



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company RITCHIE EXPLORATION, INC.  
Well SELENKE-HOCKERSMITH #1  
Field  
County GOVE State KANSAS

Company RITCHIE EXPLORATION, INC.  
Well SELENKE-HOCKERSMITH #1  
Field  
County GOVE  
State KANSAS

Location: API #: 15-063-22106-00-00  
335' FSL & 2530' FEL  
S2 - S2 - S2  
SEC 22 TWP 13S RGE 31W  
Permanent Datum GROUND LEVEL Elevation 2890  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
CNL/CDL  
SONIC  
Elevation  
K.B. 2895  
D.F. 2893  
G.L. 2890

Date	5/7/13		
Run Number	ONE		
Depth Driller	4770		
Depth Logger	4765		
Bottom Logged Interval	4763		
Top Log Interval	00		
Casing Driller	221		
Casing Logger	218		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3.400	
Density / Viscosity	9.40 / 55		
pH / Fluid Loss	9.50 / 10.4		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	0.95 @ 86F		
Rmf @ Meas. Temp	0.71 @ 86F		
Rmc @ Meas. Temp	1.14 @ 86F		
Source of Rmf / Rmc	MEASURED		
Rim @ BHT	0.66 @ 123F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	123F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	IAN MABB		
Witnessed By	MAX LOVELLY		

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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.

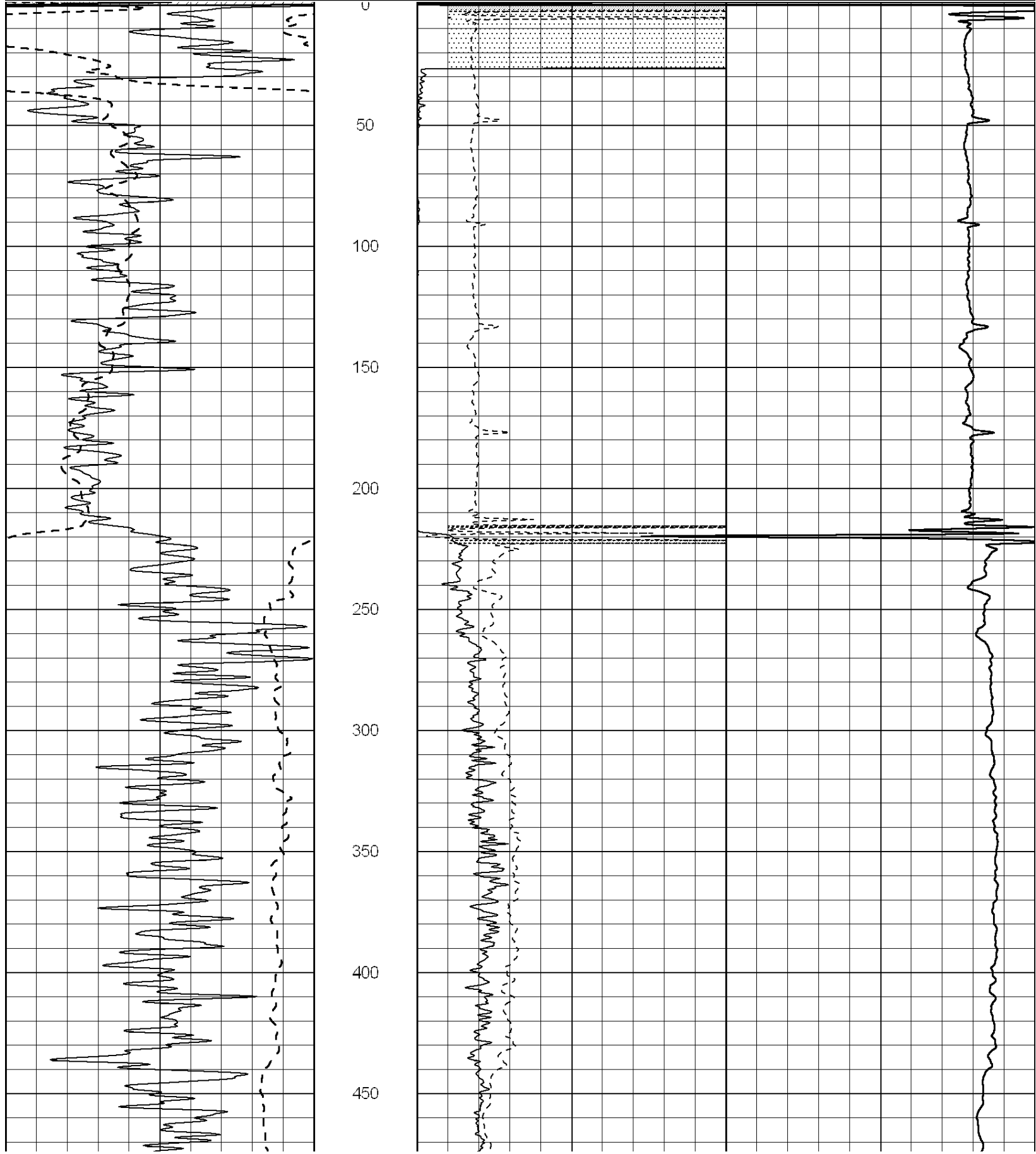
Comments

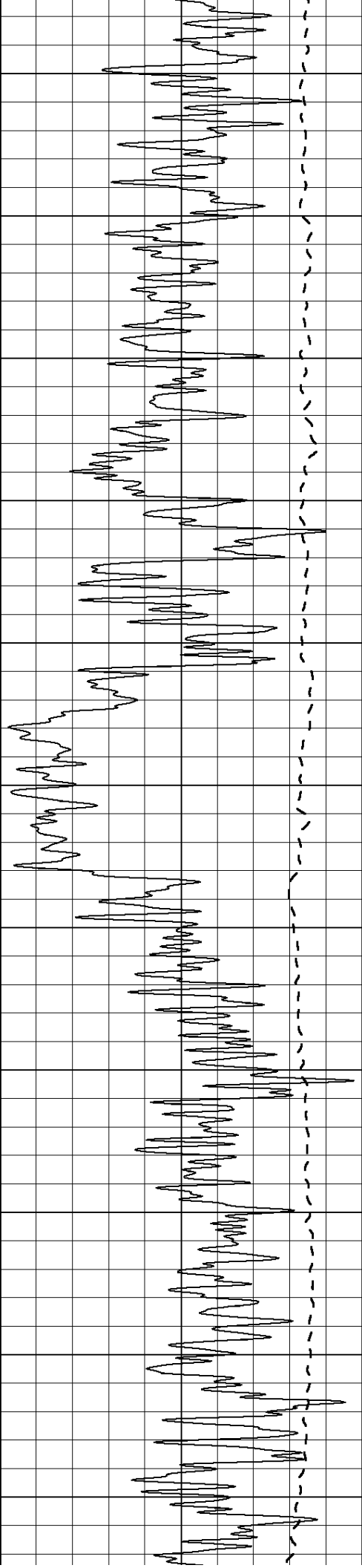
**NABORS COMPLETION & PRODUCTION SERVICES  
785-628-6395**

**THANK YOU FOR YOUR BUSINESS**

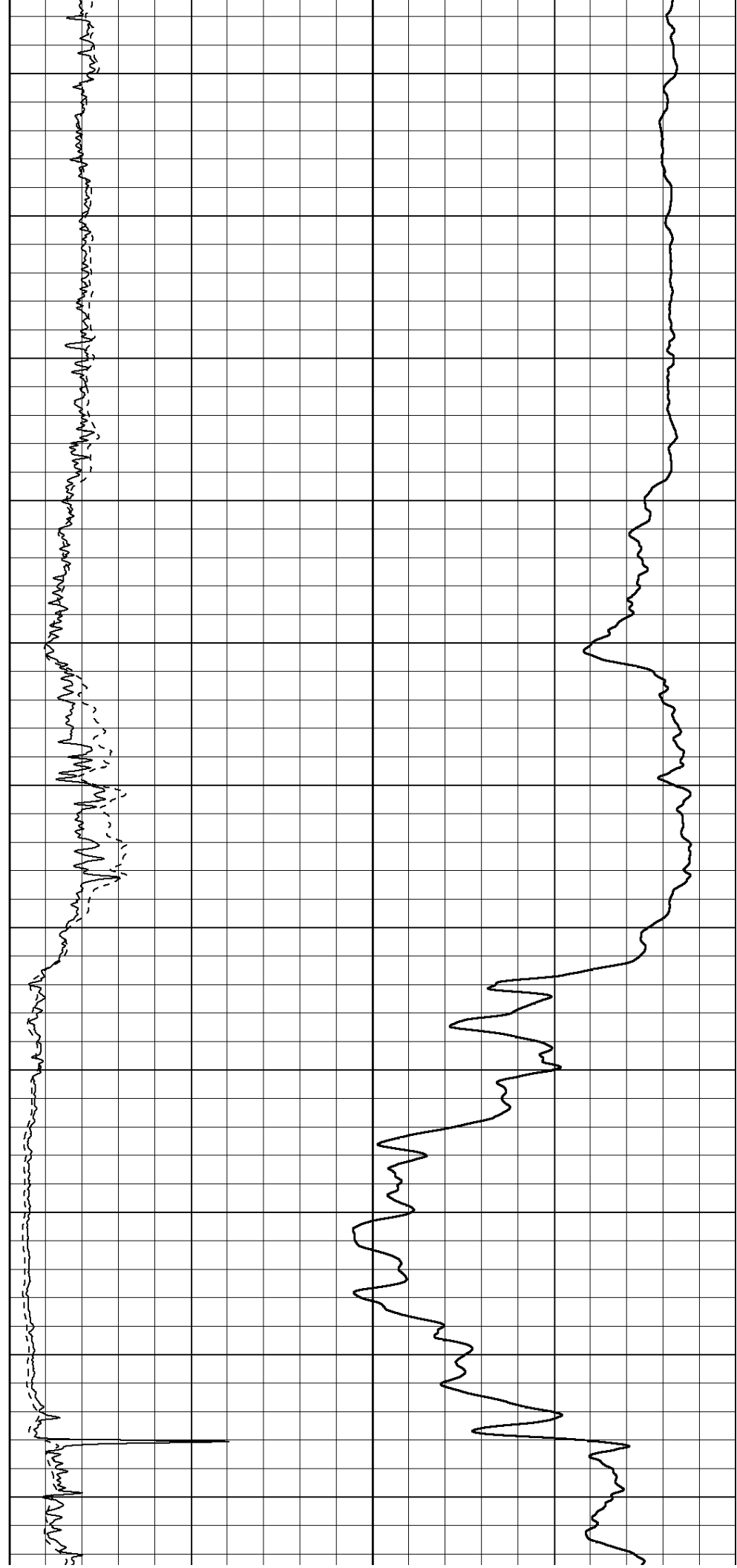
**DIRECTIONS: OAKLEY, KS. - 11 MILES SOUTH TO GOVE RD. - EAST TO RD. 16 - 4 MILES SOUTH TO RD. 0  
- 1/2 EAST - NORTH INTO**

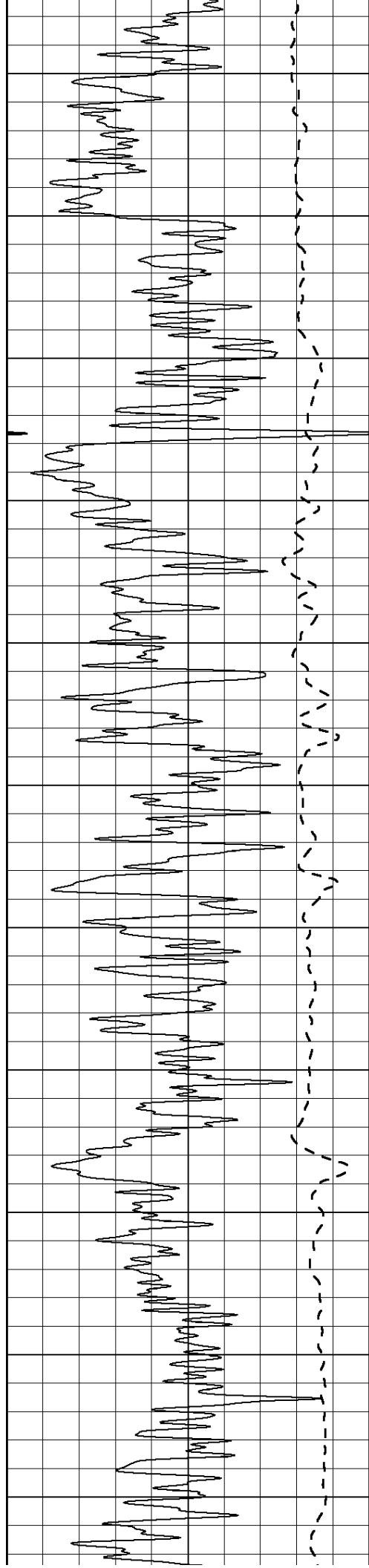
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			0	Deep Induction (Ohm-m)	50
			1000		CILD (mmho/m)
			50	RILD X10 (Ohm-m)	500
			50	RLL3 X10 (Ohm-m)	500



