



MIDWEST WIRELINE

MICRORESISTIVITY LOG

Company: Murfin Drilling Company, Inc.
 Well: Hester #4-7
 Field: Sarah Ann
 County: Cheyenne
 State: Kansas

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Location: API #: 15-023-21629-00-00
 900 FNL & 450 FWL
 SEC 7 TWP 1S RGE 39W
 Permanent Datum: Ground Level Elevation 3407
 Log Measured From: Kelly Bushing
 Drilling Measured From: Kelly Bushing
 Other Services: CNL/CDL DIL/BHCS
 Elevation: K.B. 3412, D.F., G.L. 3407

Date	8/26/2023	
Run Number	One	
Depth Driller	5175	
Depth Logger	5175	
Bottom Logged Interval	5174	
Top Log Interval	3800	
Casing Driller	8:625 @ 302	
Casing Logger	301	
Bit Size	7.875	
Type Fluid in Hole	Chemical	
Salinity, ppm CL	1200	
Density / Viscosity	9.3	64
pH / Fluid Loss	11.0	6.8
Source of Sample	FLOWLINE	
Rm @ Meas. Temp	0.65 @ 80	
Rmt @ Meas. Temp	0.49 @ 80	
Rmc @ Meas. Temp	0.88 @ 80	
Source of Rmf / Rmc	CHARTS	
Rm @ BHT	0.41 @ 128	
Operating Rig Time	5 Hours	
Max Rec. Temp. F	128	
Equipment Number	P-108	
Location	HAYS	
Recorded By	D. Schmidt	
Witnessed By	Robert Hendrix	

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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.

Benkelman,
 West on Hwy 34 to Rd 326A,
 about 2 1/2 South to location

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: Robert Hendrix
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.23		GR-M&W (105)	3.00	3.50	50.00
CNLSC CNSSC	37.13 36.38		CNT-M&W (210)	5.00	3.50	100.00
			MWLith-STEP LITHO Short (701-01)	8.40	5.00	250.00
LCAL	28.21					
LLW8N	28.21					
LLW7N	28.21					
LLW6N	28.21					
LLW5N	28.21					
LLW4N	28.21					
LLW3N	28.21					
LLW2N	28.21		ML-PSI STKBL ML (402)	7.58	4.00	65.00
LLW1N	28.21					
LSLOCK	27.96					
LLOCK	27.96					
PELTMPR	27.96					
LSHVNG	27.96					
LLHVNG	27.96					
LSW8N	27.71					
LSW7N	27.71					
LSW6N	27.71					
LSW5N	27.71					
LSW4N	27.71					
LSW3N	27.71					
LSW2N	27.71					
LSW1N	27.71					
MCAL	19.58	DIL-M&W (505 HT)	18.25	3.50	220.00	
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: murfin_hester 4-7.db: field/well/stkml/pass3.5
 Total length: 42.23 ft
 Total weight: 685.00 lb
 O.D.: 5.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_hester 4-7.db
 Dataset field/well/stkml/pass3.5/_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	No	-11	1.35	640	70	Off	5176

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



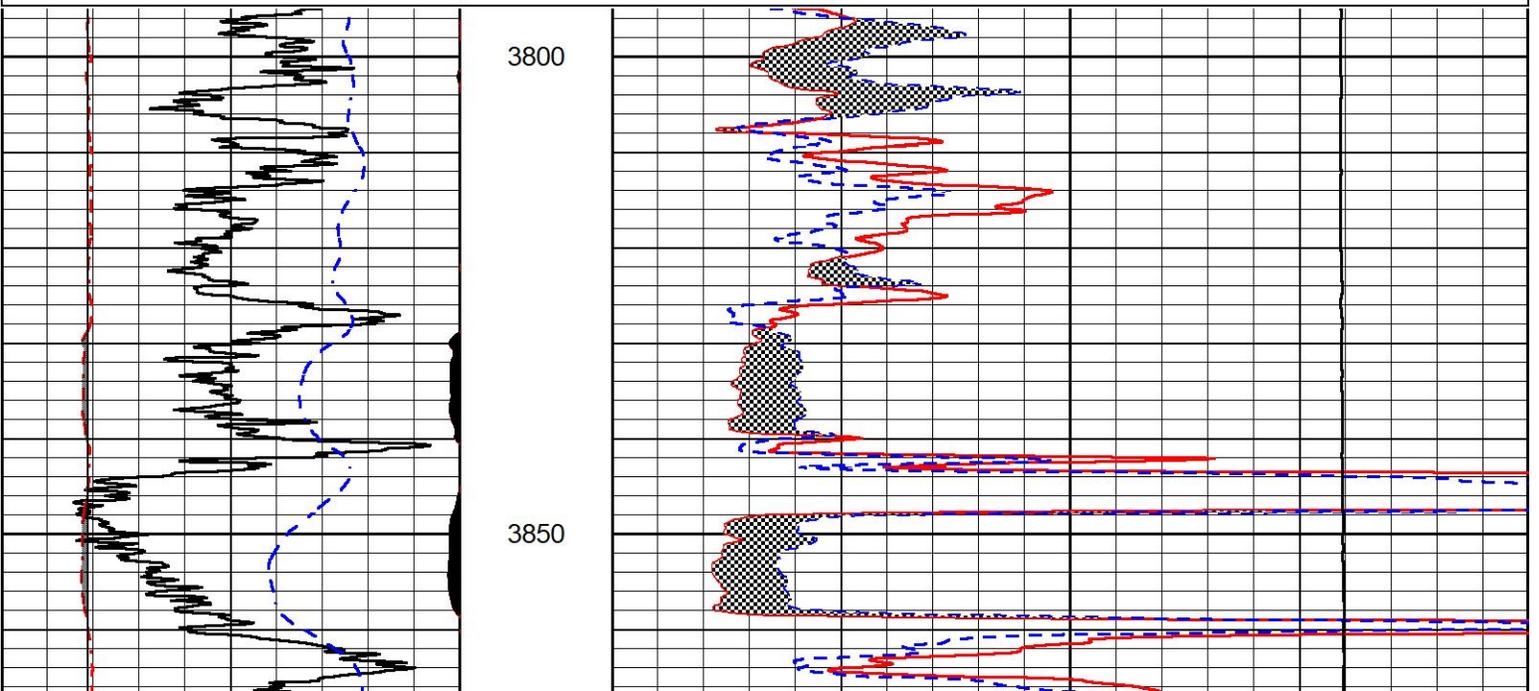
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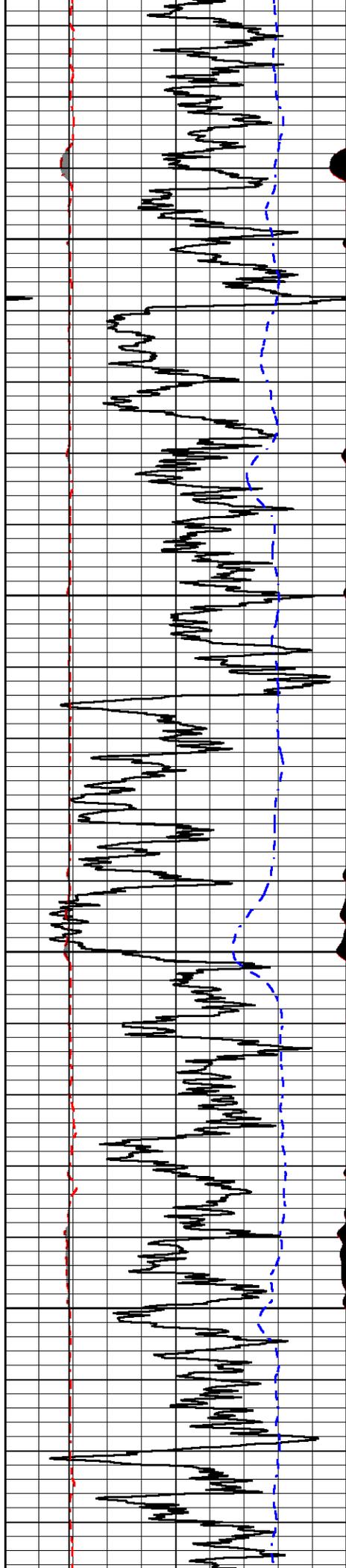
MAIN PASS

