



MICRORESISTIVITY LOG

PIONEER

Pioneer Energy Services

Company **MURFIN DRILLING COMPANY, INC.**
 Well **FRISBIE B #1-15**
 Field **WILDCAT**
 County **RAWLINS** State **KANSAS**

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Location: **API #: 15-153-21213-00-00**
660' FSL & 1610' FWL
SEC 15 TWP 2S RGE 35W
 Permanent Datum **GROUND LEVEL Elevation 3142'**
 Log Measured From **KELLY BUSHING**
 Drilling Measured From **KELLY BUSHING**
 Other Services **CNL/CDL DIL/BHCS**
 Elevation **K.B. 3147'**
D.F. N/A
G.L. 3142'

Date	10/7/2018
Run Number	ONE
Depth Driller	4815'
Depth Logger	4817'
Bottom Logged Interval	4816'
Top Log Interval	3400'
Casing Driller	8.625" @ 303'
Casing Logger	299'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	1000
Density / Viscosity	9.1 56
pH / Fluid Loss	11.0 6.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.10 @ 60
Rmt @ Meas. Temp	0.83 @ 60
Rmc @ Meas. Temp	1.49 @ 60
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.53 @ 124
Operating Rig Time	5 HOURS
Max Rec. Temp. F	124
Equipment Number	91
Location	HAYS
Recorded By	D. SCHMIDT
Witnessed By	KEN LEBLANC

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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.

BEARDSLEY,
5 NORTH, EAST INTO

Log Measured From: **KELLY BUSHING** 5 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew		This Log Record Was Witnessed By	
Engineer: D. SCHMIDT	Operator:	Primary Witness: KEN LEBLANC	Secondary Witness:
Operator:	Operator:	Secondary Witness:	Secondary Witness:
Operator:		Secondary Witness:	

Company	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
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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 (144-84)	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-PSI HIGH TEMP (967 (HT))	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					

Dataset: murfin_frisbie b 1-15.db: field/well/STKML/pass4.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_frisbie b 1-15.db

Dataset field/well/STKML/pass4.1/_vars_

Top - Bottom

M	A	SZCOR	NPORSEL	FLUIDDEN g/cc	MATRXDEN g/cc	SPSHIFT mV	SNDERRM mmho/m
2	1	Off	Limestone	1	2.71	440	0
SNDERR mmho/m	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	BOTTEMP degF	BOREID in	TDEPTH ft
0	50	0	5.5	0	124	7.875	4817



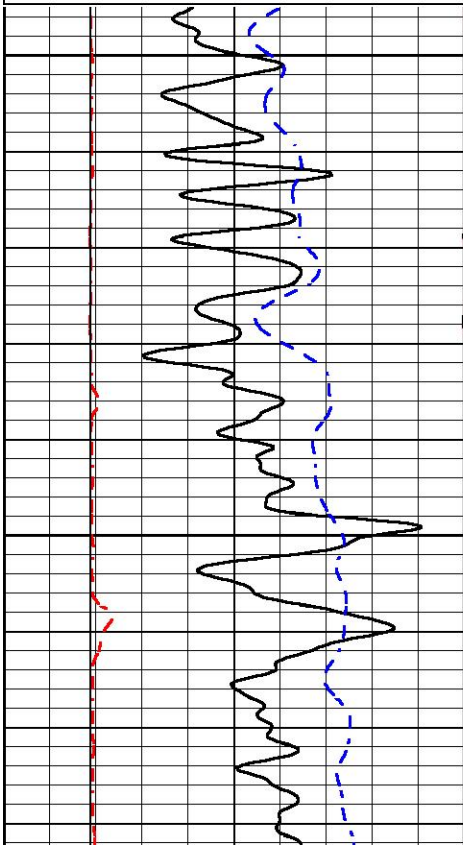
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MAIN PASS

Database File murfin_frisbie b 1-15.db
 Dataset Pathname STKML/pass4.1
 Presentation Format micro
 Dataset Creation Sun Oct 07 22:22:04 2018
 Charted by Depth in Feet scaled 1:240

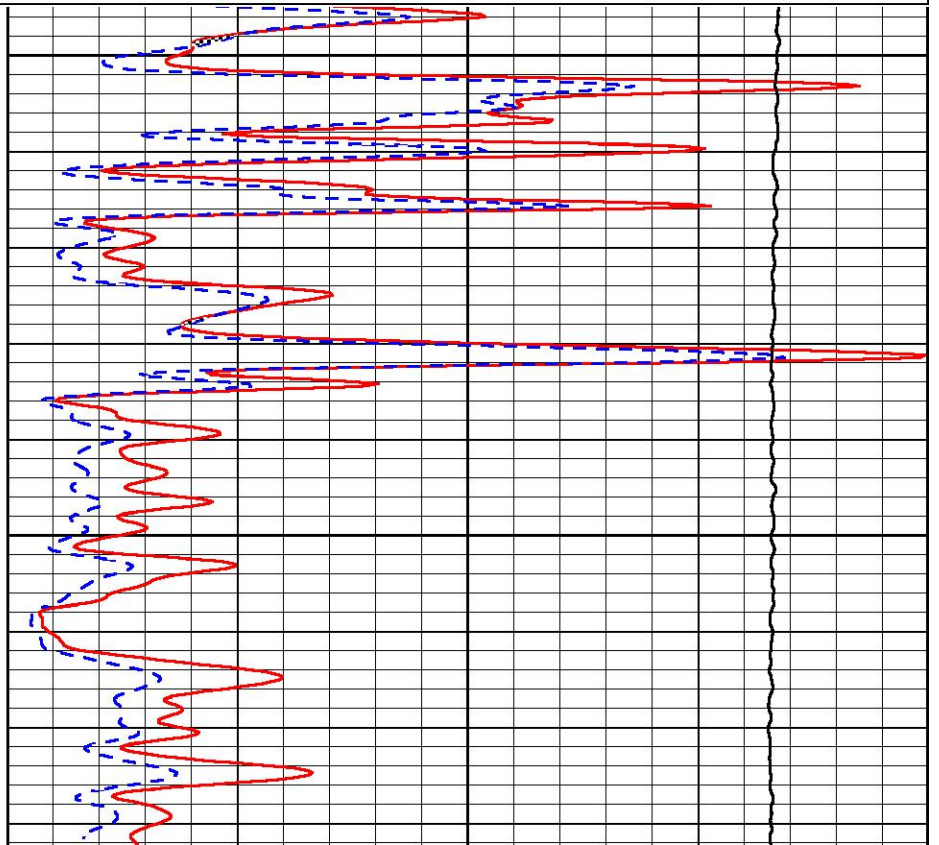
0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
2.875	mcals (in)	7.875
6	Bit Size (in)	16
-200	SP (mV)	0

