



DUAL INDUCTION LOG

Company MURFIN DRILLING CO., INC.
 Well GEYER #6-35
 Field WILDCAT
 County GRAHAM
 State KANSAS

Company MURFIN DRILLING CO., INC.
 Well GEYER #6-35
 Field WILDCAT
 County GRAHAM State KANSAS

Location: API #: 15-065-24172-00-00
 330' FSL & 475' FWL
 SEC 35 TWP 10S RGE 24W
 Permanent Datum GROUND LEVEL Elevation 2351'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services
 CNL/CDL
 MEL/BHCS
 Elevation
 K.B. 2356'
 D.F. N/A
 G.L. 2351'

Date	9/24/2019
Run Number	ONE
Depth Driller	4000'
Depth Logger	4002'
Bottom Logged Interval	4001'
Top Log Interval	0'
Casing Driller	8.625" @ 260'
Casing Logger	260'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	1500
Density / Viscosity	9.2 51
pH / Fluid Loss	10.0 7.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.48 @ 74
Rmt @ Meas. Temp	0.36 @ 74
Rmc @ Meas. Temp	0.65 @ 74
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.31 @ 116
Operating Rig Time	5 HOURS
Max Rec. Temp. F	116
Equipment Number	P-24
Location	HAYS
Recorded By	IAN MABB
Witnessed By	SAMAN SHARIFAIE

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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.
 WAKEENEY, KS.
 6 MILES NORTH TO RD B, 5 MILES WEST TO RD 210,
 1 MILE NORTH TO RD A , 2/3 MILE WEST & NORTH INTO

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

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

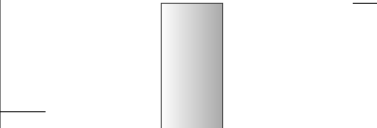
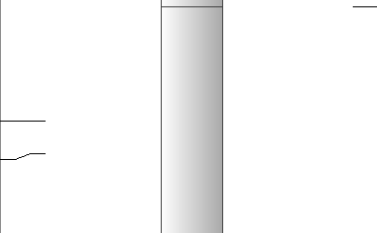
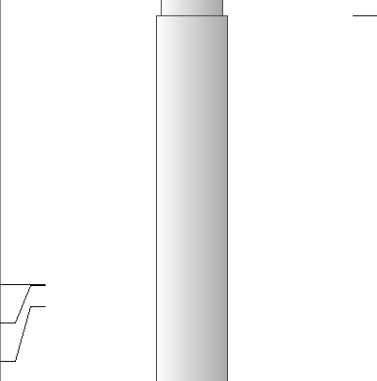
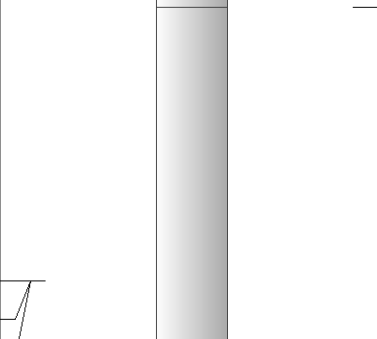
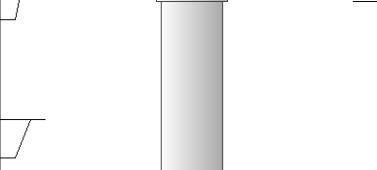
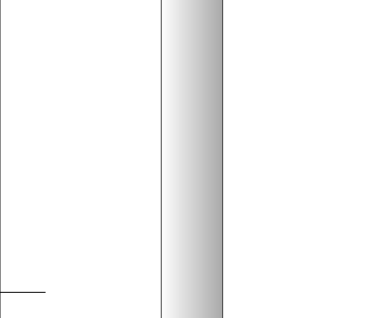
Your Pioneer Energy Services Crew Engineer: IAN MABB Operator: Operator: Operator:	This Log Record Was Witnessed By Primary Witness: SAMAN SHARIFAIE Secondary Witness: Secondary Witness: Secondary Witness:
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Log Variables

DatabaseC:\ProgramData\Warrior\Data\murfin_geyer_6_35.db
Dataset field/well/stackmel/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	116	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	6	10	220	0	Off	4002

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (233-M&W)	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 (817-947)	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					
CILD	8.00		DIL-PSI HIGH TEMP (1039)	18.50	3.50	220.00

