



**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL INDUCTION
LOG**

Company HERMAN L. LOEB, LLC.
Well SCHMITT #4-23
Field HALLET EAST
County HODGEMAN
State KANSAS

Company HERMAN L. LOEB, LLC.
Well SCHMITT #4-23
Field HALLET EAST
County HODGEMAN State KANSAS

Location: API # : 15-083-21863-0000
2310' FNL & 2199' FWL
W/2 - SE - SE - NW
SEC 23 TWP 22S RGE 25W
Permanent Datum GROUND LEVEL Elevation 2507
Log Measured From KELLY BUSHING 11' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL/PE
MEL
Elevation
K.B. 2518
D.F. 2516
G.L. 2507

Date	12/4/12		
Run Number	ONE		
Depth Driller	4730		
Depth Logger	4736		
Bottom Logged Interval	4734		
Top Log Interval	00		
Casing Driller	8 5/8"@607'		
Casing Logger	607		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3,800 PPM	
Density / Viscosity	9.1/60		
pH / Fluid Loss	10.5/7.2		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	.700@100F		
Rmf @ Meas. Temp	.525@100F		
Rmc @ Meas. Temp	.840@100F		
Source of Rmf / Rmc	MEASUREMENT		
Rin @ BHT	.569@123F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	8:30 A.M.		
Maximum Recorded Temperature	123F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	JON CHRISTENSEN	GEORGE PAYNE	

<<< 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 "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
JETMORE, KS., 8.7 W. ON HWT 156 TO "RD. 210", 3 1/2 N., 1/2 E. INTO



MAIN SECTION

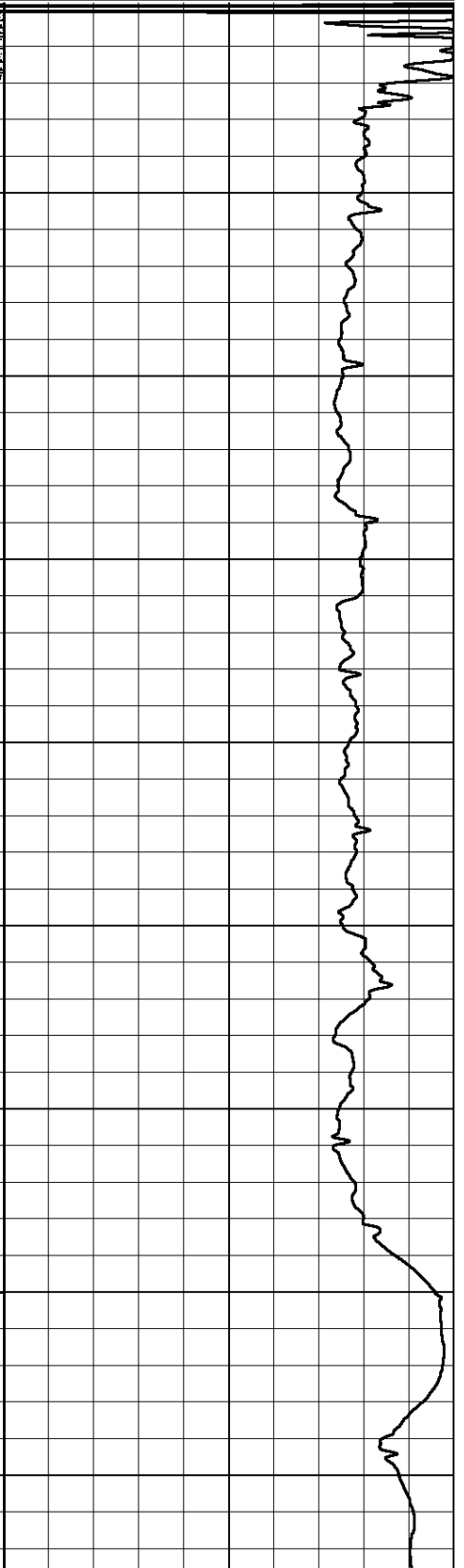
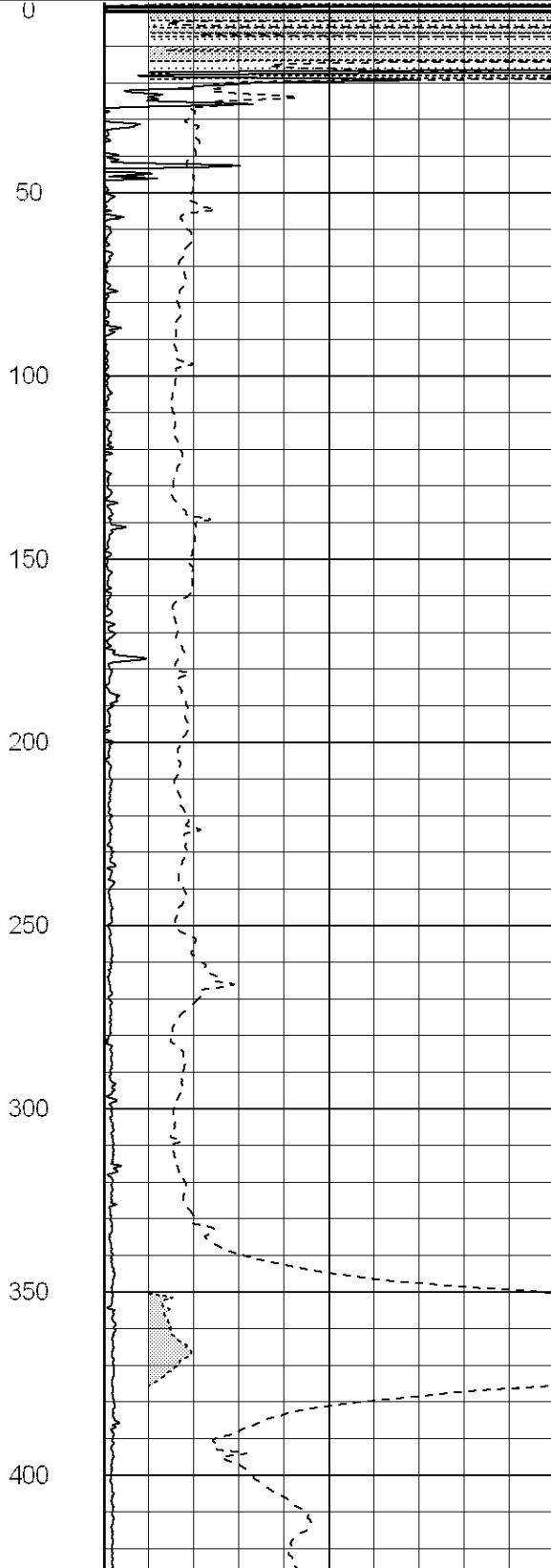
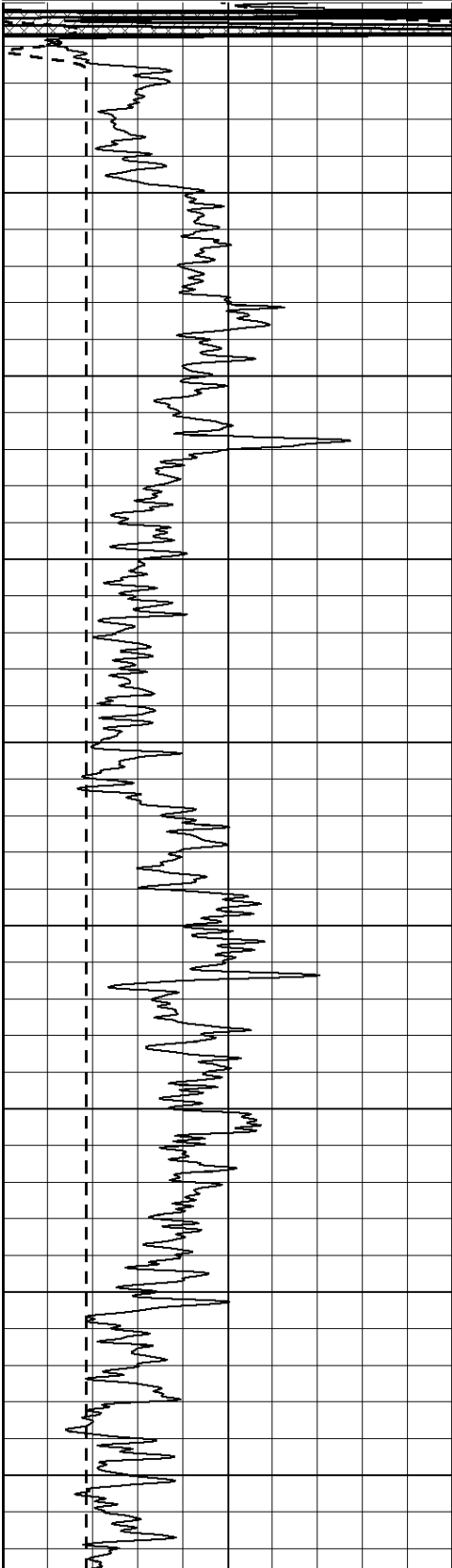
Database File: 010027pe.db
 Dataset Pathname: pass3.6
 Presentation Format: dil2
 Dataset Creation: Tue Dec 04 10:05:02 2012
 Charted by: Depth in Feet scaled 1:600

