



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company IGWT, INC.		Company IGWT, INC.	
Well BENJAMIN PEEFLY #1		Well BENJAMIN PEEFLY #1	
Field PIERCE		Field PIERCE	
County BUTLER		County BUTLER	
State KANSAS		State KANSAS	
Location:		API #: 15-015-24090-00-00	Other Services
SEC 28 TWP 25S RGE 4E		330' FSL & 560' FWL	CNL/CDL DIL
Permanent Datum	GROUND LEVEL	Elevation 1341'	Elevation
Log Measured From	KELLY BUSHING		K.B. 1347'
Drilling Measured From	KELLY BUSHING		D.F. N/A
			G.L. 1341'
Date	10/12/2017		
Run Number	ONE		
Depth Driller	2672'		
Depth Logger	2671'		
Bottom Logged Interval	2670'		
Top Log Interval	200'		
Casing Driller	8.625" @ 207'		
Casing Logger	215'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	1150		
Density / Viscosity	9.3 48		
pH / Fluid Loss	8.5 9.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.90 @ 80		
Rmf @ Meas. Temp	0.68 @ 80		
Rmc @ Meas. Temp	1.22 @ 80		
Source of Rmf / Rmc	CHARTS		
Rm @ BHT	0.70 @ 103		
Operating Rig Time	3 HOURS		
Max Rec. Temp. F	103		
Equipment Number	91		
Location	HAYS		
Recorded By	D. SCHMIDT		
Witnessed By	KENT HUPP	DAN JOHNSON	

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, 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.

POTWIN,
6 1/2 SOUTH TO 10 RD, 1 1/4 EAST,
NORTH INTO

Log Measured From: KELLY BUSHING 6 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerres.com 785-625-3858

Your Pioneer Energy Services Crew

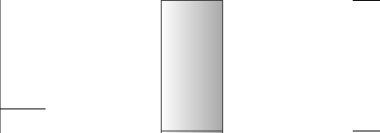
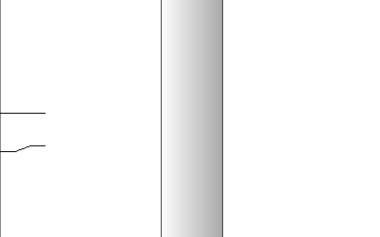
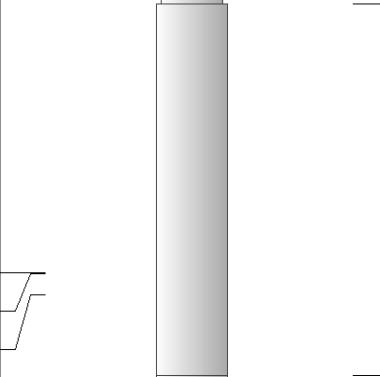
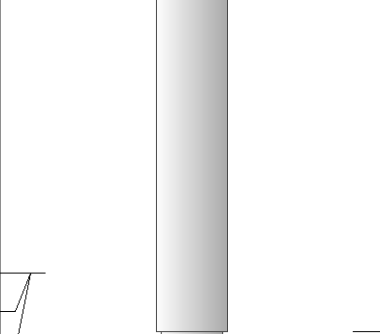
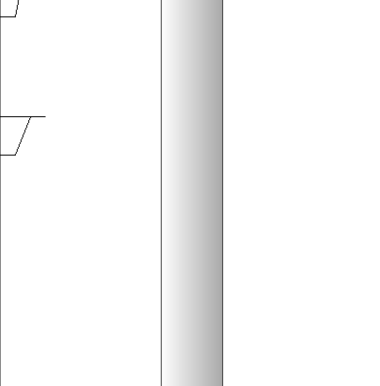
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: KENT HUPP
Secondary Witness: DAN JOHNSON
Secondary Witness:
Secondary Witness:

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	-257	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	80	0	5.5	0	2671	103	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (90-1031)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

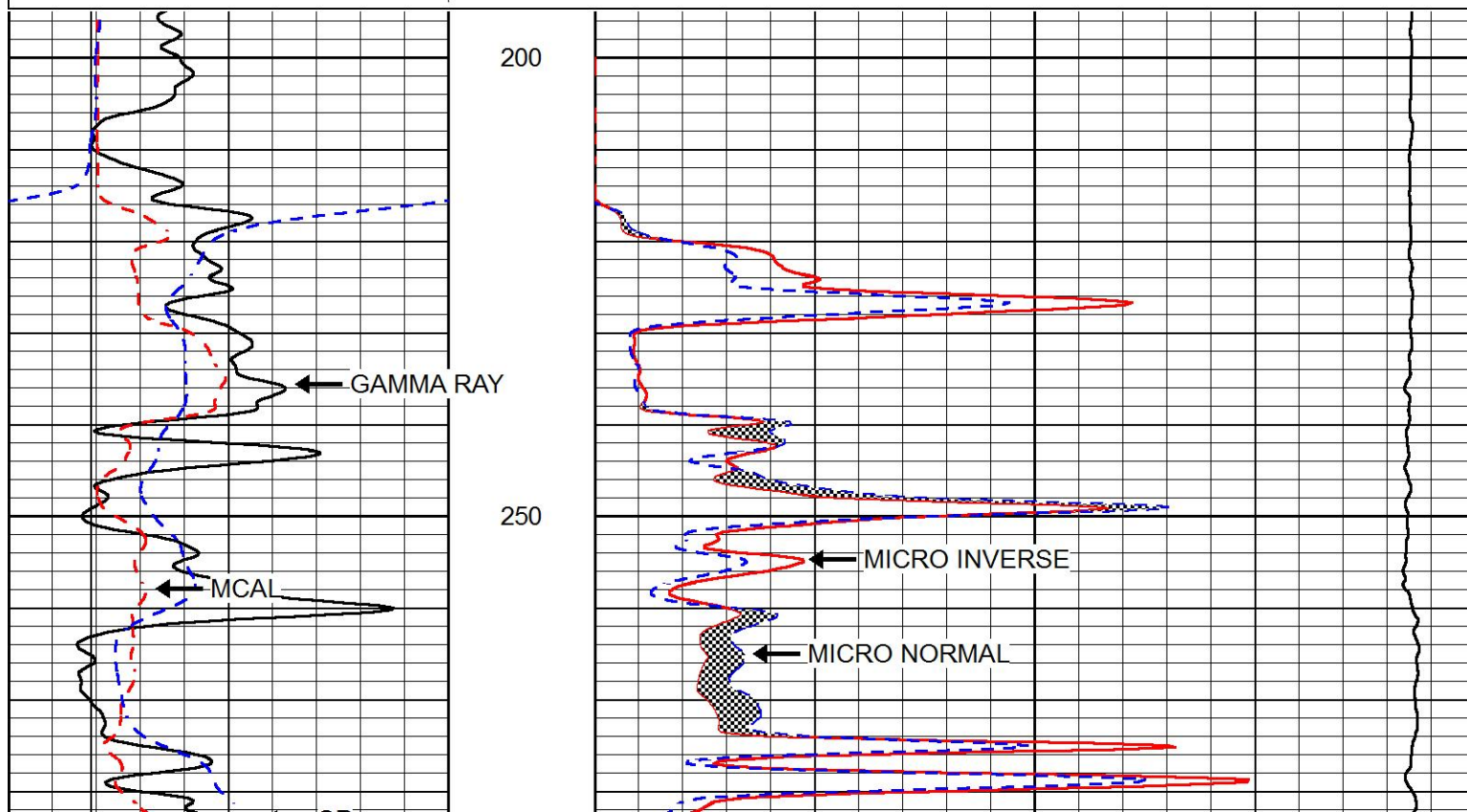
			DIL-M&W (PSI 91)	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: igwt_benjamin peffly_1.db: field/well/STKML/pass3.3 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						

