



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		CAPTIVA II	
Well		BUSTER #1-3	
Field		ZOOK	
County		PAWNEE	
State		KANSAS	
Location:		API # : 15-145-21699-0000 2416' FSL & 1062' FWL NE - NE - NW - SW SEC 3 TWP 22S RGE 16W	
Permanent Datum		GROUND LEVEL	
Log Measured From		KELLY BUSHING 10' A.G.L.	
Drilling Measured From		KELLY BUSHING	
Elevation		1989	
Other Services		CDL/CNL MEL/SONIC	
Date	12/20/12		
Run Number	ONE		
Depth Driller	3970		
Depth Logger	3966		
Bottom Logged Interval	3964		
Top Log Interval	00		
Casing Driller	8 5/8" @ 1023'		
Casing Logger	1018		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4/45		
pH / Fluid Loss	9.5/7.2		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	.900 @ 70F		
Rinf @ Meas. Temp	.675 @ 70F		
Rinc @ Meas. Temp	1.08 @ 70F		
Source of Rinf / Rinc	MEASUREMENT		
Rin @ BHT	.543 @ 116F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	9:15 P.M.		
Maximum Recorded Temperature	116F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEITH REAVIS		

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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, KANSAS (785) 628-6395
 DIRECTIONS
 LARNED, KS., 1 1/2E. ON HWY K-19, N. INTO (ACROSS FROM FEEDLOT)



NABORS
 COMPLETION
 & PRODUCTION

MAIN SECTION

Database File:

010036pe.db

Dataset Pathname:

pass3.8

Presentation Format:

dil2

Dataset Creation:

Thu Dec 20 22:45:25 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

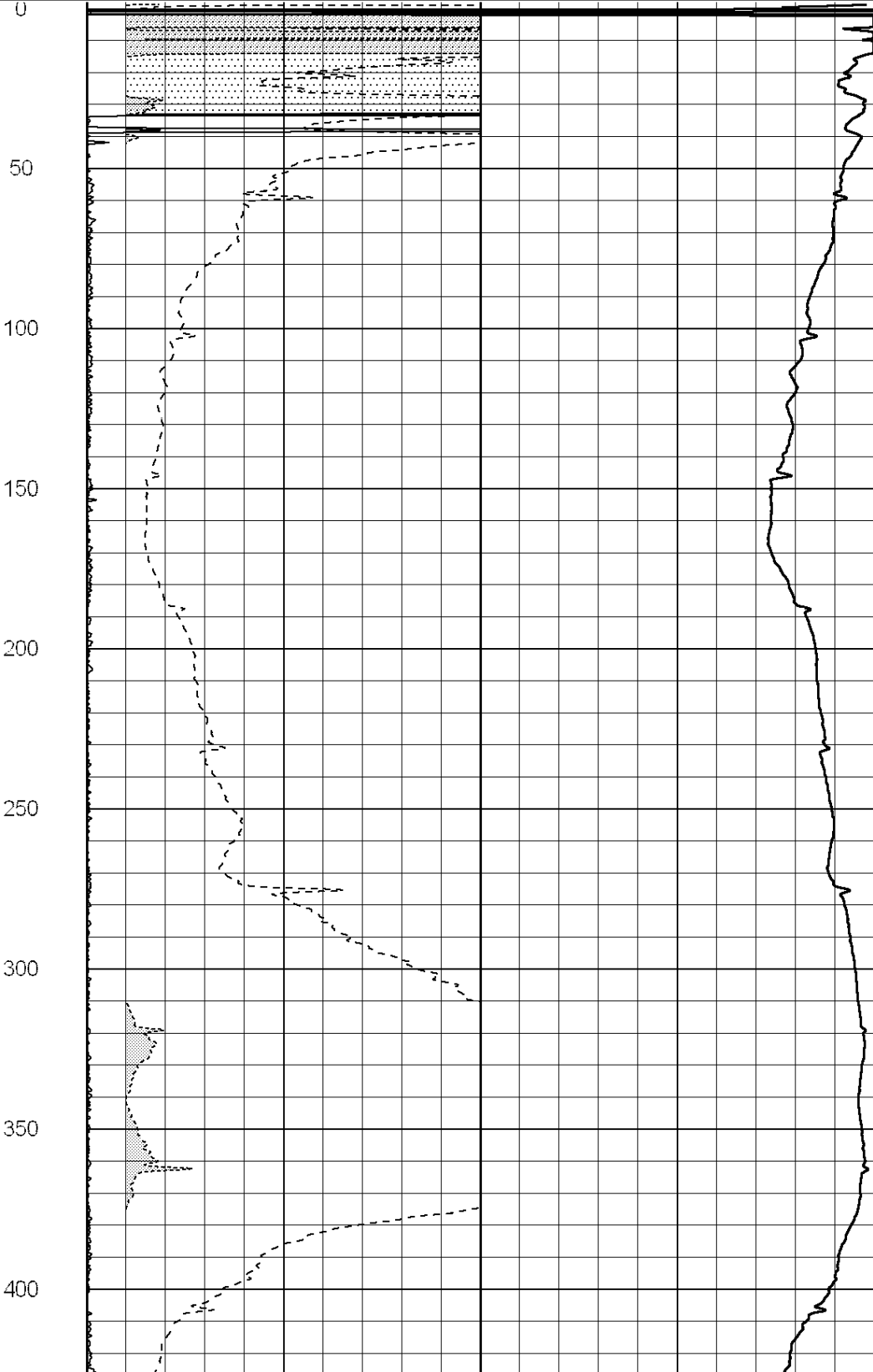
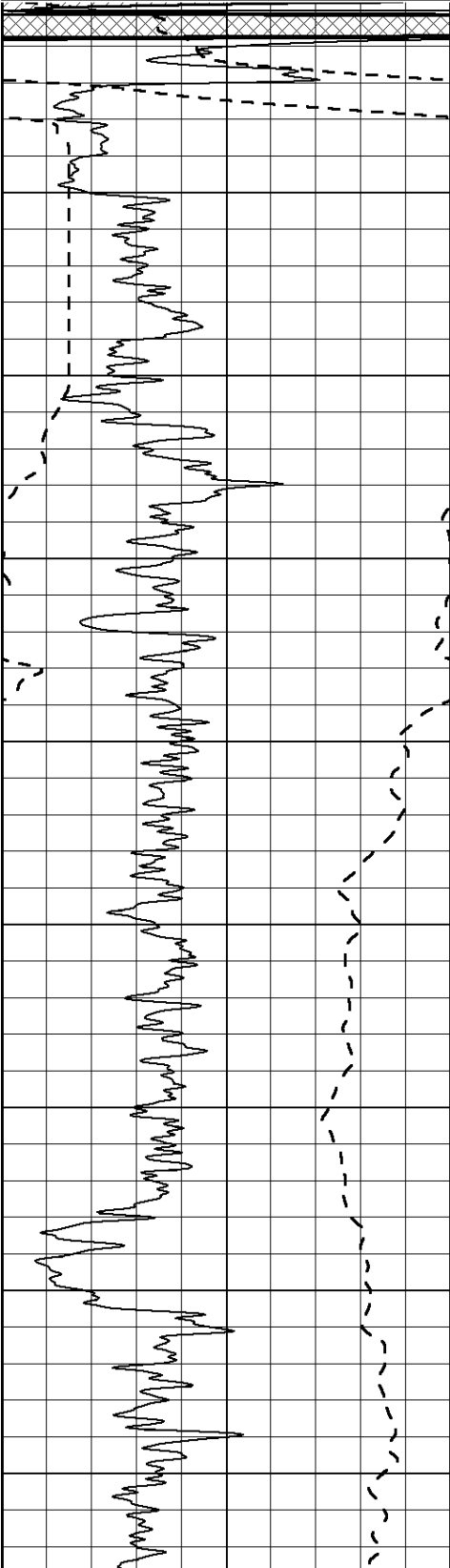
RILD X10 (Ohm-m)

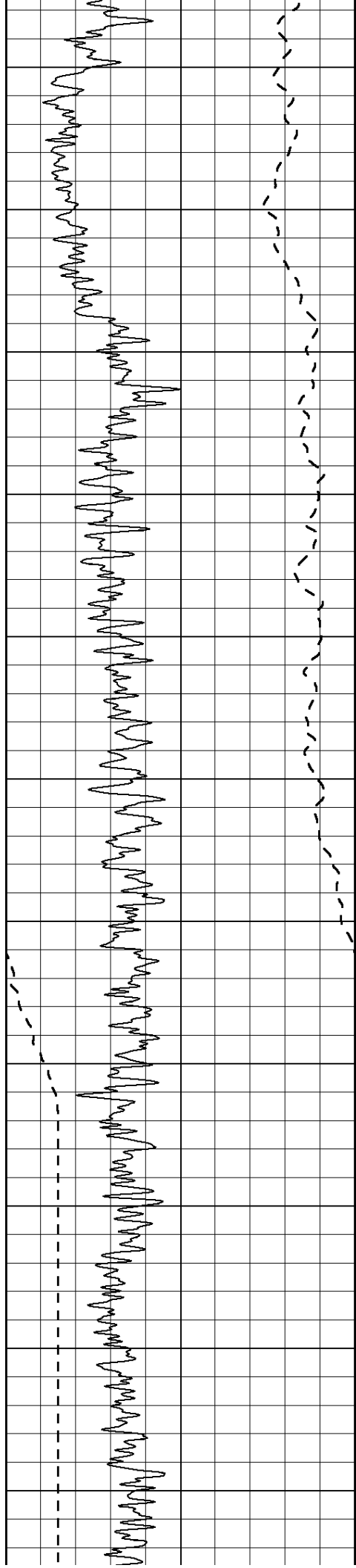
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50

