



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

## DUAL INDUCTION LOG

Company		RITCHIE EXPLORATION, INC.	
Well		#1 HORNUNG 34B	
Field		WILDCAT	
County		KIT CARSON	
State		COLORADO	
Location:		AP1 # : 05-063-06344-0000	
SEC 34 TWP 10S RGE 46W		CDL/CNL	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 11' A.G.L.	
Drilling Measured From		KELLY BUSHING	
Elevation		4488	
K.B. 4499		D.F. 4497	
G.L. 4488			
Date	8/1/12		
Run Number	ONE		
Depth Driller	5954		
Depth Logger	5951		
Bottom Logged Interval	5949		
Top Log Interval	00		
Casing Driller	8 5/8"@440'		
Casing Logger	434		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 200 PPM	
Density / Viscosity	8.7/54		
pH / Fluid Loss	9.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	3.50@90F		
Rmt @ Meas. Temp	2.63@90F		
Rmc @ Meas. Temp	4.20@90F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	2.35@134F		
Time Circulation Stopped	3.5 HOURS		
Time Logger on Bottom	1:45 P.M.		
Maximum Recorded Temperature	134F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	DAVE WILLIAMS		

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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 HAYS, KANSAS (785) 628-6395  
DIRECTIONS

BURLINGTON, CO. (I-70 SECOND EXIT) 13 S. ON HWY 383 TO MM #176 "RD. G", 12 W. TO "RD. 35", 1  
1/2N., 1/2W., S. INTO



**SUPERIOR**  
**Hays,**  
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# MAIN SECTION

Database File: 409444ddn.db  
Dataset Pathname: pass3.11  
Presentation Format: dil2  
Dataset Creation: Wed Aug 01 15:57:11 2012  
Charted by: Depth in Feet scaled 1:600

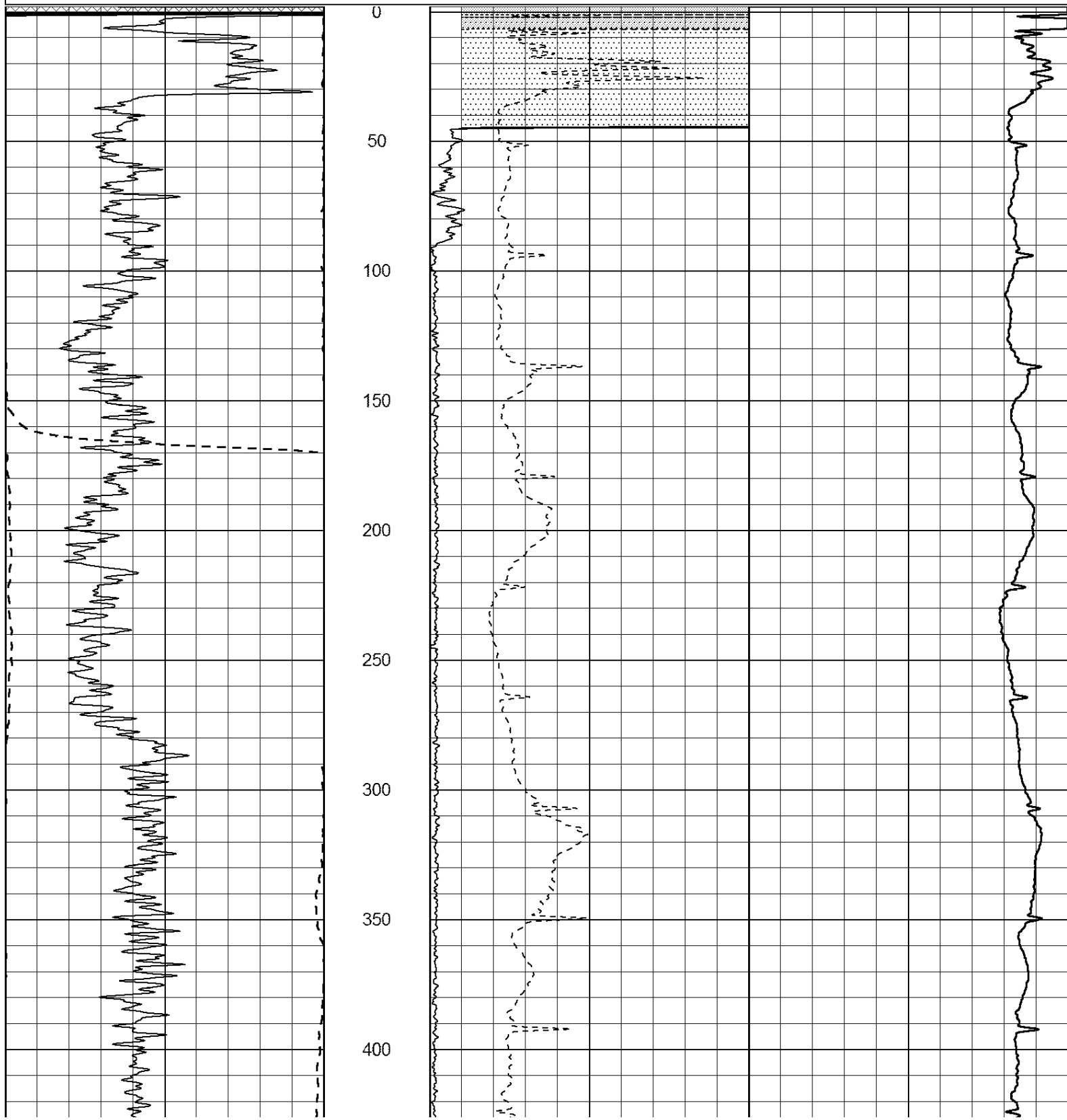
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

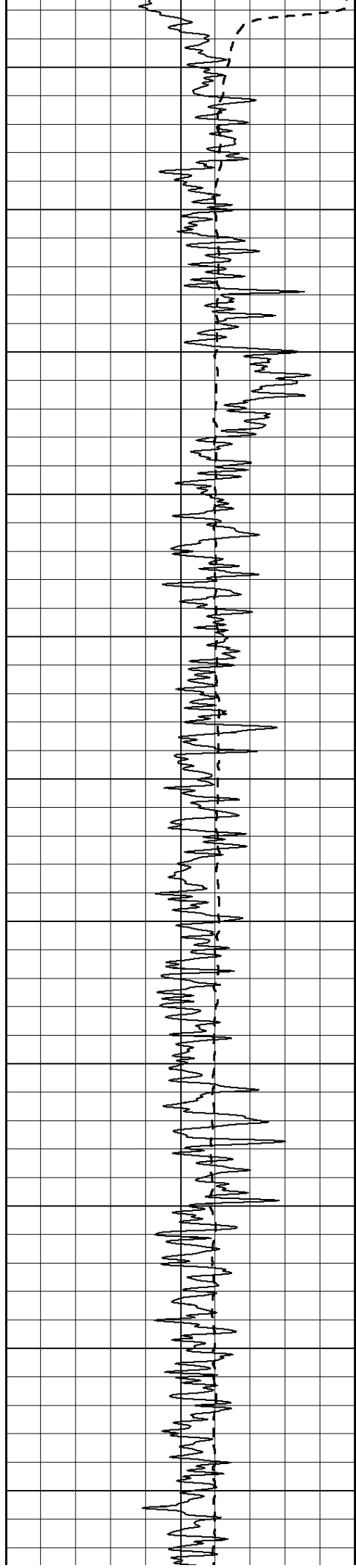
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50

1000	CILD (mmho/m)	0
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50	RILD X10 (Ohm-m)	500
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50	RLL3 X10 (Ohm-m)	500
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450

500

550

600

650

700

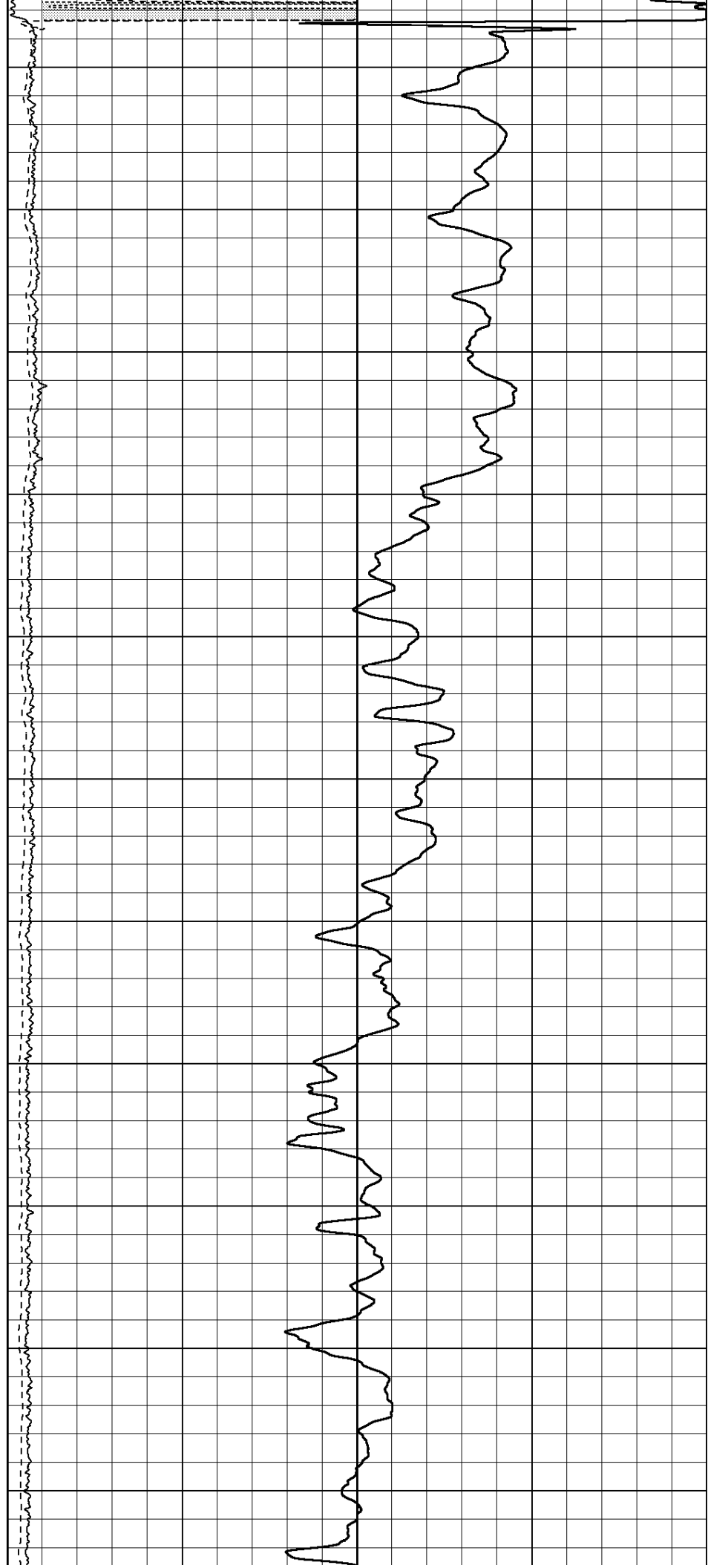
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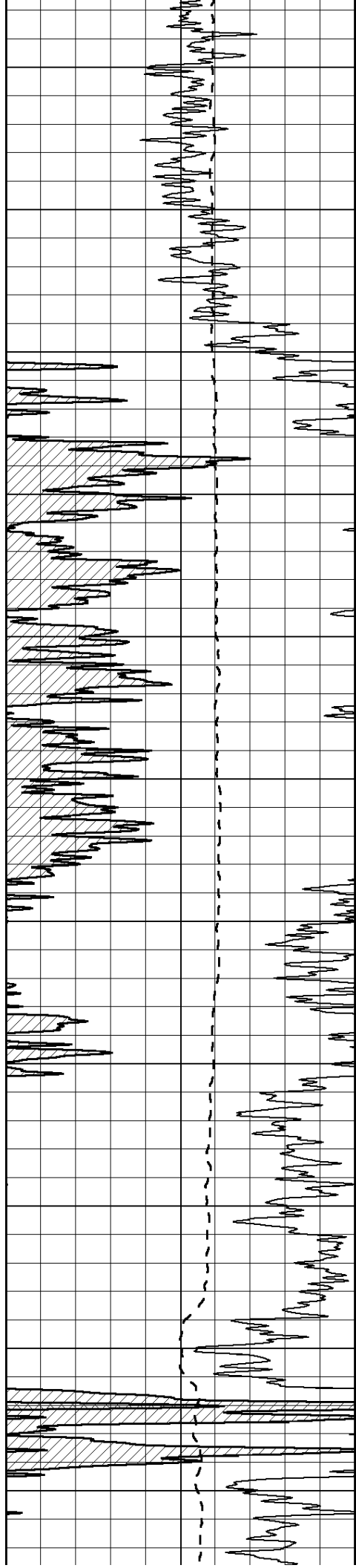
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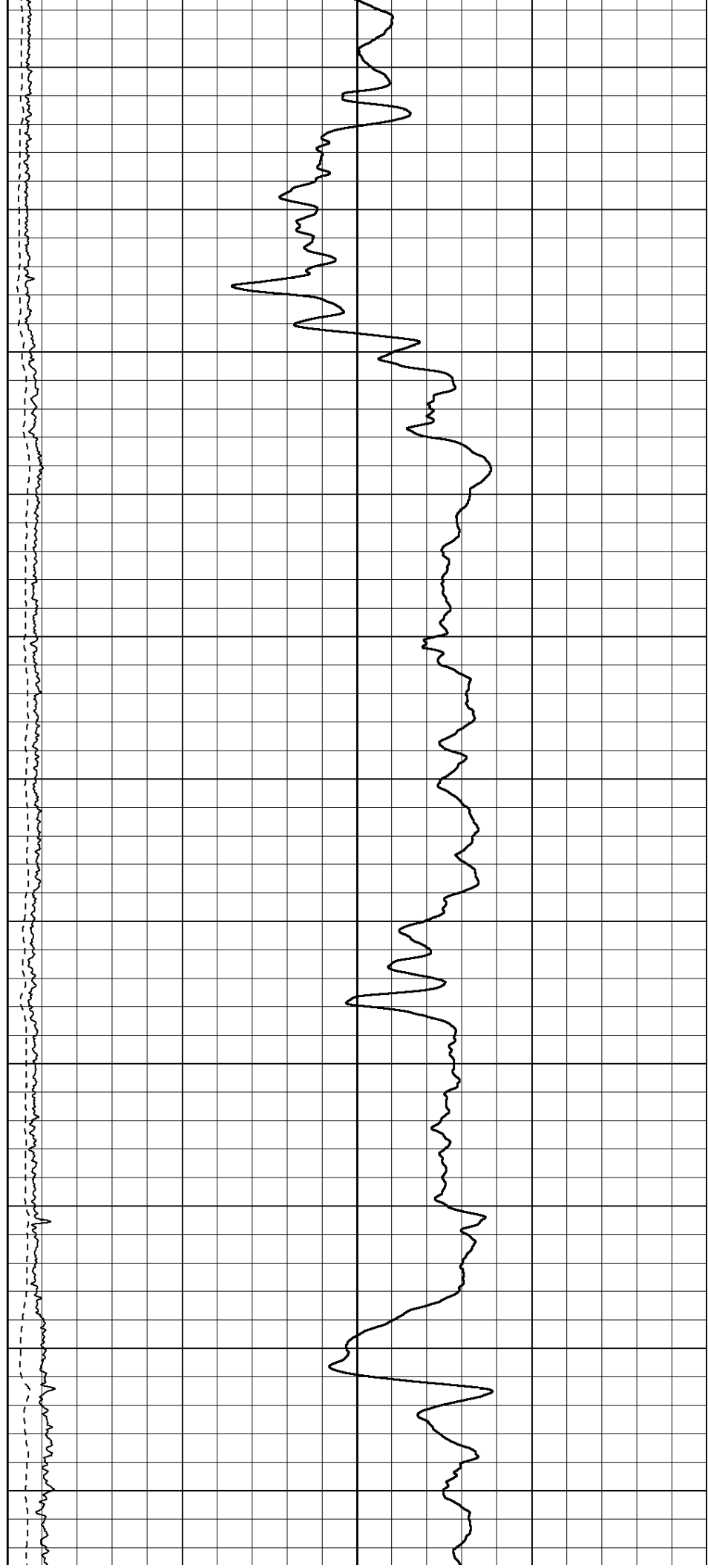
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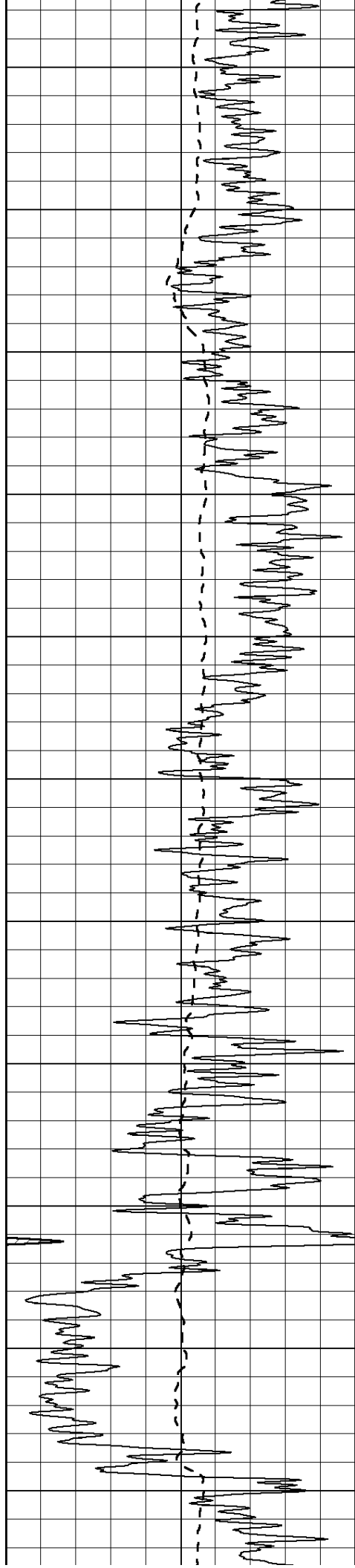
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1000  
1050  
1100  
1150  
1200  
1250  
1300  
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1400  
1450  
1500





