SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company RITCHIE EXPLORATION, INC.
Well PHILLIPS 20C #2
Field ANTELOPE RIDGE
County GOVE State KANSAS

Location: API # : 15-063-21822-00-00
1350' FSL & 2210' FWL
SEC 20 TWP 13S RGE 31W

Other Services
CDL/CNL

Elevation
K.B. 2879
D.F. 2877
G.L. 2874

Permanent Datum GROUND LEVEL Elevation 2874
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING

Company RITCHIE EXPLORATION, INC.
Well PHILLIPS 20C #2
Field ANTELOPE RIDGE
County GOVE
State KANSAS

Date	1-5-10		
Run Number	ONE		
Depth Driller	4620		
Depth Logger	4622		
Bottom Logged Interval	4620		
Top Log Interval	0		
Casing Driller	8 5/8" @ 218		
Casing Logger	218		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 3400 PPM	
Density / Viscosity	9.2/54		
pH / Fluid Loss	11.0/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.4 @ 67F		
Rmf @ Meas. Temp	1.05 @ 67F		
Rmc @ Meas. Temp	2.24 @ 67F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.775 @ 121F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	121F		
Equipment Number	680		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI	JEFF GRONEWEG	
Witnessed By	JEFF CHRISTIAN		

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Comments

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

DIRECTIONS

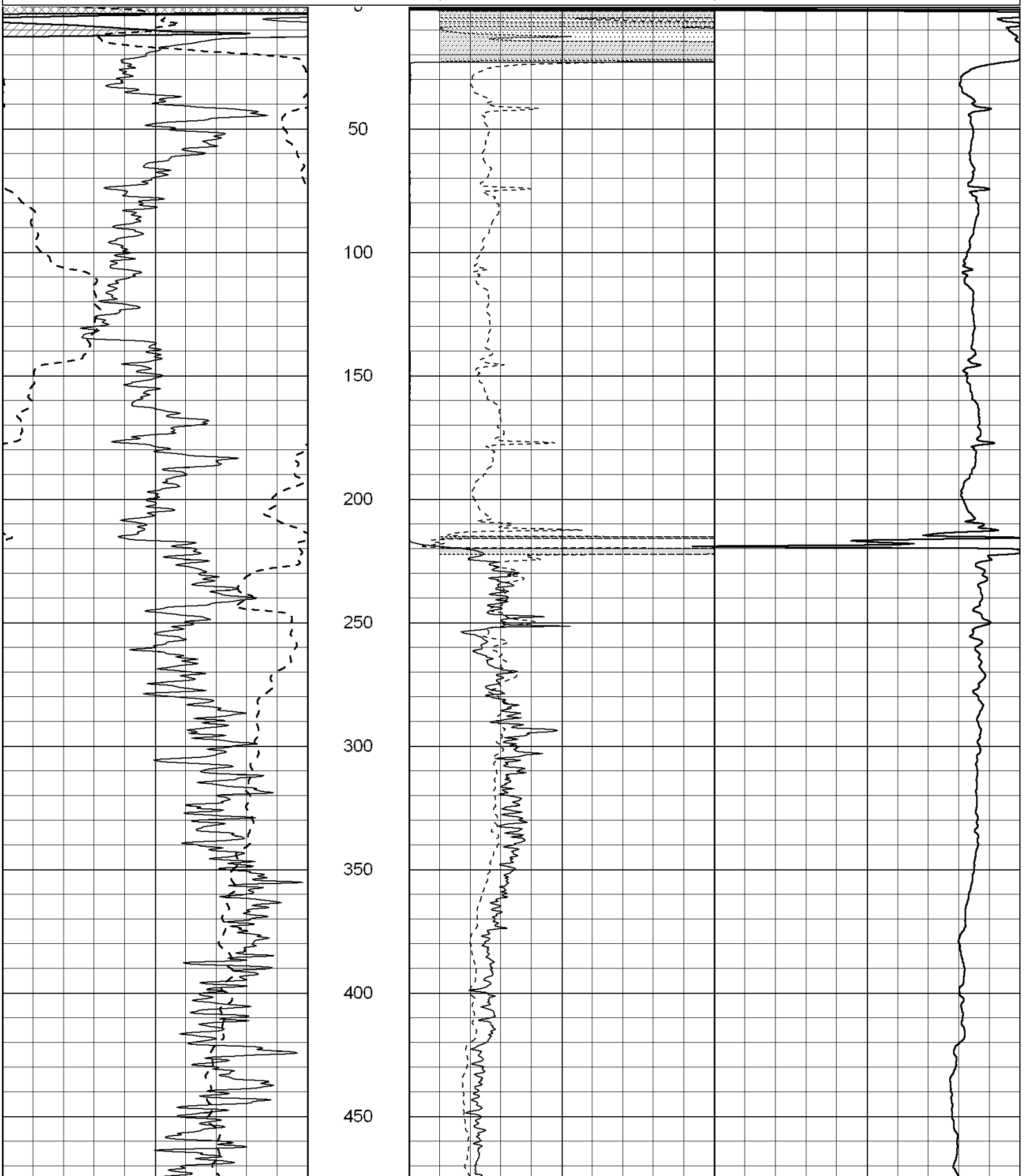
OAKLEY KS., 11S. ON HWY 83 TO GOVE RD. - 3E - 4S - 1/2E - N INTO

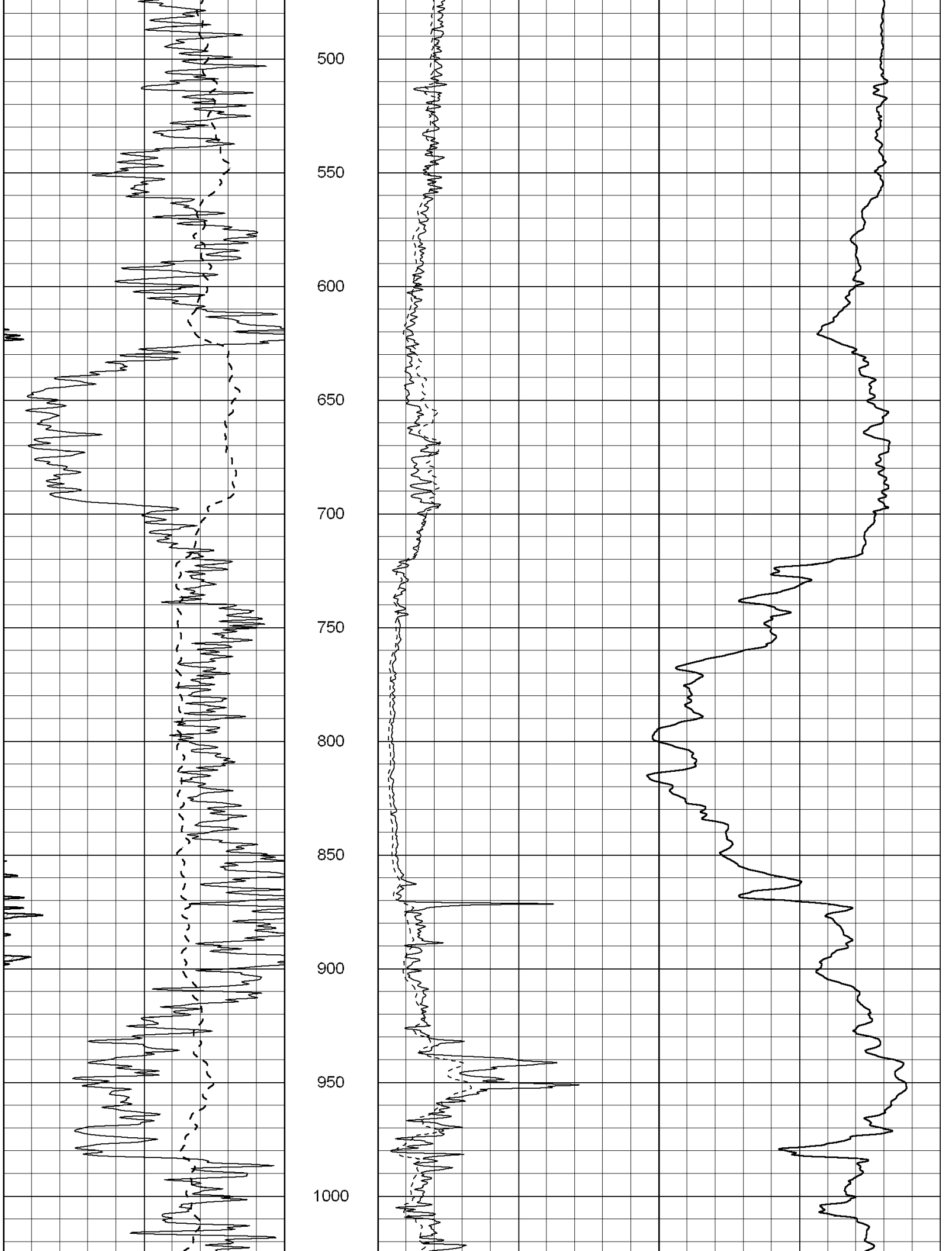
Database File: 004668ddn.db
Dataset Pathname: pass3.2
Presentation Format: _dil2
Dataset Creation: Tue Jan 05 14:49:13 2010 by Calc Open-Cased 090629

