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BOREHOLE COMPENSATED SONIC LOG

Company MURFIN DRILLING COMPANY, INC.
Well CULWELL 'J' #1-19
Field WILDCAT
County CHEYENNE State KANSAS

Location: API #: 15-023-21482-00-00
2310' FNL & 495' FEL
SEC 19 TWP 2S RGE 37W

Other Services: DIL/MEL, BHCS

Elevation: K.B. 3389', D.F. N/A, G.L. 3384'

Permanent Datum: GROUND LEVEL Elevation 3384'
Log Measured From: KELLY BUSHING
Drilling Measured From: KELLY BUSHING

Company	MURFIN DRILLING COMPANY, INC.
Well	CULWELL 'J' #1-19
Field	WILDCAT
County	CHEYENNE
State	KANSAS
Location:	API #: 15-023-21482-00-00
	2310' FNL & 495' FEL
	SEC 19 TWP 2S RGE 37W
Permanent Datum	GROUND LEVEL
Elevation	3384'
Log Measured From	KELLY BUSHING
Drilling Measured From	KELLY BUSHING
Other Services	DIL/MEL, BHCS
Elevation	K.B. 3389', D.F. N/A, G.L. 3384'

Date	4/11/2019
Run Number	TWO
Type Log	BHCS
Depth Driller	4910'
Depth Logger	4912'
Bottom Logged Interval	4901'
Top Logged Interval	300'
Type Fluid In Hole	CHEMICAL
Salinity, PPM CL	600
Density	9.2
Level	FULL
Max. Rec. Temp. F	125 DEG/F
Operating Rig Time	4 HOURS
Equipment -- Location	P-108 HAYS
Recorded By	J. HENRICKSON
Witnessed By	JEFF CHRISTIAN

Borehole Record

Run No.	Bit	From	To
ONE	12.25"	0	330'
TWO	7.875"	330'	TD

Casing Record

Size	Wgt.	From	To
8.625"	23#	0	330'

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

BIRD CITY KANSAS
2 EAST TO 30 RD, 7 1/2 NORTH, WEST INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneeres.com 785-625-3858

Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: J. HENRICKSON	Primary Witness: JEFF CHRISTIAN
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

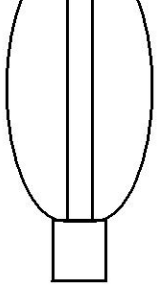
DatabaseC:\ProgramData\Warrior\Data\murfin_culwell_j_1_19.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	125	5.5	0	1	2	2.71

NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	8	35	Off	4912

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			ML-Armadillo (Armadillo-1) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
MCAL	22.50					
MI	22.50					
MN	22.50					
WVF4	13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF1	13.50					
WVF3	11.50					
WVF2	11.50					



CENT-PENGO	5.50	3.00	70.00

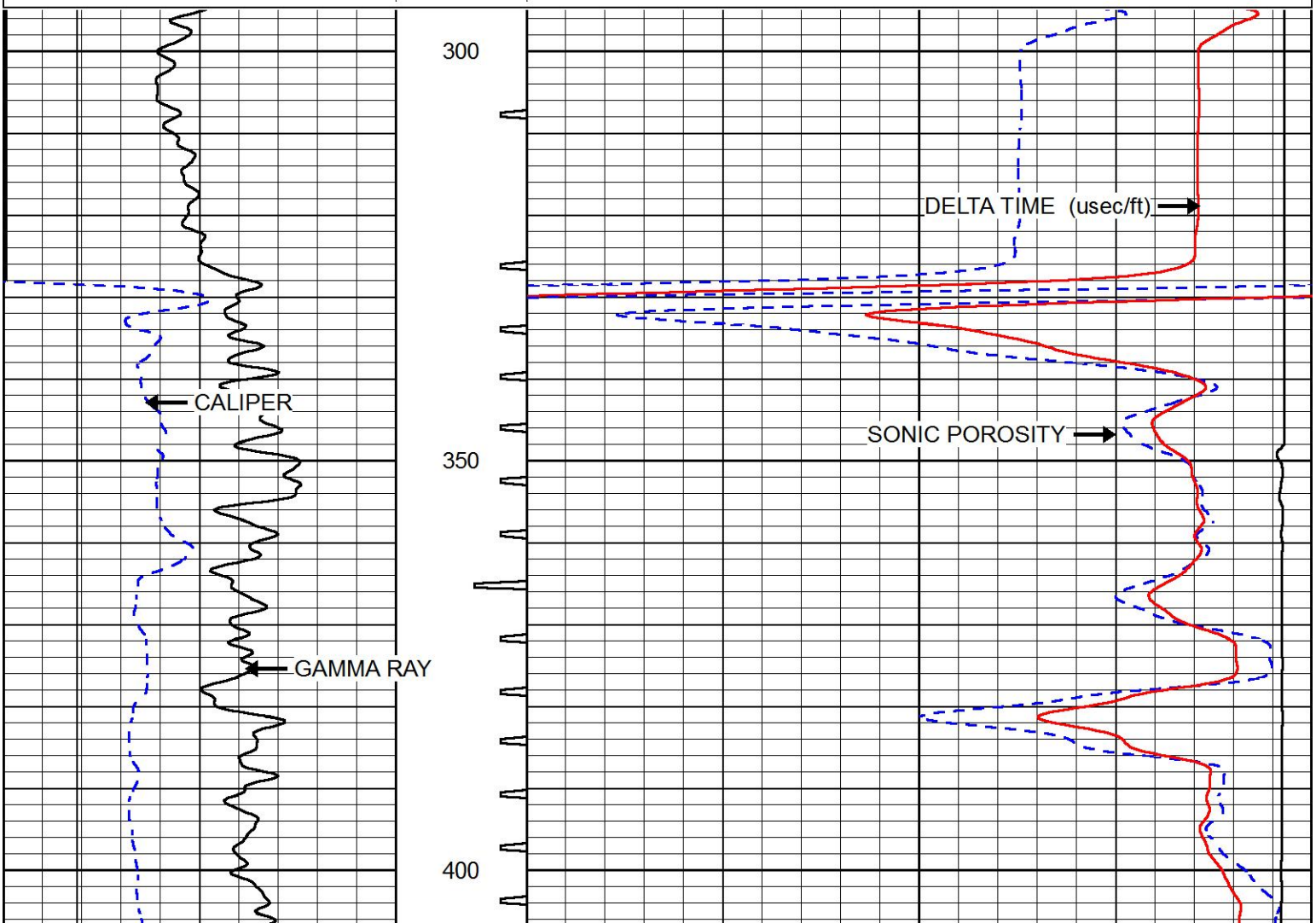
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Total length: 26.50 ft
Total weight: 470.00 lb
O.D.: 3.50 in

