



MICRORESISTIVITY

MIDWEST WIRELINE

Company LB Exploration, Inc.
Well Prochaska/Rathbun Unit #1
Field Ellsworth
County Ellsworth
State Kansas

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Location: API #: 15-053-21389-00-00
SW SE SE SE
153 FSL & 381 FEL
SEC 9 TWP 16S RGE 8W
Permanent Datum Ground Level Elevation 1613
Log Measured From Kelly Bushing
Drilling Measured From Kelly Bushing
Other Services
CNL/CDL
DIL/BHCS
Elevation
K.B. 1623
D.F.
G.L. 1613

Date	8/24/2023		
Run Number	One		
Depth Driller	3060		
Depth Logger	3059		
Bottom Logged Interval	3058		
Top Log Interval	1000		
Casing Driller	8.625 @ 223		
Casing Logger	220		
Bit Size	7.875		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	5000		
Density / Viscosity	9.4 52		
pH / Fluid Loss	10.0 9.2		
Source of Sample	Flowline		
Rm @ Meas. Temp	0.7 @ 74		
Rmt @ Meas. Temp	0.53 @ 74		
Rmc @ Meas. Temp	0.95 @ 74		
Source of Rmt / Rmc	Charts		
Rm @ BHT	0.49 @ 107		
Operating Rig Time	4 Hours		
Max Rec. Temp. F	107		
Equipment Number	P-24		
Location	Hays		
Recorded By	T. Martin		
Witnessed By	Jim Musgrove		

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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.

Ellsworth, KS, S of town at 156/14 Junction,
3.5 S on 14 to Ave O, W & N into

Log Measured From: Kelly Bushing 10 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew

Engineer: T. Martin
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: Jim Musgrove
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\lb_prochaska-rathbun unit #1.db
Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

BOREID in 7.875	BOTTEMP degF 107	CASEOD in 5.5	CASETHCK in 0	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	NPORSEL Limestone	PERFS No
SNDERR mmho/m 0	SNDERRM mmho/m 0	SPSHIFT mV -30	SRFTEMP degF 80	SZCOR Off	TDEPTH ft 3059		

Variable Description

BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
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

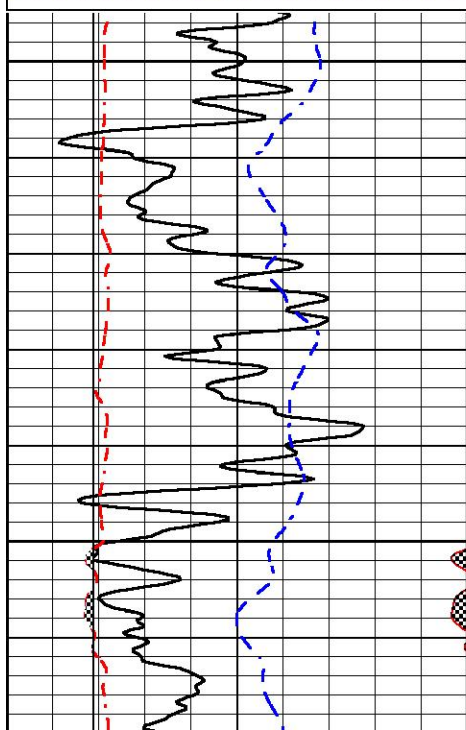
DETAIL SECTION

MAIN PASS

Database File lb_prochaska-rathbun unit #1.db
Dataset Pathname StkMI/pass3.1
Presentation Format _micro
Dataset Creation Thu Aug 24 09:53:52 2023
Charted by Depth in Feet scaled 1:240

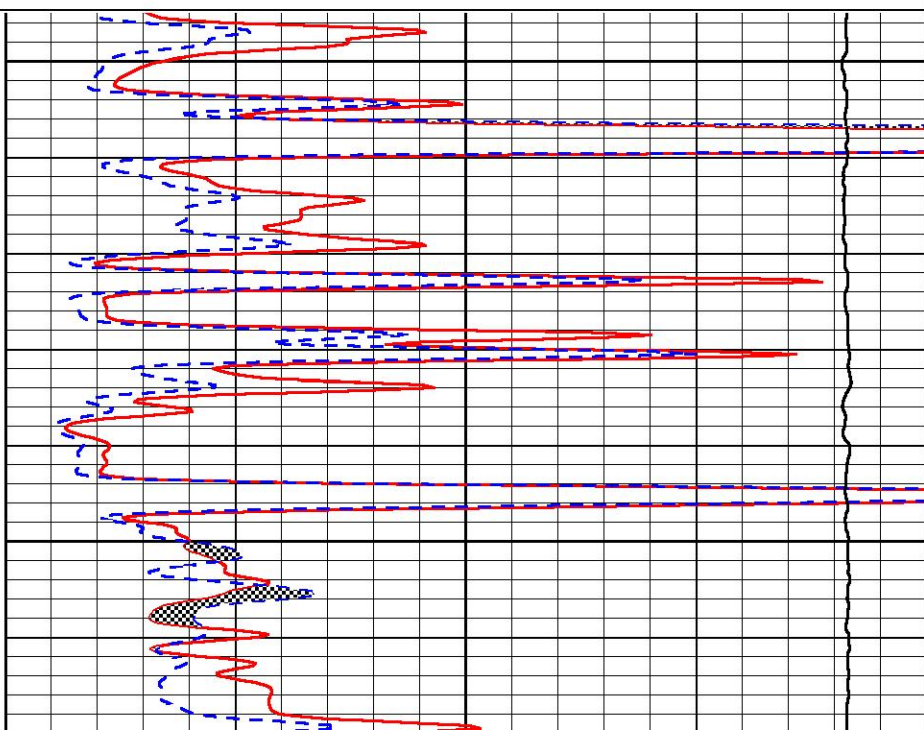
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mcal (in)	7.875
-200	sp (mV)	0

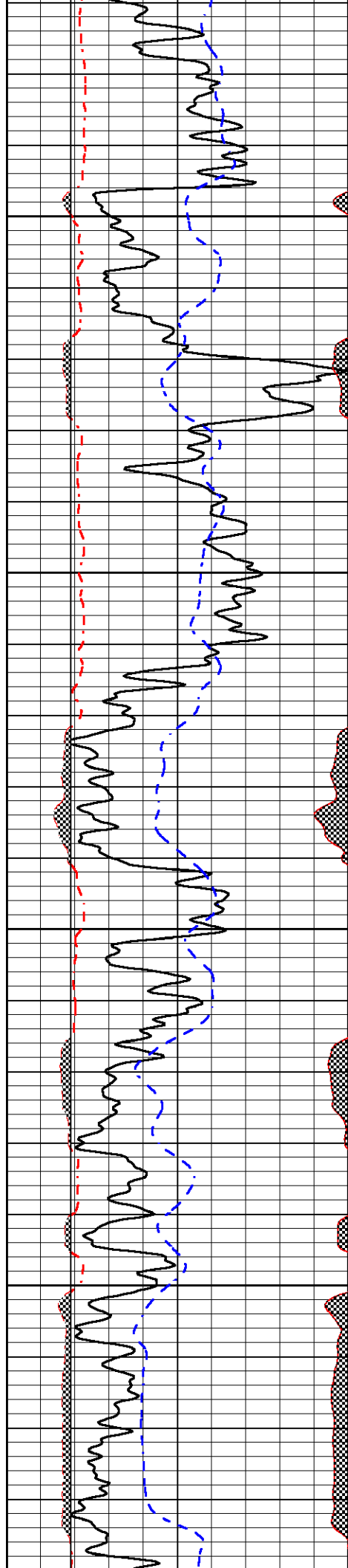
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



