



MIDWEST WIRELINE

**DUAL COMPENSATED  
POROSITY /  
MICRO LOG**

Company Murfin Drilling Company, Inc.

Well Kaus #1-21

Field

County Cheyenne State Kansas

Location: API #: 15-023-21576-00-00

2310 FSL & 175 FEL

SEC 21 TWP 3S RGE 37W

DIL/BHCS

Company Murfin Drilling Company, Inc.  
Well Kaus #1-21  
Field  
County Cheyenne  
State Kansas

Permanent Datum Ground Level Elevation 3423  
Log Measured From Kelly Bushing  
Drilling Measured From Kelly Bushing

K.B. 3428  
D.F.  
G.L. 3423

Date 8/14/2022

Run Number One

Type Log CNL / CDL / ML

Depth Driller 5191

Depth Logger 5163

Bottom Logged Interval 5162

Top Logged Interval 3750

Type Fluid In Hole Chemical

Salinity, PPM CL 1000

Density 9.0

Level Full

Max. Rec. Temp. F 128

Operating Rig Time 5 Hours

Equipment -- Location P-108 HAYS

Recorded By D. Schmidt

Witnessed By Curtis Covey

**Borehole Record**

**Casing Record**

Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	0	388	8.625	23	0	388
Two	7.875	388	TD				

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline 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,  
East to Rd 32, 3/4 North,  
West into

Log Measured From: Kelly Bushing 5 Ft. Above Permanent Datum

THANK YOU FOR USING Midwest Wireline LLC  
785-625-3858

**Your Midwest Wireline Crew**

Engineer: D. Schmidt  
Operator:  
Operator:  
Operator:

**This Log Record Was Witnessed By**

Primary Witness: Curtis Covey  
Secondary Witness:  
Secondary Witness:  
Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (103)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (210)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (304-04)	8.50	4.00	250.00
ML-PSI STKBL ML (401)			ML-PSI STKBL ML (401)	7.58	4.00	65.00
MCAL MI MN	19.58 19.58 19.58					
RLL3F RLL3	15.50 15.50					
DIL-M&W (505 HT)			DIL-M&W (505 HT)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: murfin\_kaus 1-21.db: field/well/stkml/pass4.17  
 Total length: 42.33 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin\_kaus 1-21.db  
 Dataset field/well/stkml/pass4.17/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	128	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	375	80	Off	5162

## Variable Description

A : Cement Factor (a)  
 BOREID : Borehole I.D.  
 BOTTEMP : Bottom Hole Temperature  
 CASEOD : Casing O.D.  
 CASETHCK : Casing Thickness  
 FLUIDDEN : Fluid Density  
 M : Cement Exp (m)  
 MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select  
 PERFS : Perforation Flag  
 SNDERR : Deep Sonde Error Correction  
 SNDERRM : Medium Sonde Error Correction  
 SPSHIFT : S.P. Baseline Offset  
 SRFTEMP : Surface Temperature  
 SZCOR : CN Size Cor. ?  
 TDEPTH : Total Depth



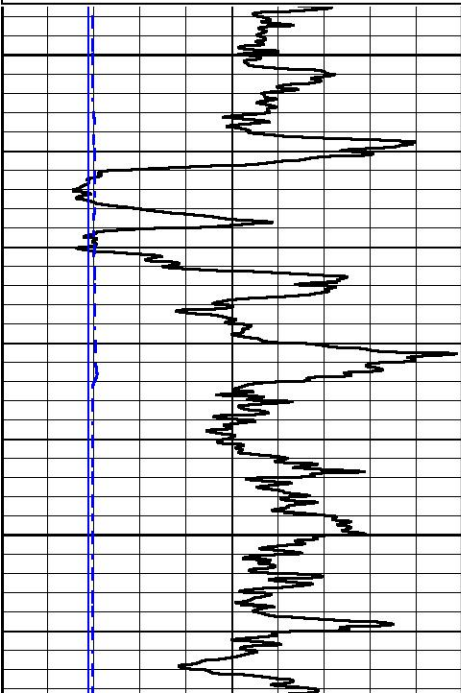
## 5" SCALE BULK DENSITY

### MAIN PASS

Database File murfin\_kaus 1-21.db  
 Dataset Pathname stkml/pass4.2  
 Presentation Format \_cdl  
 Dataset Creation Sun Aug 14 22:35:21 2022  
 Charted by Depth in Feet scaled 1:240

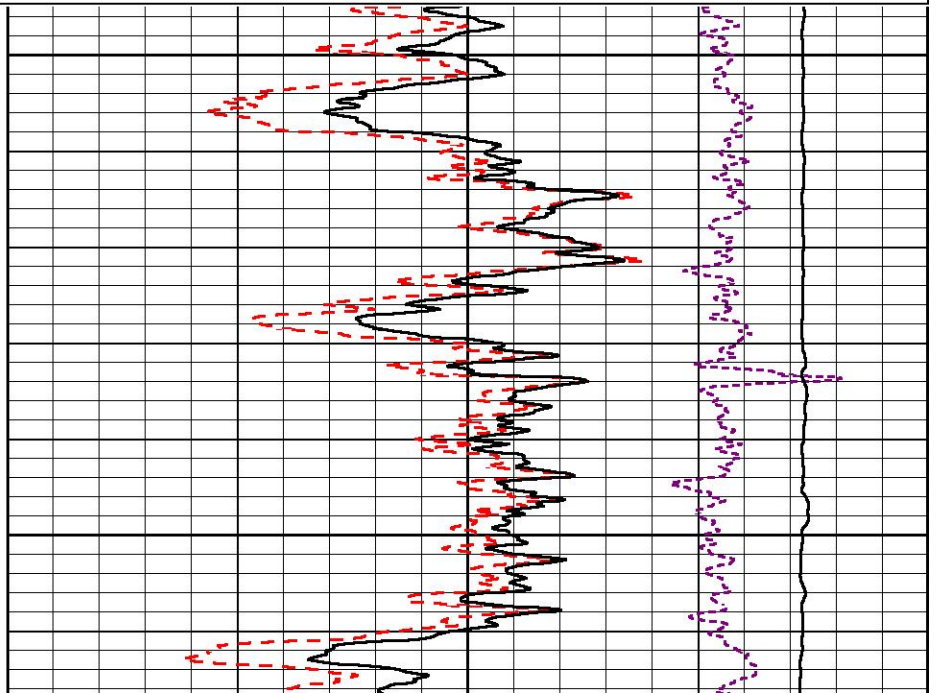
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

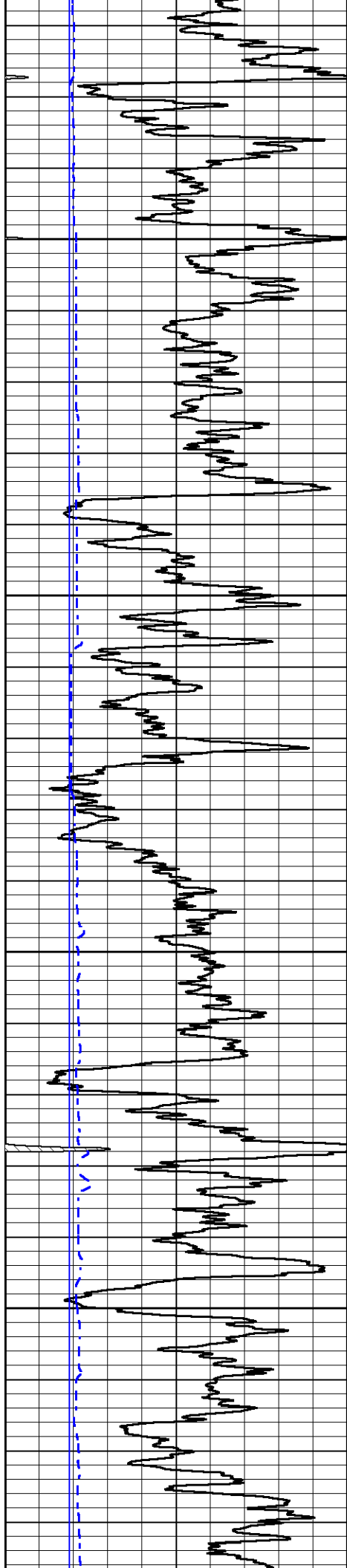
30	Compensated Density (pu)	-10
2	Bulk Density (g/cc)	3
15000	Line Tension (lb)	0
-0.25	Correction (g/cc)	0.25



