

Company	O'Brien Energy Resources Corp.	Company	O'Brien Energy Resources Corp.
Well	Keystone #6-4	Well	Keystone #6-4
Field	Angell Southeast	Field	Angell Southeast
County	Meade	County	Meade
State	Kansas	State	Kansas
Location:	1320' FSL & 2100' FWL W2 E2 E2 SW Lat: 37.202561503, Long: 100.482112615 NAD83	API #: 15-119-21443	Other Services
SEC 4	TWP 33S	RGE 29W	IAT
Permanent Datum	G.L.	Elevation 2669 ft.	K.B. 2681 ft.
Log Measured From	K.B.	12 ft. above perm. datum	D.F. 2680 ft.
Drilling Measured From	K.B.		G.L. 2669 ft.
Date	17-May-2020		
Run Number	One		
Depth Driller	6298'		
Depth Logger	6298'		
Bottom Logged Interval	6283'		
Top Log Interval	4000'		
Casing Driller	8.625" @ 1573'	@	@
Casing Logger	1567'		
Bit Size	7.875"	@	@
Type Fluid in Hole	WBM		
Density / Viscosity	9.2 / 60		
pH / Fluid Loss	11 / 6.8		
Source of Sample	Flowline		
Rm @ Meas. Temp	0.74 @ 75°F	@	@
Rmf @ Meas. Temp	0.56 @ 75°F	@	@
Rmc @ Meas. Temp	0.42 @ 75°F	@	@
Source of Rmf / Rmc	Calculated		
Rm @ BHT	0.47 @ 125°F	@	@
Time Circulation Stopped	17-May-2020 @ 18:00		
Time Logger on Bottom	18-May-2020 @ 1:15		
Maximum Recorded Temperature	125°F		
Equipment Number	10002		
Location	OKC		
Recorded By	B. Oetting		
Witnessed By	D. Greathouse		

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Equipment and Log Data															
Service Order: T2_201705															
Gamma			Density			Neutron			Sonic			IAT/DLL			
Run No.		One	Run No.		One	Run No.		One	Run No.		One	Run No.		One	
Serial No.		49	Serial No.		63	Serial No.		71	Serial No.			Serial No.		64	
O.D.		3.375 in.	Source No.		50129B	Source No.		87624G	Centralizers			Standoffs		2 @ 0.5"	
			O.D.		4.5 in.	O.D.		3.375 in.	O.D.		3.375 in.	O.D		3.875 in.	
Logging Pass Data															
General			Gamma		Density		Neutron			Sonic			IAT/DLL		
			Scales		Scales		Scales			Scales			Scales		
Run	Depths		Left	Right	Left	Right	Matrix	Left	Right	Matrix	Left	Right	Matrix	Left	Right
One	CSG	TD	0	150	0.3	-0.1	2.71 g/cc	0.3	-0.1	Lime				0.2	2000
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.															

Comments

Toolstring ran as per diagram.
Density is presented on a 2.71g/cc Matrix, Neutron is presented on a Limestone Matrix, Chlorides 6300 mg/L.
Annular volume computed using 4.5" Casing.
Washouts and borehole rugosity affect data quality.

YOUR CREW TODAY: H. Garcia / J. Jones
THANK YOU FOR CHOOSING WIRELINE LOGGING SOLUTIONS. OKLAHOMA CITY. (405) 445-7135.

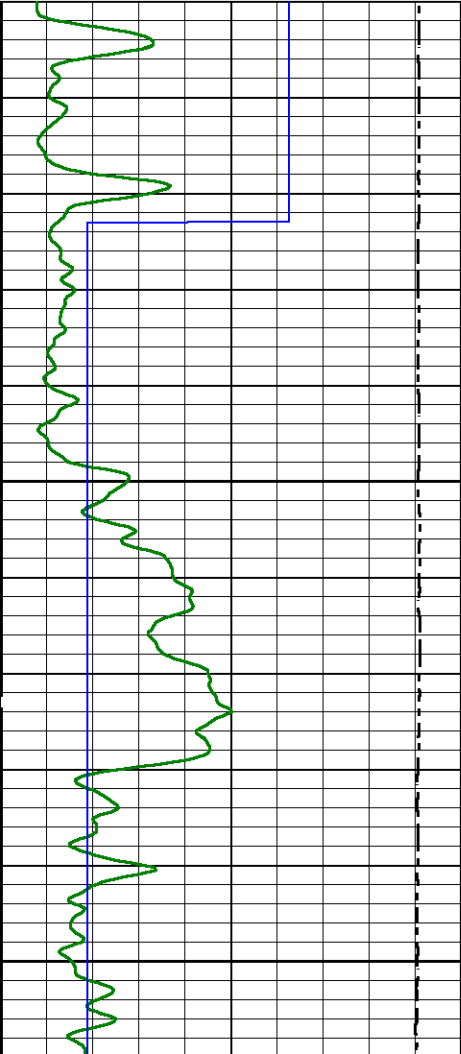


Main Pass

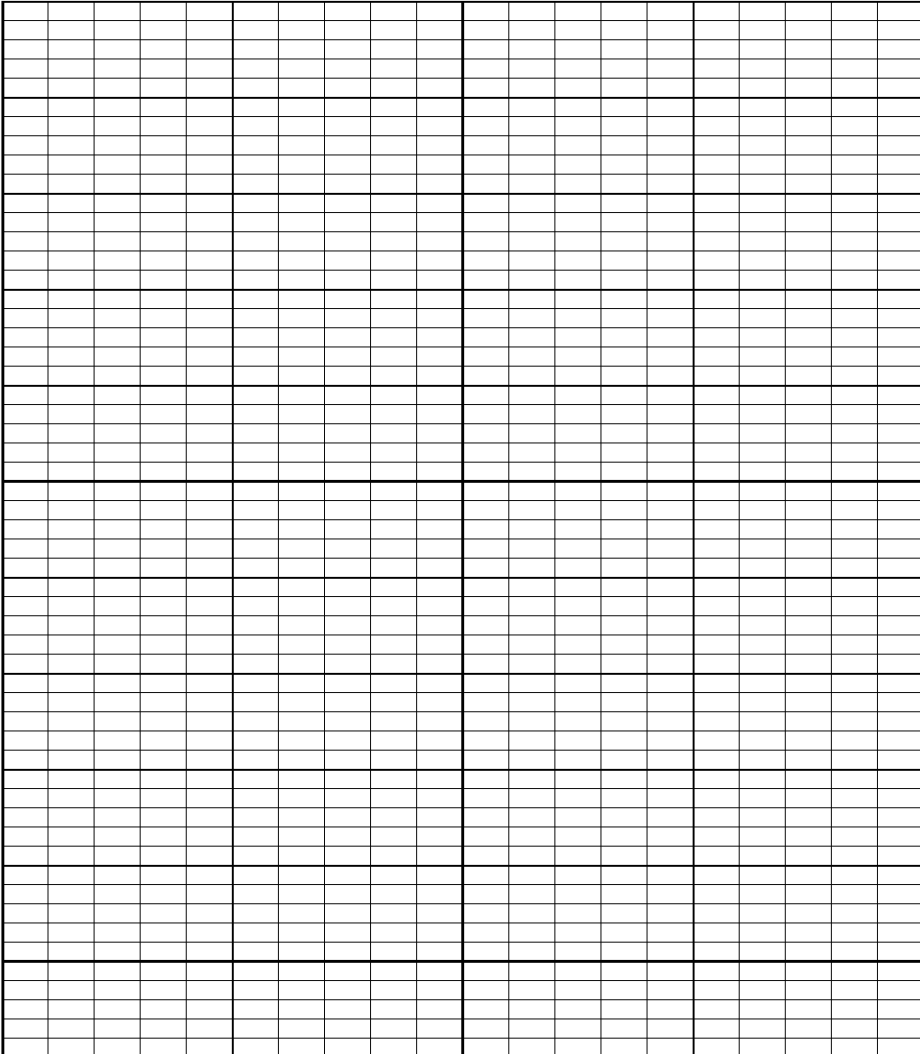
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Dataset Pathname MainPass
Presentation Format OKC-PO~2
Dataset Creation Mon May 18 03:39:43 2020
Charted by Depth in Feet scaled 1:240

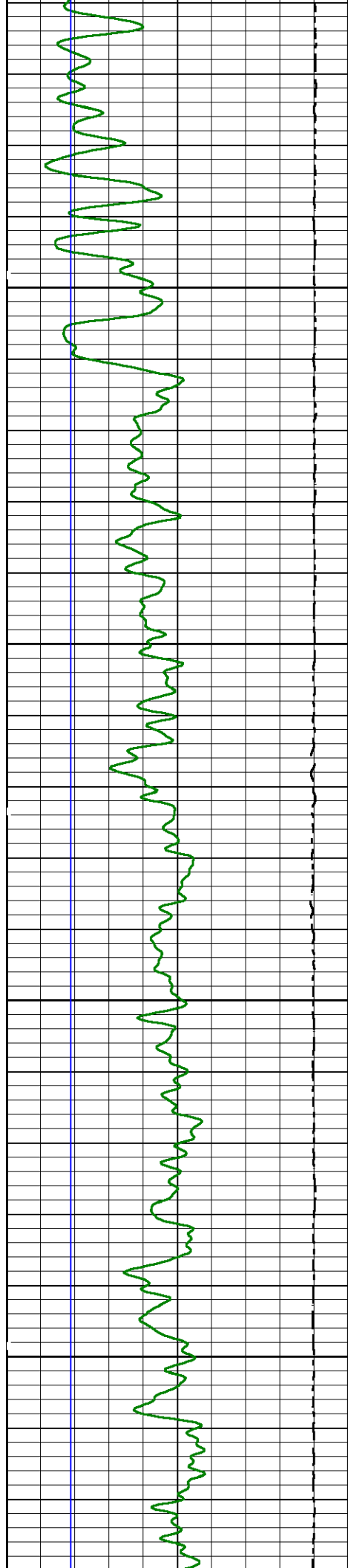
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6	Caliper (in)	16
6	Bitsize (in)	16
Line Tension		
10000 (lb)		0

0.3	Density Porosity (2.71 Matrix)	-0.1
0.3	Neutron Porosity (Lime Matrix)	-0.1
0	PE	10
Micro Normal		
0 (Ohm-m)		40
Micro Inverse		
0 (Ohm-m)		40



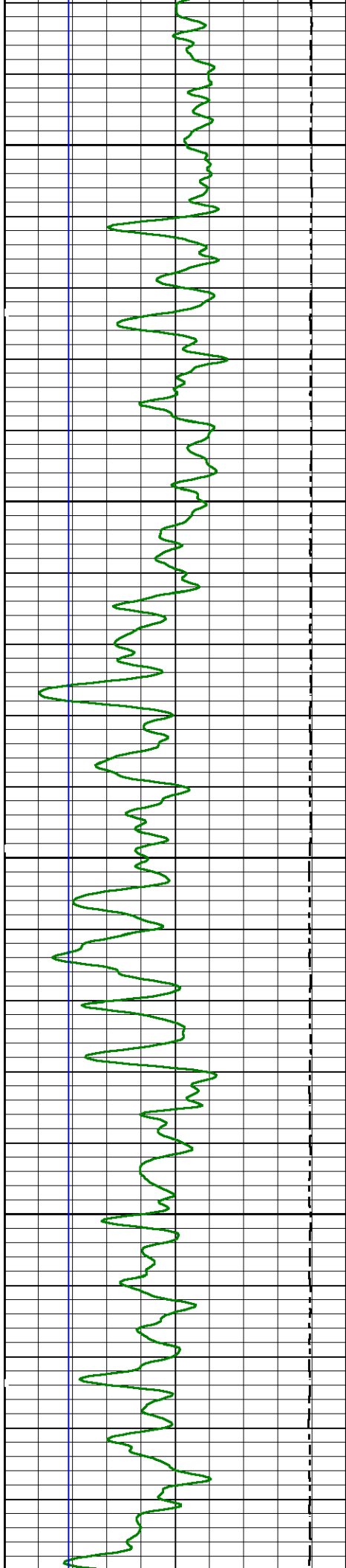
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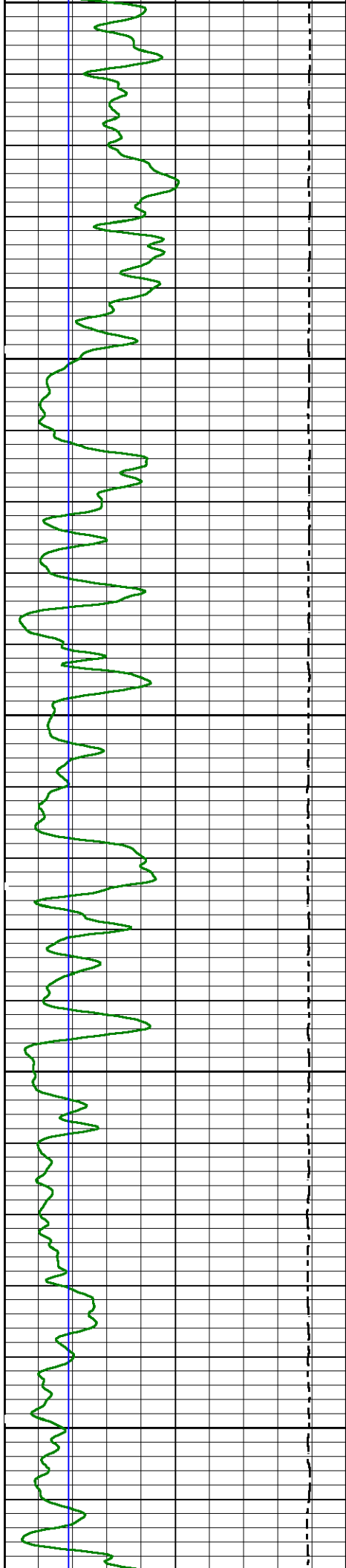
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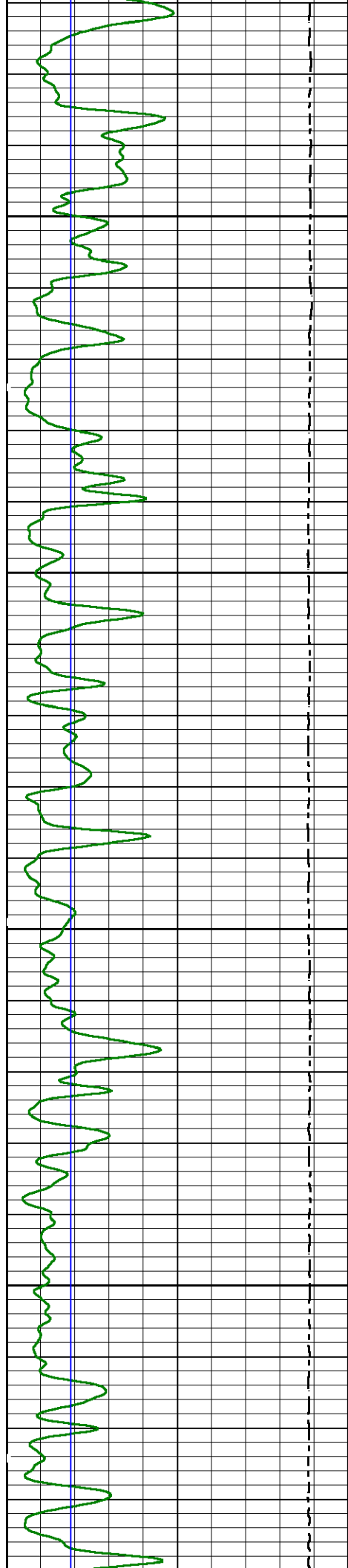
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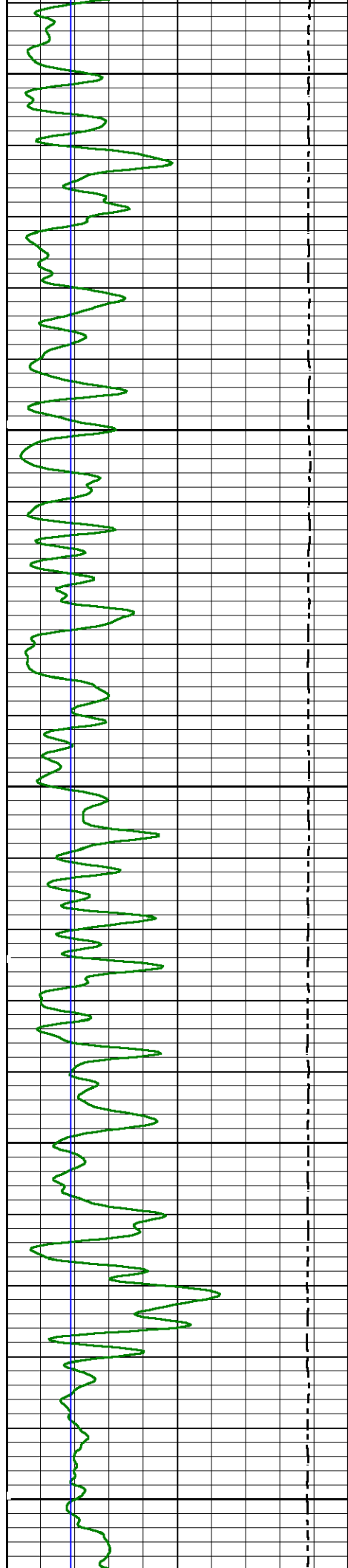
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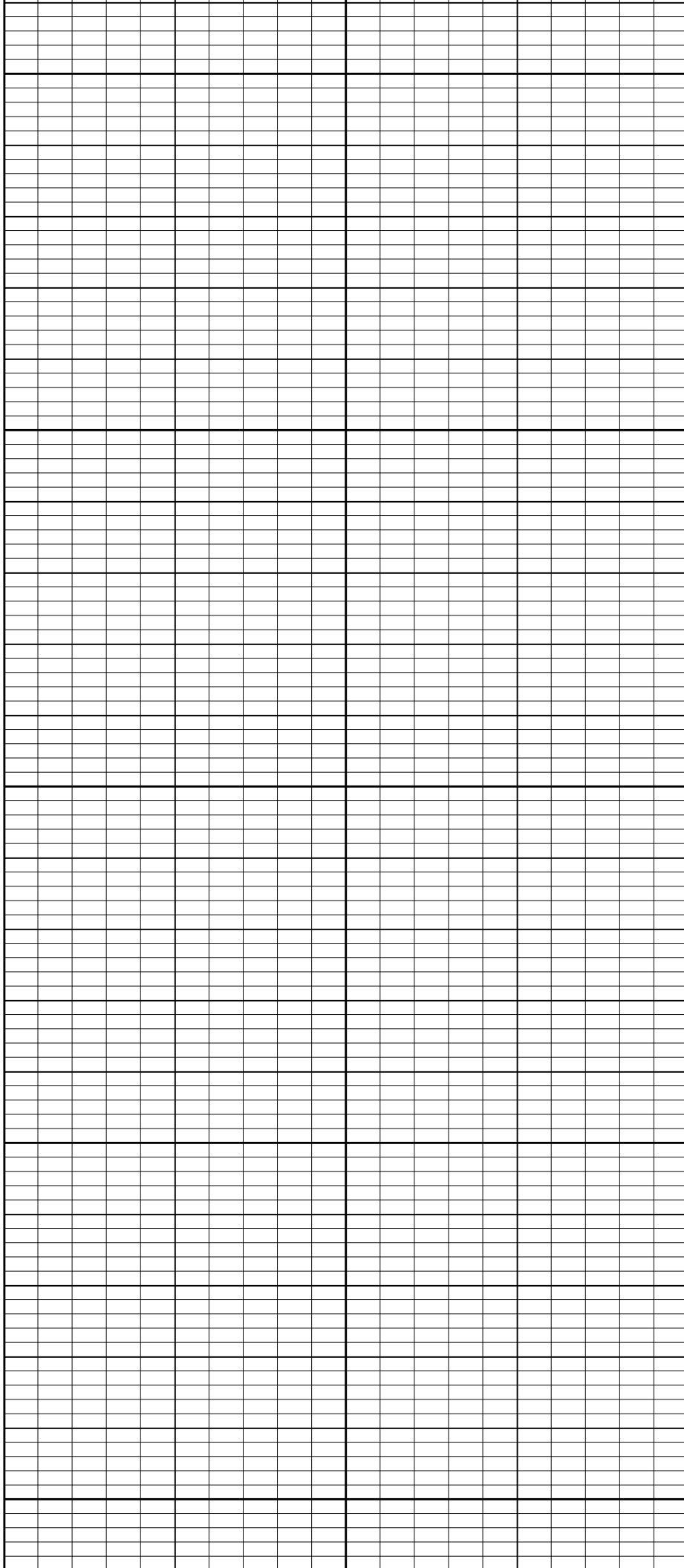
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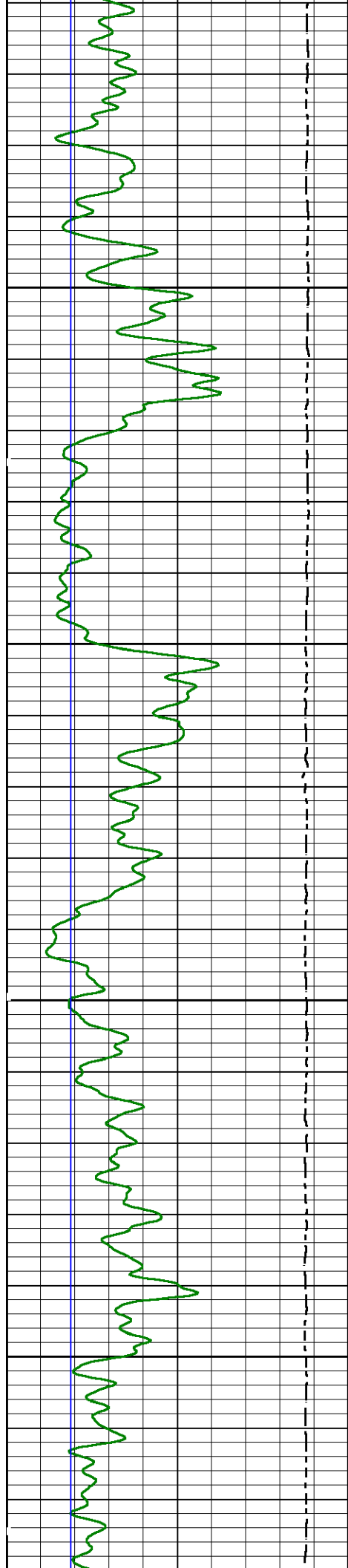
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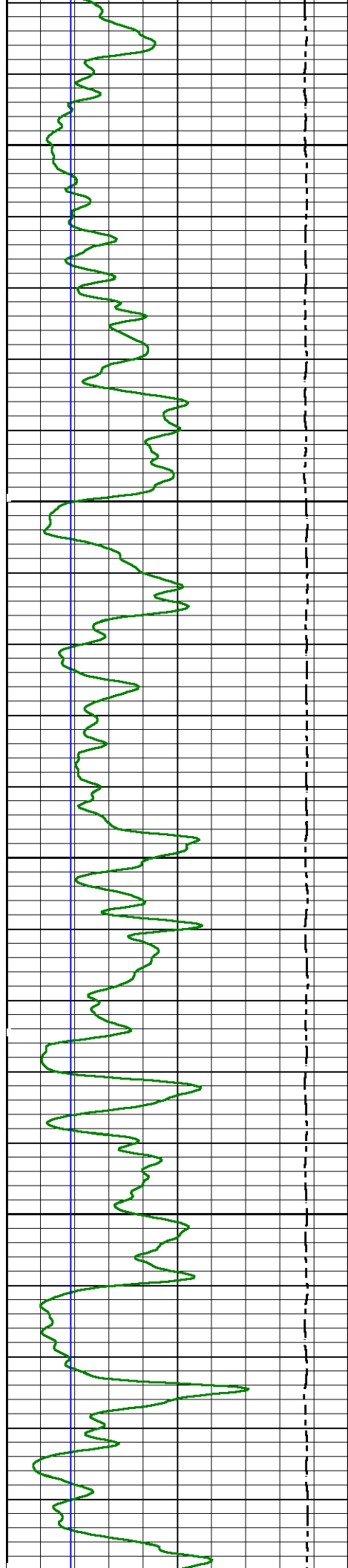
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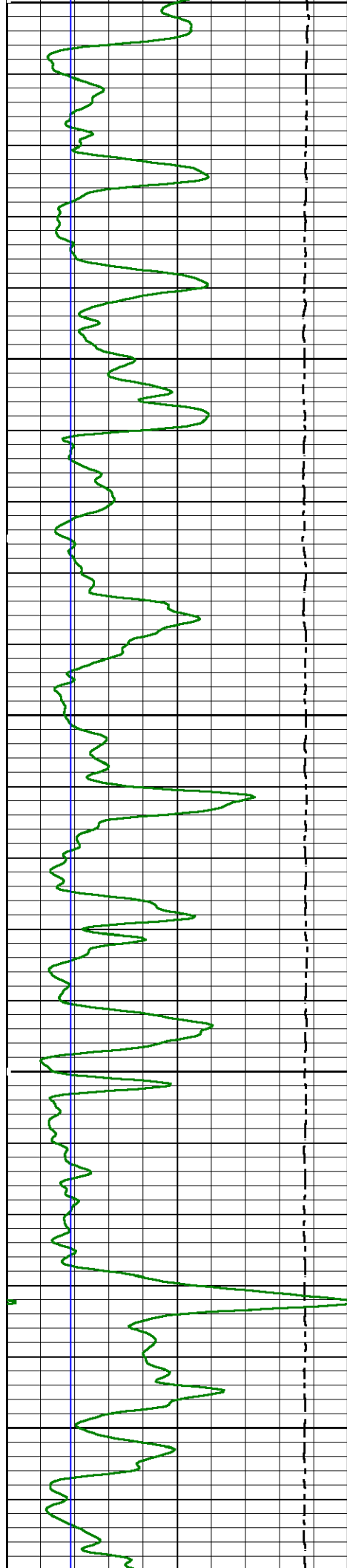
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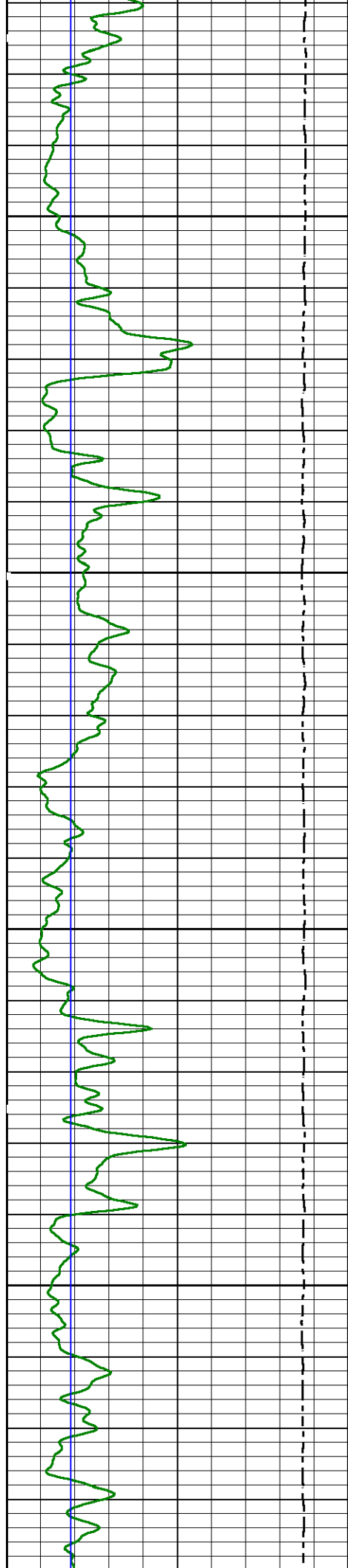
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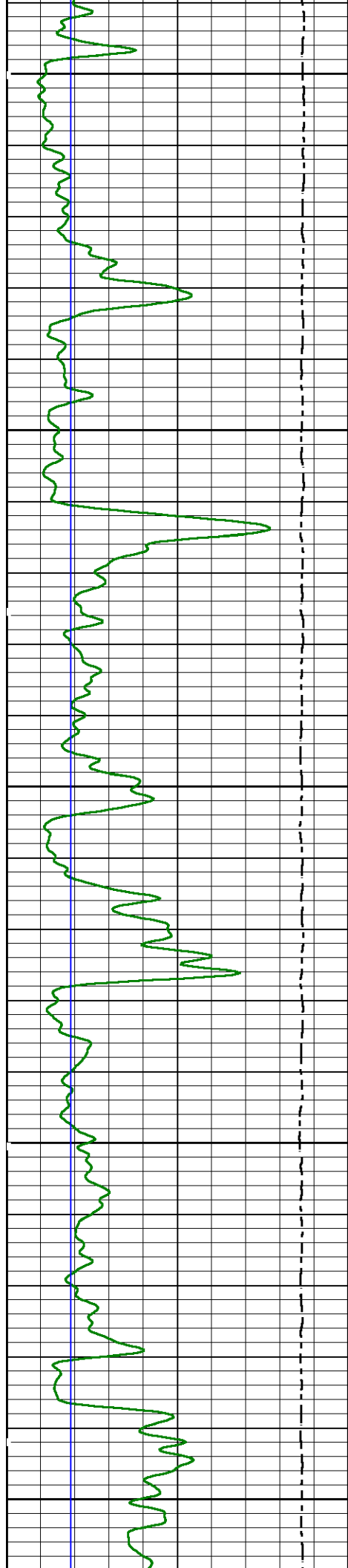
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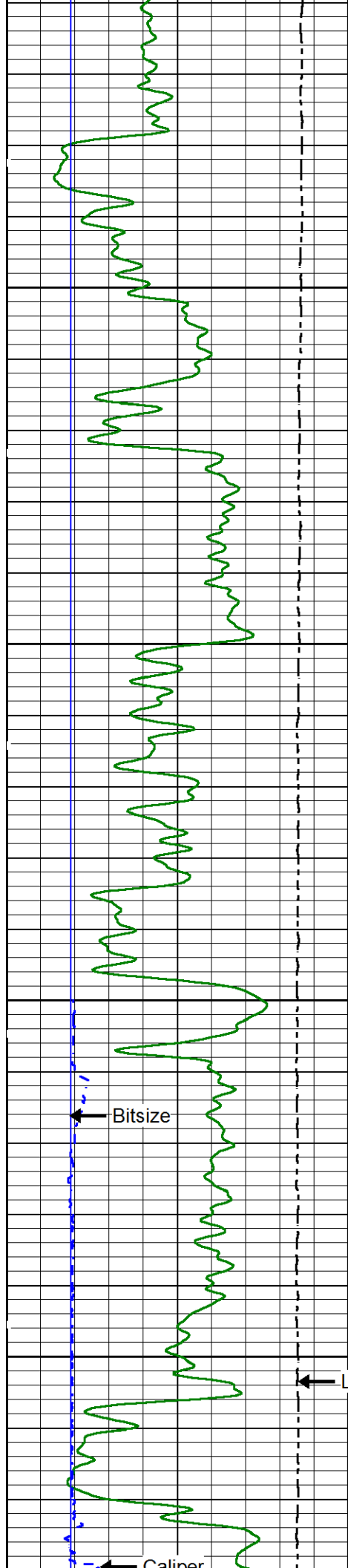
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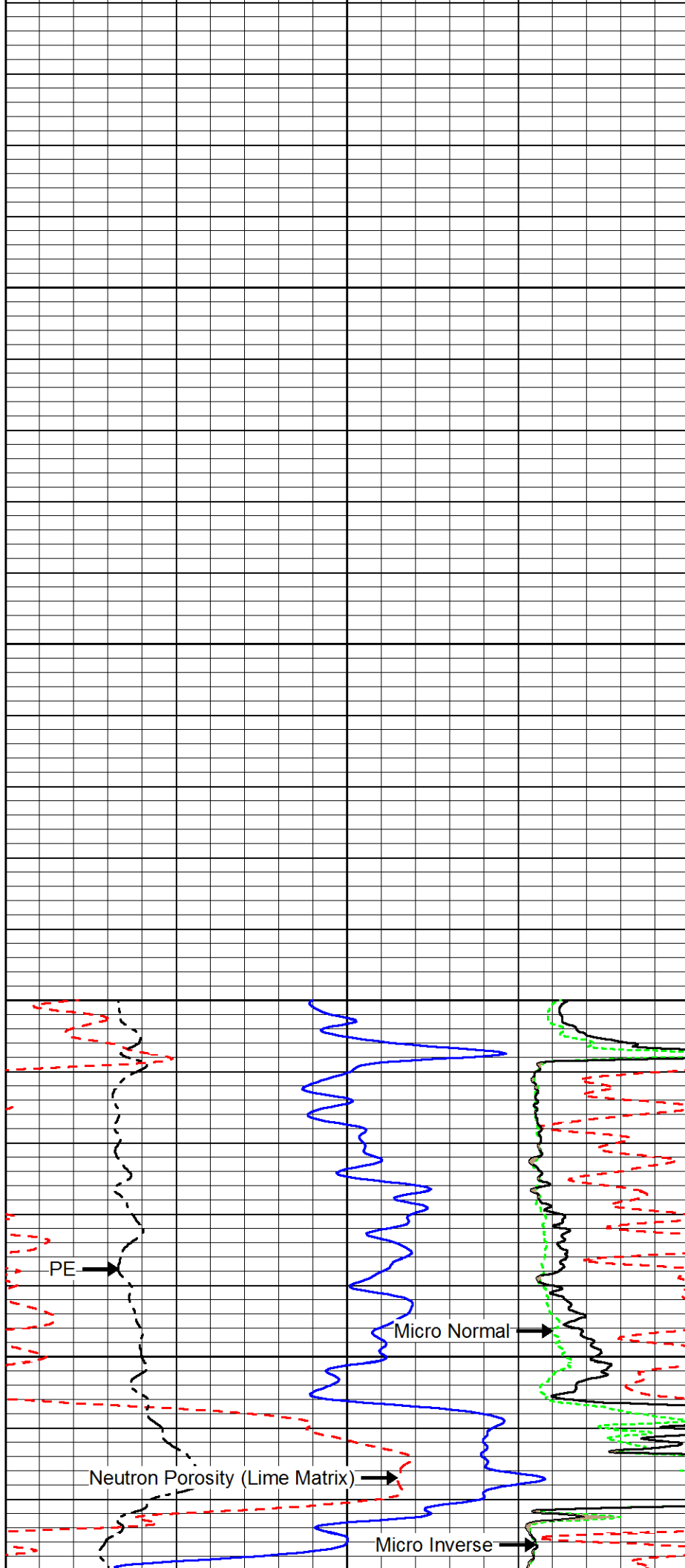
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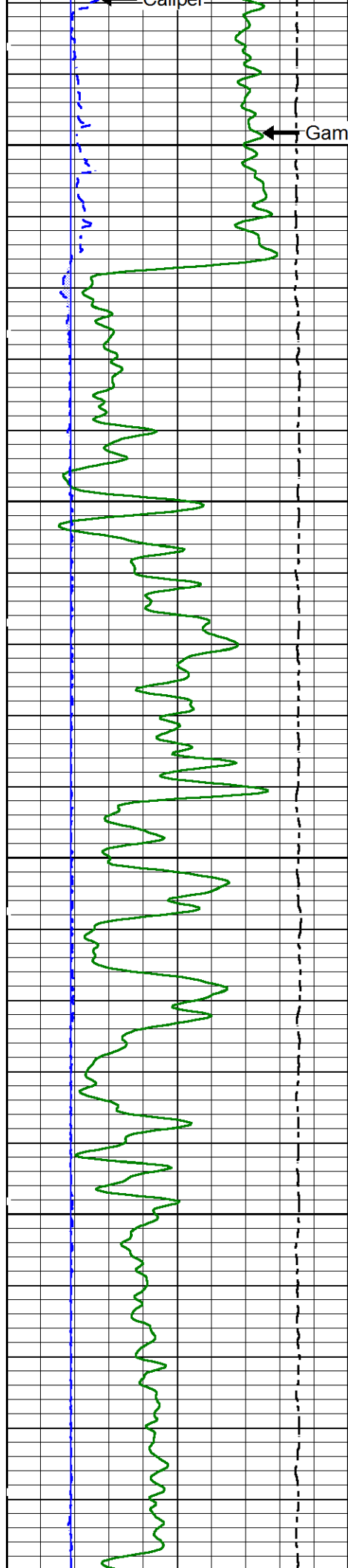
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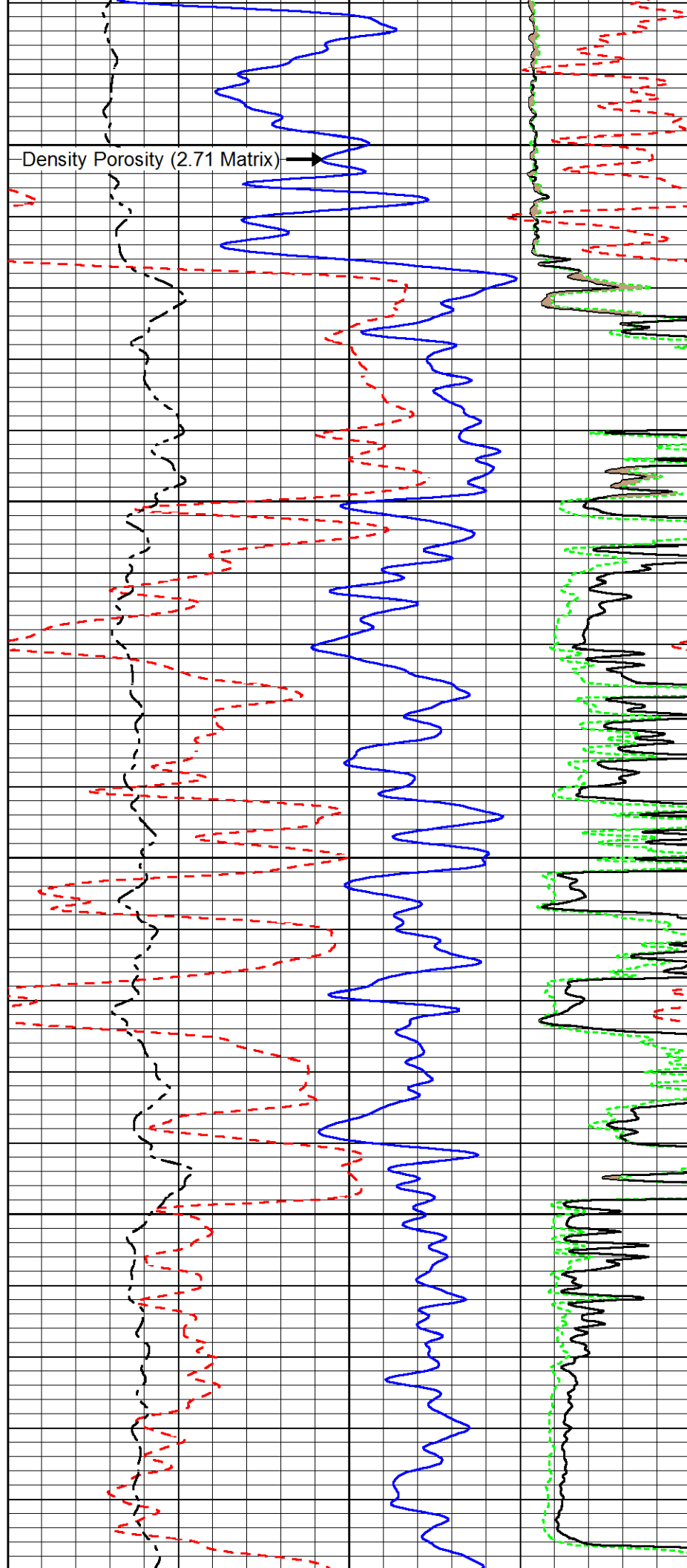