1000

1050



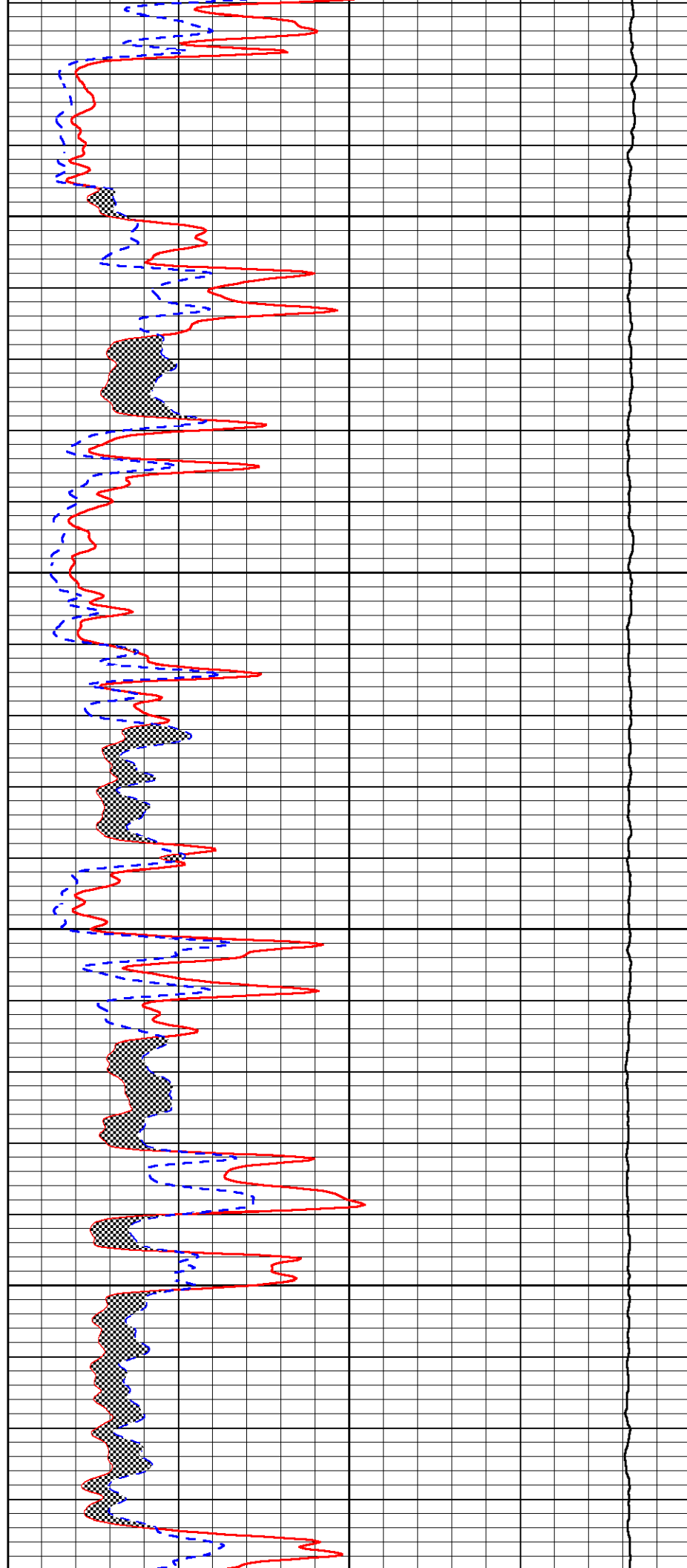


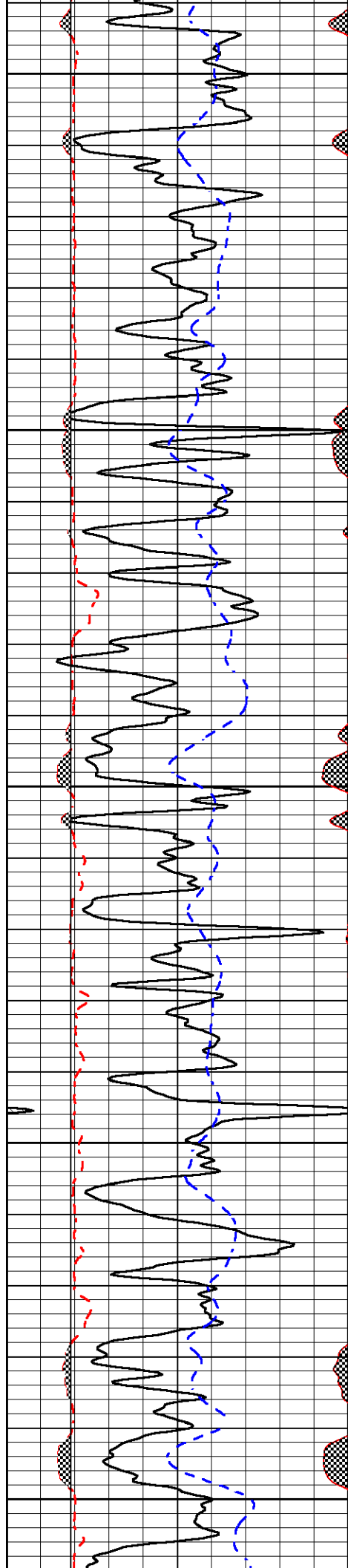
1100

1150

1200

1250





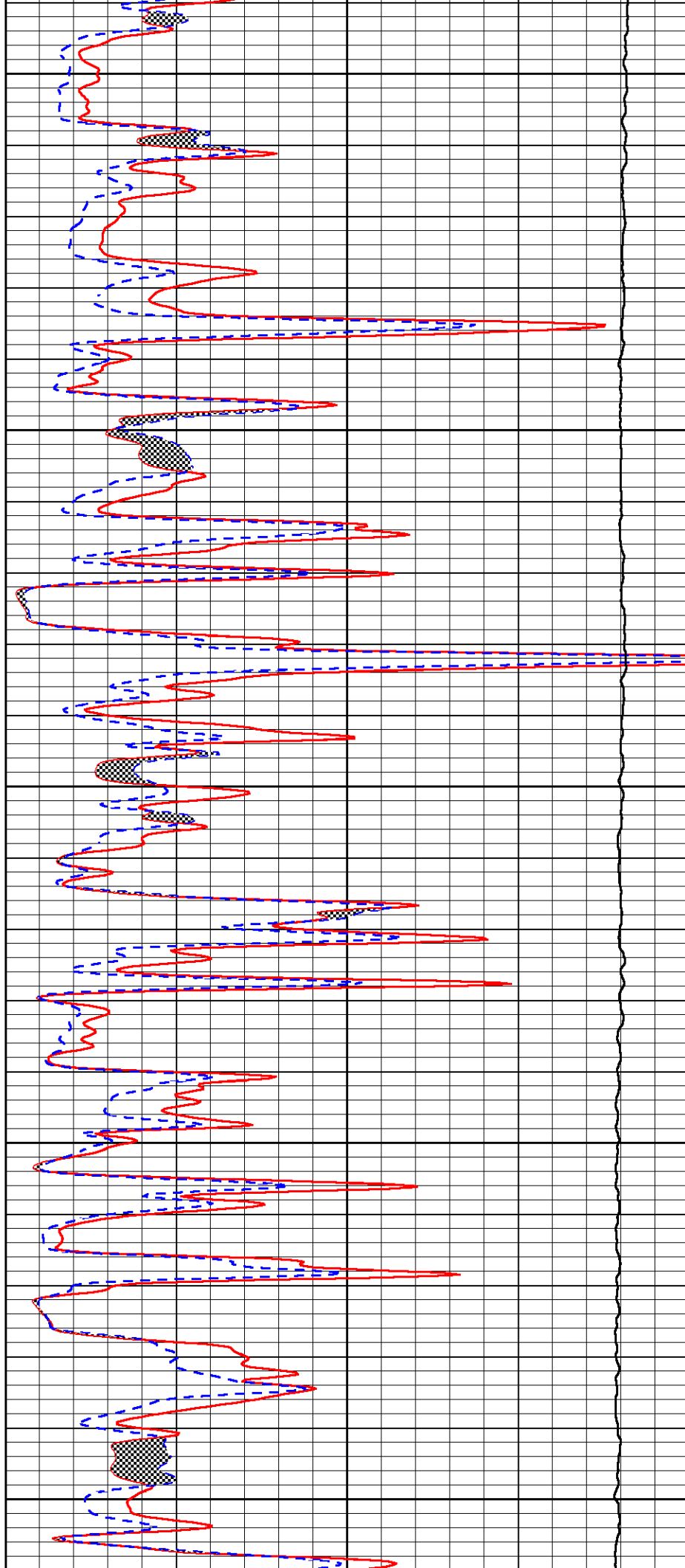
1300

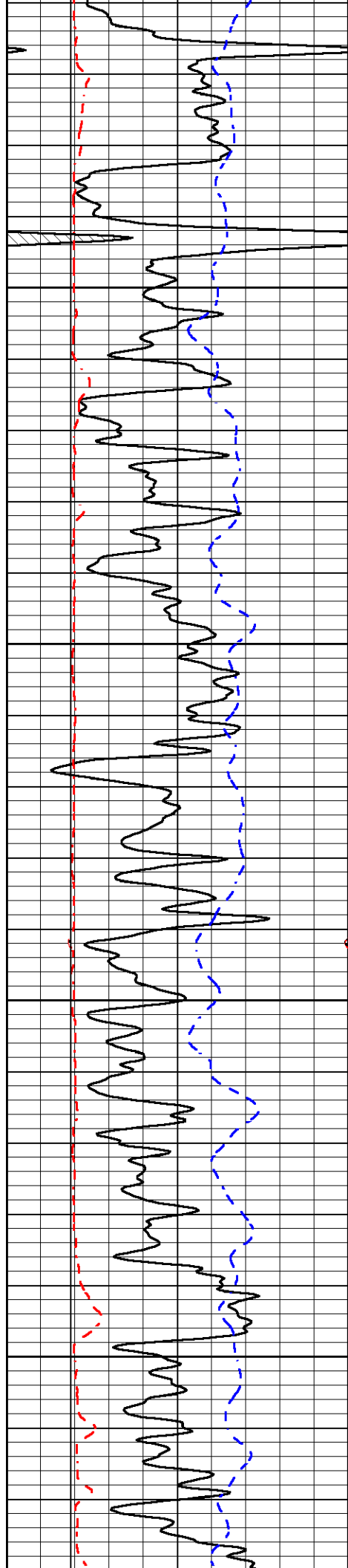