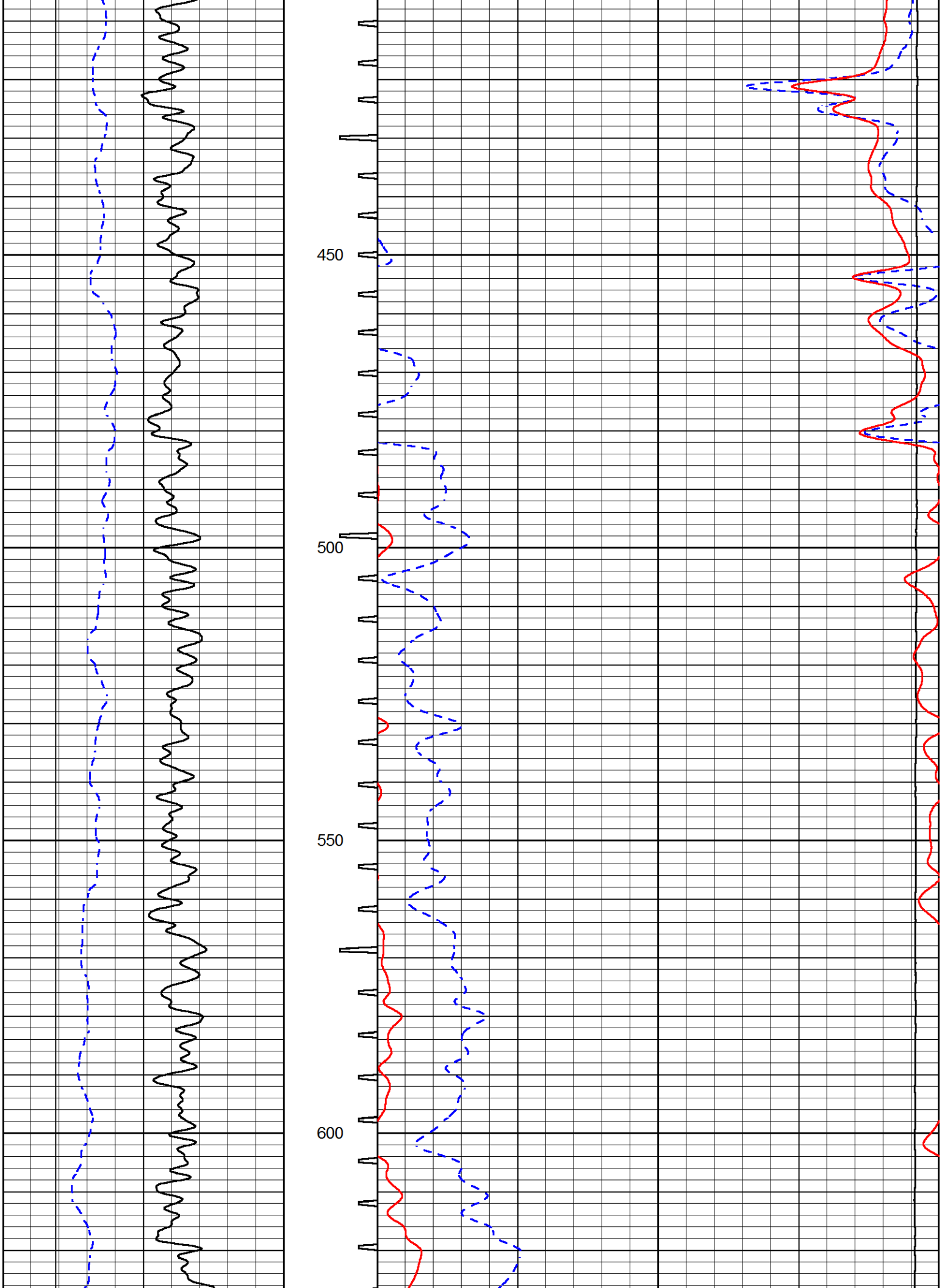
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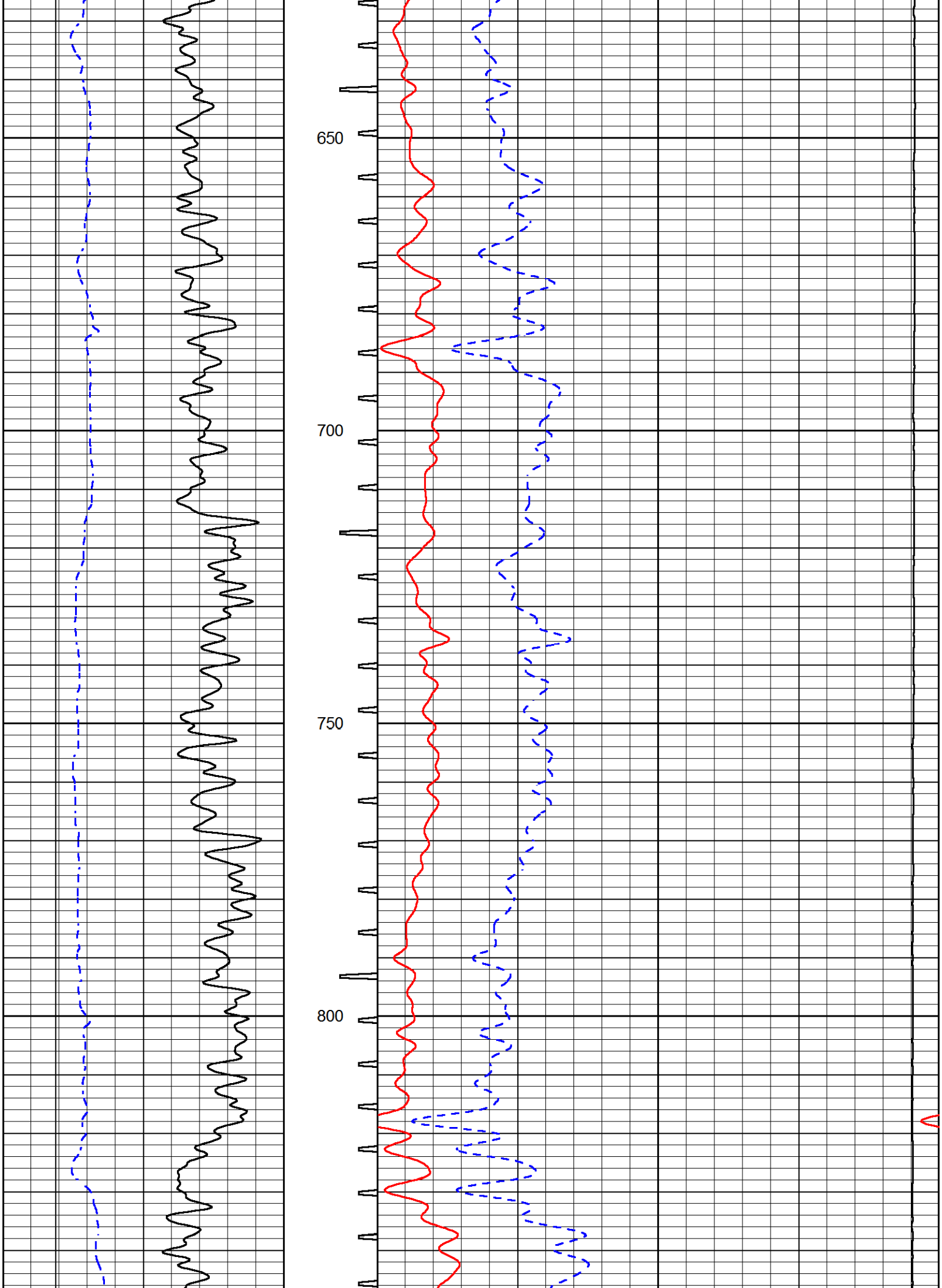
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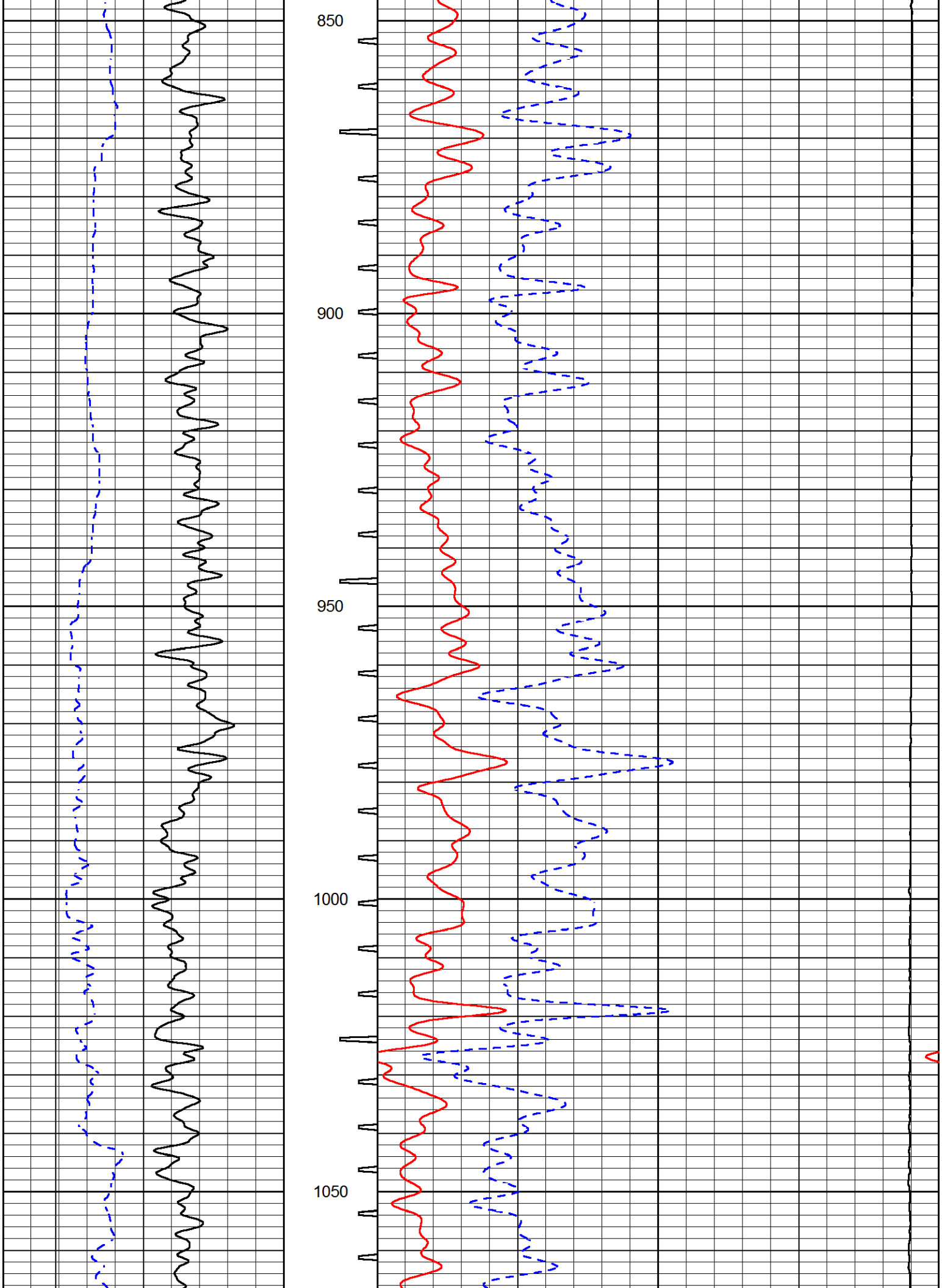
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Dataset Pathname	stack/pass3.1
Presentation Format	sonic
Dataset Creation	Thu Apr 11 15:59:16 2019
Charted by	Depth in Feet scaled 1:240

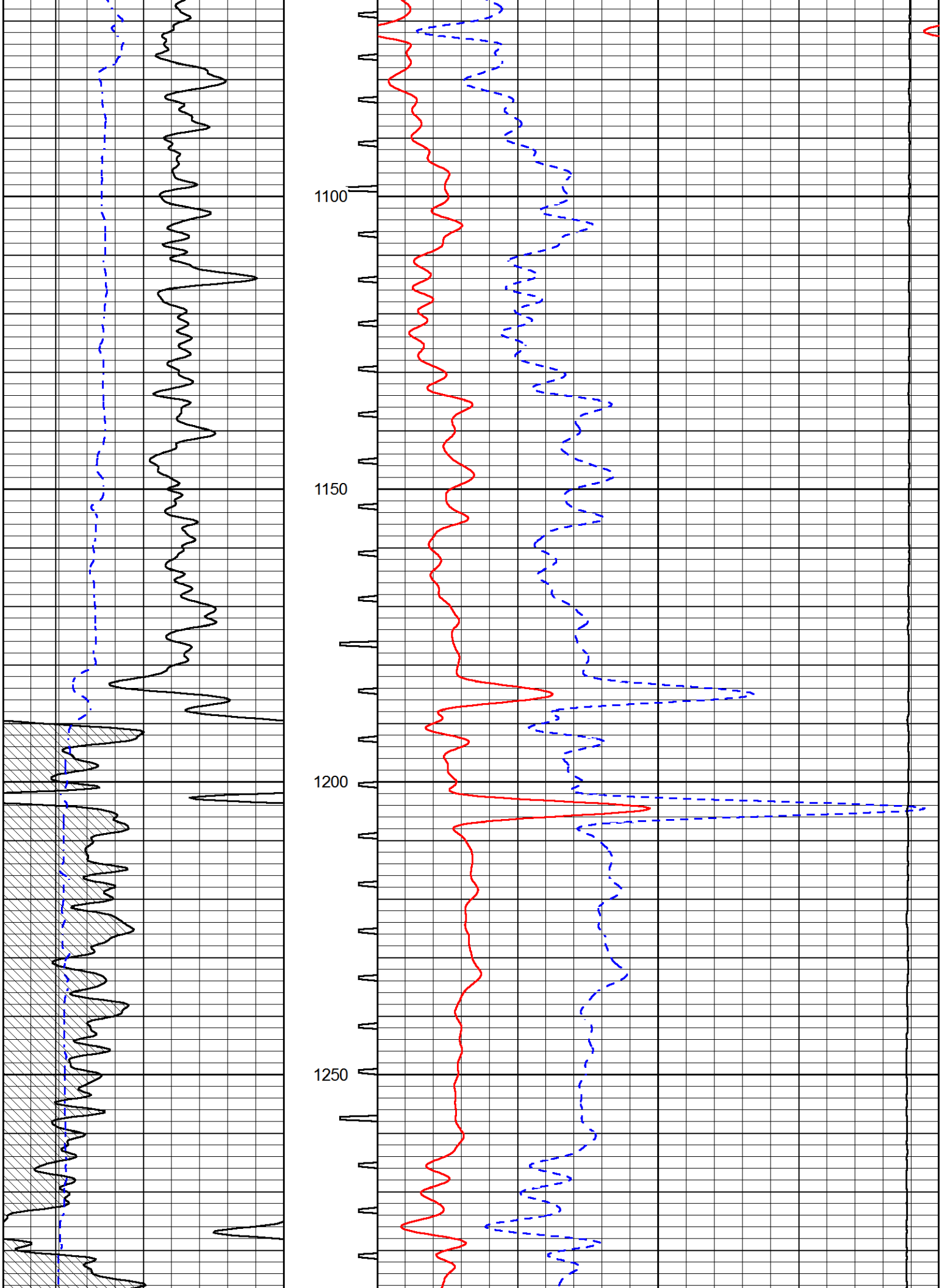
0	GAMMA RAY (GAPI)	150	SONIC INT TRAVEL TIME (msec)	140	DELTA TIME (usec/ft) (usec/ft) 40
6	CALIPER (in)	16		30	SONIC POROSITY (pu) -10
6	BIT SIZE	16		15000	LINE TENSION (lb) 0

