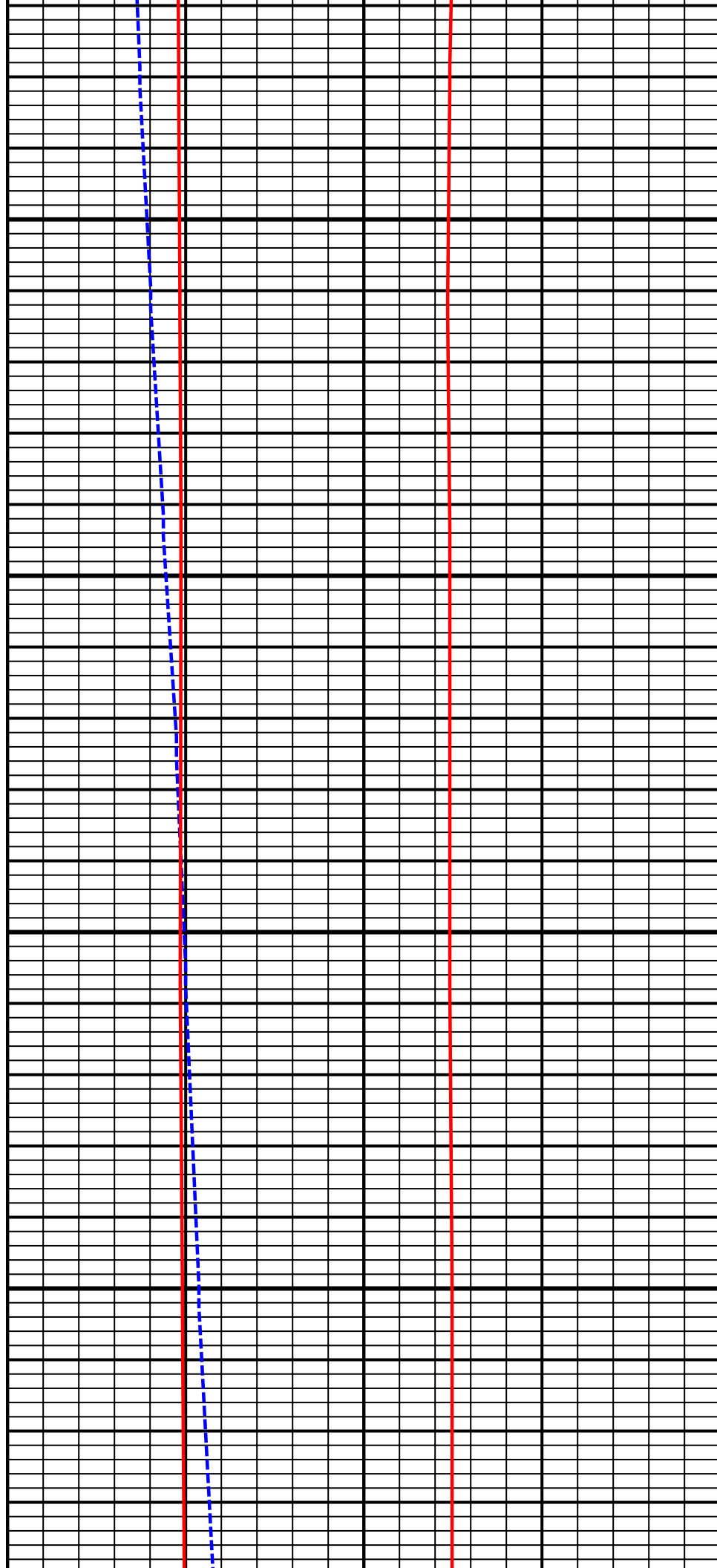
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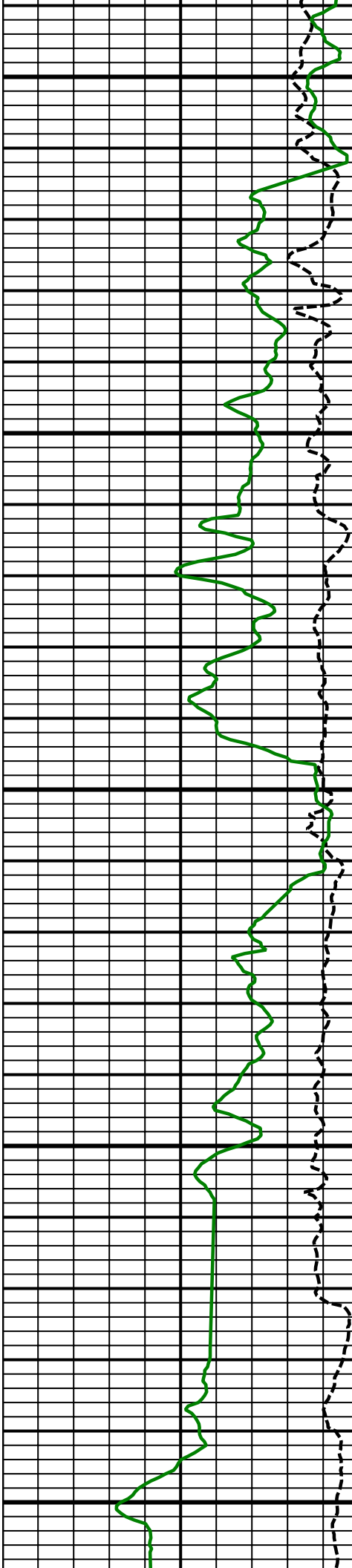




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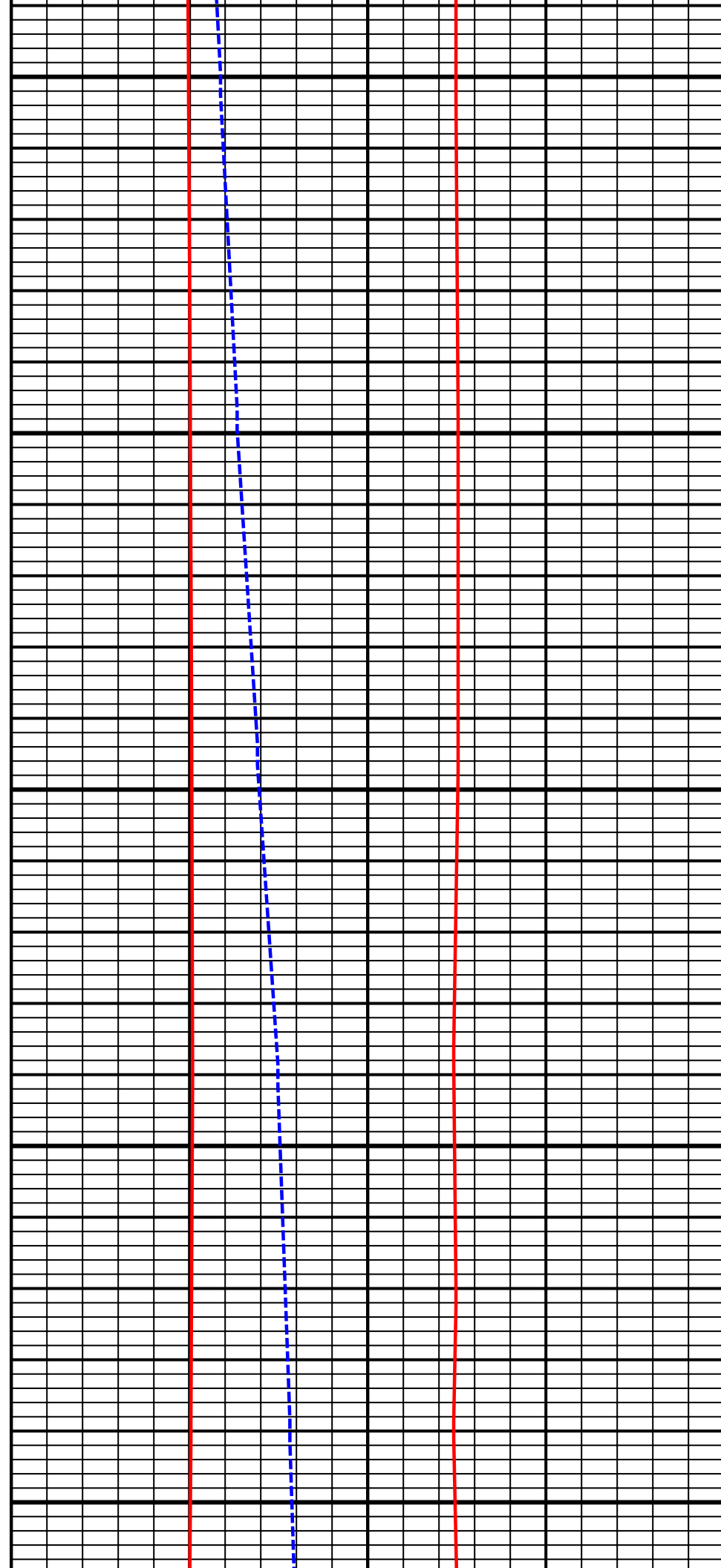


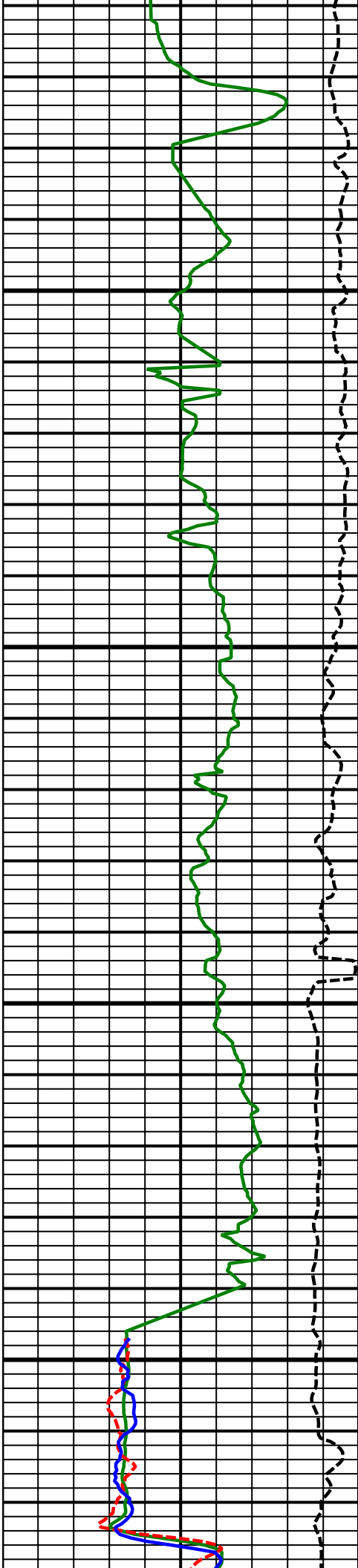


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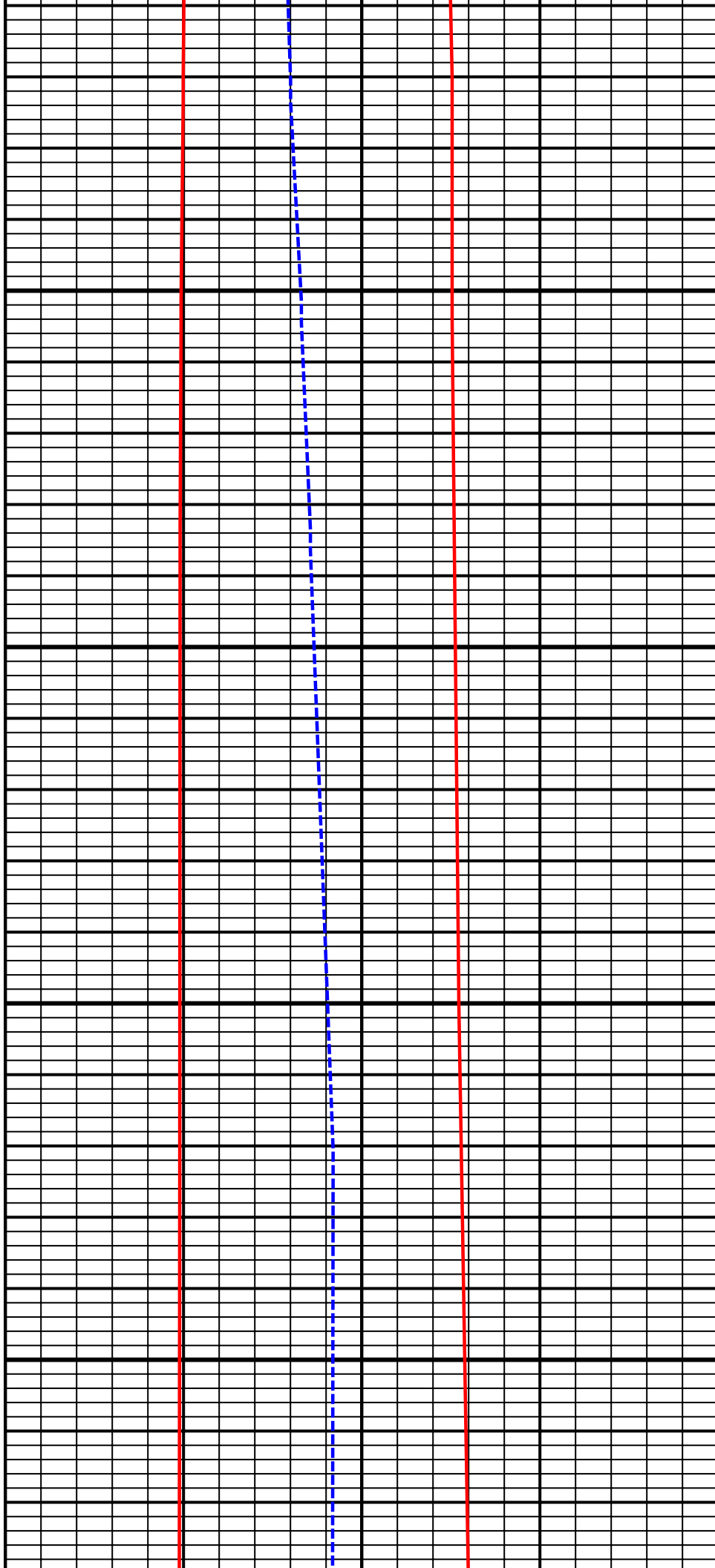


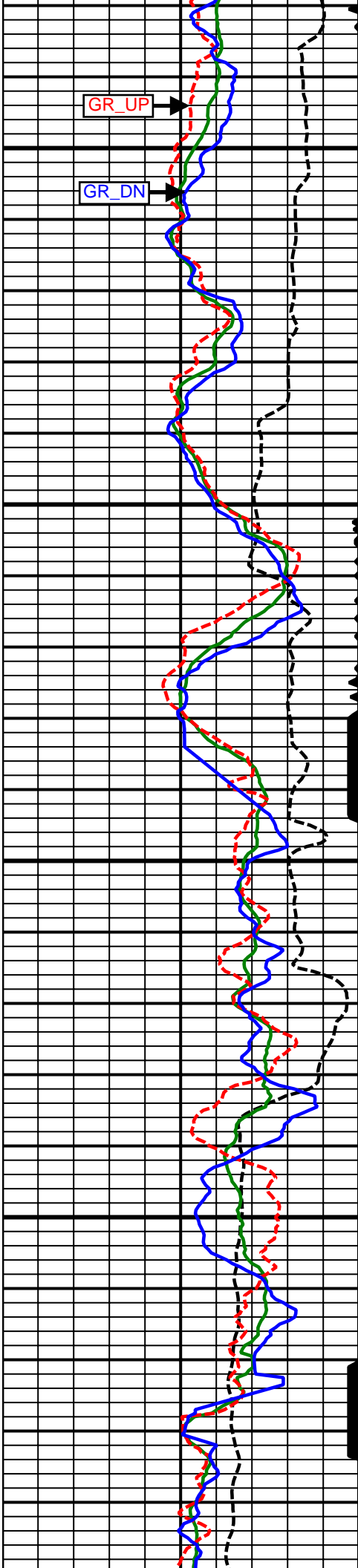
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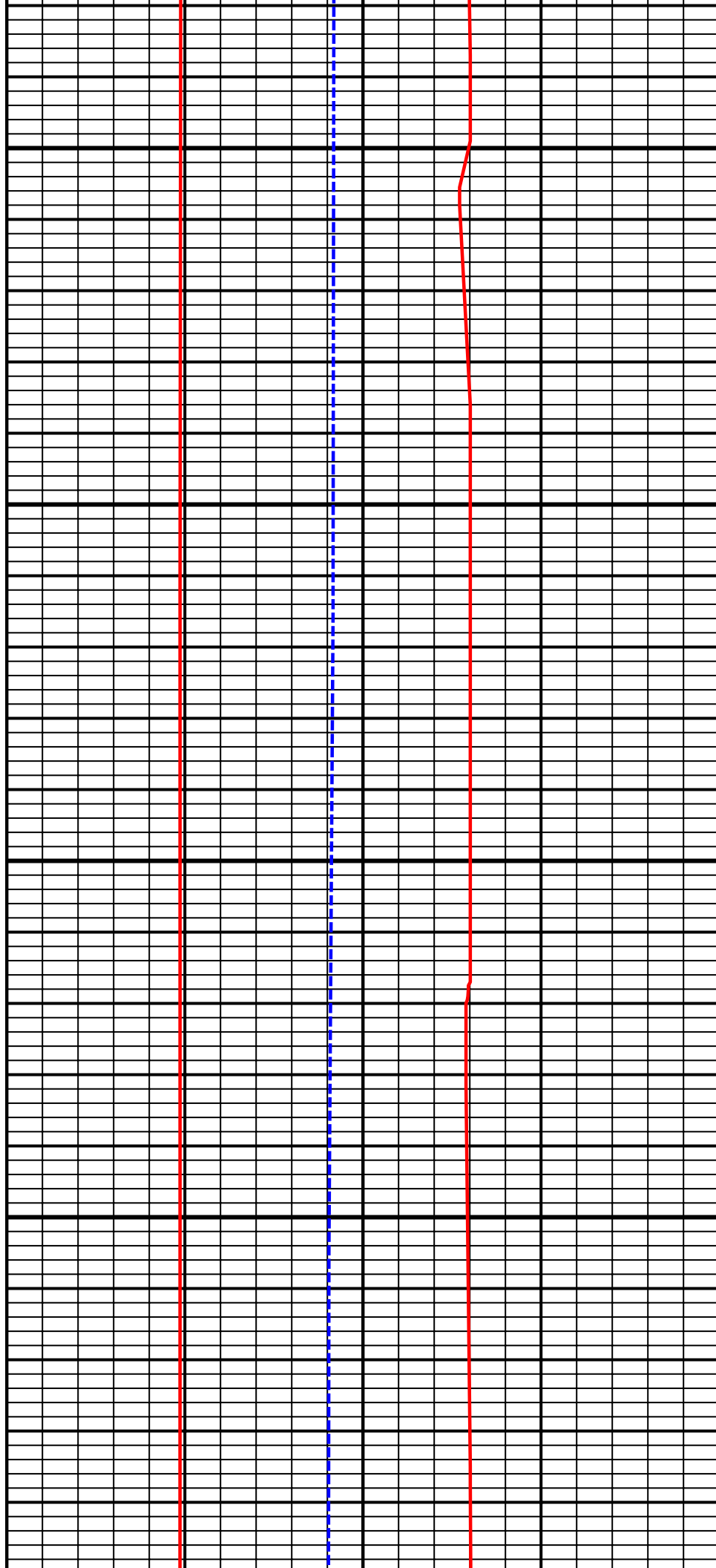
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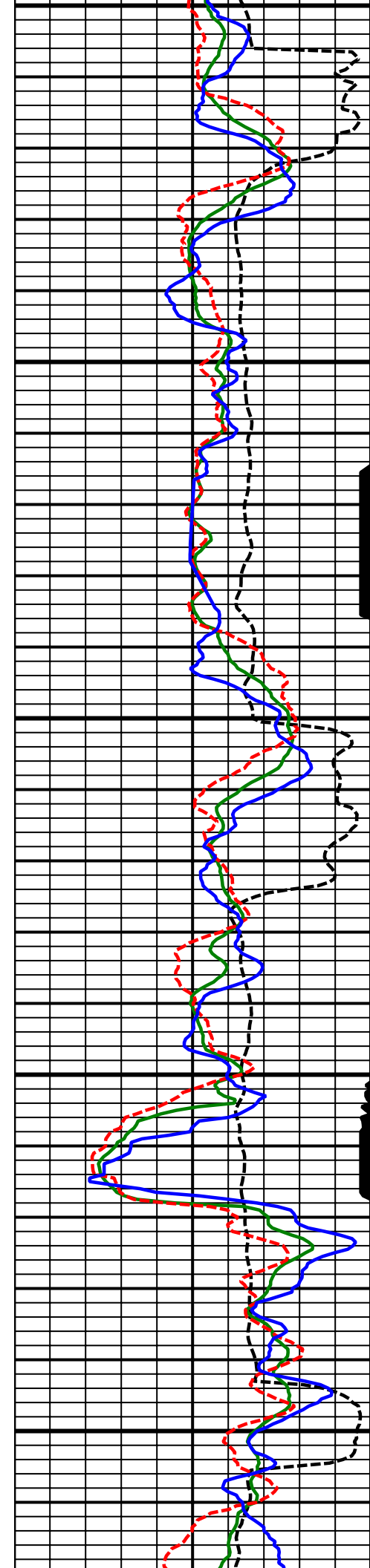




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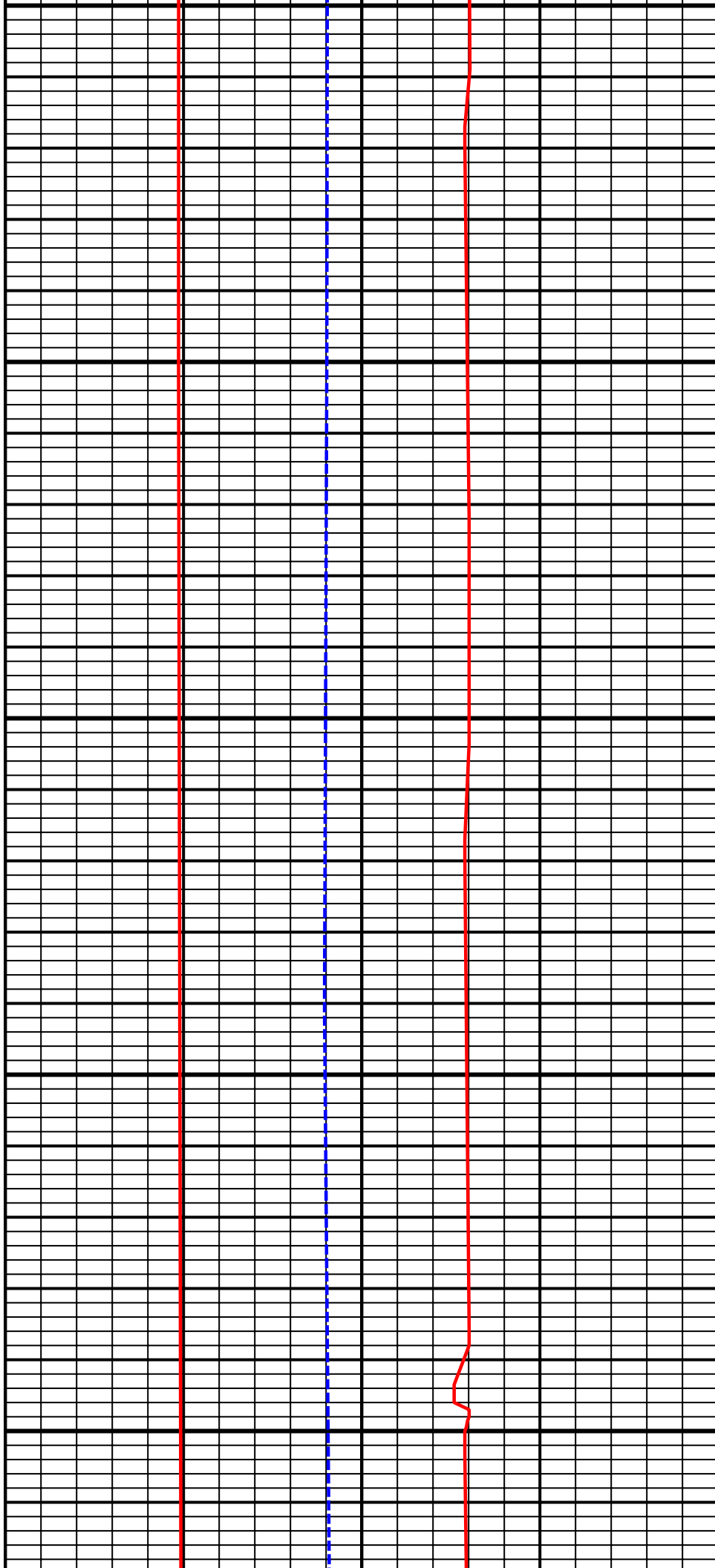
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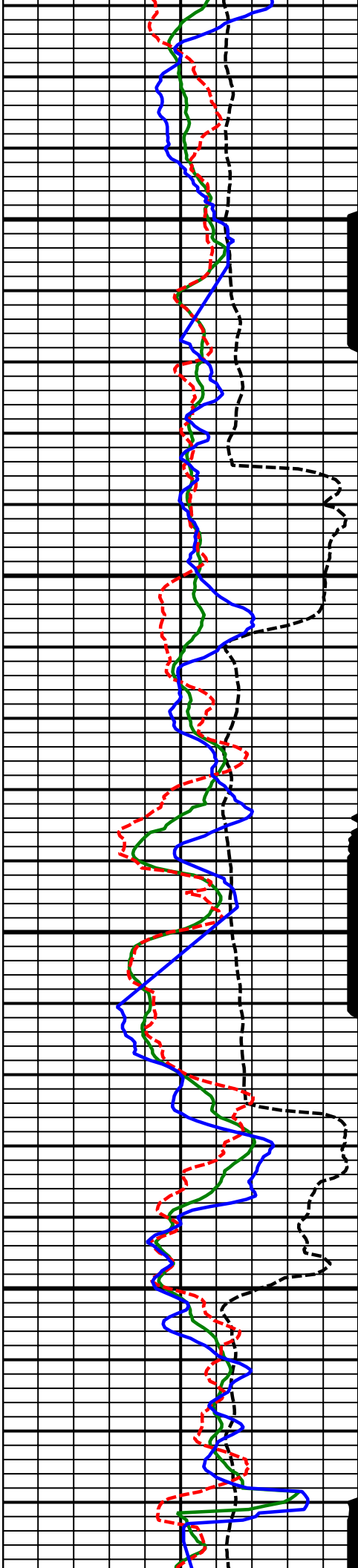