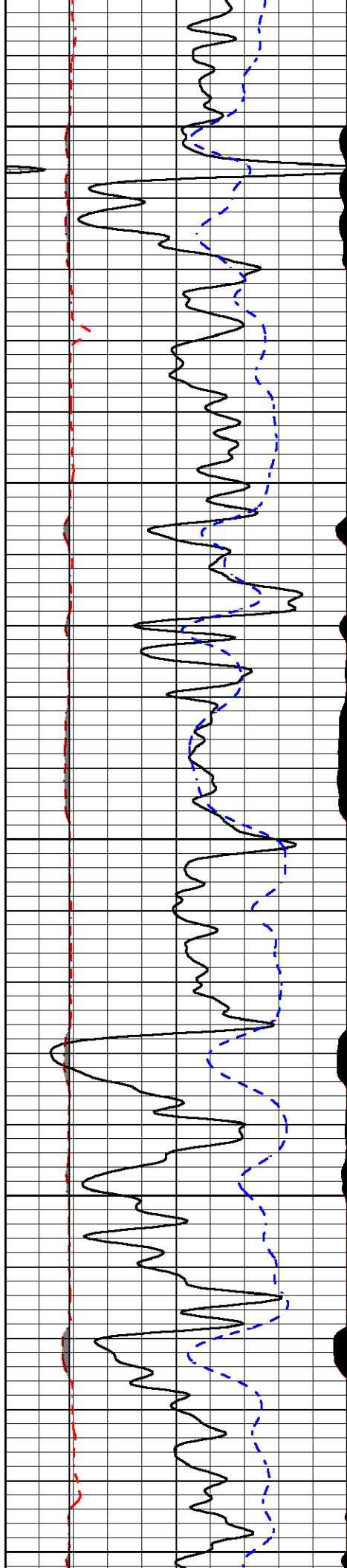
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
10000	Line Weight (lb)	0



3400

3450





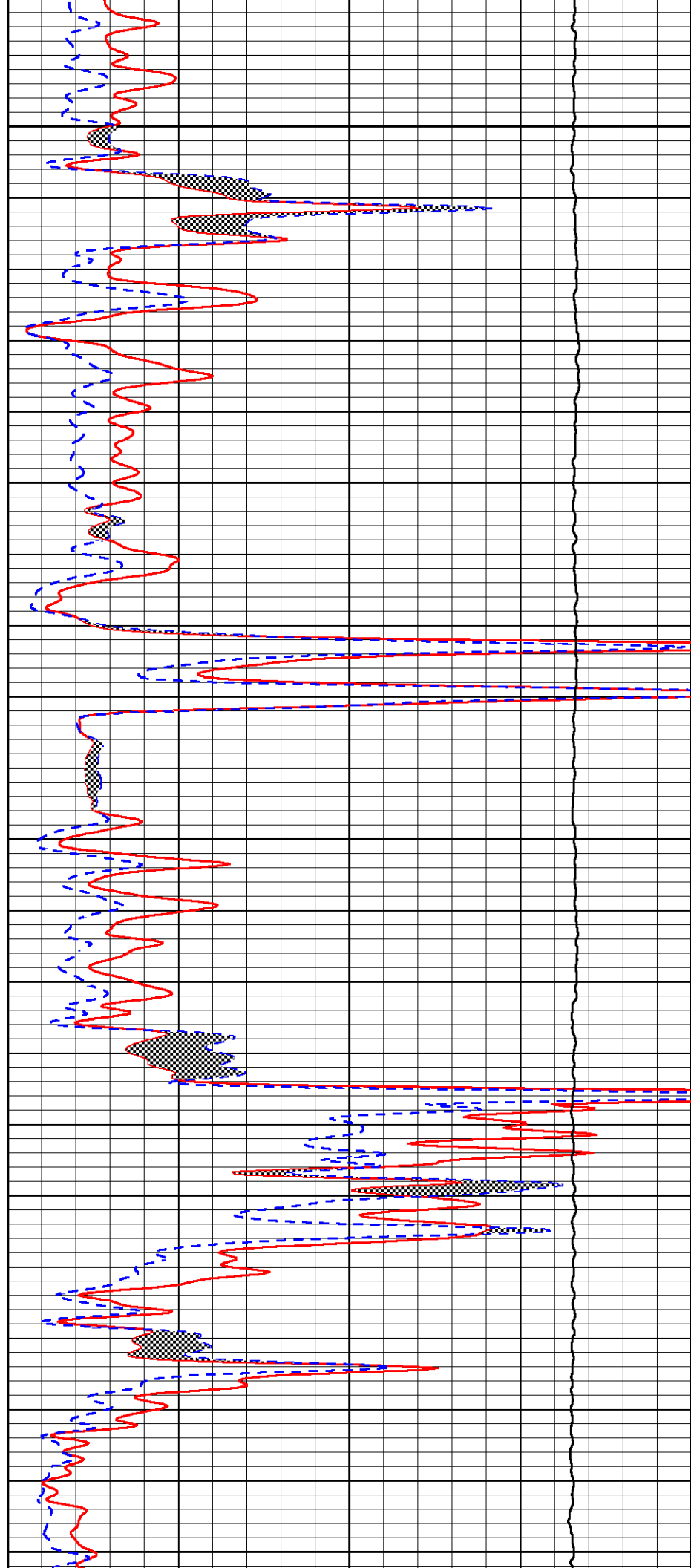
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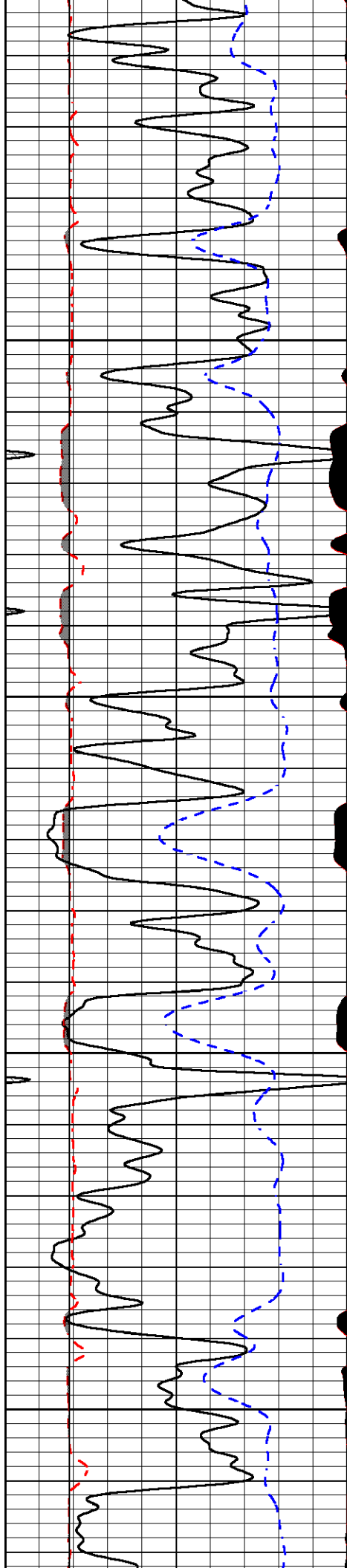
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3600