CILM 4.70

SP 0.20

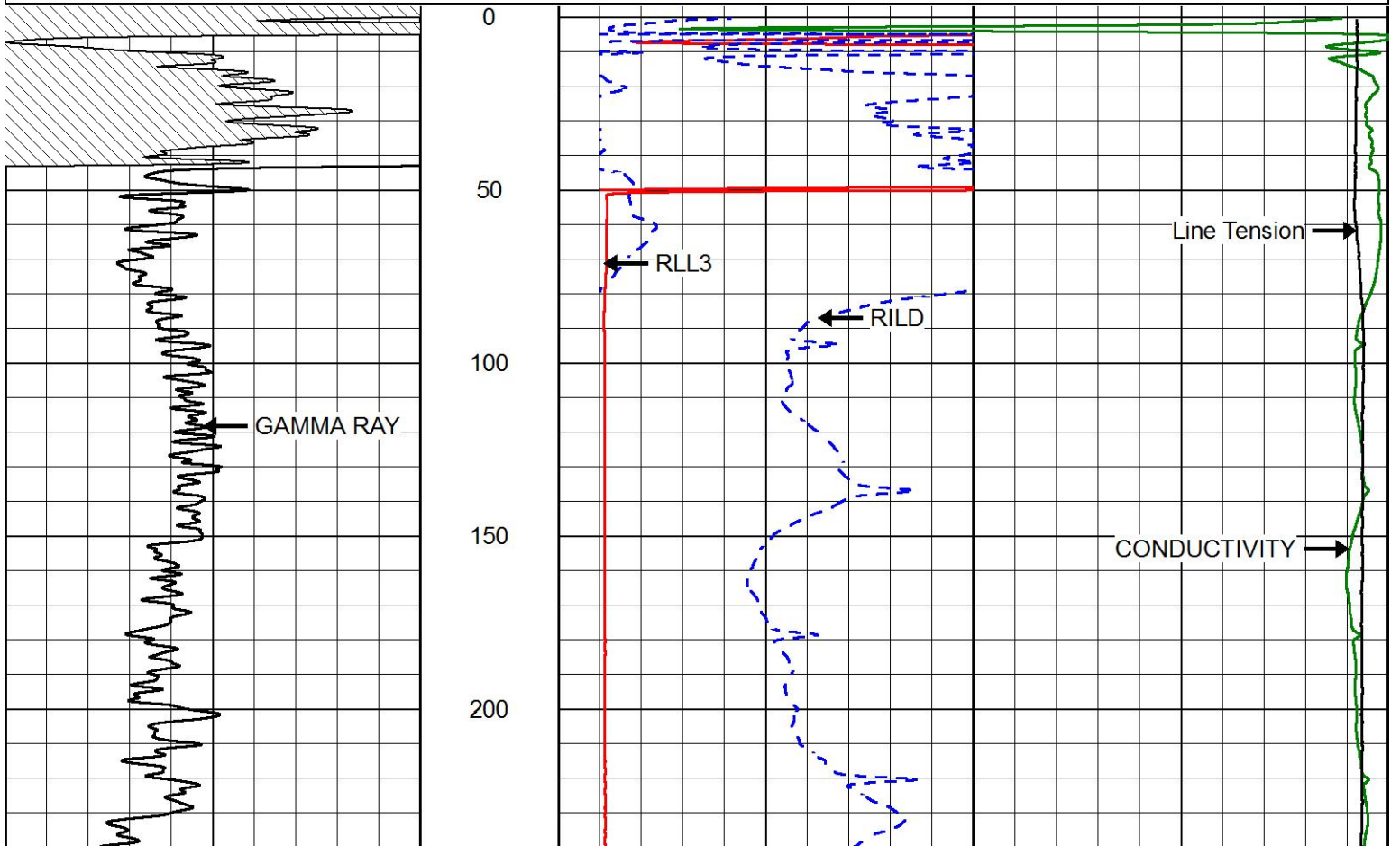
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 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

