NABORS COMPLETION & PRODUCTION SERVICES CO.

DUAL INDUCTION LOG

Company	MULL DRILLING COMPANY, INC.
Well	JOY #1-1
Field	WILDCAT
County	WICHITA
State	KANSAS

Location: API # : 15-203-20255-0000
396' FSL 1852' FEL
SW/4 - SE/4
SEC 1 TWP 16S RGE 38W

Other Services: CDL/CNL/PE, MEL/SON

Permanent Datum: GROUND LEVEL Elevation 3419
Log Measured From: KELLY BUSHING 9' A.G.L.
Drilling Measured From: KELLY BUSHING

Elevation: K.B. 3428, D.F. 3426, G.L. 3419

Date	5/16/14		
Run Number	ONE		
Depth Driller	5395		
Depth Logger	5397		
Bottom Logged Interval	5395		
Top Log Interval	0		
Casing Driller	8 5/8"@219'		
Casing Logger	219'		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,000 PPM	
Density / Viscosity	9.1/52		
pH / Fluid Loss	9.0/10.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.50@82F		
Rmf @ Meas. Temp	.38@82F		
Rmc @ Meas. Temp	.60@82F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.32@129F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	129F		
Equipment Number	4854		
Location	HAYS, KANSAS		
Recorded By	JEFF GRONEWEG		
Witnessed By	STEVE REED		

<<< Fold Here >>>

Comments

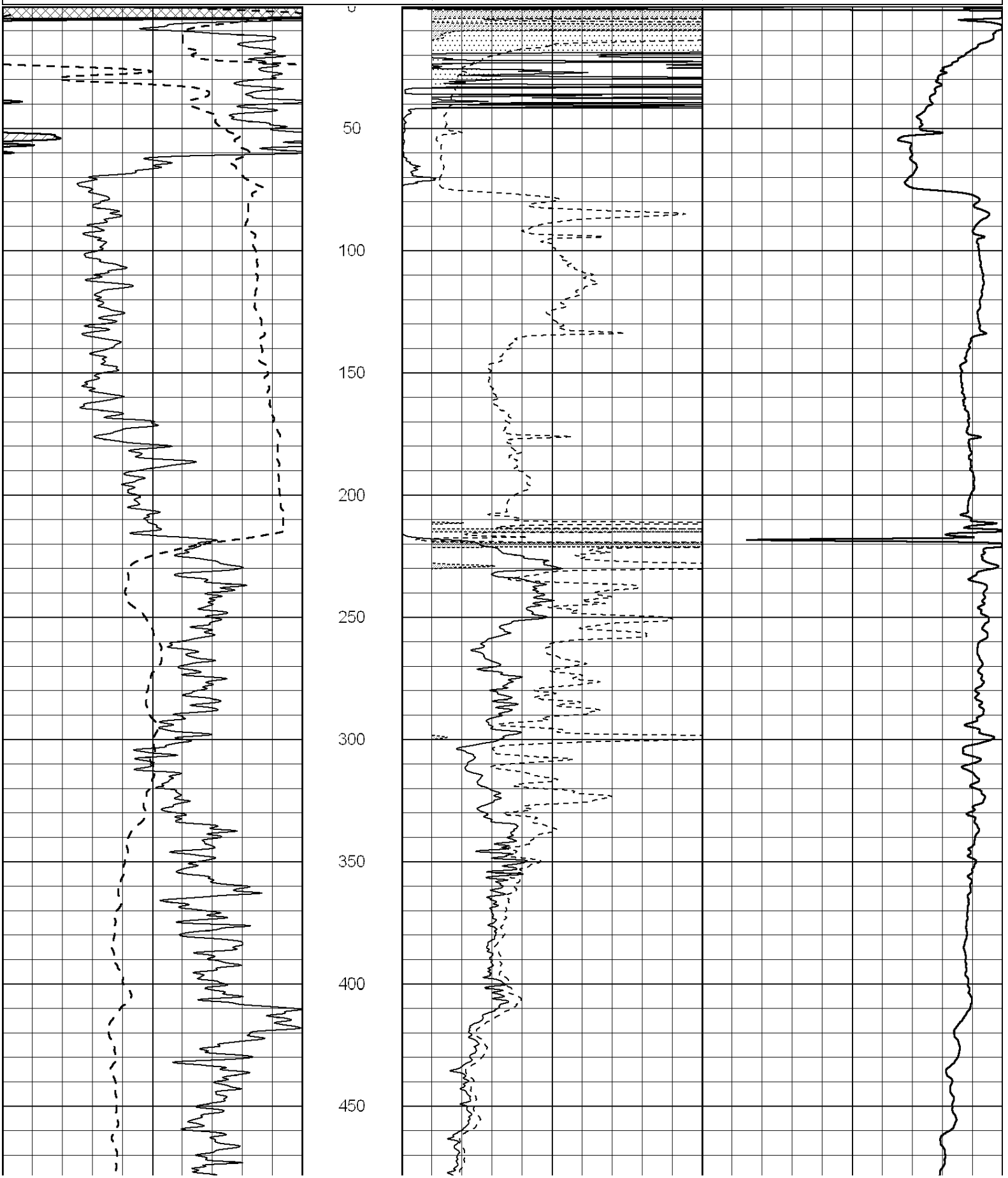
THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395
DIRECTIONS
RUSSELL SPRINGS, KS - SOUTH TO LOGAN/WICHITA COUNTY LINE
1 MILE SOUTH TO RD B
5 MILES WEST - NORTH INTO

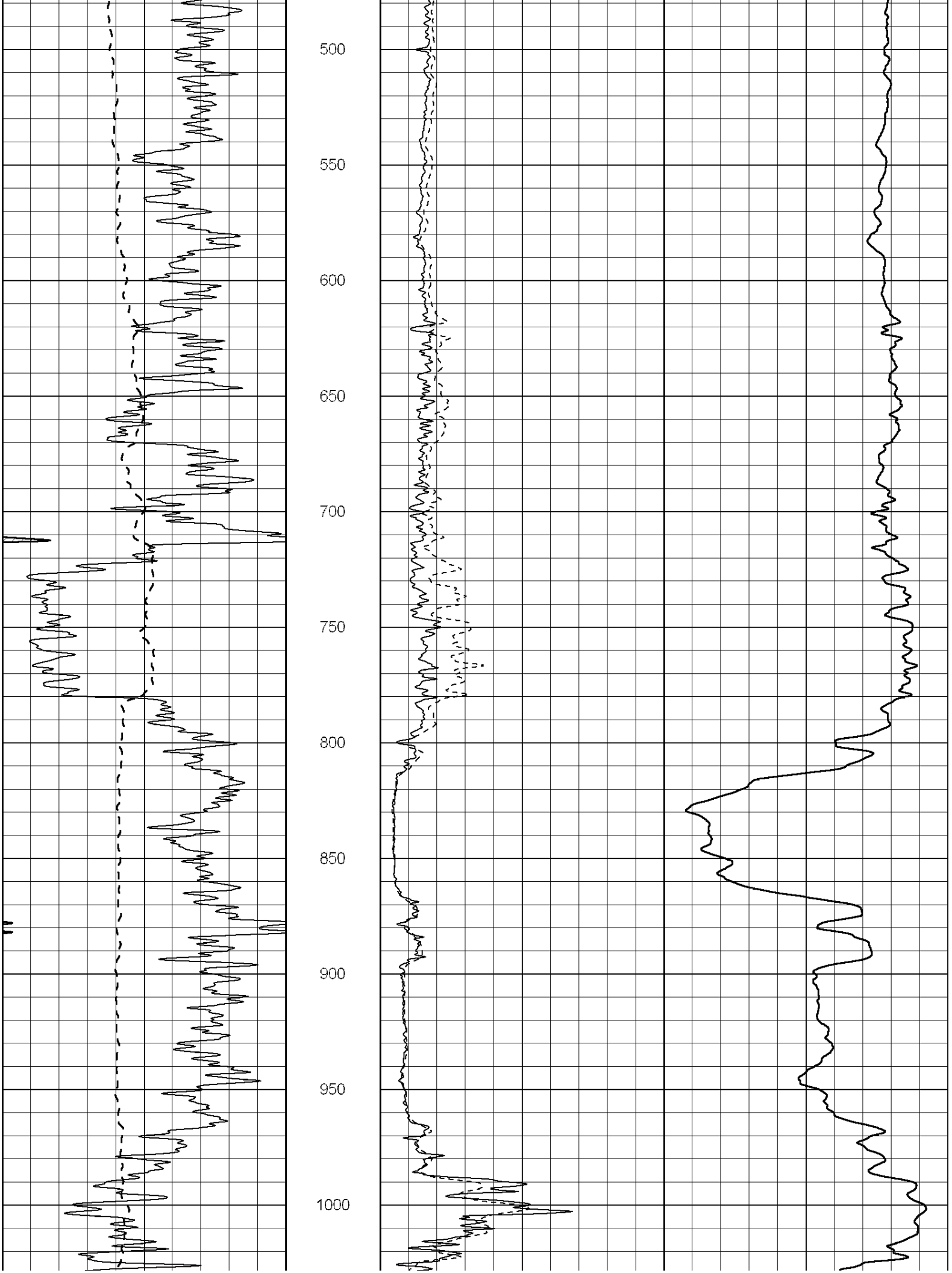
Database File:	24155pe.db
Dataset Pathname:	pass3.5
Presentation Format:	_dil2
Dataset Creation:	Fri May 16 16:33:47 2014 by Calc SOC 120430
Charted by:	Depth in Feet scaled 1:600