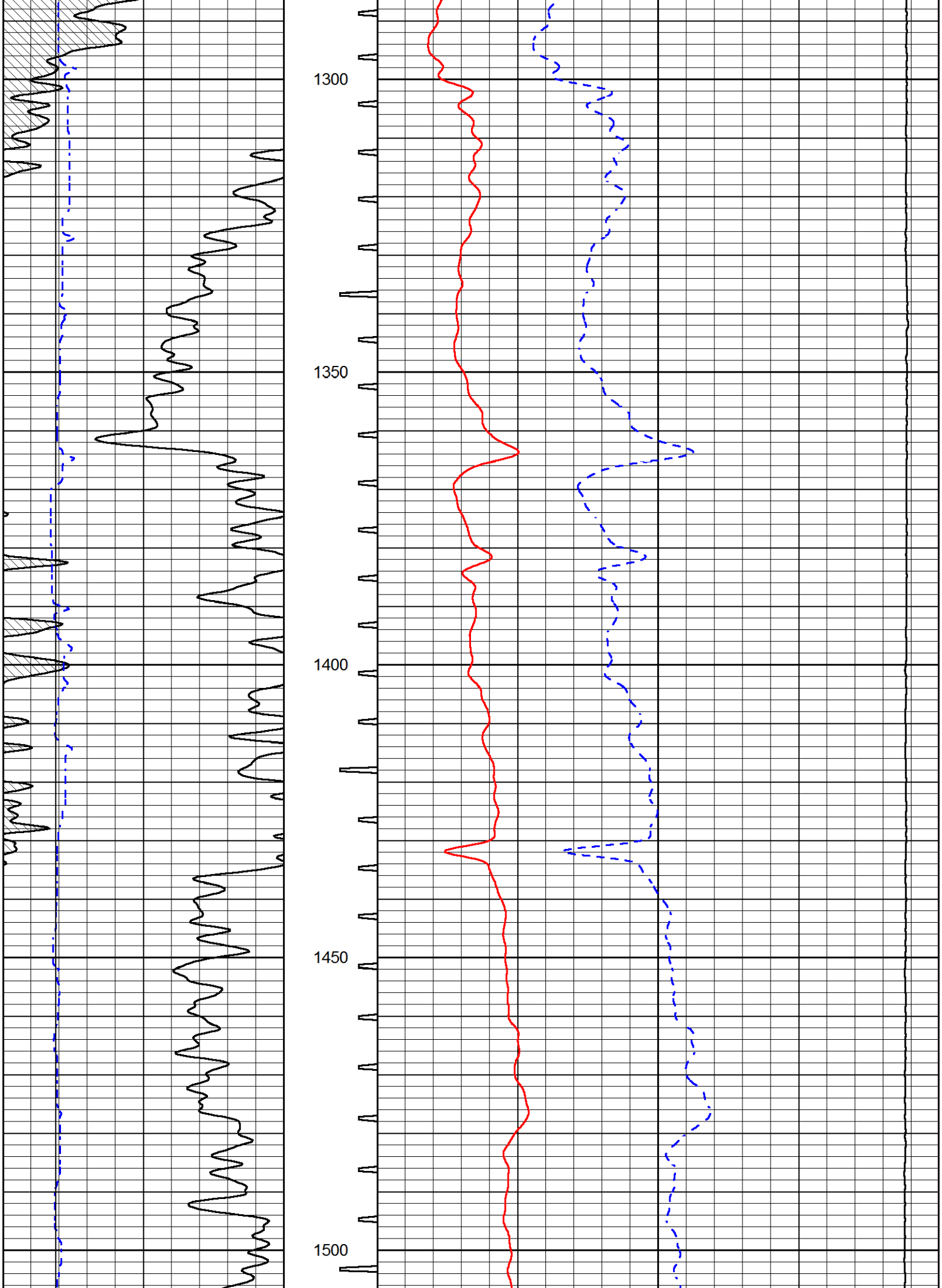


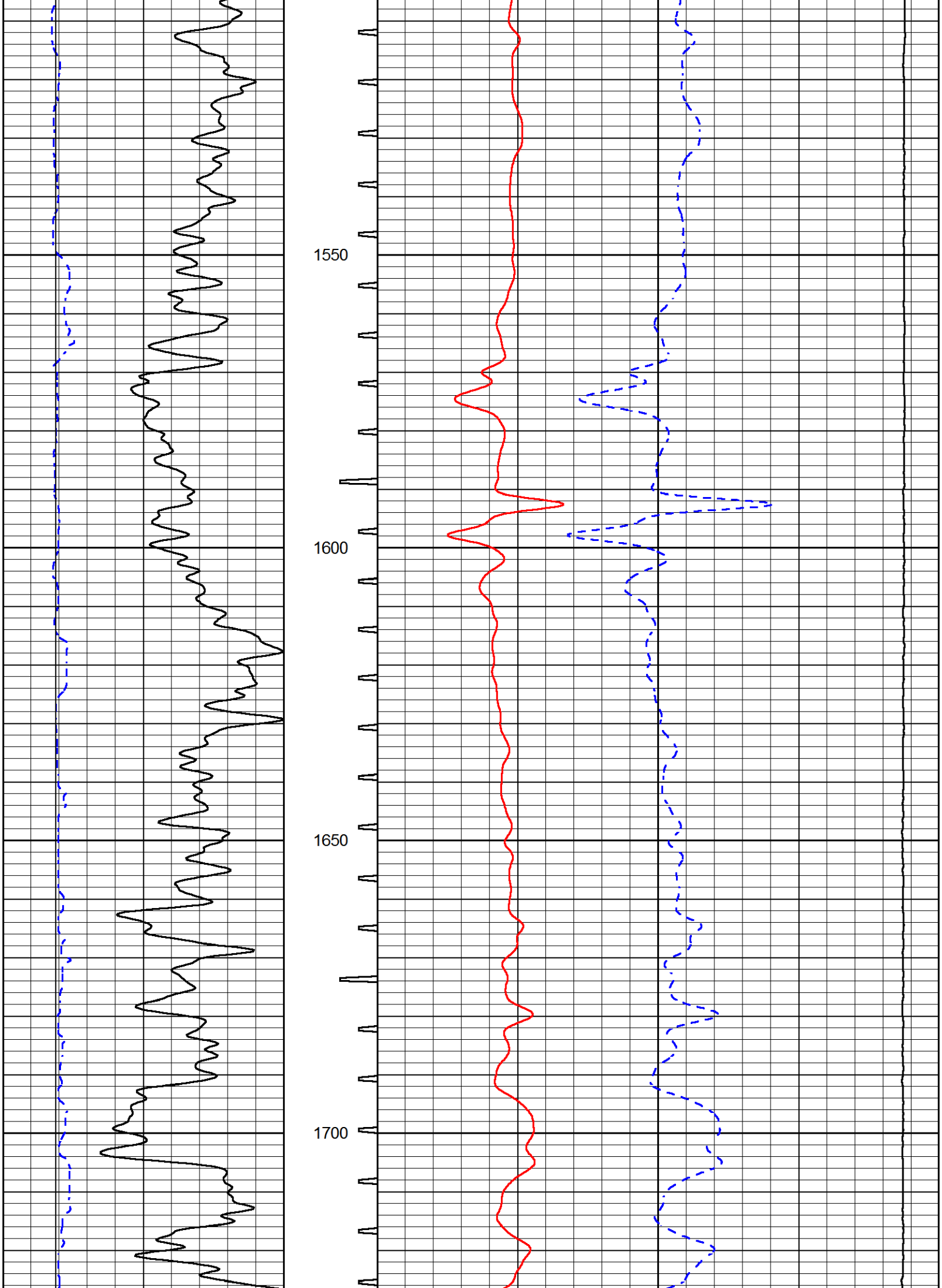

450
500
550
600

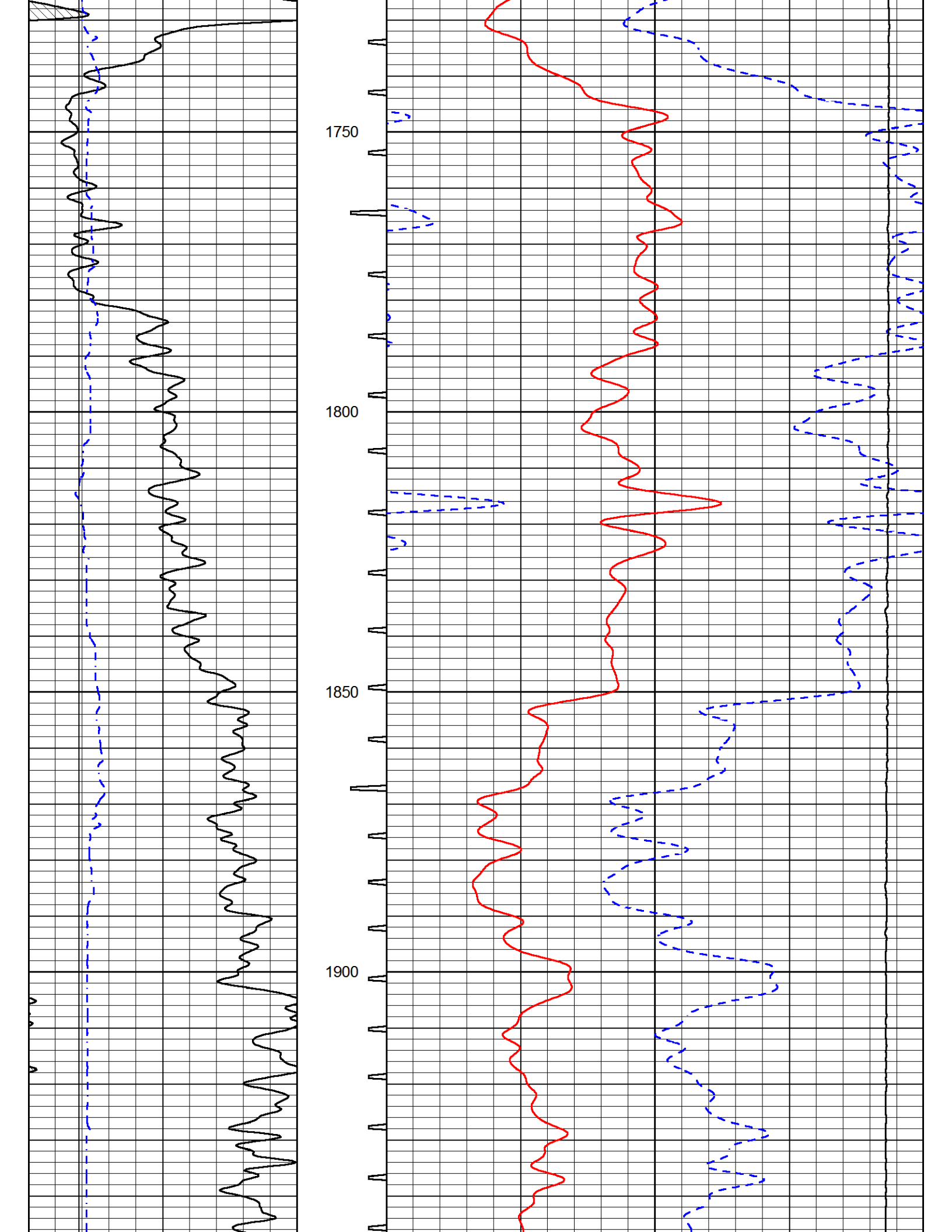

650
700
750
800

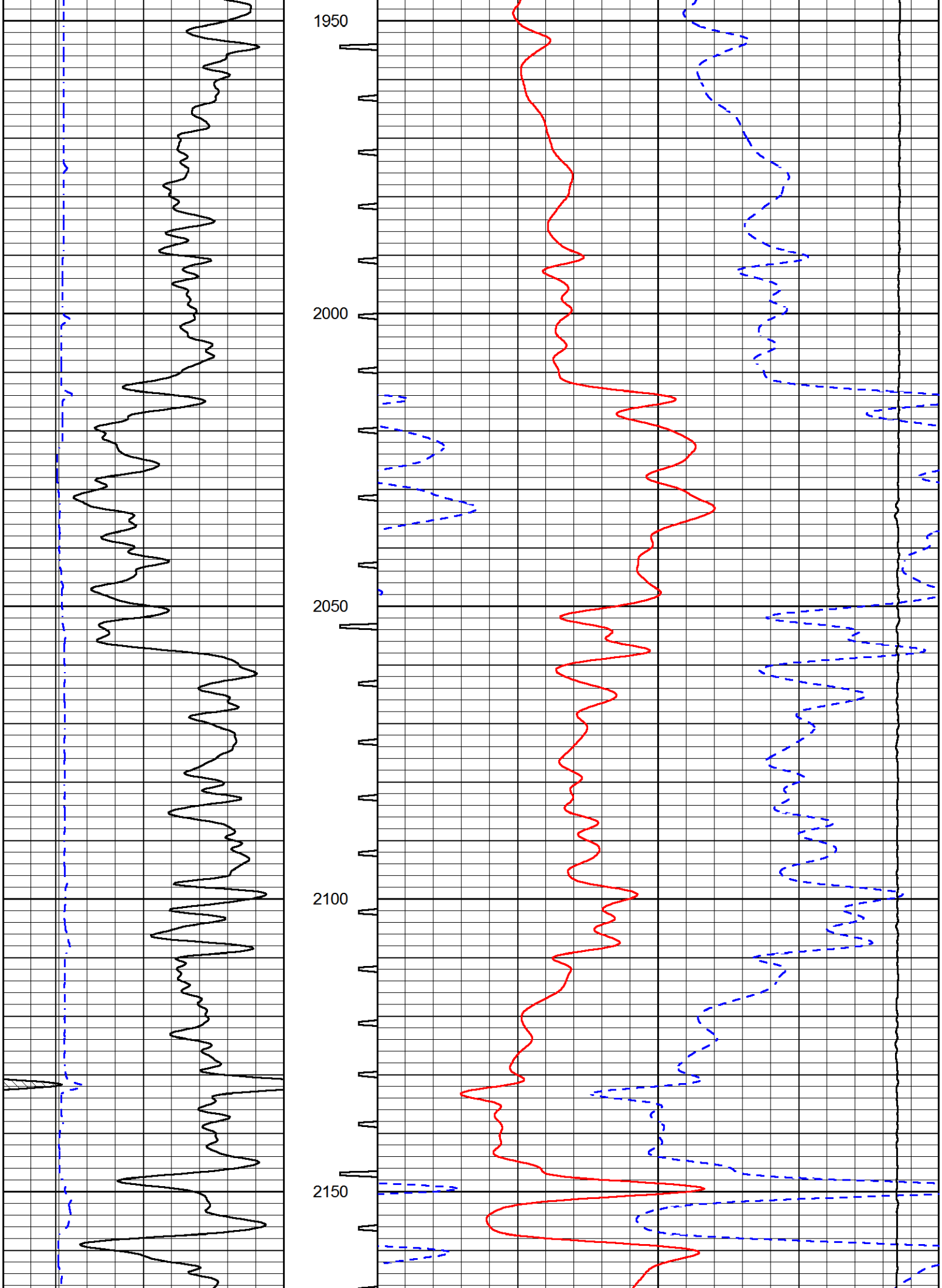

850
900
950
1000
1050

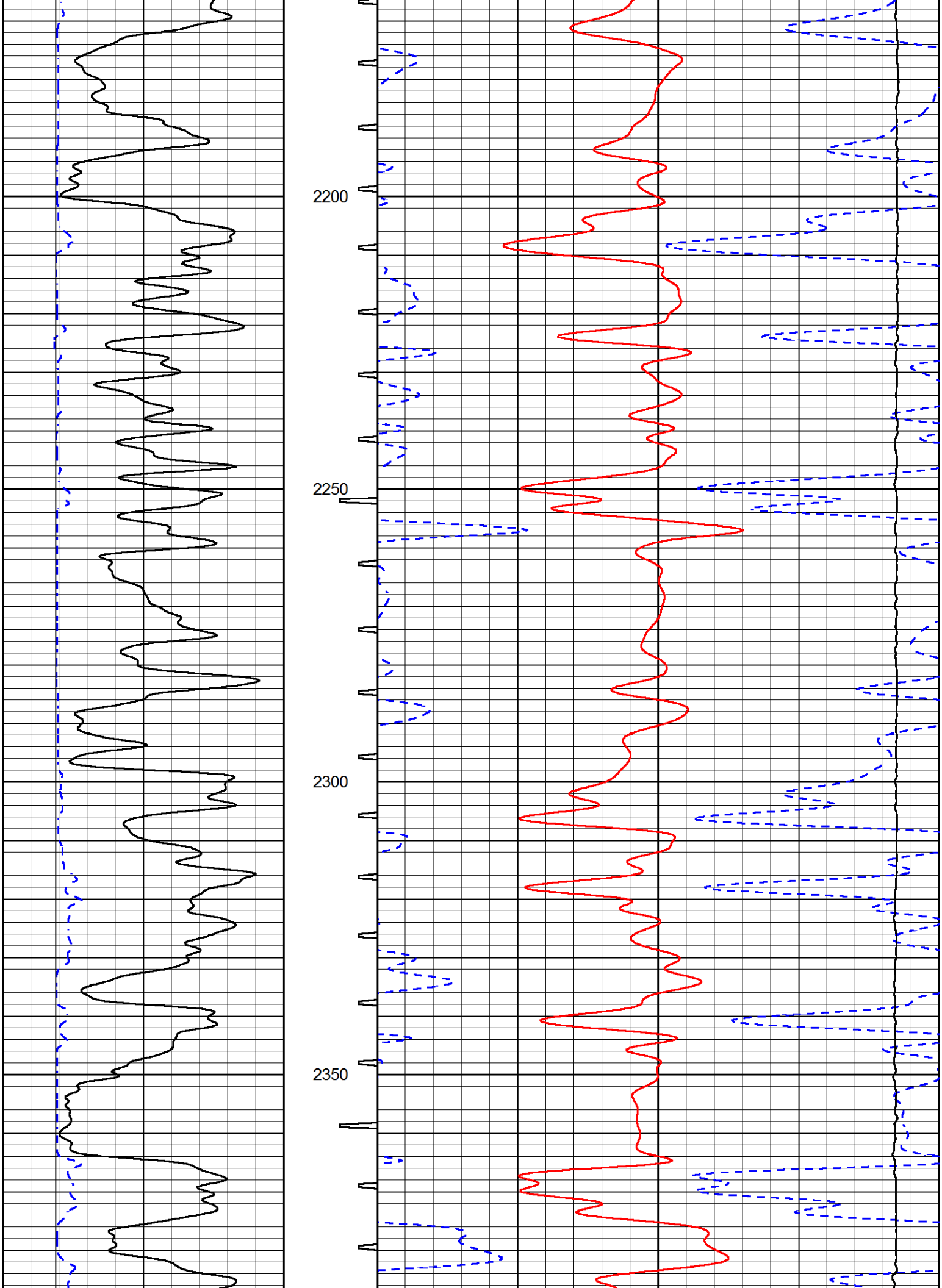