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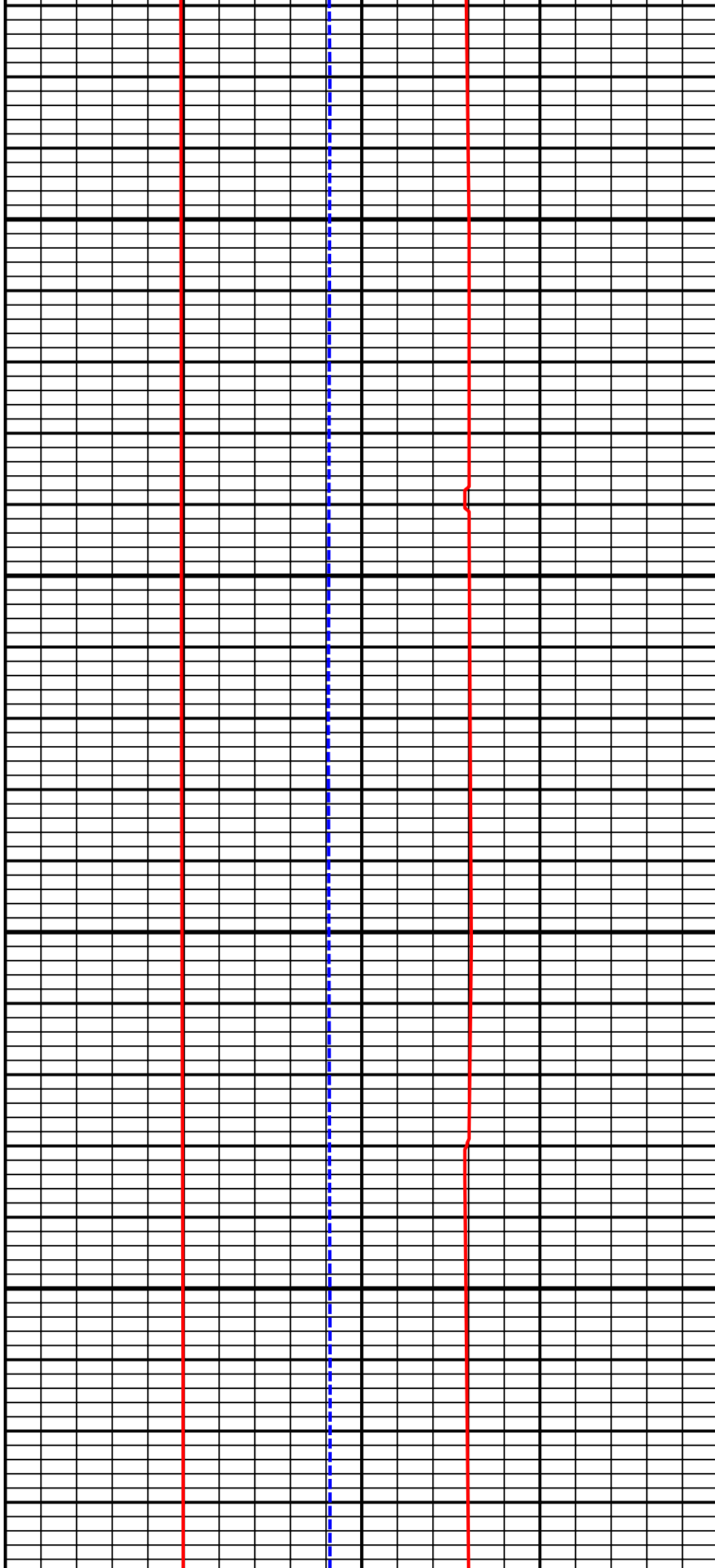
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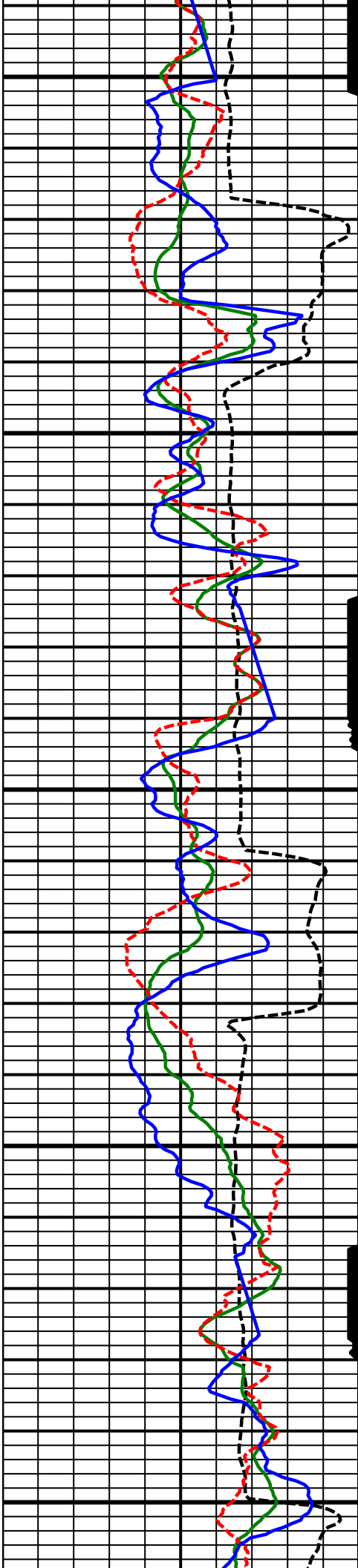




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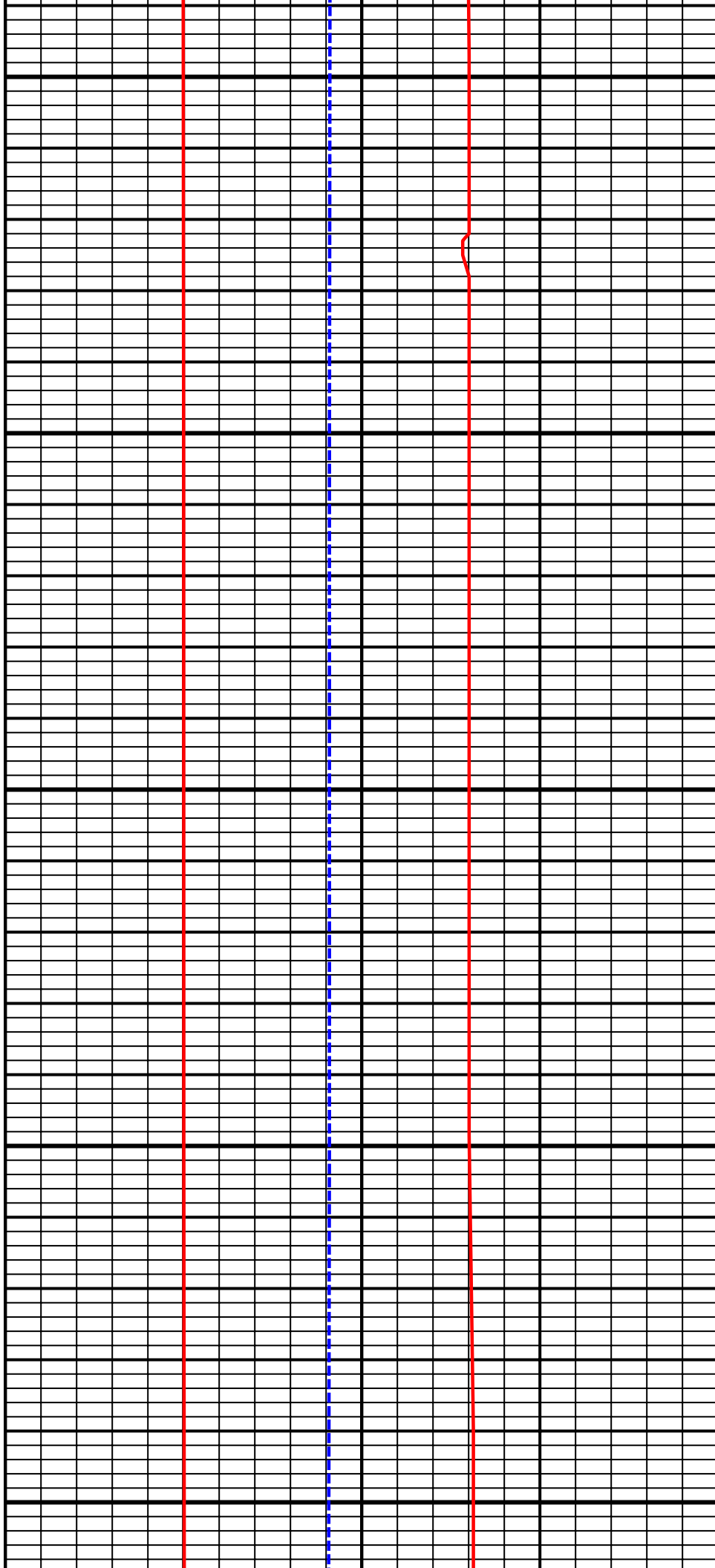


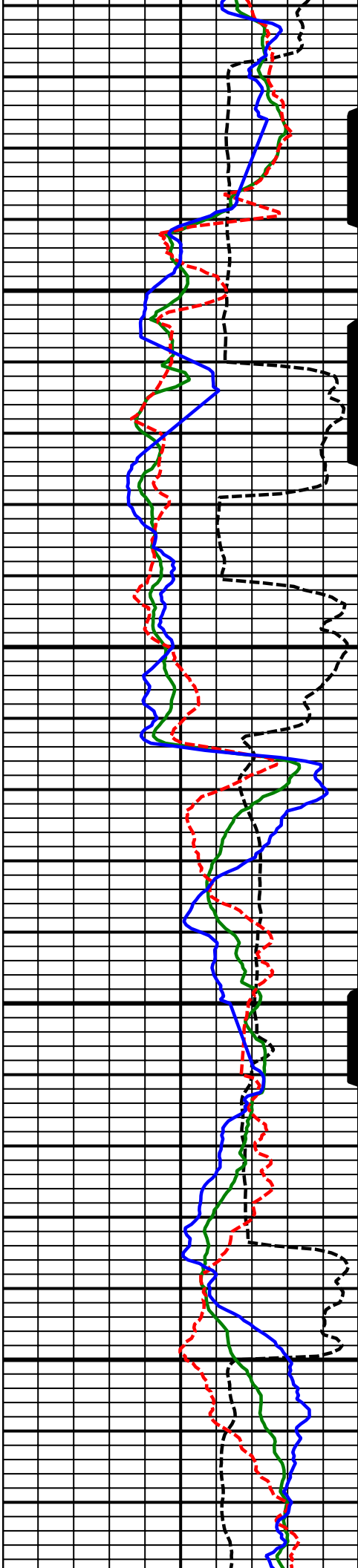


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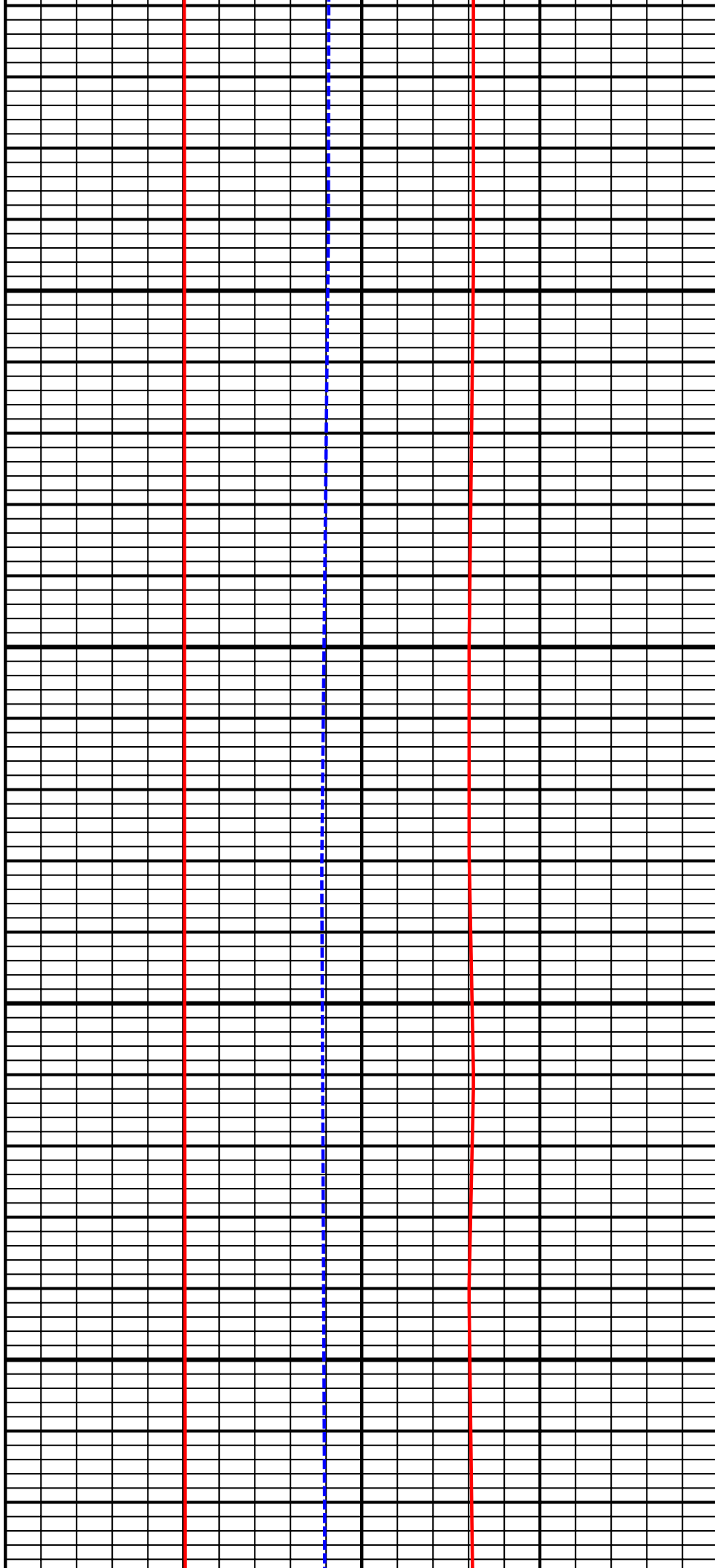
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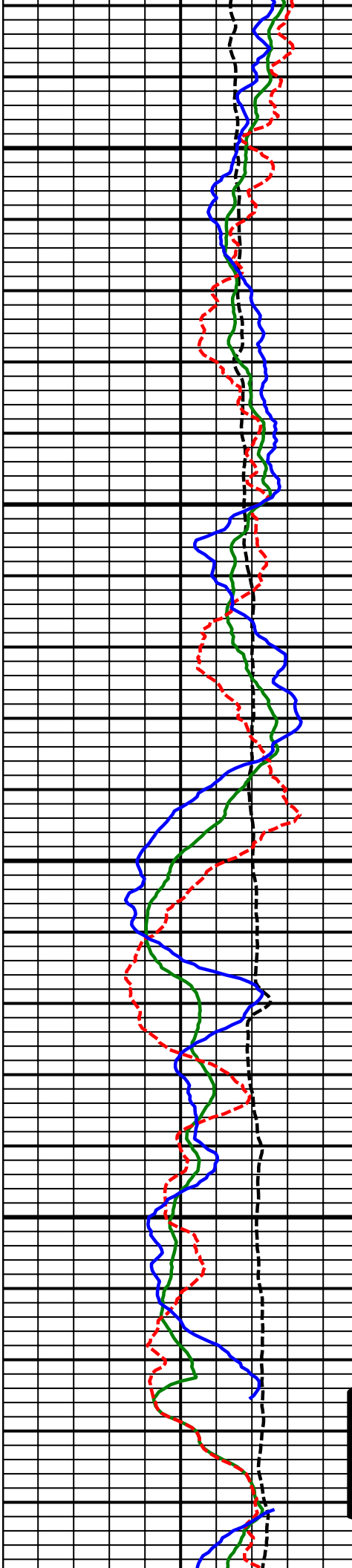




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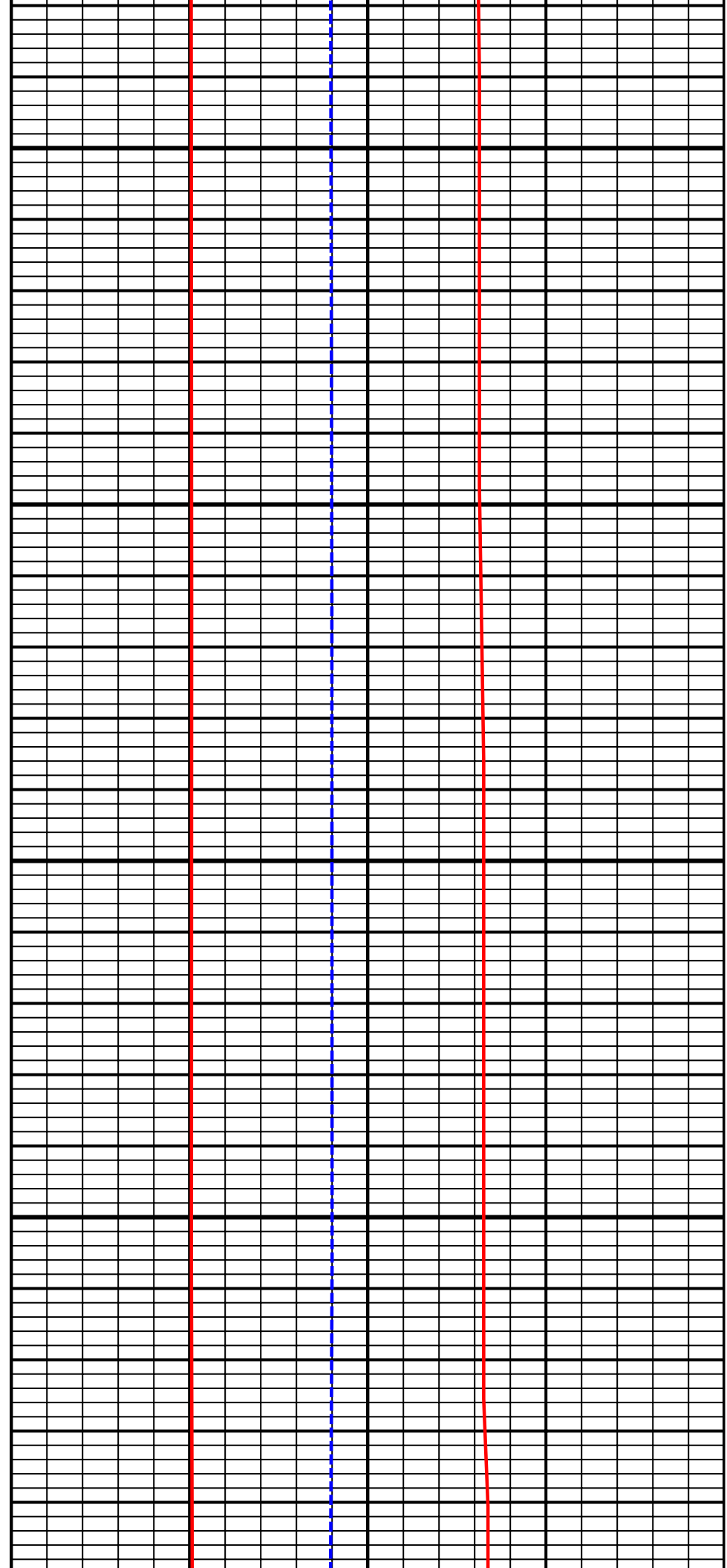
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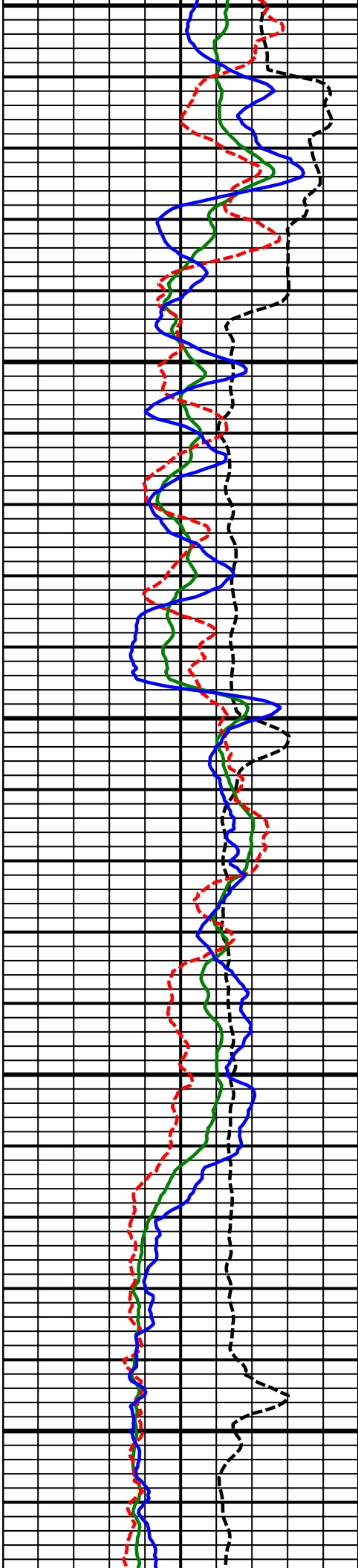




