



MIDWEST WIRELINE

**DUAL COMPENSATED
POROSITY /
MICRO LOG**

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

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Field Sarah Ann
County Cheyenne State Kansas

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
DIL/BHCS
K.B. 3412
D.F.
G.L. 3407

Date	8/26/2023						
Run Number	One						
Type Log	CNL / CDL / ML						
Depth Driller	5175						
Depth Logger	5175						
Bottom Logged Interval	5146						
Top Logged Interval	3800						
Type Fluid In Hole	Chemical						
Salinity, PPM CL	1200						
Density	9.3						
Level	Full						
Max. Rec. Temp. F	128						
Operating Rig Time	5 Hours						
Equipment -- Location	P-108 HAYS						
Recorded By	D. Schmidt						
Witnessed By	Robert Hendrix						
Borehole Record							
Run No.	Bit	From	To	Size	Wgt.	From	To
One	12.25	0	302	8.625	23	0	302
Two	7.875	302	TD				
Casing Record							

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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		3.00	3.50	50.00	
CNLSC CNSSC	37.13 36.38		CNT-M&W (210)	5.00	3.50	100.00
LCAL	28.21		MWLith-STEP LITHO Short (701-01)	8.40	5.00	250.00
LLW8N	28.21		ML-PSI STKBL ML (402)	7.58	4.00	65.00
LLW7N	28.21					
LLW6N	28.21					
LLW5N	28.21					
LLW4N	28.21					
LLW3N	28.21					
LLW2N	28.21					
LLW1N	28.21					
LSLOCK	27.96					
LLLOCK	27.96					
PELTMPR	27.96		DIL-M&W (505 HT)	18.25	3.50	220.00
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					
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

