



**BOREHOLE COMPENSATED
SONIC LOG**

Company MURFIN DRILLING COMPANY, INC.
Well FRISBIE B #1-15
Field WILDCAT
County RAWLINS
State KANSAS

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County RAWLINS State KANSAS

Location: API #: 15-153-21213-00-00
660' FSL & 1610' FWL
SEC 15 TWP 2S RGE 35W
Permanent Datum GROUND LEVEL Elevation 3142'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
CNL/CDL
DIL/MEL
Elevation
K.B. 3147'
D.F. N/A
G.L. 3142'

Date	10/7/2018						
Run Number	TWO						
Type Log	BHGS						
Depth Driller	4815'						
Depth Logger	4817'						
Bottom Logged Interval	4805'						
Top Logged Interval	300'						
Type Fluid In Hole	CHEMICAL						
Salinity, PPM CL	1000						
Density	9.1						
Level	FULL						
Max. Rec. Temp. F	124						
Operating Rig Time	5 HOURS						
Equipment -- Location	91 HAYS						
Recorded By	D. SCHMIDT						
Witnessed By	KEN LEBLANC						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
ONE	12.25"	0'	303'	8.625"	23#	0'	303'
TWO	7.875"	303'		TD			
Casing Record							

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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.
BEARDSLEY,
5 NORTH, EAST INTO

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

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

Your Pioneer Energy Services Crew		This Log Record Was Witnessed By	
Engineer: D. SCHMIDT	Operator:	Primary Witness: KEN LEBLANC	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50		CENT-PENGO (4-PENGO)	5.50	3.00	70.00

Dataset: murfin_frisbie b 1-15.db: field/well/SON/pass2
 Total length: 21.50 ft
 Total weight: 370.00 lb
 O.D.: 3.50 in

Log Variables

Database: C:\ProgramData\Warrior\Data\murfin_frisbie b 1-15.db

Dataset: field/well/STKML/pass4.1/_vars_

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	440	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	BOTTEMP degF	BOREID in	TDEPTH ft
0	50	0	5.5	0	124	7.875	4817

