



**SUPERIOR
Hays,
Kansas**

**DUAL
INDUCTION
LOG**

Company R.L. INVESTMENT, LLC
Well SCHWARTZ #A-1
Field
County THOMAS State KANSAS

Company R.L. INVESTMENT, LLC
Well SCHWARTZ #A-1
Field
County THOMAS
State KANSAS

Location: API #: 15-193-20852-0000
1320' FSL & 990' FWL
E2 - W/2 - SW
SEC 1 TWP 9S RGE 31W
Permanent Datum GROUND LEVEL Elevation 2950
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL
MEL/SON
Elevation
K.B. 2955
D.F. 2953
G.L. 2950

Date	6-10-12
Run Number	ONE
Depth Driller	4727
Depth Logger	4728
Bottom Logged Interval	4726
Top Log Interval	0
Casing Driller	258
Casing Logger	256
Bit Size	7.875
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.6 / 55
pH / Fluid Loss	11.0 / 7.2
Source of Sample	FLOWLINE
Rim @ Meas. Temp	1.10 @ 99F
Rmf @ Meas. Temp	0.83 @ 99F
Rmc @ Meas. Temp	1.32 @ 99F
Source of Rmf / Rmc	MEASURED
Rim @ BHT	0.89 @ 123F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	127F
Equipment Number	860
Location	HAYS, KS.
Recorded By	JEFF GRONEWEG
Witnessed By	LARRY FRIEND

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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

SUPERIOR WELL SERVICES
 785-628-6395
THANK YOU FOR YOUR BUSINESS
 DIRECTIONS: I-70 & CAMPUS EXIT - 8 MILES NORTH TO Y IN ROAD
 1 MILE WEST - 4 MILES NORTH TO RD L - 1 MILE EAST - 1/2 MILE NORTH
 EAST INTO

0 Gamma Ray (GAPI) 150

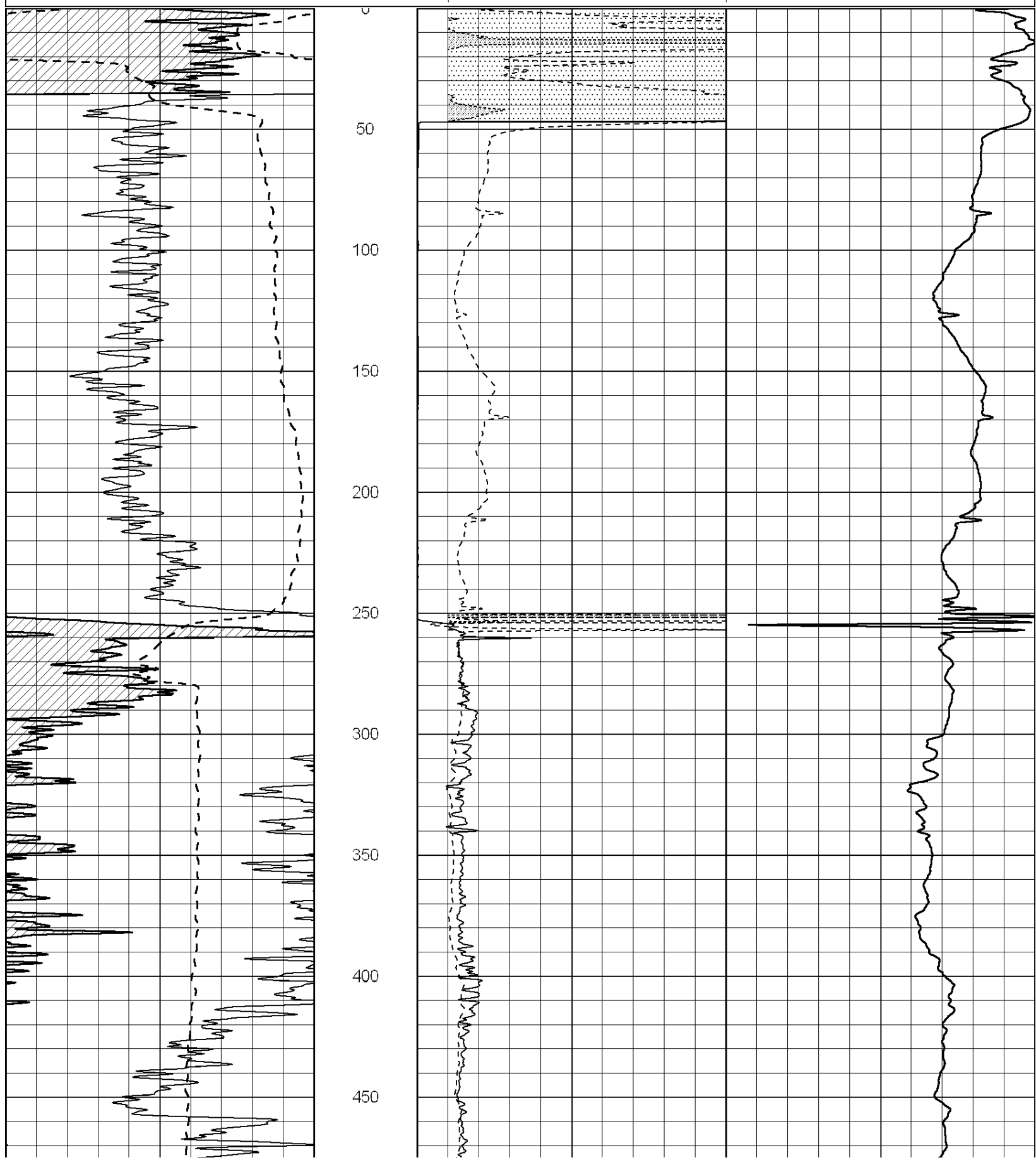
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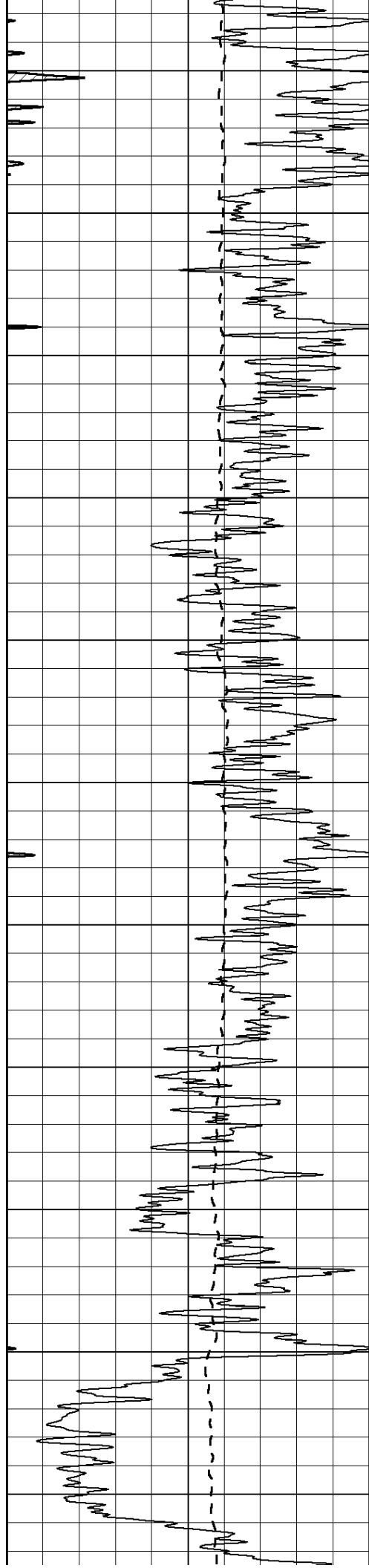
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1000 CILD (mmho/m) 0

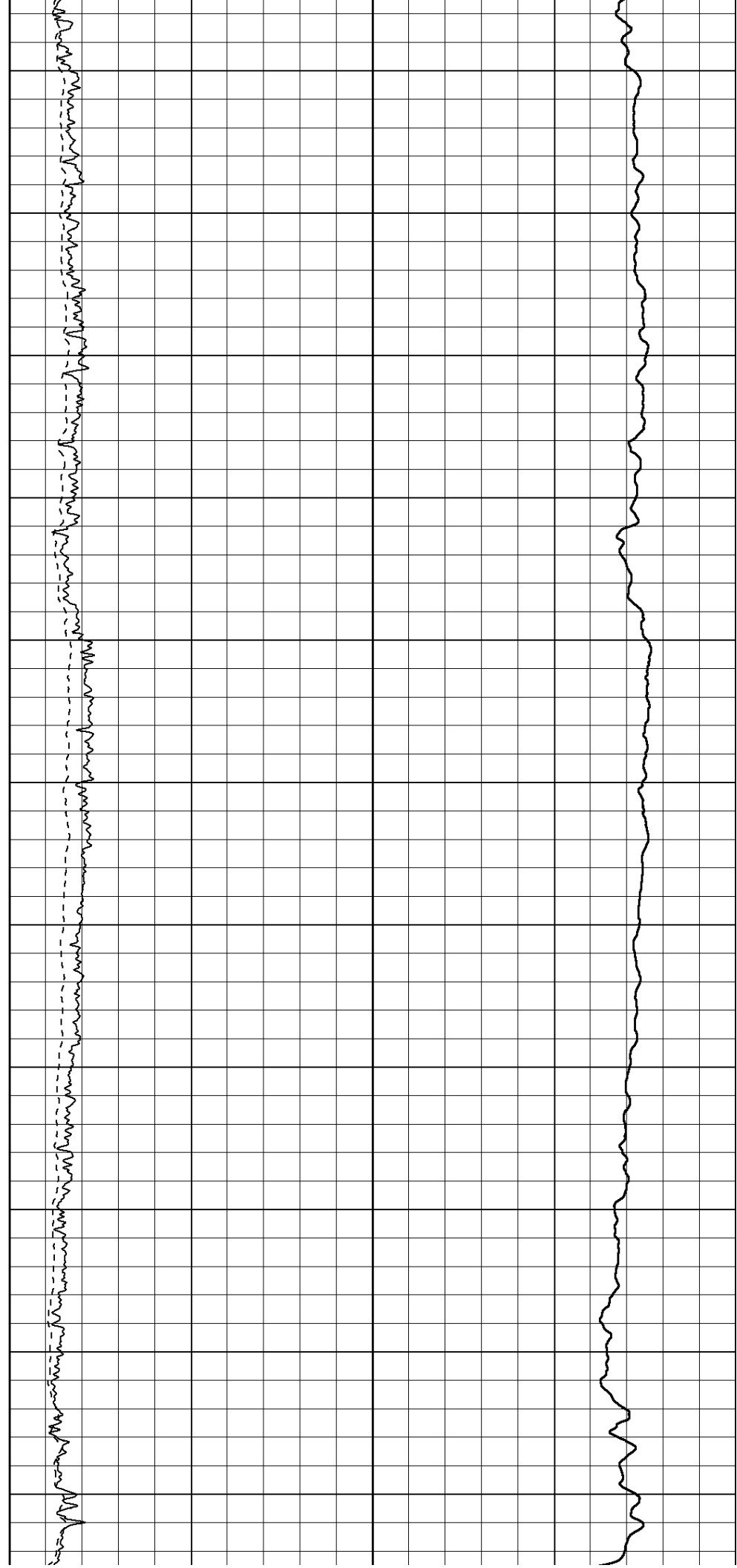
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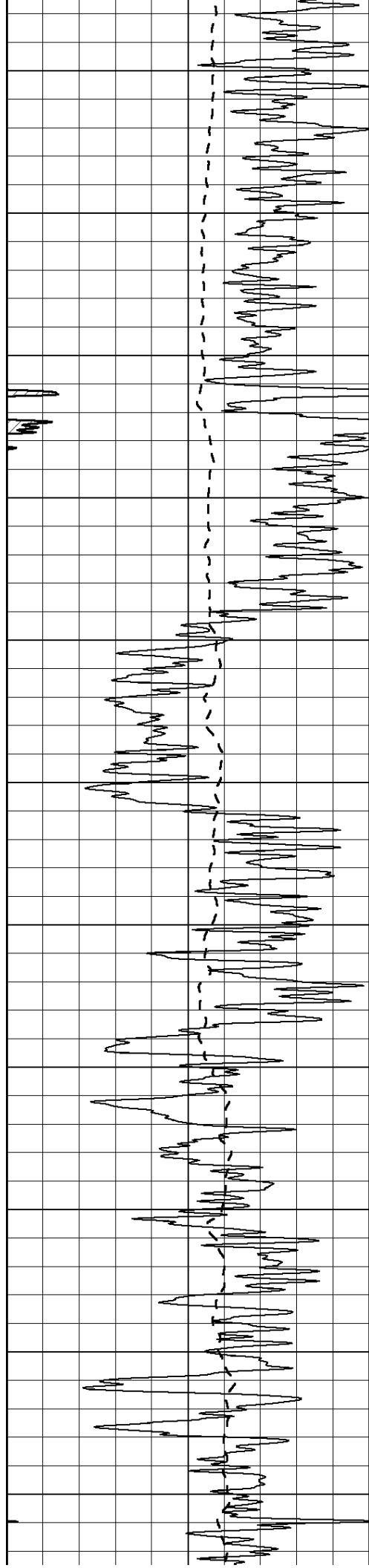
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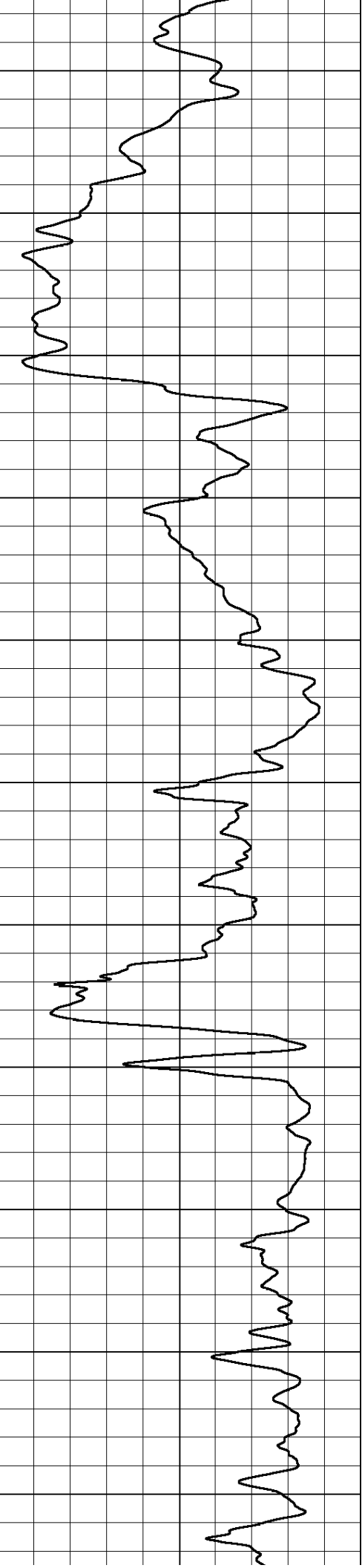
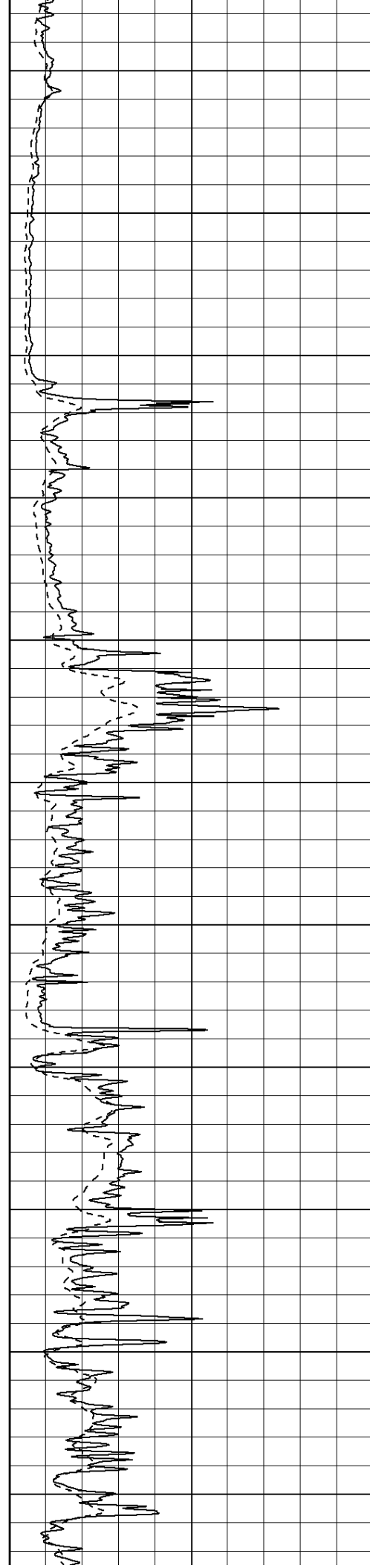