Database File murfin_hester 4-7.db
 Dataset Pathname stkml/pass3.1
 Presentation Format _micro
 Dataset Creation Sat Aug 26 03:32:50 2023
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	Micro Caliper (in)	16
2.875	mcal (in)	7.875
-200	SP (mV)	0

0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



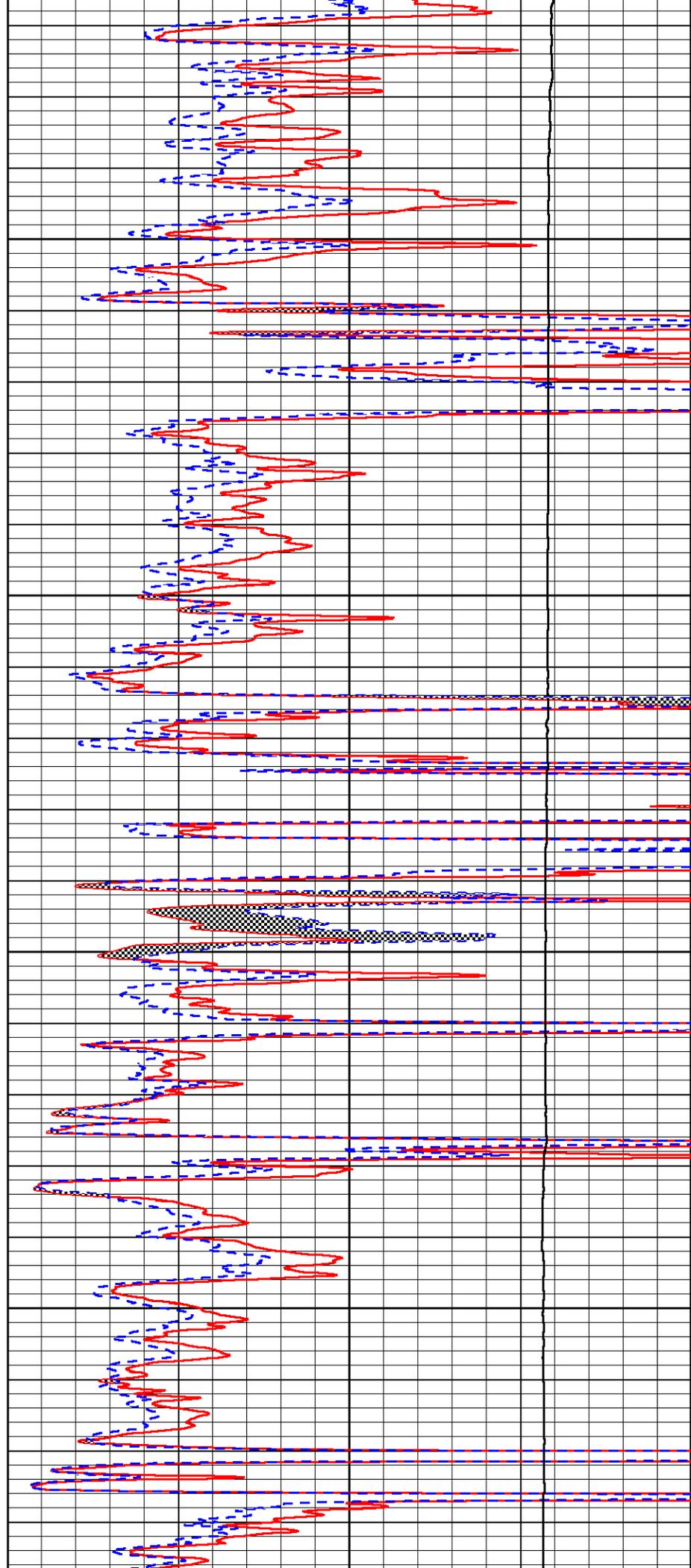


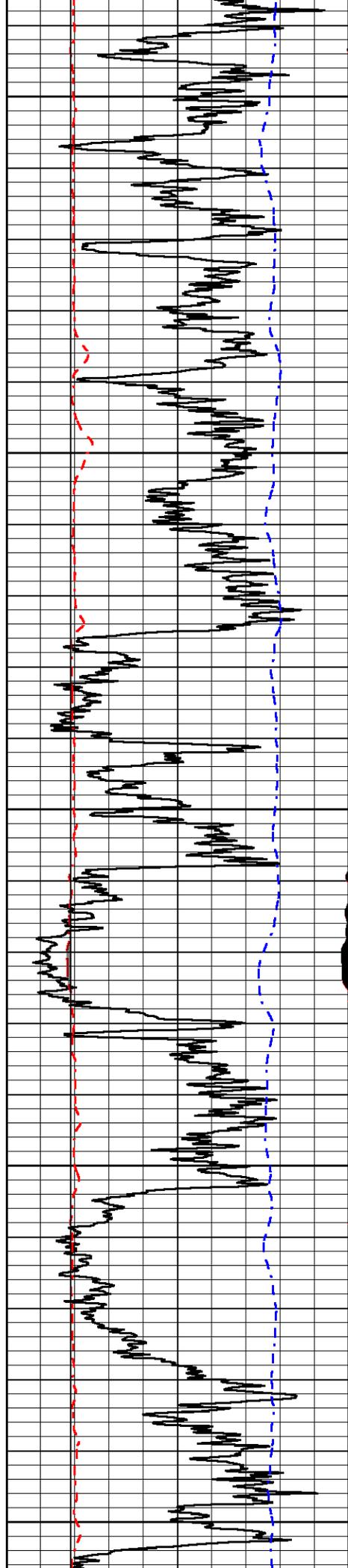
3900

3950

4000

4050





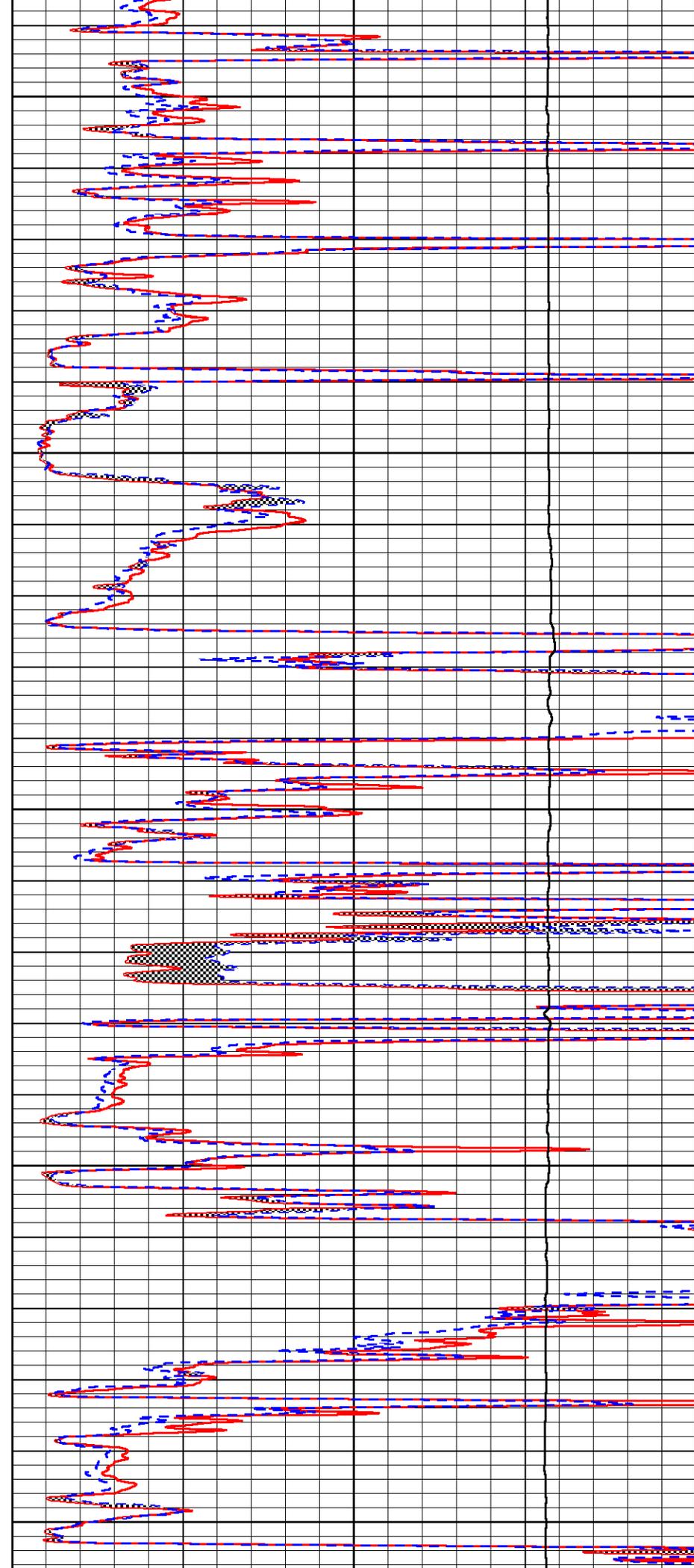
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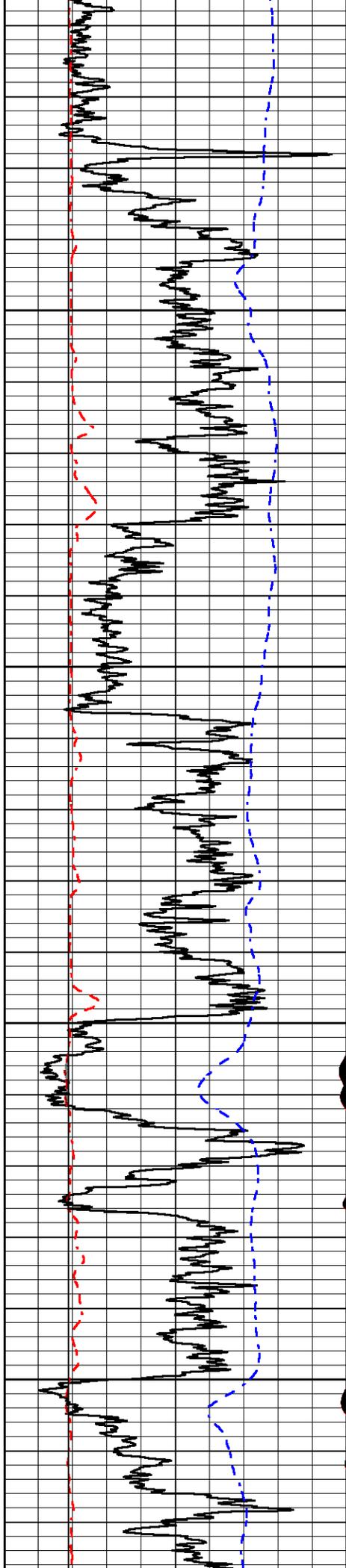
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4200