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

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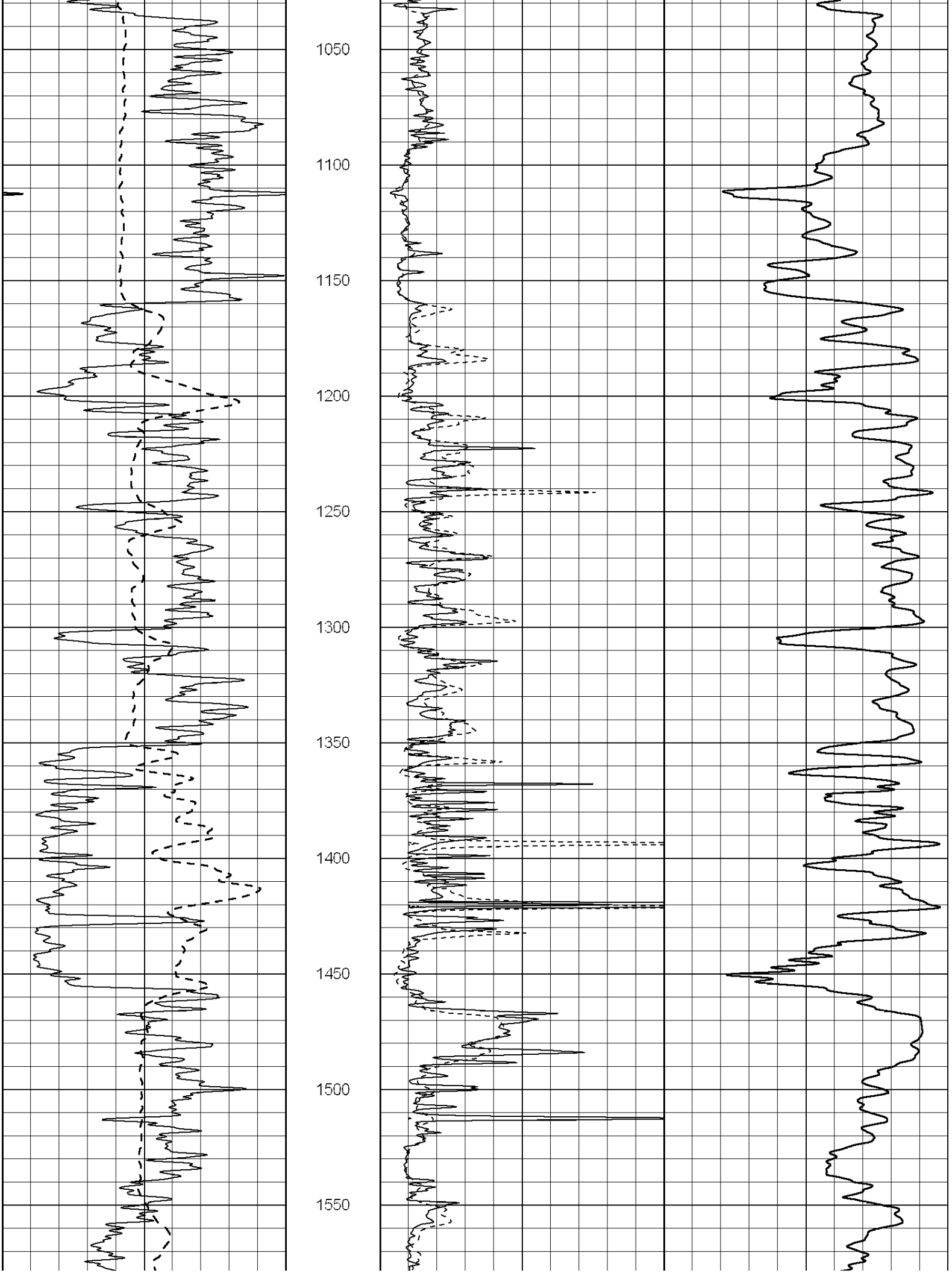
1000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1450
1500
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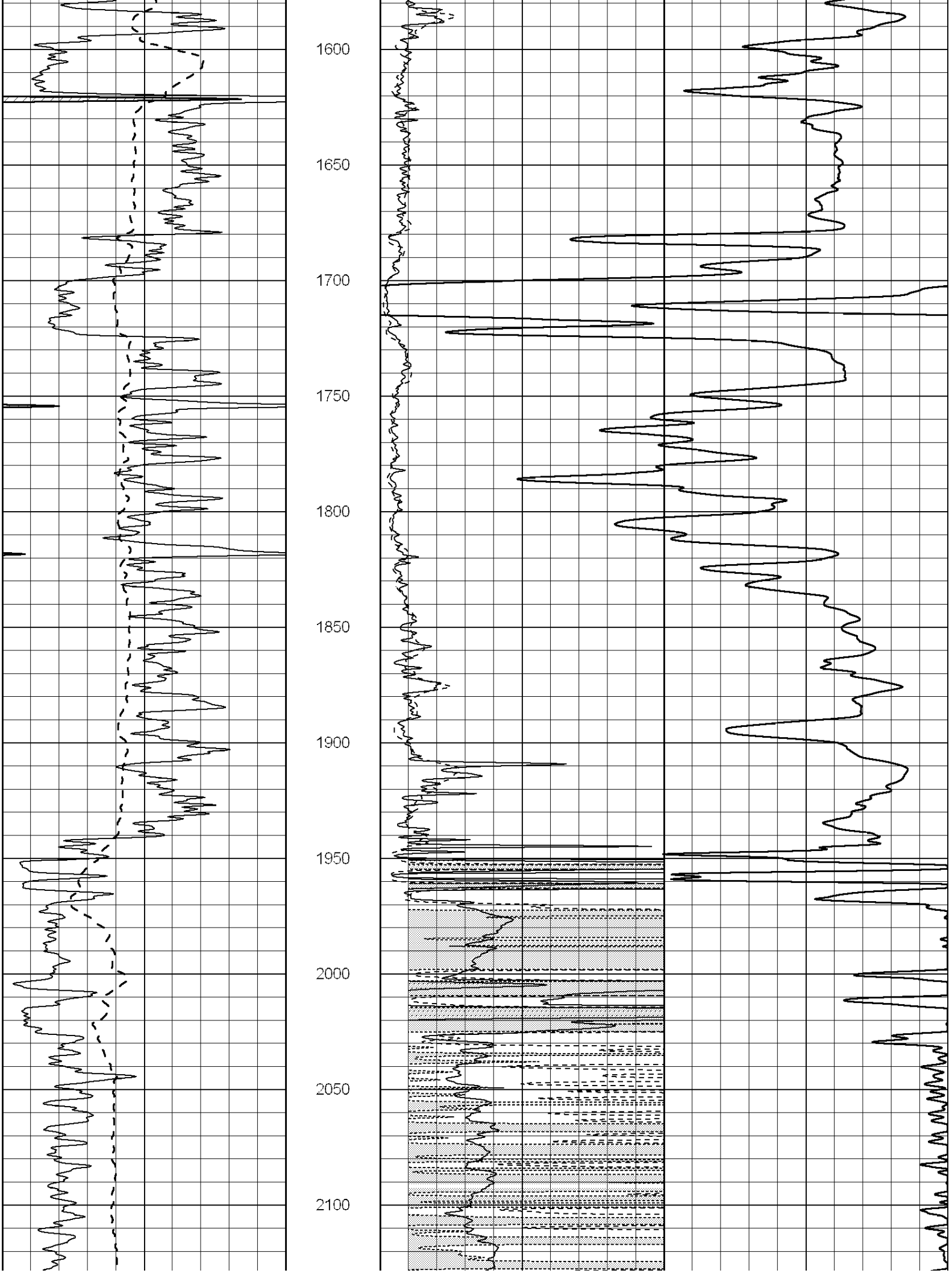
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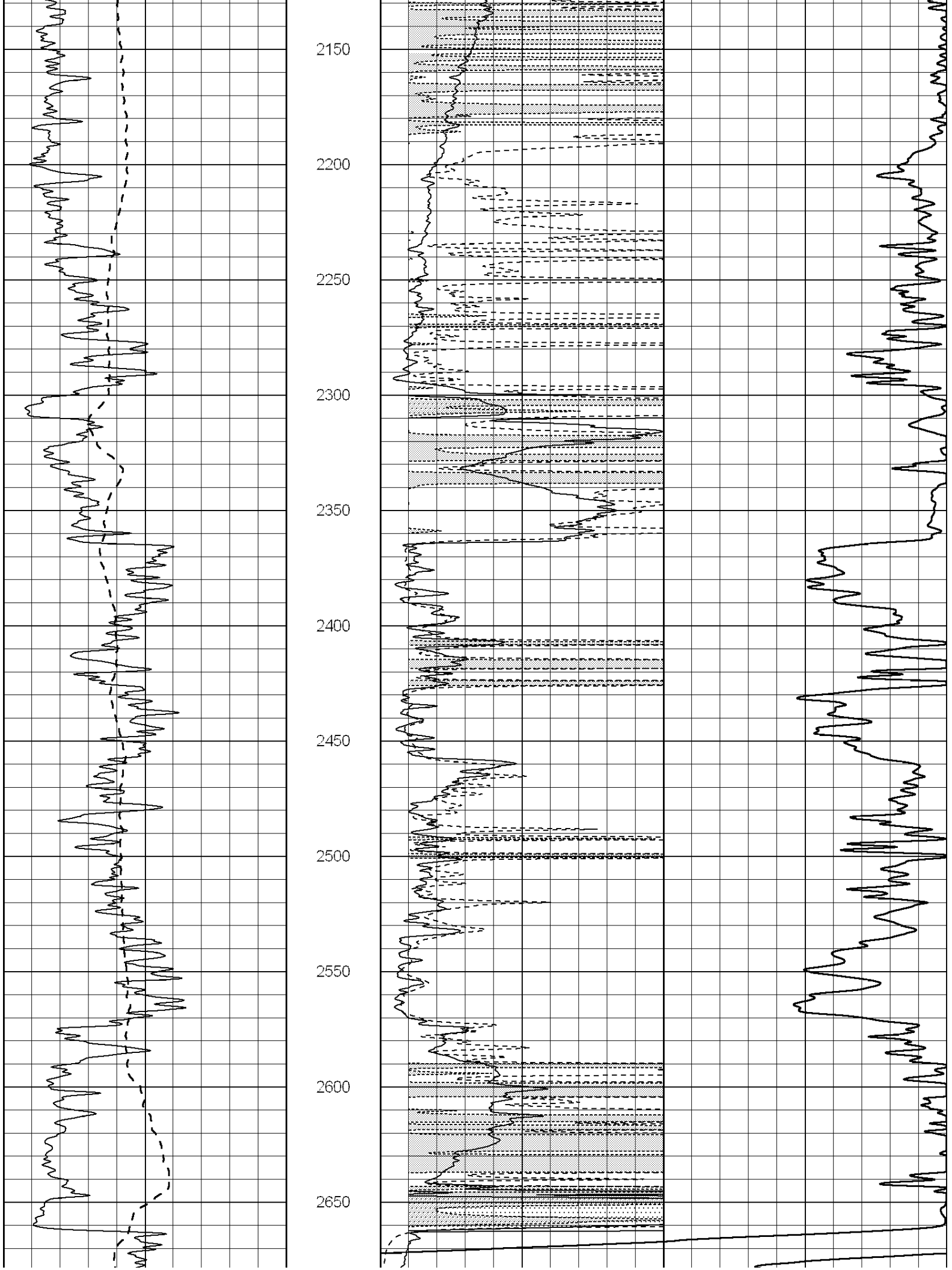