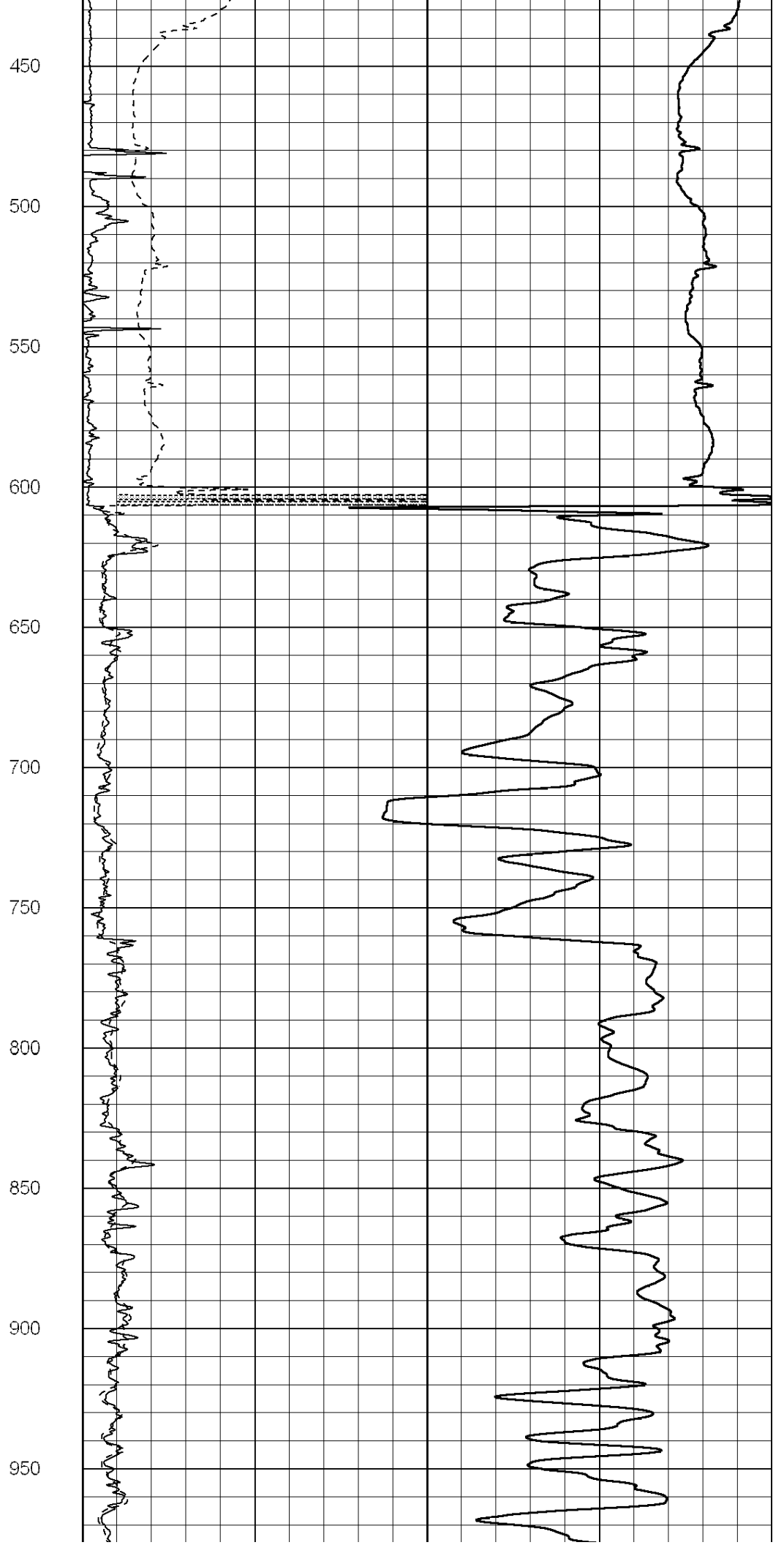
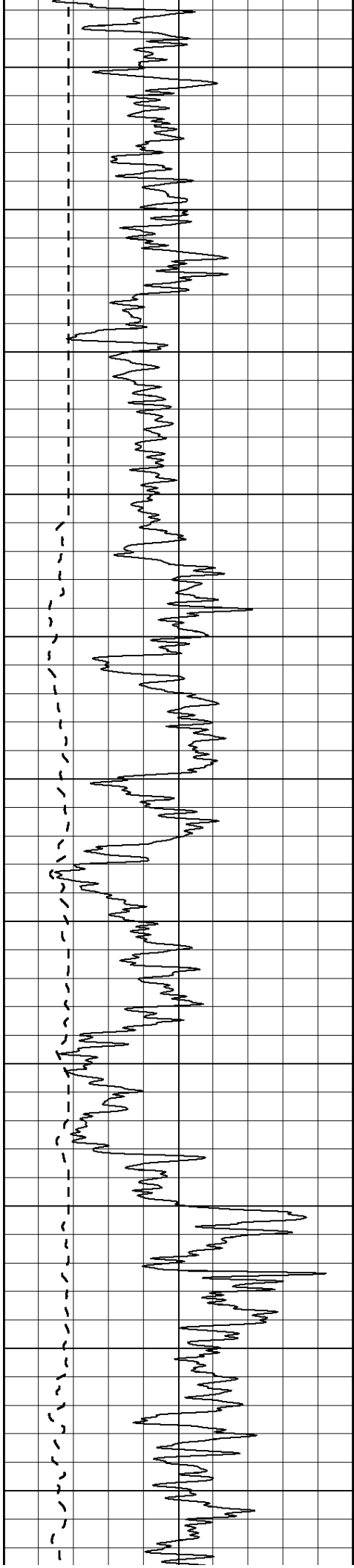
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

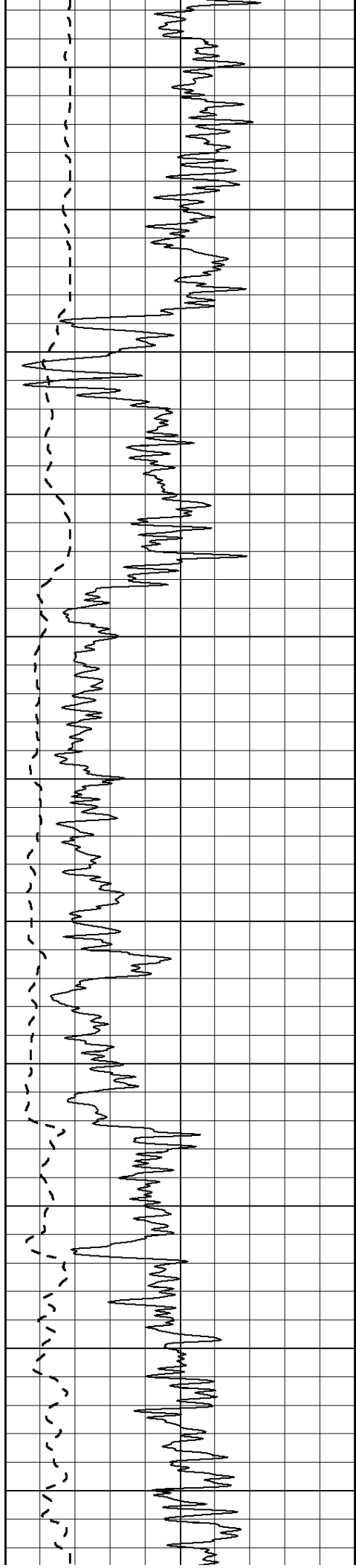
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50

1000	CILD (mmho/m)	0
------	---------------	---

50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500







1000

1050

1100

1150

1200

1250

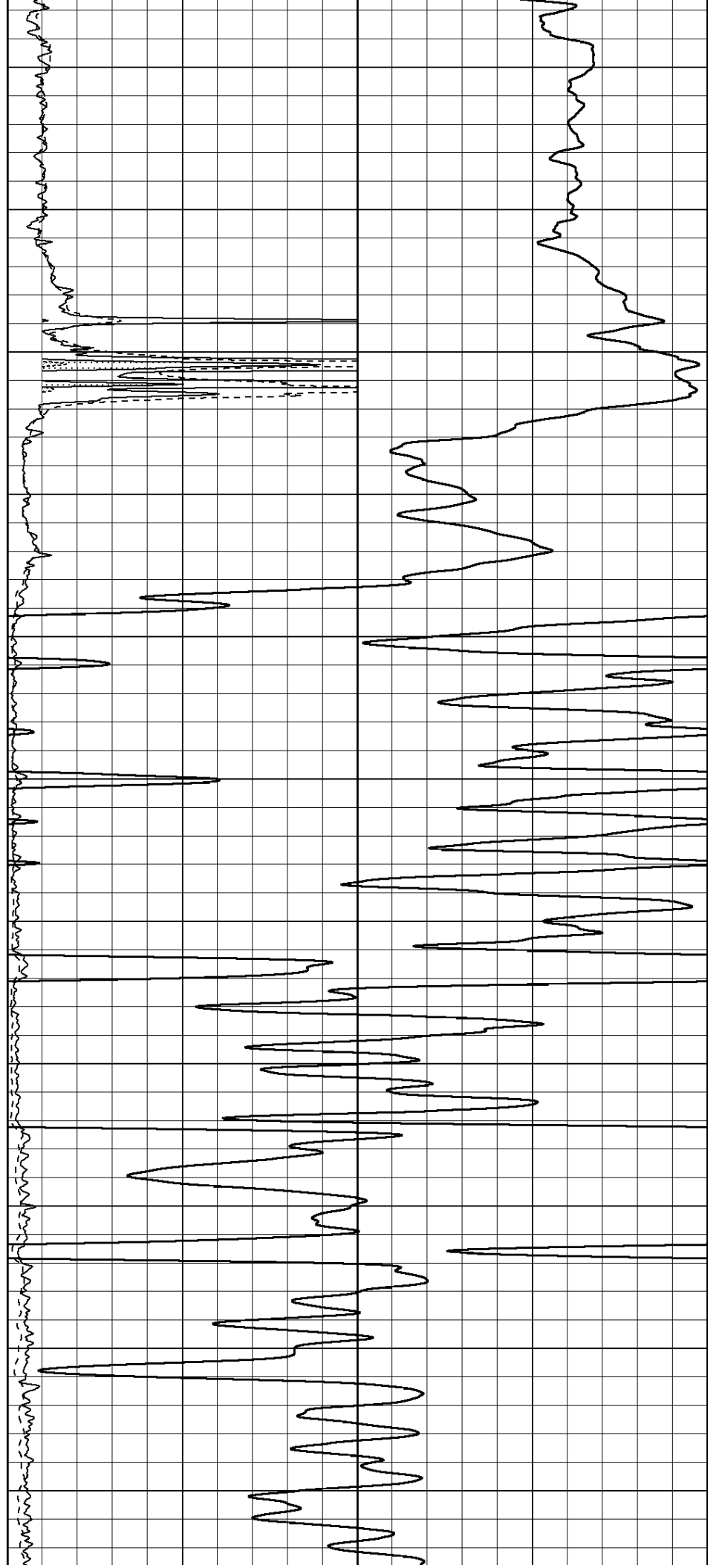
1300

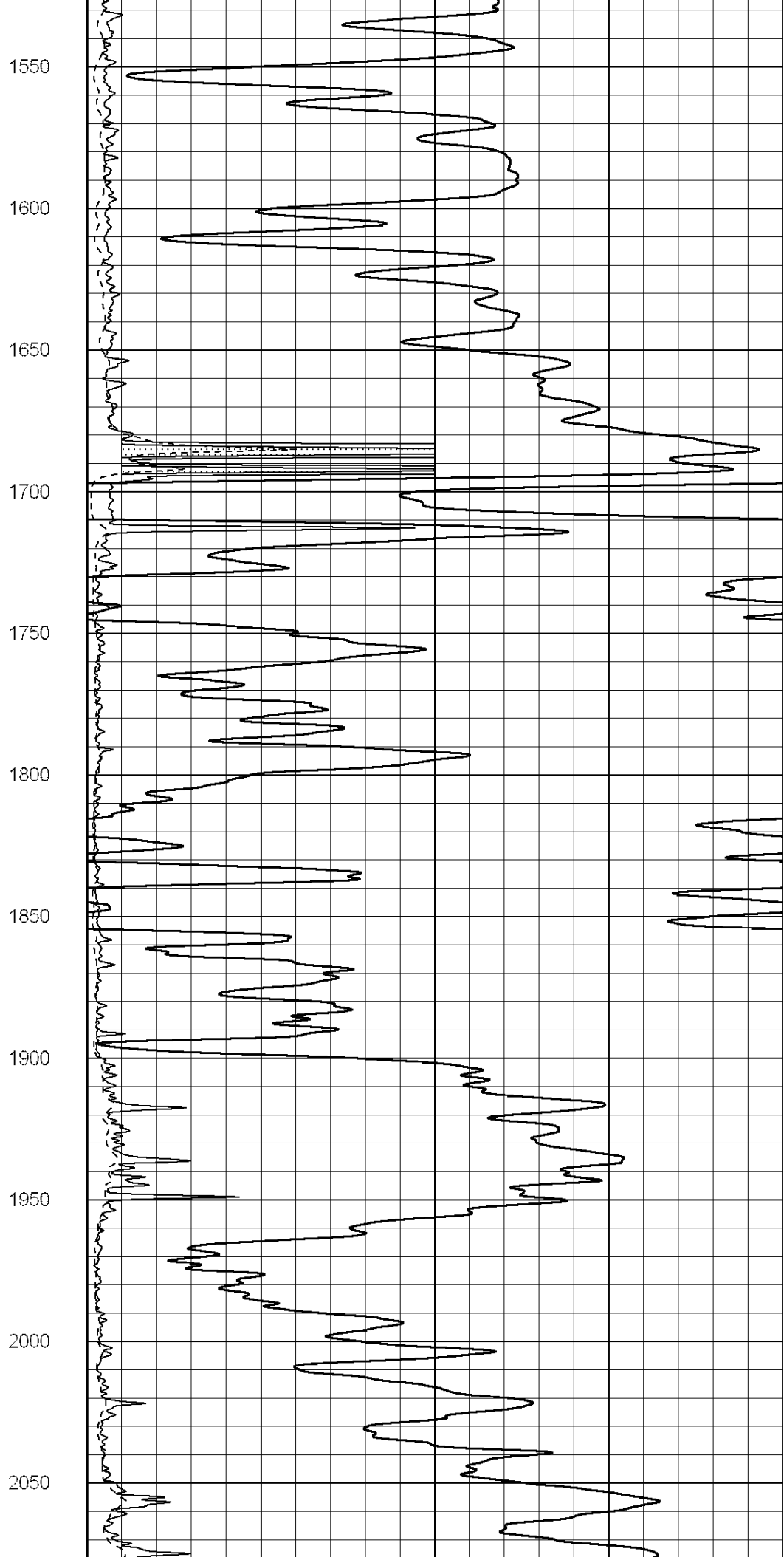
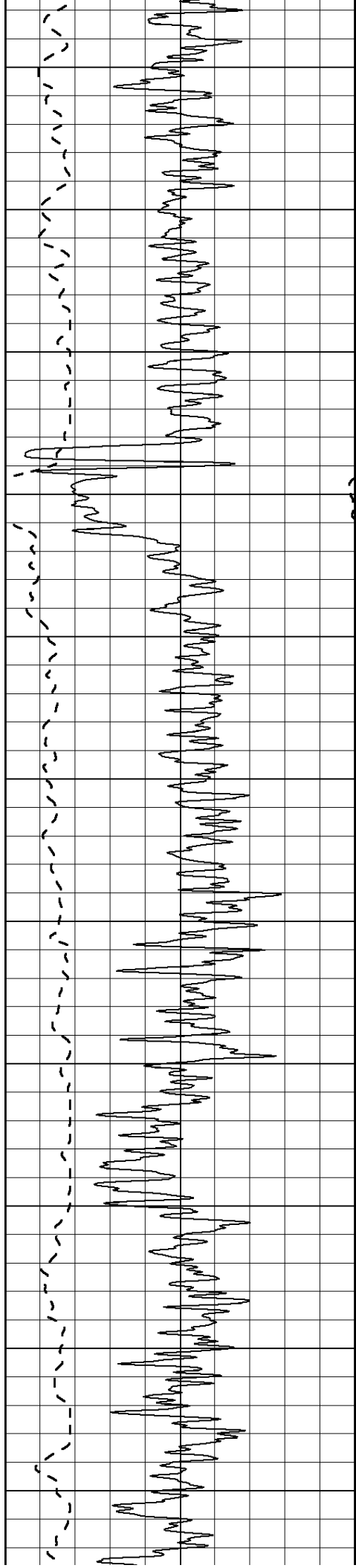
1350