3750

3800



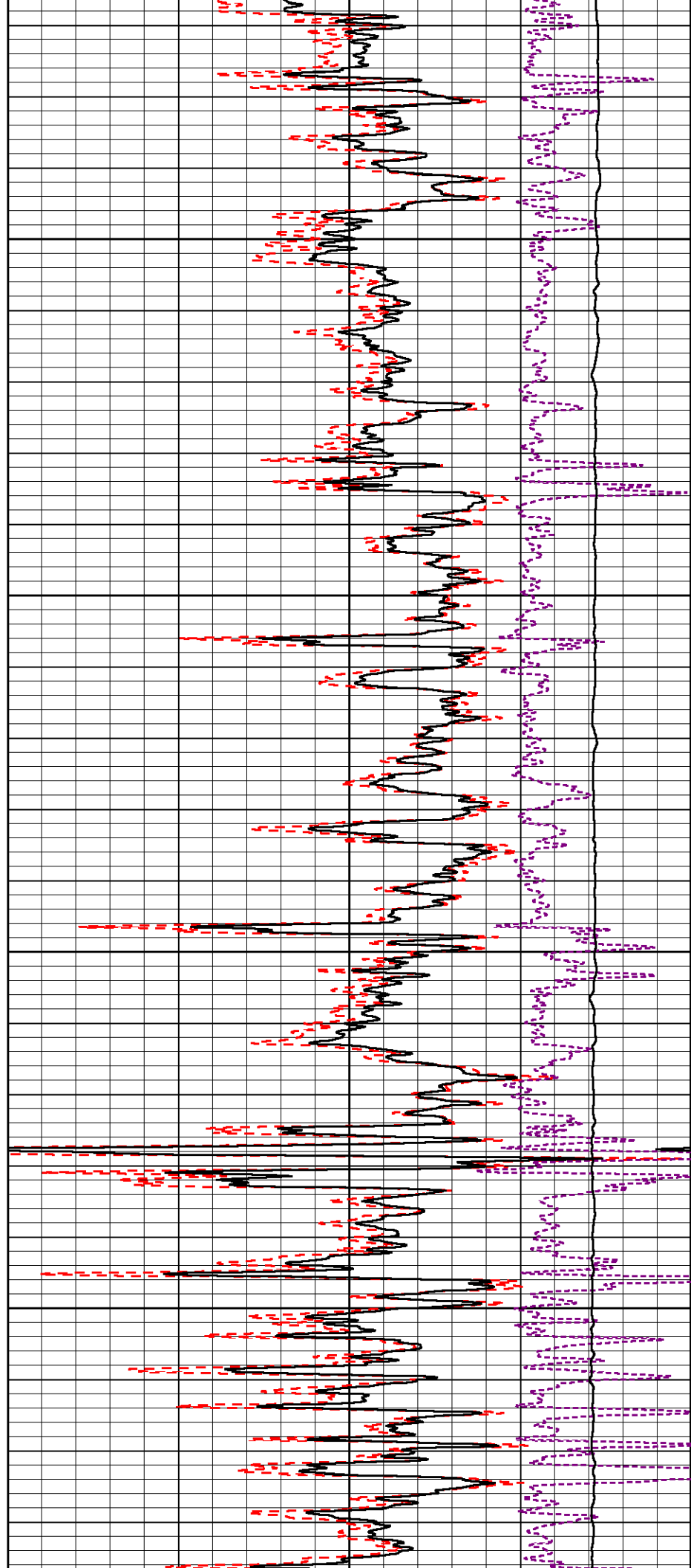


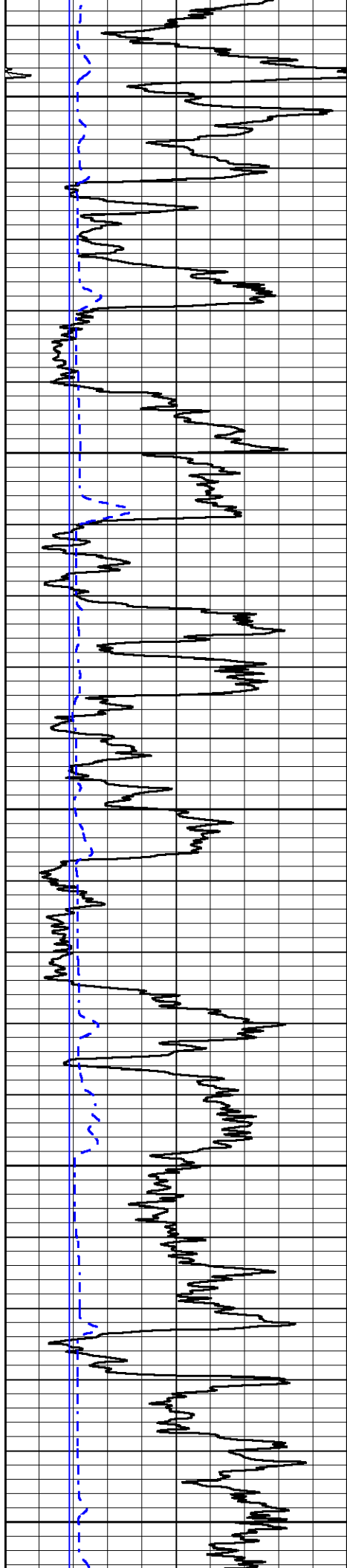
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3900

3950

4000





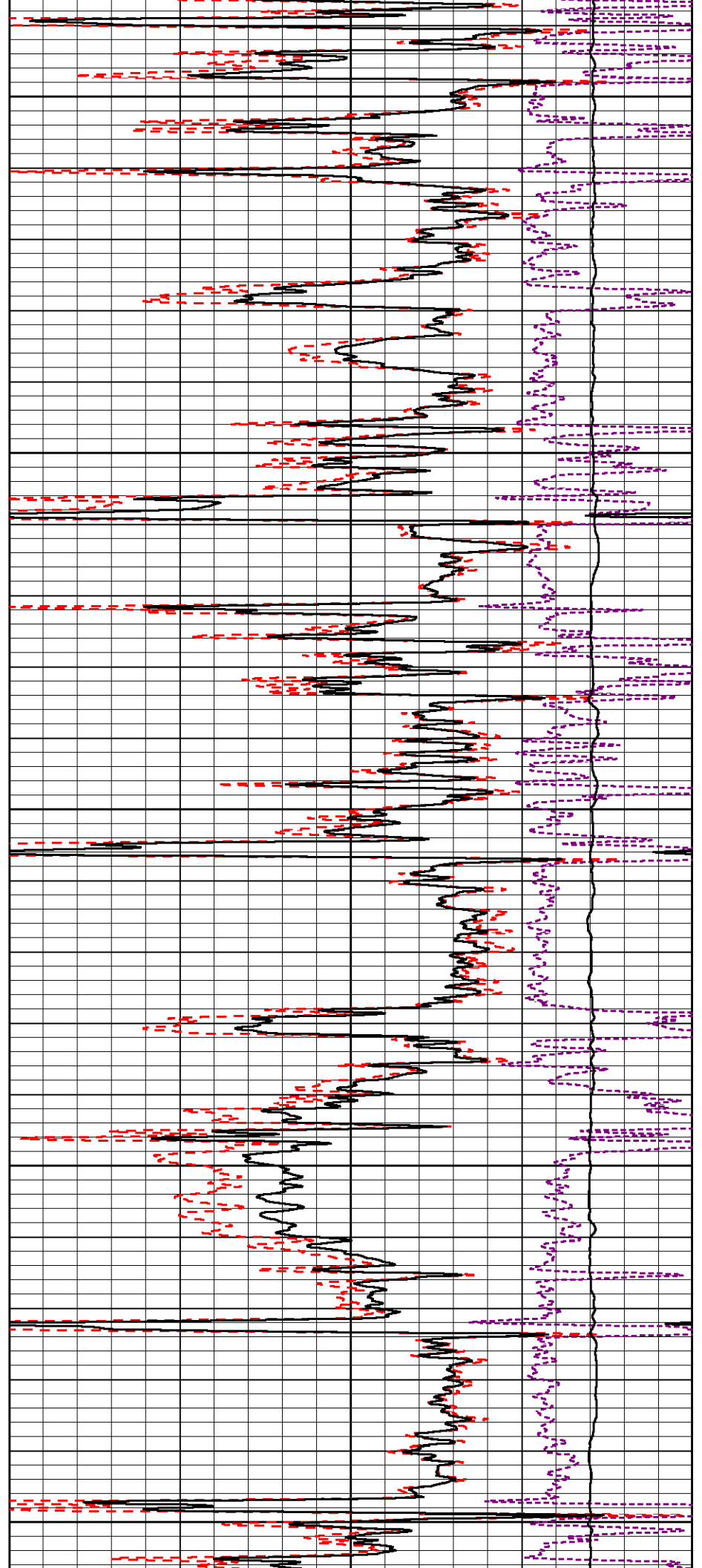
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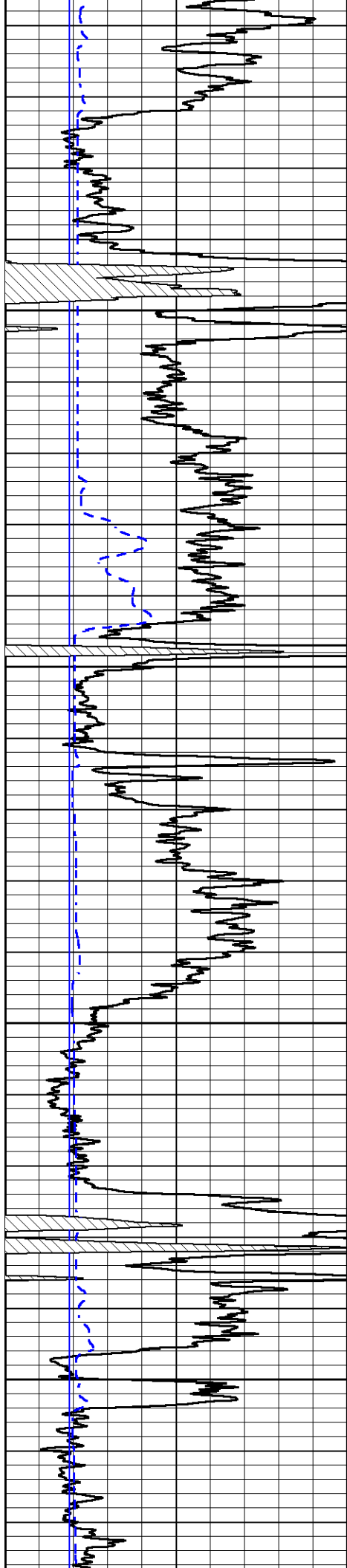
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4150