2100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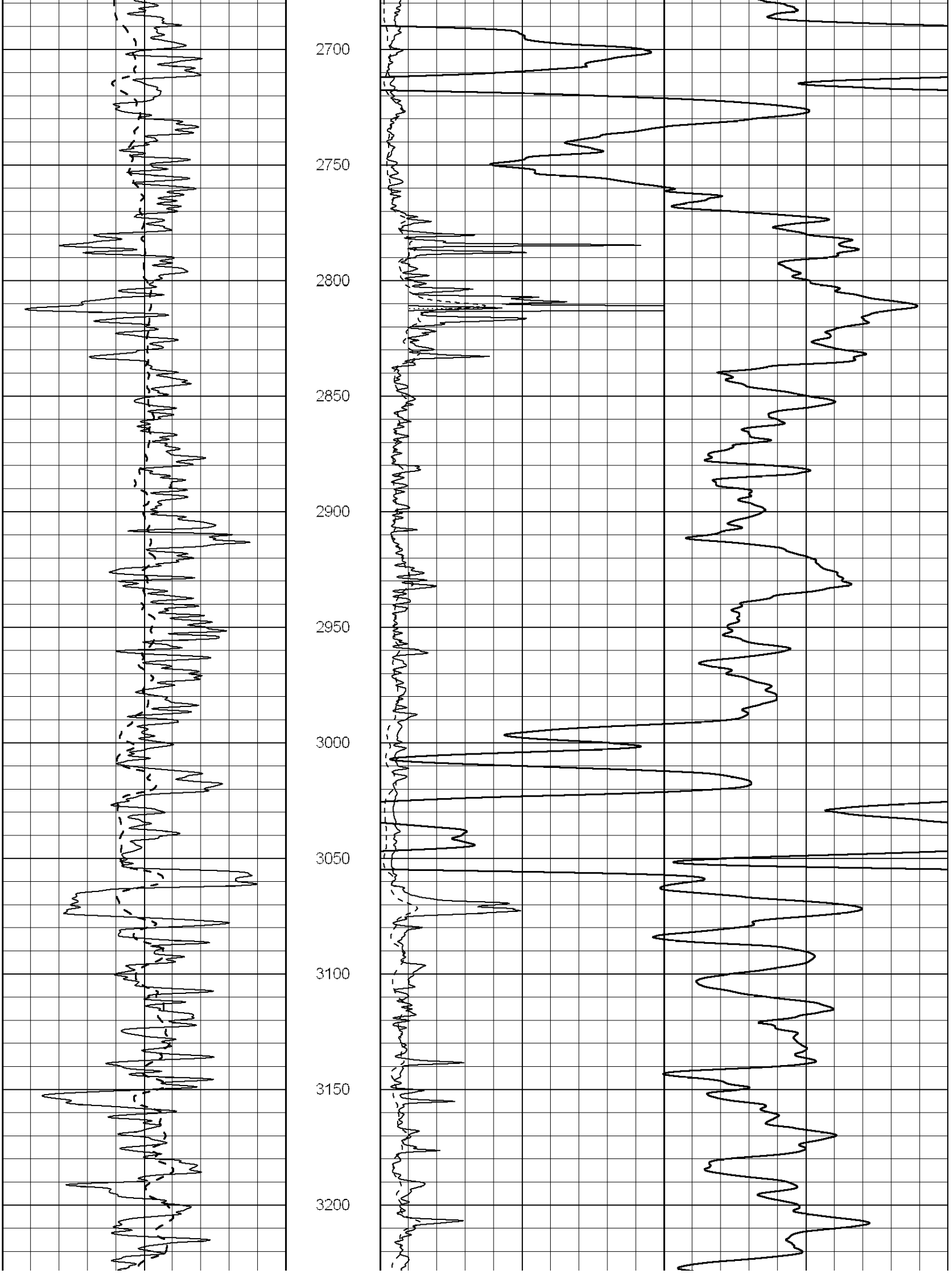
2650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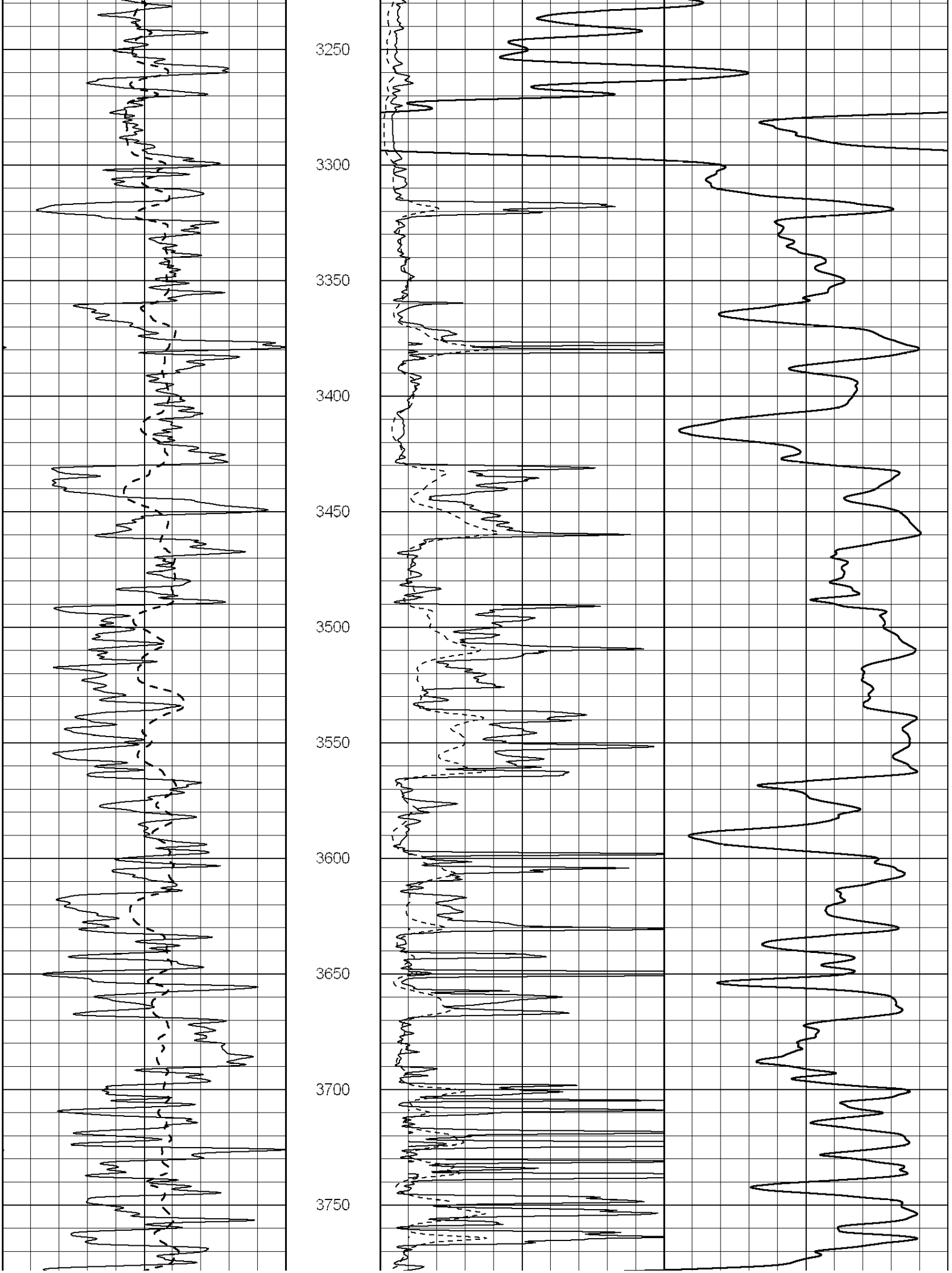
3150
3200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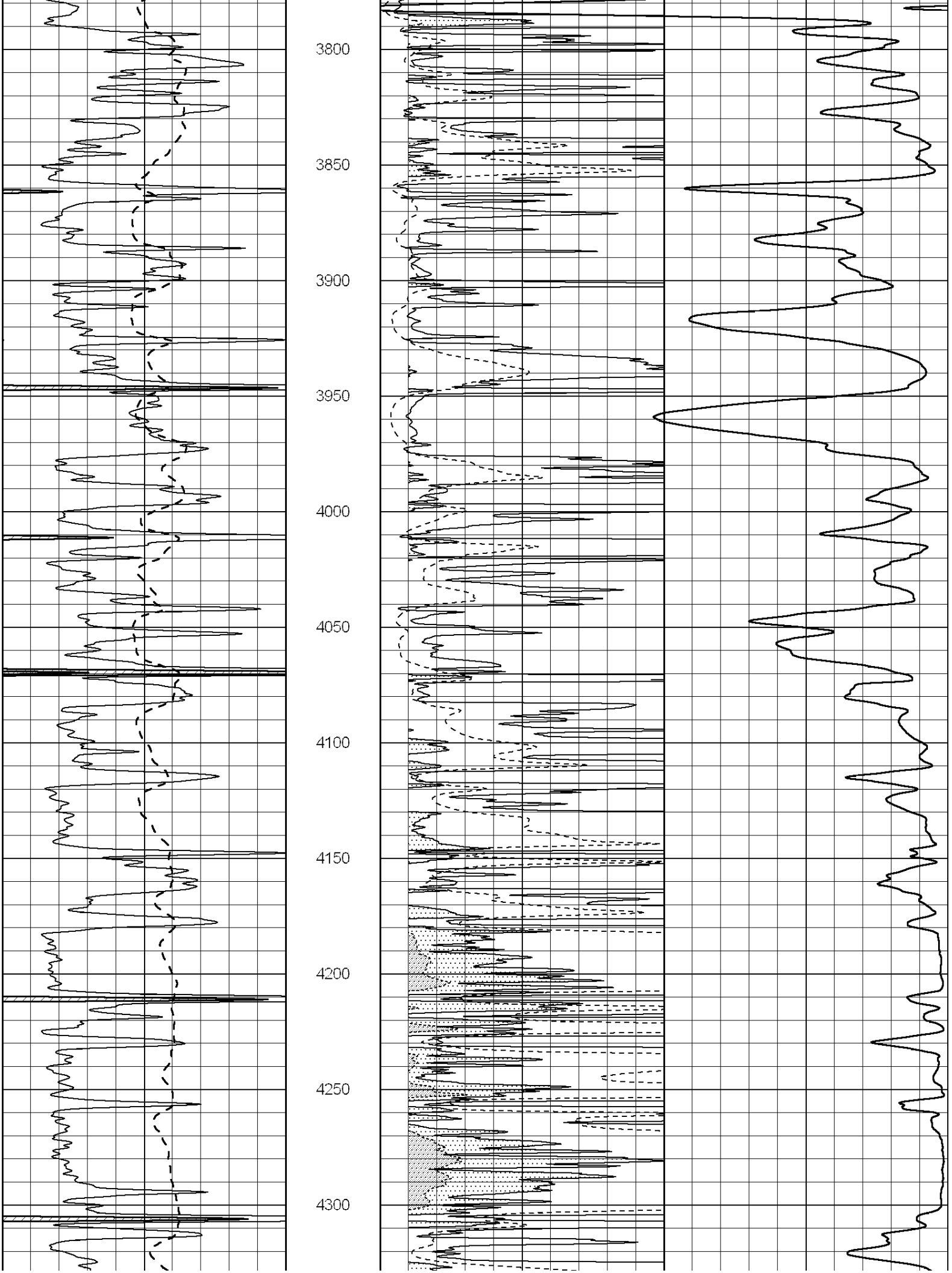
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3900
3950
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4050
