



MIDWEST WIRELINE

# DUAL INDUCTION LOG

Company **Griffin Management LLC**  
 Well **Cromer #B2**  
 Field **Moffett North**  
 County **Barber** State **Kansas**

Location: API #: 15007-24444-00-00  
 W2 W2 NW  
 1320 FNL & 330 FWL  
 SEC 4 TWP 30S RGE 15W  
 Permanent Datum Ground Level Elevation 2002  
 Log Measured From Kelly Bushing  
 Drilling Measured From Kelly Bushing  
 Other Services  
 CNL/CDL  
 MEL  
 Elevation  
 K.B. 2007  
 D.F.  
 G.L. 2002

Date	10/2/2022
Run Number	One
Depth Driller	4850
Depth Logger	4845
Bottom Logged Interval	4844
Top Log Interval	250
Casing Driller	8:625 @ 261
Casing Logger	259
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	8000
Density / Viscosity	9.4 52
pH / Fluid Loss	10.0 8.8
Source of Sample	Flowline
Rm @ Meas. Temp	0.8 @ 72
Rmt @ Meas. Temp	0.6 @ 72
Rmc @ Meas. Temp	1.08 @ 72
Source of Rmf / Rmc	Charts
Rm @ BHT	0.46 @ 125
Operating Rig Time	3 Hours
Max Rec. Temp. F	125
Equipment Number	P-24
Location	Hays
Recorded By	T. Martin
Witnessed By	Eli Felts

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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.

Croft Blktp, S to SW 110th,  
 1 E, 1.5 S, E into

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: T. Martin  
 Operator:  
 Operator:  
 Operator:

**This Log Record Was Witnessed By**

Primary Witness: Eli Felts  
 Secondary Witness:  
 Secondary Witness:  
 Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.33		GR-M&W (106)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (207-MW)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (307-11)	8.50	4.00	250.00
ML-PSIML (402)			7.58	4.00	65.00	
MCAL MI MN	19.58 19.58 19.58					
RLL3F RLL3	15.50 15.50					
DIL-M&W (501 HT)			18.25	3.50	220.00	
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: griffin\_cromer #b2.db: field/well/StkMI/pass3.1  
 Total length: 42.33 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\griffin\_cromer #b2.db  
 Dataset field/well/StkMI/pass3.1/\_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	0	0	0	320	80	Off	4843

## 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

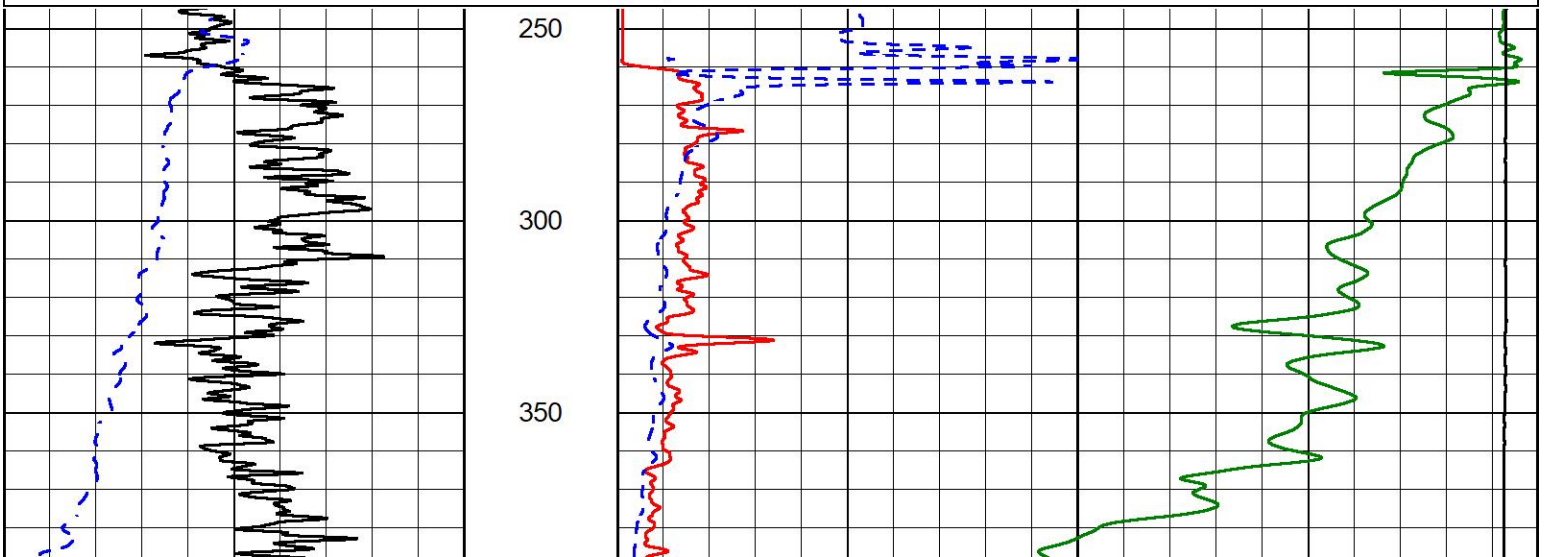


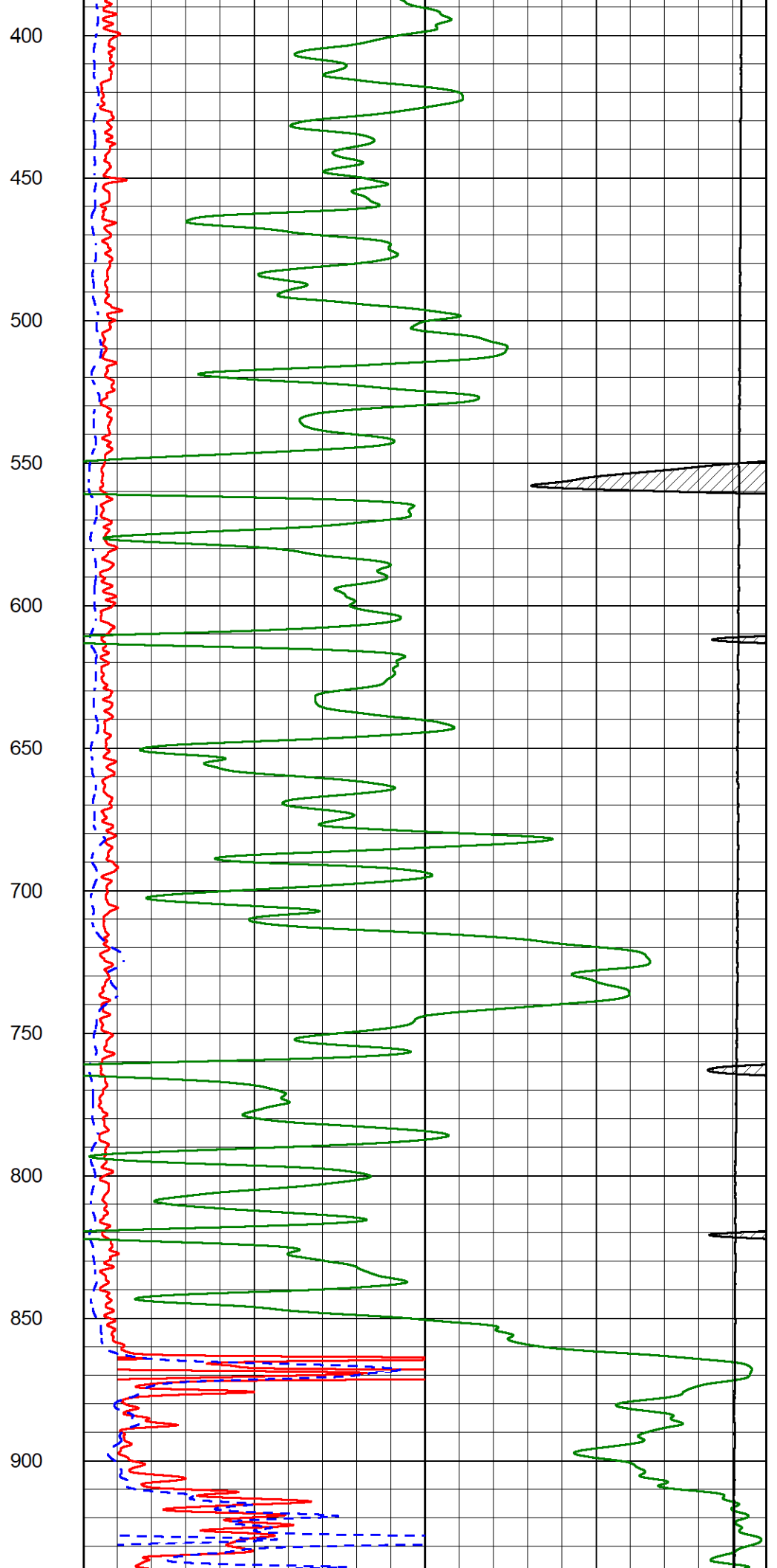
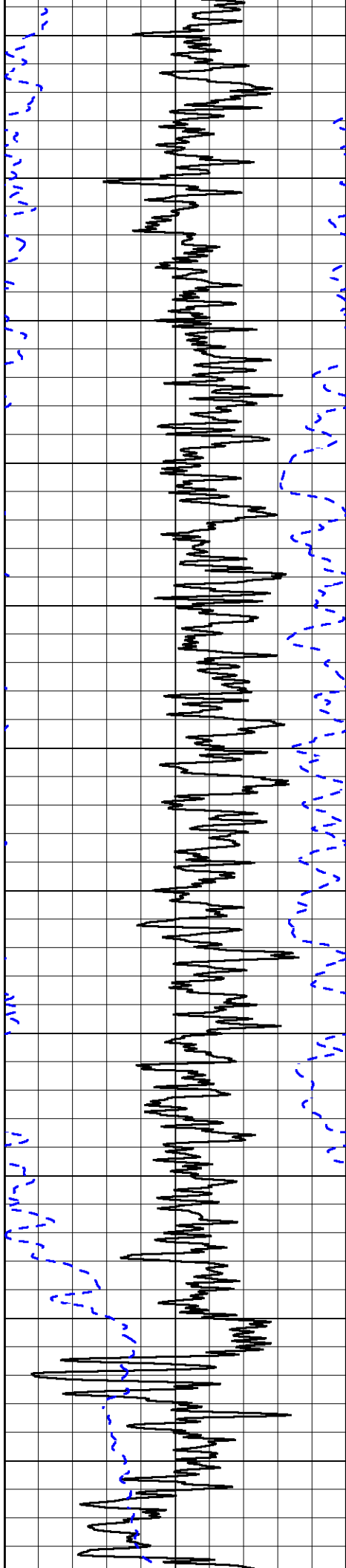
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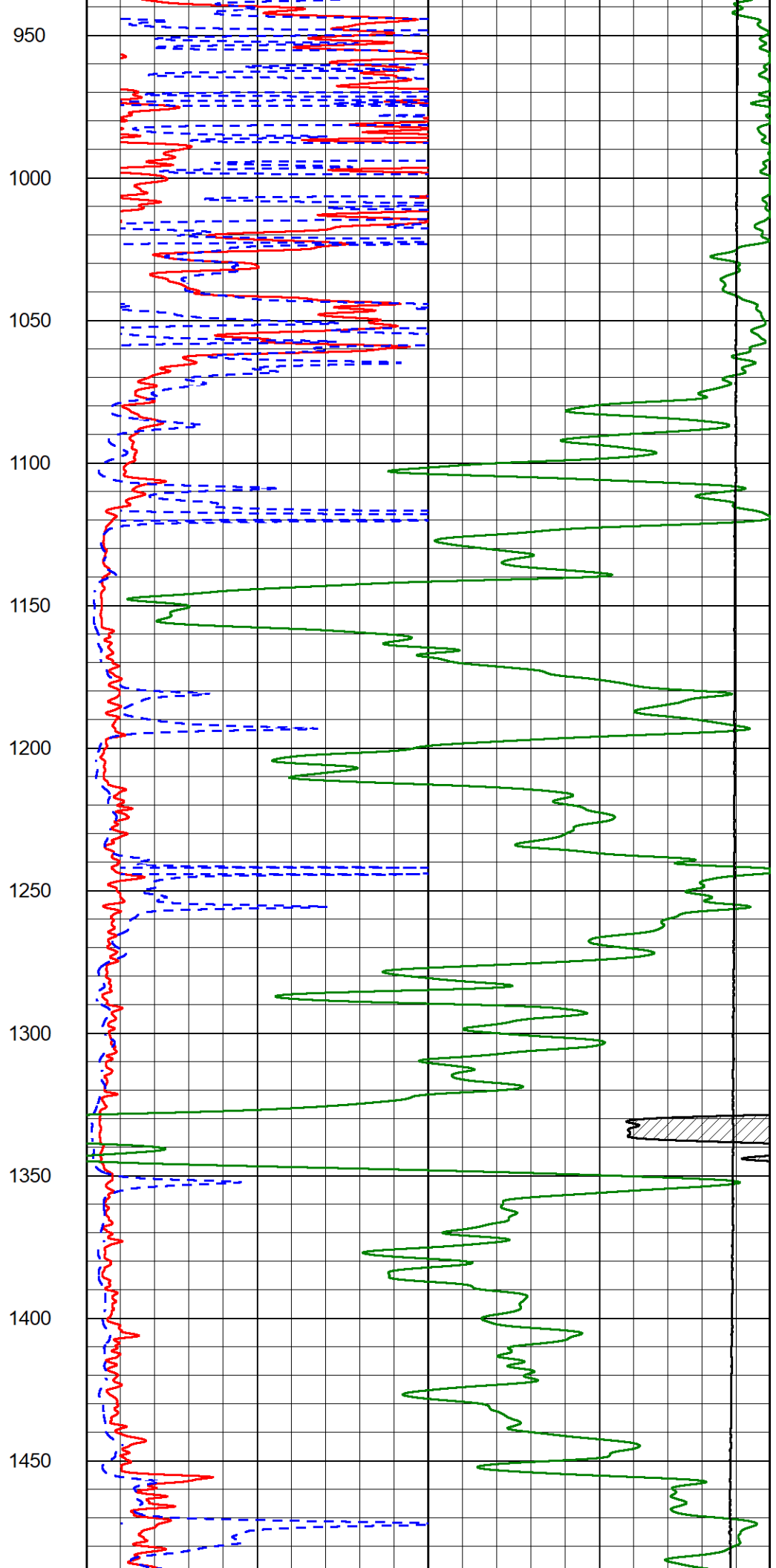
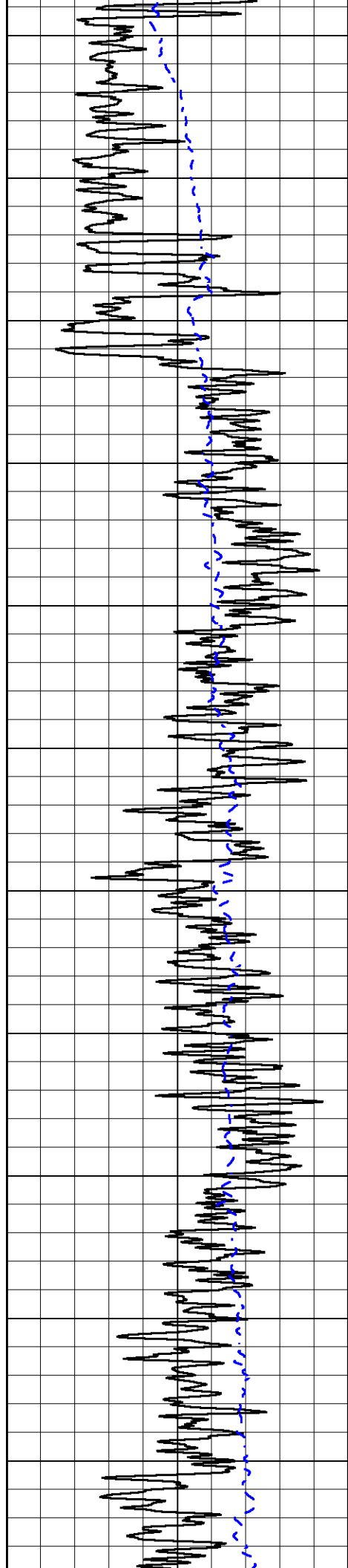
### MAIN PASS

