

DUAL INDUCTION LOG

Company	L.D. DRILLING, INC.	Company	L.D. DRILLING, INC.
Well	TERRY #1-24	Well	TERRY #1-24
Field	WILDCAT	Field	WILDCAT
County	ROOKS	County	ROOKS
State	KANSAS	State	KANSAS
Location:	API # : 15-163-24386-00-00	Other Services	CDL/CNL/MEL
	2310' FNL & 360' FWL		
	SEC 24 TWP 6S RGE 18W		
Permanent Datum	GROUND LEVEL	Elevation	1983
Log Measured From	KELLY BUSHING 5' A.G.L.	K.B. 1988	
Drilling Measured From	KELLY BUSHING	D.F. 1986	
		G.L. 1983	
Date	04/04/19		
Run Number	ONE		
Depth Driller	3610		
Depth Logger	3608		
Bottom Logged Interval	3607		
Top Log Interval	50		
Casing Driller	8 5/8" @ 257		
Casing Logger	257		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.2/52		
pH / Fluid Loss	10.0/7.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.80@65		
Rmt @ Meas. Temp	.60@65		
Rmc @ Meas. Temp	.96@65		
Source of Rmt / Rmc	MEASURED		
Rm @ BHT	.46@112		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	///		
Maximum Recorded Temperature	112F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	GUS PFANENSTIEL		
Witnessed By	KIM SHOEMAKER		

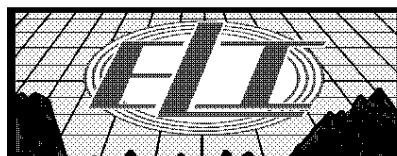
<<< Fold Here >>>

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, KS. (785) 628-6395

DIRECTIONS
STOCKTON NORTH 5 MILES, EAST INTO.



MAIN PASS

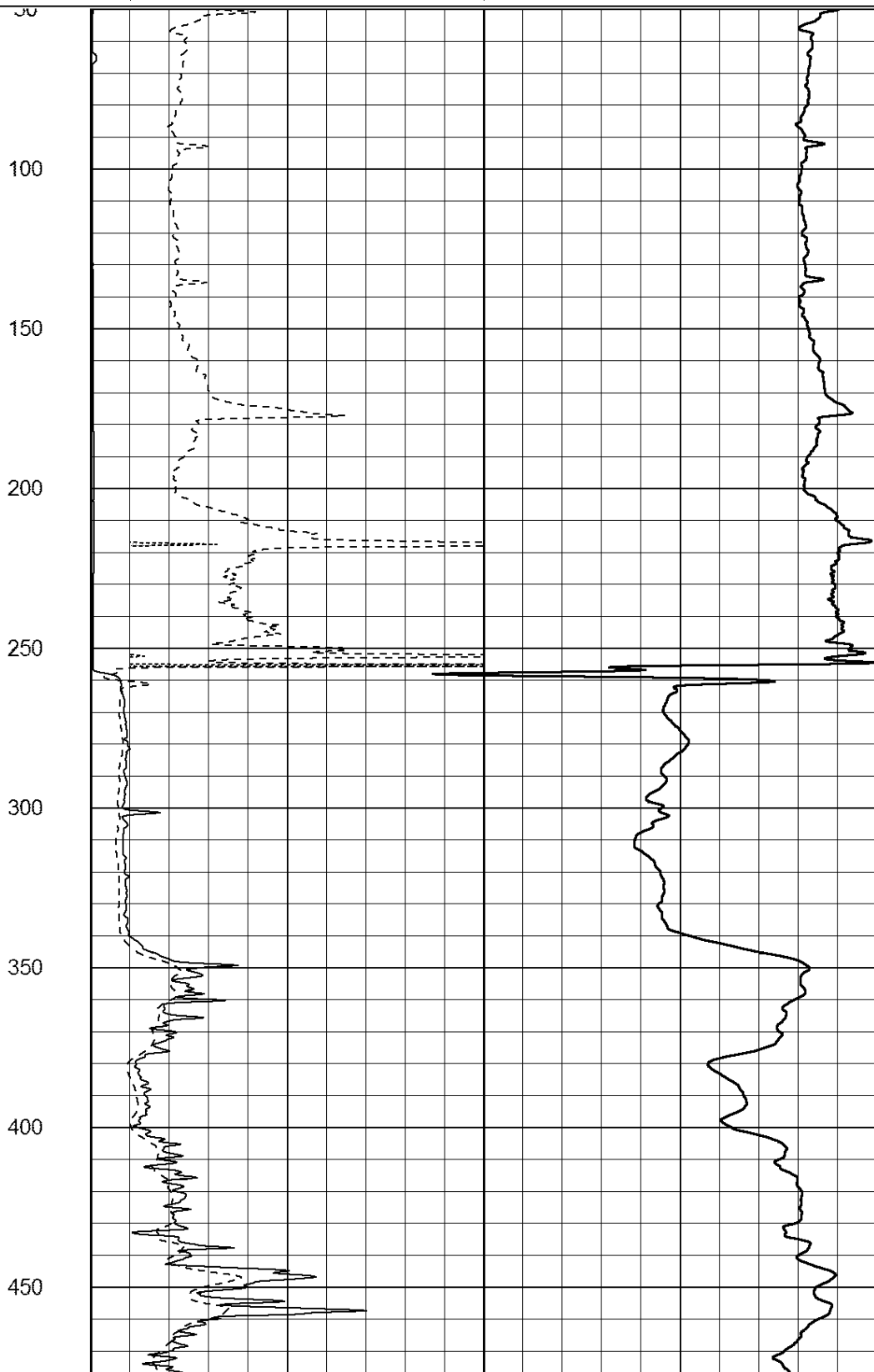
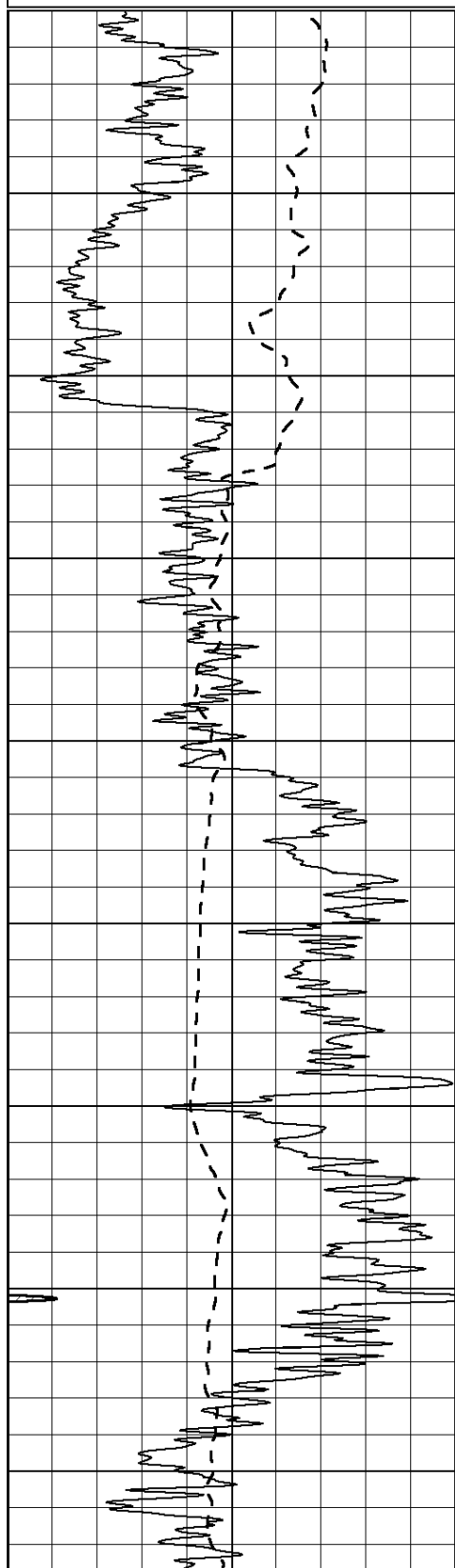
Database File: 3493ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: dil2
 Dataset Creation: Thu Apr 04 15:05:17 2019 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:600

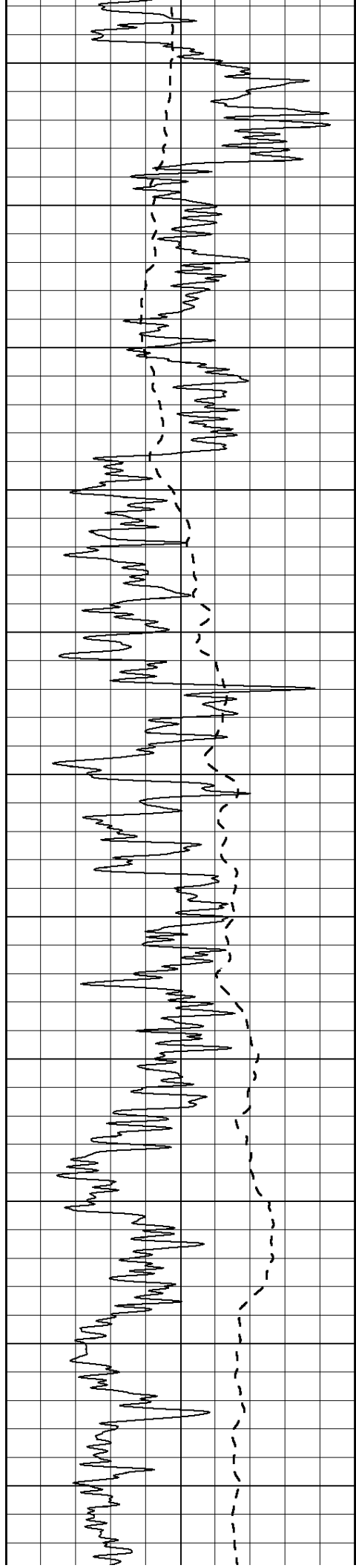
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-100	SP (mV)	100