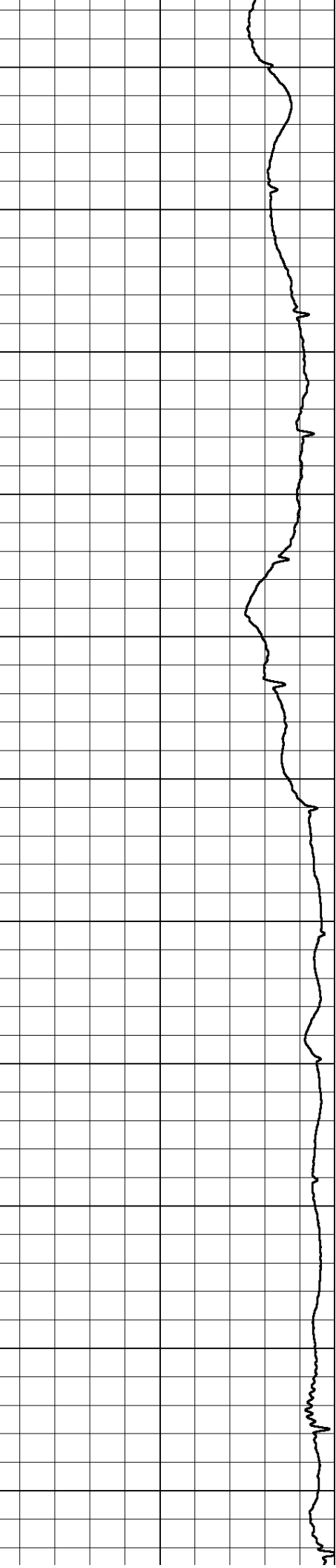
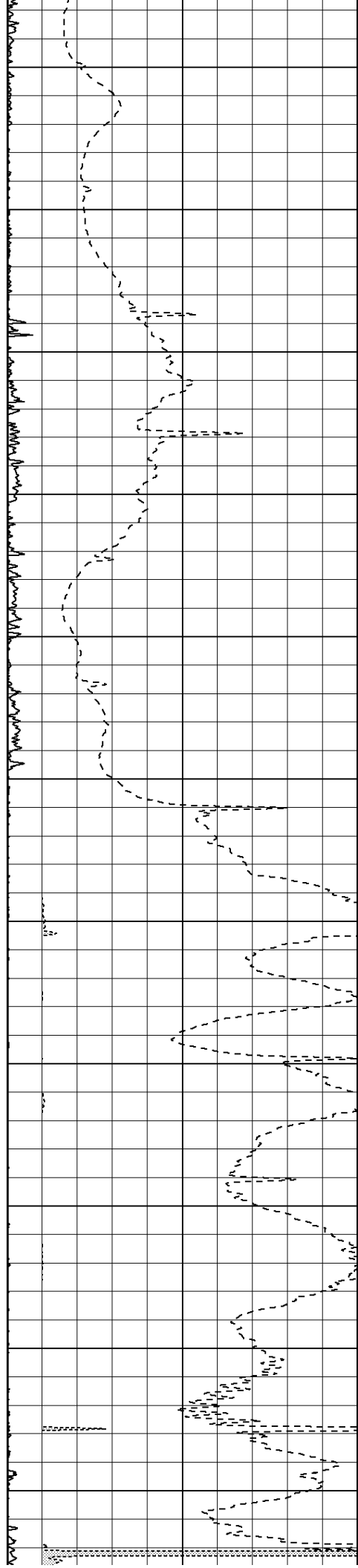
RLL3 X10 (Ohm-m)

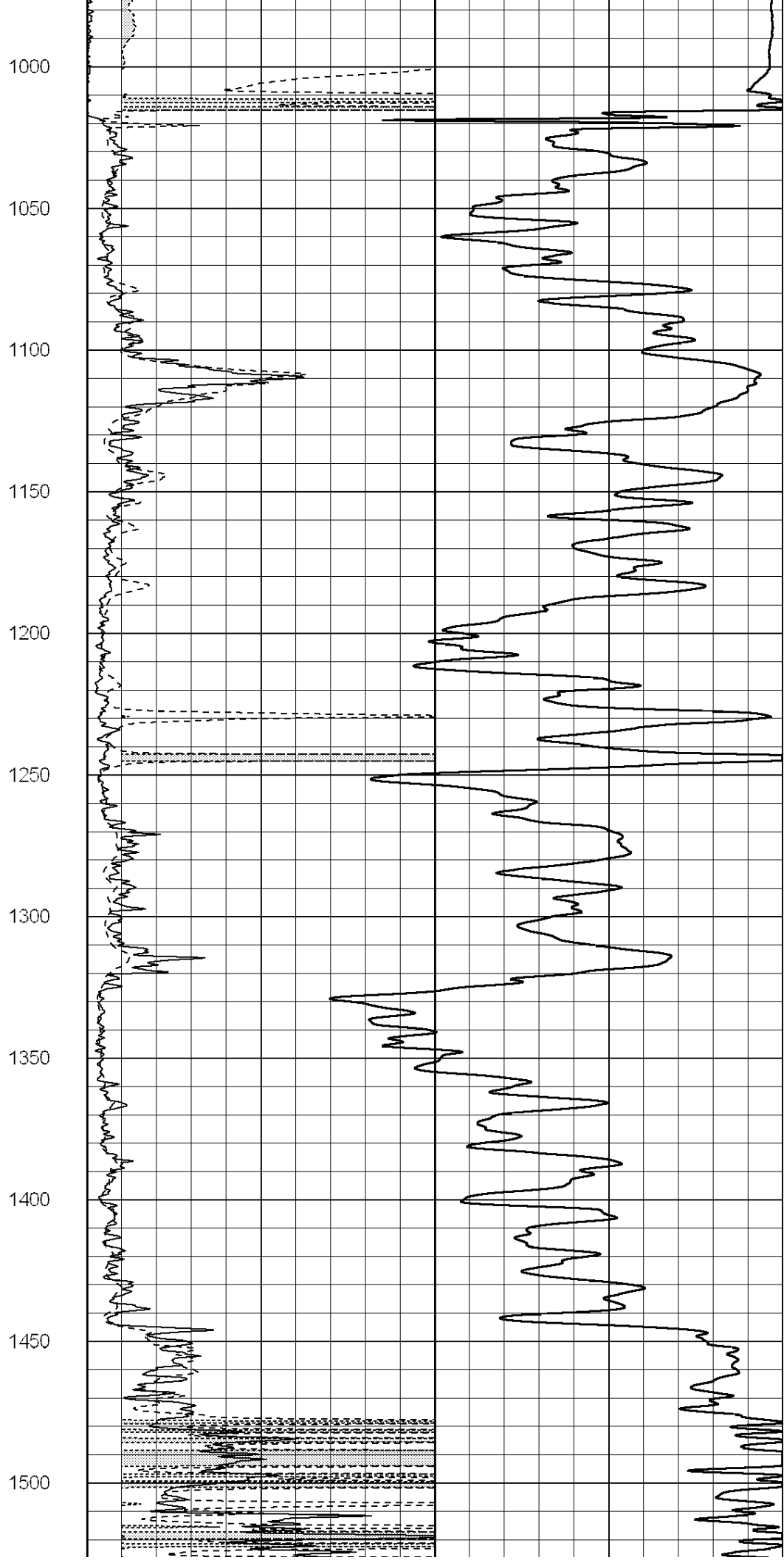
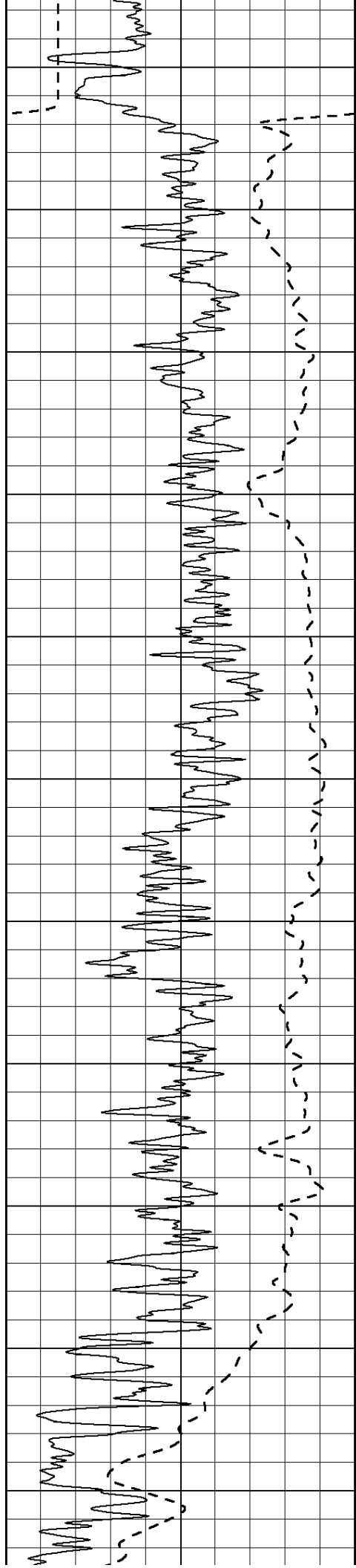
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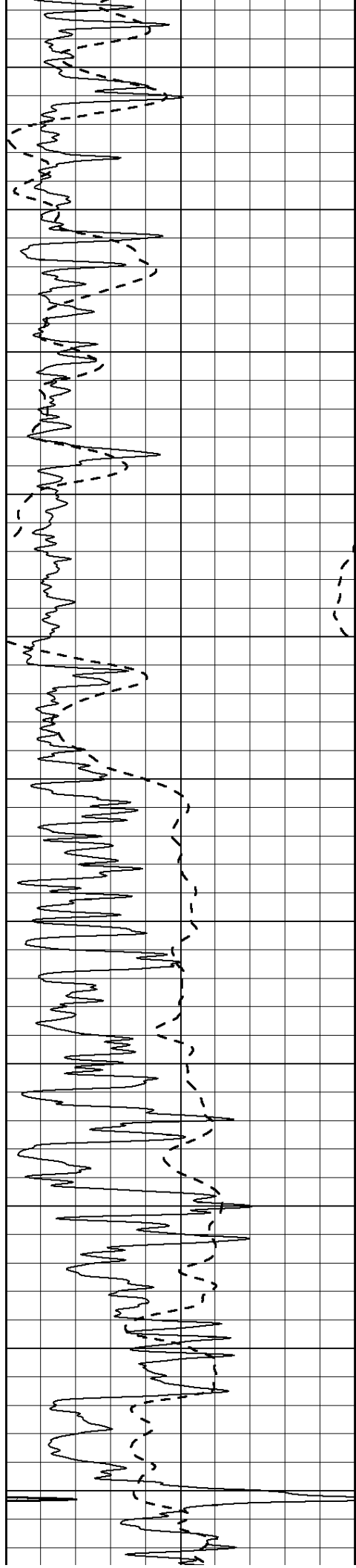




