MIDWEST WIRELINE

MICRORESISTIVITY LOG

Company Murfin Drilling Company, Inc.
Well Culwell H #3-19
Field
County Cheyenne State Kansas
Location: API #: 15-023-21595-00-00
990 FSL & 1980 FEL
SEC 19 TWP 2S RGE 37W

Other Services: CNL/CDL, DIL/BHCS

Permanent Datum	Ground Level
Log Measured From	Kelly Bushing
Drilling Measured From	Kelly Bushing
Elevation	3351
K.B.	3356
D.F.	
G.L.	3351

Company Murfin Drilling Company, Inc.
Well Culwell H #3-19
Field
County Cheyenne
State Kansas

| | | |

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	37.23		CNT-M&W (210)	5.00	3.50	100.00
CNSSC	36.48					
			CDL-M&W (303-03)	8.50	4.00	250.00
LSD	28.18					
DCAL	28.17					
SSD	27.68					
			ML-PSI STKBL ML (402)	7.58	4.00	65.00
MCAL	19.58					
MI	19.58					
MN	19.58					
RLL3F	15.50					
RLL3	15.50					
			DIL-M&W (505 HT)	18.25	3.50	220.00
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: murfin_culwell h 3-19.db: field/well/stkml/pass4.12
Total length: 42.33 ft
Total weight: 685.00 lb
O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_culwell h 3-19.db
Dataset field/well/stkml/pass4.12/_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	No	0	0	340	30	Off	4852