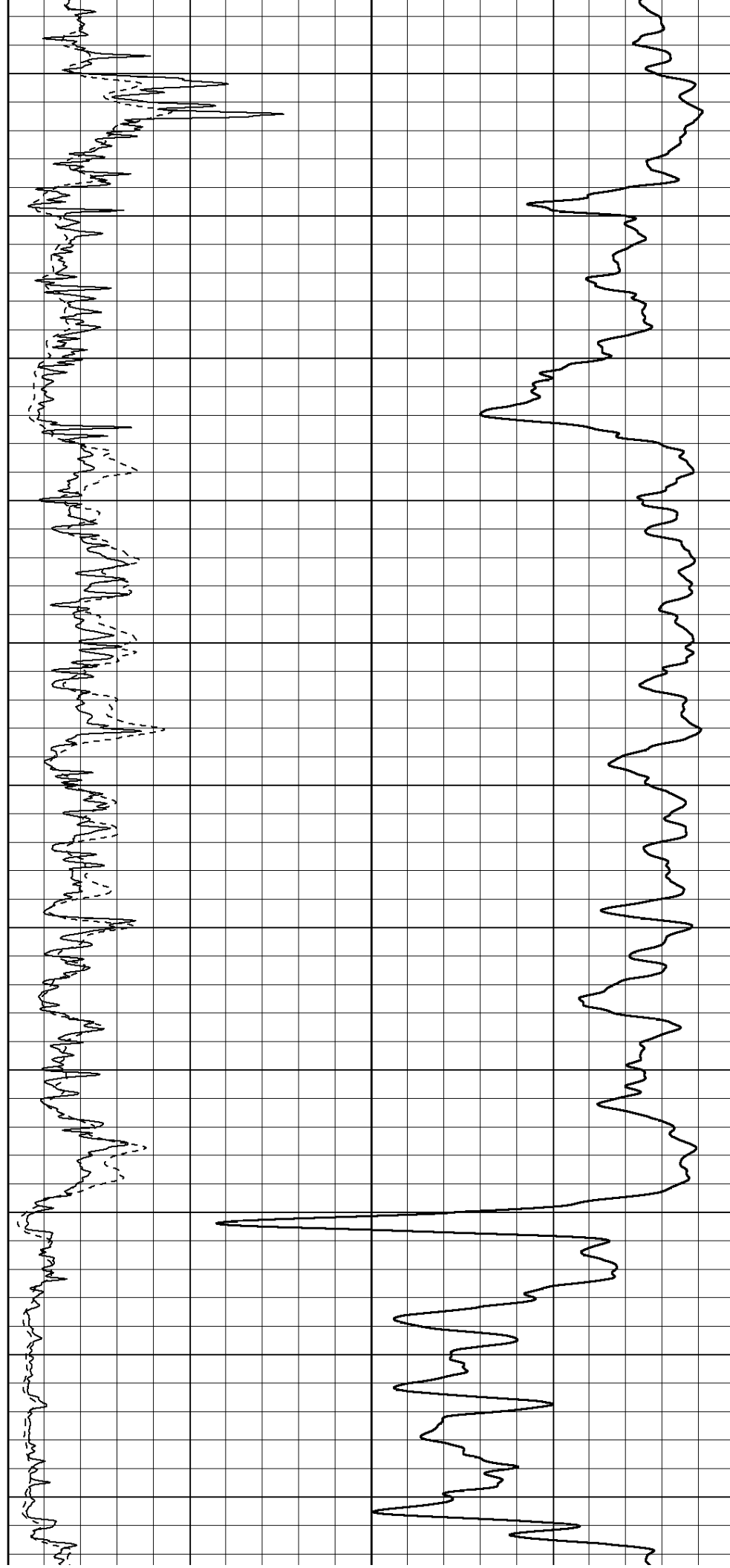


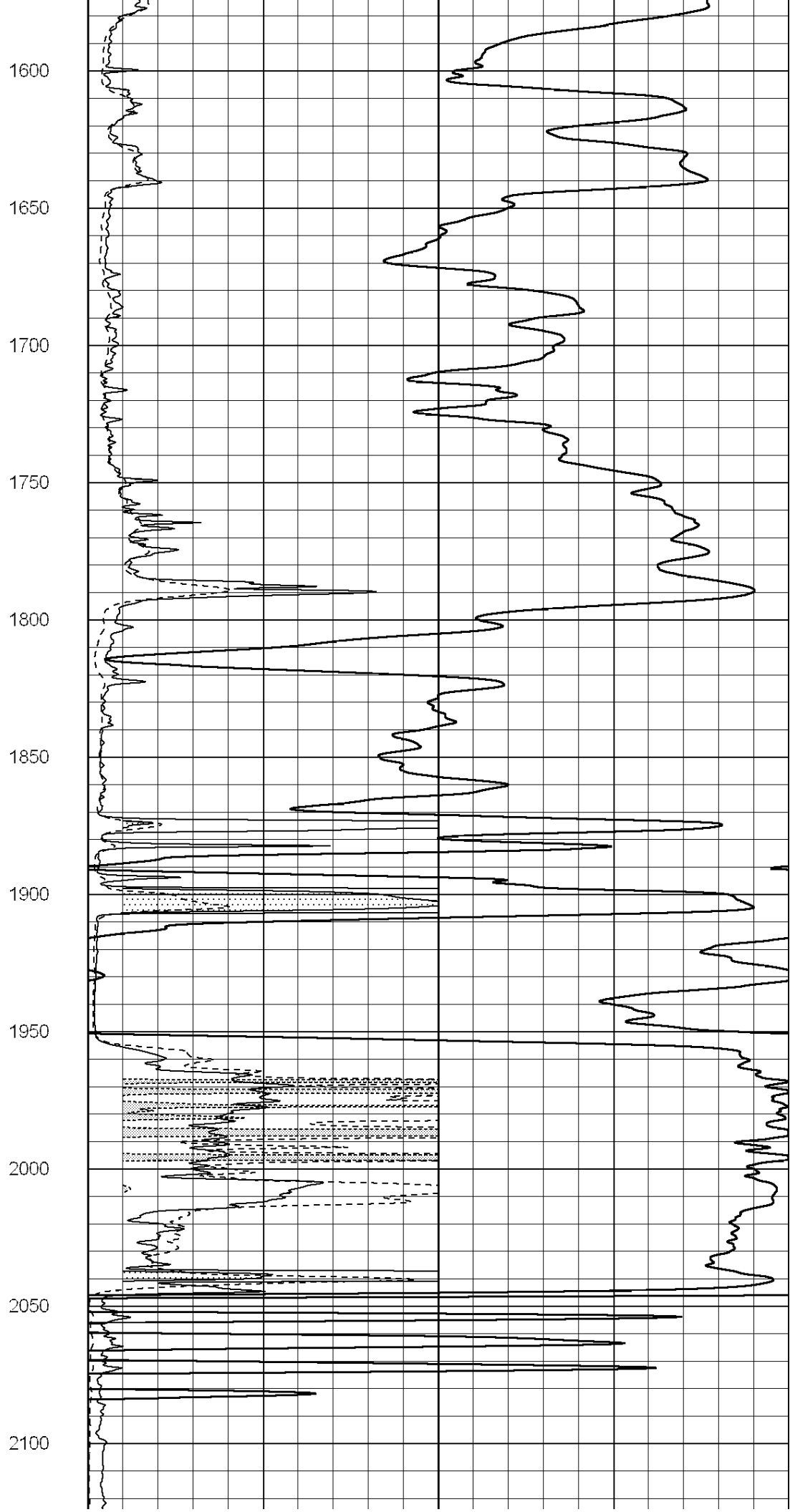
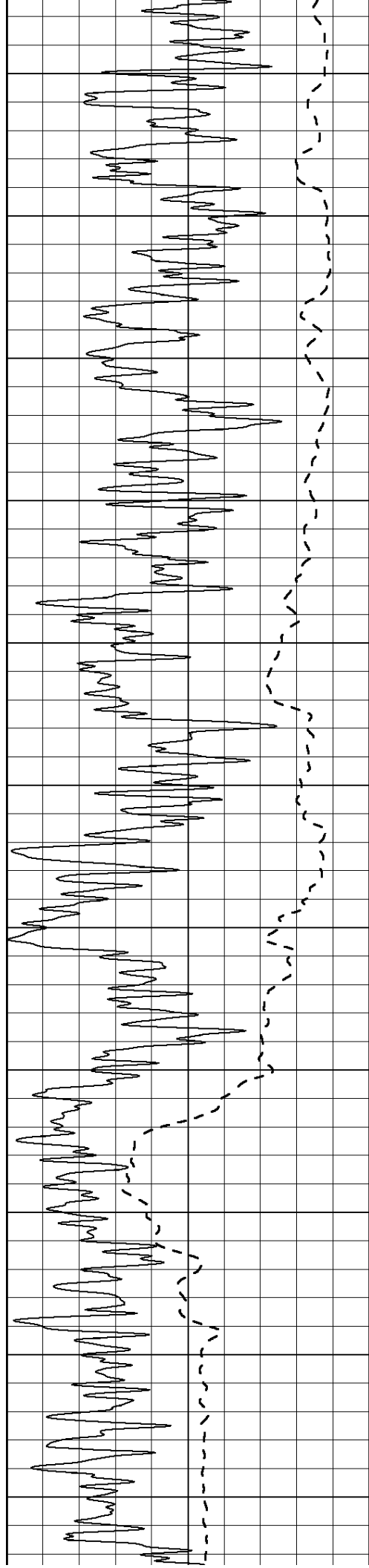
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900  
950  
1000

