SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company ATLAS OPERATING, LLC.
Well SANDERS - SCHMISSEUR #4
Field SPIVEY - GRABS BASIL
County HARPER State KANSAS

Location: API # : 15-077-21784

1500' FNL & 2170' FWL

SEC 27 TWP 31S RGE 8W

Other Services
CDL/CNL/PE
MICRO

Permanent Datum GROUND LEVEL Elevation 1584
Log Measured From KELLY BUSHING 10' A.G.L.
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1594
D.F.
G.L. 1584

Date	1-4-12		
Run Number	ONE		
Depth Driller	4955		
Depth Logger	4956		
Bottom Logged Interval	4954		
Top Log Interval	00		
Casing Driller	263		
Casing Logger	258		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4 / 52		
pH / Fluid Loss	10.0 / 9.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.55 @ 80F		
Rmf @ Meas. Temp	0.41 @ 80F		
Rmc @ Meas. Temp	0.66 @ 80F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.350 @ 124F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	9:45 A.M.		
Maximum Recorded Temperature	124F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	RUPP		
Witnessed By	PAT DEENIHAN		

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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

SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: SPIVEY MAG PLANT, 2S, 2E, 1S, 1/2E, S INTO.

MAIN SECTION

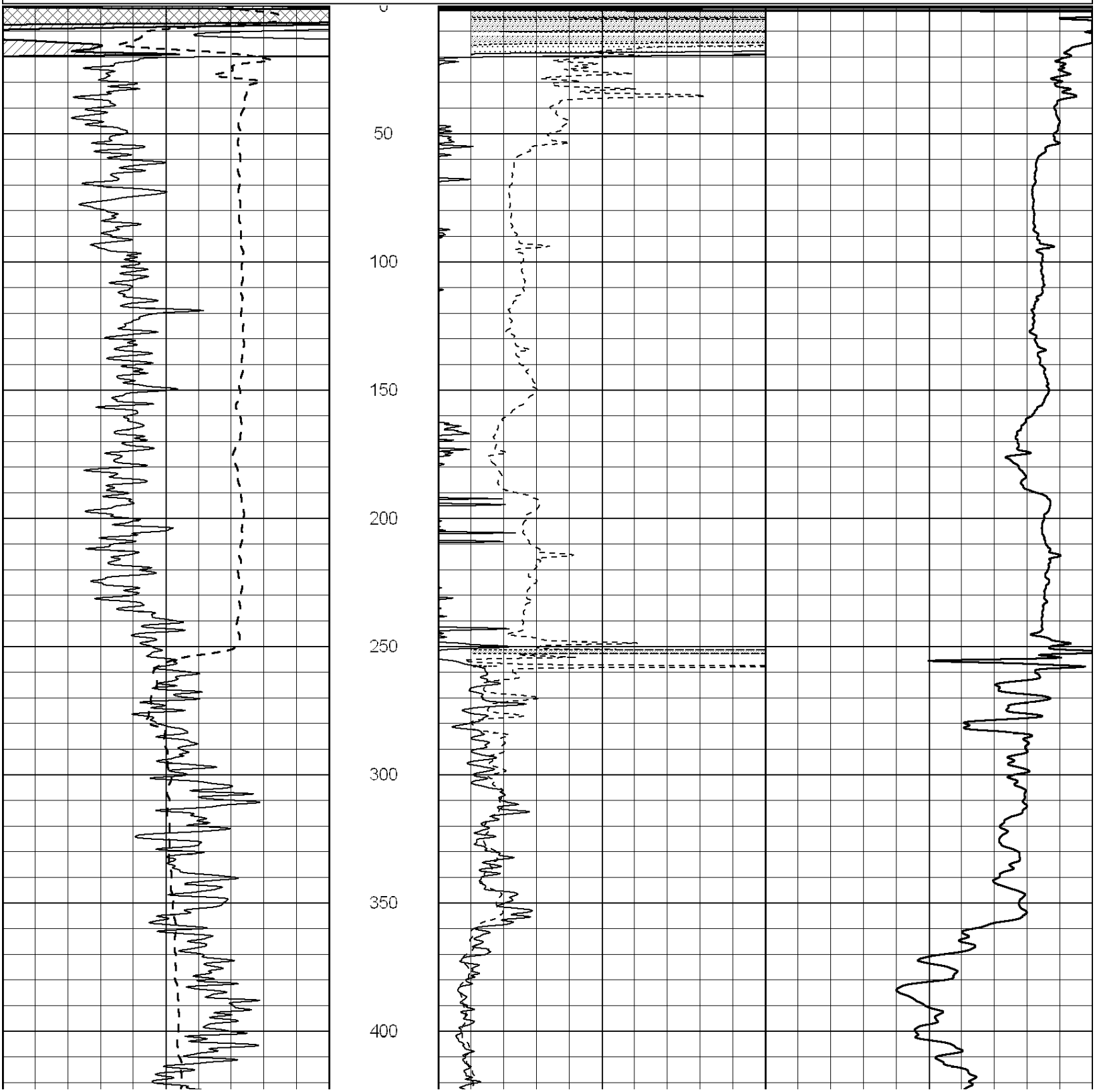
SUPERIOR
Hays,

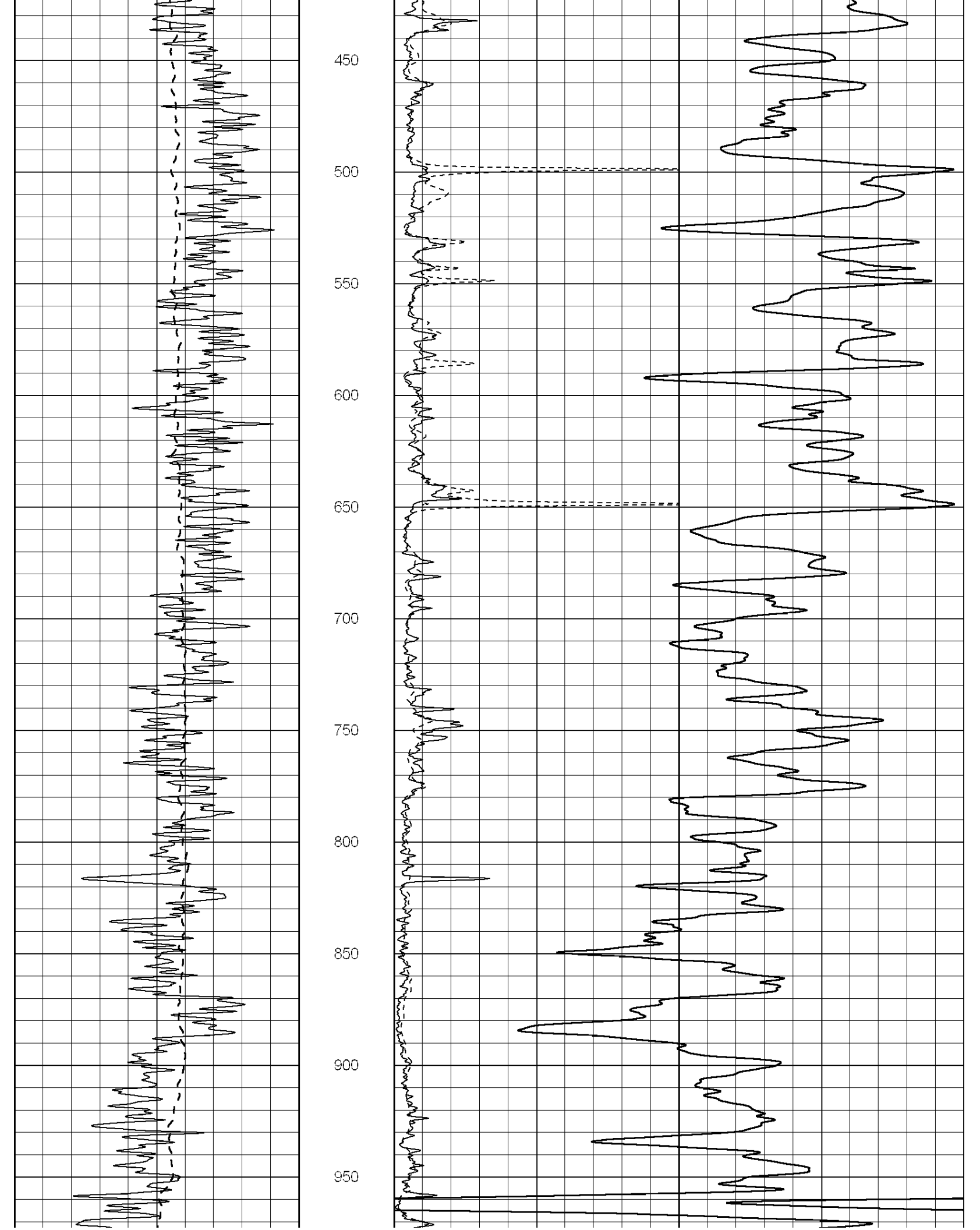
Kansas

Database File: 001224pdn.db
Dataset Pathname: pass3.A
Presentation Format: dil2
Dataset Creation: Wed Jan 04 12:31:33 2012
Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

