



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company	WHITE & ELLIS DRILLING, INC.		
Well	CHAIN RANCH "B" #1		
Field	AMBER CREEK SOUTH		
County	BARBER	State	KANSAS
Location:	AP1 # : 15-007-24163-0000 1040' FSL & 530' FWL		Other Services CDL/CNL PE/MEL
Permanent Datum	SEC 1	TWP 31S	RGE 12W
Log Measured From	GROUND LEVEL Elevation 1581 KELLY BUSHING 10' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Date	4/23/14		
Run Number	ONE		
Depth Driller	4650		
Depth Logger	4650		
Bottom Logged Interval	4648		
Top Log Interval	00		
Casing Driller	8 5/8" @ 350		
Casing Logger	344		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5000 PPM	
Density / Viscosity	9.3/52		
pH / Fluid Loss	10.5/9.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.75 @ 80F		
Rmt @ Meas. Temp	.56 @ 80F		
Rmc @ Meas. Temp	.90 @ 80F		
Source of Rmt / Rmc	MEASUREMENT		
Rm @ BHT	.48 @ 123F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	123F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	ADAM NIGHSWONGER		

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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, KS. (785) 628-6395
DIRECTIONS:

SAWYER, KS. - SOUTH TO RESORT RD. (99 SPRINGS RD.) - 1/4 EAST TO GALLARDIA RD.
1/4 SOUTH - WEST INTO AT CATTLE GUARD



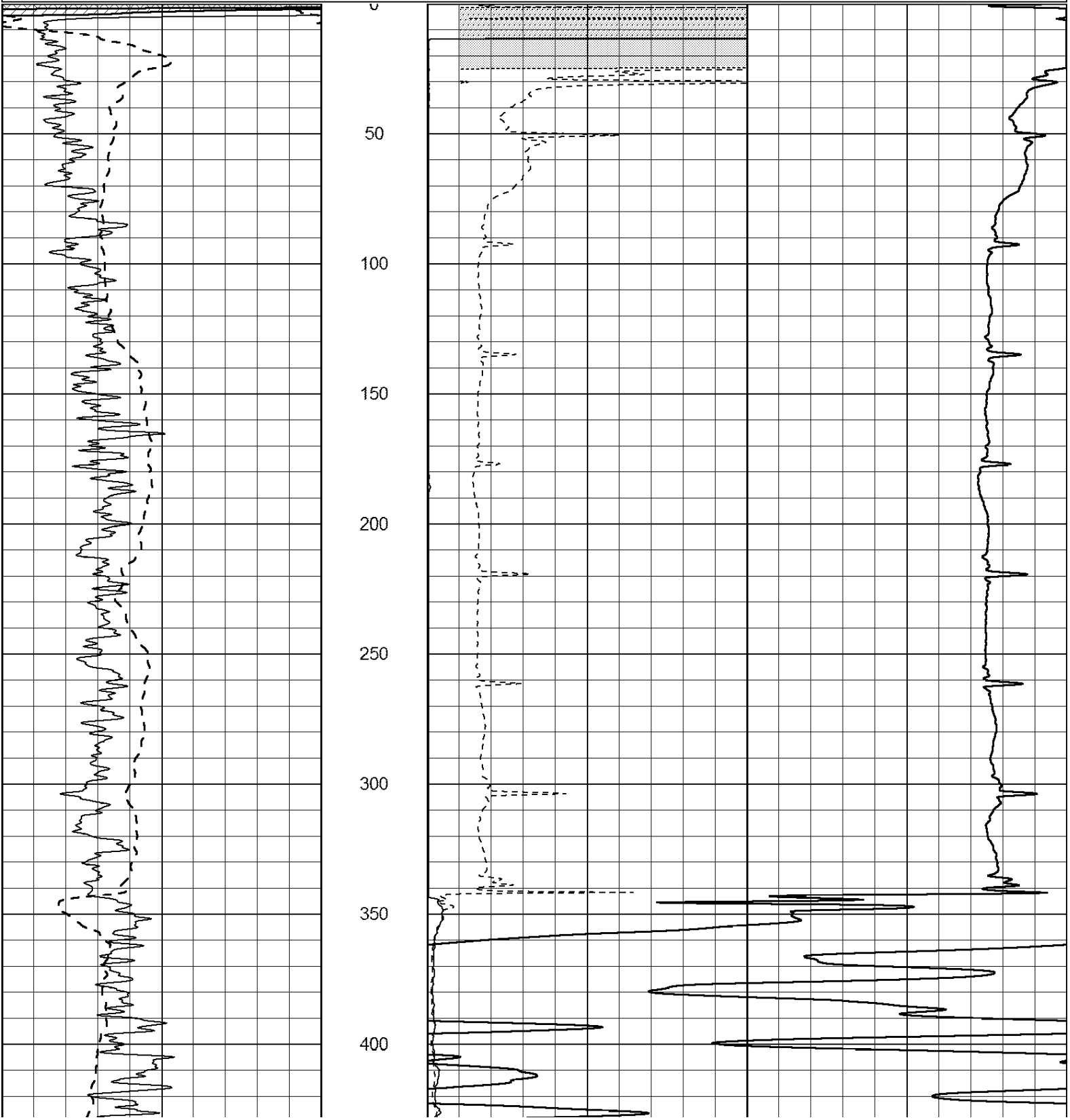
NABORS

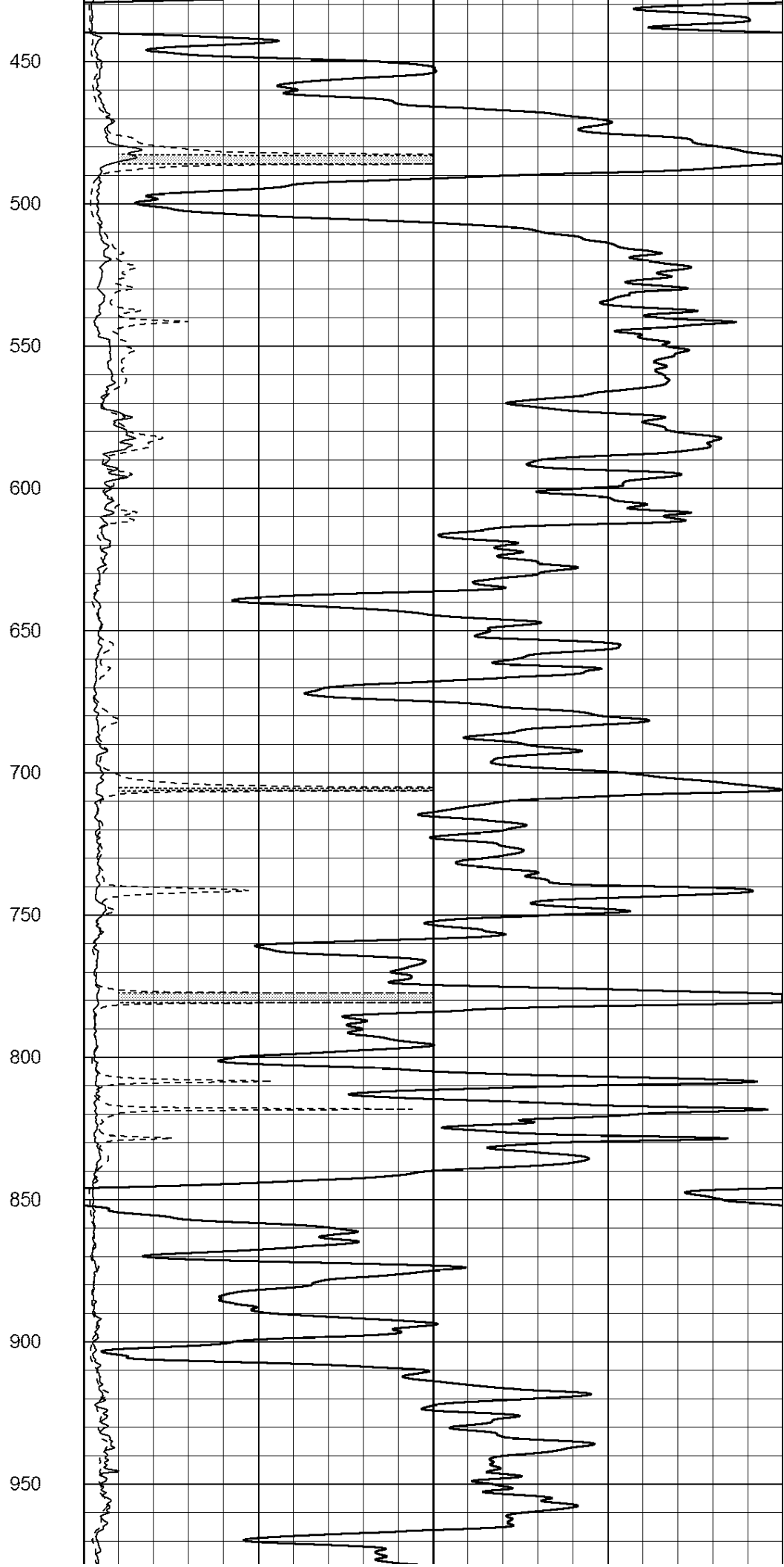
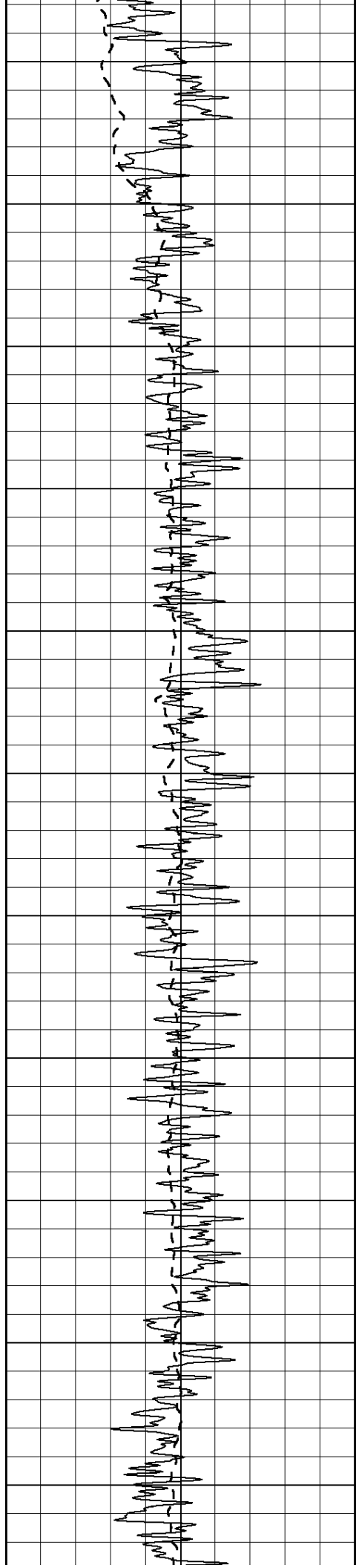
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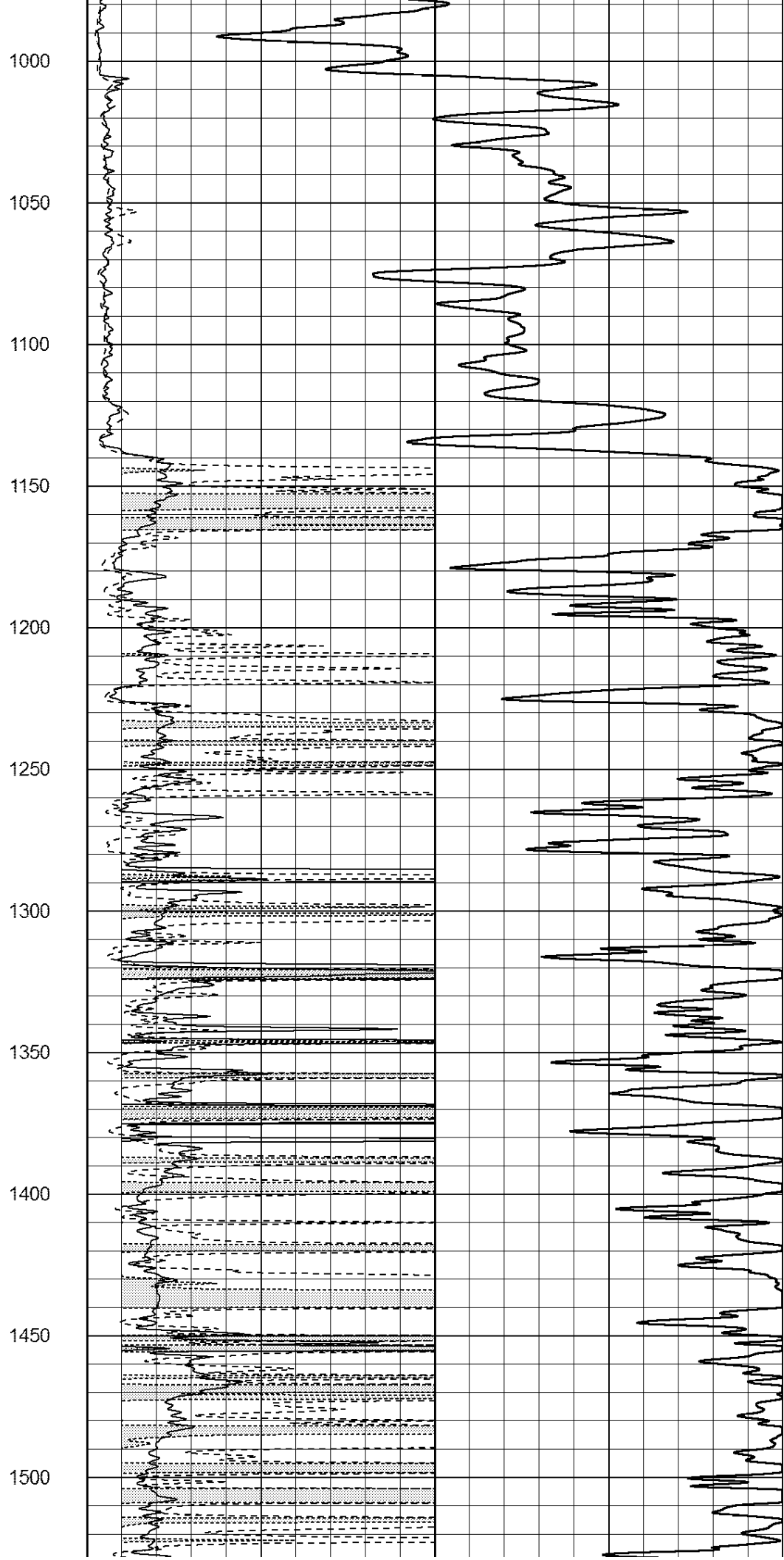
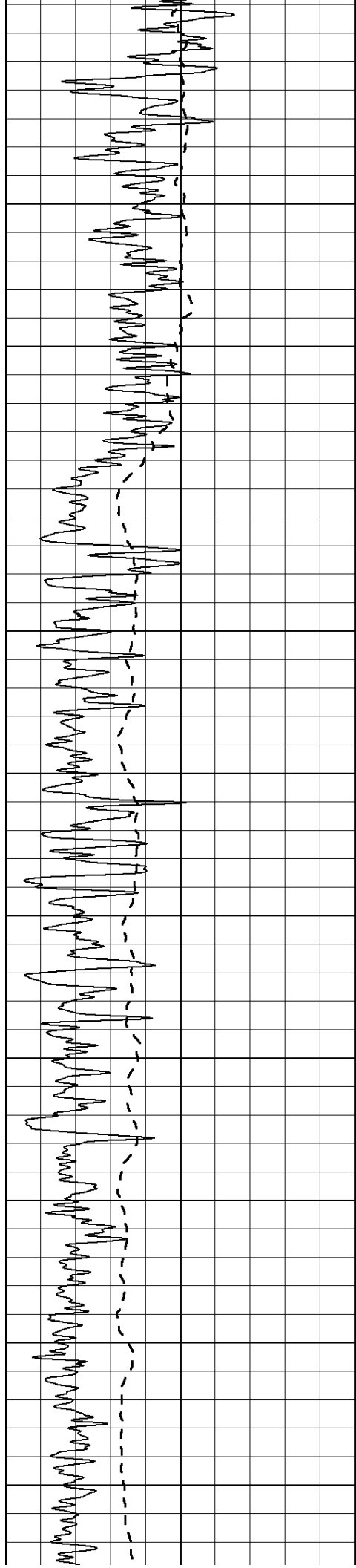
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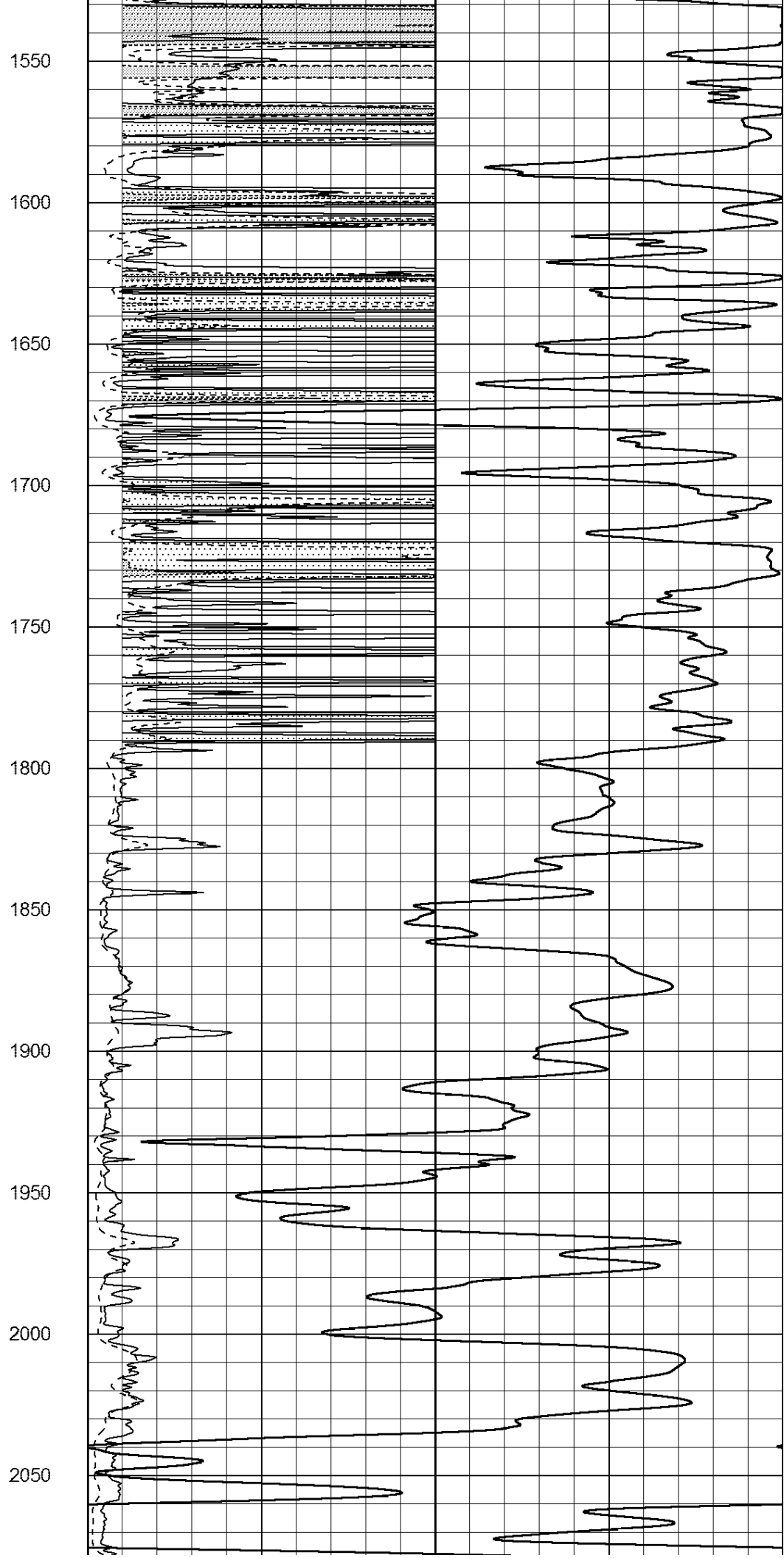
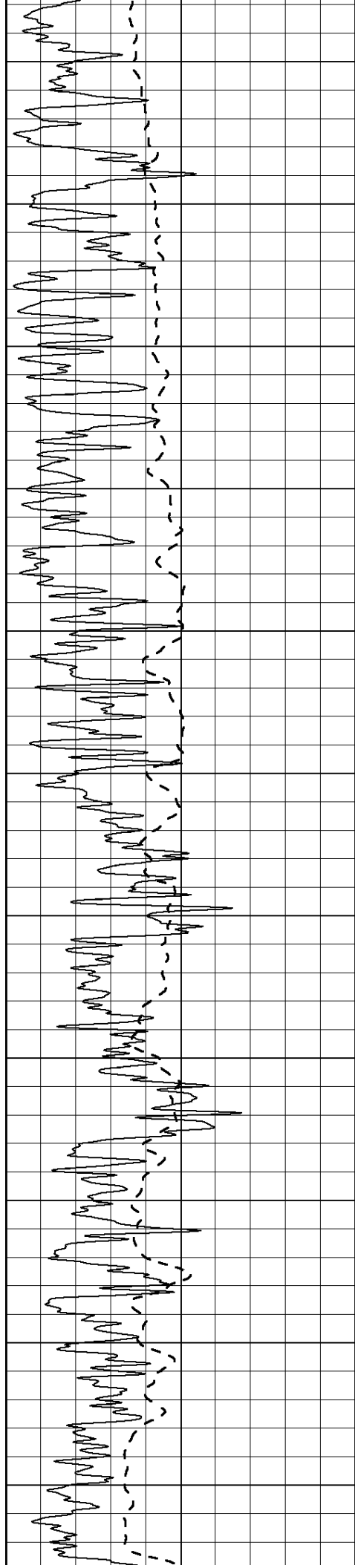
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Charted by: Depth in Feet scaled 1:600

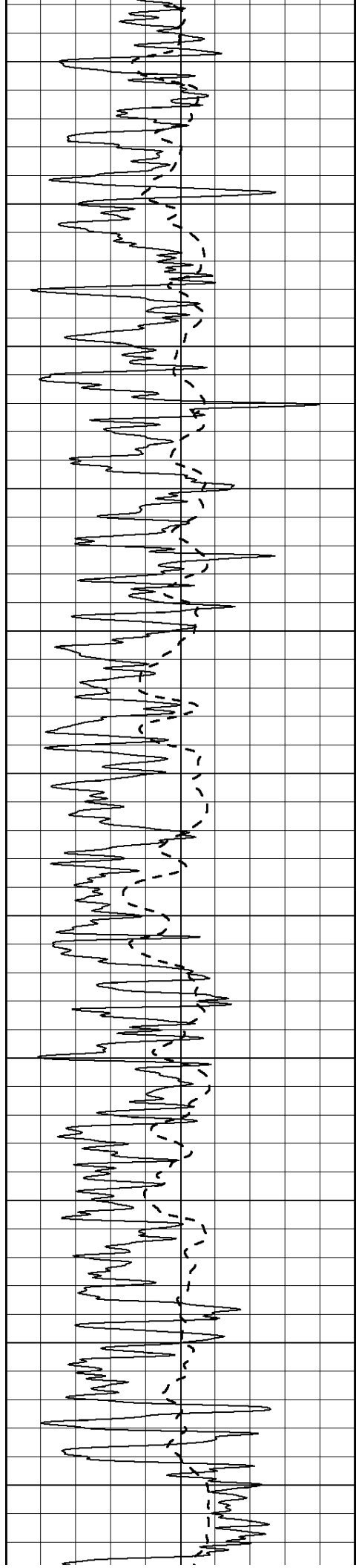
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-100	SP (mV)	100	0	RILD (Ohm-m)	50	
-----			1000	CILD (mmho/m)		0
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	