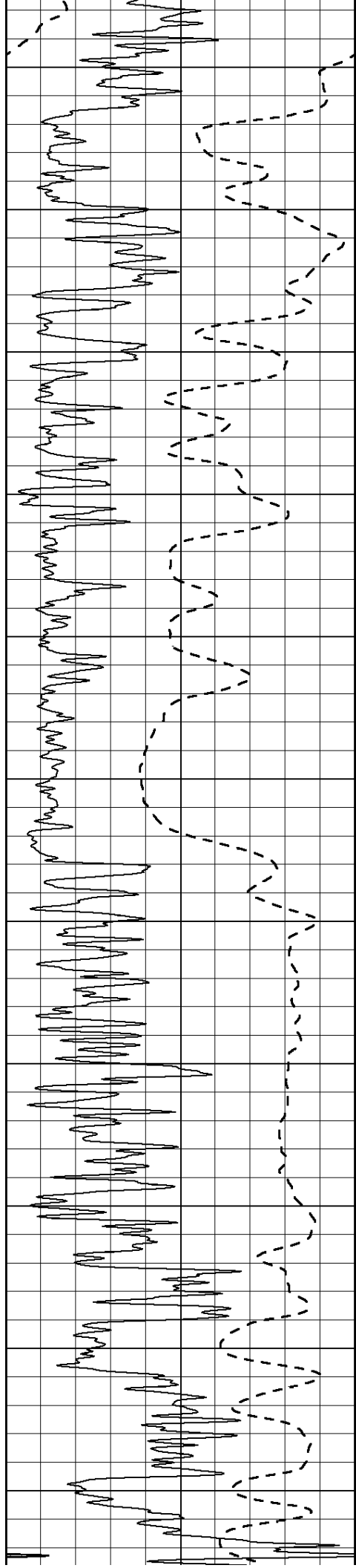
1400

1450

1500







2100

2150

2200

2250

2300

2350

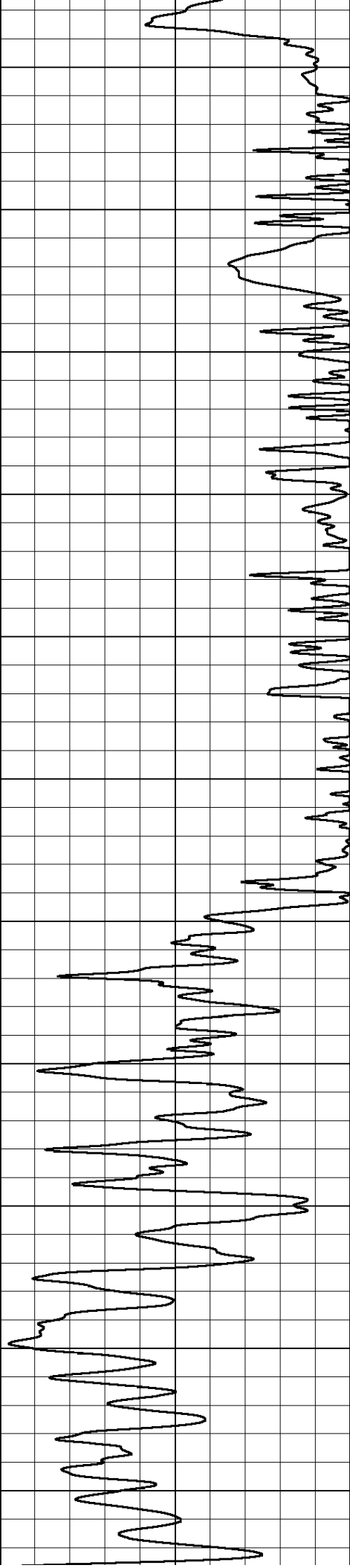
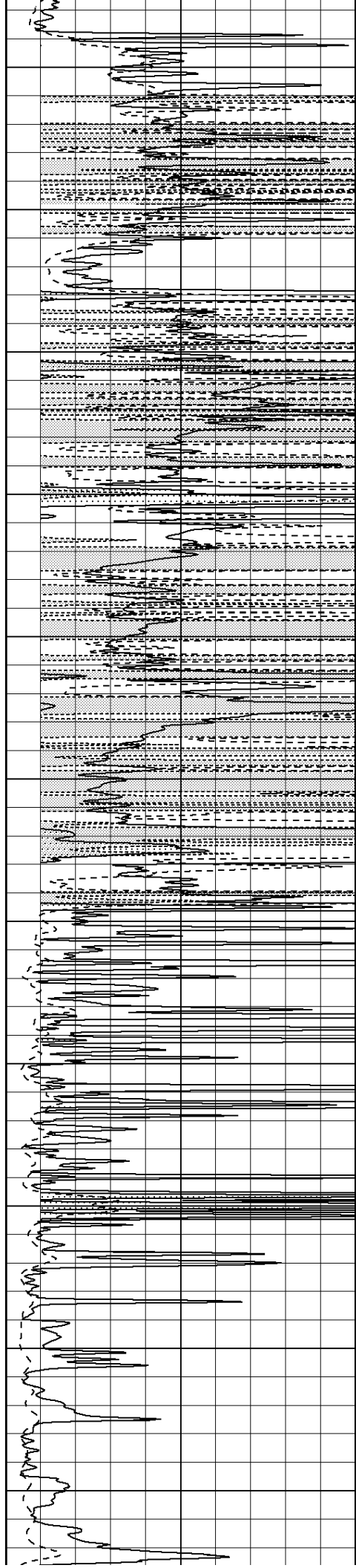
2400

