



**SUPERIOR**  
**Hays,**  
**Kansas**

**DUAL**  
**INDUCTION**  
**LOG**

Company		MULL DRILLING COMPANY, INC.	
Well		APC SCHERLER #1-15	
Field			
County		KIOWA	
State		COLORADO	
Location:		API # : 05-061-06855-0000	
		1885' FNL & 1424' FEL SW/4 - NE/4	
Permanent Datum		GROUND LEVEL	Elevation 4117
Log Measured From		KELLY BUSHING 11' A.G.L.	
Drilling Measured From		KELLY BUSHING	
SEC 15 TWP 17S RGE 45W		Other Services CDL/CNL/PE MEL/SON	
Date		4/5/11	Elevation K.B. 4128 D.F. 4126 G.L. 4117
Run Number	ONE		
Depth Driller	5380		
Depth Logger	5382		
Bottom Logged Interval	5380		
Top Log Interval	0		
Casing Driller	8 5/8" @ 319		
Casing Logger	312		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2300 PPM	
Density / Viscosity	9.0/49		
pH / Fluid Loss	10.5/8.0		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	1.20 @ 83F		
Rmf @ Meas. Temp	0.90 @ 83F		
Rmc @ Meas. Temp	1.44 @ 83F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	0.78 @ 128F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	128F		
Equipment Number	680		
Location	HAYS, KS.		
Recorded By	JEFF GRONEMEG		
Witnessed By	PHIL ASKEY		

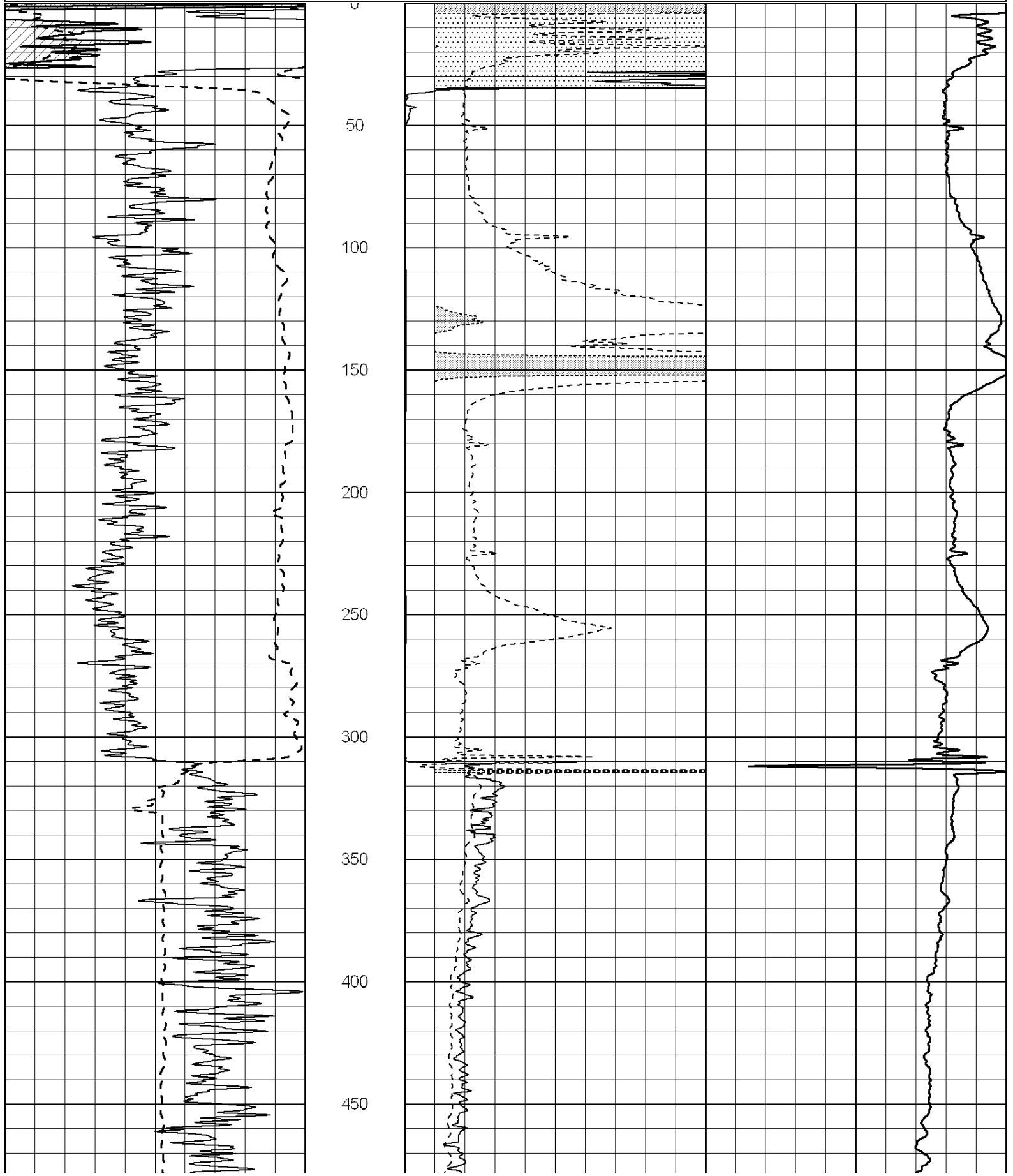
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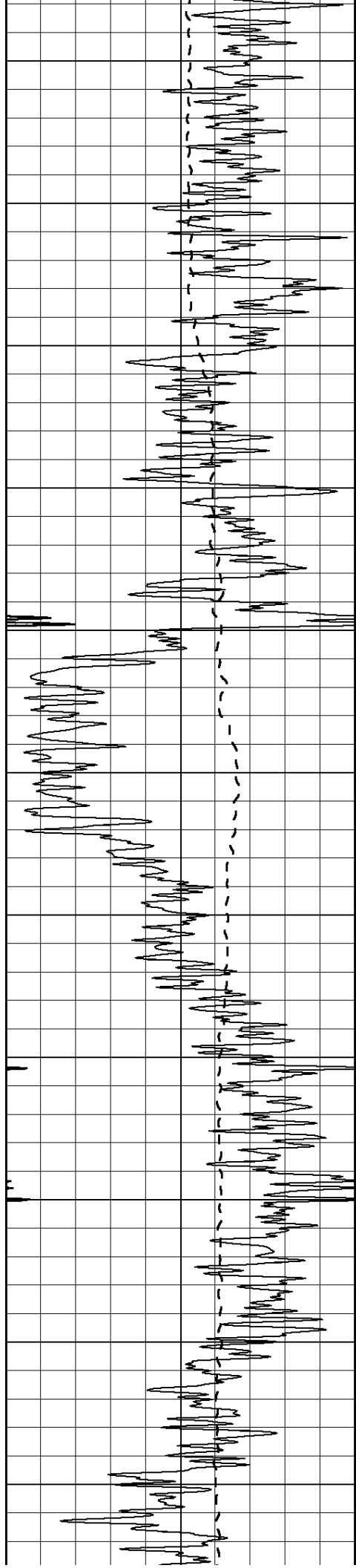
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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 - 9.3 MILES NORTH - .3 MILES WEST - SOUTH INTO

Charted by: _____ Depth in Feet scaled 1:600					
0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50
-100	SP (mV)	100	0	Deep Induction (Ohm-m)	50
-----			-----		
			1000	CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500





500

550

600

650

700

750

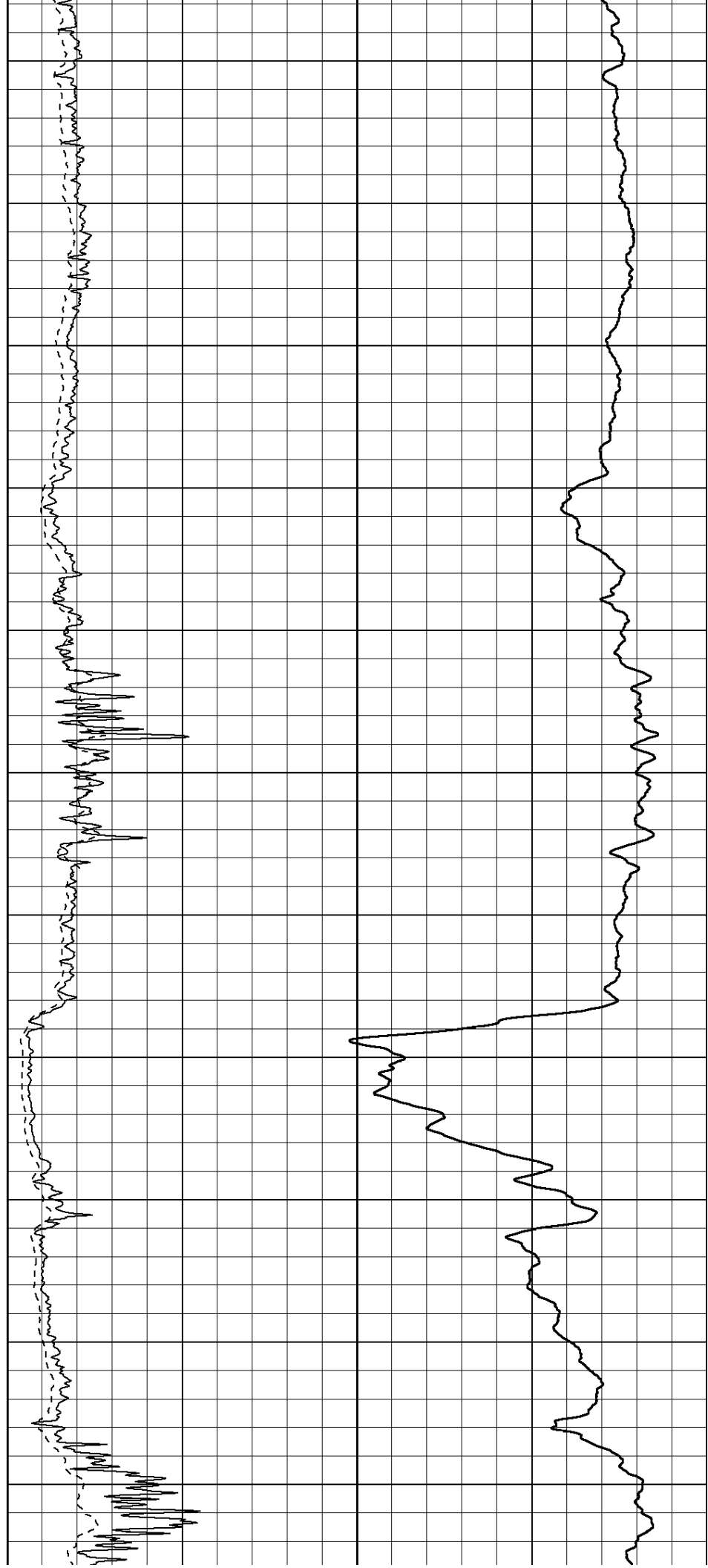
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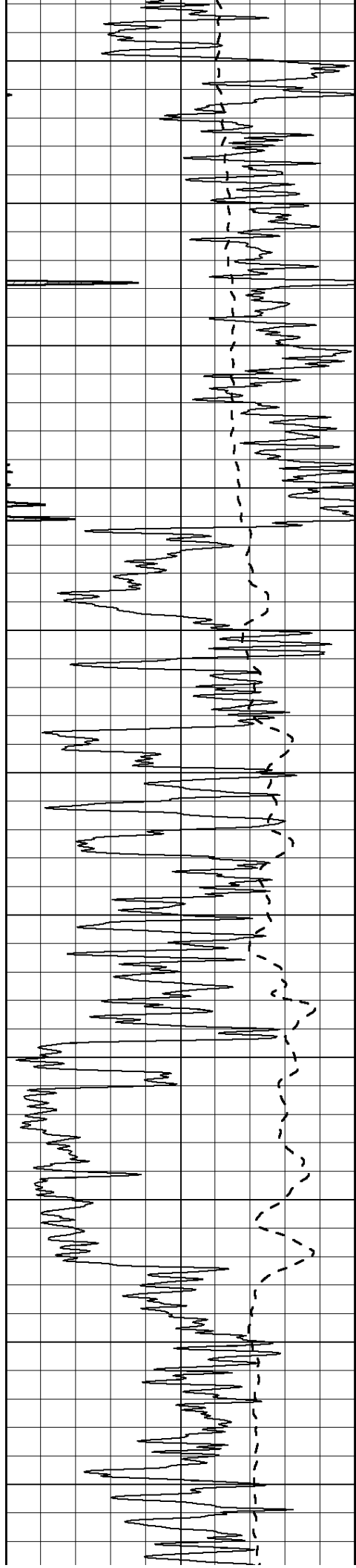
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900