1350

1400

1450

1500



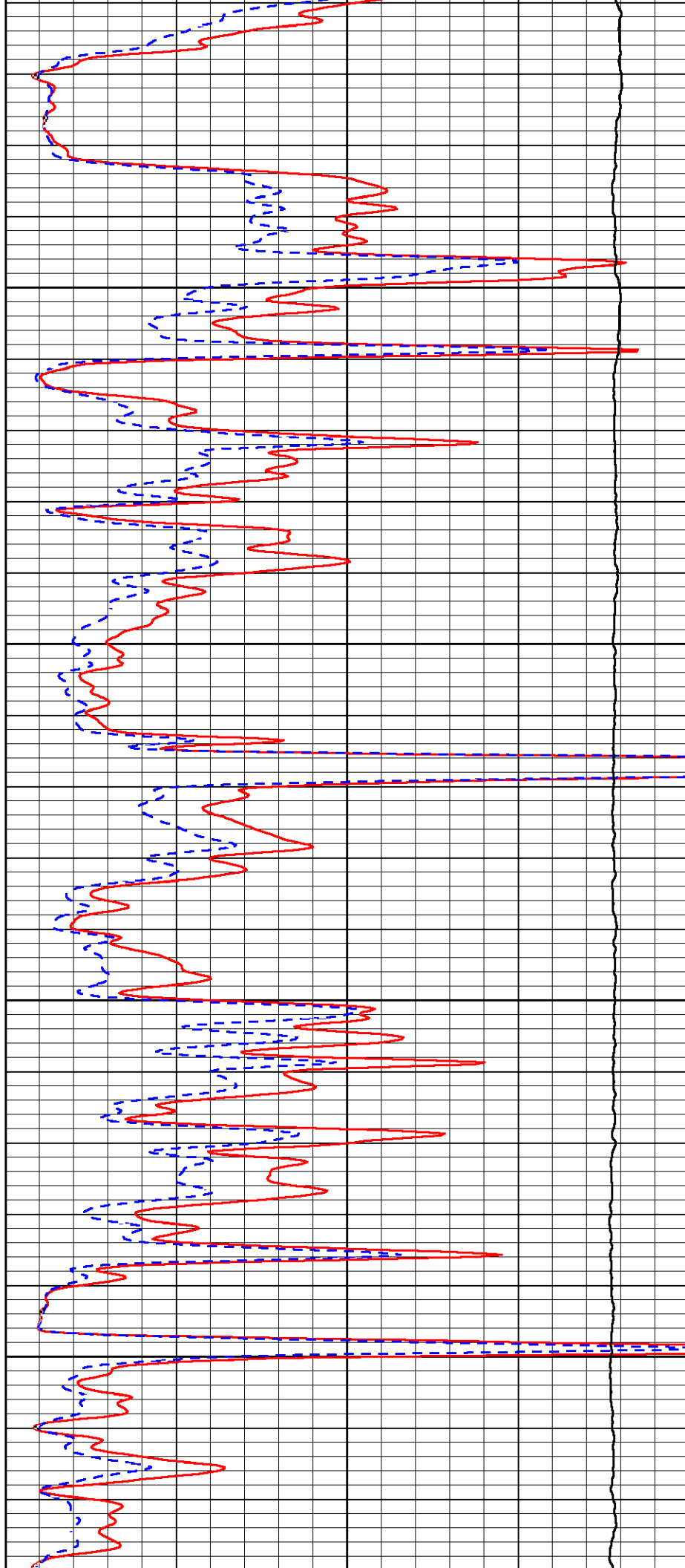


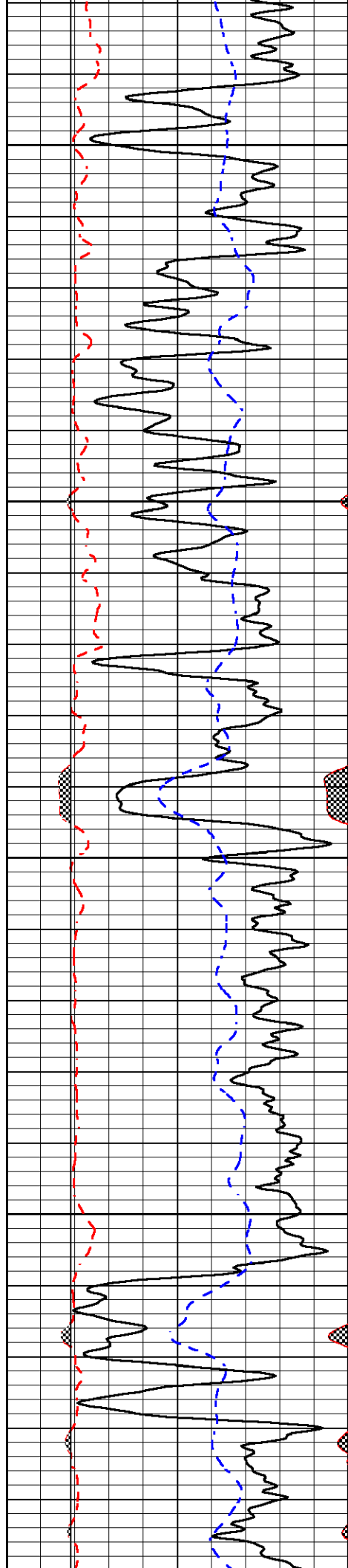
1550

1600

1650

1700





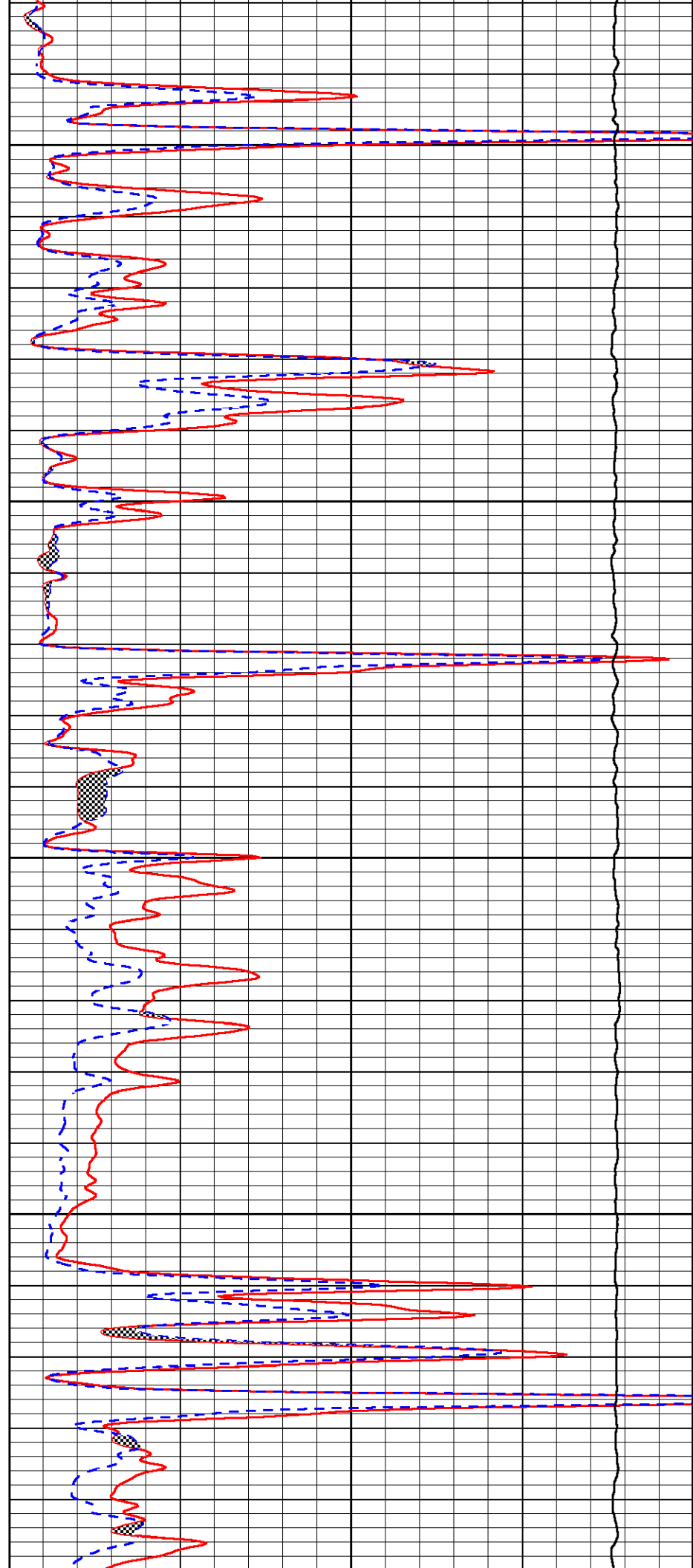
1750