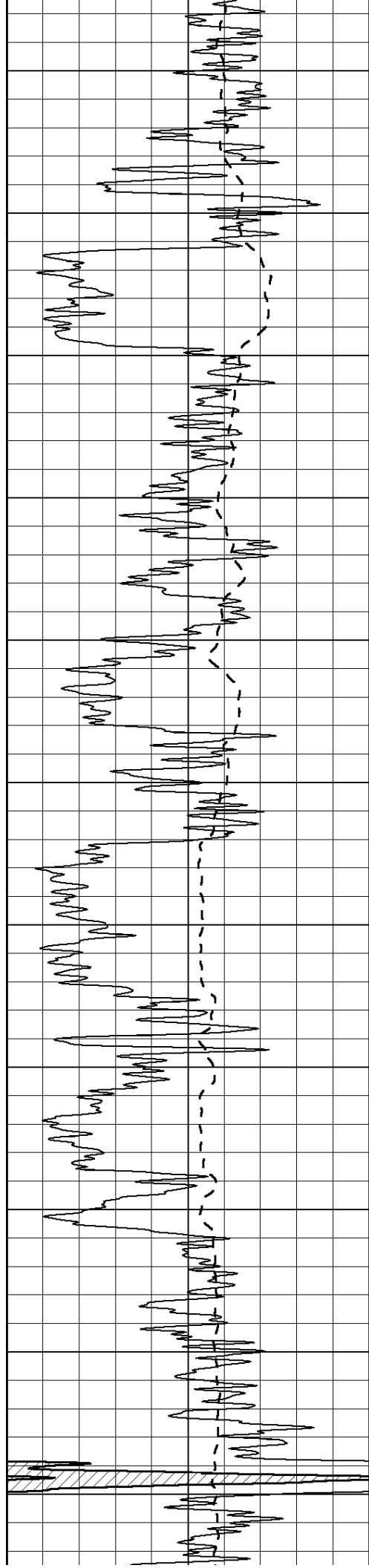
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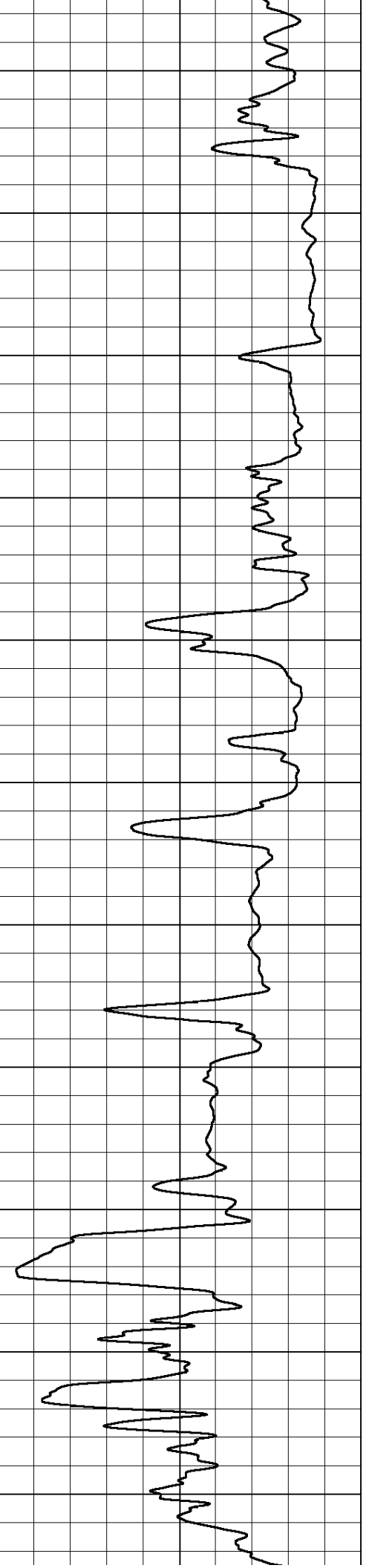
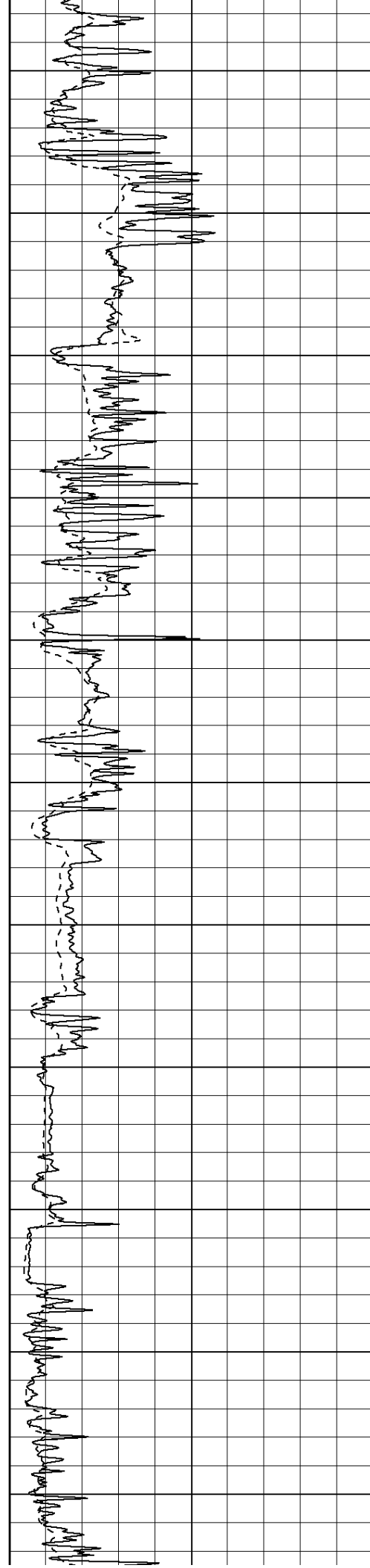