0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50

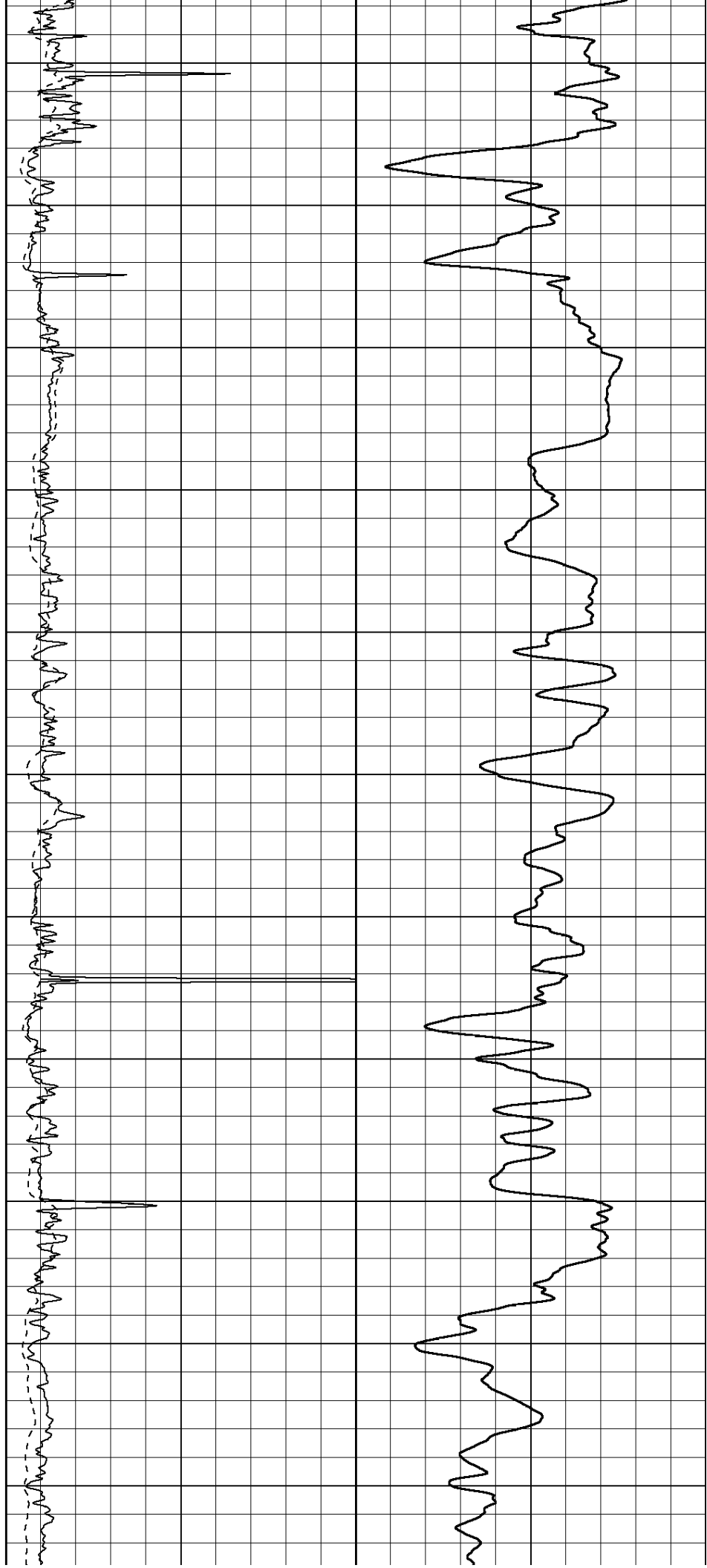
1000	CILD (mmho/m)	0
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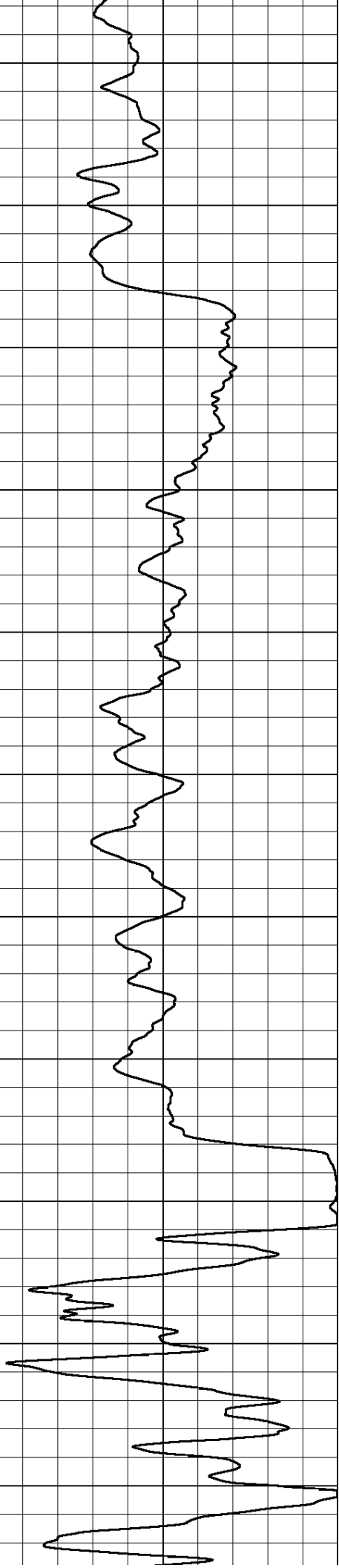
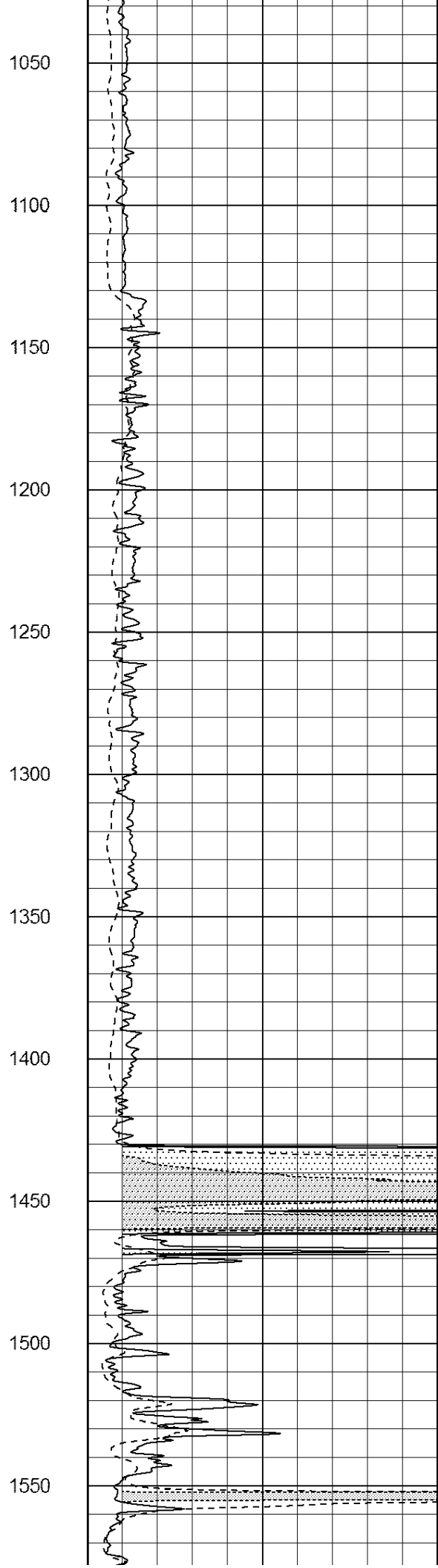
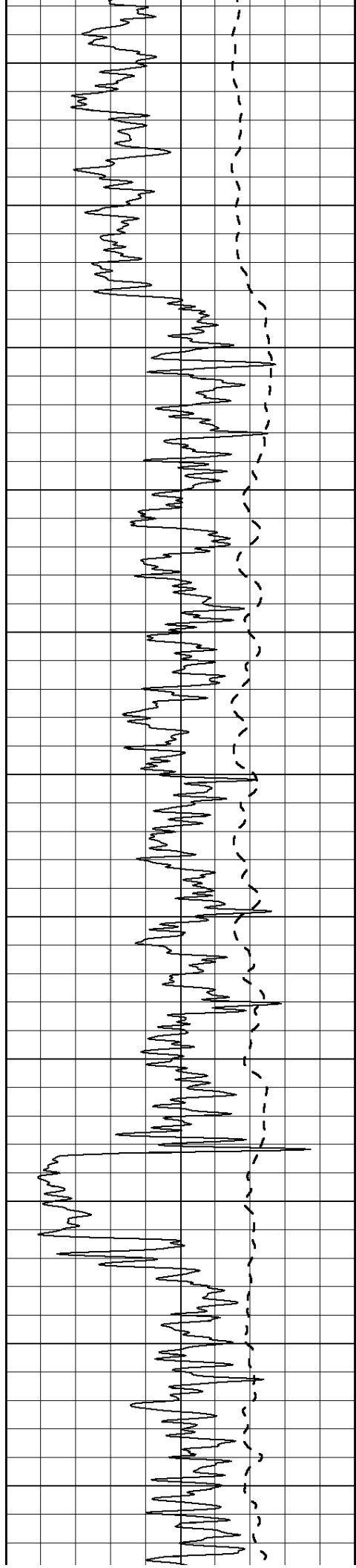
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