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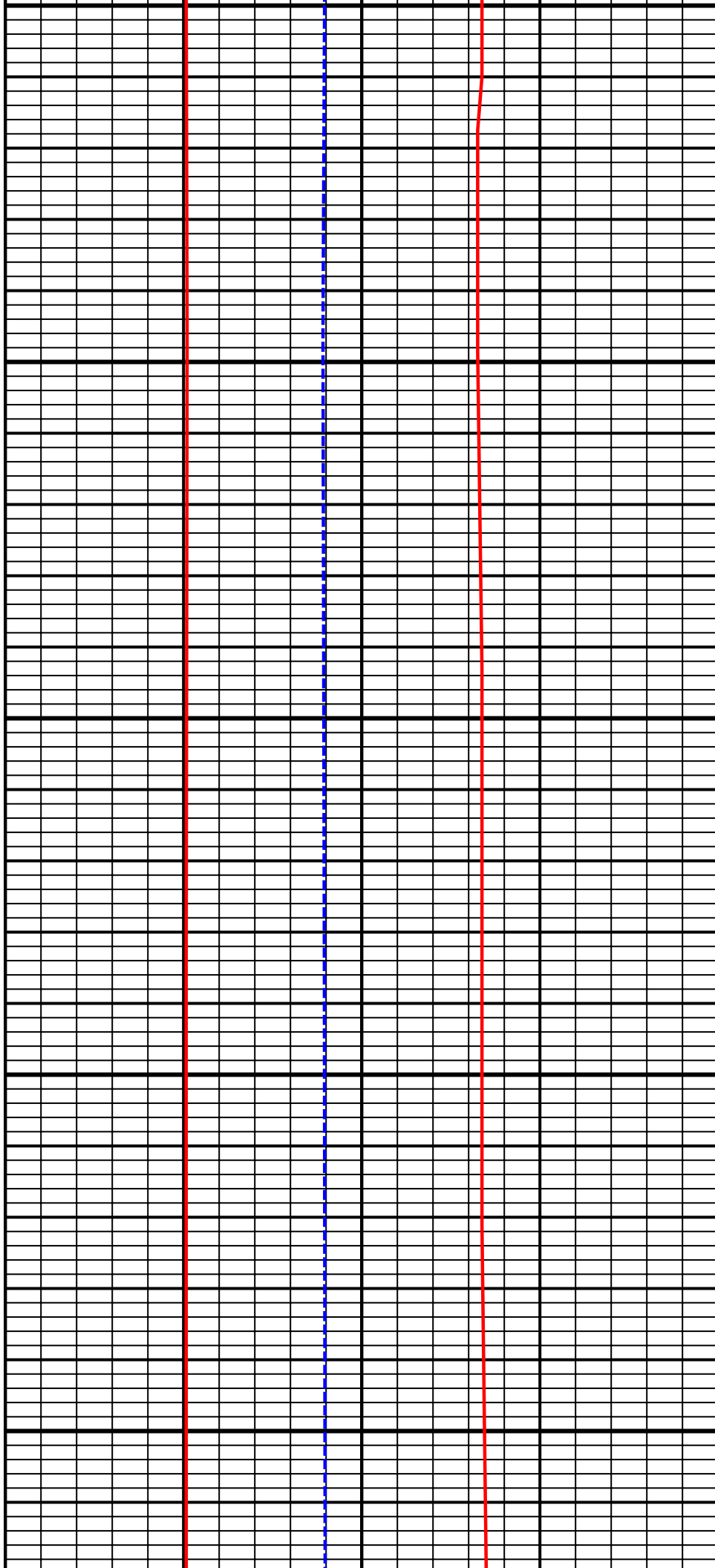
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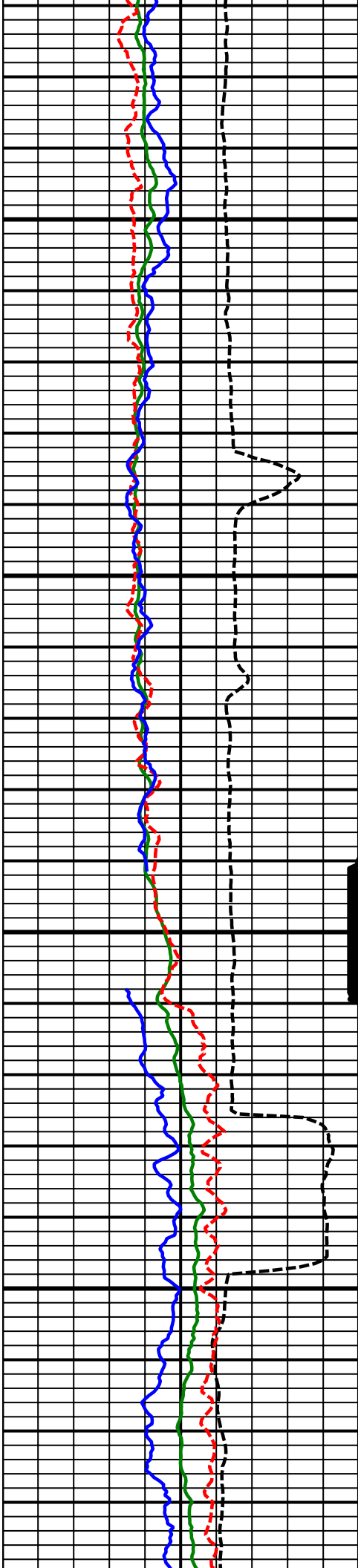




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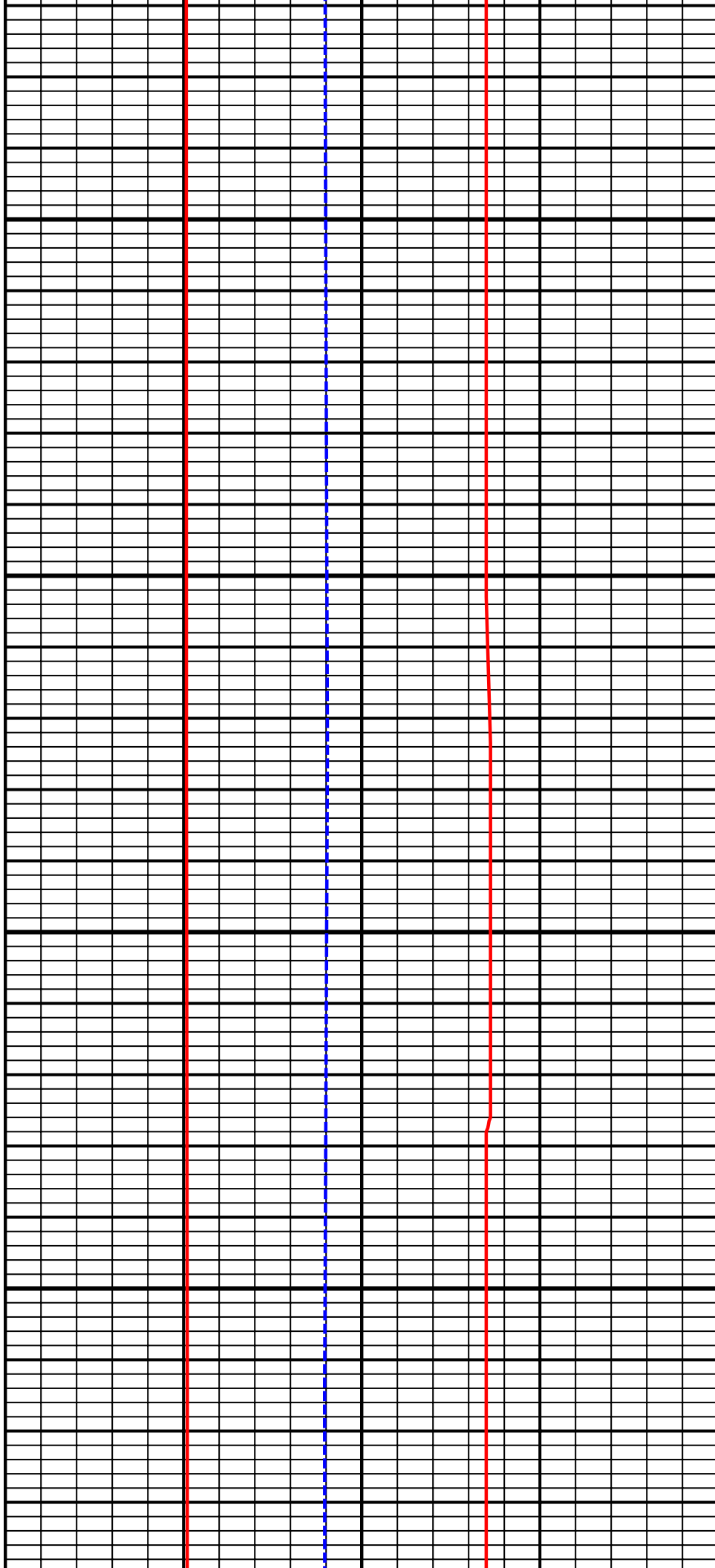
9200
MD