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

MIDWEST WIRELINE

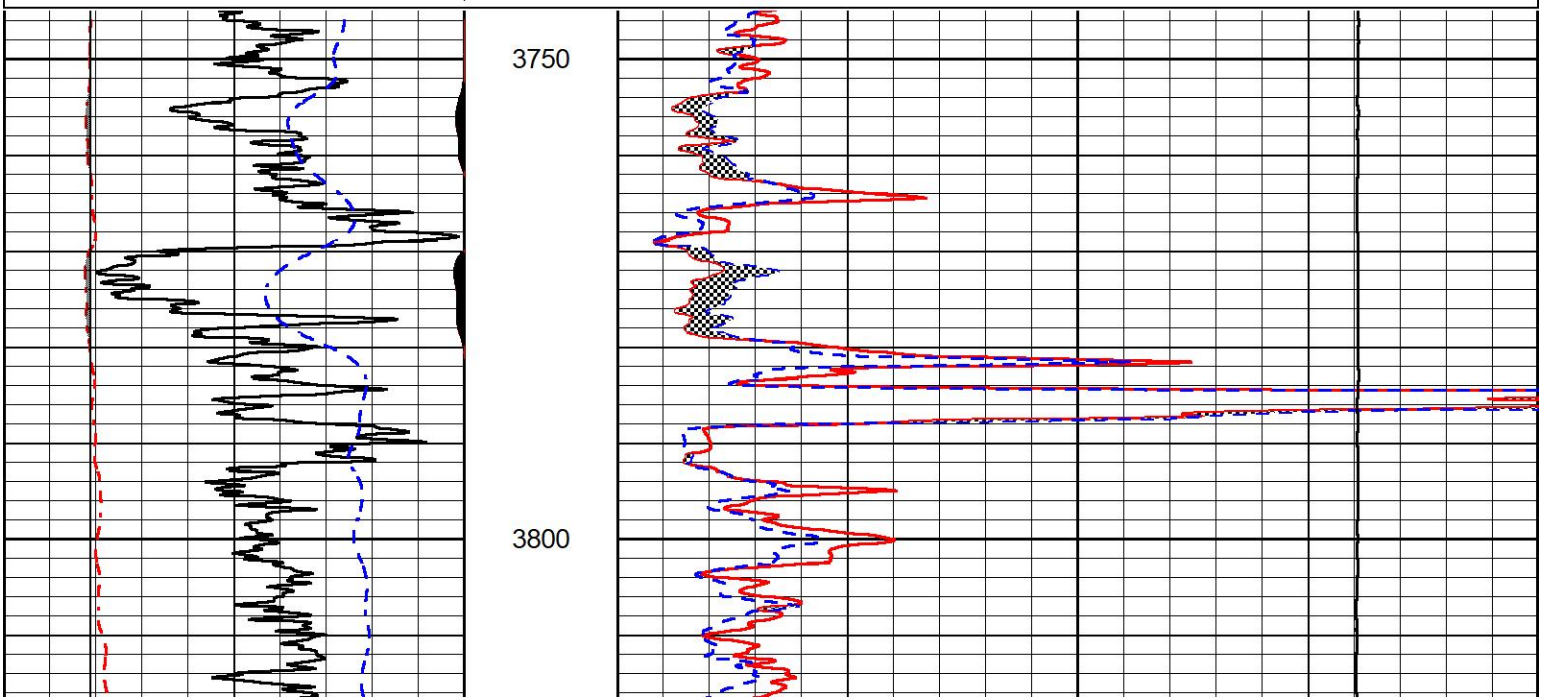
DETAIL SECTION

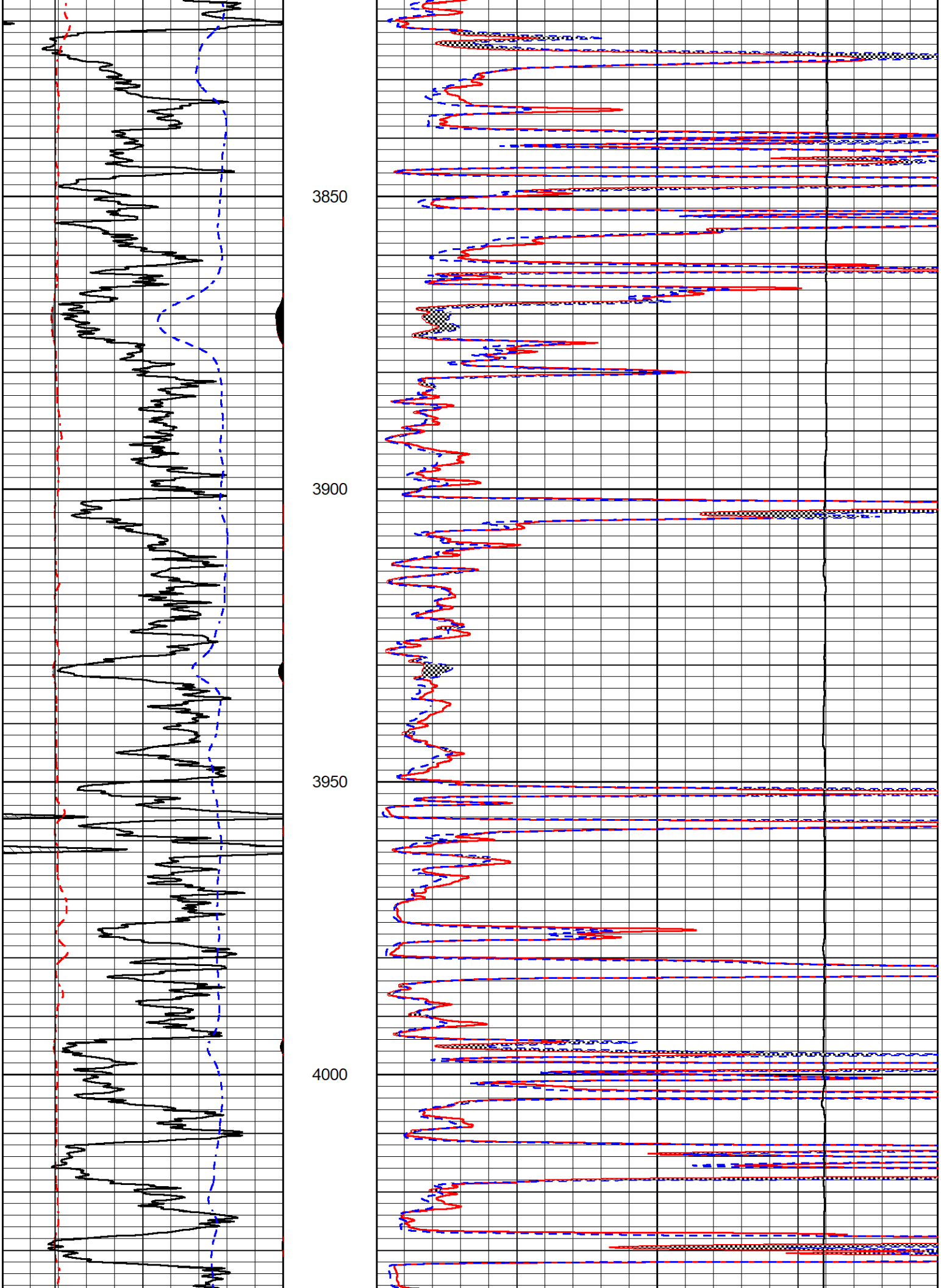
MAIN PASS