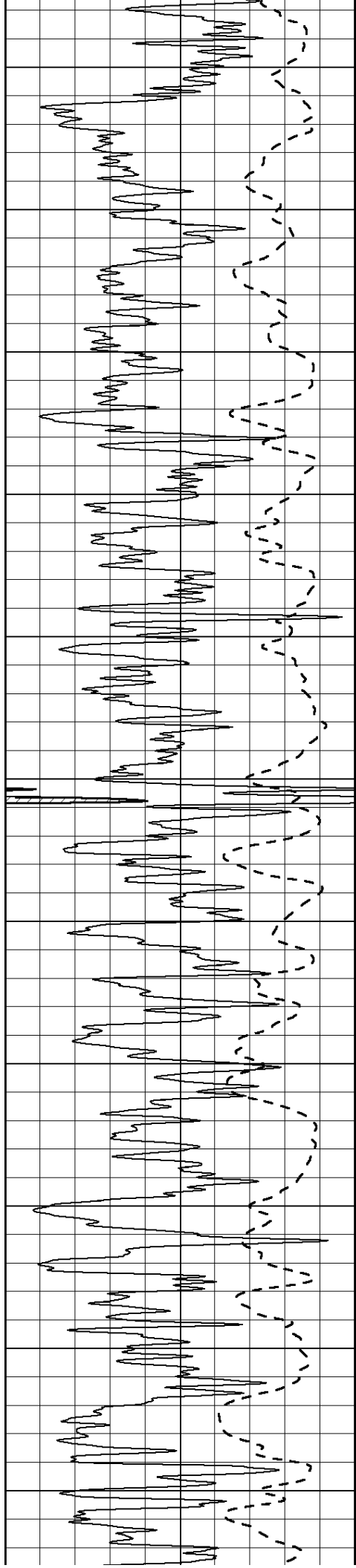
2450

2500

2550

2600





2650

2700

2750

2800

2850

2900

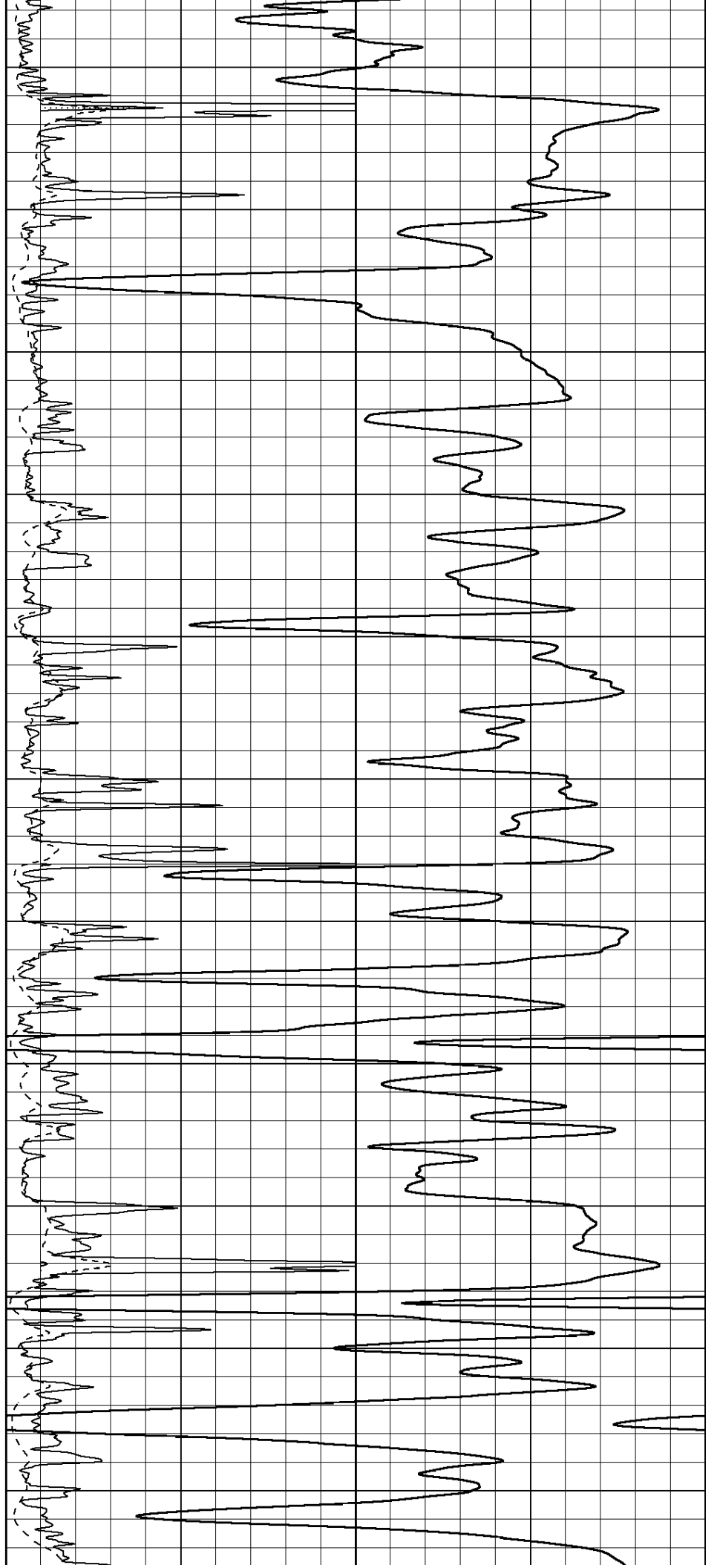
2950

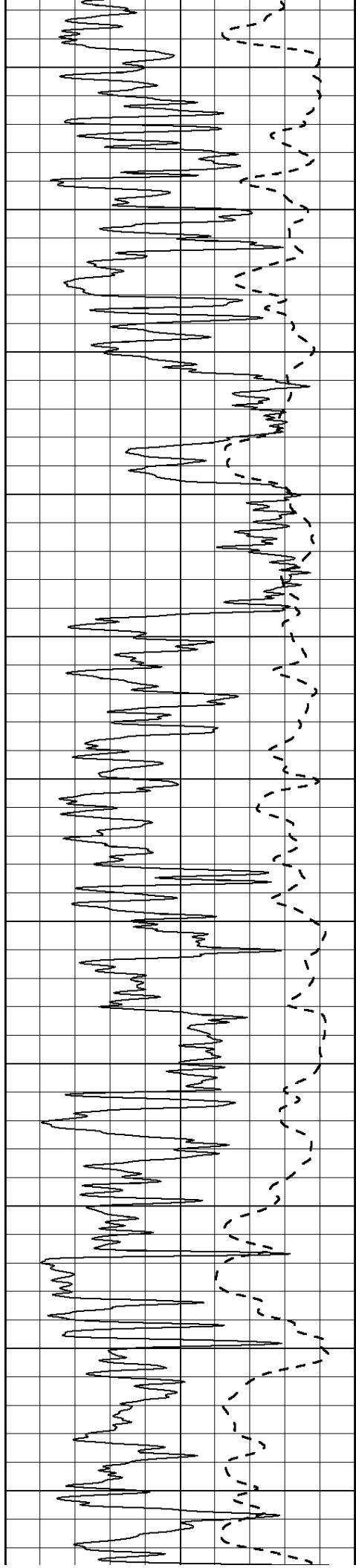
3000

3050

3100

3150





3200

3250

3300

3350

3400

3450

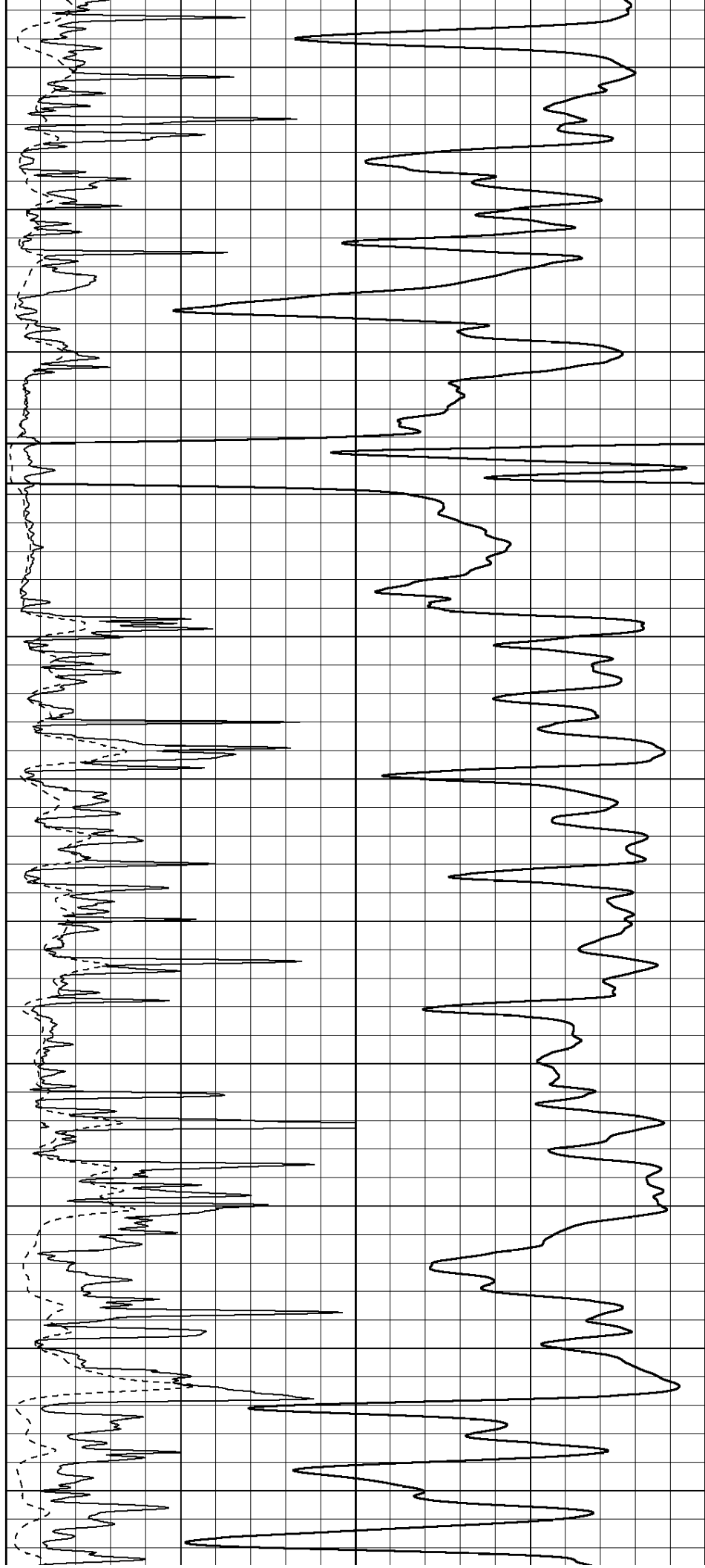
3500

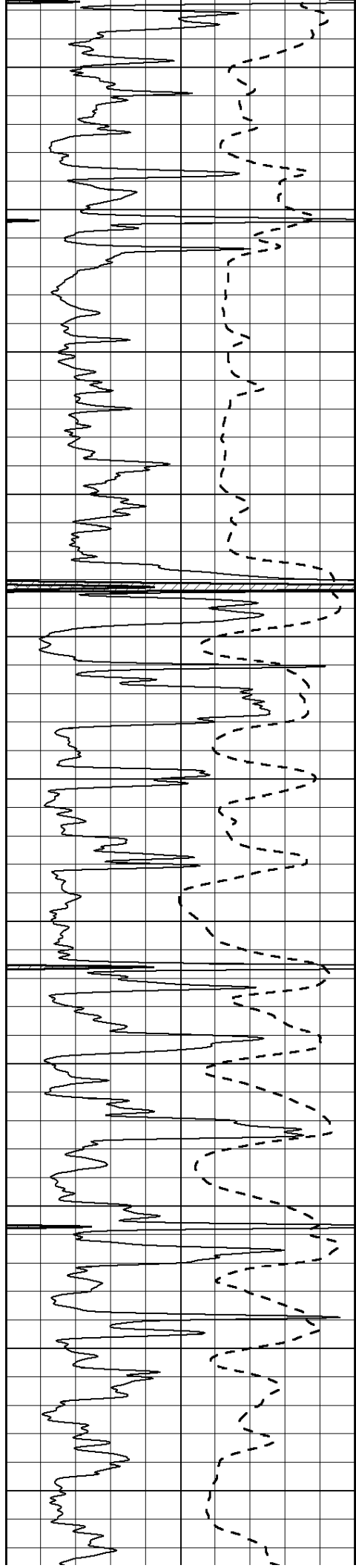
3550

3600

3650

3700





3750

3800

3850

3900

3950

4000

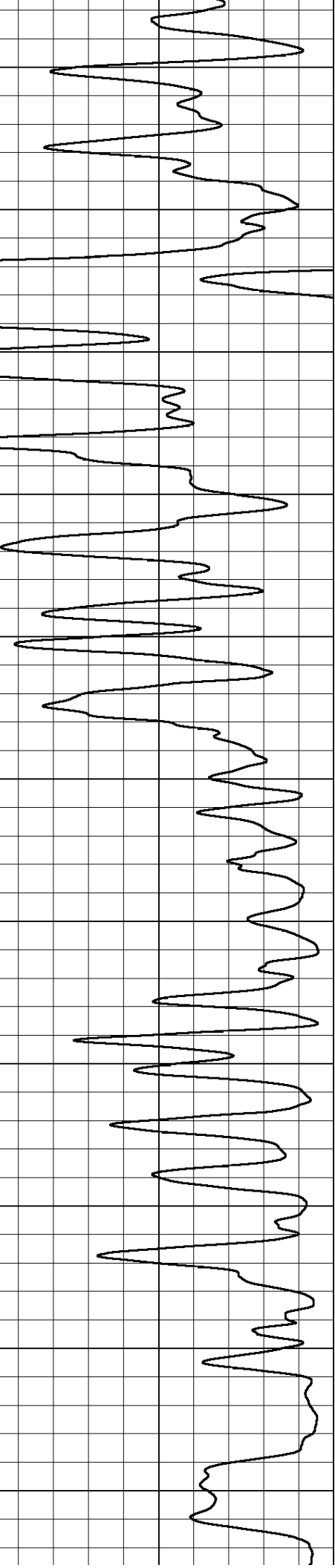
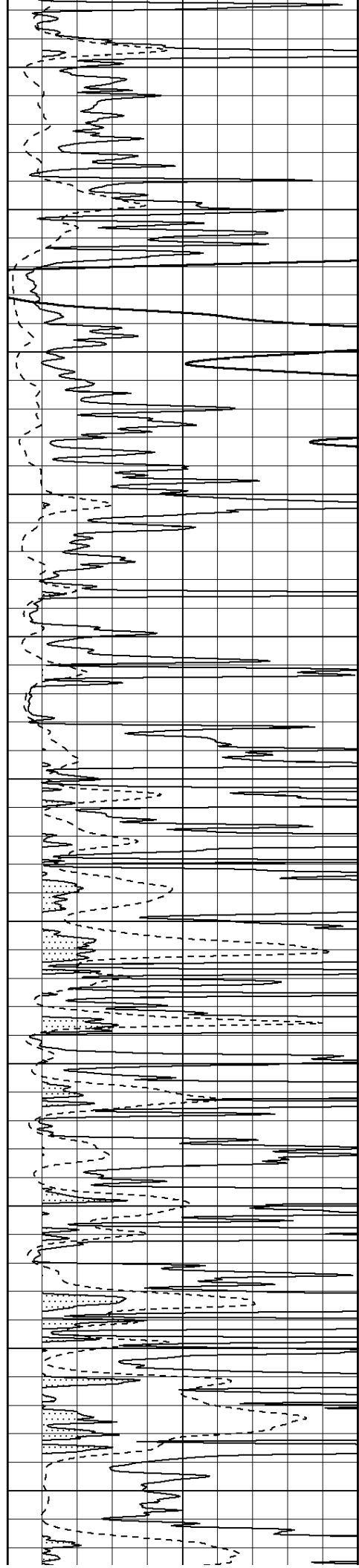
4050