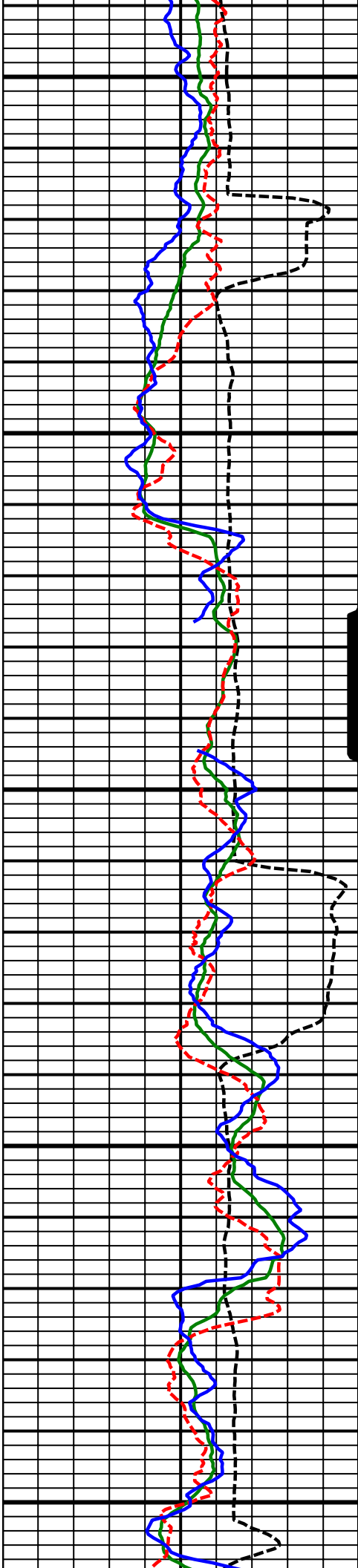




9300
MD

9400
MD

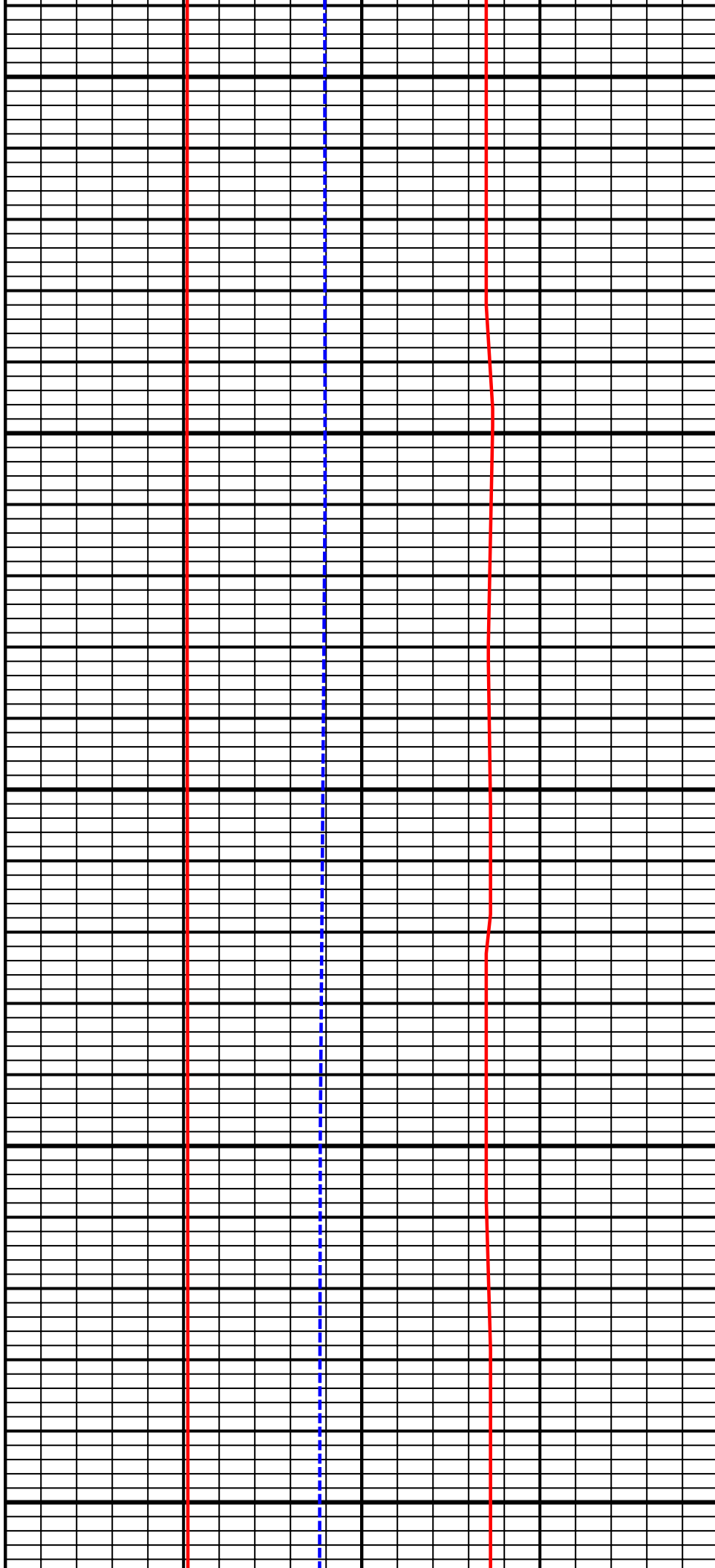


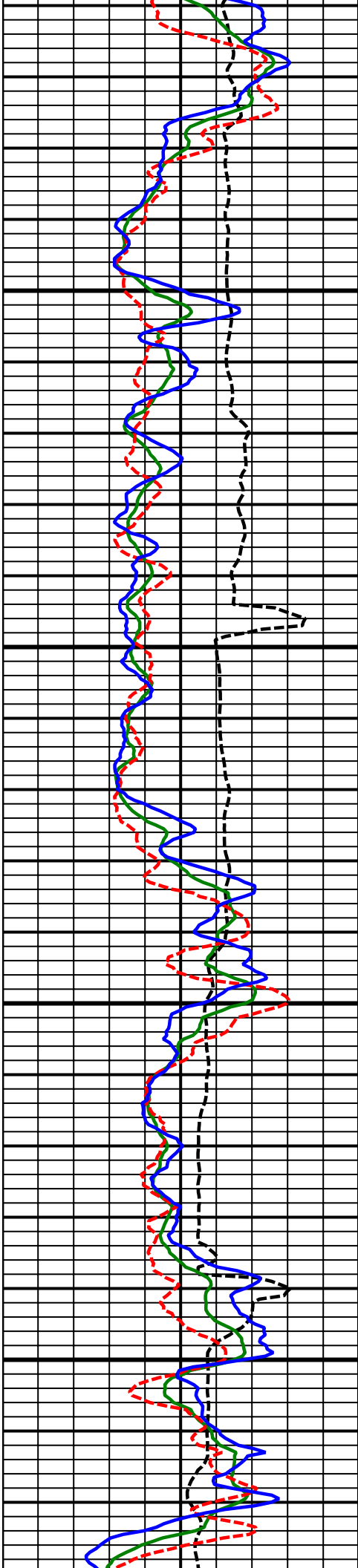


9500
MD

9600
MD

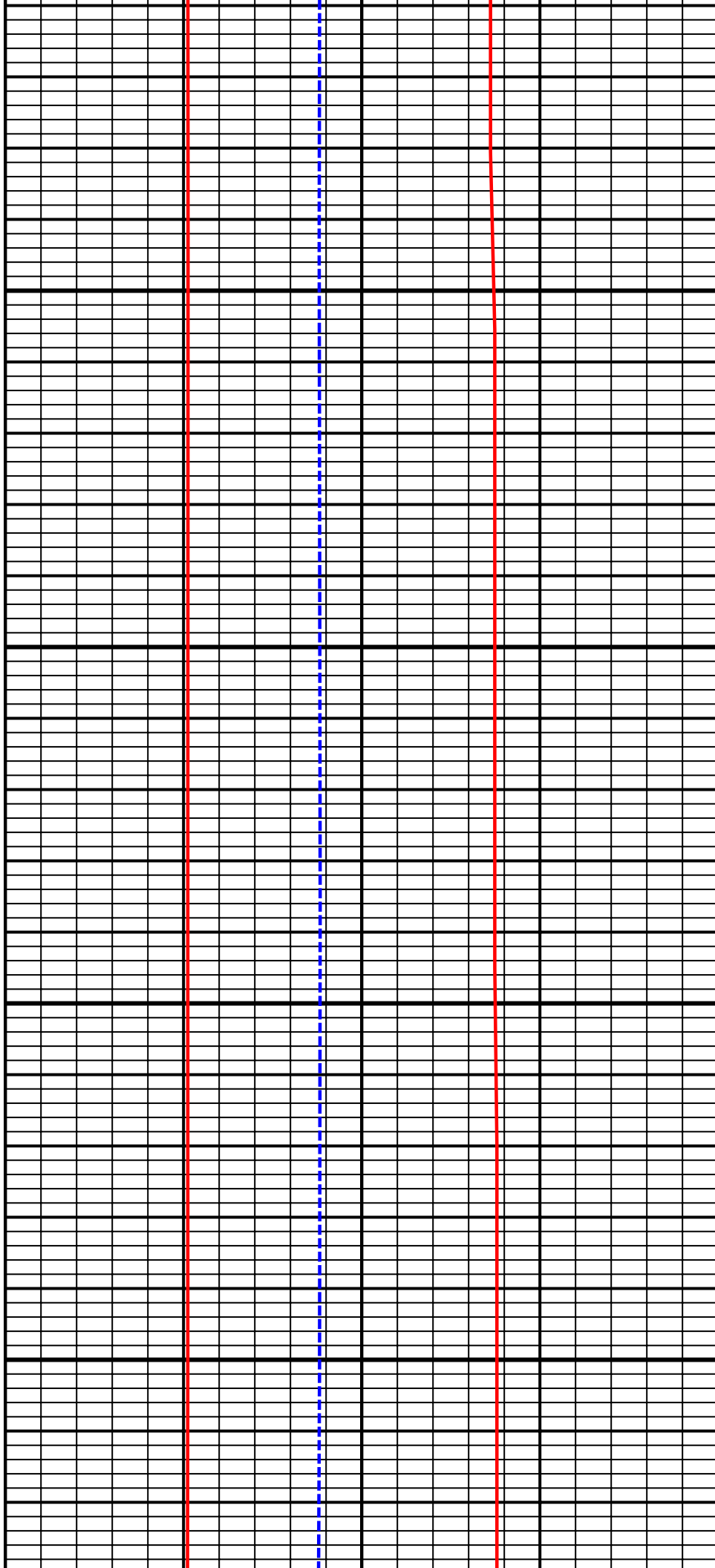
9700
MD

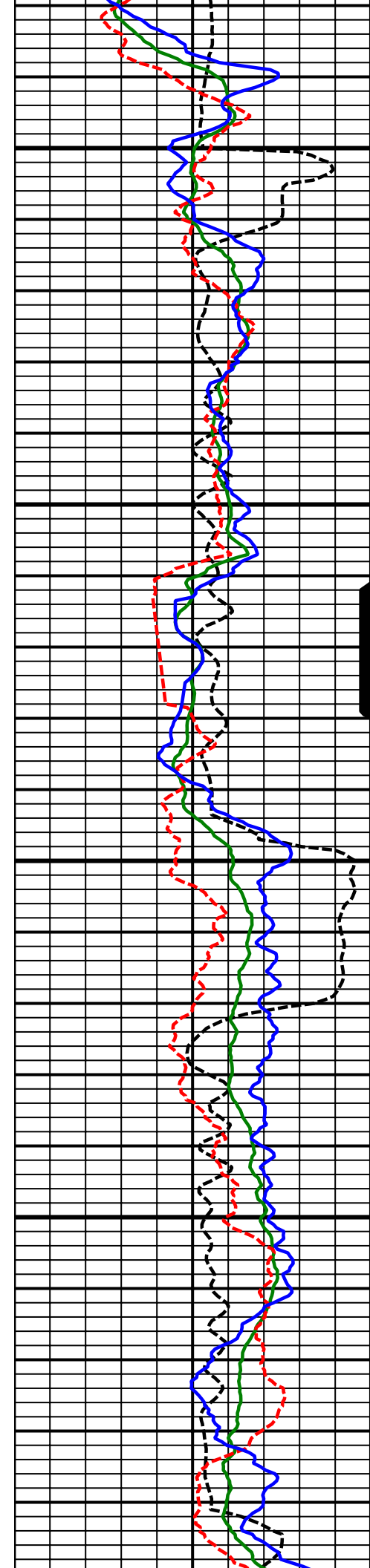




9800
MD

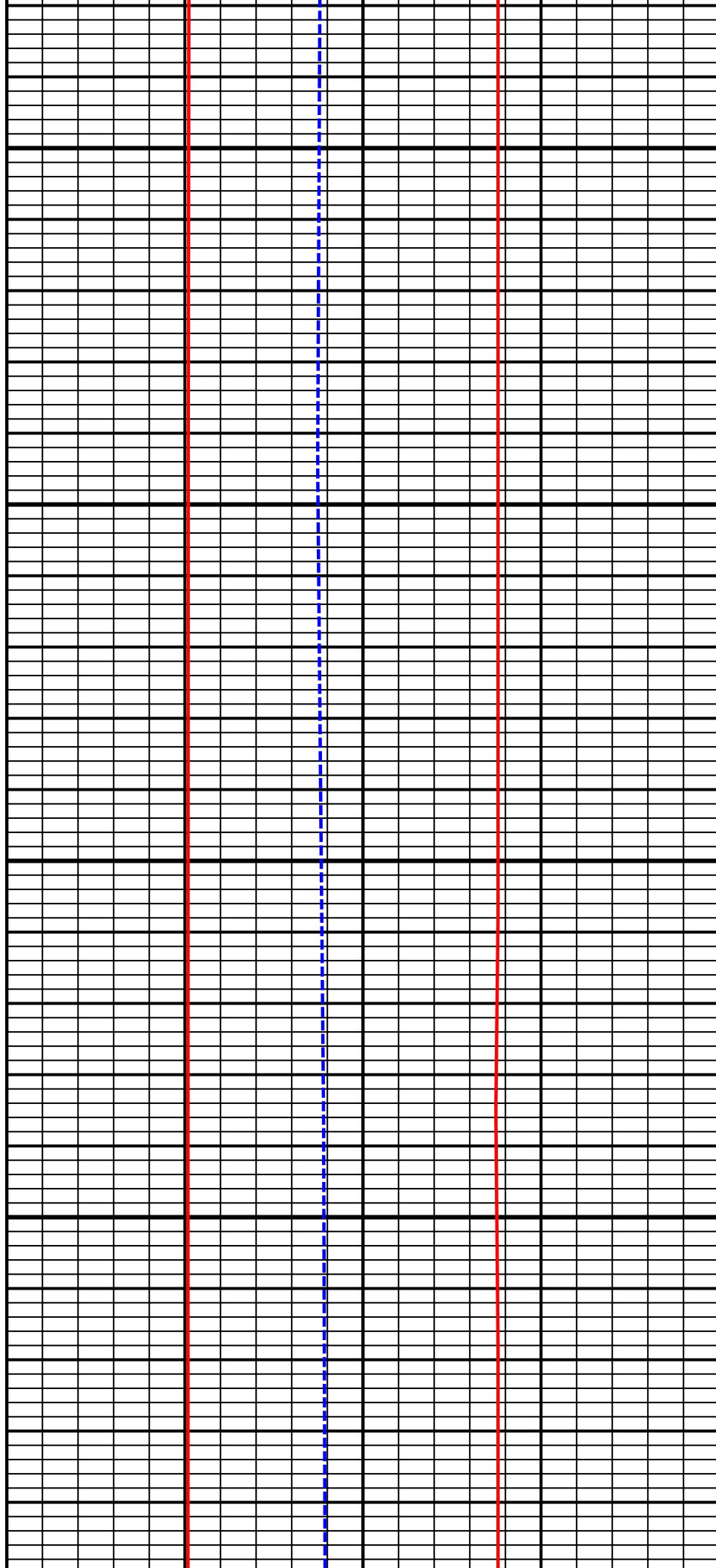
9900
MD

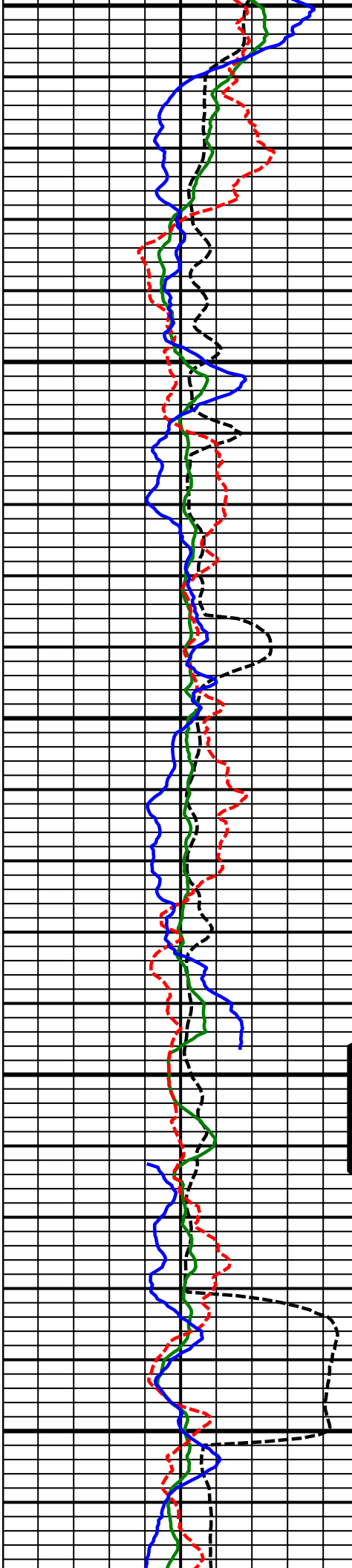




10000
MD

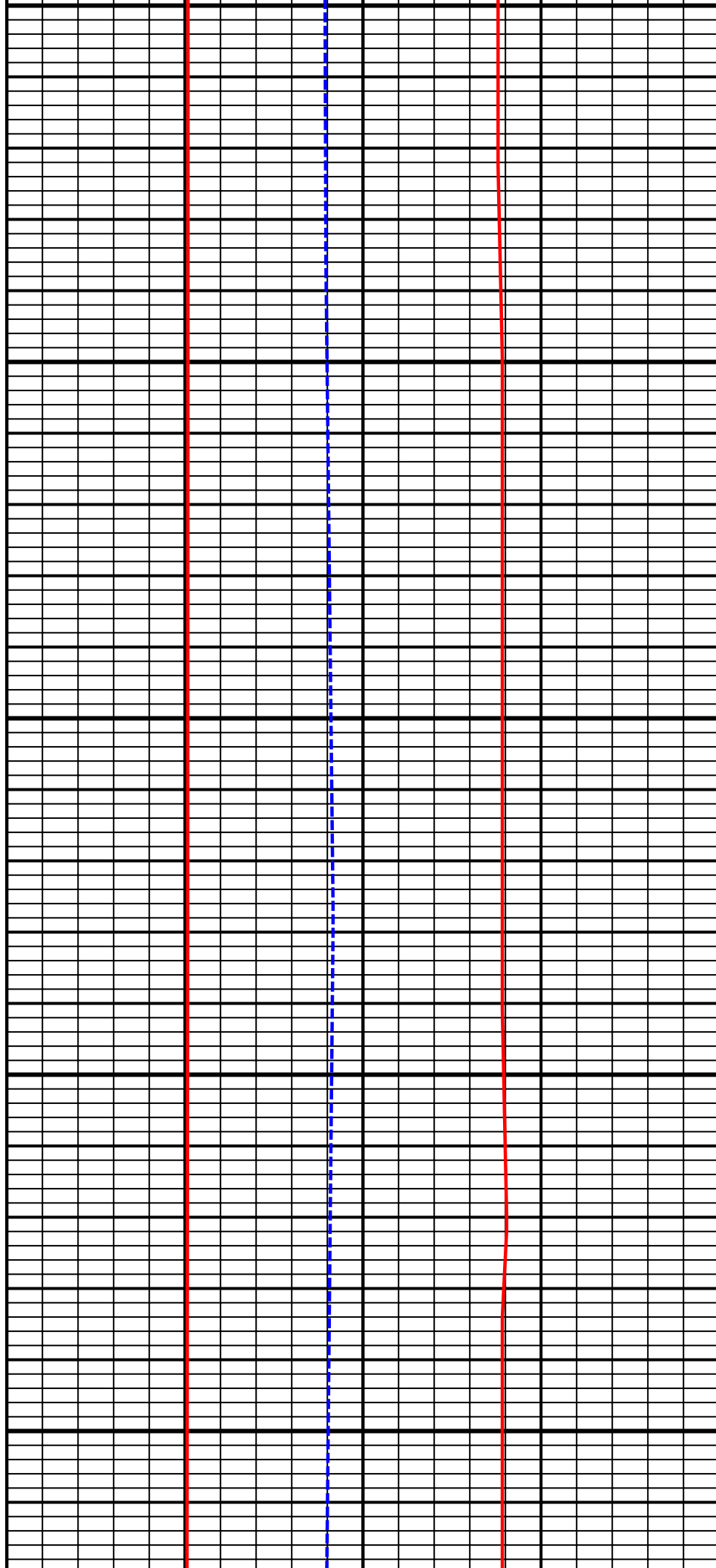
10100
MD

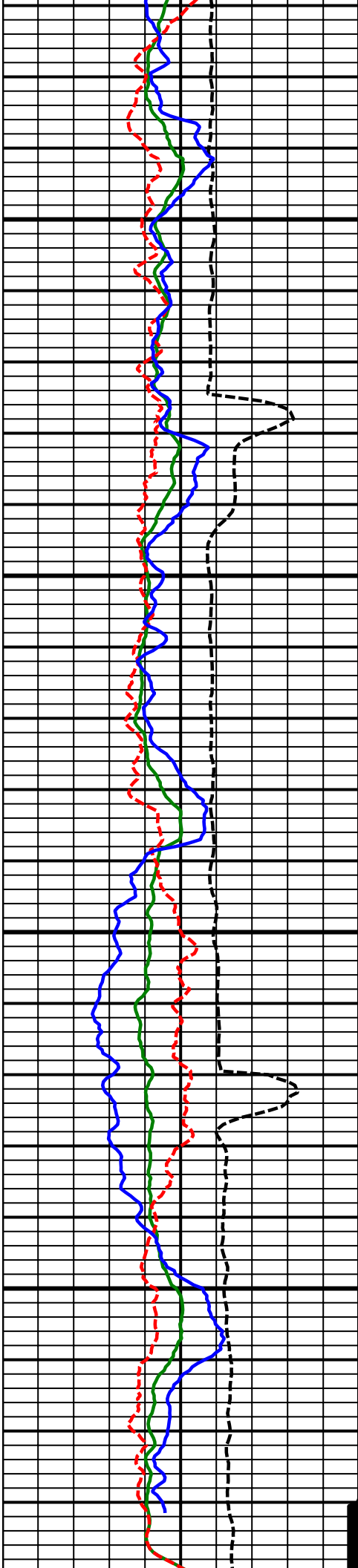




10200
MD

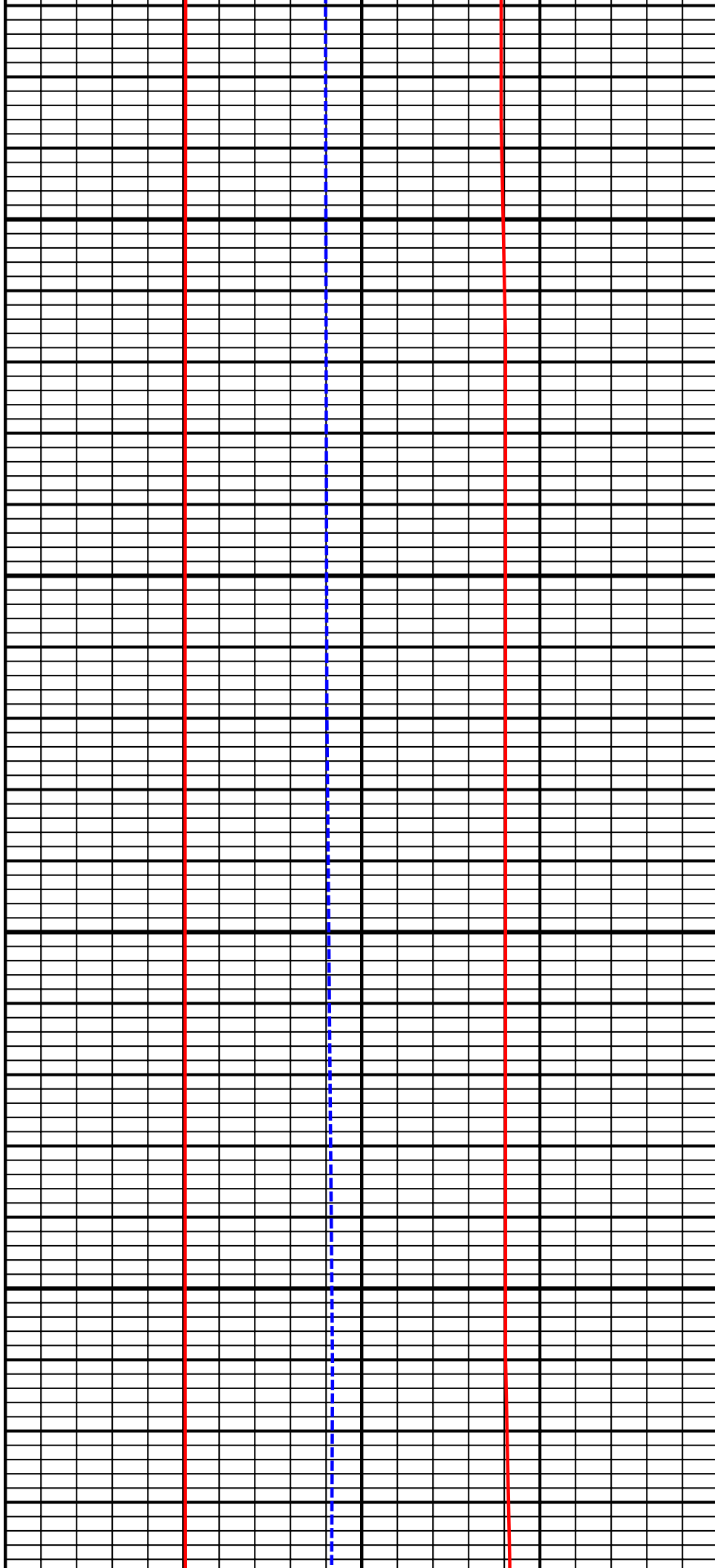
10300
MD

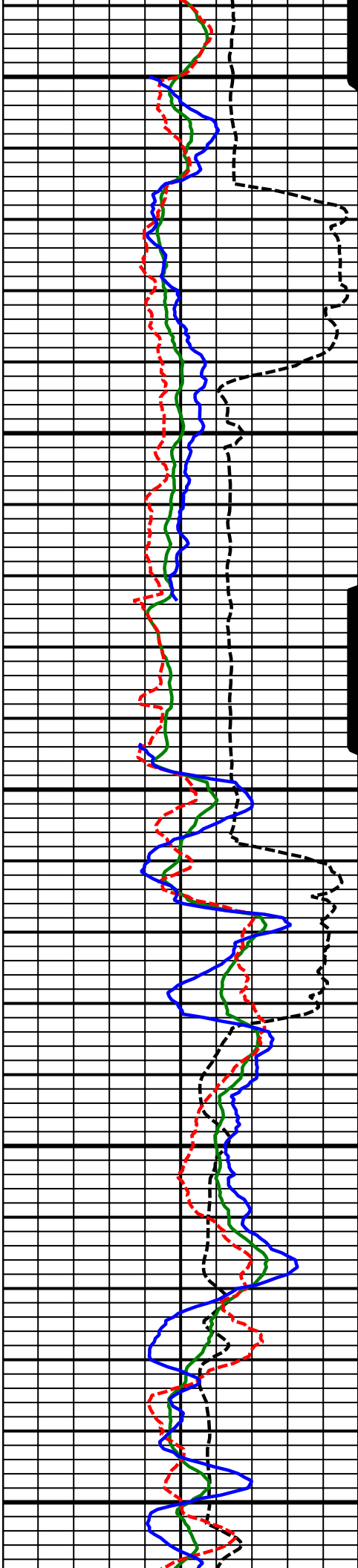




10400
MD

10500
MD

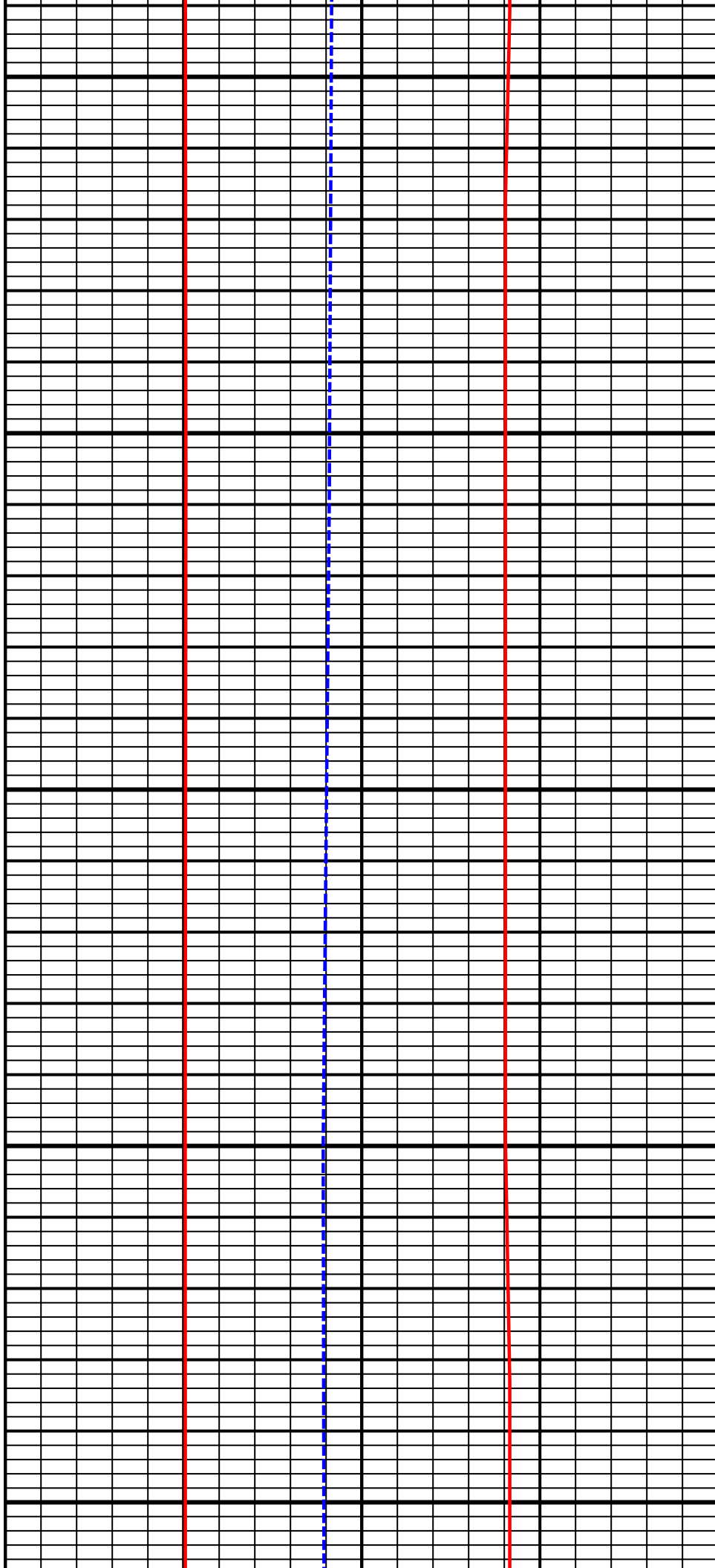


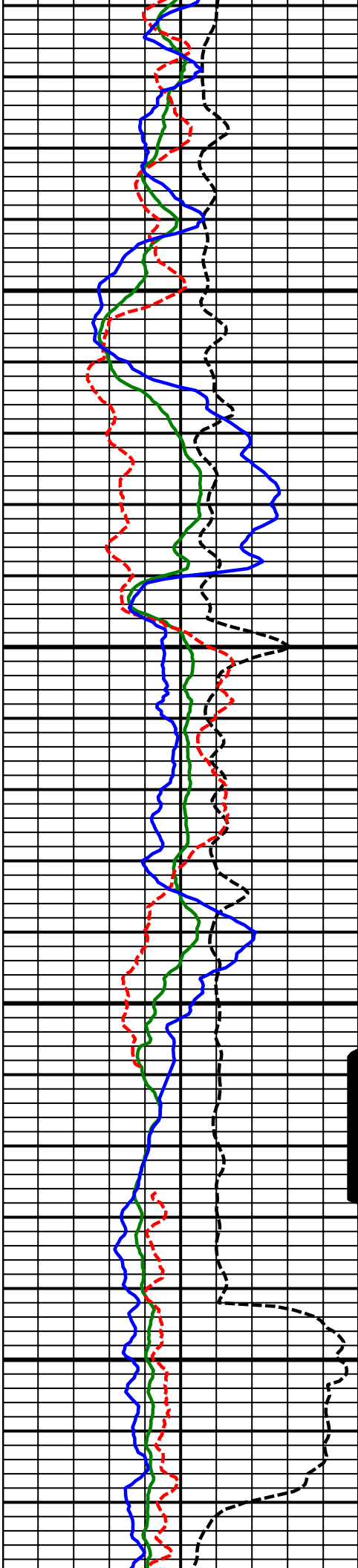


10600
MD

10700
MD

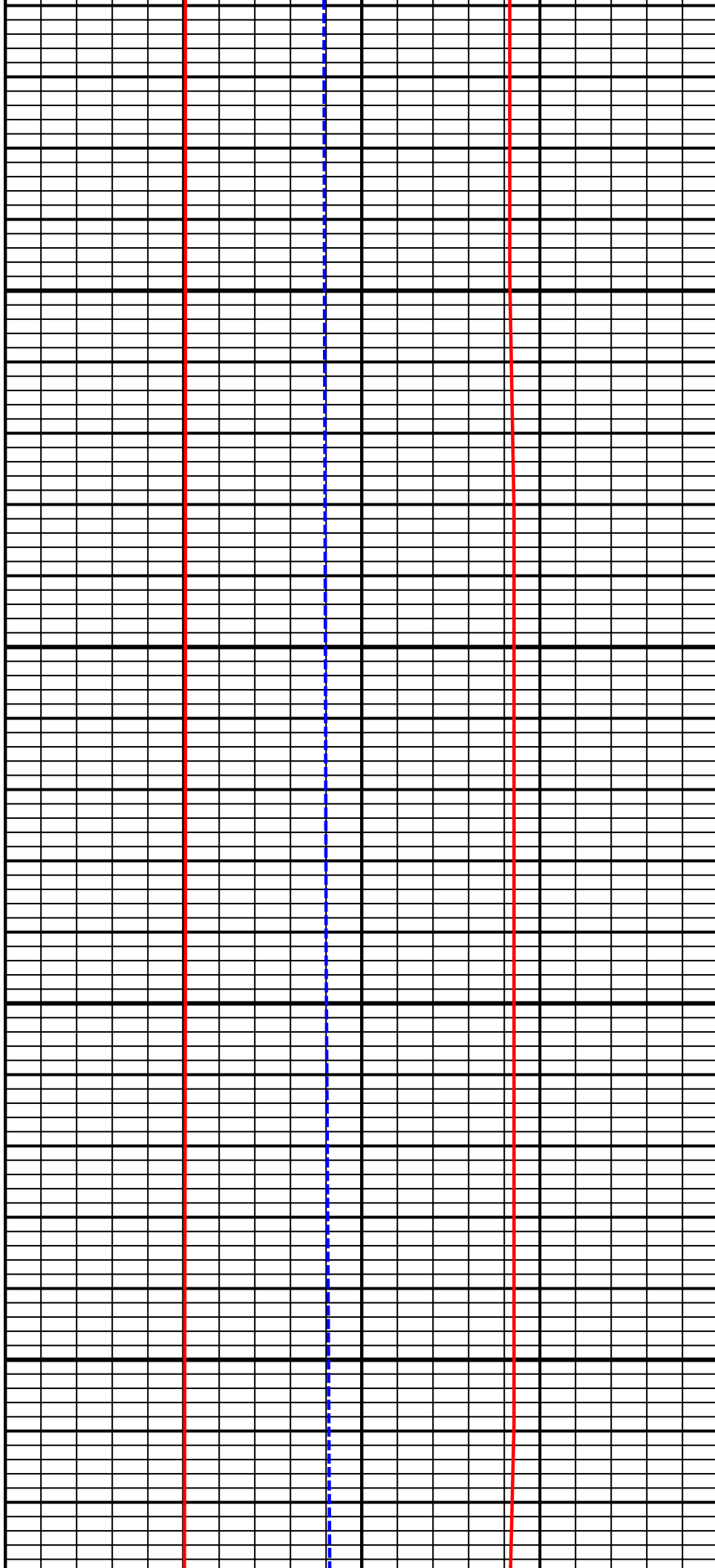
10800
MD

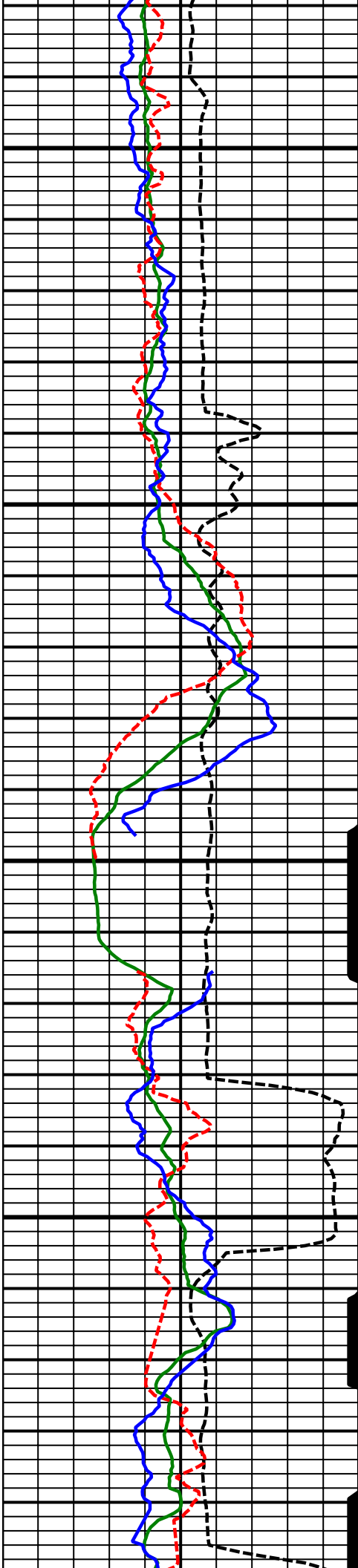




10900
MD

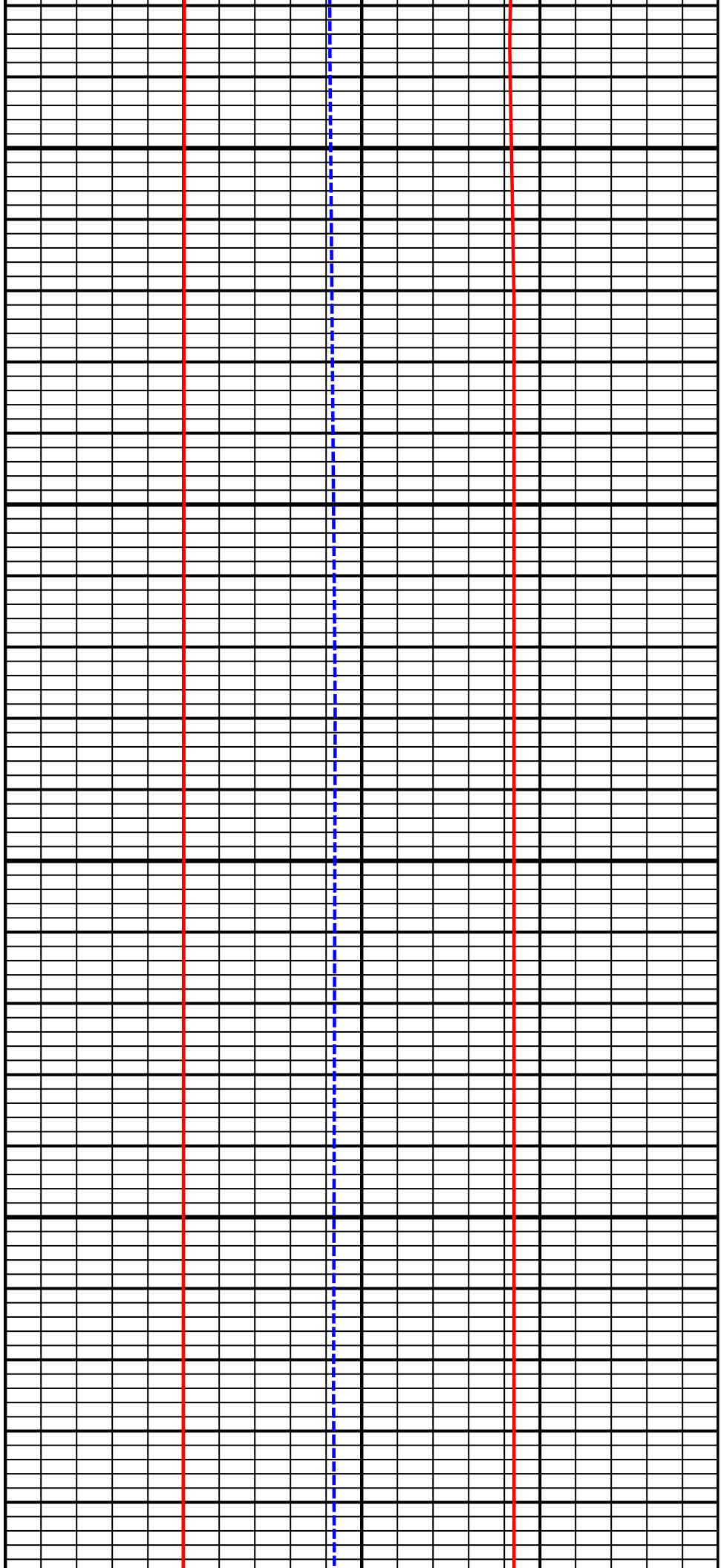
11000
MD

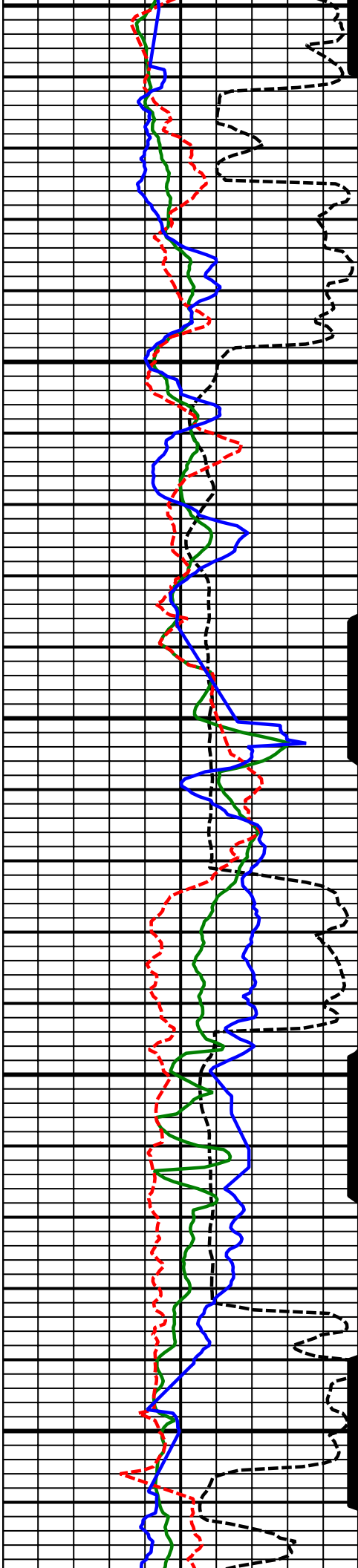




11100
MD

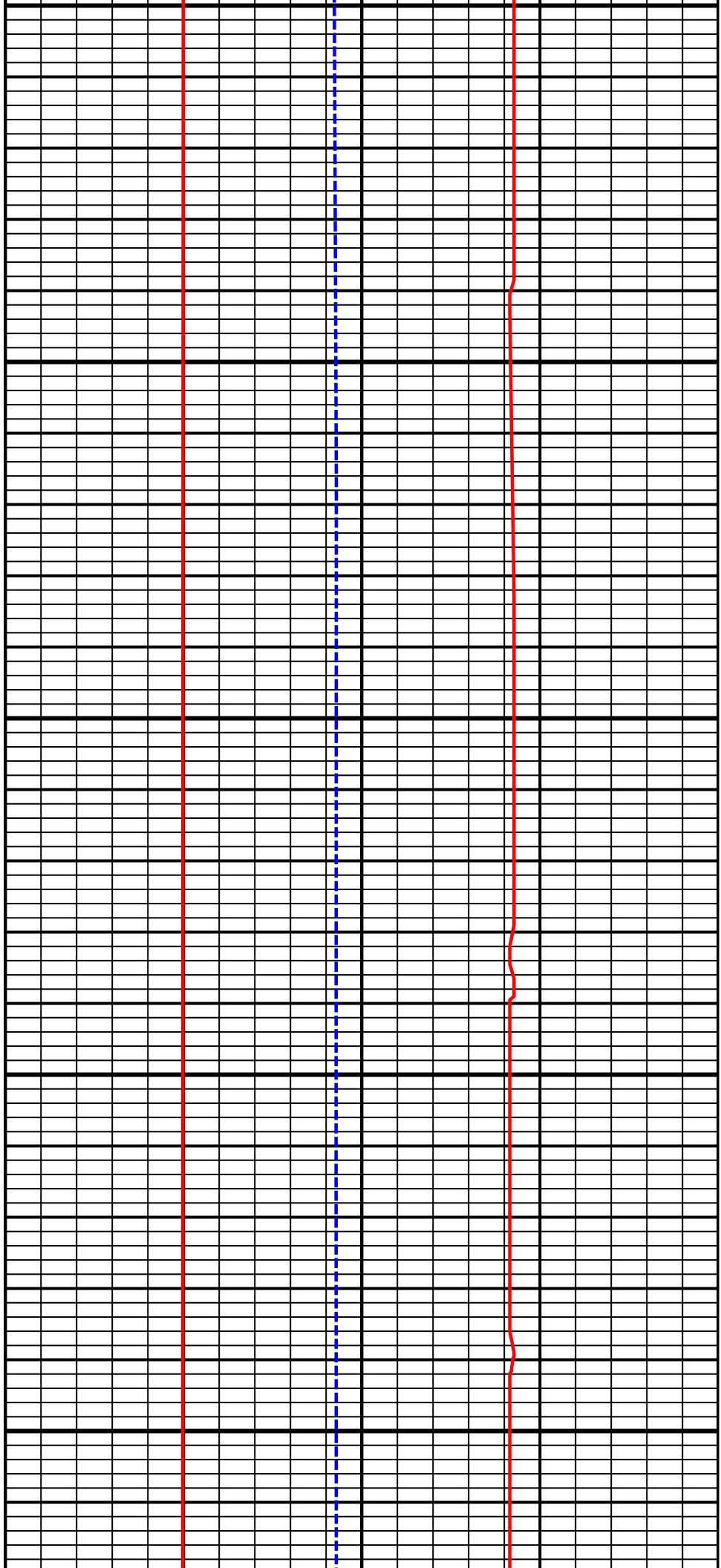
11200
MD

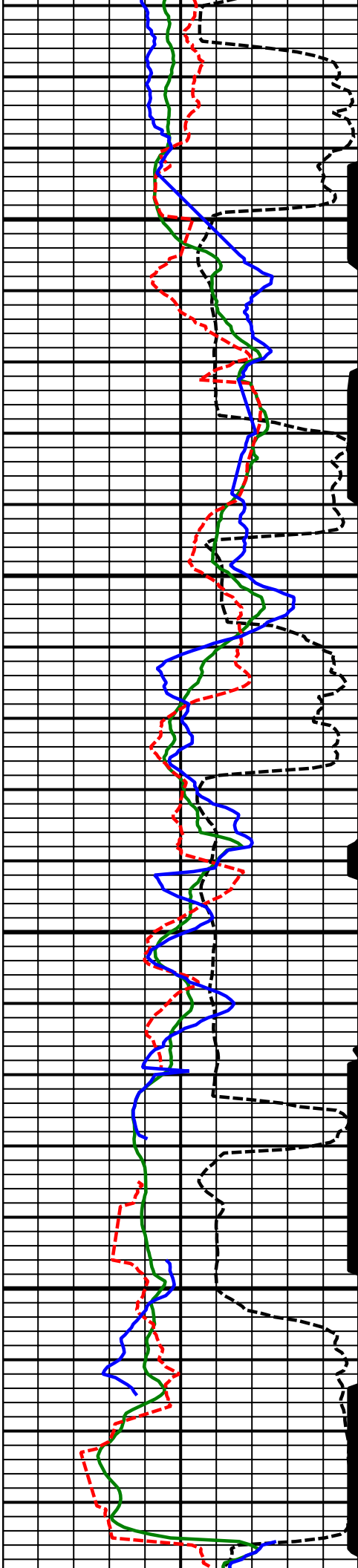




11300
MD

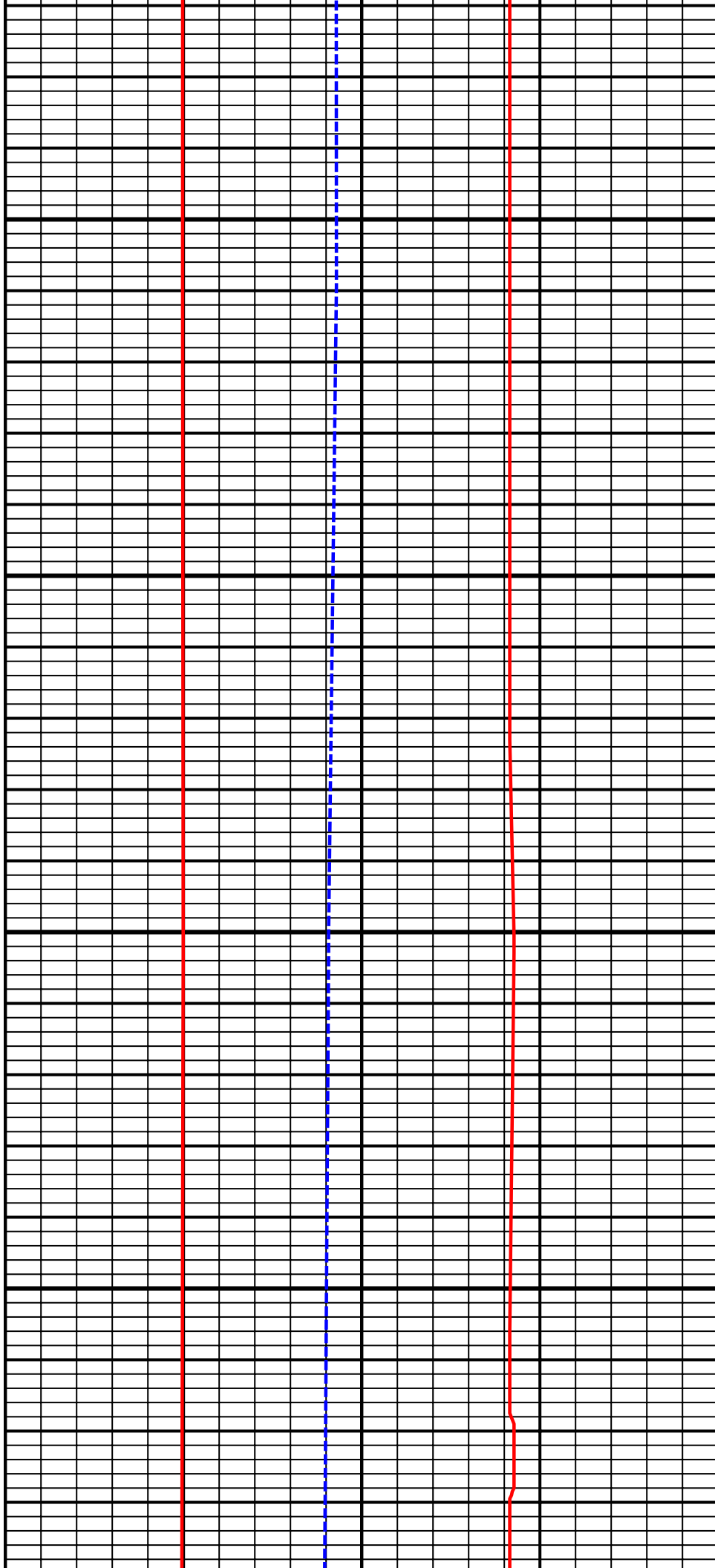
11400
MD

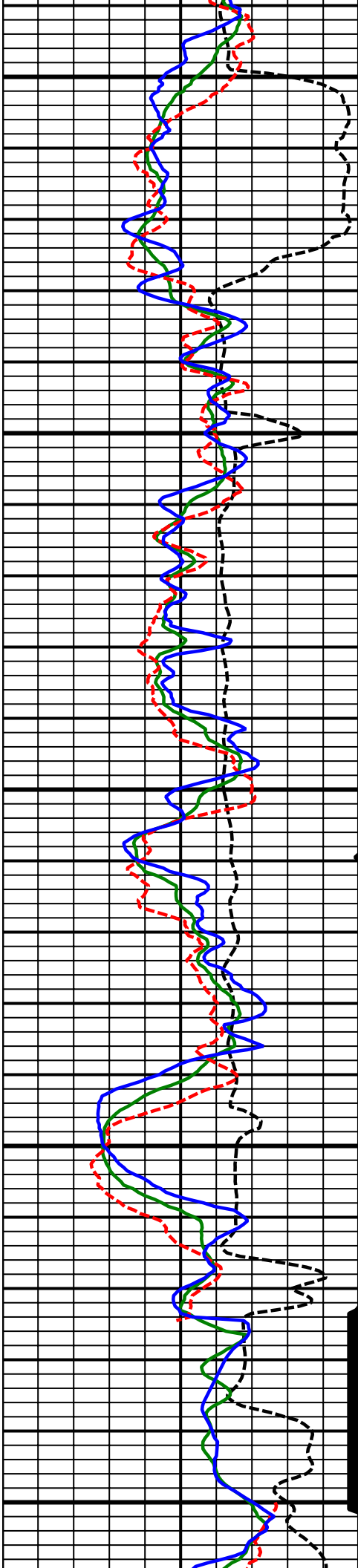




11500
MD

11600
MD

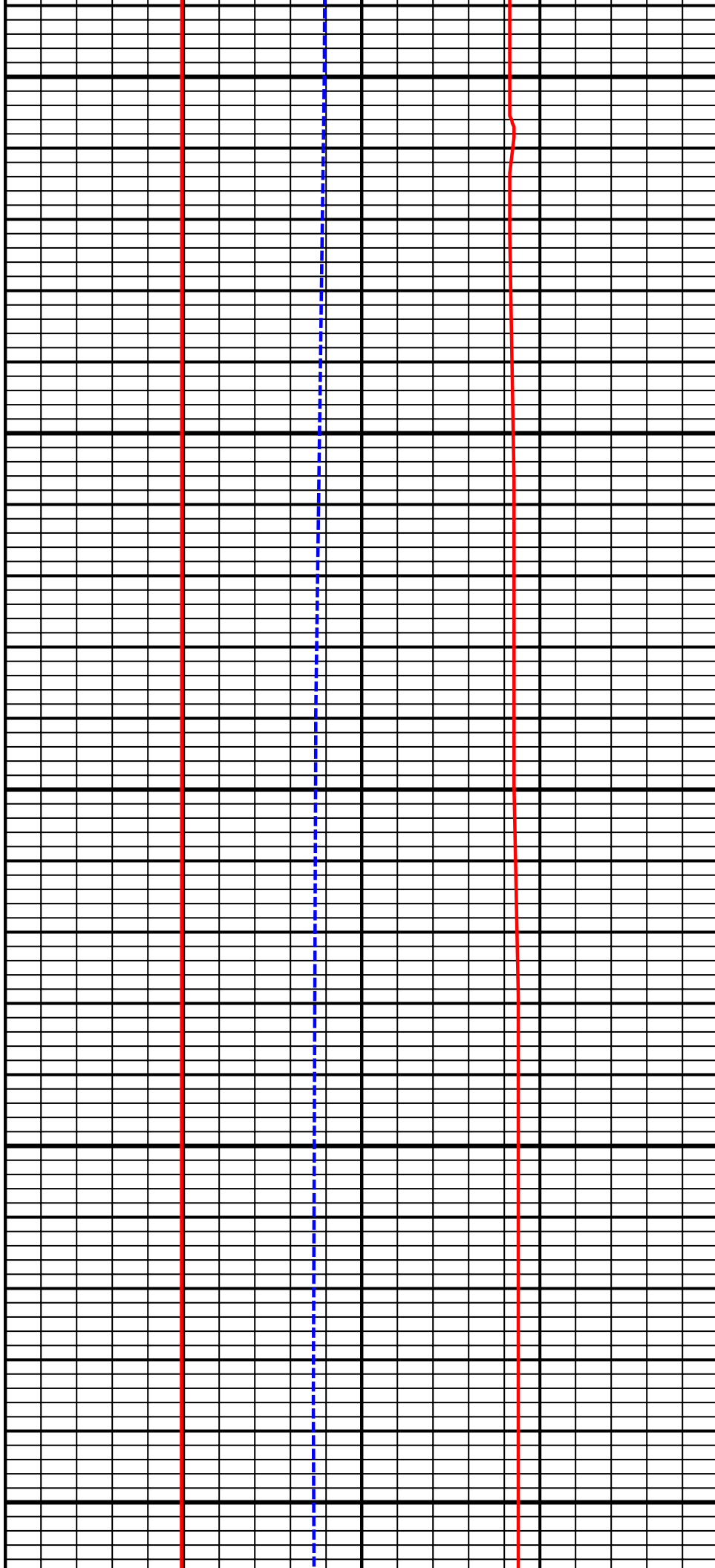


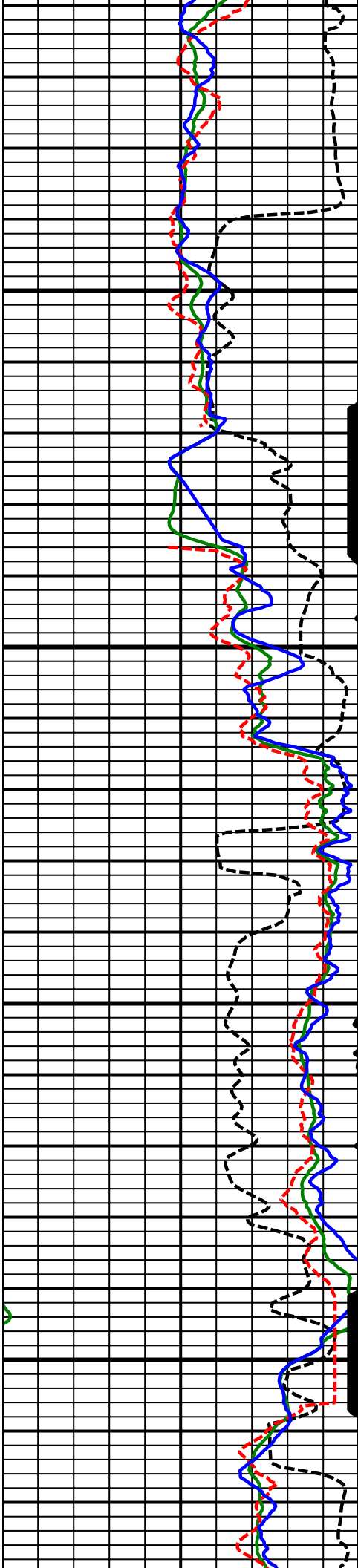


11700
MD

11800
MD

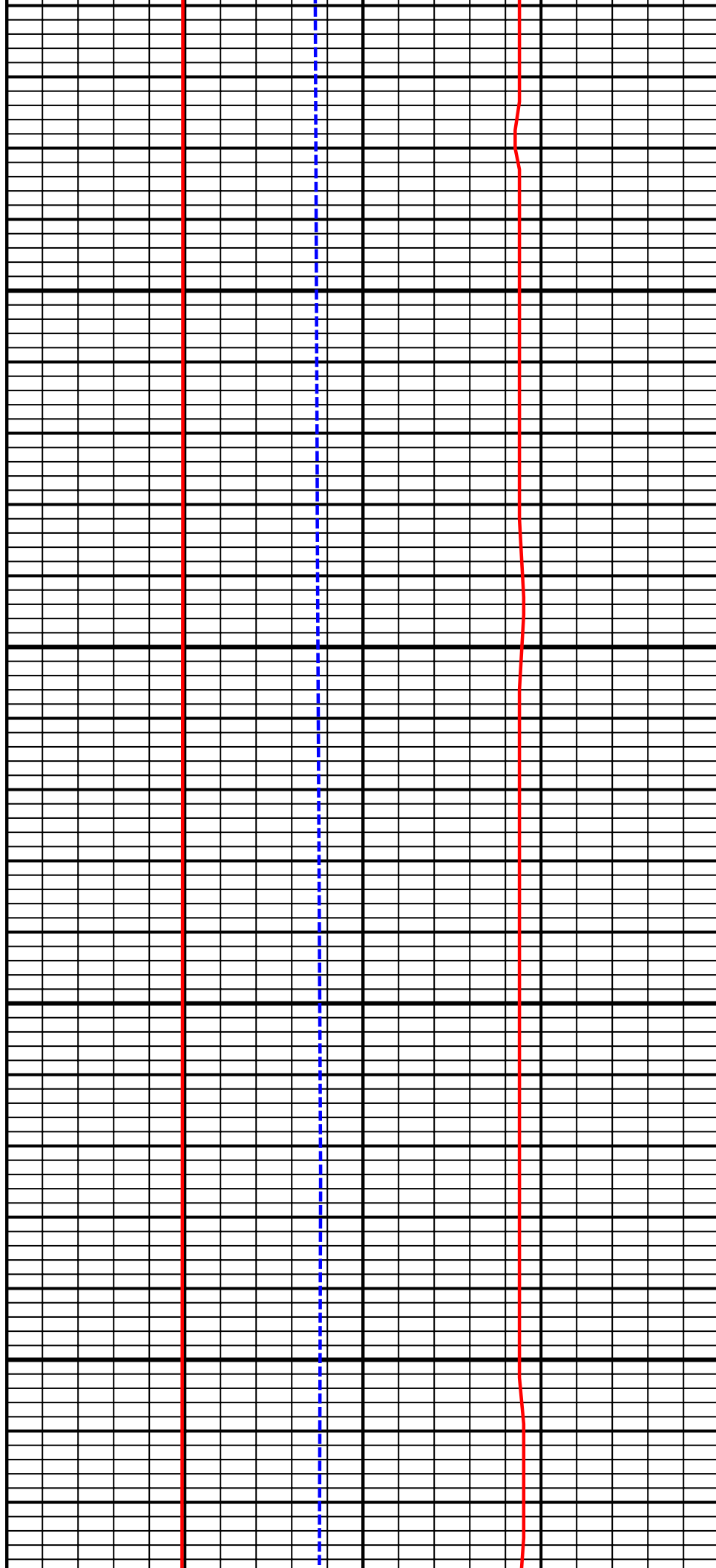
11900
MD

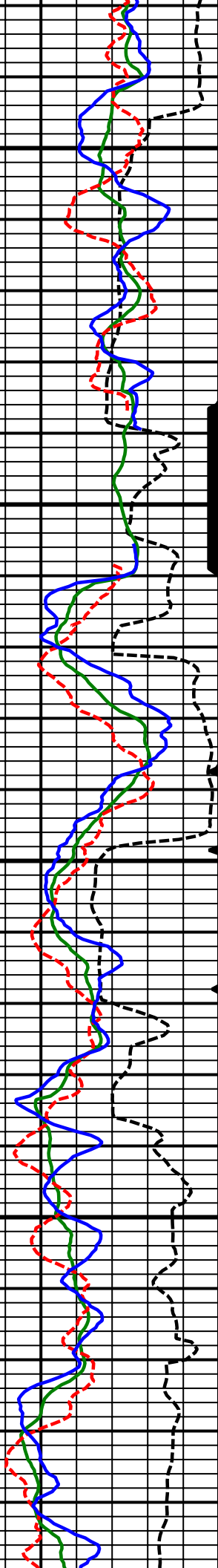




12000
MD

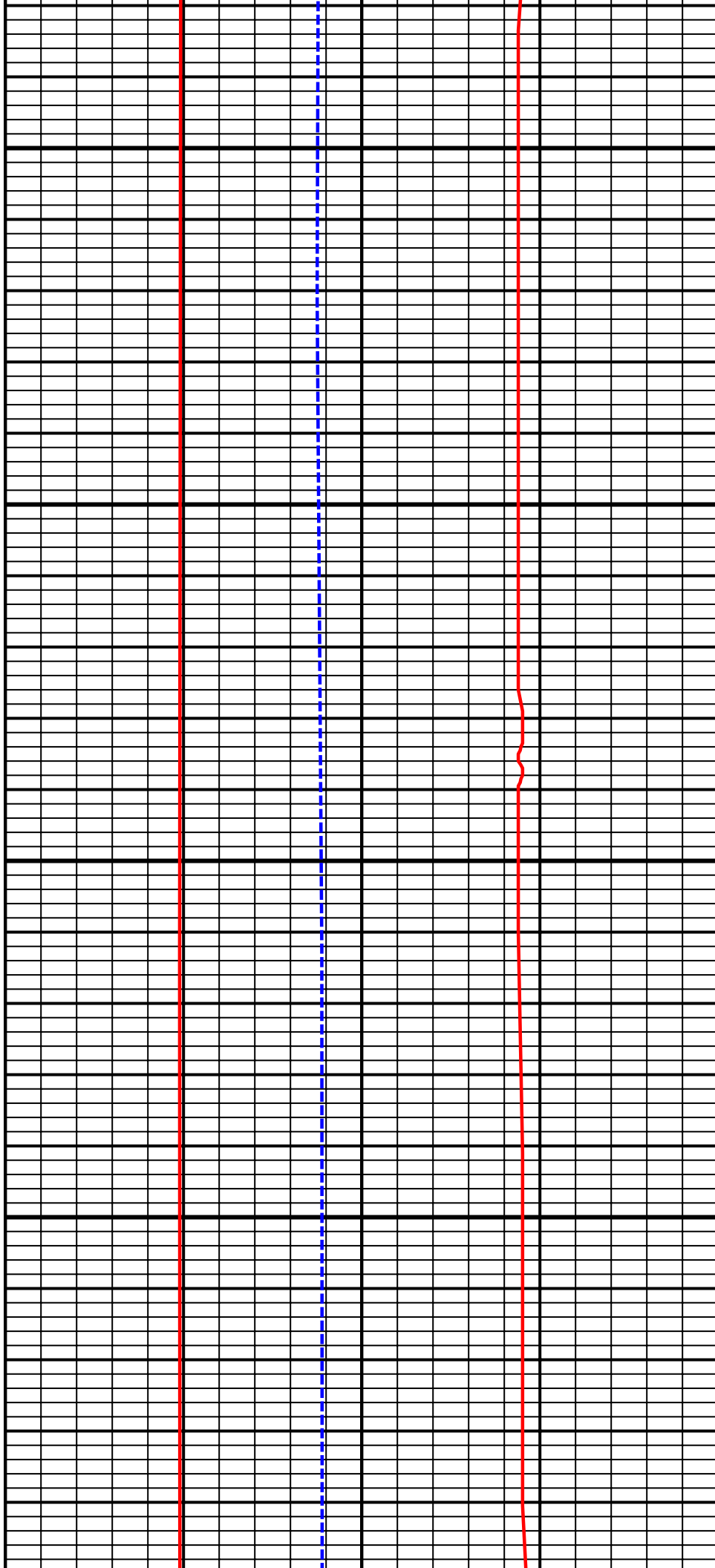
12100
MD

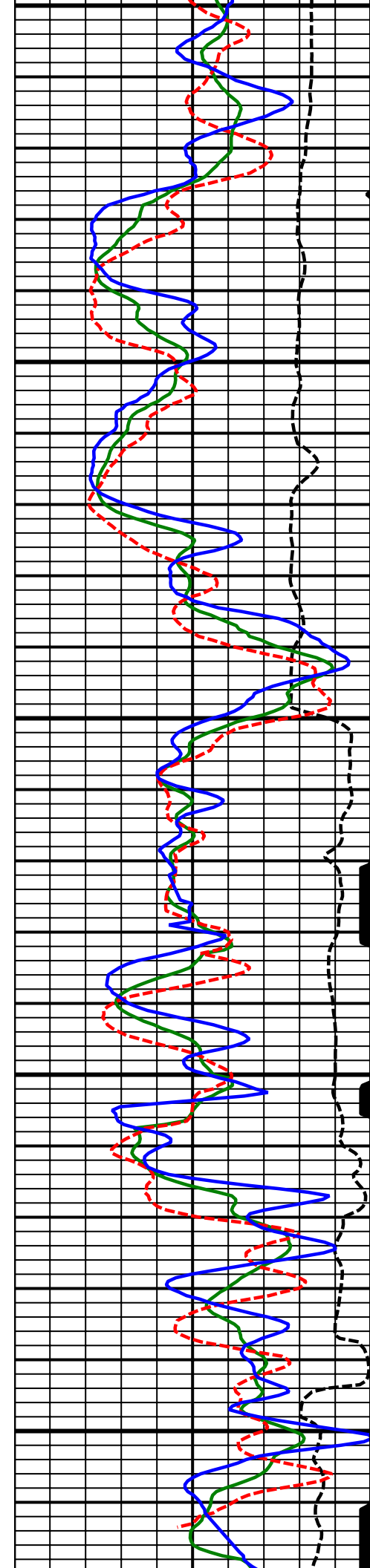




12200
MD

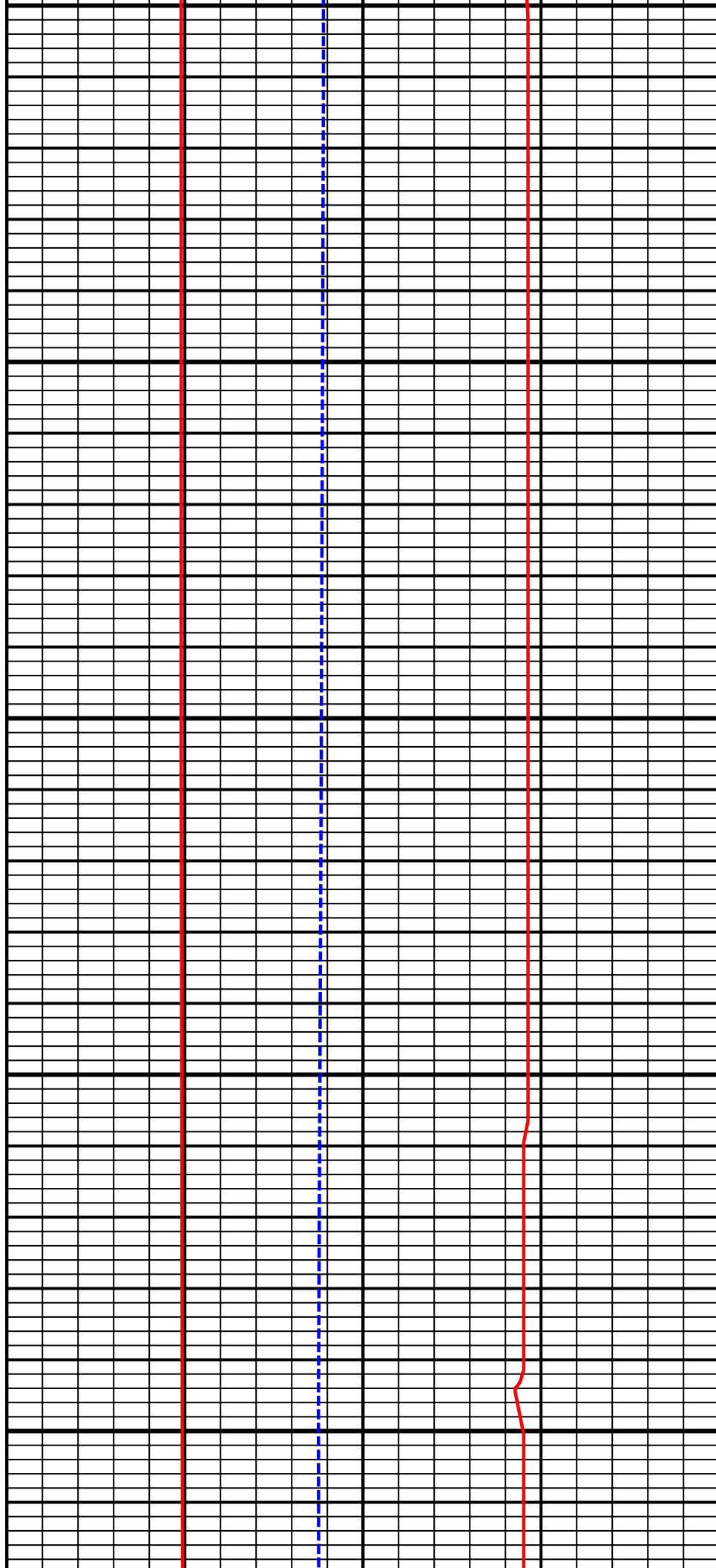
12300
MD

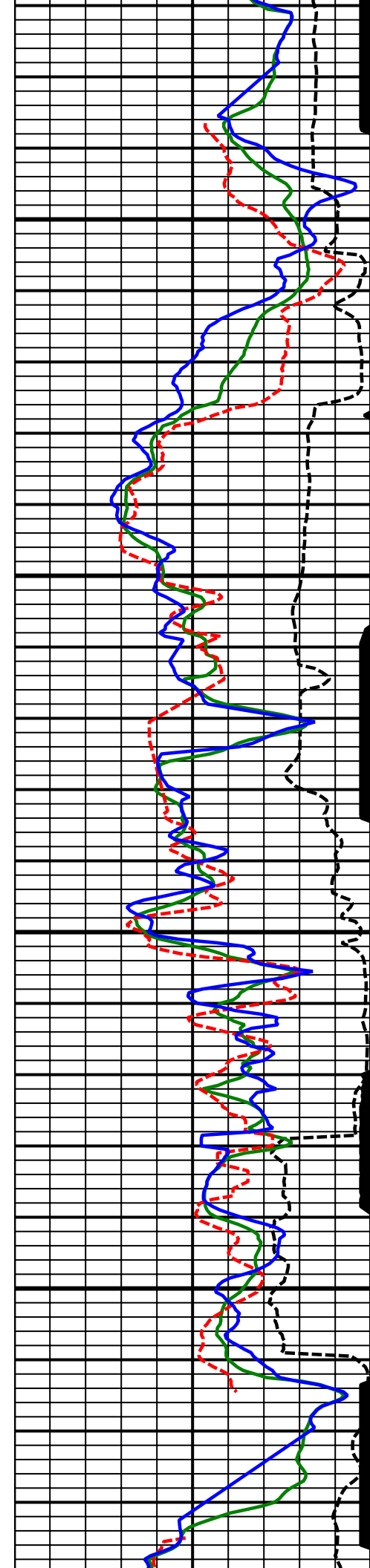




12400
MD

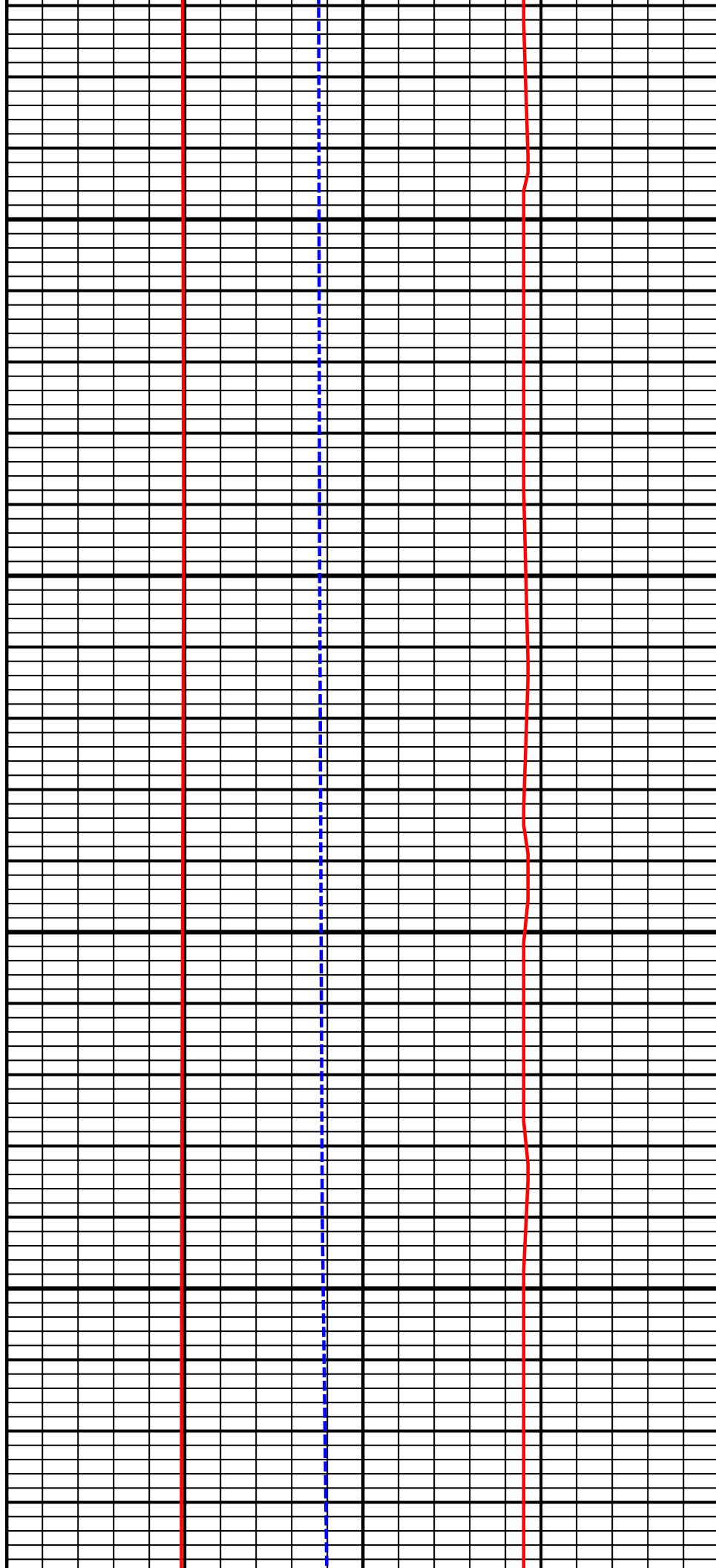
12500
MD

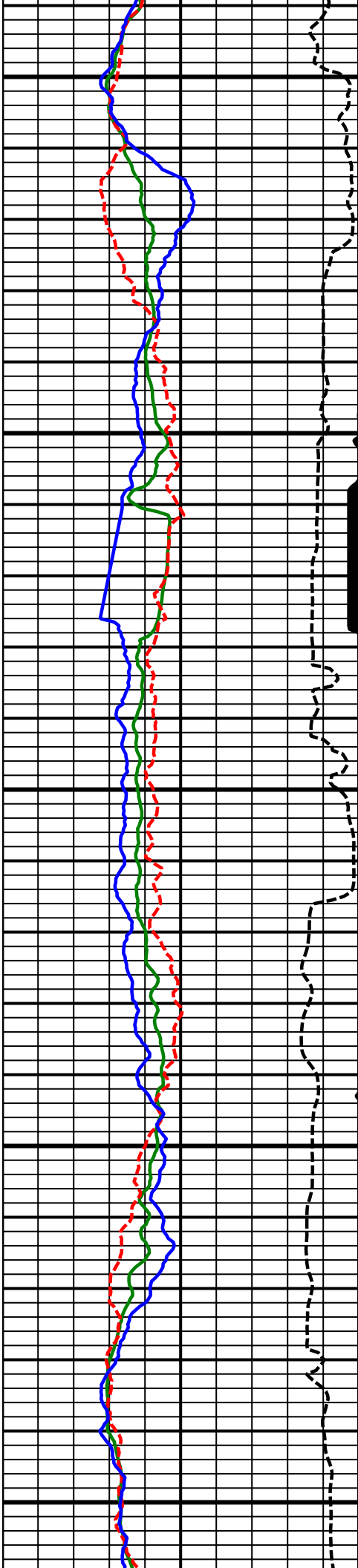




12600
MD

12700
MD

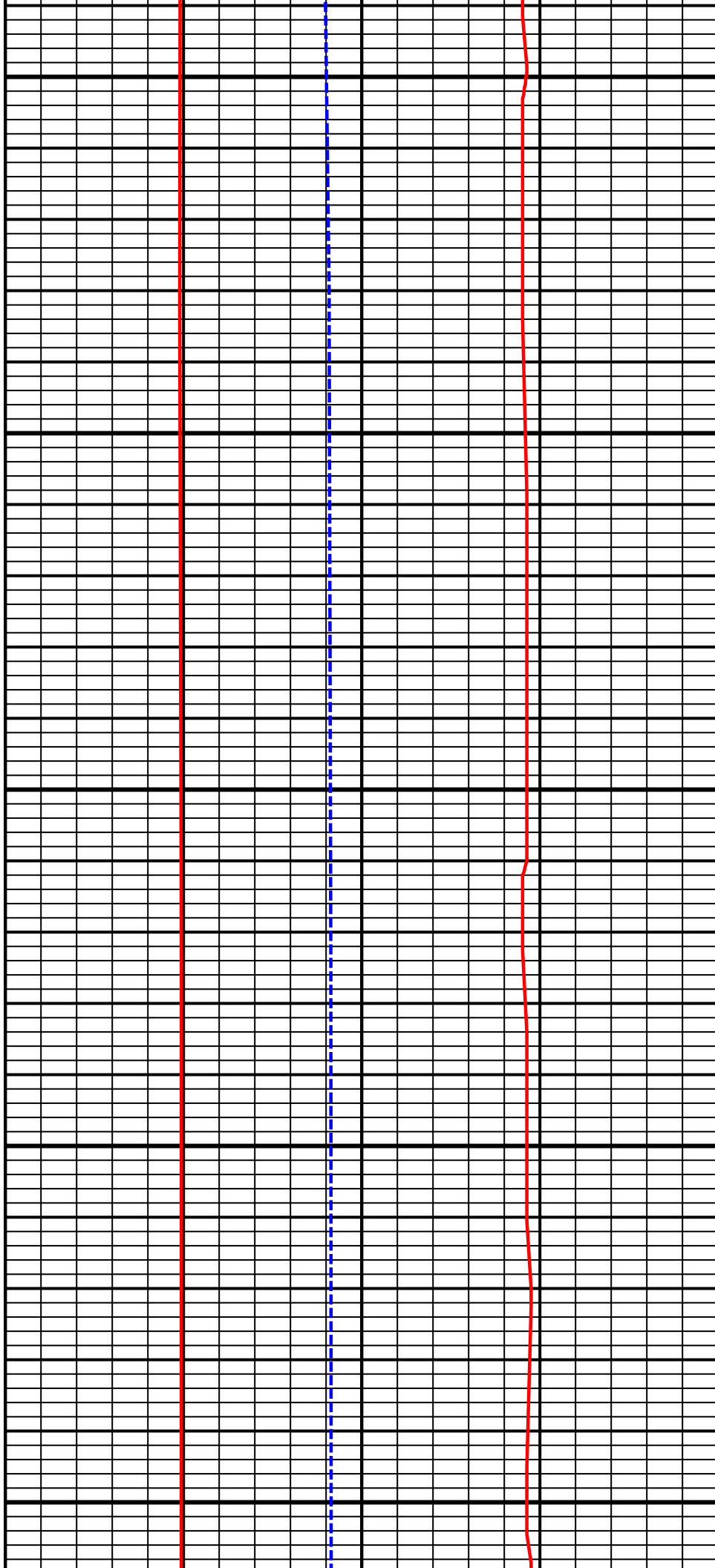


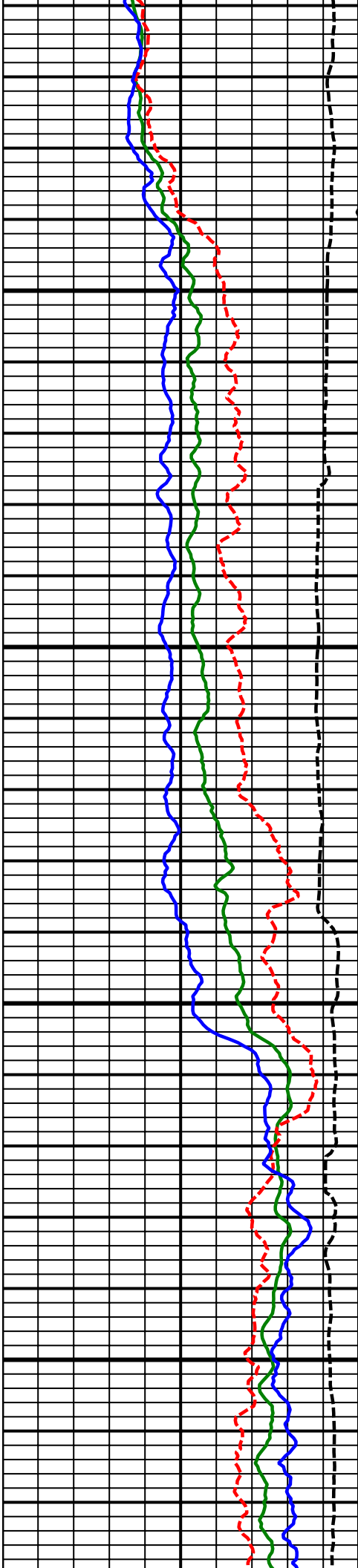


12800
MD

12900
MD

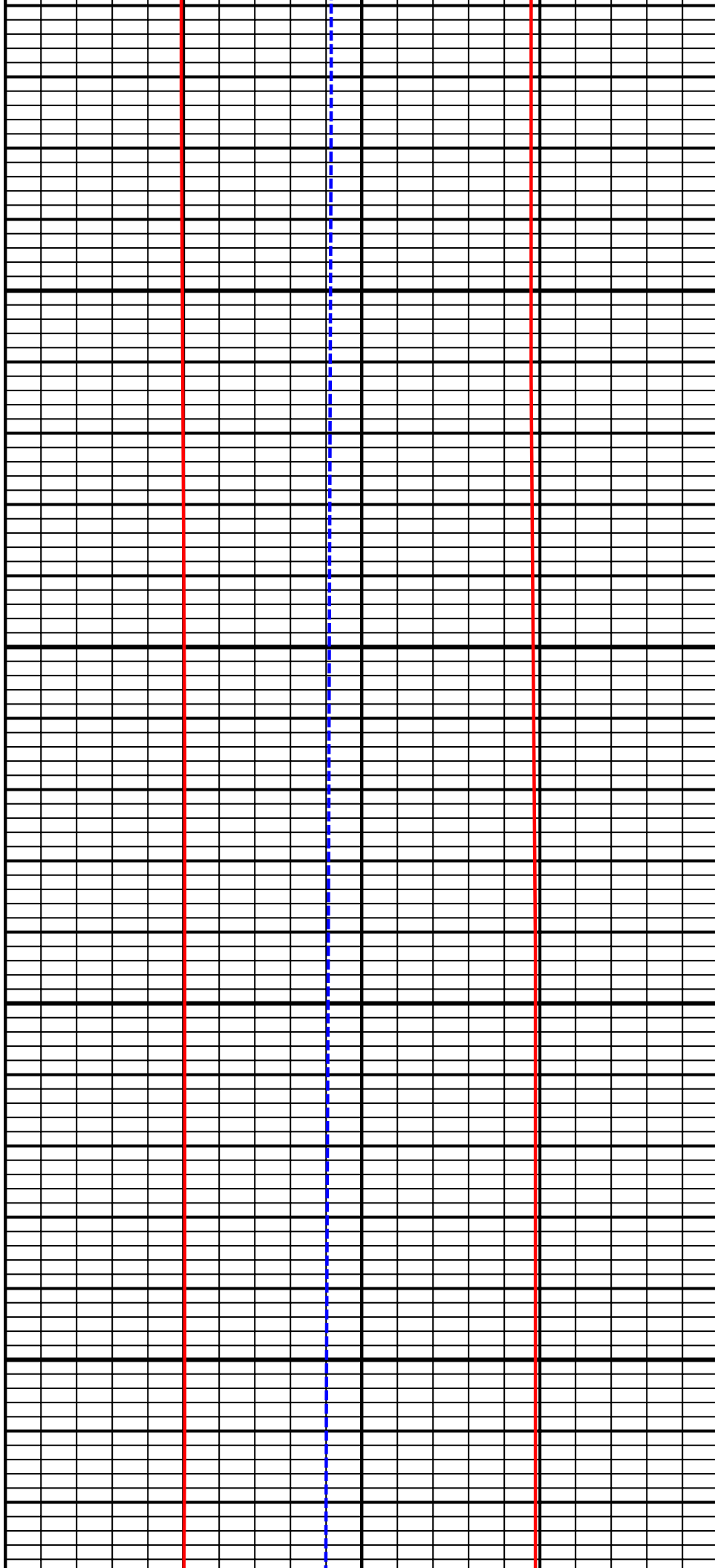
13000
MD

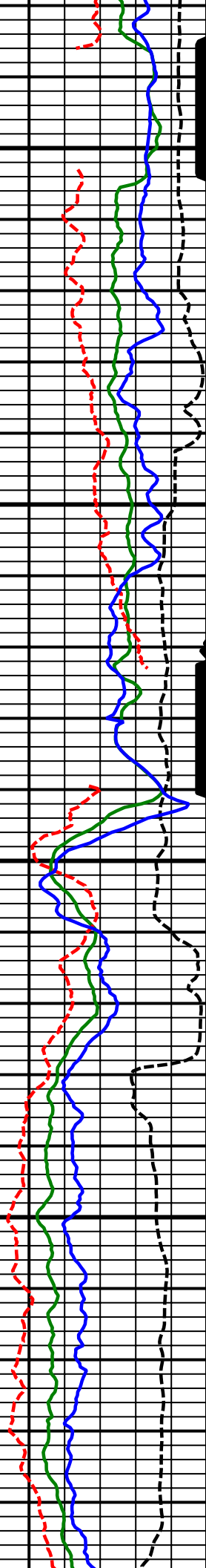




13100
MD

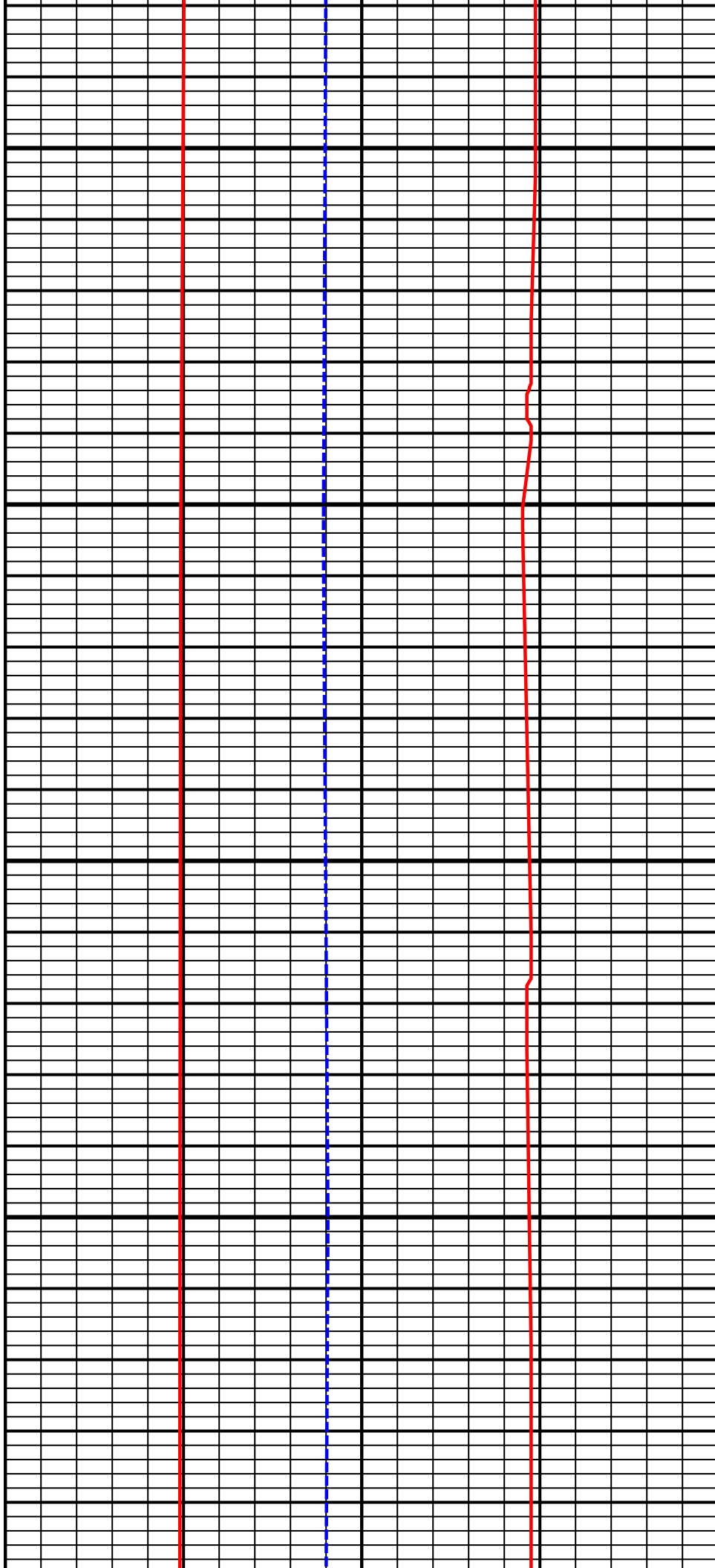
13200
MD

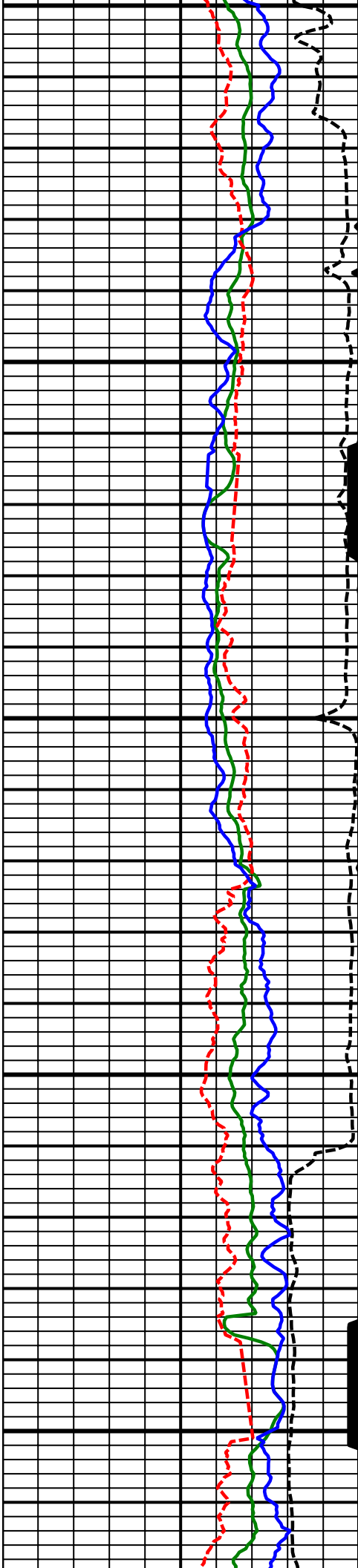




13300
MD

13400
MD



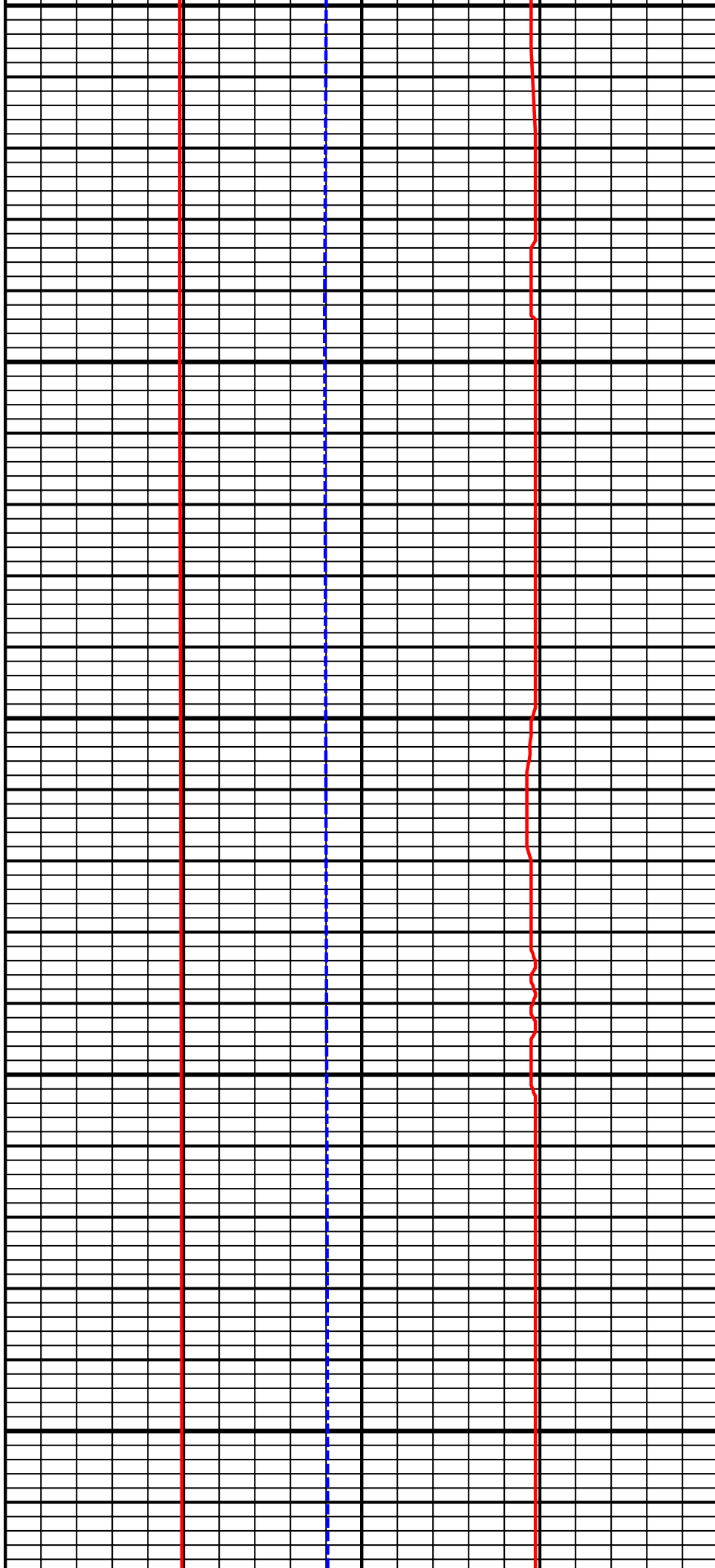


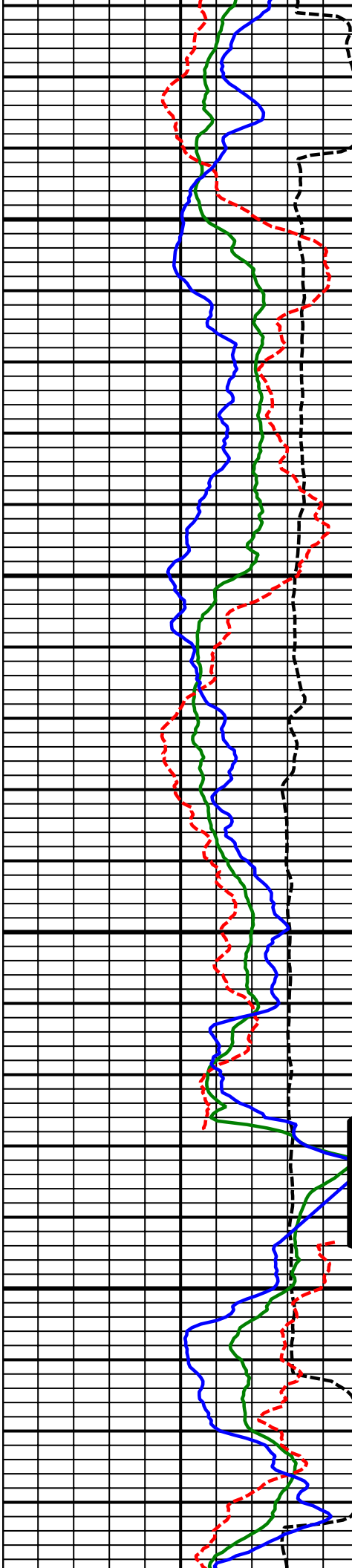
13500
MD

13600
MD

Comment
No. 3-2

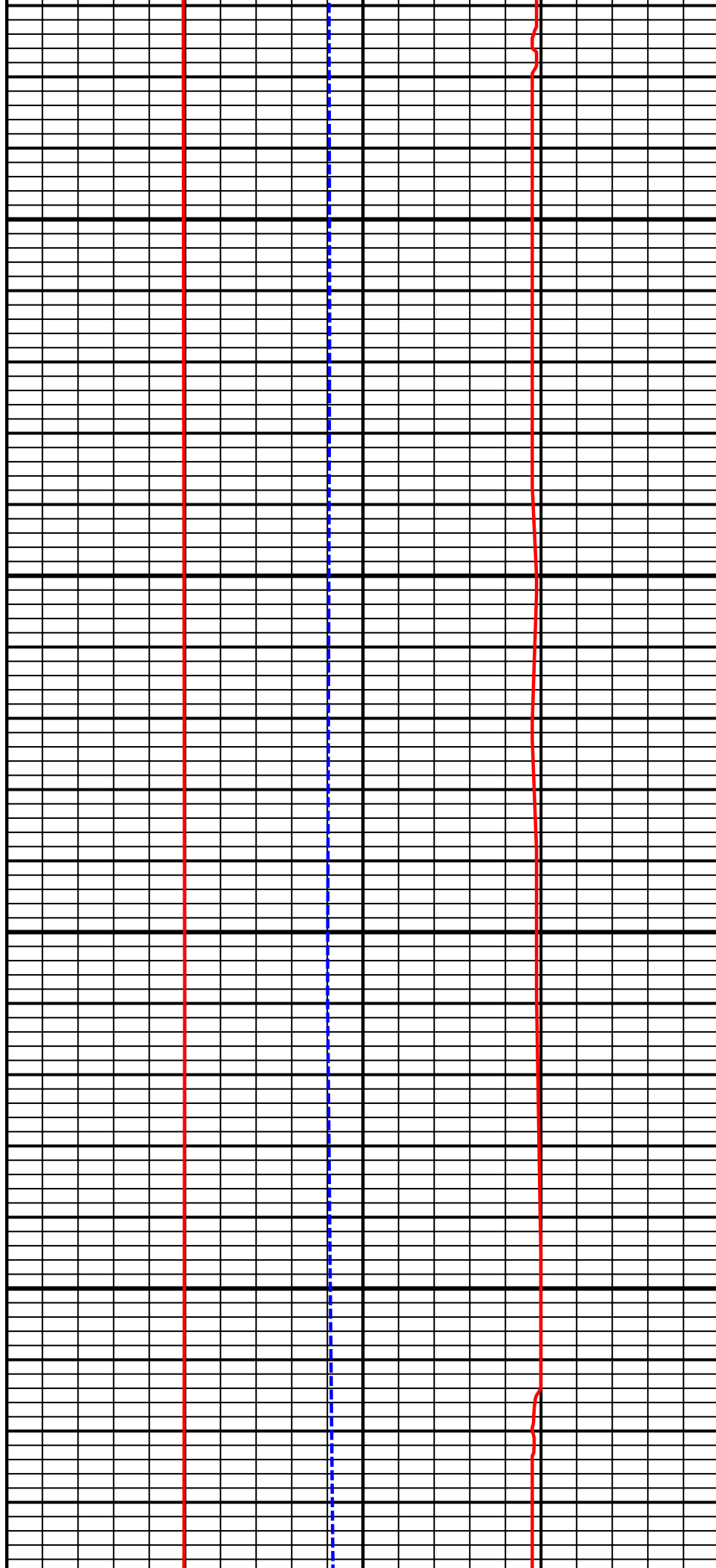
Comment
No. 4-1

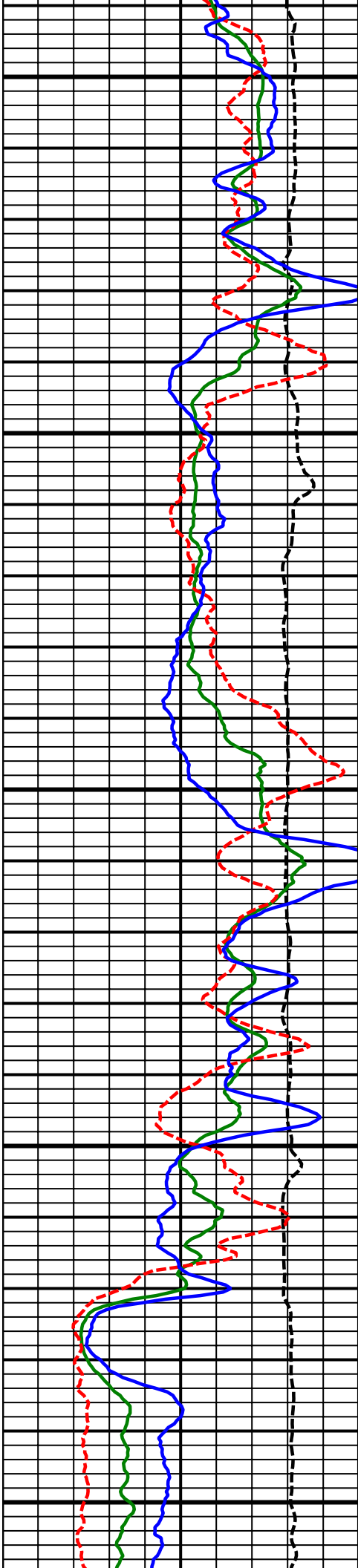




13700
MD

13800
MD

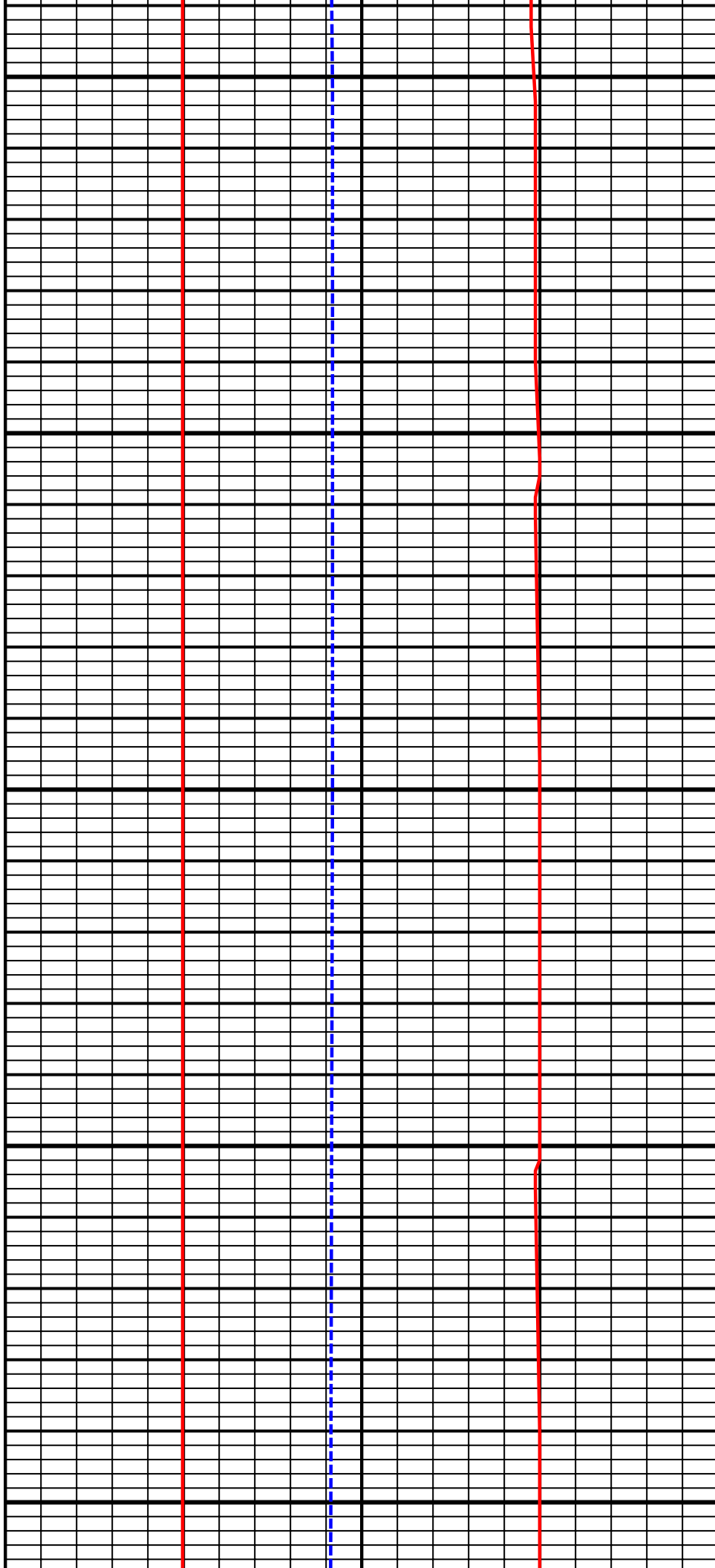


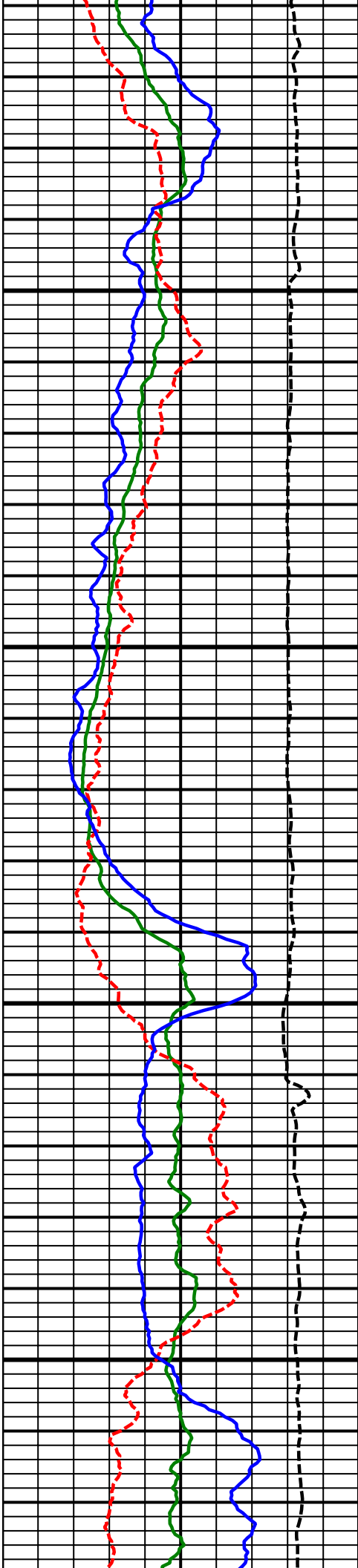


13900
MD

14000
MD

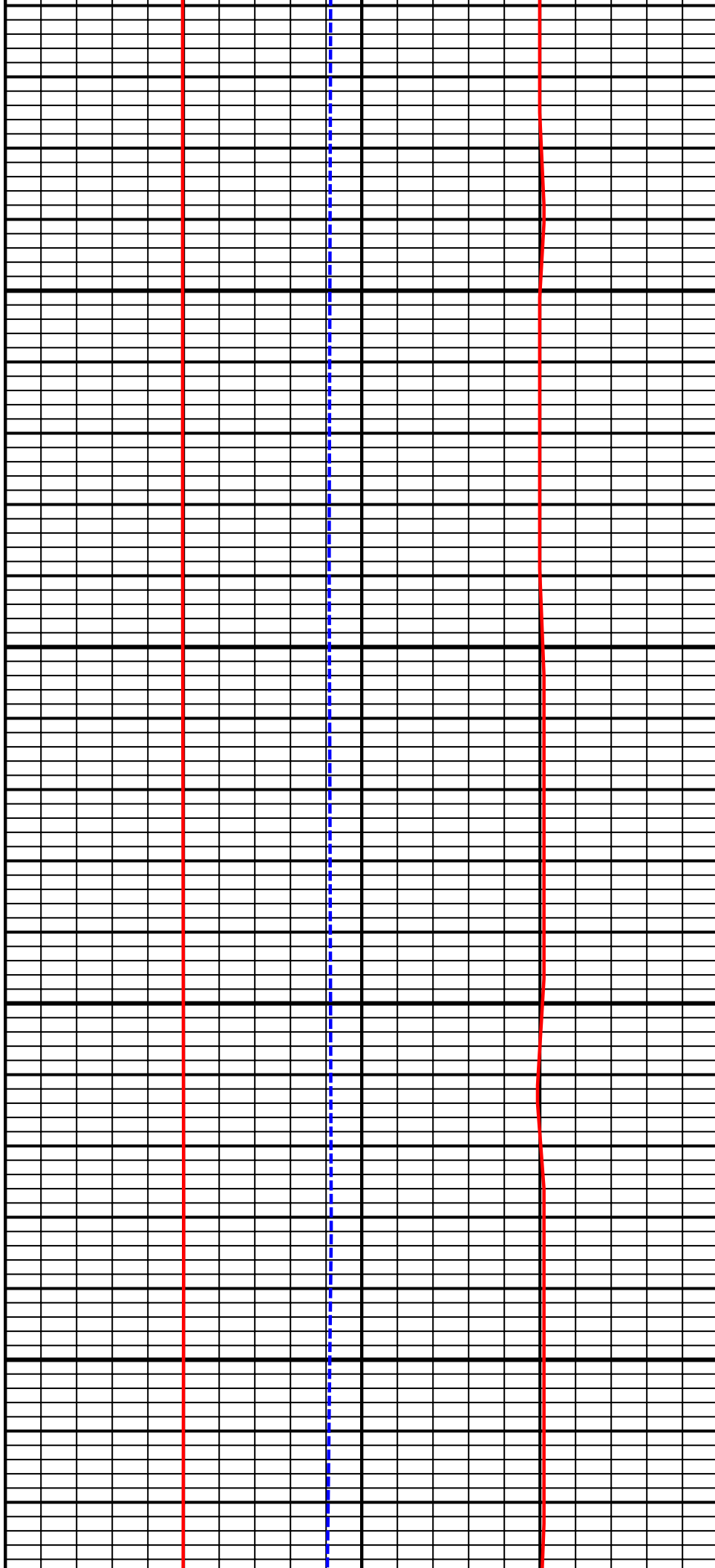
14100
MD