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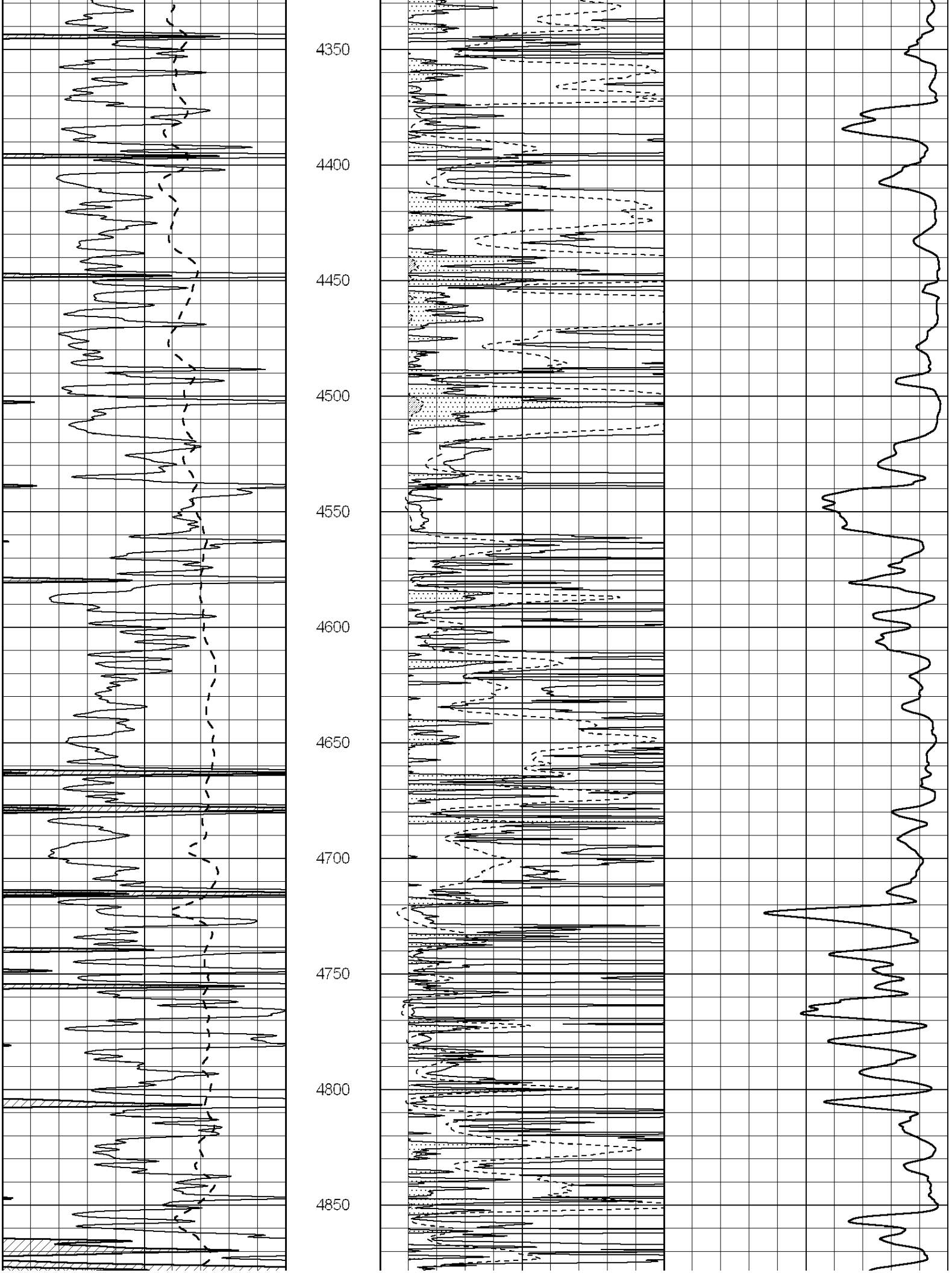
4200
4250
4300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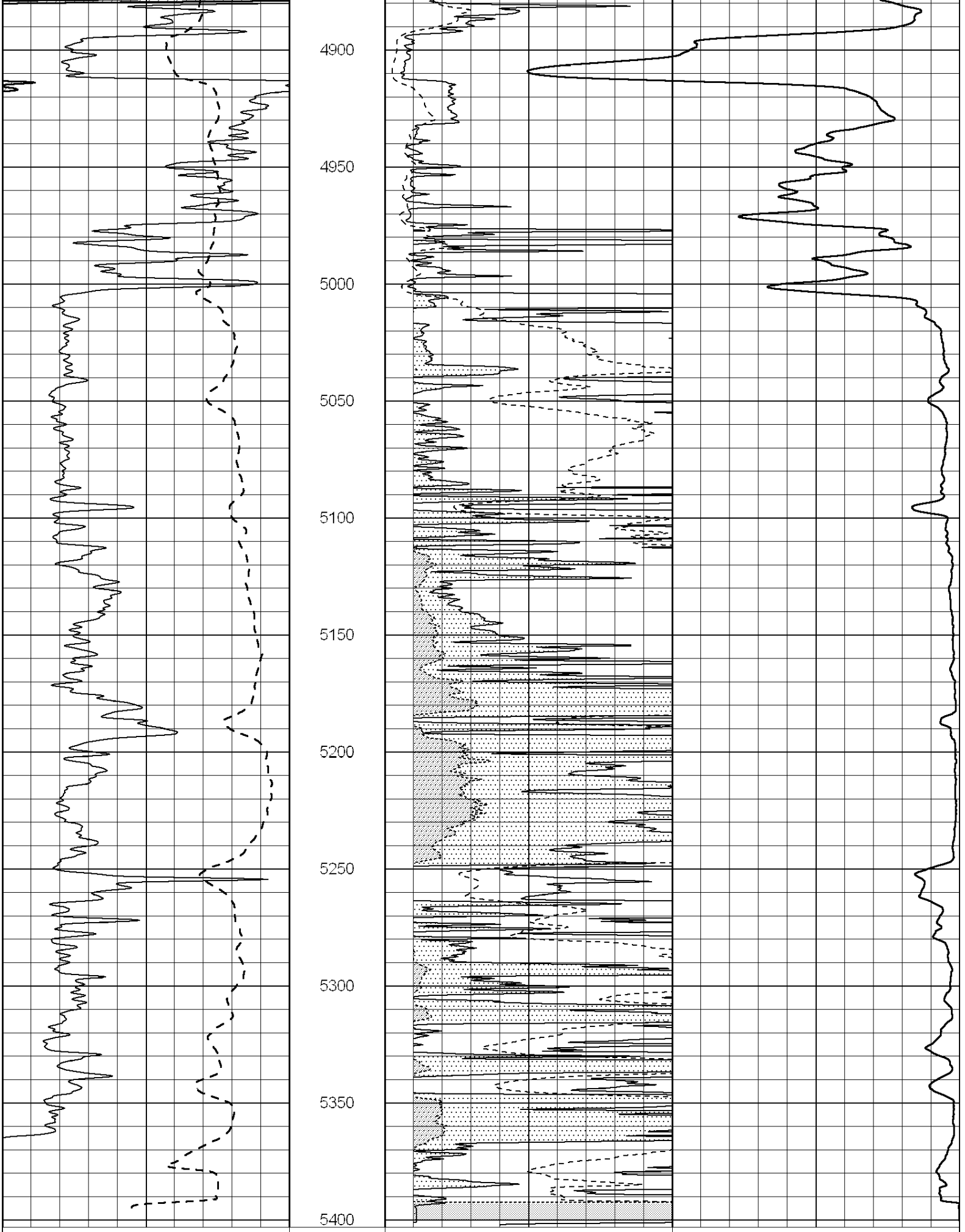
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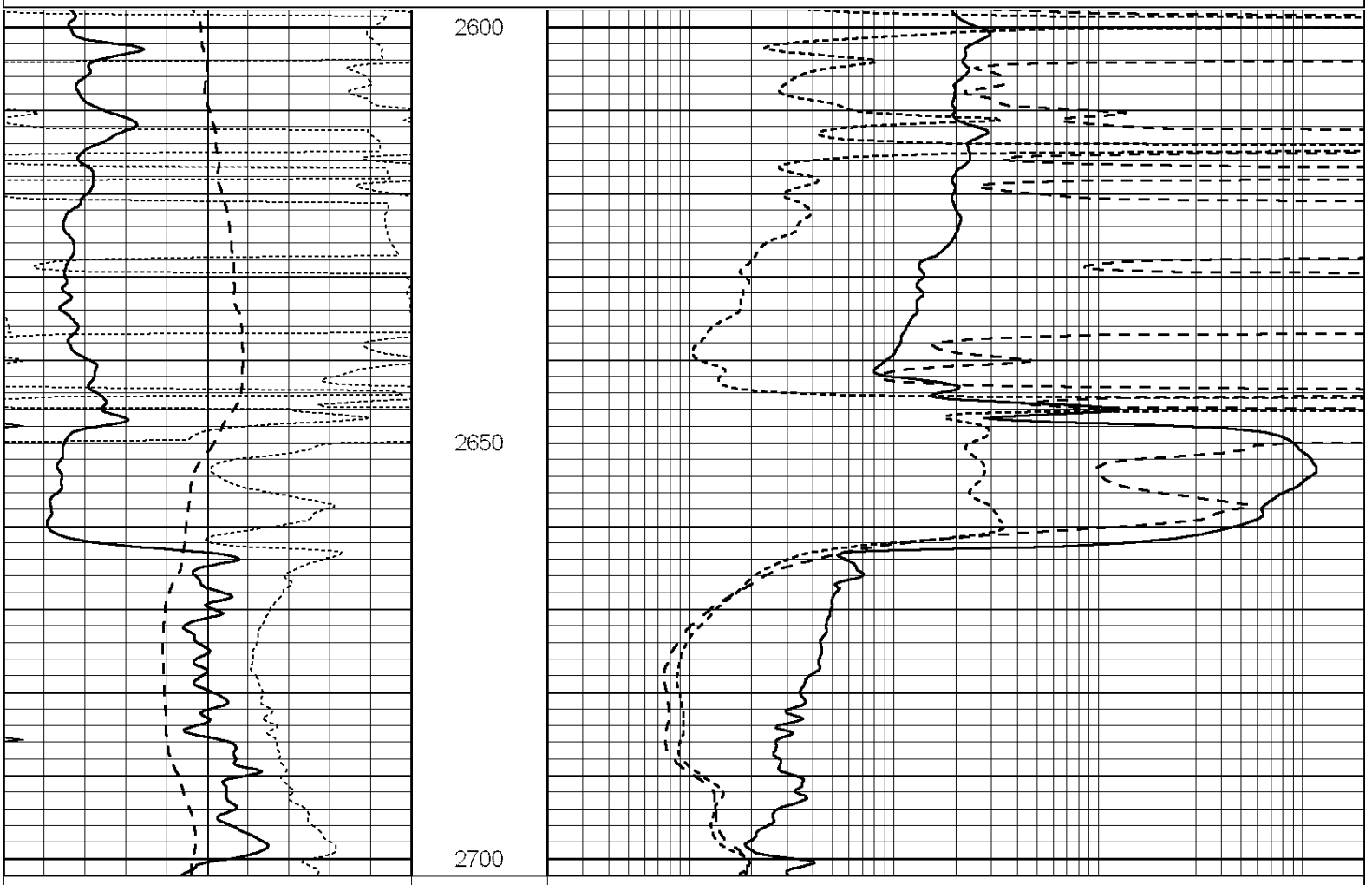
5000
5050
5100
5150
5200
5250
5300
5350
5400
0
Gamma Ray (GAPI)
150
-100
SP (mV)
100
0
RLL3 (Ohm-m)
50
0
RILD (Ohm-m)
50