450
500
550
600
650
700
750
800
850
900
950







1550

1600

1650

1700

1750

1800

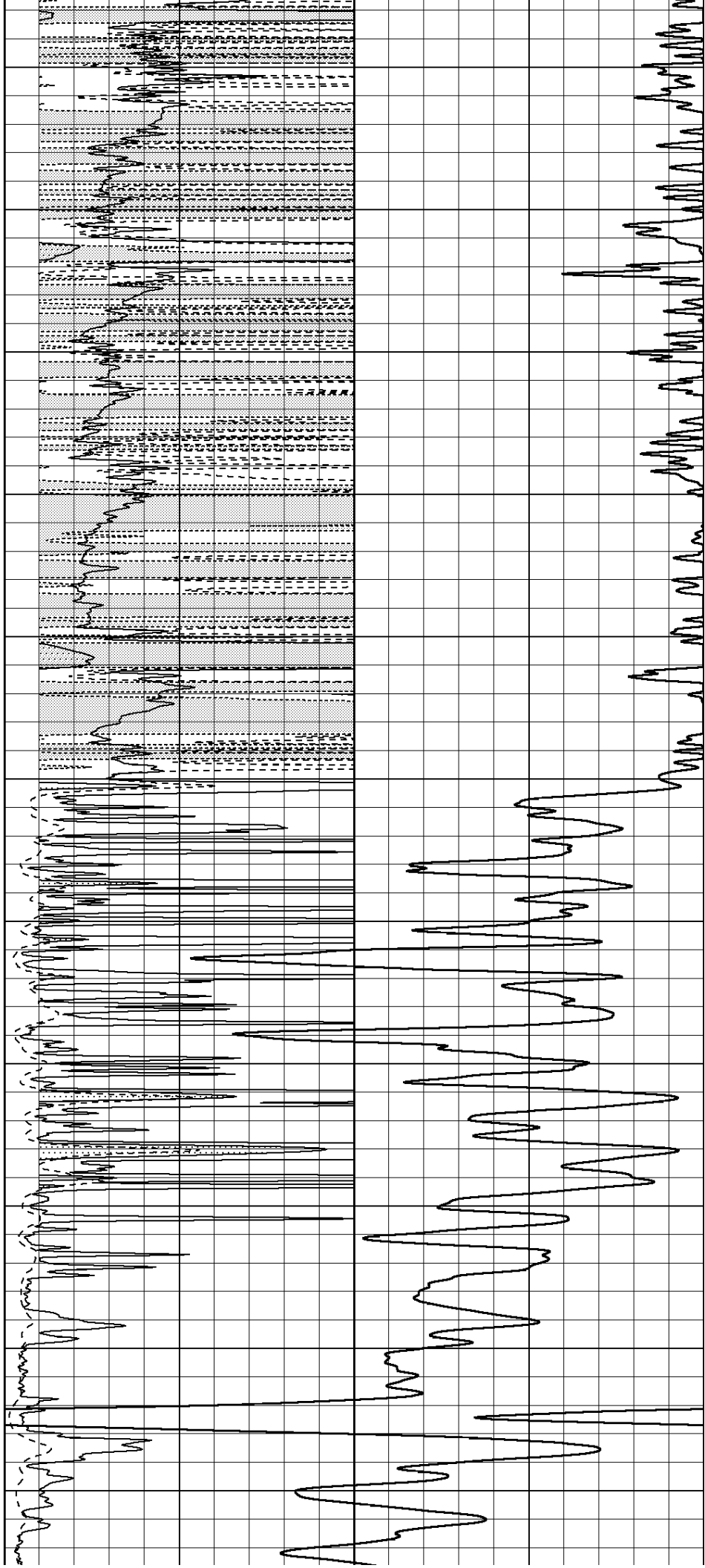
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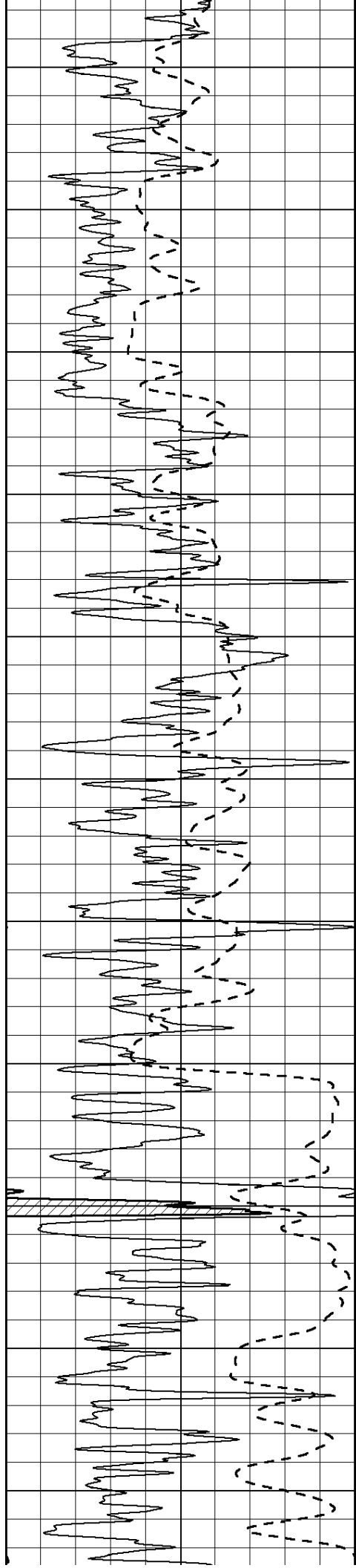
1900

1950

2000

2050





2100

2150

2200

2250

2300

2350

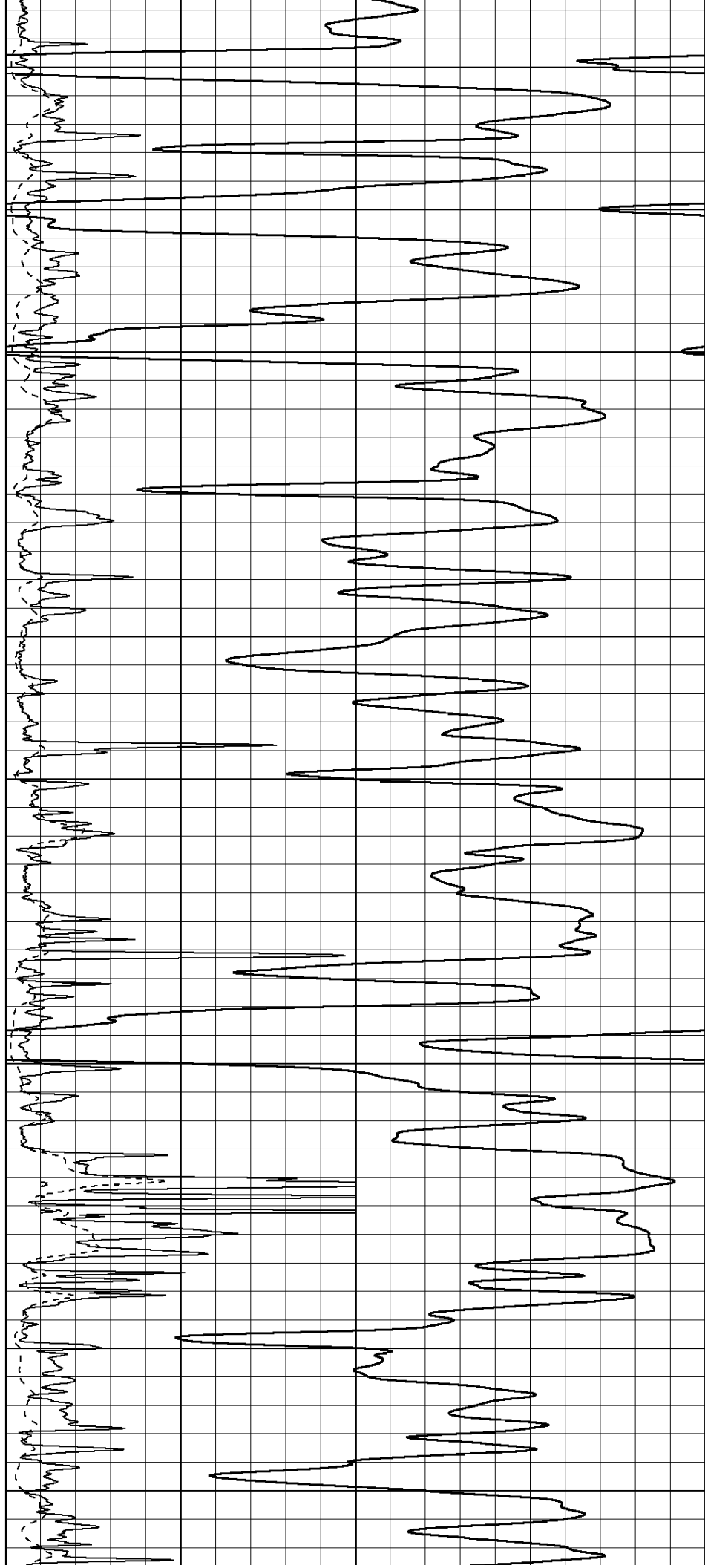
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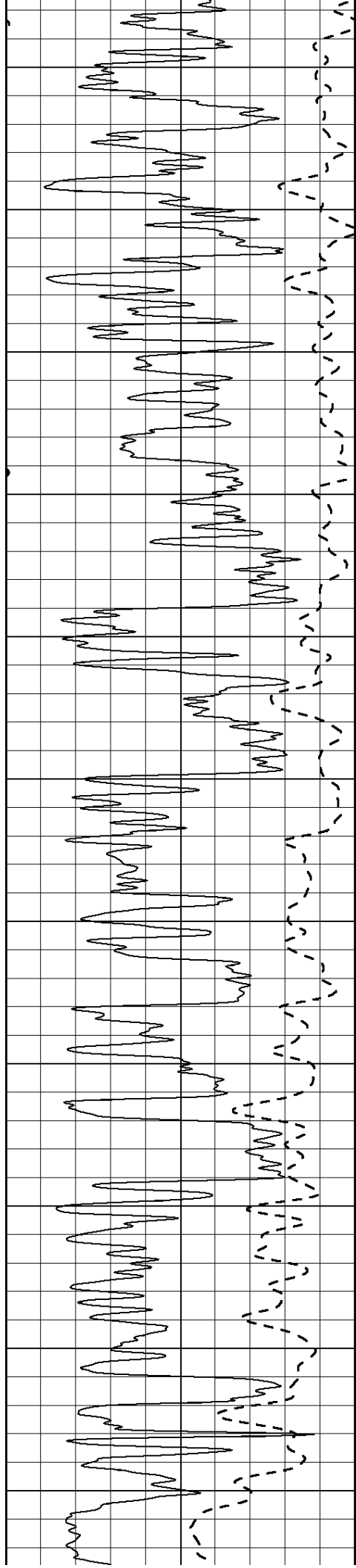
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2500