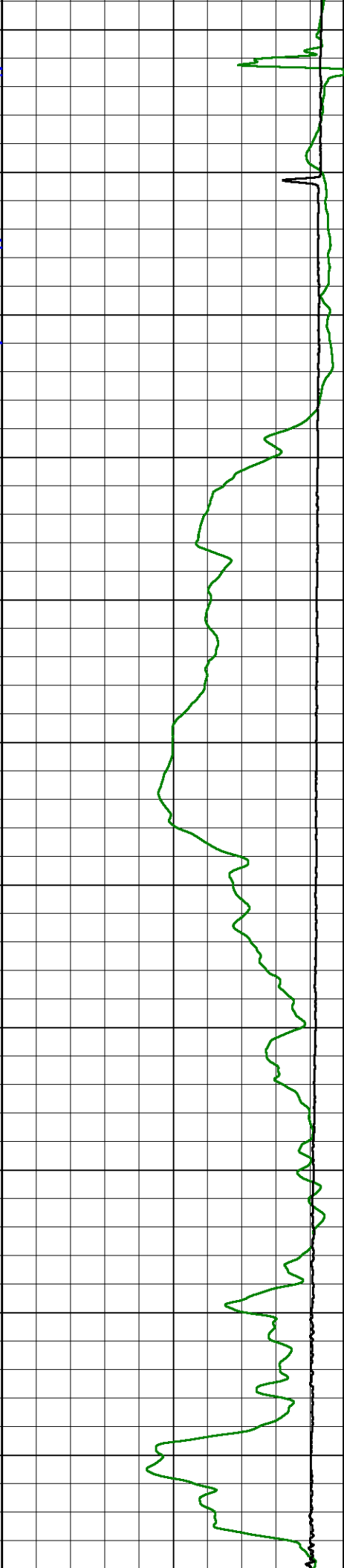
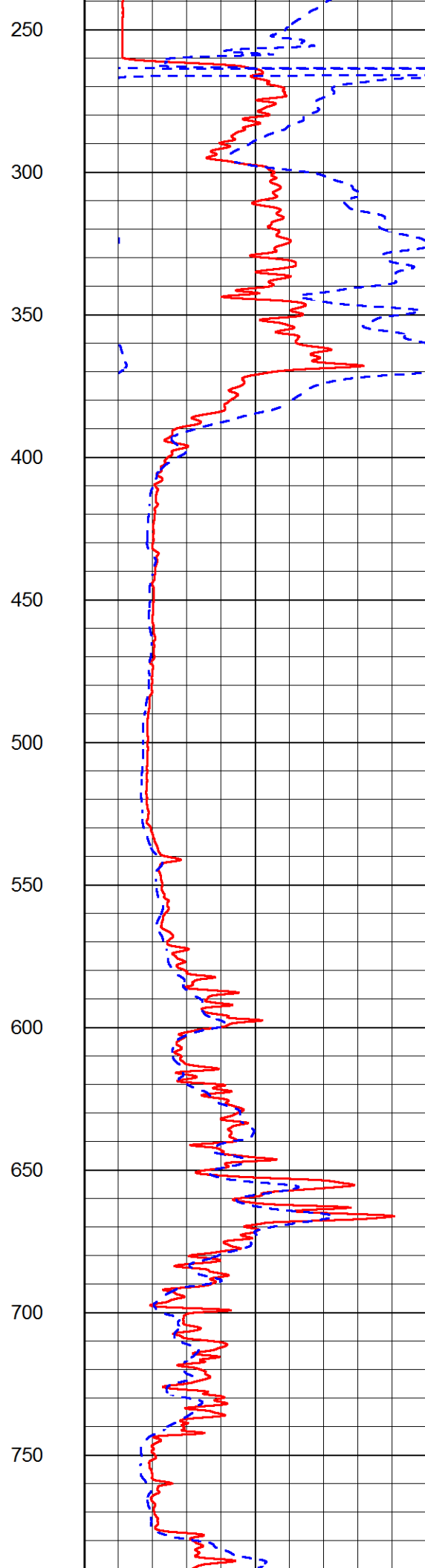
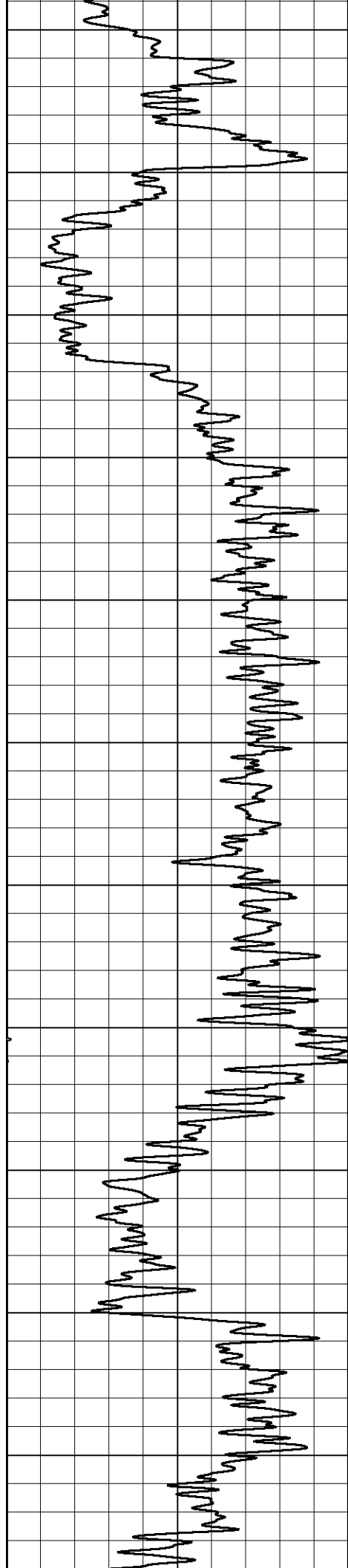


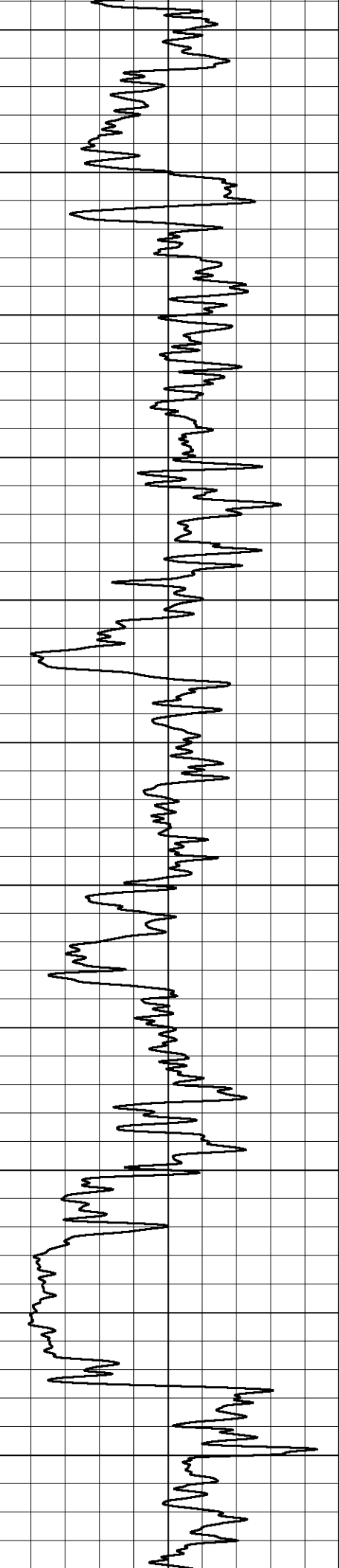
MAIN PASS

Database File murfin_geyer_6_35.db
 Dataset Pathname stackmel/pass4.1
 Presentation Format _dil2in
 Dataset Creation Tue Sep 24 08:14:32 2019
 Charted by Depth in Feet scaled 1:600