950

1000





1050

1100

1150

1200

1250

1300

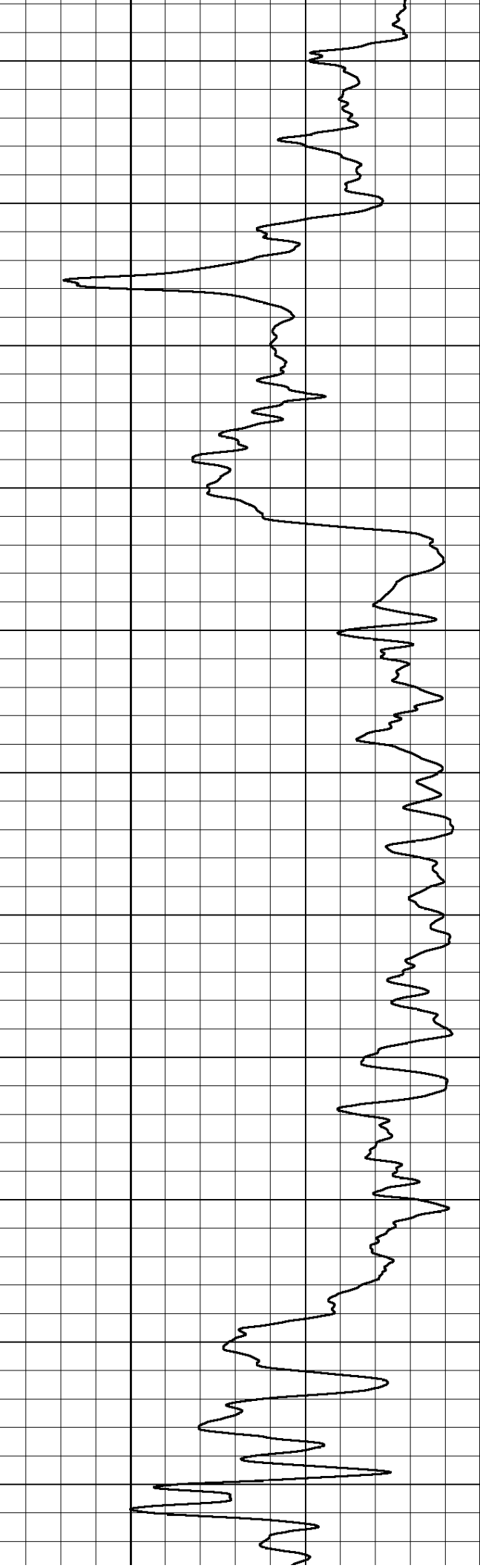
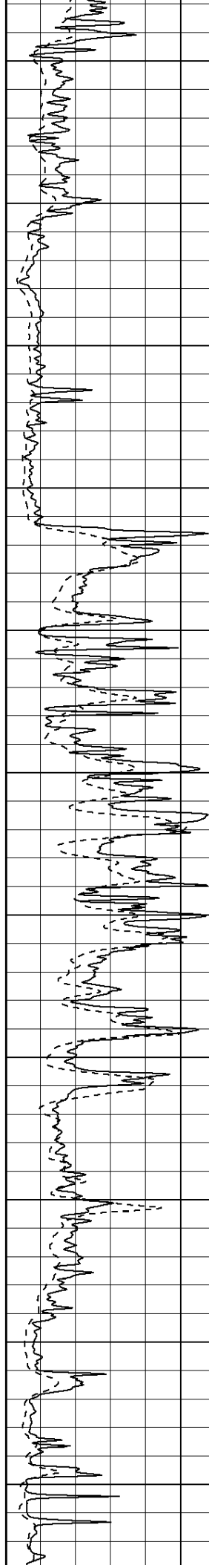
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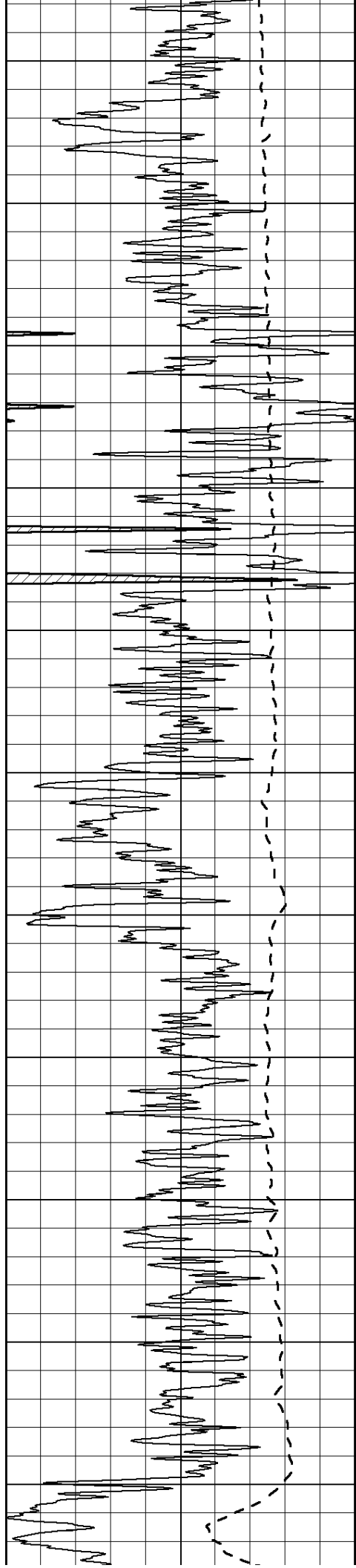
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1450

1500

1550





1600

1650

1700

1750

1800

1850

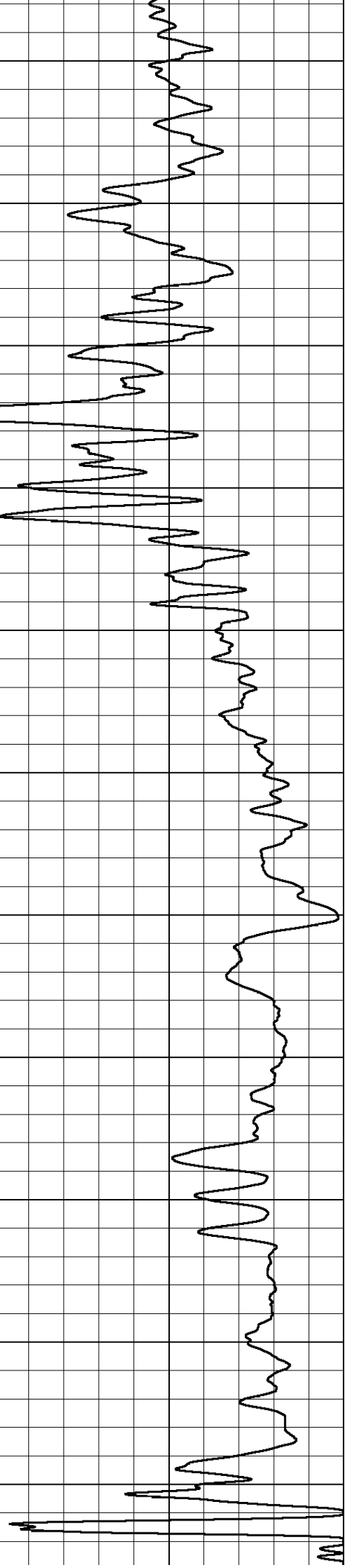
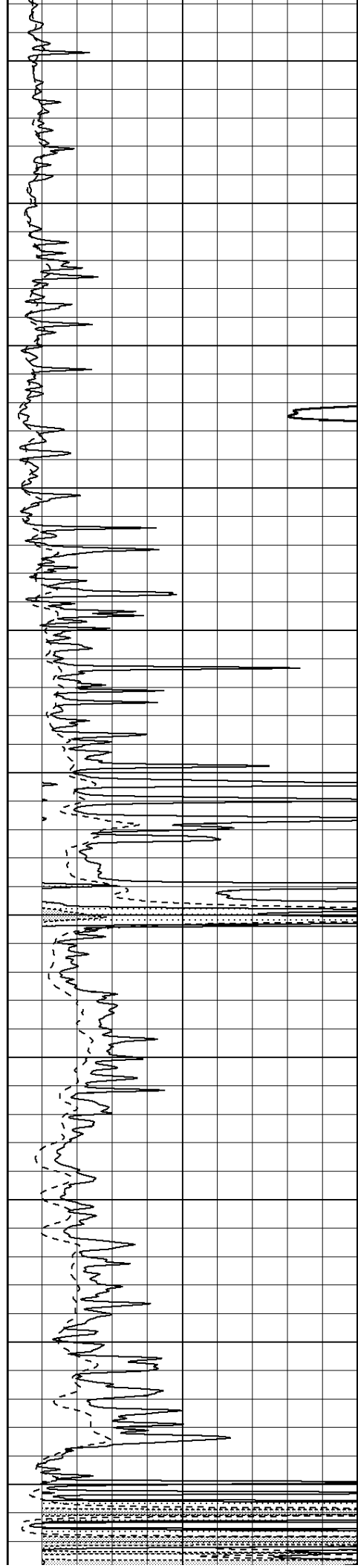
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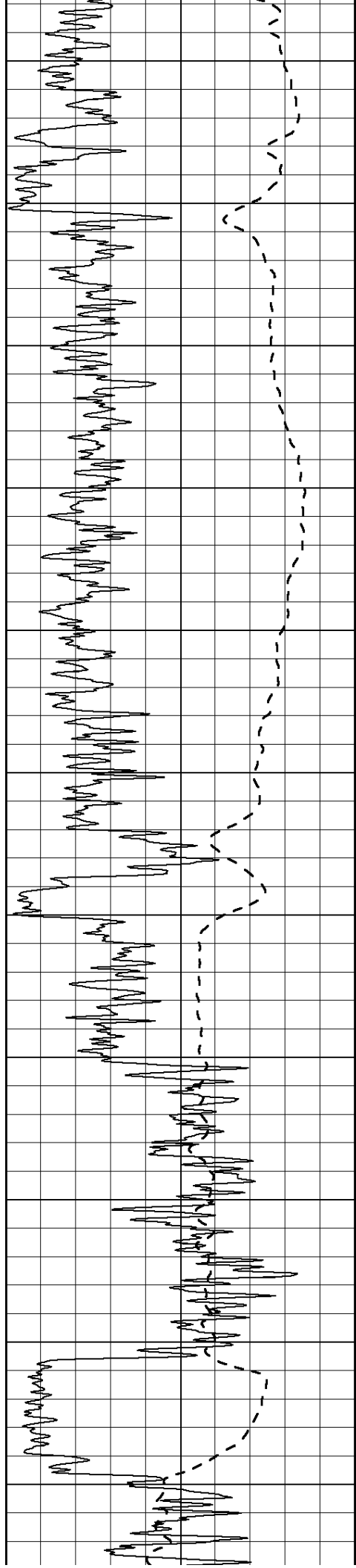
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2000

2050

2100





2150

2200

2250

2300

2350

2400

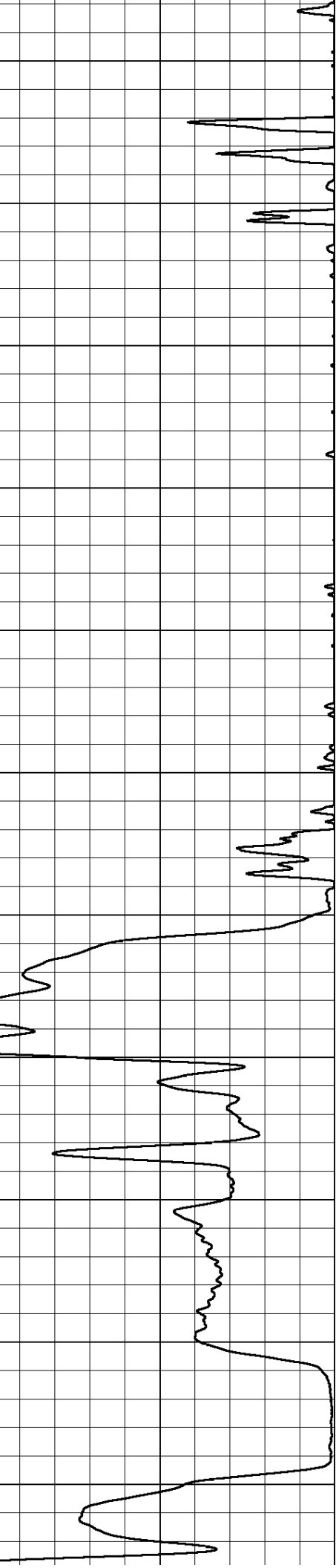
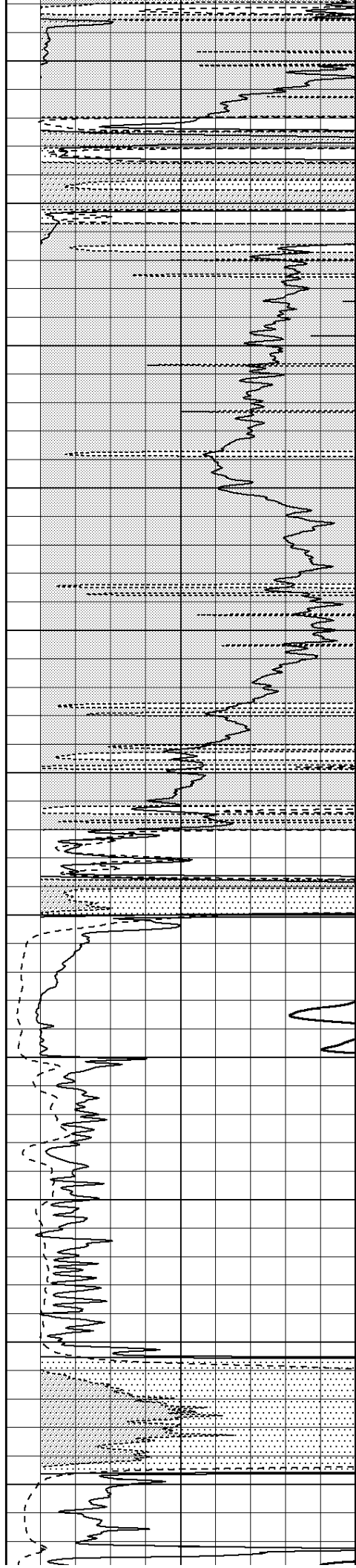
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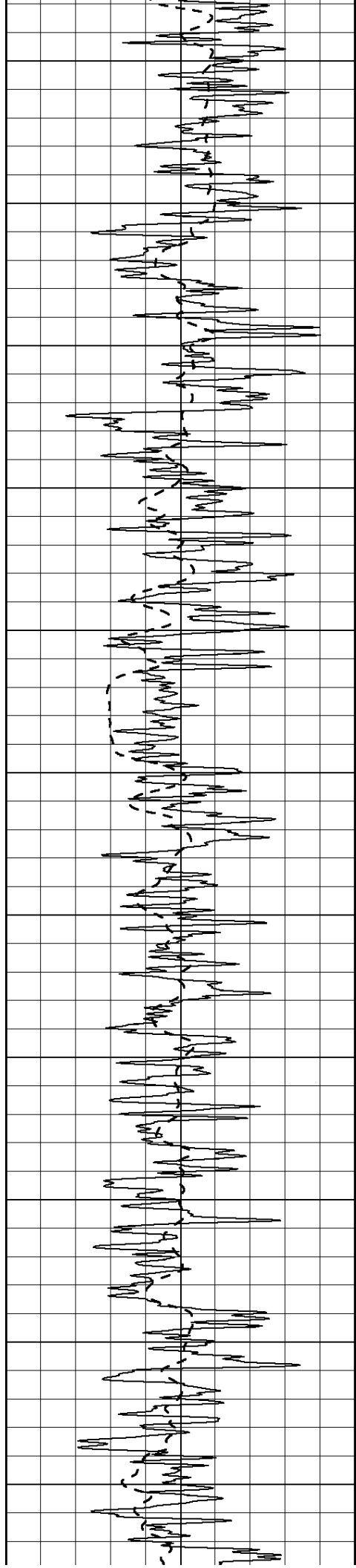
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2550