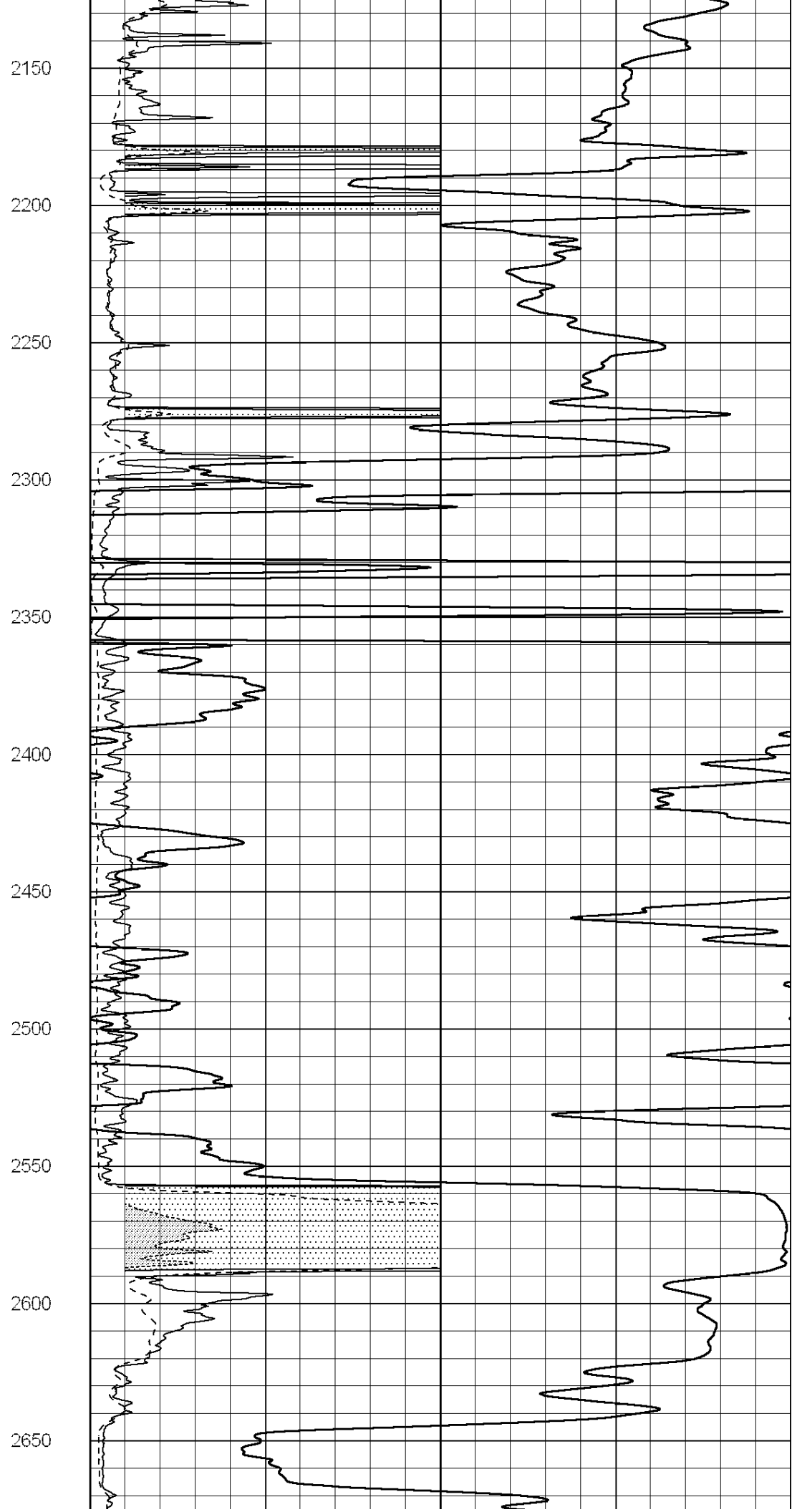
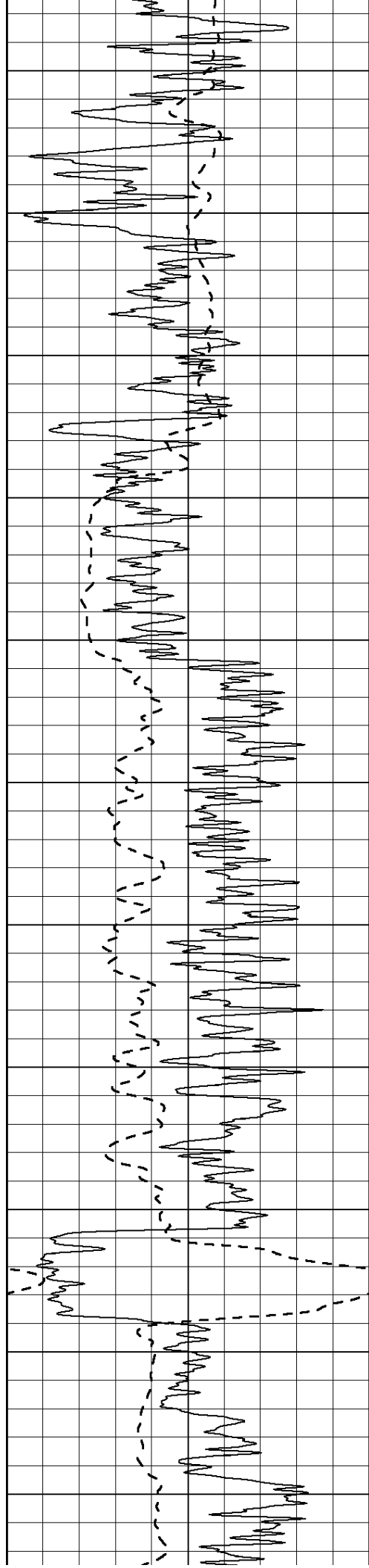
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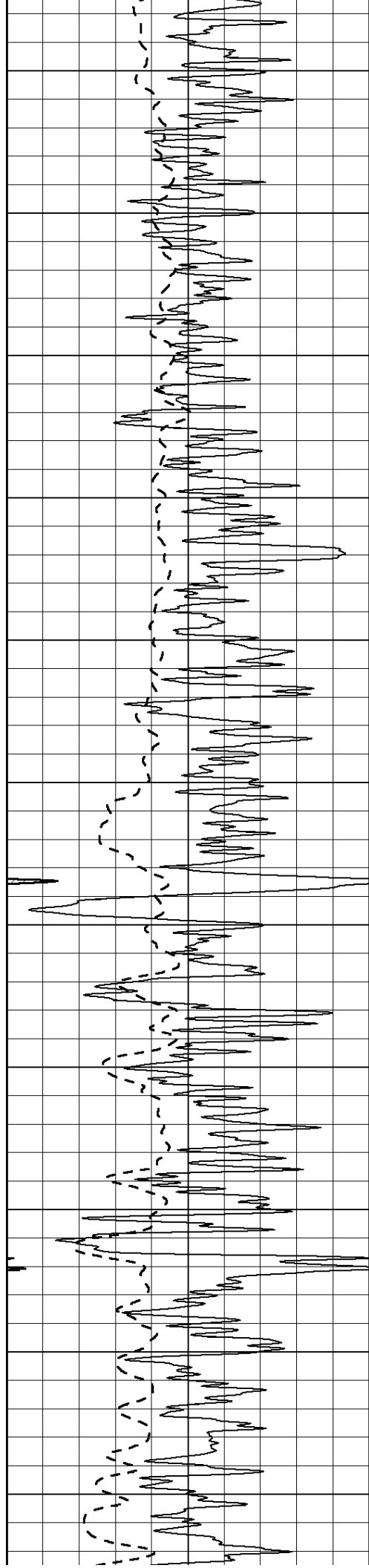




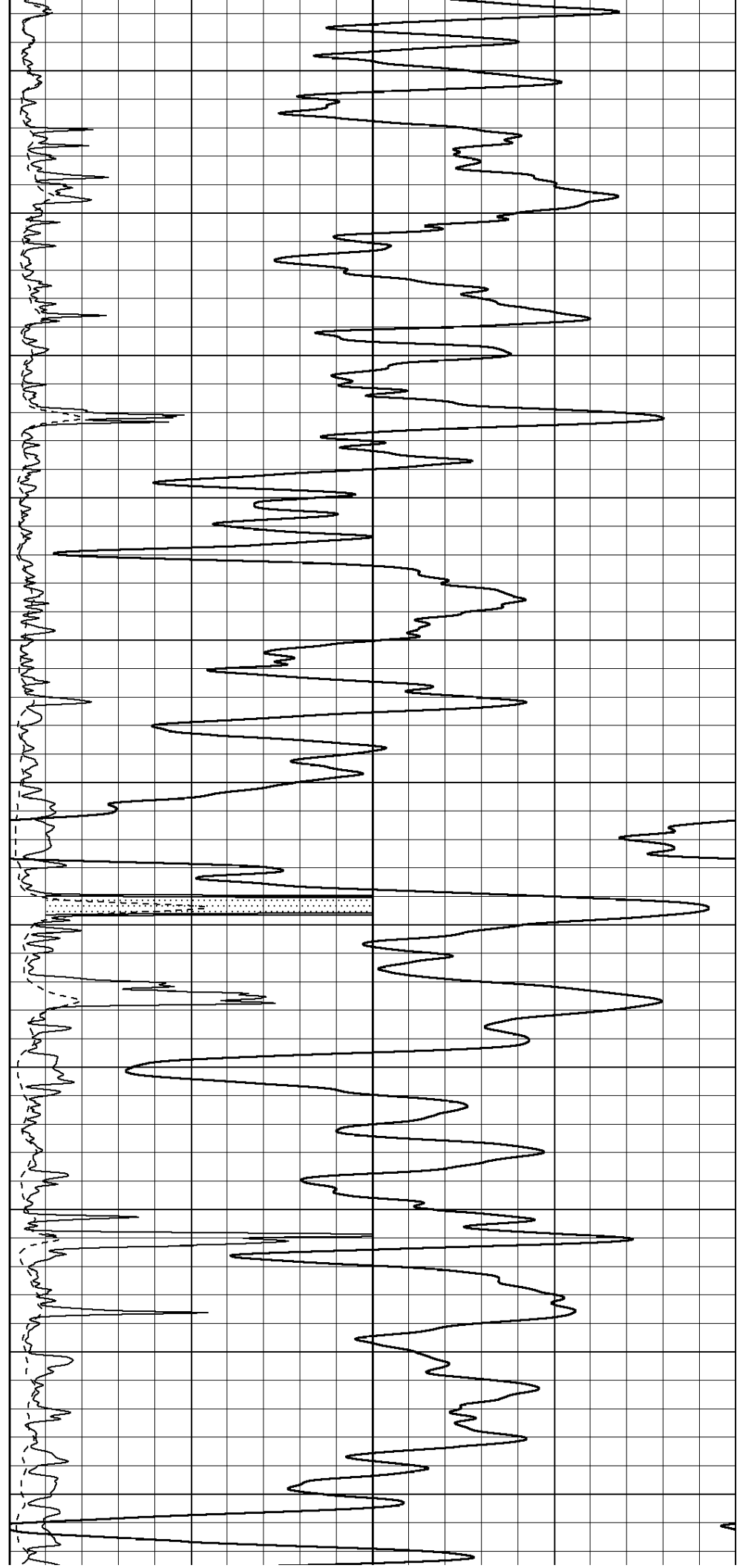
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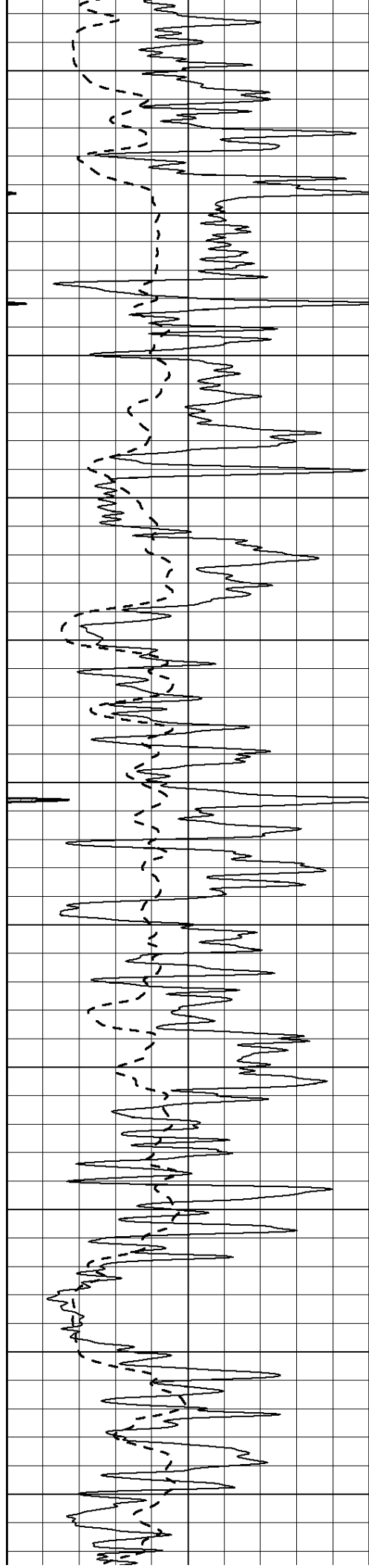