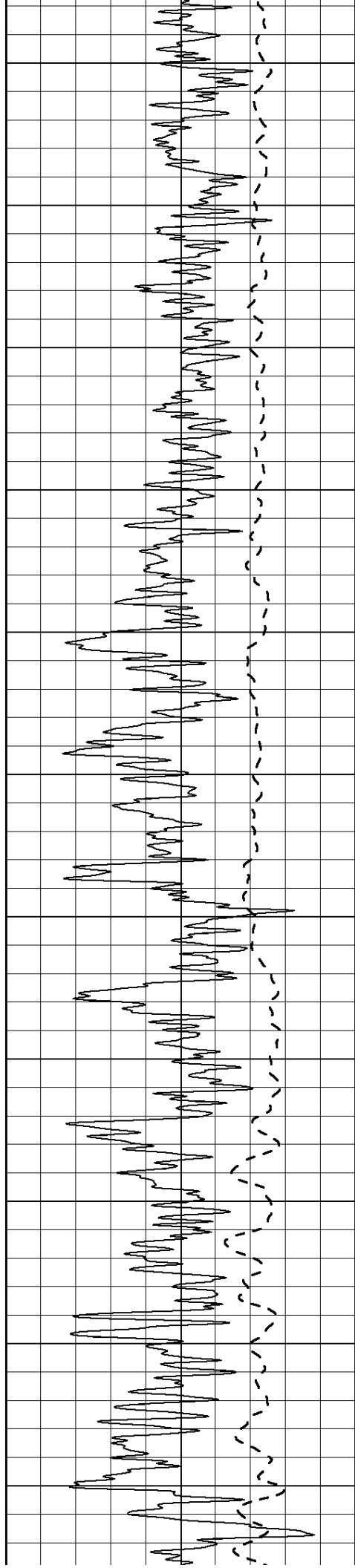




500
550
600
650
700
750
800
850
900
950
1000







1600

1650

1700

1750

1800

1850

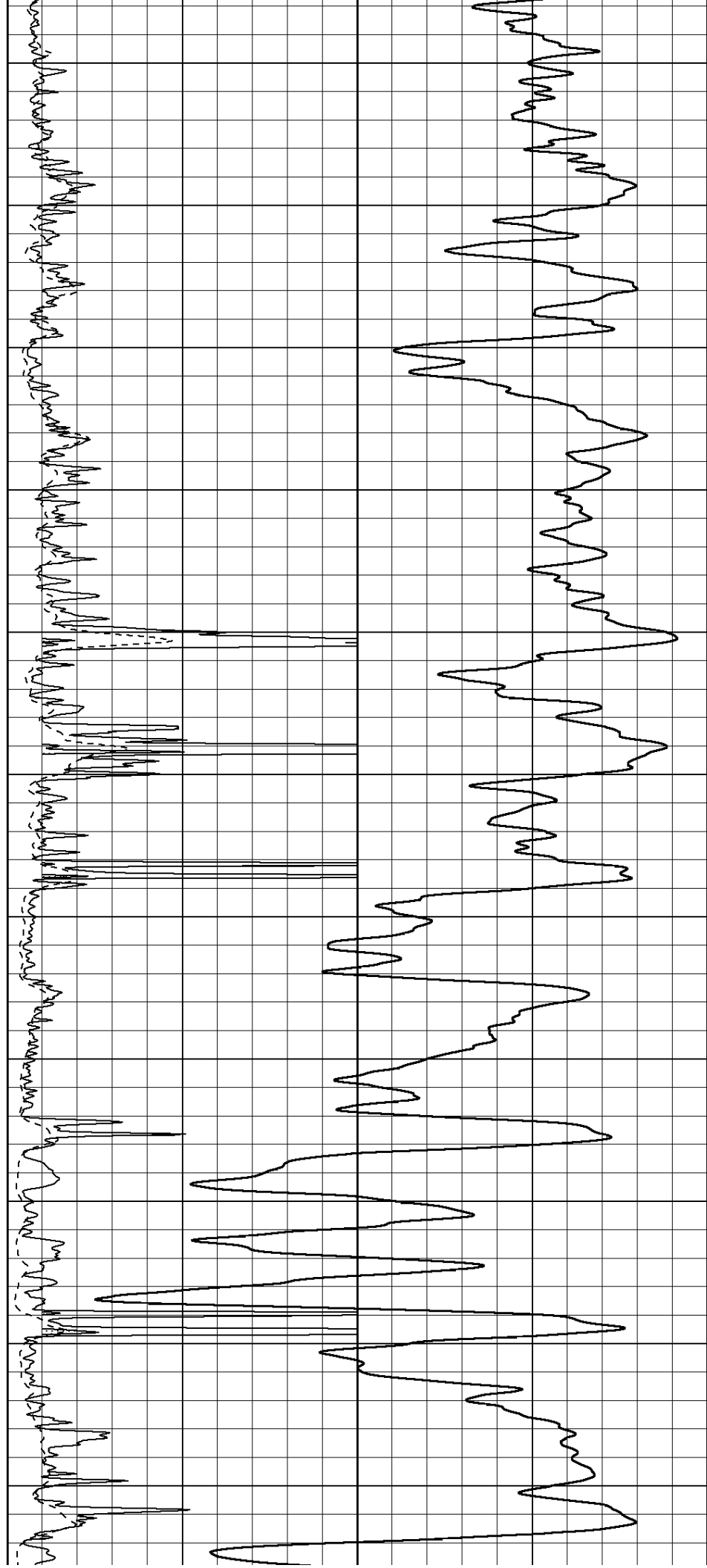
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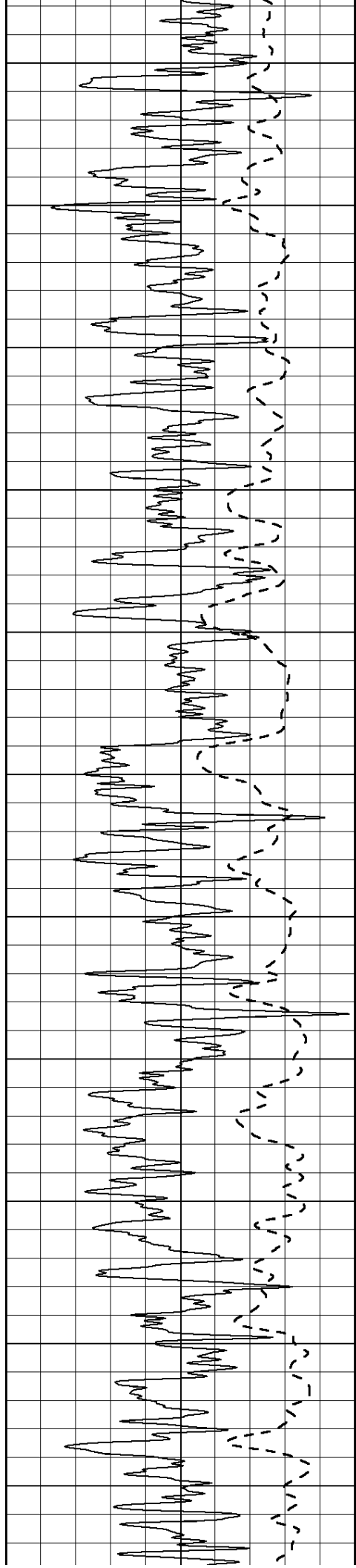
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2000

