DUAL INDUCTION LOG

Company ARP OPERATING, LLC.
Well LOS PRIMOS #2
Field COUSINS
County THOMAS State KANSAS

Location: API # : 15-193-21115-0000

1650' FSL & 1320' FEL
S/2 - N/2 - SE
SEC 26 TWP 10S RGE 33W

Other Services
CDL/CNL/PE
MEL/SONIC

Elevation
K.B. 3100
D.F. 3098
G.L. 3088

Permanent Datum GROUND LEVEL Elevation 3088
Log Measured From KELLY BUSHING 12' A.G.L.
Drilling Measured From KELLY BUSHING

Date	2/13/23		
Run Number	ONE		
Depth Driller	4747		
Depth Logger	4744		
Bottom Logged Interval	4742		
Top Log Interval	00		
Casing Driller	8 5/8"@261'		
Casing Logger	262		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES: 4,000 PPM	
Density / Viscosity	9.4/59		
pH / Fluid Loss	10.5/8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	1.40@66F		
Rmf @ Meas. Temp	1.05@66F		
Rmc @ Meas. Temp	1.68@66F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.751@123F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	5:30 P.M.		
Maximum Recorded Temperature	123F		
Equipment Number	8916		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	SEAN DEENIHAN		

Company ARP OPERATING, LLC.
Well LOS PRIMOS #2
Field COUSINS
County THOMAS
State KANSAS

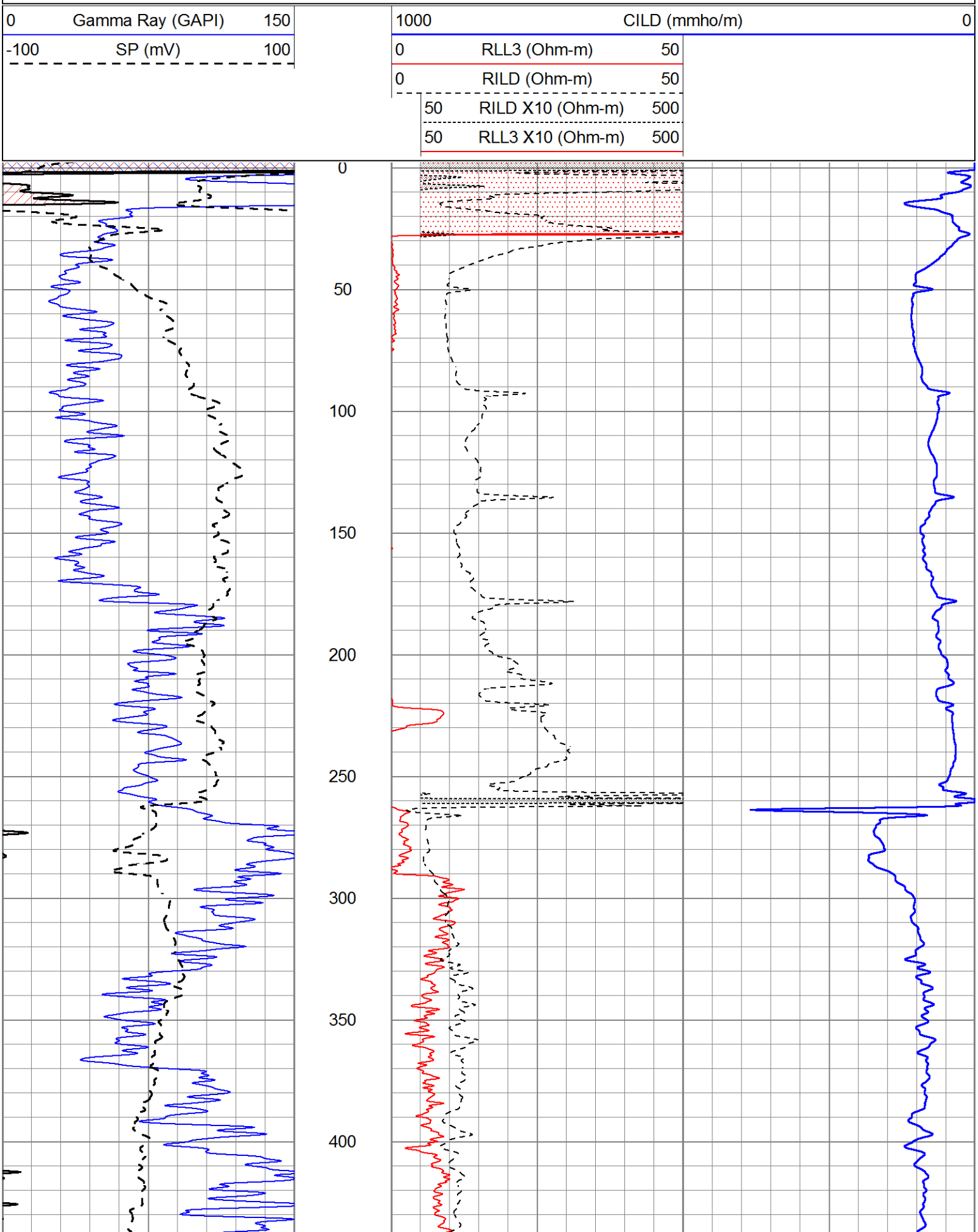
<< Fold Here >>>

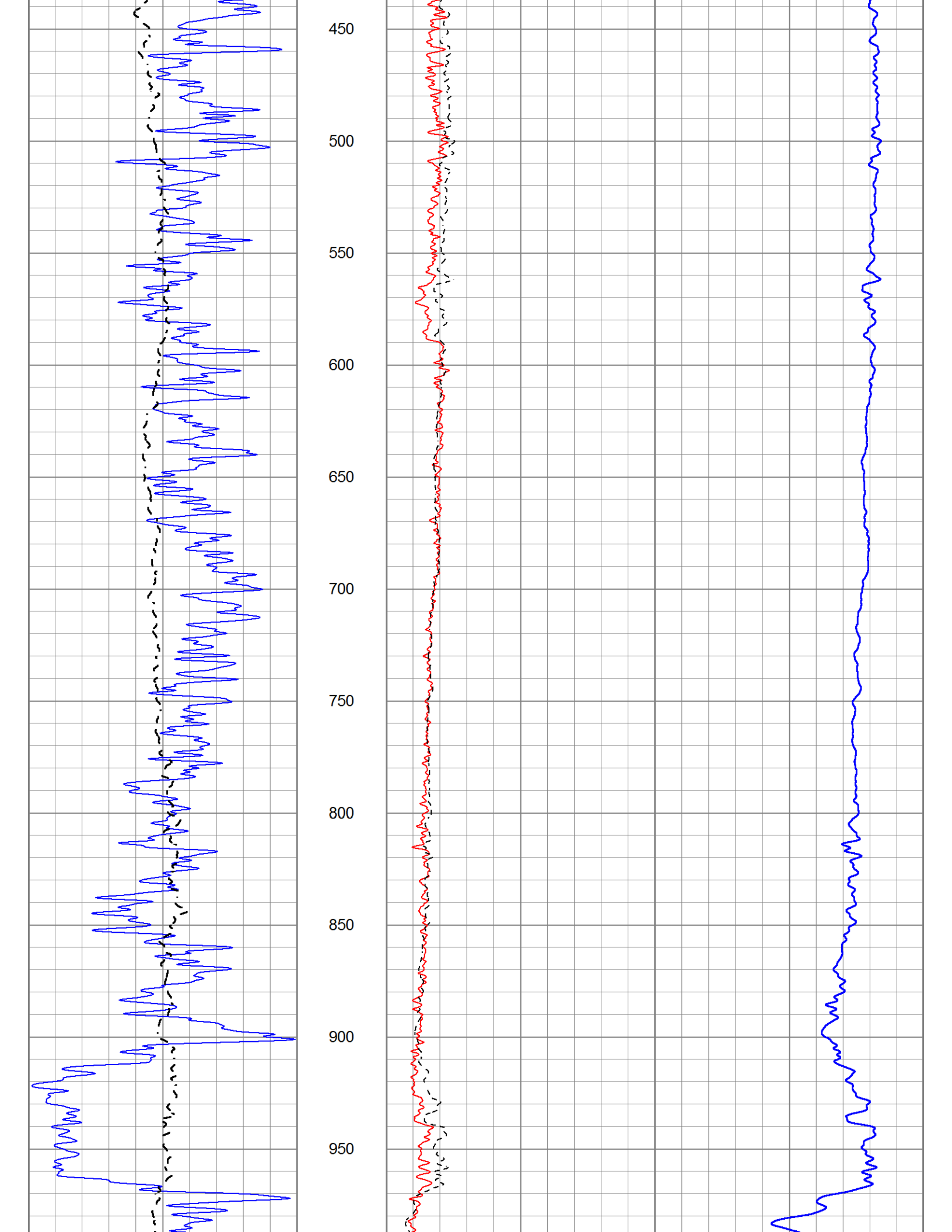
Comments

THANK YOU FOR USING ELI WIRELINE, HAYS, KS. (785) 628-6395
DIRECTIONS:
OAKLEY, KS. & SECOND I-70 EXIT, S. TO "RD. C", W. TO "RD. 23", 1S., E. INTO