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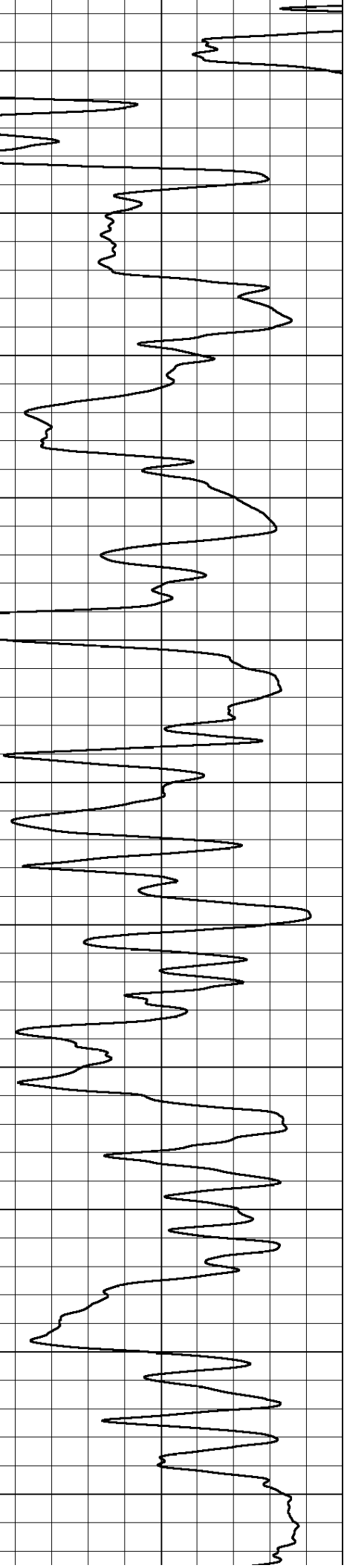
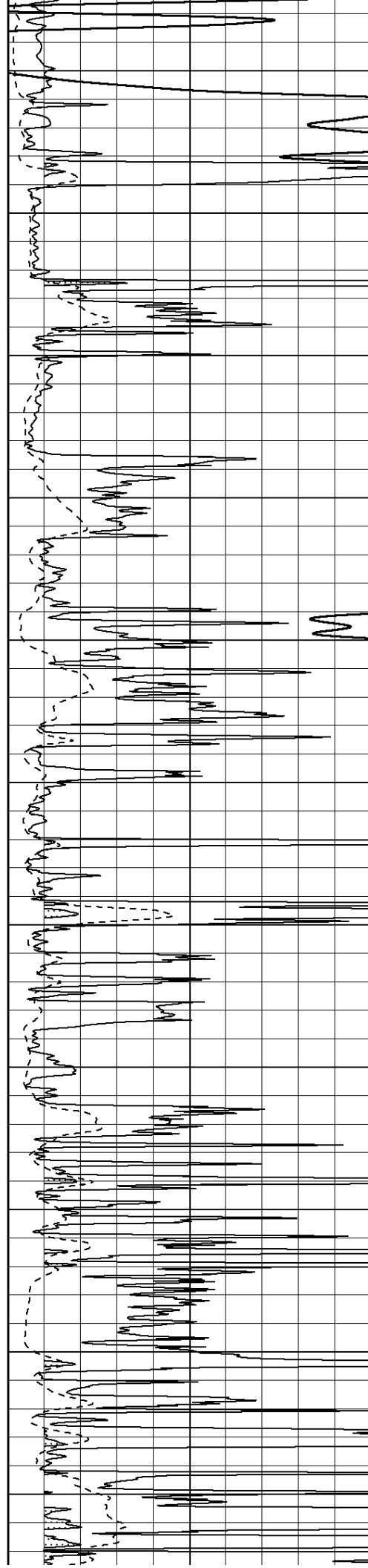
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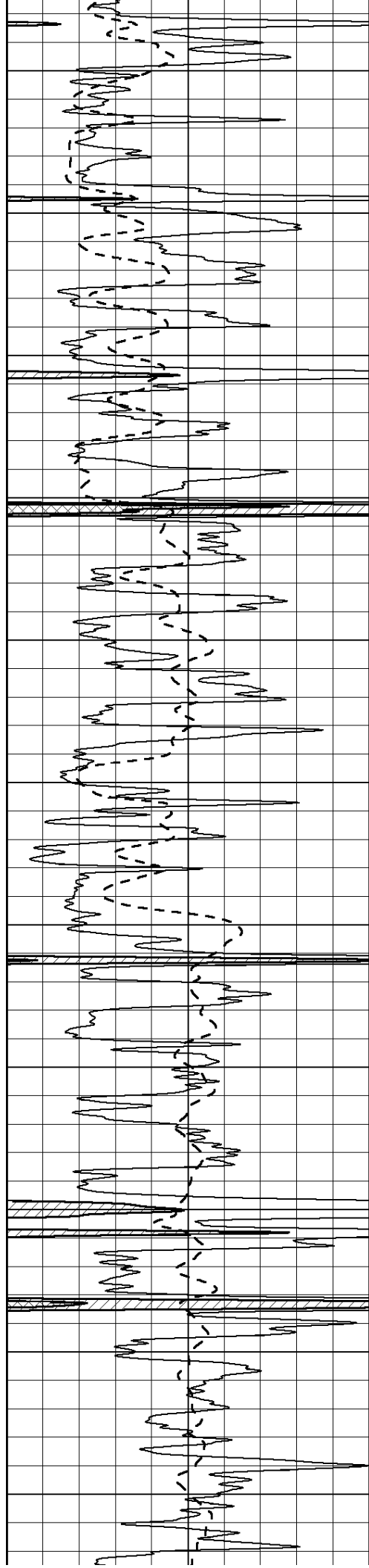
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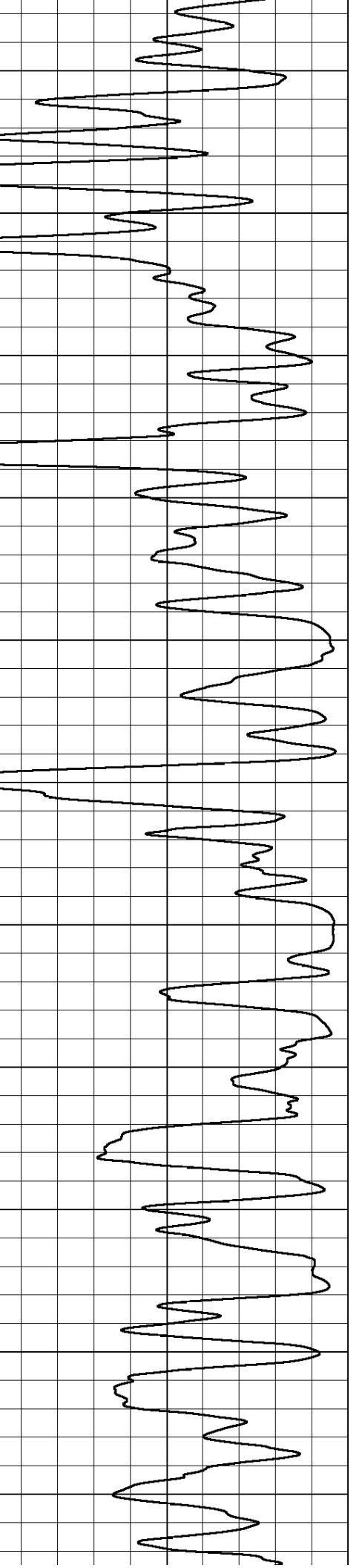
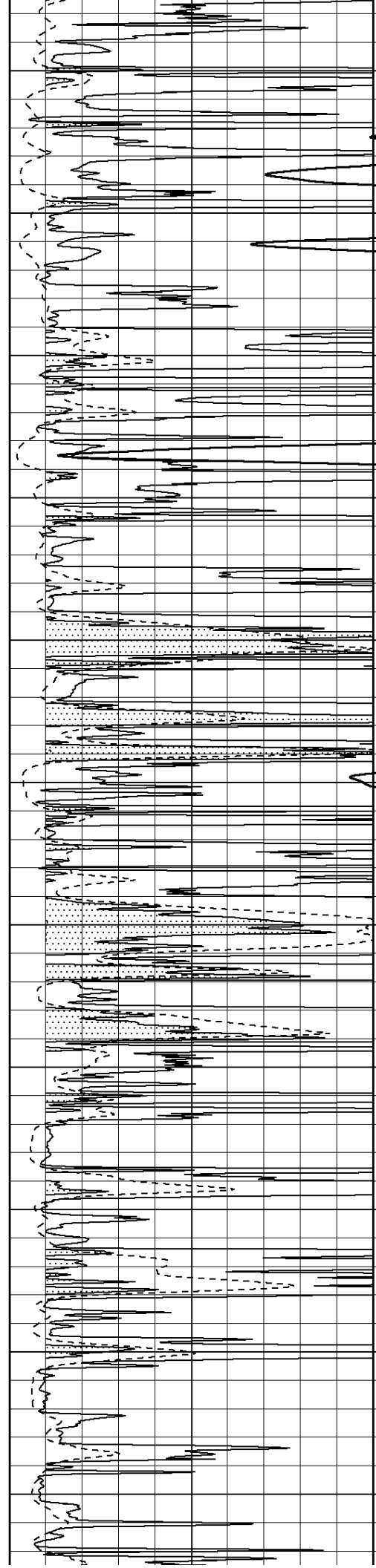
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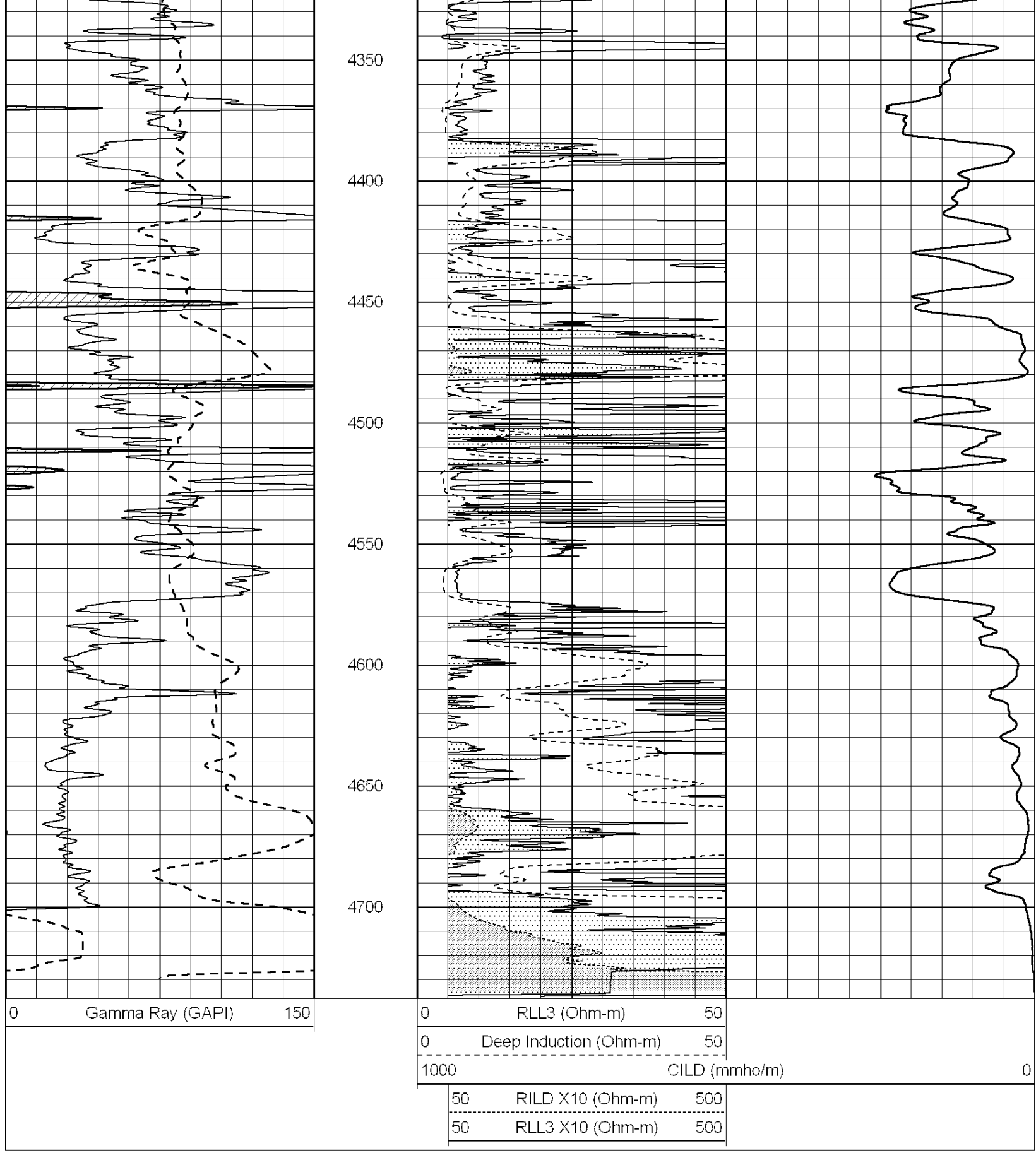
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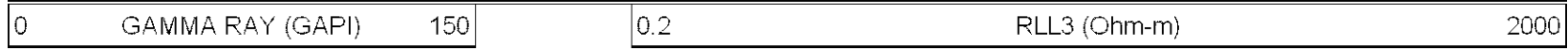