2050

2100





2150

2200

2250

2300

2350

2400

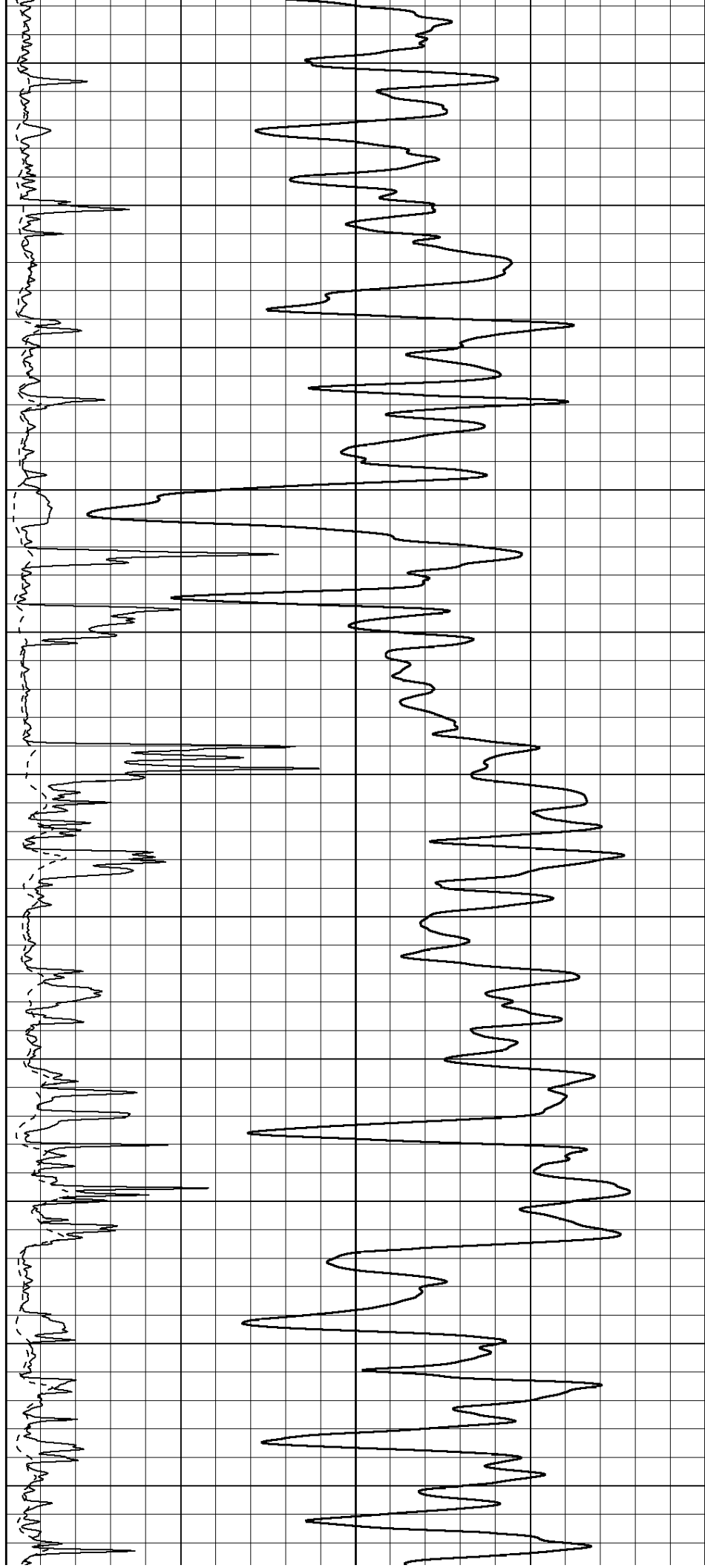
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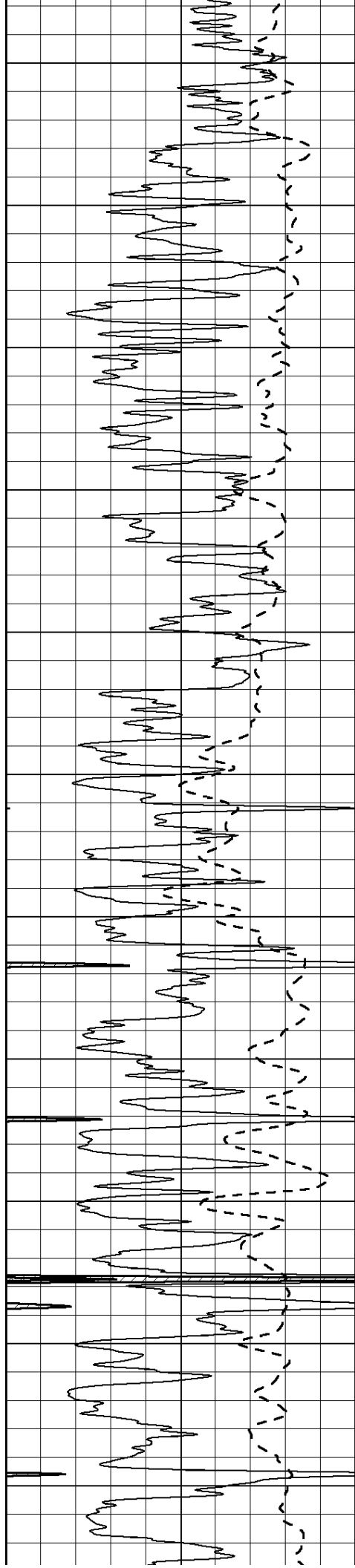
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2550

2600

2650





2700

2750

2800

2850

2900

2950

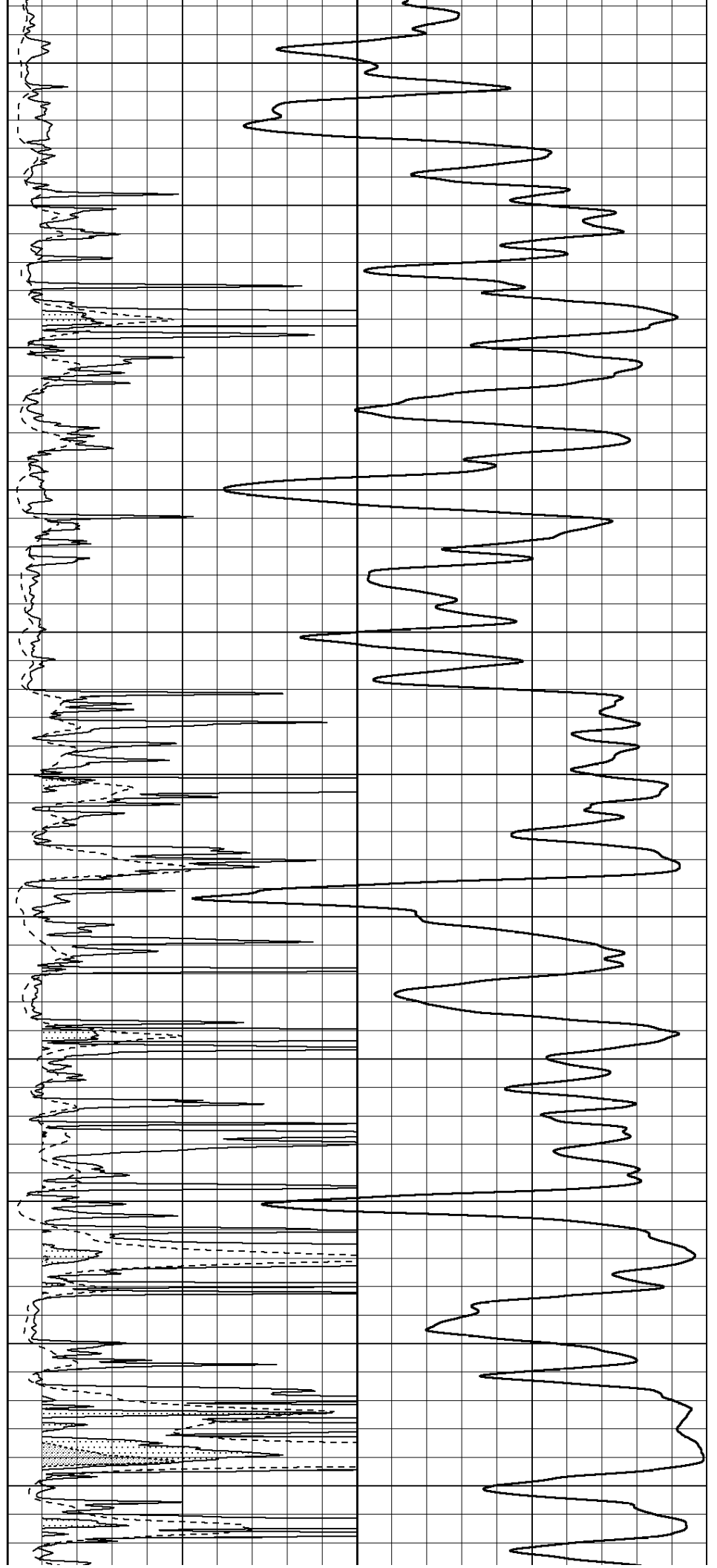
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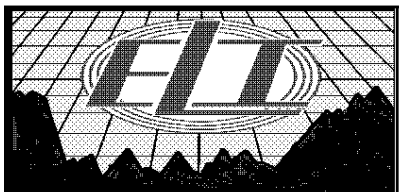
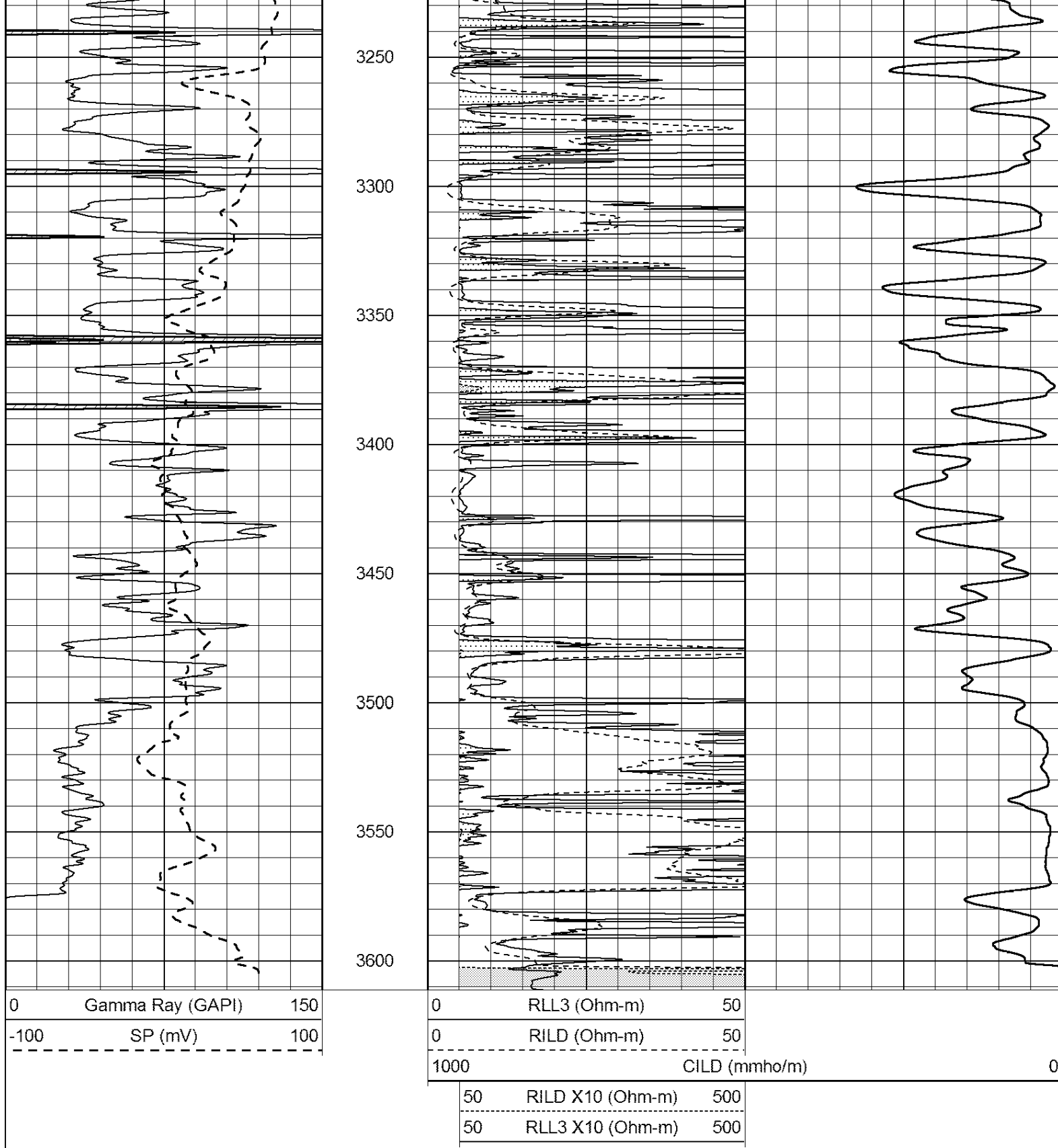
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3100