MAIN SECTION

Database File	7509pe.db
Dataset Pathname	pass3.1M
Presentation Format	_dil2
Dataset Creation	Mon Feb 13 19:26:35 2023
Charted by	Depth in Feet scaled 1:600

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650
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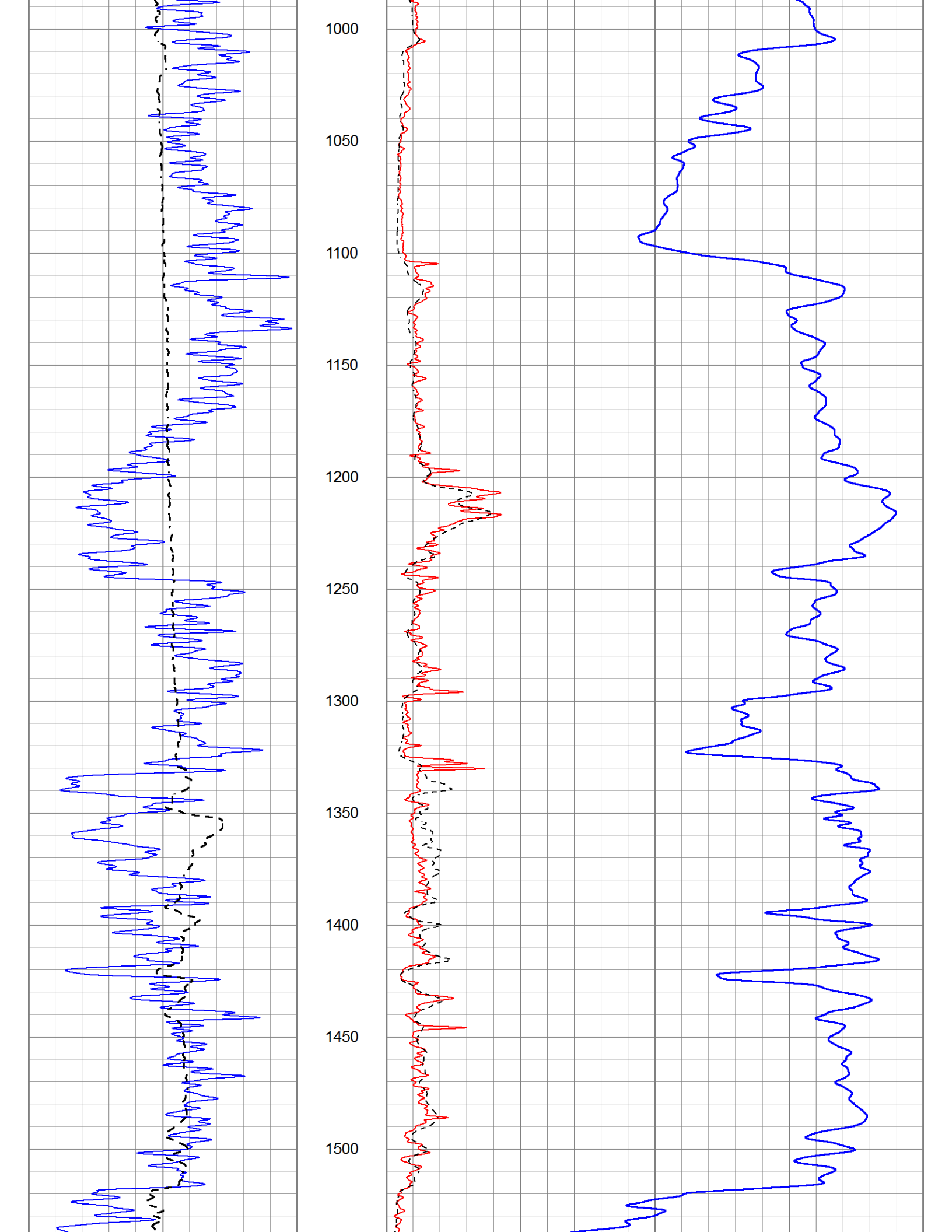
850
900
