



**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company	MULL DRILLING COMPANY, INC.	Company	MULL DRILLING COMPANY, INC.
Well	#1-16 HENDERSON	Well	#1-16 HENDERSON
Field	WILDCAT	Field	WILDCAT
County	NESS	County	NESS
State	KANSAS	State	KANSAS
Location:	API # : 15-135-25500-0000	Other Services CDL/CNL/PE MEL/SONIC	
	413' FNL & 12972' FWL		
	SEC 16 TWP 16S RGE 23W		
Permanent Datum	GROUND LEVEL	Elevation	2436
Log Measured From	KELLY BUSHING 8' A.G.L.		
Drilling Measured From	KELLY BUSHING		
Date	11/7/12		
Run Number	ONE		
Depth Driller	4500		
Depth Logger	4500		
Bottom Logged Interval	4498		
Top Log Interval	00		
Casing Driller	8 5/8"@233'		
Casing Logger	234		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 8,200 PPM	
Density / Viscosity	9.6/45		
pH / Fluid Loss	9.5/10.0		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	.55@80F		
Rinf @ Meas. Temp	.413@80F		
Rinc @ Meas. Temp	.660@80F		
Source of Rinf / Rinc	MEASUREMENT		
Rin @ BHT	.364@121F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	6:30 A.M.		
Maximum Recorded Temperature	121F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

<<< Fold Here >>>

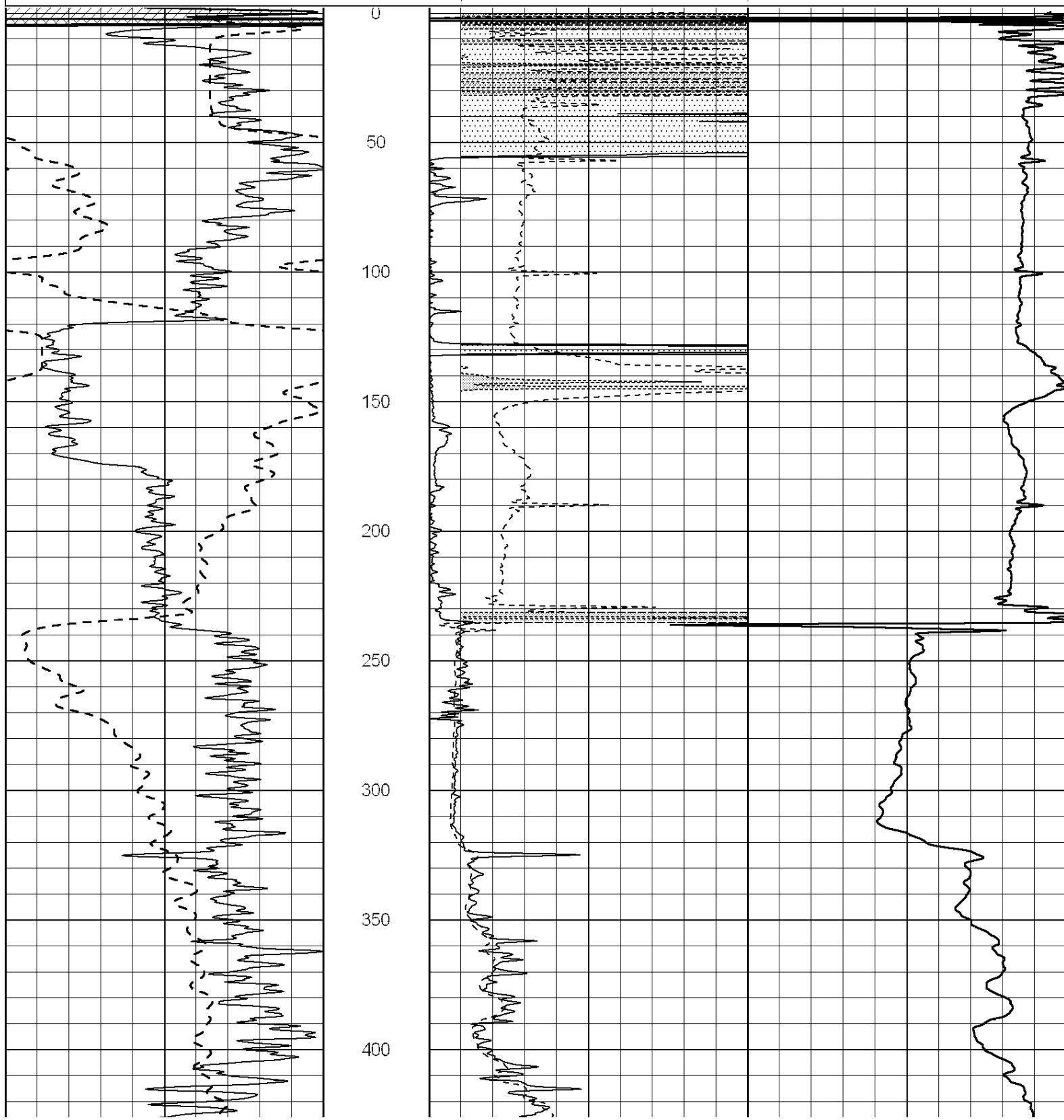
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

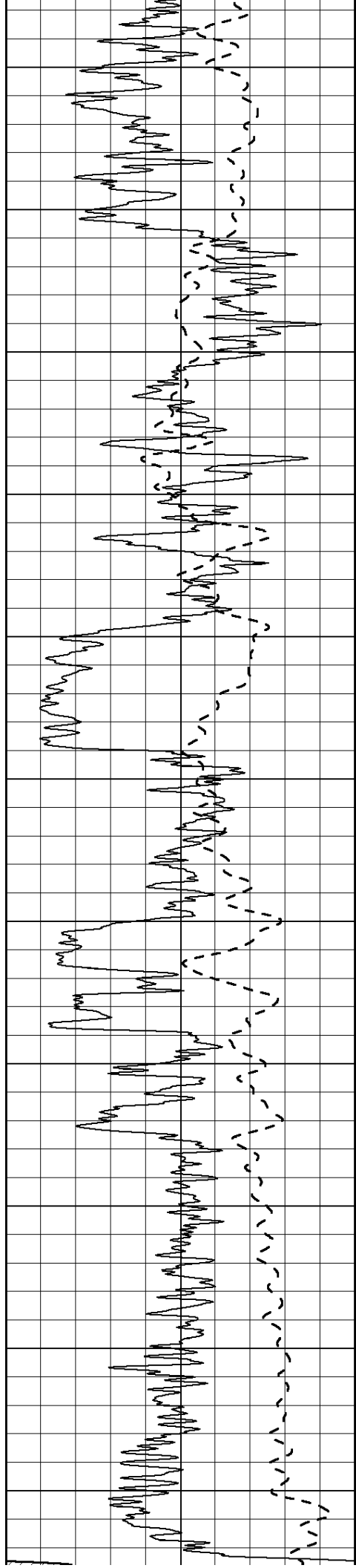
Comments

THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
RANSOM, KS. (HWY 4 & 283) 2N. ON HWY 283 TO "RD. 280", 1E., S. INTO

Database File: 010007pe.db
 Dataset Pathname: pass3.5
 Presentation Format: dil2
 Dataset Creation: Wed Nov 07 08:06:55 2012 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	0	RLL3 (Ohm-m)	50	
-100	SP (mV)	100	0	RILD (Ohm-m)	50	
-----			CILD (mmho/m)			0
			1000			
			50	RILD X10 (Ohm-m)	500	
			50	RLL3 X10 (Ohm-m)	500	





450

500

550

600

650

700

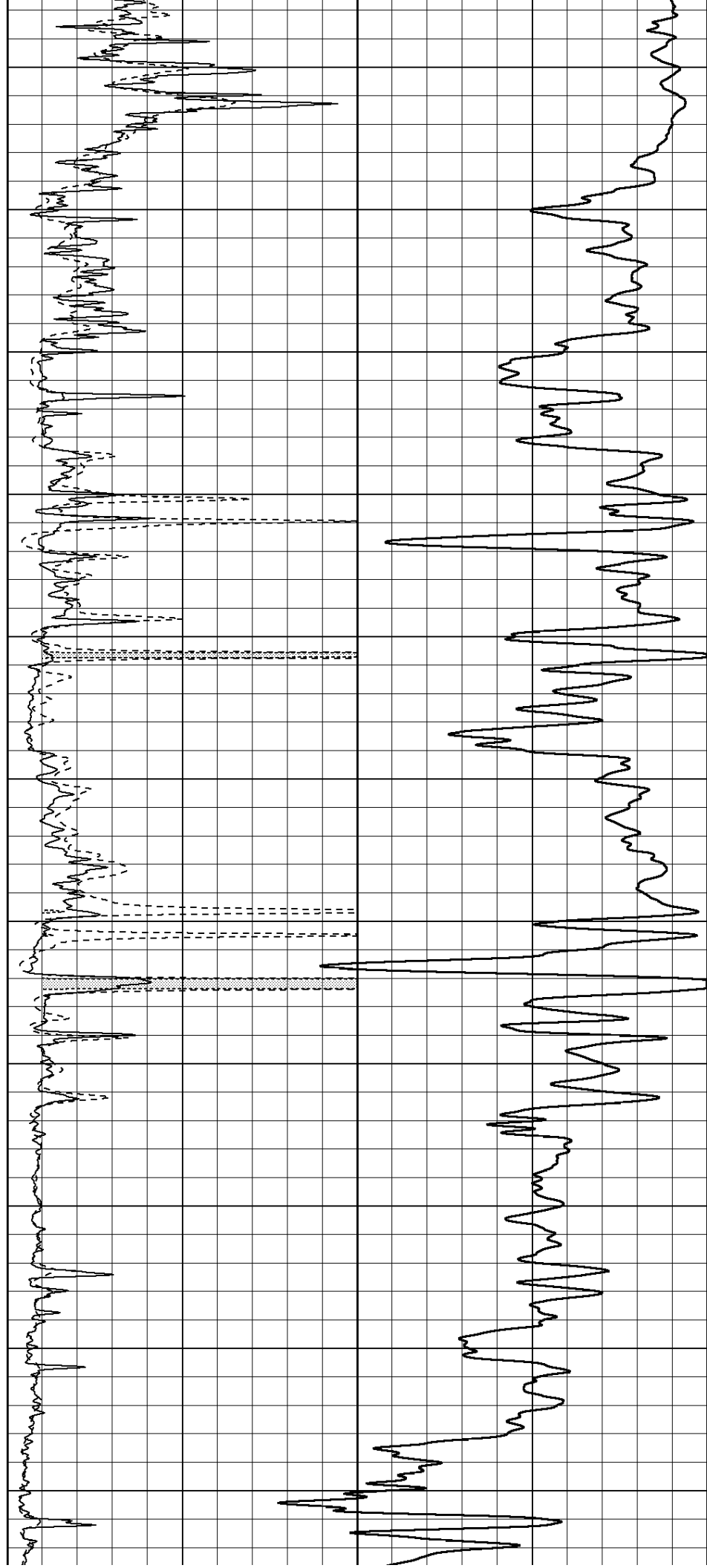
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800