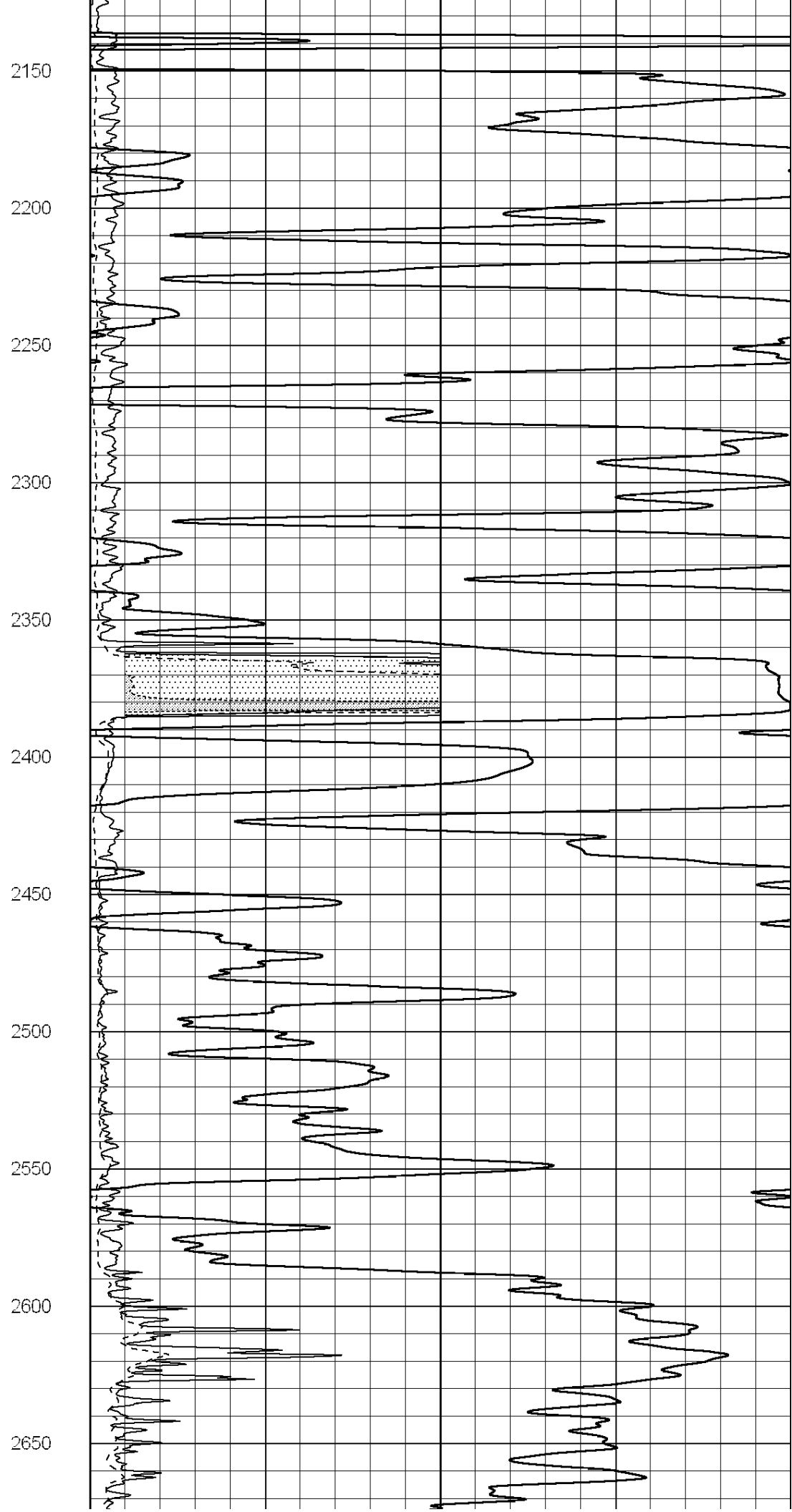
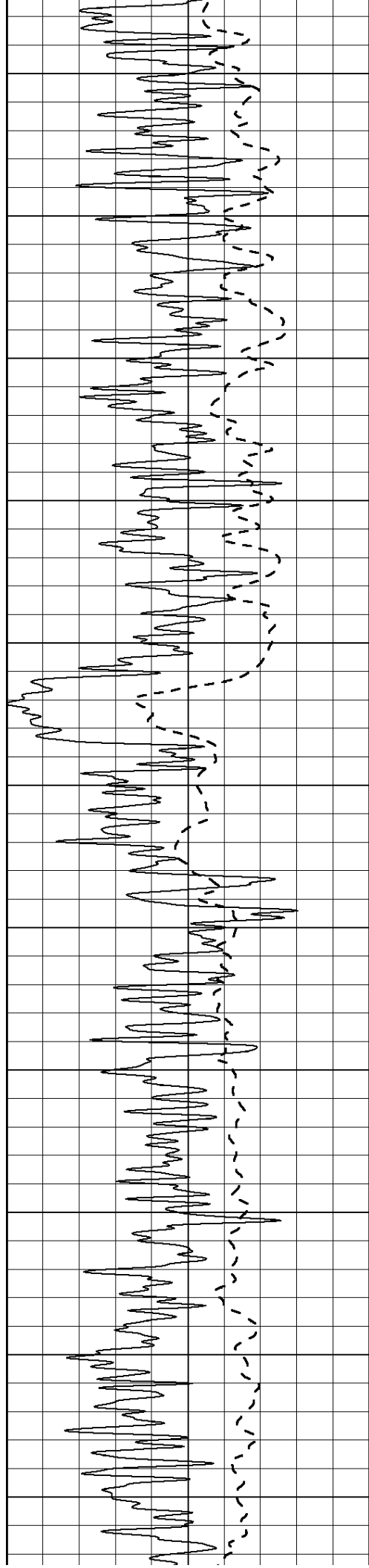


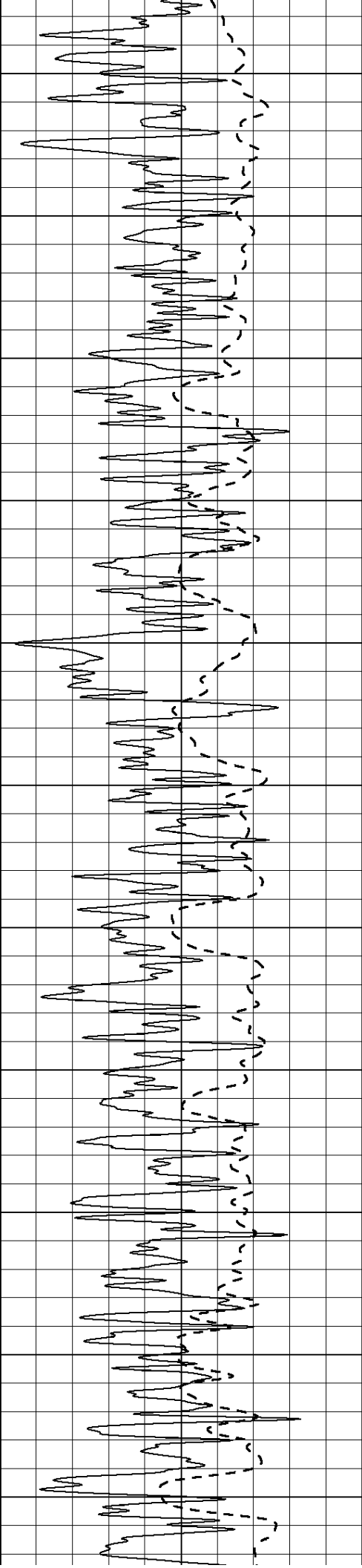


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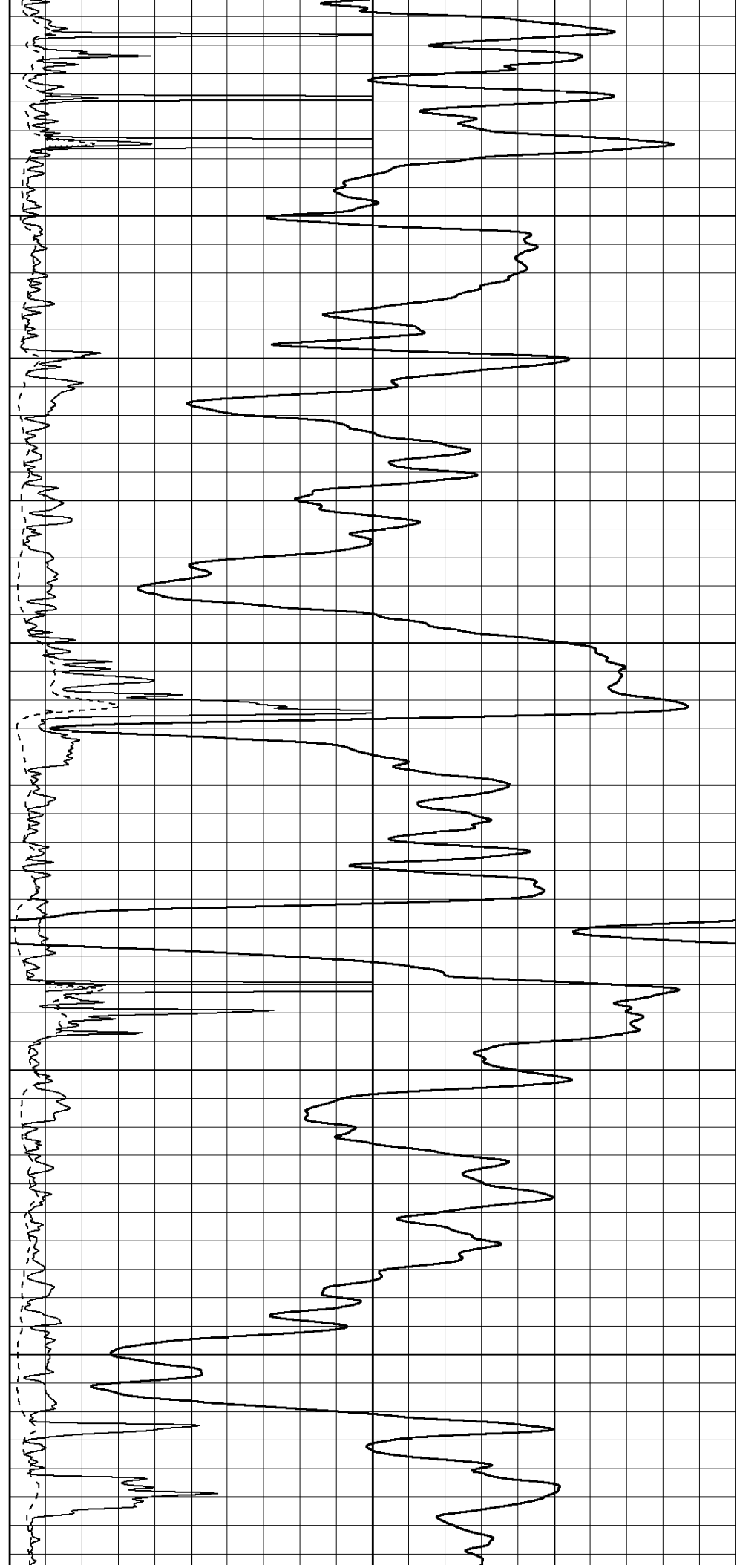


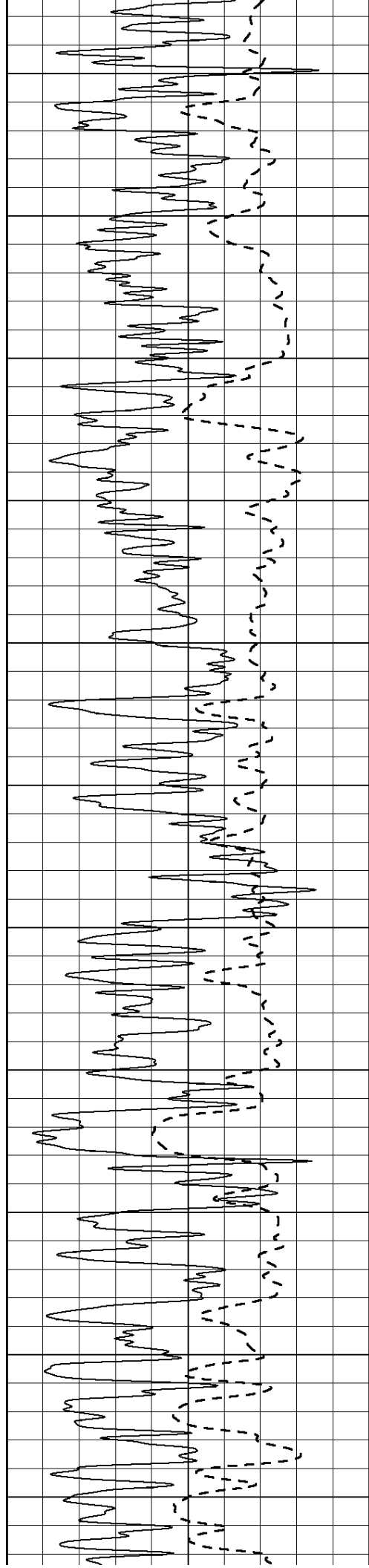






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2800  
2850  
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3050  
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3150  
3200





