DUAL INDUCTION LOG

Company	WOOLSEY OPERATING COMPANY, LLC
Well	McELWAIN #1
Field	JOY STATION
County	KIOWA
State	KANSAS

Company WOOLSEY OPERATING COMPANY, LLC.
Well McELWAIN #1
Field JOY STATION
County KIOWA State KANSAS

Location: API # : 15-097-21849-0000
1150' FNL & 1800' FEL
SEC 20 TWP 28S RGE 19W

Other Services: CDL/CNL/PE, SONIC

Permanent Datum: GROUND LEVEL Elevation 2288
Log Measured From: KELLY BUSHING 12' A.G.L
Drilling Measured From: KELLY BUSHING

Elevation: K.B. 2300, D.F. 2298, G.L. 2288

Date	2/13/19		
Run Number	ONE		
Depth Driller	5022		
Depth Logger	5024		
Bottom Logged Interval	5022		
Top Log Interval	00		
Casing Driller	10 3/4" @ 395'		
Casing Logger	395		
Bit Size	7 7/8		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 7000 PPM	
Density / Viscosity	9.2/67		
pH / Fluid Loss	10.0/8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.50 @ 60F		
Rmf @ Meas. Temp	.37 @ 60F		
Rmc @ Meas. Temp	.60 @ 60F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.24 @ 125F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	125F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	BILL KLAVER		

<<< Fold Here >>>

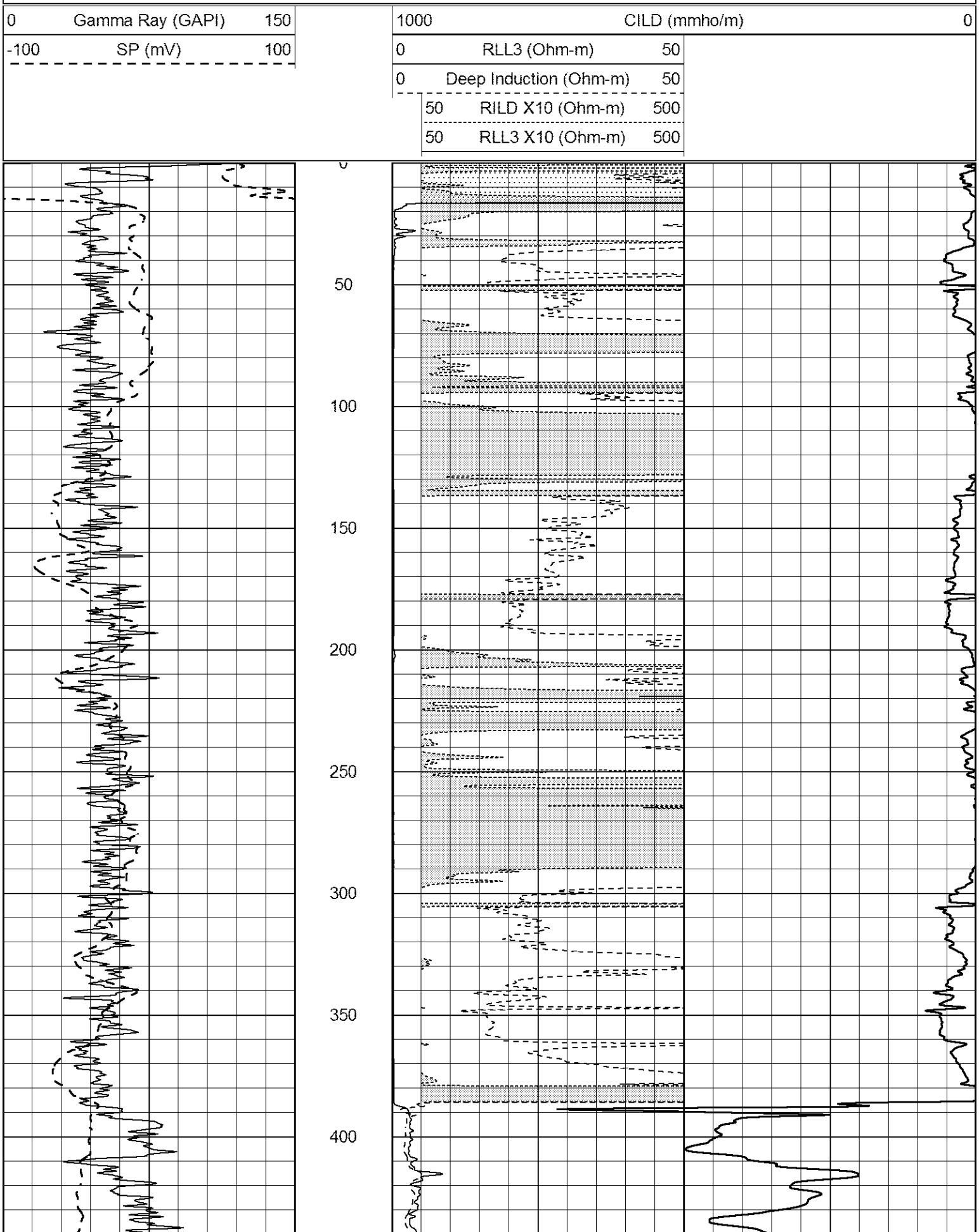
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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.

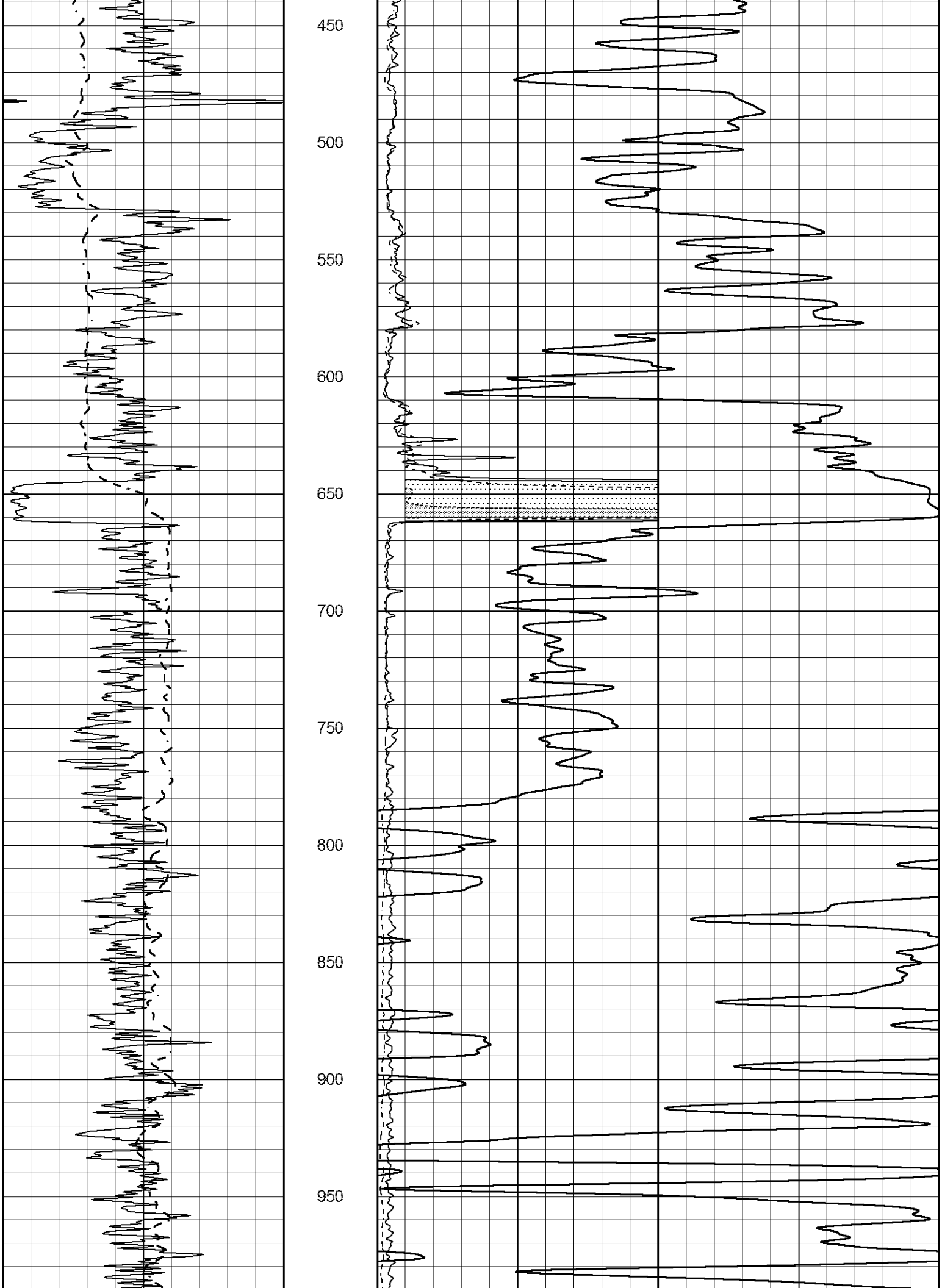
Comments

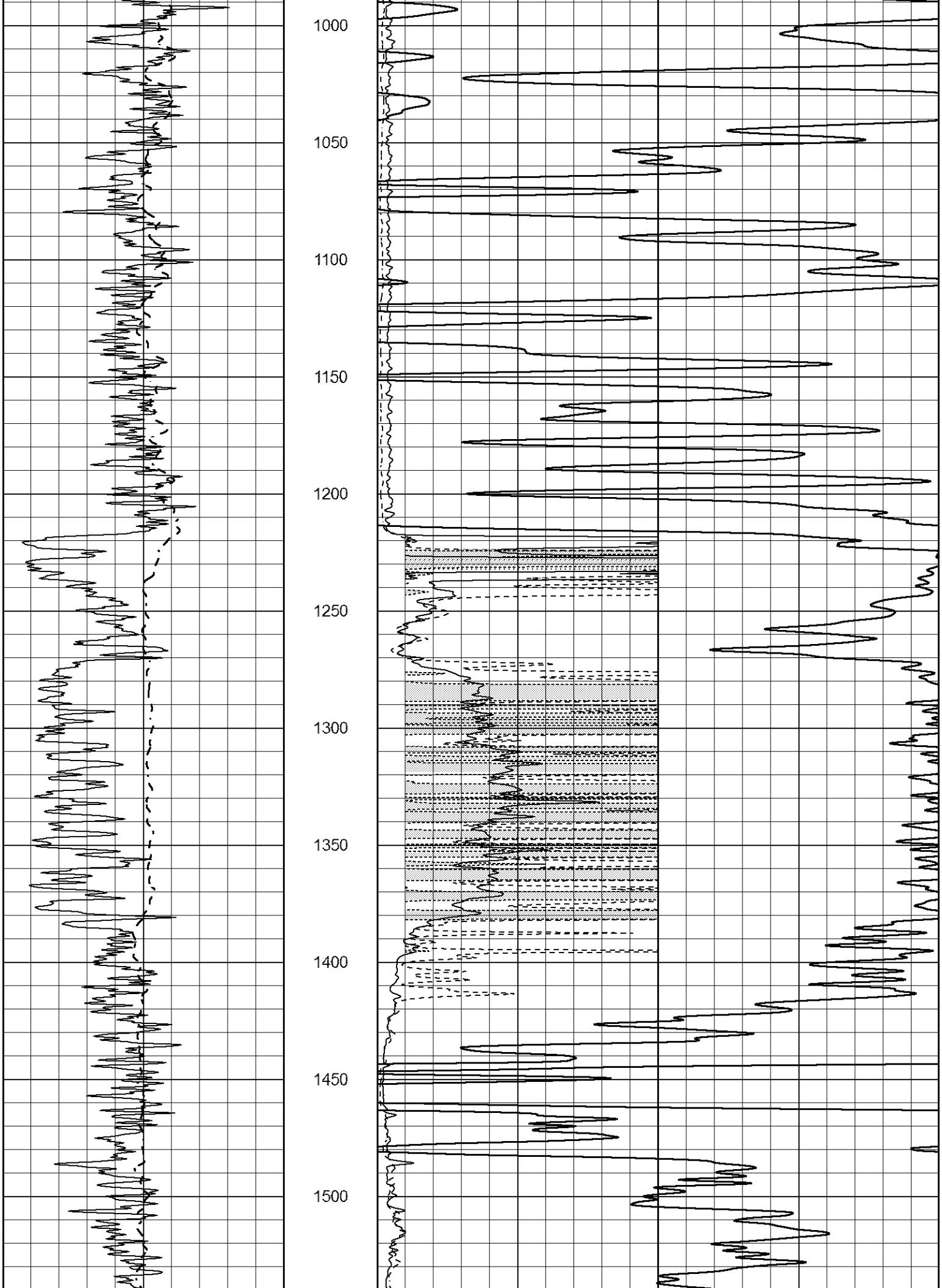
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
GREENSBURG, KS. - WEST TO MULLINVILLE GAS PLANT - 1 NORTH TO J RD.
3/4 WEST - SOUTHEAST INTO