2100

2150

2200

2250

2300

2350

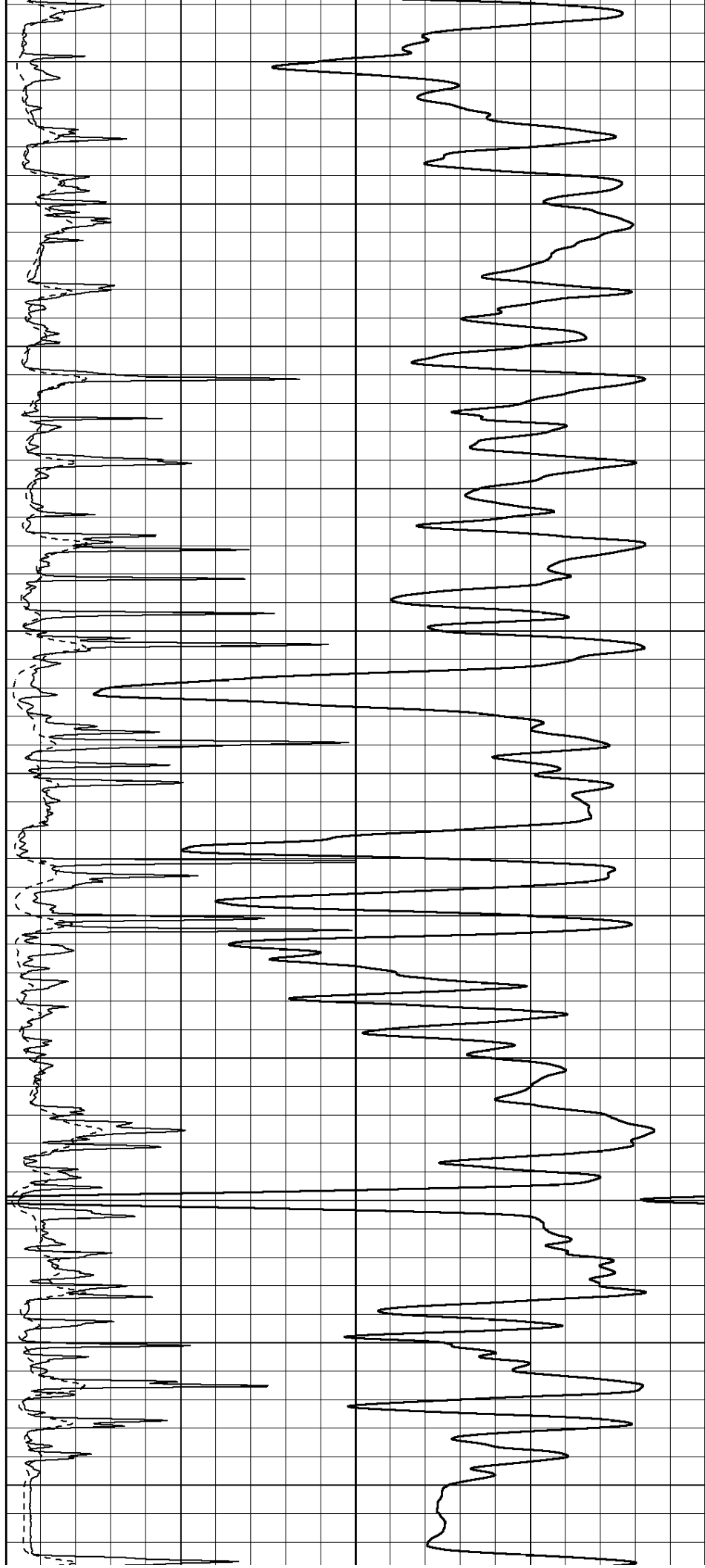
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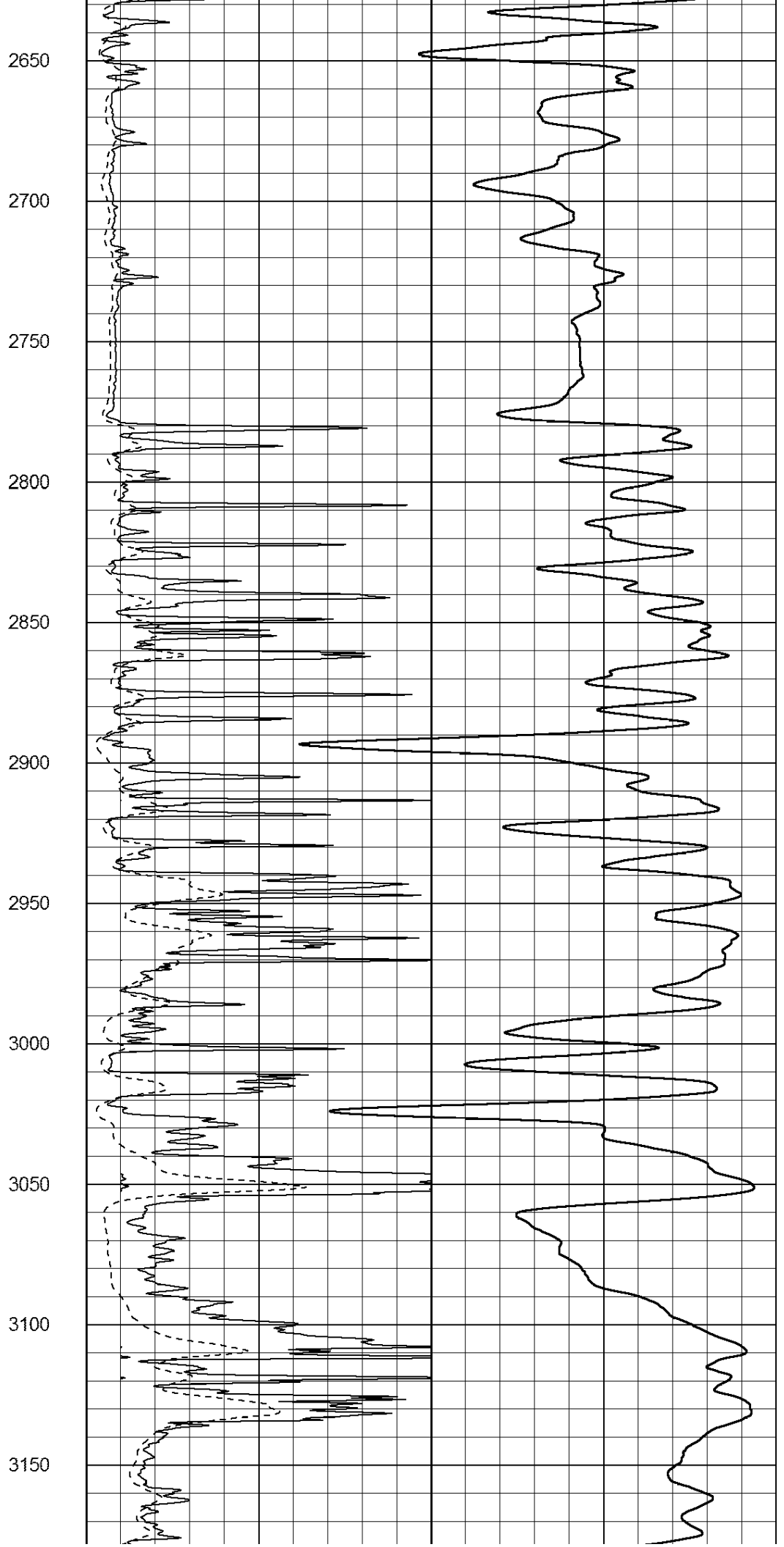
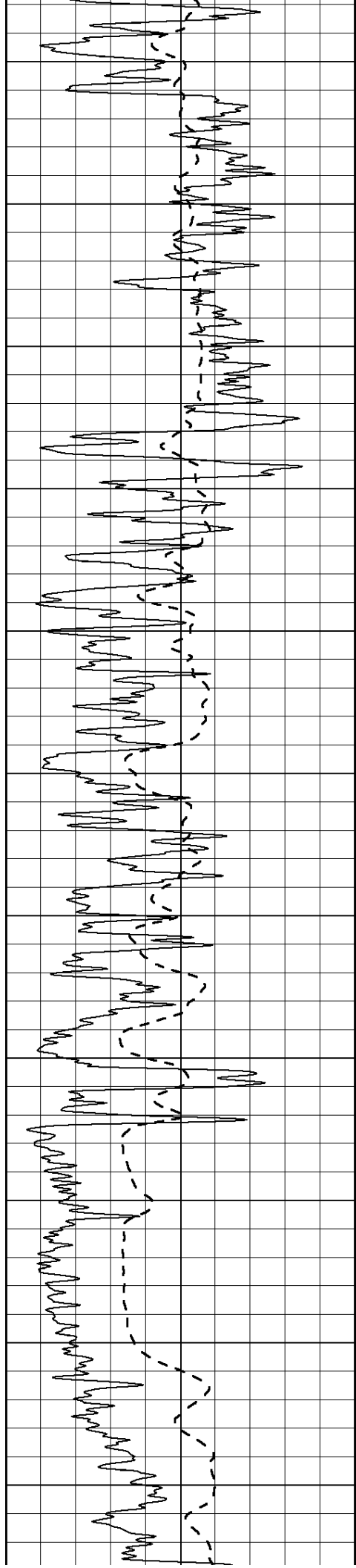
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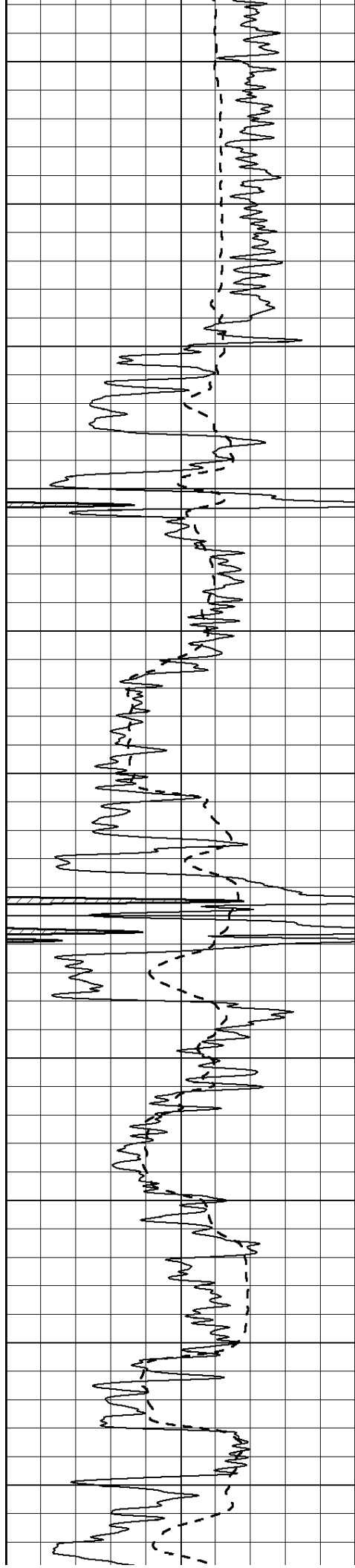
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2550

2600







3200

3250

3300

3350

3400

3450

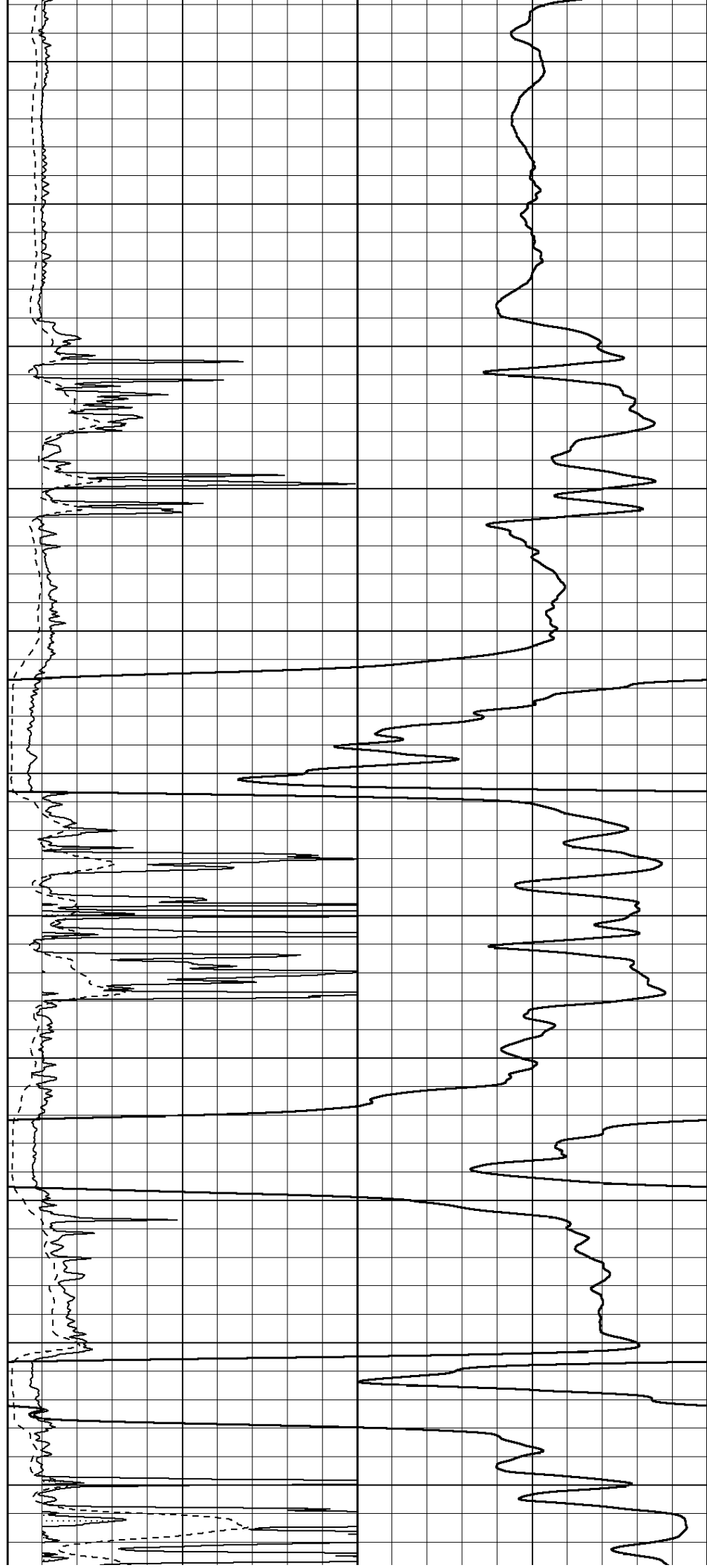
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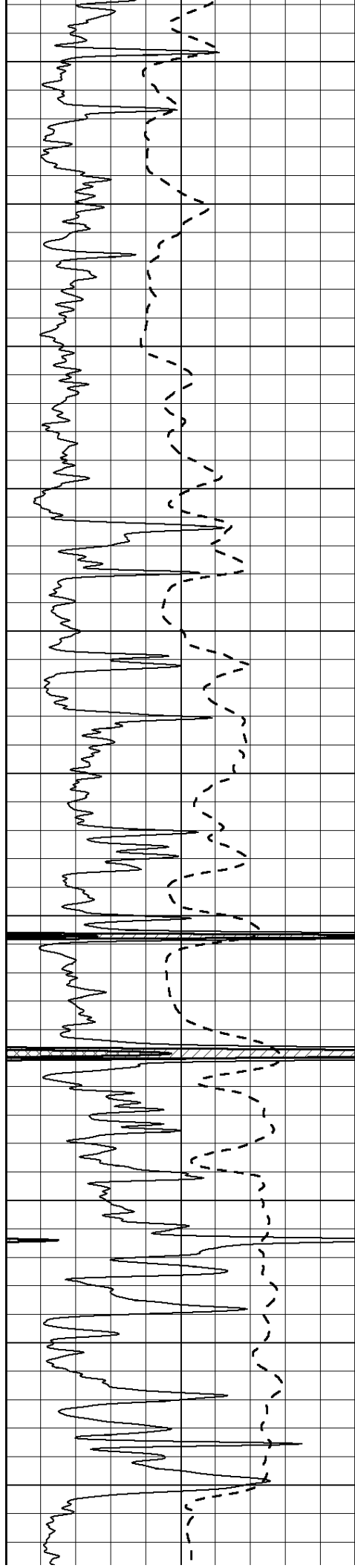
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3600