3250

3300

3350

3400

3450

3500

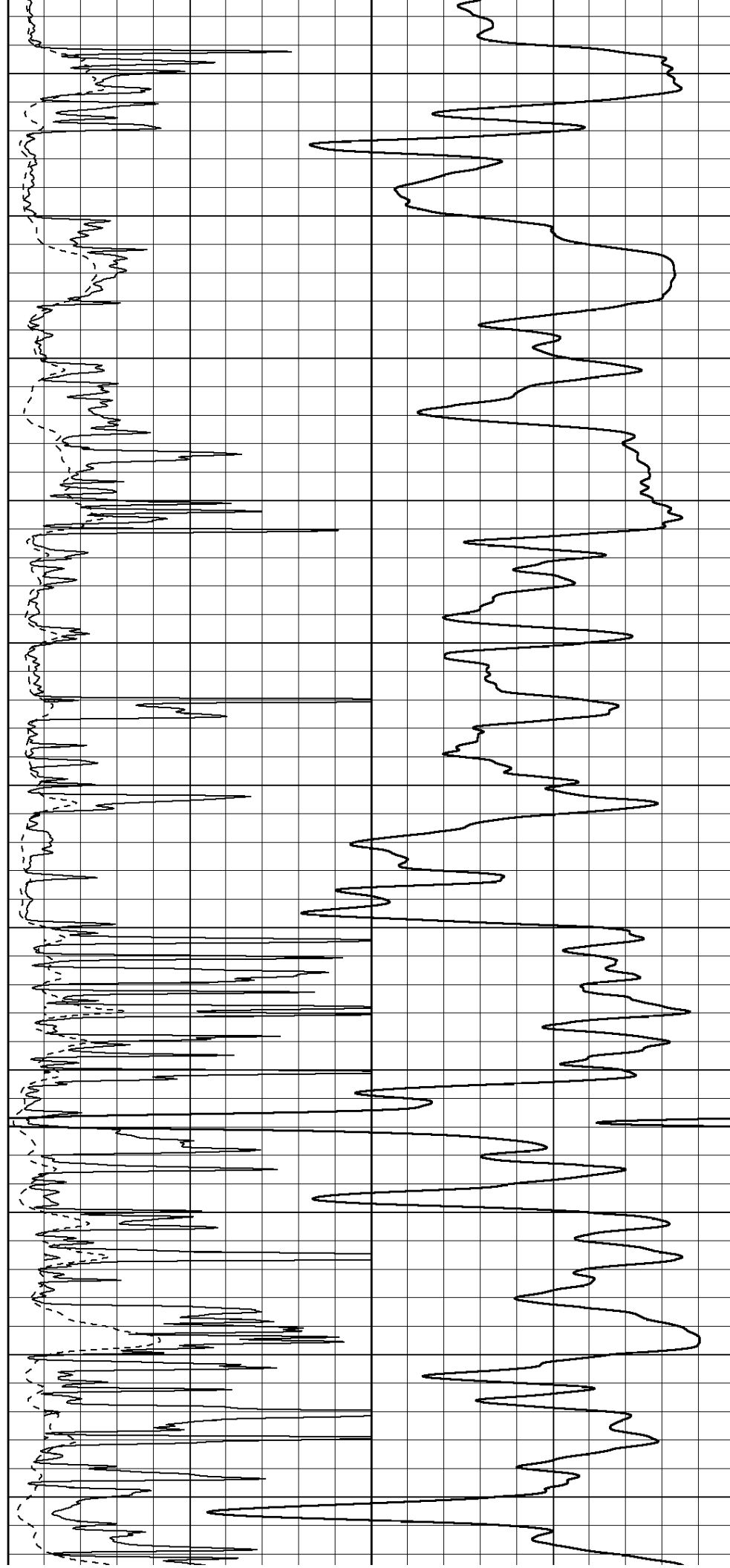
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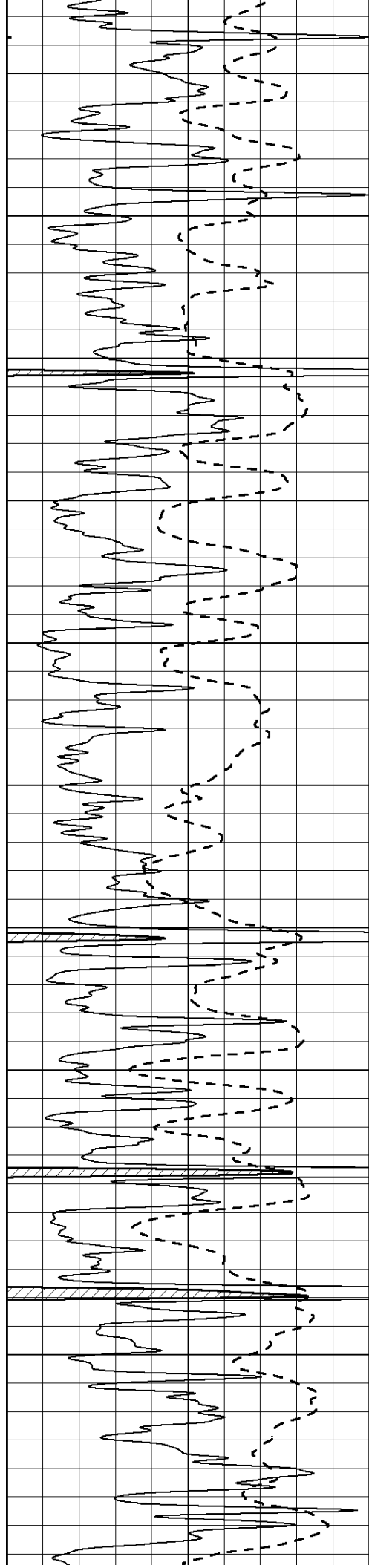
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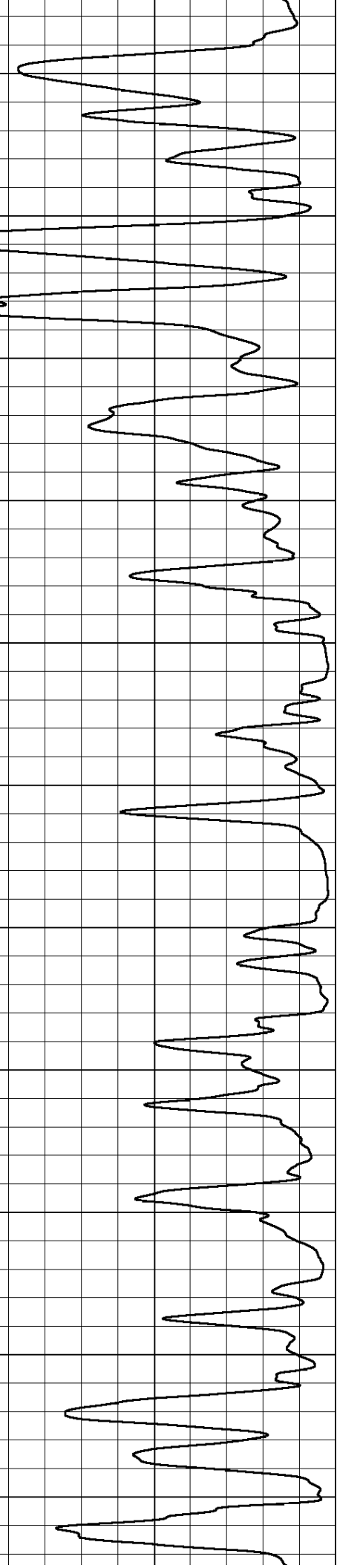
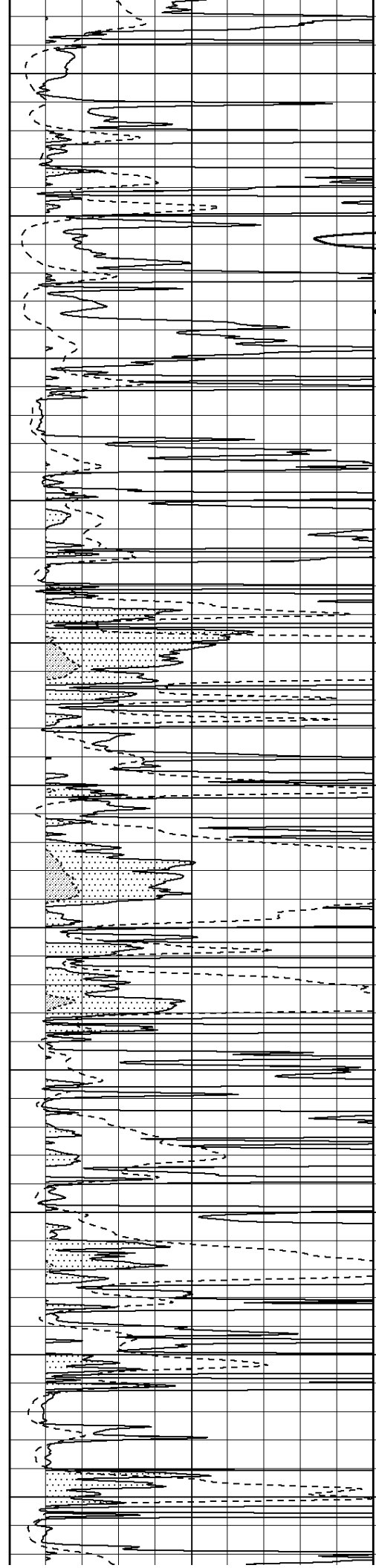
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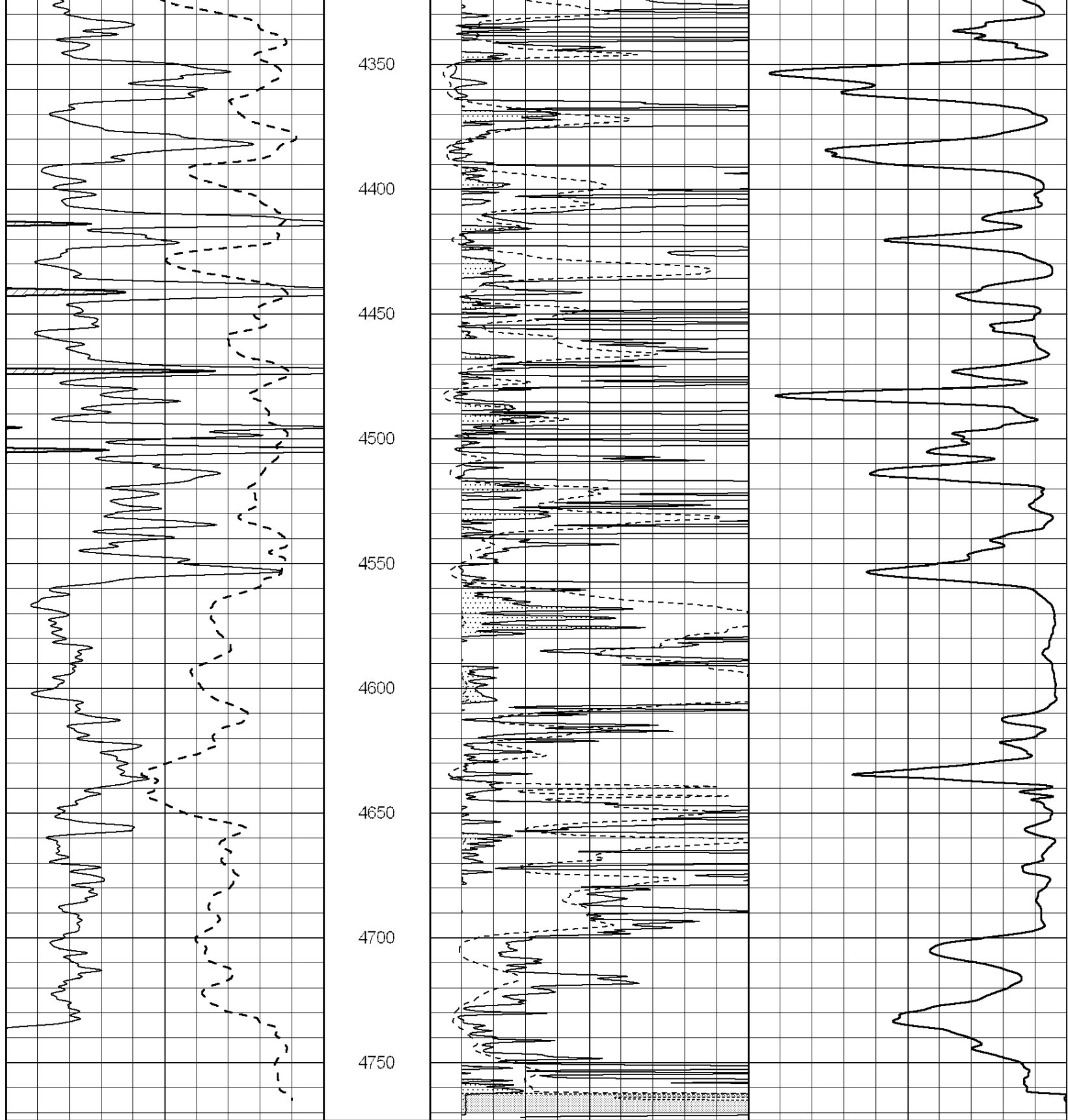
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3800  
3850  
3900  
3950  
4000  
4050  
4100  
4150  
4200  
4250  
4300