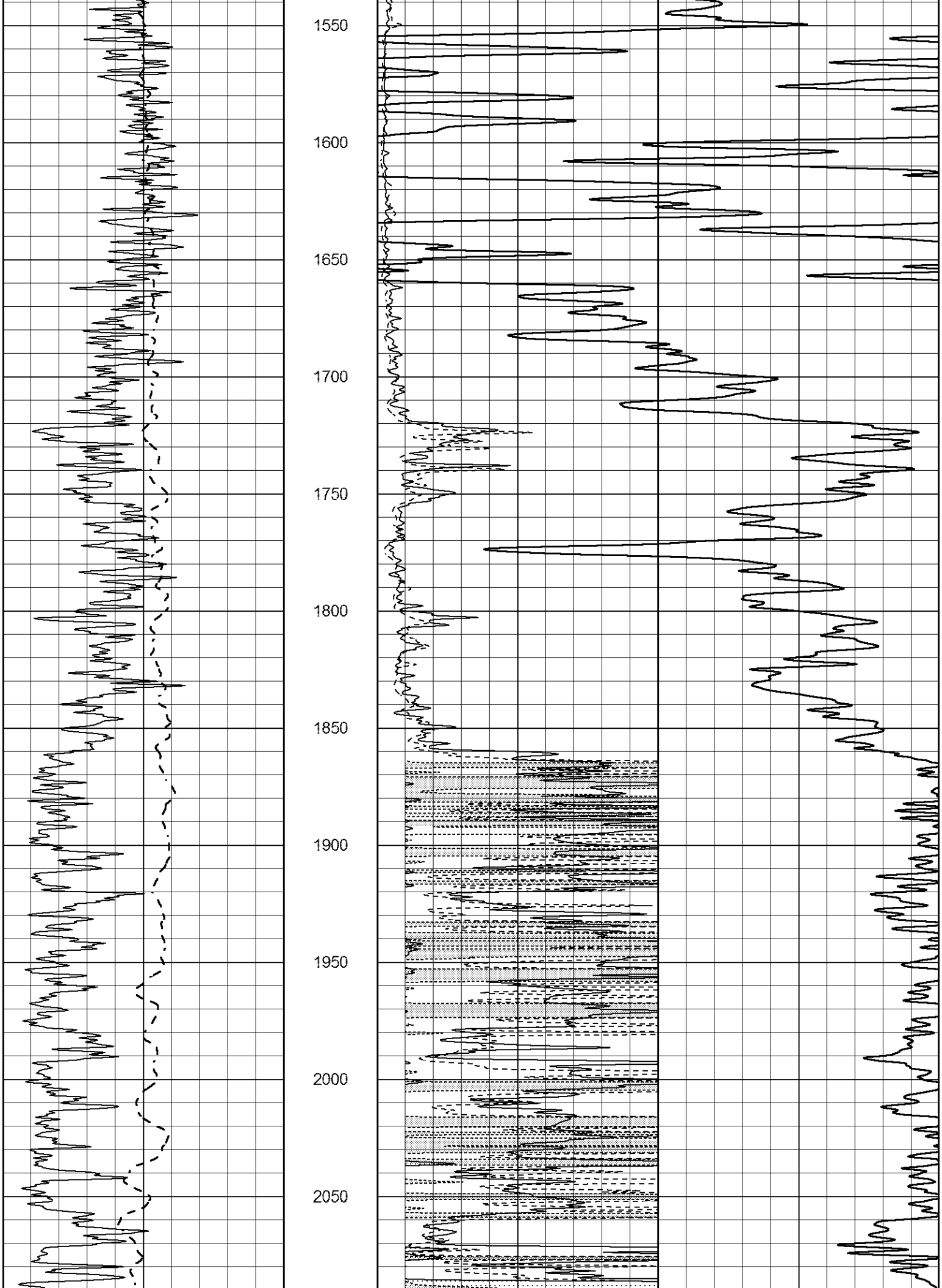
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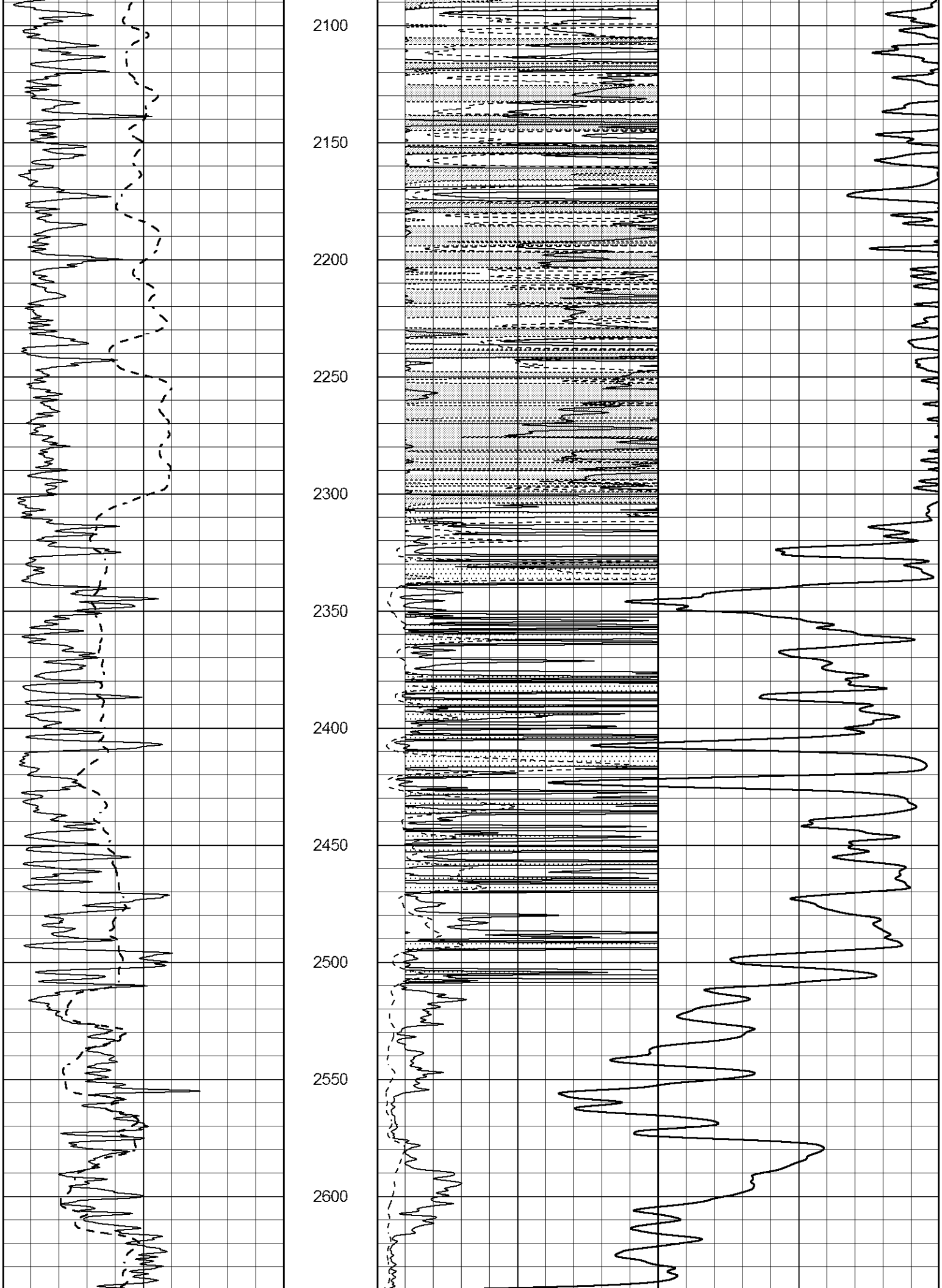
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Presentation Format	_dil2
Dataset Creation	Wed Feb 13 06:02:47 2019
Charted by	Depth in Feet scaled 1:600

