



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		MULL DRILLING COMPANY, INC.	
Well	APC - BAUGHMAN UNIT #1-35		
Field	WILDCAT		
County	CHEYENNE	State	COLORADO
Location:	APL # : 05-017-07755-00		Other Services CDL/CNL/PE MEL/SONIC
Permanent Datum	GROUND LEVEL	Elevation	4218
Log Measured From	KELLY BUSHING 11' A.G.L.		
Drilling Measured From	KELLY BUSHING		
SEC 35 TWP 16S RGE 45W		Elevation	
		K.B. 4229	
		D.F. 4227	
		G.L. 4218	
Date	8/2/13		
Run Number	ONE		
Depth Driller	5490		
Depth Logger	5492		
Bottom Logged Interval	5490		
Top Log Interval	00		
Casing Driller	8 5/8"@65.1'		
Casing Logger	649		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4,700 PPM	
Density / Viscosity	9.2/55		
pH / Fluid Loss	10.0/8.8		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.700@90F		
Rmf @ Meas. Temp	.525@90F		
Rmc @ Meas. Temp	.840@90F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.488@129F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	9:15 A.M.		
Maximum Recorded Temperature	129F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	PHIL ASKEY	GREG TWOMBLY	JERRY ROANE

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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 "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
CHEYENNE WELLS, CO. 13S. ON HWY 385 TO "RD. C", 6 W. TO "T", 3/4S., E. INTO

Database File:

011197pe.db

Dataset Pathname:

pass3.13

Presentation Format:

dil2

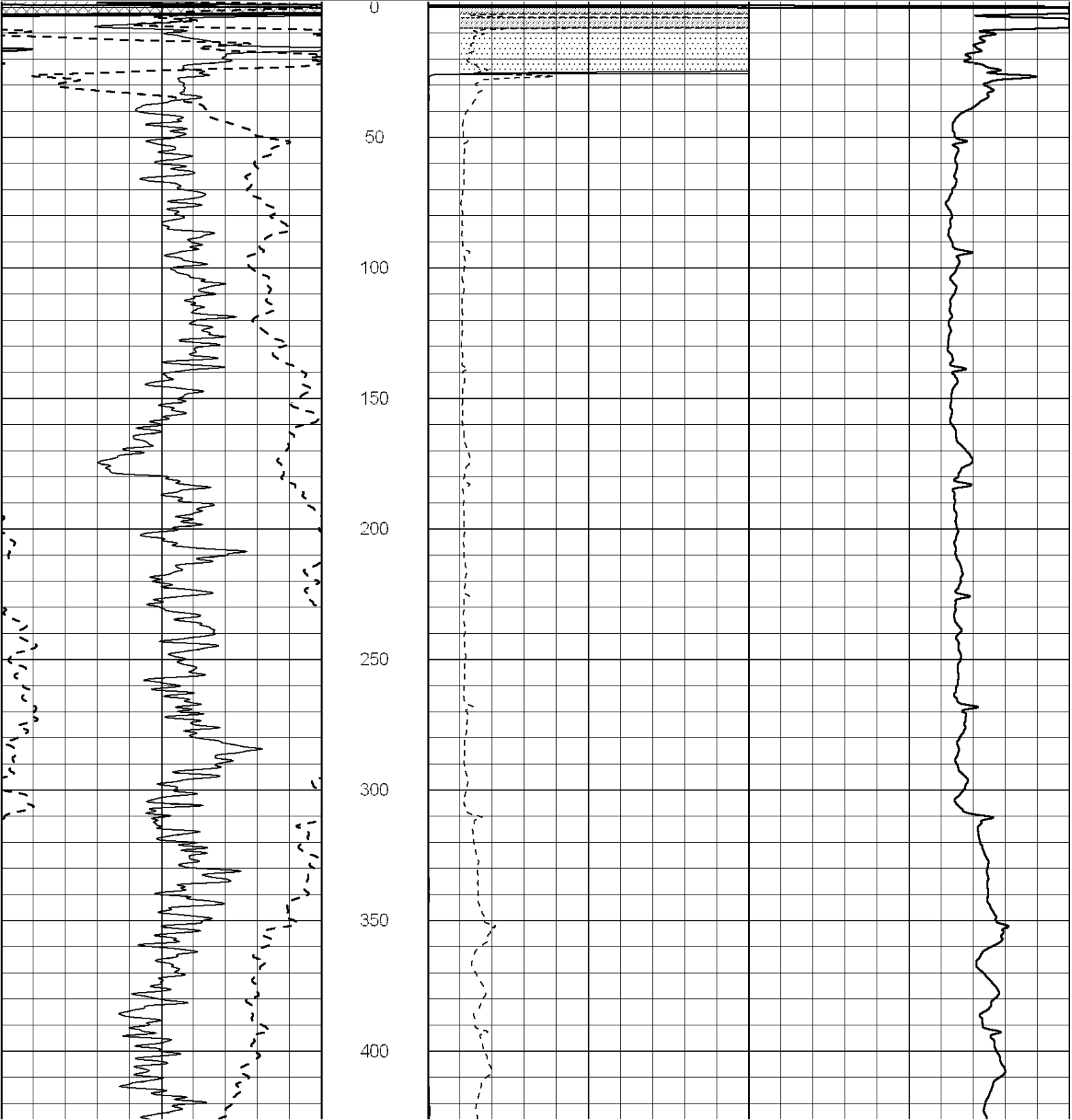
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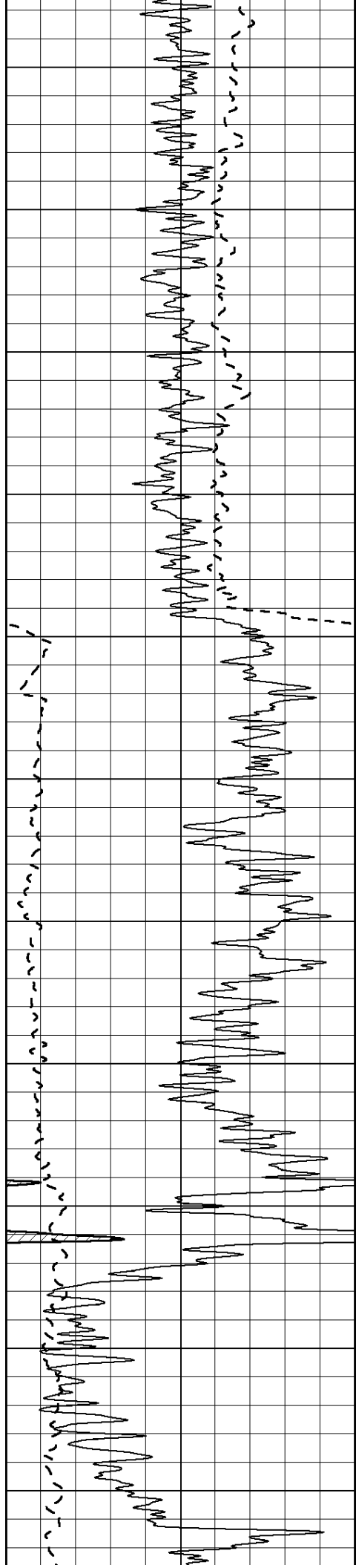
Fri Aug 02 11:44:34 2013

Charted by:

Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50
-100	SP (mV)	100	0	RILD (Ohm-m)	50
-----			1000		
			CILD (mmho/m)		
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500





450

500

550

600

650

700

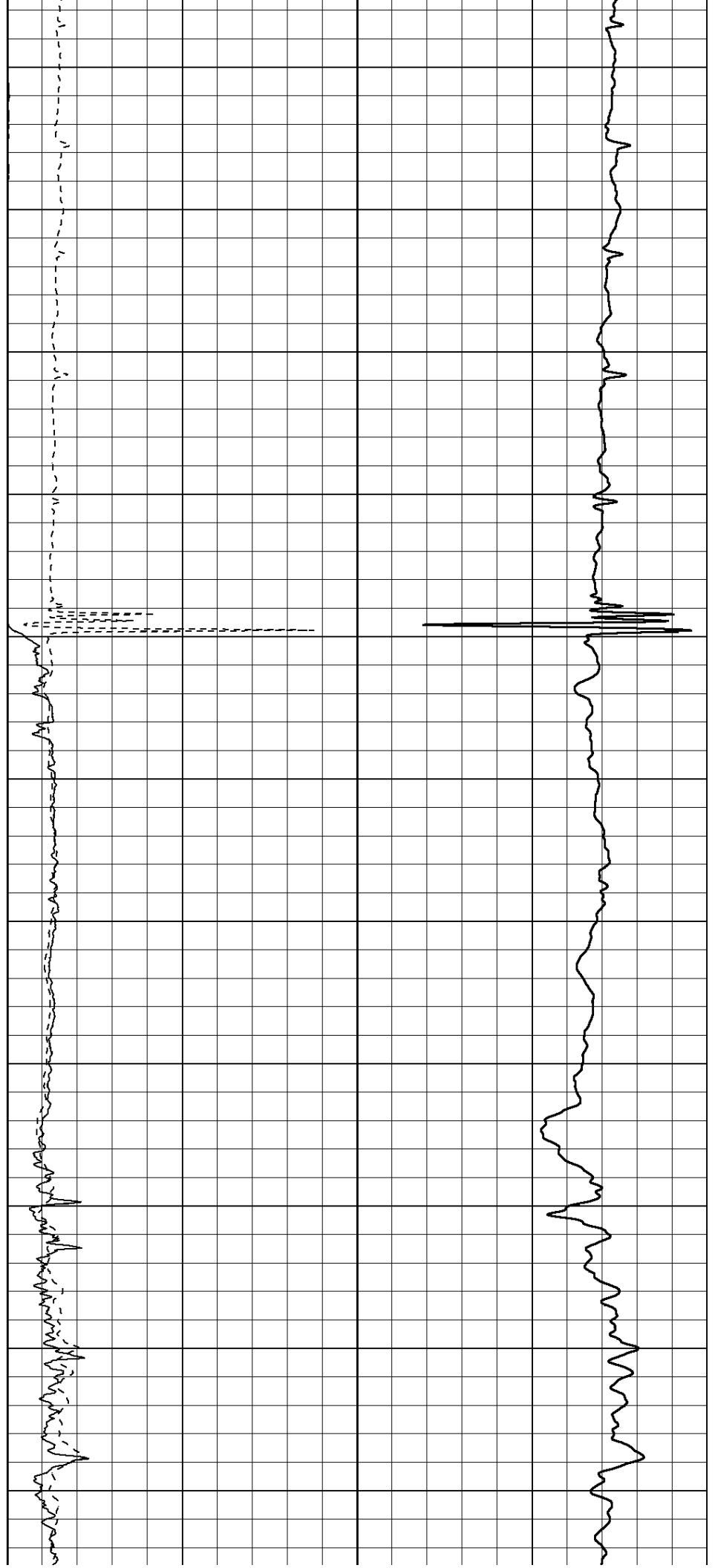
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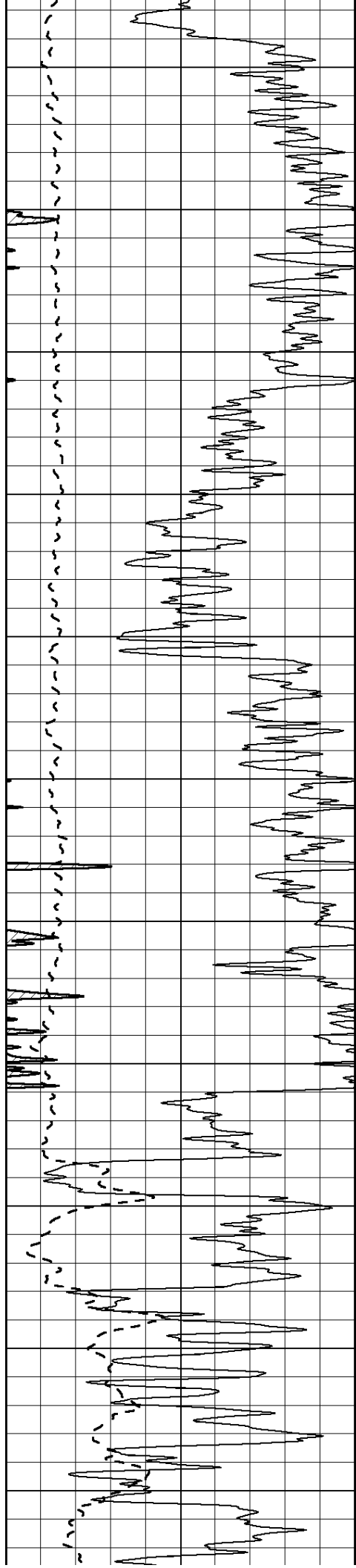
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850