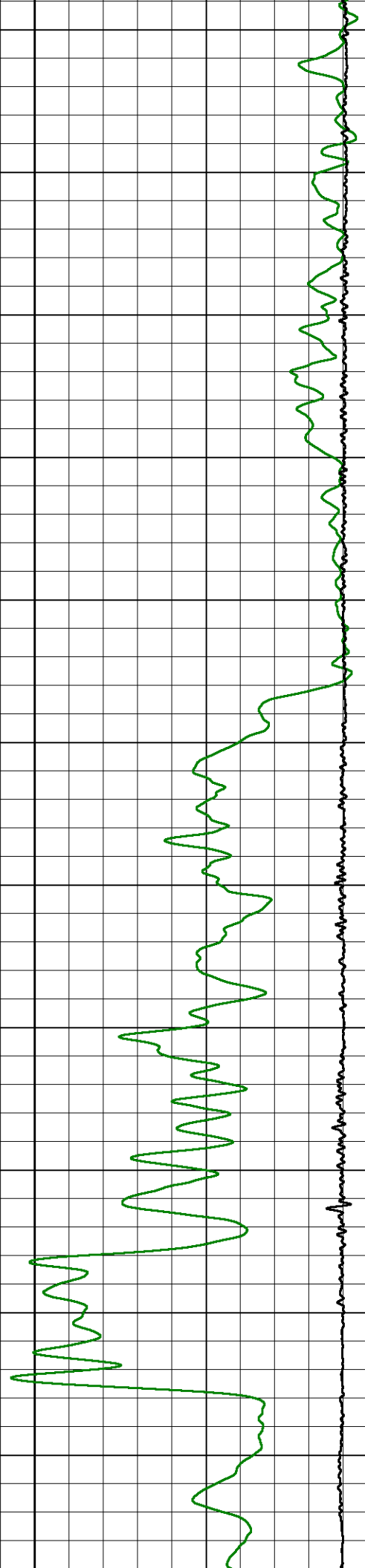
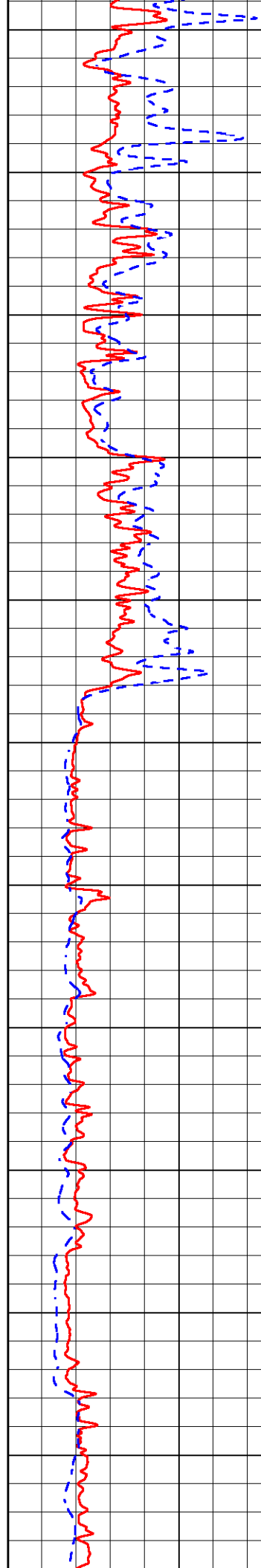
GAMMA RAY (GAPI)	0	150	1000	CONDUCTIVITY (mmho/m)	0
			15000	Line Tension (lb)	0
			0	RLL3 (Ohm-m)	50
			50	RLL3 (Ohm-m)	500
			0	RILD (Ohm-m)	50
			50	Deep Resistivity (Ohm-m)	500