1550

1600

1650

1700

1750

1800

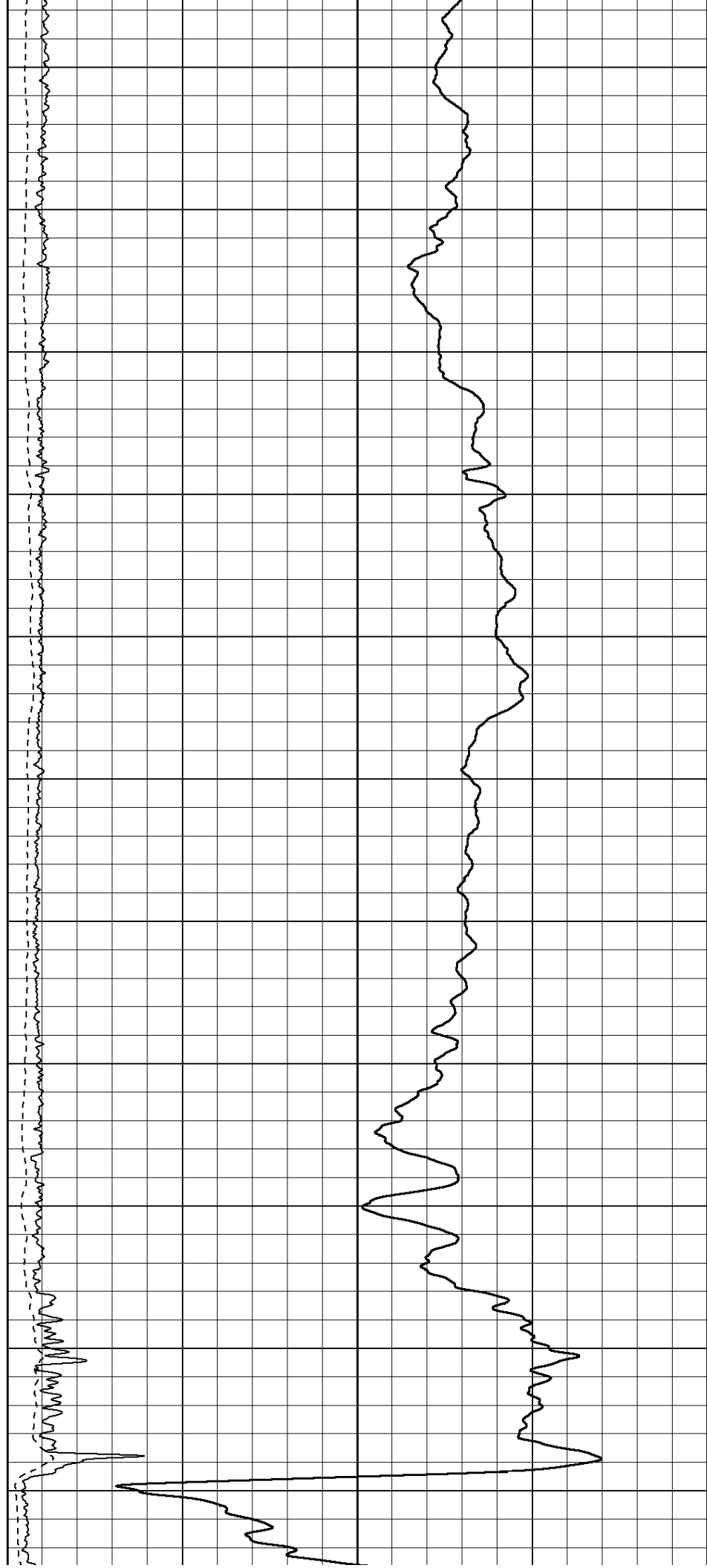
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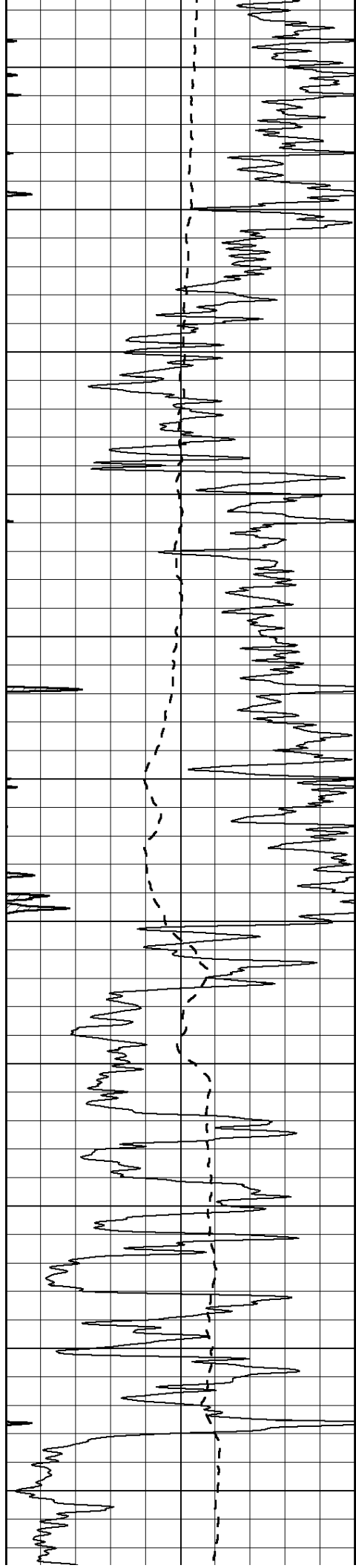
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1950

2000

2050





2100

2150

2200

2250

2300

2350

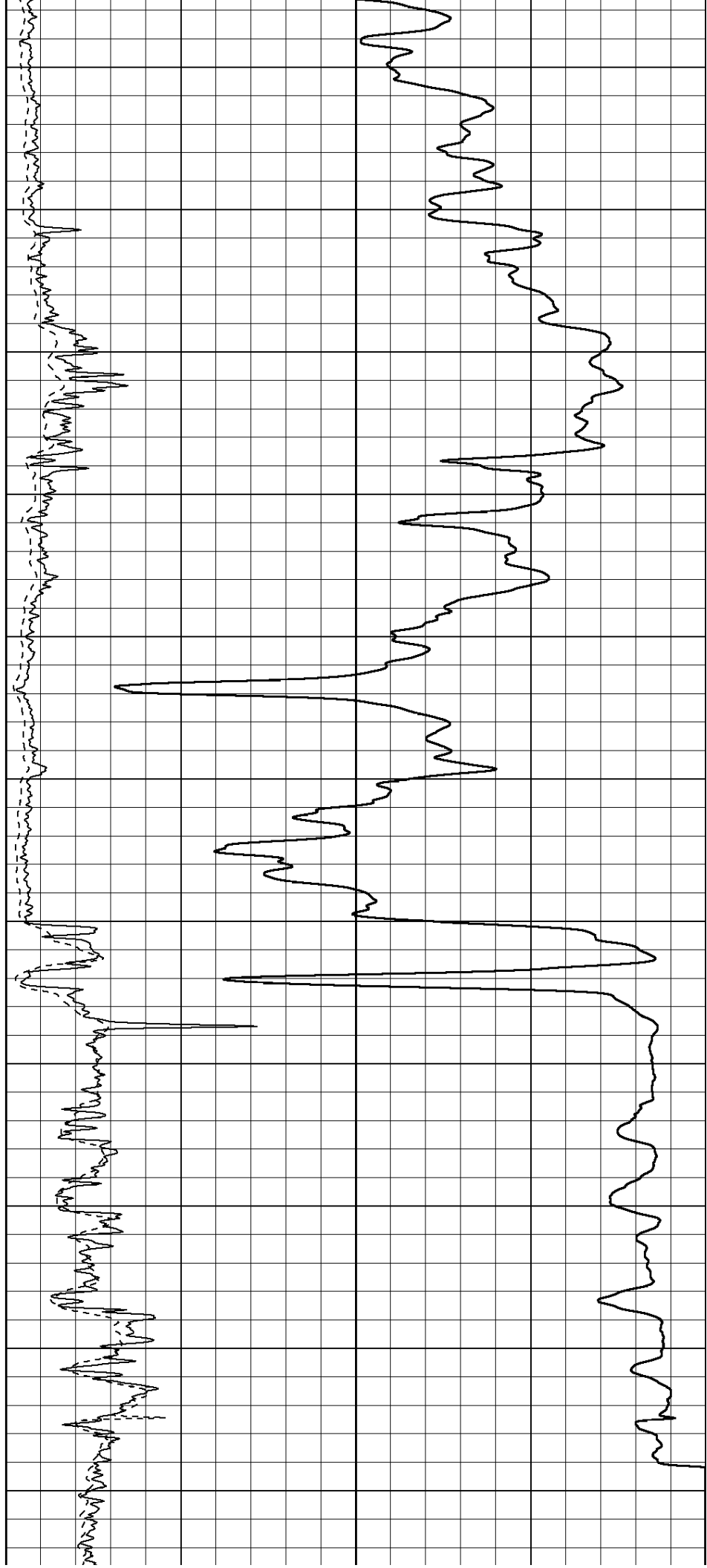
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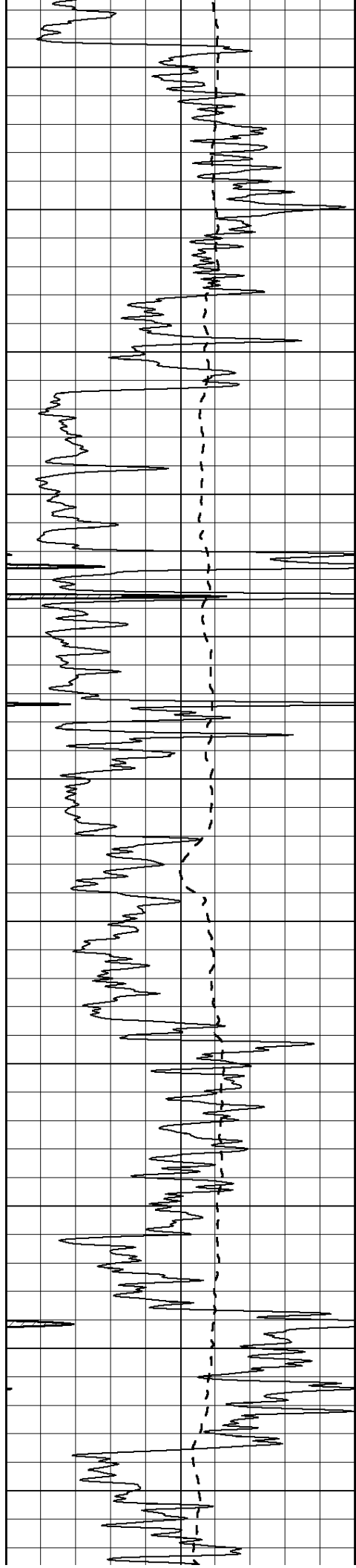
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2550