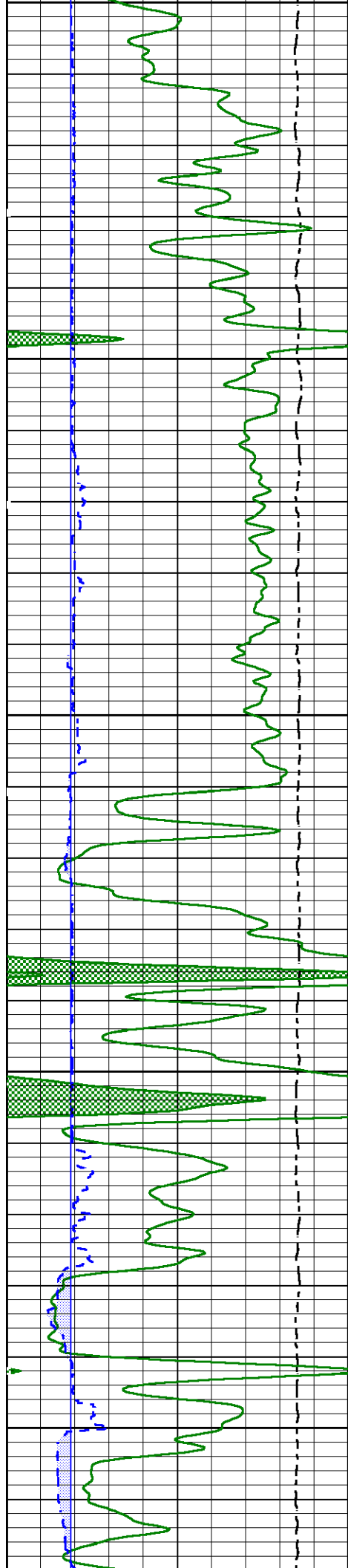
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4200

4300



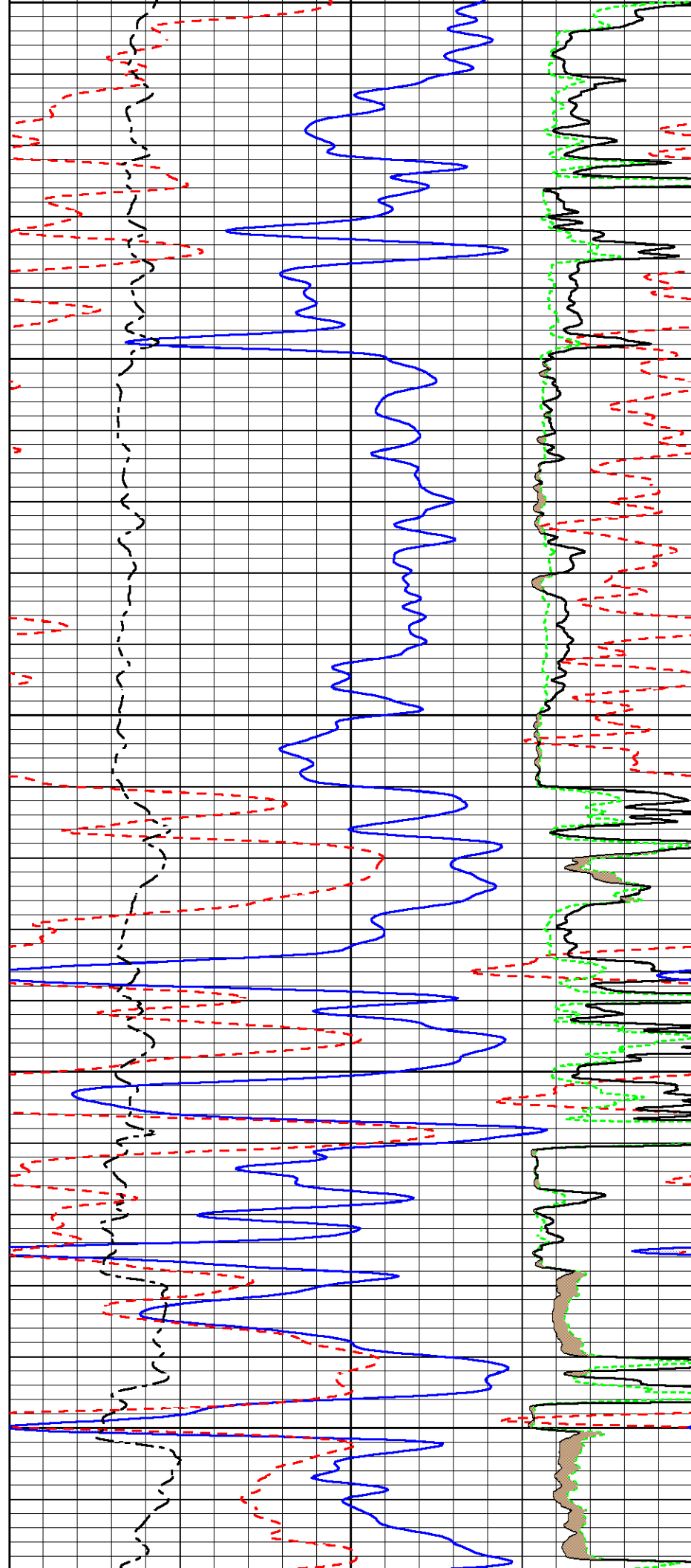
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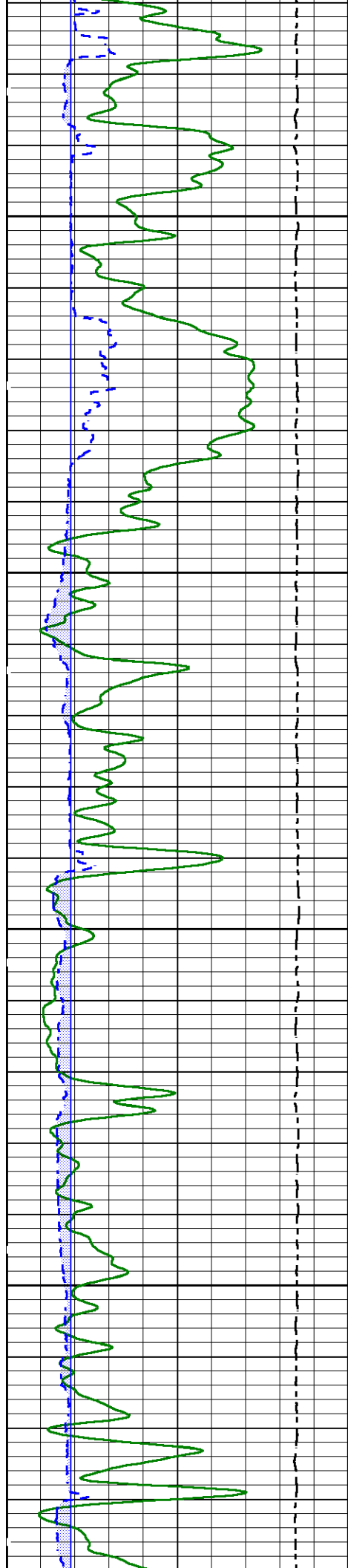


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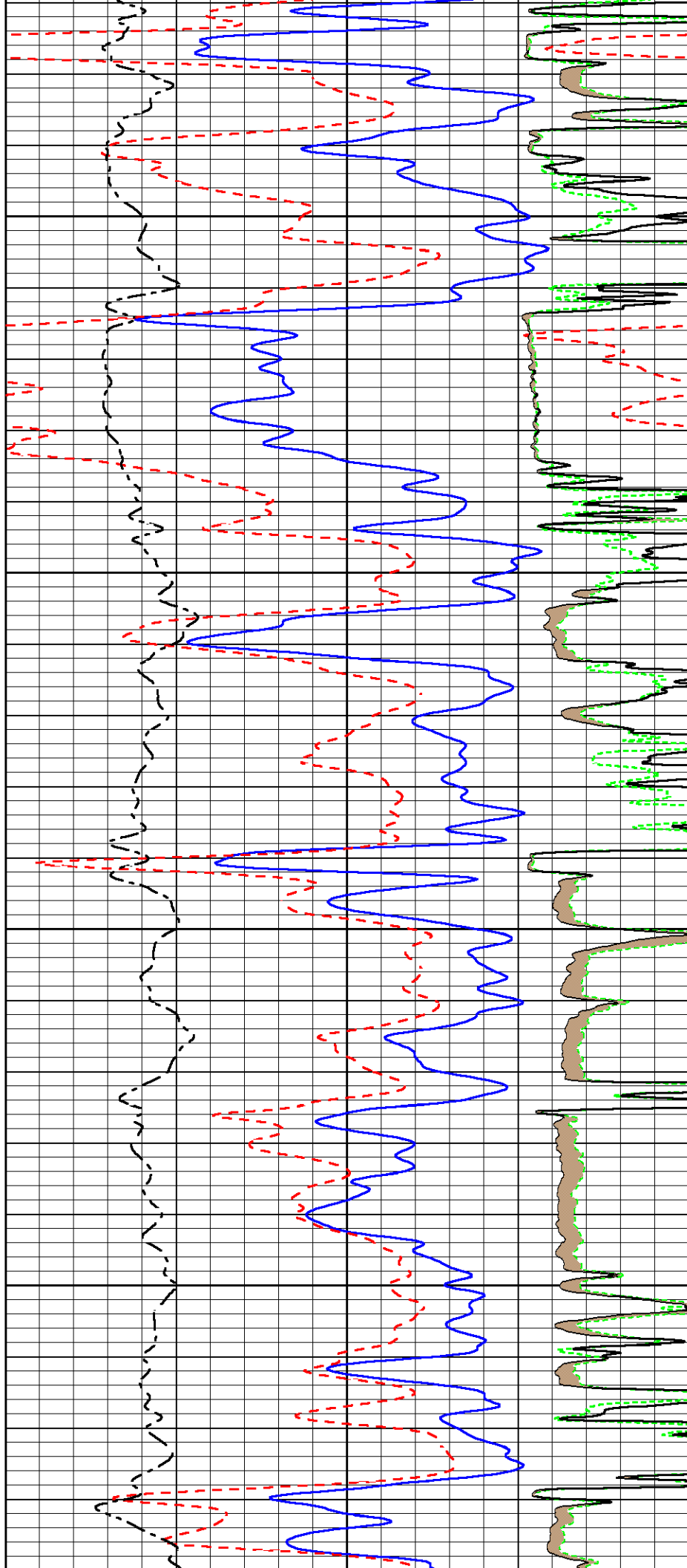
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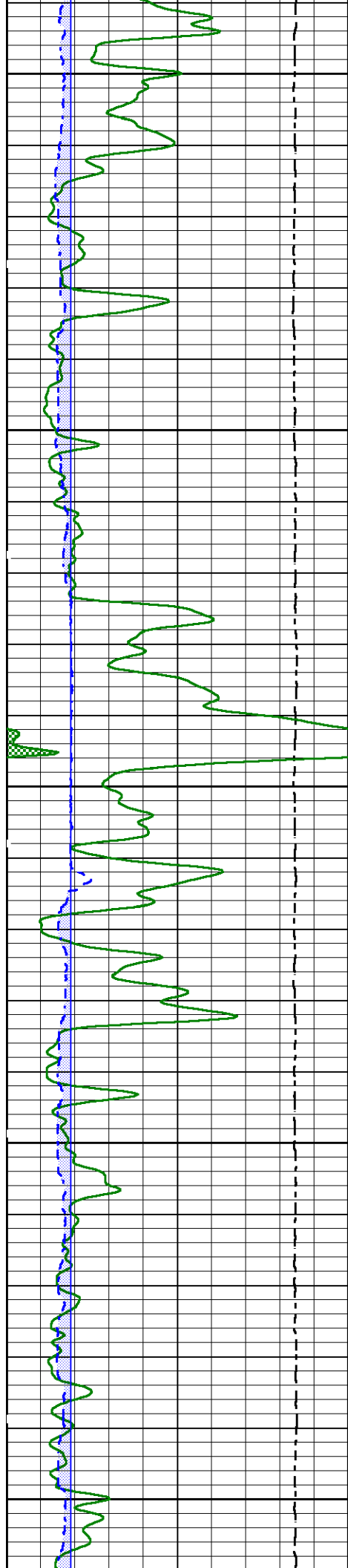




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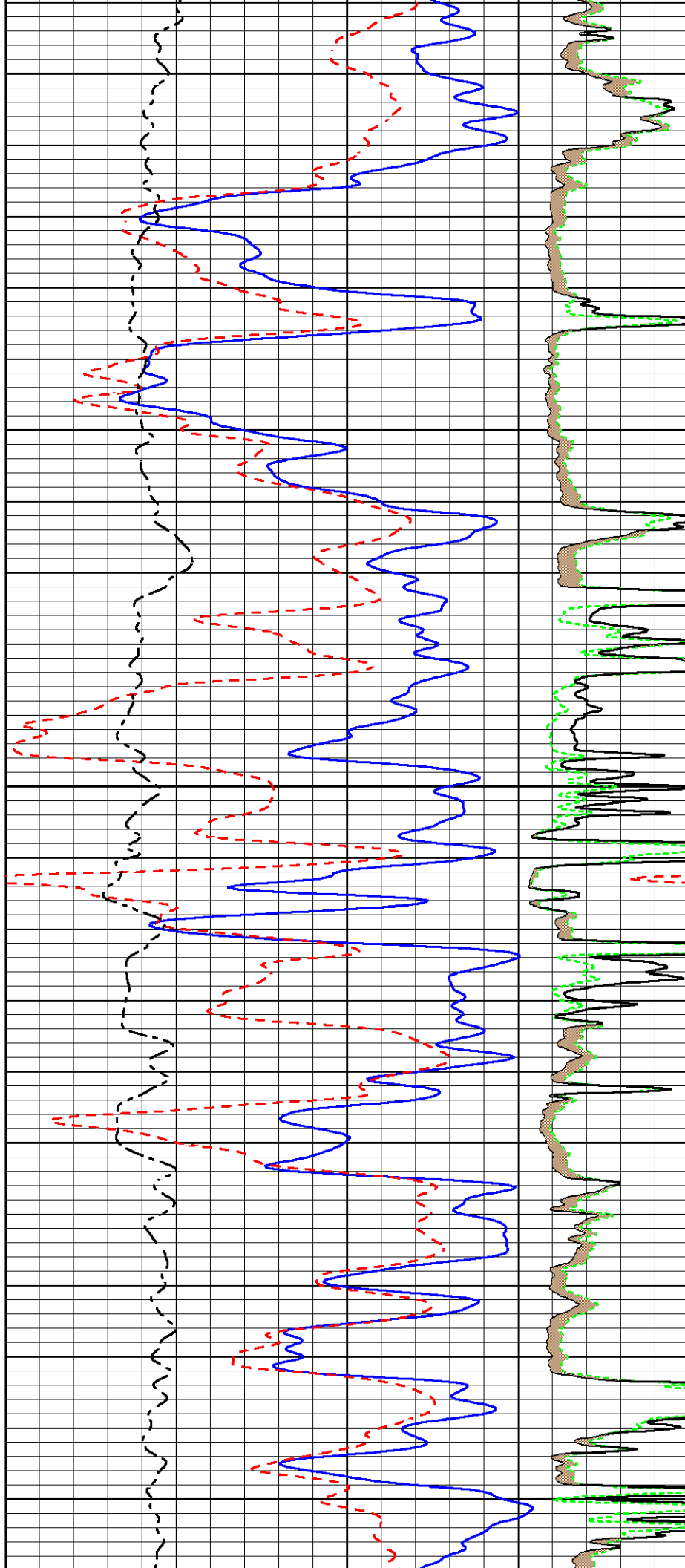
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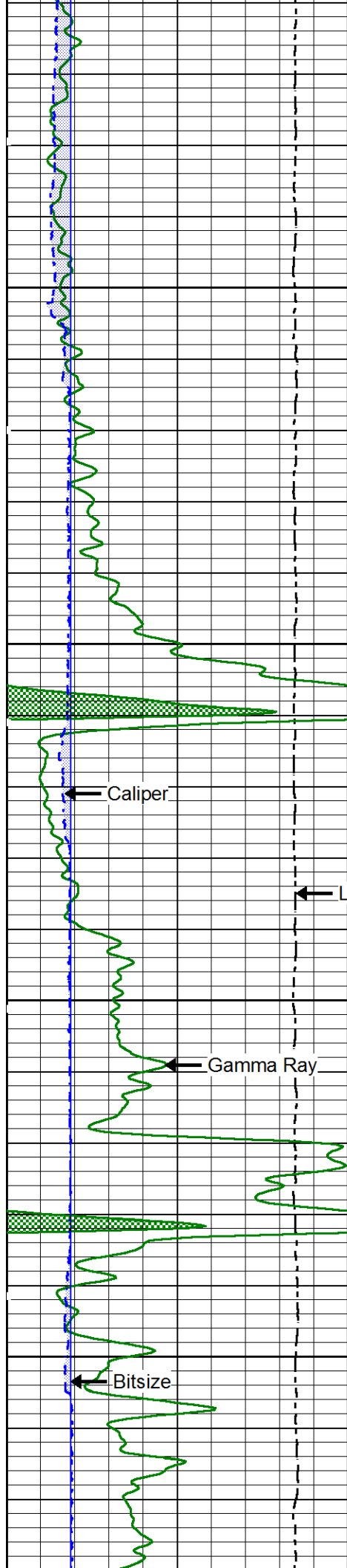




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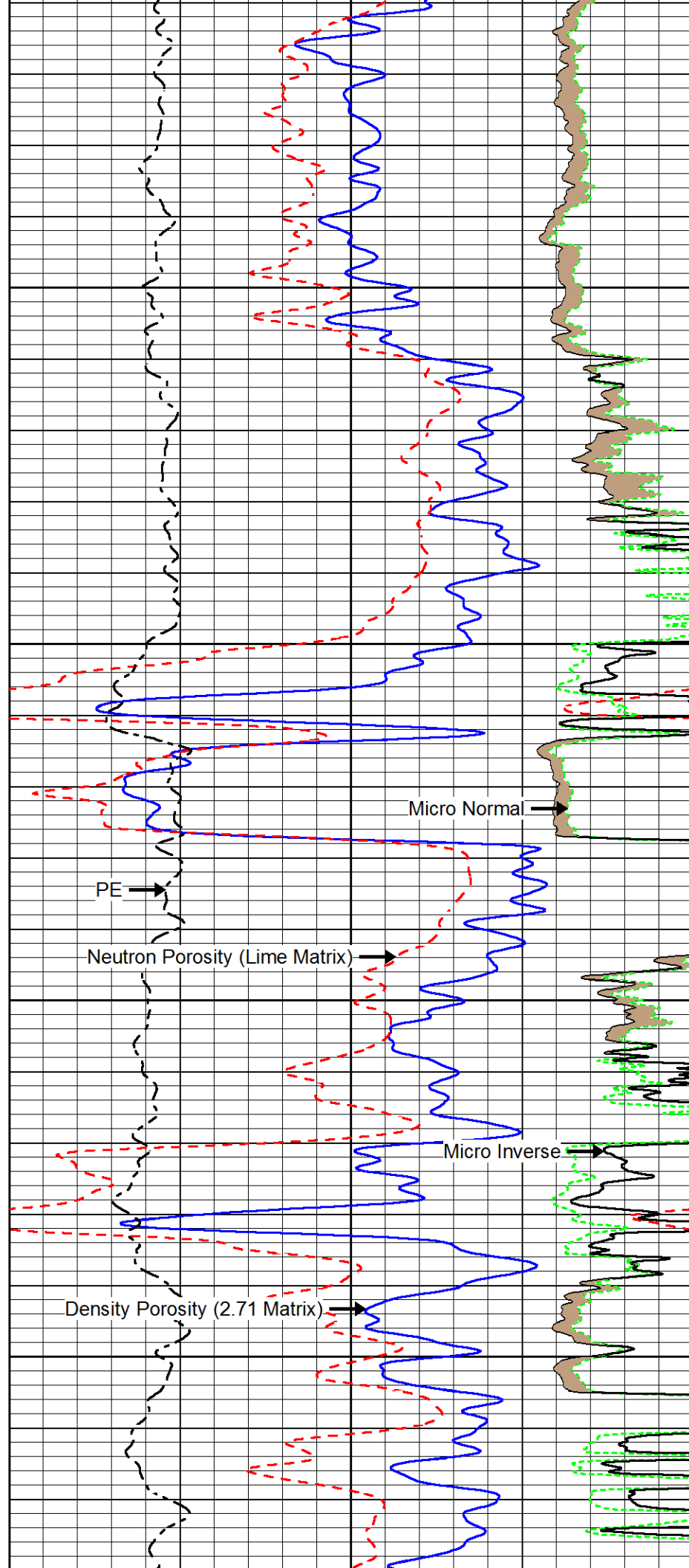
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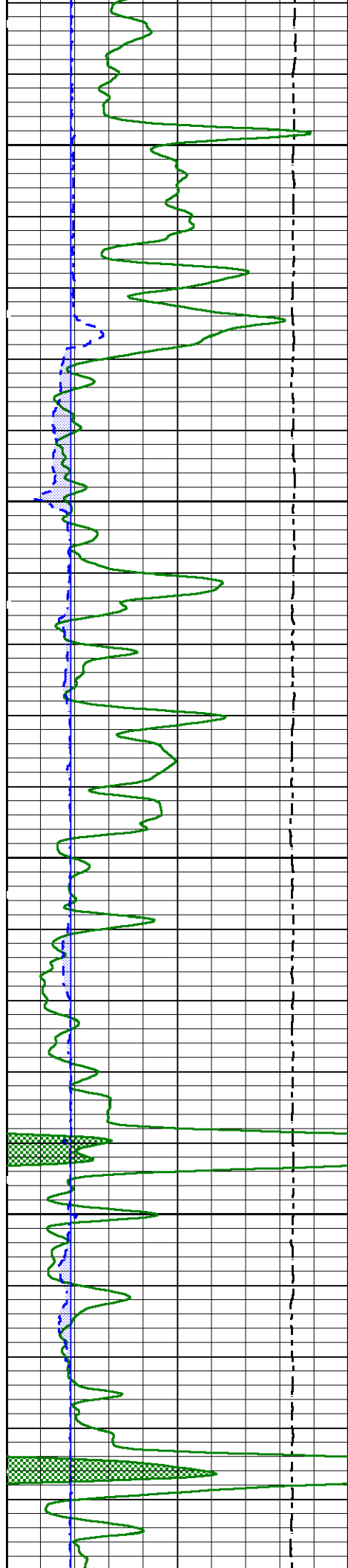