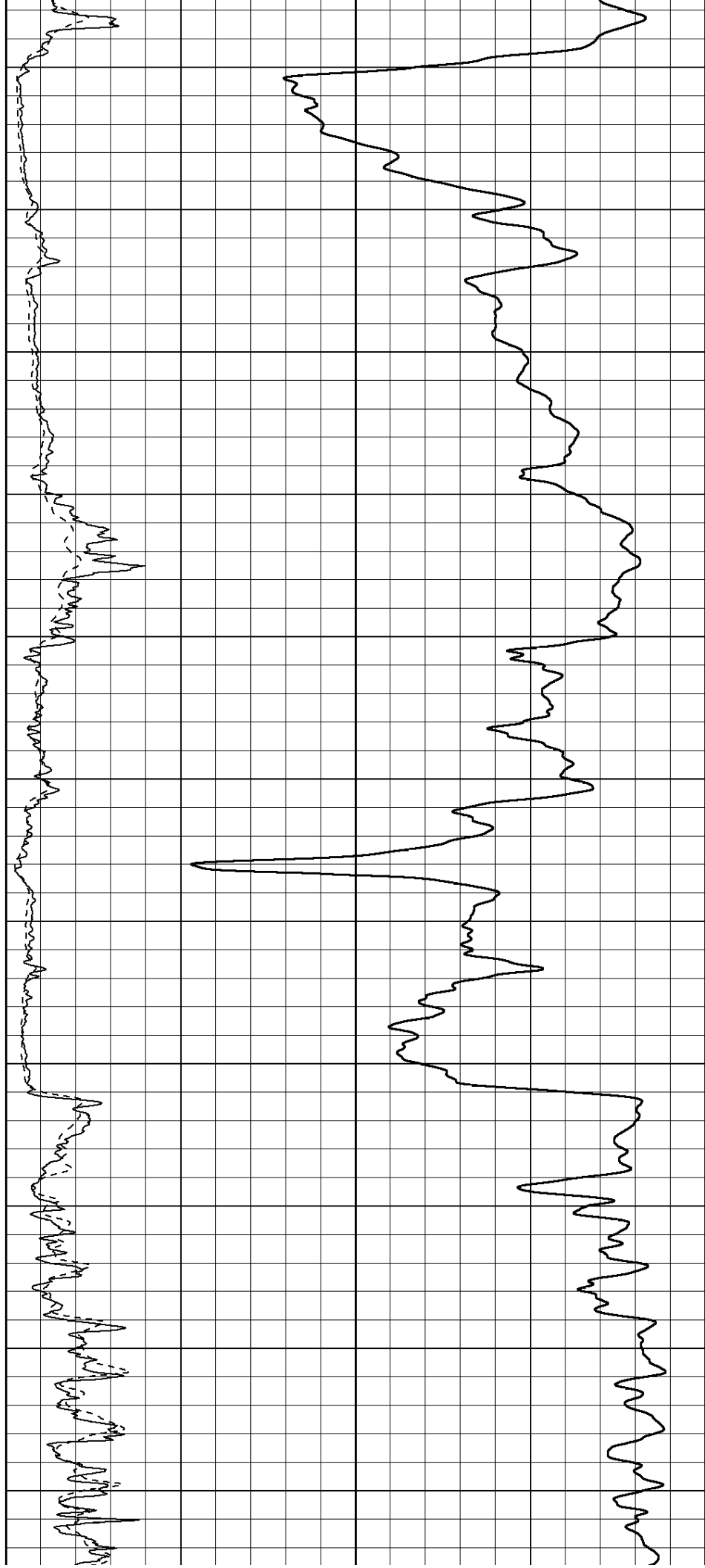
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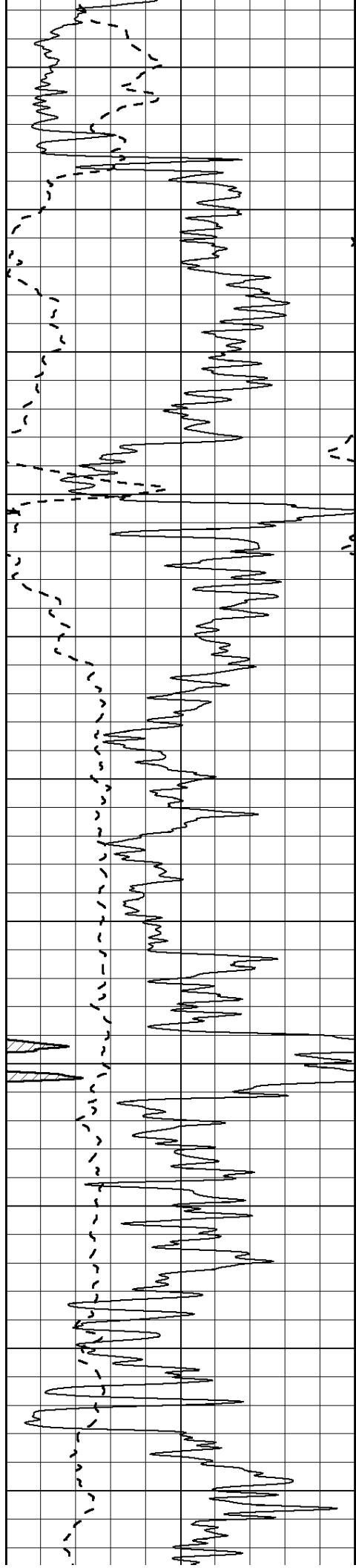
950





1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500





1550

1600

1650

1700

1750

1800

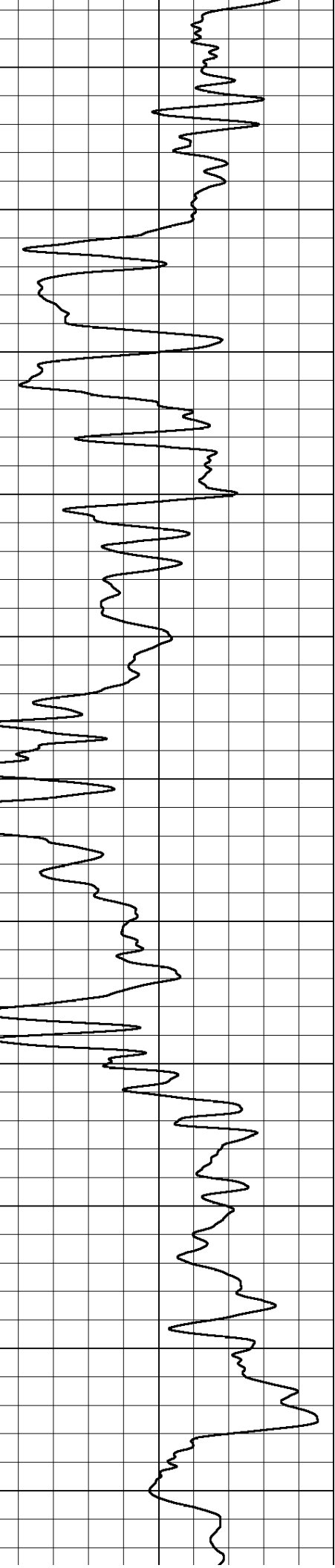
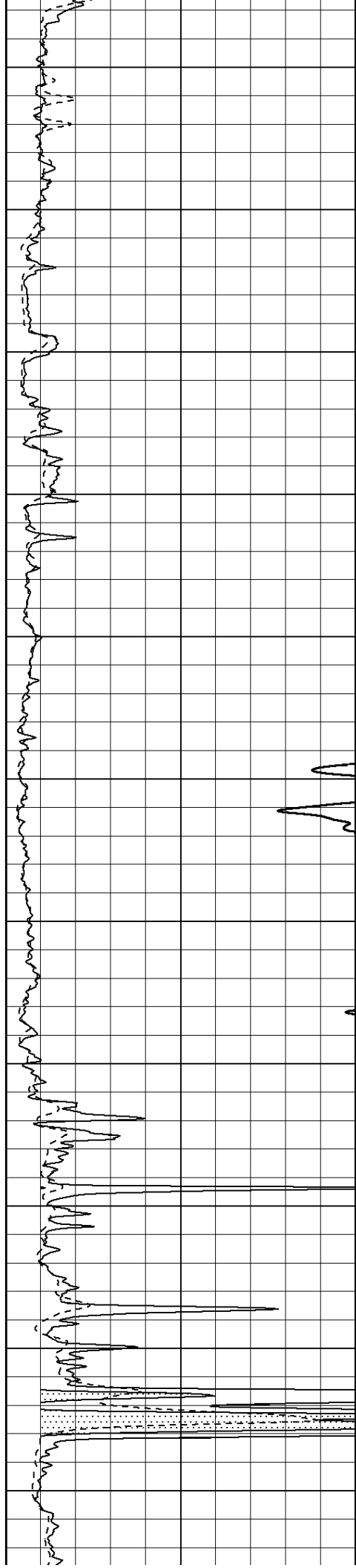
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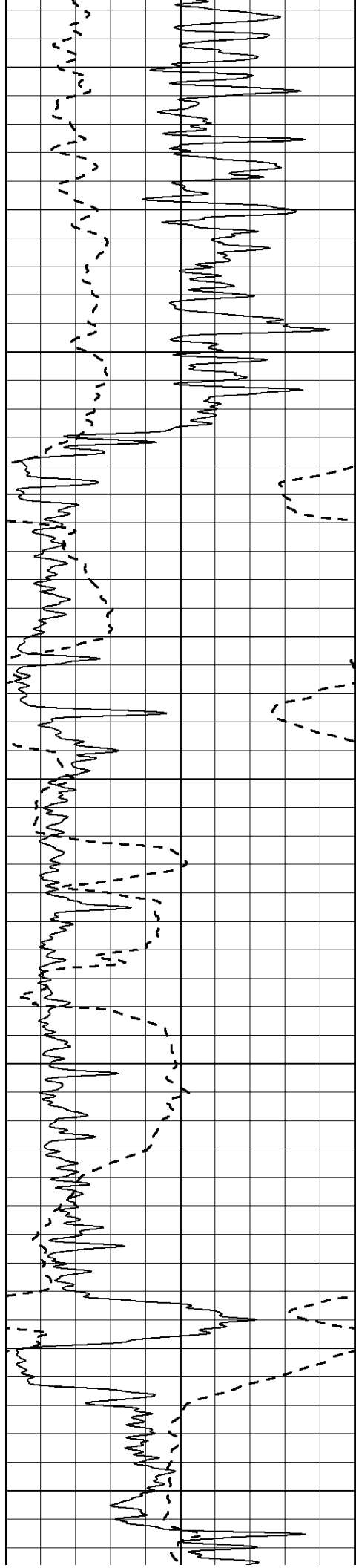
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1950

2000

2050





2100

2150

2200

2250

2300

2350

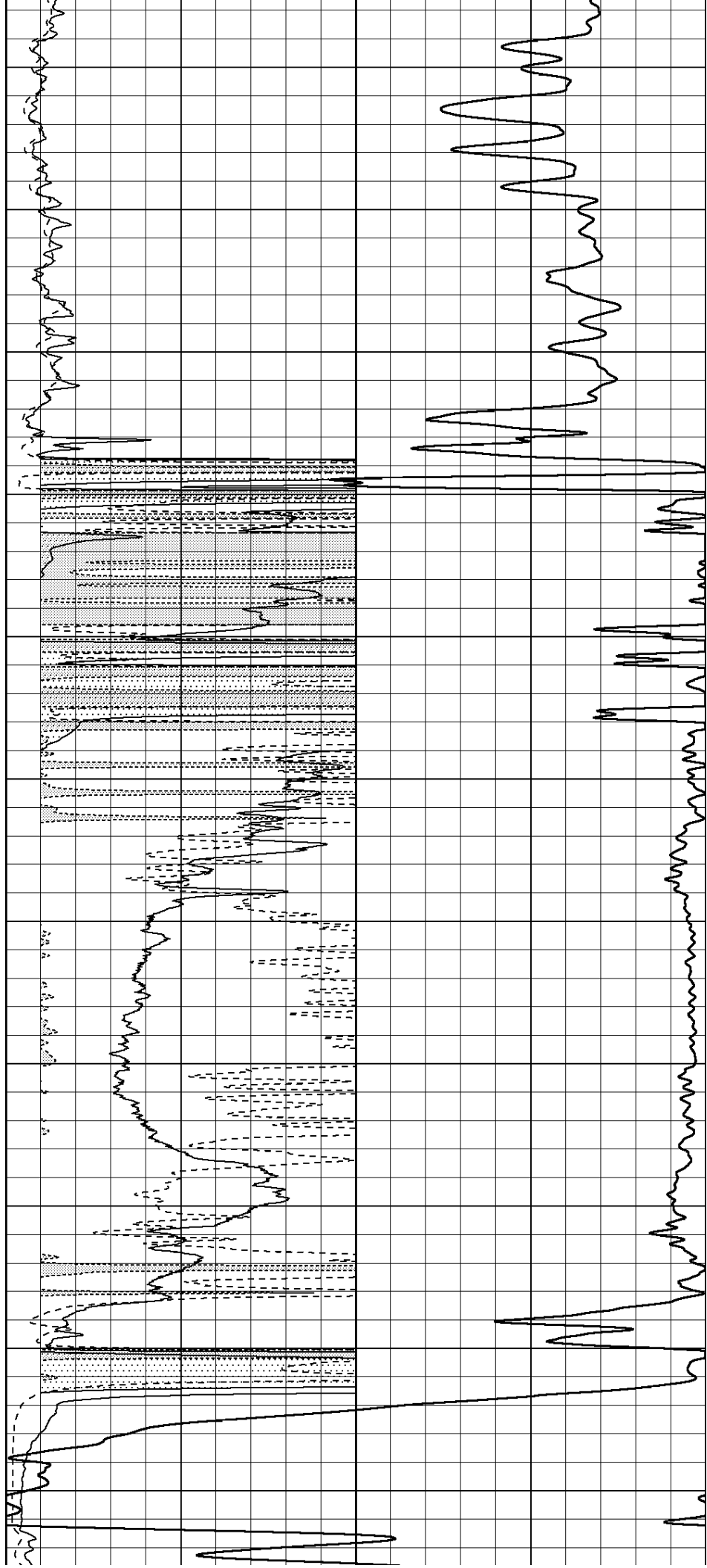
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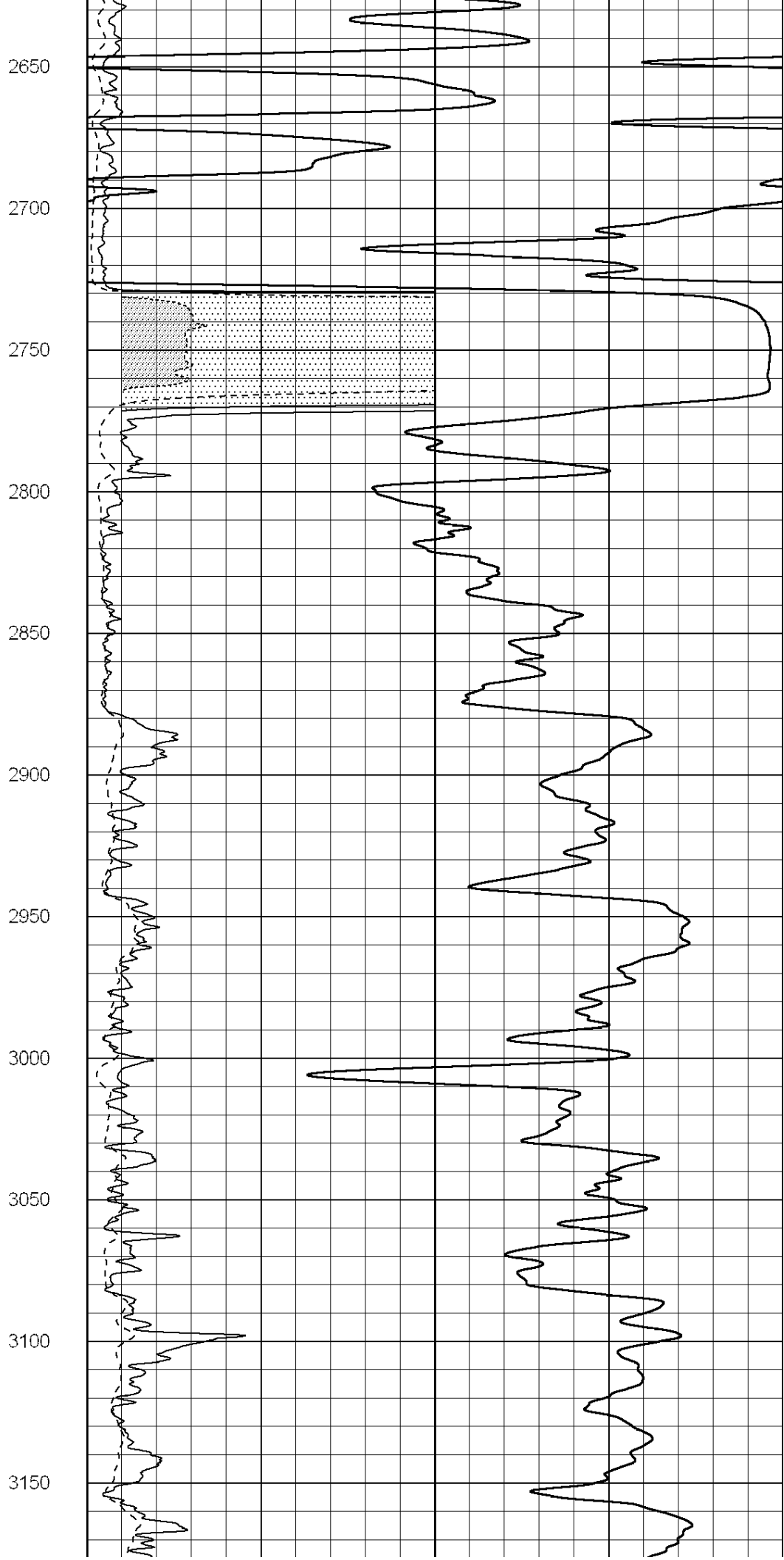
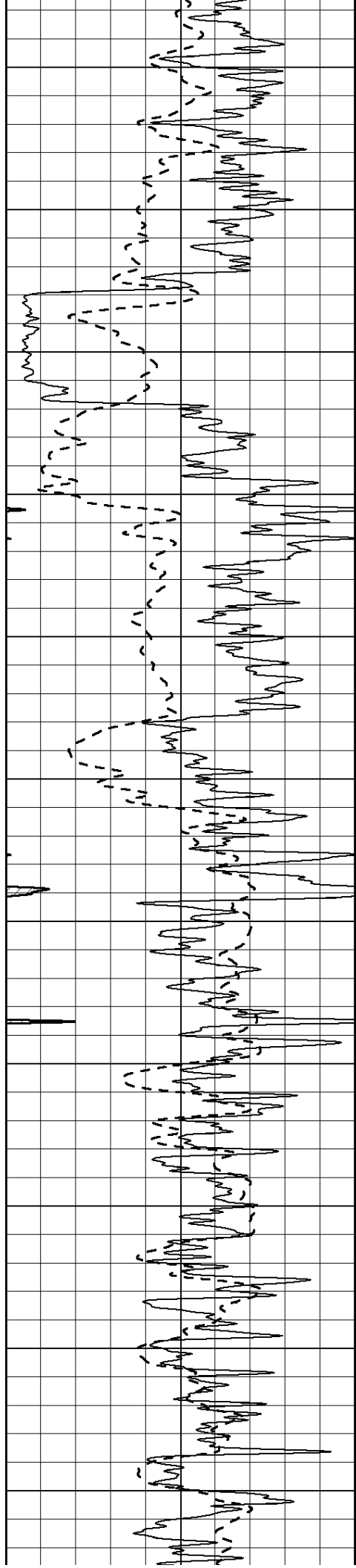
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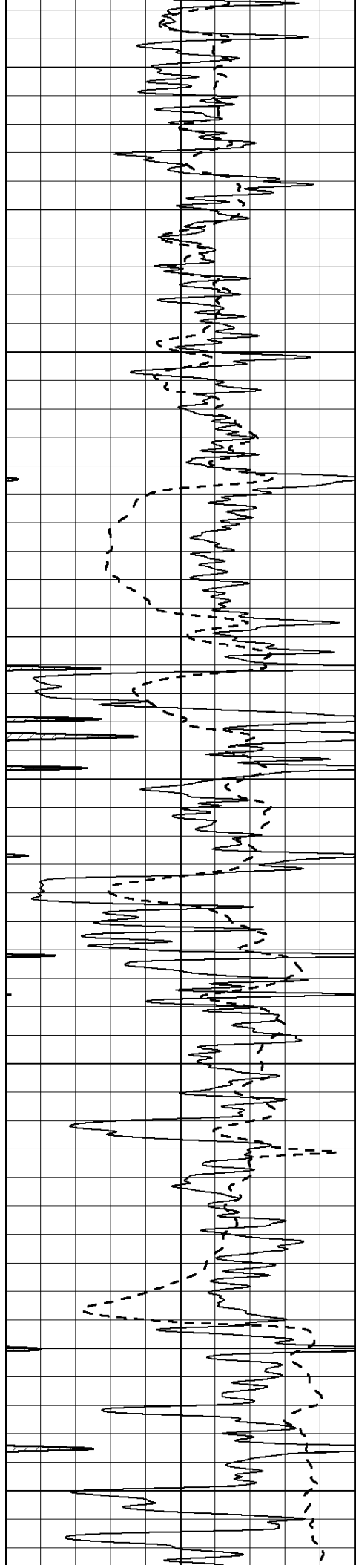
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2600