950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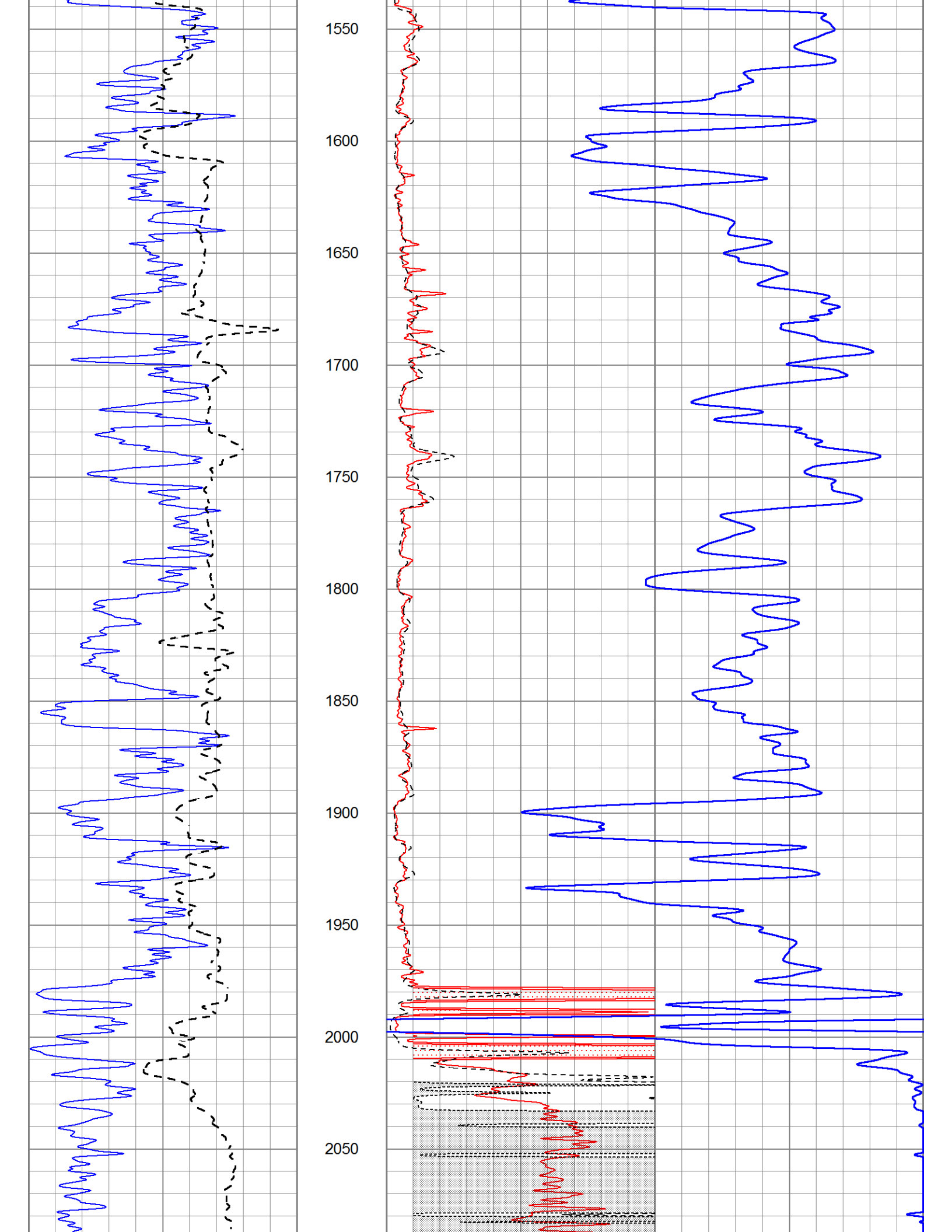
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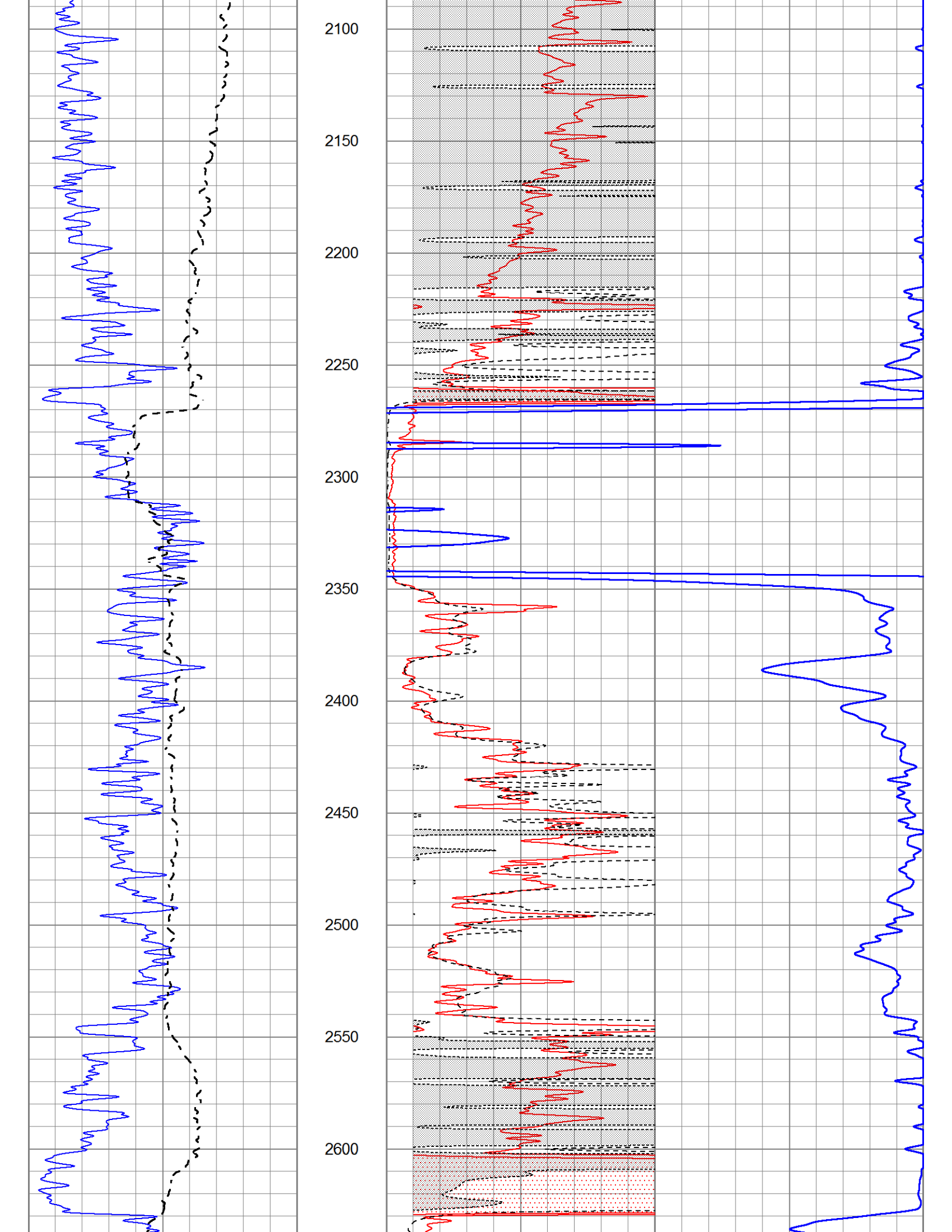
1650
1700
1750
1800
1850
1900
1950
2000
2050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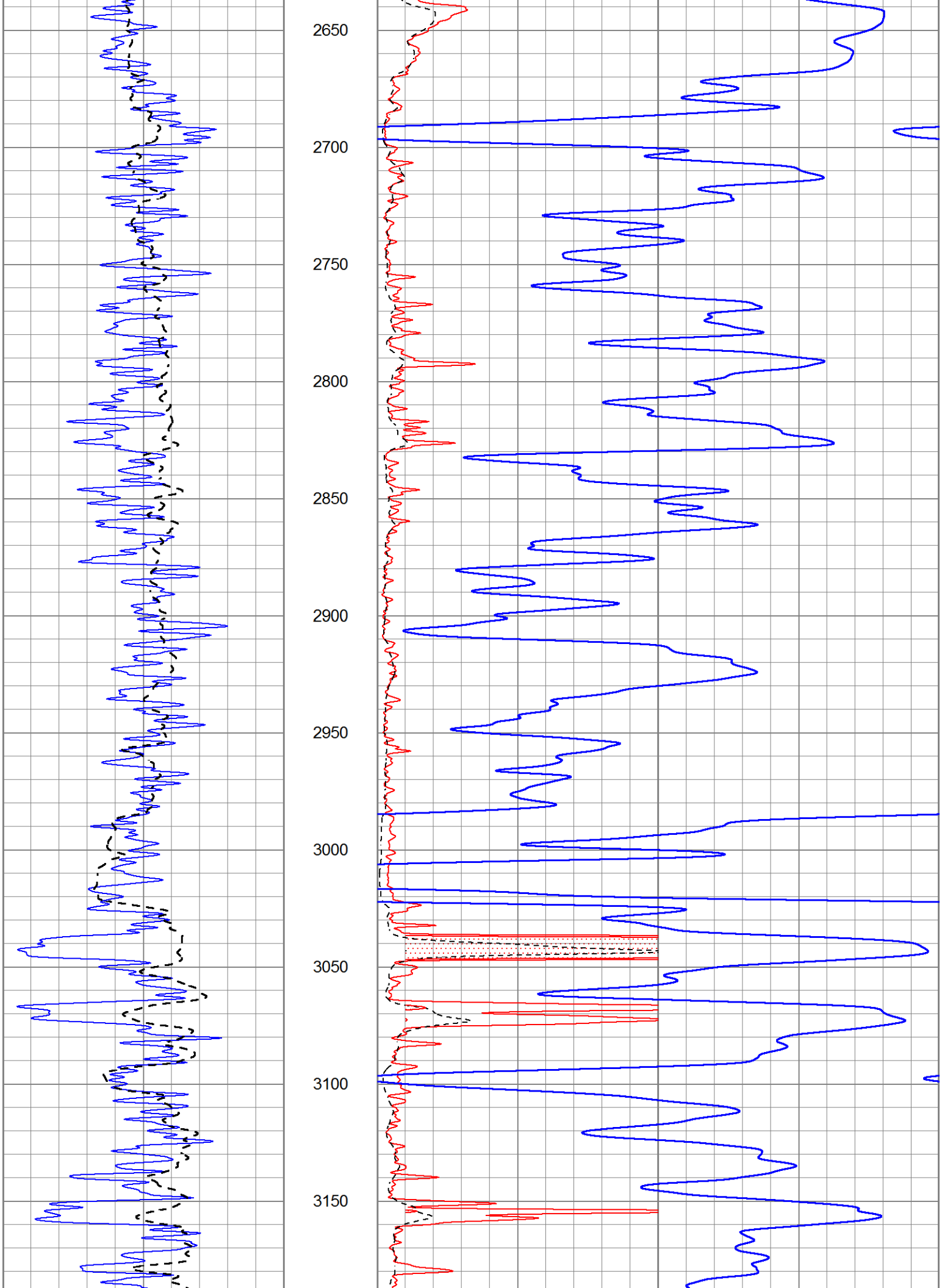
2300
2350
2400
2450
2500
2550
2600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3100
