



SUPERIOR
Hays,
Kansas

DUAL
INDUCTION
LOG

Company		MULL DRILLING COMPANY, INC.	
Well		APC TALLMAN #3-3	
Field			
County		KIOWA	State
State		COLORADO	
Location:		API # : 05-061-06864-0000 1980' FSL & 660' FEL NE/4 - SE/4	
Permanent Datum		GROUND LEVEL	Elevation
Log Measured From		KELLY BUSHING 11' A.G.L.	3986
Drilling Measured From		KELLY BUSHING	
SEC 3		TWP 18S	RGE 45W
Other Services		CDL/CNL/PE MEL/SON	
Elevation		K.B. 3997 D.F. 3995 G.L. 3986	
Date	10/3/11		
Run Number	ONE		
Depth Driller	4990.		
Depth Logger	4993		
Bottom Logged Interval	4991		
Top Log Interval	0		
Casing Driller	8 5/8" @ 353		
Casing Logger	349		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4500 PPM	
Density / Viscosity	9.3/56		
pH / Fluid Loss	9.5/8.8		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	1.50 @ 88F		
Rmf @ Meas. Temp	1.13 @ 88F		
Rmc @ Meas. Temp	1.80 @ 88F		
Source of Rmf / Rmc	MEASURED		
Rin @ BHT	1.06 @ 125F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	125F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JEFF GRONEMEG		
Witnessed By	PHIL ASKEY		

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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

THANK YOU FOR USING SUPERIOR WELL SERVICE (785) 628-6395
DIRECTIONS
BRANDON, CO - 5 MILES NORTH - WEST INTO

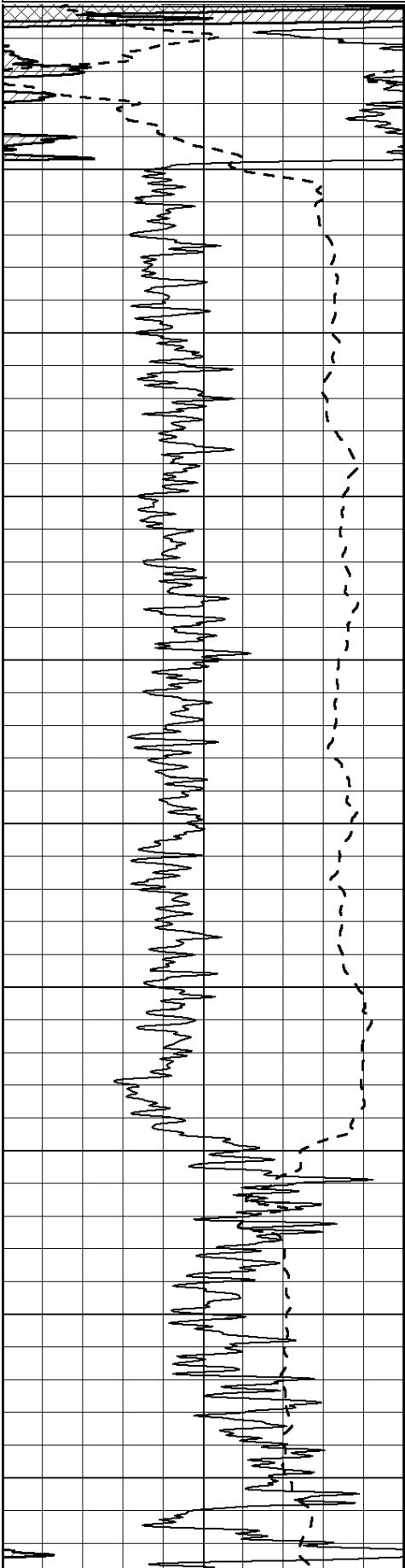
Charted by: Depth in feet scaled 1:1000

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

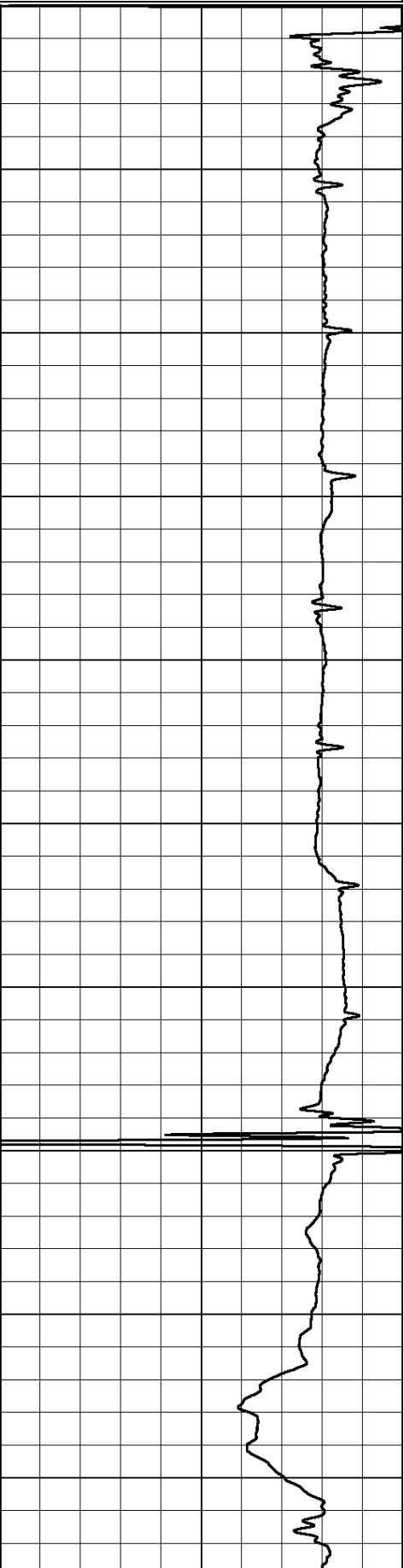
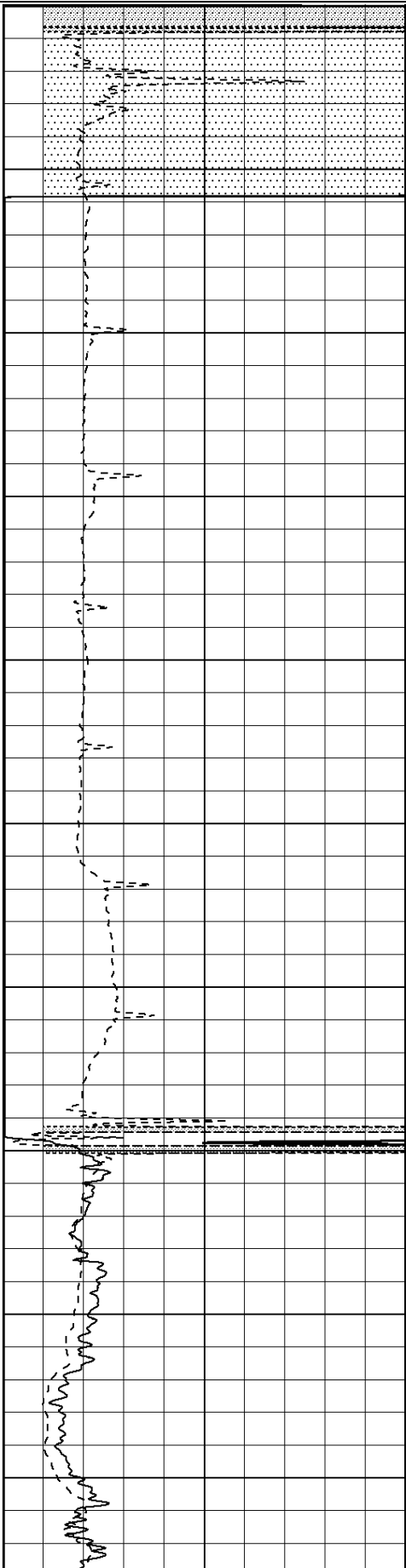
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50

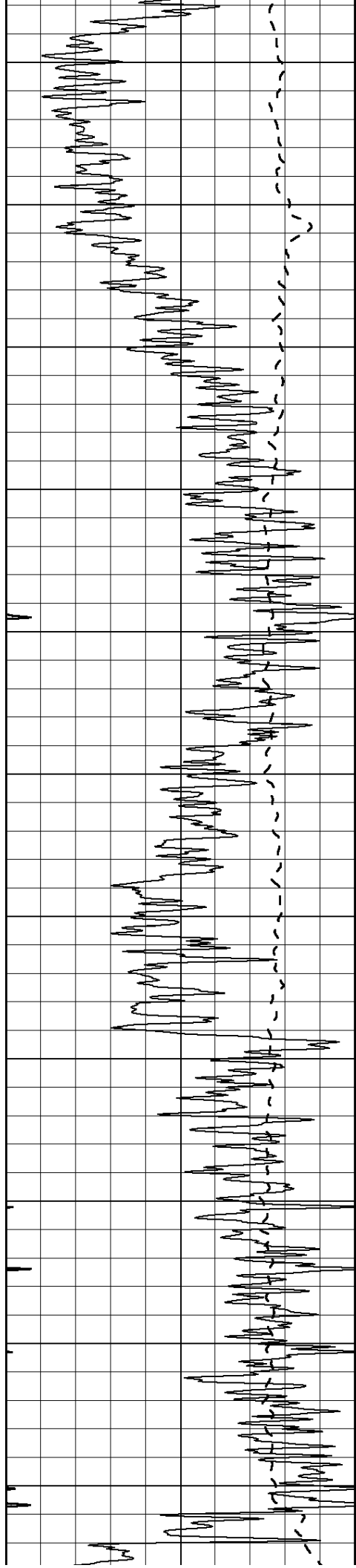
1000	CILD (mmho/m)	0
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50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500