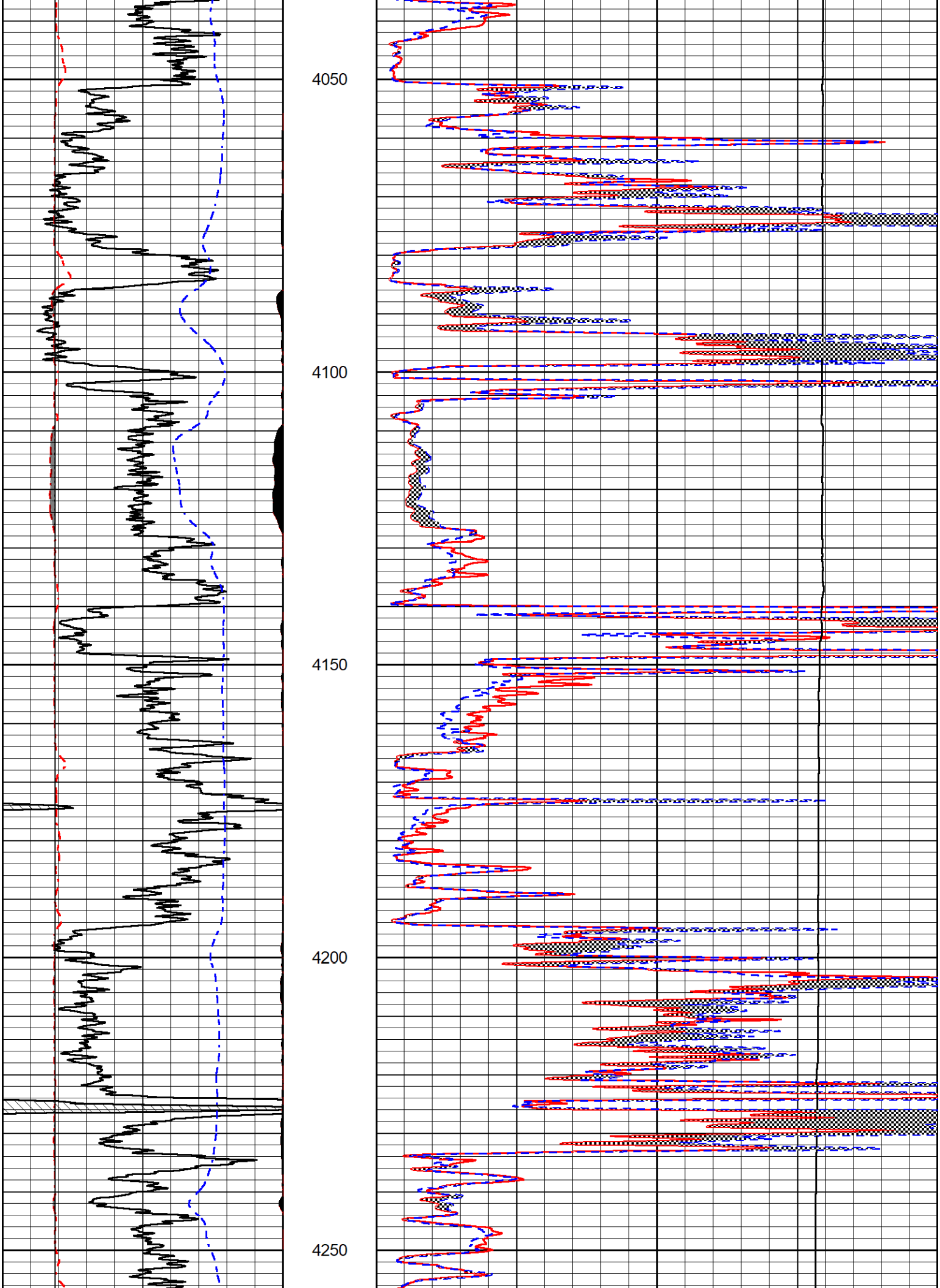
Database File	murfin_culwell h 3-19.db
Dataset Pathname	stkml/pass4.1
Presentation Format	_micro
Dataset Creation	Sat Jan 14 23:37:58 2023
Charted by	Depth in Feet scaled 1:240