2550

2600





2650

2700

2750

2800

2850

2900

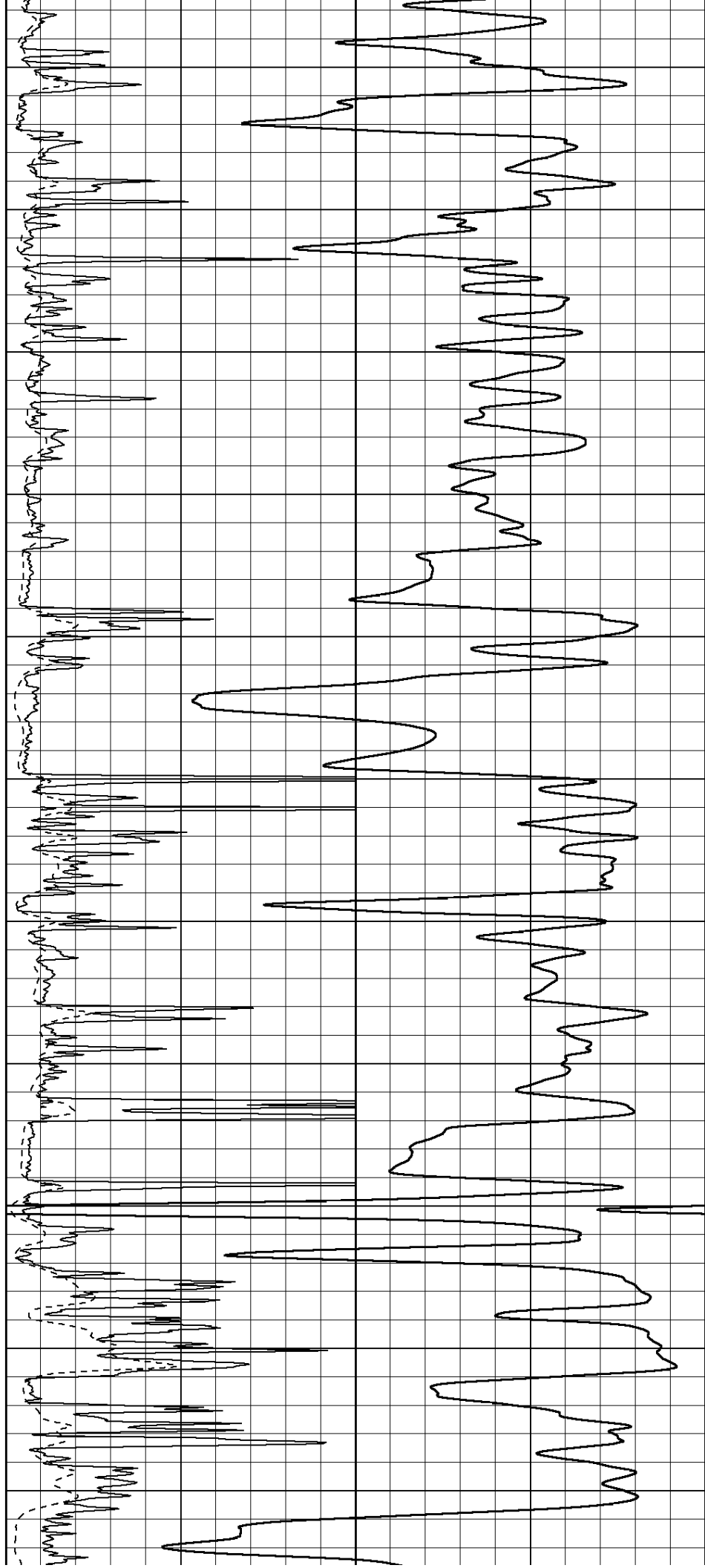
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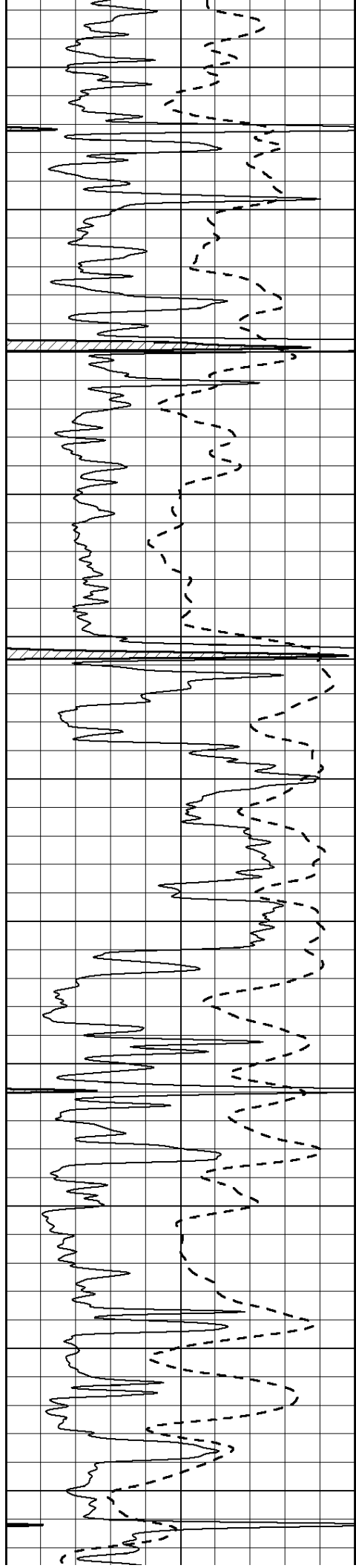
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3050