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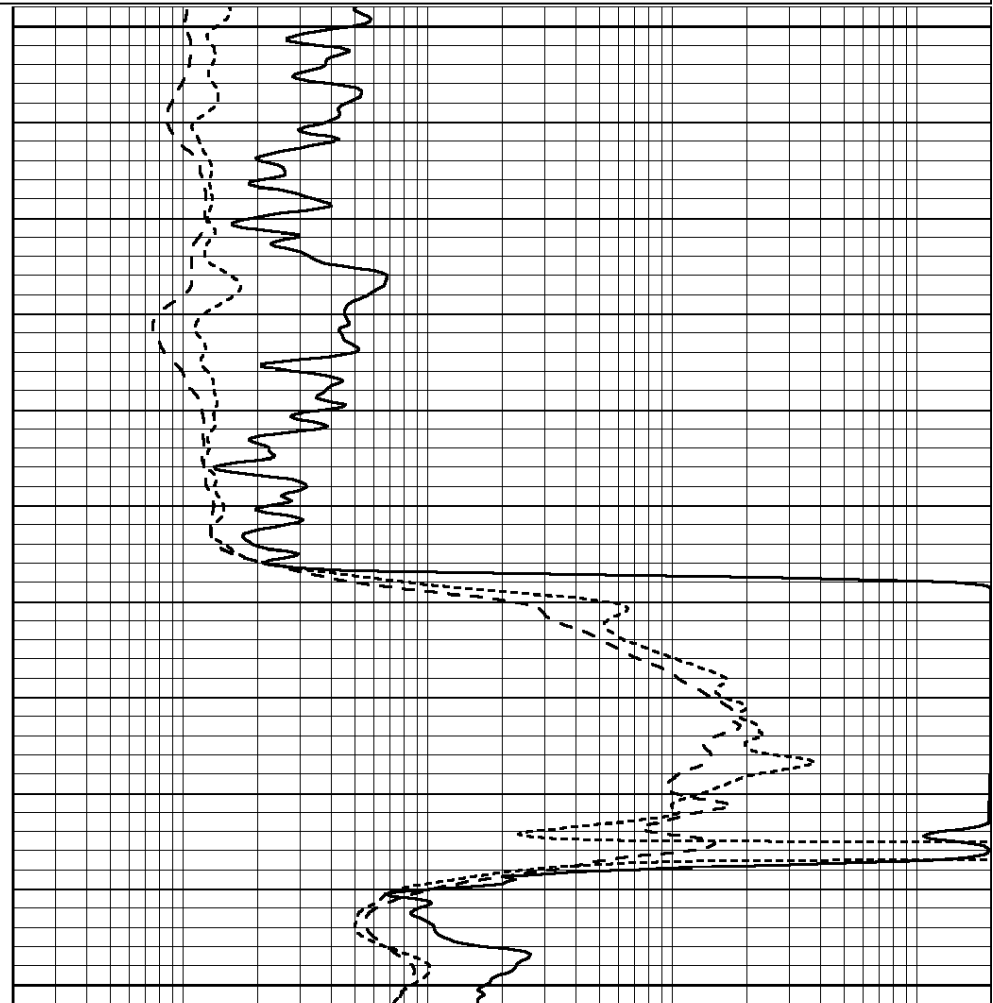
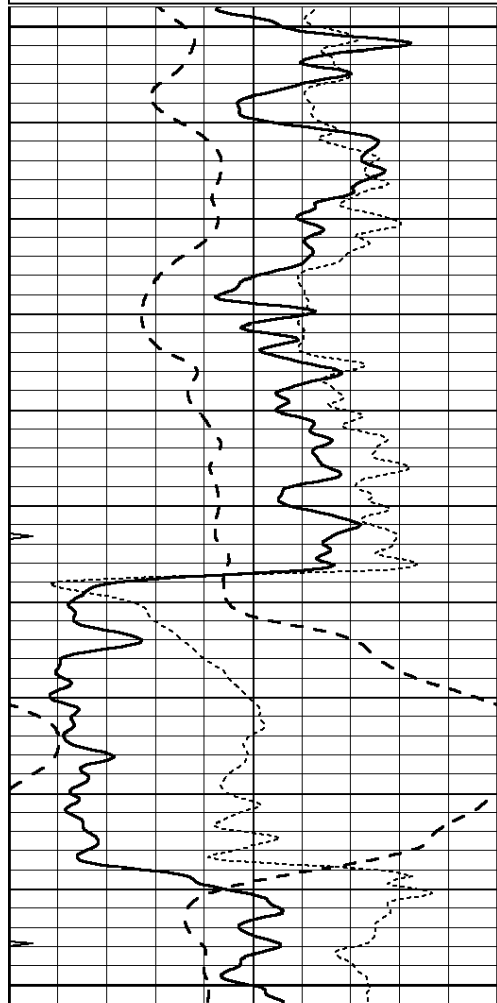


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 Presentation Format: dil
 Dataset Creation: Sun Jun 10 19:12:57 2012 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240



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

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



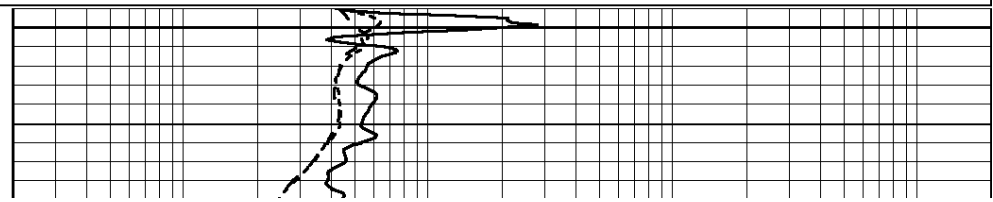
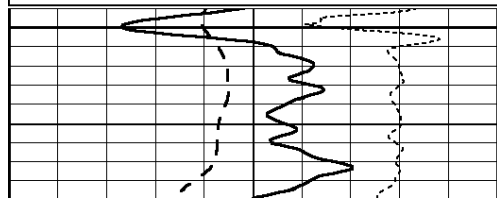
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-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

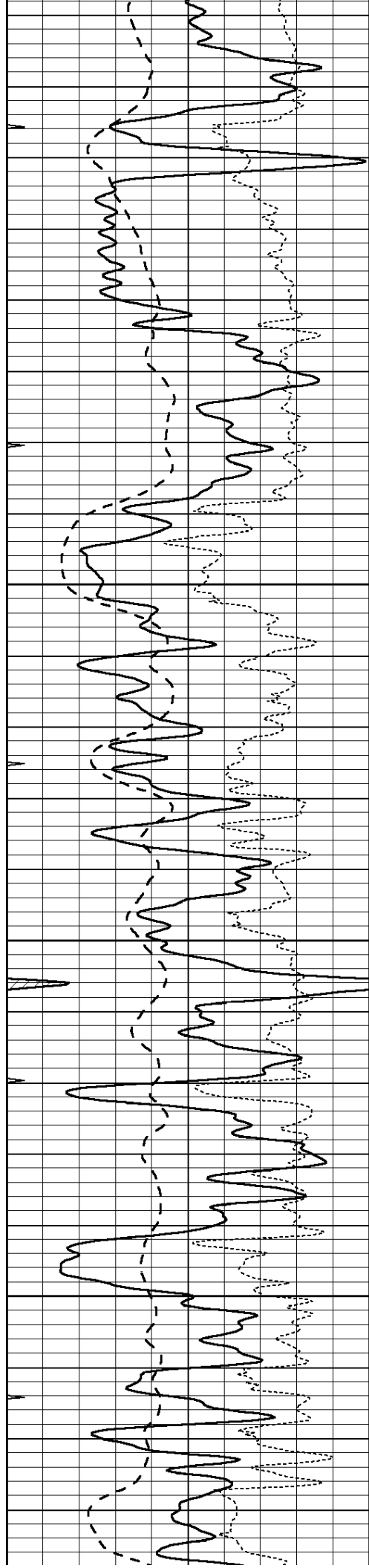
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Database File: 008787ddn.db
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 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-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