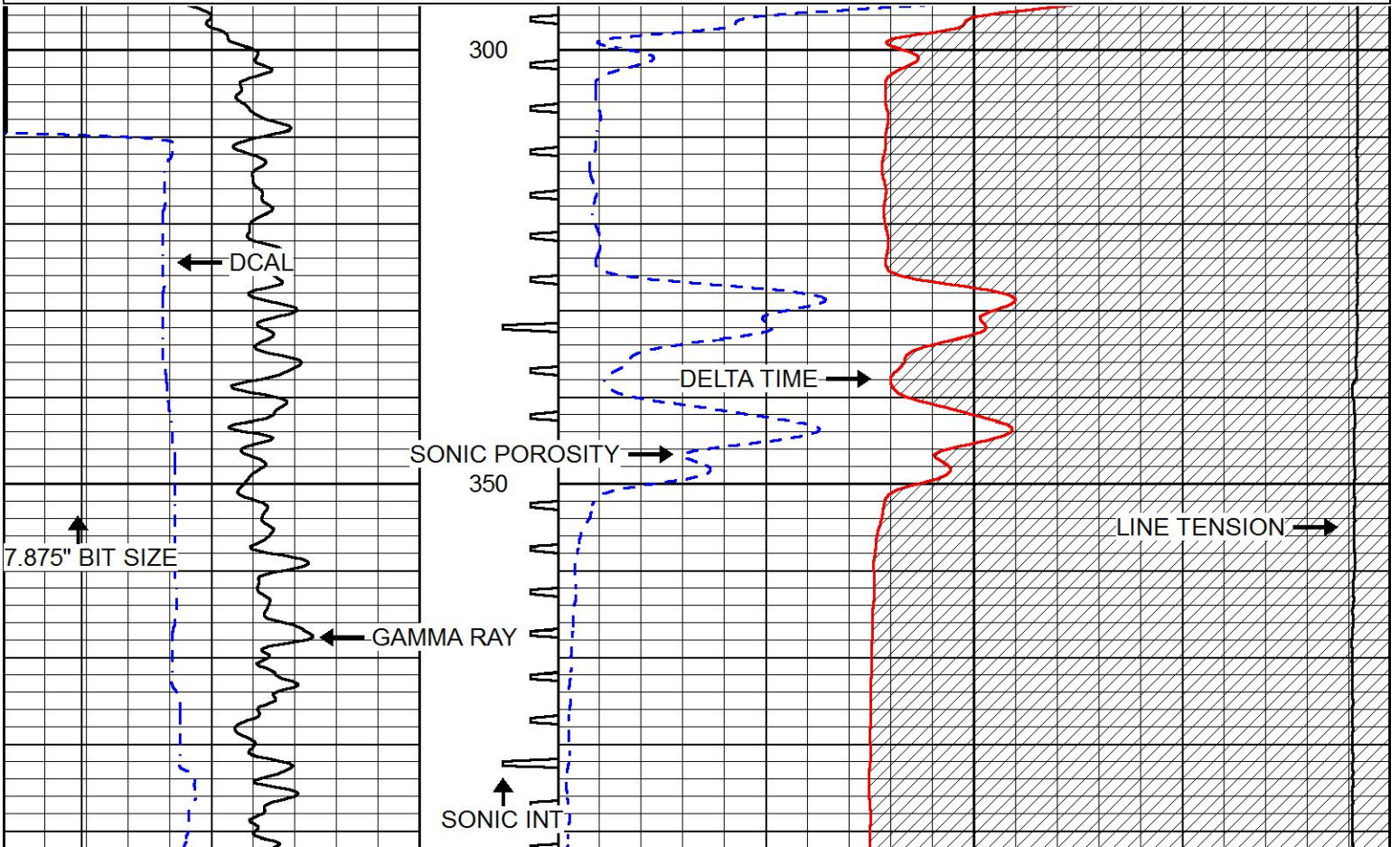


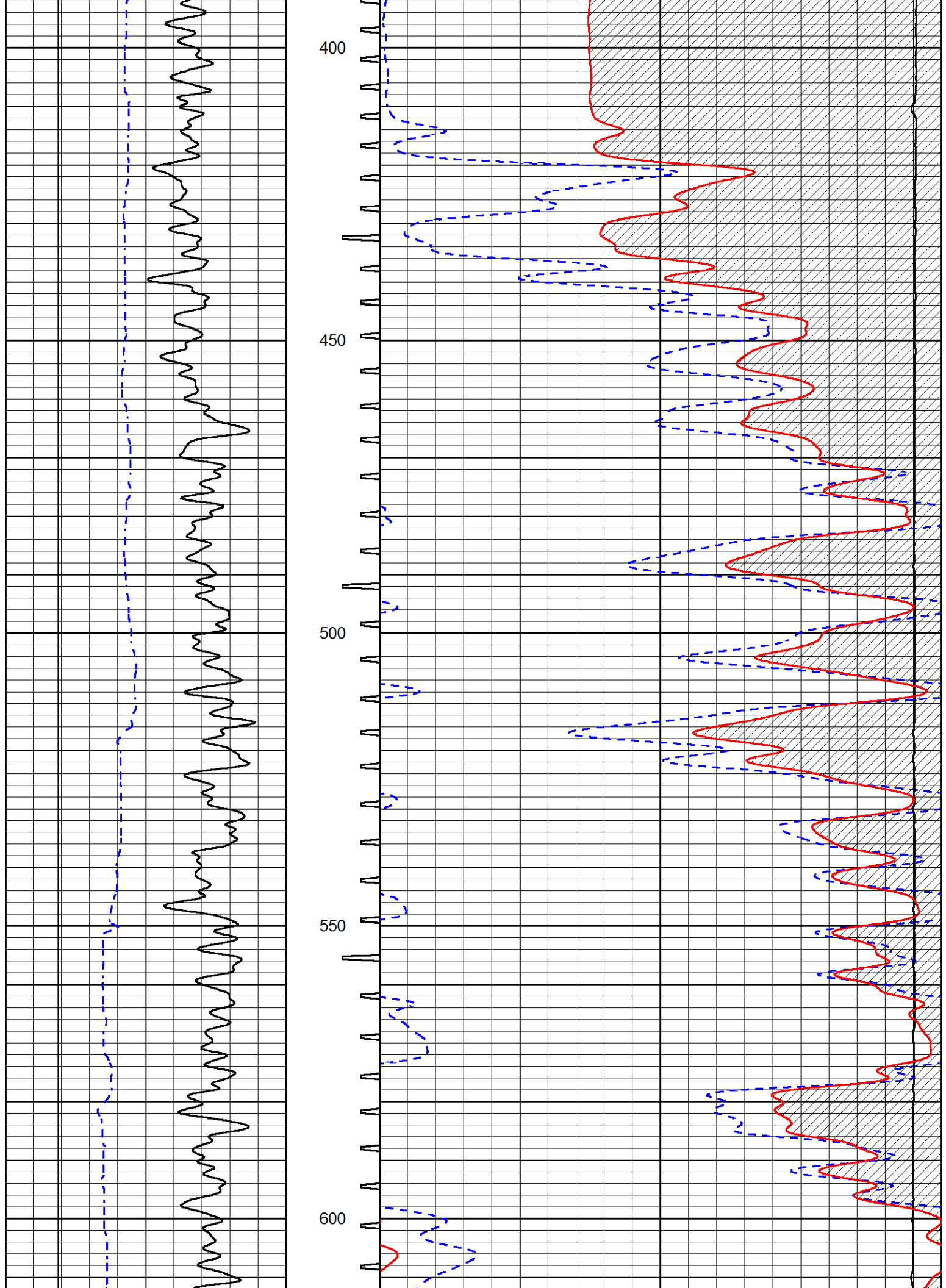
PIONEER
Pioneer Energy Services

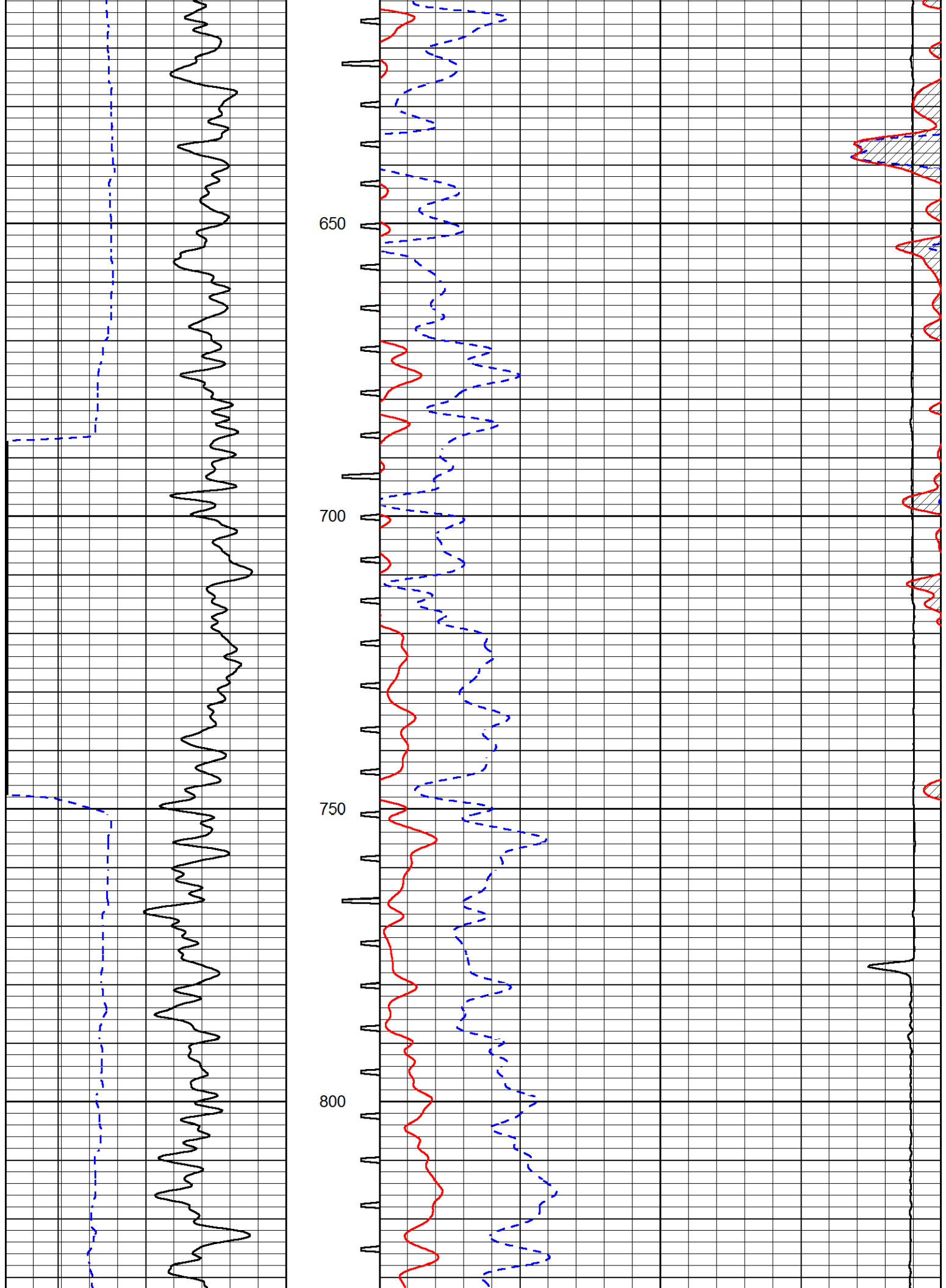
MAIN PASS

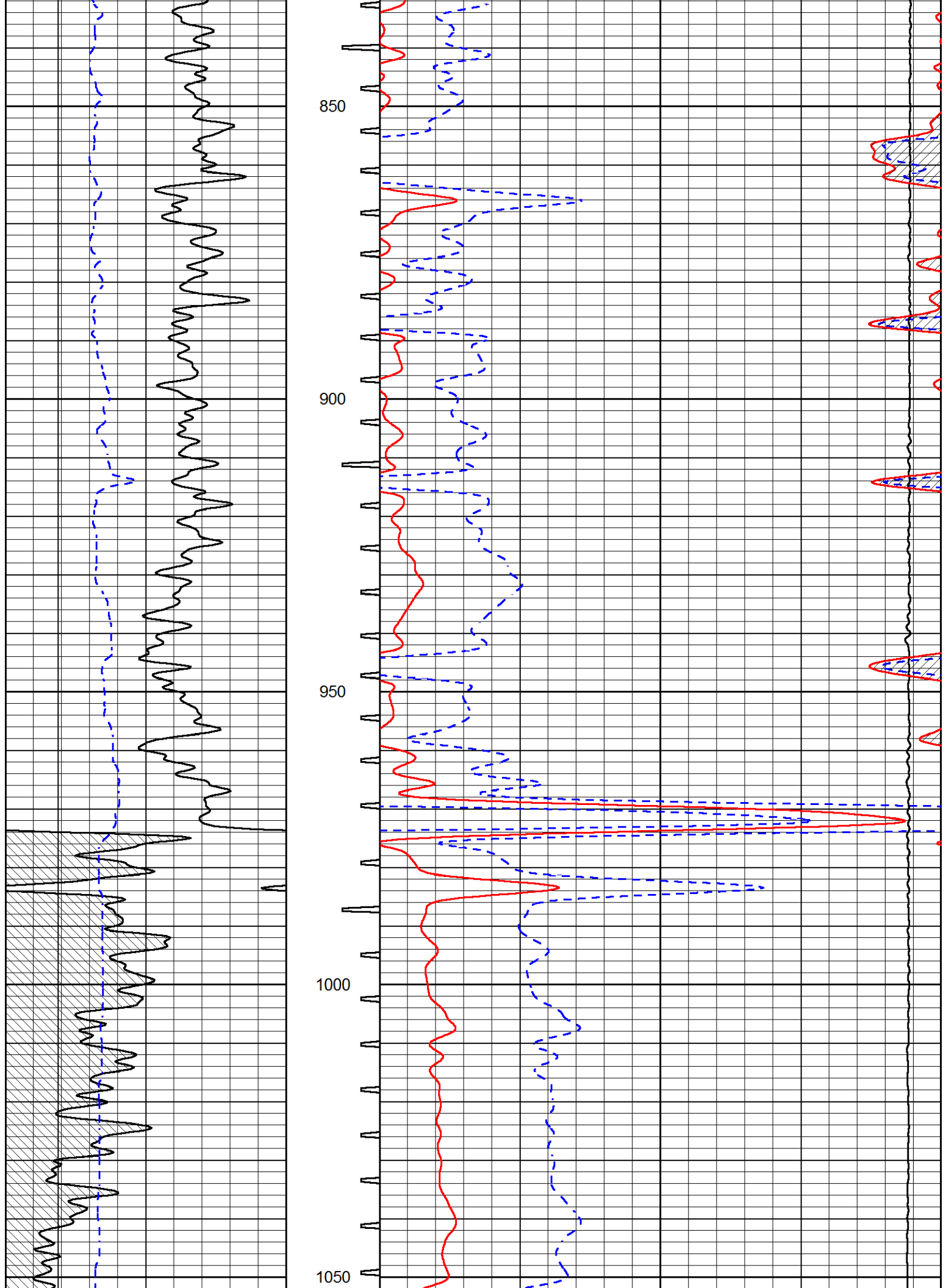
Database File: murfin_frisbie b 1-15.db
 Dataset Pathname: STKML/pass4.1
 Presentation Format: sonic
 Dataset Creation: Sun Oct 07 22:22:04 2018
 Charted by: Depth in Feet scaled 1:240

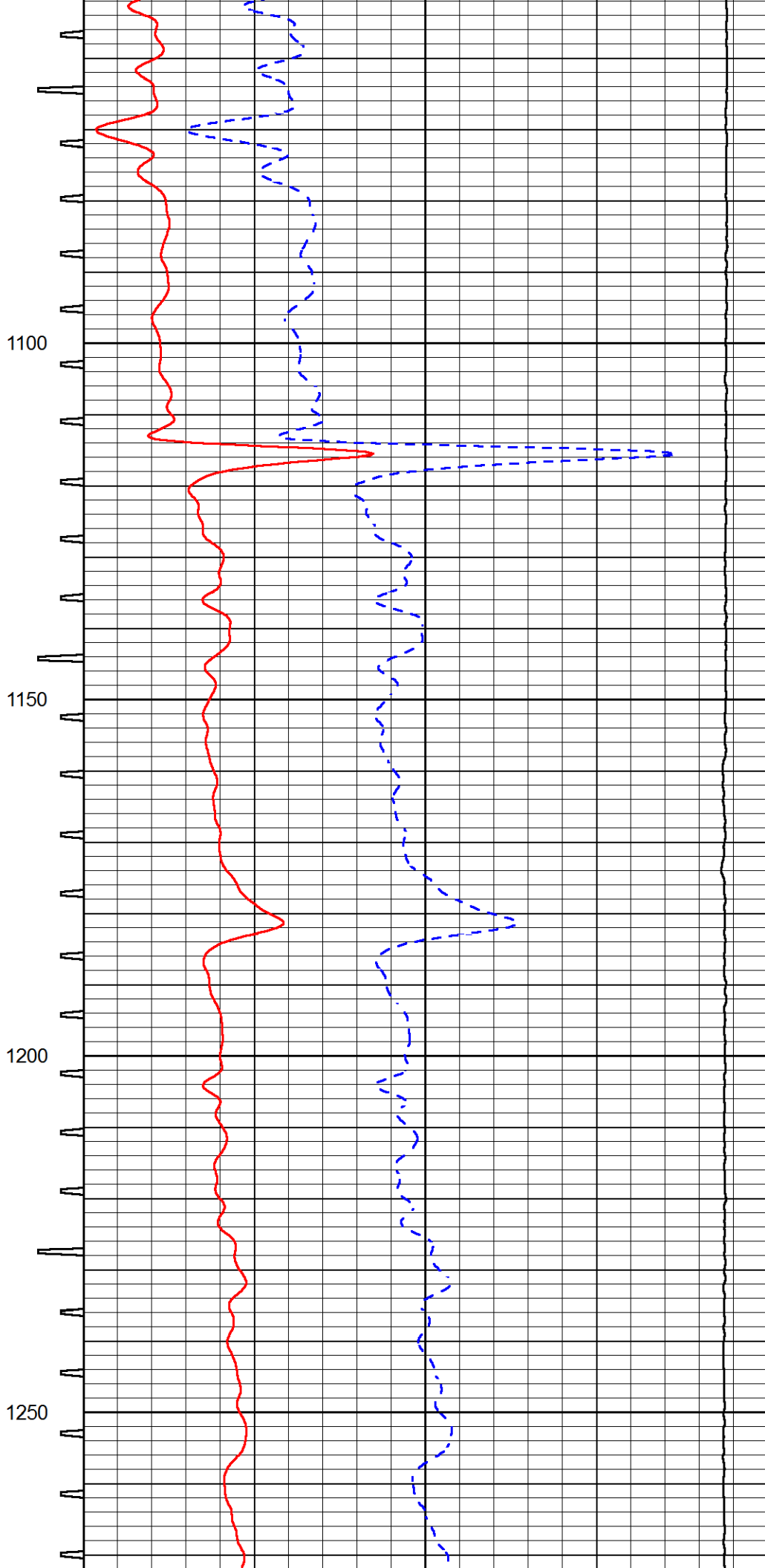
0	Gamma Ray (GAPI)	150	Sonic Int	140	Delta Time (usec/ft) (usec/ft)	40
150	GR (GAPI)	300	5 (msec) 0	30	Sonic Porosity (pu)	-10
6	DCAL (in)	16		15000	LTEN (lb) (lb)	0

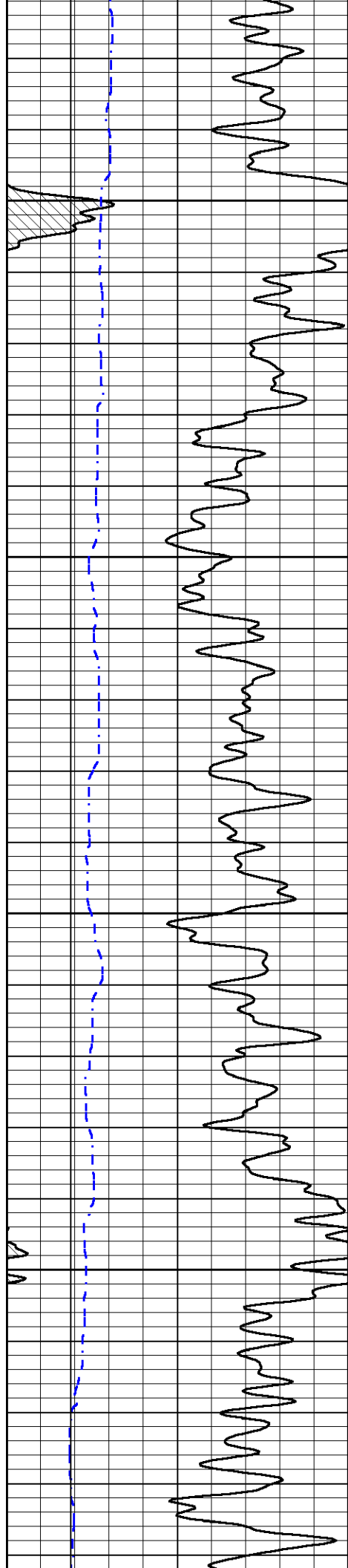










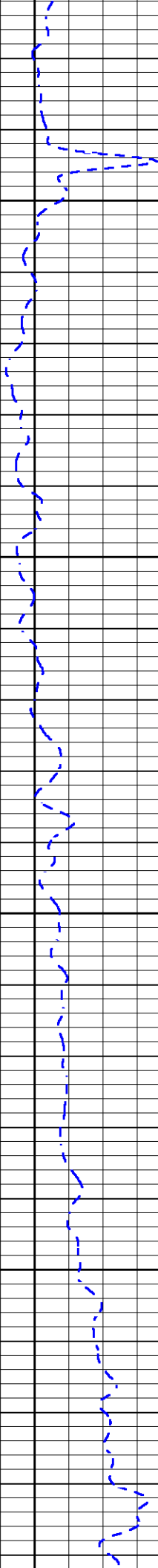
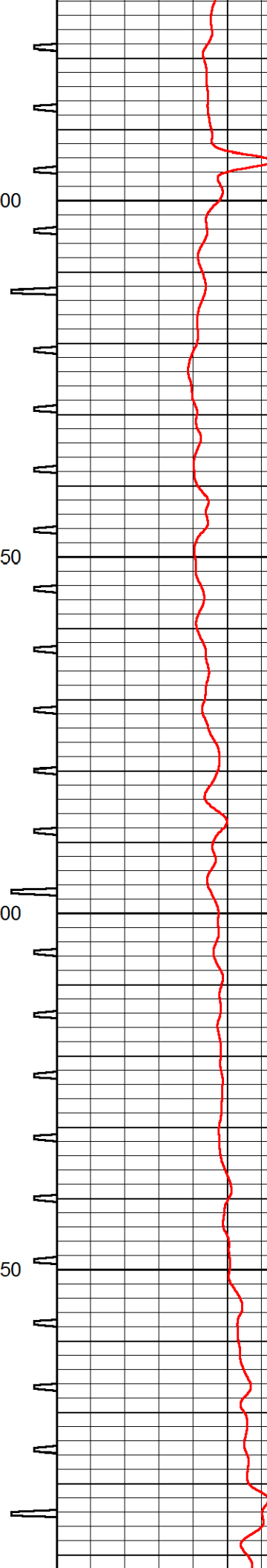