4250

4300



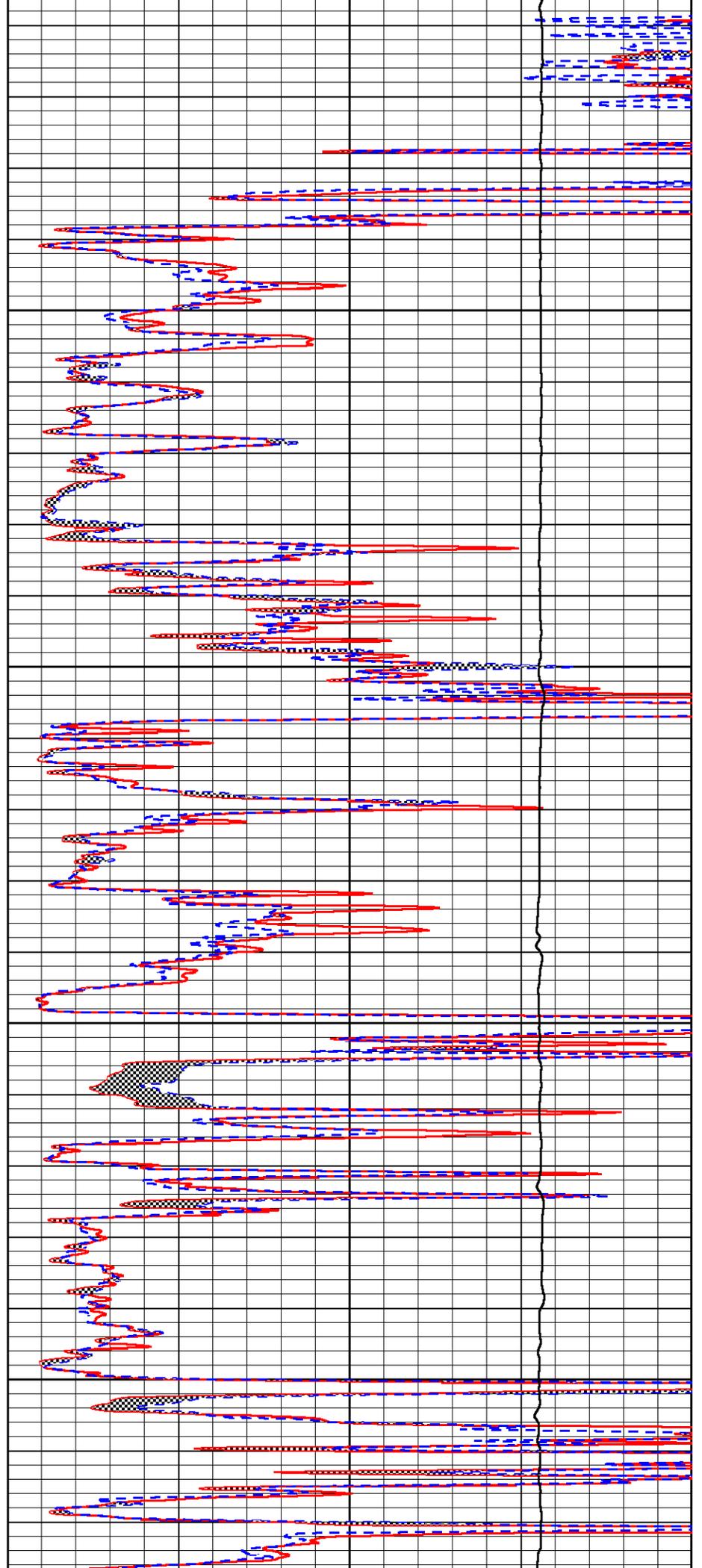


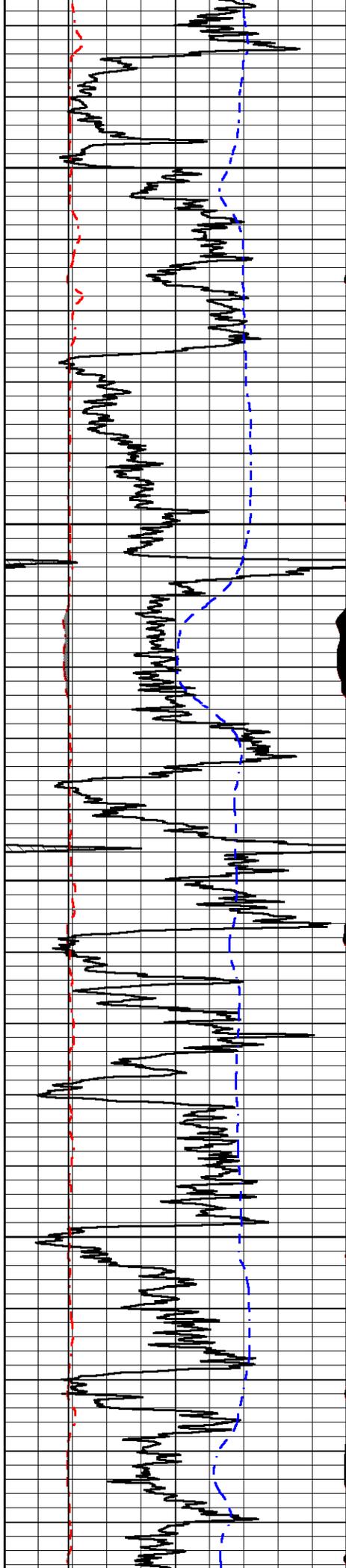
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4400