3650

3700



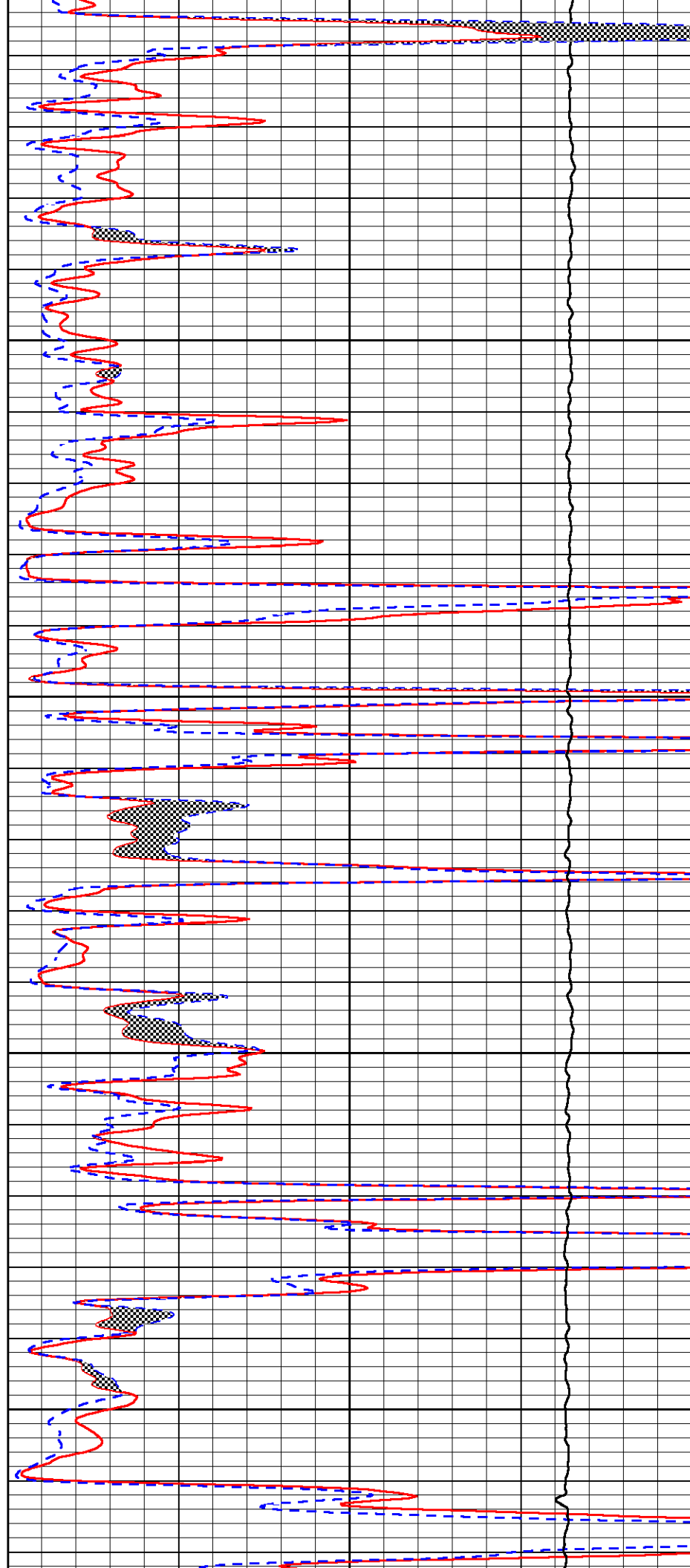


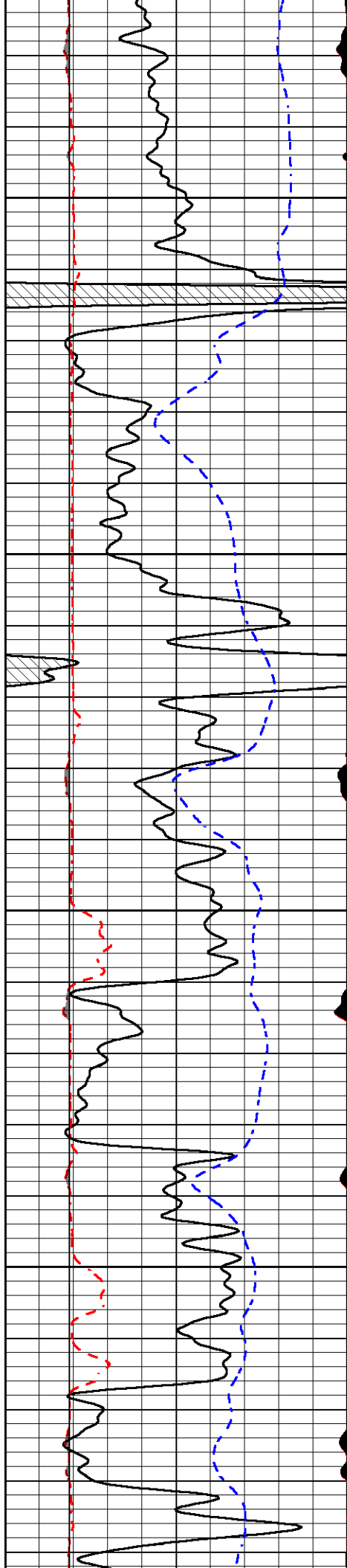
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3800