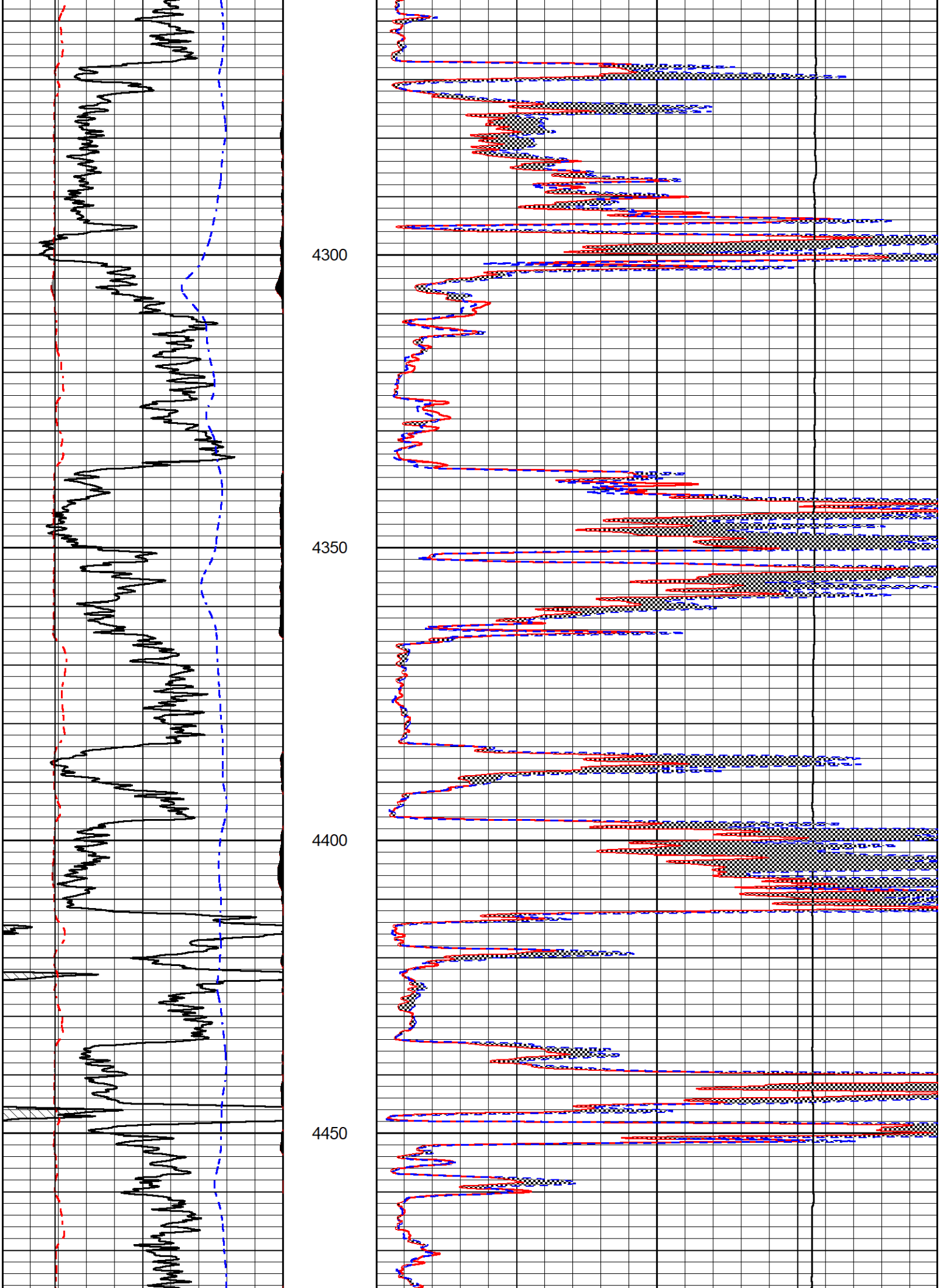
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mcal (in)	7.875
-200	SP (mV)	0