3100

3150





3200

3250

3300

3350

3400

3450

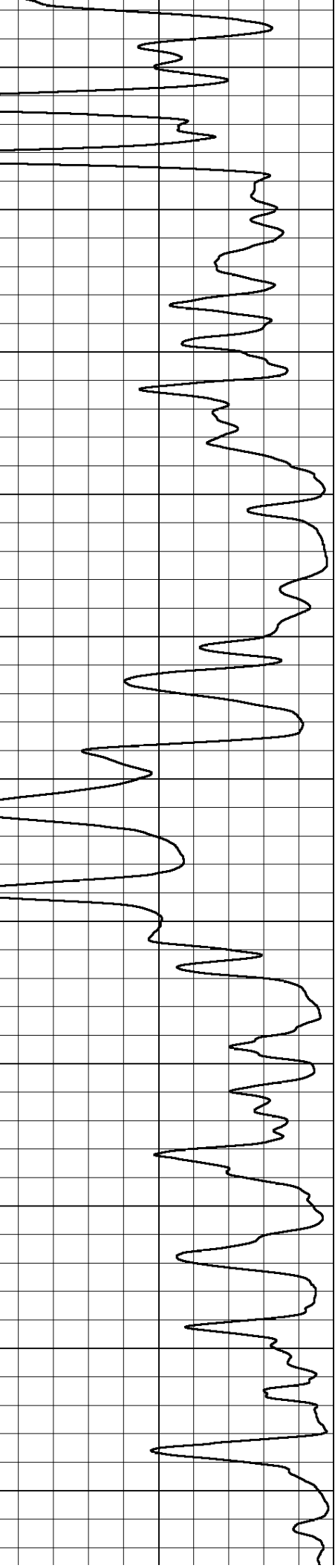
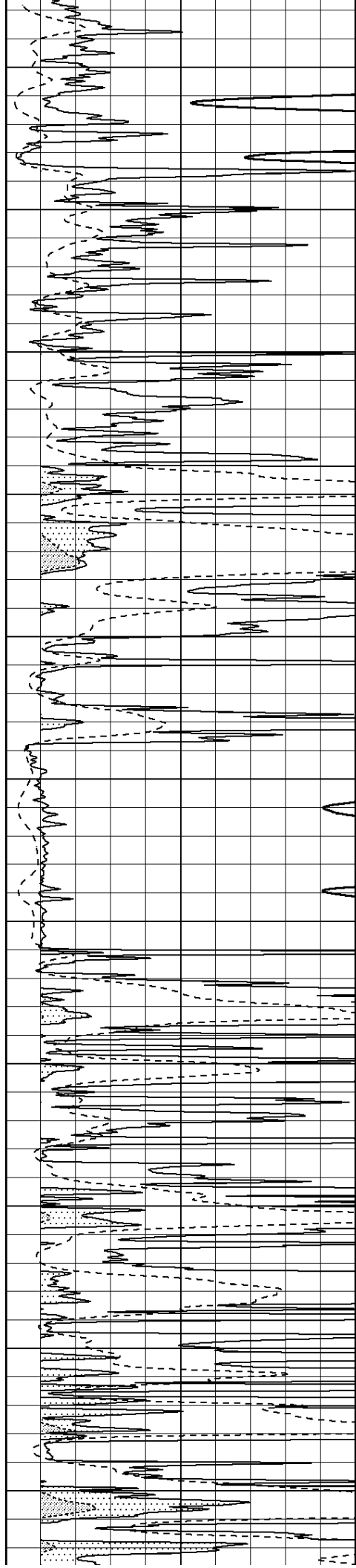
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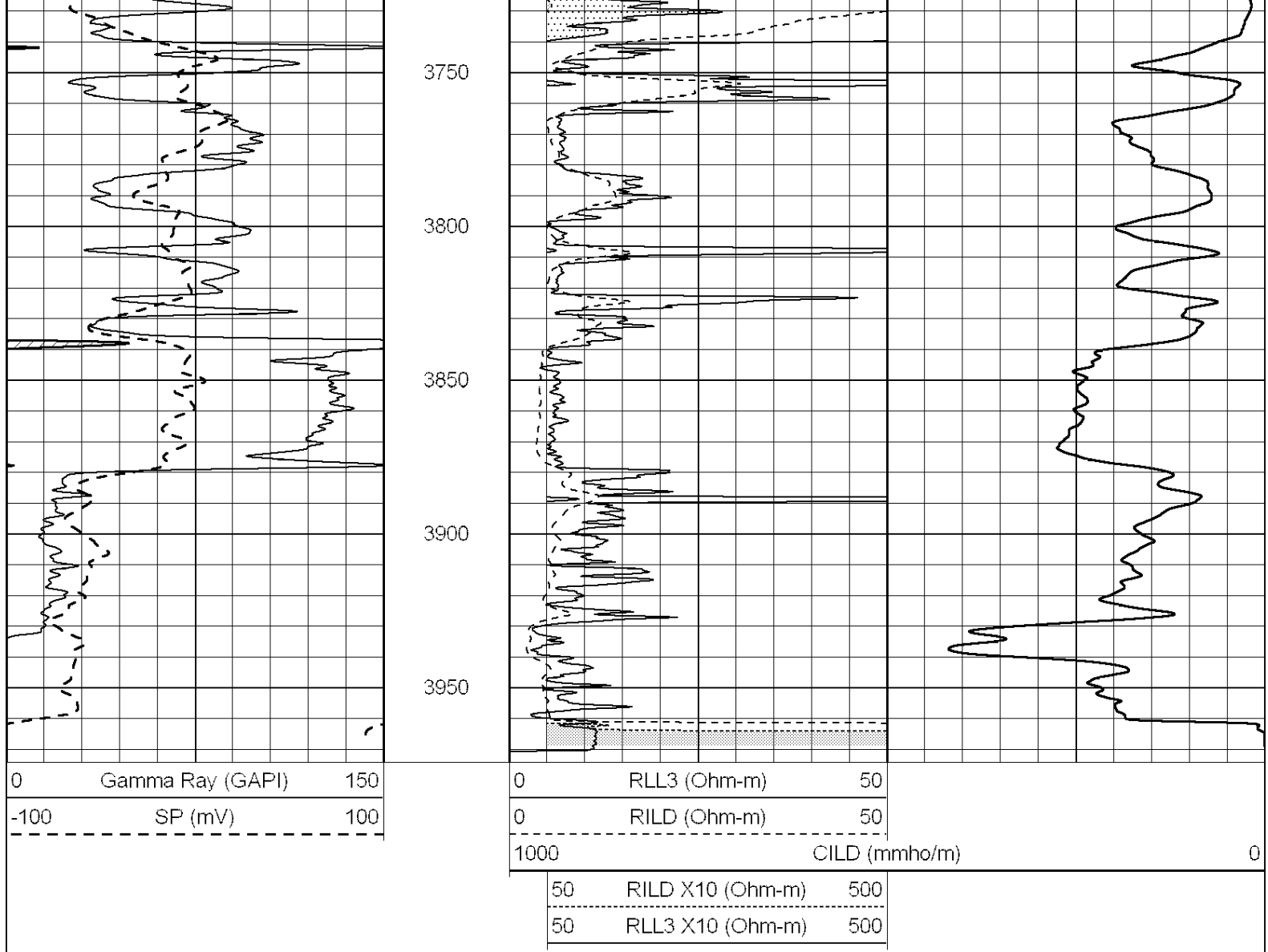
3550

3600

3650

3700





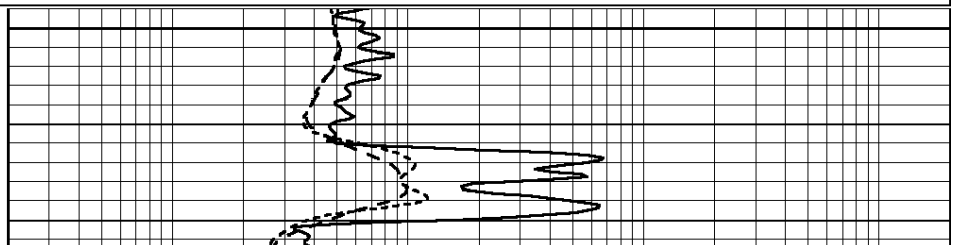
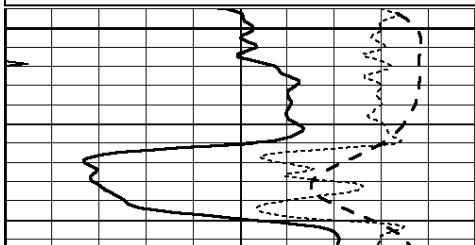
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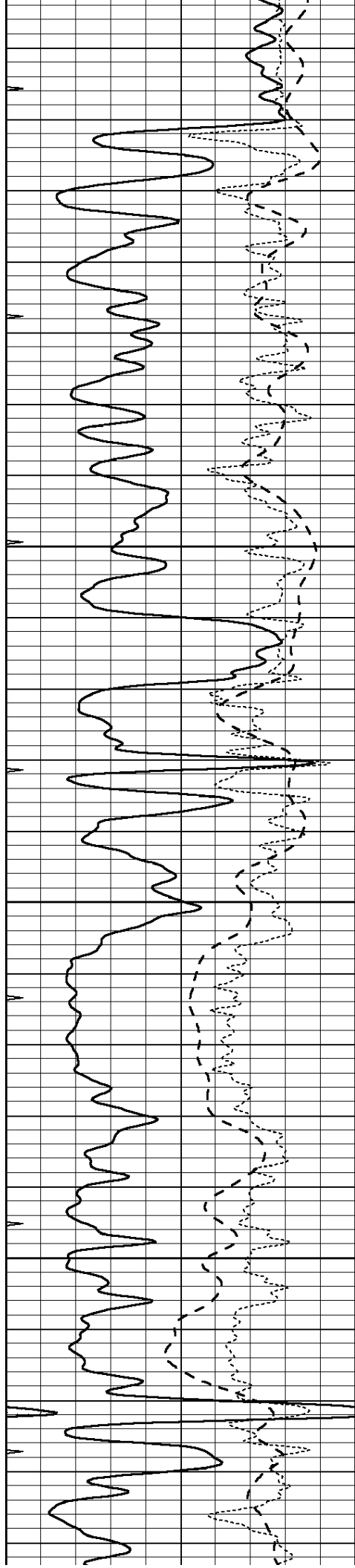
MAIN SECTION

Database File: 010036pe.db
Dataset Pathname: pass3.8
Presentation Format: dil
Dataset Creation: Thu Dec 20 22:45:25 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