3850

3900



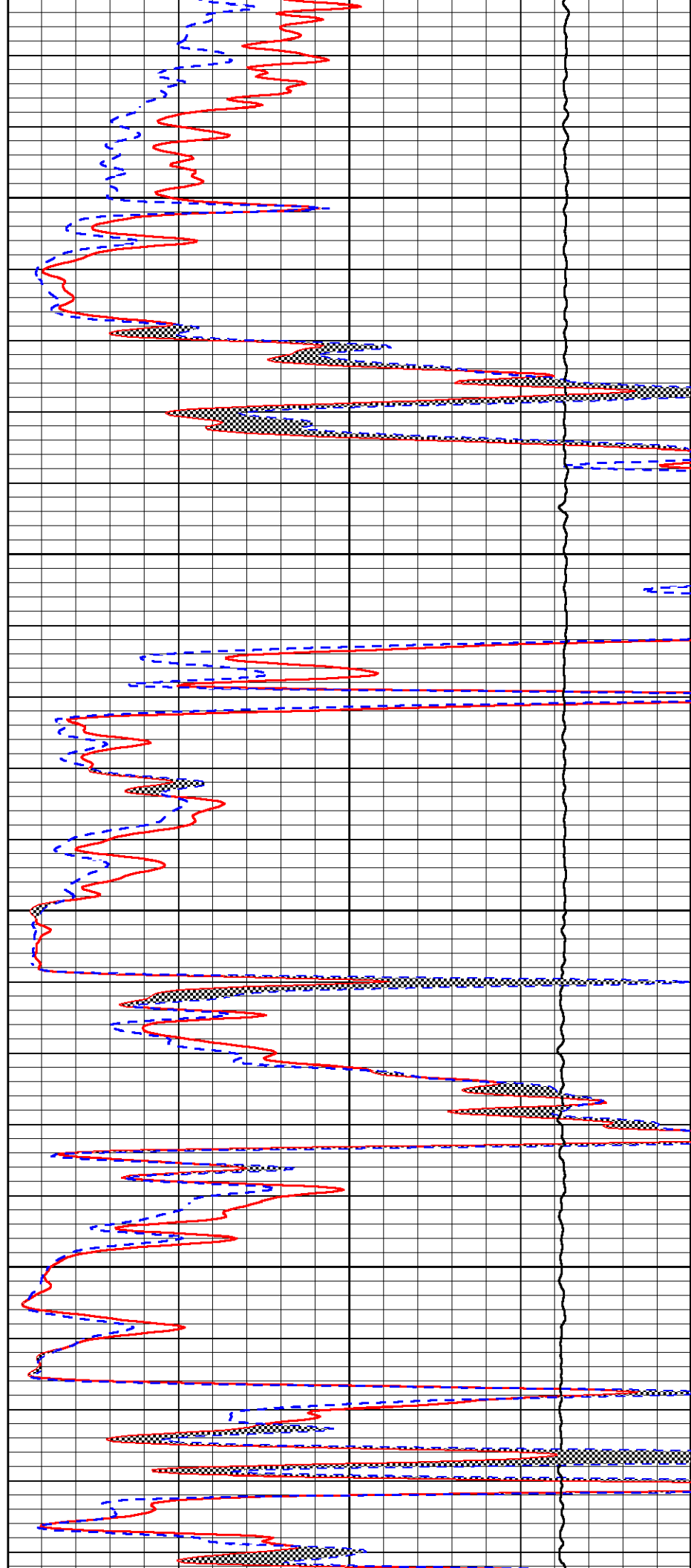


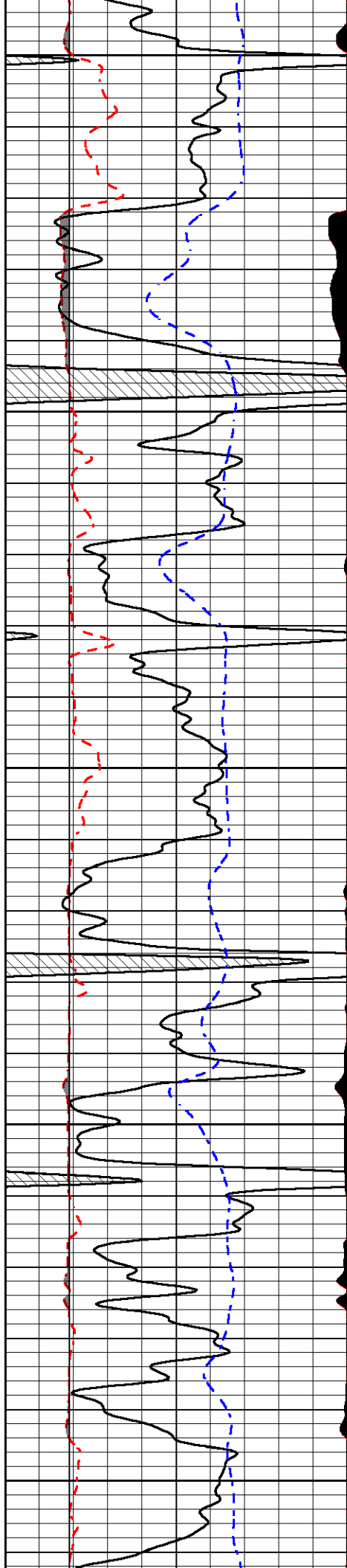
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4000

