



# NEUTRON LOG

**Baker Atlas**

File No: **1753** Company: **WARRATHON OIL COMPANY**  
 Well: **698-50-11**  
 Field: **GRAND VALLEY**  
 County: **GARFIELD** State: **COLORADO**  
 API No: **00040183940000**

Location: **SHL: 3474' FIL # 1307' FIL**  
**SEC 5 TWP 8S RGE 68E**  
 Other Services: **3.781" GAUGE BOND LOG**

Permanent Datum: **G.L. Elevation 8137 ft**  
 Log Measured From: **K.B. 24 ft Above P. D.**  
 Drill Measured From: **KELLY BISHING**  
 Elevations: **KB 8133 ft DF 8152 ft GL 8128 ft**

Date	13-APR-2010	
Run	ONE	
Service Order	578798	
Depth Driller	10097 ft	
Depth Logger	10040 ft	
Bottom Logged Interval	10040 ft	
Top Logged Interval	4400 ft	
Time Started	08:00	
Time Finished	12:30	
Operator Rig Time	4.5 HRS	
Type of Fluid in Hole	WATER	
Fluid Density	W/A	
Salinity	W/A	
Fluid Level	FULL	
Logged Cement Top	2830 ft	
Wellhead Pressure	1000 psi	
Maximum Hole Deviation	W/A	
Nominal Logging Speed	30 fpm	
Maximum Recorded Temperature	253 degF	
Reference Log	BIS/GUAD COMBO	
Reference Log Date	5-MAR-10	
Equipment No.	4271	VERVAL, UT
Recorded By	KALTT/OSTLER	
Witnessed By	MR. DOUG EPPERSON	

- FOLD HERE

In making interpretations of logs, our employees will give the customer the benefit of their best judgement. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Borehole Record		
Bit Size	From	To
8.75 in		

Casing Record				
Size	Weight	Grade	From	To
9.625 in	36 lbm/ft	J-55	SURFACE	2331 ft
4.5	11.8 lbm/ft	P-110	SURFACE	10161 ft

**Remarks**  
 SHORT JOINT RECORDED @ 8318' - 8339'  
 THE CREW OF 4271 THANKS YOU.

Equipment Data					
Run	Trip	Tool	Series Number	Serial Number	Position



Created by : RAL, v4.8.007

Plotted by : PlotMgr, v5.4.504

Company : MARATHON OIL COMPANY

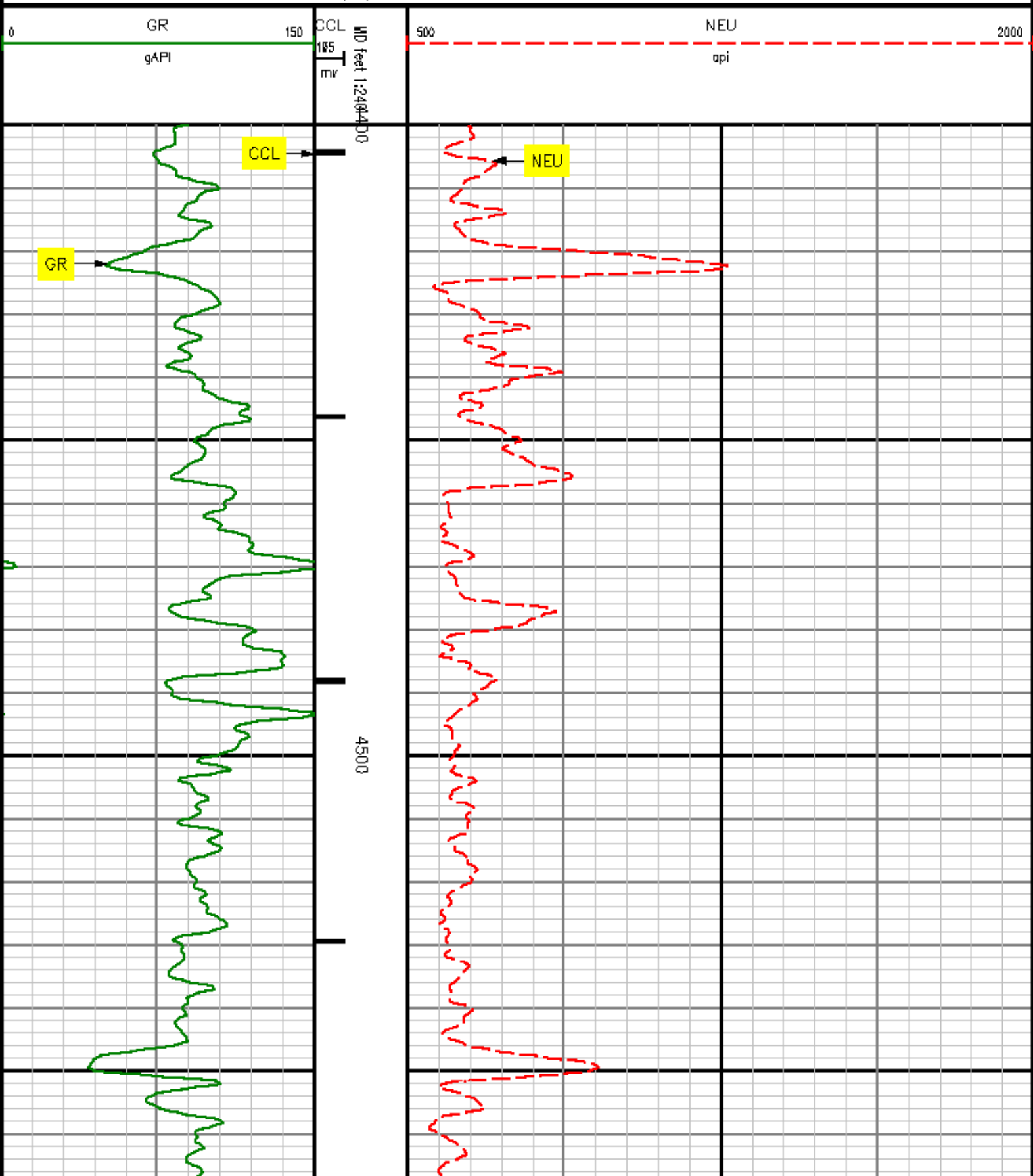
Well : 696-50-11

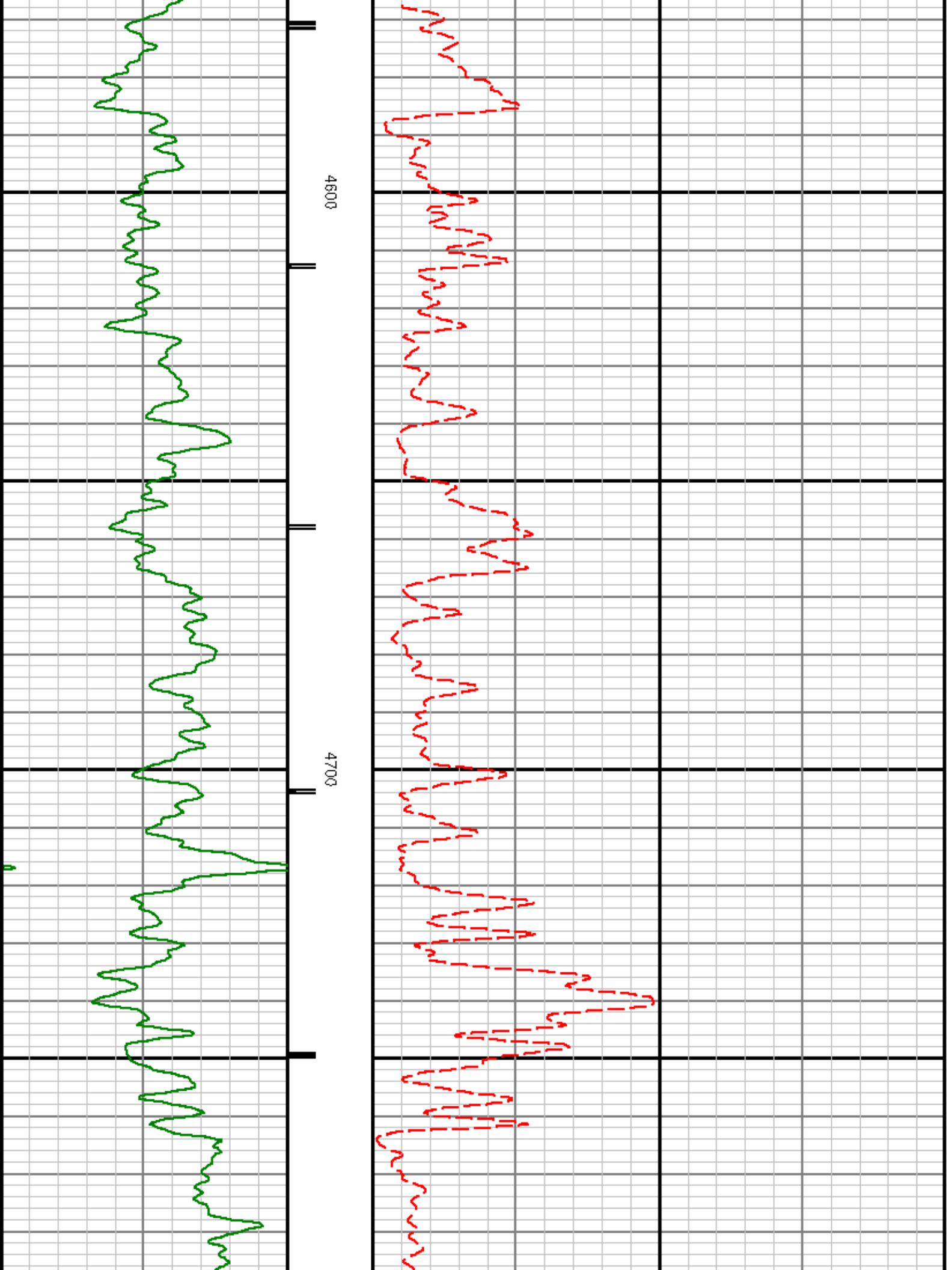
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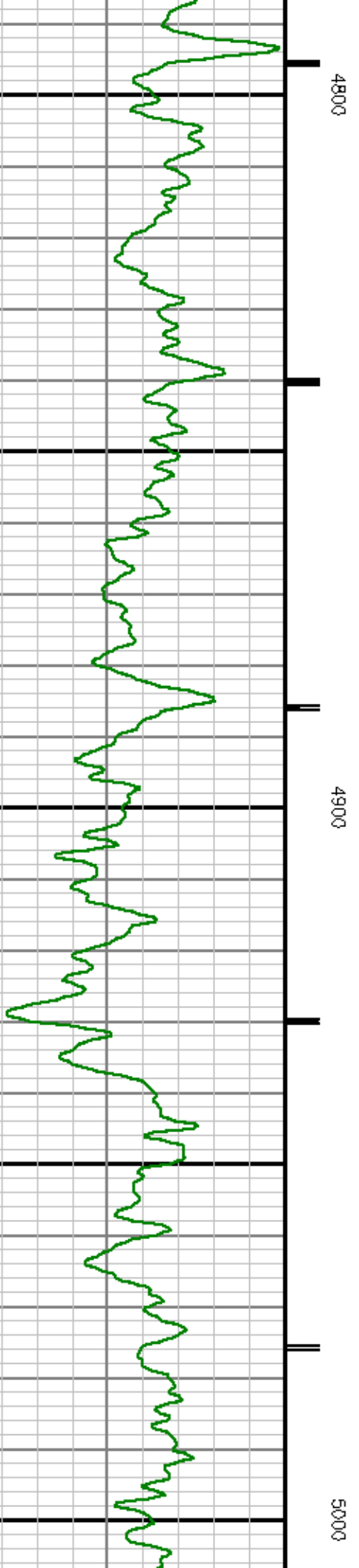
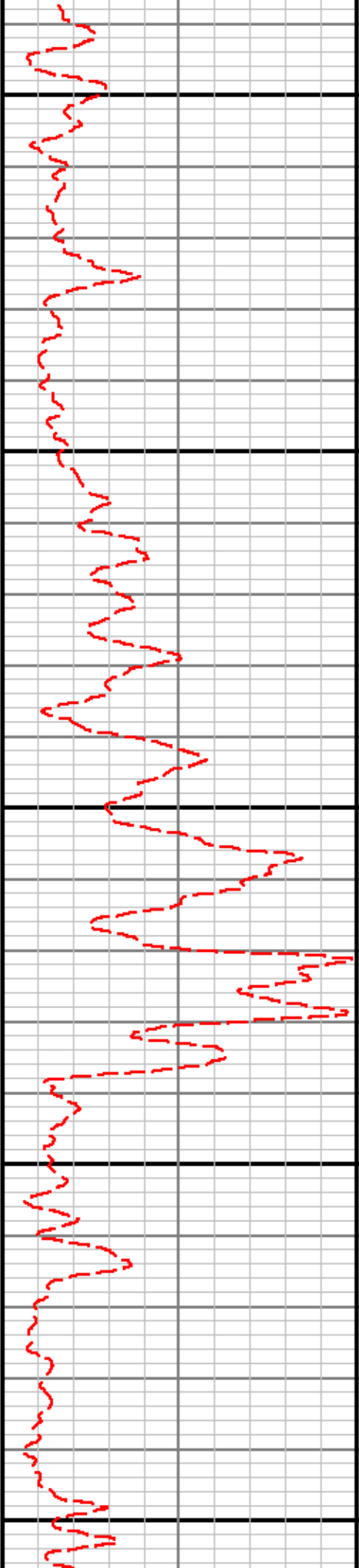
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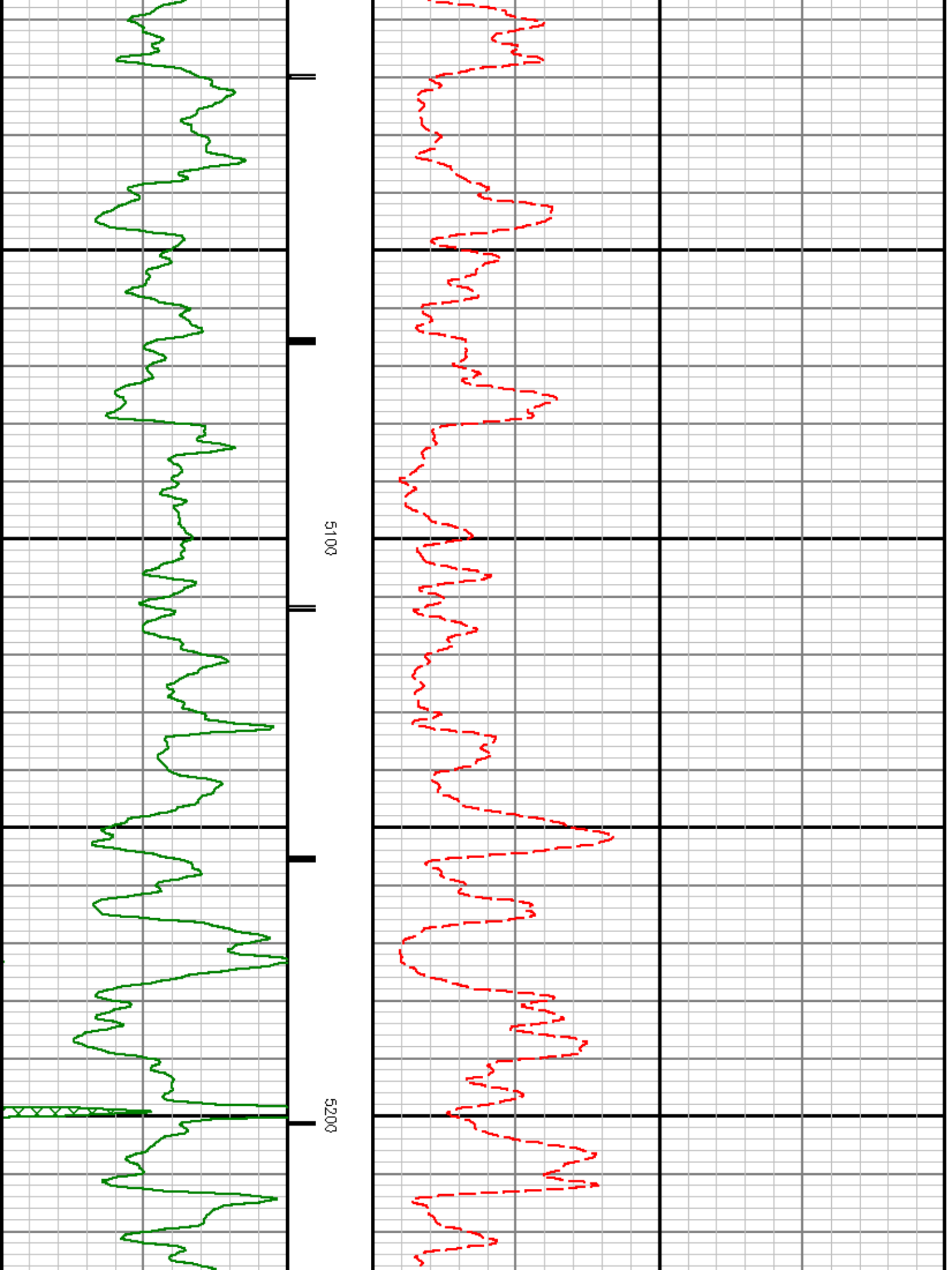
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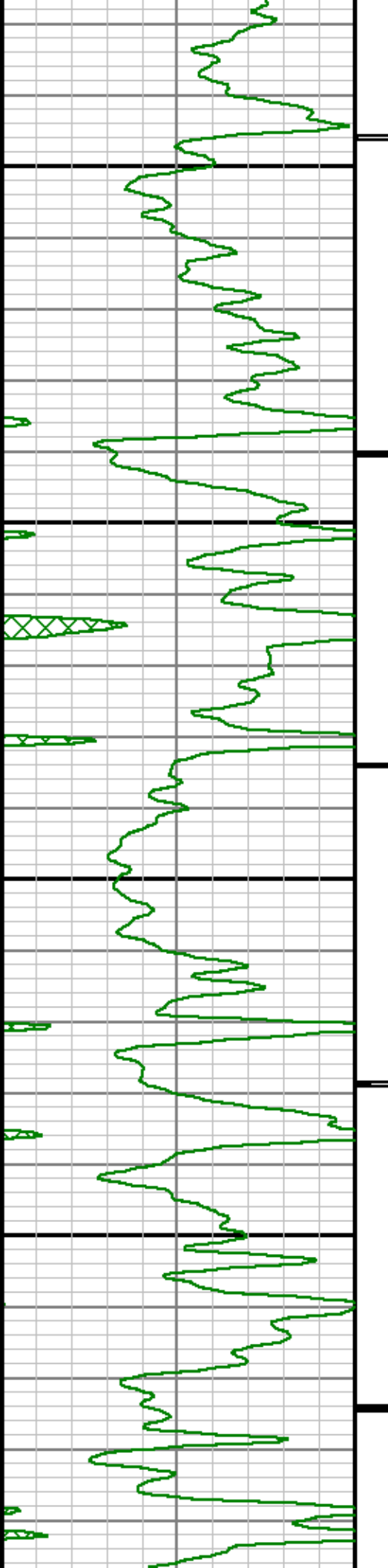
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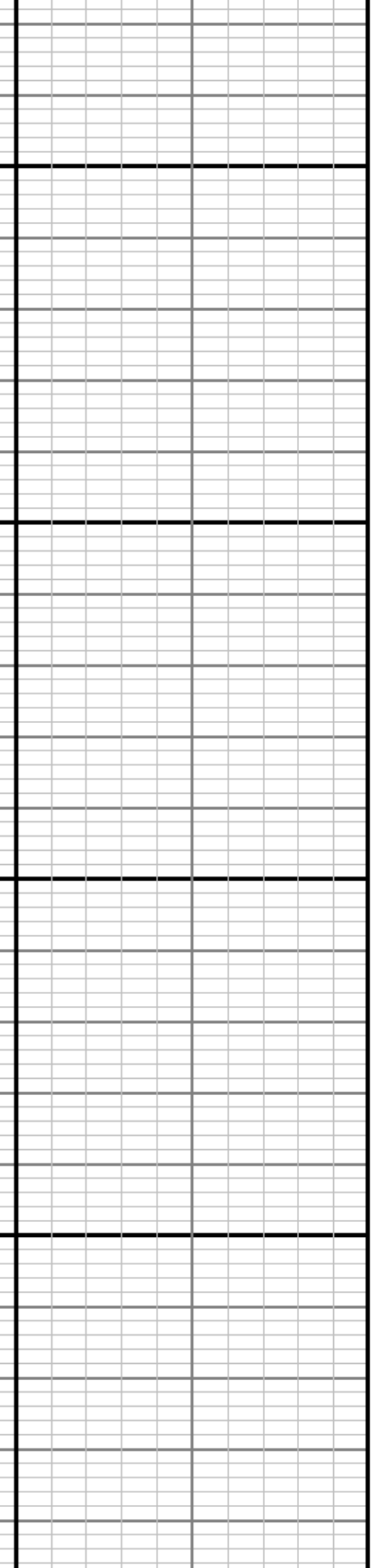
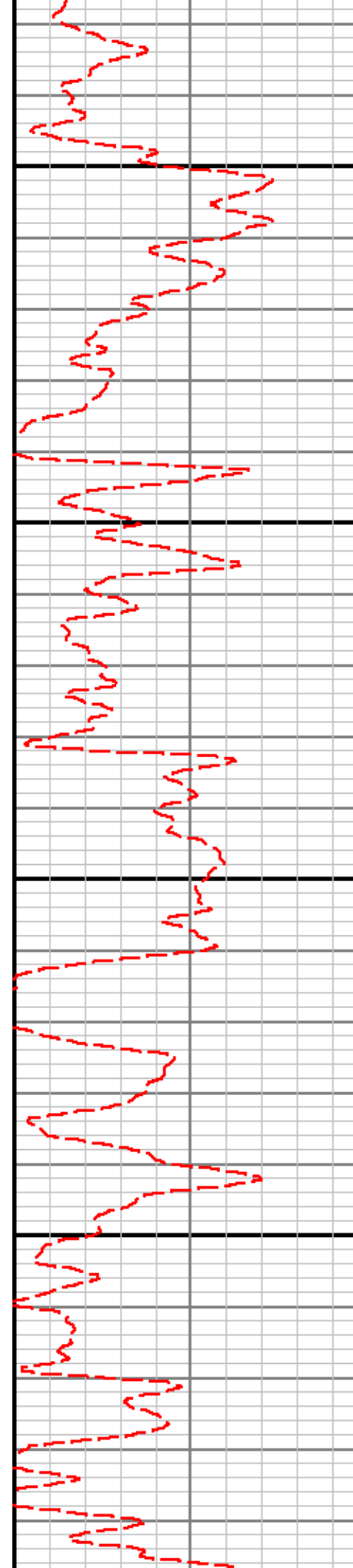