3150

3200

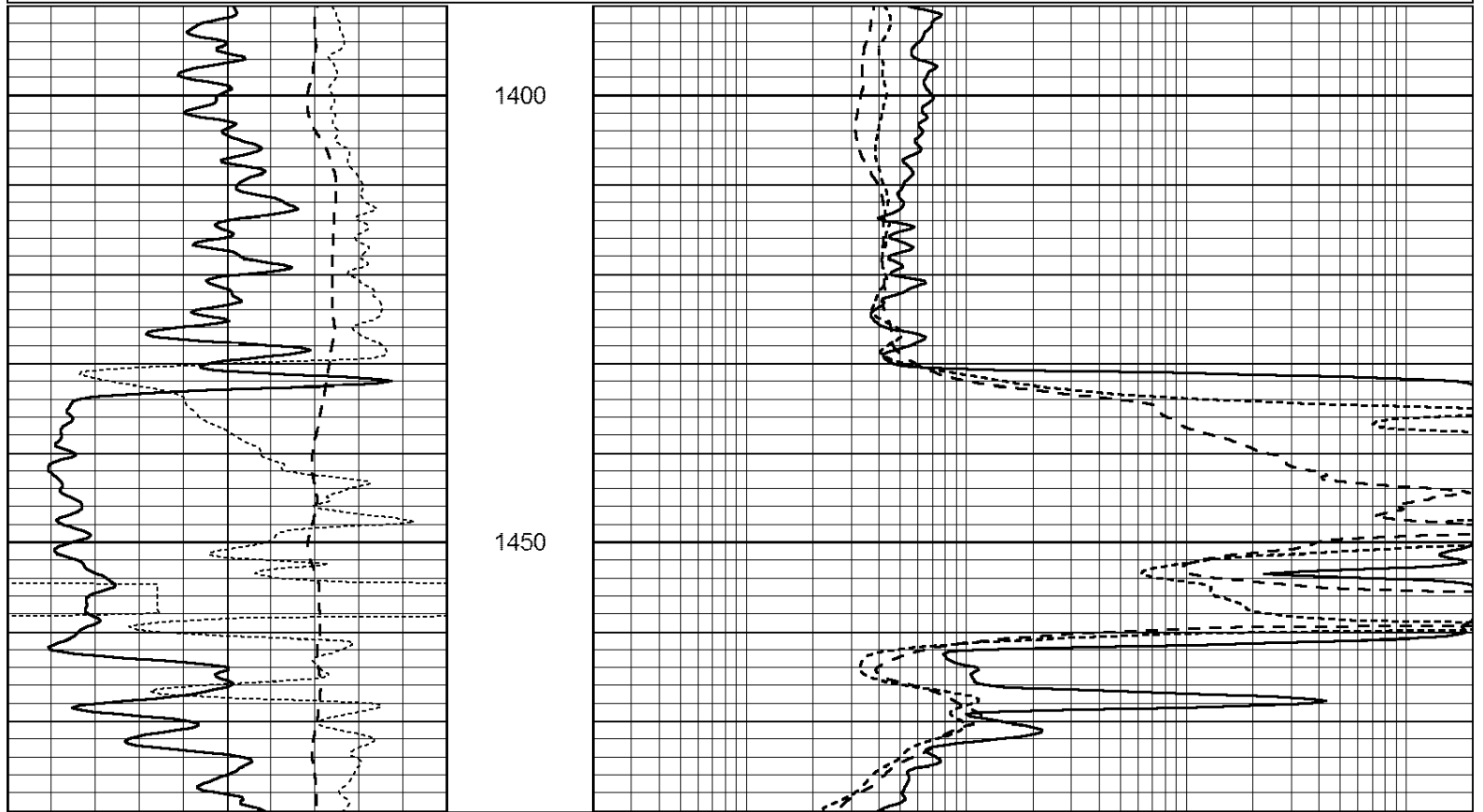




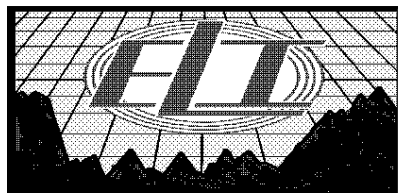
MAIN PASS

Database File: 3493ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Thu Apr 04 15:05:17 2019 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

Charted by: Depth in Feet scaled 1:240					
0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



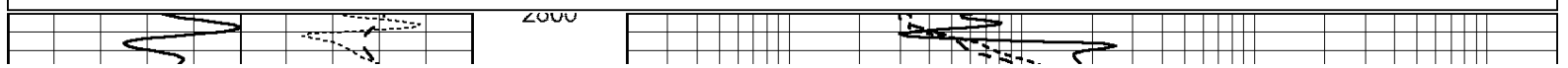
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-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			

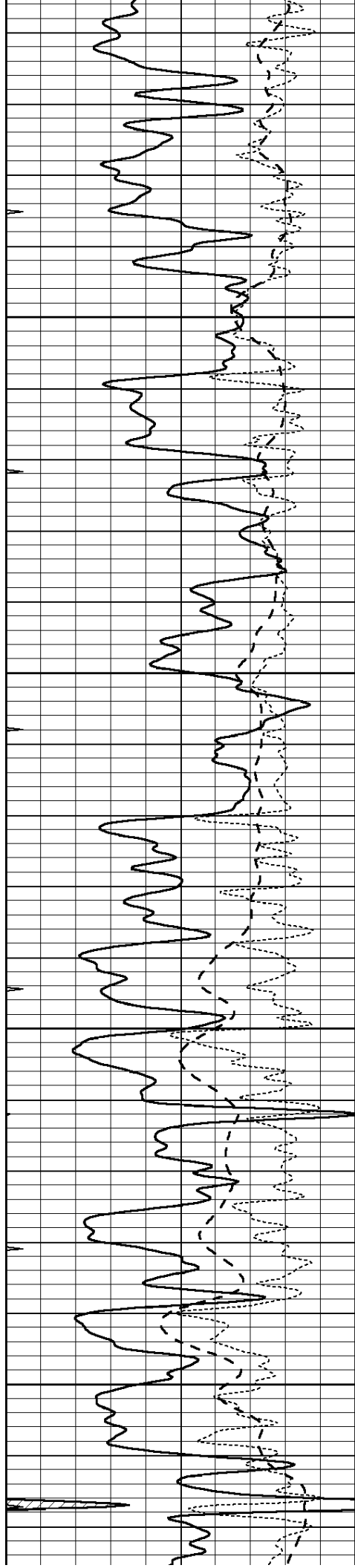


MAIN PASS

Database File: 3493ddn.db
 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Thu Apr 04 15:05:17 2019 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