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

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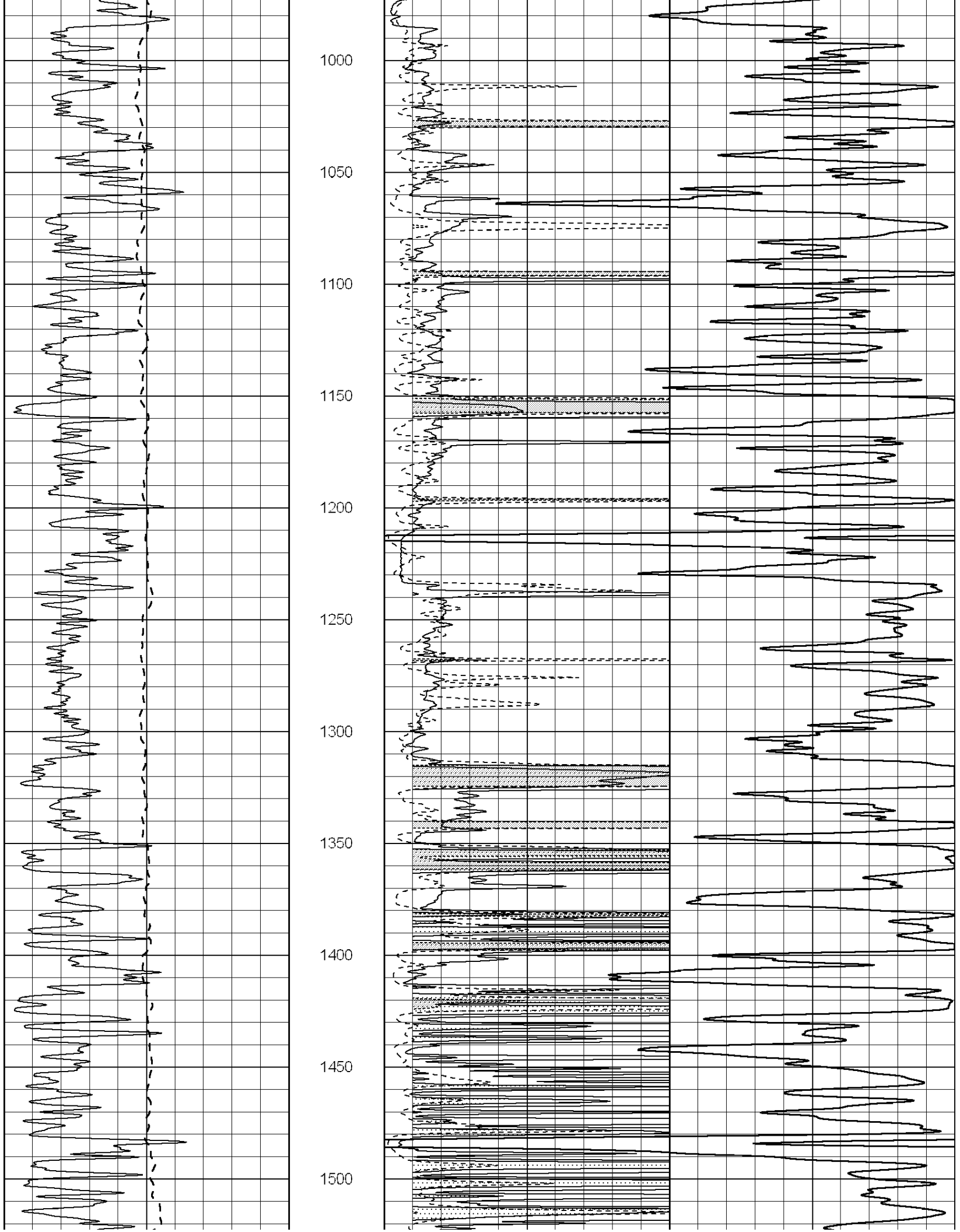
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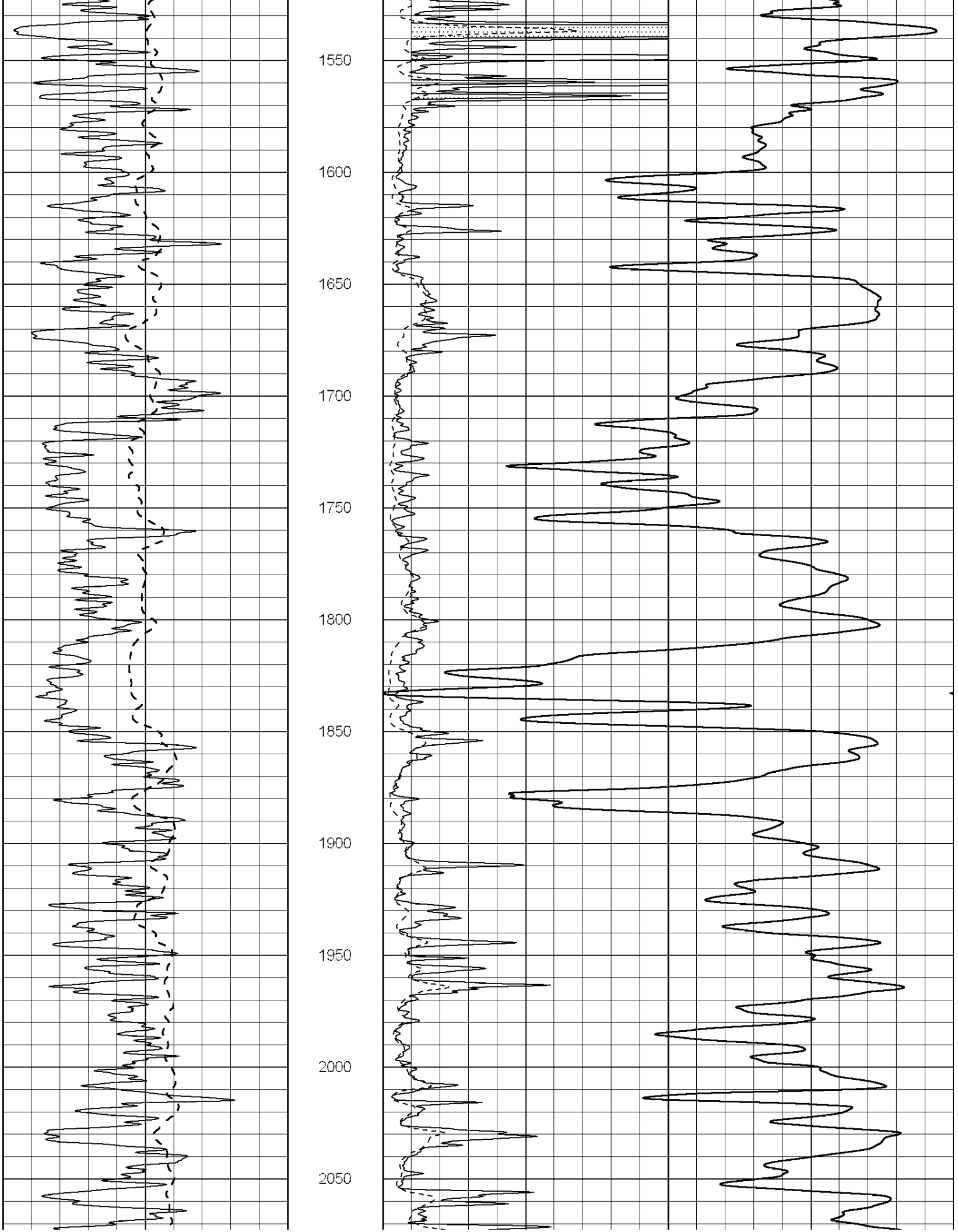
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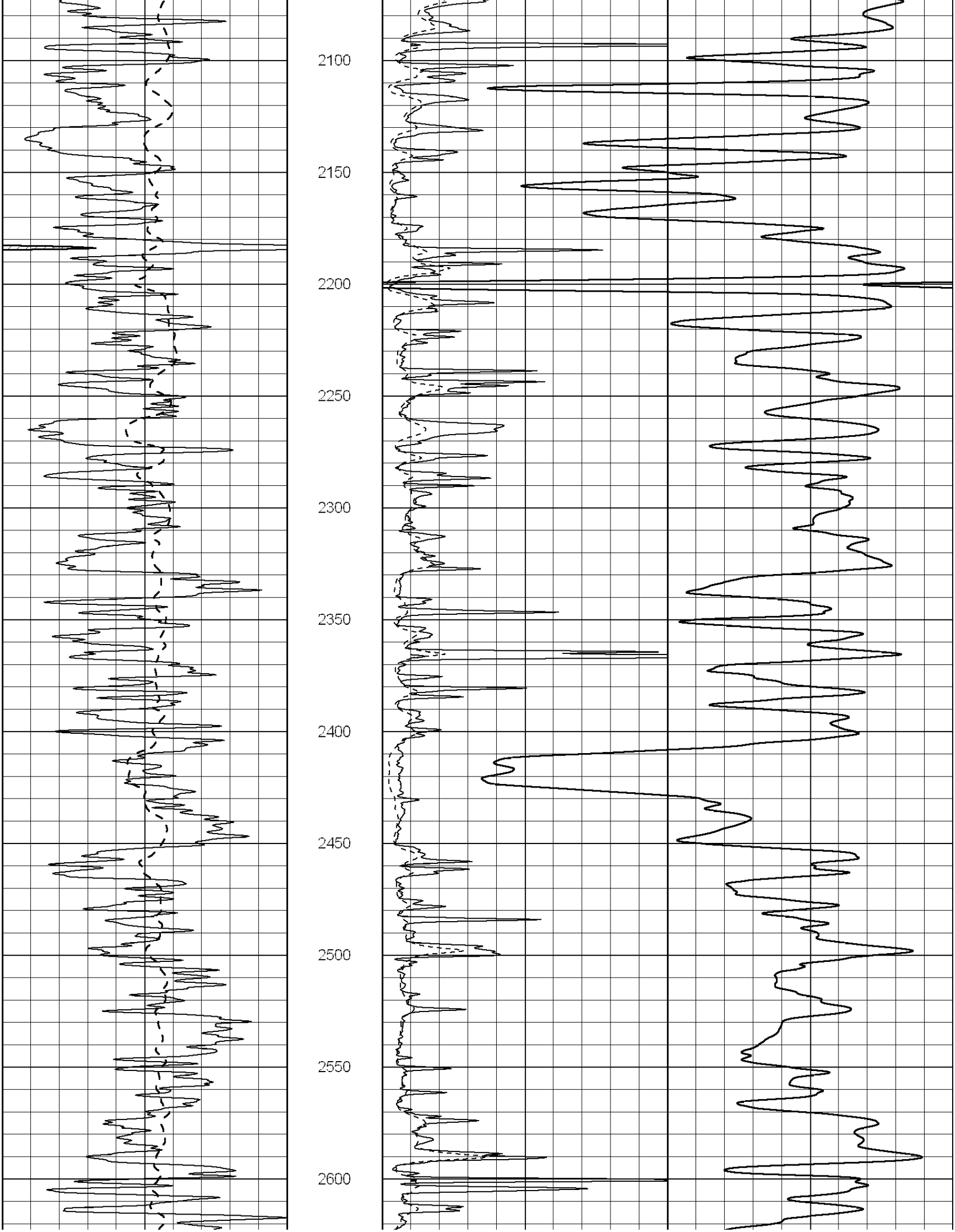
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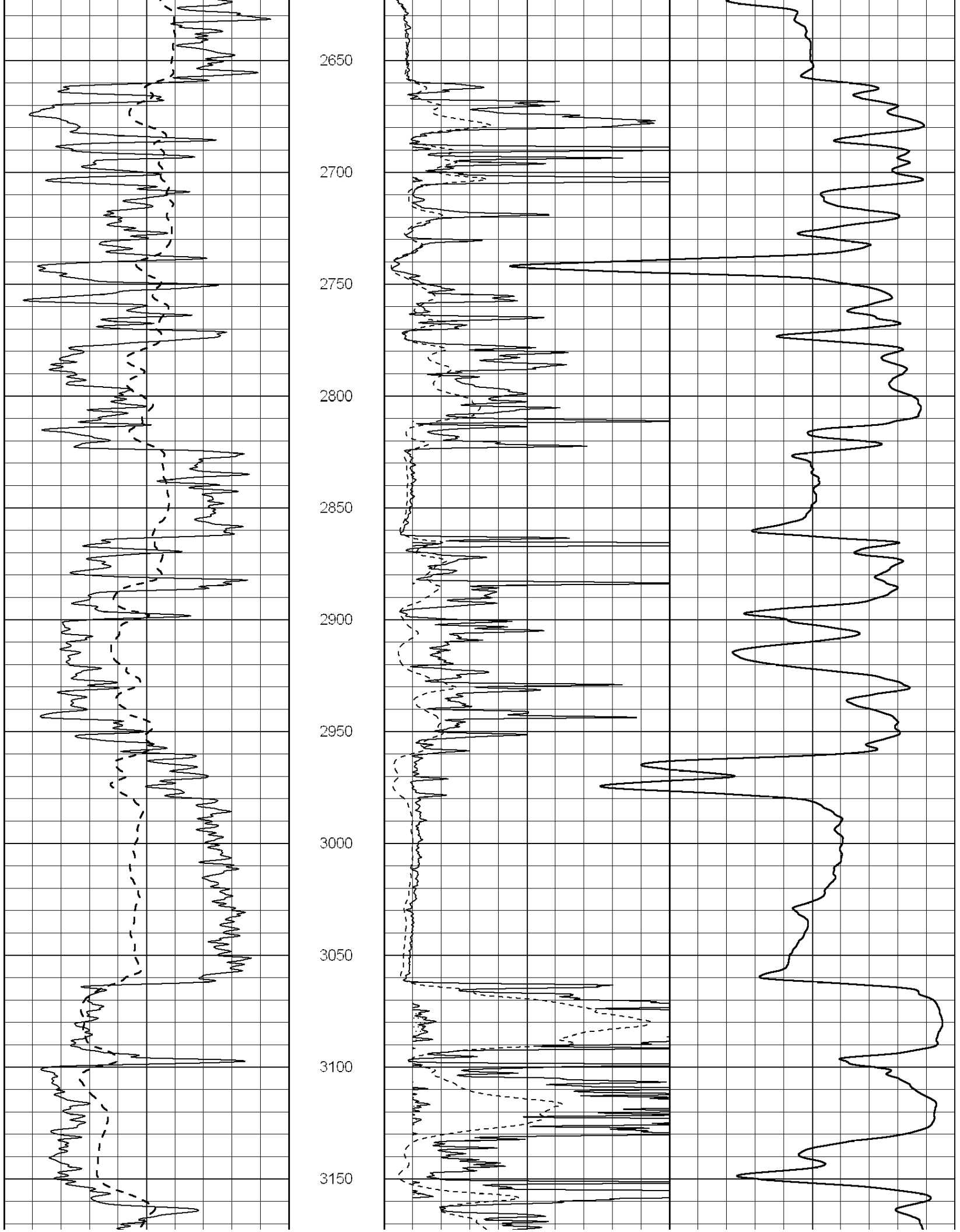