3200

3250

3300

3350

3400

3450

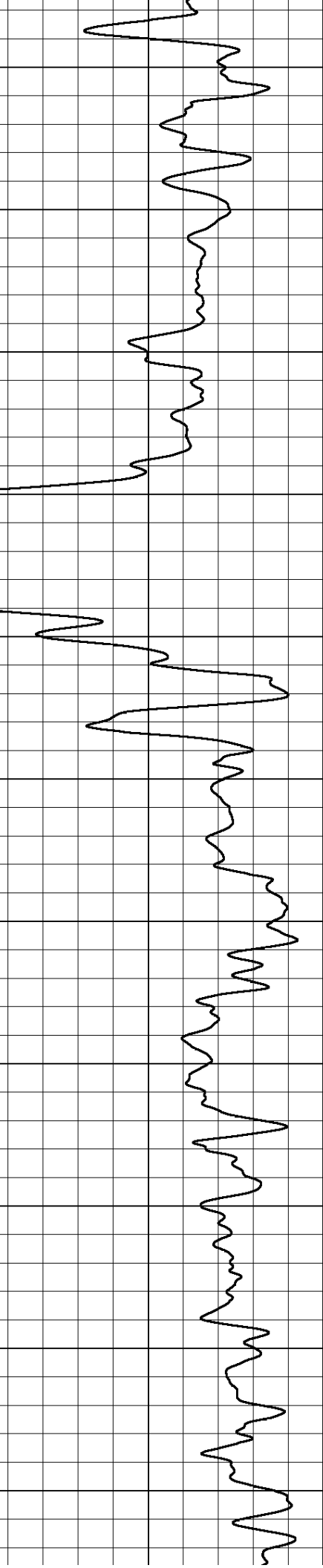
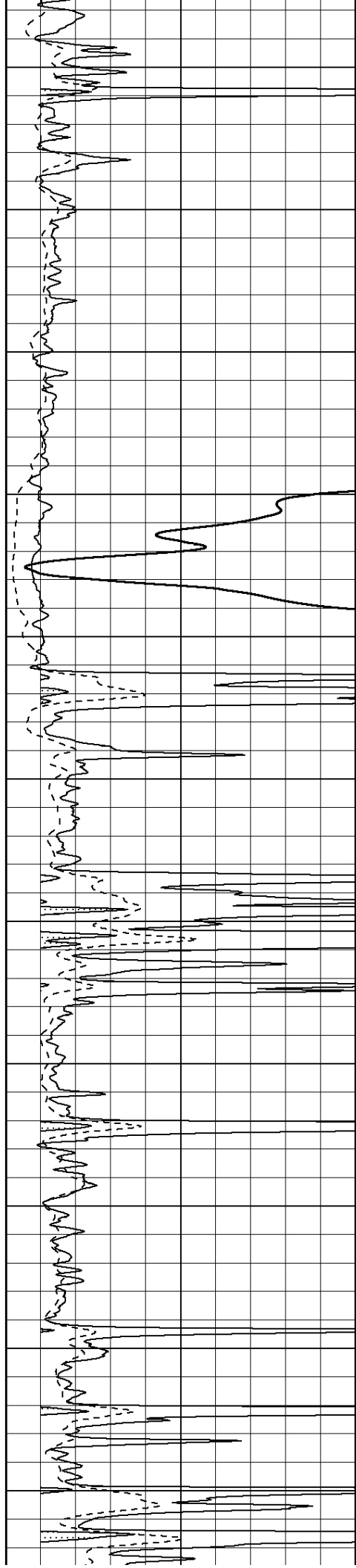
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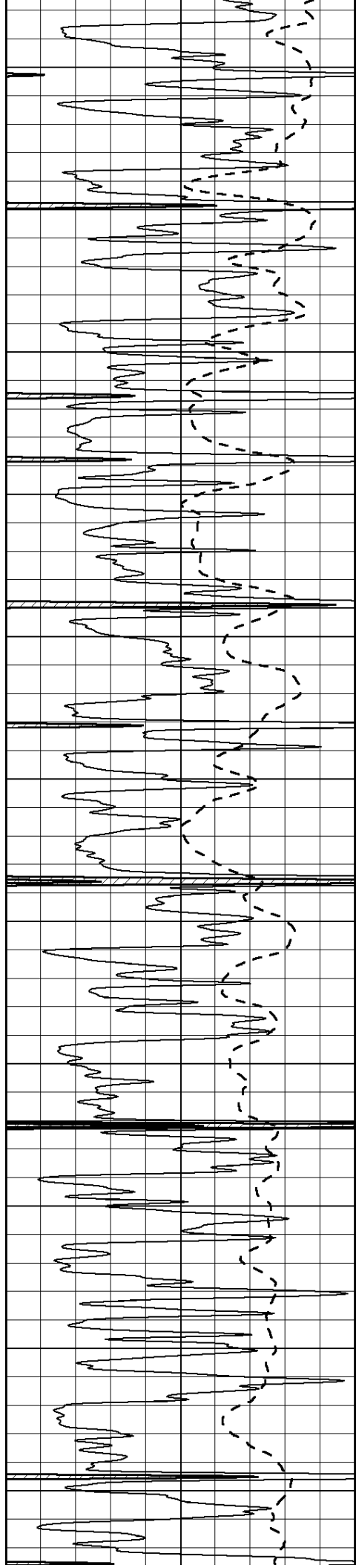
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3600

3650

3700





3750

3800

3850

3900

3950

4000

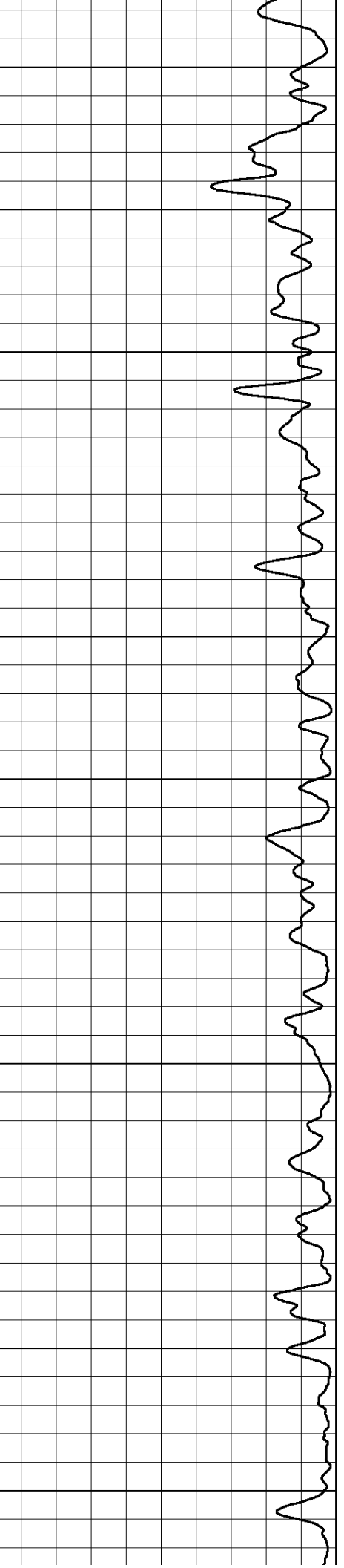
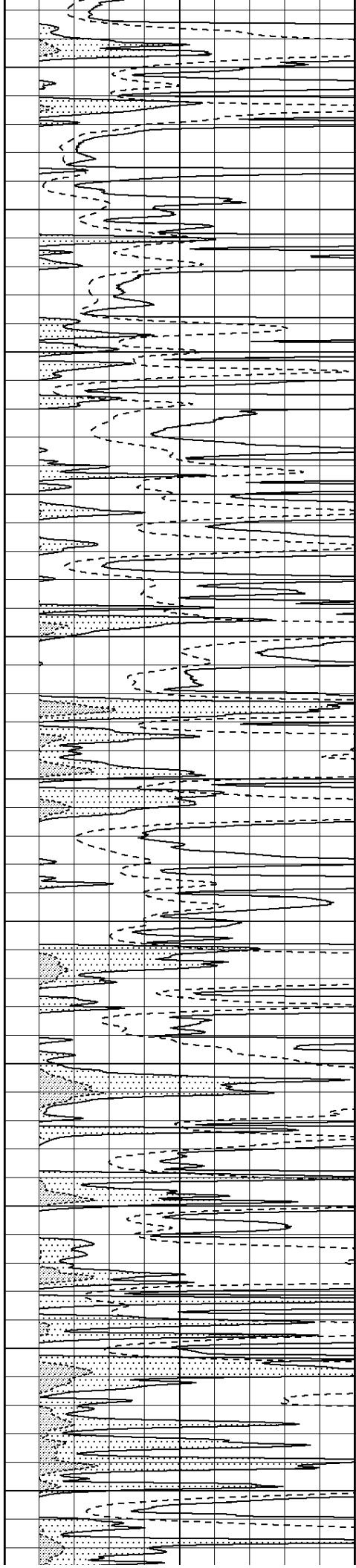
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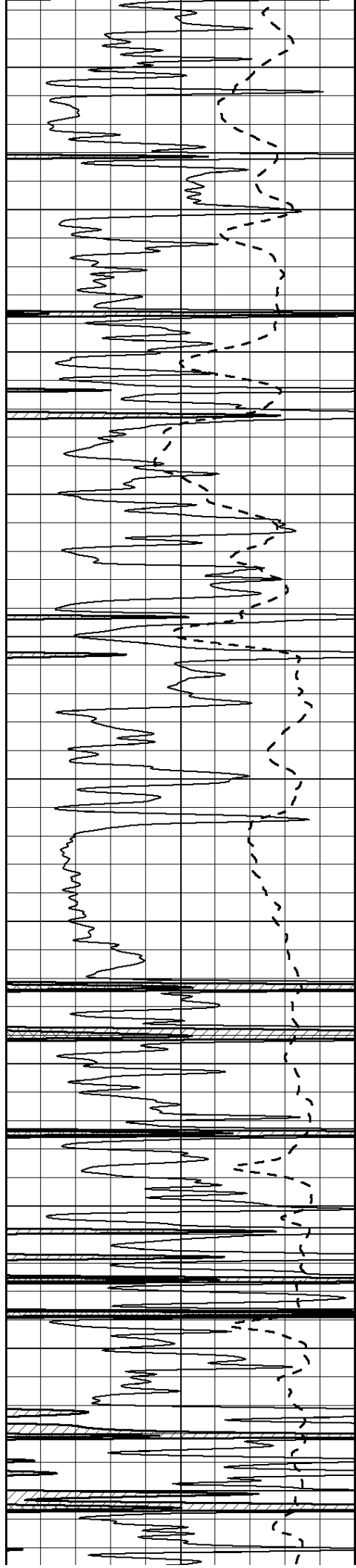
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4150