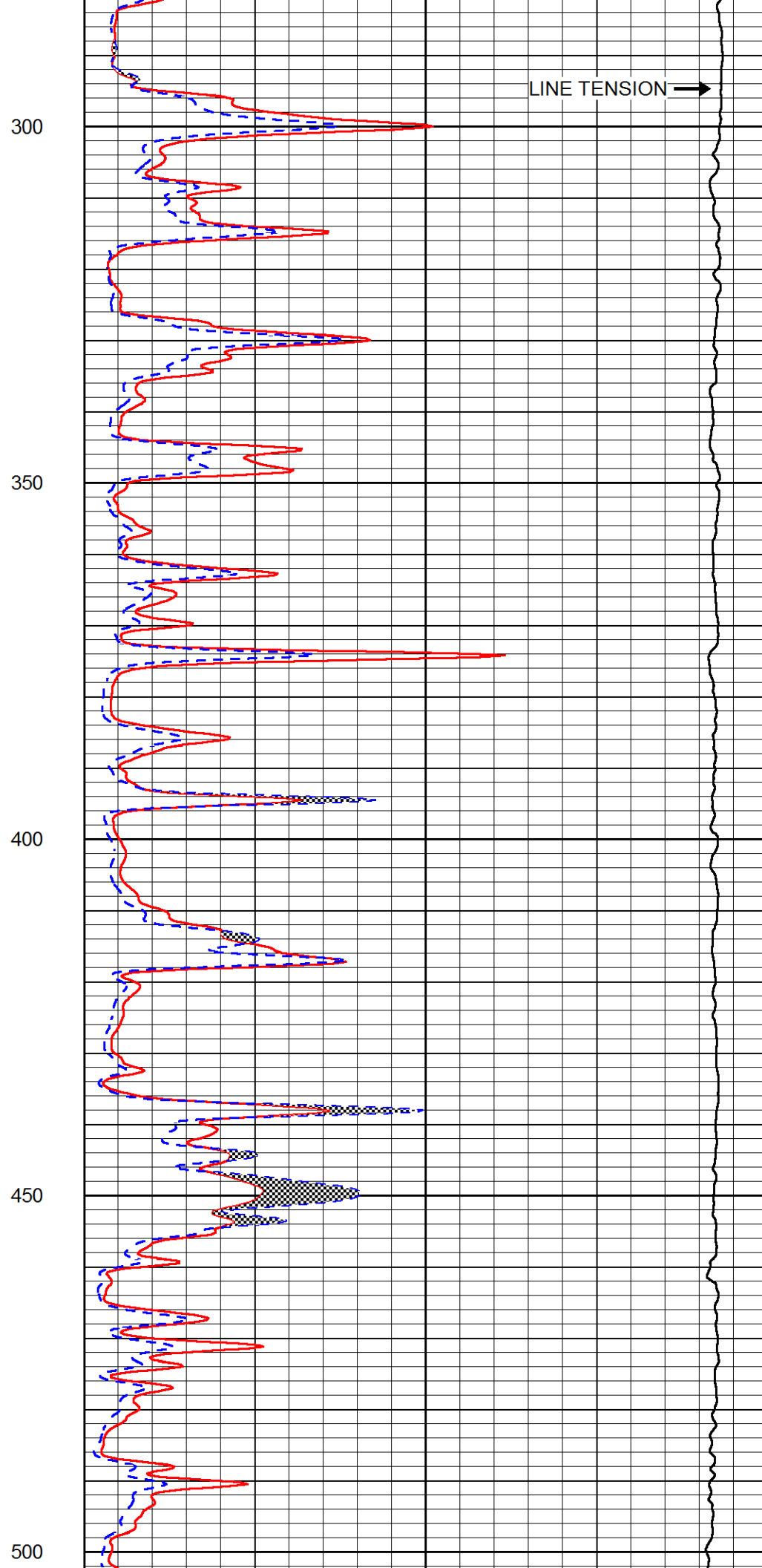
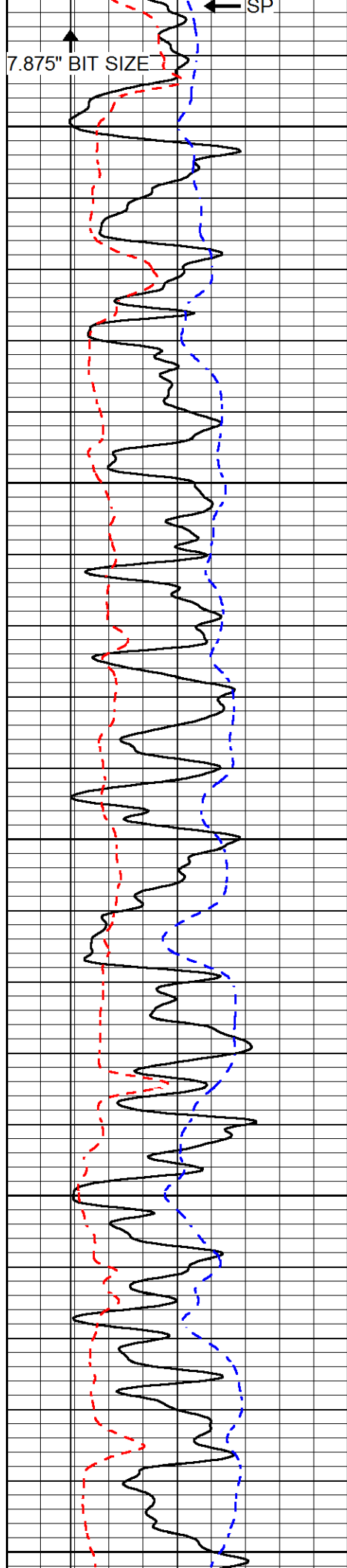


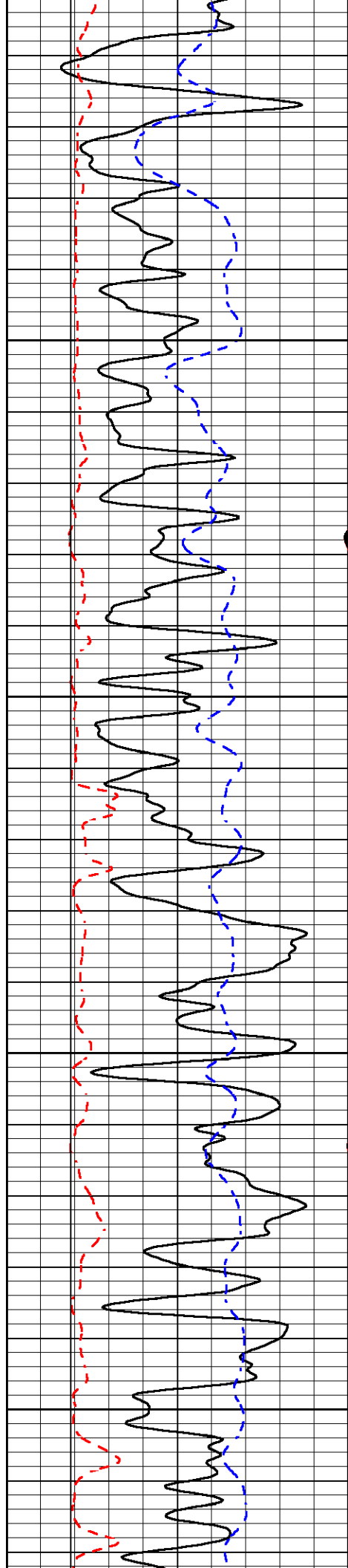
MAIN PASS

Database File	igwt_benjamin peffly_1.db
Dataset Pathname	STKML/pass3.1
Presentation Format	micro
Dataset Creation	Thu Oct 12 07:03:05 2017
Charted by	Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150	0	Micro Inverese 1 X 1 (Ohm-m)	40
6	MCAL (in)	16	0	Micro Normal 2" (Ohm-m)	40
2.875	mcals (in)	7.875	10000	Line Weight (lb)	0
6	Bit Size (in)	16			
-200	SP (mV)	0			