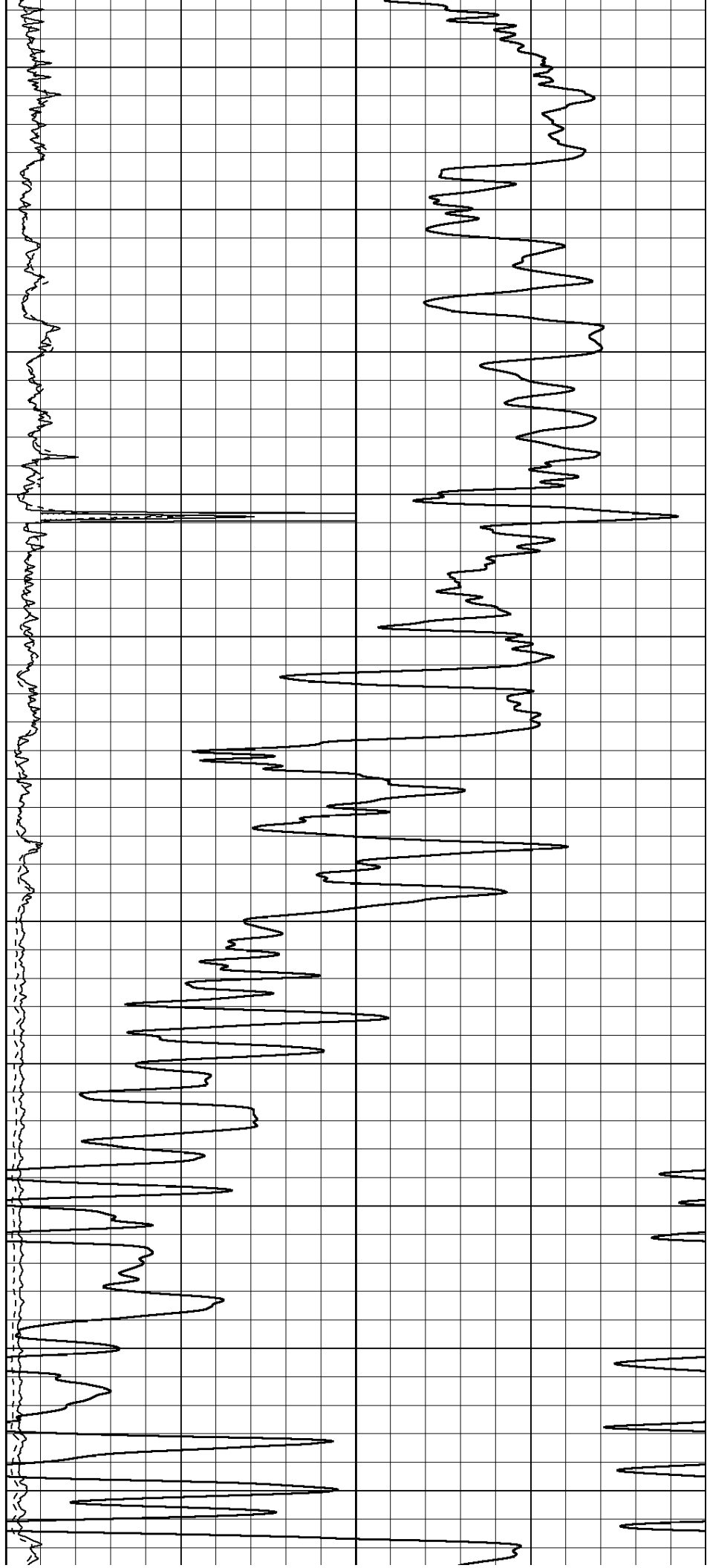
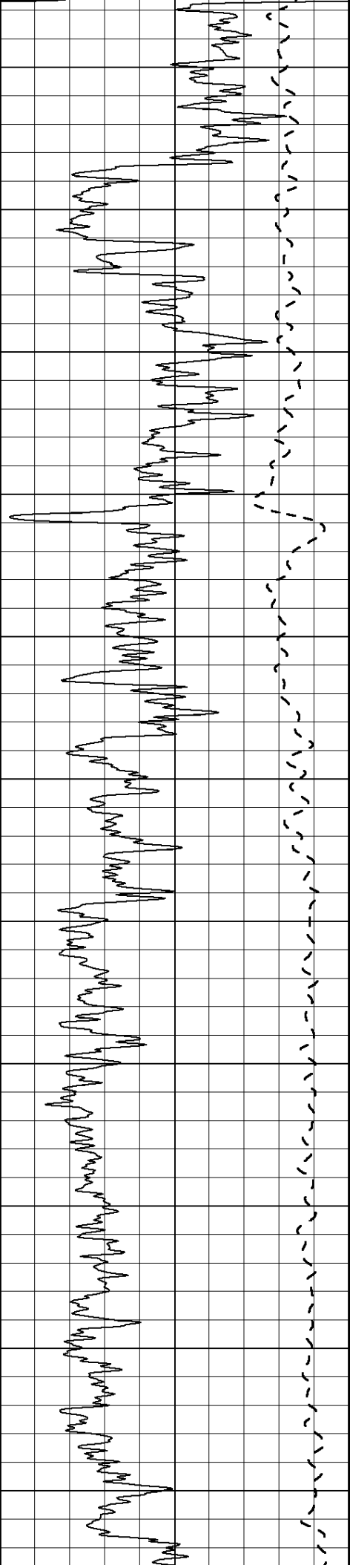
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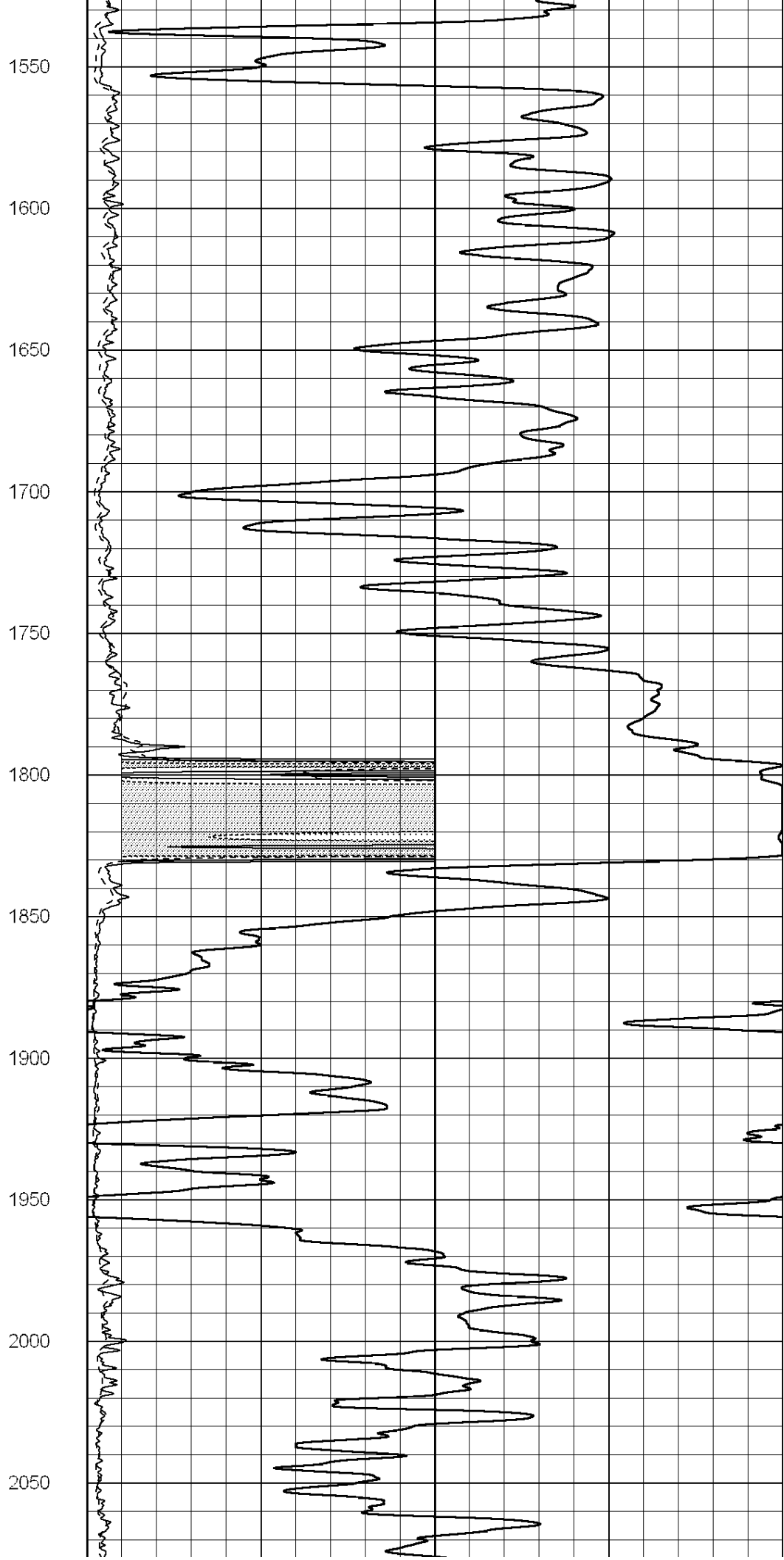
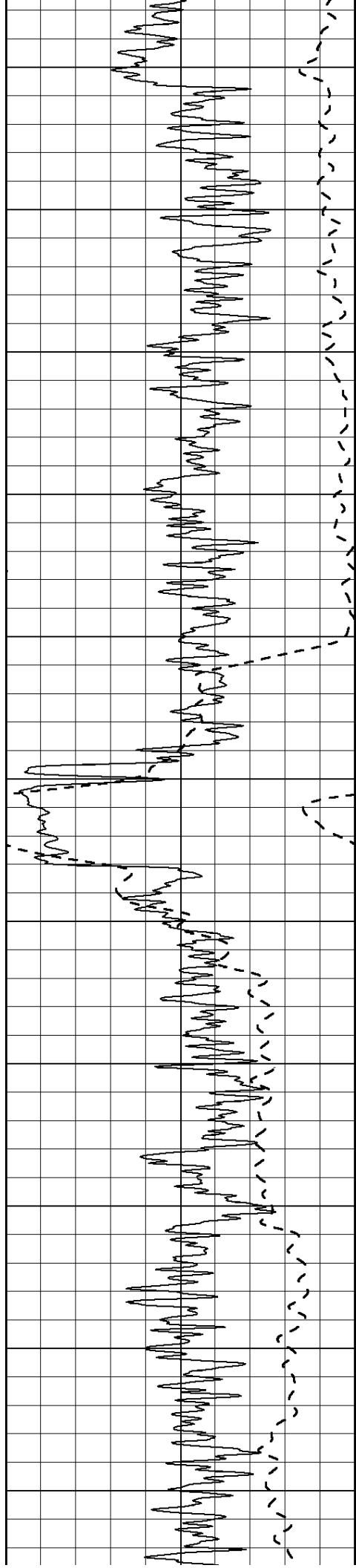
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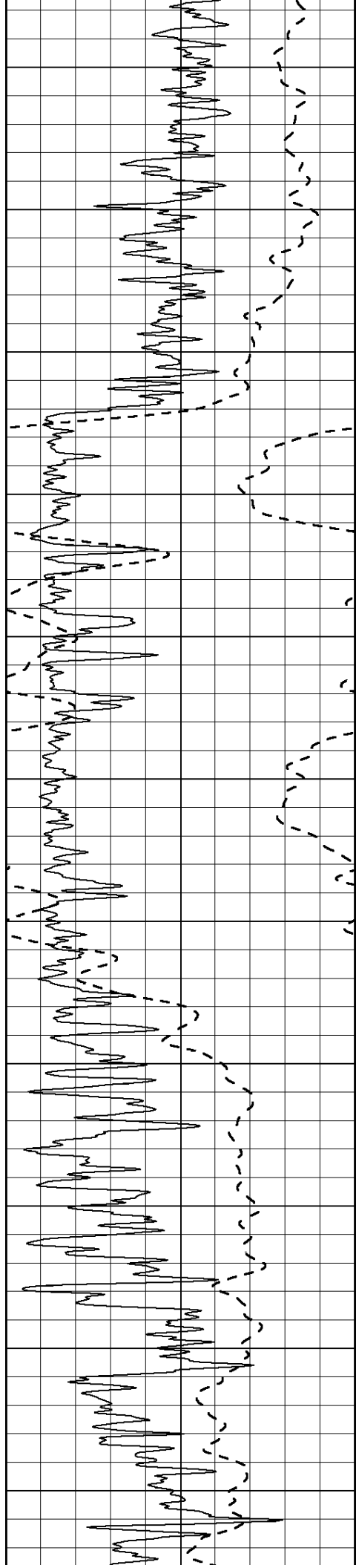
950