0 Gamma Ray (GAPI) 150

0 RLL3 (Ohm-m) 50

0 Deep Induction (Ohm-m) 50

1000 CILD (mmho/m) 0

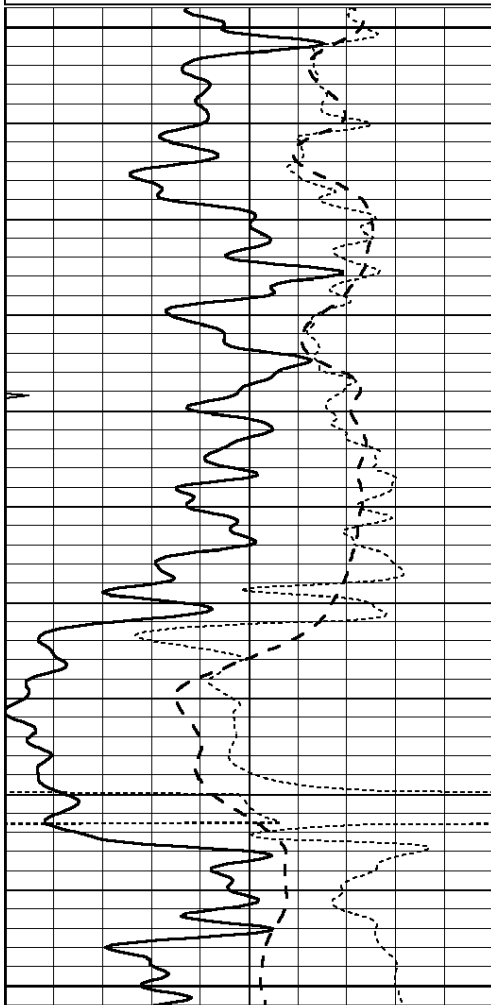
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50 RLL3 X10 (Ohm-m) 500

Presentation Format: dil  
 Dataset Creation: Tue May 07 14:50:37 2013 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

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-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

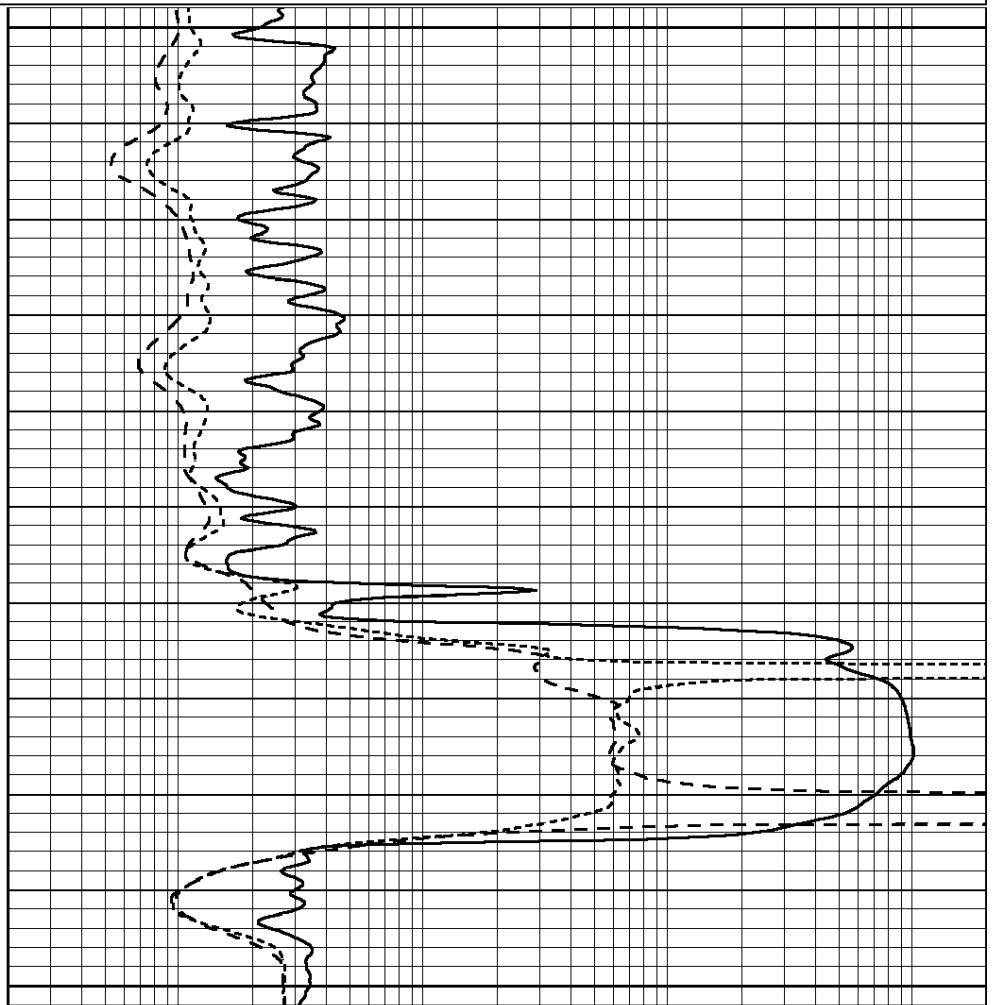
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0.2	MEDIUM INDUCTION (Ohm-m)	2000



2300

2350

2400



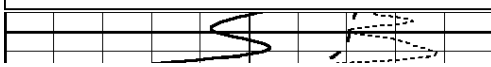
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-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

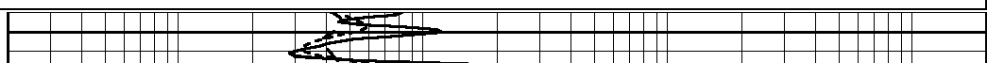
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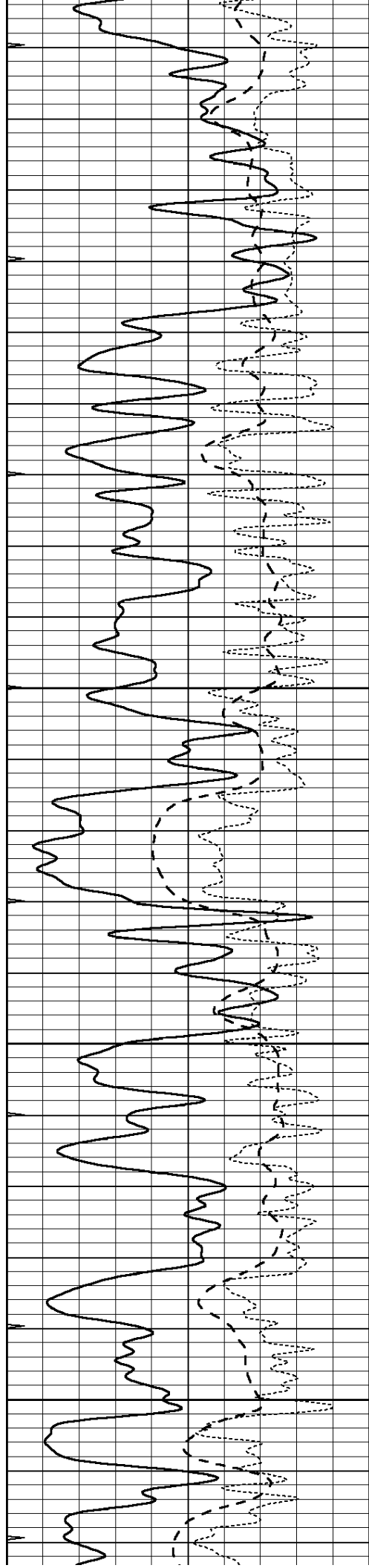
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-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3500