3650

3700





3750

3800

3850

3900

3950

4000

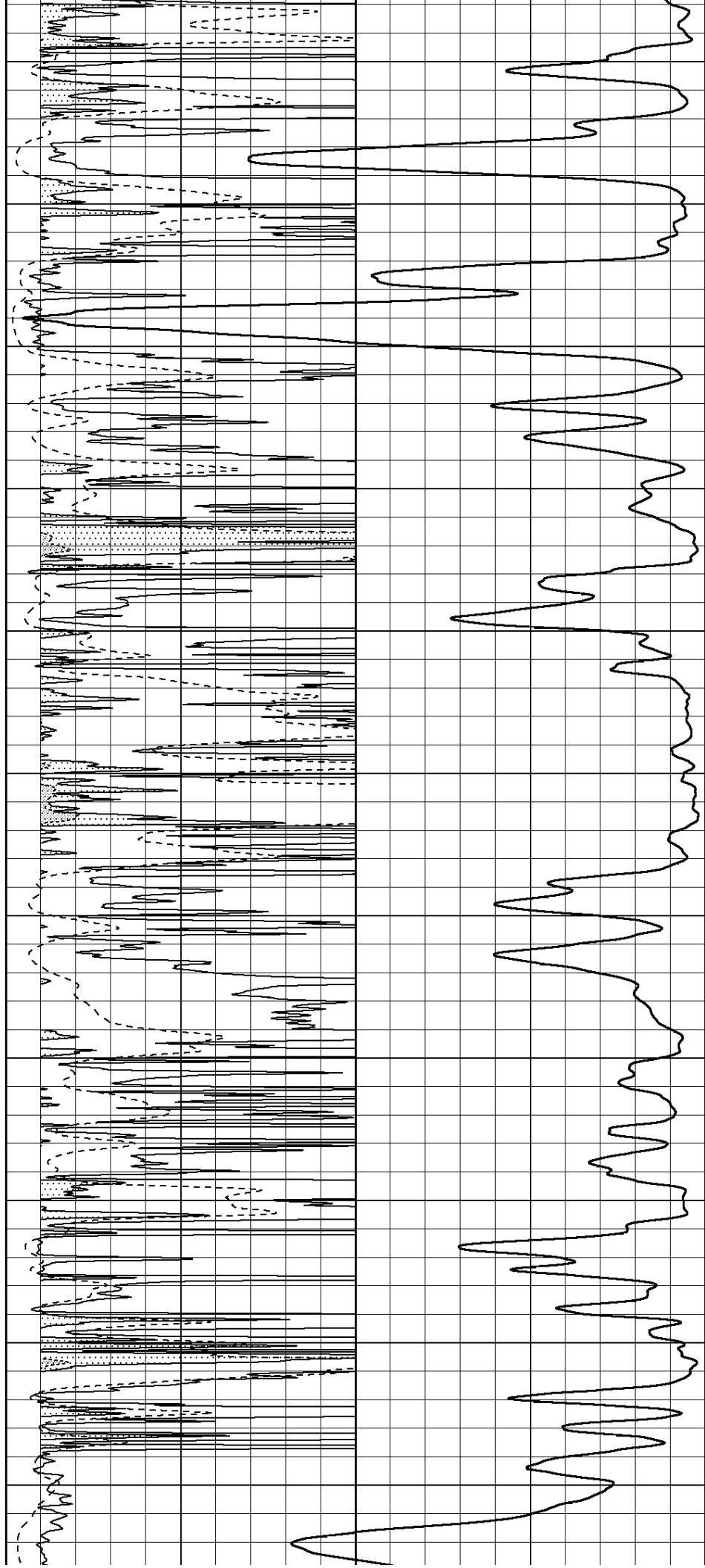
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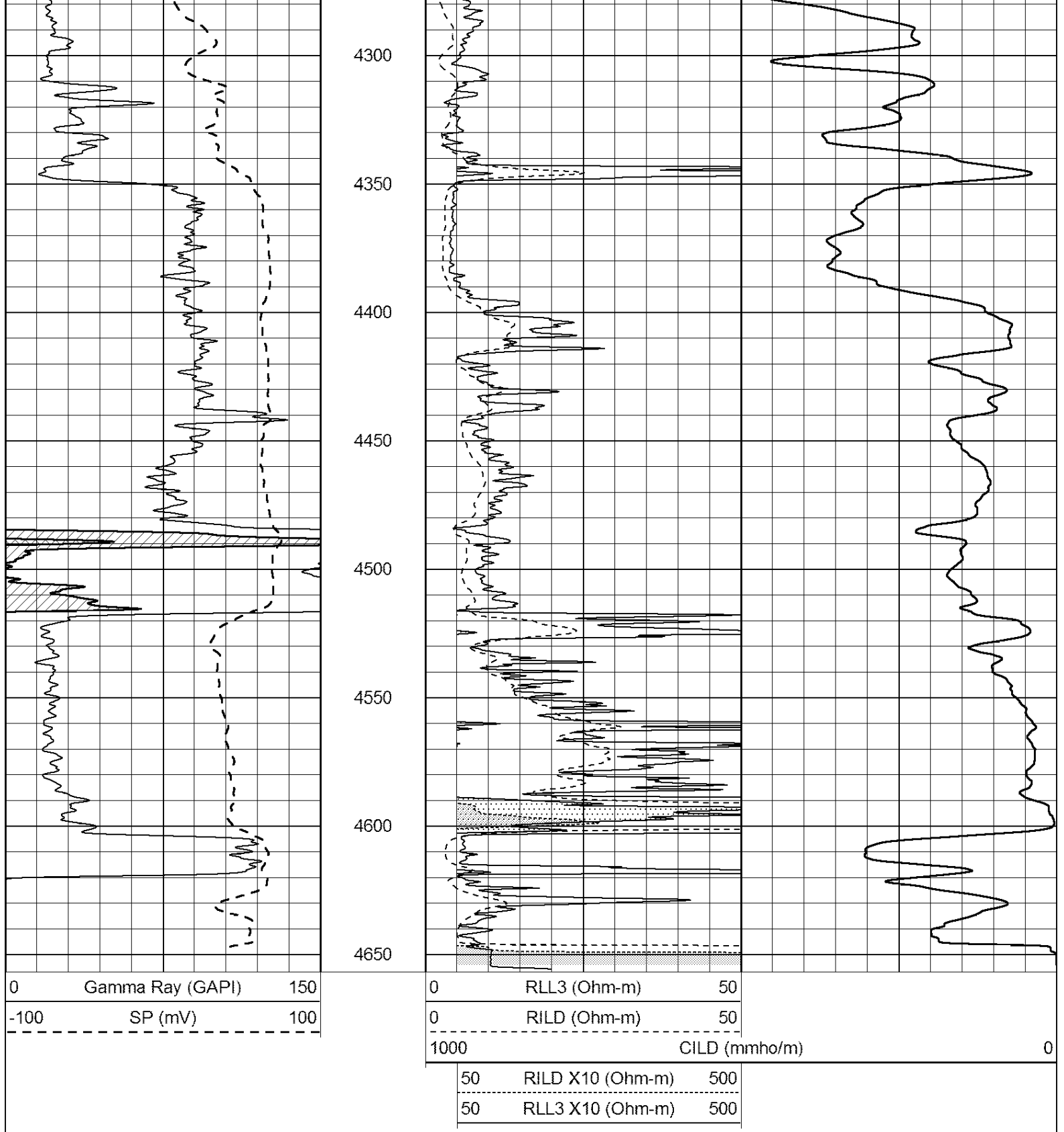
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4150