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5100

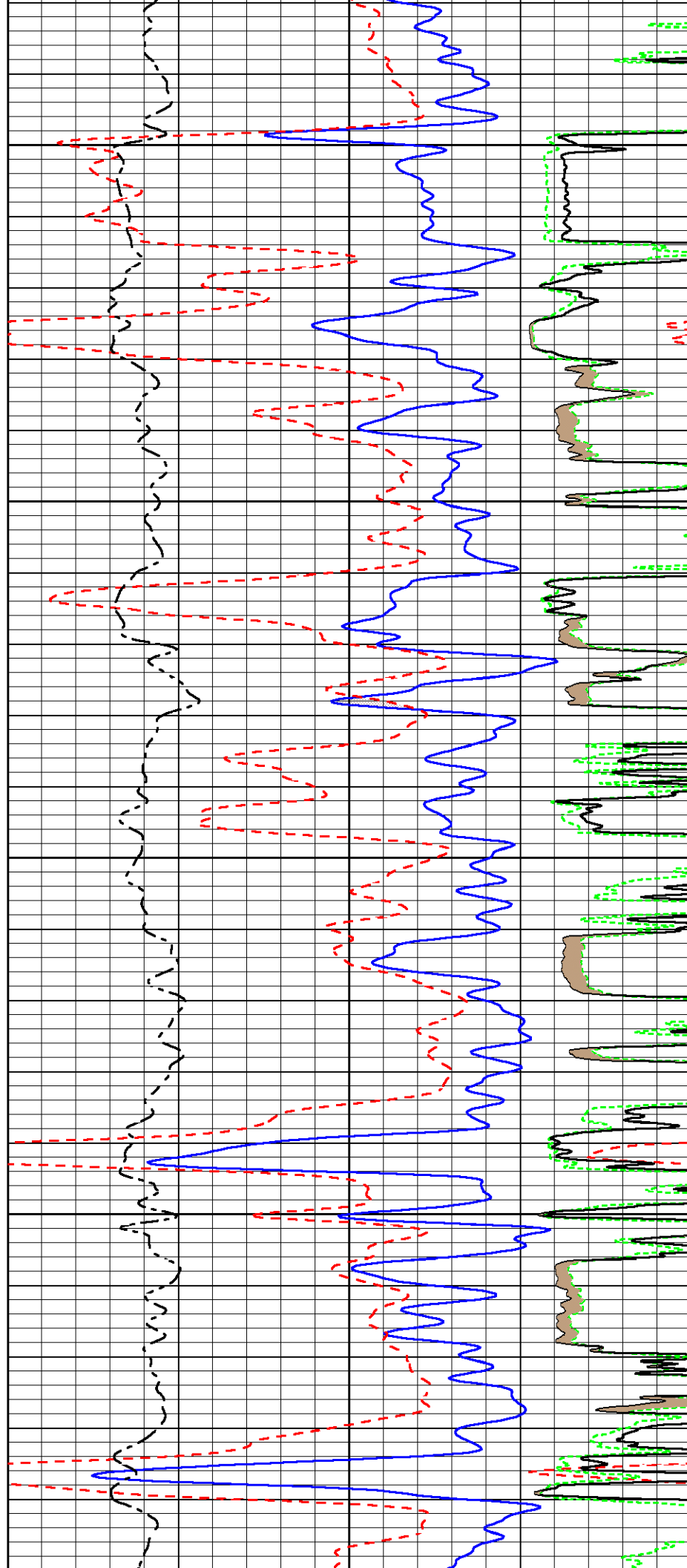




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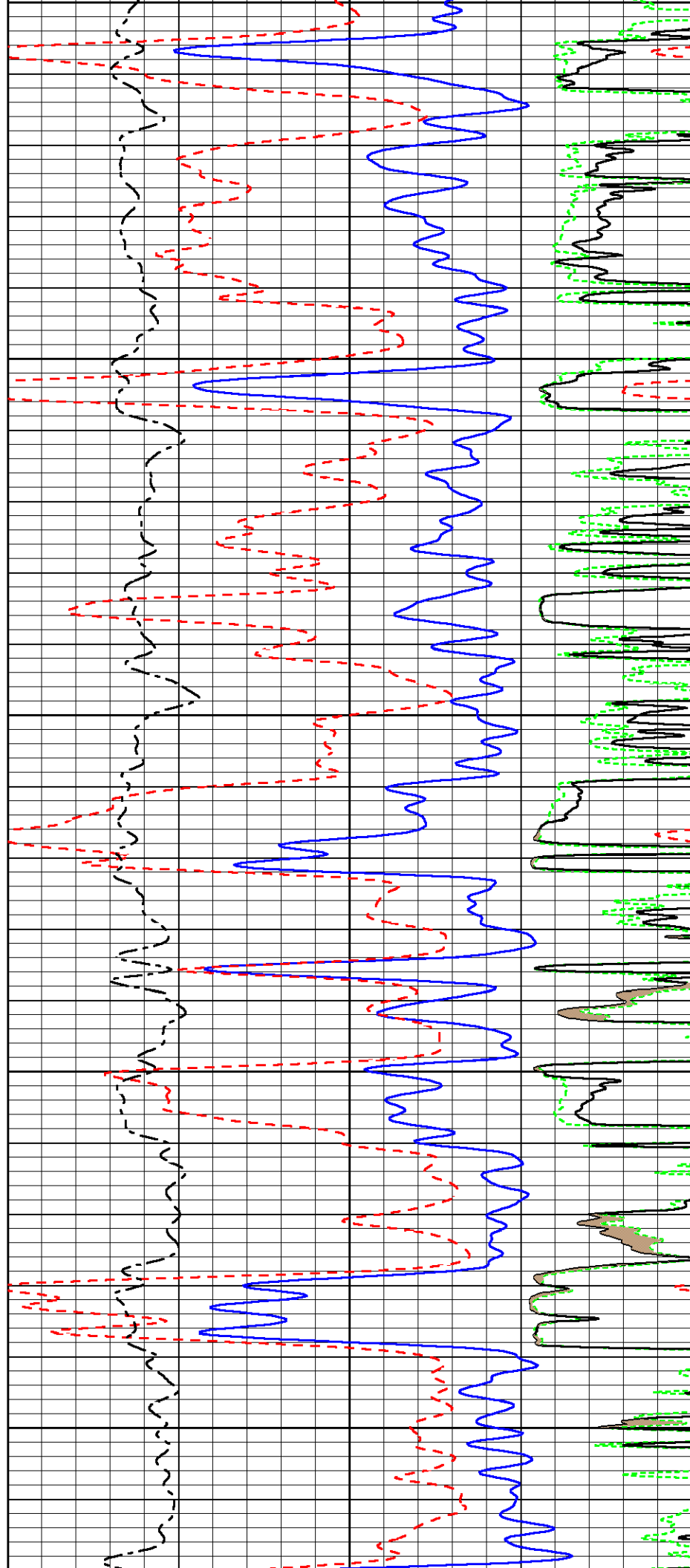
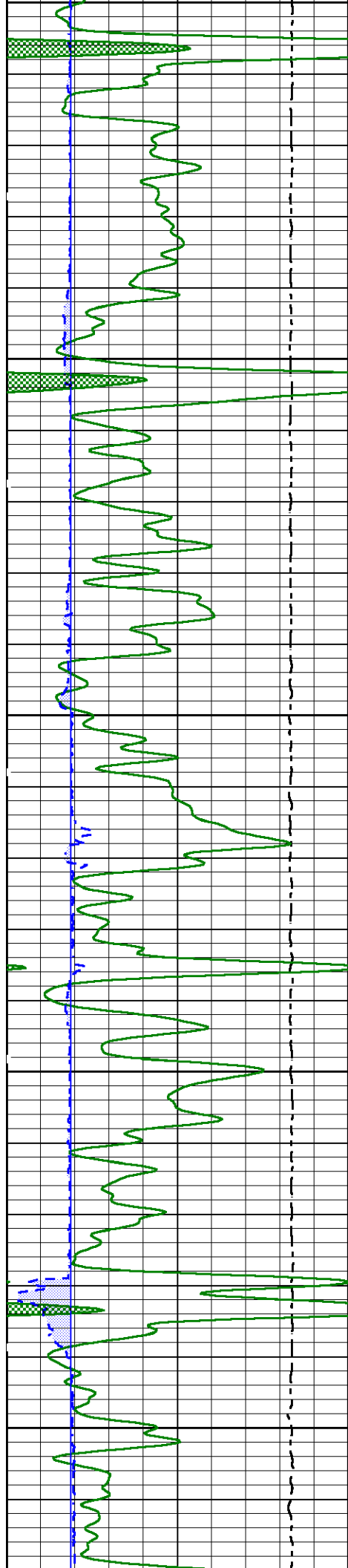
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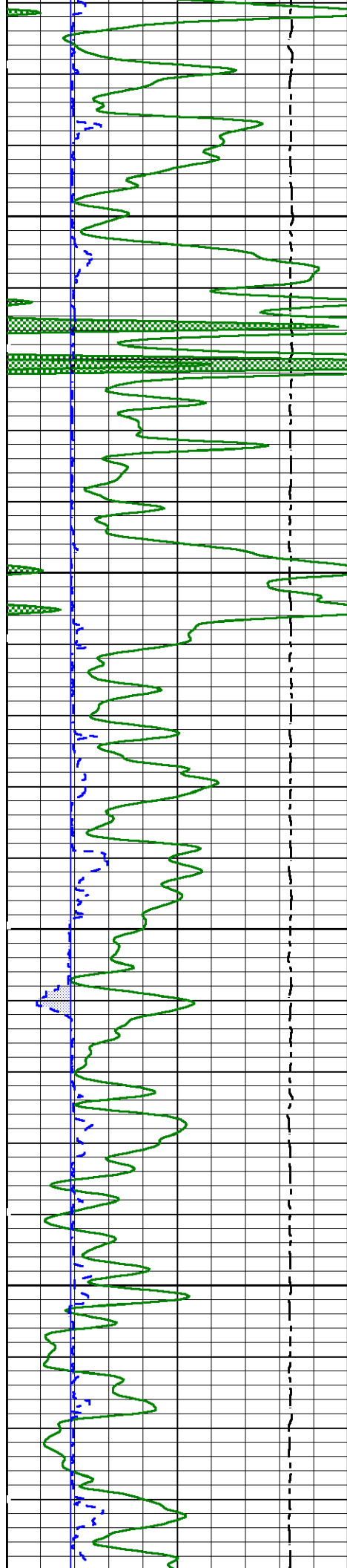


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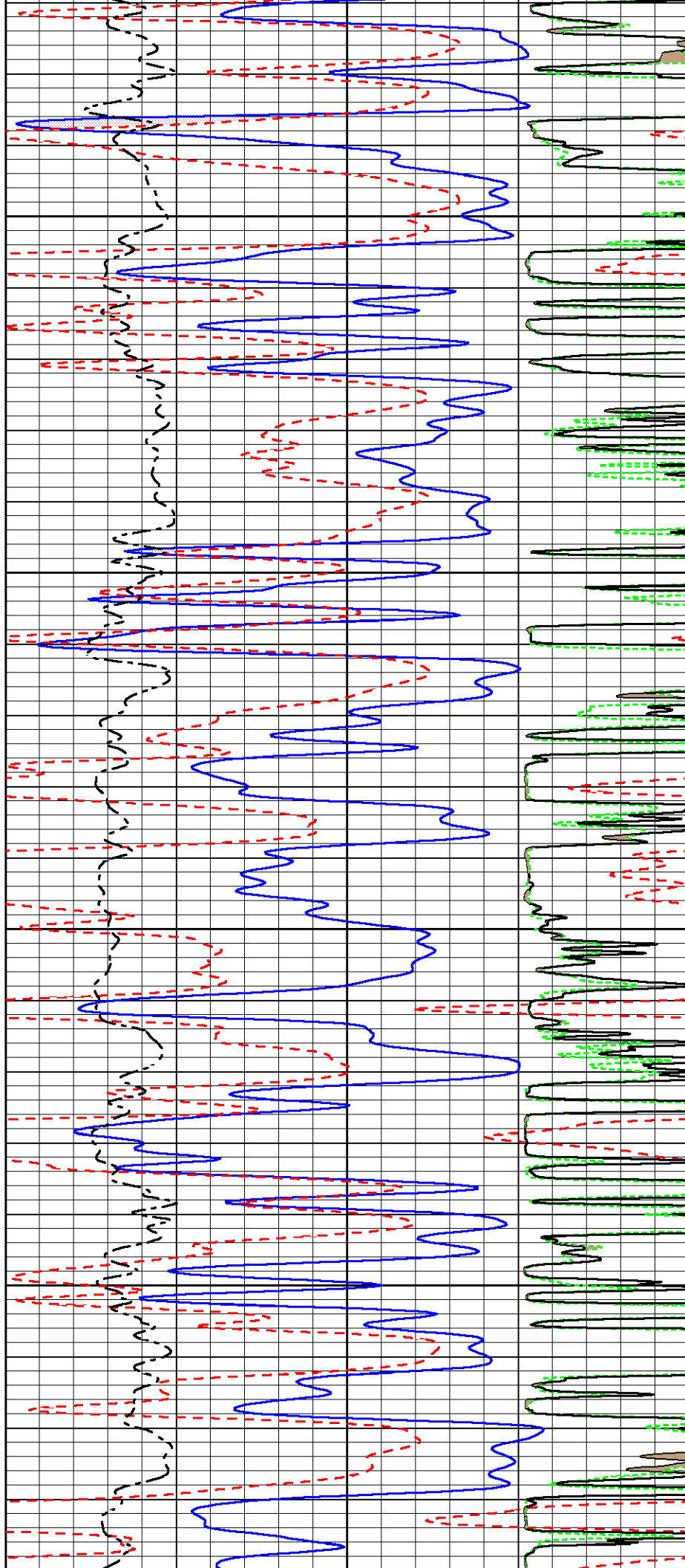
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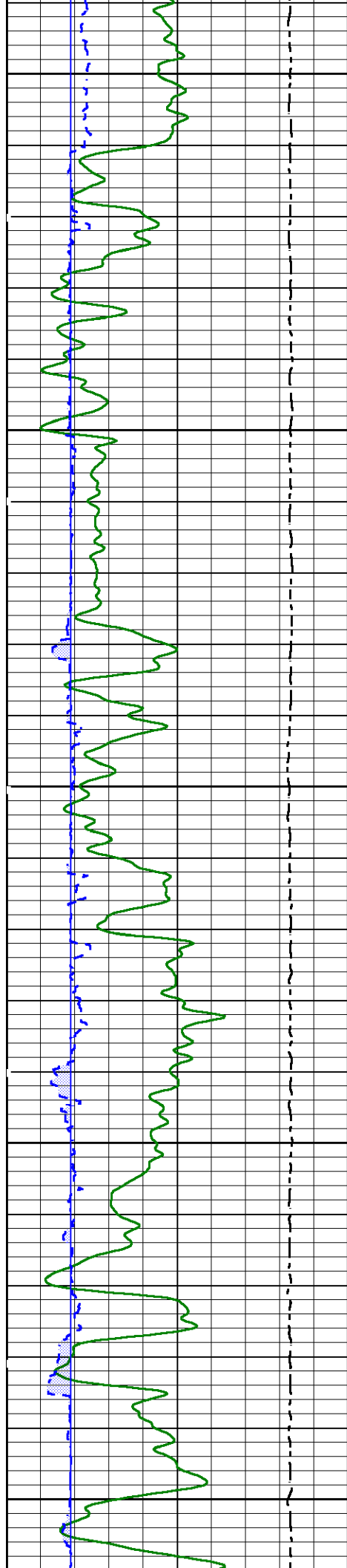




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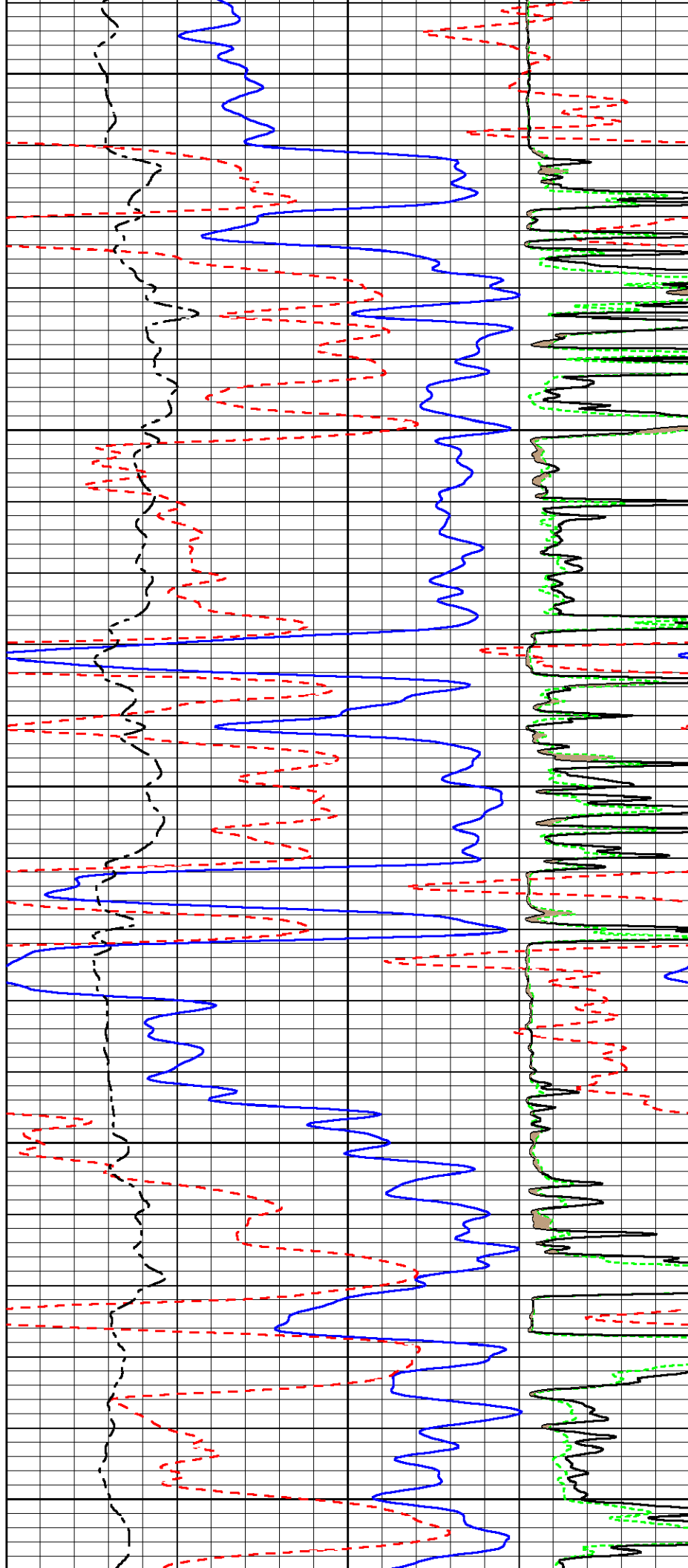
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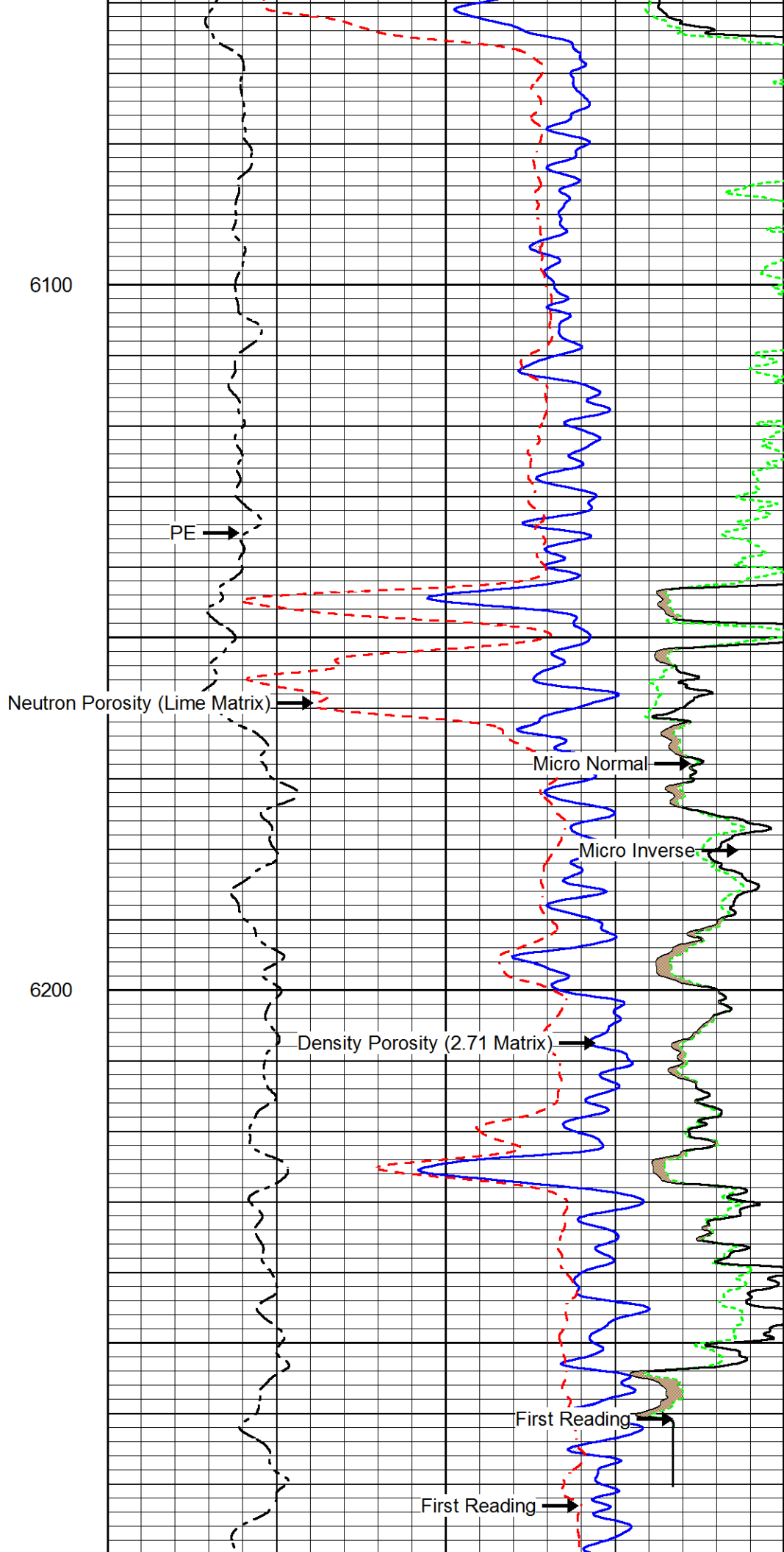
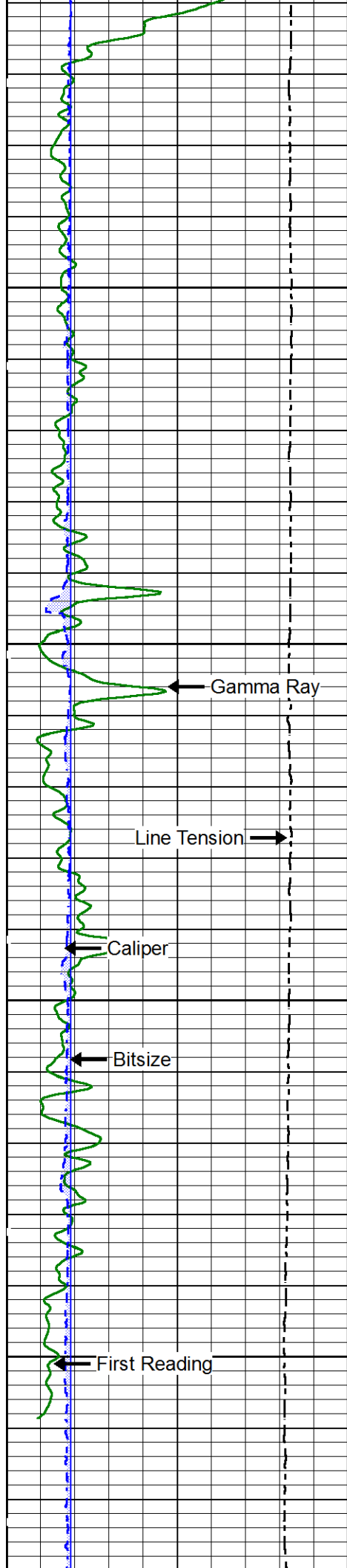


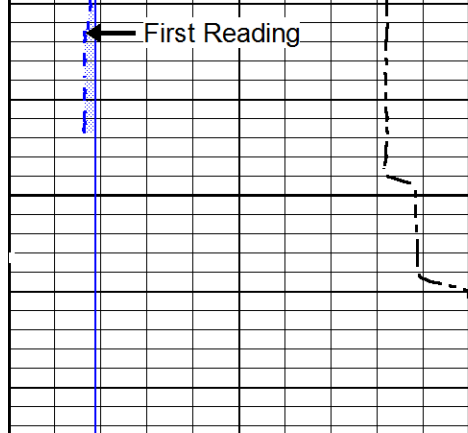


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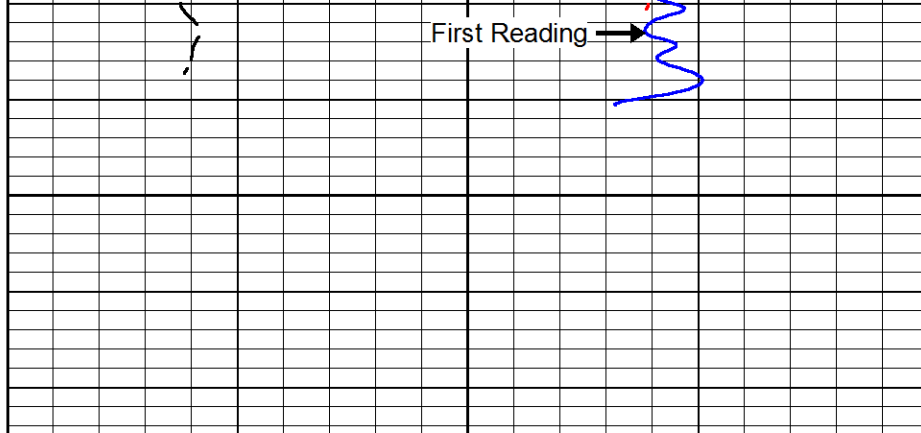
6000







Total Depth
6300



0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
6	Bitsize (in)	16
Line Tension		
10000 (lb)		0

0.3	Density Porosity (2.71 Matrix)	-0.1
0.3	Neutron Porosity (Lime Matrix)	-0.1
0	PE	10
Micro Normal		
0 (Ohm-m)		40
Micro Inverse		
0 (Ohm-m)		40



Main Pass

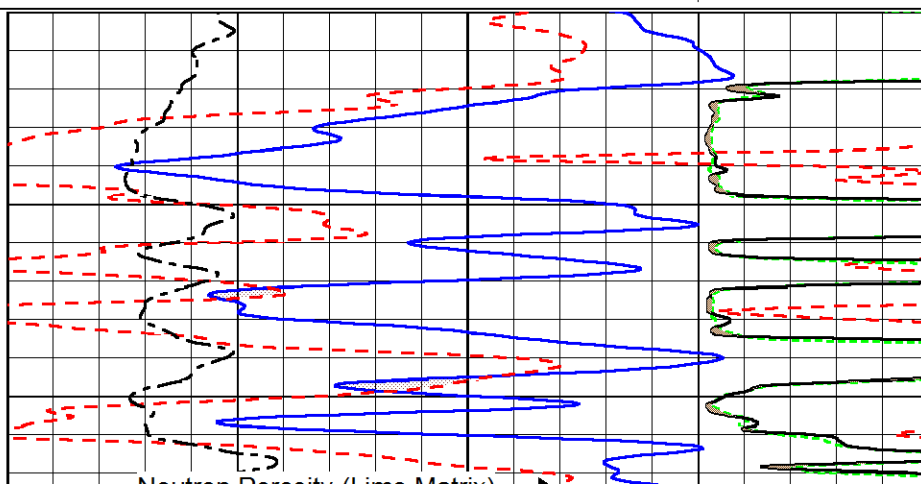
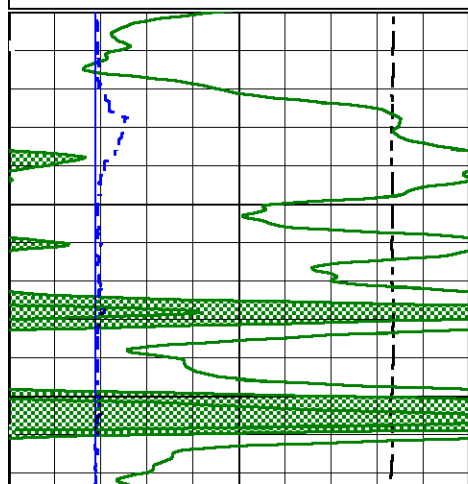