0
50
100
150
200
250
300
350
400
450





500

550

600

650

700

750

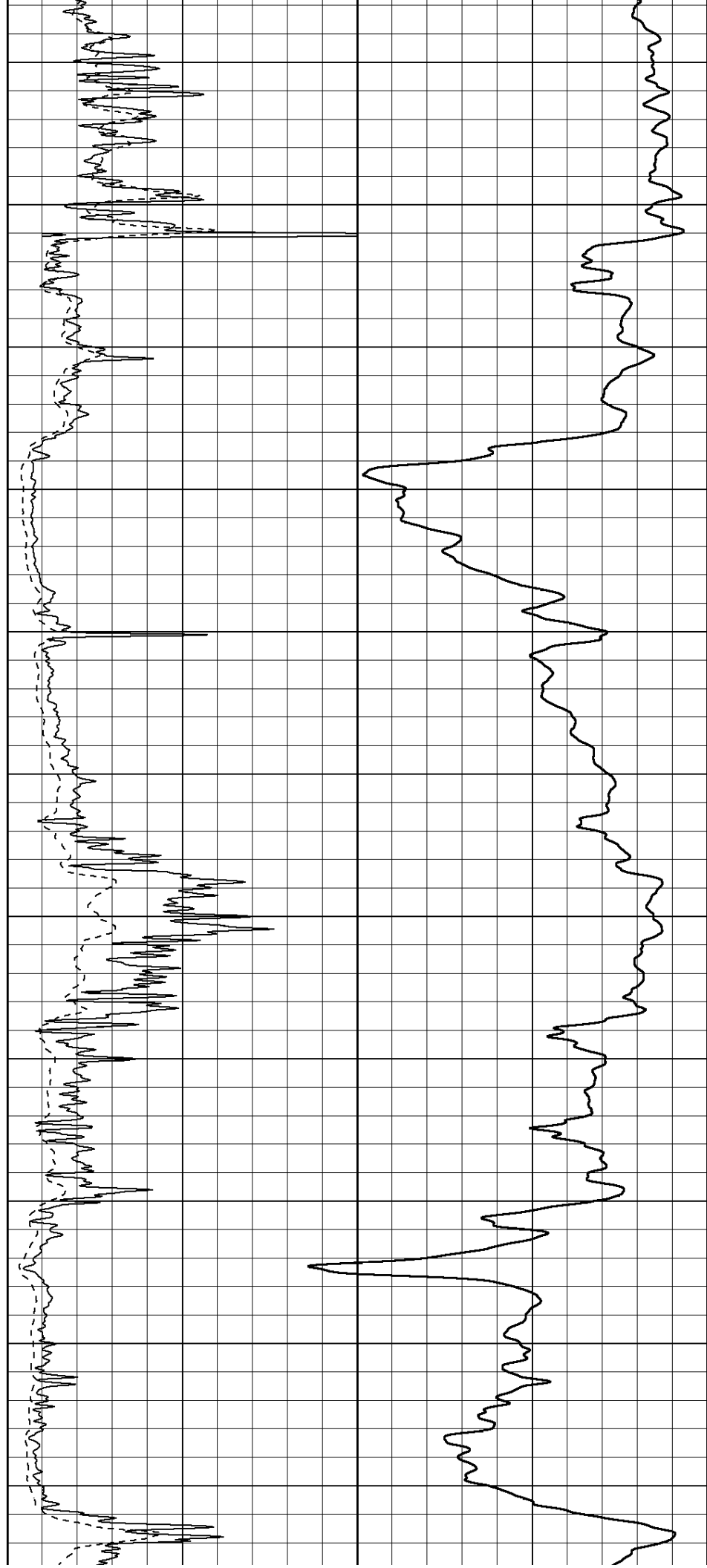
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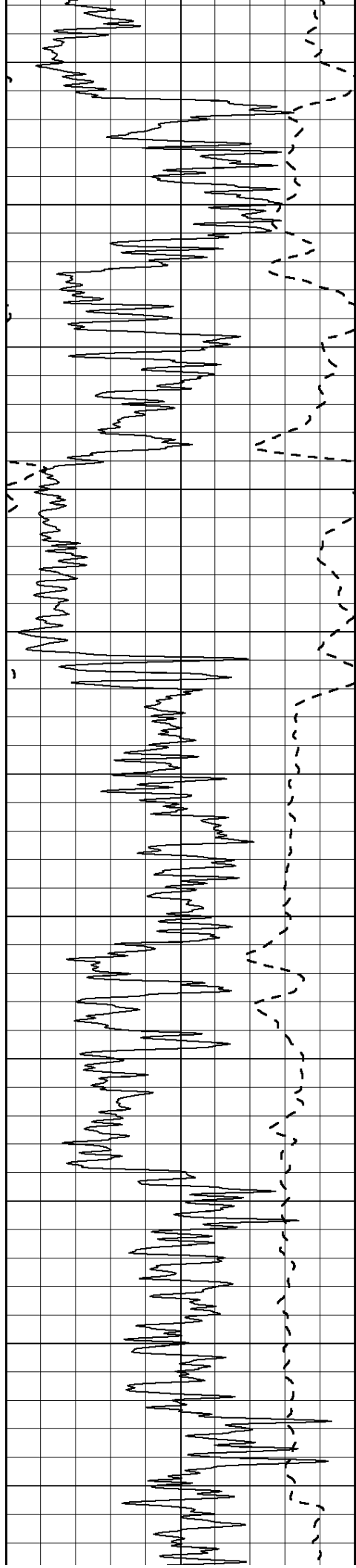
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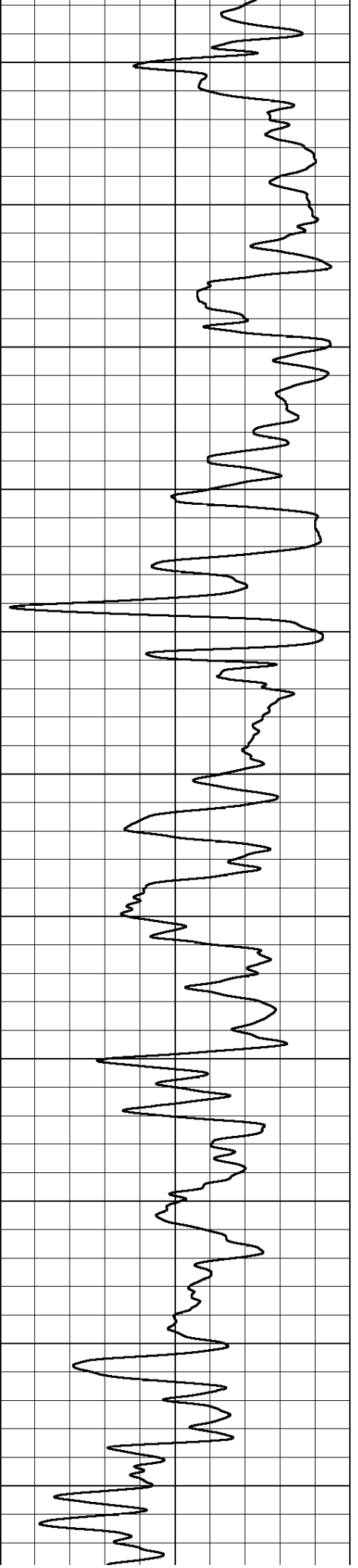
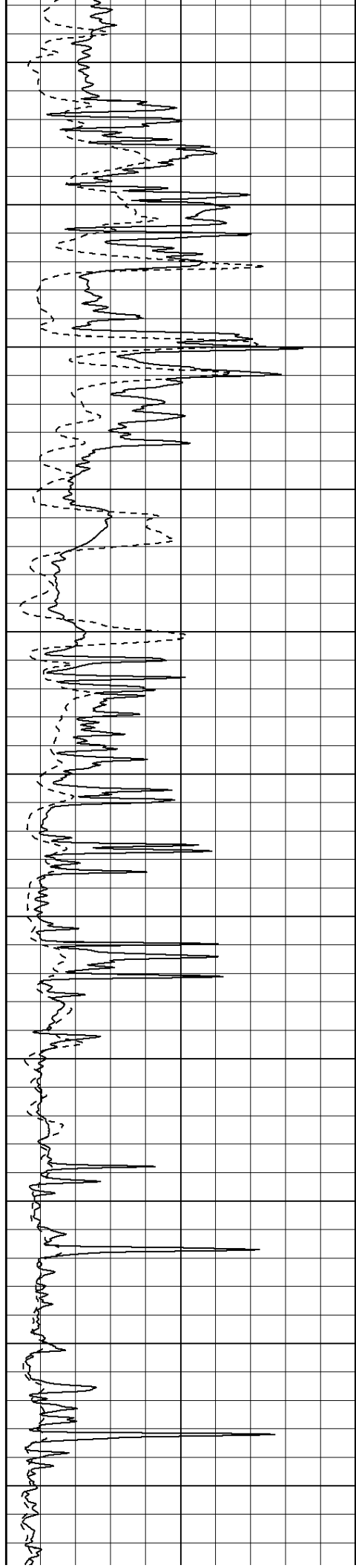
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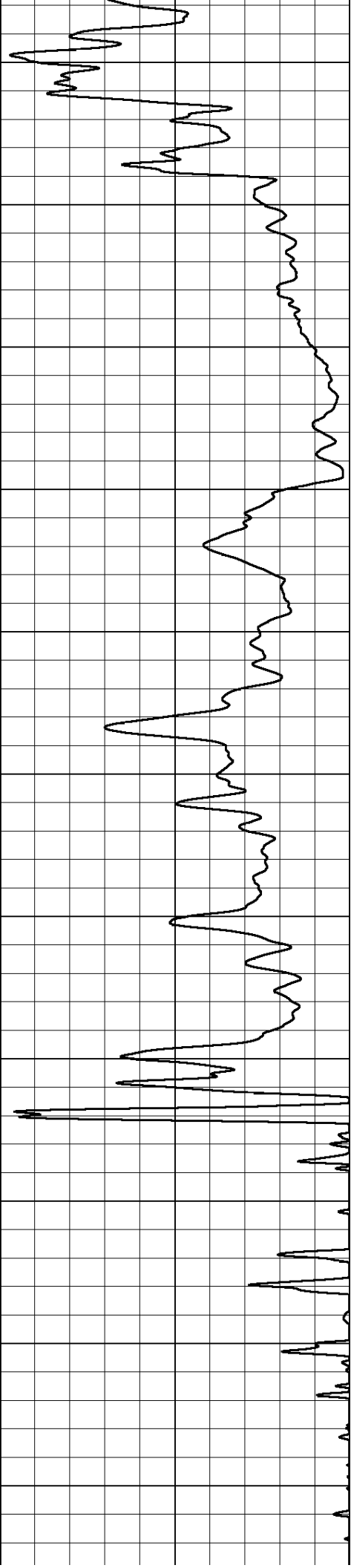
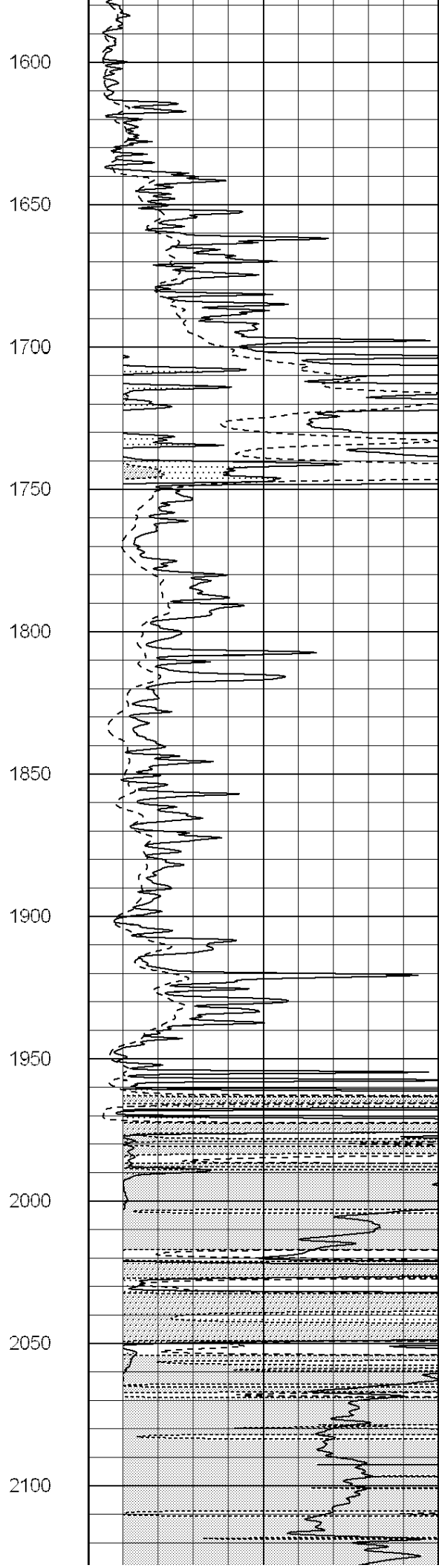
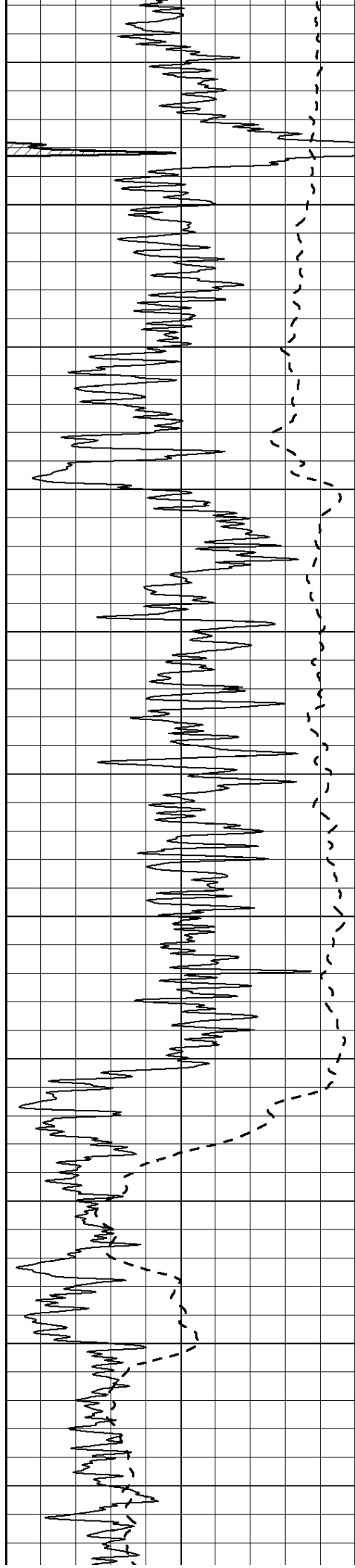
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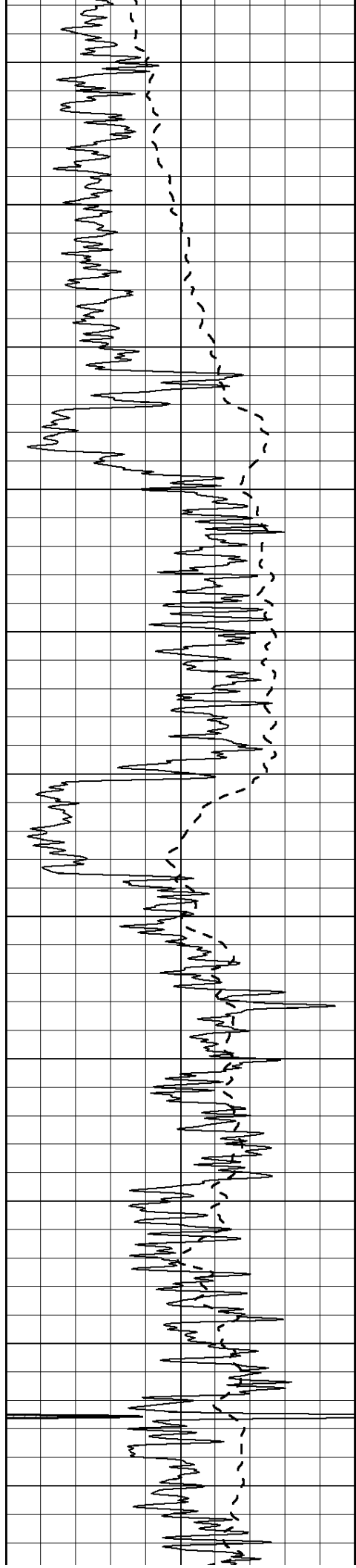




