



**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company WOOLSEY OPERATING COMPANY, LLC.
Well STERNBERGER B #4
Field STRANATHAN
County BARBER State KANSAS

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Well STERNBERGER B #4
Field STRANATHAN
County BARBER
State KANSAS

Location: API #: 15-007-24259-00-00
2010' FSL & 660' FWL
S2 - N2- NW - SW
SEC 12 TWP 35S RGE 12W
GROUND LEVEL Elevation 1383
Log Measured From KELLY BUSHING 12' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CNL/CDL/PE
Elevation
K.B. 1395
D.F. 1393
G.L. 1383

Date	12/10/14		
Run Number	ONE		
Depth Driller	5075		
Depth Logger	5078		
Bottom Logged Interval	5076		
Top Log Interval	00		
Casing Driller	13 3/8 @ 217'		
Casing Logger	217'		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.2/63	CHLORIDES 3,000 PPM	
pH / Fluid Loss	11.0/9.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.00 @ 72F		
Rmf @ Meas. Temp	0.75 @ 72F		
Rmc @ Meas. Temp	1.20 @ 72F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	0.57 @ 126F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	126F		
Equipment Number	3802		
Location	HAYS, KS.		
Recorded By	IAN MABB		
Witnessed By	BILLY KLAVER		

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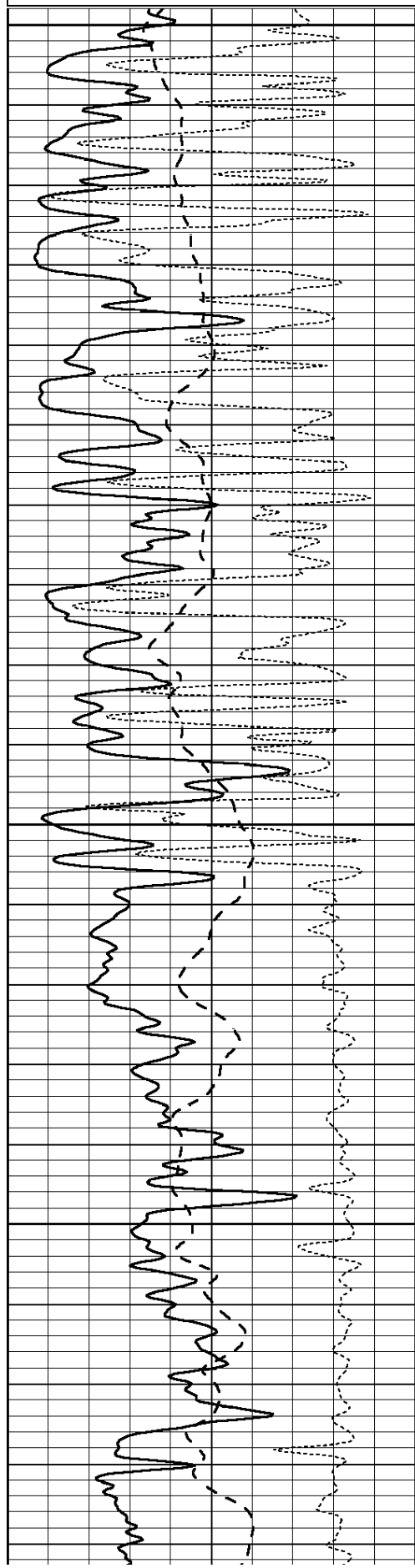
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs,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

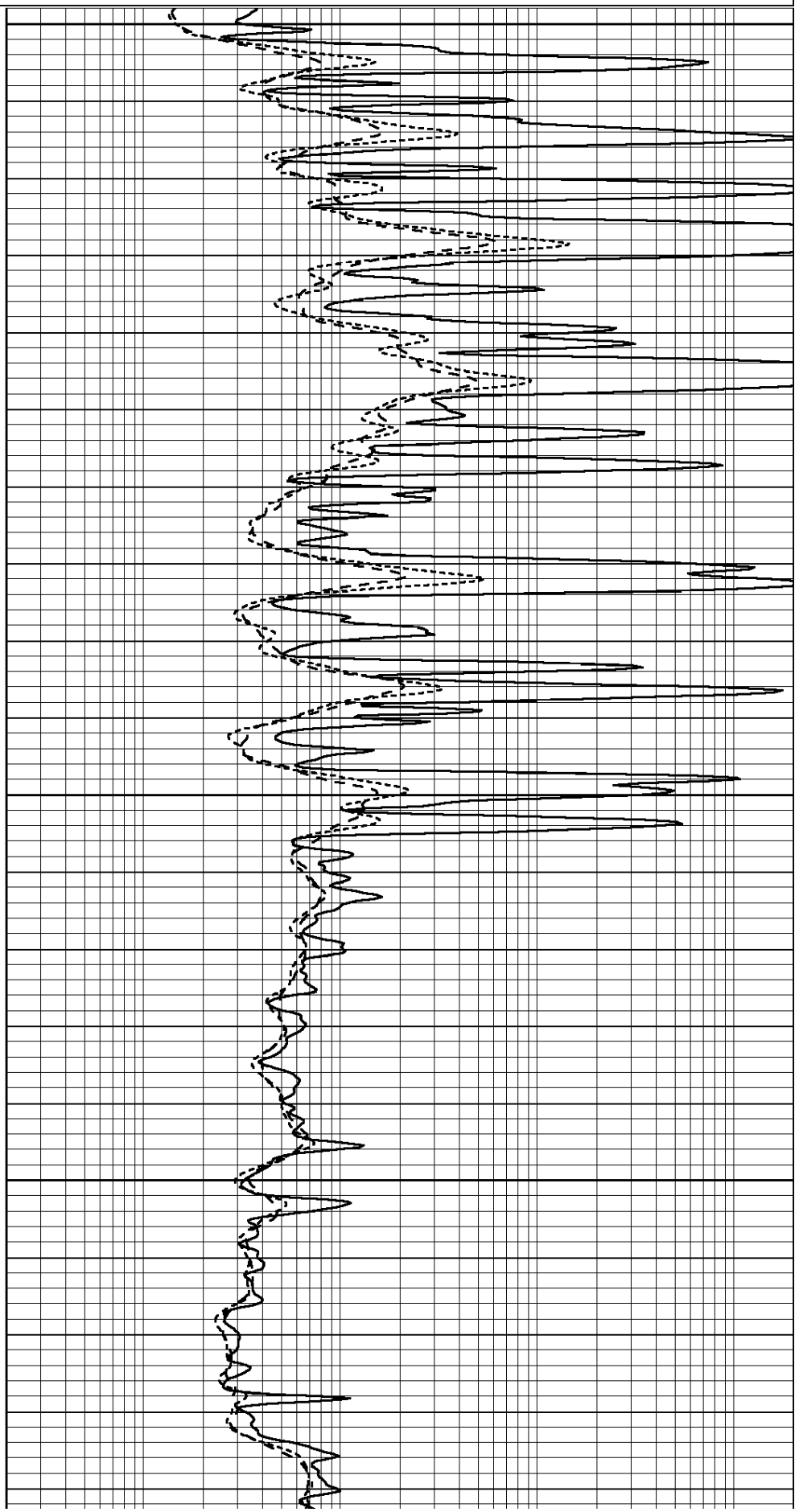
NABORS COMPLETION & PRODUCTION SERVICES CO.
785 (628 - 6395)
THANK YOU FOR YOUR BUSINESS
DIRECTIONS : HARDTNER, KS. - 4 MILES EAST - SOUTH INTO

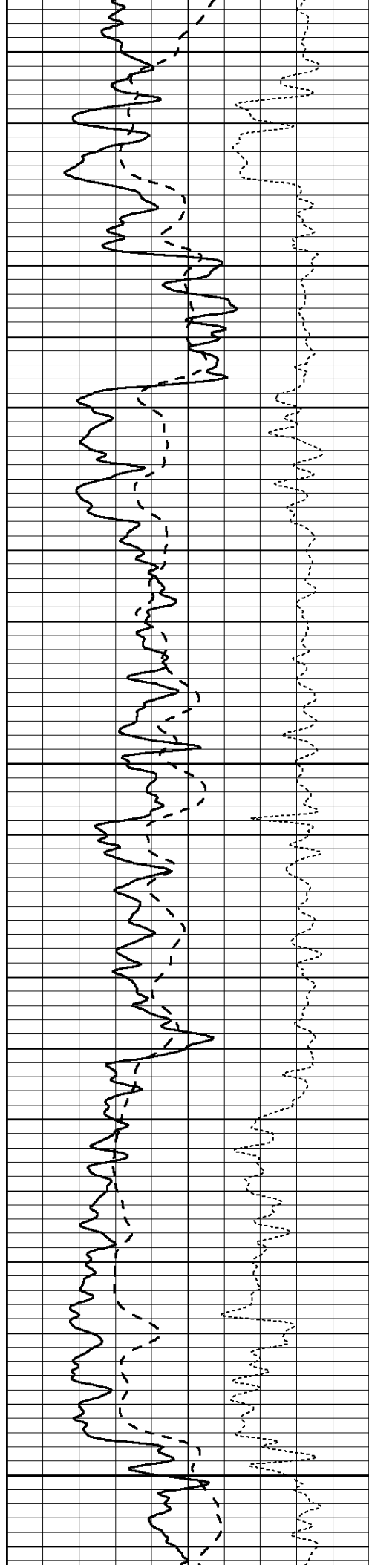
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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