4200

4250





4300

4350

4400

4450

4500

4550

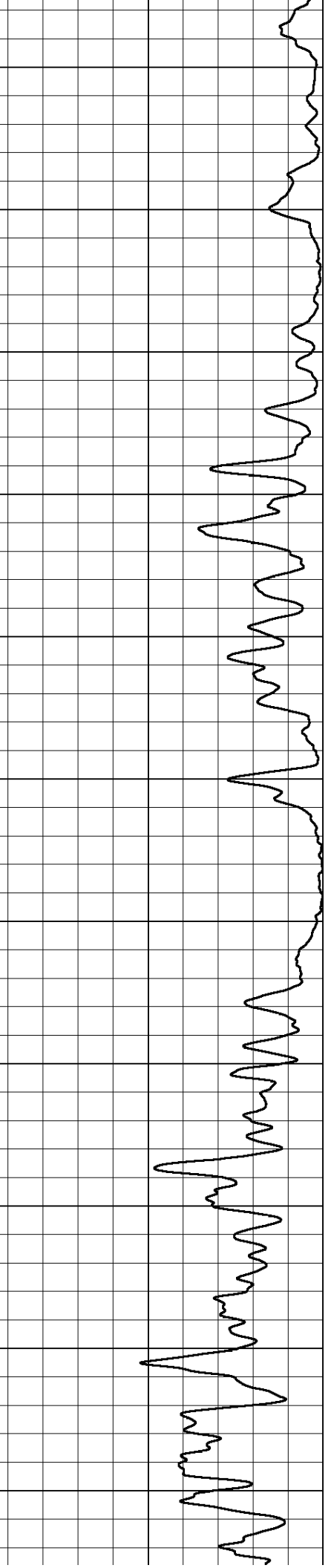
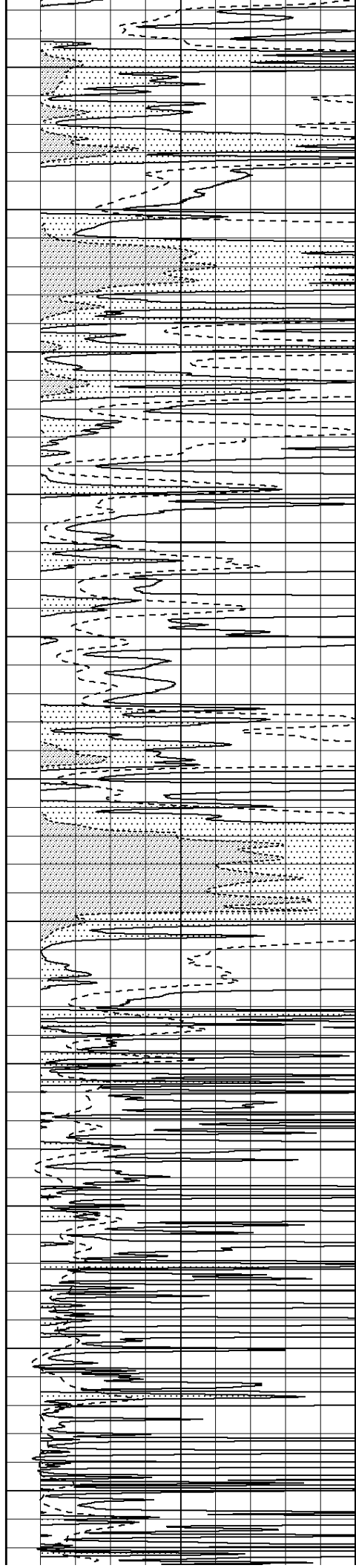
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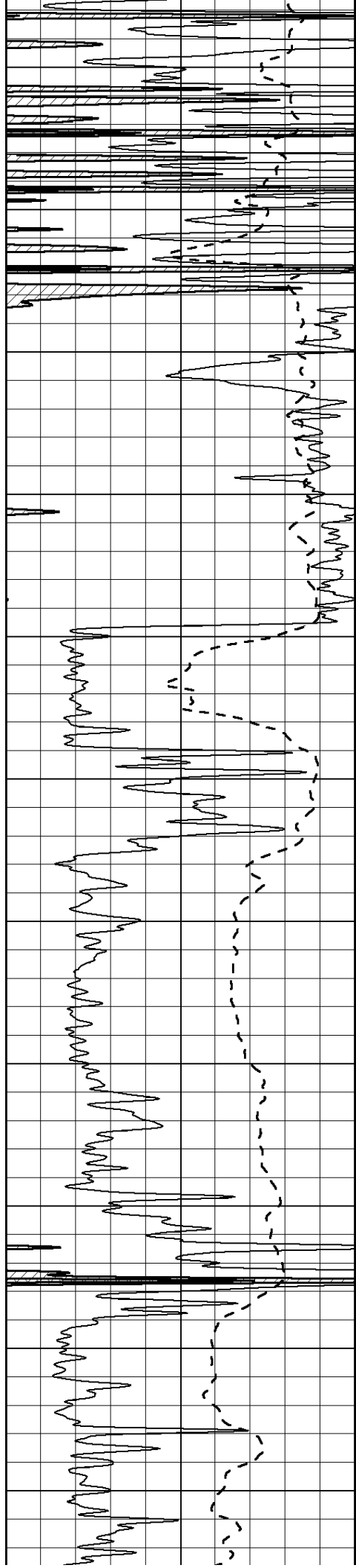
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4700

4750

4800





4850

4900

4950

5000

5050

5100

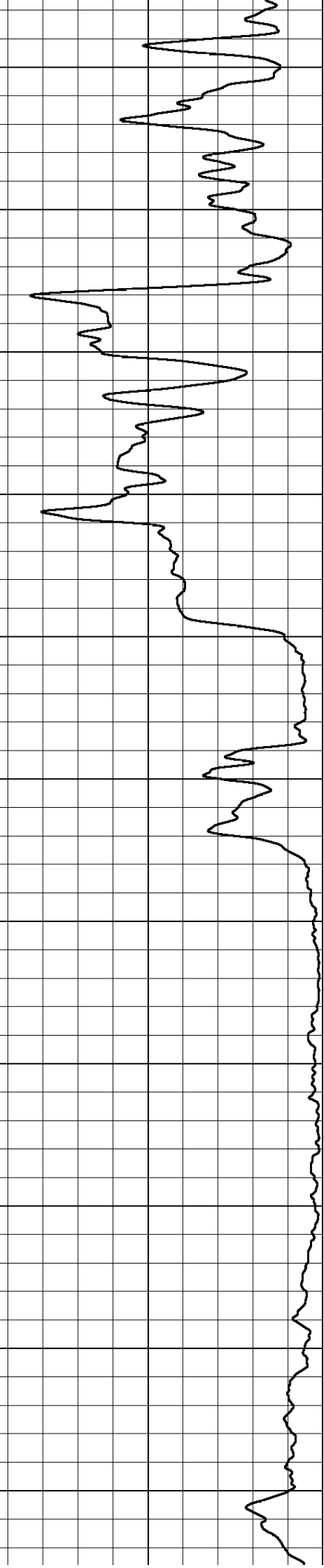
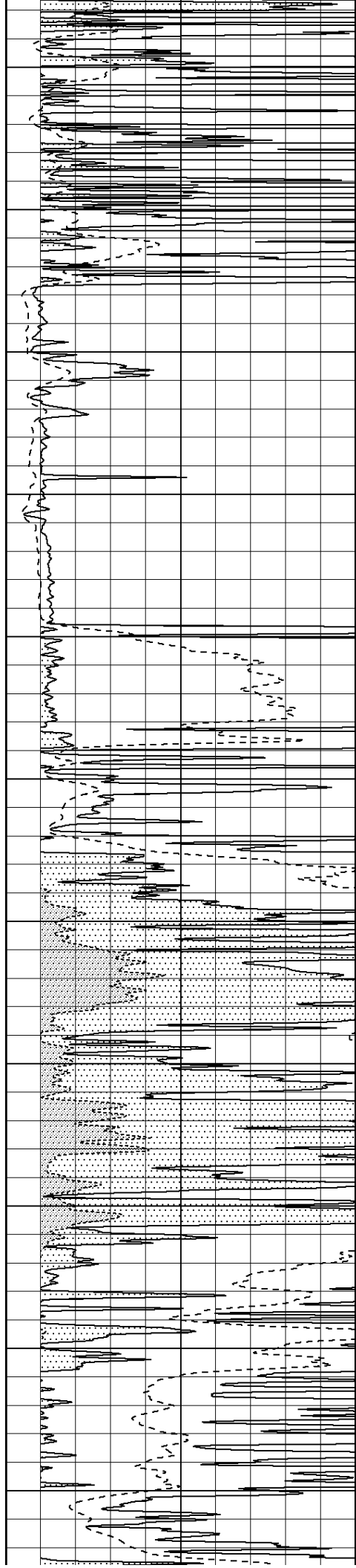
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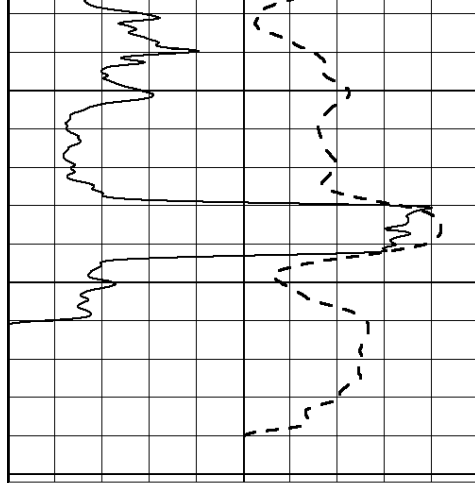
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5300

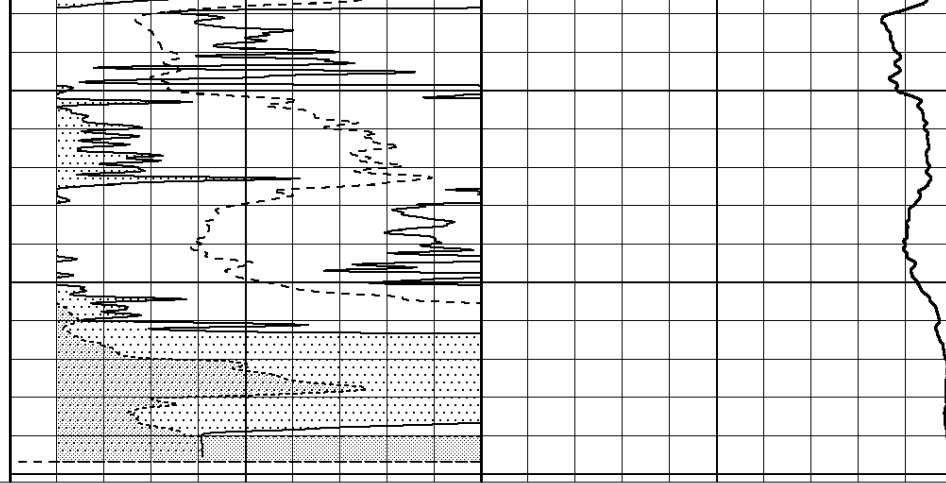
5350





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

5400
5450
5500



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



ANHYDRITE

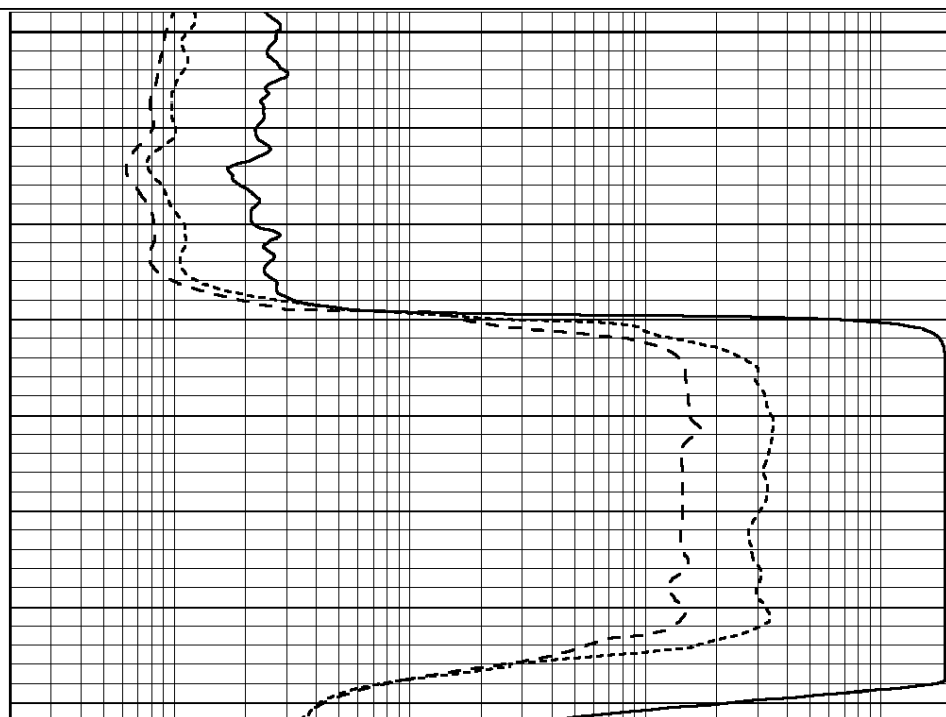
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Presentation Format: _dil
Dataset Creation: Fri Aug 02 11:45:20 2013
Charted by: Depth in Feet scaled 1:240

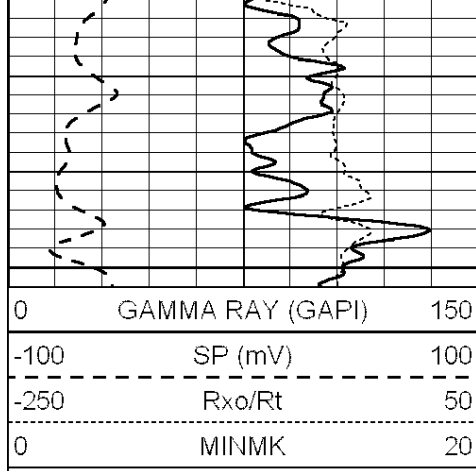
0 GAMMA RAY (GAPI) 150
-100 SP (mV) 100
-250 Rxo/Rt 50
0 MINMK 20