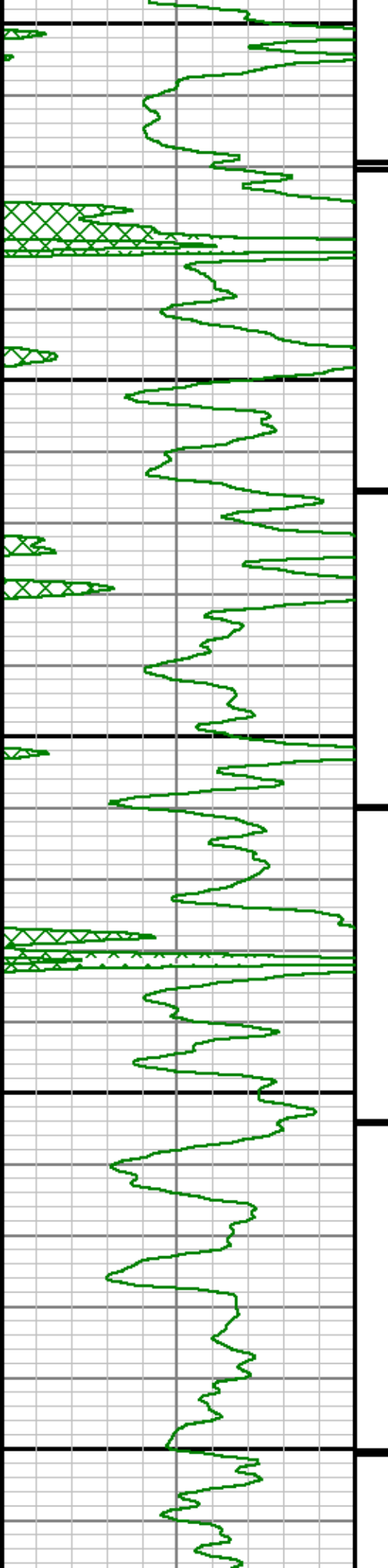




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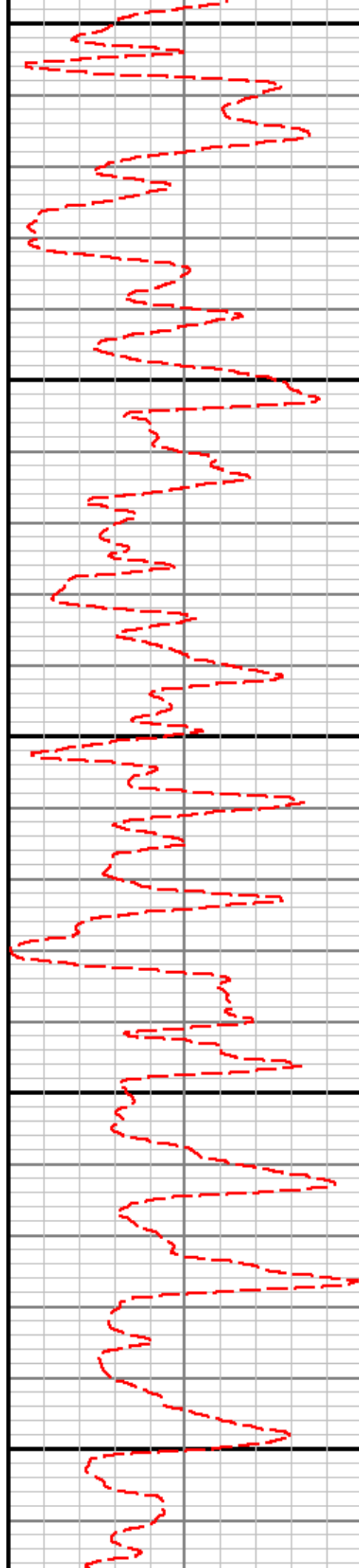
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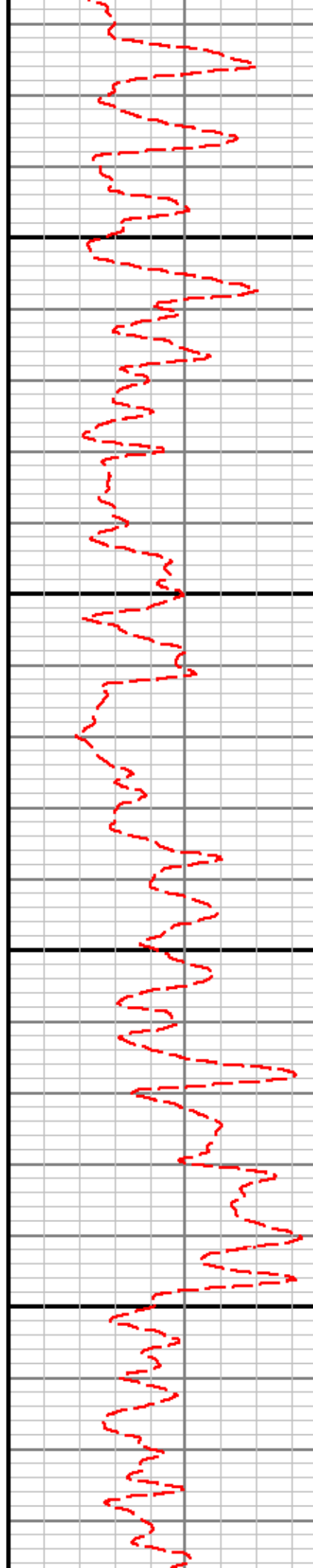
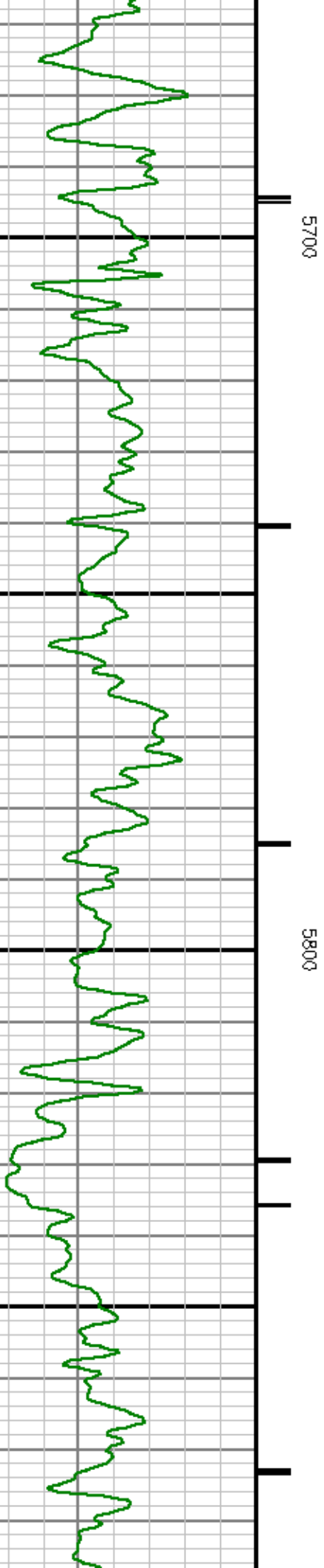


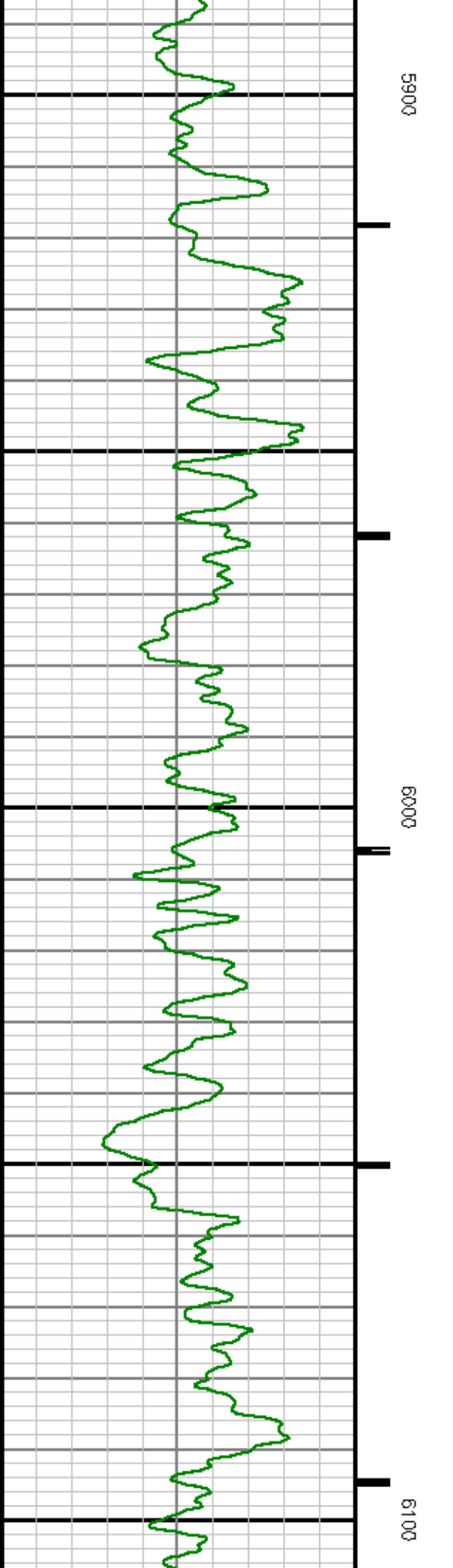
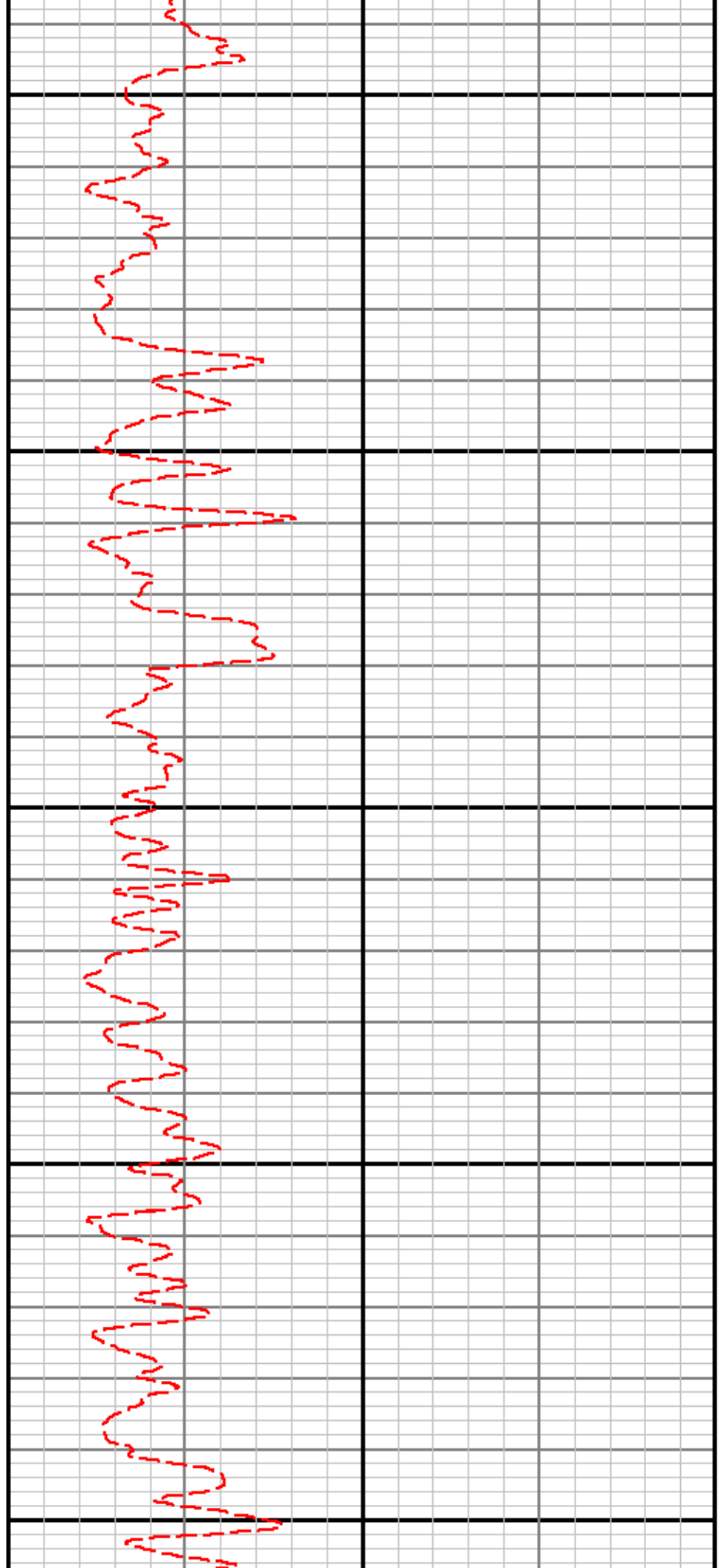