4450

4500



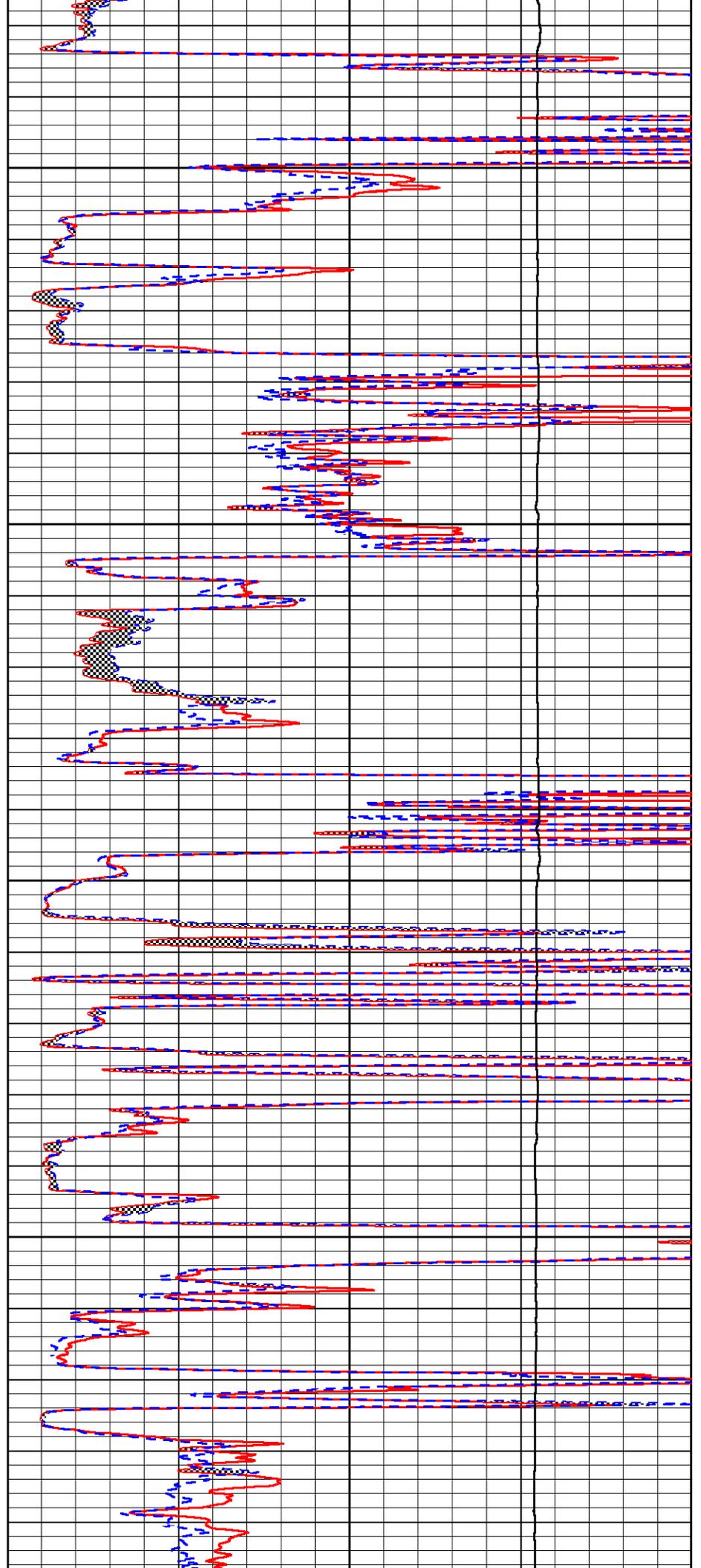


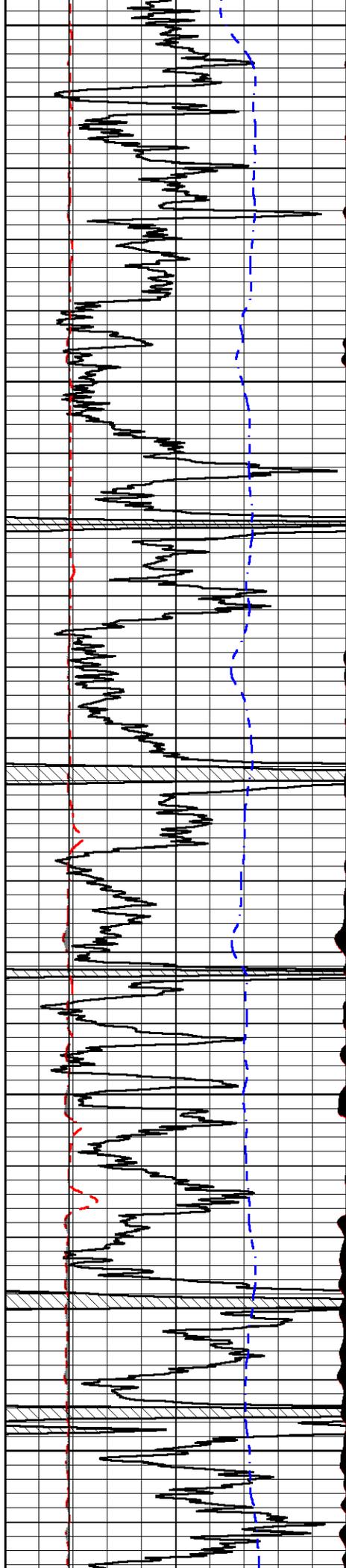
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4600

4650

4700