1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550







2150

2200

2250

2300

2350

2400

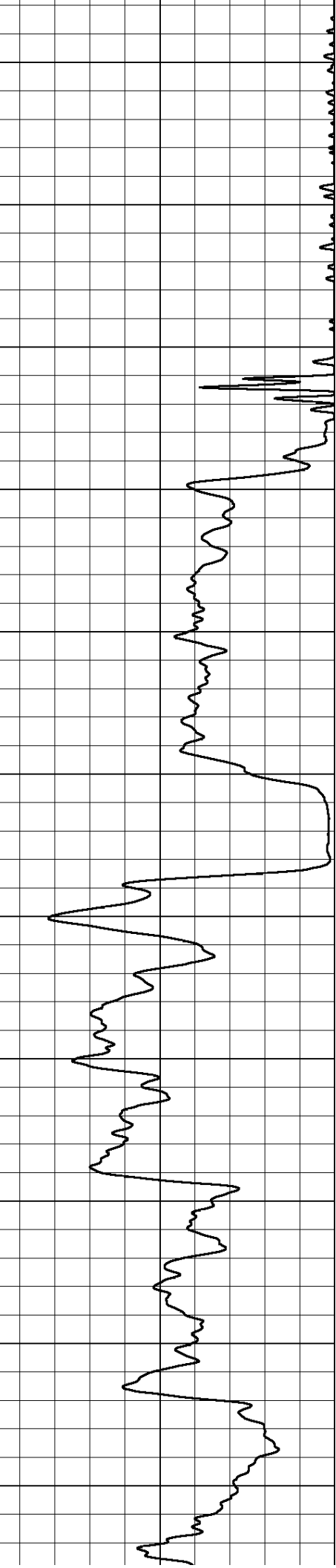
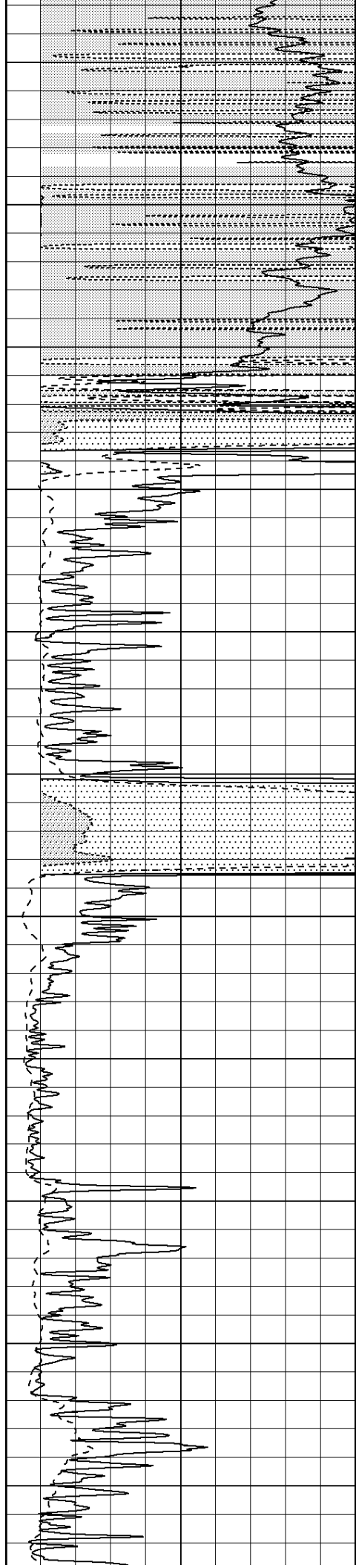
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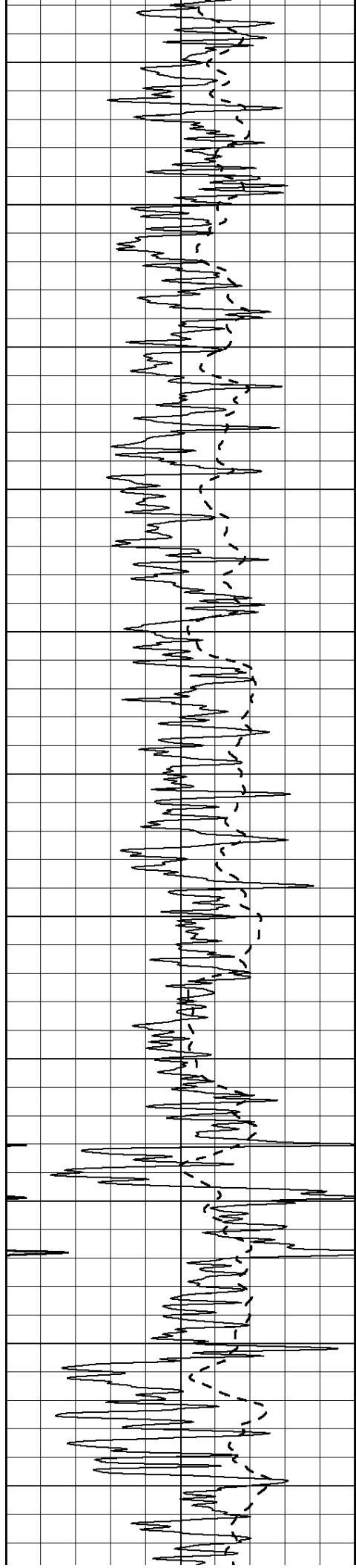
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2800

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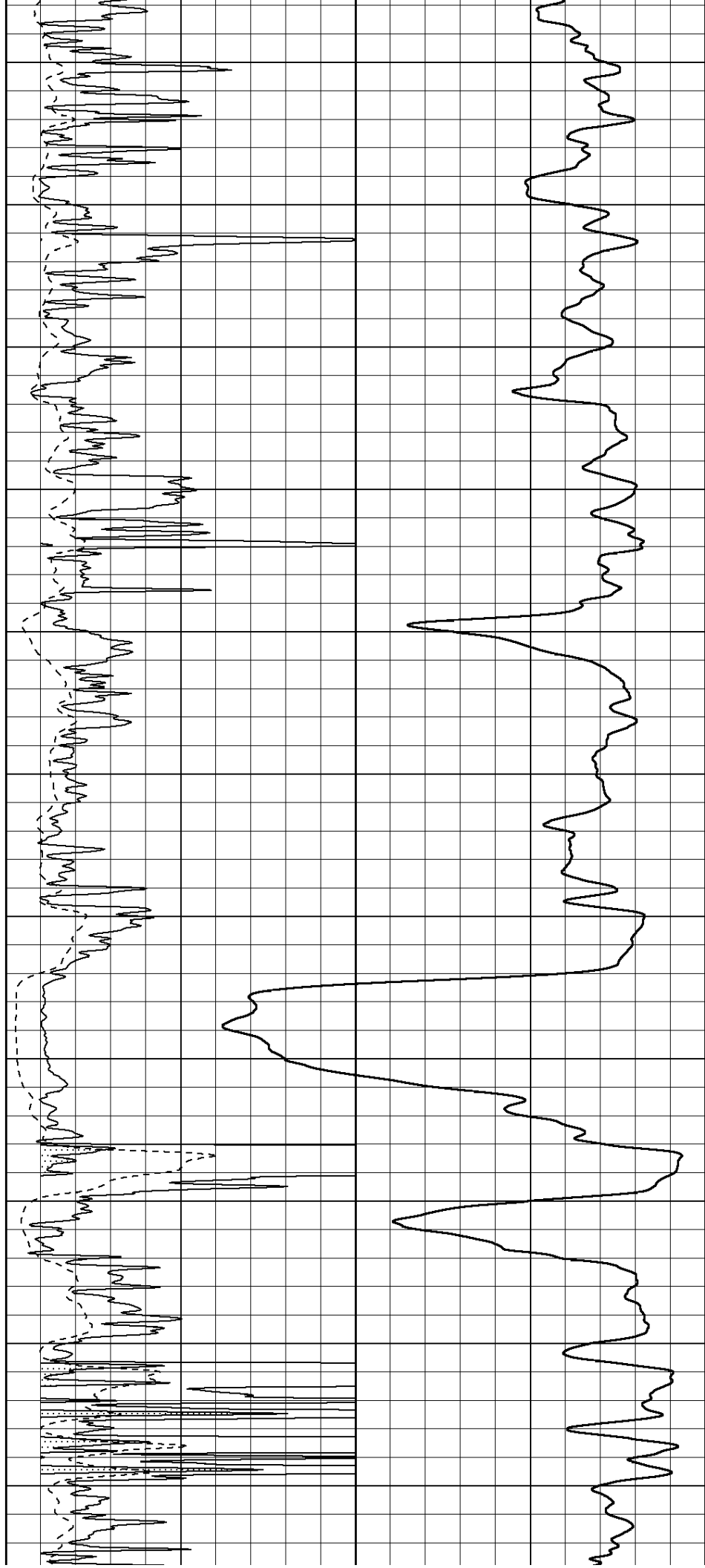
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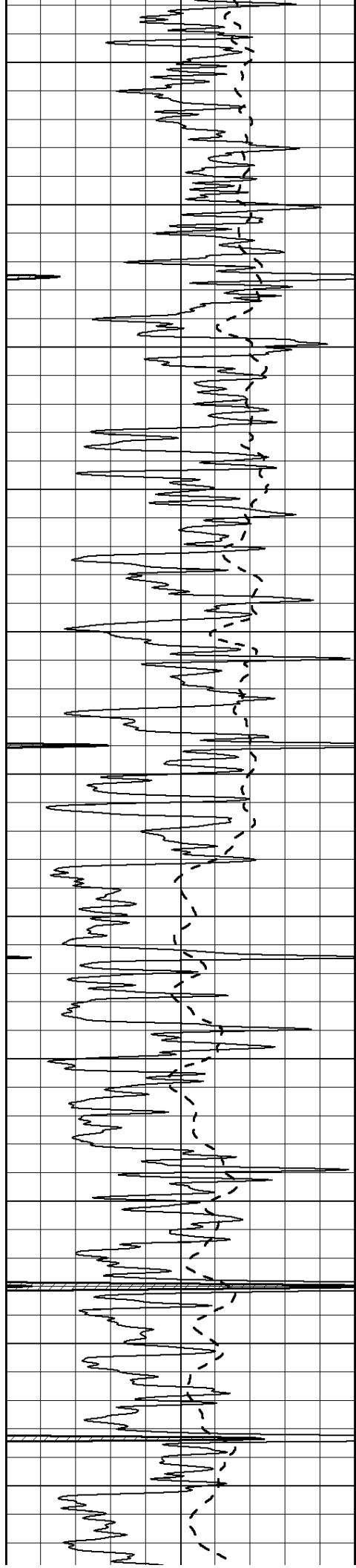
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3150

