



DUAL INDUCTION LOG

Company	L D DRILLING, INC.		
Well	#2 ARENSMAN		
Field	KRAFT - PRUSA		
County	BARTON	State	KANSAS
Company	L. D. DRILLING, INC.		
Well	#2 ARENSMAN		
Field	KRAFT - PRUSA		
County	BARTON	State	KANSAS
Location:	API # : 15-009-26183-0000		Other Services CDL/CNL MEL/SON
Permanent Datum	GROUND LEVEL		Elevation
Log Measured From	330' FNL & 2310' FVL NE - NE - NW		1917
Drilling Measured From	SEC 28 TWP 16S RGE 11W		K.B. 1922 D.F. 1920 G.L. 1917
Date	9/1/17		
Run Number	ONE		
Depth Driller	3465		
Depth Logger	3464		
Bottom Logged Interval	3462		
Top Log Interval	00		
Casing Driller	8 5/8"@413'		
Casing Logger	413		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5,700 PPM	
Density / Viscosity	9.4/56		
pH / Fluid Loss	10.0/9.2		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	.600@90F		
Rmf @ Meas. Temp	.450@90F		
Rmc @ Meas. Temp	.720@90F		
Source of Rmf / Rmc	MEASUREMENT		
Rim @ BHT	.486@111F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	4:30 A.M.		
Maximum Recorded Temperature	111F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KIM SHOEMAKER		

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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 ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
(CLAFLIN, KS.& HWY 4) 8N. ON 3RD. STREET TO "190 RD.", 1/2W., S. INTO



MAIN SECTION

Database File: 1599ddn.db
Dataset Pathname: pass3.2
Presentation Format: dil2
Dataset Creation: Fri Sep 01 05:40:18 2017
Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

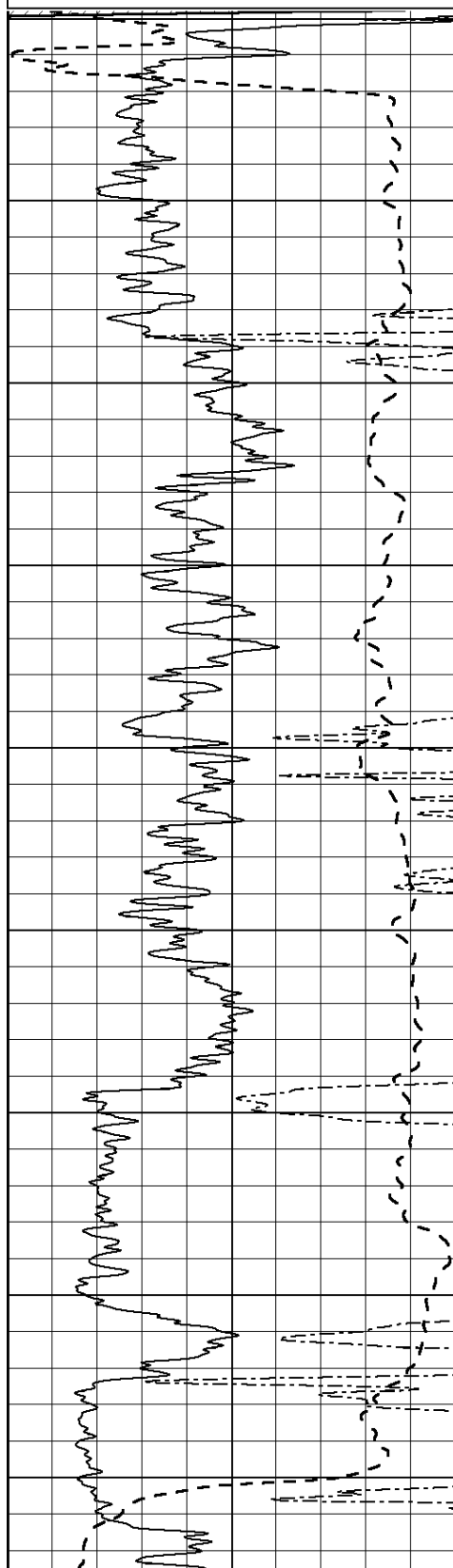
0	RLL3 (Ohm-m)	50
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0	RILD (Ohm-m)	50
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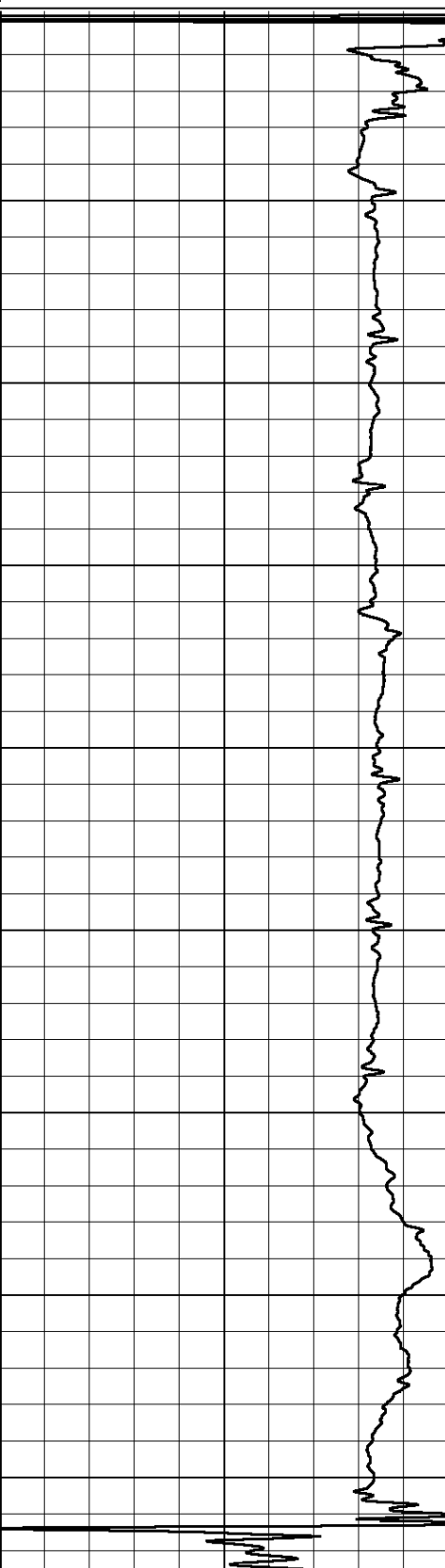
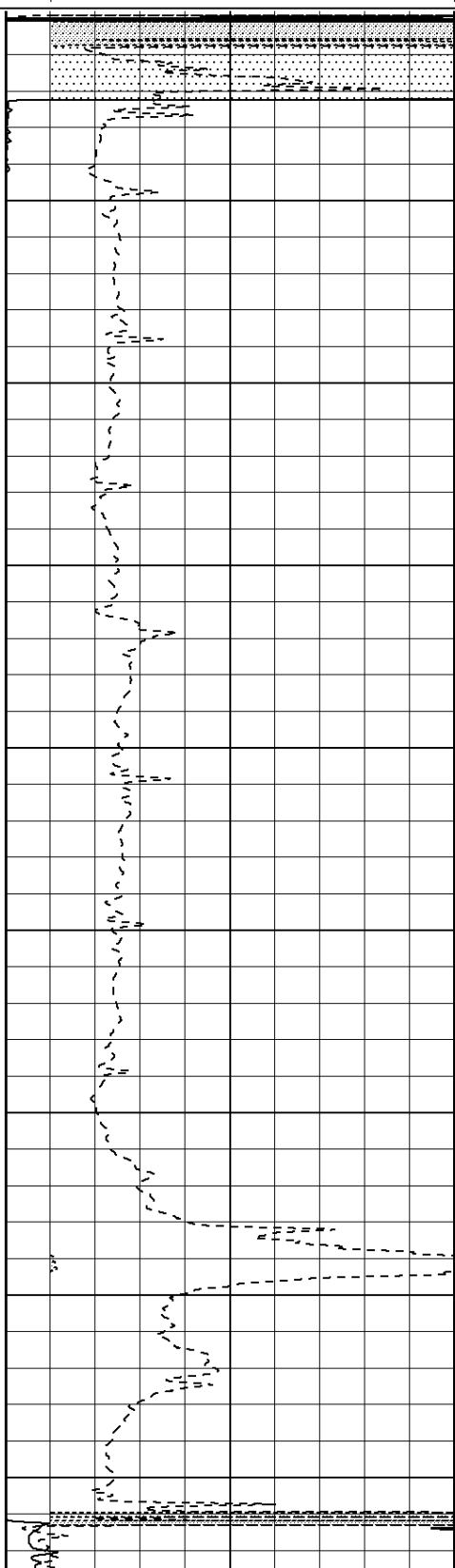
1000	CILD (mmho/m)	0
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50	RILD X10 (Ohm-m)	500
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50	RLL3 X10 (Ohm-m)	500
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0
50
100
150
200
250
300
350
400



