

**COMPLETION
& PRODUCTION
SERVICES CO.**

**DUAL
INDUCTION
LOG**

Company MULL DRILLING COMPANY, INC.
Well SANTEE #1-17
Field WILDCAT
County TREGO State KANSAS

Company MULL DRILLING COMPANY, INC.
Well SANTEE #1-17
Field WILDCAT
County TREGO
State KANSAS

Location: API #: 15-195-22822
776' FNL & 1118' FNL
SEC 17 TWP 15S RGE 23W
Permanent Datum GROUND LEVEL Elevation 2297
Log Measured From KELLY BUSHING 8' A.G.L.
Drilling Measured From KELLY BUSHING
Other Services
CDL/CNL/PE
SONIC/MEL
Elevation
K.B. 2305
D.F.
G.L. 2297

Date	11-16-12
Run Number	ONE
Depth Driller	4375
Depth Logger	4374
Bottom Logged Interval	4373
Top Log Interval	00
Casing Driller	233
Casing Logger	233
Bit Size	7.875
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.1 / 54
pH / Fluid Loss	9.0 / 10.0
Source of Sample	FLOWLINE
Rim @ Meas. Temp	0.60 @ 74F
Rmf @ Meas. Temp	0.45 @ 74F
Rmc @ Meas. Temp	0.72 @ 74F
Source of Rmf / Rmc	MEASURED
Rim @ BHT	.380 @ 118F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	10:00 P.M.
Maximum Recorded Temperature	118F
Equipment Number	860
Location	HAYS, KS.
Recorded By	RUPP
Witnessed By	KEVIN KESSLER

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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

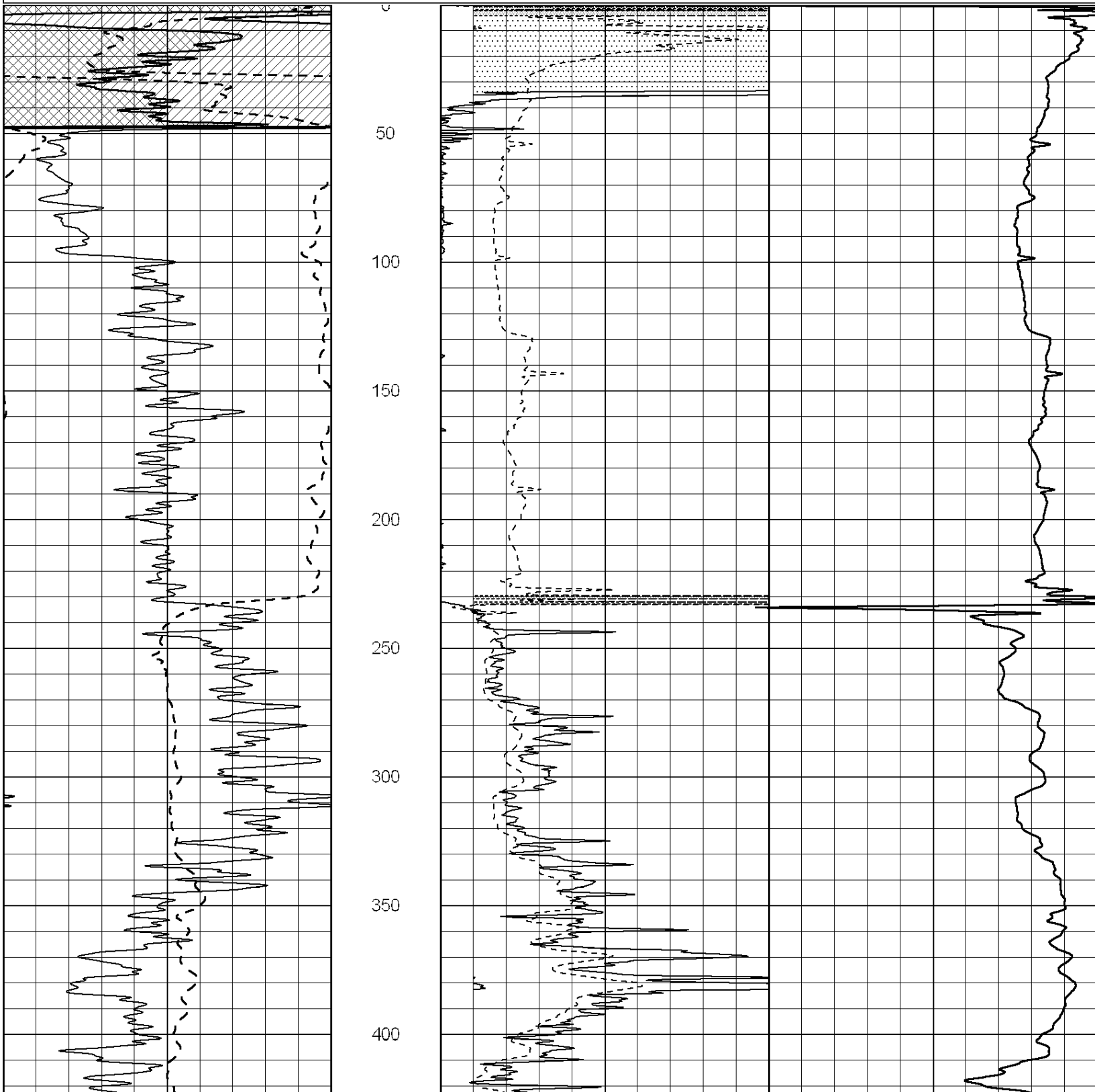
NABORS COMPLETION & PRODUCTION CO.
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: WAKEENEY, S TO RD. "AA", 1/2W, S INTO.

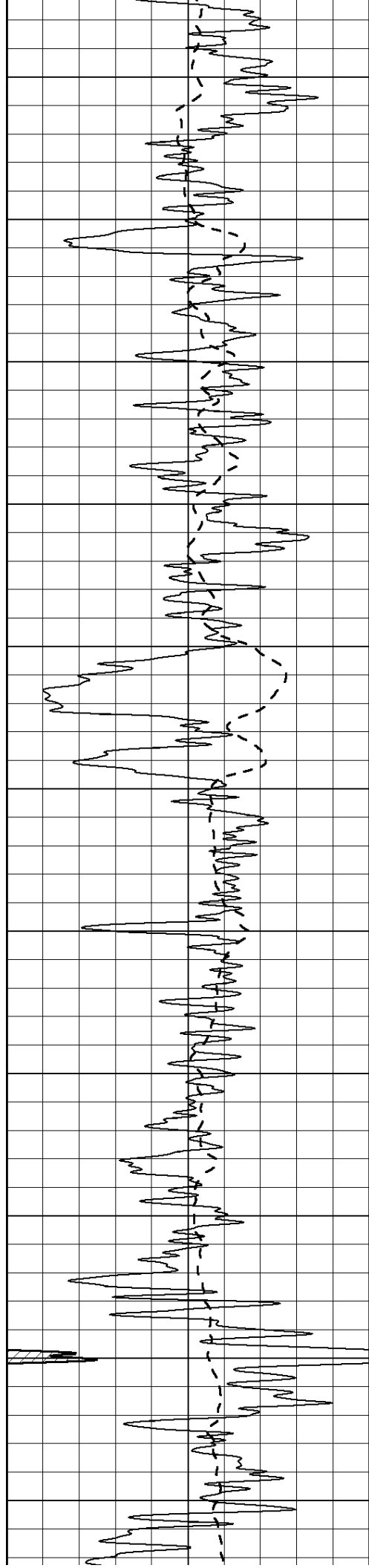


MAIN SECTION

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 Dataset Pathname: pass3.1
 Presentation Format: dil2
 Dataset Creation: Fri Nov 16 23:19:43 2012 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:600