2600

2650





2700

2750

2800

2850

2900

2950

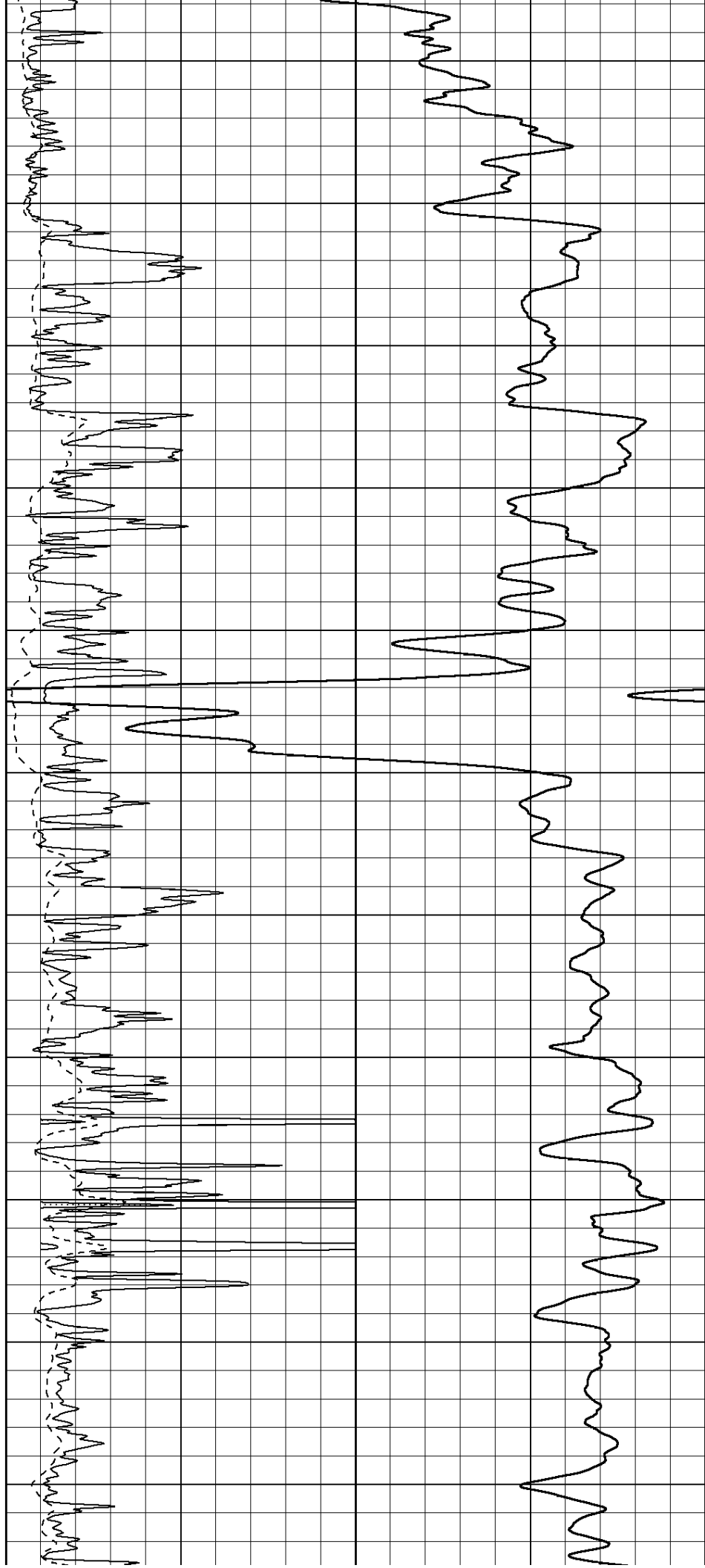
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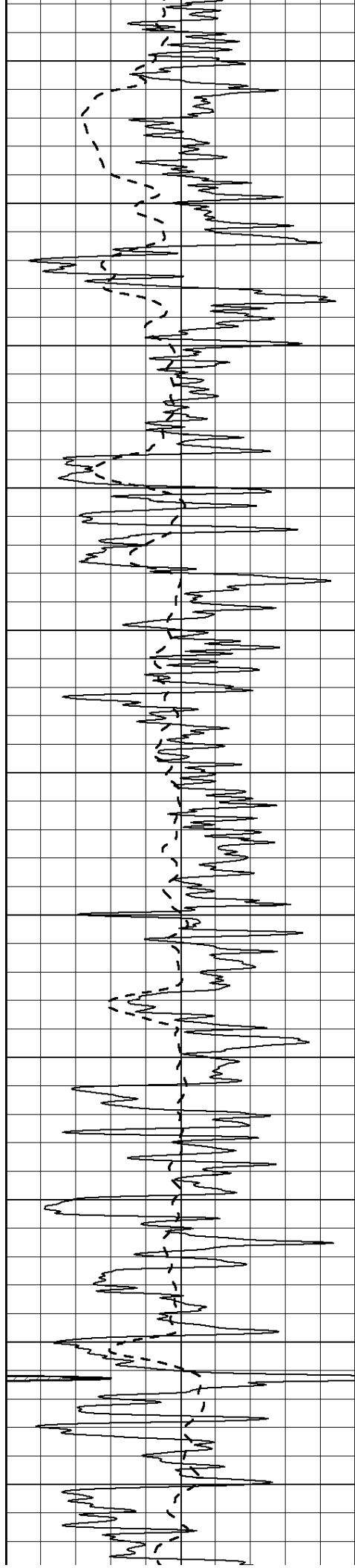
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3150

3200





3250

3300

3350

3400

3450

3500

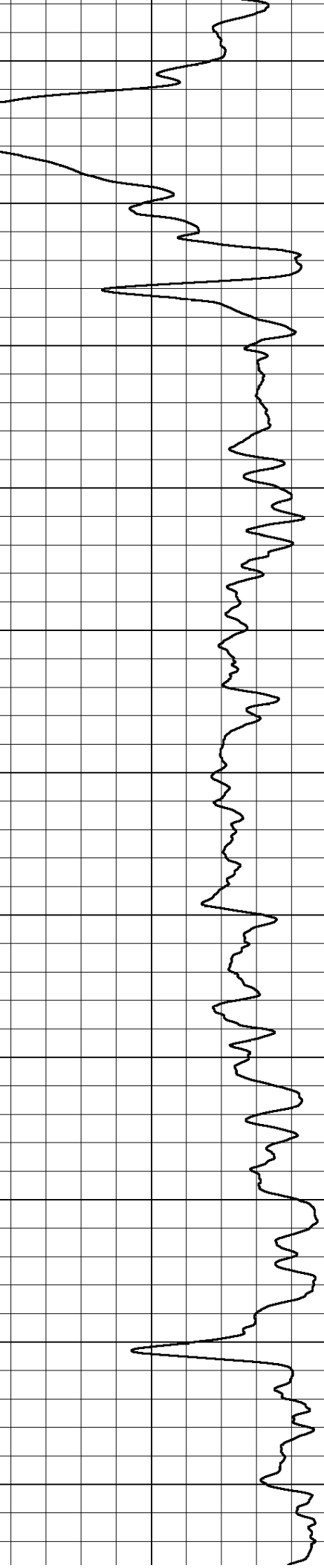
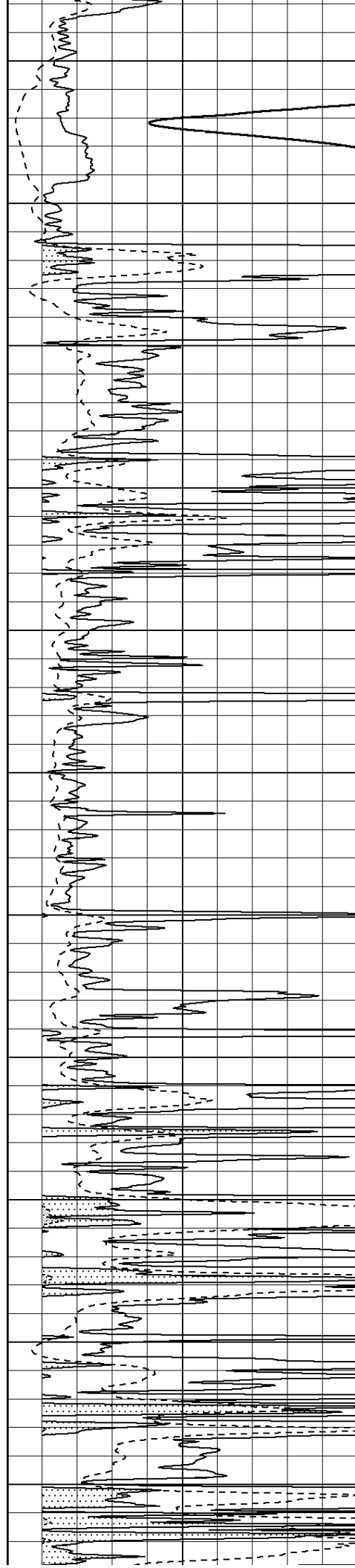
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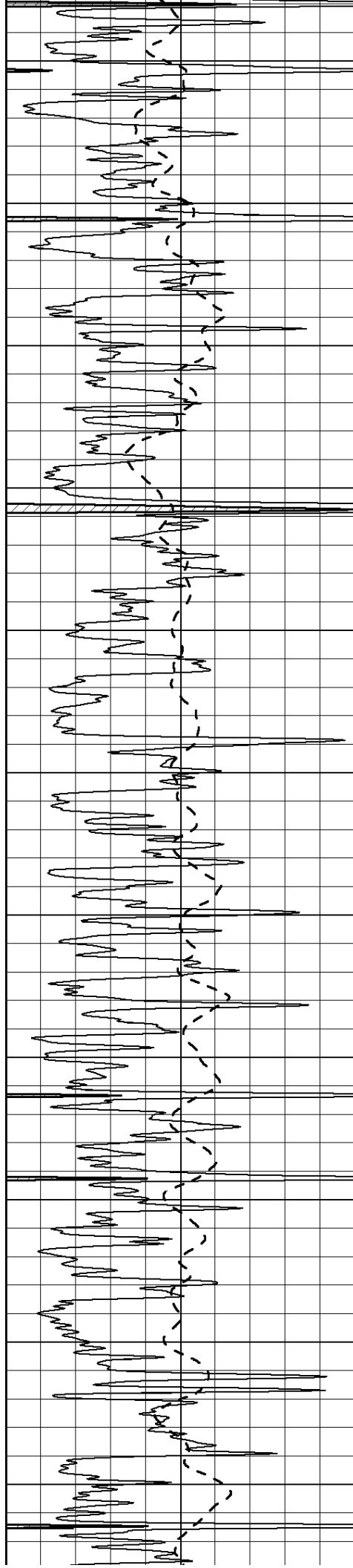
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3700

3750







3800

3850

3900

3950

4000

4050

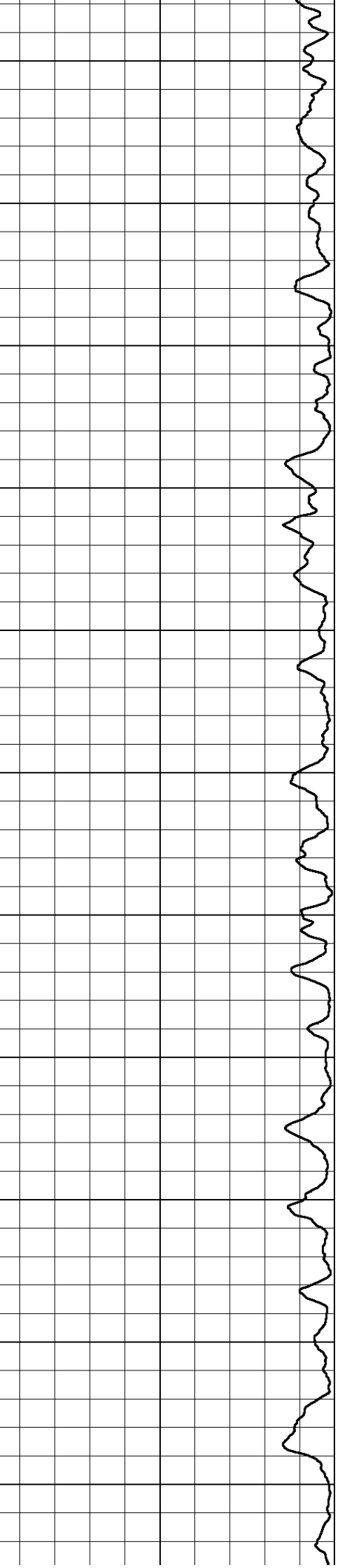
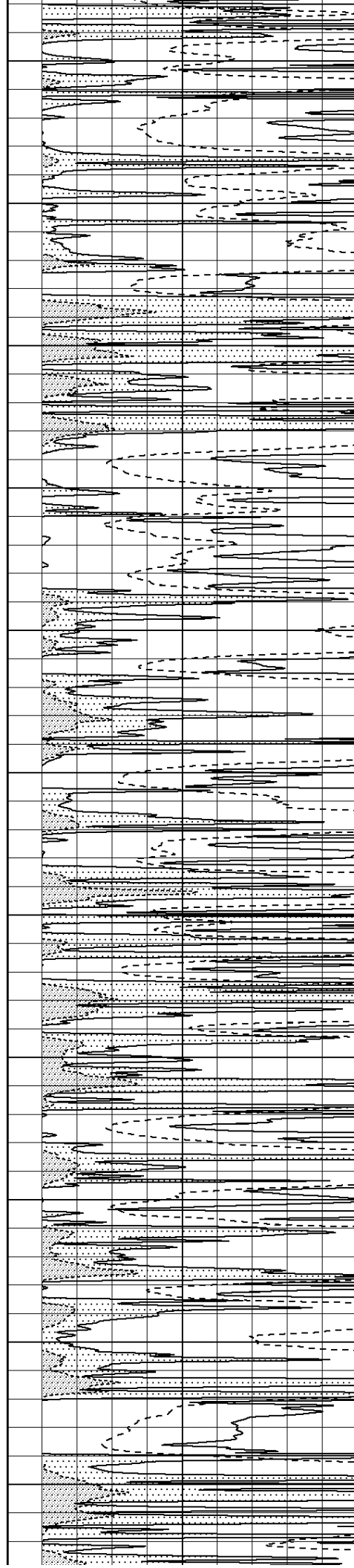
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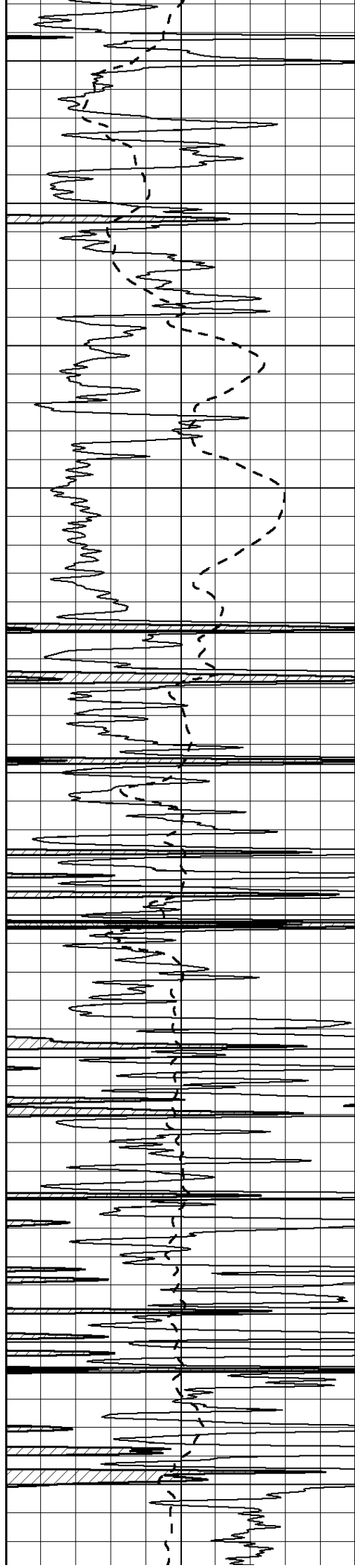
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4200

