SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company LARIO OIL & GAS COMPANY
Well KNAPP #1-31
Field WILDCAT
County GOVE State KANSAS

Location: API # : 15-063-21823-0000

1061' FNL & 1668' FWL

SEC 31 TWP 13S RGE 31W

Other Services
CDL/CNL/PE
MEL/SONIC

Elevation
K.B. 2937
D.F. 2935
G.L. 2932

Permanent Datum GROUND LEVEL Elevation 2932
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING

Date	2/25/10		
Run Number	ONE		
Depth Driller	4717		
Depth Logger	4718		
Bottom Logged Interval	4716		
Top Log Interval	00		
Casing Driller	8 5/8"@263'		
Casing Logger	263		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 4,000 PPM	
Density / Viscosity	9.0/52		
pH / Fluid Loss	10.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.500@80F		
Rmf @ Meas. Temp	.375@80F		
Rmc @ Meas. Temp	.600@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.325@123F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	12:15 P.M.		
Maximum Recorded Temperature	123F		
Equipment Number	0836		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	VERN SCHRAG		

Company LARIO OIL & GAS COMPANY
Well KNAPP #1-31
Field WILDCAT
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State KANSAS

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Comments

THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395

DIRECTIONS

OAKLEY, KS. (JUNCTION OF OLD 40 & HWY 83) 20S. ON HWY 83 TO "JAYHAWK RD."(MONUMENT ROCK SIGN) 2E. TO "RD. 10", 4N., E. INTO

MAIN SECTION

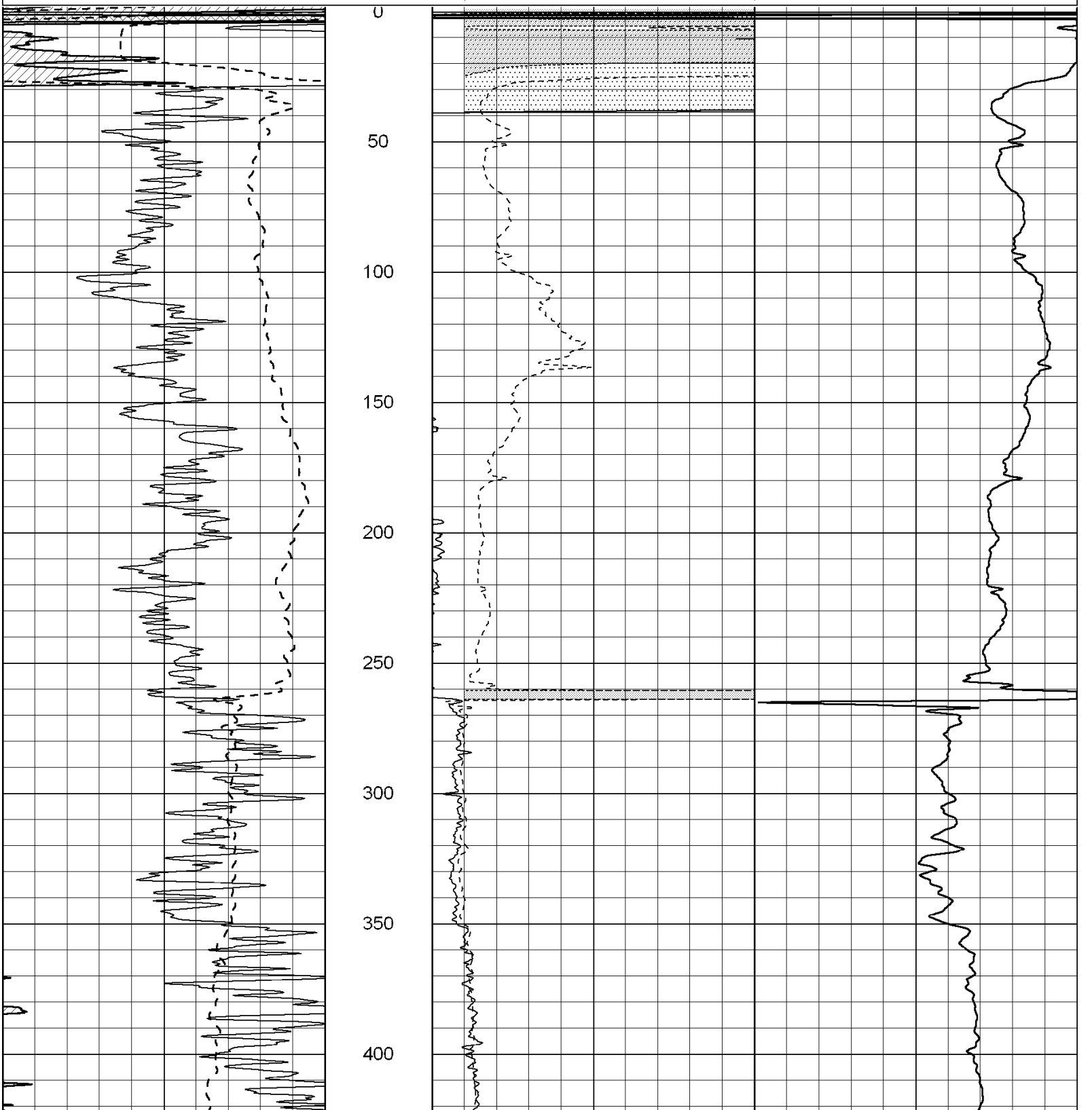
SUPERIOR
Hays,
Kansas
SUPERIOR WELL SERVICES