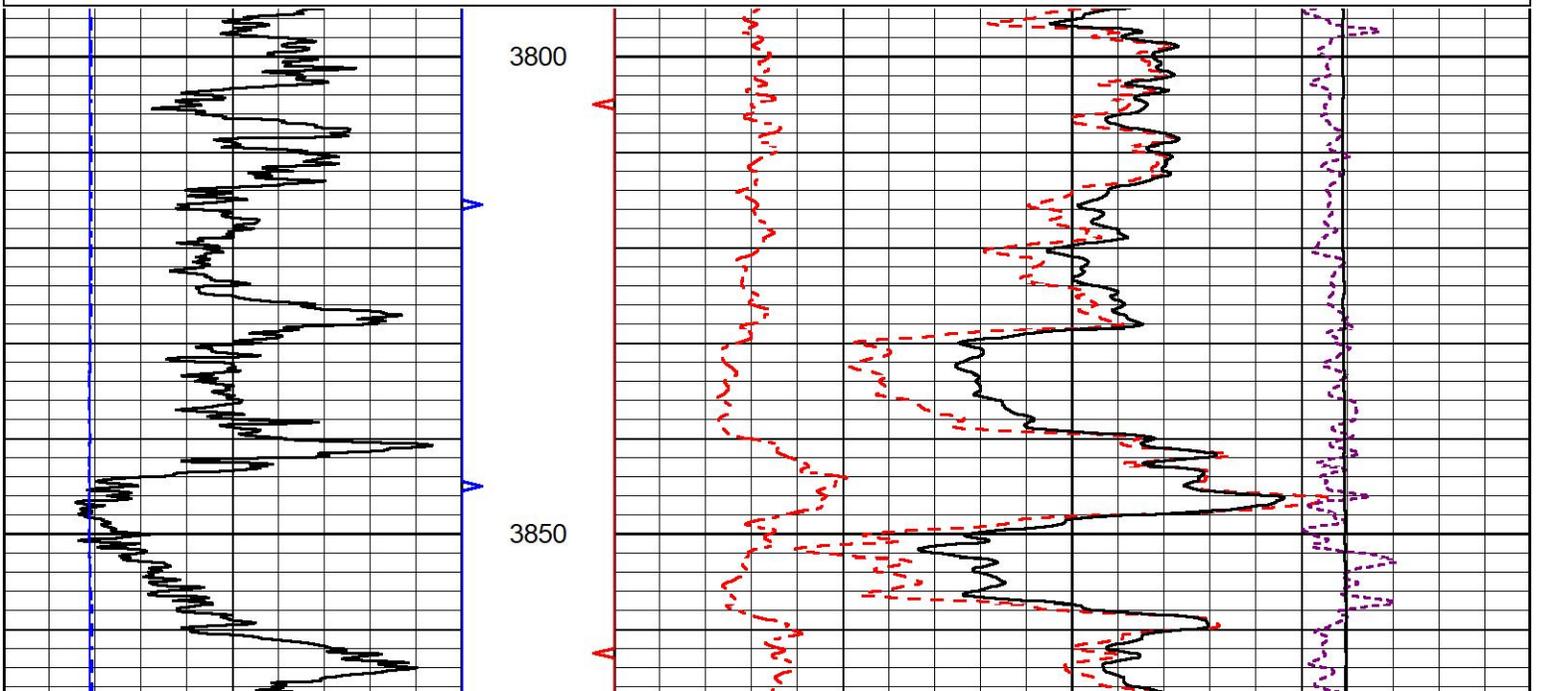


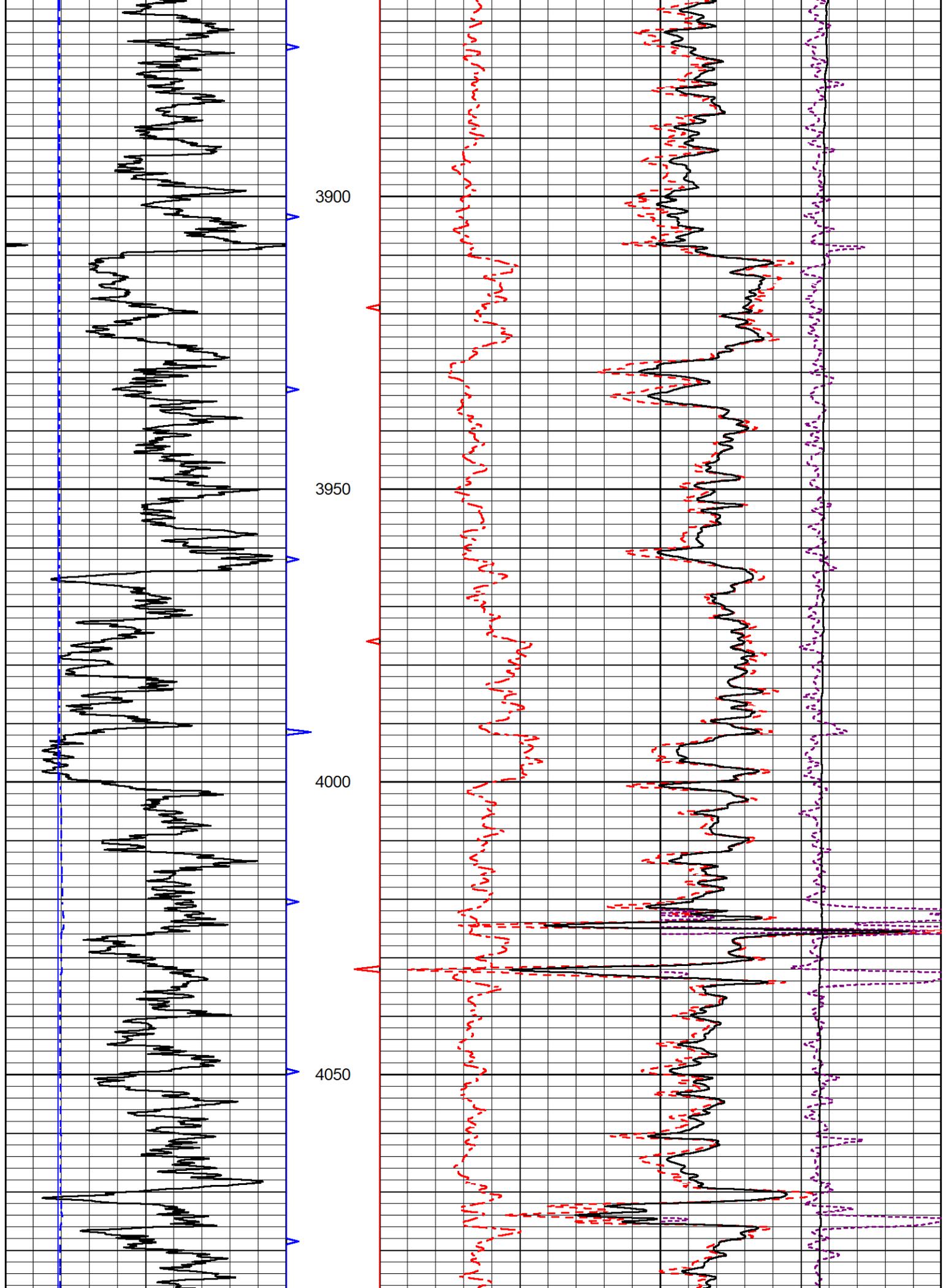
5" SCALE BULK DENSITY

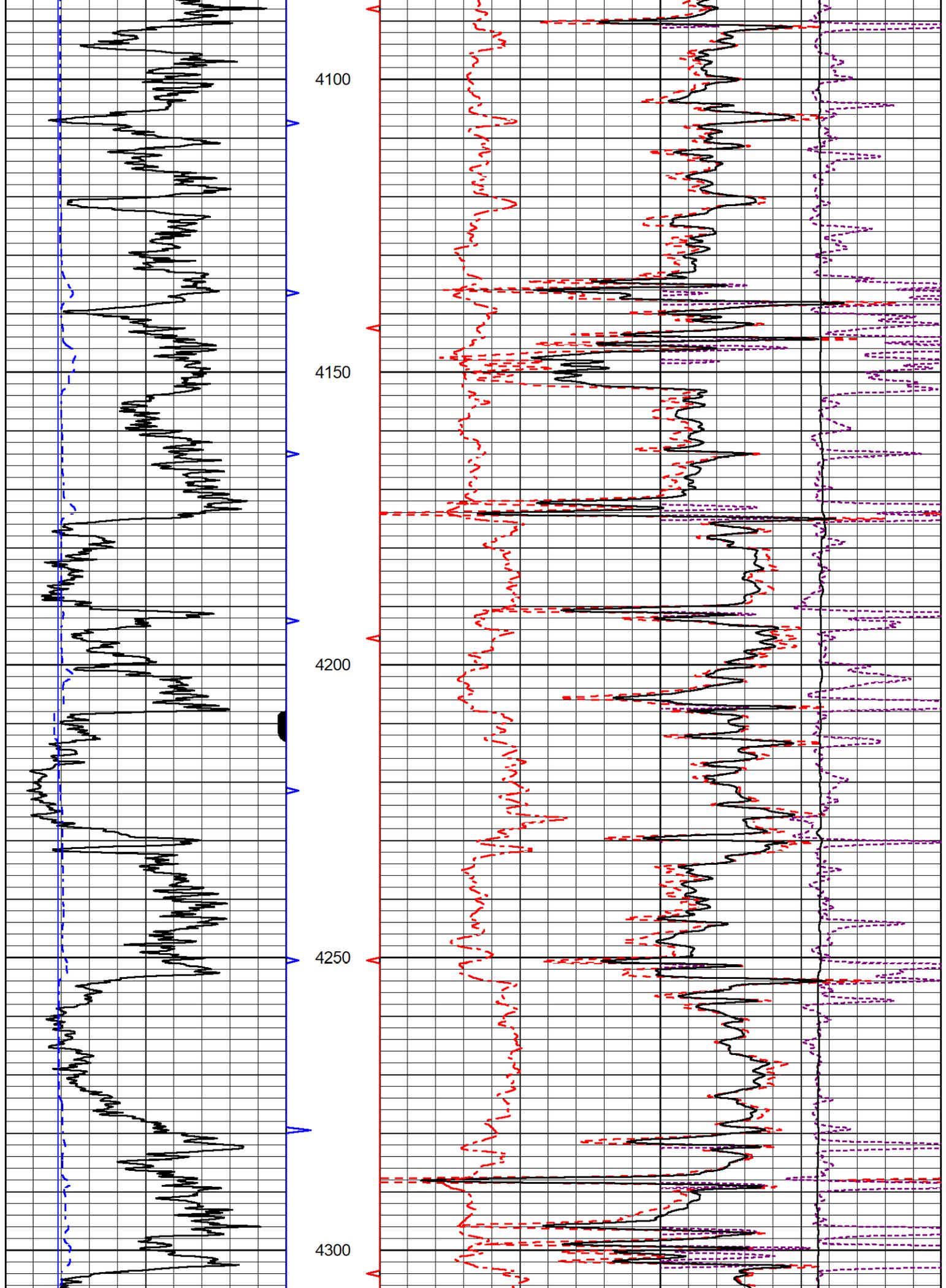
MAIN PASS

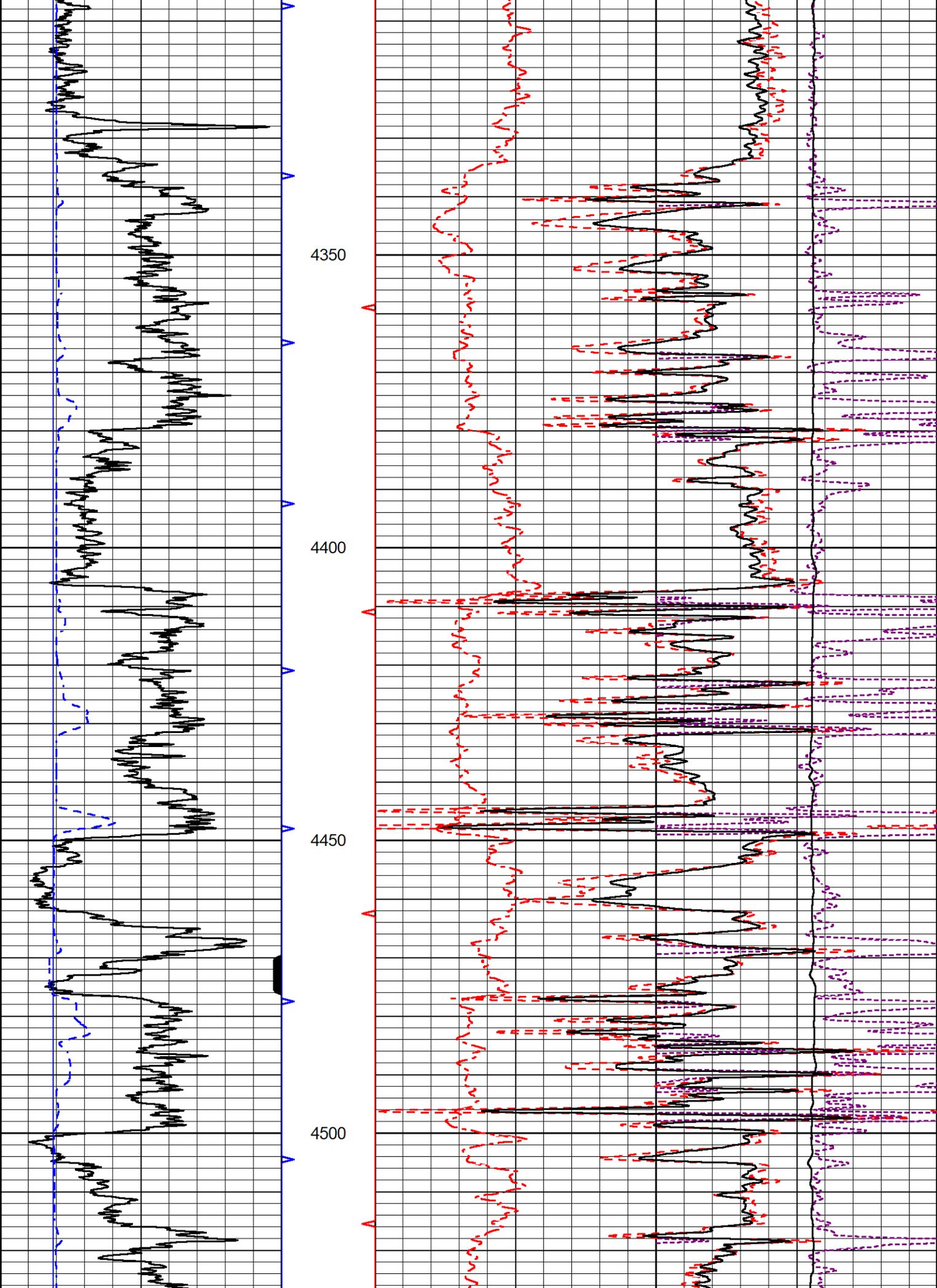
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 Charted by Depth in Feet scaled 1:240