4050

4100





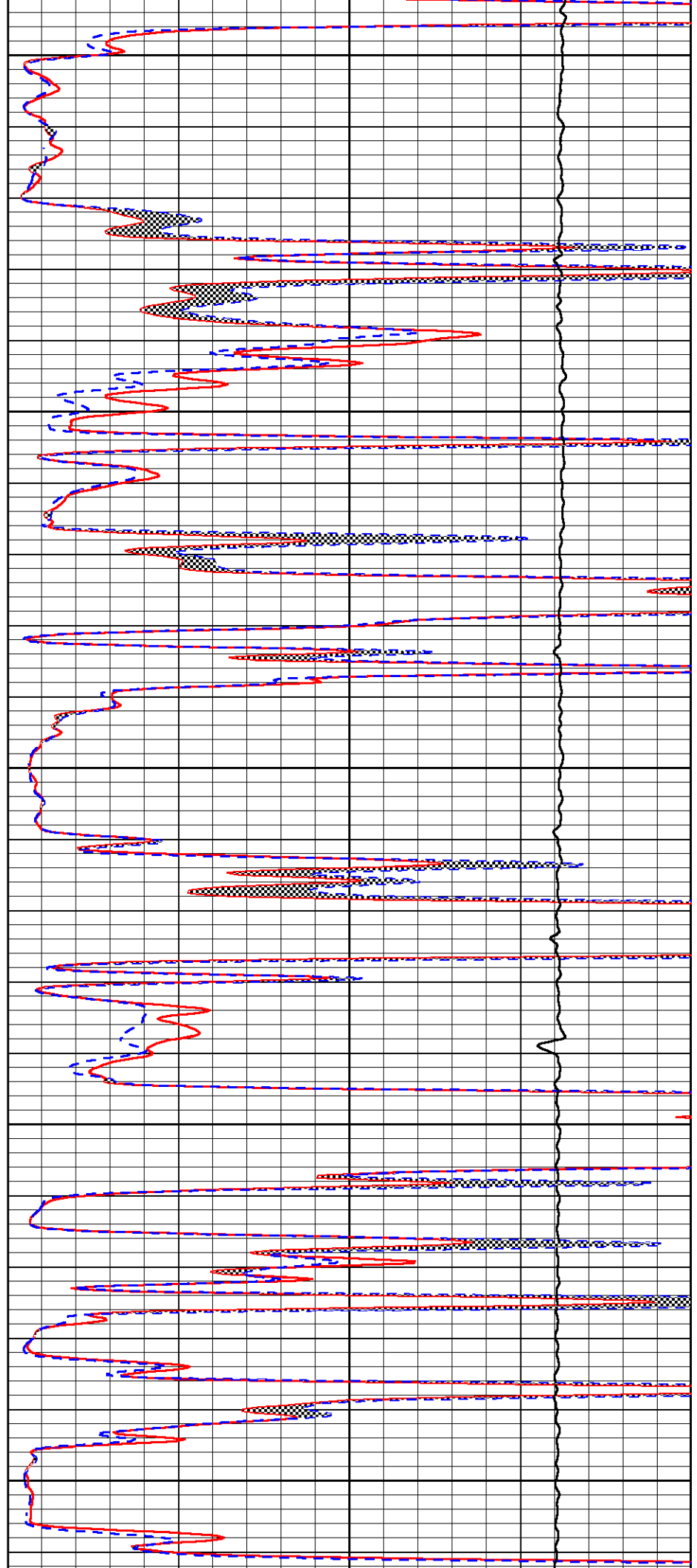
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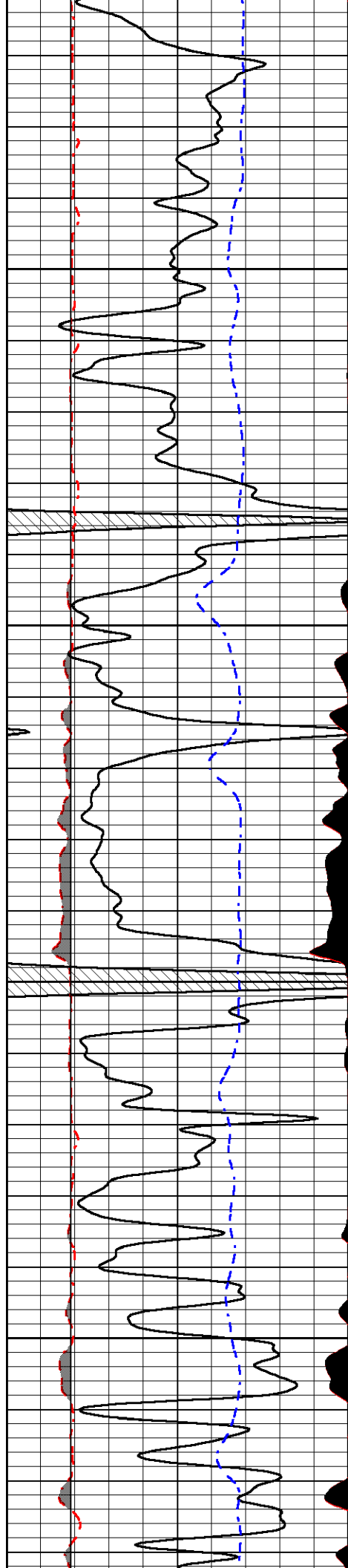
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4300