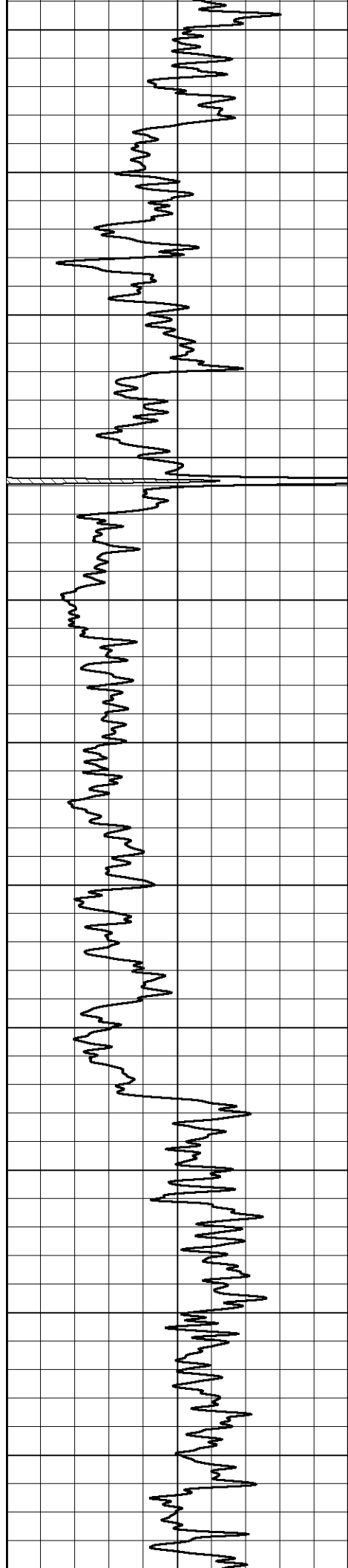




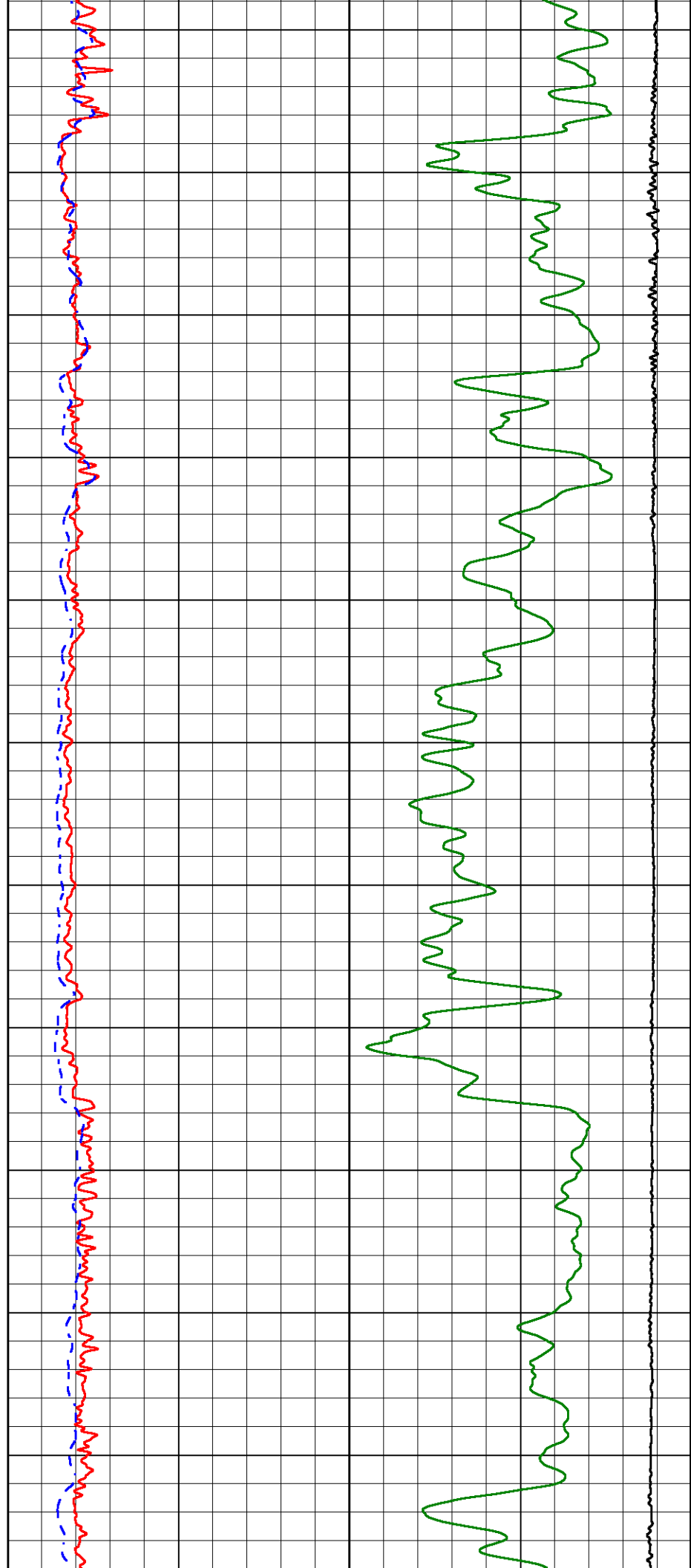


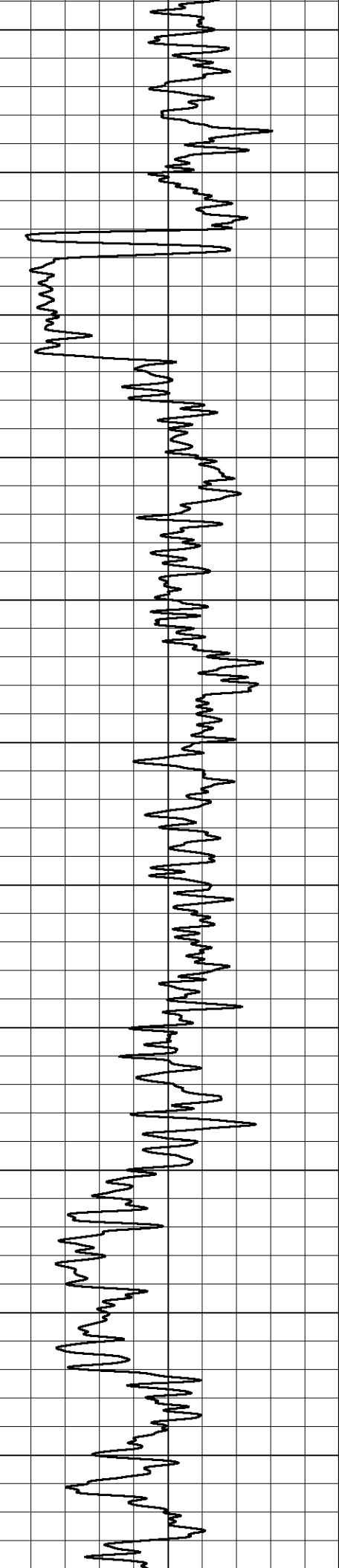
800
850
900
950
1000
1050
1100
1150
1200
1250
1300