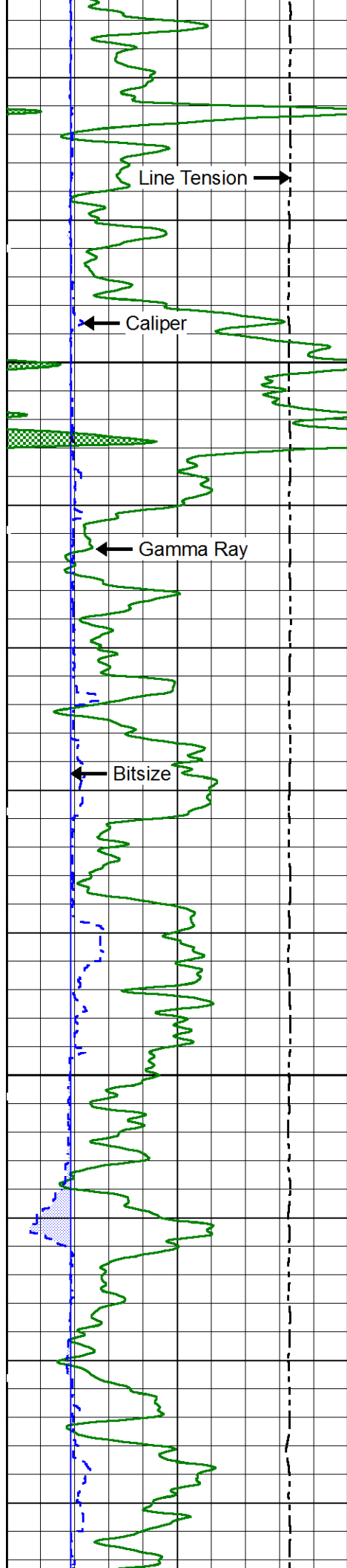
High Resolution Pass

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 Charted by Depth in Feet scaled 1:120

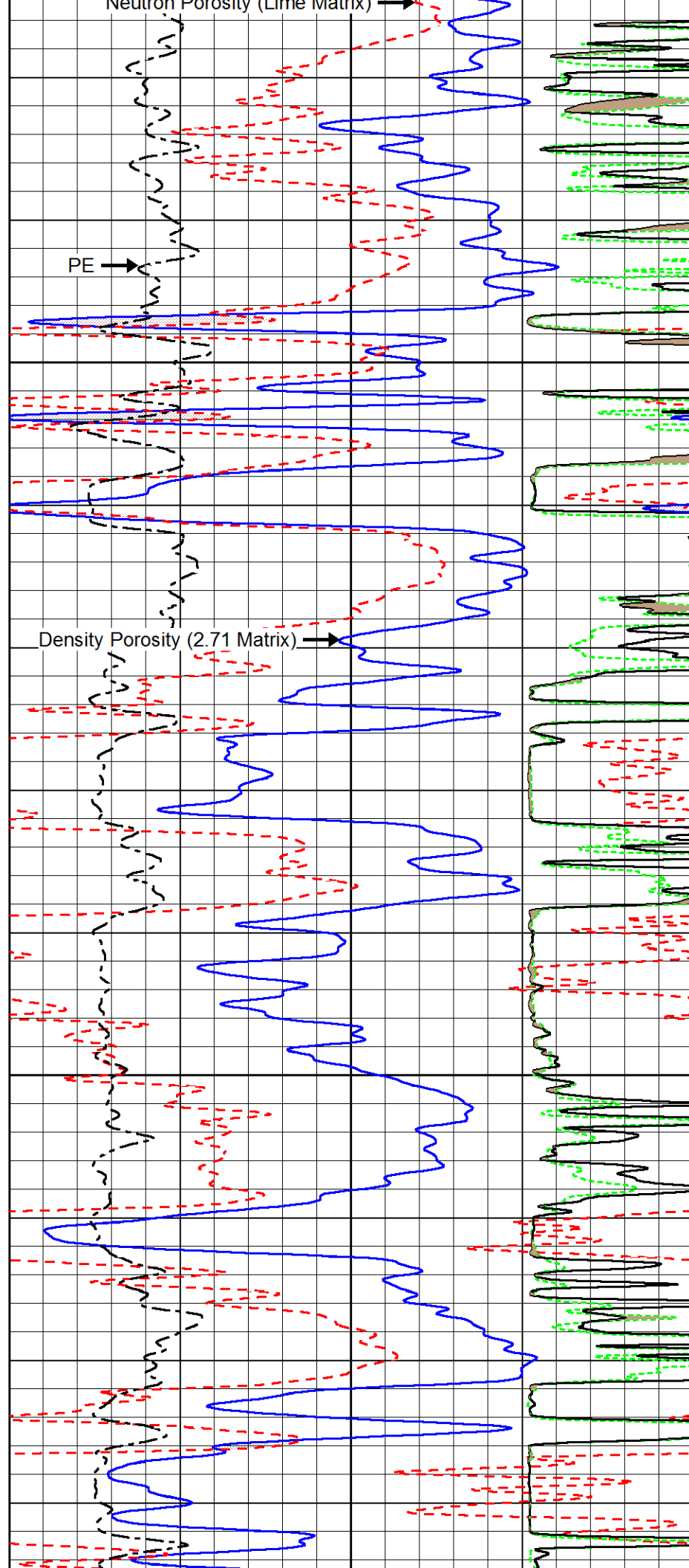
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6	Caliper (in)	16
6	Bitsize (in)	16
Line Tension		
10000 (lb)		0

0.3	Density Porosity (2.71 Matrix)	-0.1
0.3	Neutron Porosity (Lime Matrix)	-0.1
0	PE	10
Micro Normal		
0 (Ohm-m)		40
Micro Inverse		
0 (Ohm-m)		40

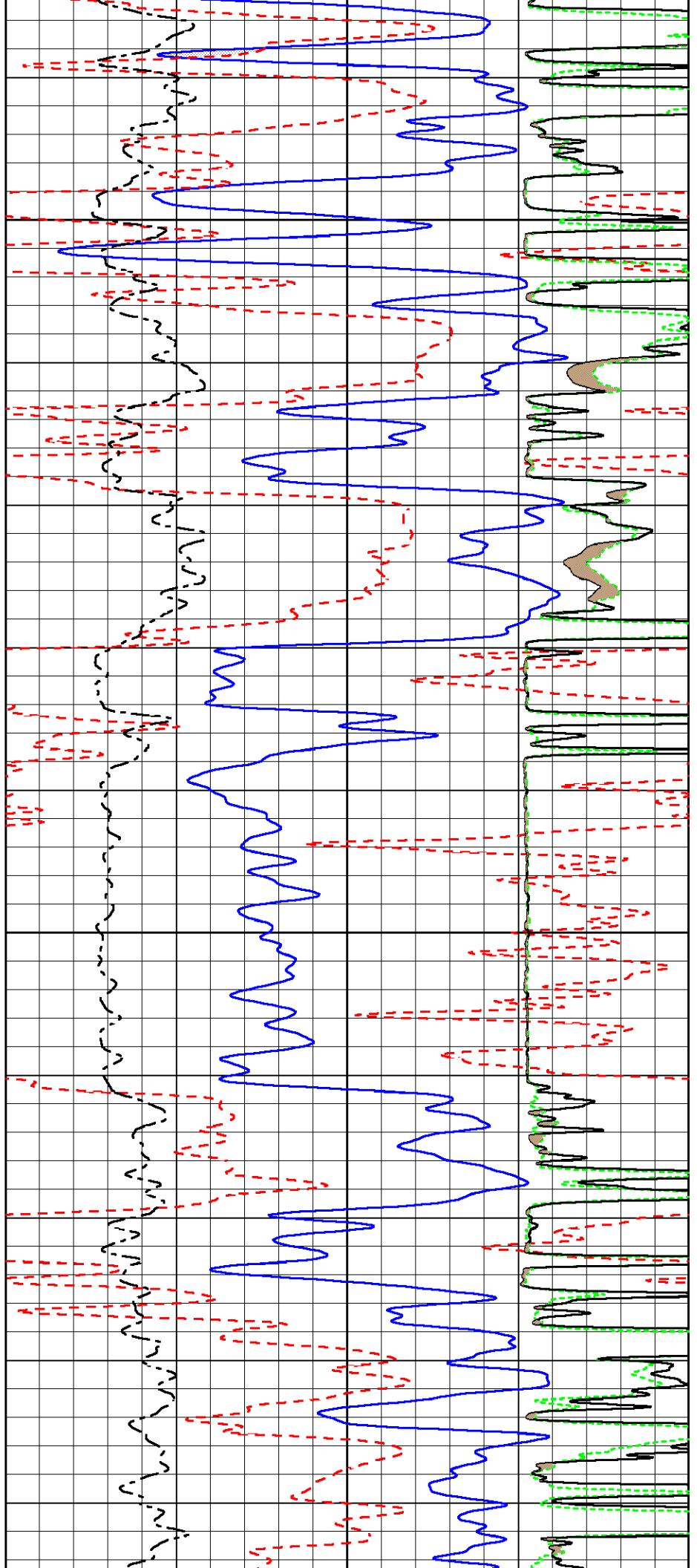
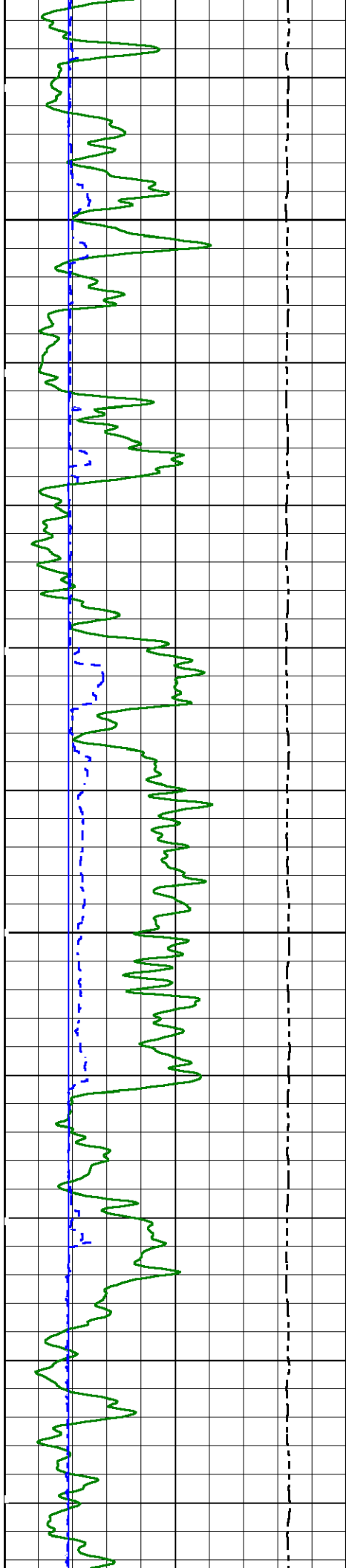




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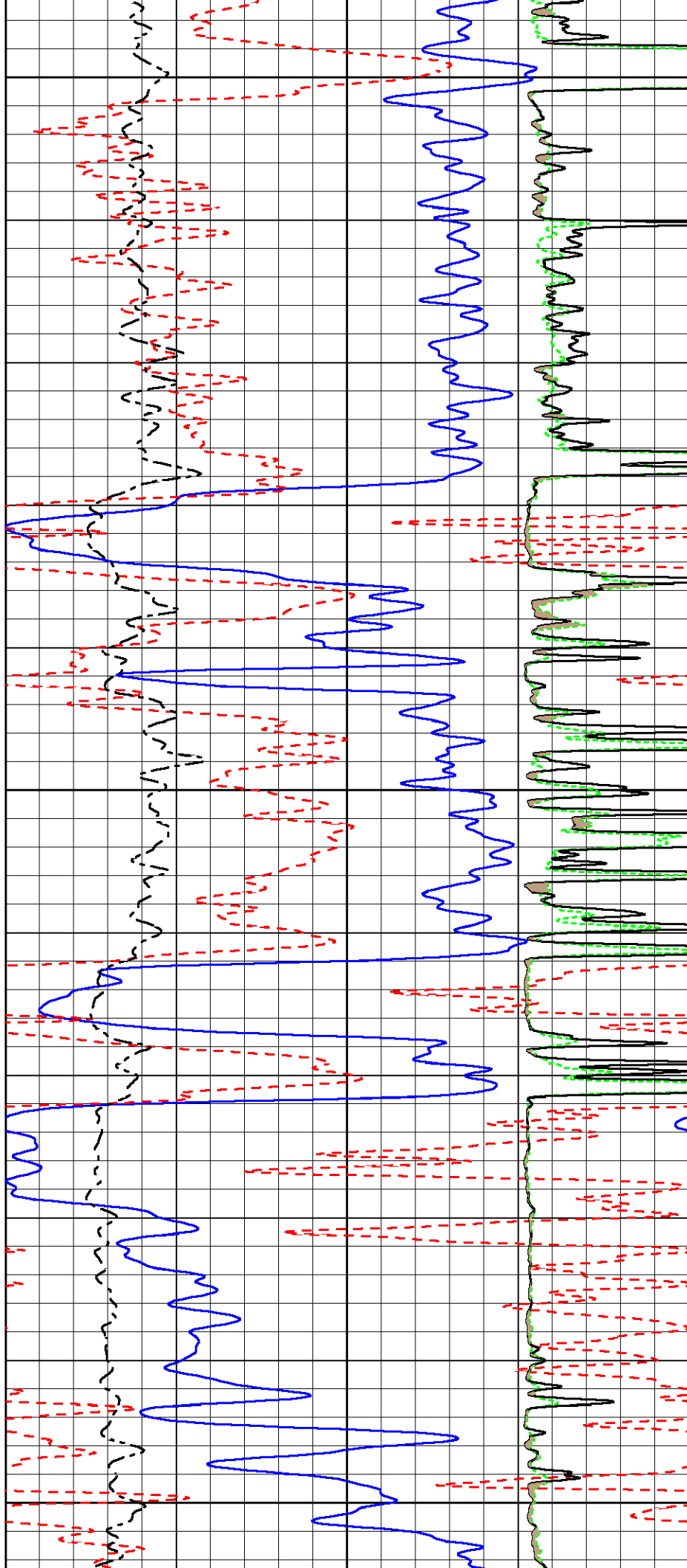
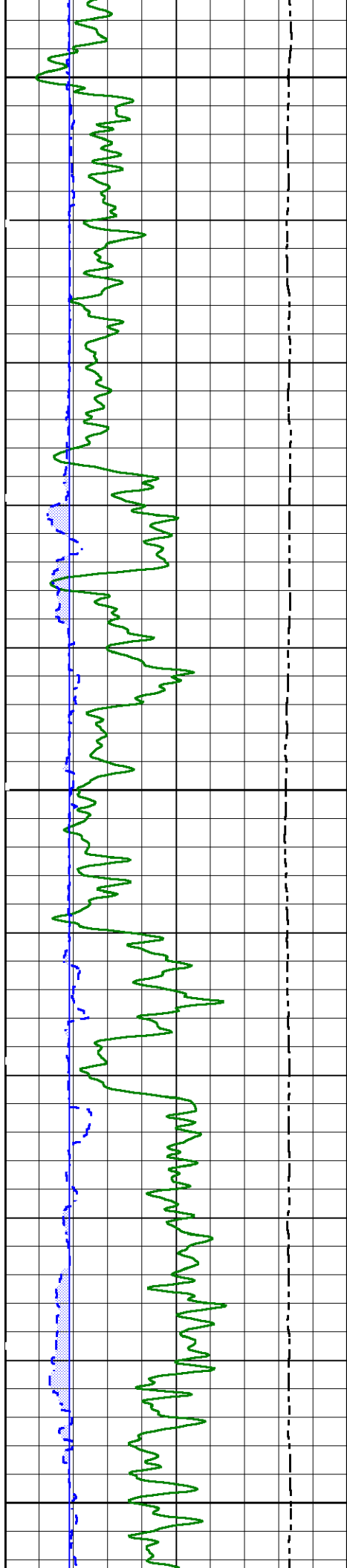


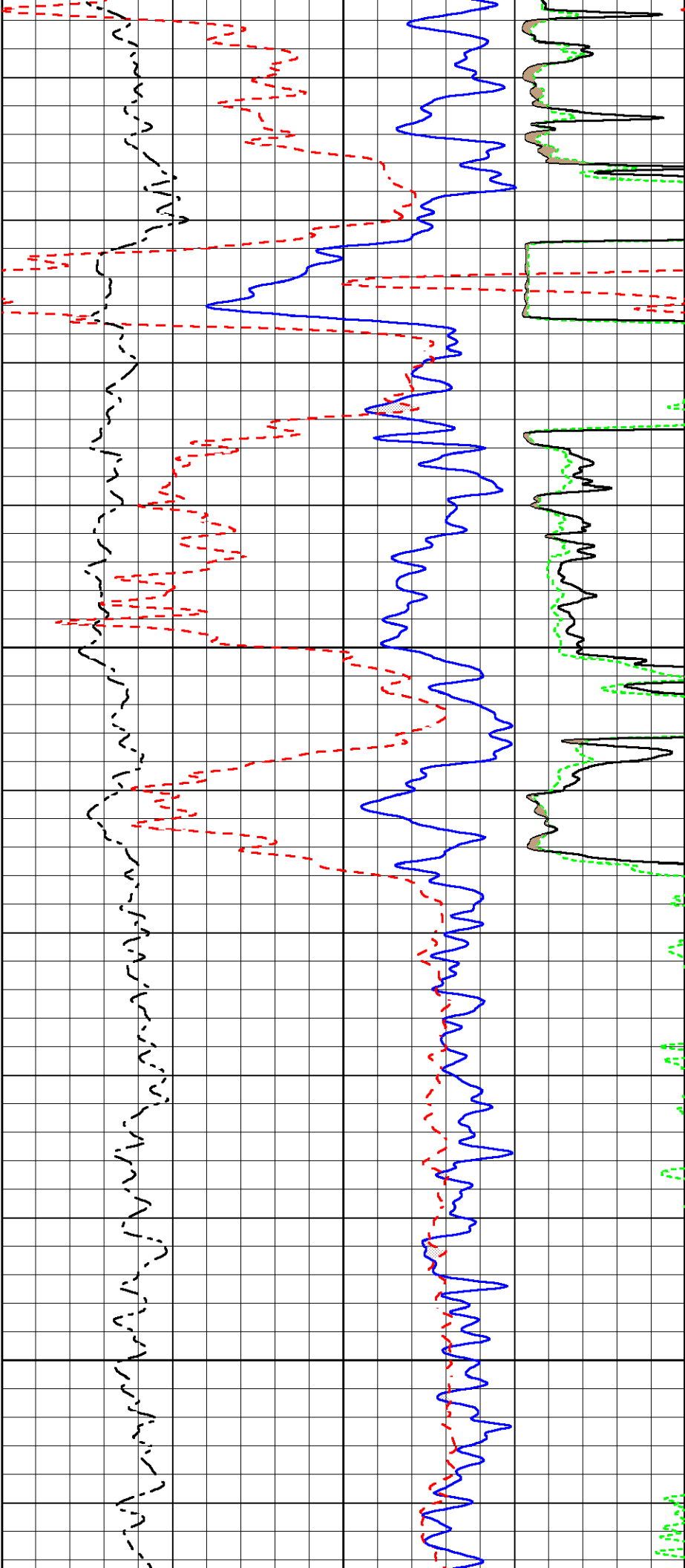
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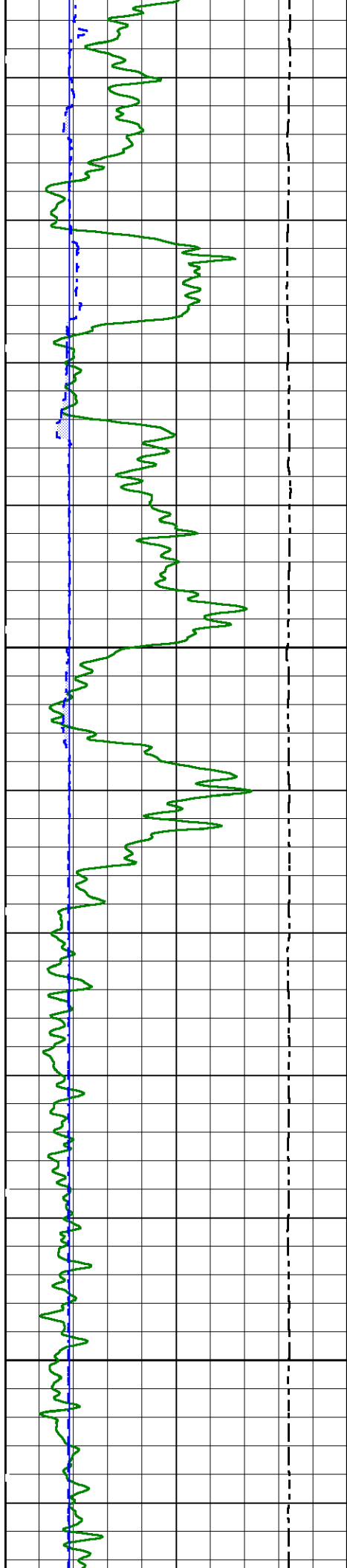
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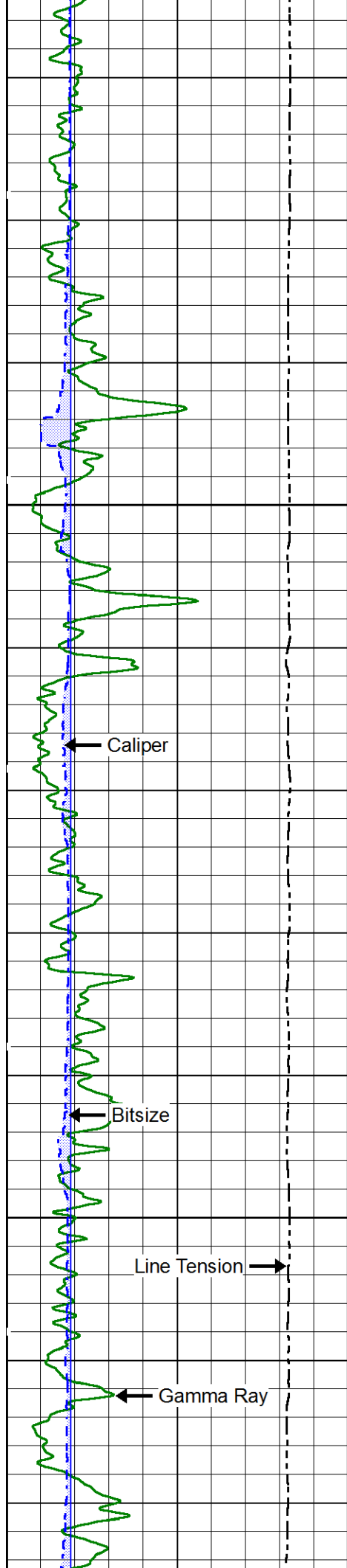
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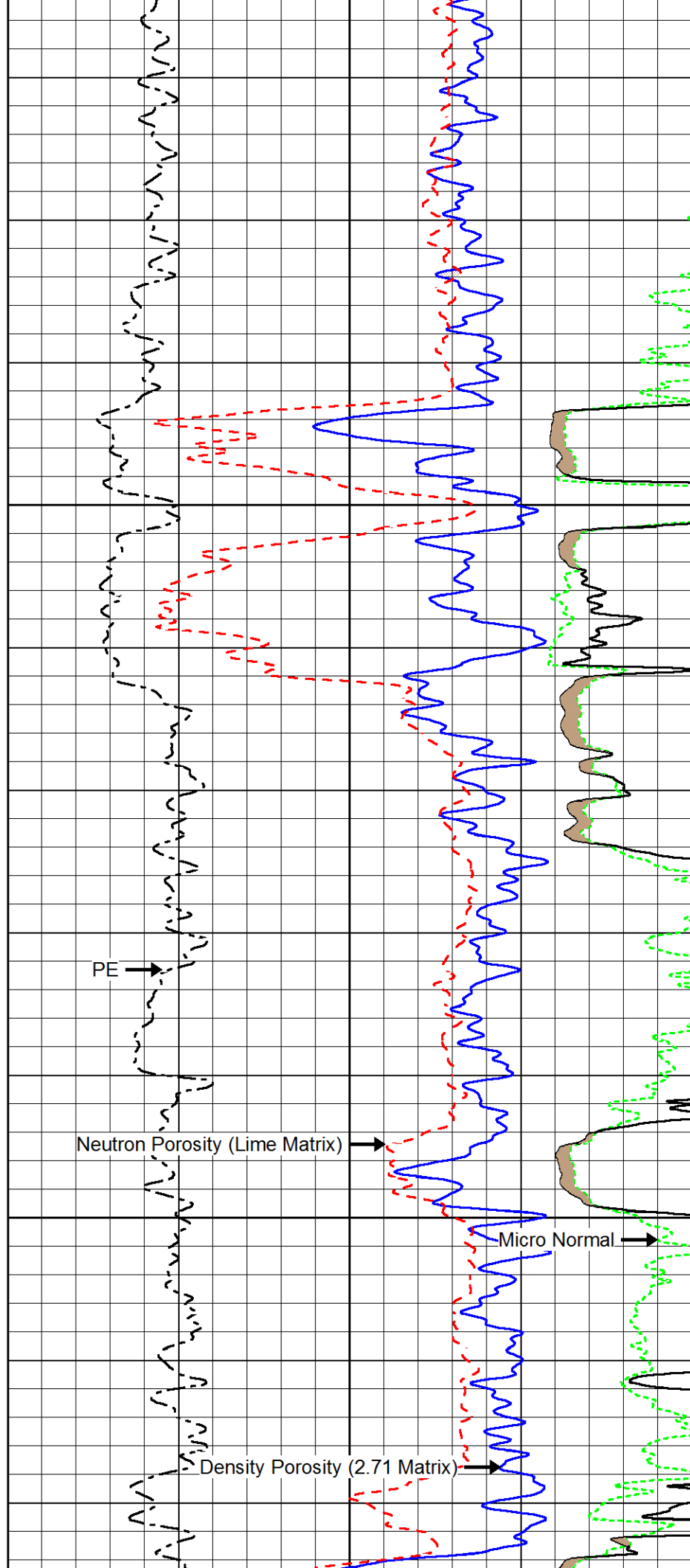


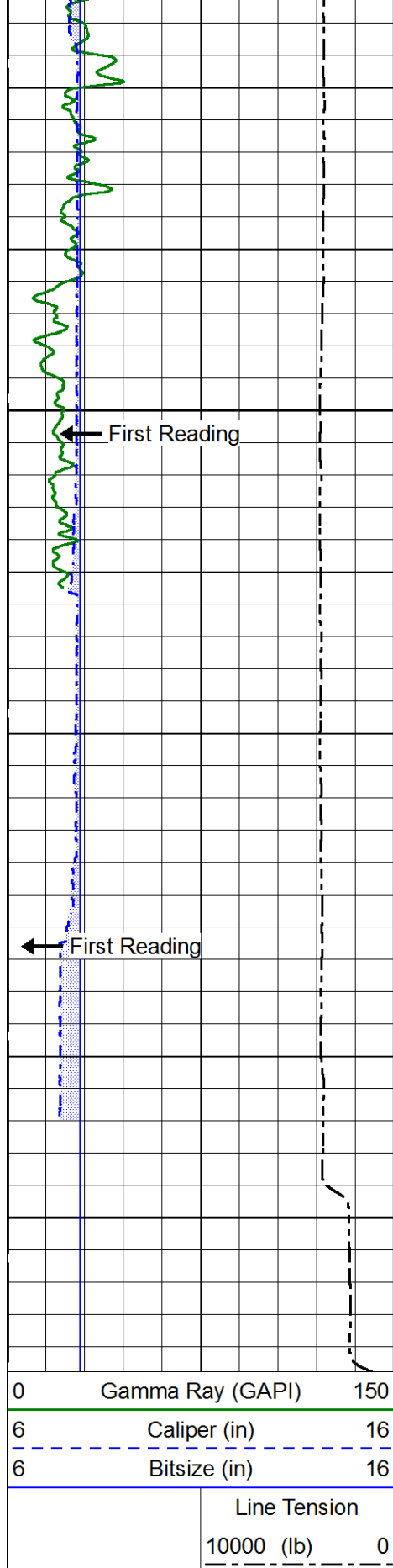
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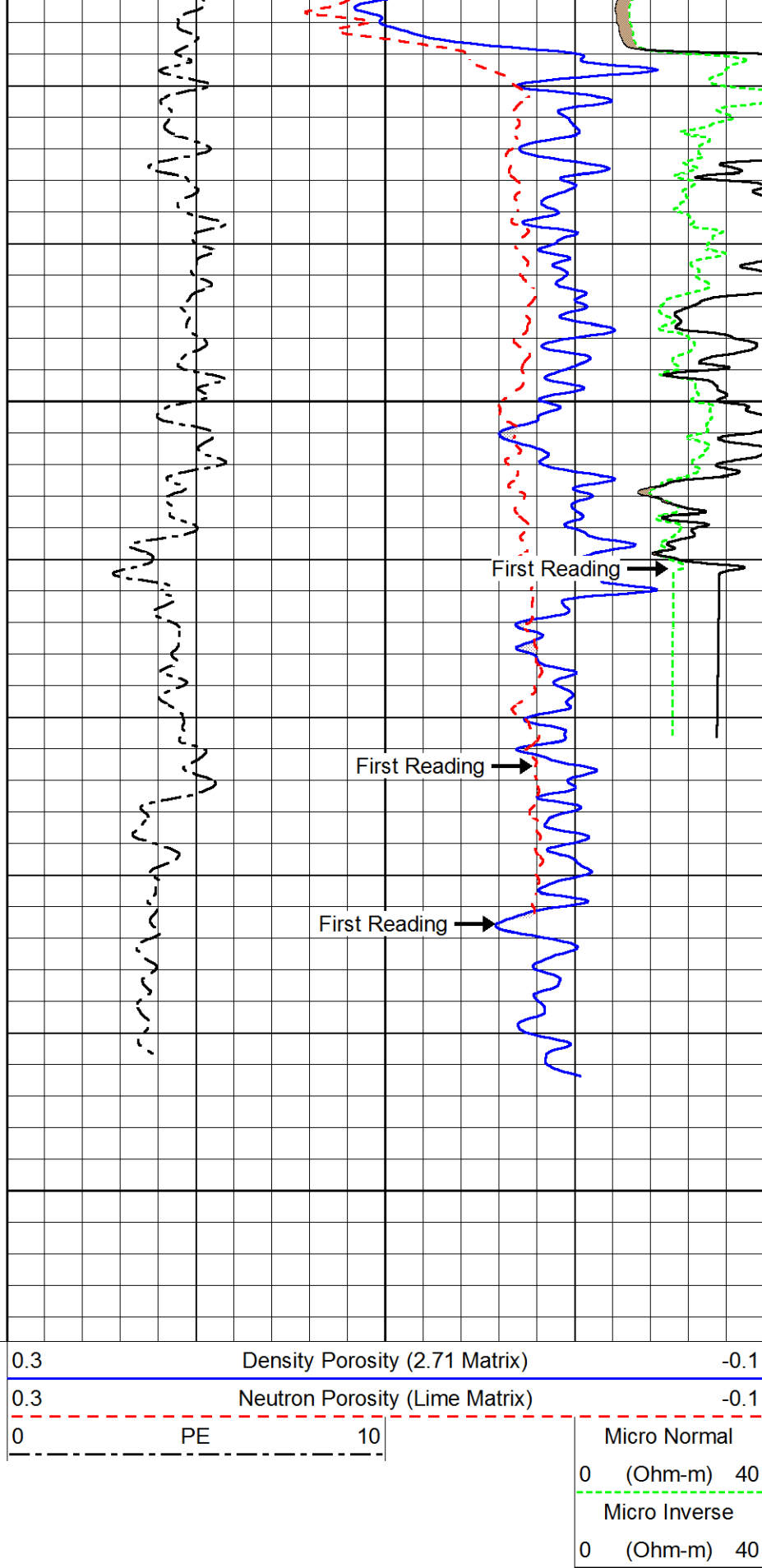