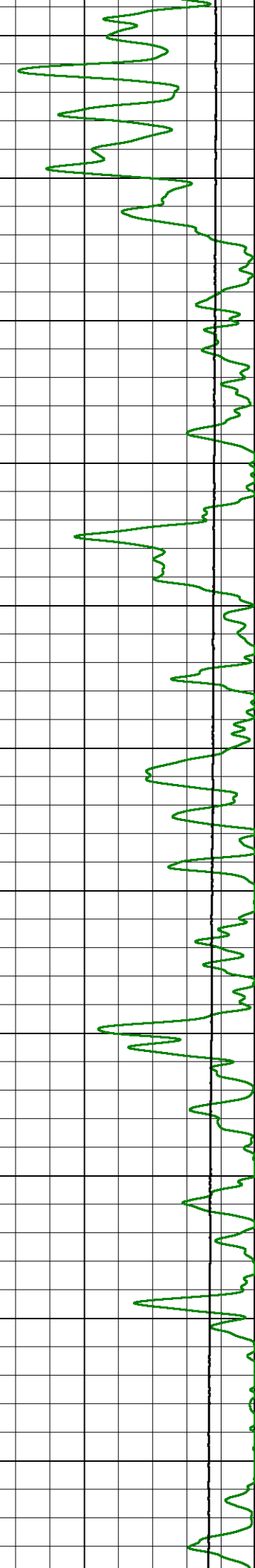
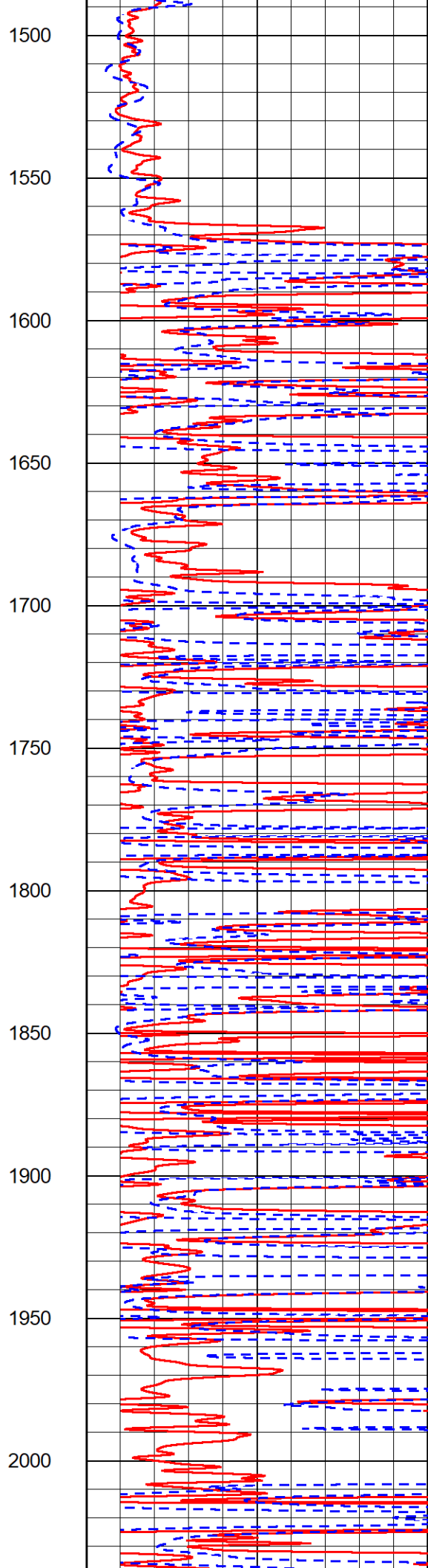
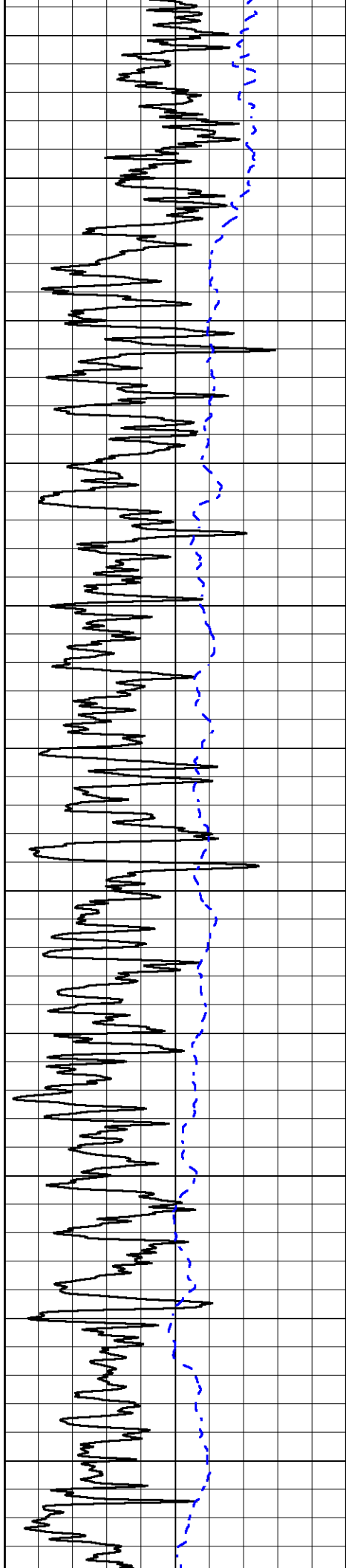
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 Presentation Format \_dil2in  
 Dataset Creation Sun Oct 02 12:34:27 2022  
 Charted by Depth in Feet scaled 1:600

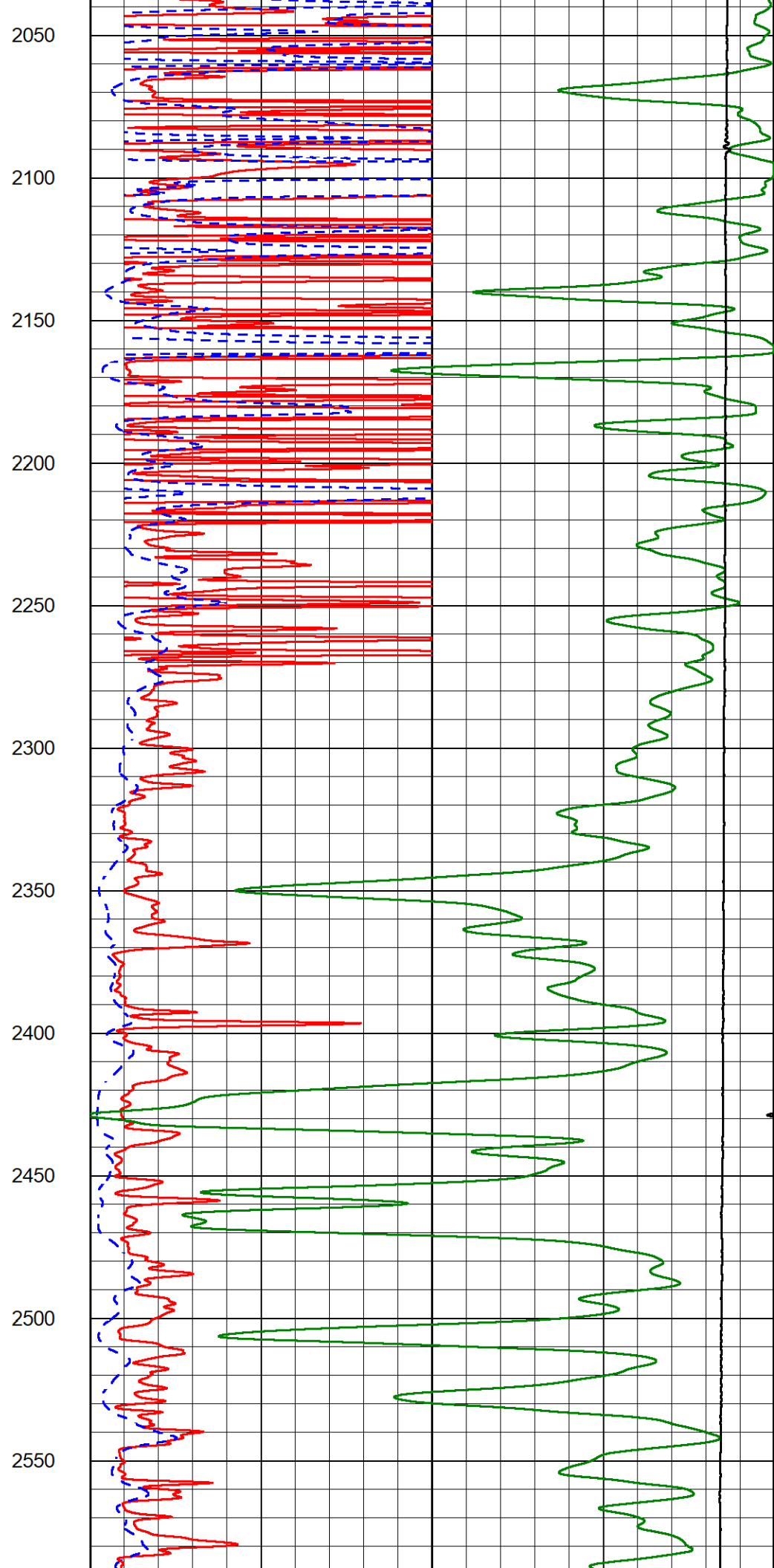
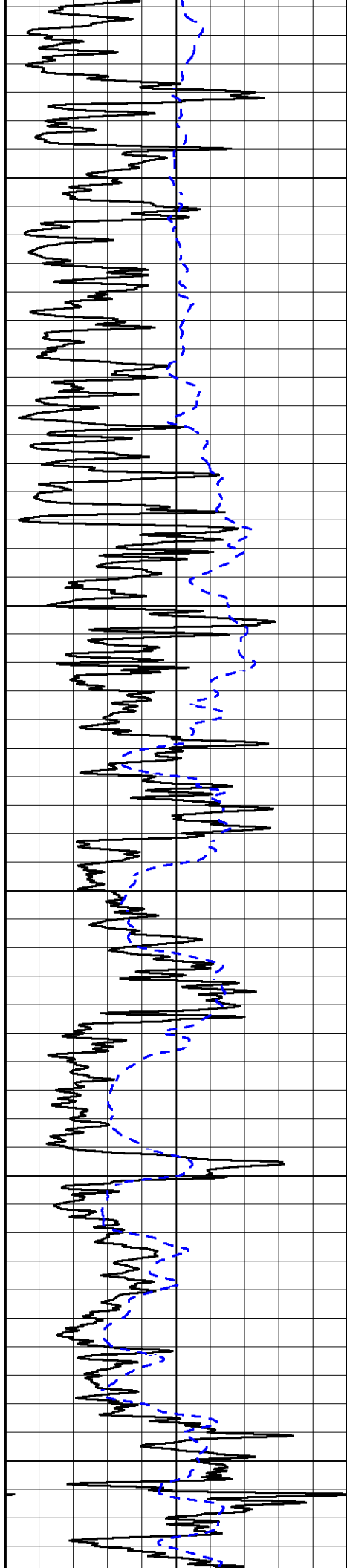
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-200	SP (mV)	0	15000	Line Tension (lb)	0
		0		Shallow Resistivity (Ohm-m)	50
		0		Deep Resistivity (Ohm-m)	50
		Shallow Resistivity			
		50	(Ohm-m)	200	
		50		Deep Resistivity (Ohm-m)	200