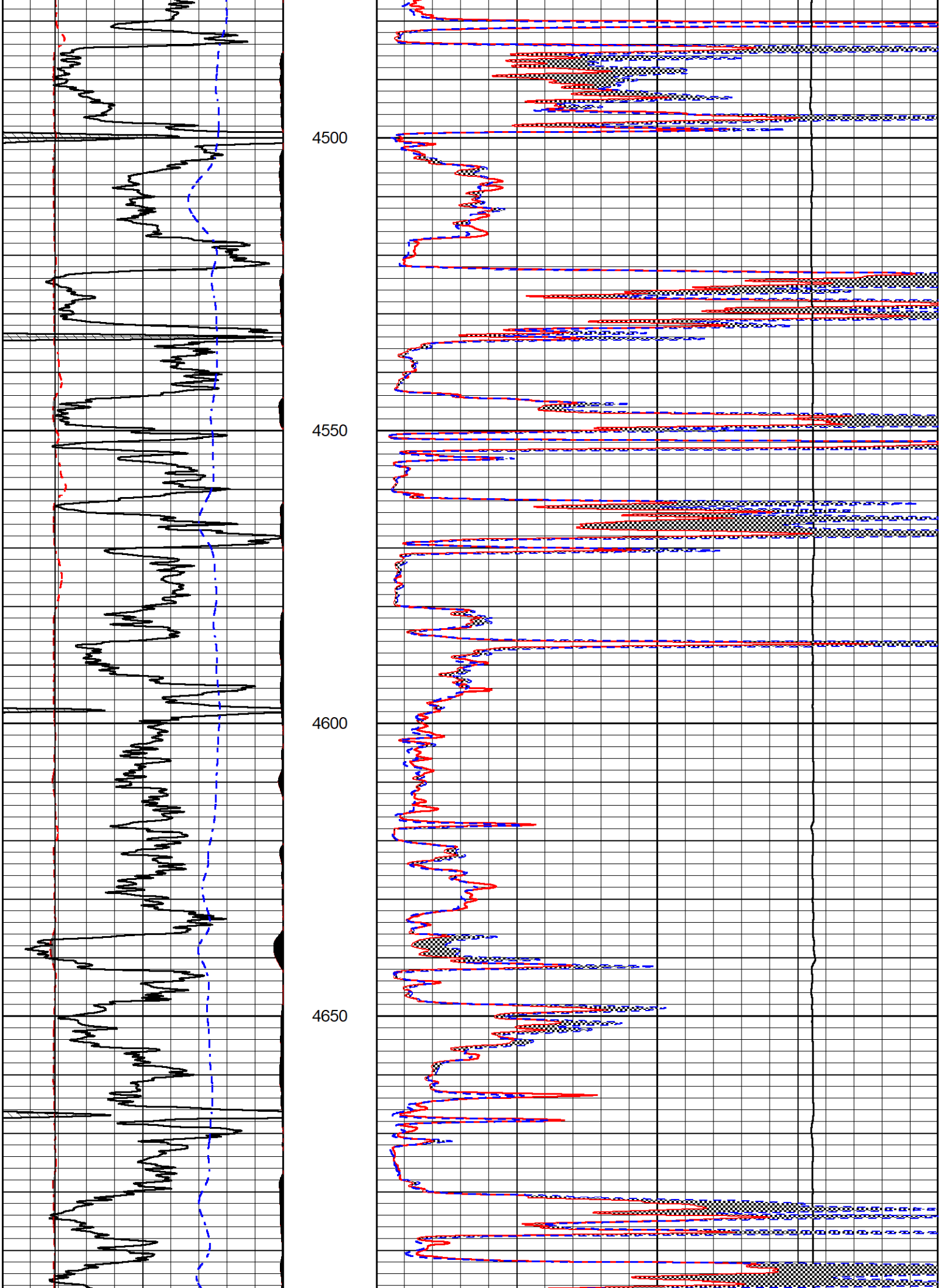
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