4200

4250



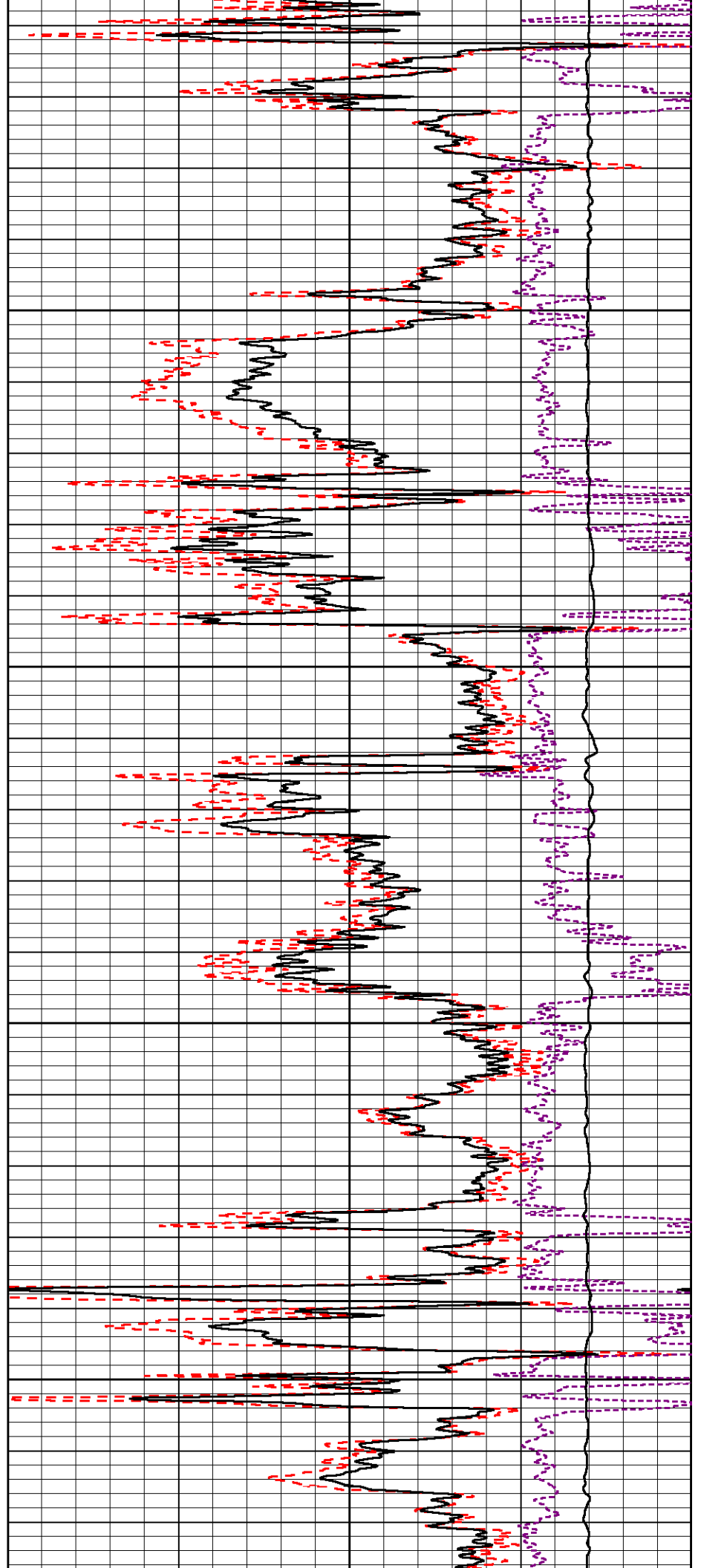


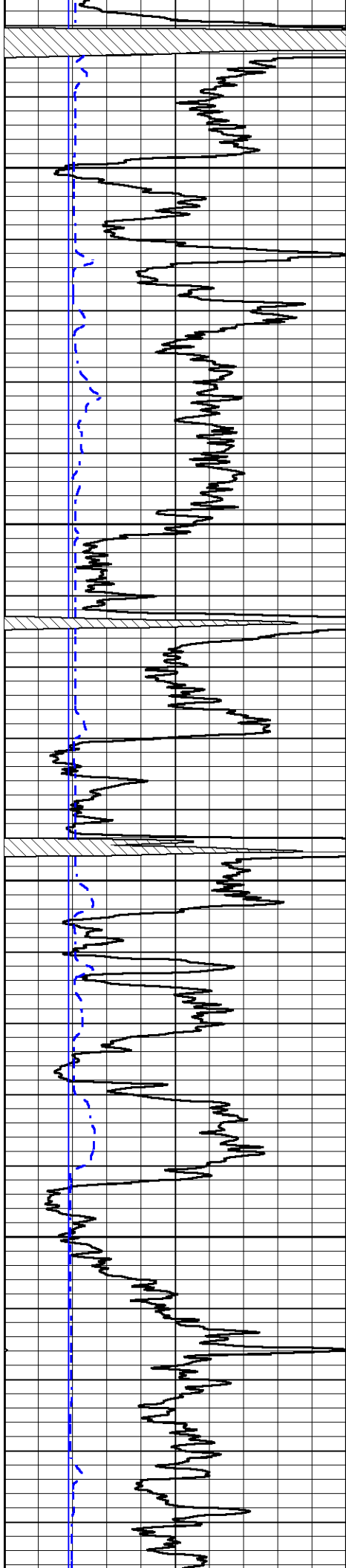
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4350

4400

4450



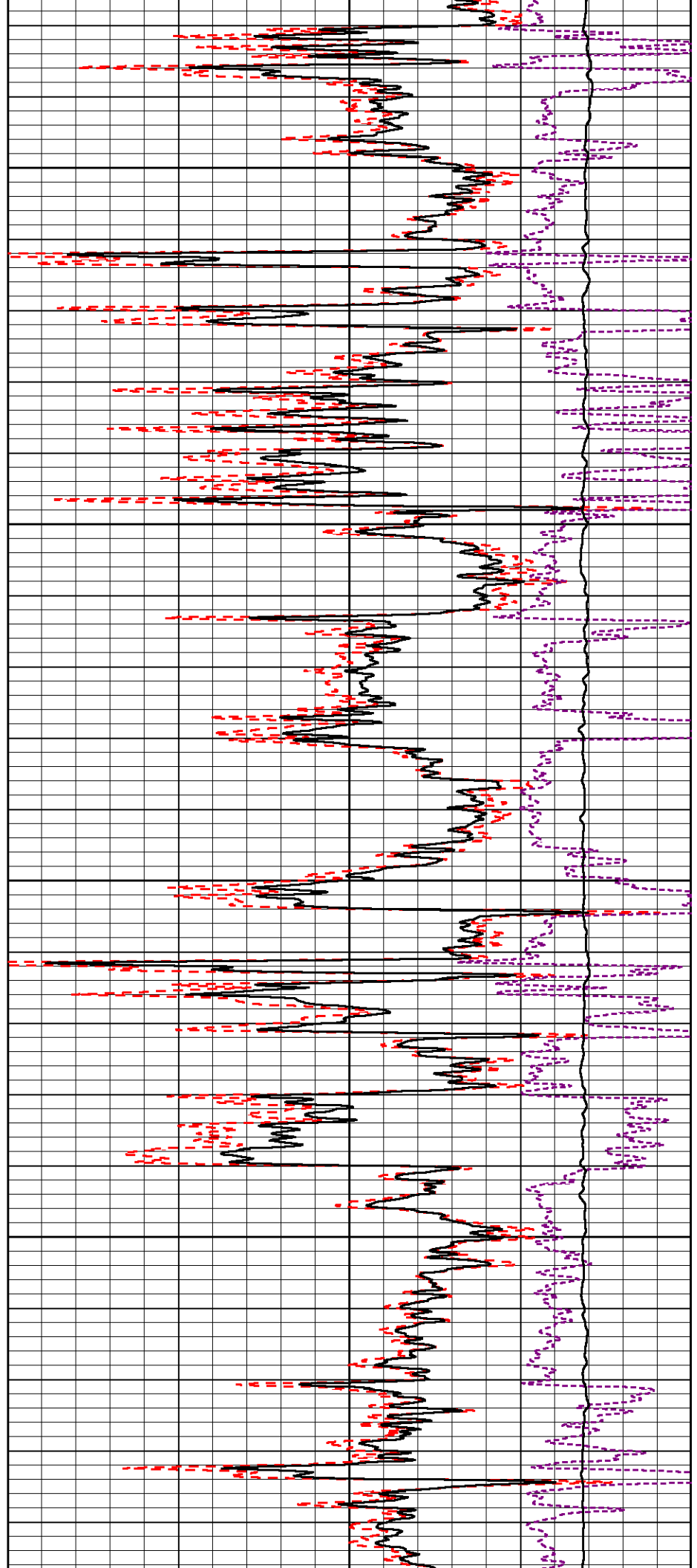


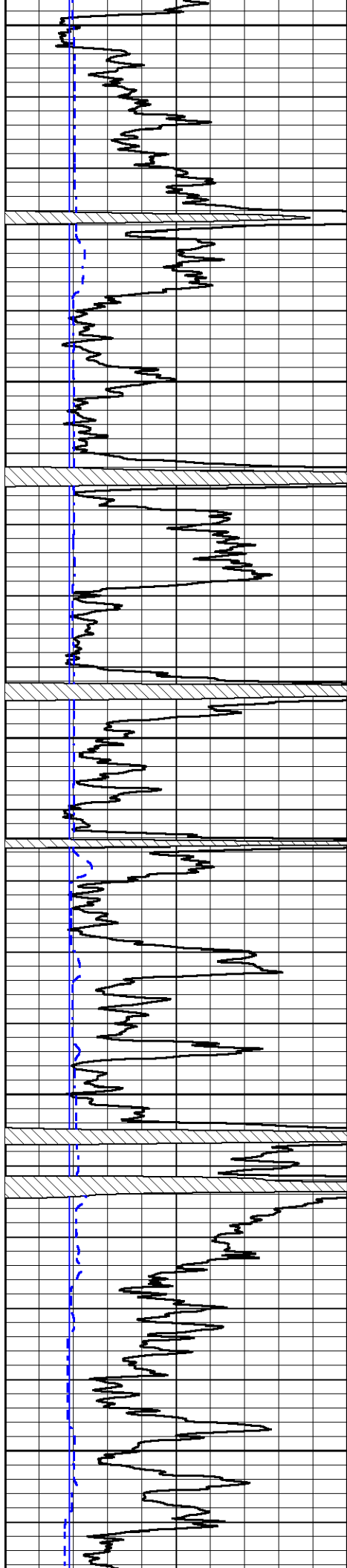
450

455

460

465





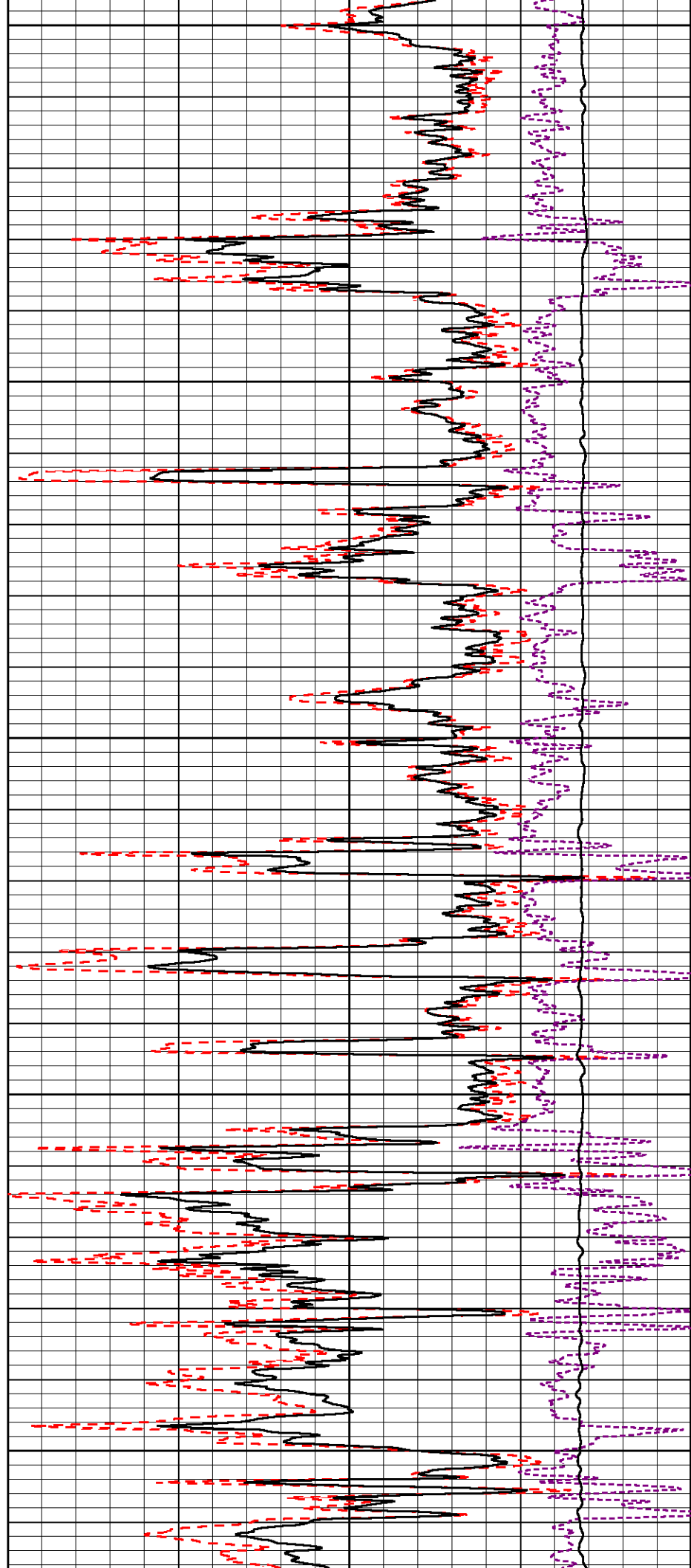
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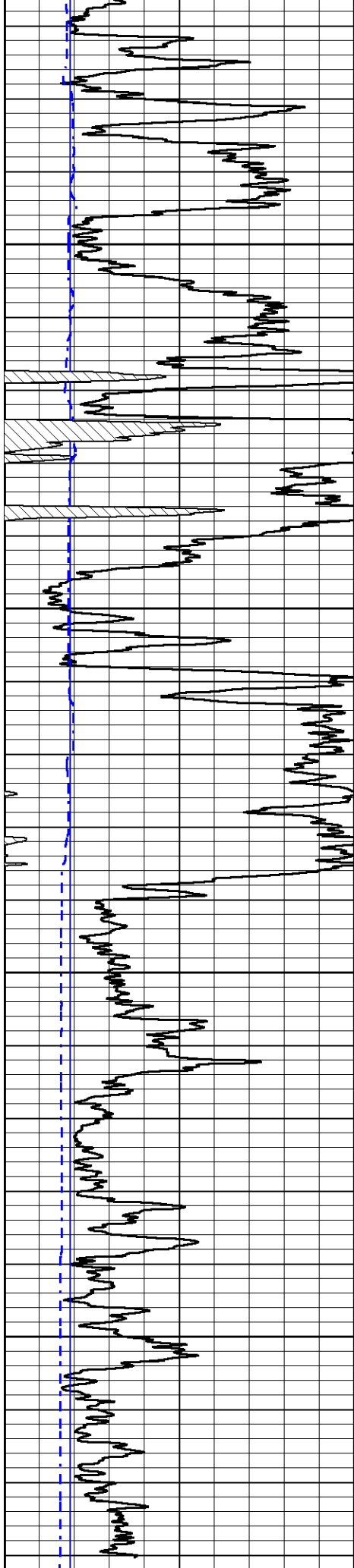
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4800