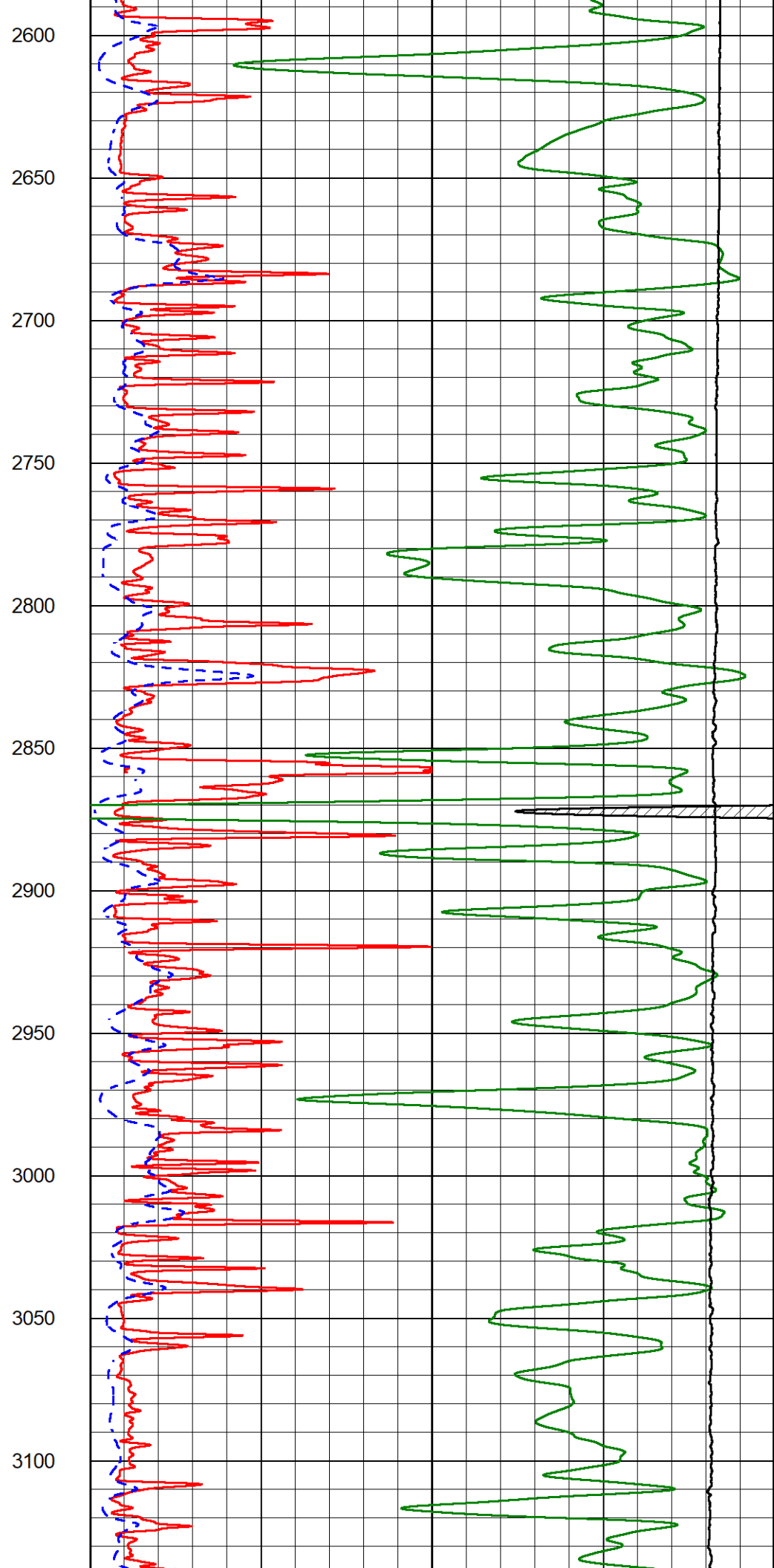
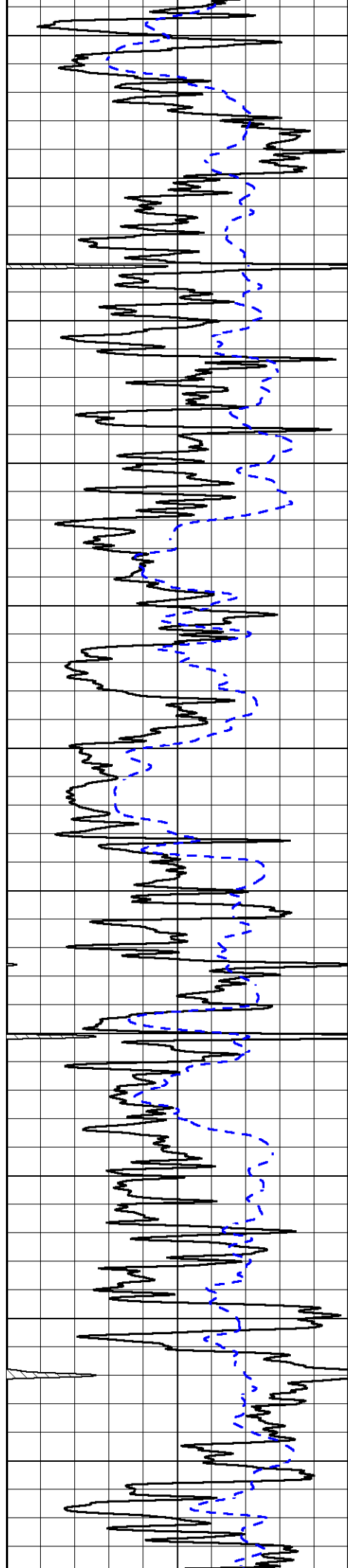


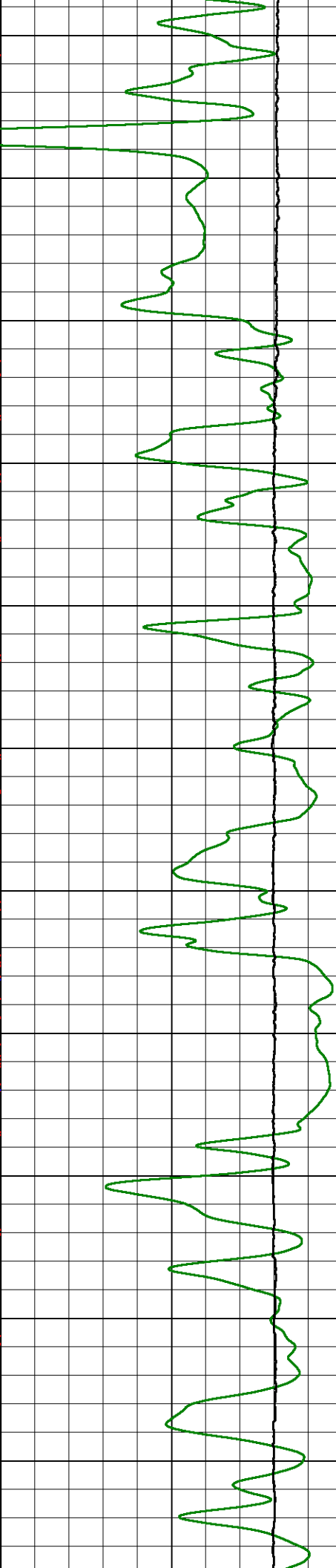
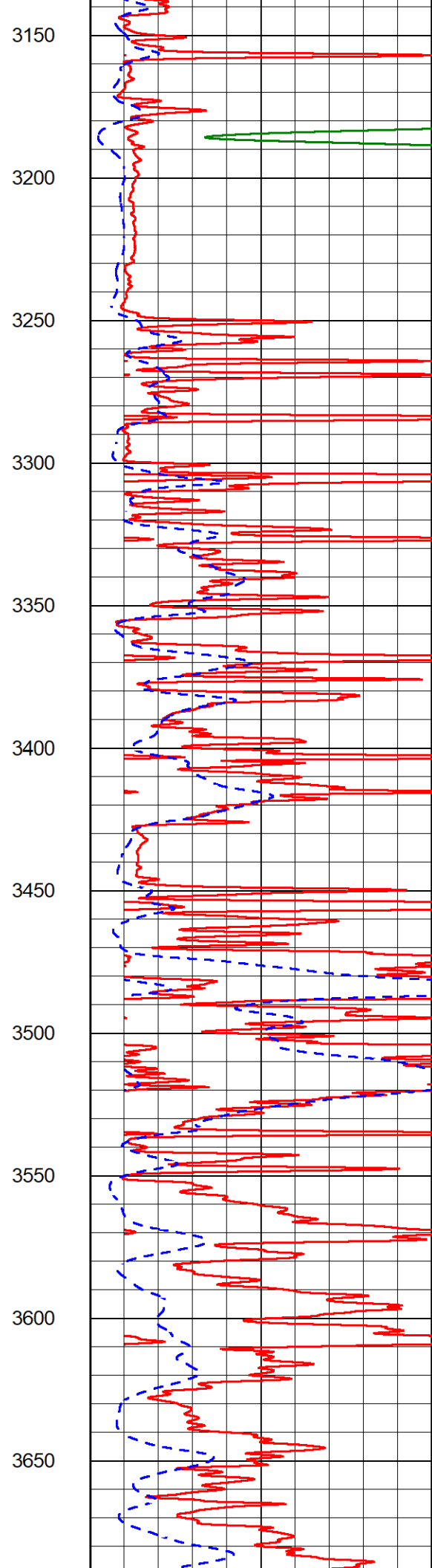
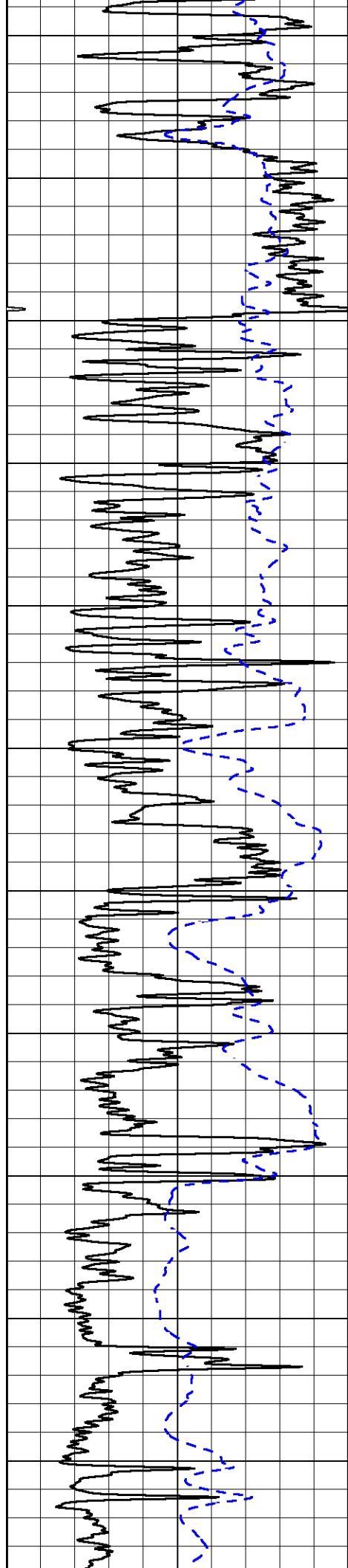