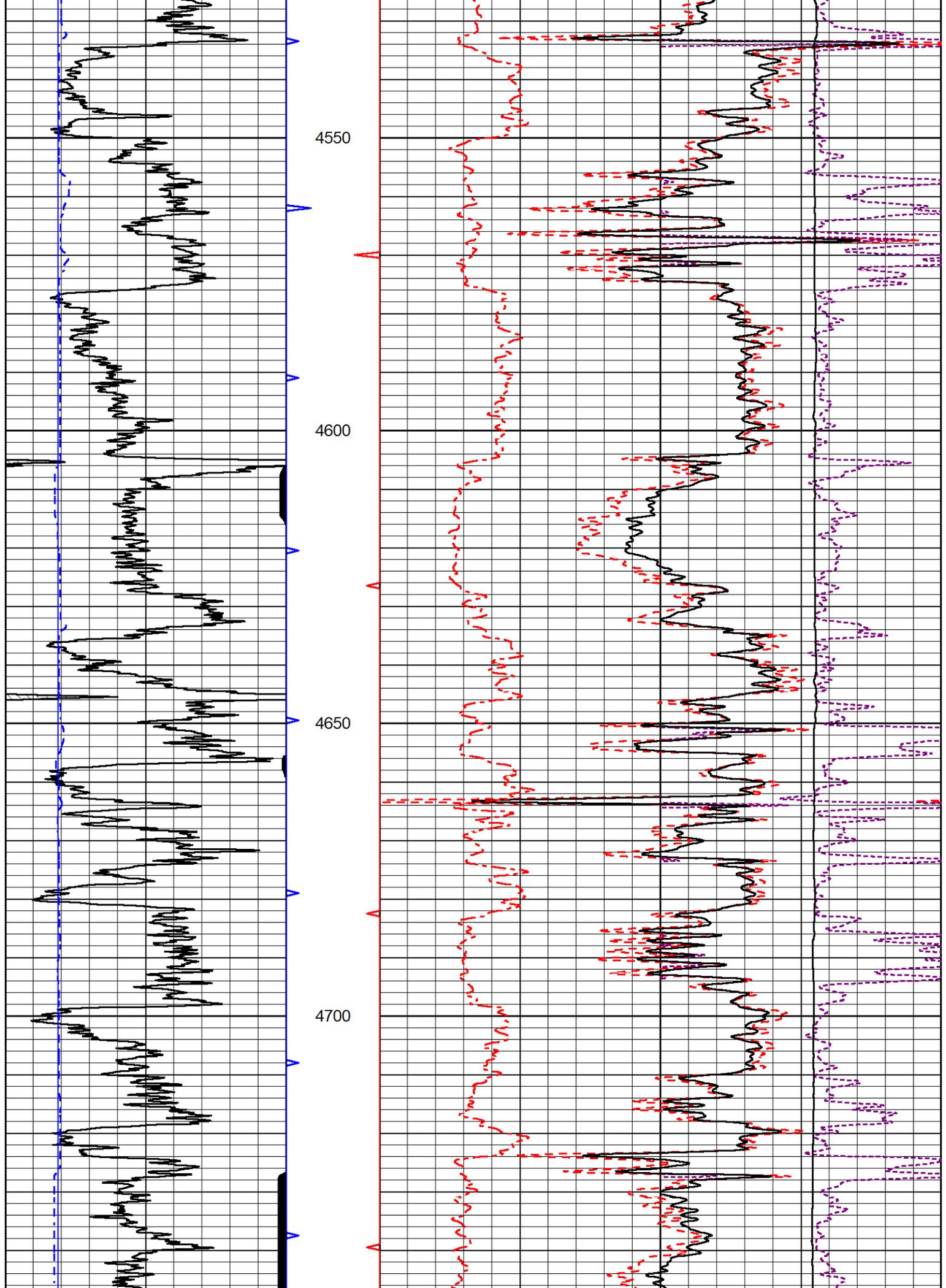
0	Gamma Ray (GAPI)	150	30	Compensated Density Porosity (pu)	-10
6	Caliper (in)	16	2	Bulk Density (g/cc)	3
			10000	Line Tension (lb)	0
			0	pecln	10 -0.25
				Correction (g/cc)	0.25