2600





2650

2700

2750

2800

2850

2900

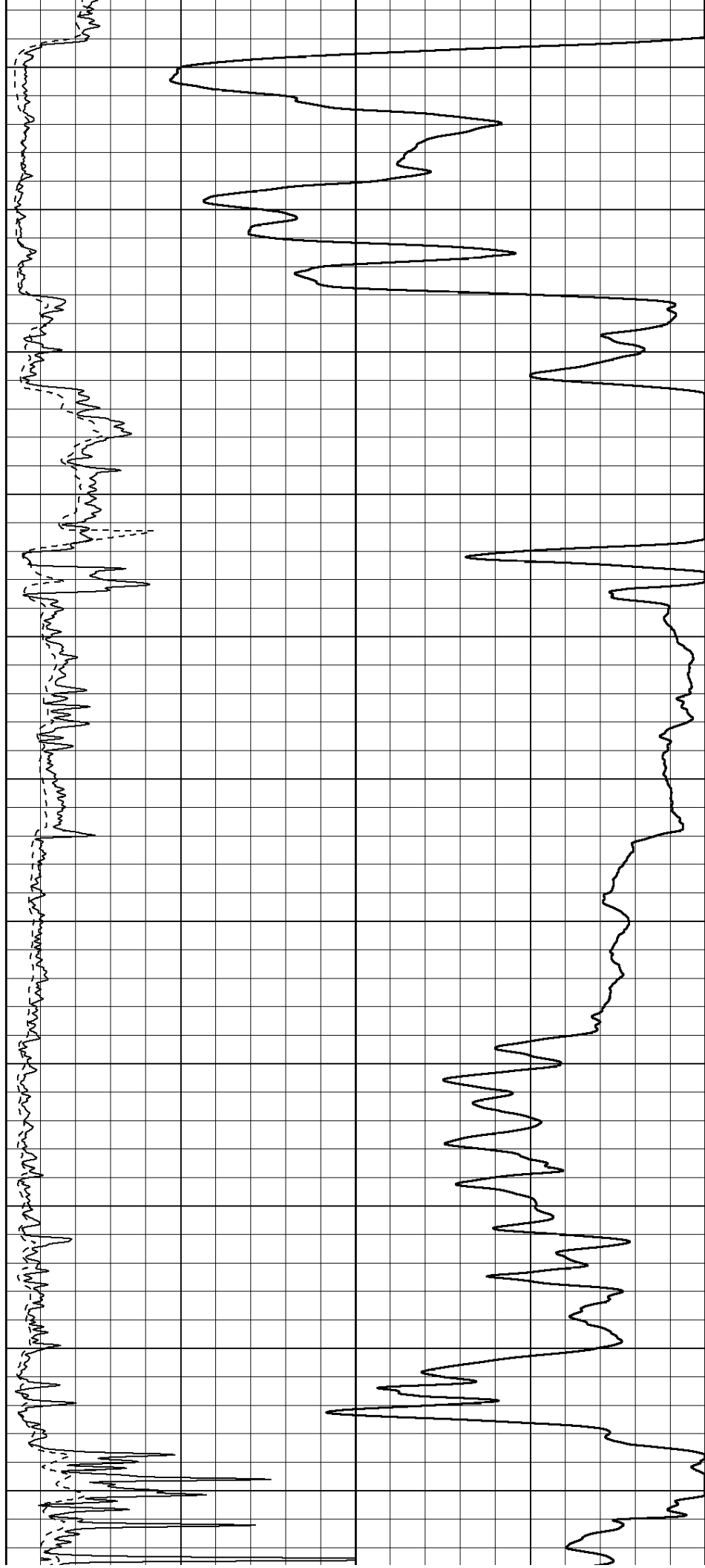
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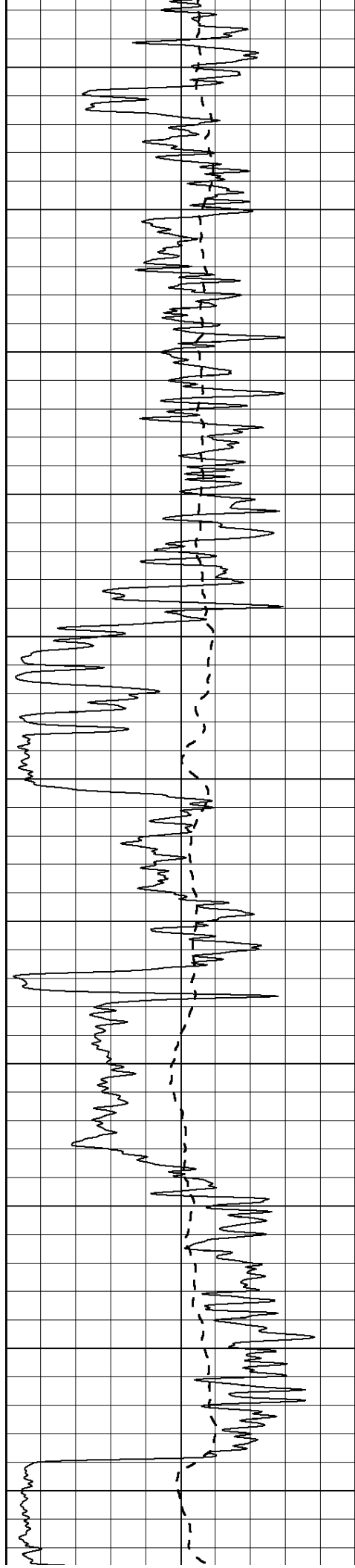
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3100

3150





3200

3250

3300

3350

3400

3450

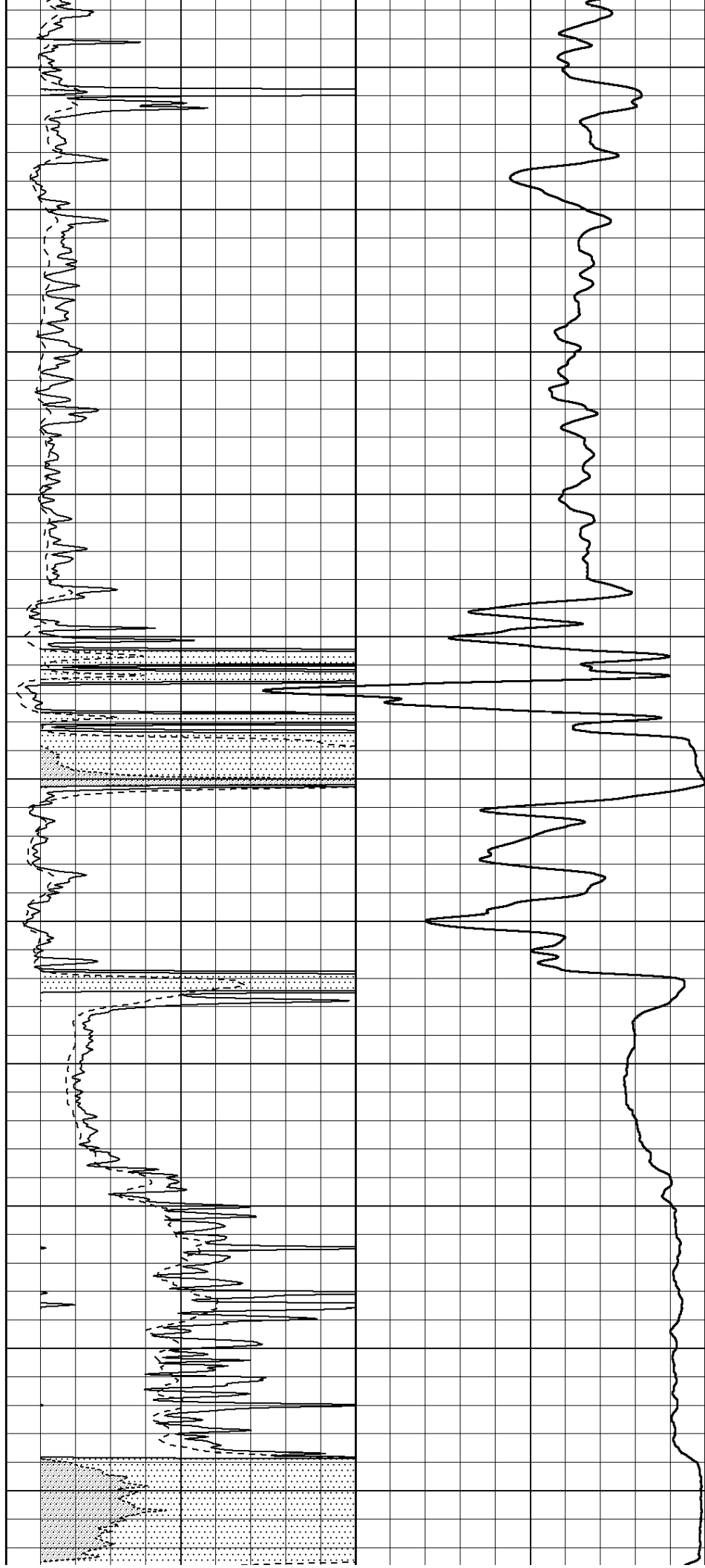
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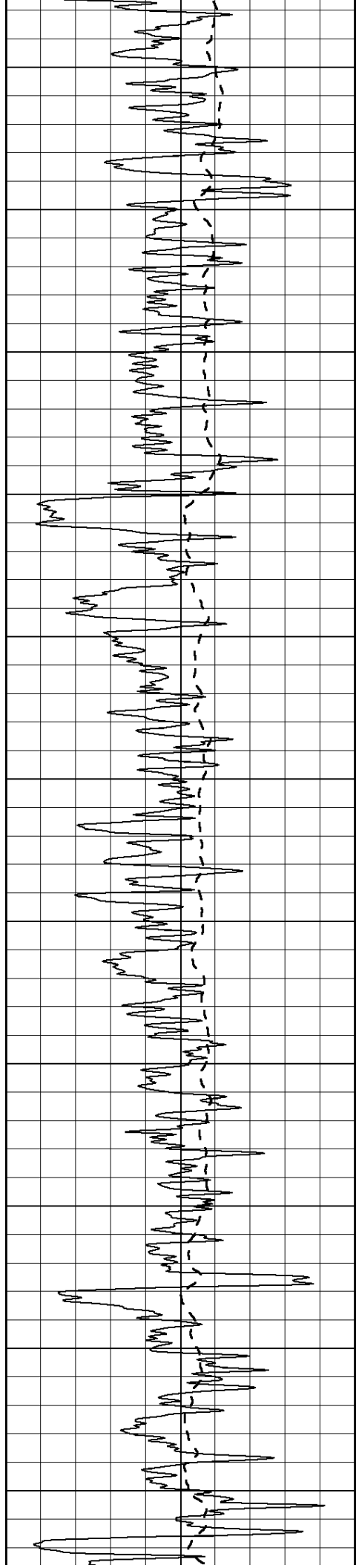
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3750