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

Database File: 24155pe.db
Dataset Pathname: pass3.5
Presentation Format: _dil
Dataset Creation: Fri May 16 16:33:47 2014 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



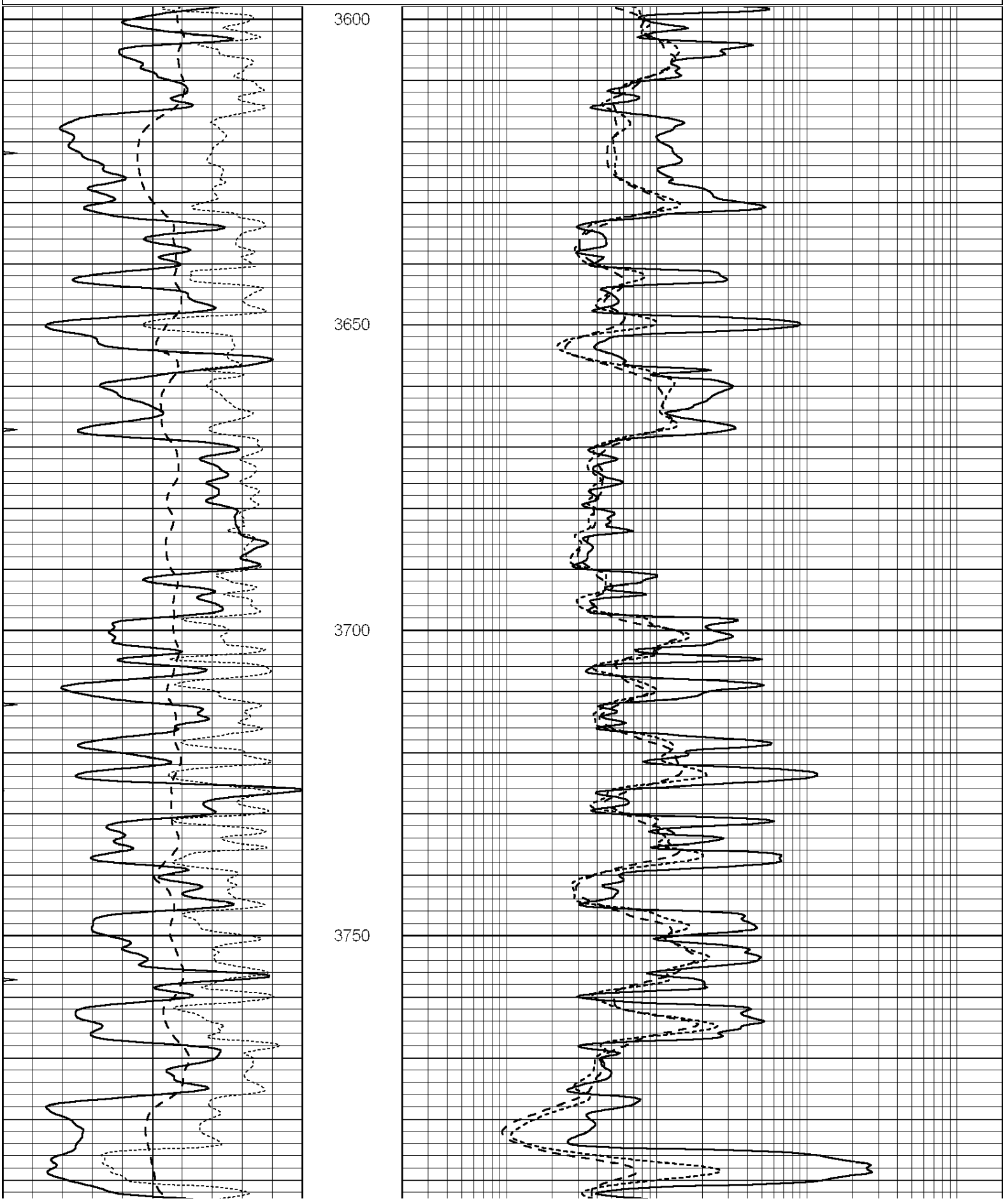
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

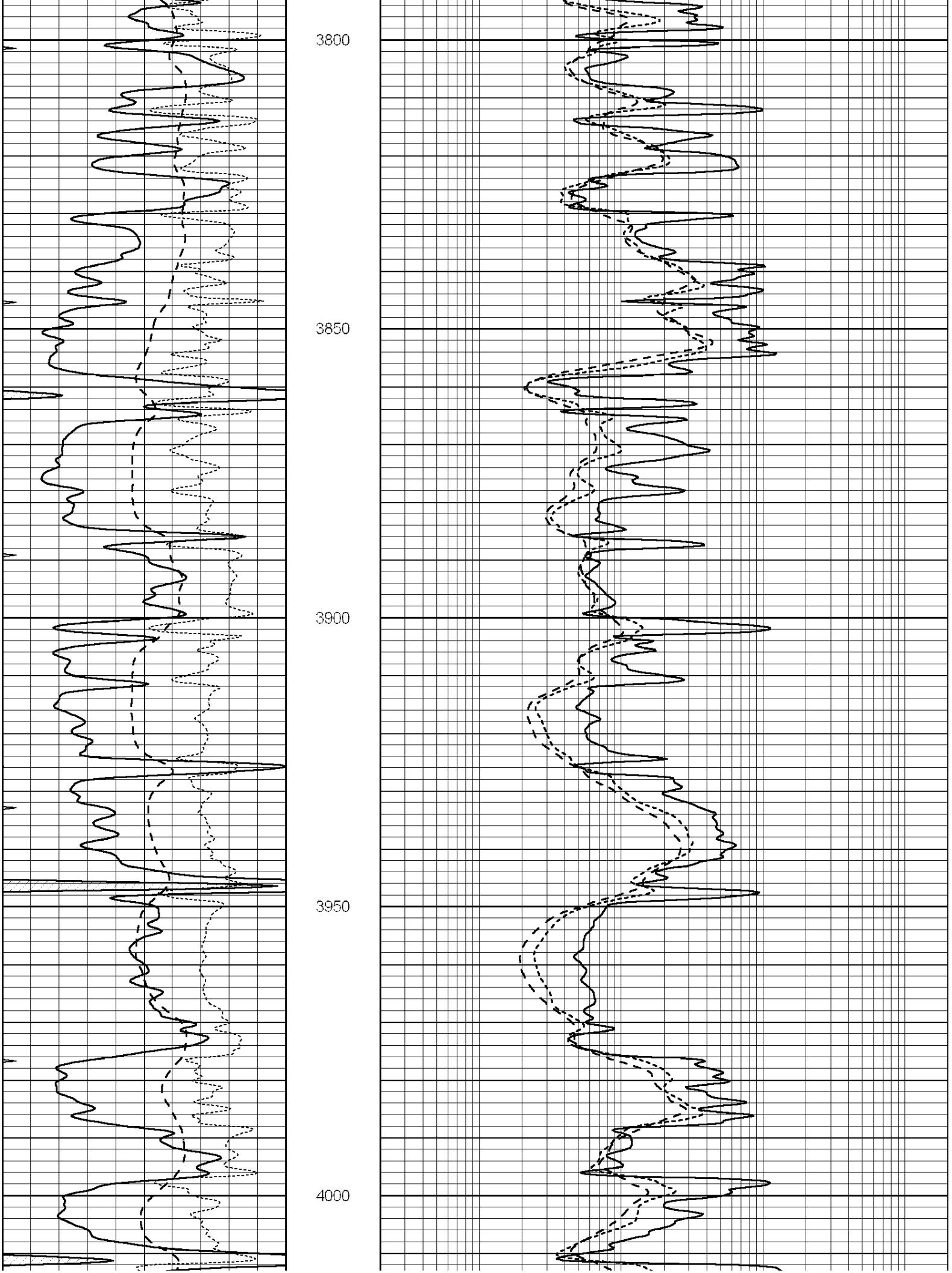
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Database File: 24155pe.db
Dataset Pathname: pass3.4
Presentation Format: _dil
Dataset Creation: Fri May 16 14:47:25 2014 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