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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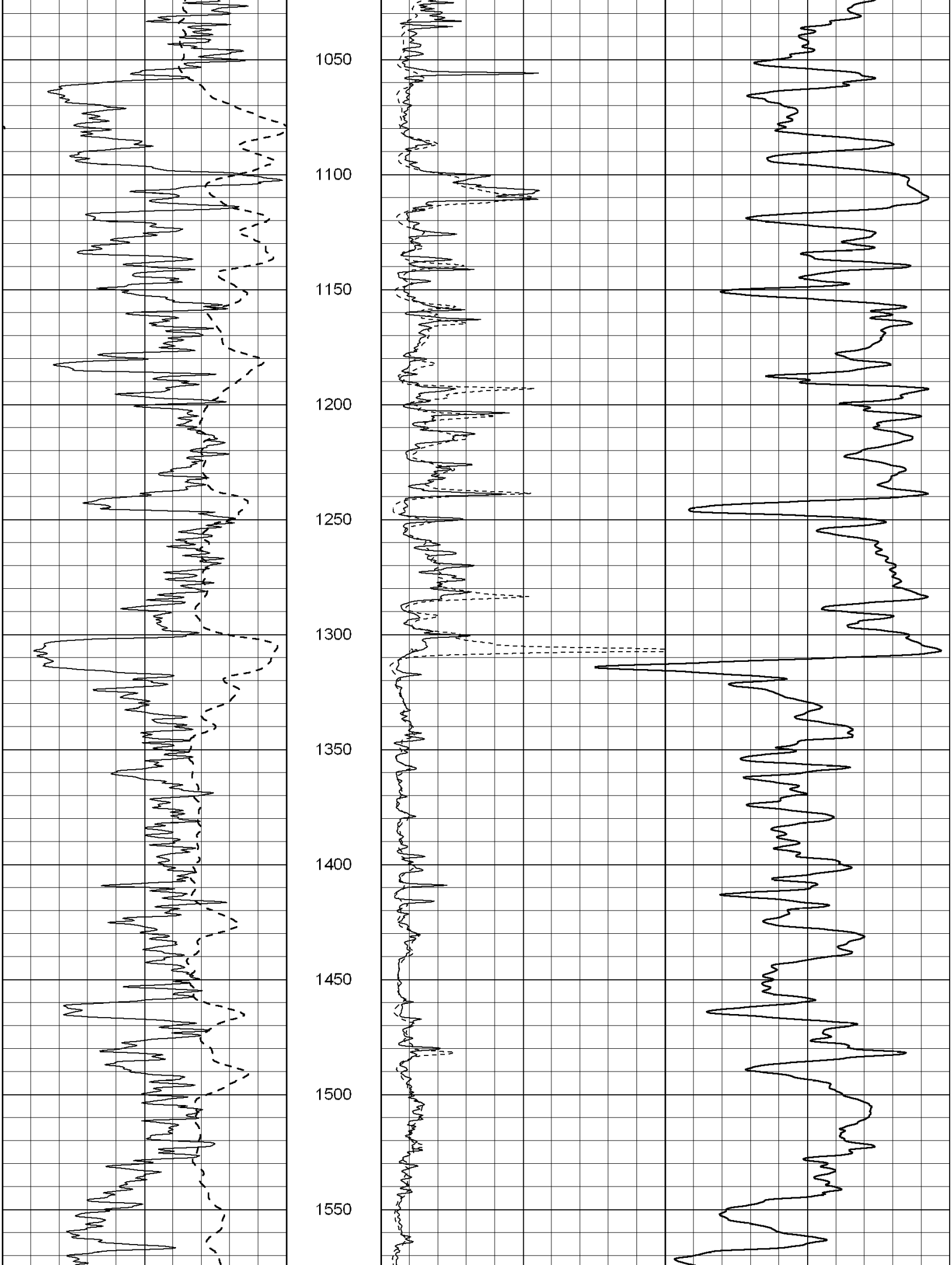
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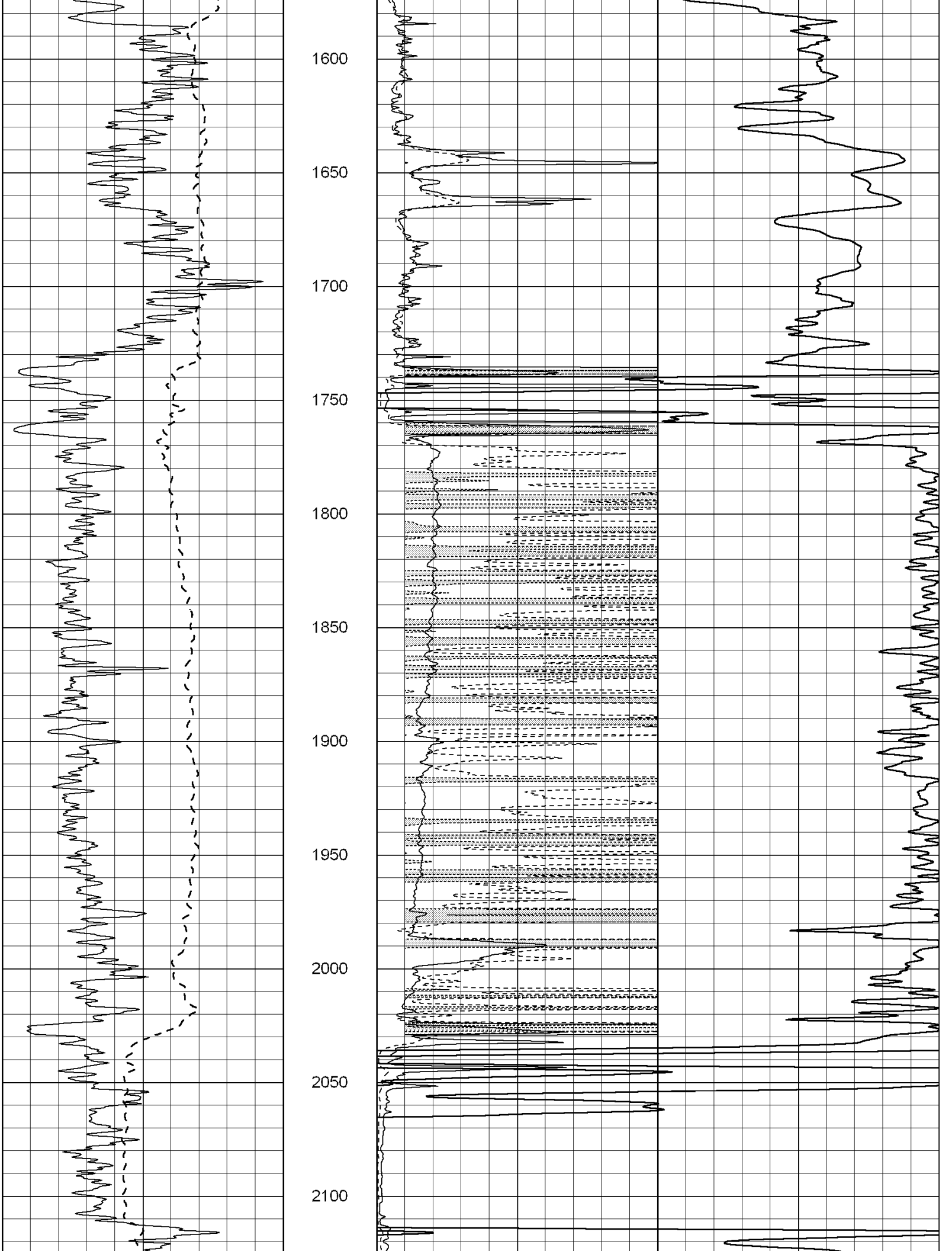