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





450

500

550

600

650

700

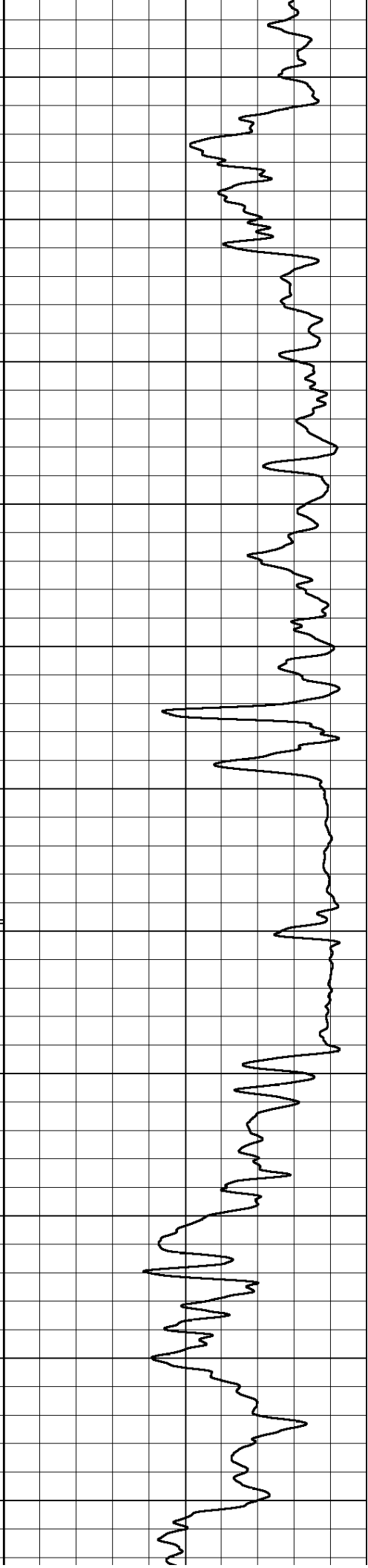
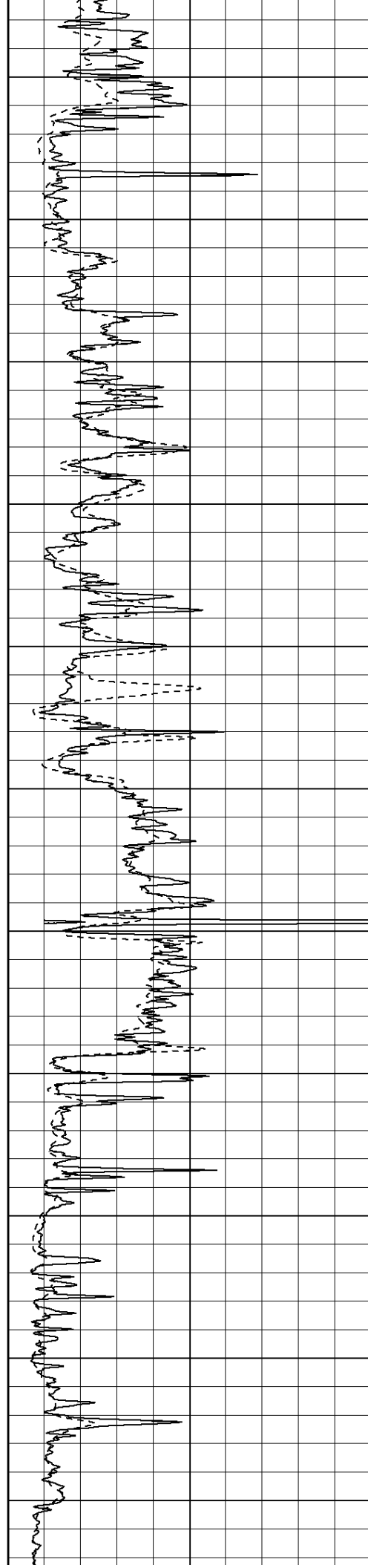
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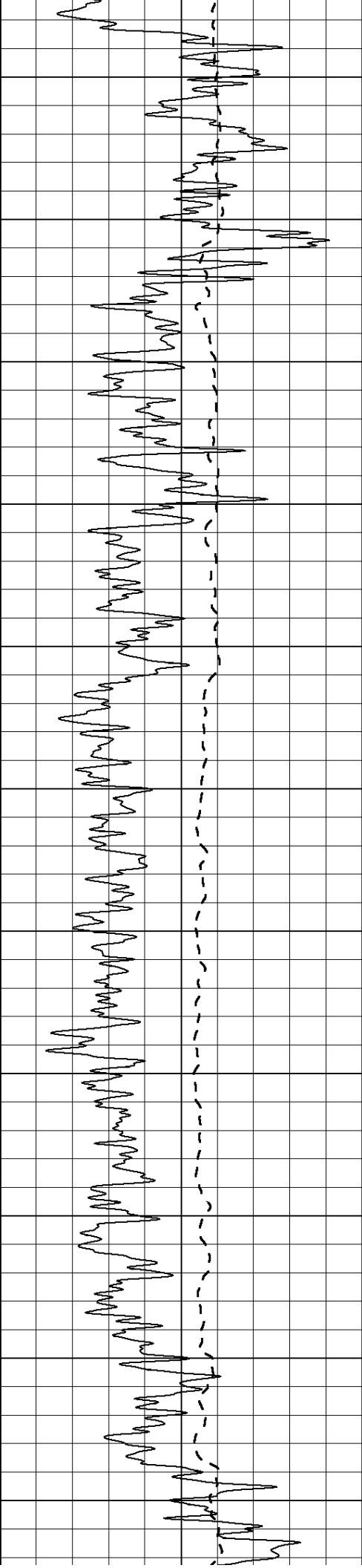
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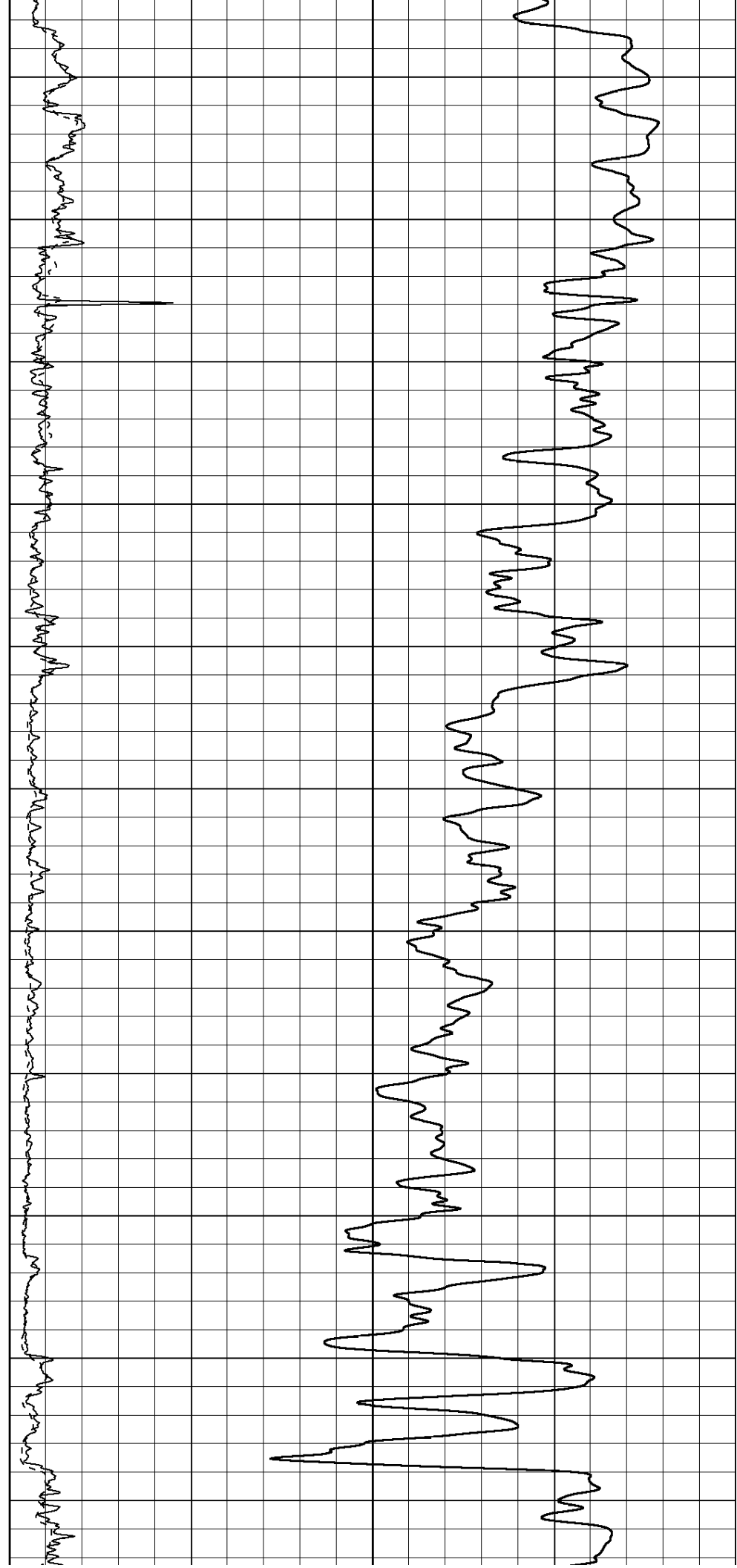
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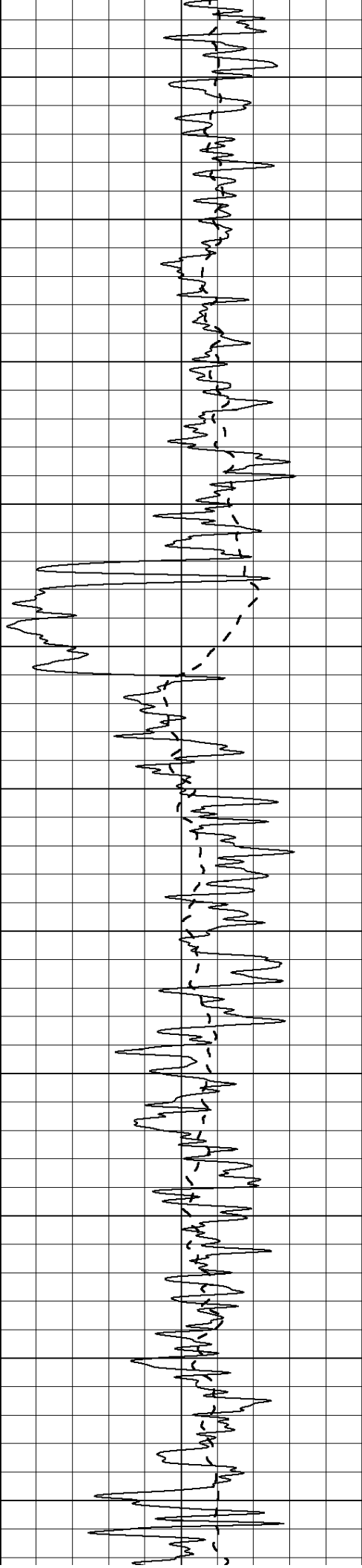
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1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500





1550

1600

1650

1700

1750

1800

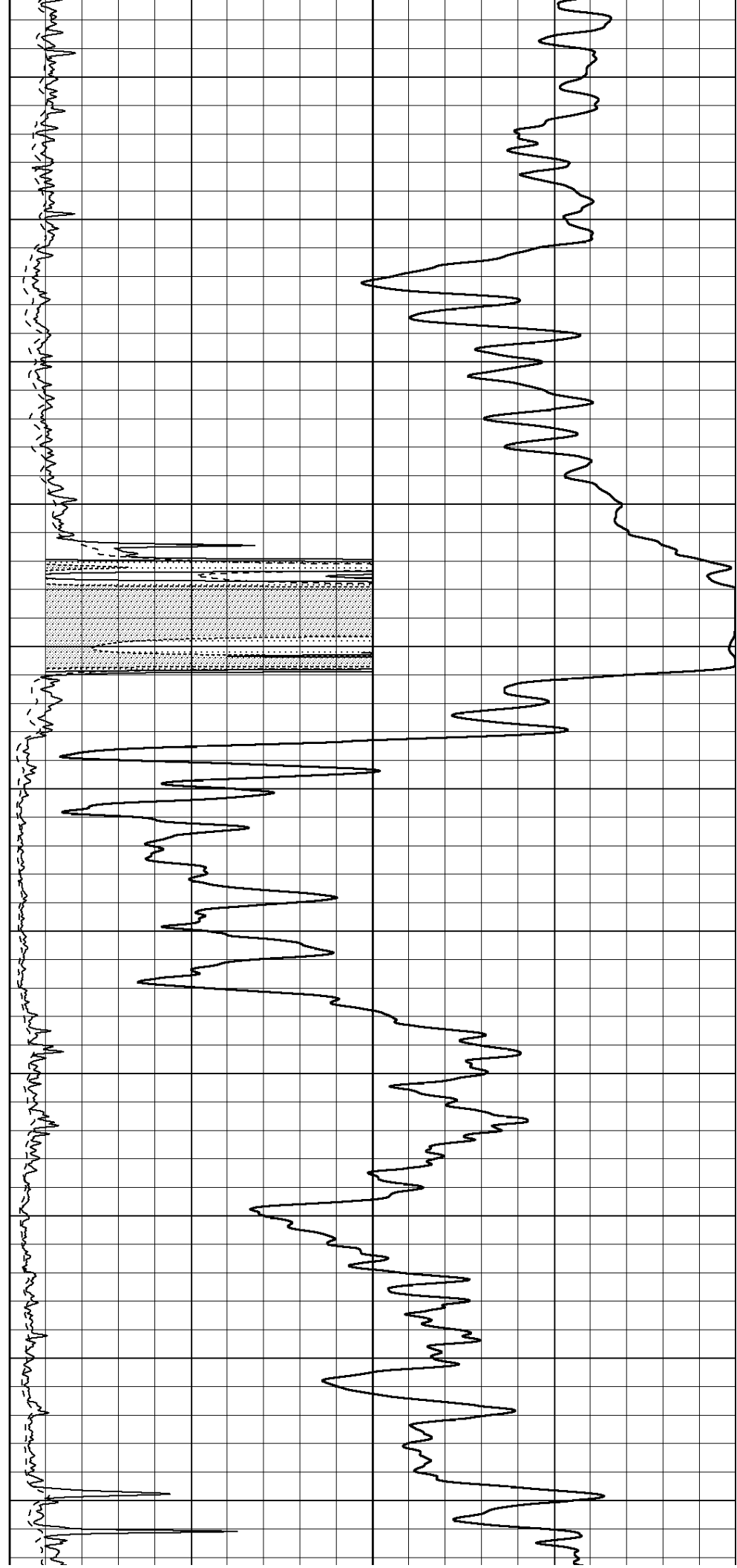
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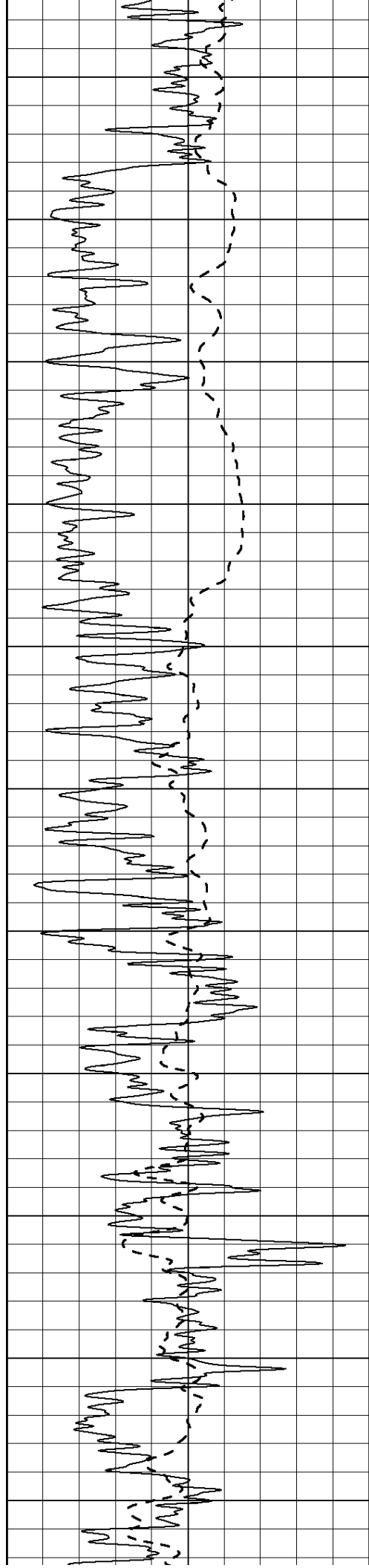
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1950