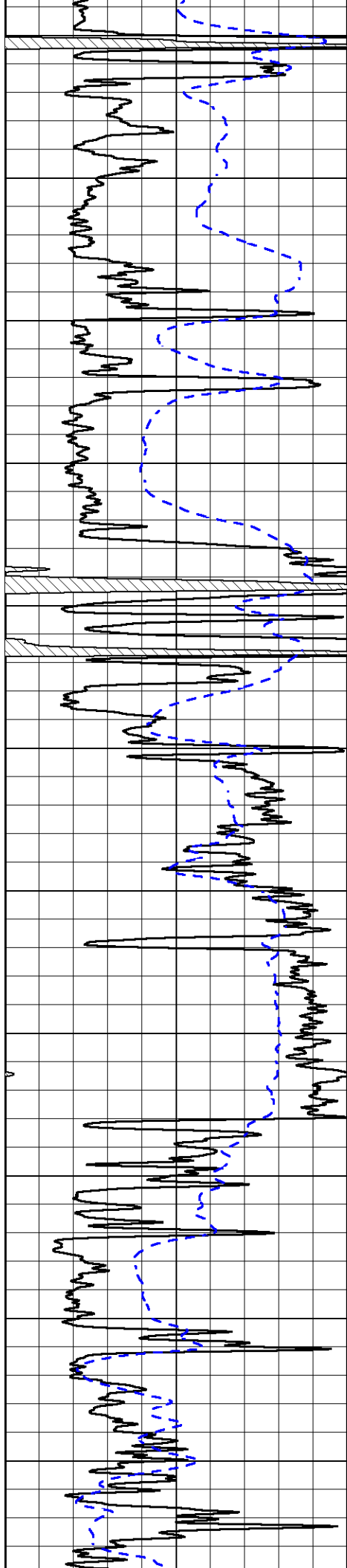












3700

3750

3800

3850

3900

3950

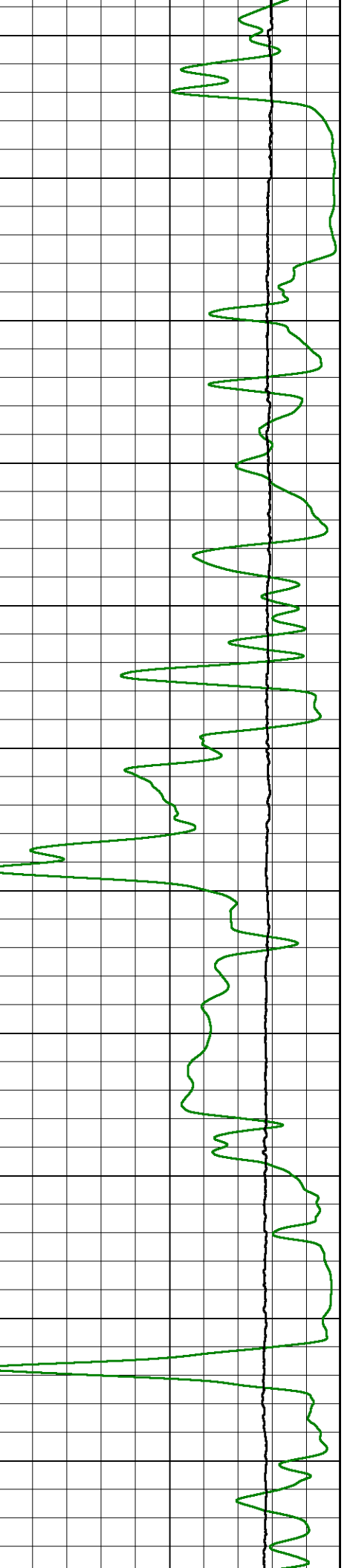
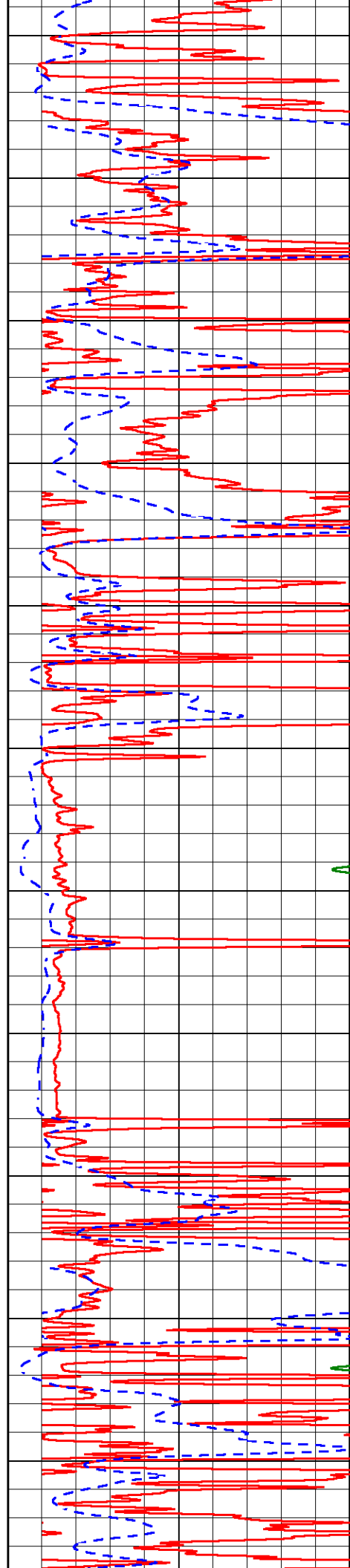
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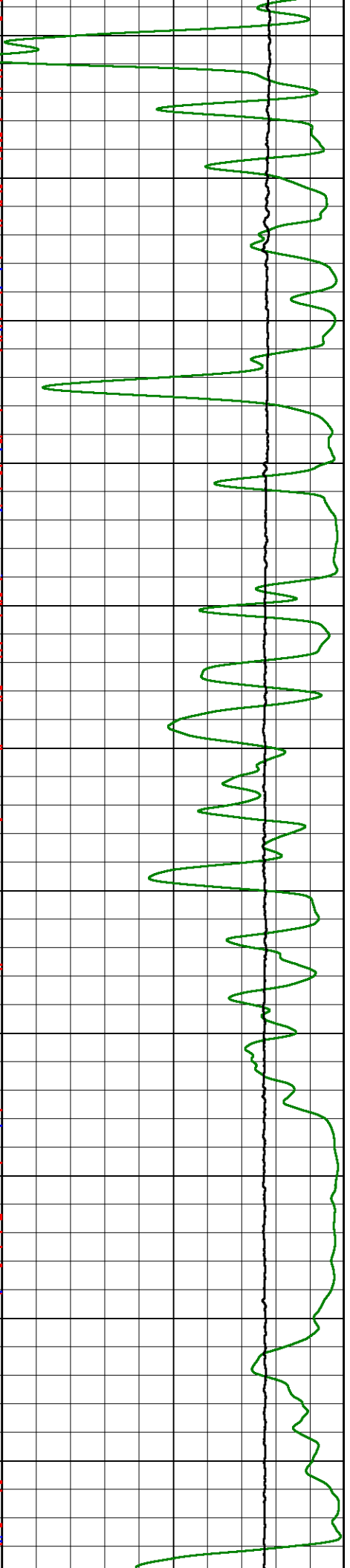
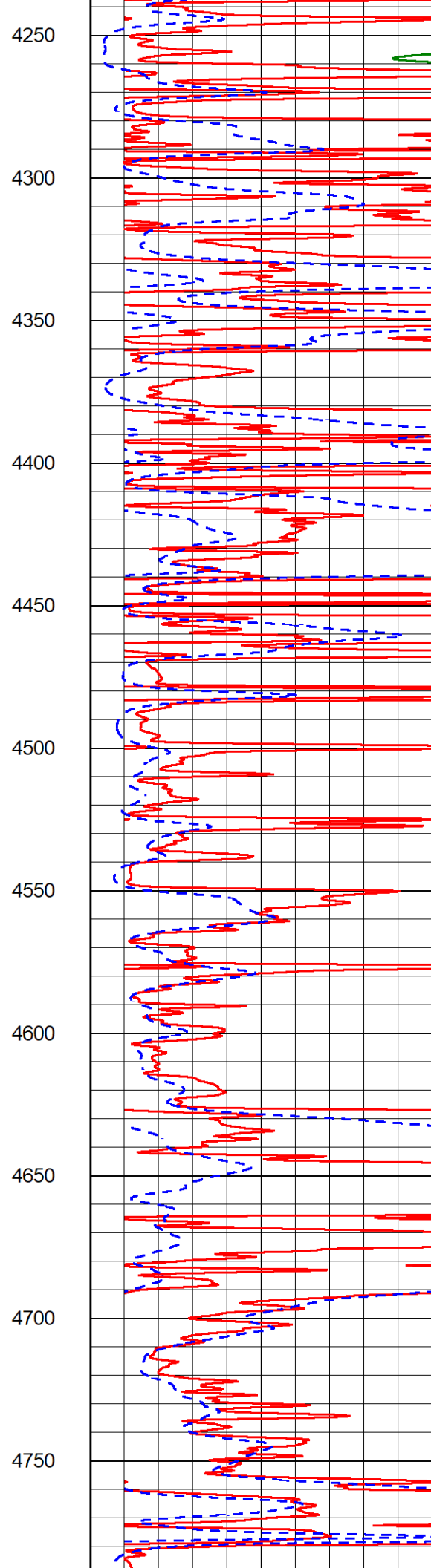
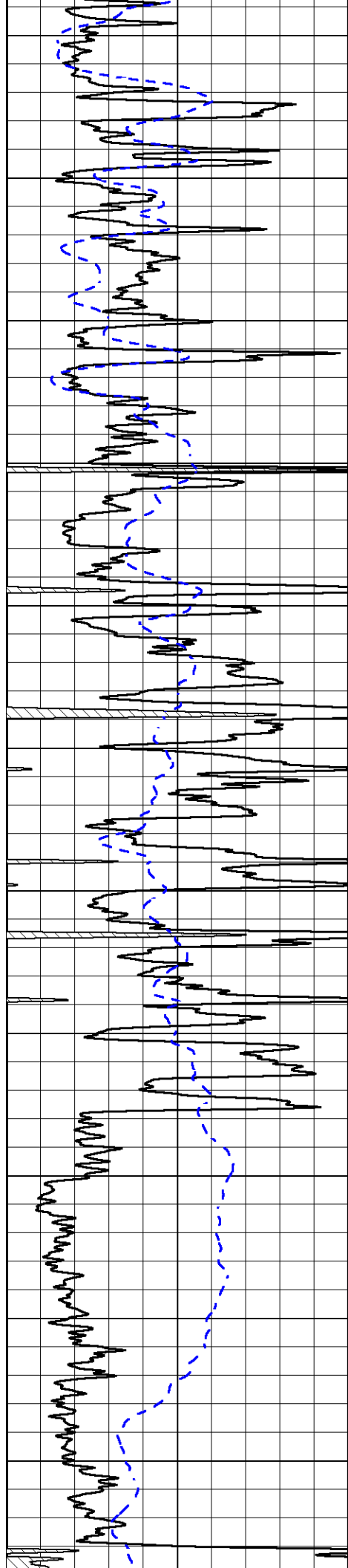
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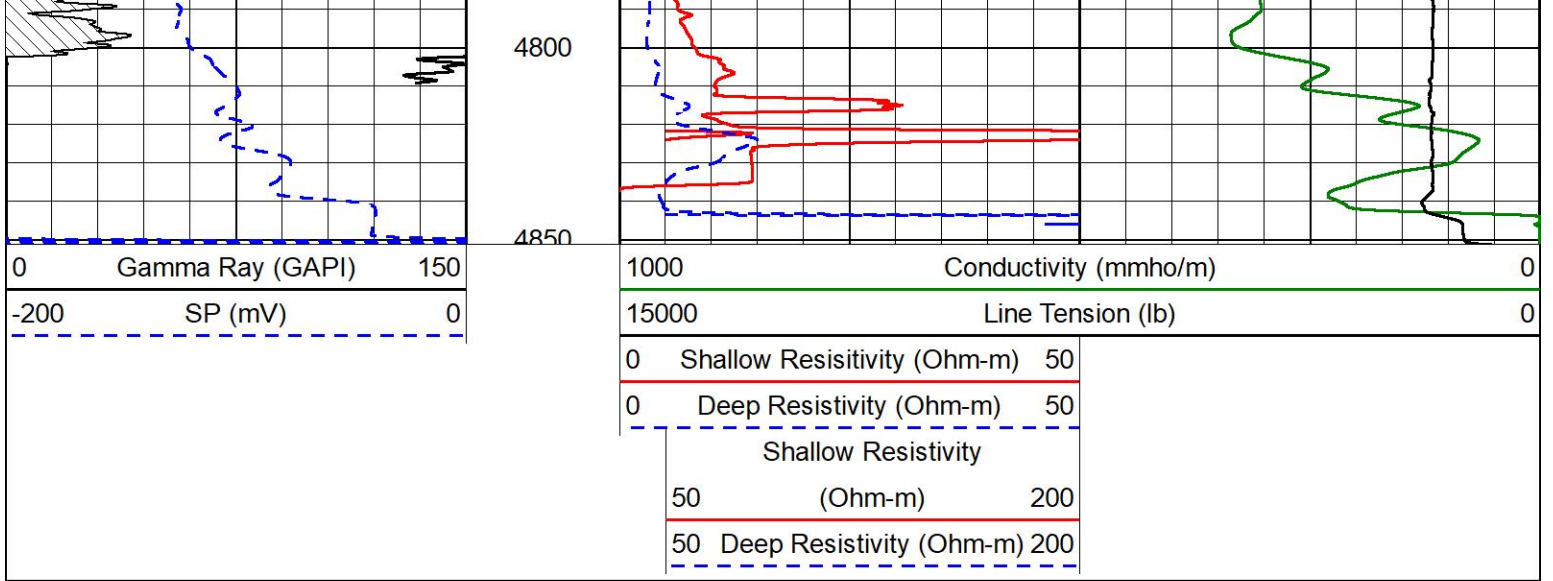
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4150

4200





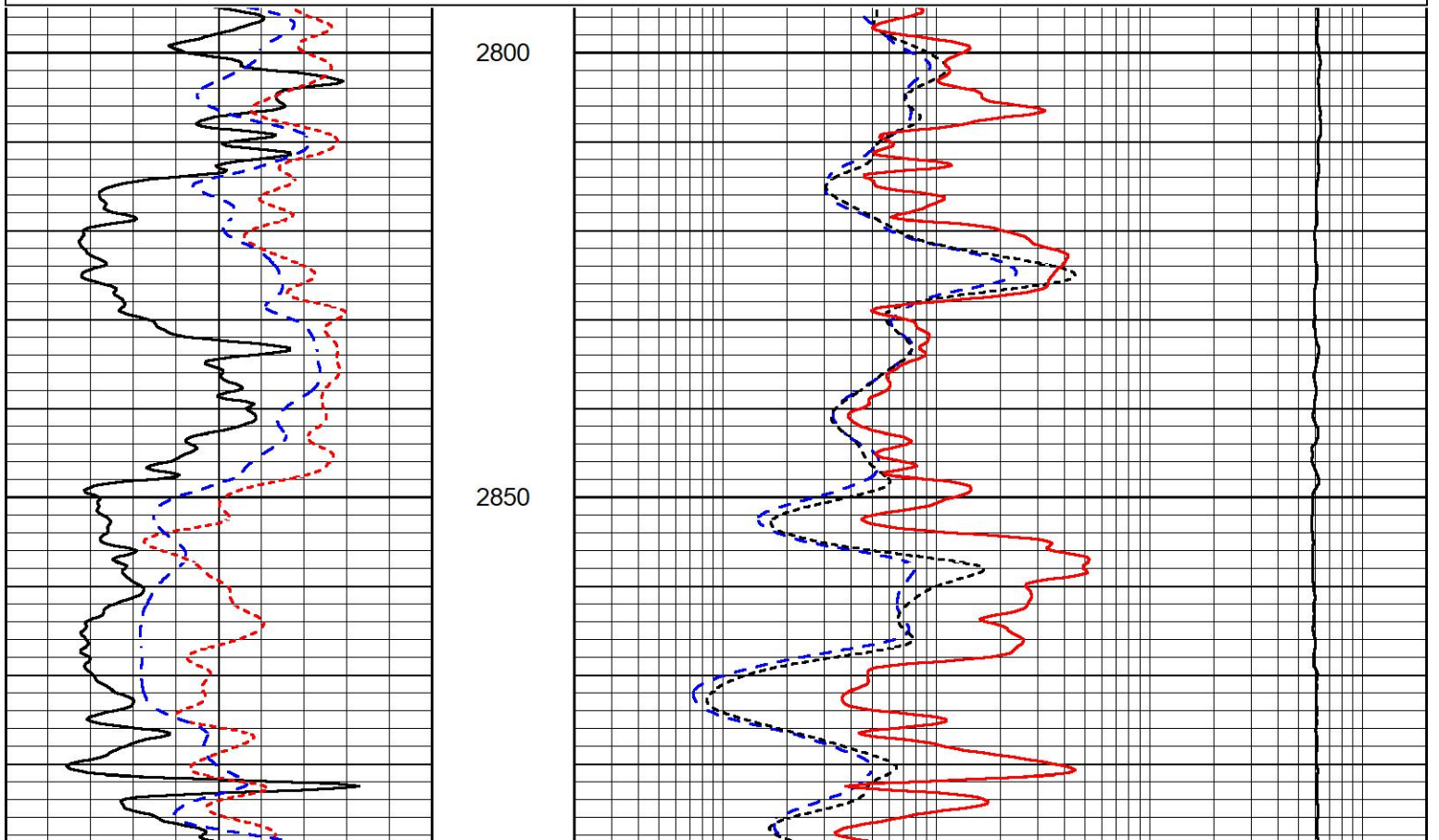
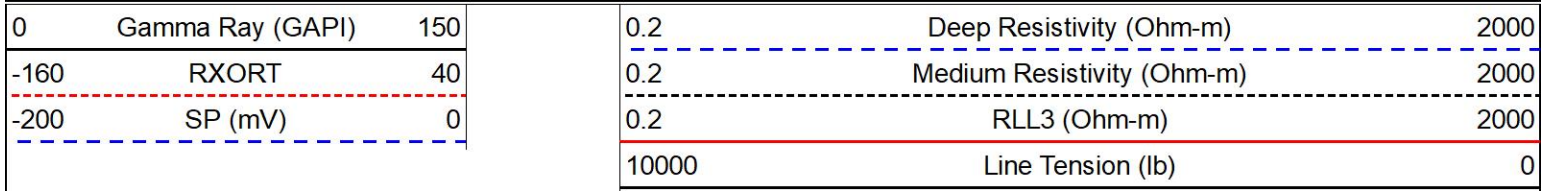