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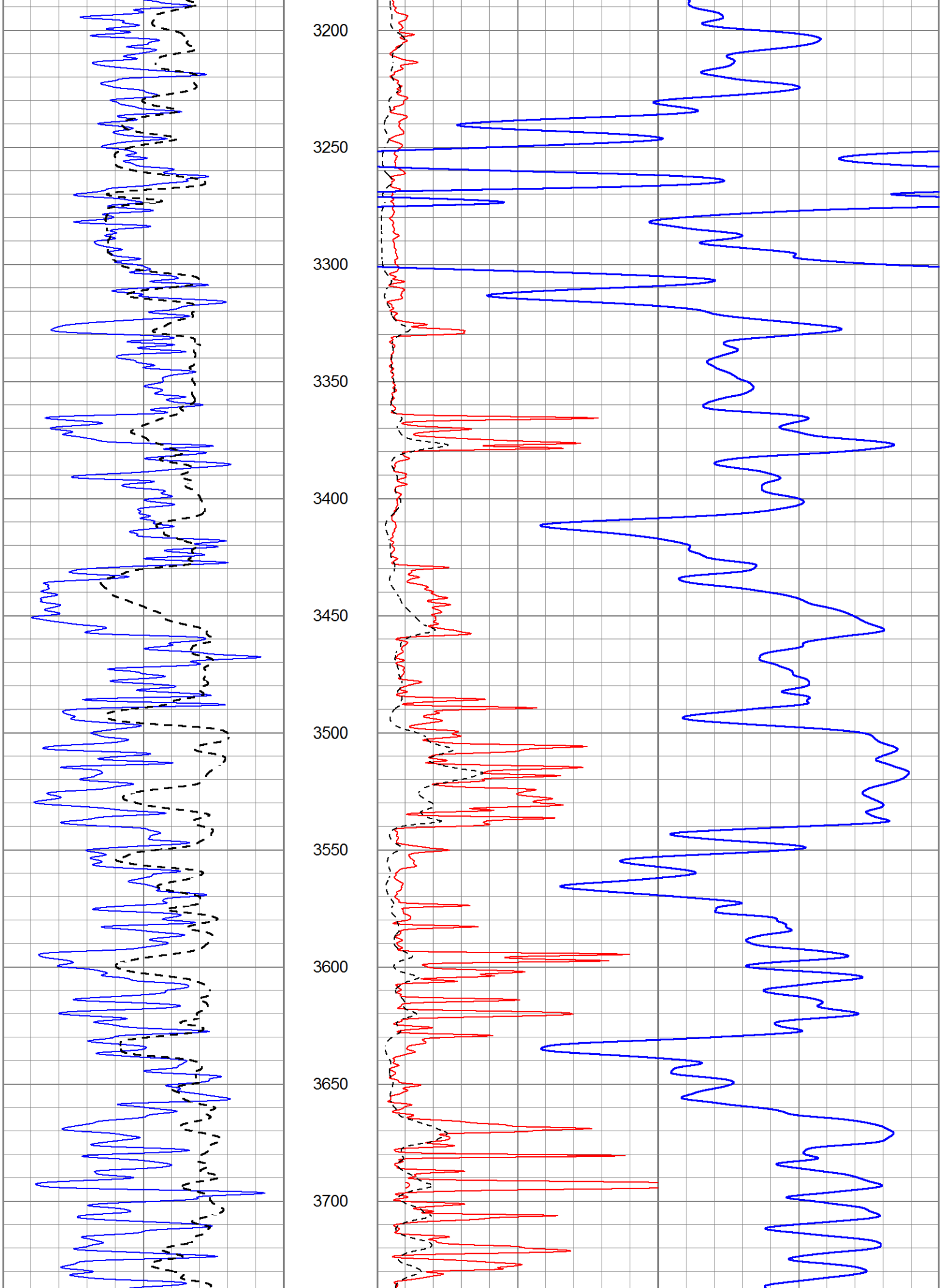
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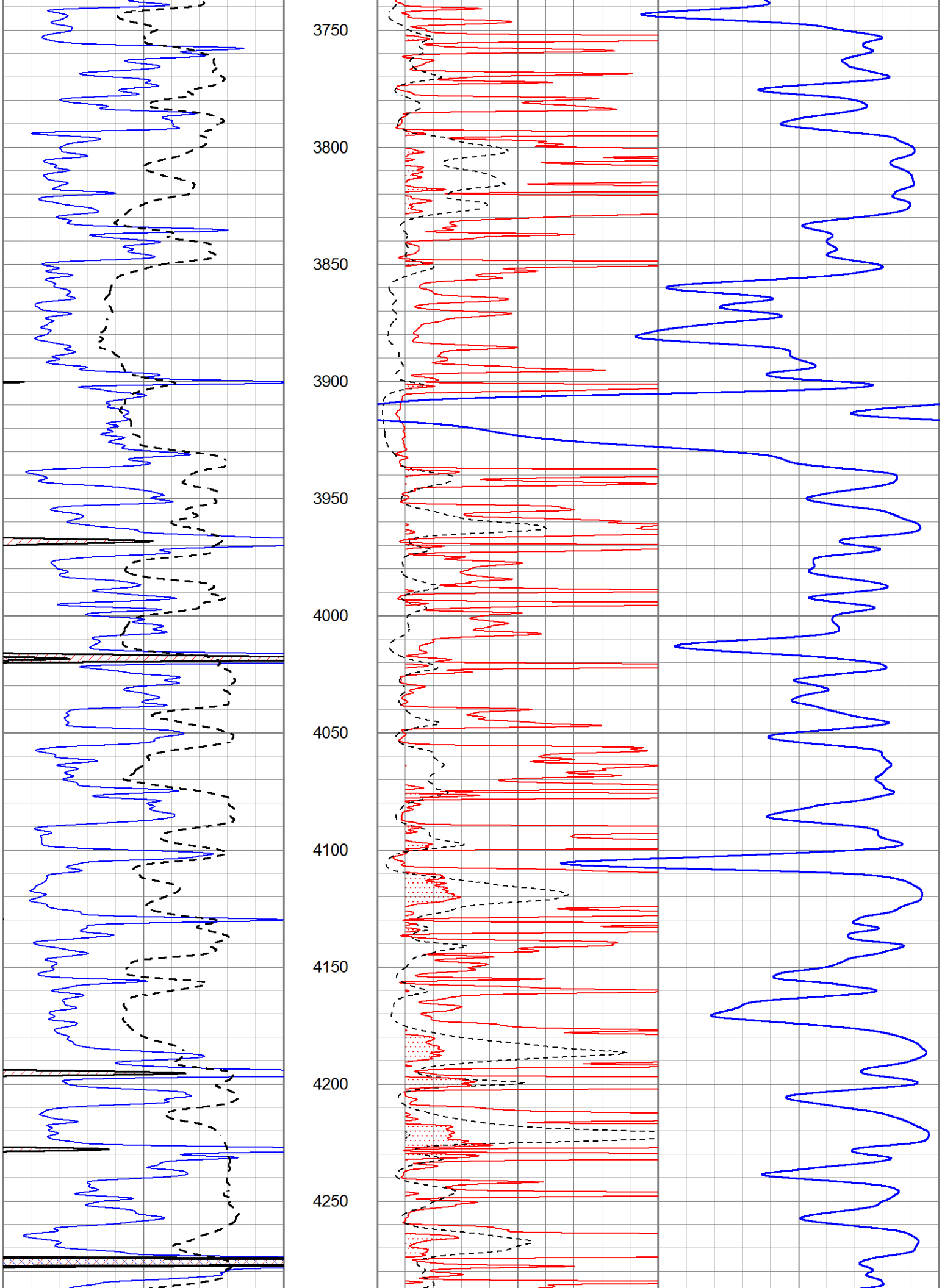
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4050
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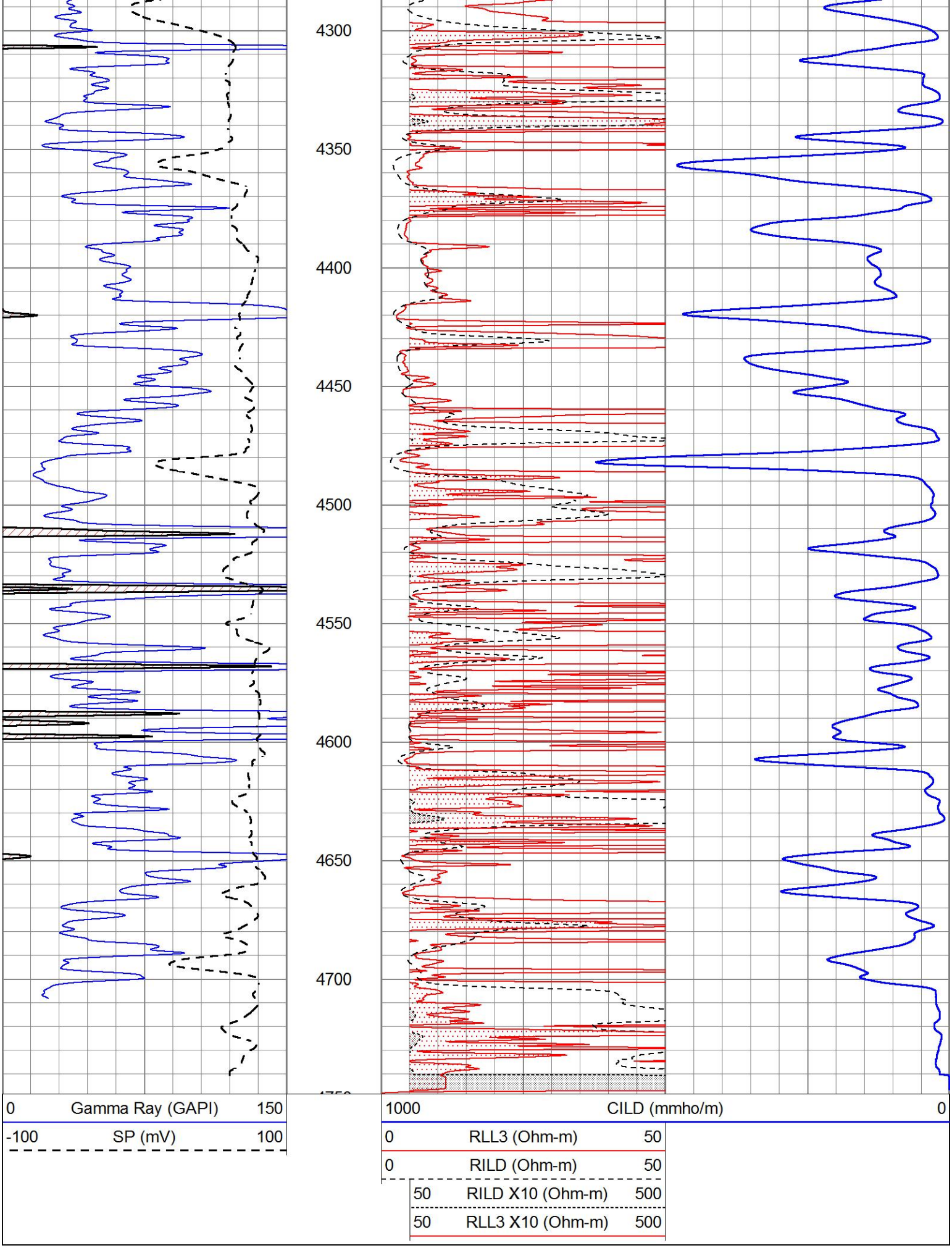
4150
4200
4250