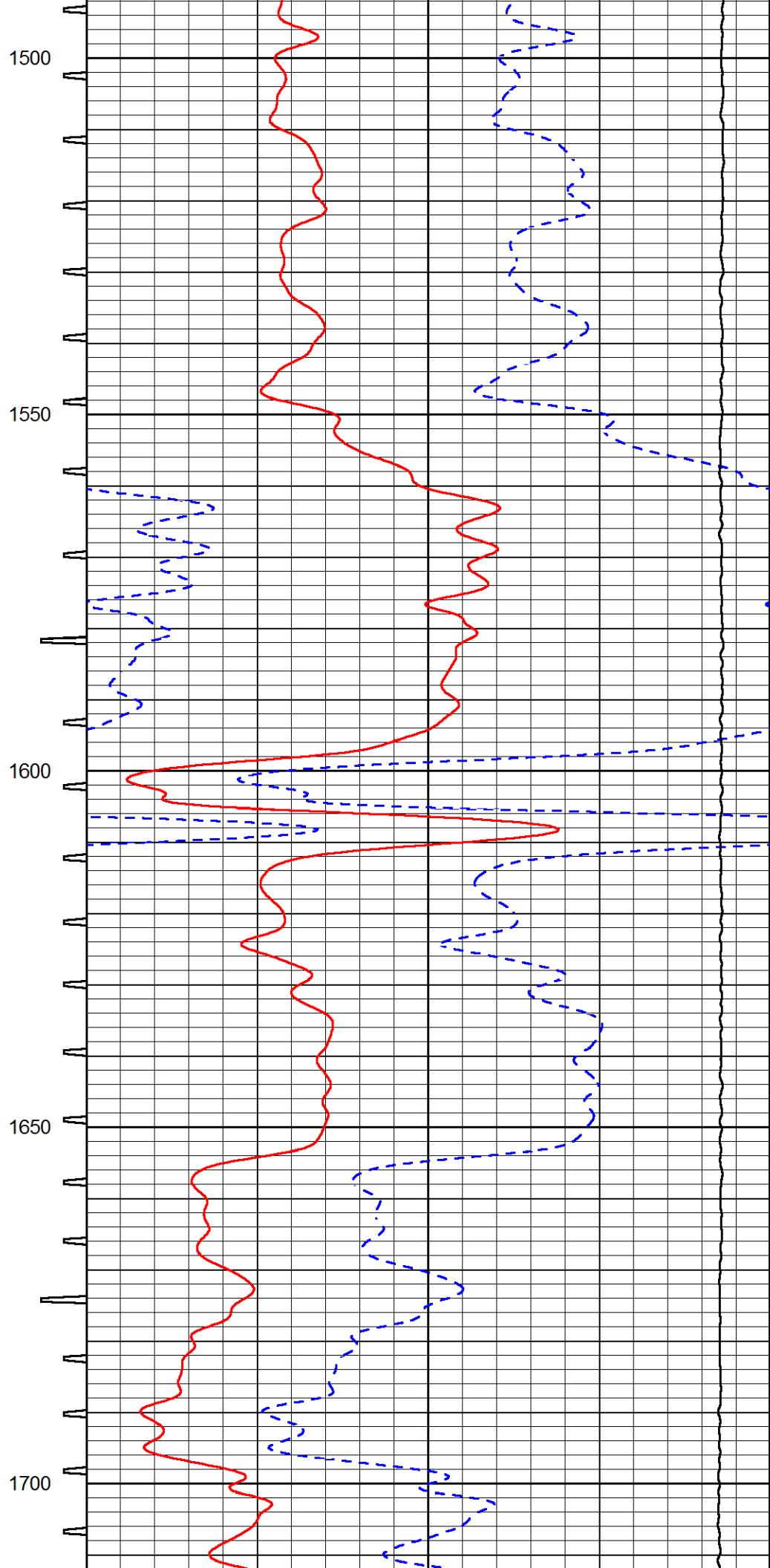
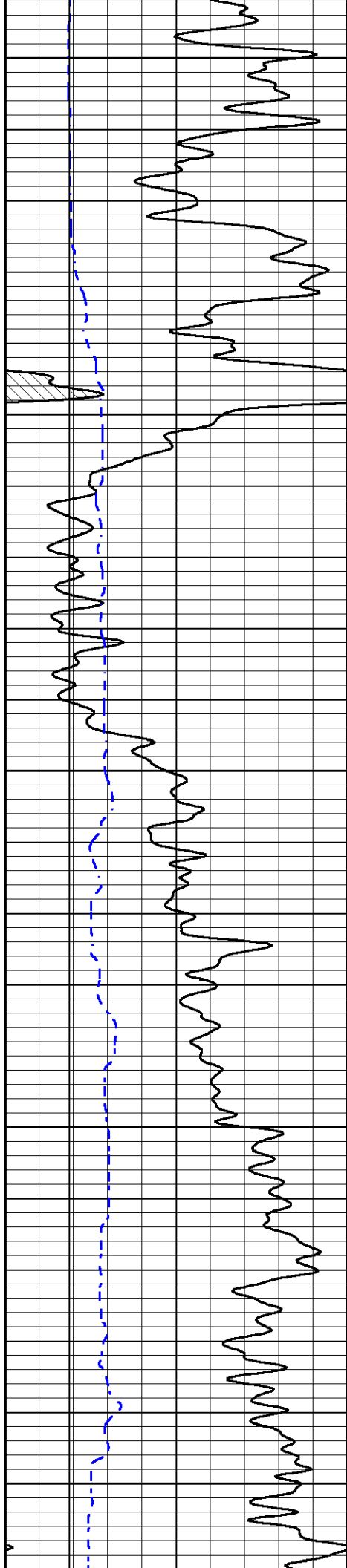
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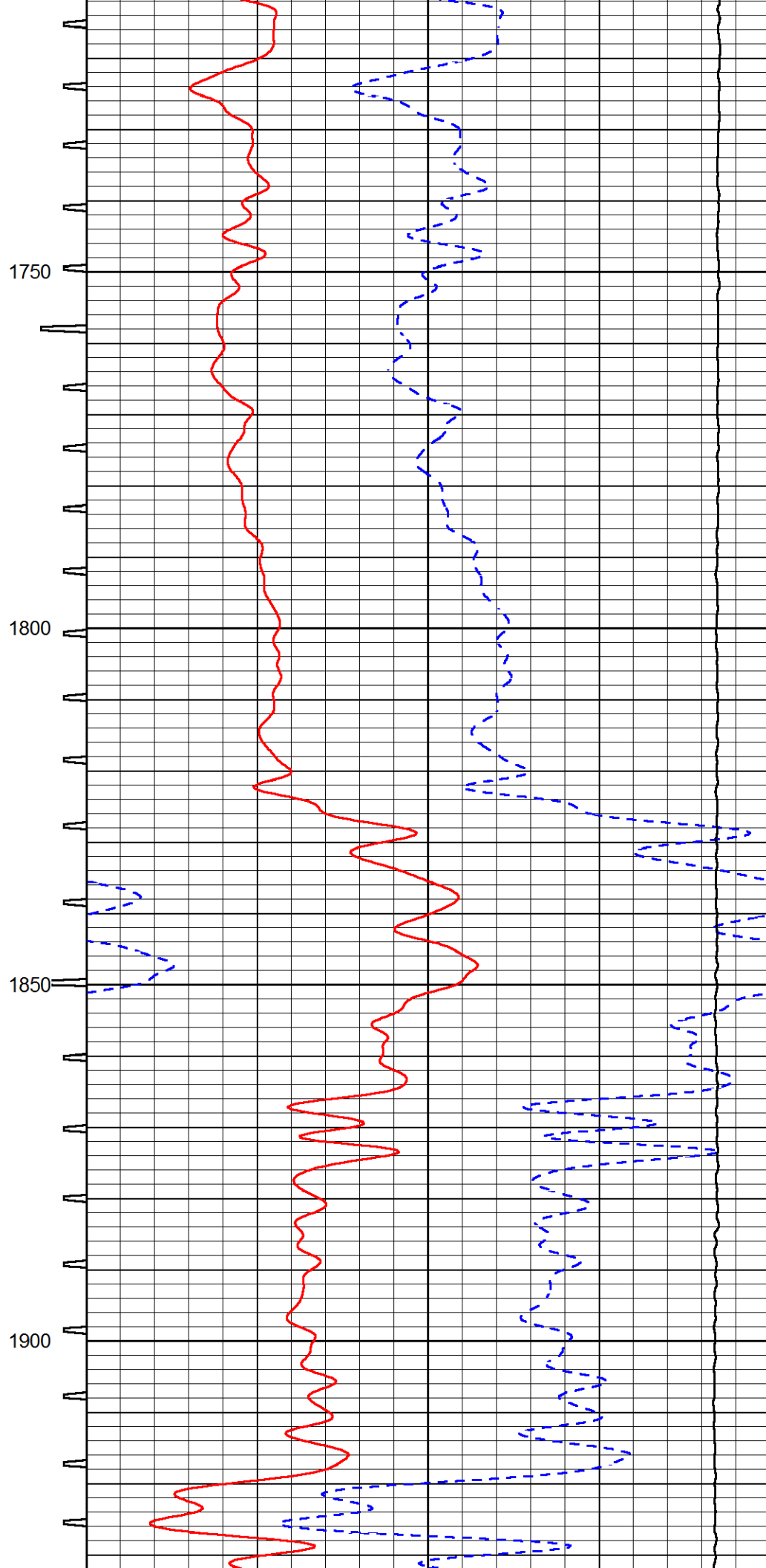
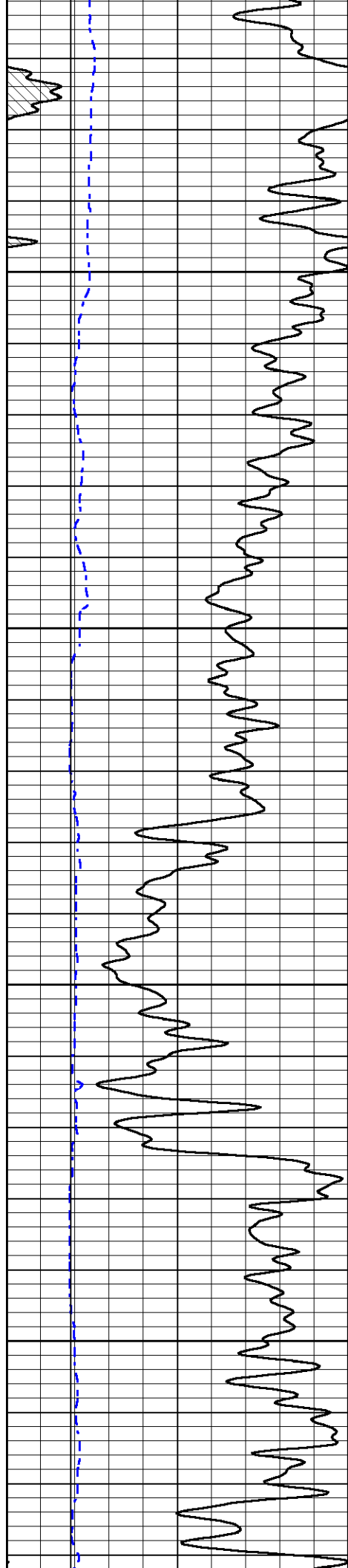
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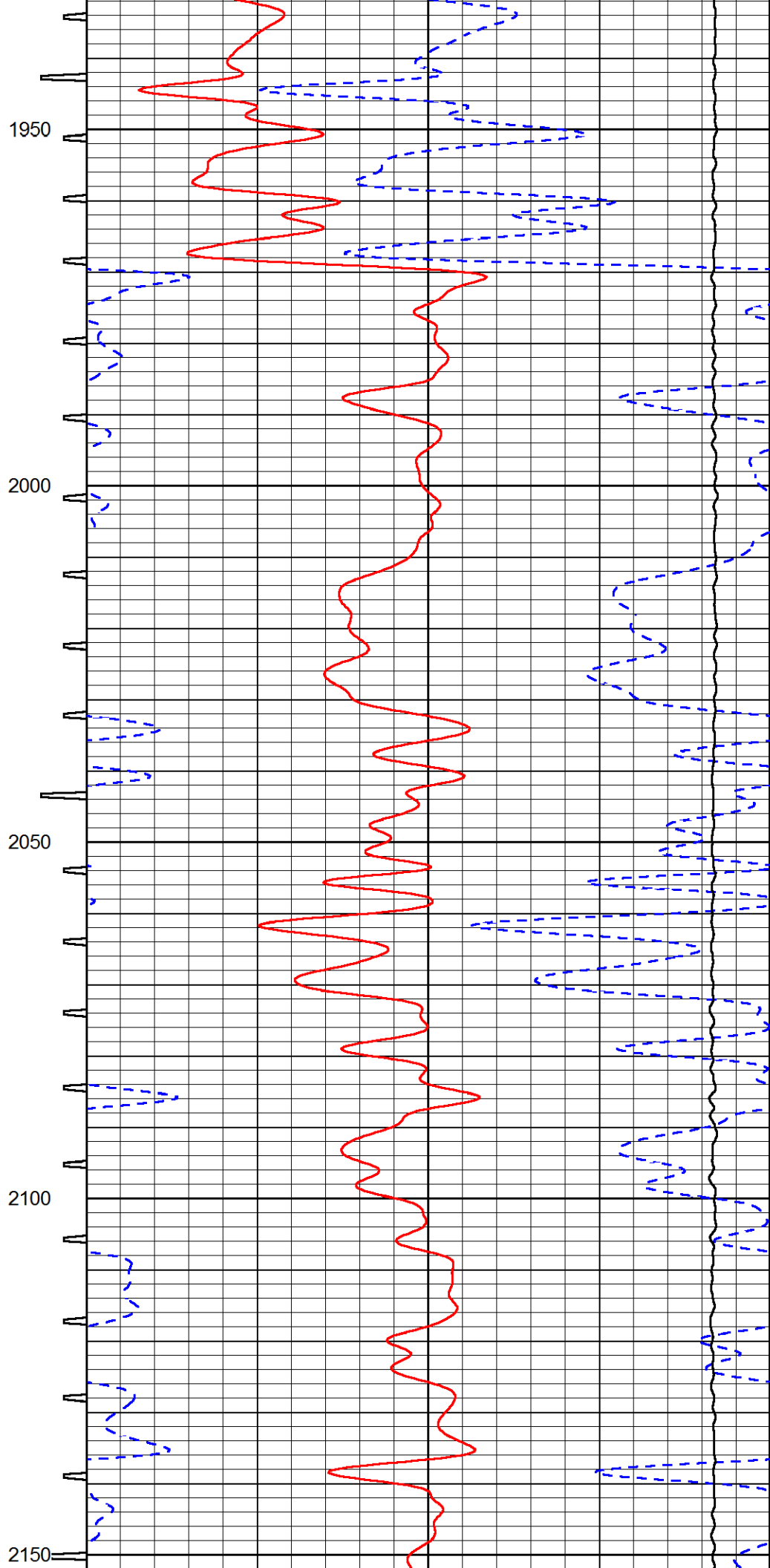
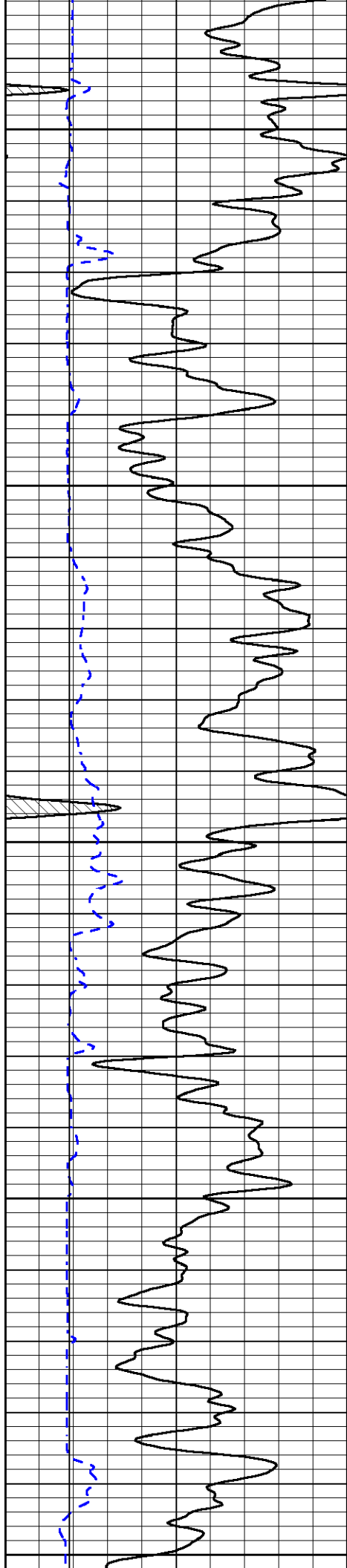
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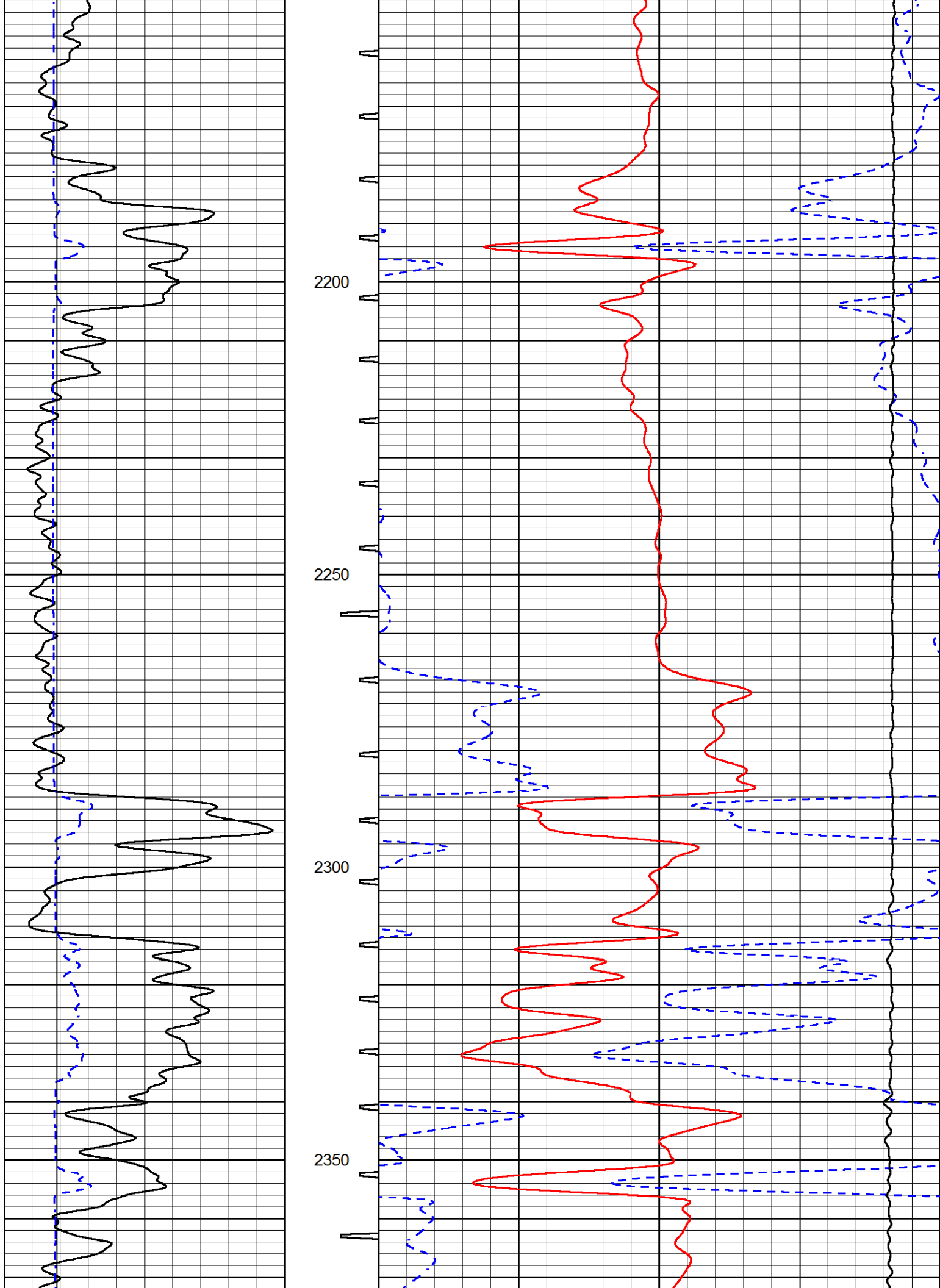
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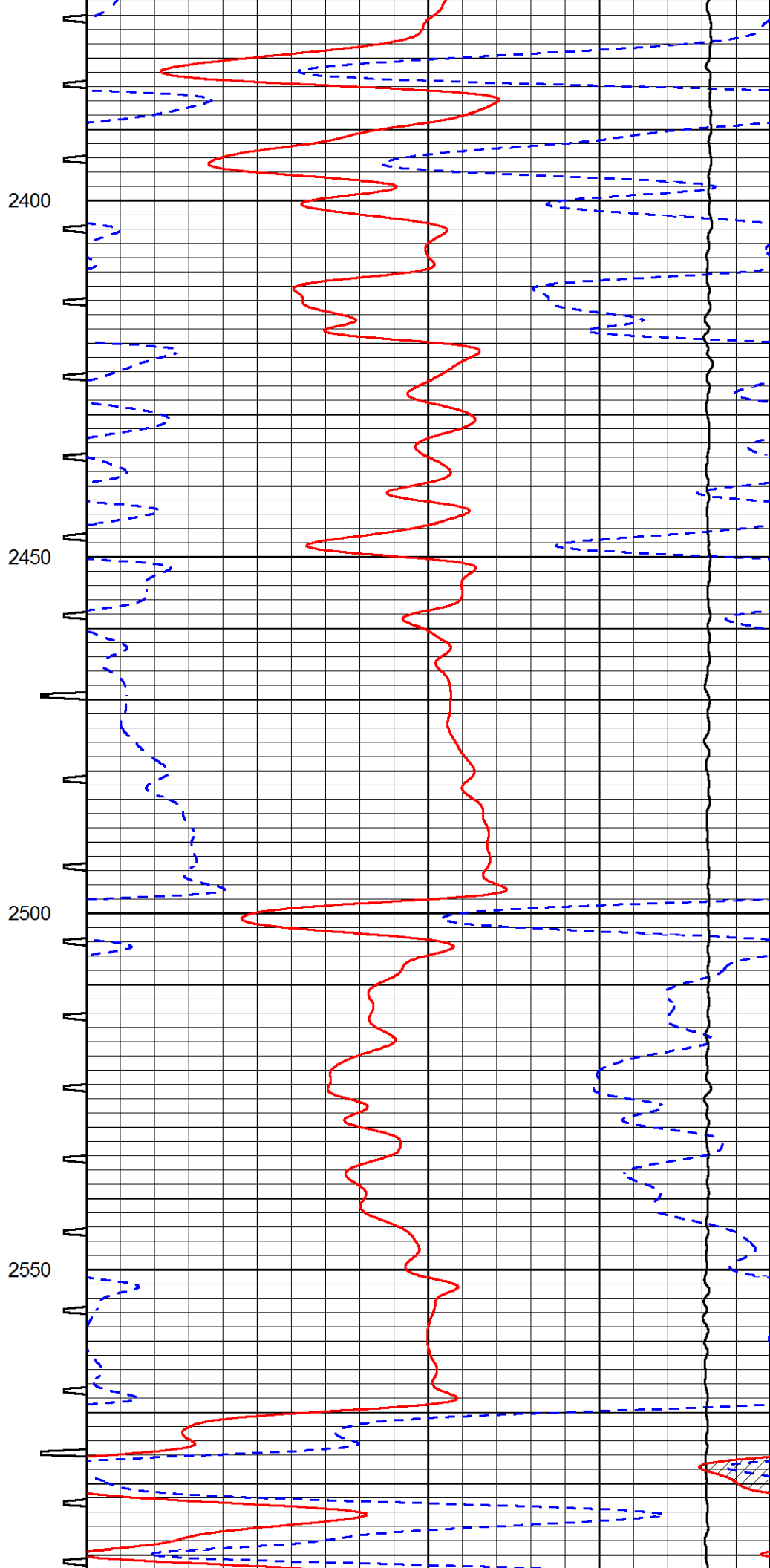
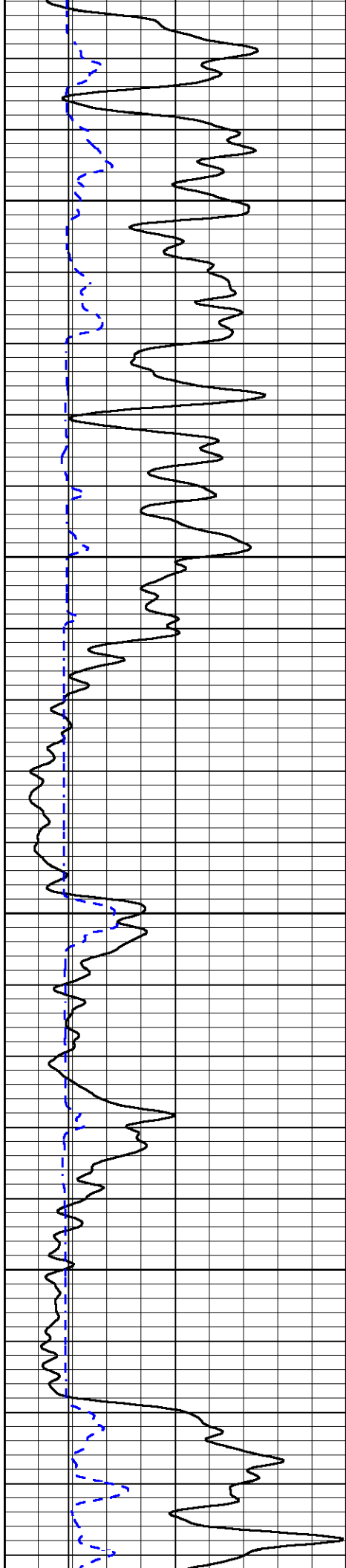