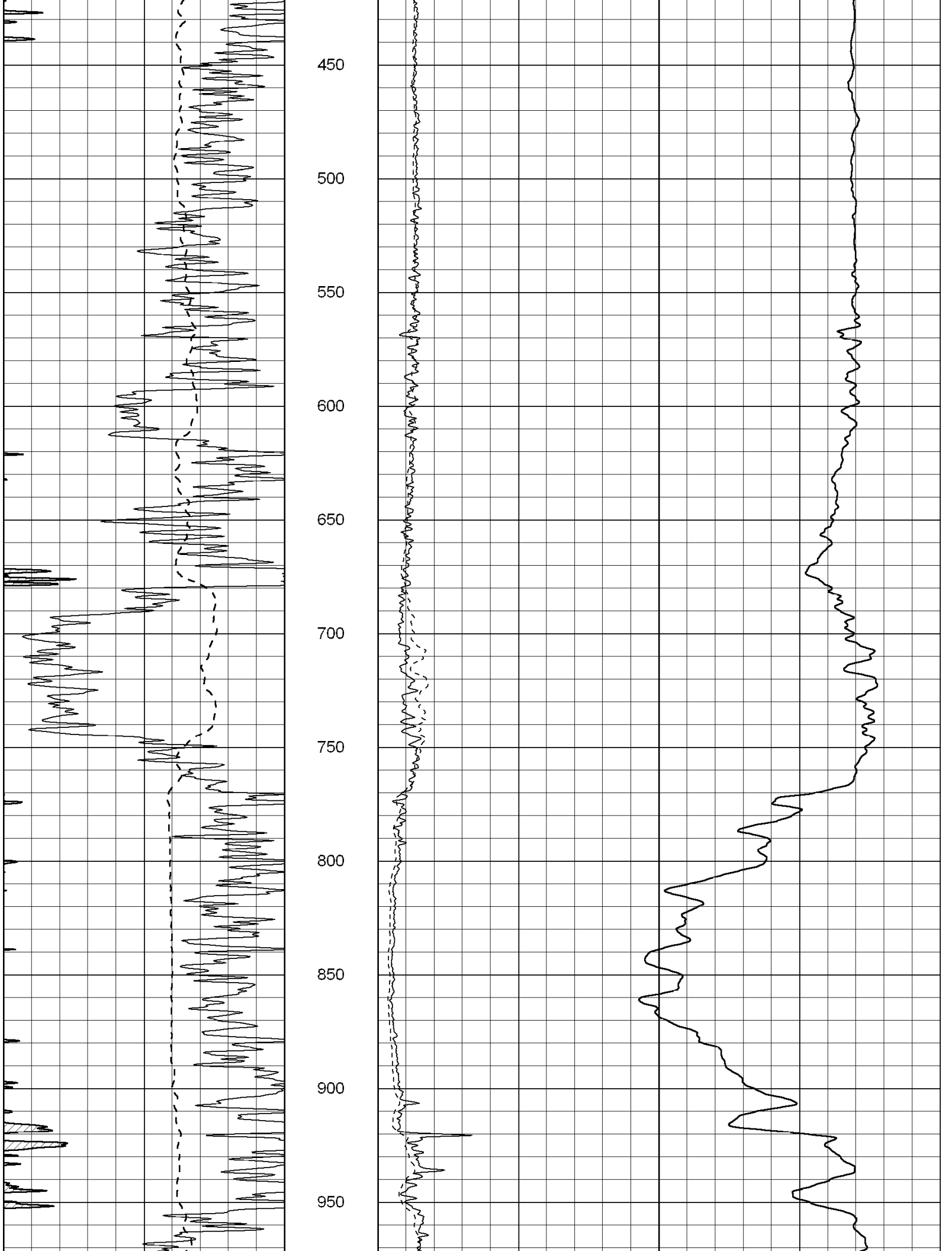
Kansas

Database File: 004724pe.db
Dataset Pathname: pass3.6
Presentation Format: dil2
Dataset Creation: Thu Feb 25 13:47:28 2010
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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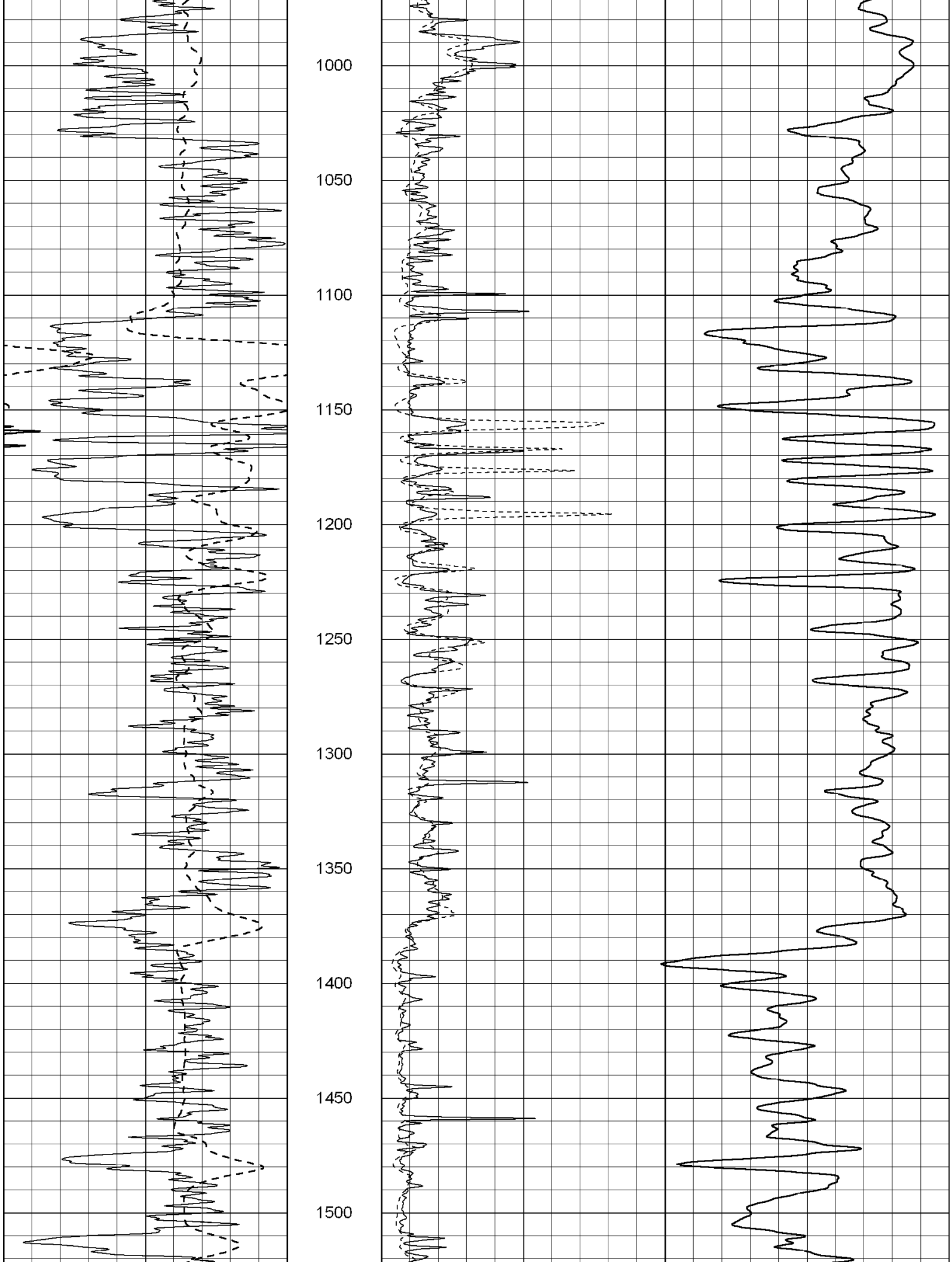