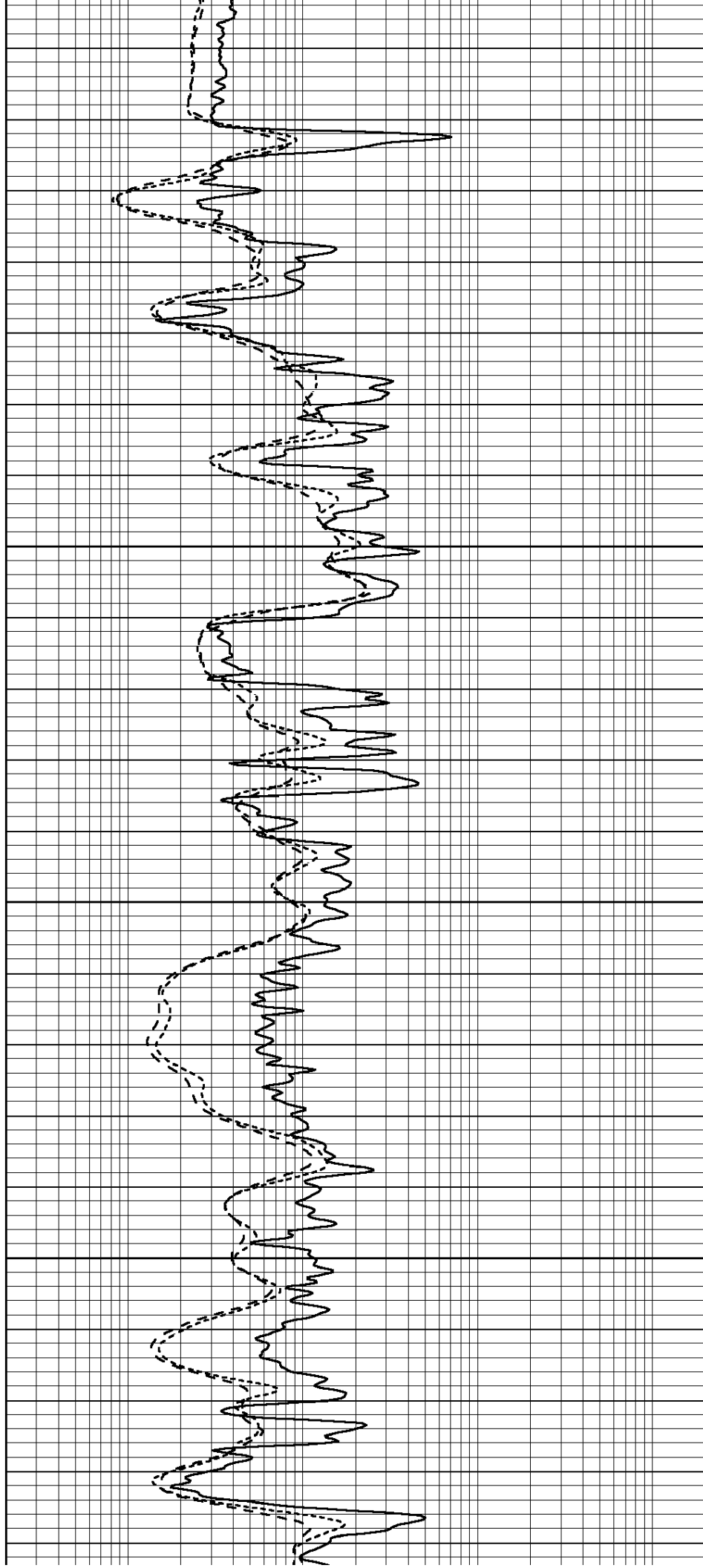


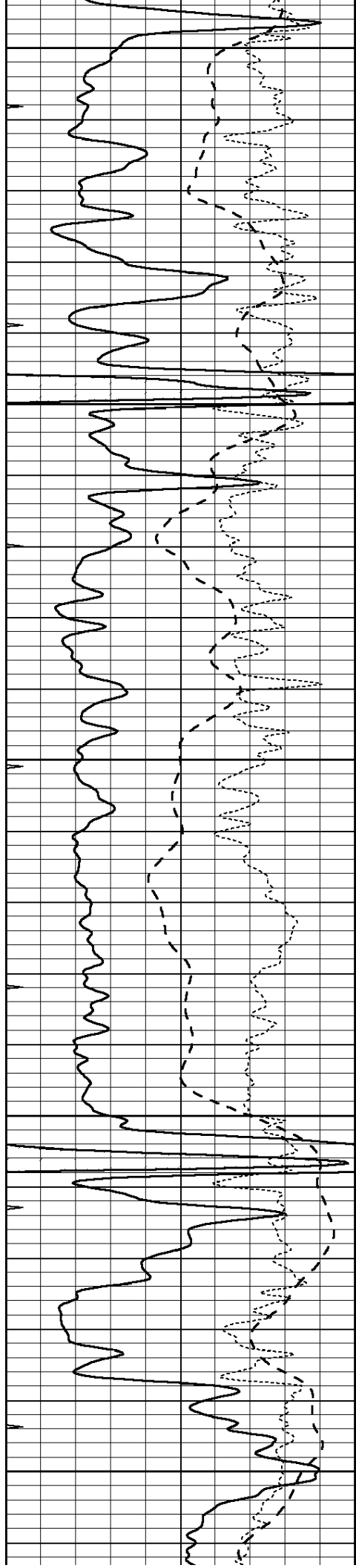
3050

3100

3150

3200





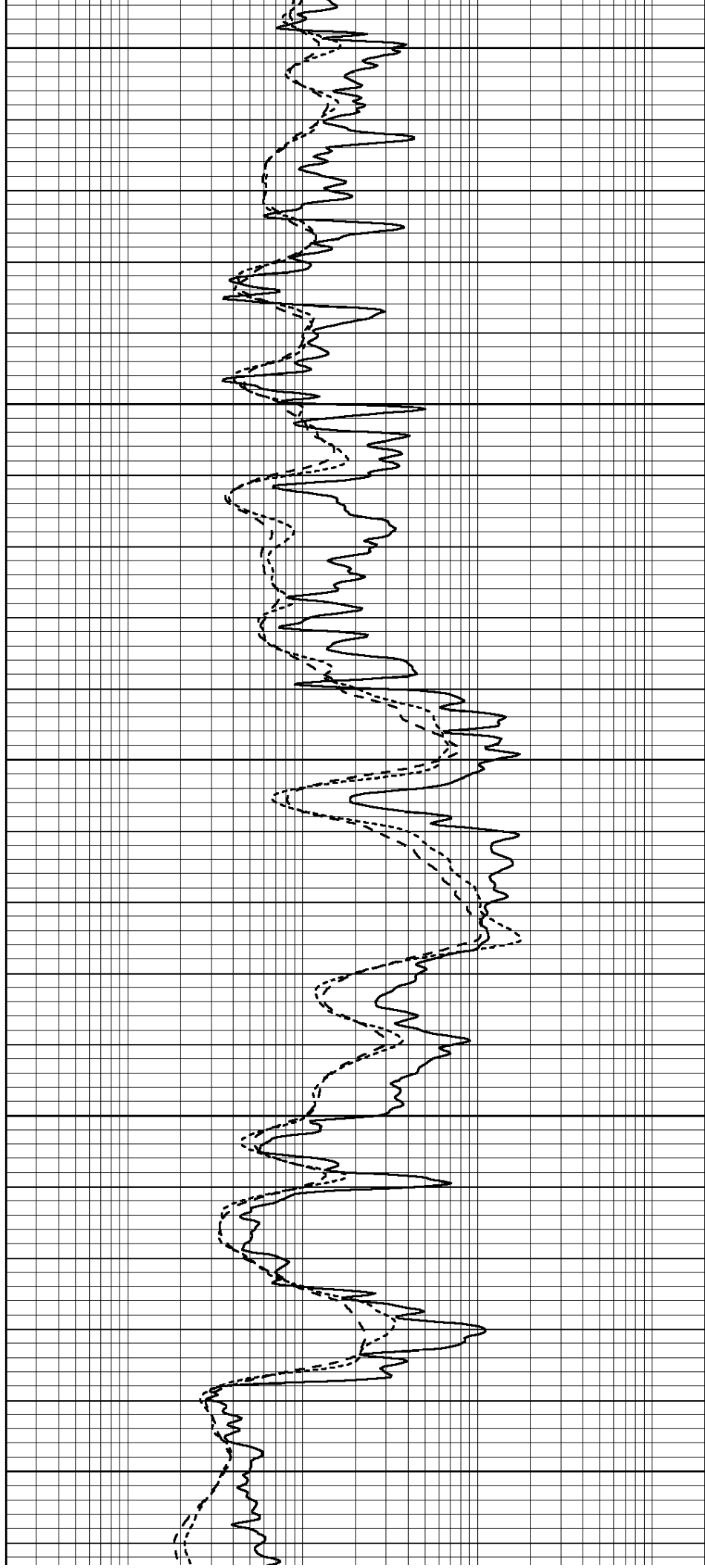
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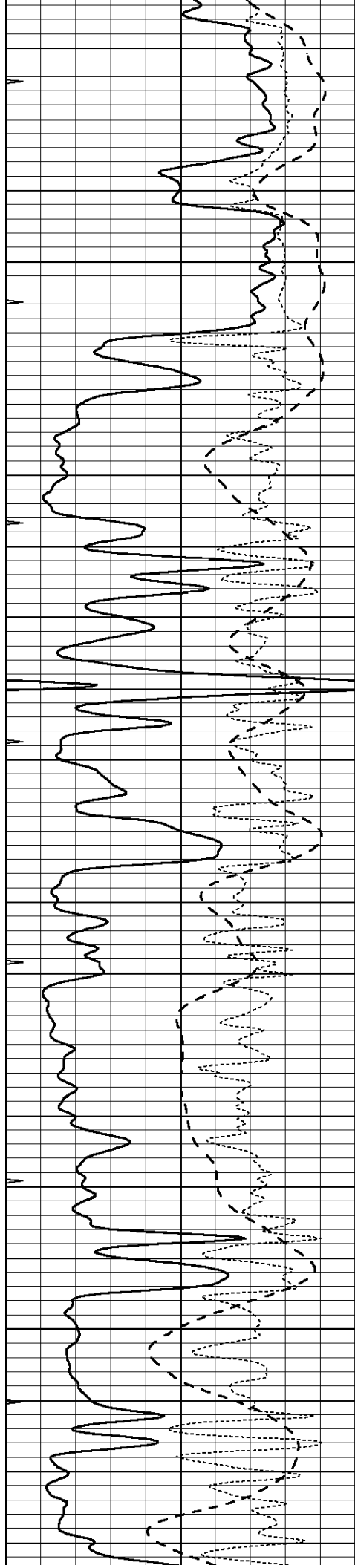
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3350