450

500

550

600

650

700

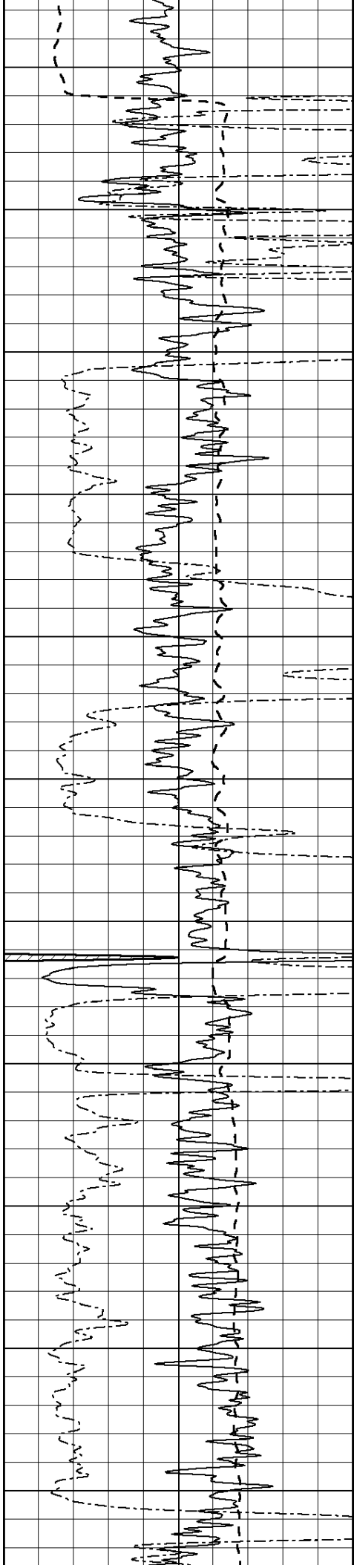
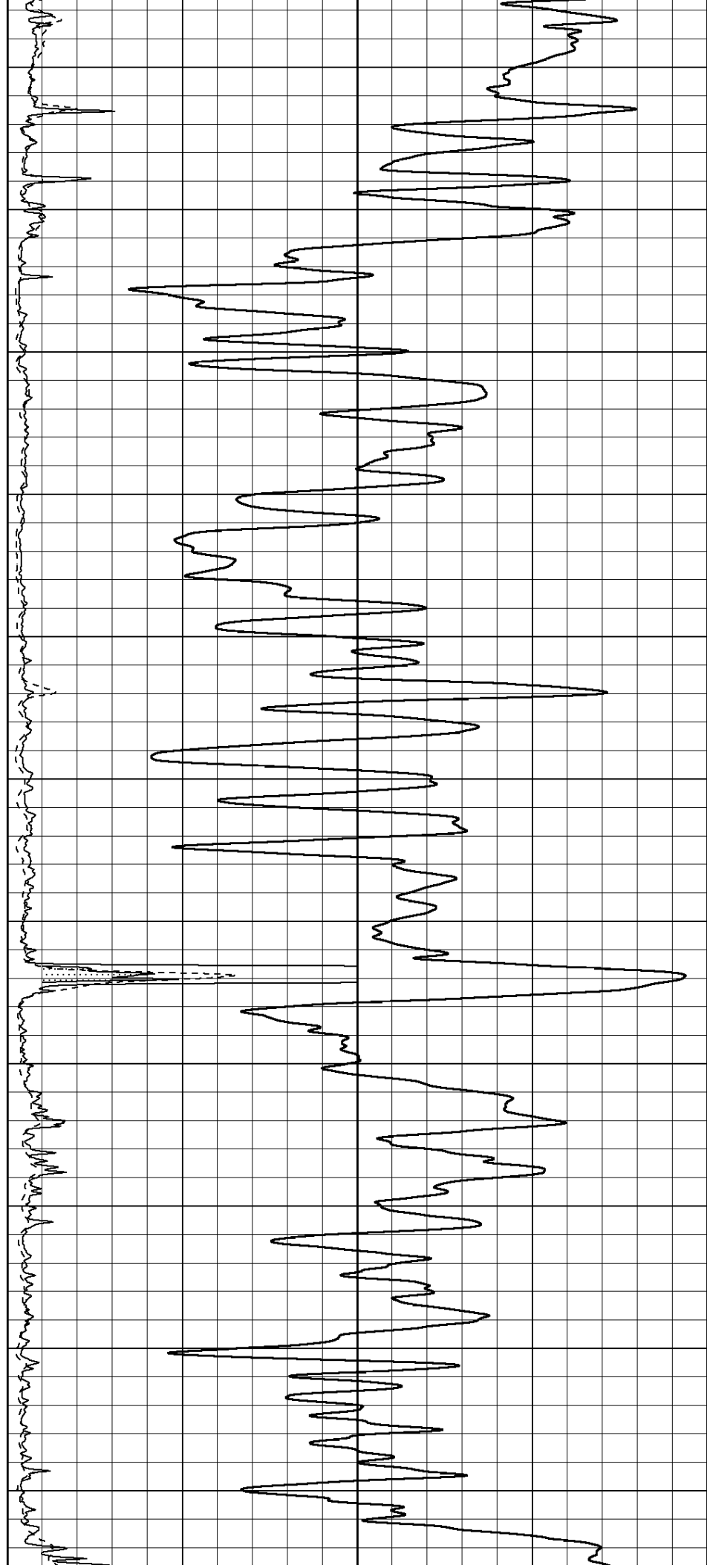
750

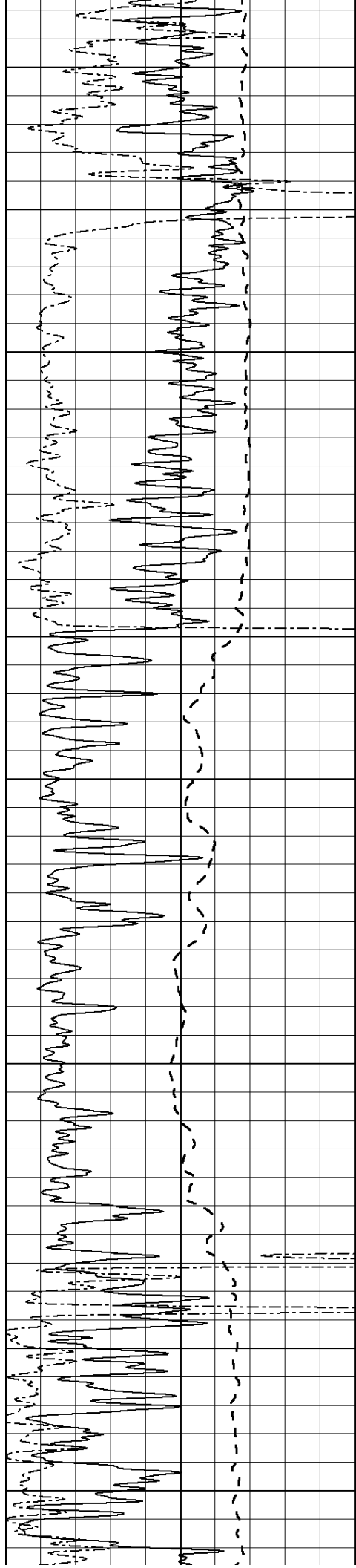
800

850

900

950





1000

1050

1100

1150

1200

1250

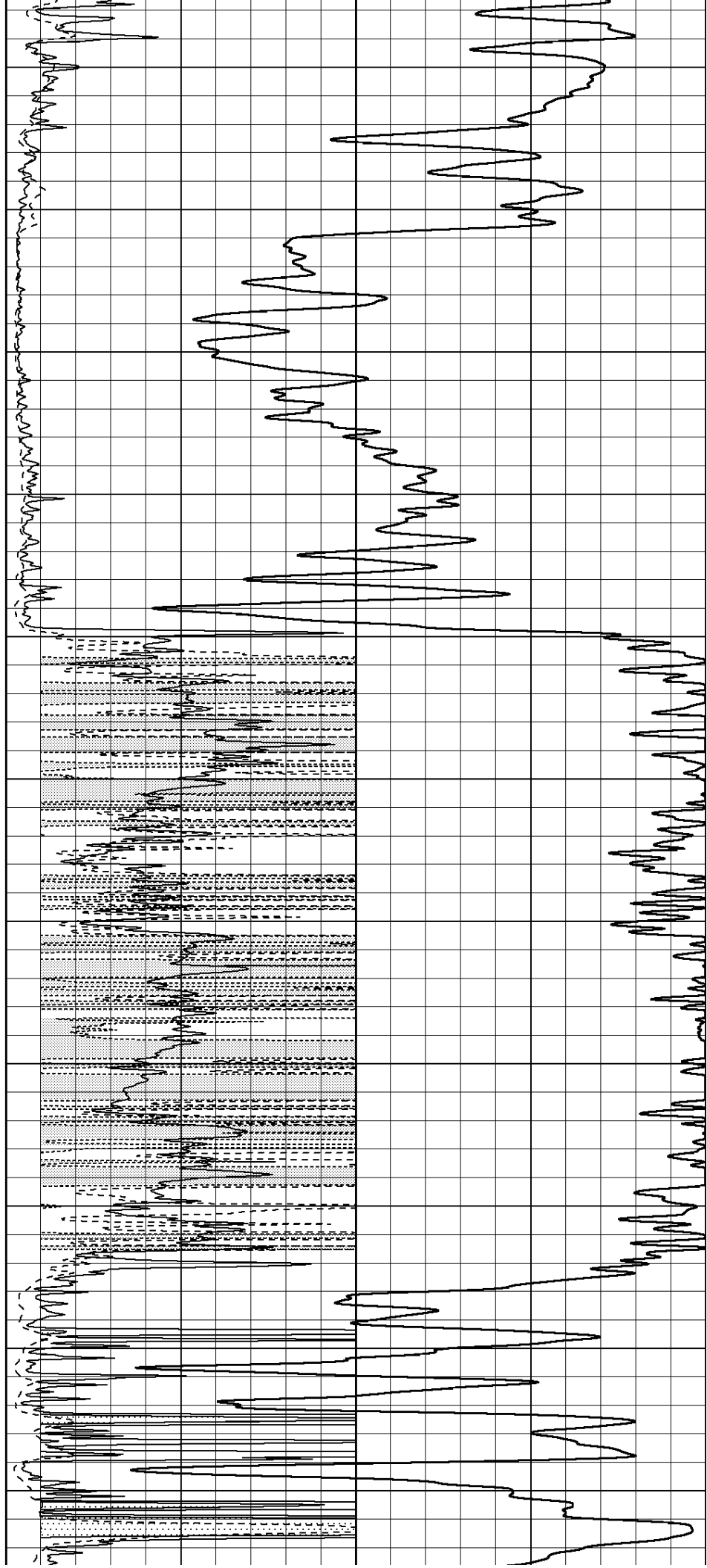
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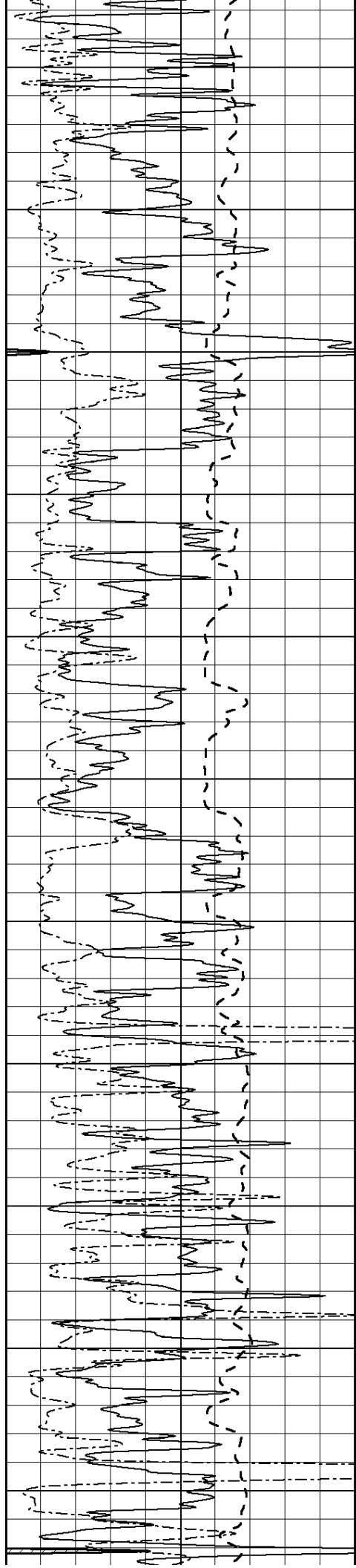
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1400