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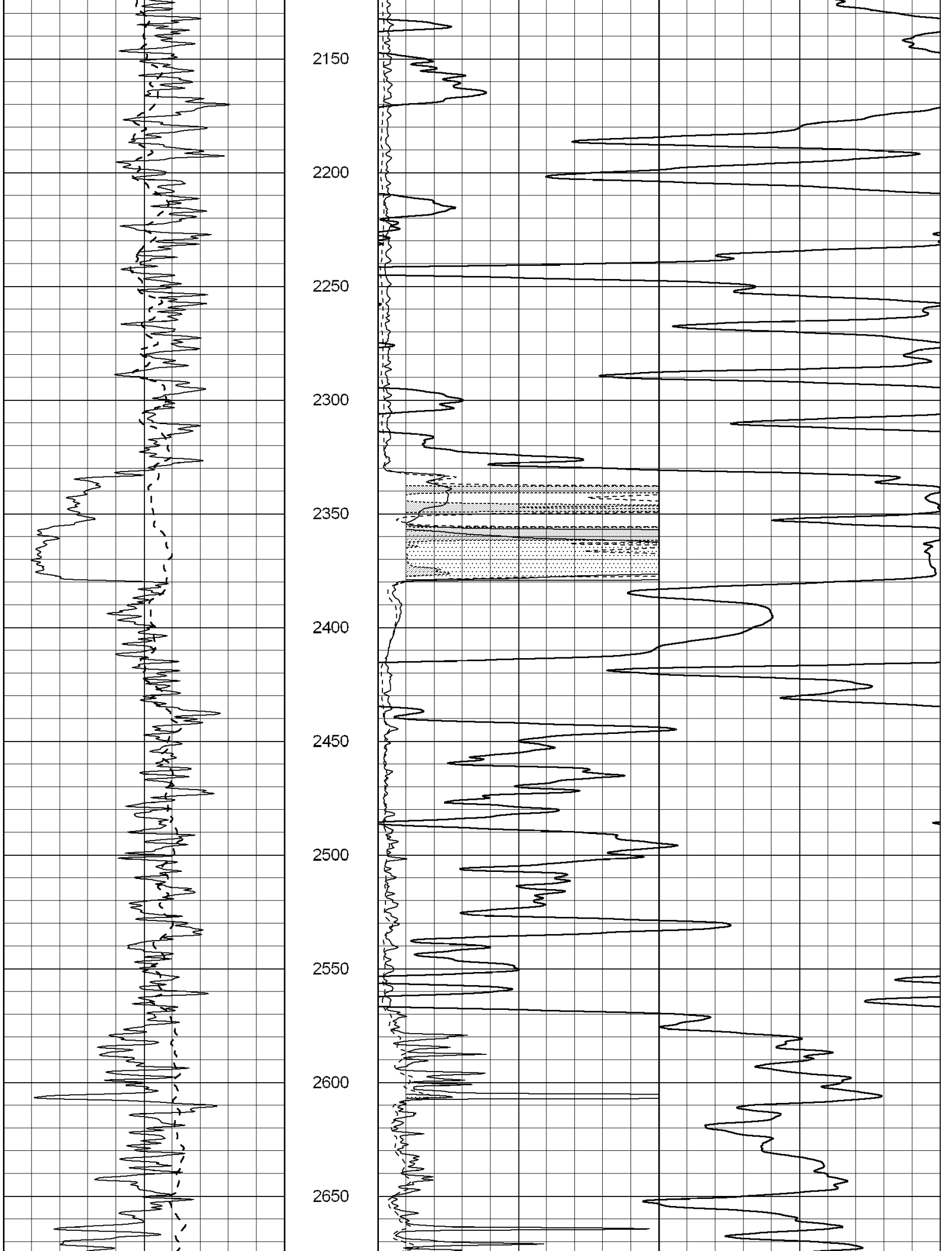
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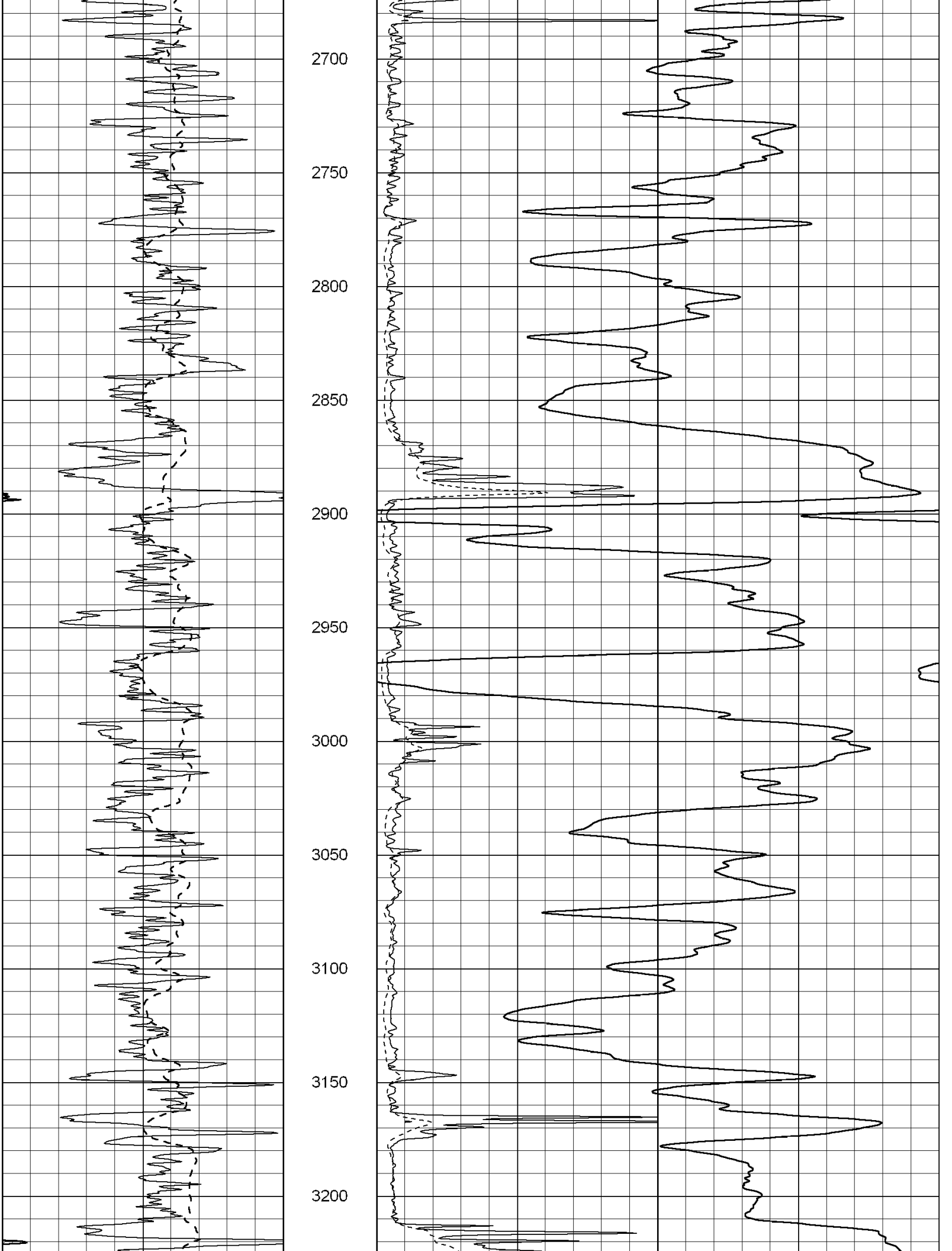
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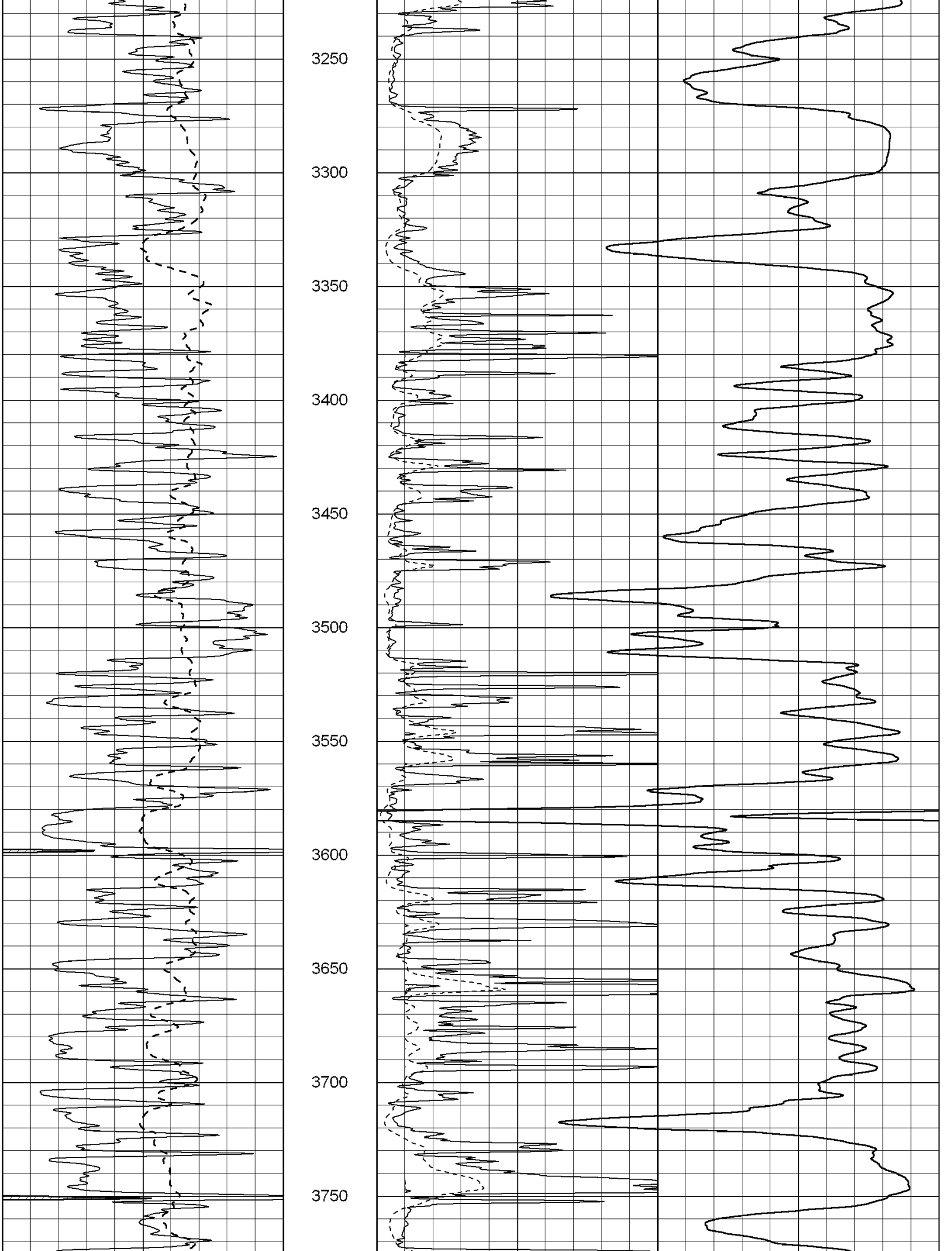