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3850

3900

3950

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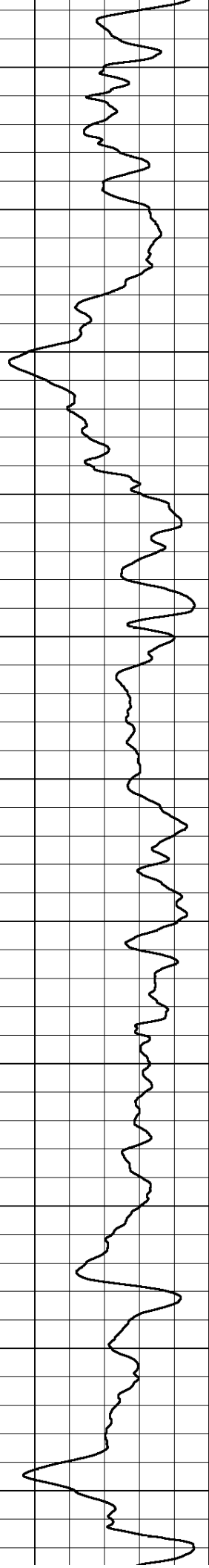
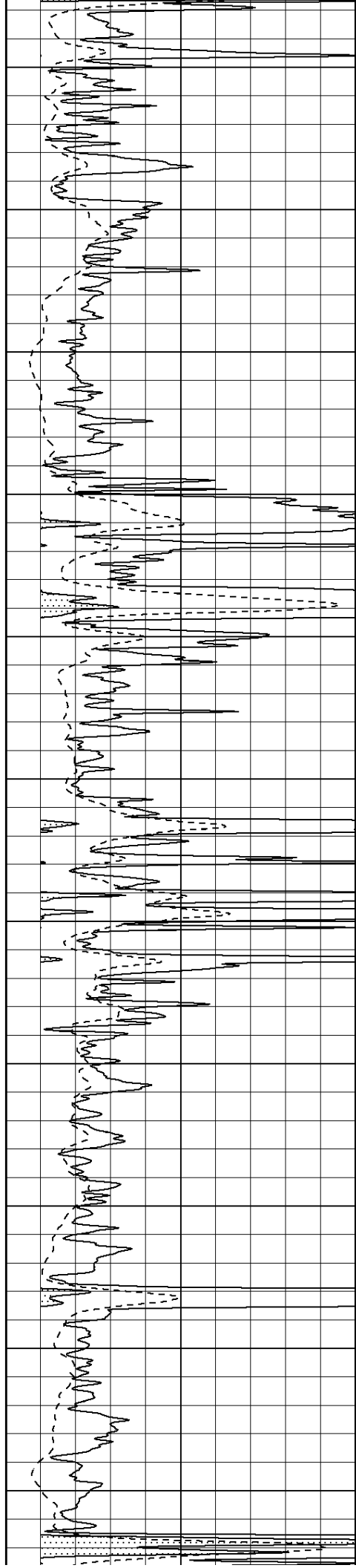
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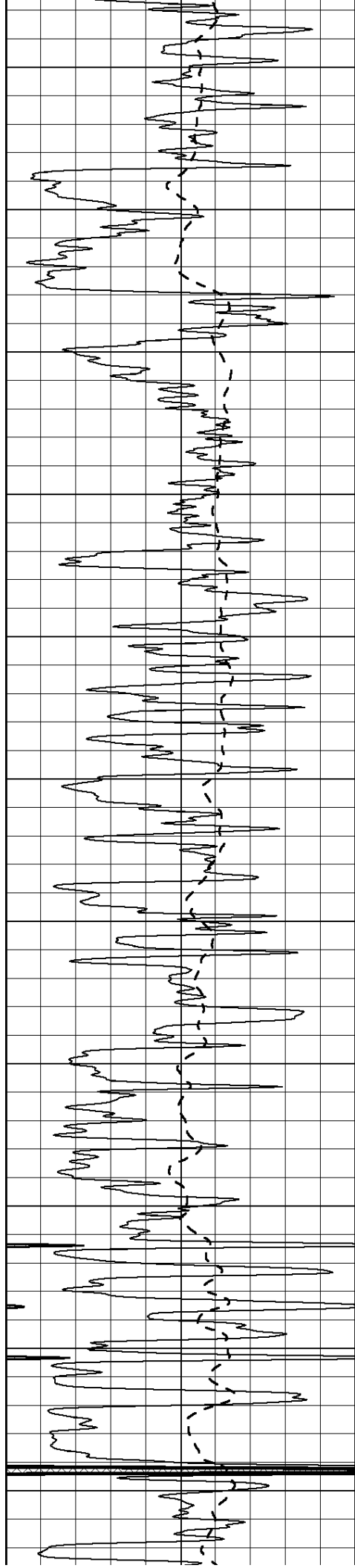
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4150

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4300

4350

4400

4450

4500

4550

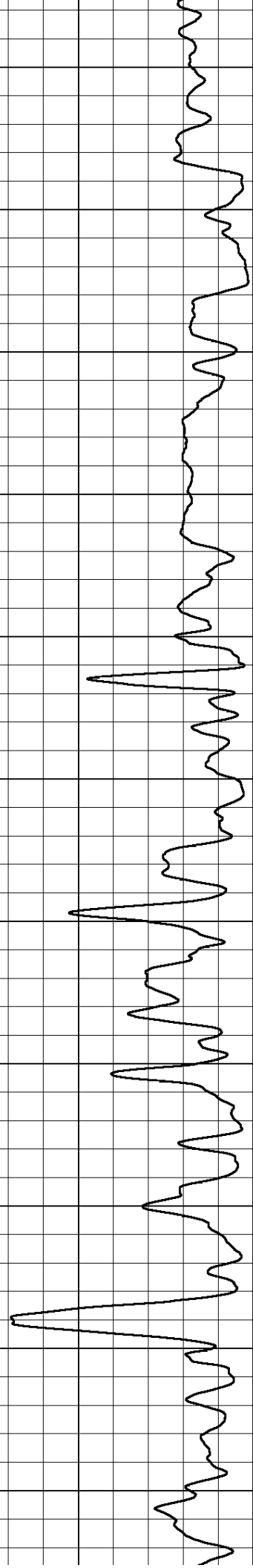
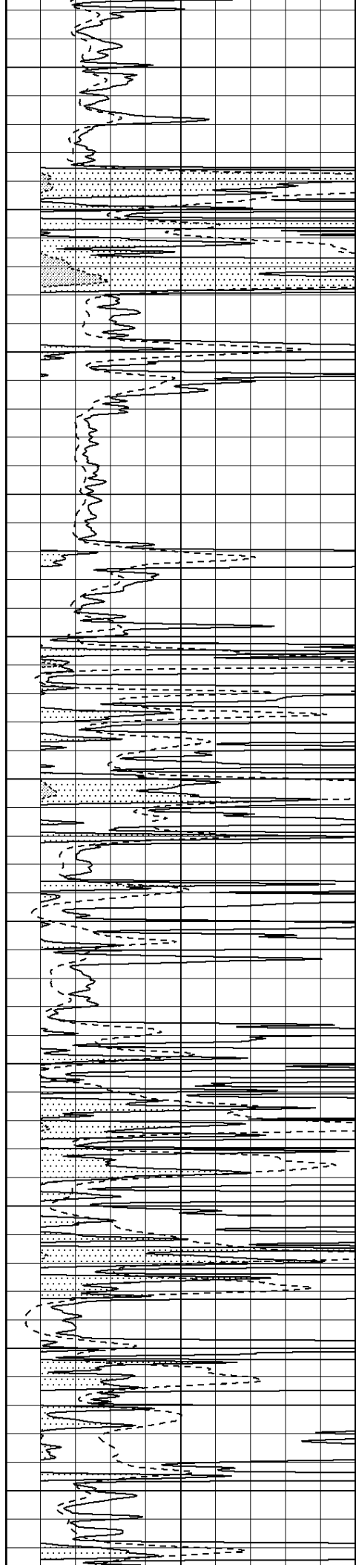
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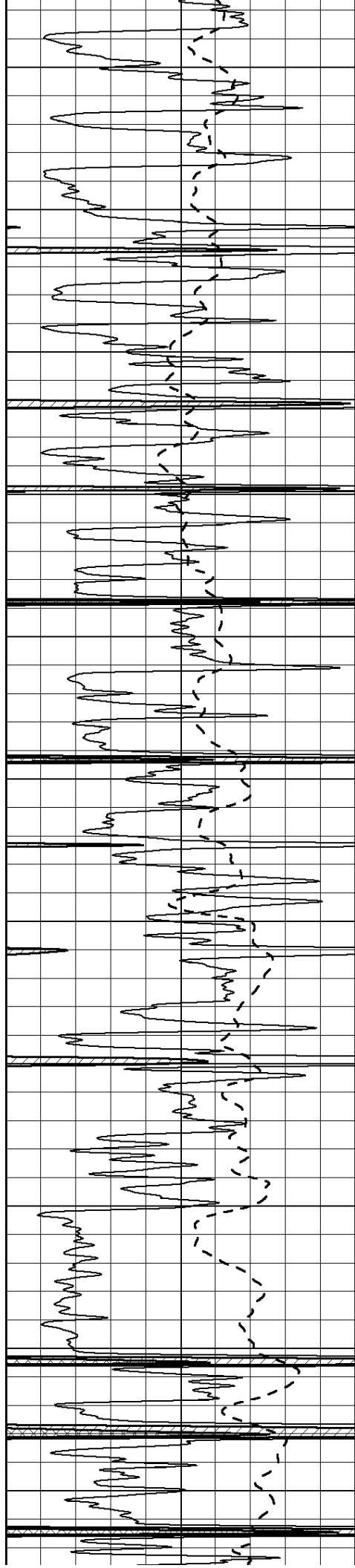
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4800





4850

4900

4950

5000

5050

5100

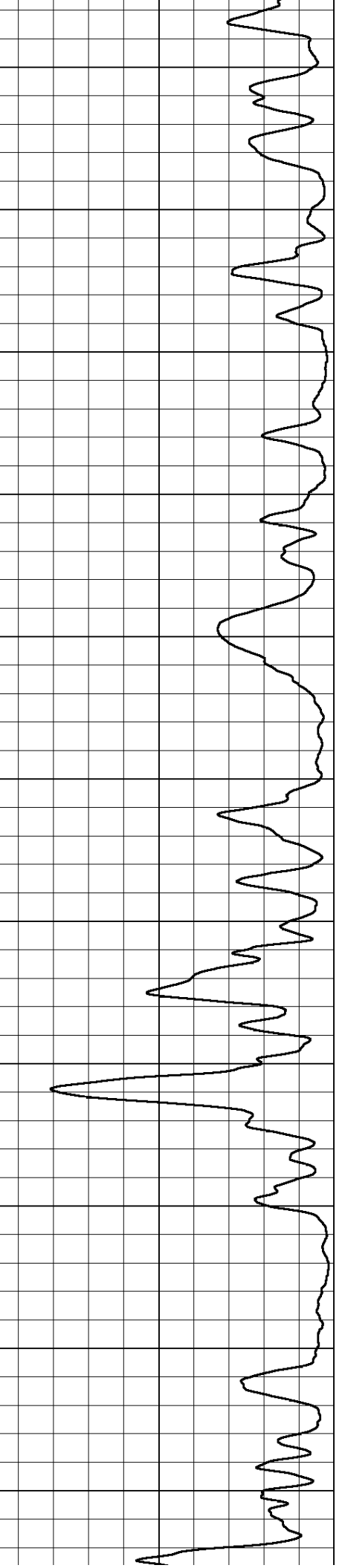
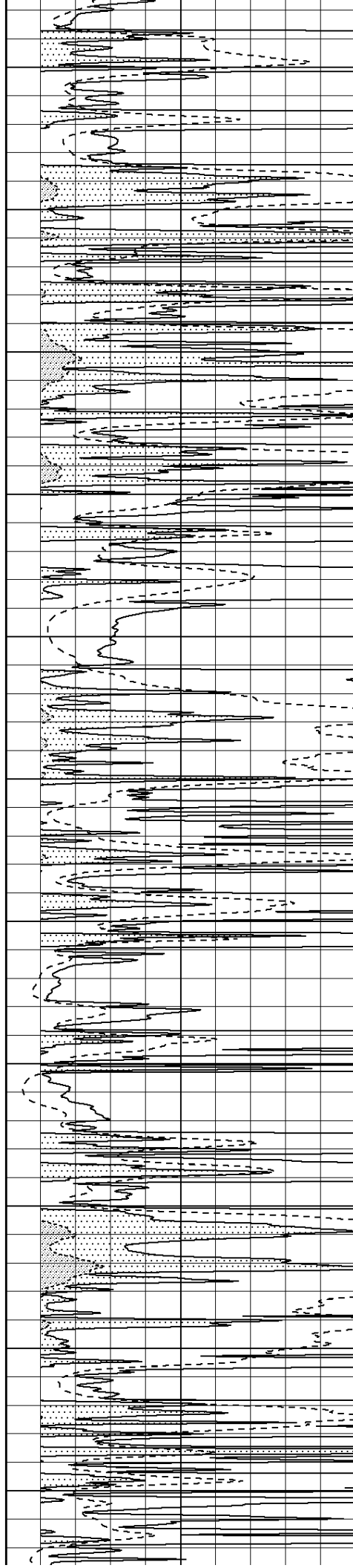
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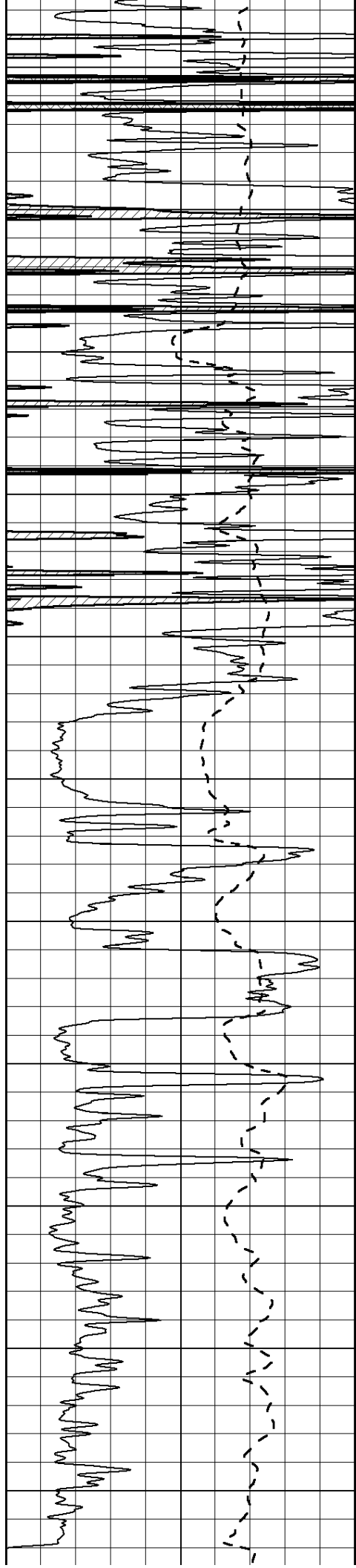
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5400