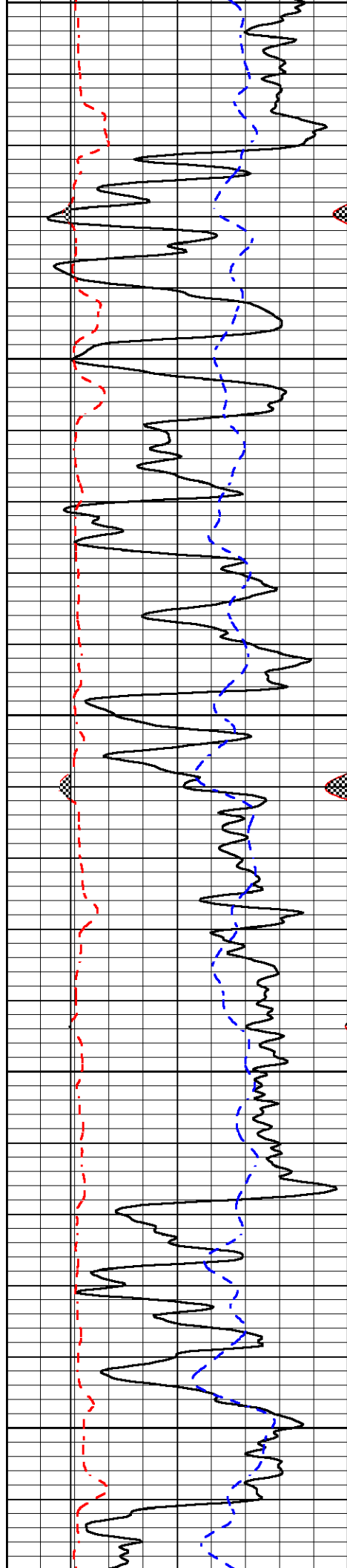
1800

1850

1900

1950





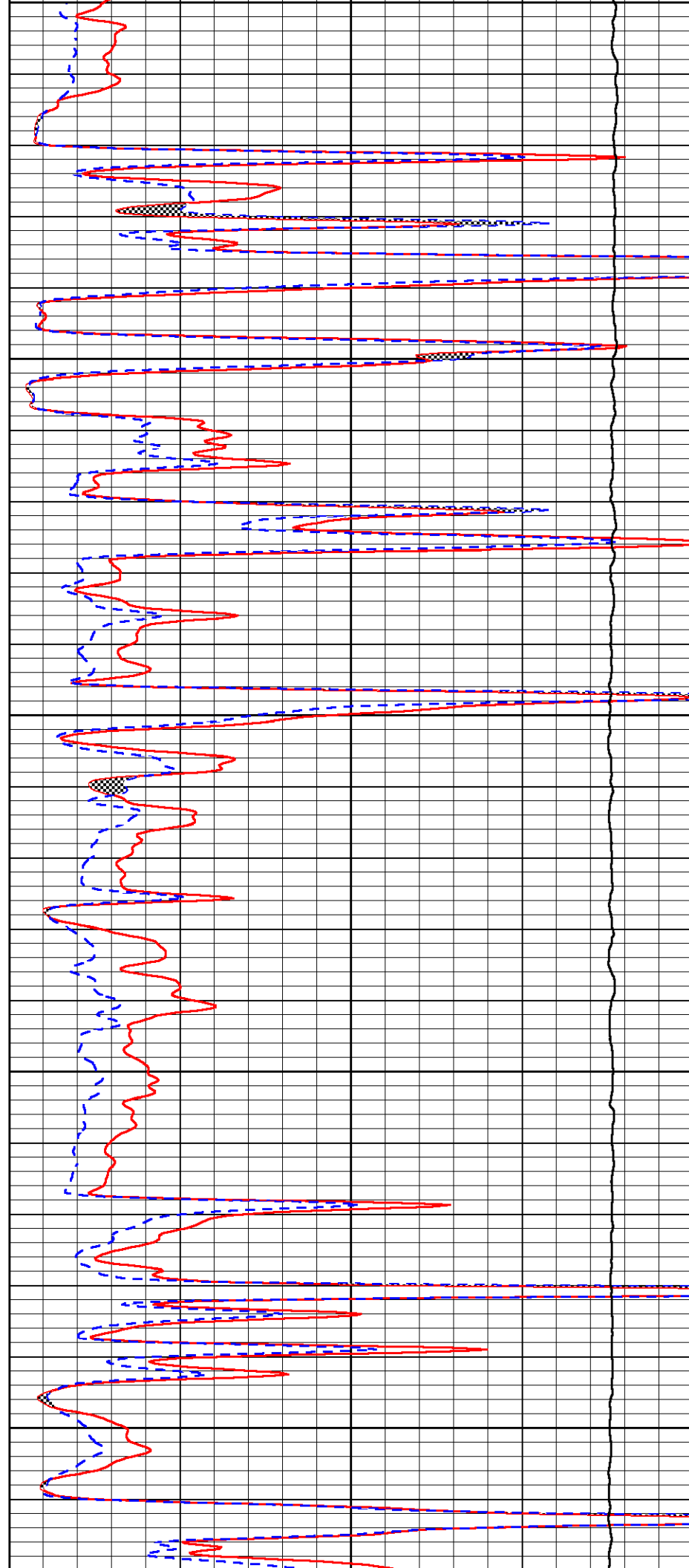
1950

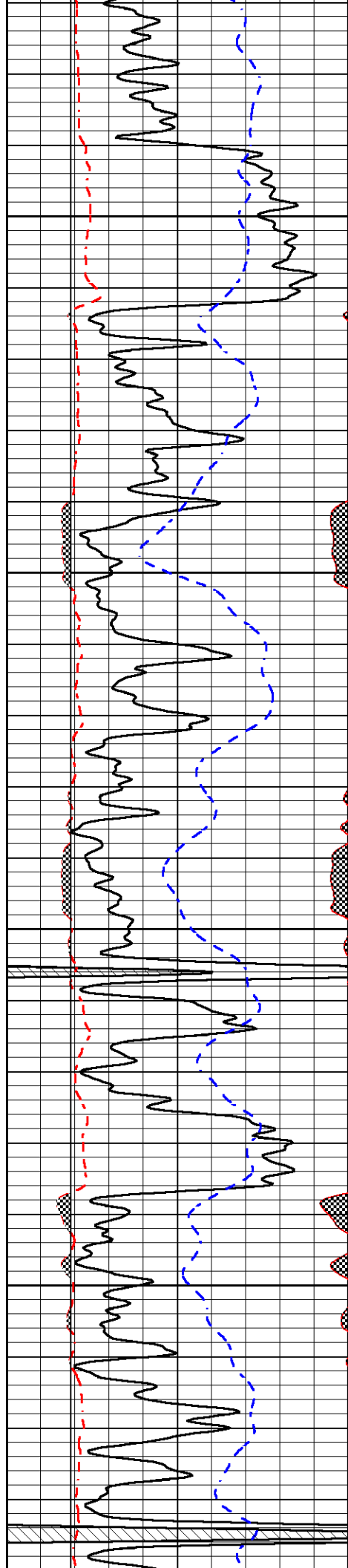
2000

2050

2100

2150



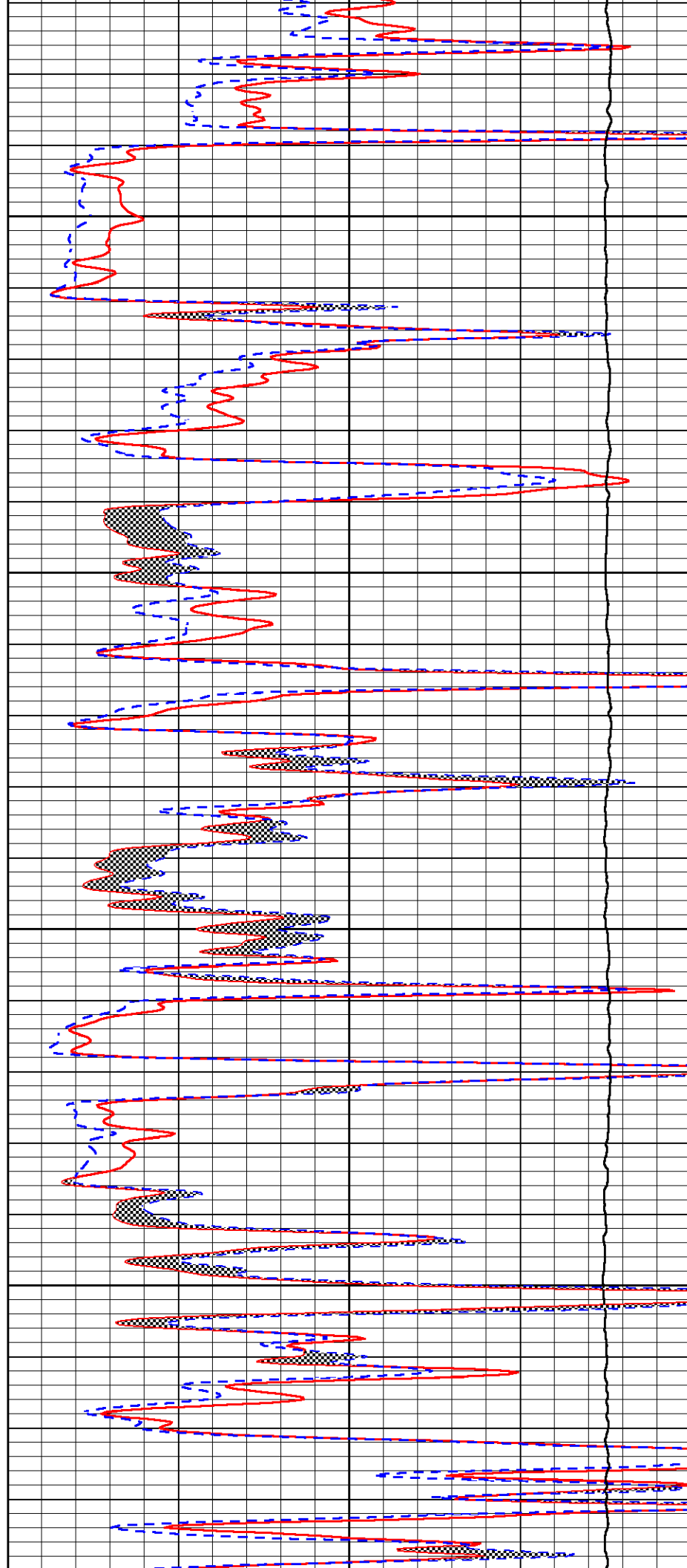


