



**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company	HERMAN L. LOEB, LLC
Well	THOMPSON C #2-16
Field	MEDICINE LODGE - BOGGS
County	BARBER
State	KANSAS
Location: API # : 15-007-24122-00-00 555' FNL& 2235' FVL SW - NE - NE - NW	
SEC 16 TWP 33S RGE 13W	
Permanent Datum	GROUND LEVEL
Log Measured From	Elevation 1811
Drilling Measured From	KELLY BUSHING 9' A.G.L. KELLY BUSHING
Other Services CDL/CNL/PE MEL/SON	
Elevation	K.B. 1820 D.F. 1818 G.L. 1811
Date	1-6-14
Run Number	ONE
Depth Driller	5162
Depth Logger	5162
Bottom Logged Interval	5160
Top Log Interval	00
Casing Driller	13 3/8" @ 258'
Casing Logger	254'
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.2/54
pH / Fluid Loss	10.5/8.8
Source of Sample	FLOWLINE
Rim @ Meas. Temp	0.50@65F
Rmf @ Meas. Temp	0.38@65F
Rmc @ Meas. Temp	0.60@65F
Source of Rmf / Rmc	MEASUREMENT
Rim @ BHT	0.26@126F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	126F
Equipment Number	860
Location	HAYS, KANSAS
Recorded By	IAN MABB
Witnessed By	JON CHRISTENSEN

<<< 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

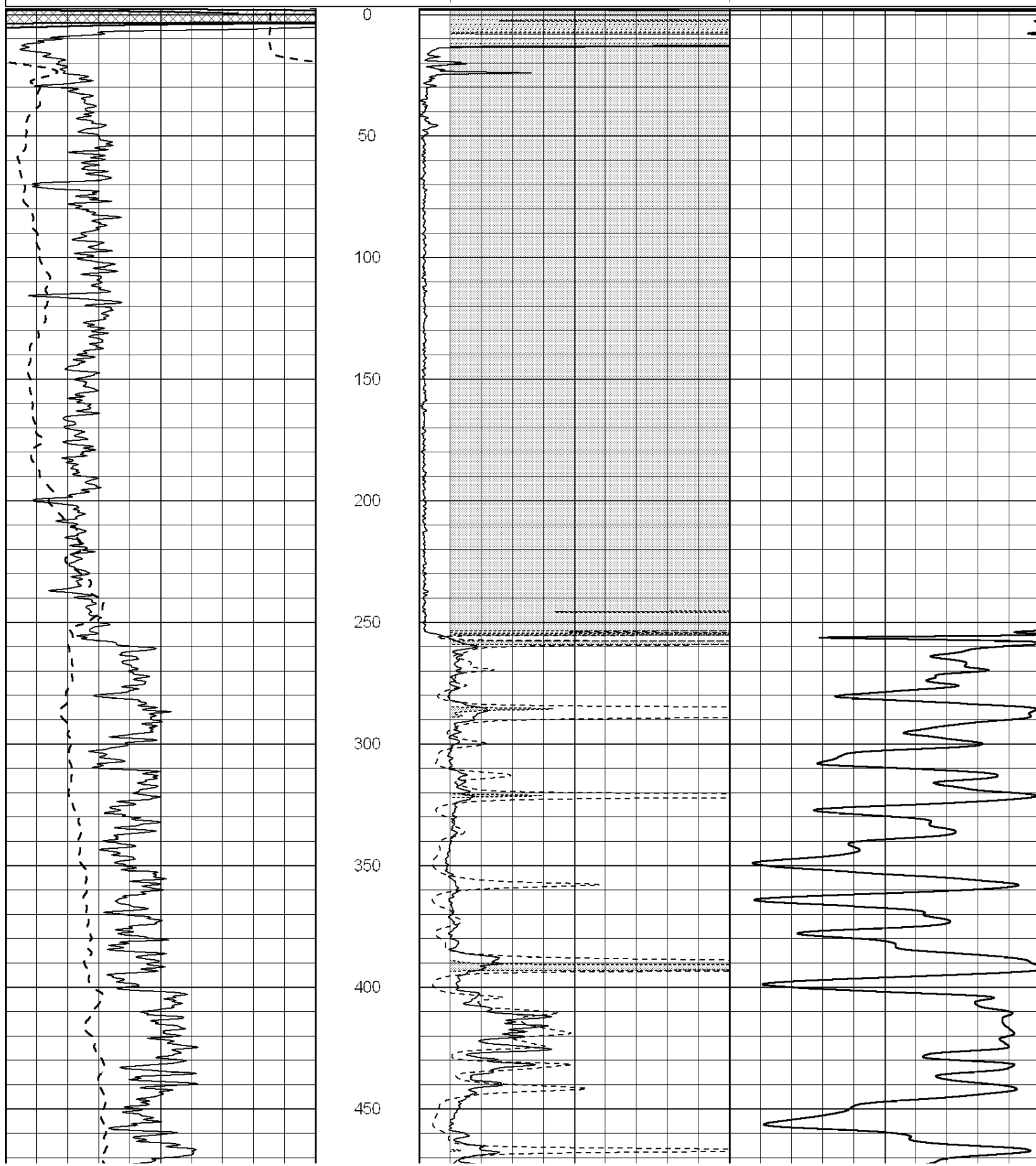
DIRECTIONS:

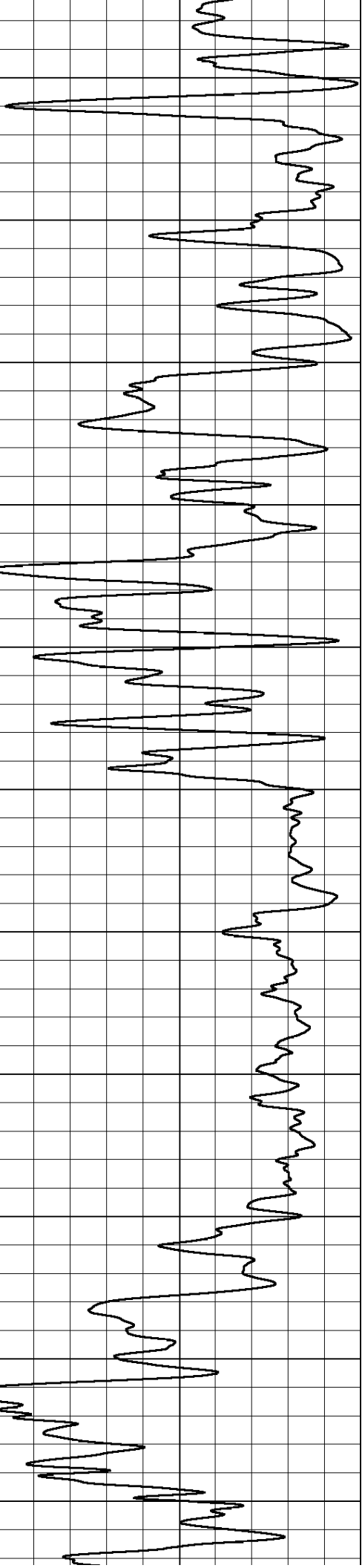
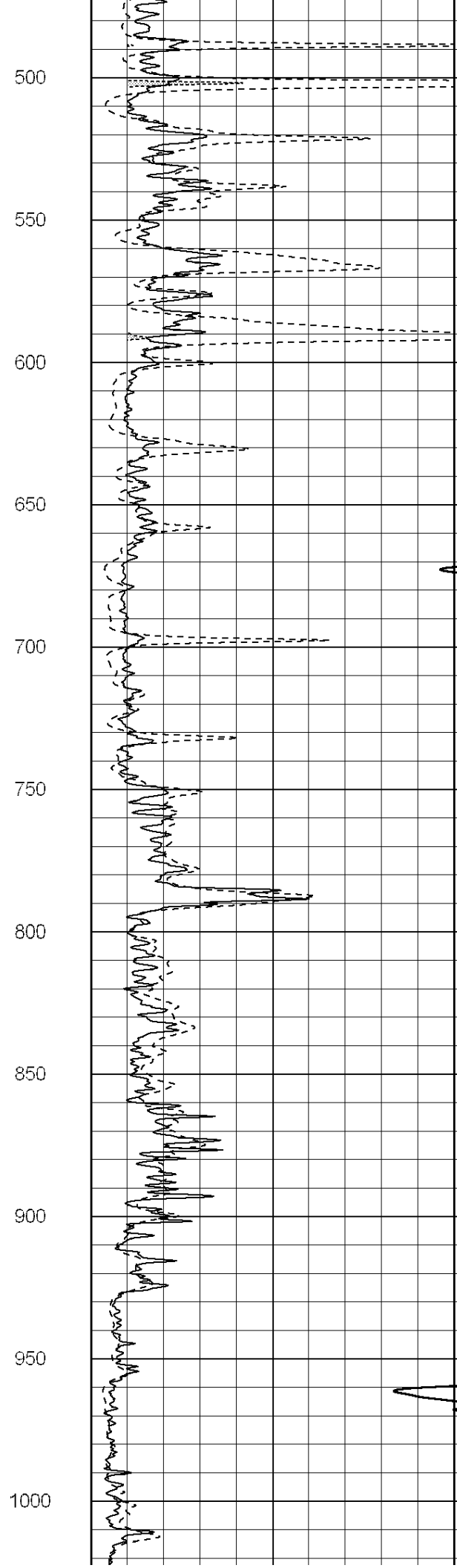
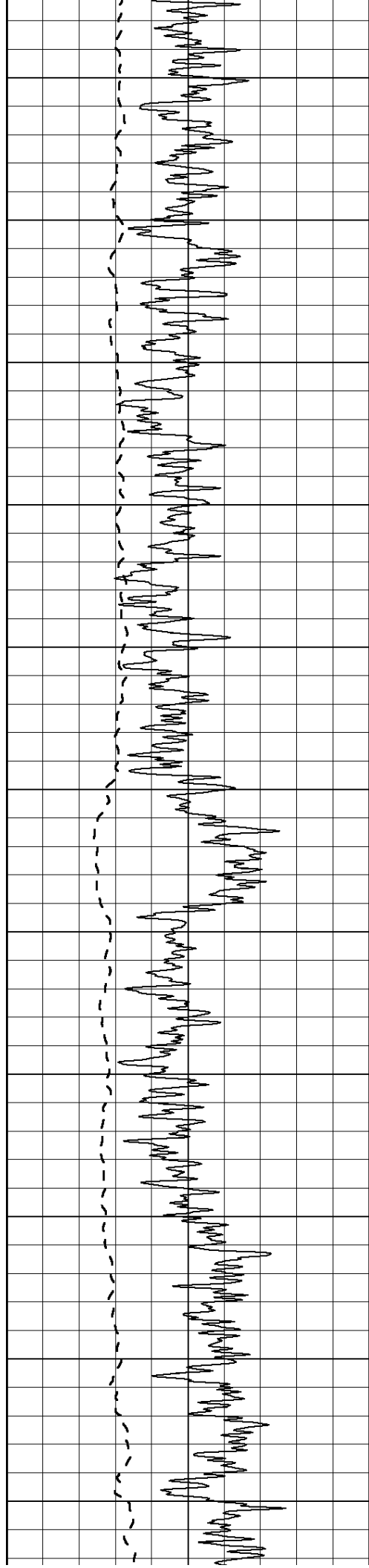
MEDICINE LODGE - 3 WEST ON 160 TO GYP HILL RD. - 10 SOUTH TO UNION CHAPEL CHURCH RD - WEST 2.5 MILES TO A SILO ON THE NORTH SIDE OF ROAD - 2.5 MILES NORTH ON MAIN LEASE RD.