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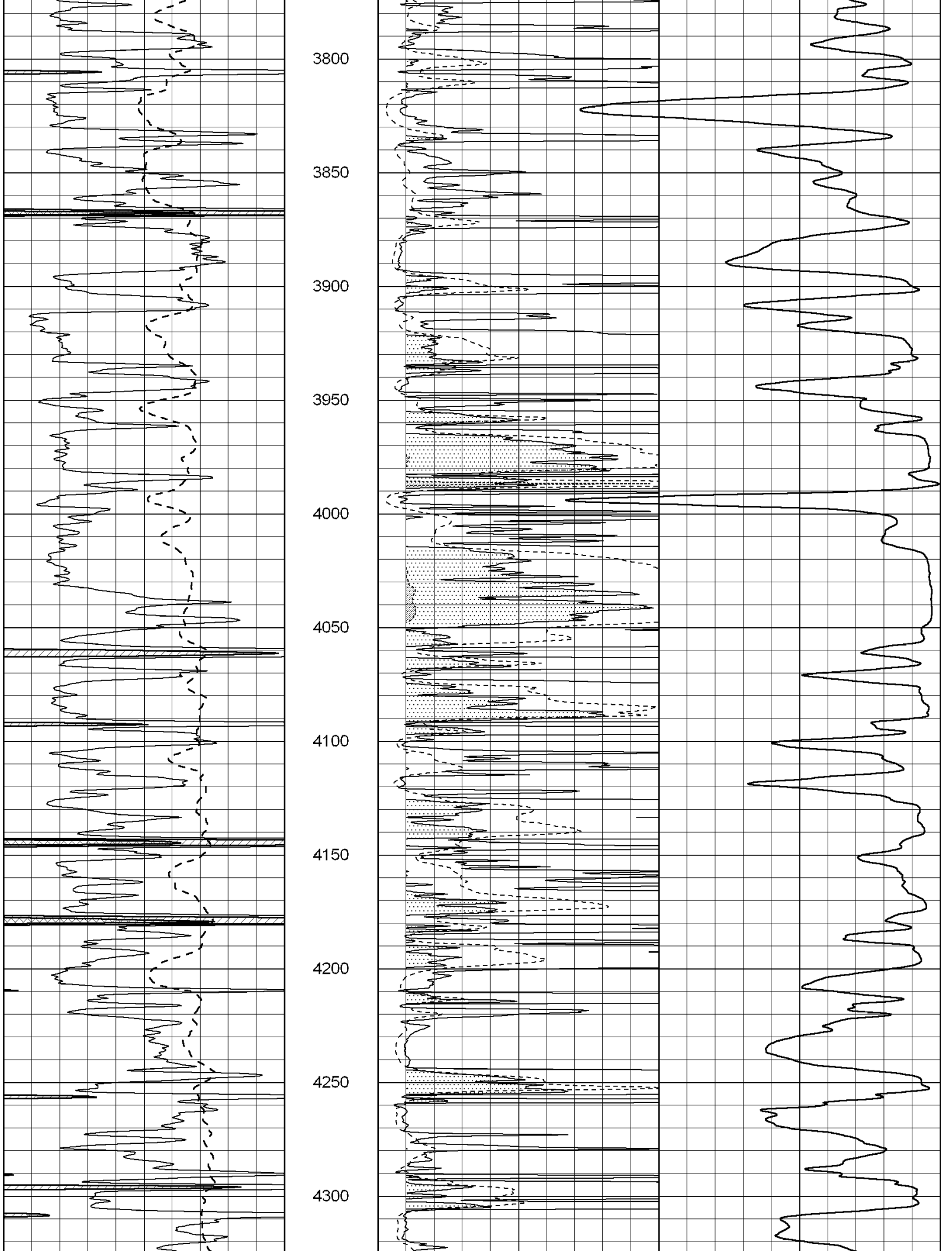
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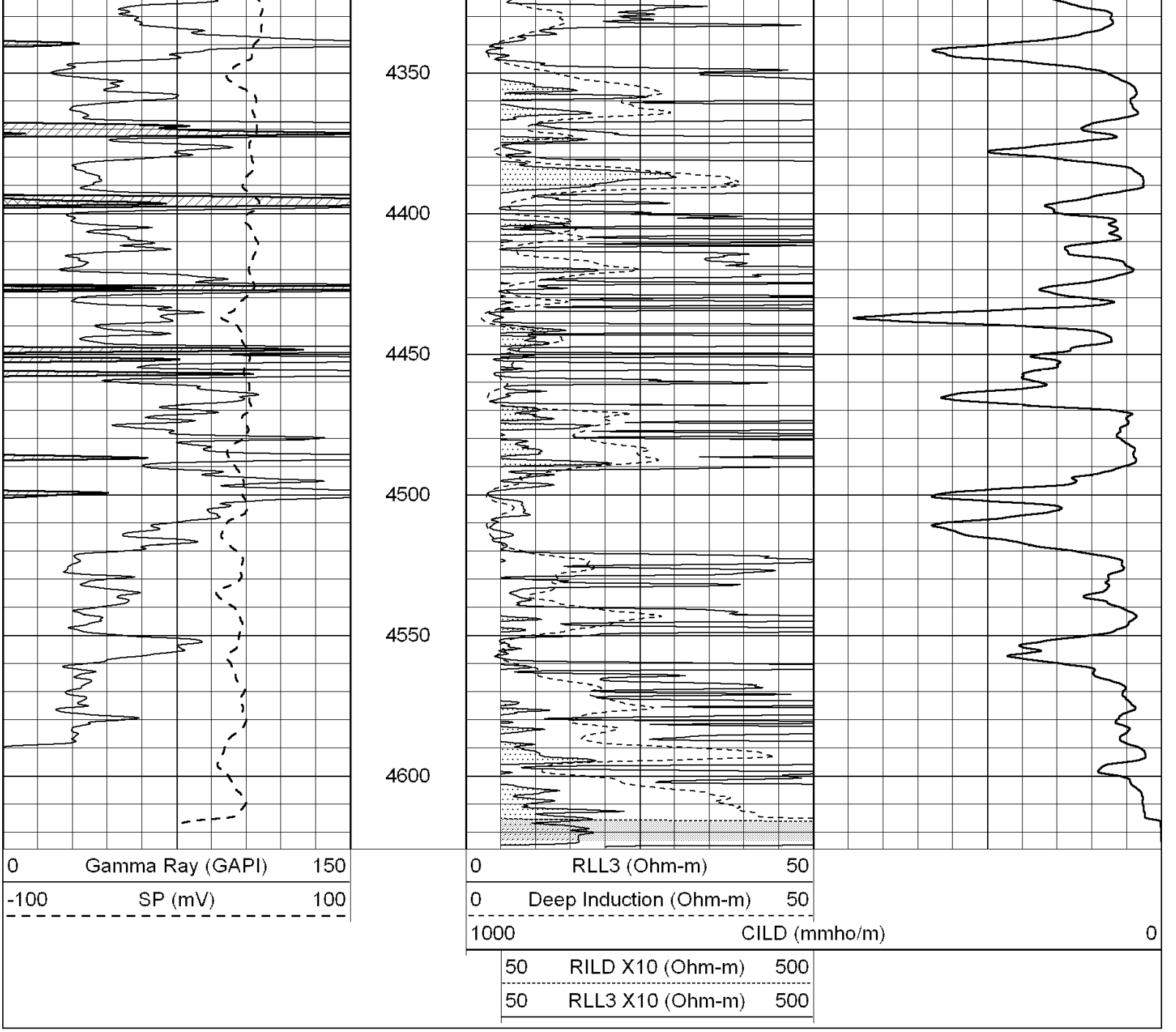
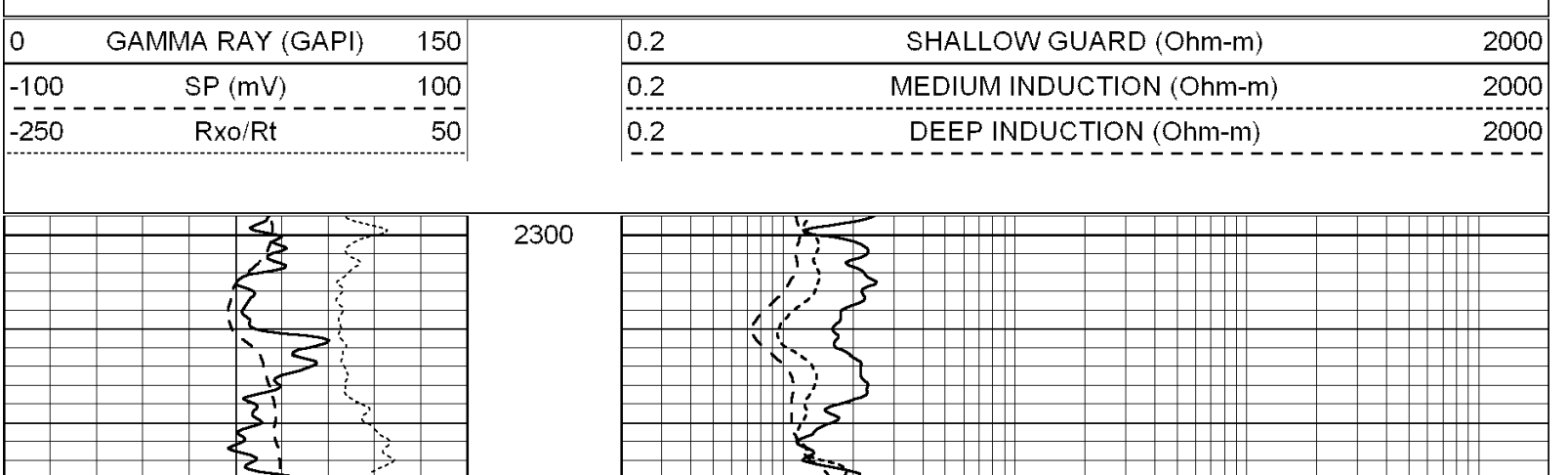
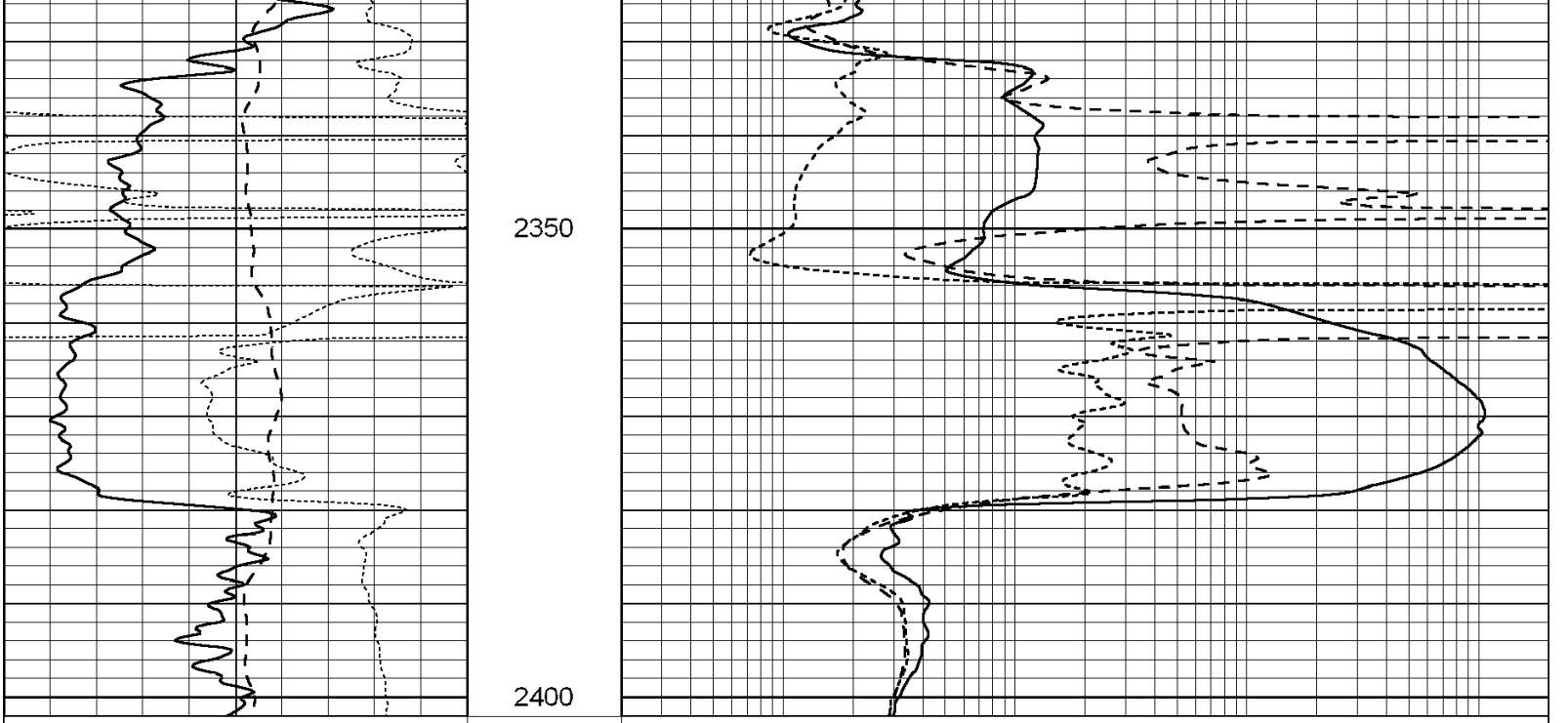