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6300

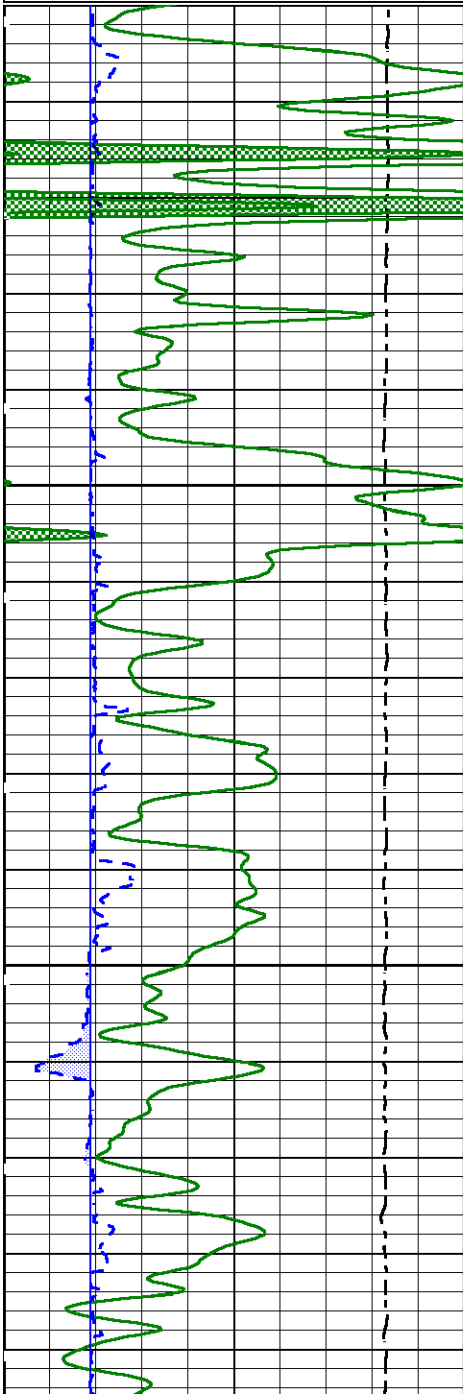


Repeat Pass

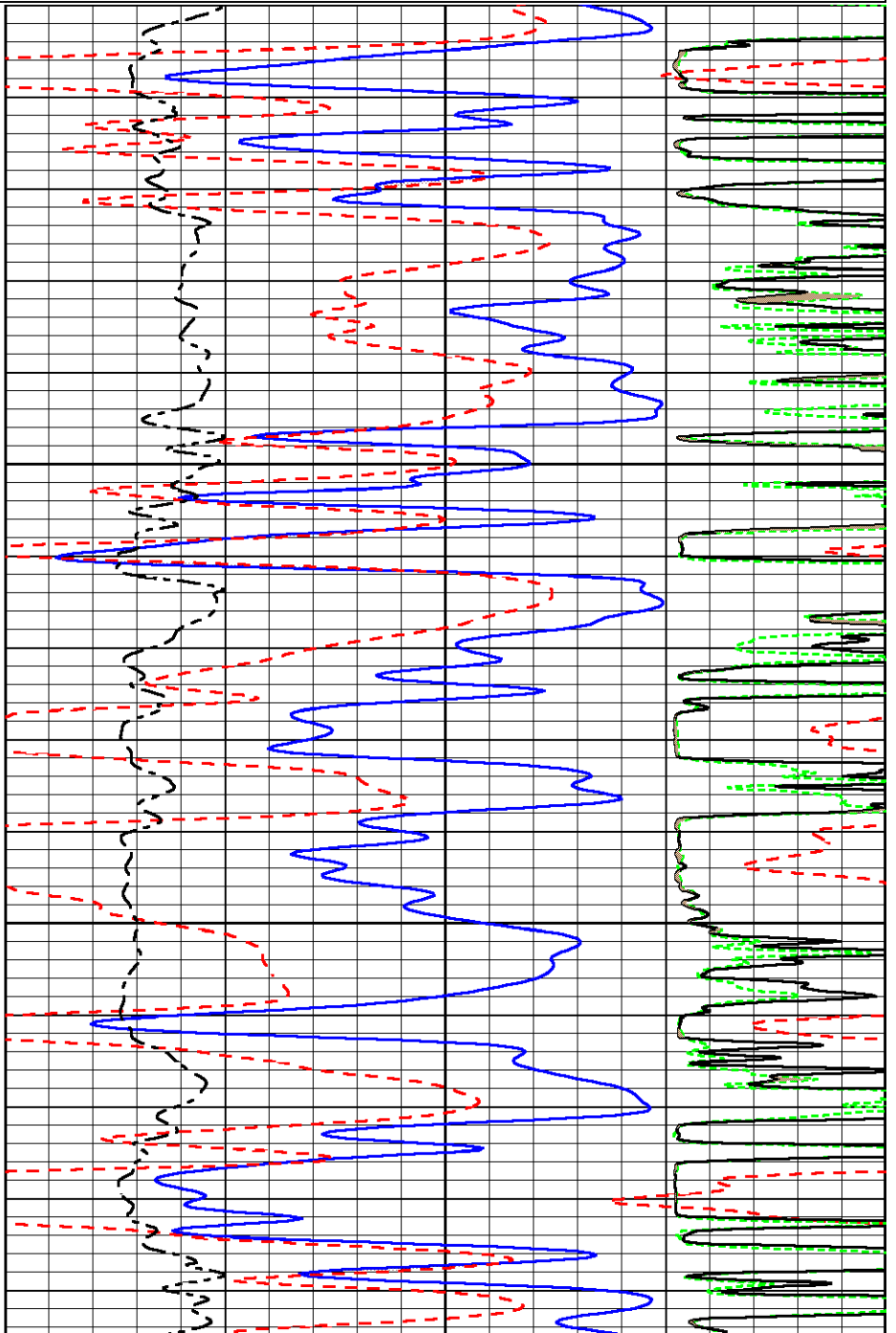
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Charted by Depth in Feet scaled 1:240

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6	Bitsize (in)	16
Line Tension		
10000	(lb)	0

0.3	Density Porosity (2.71 Matrix)	-0.1
0.3	Neutron Porosity (Lime Matrix)	-0.1
0	PE	10
Micro Normal		
0	(Ohm-m)	40
Micro Inverse		
0	(Ohm-m)	40



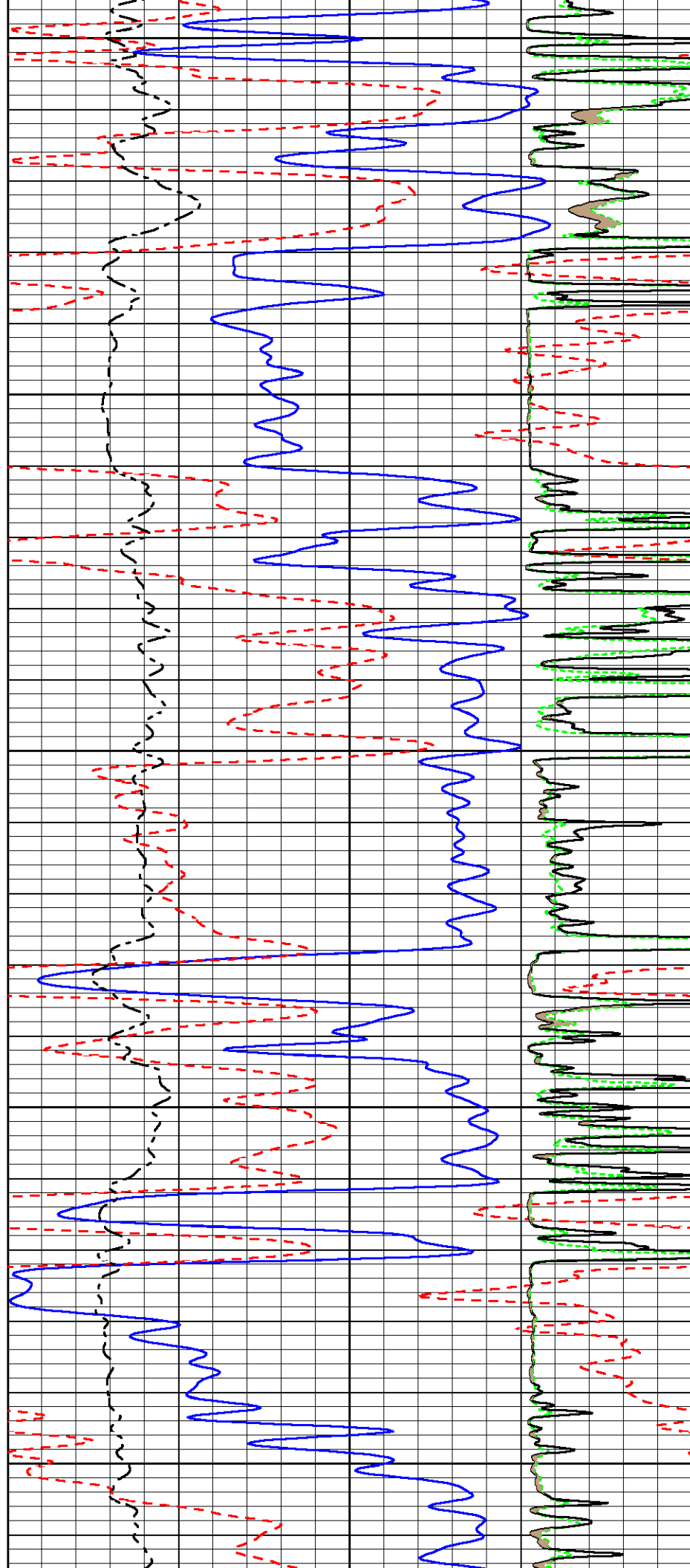
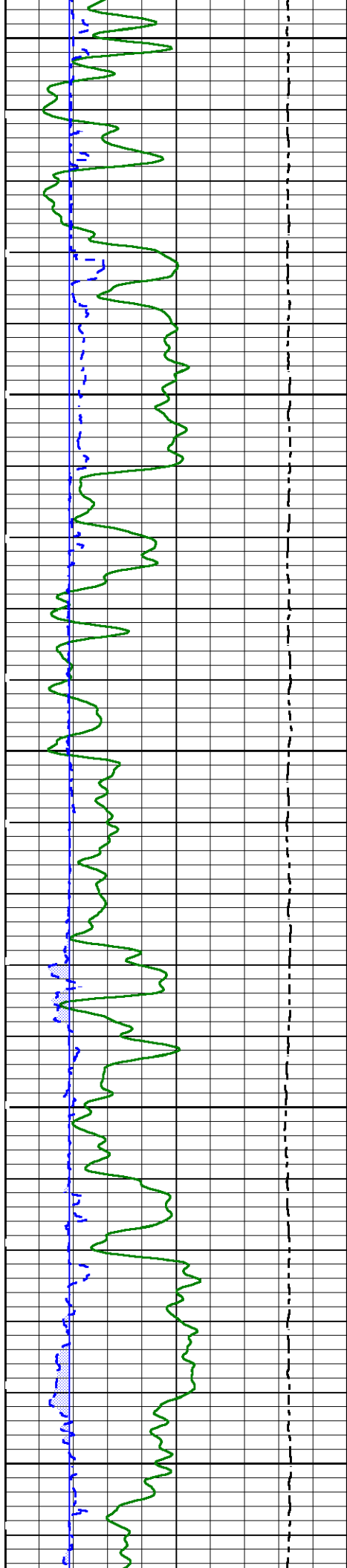
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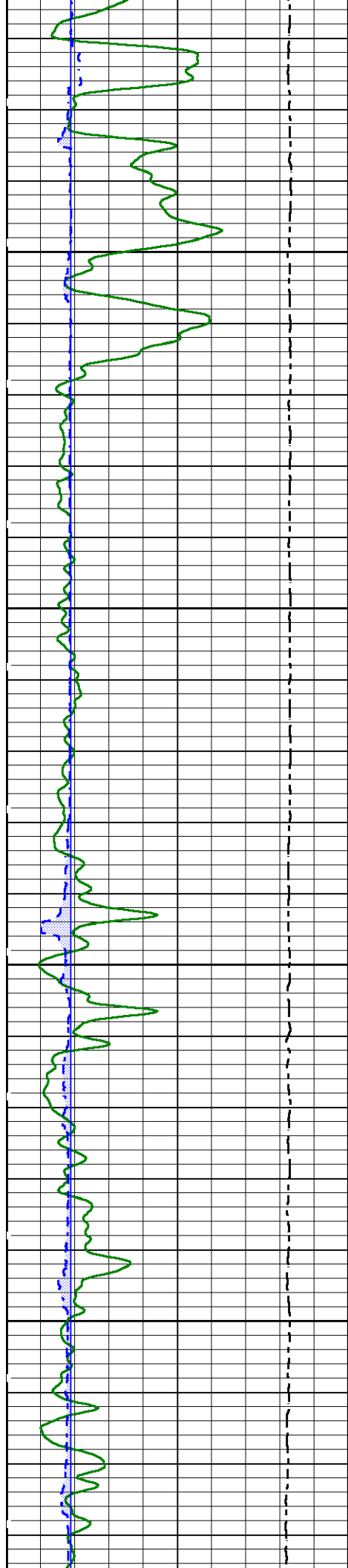


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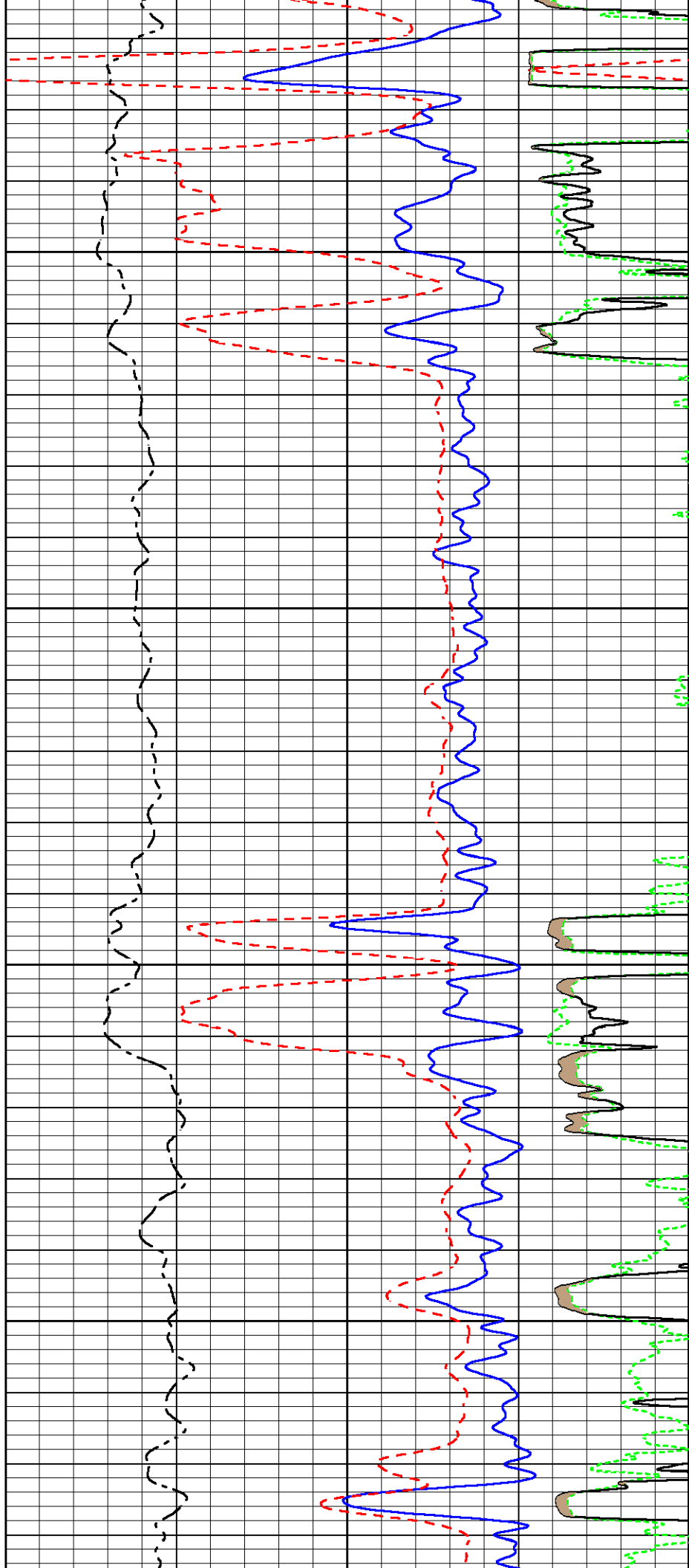
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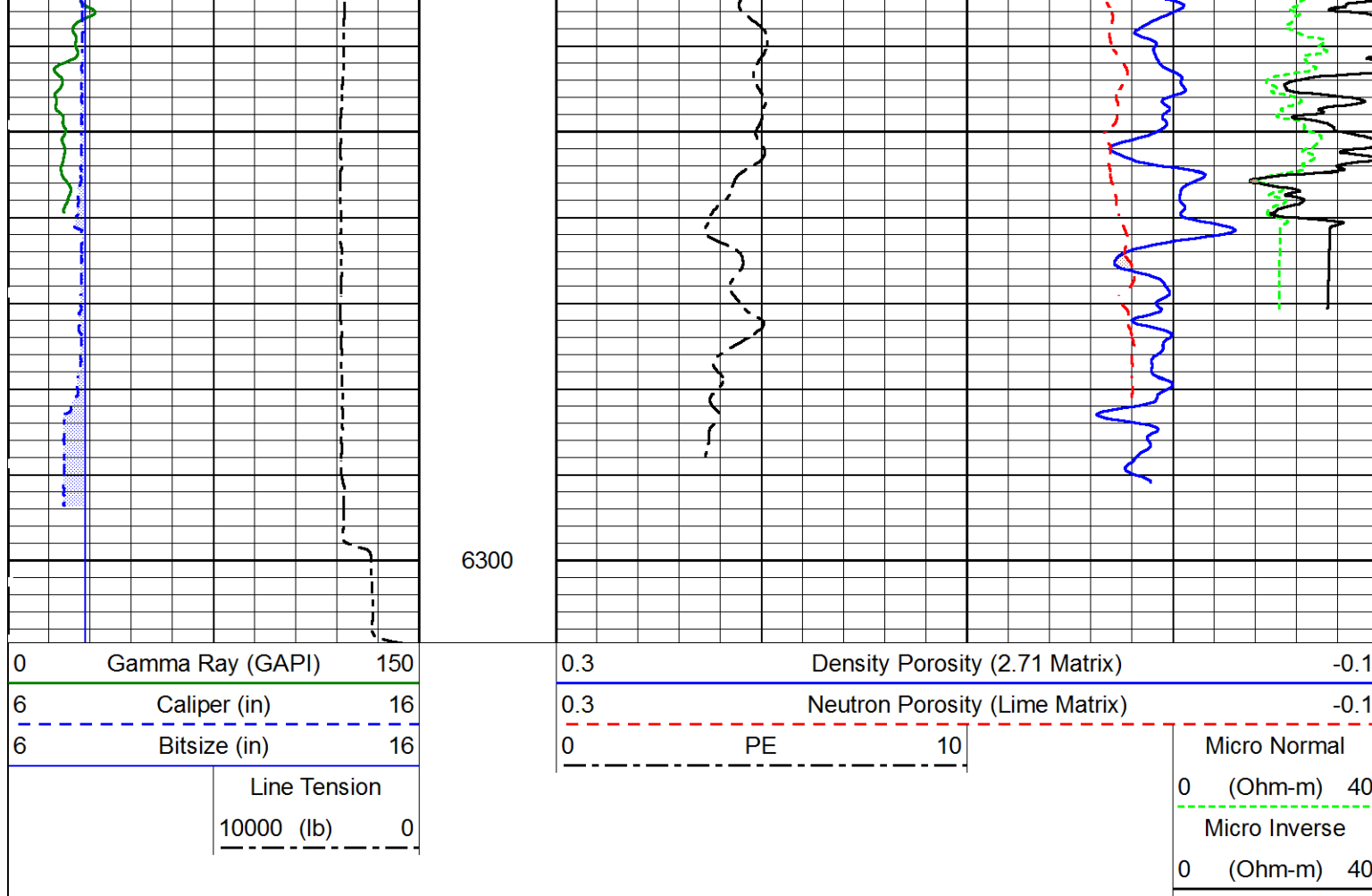




6100

6200





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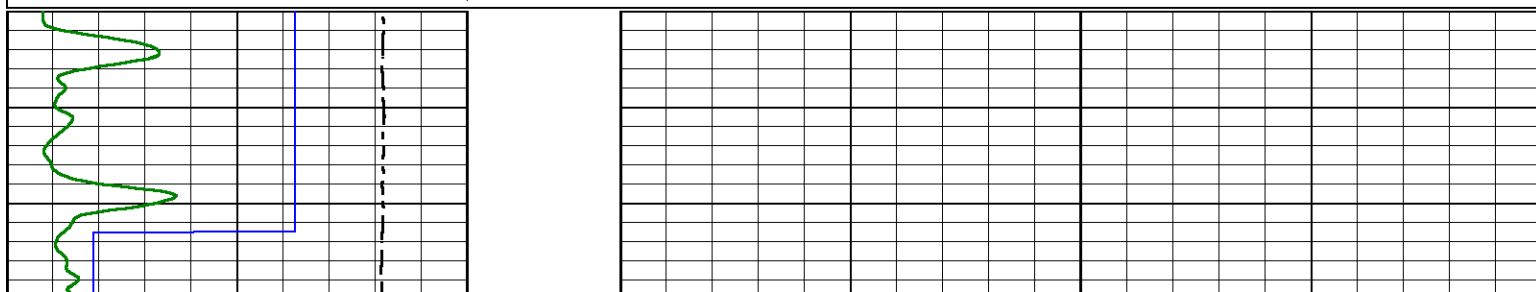
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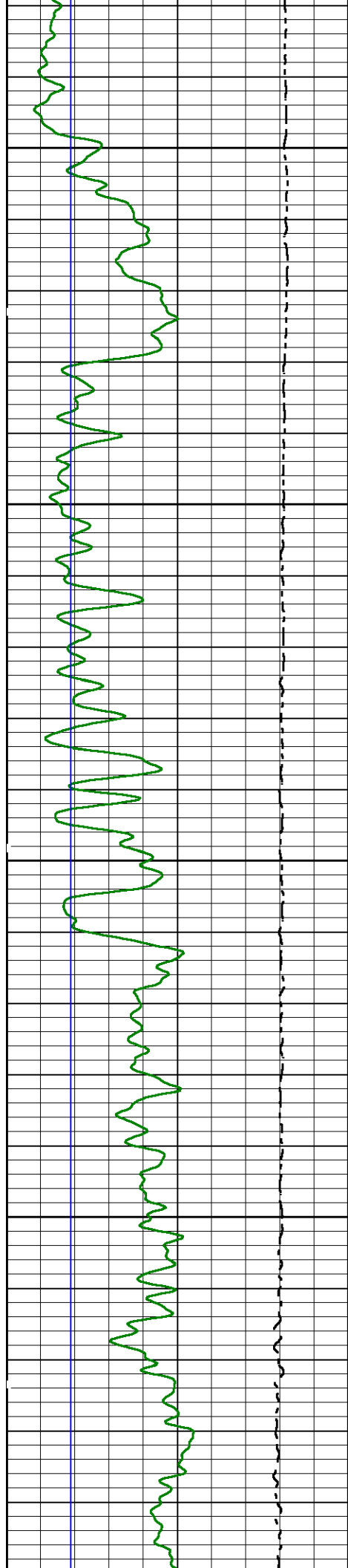
WIRELINE
LOGGING
SOLUTIONS

Main Pass

Database File obrien_keystone_6-4.db
Dataset Pathname MainPass
Presentation Format OKC-BU~2
Dataset Creation Mon May 18 03:39:43 2020
Charted by Depth in Feet scaled 1:240

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6	Caliper (in)	16	0	PE	10
10000	Line Tension (lb)	0	-0.25	Density Correction (g/cc)	0.25
6	Bit Size (in)	16			