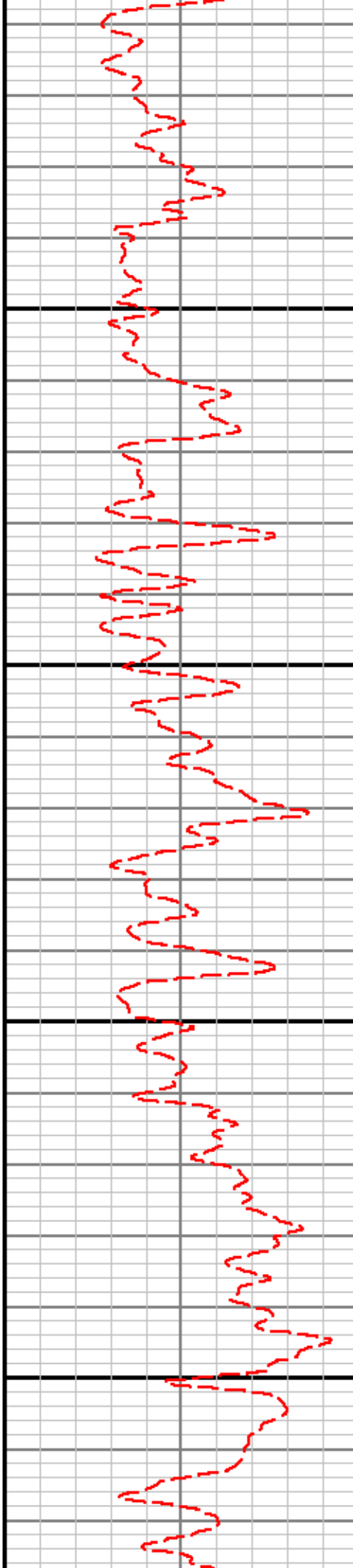
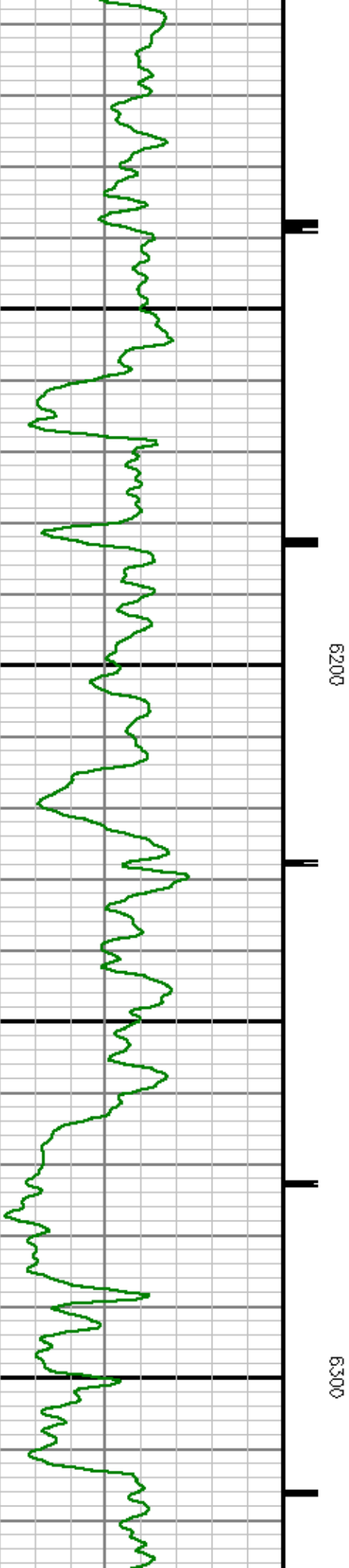
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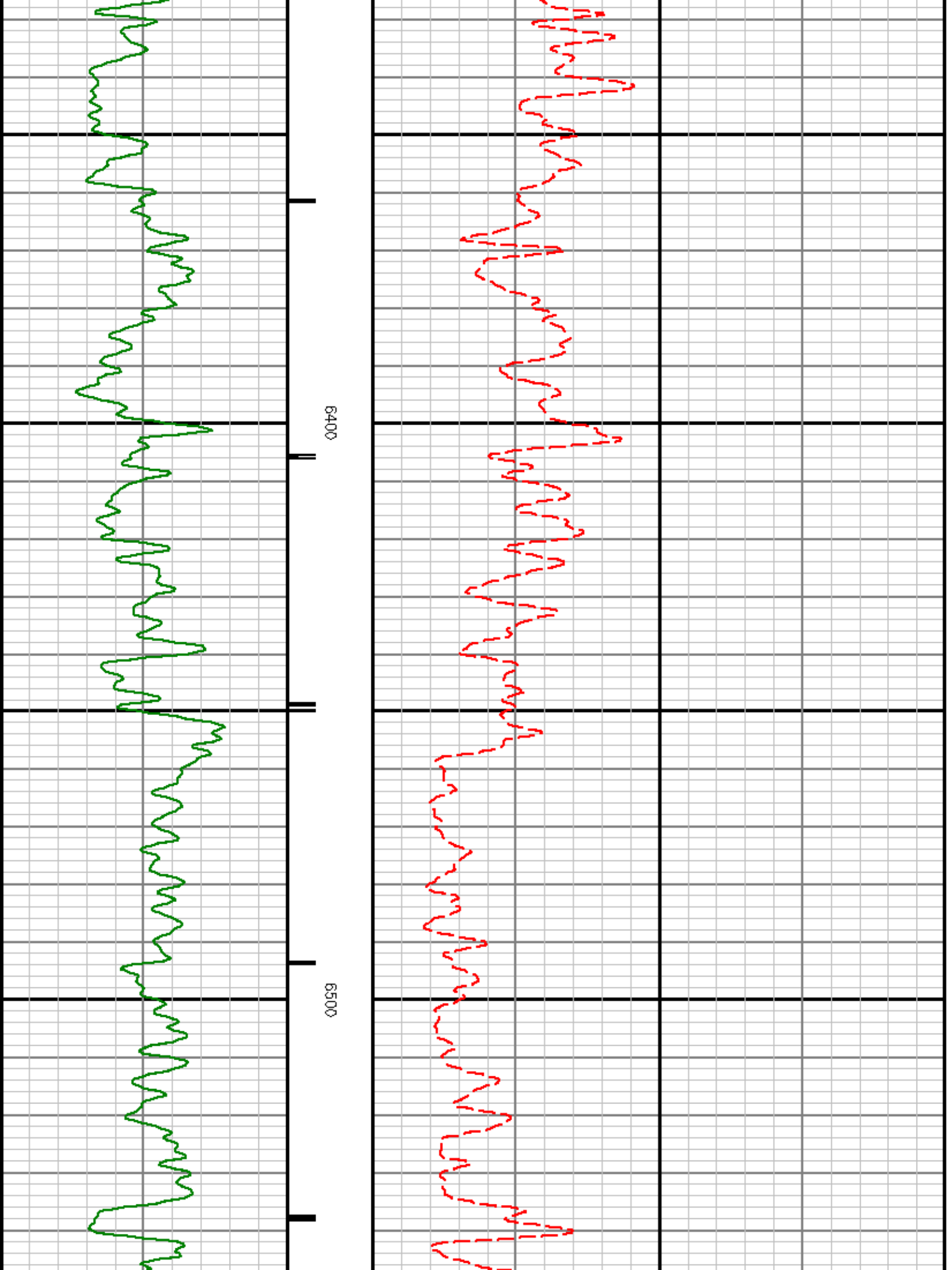
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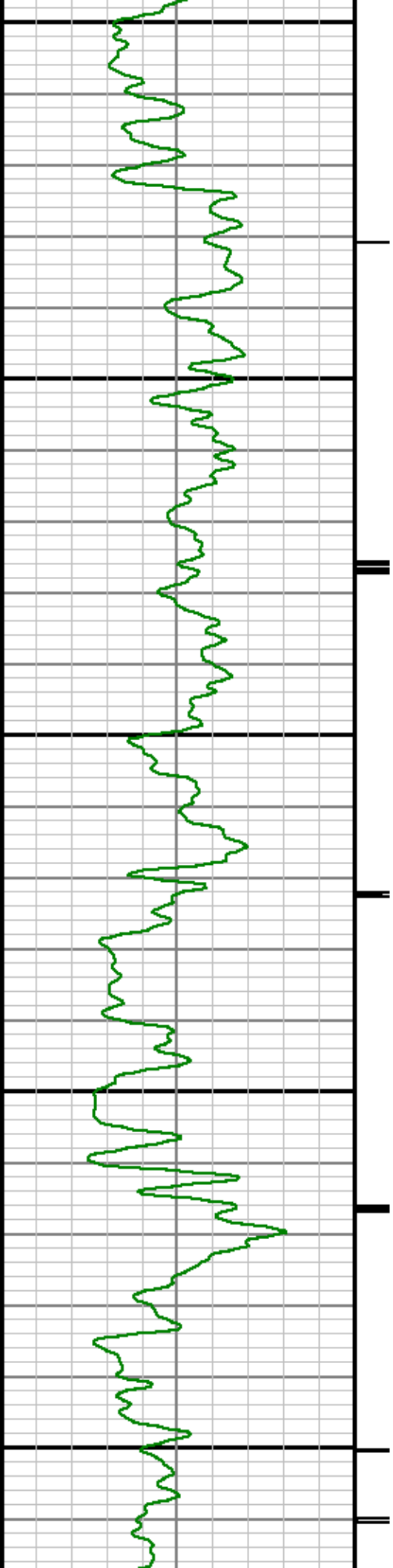






