

DUAL INDUCTION LOG

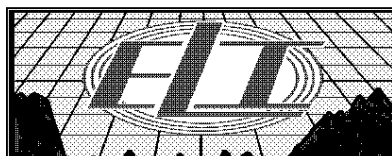
Company	MULL DRILLING COMPANY, INC.		
Well	#2-10 BOUZIDEN UNIT		
Field	BIG BEAR CREEK		
County	CLARK		
State	KANSAS		
Company	MULL DRILLING COMPANY, INC.		
Well	#2-10 BOUZIDEN UNIT		
Field	BIG BEAR CREEK		
County	CLARK		
State	KANSAS		
Location:	API # : 15-025-21604-0000 702' FNL & 385' FEL NW - SE - NE - NE		
Permanent Datum	GROUND LEVEL	Elevation	2166
Log Measured From	KELLY BUSHING 12' A.G.L.		
Drilling Measured From	KELLY BUSHING		
SEC 10	TWP 32S	RGE 23W	
Date	11/30/18		
Run Number	ONE		
Depth Driller	5400		
Depth Logger	5402		
Bottom Logged Interval	5400		
Top Log Interval	00		
Casing Driller	8 5/8"@648'		
Casing Logger	648		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 11,200 PPM	
Density / Viscosity	9.471		
pH / Fluid Loss	10.0/10.8		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.380@80F		
Rmf @ Meas. Temp	.285@80F		
Rmc @ Meas. Temp	.456@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.236@129F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	11:00 A.M.		
Maximum Recorded Temperature	129F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

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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 ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
ASHLAND, KS., 1W. ON HWY 160 TO "RD. 16", 6N., 1E. INTO AT FENCELINE



MAIN SECTION

Database File: 3064pe.db
Dataset Pathname: pass3.7
Presentation Format: dil2
Dataset Creation: Fri Nov 30 12:58:31 2018
Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

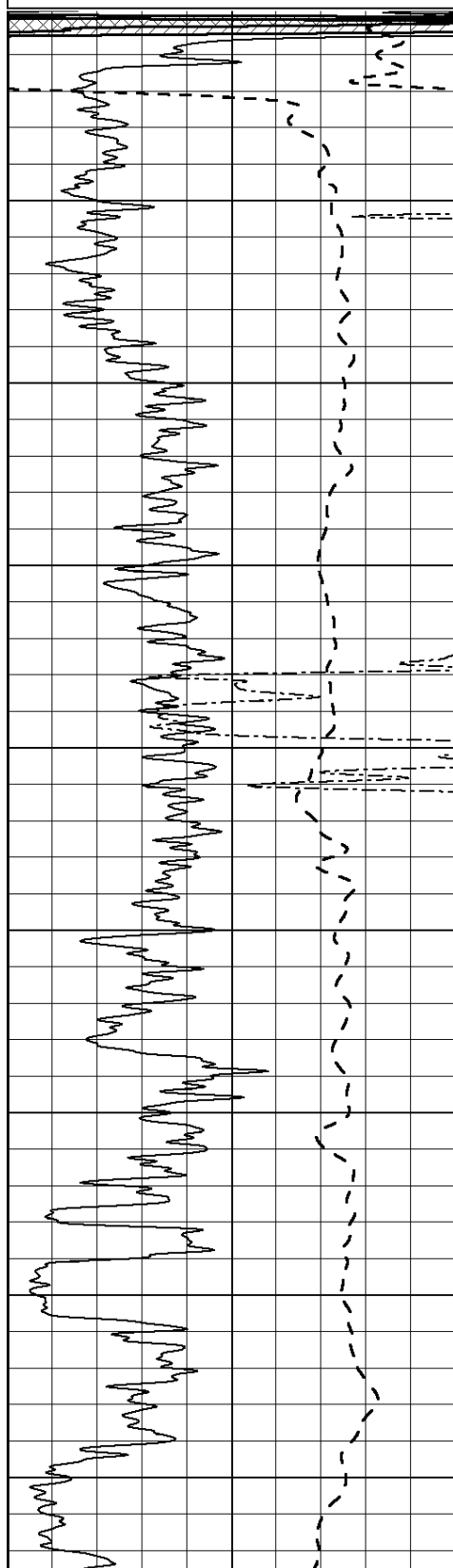
0	RLL3 (Ohm-m)	50
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0	RILD (Ohm-m)	50
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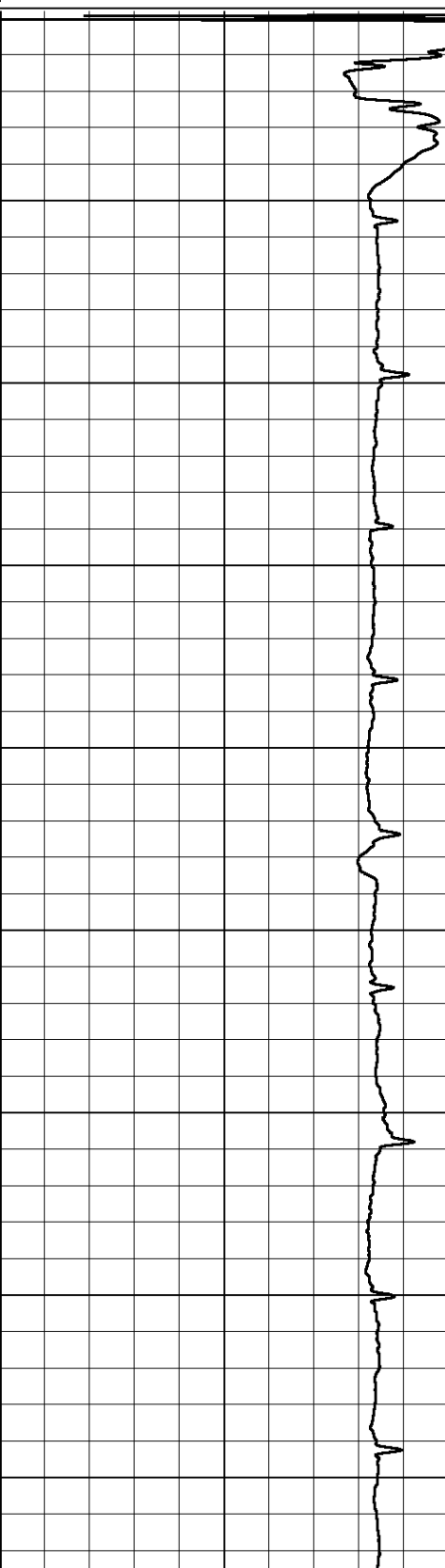
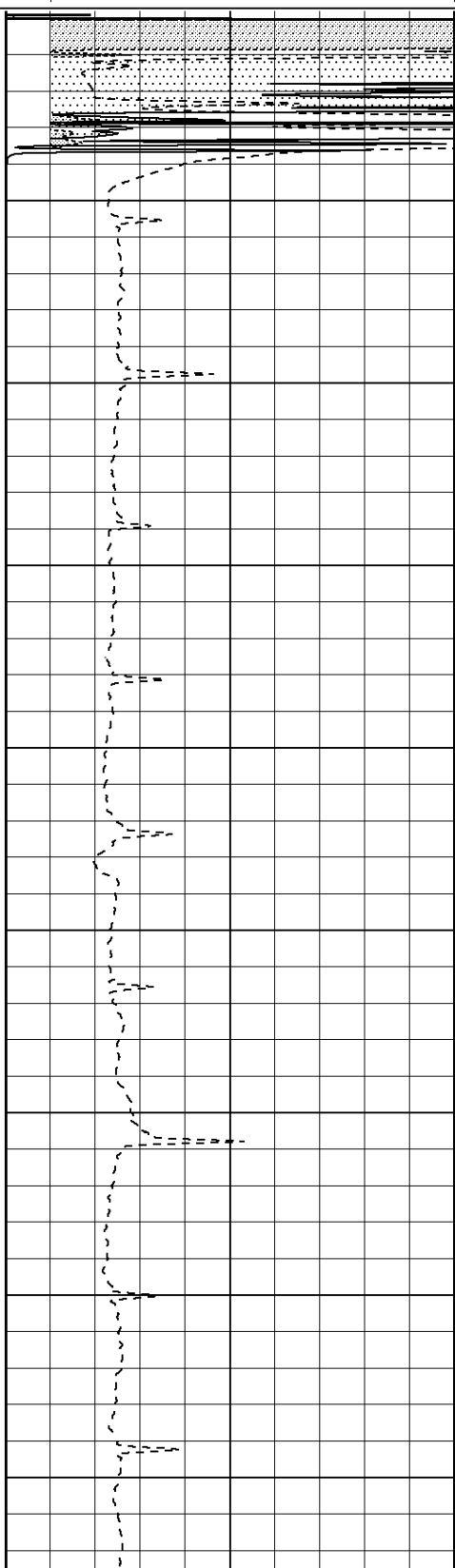
1000	CILD (mmho/m)	0
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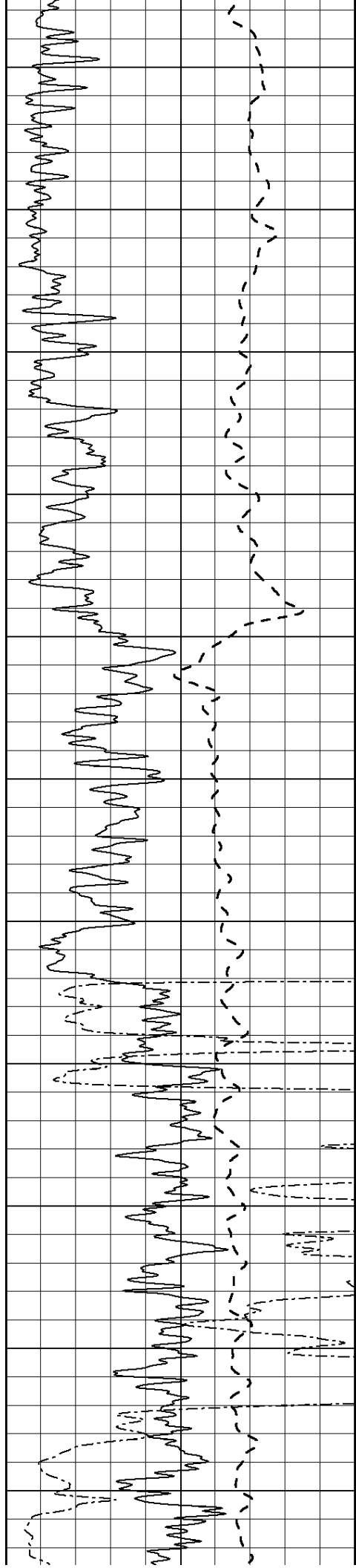
50	RILD X10 (Ohm-m)	500
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50	RLL3 X10 (Ohm-m)	500
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0
50
100
150
200
250
300
350
400