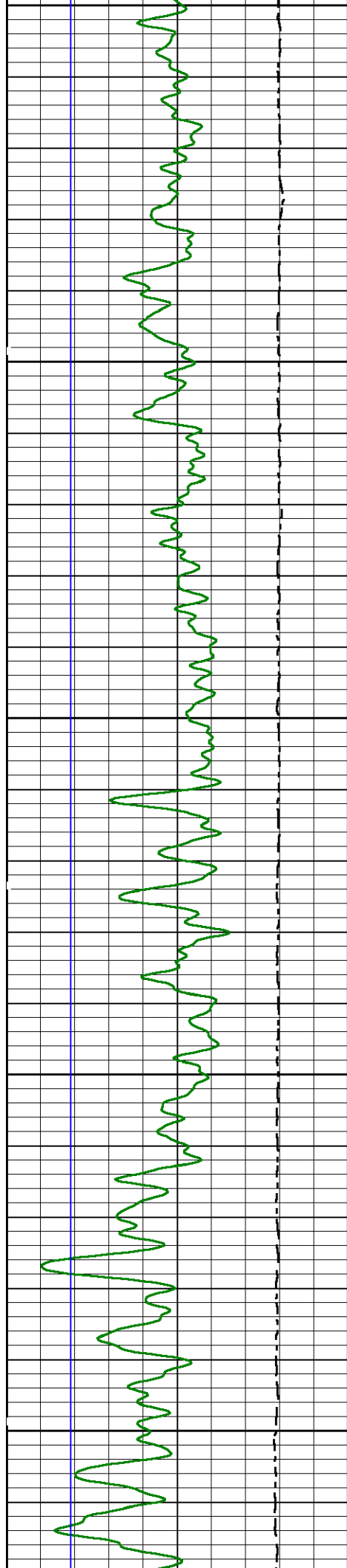




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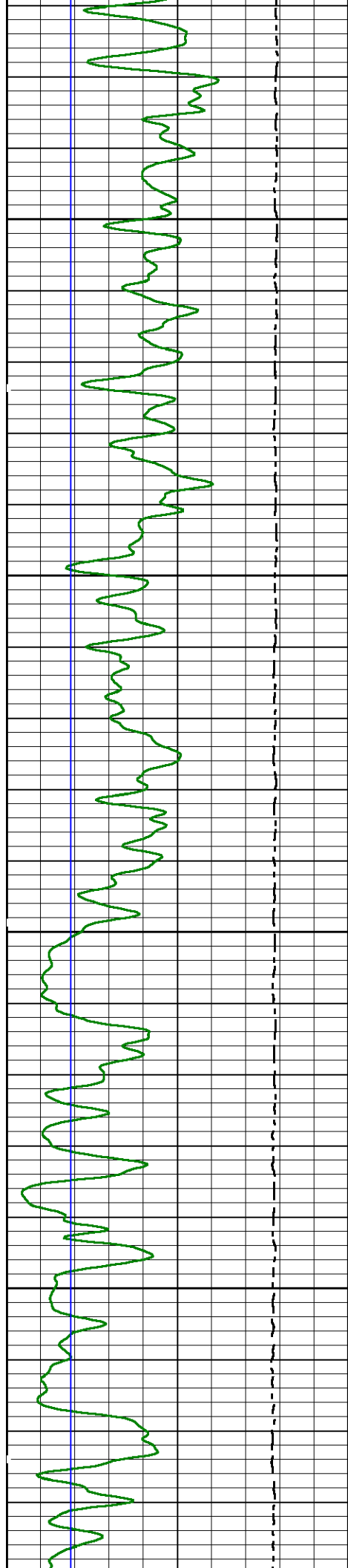
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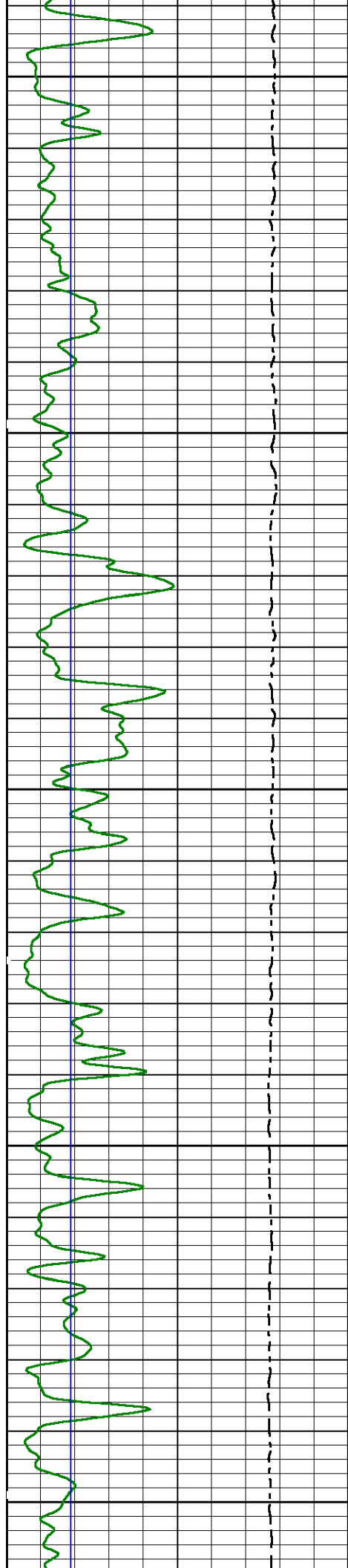
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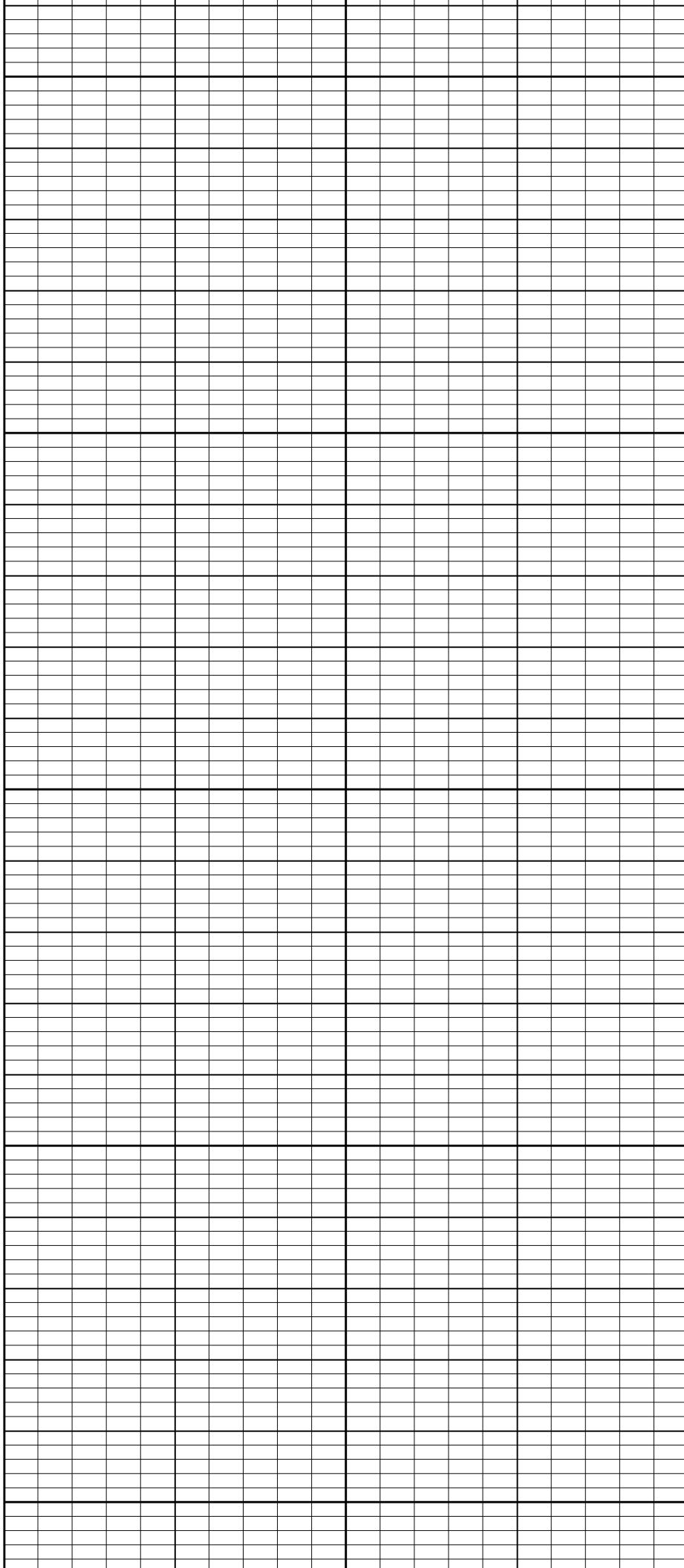
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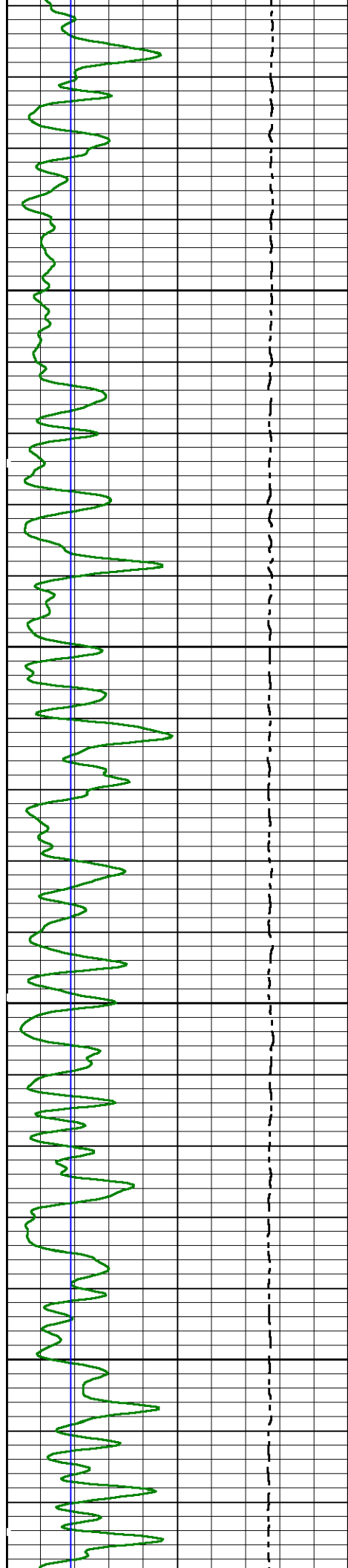
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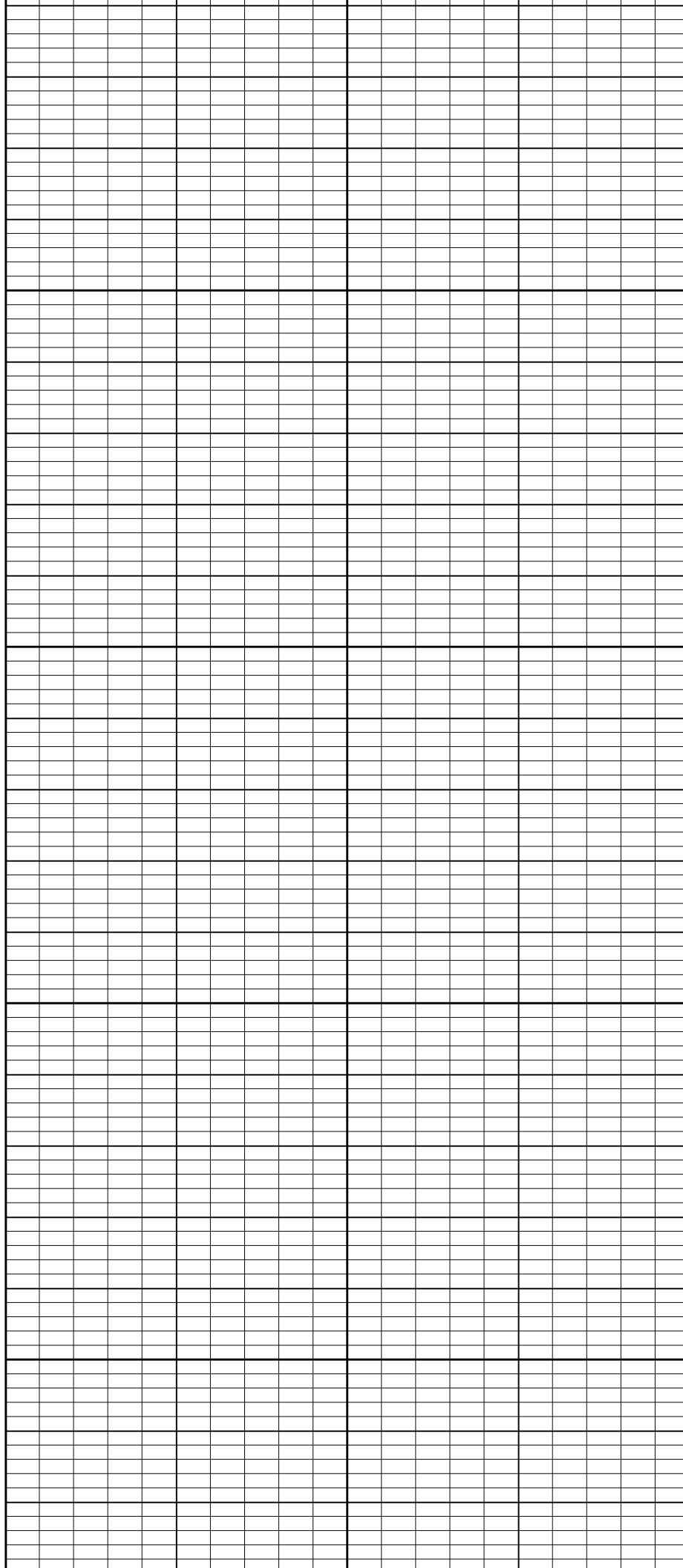
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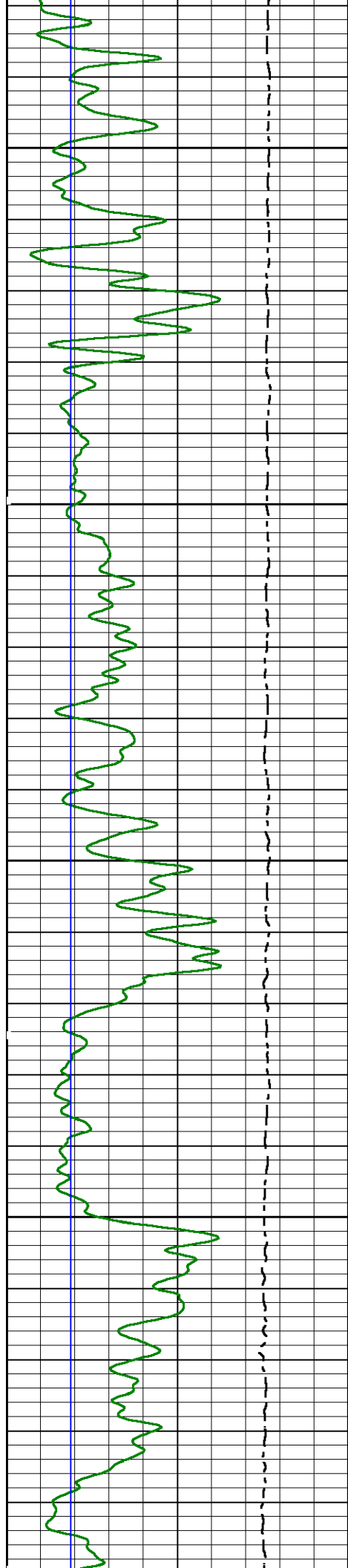




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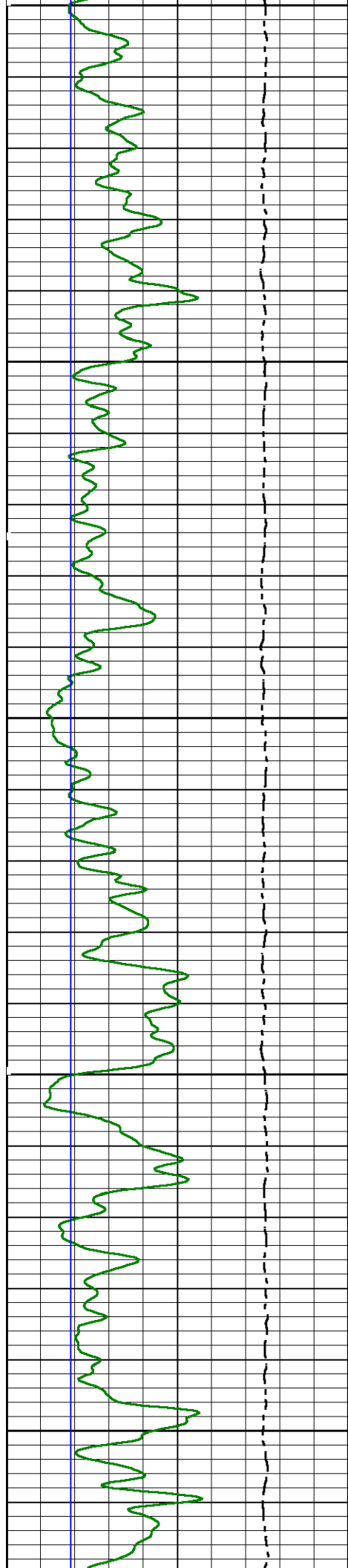




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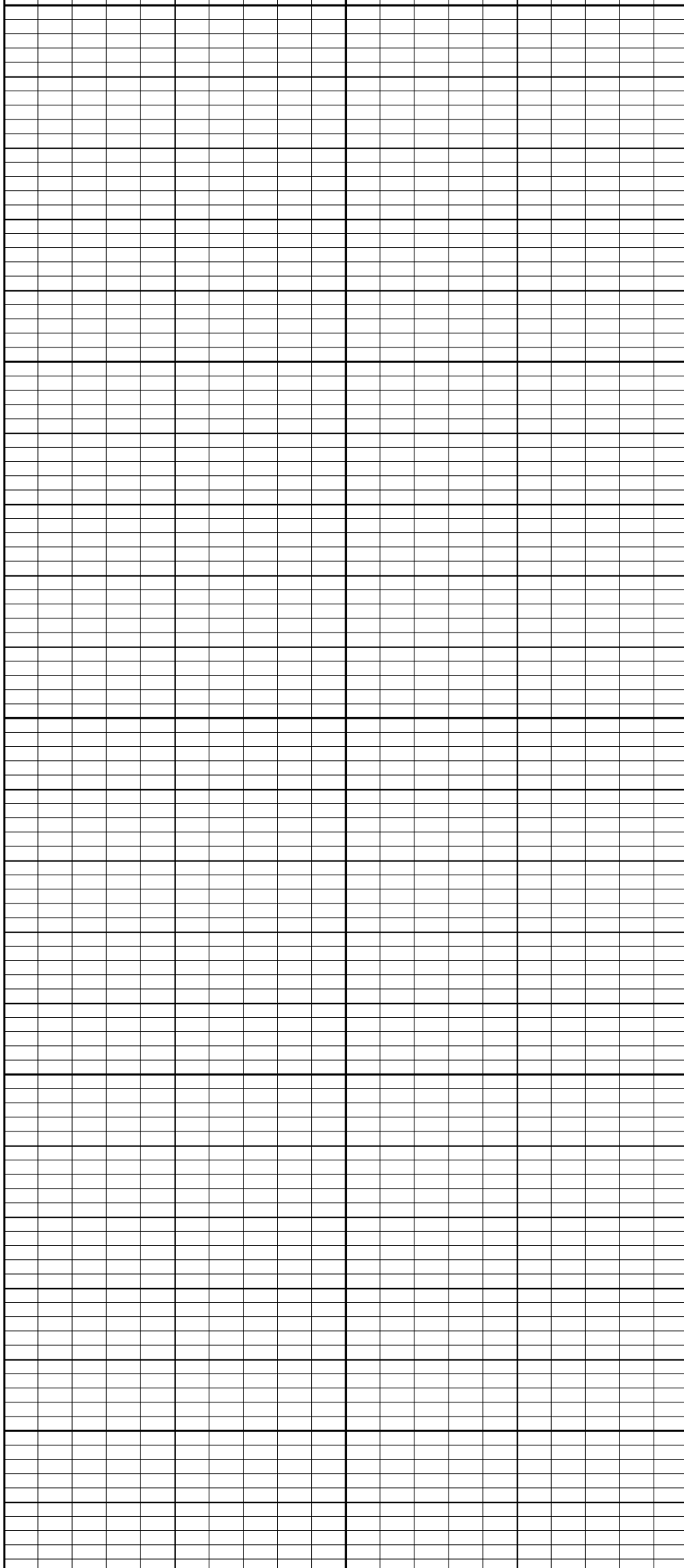
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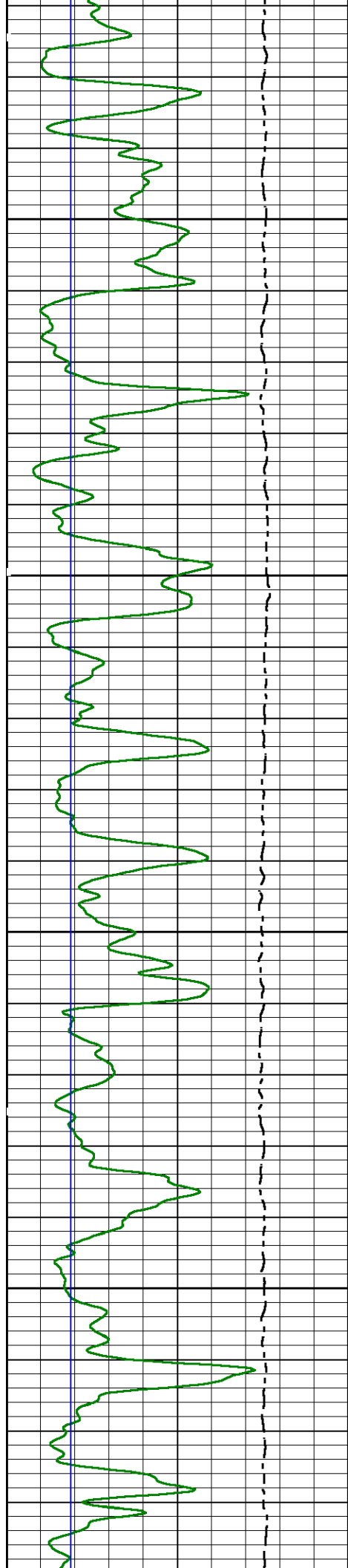


2900

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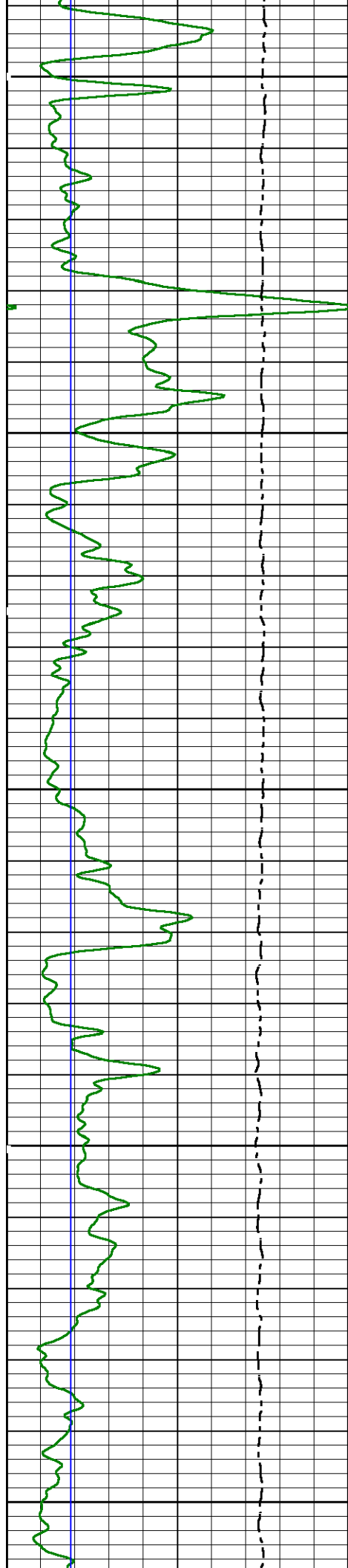
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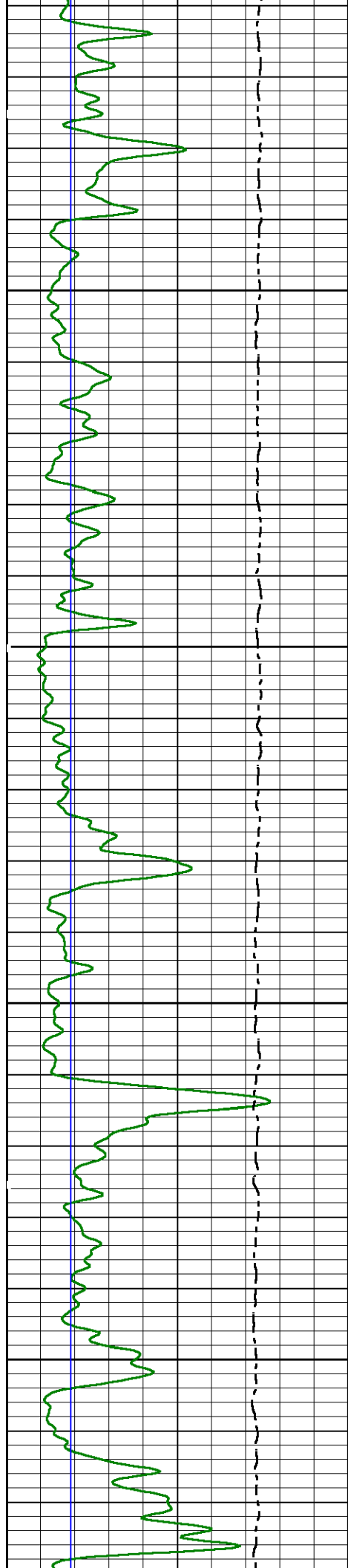
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3300



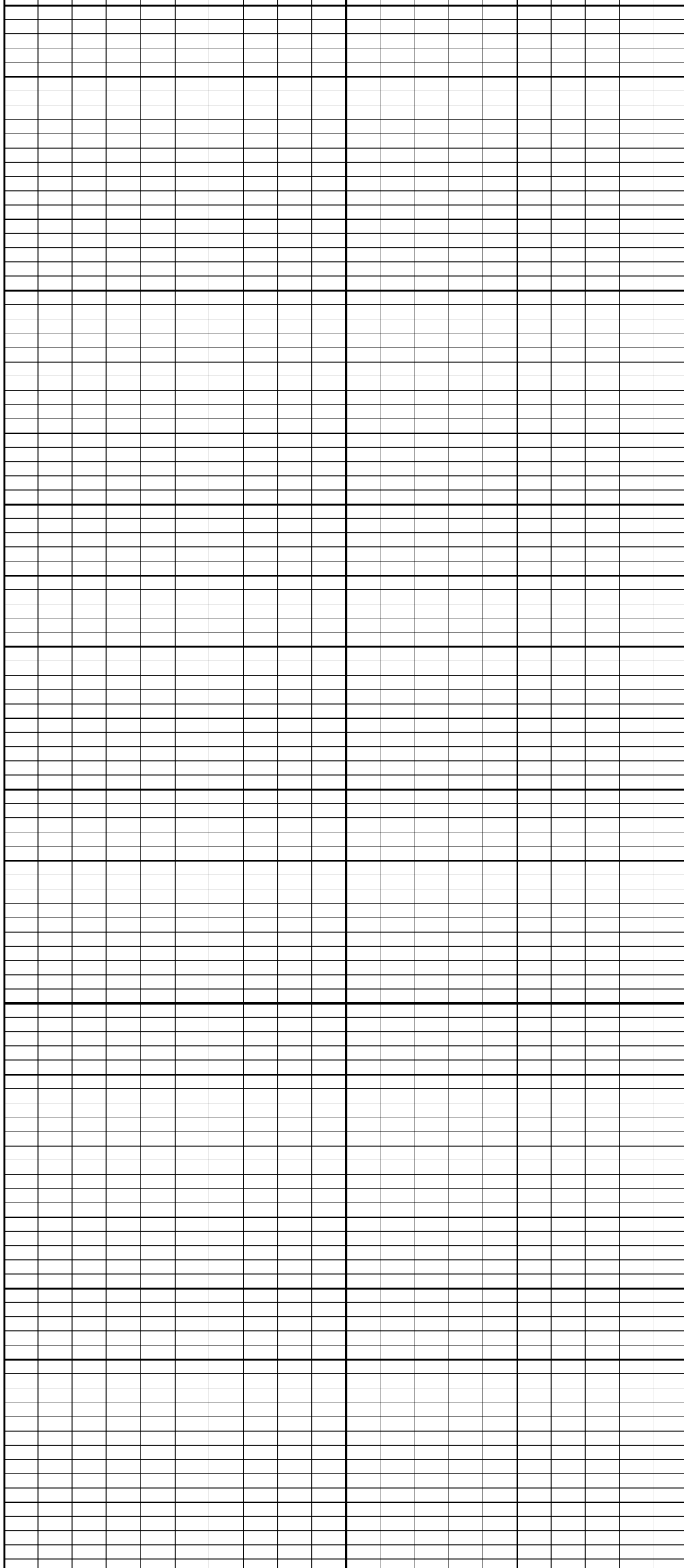
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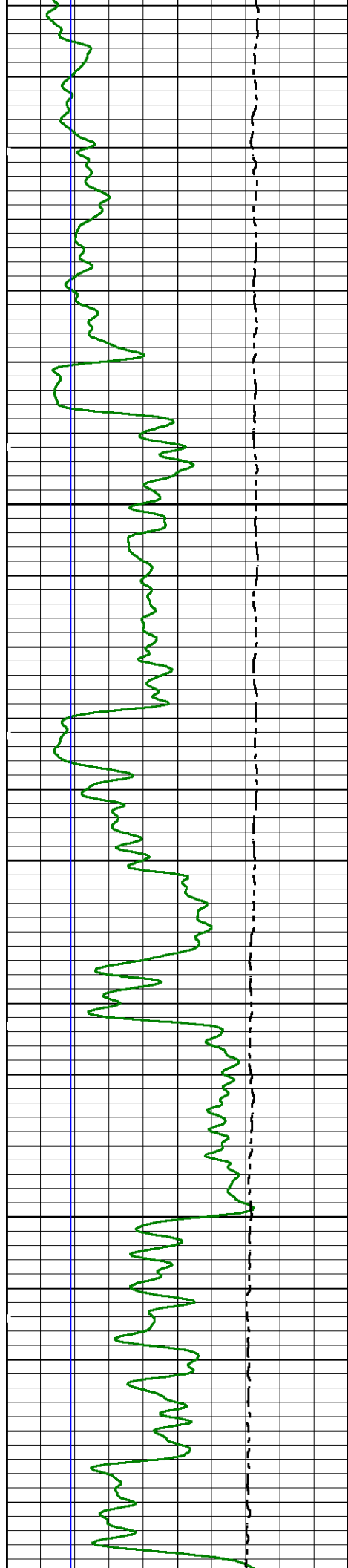
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3600

3700





3800

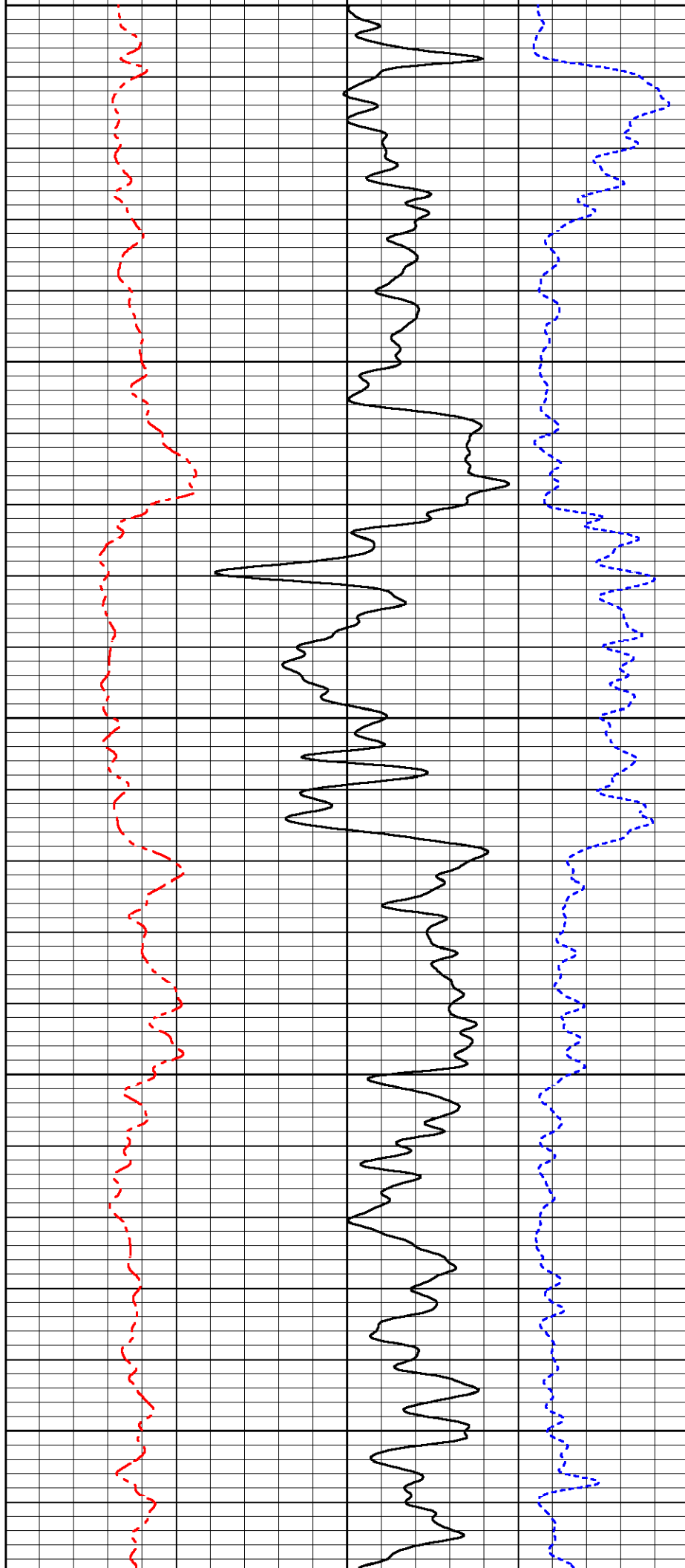
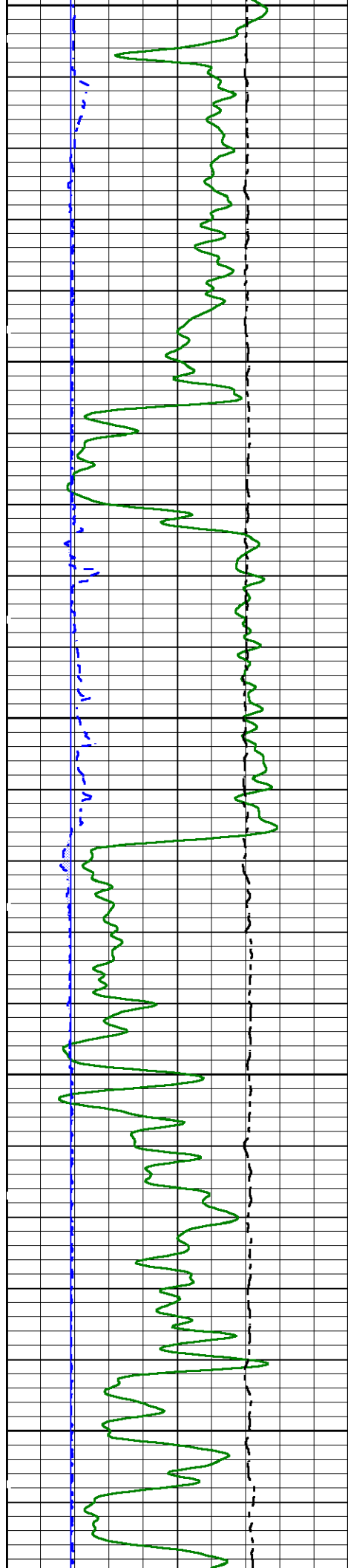
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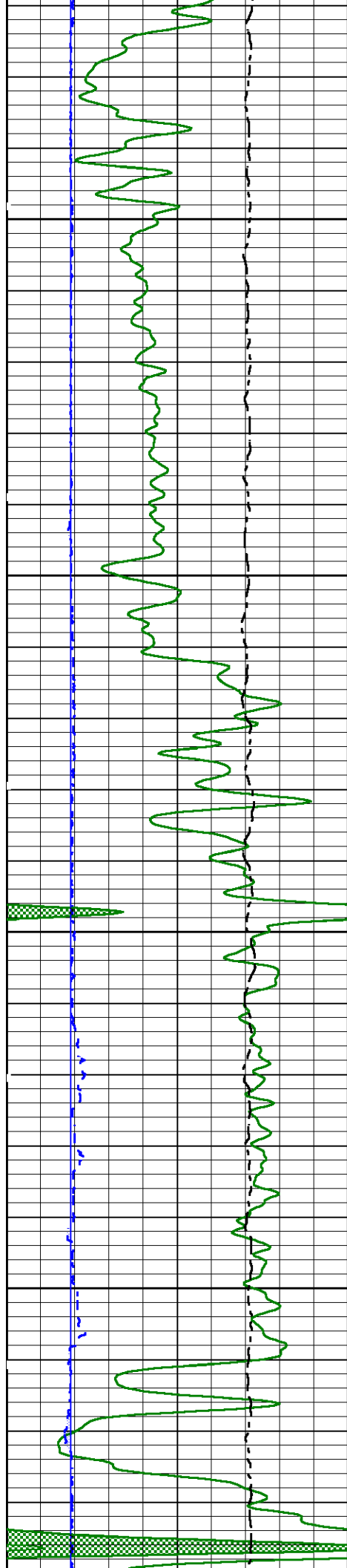
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4000