2000

2050





2100

2150

2200

2250

2300

2350

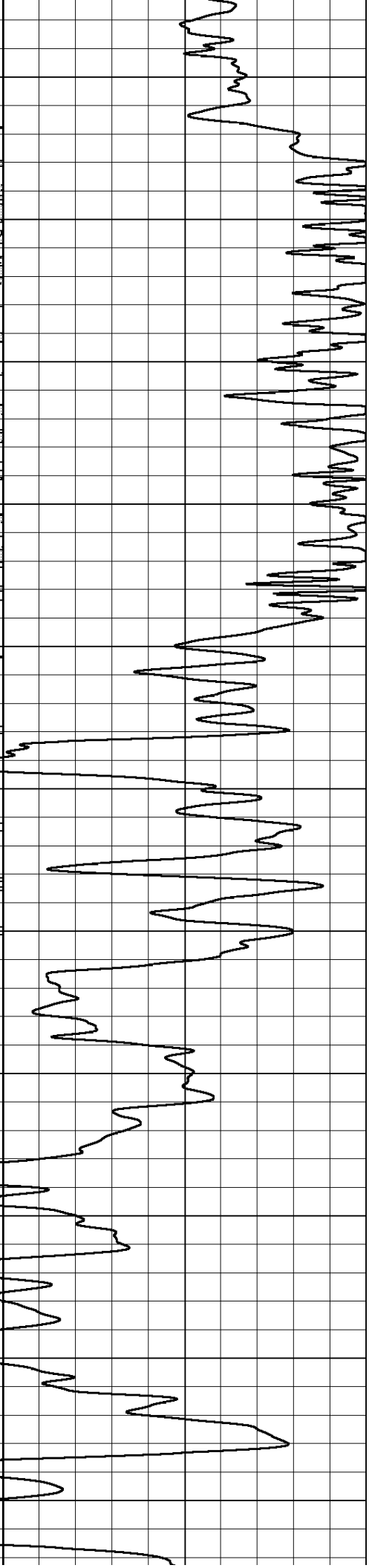
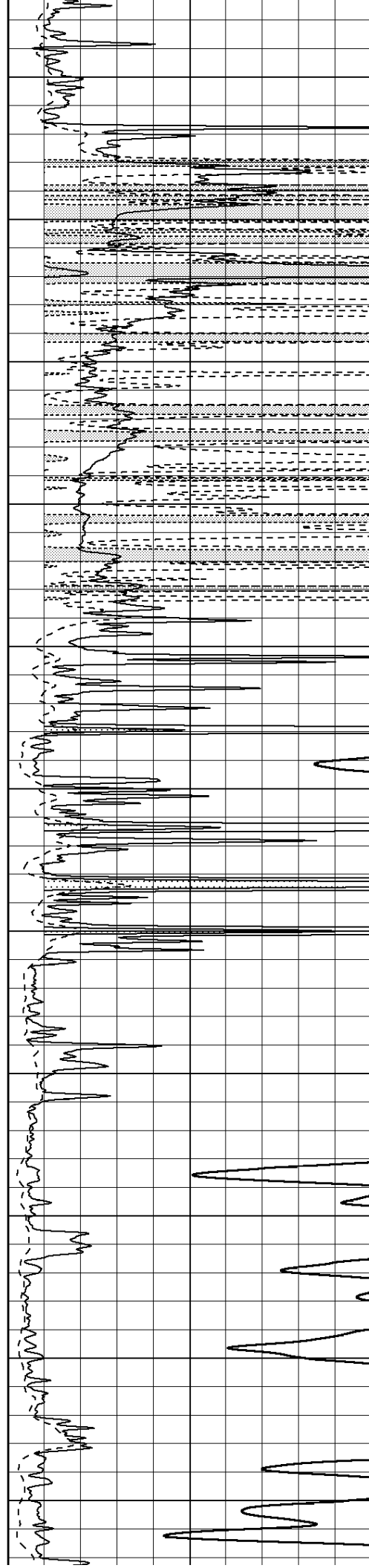
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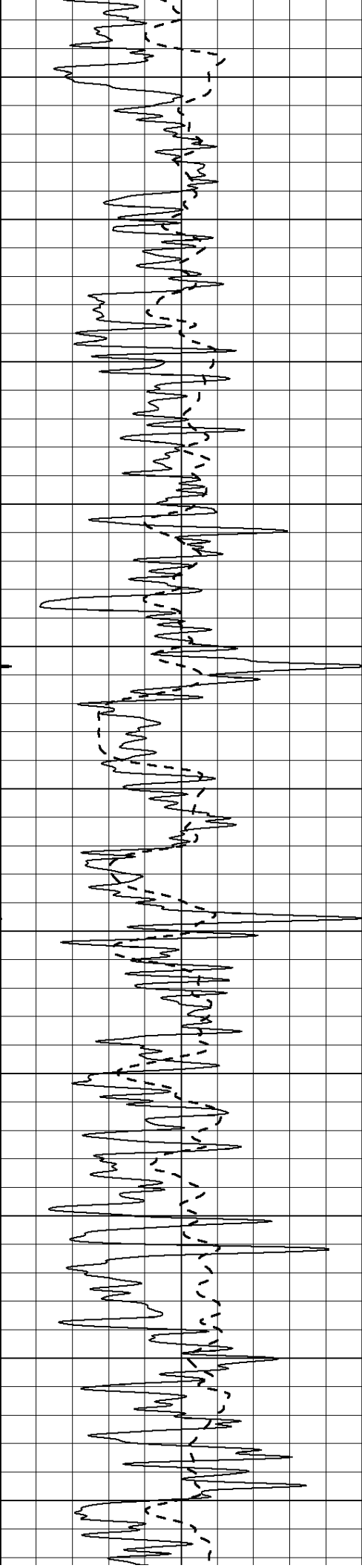
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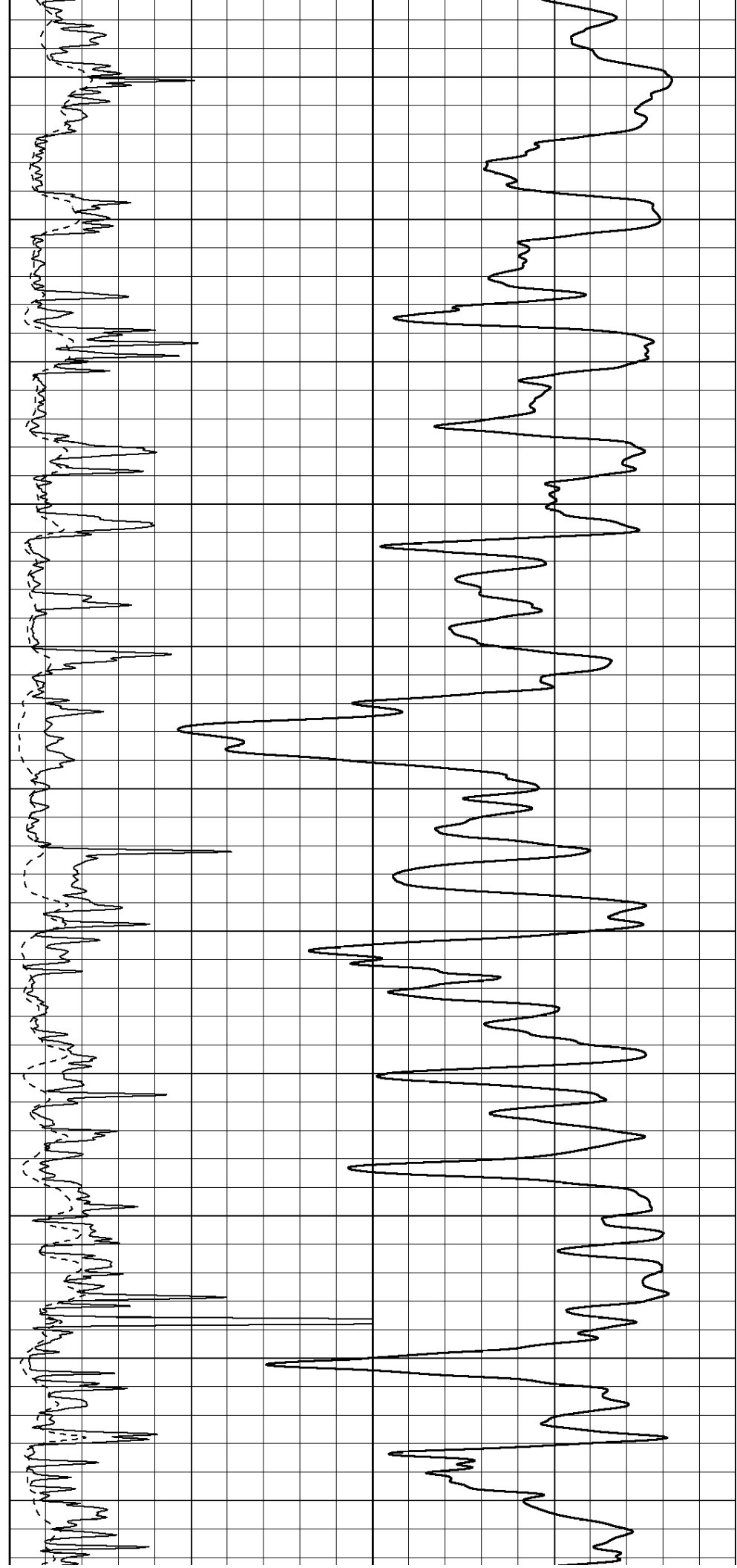
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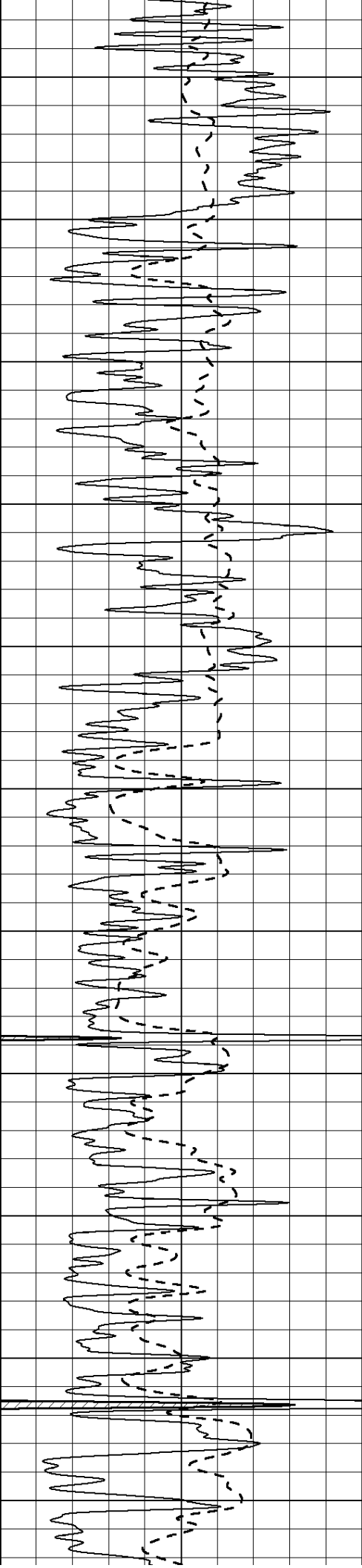
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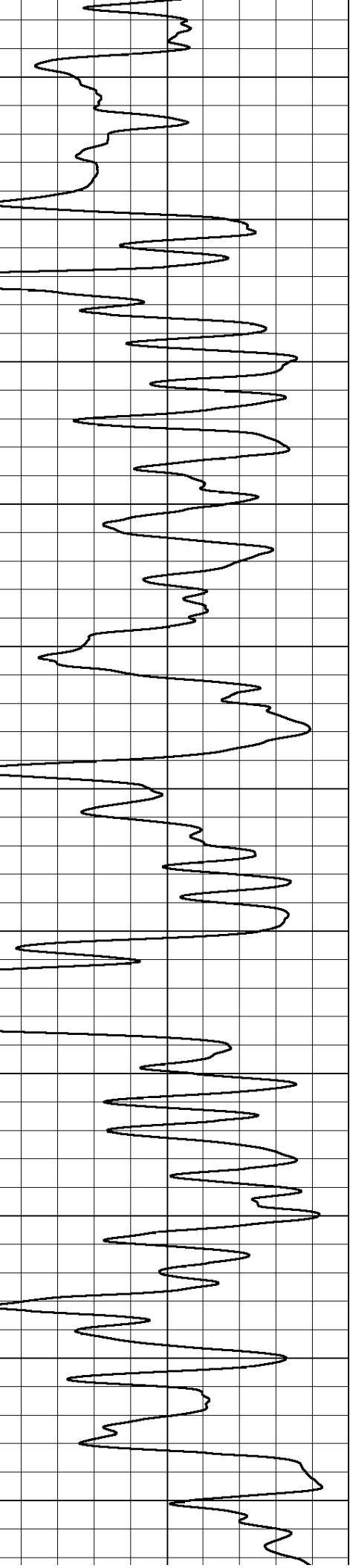
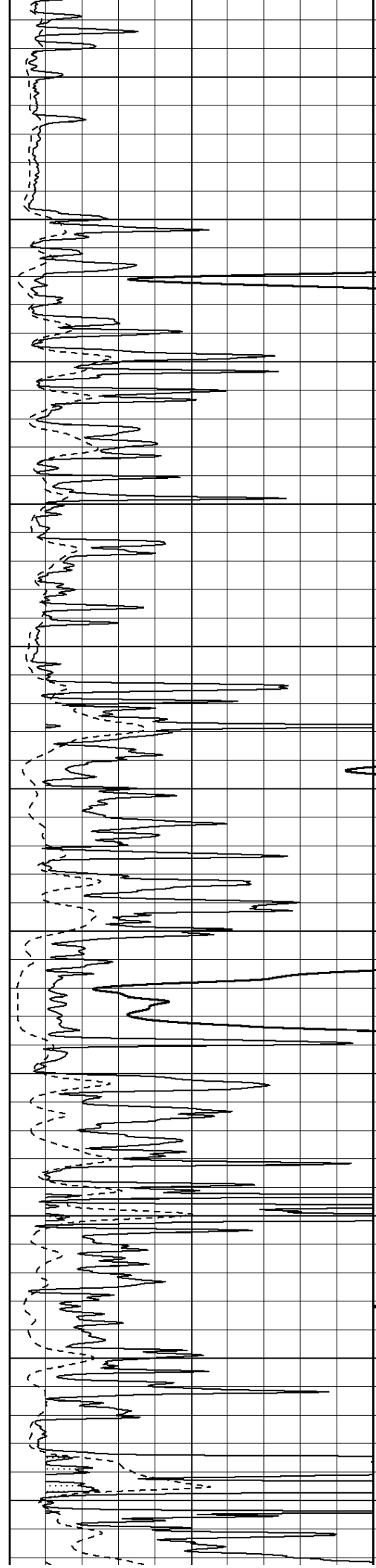