450

500

550

600

650

700

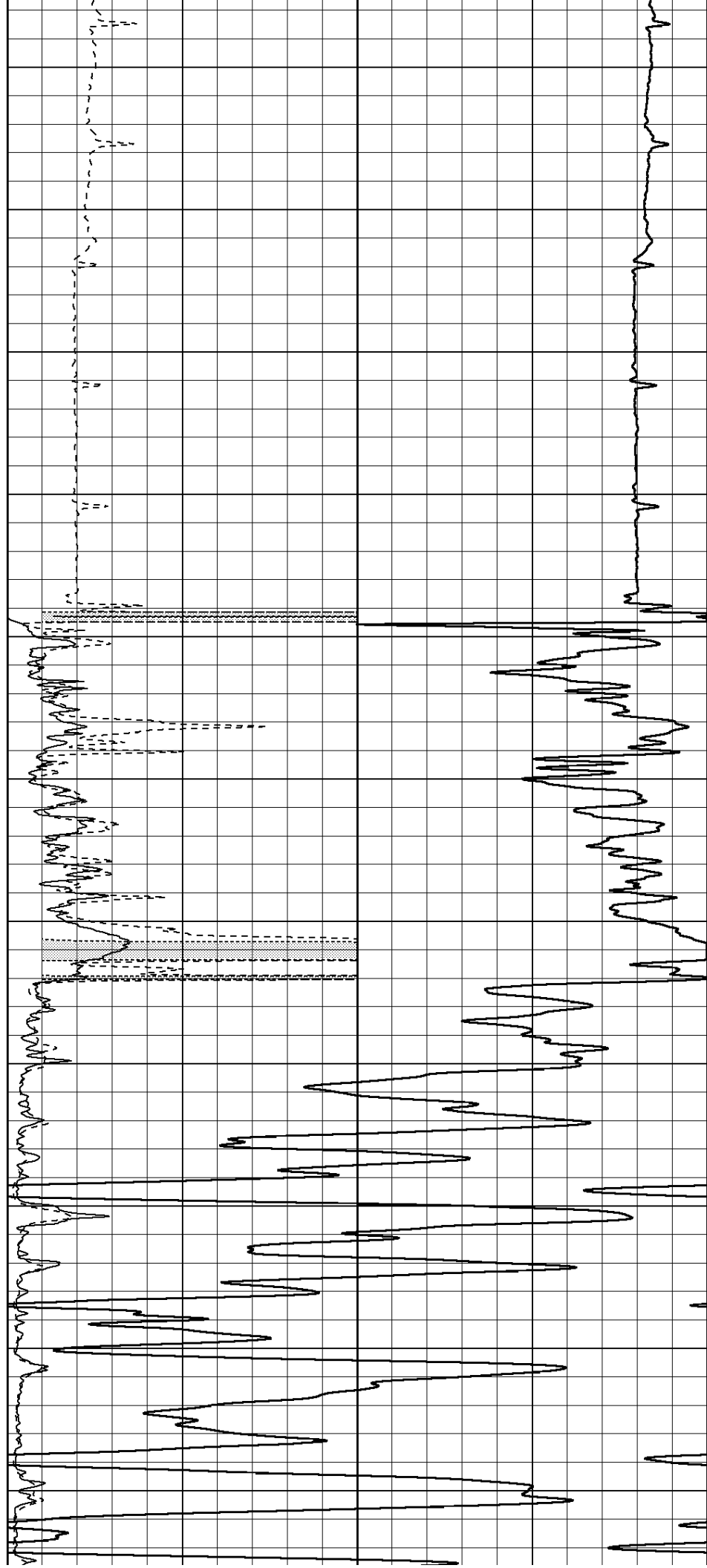
750

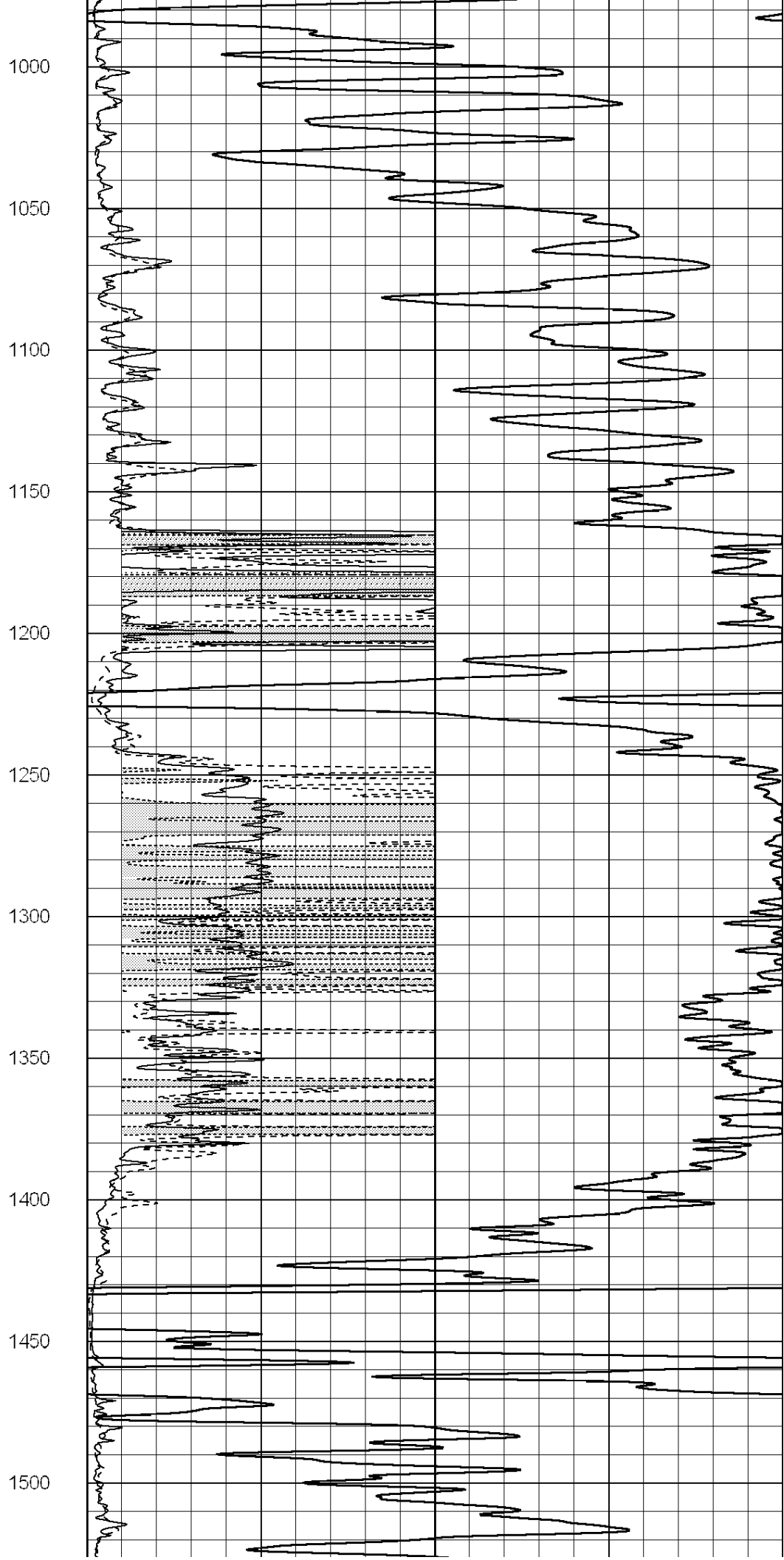
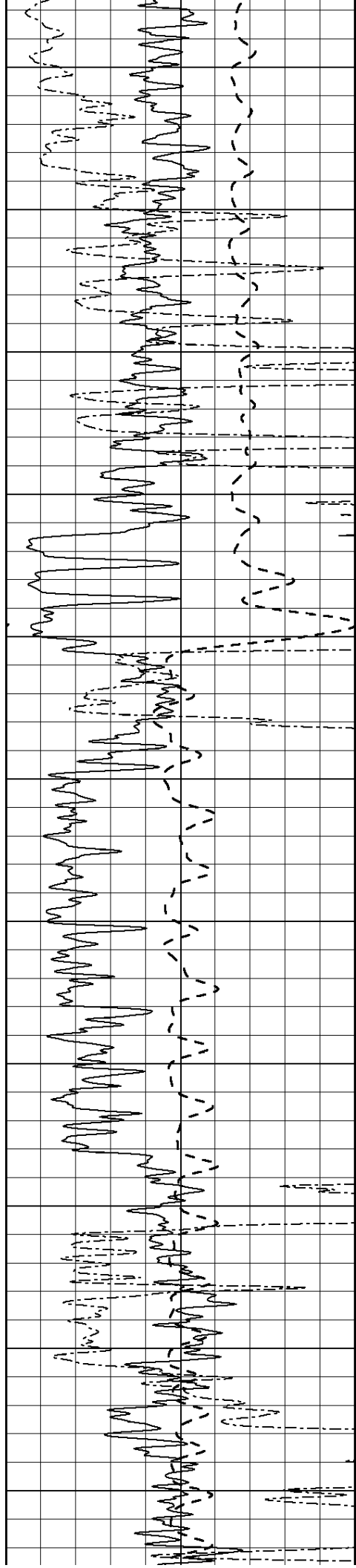
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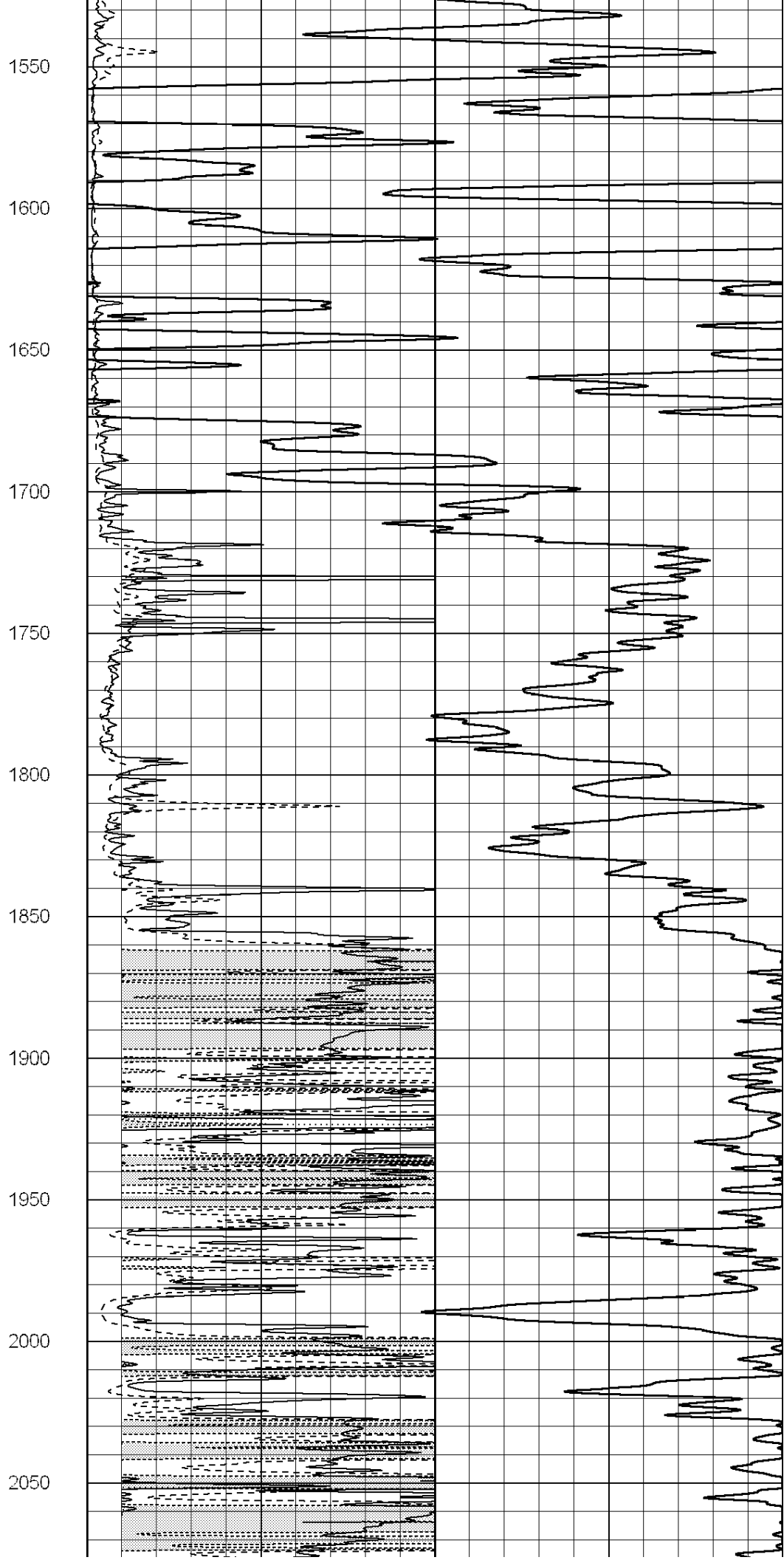
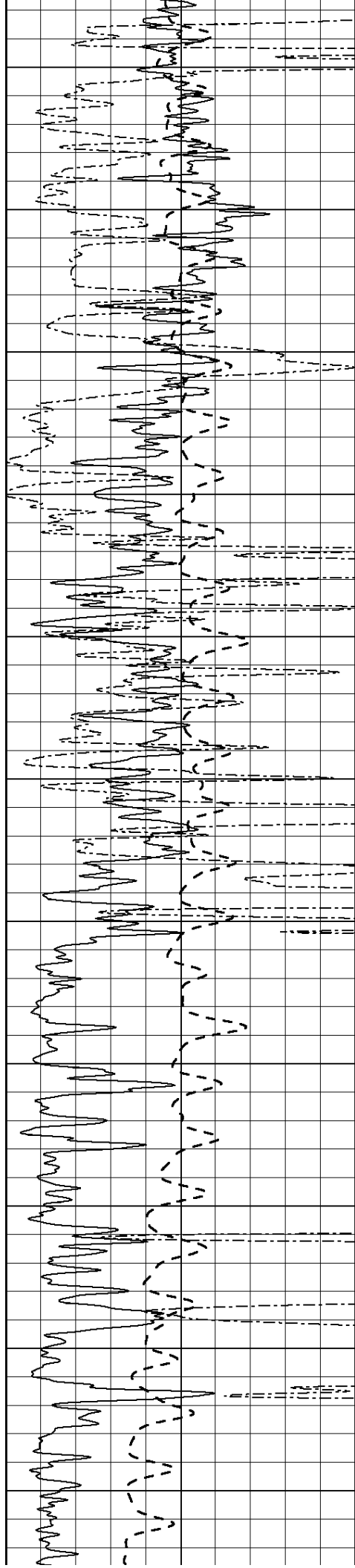
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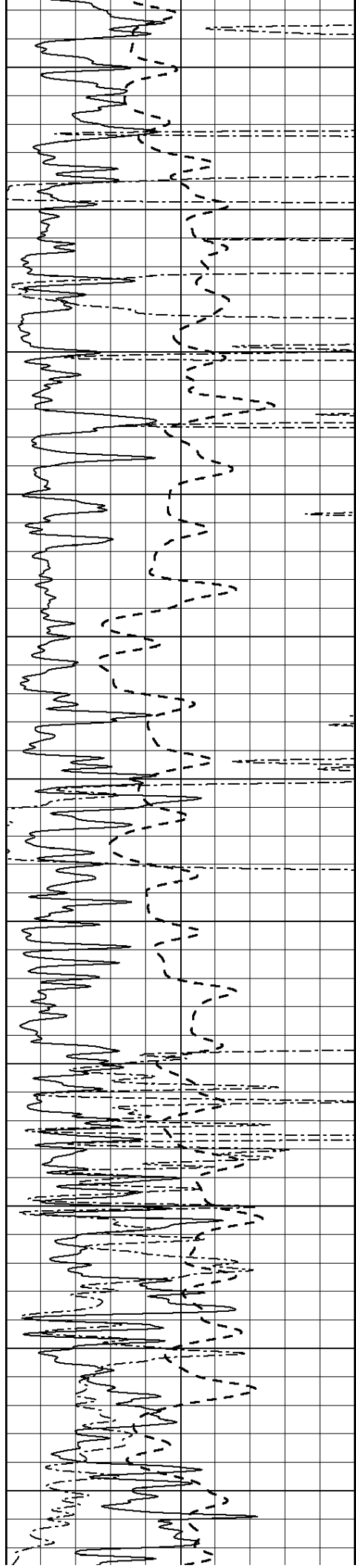
900