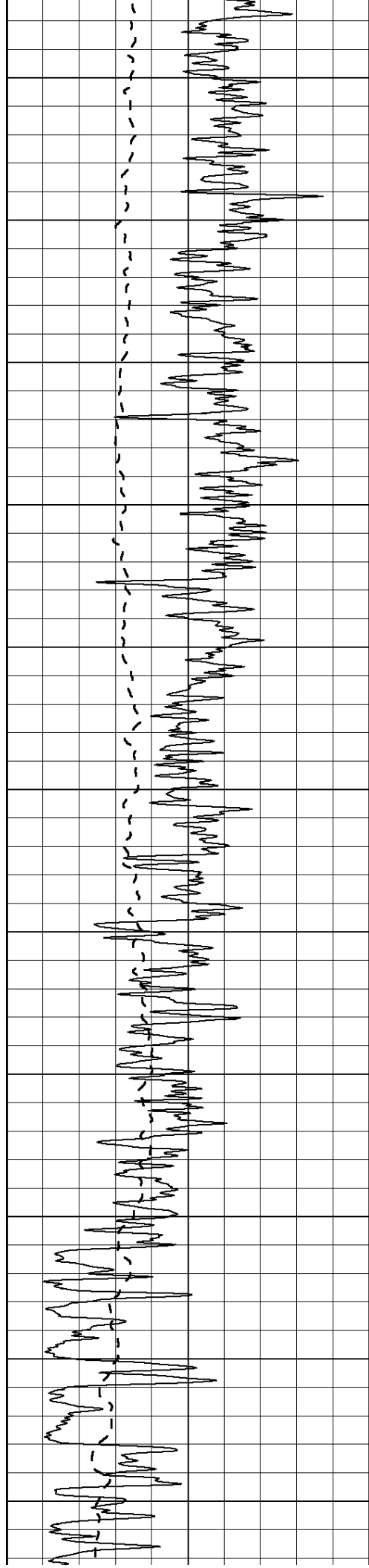
Charted by:

Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
			0	Deep Induction (Ohm-m)	50	
			1000		CILD (mmho/m)	0
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	







1050

1100

1150

1200

1250

1300

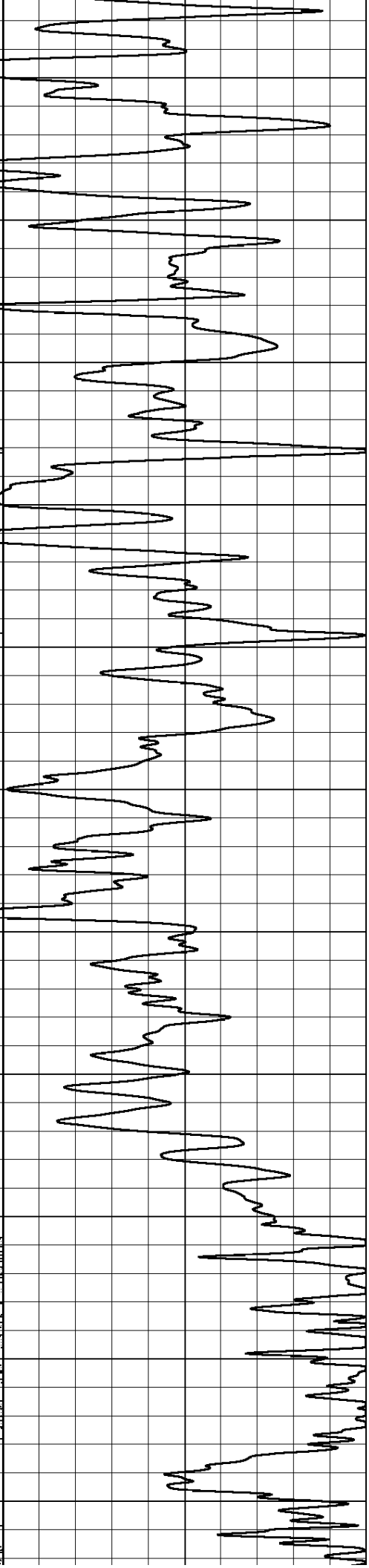
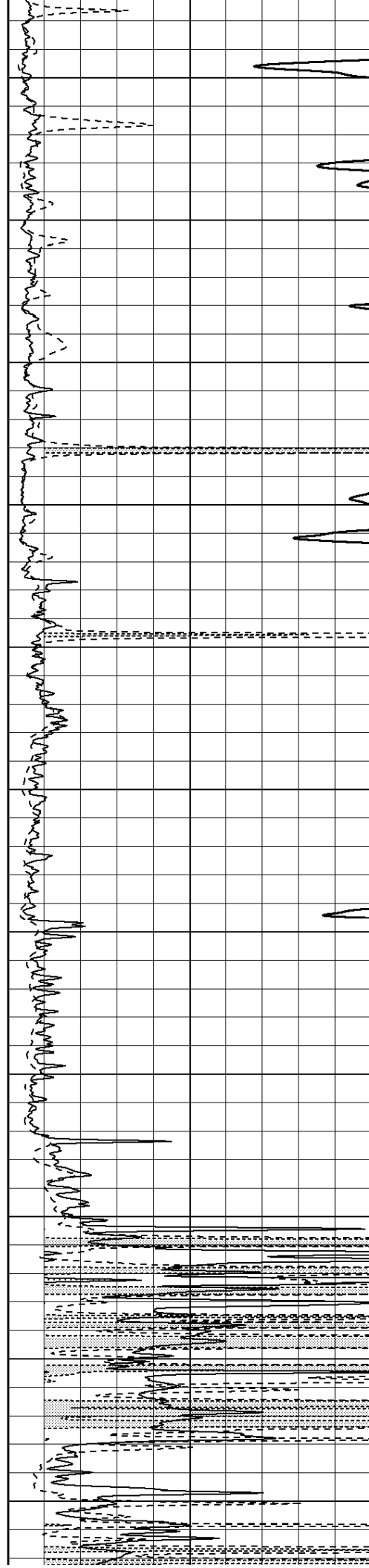
1350

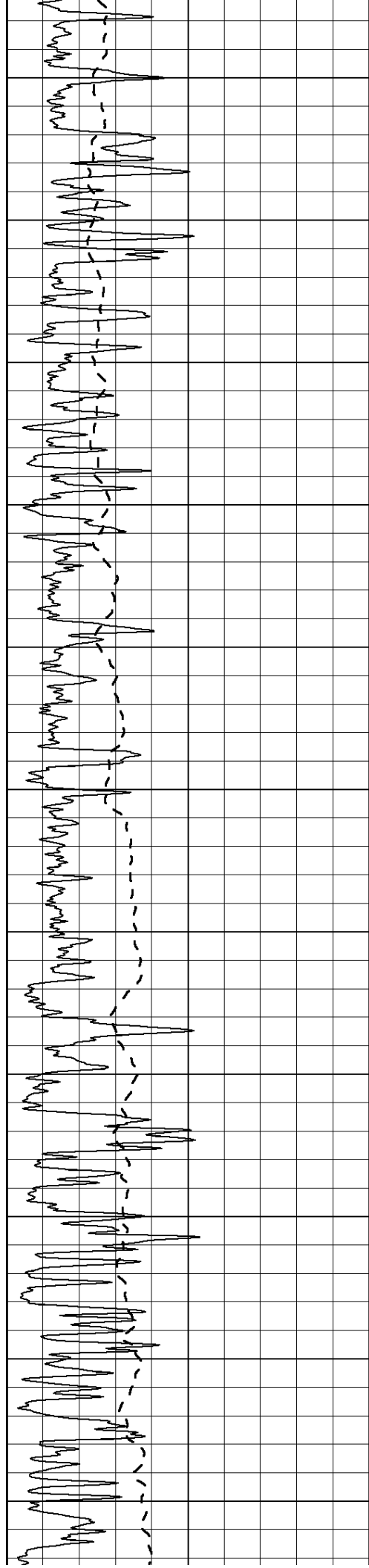
1400

1450

1500

1550





1600

1650

1700

1750

1800

1850

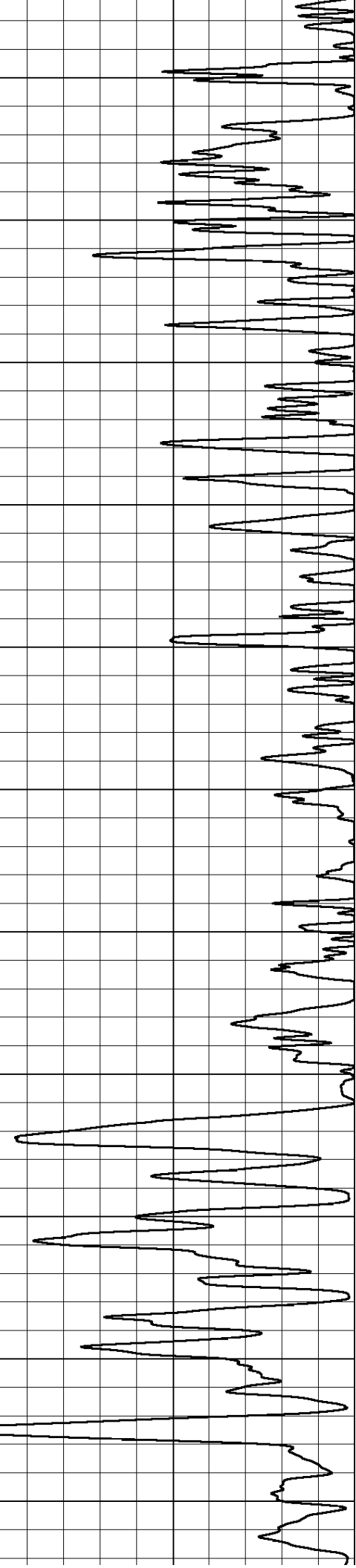
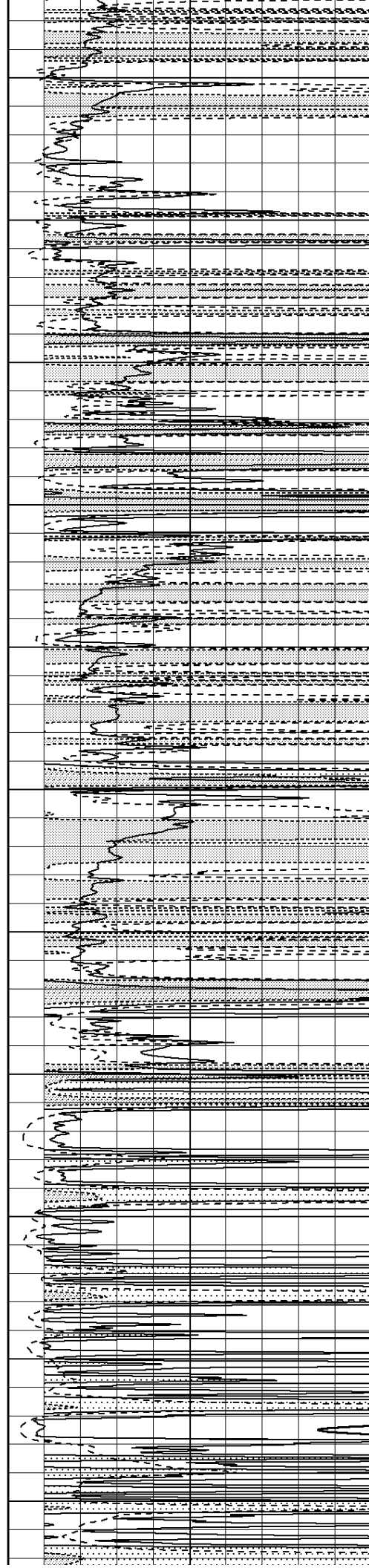
1900