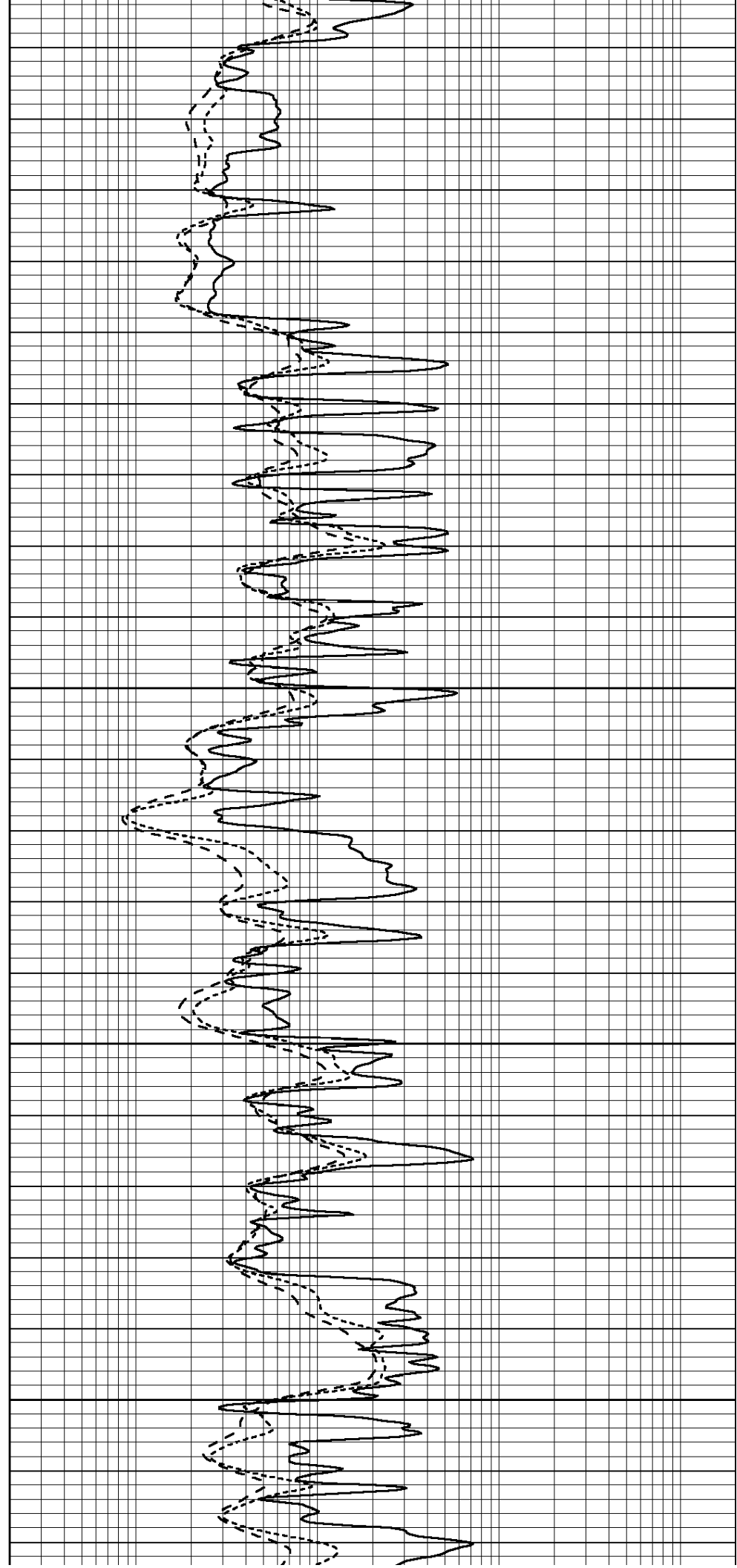


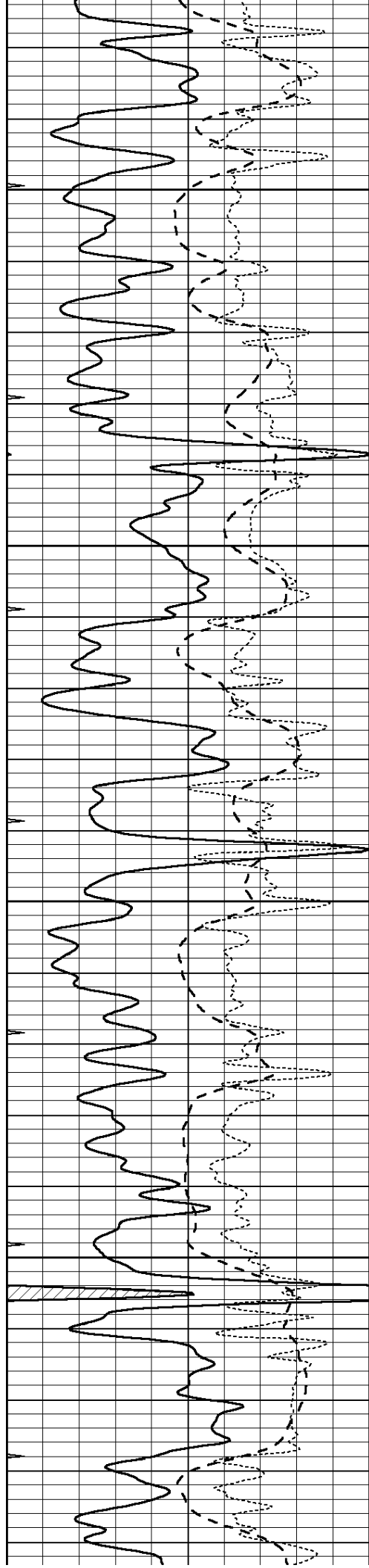
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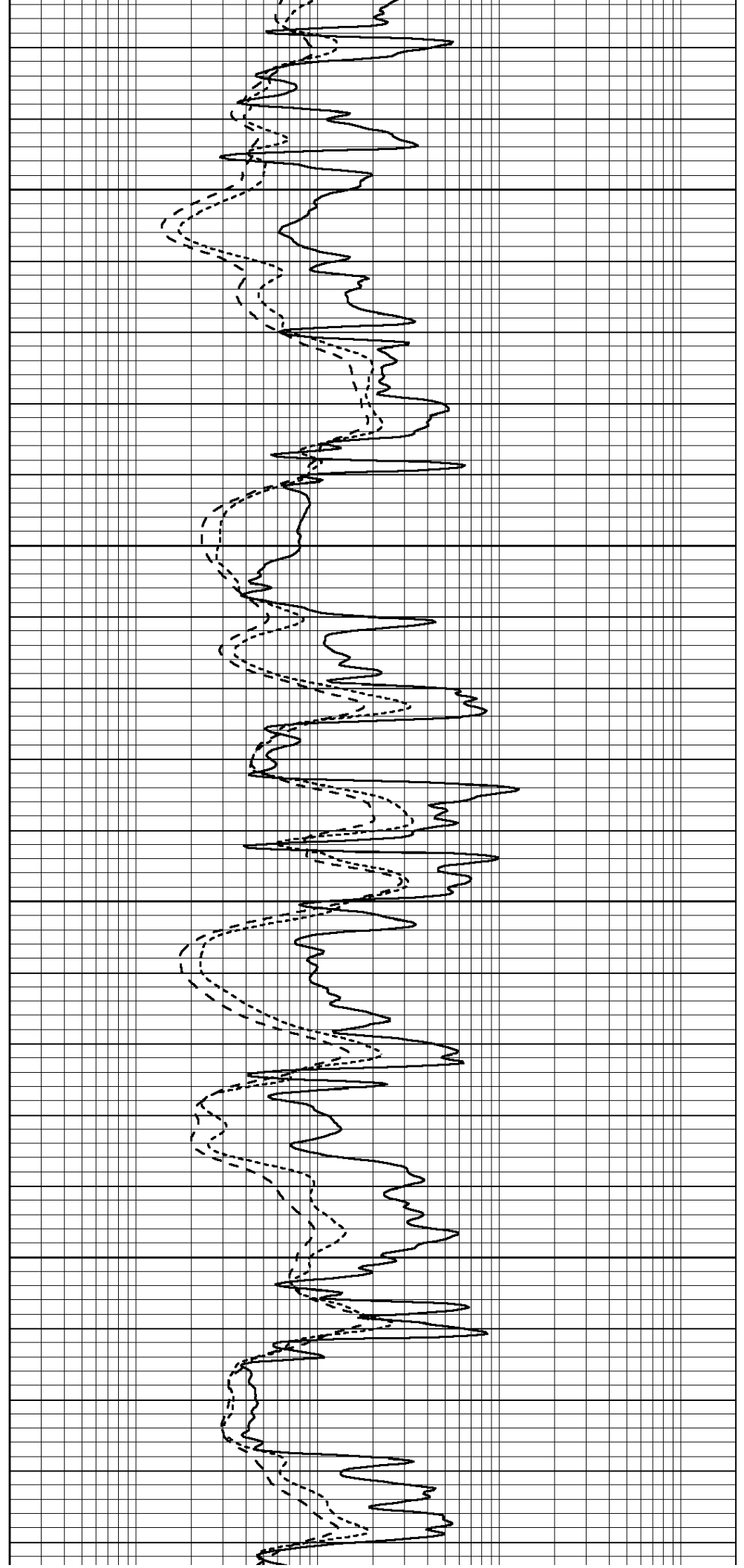


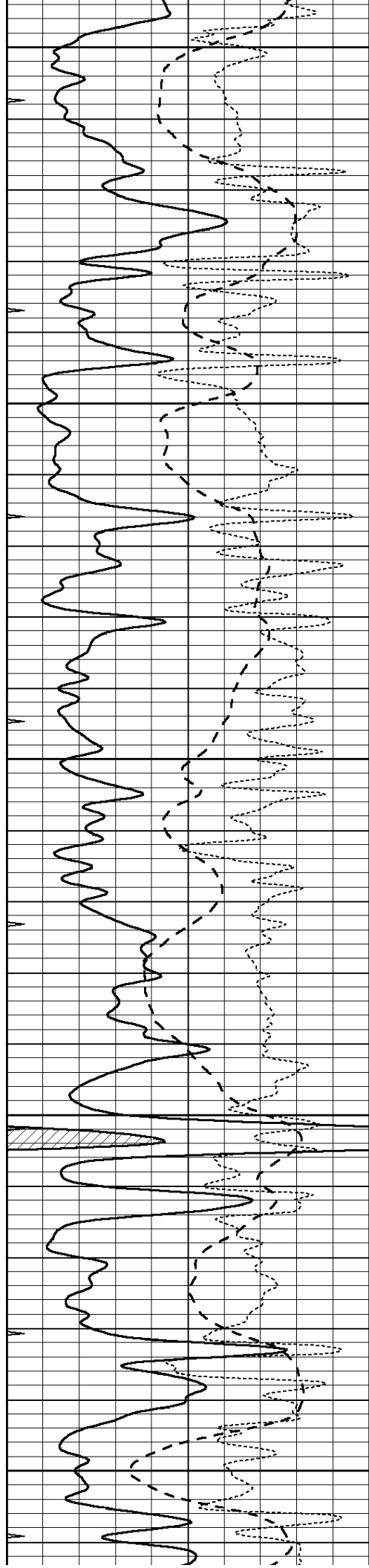
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3900





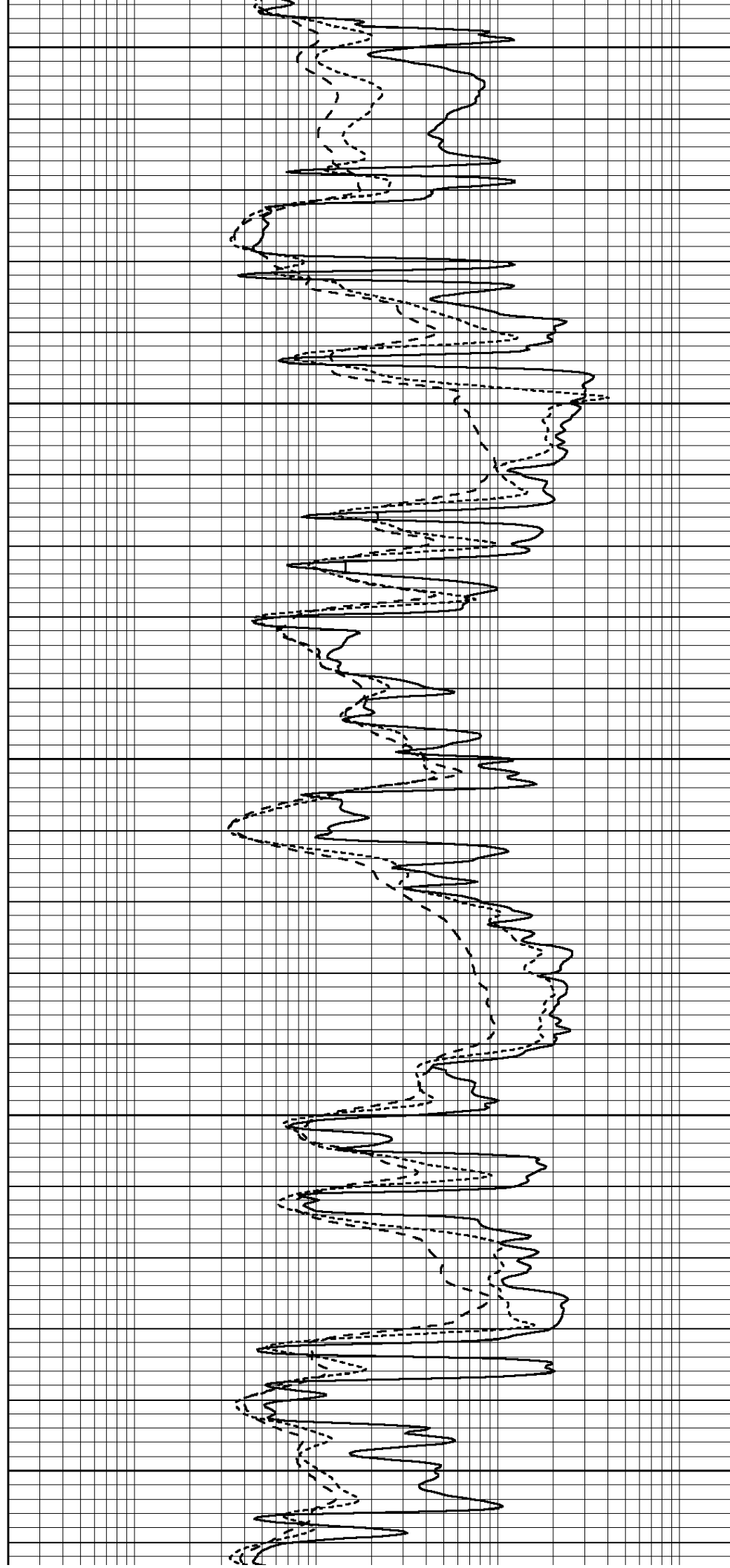
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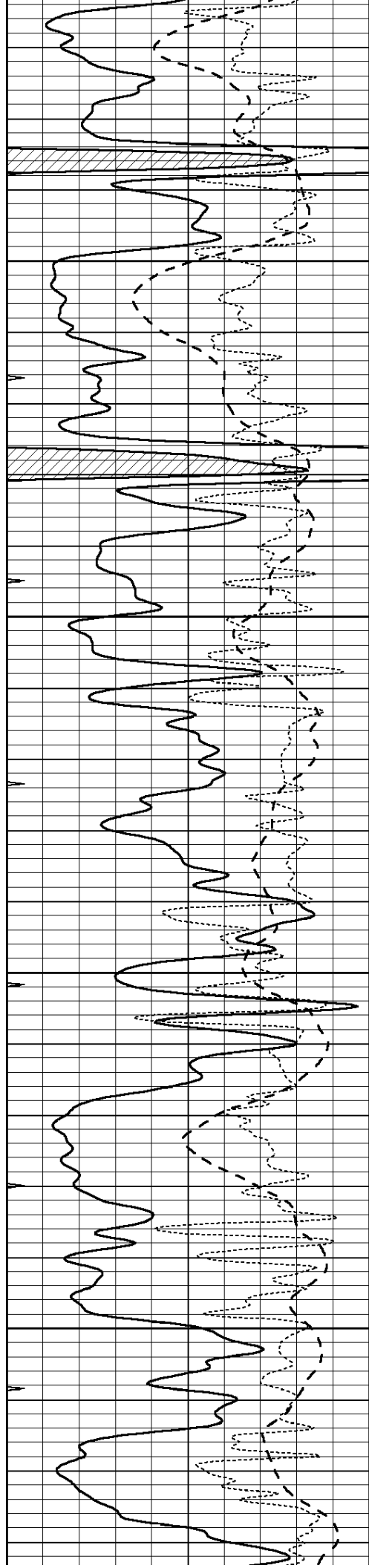
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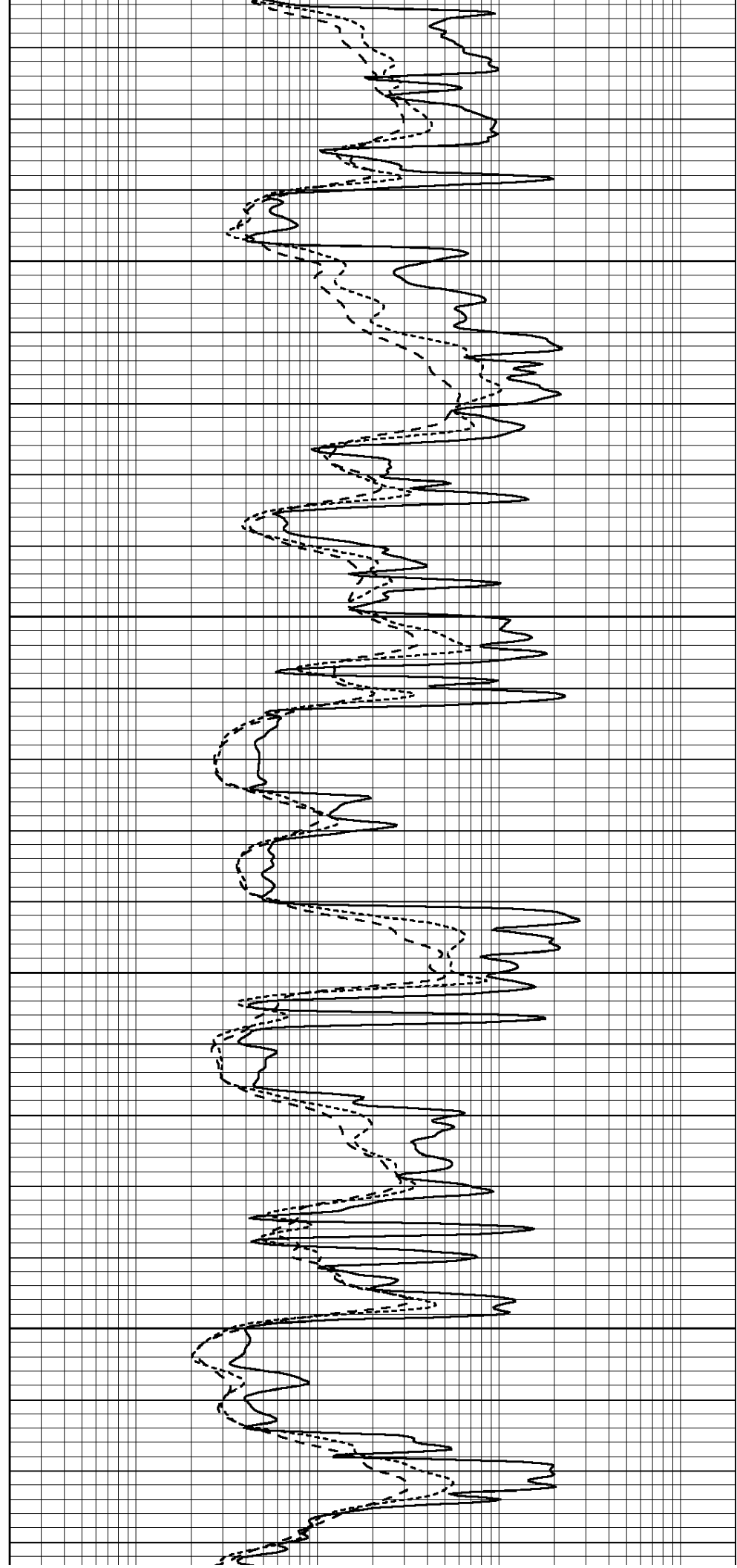