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1150
1200
1250

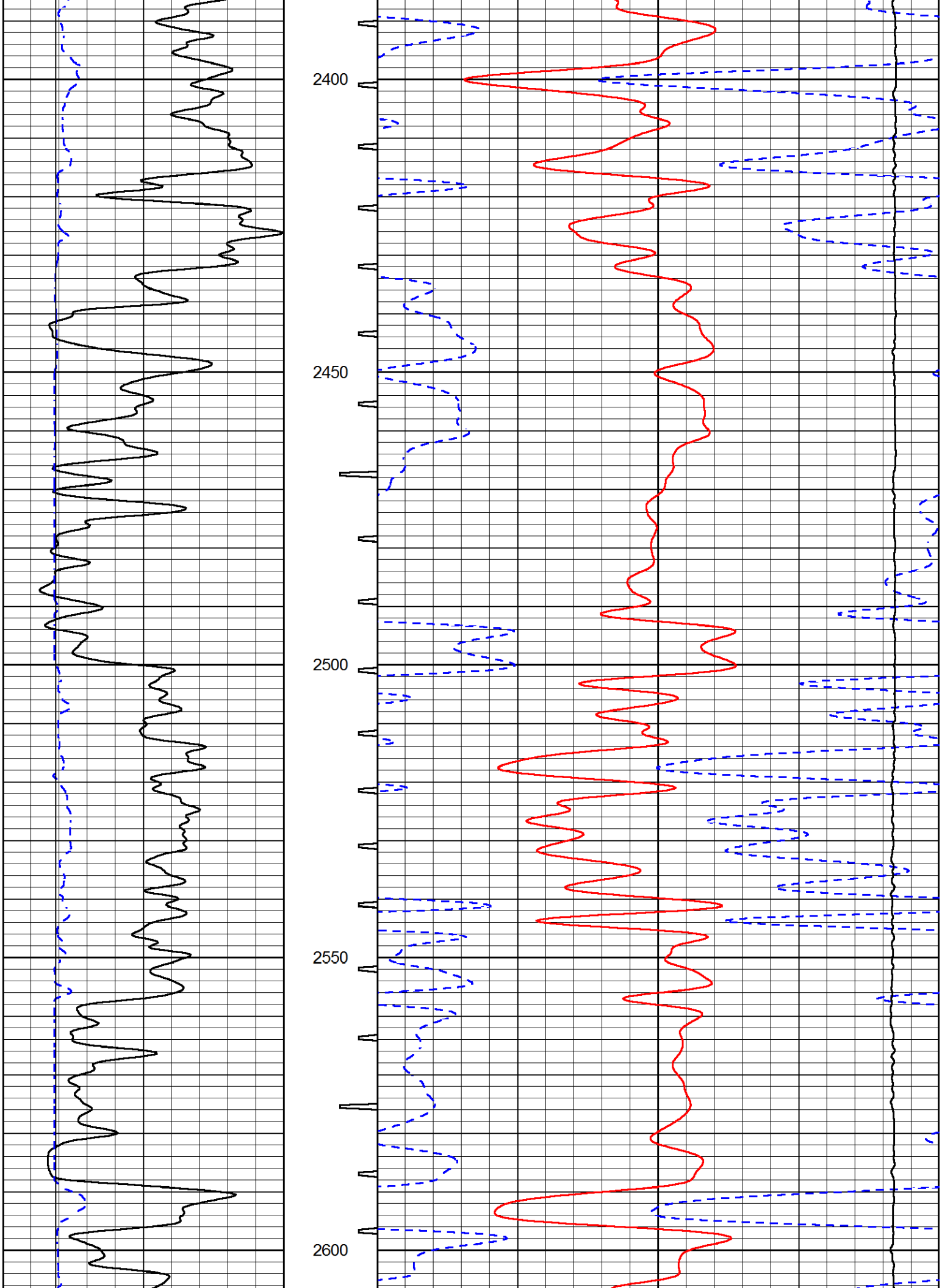

1300
1350
1400
1450
1500

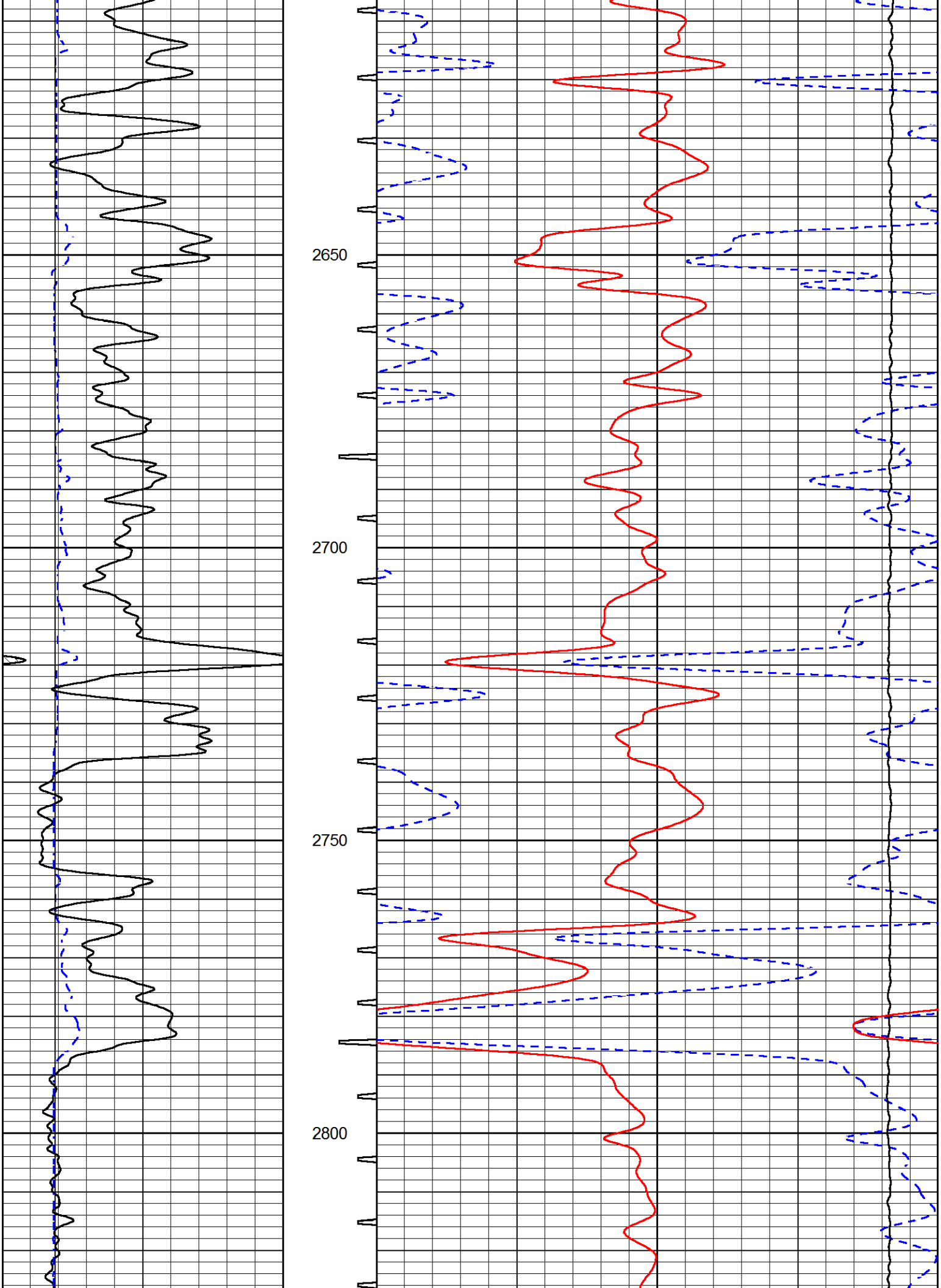

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1600
1650
1700

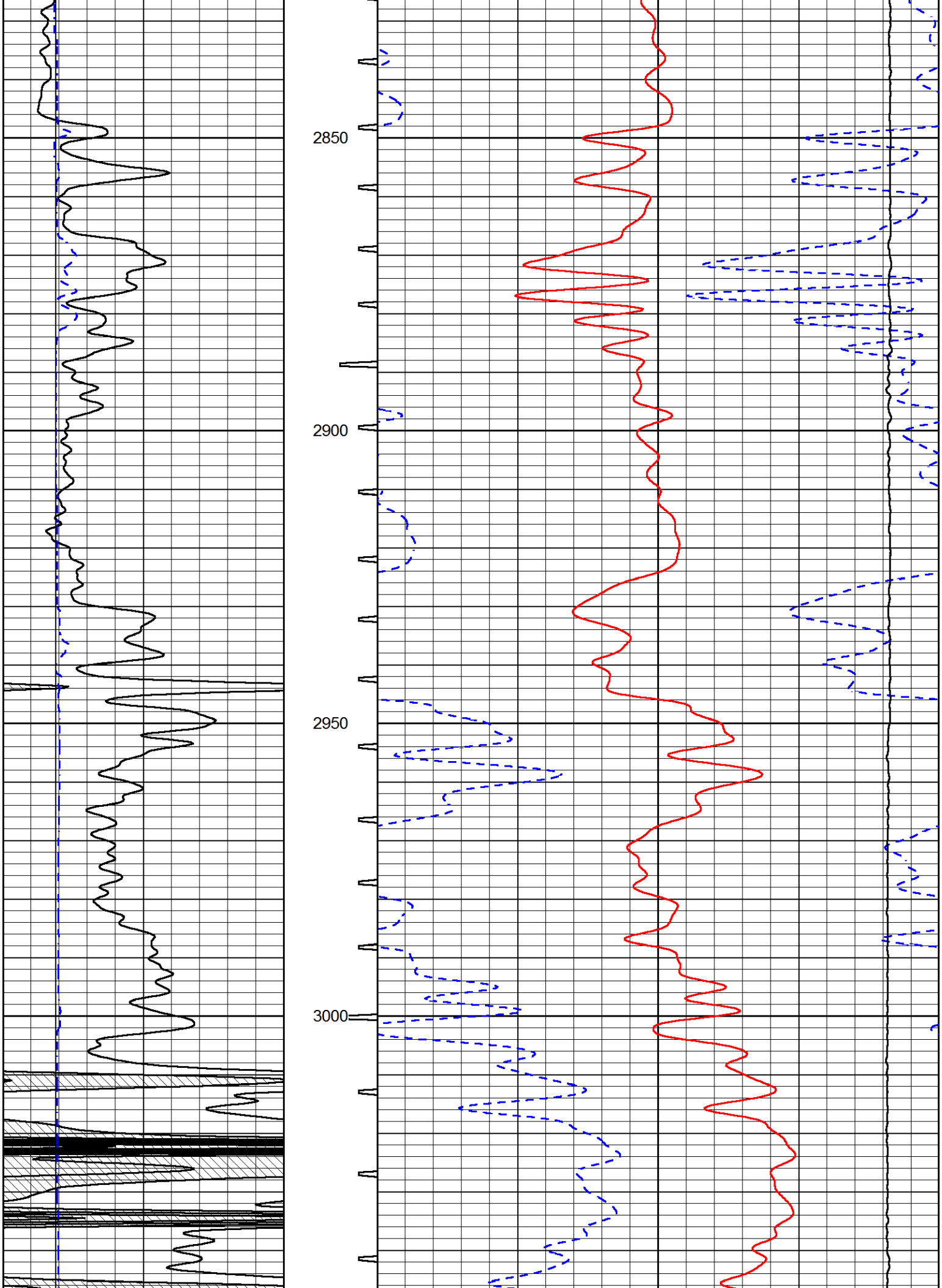