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3250

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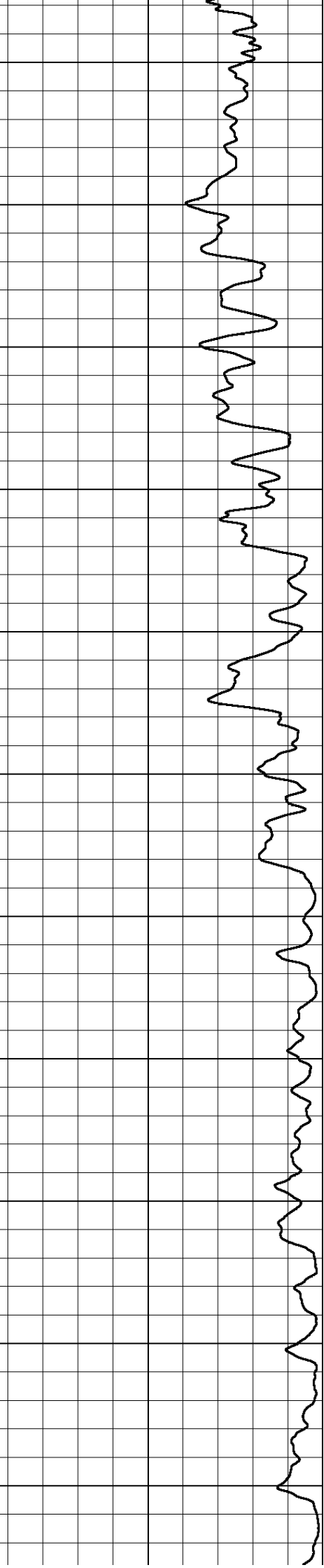
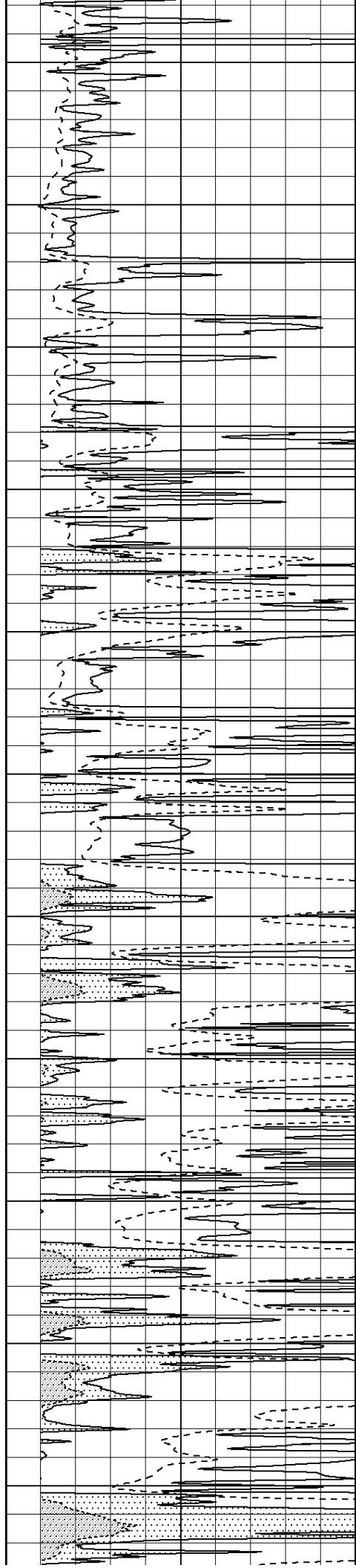
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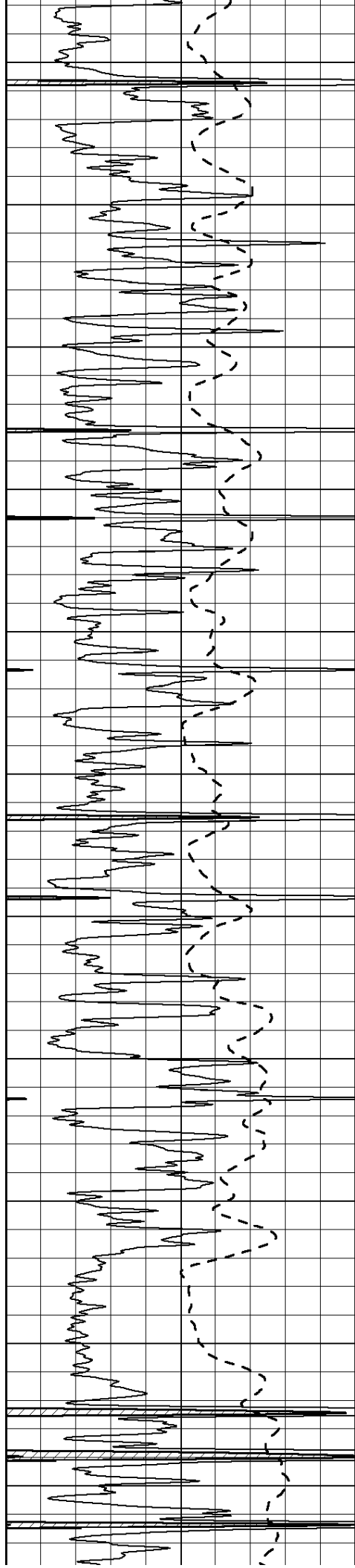
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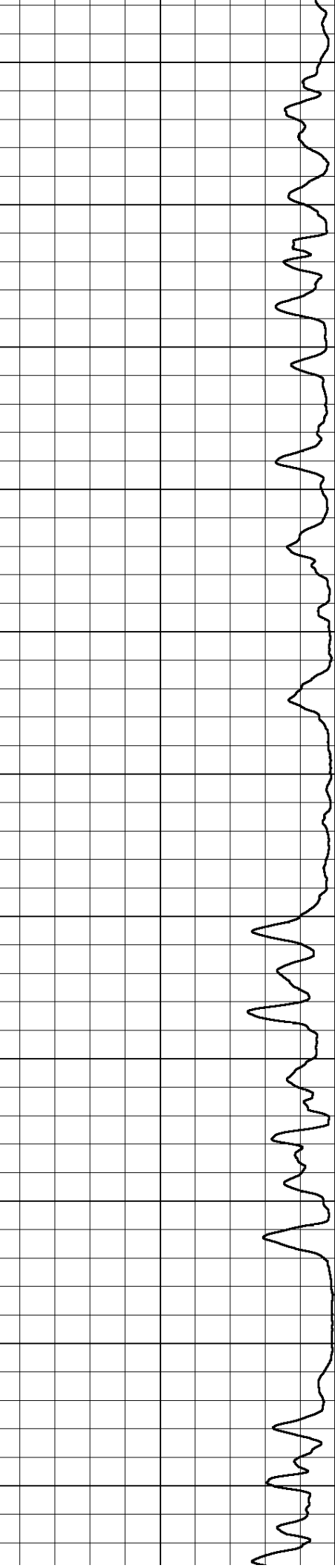
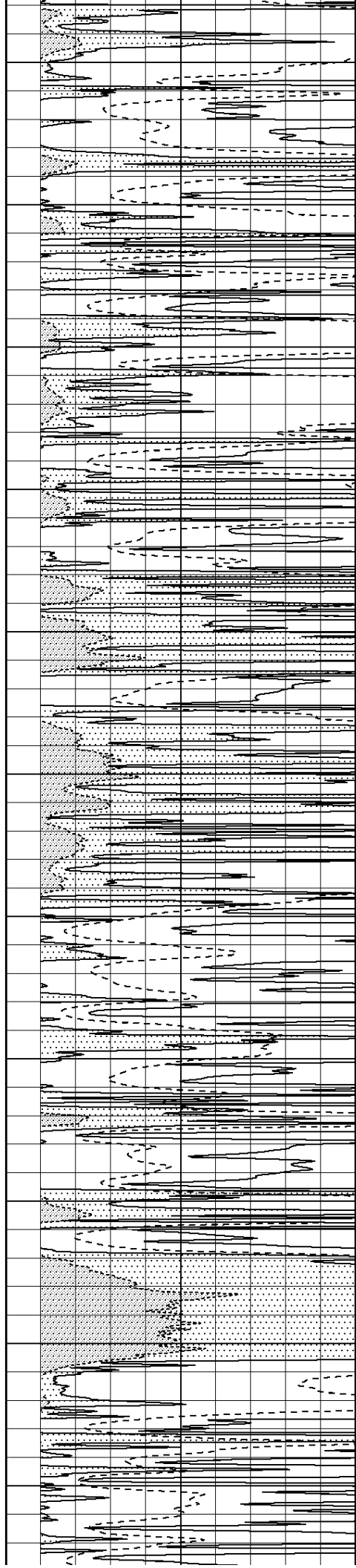
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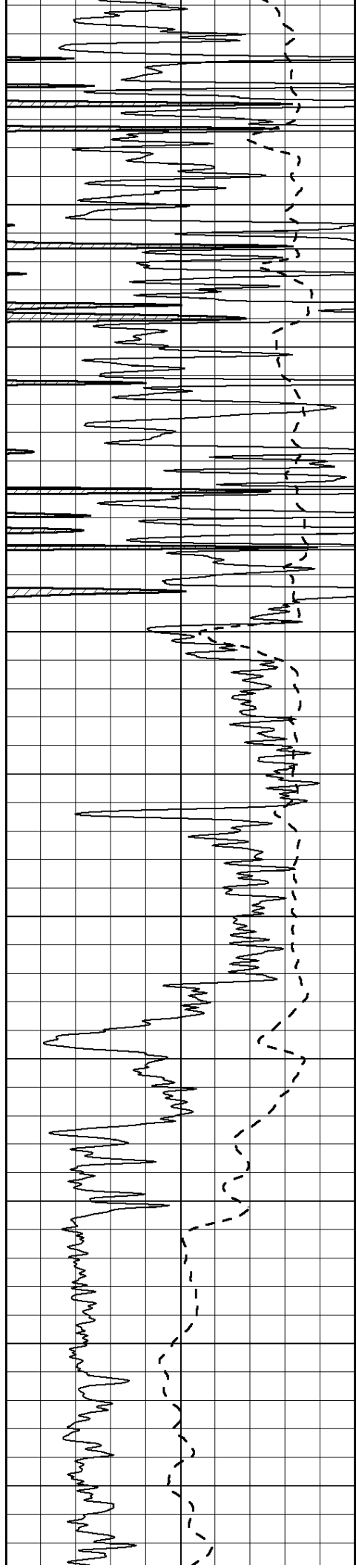
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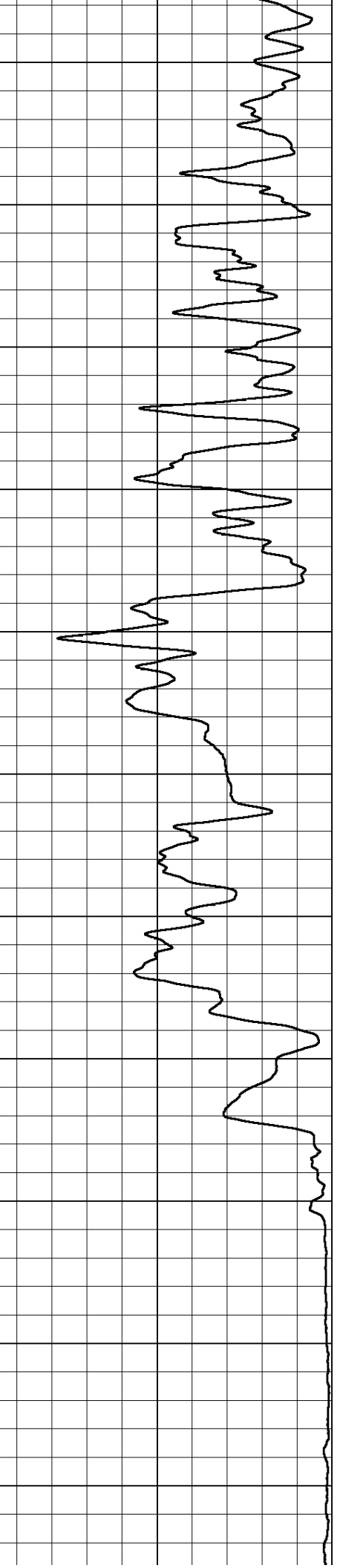
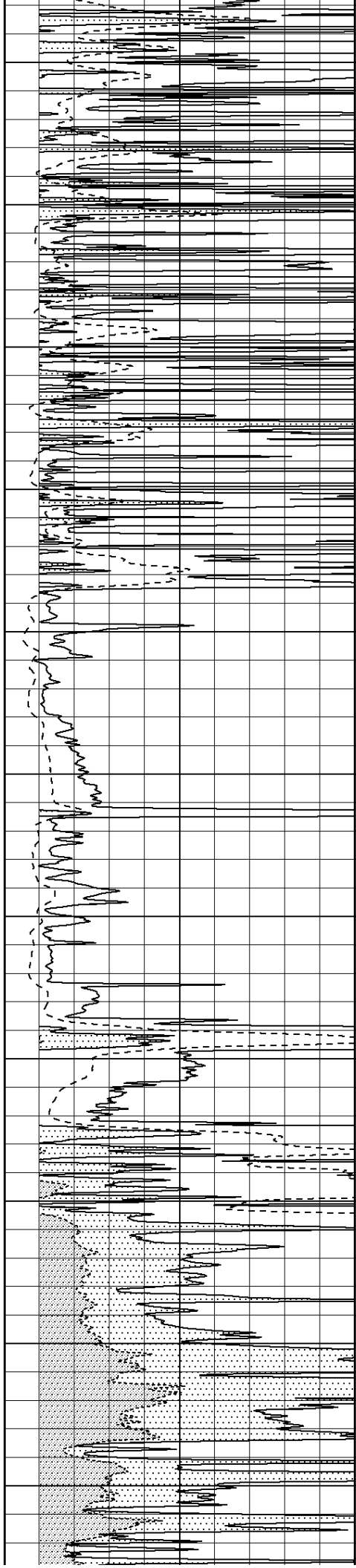
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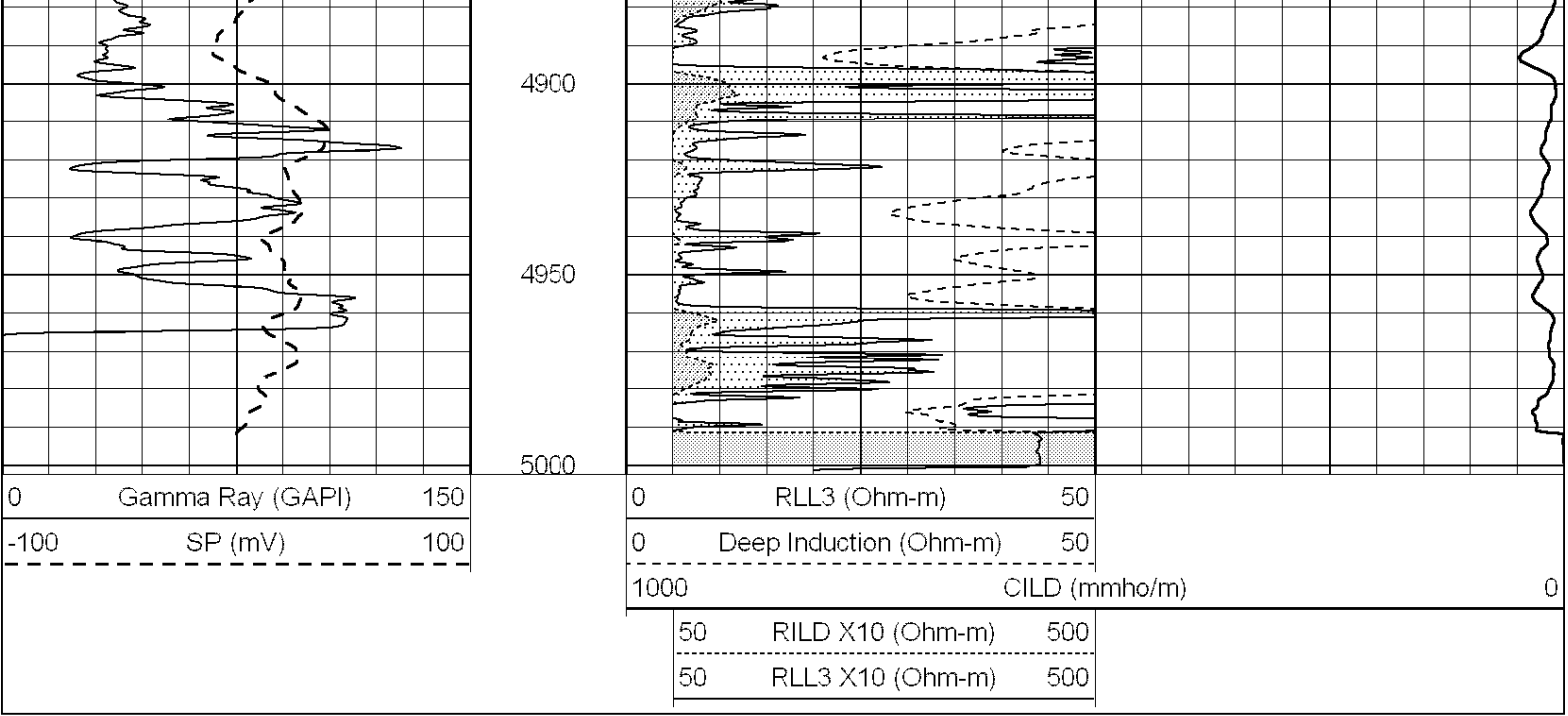
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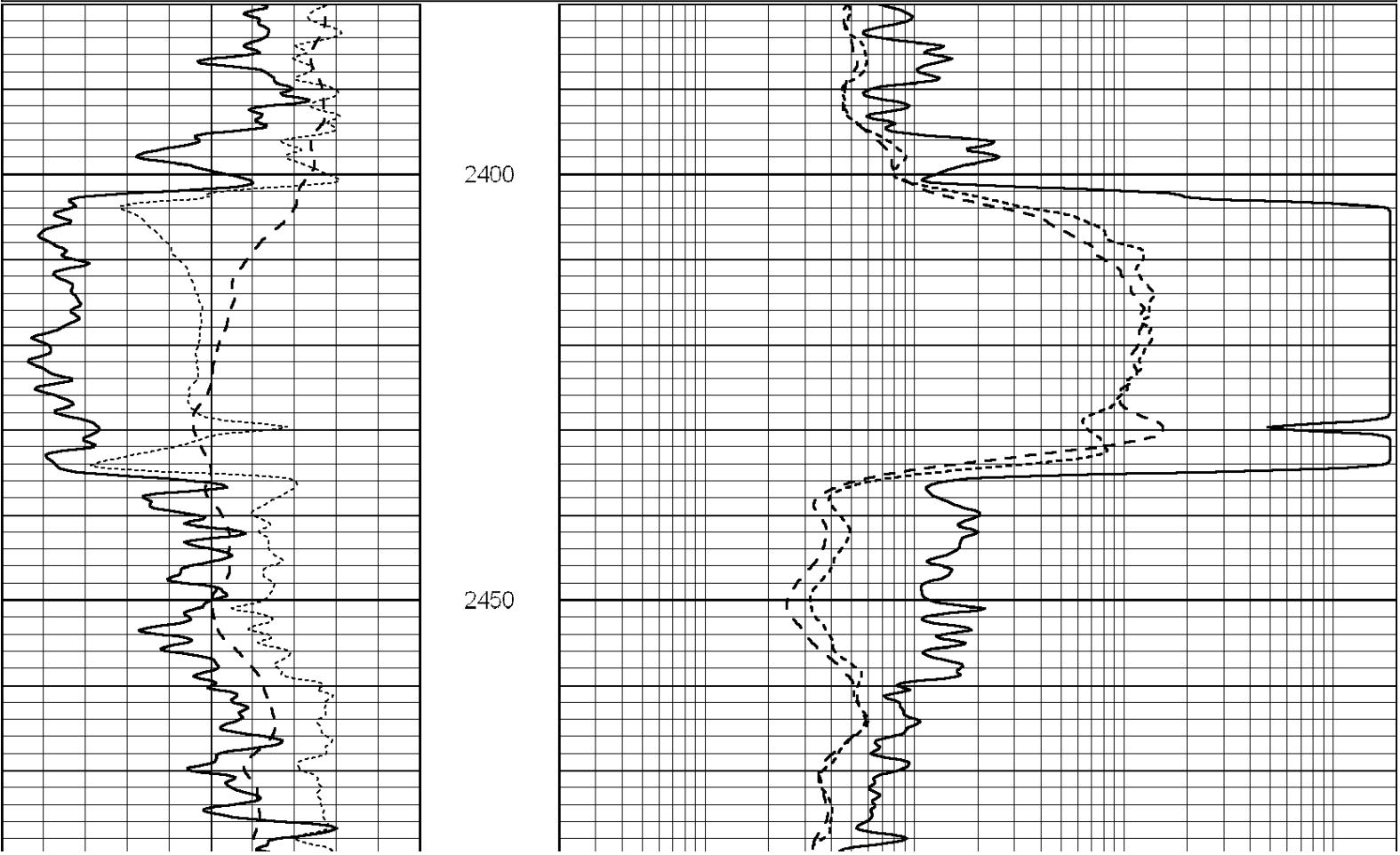
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Database File: 007876pe.db					
Dataset Pathname: pass3.4					
Presentation Format: _dil					
Dataset Creation: Mon Oct 03 08:01:45 2011 by Calc Open-Cased 090629					
Charted by: Depth in Feet scaled 1:240					
0	GAMMA RAY (GAPI)		150	0.2	SHALLOW GUARD (Ohm-m) 2000
-100	SP (mV)		100	0.2	MEDIUM INDUCTION (Ohm-m) 2000
-250	Rxo/Rt		50	0.2	DEEP INDUCTION (Ohm-m) 2000