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5600

5650

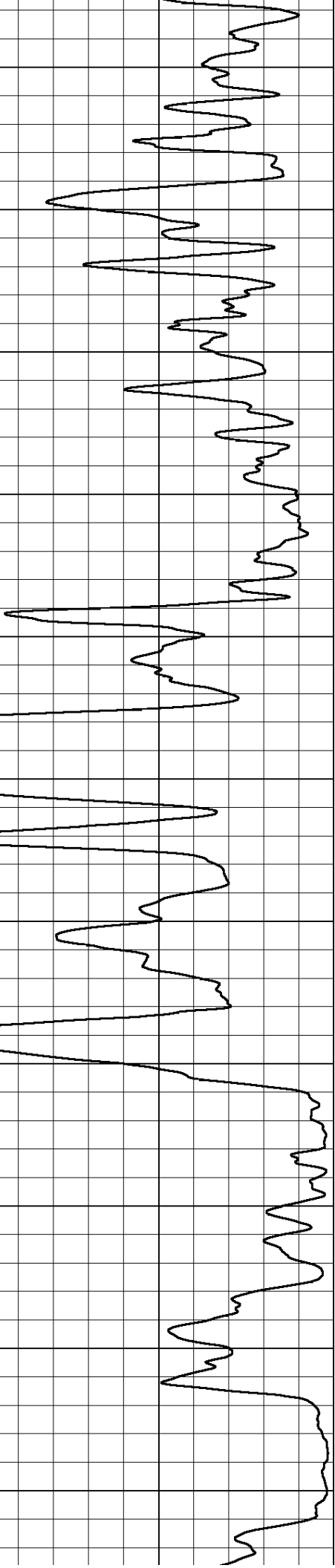
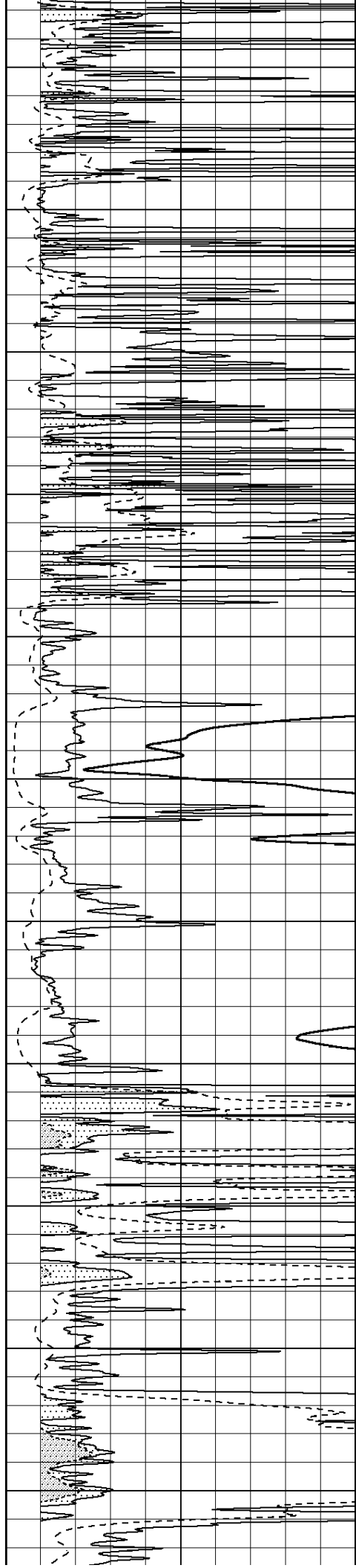
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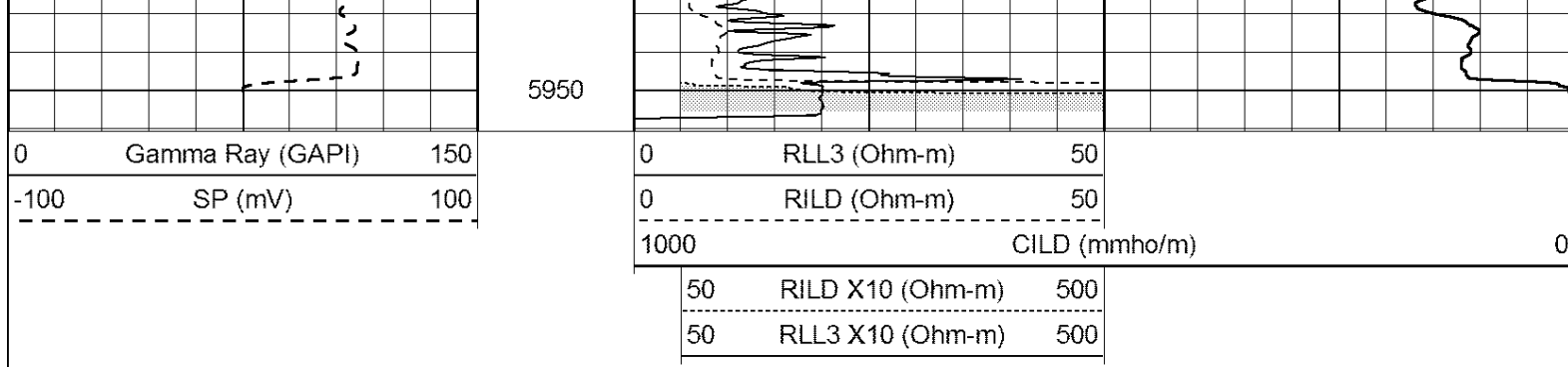
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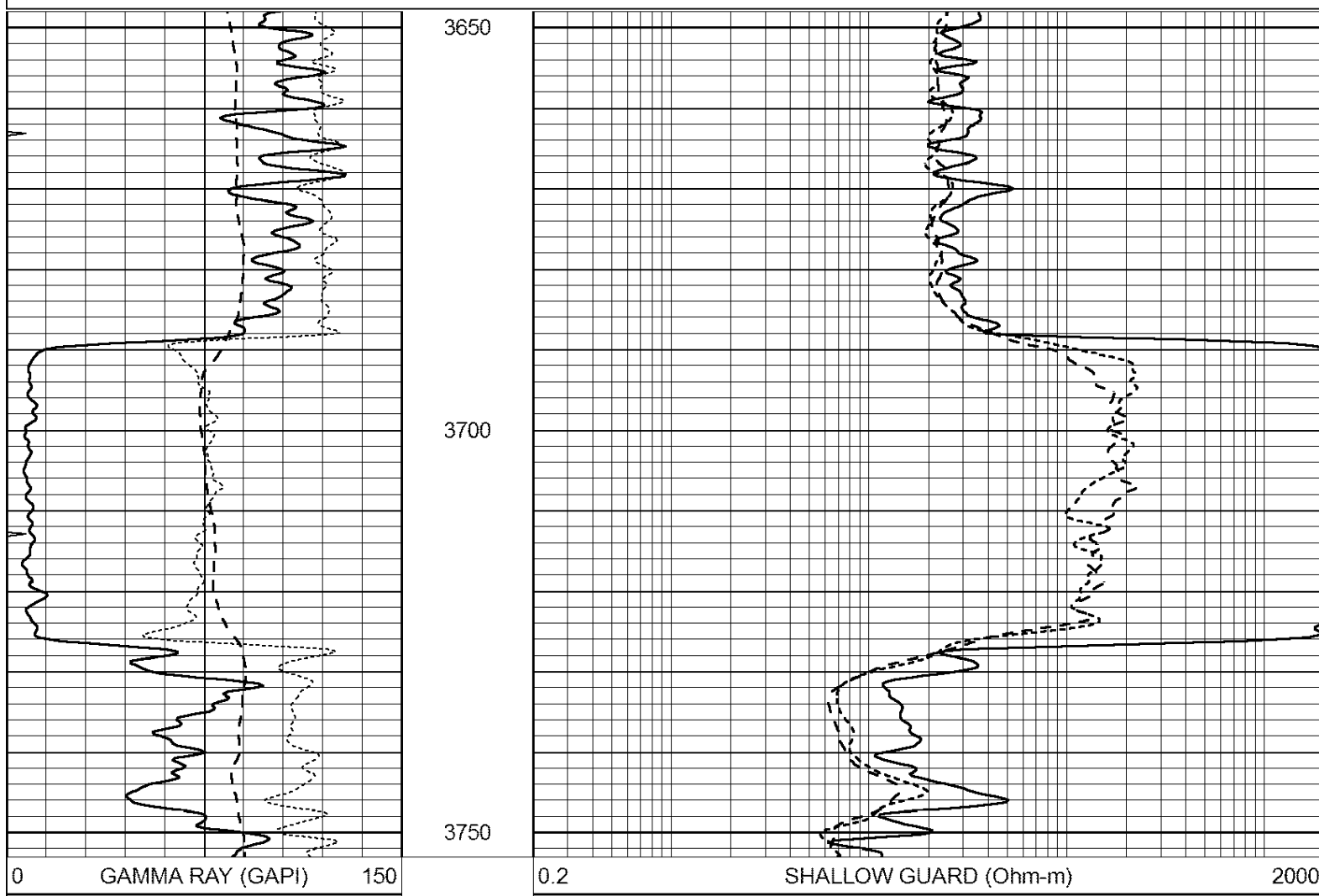
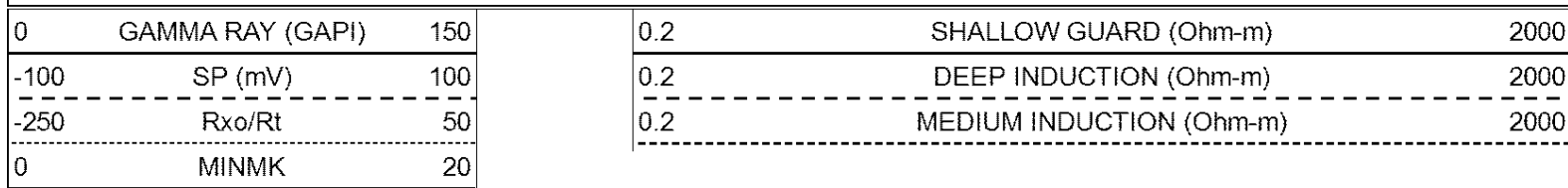




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# ANHYDRITE

Database File: 409444ddn.db  
 Dataset Pathname: pass3.10  
 Presentation Format: dil  
 Dataset Creation: Wed Aug 01 15:33:49 2012  
 Charted by: Depth in Feet scaled 1:240



-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



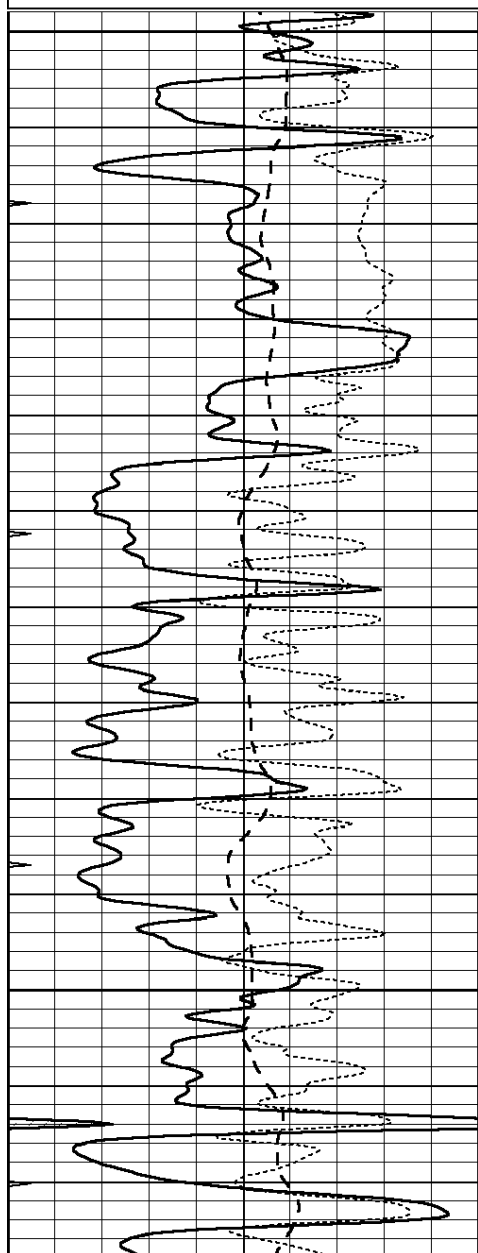
SUPERIOR  
Hays,  
Kansas

# MAIN SECTION

Database File: 409444ddn.db  
Dataset Pathname: pass3.11  
Presentation Format: dil  
Dataset Creation: Wed Aug 01 15:57:11 2012  
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

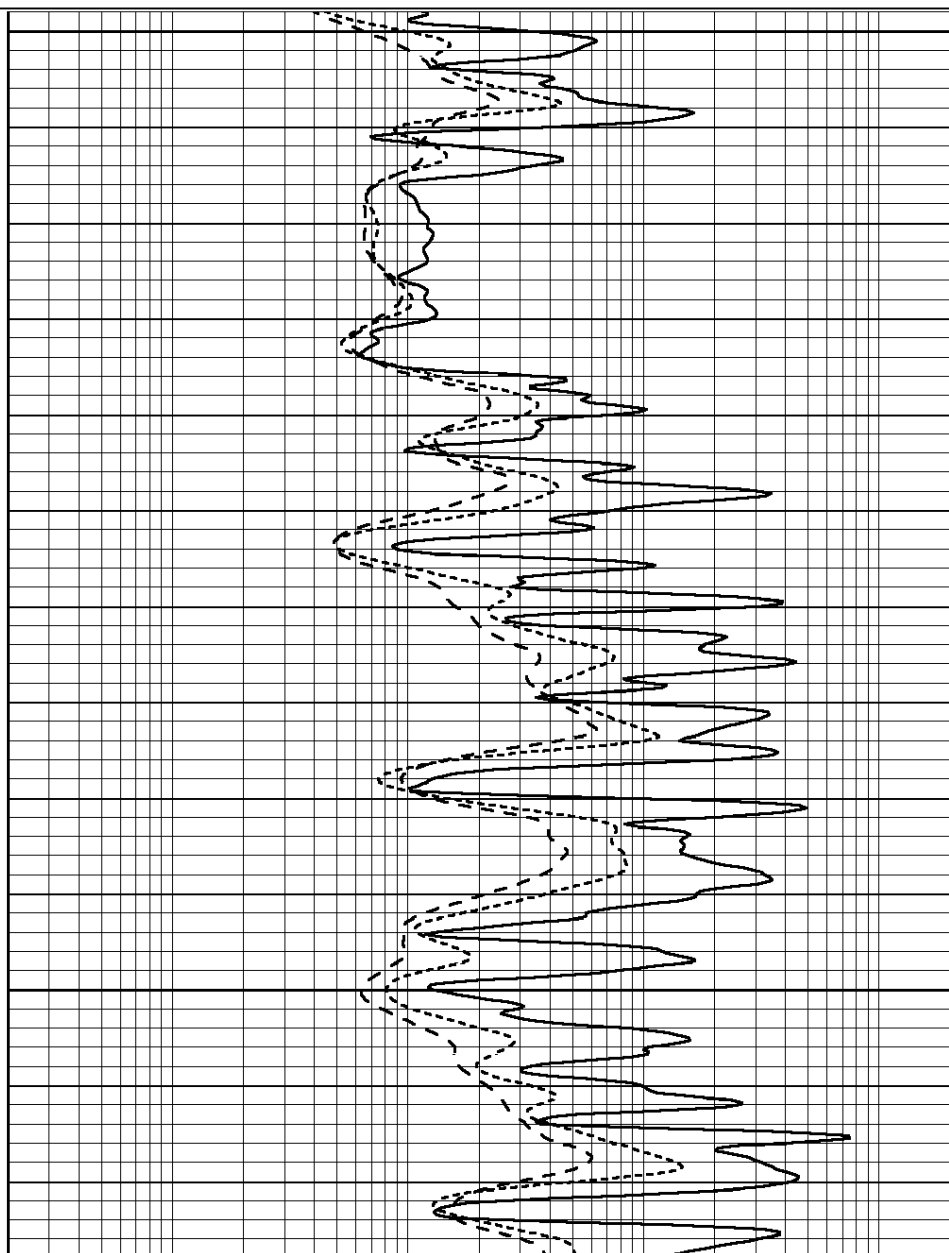
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