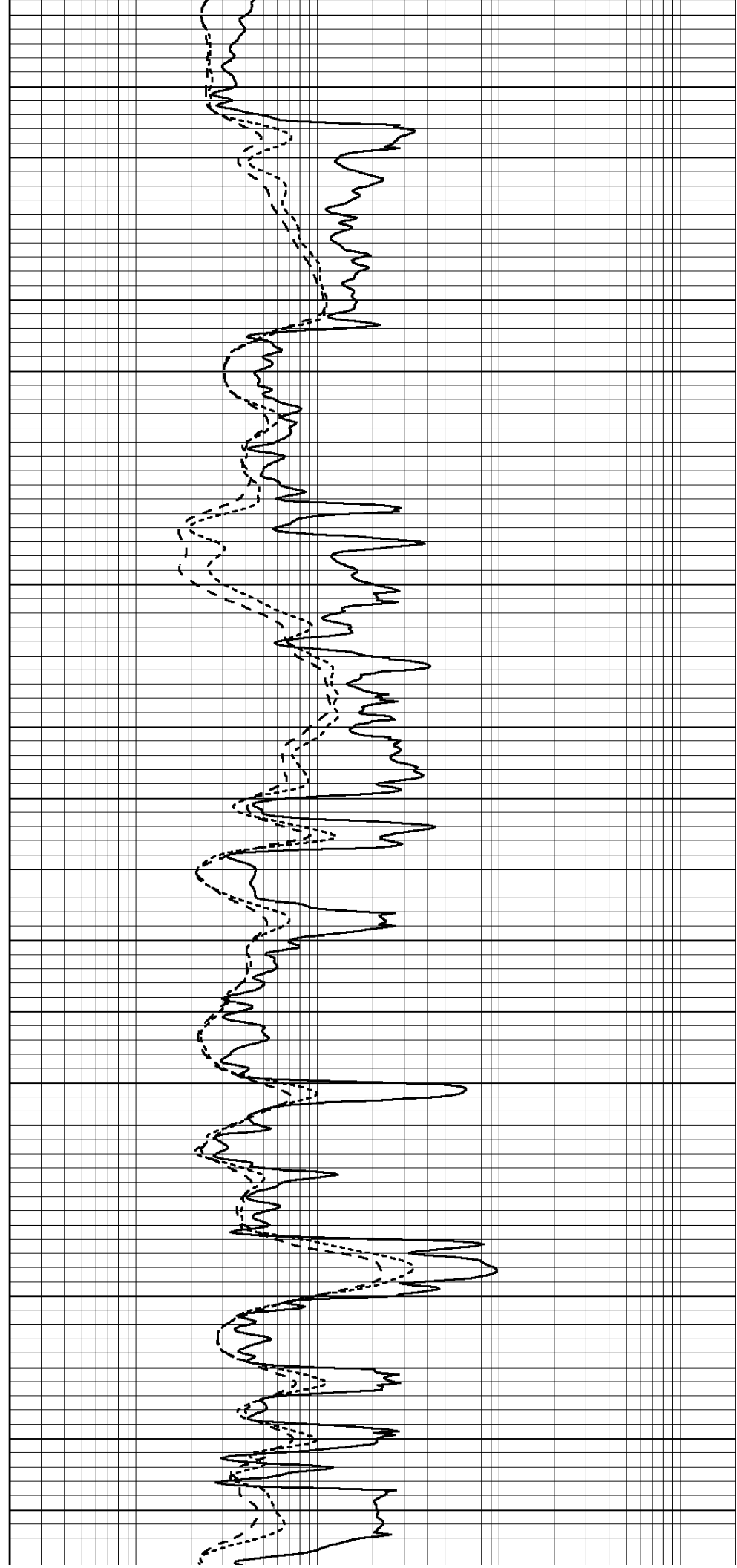


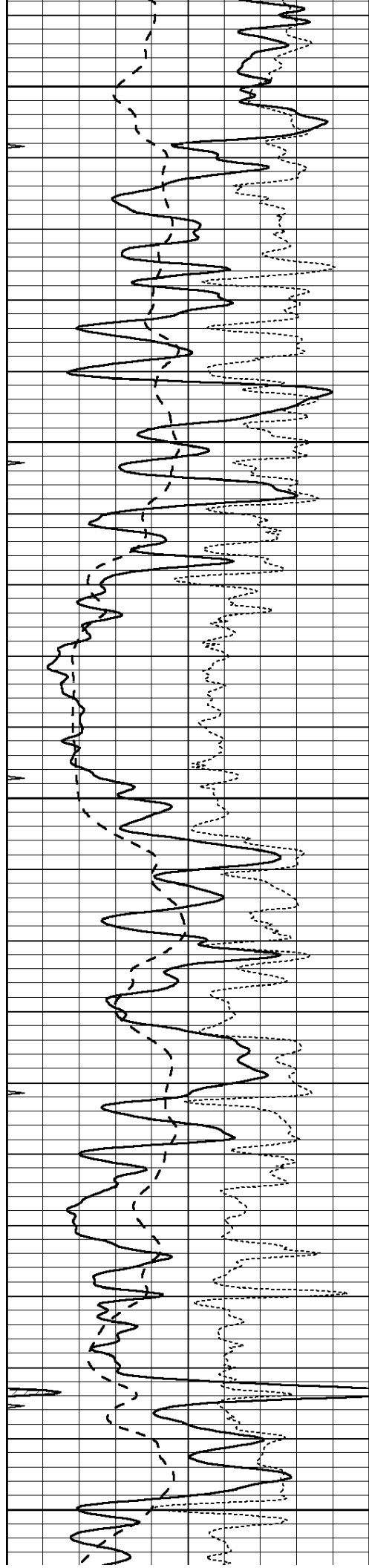
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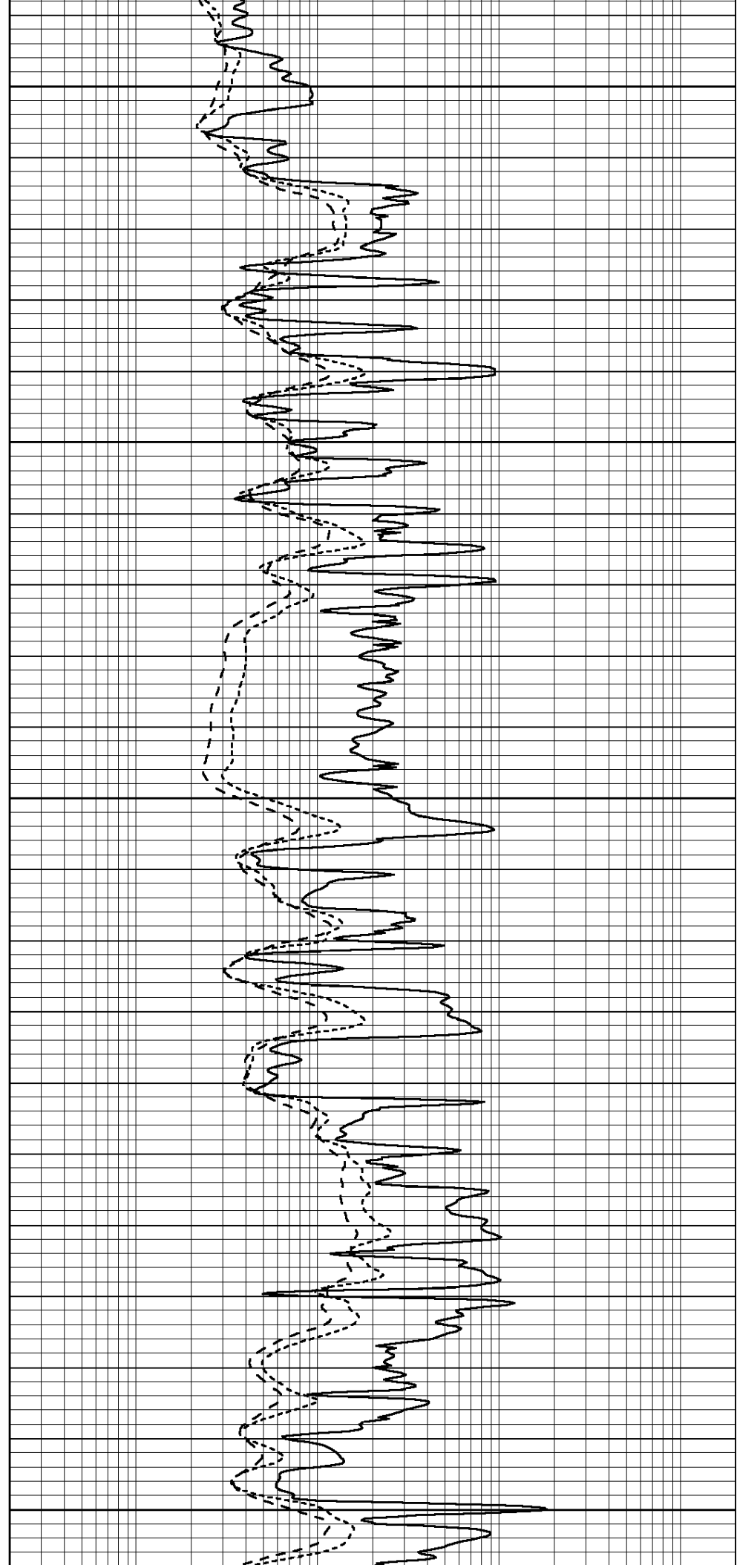
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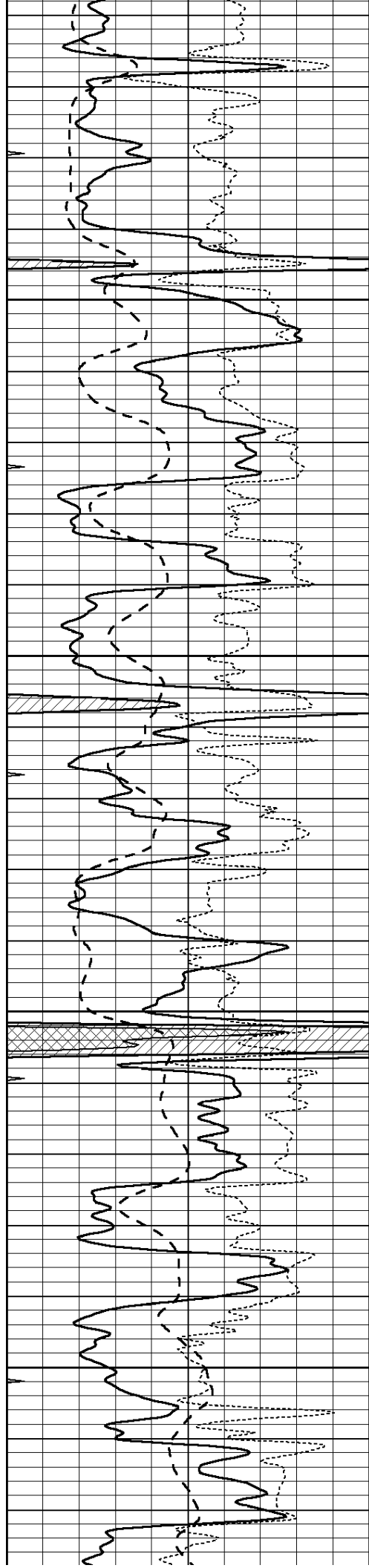
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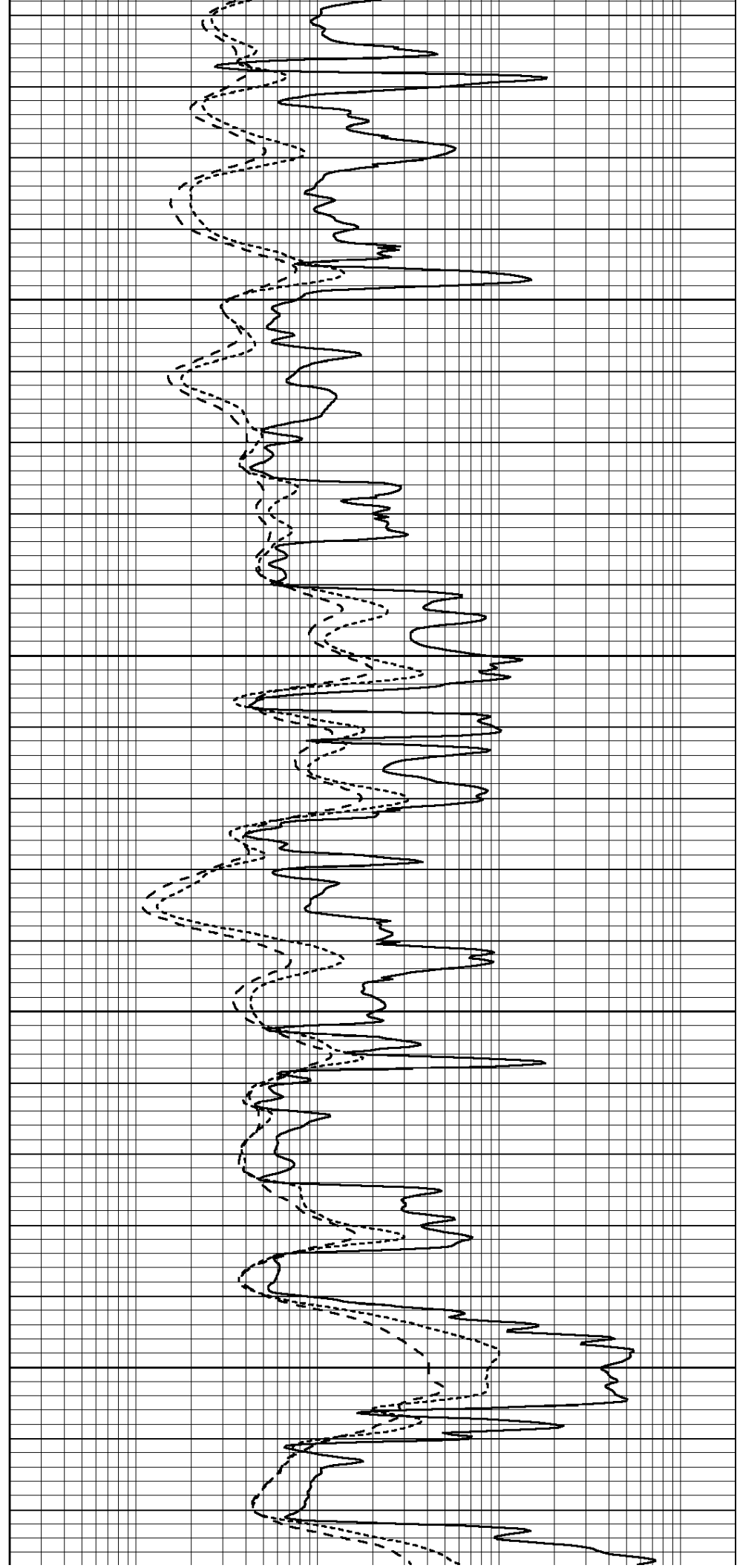


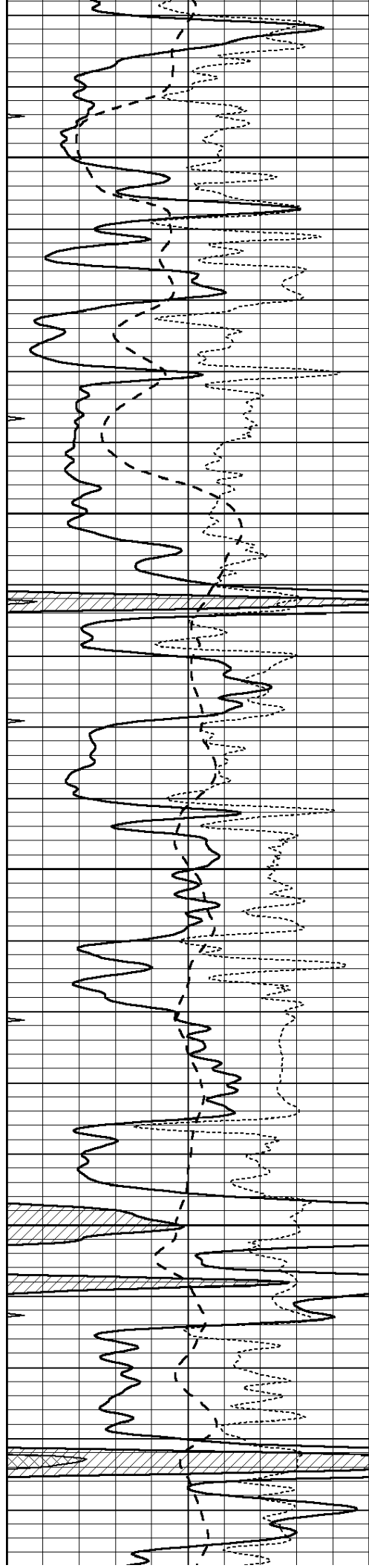
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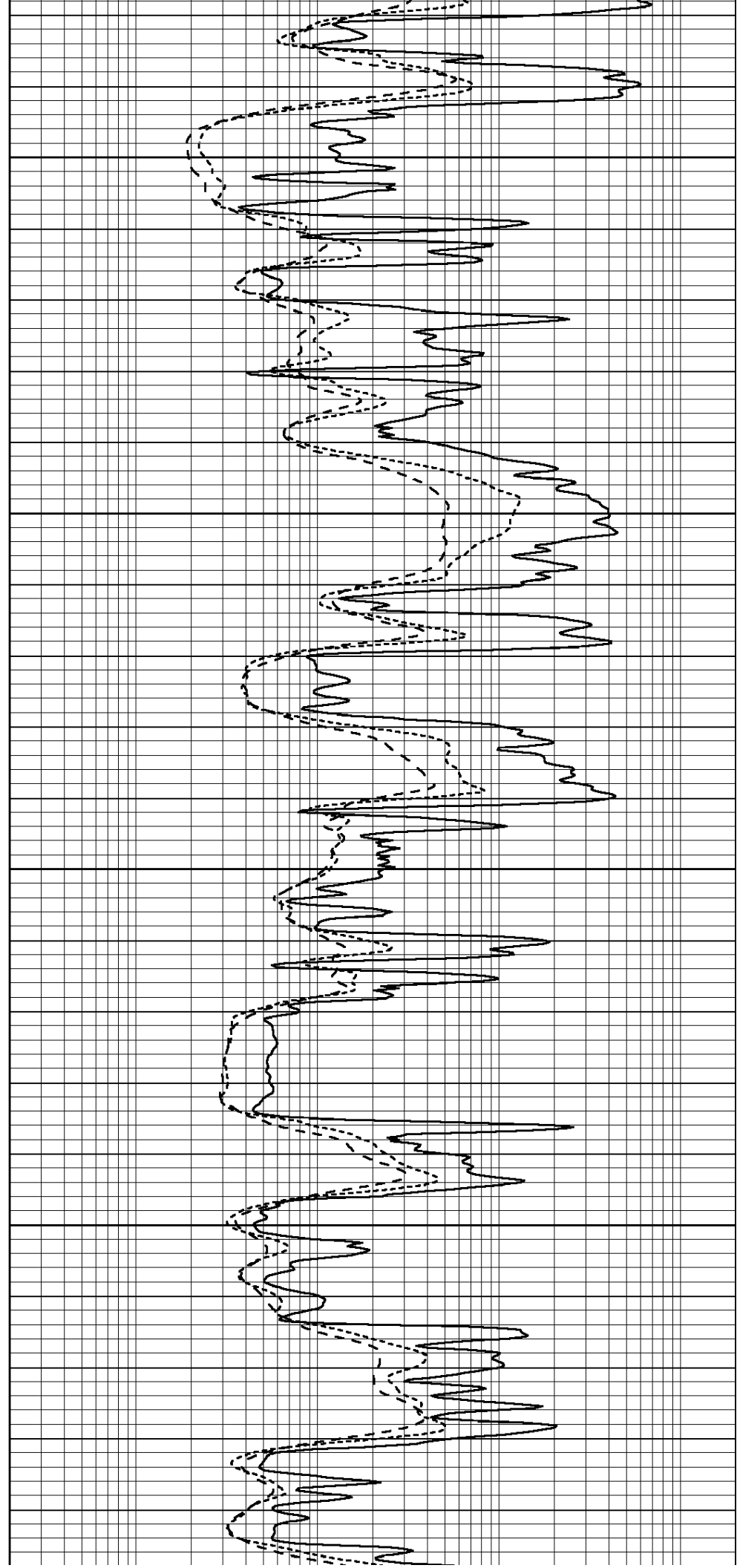