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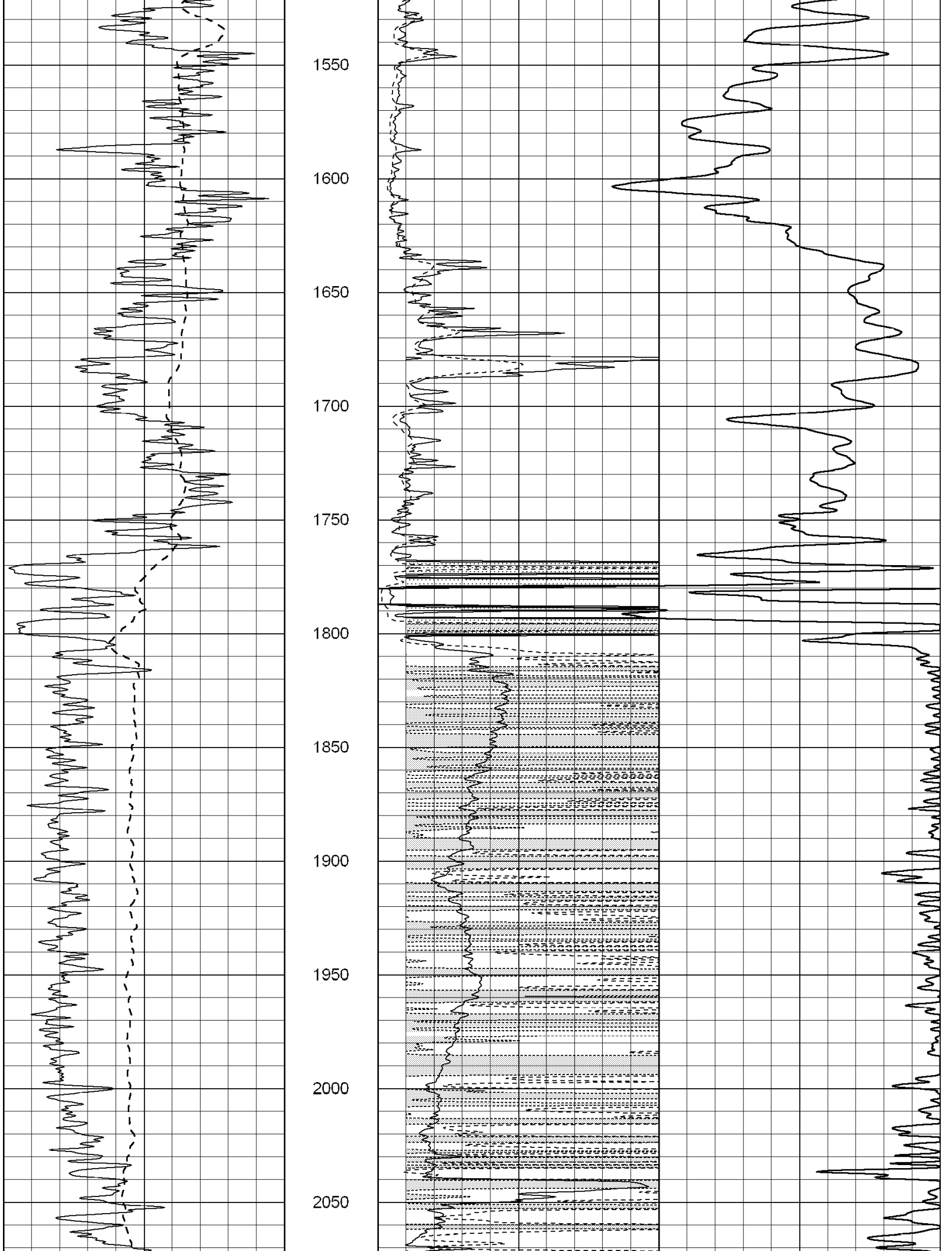
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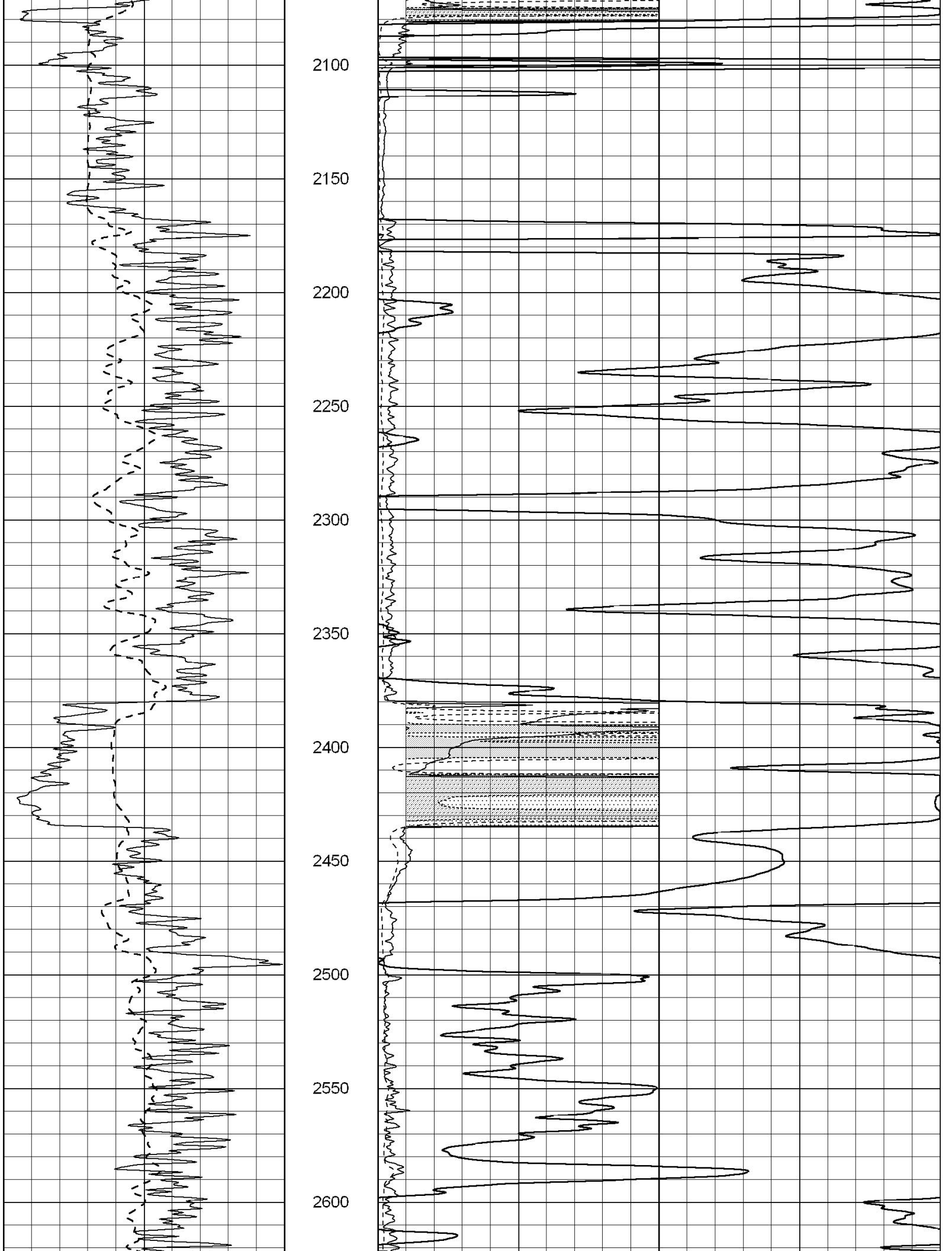
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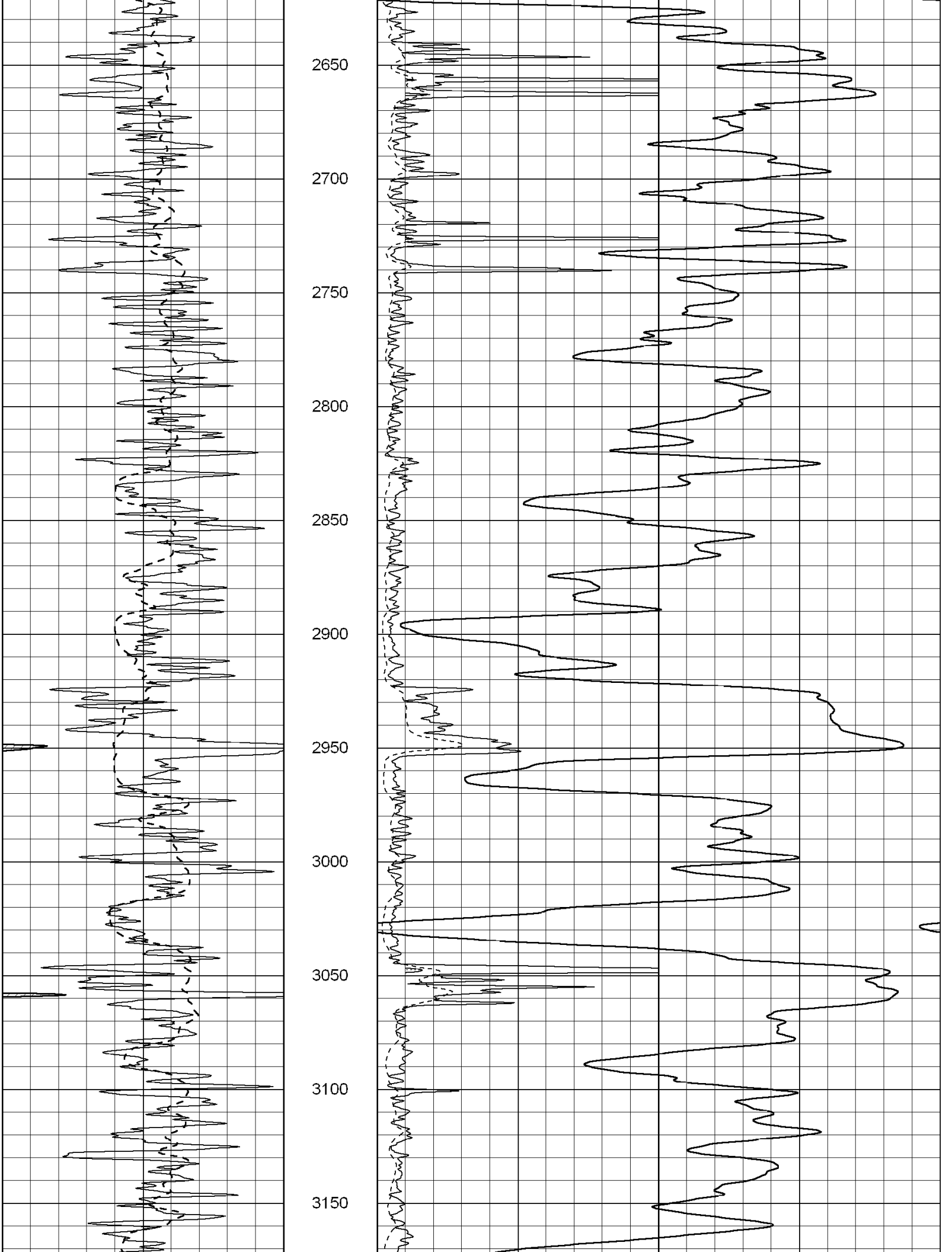