4100

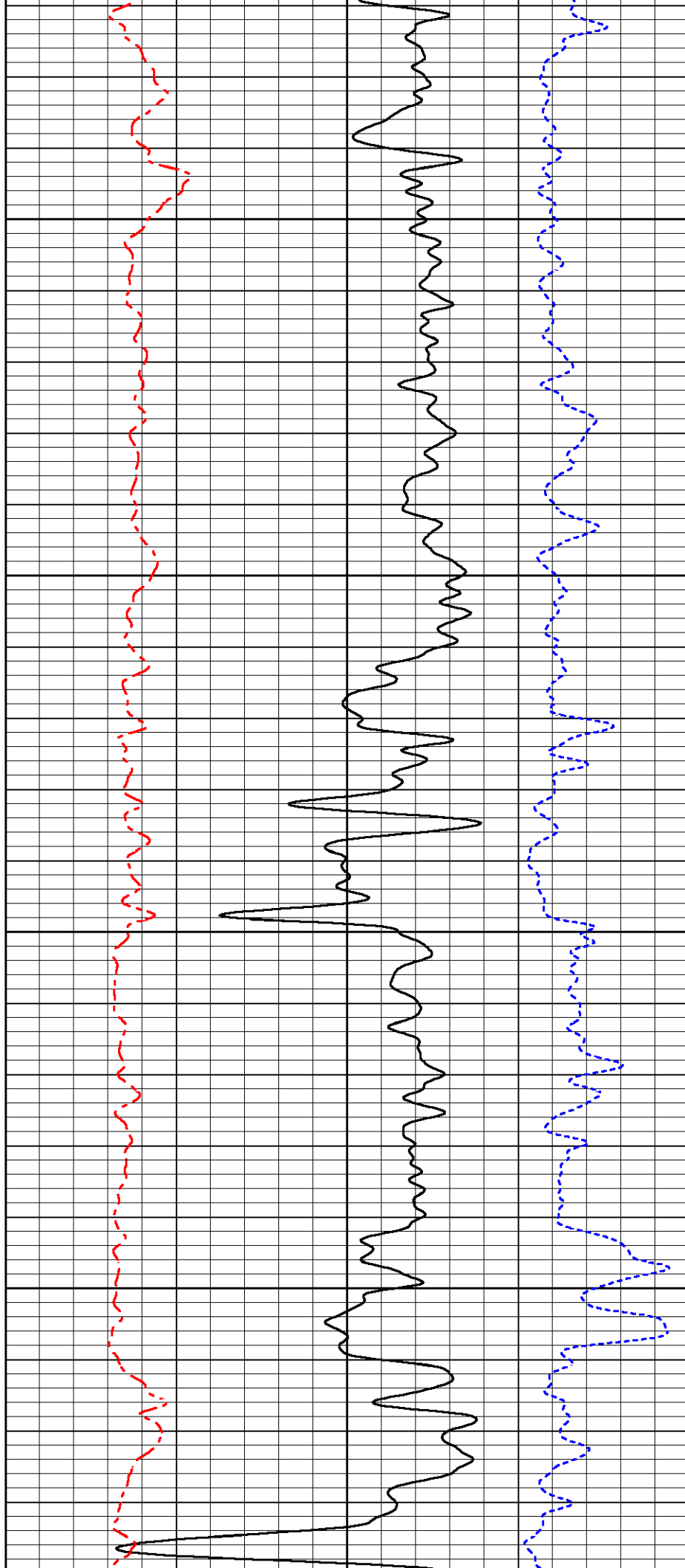
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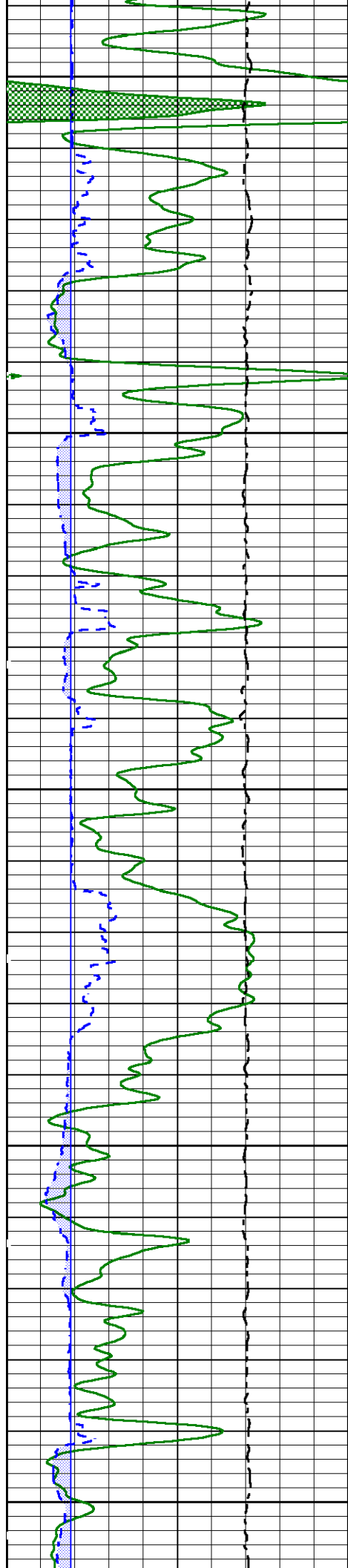




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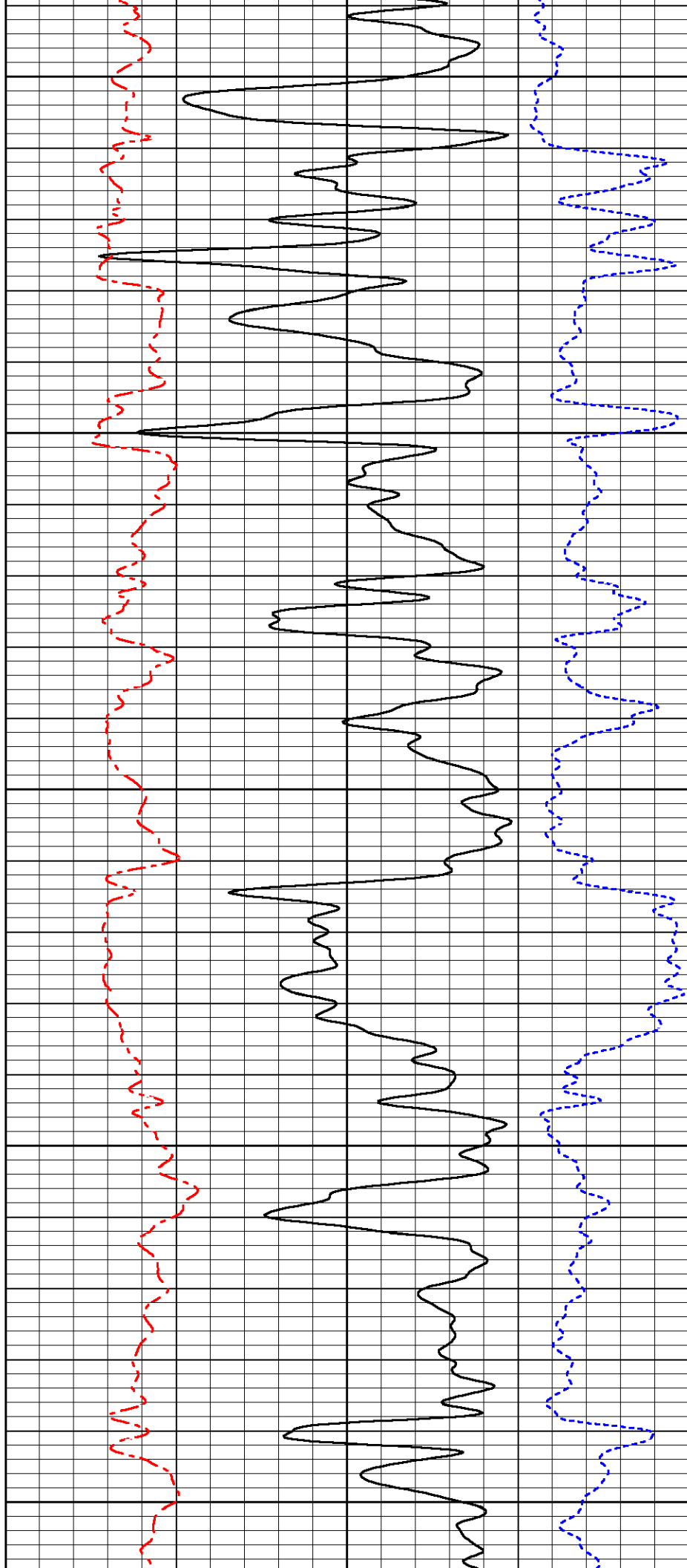
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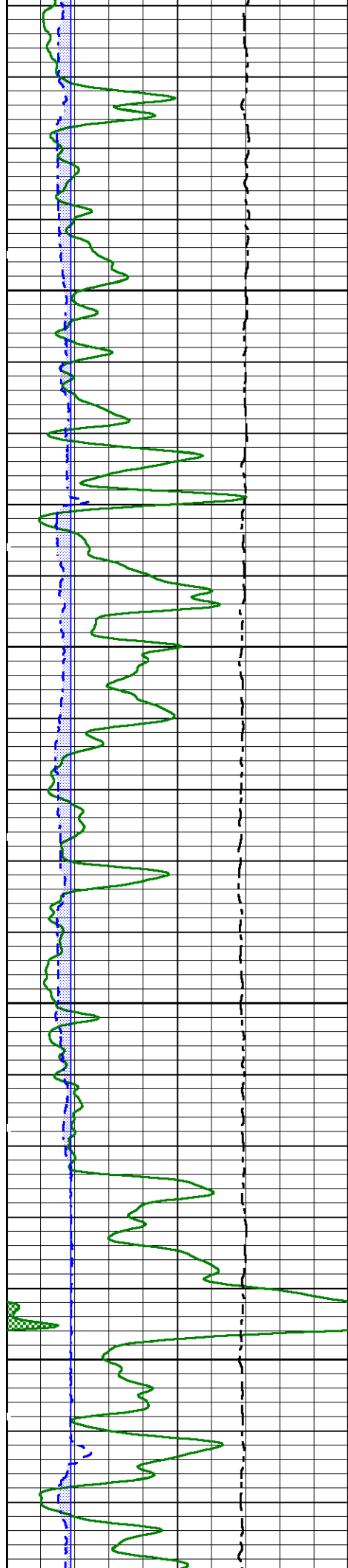




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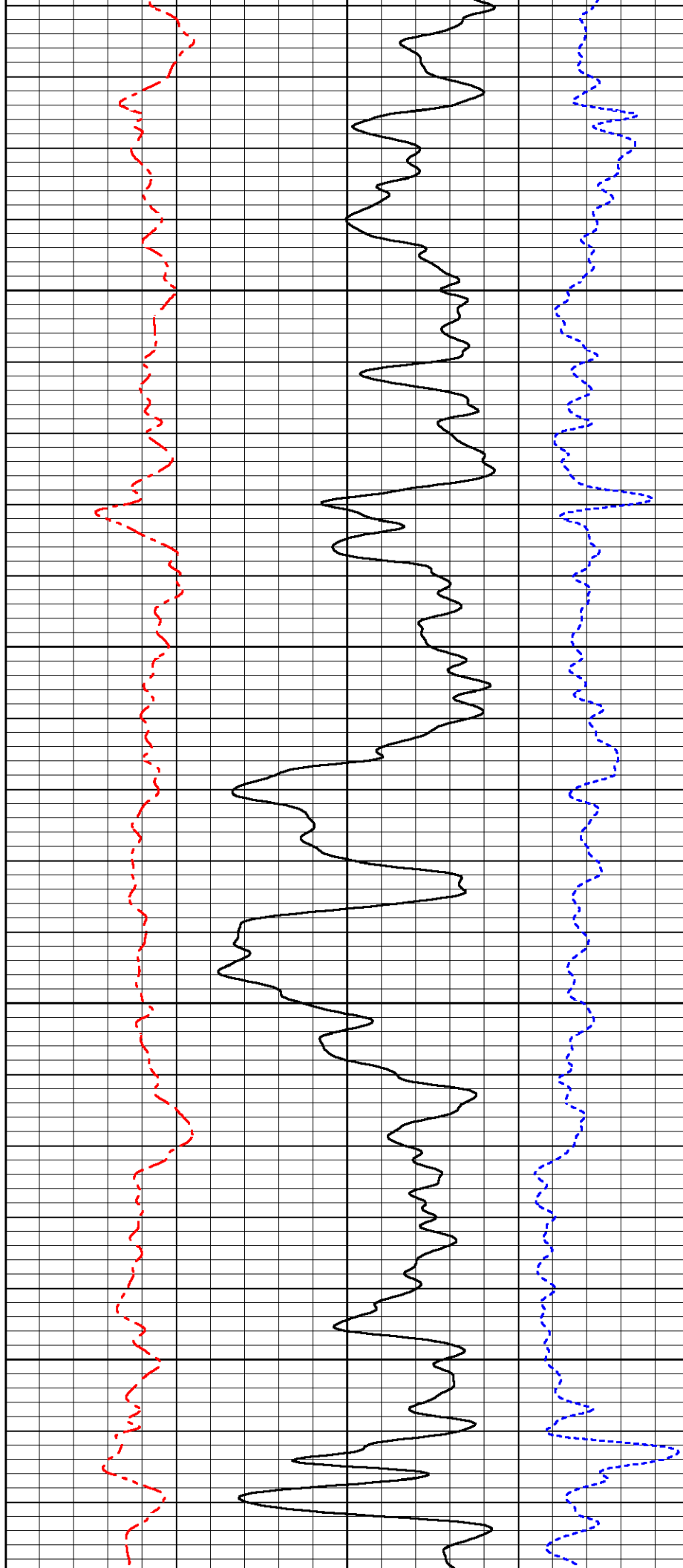
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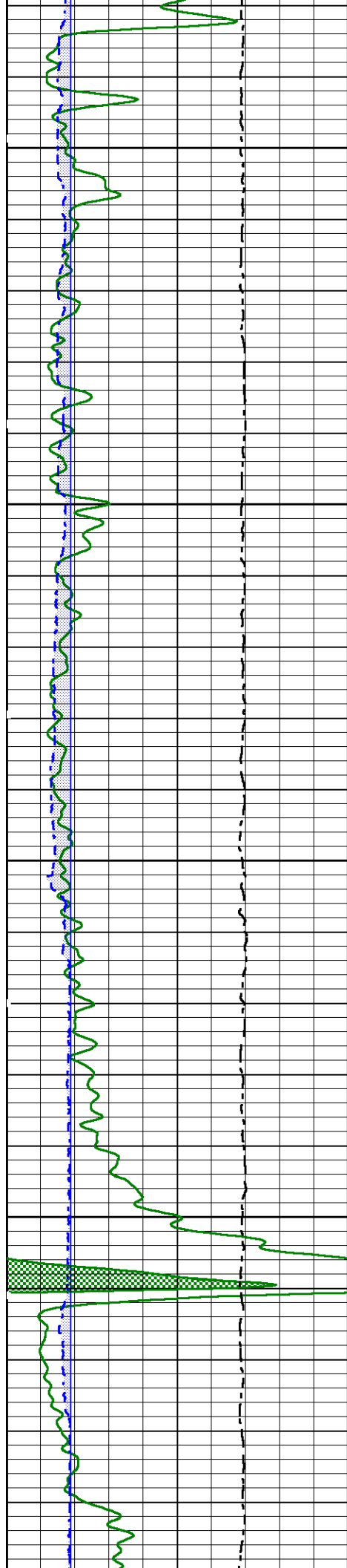




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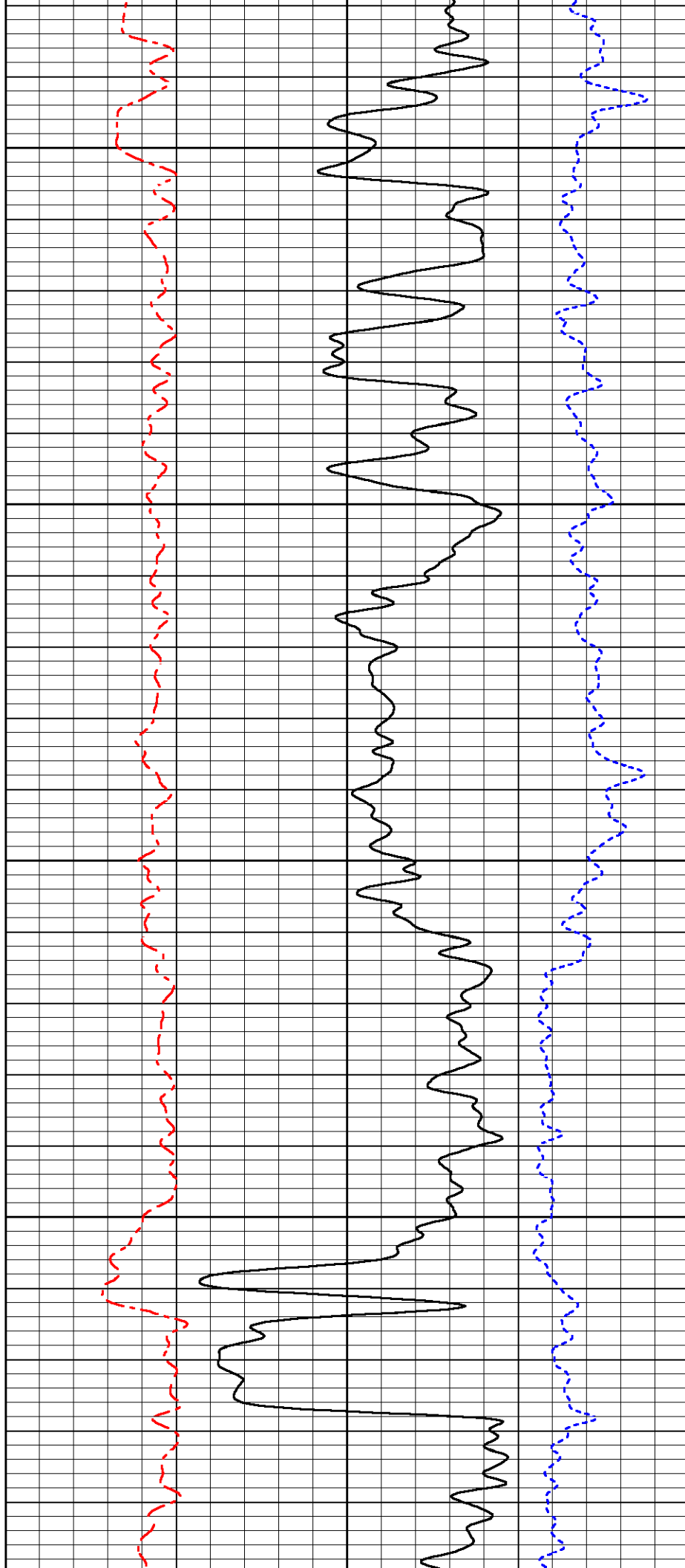




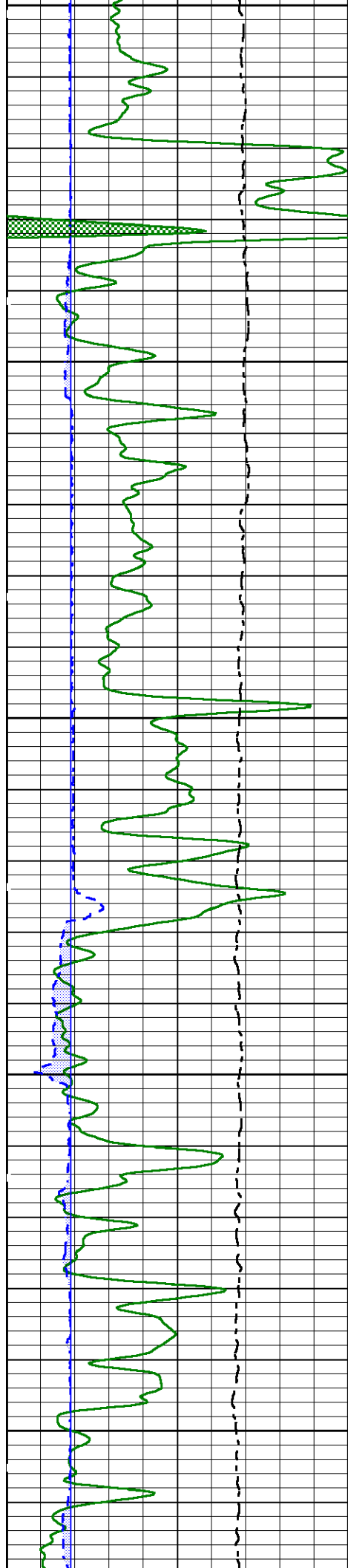
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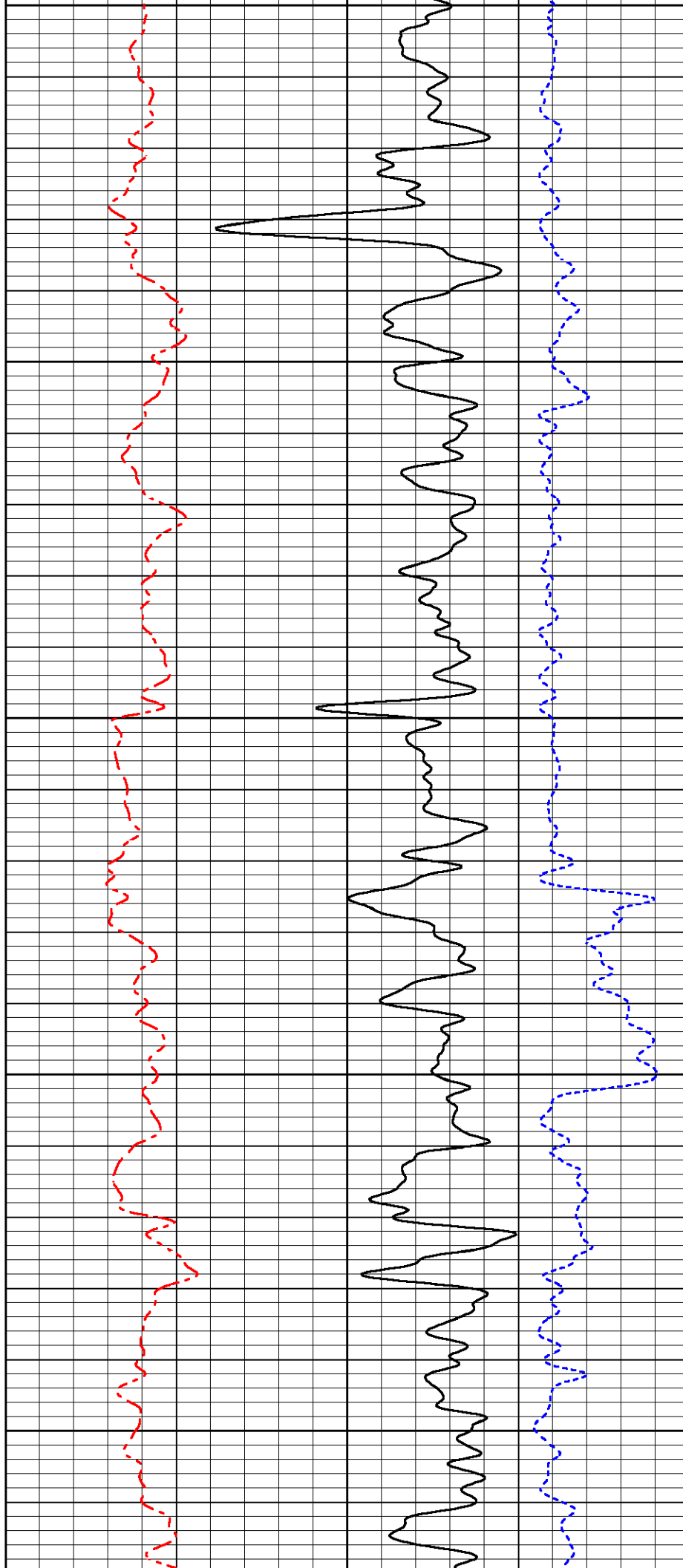
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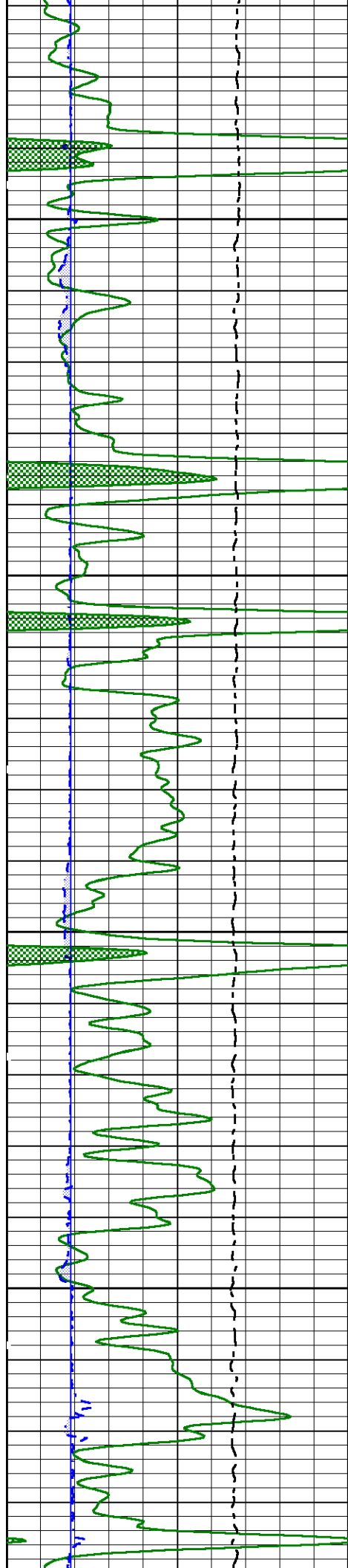
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5200

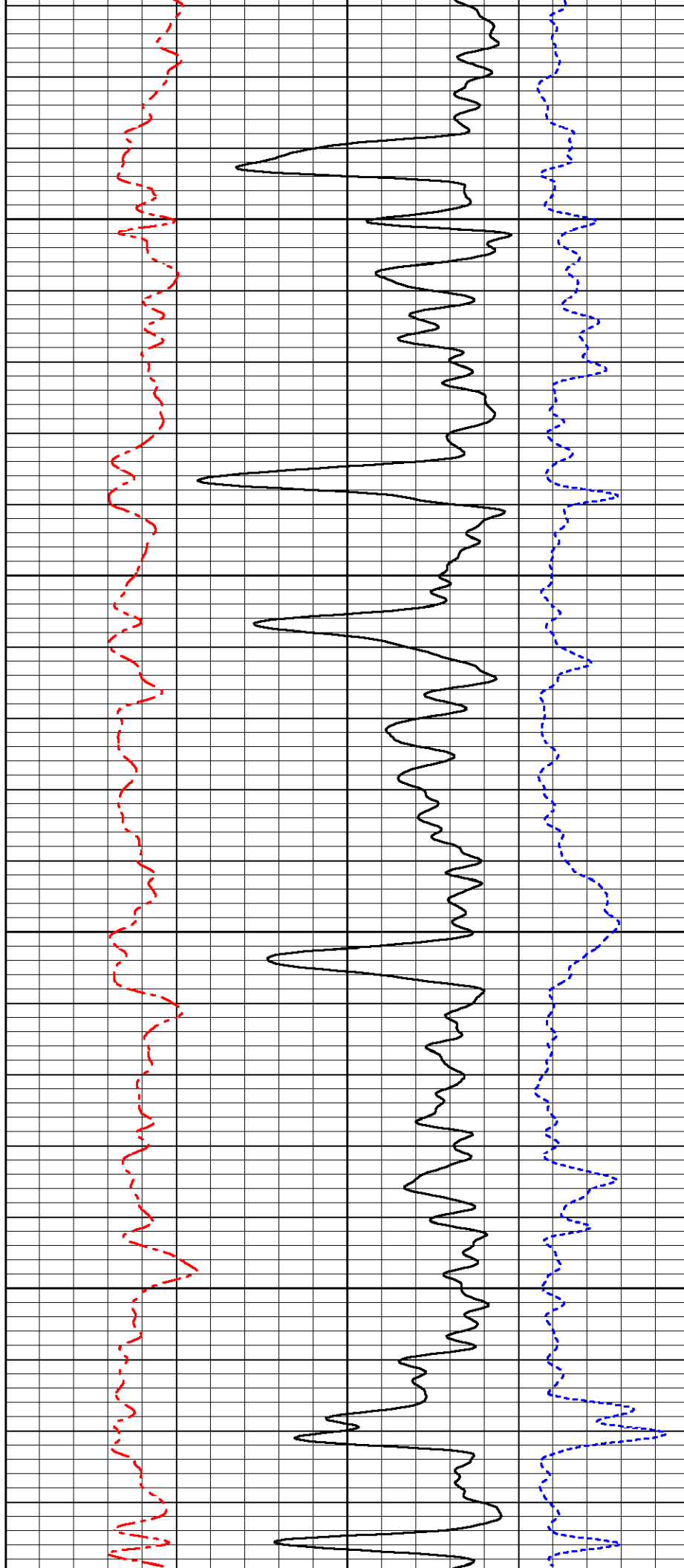


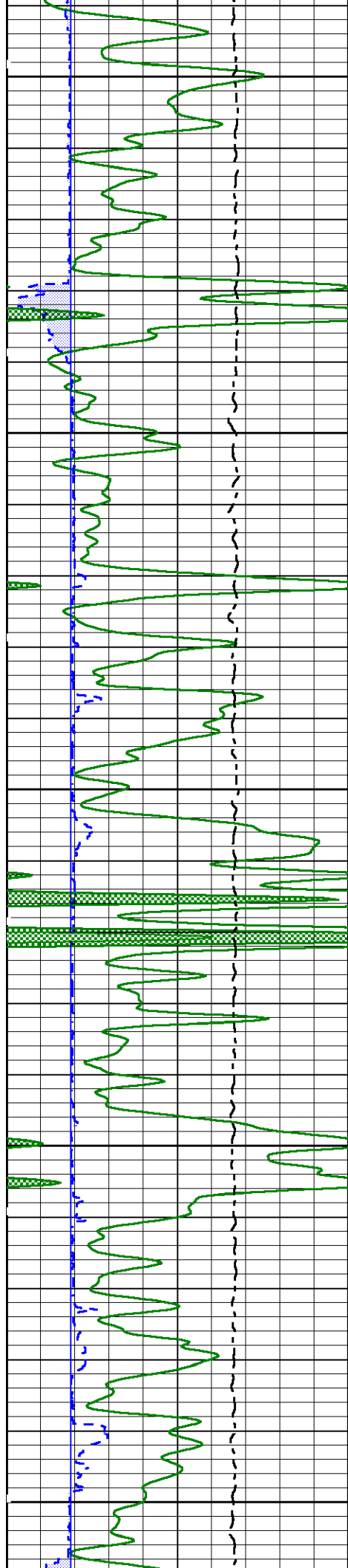
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5400