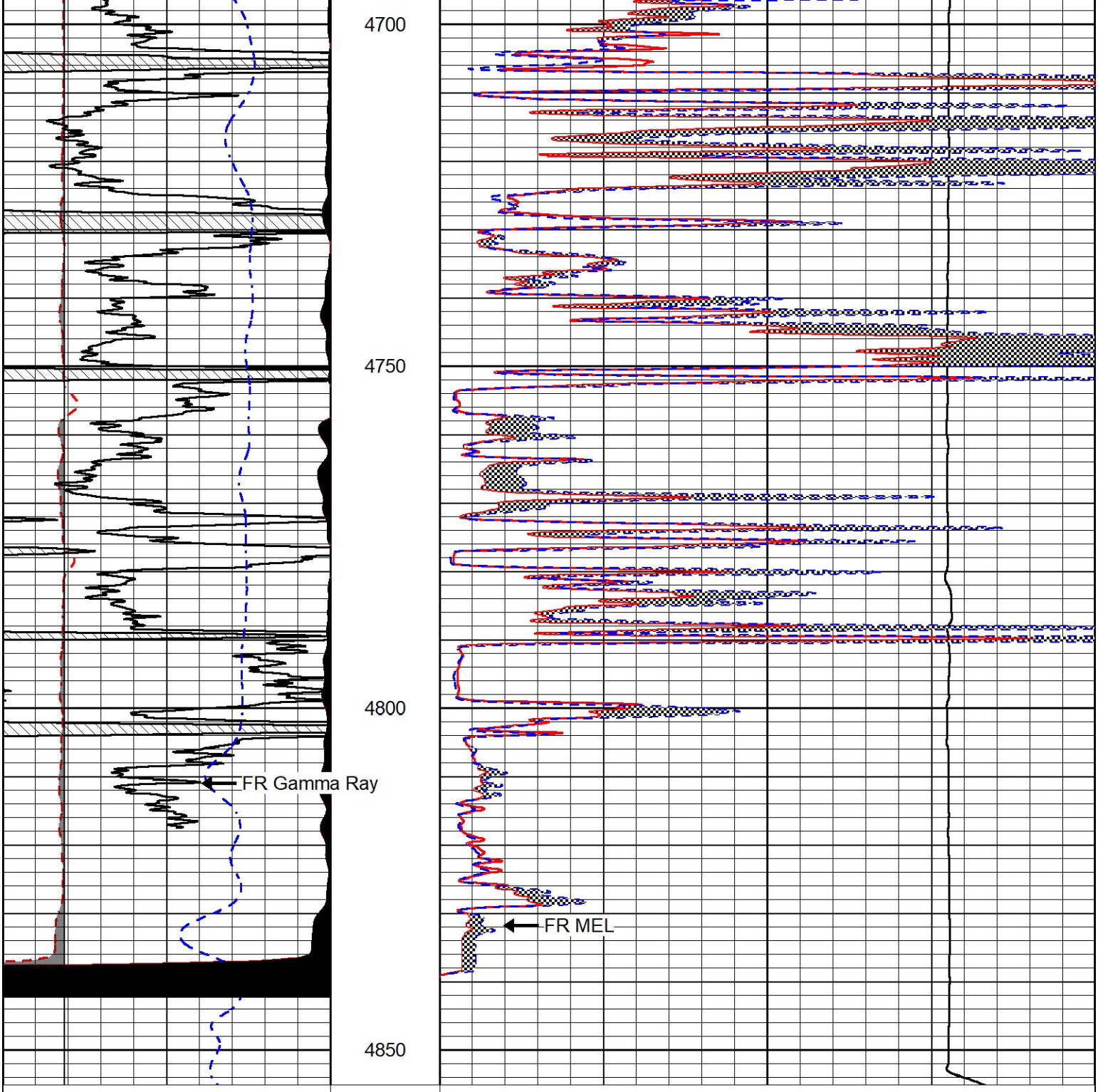



3850
3900
3950
4000


4050
4100
4150
4200
4250


4300
4350
4400
4450


4500
4550
4600
4650



MIDWEST WIRELINE

REPEAT SECTION

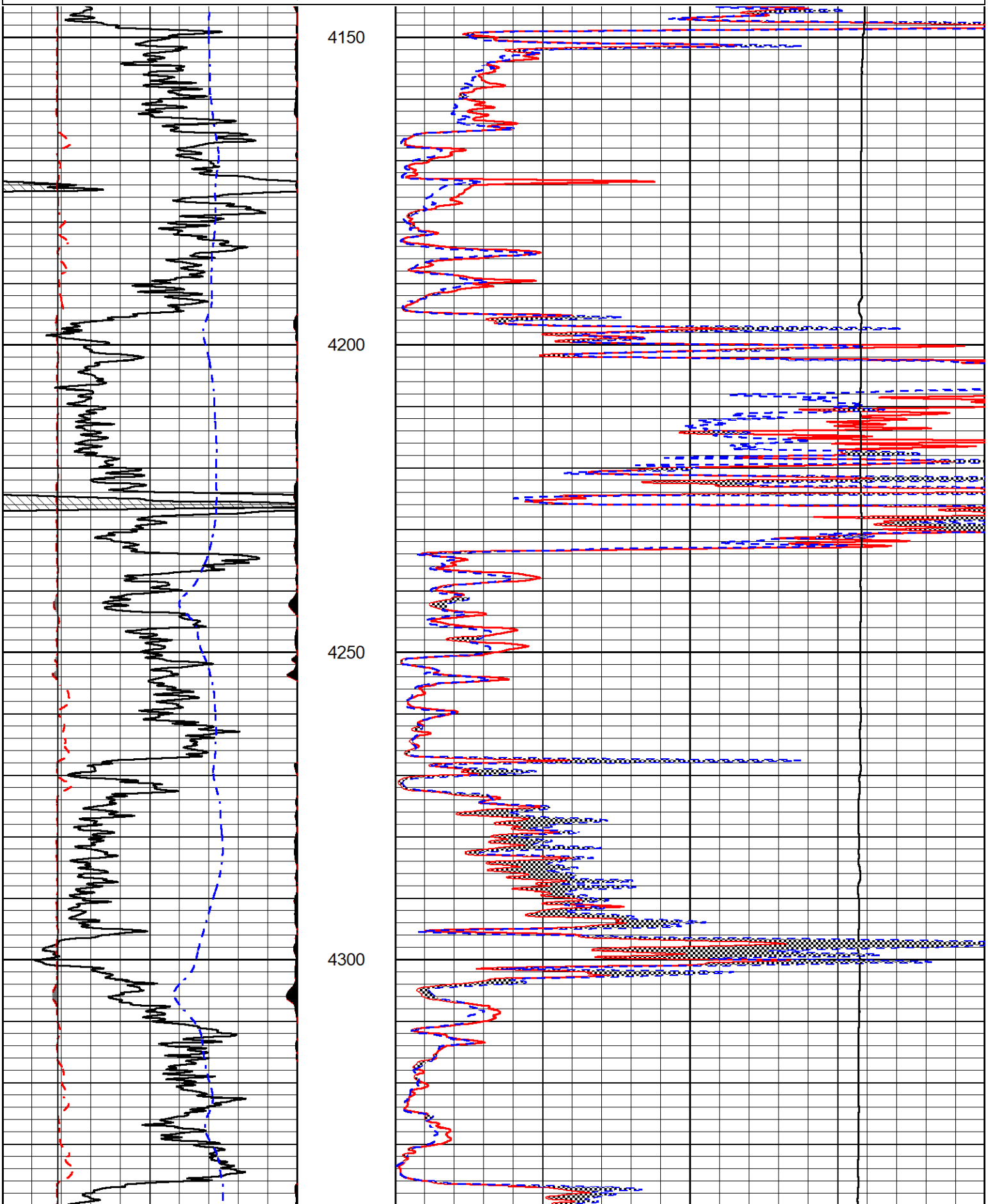
REPEAT PASS

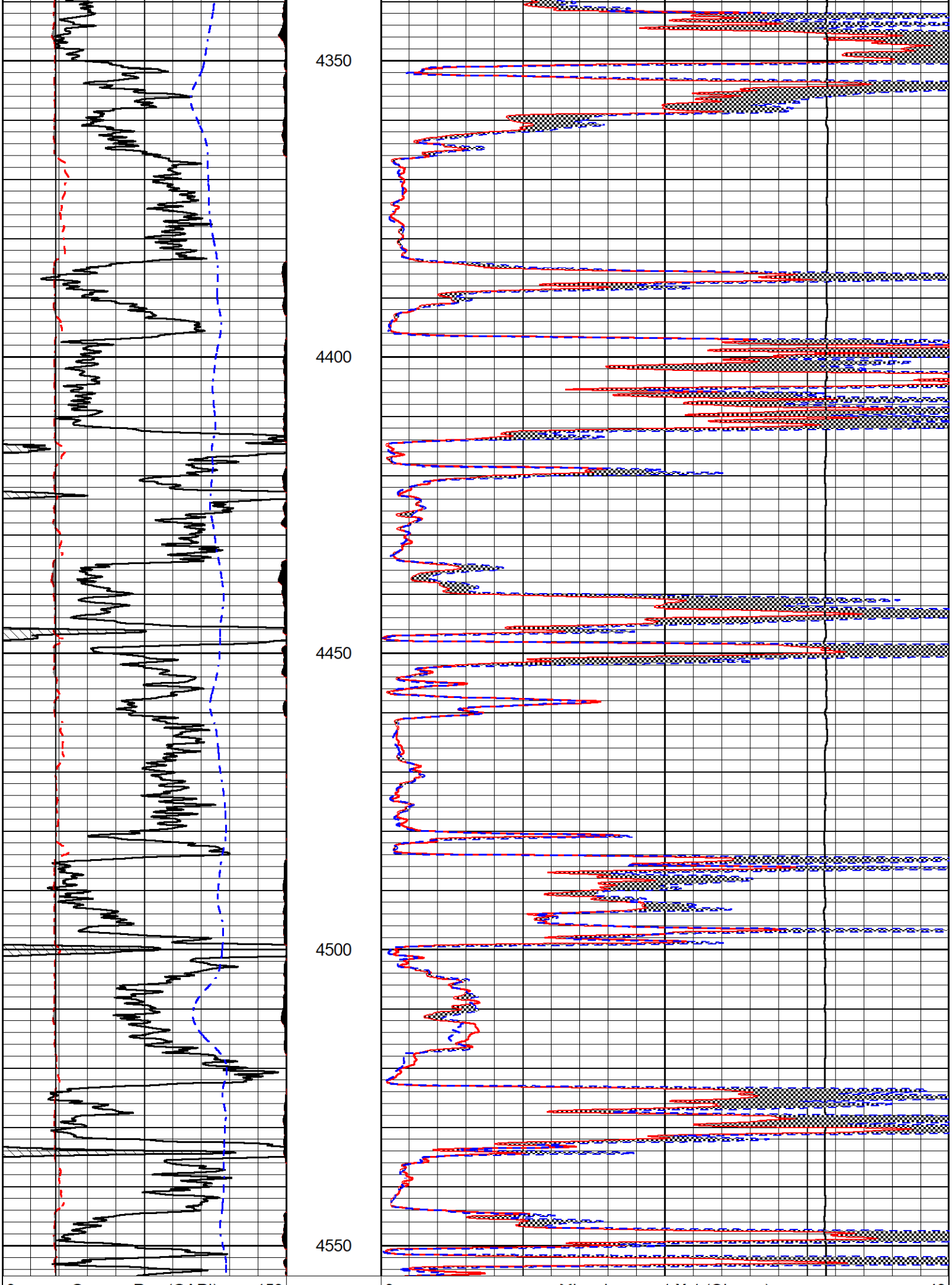
Database File	murfin_culwell h 3-19.db
Dataset Pathname	stkml/pass2.1
Presentation Format	_micro
Dataset Creation	Sat Jan 14 23:14:19 2023
Charted by	Depth in Feet scaled 1:240

Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	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




4350
4400
4450
4500
4550
0
Gamma Ray (GAPI)
150
0
Micro Inverse 1 X 1 (Ohm-m)
40

6	Caliper (in)	16