1800
1850
1900
1950





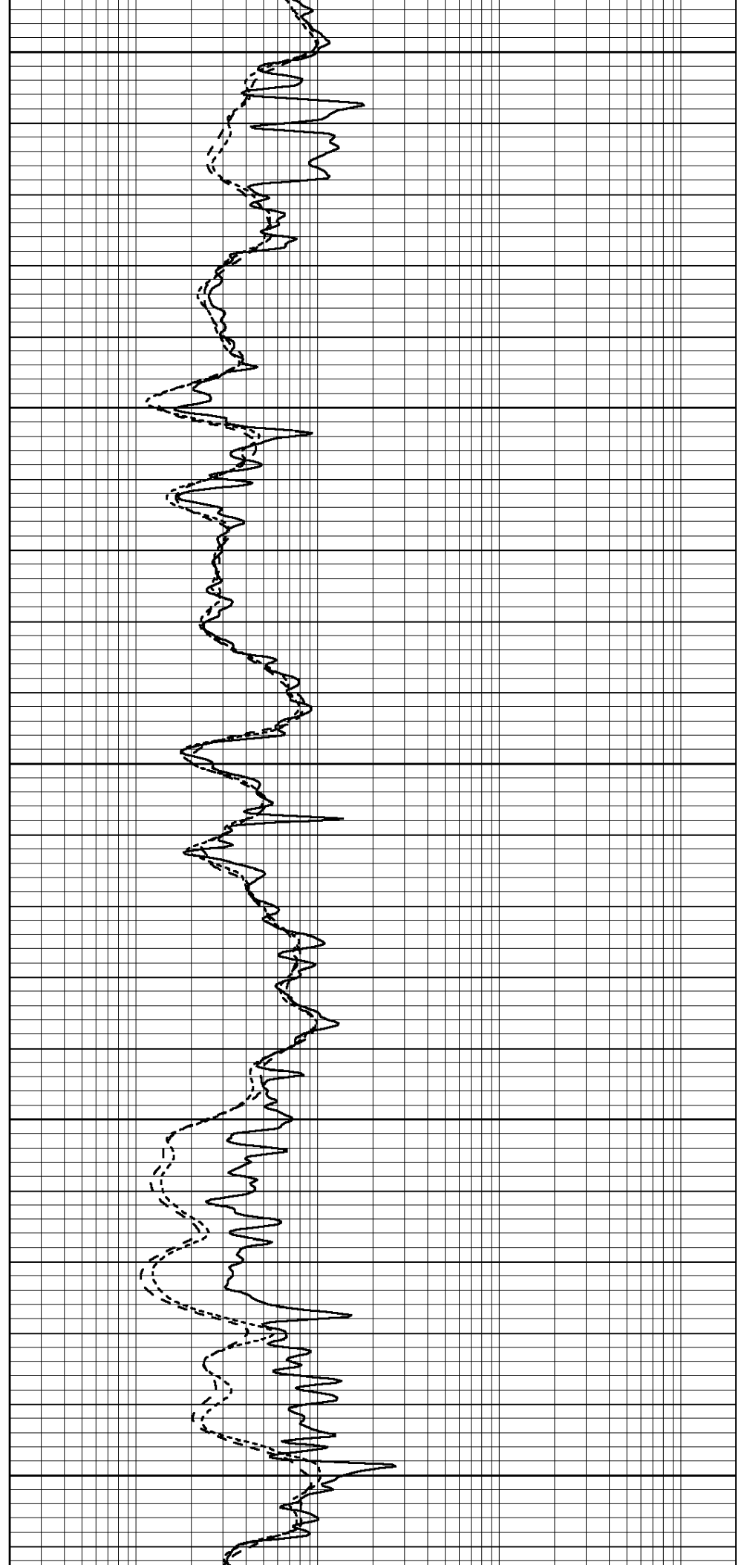
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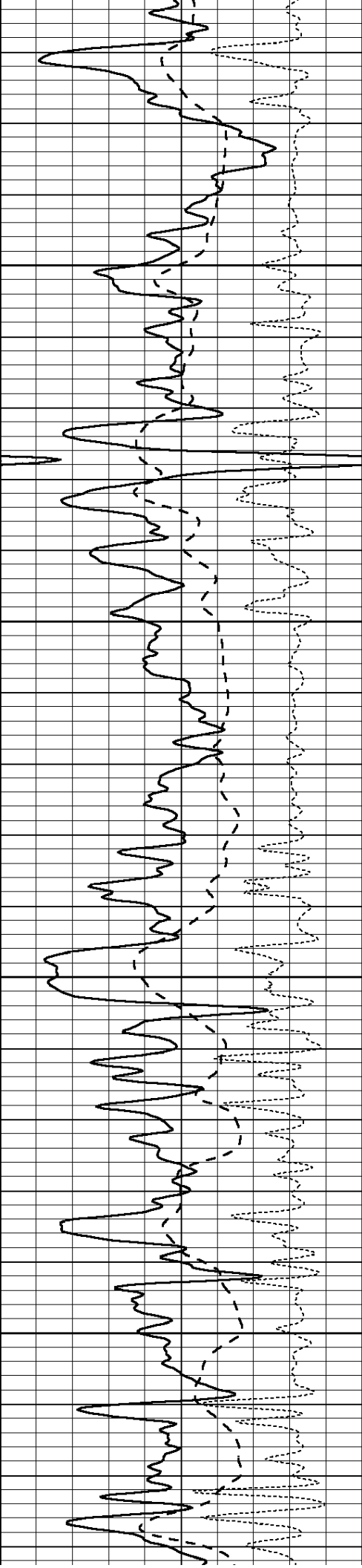
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2100

2150

2200



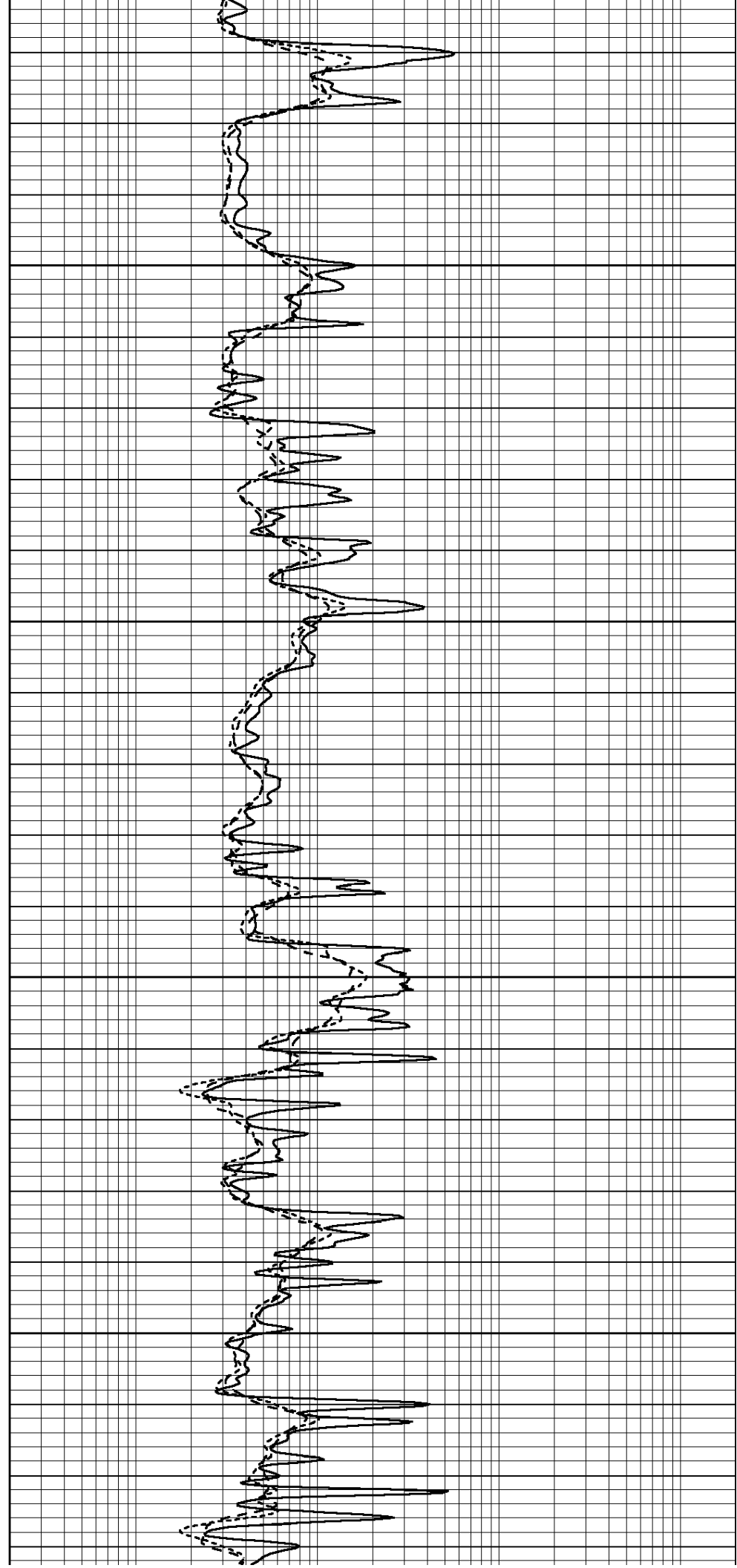


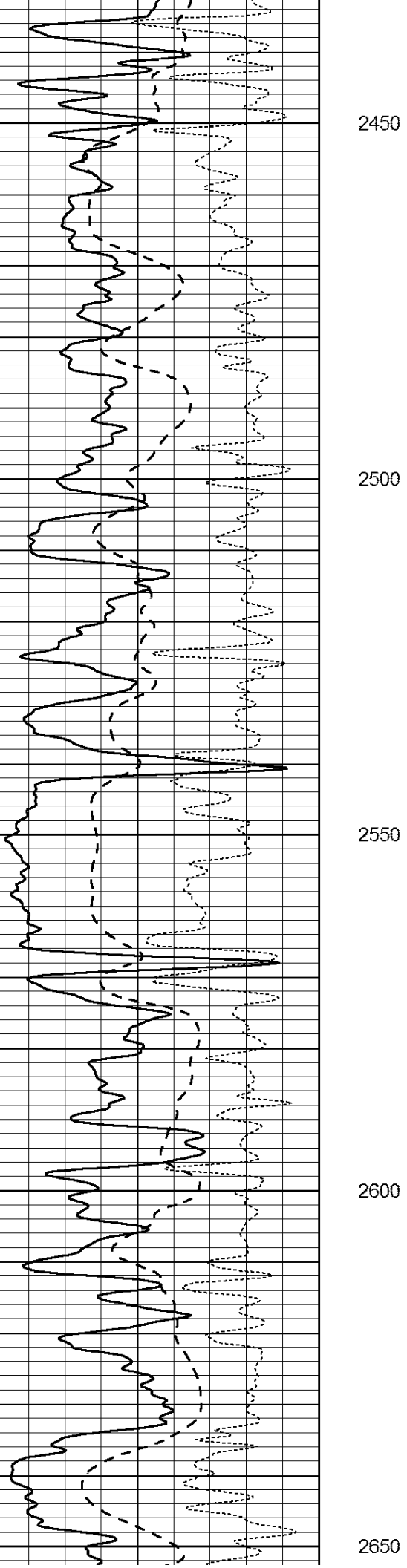
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2350