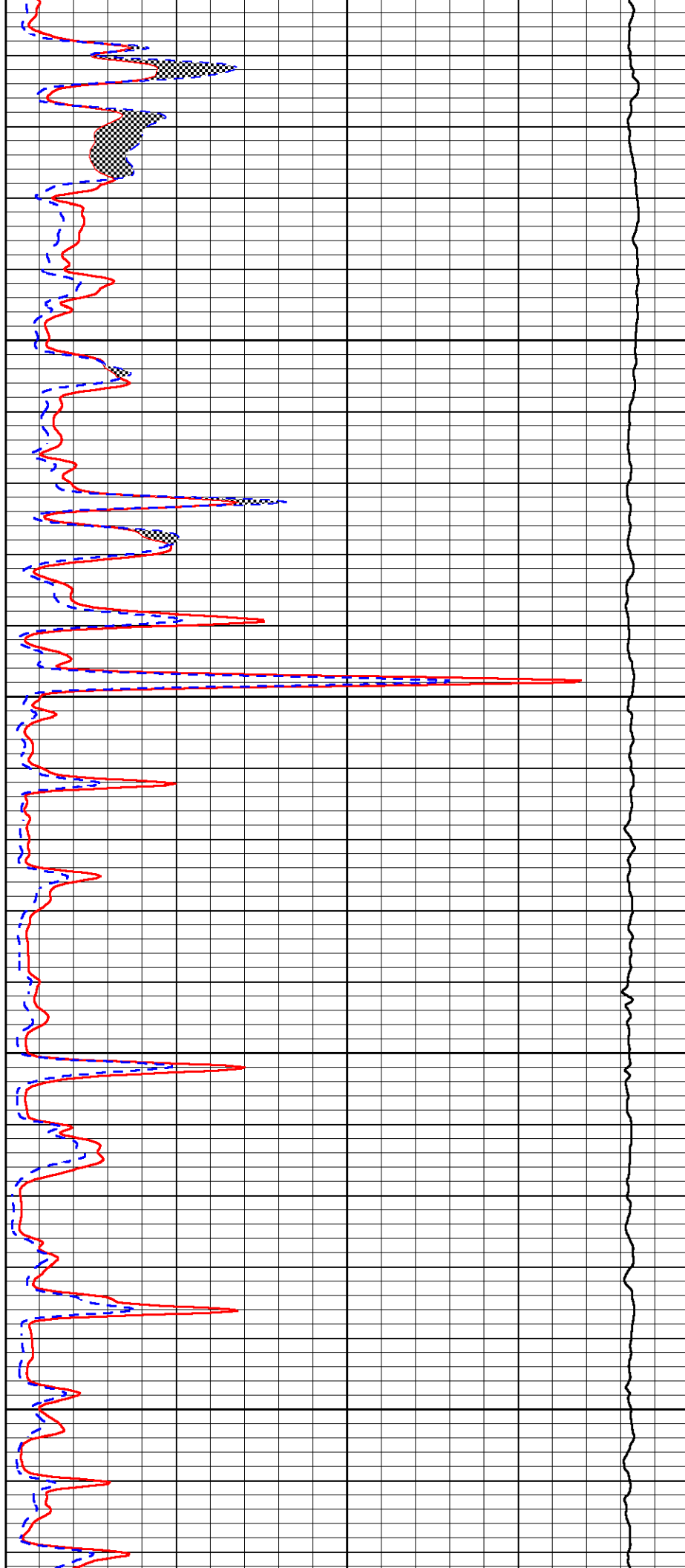


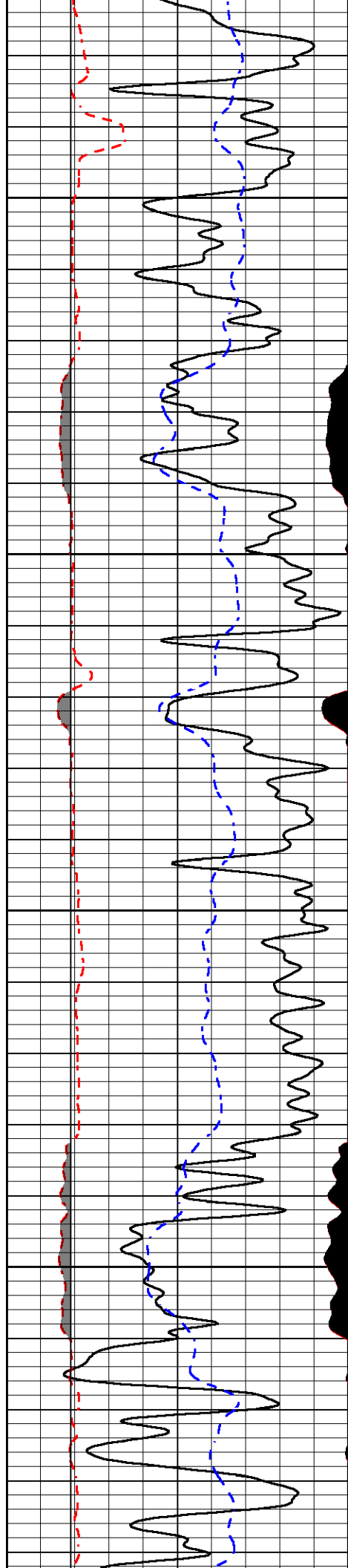
550

600

650

700



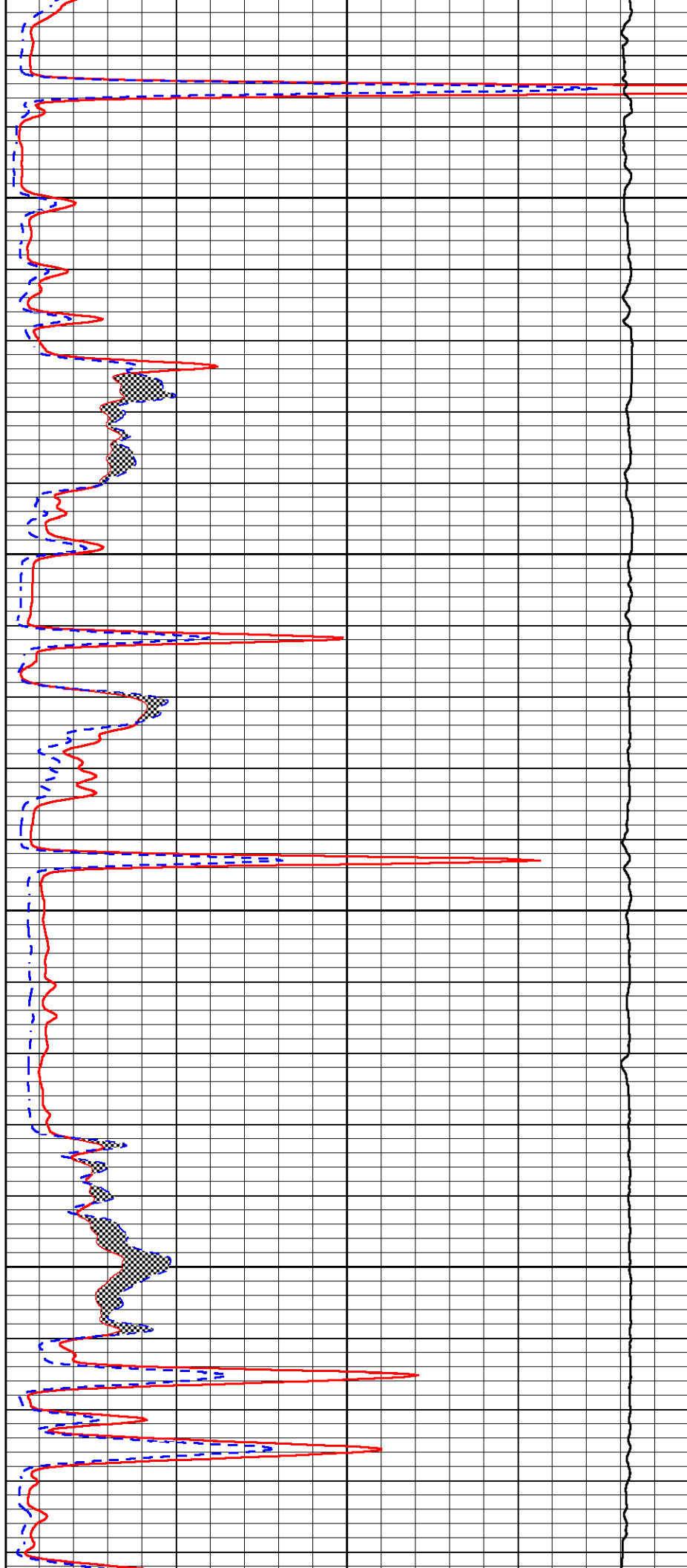


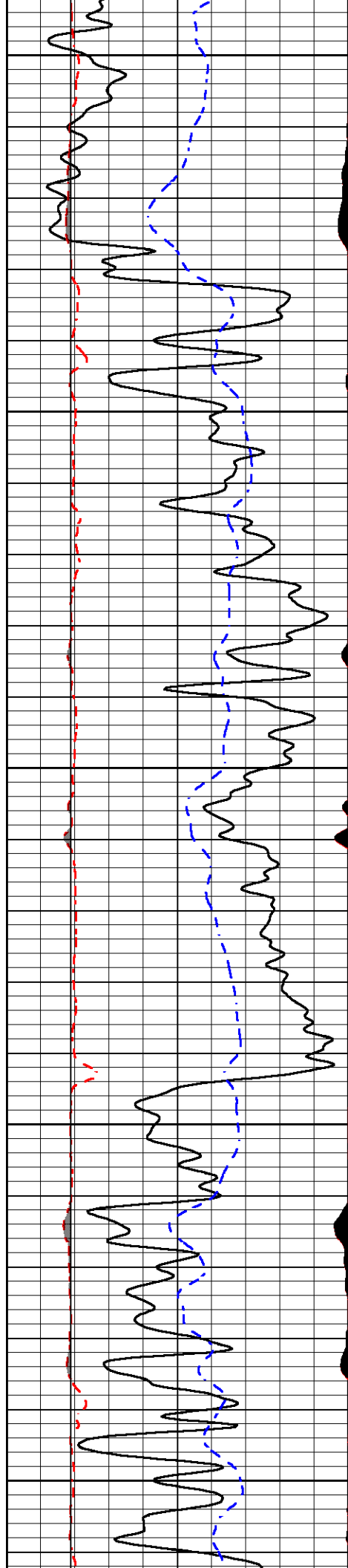
750

800

850

900





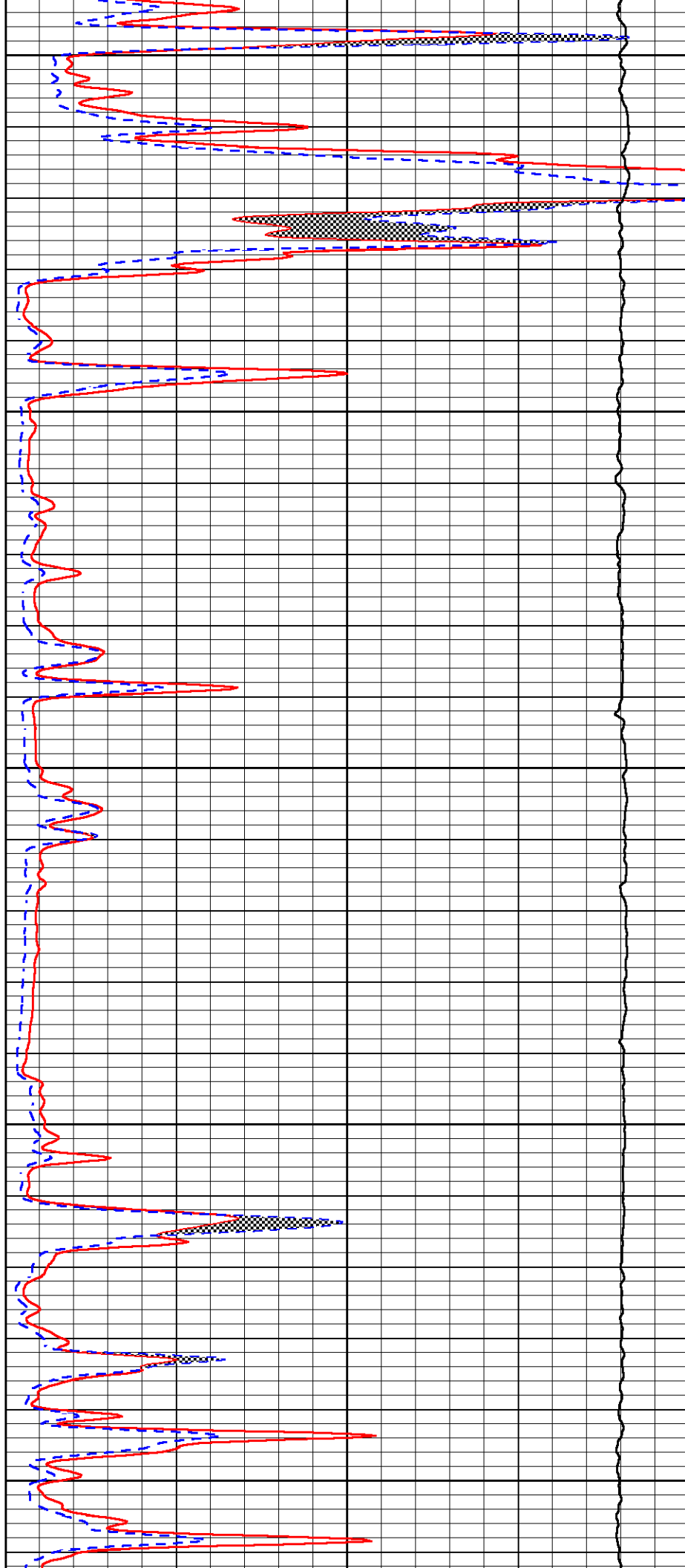
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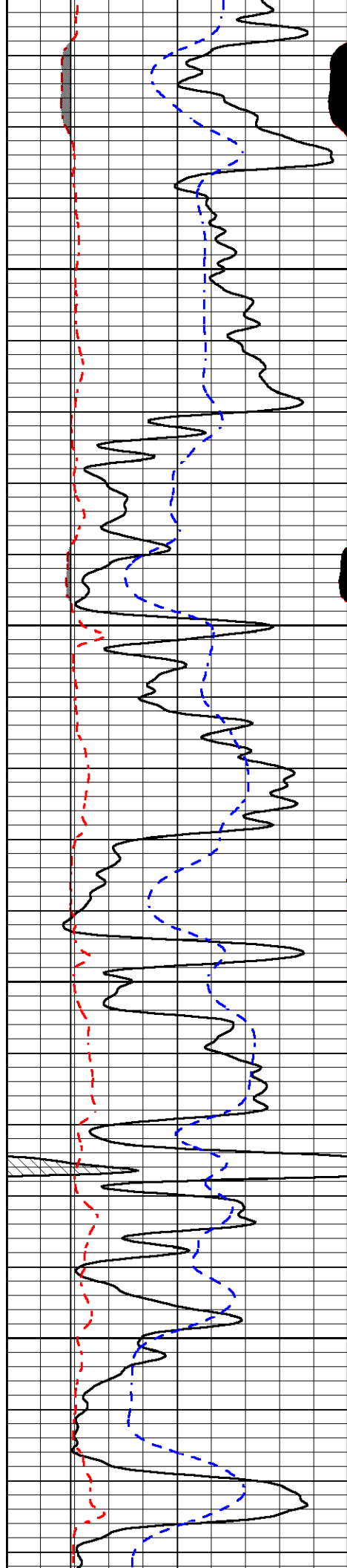
1000