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1900

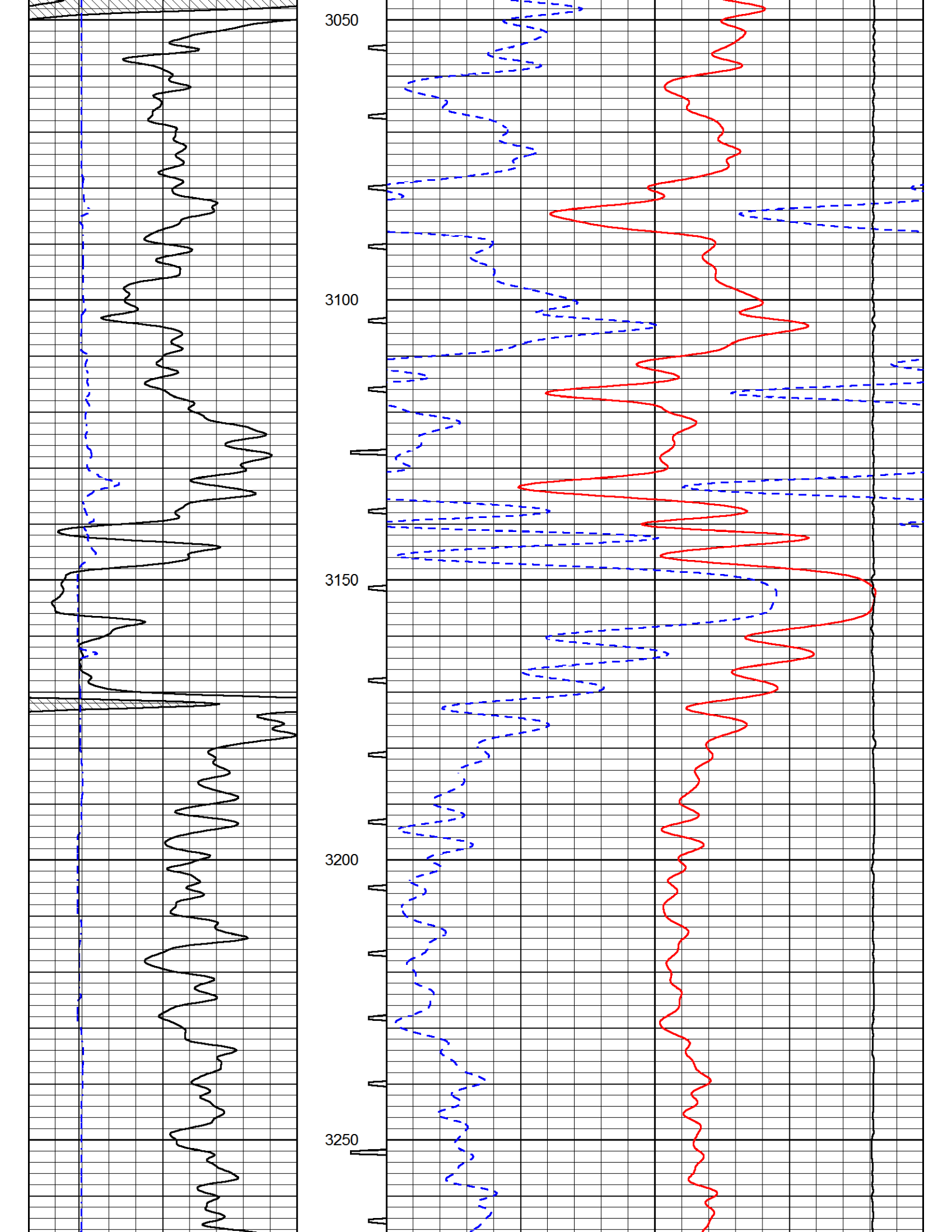

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2000
2050
2100
2150

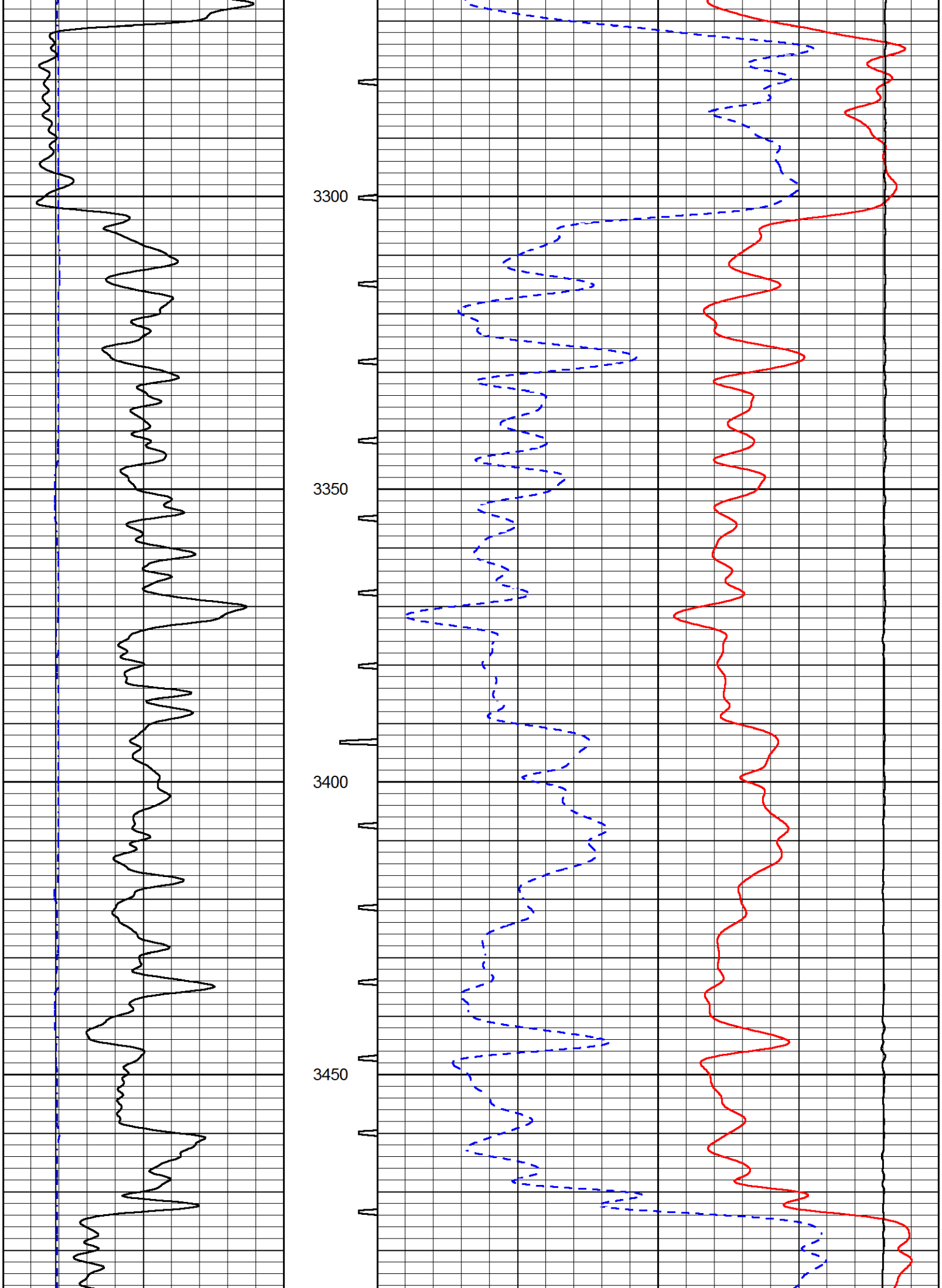

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2250