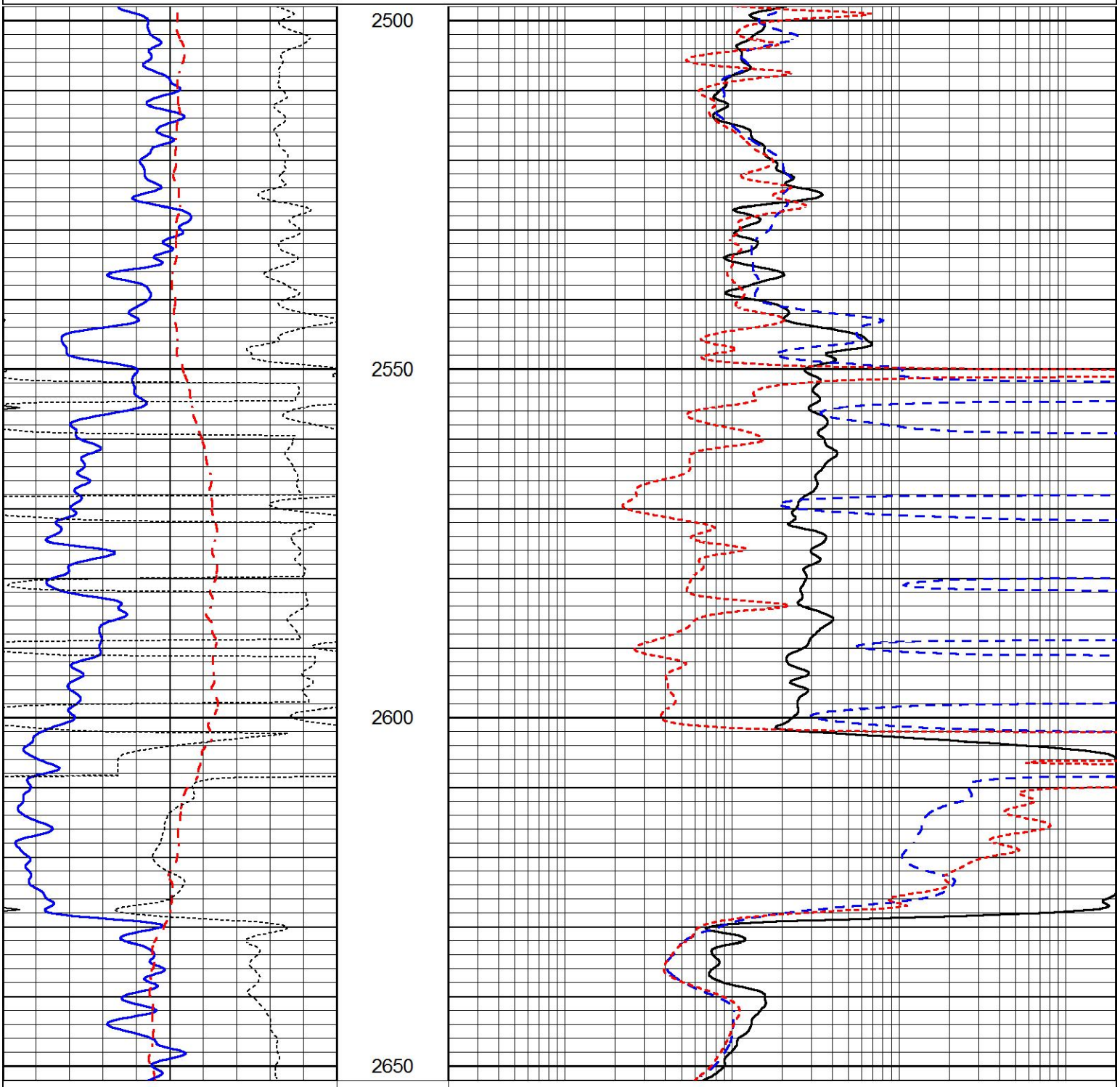

4300
4350
4400
4450
4500
4550
4600
4650
4700
0 Gamma Ray (GAPI) 150
-100 SP (mV) 100
1000 CILD (mmho/m) 0
0 RLL3 (Ohm-m) 50
0 RILD (Ohm-m) 50
50 RILD X10 (Ohm-m) 500
50 RLL3 X10 (Ohm-m) 500

ANHYDRITE

Database File	7509pe.db
Dataset Pathname	pass3.1A
Presentation Format	_dil
Dataset Creation	Mon Feb 13 19:27:30 2023
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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