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

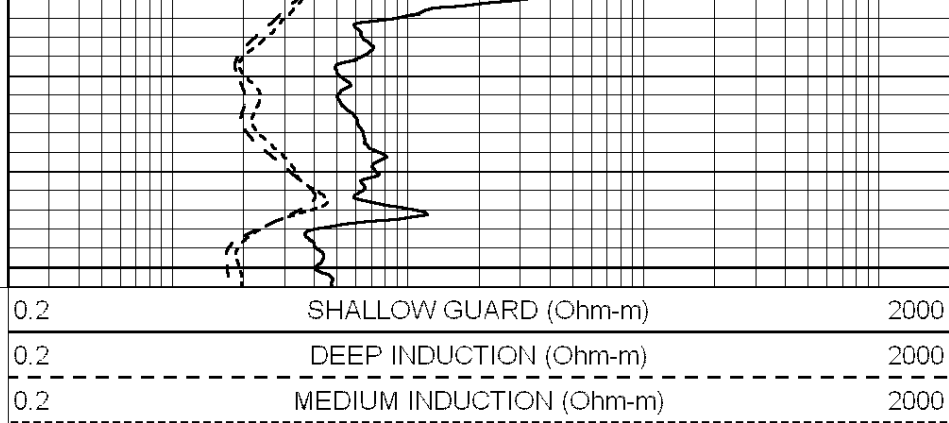


2700
2750



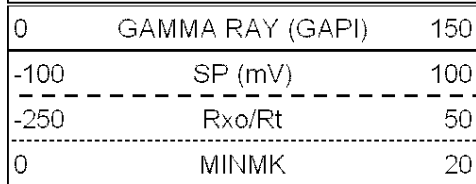


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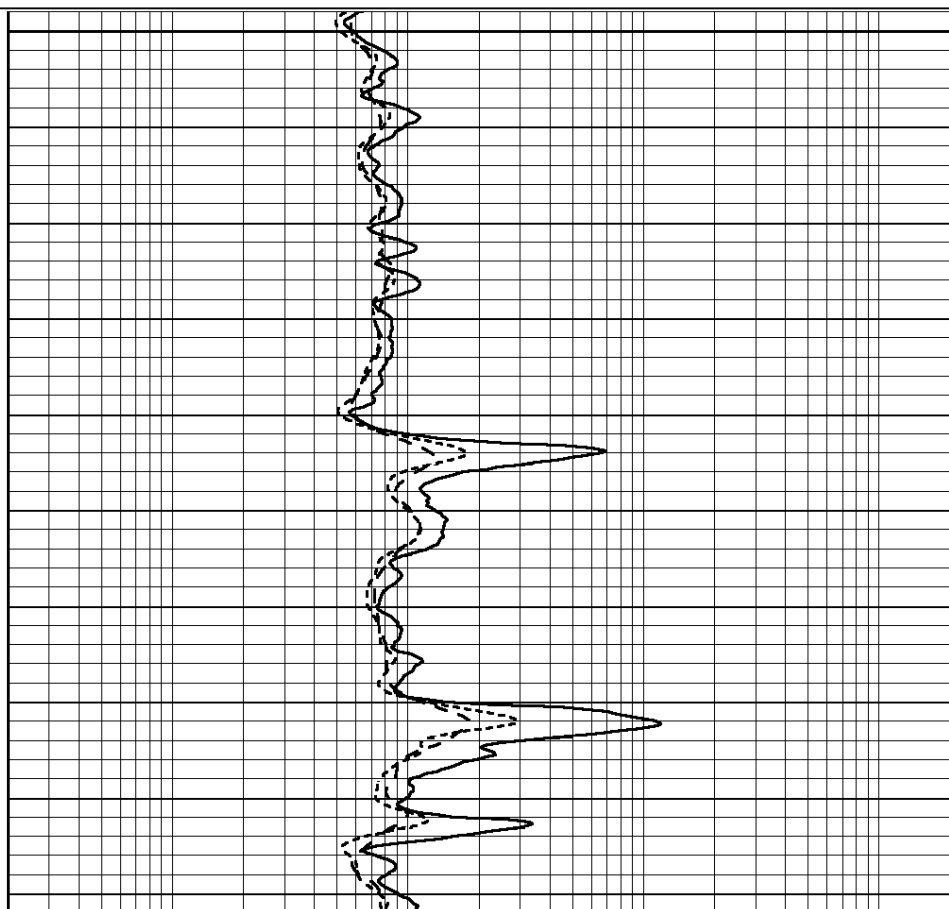
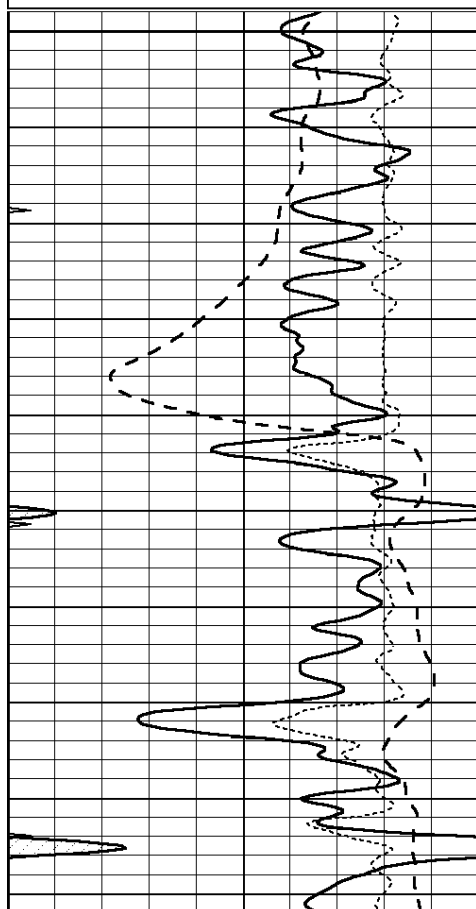
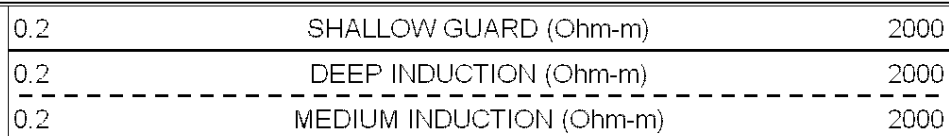
MAIN SECTION

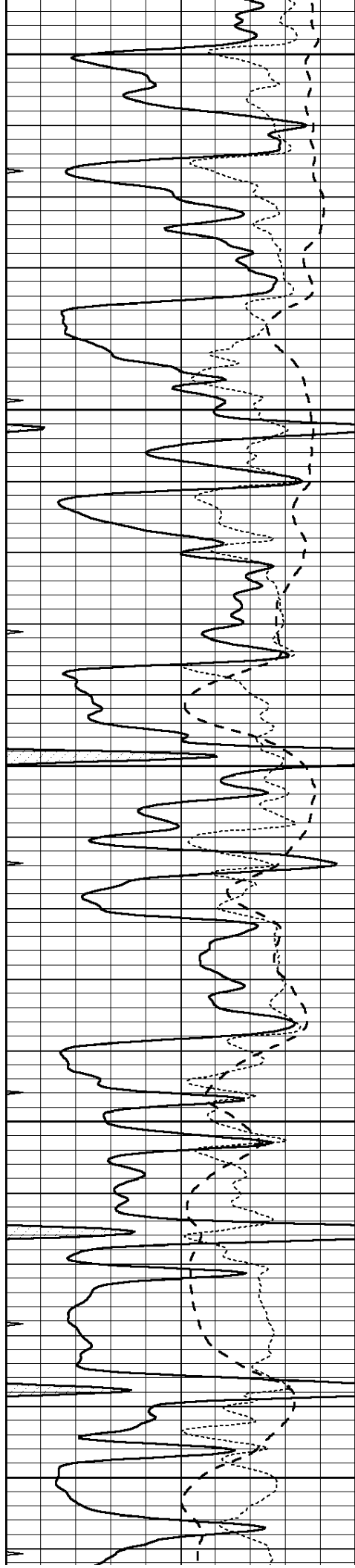
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 Dataset Pathname: pass3.13
 Presentation Format: dil
 Dataset Creation: Fri Aug 02 11:44:34 2013
 Charted by: Depth in Feet scaled 1:240



3600

3650





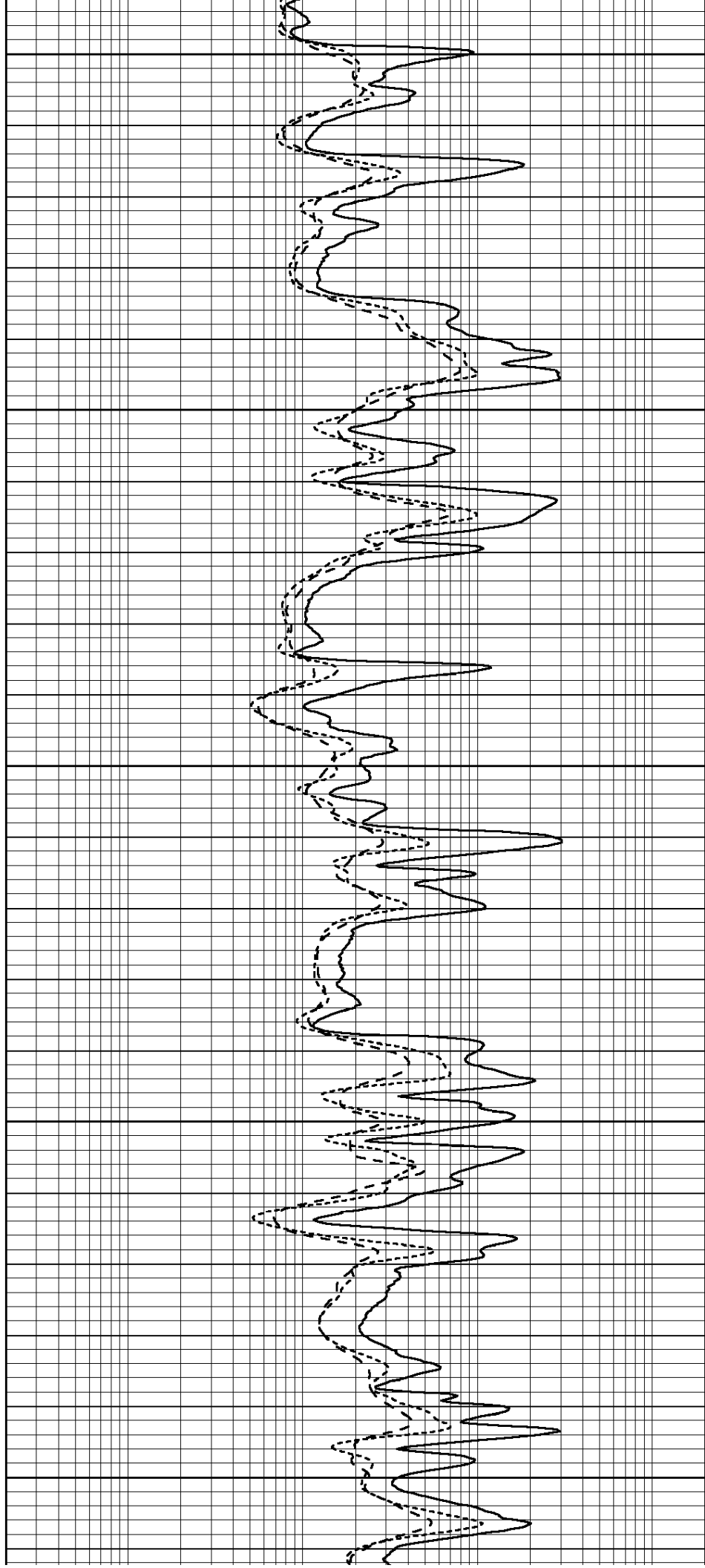
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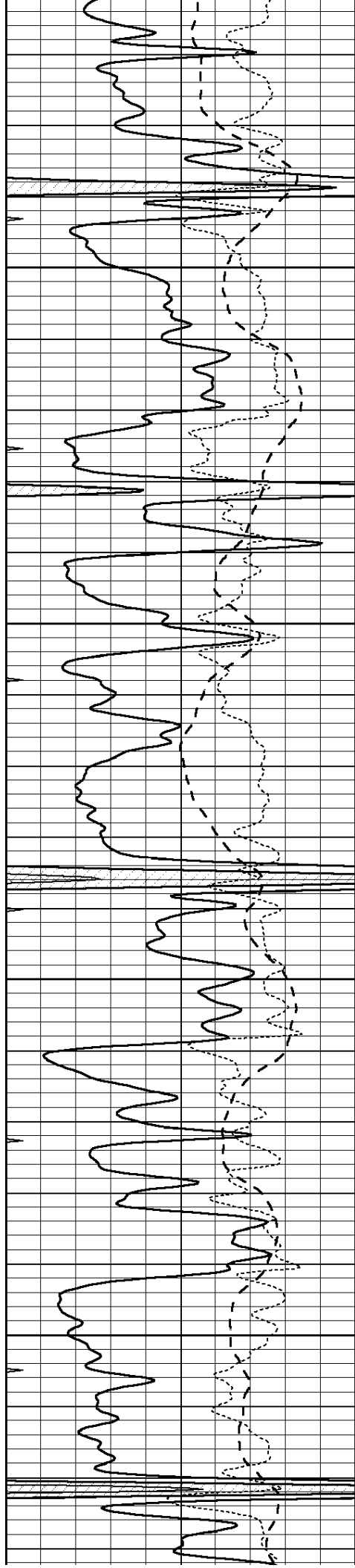
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3800