950









2100

2150

2200

2250

2300

2350

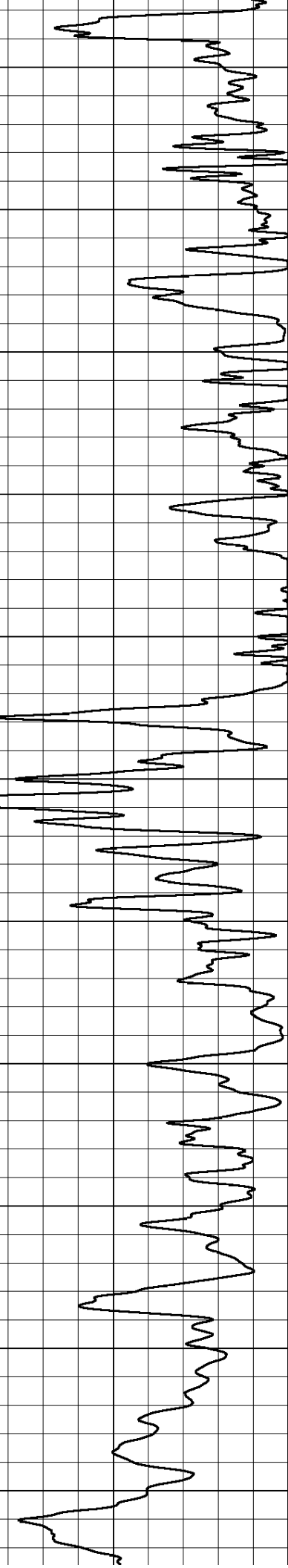
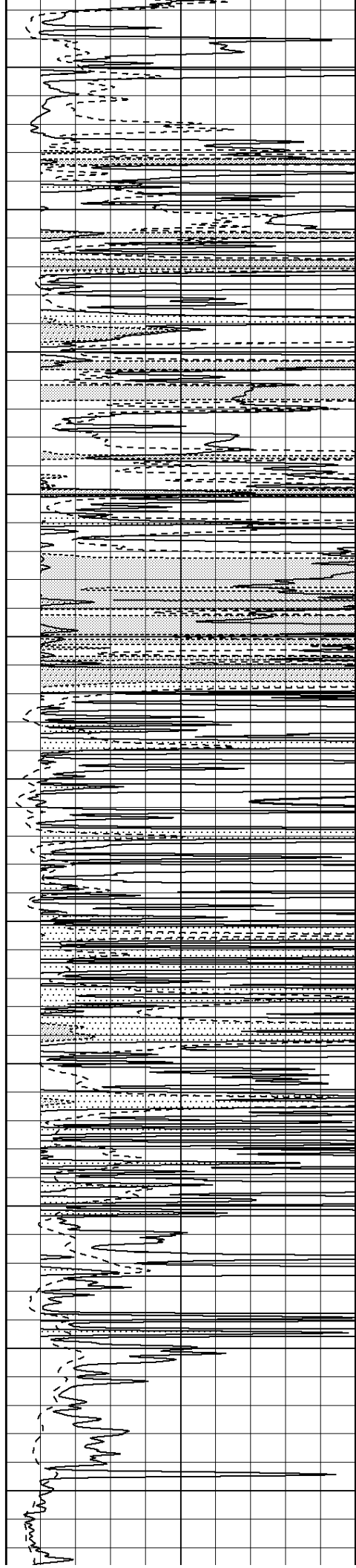
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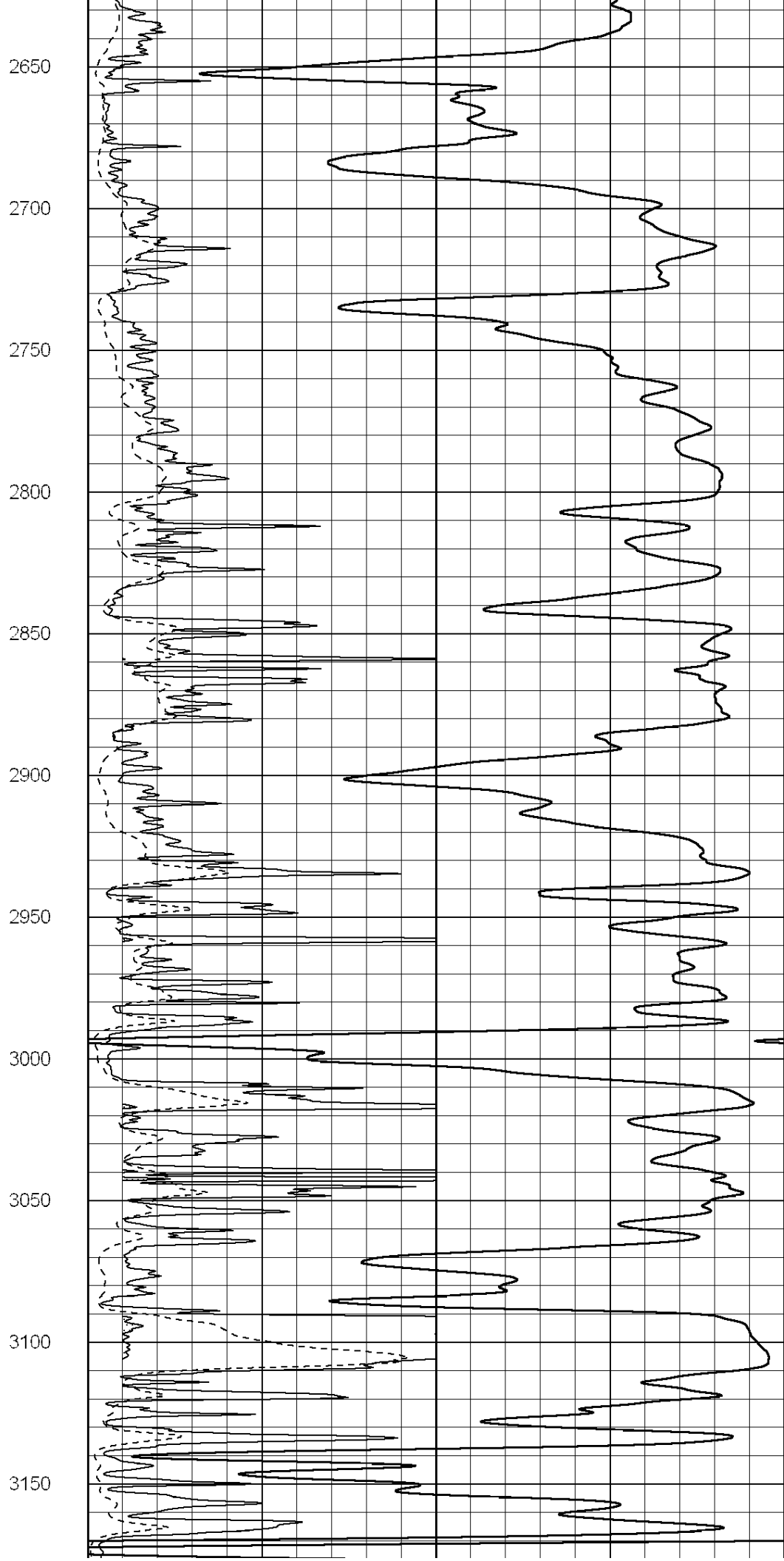
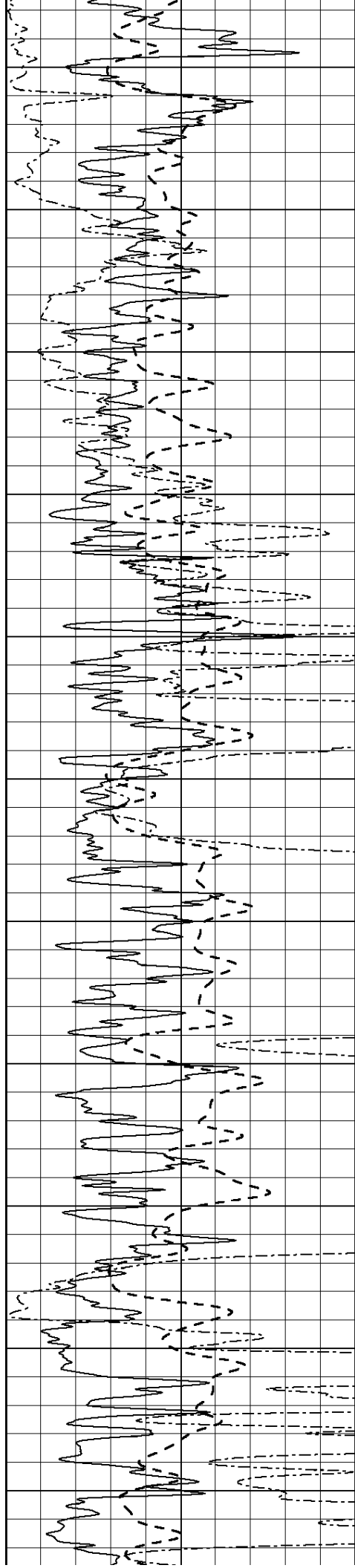
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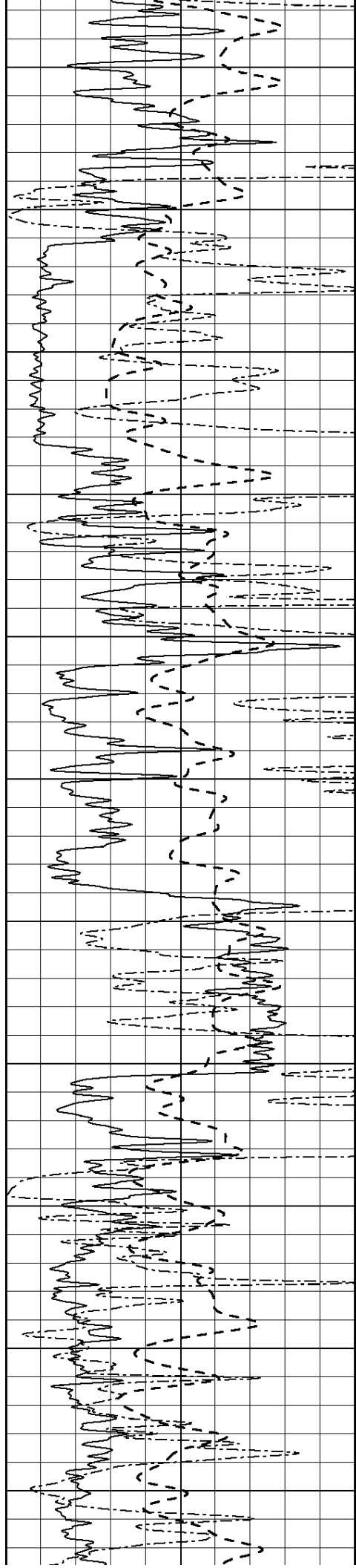
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2550

2600







3200

3250

3300

3350

3400

3450

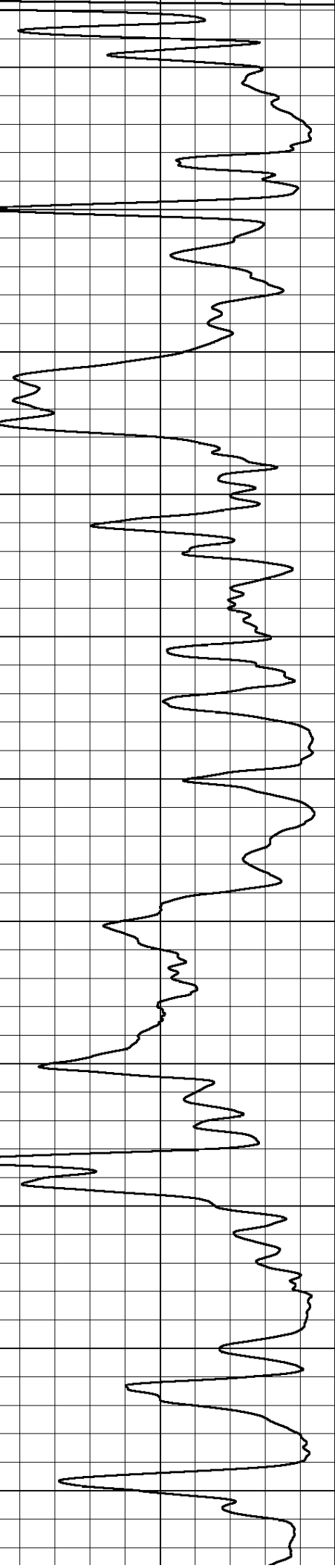
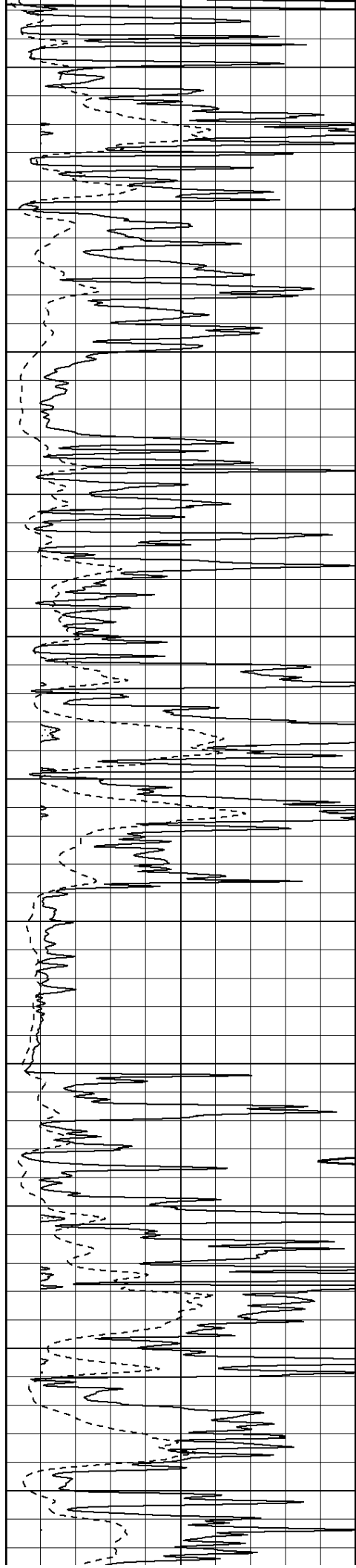
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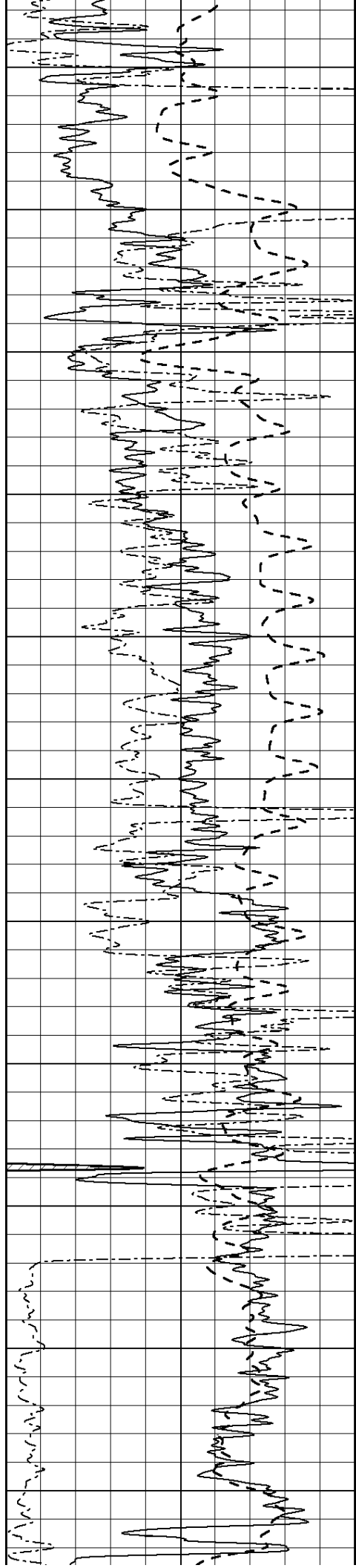
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3700