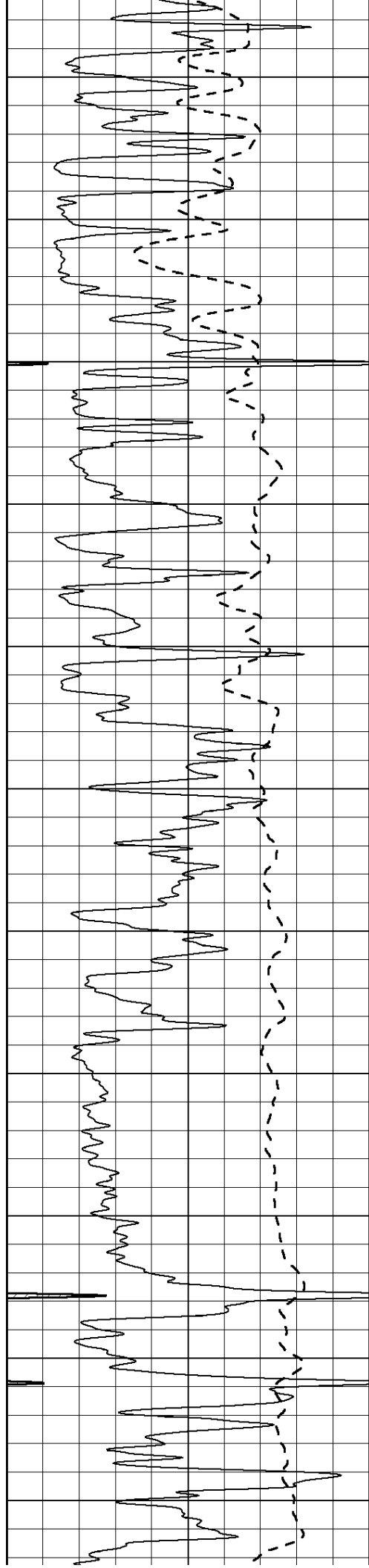
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2800
2850
2900
2950
3000
3050
3100
3150



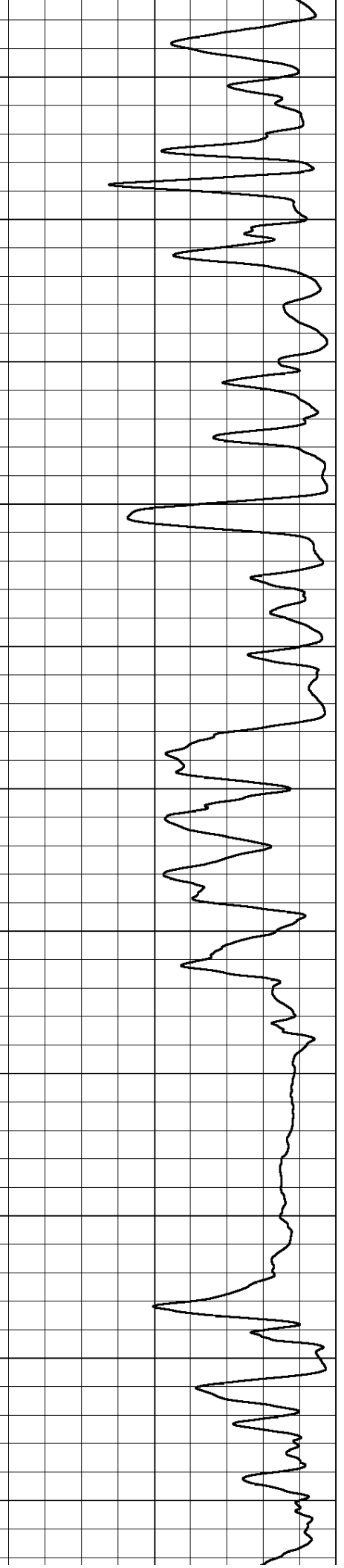
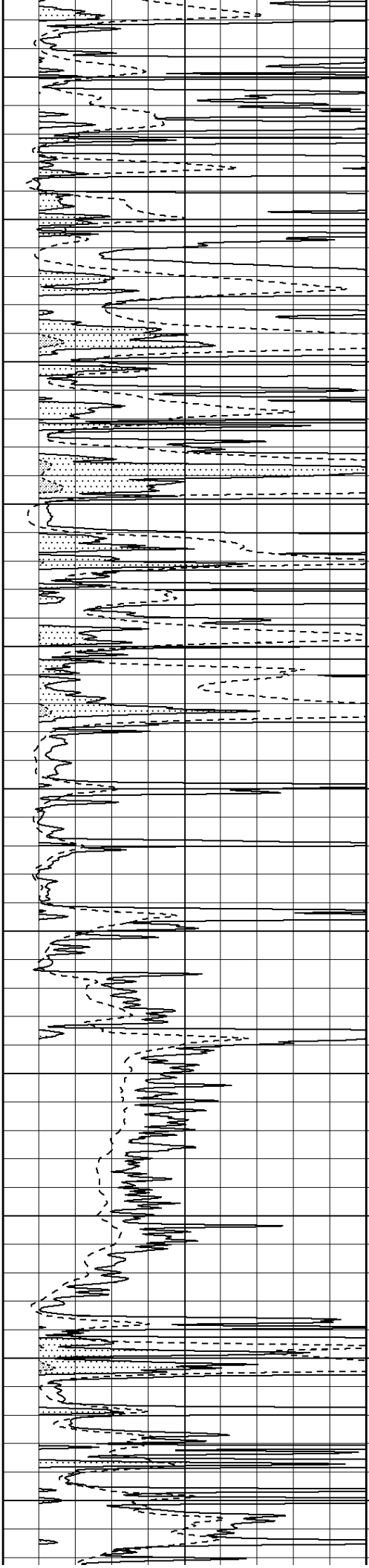