2400





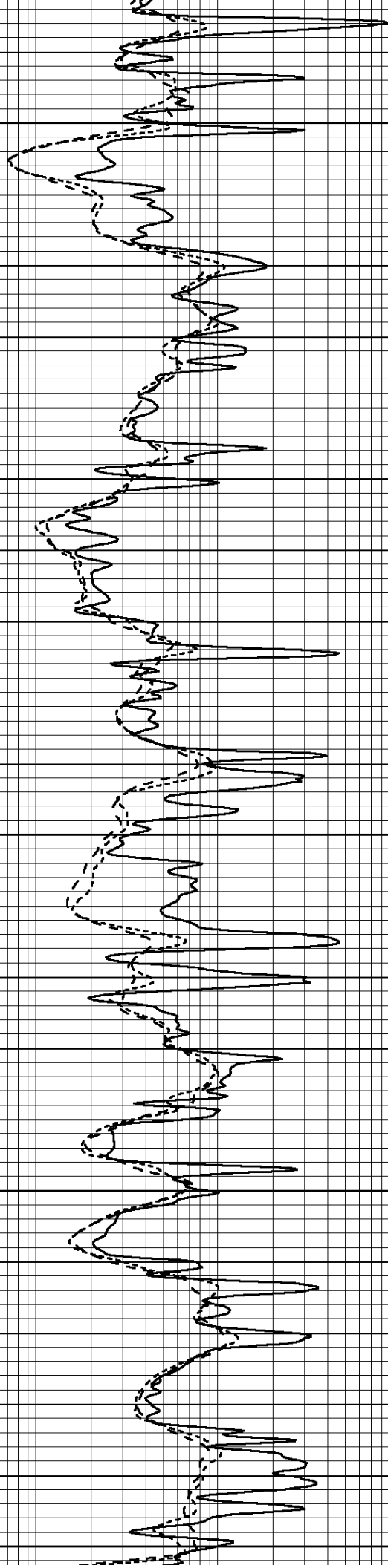
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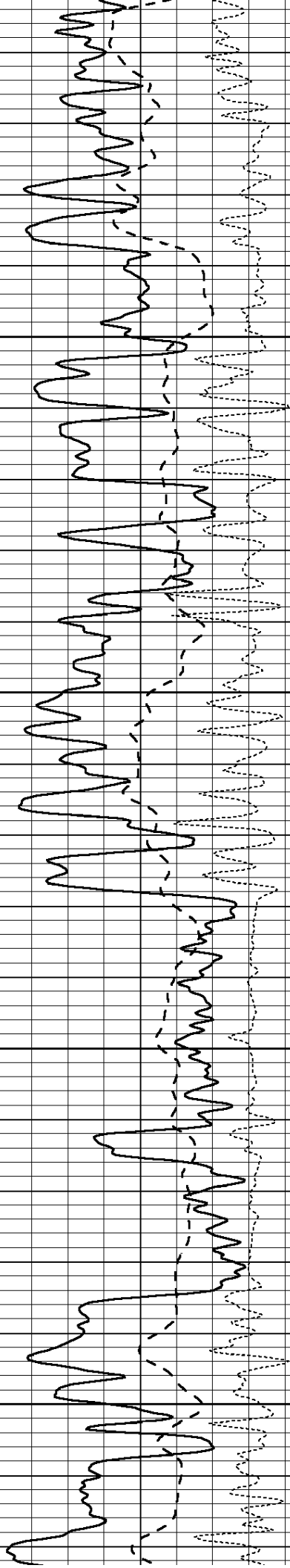
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2600

2650



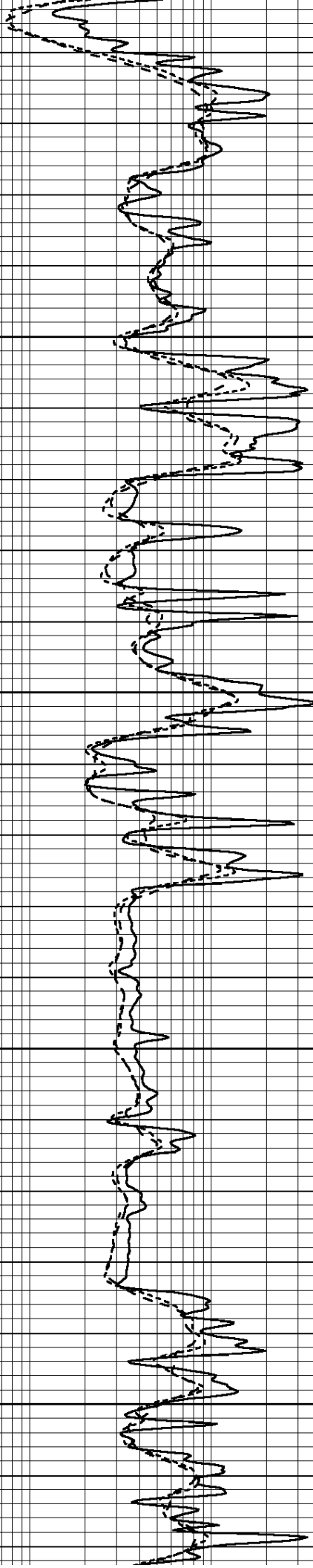


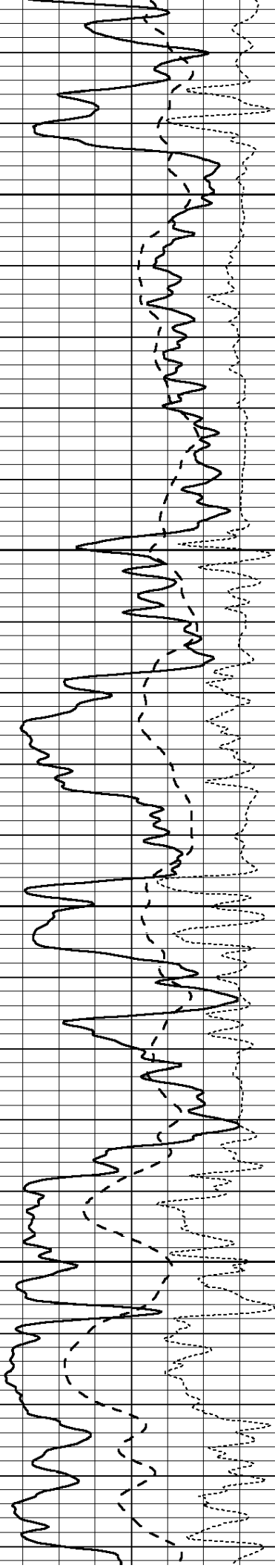
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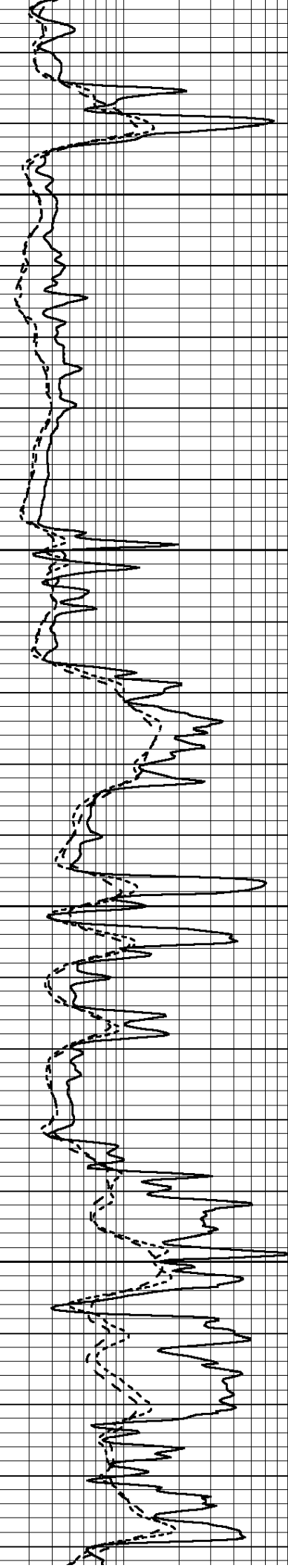


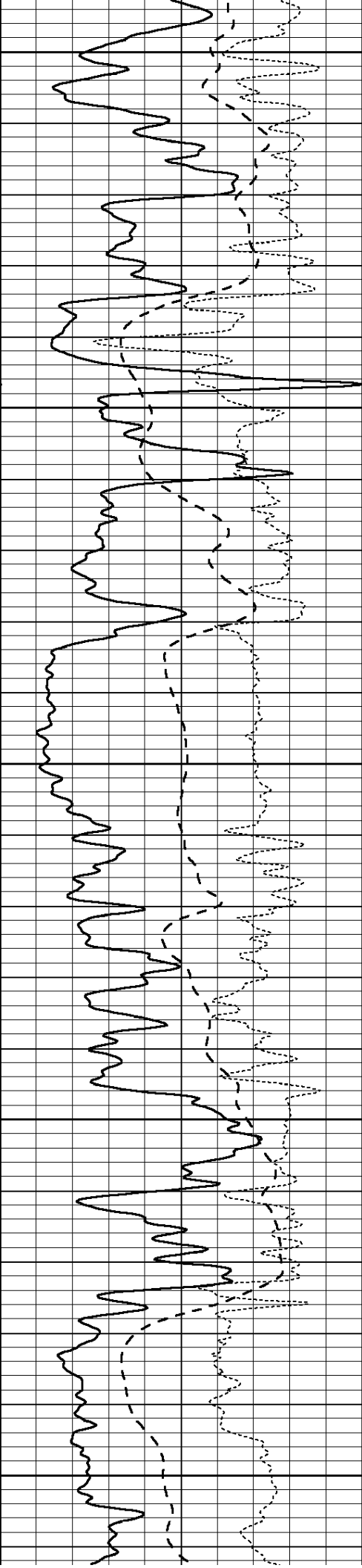
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3050