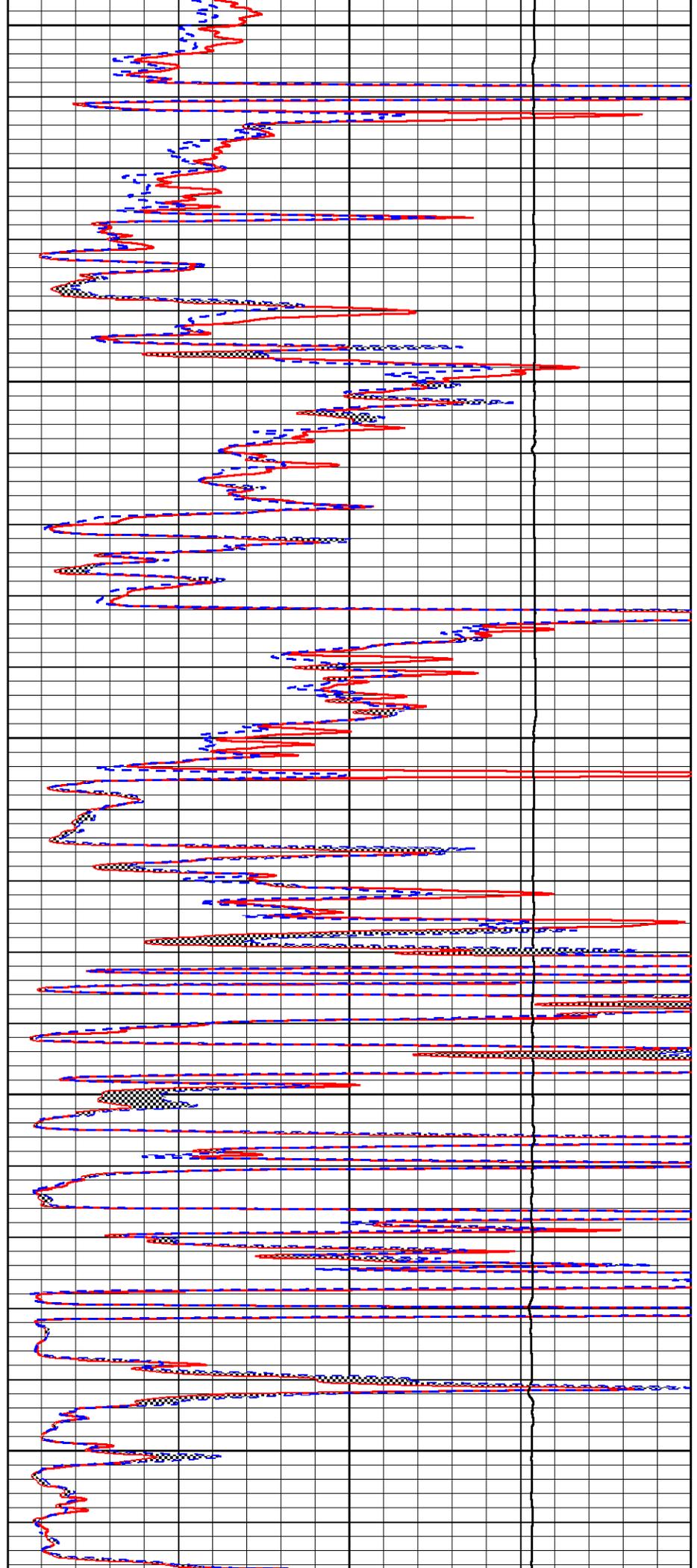
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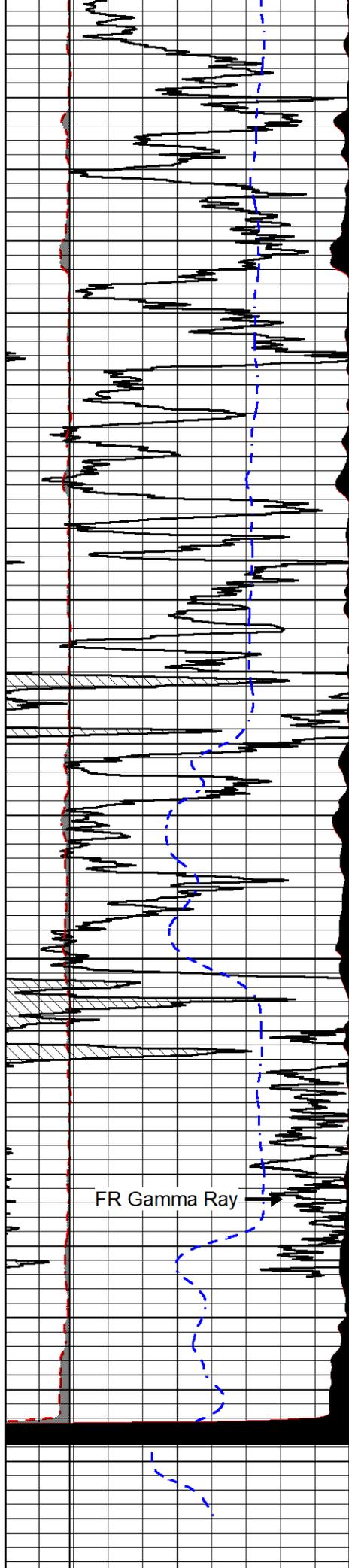
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4850