Database File:	004668ddn.db
Dataset Pathname:	pass3.2
Presentation Format:	_dil
Dataset Creation:	Tue Jan 05 14:49:13 2010 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240





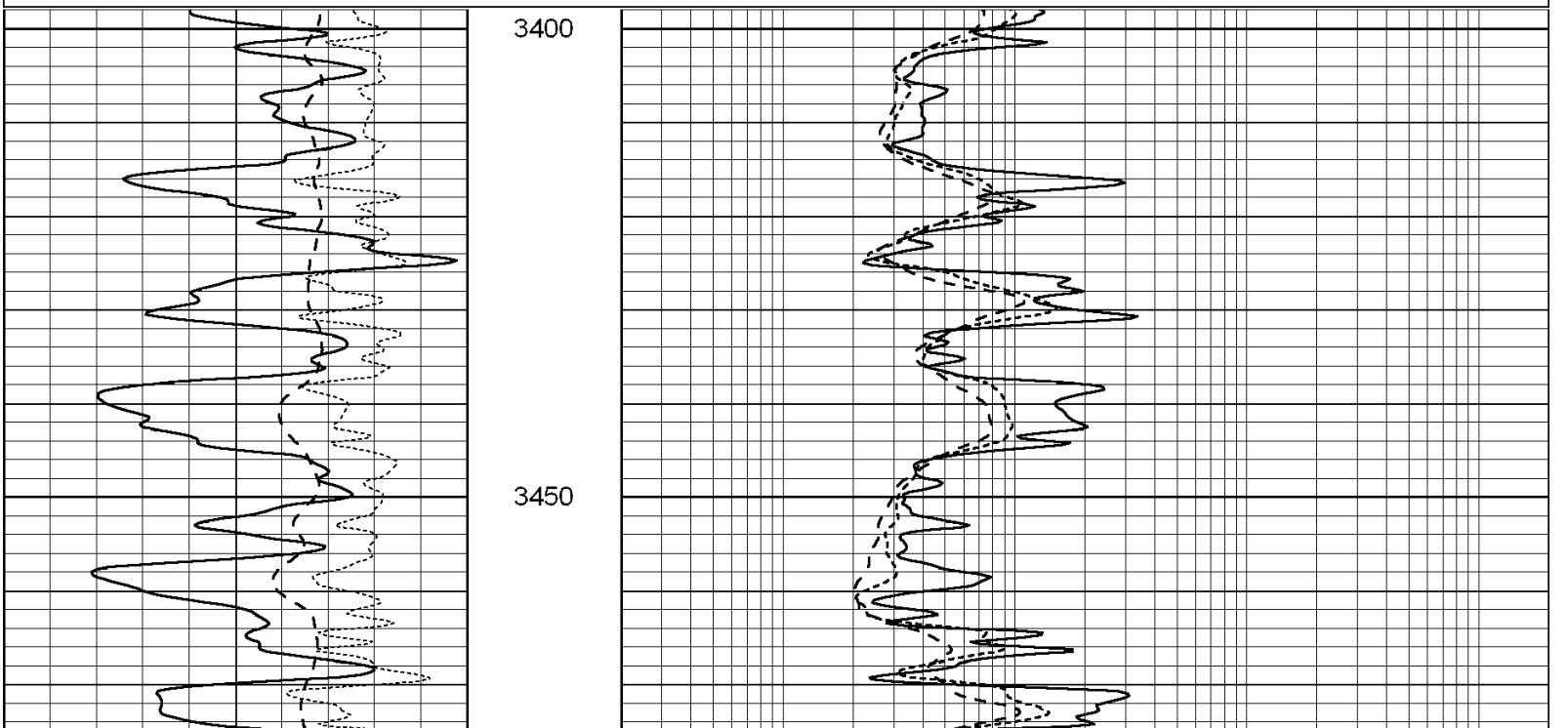
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