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3900
3950
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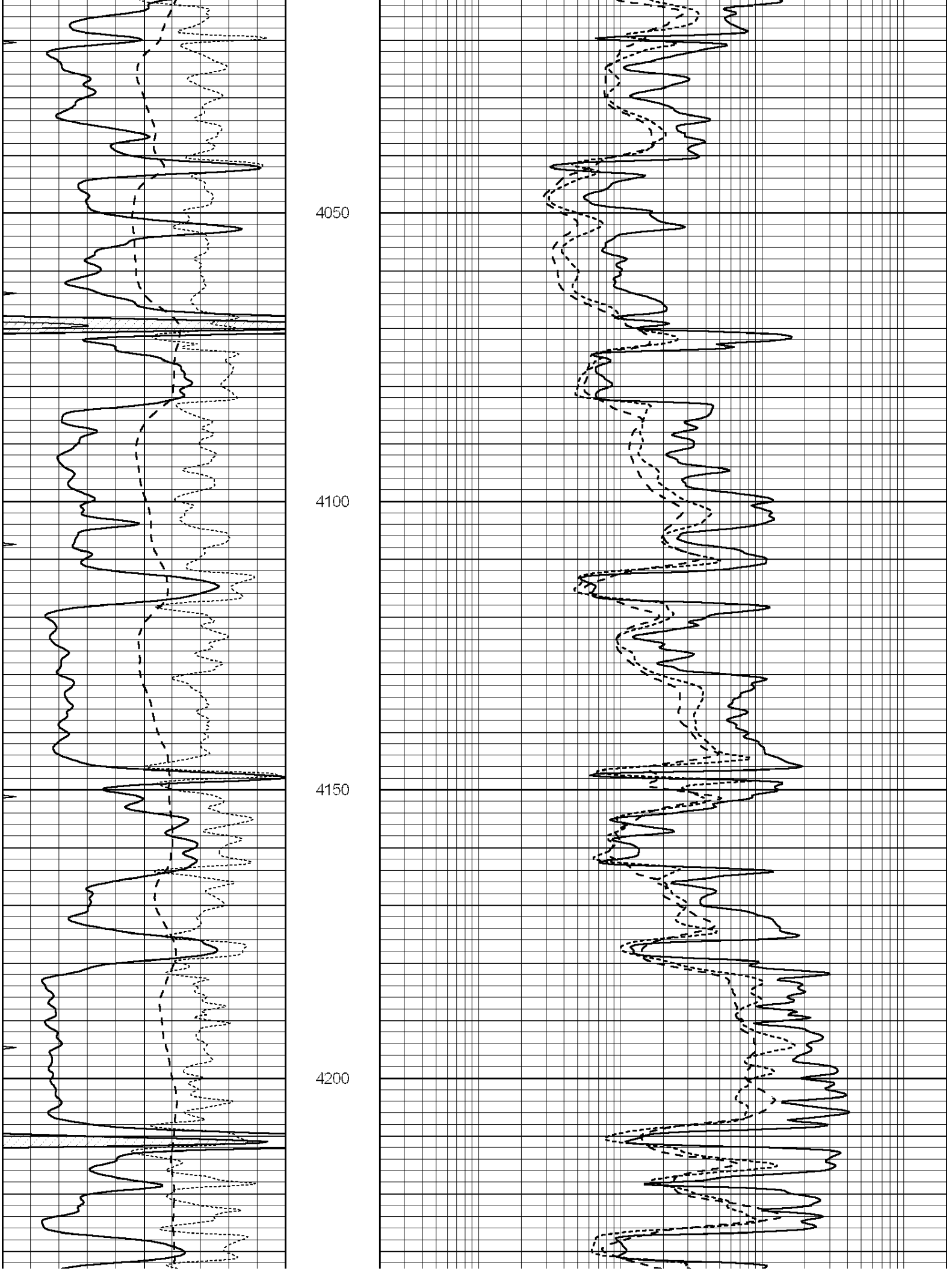
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4100
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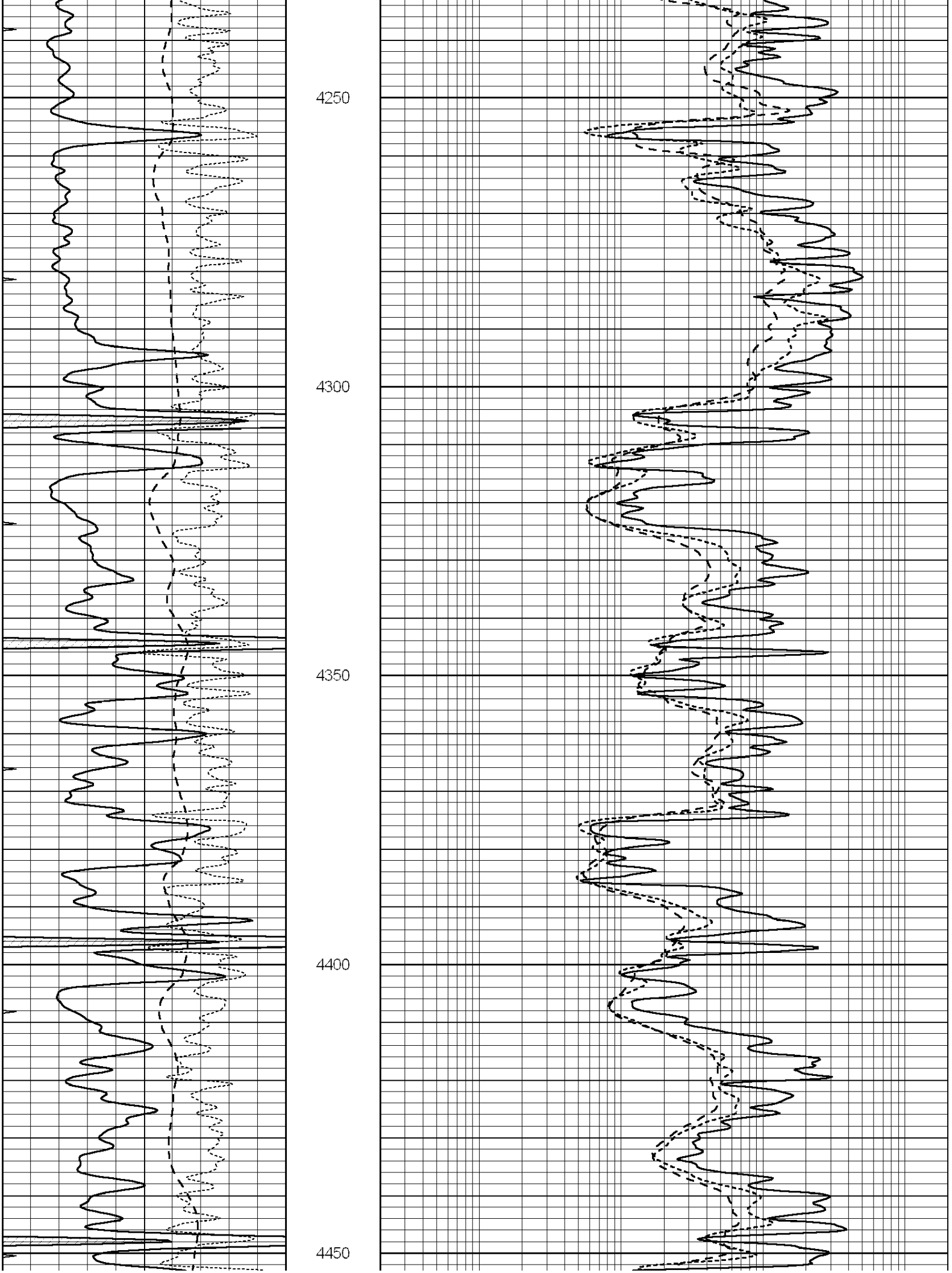
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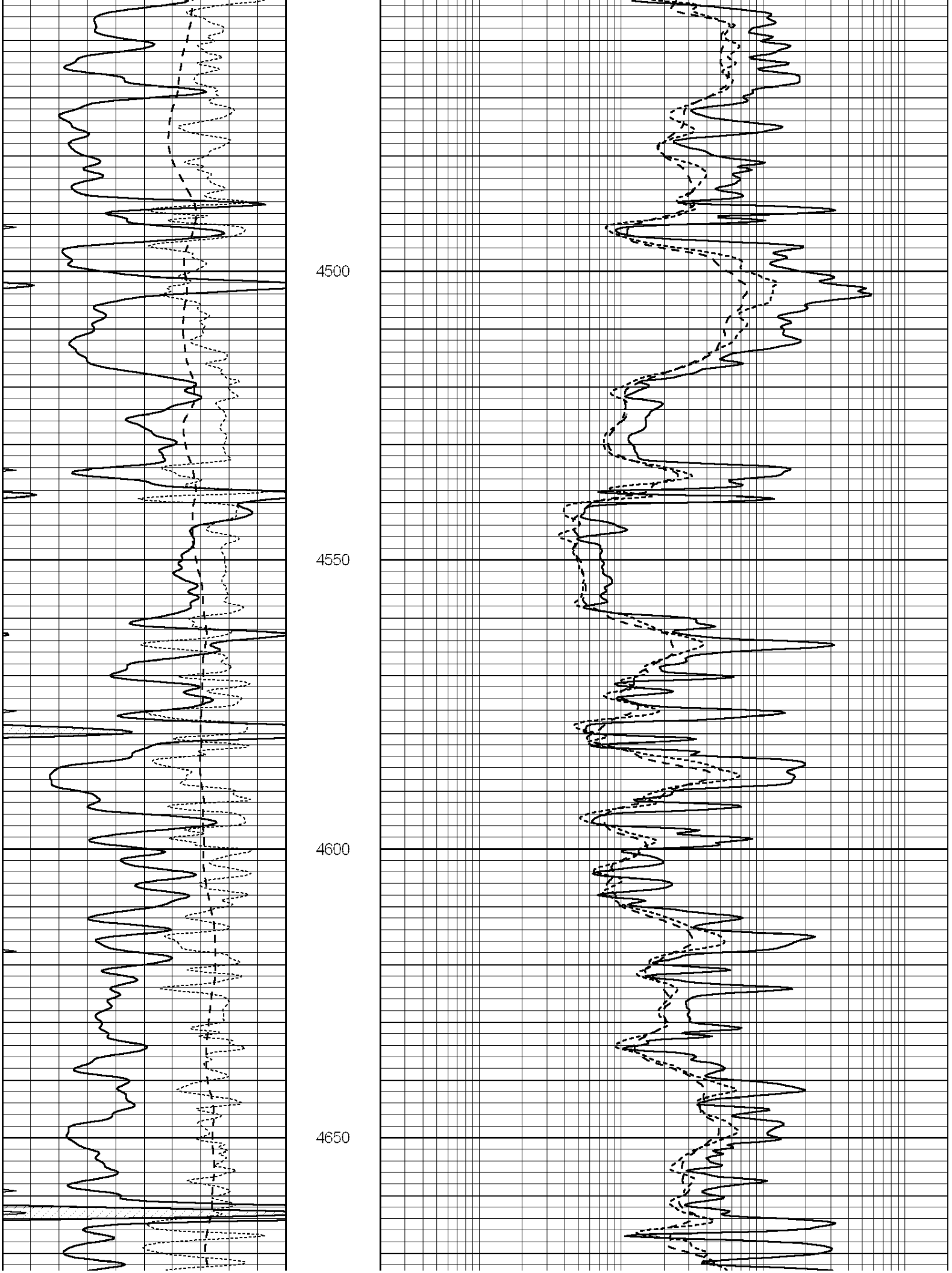