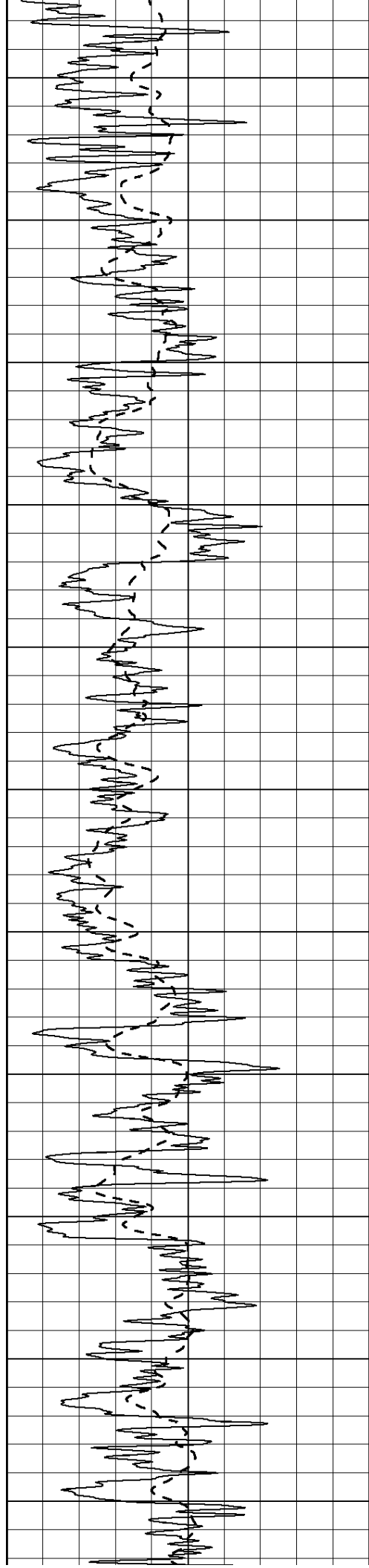
1950

2000

2050

2100





2150

2200

2250

2300

2350

2400

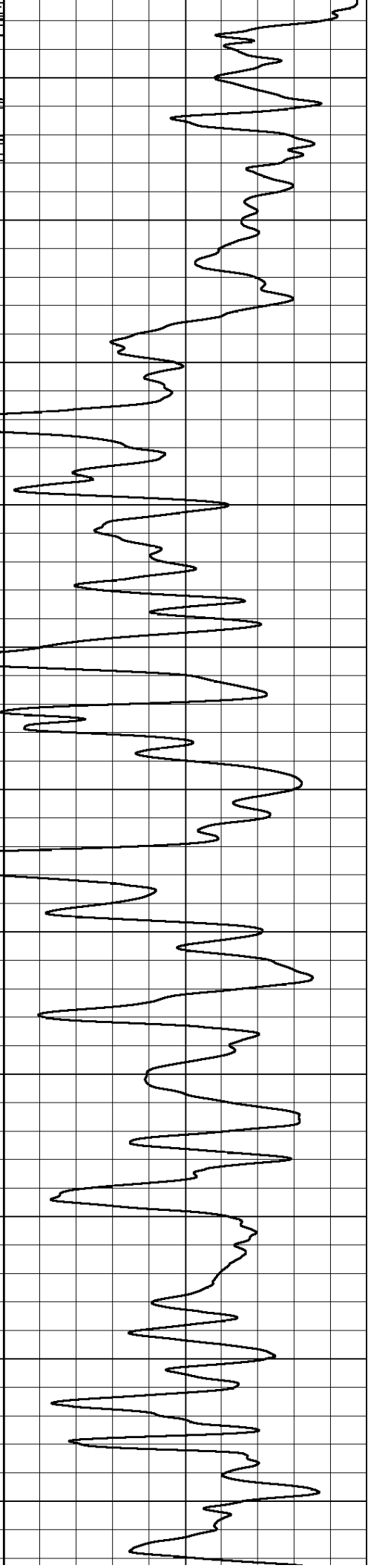
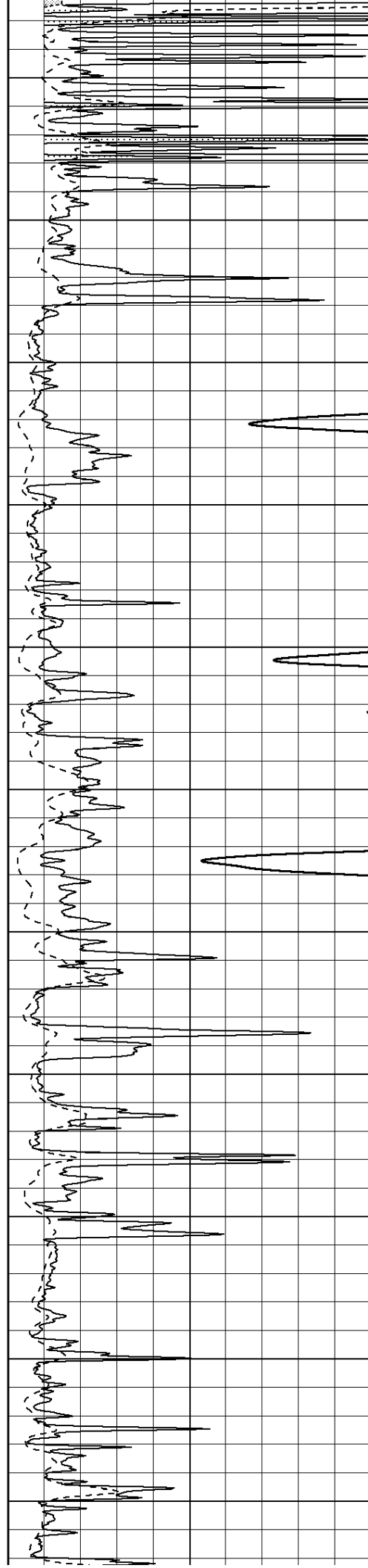
2450

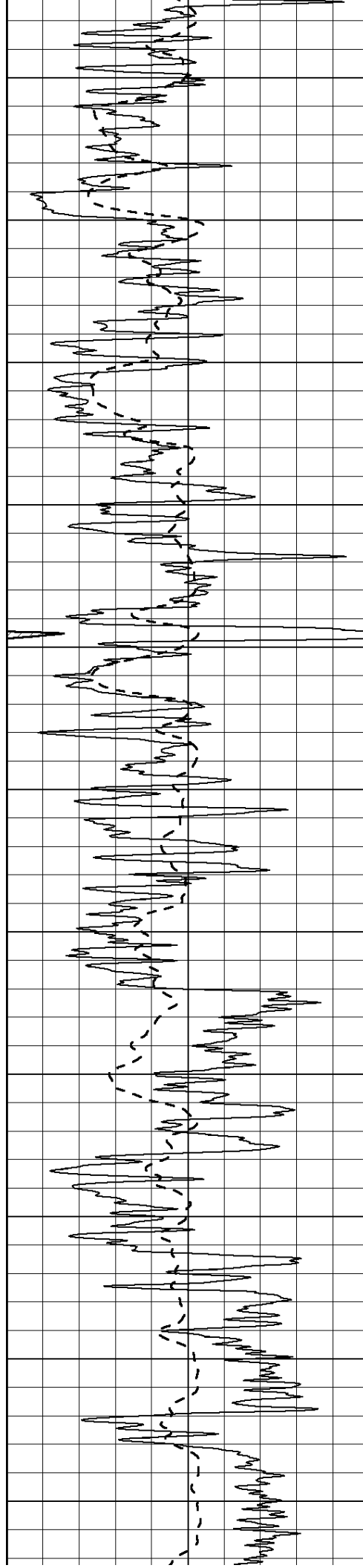
2500

2550

2600

2650





2700

2750

2800

2850

2900

2950

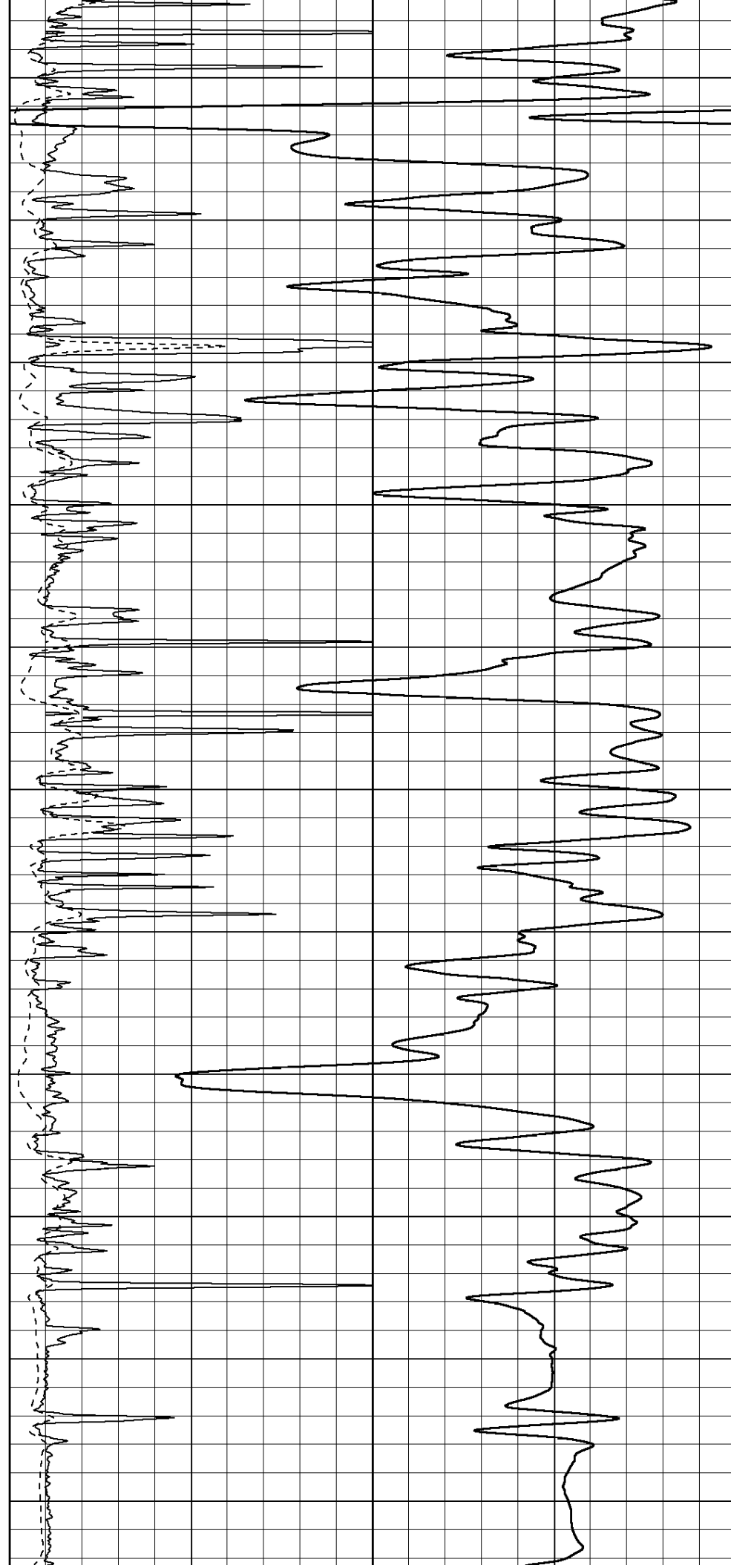
3000

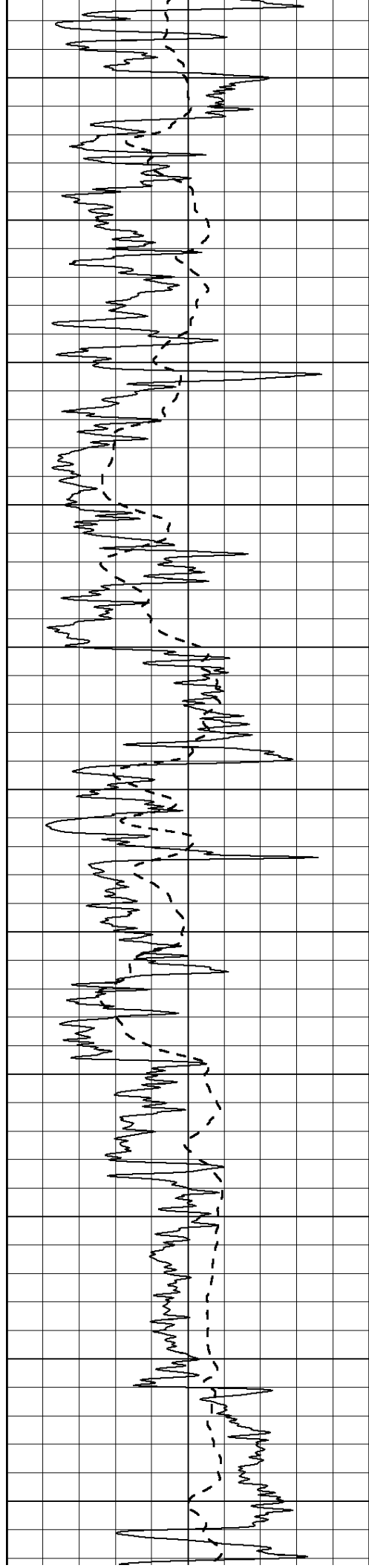
3050

3100

3150

3200





3250

3300

3350

3400

3450

3500

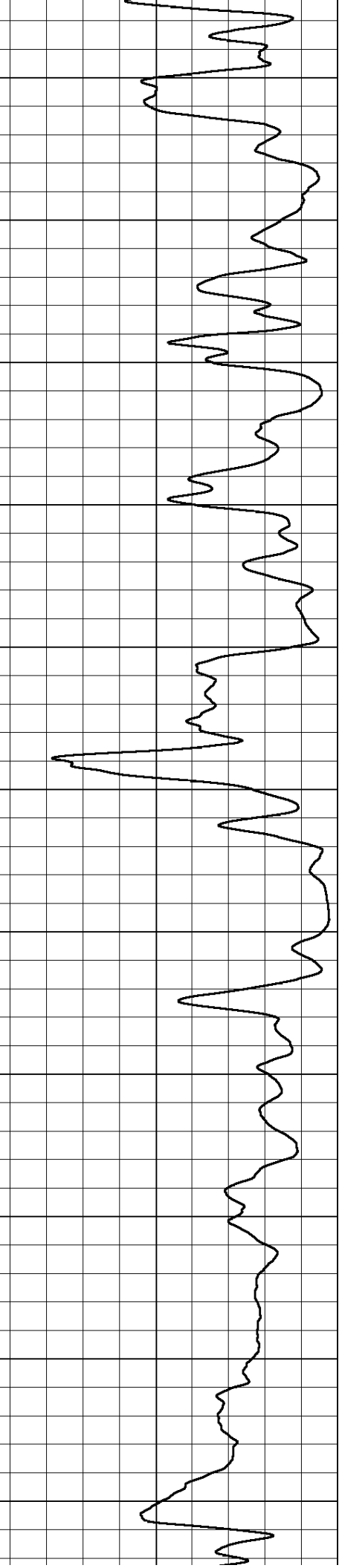
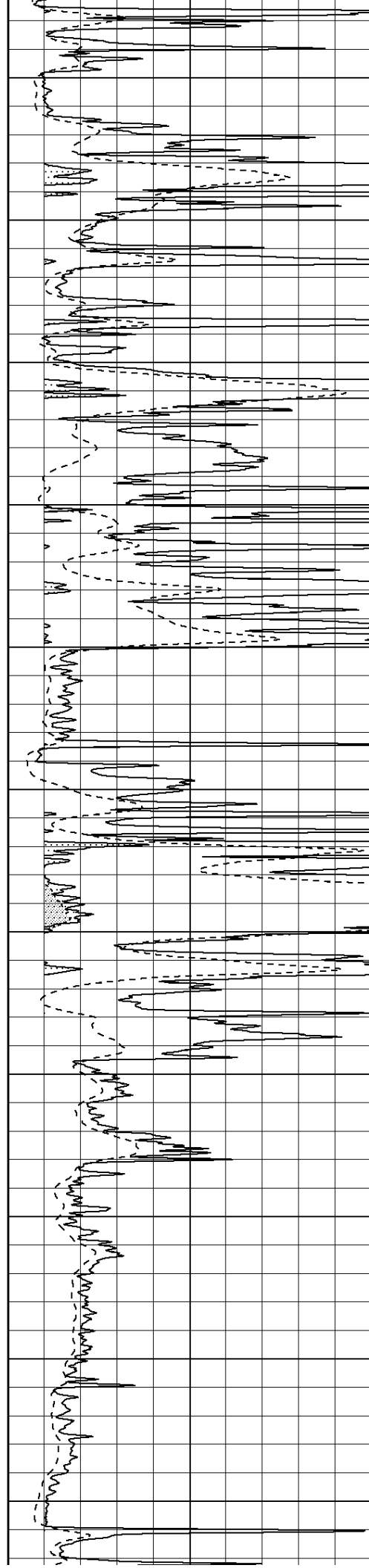
3550