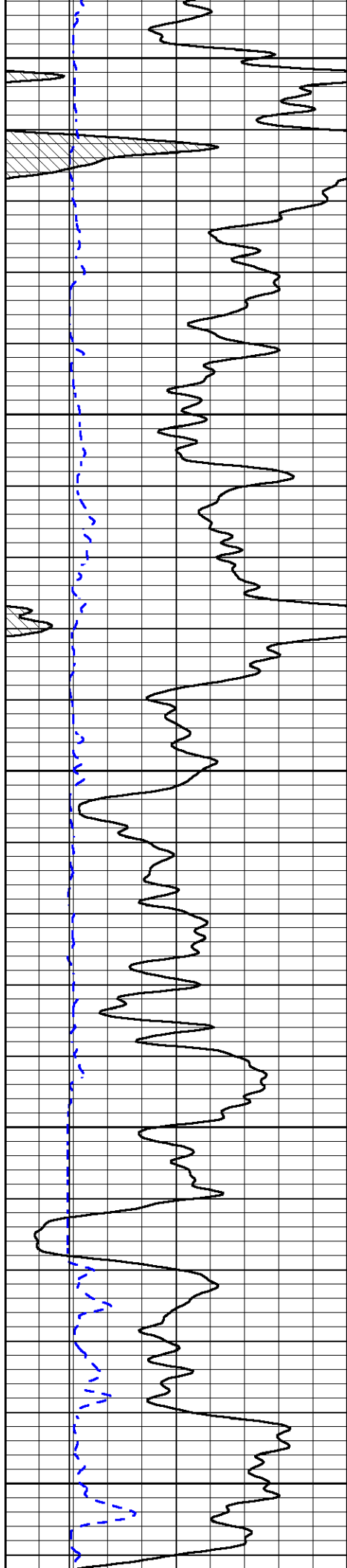












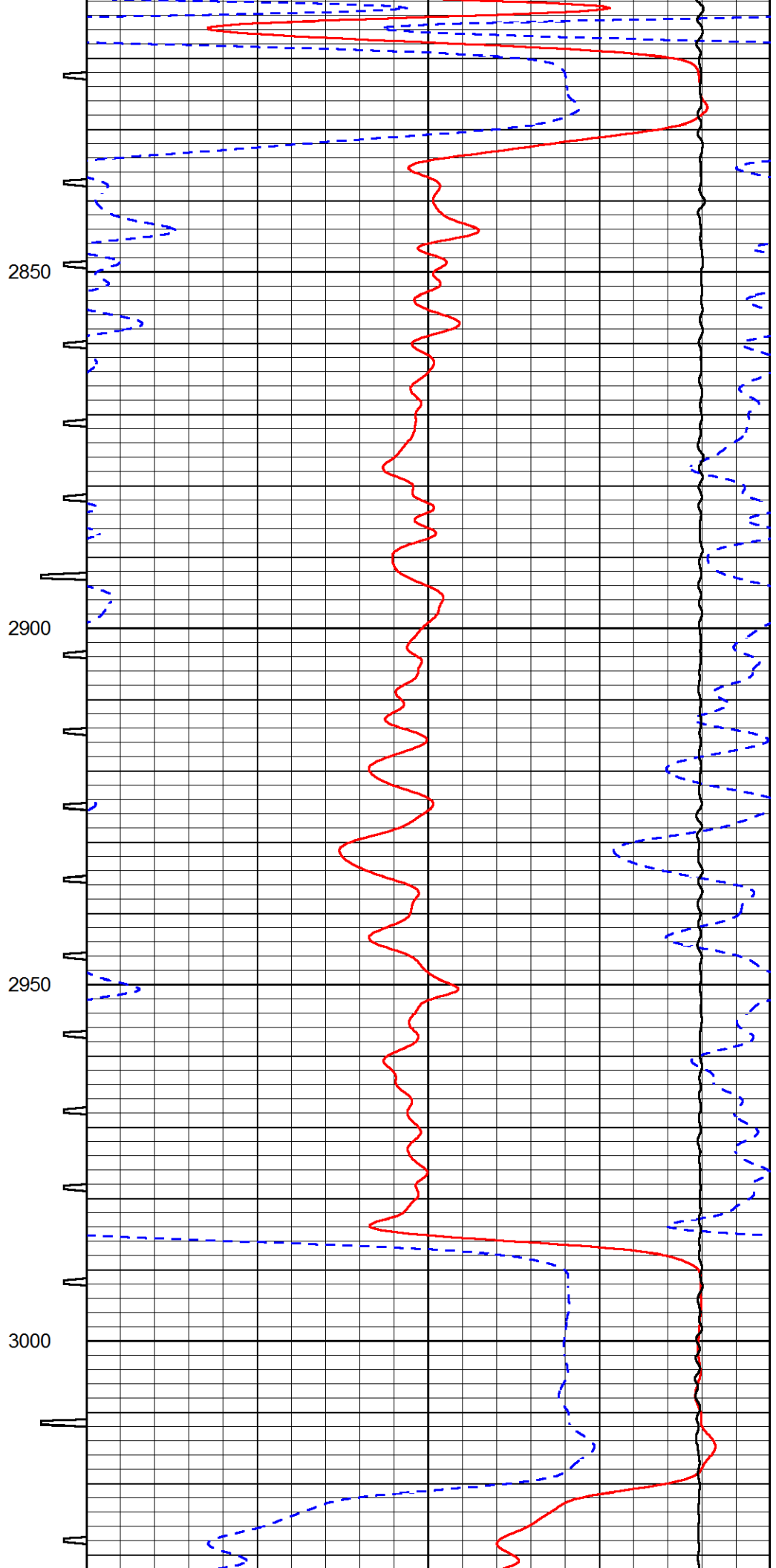
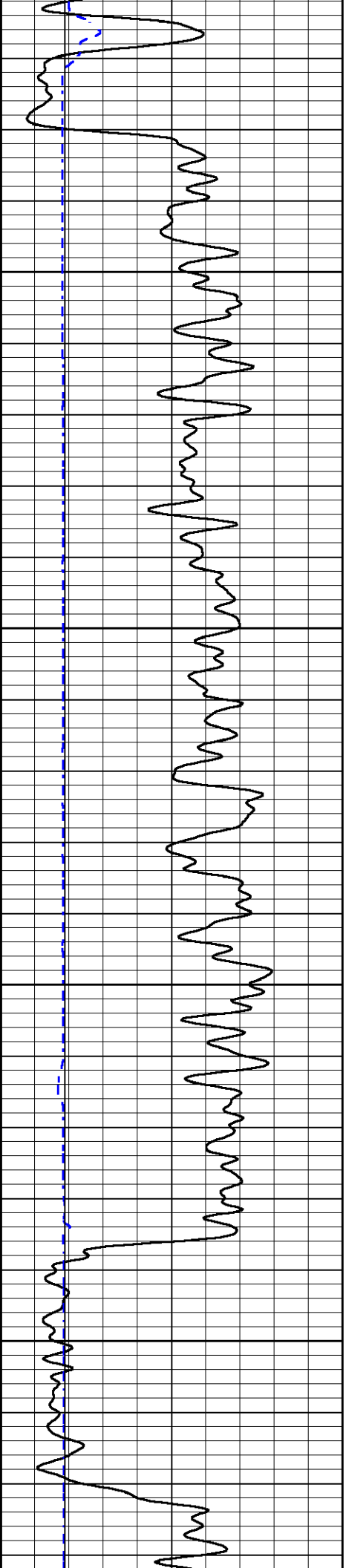
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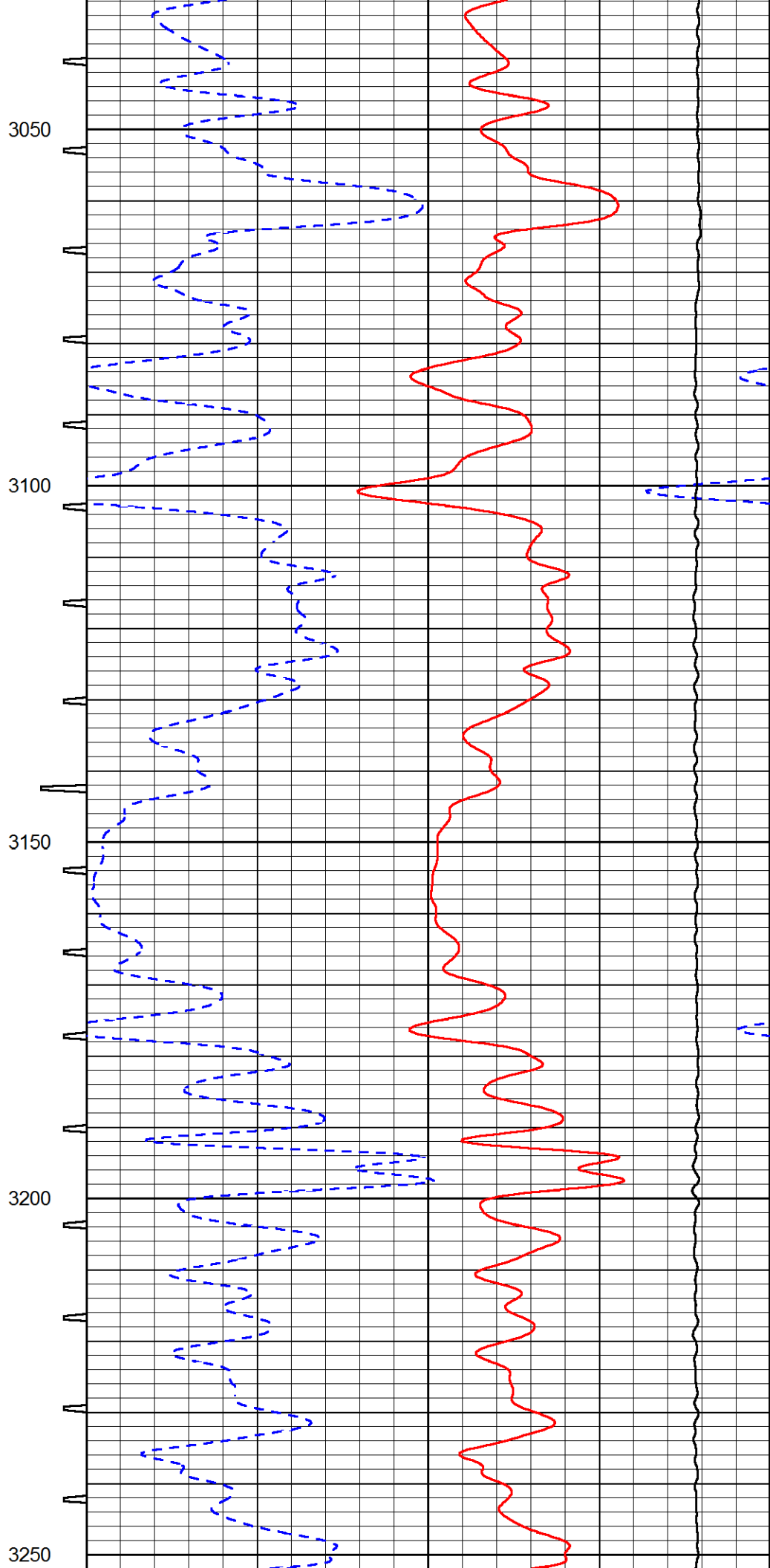
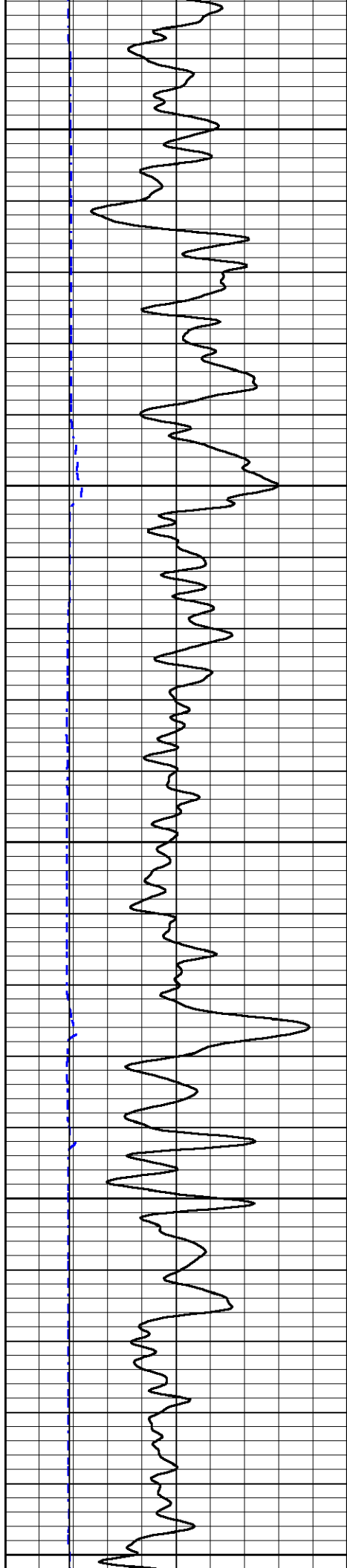
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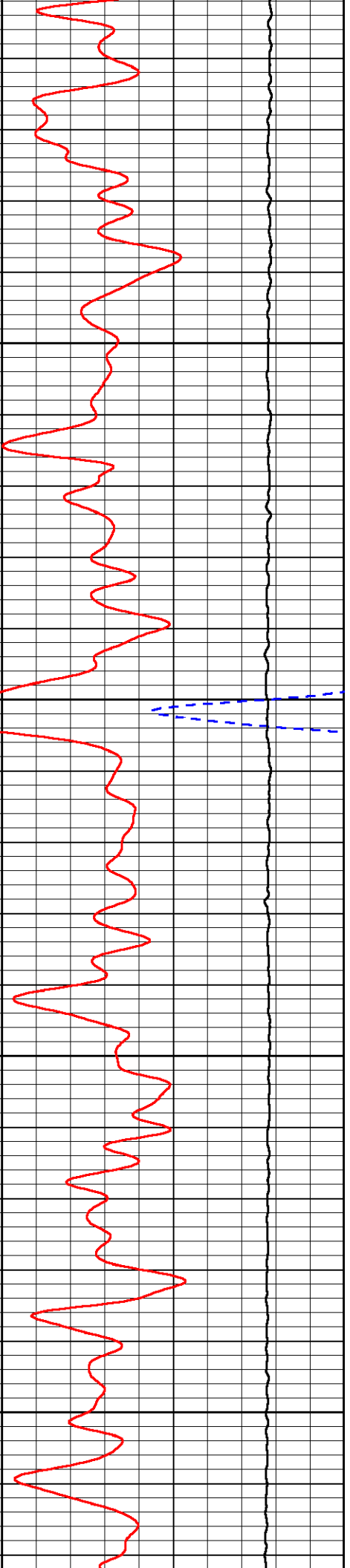
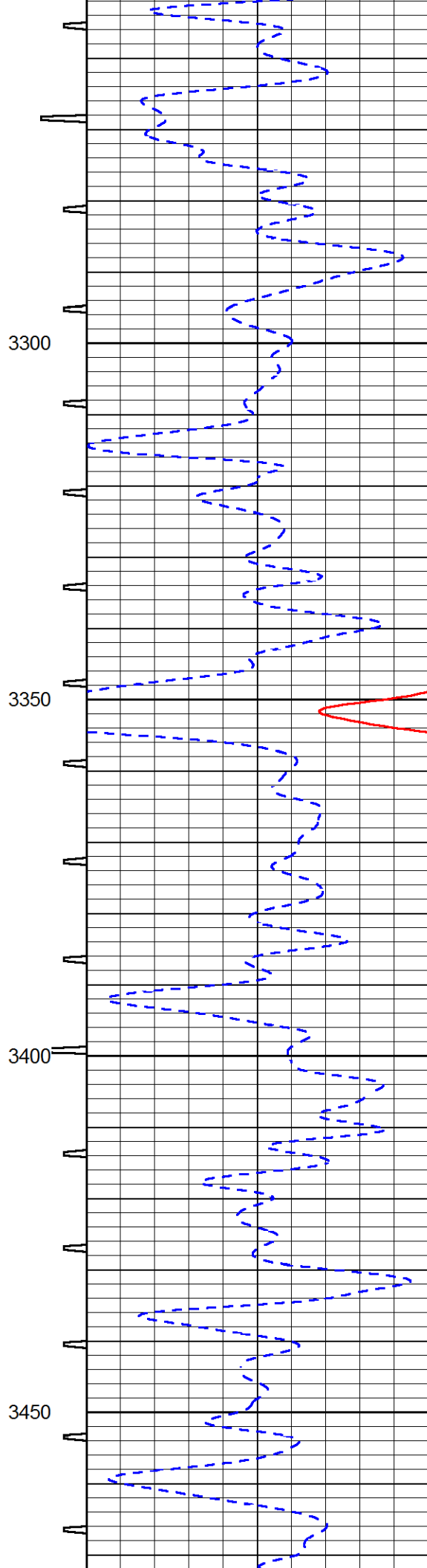
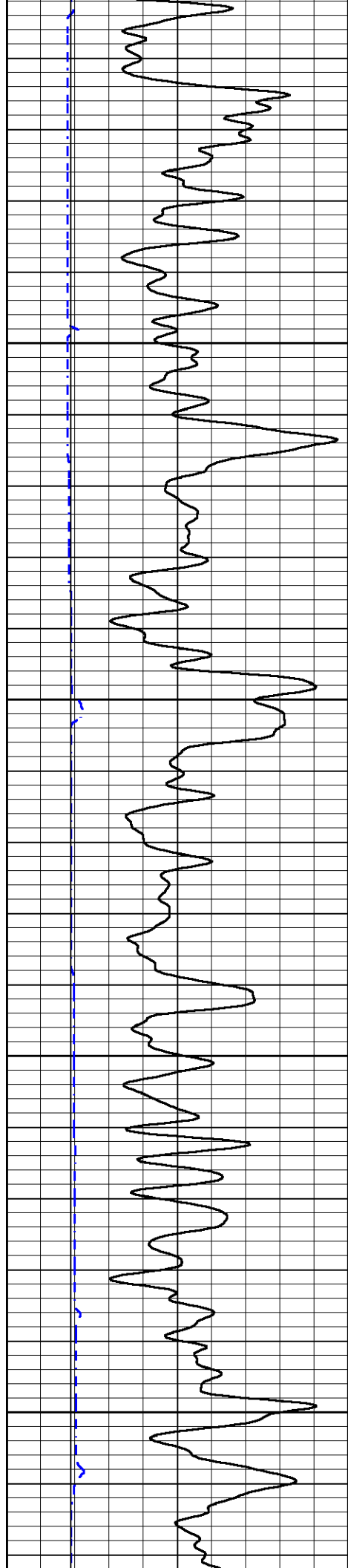