4850

4900



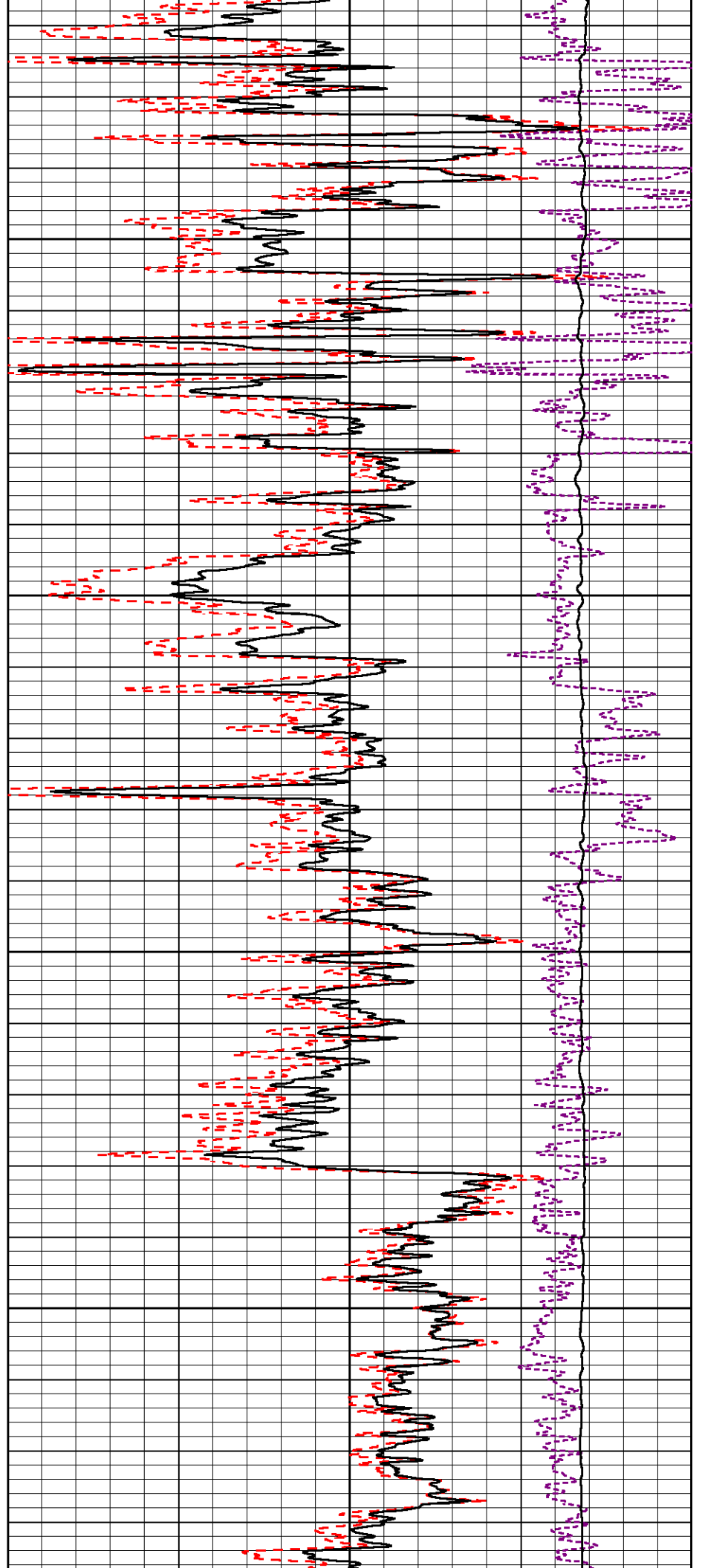


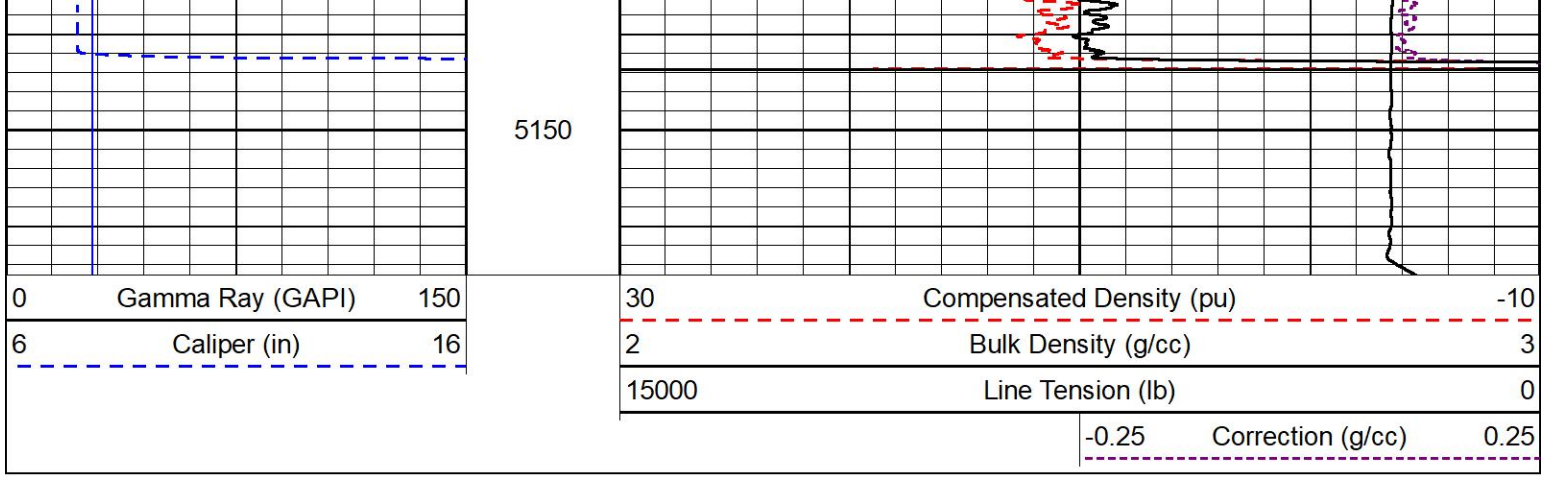
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5000