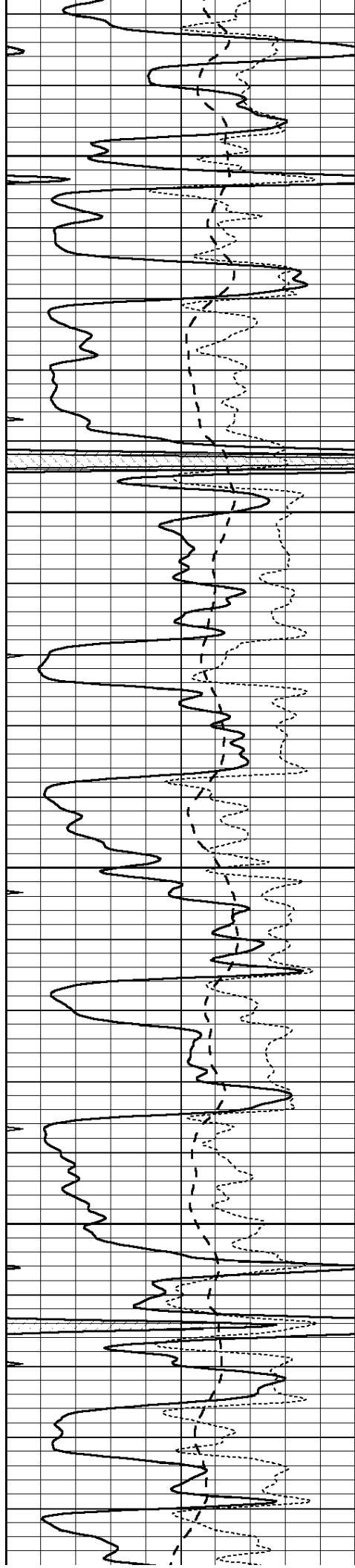


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4650

4700



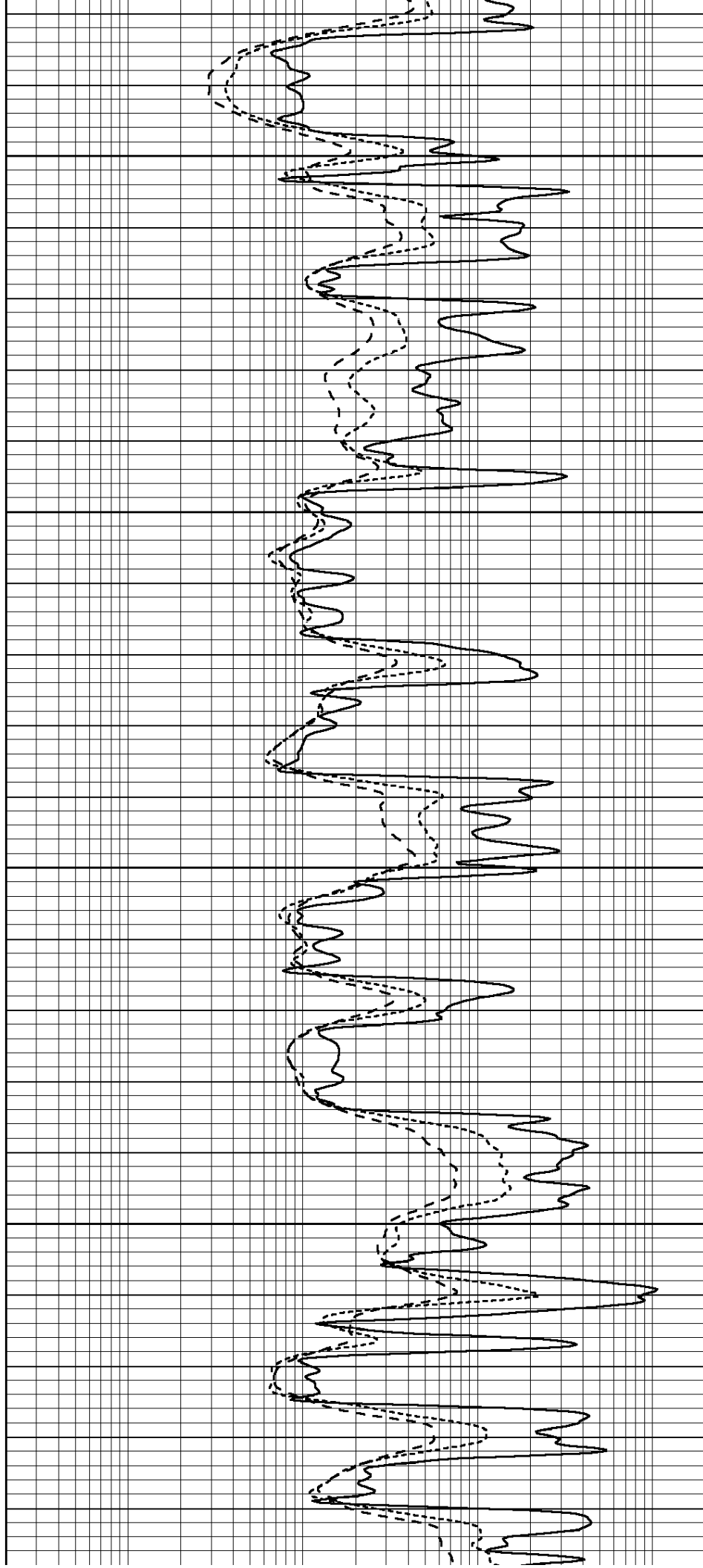


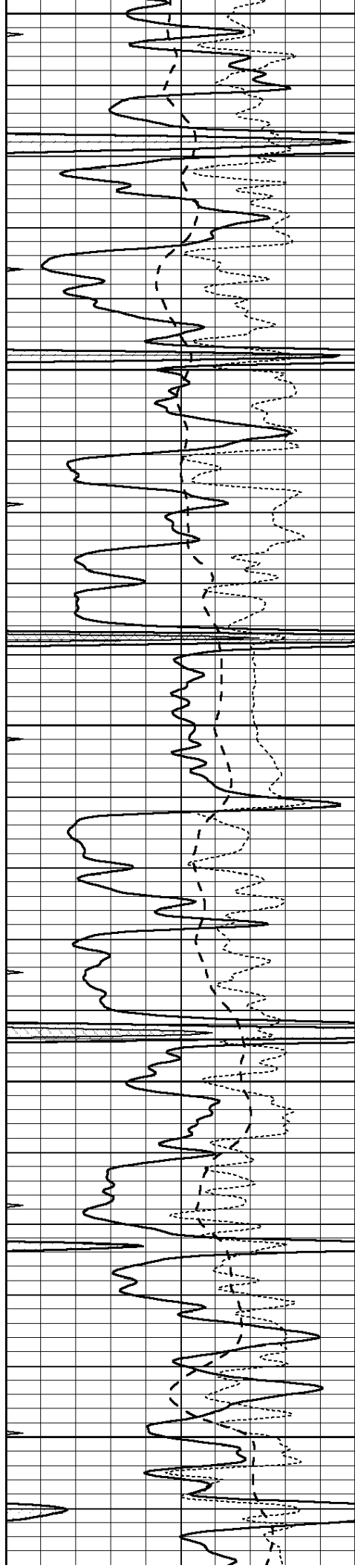
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4850

4900





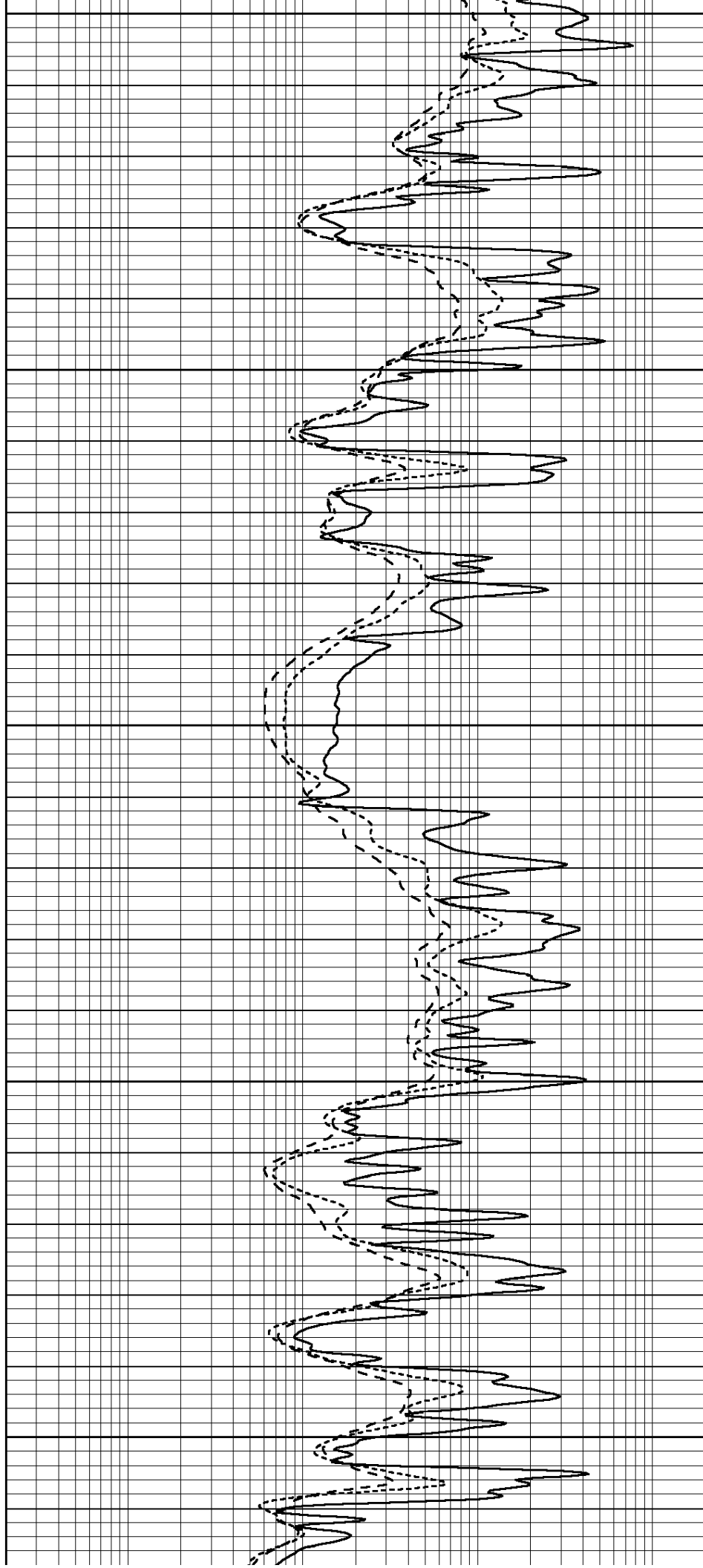
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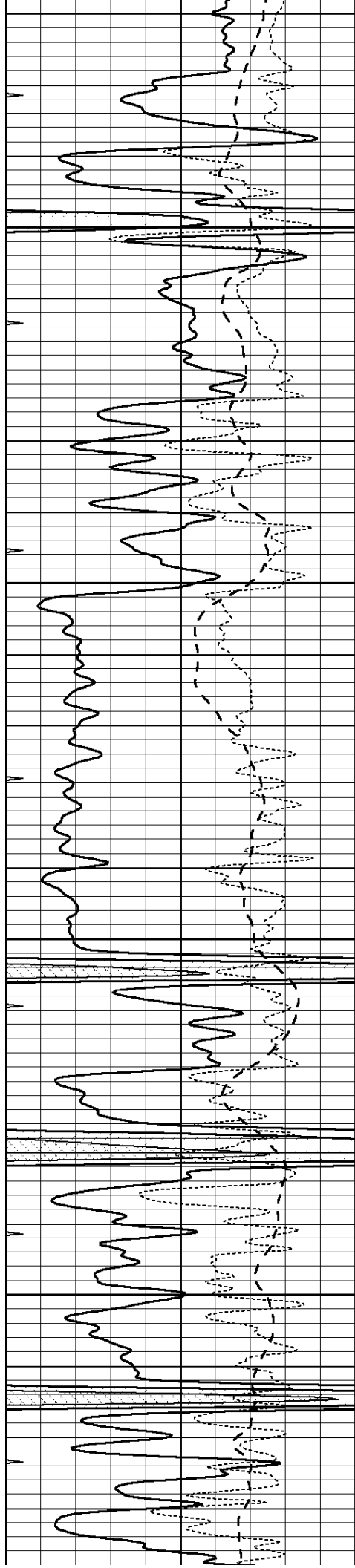
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5100