4350



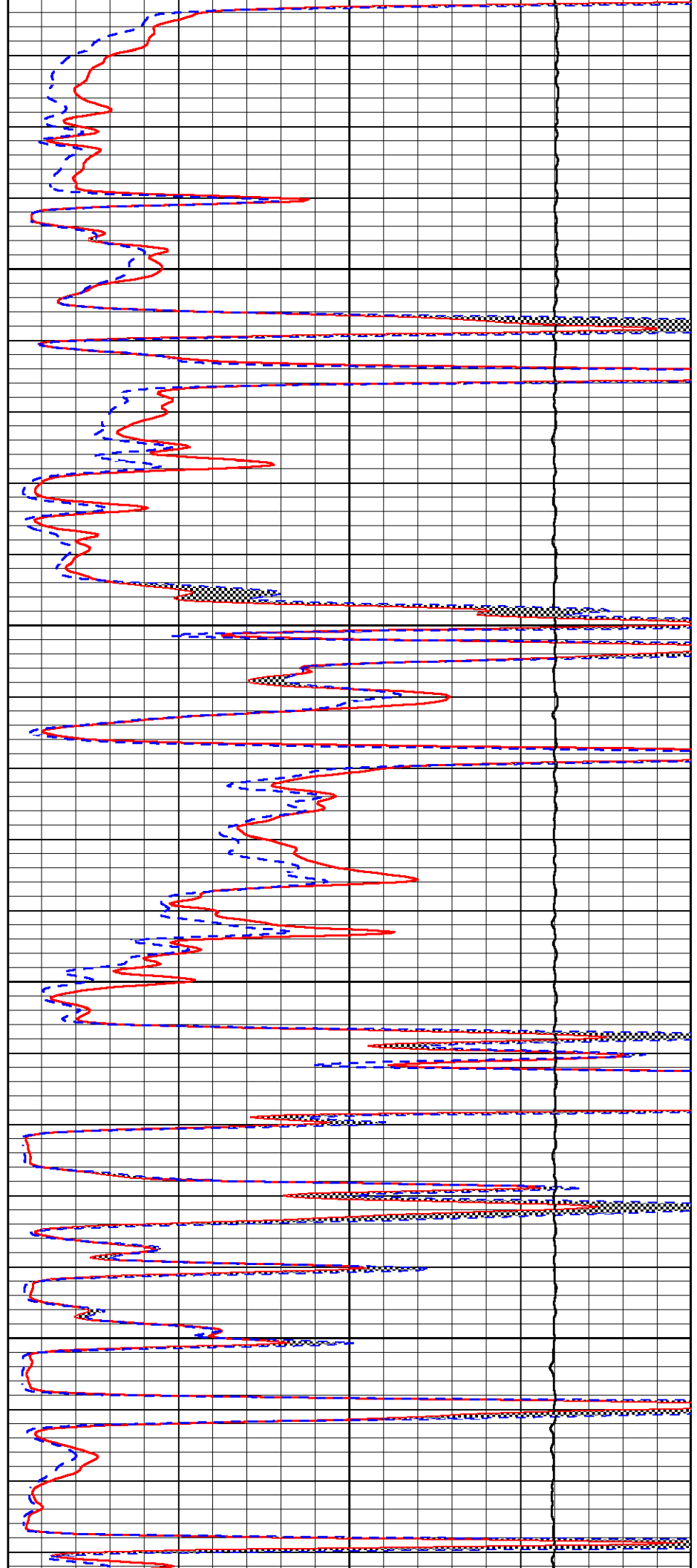


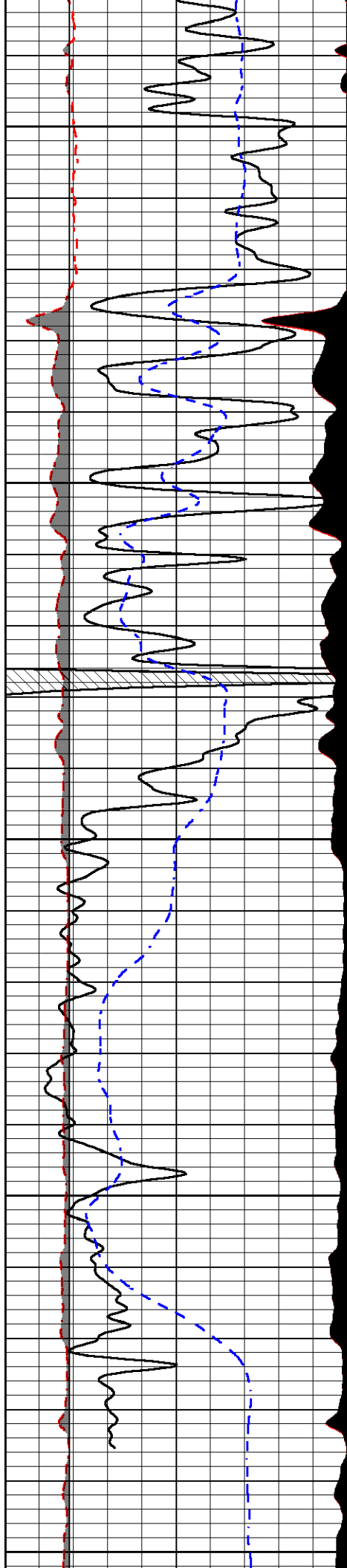
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4450

4500

4550





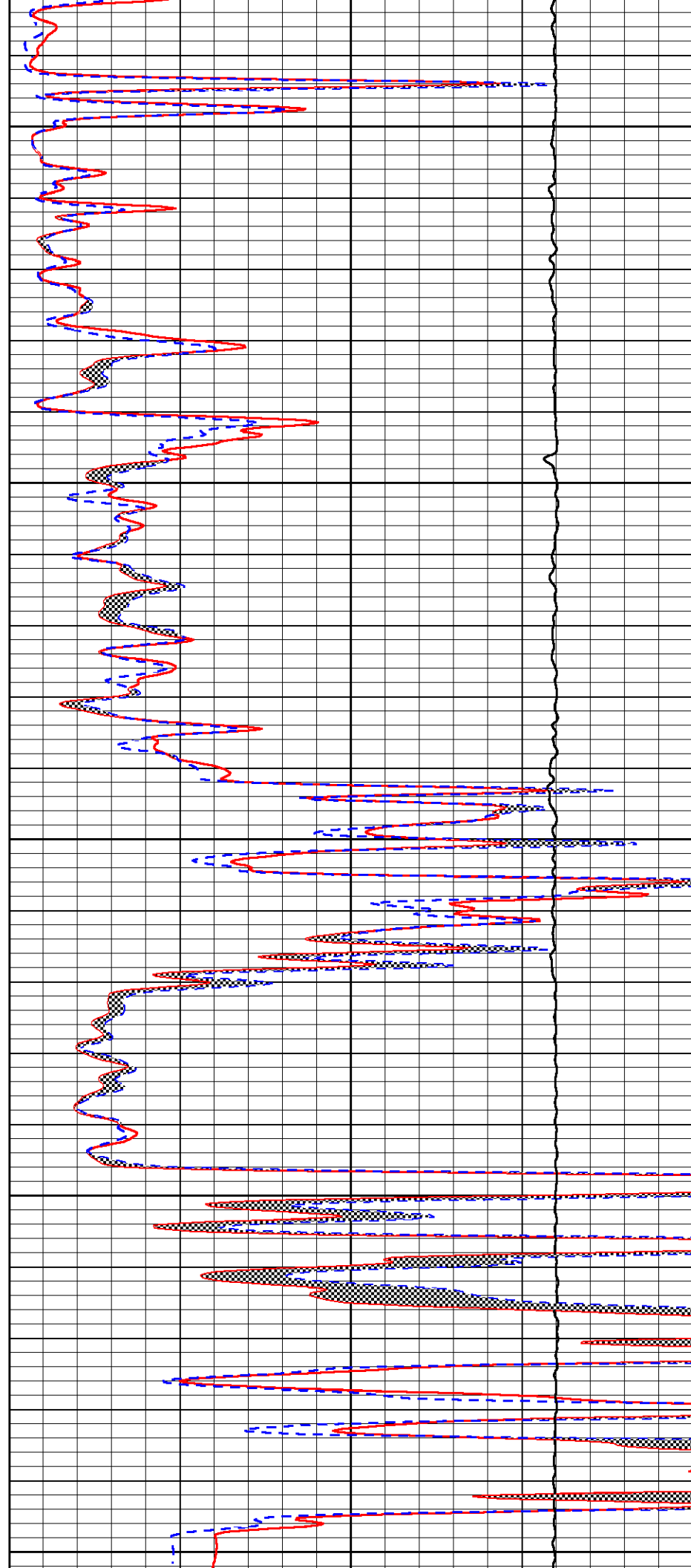
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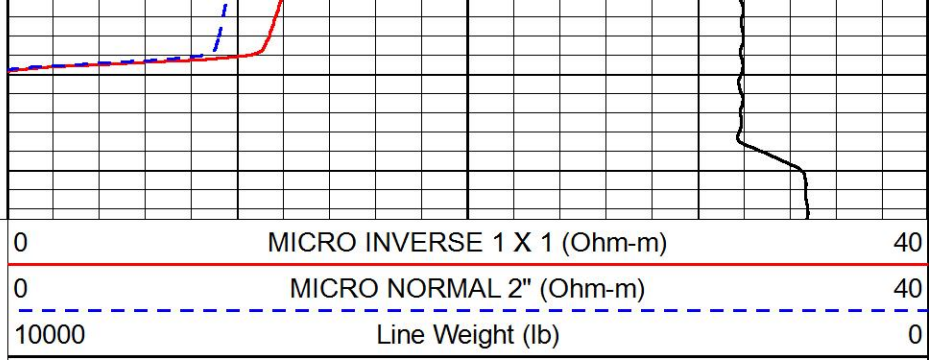
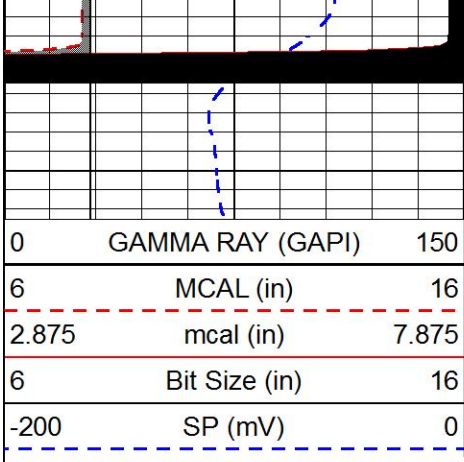
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4750