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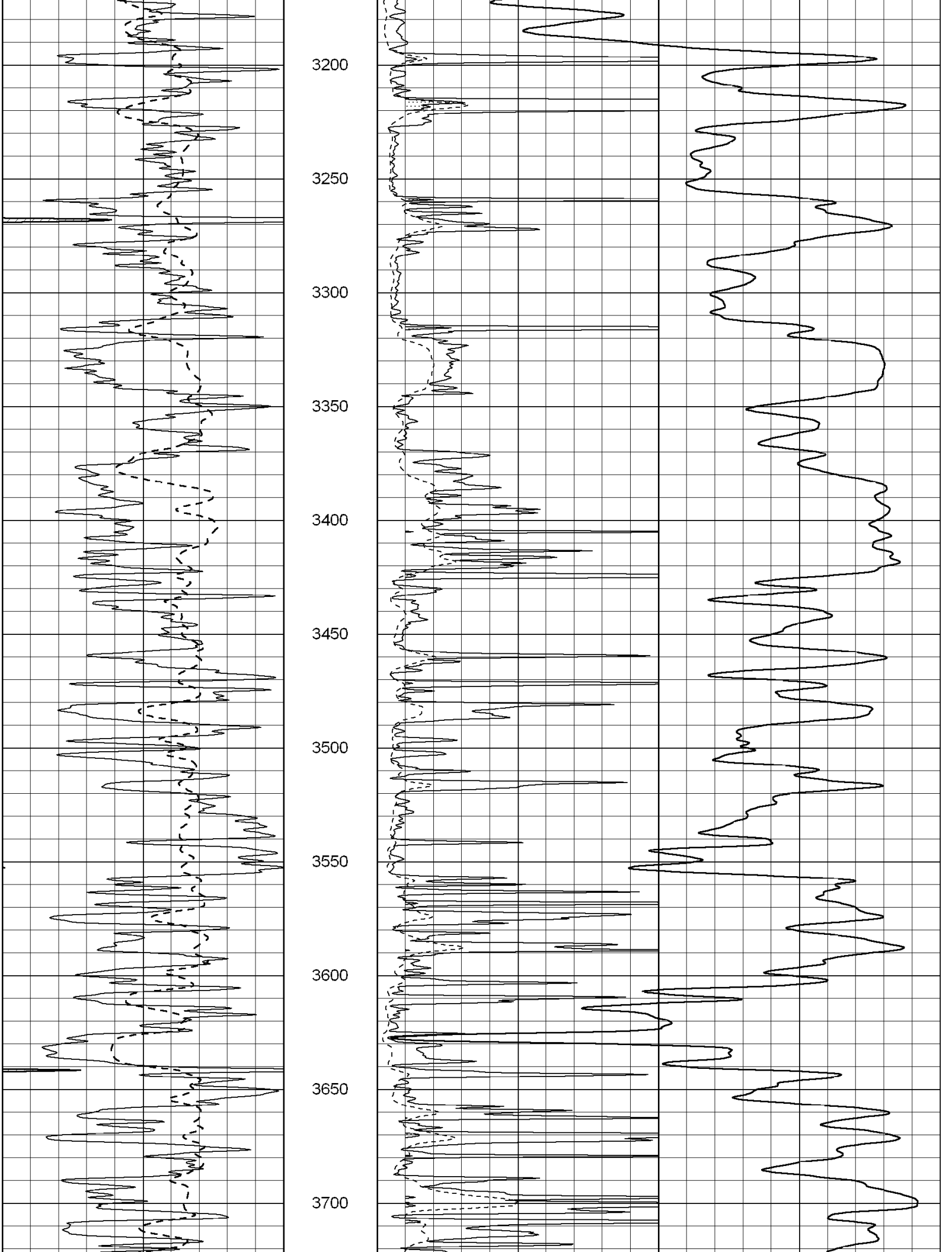
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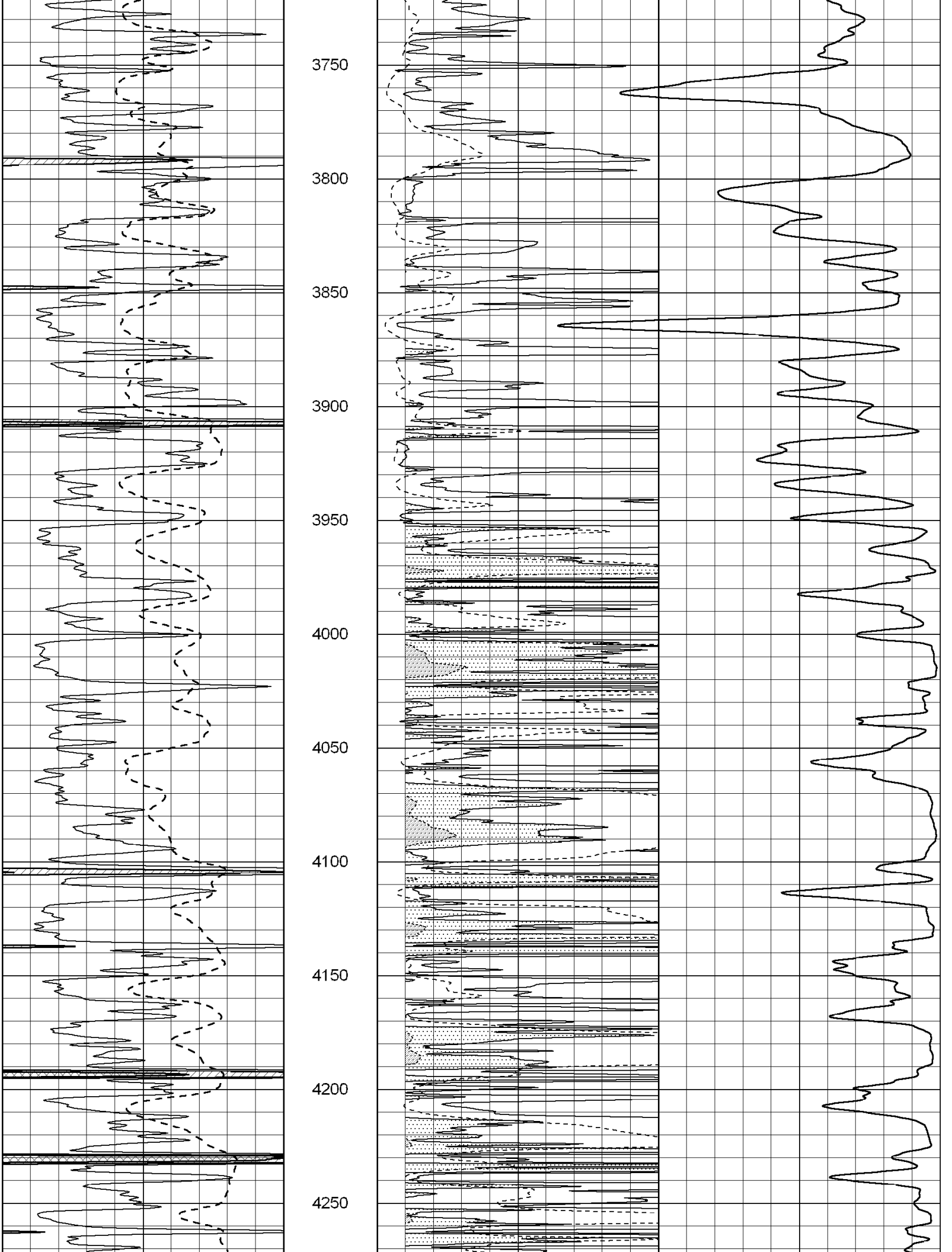
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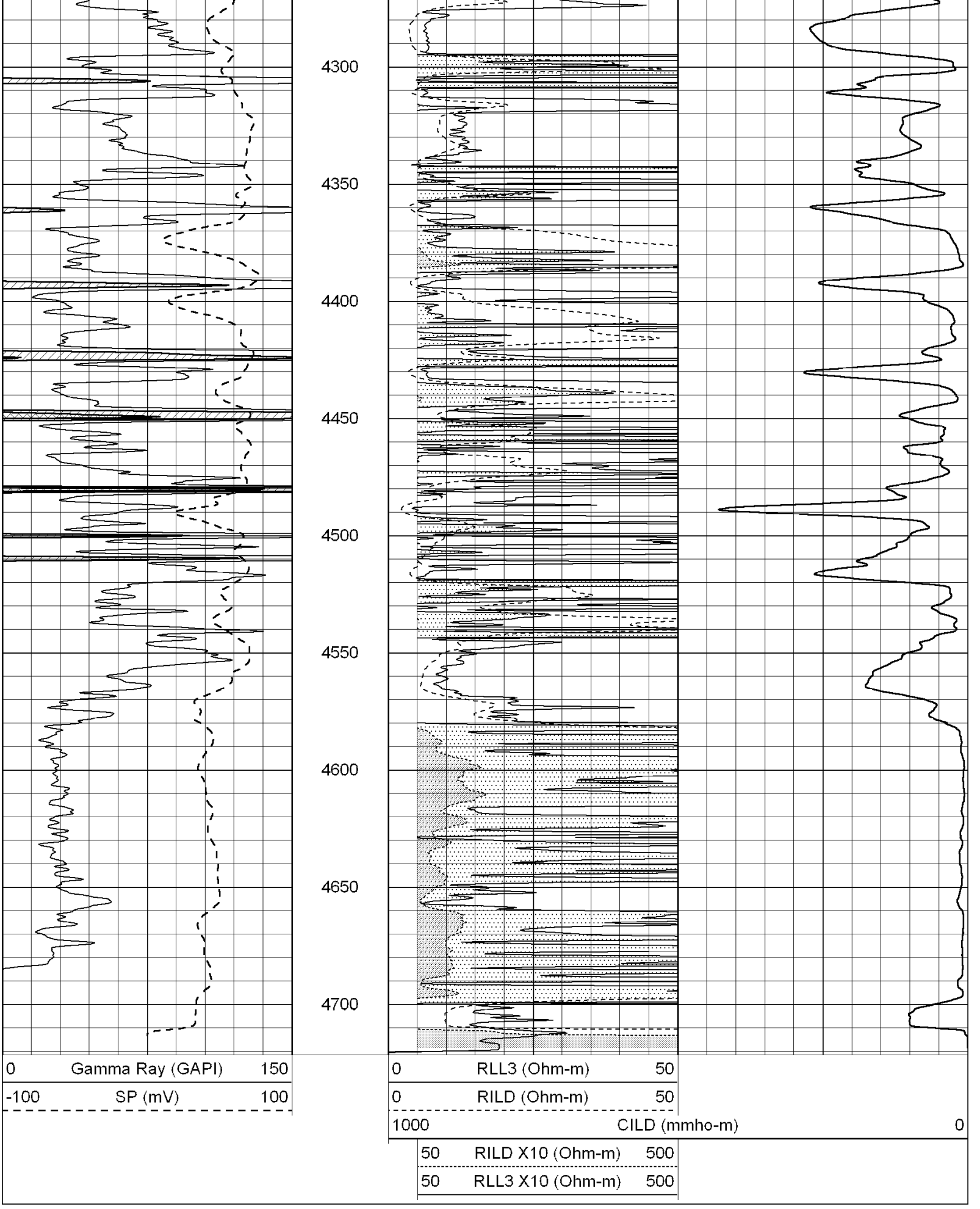