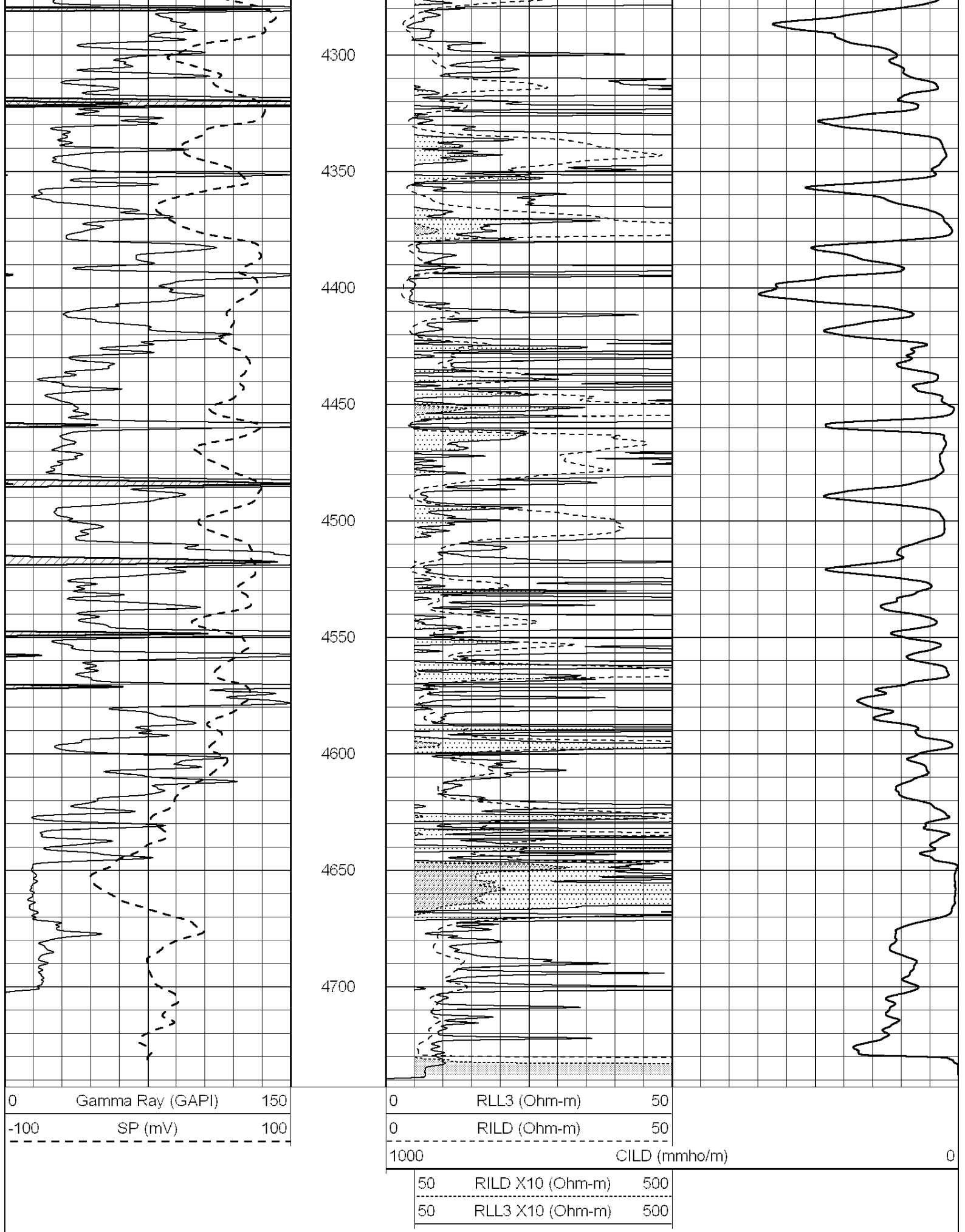
4100

4150

4200

4250



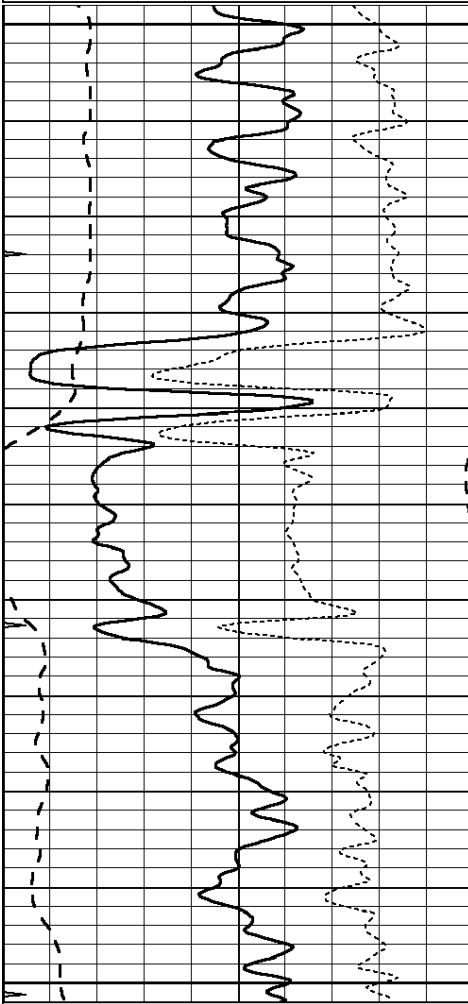


ANHYDRITE

Database File: 010027pe.db
 Dataset Pathname: pass3.7
 Presentation Format: dil
 Dataset Creation: Tue Dec 04 10:05:19 2012
 Charted by: Depth in Feet scaled 1:240

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

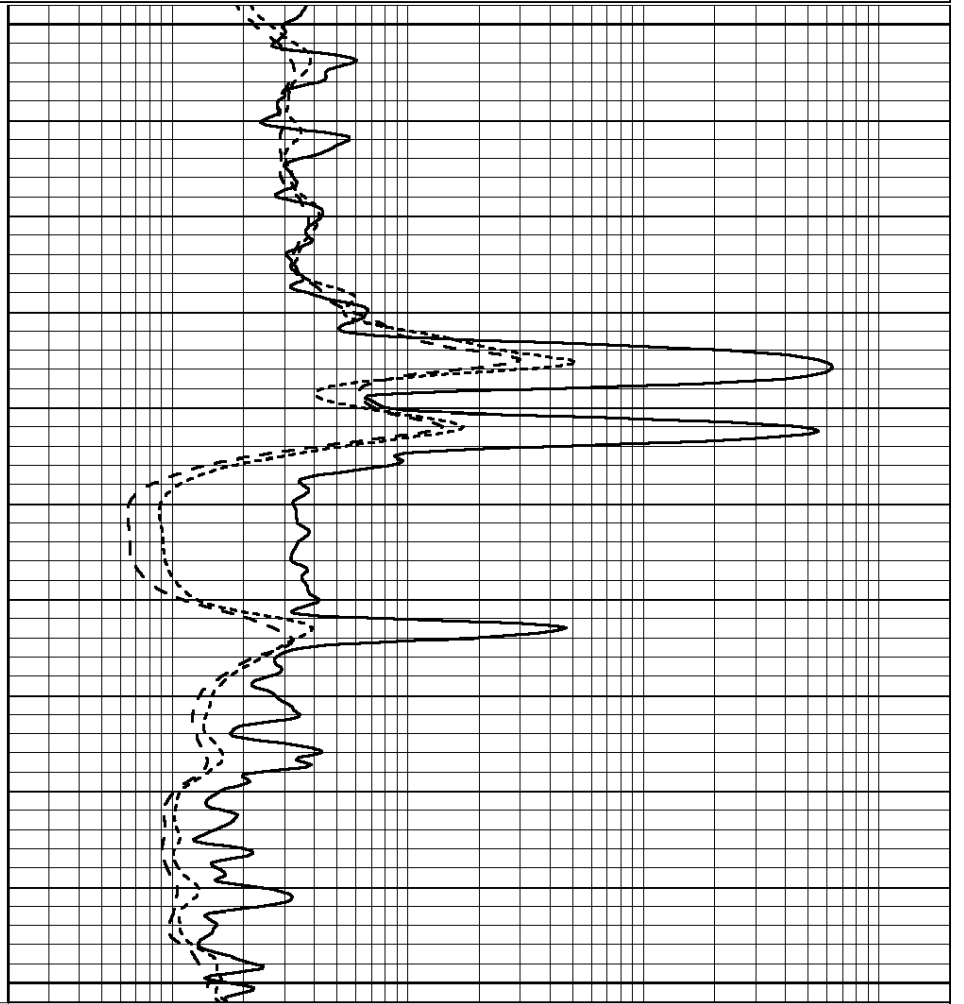
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



1650

1700

1750



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

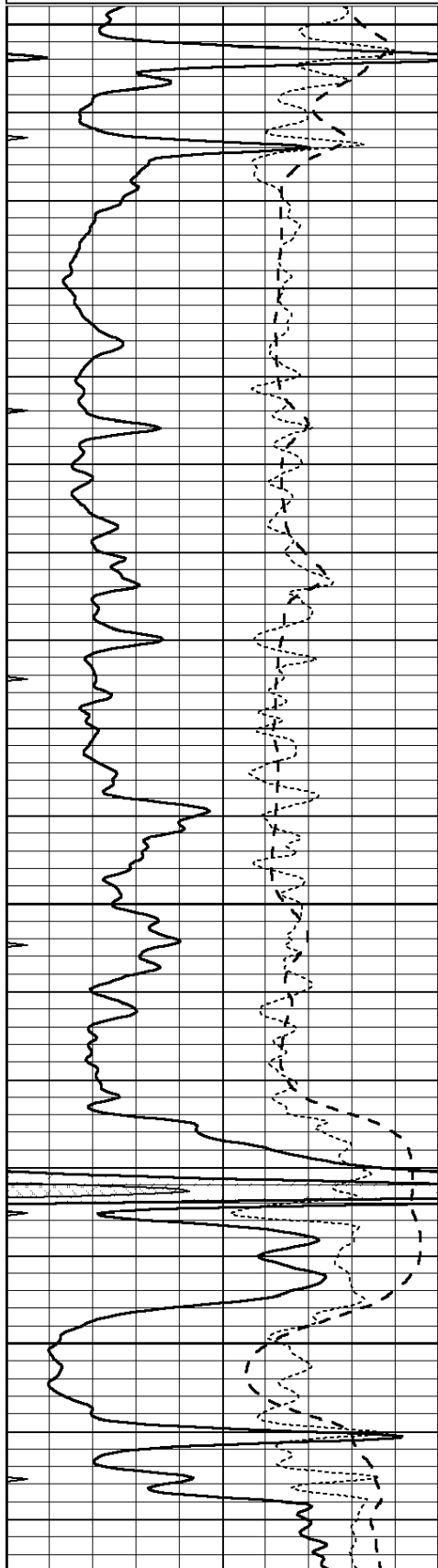
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