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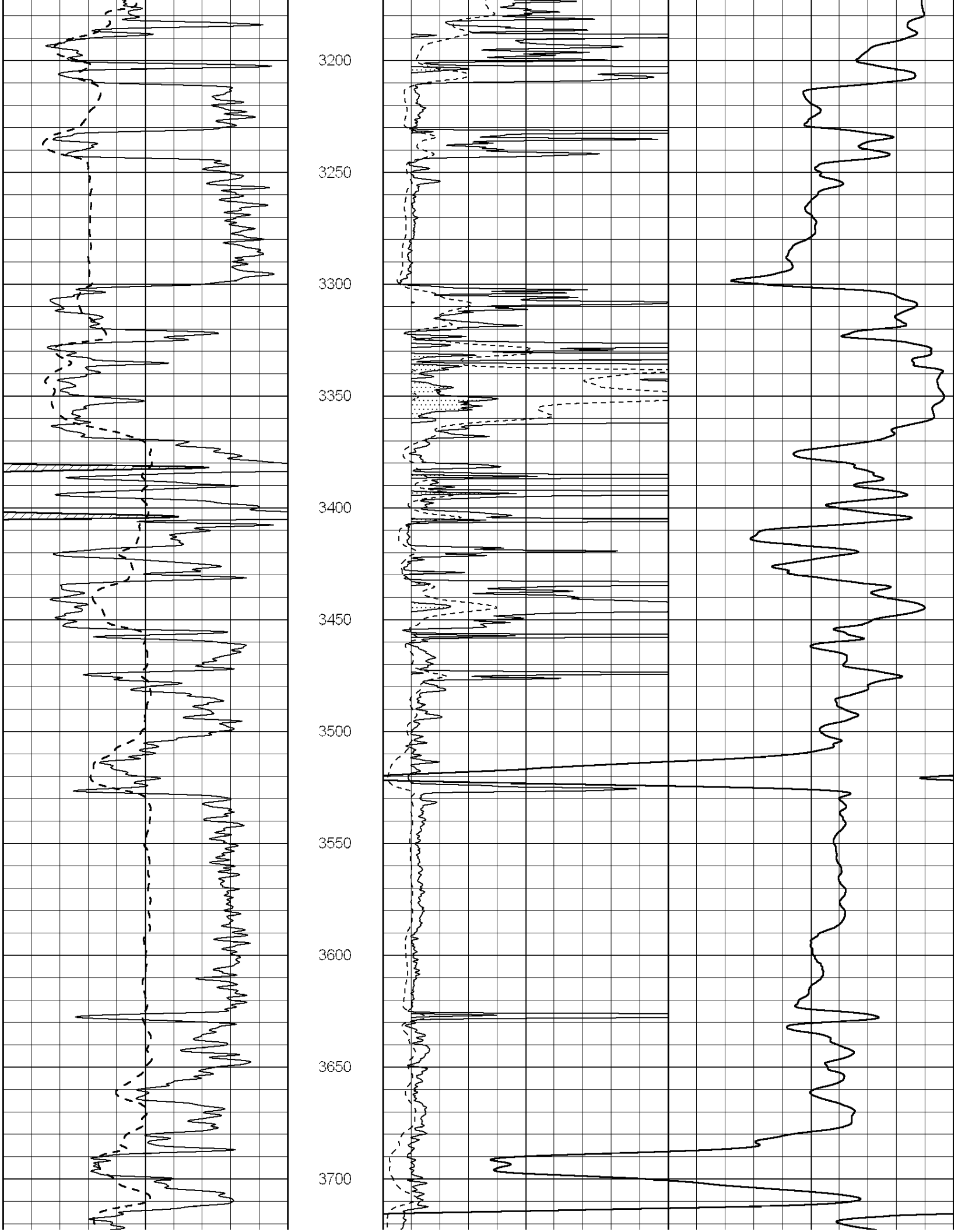
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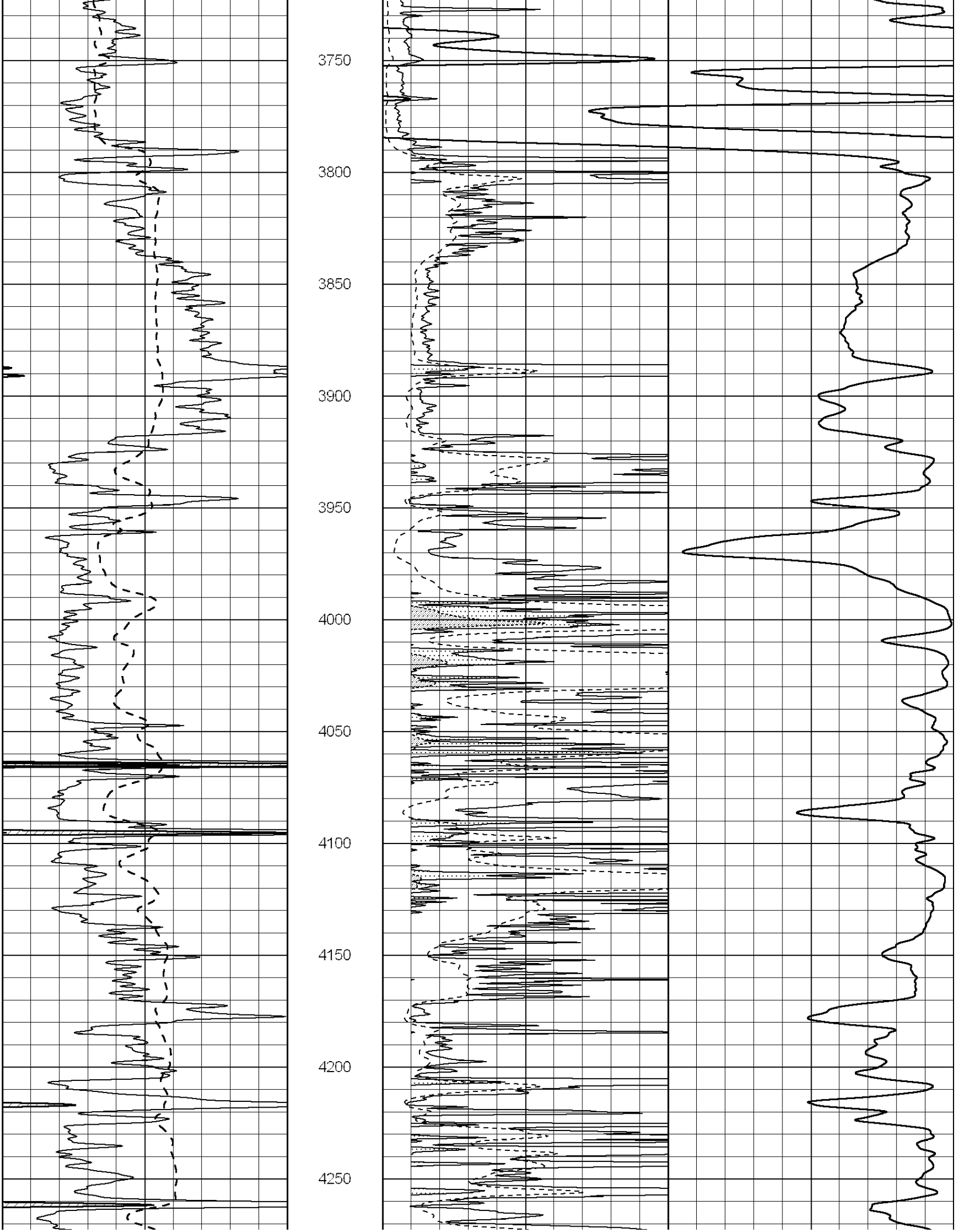
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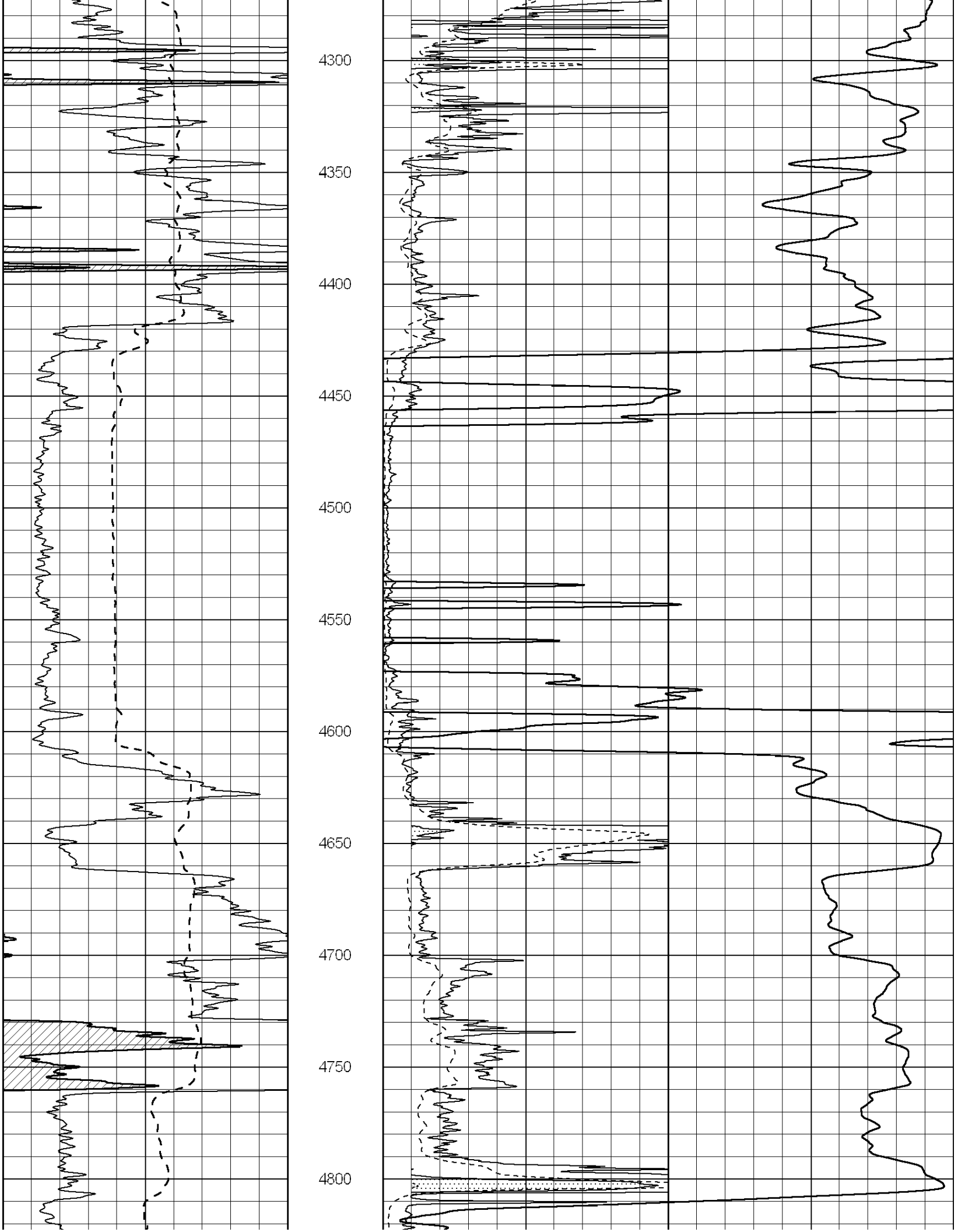
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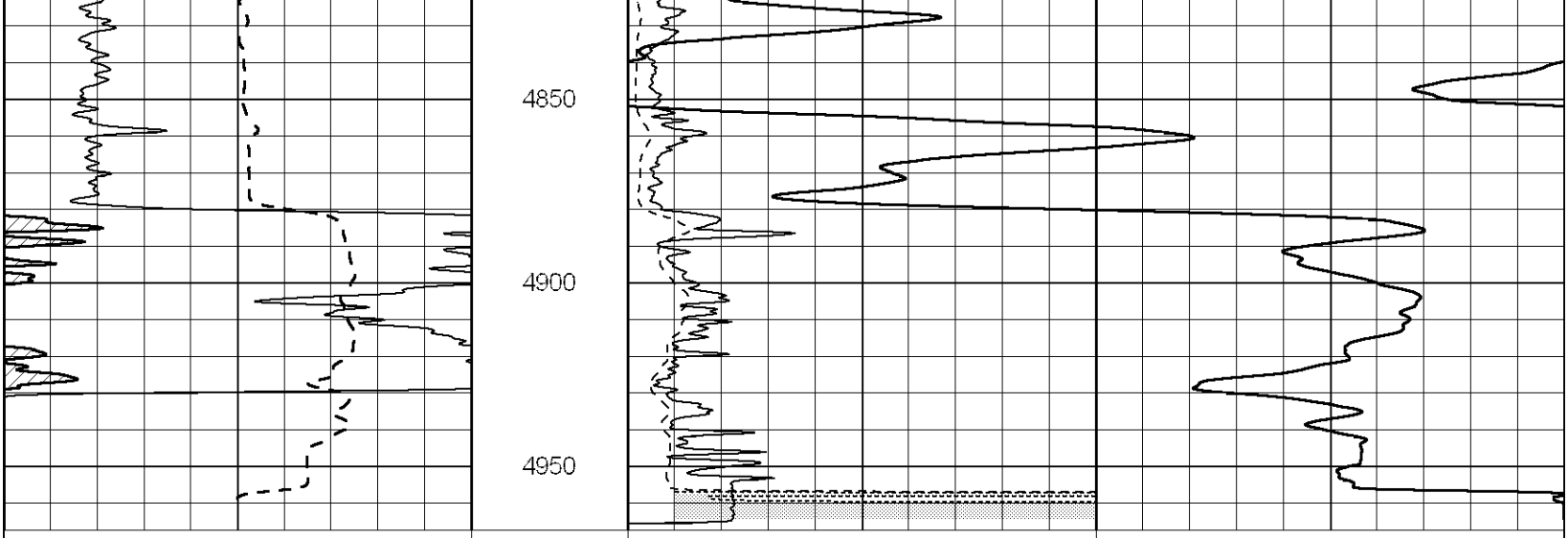