SUPERIOR

SUPERIOR

ANHYDRITE

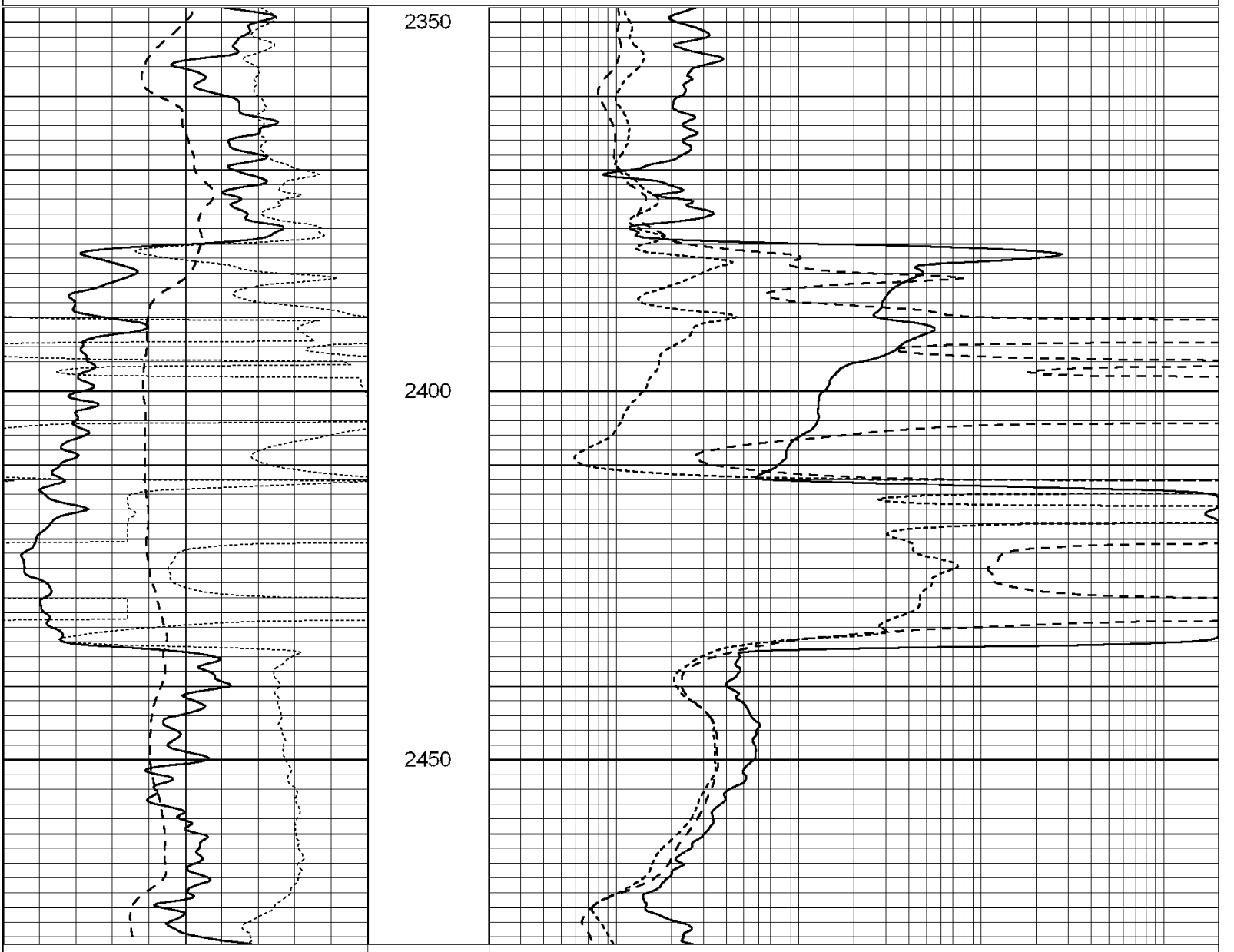
SUPERIOR WELL SERVICES
Hays, Kansas

ANHYDRITE

Database File:	004724pe.db
Dataset Pathname:	pass3.7
Presentation Format:	dil
Dataset Creation:	Thu Feb 25 13:47:43 2010 by Calc Open-Cased 060407
Charted by:	Depth in Feet scaled 1:240

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

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

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

SUPERIOR WELL SERVICES
Hays, Kansas

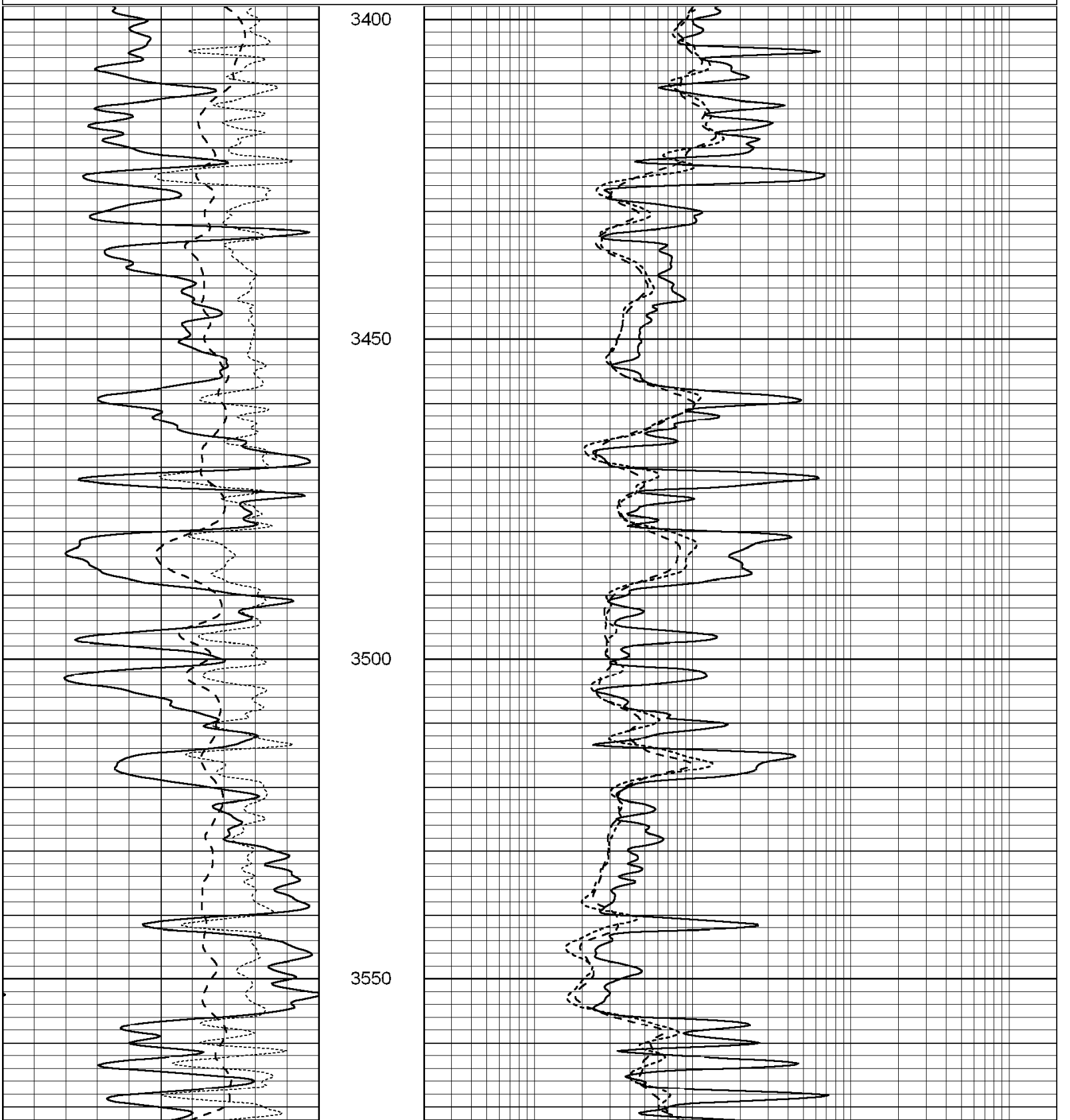
MAIN SECTION

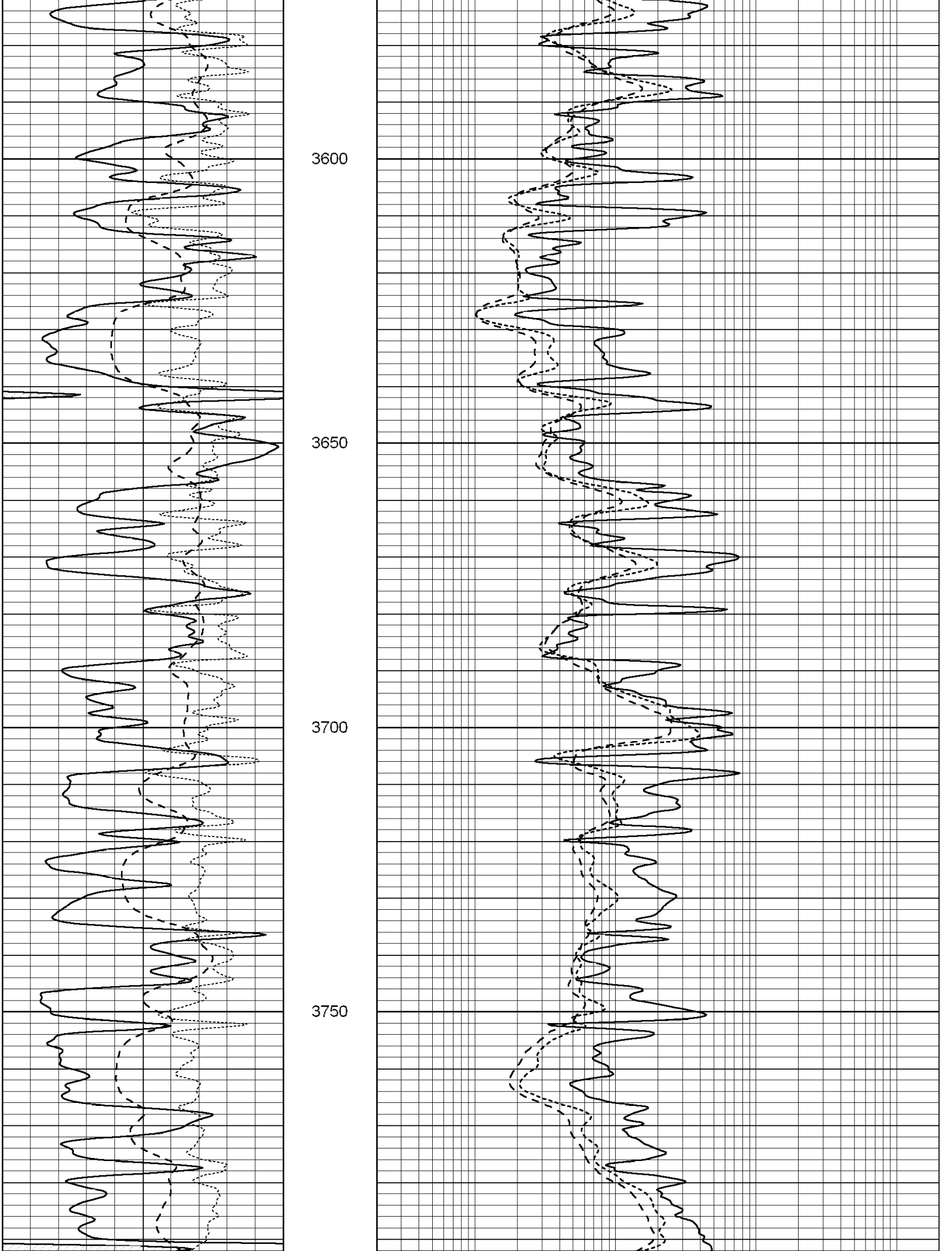
Kansas

Database File:	004724pe.db
Dataset Pathname:	pass3.6
Presentation Format:	dil
Dataset Creation:	Thu Feb 25 13:47:28 2010
Charted by:	Depth in Feet scaled 1:240