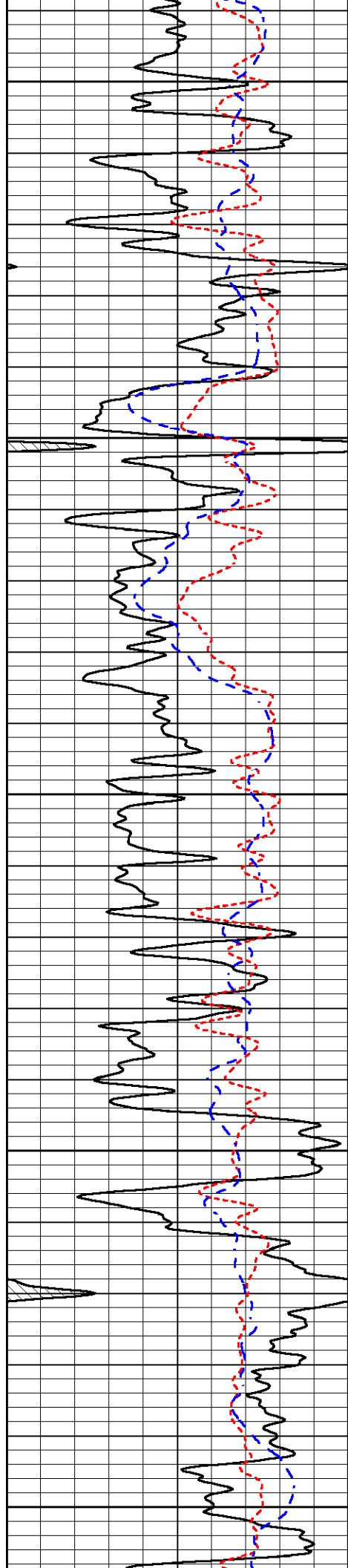
MIDWEST WIRELINE

## DETAIL SECTION

### MAIN PASS

Database File griffin\_cromer #b2.db  
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 Presentation Format \_dil  
 Dataset Creation Sun Oct 02 12:34:38 2022  
 Charted by Depth in Feet scaled 1:240





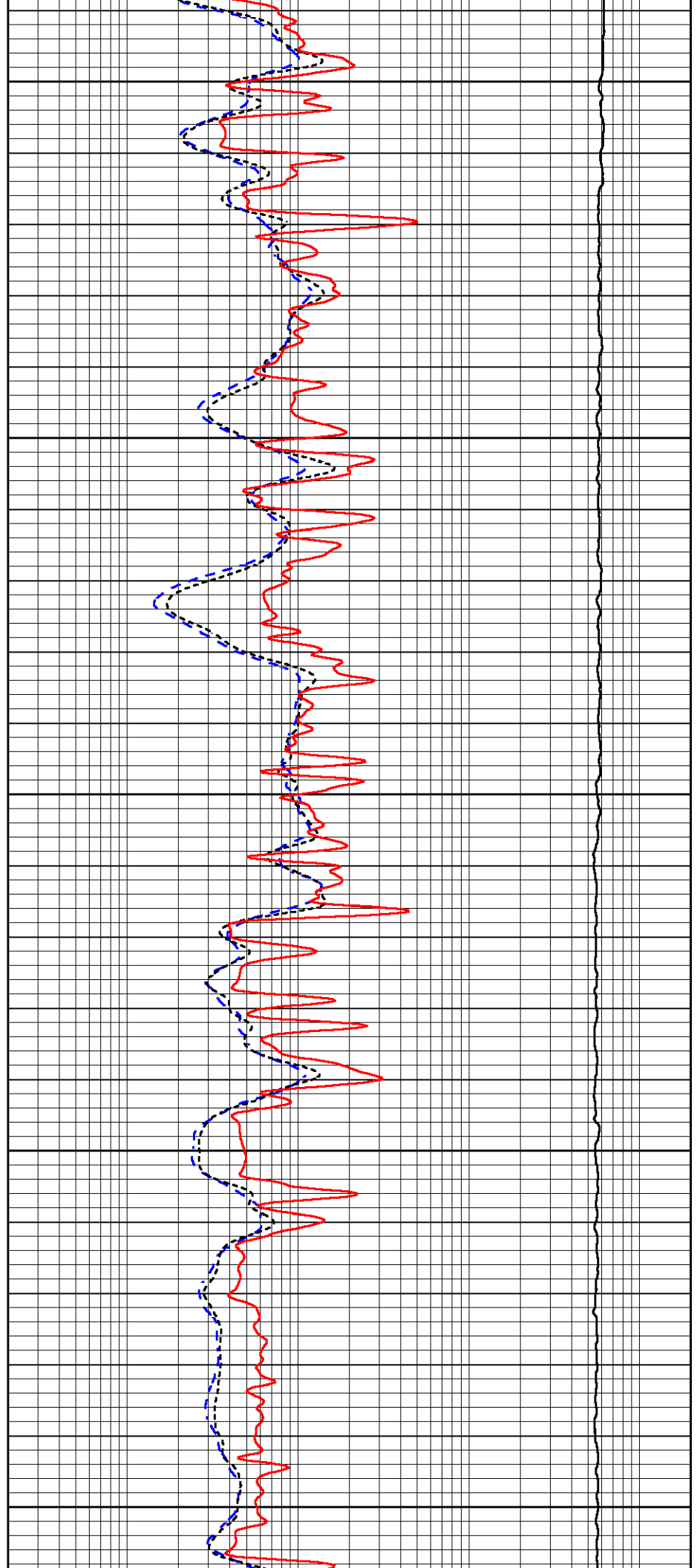
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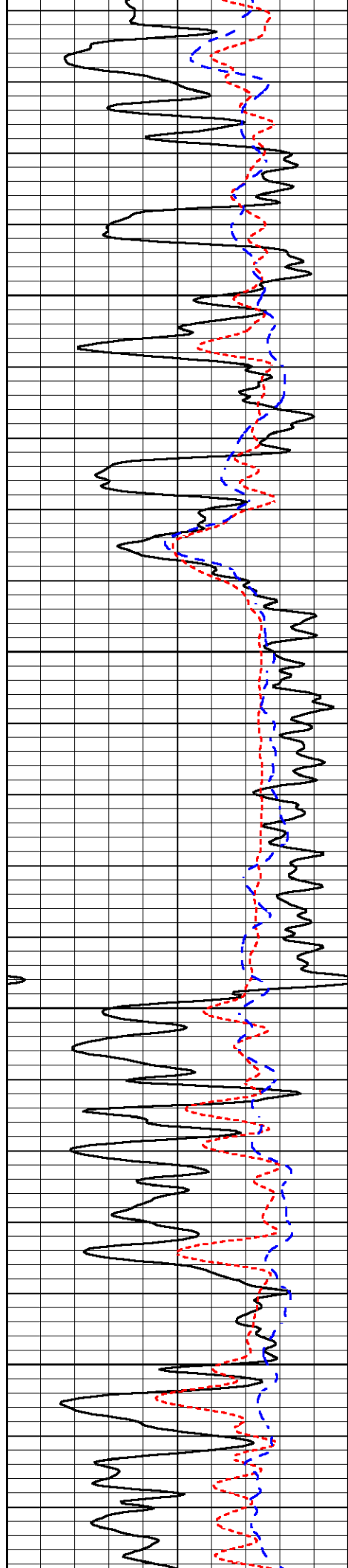
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3000

3050

3100



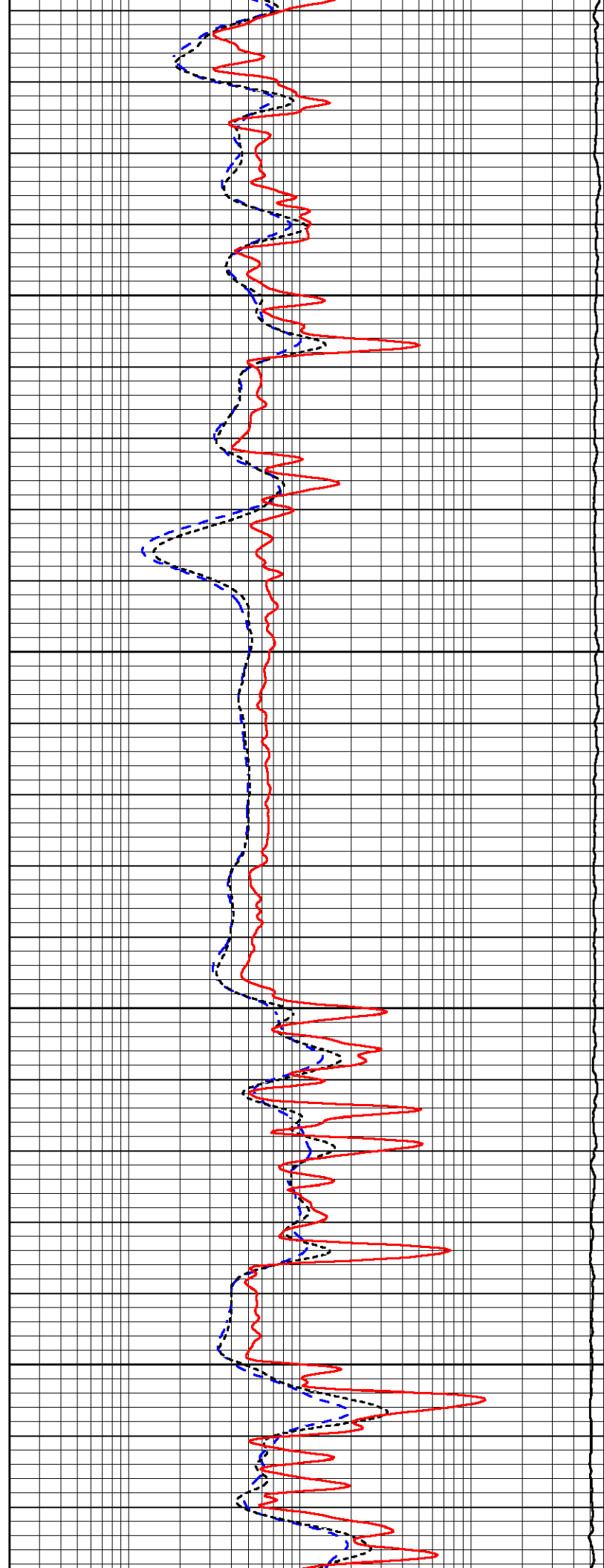


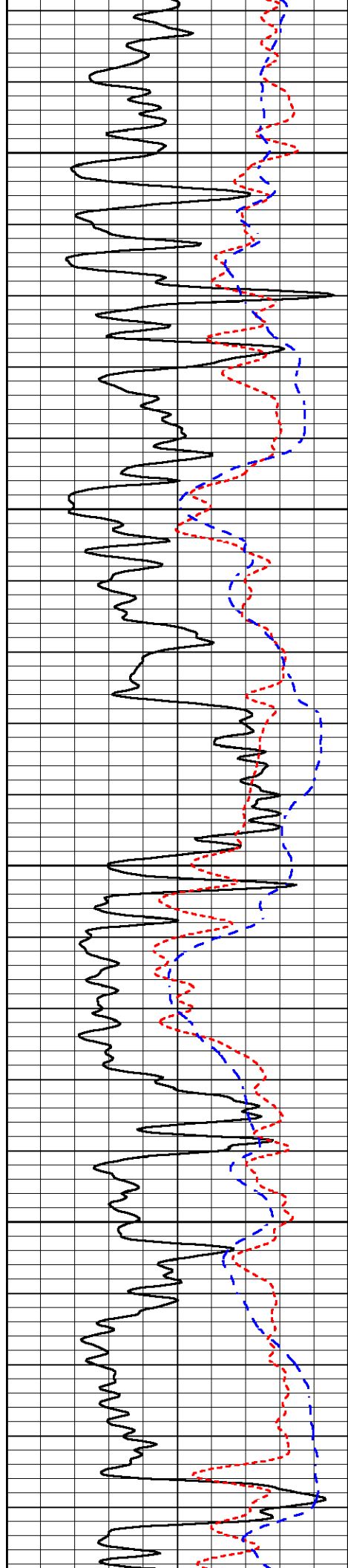
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3200