5050

5100



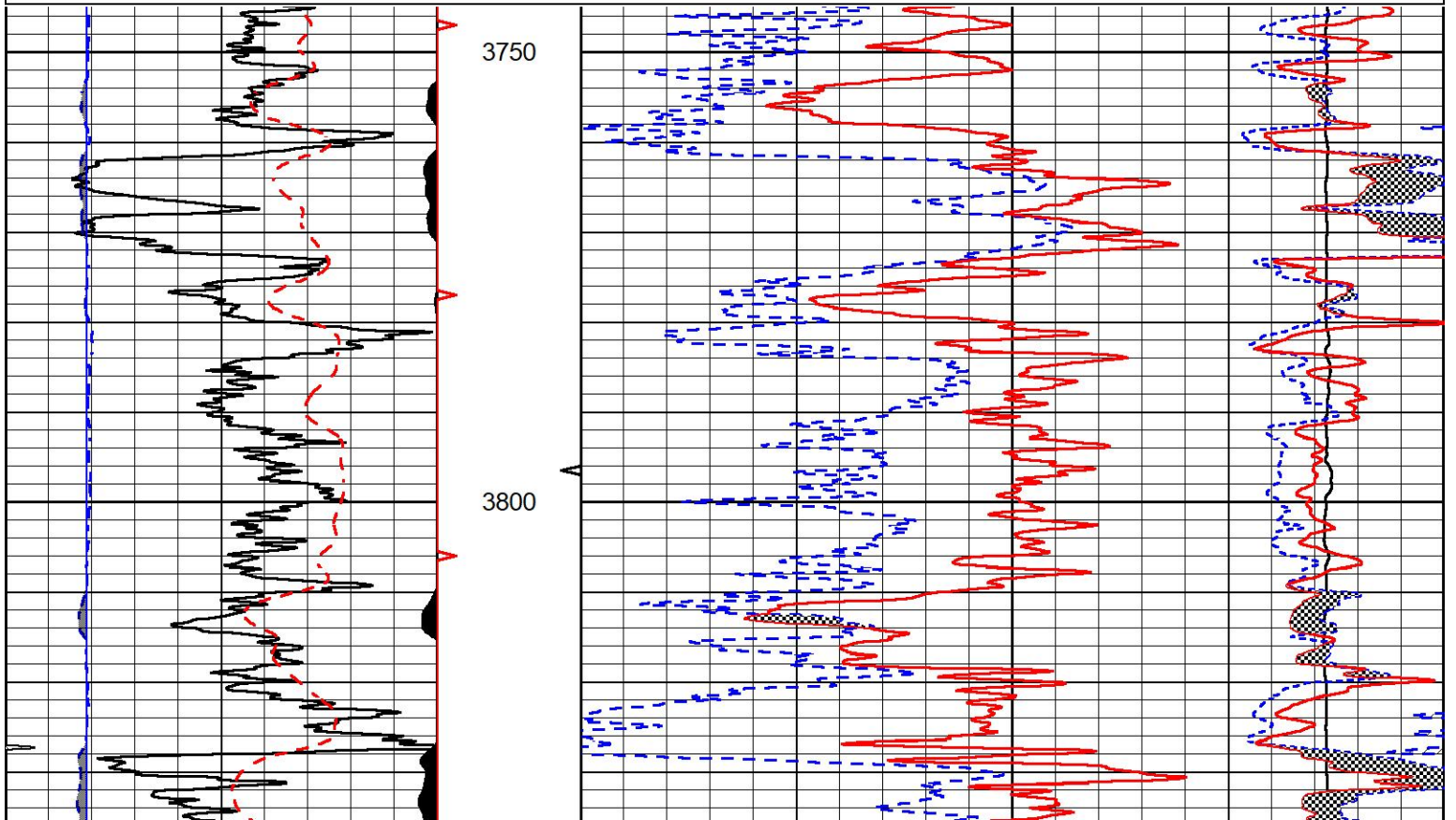
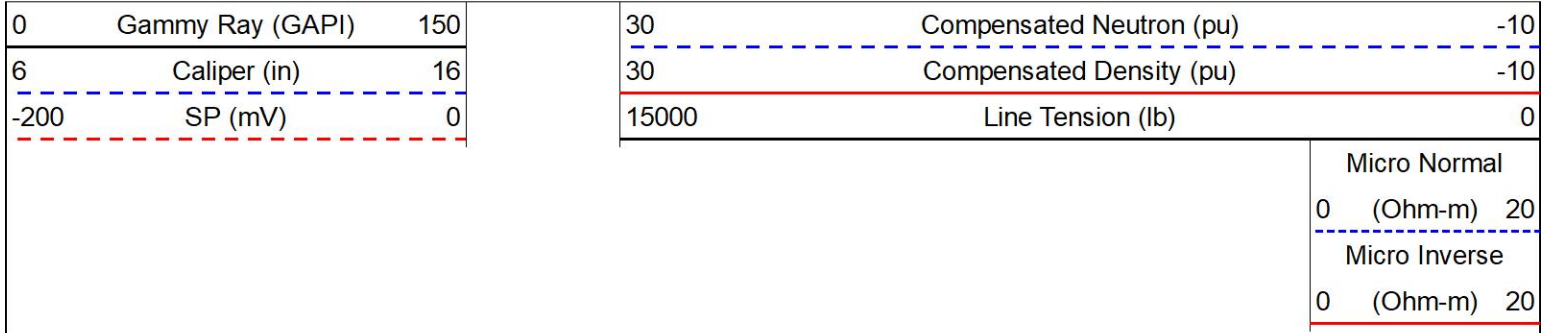


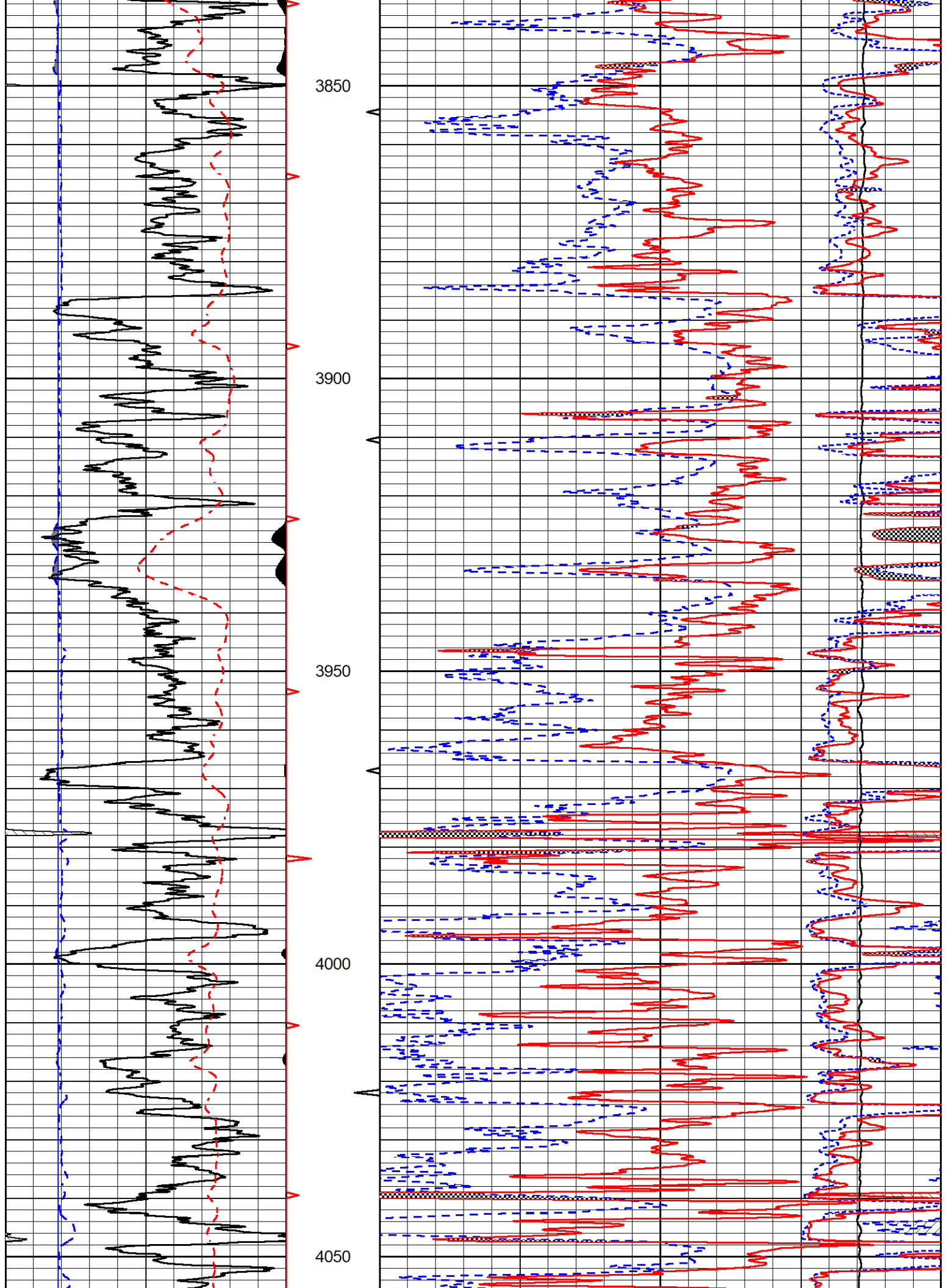
MIDWEST WIRELINE

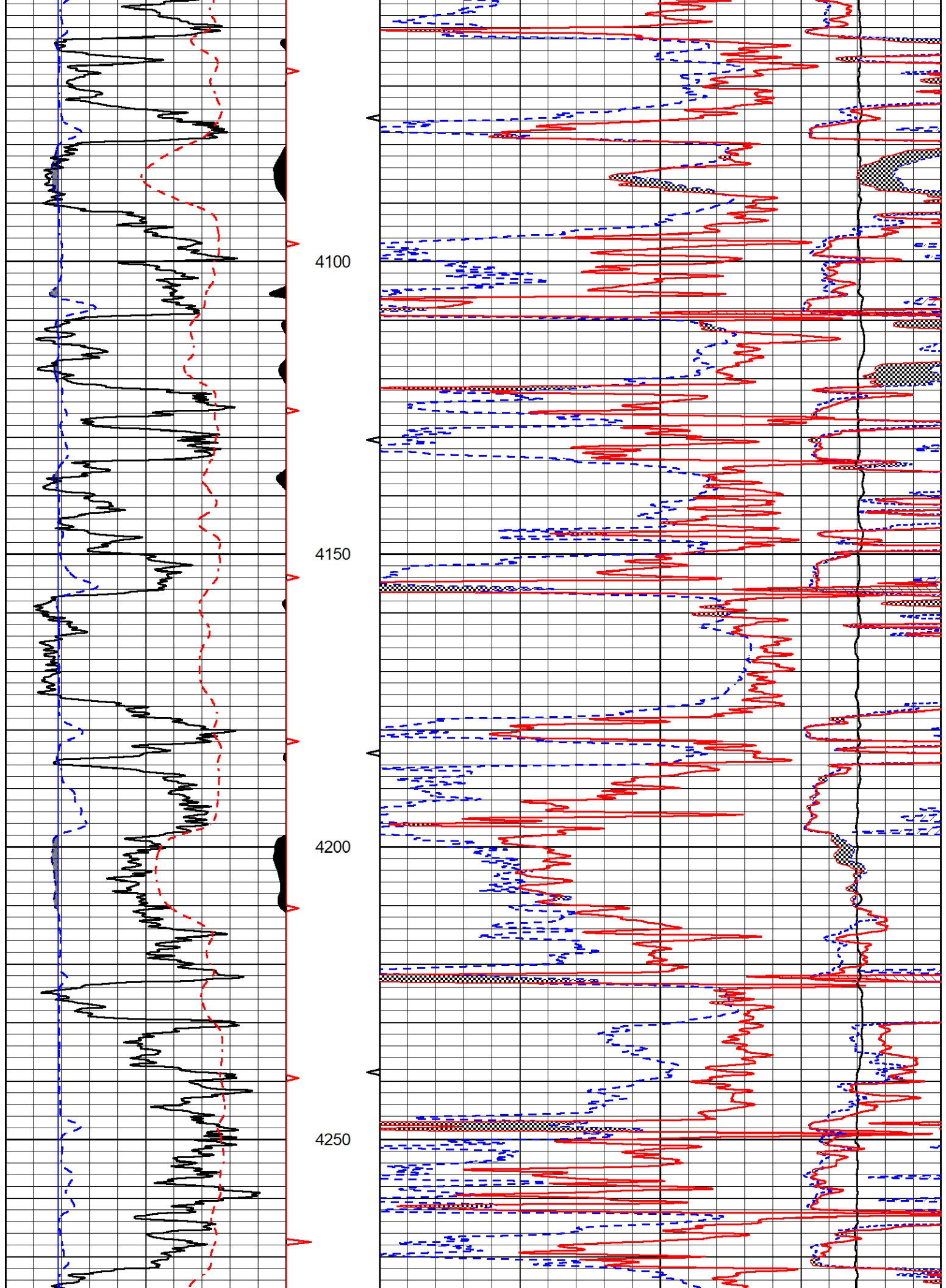
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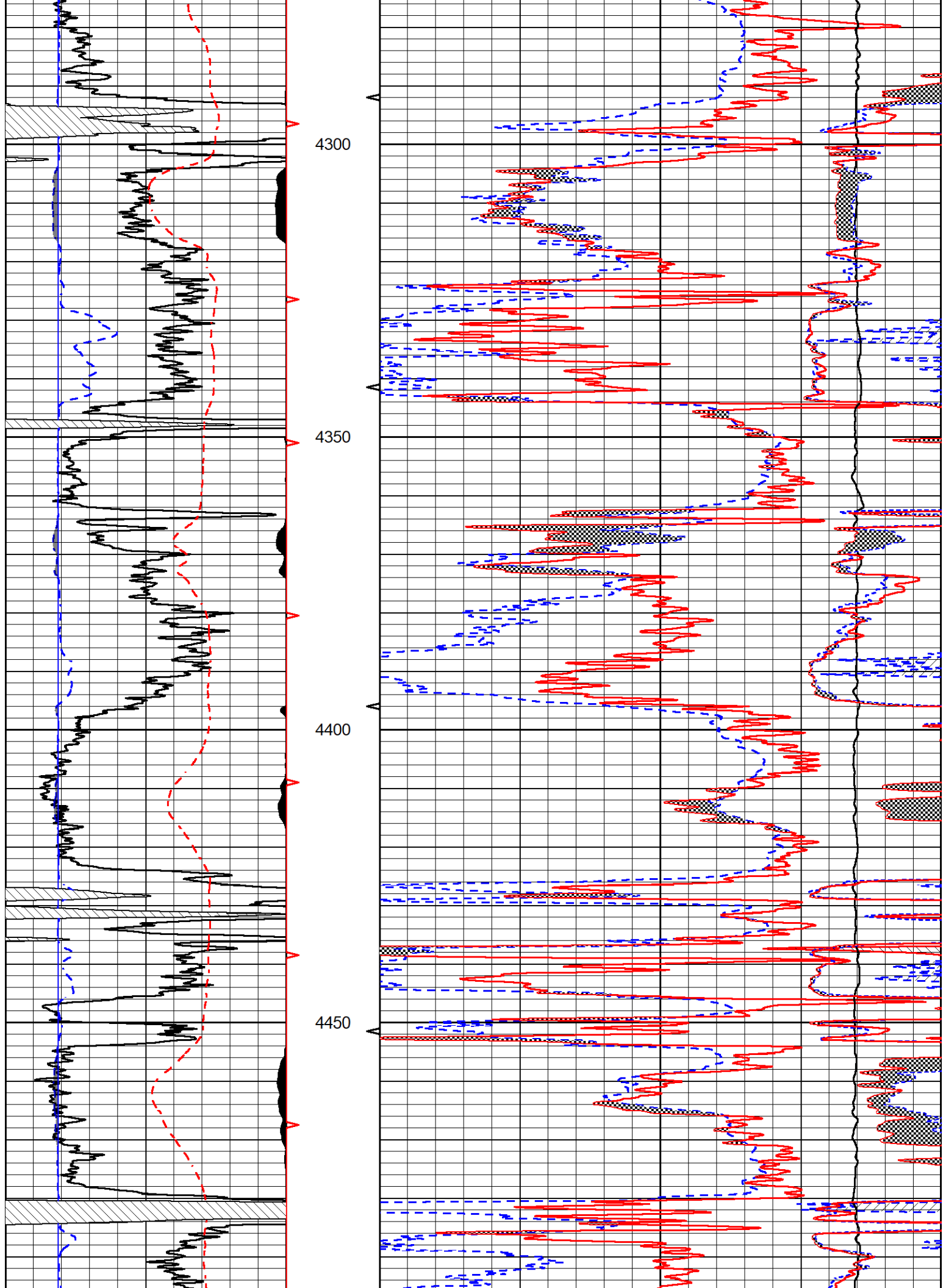
## MAIN PASS