3750

3800

3850

3900

3950

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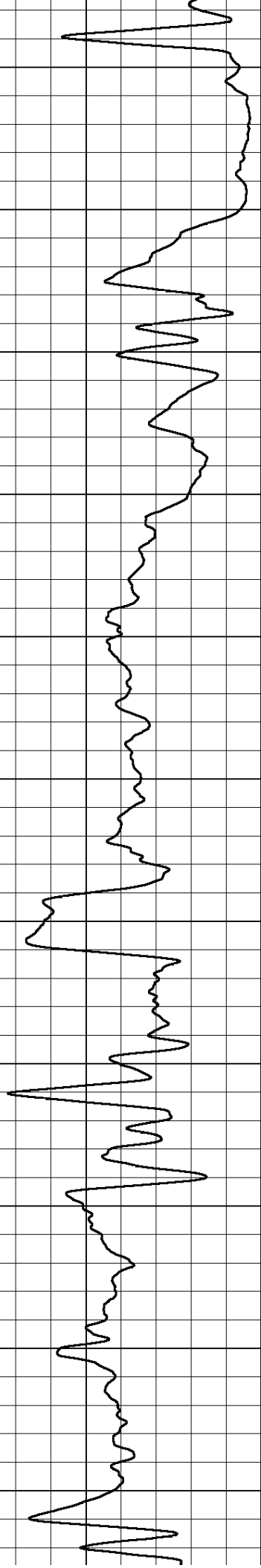
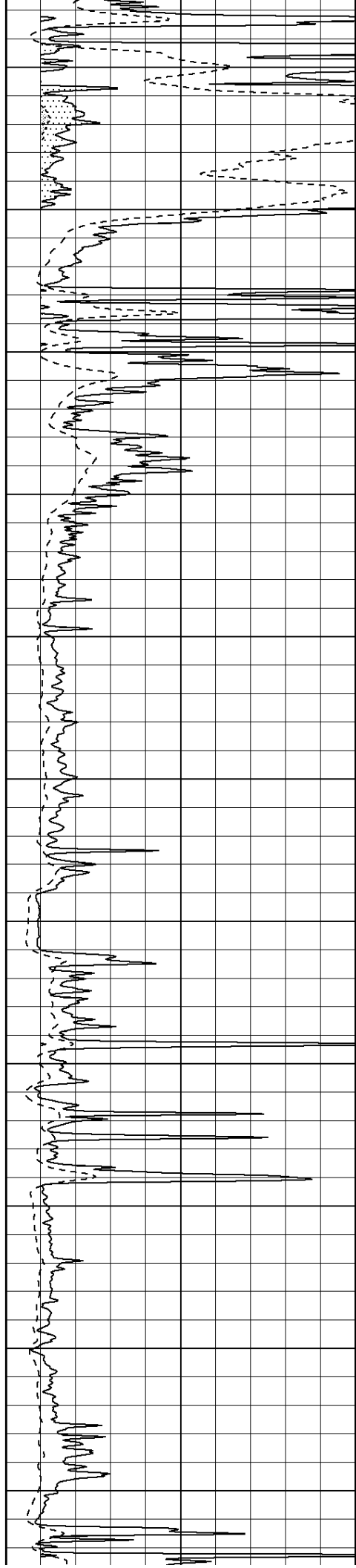
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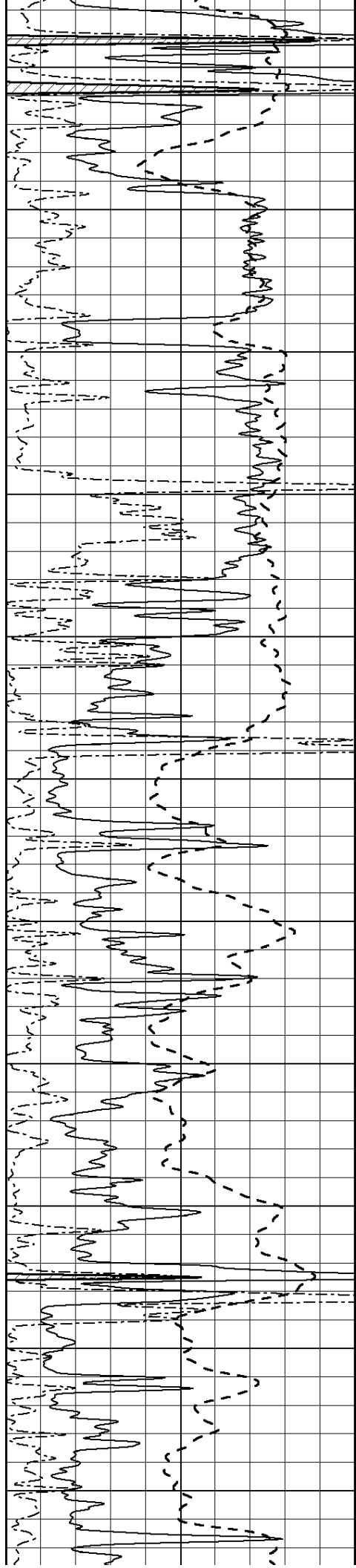
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4150

4200

4250





4300

4350

4400

4450

4500

4550

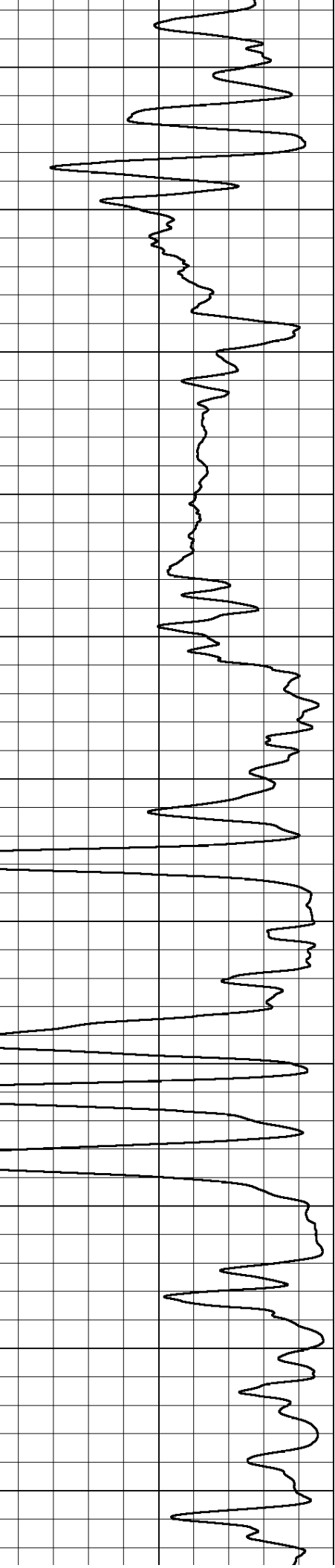
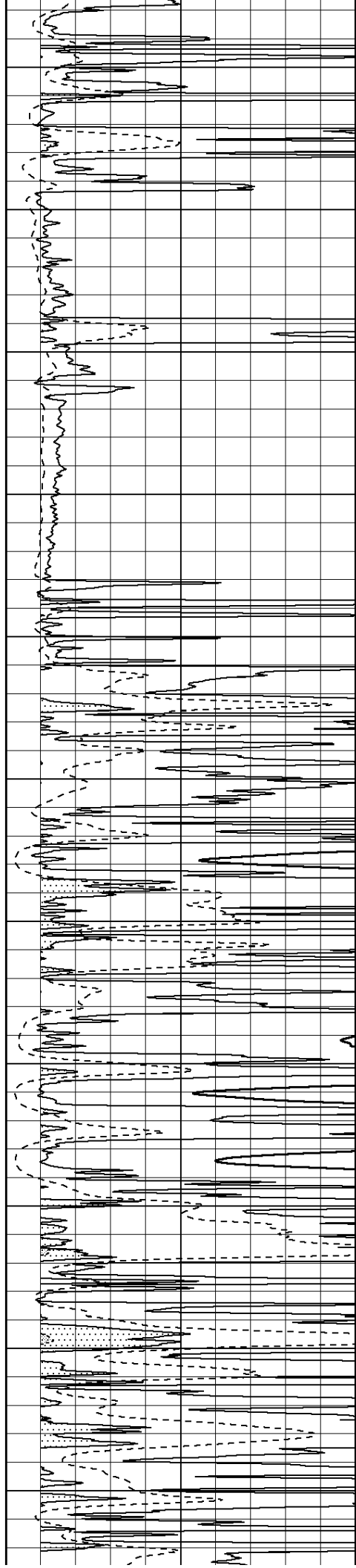
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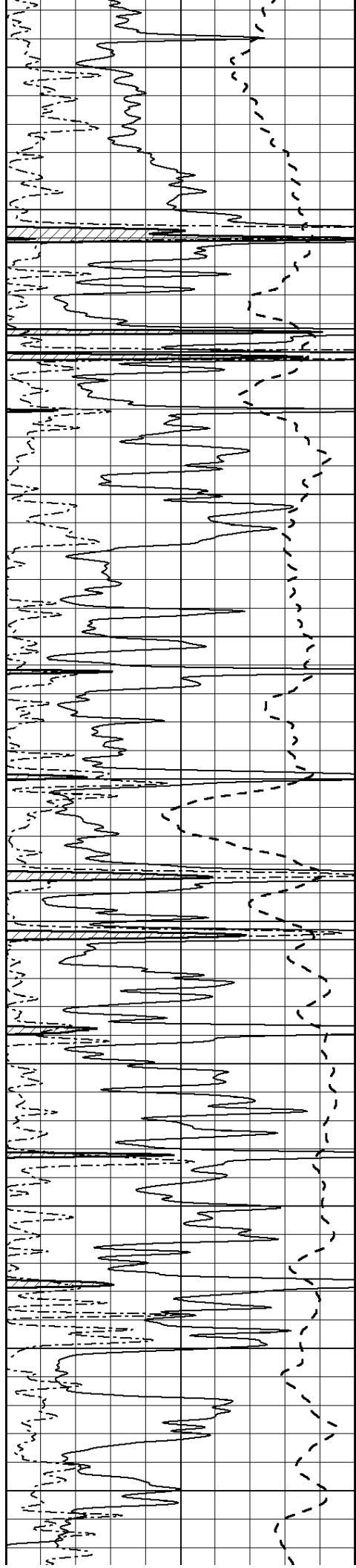
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4700