1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500







2100

2150

2200

2250

2300

2350

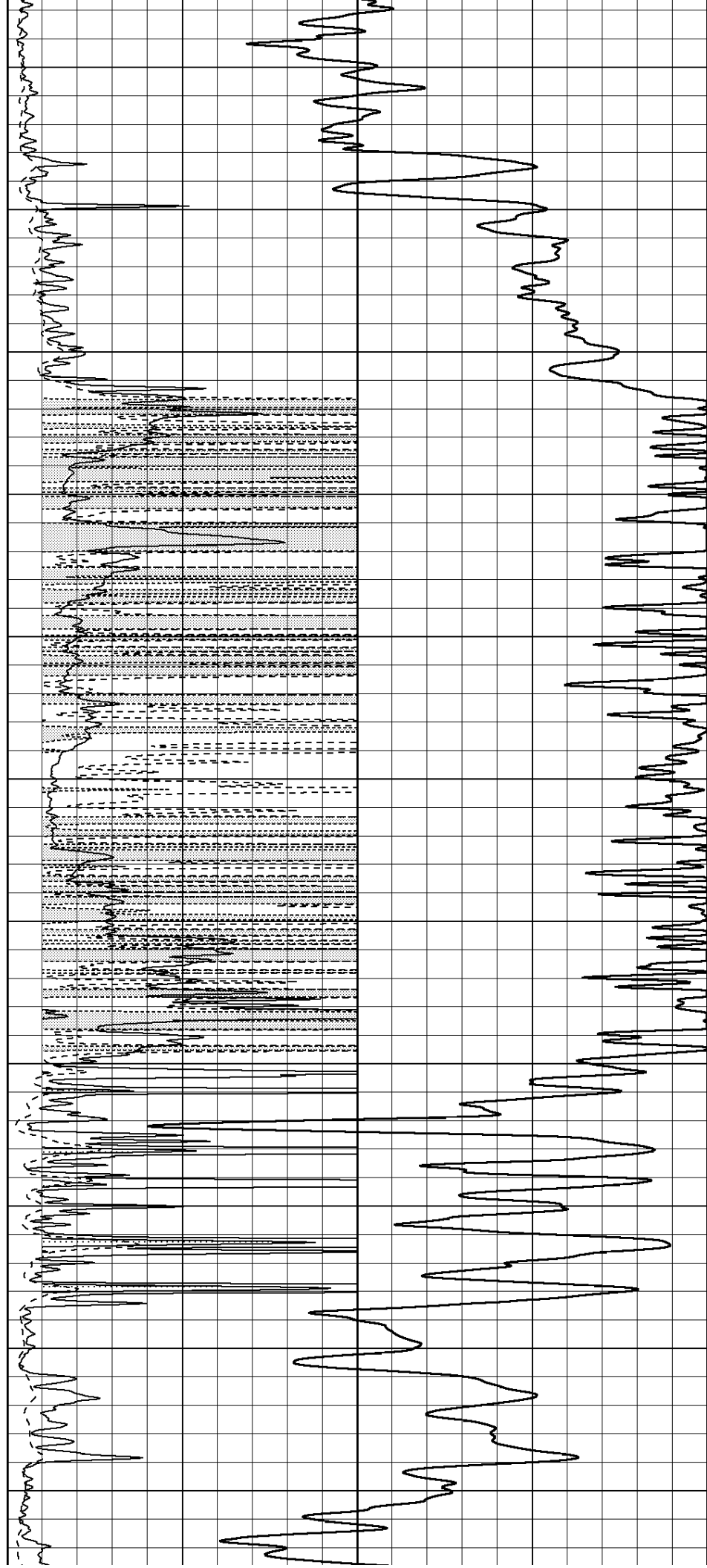
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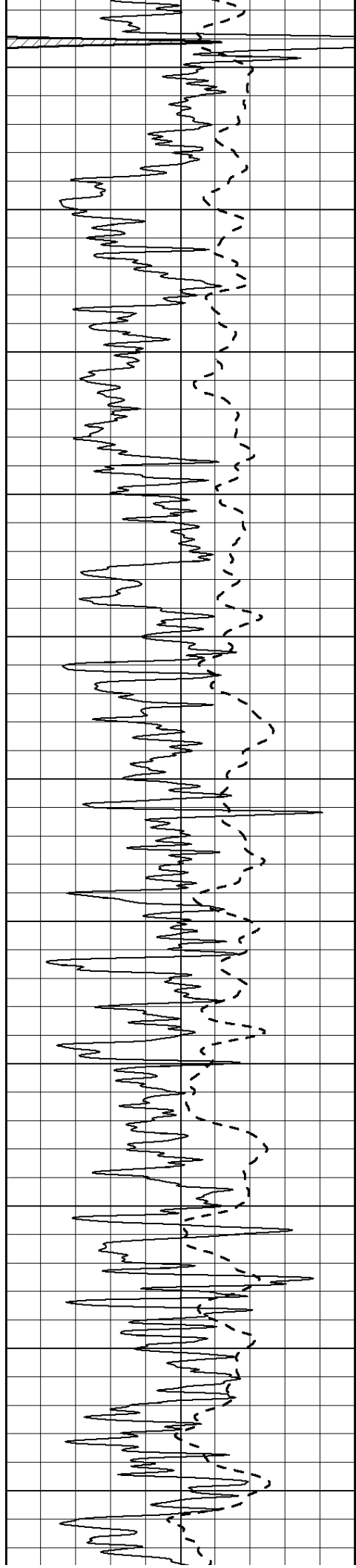
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2500