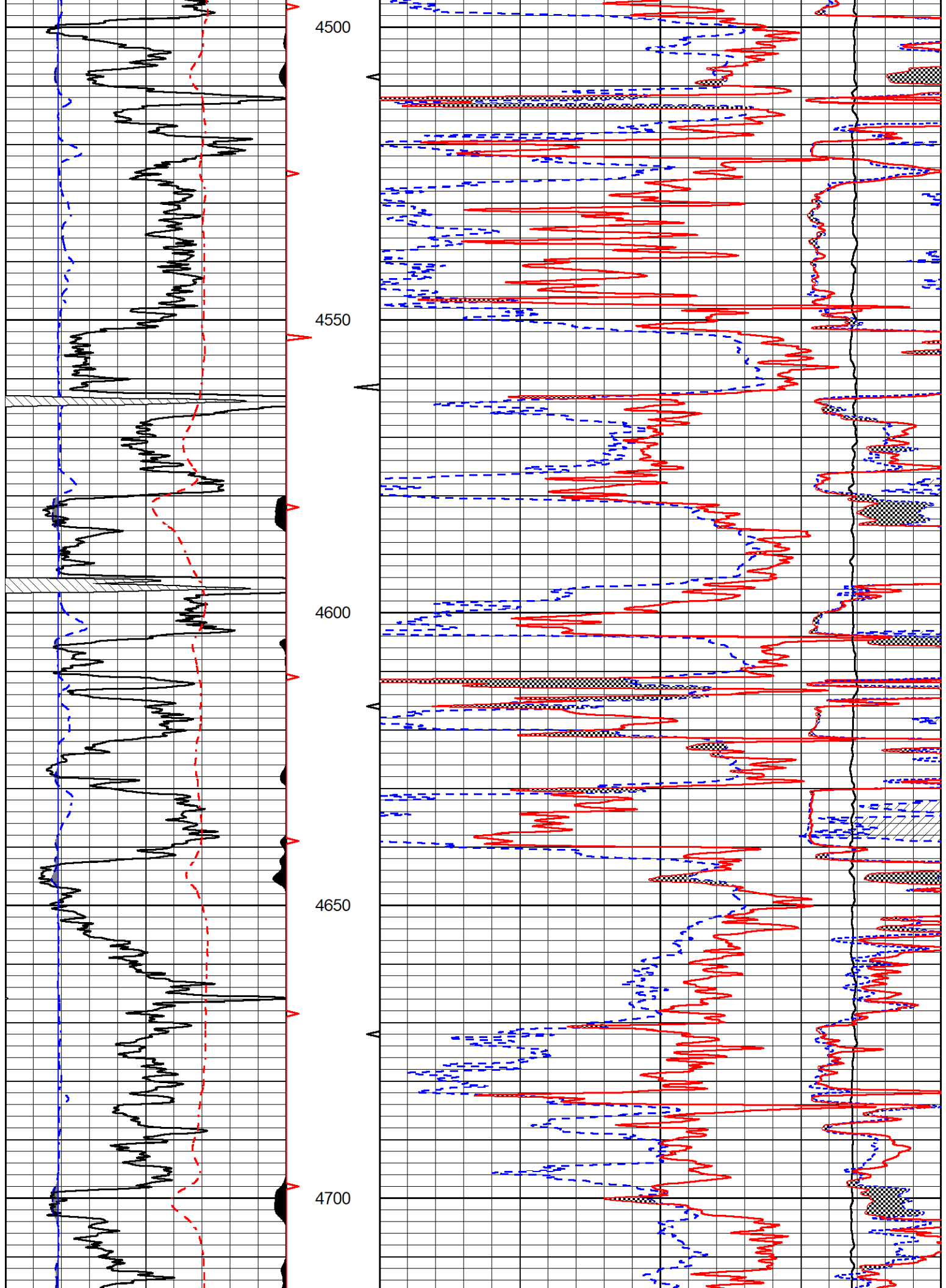
Database File      murfin\_kaus 1-21.db  
 Dataset Pathname    stkml/pass4.1  
 Presentation Format    \_CNDLS~2  
 Dataset Creation      Sun Aug 14 22:29:22 2022  
 Charted by            Depth in Feet scaled 1:240