3400

3450



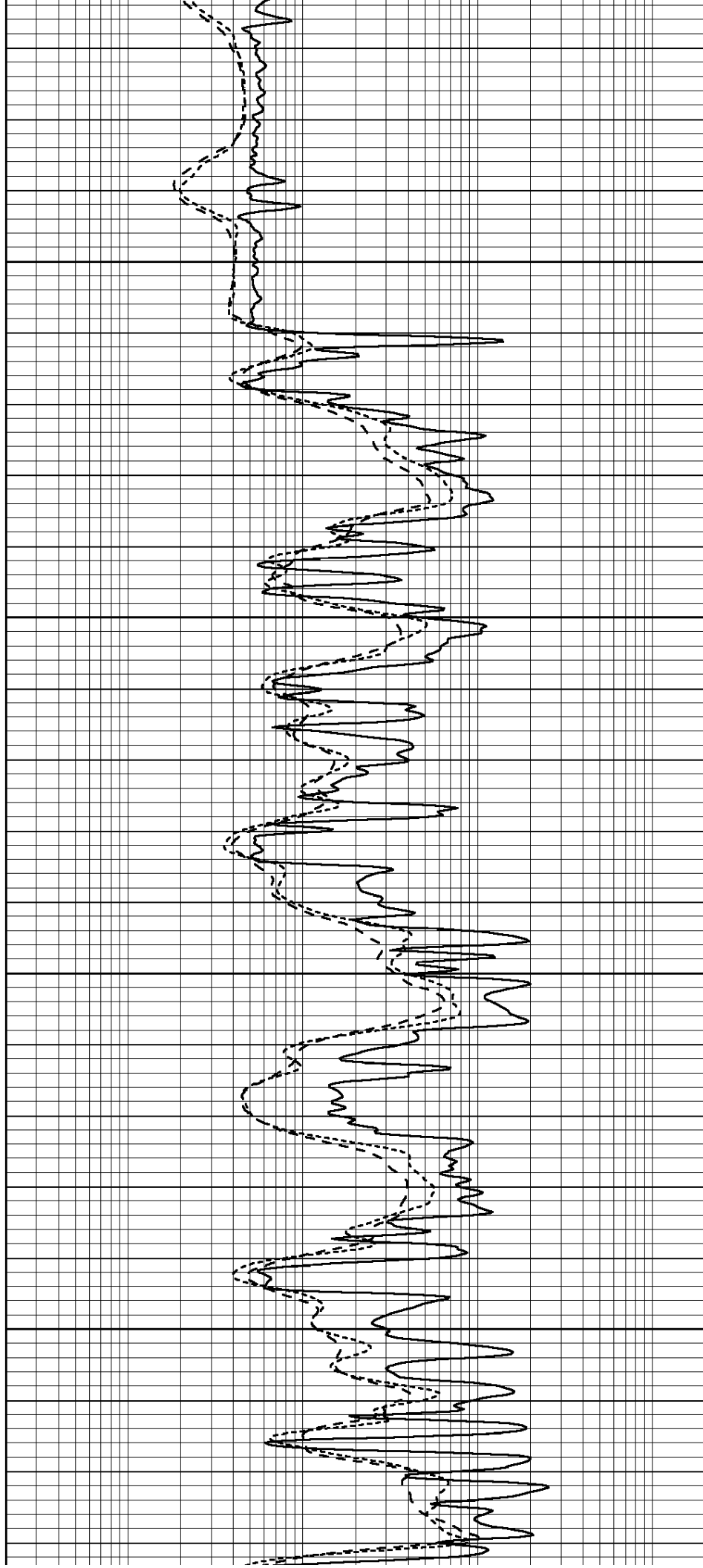


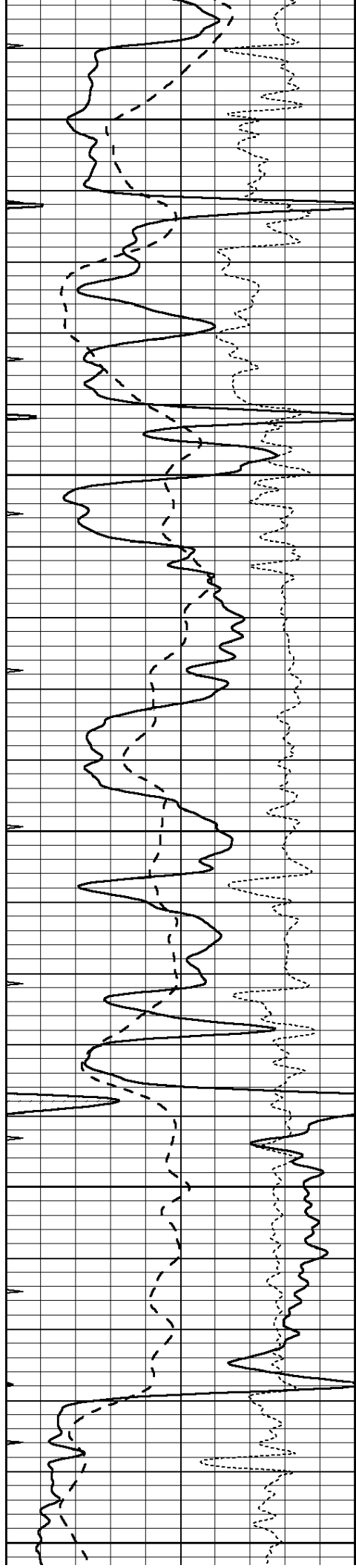
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3550

3600

3650





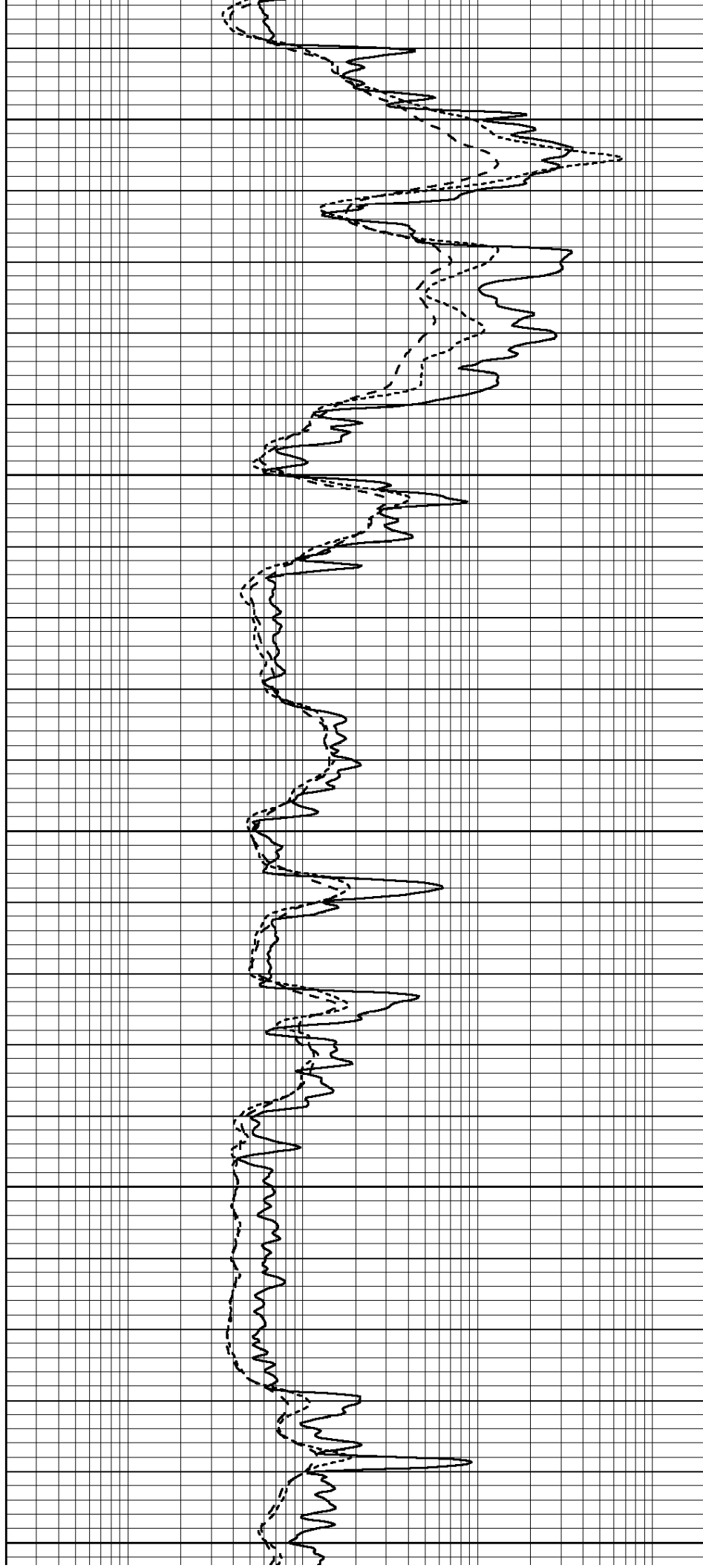
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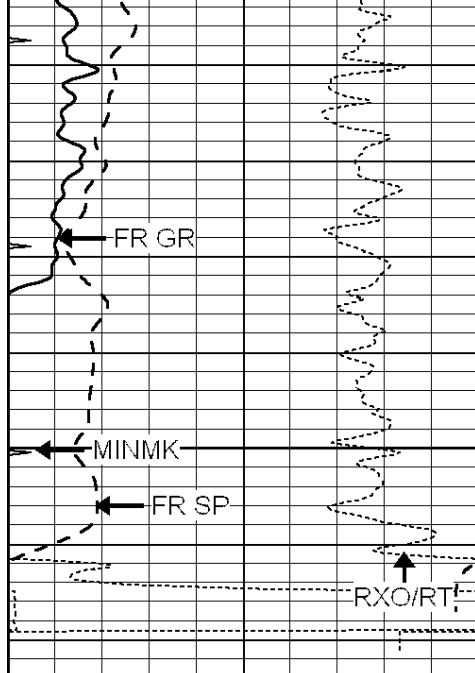
3750

3800

3850

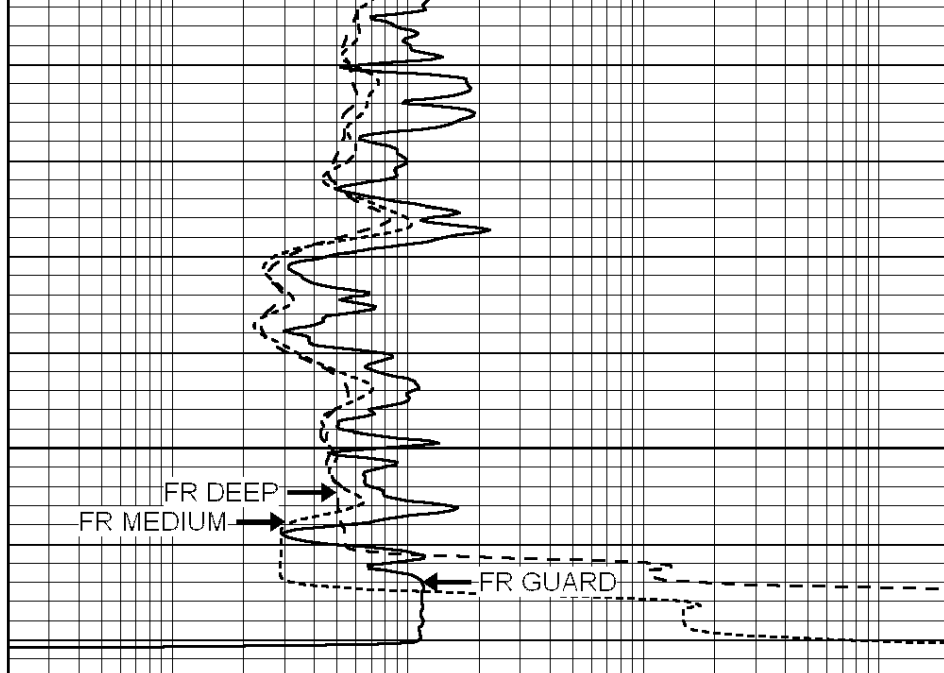
3900





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

3950
LTD 3966



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

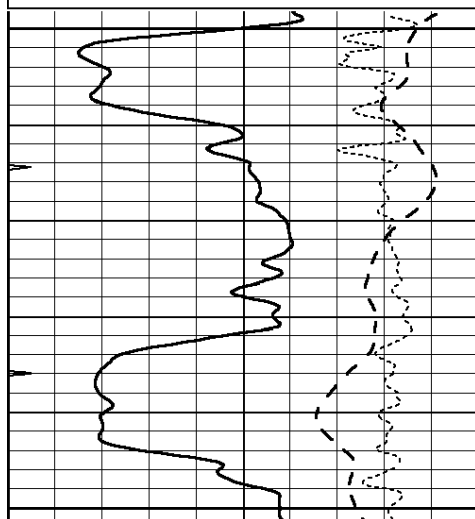


REPEAT SECTION

Database File: 010036pe.db
 Dataset Pathname: pass2.9
 Presentation Format: dil
 Dataset Creation: Thu Dec 20 22:55:30 2012 by Calc SOC 120430
 Charted by: Depth in Feet scaled 1:240