4900

4950



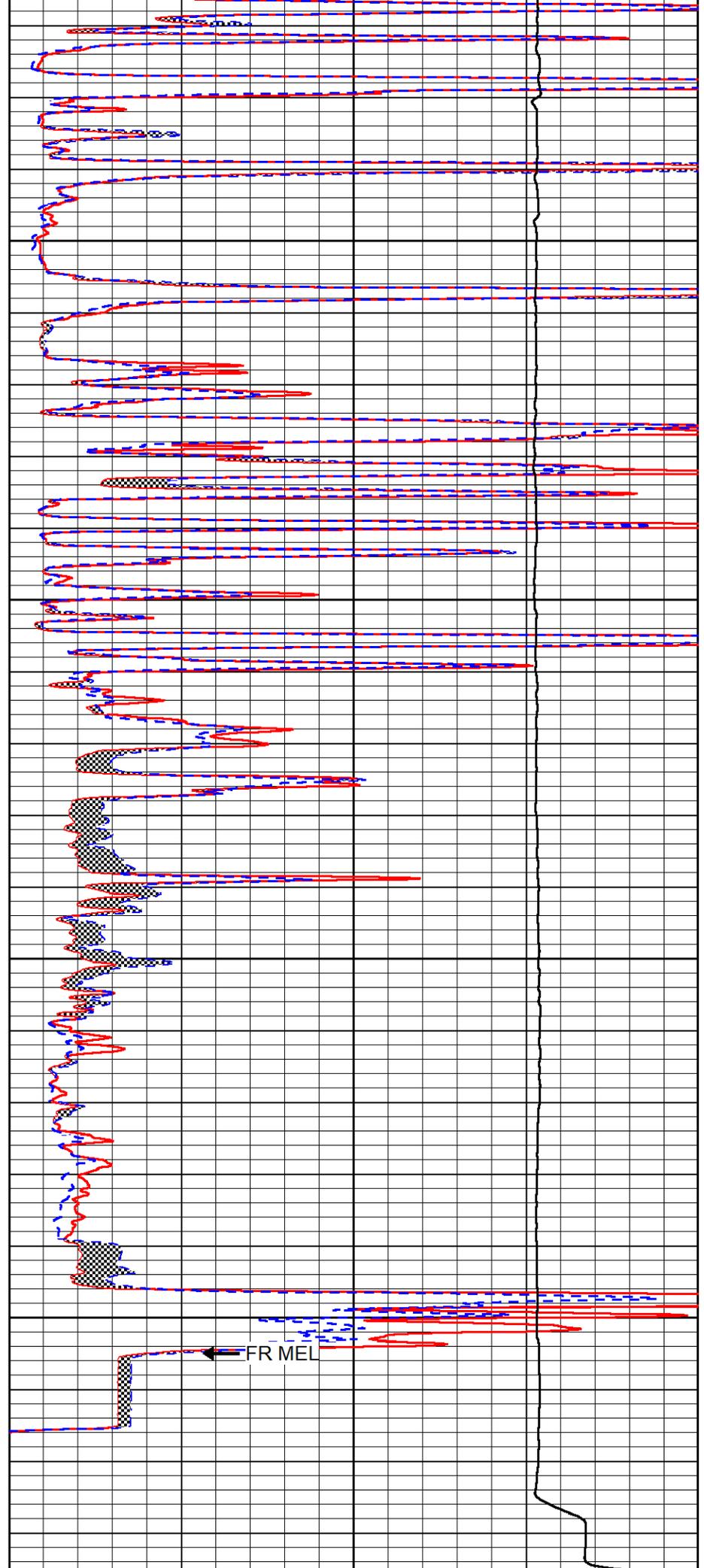


5000

5050

5100

5150



0	Gamma Ray (GAPI)	150
6	Micro Caliper (in)	16
2.875	mcal (in)	7.875
-200	SP (mV)	0

0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



MIDWEST WIRELINE

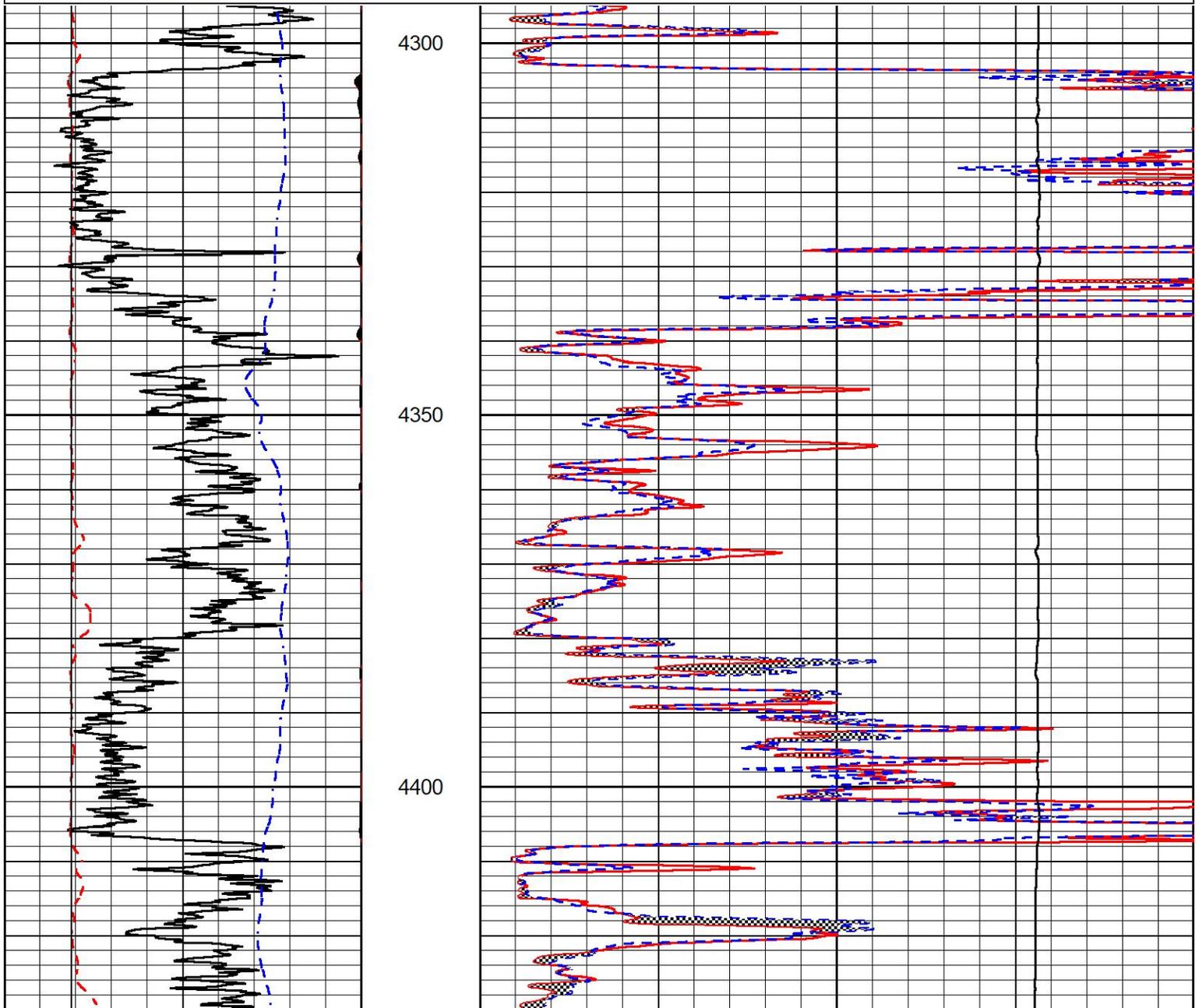
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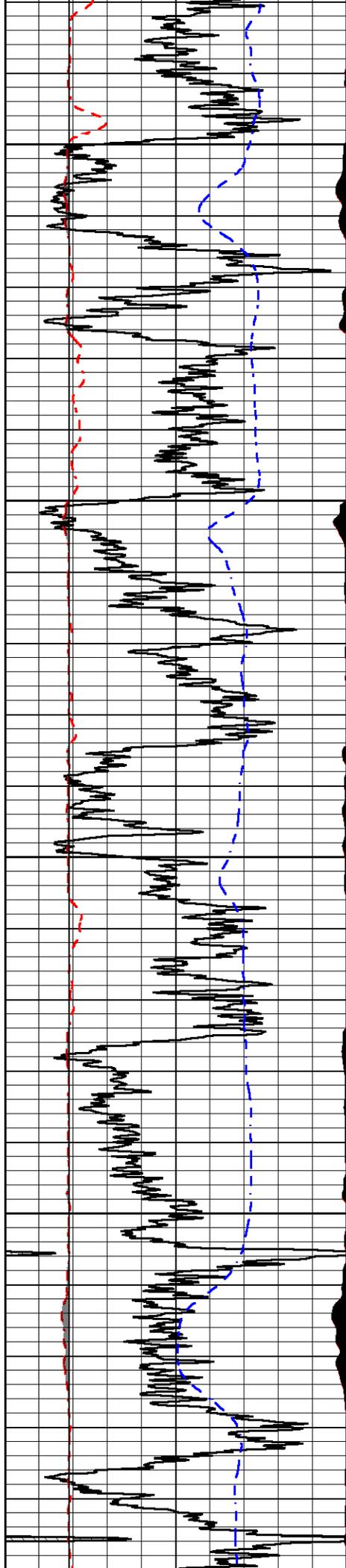
REPEAT PASS

Database File murfin_hester 4-7.db
 Dataset Pathname stkml/pass2.1
 Presentation Format _micro
 Dataset Creation Sat Aug 26 02:55:29 2023
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	Micro Caliper (in)	16
2.875	mcal (in)	7.875
-200	SP (mV)	0