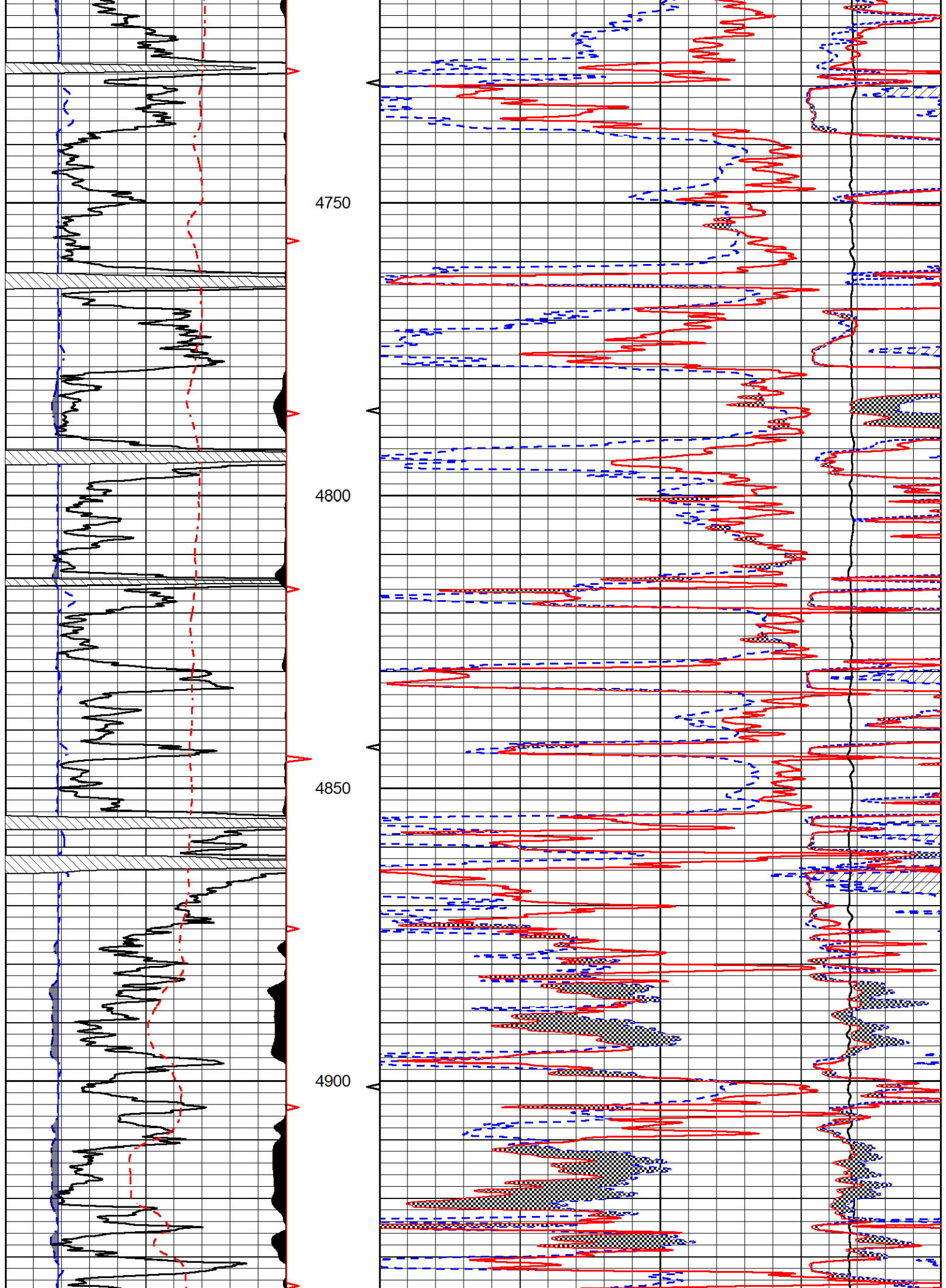


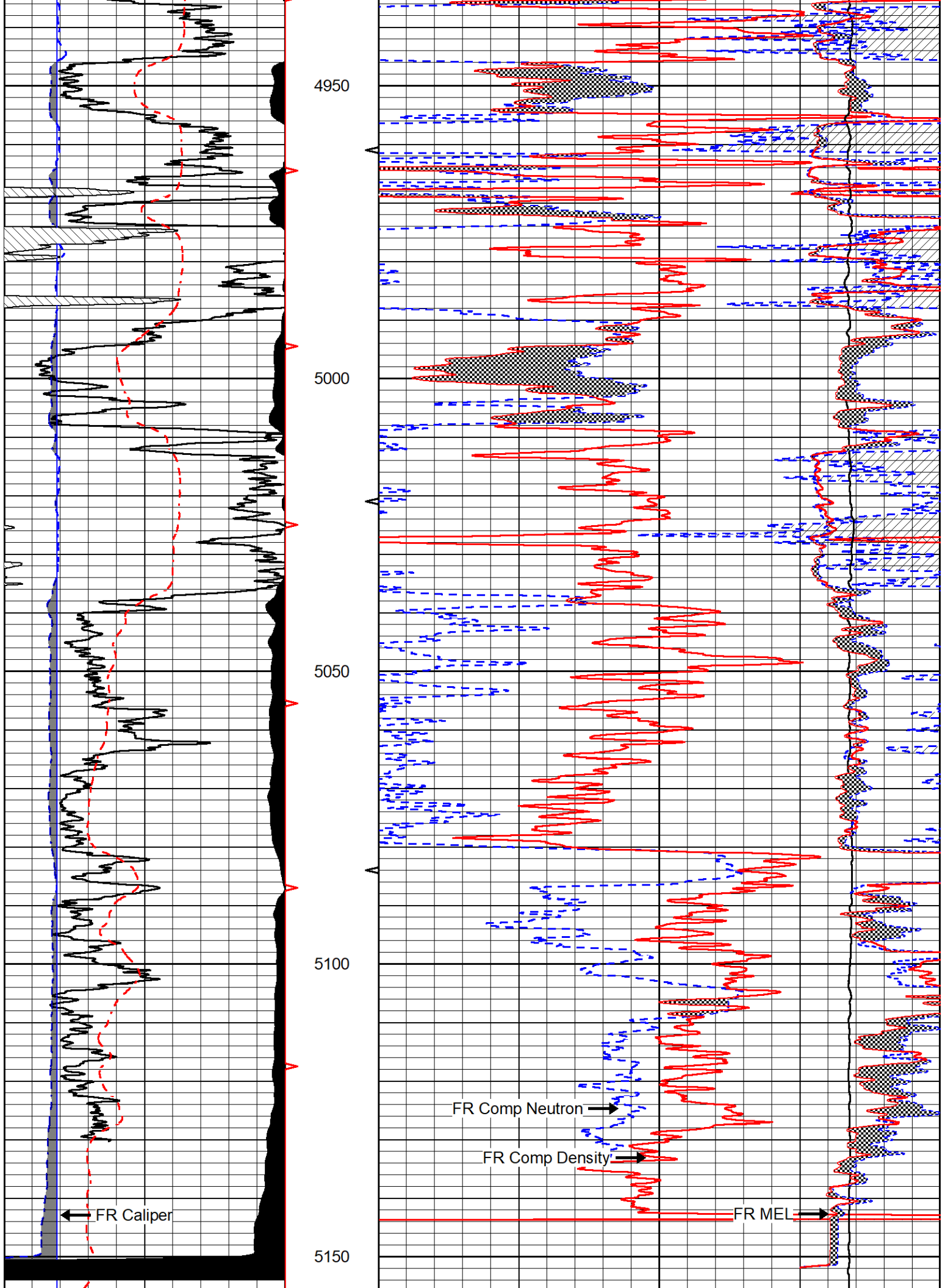


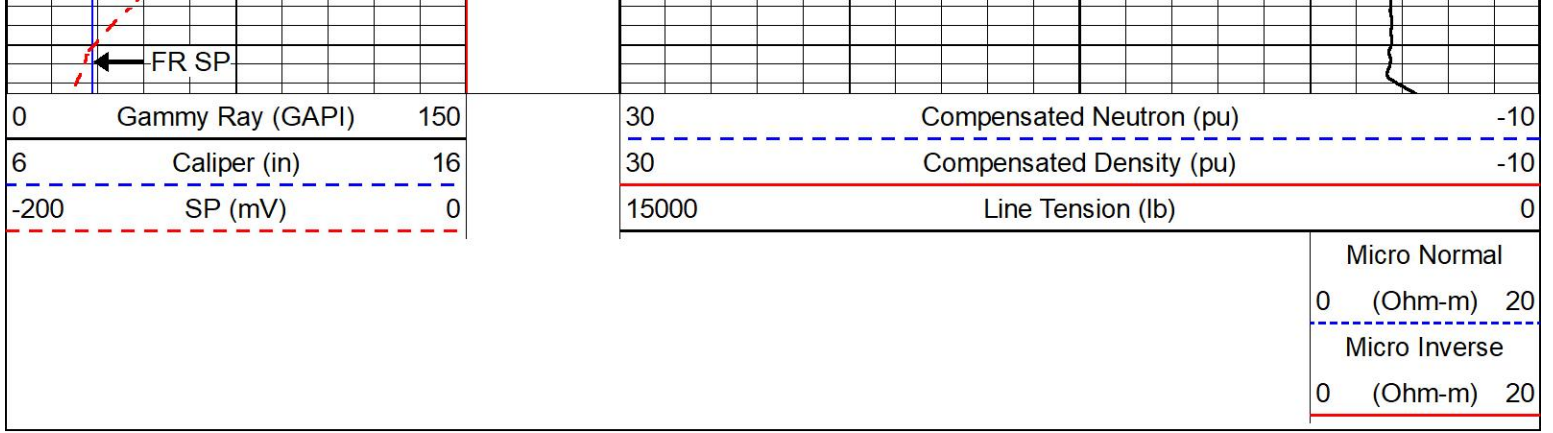








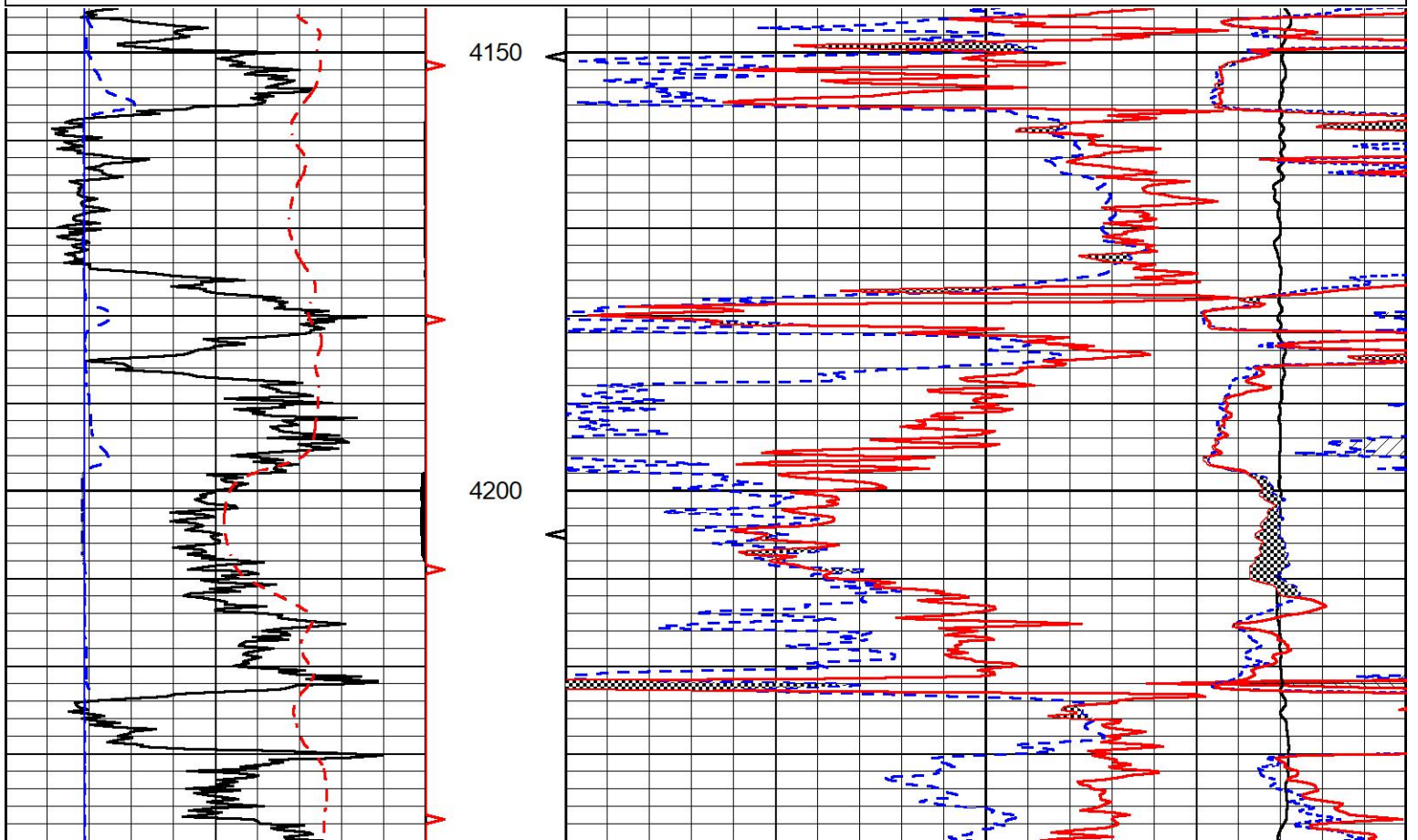
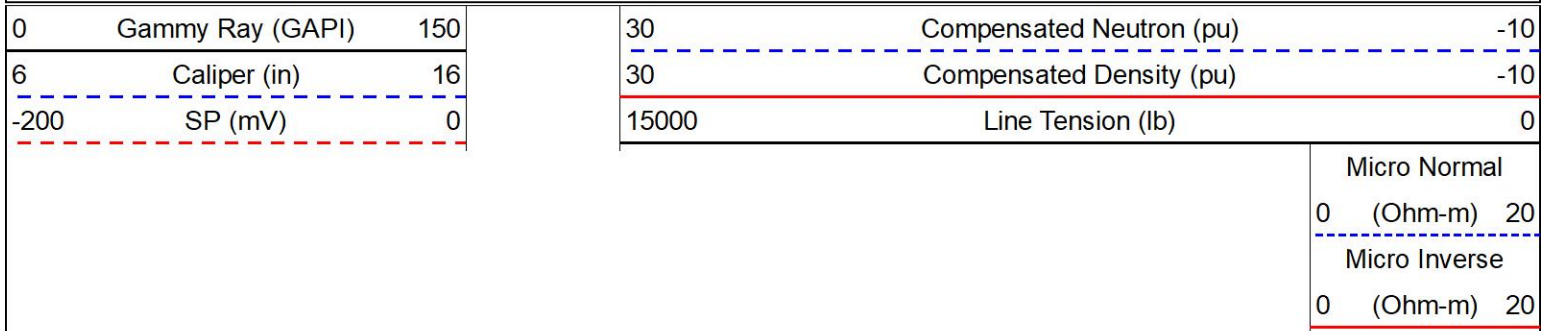