1450

1500





1550

1600

1650

1700

1750

1800

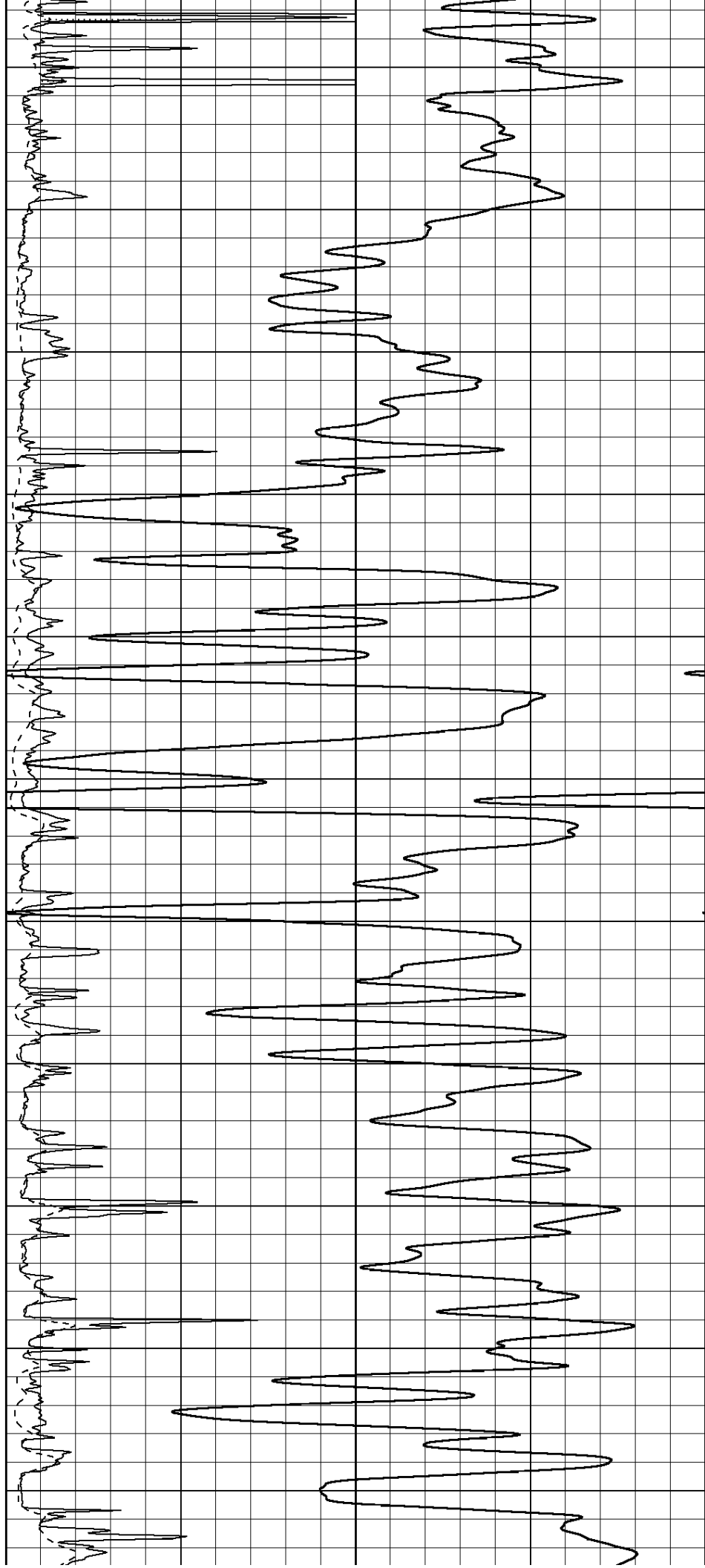
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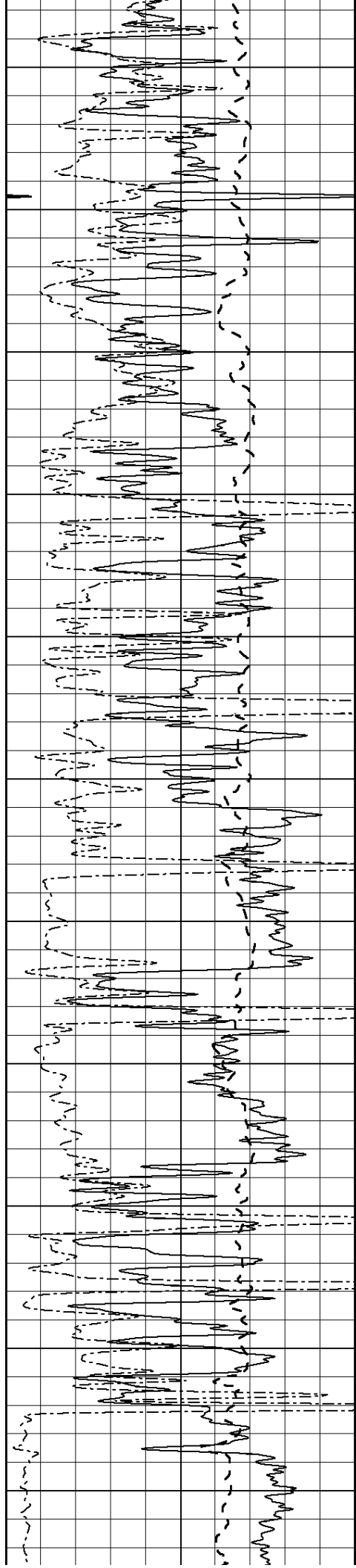
1900

1950

2000

2050





2100

2150

2200

2250

2300

2350

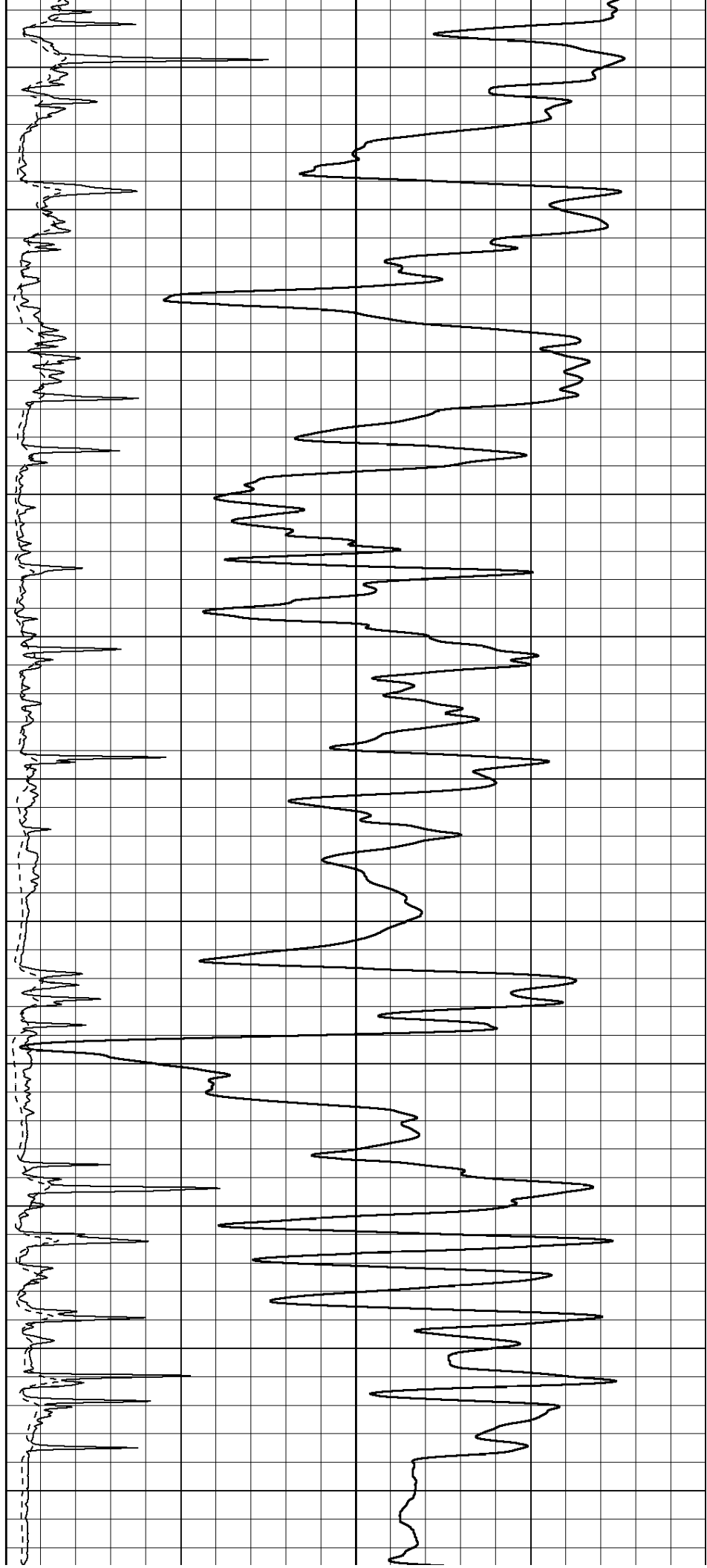
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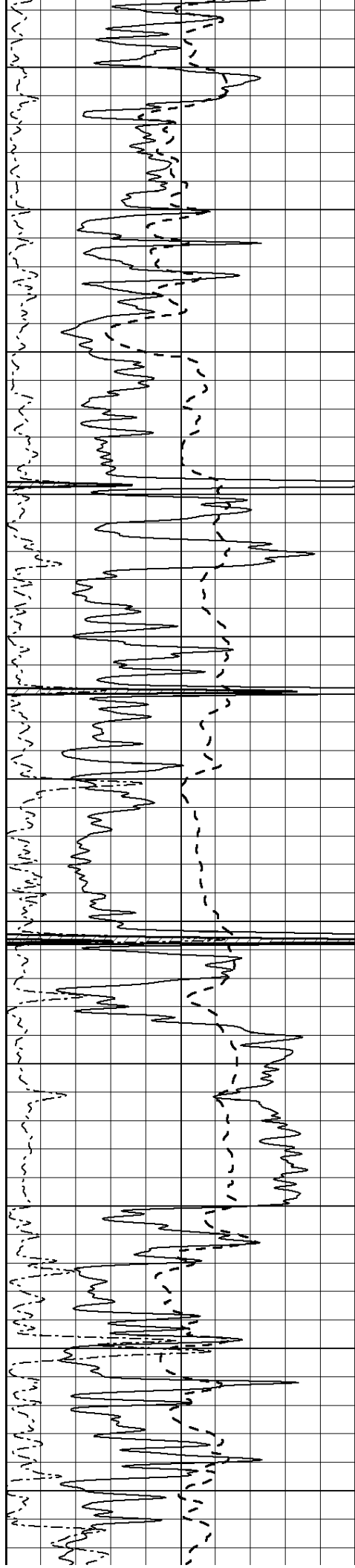
2450