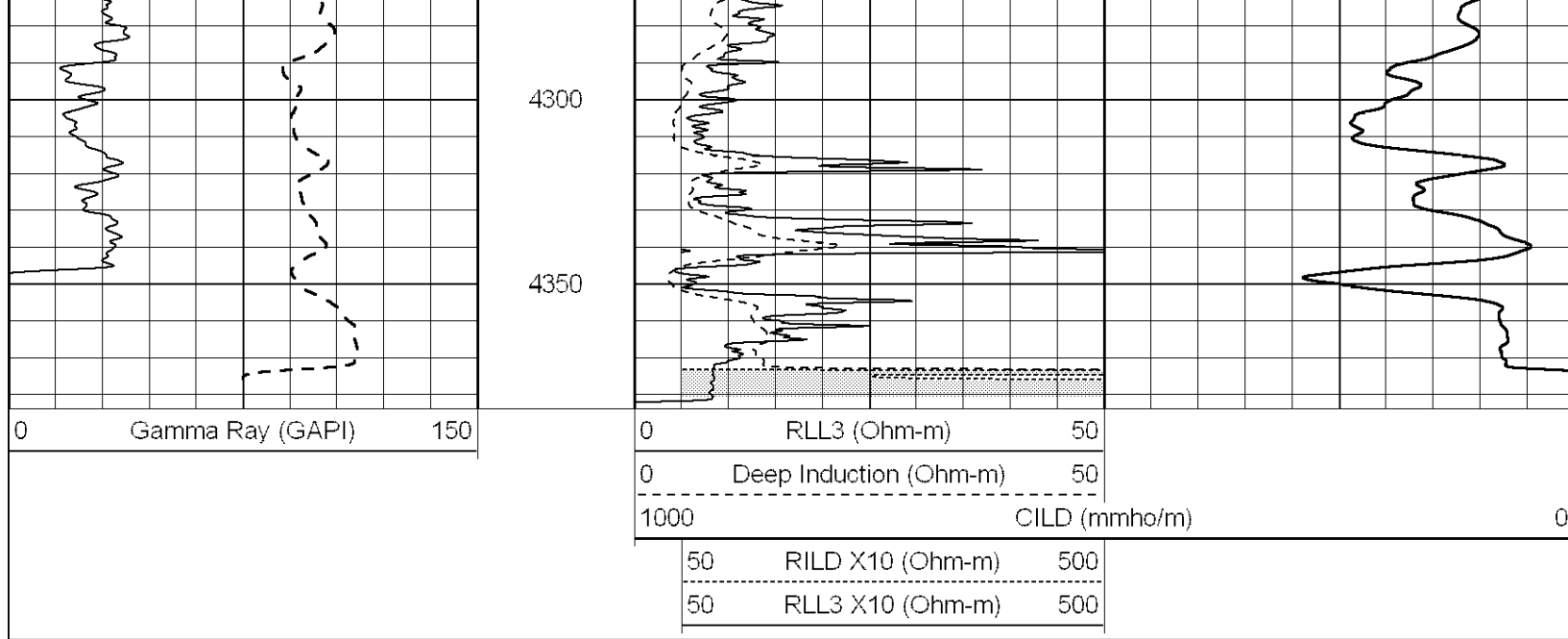
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3250
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3350
3400
3450
3500
3550
3600
3650
3700





3750
3800
3850
3900
3950
4000
4050
4100
4150
4200
4250



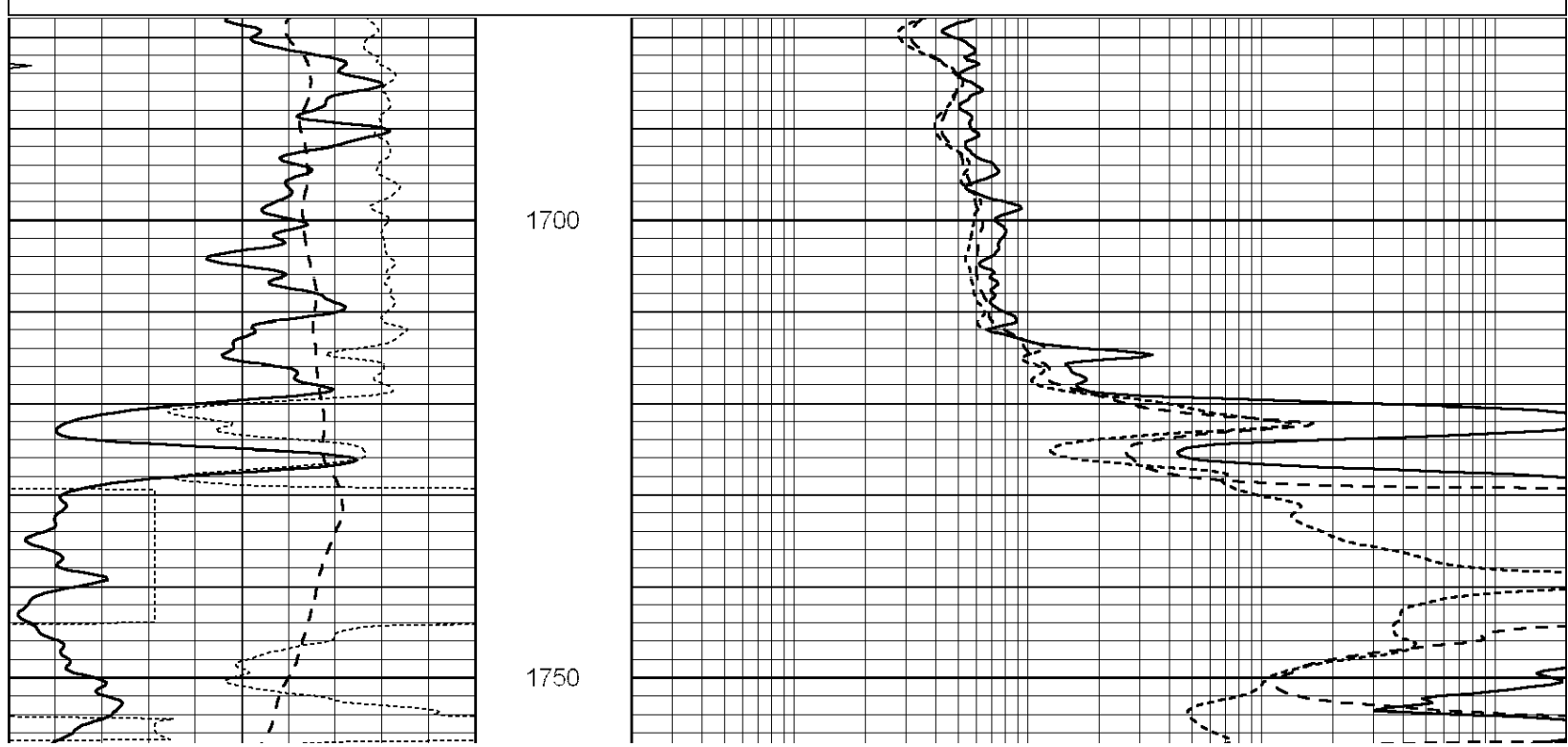


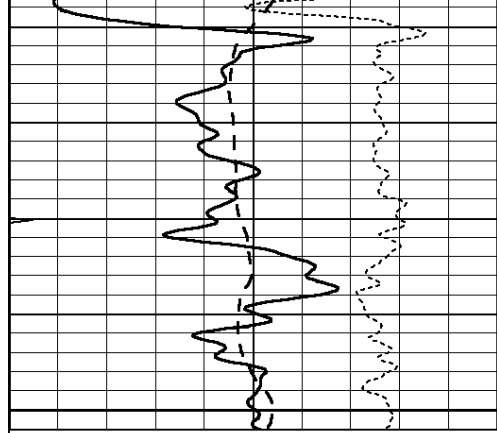
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MAIN SECTION

Database File: 009949pdn.db
 Dataset Pathname: pass3.1
 Presentation Format: dil
 Dataset Creation: Fri Nov 16 23:19:43 2012 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

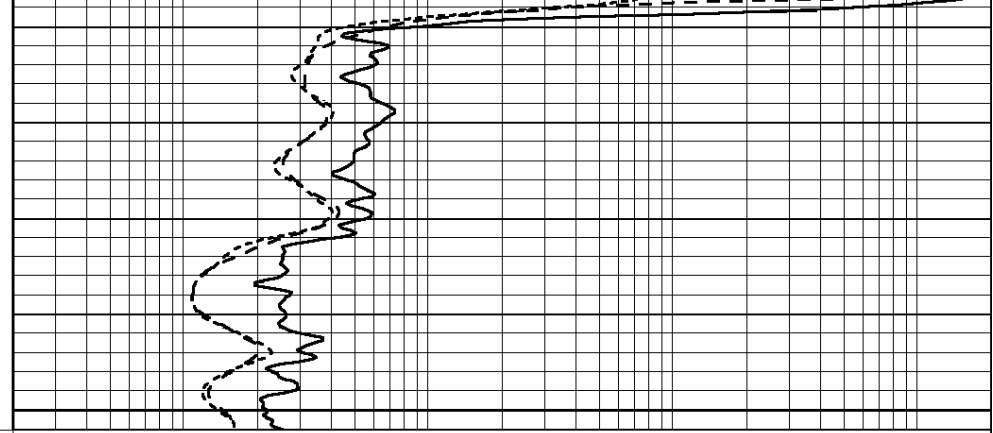
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-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	RxoRt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

1800



0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

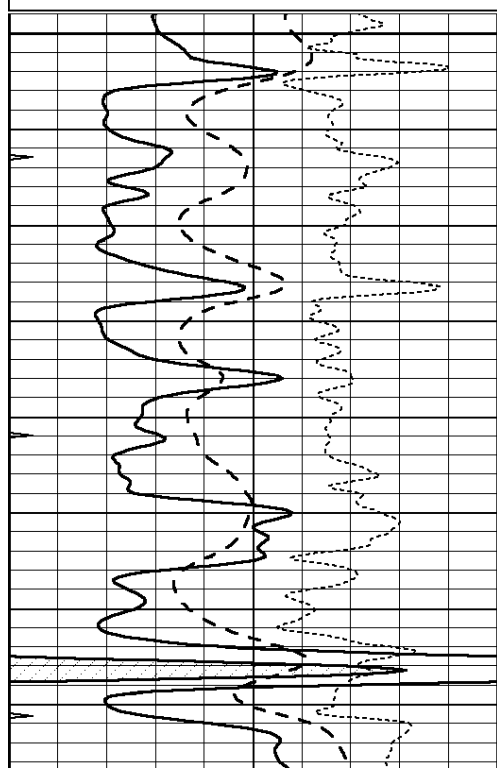


MAIN SECTION

Database File: 009949pdn.db
 Dataset Pathname: pass3.1
 Presentation Format: dil
 Dataset Creation: Fri Nov 16 23:19:43 2012 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