SUPERIOR WELL SERVICES

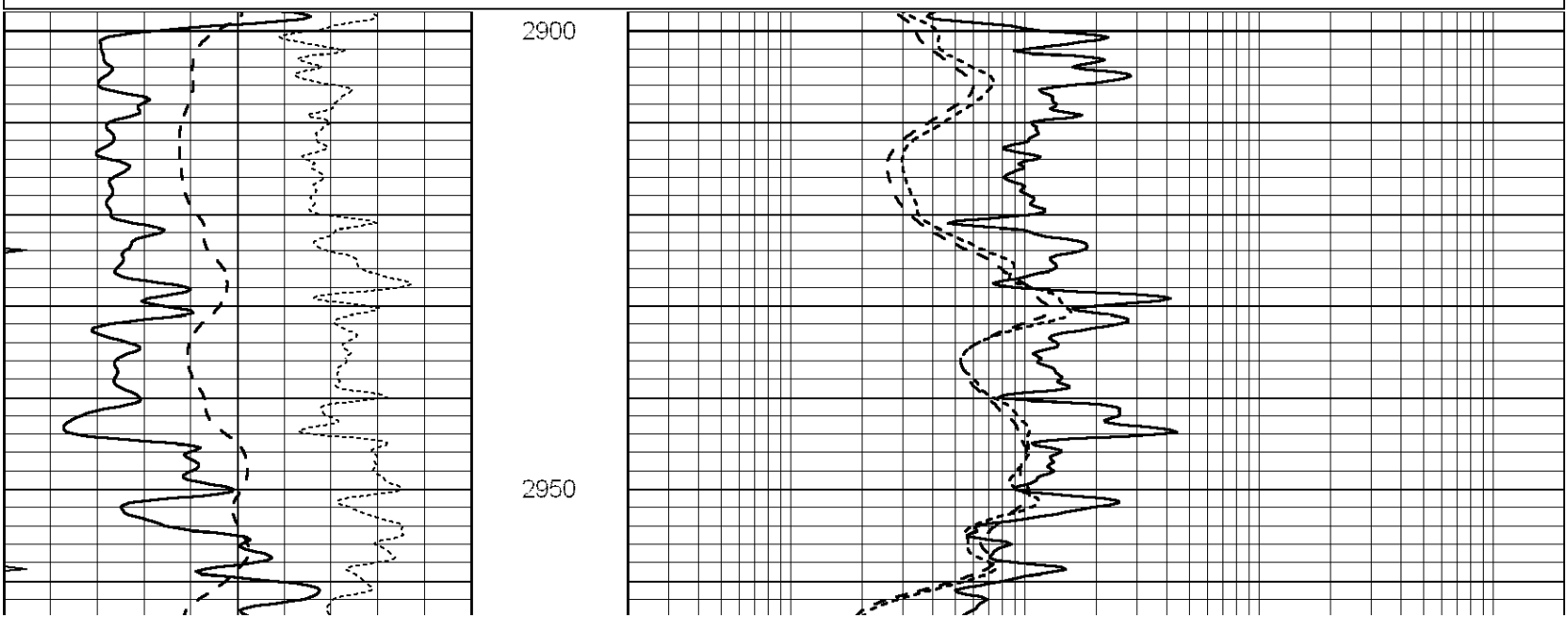
SUPERIOR
Hays,
Kansas

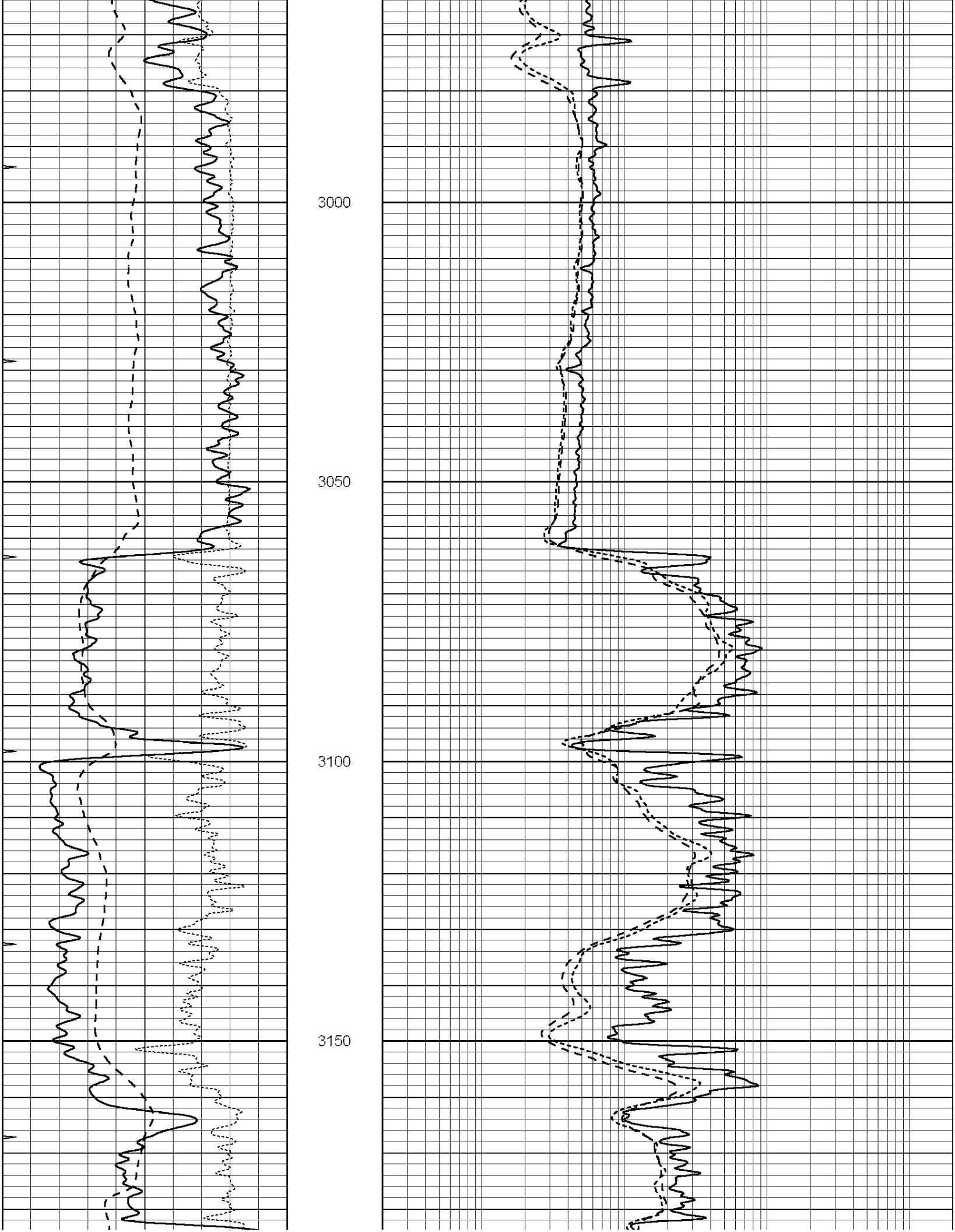
MAIN SECTION

Database File:	001224pdn.db
Dataset Pathname:	pass3.A
Presentation Format:	dil
Dataset Creation:	Wed Jan 04 12:31:33 2012
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