3850

3900



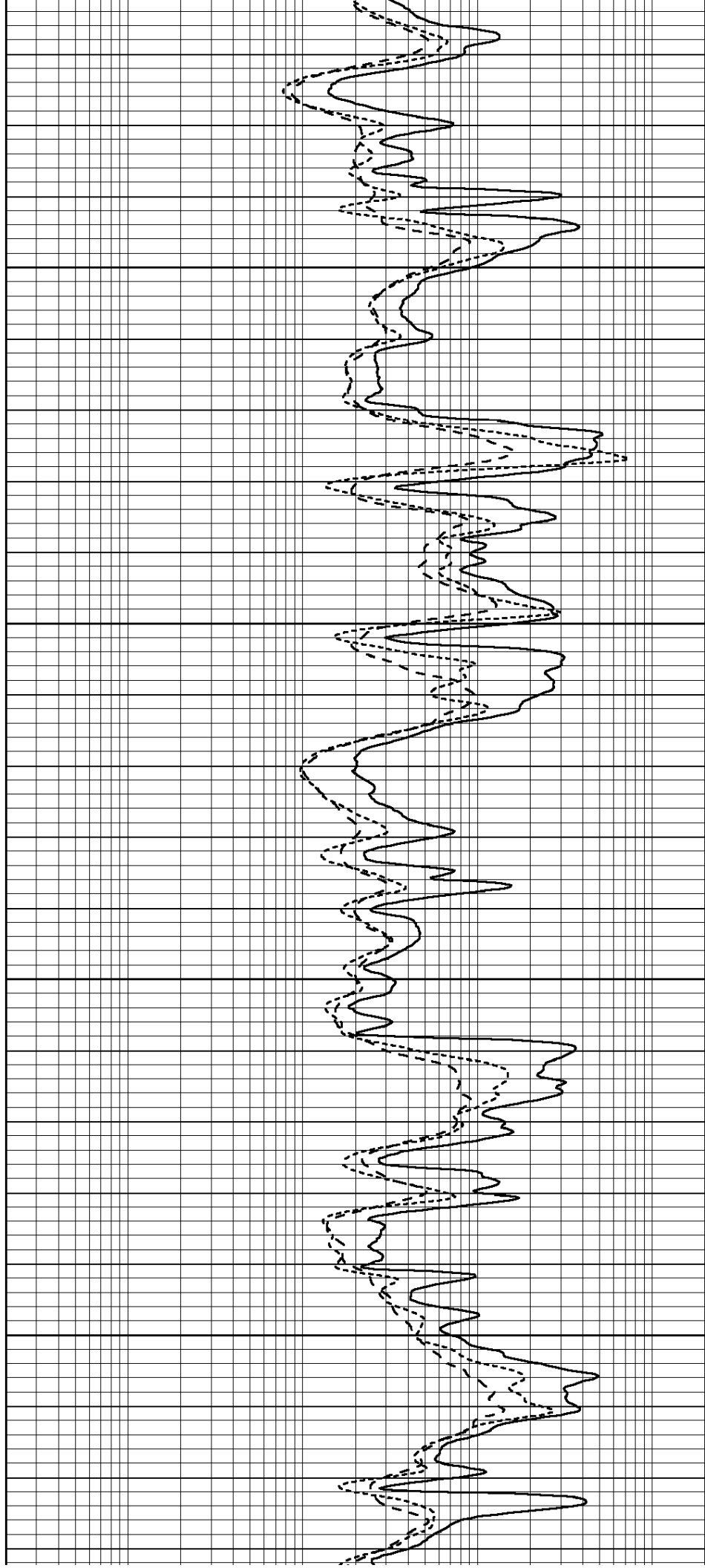


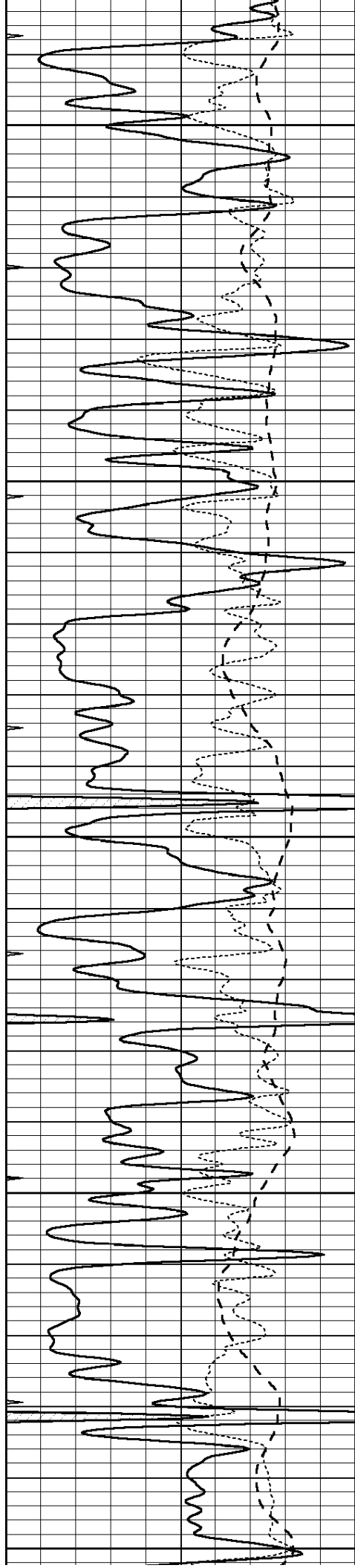
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4000

4050

4100





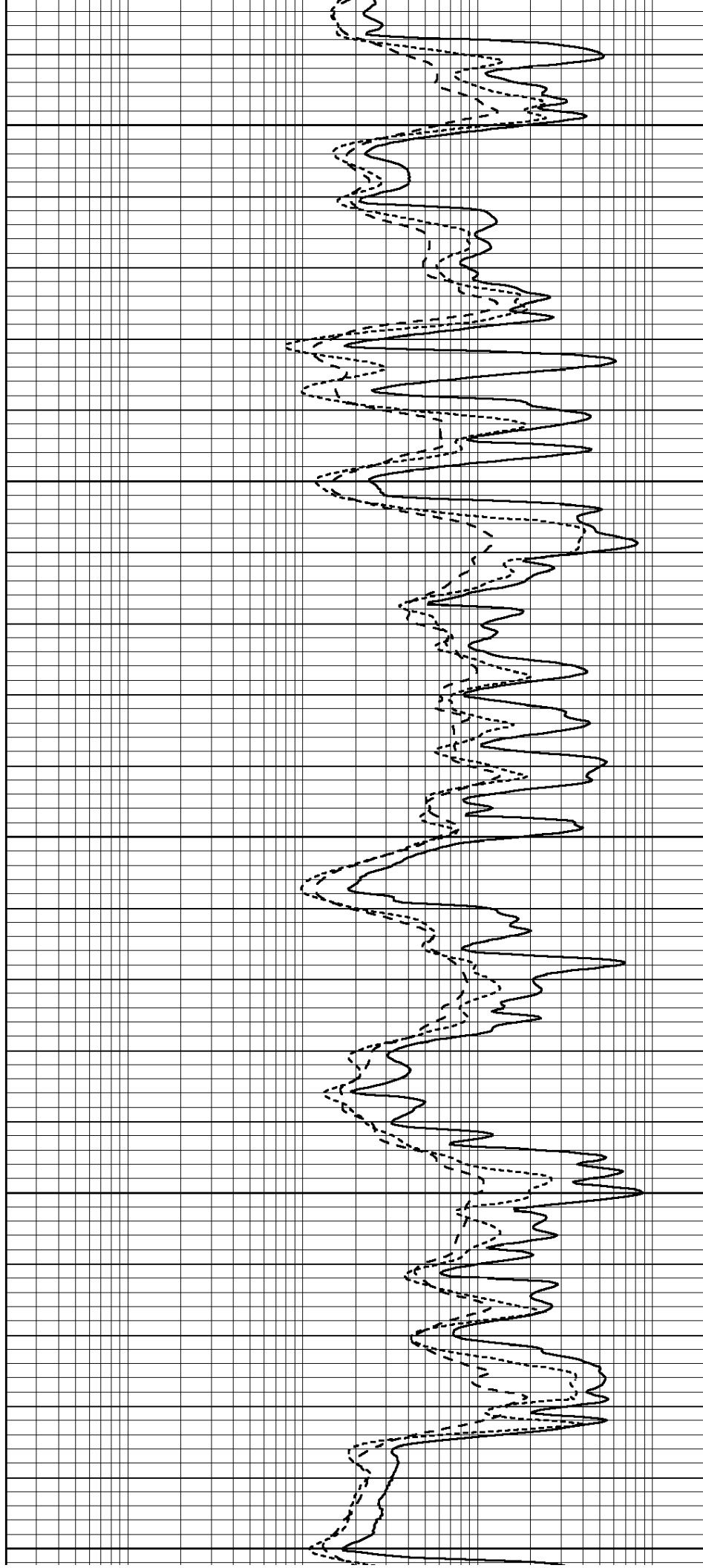
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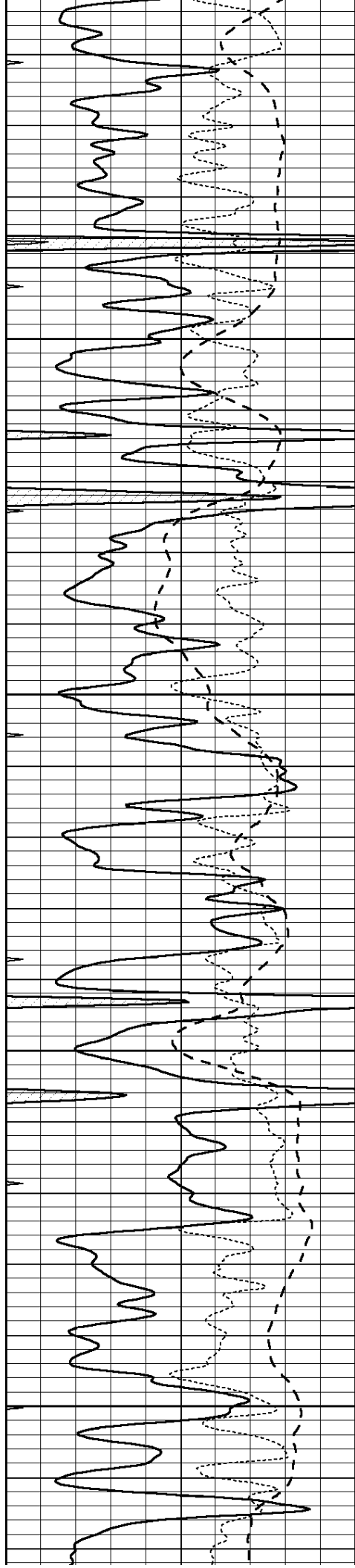
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4300

4350



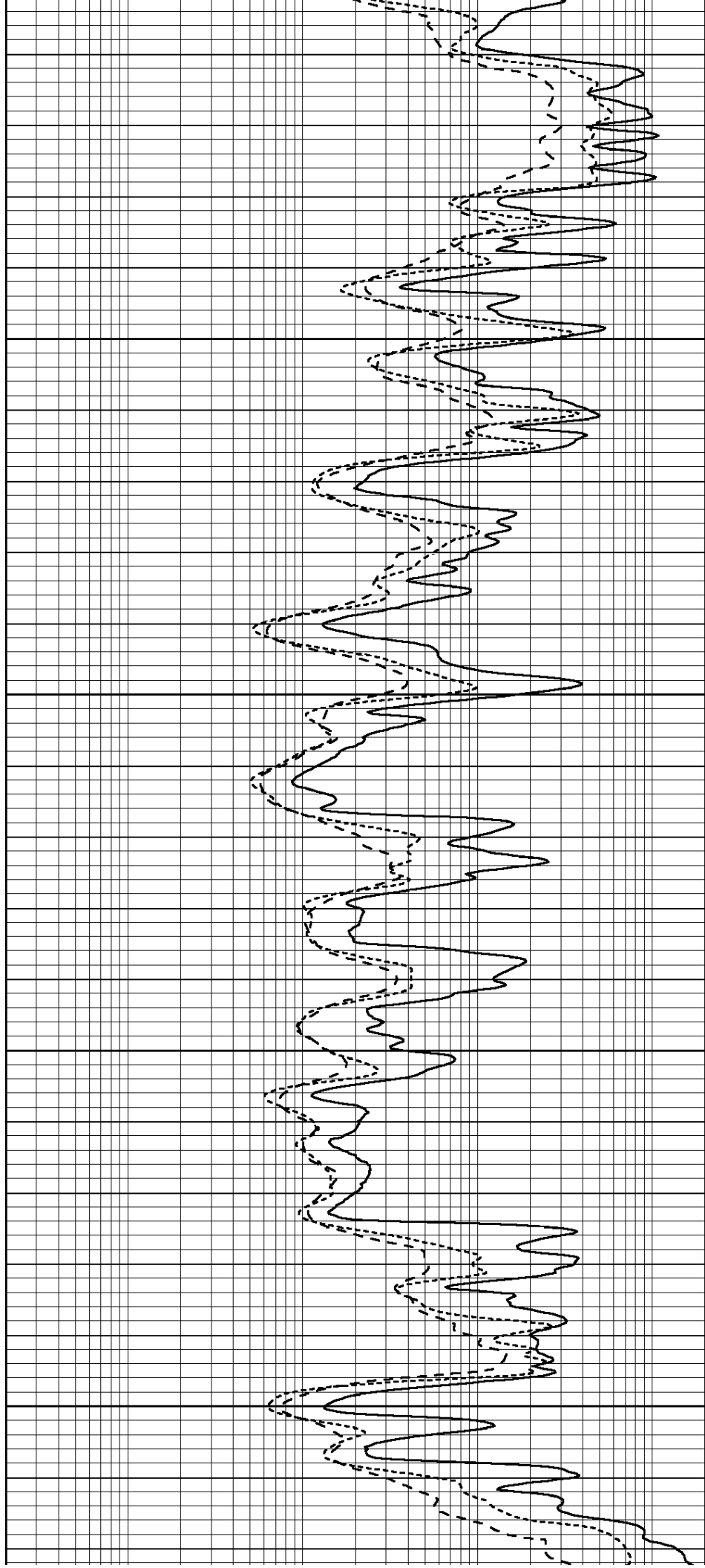


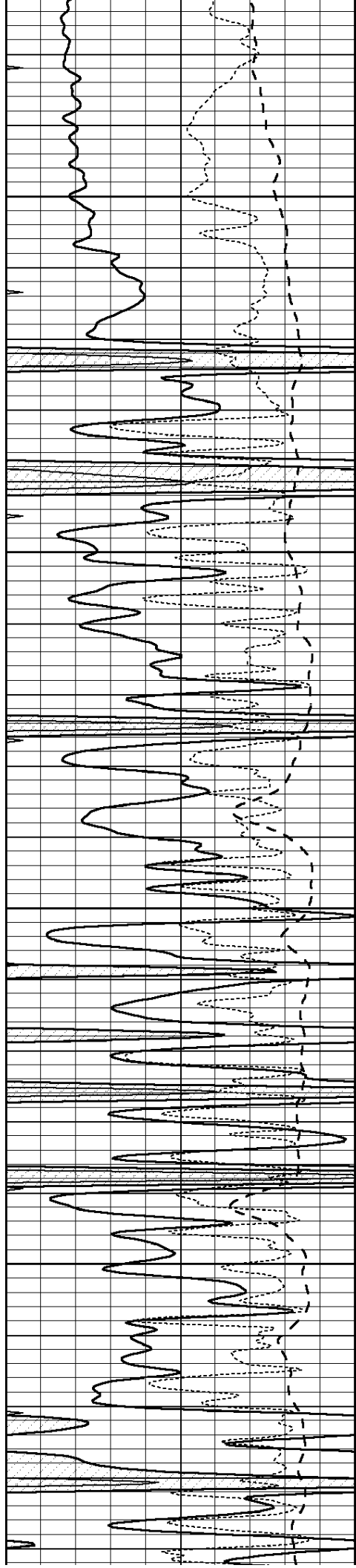
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4450