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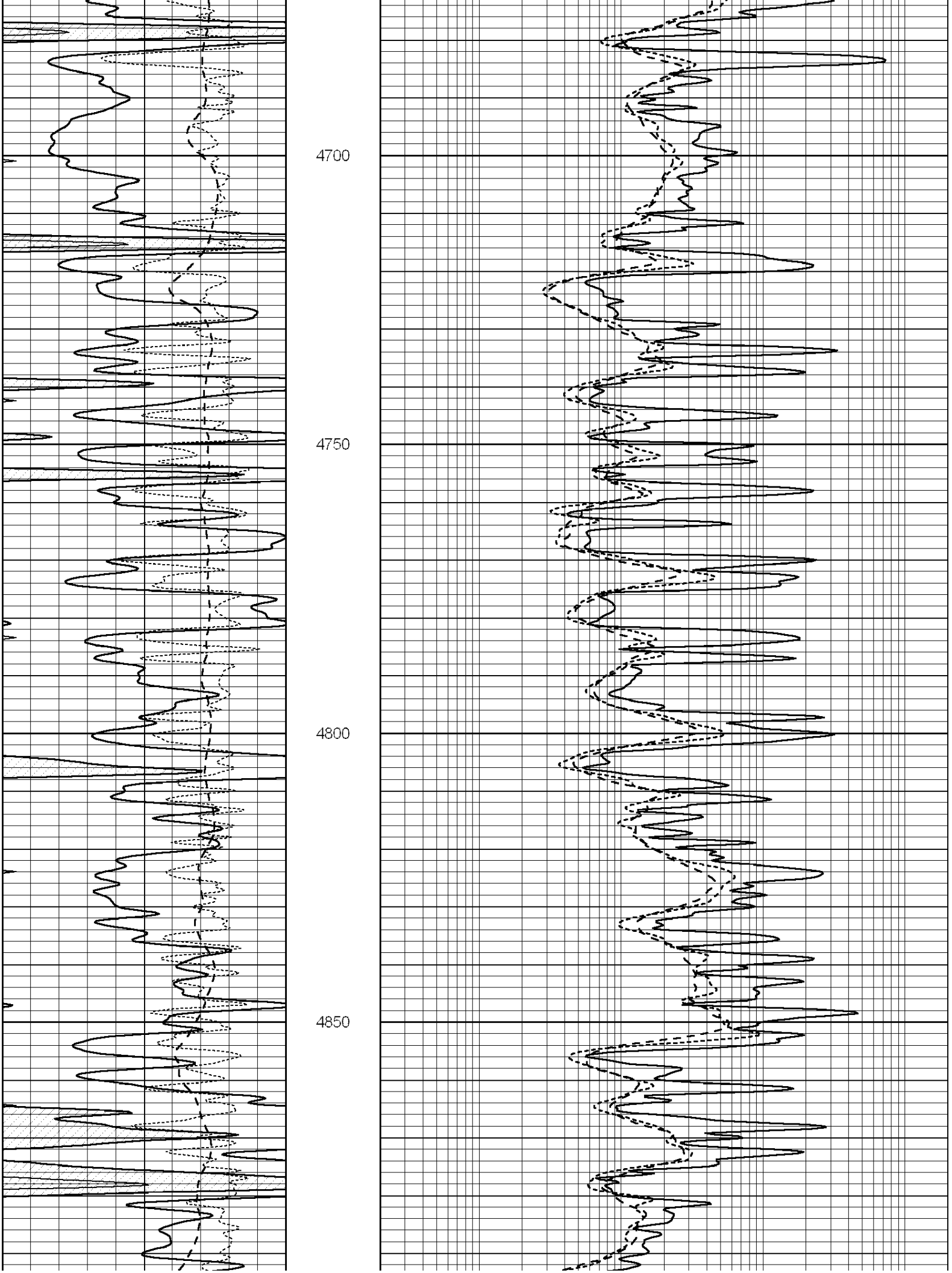
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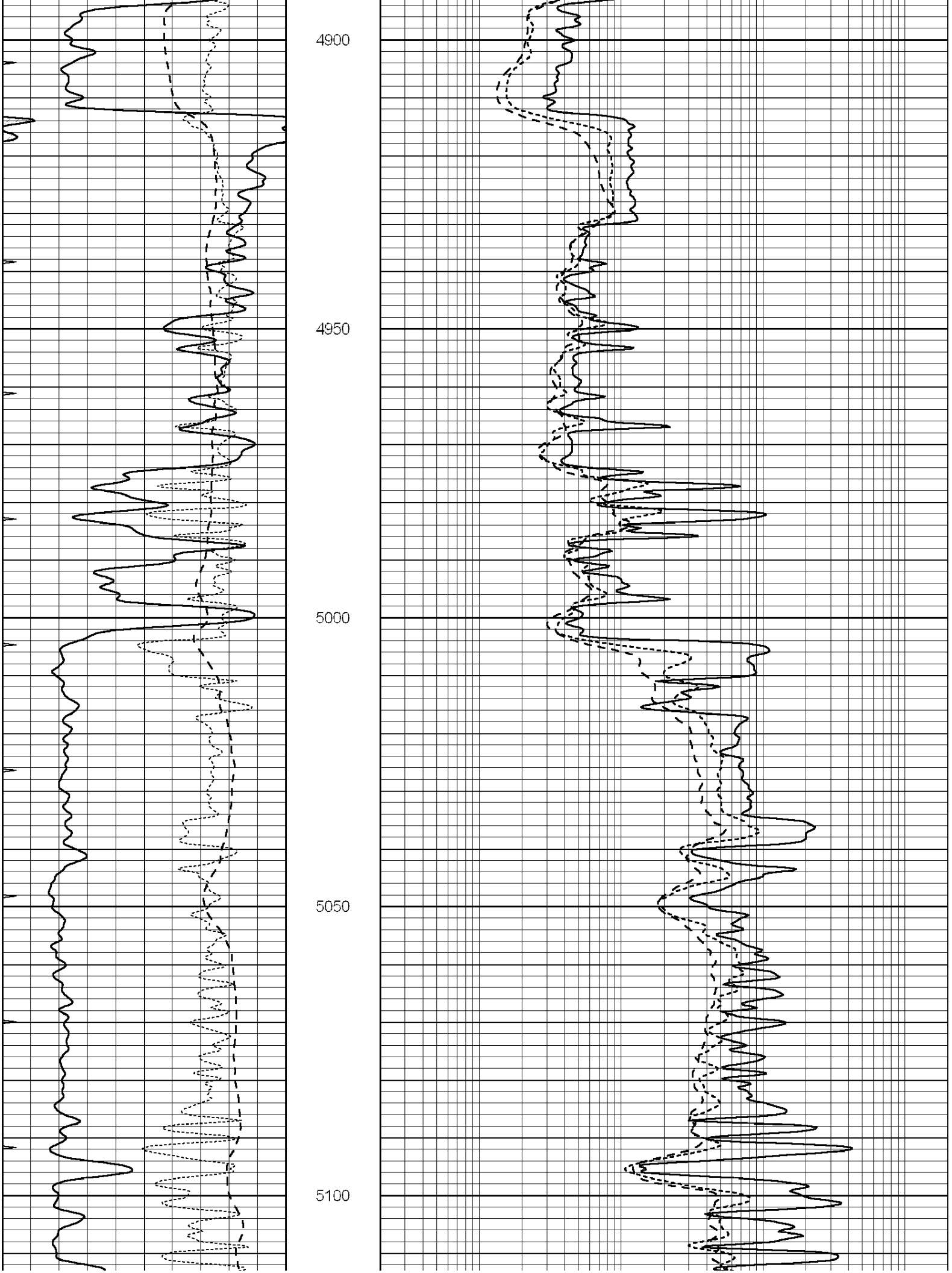
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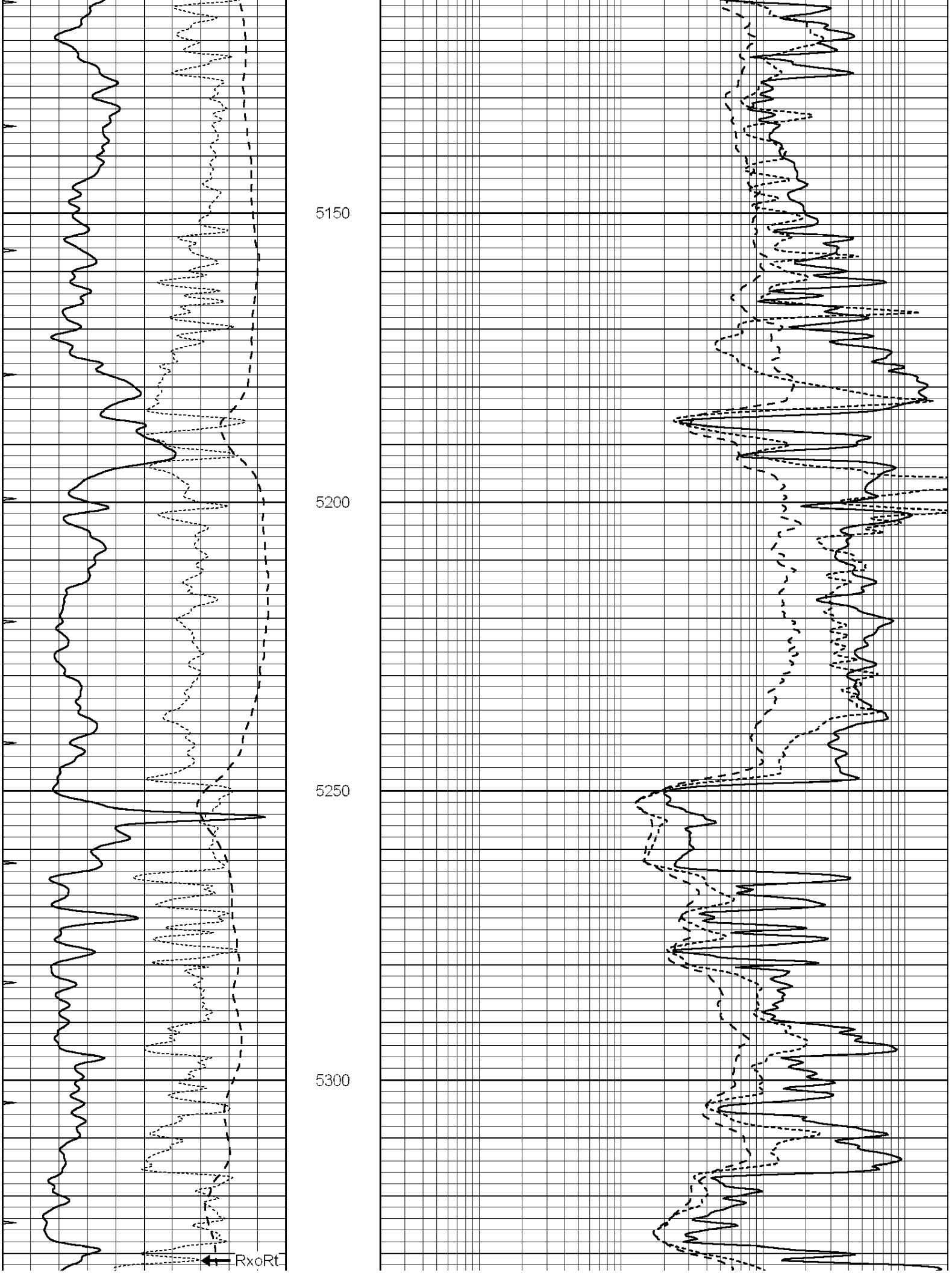
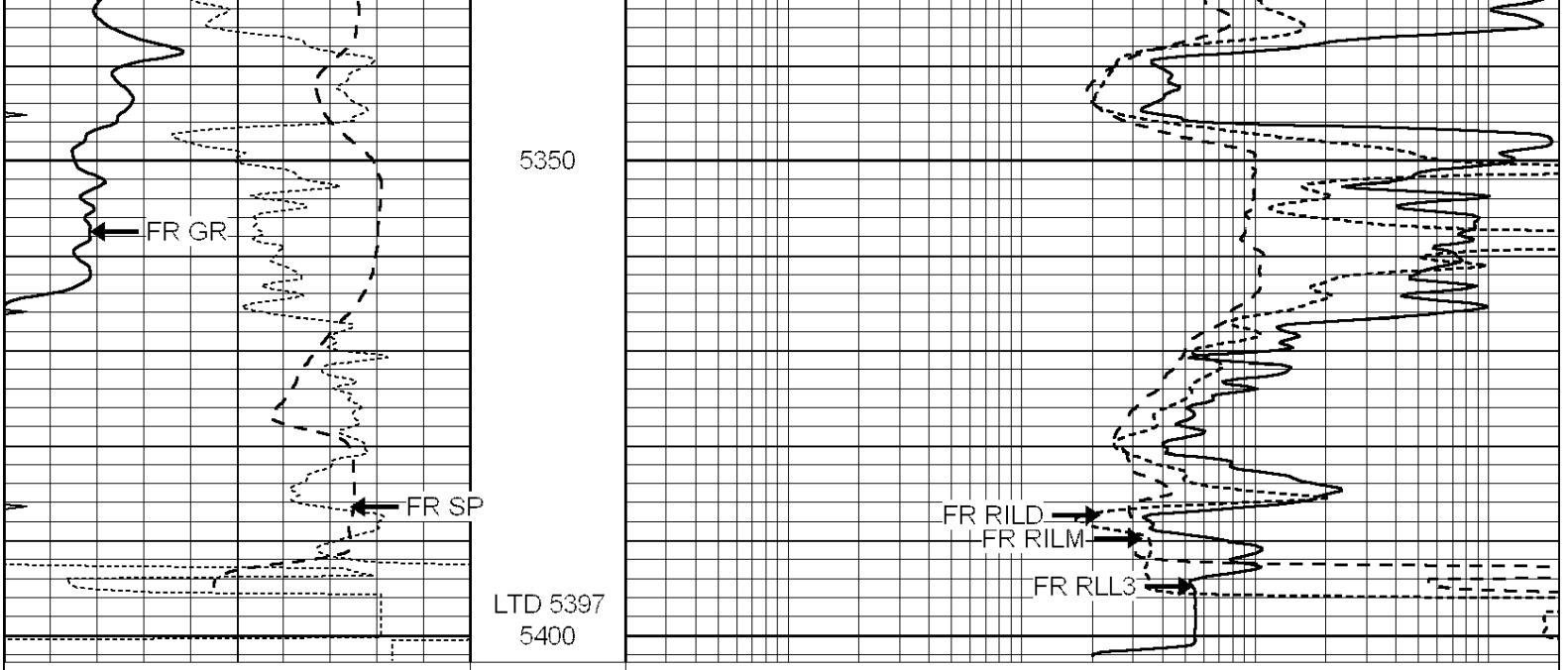
4950
5000
5050
5100