2550

2600





2650

2700

2750

2800

2850

2900

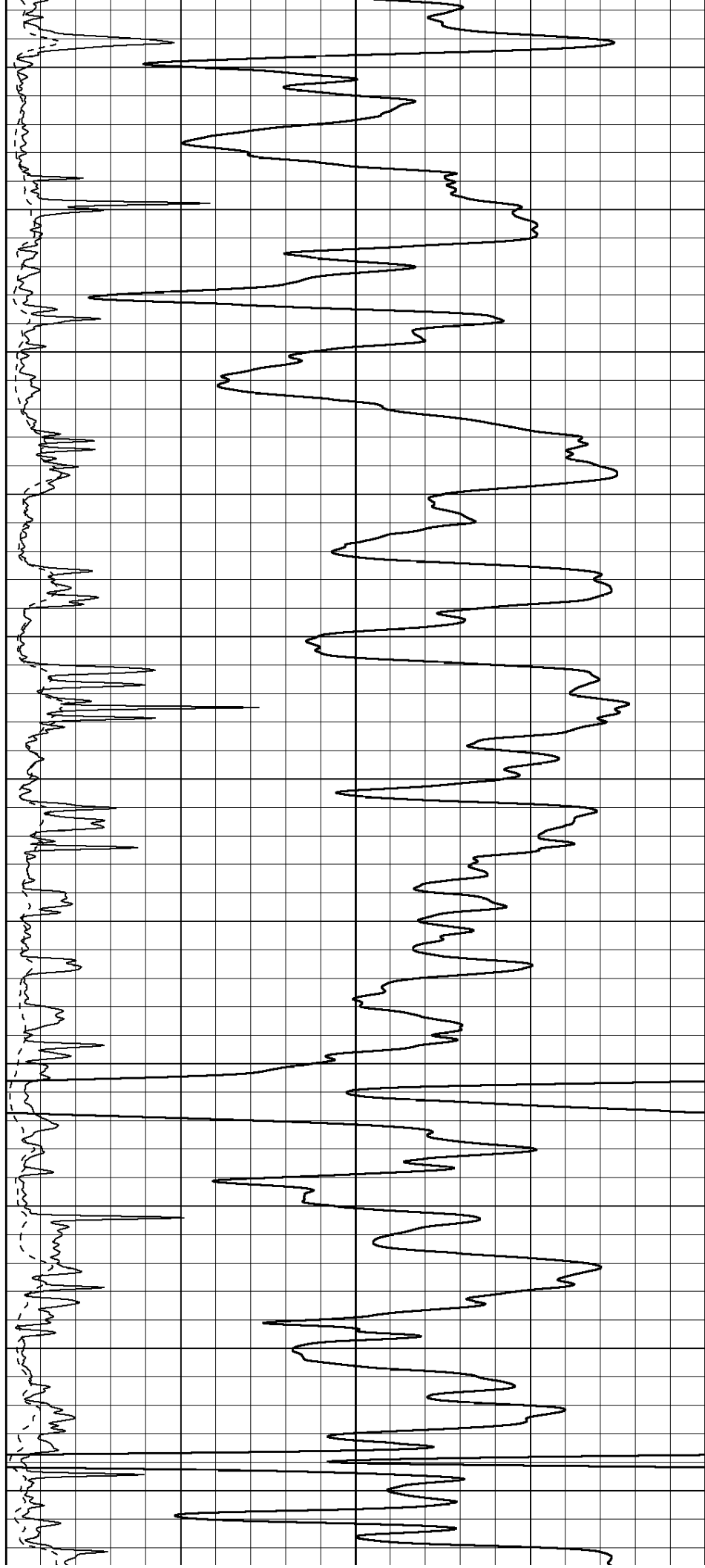
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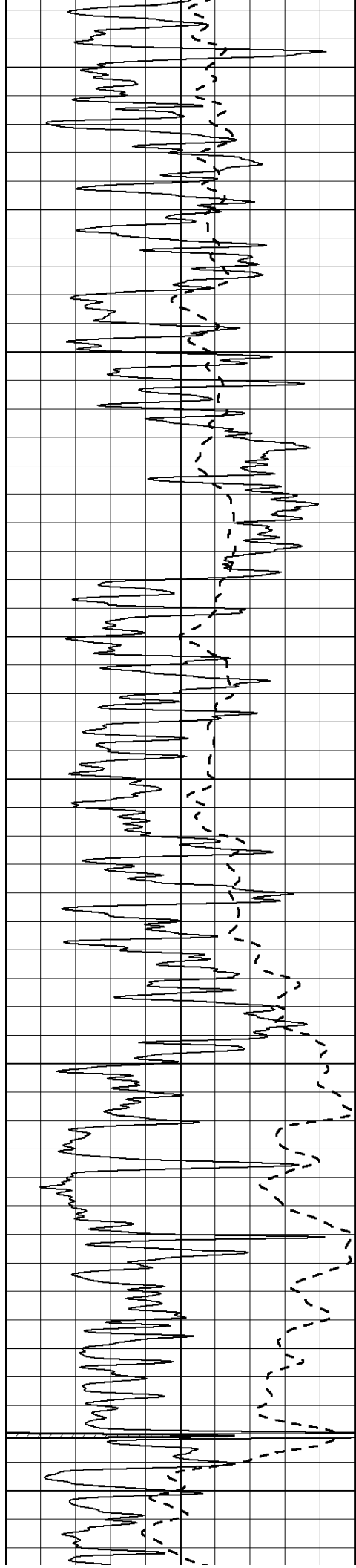
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3050

3100

3150





3200

3250

3300

3350

3400

3450

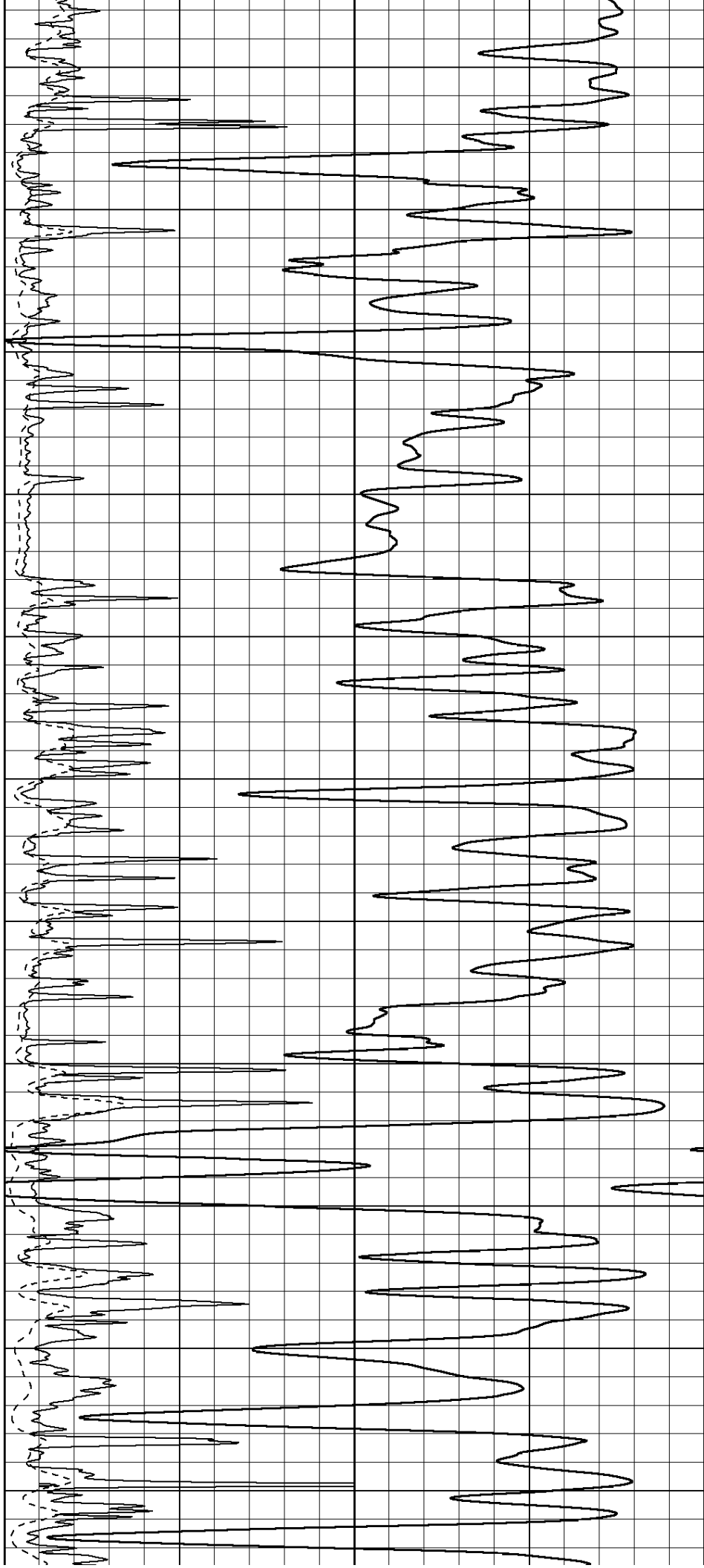
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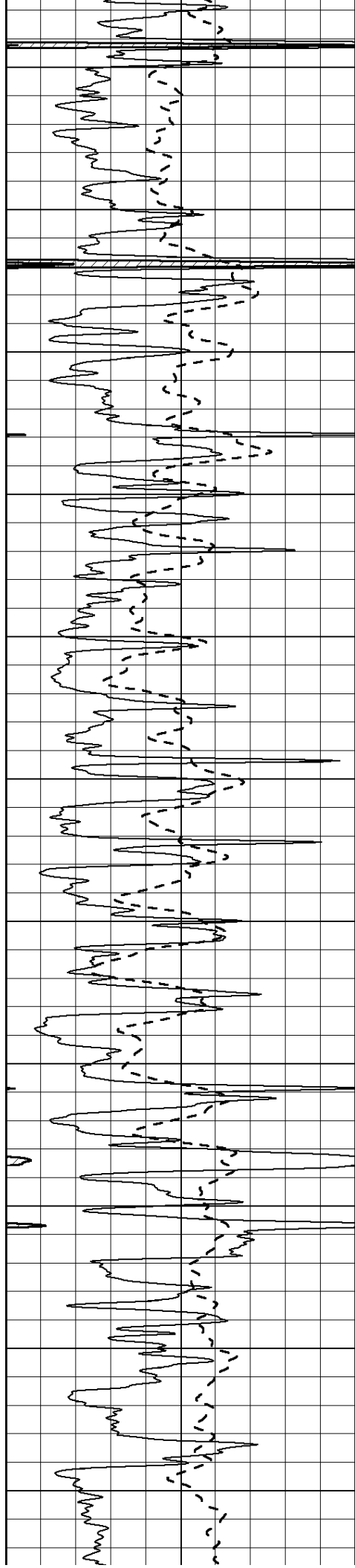
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3600