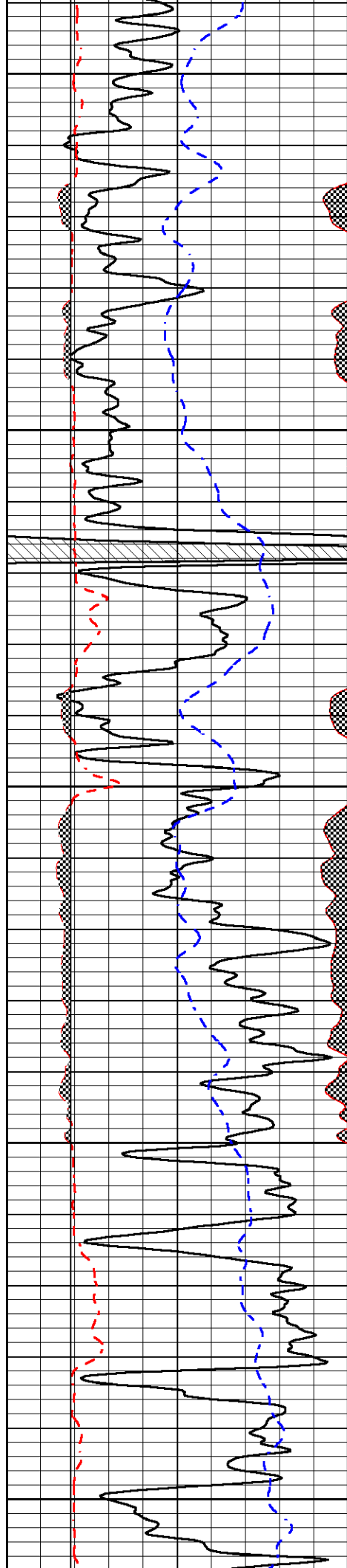
2200

2250

2300

2350





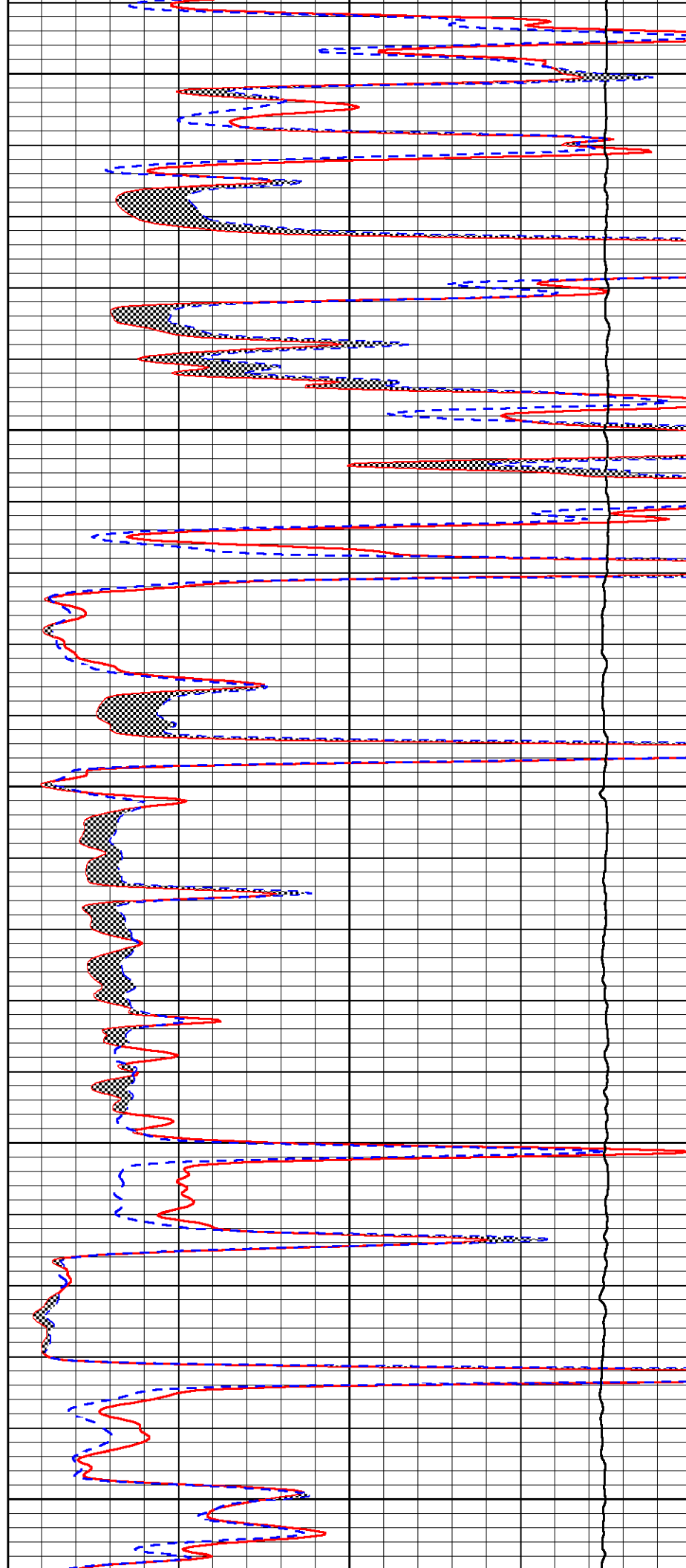
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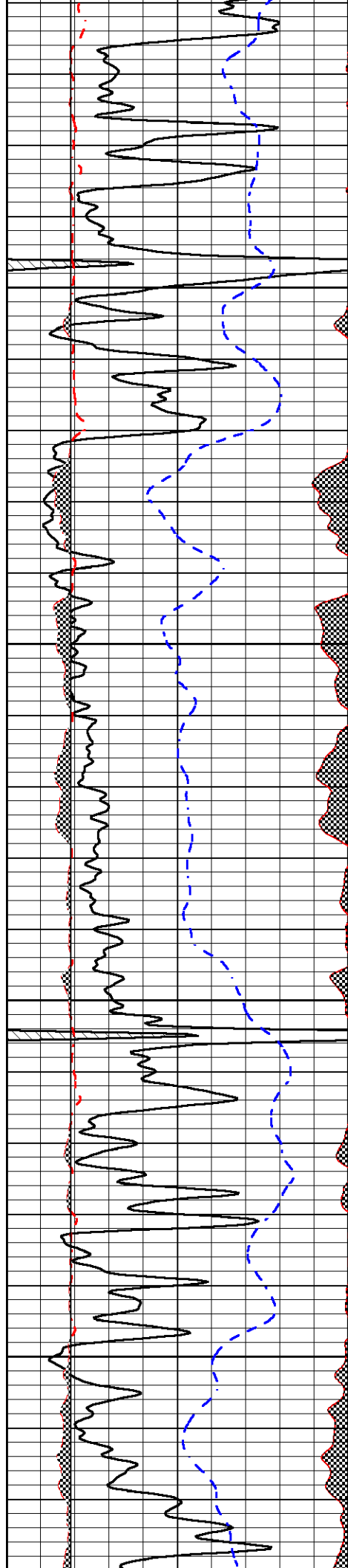
2450