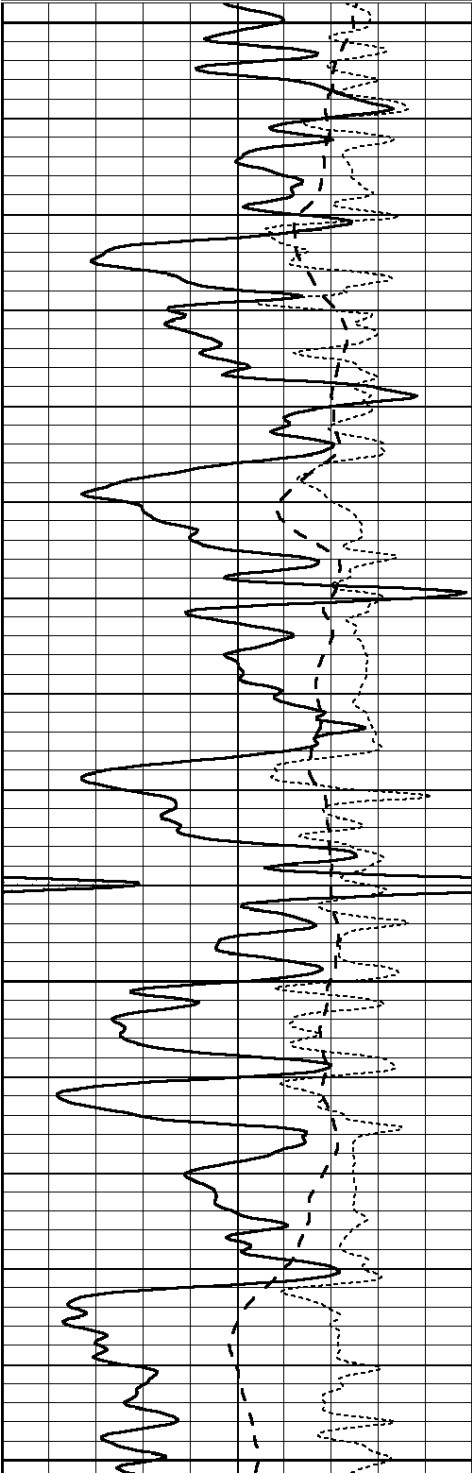
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

Database File:	007876pe.db
Dataset Pathname:	pass3.4
Presentation Format:	_dil
Dataset Creation:	Mon Oct 03 08:01:45 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

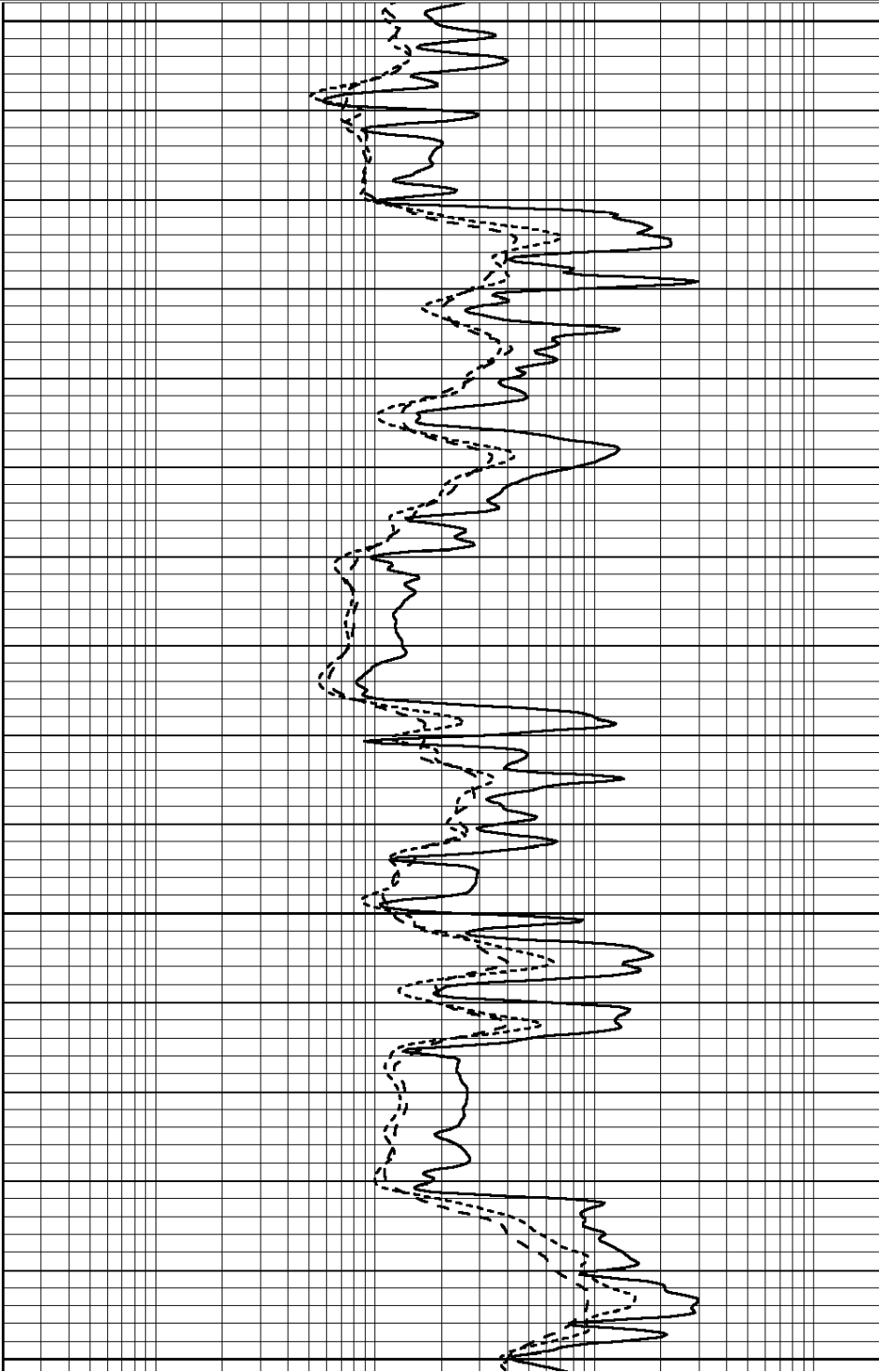


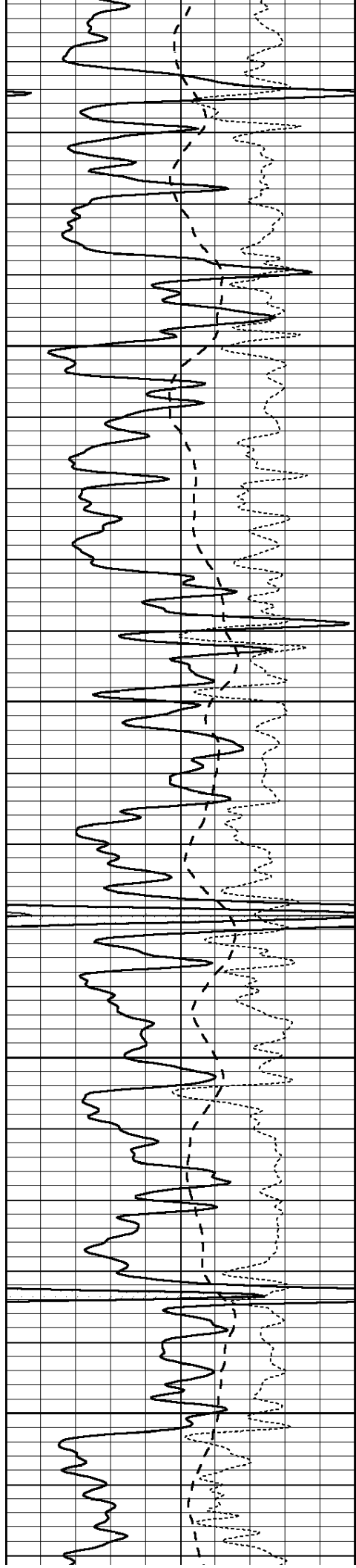
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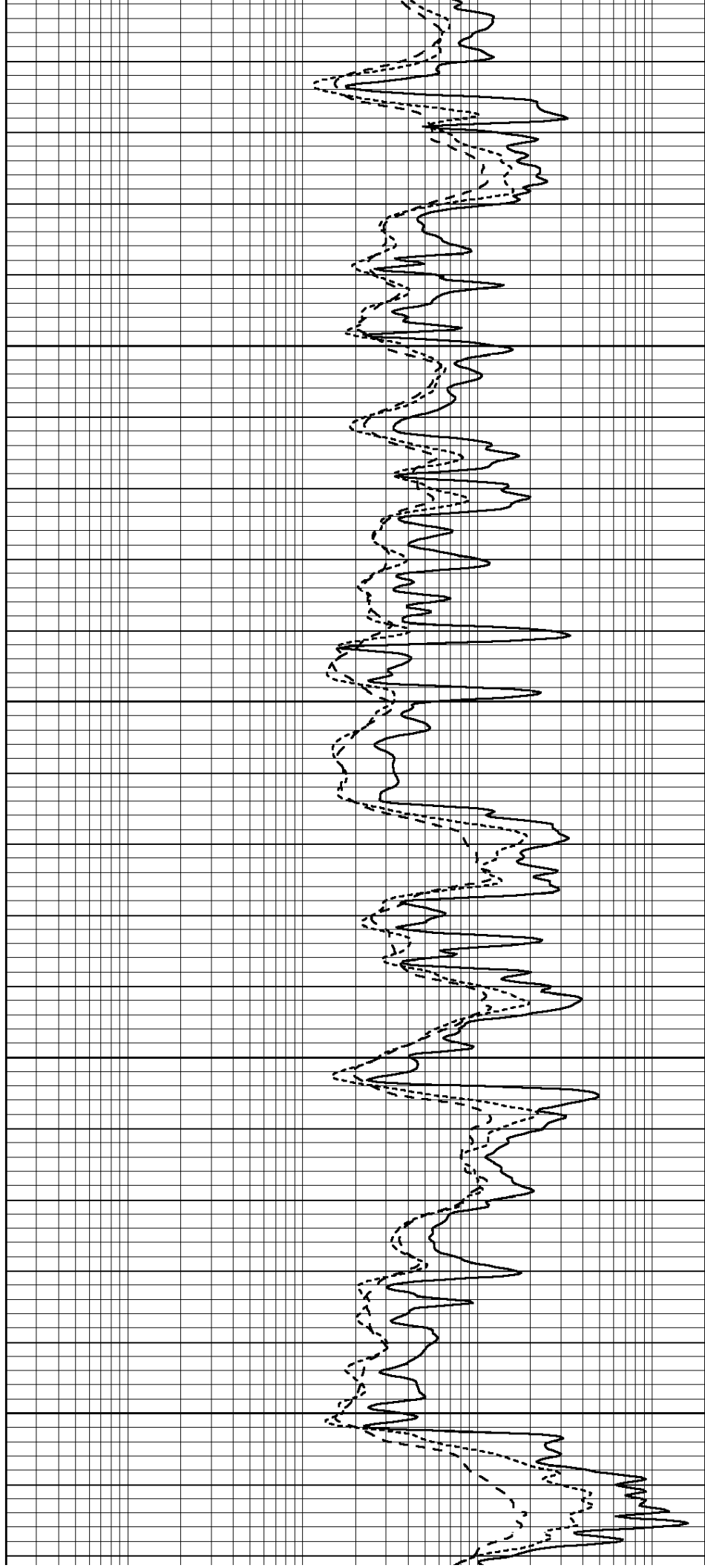