4500

4550



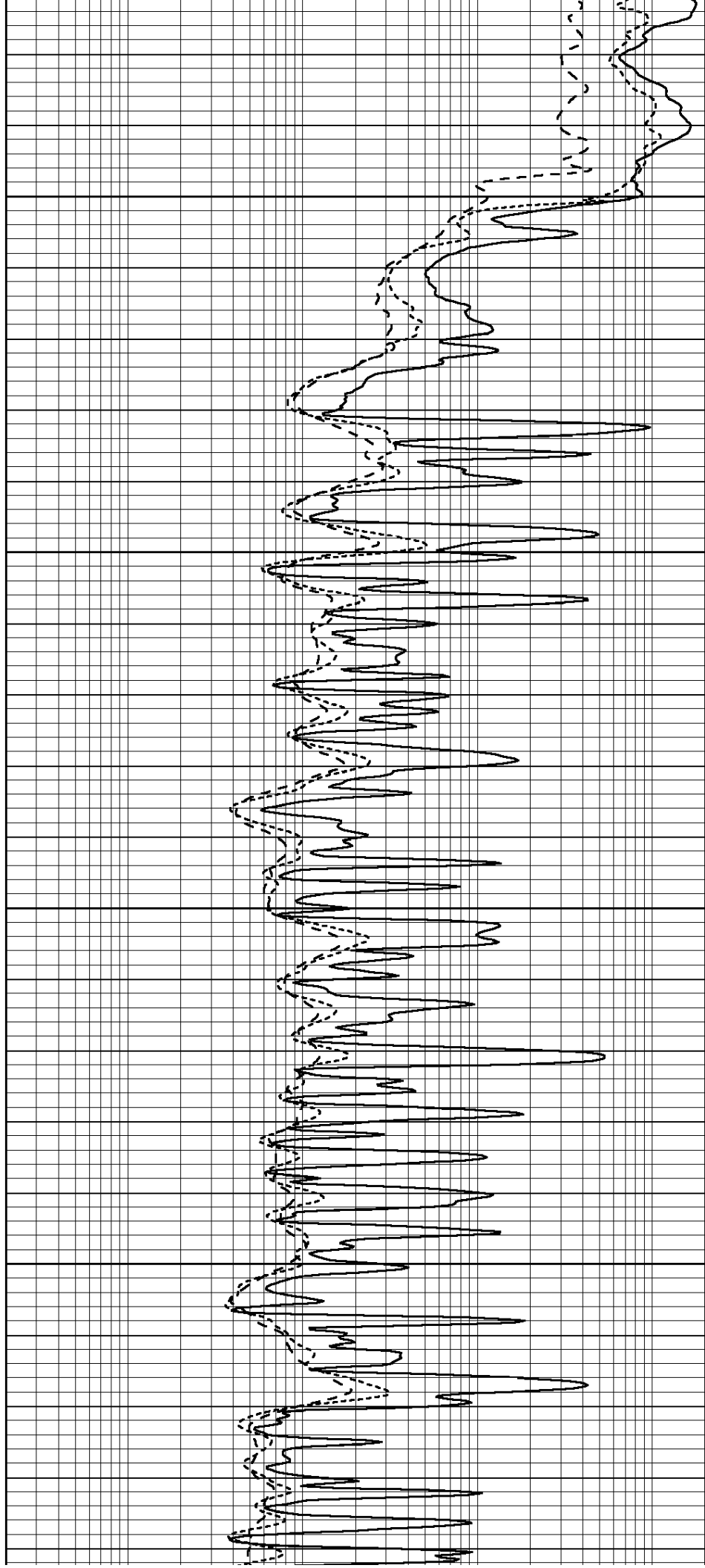


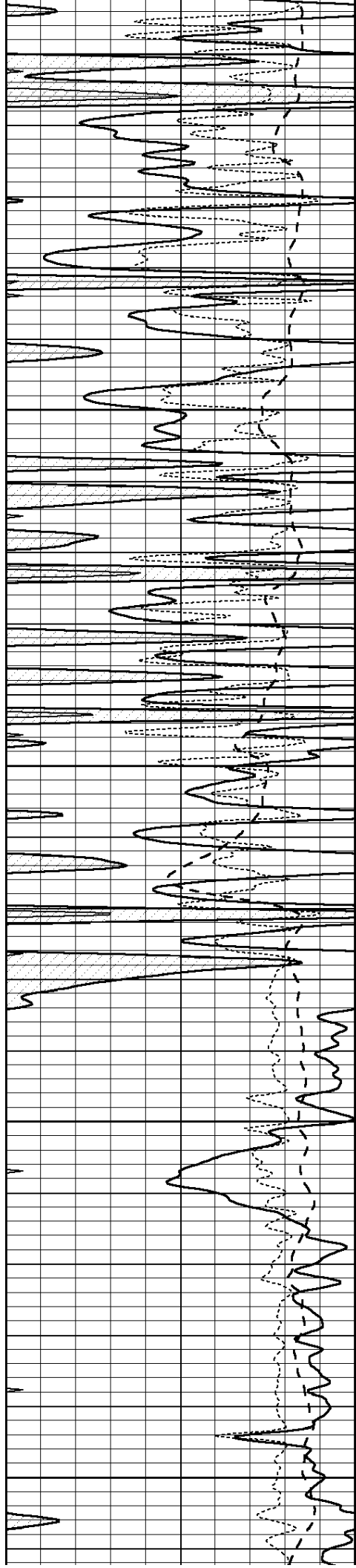
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4650

4700

4750





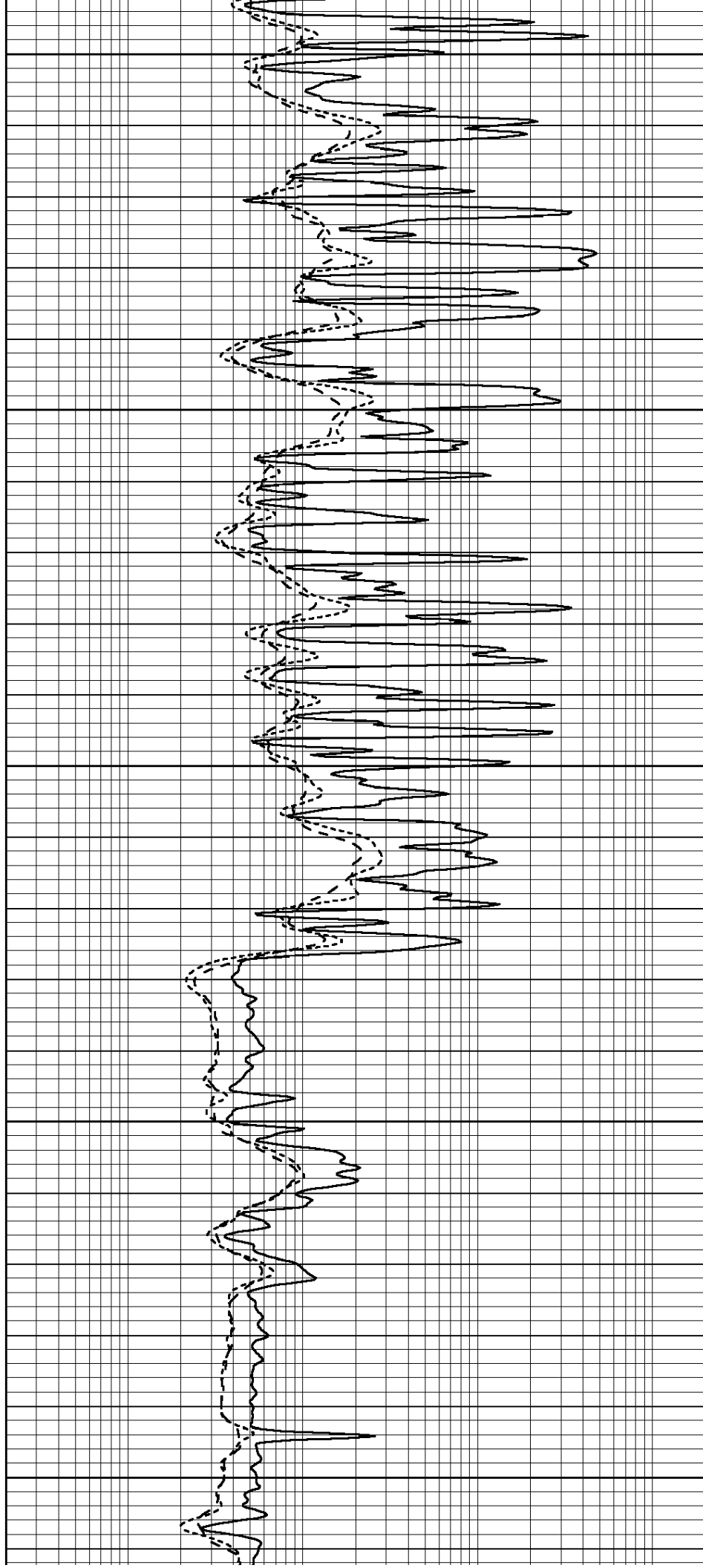
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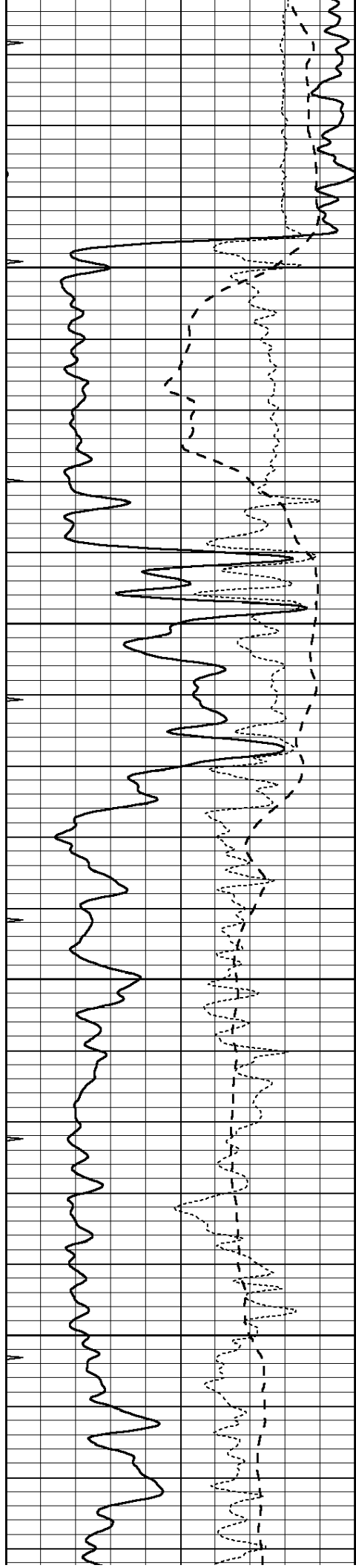
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4900

4950

5000



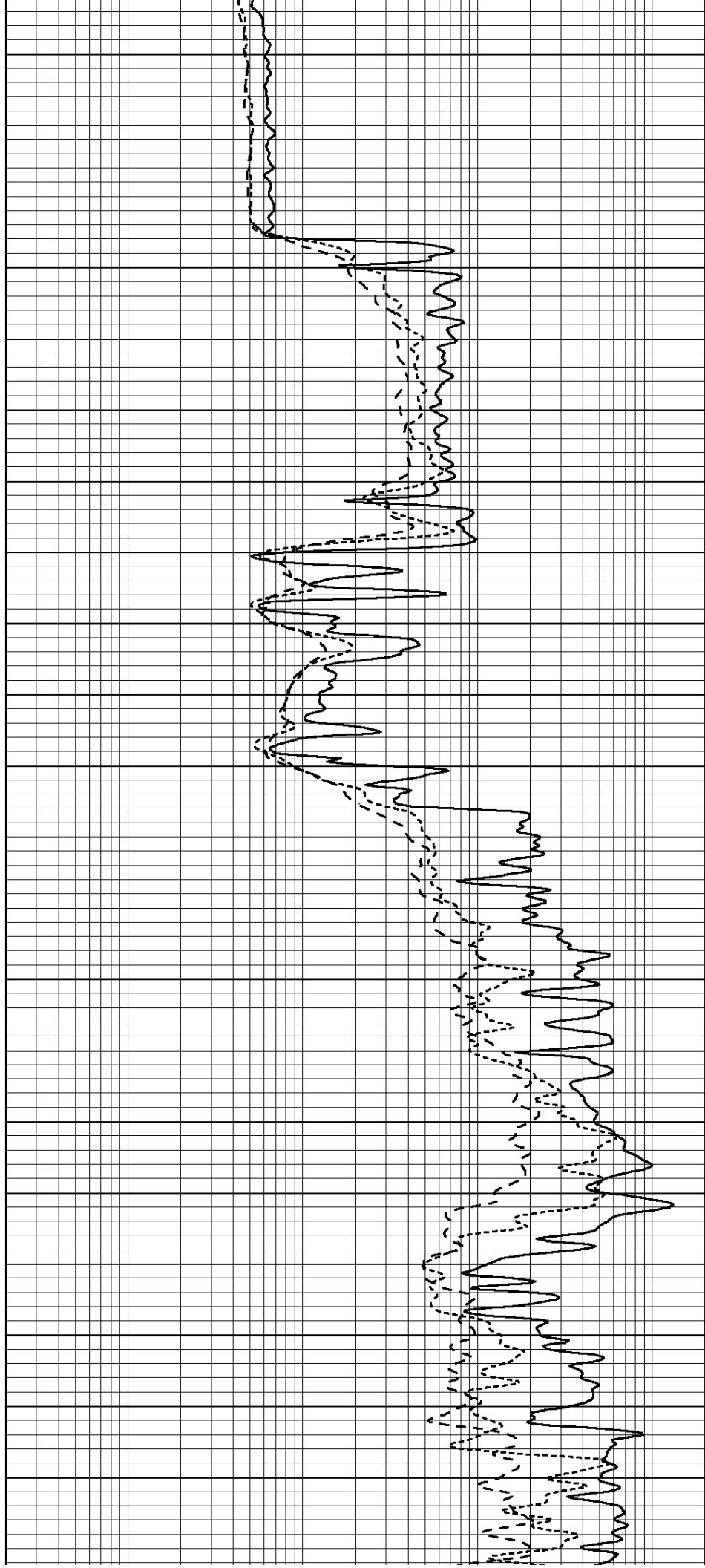


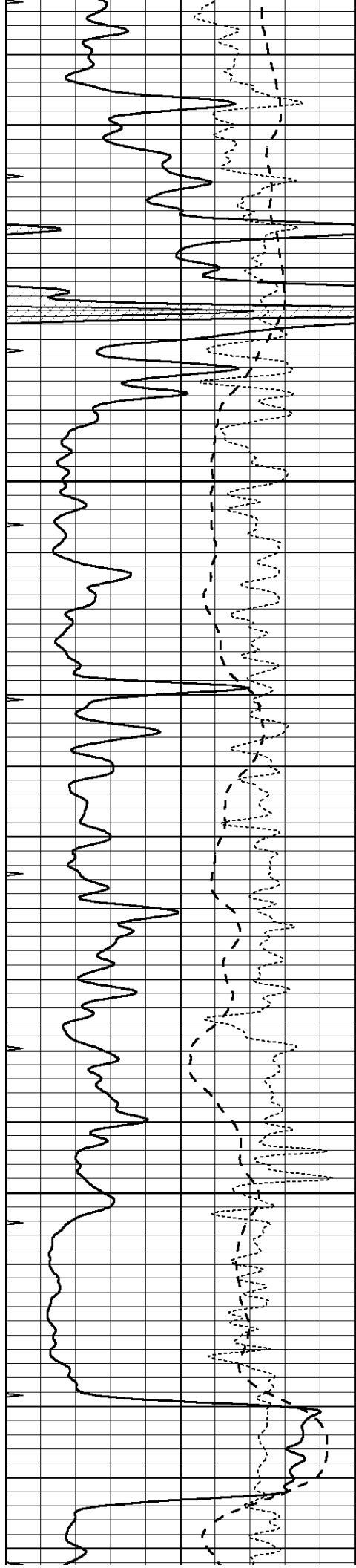
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5100