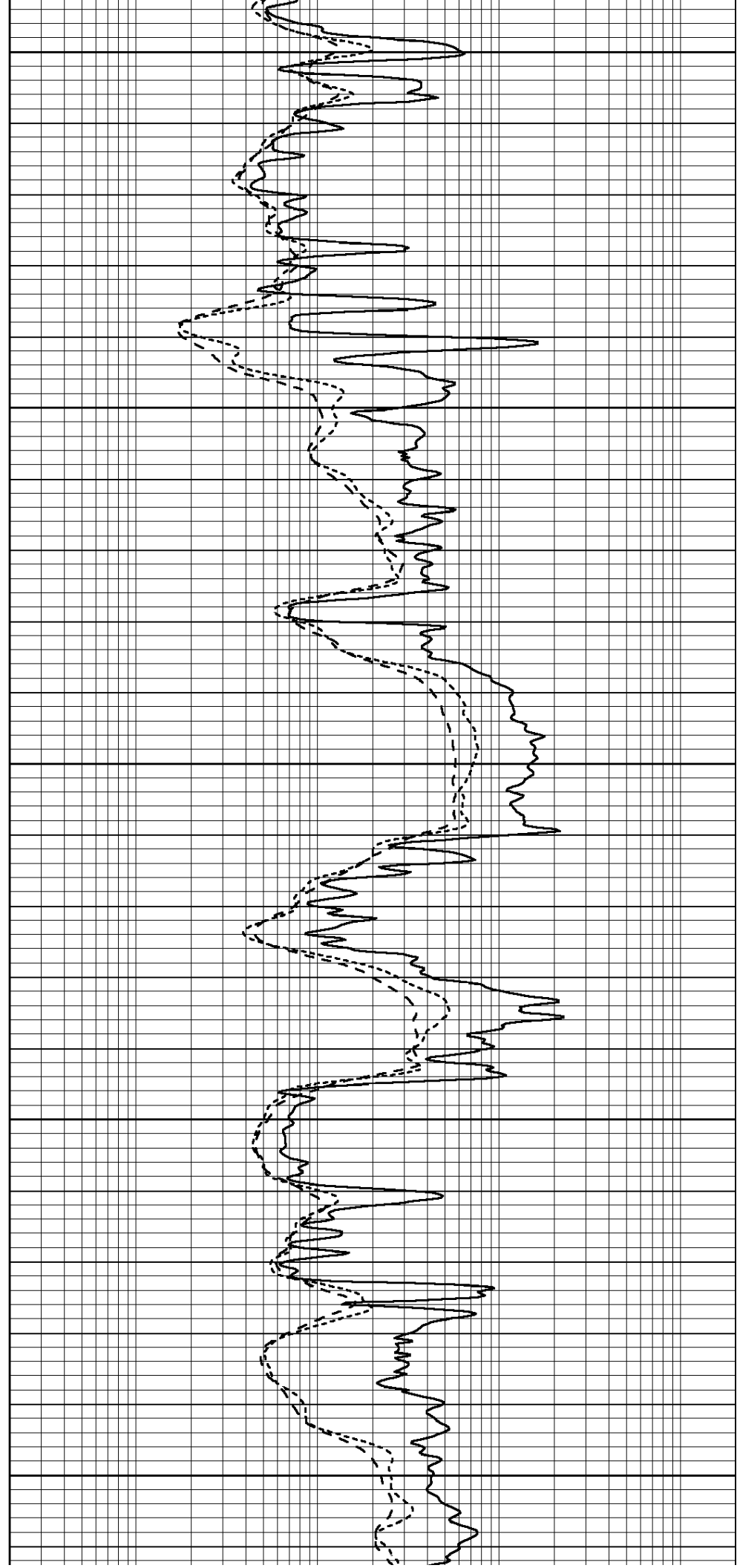
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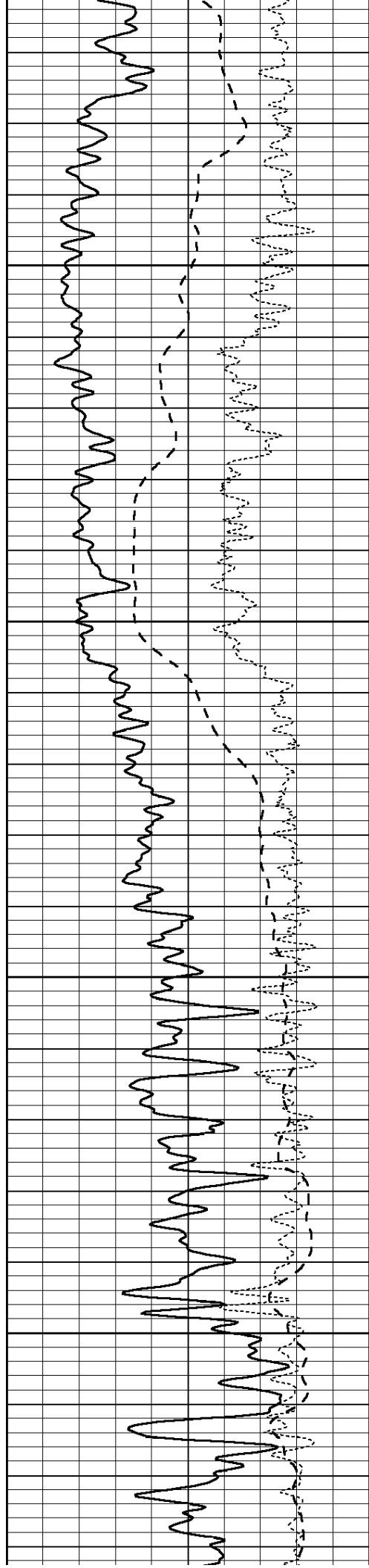
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3300



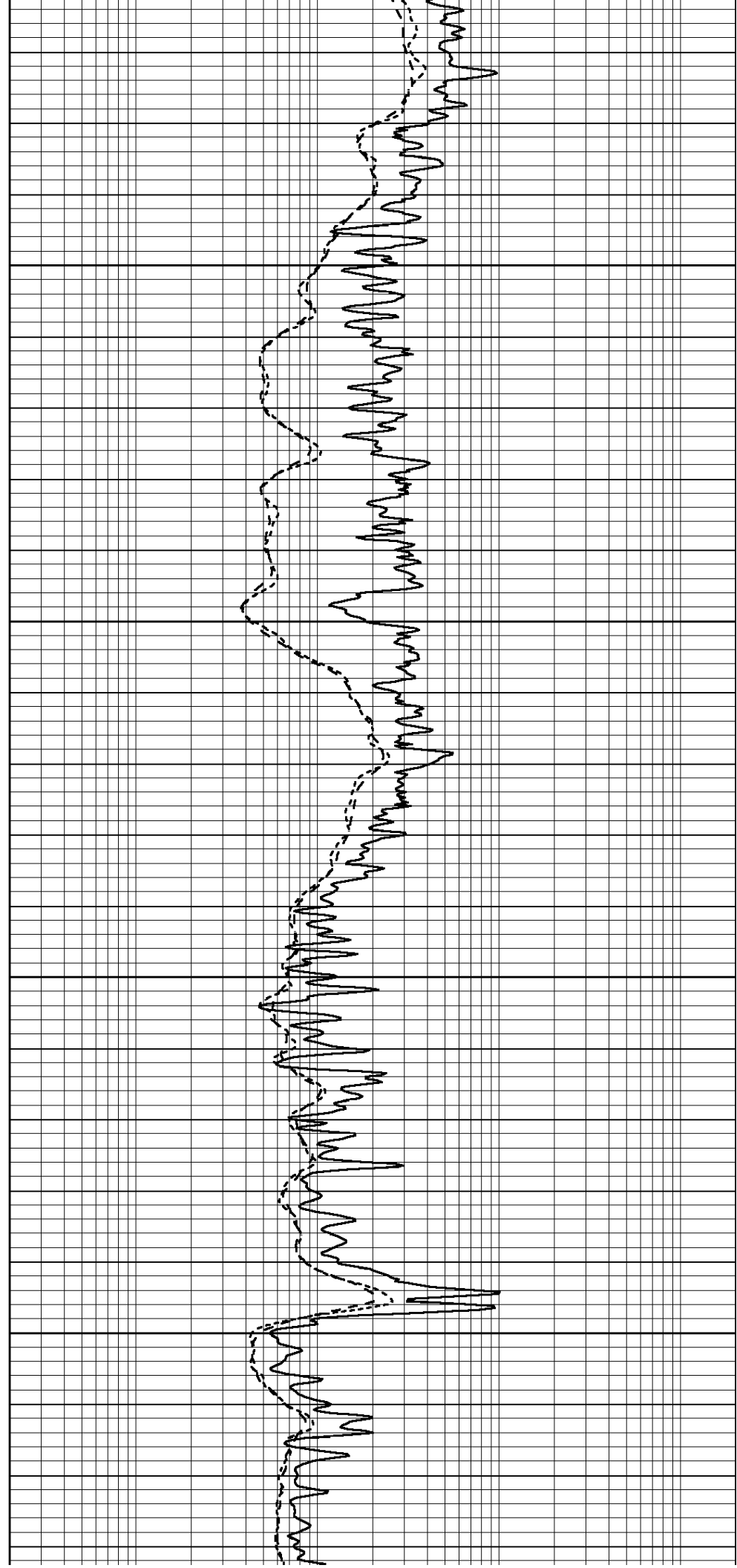


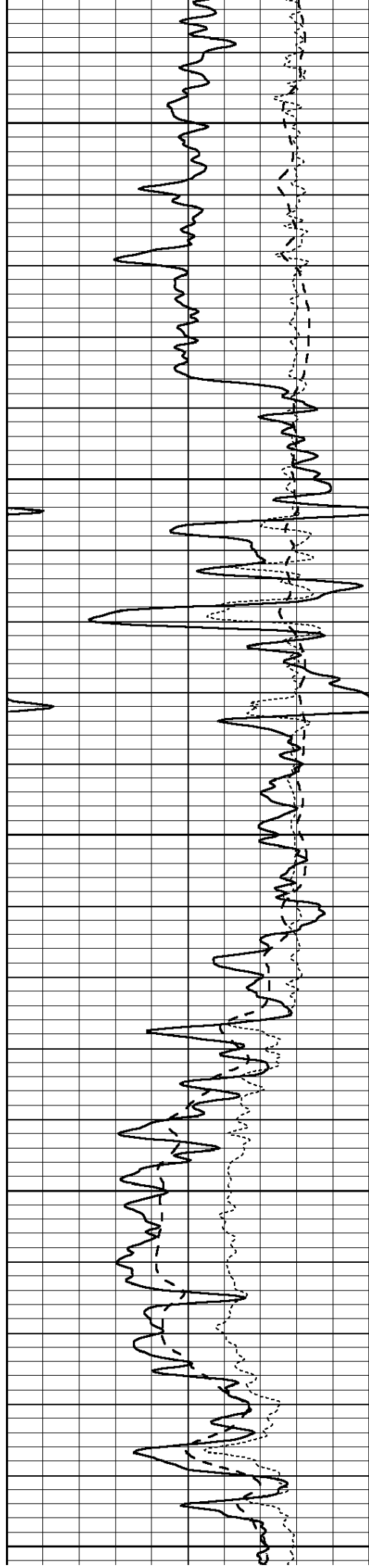
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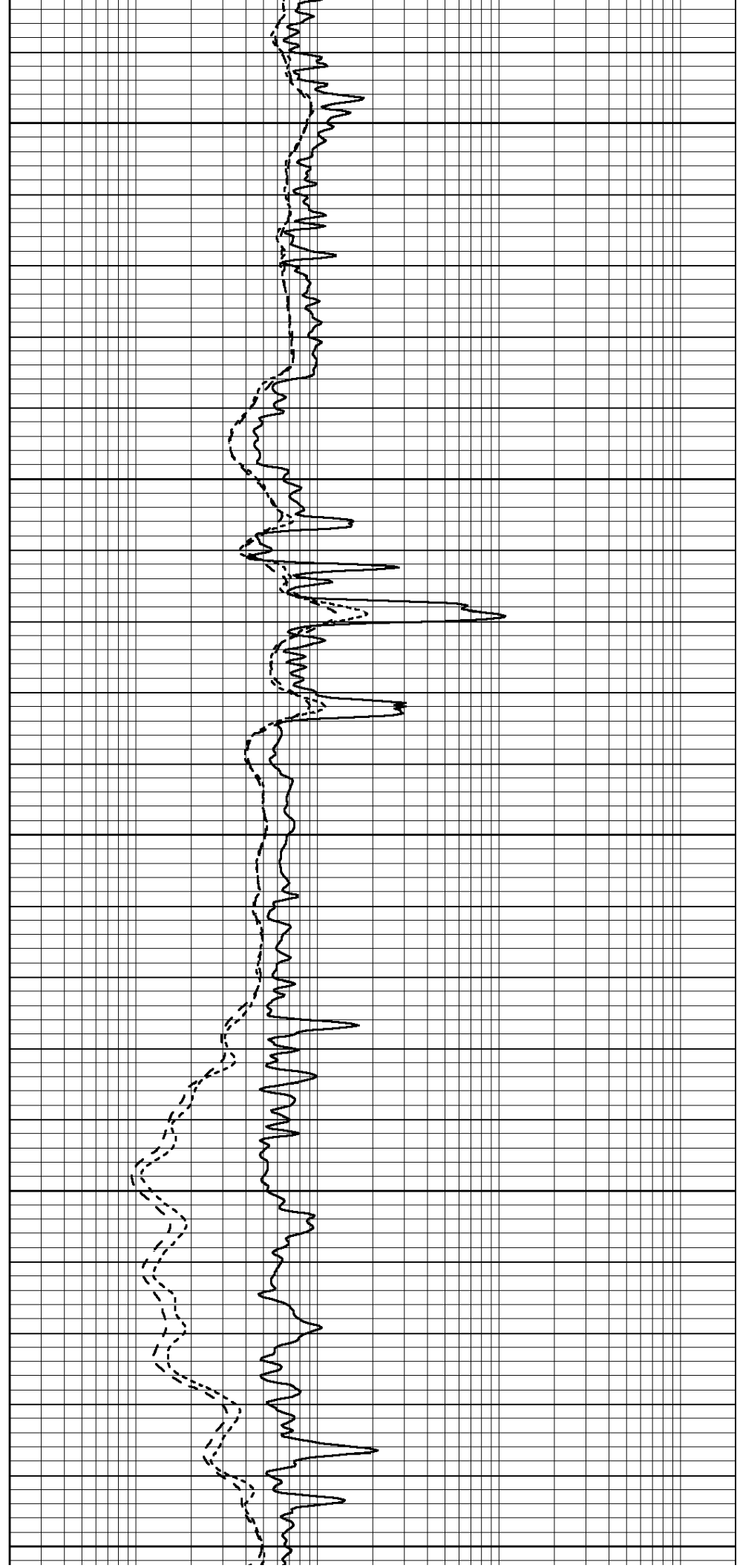
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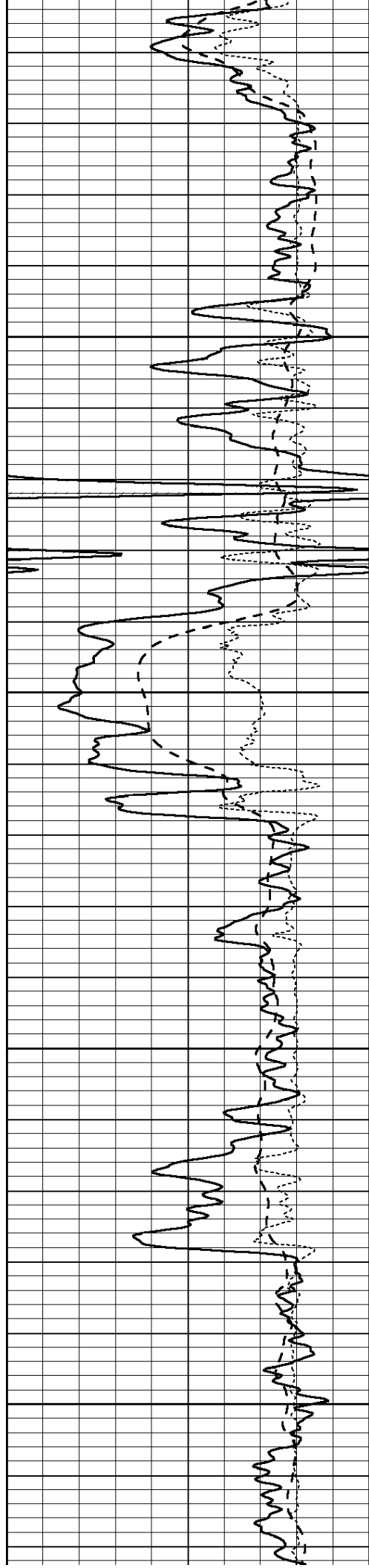
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3750