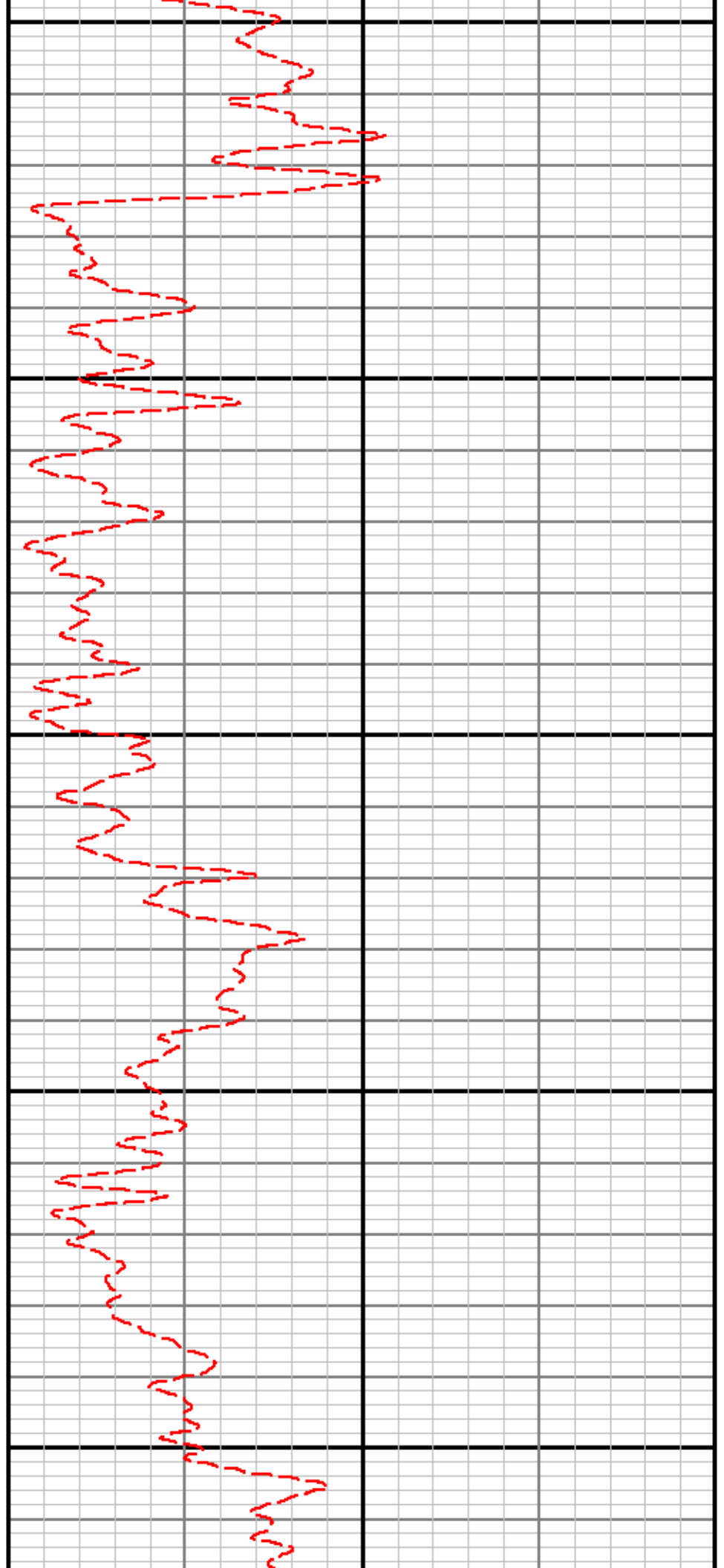


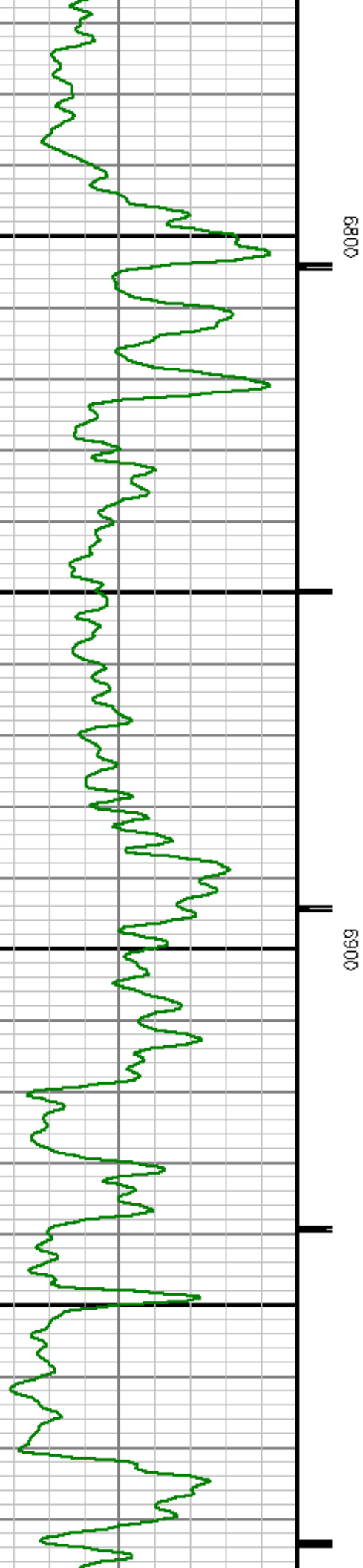




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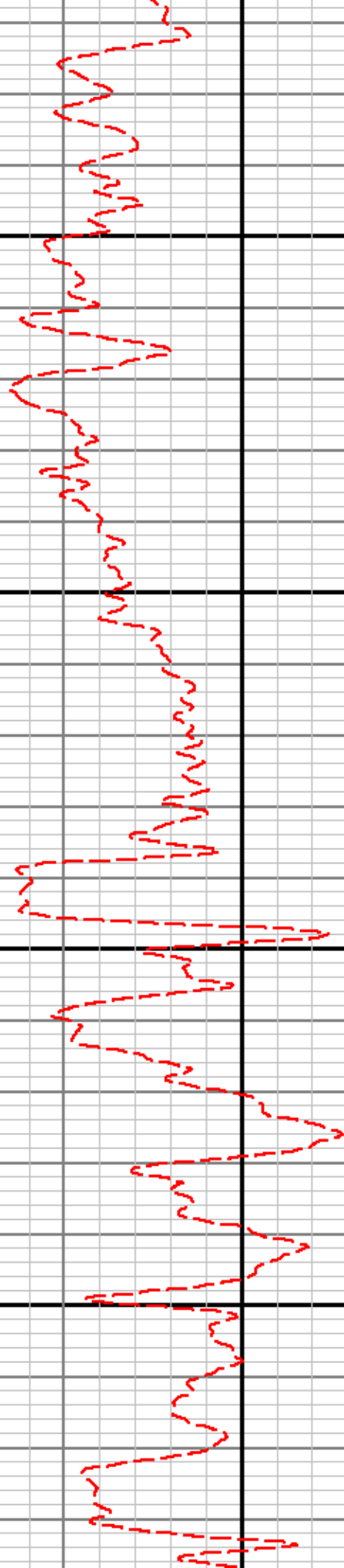
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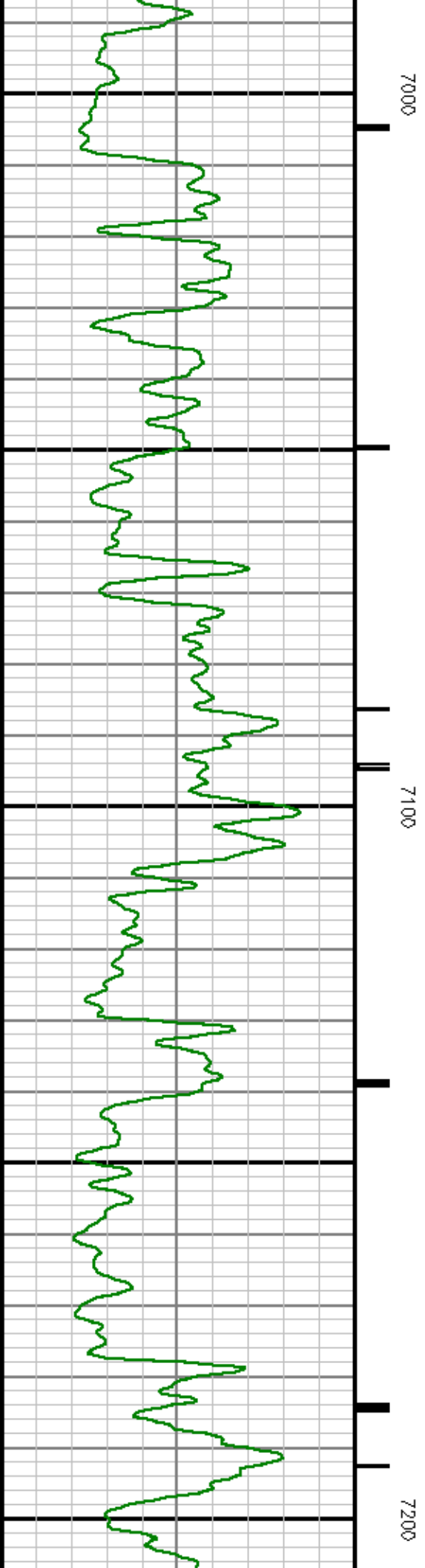
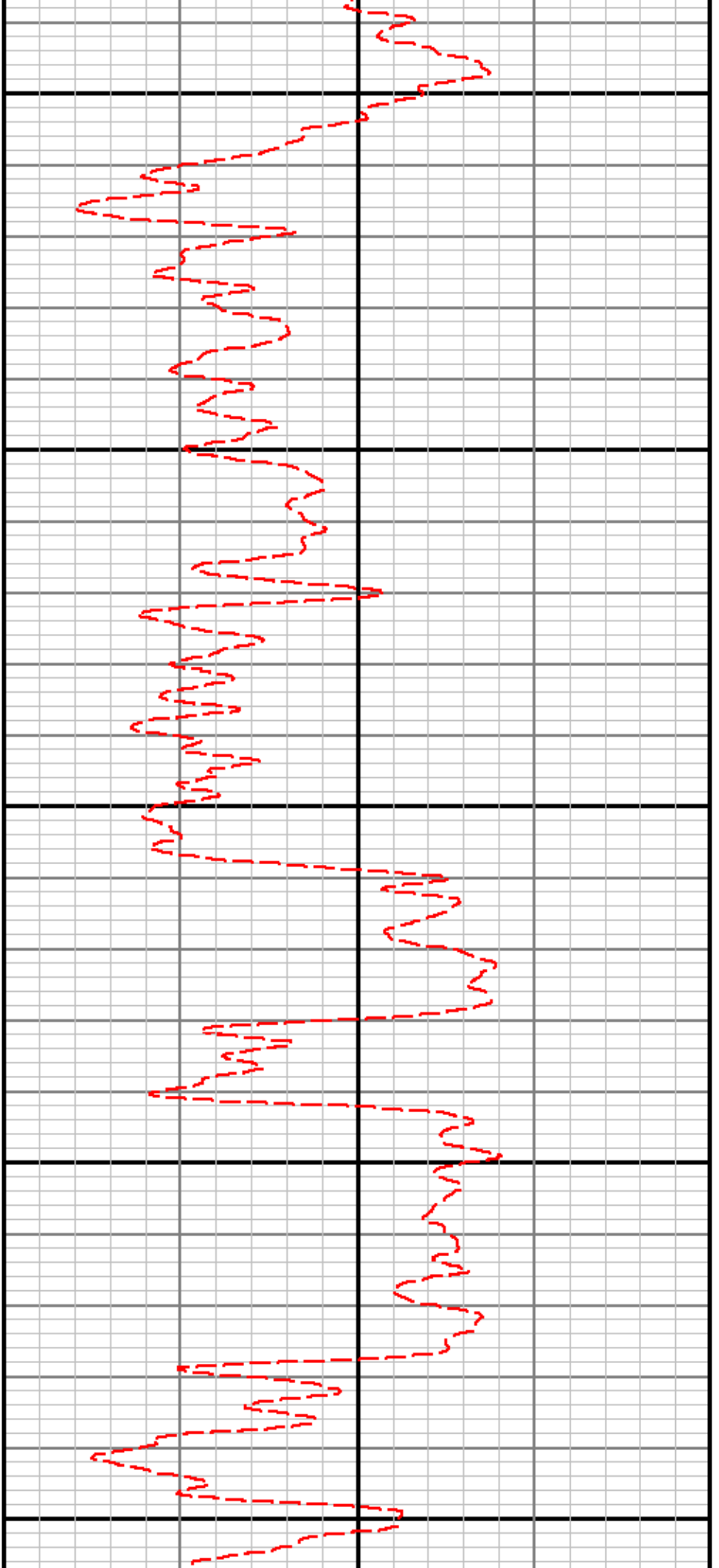


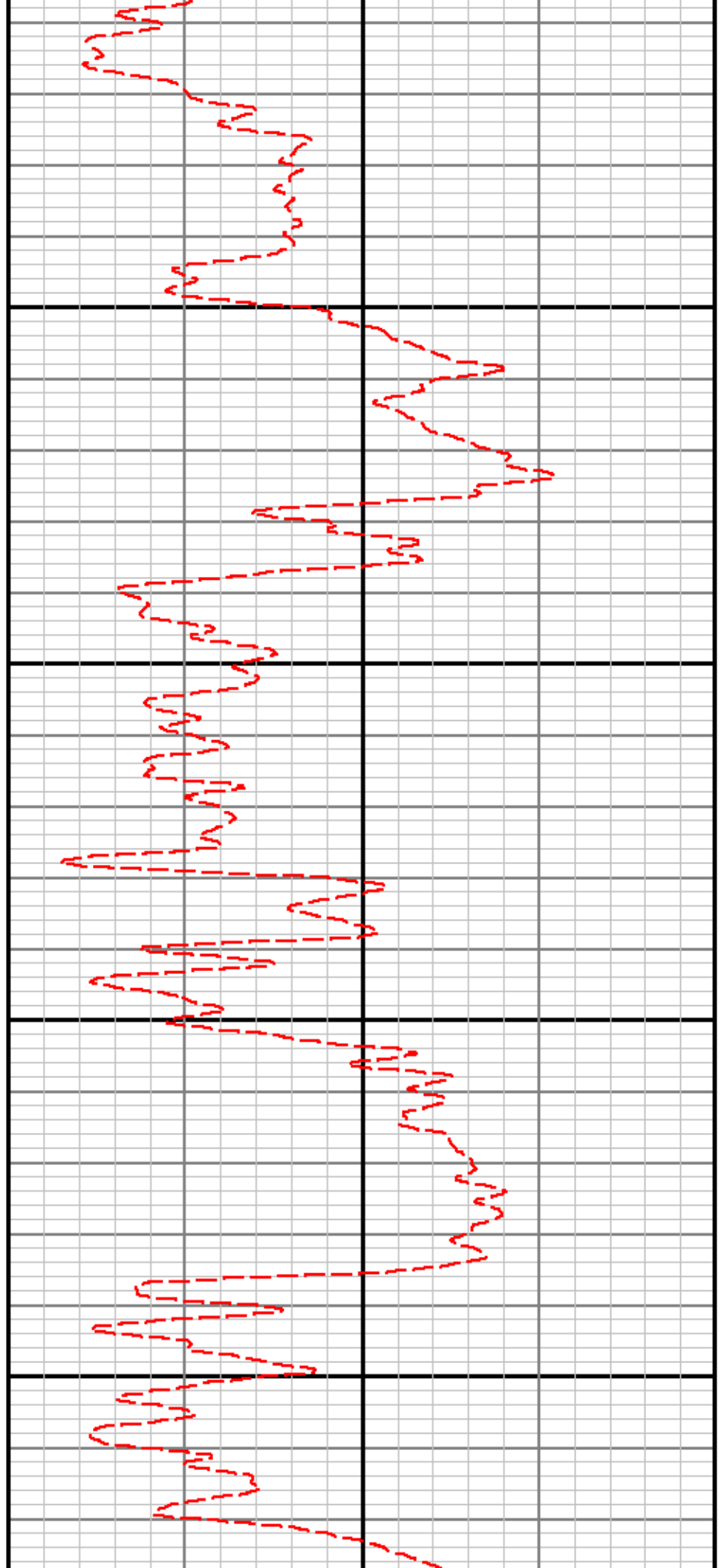
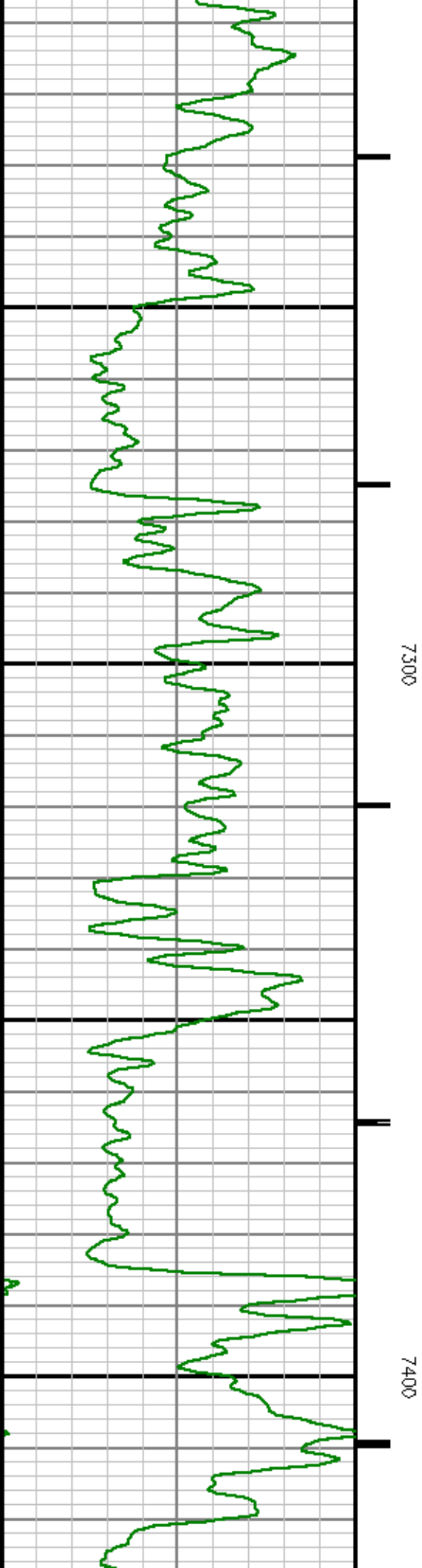