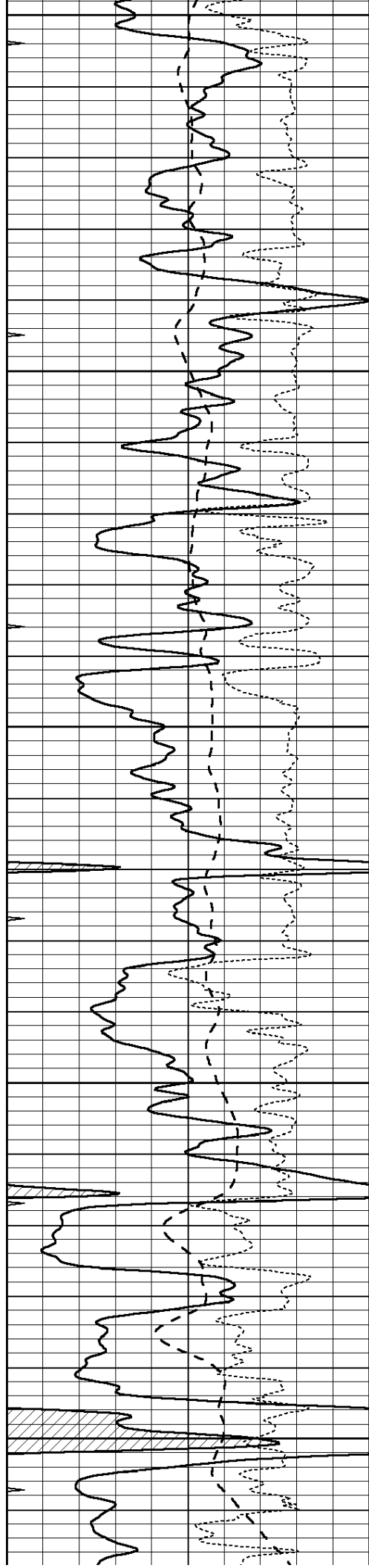
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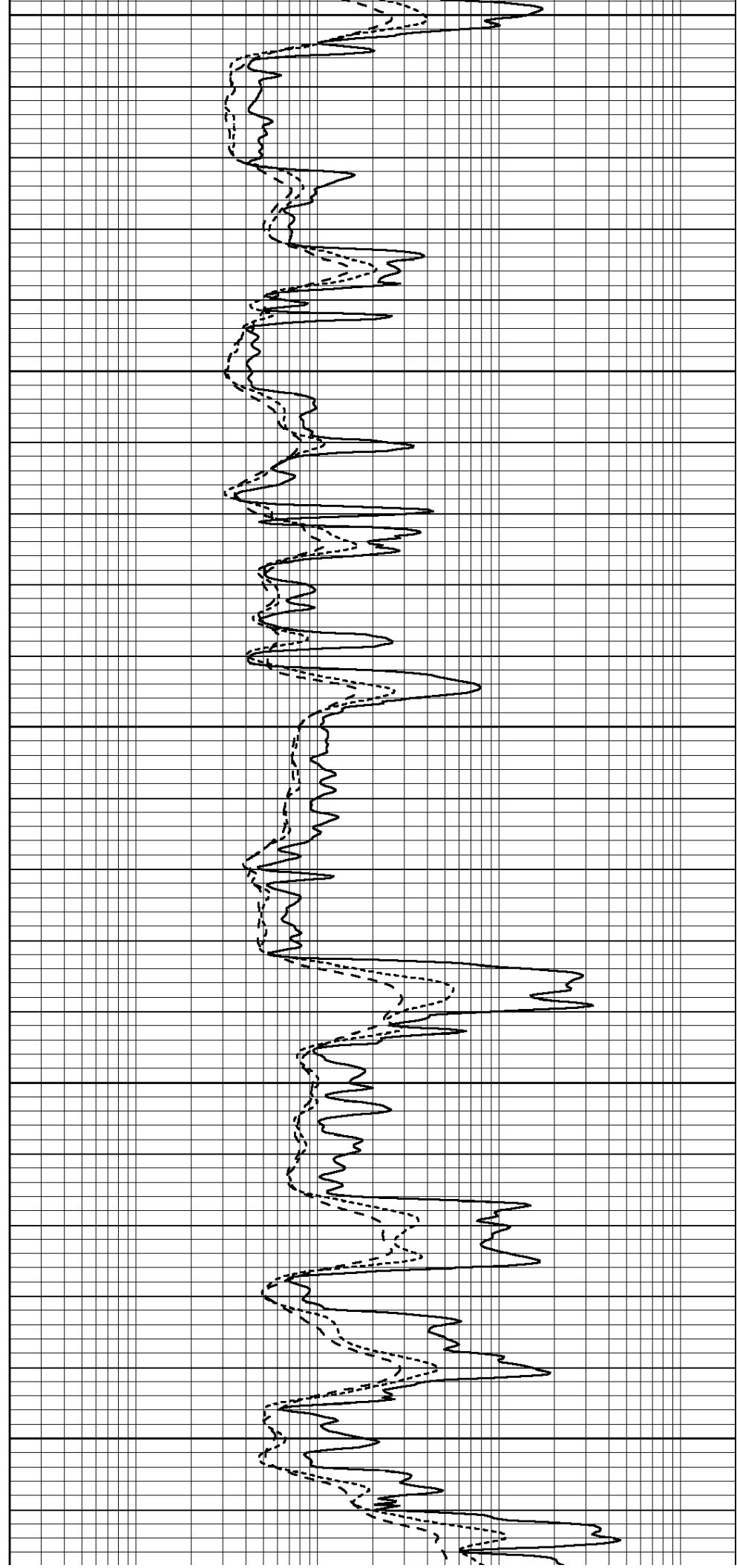
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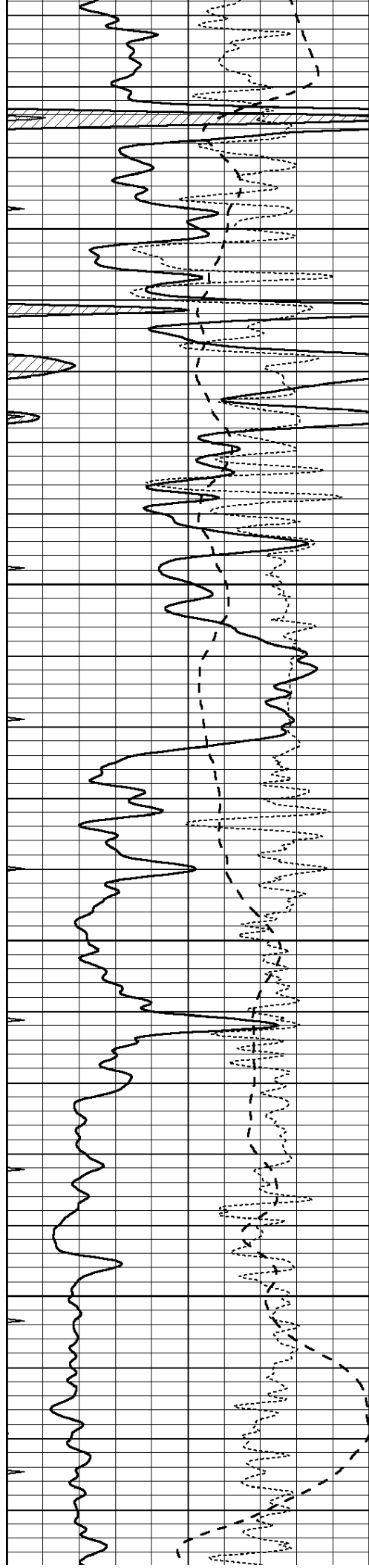
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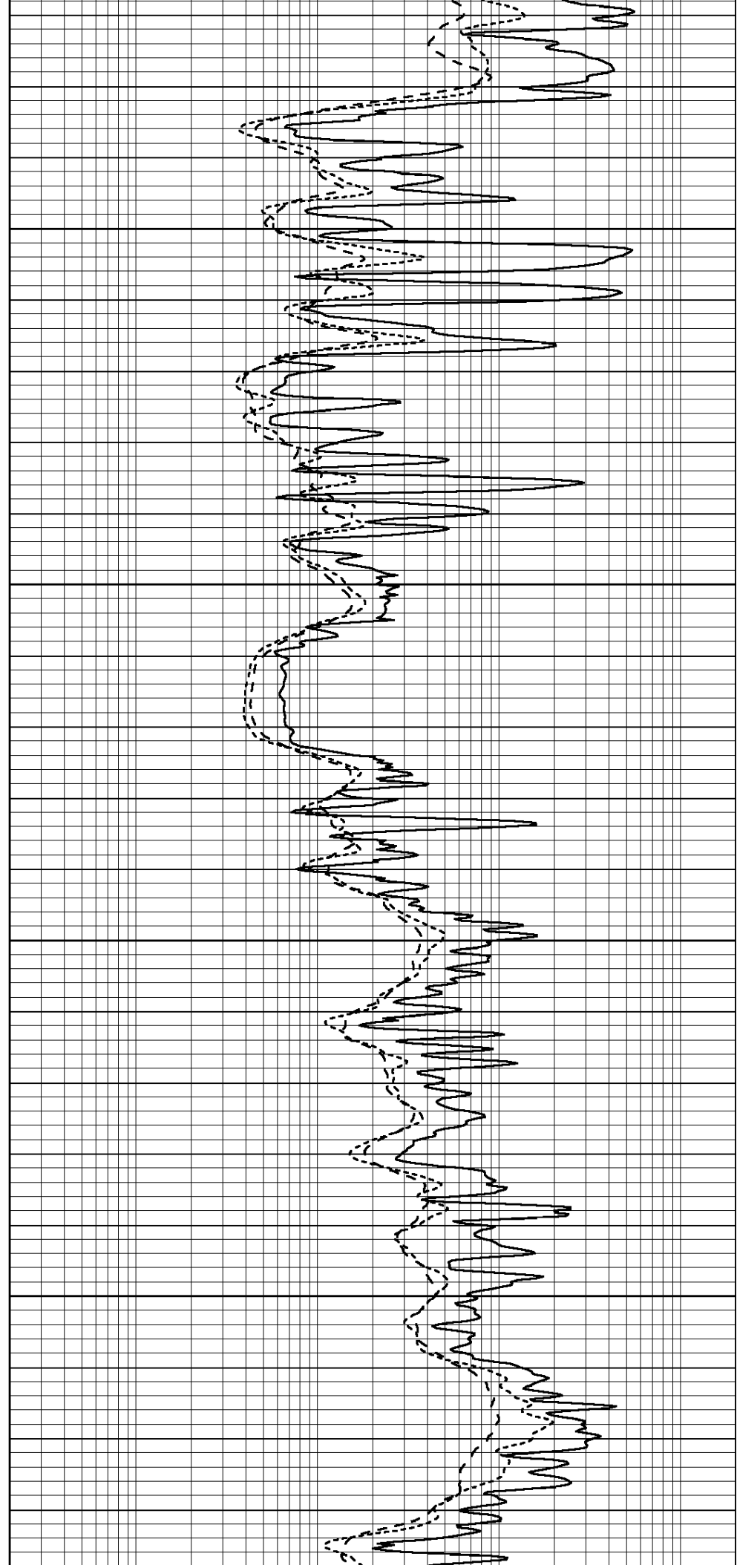