2500

2550

2600



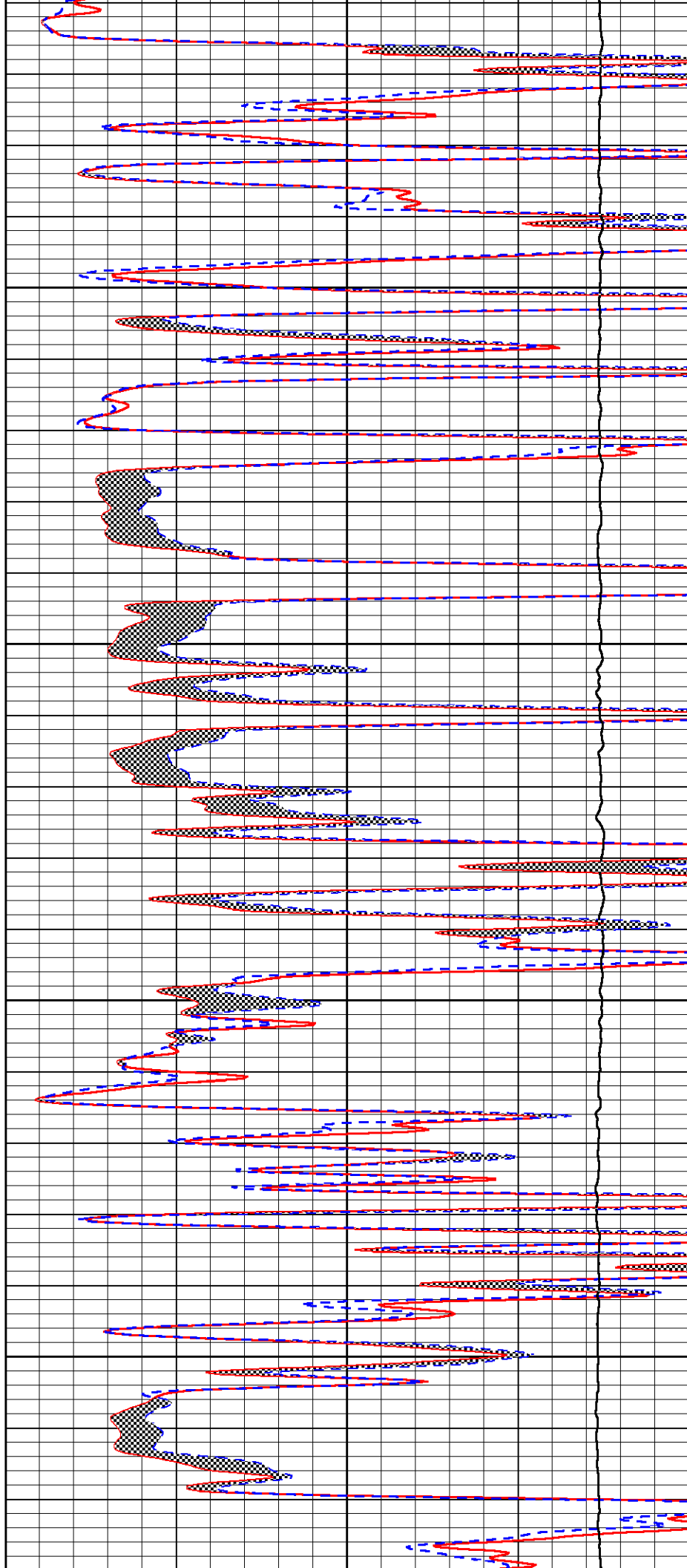


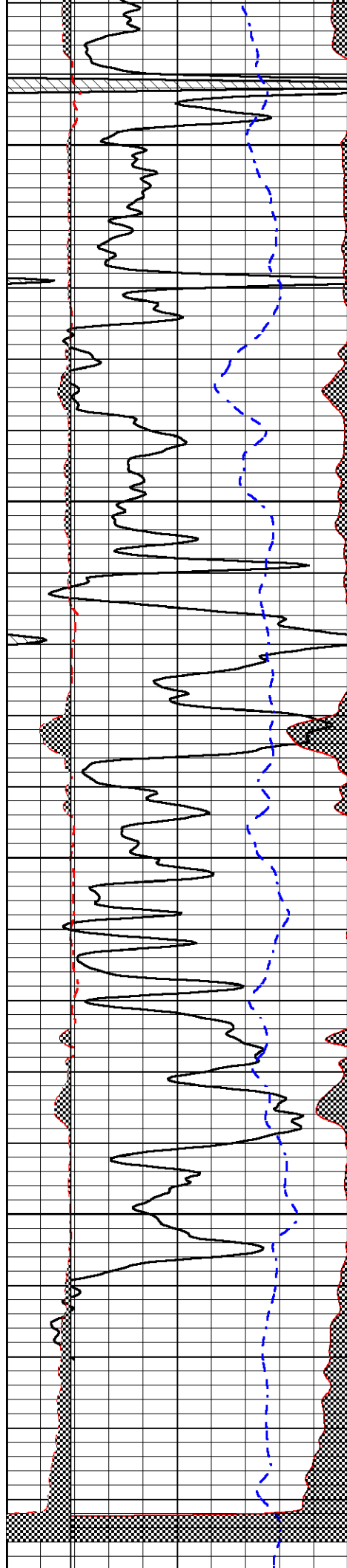
2650

2700

2750

2800





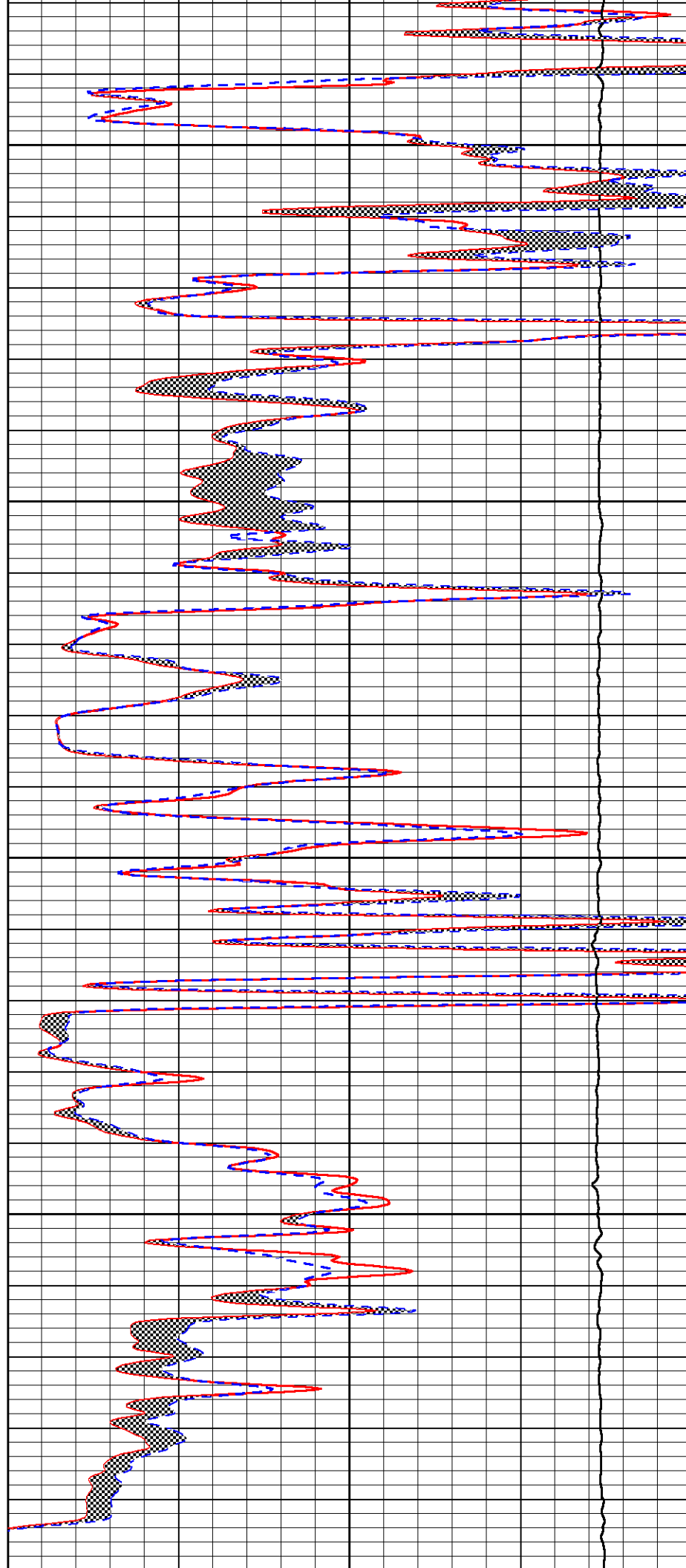
2850

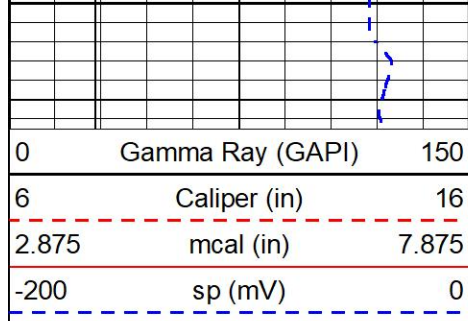
2900

2950

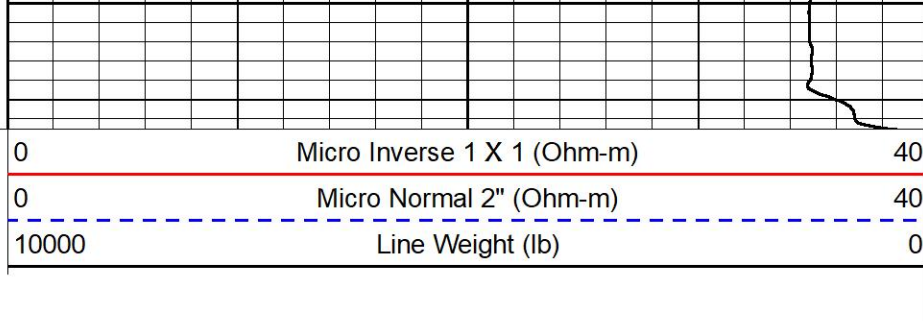
3000

3050





3030

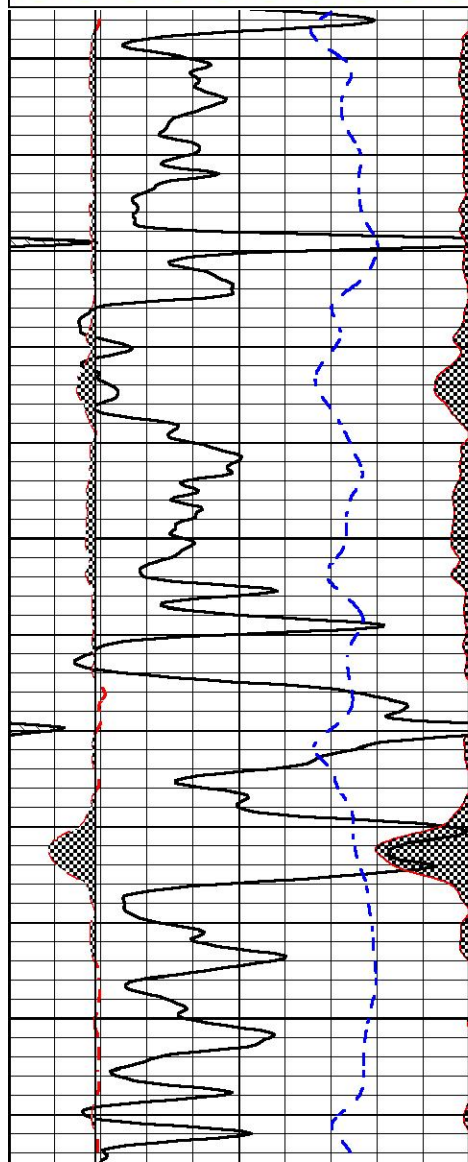