2500

2550

2600





2650

2700

2750

2800

2850

2900

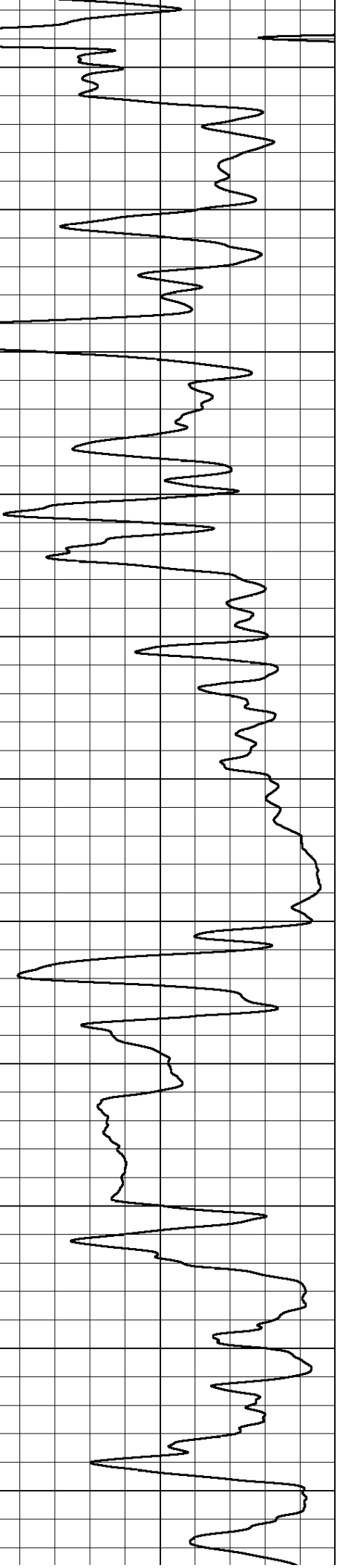
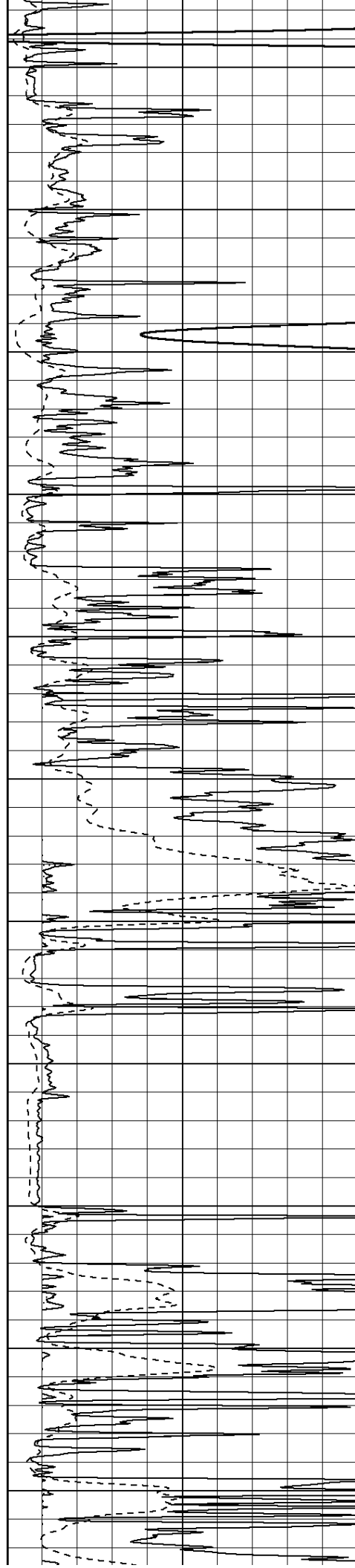
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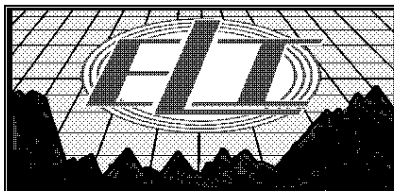
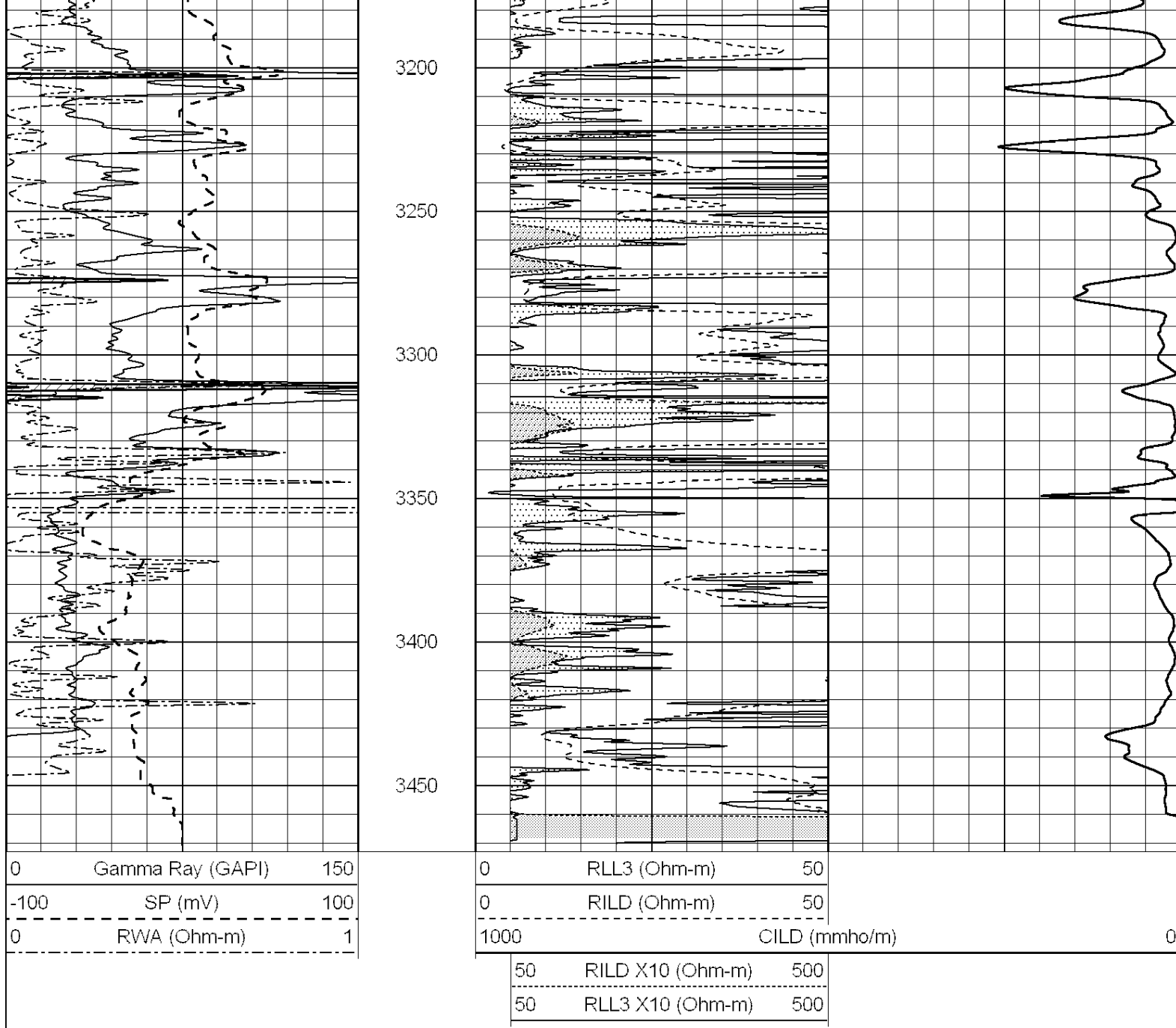
3000