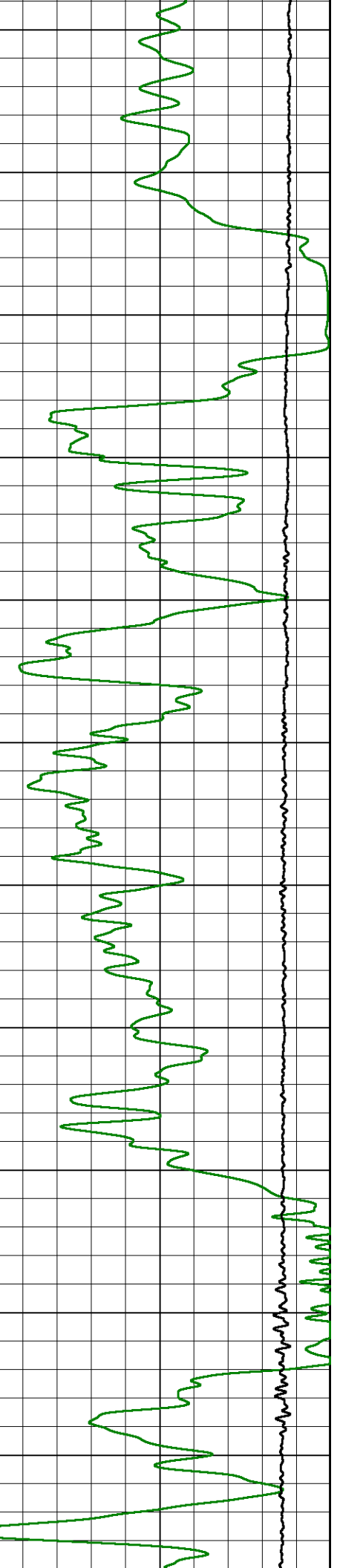
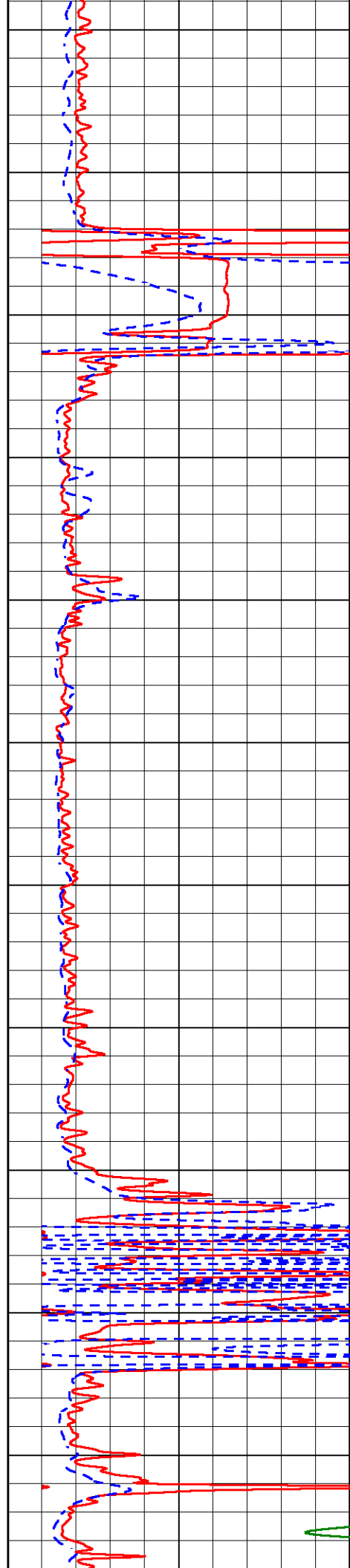