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

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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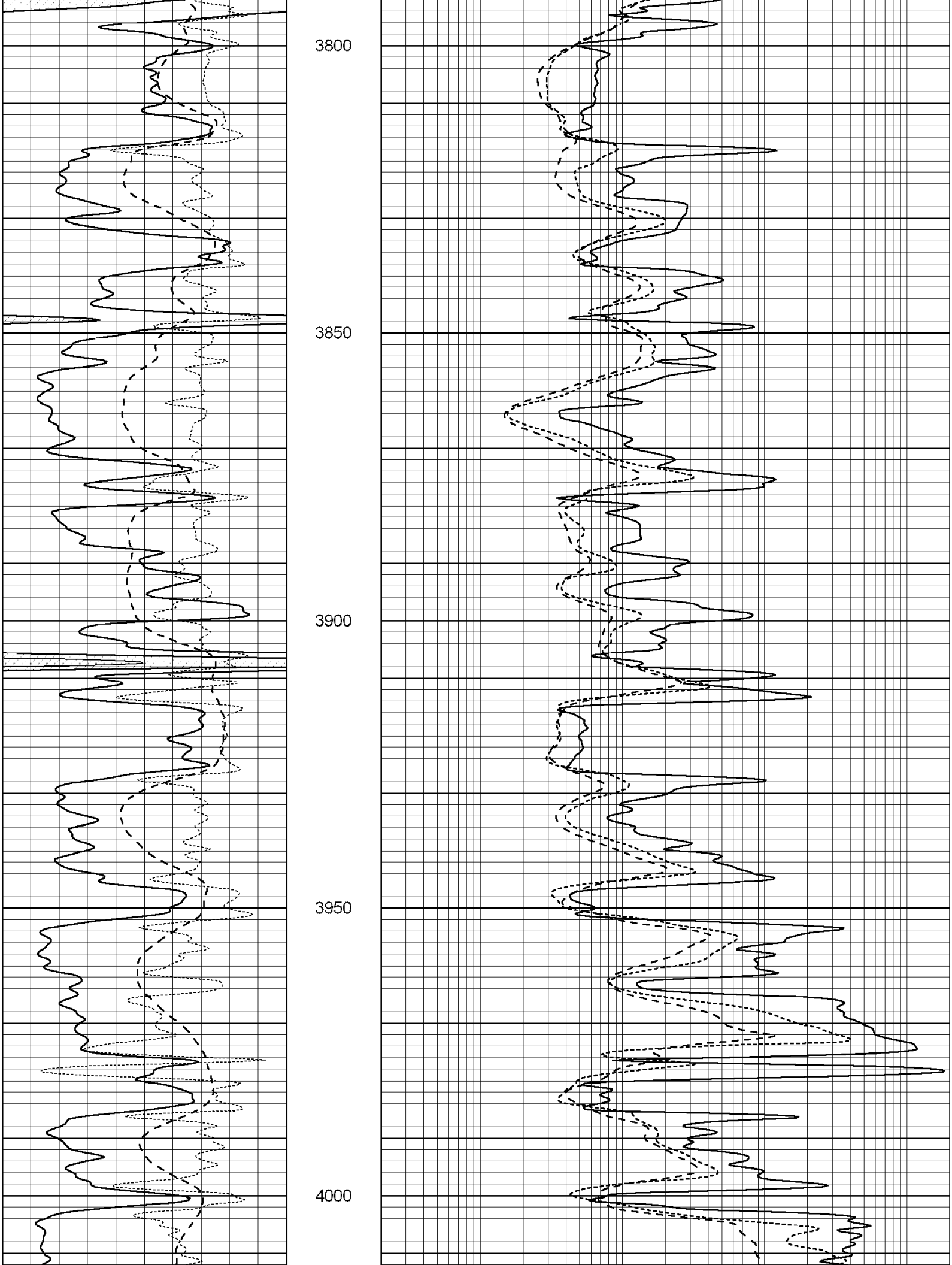
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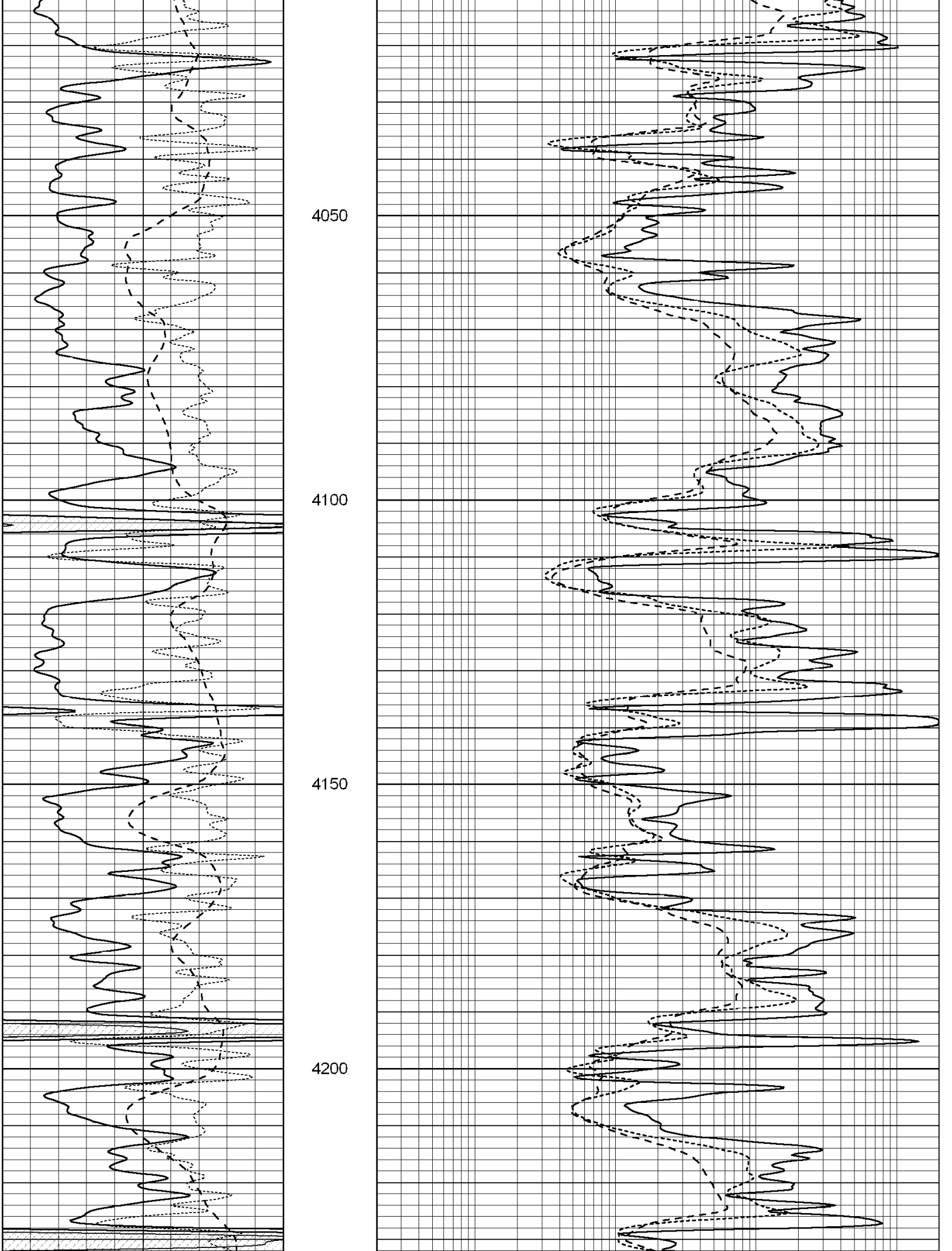
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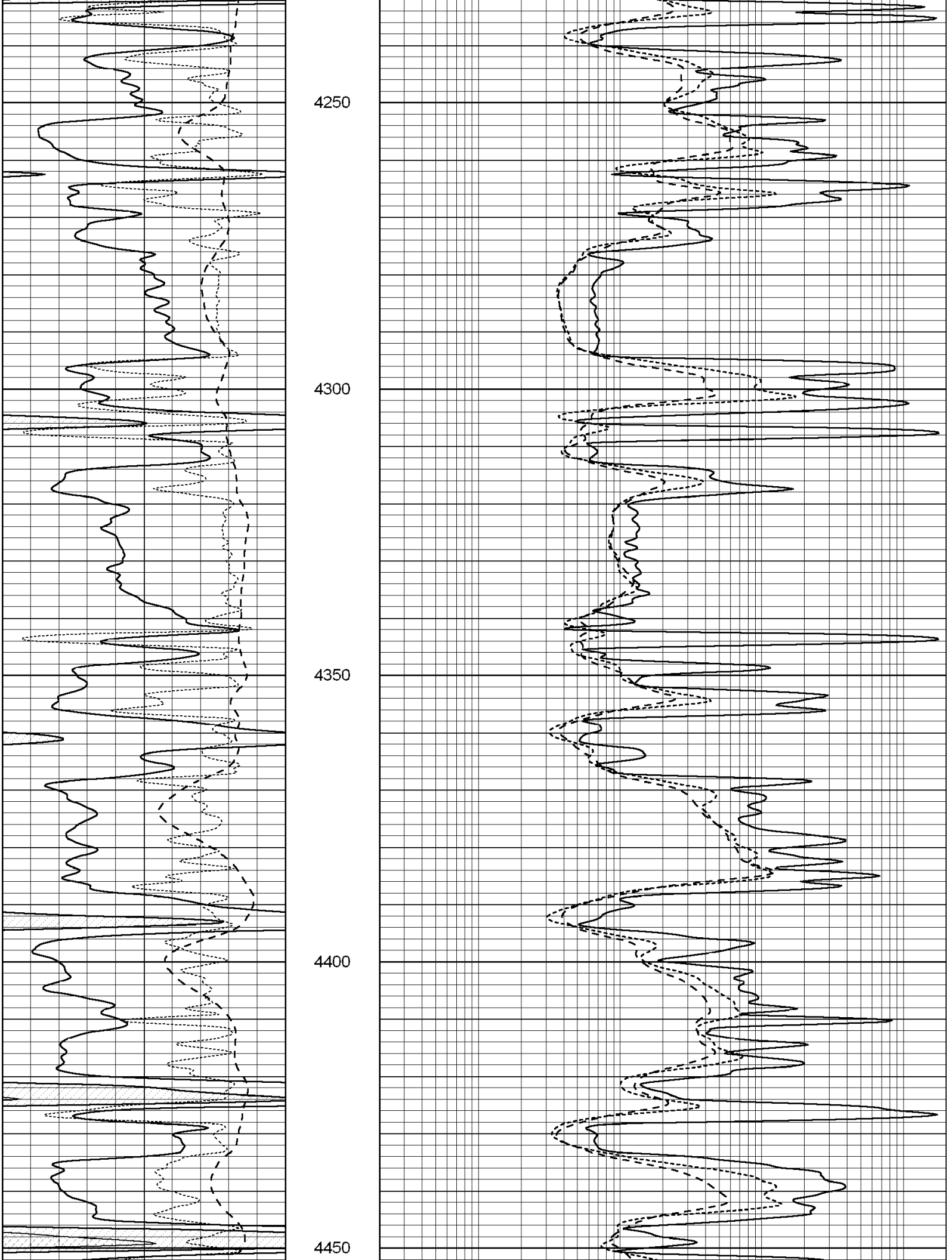