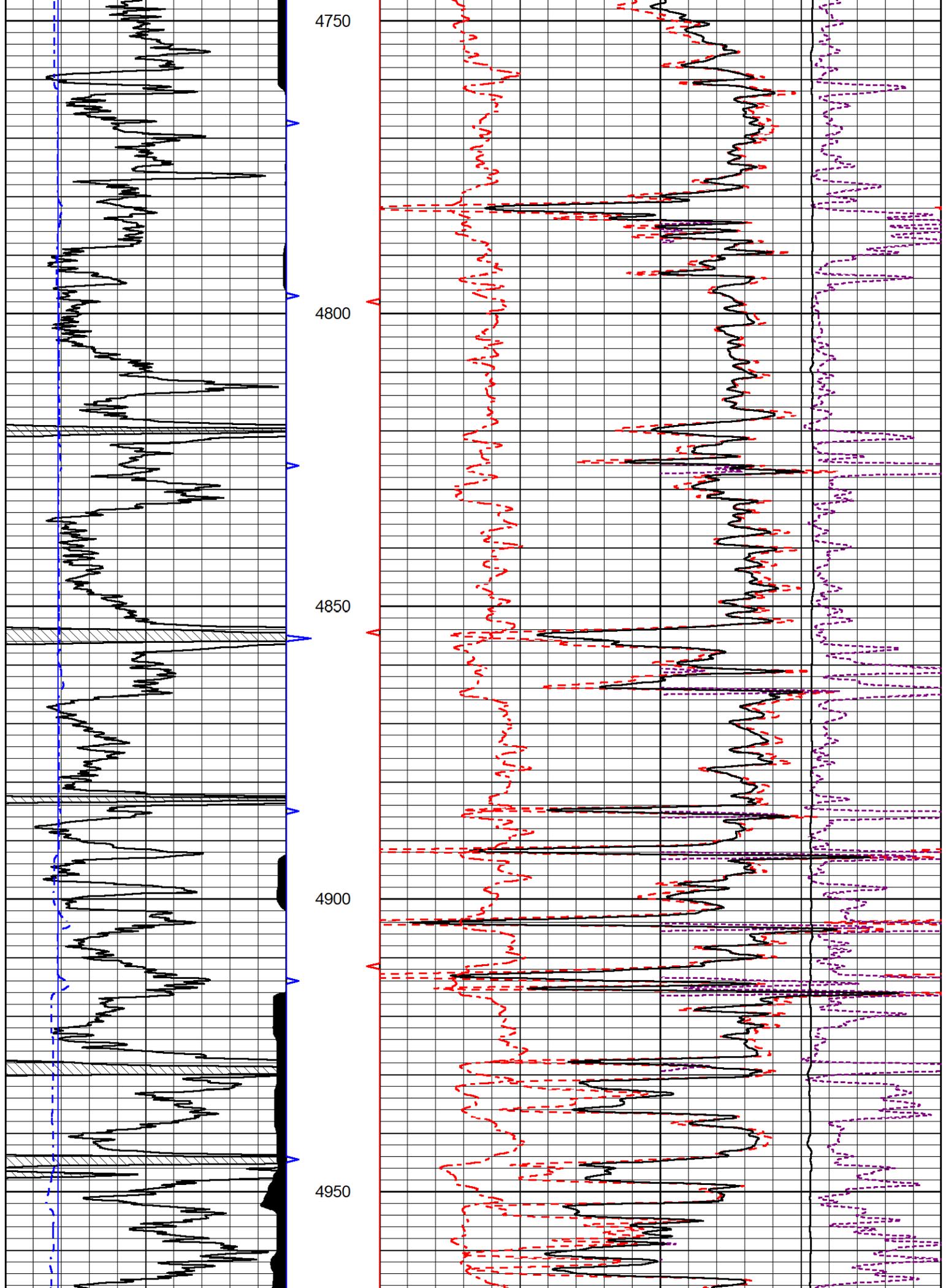


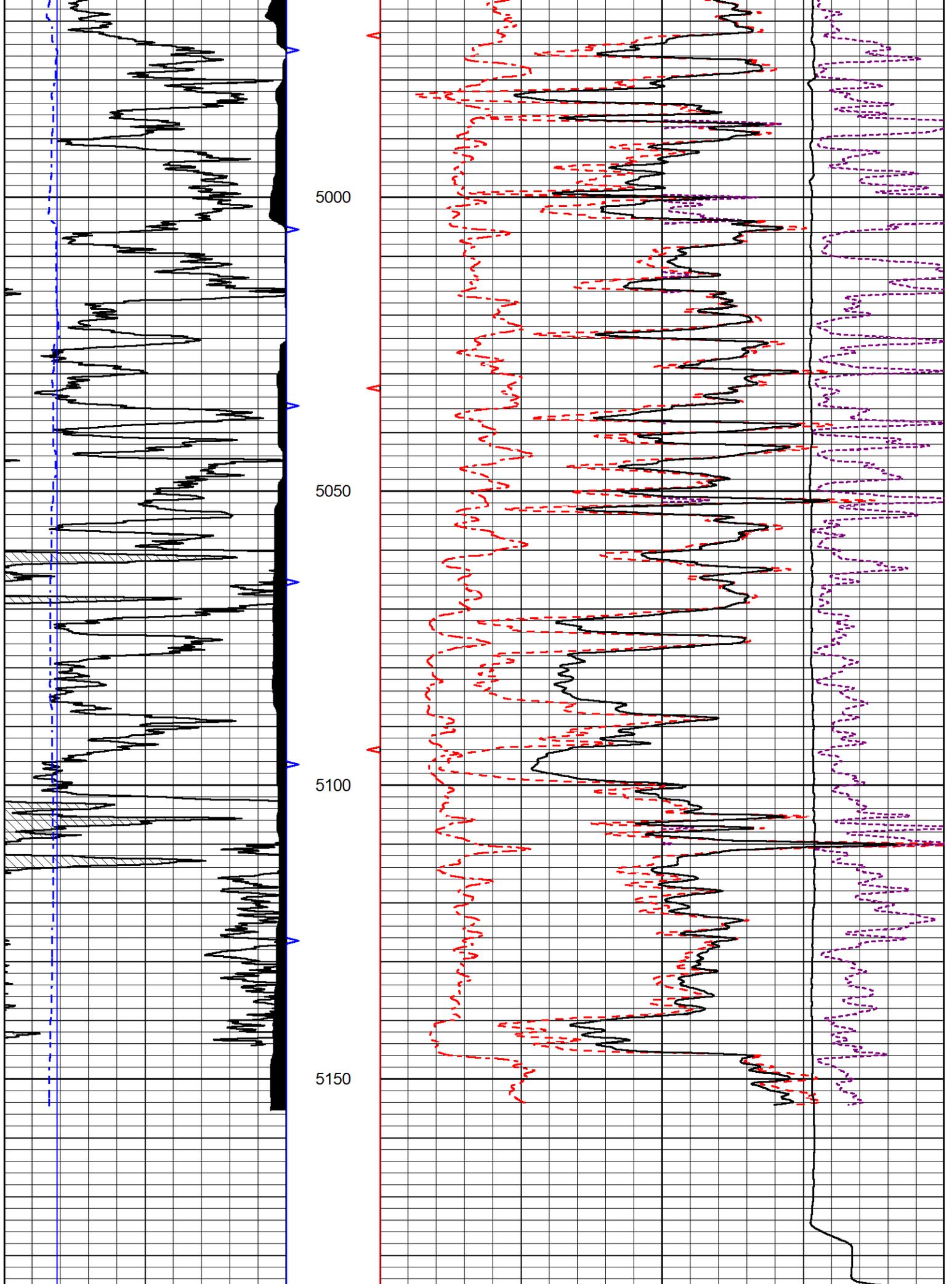












0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

30	Compensated Density Porosity (pu)	-10		
2	Bulk Density (g/cc)	3		
10000	Line Tension (lb)	0		
0	pecln	10 -0.25	Correction (g/cc)	0.25



MIDWEST WIRELINE

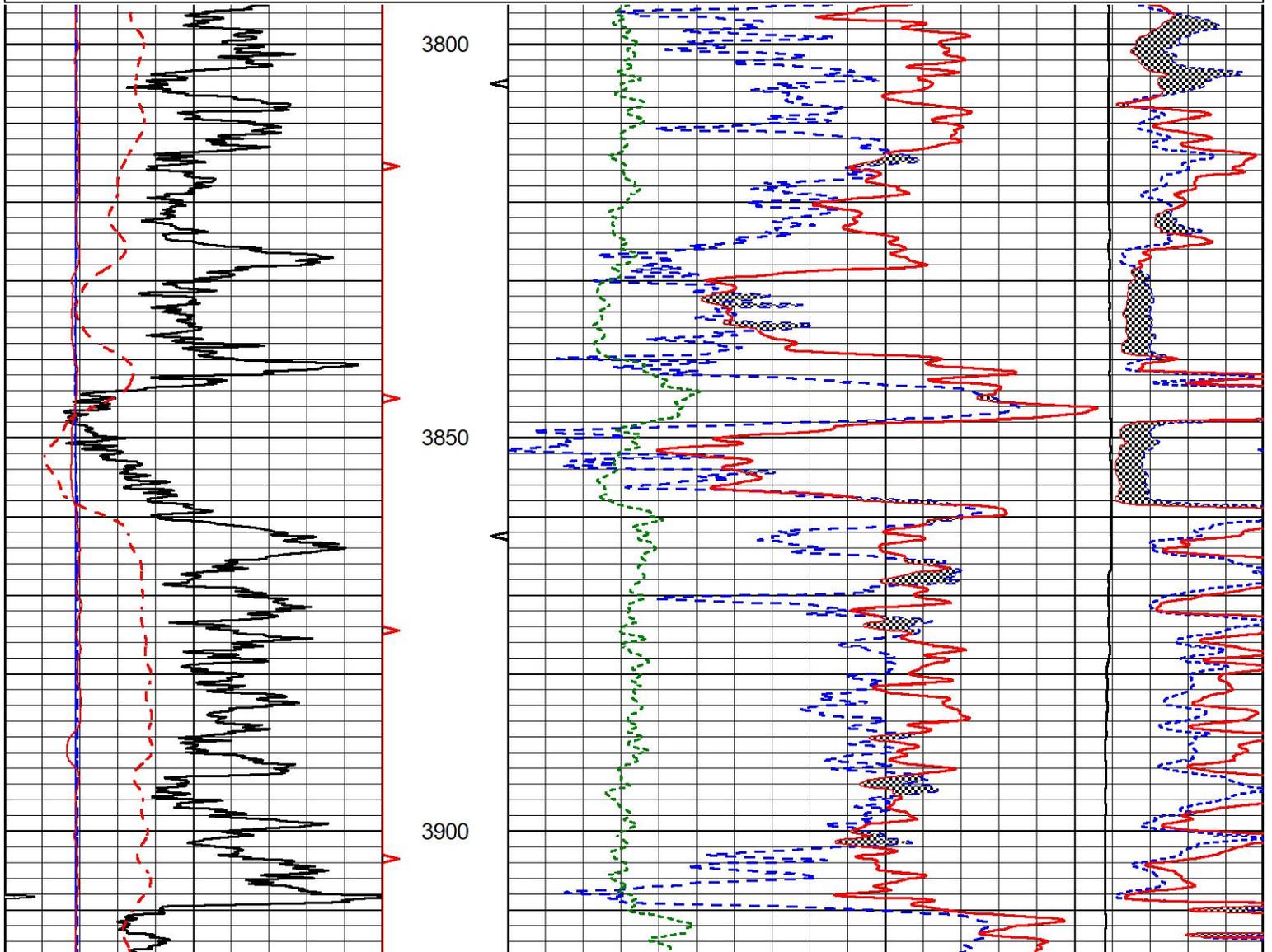
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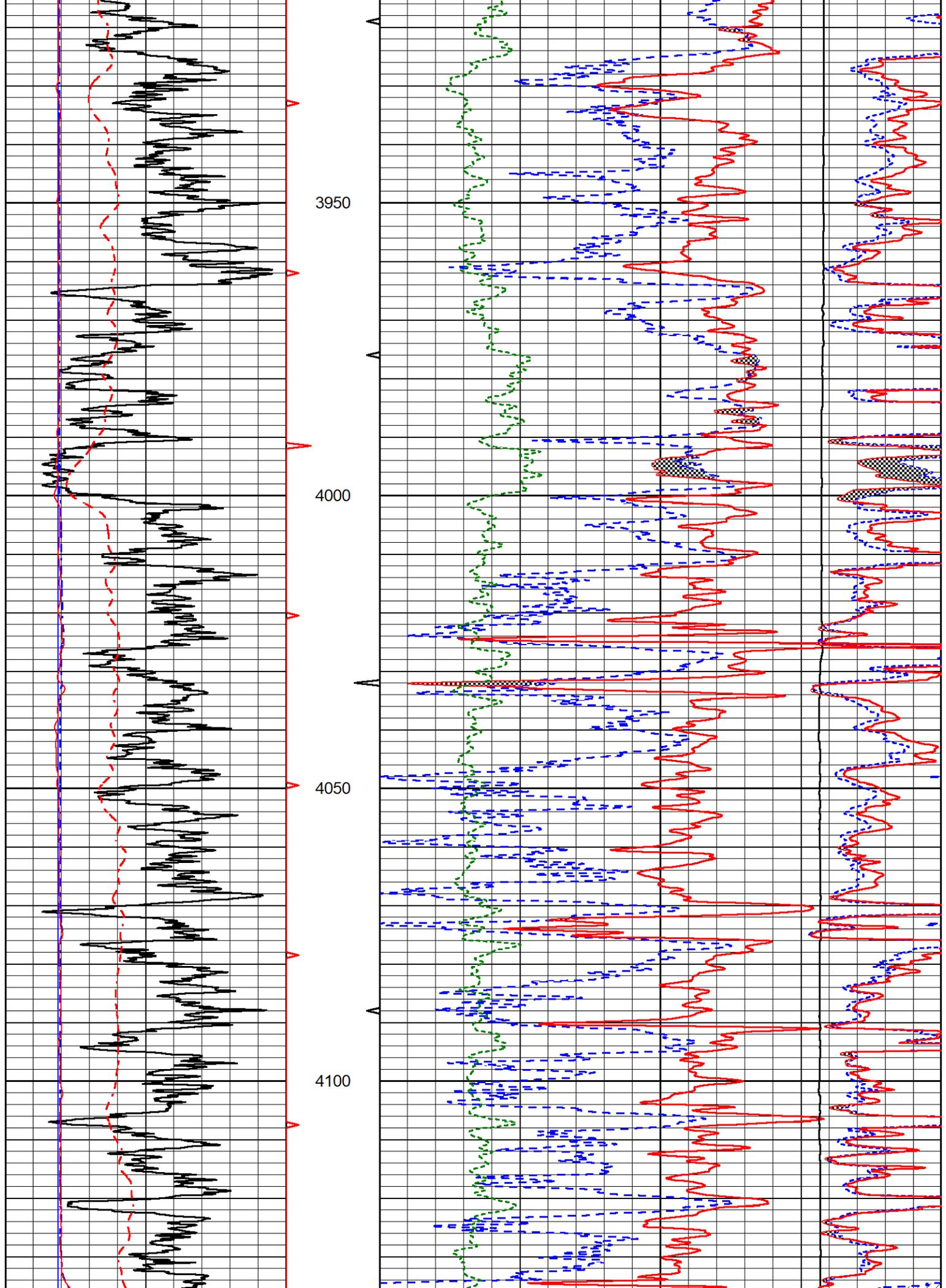
MAIN PASS