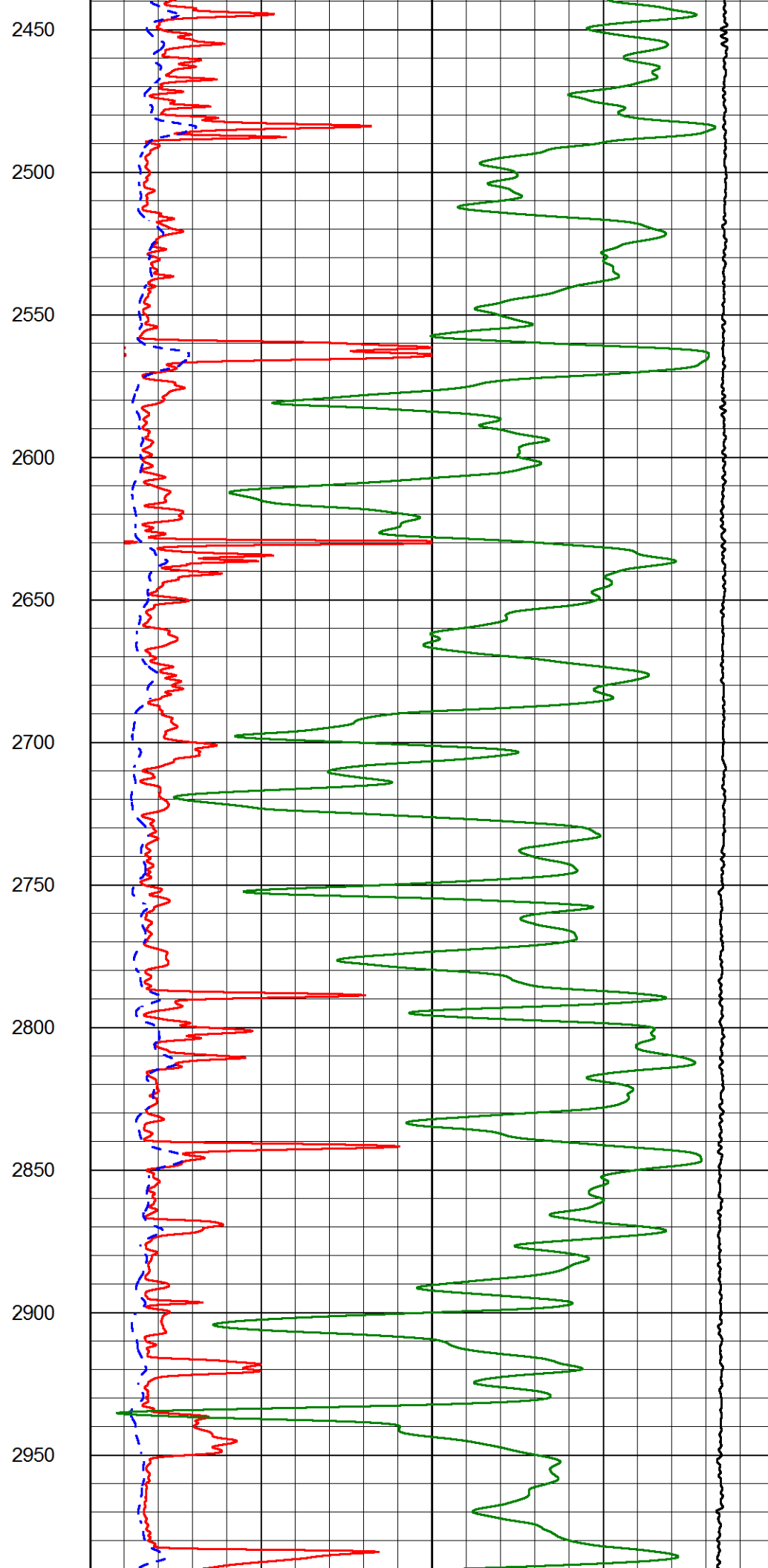
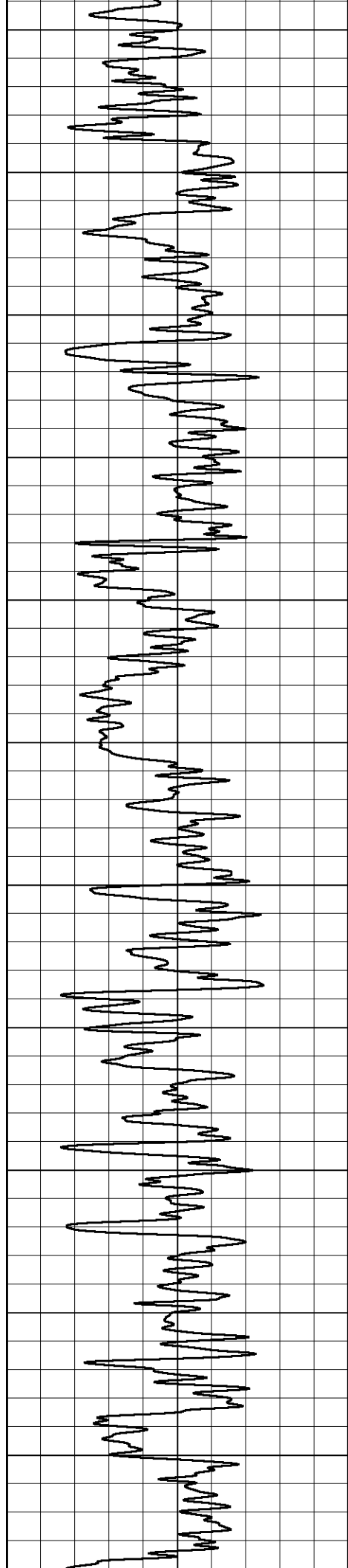
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1400
1450
1500
1550
1600
1650
1700
1750
1800
1850