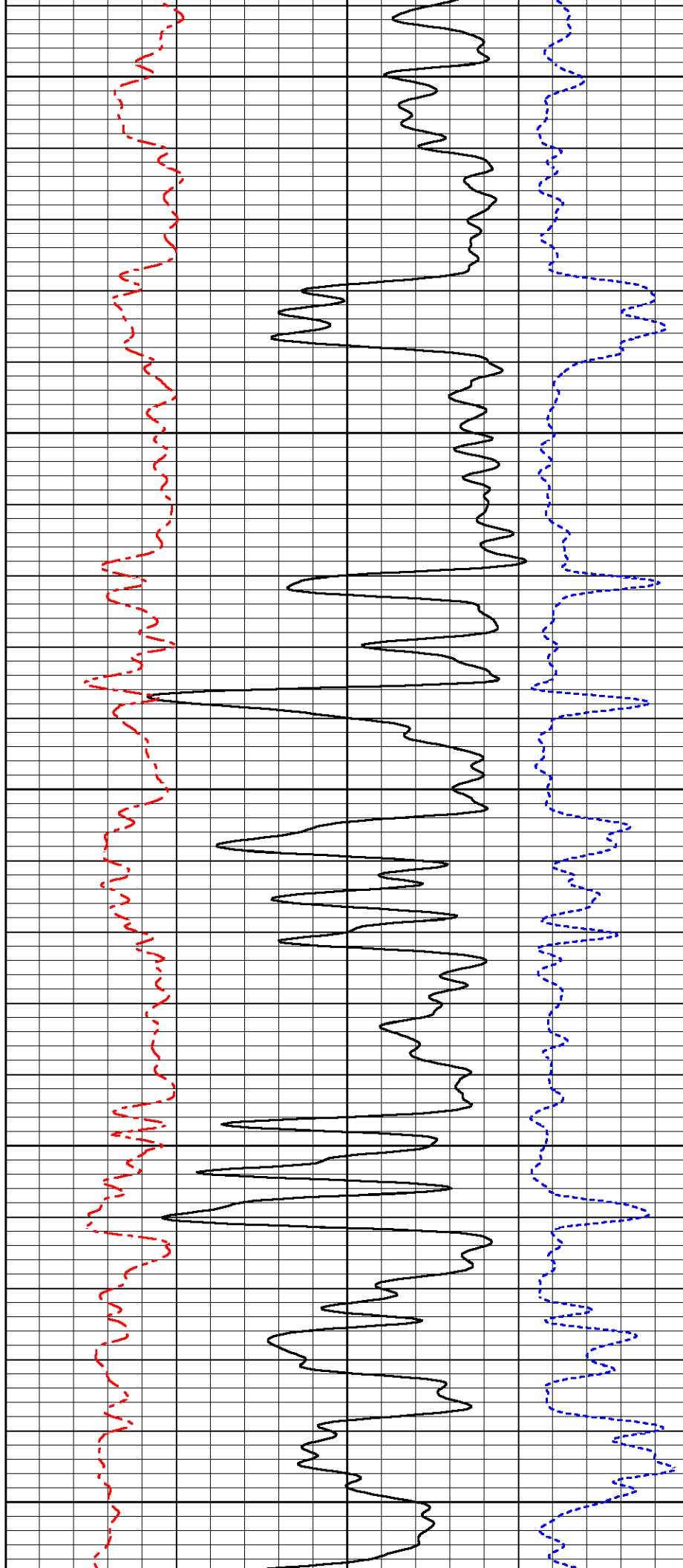
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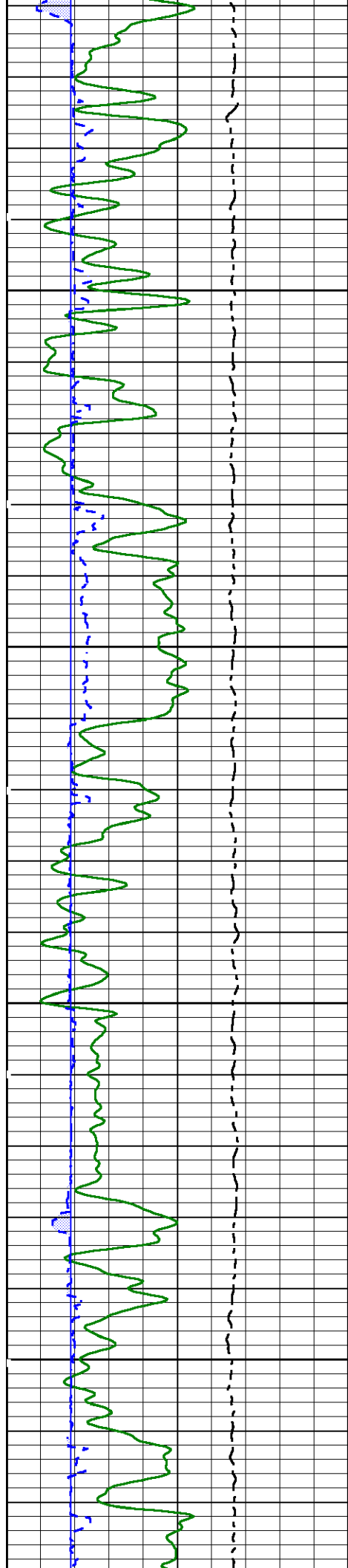




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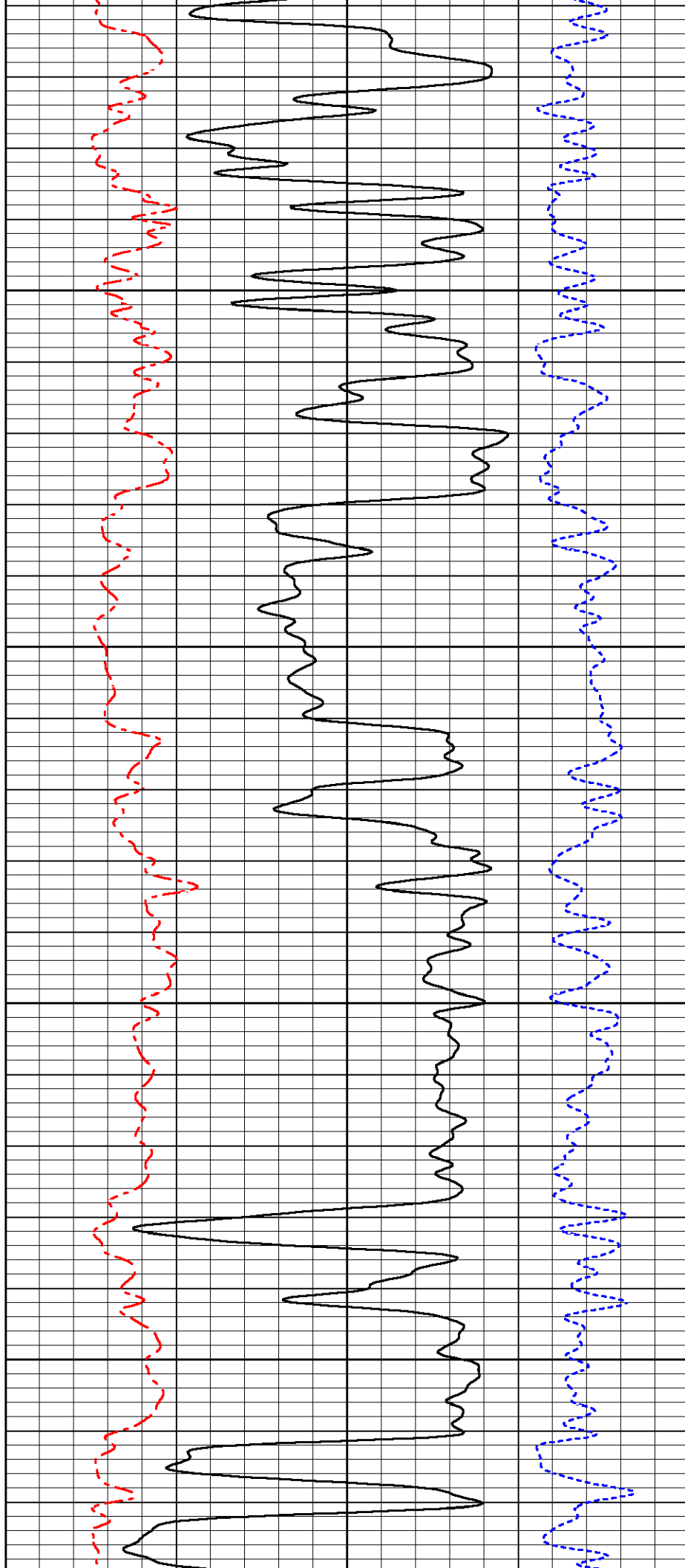
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5800

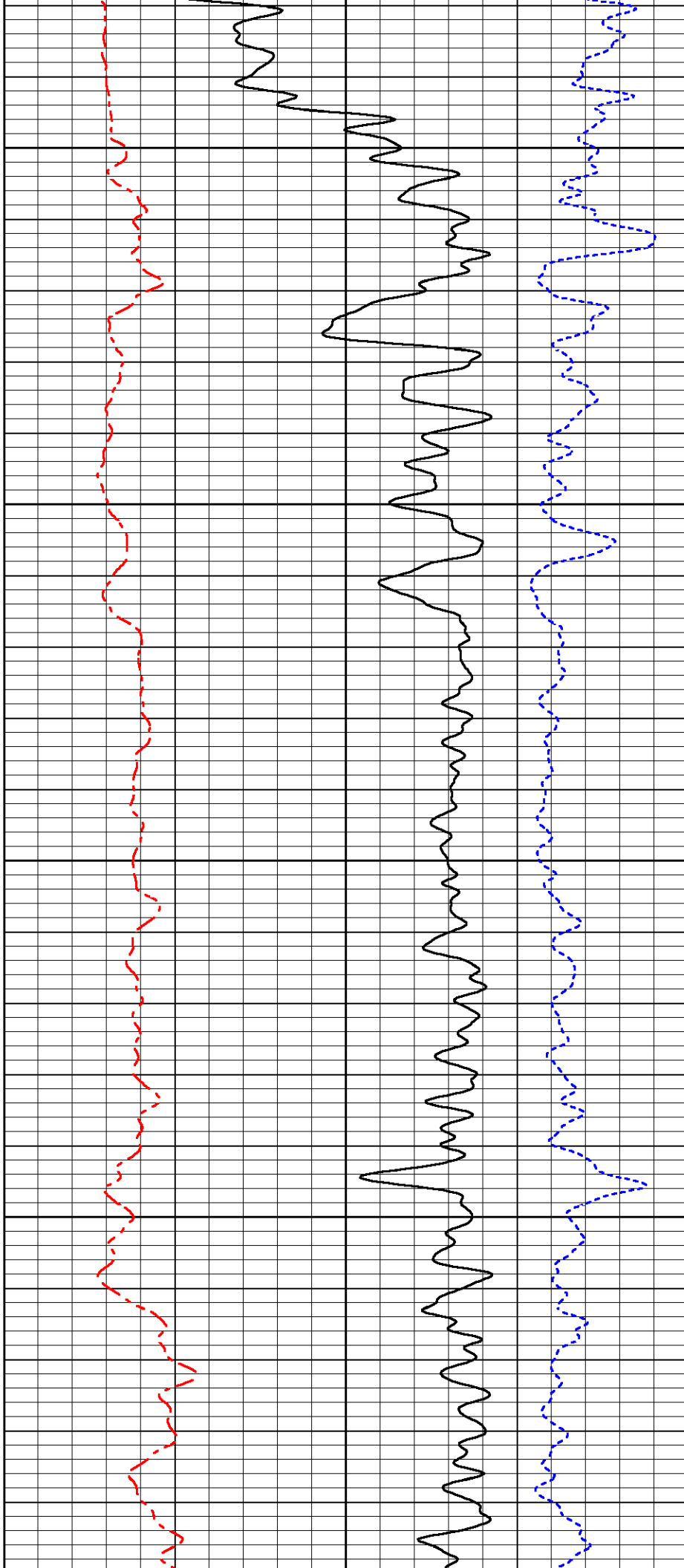
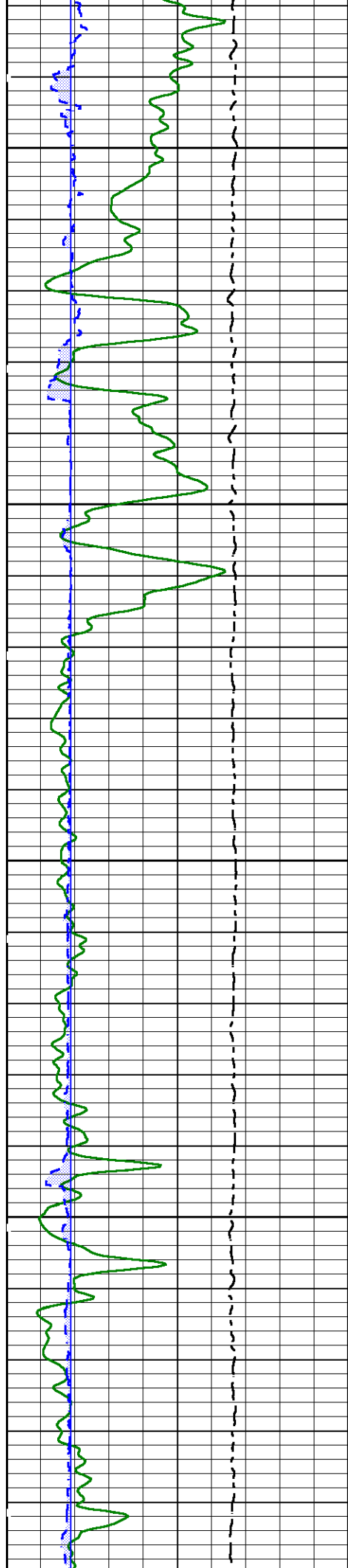
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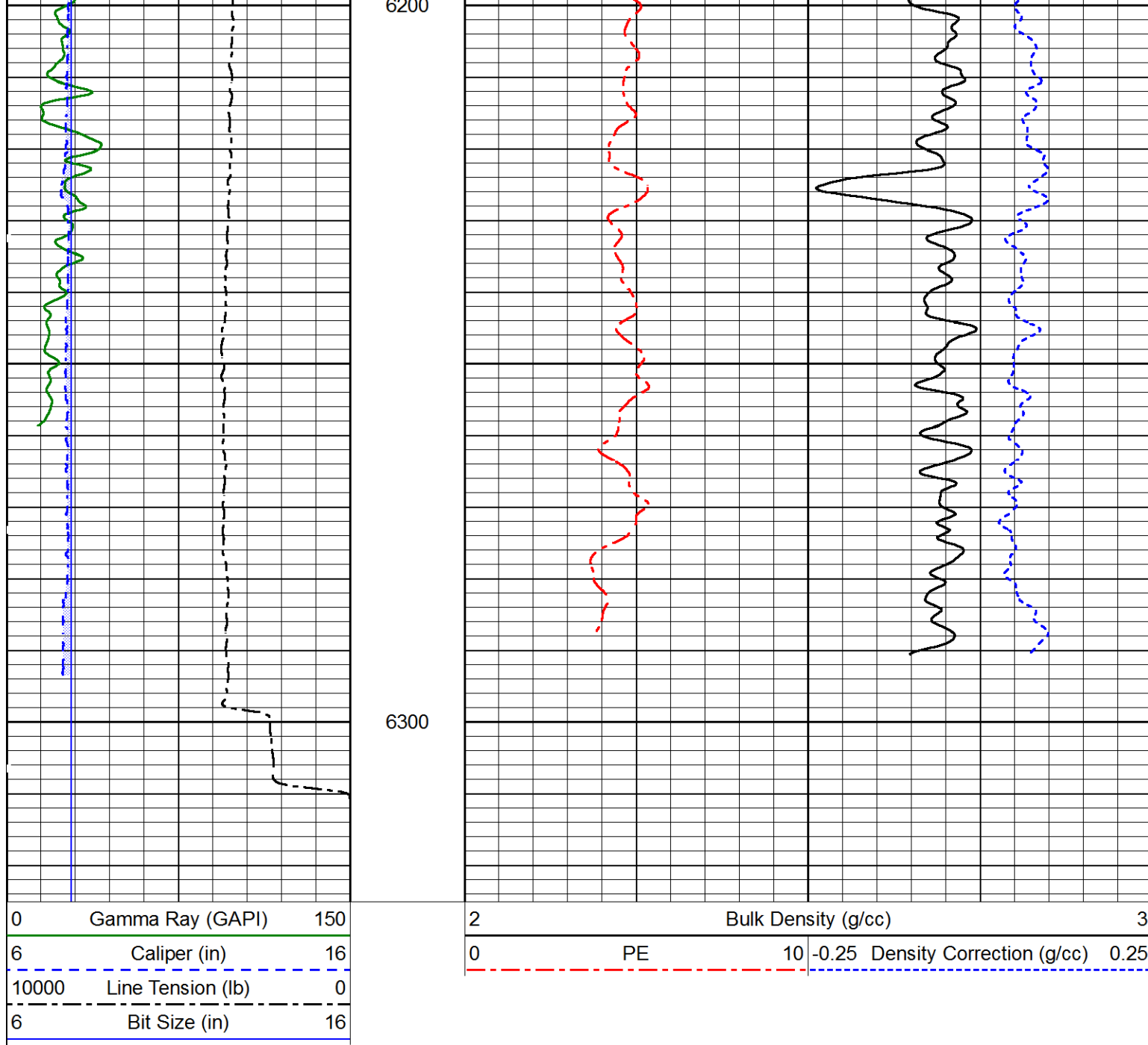


6000

6100

6200





WIREFLINE
LOGGING
SOLUTIONS

Main Pass

Log Variables

DatabaseC:\Sondex\Sondex Warrior\Data\obrien_keystone_6-4.db
Dataset field/well/run1/HiRes/_vars_

Top - 1573.00 ft

FRMSALIN kppm 0	MUDSALIN kppm 0	DEVI deg 0	SRFTEMP degF 68	SO in 0.25	DE-CENT Yes	CASED? Yes	CASEWGHT lb/ft 24
NPORSEL Limestone	AIR_HOLE? No	MudWgt lb/gal 9.2	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	SPSHIFT mV 0	CASETHCK in 0	CASEOD in 8.625
PERFS	TDEPTH	BOTTEMP	BOREID				

	ft	degF	in
0	6298	130	12.25

1573.00 ft - Bottom							
FRMSALIN kppm 0	MUDSALIN kppm 0	DEVI deg 0	SRFTEMP degF 68	SO in 0.25	DE-CENT Yes	CASED? No	CASEWGHT lb/ft 11.5
NPORSEL Limestone	AIR_HOLE? No	MudWgt lb/gal 9.2	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	SPSHIFT mV 0	CASETHCK in 0	CASEOD in 4.5
PERFS 0	TDEPTH ft 6298	BOTTEMP degF 130	BOREID in 7.875				

Calibration Report								
Database File	obrien_keystone_6-4.db							
Dataset Pathname	HiRes							
Dataset Creation	Mon May 18 01:52:50 2020 by Calc Sondex							
Induction Array Tool Calibration Report								
Serial Number:				B12164				
Tool Model:				002				
Master Calibration Performed:				Fri Mar 08 11:08:02 2019				
Temperature:				62.3 degF				
Sonde Error:								
Array	1	2	3	4	5	6	7	
Real	209.1	-13.0	-59.4	-11.7	-2.8	1.0	4.3	mmho/m
Imaginary	-50.9	5.8	0.9	4.1	7.1	-13.1	-0.1	mmho/m
Loop Gain:								
Array	1	2	3	4	5	6	7	
Loop (real)	537.7	678.5	1295.3	1394.1	1144.8	712.8	404.8	mmho/m
Loop (imaginary)	73.3	92.5	389.8	419.5	344.5	214.5	121.8	mmho/m
Real	825.1	793.4	1253.6	1409.7	1181.6	755.7	430.9	mmho/m
Imaginary	27.1	111.6	391.7	430.4	358.8	213.6	128.4	mmho/m
Gain (real)	0.873	0.841	0.987	0.981	0.967	0.945	0.949	
Gain (imaginary)	0.939	0.874	0.998	0.984	0.979	0.946	0.948	
Before Survey Verification Performed:								
Sonde 1 Temperature:				degF				
Sonde 2 Temperature:				degF				
Array 1 Temperature:				degF				
Array	1	2	3	4	5	6	7	
TxIR								
TxIX								
Tx Magnitude								
Gain								
RxCR								
RxCX								
RxC Magnitude								
Tool Module Parameters								
Software Version:				8.0.0.4				
Borehole Size Source:				CALI				
Mud Resistivity Source:				MUDRES				

Mud Resistivity Source:	MUDRES
Mud Resistivity At Surface:	N/A
Mud Resistivity Surface Temperature:	N/A
Borehole Corrections:	Automatic
Minimum Standoff:	0.4 in

Litho Density Tool Calibration Report

Serial Number:	B0063S50129B
Tool Model:	B10063

Caliper Calibration Performed:	Fri May 15 11:18:11 2020
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	Diameter		Reading	
Small Ring:	9.000	in	1891.800	cps
Large Ring:	13.000	in	2244.100	cps
Gain:	0.0114			
Offset:	-12.4794			

Master Calibration Performed:	Fri May 15 10:52:09 2020
-------------------------------	--------------------------

Source Number:	50129B
Medium:	Water
Al Block Density:	2.6014 g/cc

	Background	Al Block	Al Block + Fe	
SS1	662.1	3915.5	3603.1	cps
SS2	1866.7	26468.7	24190.6	cps
SSTOTAL	4364.1	42048.0	38112.2	cps
LITH	73.2	438.7	283.6	cps
LL	144.4	725.5	691.6	cps
LU	411.6	901.7	880.6	cps
LS	556.0	1627.2	1572.2	cps
LSTOTAL	1047.9	4025.8	3505.5	cps
SSHV	1462.5	1464.4	1465.3	V
LSHV	1468.7	1467.1	1468.2	V
SSFF	0.006	0.009	0.004	
LSFF	0.007	0.005	0.005	

Before Survey Verification Performed:	Mon Feb 24 10:39:31 2020
After Survey Verification Performed:	Mon Feb 24 10:45:14 2020

	Master Background	Before Survey Background	After Survey Background	
SS1	662.1	662.3	666.4	cps
SS2	1866.7	1872.6	1878.1	cps
SSTOTAL	4364.1	4372.7	4388.1	cps
LITH	73.2	74.5	73.9	cps
LL	144.4	144.8	142.6	cps
LU	411.6	410.2	414.9	cps
LS	556.0	555.0	557.5	cps
LSTOTAL	1047.9	1049.2	1050.2	cps
SSHV	1462.5	1467.0	1467.2	V
LSHV	1468.7	1471.5	1471.5	V
SSFF	0.006	0.003	0.009	
LSFF	0.007	0.006	0.004	

Tool Module Parameters

Software Version:	8.0.0.6
Borehole Size Source:	BOREID
Pad Type:	2

Compensated Neutron Tool Calibration Report					
Serial Number:		C10071			
Tool Model:		009			
Master Calibration Performed:		Fri May 15 08:32:16 2020			
Source Number:		87624G			
Short Spacing Counts:		4685.07	cps		
Long Spacing Counts:		170.48	cps		
High Voltage:		1364.05	V		
Target Ratio:		27.2000			
Ratio:		27.4816			
K-Factor:		0.9898			
Before Survey Verification Performed:		Fri May 15 08:39:23 2020			
After Survey Verification Performed:		Fri May 15 08:40:36 2020			
Verifier Number:		6489			
Verifier Values	Master Cal	Before Survey	After Survey		
Short Spacing Counts:	264.29	267.98	268.28	cps	
Long Spacing Counts:	260.11	261.87	263.74	cps	
High Voltage:	1364.02	1364.01	1364.01	V	
Ratio:	1.0161	1.0233	1.0172		
Tool Module Parameters					
Software Version:		8.0.0.5			
Borehole Size Source:		CALI			
Clip Crossplot Porosity:		YES			
Lithology Identification Parameters:					
	Calcite	Quartz	Dolomite		
Uma:	13.77	4.79	9.03	barns/cc	
RHoma:	2.71	2.65	2.88	g/cc	
Micro Electric Log Calibration Report					
Serial Number:		10021240			
Tool Model:		003			
Caliper Calibration Performed:		Mon Nov 13 12:40:50 2017			
		Pad Arm		Backup Arm	
	Radius	in	Reading	Radius	in
Small Jig:	9.000	in	1847.200	9.000	in
Large Jig:	13.000	in	2371.600	13.000	in
Gain:		0.0076		0.0063	
Offset:		-5.0900		-1.5092	
Pad Calibration					
		Inverse		Normal	
Gain:		1.0000		1.0000	
Offset:		0.0000		0.0000	
Tool Module Parameters					
Software Version:		8.0.0.4			
Gamma Ray Calibration Report					

Tool Model:	001	
Performed:	Thu Apr 16 17:15:15 2020	
Calibrator Value:	156.0	GAPI
Background Reading:	63.7	cps
Calibrator Reading:	494.2	cps
Sensitivity:	0.3624	GAPI/cps

Borehole Fluid Resistivity Calibration Report

Serial Number:	P004
Tool Model:	002

Master Calibration Performed: Wed May 25 15:17:37 2016

Resistivity Polynomial Equation:

$$0.1429x^3 - 0.4495x^2 + 1.2097x - 0.2854$$

Temperature Calibration:

Reference		Reading	
71.60	degF	559.80	bits
167.00	degF	659.50	bits

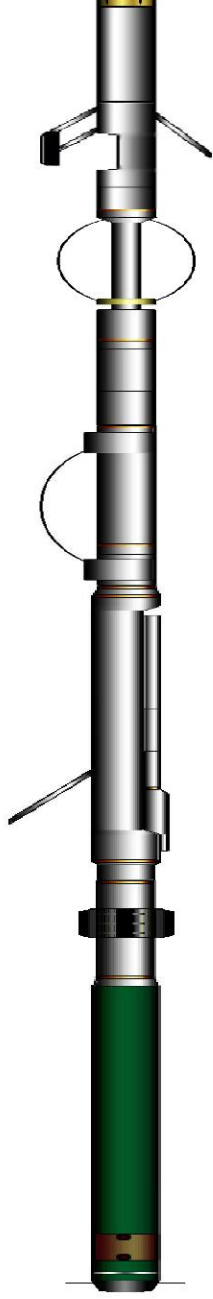
Head Tension Unit Calibration Report

Serial Number:	00001
Tool Model:	011

Performed: Mon Mar 04 10:52:43 2013

Point #	Reference		Reading	
1	-19894.000	lb	8957.860	cps
2	-15010.000	lb	13965.100	cps
3	-9998.000	lb	19079.100	cps
4	-5007.000	lb	24133.000	cps
5	-1009.000	lb	28232.100	cps
6	1017.000	lb	30185.400	cps
7	5040.000	lb	34439.700	cps
8	9970.000	lb	39346.900	cps
9	14955.000	lb	44466.000	cps
10	19770.000	lb	49397.800	cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
HTEN	55.67		CHD-WFT (WFT01) Weatherford Cable Head	2.67	2.25	15.00
			X-Over-WFT (0001) Weatherford X-Over	1.13	3.38	5.00
XTU-008 (C10067) Crossover Ultrawire Toolbus to Ultralink	2.08		3.38	47.00		
HTU-011 (00001) Head Tension Unit	2.18		3.38	55.00		
CCL	53.15		CCL-028 (252350) Casing Collar Locator	1.61	3.13	36.00
BFR	50.41		BFR-002 (P004) Borehole Fluid Resistivity Tool	4.39	3.38	94.00
GR	47.64		GRT-001 (C10049) Gamma Ray Tool	3.22	3.38	69.00
			Overbody-Over-cen Overbody Centralizer	3.00	3.38	10.00

MEL	37.67		MEL-003 (10021240) Micro Electric Log	9.27	3.38	209.00
			CEN-001 (000028) Inline OH Springbow Centraliser	4.27	3.38	66.00
			KJT-001 (10010514) Knuckle Joint	2.86	3.38	72.00
CNLSC CNSSC	25.59 25.09		CNL-009 (C10071) Compensated Neutron Logging Tool	5.28	3.38	100.00
LDT	15.44		LDT-B10063 (B0063S50129B) Litho Density Tool	9.75	4.50	310.00
			Overbody-Standoff Standoff (Rubber)	1.00	4.50	4.00
IAT	8.44		IAT-002 (B12164) Induction Array Tool	13.22	3.88	196.00
SP	0.43		Shorty-Short Short Hole Finder	0.38	3.88	6.00
Dataset: obrien_keystone_6-4.db: field/well/run1/HiRes Total length: 62.30 ft Total weight: 1294.00 lb O.D.: 4.50 in						



Company	O'Brien Energy Resources Corp.
Well	Keystone #6-4
Field	Angell Southeast
County	Meade
State	Kansas