1050

1100

1150



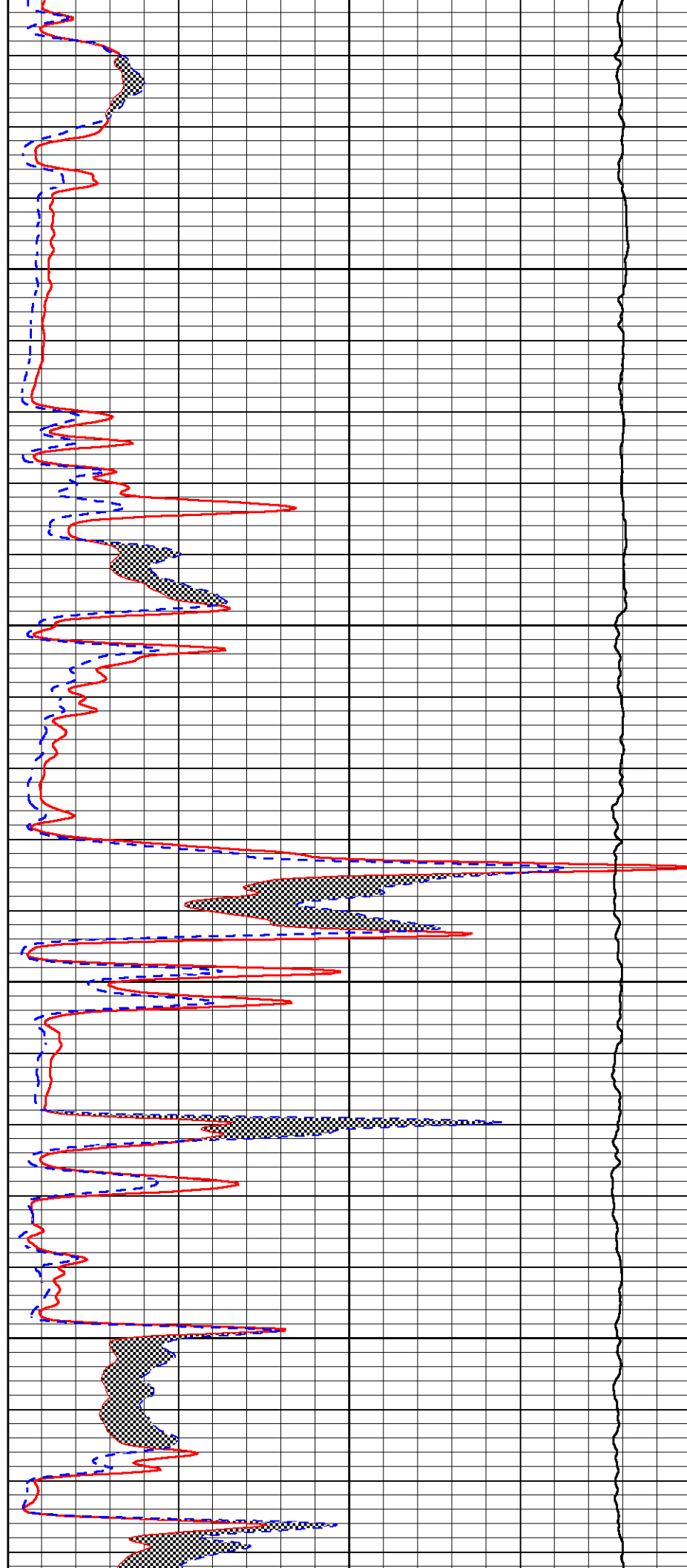


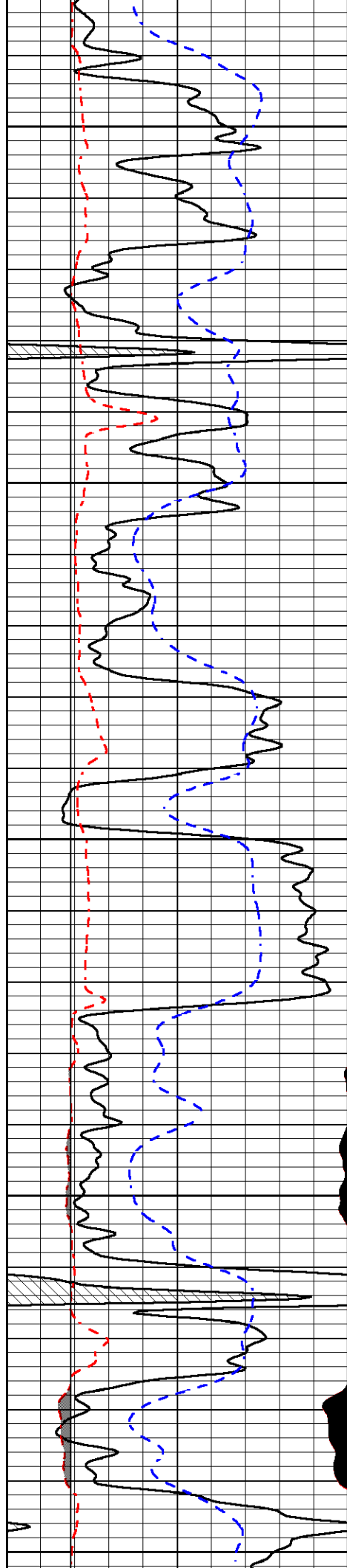
1200

1250

1300

1350





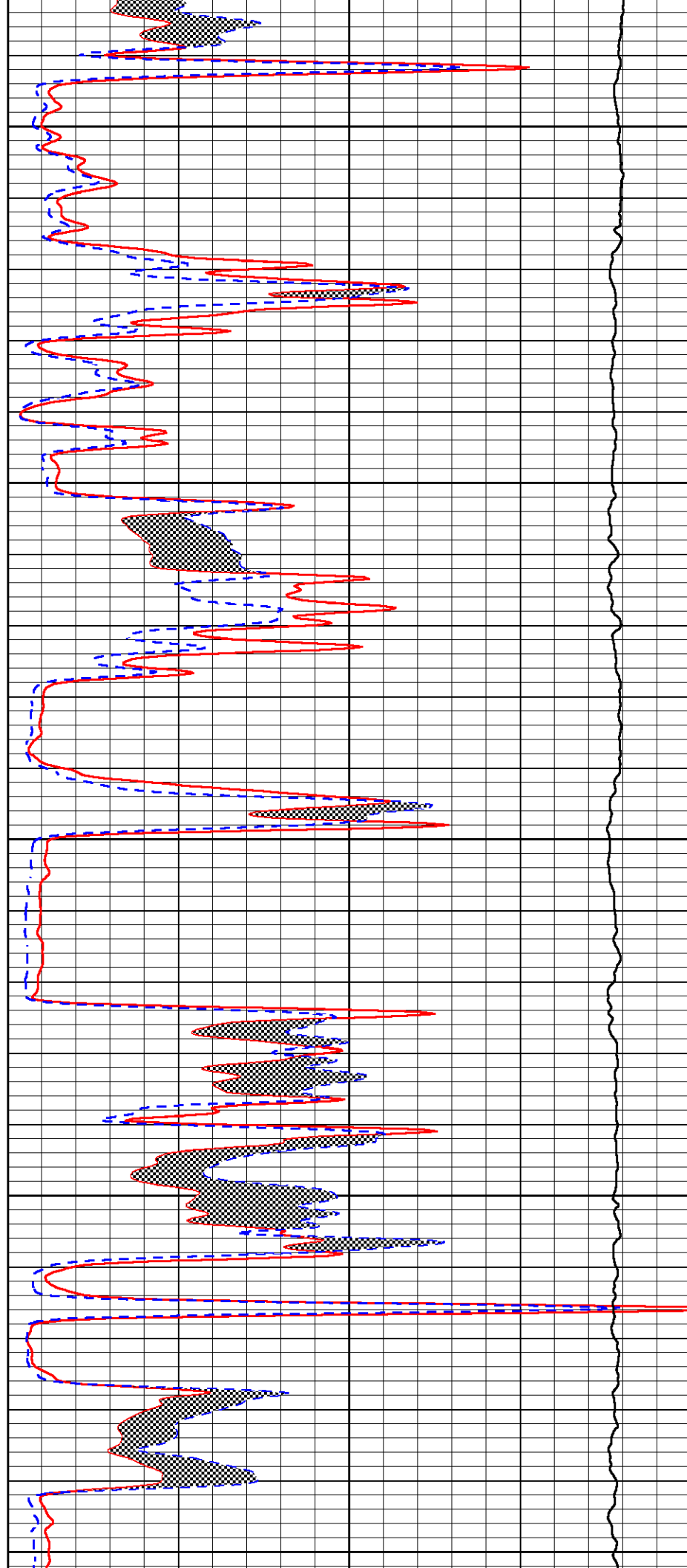
1400