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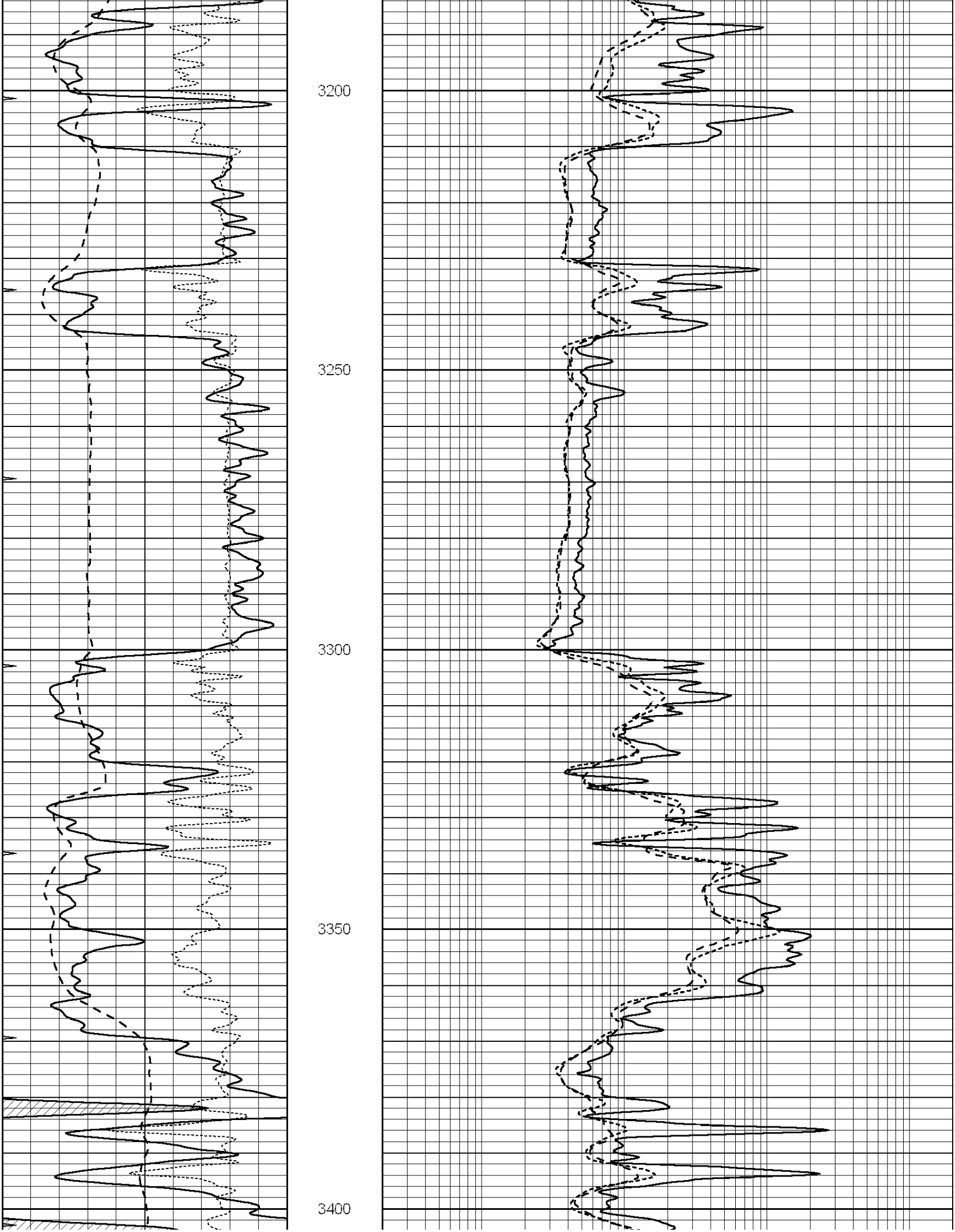
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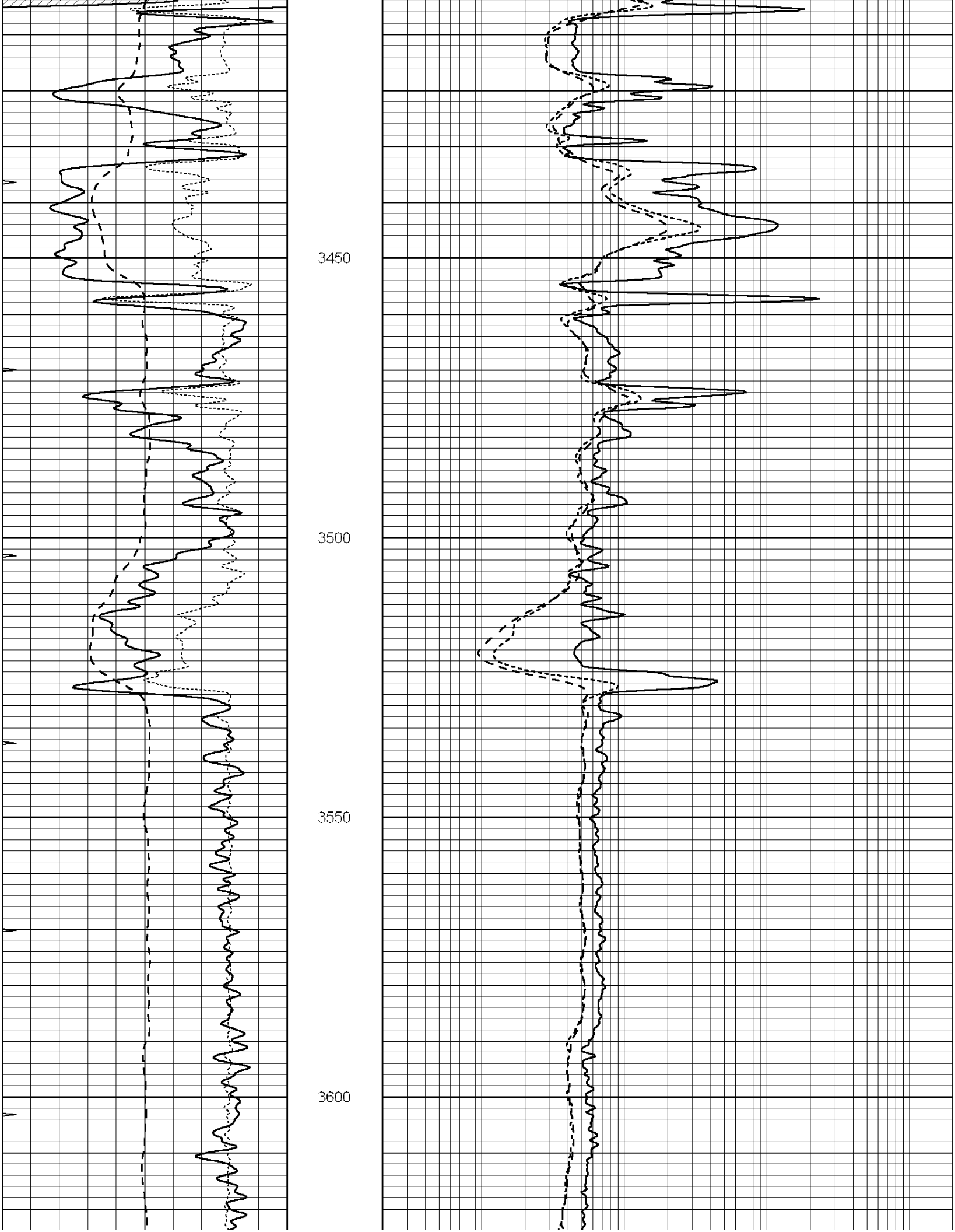
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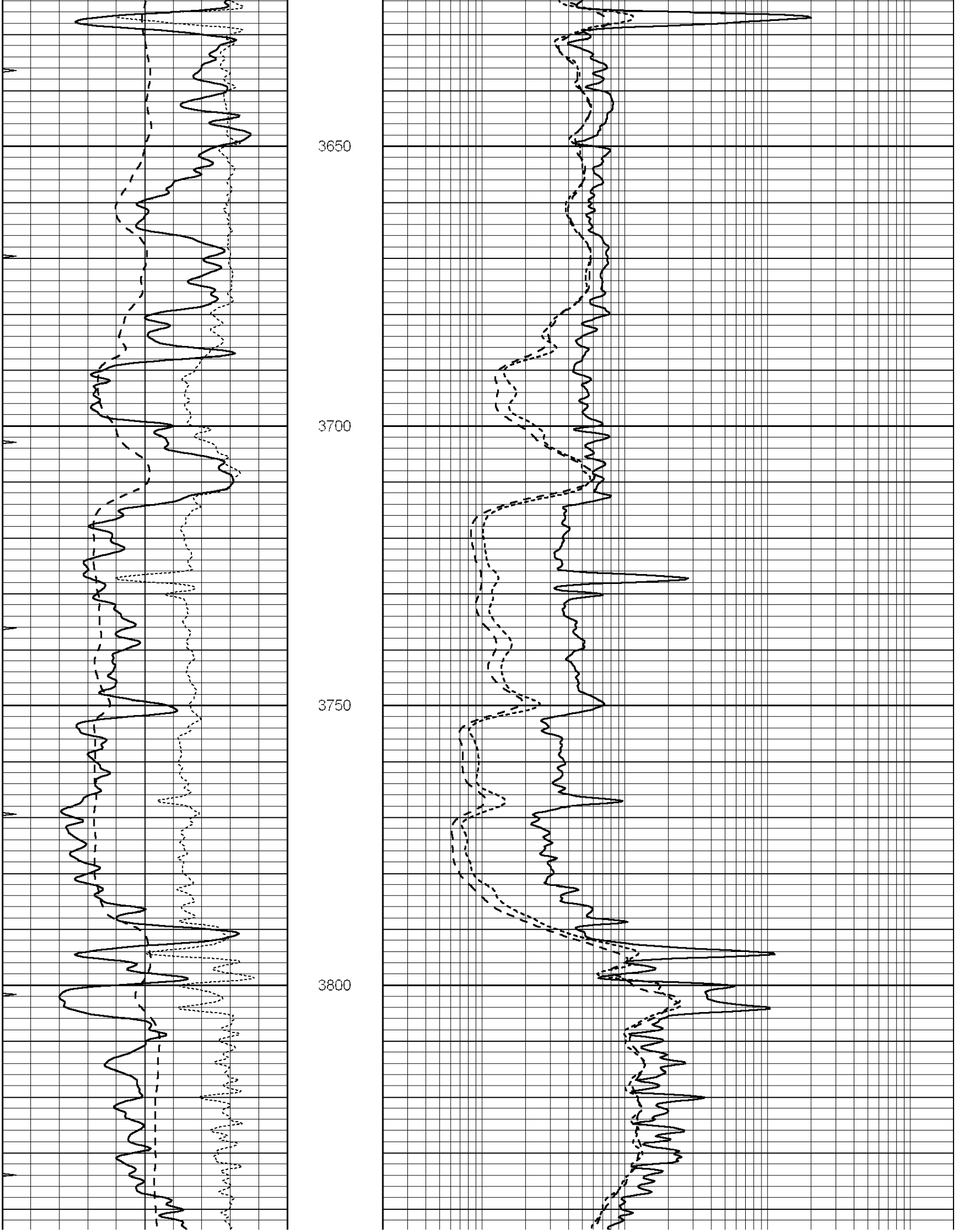