2.875	mcal (in)	7.875
-200	SP (mV)	0

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

Calibration Report

Database File	murfin_culwell h 3-19.db
Dataset Pathname	stkml/pass4.12
Dataset Creation	Sat Jan 14 22:52:47 2023

Dual Induction Calibration Report

Serial-Model:	505 HT-M&W
Surface Cal Performed:	Mon Nov 14 06:05:40 2022

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.480	-49.500
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.390	-33.500

Microlog Calibration Report

Serial-Model:	402-PSI STKBL ML
Performed:	Tue Jan 3 20:52:47 2023

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	14500.0000	-1.0000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	13500.0000	-0.5000
Caliper	1.0046	1.1419	5.5000	20.0000	in	50.0000	-44.5500

Compensated Density Calibration Report

Serial-Model:	303-03-M&W
Source #:	21170B
Master Calibration Performed:	Mon Jan 2 03:21:14 2023

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3841.78	5151.73	cps
Aluminum	2.640	g/cc	700.98	3068.49	cps

Spine Angle = 73.06

Density/Spine Ratio = 0.498

	Size		Reading
Small Ring	4.00	in	1.17
Large Ring	14.00	in	1.04

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

MIDWEST WIRELINE

Company	Murfin Drilling Company, Inc.
Well	Culwell H 3-19
Field	
County	Cheyenne
State	Kansas