4200

4250





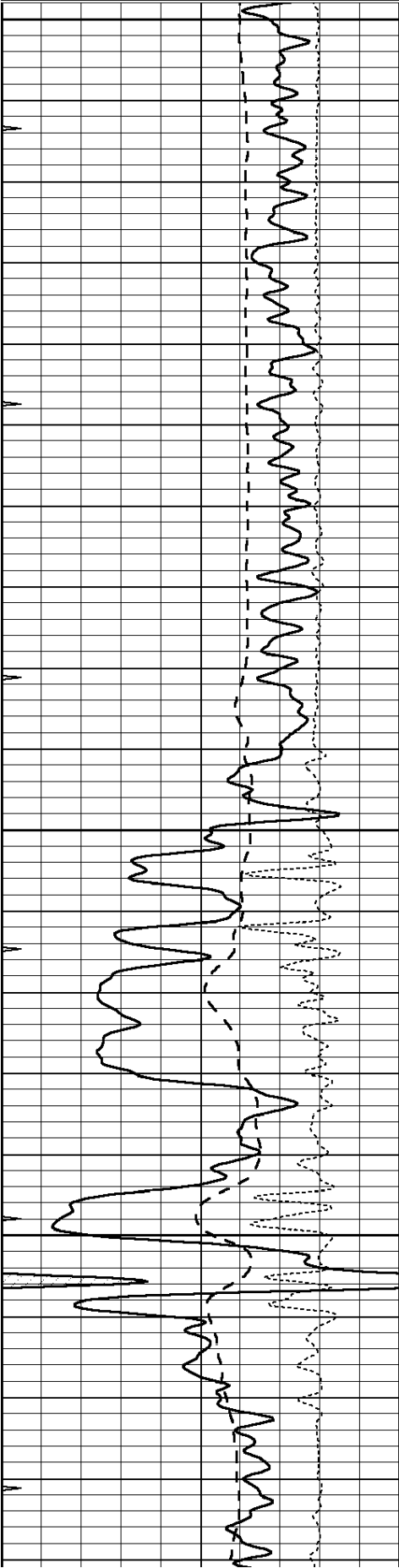
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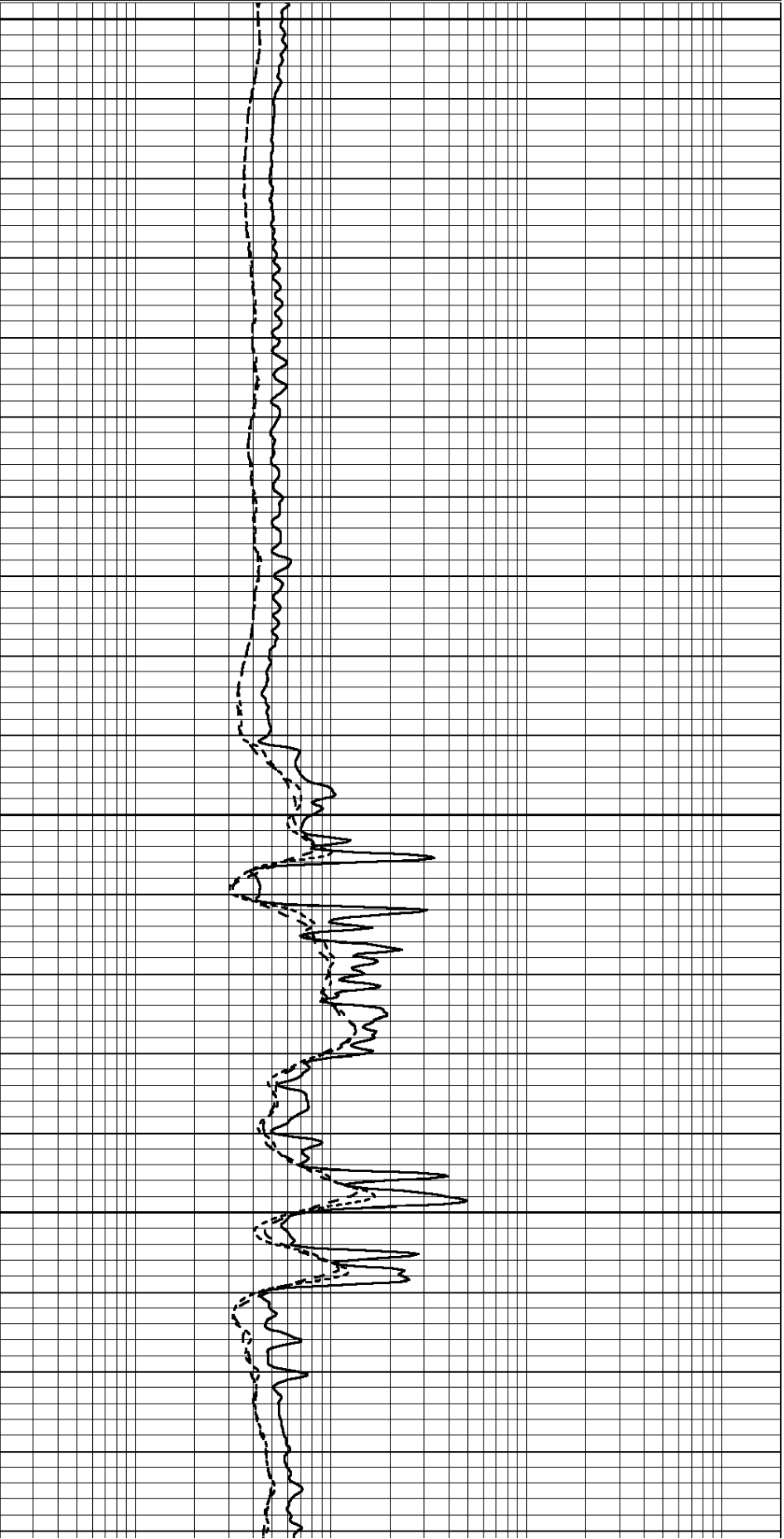
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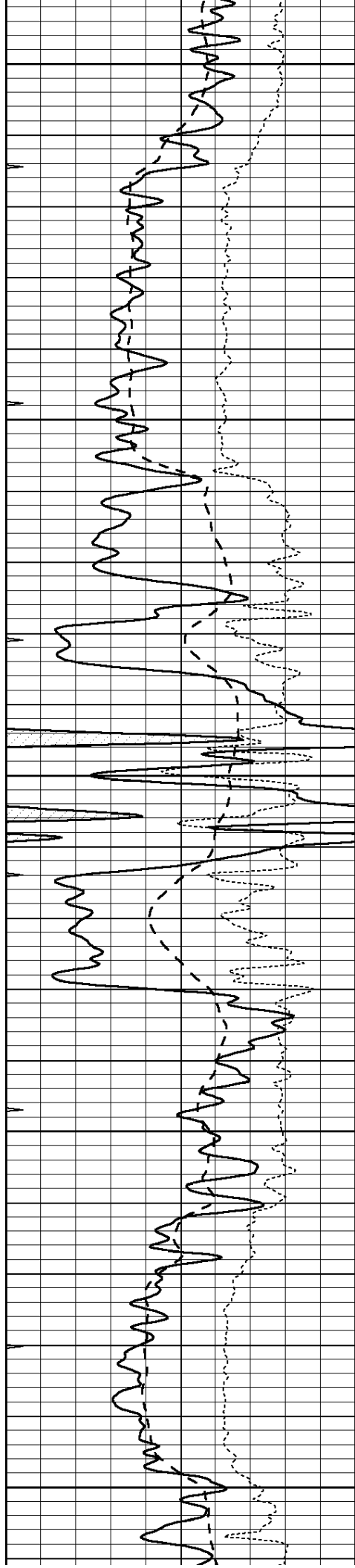
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 Dataset Pathname: pass3.1
 Presentation Format: _dil
 Dataset Creation: Wed Apr 23 08:07:05 2014 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

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





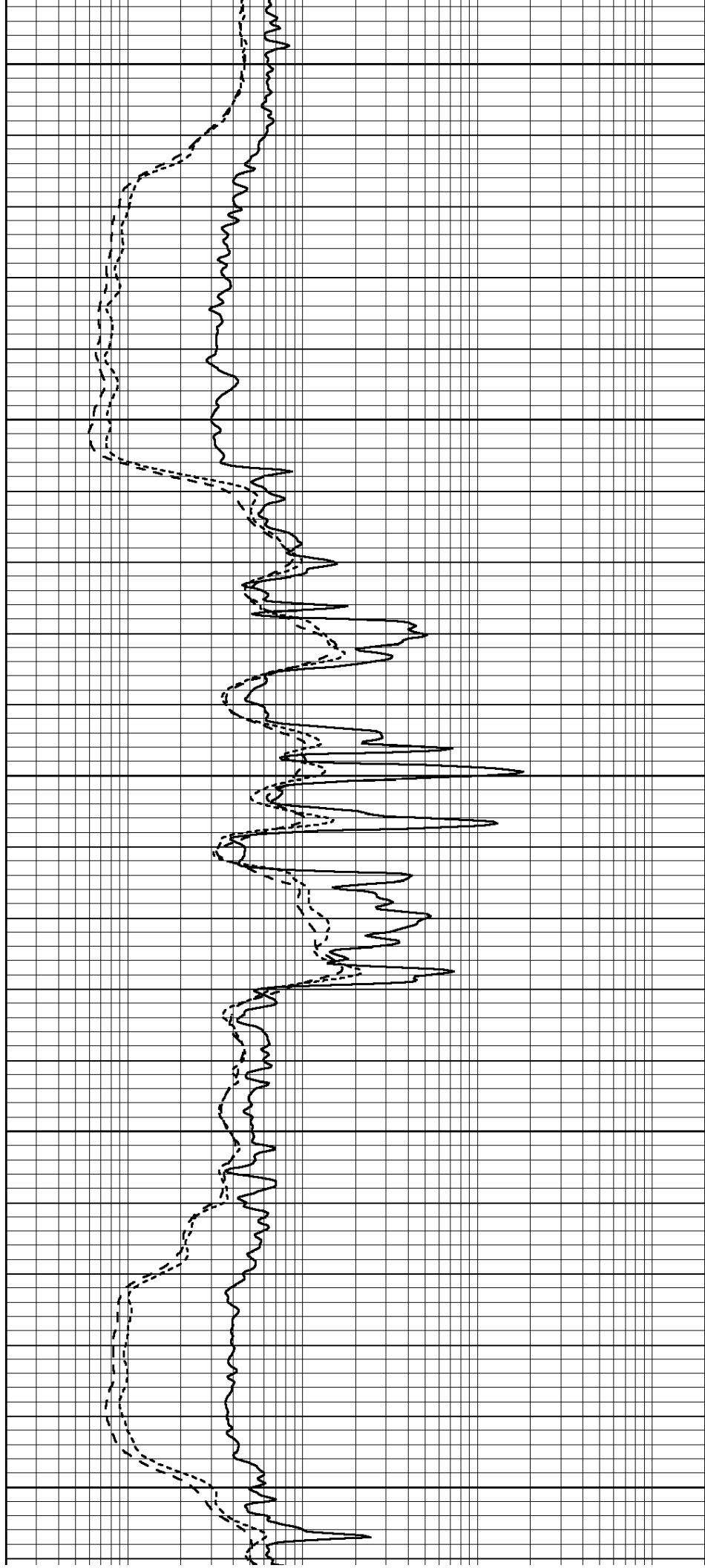
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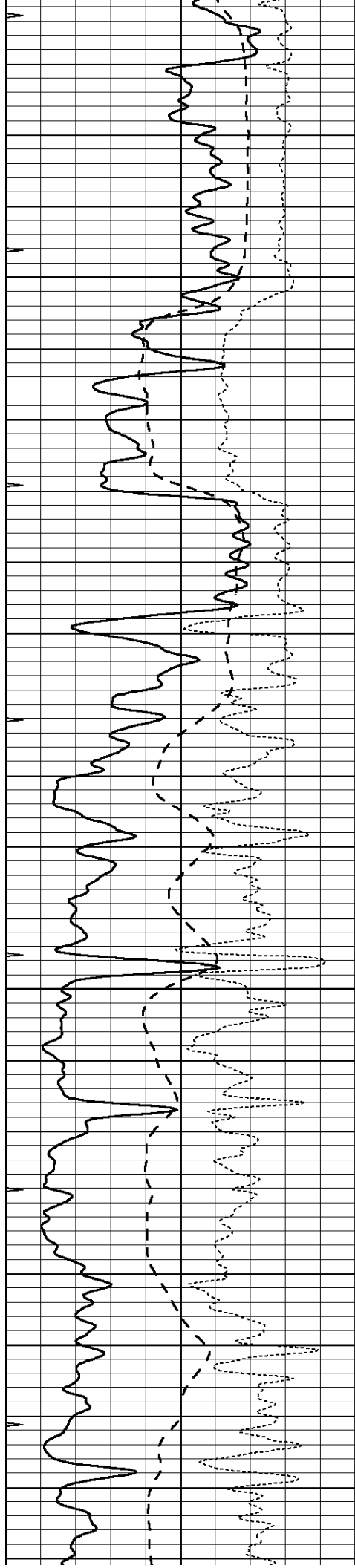
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3500