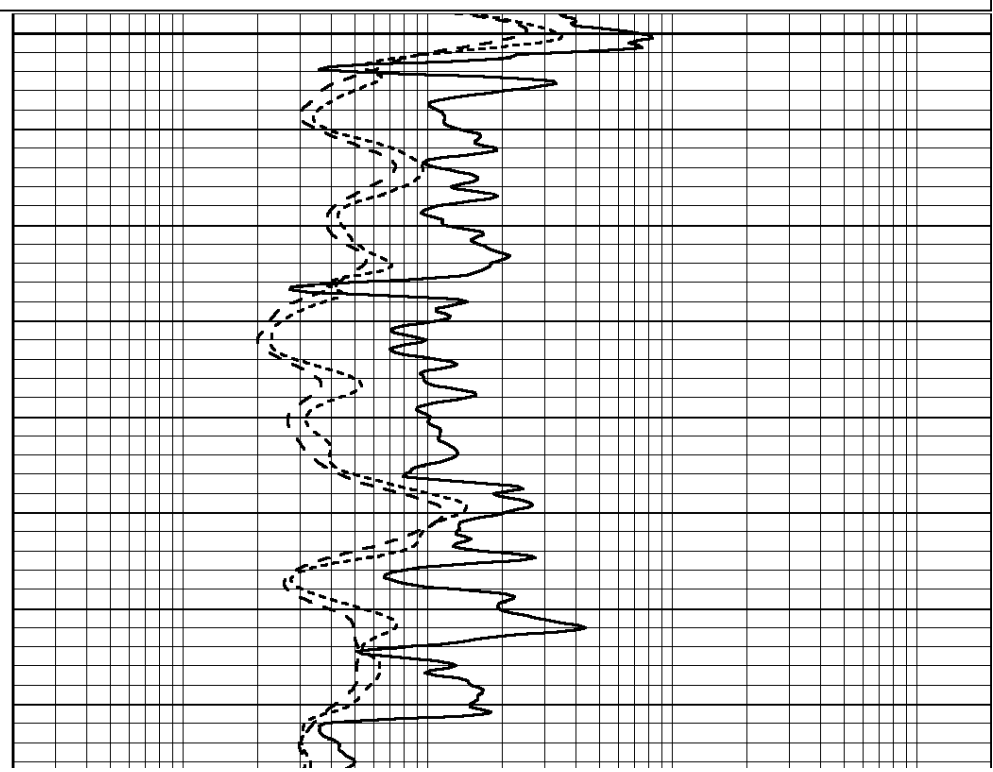
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

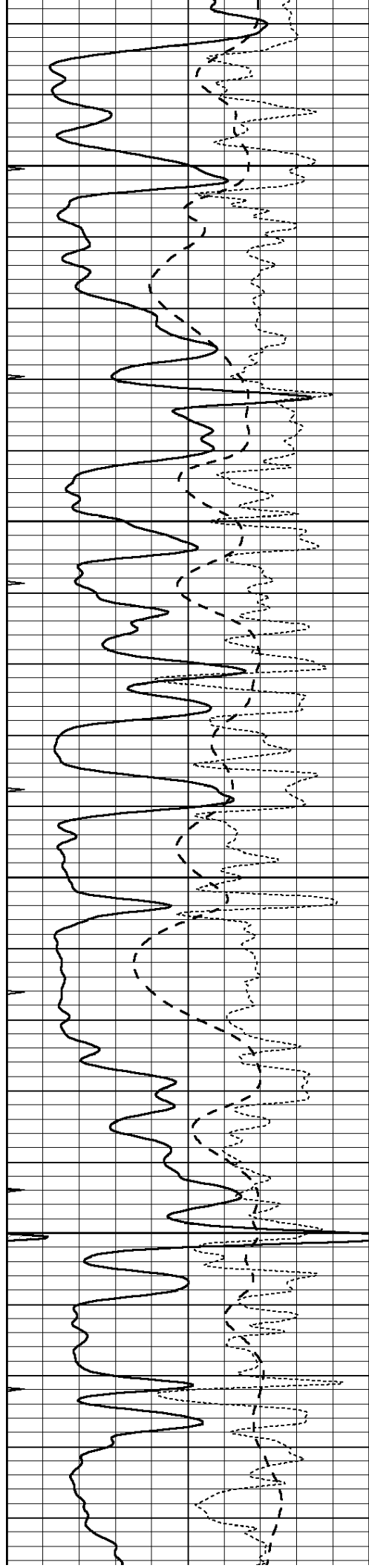
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3600

3650



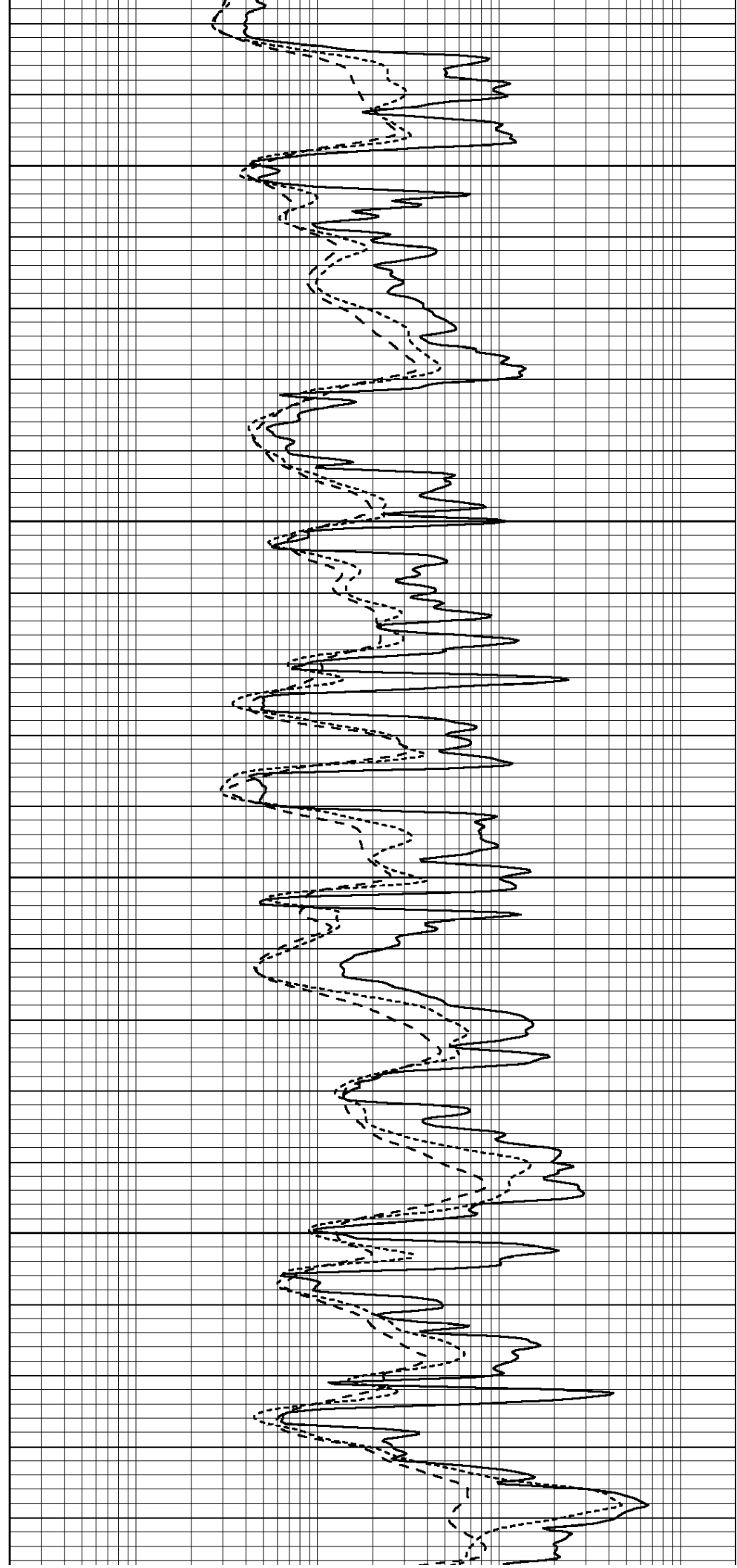


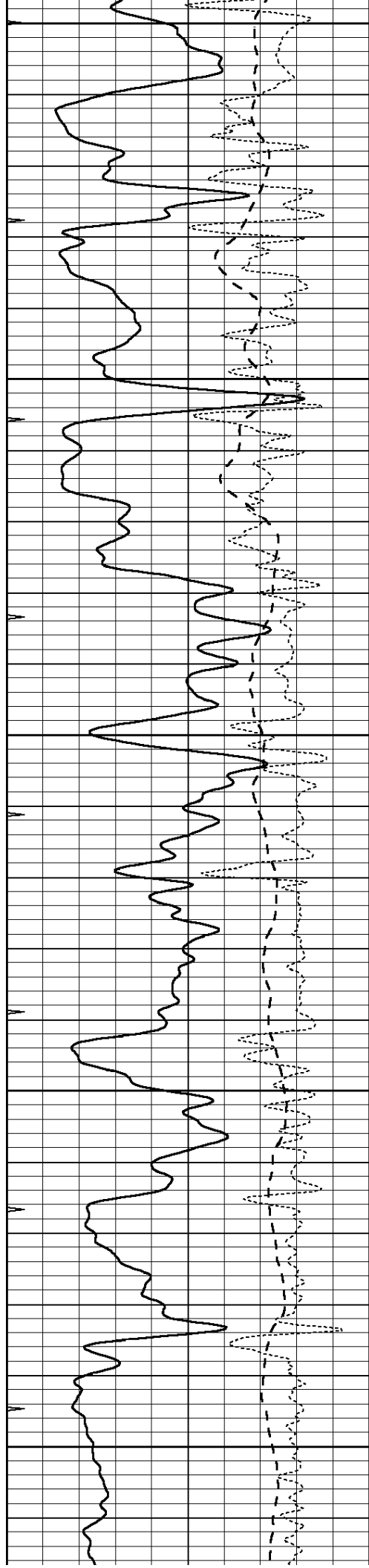
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3750