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

-250	Rxo/Rt	50
0	MINMK	20

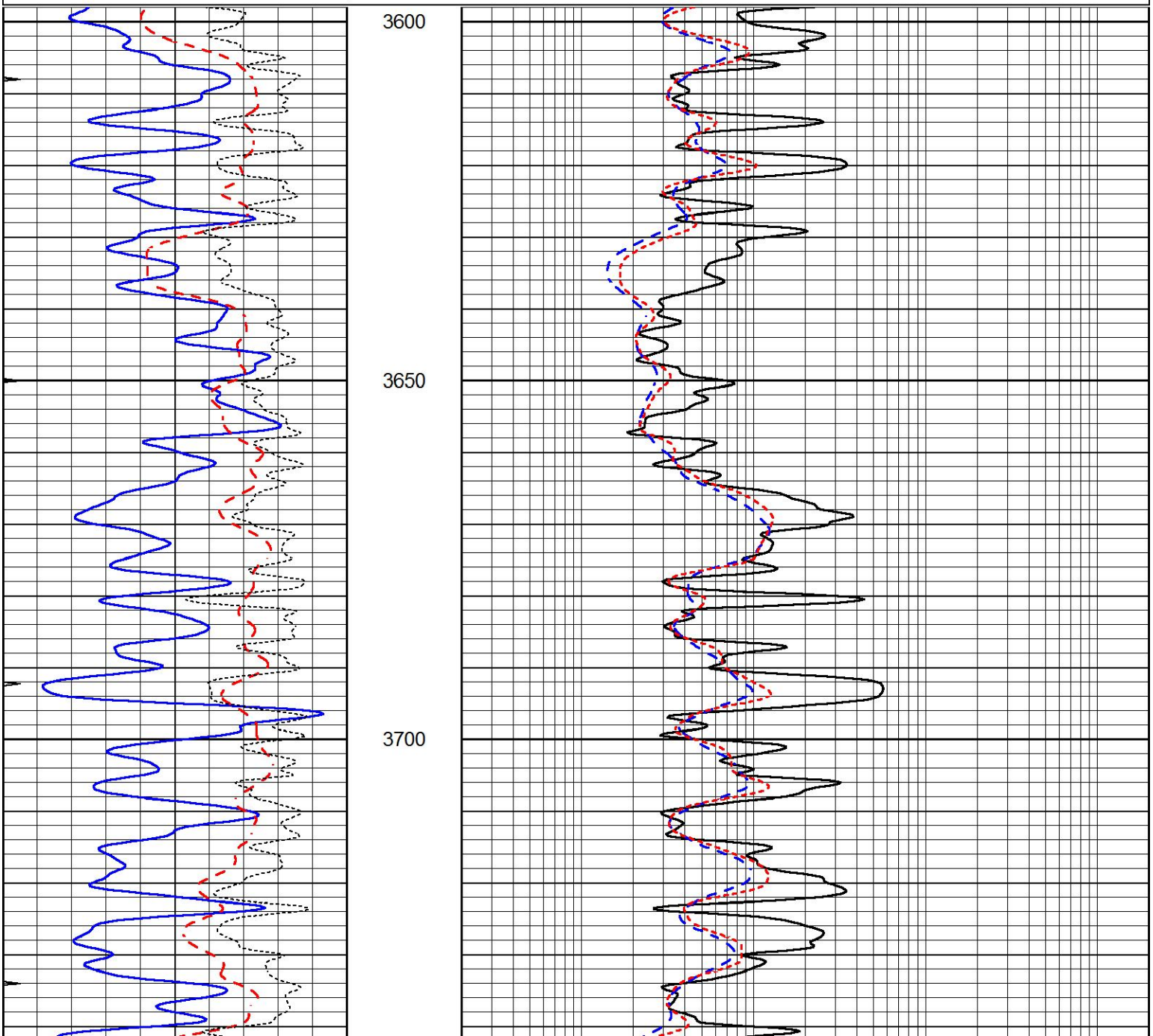
0.2	MEDIUM INDUCTION (Ohm-m)	2000

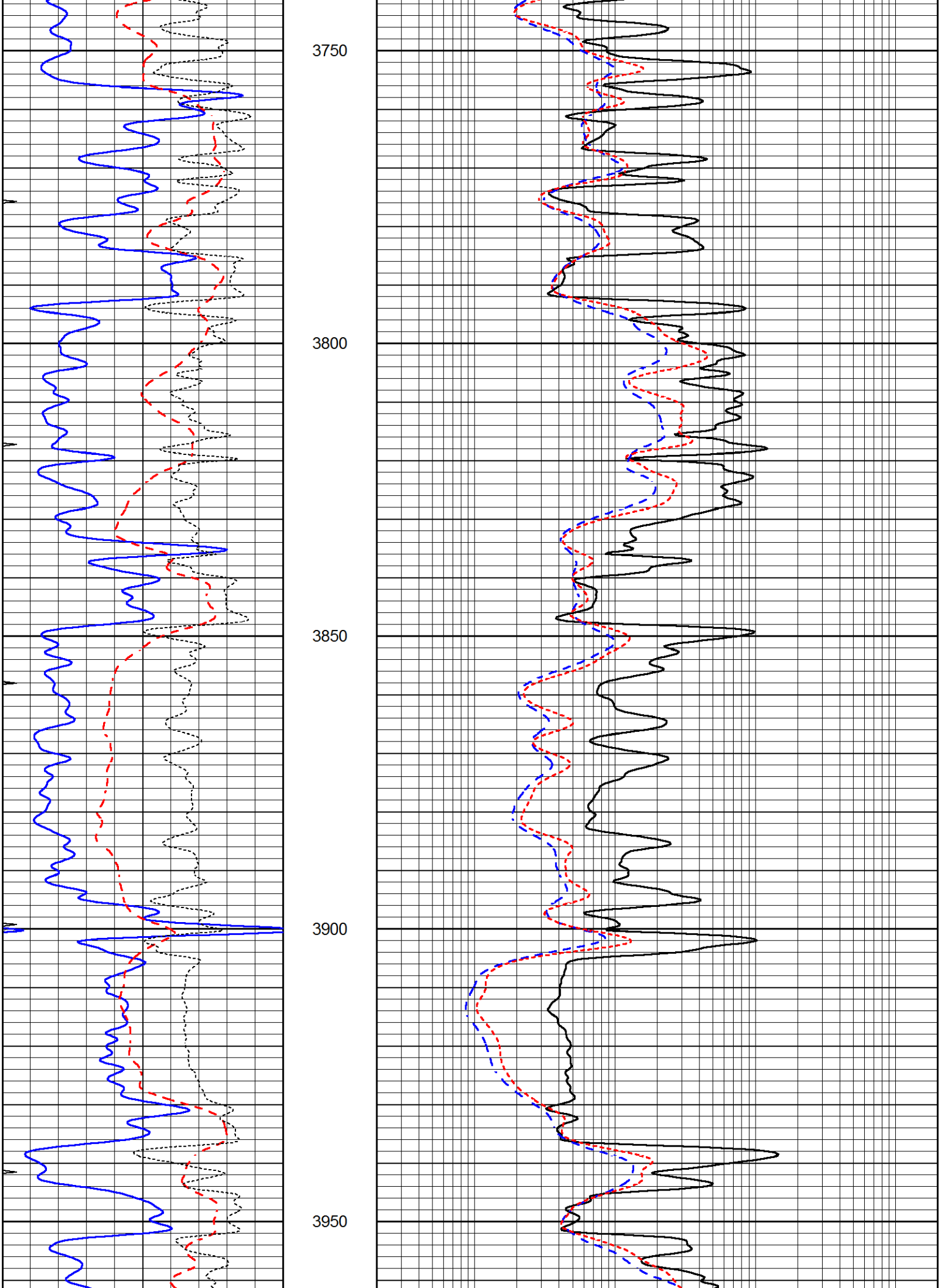
MAIN SECTION

Database File	7509pe.db
Dataset Pathname	pass3.1M
Presentation Format	_dil
Dataset Creation	Mon Feb 13 19:26:35 2023
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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