4250

4300





4350

4400

4450

4500

4550

4600

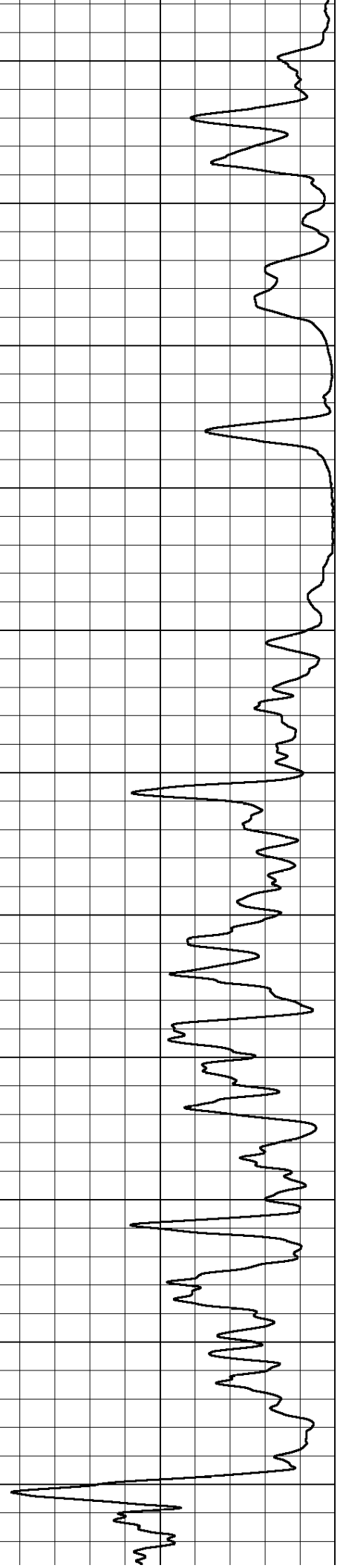
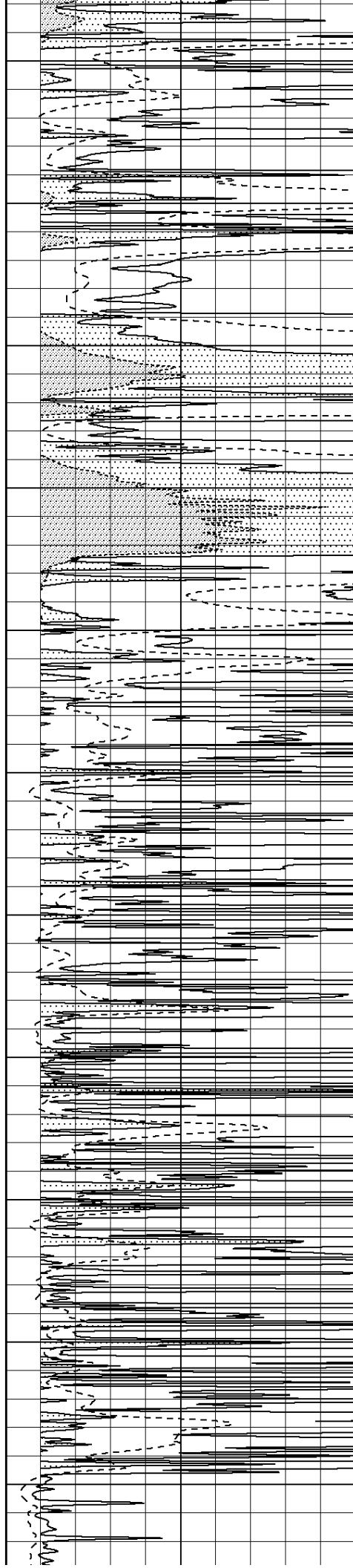
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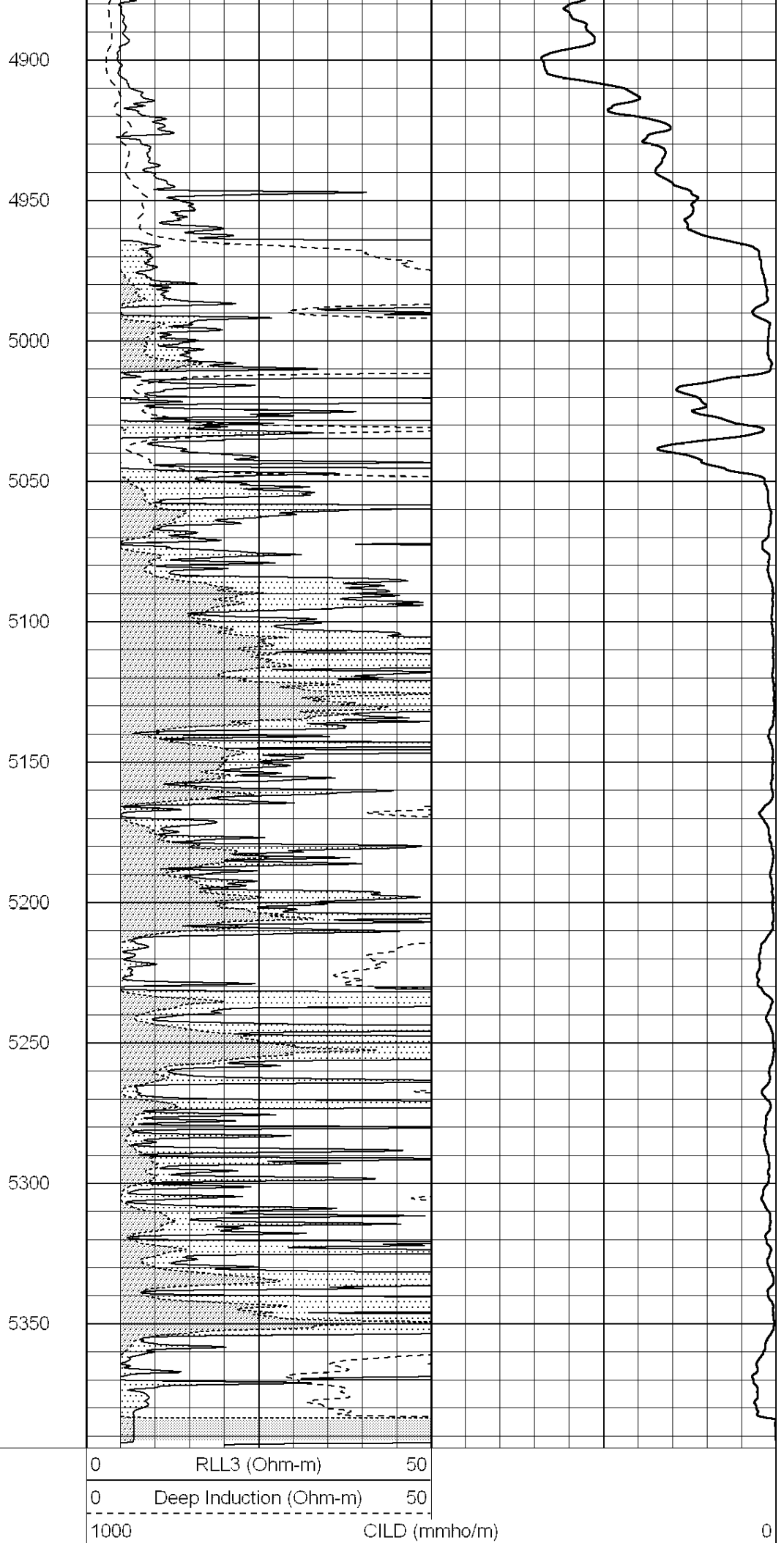
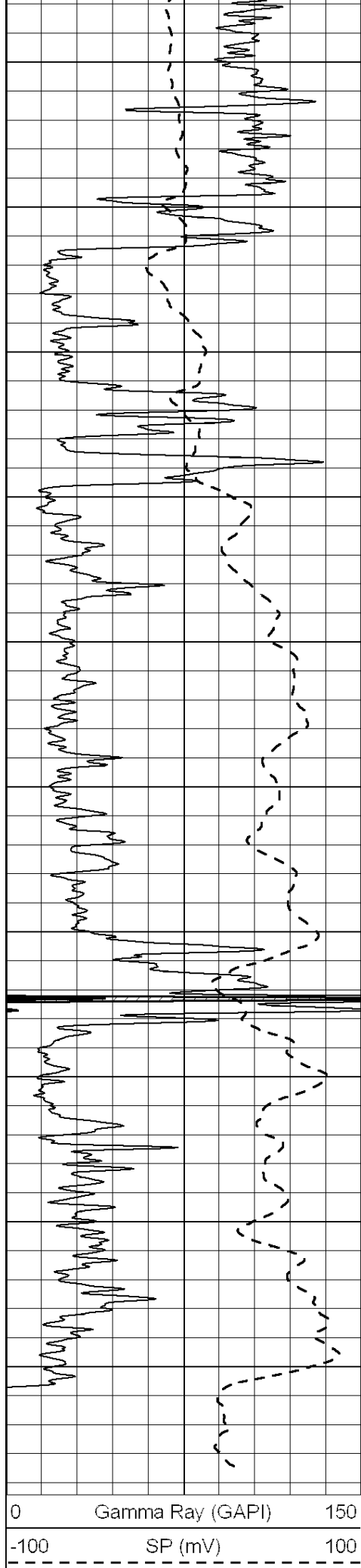
4700

4750

4800

4850



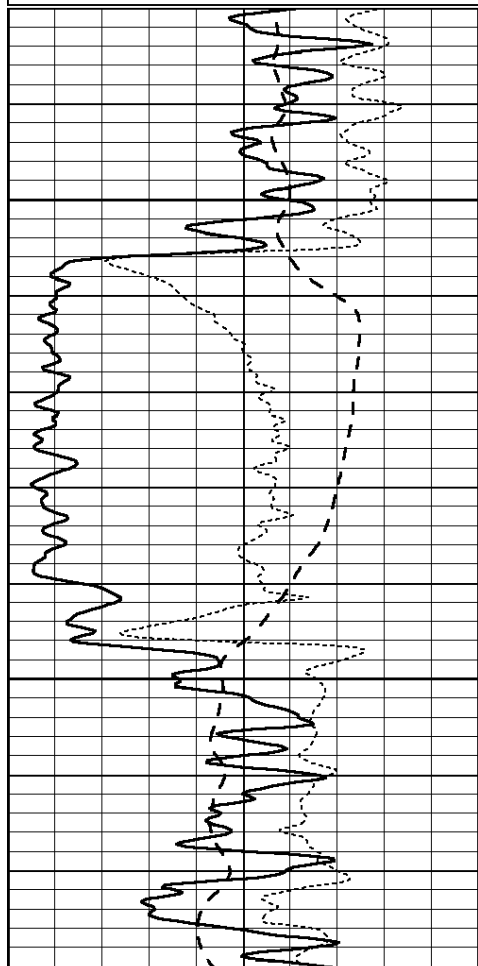


50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

Database File: 006801pe.db  
Dataset Pathname: pass3.2  
Presentation Format: \_dil  
Dataset Creation: Tue Apr 05 08:57:31 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