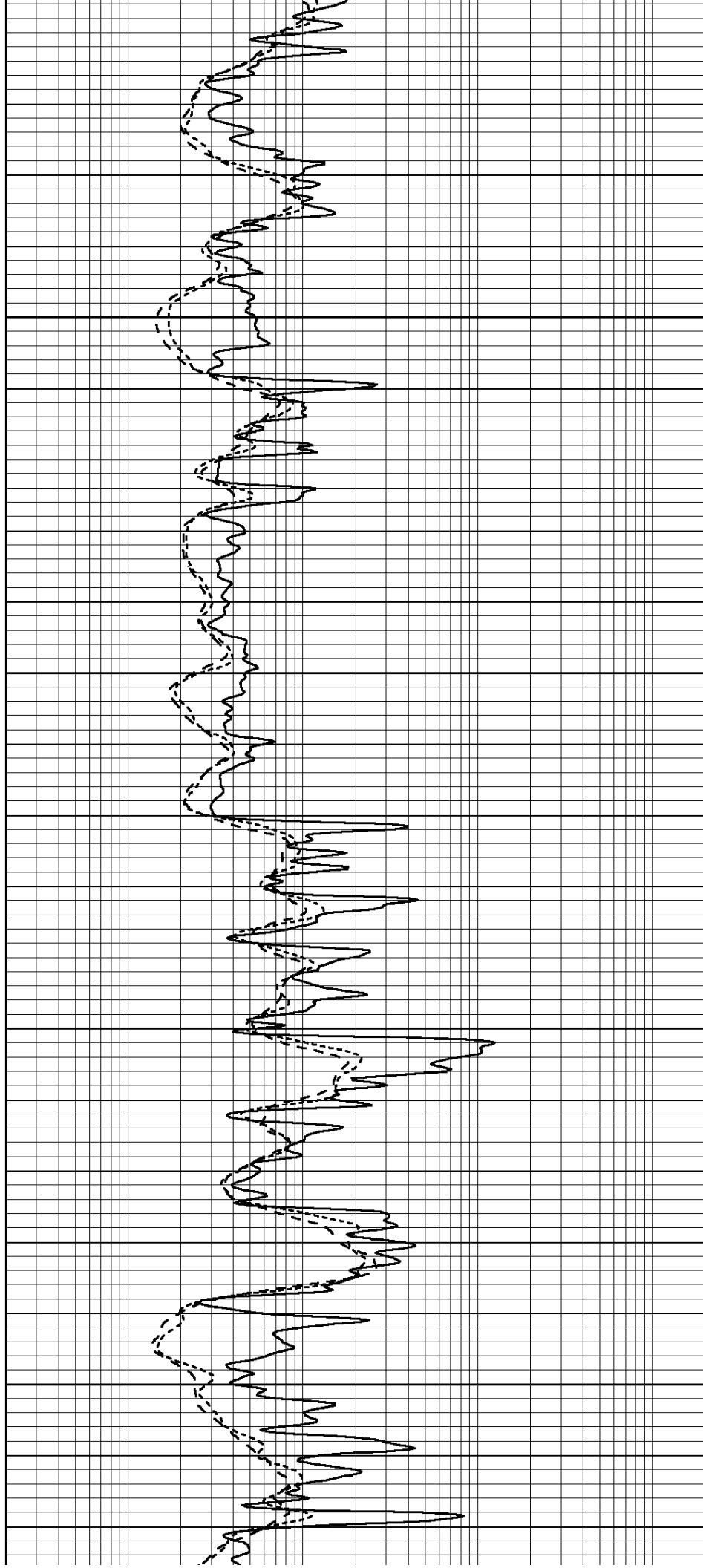


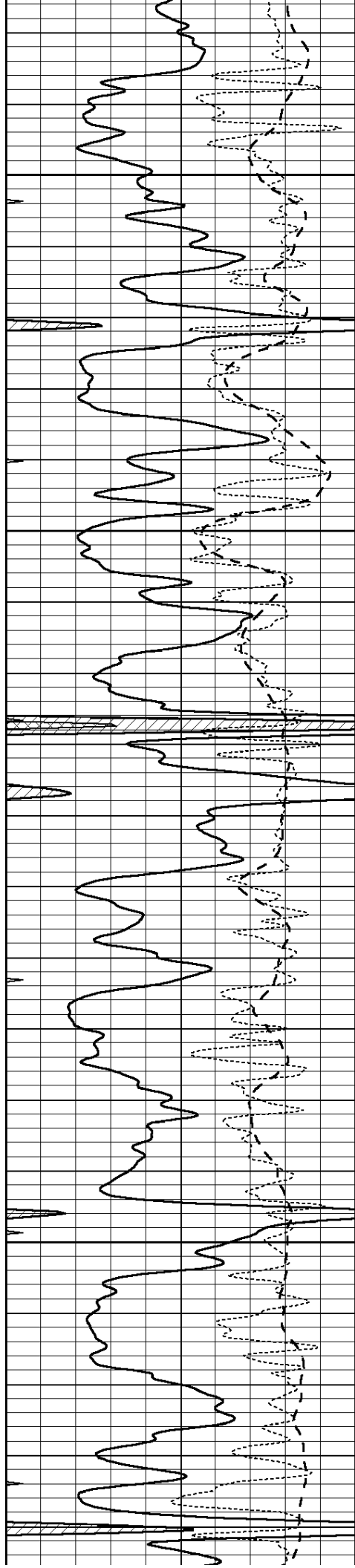
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2900