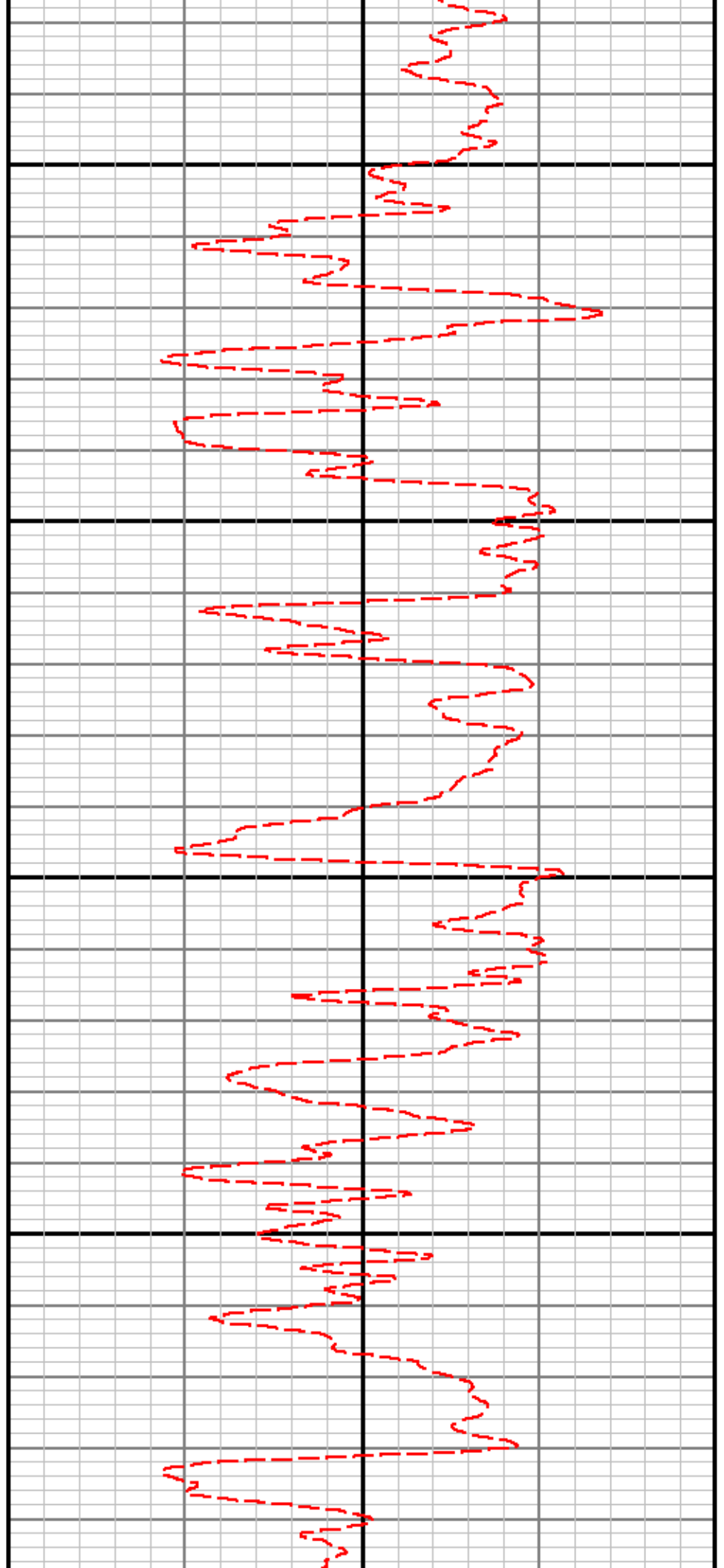
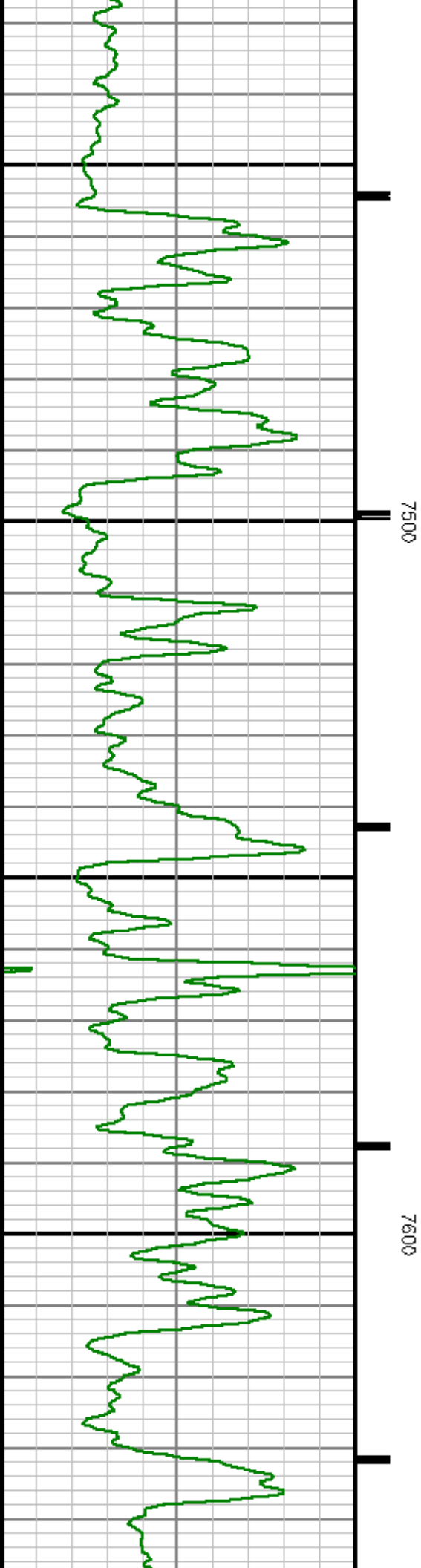
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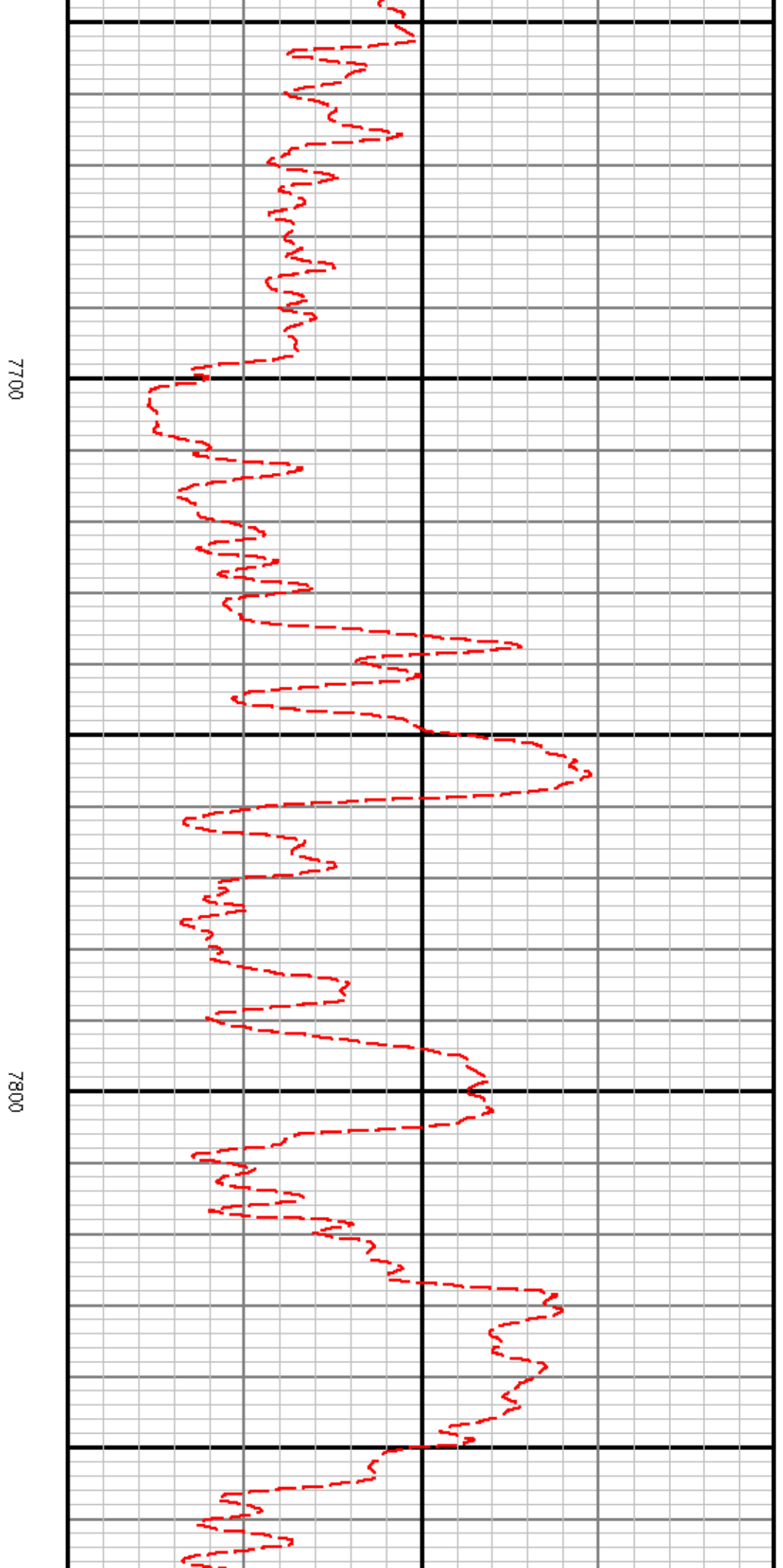
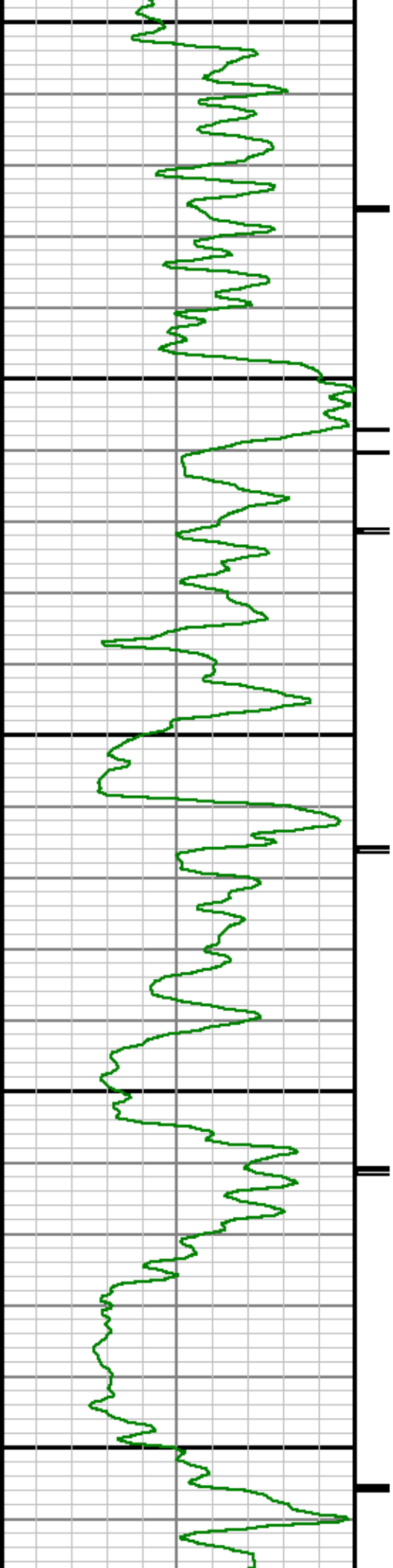
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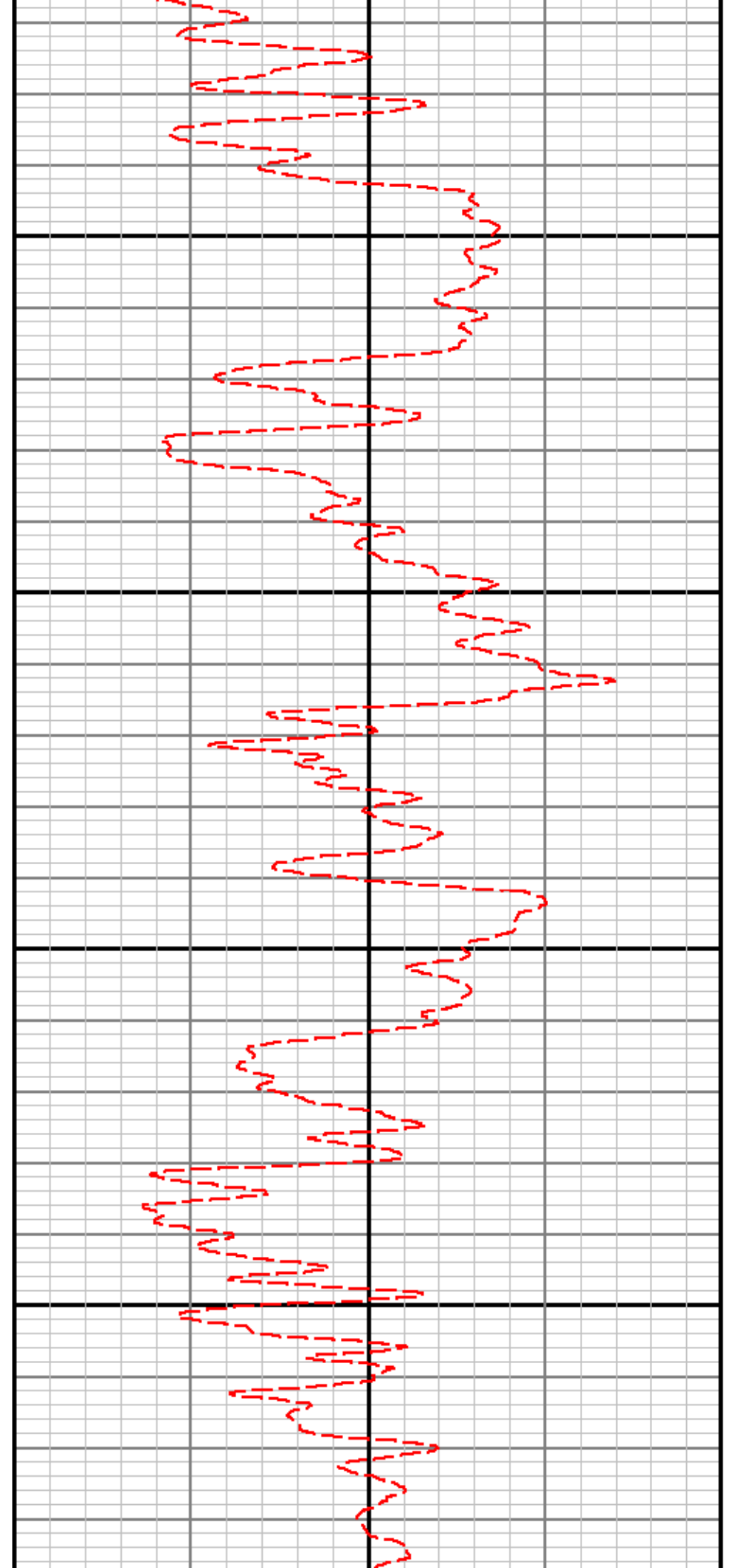
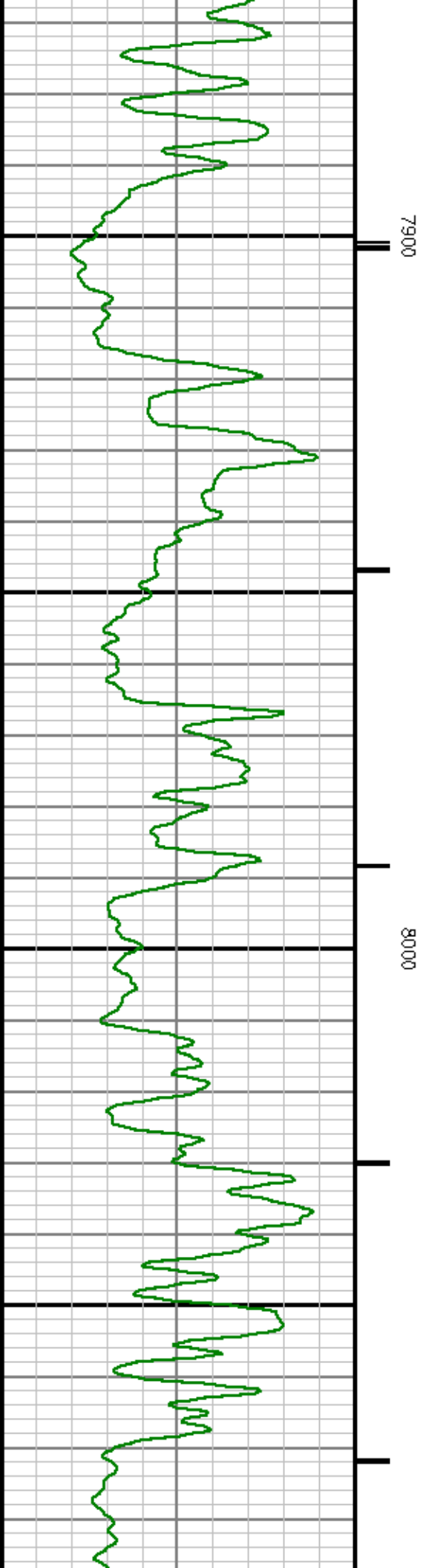