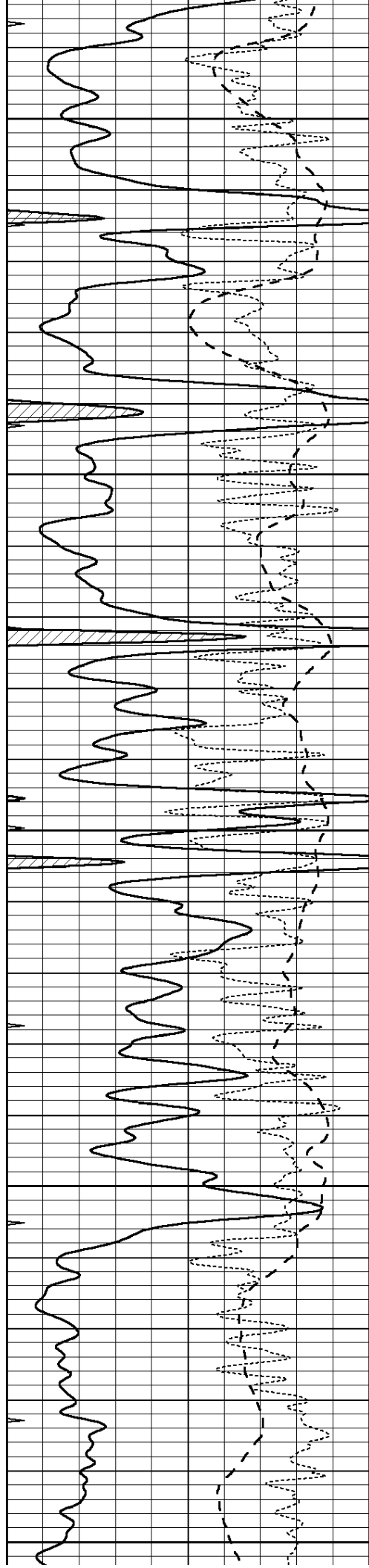
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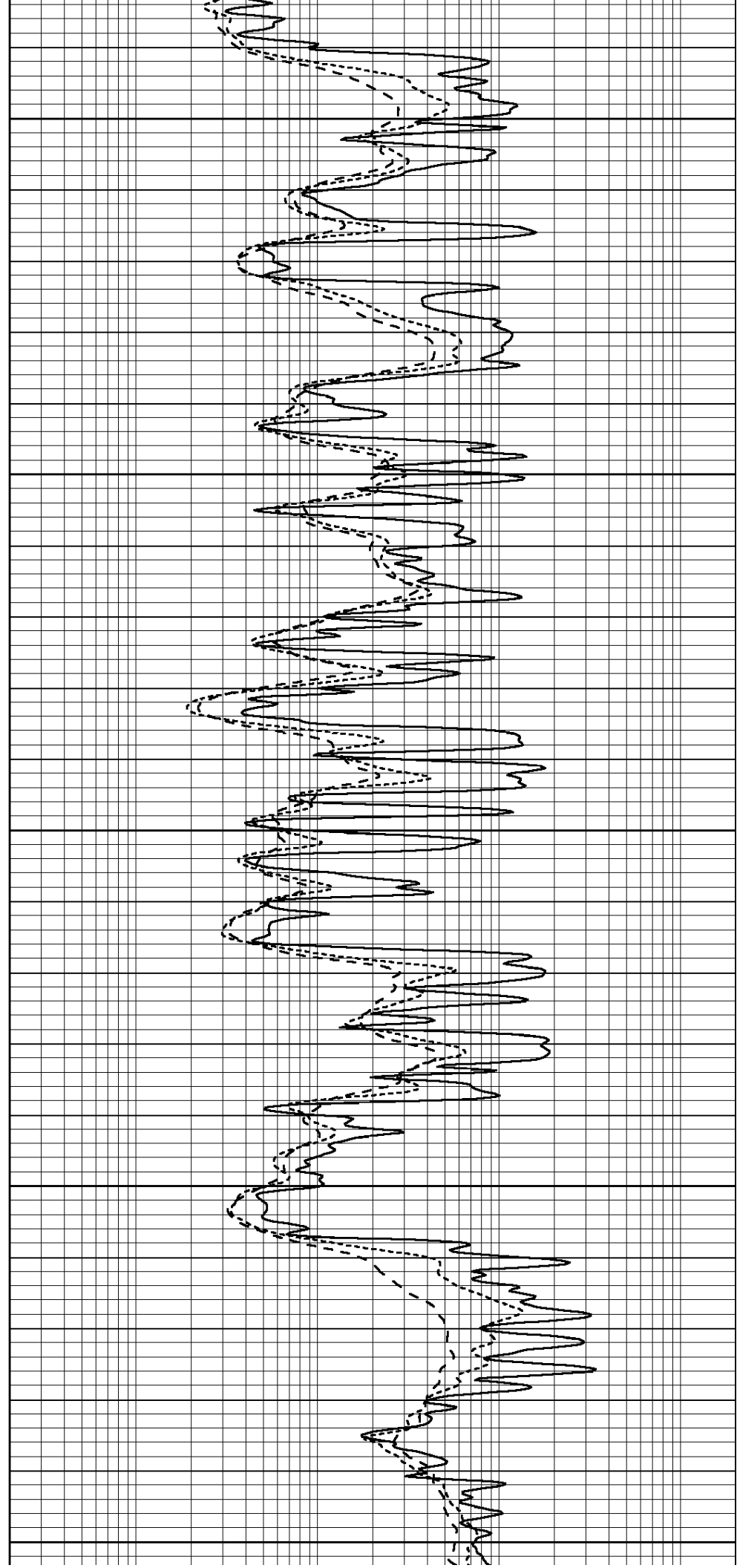
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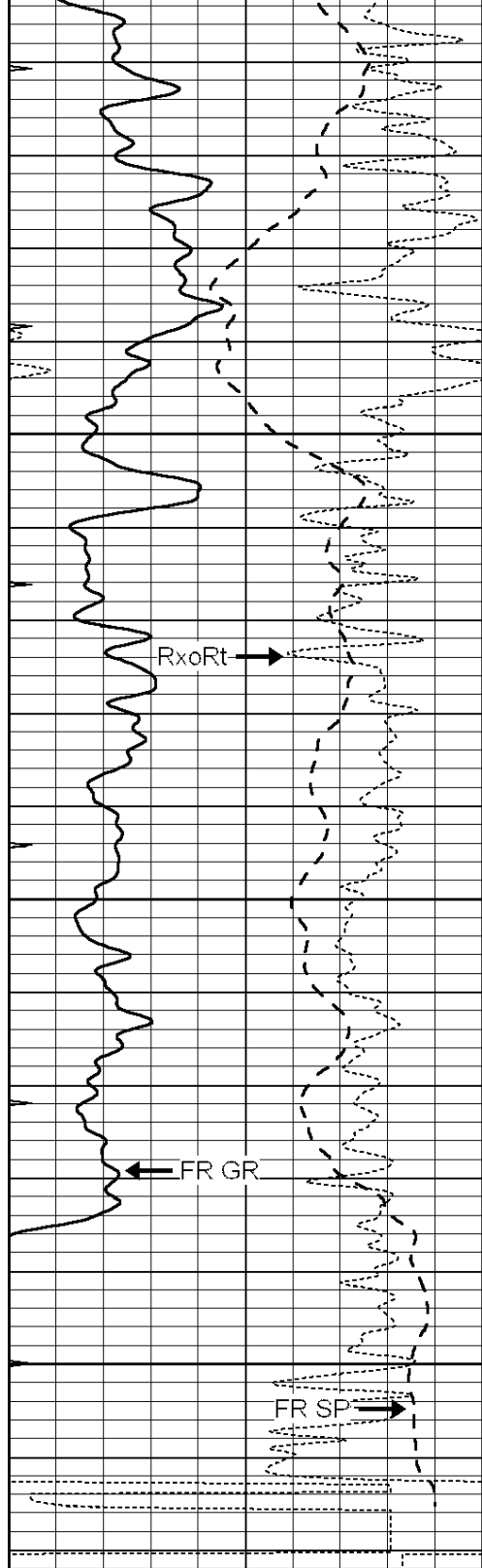
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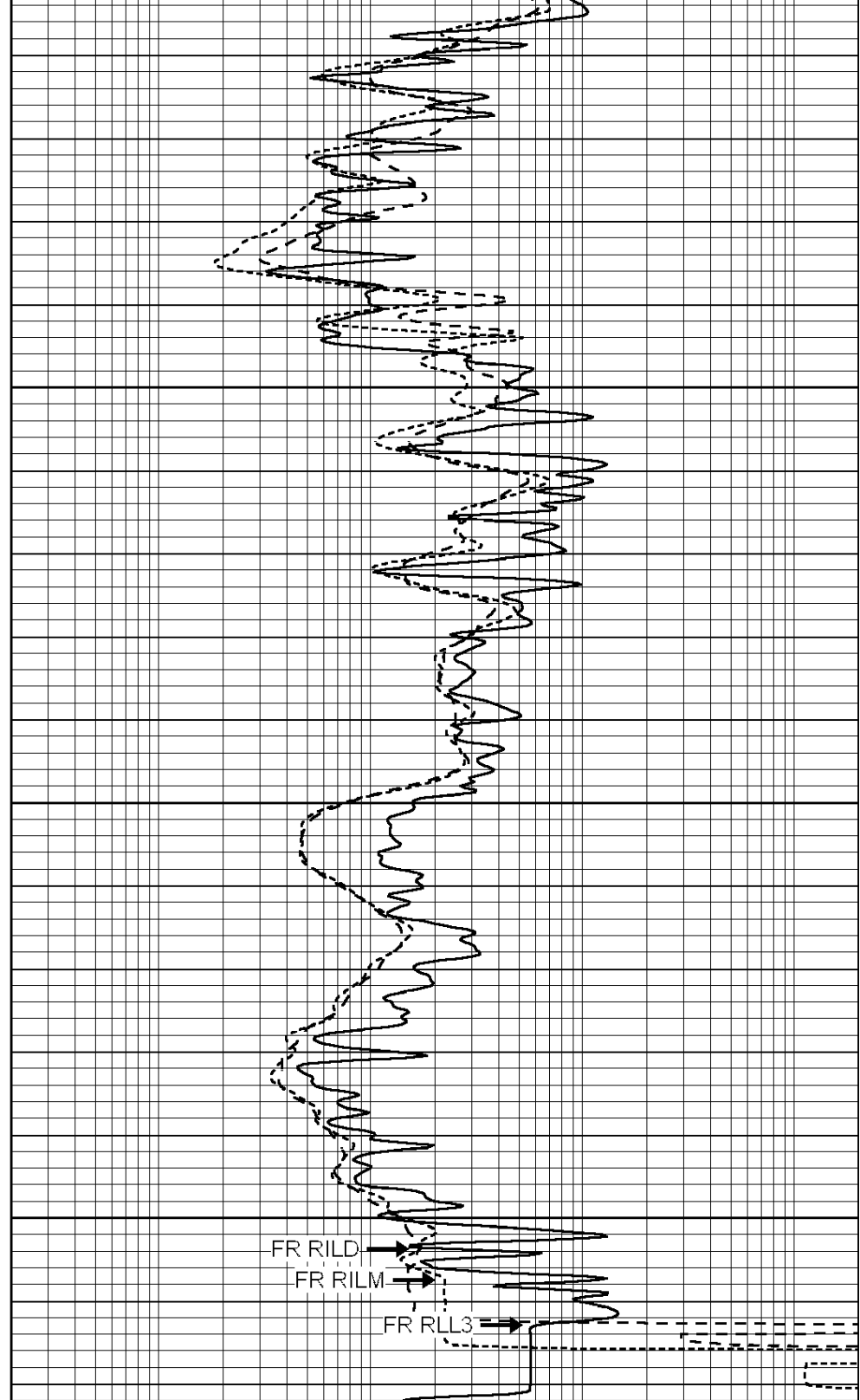
4600