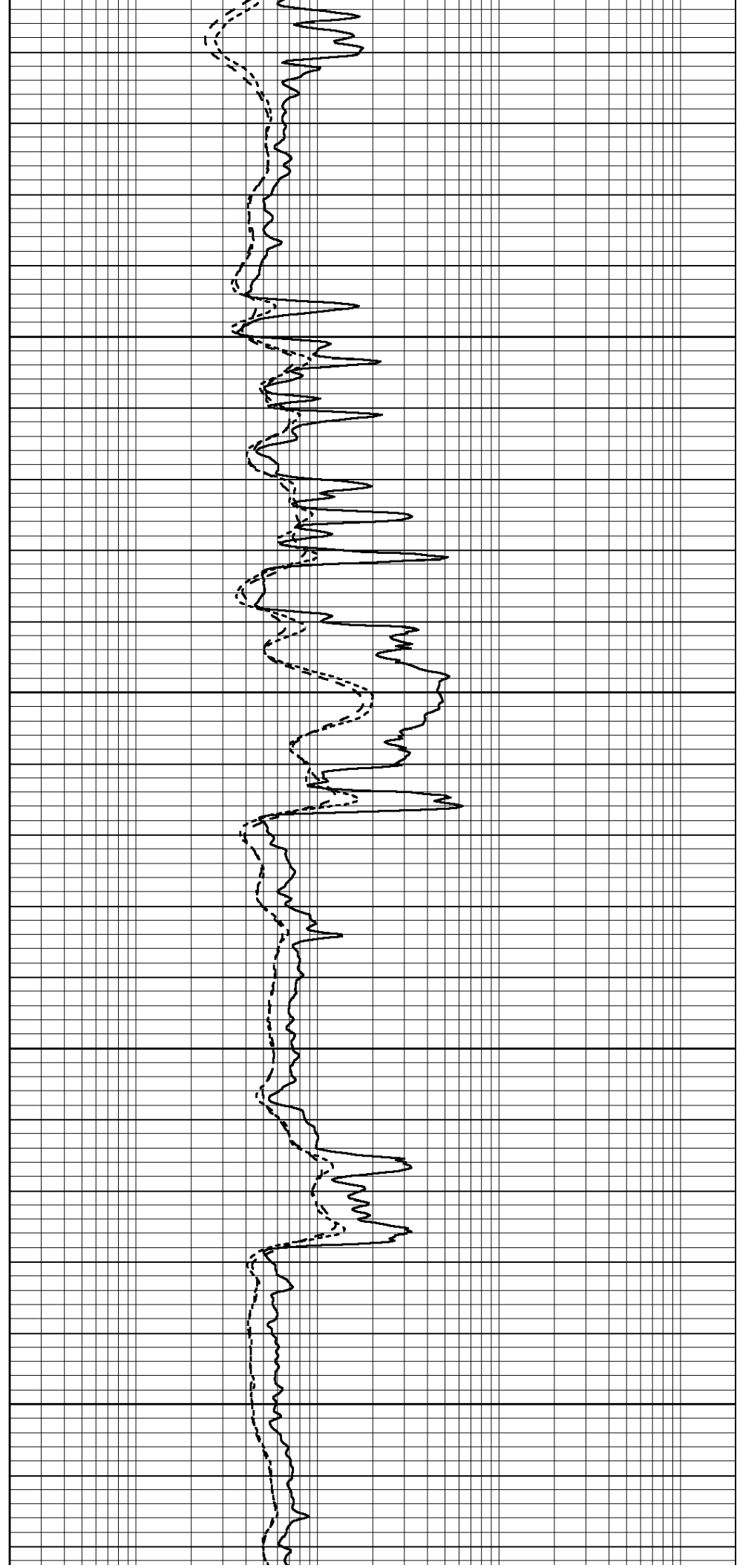


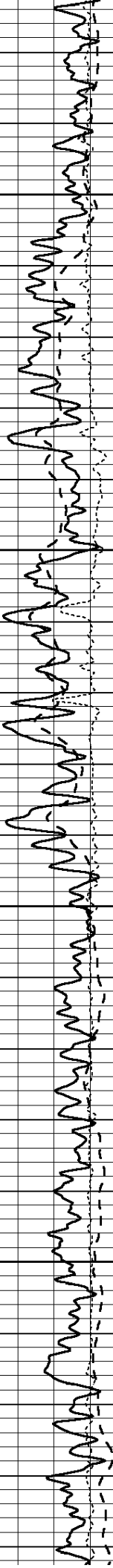
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3850

3900

3950



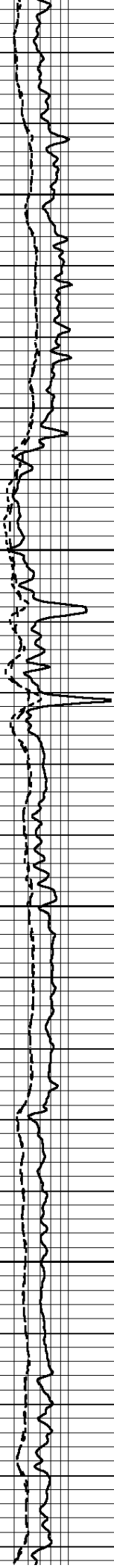


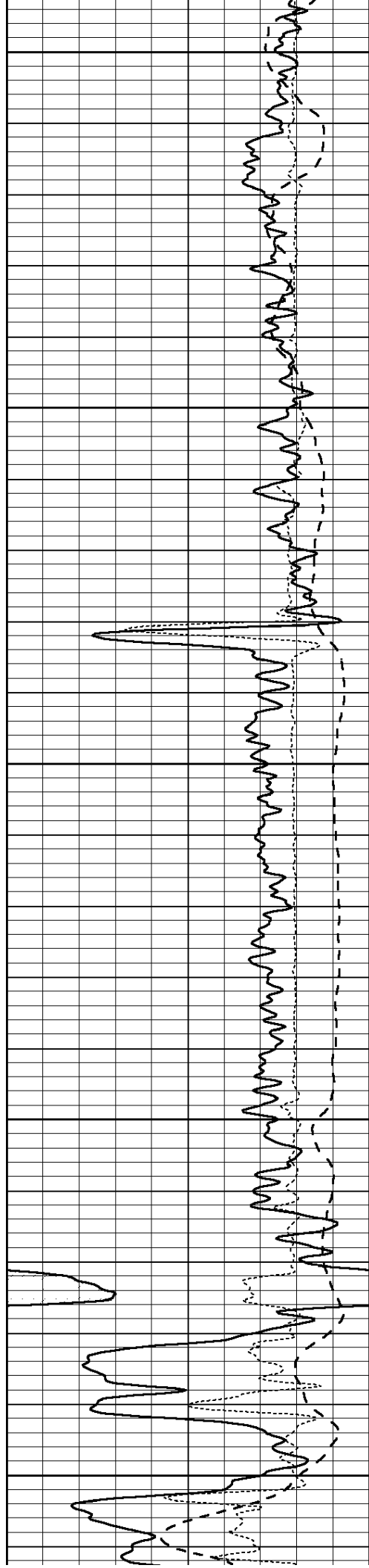
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4050