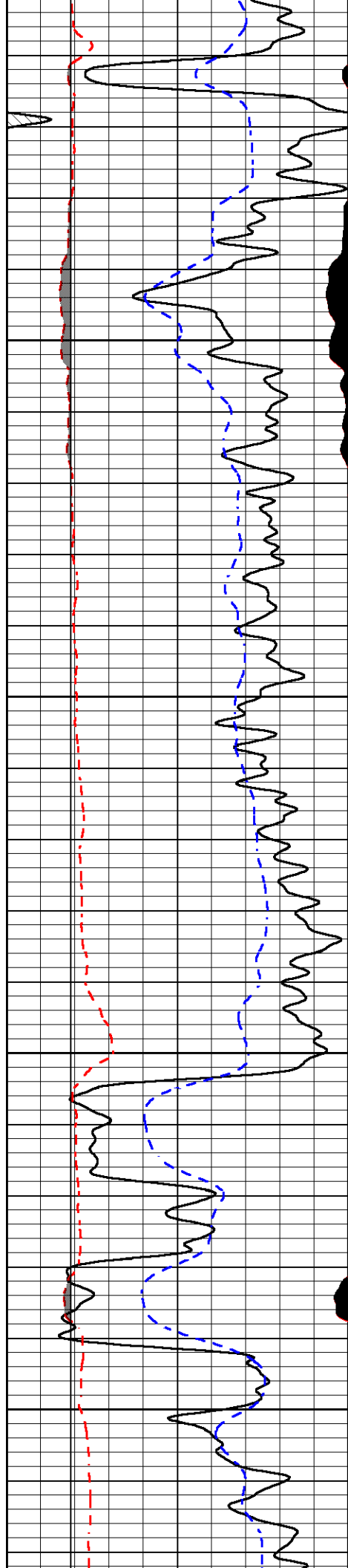
1450

1500

1550

1600



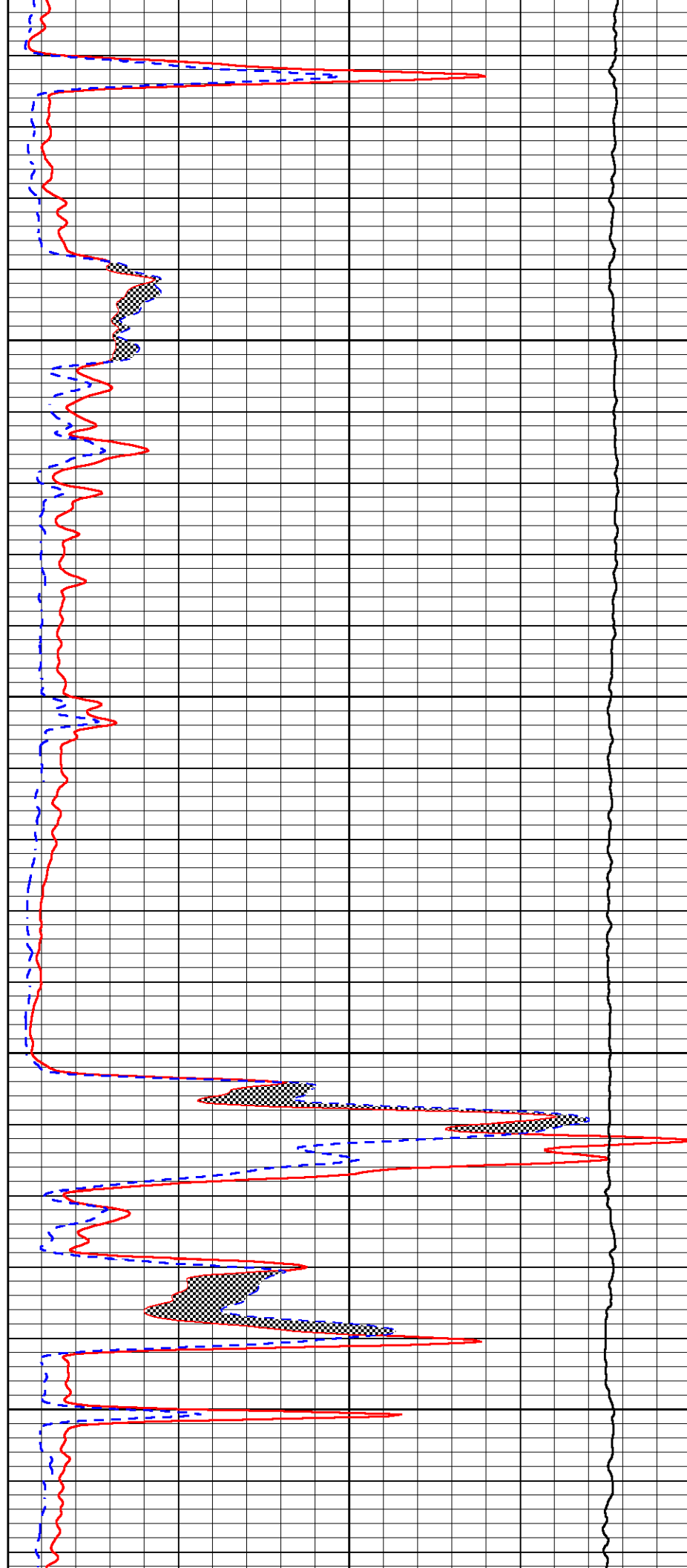


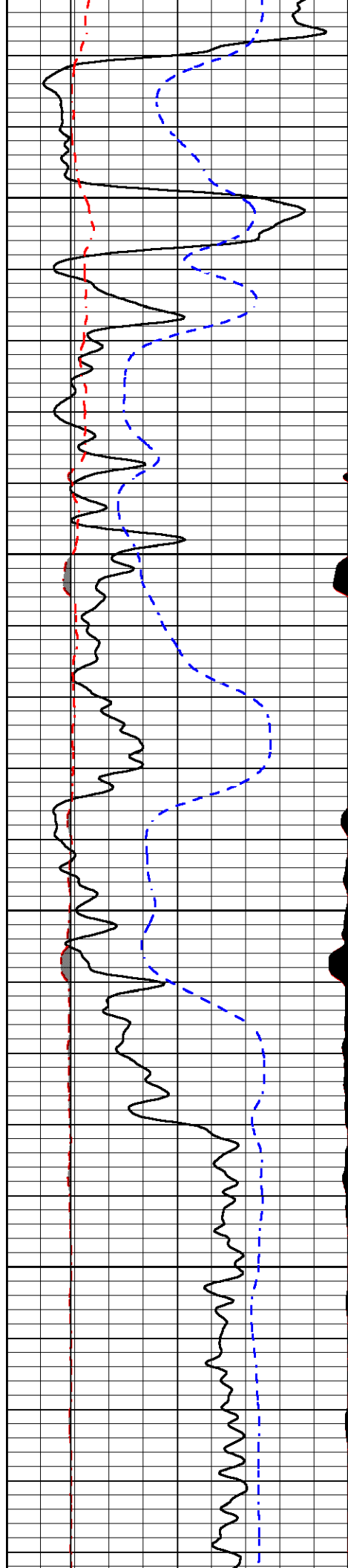
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1700