3250

3300



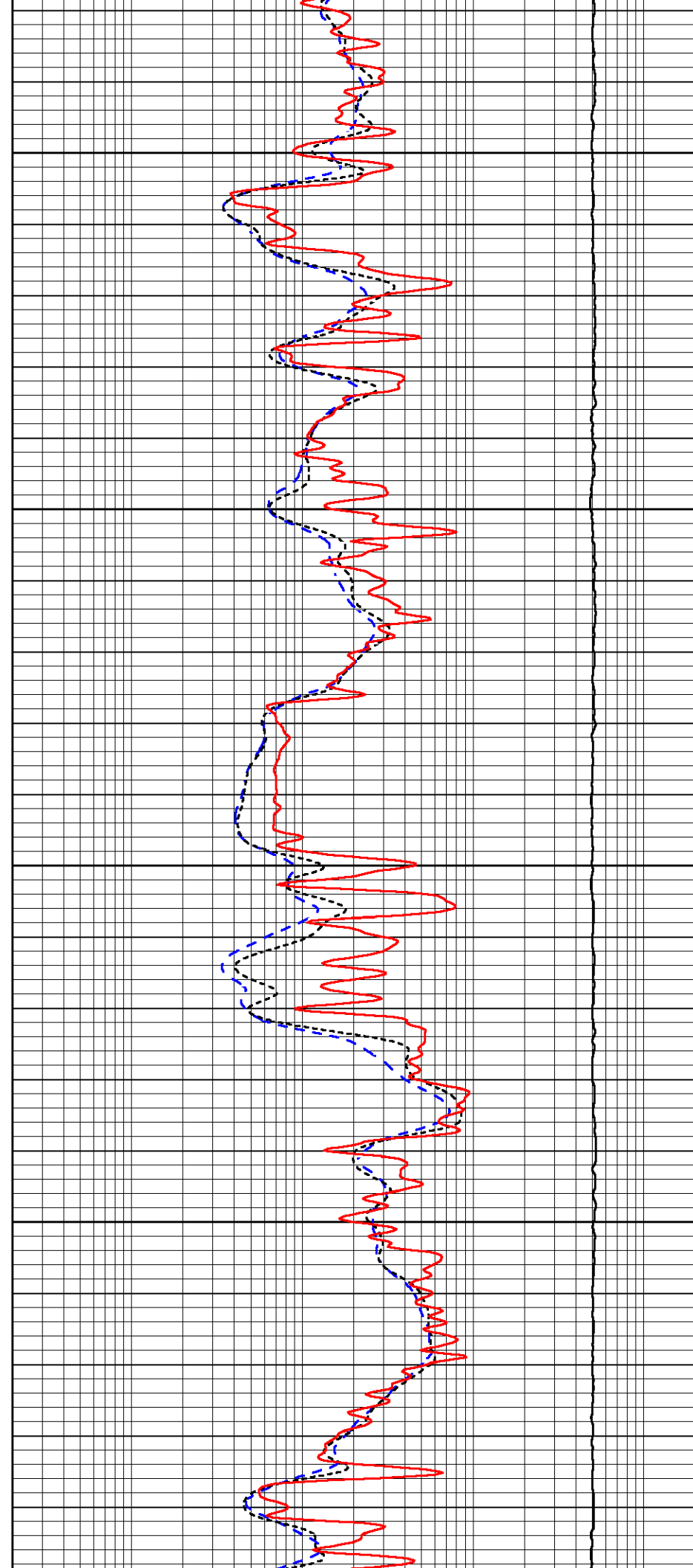


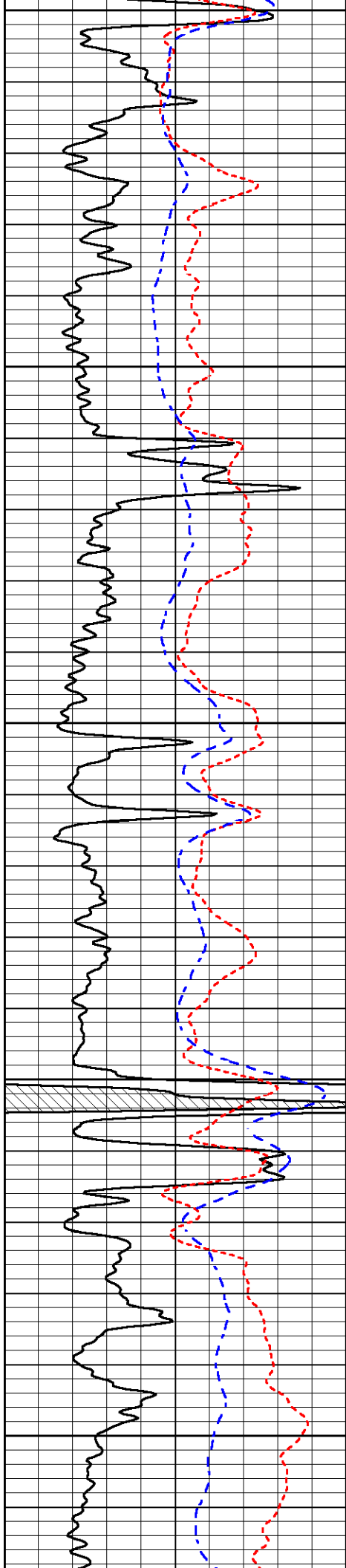
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3400

3450

3500





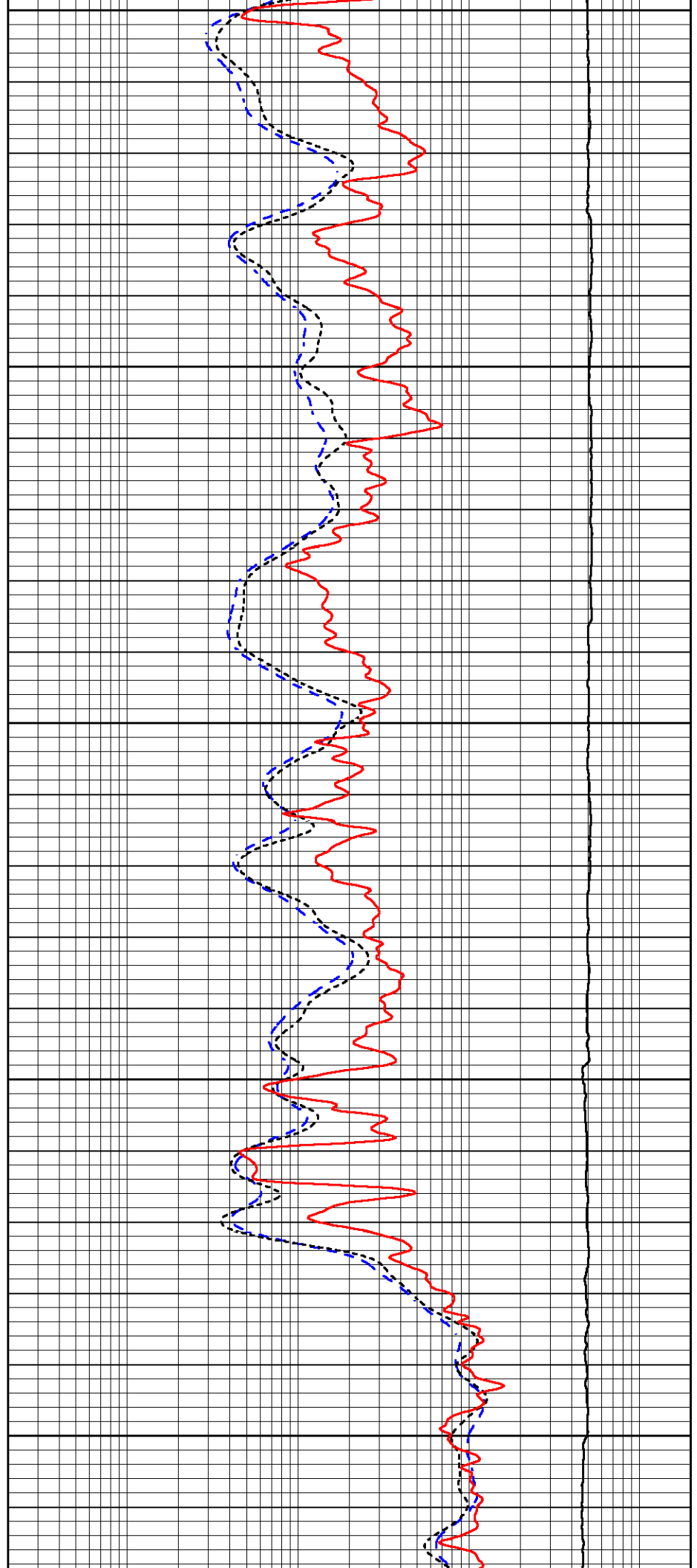
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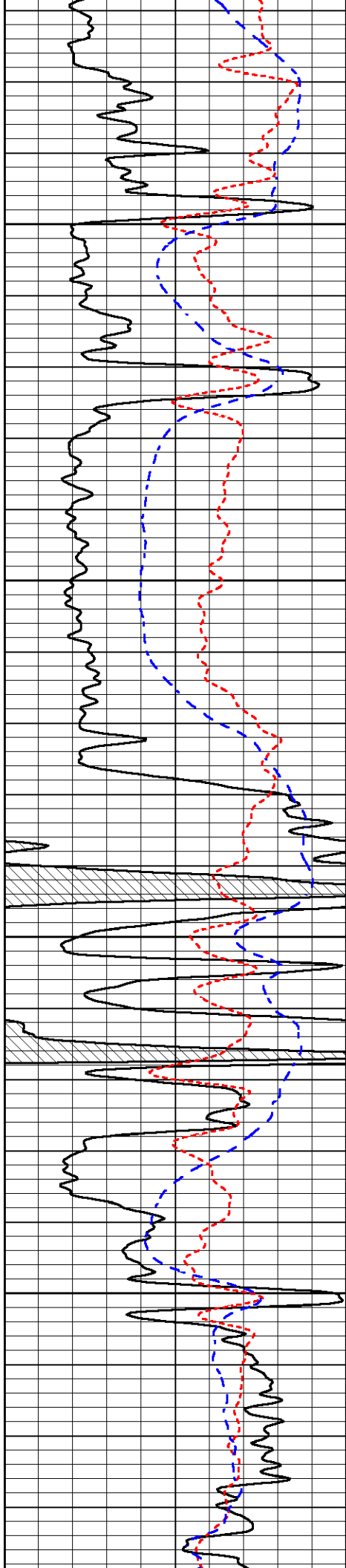
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3650