3800

3850





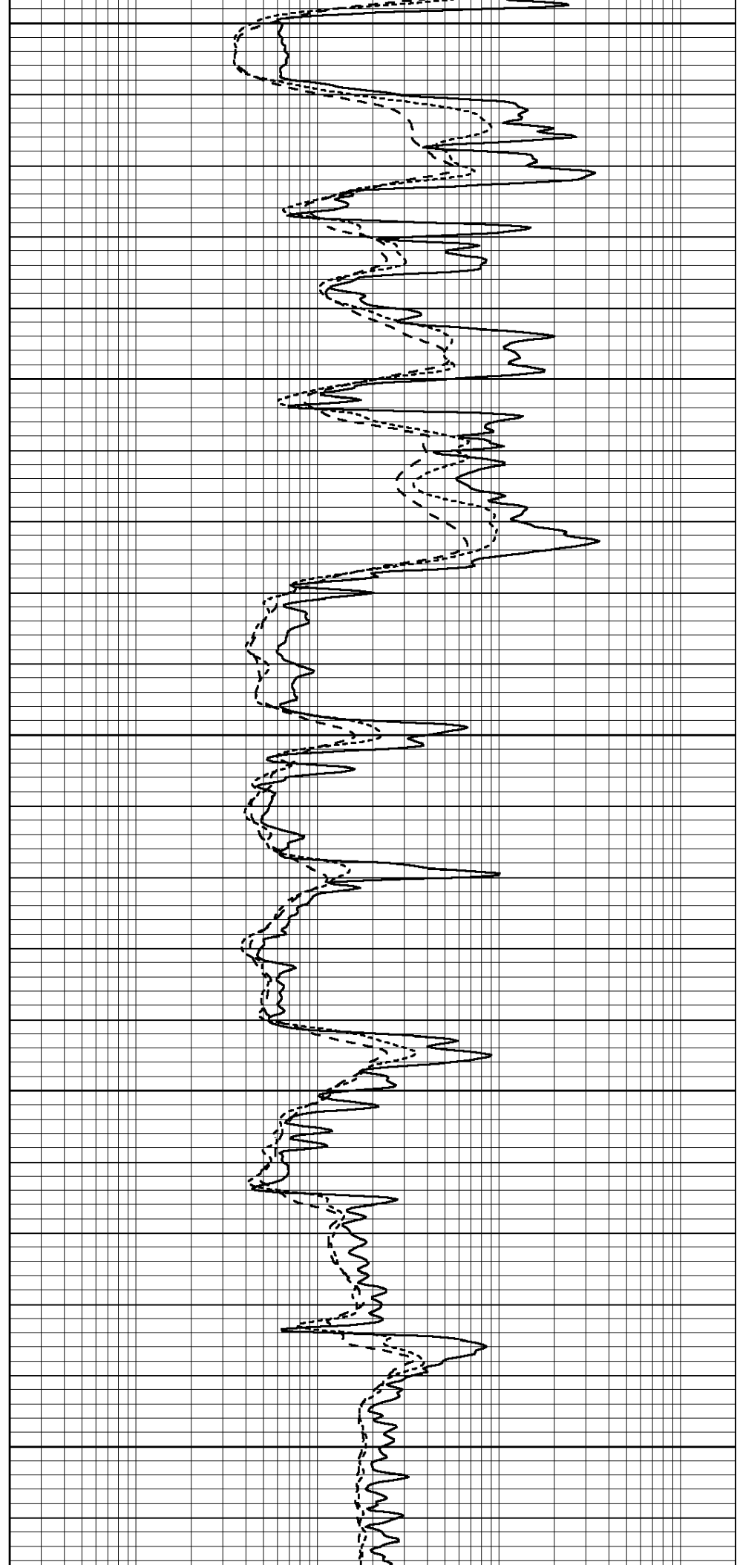
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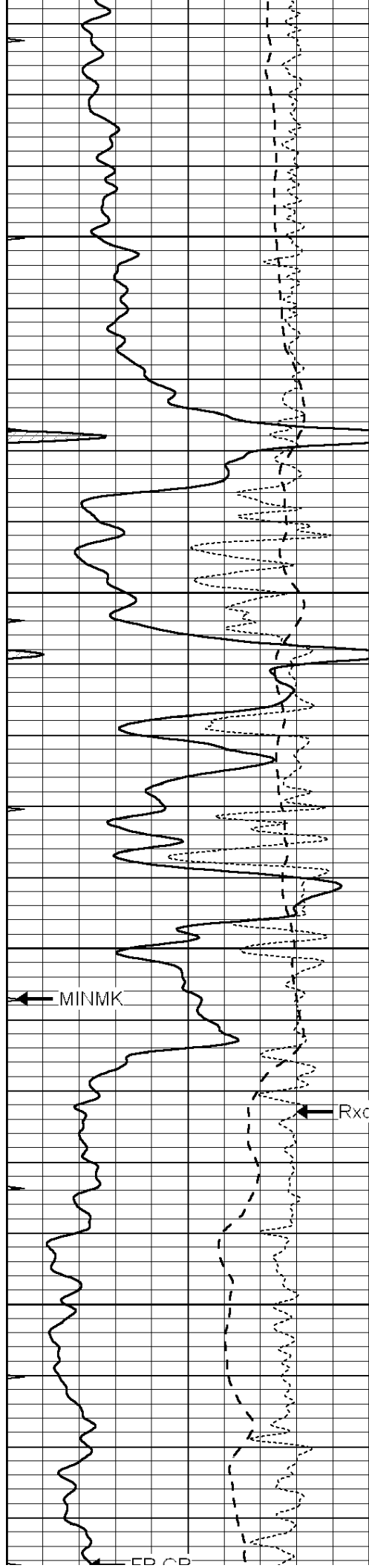
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4000

4050

4100



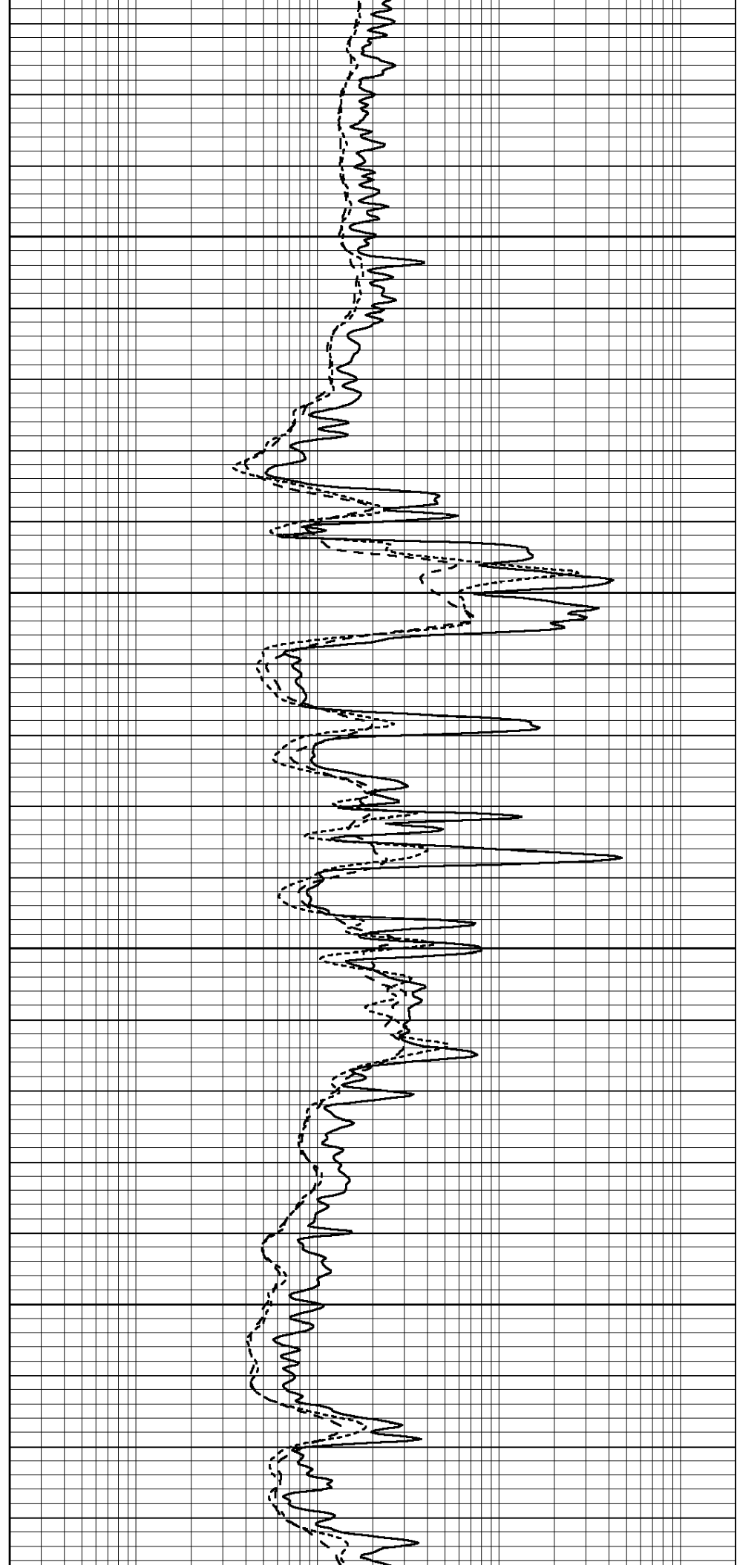


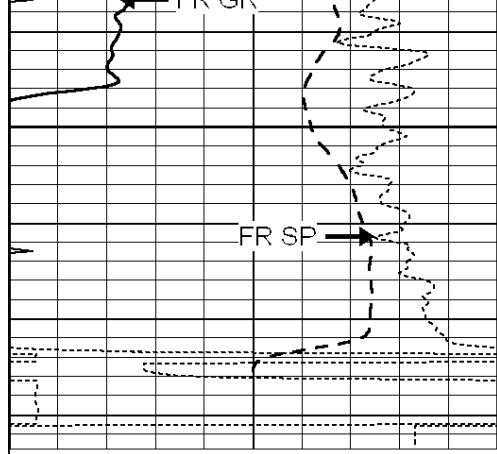
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4200