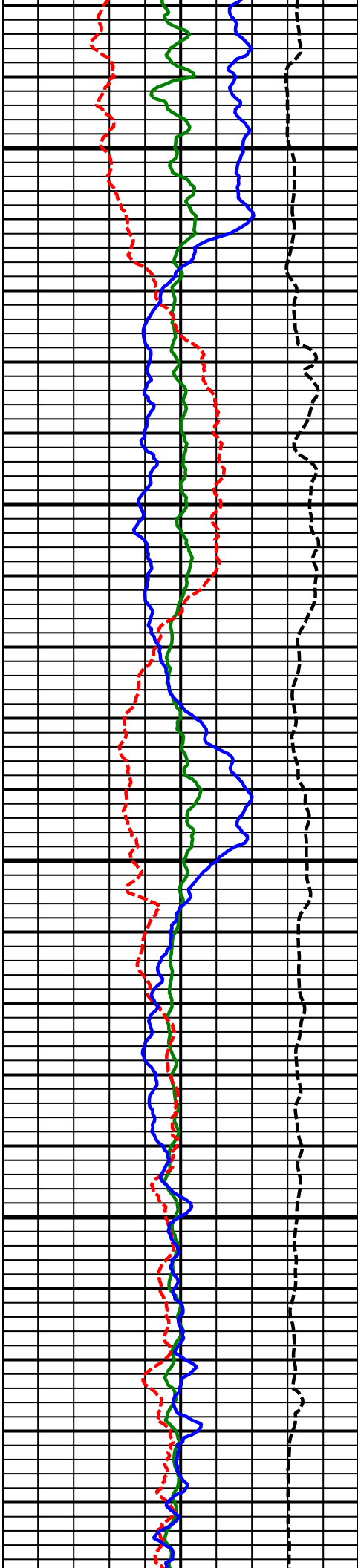




14200
MD

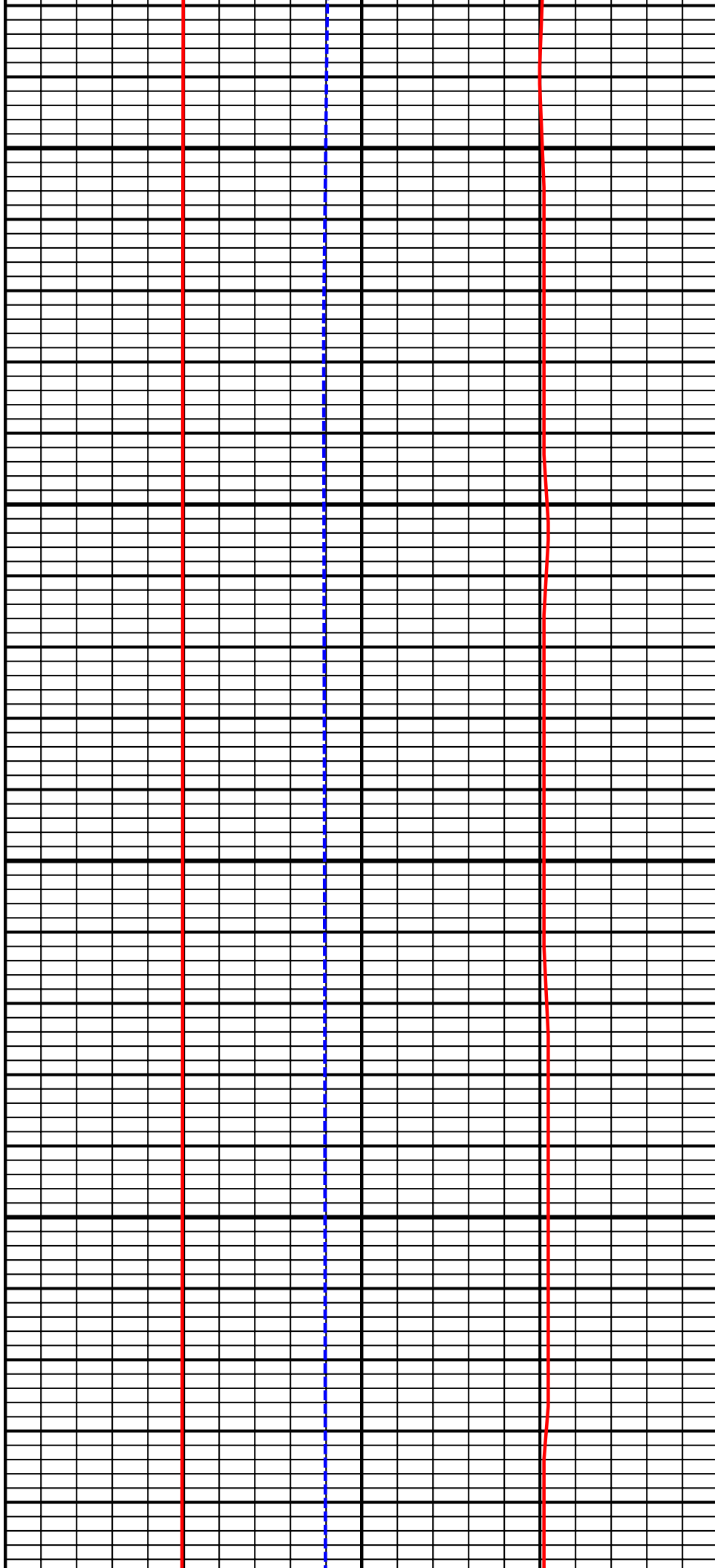
14300
MD

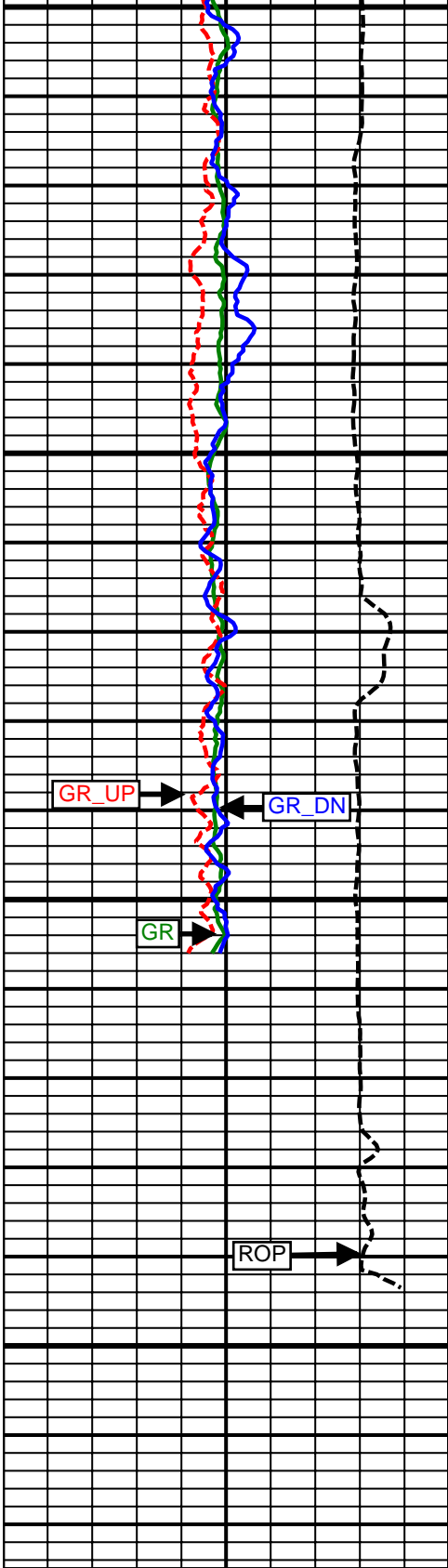




14400
MD

14500
MD

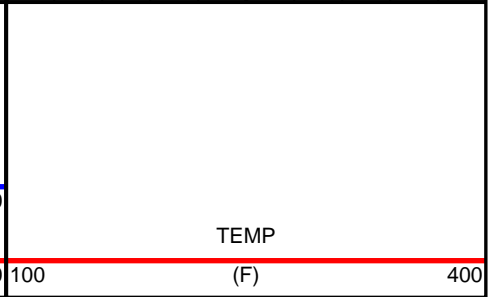
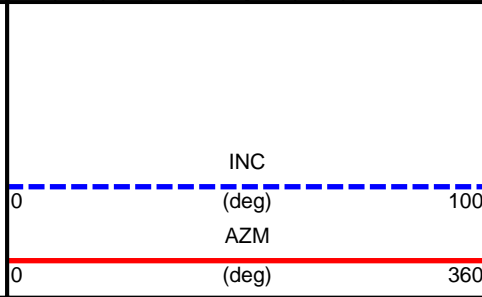
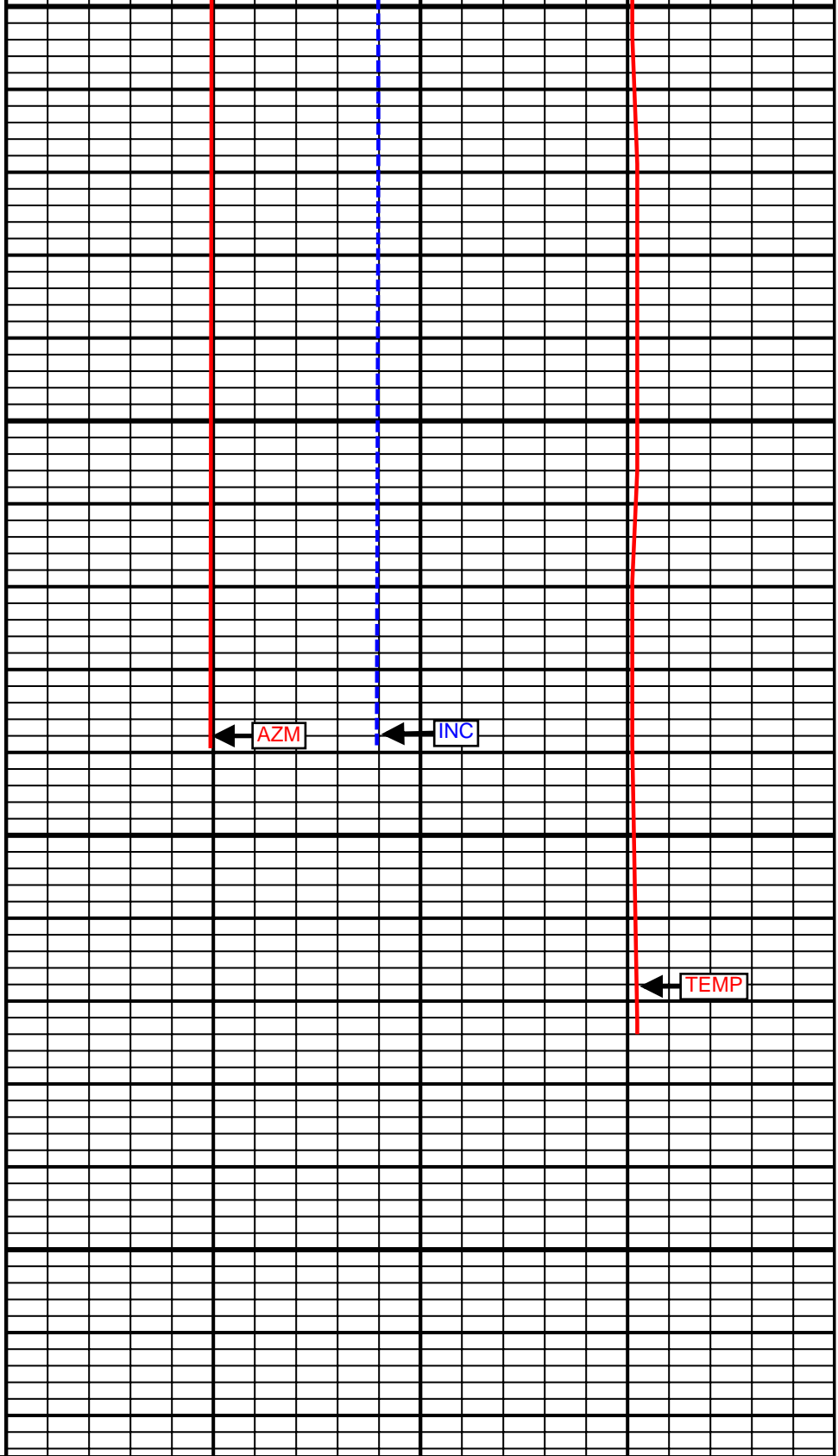
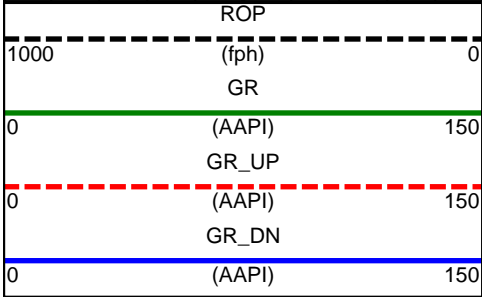




14600
MD

Comment
No. 4-2

14700
MD



SURVEY						
Survey Calculation Method: Minimum Curvature						
Magnetic Reference	Target Direction	Total Magnetic Field	Magnetic Dip Angle	Magnetic Declination	Grid Convergence	Total Correction
True North	180.08 deg	52889 nT	66.94 deg	8.50 deg	0.00 deg	8.50 deg
Survey Tie-On	Depth	INC	AZ	TVD	NS	EW
	918.00 ft	0.22 deg	104.52 deg	917.99 ft	0.07 ft	0.97 ft

Well Head							
Depth (ft)	Inc (deg)	Azm (deg)	TVD (ft)	NS (ft)	EW (ft)	VSect (ft)	Dogleg (deg/100ft)
1009.00	0.50	245.17	1008.99	-0.14	0.78	0.14	0.75
1375.00	0.30	232.97	1374.98	-1.39	-1.44	1.39	0.06
1833.00	0.43	338.21	1832.97	-0.51	-3.03	0.52	0.13
2200.00	0.56	311.15	2199.96	1.94	-4.89	-1.94	0.07
2569.00	1.44	130.16	2568.93	0.14	-2.71	-0.14	0.54
2661.00	3.52	130.70	2660.84	-2.45	0.32	2.45	2.26
2754.00	5.42	121.46	2753.55	-6.60	6.23	6.59	2.18
2850.00	7.04	122.57	2848.98	-12.13	15.06	12.11	1.69
2945.00	8.85	115.37	2943.07	-18.40	26.57	18.36	2.17
3040.00	9.33	106.87	3036.88	-23.77	40.54	23.71	1.50
3135.00	8.99	102.53	3130.67	-27.61	55.15	27.53	0.81
3230.00	7.92	98.79	3224.64	-30.22	68.87	30.13	1.27
3324.00	7.54	88.77	3317.79	-31.08	81.44	30.97	1.49
3419.00	7.50	89.68	3411.97	-30.91	93.87	30.78	0.13
3514.00	7.90	101.01	3506.12	-32.12	106.48	31.97	1.65
3609.00	8.79	101.62	3600.11	-34.83	119.99	34.67	0.94
3704.00	10.27	96.16	3693.80	-37.20	135.53	37.01	1.82
3799.00	10.16	88.71	3787.30	-37.92	152.32	37.71	1.39
3894.00	8.86	82.53	3880.99	-36.78	167.95	36.55	1.74
3988.00	9.01	87.84	3973.85	-35.57	182.49	35.31	0.89
4083.00	9.59	96.22	4067.61	-36.14	197.79	35.87	1.55
4178.00	11.17	87.79	4161.06	-36.64	214.85	36.34	2.30
4273.00	10.35	88.82	4254.39	-36.11	232.58	35.79	0.89
4367.00	8.98	84.52	4347.05	-35.24	248.33	34.89	1.65
4462.00	9.10	86.69	4440.87	-34.10	263.21	33.73	0.38
4556.00	8.42	89.43	4533.78	-33.60	277.51	33.21	0.85
4651.00	8.67	86.57	4627.72	-33.10	291.61	32.70	0.52
4746.00	10.17	90.18	4721.44	-32.70	307.15	32.27	1.70
4840.00	9.05	86.29	4814.12	-32.25	322.82	31.80	1.38
4935.00	9.28	94.09	4907.91	-32.31	337.92	31.84	1.33
5030.00	8.77	93.87	5001.73	-33.35	352.79	32.85	0.54