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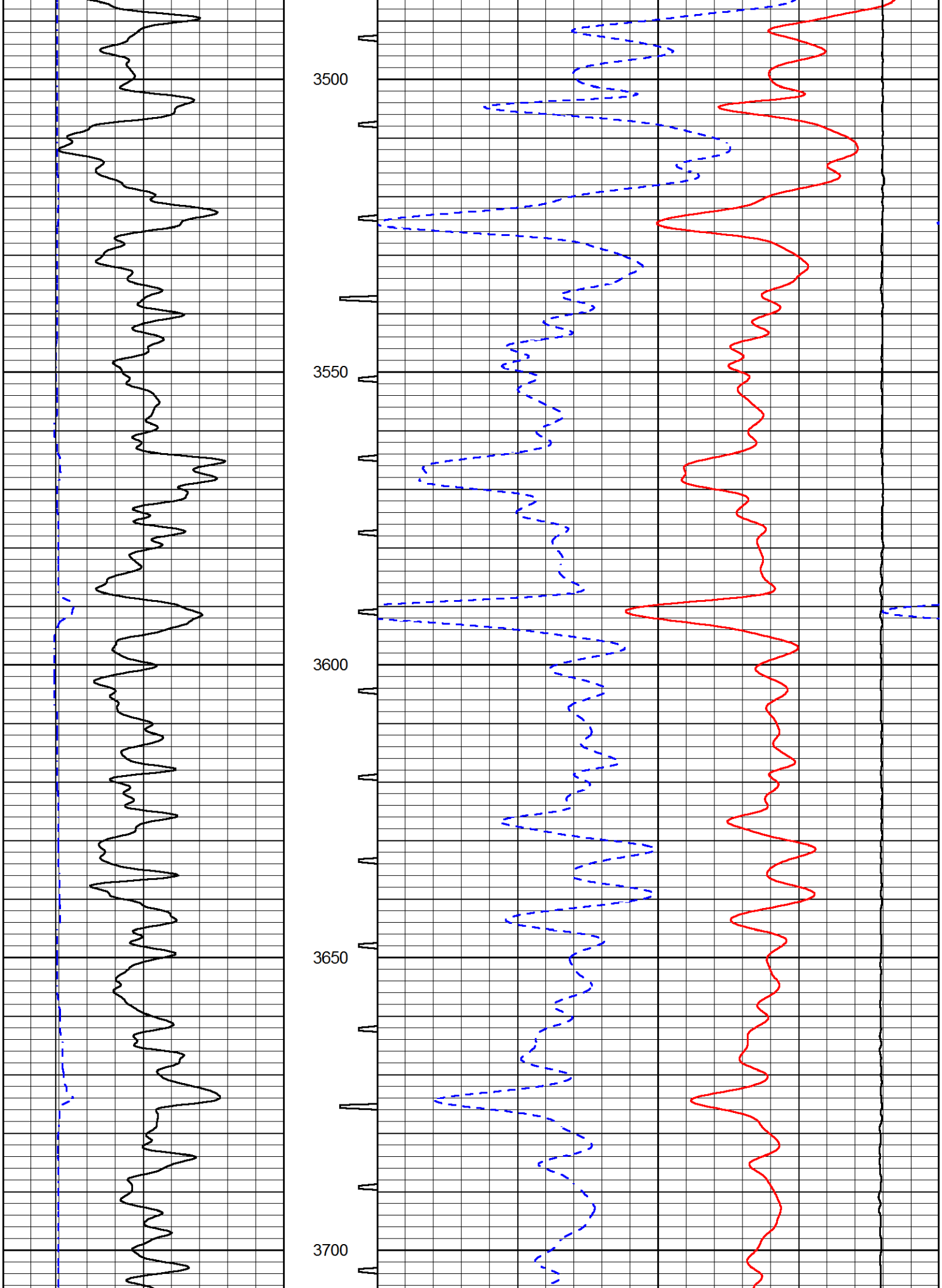

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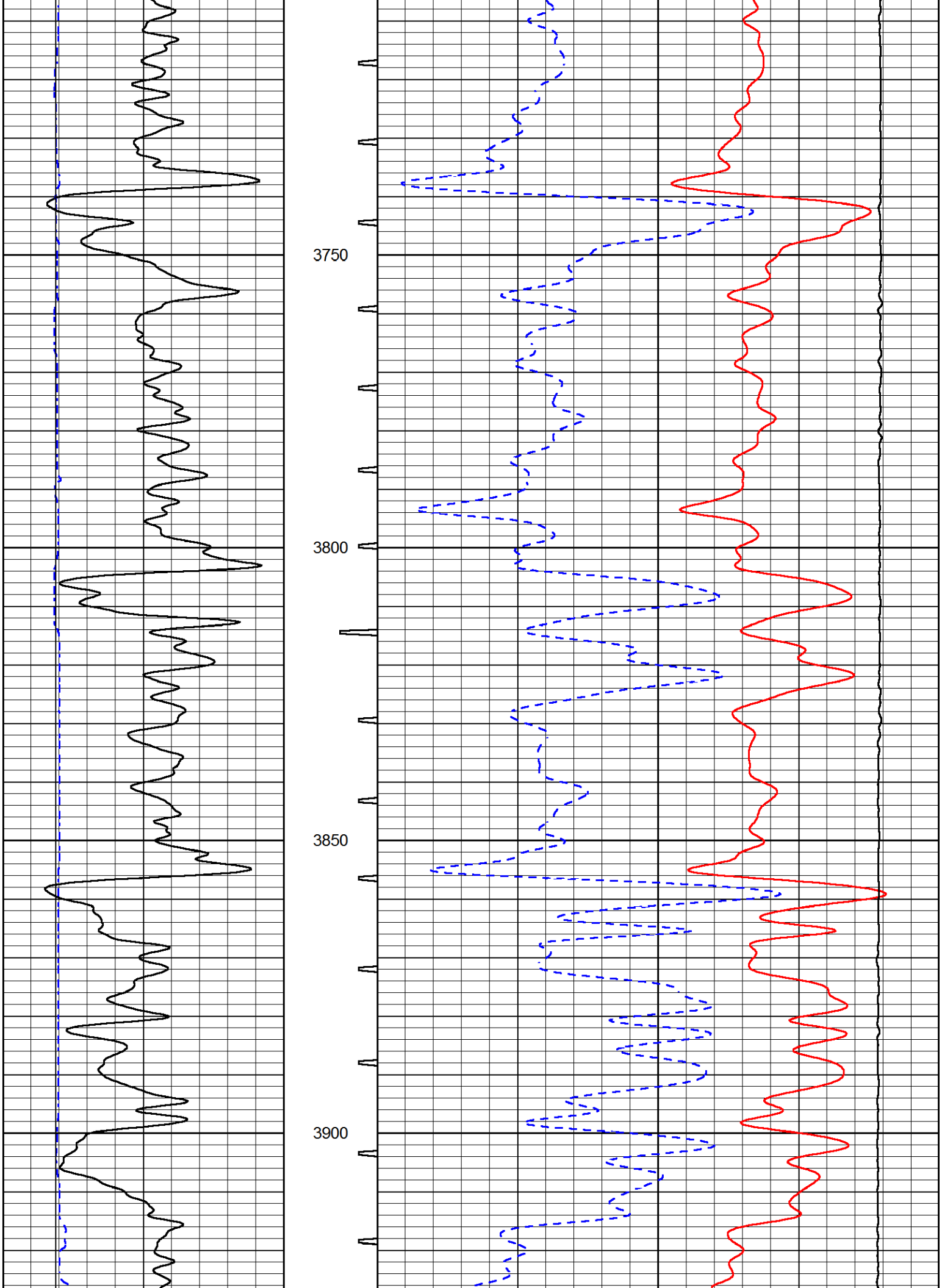

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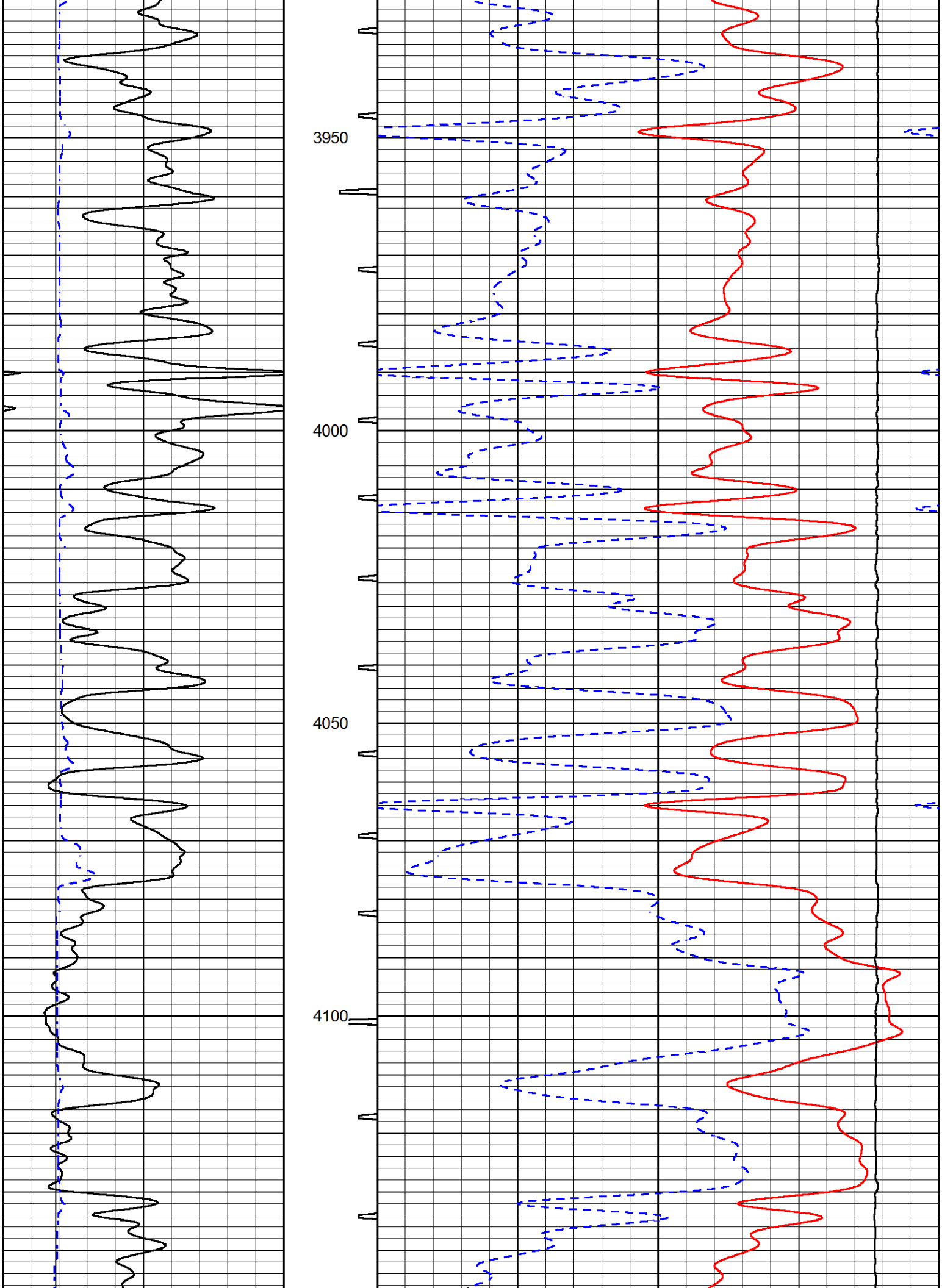