4750

4800





4850

4900

4950

5000

5050

5100

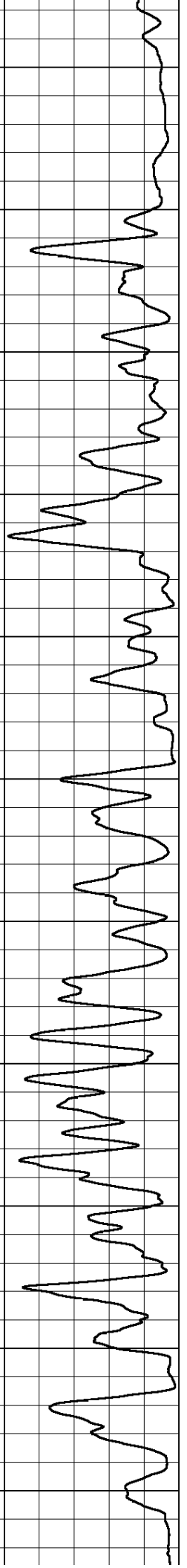
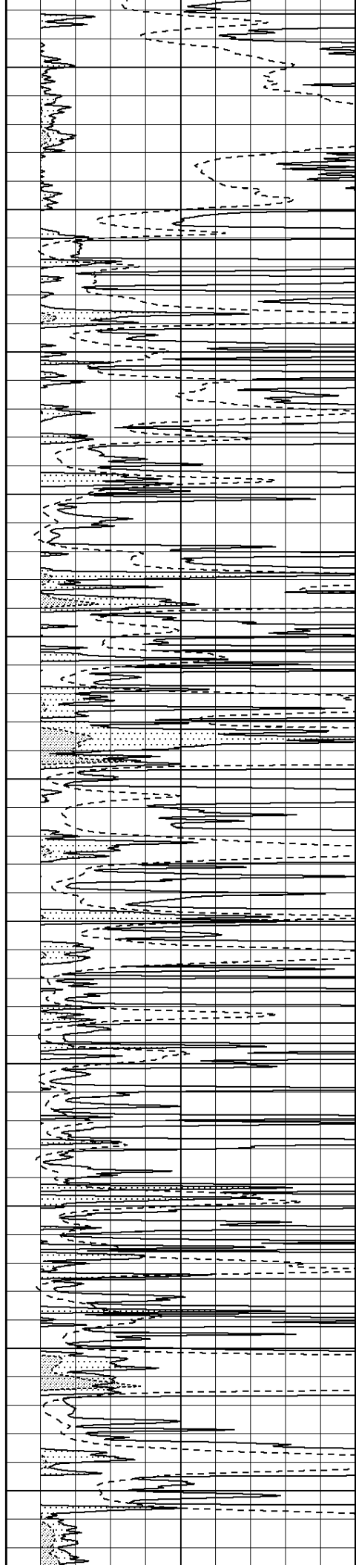
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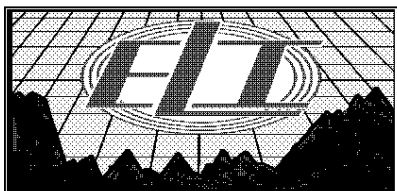
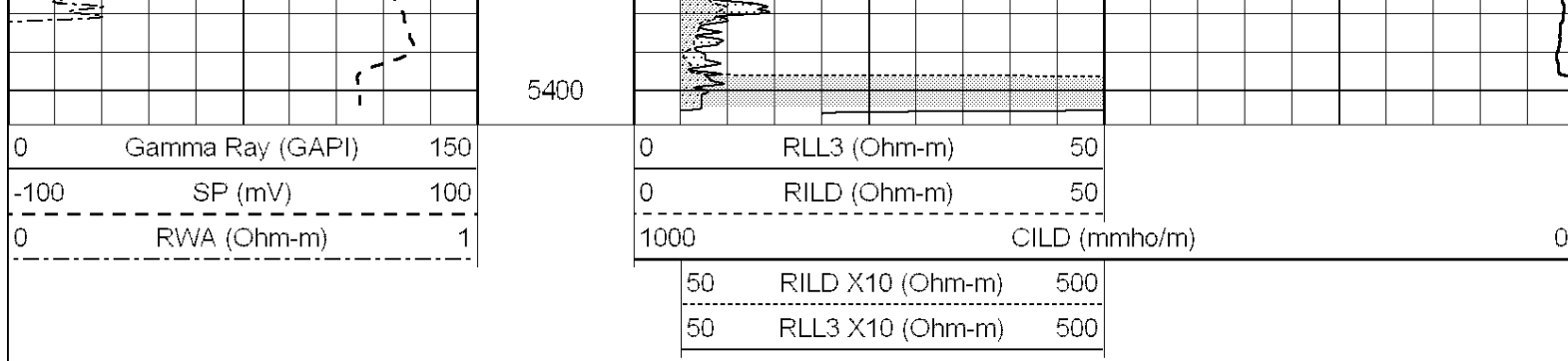
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5250

5300

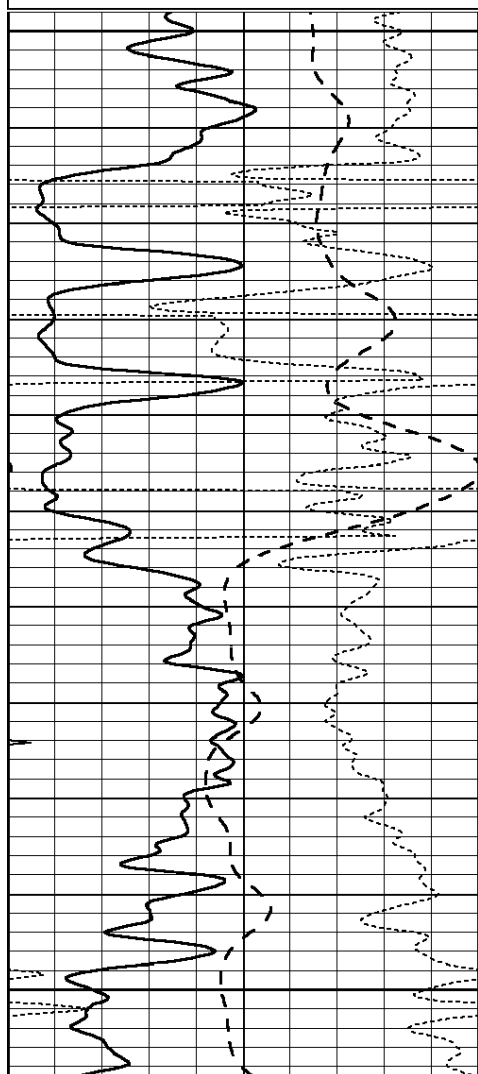
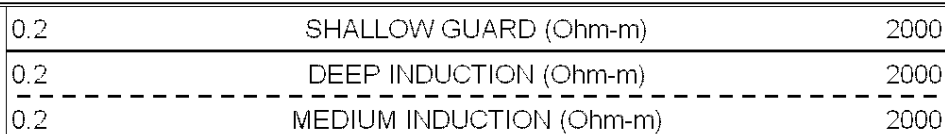
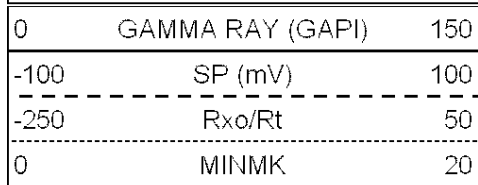
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MAIN SECTION

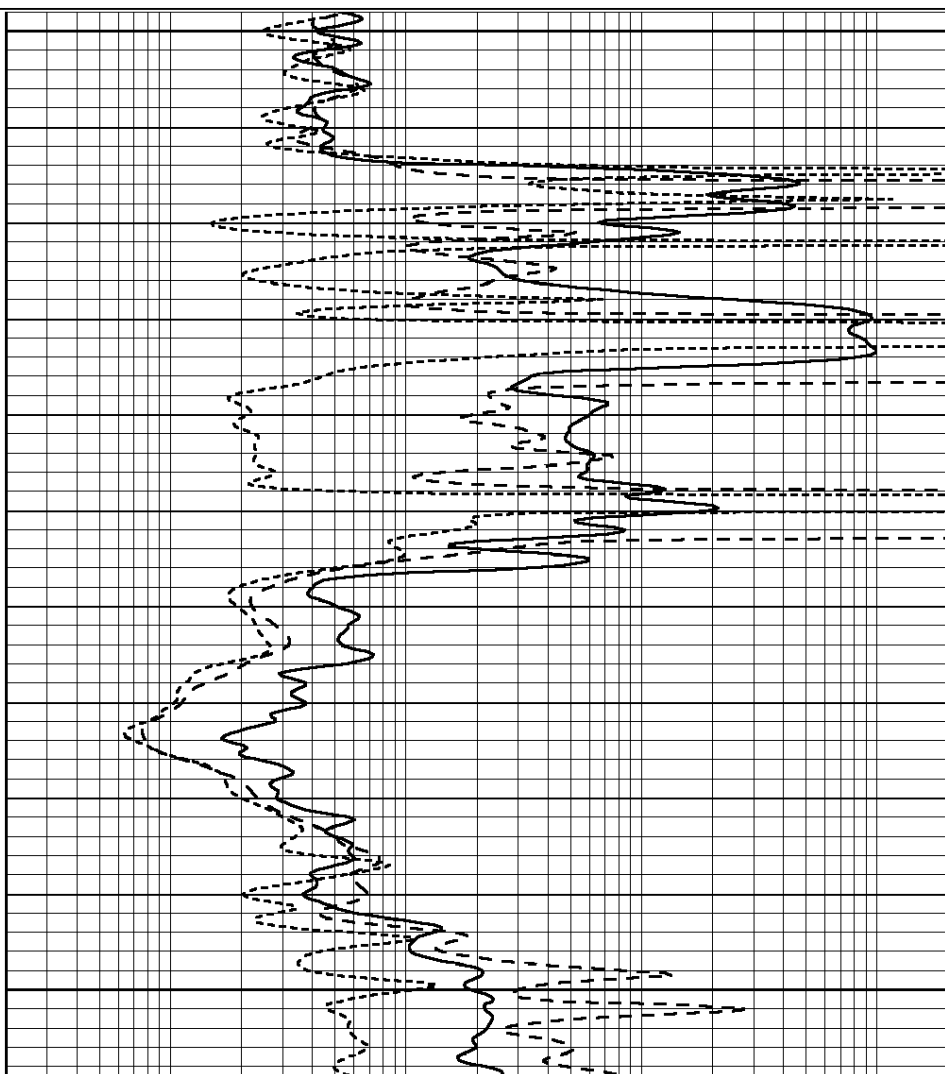
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 Presentation Format: _dil
 Dataset Creation: Fri Nov 30 12:59:34 2018
 Charted by: Depth in Feet scaled 1:240

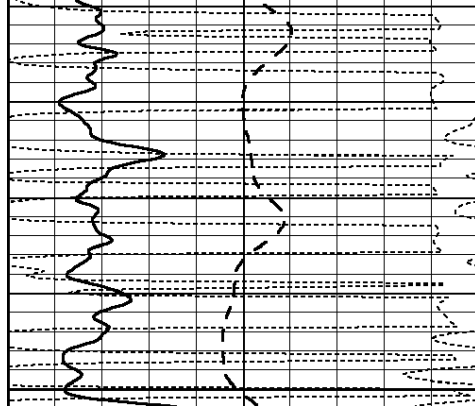


1150

1200

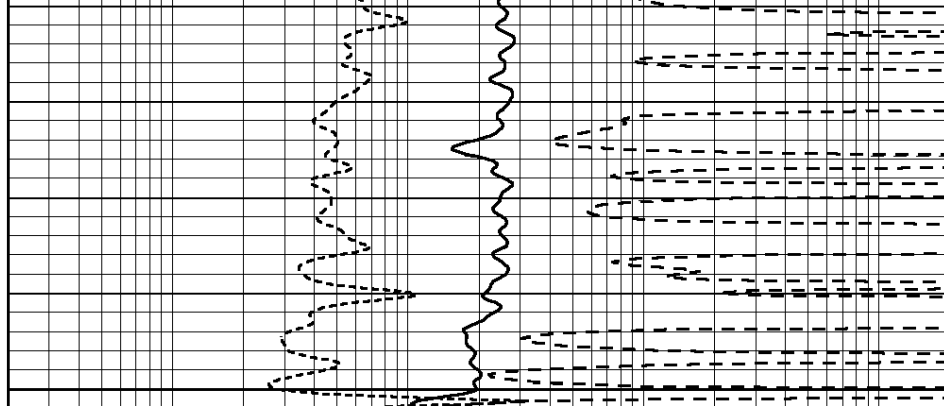
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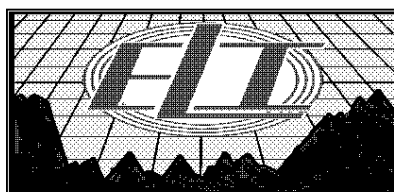


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

1300



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

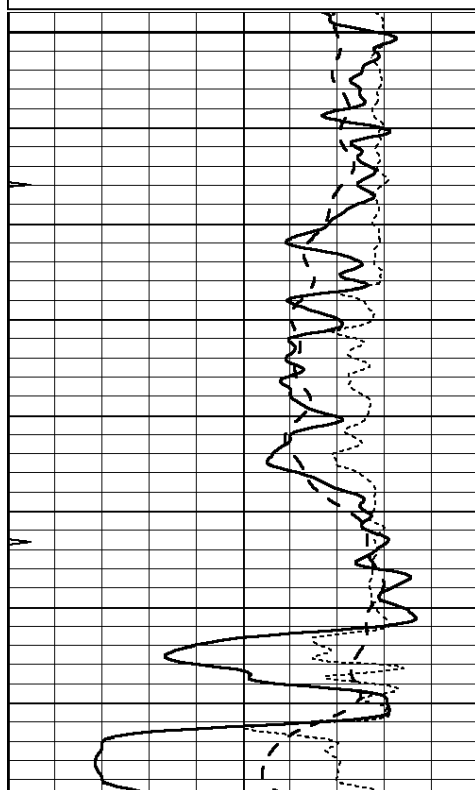


MAIN SECTION

Database File: 3064pe.db
 Dataset Pathname: pass3.7
 Presentation Format: _dil
 Dataset Creation: Fri Nov 30 12:58:31 2018
 Charted by: Depth in Feet scaled 1:240