5125.00	9.50	95.21	5095.53	-34.55	367.82	34.03	0.80
5219.00	9.61	93.28	5188.22	-35.70	383.38	35.17	0.36
5314.00	10.06	91.58	5281.83	-36.38	399.59	35.82	0.56
5409.00	9.29	85.72	5375.48	-36.04	415.53	35.46	1.31
5503.00	8.85	87.71	5468.30	-35.18	430.32	34.58	0.57
5598.00	9.07	90.23	5562.14	-34.92	445.11	34.30	0.47
5693.00	8.41	92.77	5656.04	-35.29	459.54	34.65	0.80
5787.00	9.70	94.10	5748.87	-36.19	474.30	35.52	1.39
5882.00	9.40	94.00	5842.55	-37.30	490.03	36.62	0.32
5976.00	10.45	92.21	5935.14	-38.16	506.20	37.46	1.16
6070.00	11.83	91.28	6027.37	-38.71	524.36	37.98	1.48

6165.00	11.93	80.94	6120.34	-37.38	543.79	36.62	2.24
6260.00	10.44	77.43	6213.54	-33.96	561.89	33.18	1.72
6354.00	8.34	84.74	6306.28	-31.48	576.99	30.68	2.56
6449.00	8.36	98.61	6400.28	-31.88	590.68	31.06	2.12
6544.00	9.87	93.57	6494.08	-33.42	605.64	32.58	1.80
6575.00	9.38	91.95	6524.64	-33.68	610.81	32.82	1.81
6607.00	8.77	105.01	6556.25	-34.40	615.78	33.54	6.70
6638.00	10.19	125.88	6586.83	-36.62	620.28	35.75	11.91
6670.00	11.41	135.41	6618.27	-40.53	624.80	39.66	6.75
6701.00	12.41	139.99	6648.60	-45.26	629.09	44.39	4.44
6733.00	14.47	143.78	6679.72	-51.12	633.67	50.24	7.00
6764.00	16.47	145.79	6709.60	-57.88	638.43	56.99	6.68
6796.00	17.99	148.22	6740.16	-65.84	643.58	64.94	5.25
6827.00	19.13	149.97	6769.55	-74.30	648.64	73.40	4.09
6859.00	20.19	149.46	6799.68	-83.60	654.07	82.69	3.36
6891.00	21.72	151.51	6829.56	-93.56	659.71	92.64	5.30
6922.00	24.19	156.21	6858.11	-104.42	665.00	103.49	9.92
6954.00	26.87	160.91	6886.99	-117.25	670.02	116.32	10.49
6985.00	29.62	166.15	6914.30	-131.32	674.14	130.38	11.94
7017.00	32.23	168.57	6941.75	-147.36	677.73	146.42	9.03
7048.00	34.67	171.52	6967.61	-164.19	680.67	163.24	9.46
7080.00	37.11	172.92	6993.53	-182.77	683.20	181.82	8.04
7111.00	40.16	174.08	7017.75	-202.00	685.38	201.05	10.11
7143.00	43.73	175.09	7041.54	-223.29	687.39	222.33	11.35
7174.00	47.37	174.90	7063.25	-245.33	689.33	244.37	11.75
7206.00	49.95	174.38	7084.39	-269.25	691.57	268.29	8.15
7251.00	53.69	176.54	7112.20	-304.51	694.35	303.54	9.13
7301.00	58.68	178.97	7140.02	-346.00	695.96	345.03	10.76
7348.00	63.36	180.73	7162.78	-387.10	696.05	386.13	10.48
7395.00	69.04	182.21	7181.74	-430.07	694.93	429.10	12.42
7440.00	74.78	183.02	7195.71	-472.78	692.98	471.81	12.87
7490.00	78.16	181.36	7207.41	-521.35	691.13	520.39	7.49
7522.00	80.03	179.64	7213.46	-552.77	690.85	551.80	7.87
7553.00	83.06	177.40	7218.02	-583.42	691.65	582.45	12.11