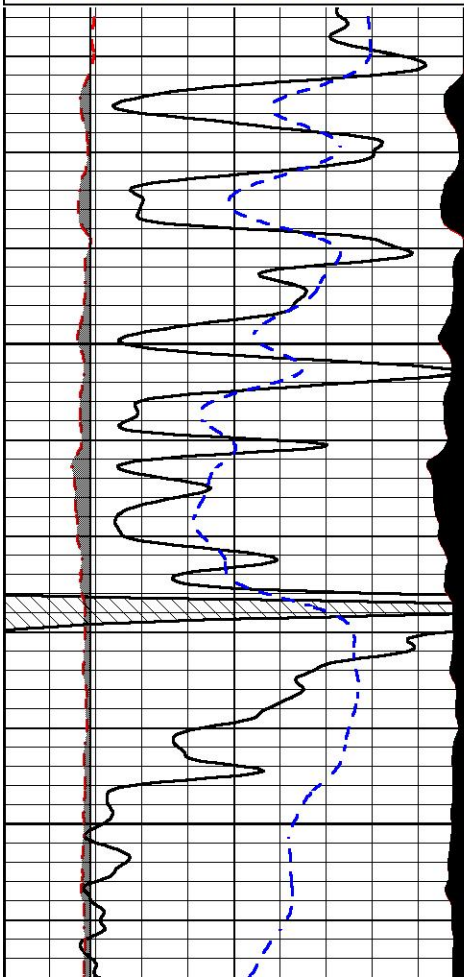
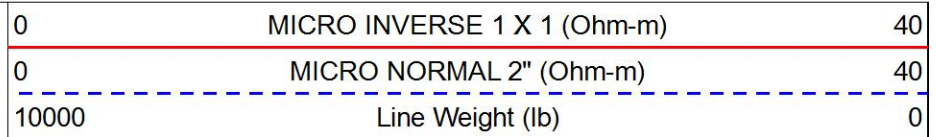
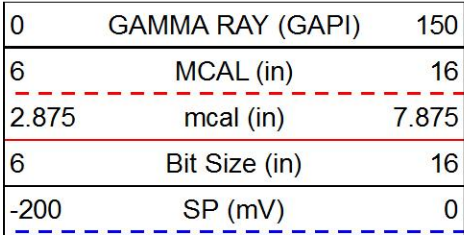
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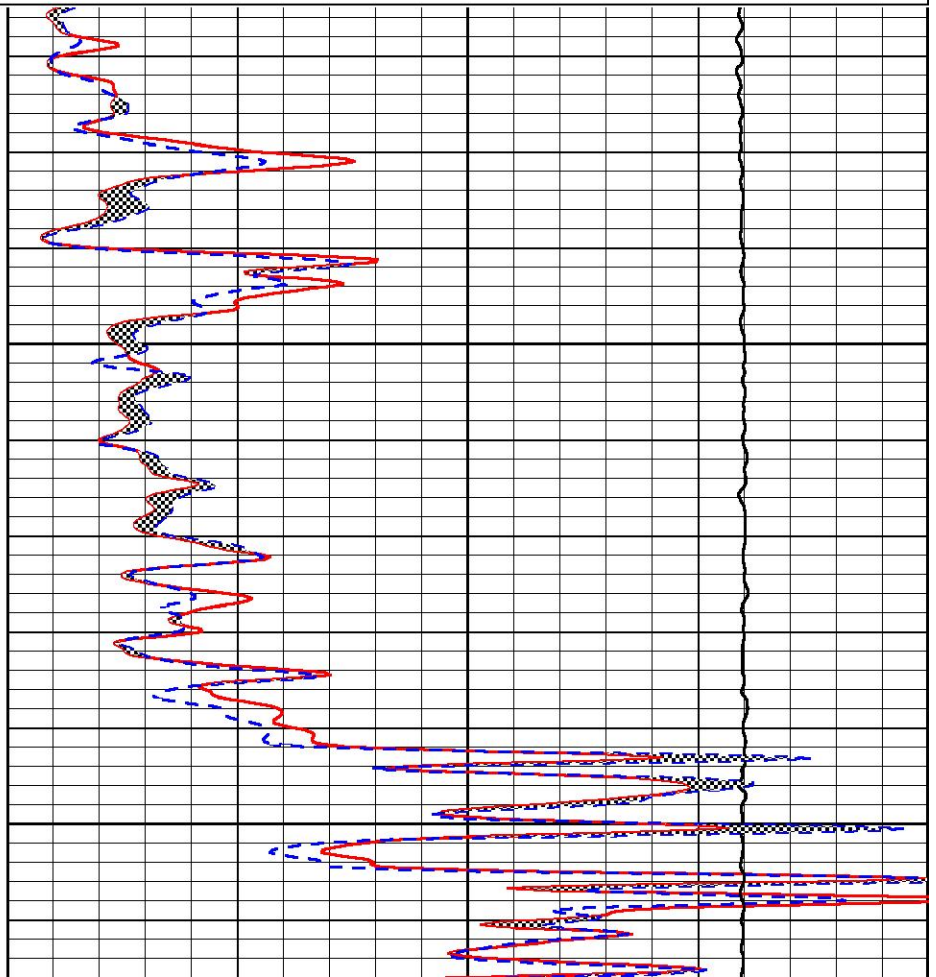
REPEAT SECTION