MAIN SECTION

Database File: 010027pe.ud
 Dataset Pathname: pass3.6
 Presentation Format: dil
 Dataset Creation: Tue Dec 04 10:05:02 2012
 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

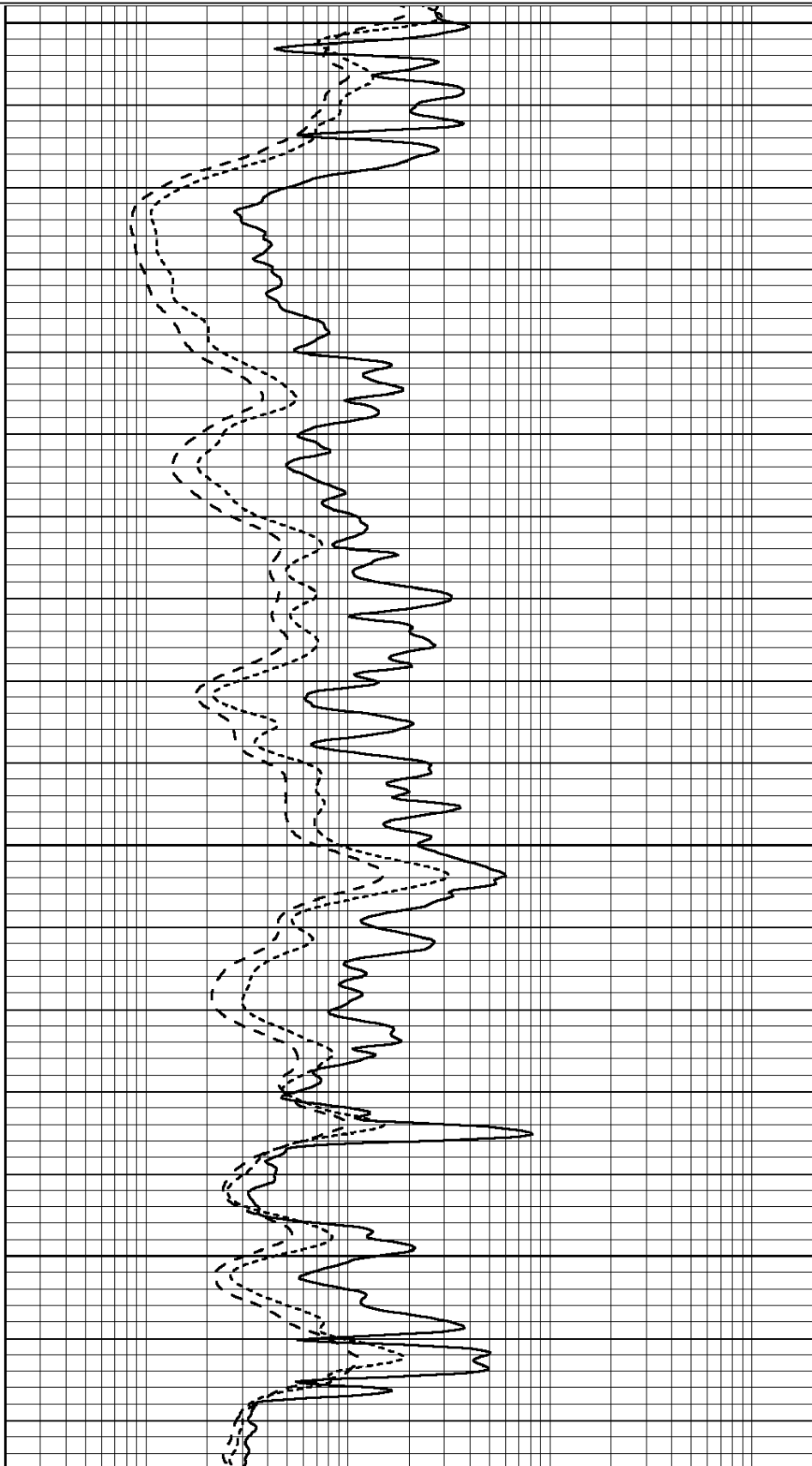


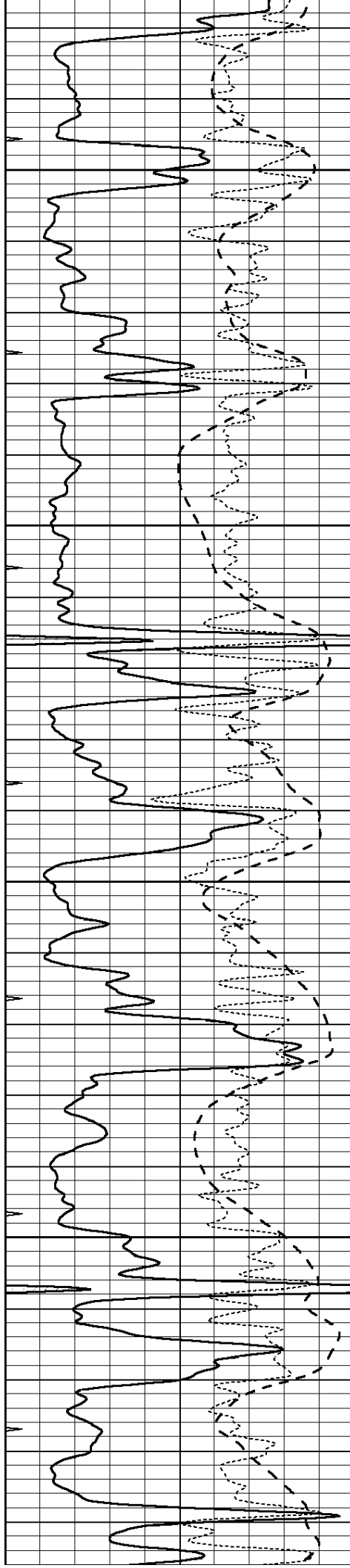
3800

3850

3900

3950



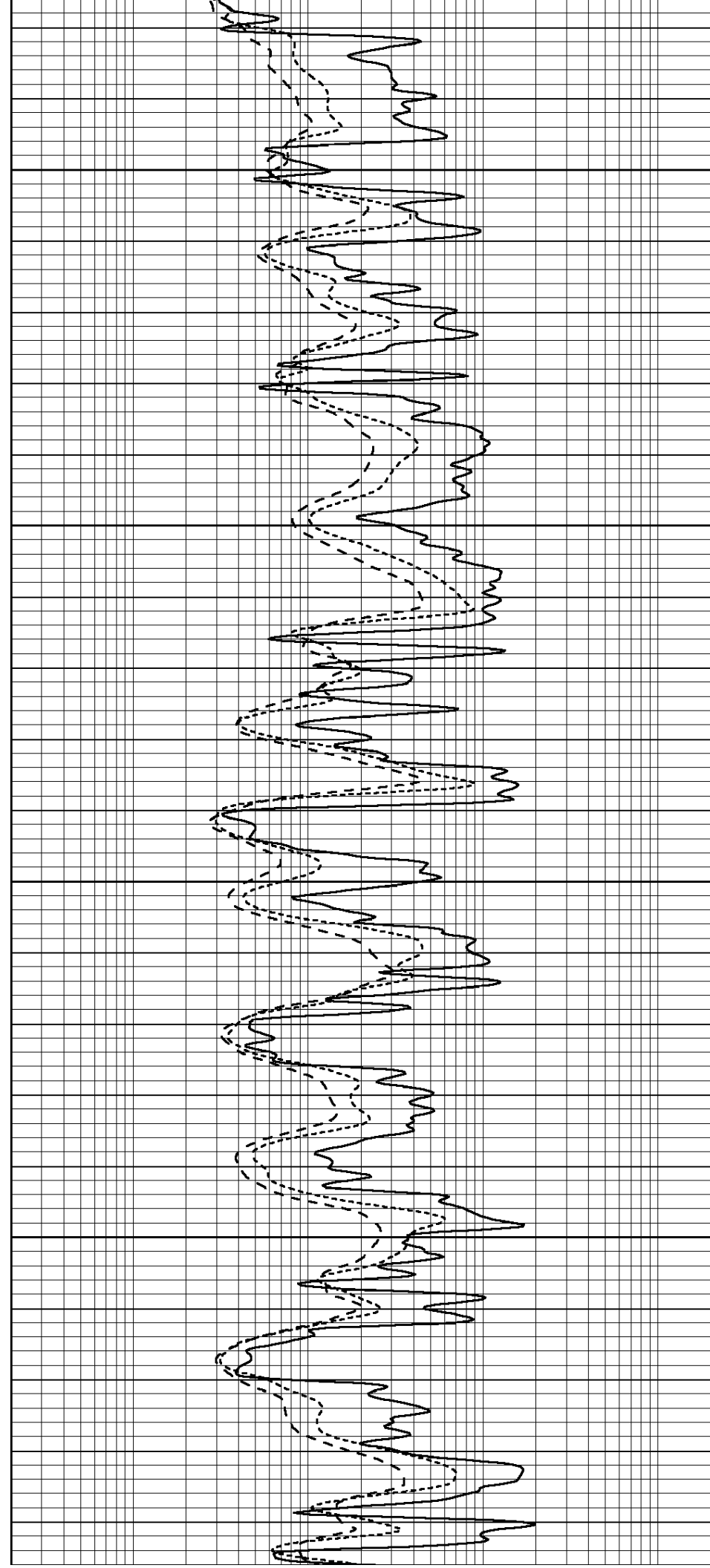


4000

4050

4100

4150

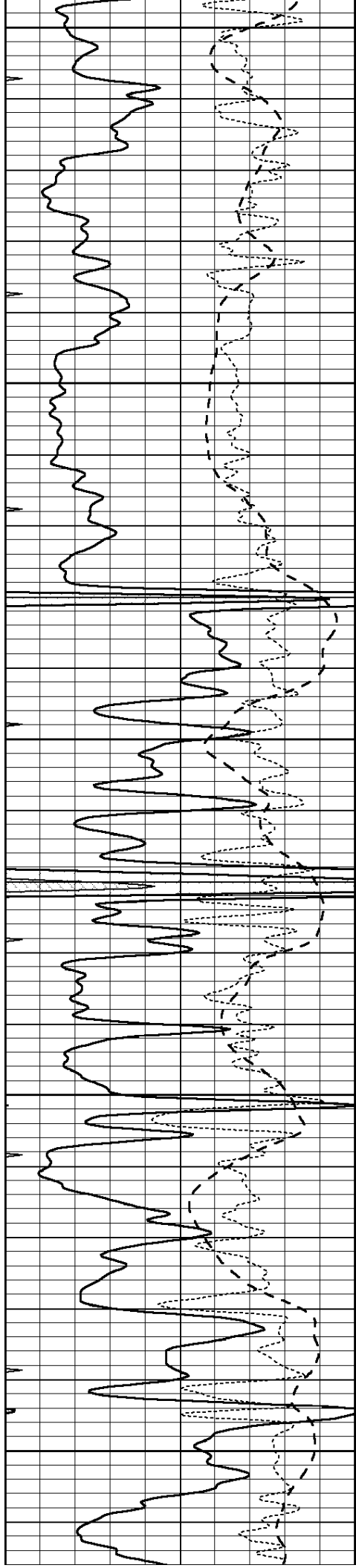


4000

4050

4100

4150



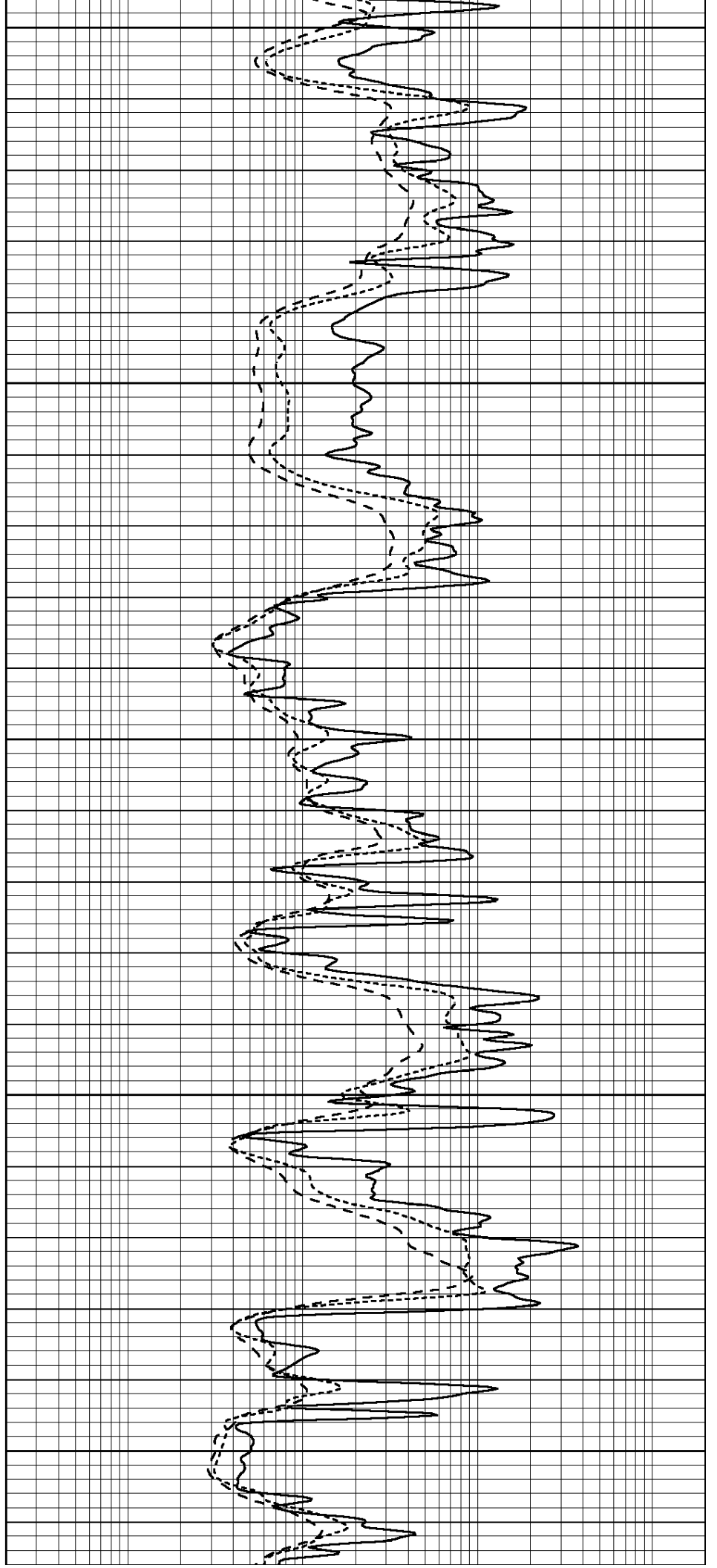
4200

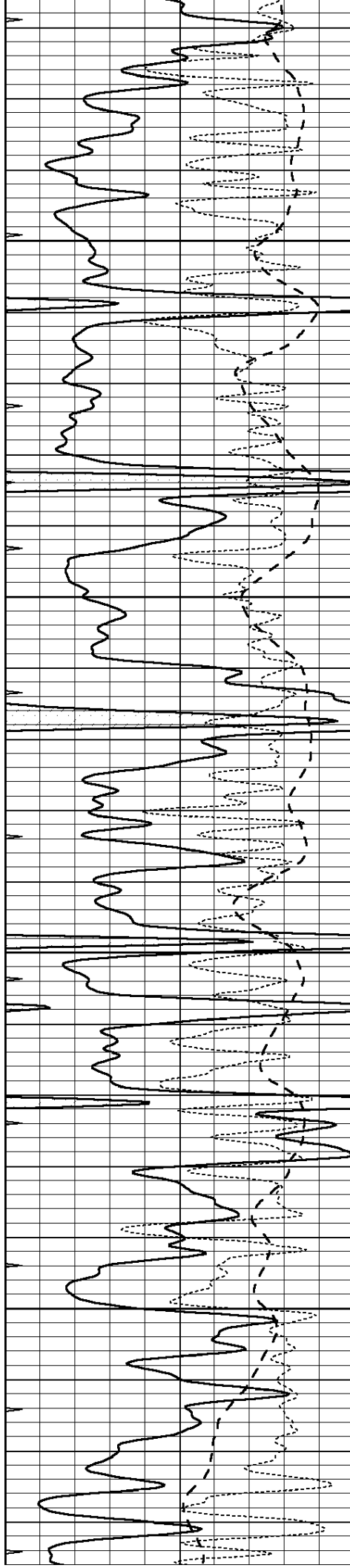
4250

4300

4350

4400



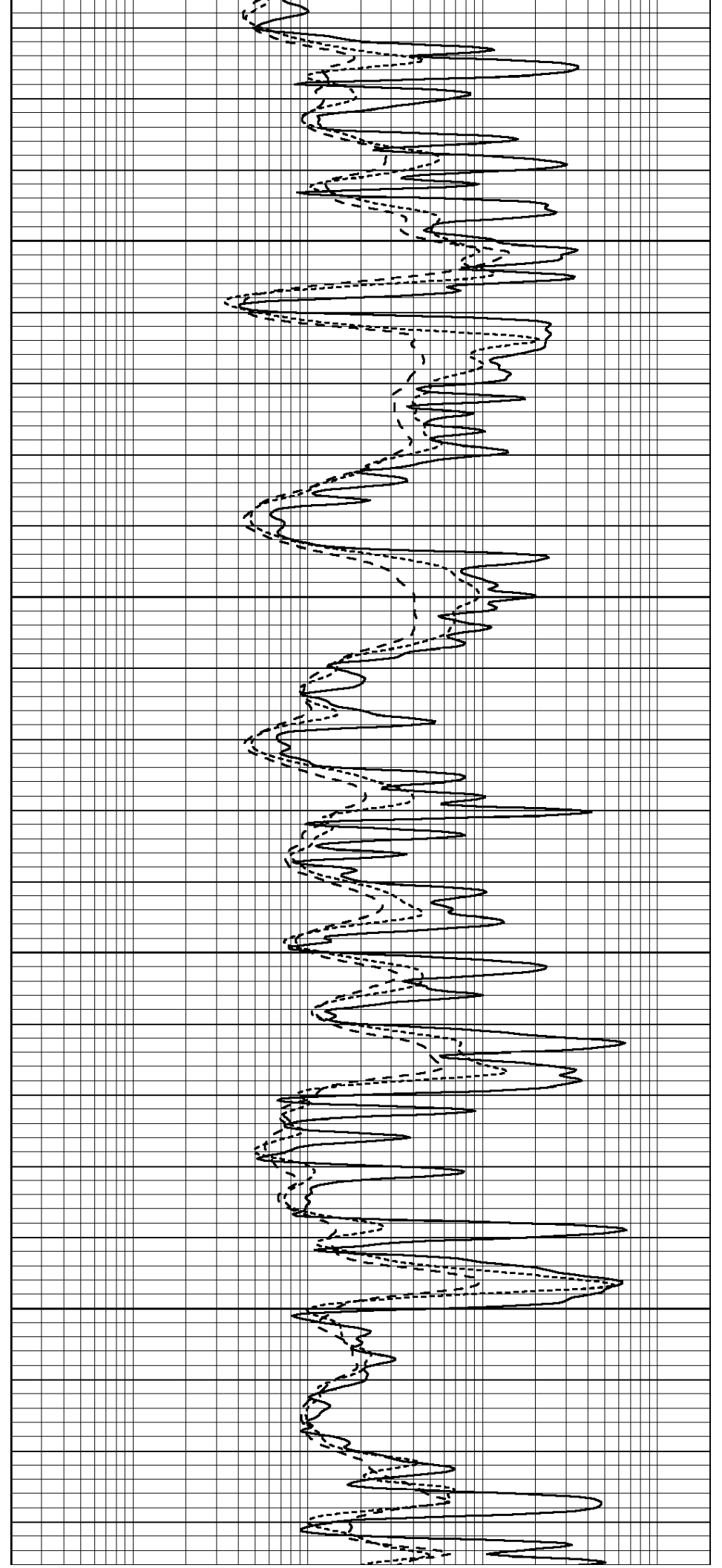


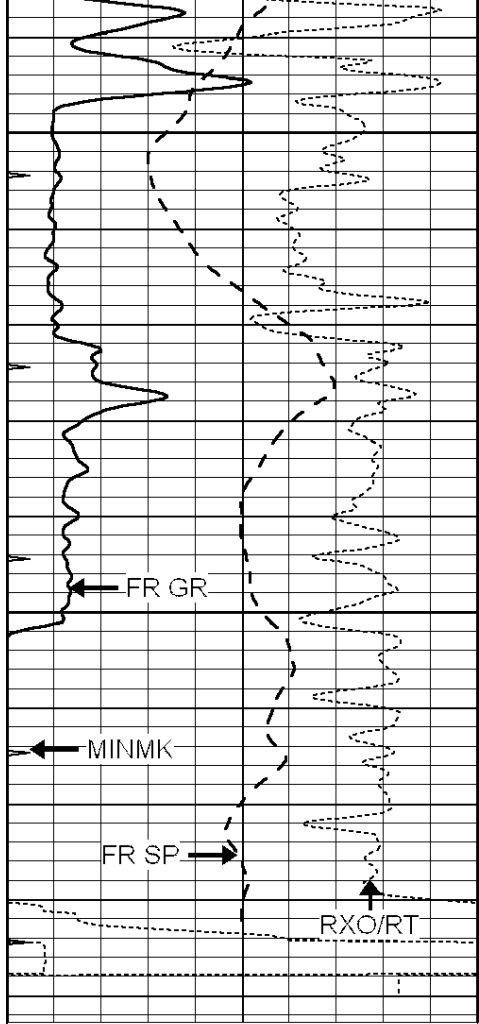
4450

4500

4550

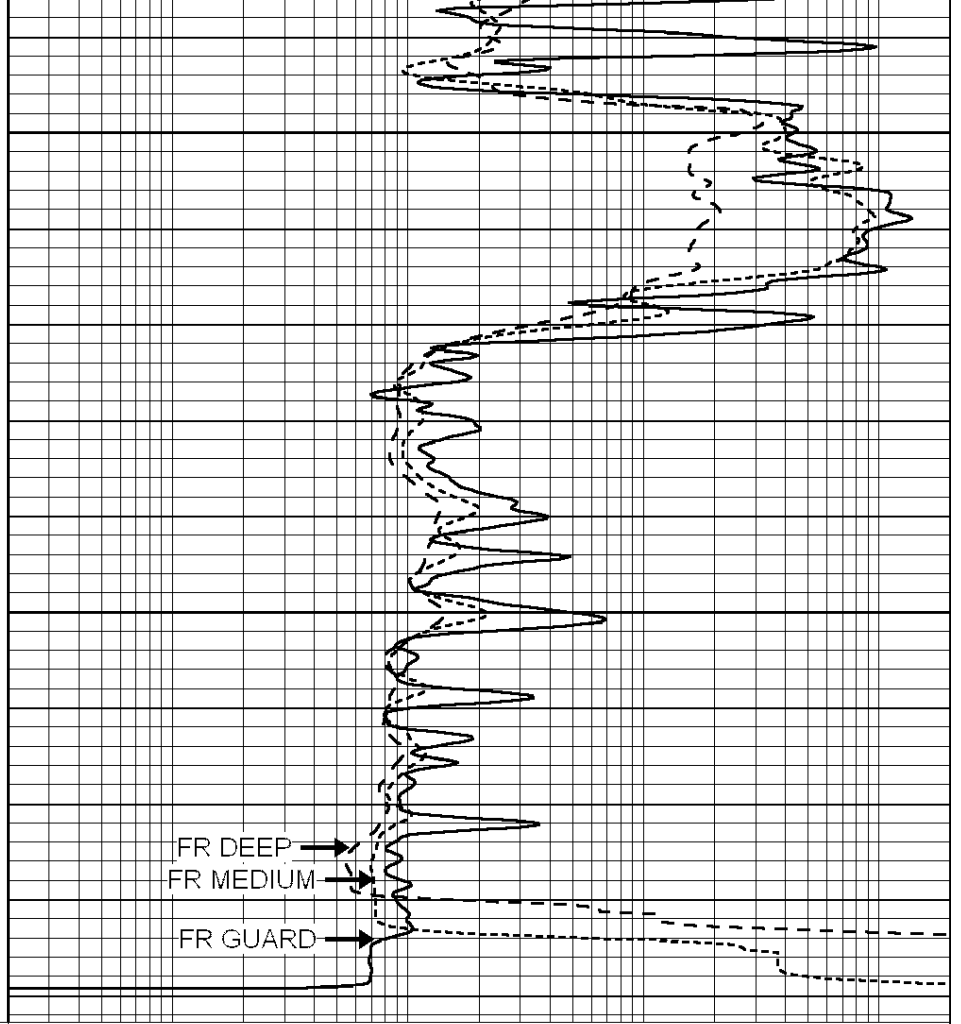
4600





4650
4700
LTD 4736

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

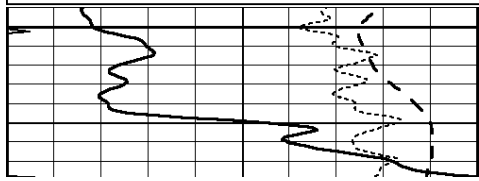


REPEAT SECTION

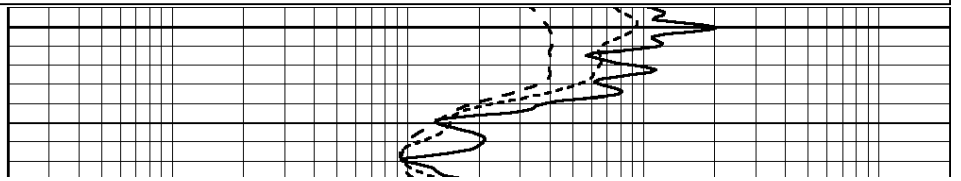