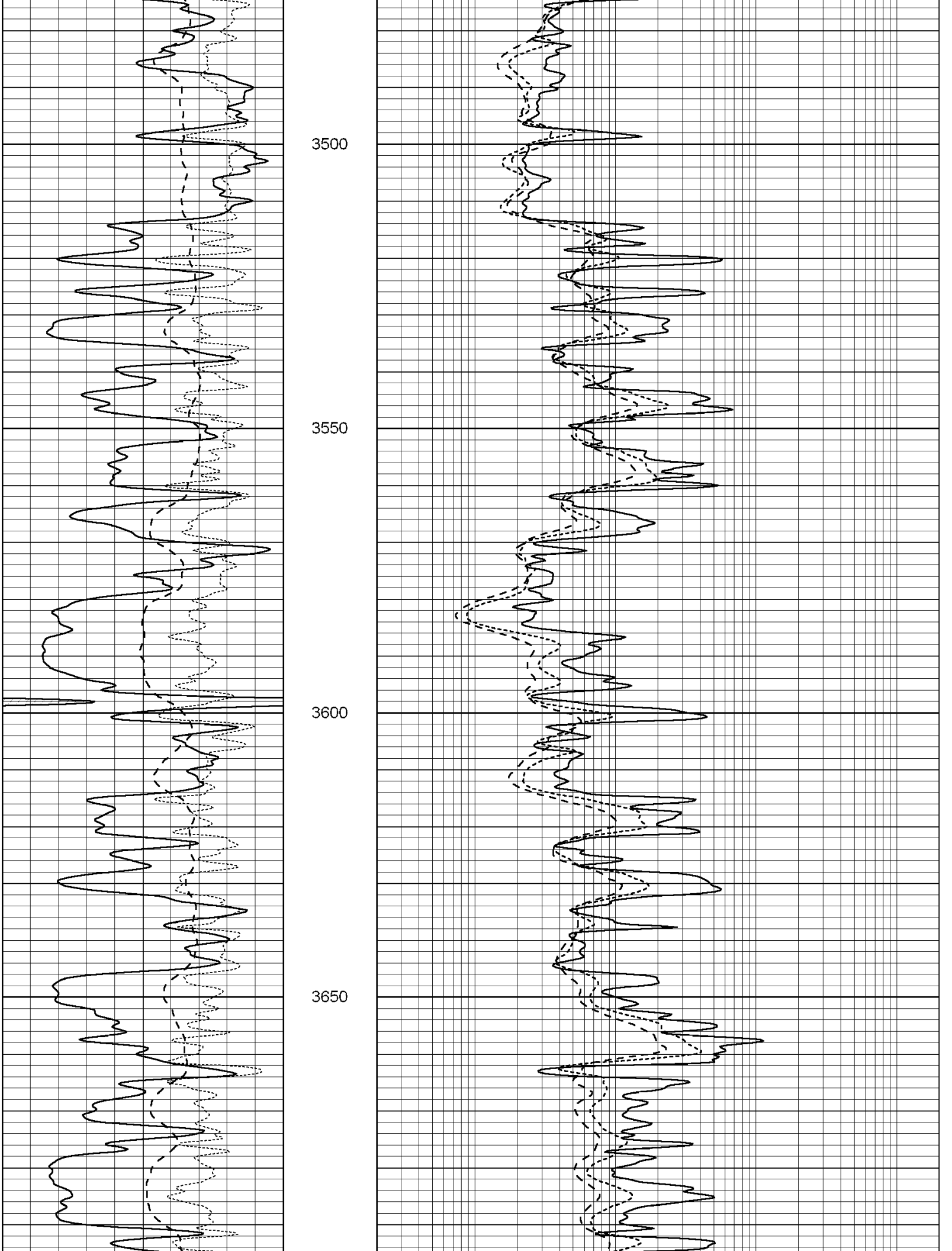
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