1750

1800



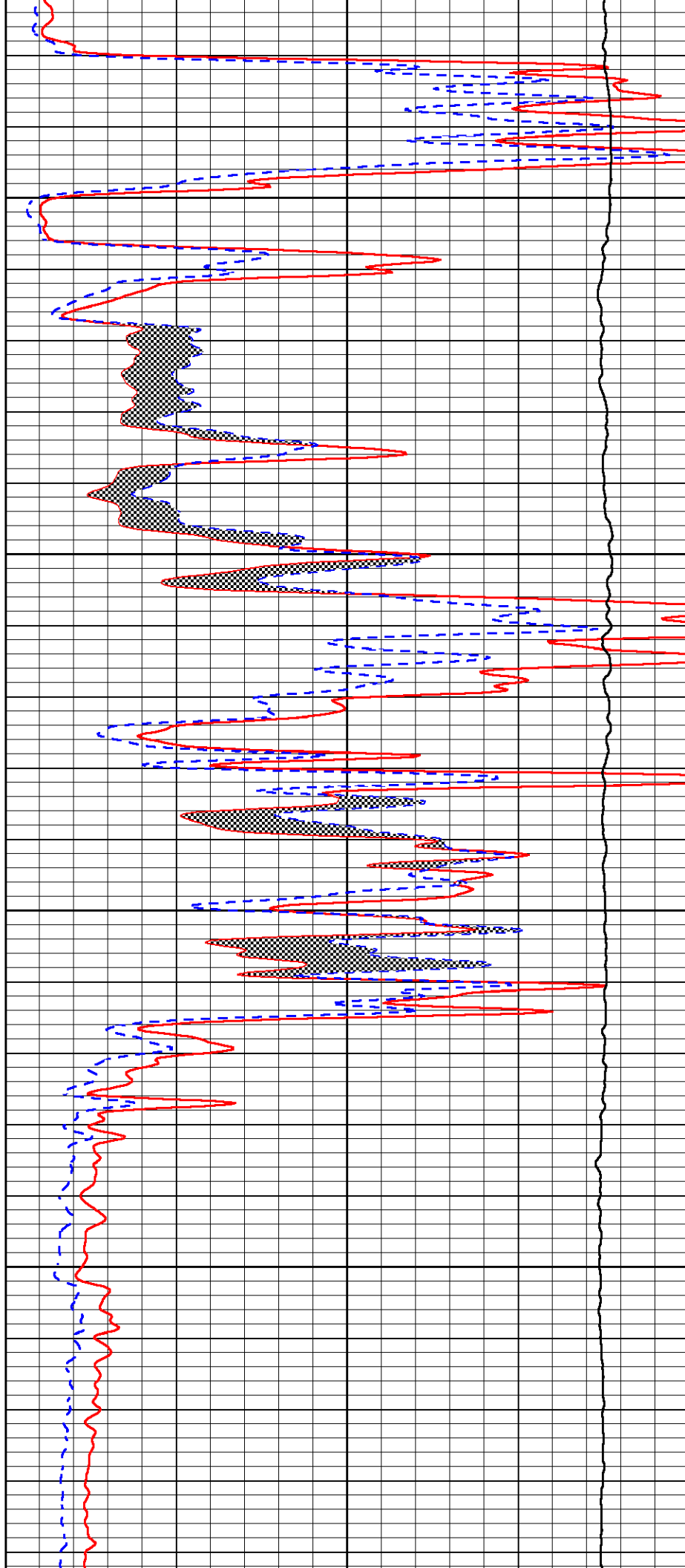


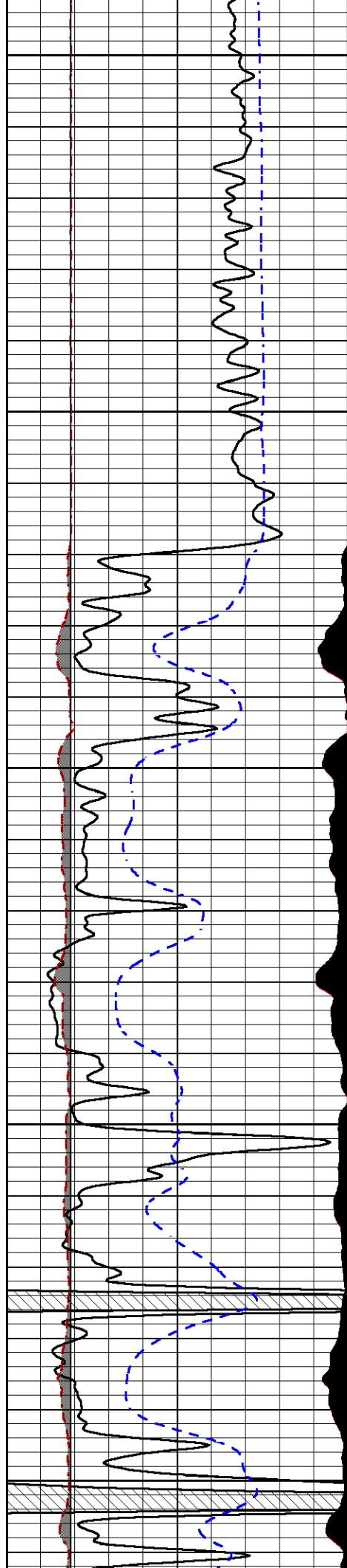
1850

1900

1950

2000





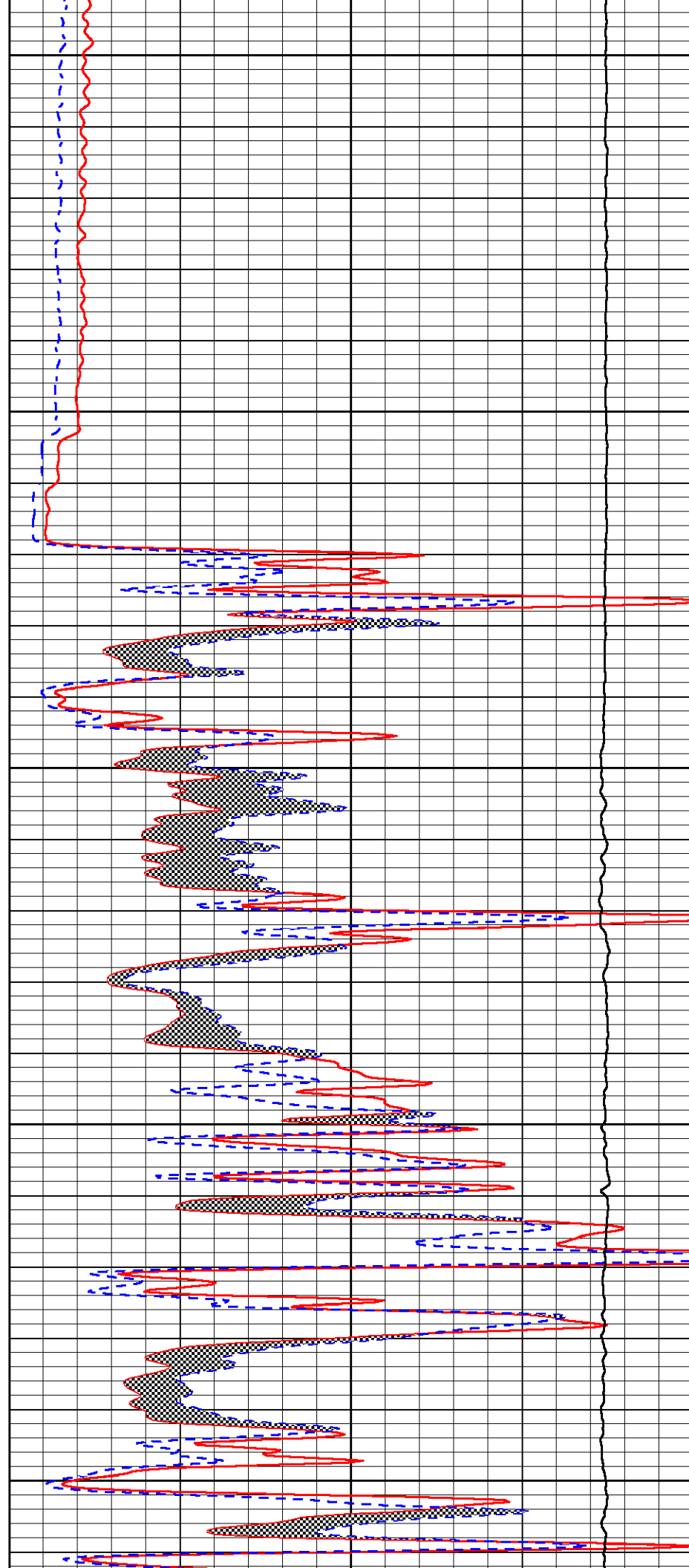
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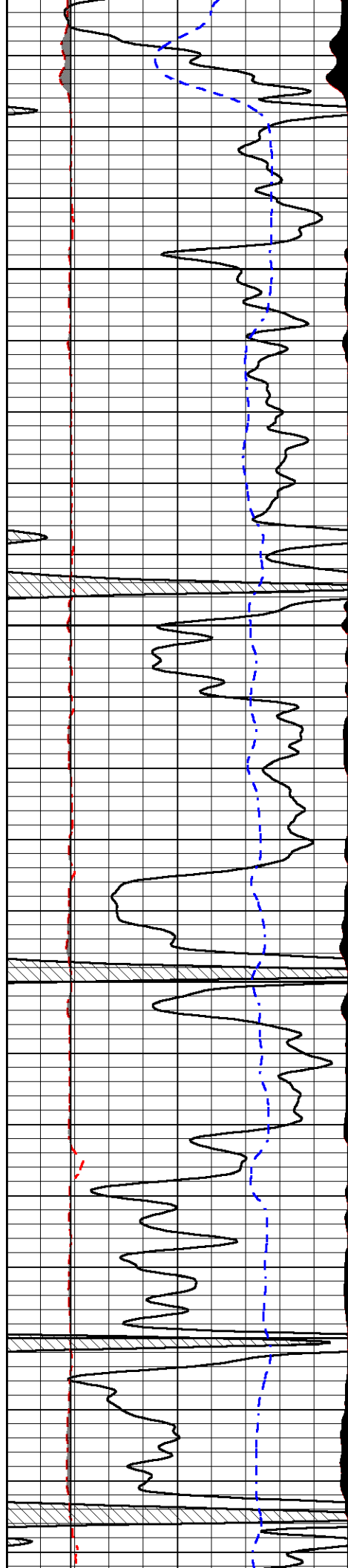
2100