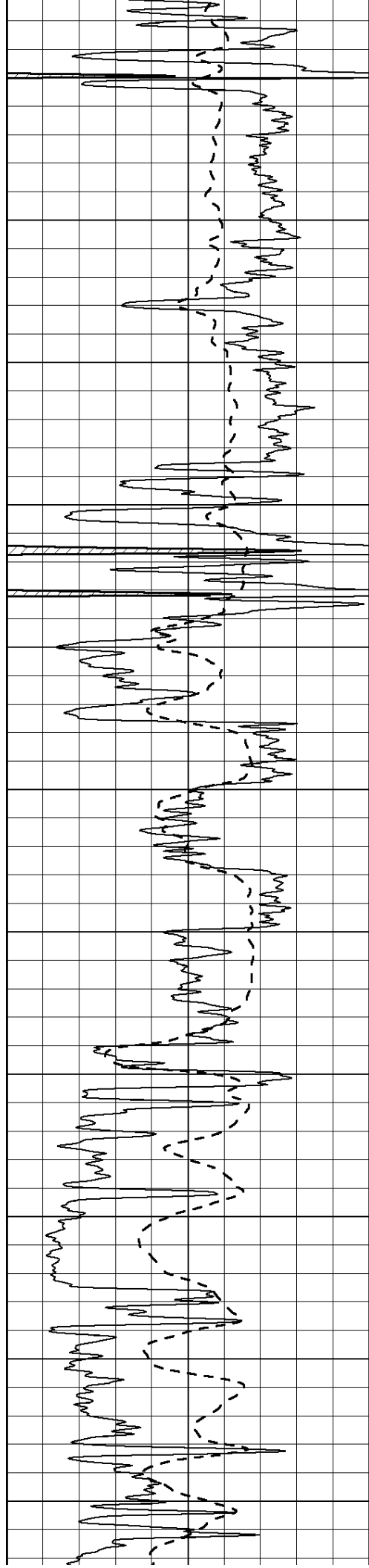
3600

3650

3700

3750





3800

3850

3900

3950

4000

4050

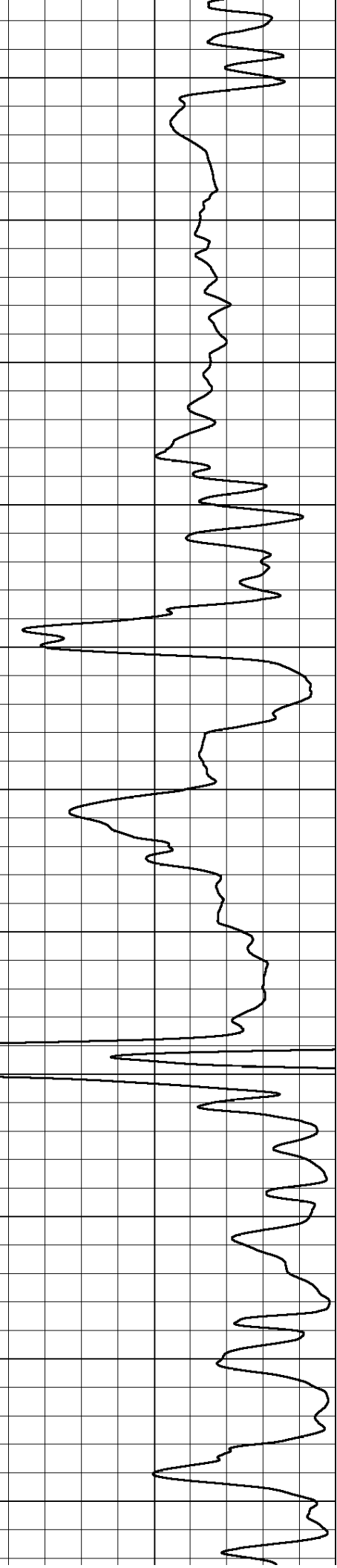
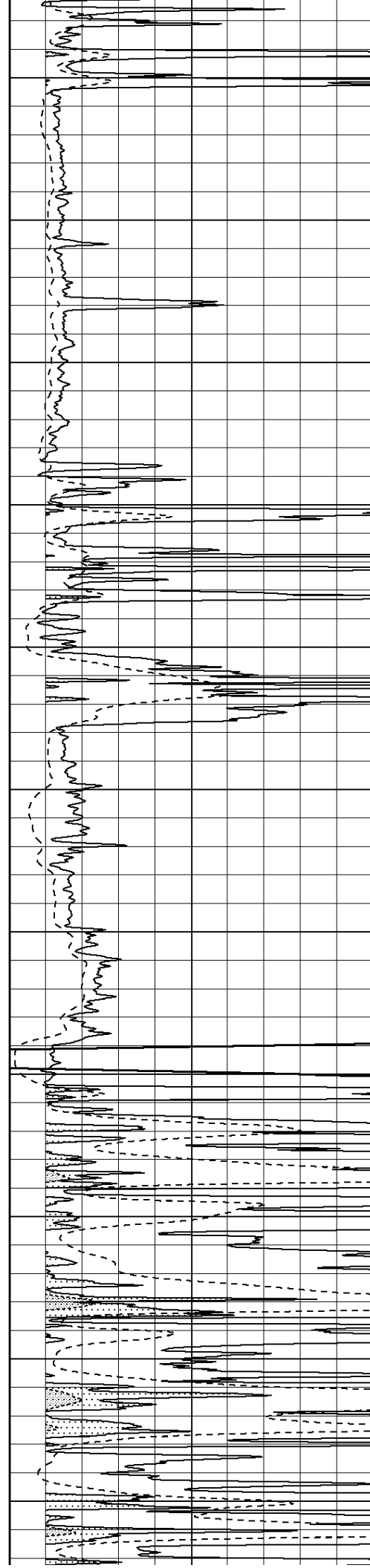
4100

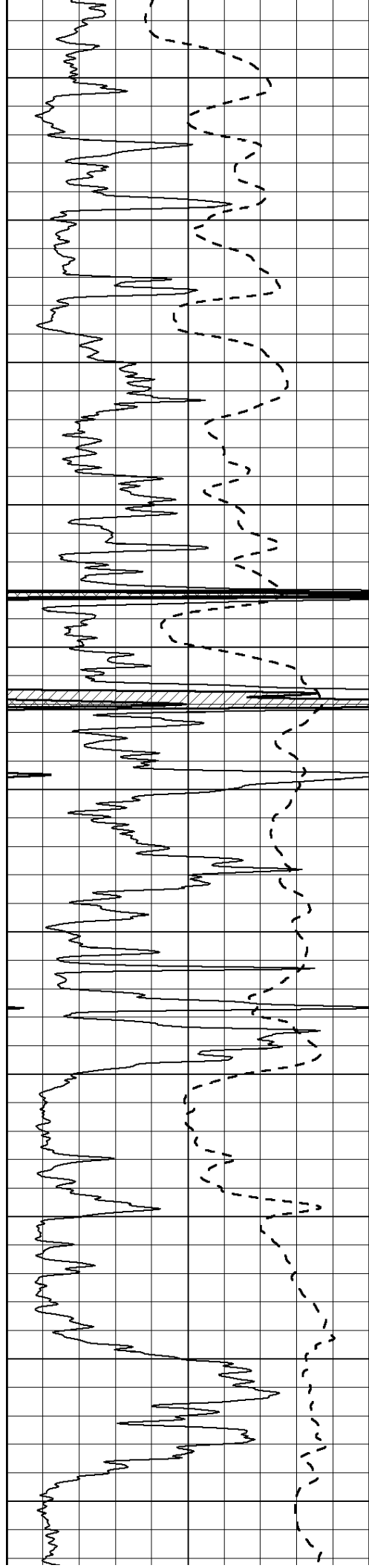
4150

4200

4250

4300





4350

4400

4450

4500

4550

4600

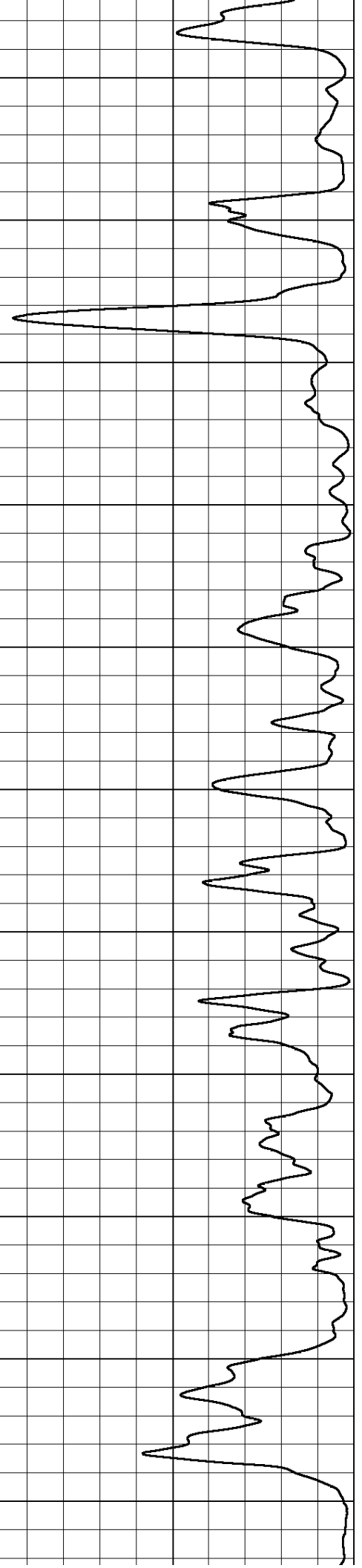
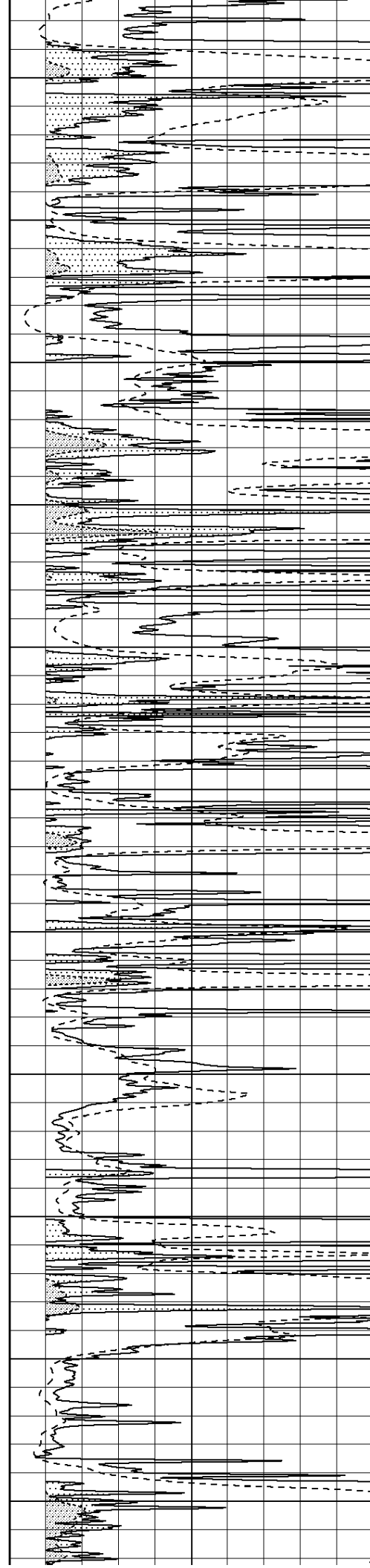
4650