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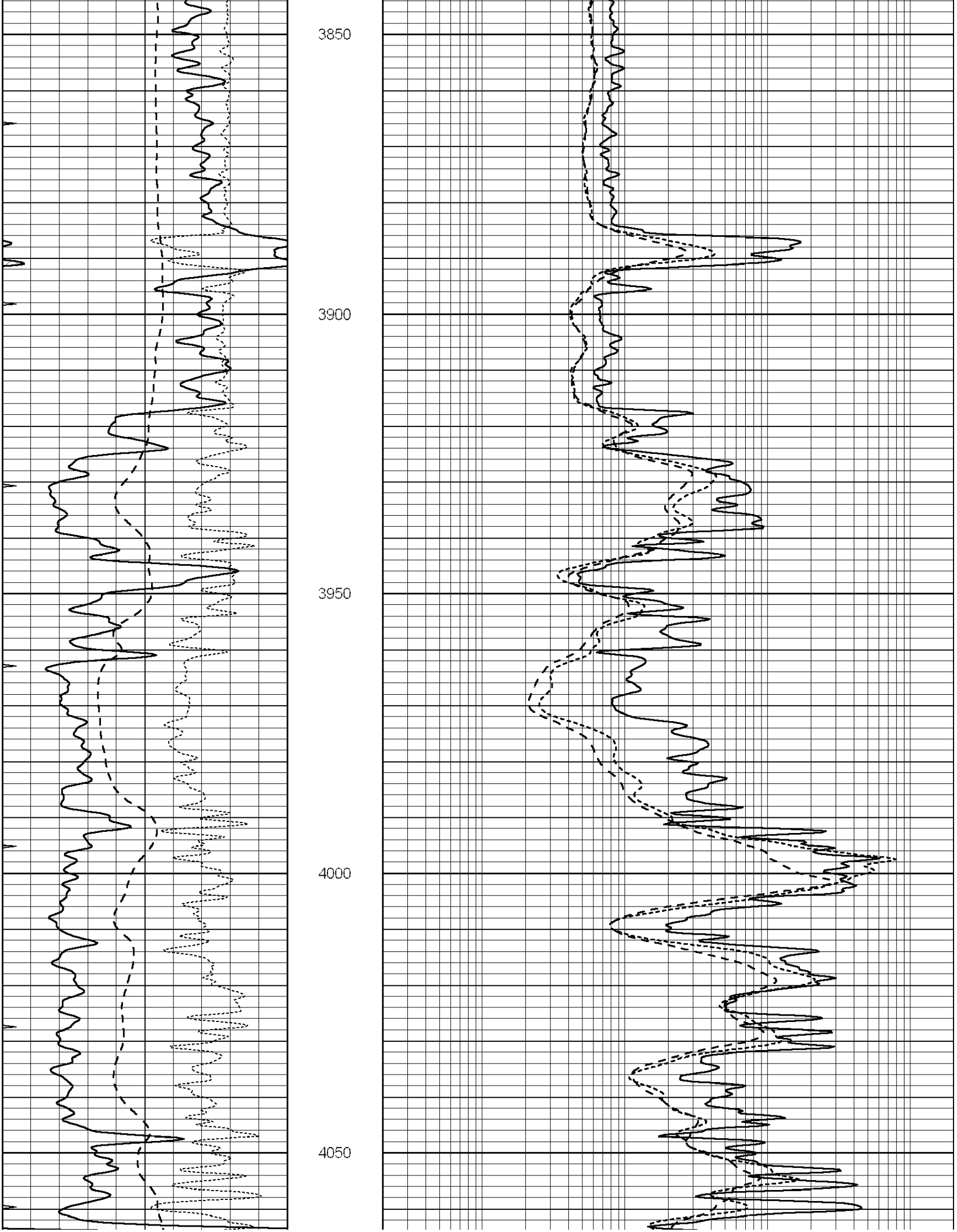
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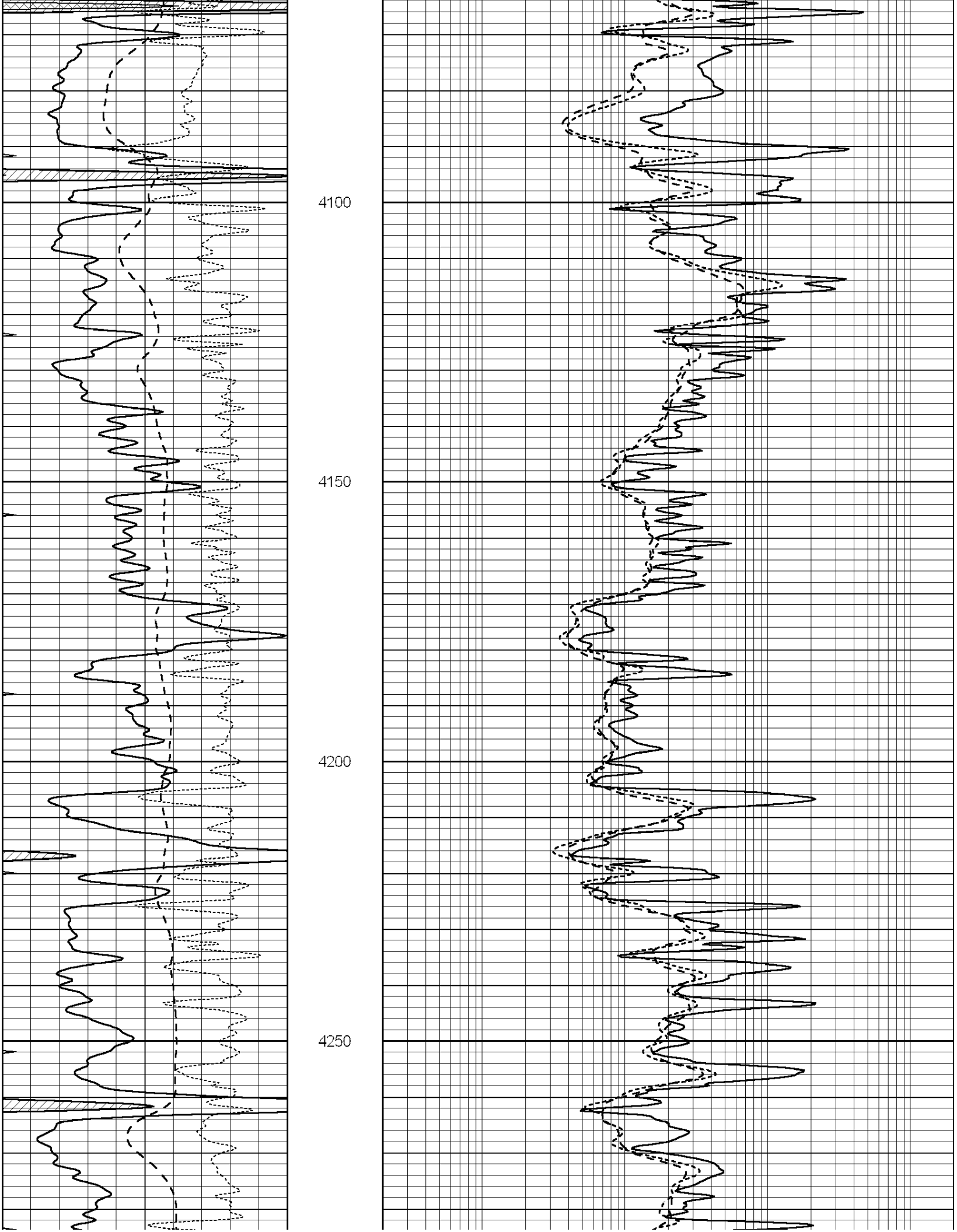
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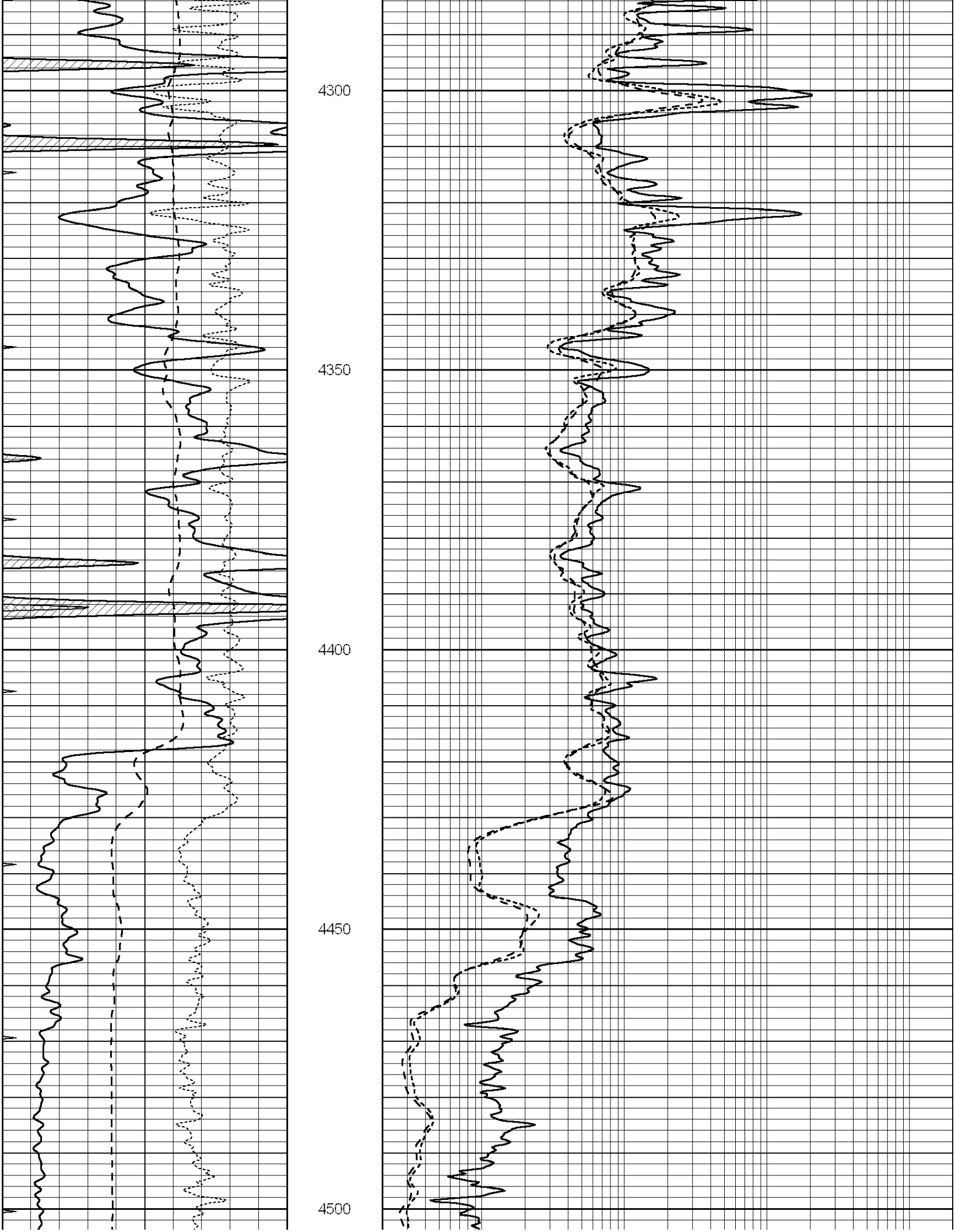
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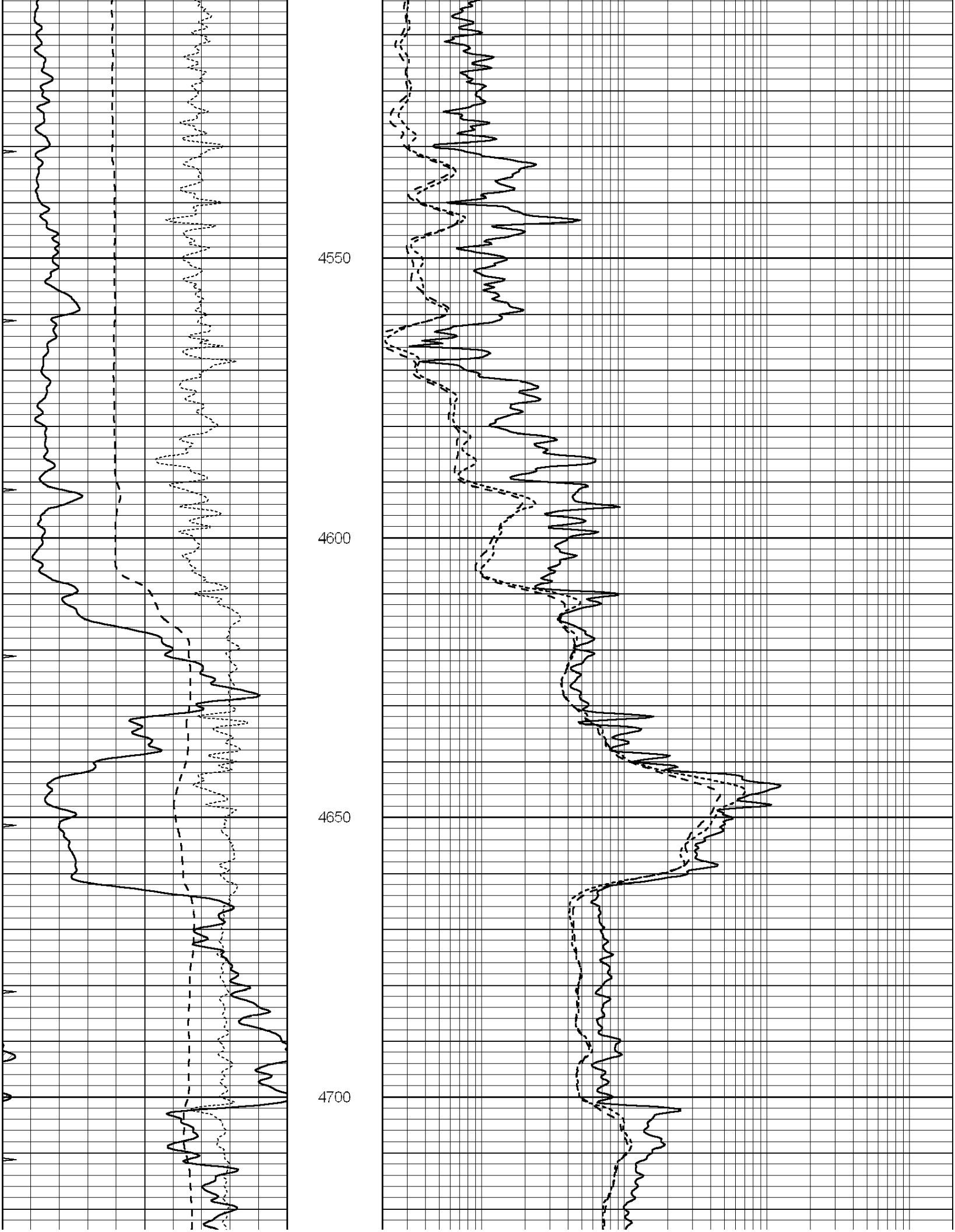