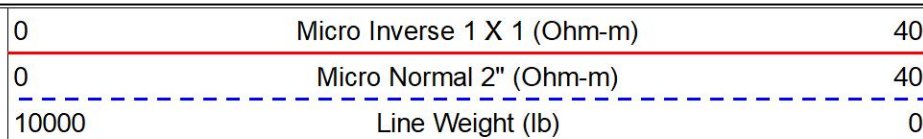
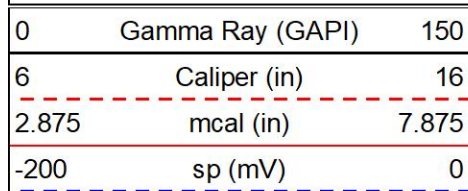


MIDWEST WIRELINE

REPEAT SECTION

REPEAT PASS

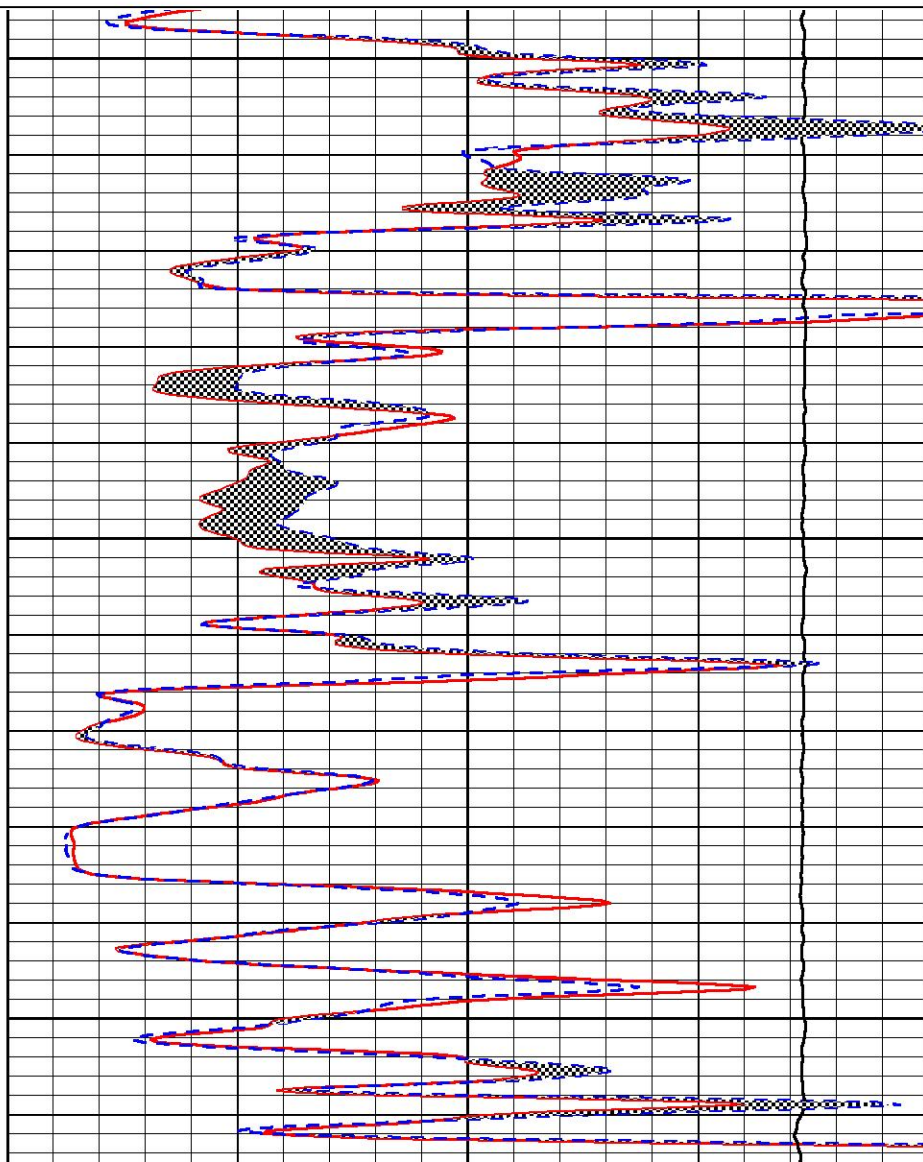
Database File lb_prochaska-rathbun unit #1.db
 Dataset Pathname StkMI/pass2.1
 Presentation Format _micro
 Dataset Creation Thu Aug 24 09:10:04 2023
 Charted by Depth in Feet scaled 1:240