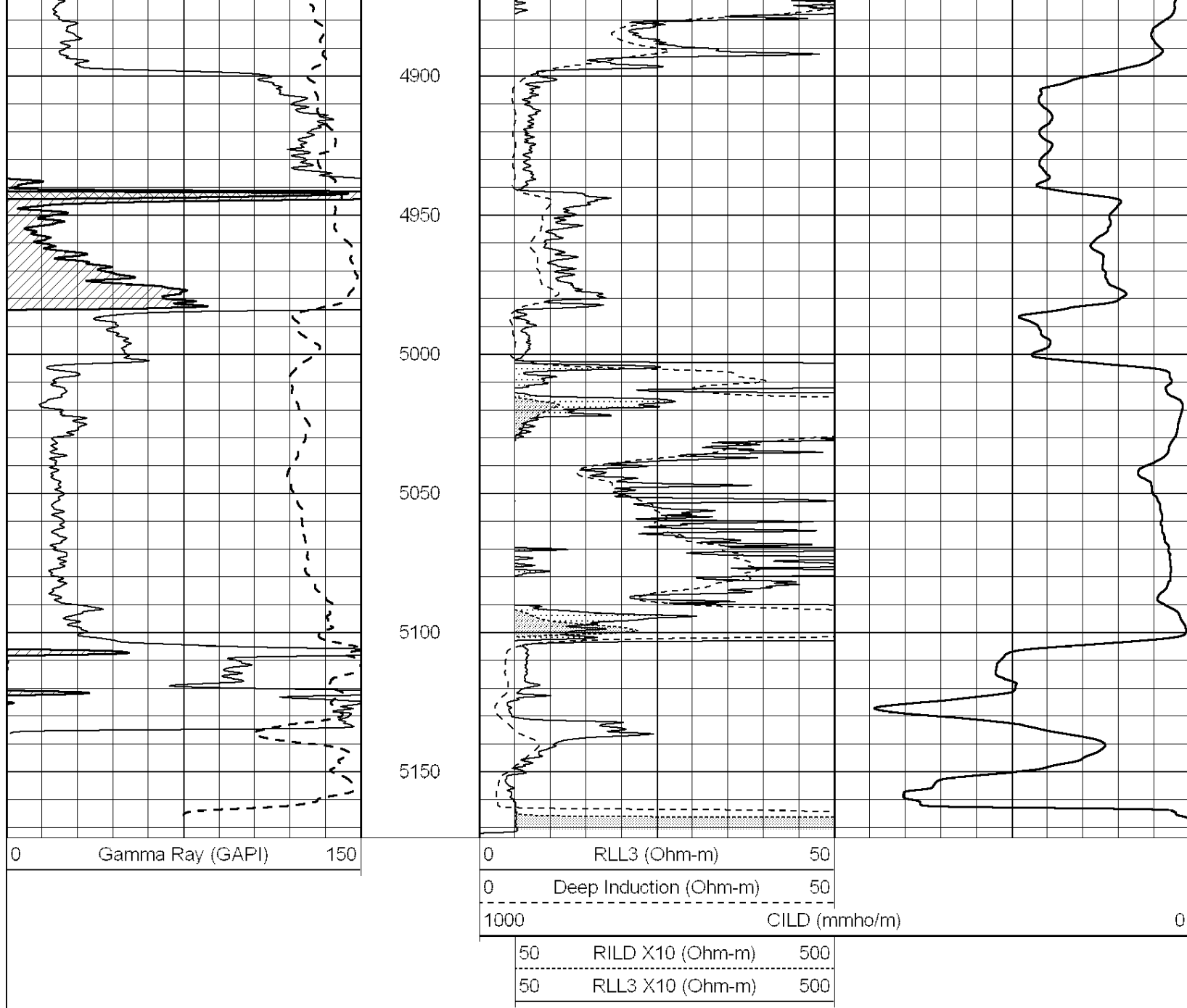
4700

4750

4800

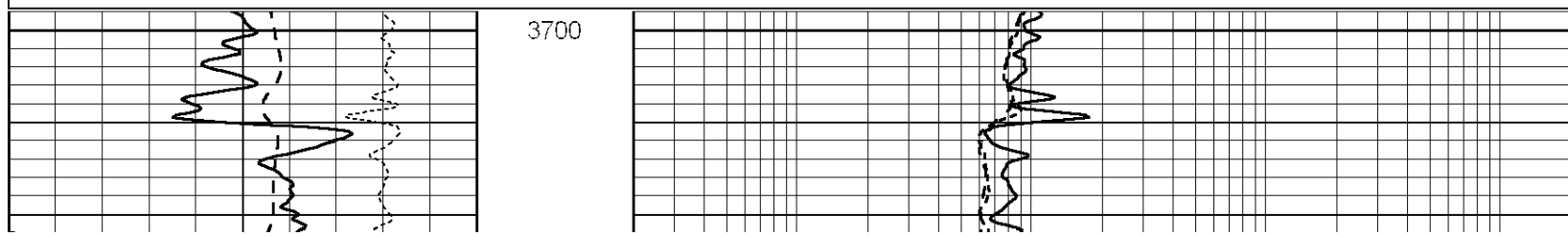
4850

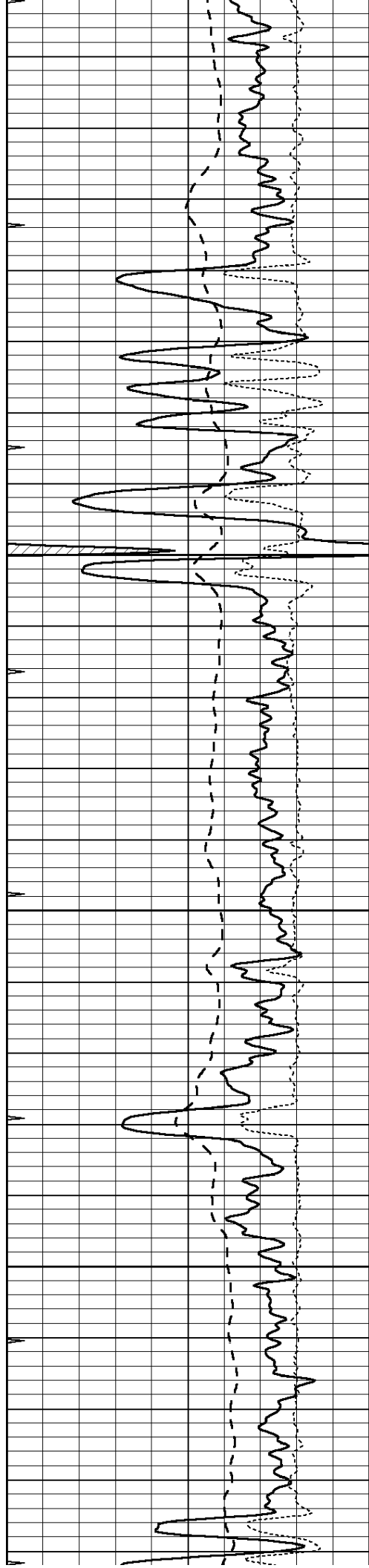




Database File: 22210pe.db
 Dataset Pathname: pass3.4
 Presentation Format: _dil
 Dataset Creation: Mon Jan 06 23:40:23 2014 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	RLL3 (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