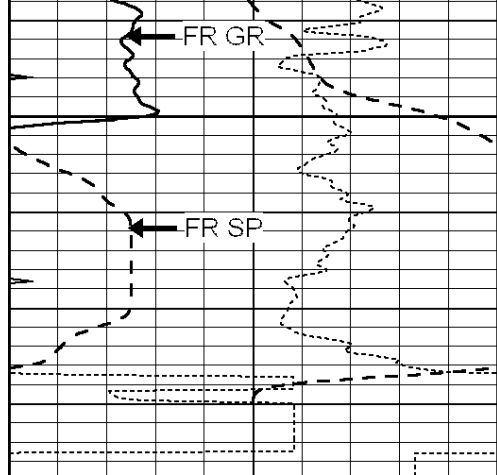
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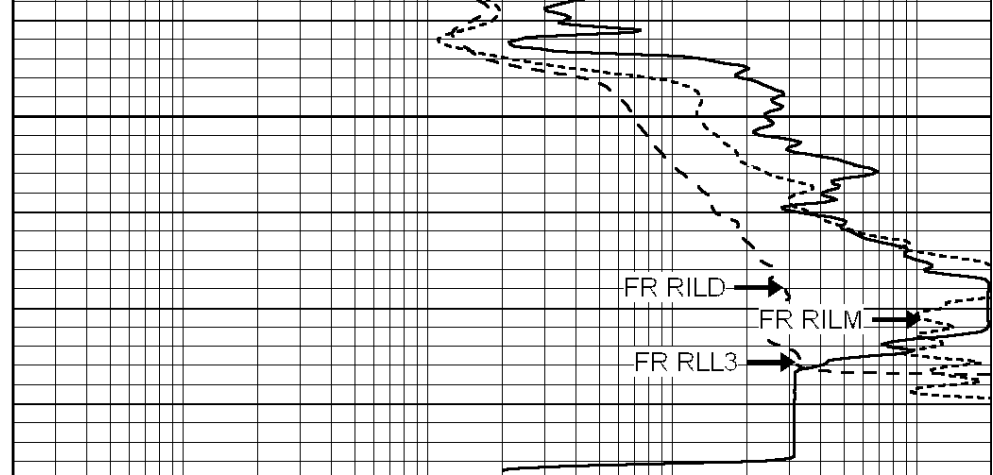
4650





4700
LTD 4728

0	GAMMA RAY (GAPI)	150
-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



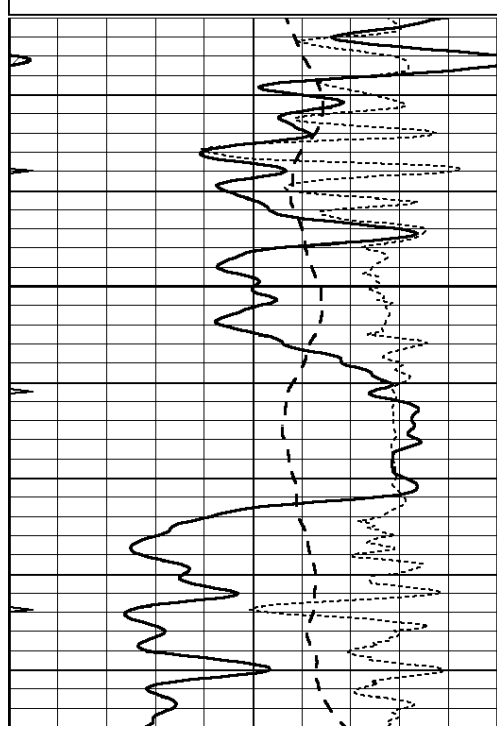
SUPERIOR
Hays,
Kansas

REPEAT SECTION

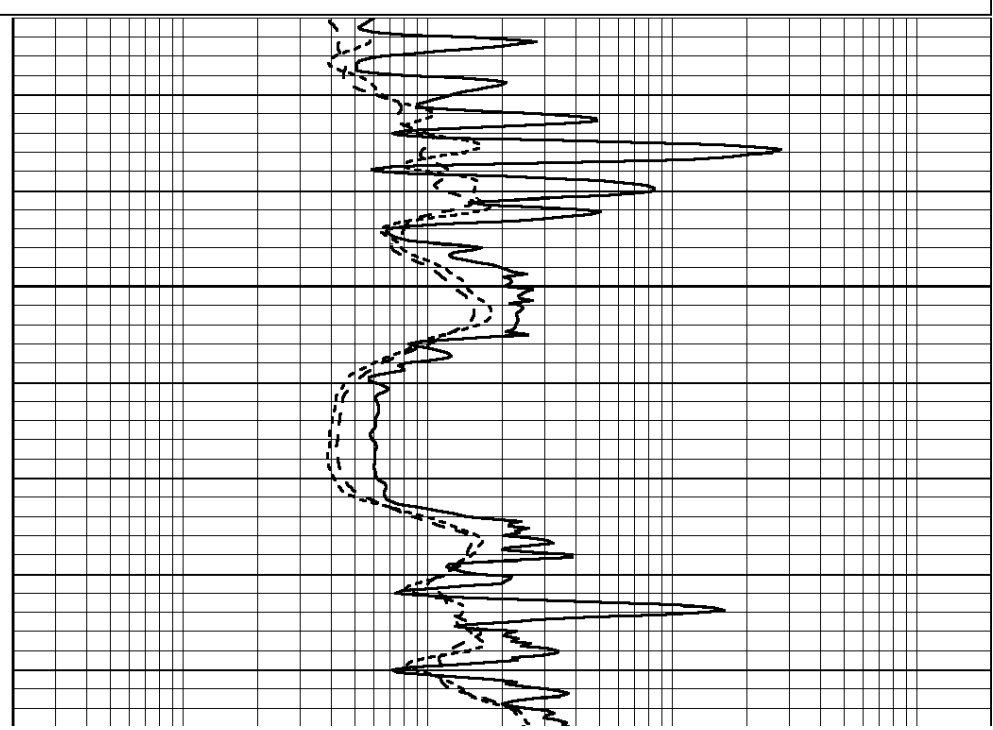
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 Charted by: Depth in Feet scaled 1:240

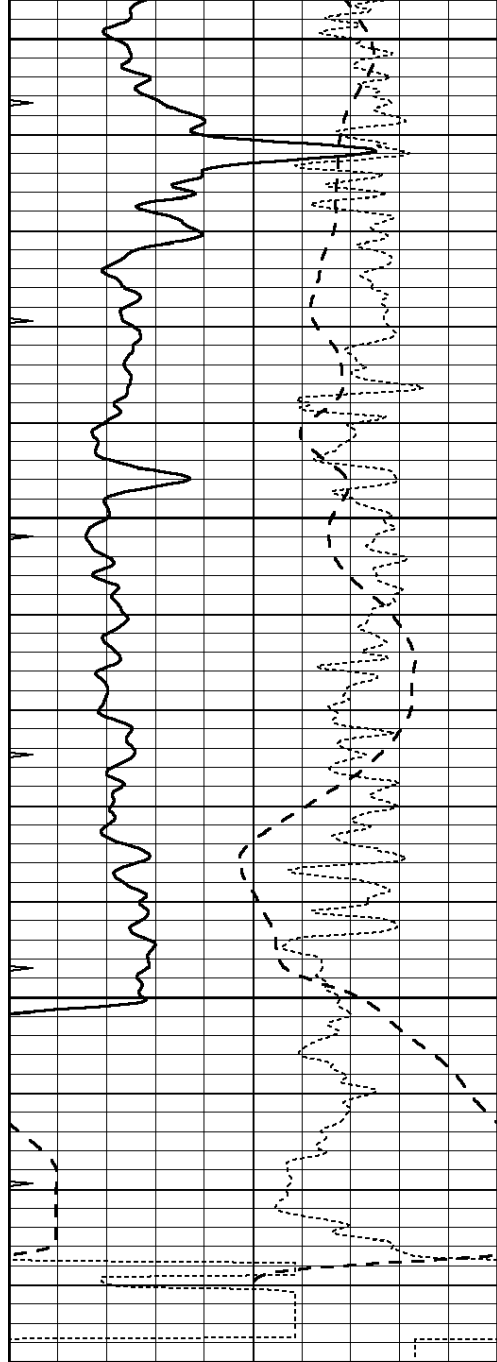
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

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



4550



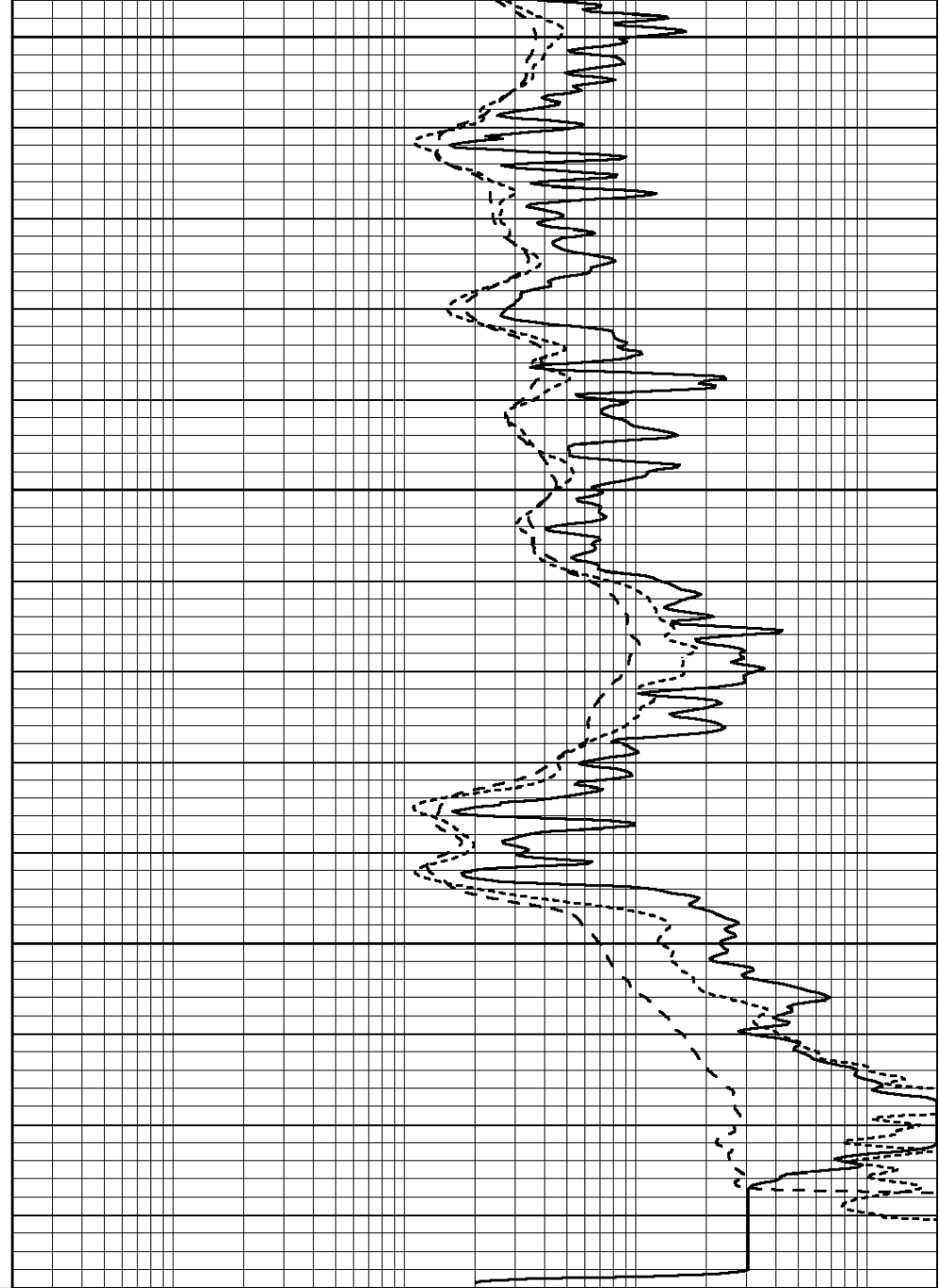


4600

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0	GAMMA RAY (GAPI)	150
-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

Calibration Report

Database File: 008787ddn.db
 Dataset Pathname: pass3.3
 Dataset Creation: Sun Jun 10 19:12:57 2012 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
 Surface Cal Performed: Mon Jun 04 20:32:56 2012
 Downhole Cal Performed: Mon Jul 28 12:02:56 2008
 After Survey Verification Performed: Fri Jun 01 07:32:39 2012

Surface Calibration

Readings

References

Results

Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	550.000	-13.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	540.000	-17.000
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		3970.000	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		

Compensated Density Calibration Report

Serial-Model:	GEAR2-GEARHART
Source / Verifier:	147 / 147
Master Calibration Performed:	Mon Jun 04 21:41:50 2012

Master Calibration						
	Density		Far Detector	Near Detector		
Magnesium	1.710	g/cc	1203.63	642.89	cps	
Aluminum	2.580	g/cc	267.51	439.63	cps	
	Spine Angle = 75.82		Density/Spine Ratio = 0.561			
	Size		Reading			
Small Ring	8.15	in	4.50	V		
Large Ring	14.00	in	6.90	V		

Compensated Neutron Calibration Report

Serial Number:	NUE_2I
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:	Mon Jun 04 20:32:21 2012

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.7500	GAPI/cps