3050

3100

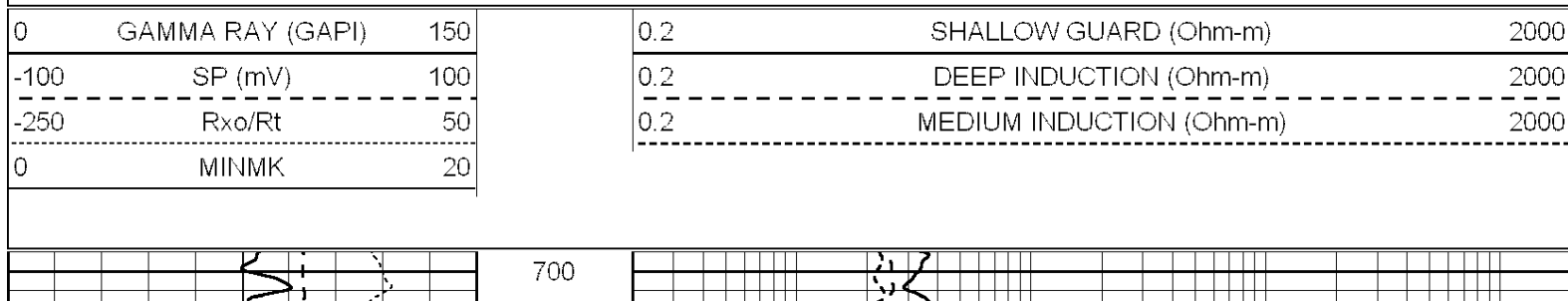
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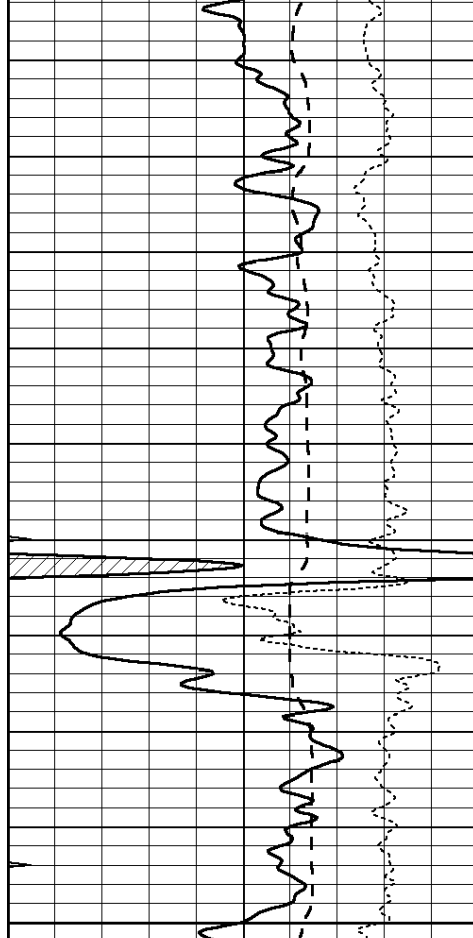




ANHYDRITE

Database File: 1599ddn.db
 Dataset Pathname: pass3.3
 Presentation Format: _dil
 Dataset Creation: Fri Sep 01 05:41:58 2017
 Charted by: Depth in Feet scaled 1:240

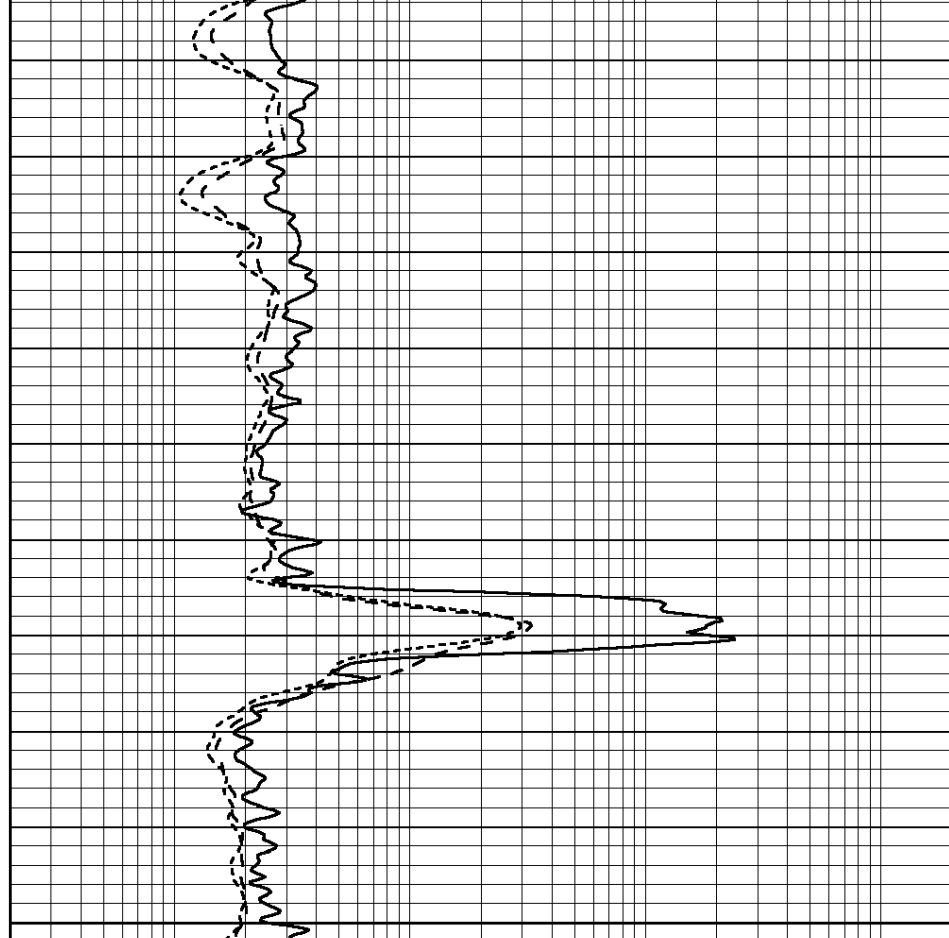




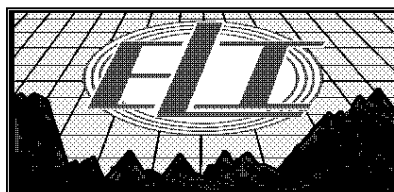
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

750

800



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



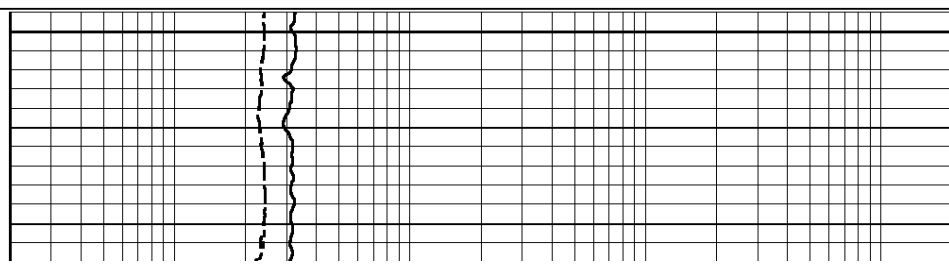
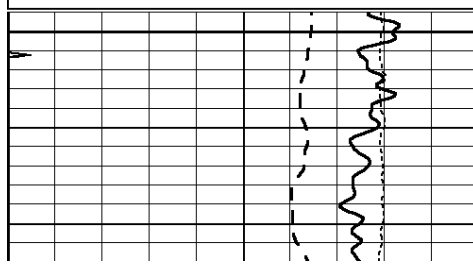
MAIN SECTION

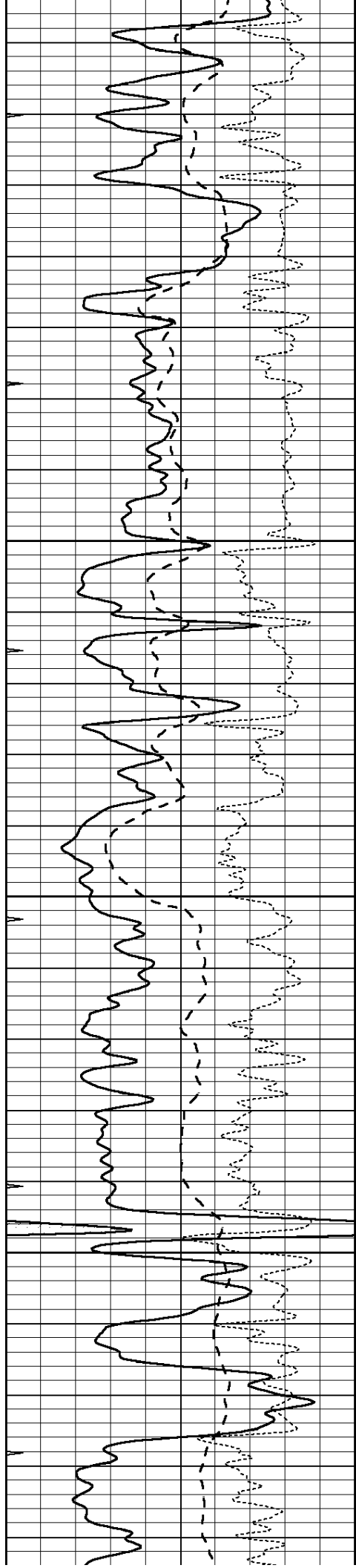
Database File: 1599ddn.db
 Dataset Pathname: pass3.2
 Presentation Format: _dil
 Dataset Creation: Fri Sep 01 05:40:18 2017
 Charted by: Depth in Feet scaled 1:240