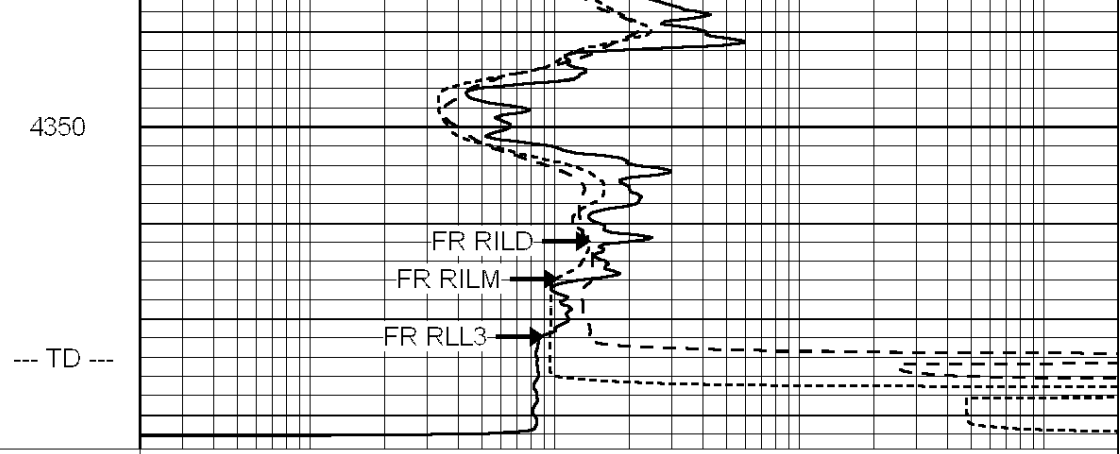
4250

4300





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20



0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

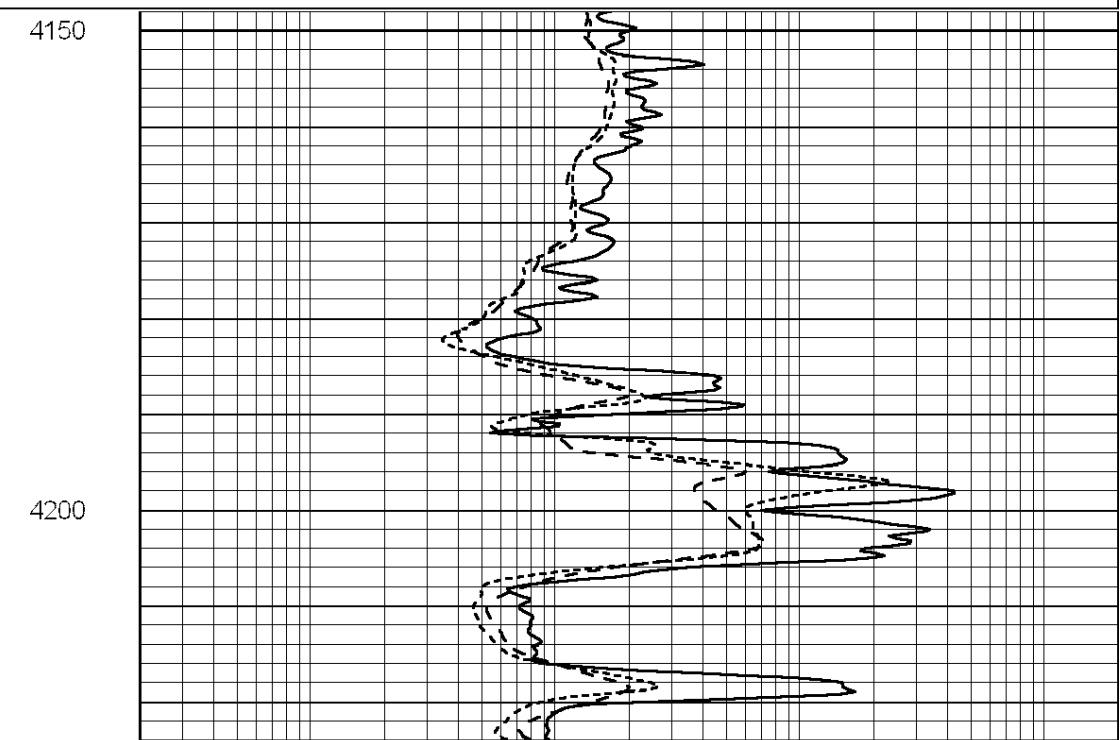
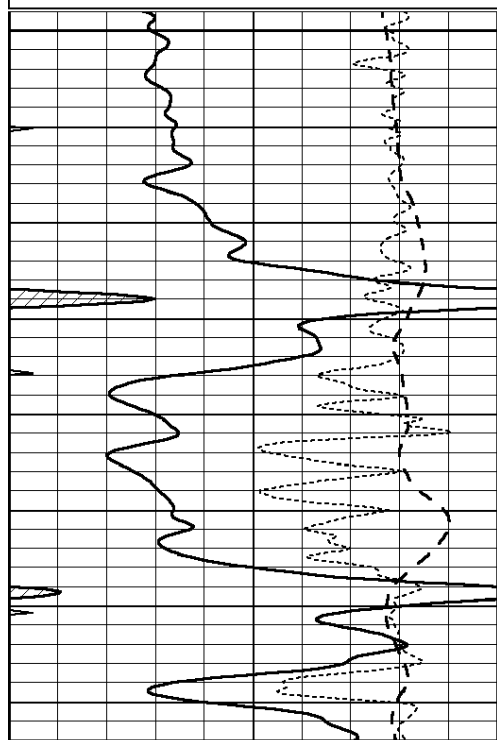


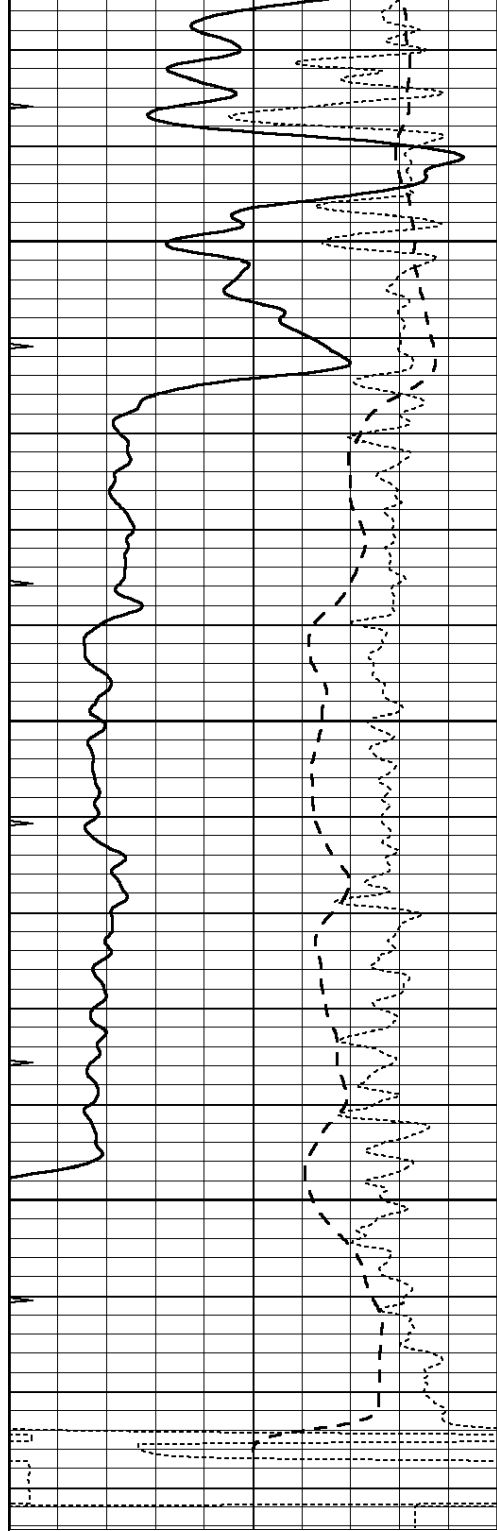
REPEAT SECTION

Database File: 009949pdn.db
 Dataset Pathname: pass2.1
 Presentation Format: dil
 Dataset Creation: Fri Nov 16 23:09:27 2012 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



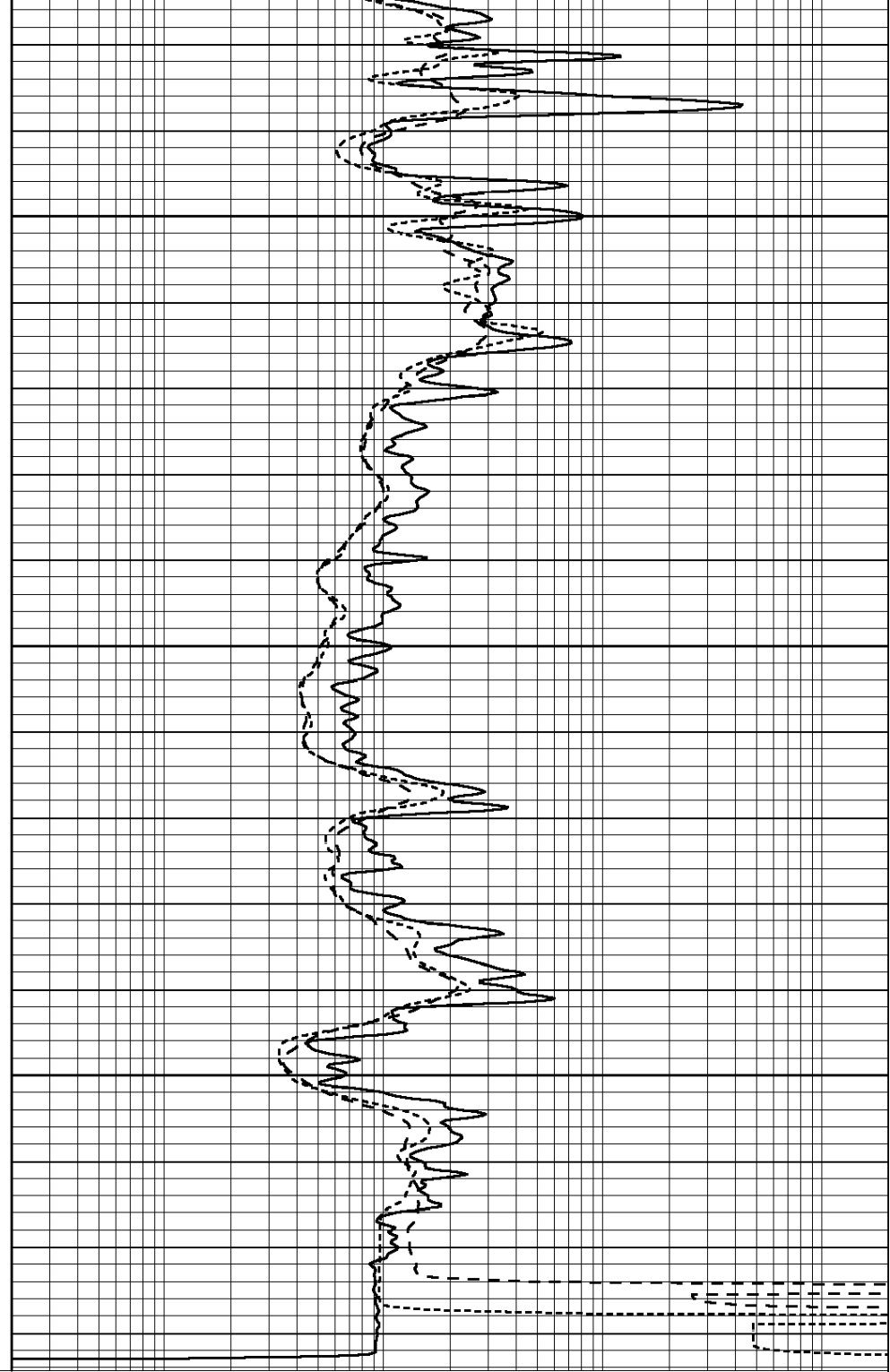


4250

4300

4350

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20



0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Database File: 009949pdm.db
 Dataset Pathname: pass3.1
 Dataset Creation: Fri Nov 16 23:19:43 2012 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: DIL5-GEAR
 Performed: Fri Nov 16 23:05:58 2012

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.004	0.654	V	0.000	400.000	mmho/m	470.000	-13.000
Medium	-0.005	0.737	V	0.000	462.500	mmho/m	500.000	-9.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.006	0.655	V	0.000	400.000	mmho/m	615.668	-3.483
Medium	0.010	0.747	V	0.000	462.500	mmho/m	627.607	-6.064

Litho Density Calibration Report
Serial: 002 Model: PRB
Performed Mon Apr 02 17:56:53 2012

Litho Density Calibration					
	Background	Magnesium	Aluminum	Sandstone	
Window 1	872.3	7266.3	2292.6	7931.5	cps
Window 2	822.9	5957.5	1958.0	6389.6	cps
Window 3	670.4	3219.9	1211.9	3388.2	cps
Window 4	201.6	201.1	202.3	204.6	cps
Long Space	0.0	5134.6	1135.0	5566.6	cps
Short Space	1.1	994.2	674.4	1059.2	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe			2.5700	1.5500	
Rib Angle	: 45.6	Rib Slope	: 1.020	Density/Spine Ratio	: 0.569
Spine Angle	: 75.6	Spine Slope	: 3.888	Spine Intercept	: -18.3

Caliper	Readings	Reference
Low Ref	4.3	8.4
High Ref	6.1	14.0
	Gain: 3.0	Offset: -4.4

Compensated Neutron Calibration Report

Serial Number: NUE_2I
Tool Model: G

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	1.00 cps	1.00 cps	1.0000
Long Space	1.00 cps	1.00 cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR5
Tool Model: OPEN
Performed: Fri Nov 16 23:05:30 2012

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.7400 GAPI/cps