3700

3750



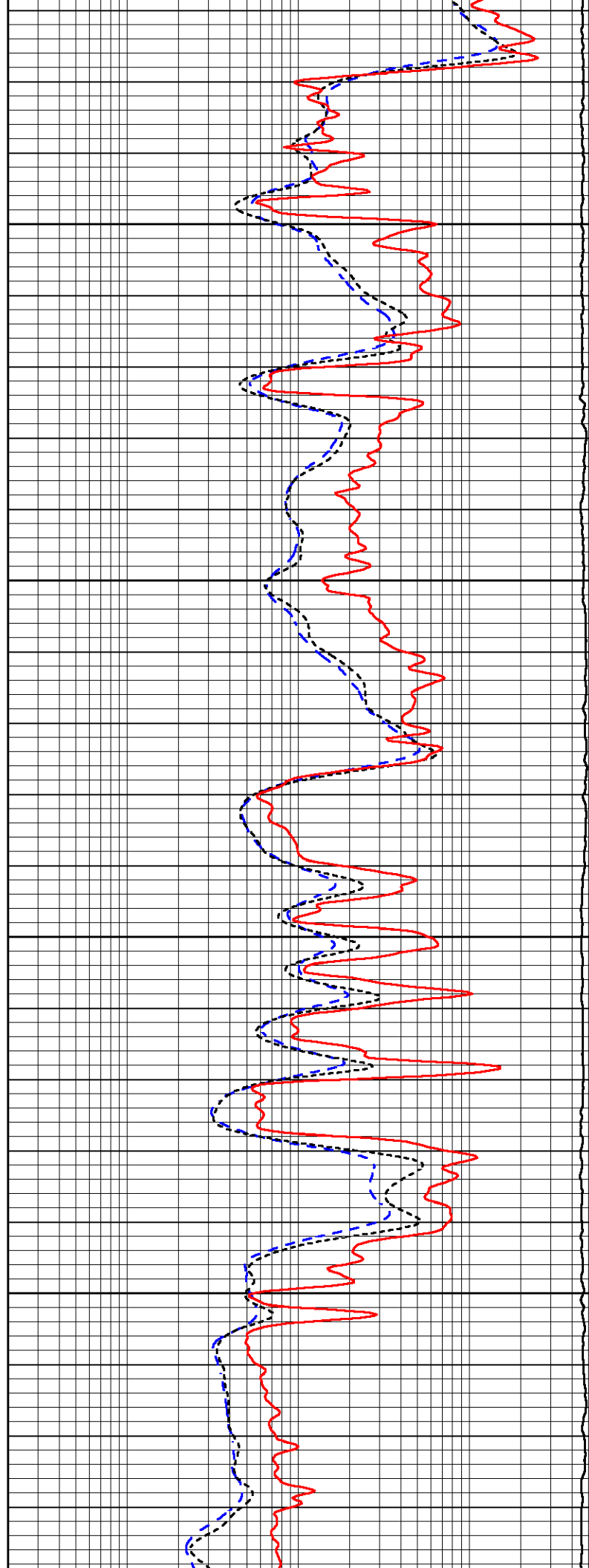


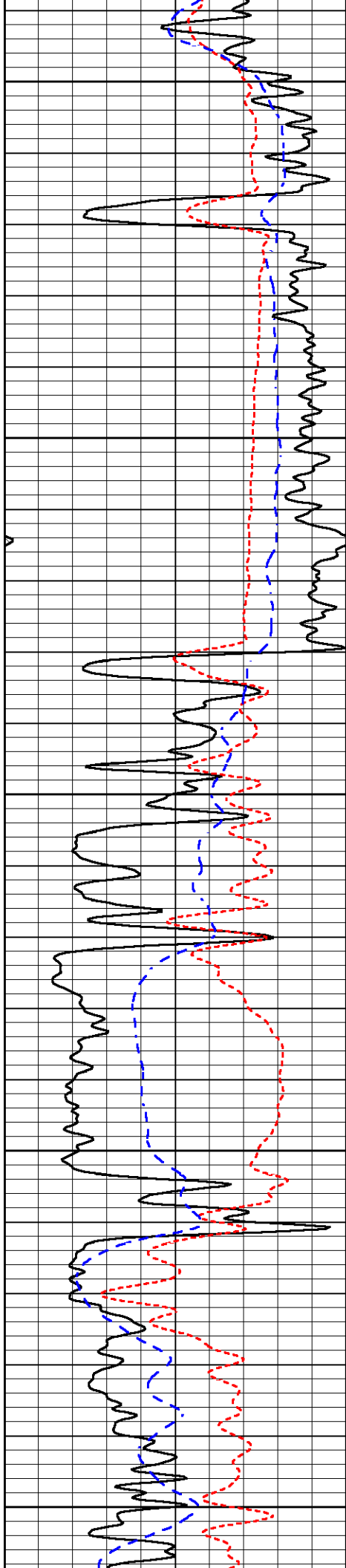
3800

3850

3900

3950





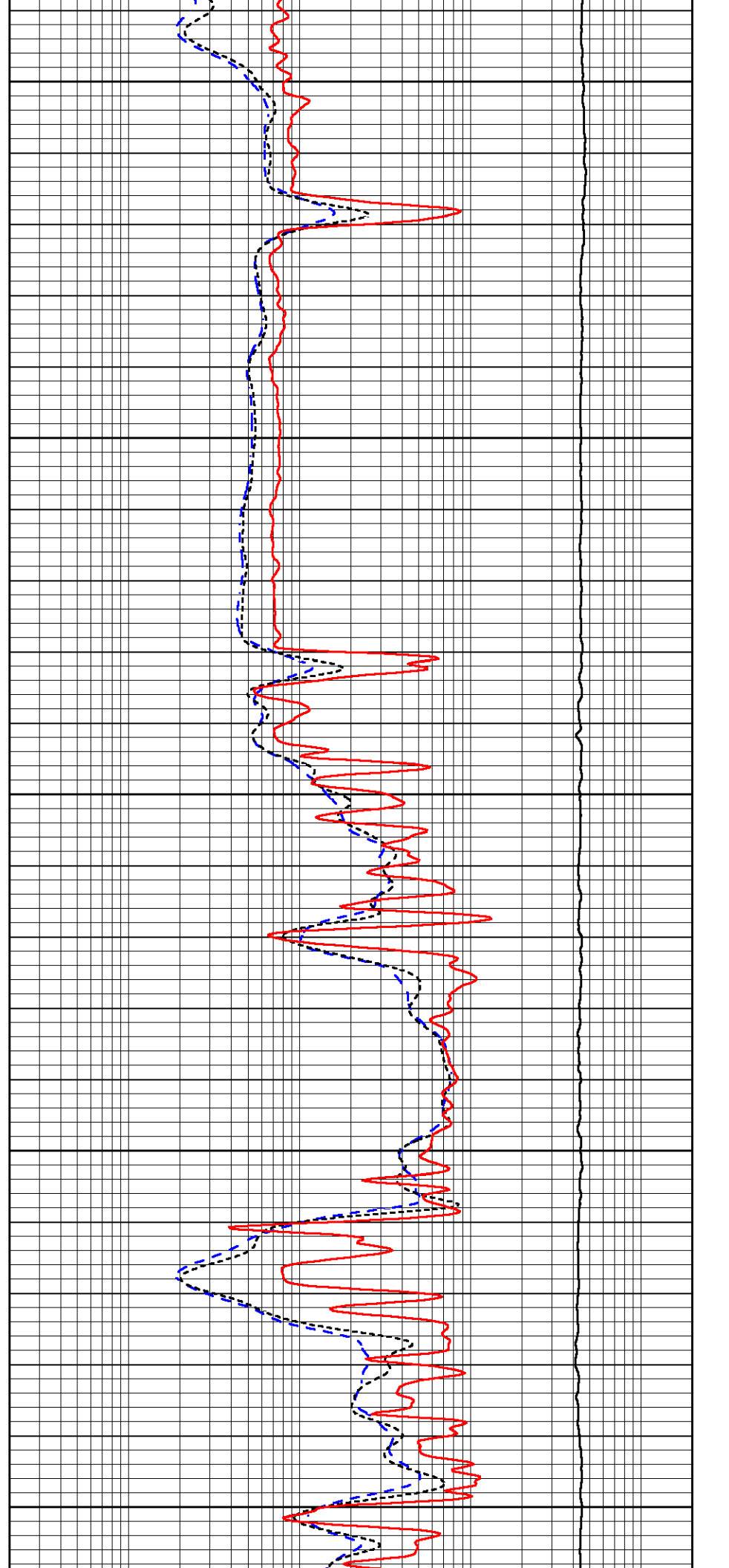
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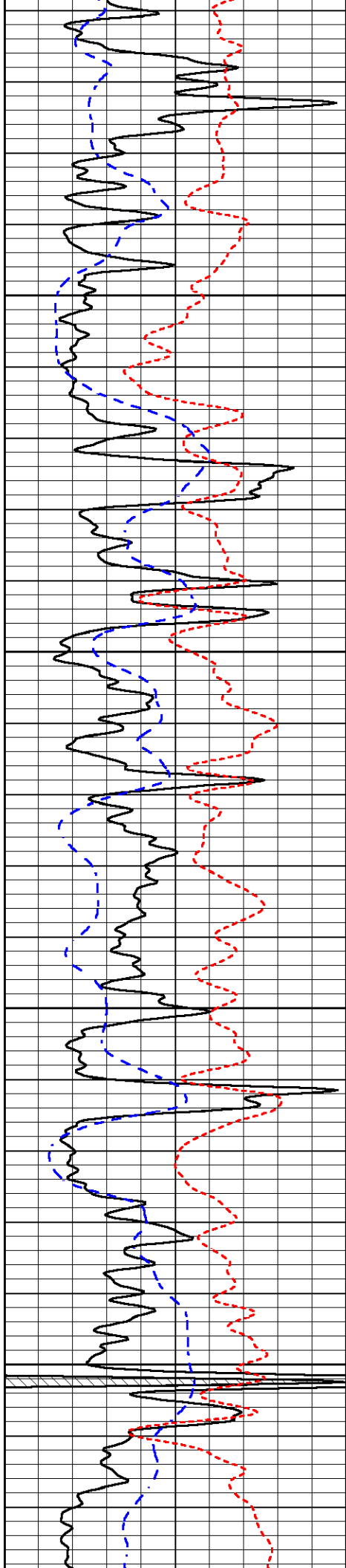
4050

4100

4150

4200



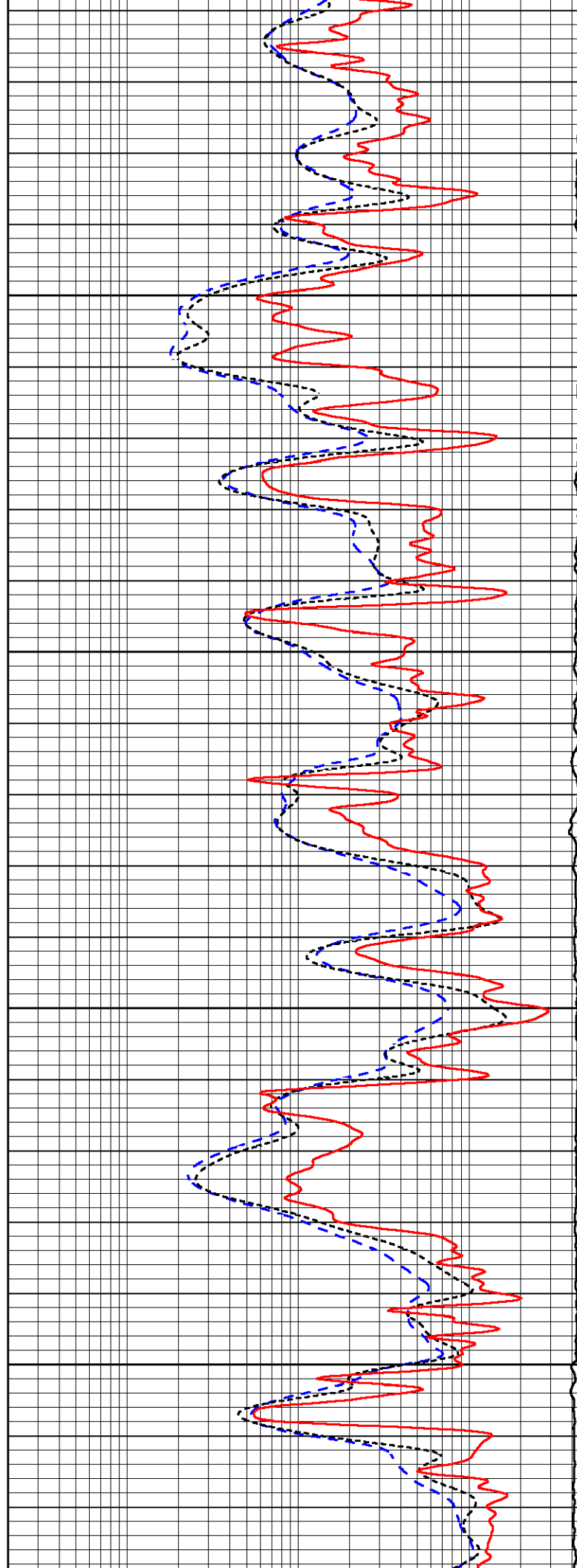


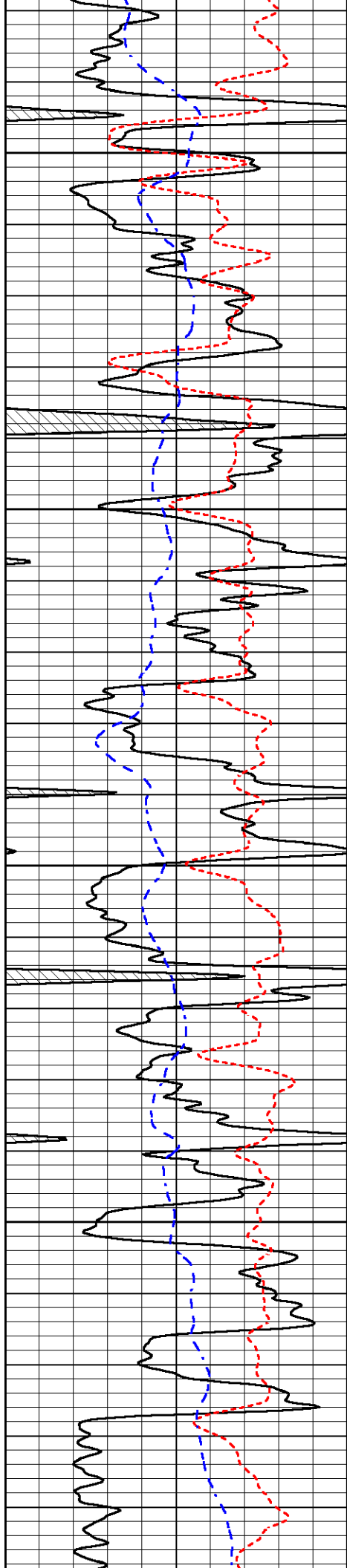
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4300