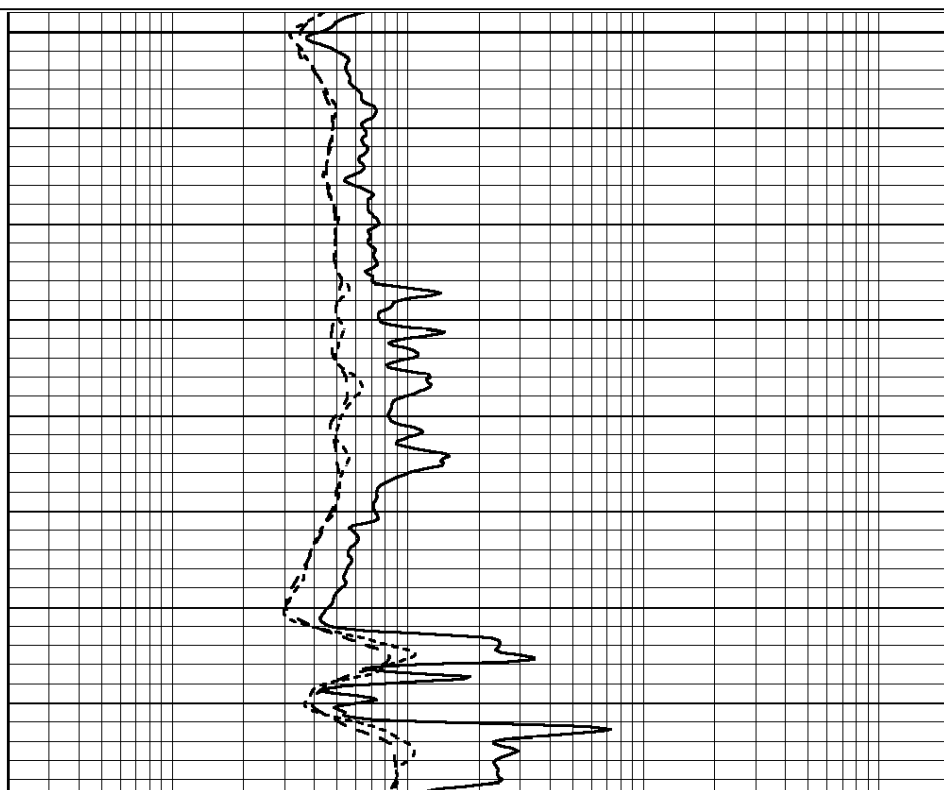
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

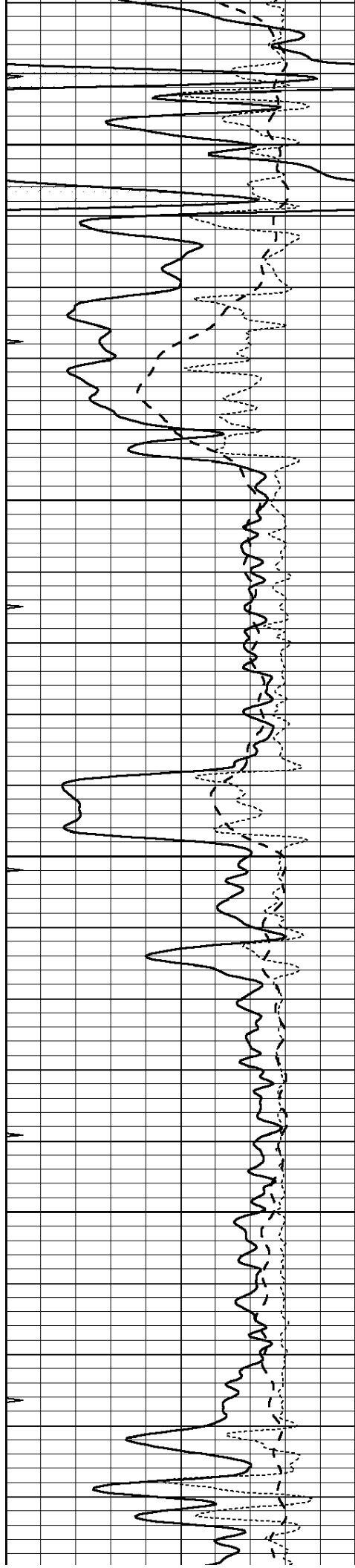
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



4200

4250





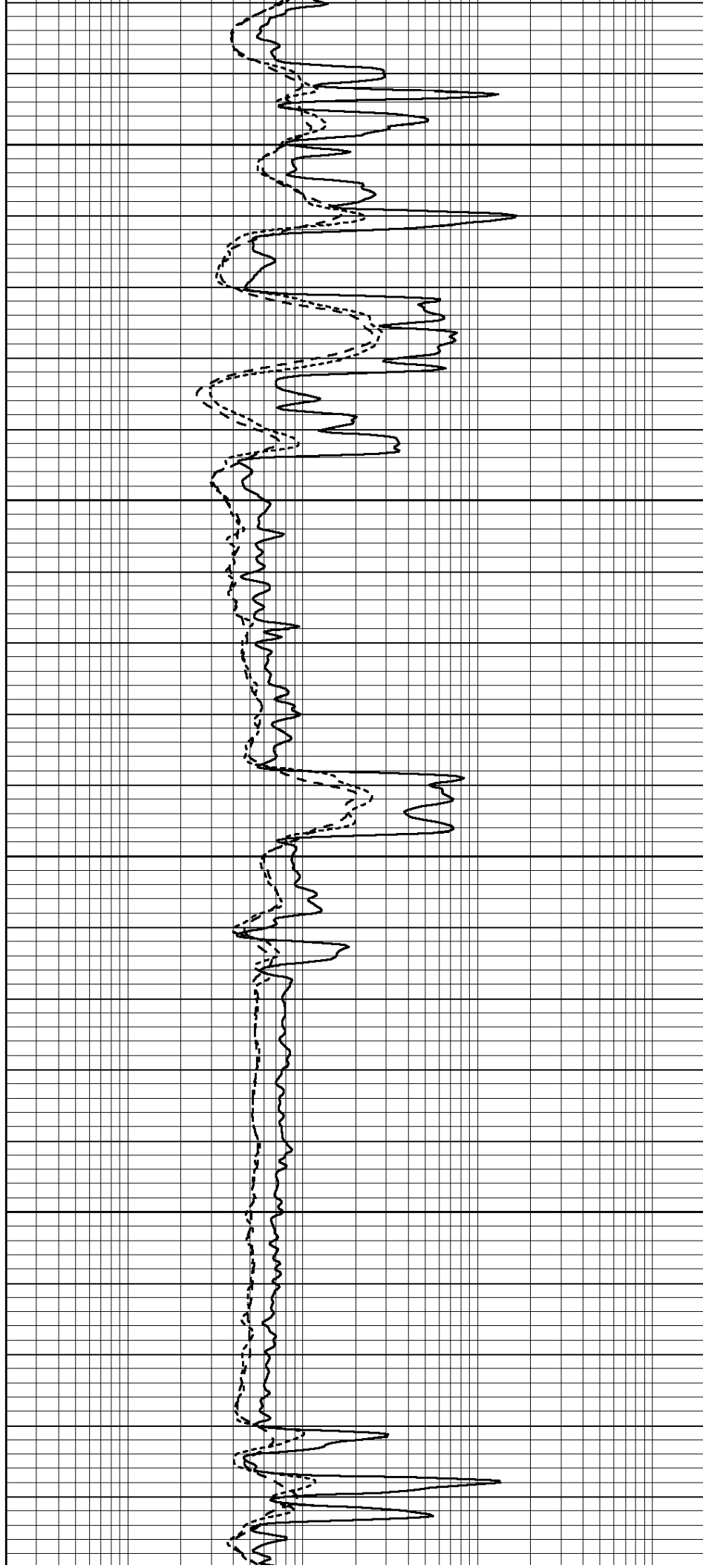
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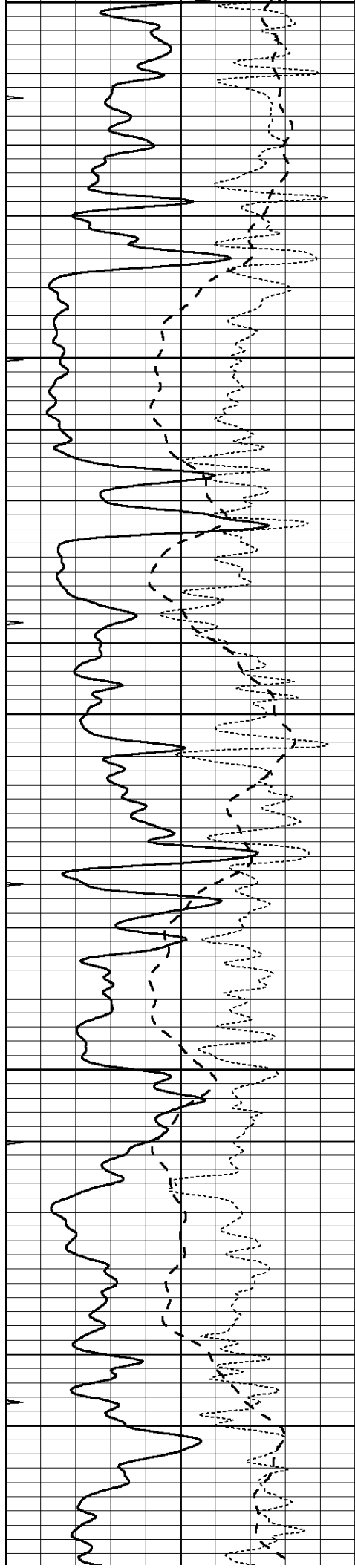
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4400

4450

4500





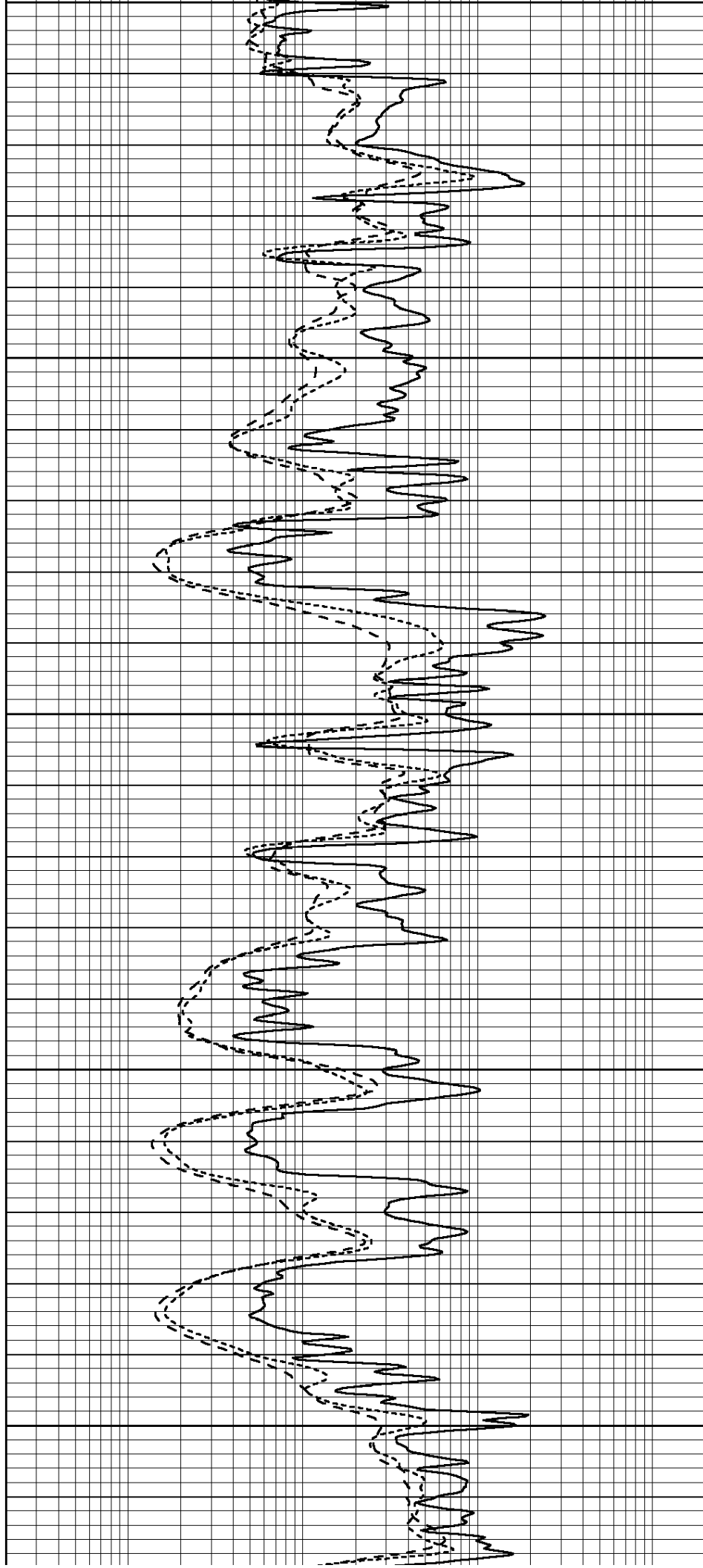
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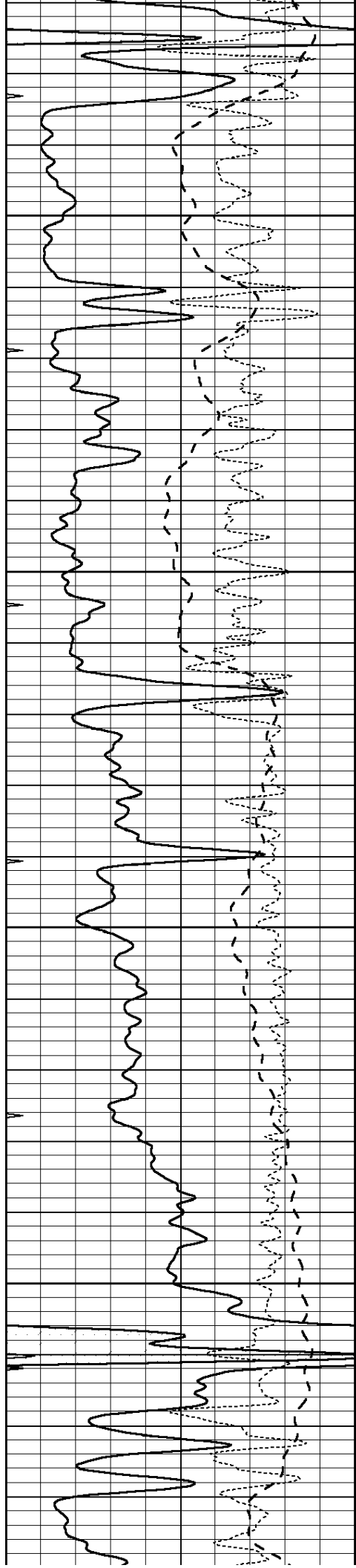
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4600