3650

3700





3750

3800

3850

3900

3950

4000

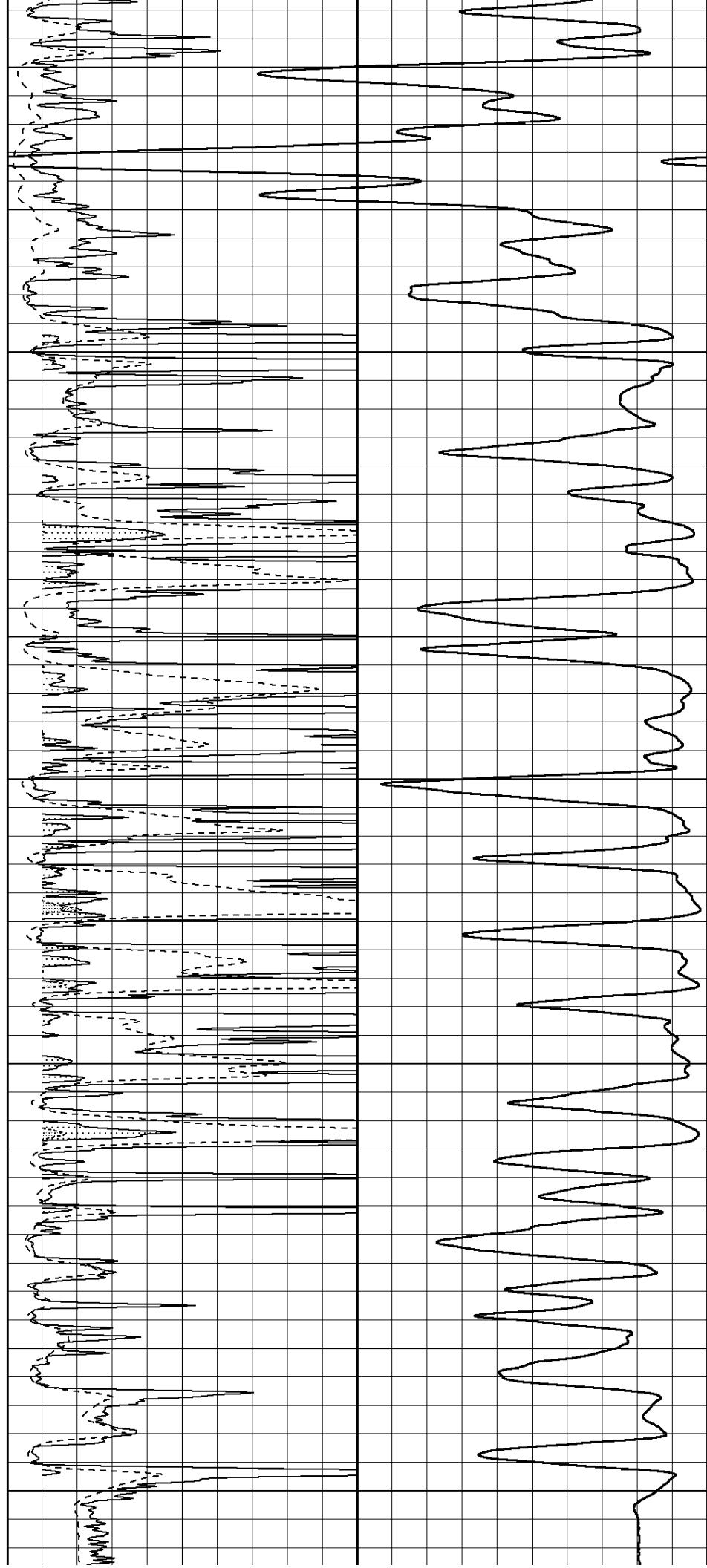
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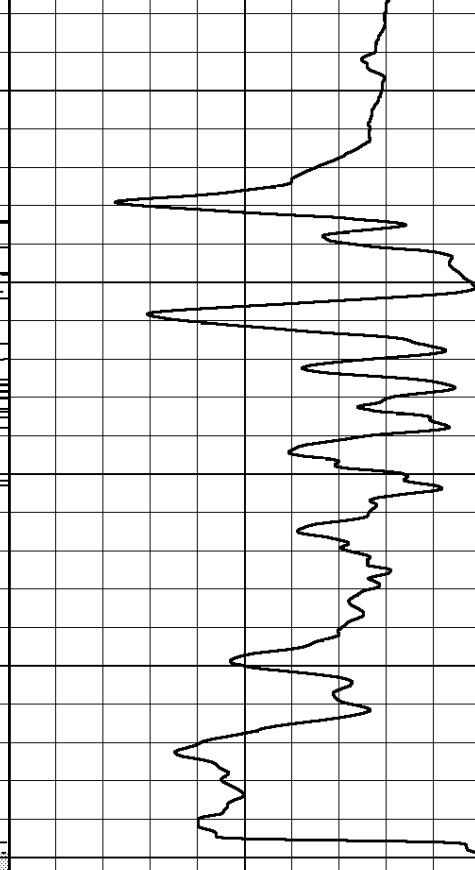
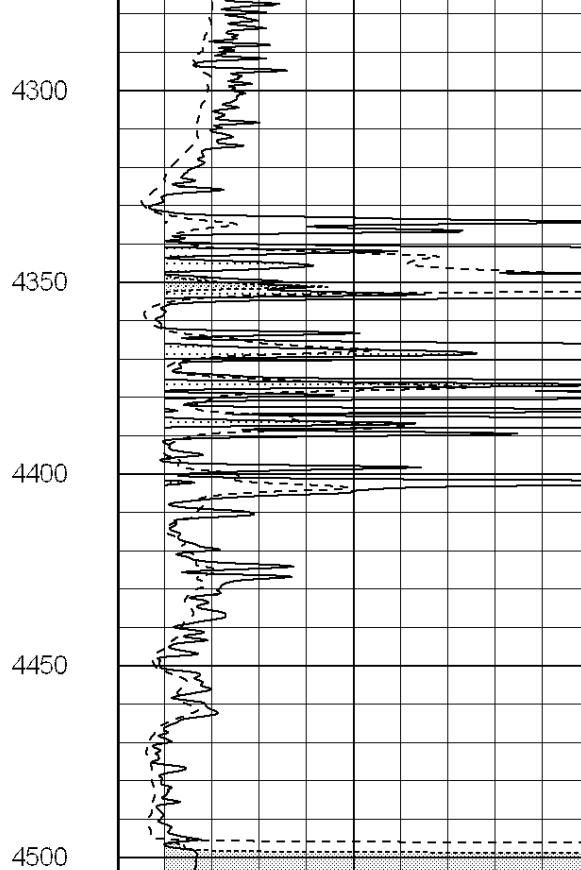
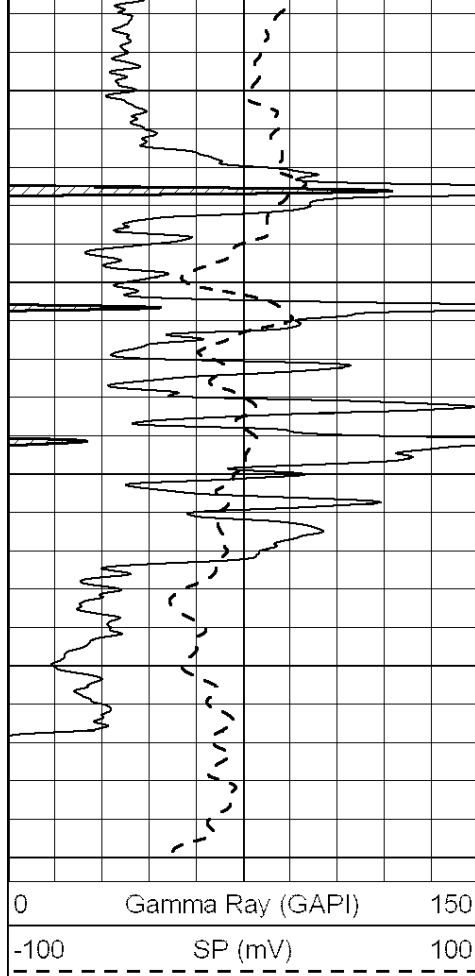
4100

4150

4200

4250





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

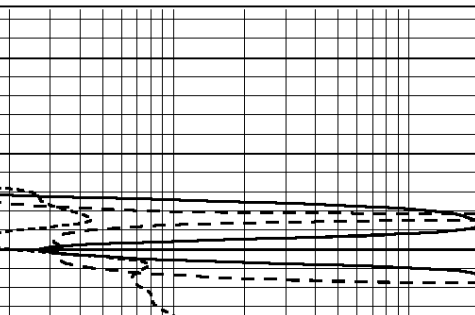
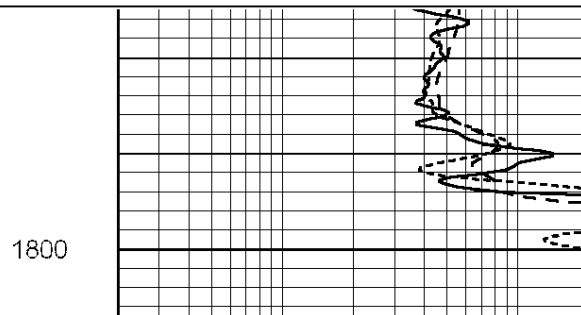
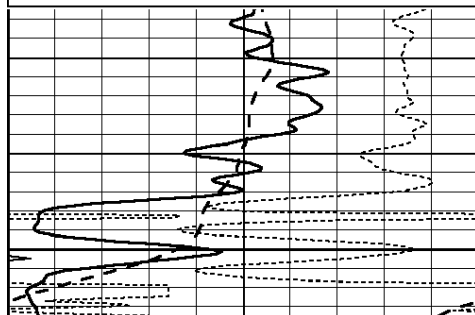
NABORS
COMPLETION
& PRODUCTION
SERVICES CO.

ANHYDRITE

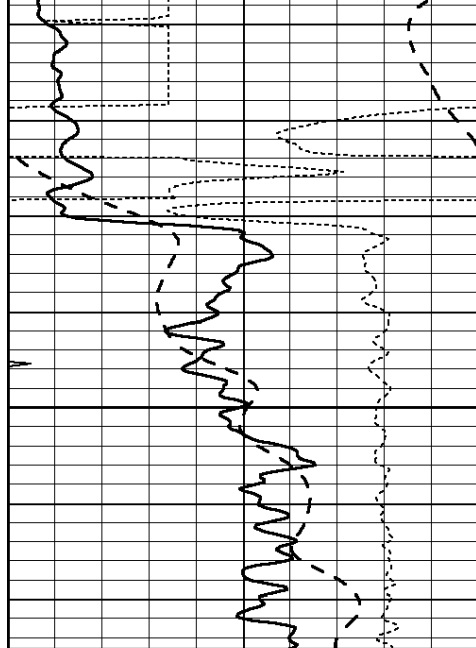
Database File: 010007pe.db
Dataset Pathname: pass3.6
Presentation Format: dil
Dataset Creation: Wed Nov 07 08:07:35 2012 by Calc SOC 120430
Charted by: Depth in Feet scaled 1:240

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

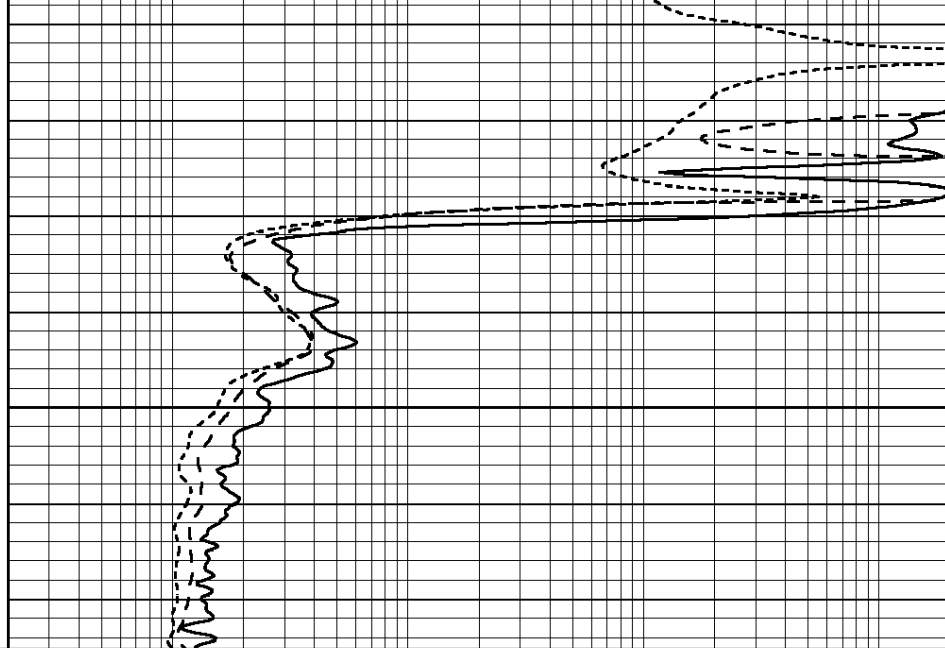


1800



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

1850



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

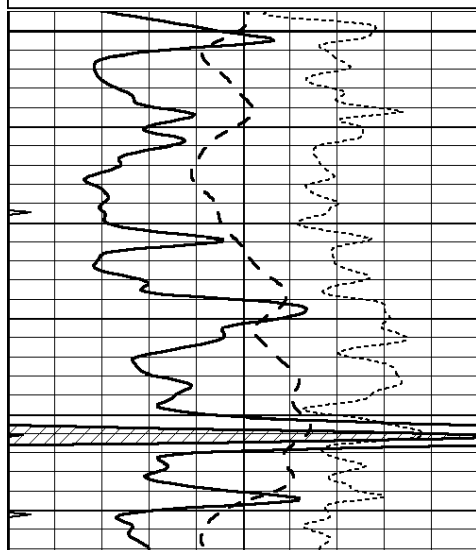


MAIN SECTION

Database File: 010007pe.db
 Dataset Pathname: pass3.5
 Presentation Format: dil
 Dataset Creation: Wed Nov 07 08:06:55 2012 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