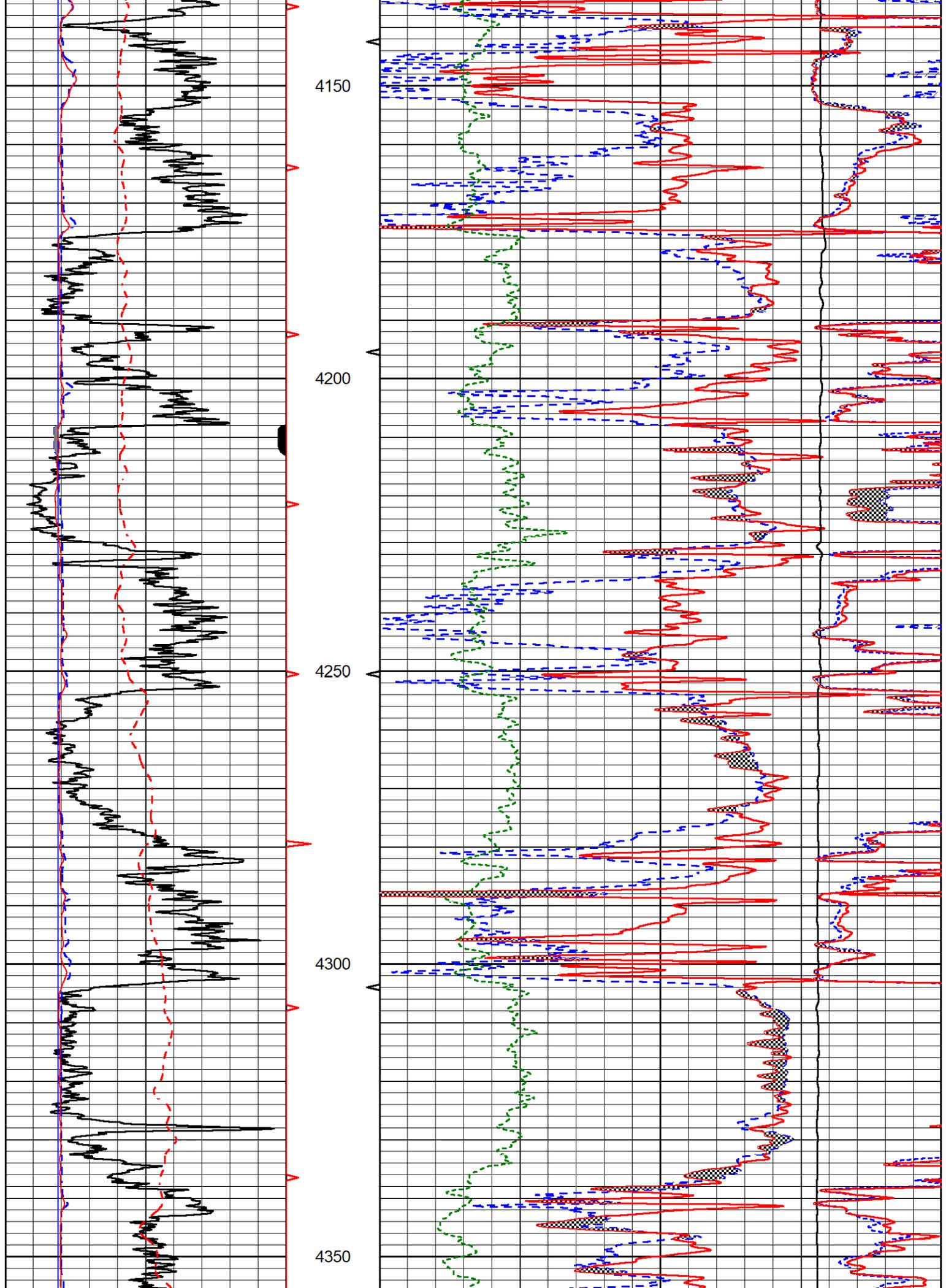
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 Charted by Depth in Feet scaled 1:240