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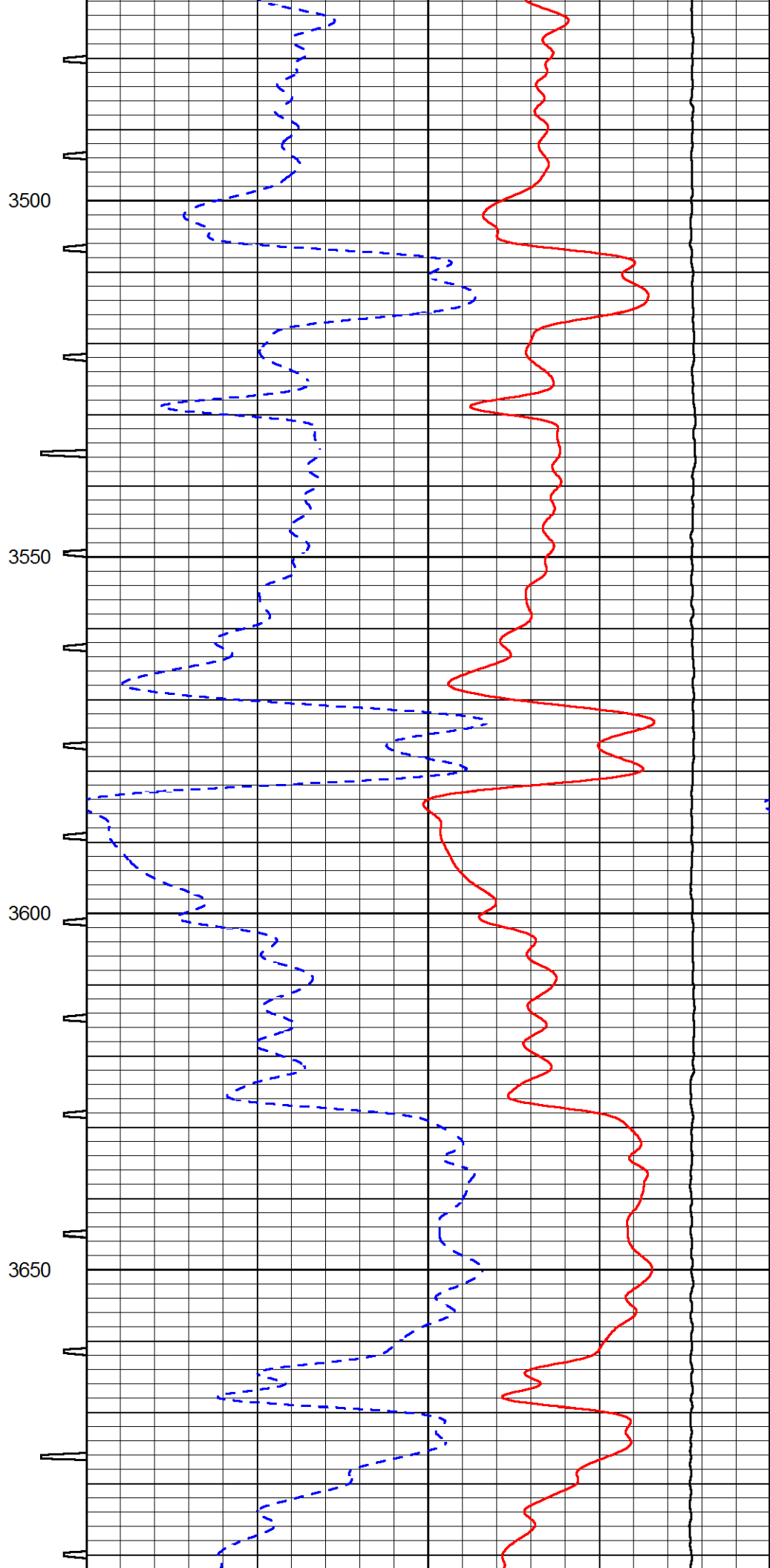
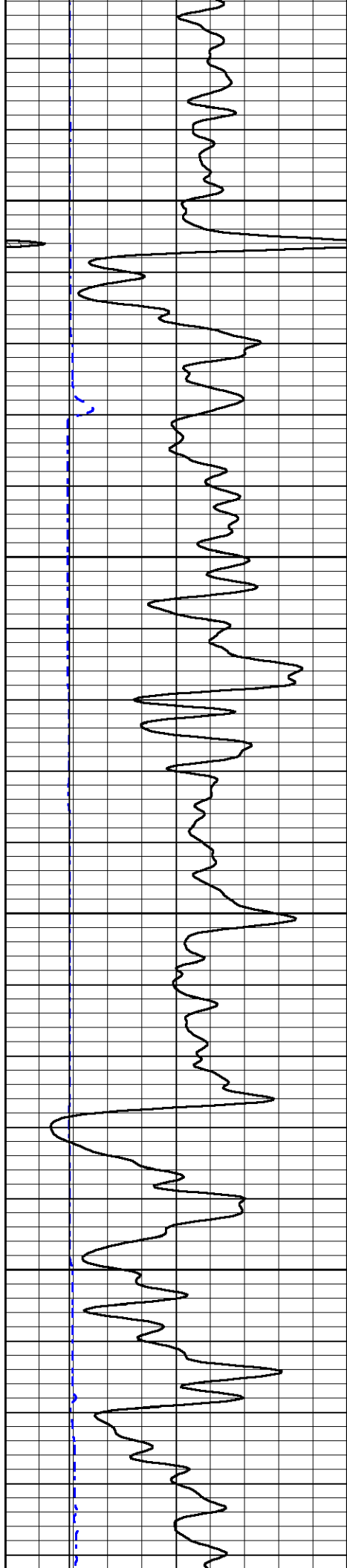
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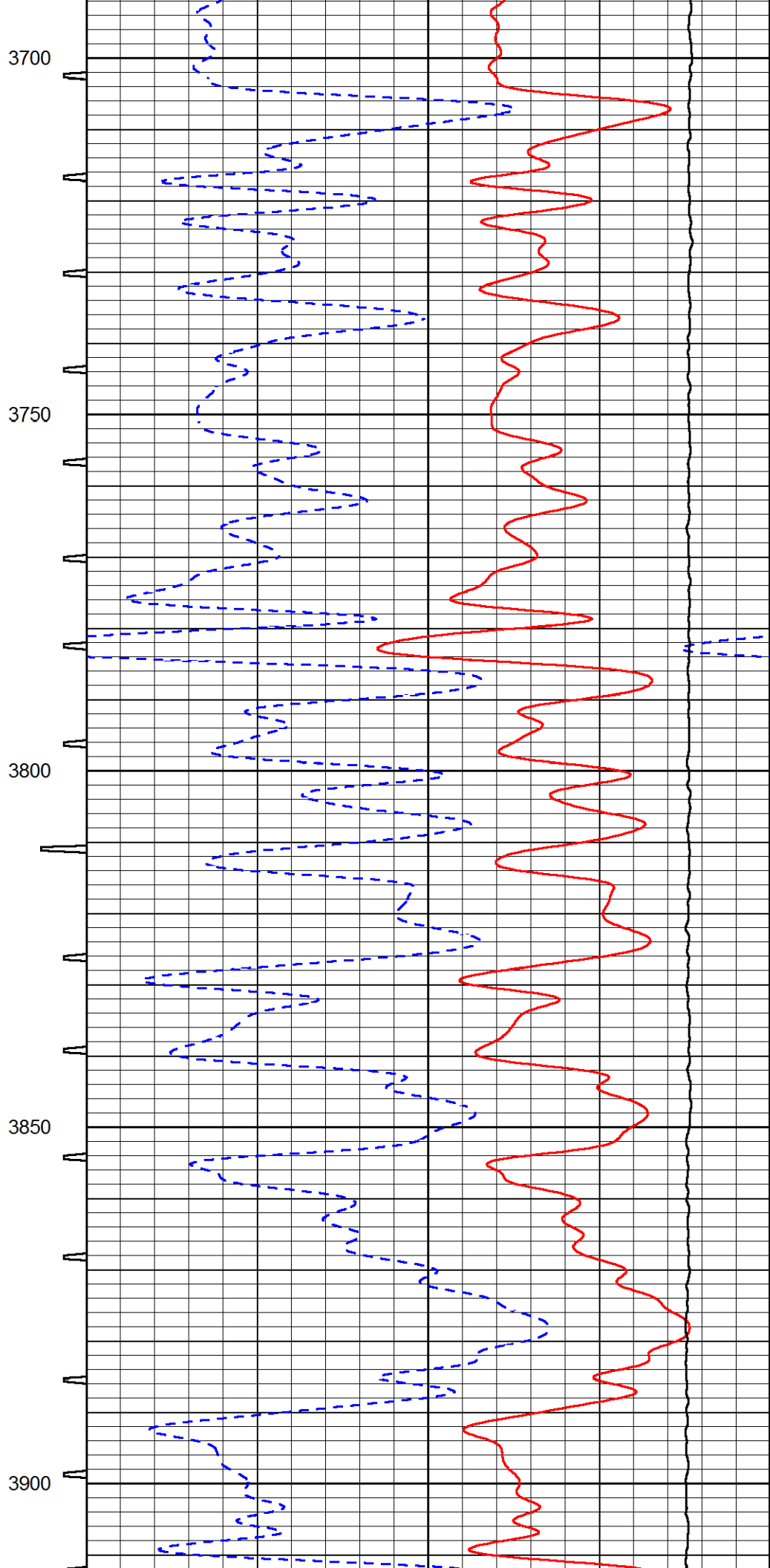
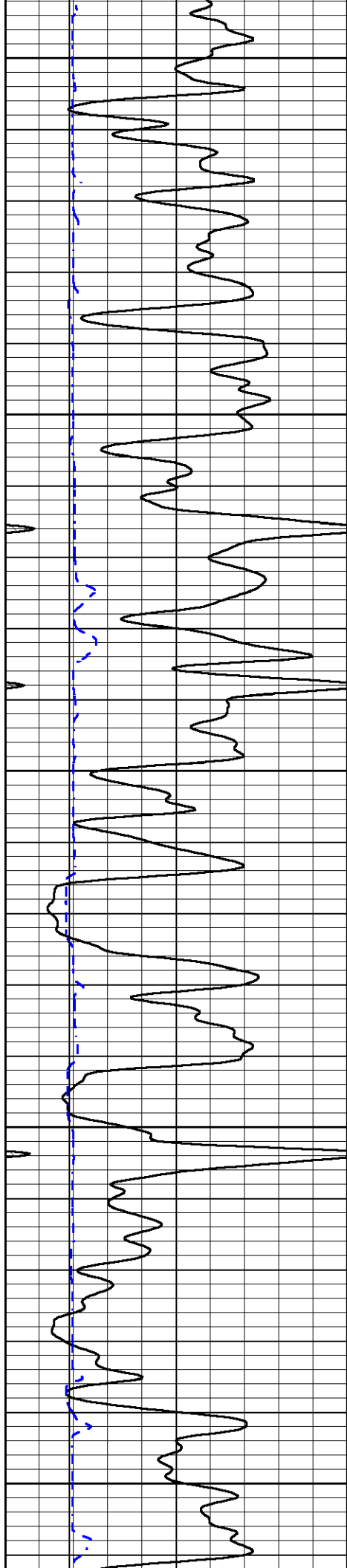
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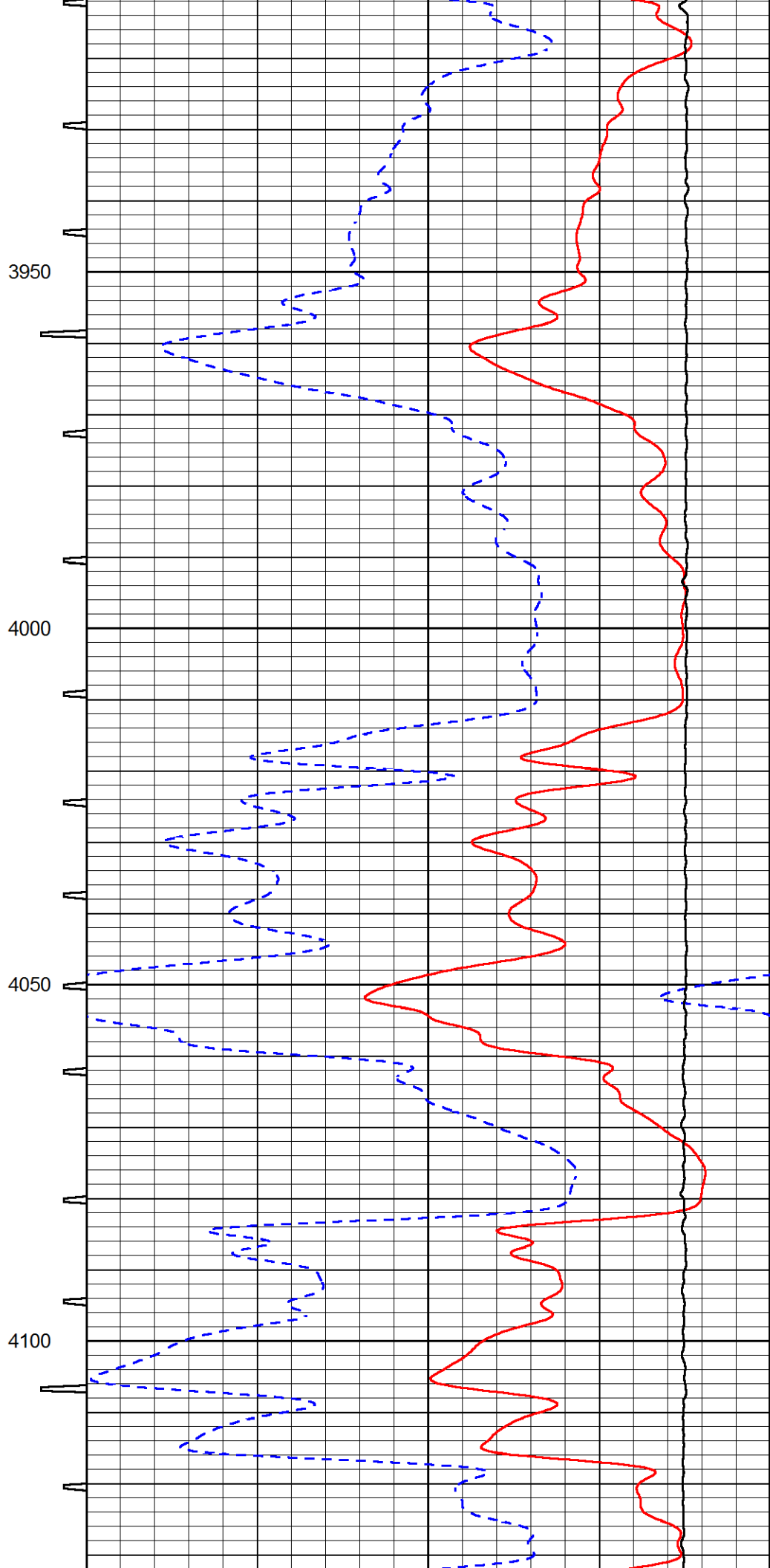
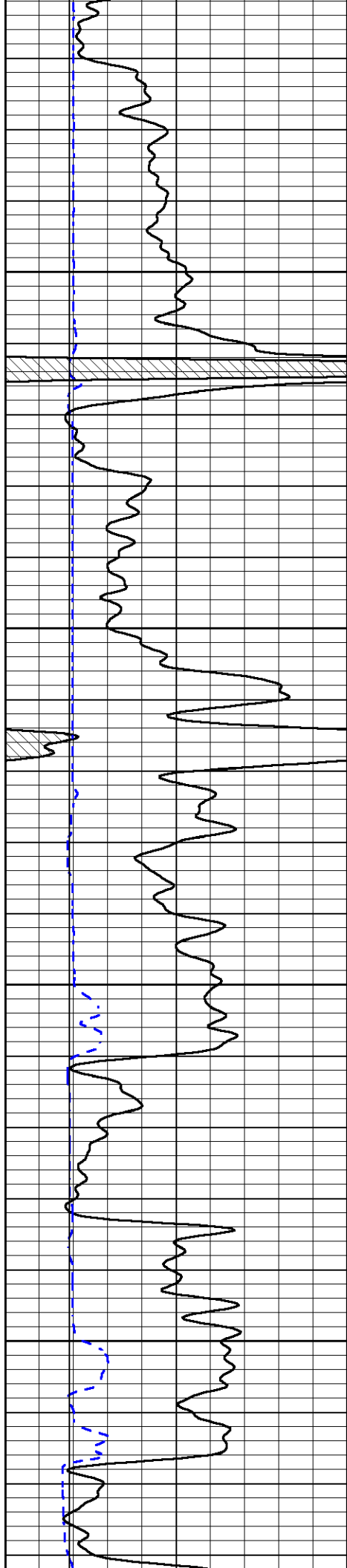