4650

4700



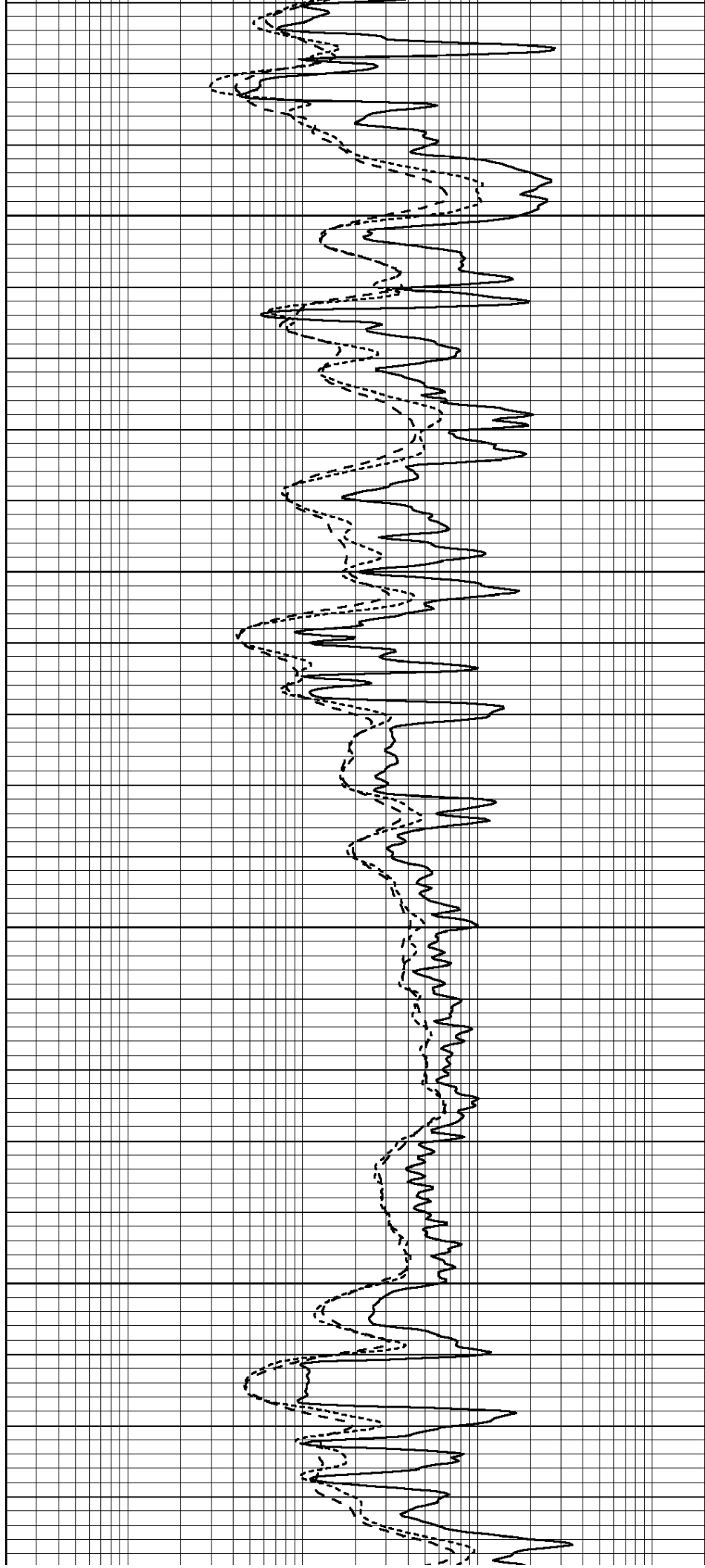


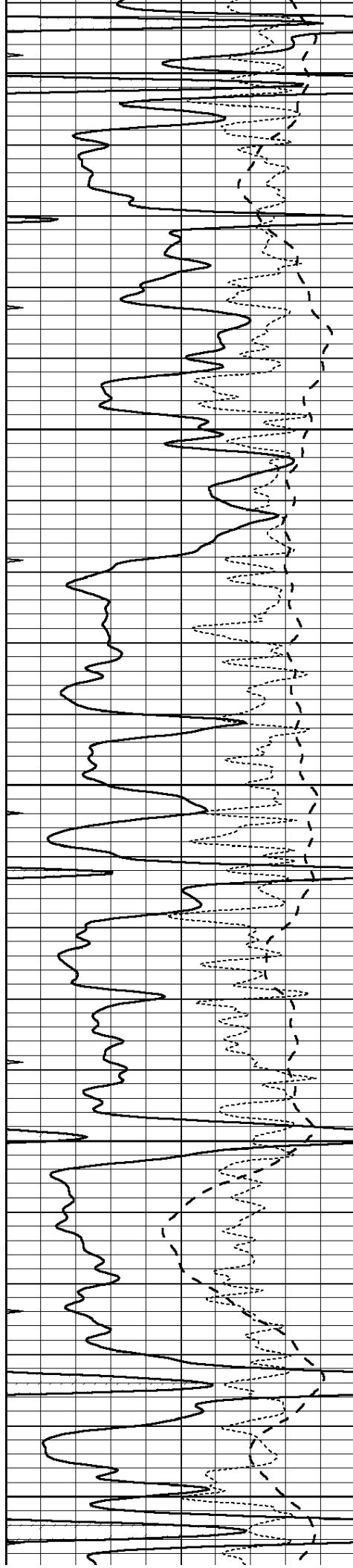
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4800

4850

4900





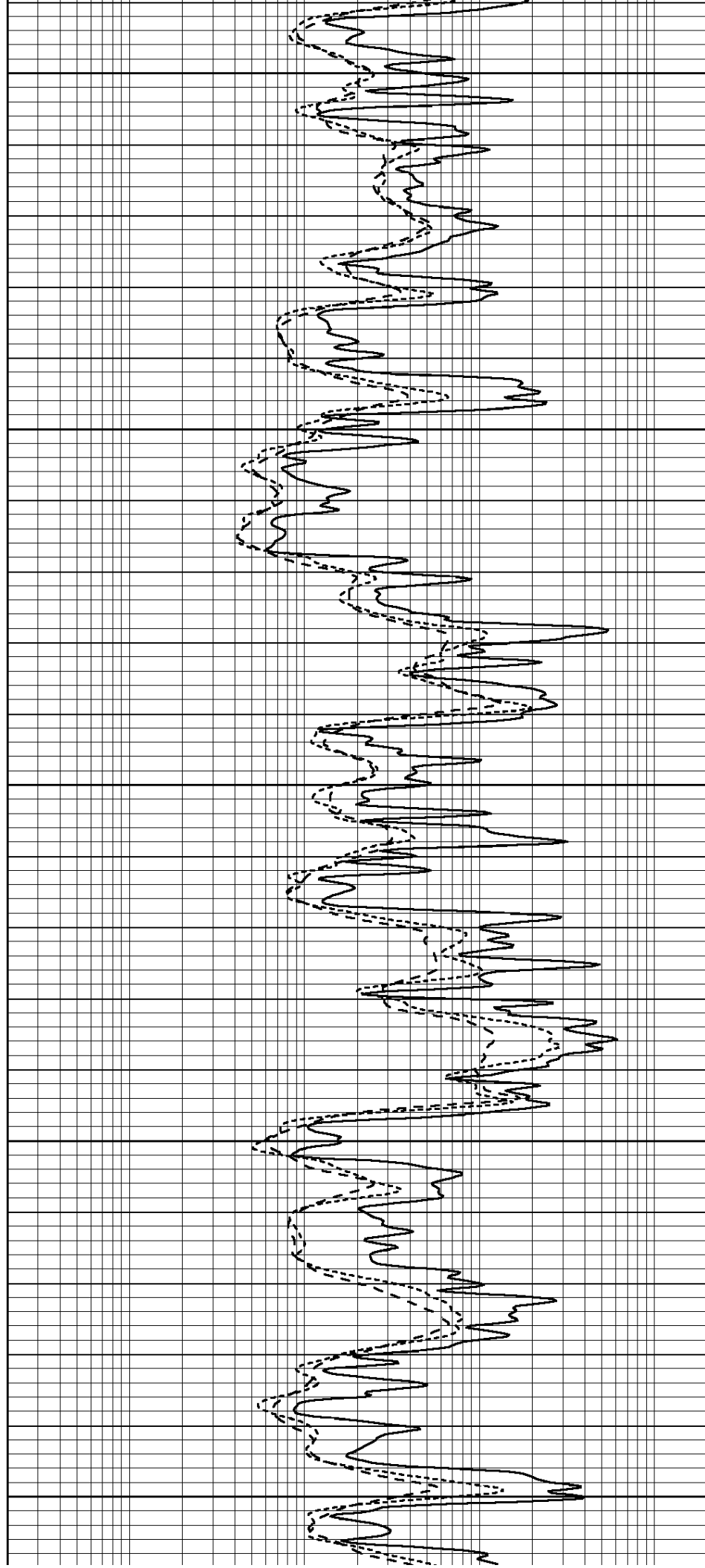
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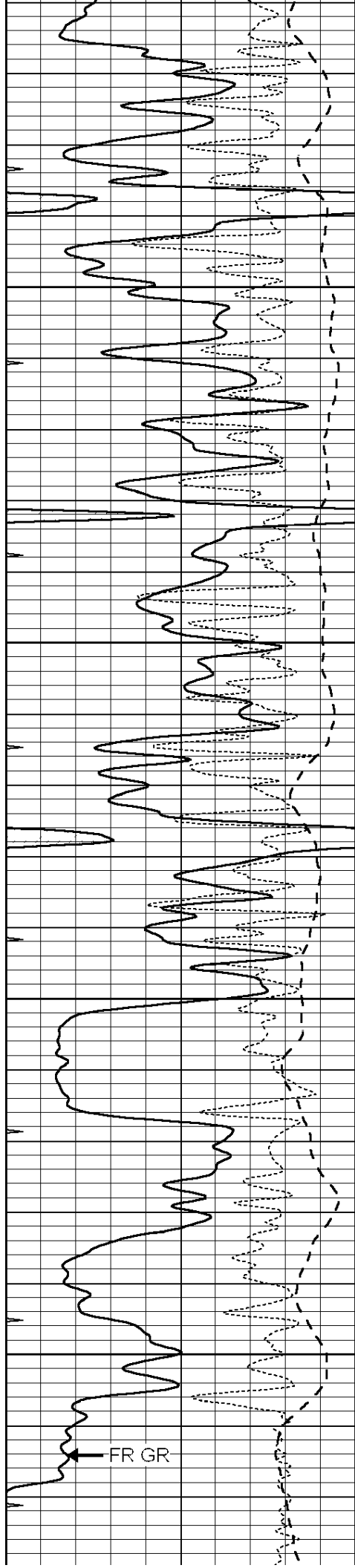
5000

5050

5100

5150





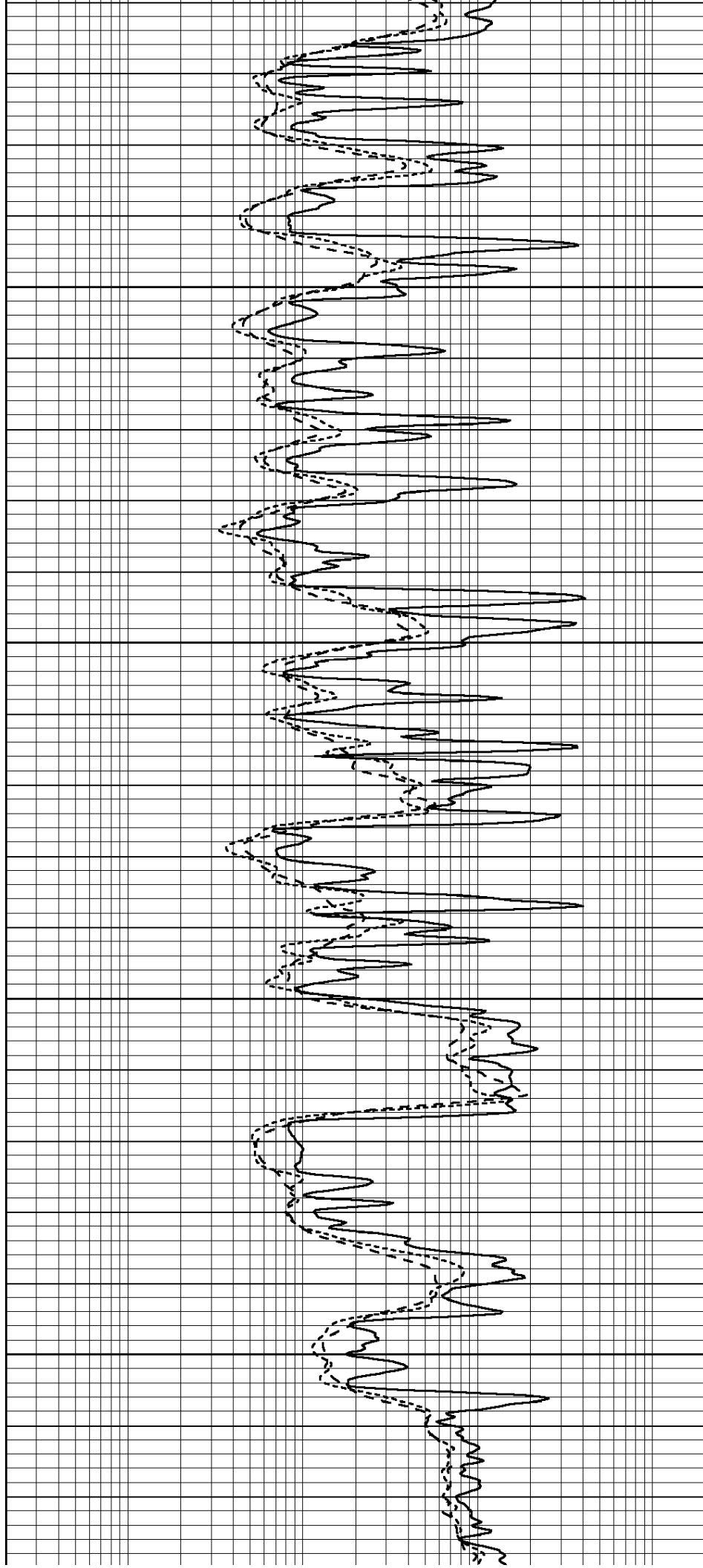
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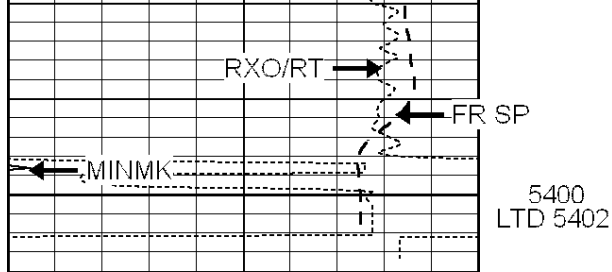
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5300