7585.00	85.59	176.48	7221.18	-615.21	693.35	614.24	8.41
7672.00	91.96	176.07	7223.04	-701.96	699.00	700.99	7.34
7814.00	91.60	175.02	7218.63	-843.46	710.02	842.47	0.78
7907.00	90.43	175.08	7216.99	-936.10	718.04	935.10	1.26
7999.00	90.18	174.93	7216.50	-1027.75	726.05	1026.73	0.32
8090.00	89.56	176.16	7216.70	-1118.47	733.12	1117.45	1.51
8182.00	91.06	177.39	7216.20	-1210.32	738.30	1209.29	2.11
8273.00	90.62	177.92	7214.87	-1301.23	742.02	1300.20	0.76
8364.00	91.11	179.42	7213.50	-1392.20	744.13	1391.16	1.73
8456.00	90.92	180.03	7211.87	-1484.18	744.57	1483.14	0.69
8548.00	90.92	180.23	7210.39	-1576.17	744.37	1575.13	0.22
8640.00	90.62	180.87	7209.15	-1668.15	743.48	1667.11	0.77
8732.00	88.77	180.92	7209.64	-1760.14	742.05	1759.10	2.01
8824.00	89.57	181.61	7210.98	-1852.10	740.01	1851.07	1.15
8915.00	89.91	182.15	7211.39	-1943.05	737.03	1942.02	0.70
9005.00	90.00	181.87	7211.46	-2033.00	733.87	2031.97	0.33
9097.00	89.12	183.56	7212.17	-2124.89	729.51	2123.87	2.07
9189.00	89.51	182.63	7213.27	-2216.75	724.55	2215.73	1.10
9282.00	89.74	182.68	7213.87	-2309.64	720.24	2308.64	0.25
9374.00	90.35	182.86	7213.80	-2401.54	715.79	2400.53	0.69
9465.00	89.57	183.79	7213.87	-2492.38	710.52	2491.39	1.33
9558.00	89.69	183.45	7214.47	-2585.19	704.64	2584.21	0.39
9651.00	88.34	184.09	7216.06	-2677.98	698.53	2677.00	1.61
9743.00	88.06	184.45	7218.95	-2769.68	691.68	2768.71	0.50
9836.00	88.33	184.27	7221.88	-2862.36	684.62	2861.40	0.35
9899.00	88.15	184.27	7223.82	-2925.16	679.93	2924.20	0.29
9994.00	87.29	183.34	7227.60	-3019.87	673.63	3018.93	1.33

10089.00	88.94	183.03	7230.72	-3114.67	668.35	3113.73	1.77
10183.00	89.56	183.03	7231.95	-3208.53	663.39	3207.60	0.66
10278.00	91.60	182.77	7230.99	-3303.40	658.58	3302.47	2.16
10372.00	89.82	182.15	7229.83	-3397.30	654.55	3396.38	2.01
10467.00	90.18	181.46	7229.83	-3492.25	651.55	3491.34	0.82
10562.00	91.79	181.62	7228.19	-3587.20	649.00	3586.29	1.70
10656.00	90.92	182.37	7225.97	-3681.11	645.73	3680.21	1.22
10751.00	89.20	181.57	7225.87	-3776.05	642.46	3775.15	2.00
10845.00	89.51	181.92	7226.93	-3870.00	639.60	3869.11	0.50
10940.00	90.00	181.85	7227.34	-3964.95	636.48	3964.06	0.52
11035.00	91.05	180.78	7226.47	-4059.92	634.30	4059.03	1.58
11129.00	92.53	180.28	7223.53	-4153.87	633.43	4152.98	1.66
11224.00	92.10	179.72	7219.69	-4248.79	633.43	4247.90	0.74
11318.00	92.84	179.35	7215.64	-4342.70	634.19	4341.81	0.88
11413.00	92.77	179.14	7210.99	-4437.58	635.44	4436.68	0.23