4100

4150





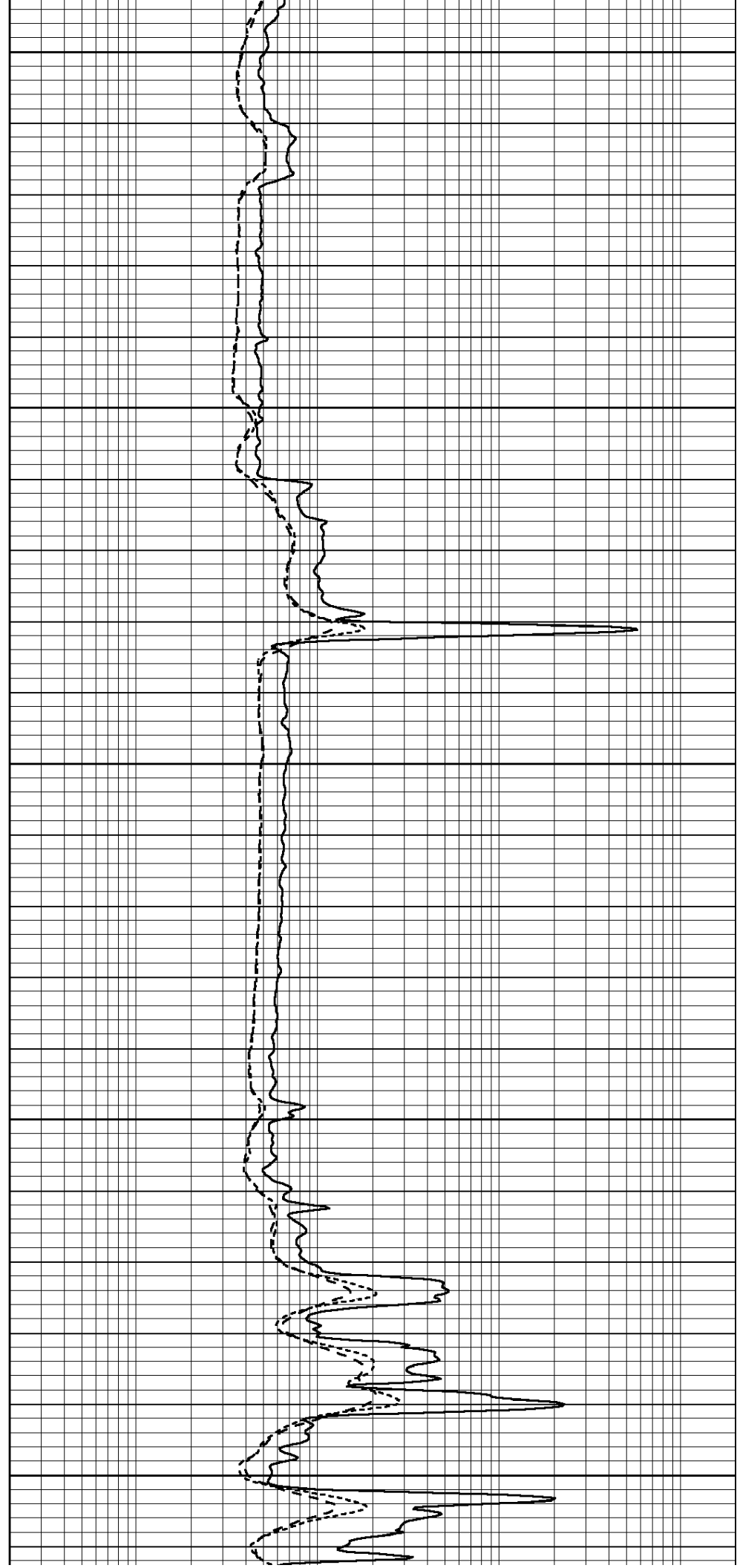
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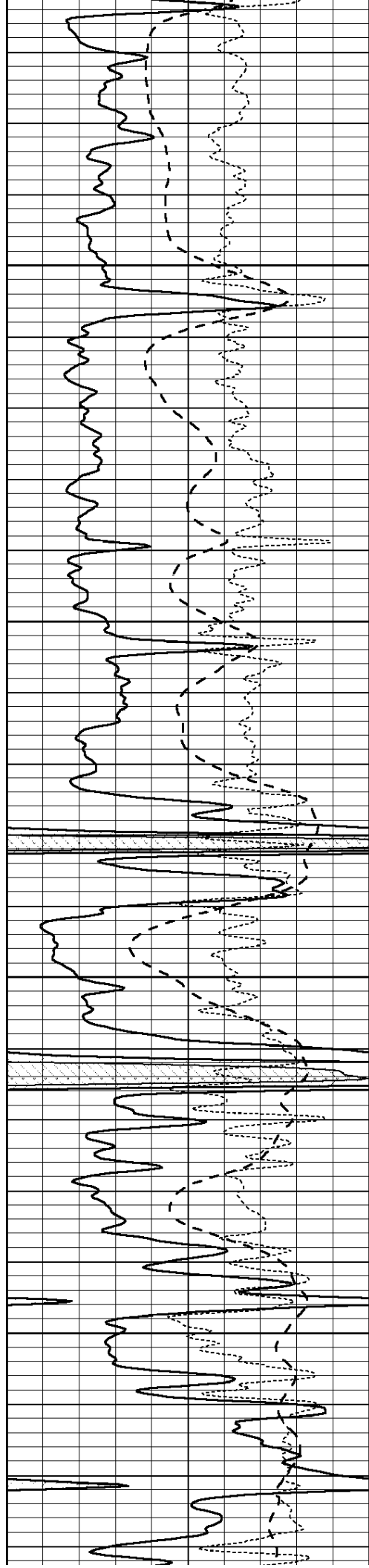
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4400