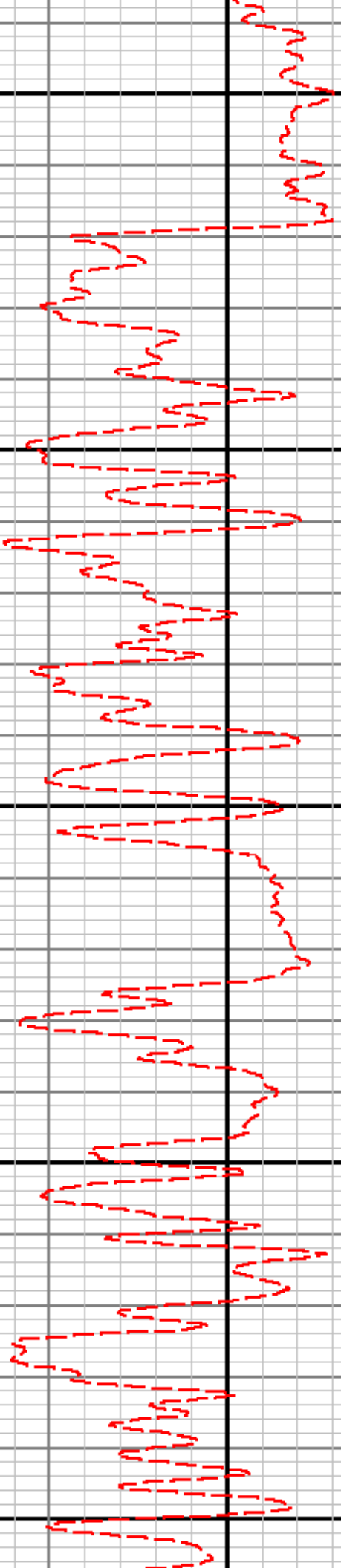




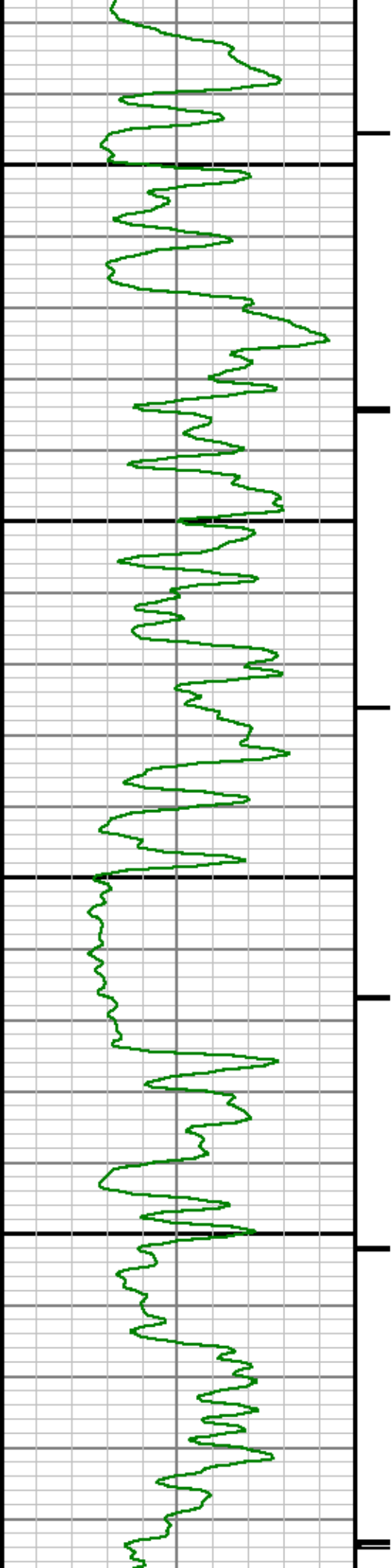
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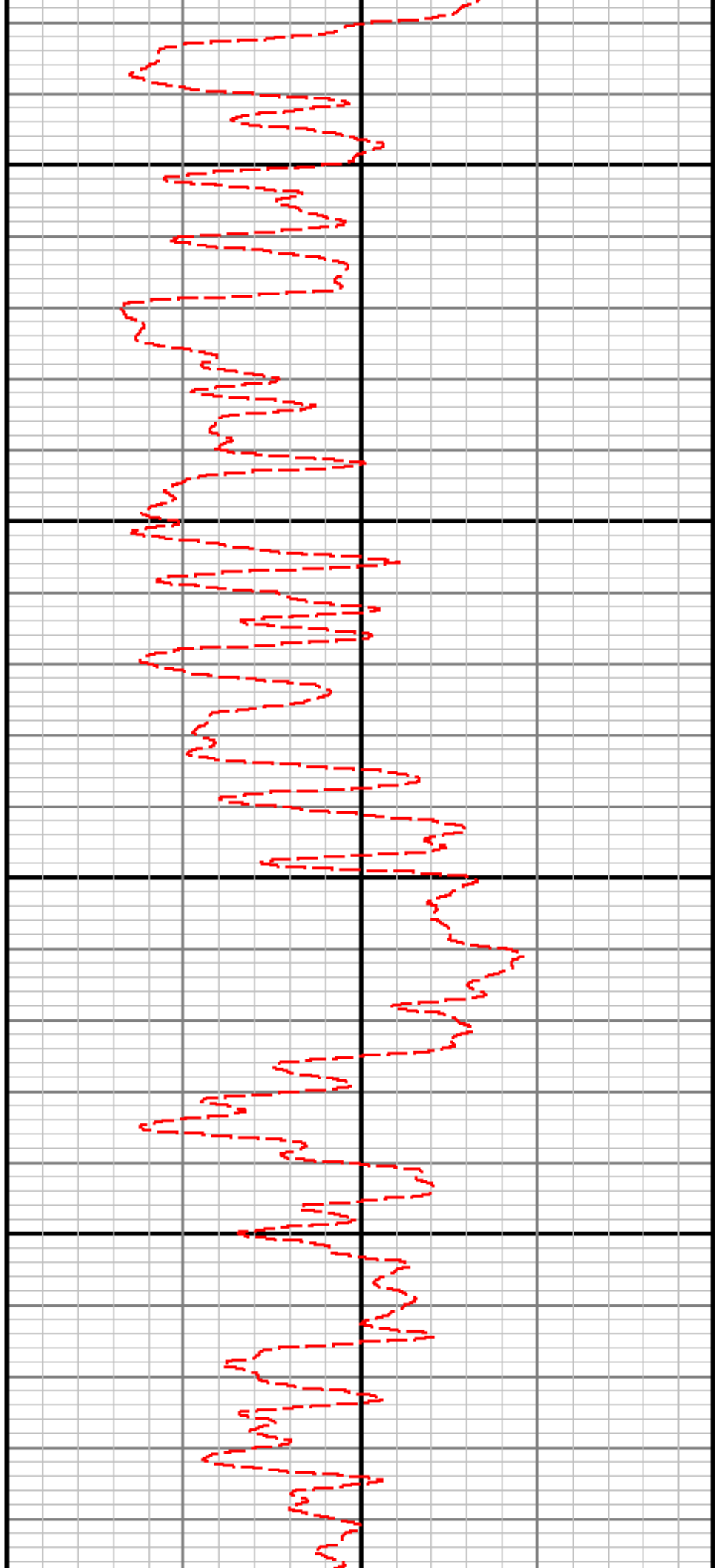


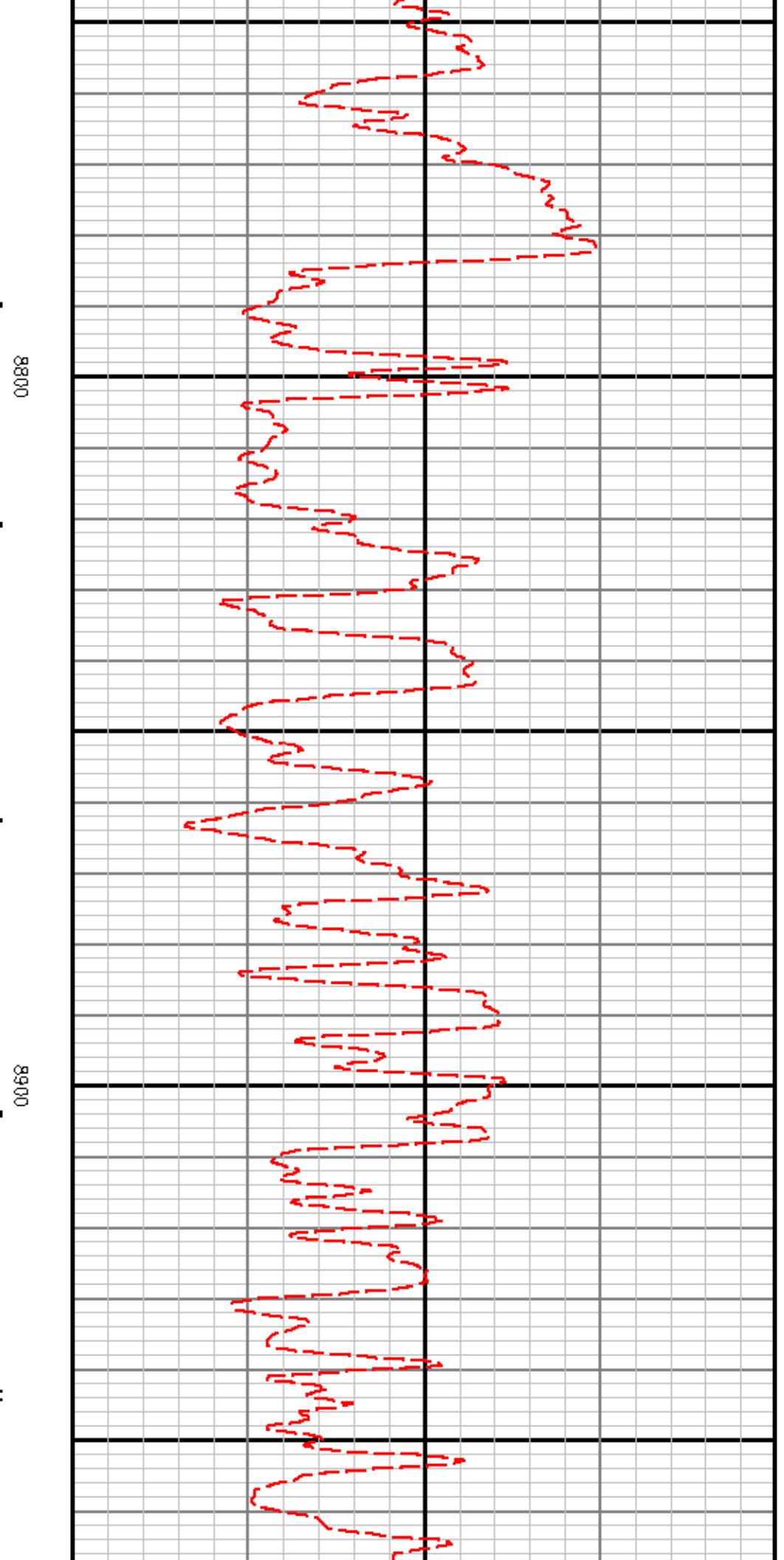
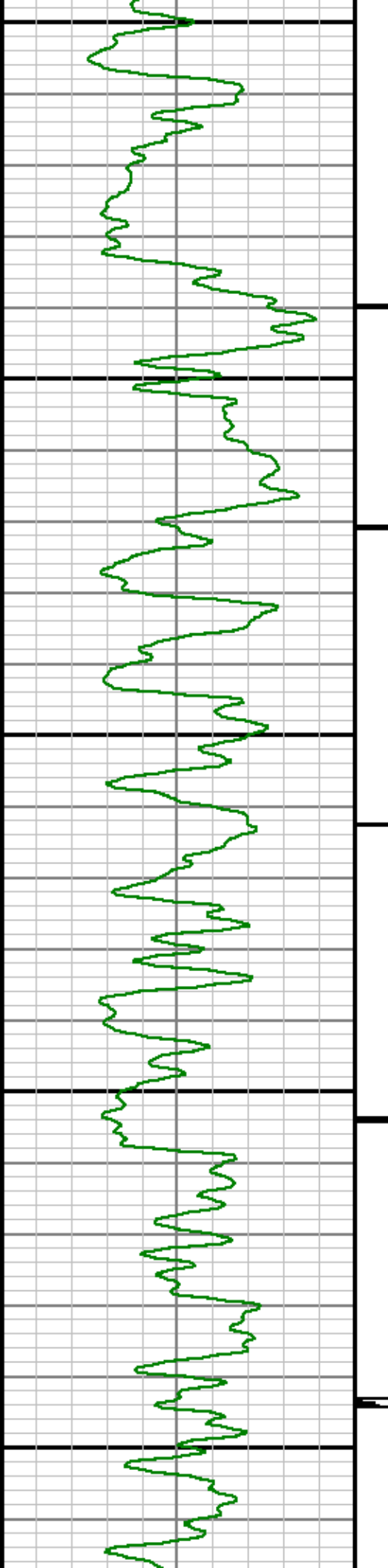


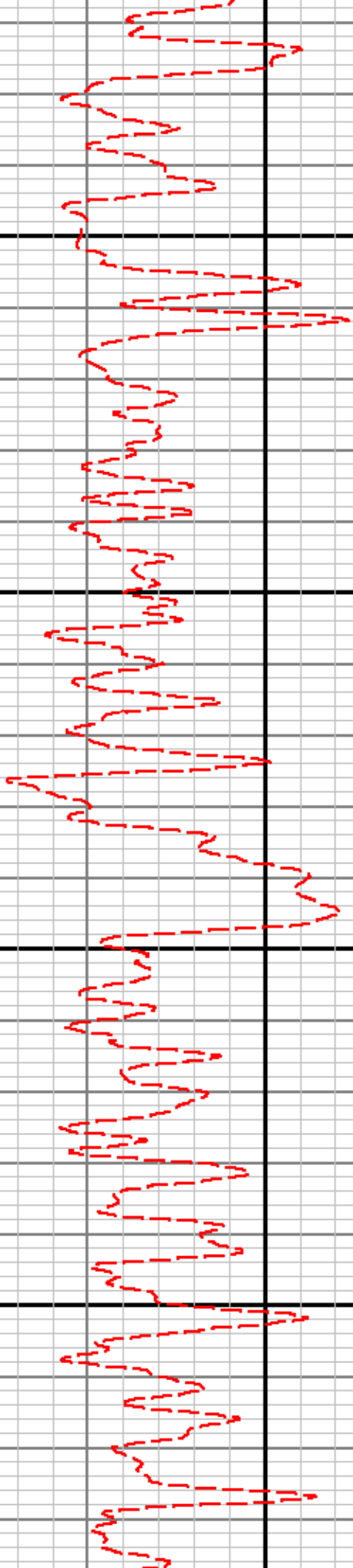
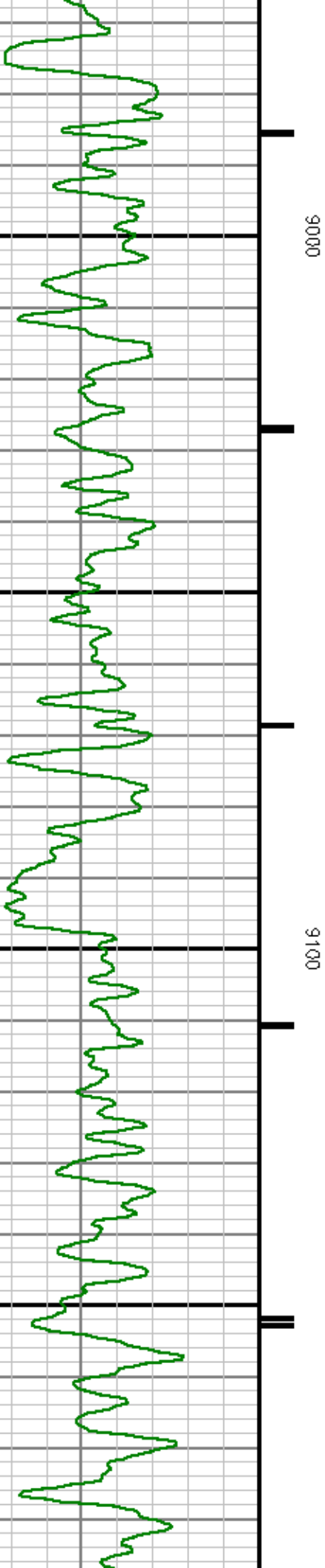