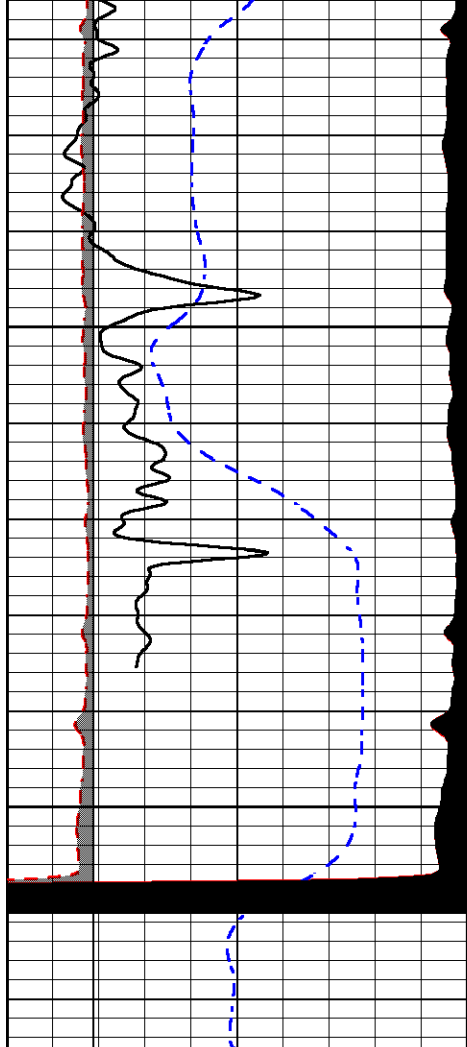
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 Presentation Format micro
 Dataset Creation Sun Oct 07 19:32:58 2018
 Charted by Depth in Feet scaled 1:240



4650

4700

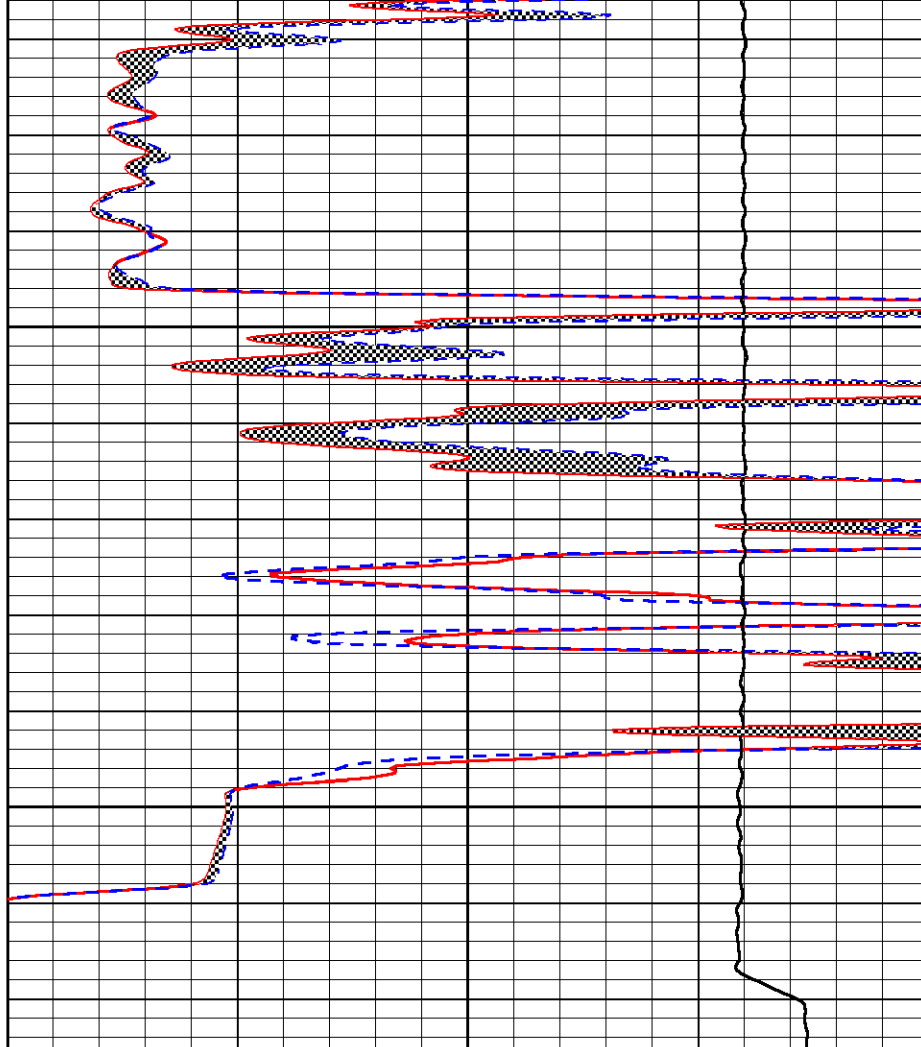




4750

4800

0	GAMMA RAY (GAPI)	150
6	MCAL (in)	16
2.875	mcAl (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

Calibration Report

Database File murfin_frisbie b 1-15.db
 Dataset Pathname STKML/pass4.1
 Dataset Creation Sun Oct 07 22:22:04 2018

Dual Induction Calibration Report

Serial-Model: 967 (HT)-PSI HIGH TEMP
 Calibration Performed: Sun Oct 07 19:24:22 2018

Loop:	Readings		References		Results		
	Air	Loop	Air	Loop	Gain	Offset	
Deep	167.000	835.000	0.000	255.800	mmho/m	0.565	-19.250
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.390	-40.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Sat Sep 08 05:17:35 2018

	Readings		References		Results		
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	18000.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	21500.0000	-0.6000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.8500

Compensated Density Calibration Report

Serial-Model: 144-84-M&W
Source / Verifier: 16955B / 2ci
Master Calibration Performed: Thu Aug 30 10:10:19 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4867.47	6031.92	cps
Aluminum	2.650	g/cc	906.23	3806.99	cps
Spine Angle = 74.69			Density/Spine Ratio = 0.514		
	Size		Reading		
Small Ring	5.00	in	0.70		
Large Ring	15.00	in	0.04		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: FRI AUG 24 10:30:30 2018

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: Fri Aug 24 11:16:10 2018

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.6000 GAPI/cps

 <p>PIONEER Pioneer Energy Services</p>	Company	MURFIN DRILLING COMPANY, INC.
	Well	FRISBIE B #1-15
	Field	WILDCAT
	County	RAWLINS
	State	KANSAS