2150

2200

2250



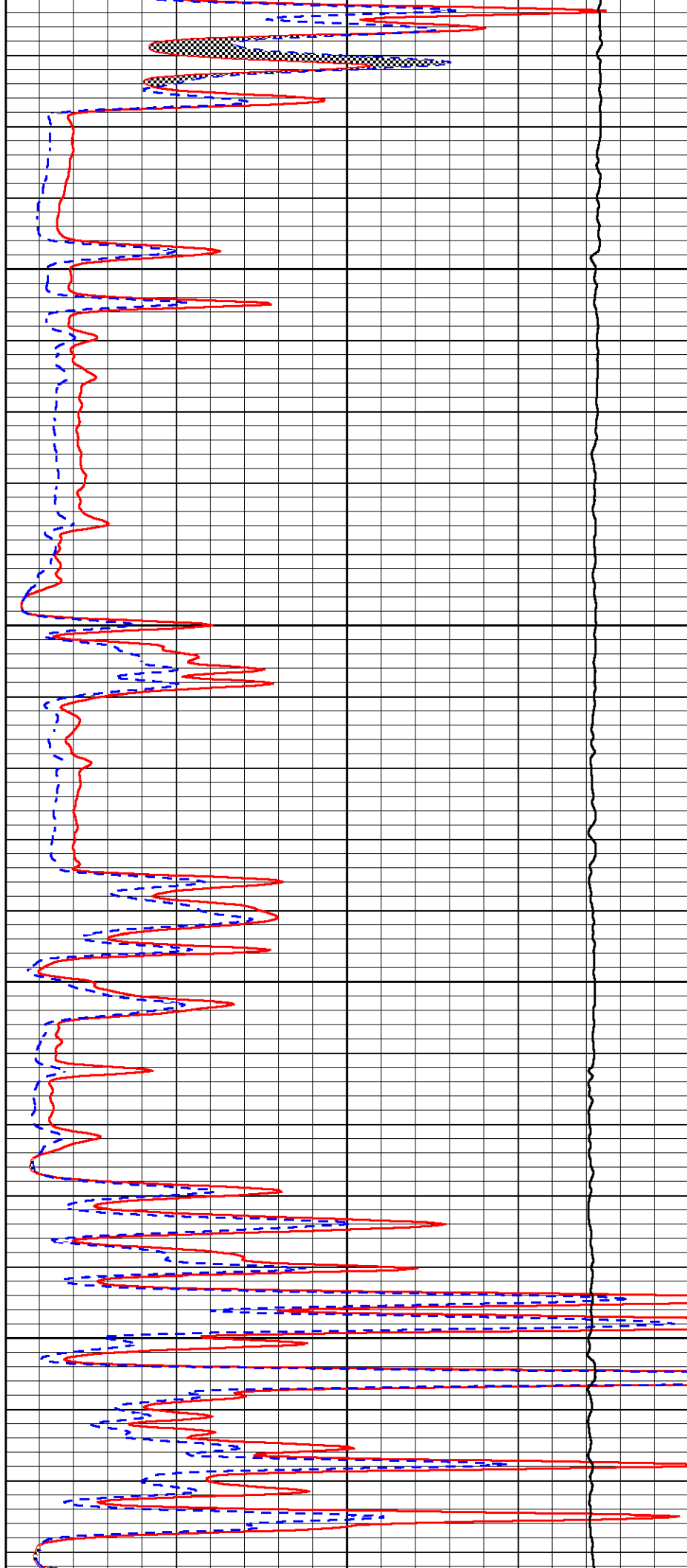


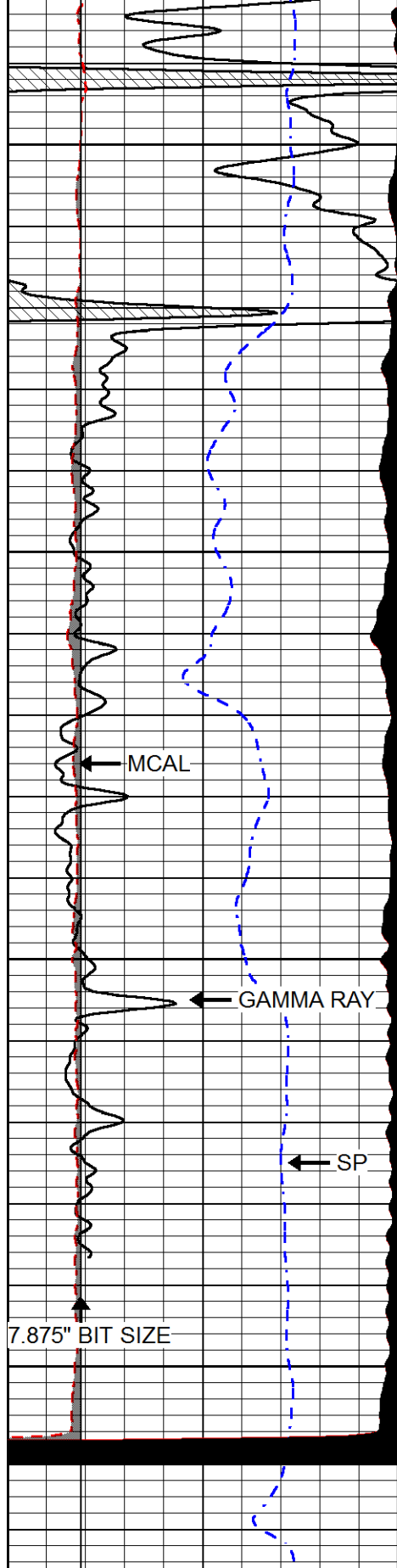
2300

2350

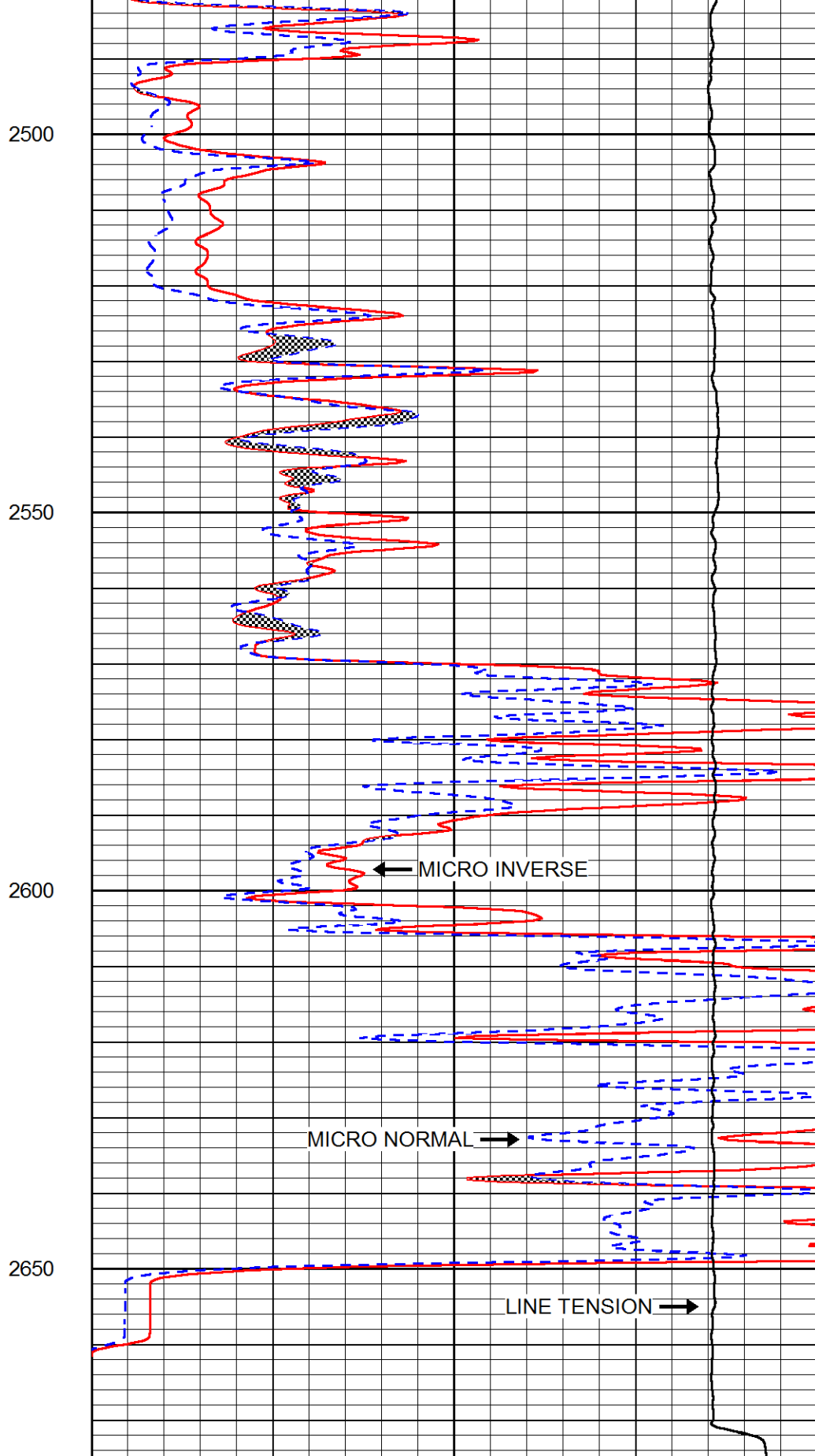
2400

2450





0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcals (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0



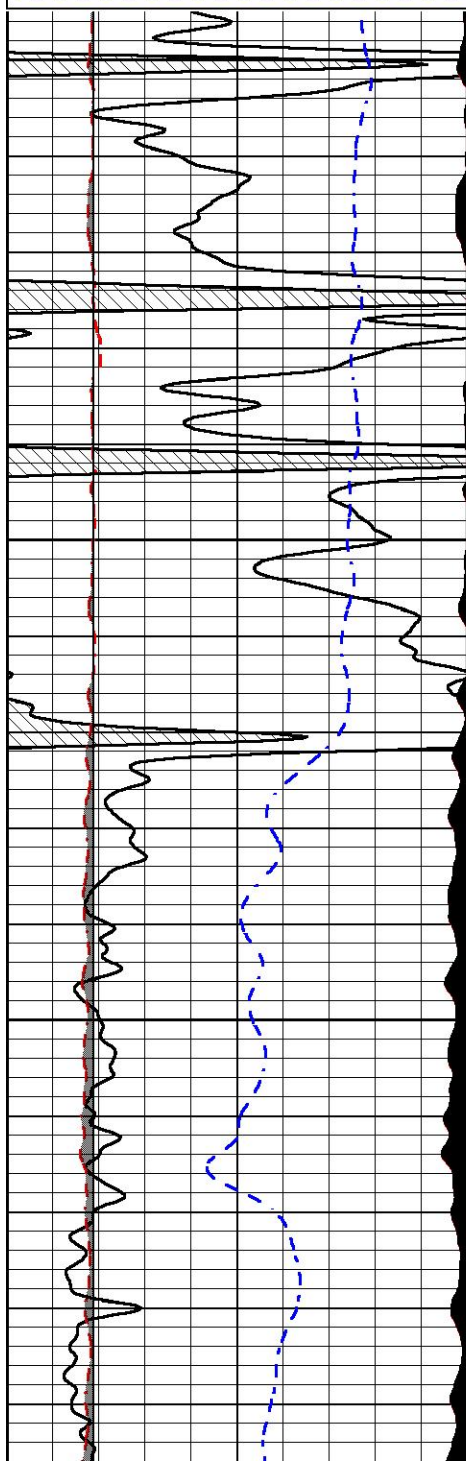
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