Database File:	004668ddn.db
Dataset Pathname:	pass3.2
Presentation Format:	_dil
Dataset Creation:	Tue Jan 05 14:49:13 2010 by Calc Open-Cased 090629
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	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

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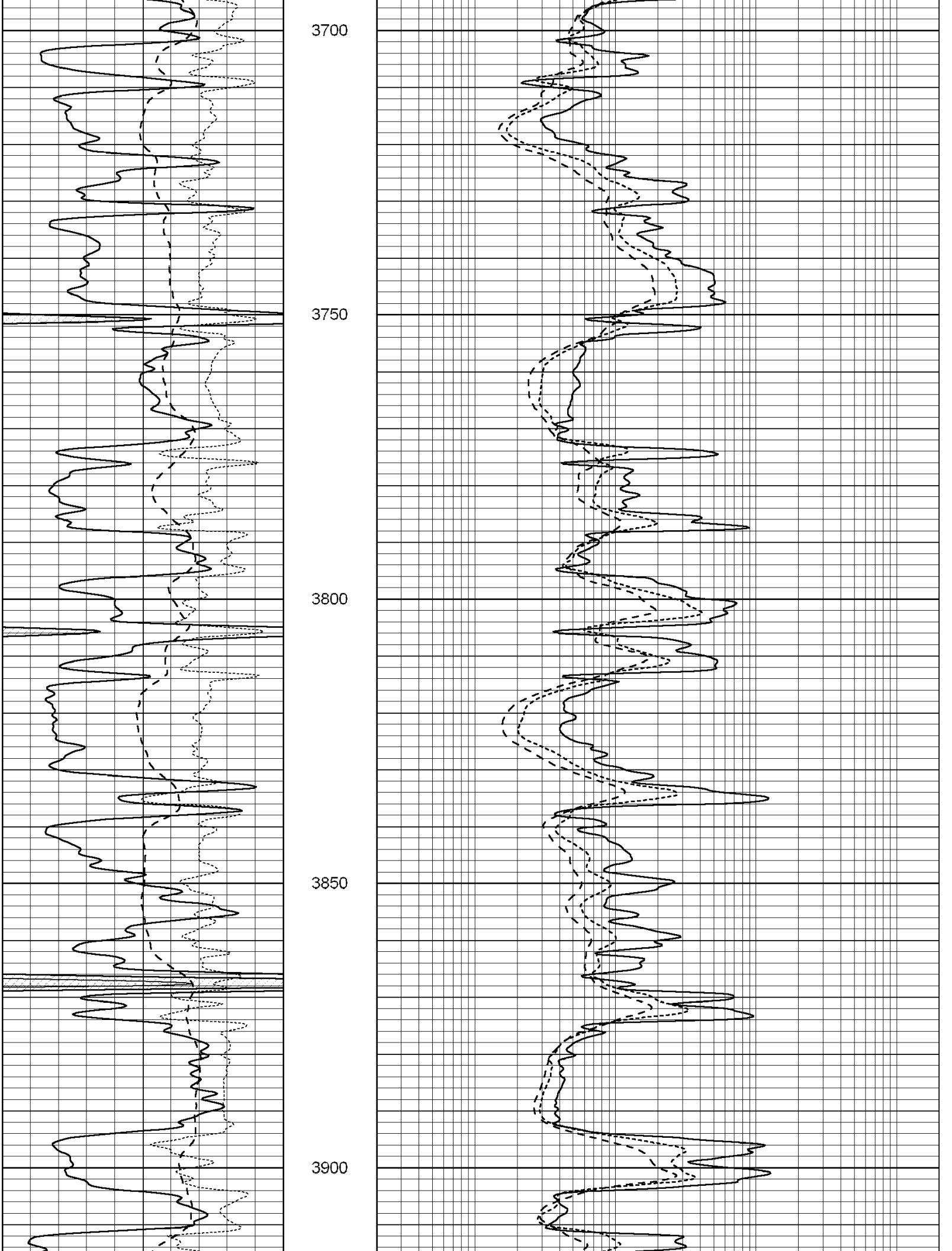
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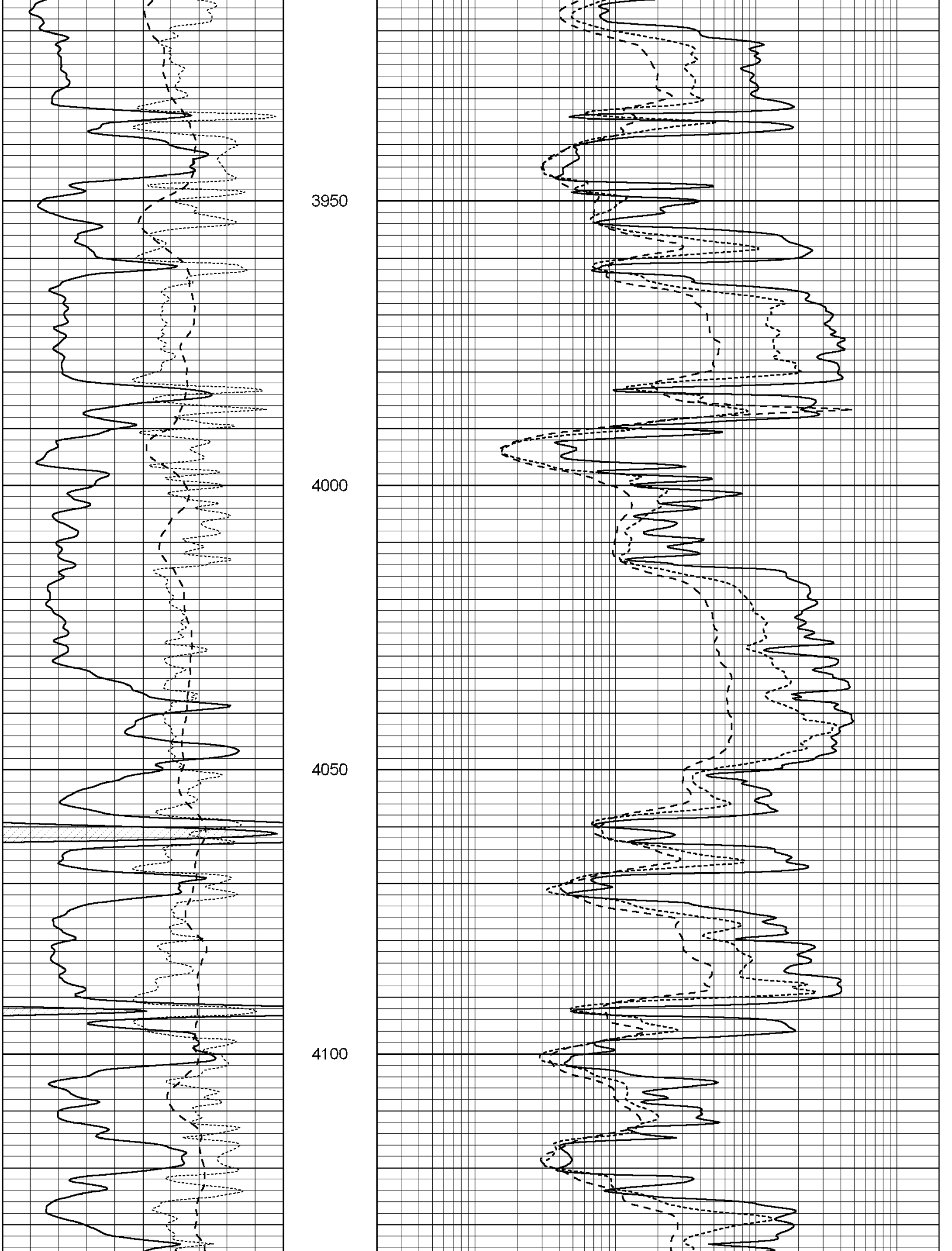
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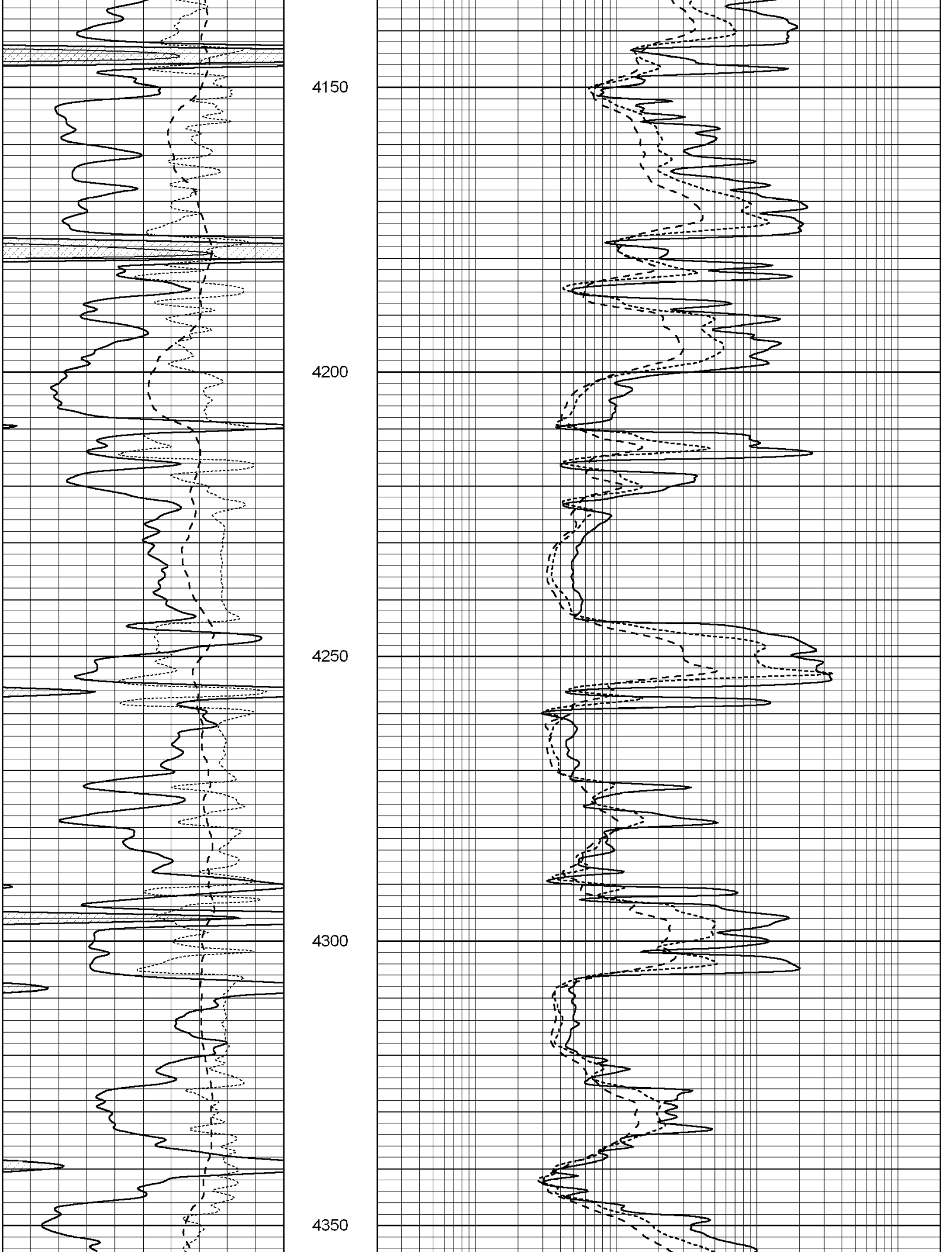
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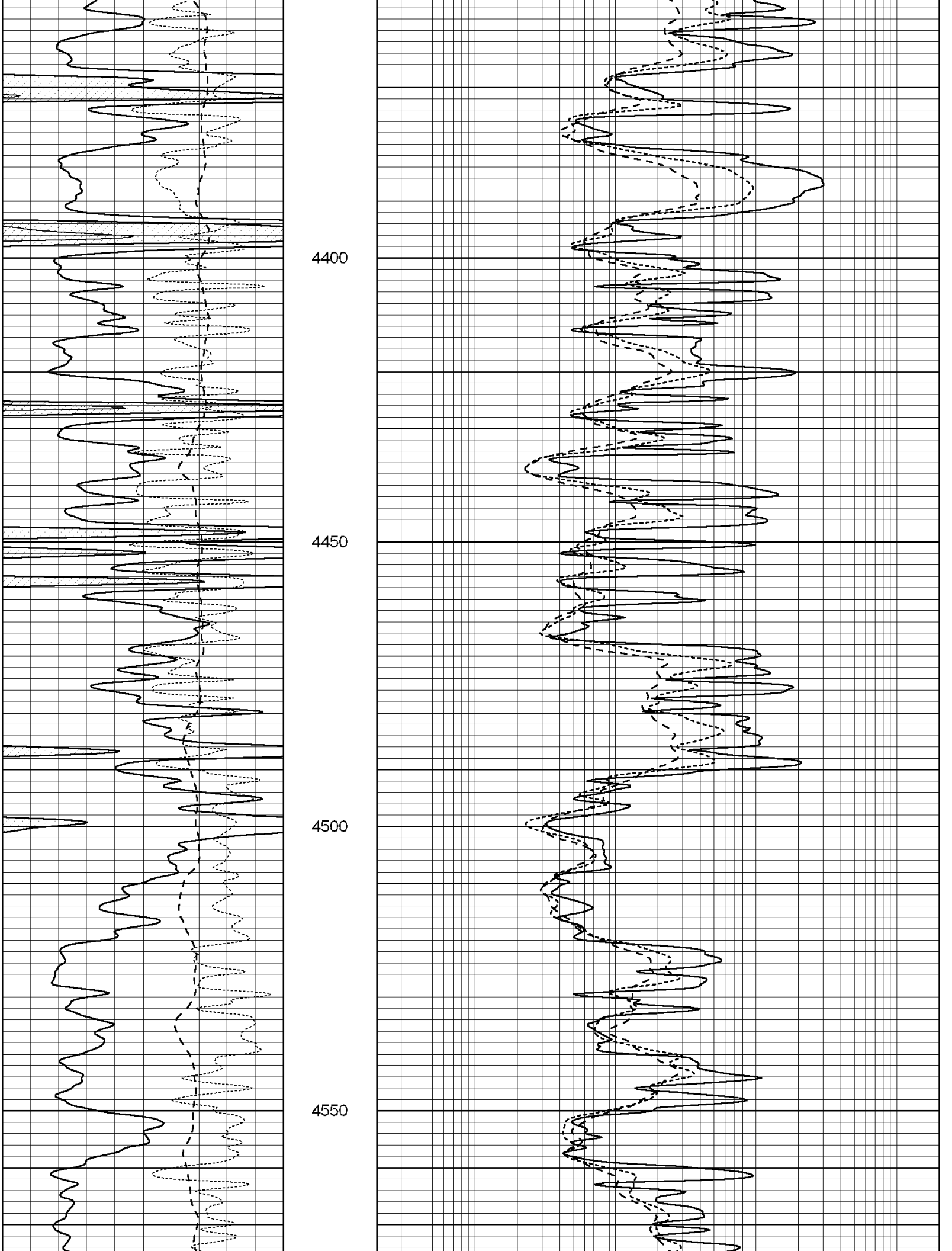
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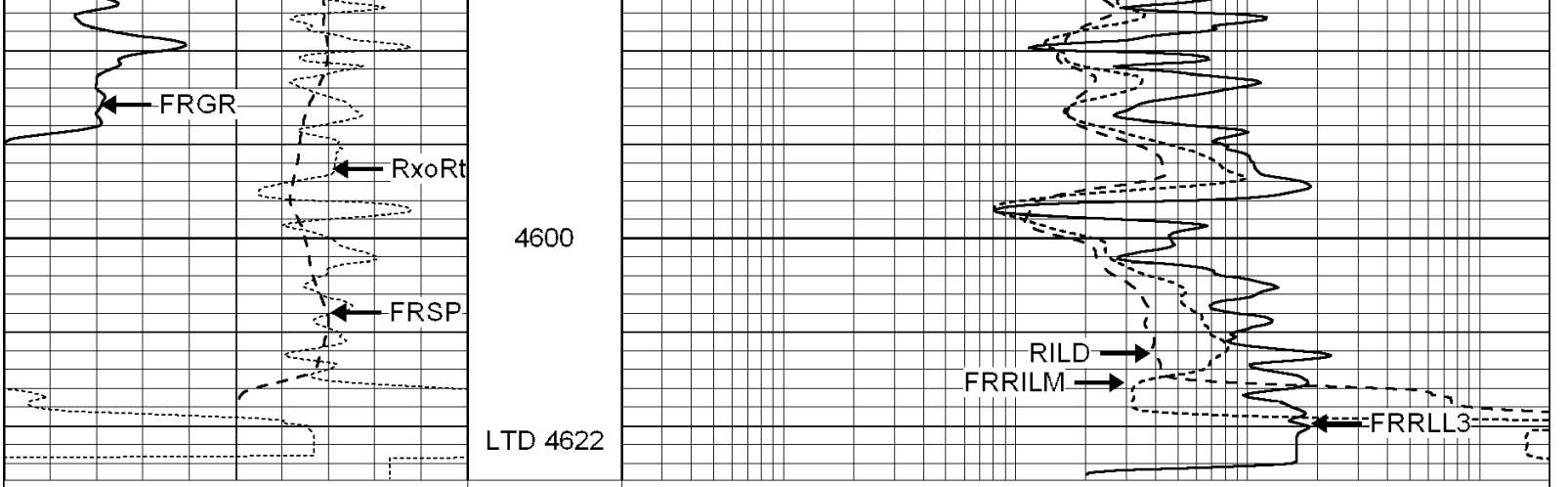