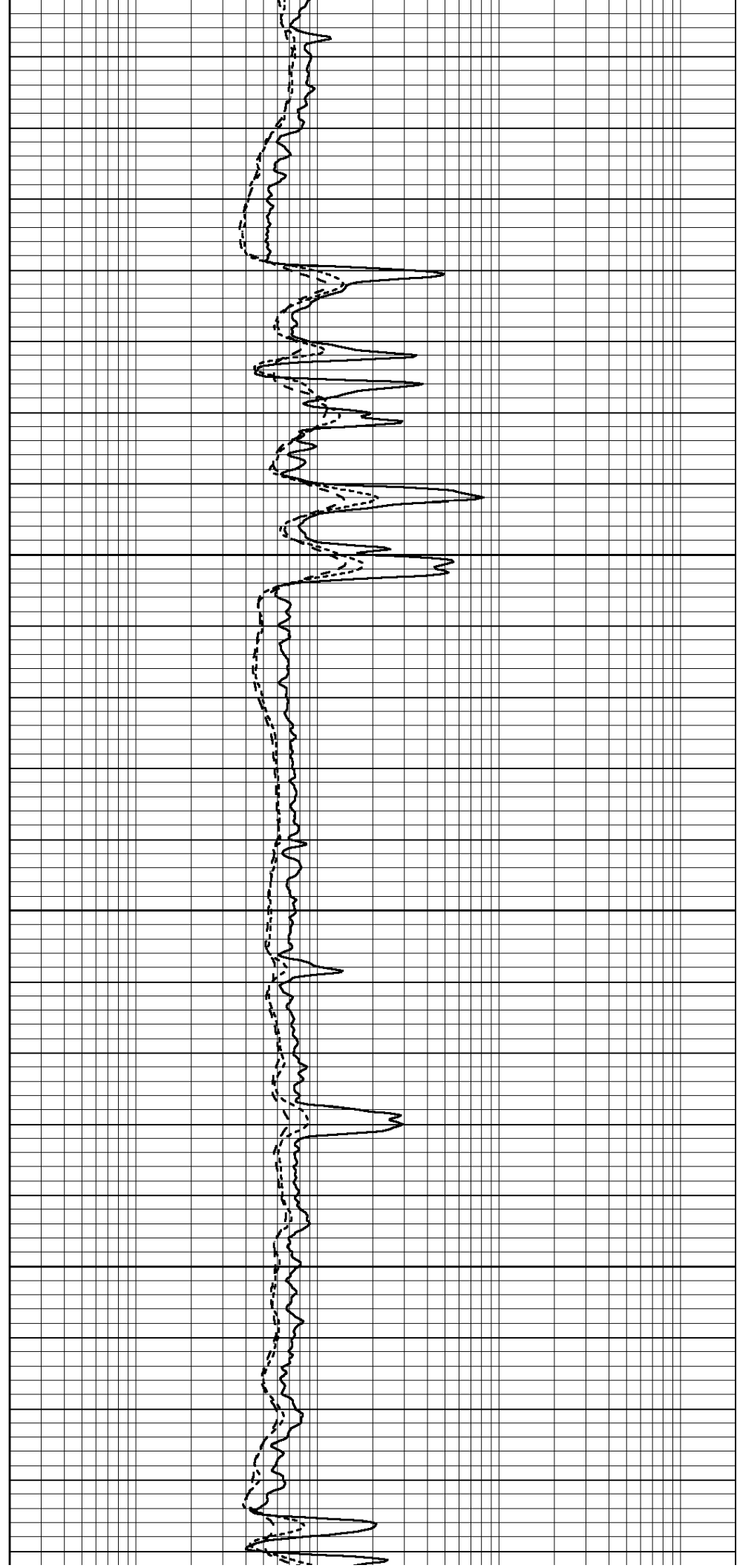


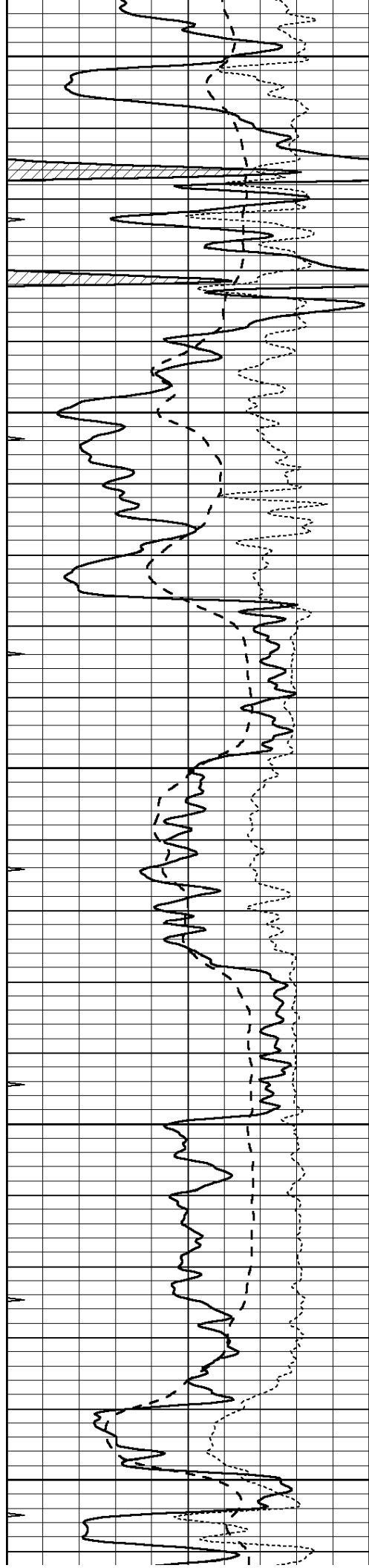
3750

3800

3850

3900





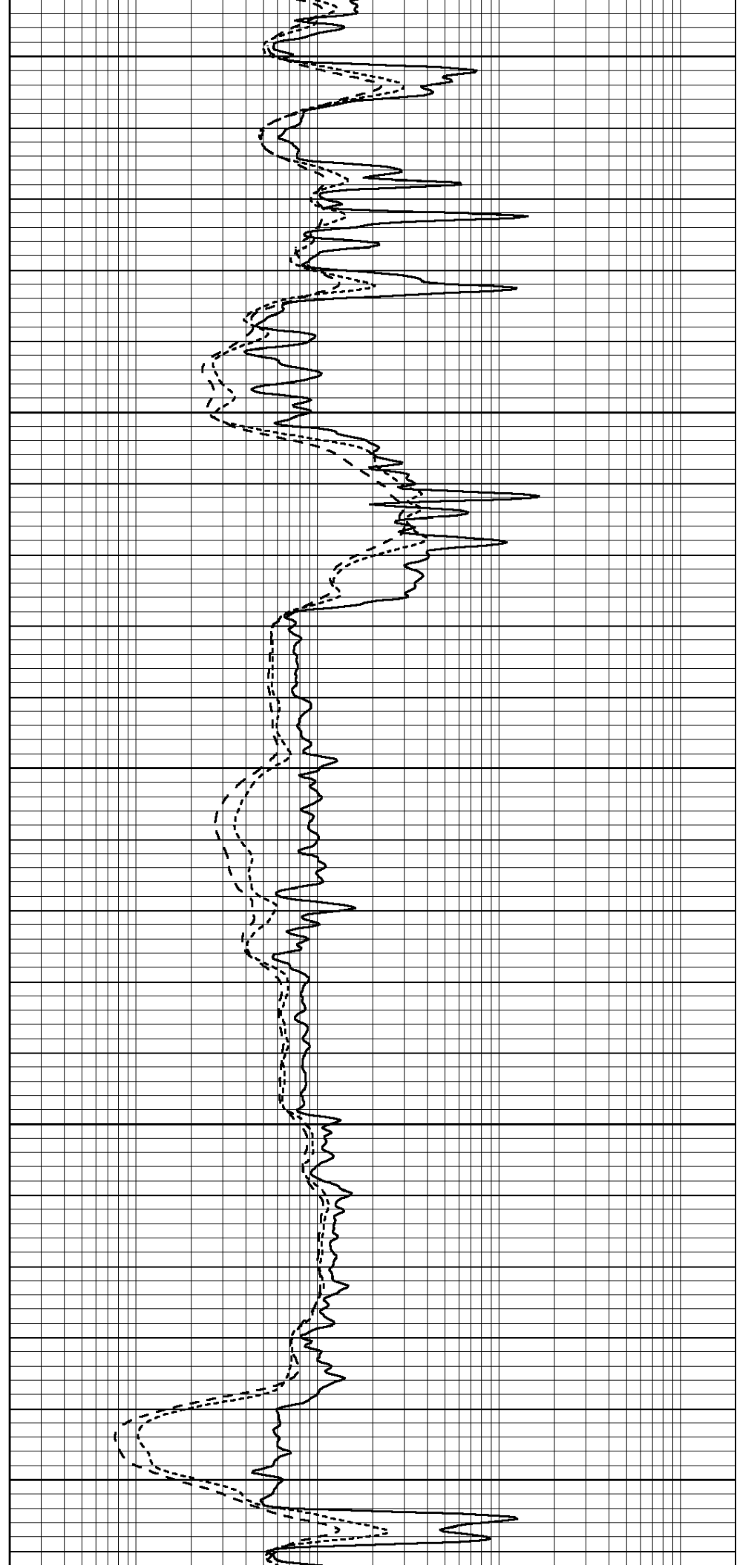
3950

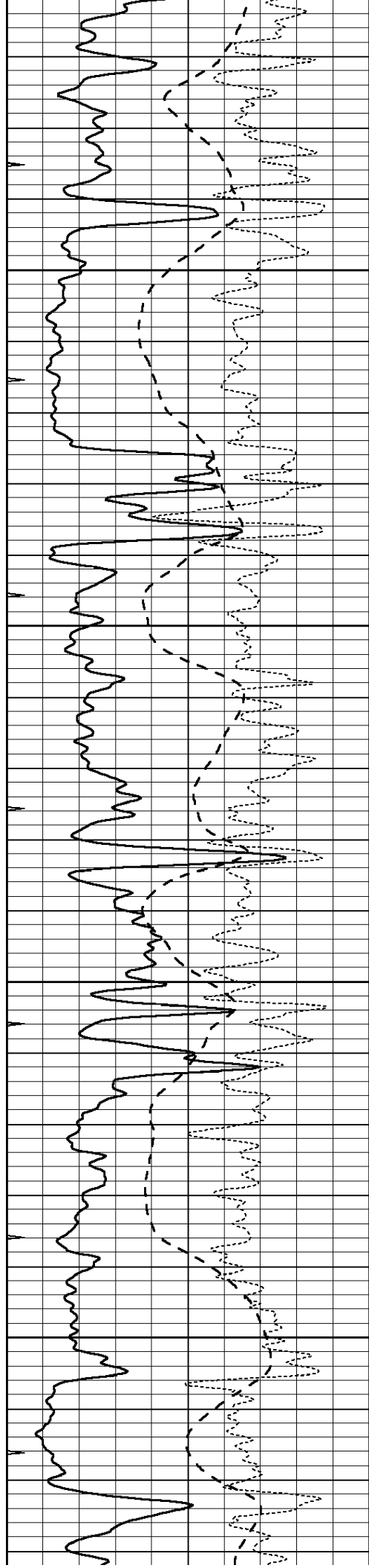
4000

4050

4100

4150



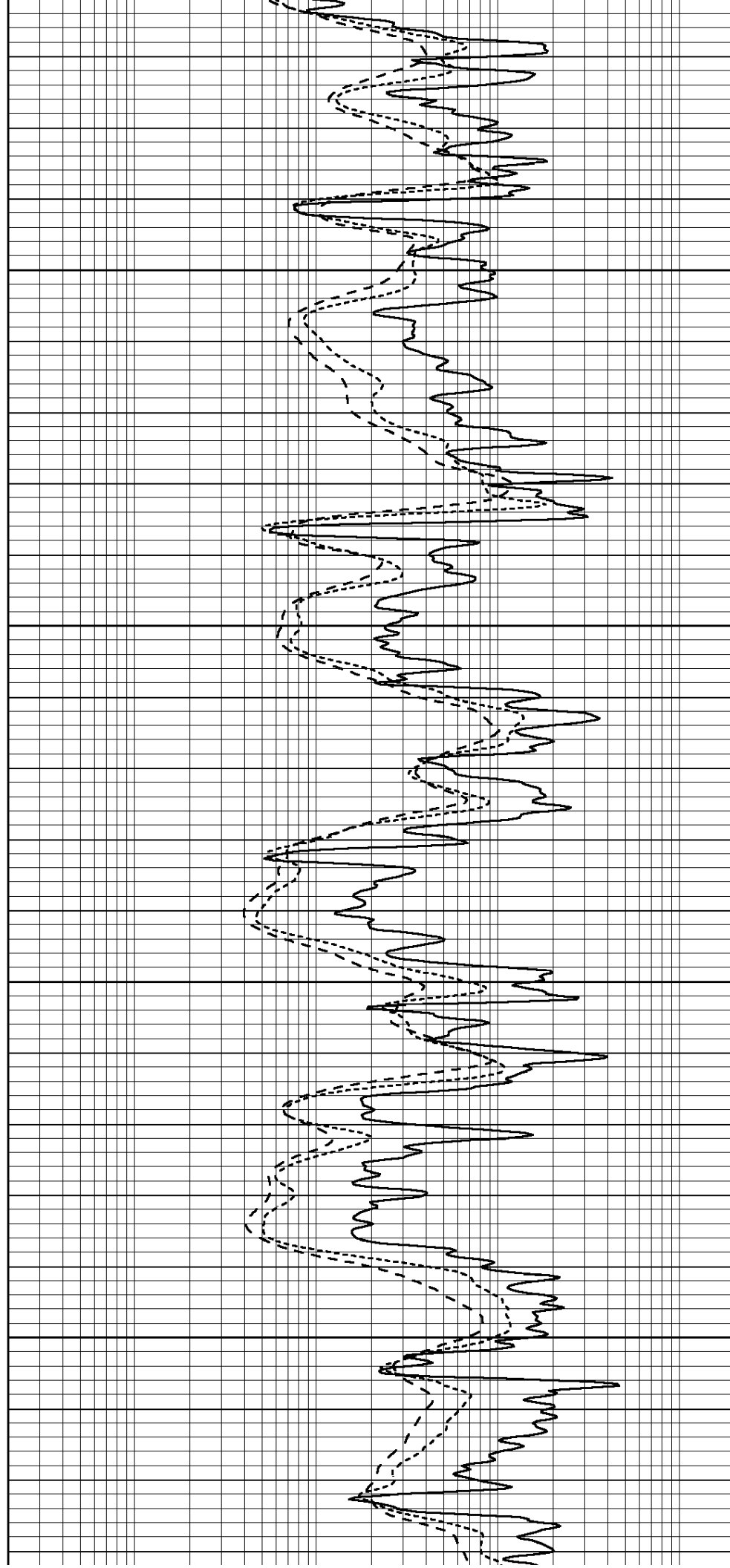


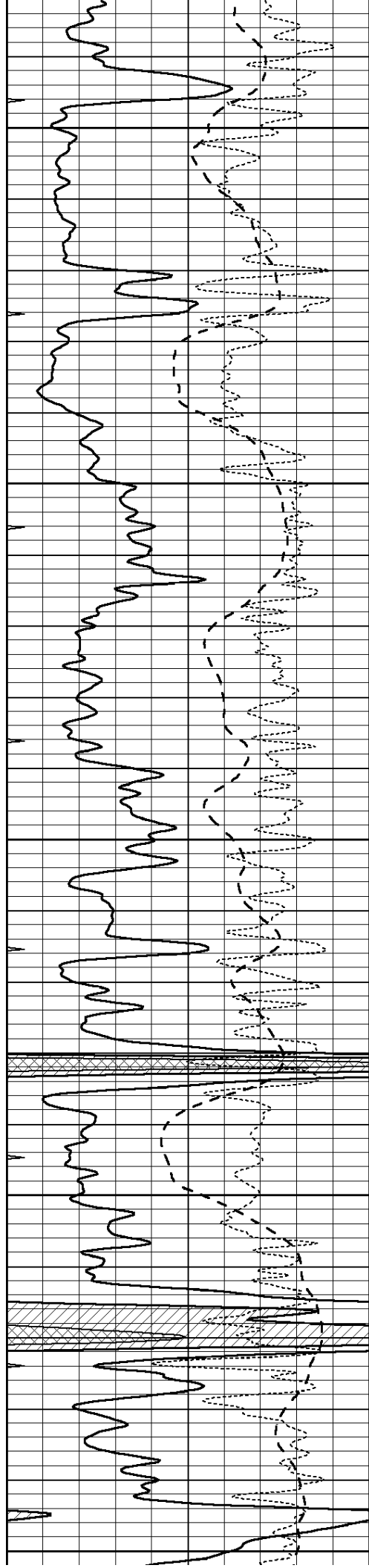
4200

4250

4300

4350





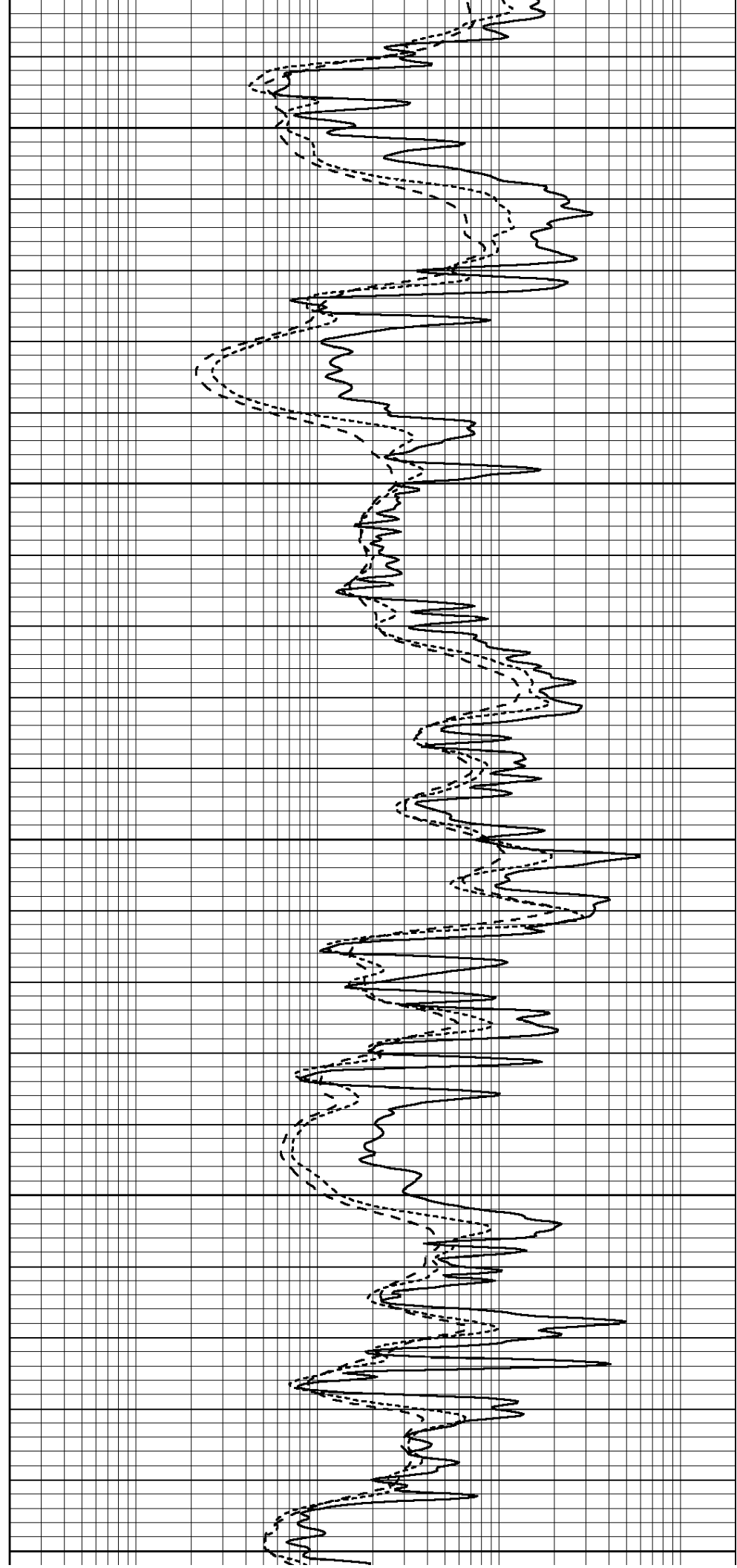
4400

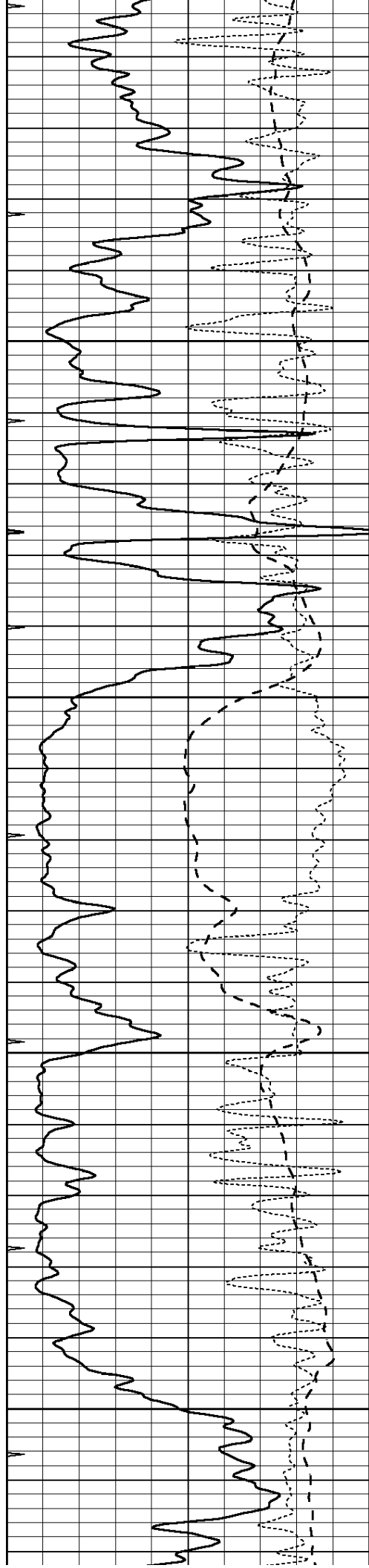
4450

4500

4550

4600



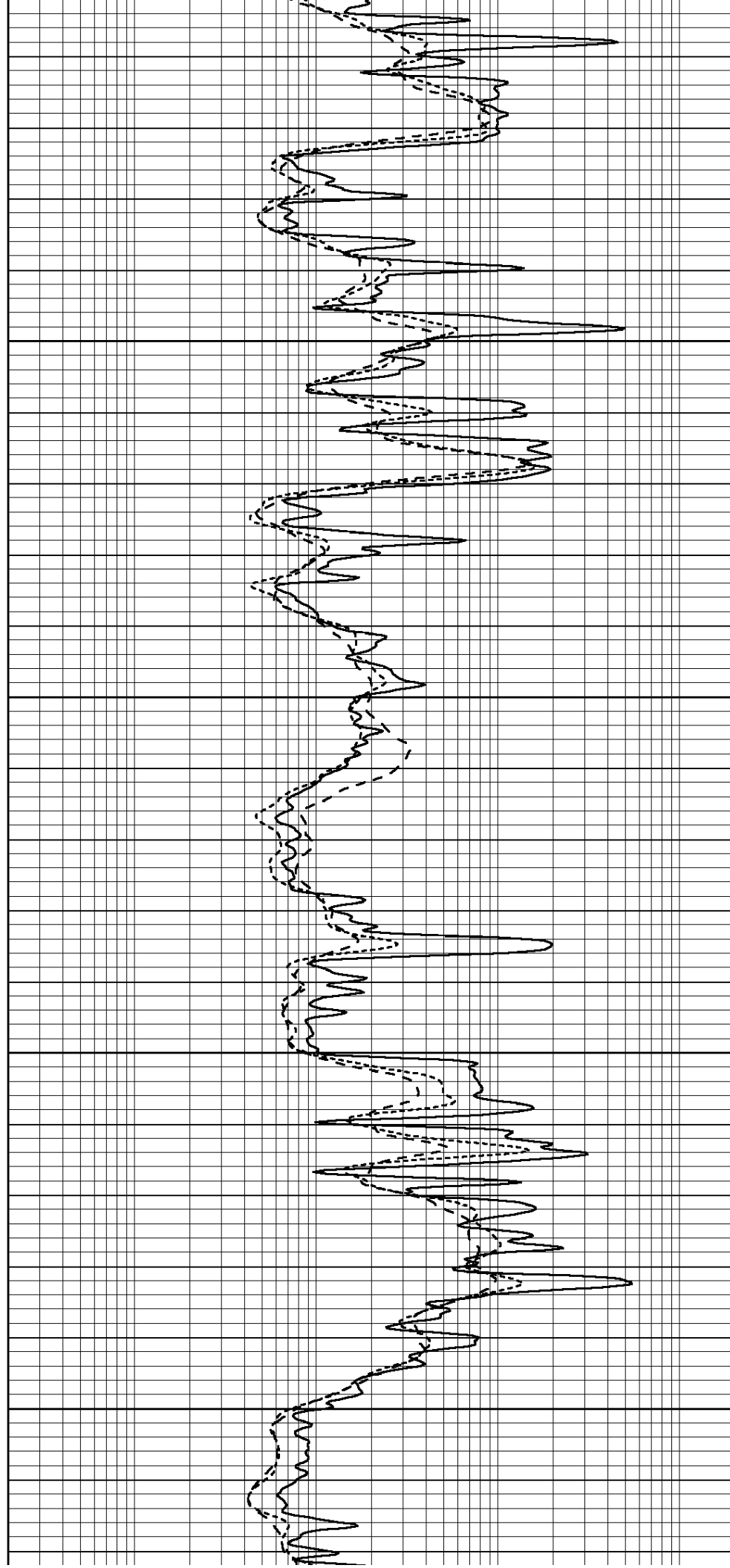


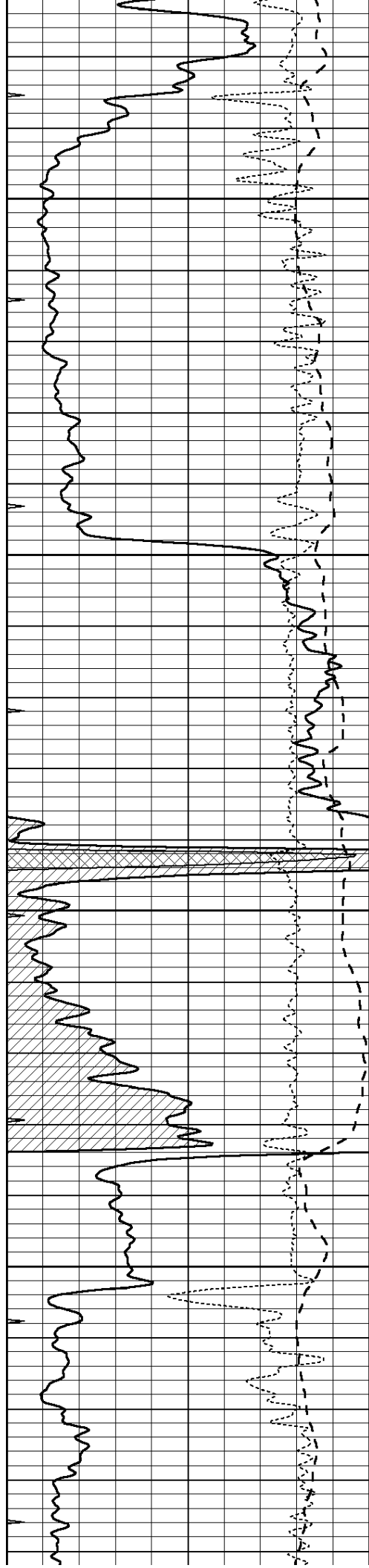
4650

4700

4750

4800



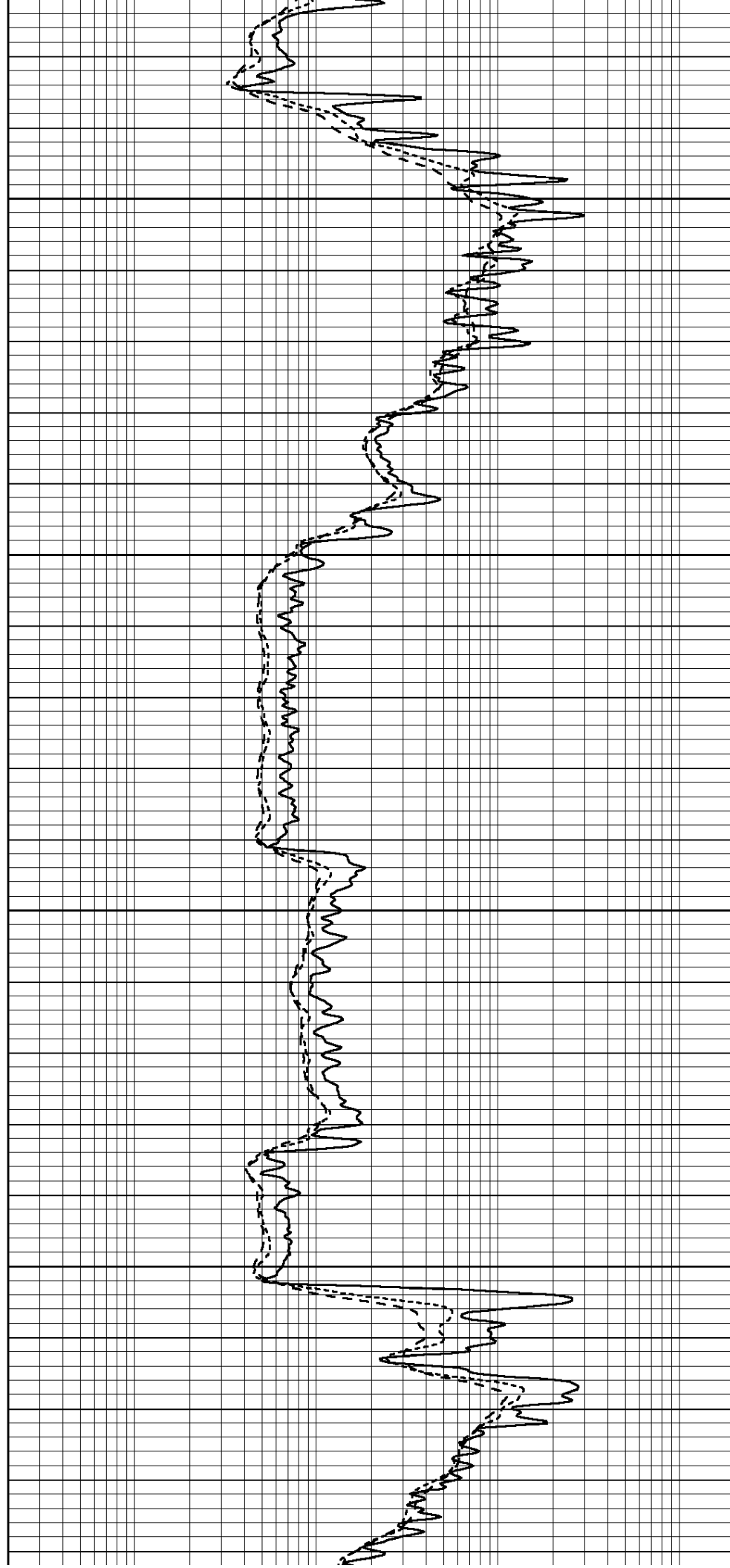


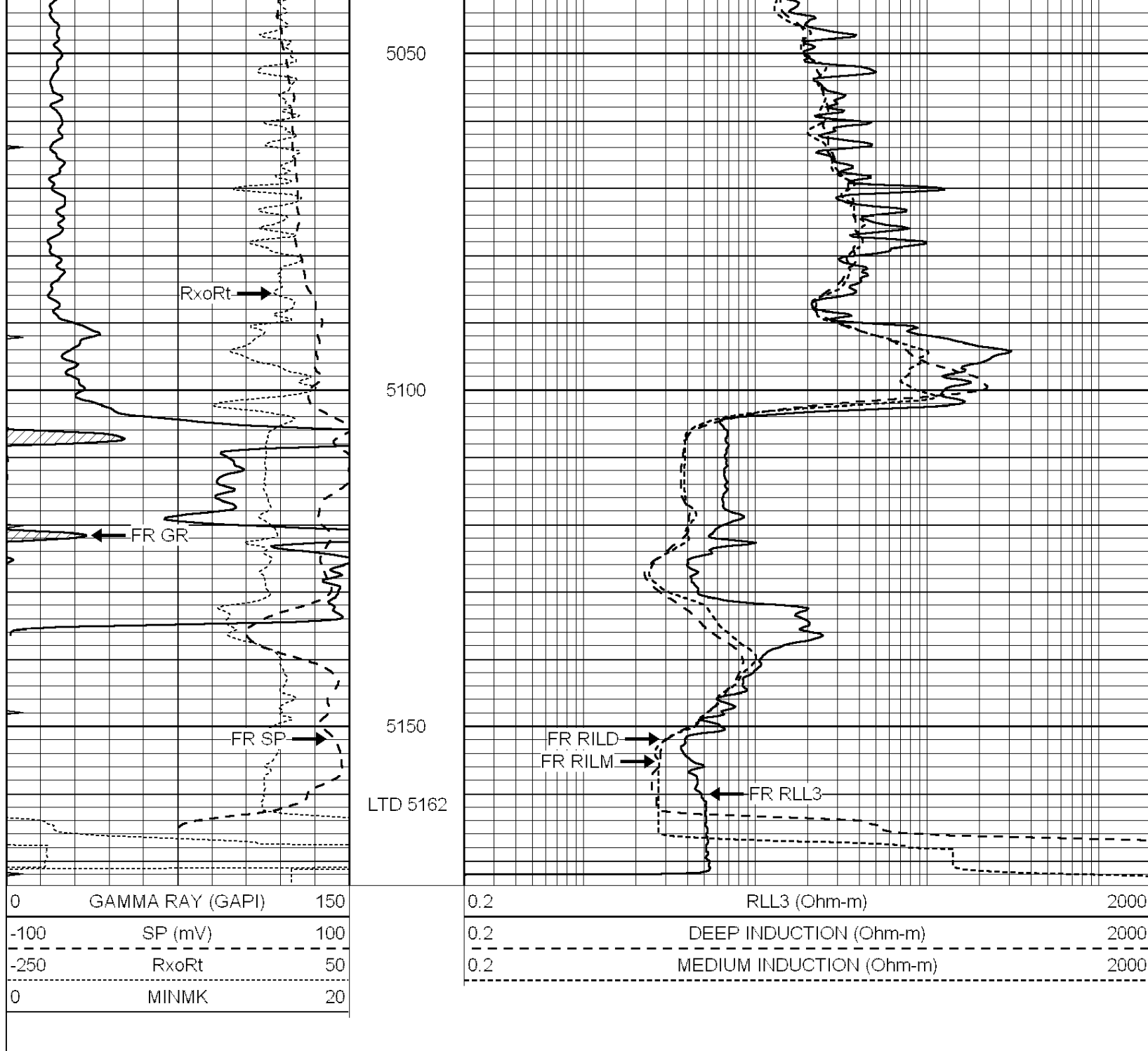
4850

4900

4950

5000

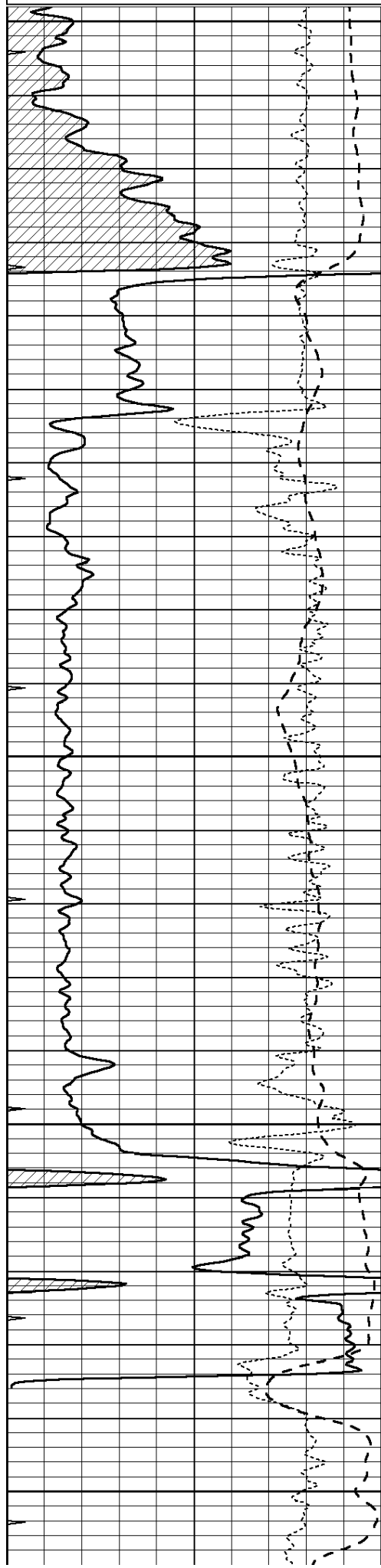




REPEAT SECTION

Database File: 22210pe.db
 Dataset Pathname: pass2.1.1
 Presentation Format: _dil