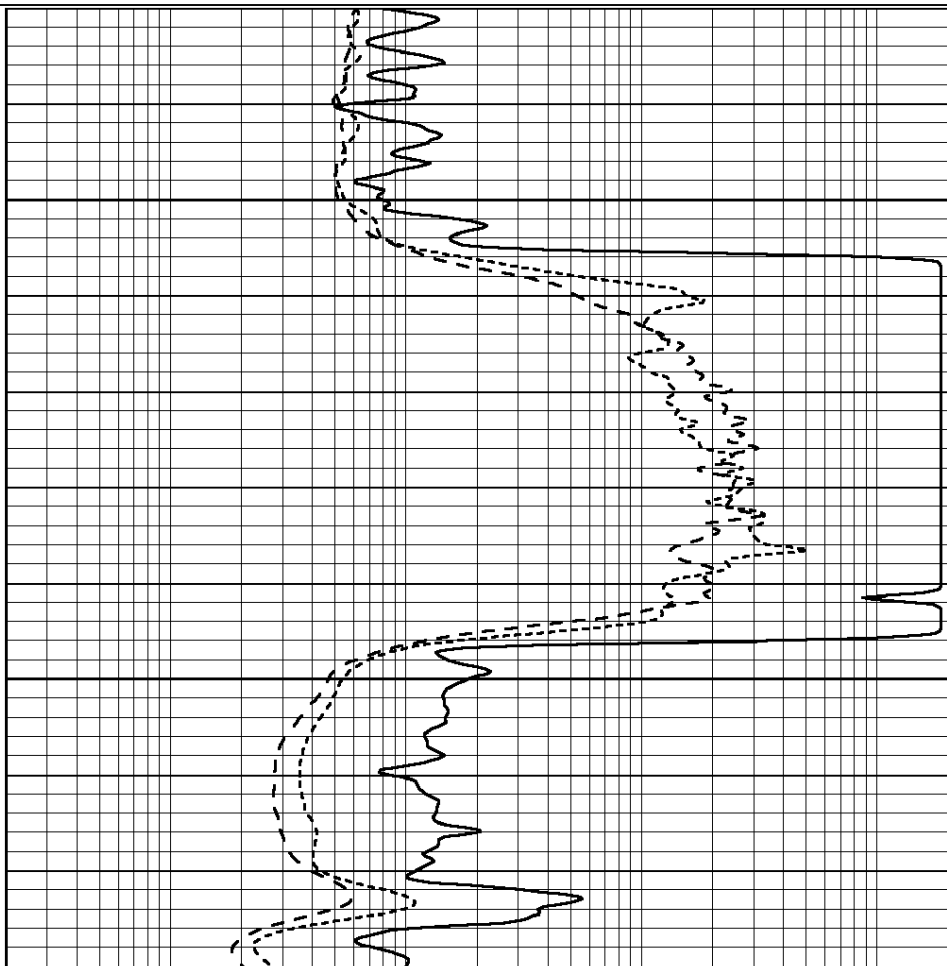
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



2600

2650

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

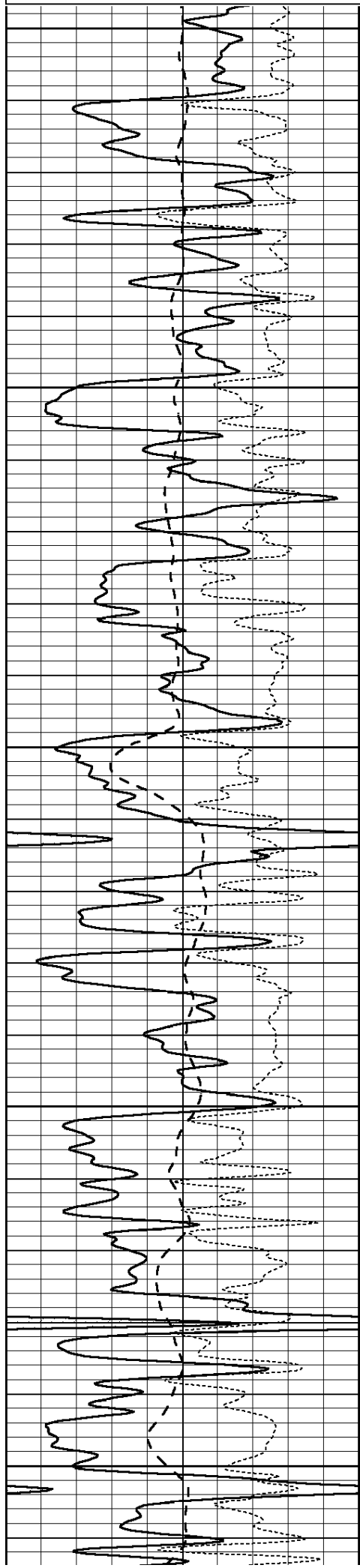


0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

Database File: 006801pe.db  
Dataset Pathname: pass3.1  
Presentation Format: \_dil  
Dataset Creation: Tue Apr 05 07:28:24 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



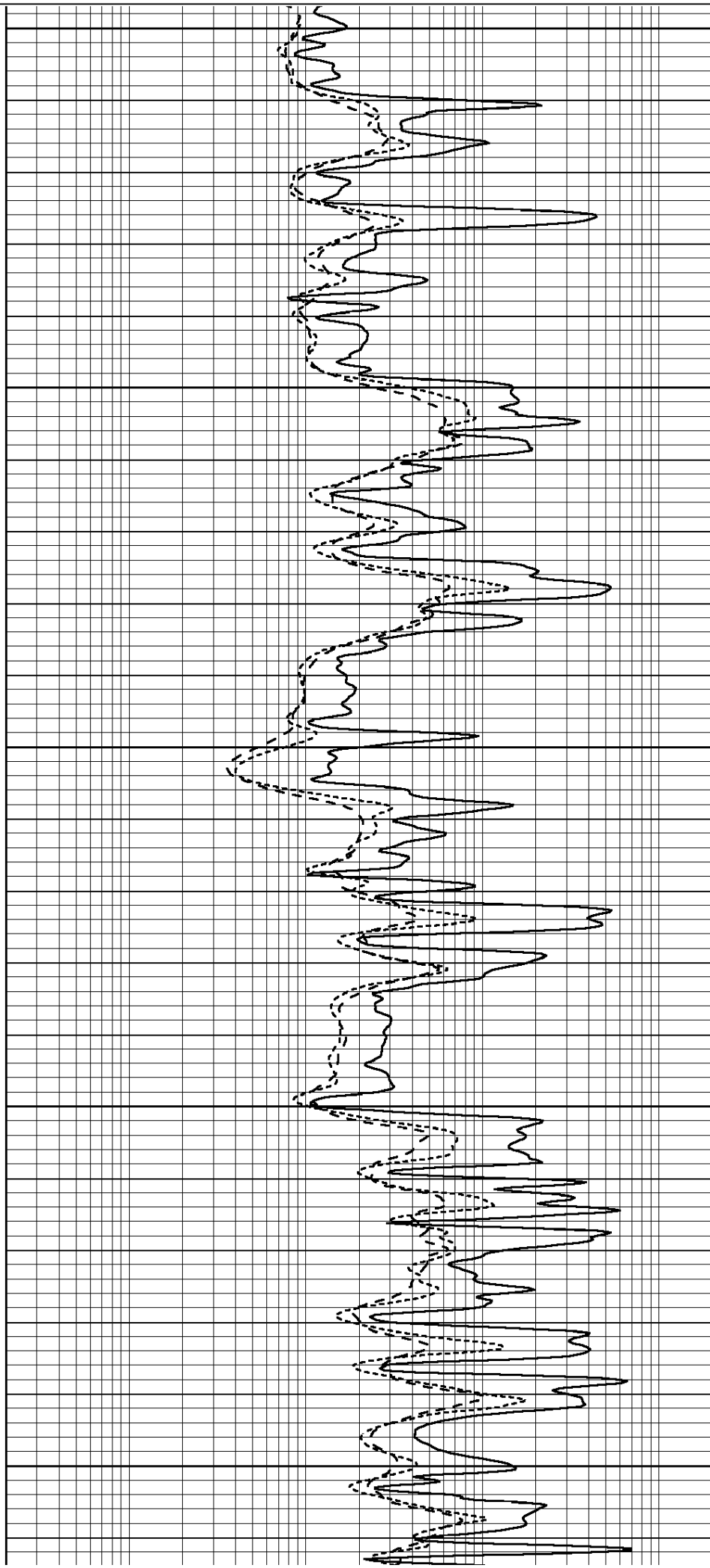
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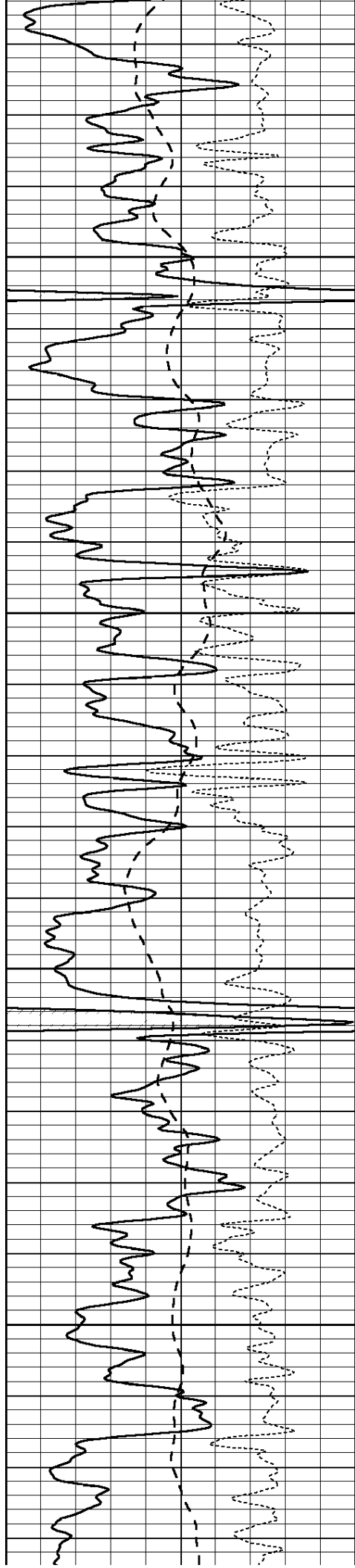
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3700

3750

3800



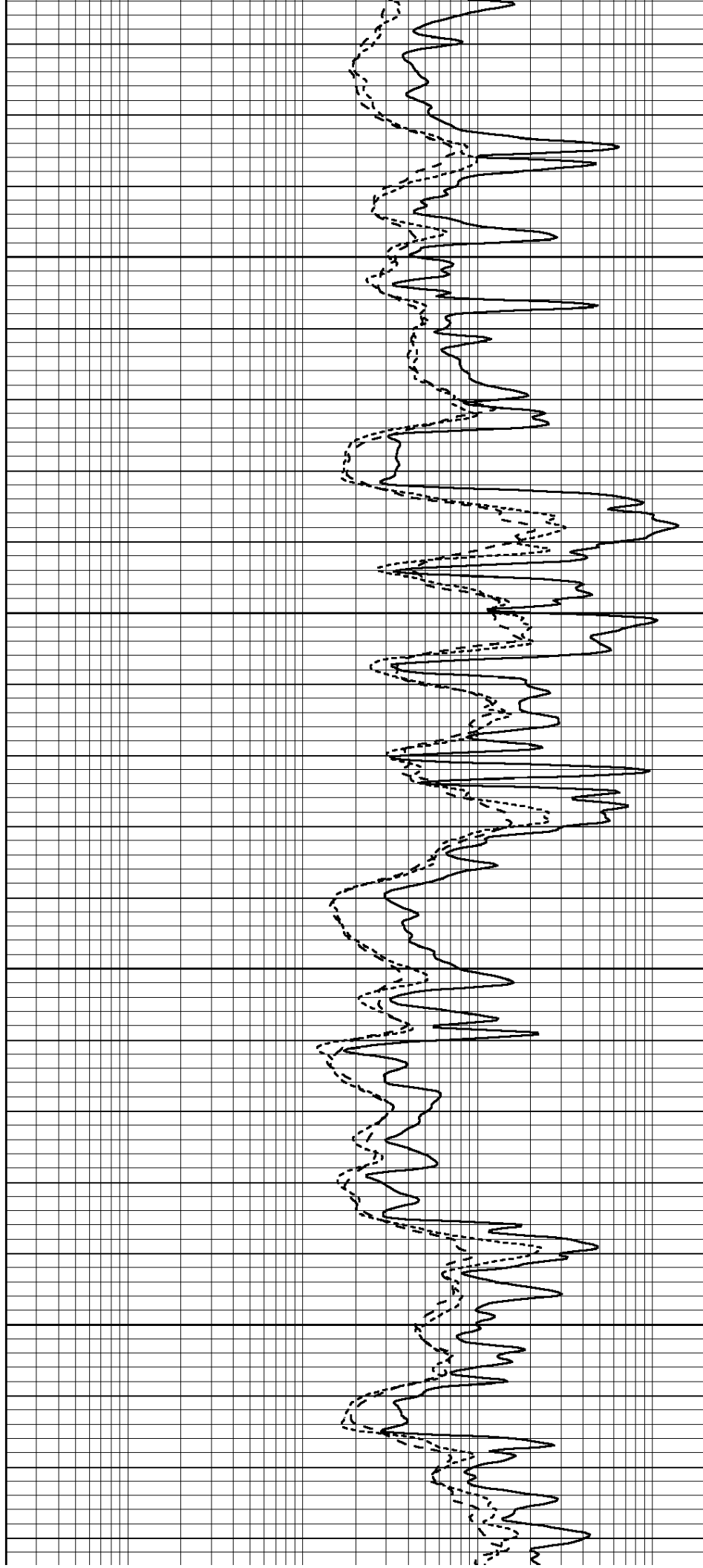


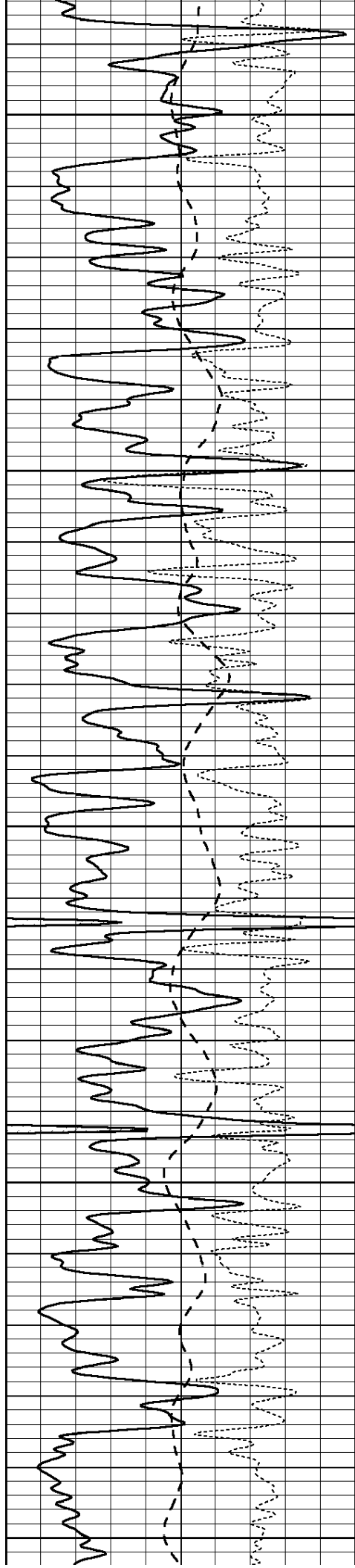
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3900