5150





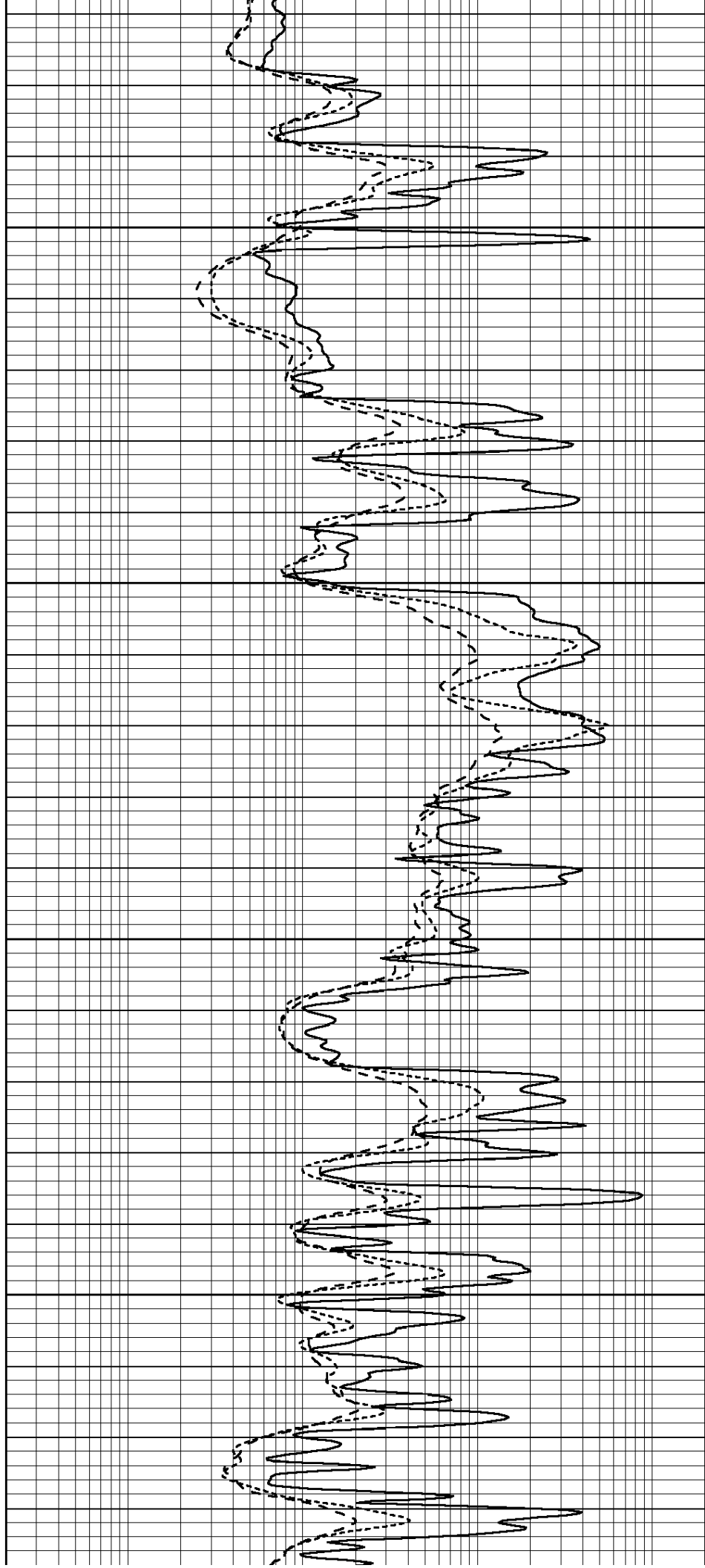


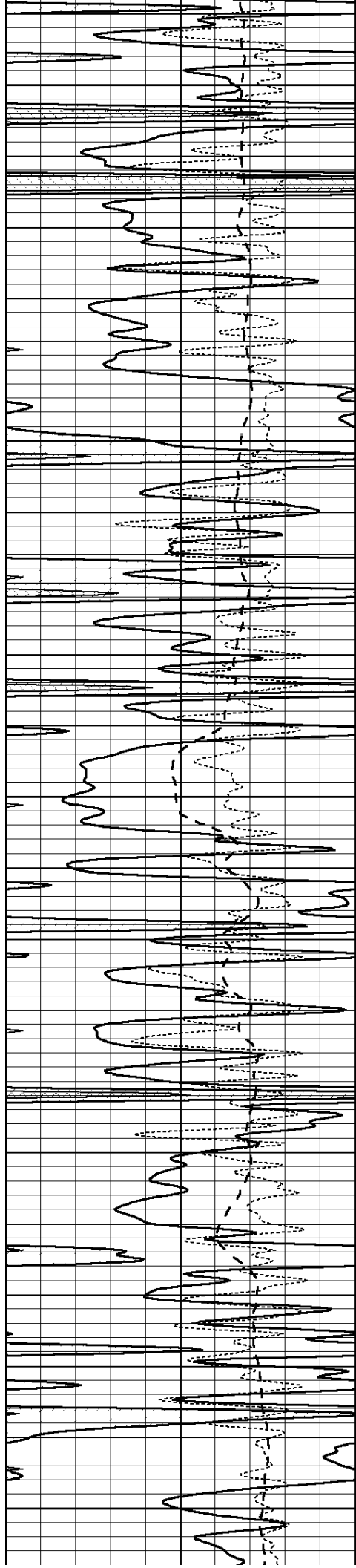
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5350





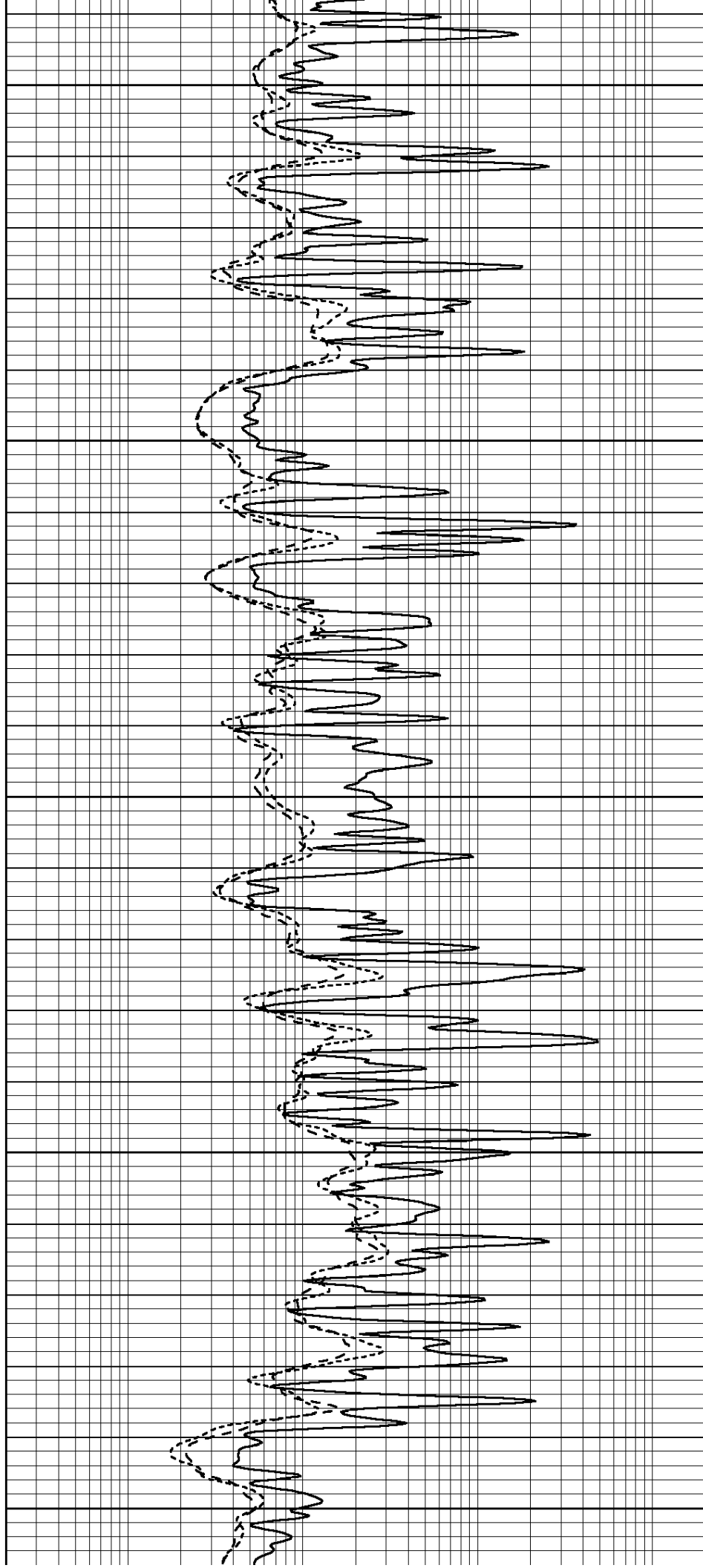
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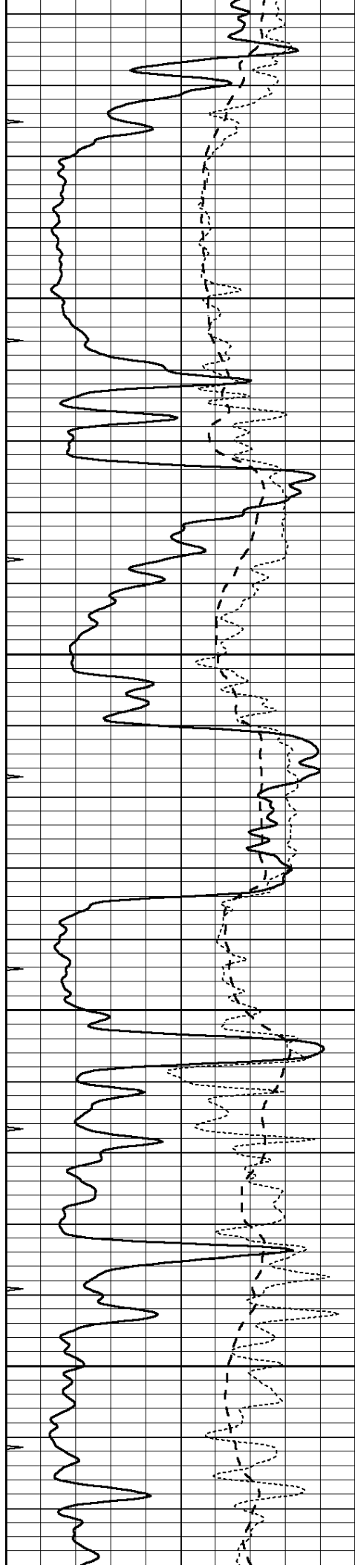
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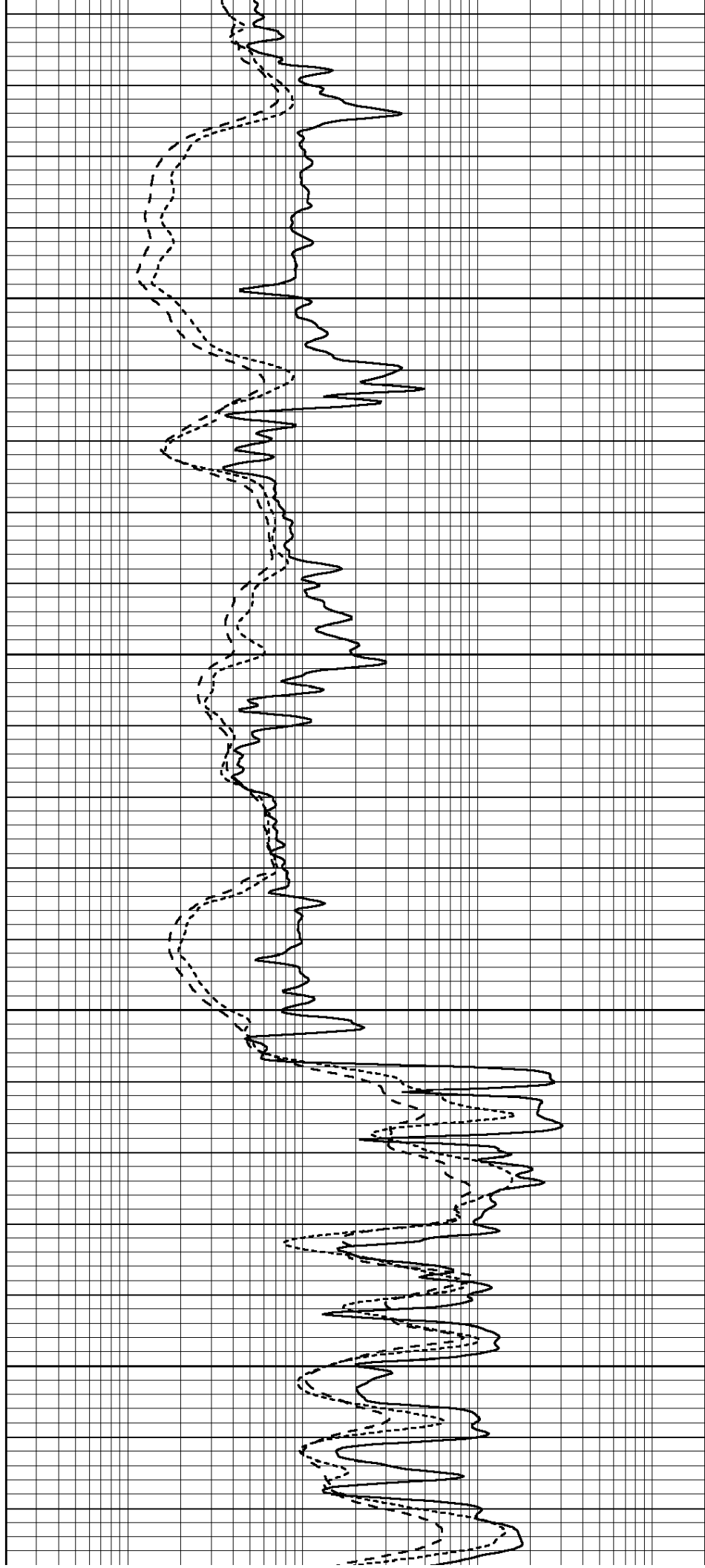