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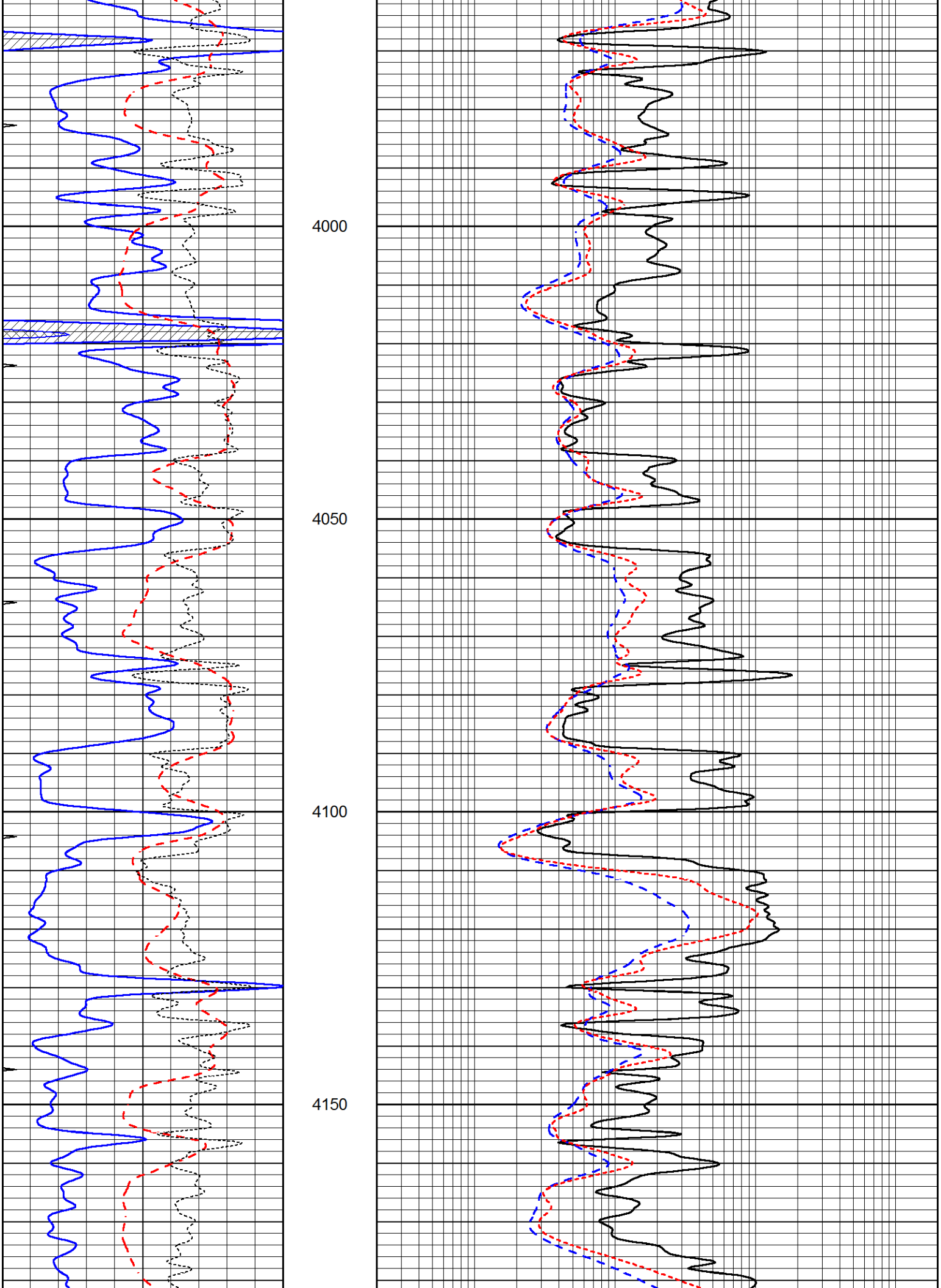
3900
3950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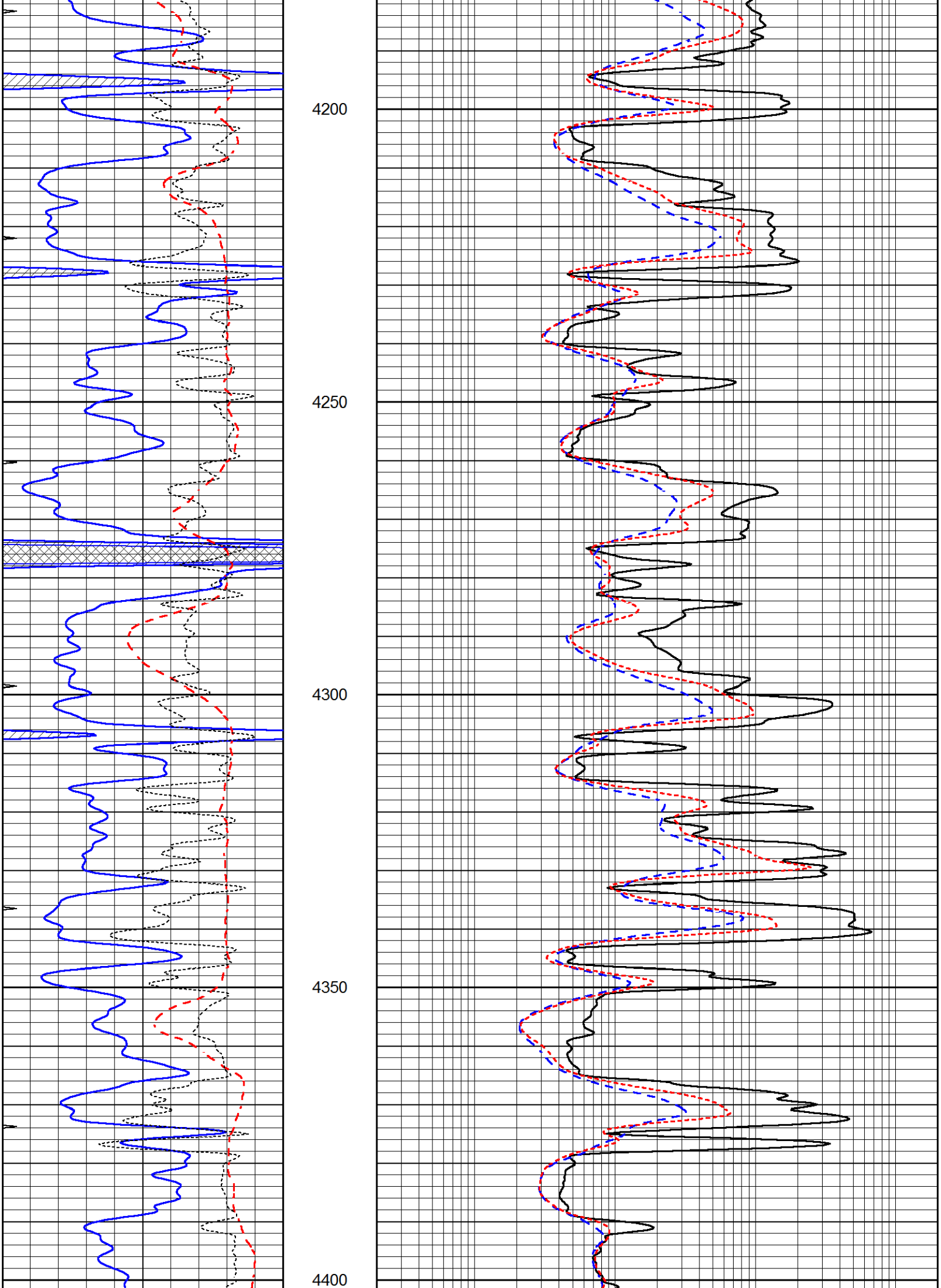
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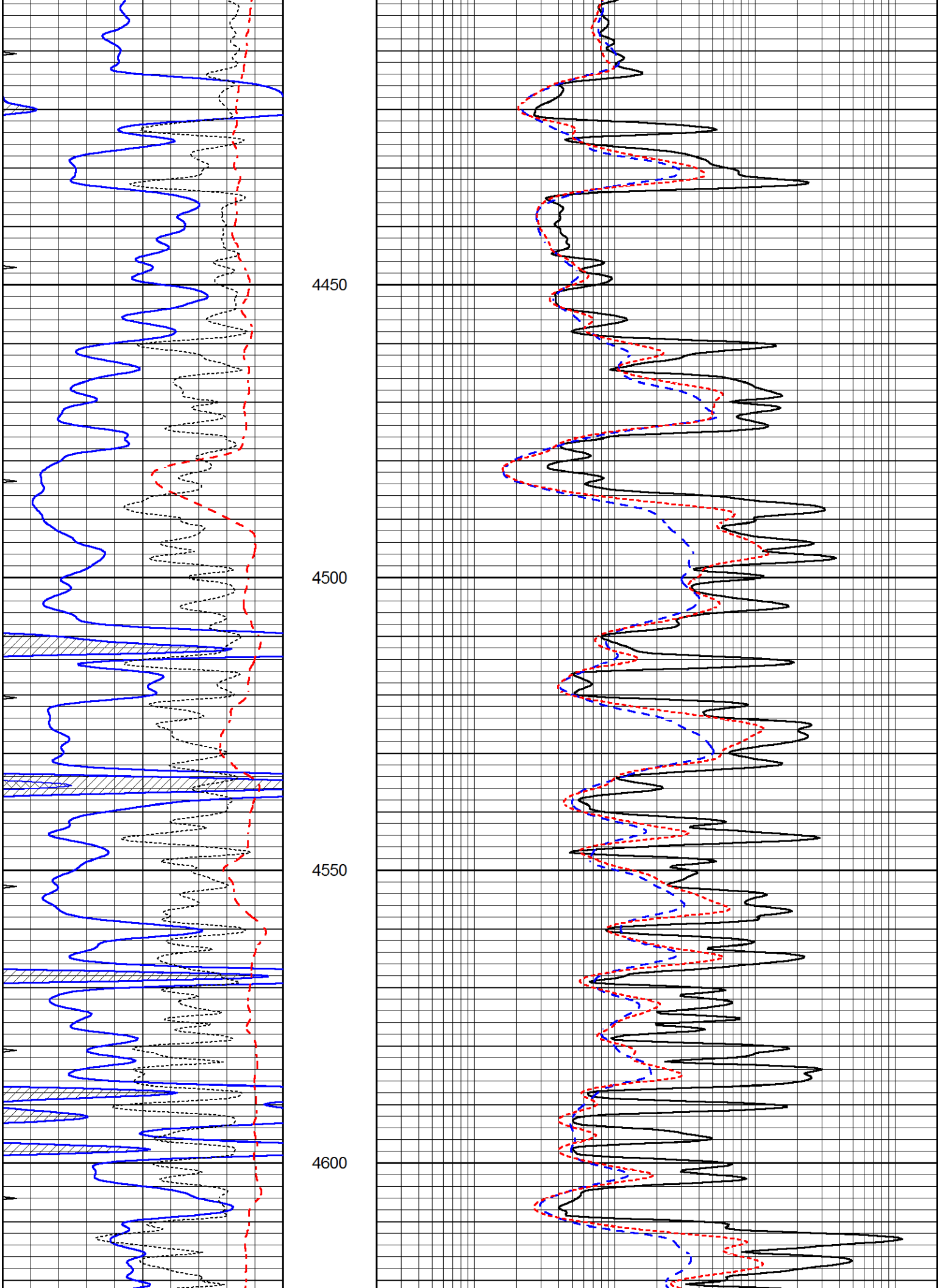
4250
4300
4350
4400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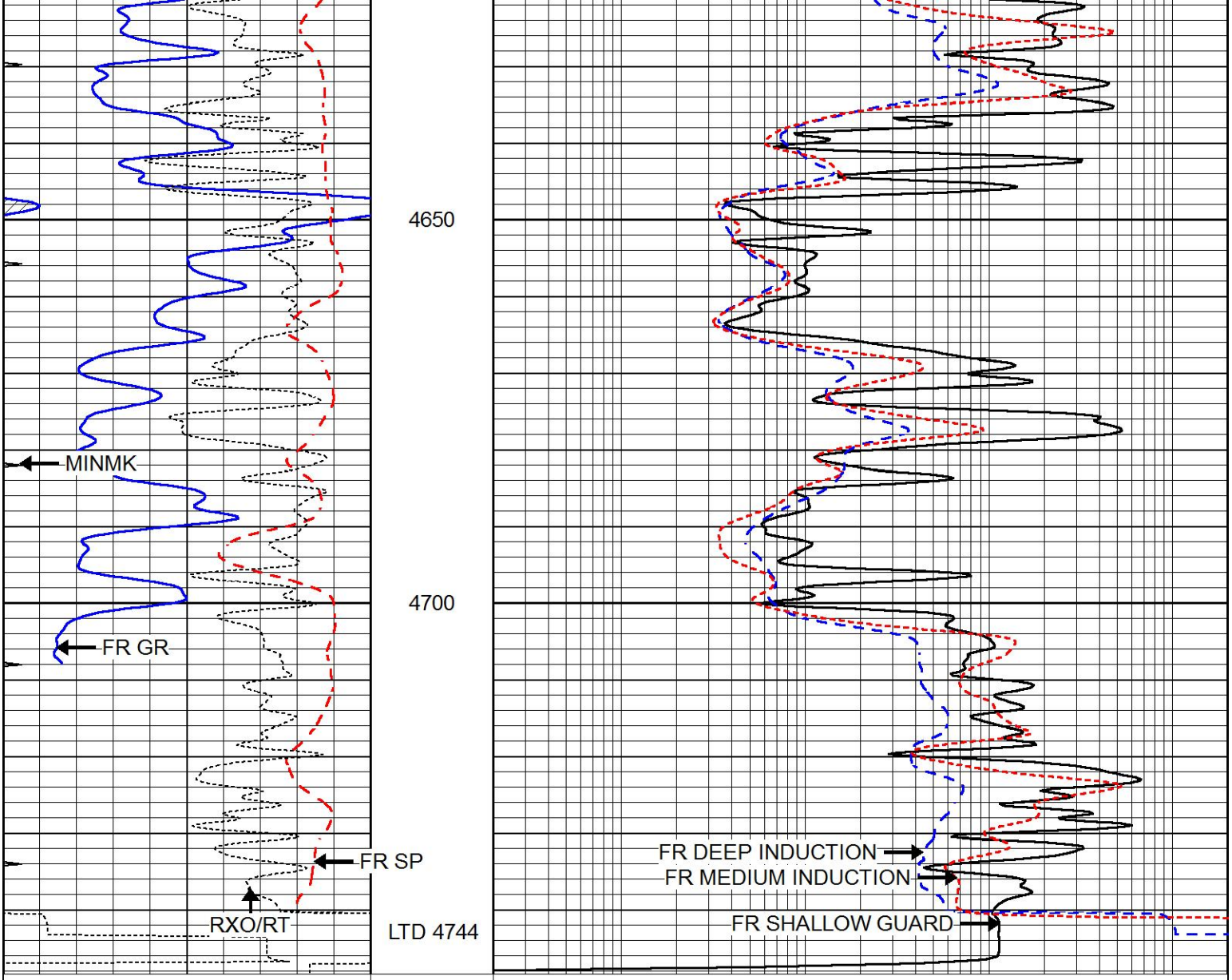