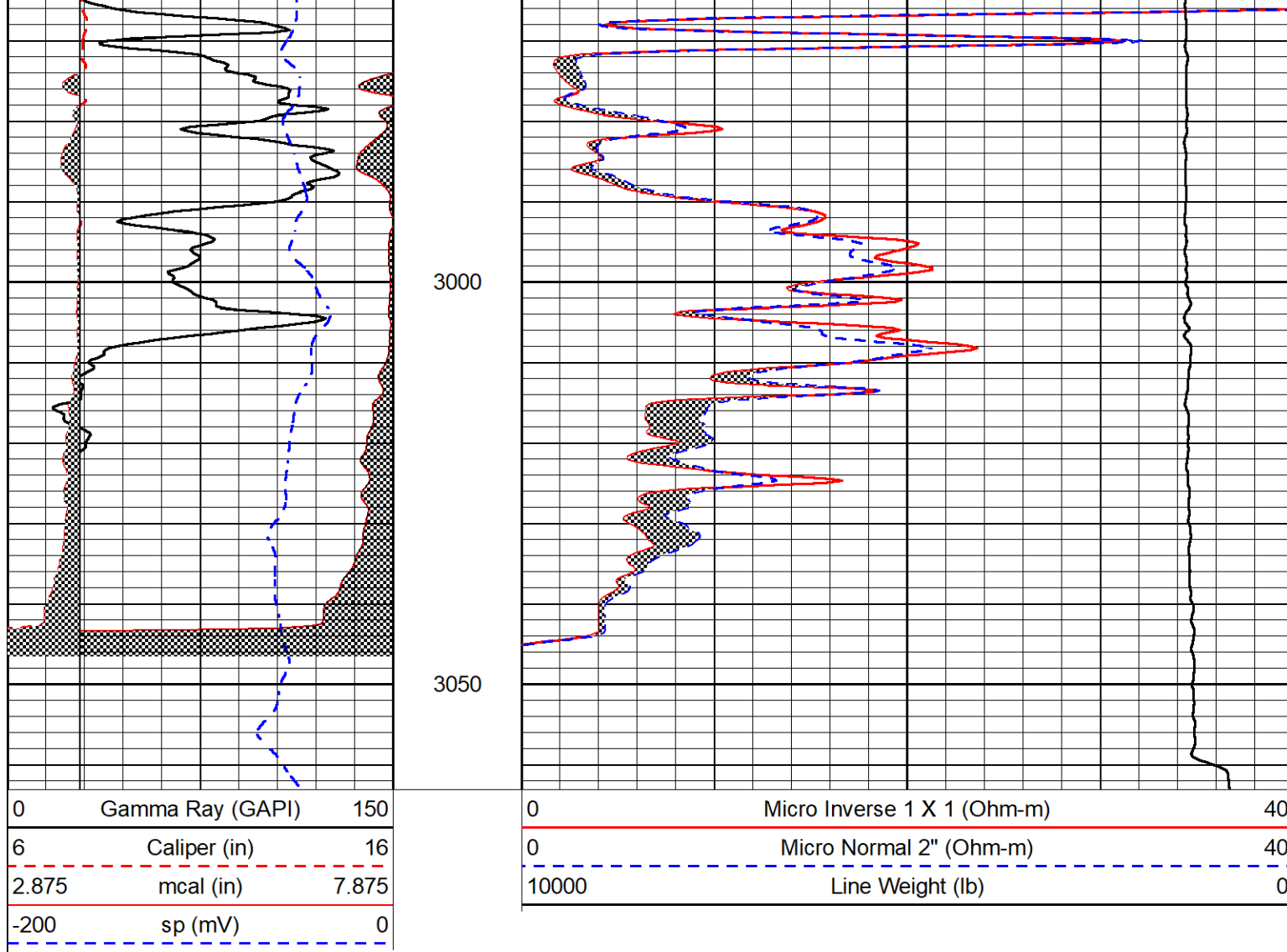


2850

2900

2950





Calibration Report

Database File lb_prochaska-rathbun unit #1.db
 Dataset Pathname StkMI/pass3.1
 Dataset Creation Thu Aug 24 09:53:52 2023

Dual Induction Calibration Report

Serial-Model: 507-M&W
 Surface Cal Performed:

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	68.570	638.100	0.000	255.800	mmho/m	0.500	-37.000
Medium	184.288	716.191	0.000	255.800	mmho/m	0.430	-75.000

Microlog Calibration Report

Serial-Model: 401-PSIML
 Performed: Mon Jun 5 16:37:07 2023

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-0.4000

Inverse Caliper	0.0000	1.0000	0.0000	1.0000	Ohm-m	21000.0000	-0.7500
	1.0052	1.0858	5.0000	16.5000	in	142.7190	-138.7800

LITHODENSITY Calibration Report									
Serial Number:		704-10							
Tool Model:		STEP LITHO							
Performed:		Fri Jun 23 15:26:01 2023							
Source:									
	Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:									
SS:	51	54	202	252	21	70	42	1	cps
LS:	85	96	363	462	53	147	97	3	cps
Aluminum:									
SS:	870	1018	2321	2004	37	71	43	2	cps
LS:	1057	1828	3315	1570	61	147	91	5	cps
Magnesium:									
SS:	1459	1669	3829	2914	42	70	46	3	cps
LS:	4526	7550	13047	4982	98	135	93	13	cps
Aluminum+Iron:									
SS:	553	719	1939	1750	37	72	45	2	cps
LS:	613	1297	2812	1404	60	146	96	4	cps
		Density			PE				
		Actual	Calibrated		Actual	Calibrated	Quality		
Background:									
SS:							0.245		
LS:							0.205		
Aluminum:									
SS:		2.6000	2.6000	g/cc			0.240		
LS:		2.6000	2.6000	g/cc			0.236		
Magnesium:									
SS:		1.6800	1.6800	g/cc	2.5700	2.5700	0.210		
LS:		1.6800	1.6800	g/cc	2.5700	2.5700	0.184		
Aluminum+Iron:									
SS:						6.1800	0.228		
LS:						6.1800	0.206		

Before Survey									
Performed:		Wed Feb 9 13:15:42 2022							
SS:	0	0	0	0	0	0	0	0	cps
LS:	1370	1580	3705	3037	48	80	50	4	cps
After Survey									
Performed:		Wed Feb 9 13:16:02 2022							
SS:	0	0	0	0	0	0	0	0	cps
LS:	1400	1600	3800	3100	60	100	70	6	cps

Caliper:	Reference:	Reading:
Small Ring:	6.0 in	0.2
Large Ring:	15.0 in	0.8
Gain:	16.161	
Offset:	1.100	

Compensated Neutron Calibration Report									
					Serial Number:		207		
					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
PRE-SURVEY VERIFICATION						
	Detector	Readings		Measured	Target	
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		
3)	Short Space		cps			
	Long Space		cps	pu		
POST-SURVEY VERIFICATION						
	Detector	Readings		Measured	Target	
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		pu
3)	Short Space		cps			
	Long Space		cps	pu		pu
Gamma Ray Calibration Report						
Serial Number:		106				
Tool Model:		M&W				
Performed:		Tue Aug 22 07:35:27 2023				
Calibrator Value:		500.0		GAPI		
Background Reading:		24.0		cps		
Calibrator Reading:		637.0		cps		
Sensitivity:		0.5500		GAPI/cps		

 MIDWEST WIRELINE	Company	LB Exploration, Inc.
	Well	Prochaska/Rathbun Unit #1
	Field	Ellsworth
	County	Ellsworth
	State	Kansas