4350

4400



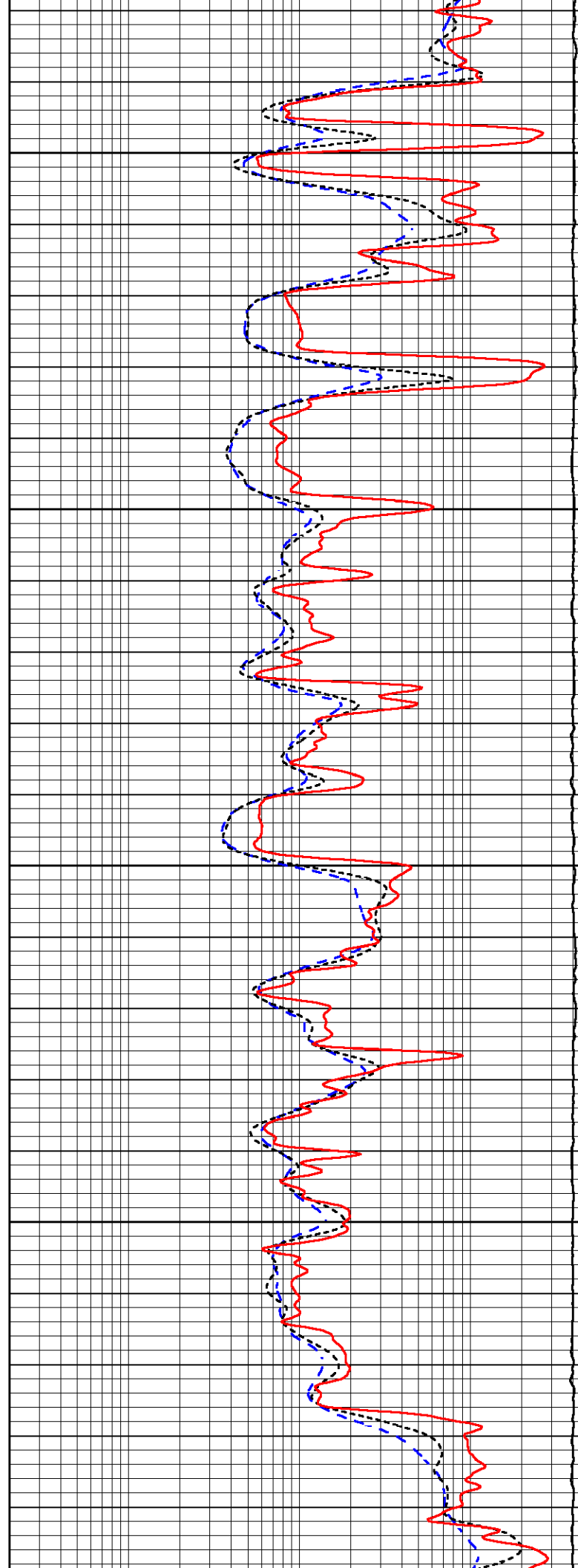


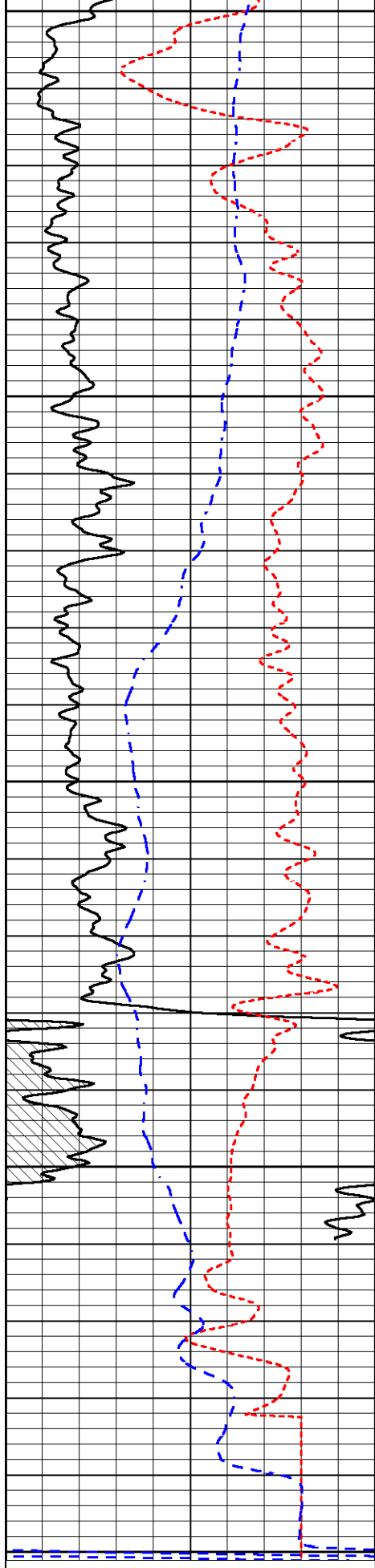
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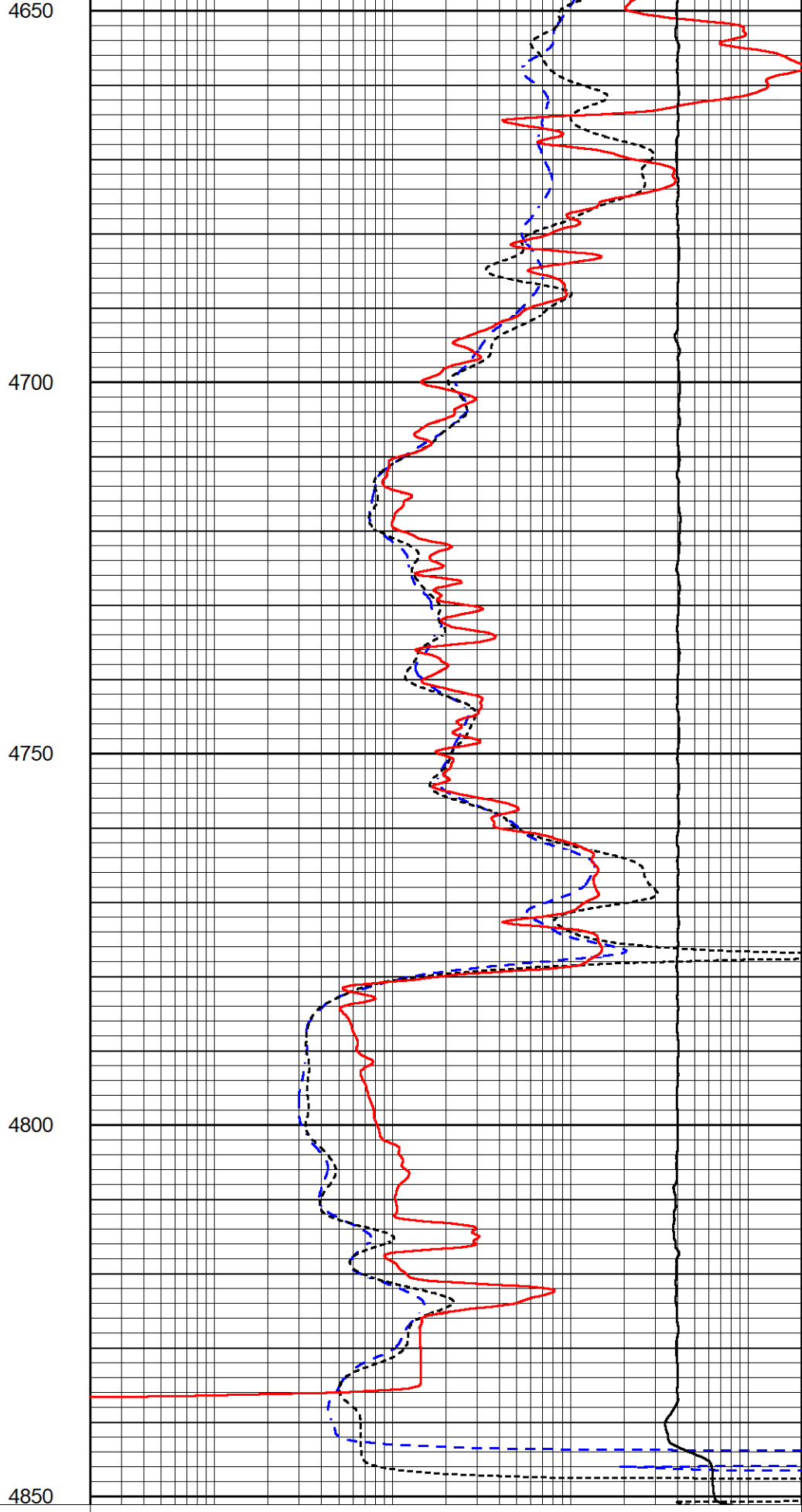
4550

4600





0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



MIDWEST WIRELINE

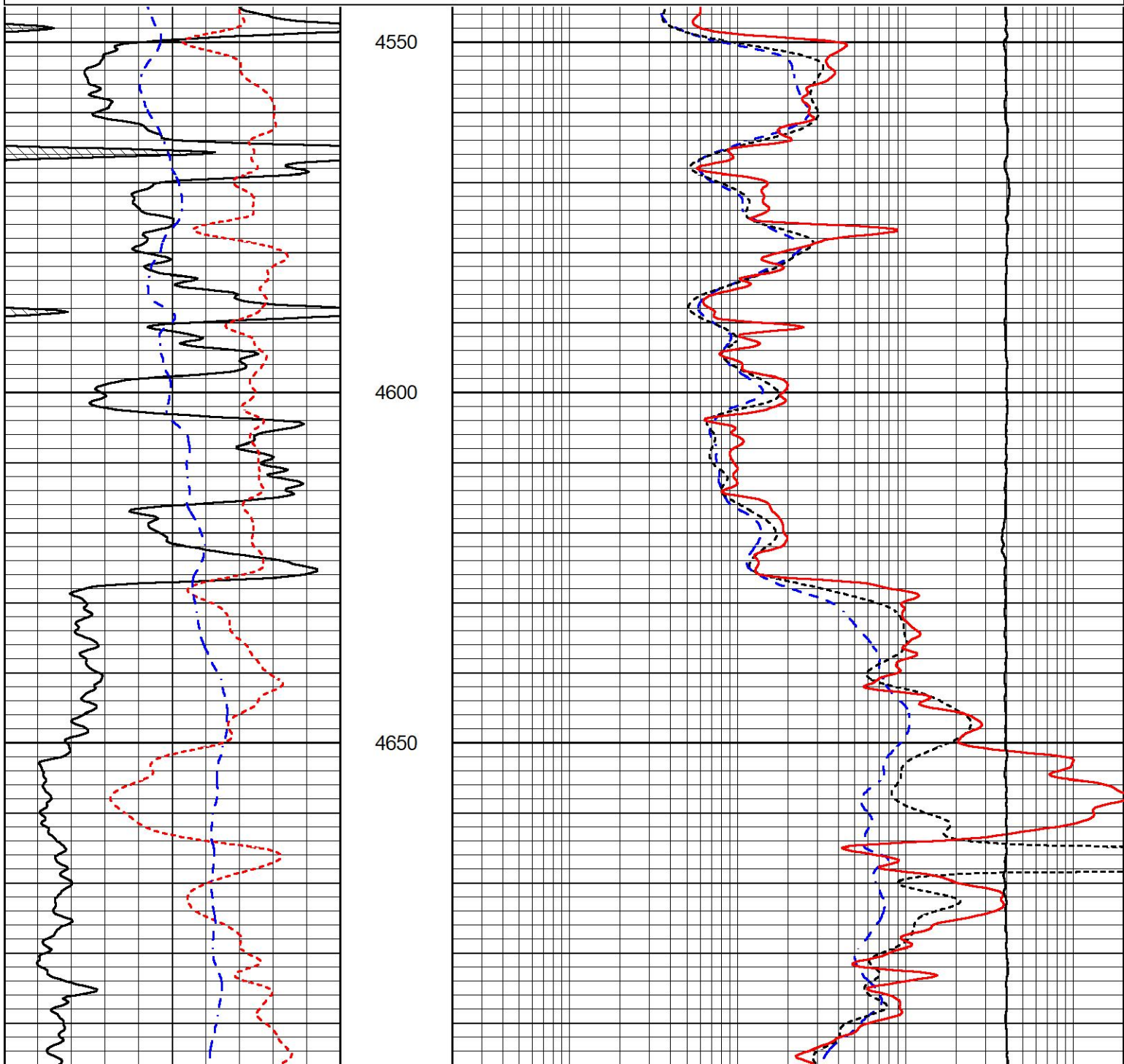
# REPEAT SECTION

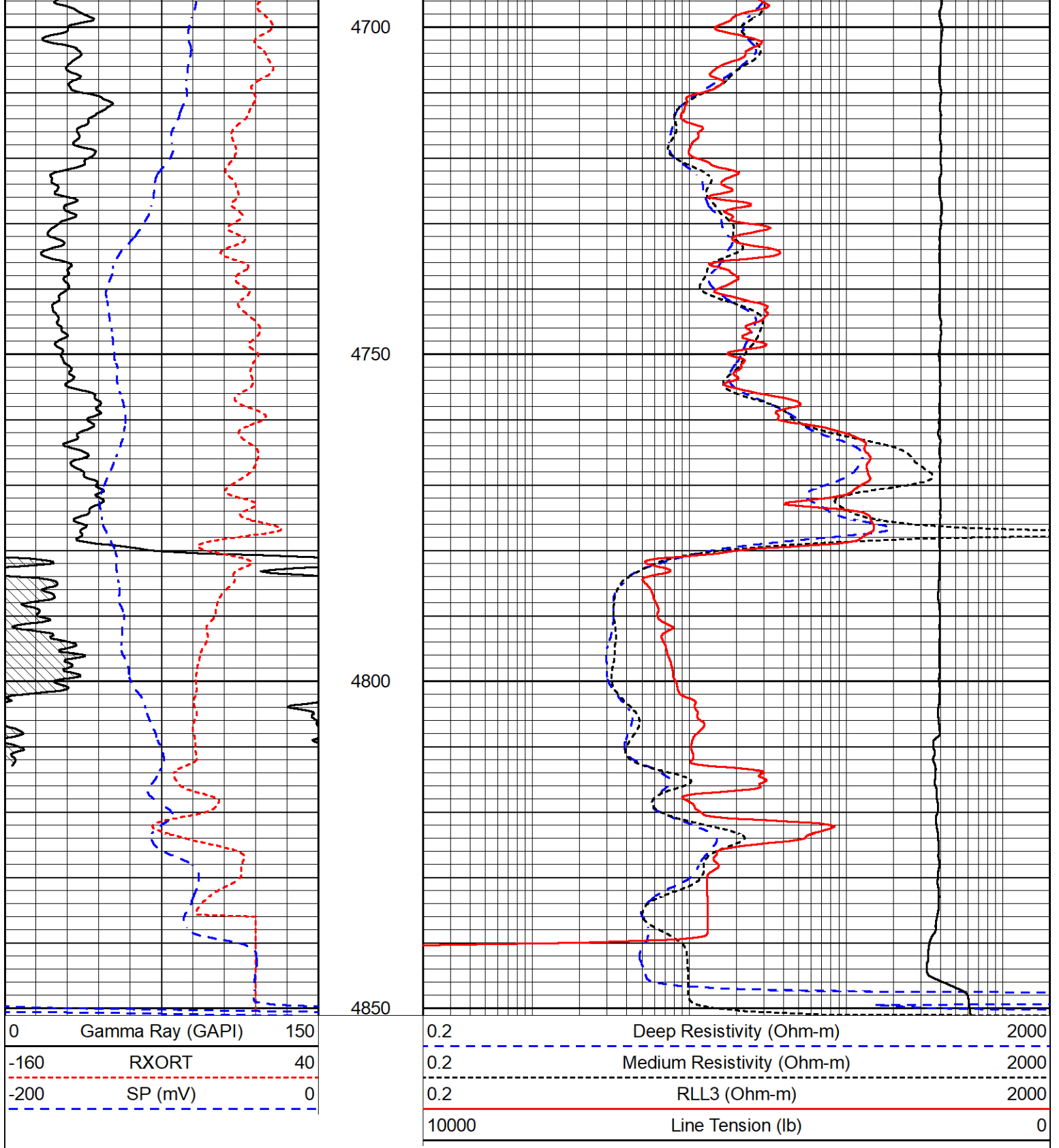
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 Dataset Pathname StkMI/pass2.1  
 Presentation Format \_dil  
 Dataset Creation Sun Oct 02 12:09:26 2022  
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-160	RXORT	40
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0





### Calibration Report

Database File griffin\_cromer #b2.db  
 Dataset Pathname StkMI/pass3.1  
 Dataset Creation Sun Oct 02 12:34:38 2022

### Dual Induction Calibration Report

Serial-Model: 501 HT-M&W  
 Surface Cal Performed: Thu Sep 22 17:20:27 2022

Readings

References

Results

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.455	-36.000
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.305	-33.000

Microlog Calibration Report

Serial-Model: 402-PSIML  
 Performed: Thu Sep 22 17:20:33 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	13000.0000	0.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	19000.0000	-0.2000
Caliper	1.0052	1.0858	5.0000	16.5000	in	120.0000	-117.0000

Compensated Density Calibration Report

Serial-Model: 307-11-M&W  
 Source #: 20762B  
 Master Calibration Performed: Sat Aug 27 10:20:16 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3600.52	4768.22	cps
Aluminum	2.670	g/cc	693.98	3106.20	cps
Spine Angle = 75.41			Density/Spine Ratio = 0.538		
	Size		Reading		
Small Ring	6.00	in	1.16		
Large Ring	18.00	in	1.01		

Compensated Neutron Calibration Report

Serial Number: 207-MW  
 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 Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	106	
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	Griffin Management LLC
Well	Cromer #B2
Field	Moffett North
County	Barber
State	Kansas