3950

4000





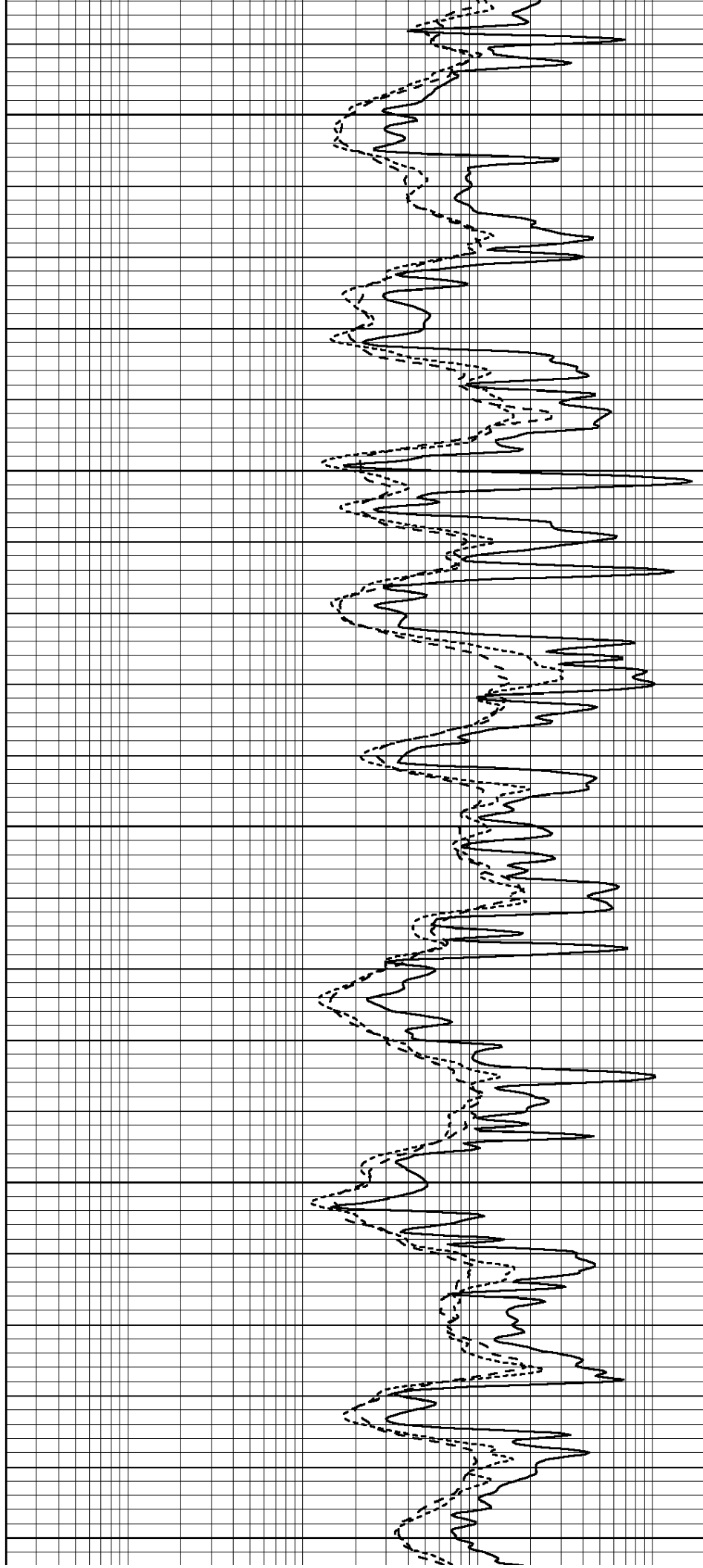
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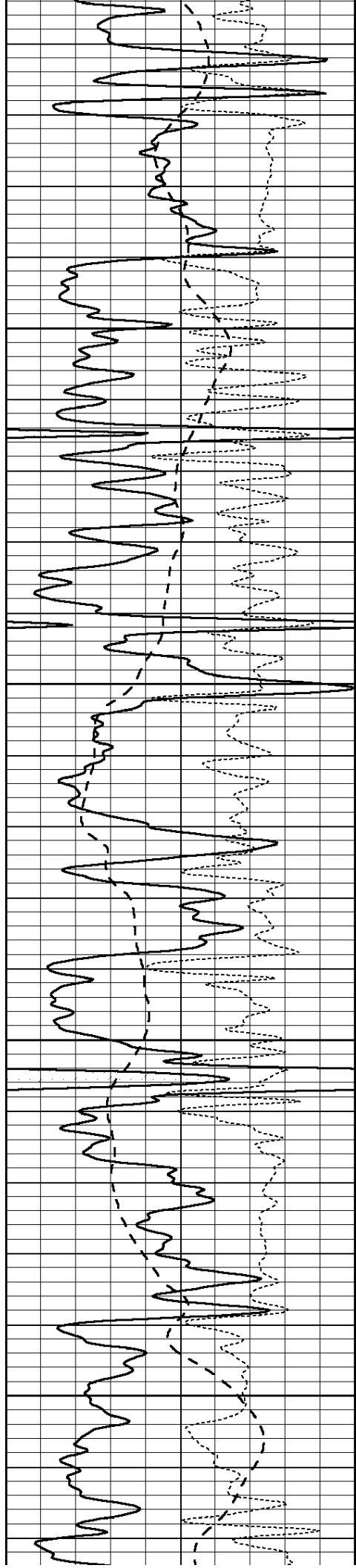
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4150

4200

4250



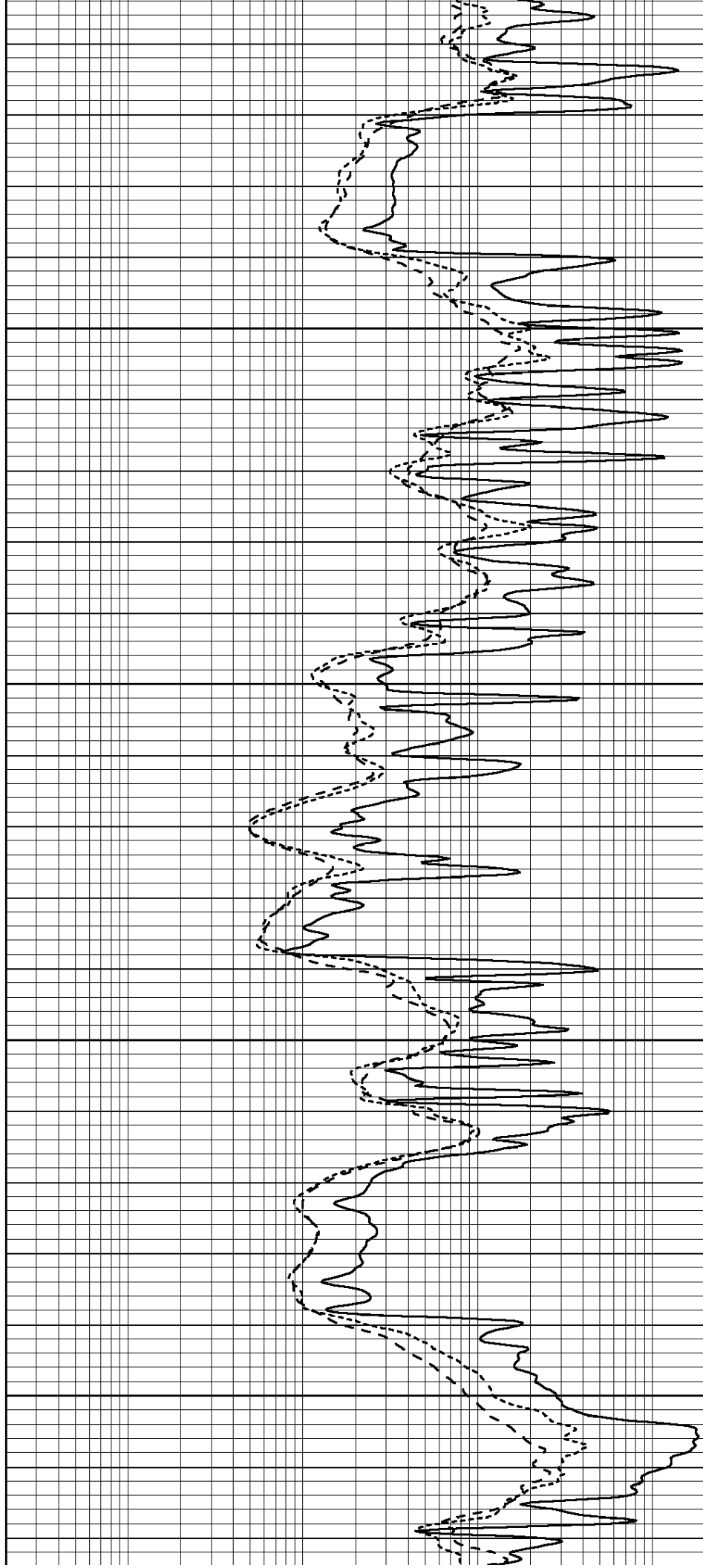


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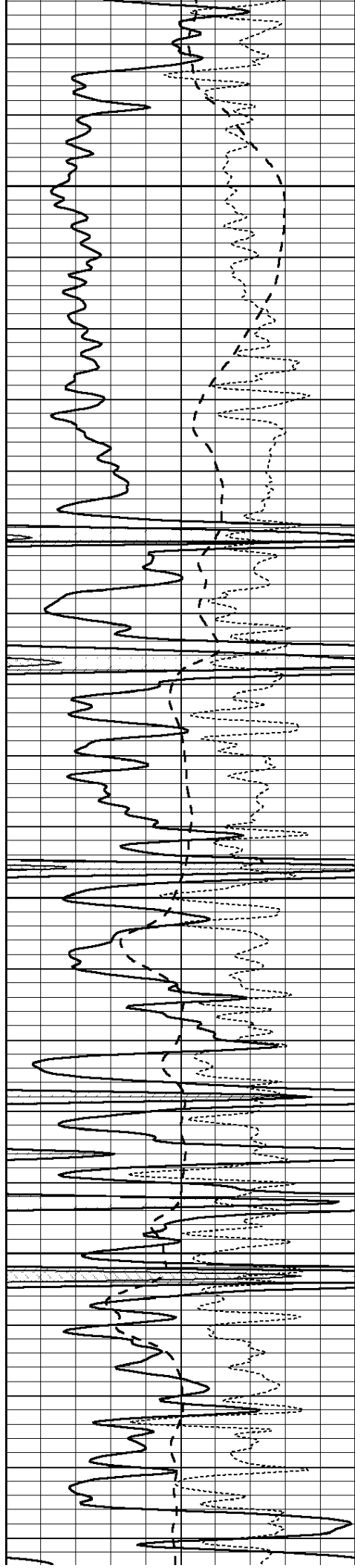
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4400