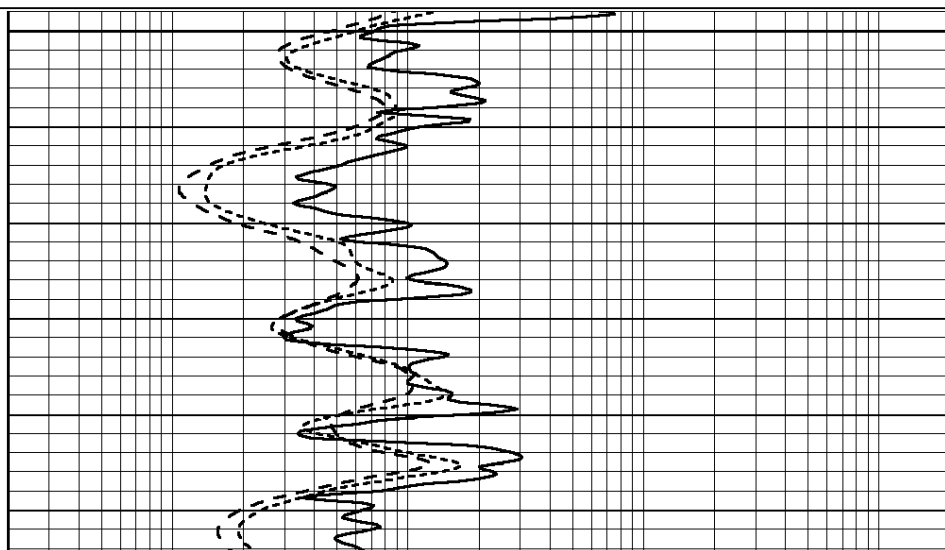
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

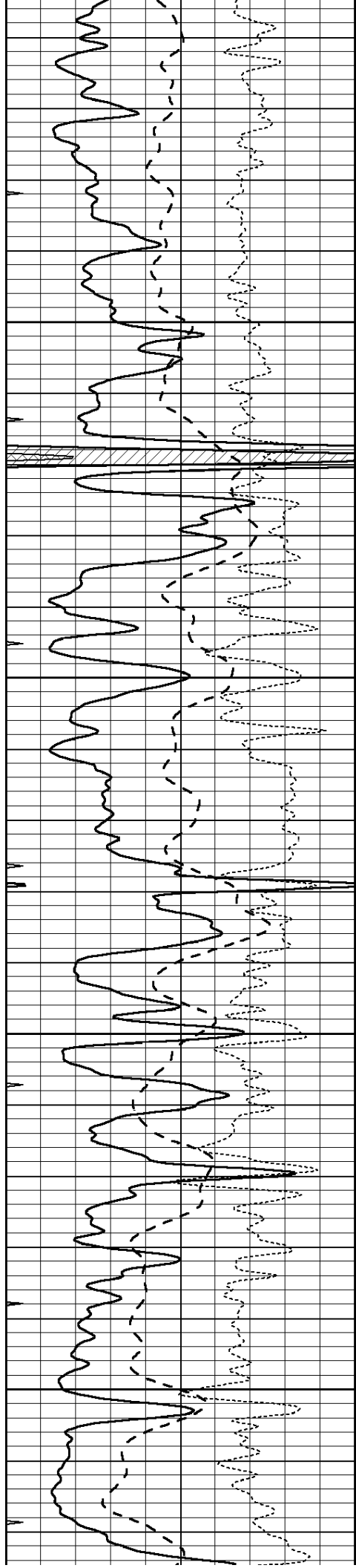
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3700

3750



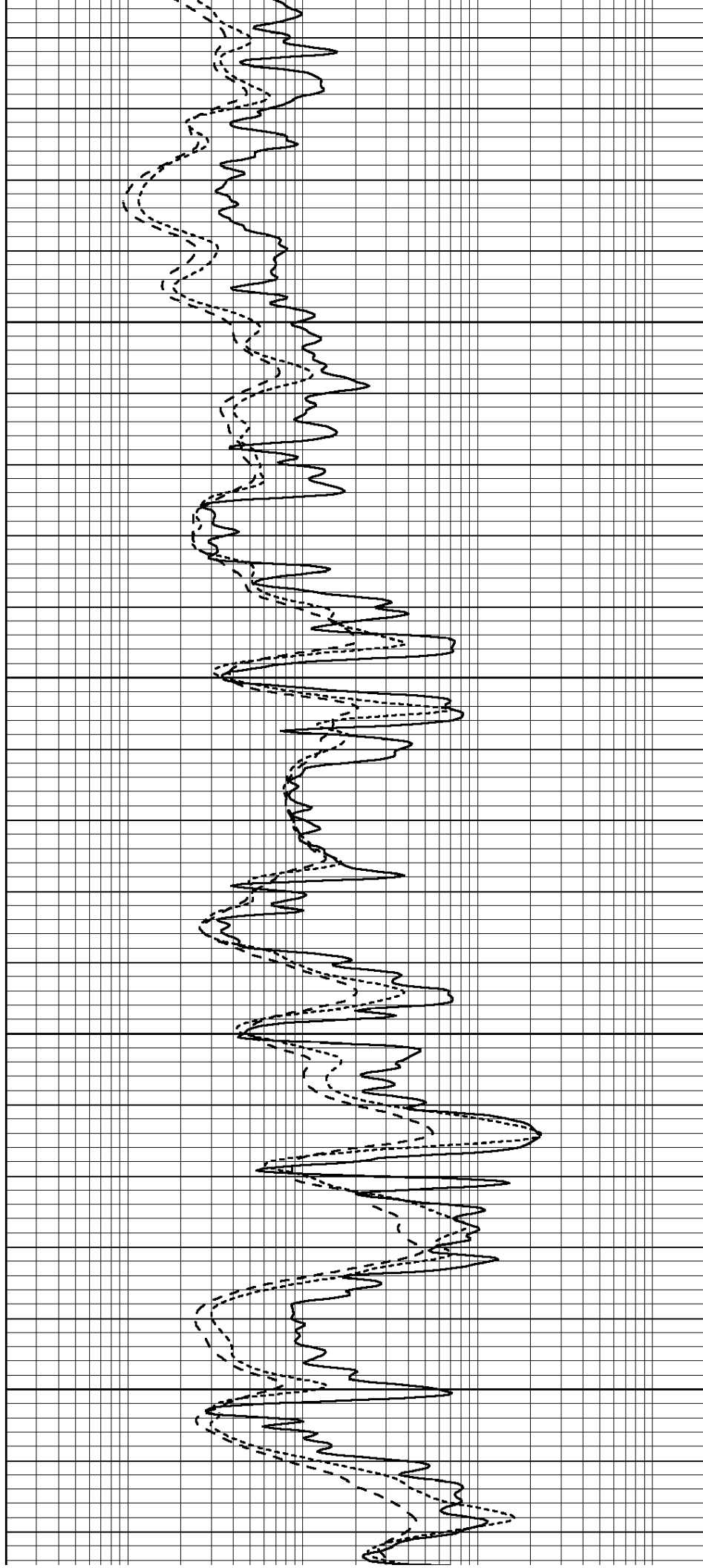


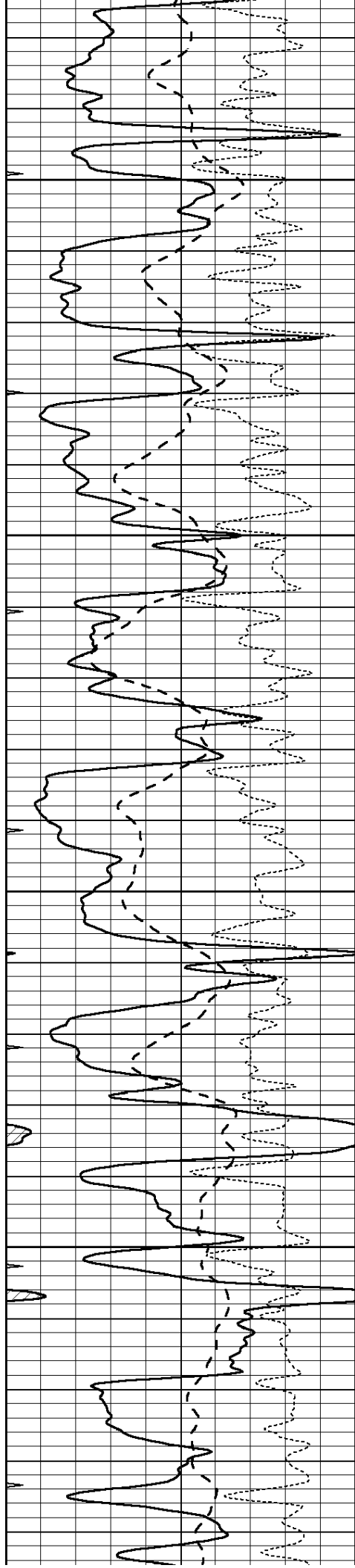
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3850