3550

3600



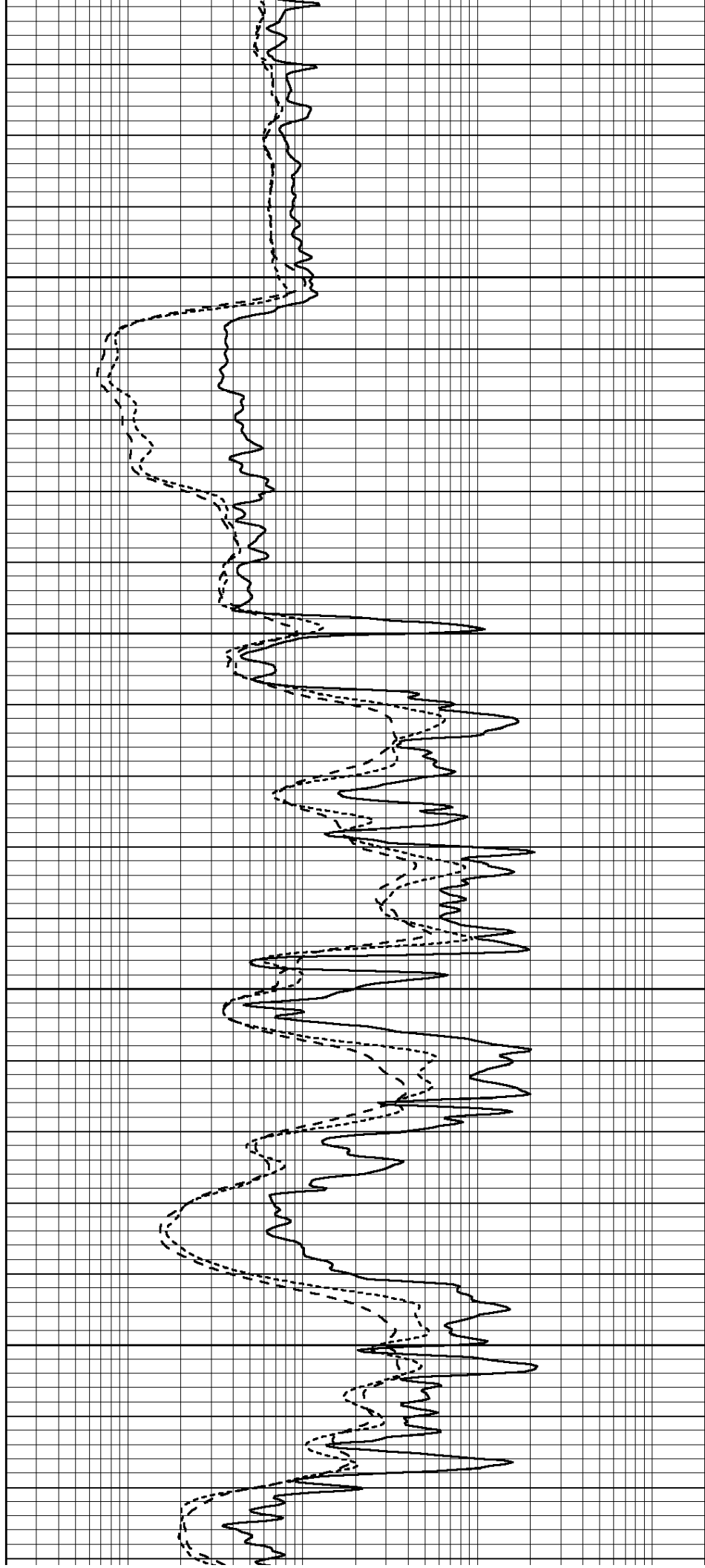


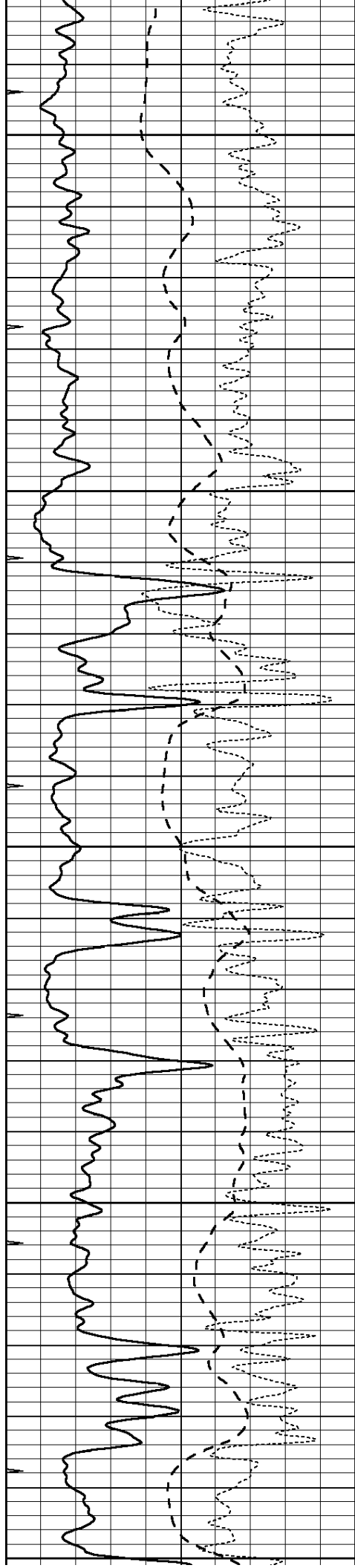
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3700

3750

3800





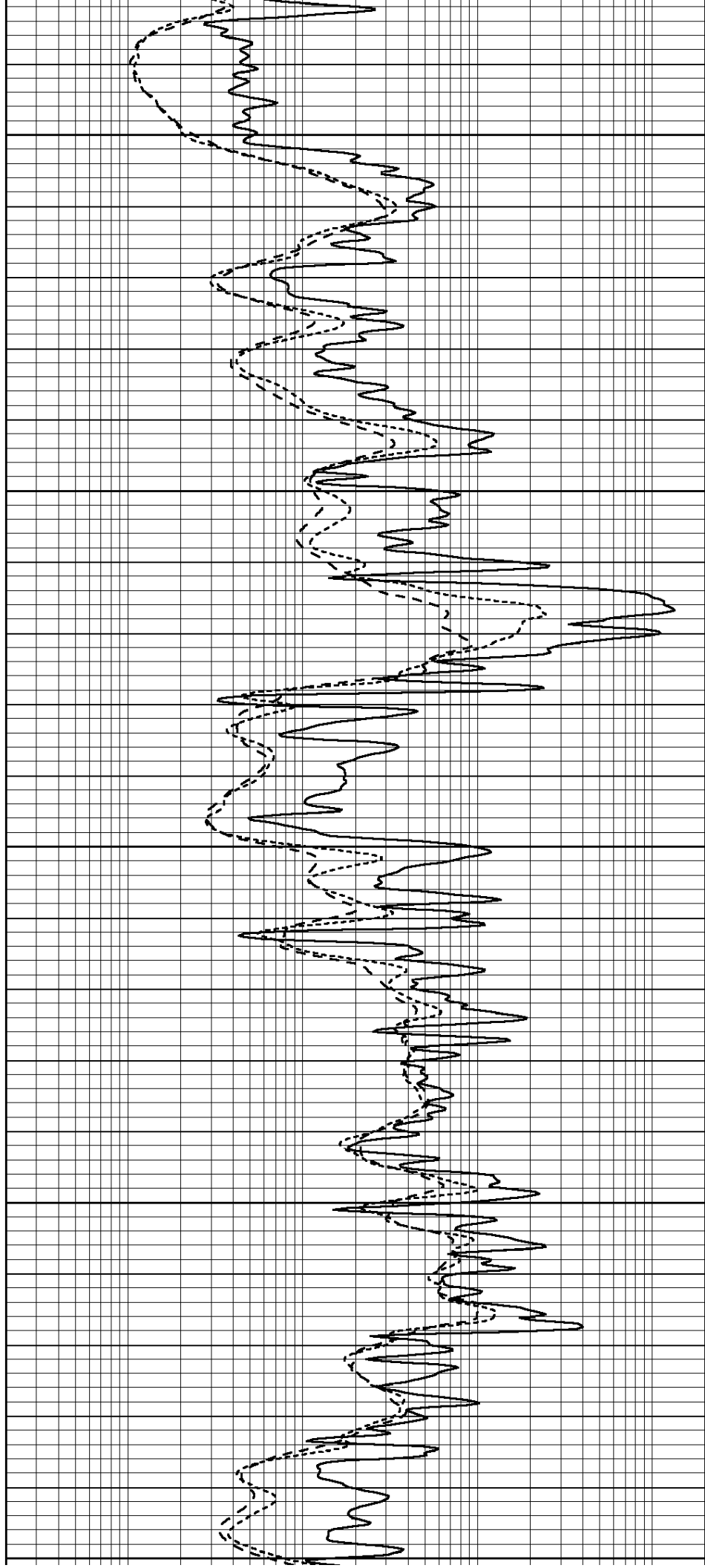
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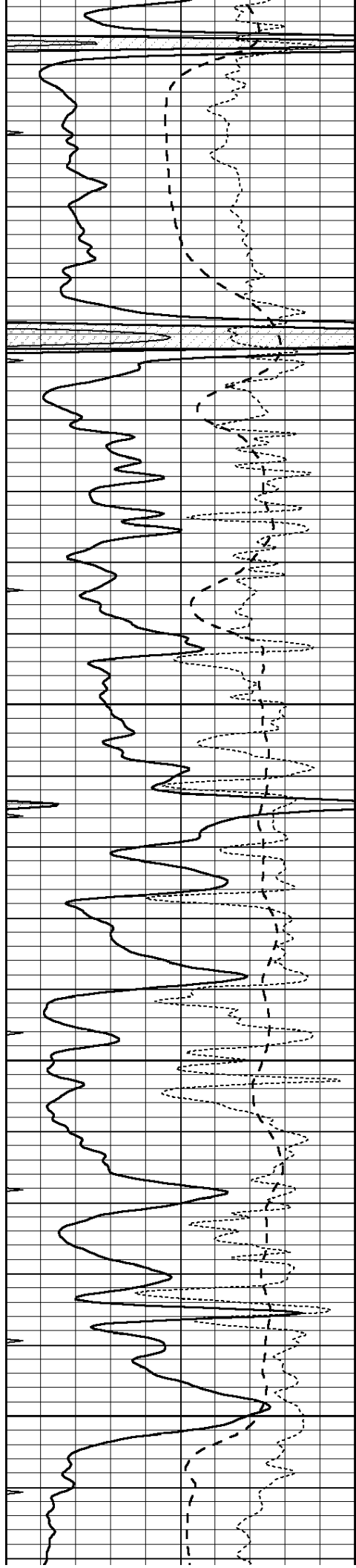
3900