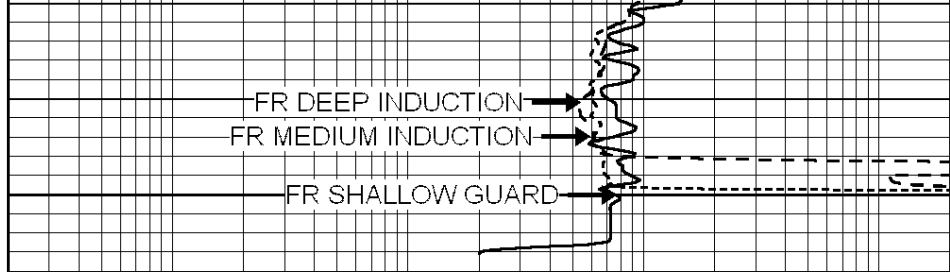
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FR GR

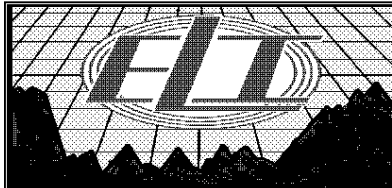




0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



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

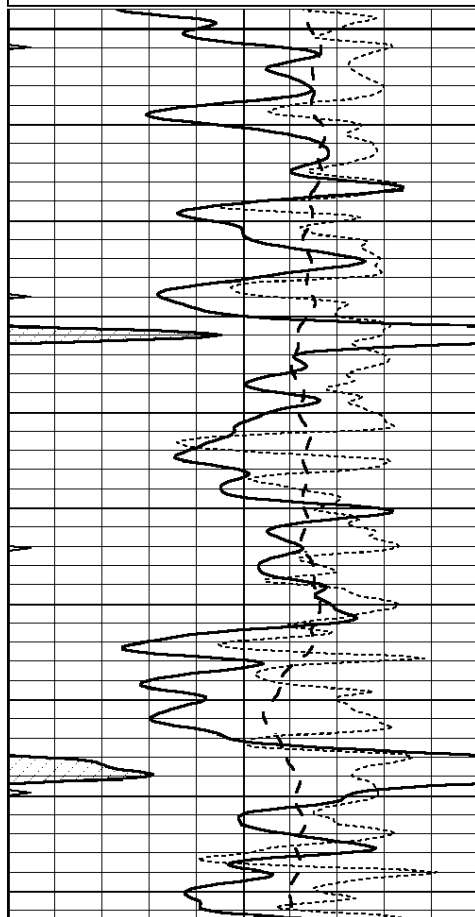


REPEAT SECTION

Database File: 3064pe.db
 Dataset Pathname: pass2.8
 Presentation Format: _dil
 Dataset Creation: Fri Nov 30 12:33:09 2018
 Charted by: Depth in Feet scaled 1:240

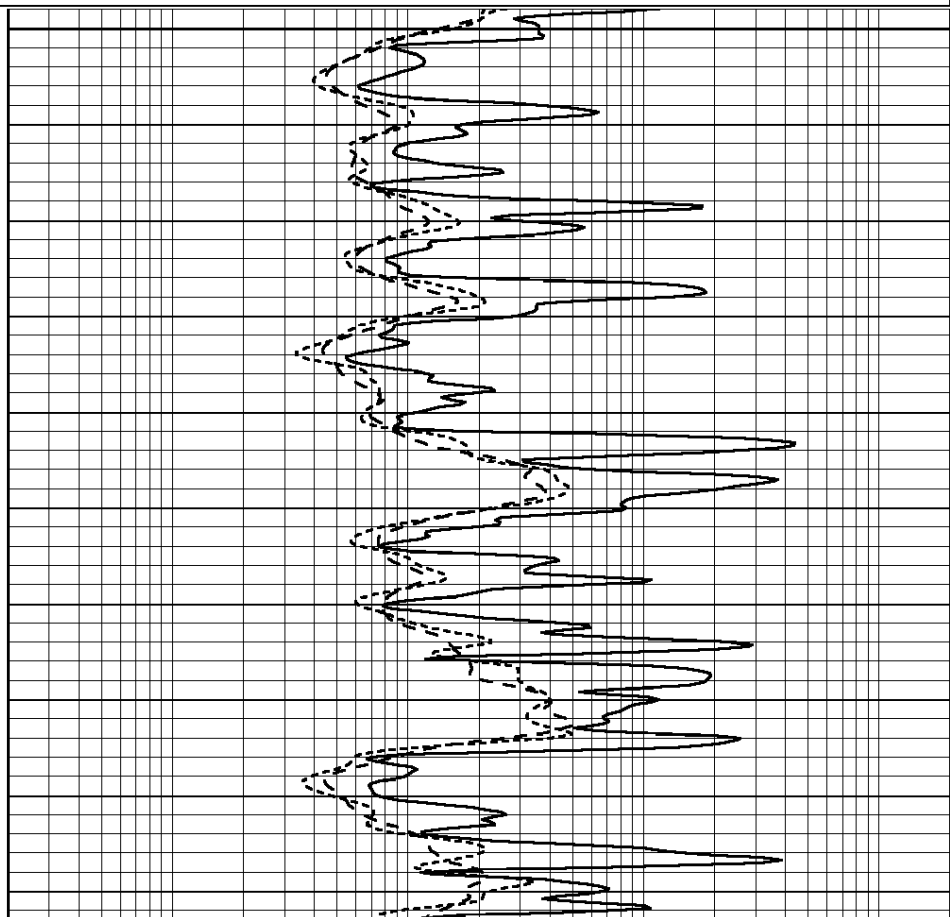
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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

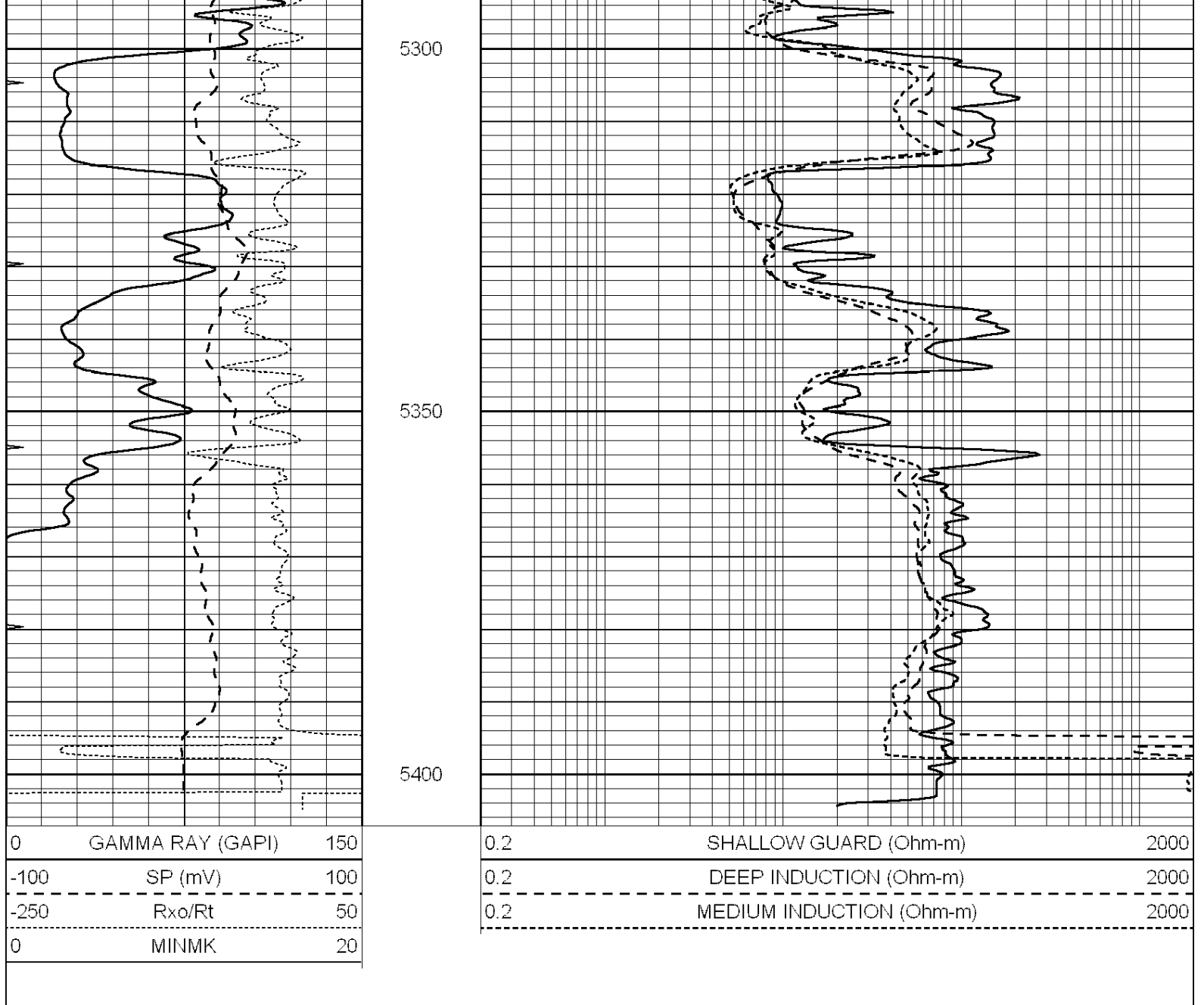
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



5200

5250





Calibration Report								
Database File:		1598ddn.db						
Dataset Pathname:		pass4						
Dataset Creation:		Wed Aug 30 02:13:00 2017 by Log SOC 120430						
Dual Induction Calibration Report								
Serial-Model:		PROBE7-DILG						
Surface Cal Performed:		Wed Aug 30 00:06:33 2017						
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	620.000	0.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.035	0.712	V	0.000	464.000	mmho/m	655.677	0.100

Medium	0.003	0.712	V	0.000	484.000	mmho/m	855.677	-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					

Master Calibration					Performed Mon Aug 21 11:27:42 2017			
	Background	Magnesium	Aluminum	Sandstone				
Window 1	837.1	10632.5	2945.1	12110.1				cps
Window 2	772.0	9117.4	2570.1	10197.3				cps
Window 3	631.7	4669.0	1481.9	5042.9				cps
Window 4	187.0	187.5	185.9	189.9				cps
Long Space	0.0	8345.4	1798.1	9425.3				cps
Short Space	1.1	1927.9	1285.9	2050.2				cps
Rho		1.7100	2.5960	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio				: 0.558
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept				: -19.6

Before Survey Verification					Performed Wed Dec 31 18:00:00 1969			
Window 1	0.0	0.0	0.0	0.0				cps
Window 2	0.0	0.0	0.0	0.0				cps
Window 3	0.0	0.0	0.0	0.0				cps
Window 4	0.0	0.0	0.0	0.0				cps
Long Space	0.0	0.0	0.0	0.0				cps
Short Space	0.0	0.0	0.0	0.0				cps
Measured Rho		0.0000	0.0000	0.0000				g/cc
Measured Correction		0.0000	0.0000	0.0000				g/cc
Measured Pe			0.0000	0.0000				

After Survey Verification					Performed Wed Dec 31 18:00:00 1969			
Window 1	0.0	0.0	0.0	0.0				cps
Window 2	0.0	0.0	0.0	0.0				cps
Window 3	0.0	0.0	0.0	0.0				cps
Window 4	0.0	0.0	0.0	0.0				cps
Long Space	0.0	0.0	0.0	0.0				cps
Short Space	0.0	0.0	0.0	0.0				cps
Measured Rho		0.0000	0.0000	0.0000				g/cc

Measured Correction	0.0000	0.0000	0.0000	g/cc
Measured Pe		0.0000	0.0000	
Compensated Neutron Calibration Report				
Serial Number:		070808		
Tool Model:		Probe		
PRE-SURVEY VERIFICATION				
Detector	Readings	Measured	Target	
Short 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:	070558			
Tool Model:	OPEN_GR			
Performed:	Wed May 31 00:09:32 2017			
Calibrator Value:	1.0	GAPI		
Background Reading:	0.0	cps		
Calibrator Reading:	1.0	cps		
Sensitivity:	0.2800	GAPI/cps		