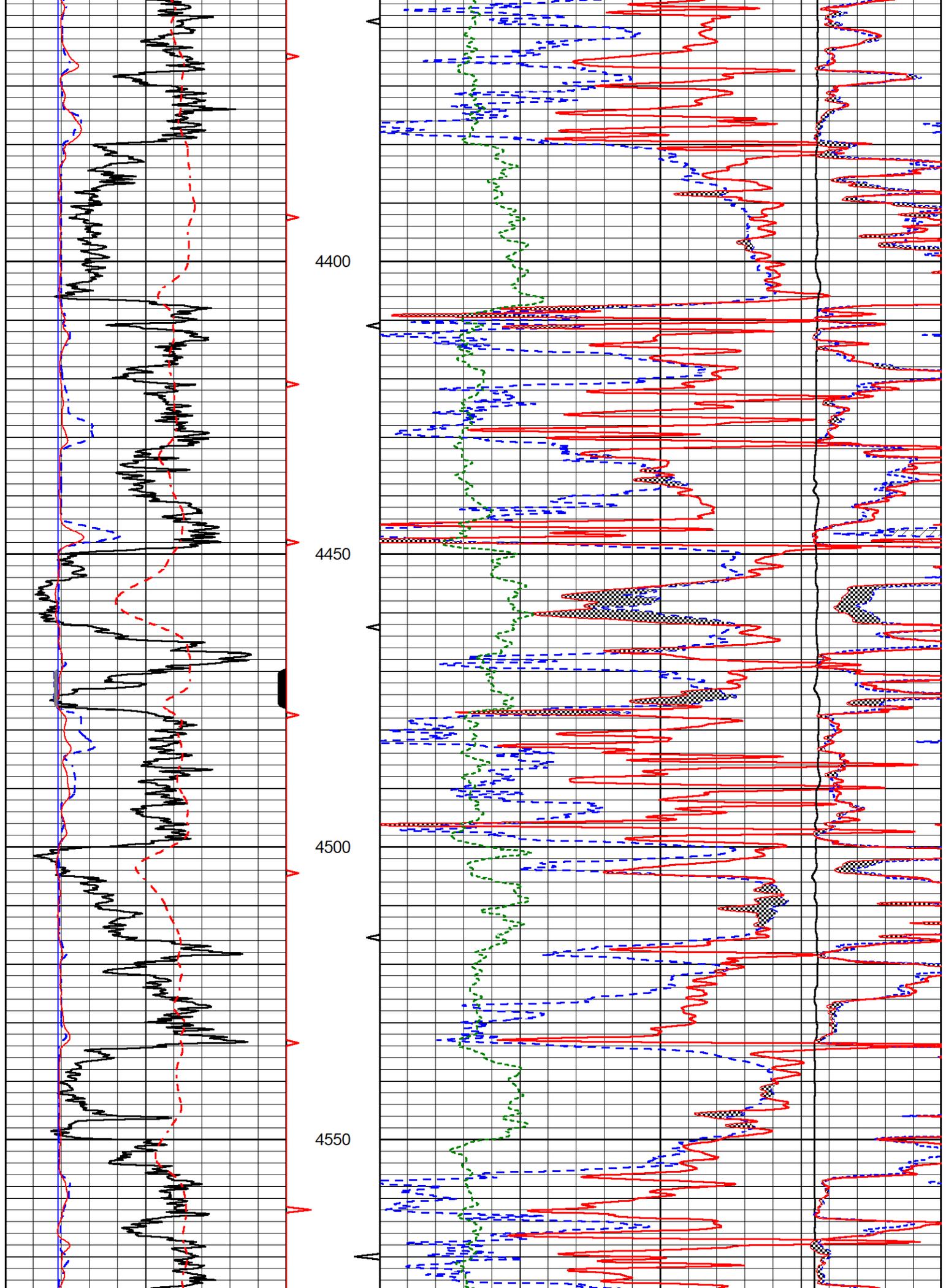
0	Gamma Ray (GAPI)	150
6	Density Caliper (in)	16
-200	SP (mV)	0
6	Micro Caliper (in)	16

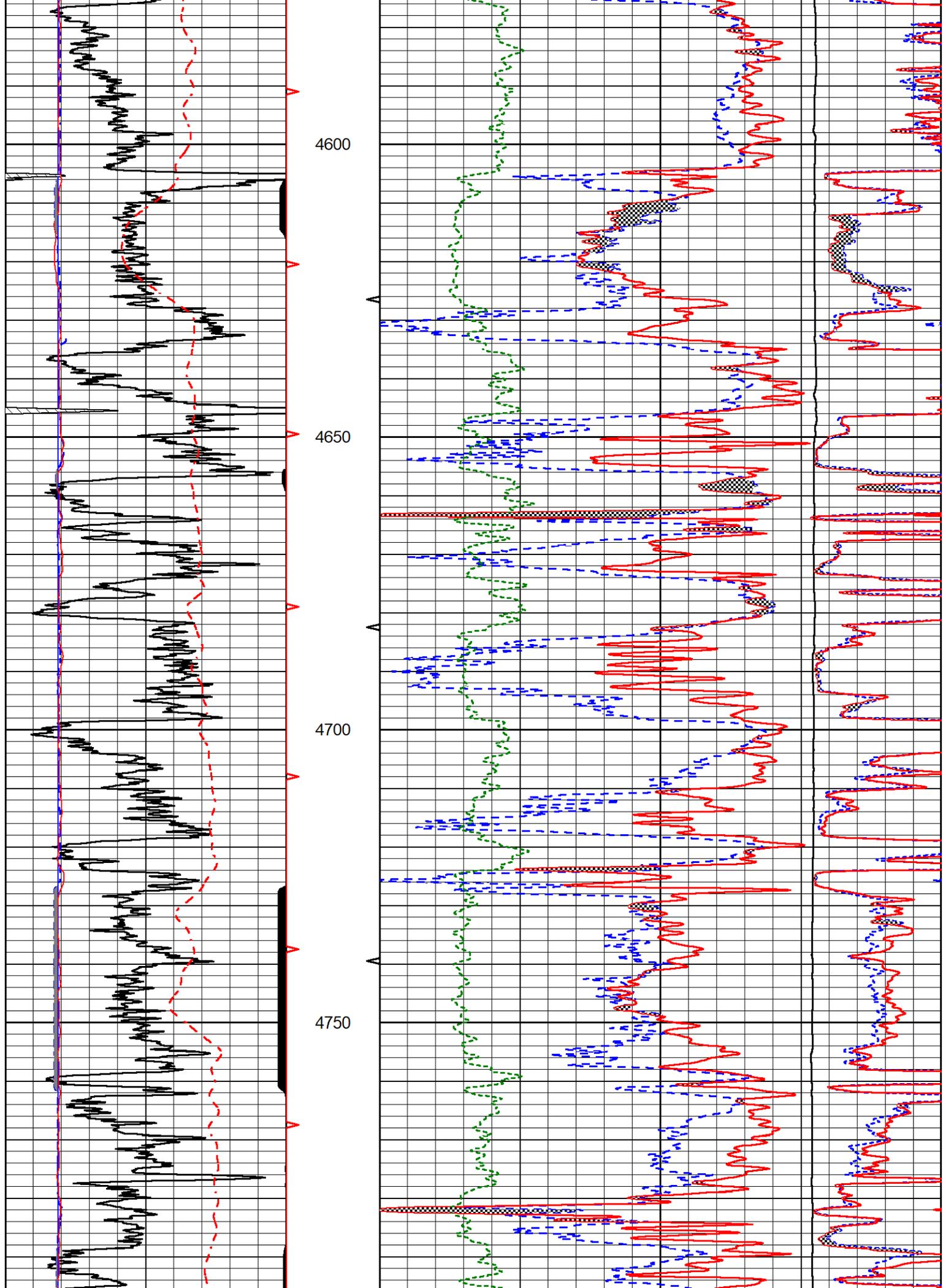
30	Compensated Neutron Porosity (pu)	-10	
30	Compensated Density Porosity (pu)	-10	
10000	Line Tension (lb)	0	
	PE		Micro Normal
			0 (Ohm-m) 20
			Micro Inverse
			0 (Ohm-m) 20