3900

3950



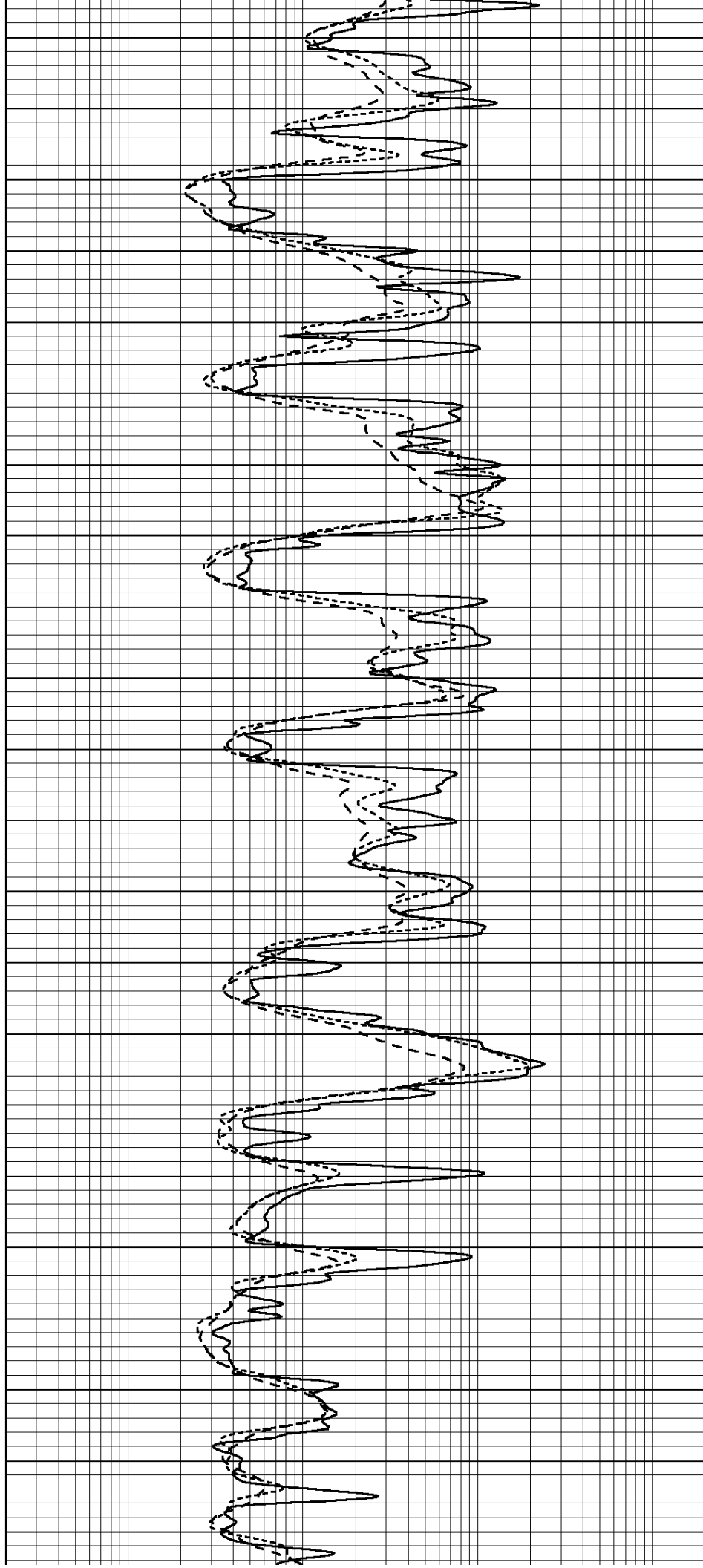


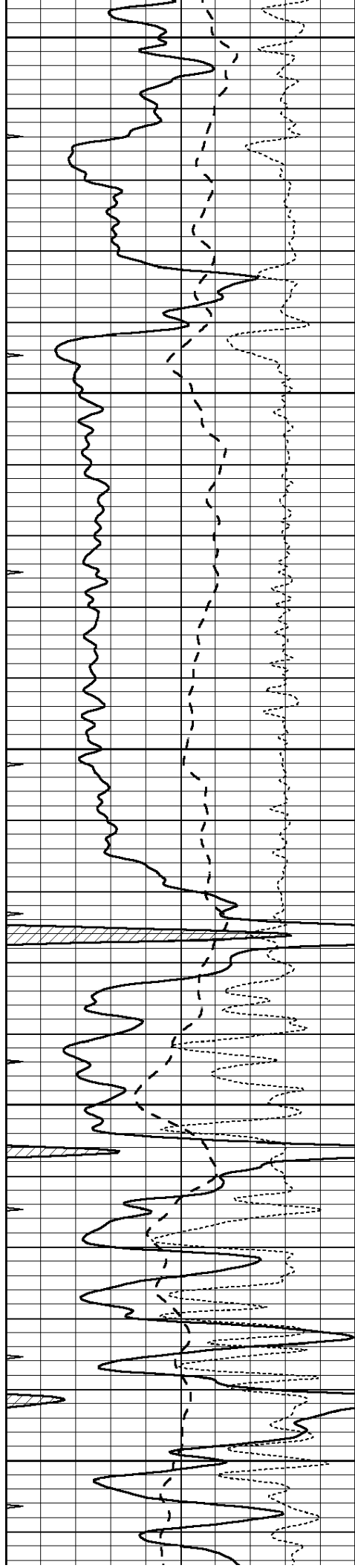
4000

4050

4100

4150





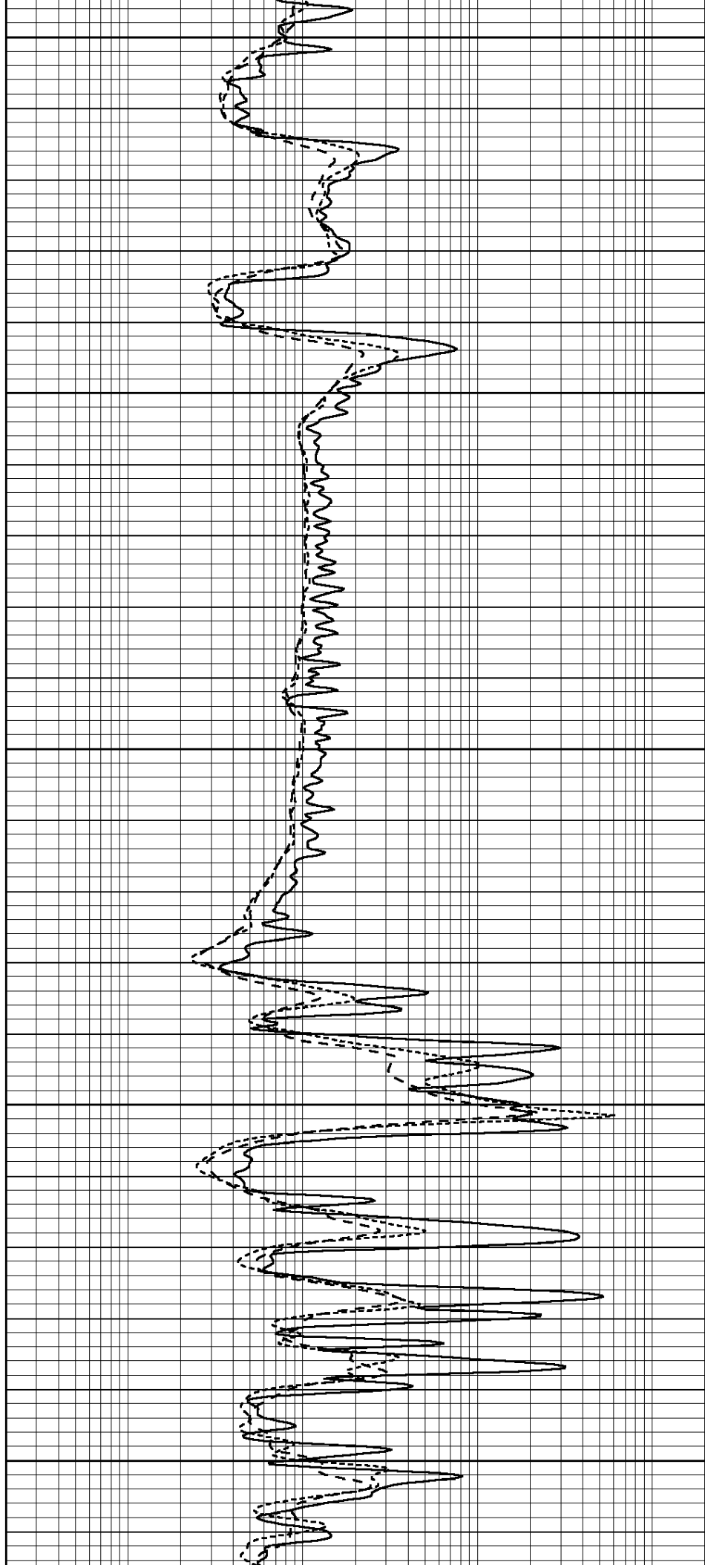
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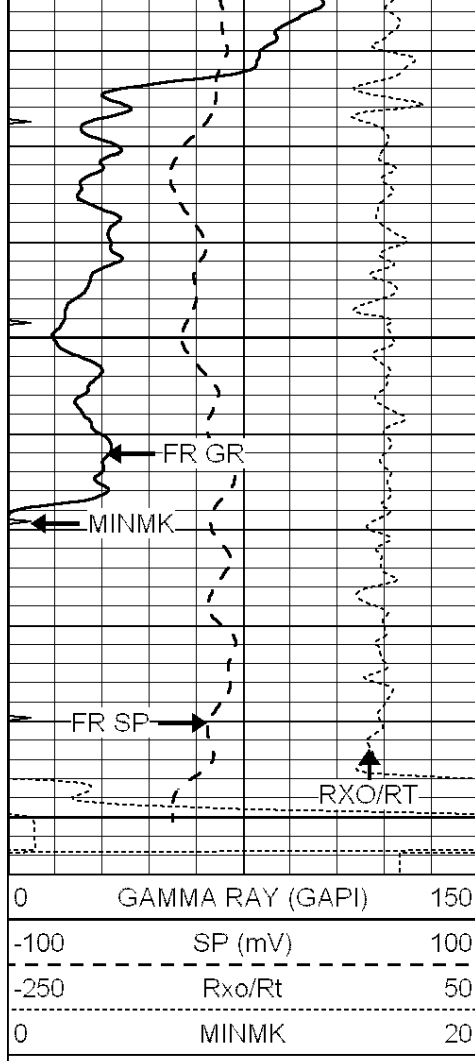
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4300