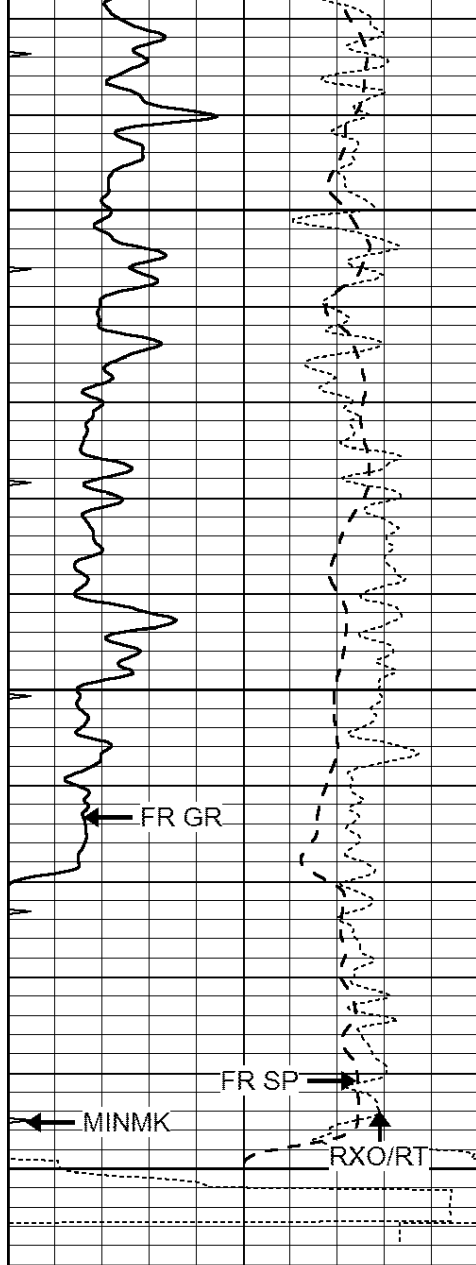
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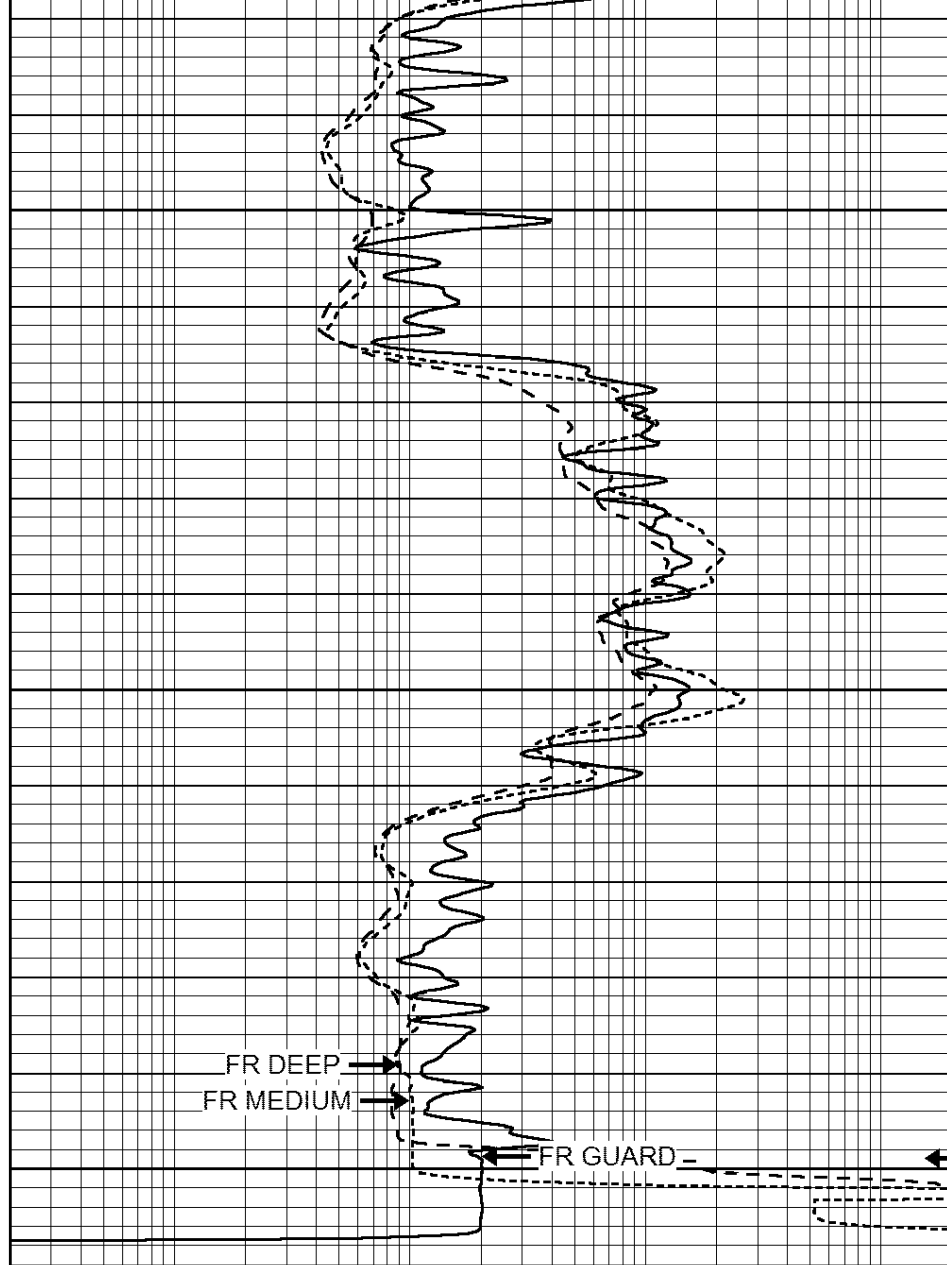
5800





5950  
LTD 5951

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



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



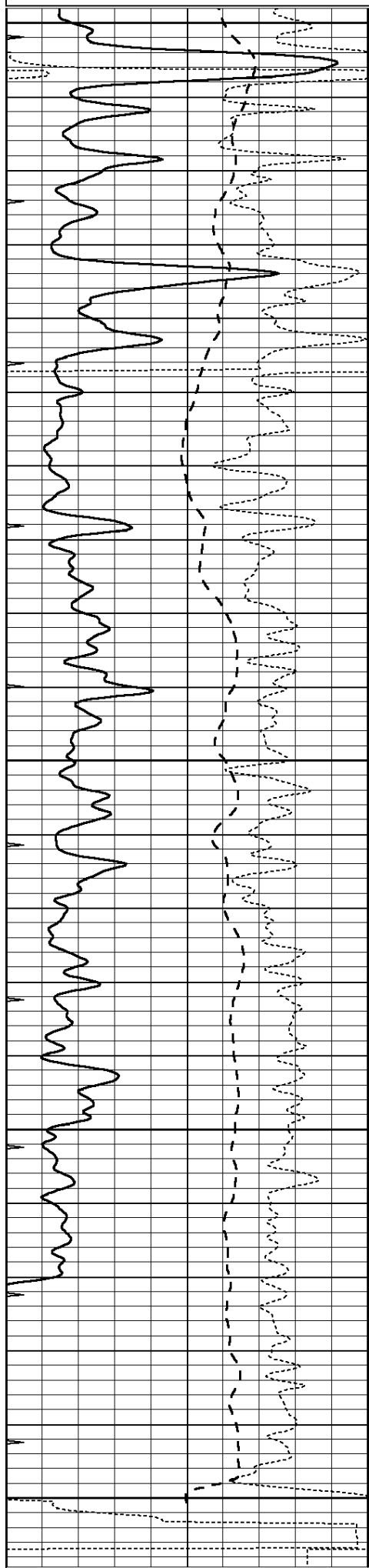
SUPERIOR  
Hays,  
Kansas

# REPEAT SECTION

Database File: 409444ddn.db  
Dataset Pathname: pass2.10  
Presentation Format: \_dil  
Dataset Creation: Wed Aug 01 16:02:04 2012 by Calc Open-Cased 110302  
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



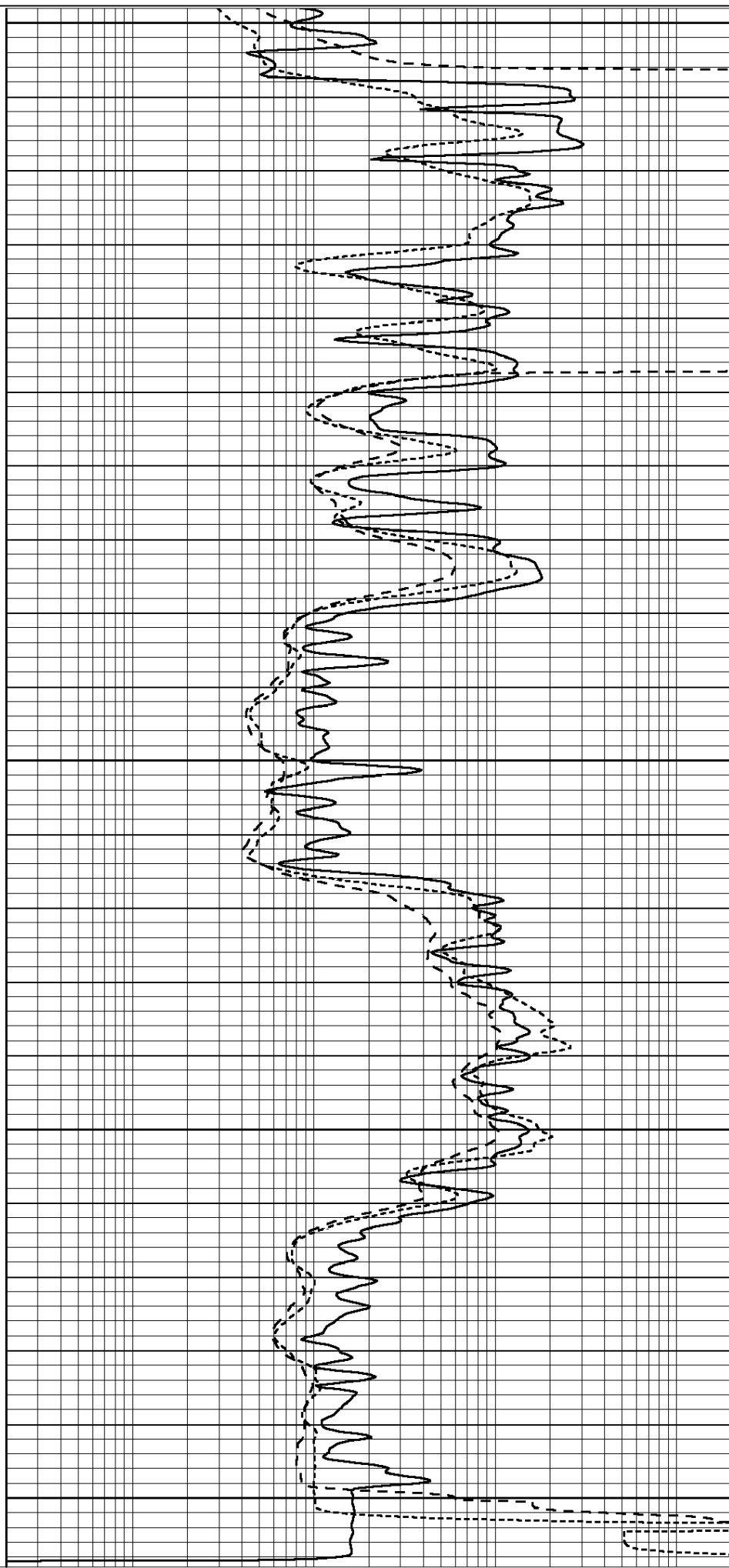
5750

5800

5850

5900

5950



0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			

Calibration Report									
Database File:		409444ddn.db							
Dataset Pathname:		pass3.10							
Dataset Creation:		Wed Aug 01 15:33:49 2012							
Dual Induction Calibration Report									
Serial-Model: Performed:				DIL3-GEAR Wed Aug 01 13:46:04 2012					
Readings				References			Results		
Loop:	Air	Loop		Air	Loop		m	b	
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	9.000	
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	-4.000	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.002	0.645	V	0.000	400.000	mmho/m	622.059	-1.071	
Medium	0.007	0.740	V	0.000	462.500	mmho/m	631.393	-4.555	
Litho Density Calibration Report Serial: 006      Model: PRB Performed Sun Aug 15 09:48:41 2010									
Litho Density Calibration									
	Background		Magnesium		Aluminum		Sandstone		
Window 1	1686.6		11612.8		3932.0		12718.8		cps
Window 2	1531.4		9204.7		3267.8		9851.9		cps
Window 3	1198.3		4733.6		1952.5		4920.6		cps
Window 4	317.3		321.2		325.9		303.6		cps
Long Space	0.0		7673.3		1736.4		8320.4		cps
Short Space	1.7		2548.5		1657.2		2628.8		cps
Rho			1.7100		2.5900		1.3800		g/cc
Pe					2.5700		1.5500		
Rib Angle	: 43.8		Rib Slope	: 0.961	Density/Spine Ratio			: 0.569	
Spine Angle	: 73.8		Spine Slope	: 3.453	Spine Intercept			: -18.1	
Caliper									
	Readings		Reference						
Low Ref	3.5		8.0						
High Ref	5.5		15.0						
	Gain: 3.6				Offset: -4.8				
Compensated Neutron Calibration Report									
Serial Number:				070808					
Tool Model:				Probe					
PRE-SURVEY VERIFICATION									
	Detector		Readings		Measured		Target		
	Short Space		cps						
	Long Space		cps						

Long Space	cps	pu	pu
POST-SURVEY VERIFICATION			
Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu
Gamma Ray Calibration Report			
Serial Number:	070559		
Tool Model:	OPEN_GR		
Performed:	Thu Jul 26 17:34:29 2012		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.3000	GAPI/cps	