0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

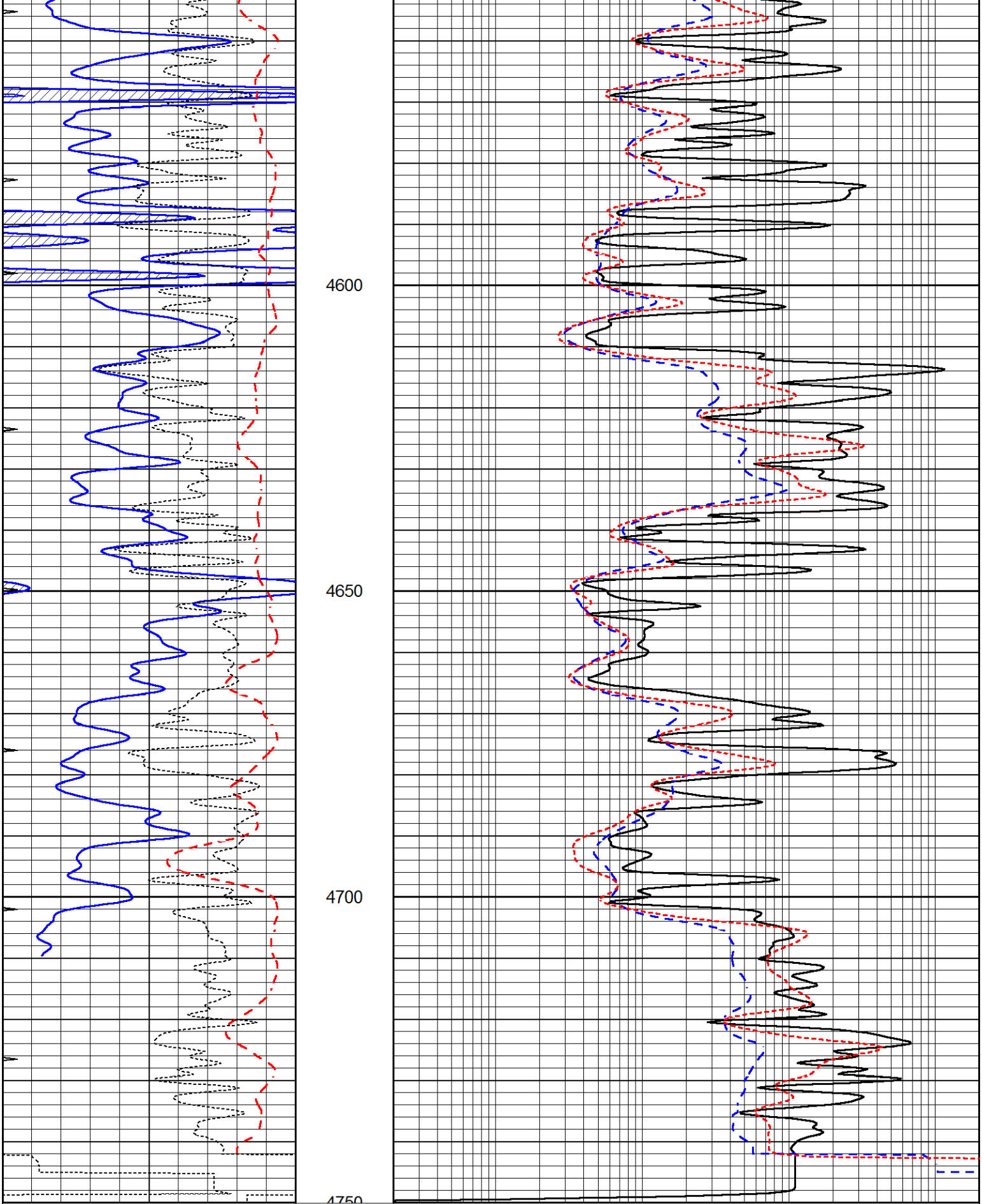
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

REPEAT SECTION

Database File	7509pe.db
Dataset Pathname	pass2.1R
Presentation Format	_dil
Dataset Creation	Mon Feb 13 18:25:14 2023
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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	MINMK	20

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 7509pe.db
Dataset Pathname pass3.1M
Dataset Creation Mon Feb 13 19:26:35 2023

Dual Induction Calibration Report

Serial-Model:	DIL7-GEAR
Surface Cal Performed:	Mon Feb 13 03:29:35 2023
Downhole Cal Performed:	Tue Jul 22 10:15:08 2008
After Survey Verification Performed:	Wed Jan 18 02:07:20 2023

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.019	0.660	V	0.000	400.000	mmho/m	660.000	16.000
Medium	-0.006	0.655	V	0.000	462.500	mmho/m	720.000	-32.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.010	0.665	V	0.000	400.000	mmho/m	610.018	-5.925
Medium	0.009	0.655	V	0.000	400.000	mmho/m	618.983	-5.564

Downhole Calibration

	Readings			References			Results	
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.000	0.000	mmho/m	-6.200	401.333	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	-1.141	472.660	mmho/m	1.000	0.000
Shallow	2.521	0.019	V	500.000	2.000	Ohm-m	200.000	0.000

After Survey Verification

	Readings			Targets			Results	
Internal:	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Medium	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Shallow	2.500	0.010	Ohm-m	500.000	2.000	Ohm-m	200.000	0.000

Litho Density Calibration Report

Serial: 004 Model: PRB

Master Calibration

Performed Fri Nov 04 15:19:59 2022

	Background	Magnesium	Aluminum	Aluminum+Fe	
Window 1	1153.2	7232.1	2536.8	2279.5	cps
Window 2	1055.6	6225.5	2222.3	2030.5	cps
Window 3	902.5	3849.3	1546.4	1462.0	cps
Window 4	254.4	258.2	253.1	253.9	cps
Long Space	0.0	5169.9	1166.7	974.9	cps
Short Space	4.7	1383.0	950.5	792.1	cps
Rho		1.7100	2.5900	0.0000	g/cc
Pe		2.0000	2.7500	5.7900	

Rib Angle	: 45.9	Rib Slope	: 1.031	Density/Spine Ratio	: 0.573
Spine Angle	: 75.9	Spine Slope	: 3.970	Spine Intercept	: -20.2

Before Survey Verification

Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

After Survey Verification Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

Compensated Neutron Calibration Report

Serial Number: 6I
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

PRE-SURVEY VERIFICATION

	Detector	Readings		Measured		Target	
1)	Short Space		cps				
	Long Space		cps		pu		pu
2)	Short Space		cps				
	Long Space		cps		pu		
3)	Short Space		cps				
	Long Space		cps		pu		

POST-SURVEY VERIFICATION

	Detector	Readings		Measured		Target	
1)	Short Space		cps				
	Long Space		cps		pu		pu
2)	Short Space		cps				
	Long Space		cps		pu		pu
3)	Short Space		cps				
	Long Space		cps		pu		pu

Gamma Ray Calibration Report

Gamma Ray Calibration Report

Serial Number:	GR6	
Tool Model:	OPEN	
Performed:	Mon Feb 13 04:57:01 2023	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.8500	GAPI/cps