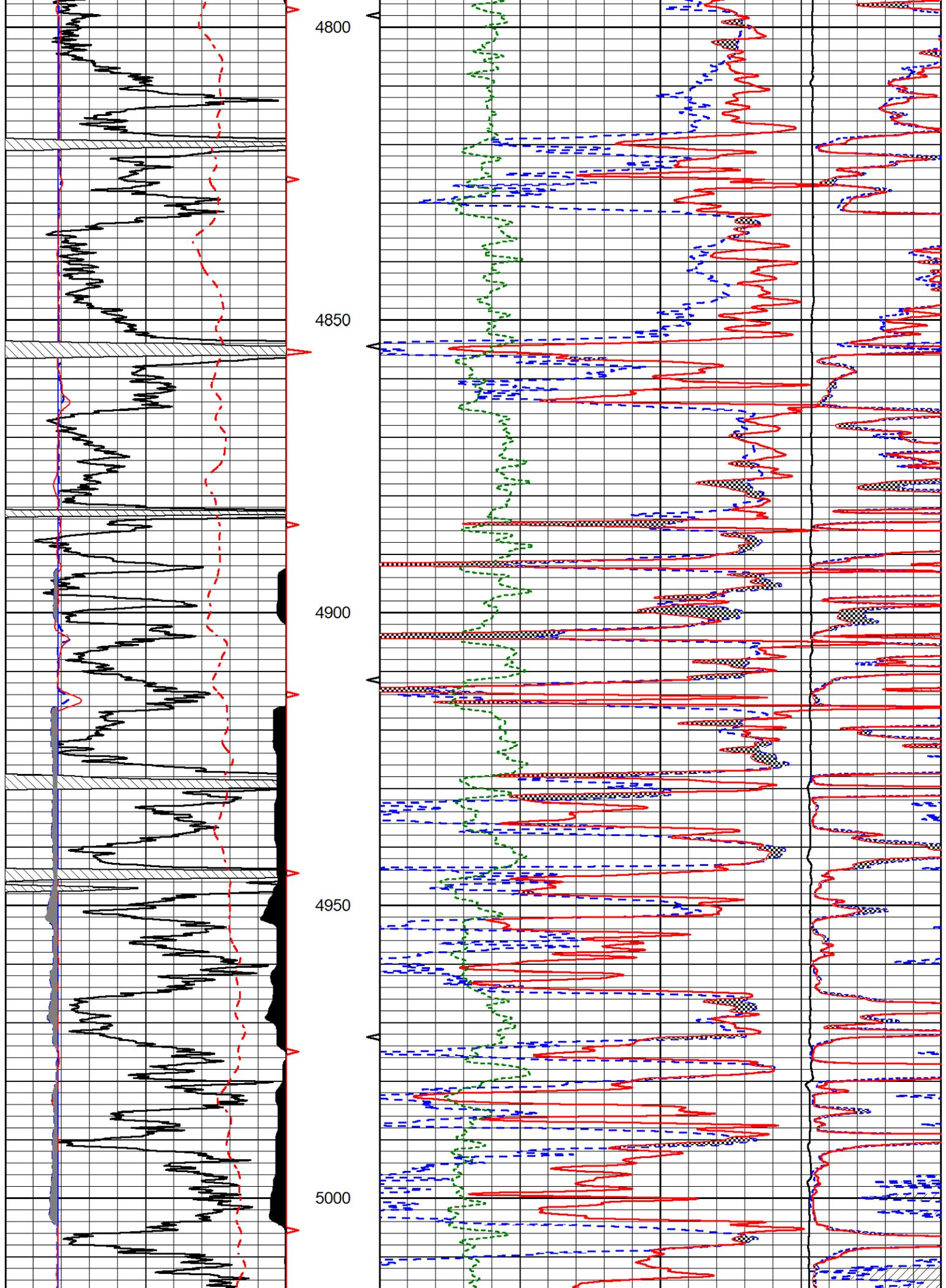


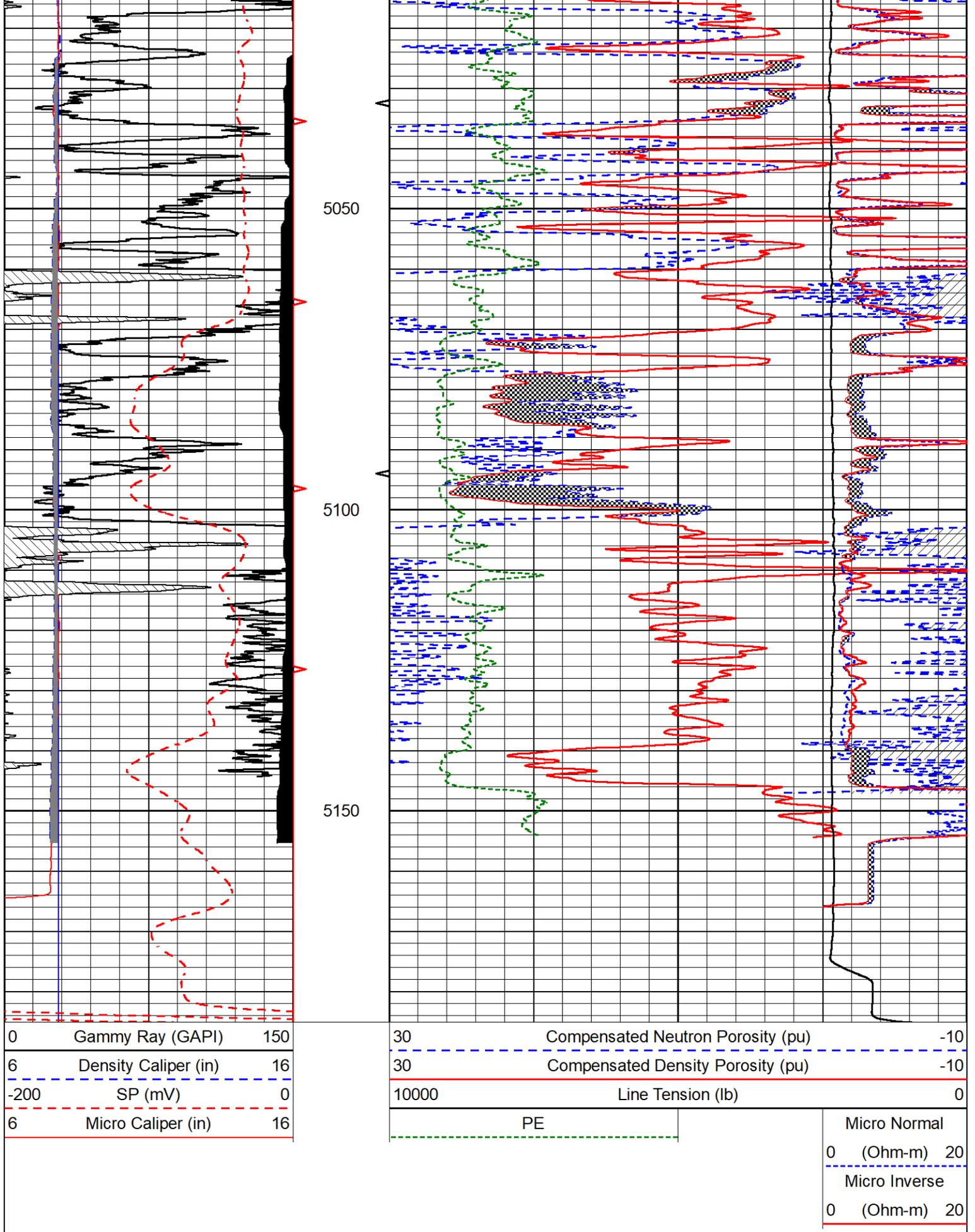












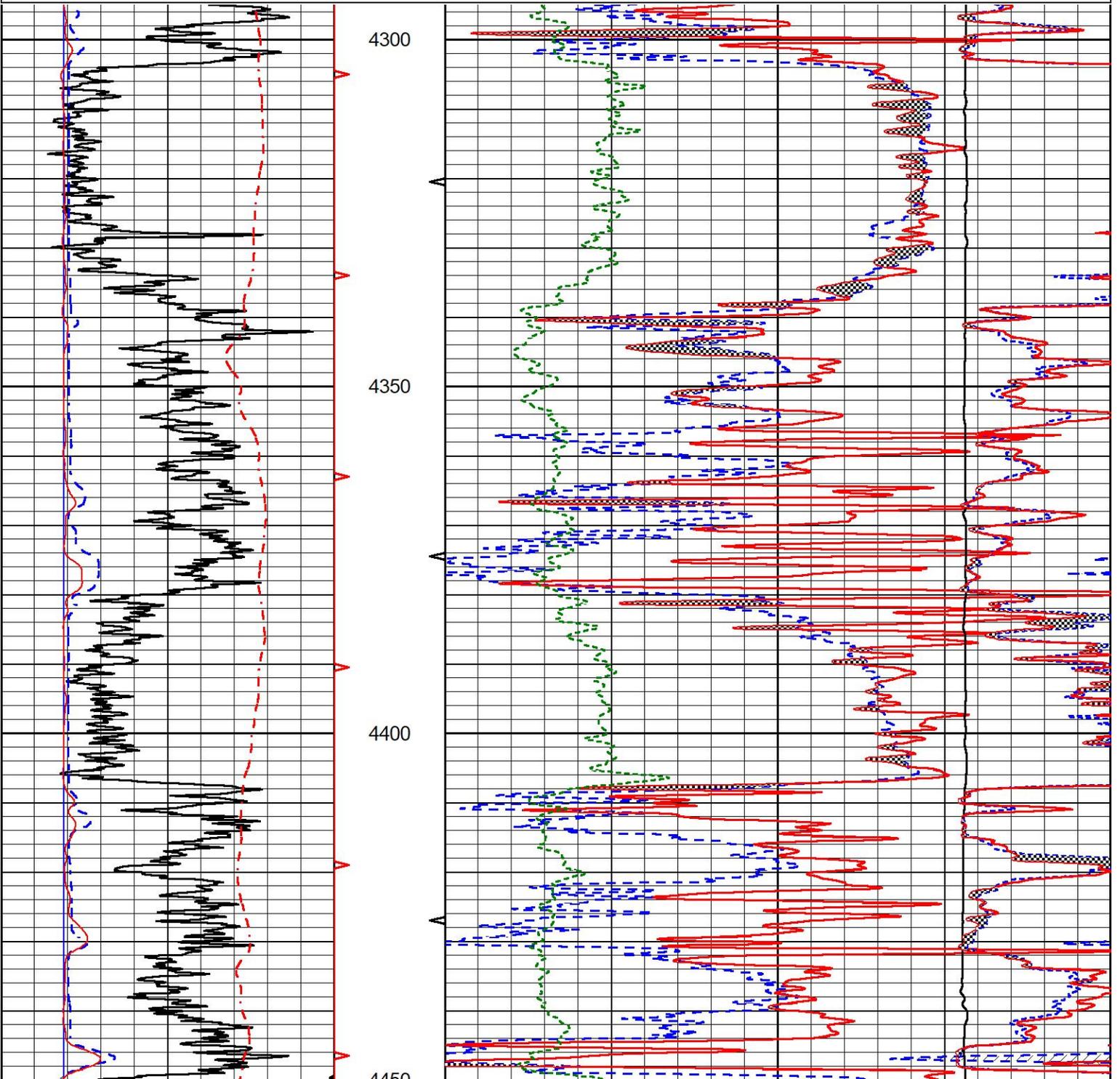
REPEAT SECTION

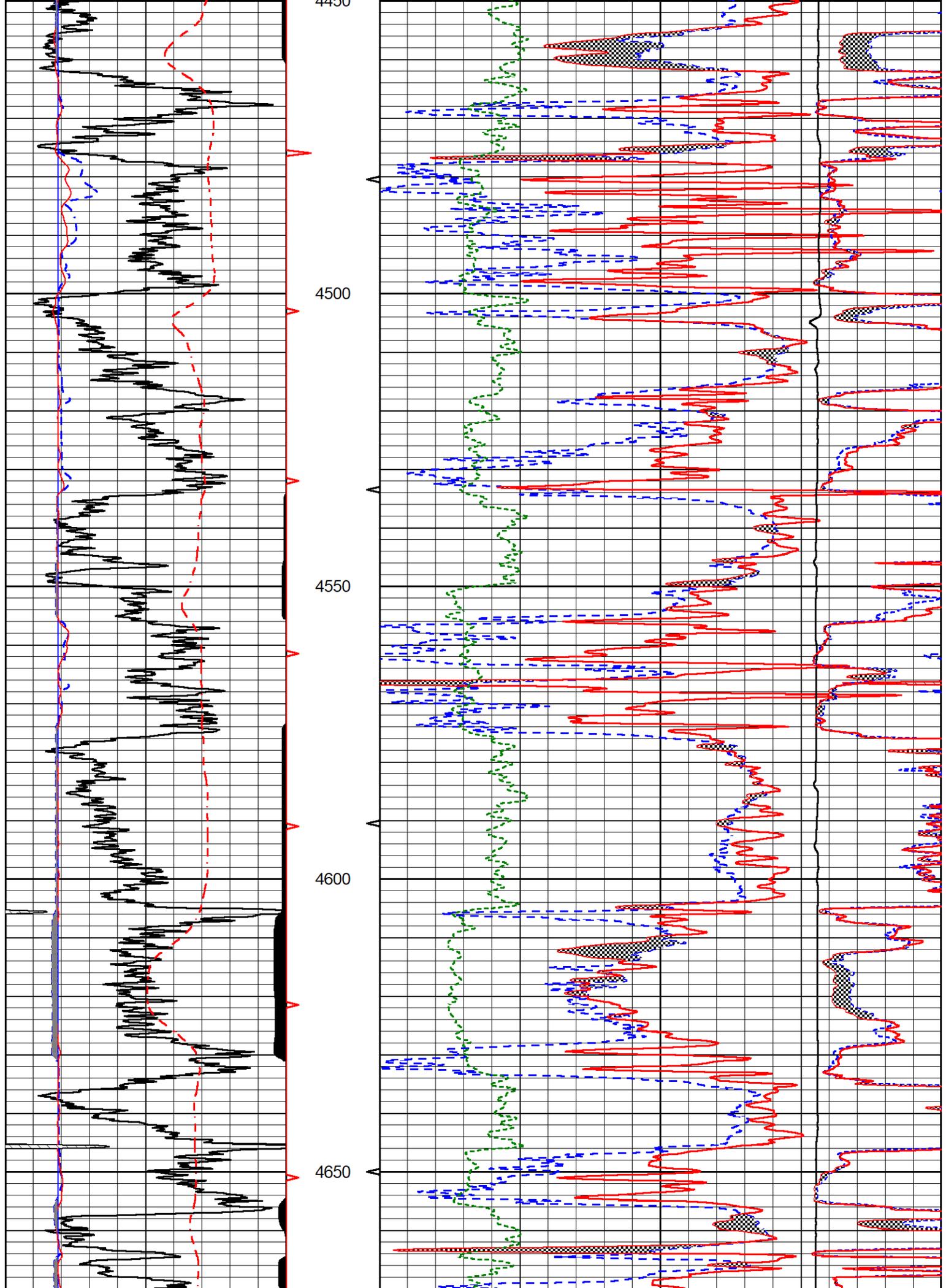


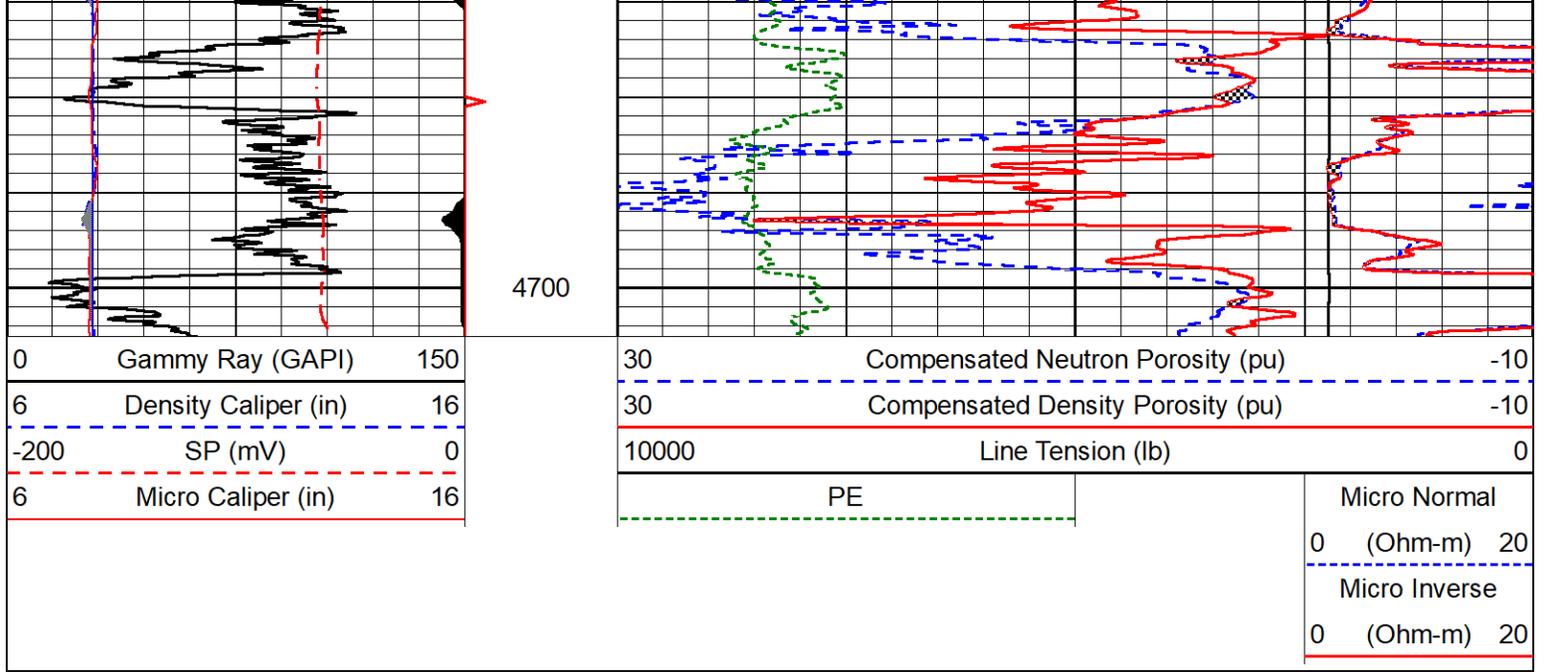
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 Presentation Format _C9B97~1
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 Charted by Depth in Feet scaled 1:240

0	Gammy Ray (GAPI)	150
6	Density Caliper (in)	16
-200	SP (mV)	0
6	Micro Caliper (in)	16

30	Compensated Neutron Porosity (pu)	-10
30	Compensated Density Porosity (pu)	-10
10000	Line Tension (lb)	0
PE		
	Micro Normal	0 (Ohm-m) 20
	Micro Inverse	0 (Ohm-m) 20







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:									
SS:	52	53	205	255	24	69	44	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
County Chevenne

MIDWEST WIRELINE

State

Kansas