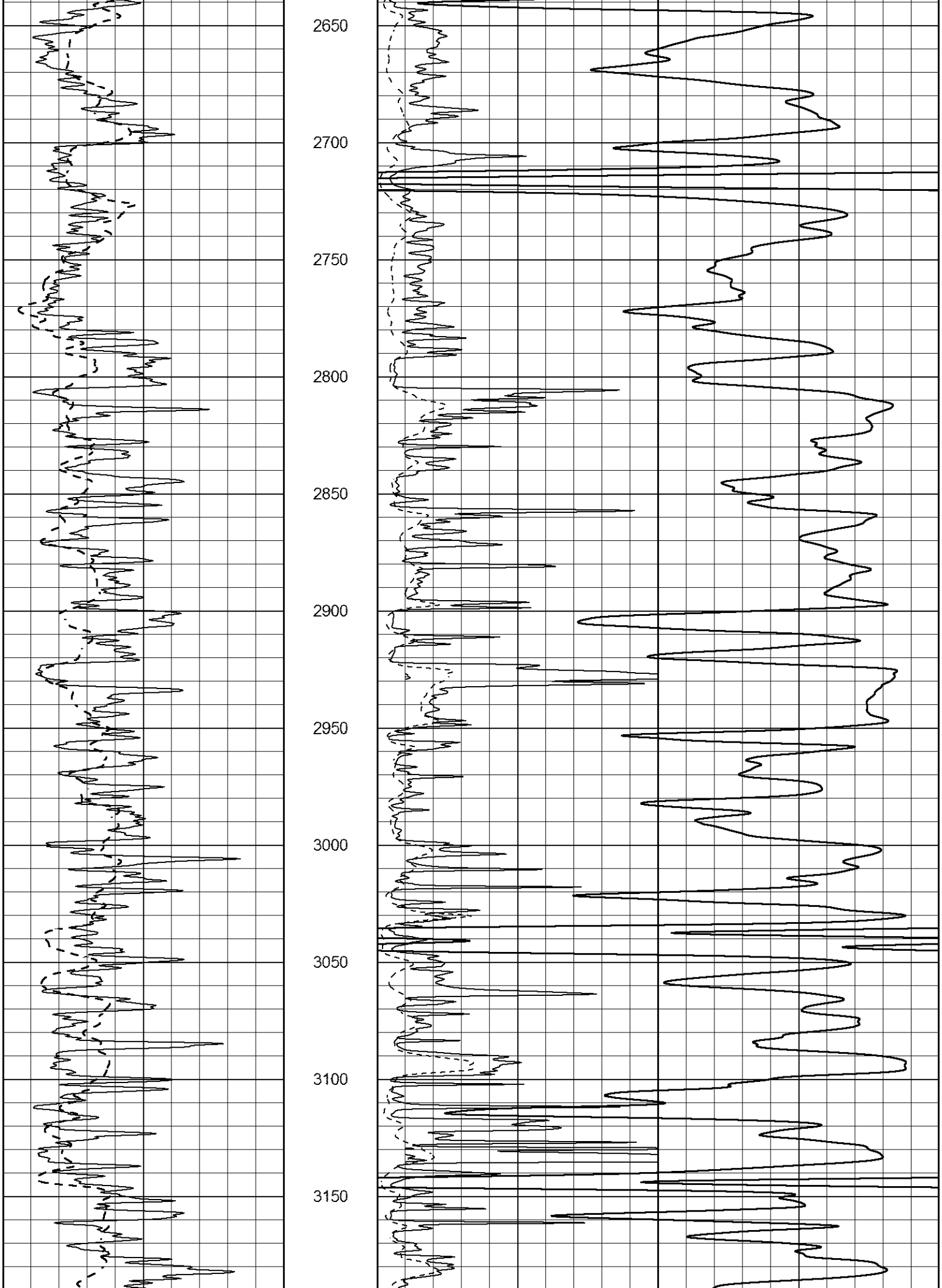


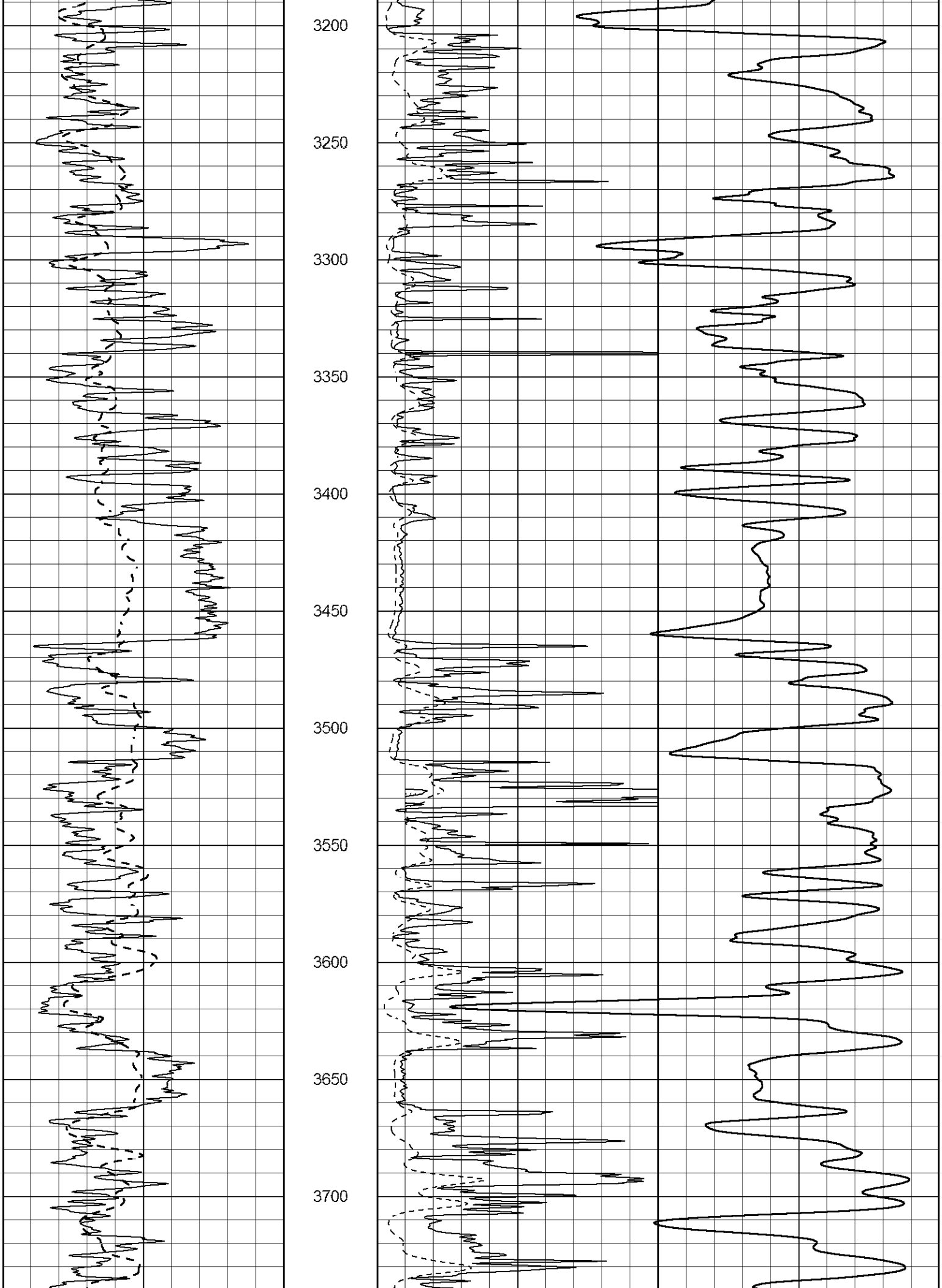

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650
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900
950

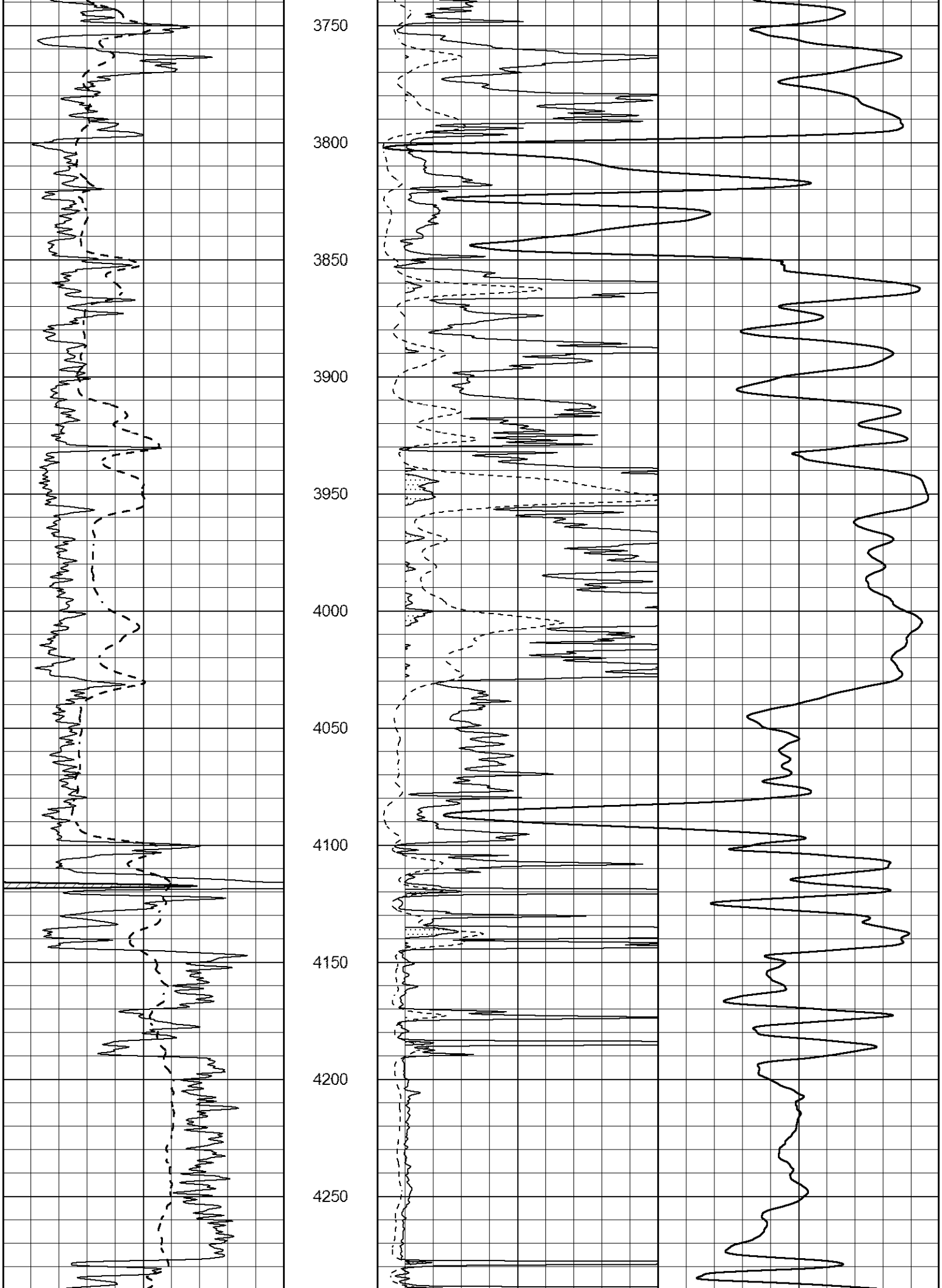

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1100
1150
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1250
1300
1350
1400
1450
1500

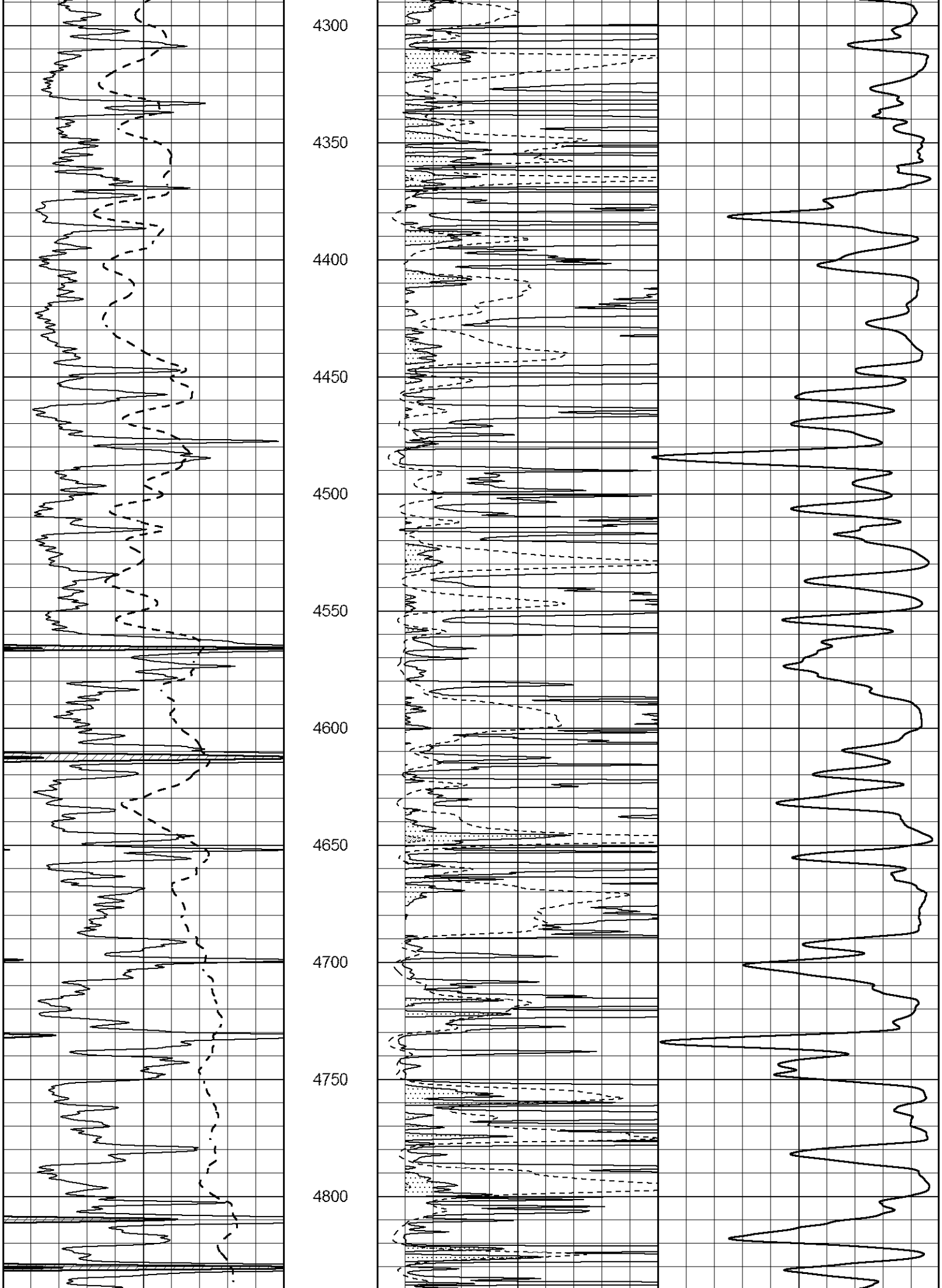

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1600
1650
1700
1750
1800
1850
1900
1950
2000
2050