11508.00	92.90	178.99	7206.29	-4532.45	636.99	4531.55	0.21
11602.00	90.68	179.62	7203.36	-4626.39	638.13	4625.49	2.45
11697.00	89.51	178.12	7203.20	-4721.36	640.00	4720.47	2.00
11791.00	87.10	178.19	7205.98	-4815.27	643.03	4814.36	2.56
11886.00	86.43	177.86	7211.34	-4910.06	646.30	4909.15	0.79
11980.00	87.16	177.96	7216.60	-5003.85	649.72	5002.94	0.78
12075.00	88.09	177.39	7220.53	-5098.69	653.57	5097.77	1.15
12170.00	87.47	176.65	7224.21	-5193.49	658.50	5192.56	1.02
12264.00	88.77	175.95	7227.30	-5287.24	664.57	5286.30	1.57
12359.00	88.89	176.20	7229.24	-5382.00	671.07	5381.05	0.29
12454.00	88.27	176.24	7231.59	-5476.76	677.33	5475.81	0.65
12548.00	87.47	177.34	7235.08	-5570.54	682.59	5569.59	1.45
12643.00	87.78	178.70	7239.02	-5665.40	685.87	5664.44	1.47
12737.00	88.52	176.85	7242.06	-5759.28	689.52	5758.31	2.12
12832.00	90.86	176.08	7242.57	-5854.09	695.37	5853.11	2.59
12927.00	91.32	177.75	7240.76	-5948.93	700.48	5947.95	1.82
13021.00	91.42	177.63	7238.52	-6042.83	704.27	6041.84	0.17
13116.00	90.80	181.12	7236.67	-6137.79	705.31	6136.80	3.73
13210.00	90.06	181.13	7235.97	-6231.77	703.46	6230.78	0.79
13305.00	89.26	177.03	7236.53	-6326.73	704.99	6325.74	4.40
13400.00	90.49	176.32	7236.74	-6421.57	710.50	6420.57	1.49
13494.00	89.57	176.15	7236.69	-6515.37	716.67	6514.36	1.00
13619.00	90.25	177.87	7236.89	-6640.19	723.19	6639.17	1.48
13714.00	90.62	178.60	7236.17	-6735.14	726.12	6734.12	0.86
13808.00	90.06	179.71	7235.61	-6829.13	727.50	6828.11	1.32
13903.00	91.79	178.87	7234.08	-6924.10	728.68	6923.08	2.02
13997.00	91.79	179.11	7231.14	-7018.04	730.33	7017.02	0.26
14092.00	91.35	179.01	7228.54	-7112.99	731.89	7111.97	0.47
14187.00	90.86	178.97	7226.70	-7207.96	733.57	7206.93	0.52
14281.00	91.42	180.09	7224.83	-7301.94	734.34	7300.91	1.33
14376.00	89.32	179.07	7224.22	-7396.93	735.03	7395.89	2.46
14470.00	89.63	179.04	7225.08	-7490.91	736.58	7489.87	0.33
14565.00	89.82	178.22	7225.54	-7585.88	738.86	7584.84	0.89
14639.00	89.45	177.42	7226.01	-7659.83	741.67	7658.78	1.19
Projection to Total Depth							
14693.00	89.45	177.42	7226.53	-7713.77	744.10	7712.72	0.00

Weatherford surveys from 1009 ft MD to 14639 ft MD.

TD called at 14693 ft MD.

The total correction is 8.50 deg relative to True North.



Weatherford®

Final Print

COMPANY	<u>Anadarko</u>		
WELL	<u>Thomsen 36N-18HZ</u>		
FIELD	<u>Wattenburg</u>		
RIG	<u>H&P 307</u>		
LOC.	<u>Colorado</u>	COUNTY	<u>Weld</u>