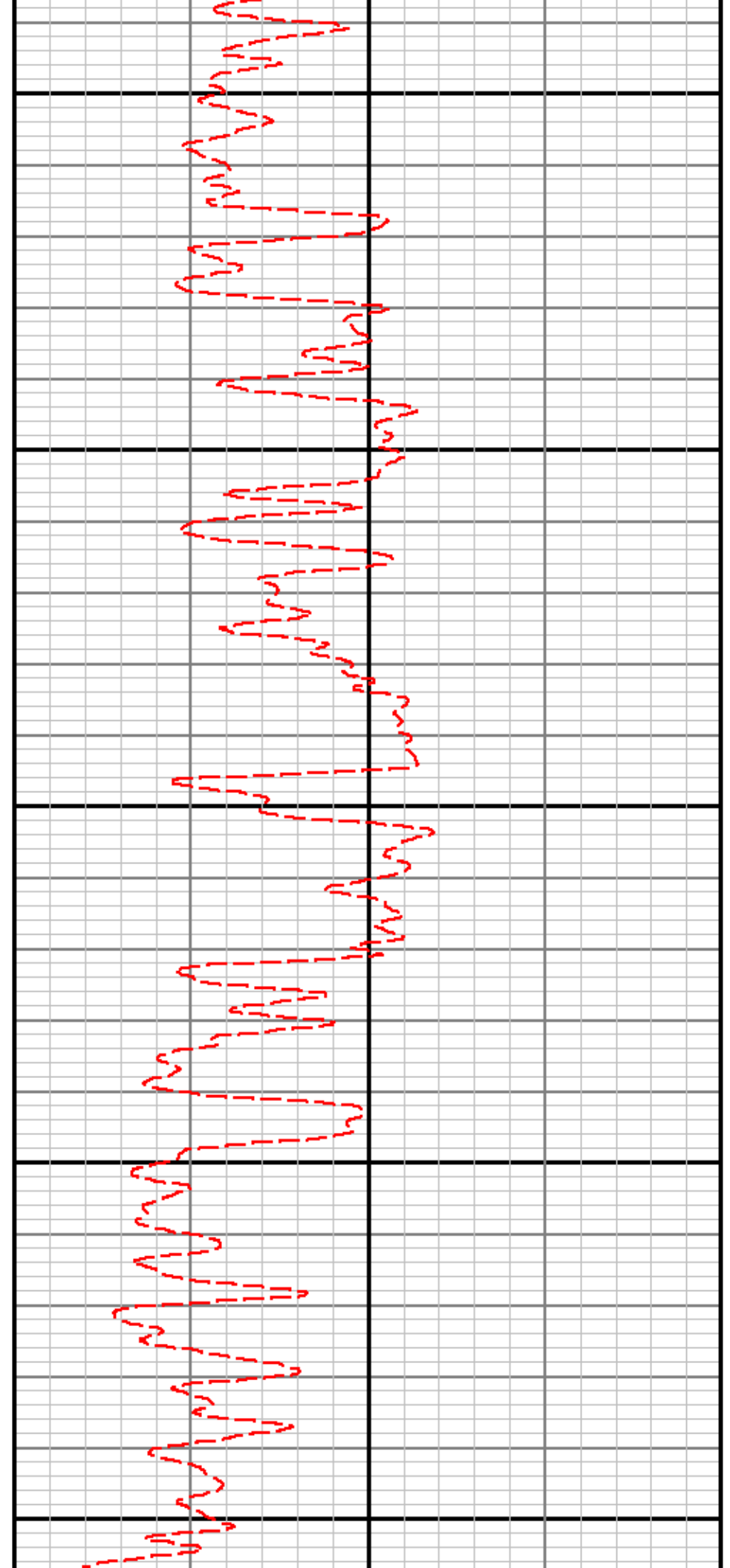
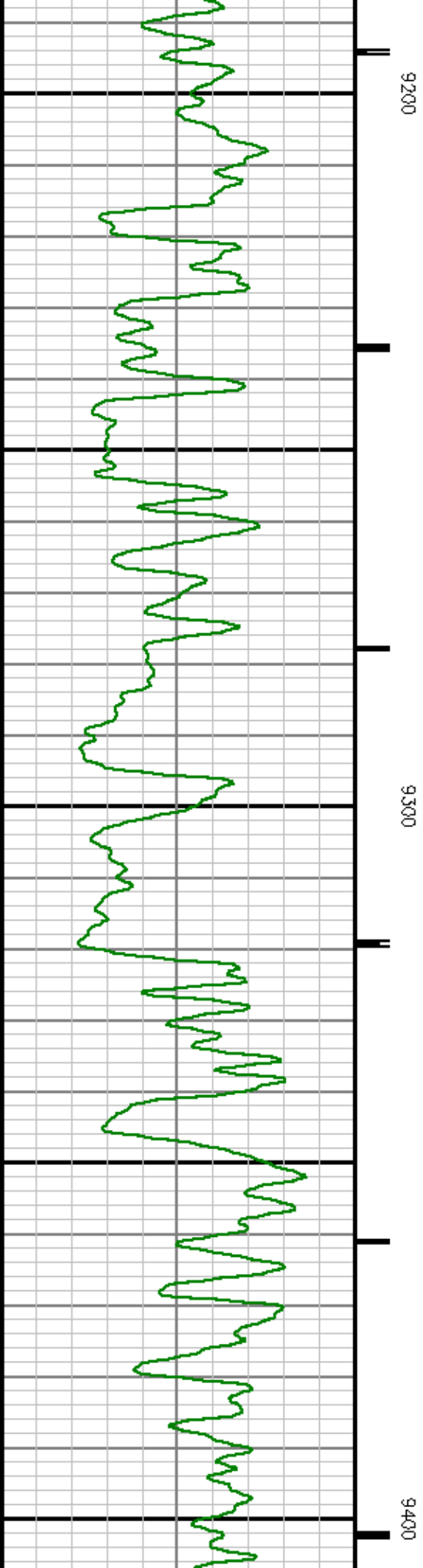
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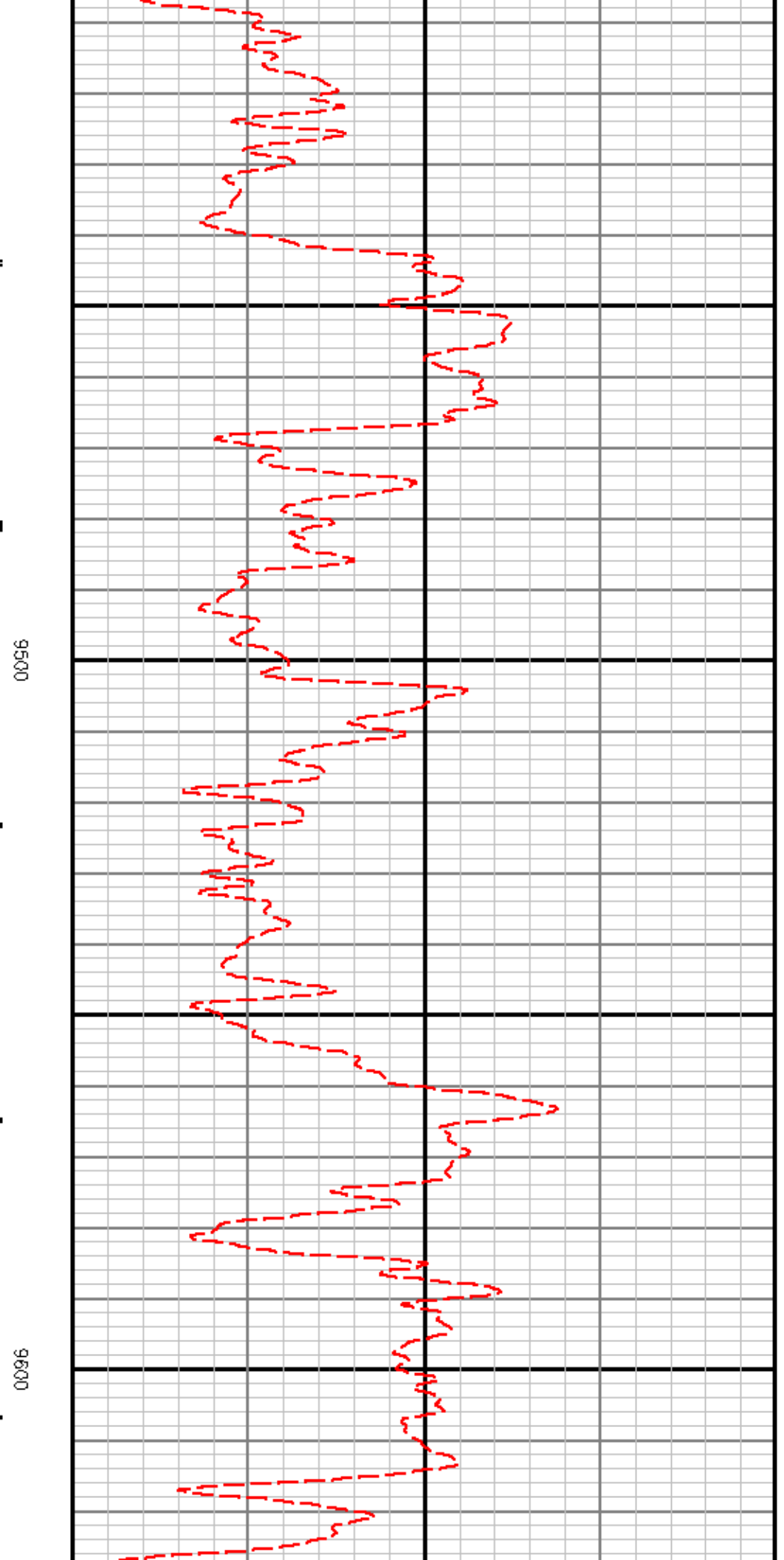
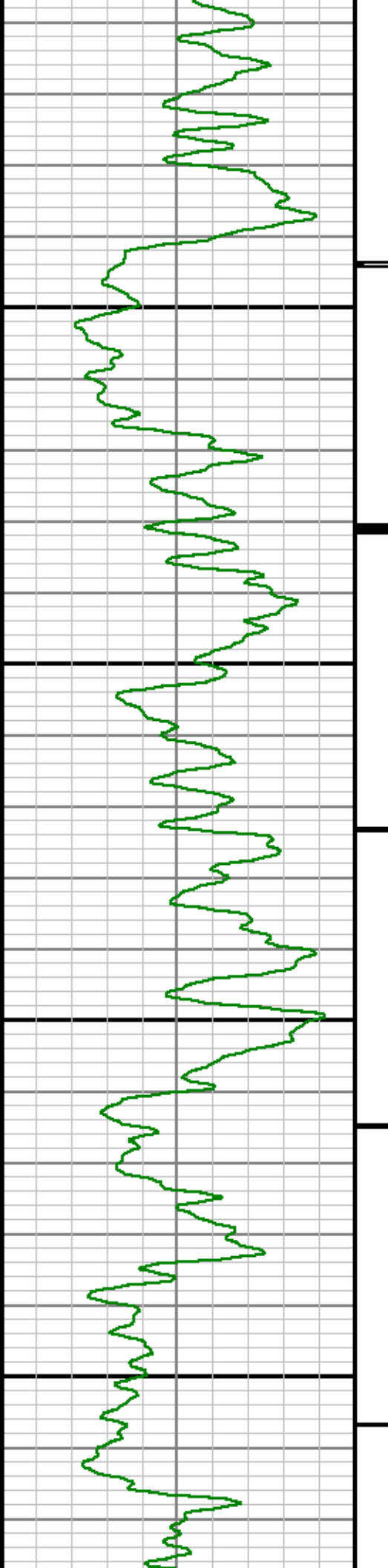
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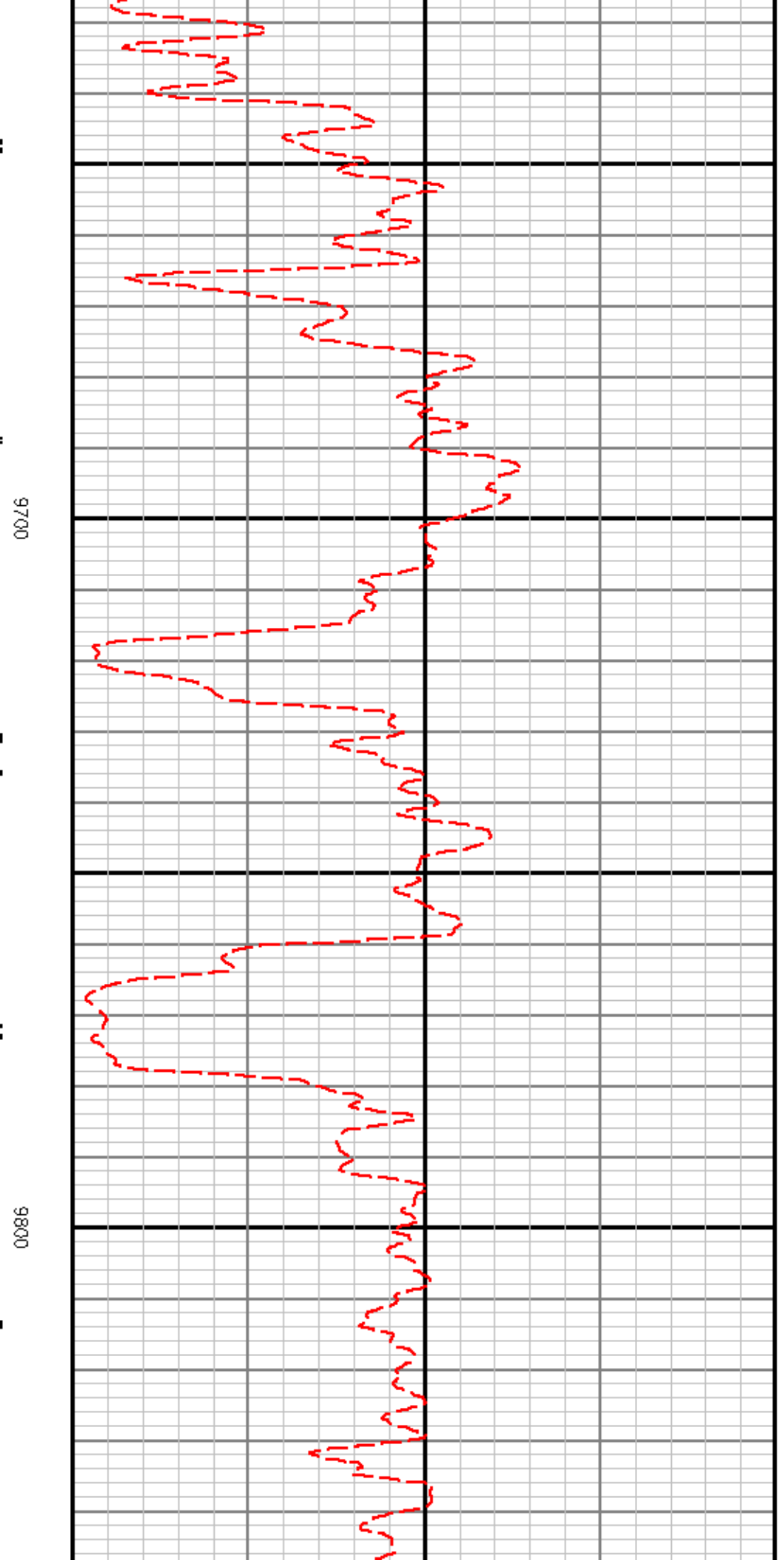
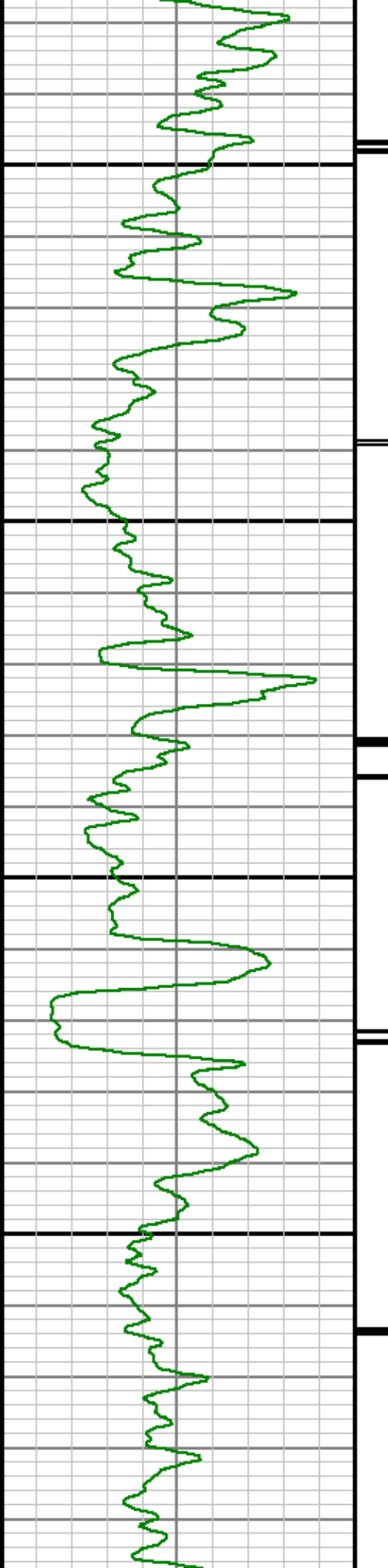