Database File: 010027pe.db
 Dataset Pathname: pass2.4
 Presentation Format: dil
 Dataset Creation: Tue Dec 04 10:08:40 2012
 Charted by: Depth in Feet scaled 1:240

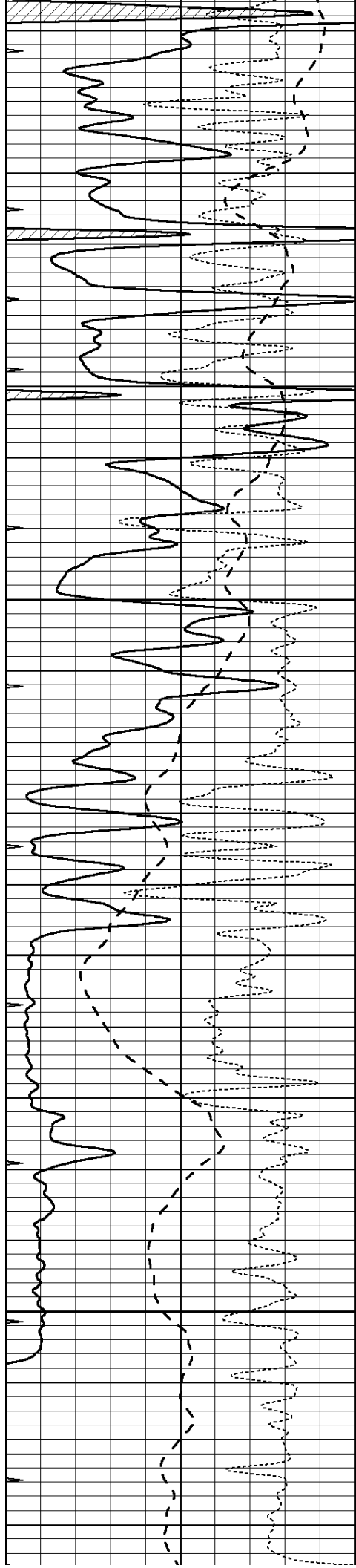
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



4500



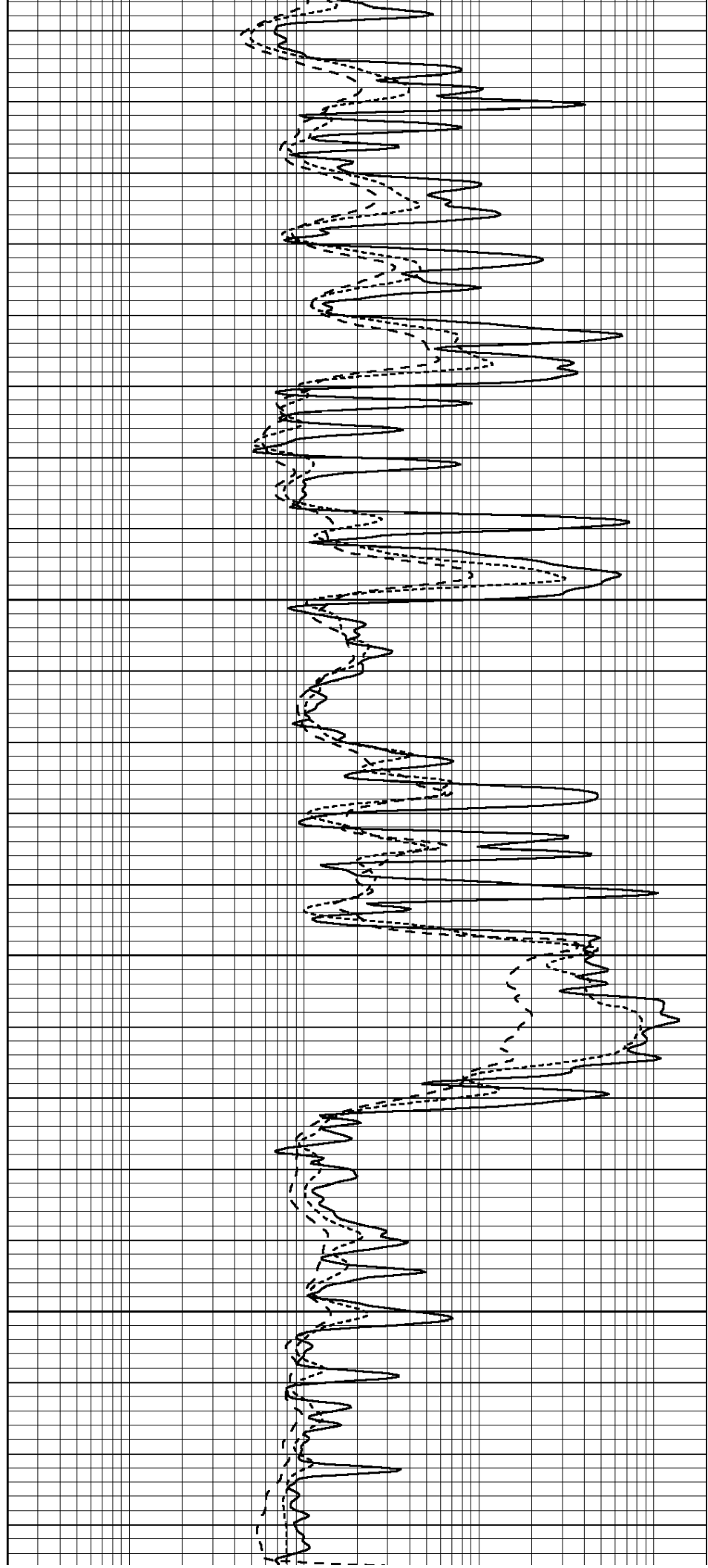


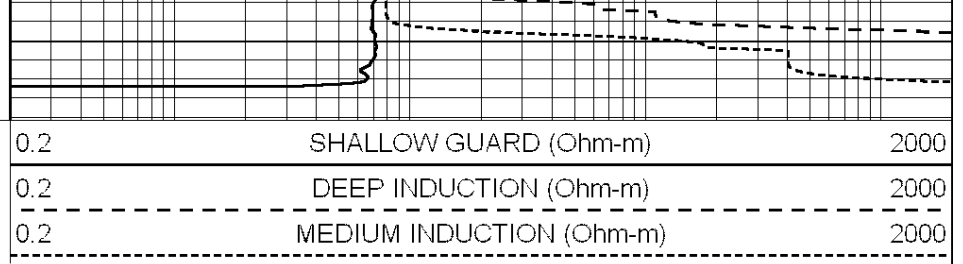
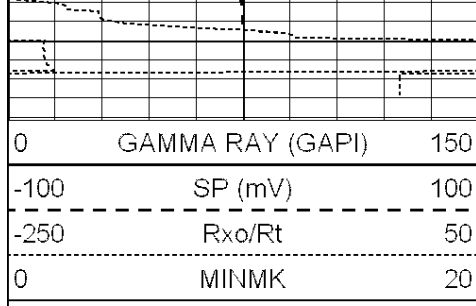
4550

4600

4650

4700





Calibration Report

Database File: 010027pe.db
 Dataset Pathname: pass3.6
 Dataset Creation: Tue Dec 04 10:05:02 2012

Dual Induction Calibration Report

Serial-Model: DIL3-GEAR
 Performed: Mon Dec 03 20:26:59 2012

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	6.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	1.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	622.059	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	631.393	-4.555

Litho Density Calibration Report

Serial: 006 Model: PRB
 Performed Sun Aug 15 09:48:41 2010

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1686.6	11612.8	3932.0	12718.8	cps
Window 2	1531.4	9204.7	3267.8	9851.9	cps
Window 3	1198.3	4733.6	1952.5	4920.6	cps
Window 4	317.3	321.2	325.9	303.6	cps
Long Space	0.0	7673.3	1736.4	8320.4	cps
Short Space	1.7	2548.5	1657.2	2628.8	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 43.8	Rib Slope	: 0.961	Density/Spine Ratio	: 0.569
Spine Angle	: 73.8	Spine Slope	: 3.453	Spine Intercept	: -18.1

Caliper

	Readings	Reference	
Low Ref	3.5	6.6	
High Ref	5.5	15.0	
	Gain: 4.4		Offset: -8.8

Compensated Neutron Calibration Report

Serial Number: 070808
 Tool Model: Probe

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:	070559		
Tool Model:	OPEN_GR		
Performed:	Wed Nov 28 18:32:17 2012		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.3000	GAPI/cps	