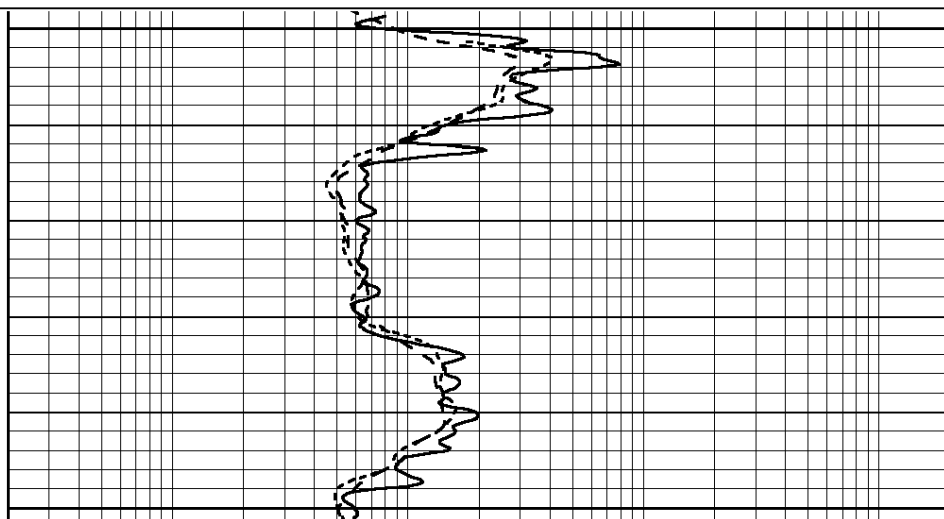
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

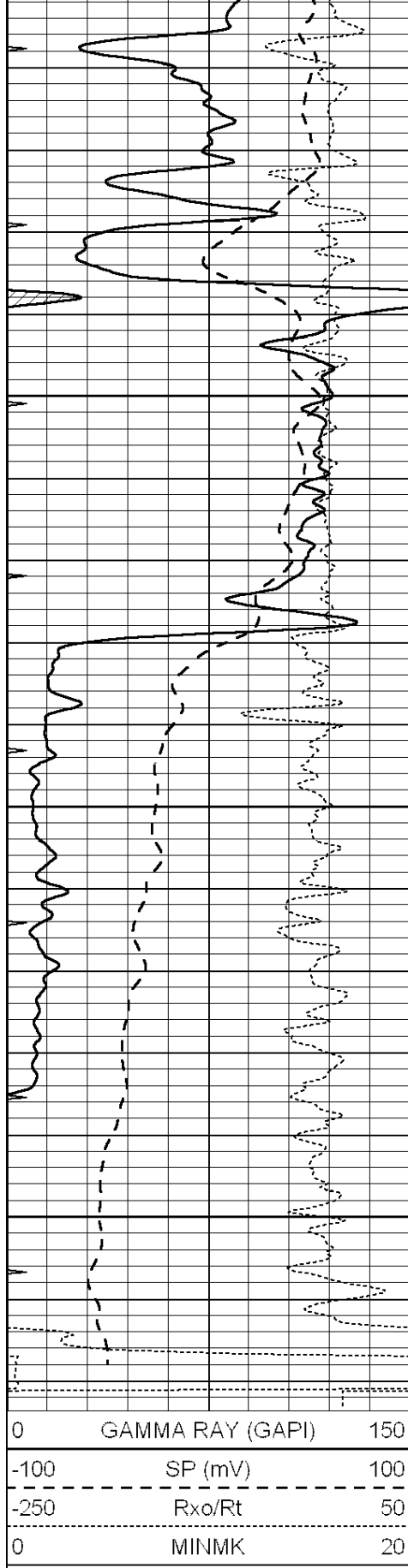
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3750

3800

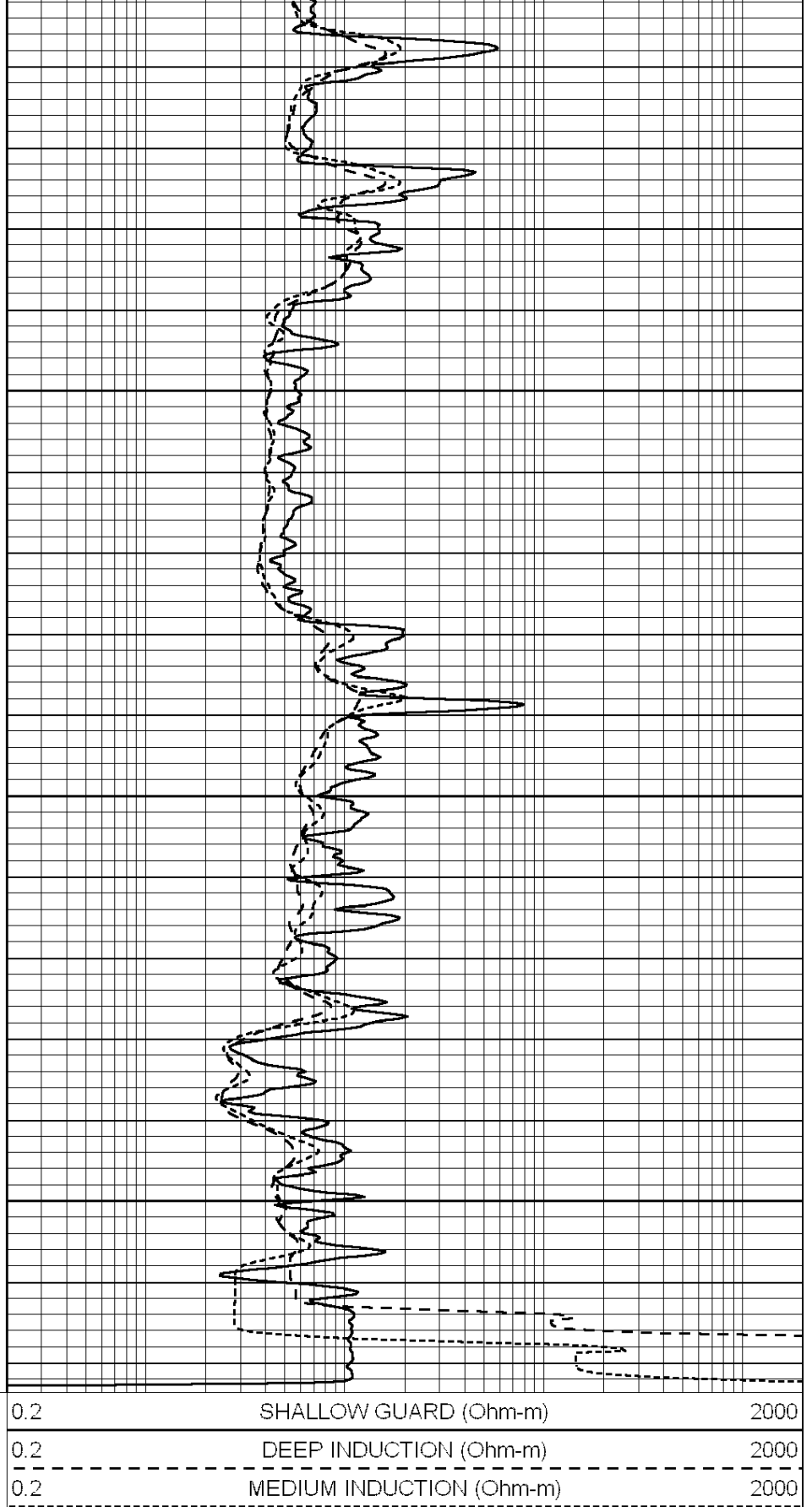




3850

3900

3950



Calibration Report

Database File: 010036pe.db
Dataset Pathname: pass3.8
Dataset Creation: Thu Dec 20 22:45:25 2012

Dual Induction Calibration Report

Serial-Model: DIL4-GEAR
 Surface Cal Performed: Thu Dec 20 21:29:45 2012
 Downhole Cal Performed: Tue Sep 25 17:01:29 2001
 After Survey Verification Performed: Sat Jun 11 16:07:12 2005

Surface Calibration

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.008	0.666	V	0.000	400.000	mmho/m	570.000	-2.000
Medium	-0.003	0.769	V	0.000	462.500	mmho/m	560.000	-1.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.013	0.651	V	0.000	400.000	mmho/m	627.541	-8.365
Medium	0.020	0.754	V	0.000	462.500	mmho/m	630.311	-12.549

Downhole Calibration

Readings				References			Results	
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Medium	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Shallow	2.525	0.026	V	500.000	2.000	Ohm-m	250.000	-4.000

After Survey Verification

Readings				Targets			Results	
Internal:	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Medium	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Shallow	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000

Litho Density Calibration Report
Serial: 003N Model: PRB

Master Calibration

Performed Tue Sep 08 14:14:44 2009

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2042.6	12312.8	4225.8	13758.4	cps
Window 2	1855.8	10134.7	3624.2	11113.1	cps
Window 3	1639.4	6760.2	2716.3	7260.3	cps
Window 4	466.4	469.2	466.1	476.5	cps
Long Space	0.0	8278.9	1768.4	9257.4	cps
Short Space	2.2	2377.3	1544.1	2574.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept	: -18.8

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

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:	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	