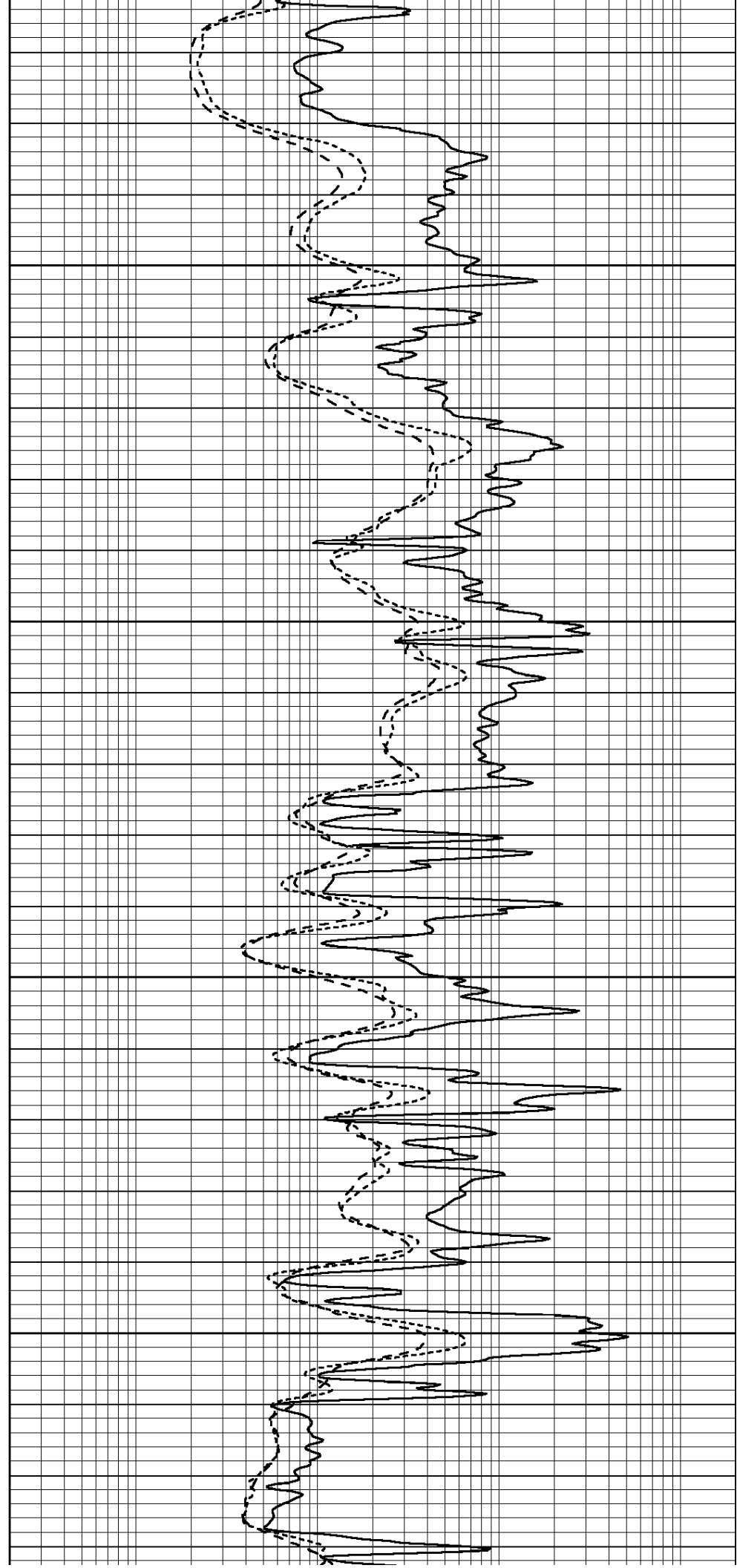


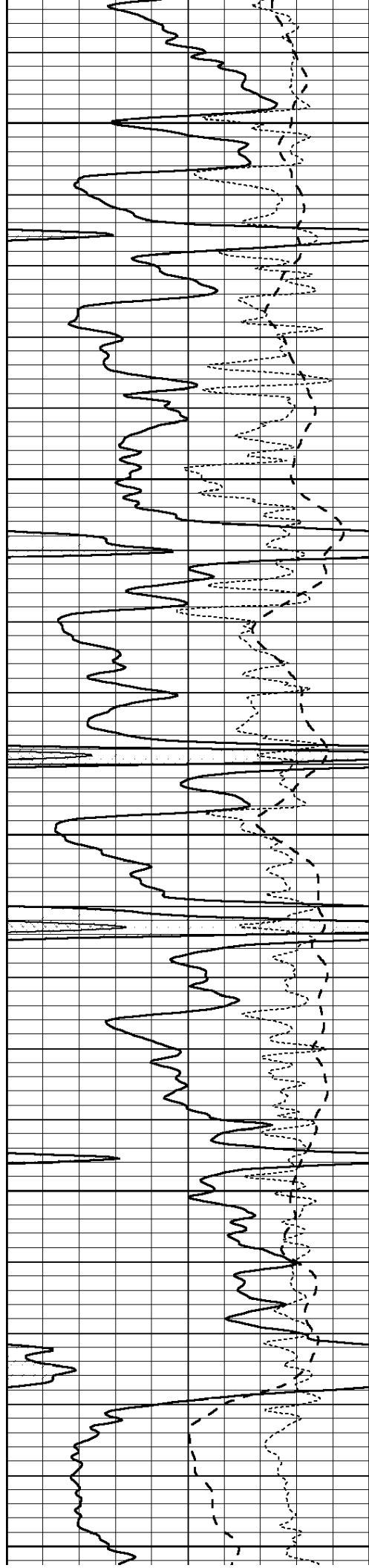
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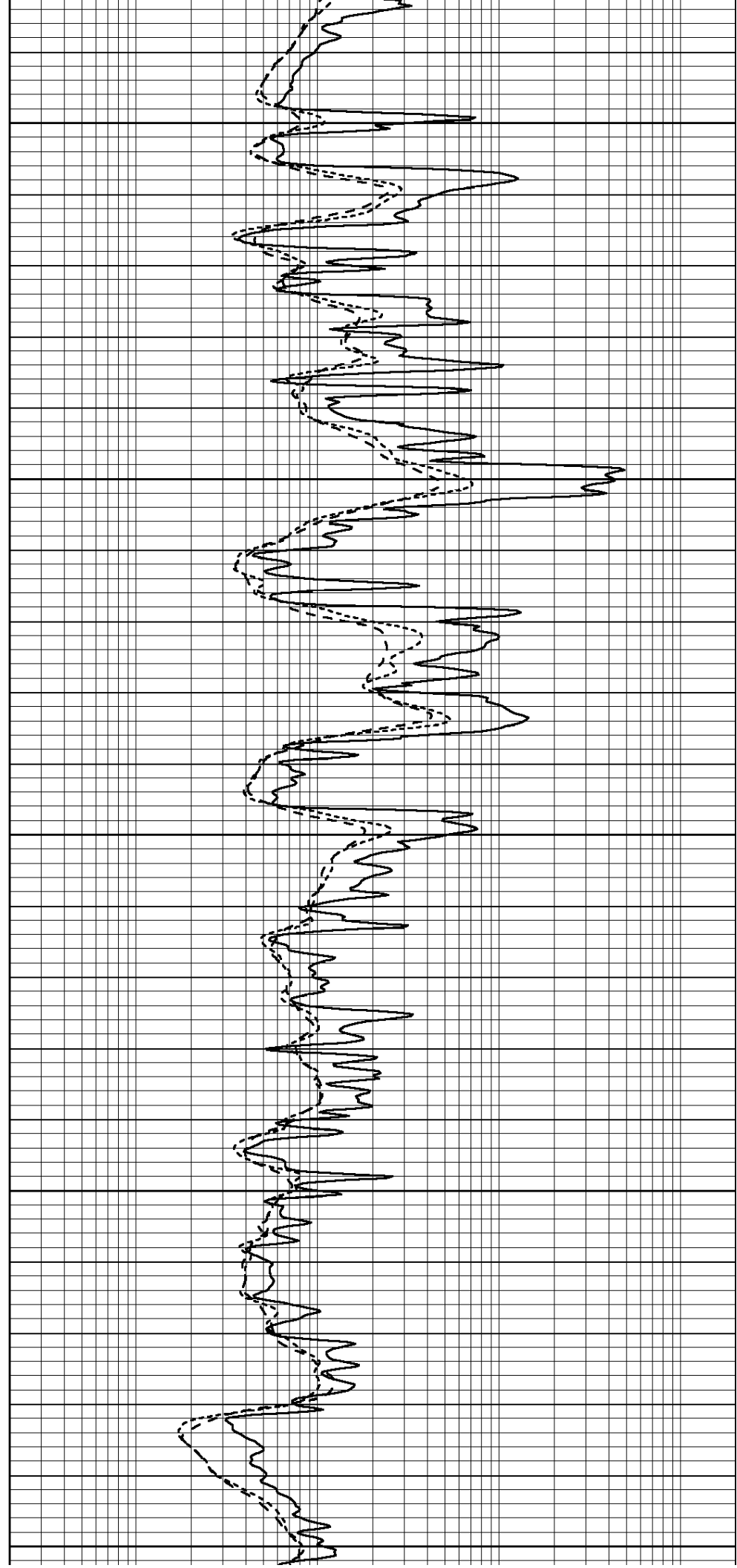
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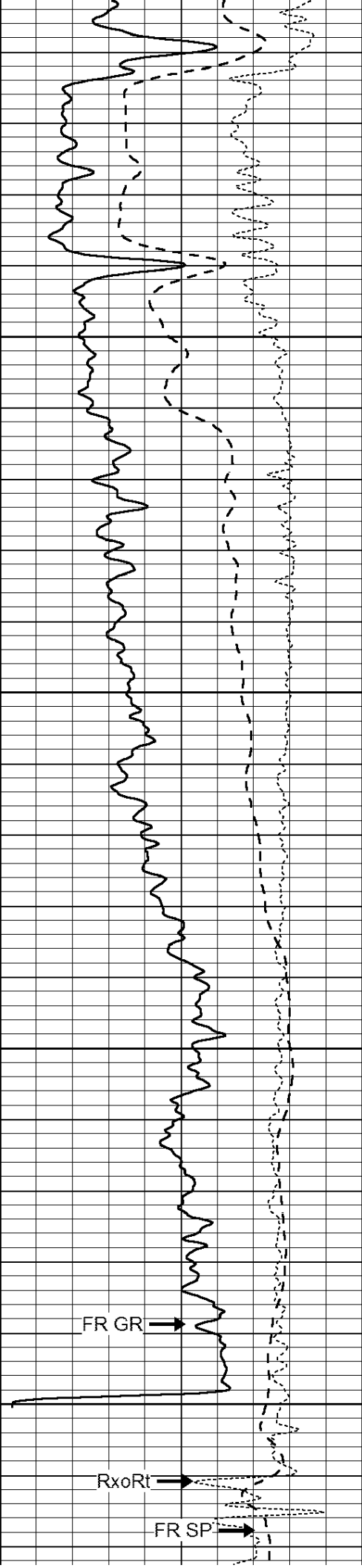
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4850



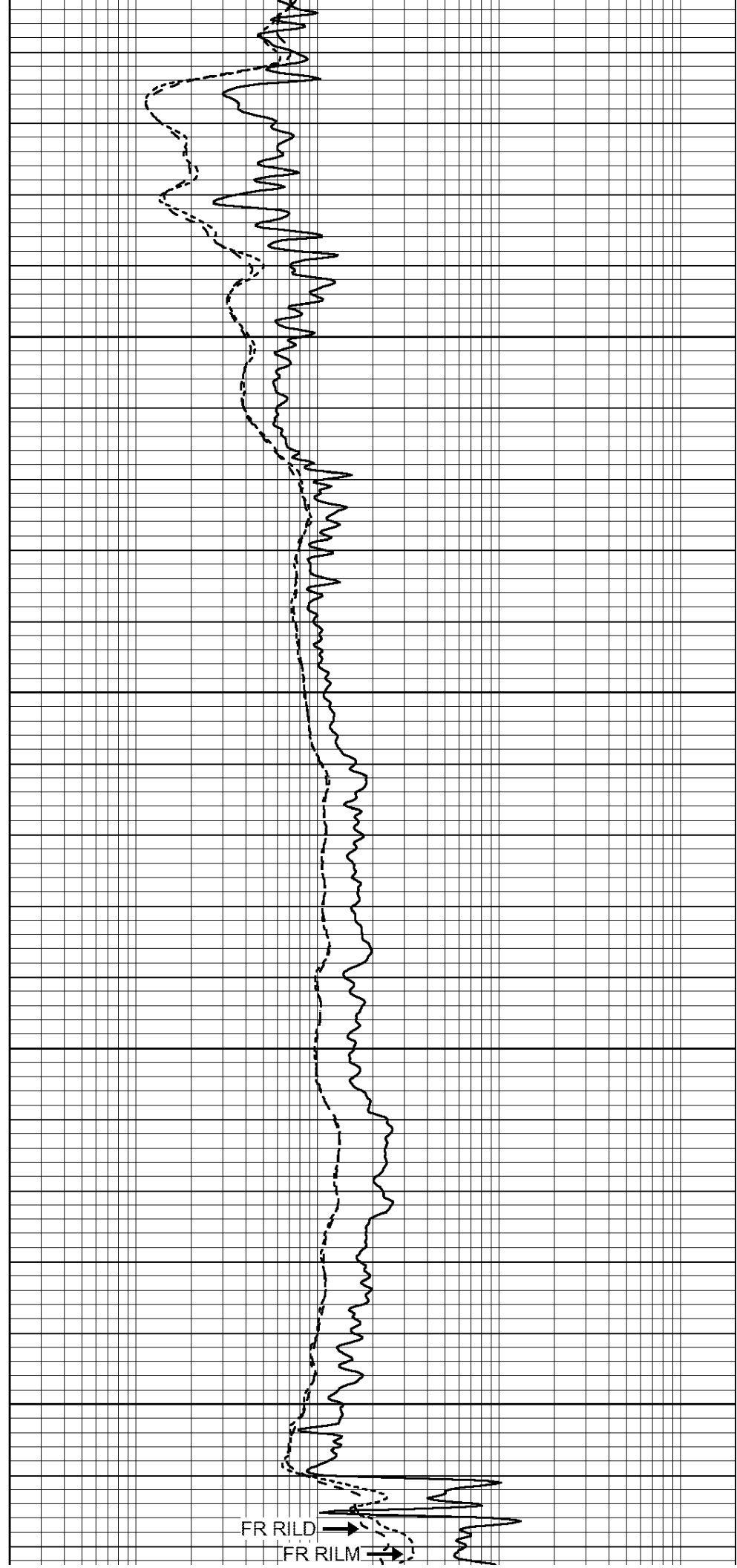


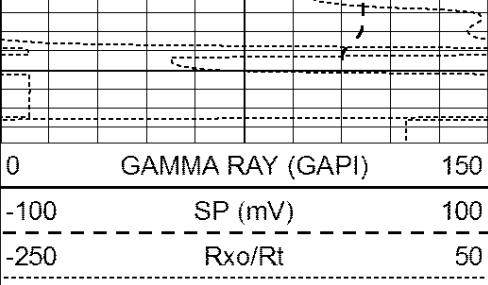
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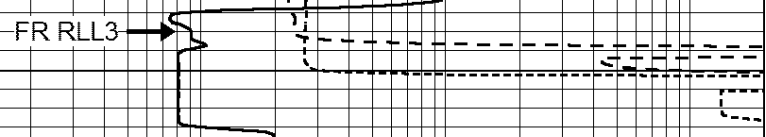
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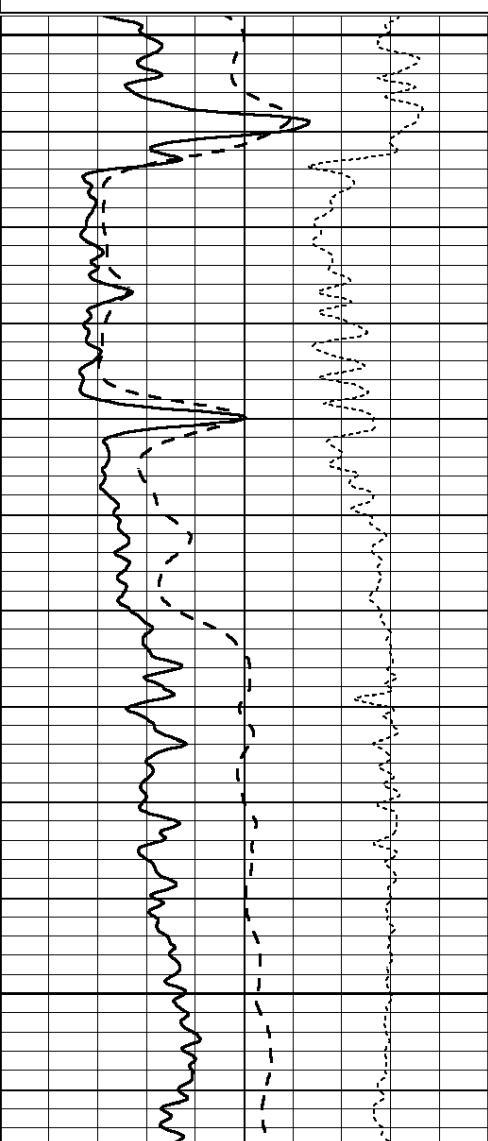
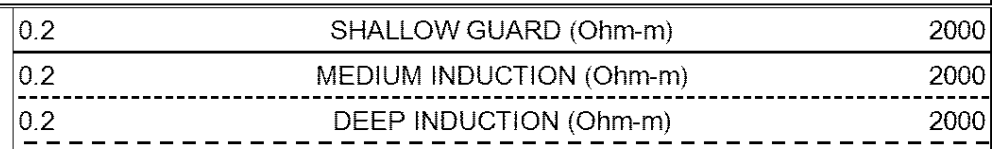
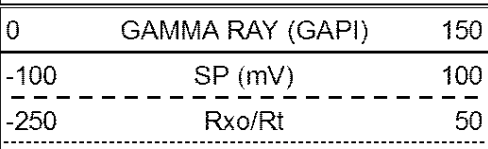