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

2600



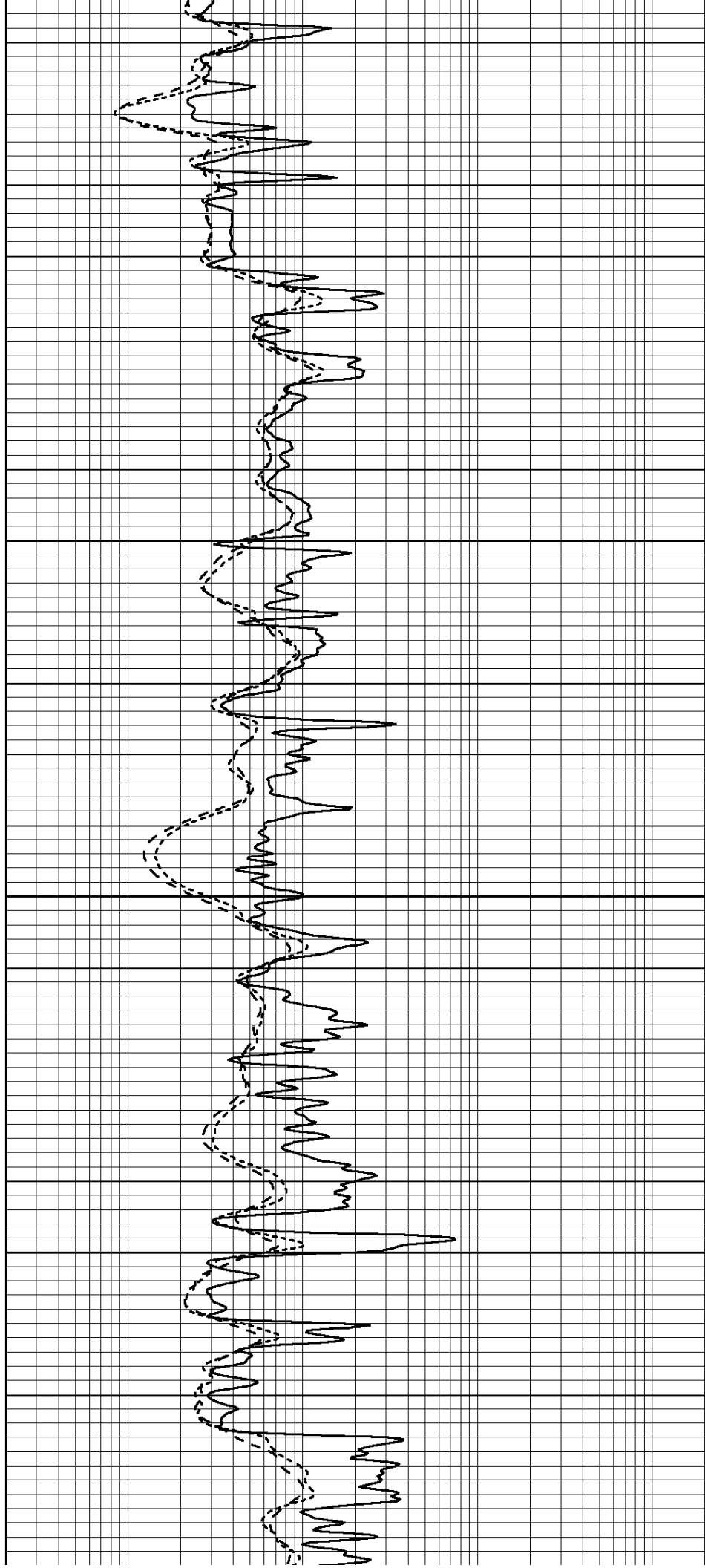


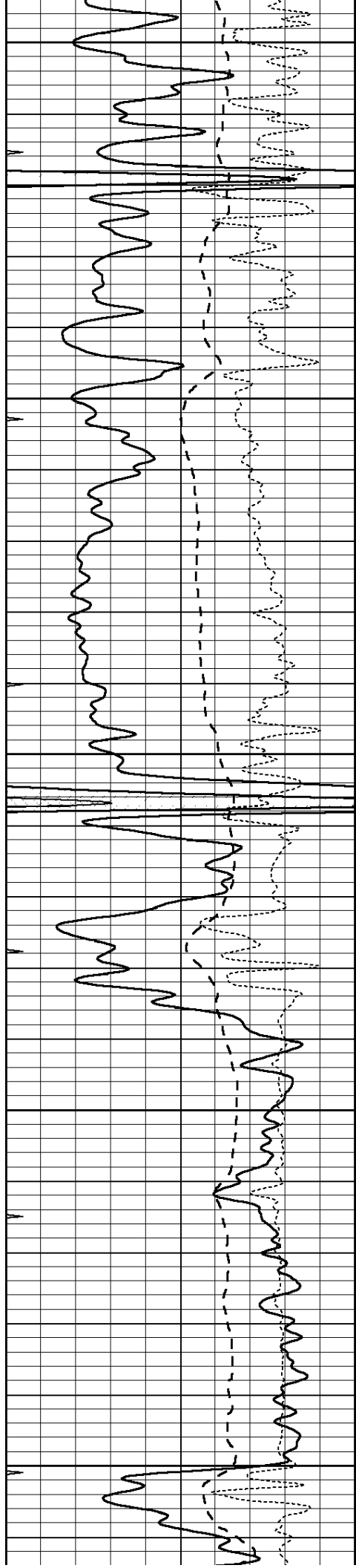
2650

2700

2750

2800





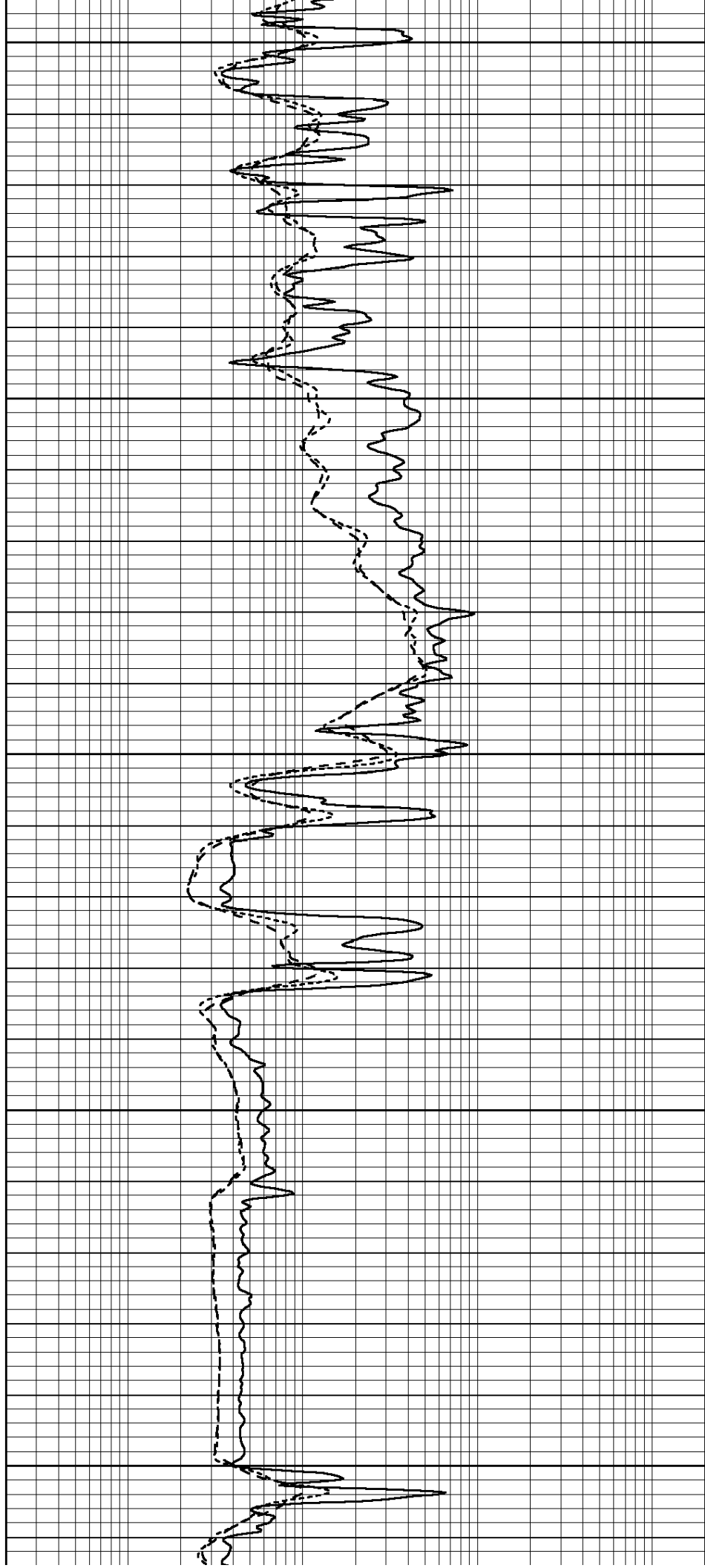
2850

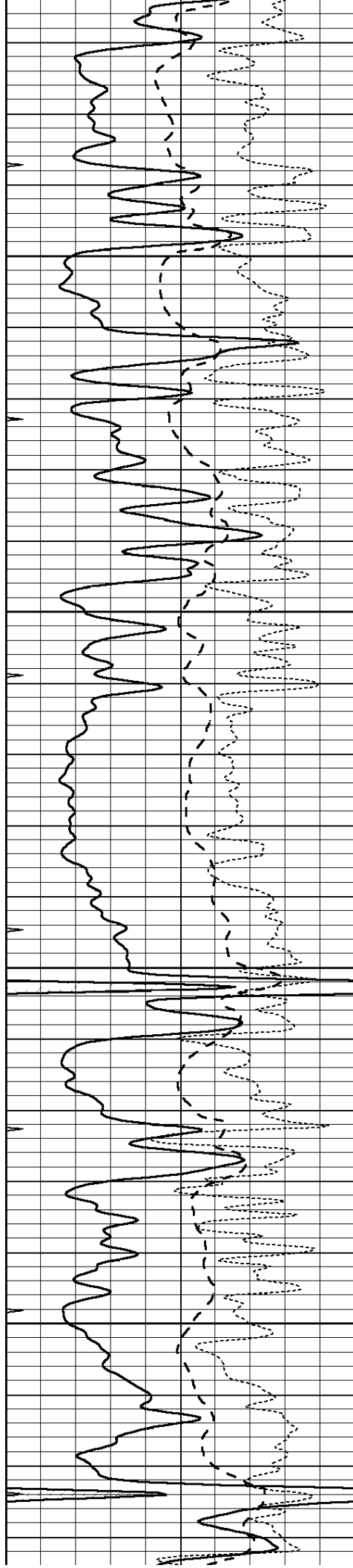
2900

2950

3000

3050



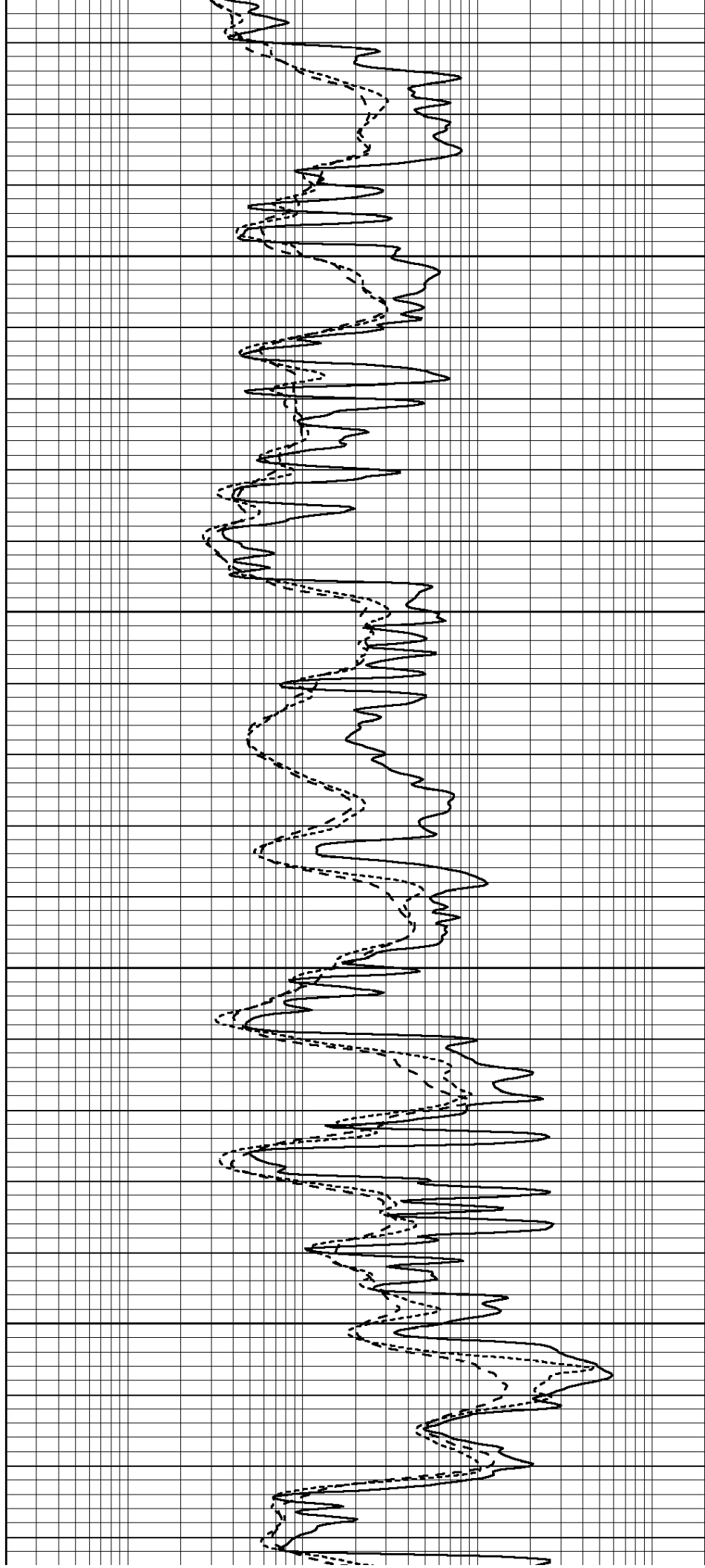


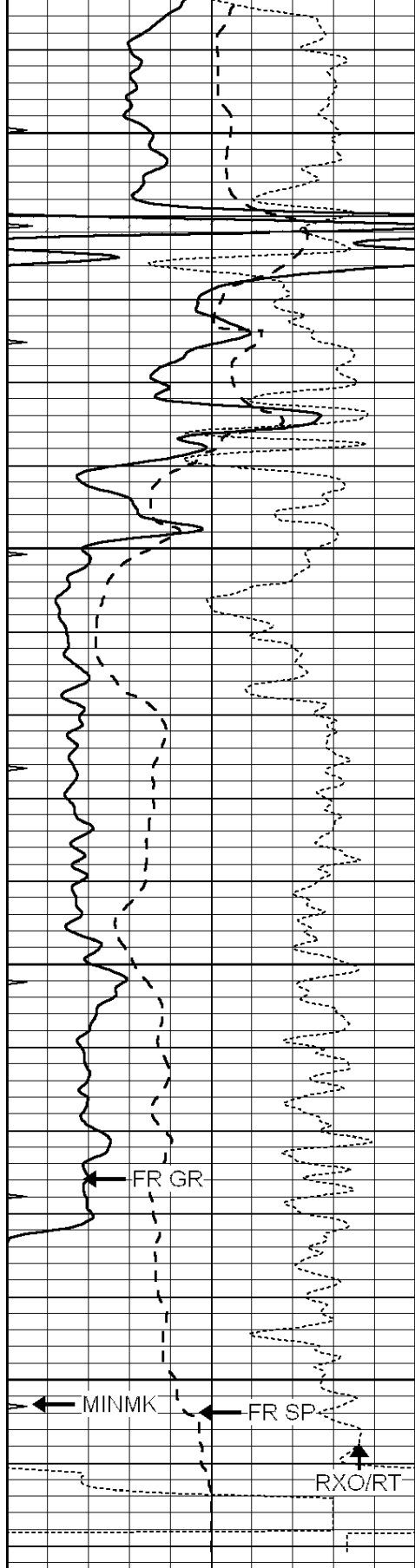
3100

3150

3200

3250





3300

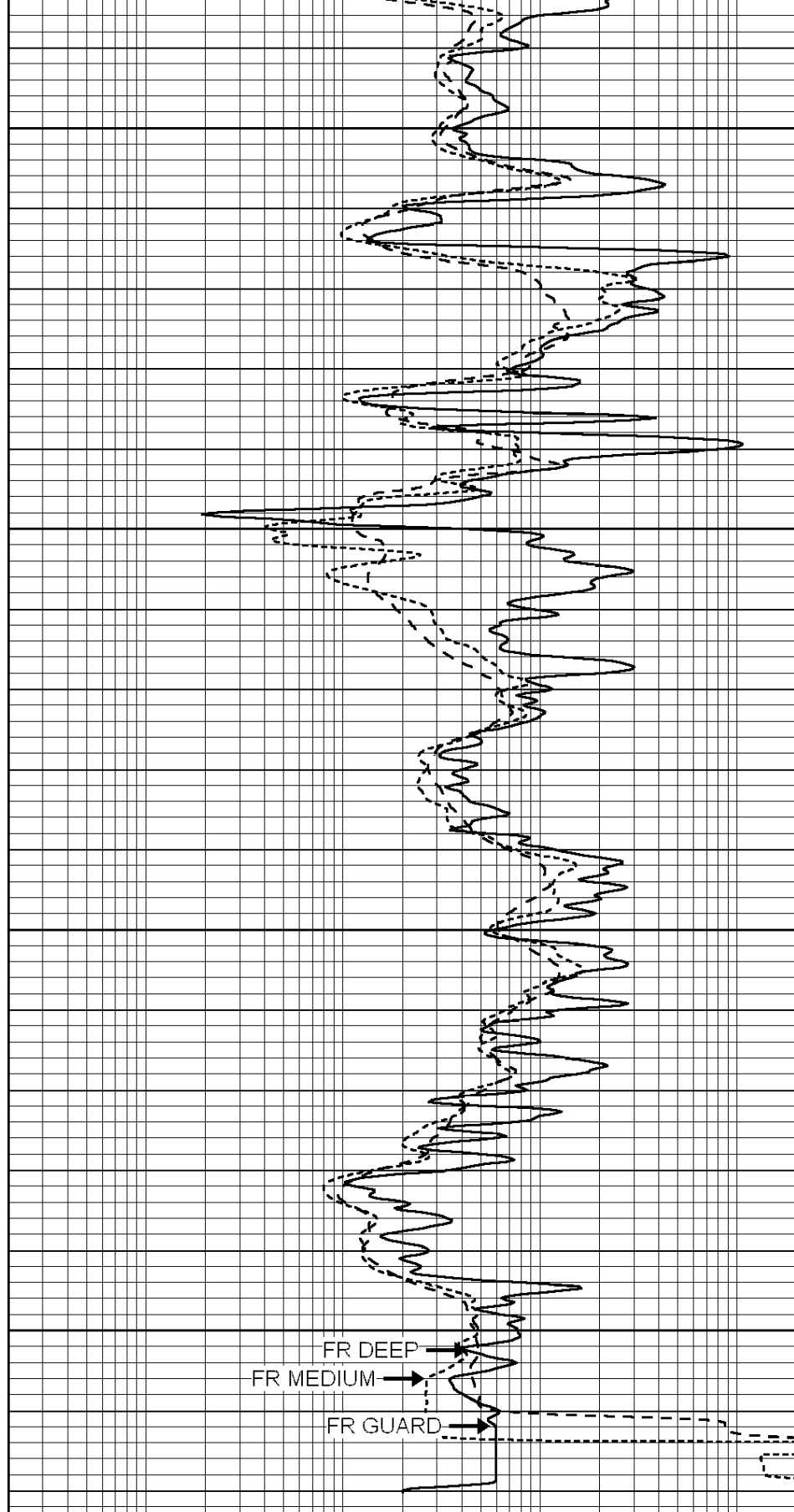