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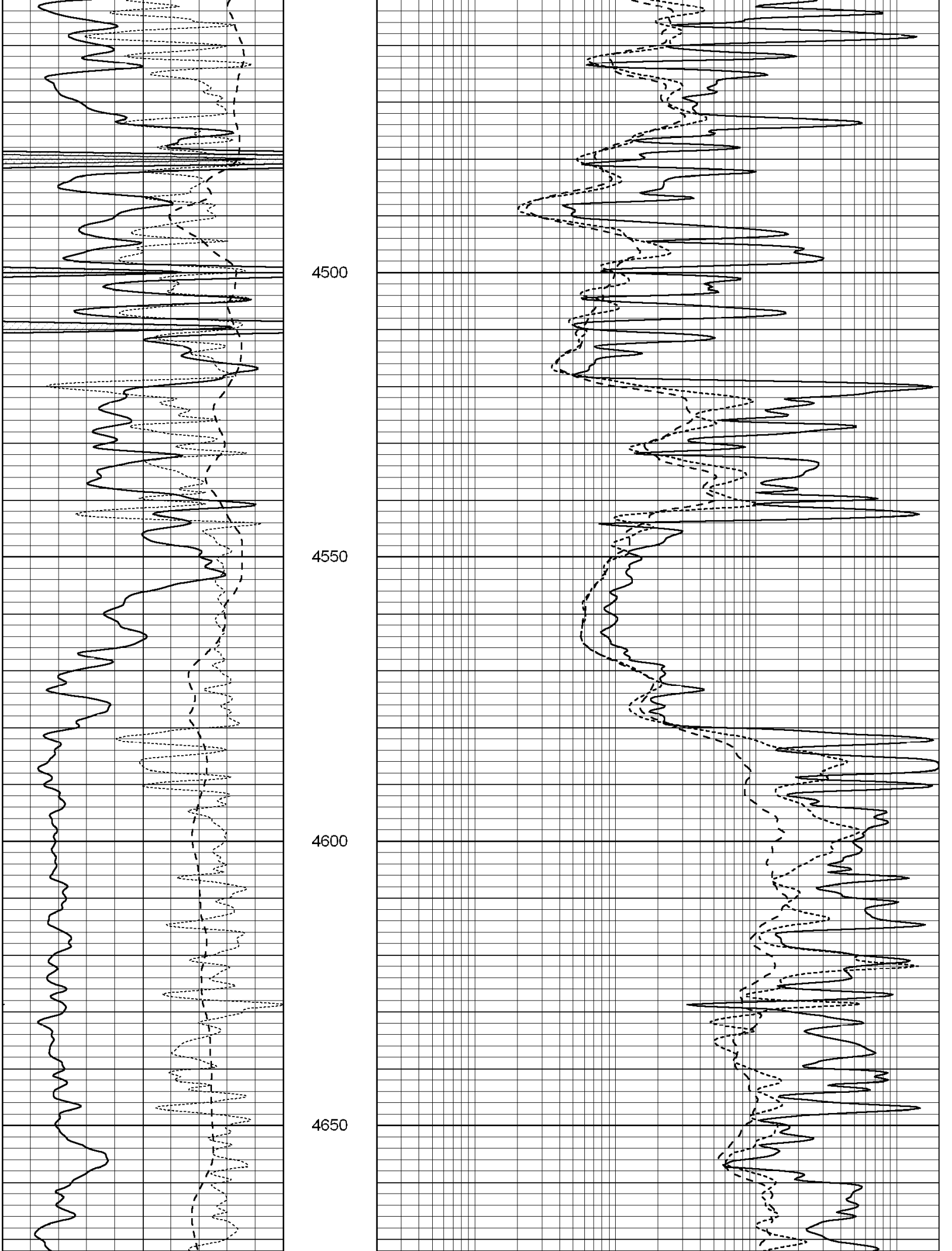
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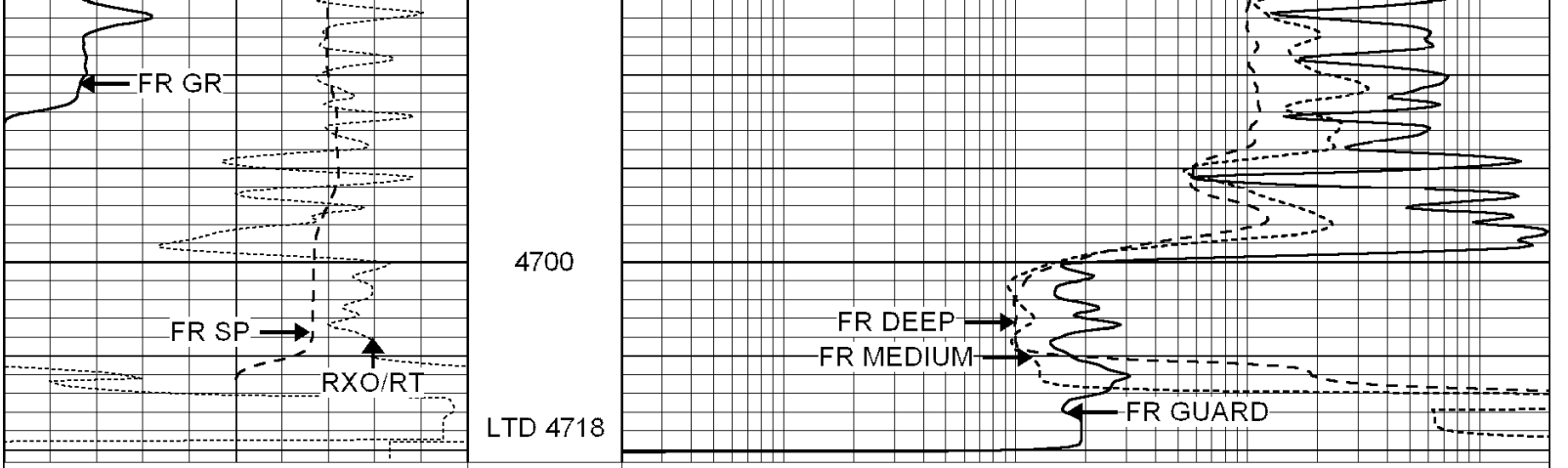


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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