2950

3000



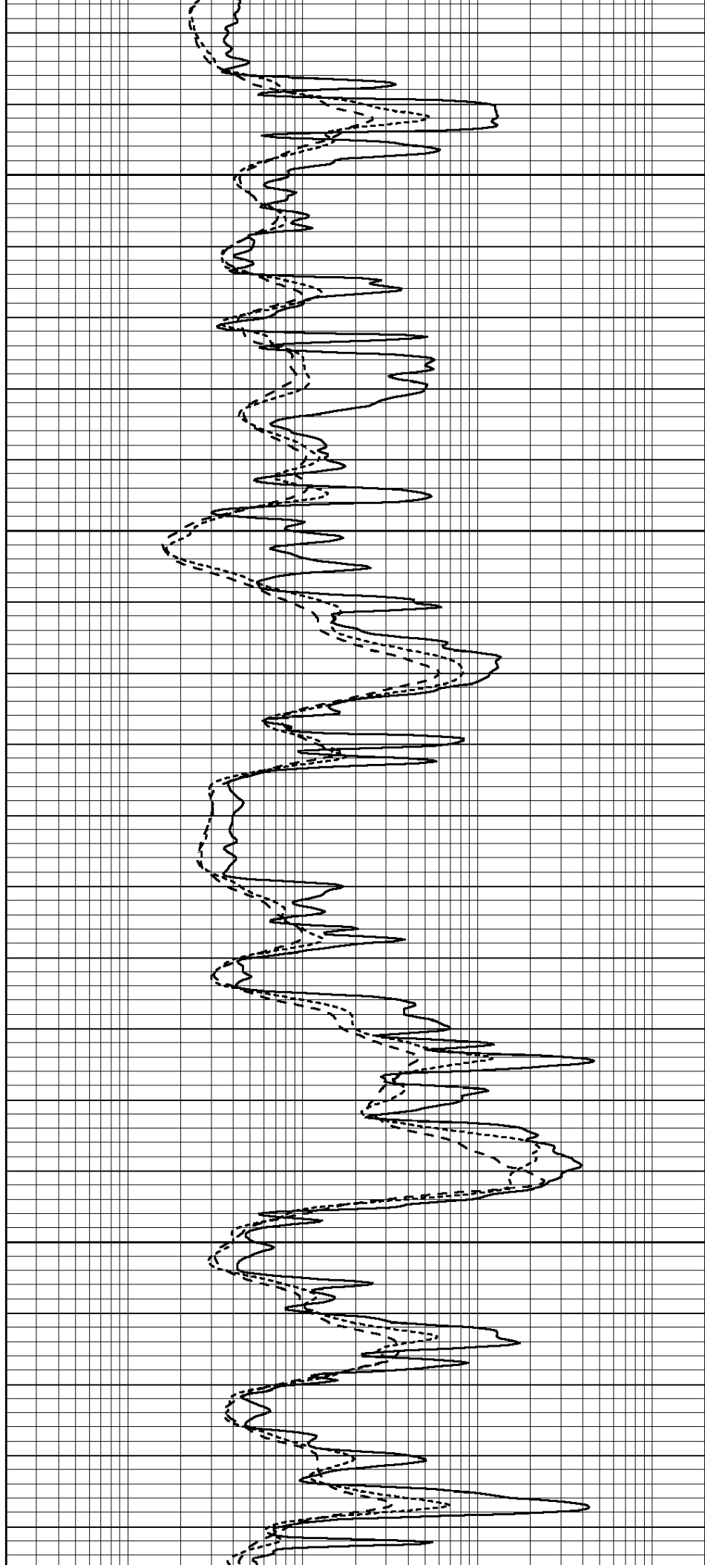


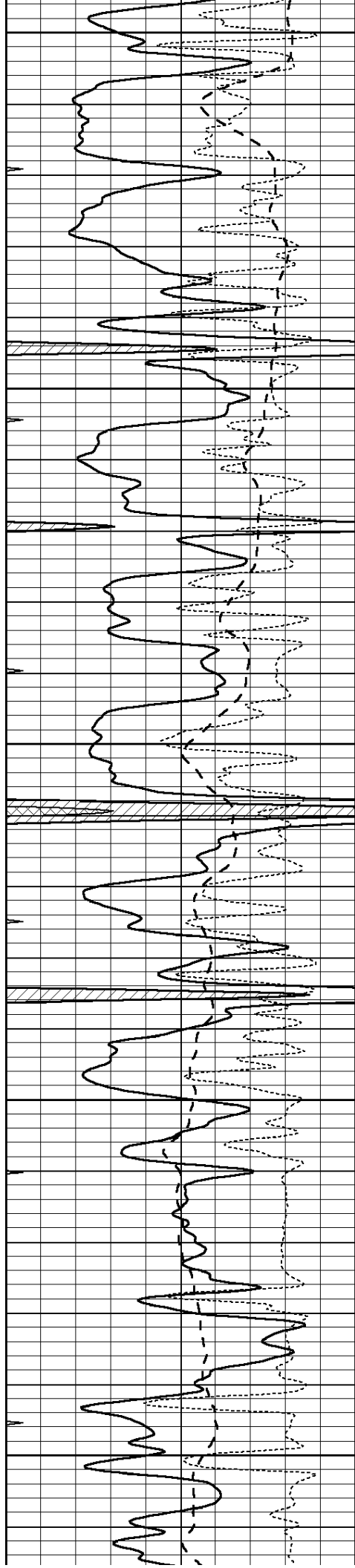
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3100

3150

3200





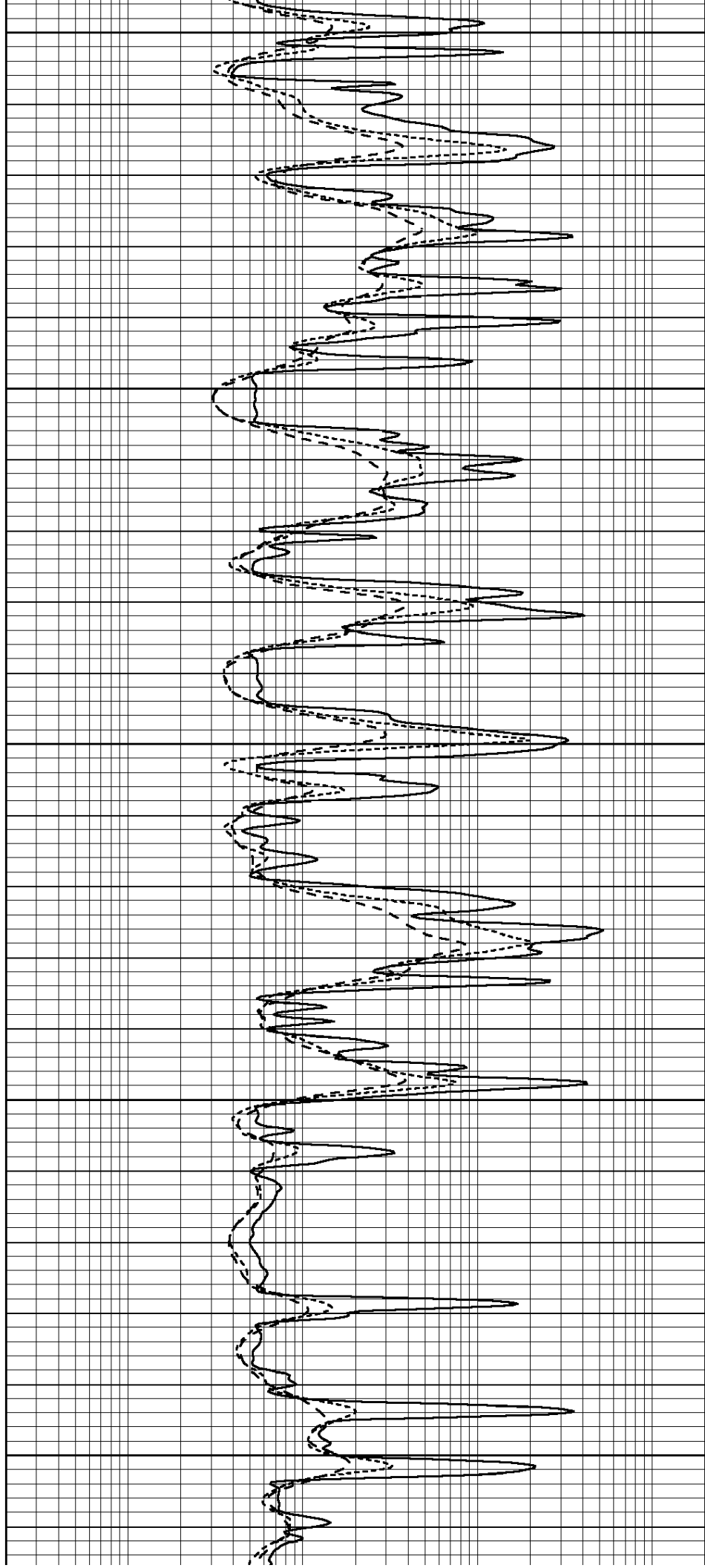
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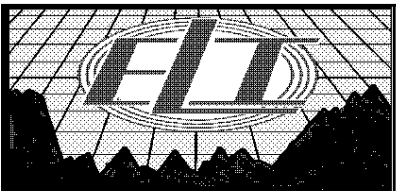
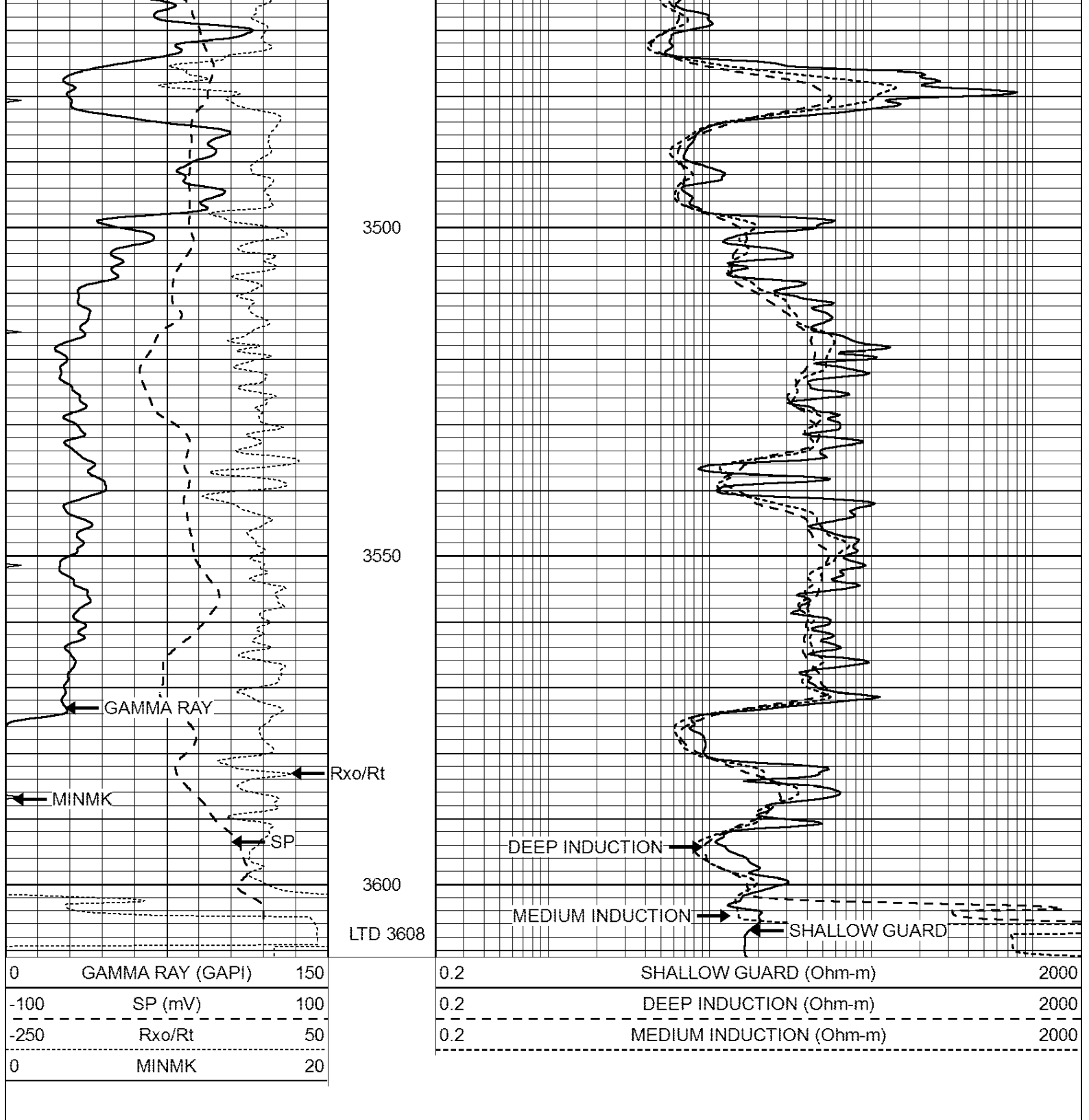
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3350