LTD 5078



REPEAT SECTION

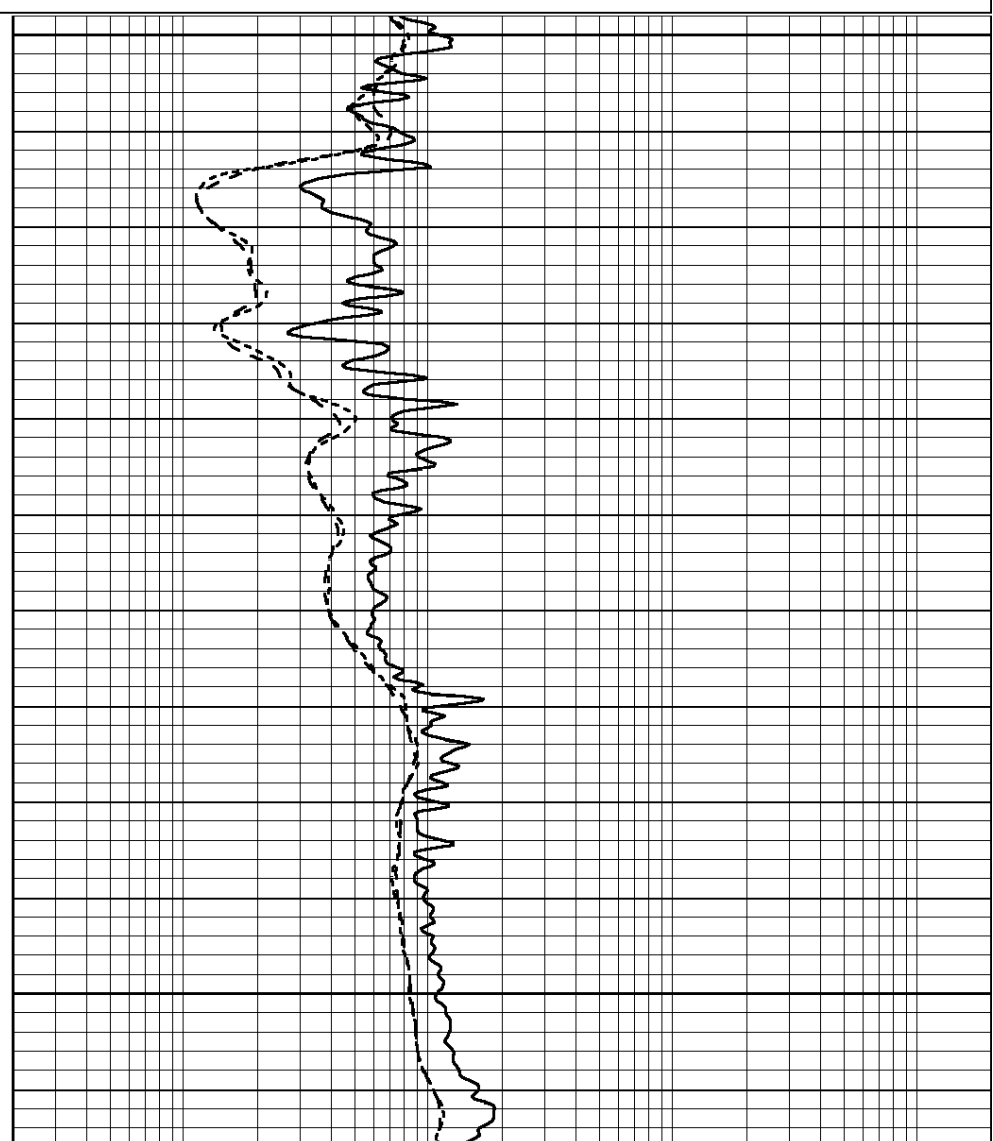
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 Charted by: Depth in Feet scaled 1:240

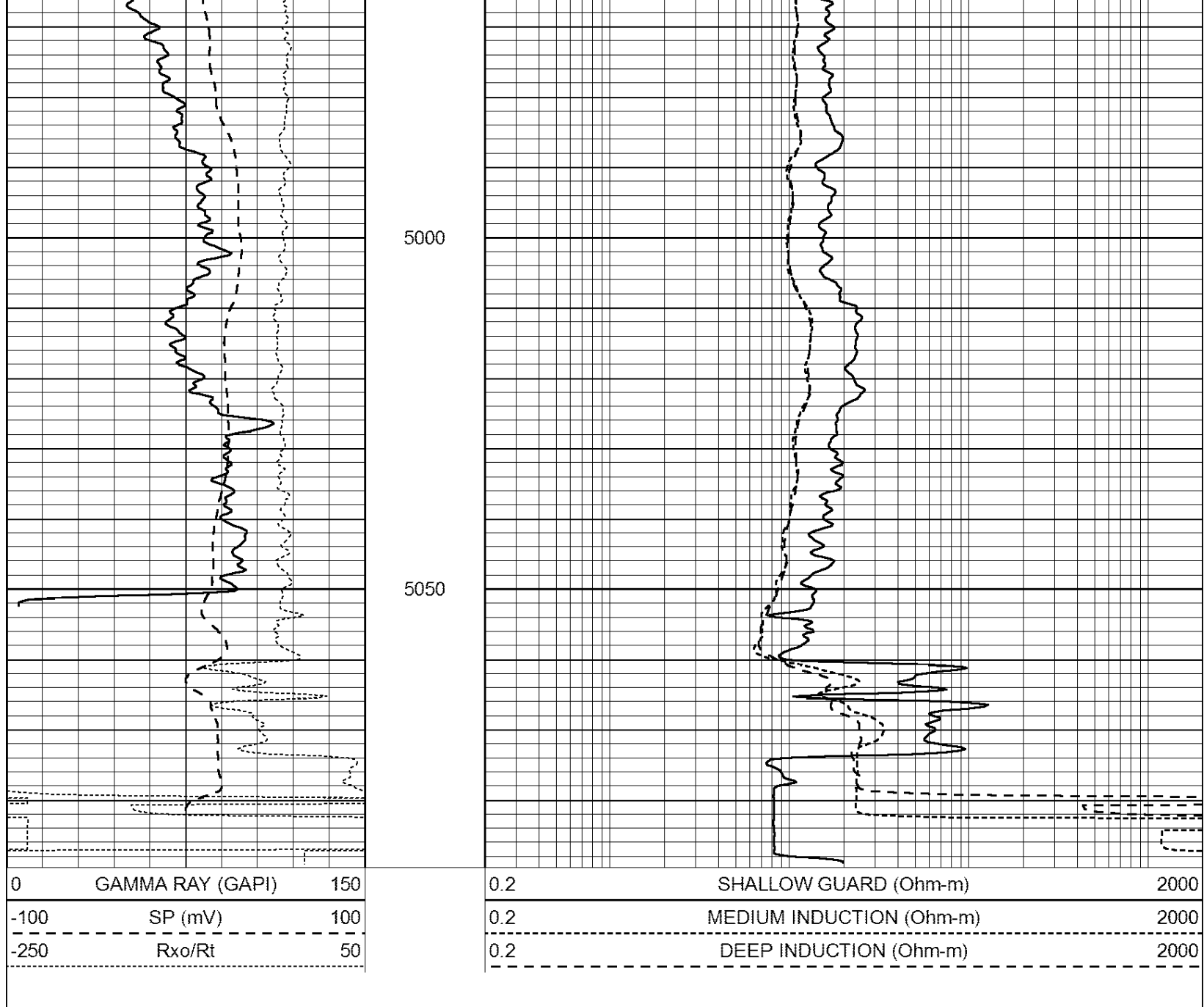


4850

4900

4950





Calibration Report

Database File: 26271pe.db
 Dataset Pathname: pass3.3
 Dataset Creation: Wed Dec 10 11:27:18 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE7-DILG
 Surface Cal Performed: Fri Dec 05 11:16:41 2014
 Downhole Cal Performed: Sat Jan 19 19:51:38 2013
 After Survey Verification Performed: Sat Jan 19 19:51:38 2013

Surface Calibration		Readings		References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.793	0.790	V	0.000	400.000	mmho/m	520.000	12.000
Medium	0.992	1.002	V	0.000	464.000	mmho/m	570.000	-32.000
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		Zero	Cal		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		Zero	Cal		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	-47330.100	-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		

Litho Density Calibration Report
Serial: 06 Model: PRB

Master Calibration

Performed Thu Oct 09 14:28:52 2014

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1287.1	7570.1	2764.0	8150.7	cps
Window 2	1212.7	6261.6	2285.4	6560.4	cps
Window 3	942.6	3263.2	1393.8	3331.0	cps
Window 4	309.7	313.4	308.2	313.9	cps
Long Space	0.0	5048.9	1072.7	5347.6	cps
Short Space	1.6	1713.6	1158.2	1823.5	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 45.8	Rib Slope	: 1.029	Density/Spine Ratio	: 0.555
Spine Angle	: 75.8	Spine Slope	: 3.954	Spine Intercept	: -20.9

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

Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho	0.0000	0.0000	0.0000	0.0000	g/cc
Measured Correction	0.0000	0.0000	0.0000	0.0000	g/cc
Measured Pe		0.0000		0.0000	

Compensated Neutron Calibration Report

Serial Number: 080620
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: 46001
Tool Model: Probe1
Performed: Mon Nov 24 09:45:18 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.2600 GAPI/cps