4450





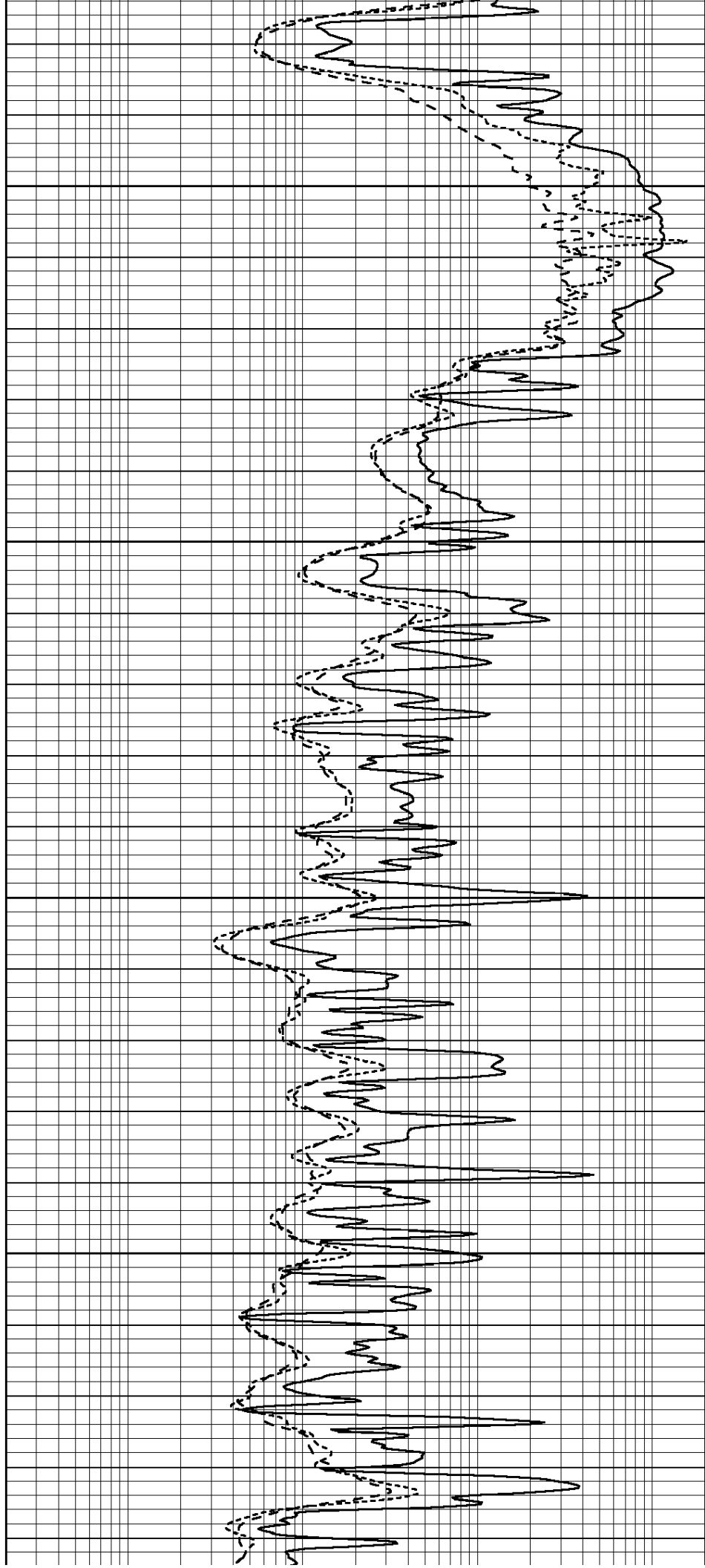


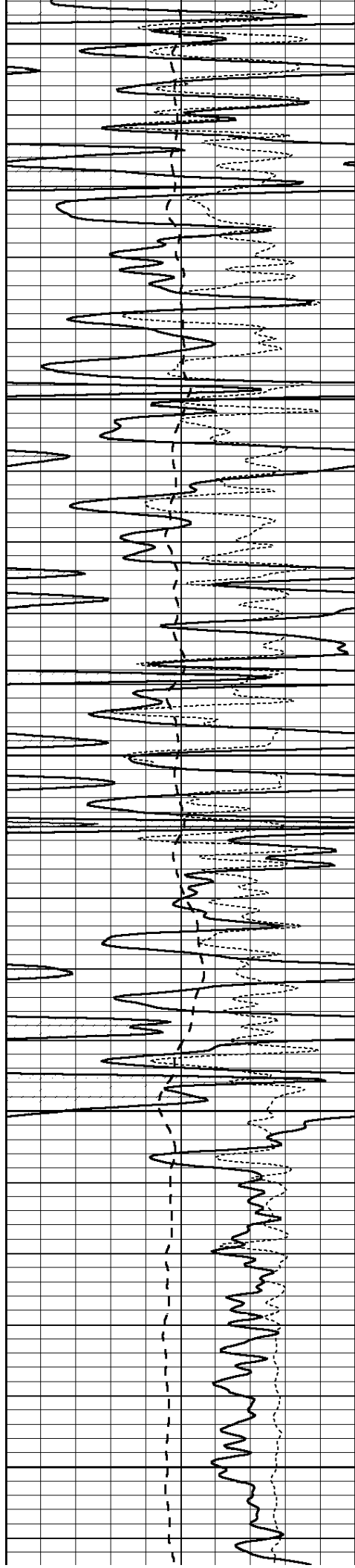
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4550

4600

4650





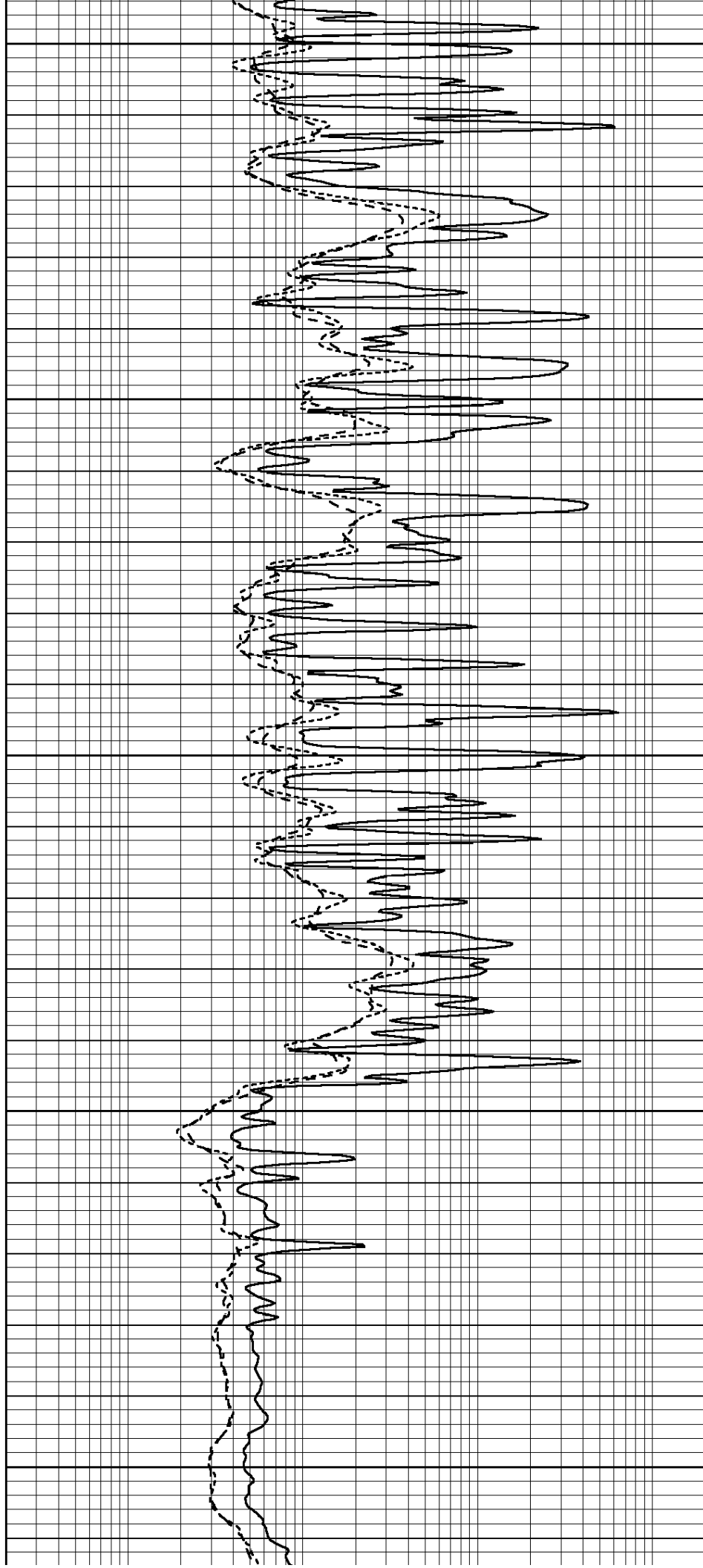
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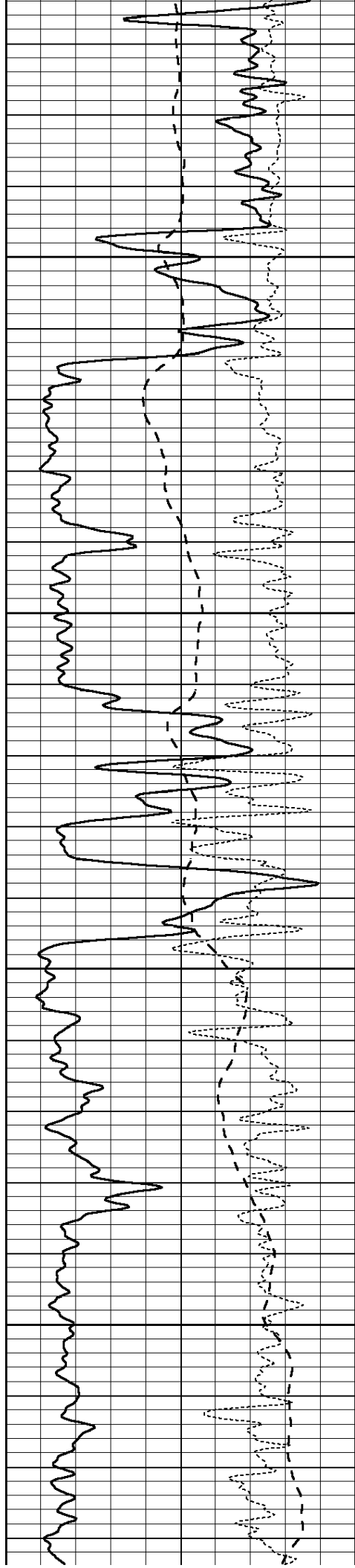
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4900



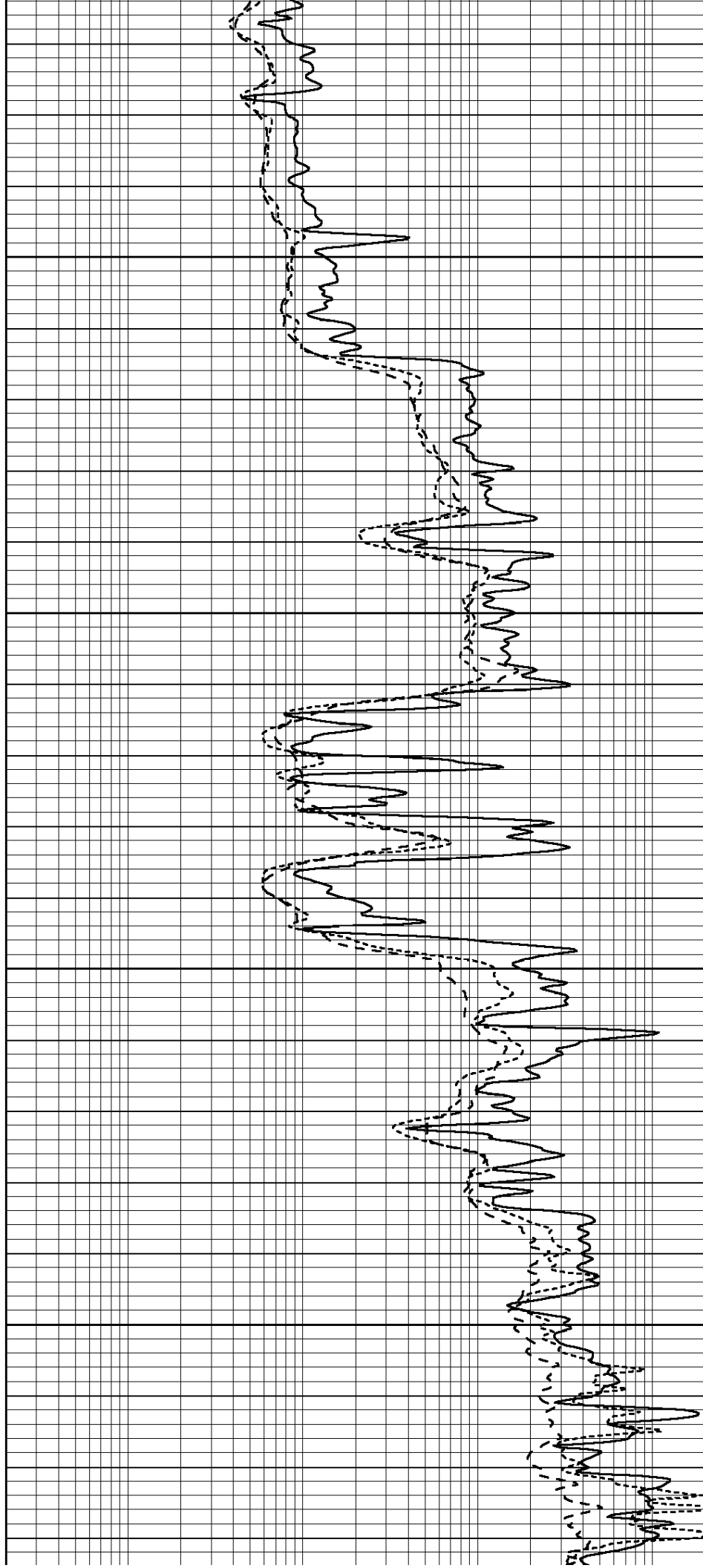


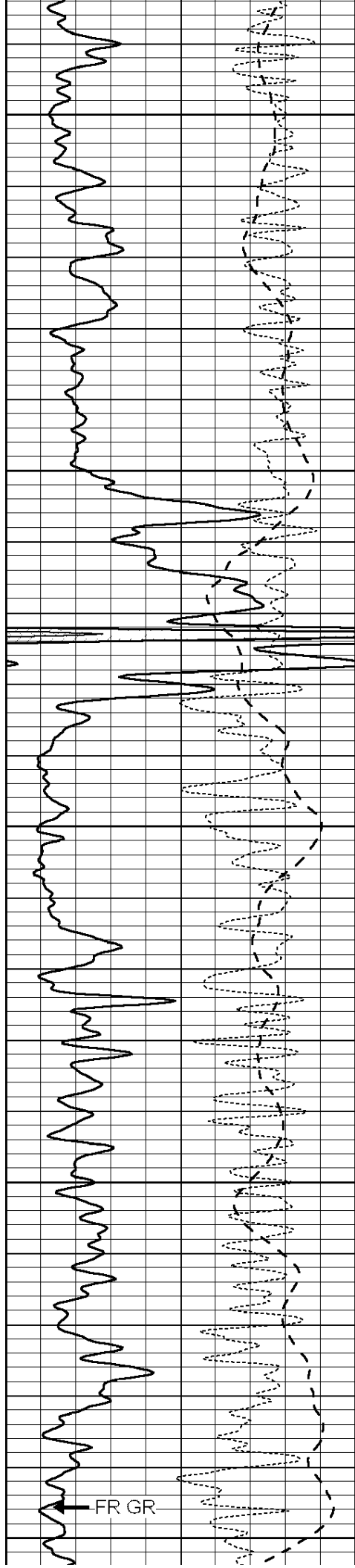
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5000