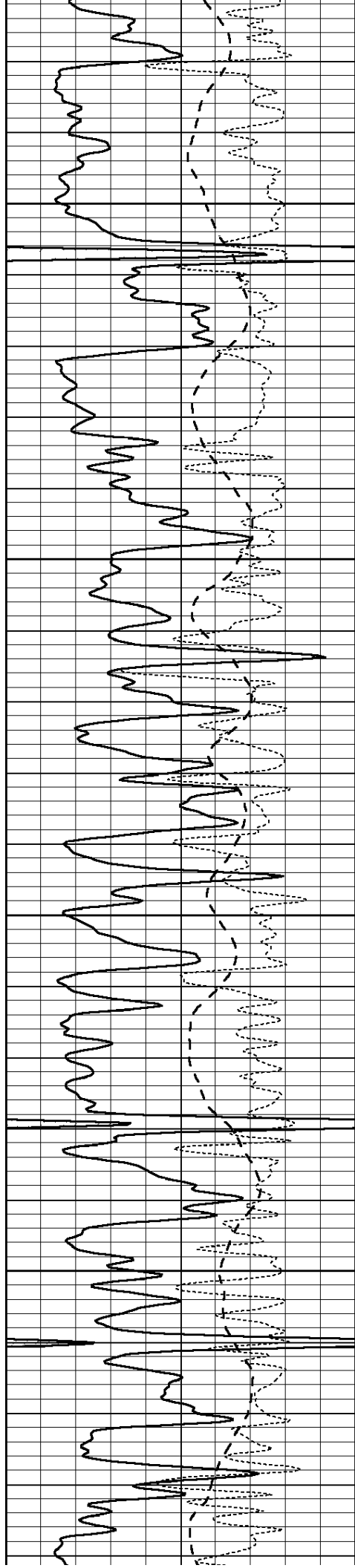
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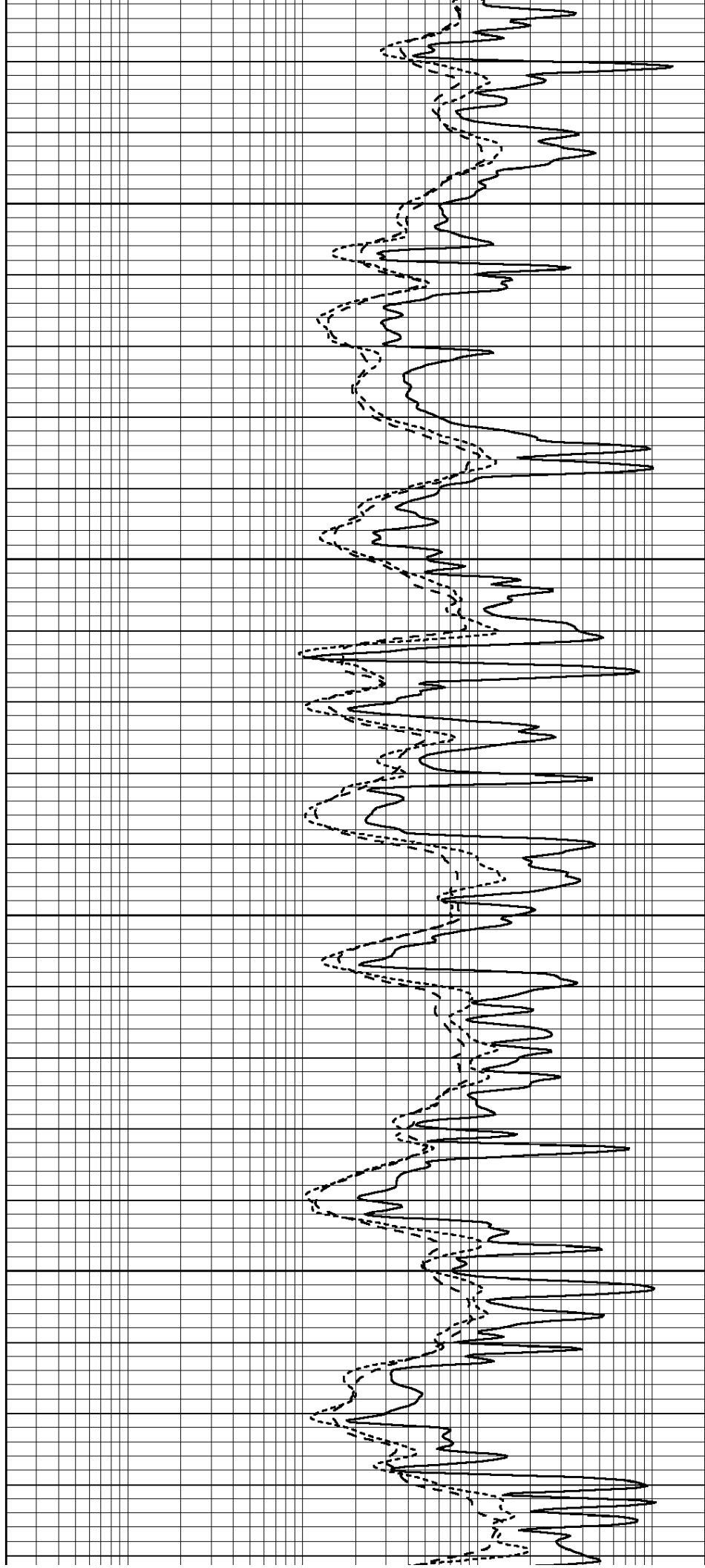


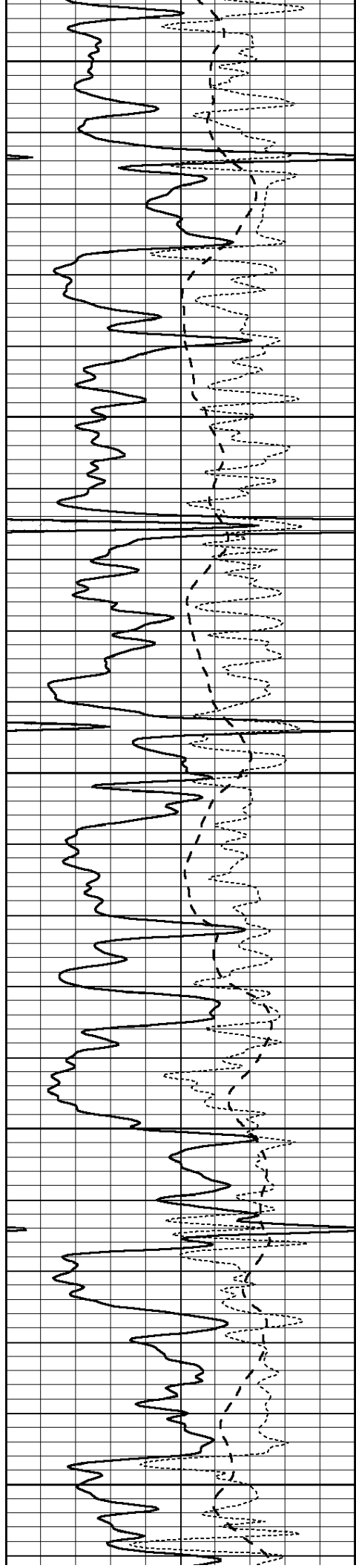
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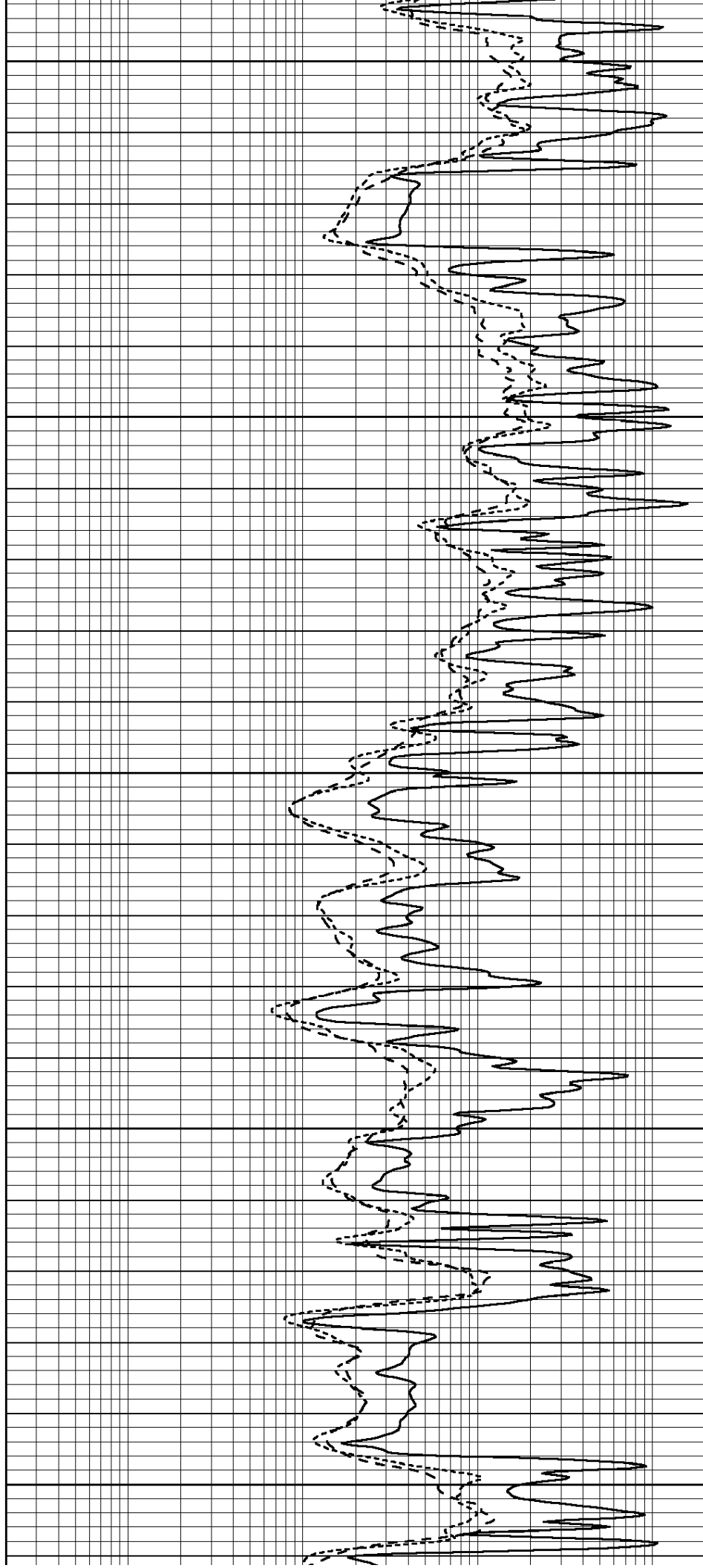
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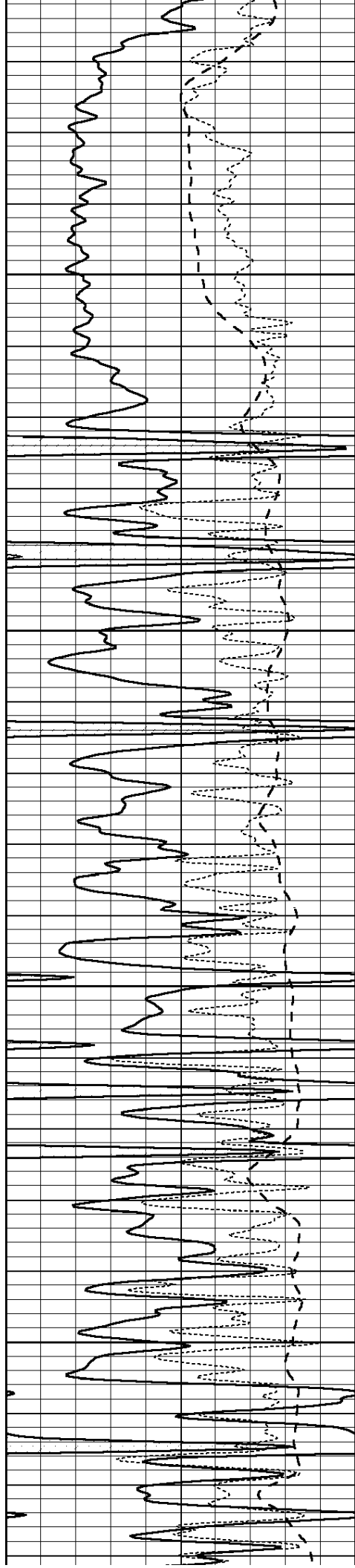
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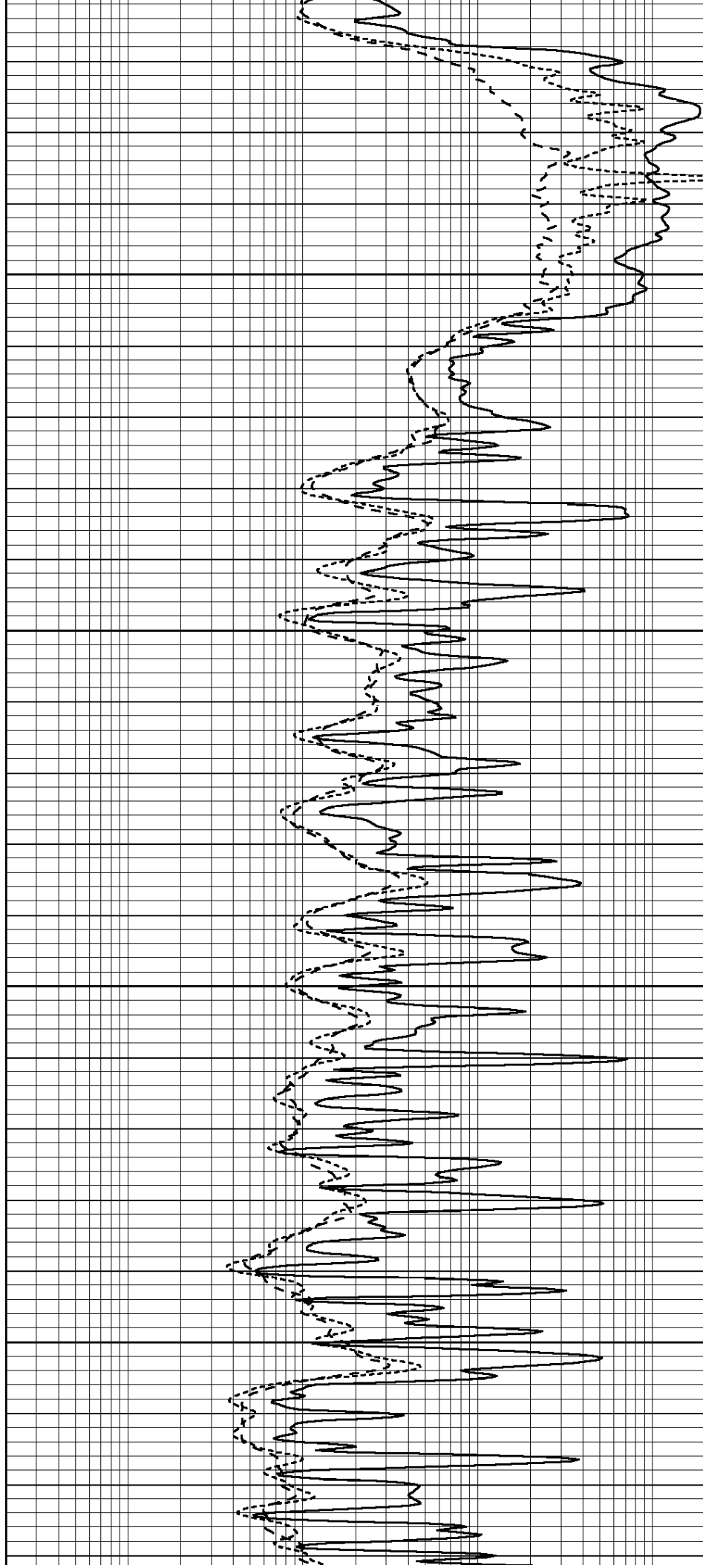