3950

4000

4050



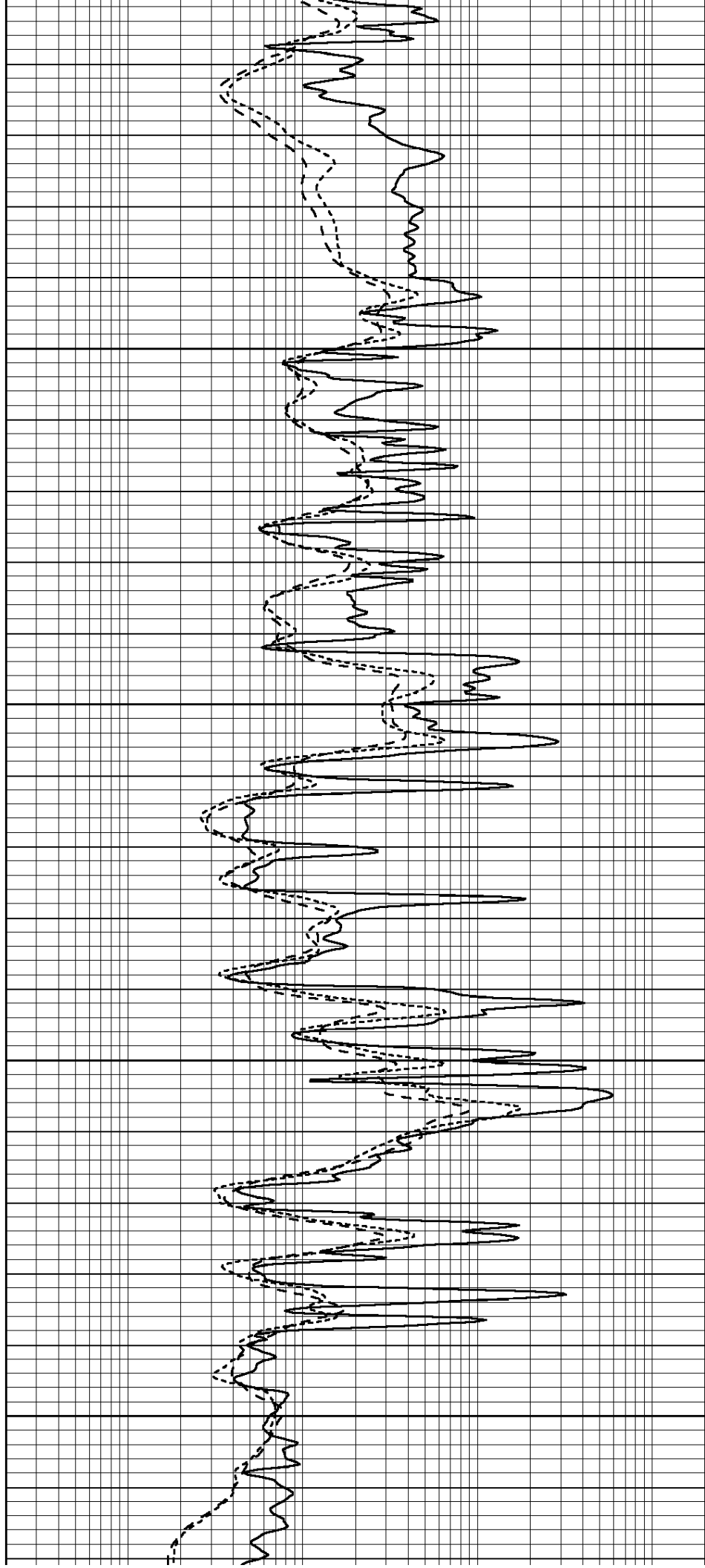


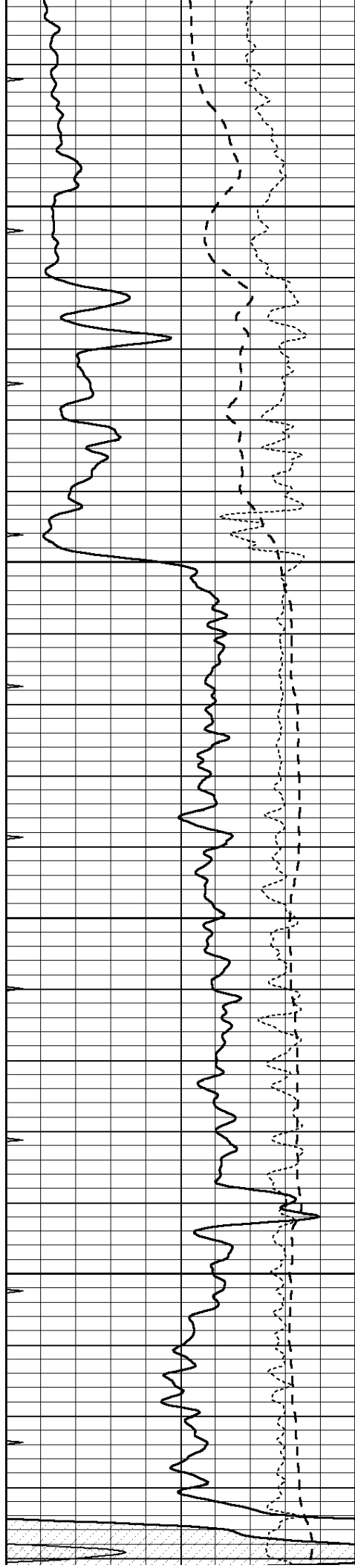
4100

4150

4200

4250



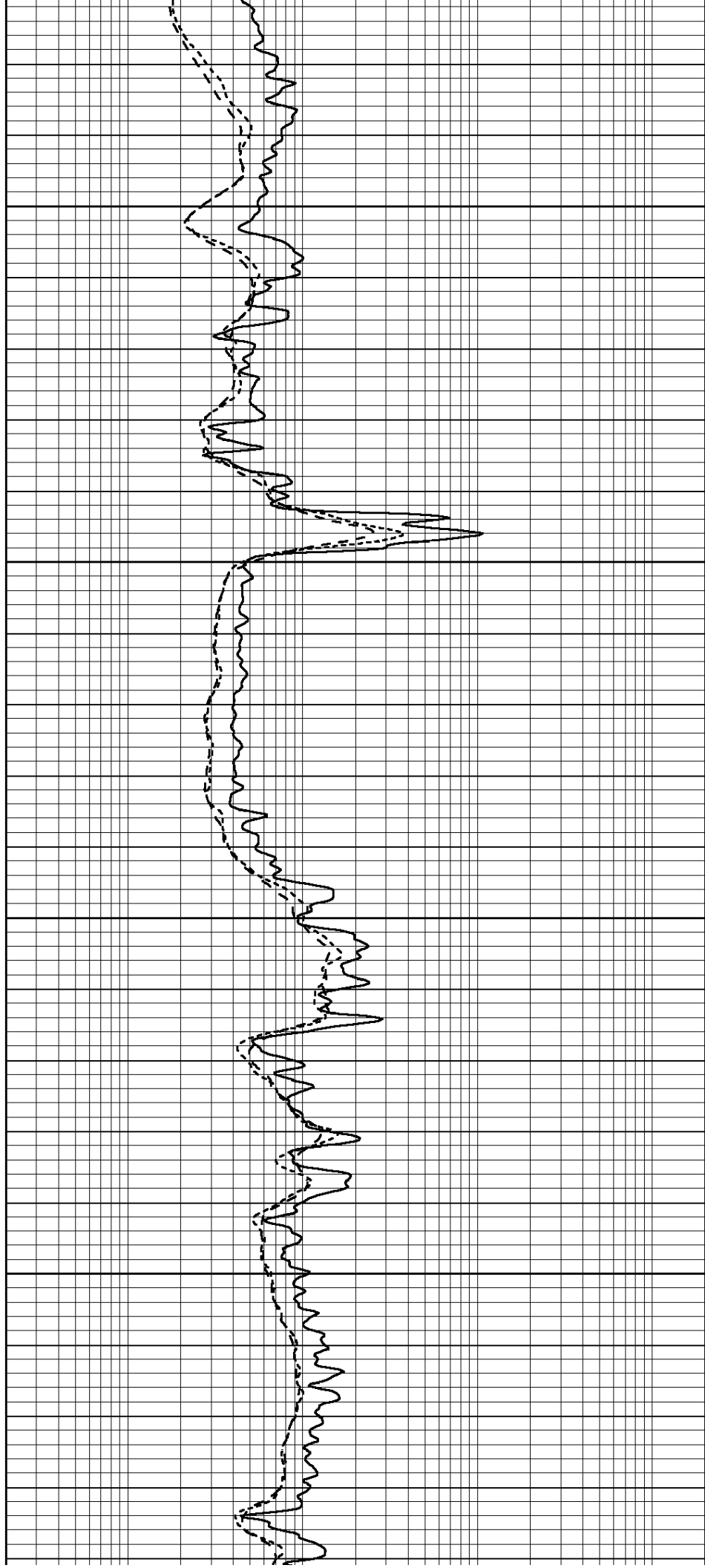


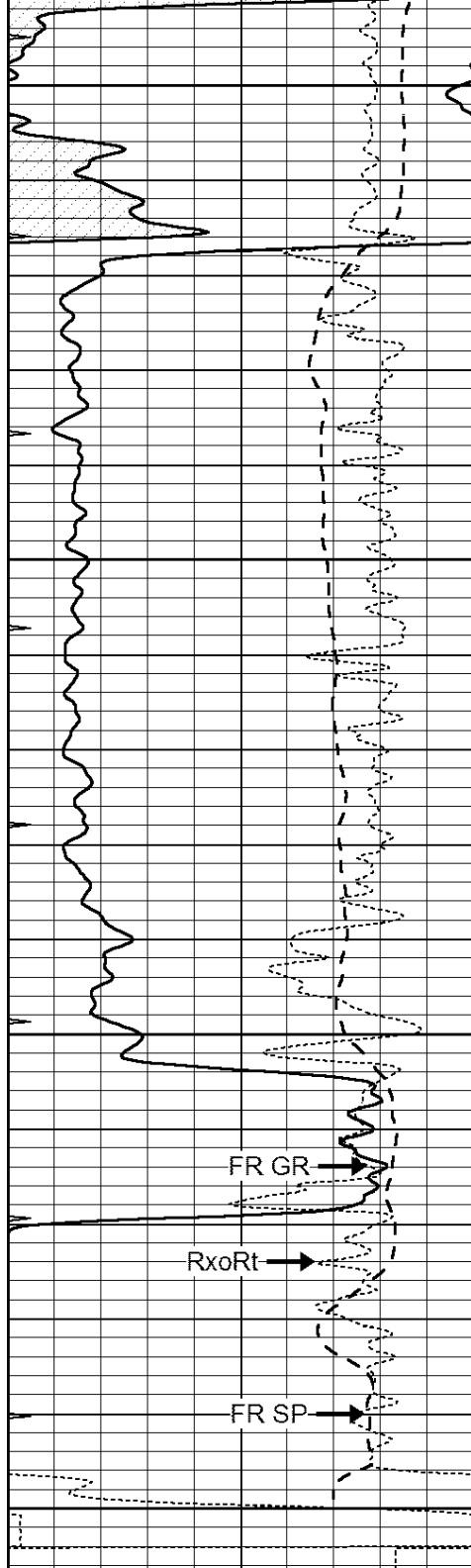
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4350

4400

4450





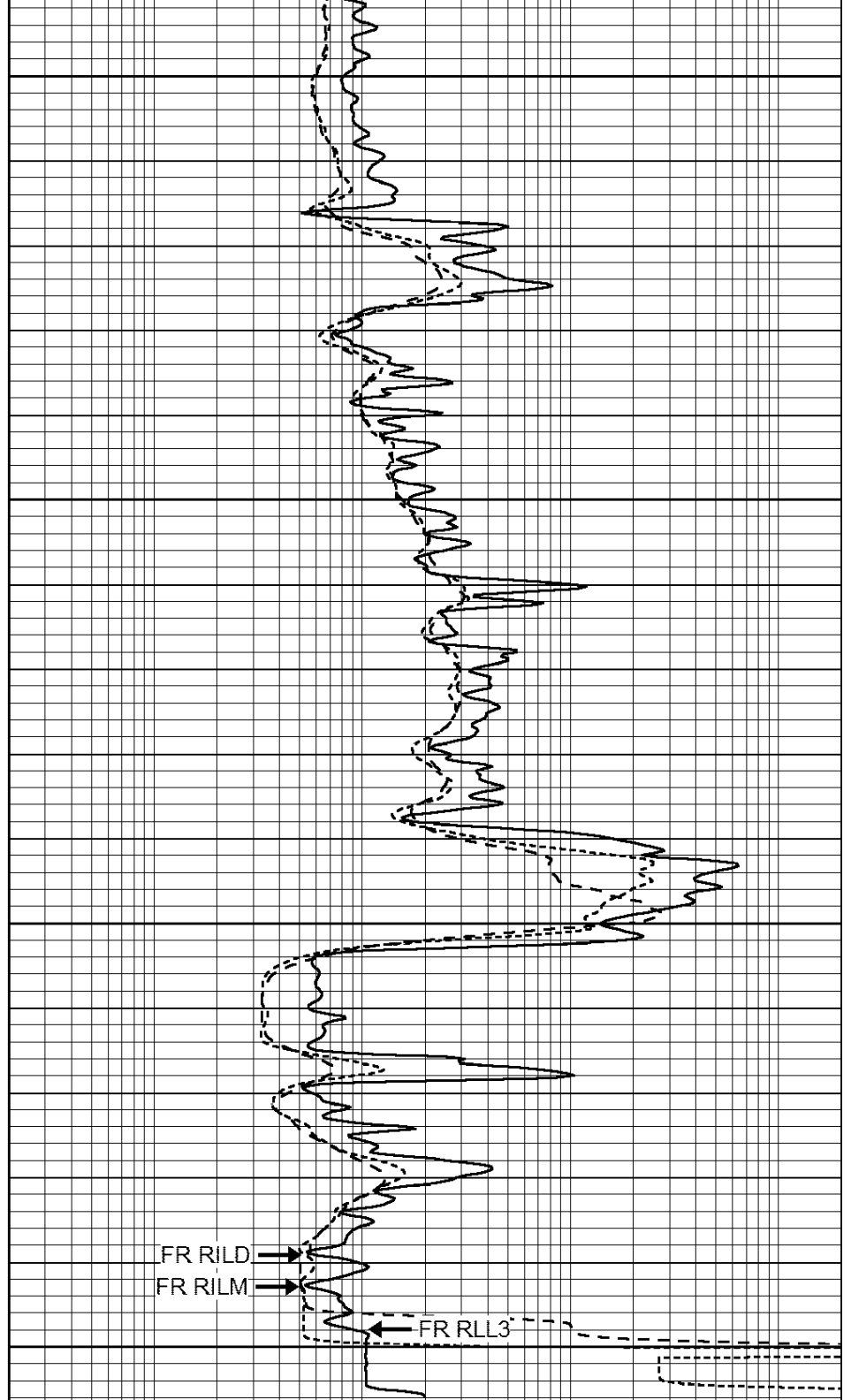
4500

4550

4600

LTD 4650

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



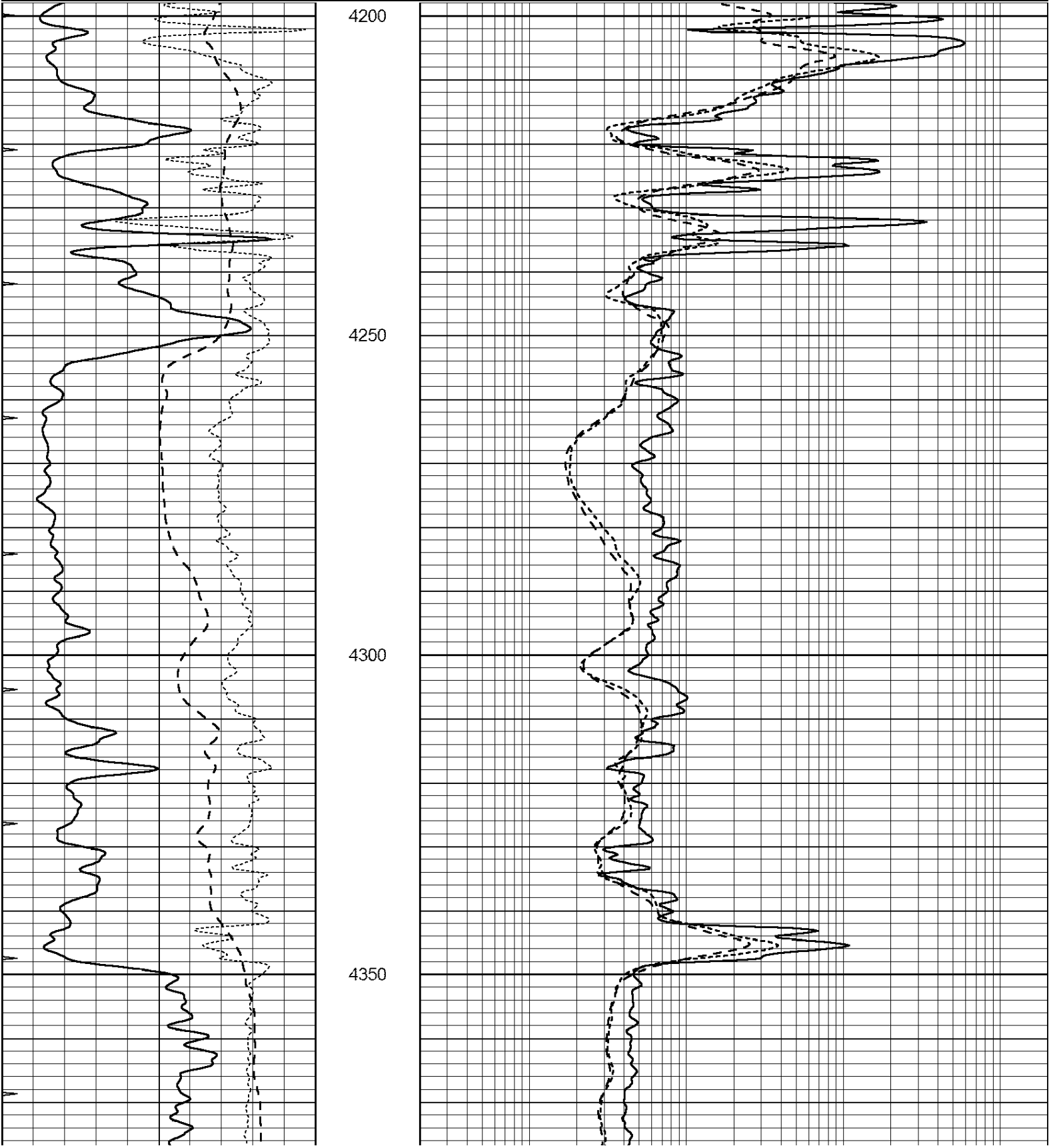
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