5050

5100





5150

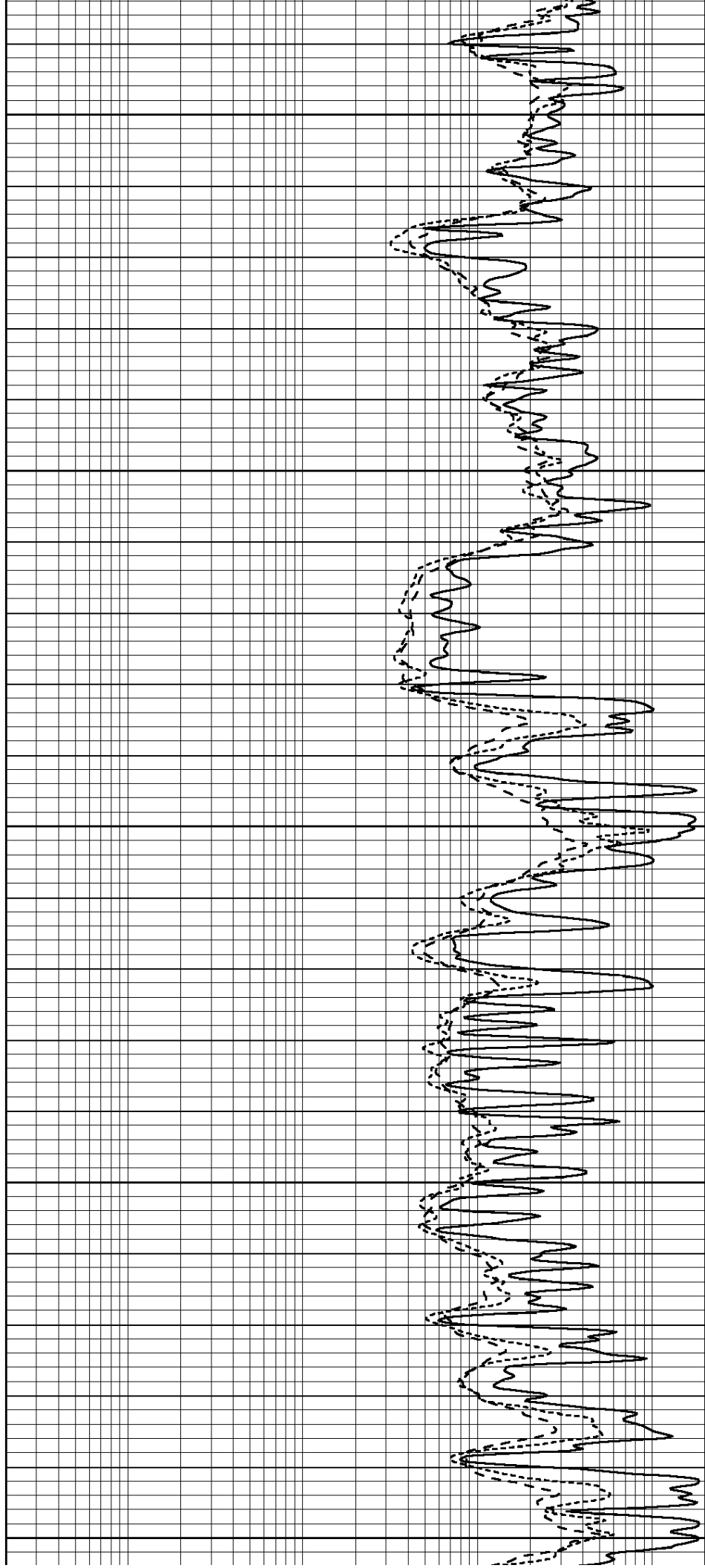
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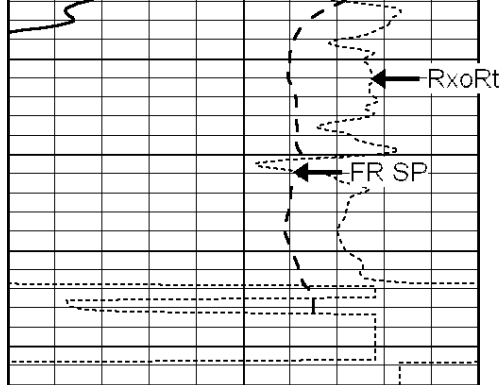
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5300

5350

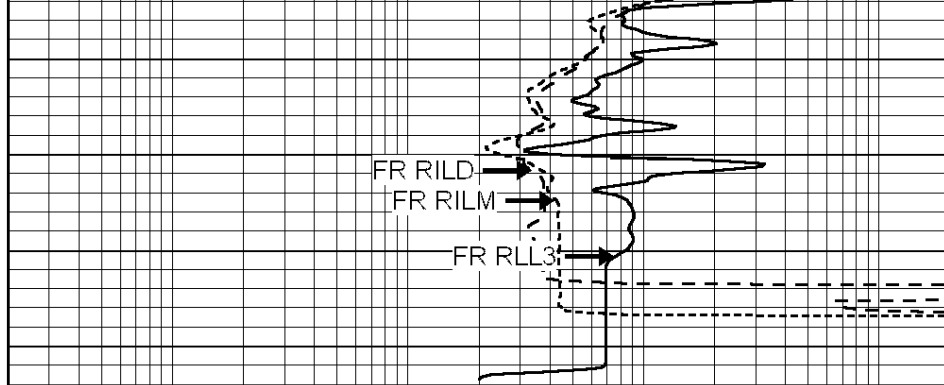
FR GR





LTD 5382

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



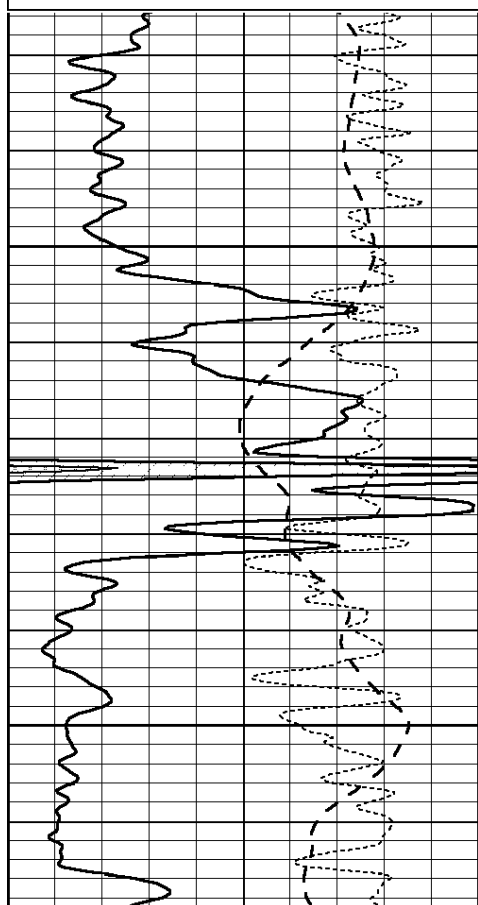
SUPERIOR  
Hays,  
Kansas

# REPEAT SECTION

Database File: 006801pe.db  
Dataset Pathname: pass2.2  
Presentation Format: \_dil  
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Charted by: Depth in Feet scaled 1:240

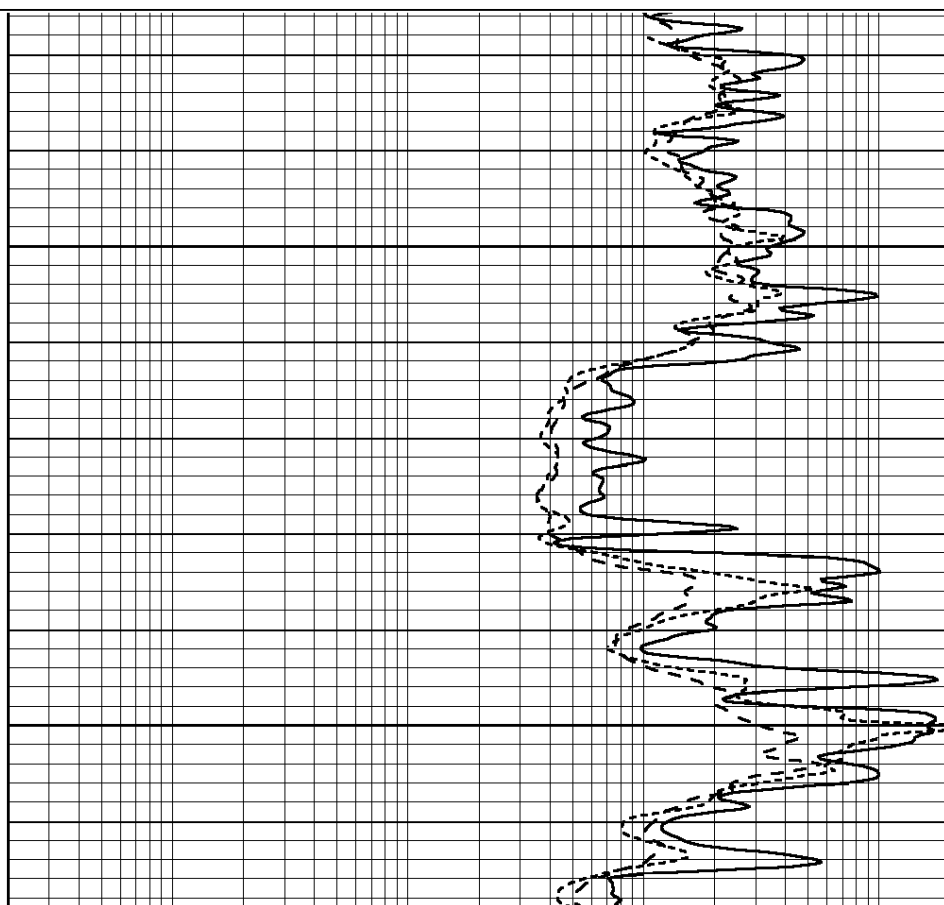
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-100	SP (mV)	100
-250	Rxo/Rt	50

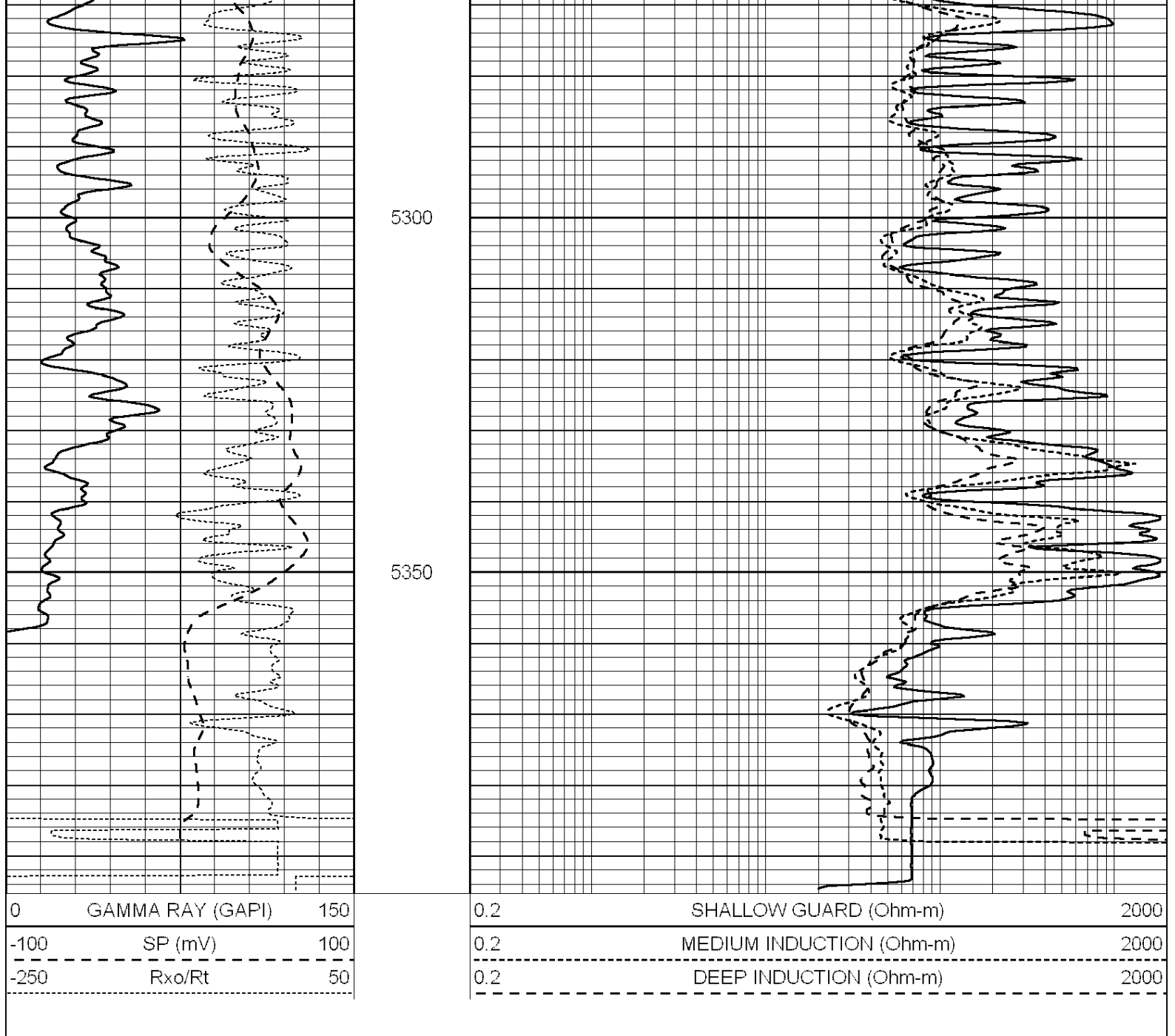
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000



5200

5250





### Calibration Report

Database File: 006801pe.db  
Dataset Pathname: pass3.2  
Dataset Creation: Tue Apr 05 08:57:31 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

Loop:	Readings			References			Results	
	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								
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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	2.8	8.0
	5.0	14.0
	Gain: 2.7	Offset: -1.6

Compensated Neutron Calibration Report
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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
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Serial Number:	#8
Tool Model:	OPEN
Performed:	Fri Feb 18 03:07:29 2011

Performed: PMT CD 16 05.07.25 2011

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps

Calibrator Reading: 175.0 cps

Sensitivity: 0.8971 GAPI/cps