 Dataset Creation: Mon Jan 06 21:11:39 2014 by Calo Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	RLL3 (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



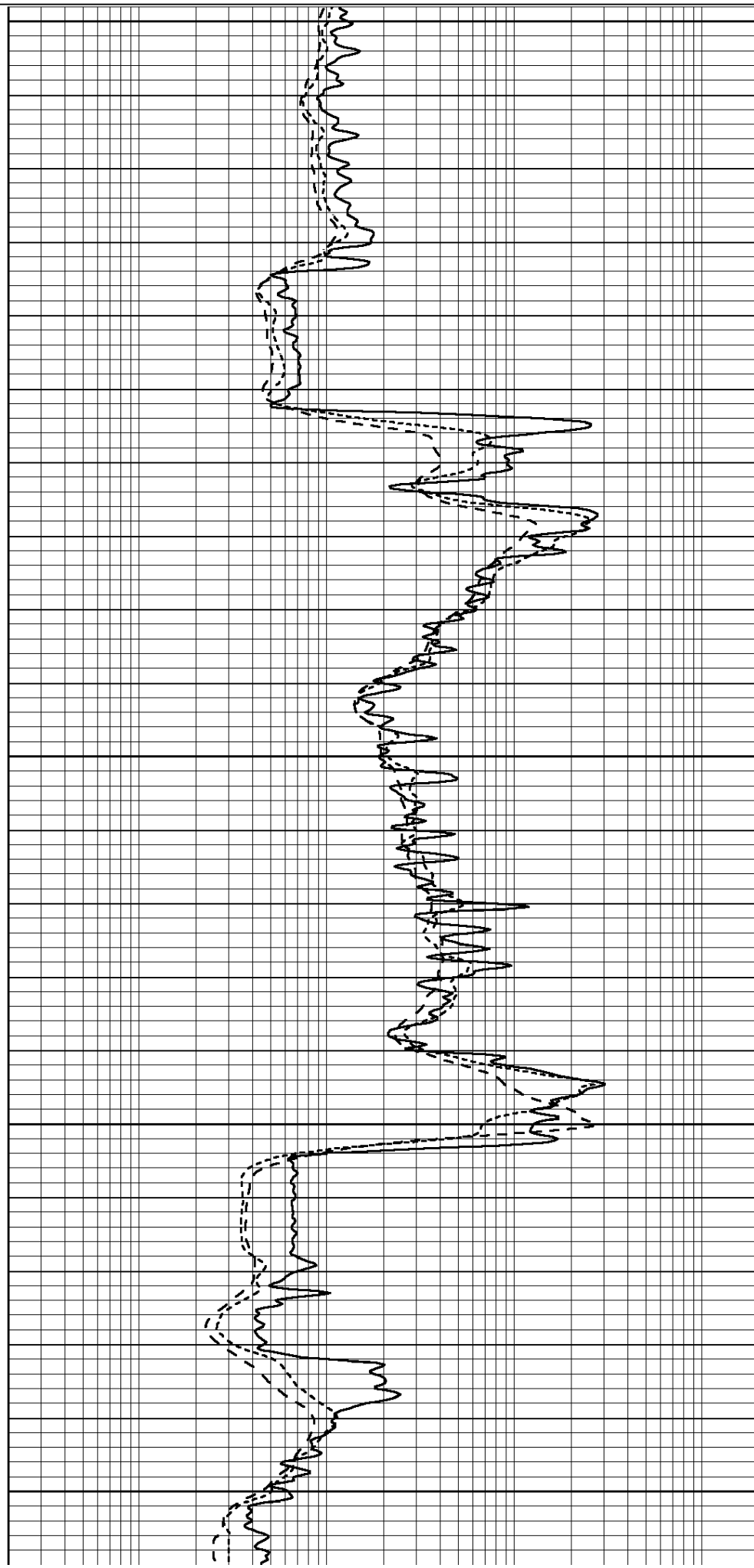
4950

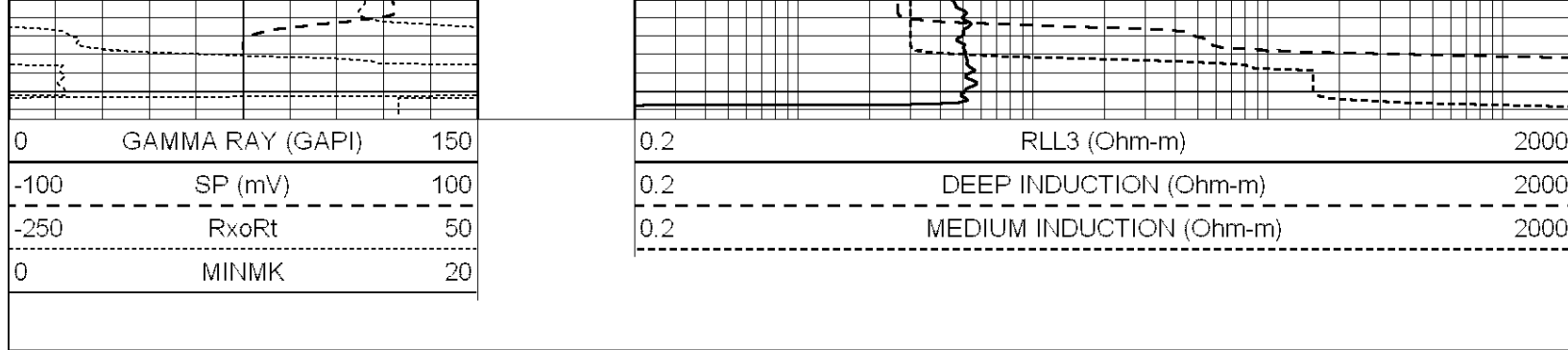
5000

5050

5100

5150





Calibration Report

Database File: 22210pe.db
 Dataset Pathname: pass3.4
 Dataset Creation: Mon Jan 06 23:40:23 2014 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: DIL3-GEAR
 Performed: Sat Jan 04 10:54:27 2014

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	500.000	2.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	580.000	3.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	560.000	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	540.000	-4.000

Litho Density Calibration Report
 Serial: 001 Model: PRB
 Performed Tue Jul 03 11:37:32 2007

Litho Density Calibration					
	Background	Magnesium	Aluminum	Sandstone	
Window 1	2170.6	9915.1	3855.3	11241.6	cps
Window 2	2029.2	8716.5	3483.5	9750.8	cps
Window 3	1665.0	4929.7	2356.8	5332.0	cps
Window 4	493.3	492.1	490.0	486.8	cps
Long Space	0.0	6687.3	1454.3	7721.6	cps
Short Space	1.9	2149.3	1403.9	2354.5	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.556
Spine Angle	: 74.4	Spine Slope	: 3.583	Spine Intercept	: -18.7

Caliper		
Low Ref	Readings	Reference
High Ref	3.5	8.3
	5.4	14.0
	Gain: 2.9	Offset: -1.0

Compensated Neutron Calibration Report

Serial Number: 080620
 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:	7		
Tool Model:	Probe1		
Performed:	Sat Jan 04 10:53:32 2014		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.4600	GAPI/cps	