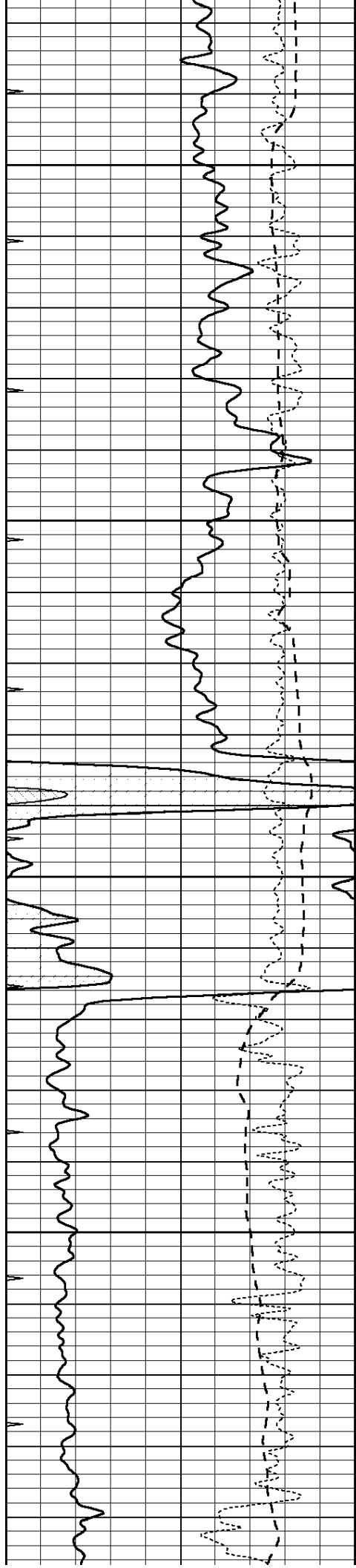


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REPEAT SECTION

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			



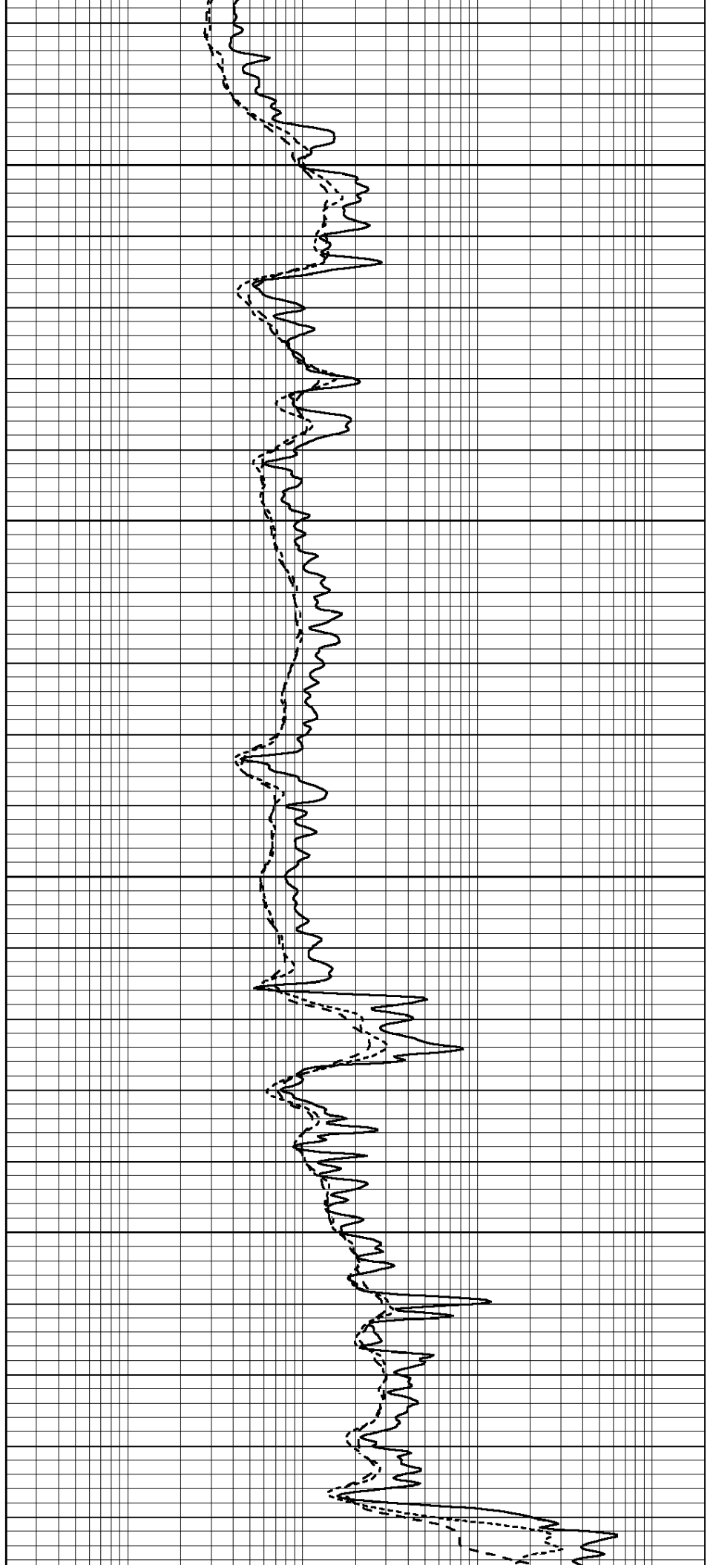


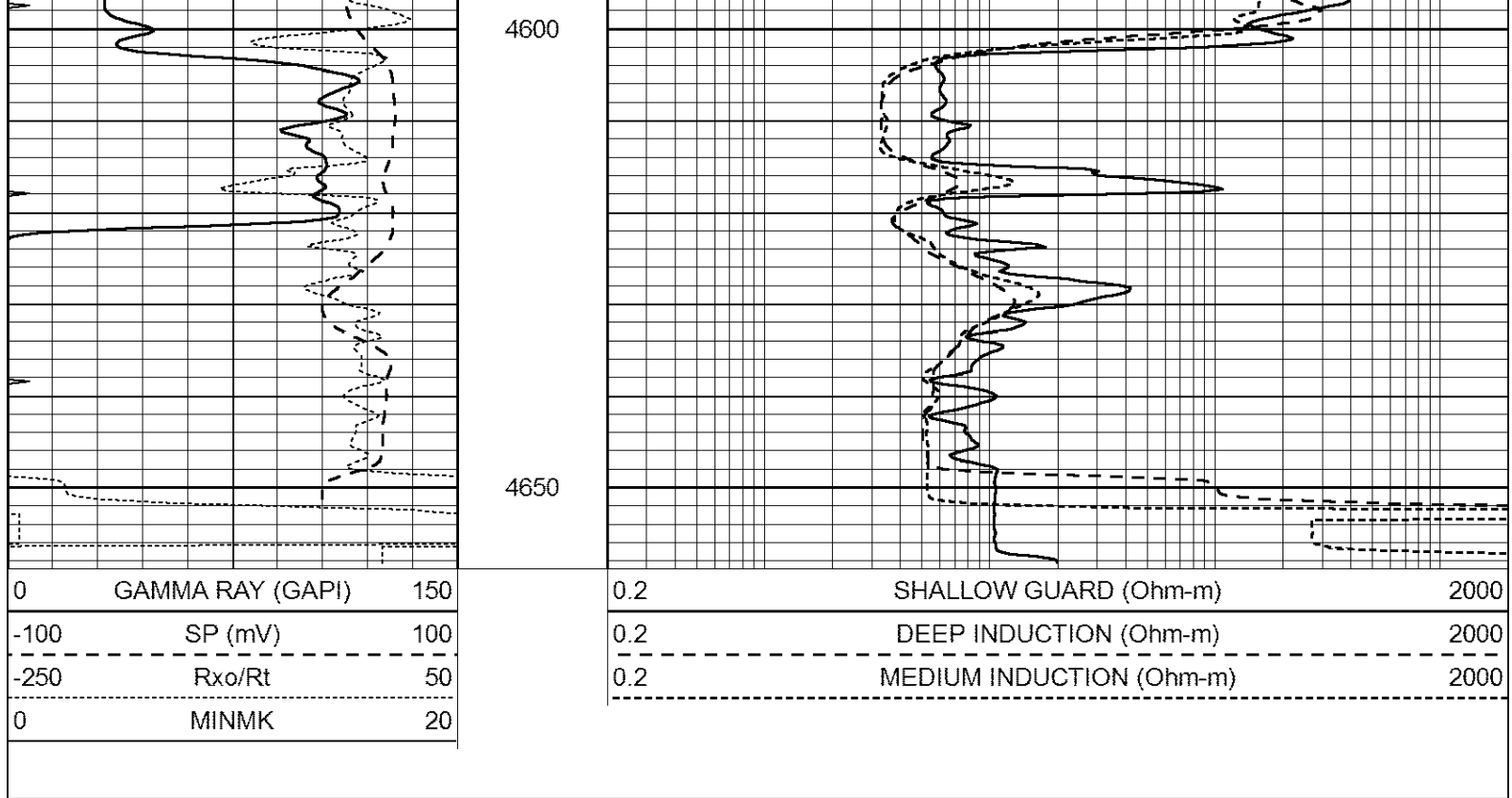
4400

4450

4500

4550





Calibration Report									
Database File:		24231pe.db							
Dataset Pathname:		pass2.1							
Dataset Creation:		Wed Apr 23 07:58:21 2014 by Calc Open-Cased 090629							
Dual Induction Calibration Report									
Serial-Model:					PROBE8-DILG				
Surface Cal Performed:					Fri Aug 01 06:33:19 2008				
Downhole Cal Performed:					Mon Jul 28 11:08:27 2008				
After Survey Verification Performed:					Mon Jul 28 11:08:27 2008				
Surface Calibration									
Readings				References			Results		
Loop:	Air	Loop		Air	Loop		m	b	
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730	
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680	
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: 001 Model: PRB

Master Calibration			Performed Thu Sep 17 09:57:21 2009					
	Background		Magnesium		Aluminum		Sandstone	
Window 1	2056.0		9796.8		3673.1		10821.3	cps
Window 2	1920.0		8541.1		3303.5		9307.2	cps
Window 3	1563.1		4735.7		2212.8		5017.5	cps
Window 4	466.0		466.1		465.6		471.5	cps
Long Space	0.0		6621.1		1383.5		7387.2	cps
Short Space	2.5		2361.7		1523.2		2534.0	cps
Rho			1.7100		2.5900		1.3800	g/cc
Pe			0.0000		2.5700		1.5500	
Rib Angle	: 44.4		Rib Slope	: 0.978	Density/Spine Ratio		: 0.541	
Spine Angle	: 74.4		Spine Slope	: 3.570	Spine Intercept		: -18.9	

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
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

Serial Number:	6I
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

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	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu
Gamma Ray Calibration Report				
Serial Number:		GR6		
Tool Model:		OPEN		
Performed:		Fri Nov 29 08:34:37 2013		
Calibrator Value:		150.0	GAPI	
Background Reading:		0.0	cps	
Calibrator Reading:		276.0	cps	
Sensitivity:		0.6035	GAPI/cps	