3350

3400

3450

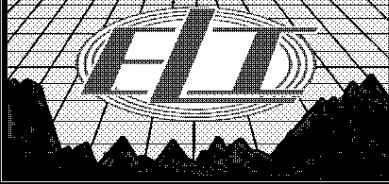
LTD 3464

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



FR DEEP
FR MEDIUM
FR GUARD

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

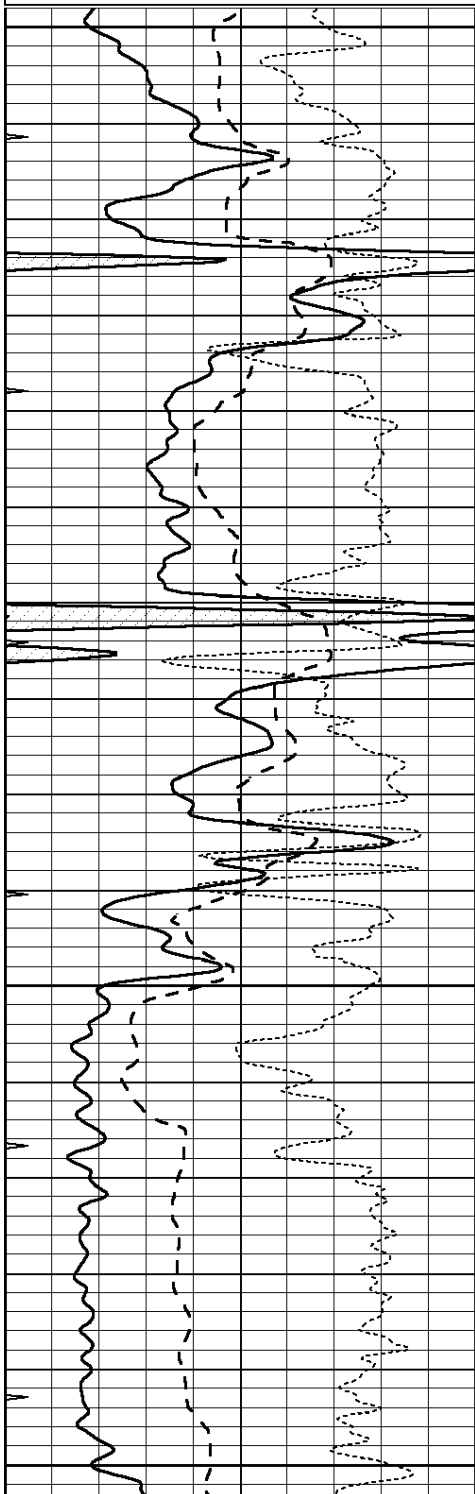


REPEAT SECTION

Database File: 1599ddn.db
Dataset Pathname: pass2.3
Presentation Format: _dil
Dataset Creation: Fri Sep 01 04:47:57 2017
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