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

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

SUPERIOR WELL SERVICES

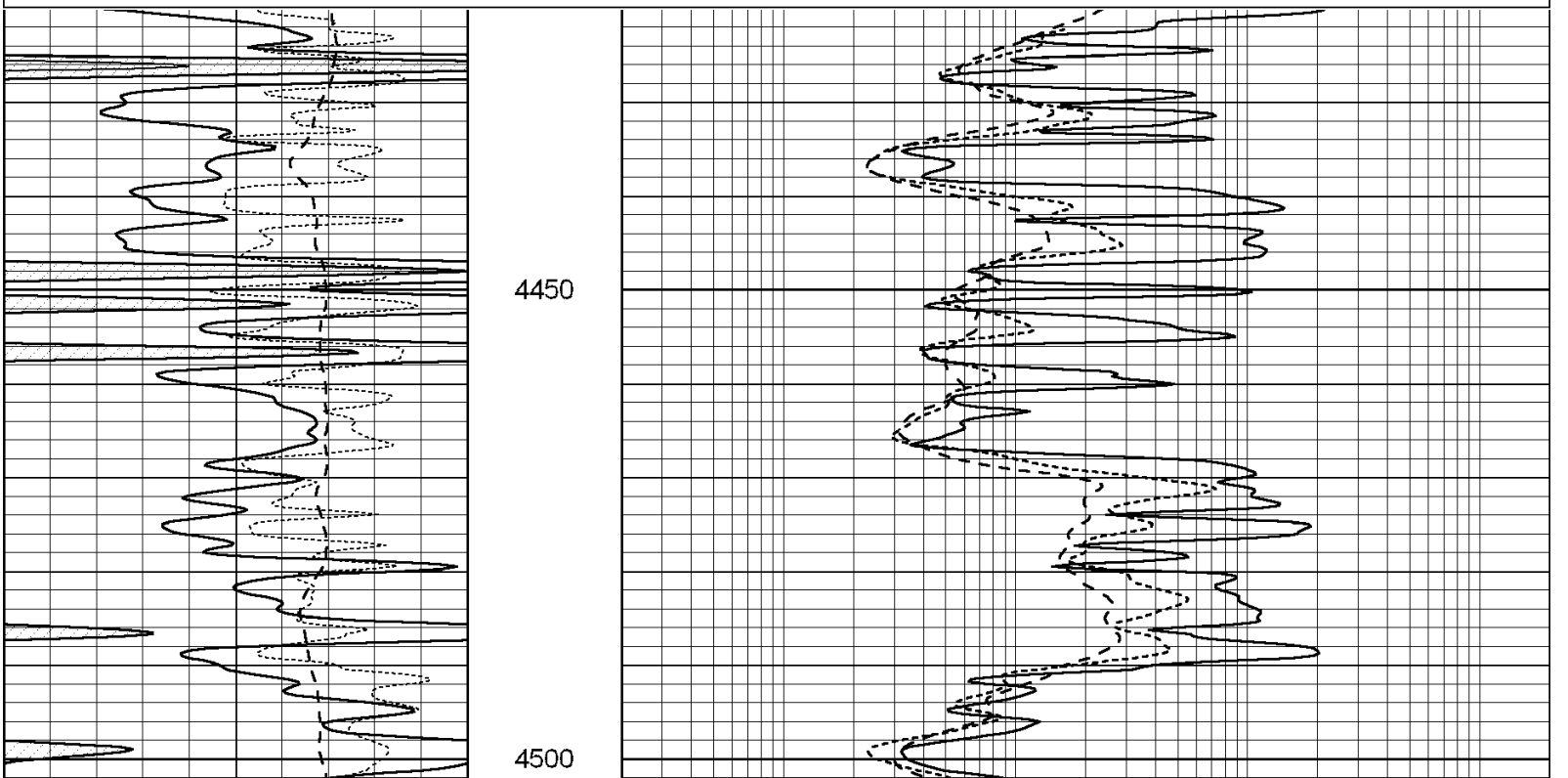
SUPERIOR
Hays,
Kansas

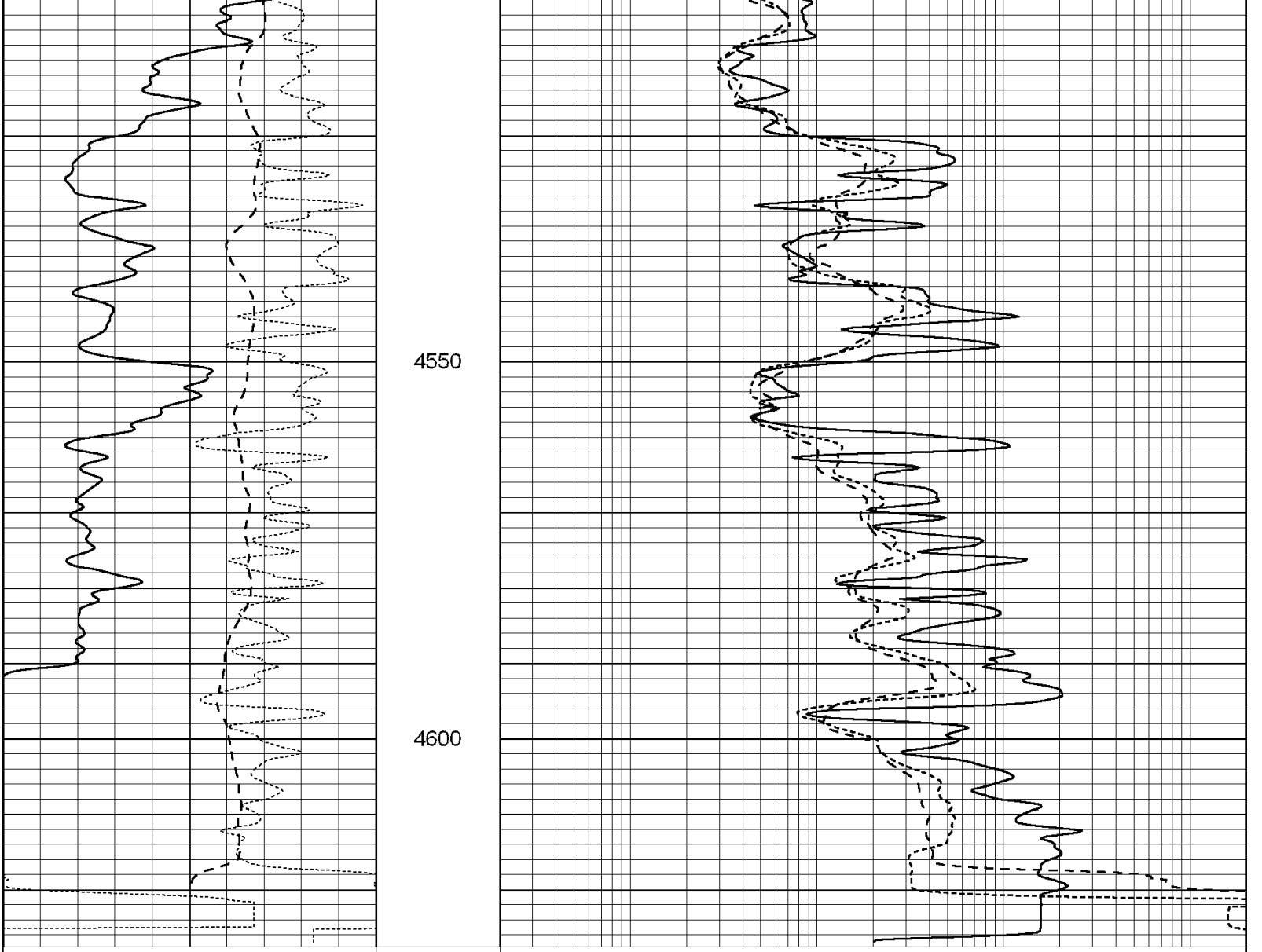
REPEAT SECTION

Database File:	004668ddn.db
Dataset Pathname:	pass2.2
Presentation Format:	_dil
Dataset Creation:	Tue Jan 05 14:53:52 2010 by Calc Open-Cased 090629
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	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000





Calibration Report

Database File: 004668ddn.db
Dataset Pathname: pass2.1
Dataset Creation: Tue Jan 05 13:36:12 2010 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE8-DILG
Surface Cal Performed:	Fri Aug 01 06:33:19 2008
Downhole Cal Performed:	Mon Jul 28 11:08:27 2008
After Survey Verification Performed:	Mon Jul 28 11:08:27 2008

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	632.616	-9.730
Medium	0.029	0.796	V	0.000	464.000	mmho/m	605.049	-17.680

Internal:	Zero	Cal		Zero	Cal		m	b

Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-6.500	V		3800.000	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		

Compensated Density Calibration Report

Serial-Model: GEAR4-GEARHART
Source / Verifier: 143 / 143
Master Calibration Performed: Fri Jan 16 10:06:35 2009

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1358.55	649.93	cps
Aluminum	2.580	g/cc	325.11	479.52	cps

Spine Angle = 78.00 Density/Spine Ratio = 0.595

	Size		Reading	
Small Ring	8.00	in	3.56	V
Large Ring	14.00	in	6.65	V

Compensated Neutron Calibration Report

Serial Number: 5I
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: GR6
Tool Model: OPEN
Performed: Tue Nov 10 08:32:36 2009

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity:	0.5535	GAPI/cps