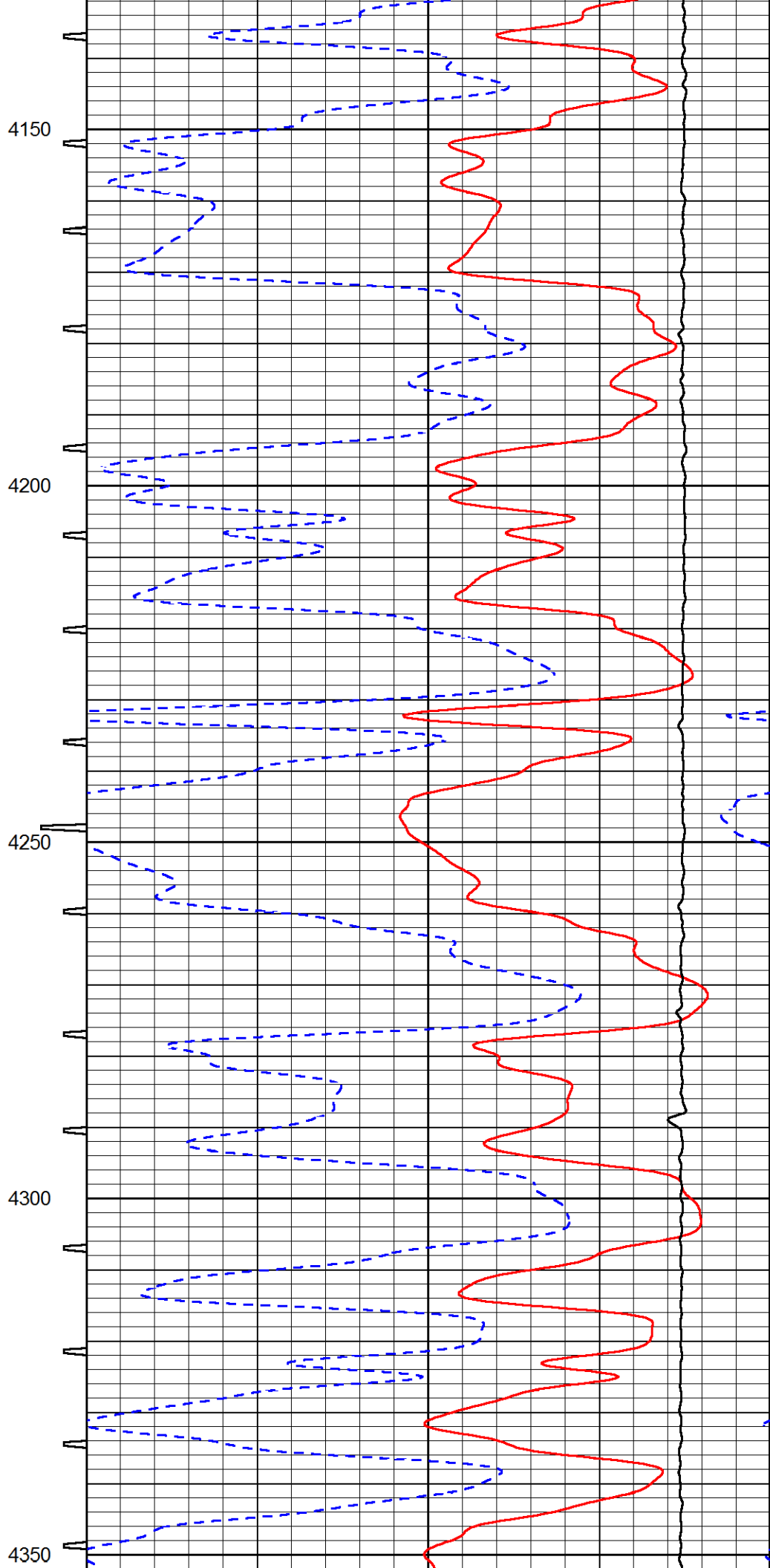
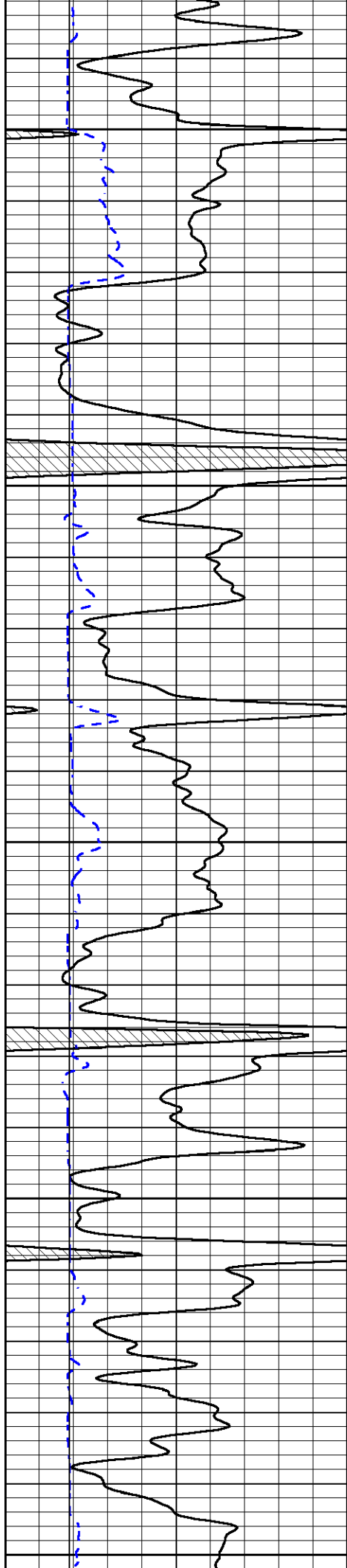