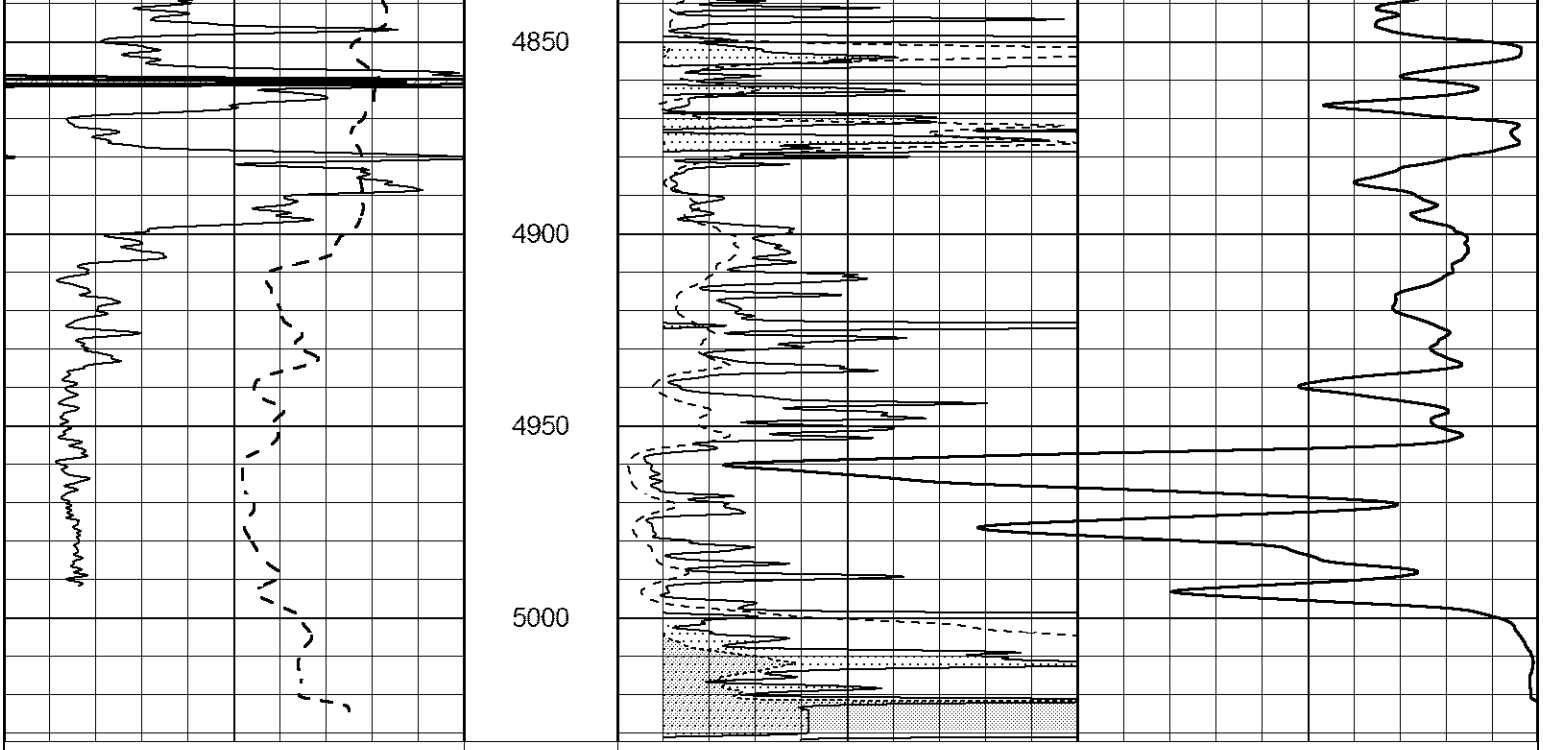

2100
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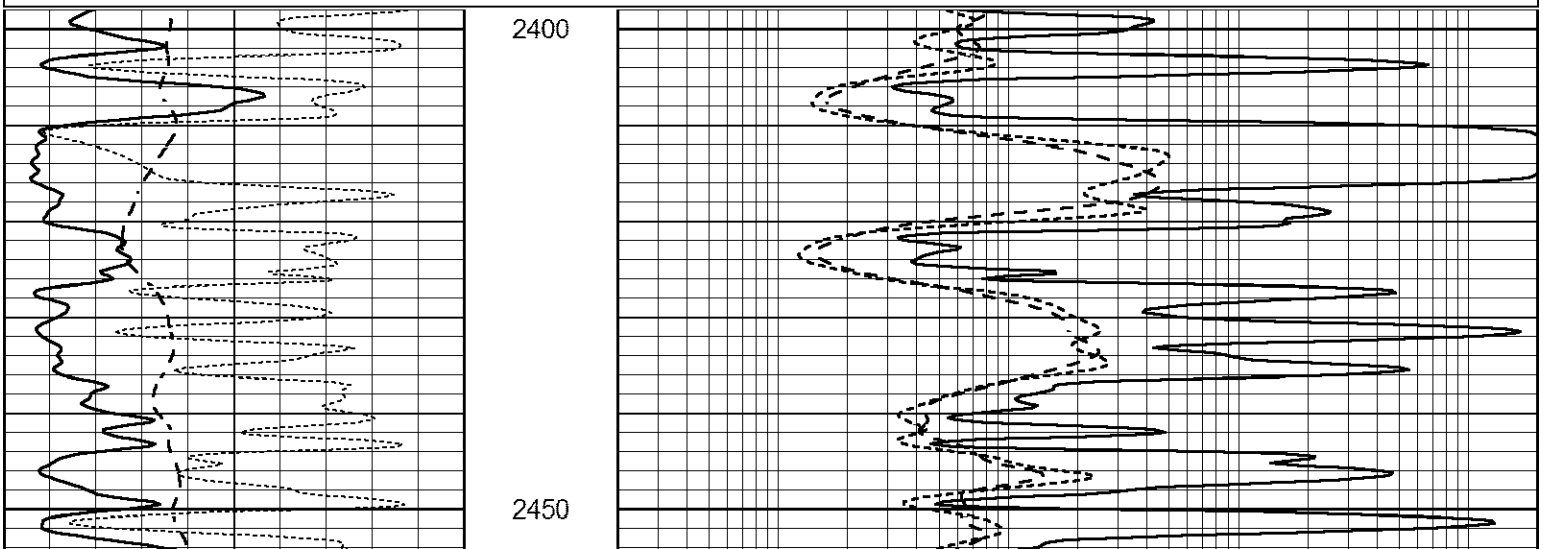


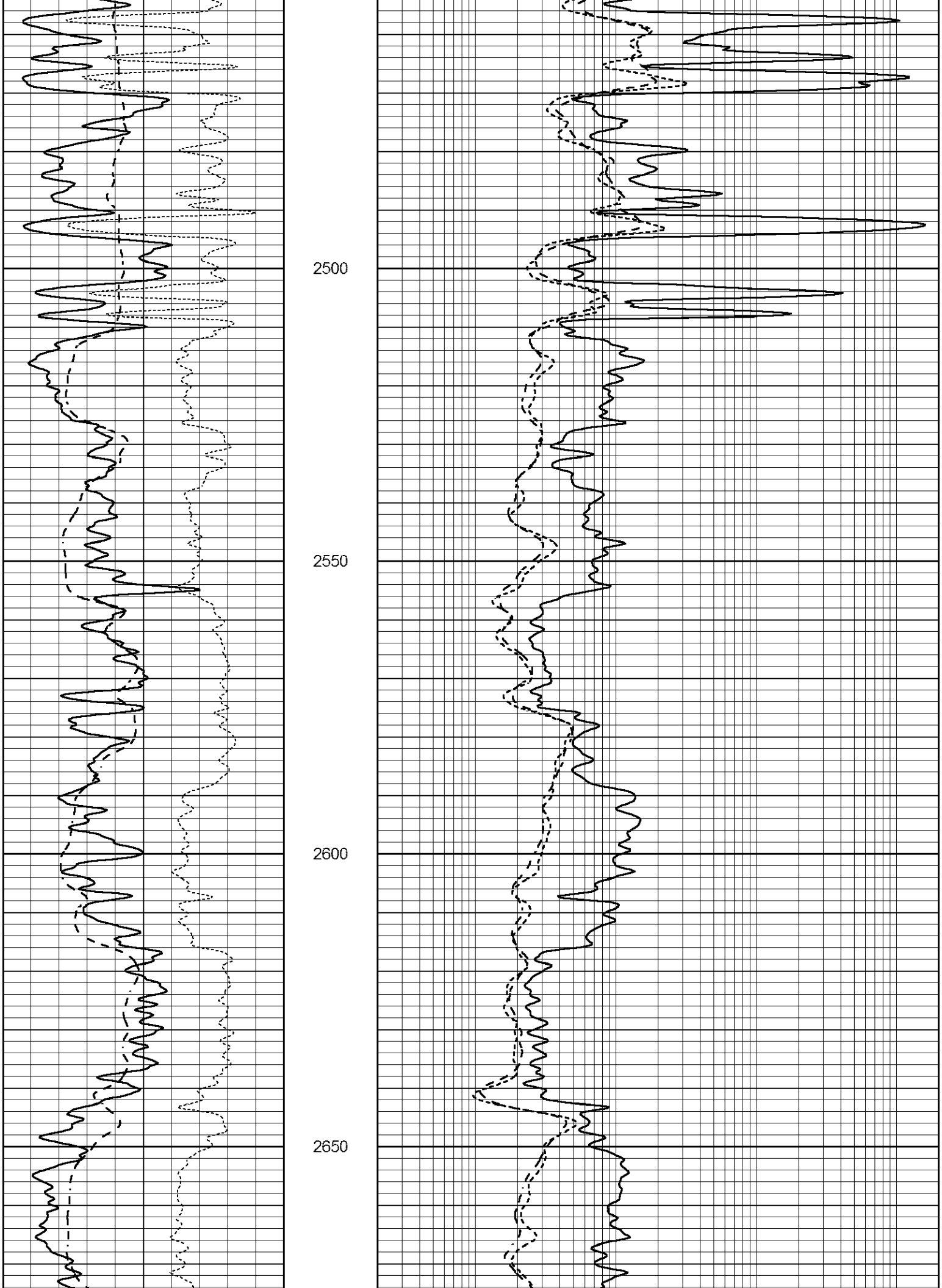
MAIN SECTION

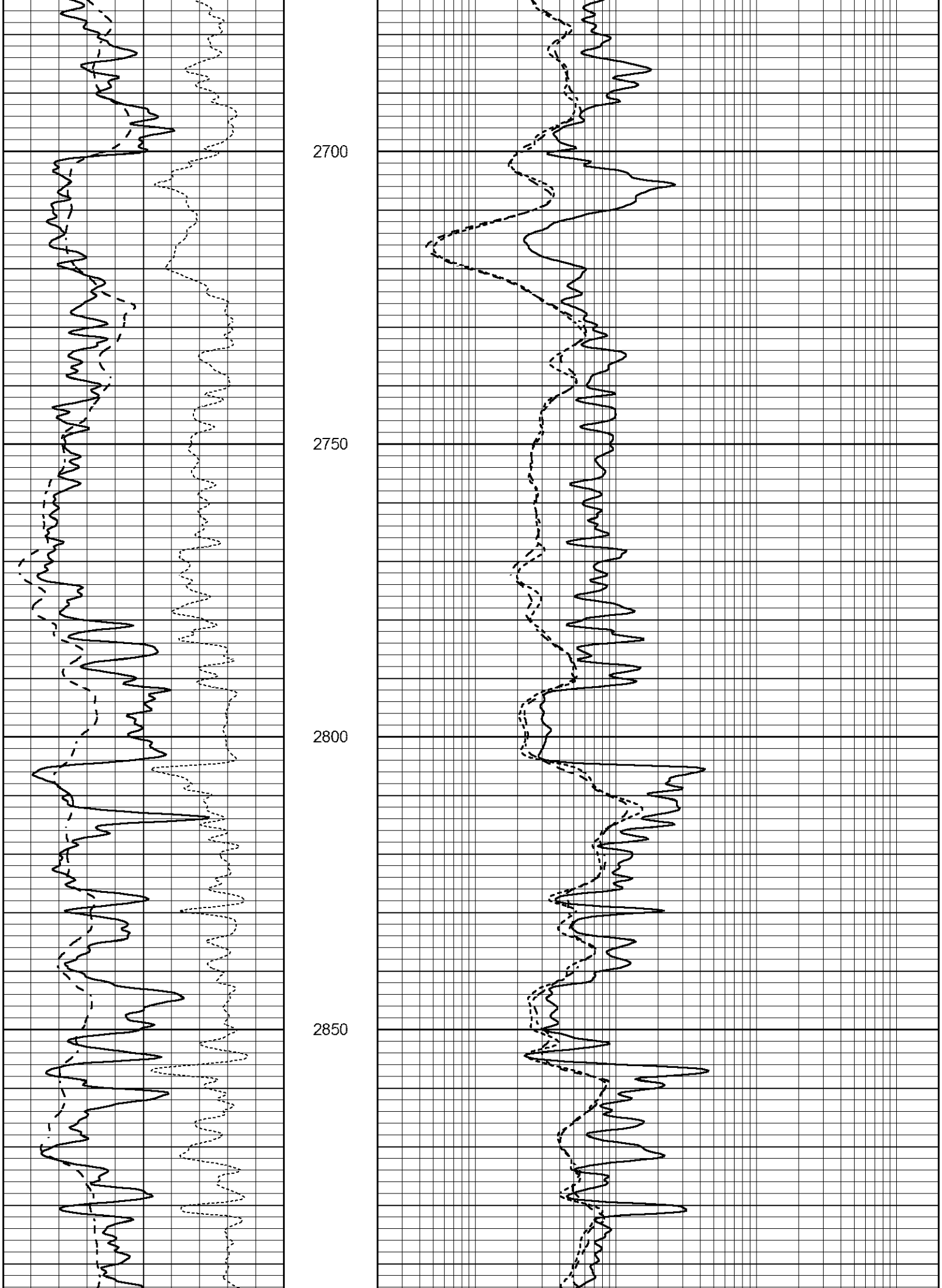
Database File	3443pe8.db
Dataset Pathname	pass3.1
Presentation Format	_dil
Dataset Creation	Wed Feb 13 05:09:44 2019
Charted by	Depth in Feet scaled 1:240

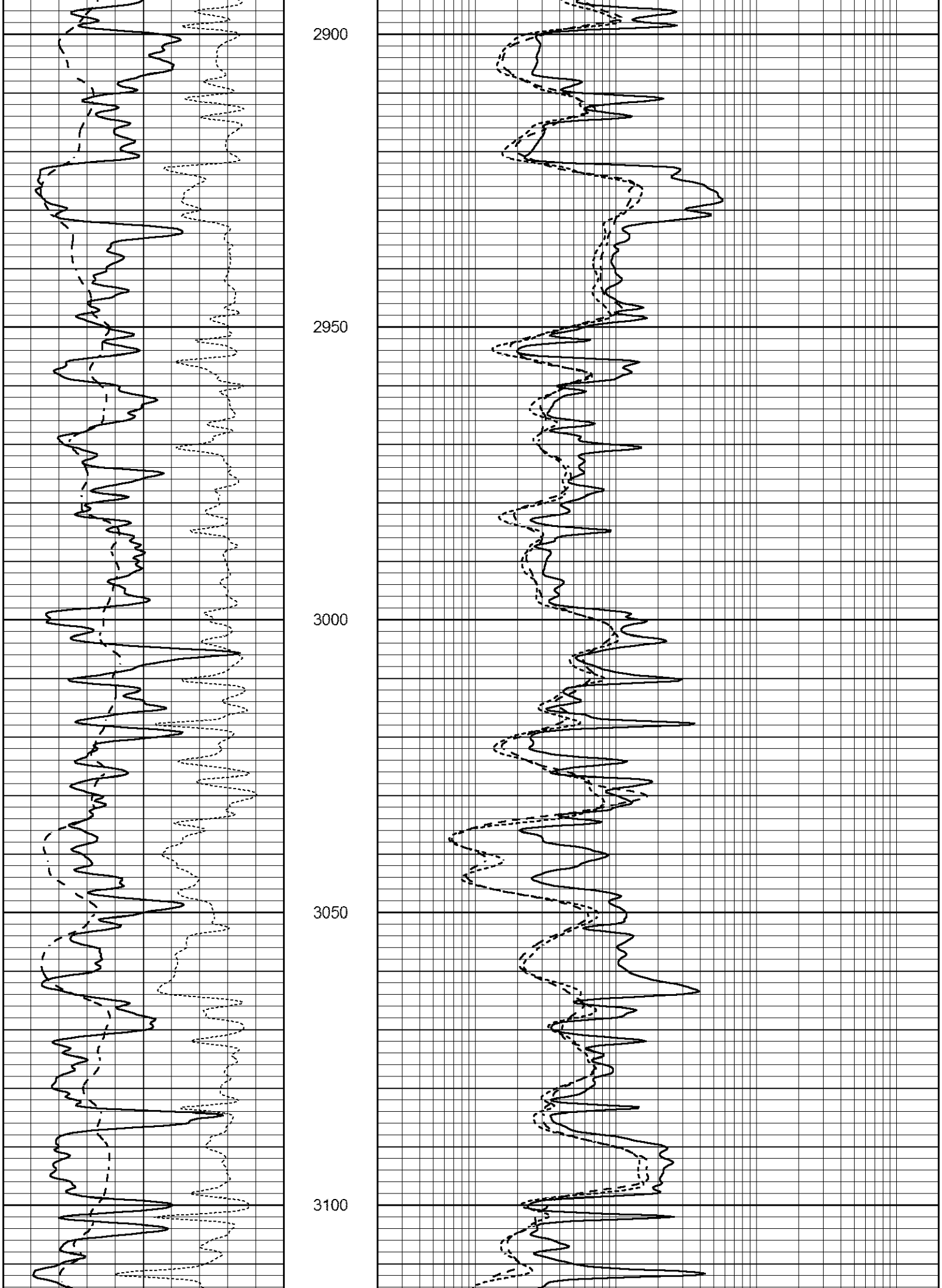
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50

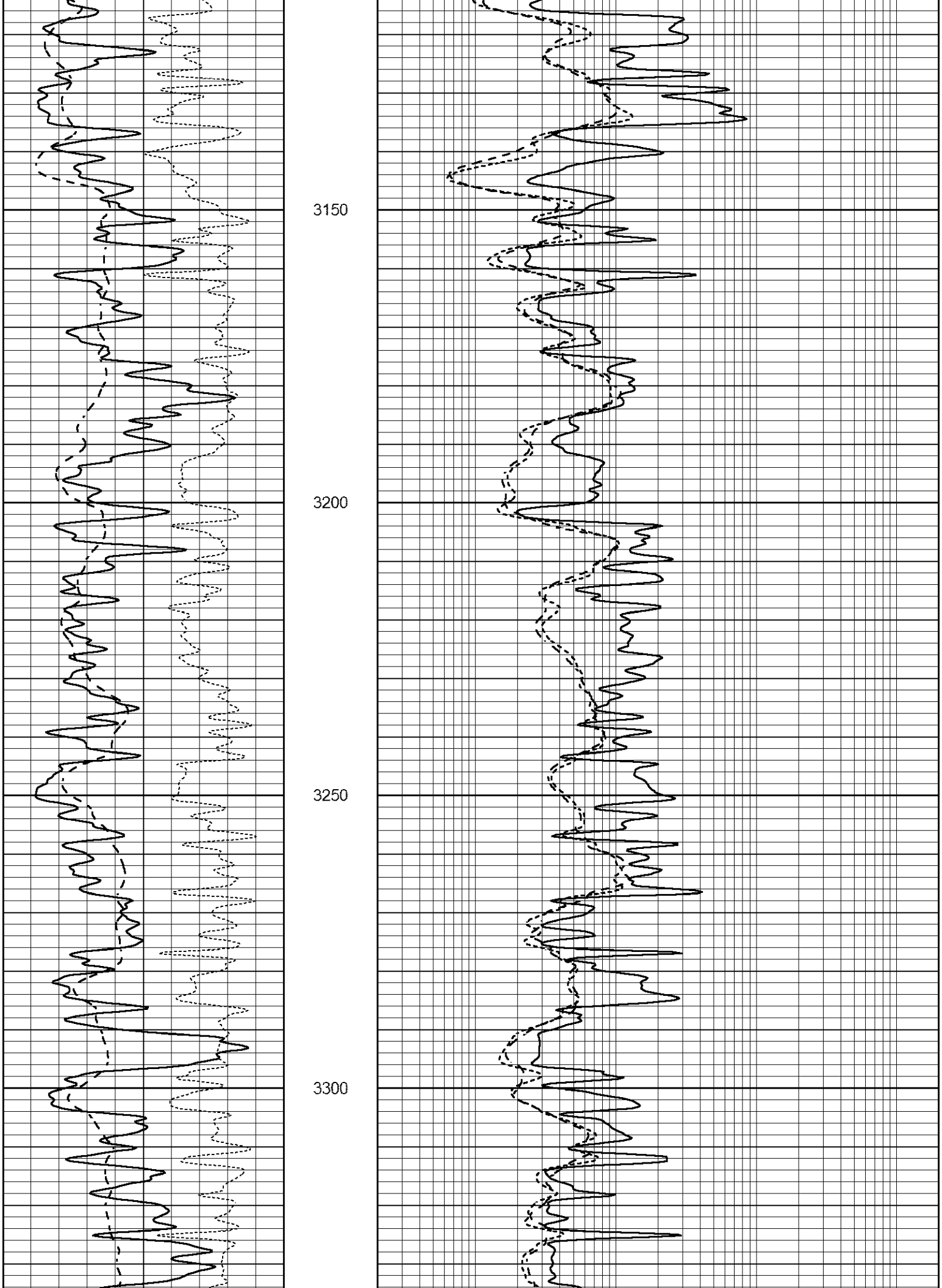
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

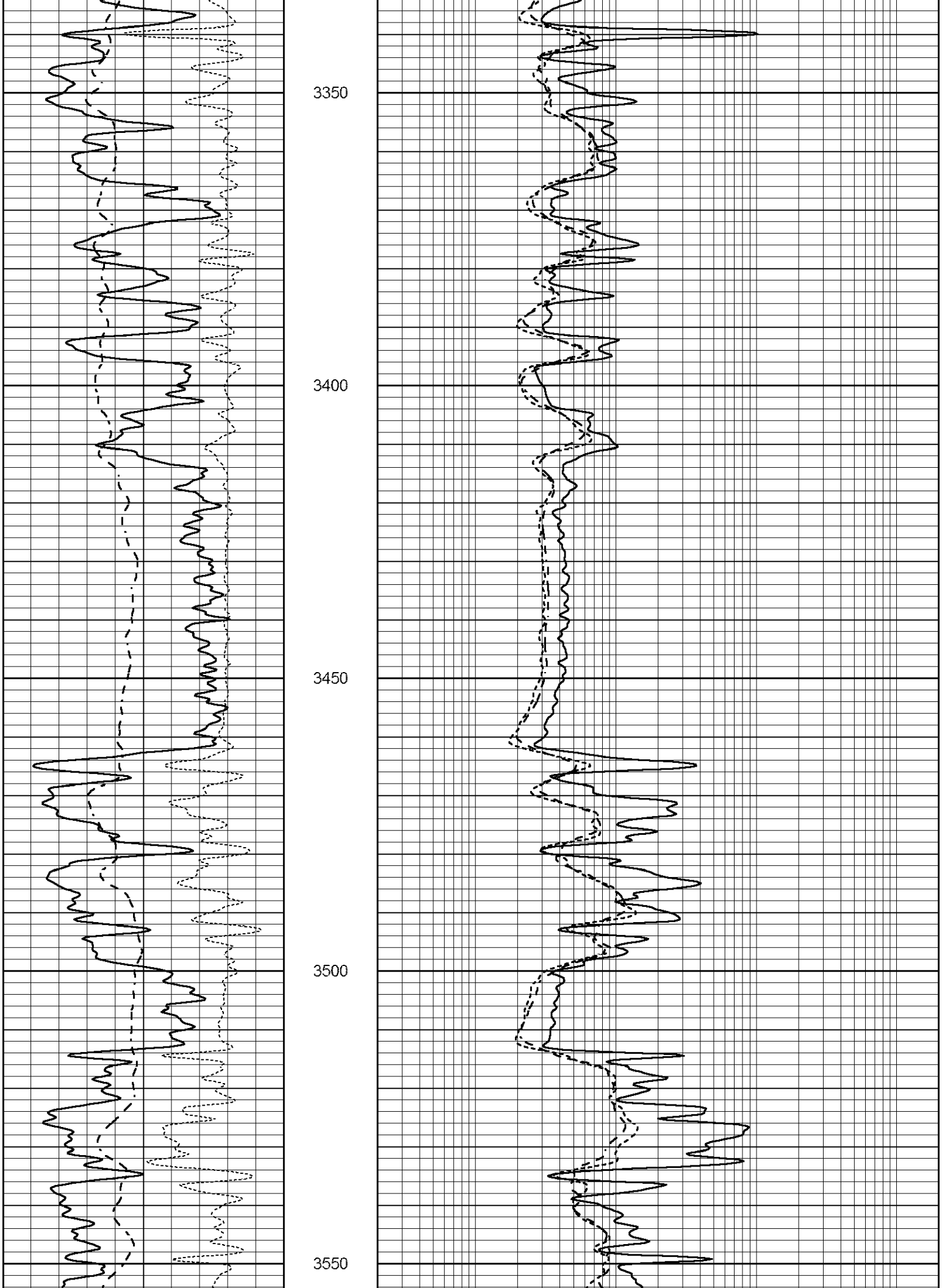


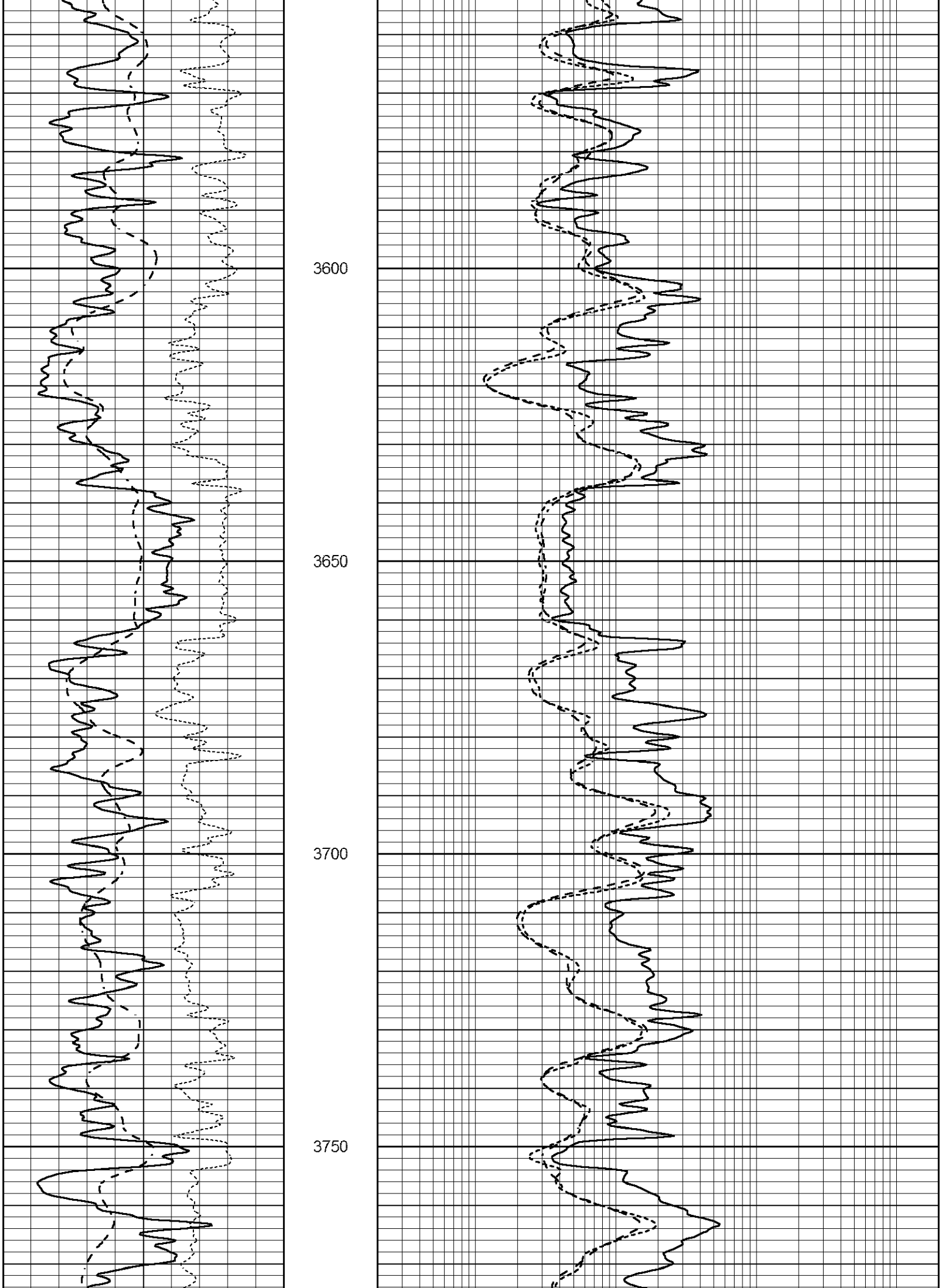

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2600
2650

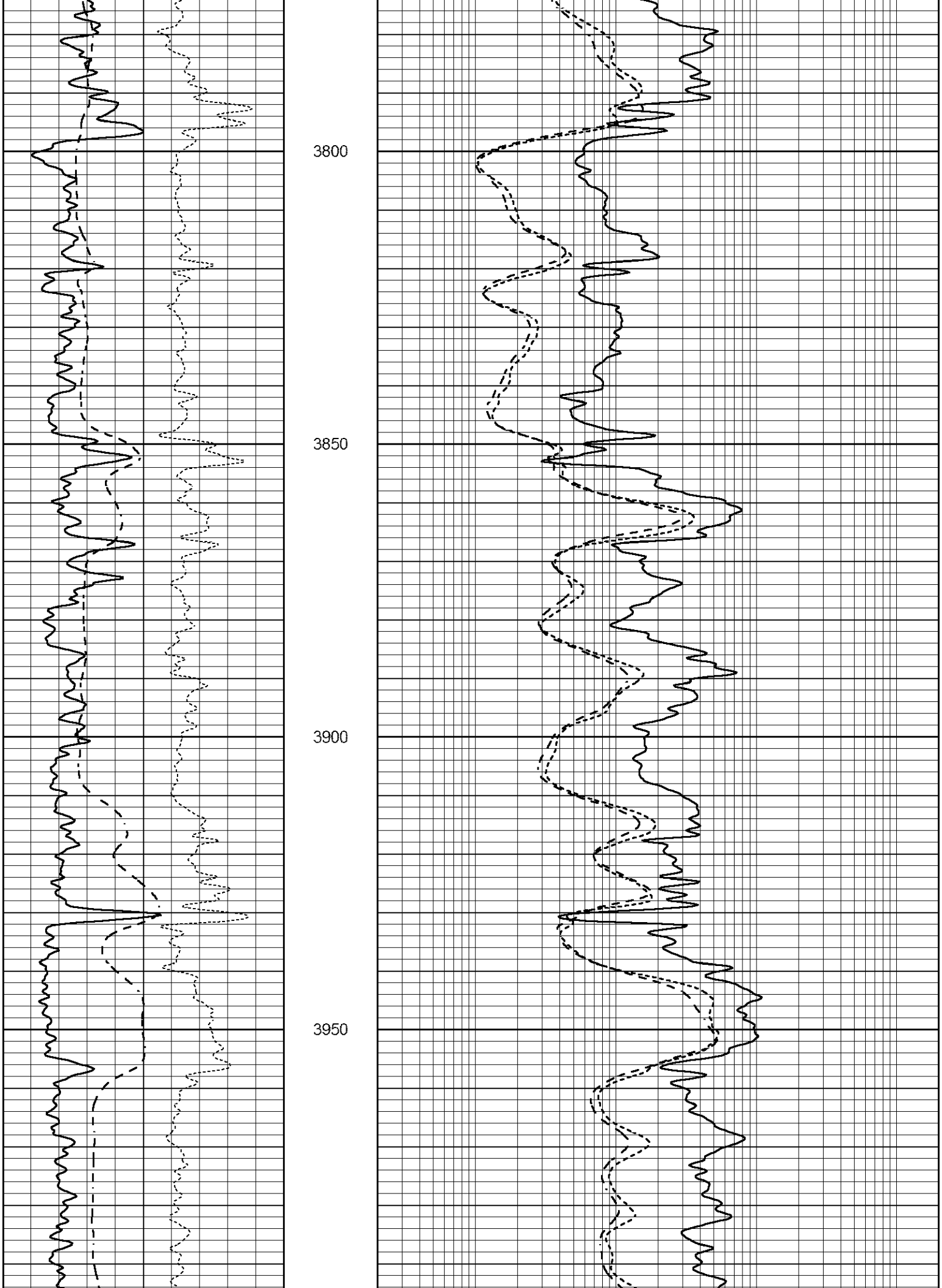

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2750
2800
2850

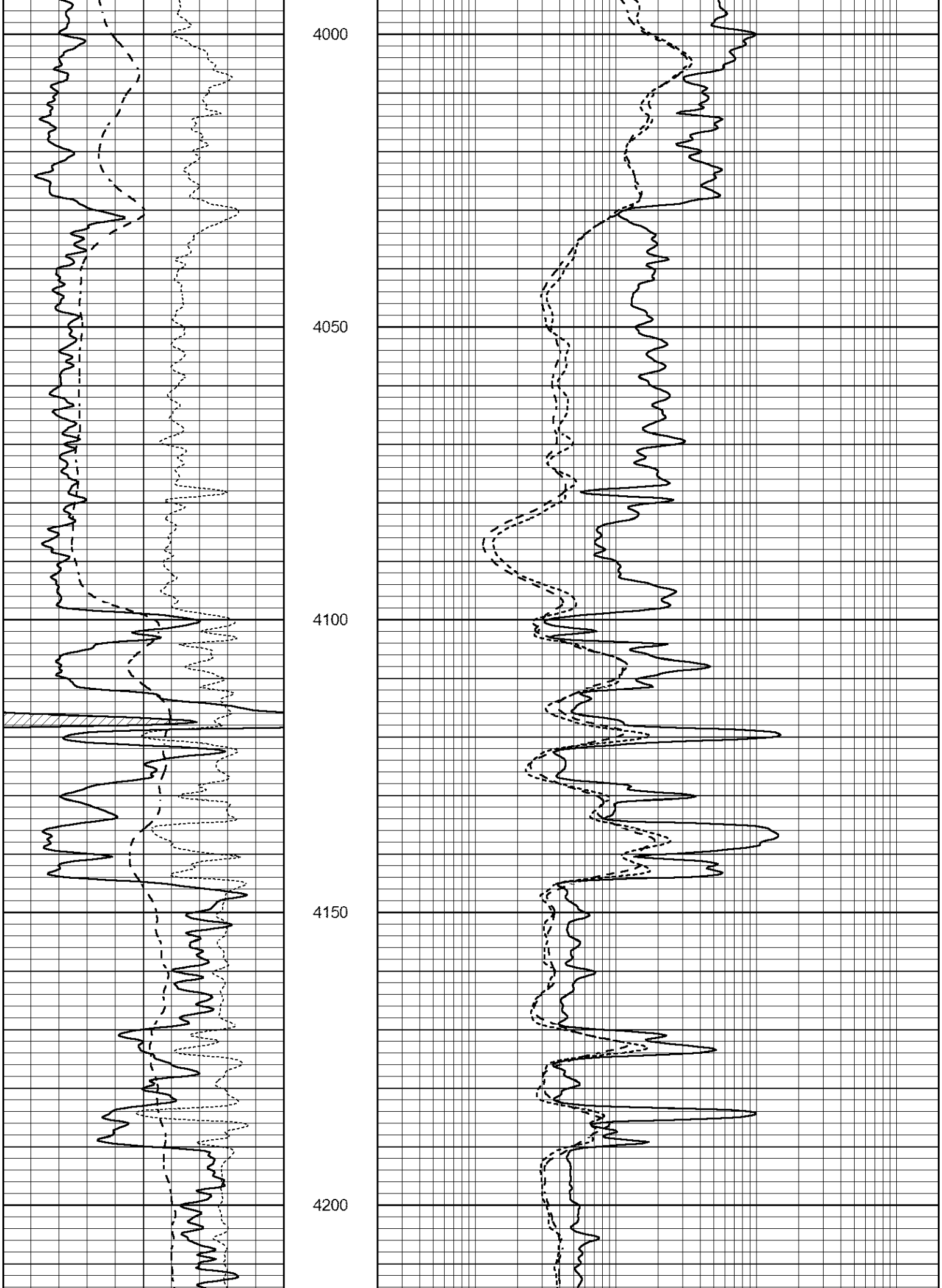

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3000
3050
3100

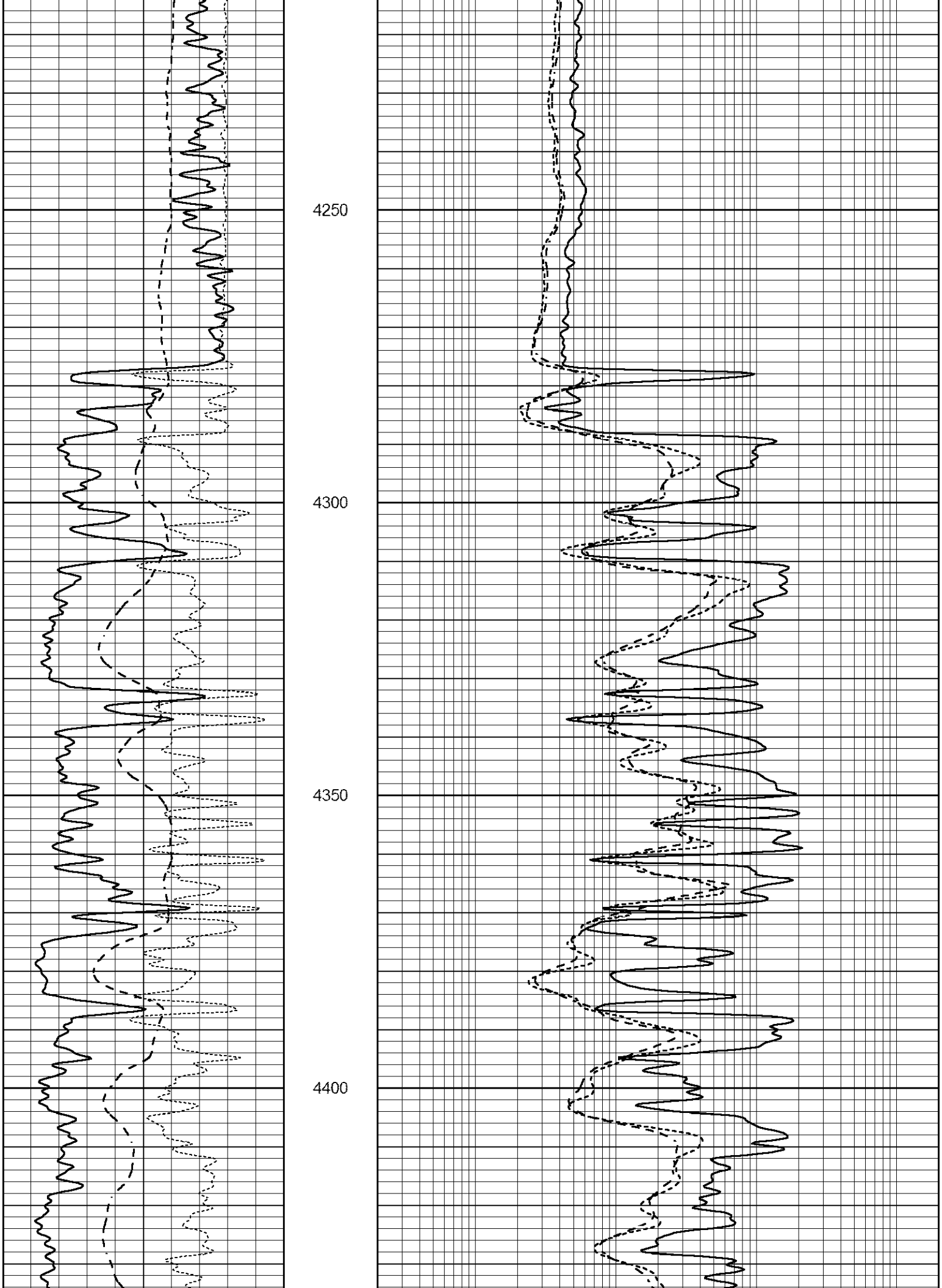

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3300

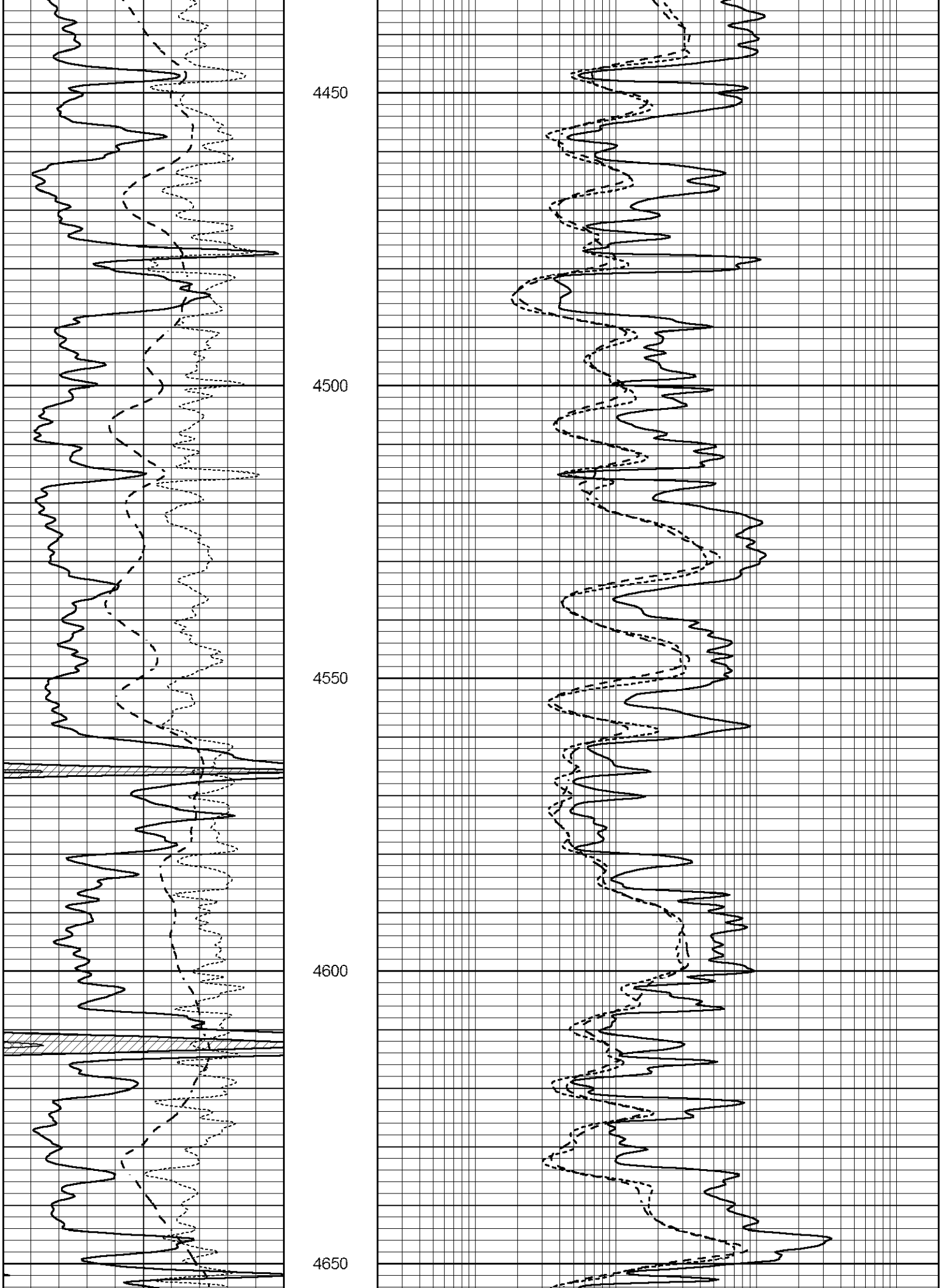

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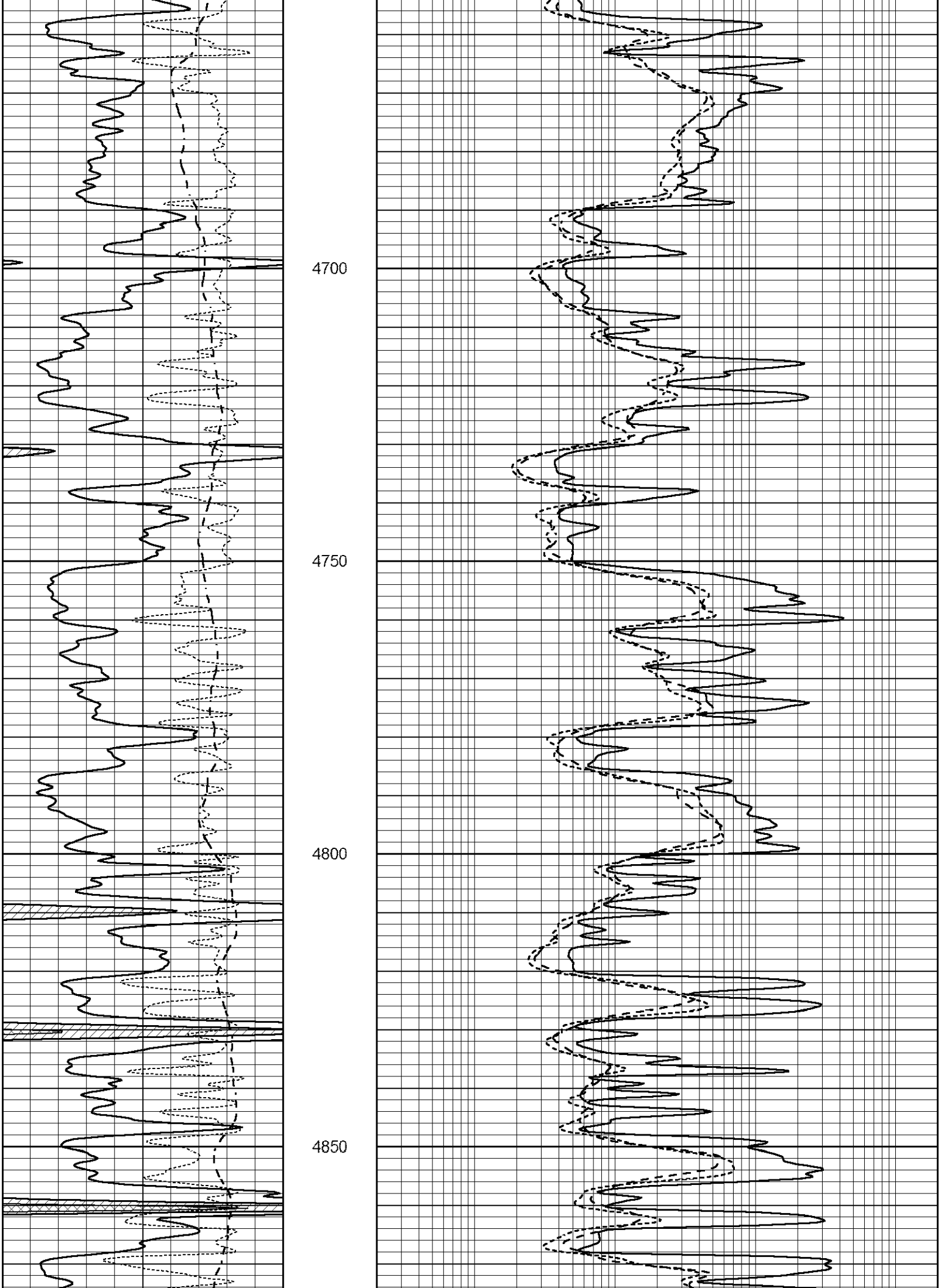

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3750

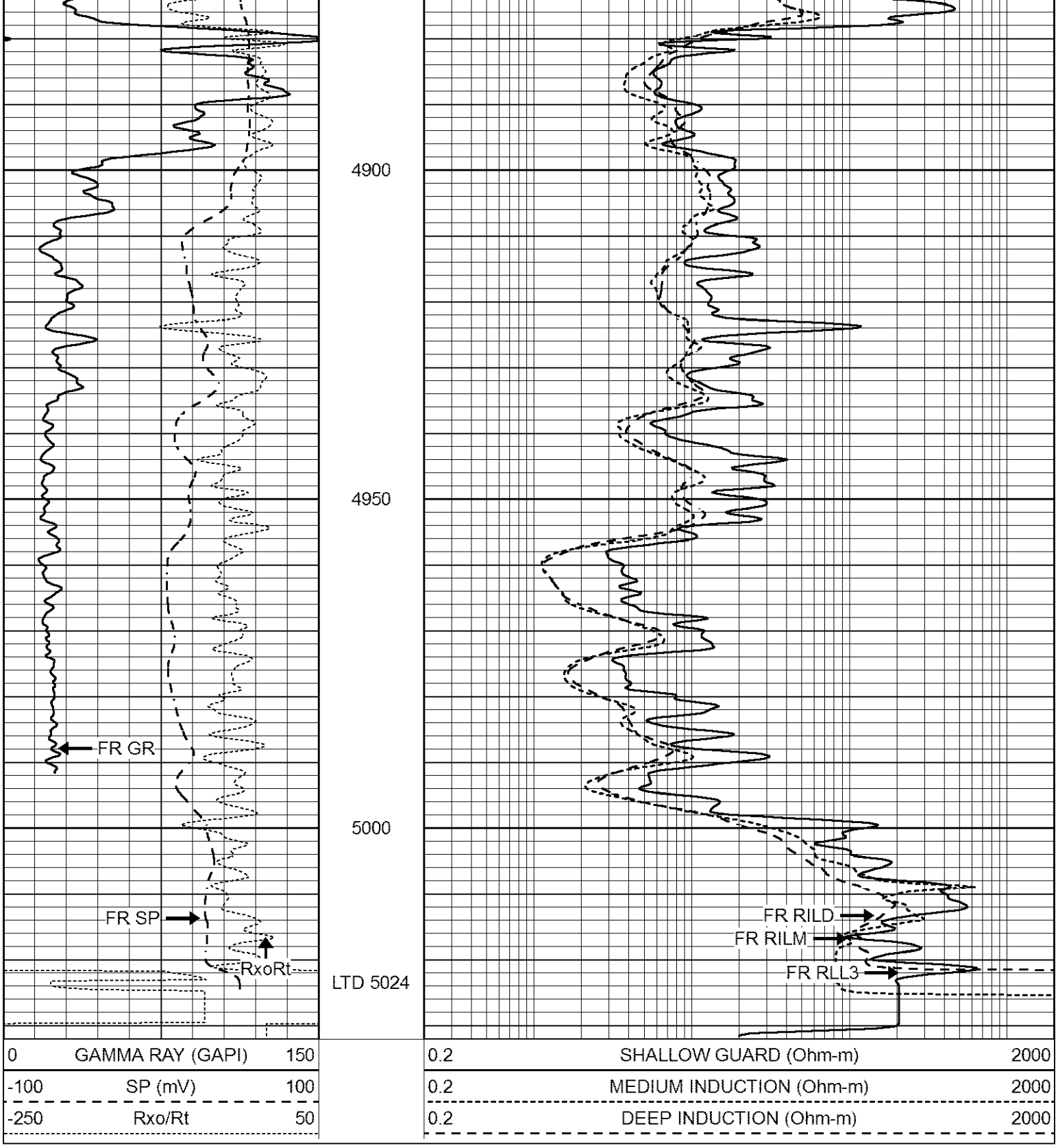

3800
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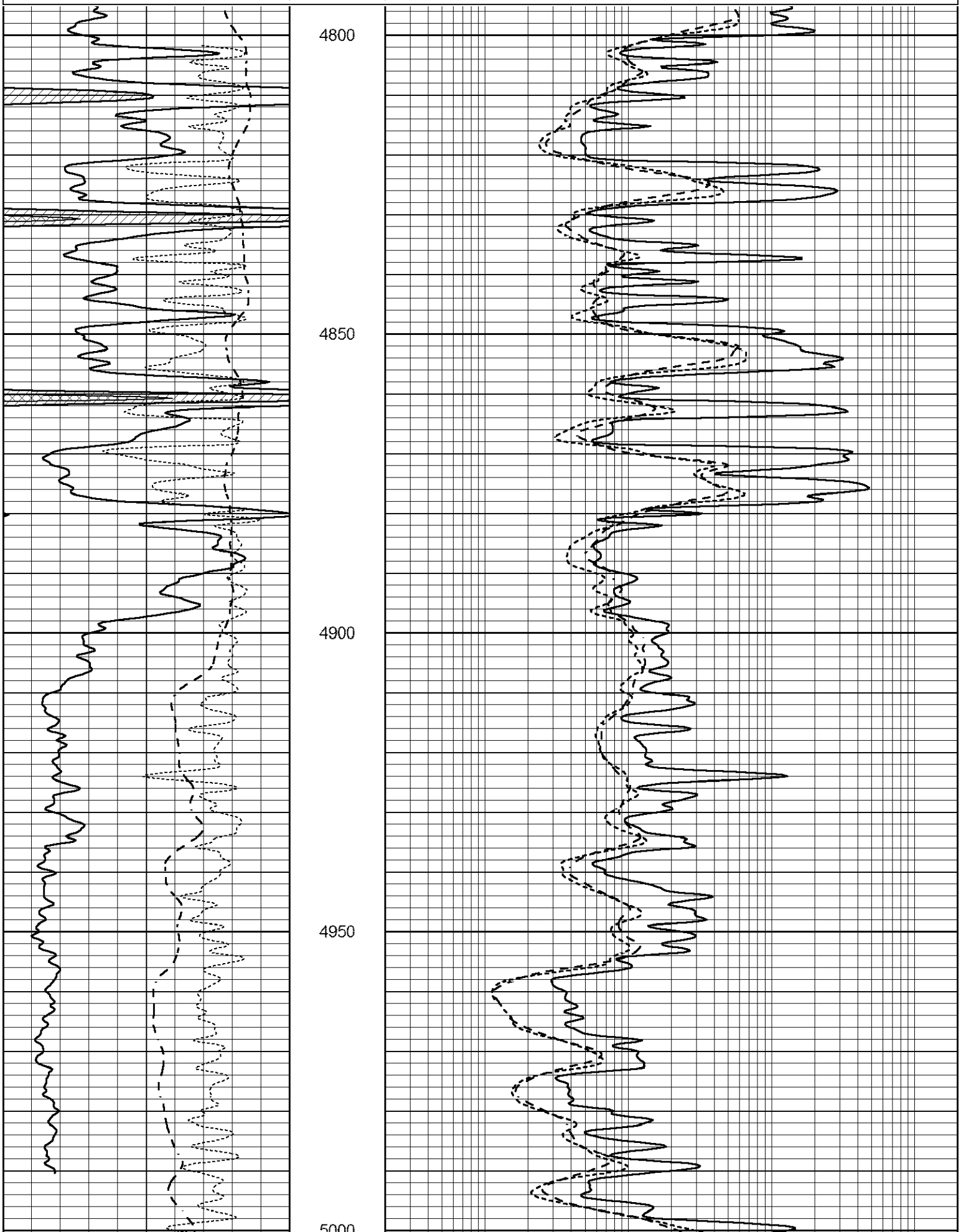


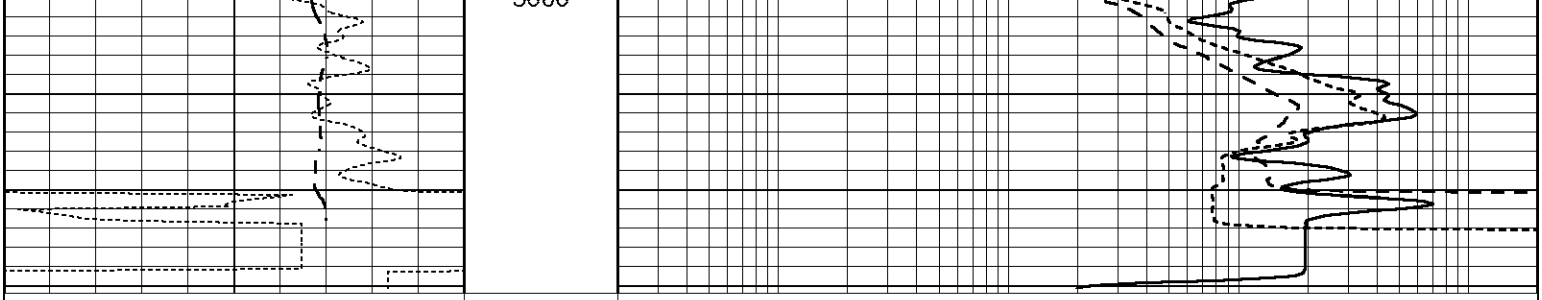
REPEAT SECTION

Database File	3443pe8.db
Dataset Pathname	pass2.1
Presentation Format	_dil
Dataset Creation	Wed Feb 13 04:38:15 2019
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





0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	MEDIUM INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	DEEP INDUCTION (Ohm-m)	2000

Calibration Report

Database File 3443pe8.db
Dataset Pathname pass2.1
Dataset Creation Wed Feb 13 04:38:15 2019

Dual Induction Calibration Report

Serial-Model: FW1410-55-Probe
Surface Cal Performed: Mon May 22 14:23:32 2017
Downhole Cal Performed: Thu Mar 12 09:29:20 2015
After Survey Verification Performed: Thu Mar 12 09:29:20 2015

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	1.000	400.000	mmho/m	618.595	-5.524
Medium	-0.000	0.731	V	1.000	464.000	mmho/m	632.856	1.197
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.007	0.649	V	0.000	400.000	mmho/m	623.784	-4.595
Medium	0.004	0.743	V	0.000	464.000	mmho/m	627.284	-2.251

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	-0.824	395.917	mmho/m	-0.976	397.550	mmho/m	1.004	-0.149
Medium	3.565	471.327	mmho/m	3.468	471.590	mmho/m	1.001	-0.099
LL3		7.503	V		1500.000	Ohm-m		
		0.001	V		20.000	Ohm-m		
		-7.481	V		3745.000	mmho-m		

After Survey Verification

	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.824	395.917	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	3.565	471.327	mmho/m	1.000	0.000
LL3		0.000	Ohm-m		1500.000	Ohm-m		
		0.000	Ohm-m		20.000	Ohm-m		
		0.000	mmho-m		3745.000	mmho-m		

Litho Density Calibration Report

Serial: 140704
Model: V4_10P
Source Number: 74GBq-19

Master Calibration — Performed: Fri Jan 18 10:53:52 2019

	Background	Aluminum	Magnesium	
Window 1	563.20	5403.39	24190.50	cps
Window 2	44.78	1243.51	6049.93	cps
Window 4	247.62	1222.40	5239.60	cps
Window 5	568.17	8975.27	17094.80	cps
Window 6	44.48	1484.88	2922.28	cps
Window 8	270.82	2877.34	5377.89	cps
Bulk Density	-	2.6020	1.6830	g/cc
Pe	-	3.0000	2.5070	b/e

LS Alpha: : -1.8641 SS Alpha: : -0.7692 LS CPE: : 1.1004
LS Beta: : 127931.7253 SS Beta: : 20075.8142 SS CPE: : 1.5209

Before Survey Backround Counts Verification — Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

After Survey Background Counts Verification — Performed: Wed Dec 31 18:00:00 1969

Window 1	0.00	cps
Window 2	0.00	cps
Window 4	0.00	cps
Window 5	0.00	cps
Window 6	0.00	cps
Window 8	0.00	cps

Lithodensity Caliper Calibration — Performed: Fri Jan 18 10:53:52 2019

Results Readings		References (in)			
Low	High	Low	High	Gain	Offset
90.2	3611.6	8.0	14.0	0.0	7.8

Before Survey Caliper Verification — Performed:

	Reference	Reading
Caliper (in)		

After Survey Caliper Verification — Performed:

	Reference	Reading
Caliper (in)		

Compensated Neutron Calibration Report

Serial Number: 080621PMC
Tool Model: NABORS

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:	7	
Tool Model:	Probe1	
Performed:	Wed Dec 05 01:26:33 2018	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.4300	GAPI/cps