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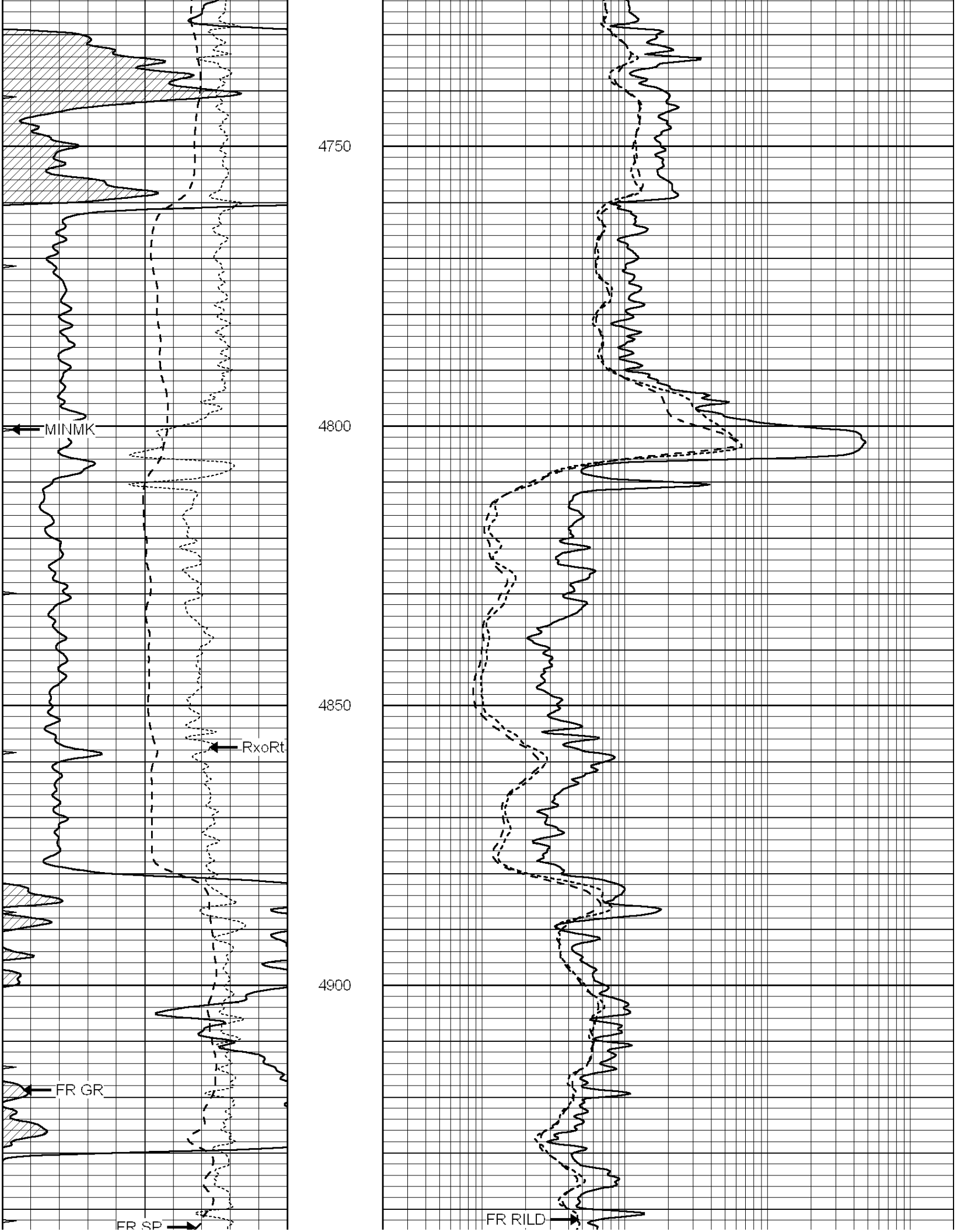
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MINMK
RxoRt
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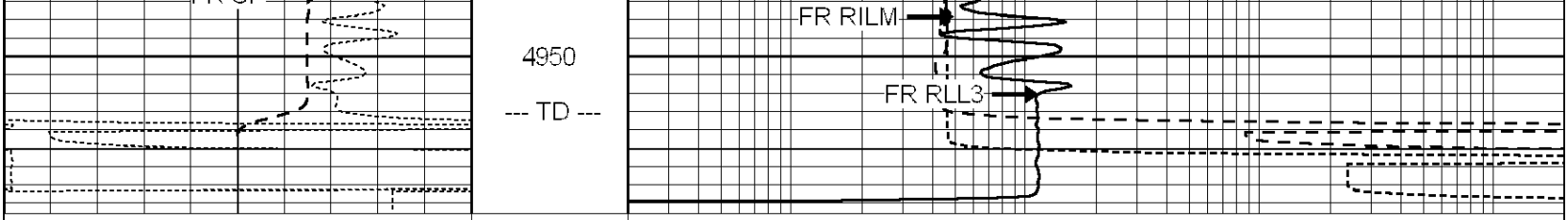
FR SP
FR RILD