3400

3450



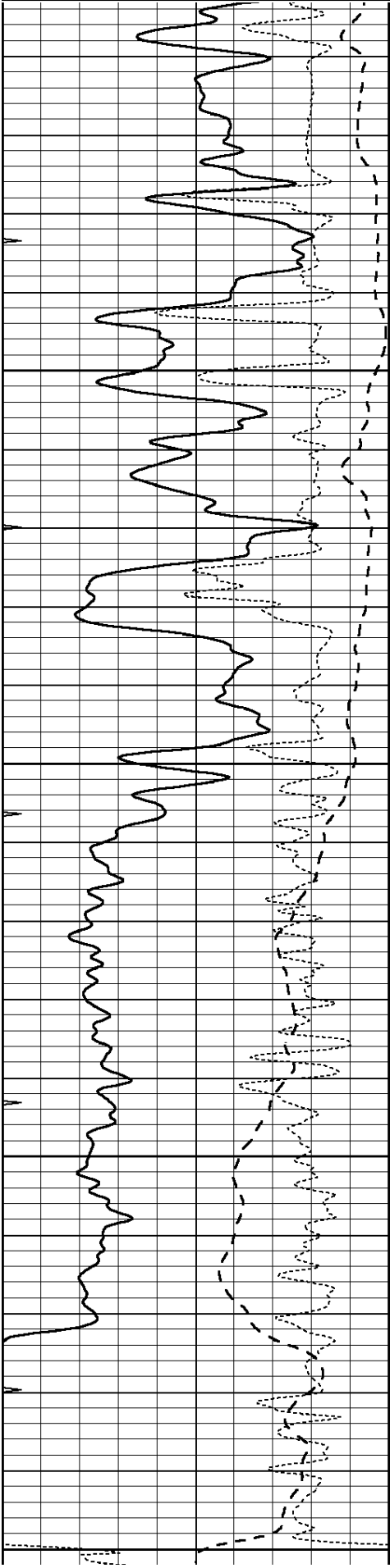


REPEAT SECTION

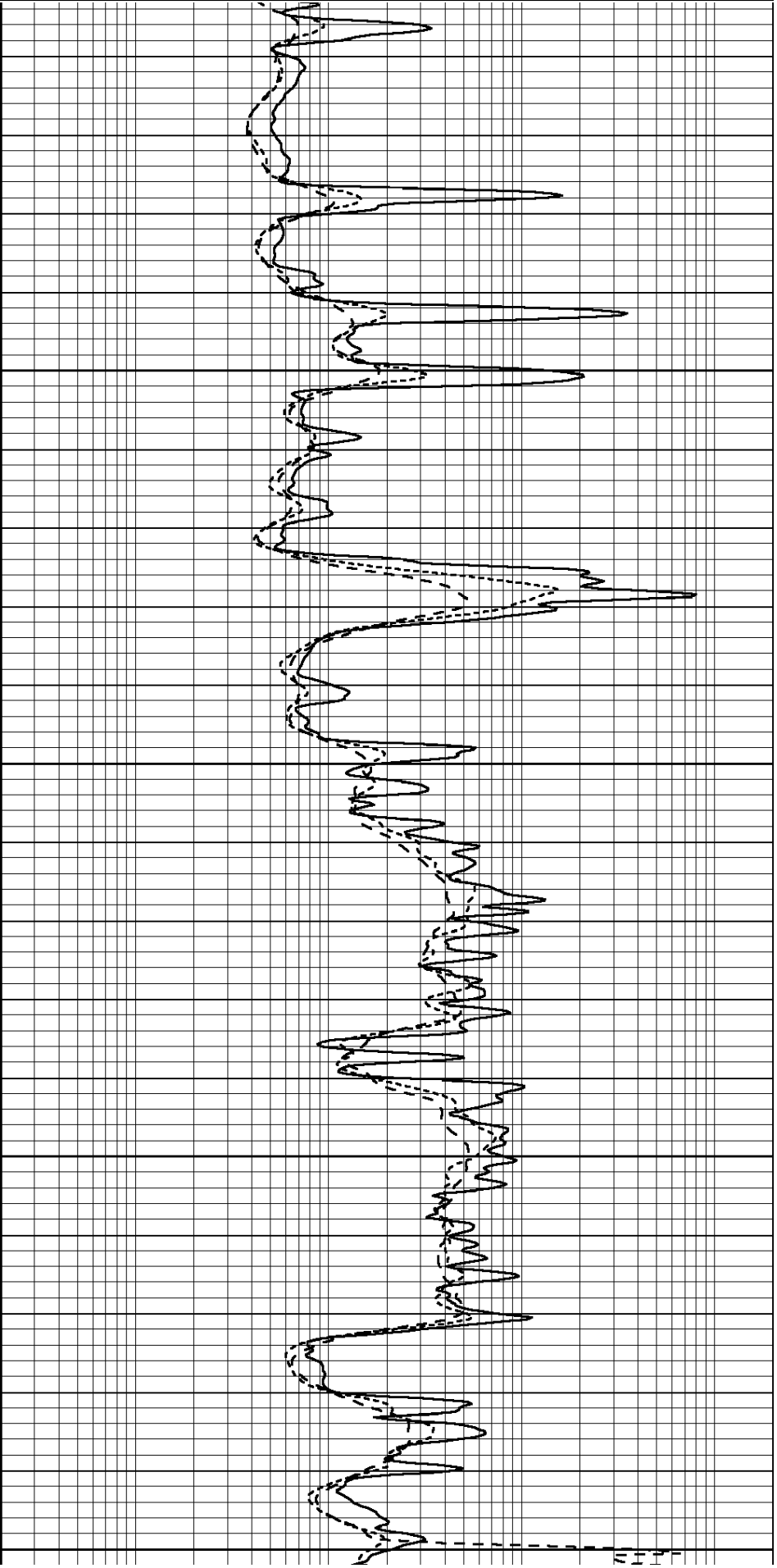
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Dataset Pathname: pass2.1
Presentation Format: _dil
Dataset Creation: Thu Apr 04 14:40:34 2019 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240



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



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



0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			

Database File: 3493ddn.db		Calibration Report	
Dataset Pathname: pass2.1			
Dataset Creation: Thu Apr 04 14:40:34 2019 by Calc Open-Cased 090629			

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Mon Sep 10 14:28:35 2018
Downhole Cal Performed:	Mon Sep 10 14:28:38 2018
After Survey Verification Performed:	Mon Sep 10 14:28:40 2018

Surface Calibration								
Readings			References				Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

Downhole Calibration								
Readings			References				Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	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: 001N Model: PRB

Master Calibration					Performed Fri Feb 22 10:21:38 2019	
	Background	Magnesium	Aluminum	Sandstone		
Window 1	1650.2	7609.7	2906.5	8386.5		cps
Window 2	1538.2	6635.9	2614.4	7212.4		cps
Window 3	1257.0	3718.7	1765.8	3927.1		cps

Window 4	376.8	375.6	373.4	374.5	cps
Long Space	0.0	5097.7	1076.2	5674.2	cps
Short Space	2.8	1704.3	1106.3	1723.6	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 44.5	Rib Slope	: 0.982	Density/Spine Ratio	: 0.545
Spine Angle	: 74.5	Spine Slope	: 3.599	Spine Intercept	: -18.2

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	

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Compensated Neutron Calibration Report

Serial Number:	6I
Tool Model:	G

CALIBRATION					
Detector		Readings		Target	Normalization
Short Space		1.00	cps	1.00	1.0000
Long Space		1.00	cps	1.00	1.0000

PRE-SURVEY VERIFICATION					
Detector		Readings		Measured	Target
1)	Short Space		cps		
	Long Space		cps	pu	pu
2)	Short Space		cps		
	Long Space		cps	pu	
3)	Short Space		cps		
	Long Space		cps	pu	

POST-SURVEY VERIFICATION					
Detector		Readings		Measured	Target

1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	pu

Gamma Ray Calibration Report				
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Serial Number:	GR6		
Tool Model:	OPEN		
Performed:	Mon Sep 10 14:29:23 2018		
Calibrator Value:	150.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	276.0	cps	
Sensitivity:	0.5500	GAPI/cps	