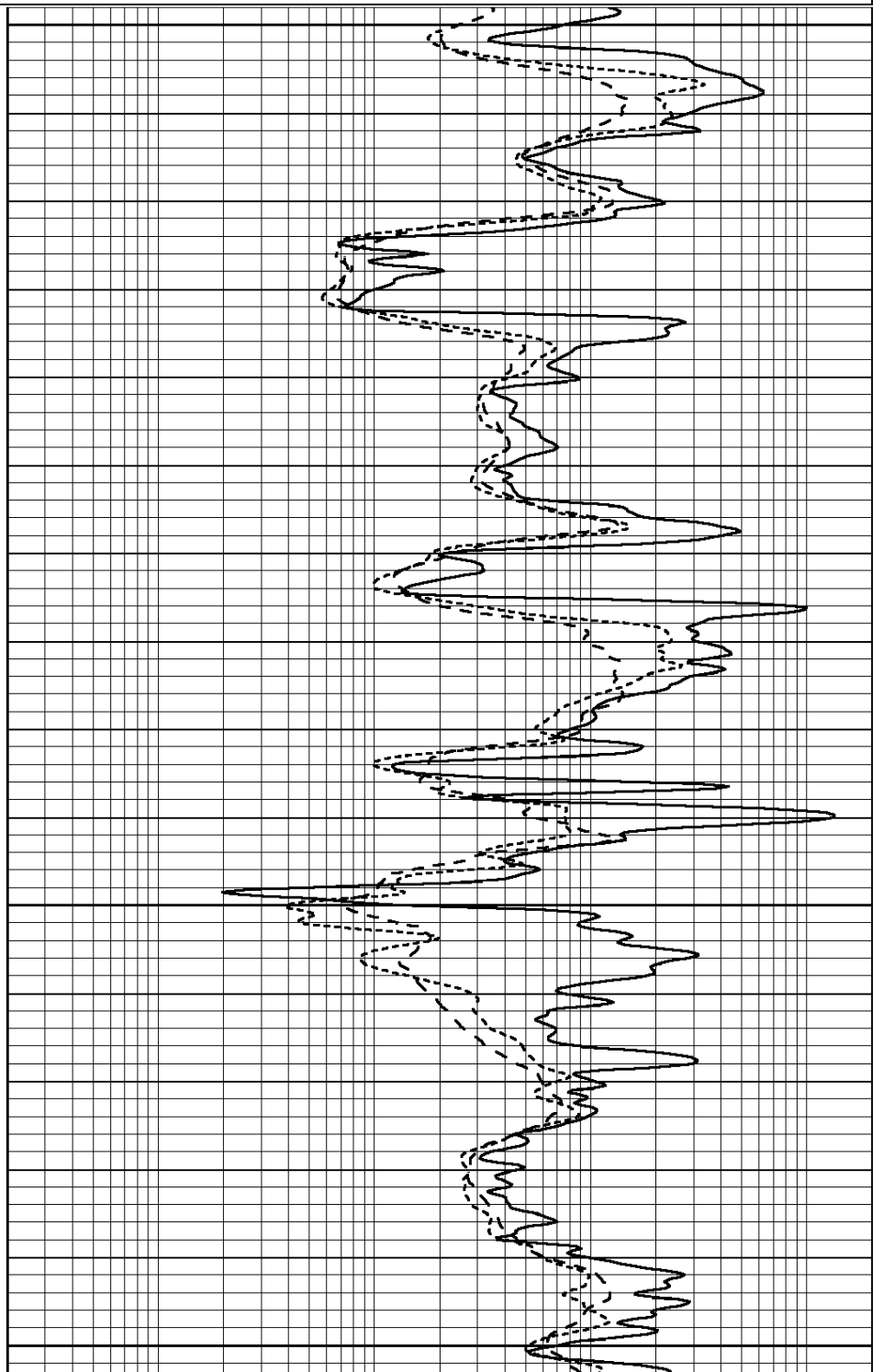


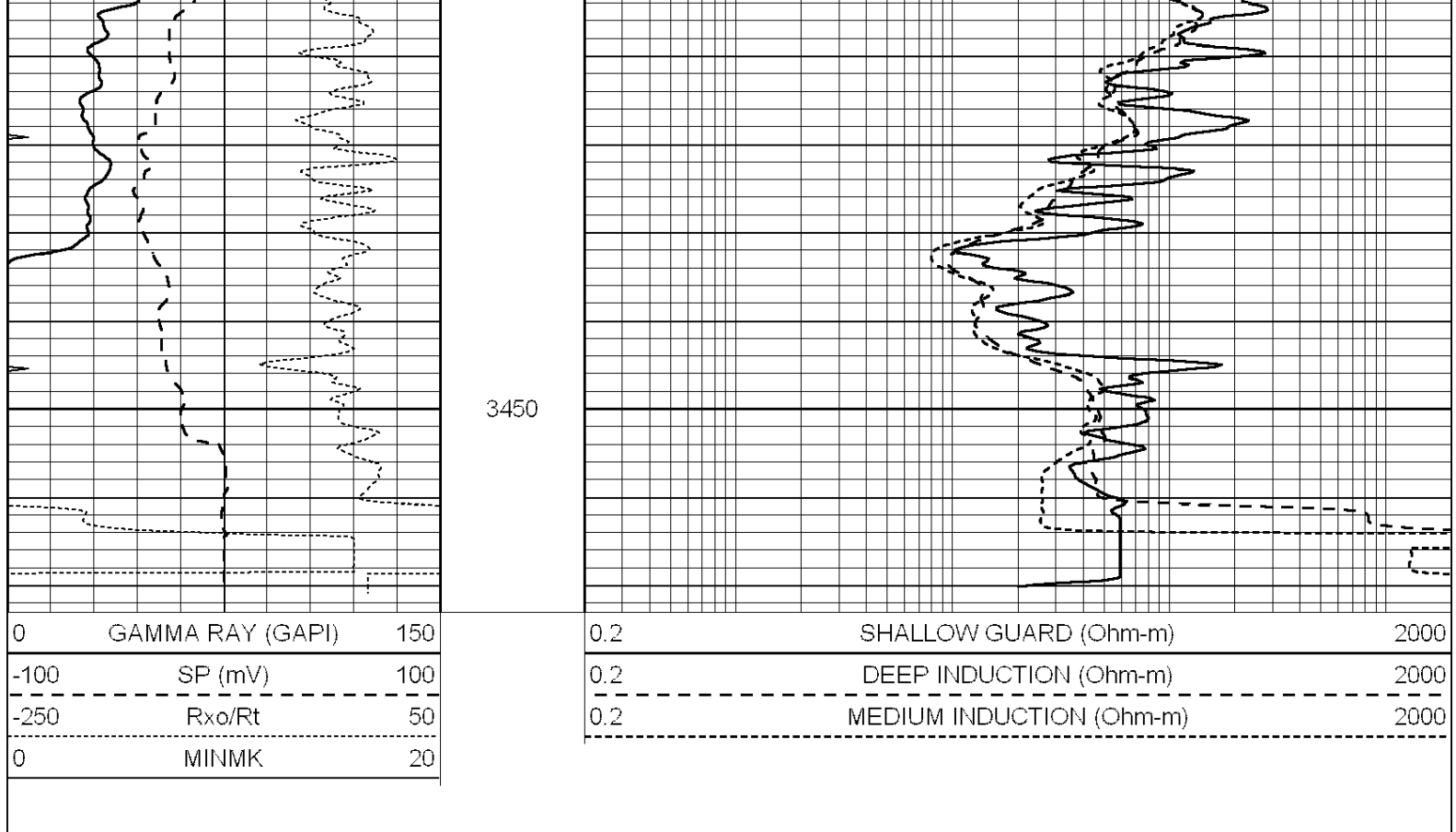
3250

3300

3350

3400





Calibration Report									
Database File:		1598ddn.db							
Dataset Pathname:		pass4							
Dataset Creation:		Wed Aug 30 02:13:00 2017 by Log SOC 120430							
Dual Induction Calibration Report									
Serial-Model:		PROBE7-DILG							
Surface Cal Performed:		Wed Aug 30 00:06:33 2017							
Downhole Cal Performed:		Mon Jul 28 12:02:56 2008							
After Survey Verification Performed:		Mon Jul 28 12:02:56 2008							
Surface Calibration									
		Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b	
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	620.000	0.000	
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000	
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		4000.000	mmho-m			
After Survey Verification									
		Readings			Targets			Results	

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: 002 Model: PRB

Master Calibration			Performed Mon Aug 21 11:27:42 2017					
	Background	Magnesium		Aluminum		Sandstone		
Window 1	837.1	10632.5		2945.1		12110.1		cps
Window 2	772.0	9117.4		2570.1		10197.3		cps
Window 3	631.7	4669.0		1481.9		5042.9		cps
Window 4	187.0	187.5		185.9		189.9		cps
Long Space	0.0	8345.4		1798.1		9425.3		cps
Short Space	1.1	1927.9		1285.9		2050.2		cps
Rho		1.7100		2.5960		1.3800		g/cc
Pe		0.0000		2.5700		1.5500		
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio			: 0.558	
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept			: -19.6	

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:	070808
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:		070558		
Tool Model:		OPEN_GR		
Performed:		Wed May 31 00:09:32 2017		
Calibrator Value:		1.0	GAPI	
Background Reading:		0.0	cps	
Calibrator Reading:		1.0	cps	
Sensitivity:		0.2800	GAPI/cps	