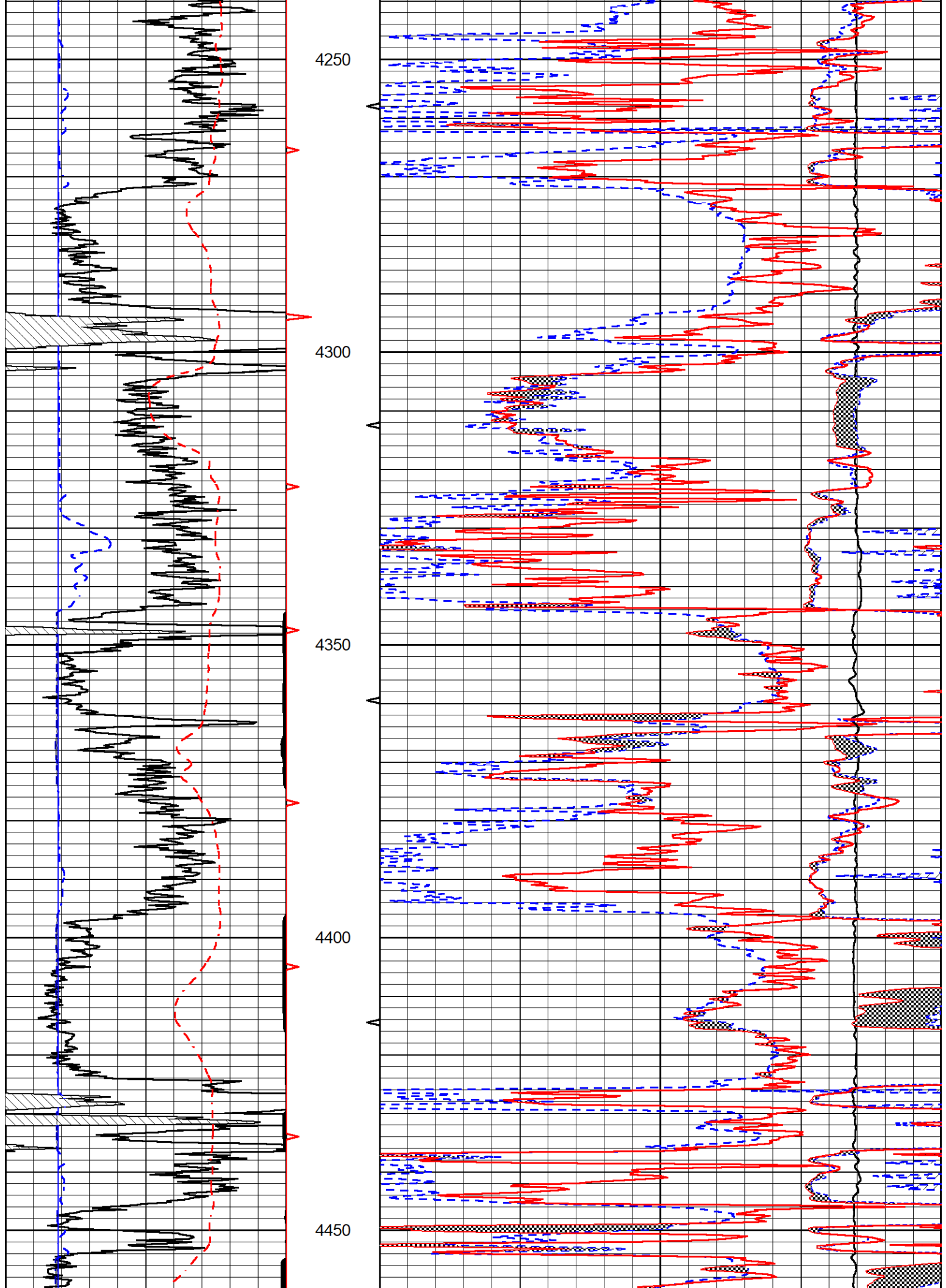


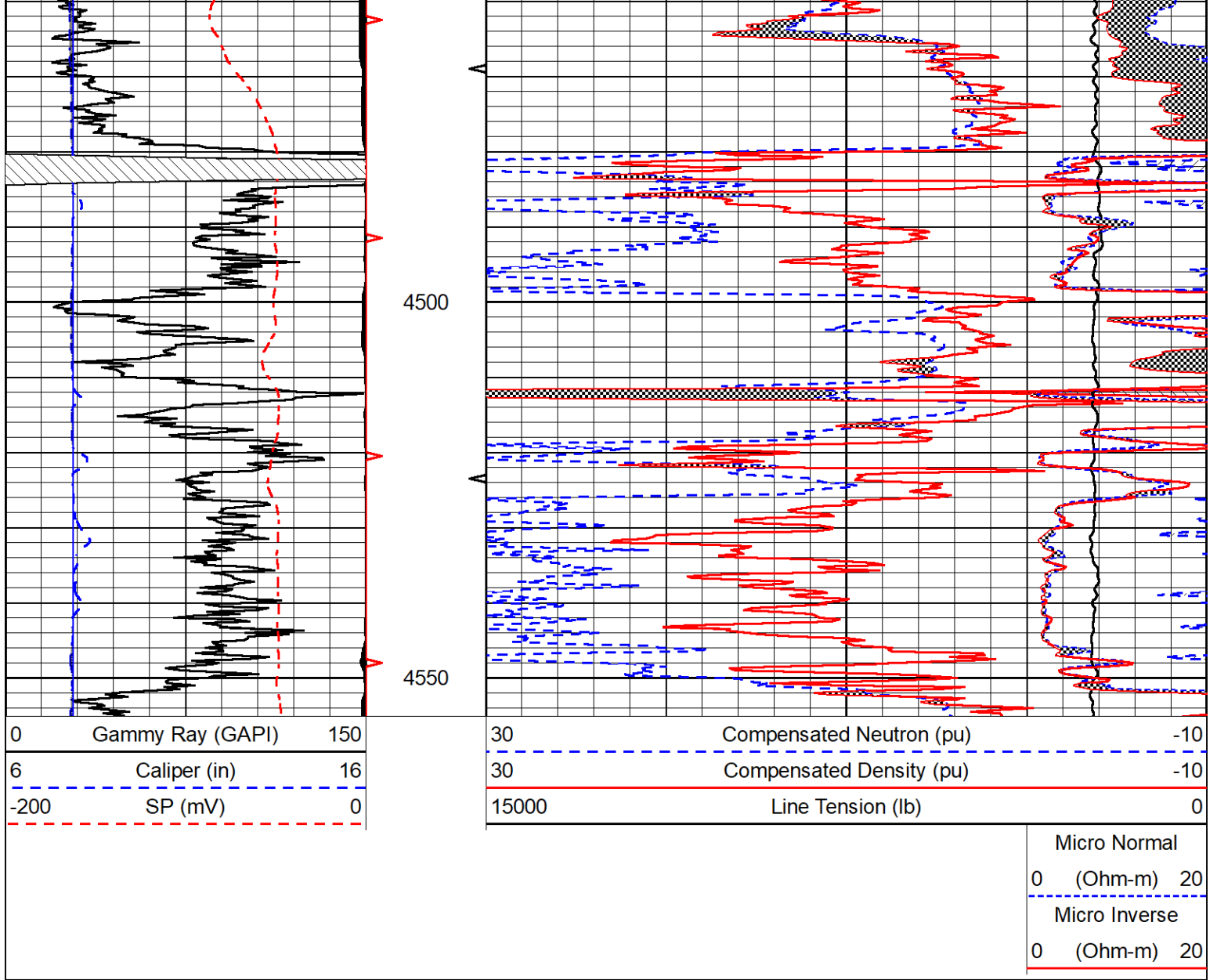
# REPEAT SECTION

## REPEAT PASS

Database File      murfin\_kaus 1-21.db  
 Dataset Pathname    stkml/pass2.1  
 Presentation Format    \_CNDLS~2  
 Dataset Creation      Sun Aug 14 21:38:15 2022  
 Charted by            Depth in Feet scaled 1:240







### Calibration Report

Database File      murfin\_kaus 1-21.db  
 Dataset Pathname    stkml/pass4.17  
 Dataset Creation    Sun Aug 14 21:42:13 2022

### Dual Induction Calibration Report

Serial-Model:                      505 HT-M&W  
 Surface Cal Performed:            Wed Feb 2 12:55:14 2022

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.480	-62.000
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.390	-59.000

### Microlog Calibration Report

Serial-Model:                      401-PSI STKBL ML  
 Performed:                        Mon Aug 1 06:22:24 2022

Readings	References	Results
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	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	16000.0000	-2.0000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	13700.0000	-0.8000
Caliper	1.0049	1.0846	5.5000	20.0000	in	135.0000	-131.3000

**Compensated Density Calibration Report**

Serial-Model: 304-04-M&W  
Source #: 21170B  
Master Calibration Performed: Sun May 29 09:31:45 2022

**Master Calibration**

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6392.84	8538.69	cps
Aluminum	2.685	g/cc	1184.69	5433.63	cps
Spine Angle = 74.99			Density/Spine Ratio = 0.533		
	Size		Reading		
Small Ring	4.00	in	1.15		
Large Ring	14.00	in	1.02		

**Compensated Neutron Calibration Report**

Serial-Model: 210-M&W  
Source #: N-1238  
Master Calibration Performed: Fri Dec 3 09:16:24 2021

**Master Calibration**

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: 103  
Tool Model: M&W  
Performed: Fri Dec 3 12:13:24 2021

Calibrator Value: 500.0 GAPI

Background Reading: 28.0 cps  
Calibrator Reading: 986.0 cps

Sensitivity: 0.5700 GAPI/cps



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