0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0





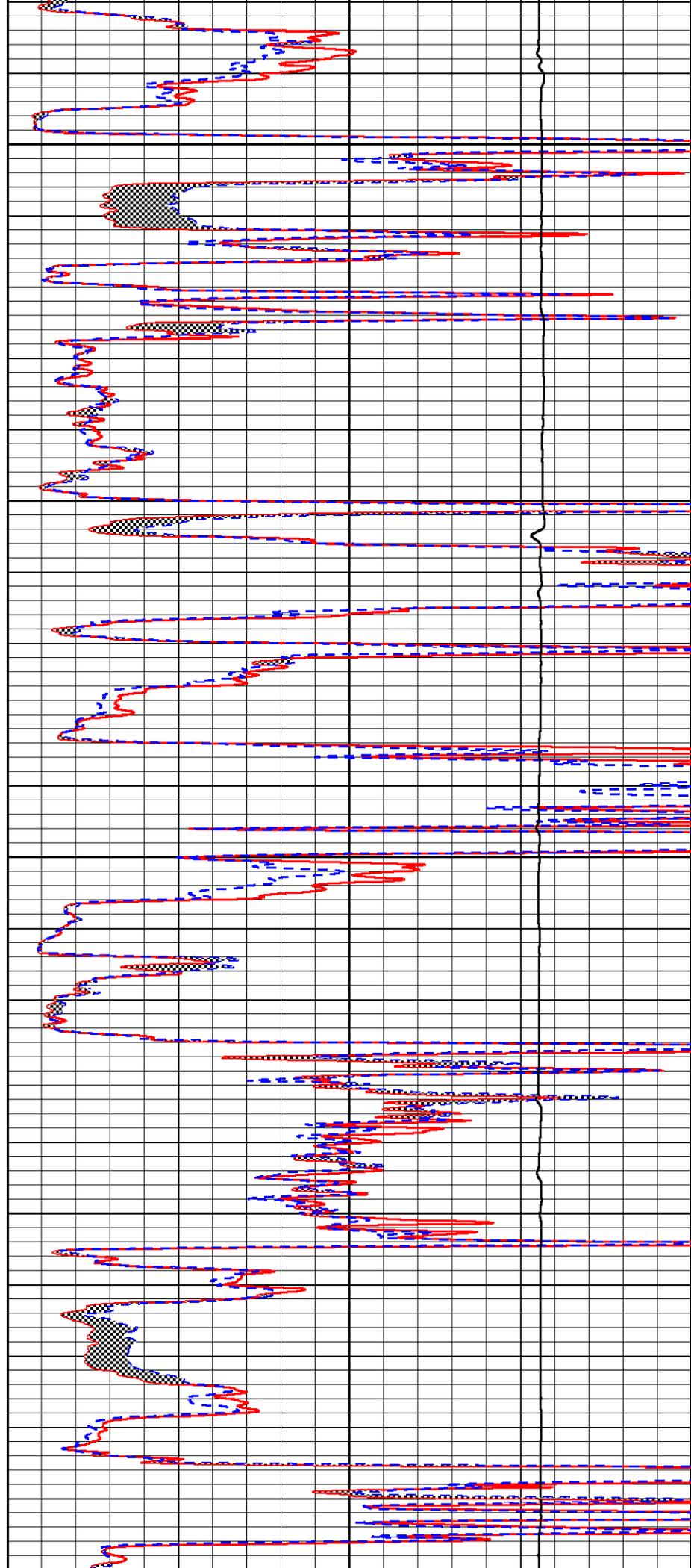
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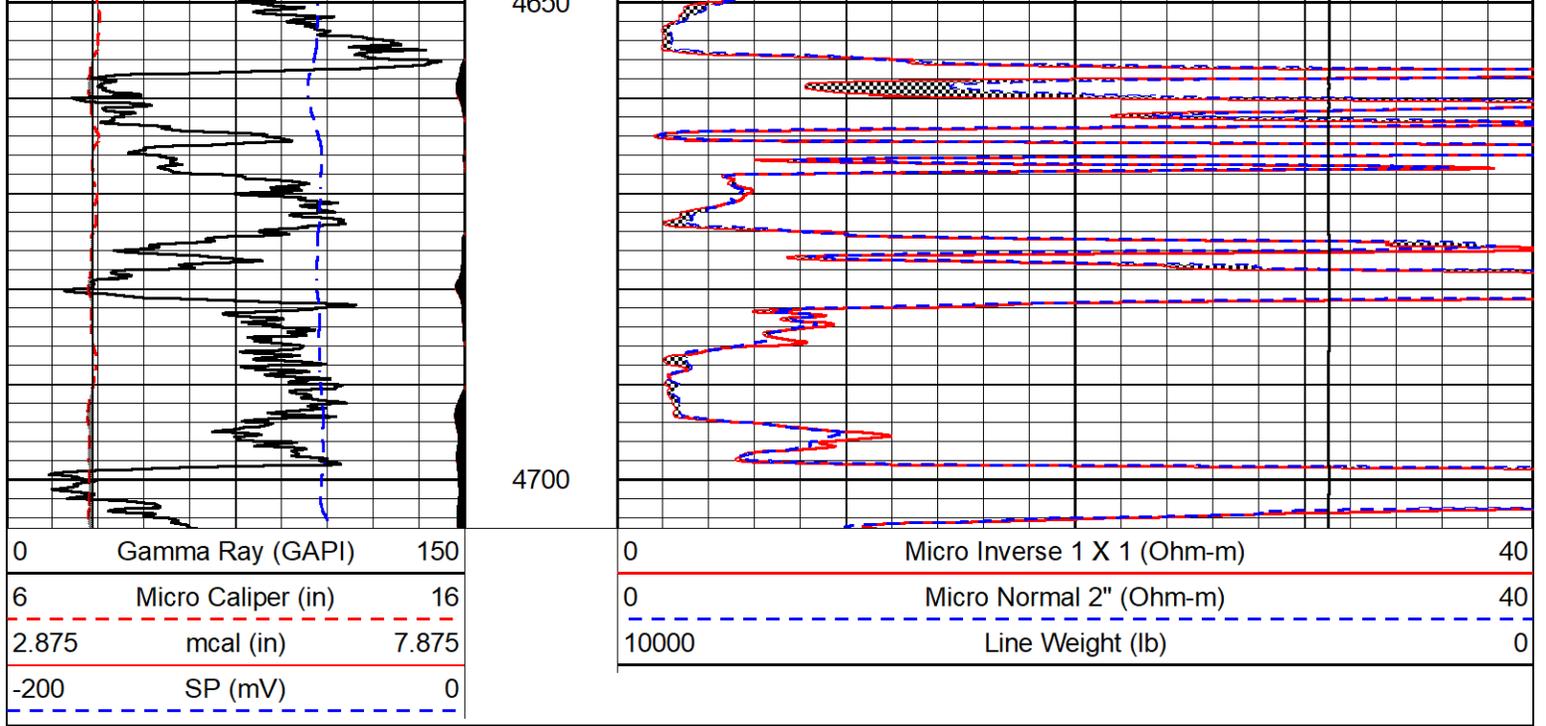
4500

4550

4600

4650





Calibration Report	
Database File	murfin_hester 4-7.db
Dataset Pathname	stkml/pass3.5
Dataset Creation	Sat Aug 26 03:05:15 2023

Dual Induction Calibration Report	
Serial-Model:	505 HT-M&W
Surface Cal Performed:	Fri Aug 11 21:22:17 2023

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.480	-42.000
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.410	-40.000

Microlog Calibration Report	
Serial-Model:	402-PSI STKBL ML
Performed:	Thu Aug 24 12:21:45 2023

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	30500.0000	-0.7000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	27000.0000	-0.1000
Caliper	1.0046	1.1419	5.5000	20.0000	in	50.0000	-44.4000

LITHODENSITY Calibration Report	
Serial Number:	701-01
Tool Model:	STEP LITHO Short
Performed:	Wed Aug 16 15:02:56 2023

Source:								
Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:	52	53	205	255	24	69	44	1
SS:	52	53	205	255	24	69	44	1

SS: 52 55 203 233 24 09 44 1 1 cps
 LS: 81 85 334 425 46 135 88 2 cps

Aluminum:

SS: 774 936 2171 1967 43 73 44 2 cps
 LS: 847 1595 3011 1457 56 137 87 5 cps

Magnesium:

SS: 1271 1508 3520 2831 46 71 45 3 cps
 LS: 3600 6590 11760 4608 88 128 83 13 cps

Aluminum+Iron:

SS: 492 651 1805 1706 40 72 44 2 cps
 LS: 499 1107 2530 1299 53 134 86 4 cps

	Density		PE			
	Actual	Calibrated	Actual	Calibrated	Quality	
Background:						
SS:					0.222	
LS:					0.212	
Aluminum:						
SS:	2.6000	2.6000	g/cc		0.248	
LS:	2.6000	2.6000	g/cc		0.220	
Magnesium:						
SS:	1.6800	1.6800	g/cc	2.5700	2.5700	0.222
LS:	1.6800	1.6800	g/cc	2.5700	2.5700	0.213
Aluminum+Iron:						
SS:					6.1800	0.239
LS:					6.1800	0.214

Caliper: Reference: Reading:
 Small Ring: 6.0 in 100.0
 Large Ring: 16.0 in 400.0
 Gain: 18.000
 Offset: 0.185

Compensated Neutron Calibration Report

Serial Number: 210
 Tool Model: M&W

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: 105
 Tool Model: M&W
 Performed: Fri Dec 3 15:10:46 2021
 Calibrator Value: 500.0 GAPI
 Background Reading: 24.0 cps
 Calibrator Reading: 637.0 cps
 Sensitivity: 0.5500 GAPI/cps



Company Murfin Drilling Company, Inc.
 Well Hester #4-7
 Field Sarah Ann



Field	Sarah Ann
County	Cheyenne
State	Kansas