5150

5200





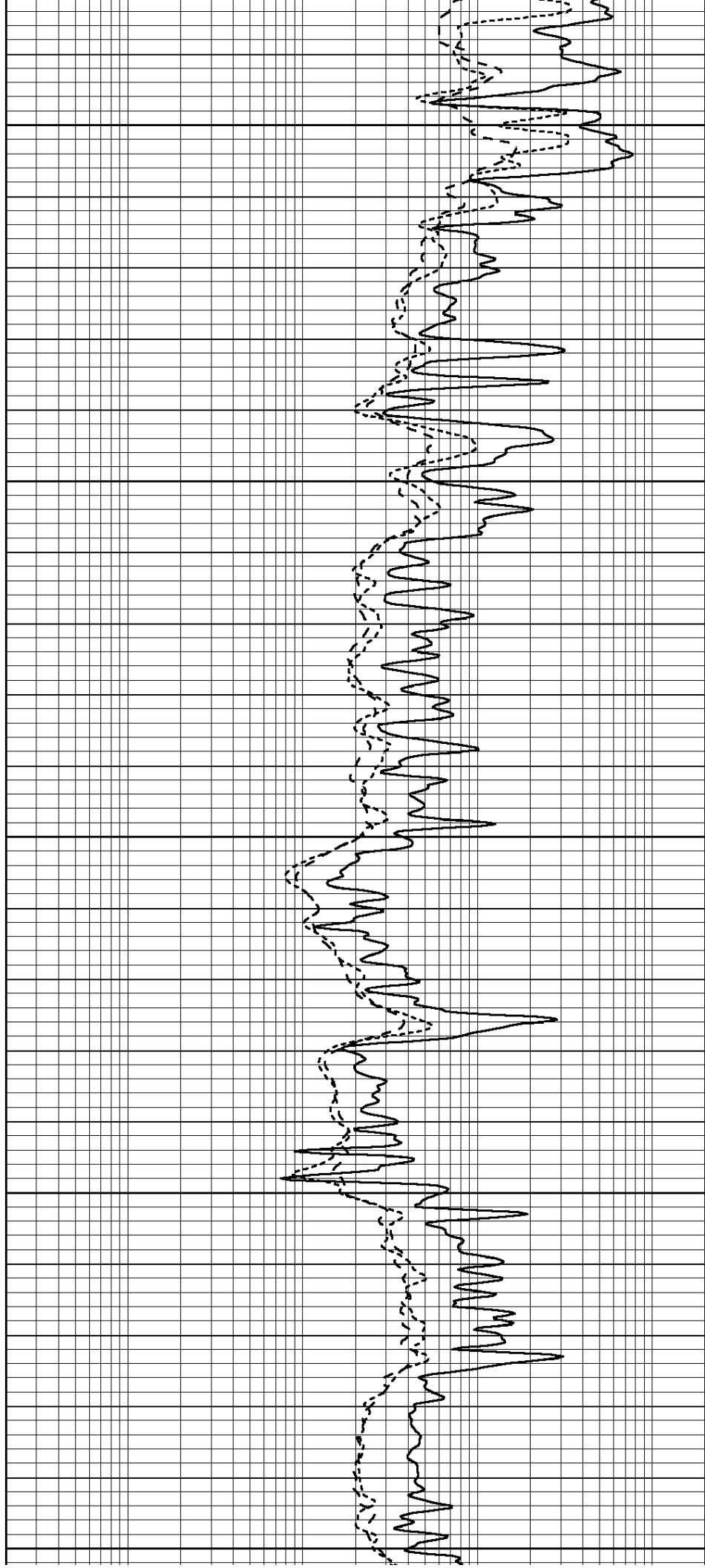
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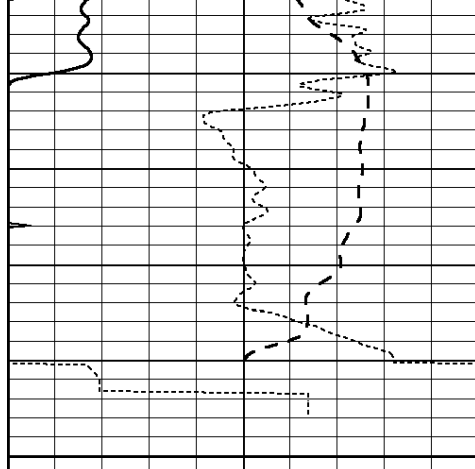
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5350

5400

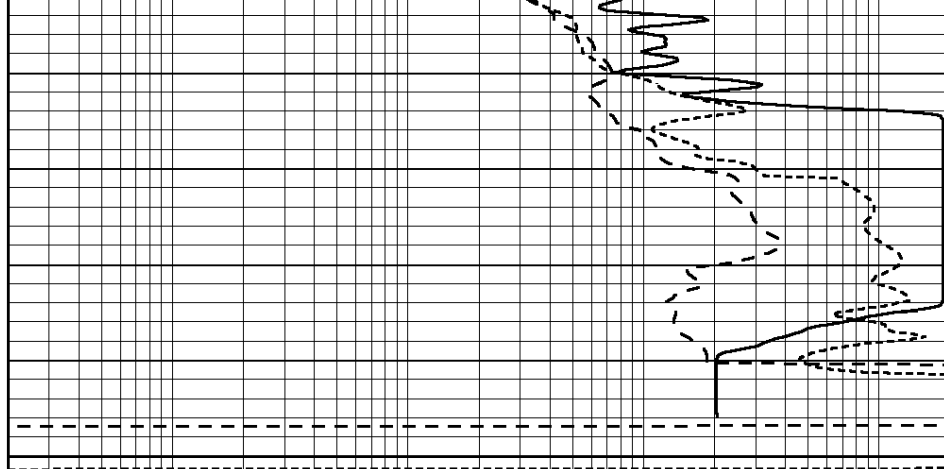
5450





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

5500



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

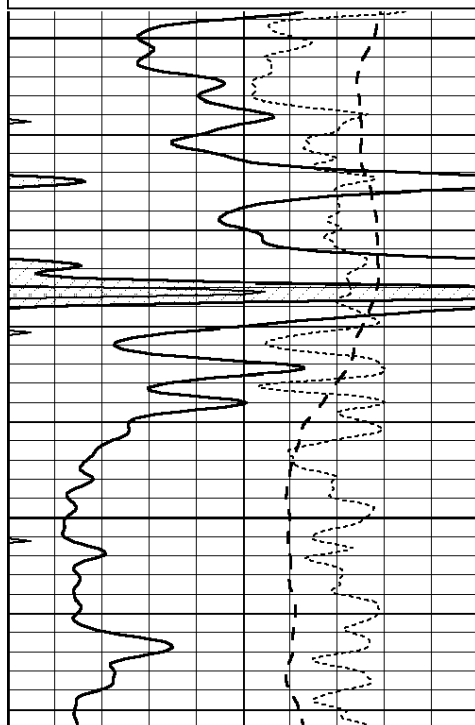


REPEAT SECTION

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 Charted by: Depth in Feet scaled 1:240

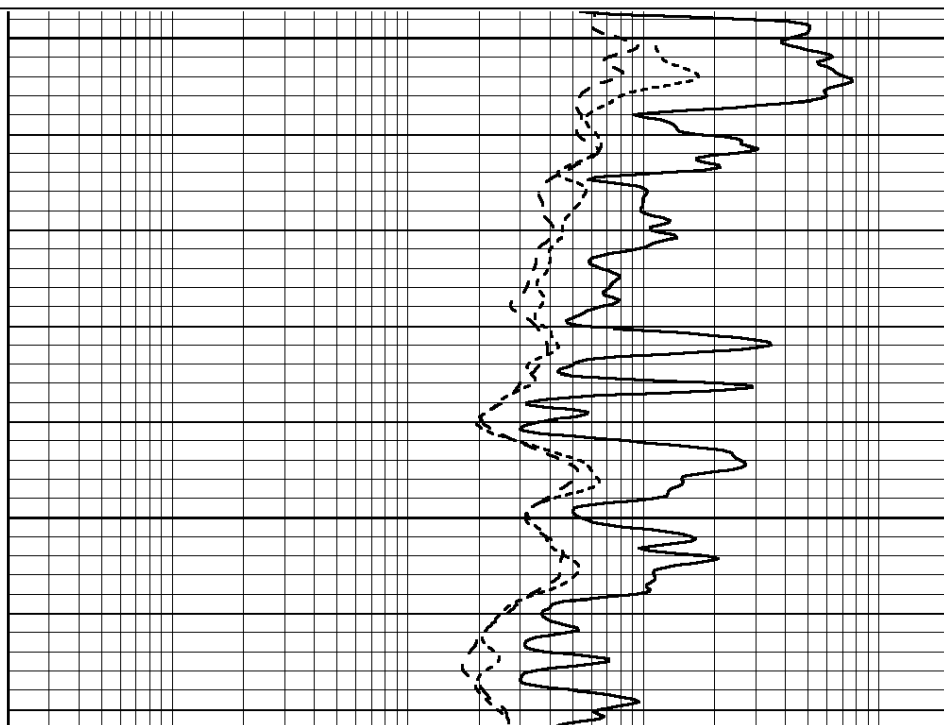
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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

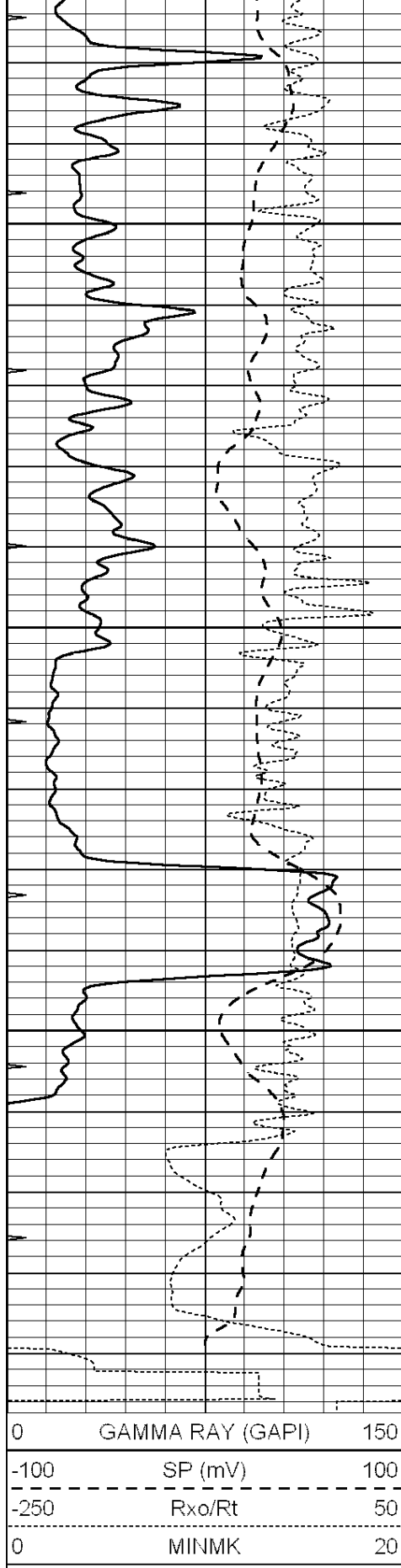
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



5250

5300

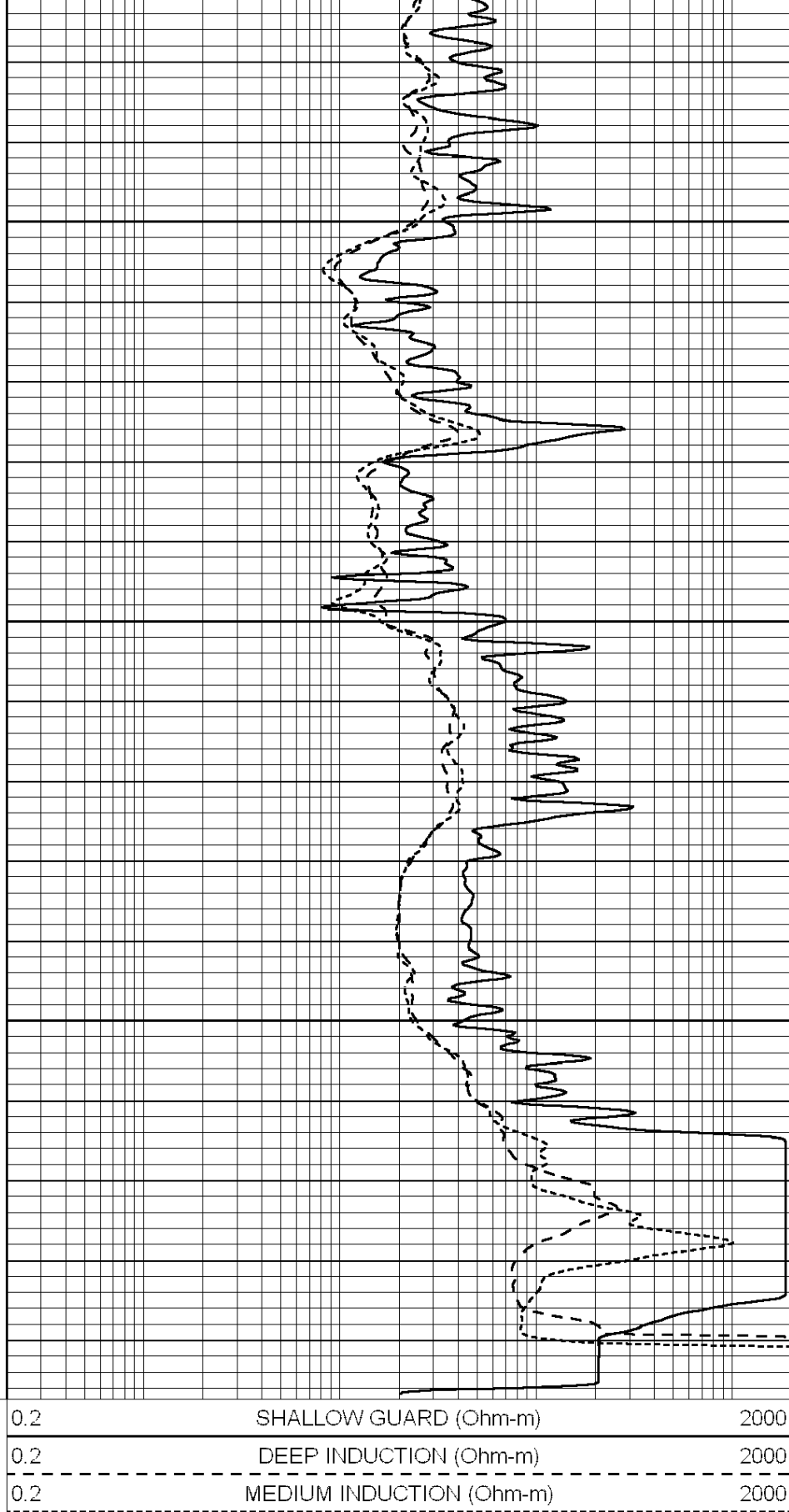




5350

5400

5450



Calibration Report

Database File: 011197pe.db
 Dataset Pathname: pass3.13
 Dataset Creation: Fri Aug 02 11:44:34 2013

Dual Induction Calibration Report								
Serial-Model:			PROBE9-DILG					
Surface Cal Performed:			Thu Jul 11 13:14:55 2013					
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	5.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	640.000	-3.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	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: 004N			Model: PRB					
Master Calibration								
Performed Mon Jun 03 09:36:56 2013								
	Background	Magnesium		Aluminum		Sandstone		
Window 1	1417.6	10391.4		3464.6		11537.5		cps
Window 2	1295.0	8959.7		3050.1		9816.4		cps
Window 3	1105.1	5464.2		2051.0		5838.8		cps
Window 4	315.0	317.7		312.9		319.8		cps
Long Space	0.0	7664.6		1755.0		8521.3		cps
Short Space	1.8	1582.4		1040.8		1699.4		cps
Rho		1.7100		2.5900		1.3800		g/cc
Pe		0.0000		2.5700		1.5500		
Rib Angle	: 44.1	Rib Slope	: 0.970	Density/Spine Ratio		: 0.574		
Spine Angle	: 74.1	Spine Slope	: 3.519	Spine Intercept		: -17.0		
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
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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:	070559	
Tool Model:	OPEN_GR	
Performed:	Wed Jun 12 18:25:42 2013	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.3500	GAPI/cps