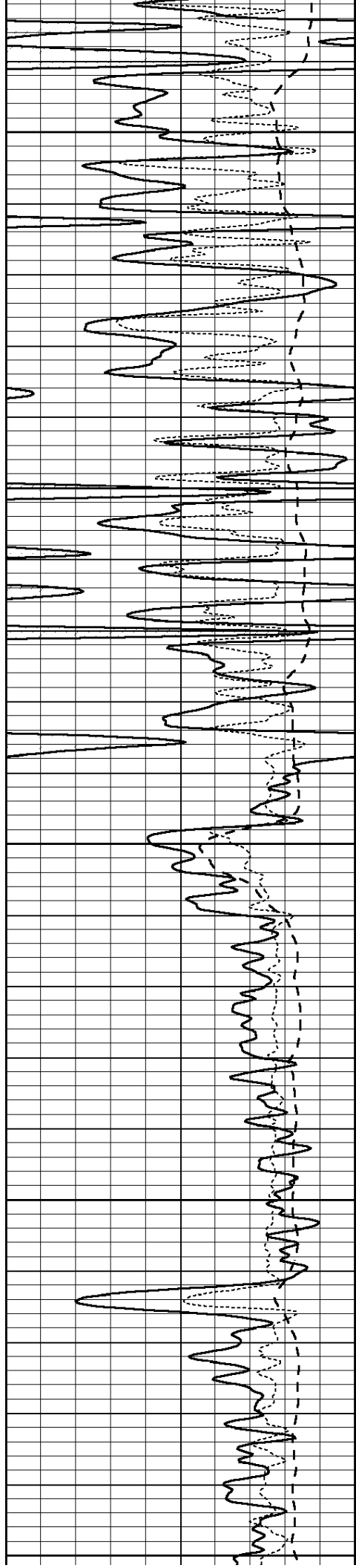
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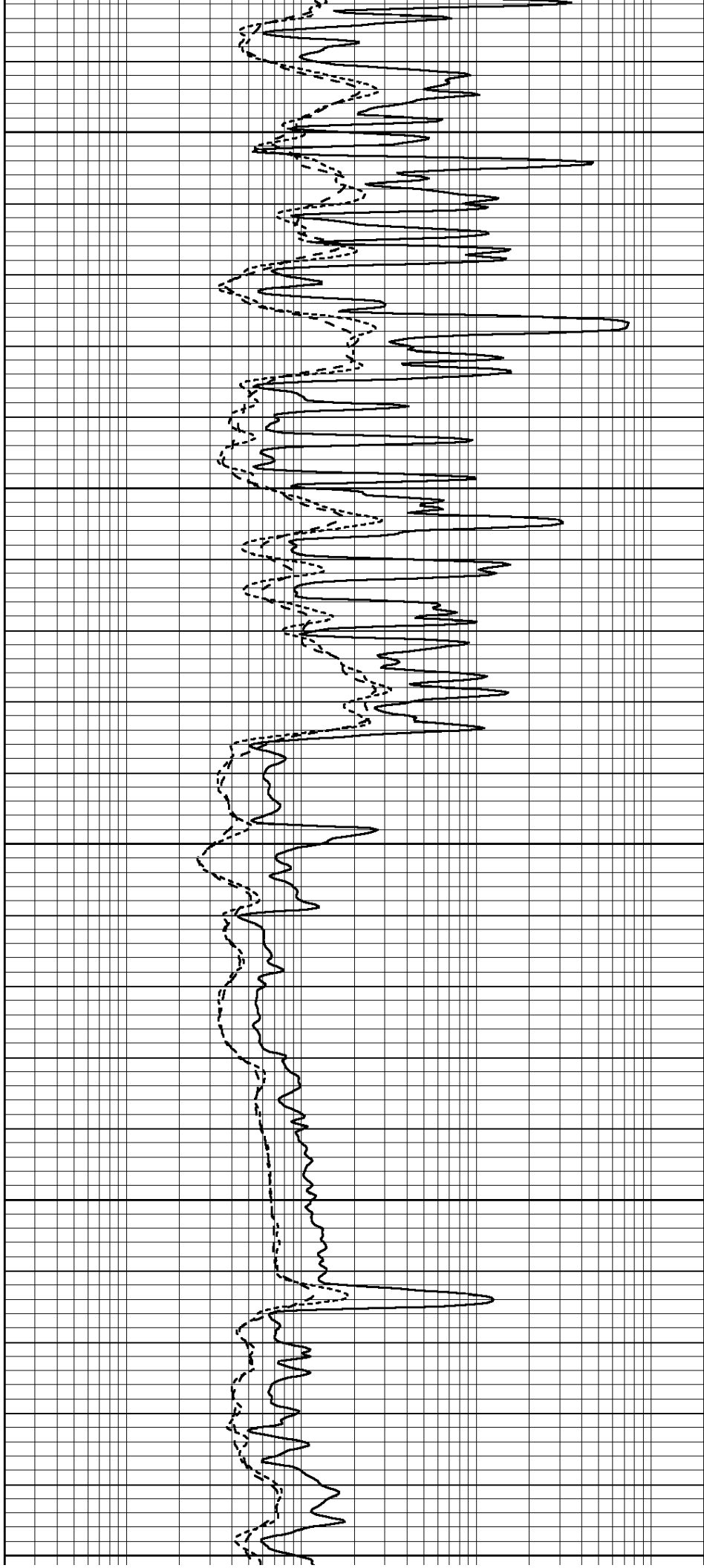
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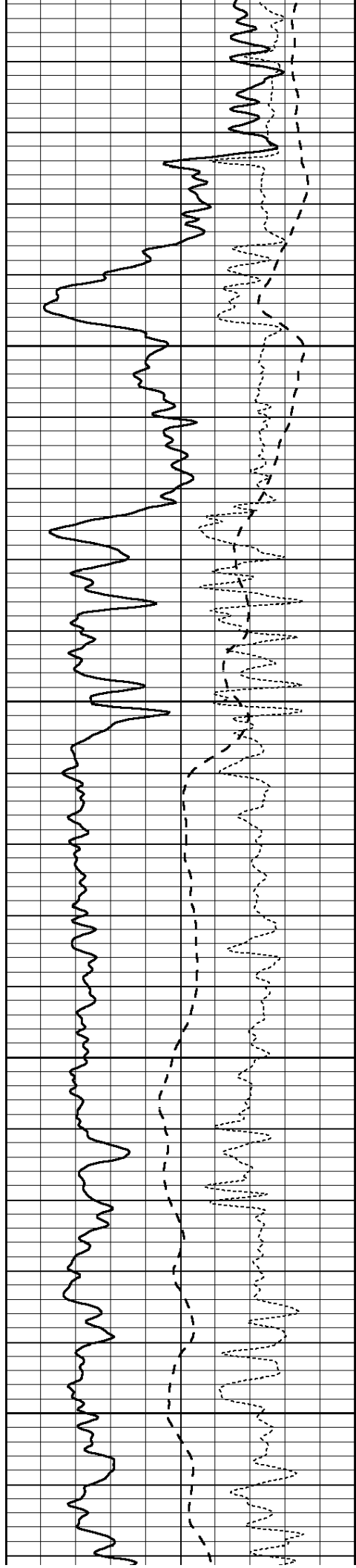
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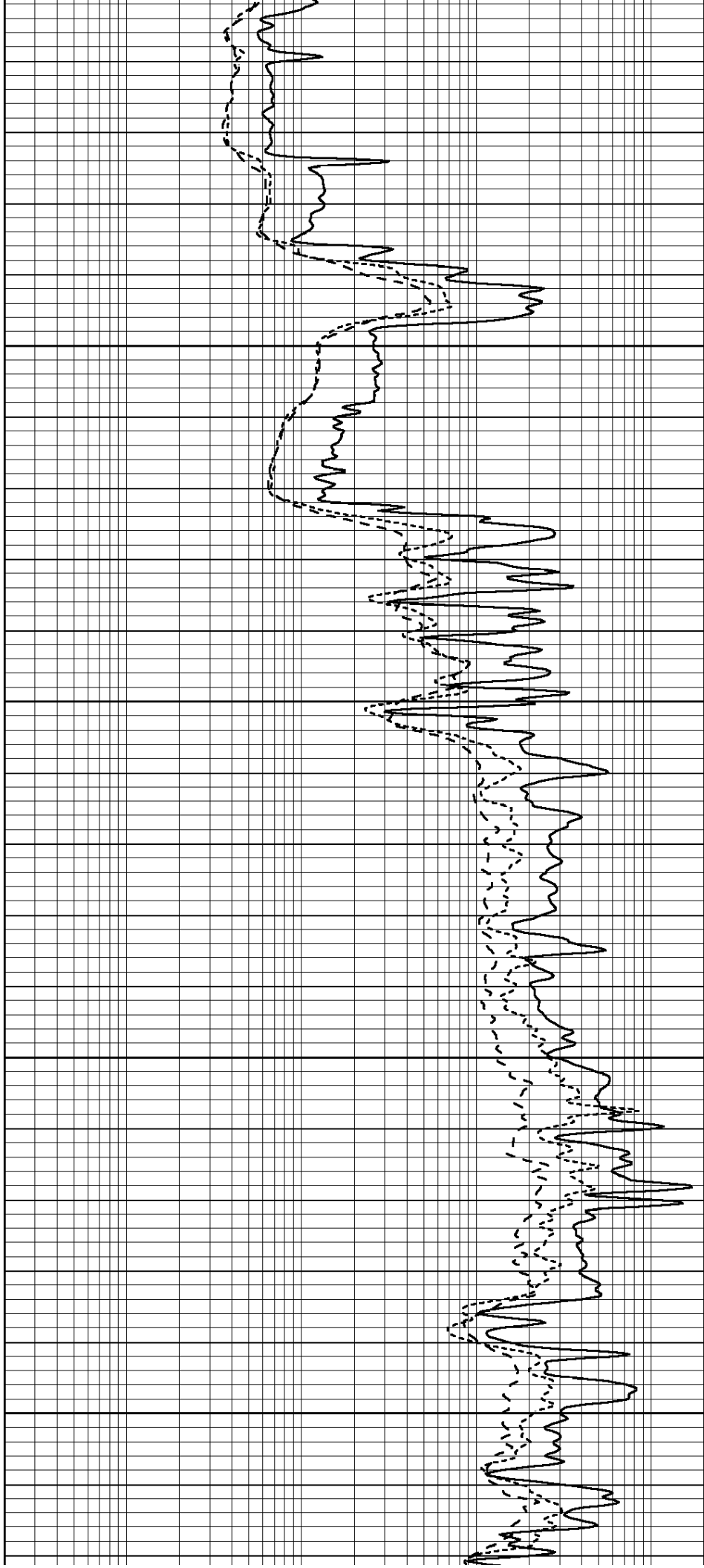