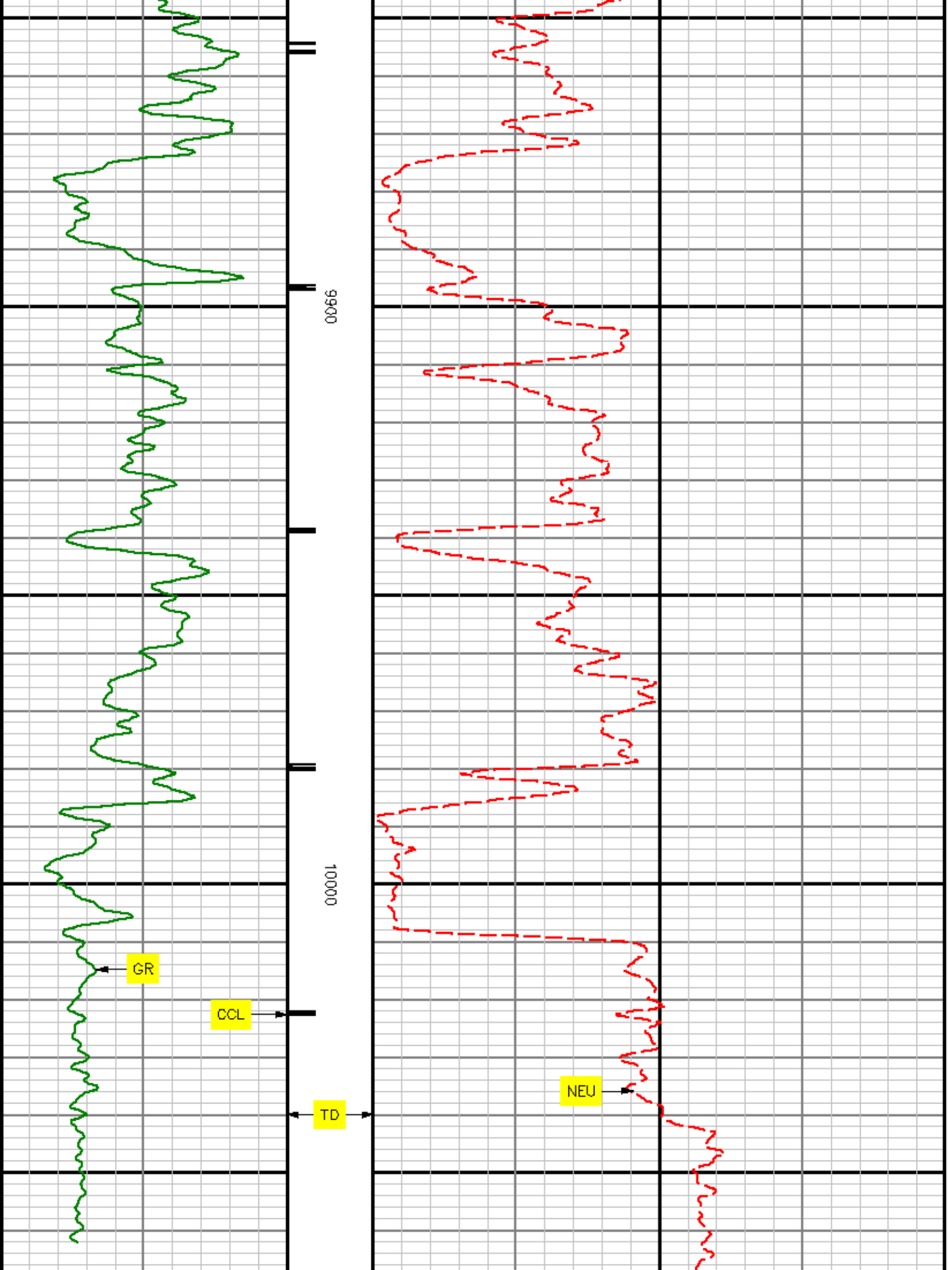














## *REPEAT SECTION*

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	TOP	BOTTOM
RAL	Amp Gate Start Far	316.900	usec	9749.718	10071.250
RAL	Amp Gate Start Near	200.391	usec	9749.718	10071.250
RAL	Amp Gate Start Radial	200.391	usec	9749.718	10071.250
RAL	Amp Gate Width Far	25.000	usec	9749.718	10071.250
RAL	Amp Gate Width Near	25.000	usec	9749.718	10071.250
RAL	Amp Gate Width Radial	25.000	usec	9749.718	10071.250
RAL	casing od	4.500	inches	9749.718	10071.250
RAL	casing wt	11.600	lbm/ft	9749.718	10071.250
RAL	FB Start Far	291.900	usec	9749.718	10071.250
RAL	FB Start Near	175.391	usec	9749.718	10071.250
RAL	FB Start Radial	175.391	usec	9749.718	10071.250
RAL	FB Thresh Far	15.000	mv	9749.718	10071.250
RAL	FB Thresh Near	10.000	mv	9749.718	10071.250
RAL	FB Thresh Radial	10.000	mv	9749.718	10071.250
RAL	Fluid Travel Time	200.000	usec/ft	9749.718	10071.250

### DEPTH OFFSETS (for Acquired Curves)

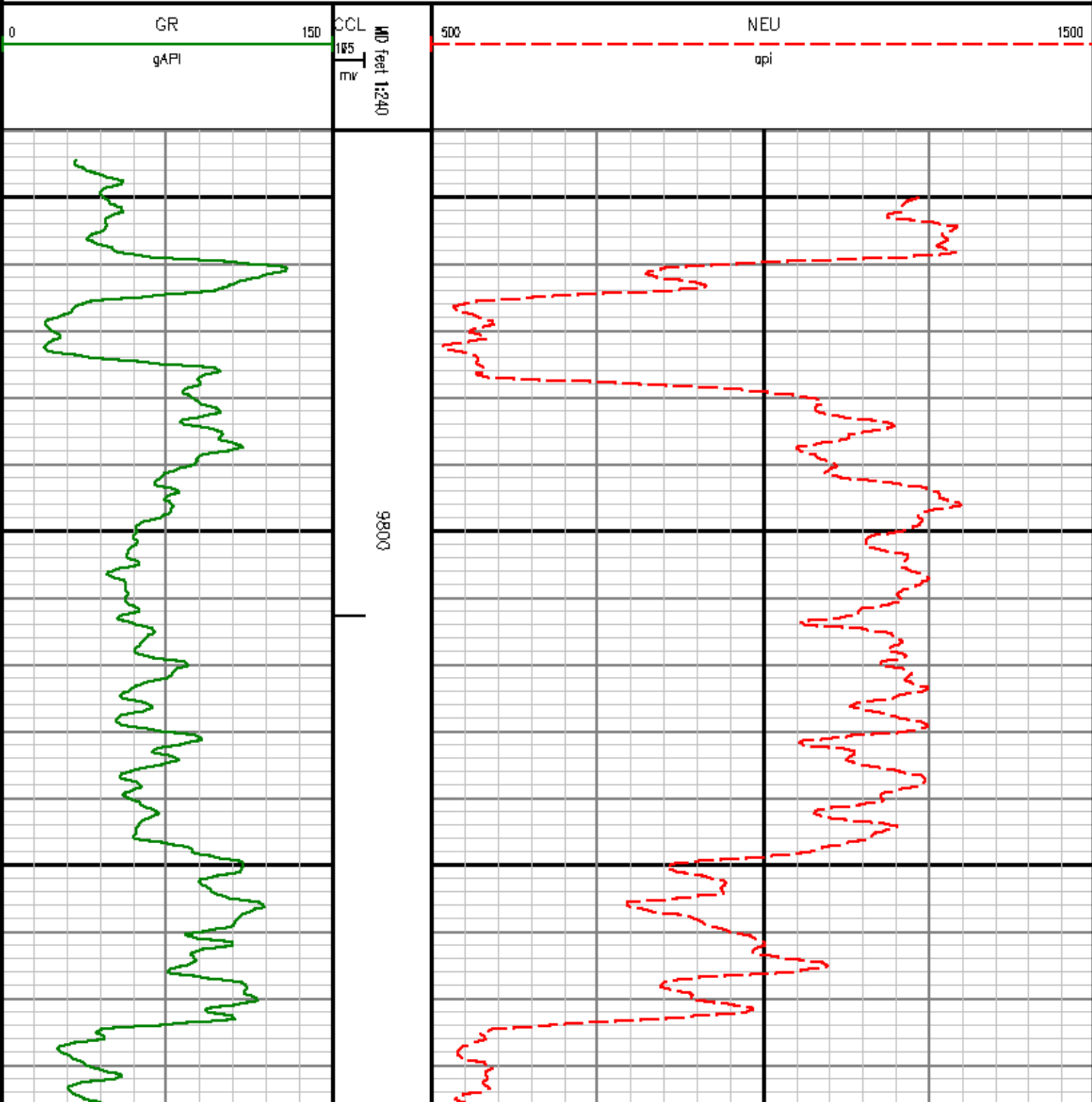
SERIES	DEPTH OFFSET	ACQUIRED CURVES							
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		FPR3	FPR5	TT3	TTR1	TTR2	TTR3		
		TTR4	TTR5	TTR6	TTR7	TTR8	XAMP		
		AFAR	SIG	TT5					
1426XA	-14.360	AFAR	SIG	TT5					
1426XA	-7.250	CCL							

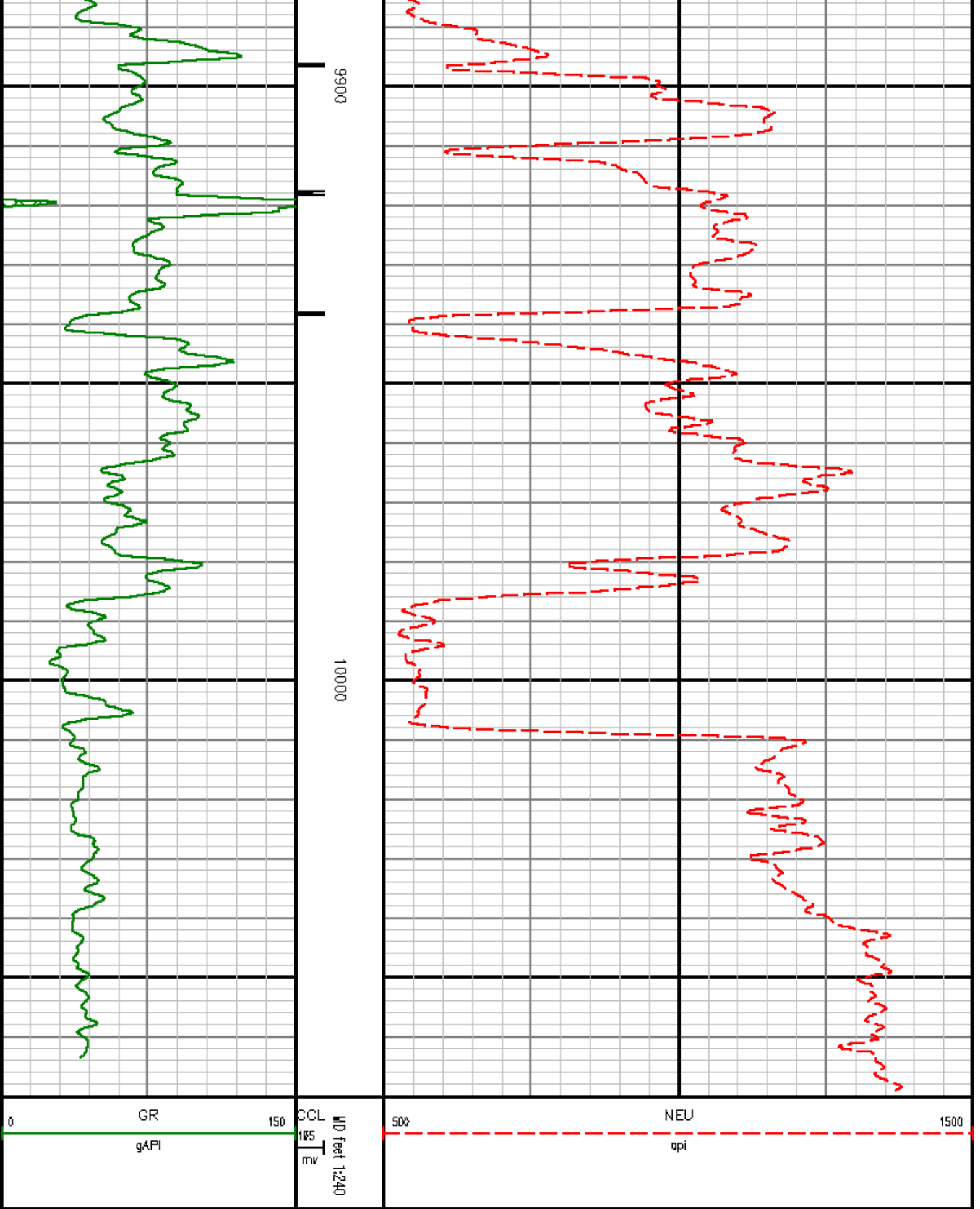
1426XA  
1426XA

-5.390  
0.000

GR  
NEU

Created by : RAL, v4.8.007  
Plotted by : PlotMgr, v5.4.504  
Company : MARATHON OIL COMPANY  
Well : 696-5C-11  
File Name : d:\well\data\11\_5crad\repeat.xtf  
Mode : PlotMgr 5.4.504  
Interval : 9740.00 - 10070.25 feet UP  
Created : 4/19/2010 8:52:58 AM





0 GR 150  
 gAPI

CCL MD Feet 1:240  
 185  
 mw

500 NEU 1500  
 api

# CALIBRATION SUMMARY

## GAMMA RAY

Calibration File: C:\case\calver\GR\457A1.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Thu Apr 08 03:25:20 2010 TOOL SERIES: 2459XA ASSET: 457 SEQ: A1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K DA905	66.67	340.53	0.676	45.03	230.03	185.00

Verification File: C:\case\calver\GR\457A1.VP

### PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Thu Apr 08 03:27:39 2010 TOOL SERIES: 2459XA ASSET: 457 SEQ: A1

Calibrator #	Background [cps]	Calibrator On [cps]	Multiplicative	Background [api]	Calibrator On [api]	Differential [api]
S2K DA905	58.98	332.71	0.676	39.84	224.75	184.91

## NEUTRON

Calibration File: C:\CASE\CALVER\NEU\457A4.cal

### CALIBRATION SUMMARY

DATE/TIME PERFORMED: Thu Apr 08 09:48:36 2010 TOOL SERIES: 2459XA ASSET: 457 SEQ: A4

Calibrator #	Source #	Bushing Down [cps]	Bushing Up [cps]	Multiplicative	Bushing Down [api]	Bushing Up [api]	Differential [api]
SHOP SHOP	S17R5 S35012	1549.41	586.72	0.904	1400.23	530.23	870.00

Verification File: C:\CASE\CALVER\NEU\457A4.VP

### PRIMARY LOG VERIFICATION

DATE/TIME PERFORMED: Thu Apr 08 11:11:22 2010 TOOL SERIES: 2459XA ASSET: 457 SEQ: A4

Calibrator #	Source #	Bushing Down [cps]	Bushing Up [cps]	Multiplicative	Bushing Down [api]	Bushing Up [api]	Differential [api]
SHOP SHOP	S17R5 S35012	1550.75	563.54	0.904	1401.44	509.29	892.16

# TOOL DIAGRAM

**OTA SHORT CABLE HEAD**

**CENTRALIZER**

Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

**PROBE 2 3/4 DUAL RECEIVER RADII (1426XA)**

**CENTRALIZER**

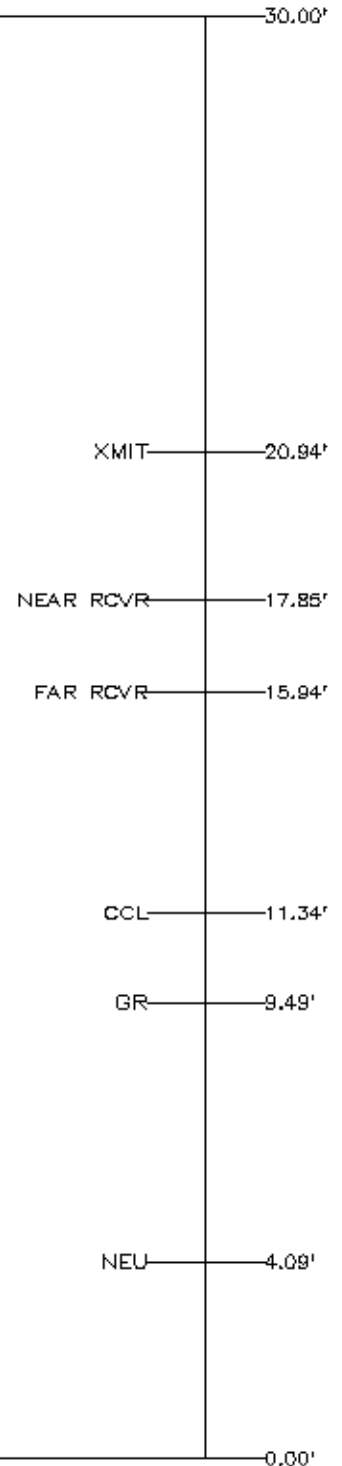
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Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb

**Probe GR/CCL/NEU**

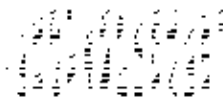
Series	2459XA
Mnemonic	PROB
Diameter	2.75"
Length	9.42'
Measure Point	1.21' NEU
Measure Point	6.80' GR
Measure Point	8.46' CCL

**CENTRALIZER**

Series	RALCENT
Mnemonic	CENT
Diameter	3.12"
Weight	20.00 lb



Total Length: 30.00'  
 Total Weight: Not Available  
 Max Diameter: 0' 3.12"



Field	GRAND VALLEY		API No:
County	GARFIELD	State	COLORADO
Location		Elevations	
SHL: 3474' FNL & 1307' FWL		KB	8153 ft
		DF	8152 ft
		GL	8129 ft
SEC	5	TWP	8S
		RGE	96W