SUPERIOR WELL SERVICES

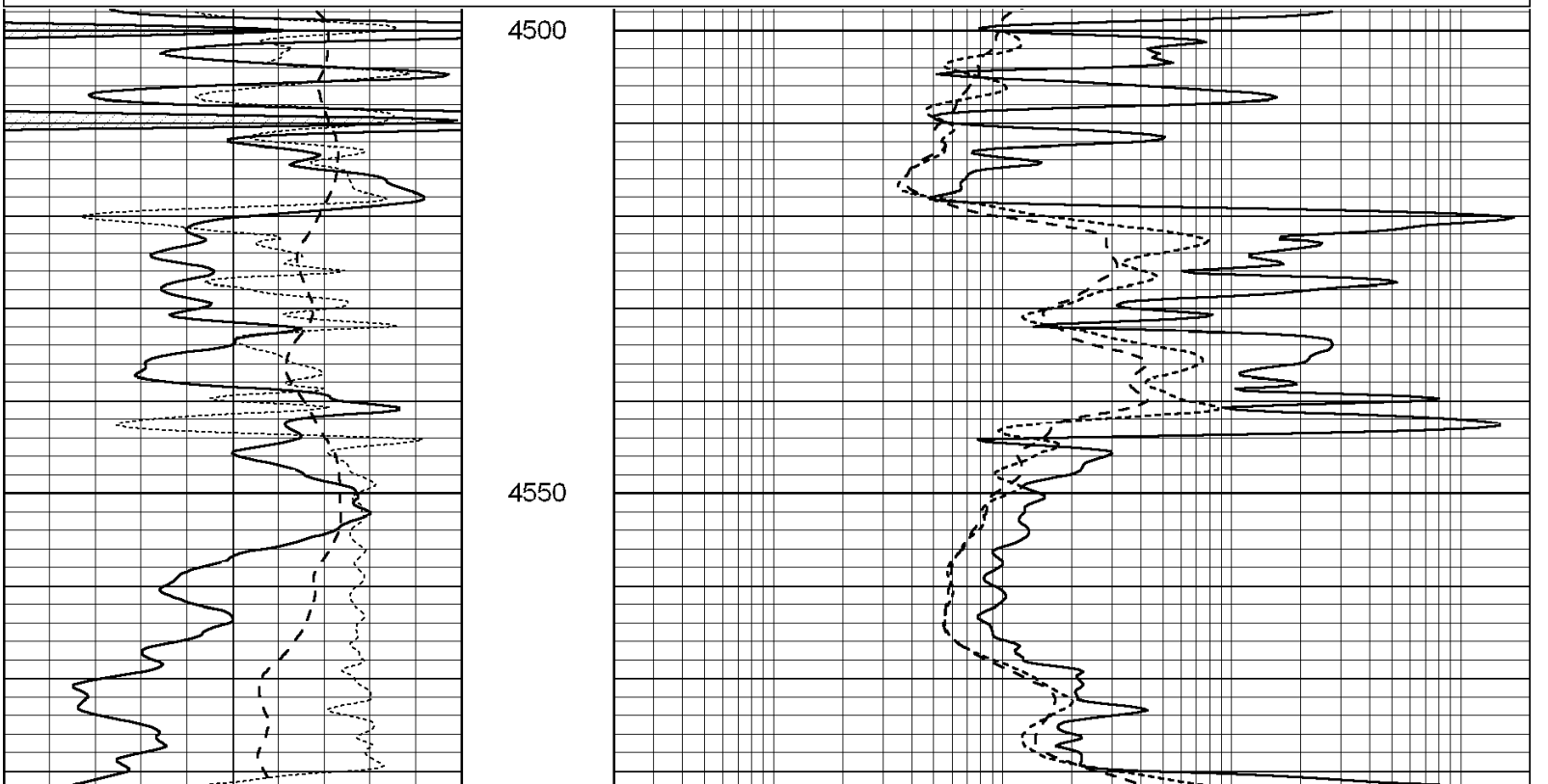
SUPERIOR
Hays,
Kansas

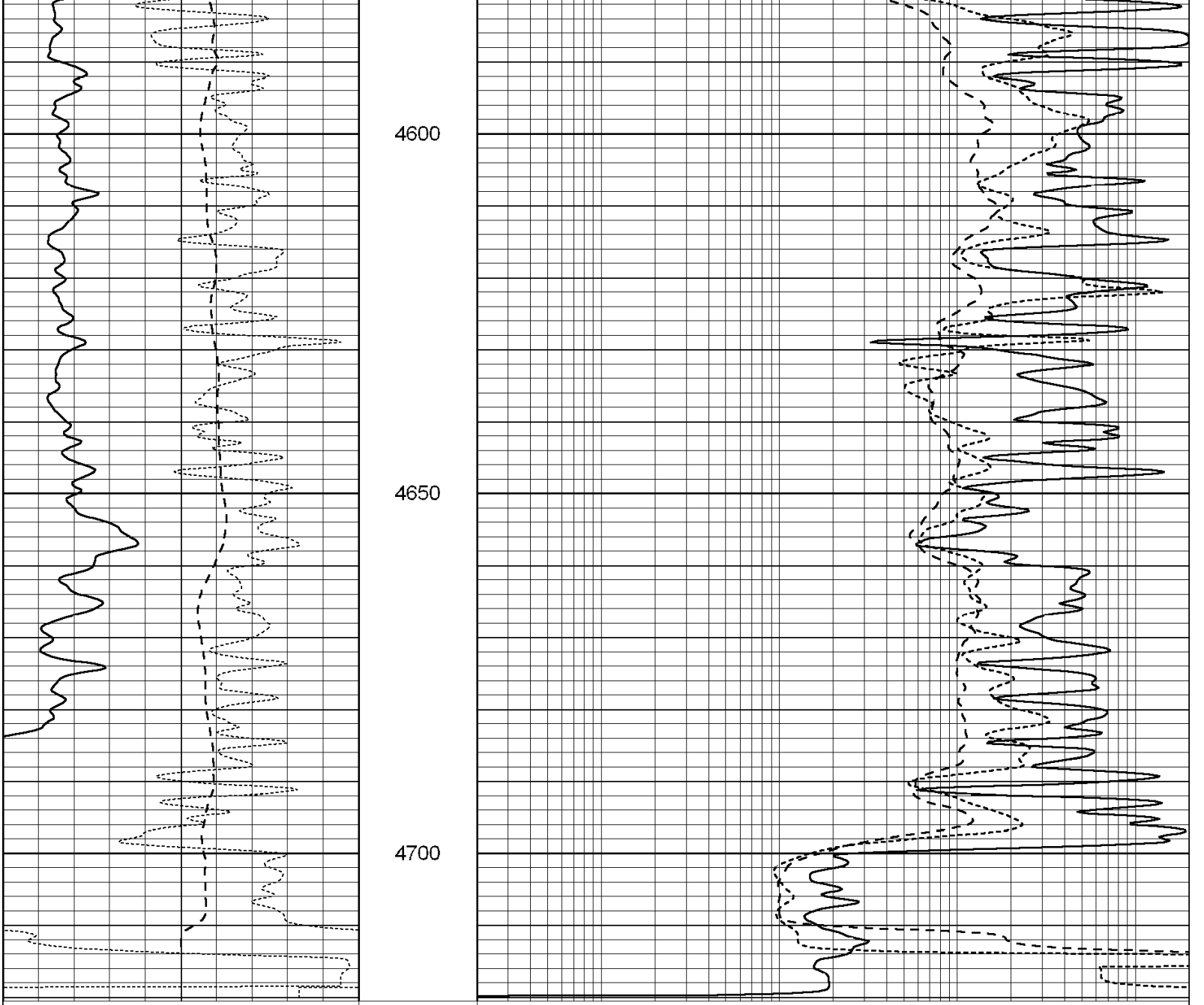
REPEAT SECTION

Database File:	004724pe.db
Dataset Pathname:	pass2.8
Presentation Format:	dil
Dataset Creation:	Thu Feb 25 12:53:15 2010 by Calc Open-Cased 060407
Charted by:	Depth in Feet scaled 1:240

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

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: 004724pe.db
Dataset Pathname: pass3.6
Dataset Creation: Thu Feb 25 13:47:28 2010

Dual Induction Calibration Report

Serial-Model: DIL6-GEAR
Performed: Thu Feb 25 12:21:24 2010

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.001	0.644	V	0.000	400.000	mmho-m	660.000	-4.000
Medium	0.020	0.738	V	0.000	462.500	mmho-m	740.000	-25.000

Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000
Medium	0.000	1.000	V	0.000	1.000	mmho-m	1.000	0.000

Litho Density Calibration Report

Serial: 004N Model: PRB
Performed Tue Sep 08 13:49:55 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1535.8	11161.3	3721.6	12498.8	cps
Window 2	1402.6	9435.7	3219.7	10417.7	cps
Window 3	1077.6	4422.0	1779.2	4753.4	cps
Window 4	337.3	342.8	337.4	343.7	cps
Long Space	0.0	8033.1	1817.0	9015.1	cps
Short Space	1.2	1671.8	1138.1	1813.0	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 45.5	Rib Slope	: 1.017	Density/Spine Ratio	: 0.573
Spine Angle	: 75.5	Spine Slope	: 3.865	Spine Intercept	: -19.7

Caliper

	Readings	Reference
Low Ref	1.1	6.9
High Ref	3.0	14.0

Gain: 3.7 Offset: 2.8

Compensated Neutron Calibration Report

Serial Number: NEU_4I
Tool Model: G

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	996.00	cps	1000.00	cps	1.0000
Long Space	977.00	cps	1000.00	cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR4
Tool Model: OPEN
Performed: Thu Feb 25 11:22:05 2010

Calibrator Value: 200.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 189.0 cps

Sensitivity: 0.7500 GAPI/cps