REPEAT SECTION

Database File igwt_benjamin peffy_1.db
Dataset Pathname STKML/pass2.1
Presentation Format micro
Dataset Creation Thu Oct 12 06:11:40 2017
Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	MCAL (in)	16
2.875	mcals (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0

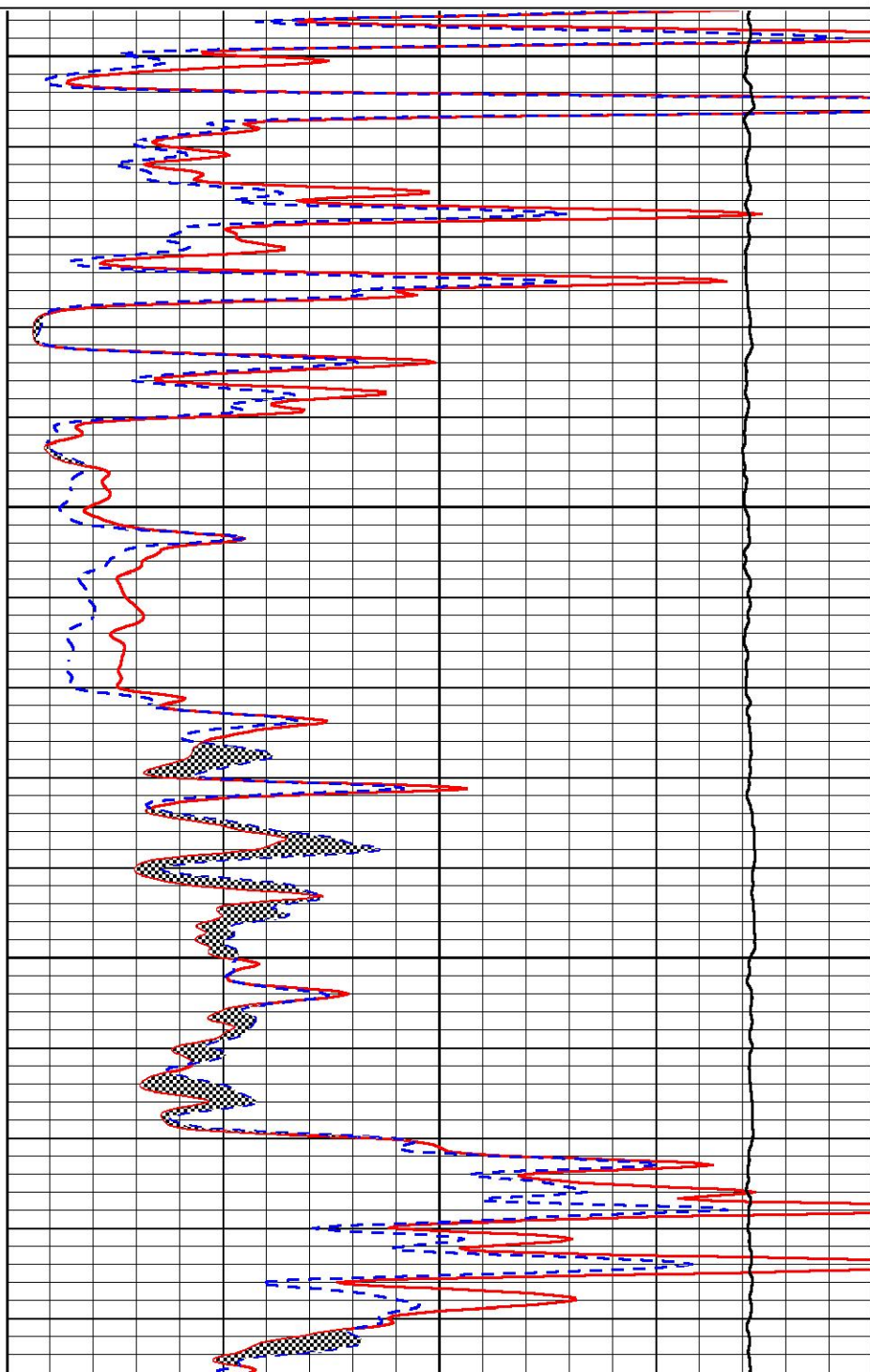
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0

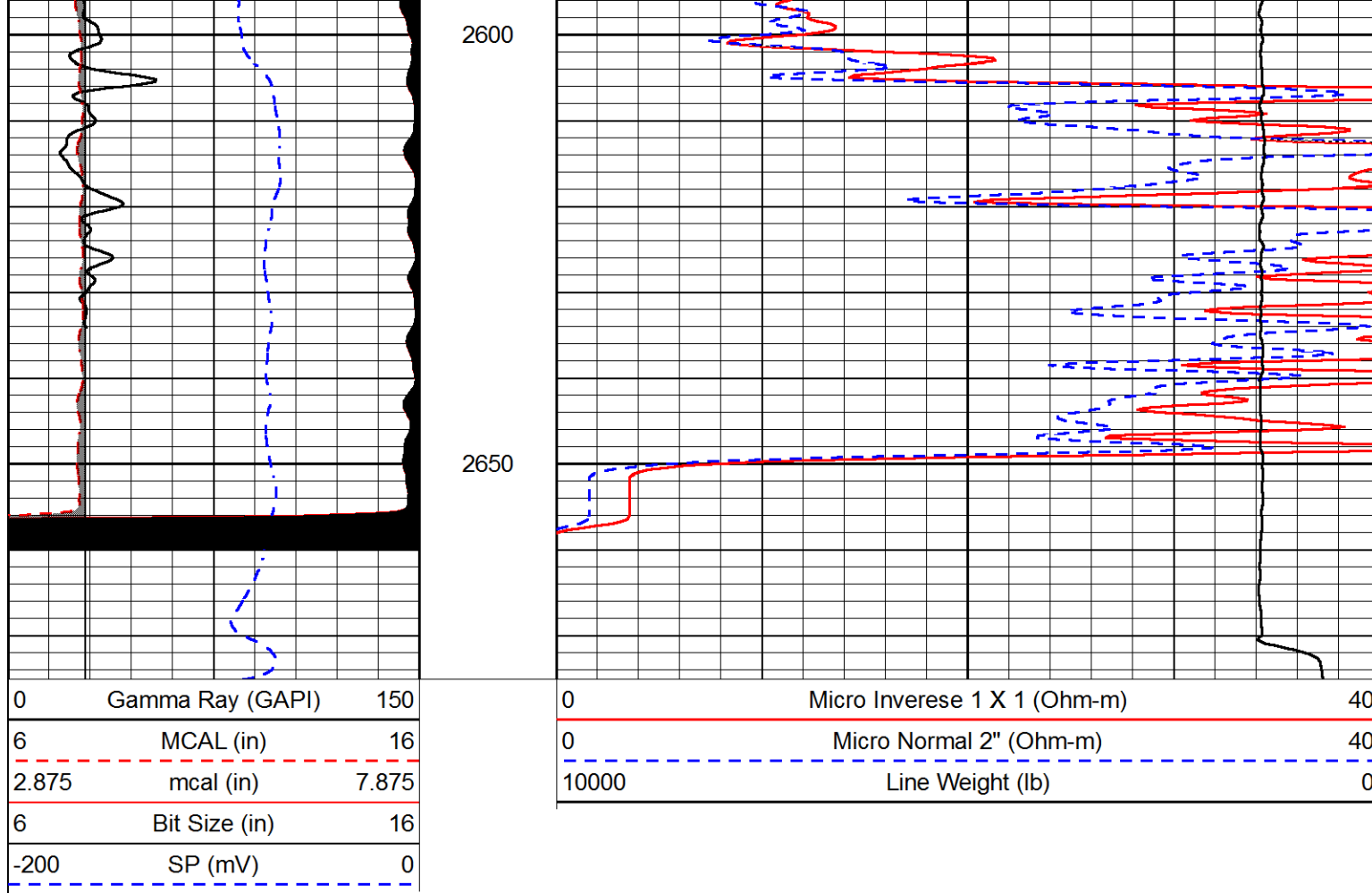


2450

2500

2550





Calibration Report

Database File igwt_benjamin peffly_1.db
 Dataset Pathname STKML/pass3.3
 Dataset Creation Thu Oct 12 06:05:08 2017

Dual Induction Calibration Report

Serial-Model: PSI 91-M&W
 Calibration Performed: Wed Sep 13 22:23:16 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	166.796	835.089	0.000	255.800	mmho/m	0.430	-31.000
Medium	142.009	1348.560	0.000	255.800	mmho/m	0.360	-31.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Wed Sep 06 19:50:56 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	12000.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	13150.0000	-0.3000
Caliper	1.0001	1.1397	6.5000	18.5000	in	100.0000	-97.4350

Compensated Density Calibration Report

Serial-Model:	90-1031-M&W
Source / Verifier:	16955B / 2ci
Master Calibration Performed:	Wed Sep 06 19:51:03 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4903.44	6153.79	cps
Aluminum	2.640	g/cc	934.50	4021.31	cps
Spine Angle = 75.61			Density/Spine Ratio = 0.517		
	Size		Reading		
Small Ring	8.00	in	1.84		
Large Ring	22.00	in	1.46		

Compensated Neutron Calibration Report

Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	WED SEP 6 10:30:30 2017

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:	89
Tool Model:	M&W
Calibration Performed:	Wed Sep 06 19:51:14 2017
Calibrator Value:	1.0 GAPI
Background Reading:	0.0 cps
Calibrator Reading:	1.0 cps
Sensitivity:	0.6000 GAPI/cps



Company	IGWT, INC.
Well	BENJAMIN PEFFLY #1
Field	PIERCE
County	BUTLER
State	KANSAS