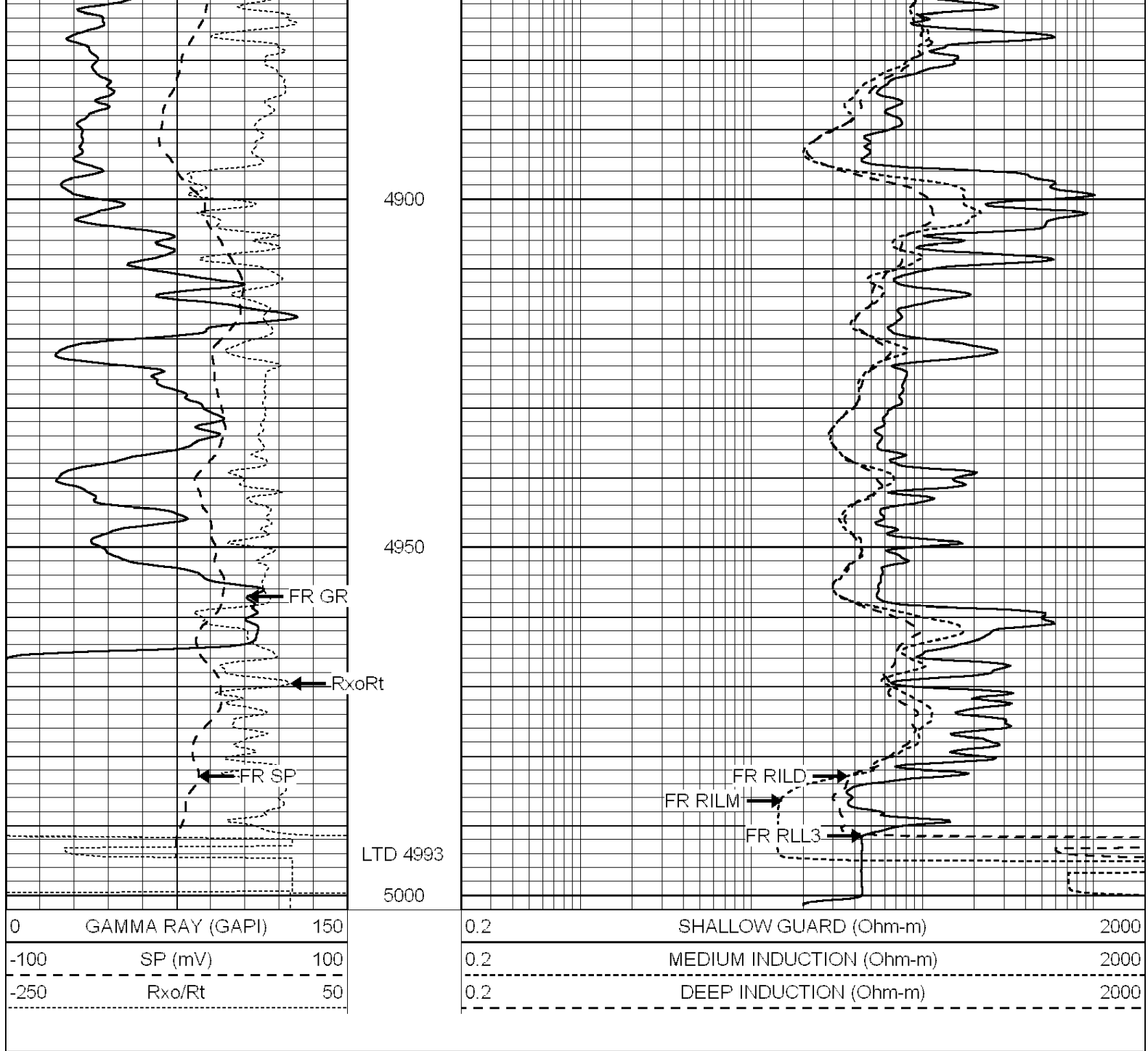
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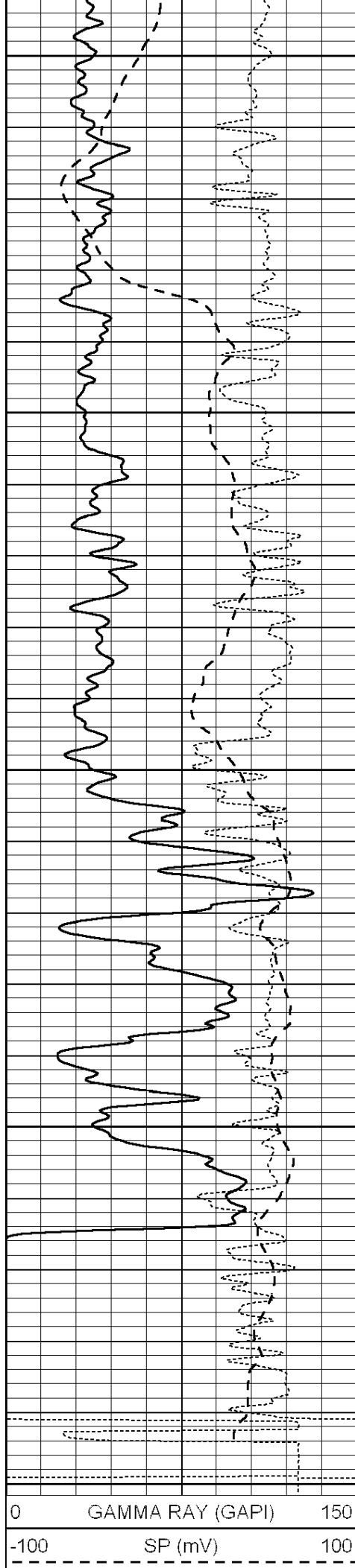


SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 007876pe.db
 Dataset Pathname: pass2.4
 Presentation Format: _dil
 Dataset Creation: Mon Oct 03 05:45:32 2011 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000



4800

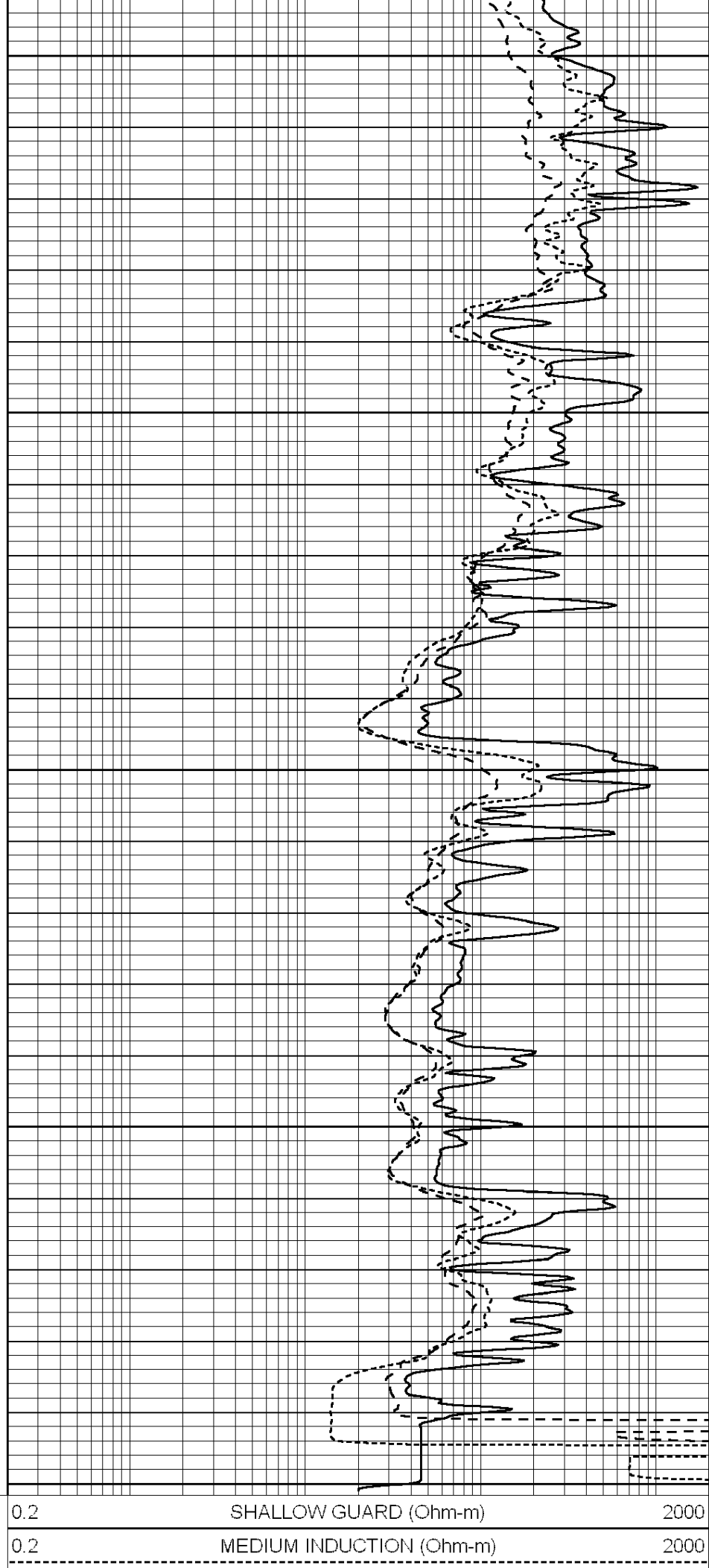
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4900

4950

5000

0 GAMMA RAY (GAPI) 150
-100 SP (mV) 100



0.2 SHALLOW GUARD (Ohm-m) 2000
0.2 MEDIUM INDUCTION (Ohm-m) 2000

Calibration Report	
Database File:	007876pe.db
Dataset Pathname:	pass3.4
Dataset Creation:	Mon Oct 03 08:01:45 2011 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE7-DILG
Surface Cal Performed:	Wed Jul 30 06:14:24 2008
Downhole Cal Performed:	Mon Jul 28 12:02:56 2008
After Survey Verification Performed:	Mon Jul 28 12:02:56 2008

Surface Calibration								
Readings			References				Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	621.923	8.759
Medium	0.039	0.728	V	0.000	464.000	mmho/m	673.322	-26.058
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration								
Readings			References				Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification								
Readings			Targets				Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report
Serial: 002 Model: PRB
Performed Mon Oct 29 15:40:49 2007

Litho Density Calibration					
	Background	Magnesium	Aluminum	Sandstone	
Window 1	1056.3	9118.0	2809.7	10378.4	cps
Window 2	969.9	7671.9	2431.6	8565.8	cps
Window 3	683.8	2939.8	1161.0	3161.8	cps
Window 4	231.4	231.6	226.7	230.8	cps
Long Space	0.0	6702.0	1461.7	7595.9	cps
Short Space	1.2	1433.6	959.4	1568.6	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio	: 0.559
Spine Angle	: 75.2	Spine Slope	: 3.791	Spine Intercept	: -18.7
Caliper					
Low Ref	Readings	Reference			
High Ref	3.7	8.0			
	6.1	14.0			
	Gain: 2.5			Offset: -1.2	
Compensated Neutron Calibration Report					
		Serial Number:	6I		
		Tool Model:	G		
CALIBRATION					
	Detector	Readings	Target		Normalization
	Short Space	1.00 cps	1.00 cps		1.0000
	Long Space	1.00 cps	1.00 cps		1.0000
Gamma Ray Calibration Report					
	Serial Number:	#8			
	Tool Model:	OPEN			
	Performed:	Mon Jun 13 16:56:43 2011			
	Calibrator Value:	150.0	GAPI		
	Background Reading:	0.0	cps		
	Calibrator Reading:	175.0	cps		
	Sensitivity:	0.8371	GAPI/cps		