4650  
4700  
4750  
LTD 4765

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20



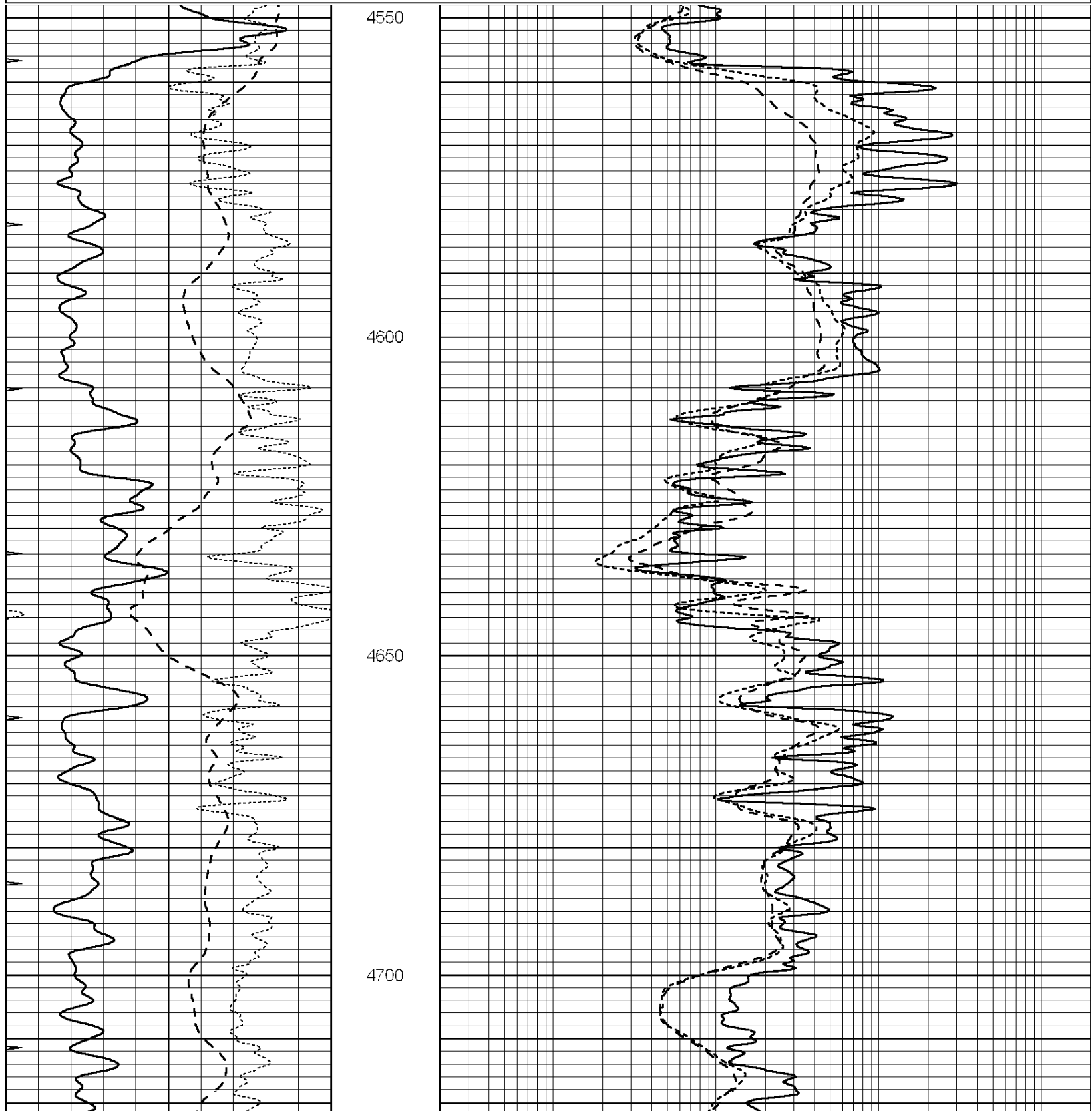
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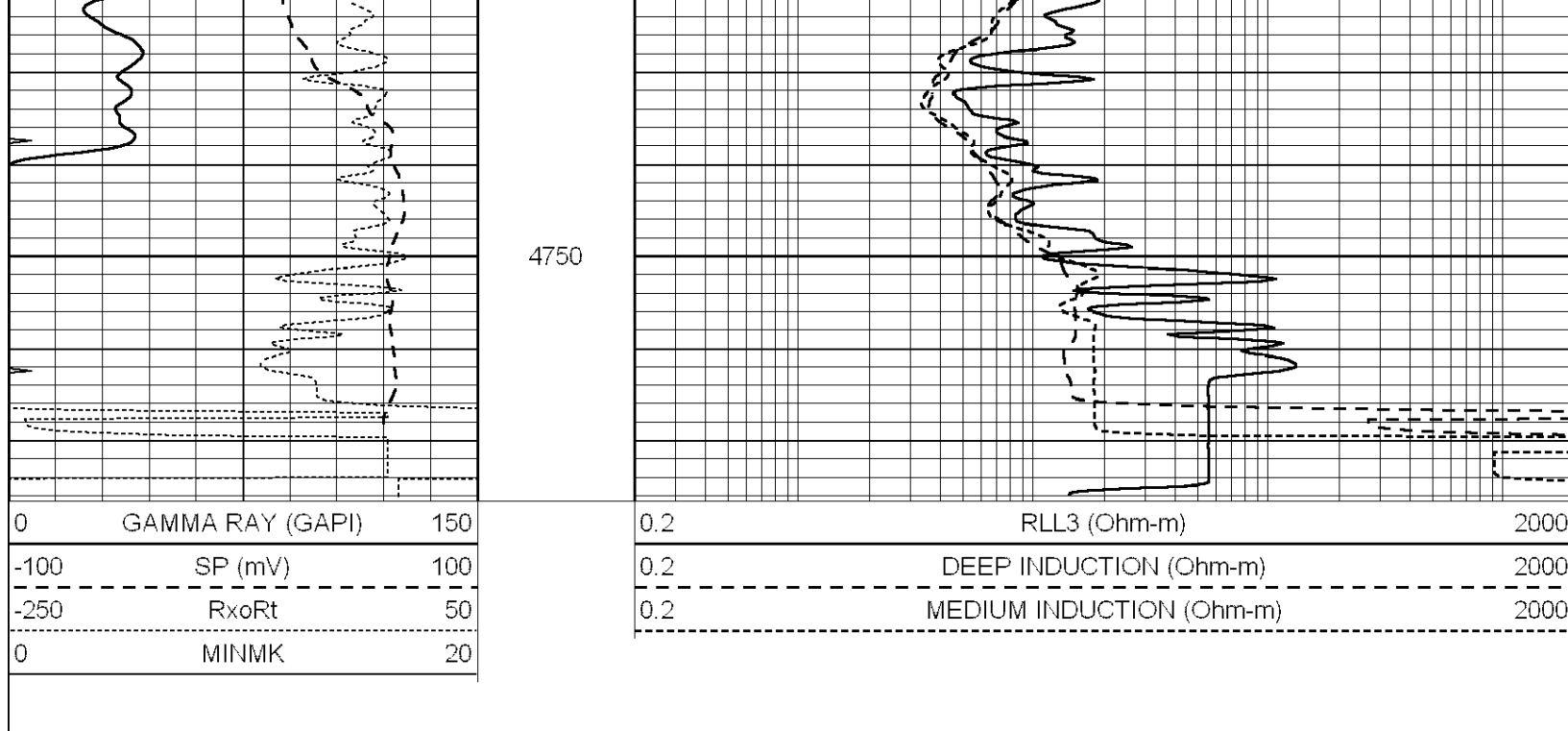


# REPEAT SECTION

Database File: 010998ddn.db  
 Dataset Pathname: pass2.3  
 Presentation Format: \_dil  
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 Charted by: Depth in Feet scaled 1:240

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-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			





### Calibration Report

Database File: 010998ddn.db  
 Dataset Pathname: pass3.4  
 Dataset Creation: Tue May 07 14:50:37 2013 by Calc Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: PROBE7-DILG  
 Surface Cal Performed: Thu Apr 25 07:54:19 2013  
 Downhole Cal Performed: Sat Jan 19 19:51:38 2013  
 After Survey Verification Performed: Sat Jan 19 19:51:38 2013

#### Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	0.793	0.790	V	0.000	400.000	mmho/m	620.000	4.000
Medium	0.992	1.002	V	0.000	464.000	mmho/m	680.000	-42.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.041	0.642	V	0.000	400.000	mmho/m	664.874	-27.011
Medium	0.035	0.802	V	0.000	464.000	mmho/m	604.936	-21.367

#### Downhole Calibration

	Readings			References			Results	
	Zero	Cal	V	Zero	Cal	mmho/m	m'	b'
Deep	135384.000	27094.500	mmho/m	135400.000	27082.400	mmho/m	1.000	-19.259
Medium	-47330.100	-9381.740	mmho/m	-47327.100	-9389.280	mmho/m	1.000	-10.154
LL3		7.322	V		1400.000	Ohm-m		
		0.038	V		20.000	Ohm-m		
		-7.273	V		4000.000	mmho-m		

#### After Survey Verification

	Readings			Targets			Results	
	Zero	Cal	mmho/m	Zero	Cal	mmho/m	m'	b'
Deep	0.000	0.000	mmho/m	135384.000	27094.500	mmho/m	1.000	0.000

Medium	0.000	0.000	mmho/m	-4/330.100	-9381.740	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1400.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		4000.000	mmho-m		

Compensated Density Calibration Report

Serial-Model: GEAR1-GEARHART  
 Source / Verifier: 147 / 147  
 Master Calibration Performed: Thu Apr 25 08:46:02 2013

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1205.77	610.74	cps
Aluminum	2.600	g/cc	271.21	419.72	cps
Spine Angle = 75.89			Density/Spine Ratio = 0.579		
	Size		Reading		
Small Ring	7.60	in	4.69	V	
Large Ring	14.00	in	6.52	V	

Compensated Neutron Calibration Report

Serial Number: NEU\_4I  
 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: GR5  
 Tool Model: OPEN  
 Performed: Tue May 07 11:41:40 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 3.0000 GAPI/cps