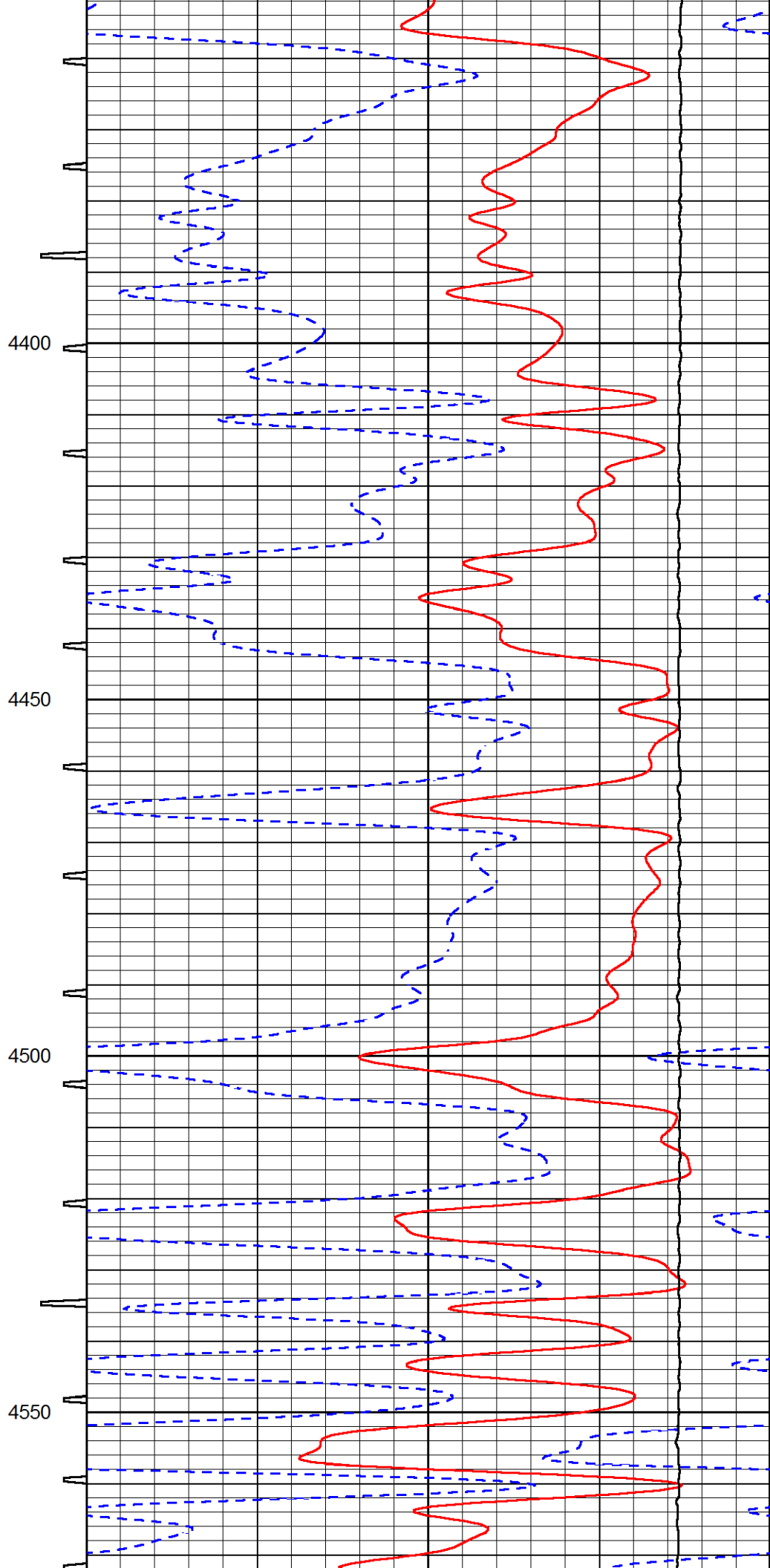
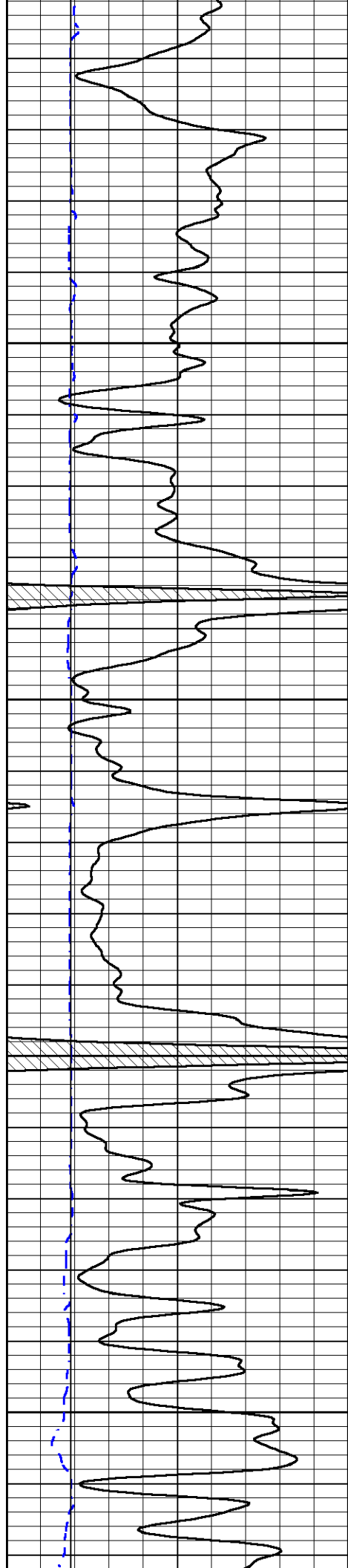
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4200