4350

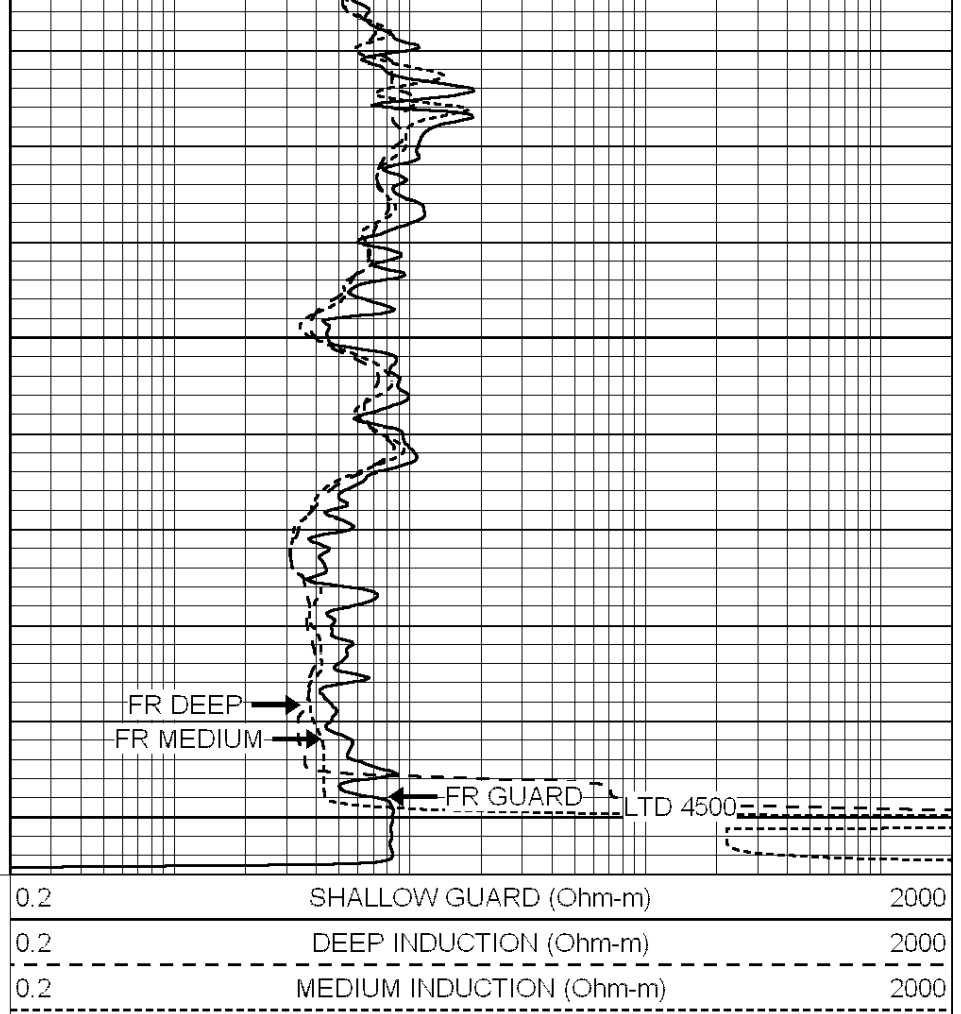
4400





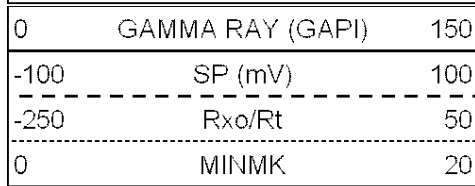
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4500

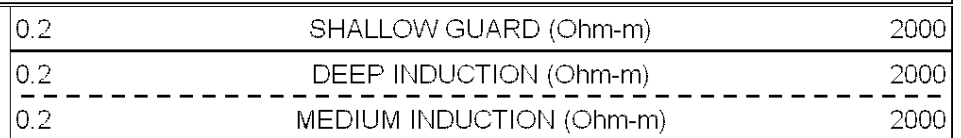


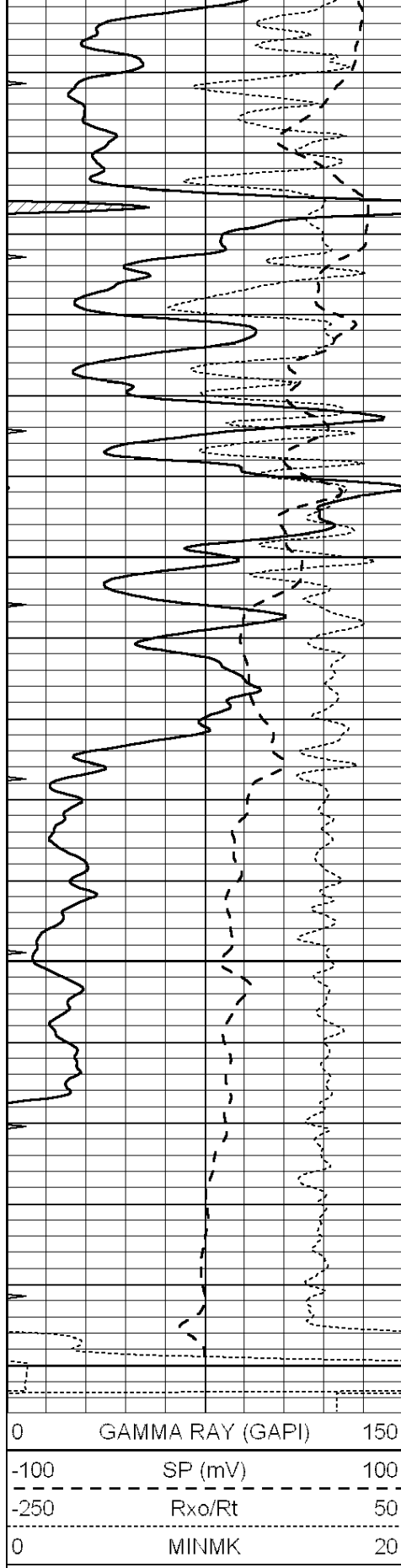
REPEAT SECTION

Database File: 010007pe.db
 Dataset Pathname: pass2.5
 Presentation Format: dil
 Dataset Creation: Wed Nov 07 08:08:50 2012 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240



4300





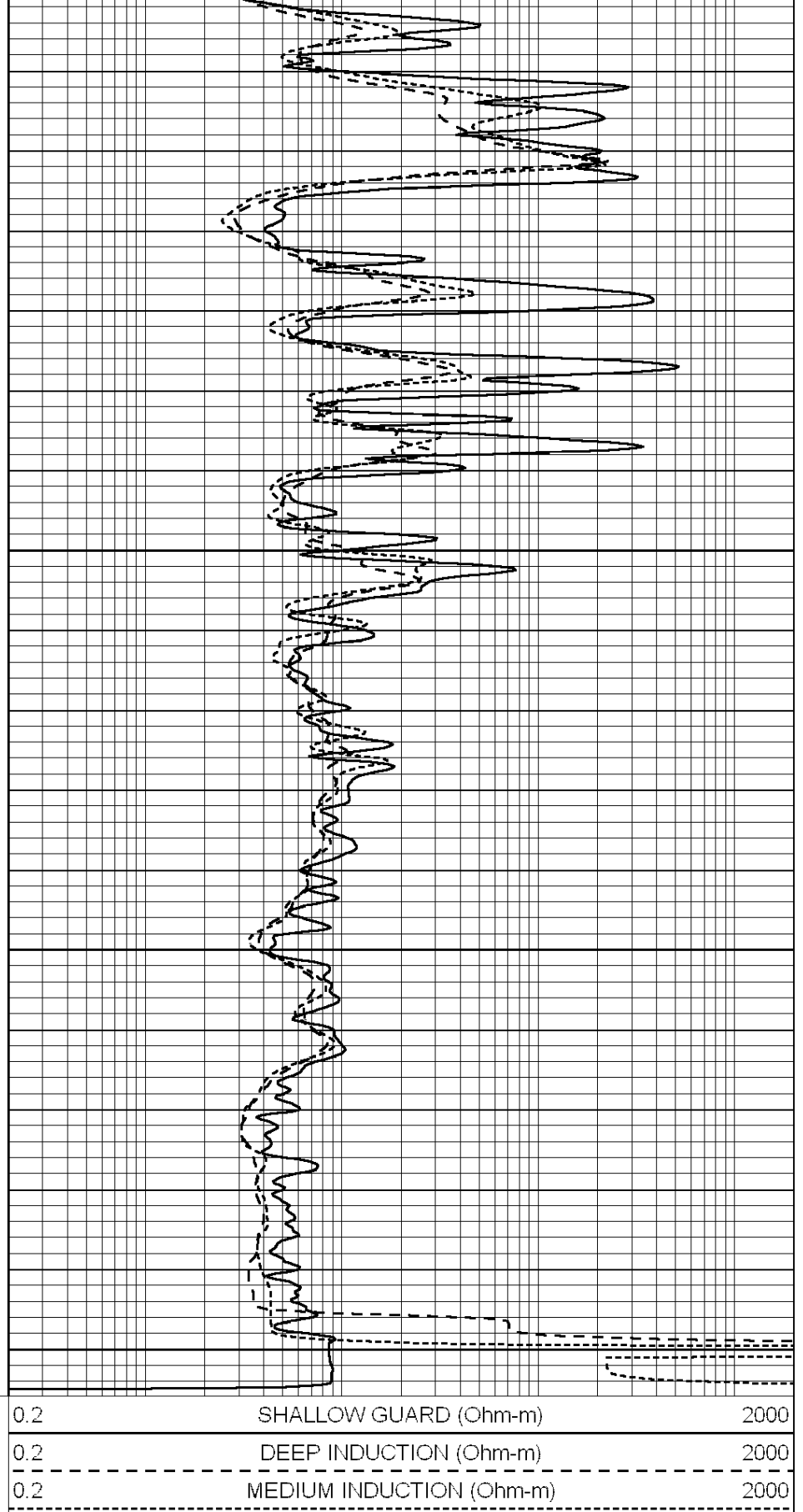
4350

4400

4450

4500

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

Calibration Report

Database File: 010007pe.db
Dataset Pathname: pass3.5
Dataset Creation: Wed Nov 07 08:06:55 2012 by Calc SOC 120430

Dual Induction Calibration Report								
Serial-Model: Performed:				DIL3-GEAR Fri Nov 02 08:44:54 2012				
Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	0.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	-20.000
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								
Low Ref	Readings 3.5	Reference 6.5						
High Ref	5.5	15.0						
	Gain: 4.4			Offset: -9.1				
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:		070559						
Tool Model:		OPEN_GR						
Performed:		Wed Sep 19 15:58:00 2012						

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.3000	GAPI/cps