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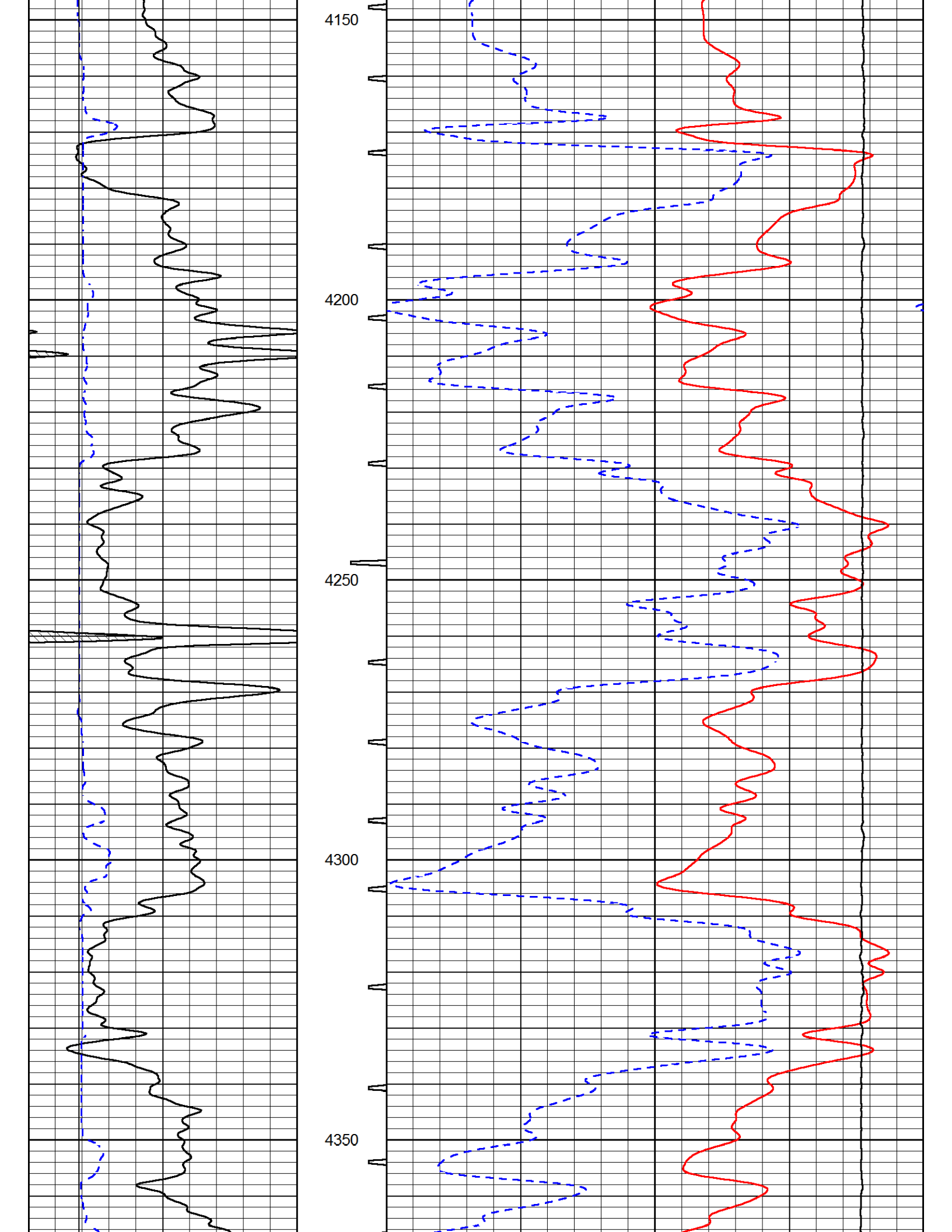

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3100
3150
3200
3250

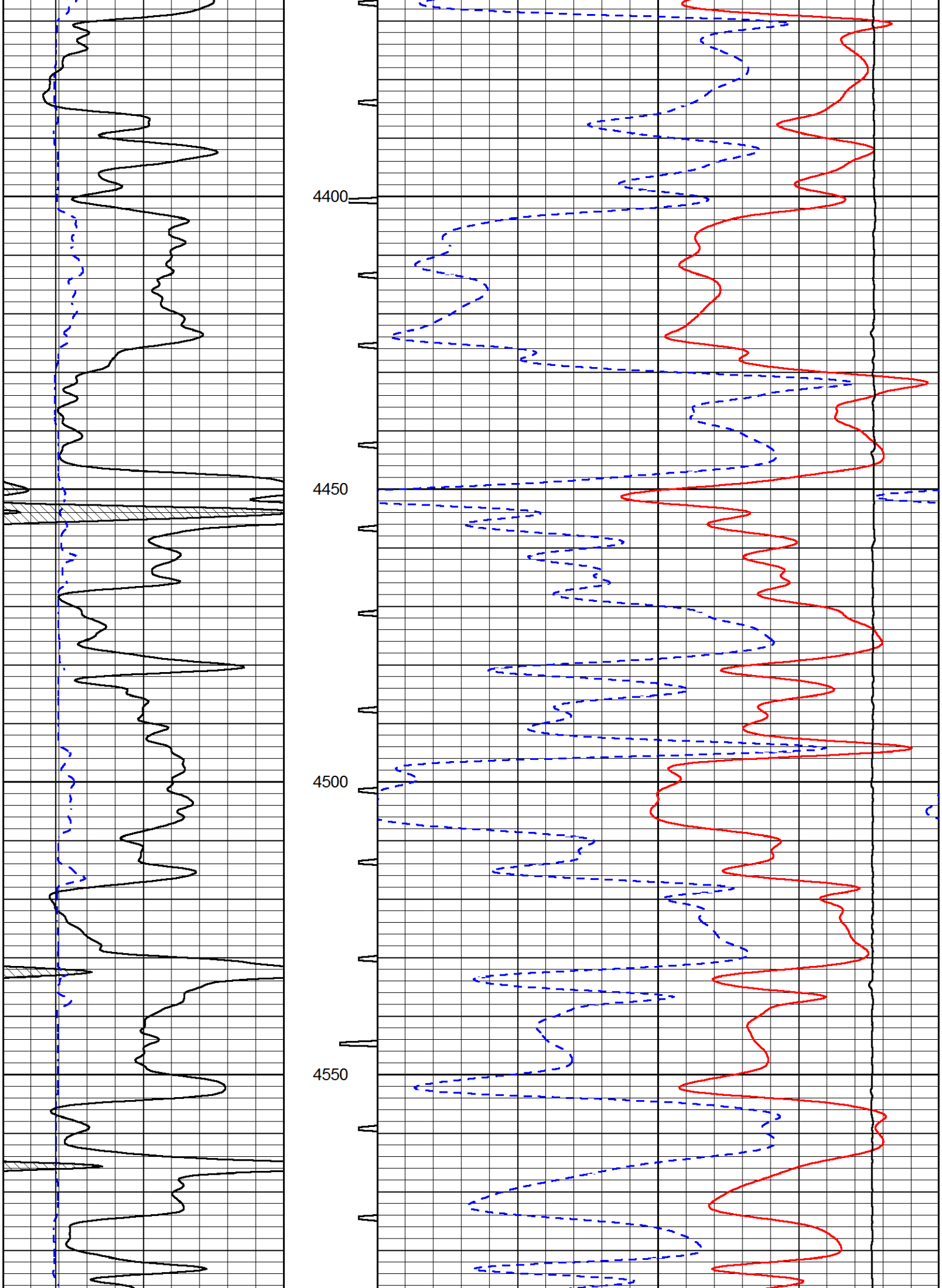

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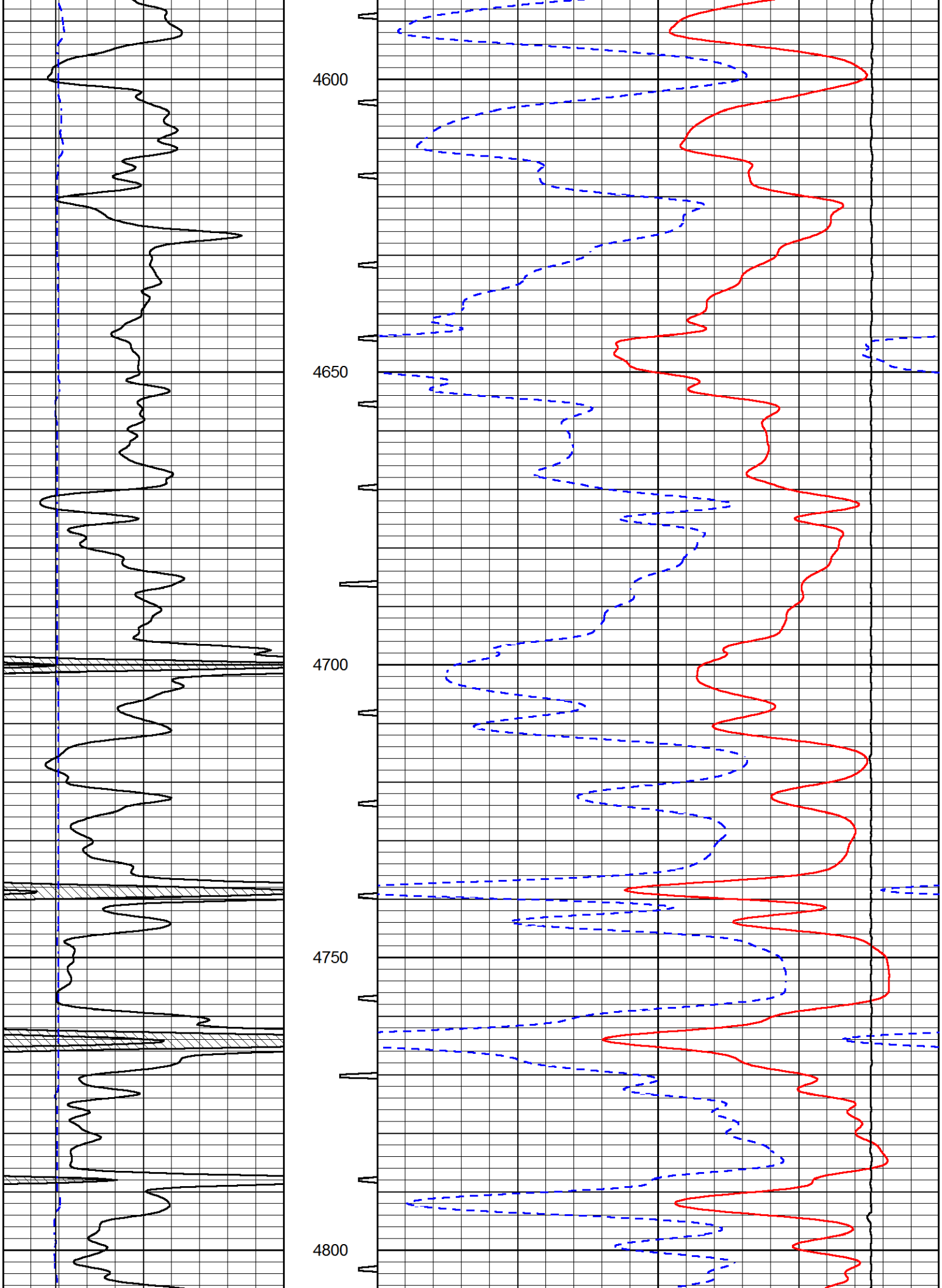

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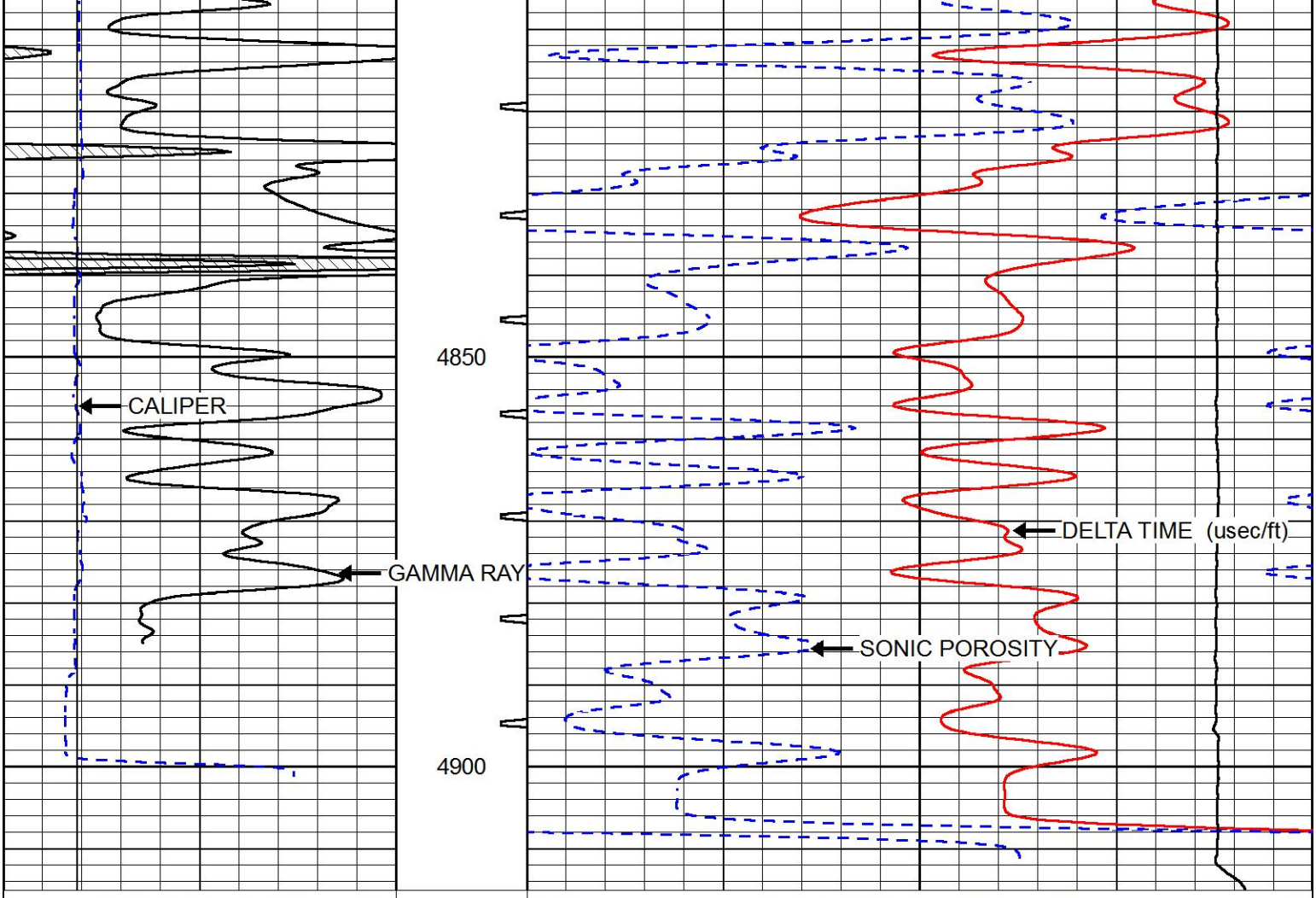

3750
3800
3850
3900


3950
4000
4050
4100


4150
4200
4250
4300
4350


4400
4450
4500
4550


4600
4650
4700
4750
4800



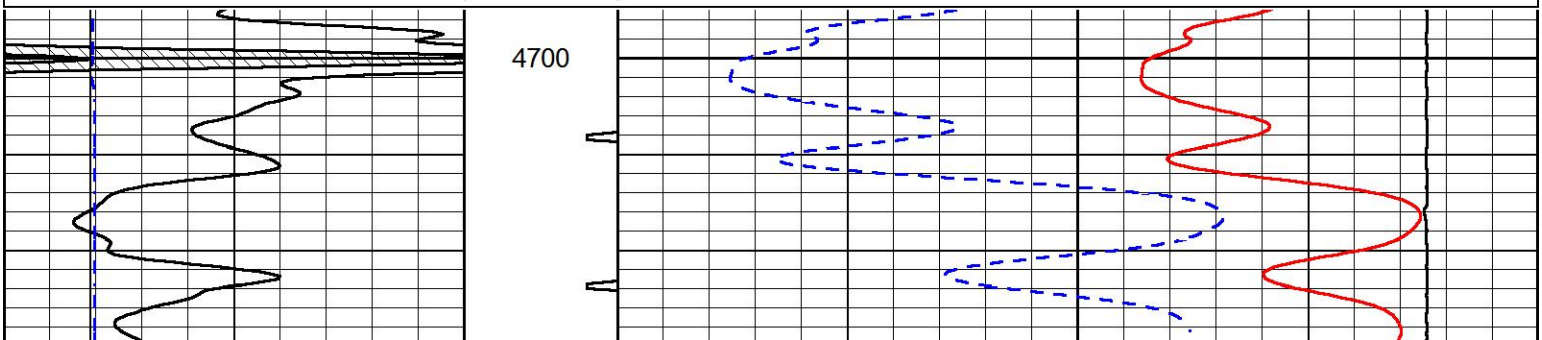
0	GAMMA RAY (GAPI)	150	SONIC INT TRAVEL TIME (msec)	140	DELTA TIME (usec/ft) (usec/ft)	40
6	CALIPER (in)	16		30	SONIC POROSITY (pu)	-10
6	BIT SIZE	16		15000	LINE TENSION (lb)	0

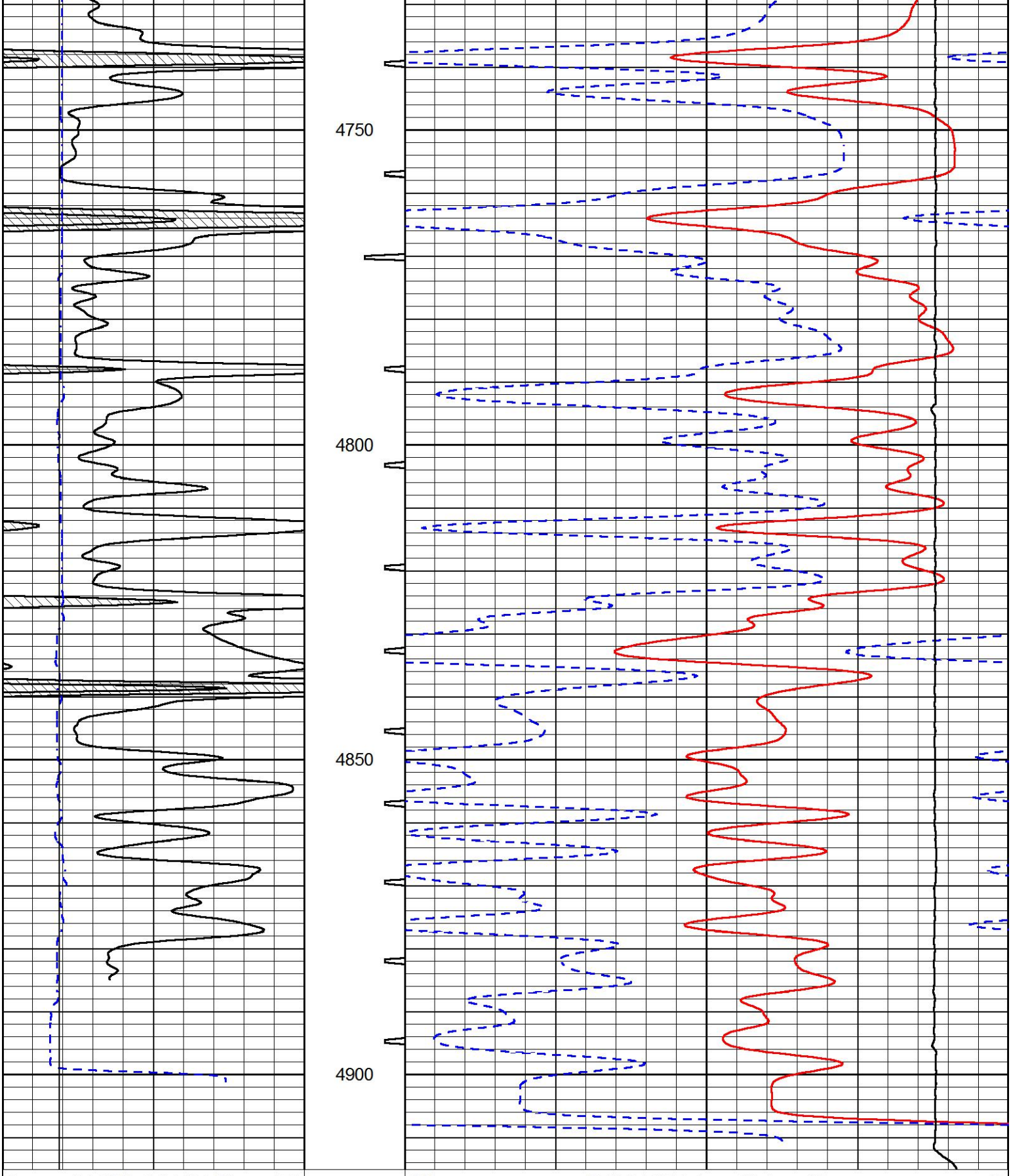
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REPEAT SECTION

Database File	murfin_culwell_j_1_19.db
Dataset Pathname	stack/pass2.1
Presentation Format	sonic
Dataset Creation	Thu Apr 11 15:40:45 2019
Charted by	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	SONIC INT TRAVEL TIME (msec)	140	DELTA TIME (usec/ft) (usec/ft)	40
6	CALIPER (in)	16		30	SONIC POROSITY (pu)	-10
6	BIT SIZE	16		15000	LINE TENSION (lb)	0





Company	MURFIN DRILLING COMPANY, INC.
Well	CULWELL 'J' #1-19

PIONEER

Pioneer Energy Services

Field	WILDCAT
County	CHEYENNE
State	KANSAS