5150
5200
5250
5300
RxoRt



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

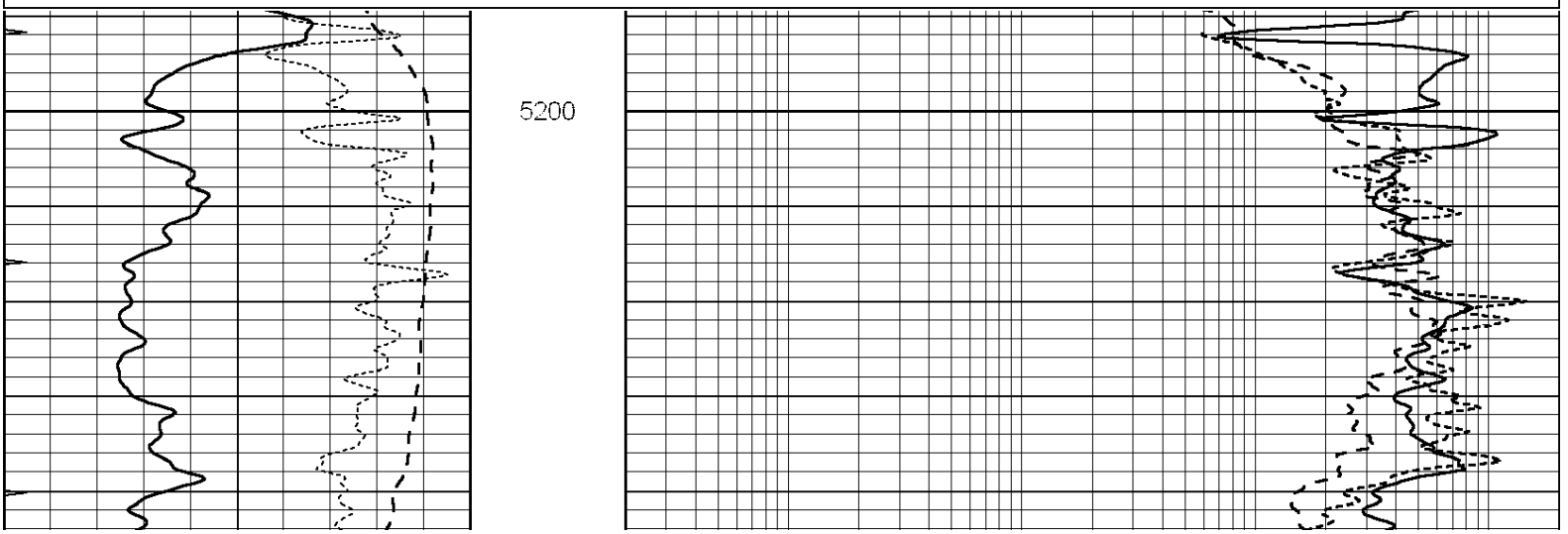
NABORS
COMPLETION & PRODUCTION SERVICES CO.

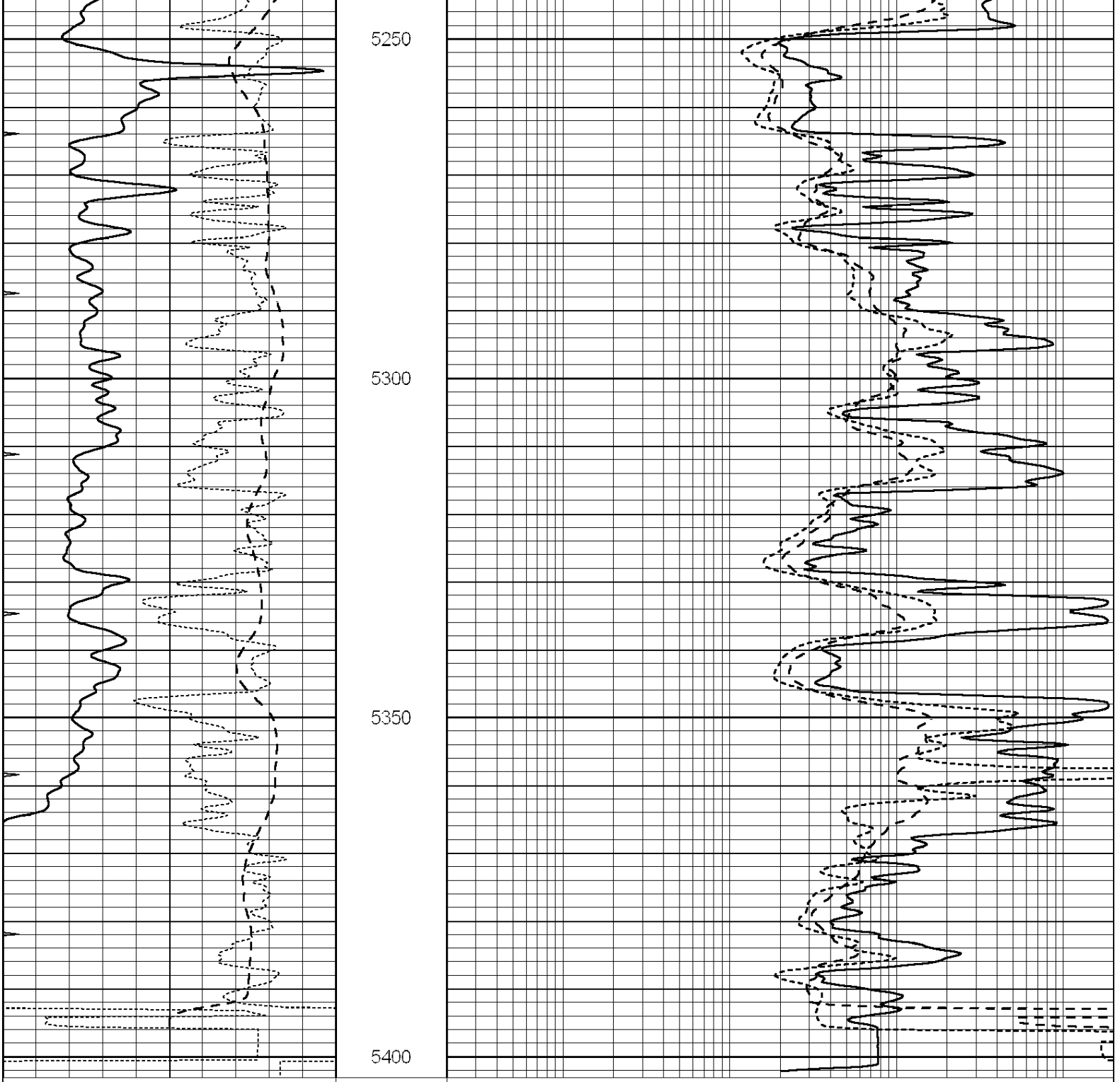
REPEAT SECTION

Database File: 24155pe.db
Dataset Pathname: pass2.4
Presentation Format: _dil
Dataset Creation: Fri May 16 15:03:58 2014 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





Calibration Report

Database File: 24155pe.db
Dataset Pathname: pass3.5
Dataset Creation: Fri May 16 16:33:47 2014 by Calc SOC 120430

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
Surface Cal Performed: Sat May 03 21:20:05 2014

Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	660.000	-8.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	600.000	-16.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report

Serial: 004N Model: PRB

Master Calibration

Performed Mon Jun 03 09:36:56 2013

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1417.6	10391.4	3464.6	11537.5	cps
Window 2	1295.0	8959.7	3050.1	9816.4	cps
Window 3	1105.1	5464.2	2051.0	5838.8	cps
Window 4	315.0	317.7	312.9	319.8	cps
Long Space	0.0	7664.6	1755.0	8521.3	cps
Short Space	1.8	1582.4	1040.8	1699.4	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	

Rib Angle	: 44.1	Rib Slope	: 0.970	Density/Spine Ratio	: 0.574
Spine Angle	: 74.1	Spine Slope	: 3.519	Spine Intercept	: -17.0

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
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: 070558
Tool Model: OPEN_GR
Performed: Thu May 15 06:08:02 2014

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps