DUAL INDUCTION LOG

Company PHILLIPS EXPLORATION COMPANY, L.C.
Well GEYER #3 OK
Field
County TREGO State KANSAS
Location: API # : 15-195-23076-0000
990' FSL & 1650' FWL
SEC 3 TWP 11S RGE 24W
Permanent Datum GROUND LEVEL Elevation 2305
Log Measured From KELLY BUSHING 5' A.G.L
Drilling Measured From KELLY BUSHING
Other Services CDL/CNL MEL
Elevation K.B. 2310 D.F. 2308 G.L. 2305

Company PHILLIPS EXPLORATION COMPANY, L.C.
Well GEYER #3 OK
Field
County TREGO
State KANSAS

Date	12/12/18		
Run Number	ONE		
Depth Driller	3982		
Depth Logger	3984		
Bottom Logged Interval	3982		
Top Log Interval	00		
Casing Driller	8 5/8" @ 217		
Casing Logger	216		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 5300 PPM	
Density / Viscosity	9.1/51		
pH / Fluid Loss	10.5/7.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.65 @ 58F		
Rmf @ Meas. Temp	.48 @ 58F		
Rmc @ Meas. Temp	.78 @ 58F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.36 @ 116F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	////		
Maximum Recorded Temperature	116F		
Equipment Number	3802		
Location	HAYS, KANSAS		
Recorded By	JASON CAPPELLUCCI		
Witnessed By	PAT DEENIHAN		

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Comments

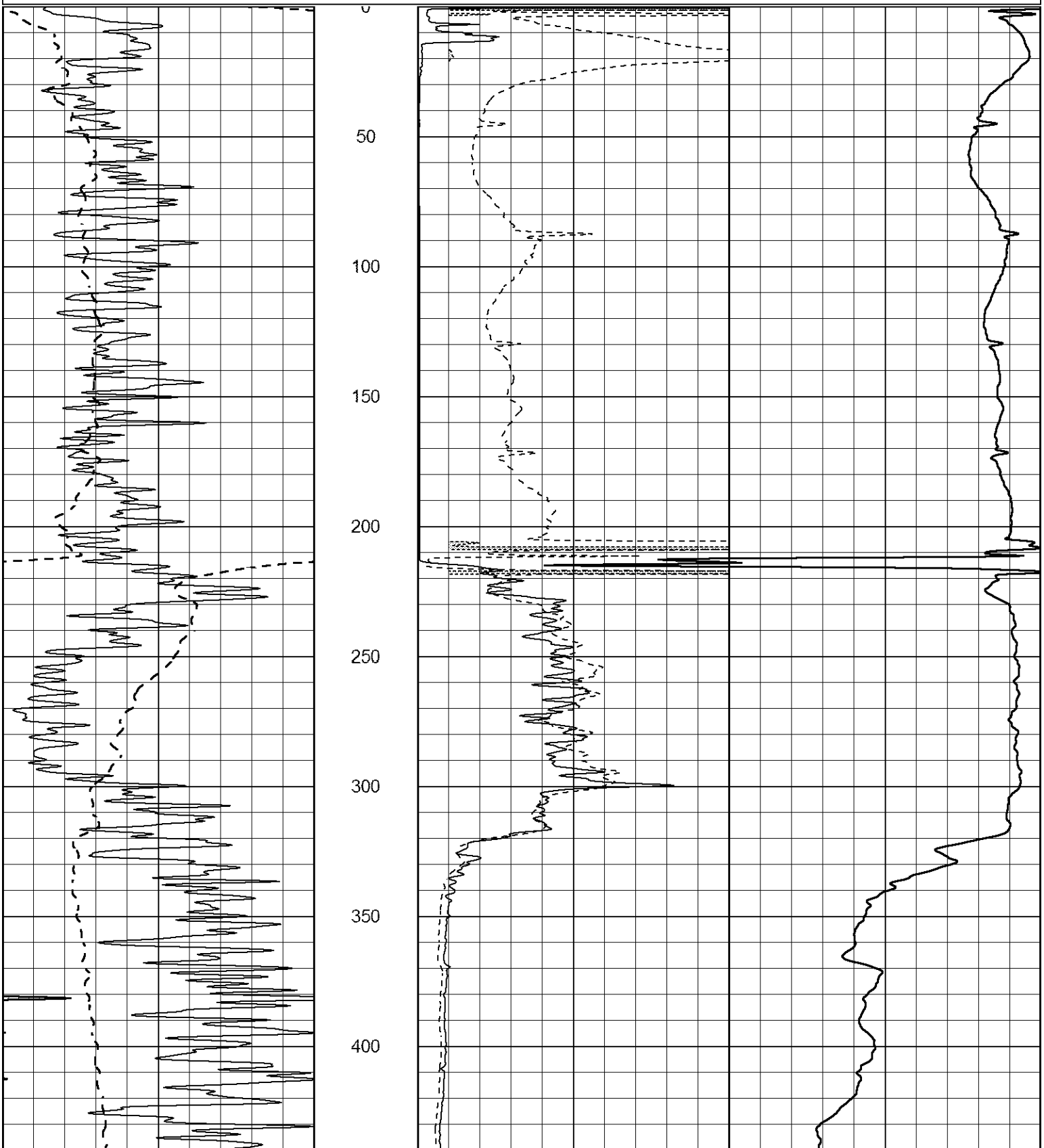
THANK YOU FOR USING ELI WIRELINE SERVICES, HAYS, KS. (785) 628-6395
DIRECTIONS
WAKEENEY, KS. - NORTH TO SALINE RIVER - 1 NORTH OF RIVER TO RD. B
5 1/2 WEST - NORTH INTO

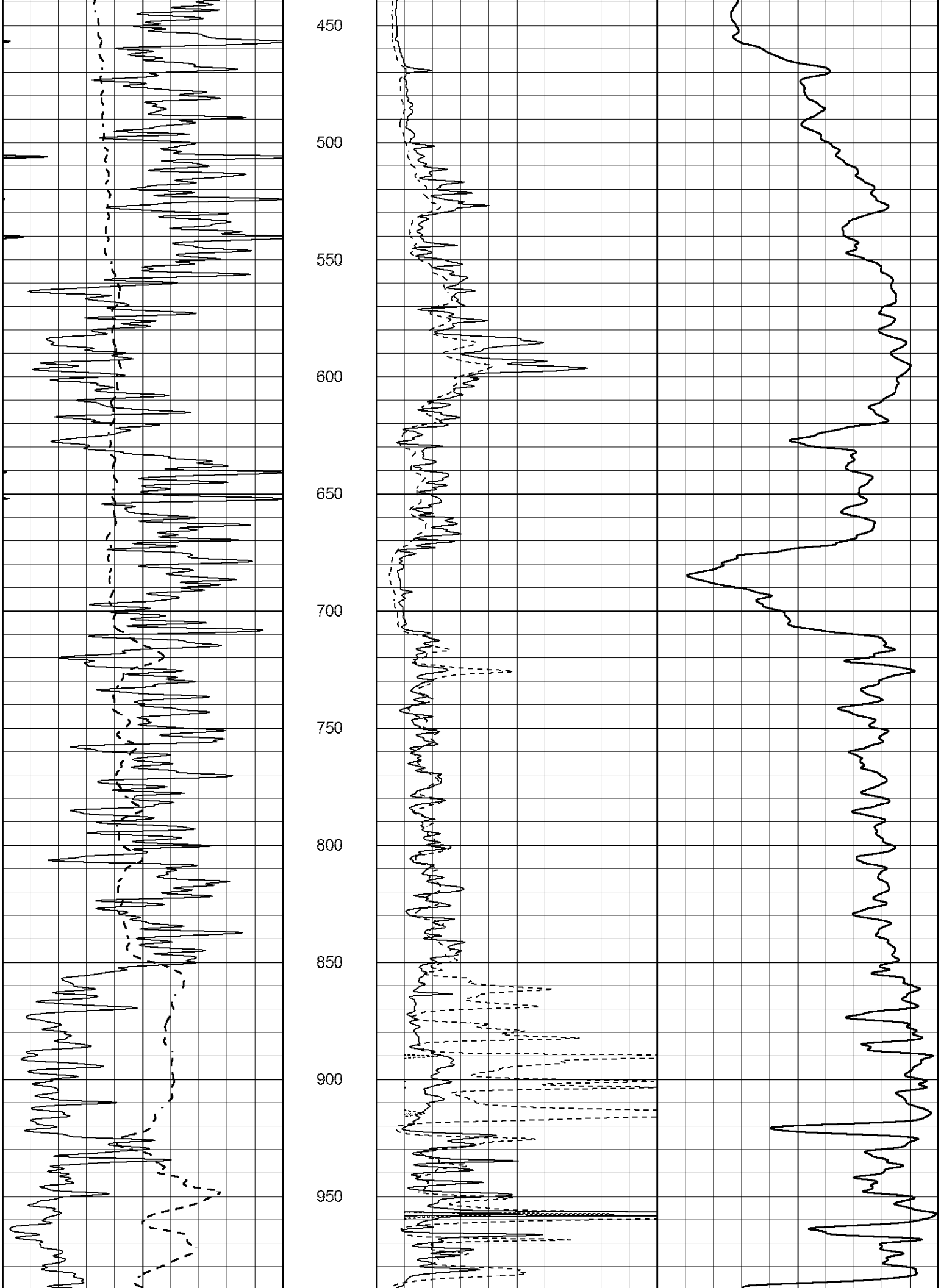
MAIN SECTION

Database File	3428ddn8.db
Dataset Pathname	pass4.3
Presentation Format	_dil2
Dataset Creation	Wed Dec 12 08:59:20 2018
Charted by	Depth in Feet scaled 1:600

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

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

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650
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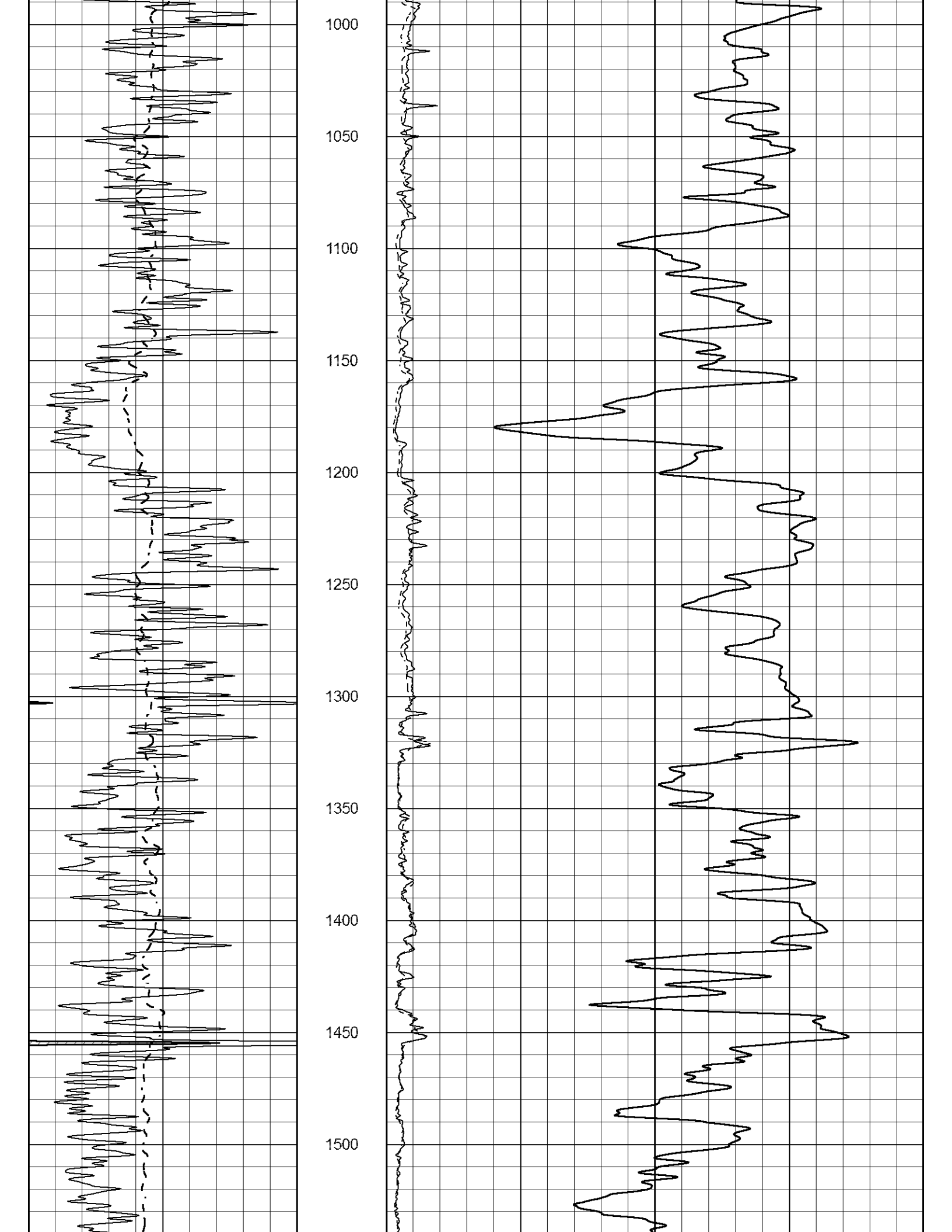
950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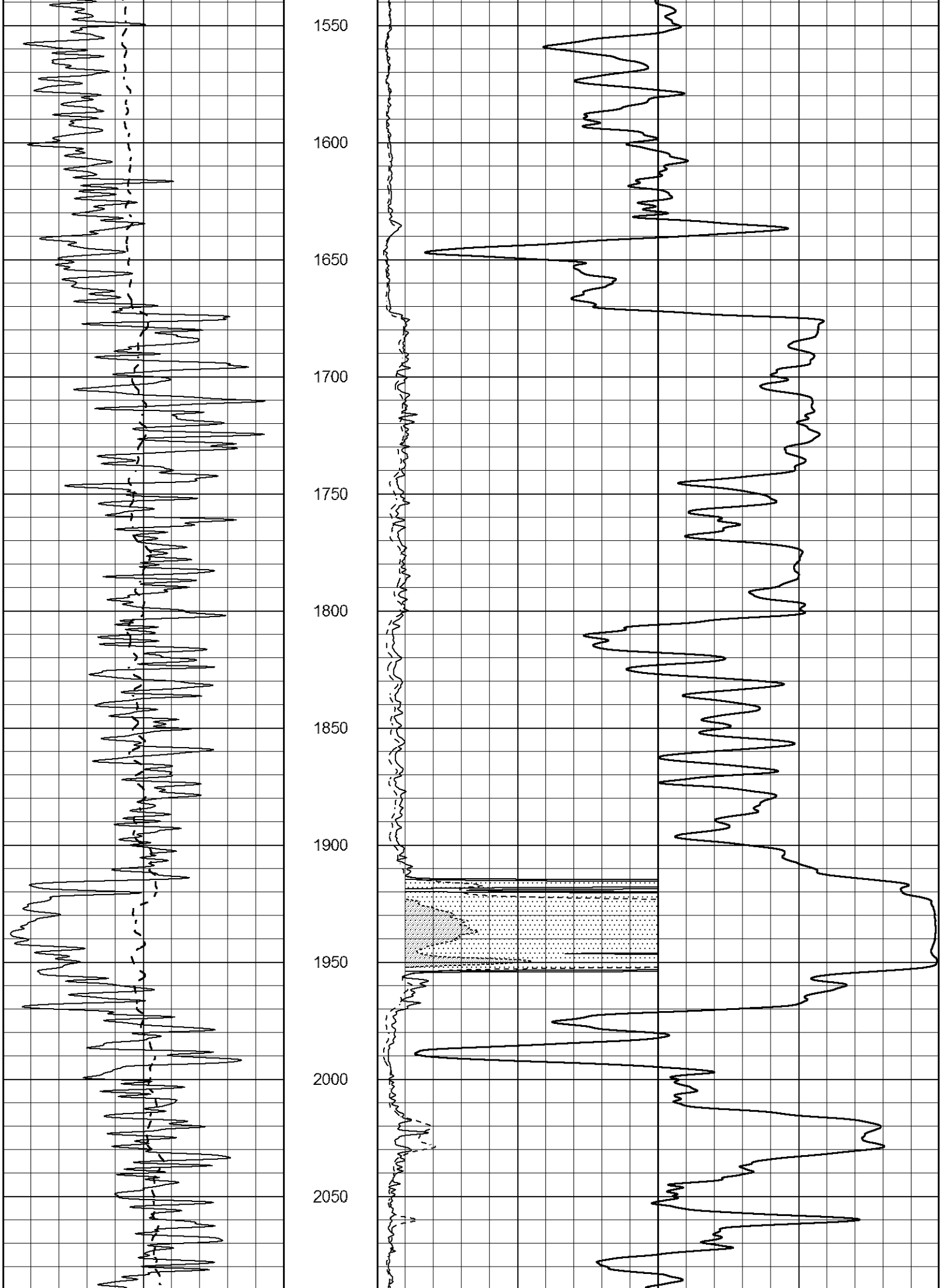
1100
1150
1200
1250
1300
1350
1400
1450
1500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1700
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1800
1850
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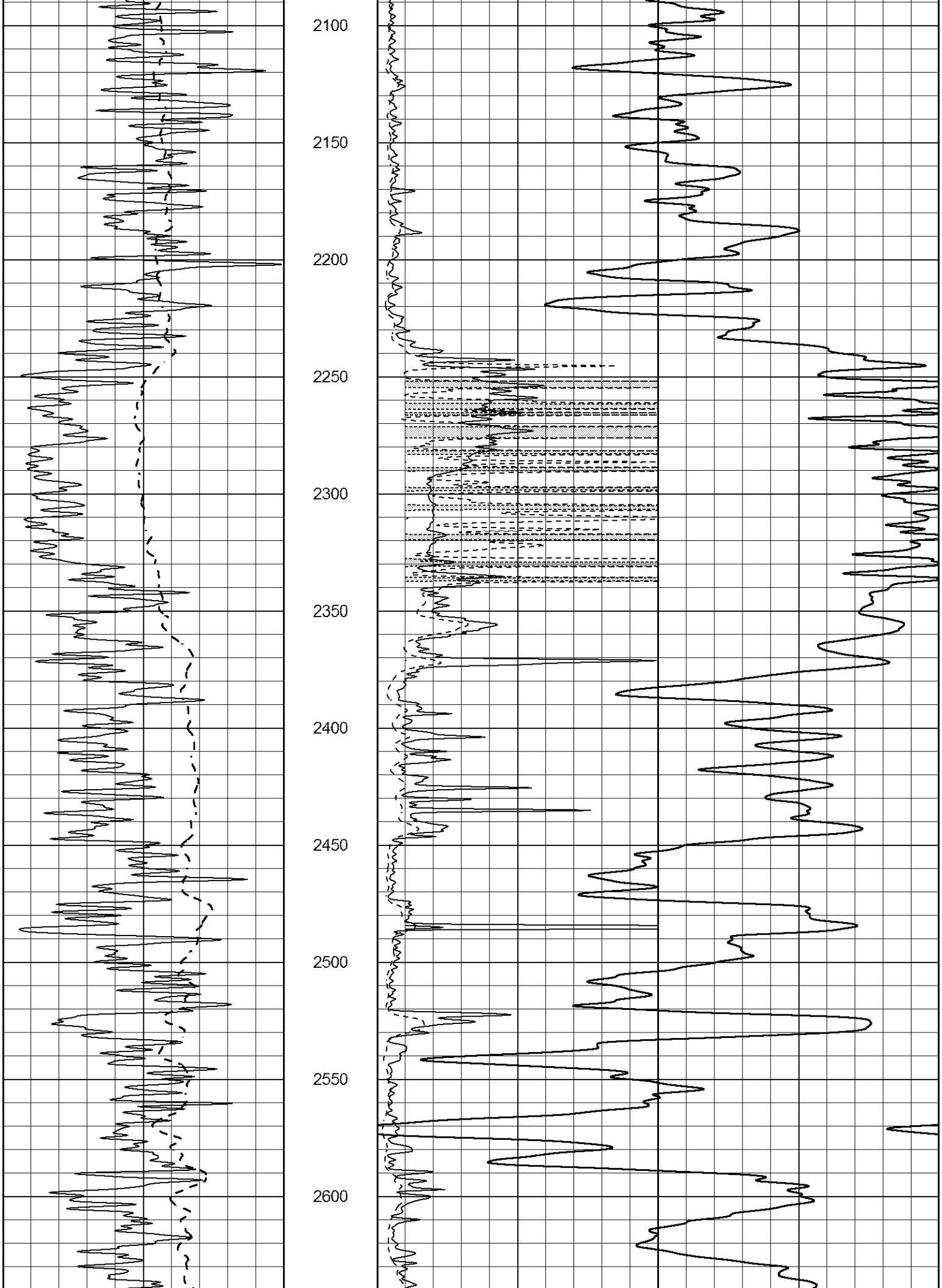
2000
2050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2400
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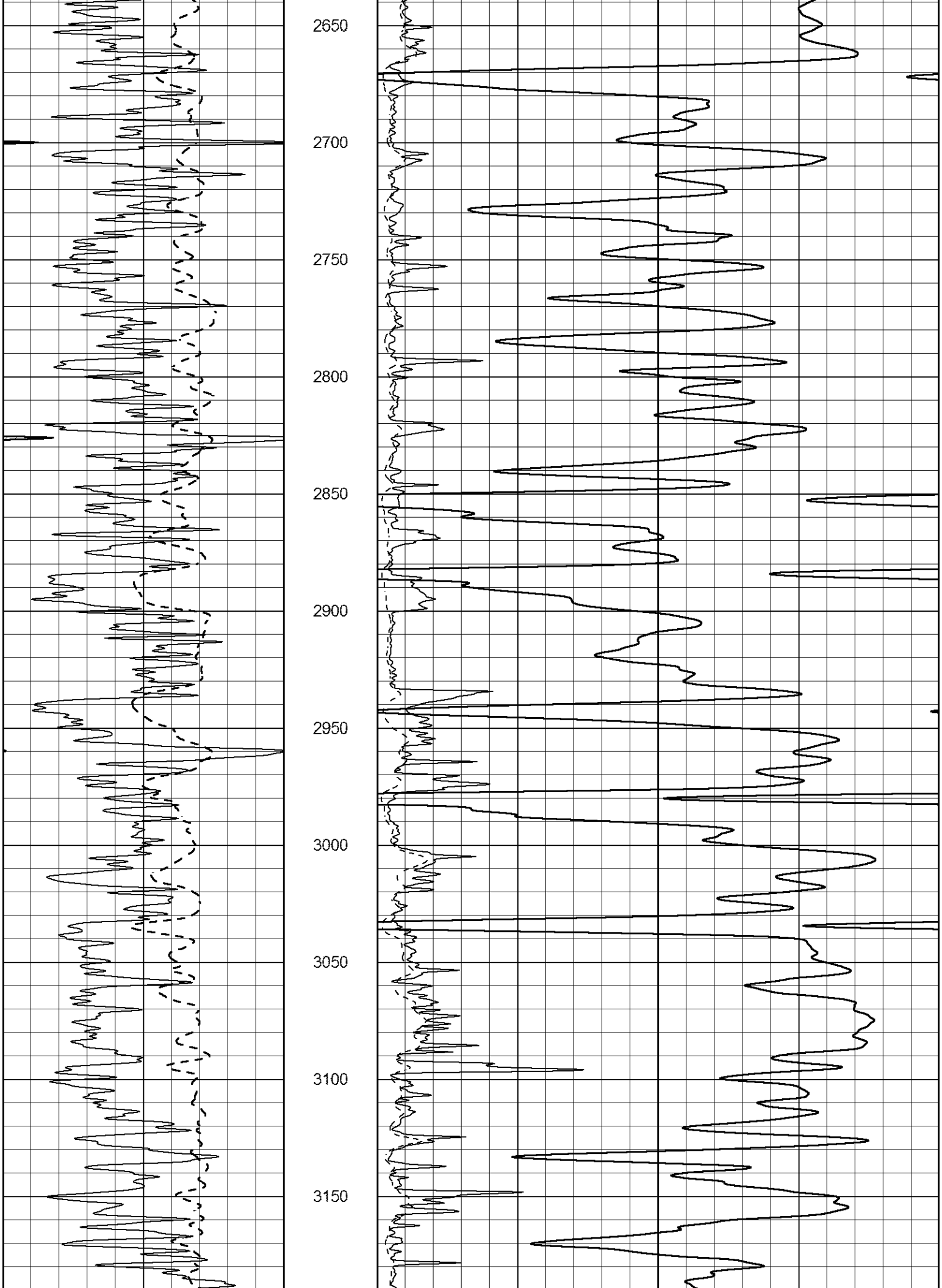
2500
2550
2600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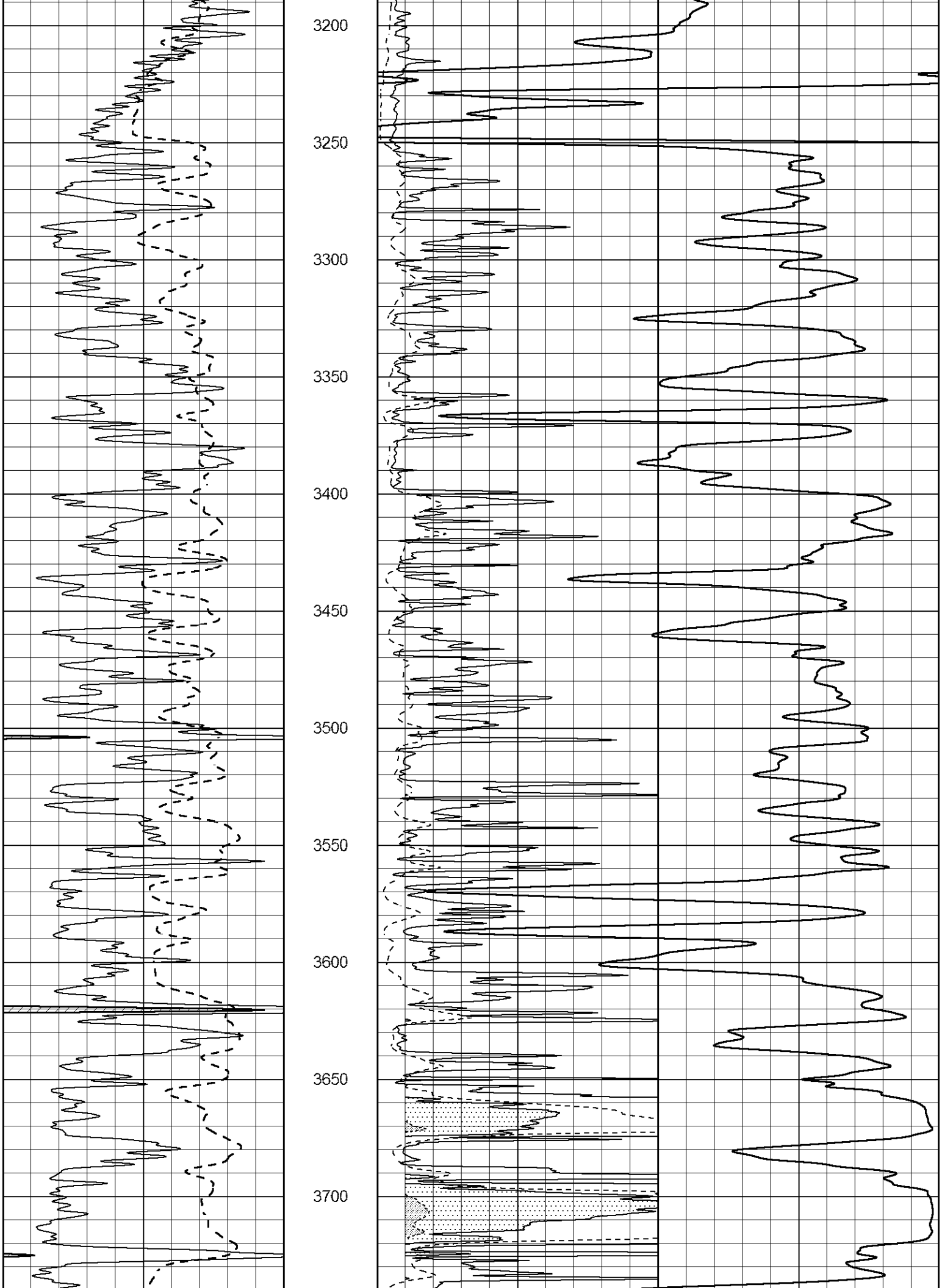
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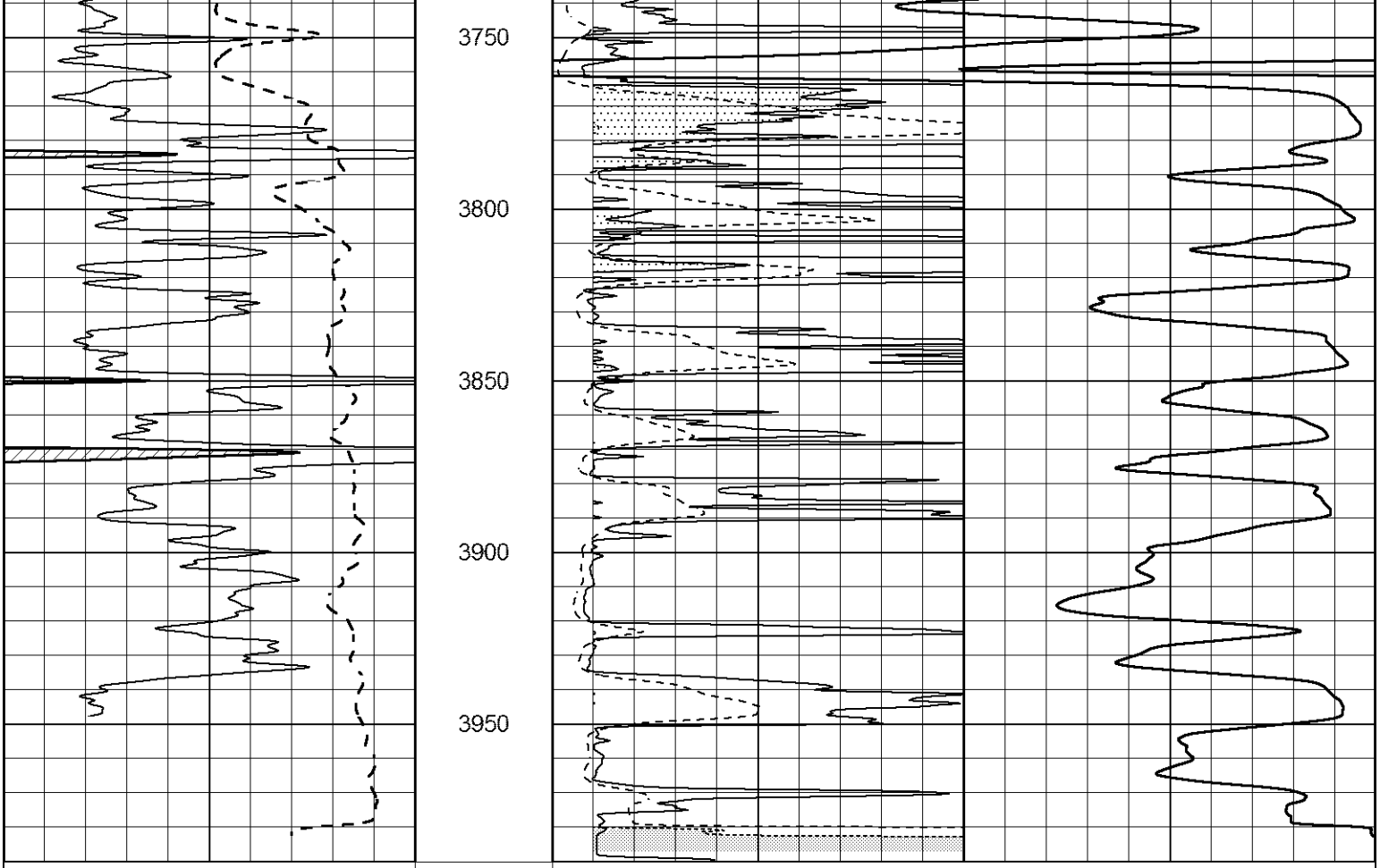


0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

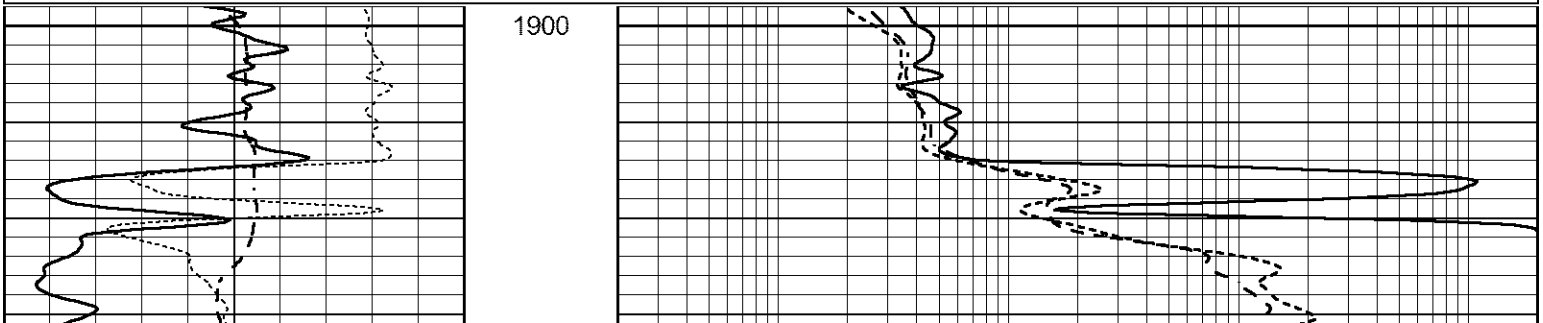
1000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50
0	Deep Induction (Ohm-m)	50
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

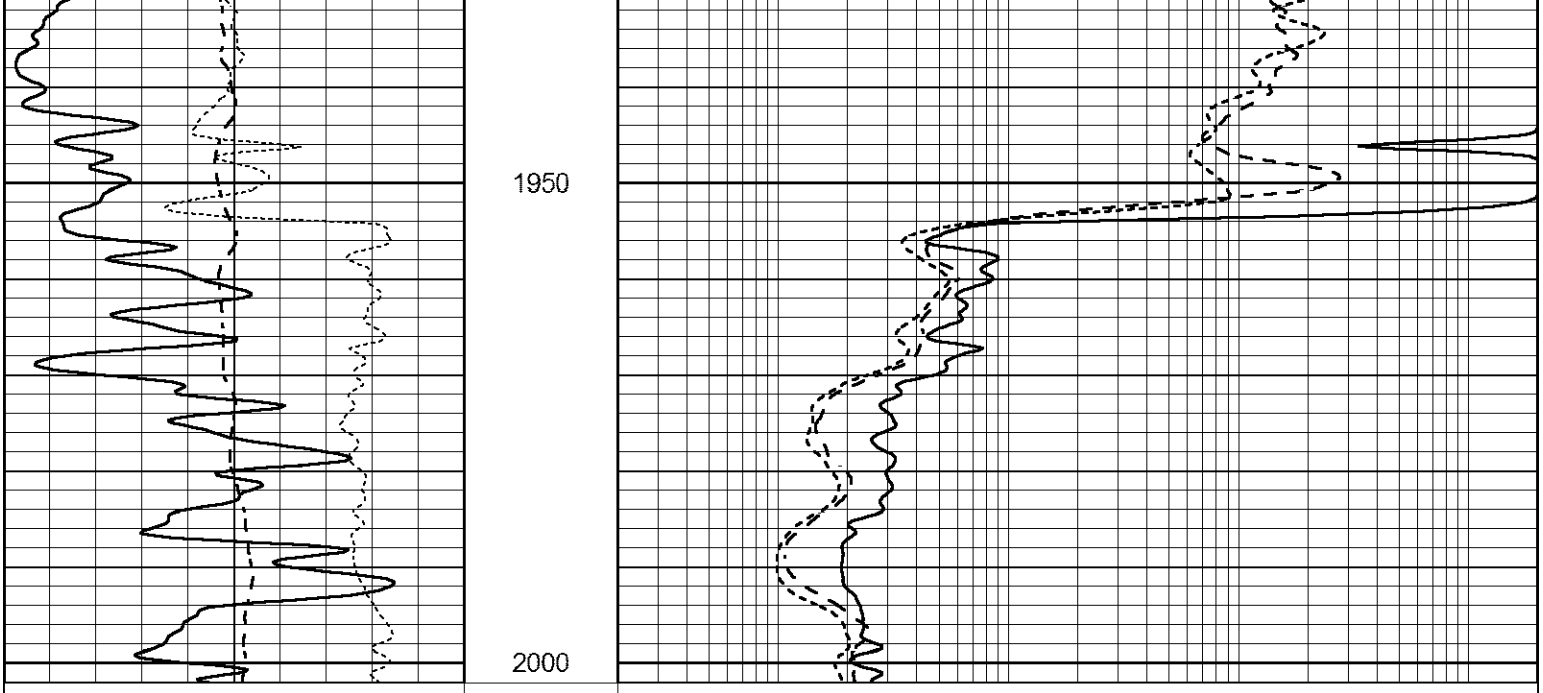
ANHYDRITE

Database File	3428ddn8.db
Dataset Pathname	pass4.2
Presentation Format	_dil
Dataset Creation	Wed Dec 12 08:00:30 2018
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
-100	SP (mV)	100
-250	Rxo/Rt	50

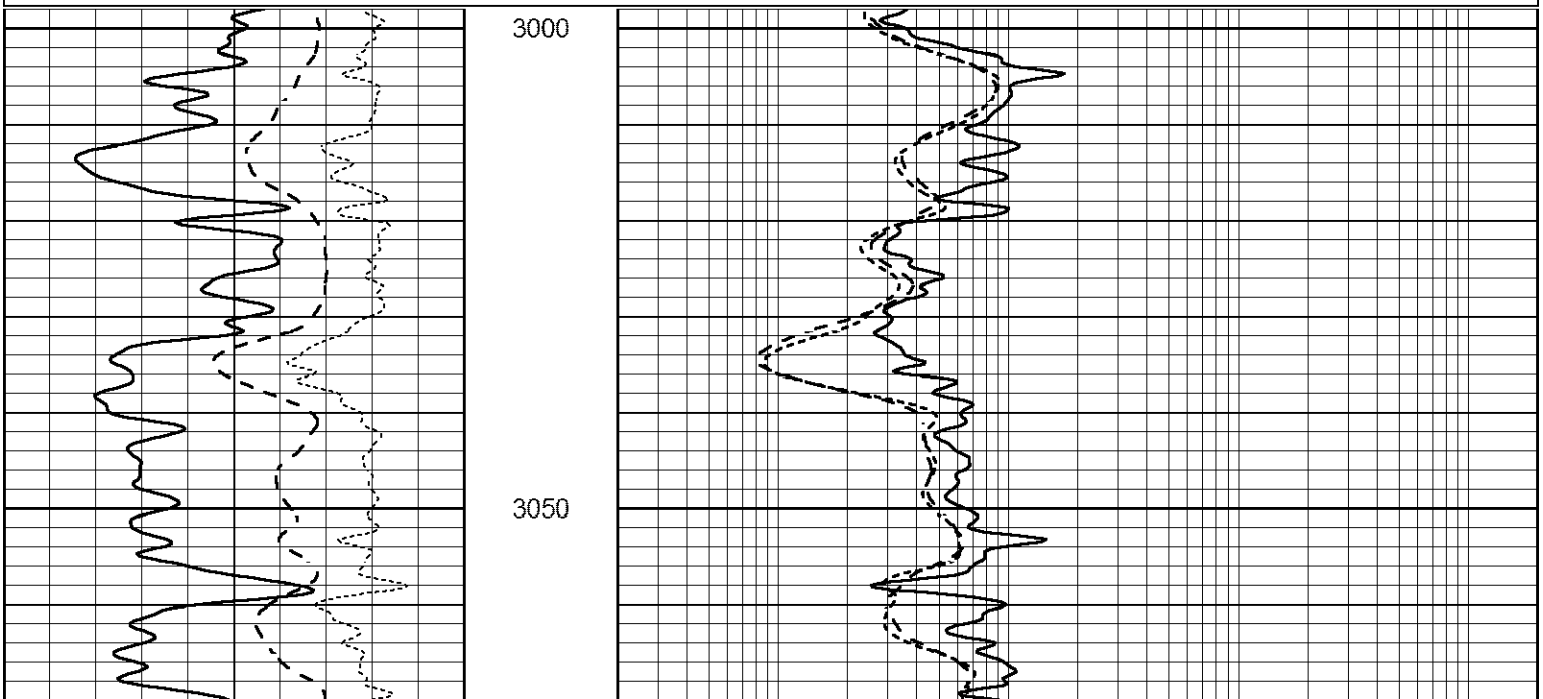
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000

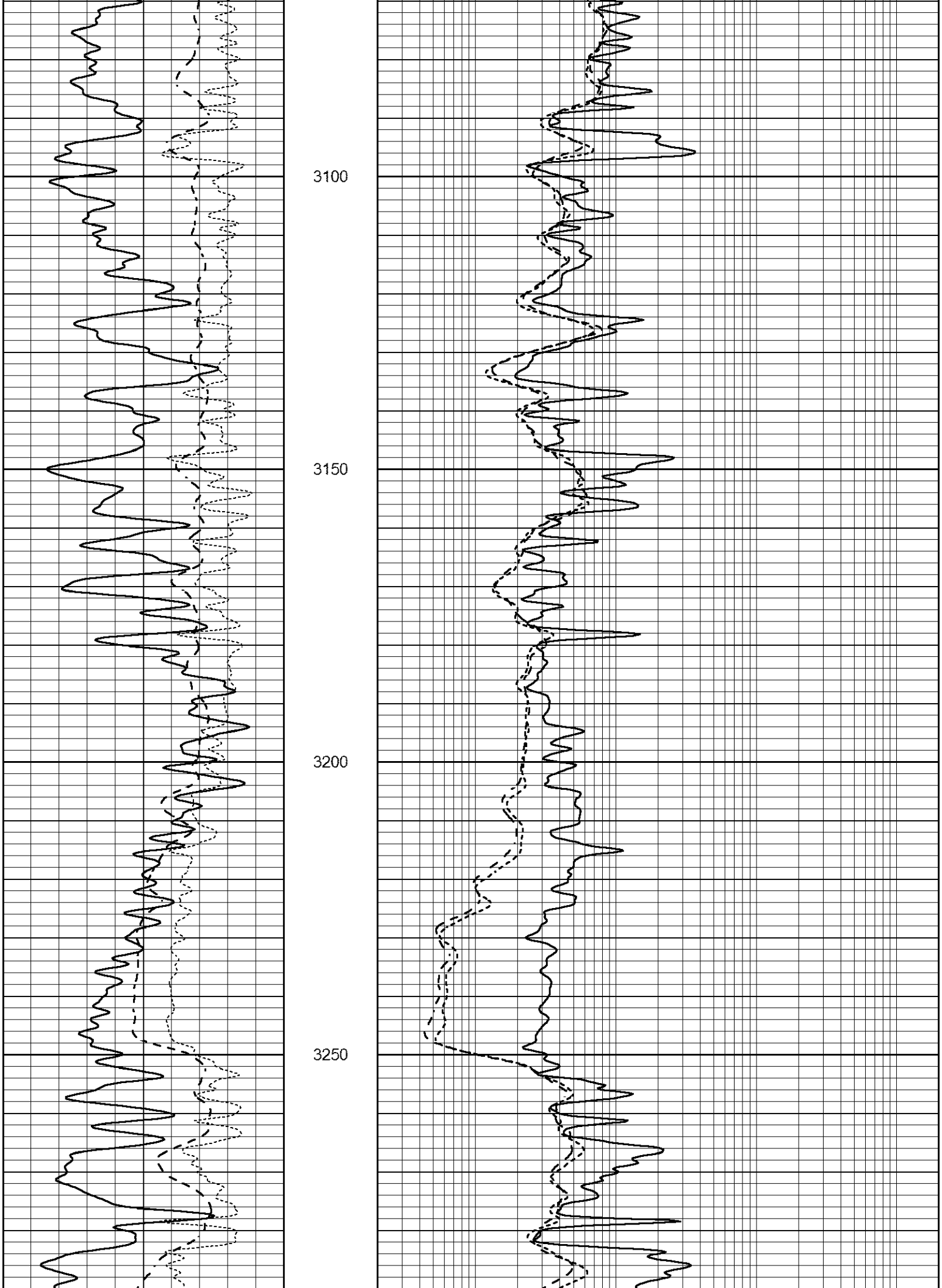
MAIN SECTION

Database File	3428ddn8.db
Dataset Pathname	pass4.1
Presentation Format	_dil
Dataset Creation	Wed Dec 12 07:59:41 2018
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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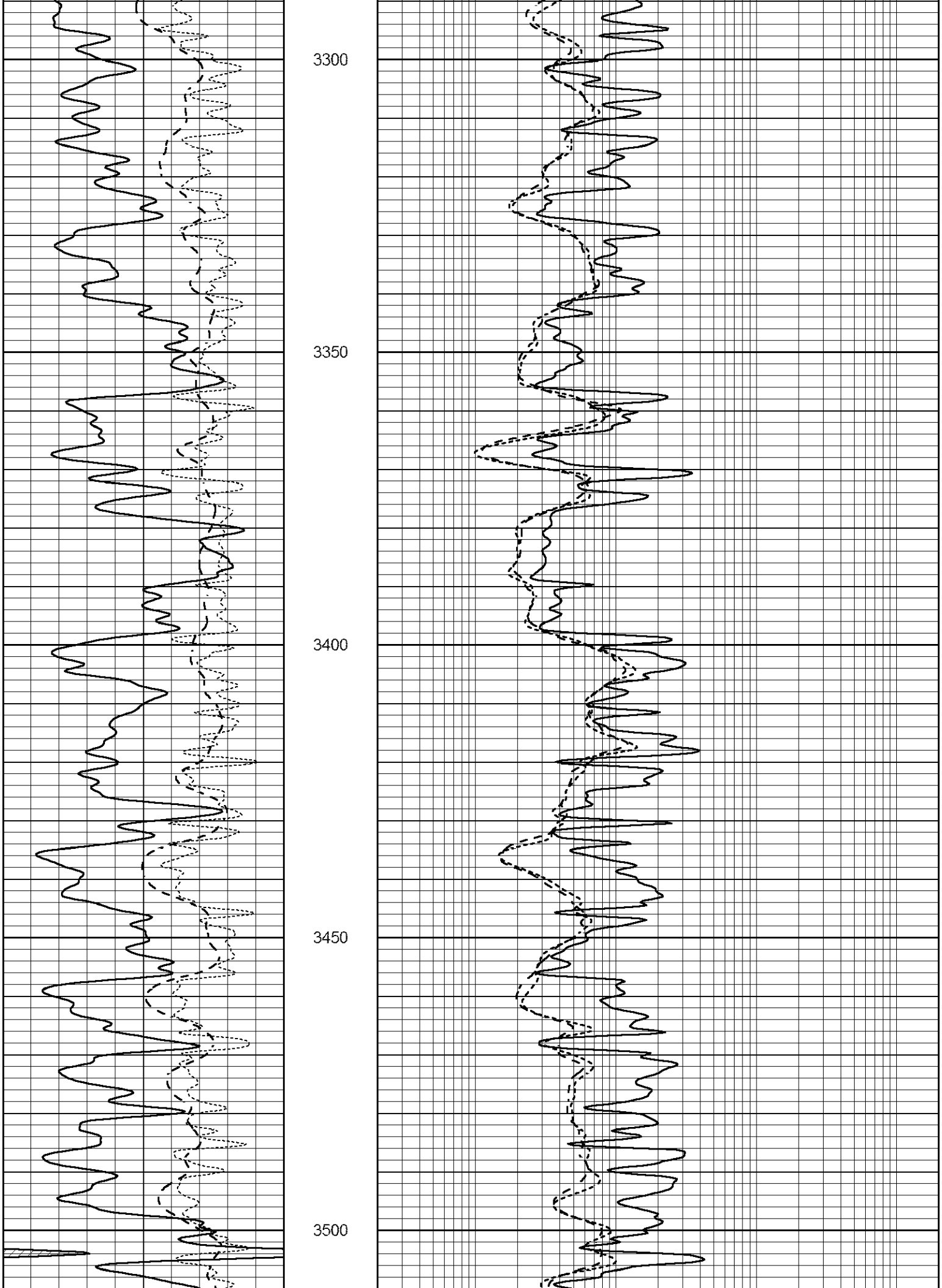
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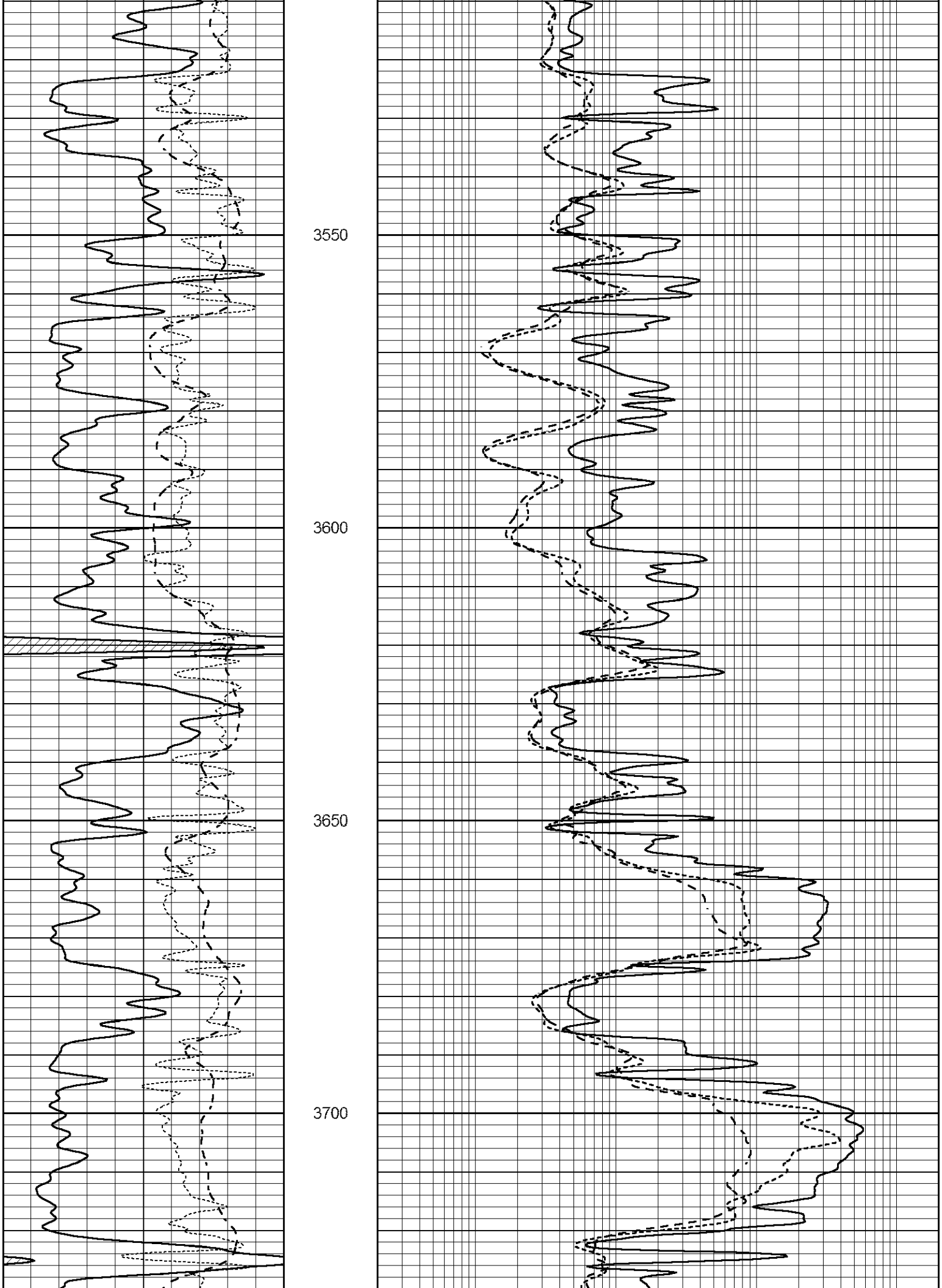
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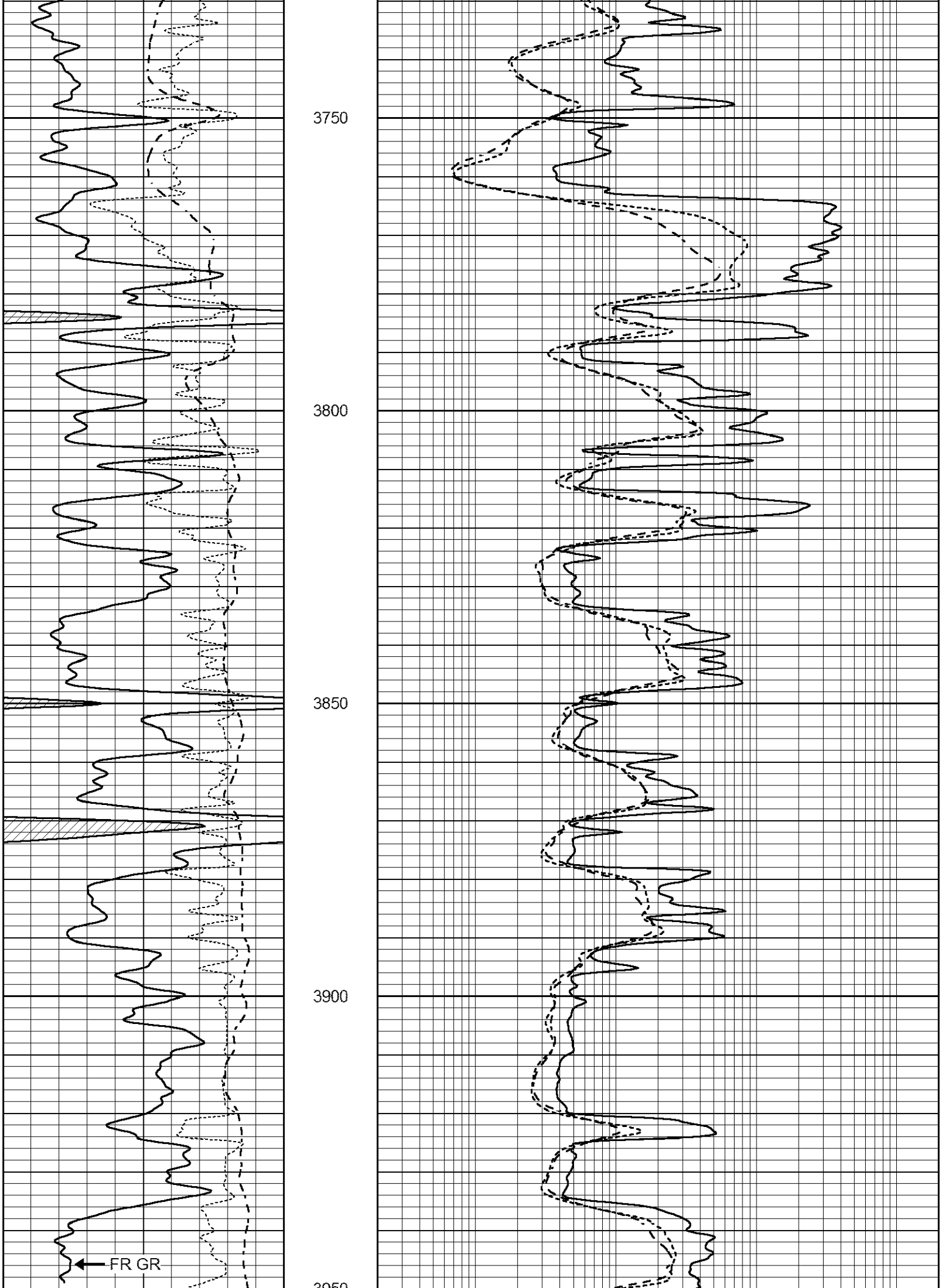
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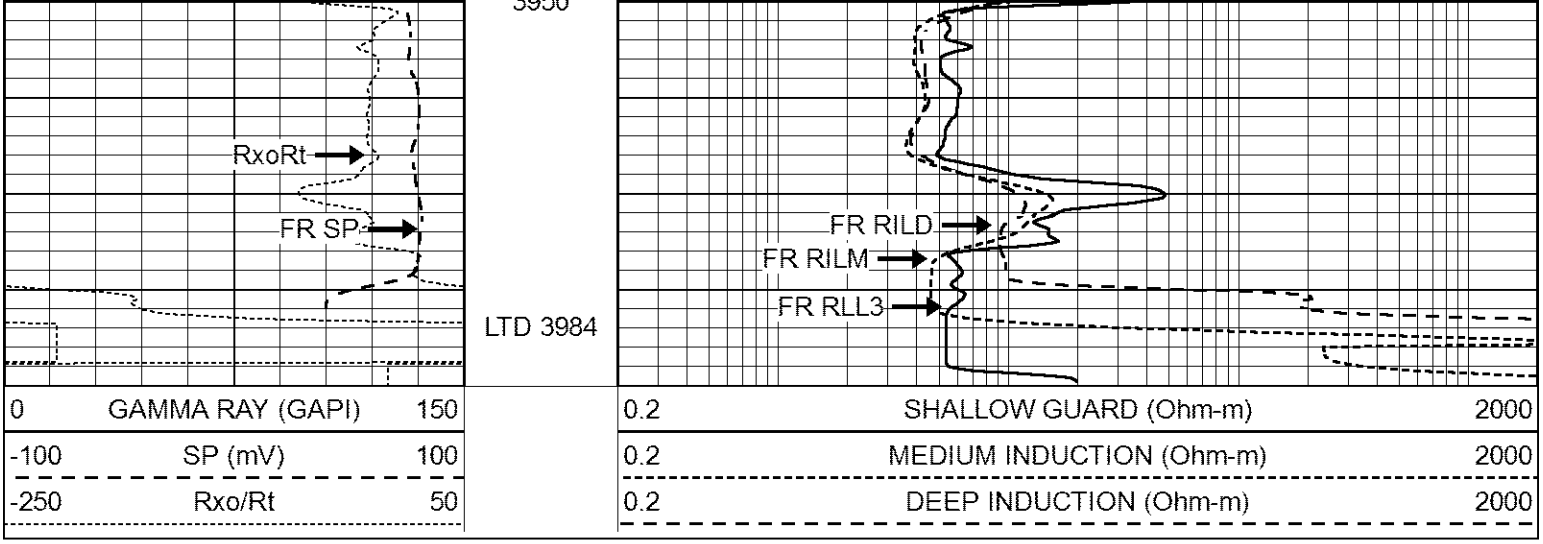
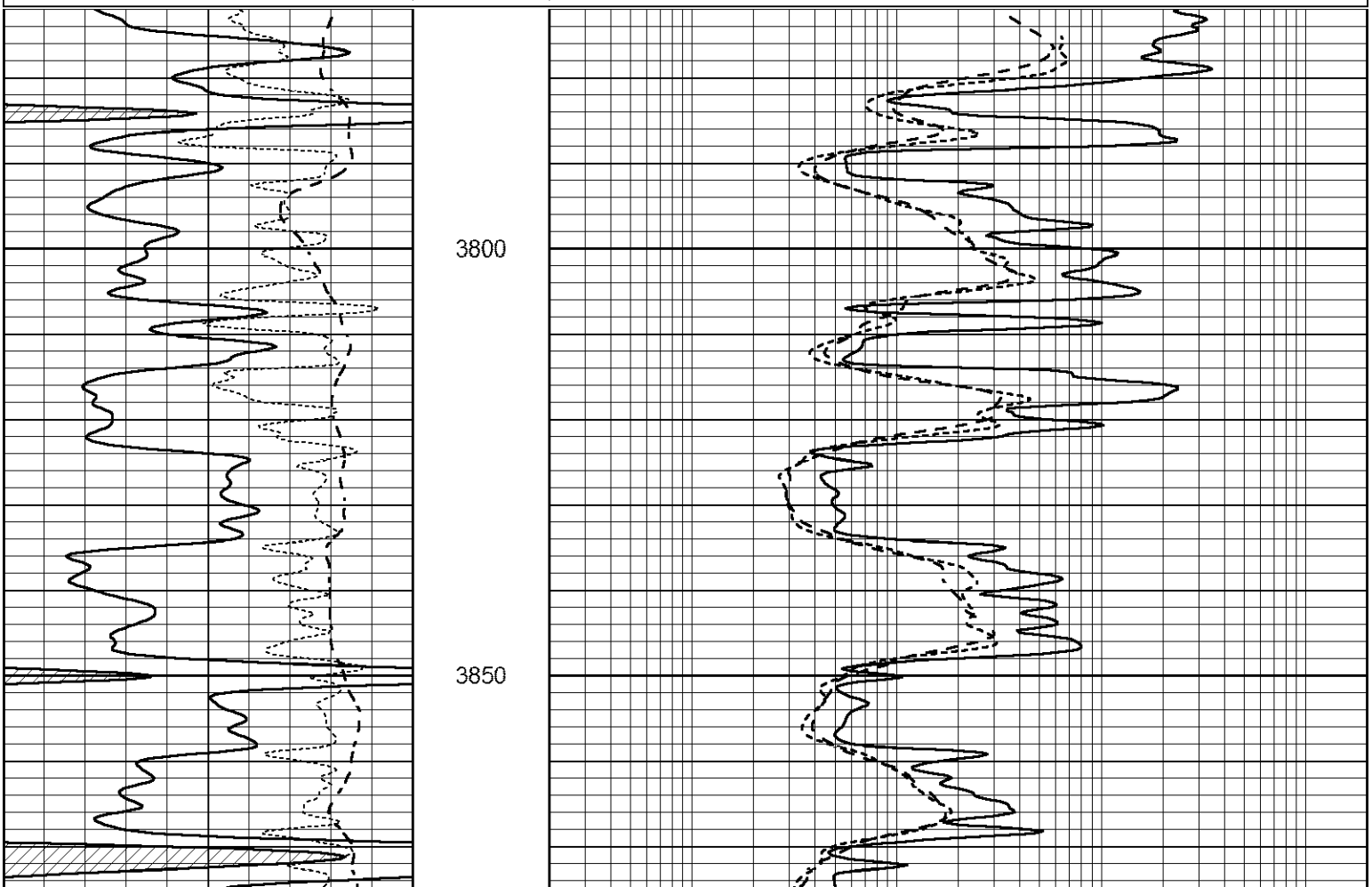
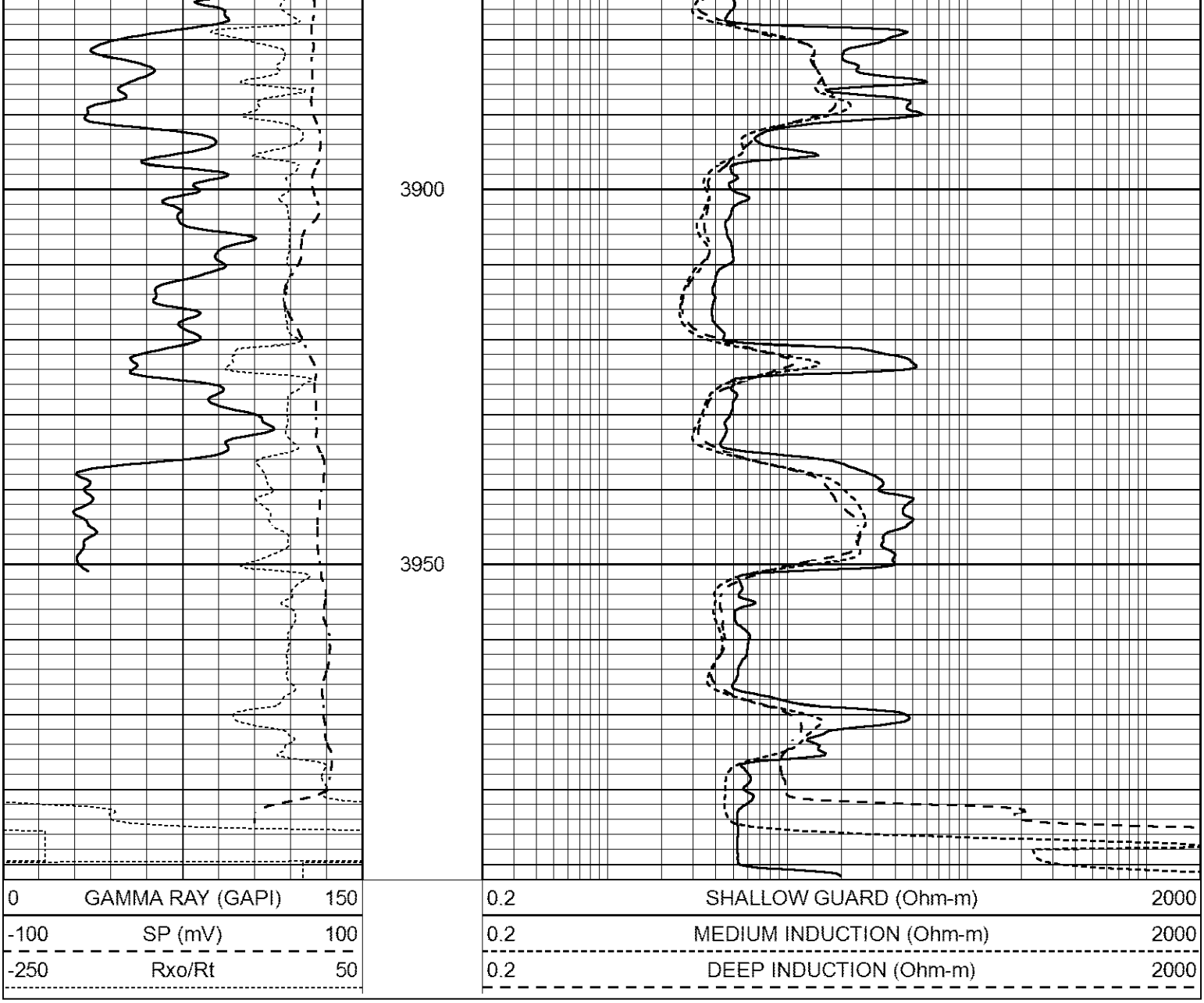
FR GR



REPEAT SECTION

Database File	3428ddn8.db
Dataset Pathname	pass3.1
Presentation Format	_dil
Dataset Creation	Wed Dec 12 07:37:31 2018
Charted by	Depth in Feet scaled 1:240





Calibration Report

Database File	3428ddn8.db
Dataset Pathname	pass4.1
Dataset Creation	Wed Dec 12 07:59:41 2018

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		

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