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

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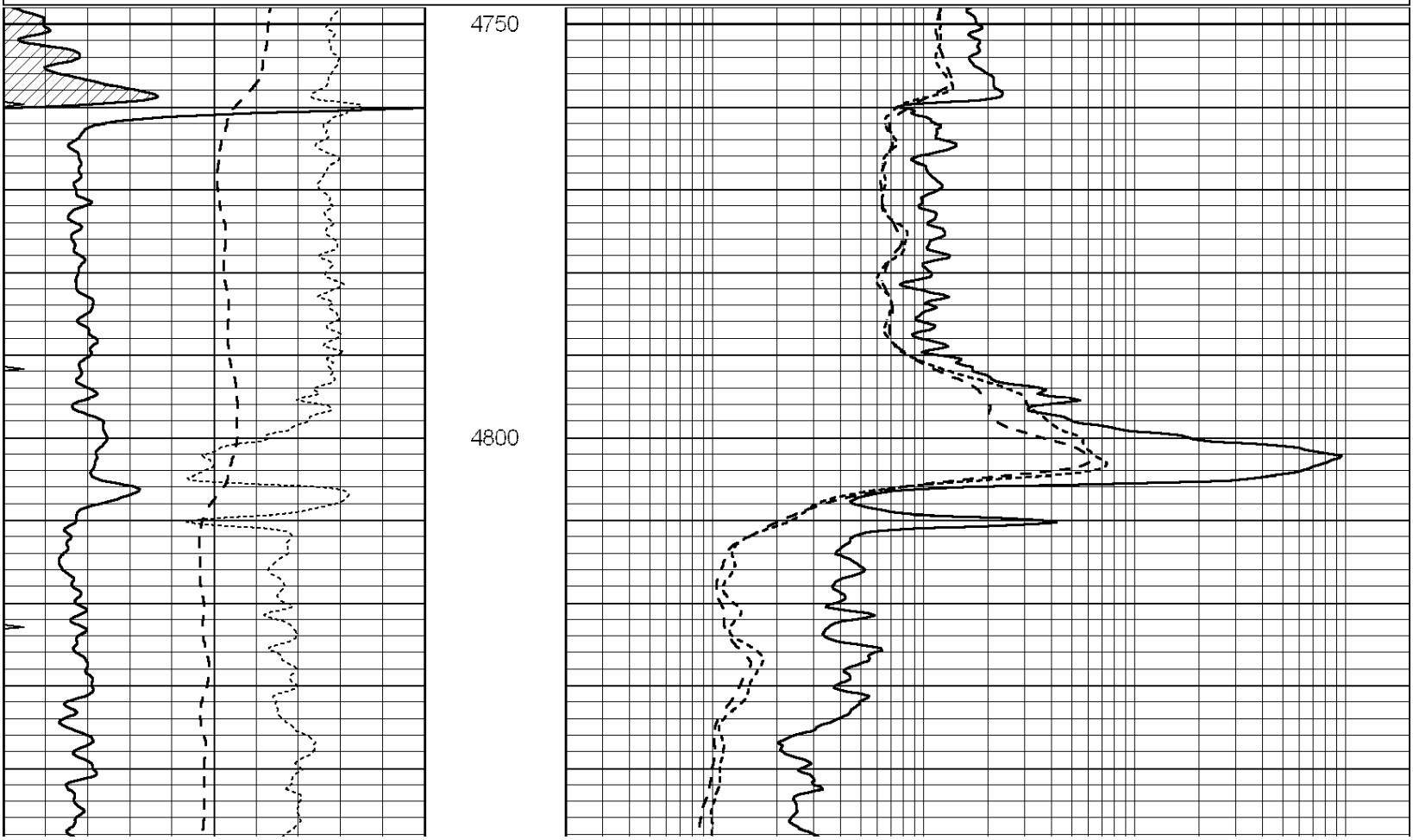
Kansas

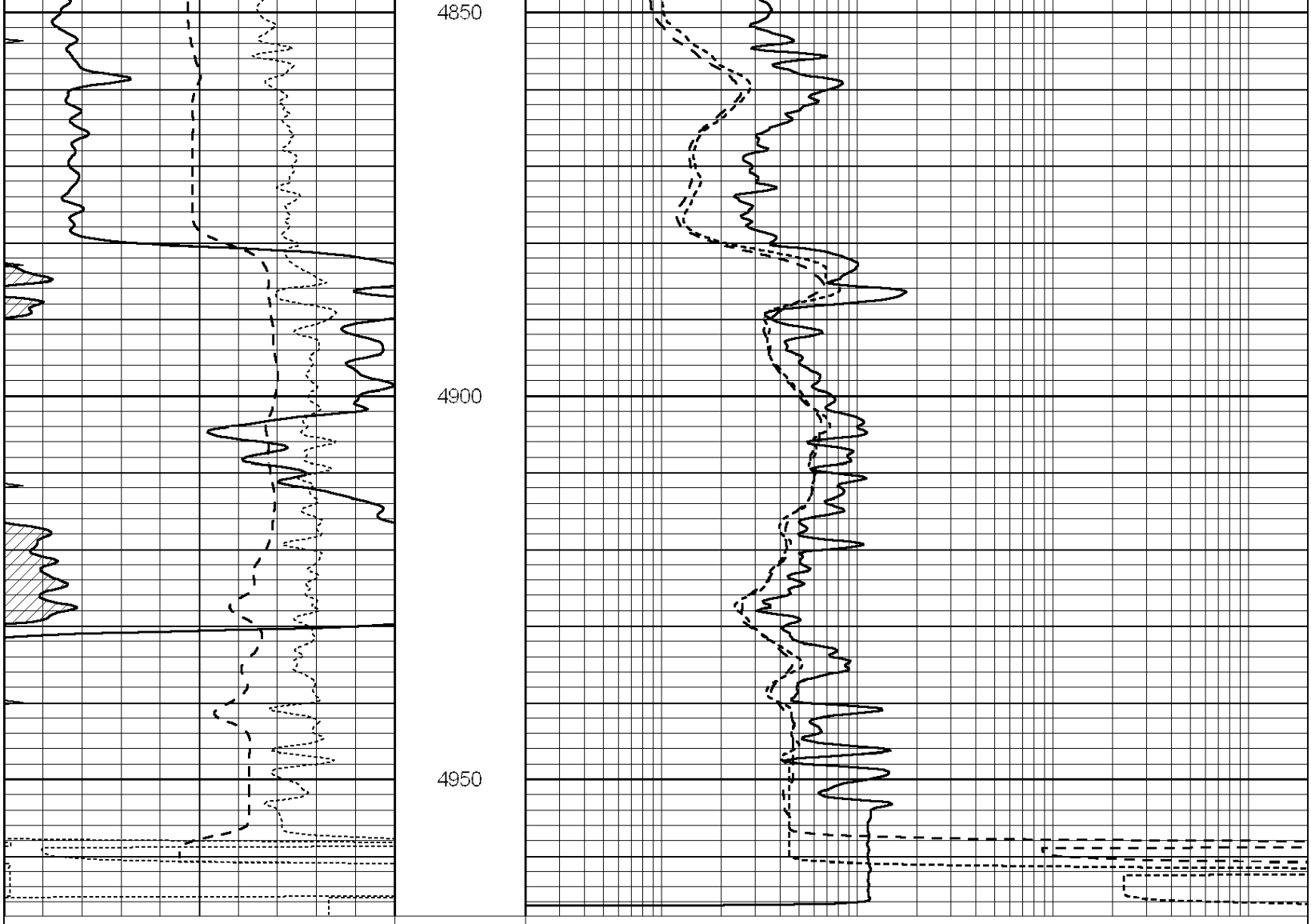
REPEAT SECTION

Database File:	001224pdn.db
Dataset Pathname:	pass2.1A
Presentation Format:	dil
Dataset Creation:	Wed Jan 04 11:16:37 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





Calibration Report

Database File: 001224pdn.db
Dataset Pathname: pass3.A
Dataset Creation: Wed Jan 04 12:31:33 2012

Dual Induction Calibration Report

Serial-Model: DIL5-GEAR
Performed: Wed Jan 04 09:54:39 2012

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.004	0.654	V	0.000	400.000	mmho/m	520.000	-18.000
Medium	-0.005	0.737	V	0.000	462.500	mmho/m	550.000	-12.000
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 Tue Jul 03 11:12:28 2007

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1059.5	9172.0	2859.6	10210.6	cps
Window 2	976.0	7793.2	2486.1	8515.6	cps
Window 3	689.8	2930.5	1159.0	3096.2	cps
Window 4	231.9	237.2	231.1	234.0	cps
Long Space	0.0	6817.1	1510.1	7539.6	cps
Short Space	1.6	1758.1	1188.6	1898.8	cps
Rho		1.7100	2.5960	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 45.4	Rib Slope	: 1.015	Density/Spine Ratio	: 0.569
Spine Angle	: 75.4	Spine Slope	: 3.850	Spine Intercept	: -19.9

Caliper

	Readings	Reference
Low Ref	3.8	8.4
High Ref	4.9	12.0
	Gain: 3.2	Offset: -3.7

Compensated Neutron Calibration Report

Serial Number: NEU_1I
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: Wed Jan 04 10:16:17 2012

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6500 GAPI/cps