4250

4300

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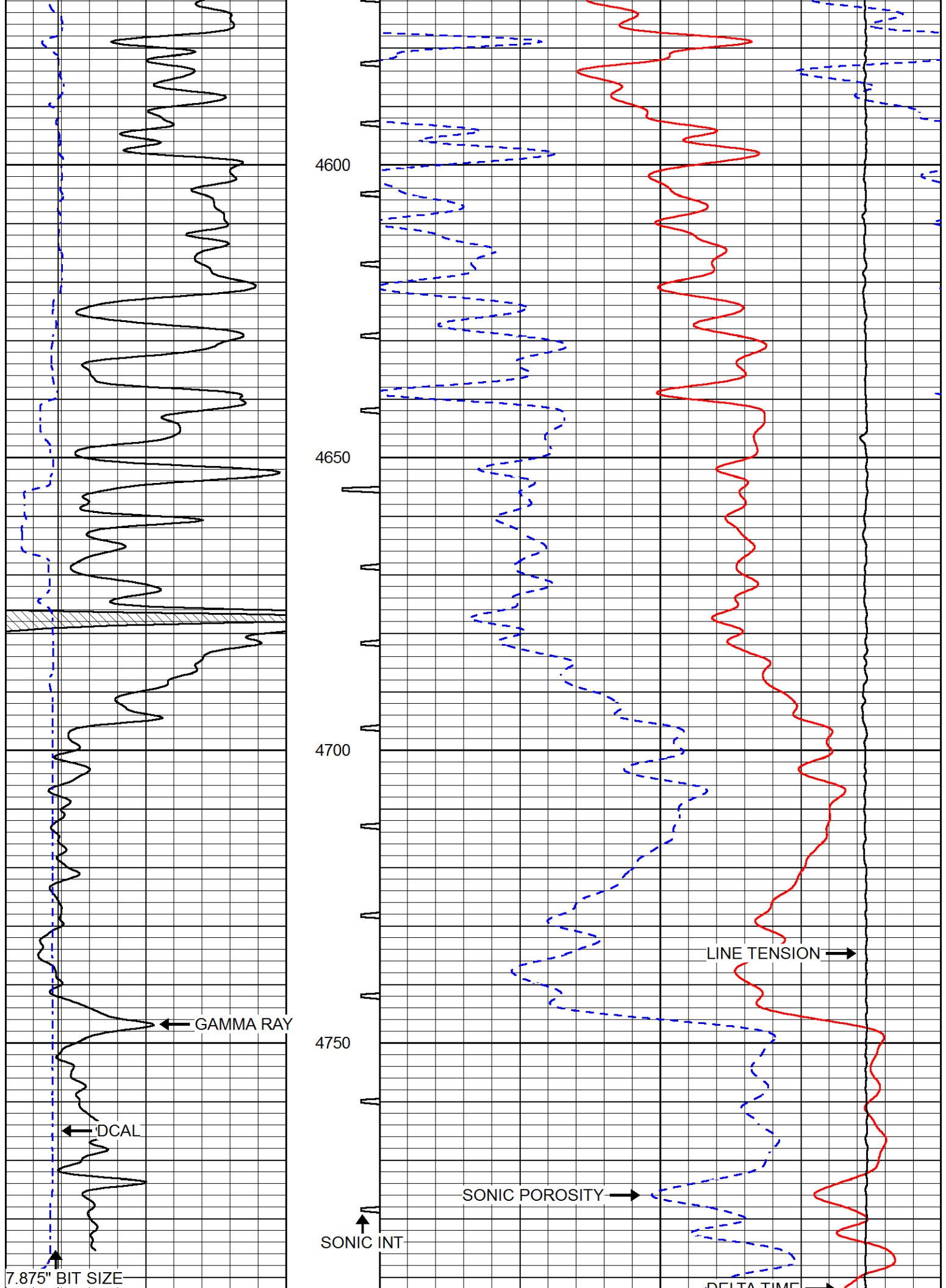


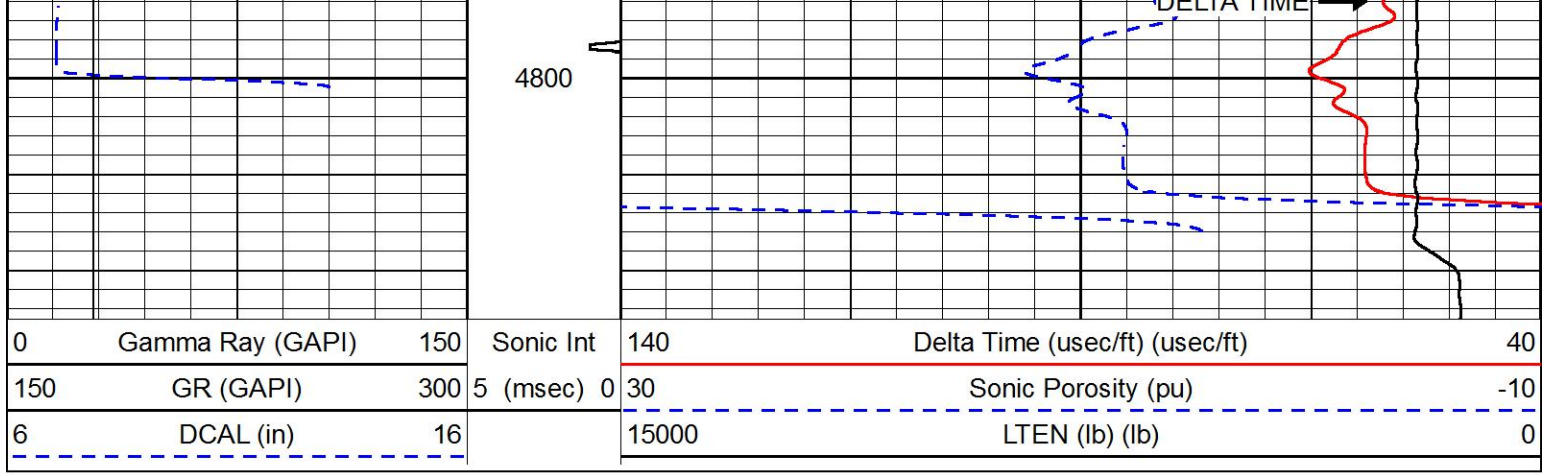
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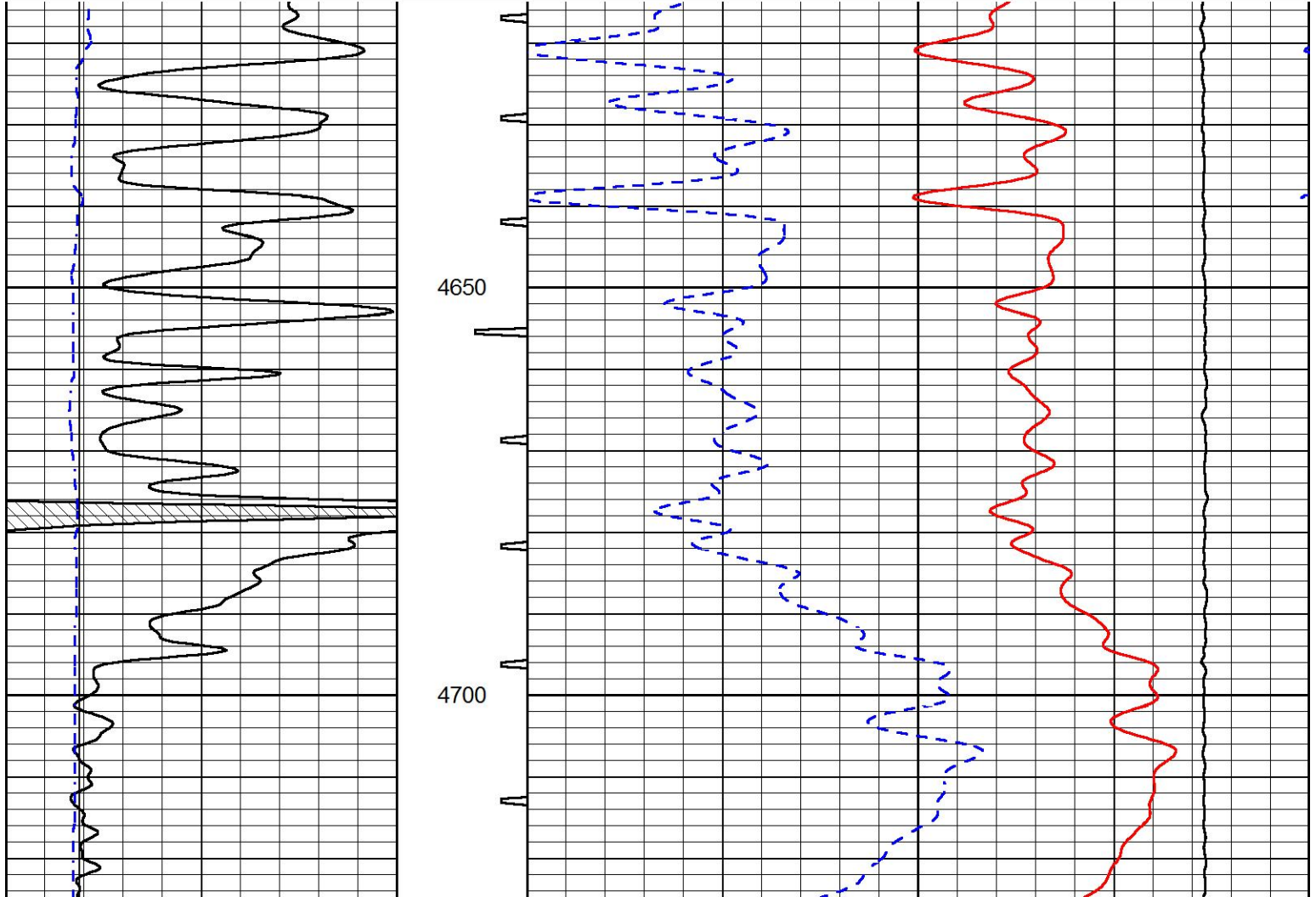
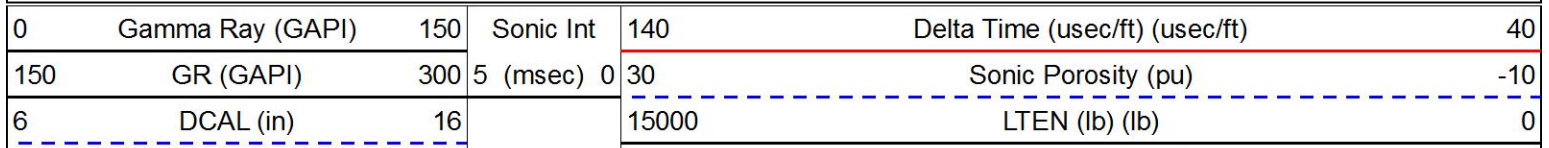
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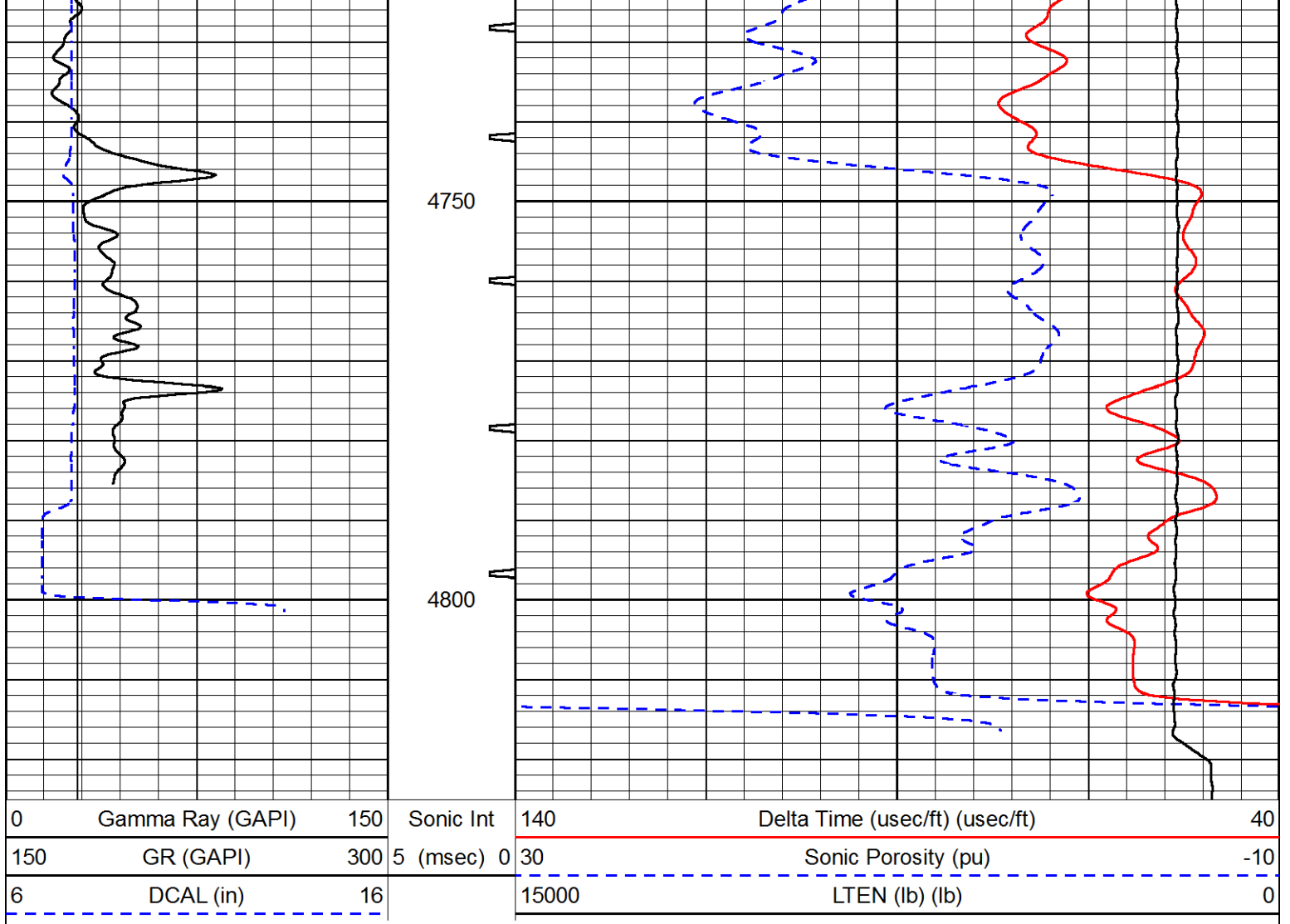




REPEAT SECTION

Database File murfin_frisbie b 1-15.db
 Dataset Pathname STKML/pass3.3
 Presentation Format sonic
 Dataset Creation Sun Oct 07 19:32:58 2018
 Charted by Depth in Feet scaled 1:240





Calibration Report

Database File murfin_frisbie b 1-15.db
 Dataset Pathname STKML/pass4.1
 Dataset Creation Sun Oct 07 22:22:04 2018

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
 Calibration Performed: Sun Oct 07 19:24:22 2018

Loop:	Readings		References		Results		
	Air	Loop	Air	Loop	Gain	Offset	
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-19.250
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Sat Sep 08 05:17:35 2018

	Readings		References		Results		
	Zero	Cal	Zero	Cal	m	b	
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	18000.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	21500.0000	-0.6000

Compensated Density Calibration Report

Serial-Model: 144-84-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Thu Aug 30 10:10:19 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4867.47	6031.92	cps
Aluminum	2.650	g/cc	906.23	3806.99	cps
Spine Angle = 74.69			Density/Spine Ratio = 0.514		
	Size		Reading		
Small Ring	5.00	in	0.70		
Large Ring	15.00	in	0.04		

Compensated Neutron Calibration Report

Serial Number: 207-MW
 Tool Model: M&W
 Calibration Performed: FRI AUG 24 10:30:30 2018

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number: 89
 Tool Model: M&W
 Calibration Performed: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps



PIONEER
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