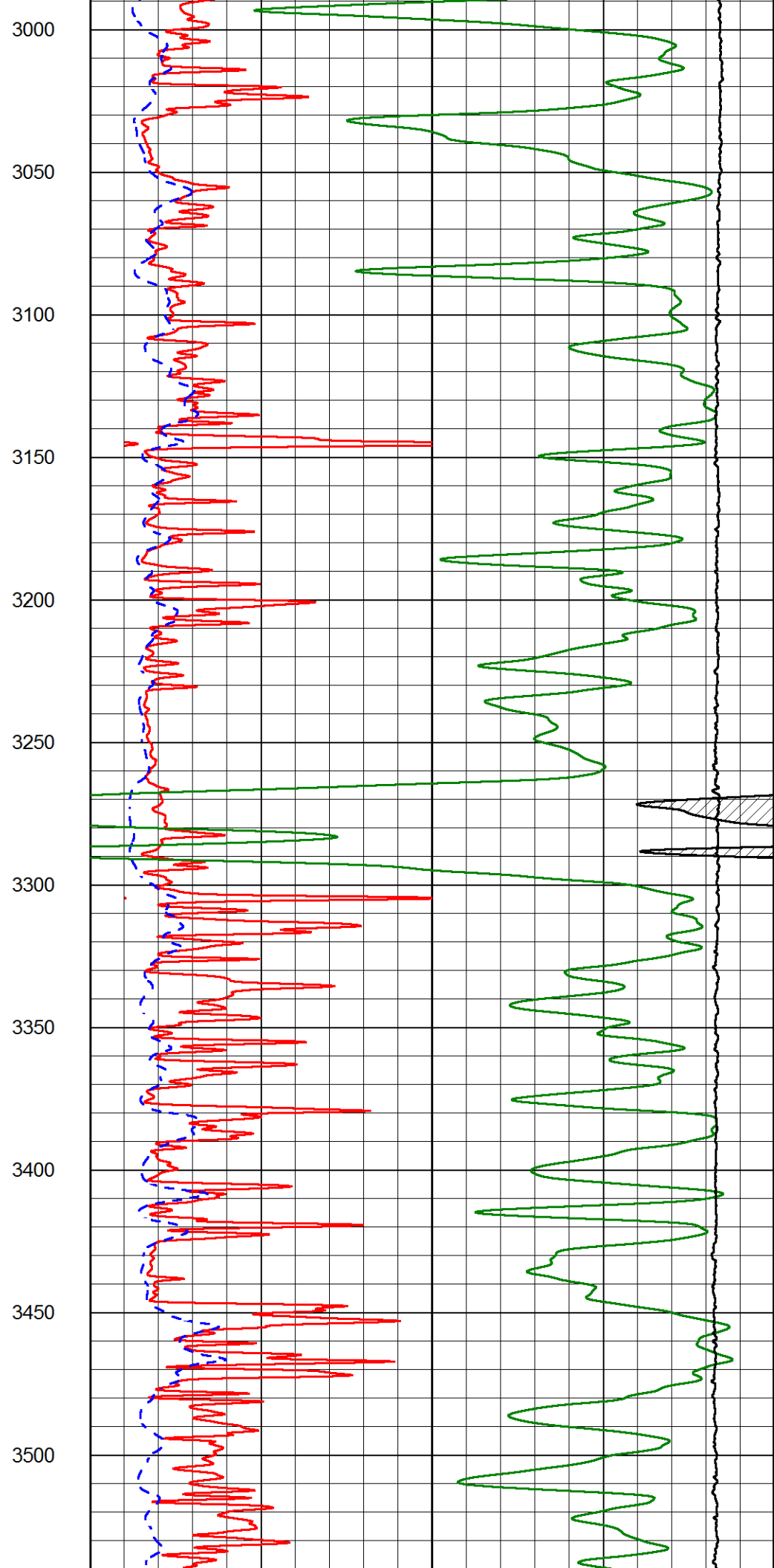
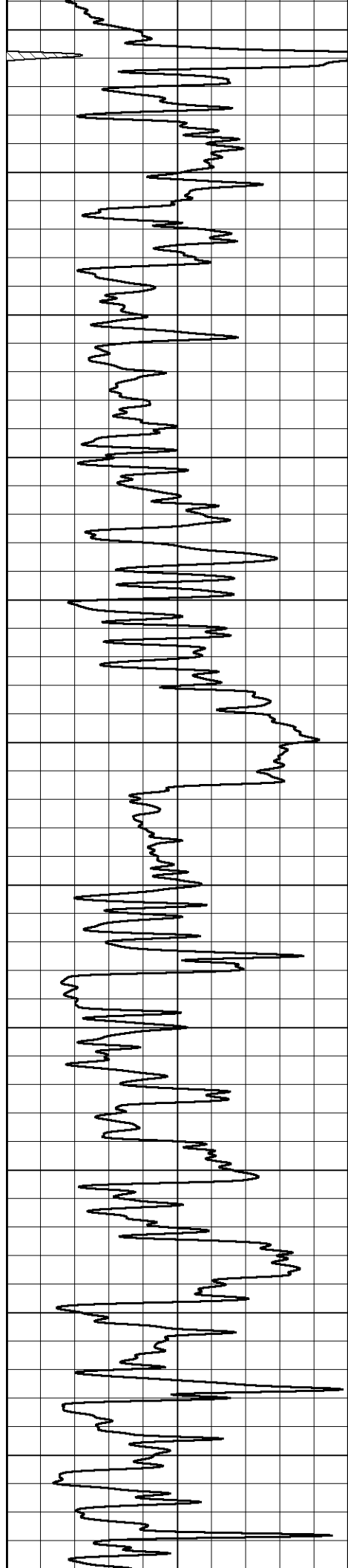


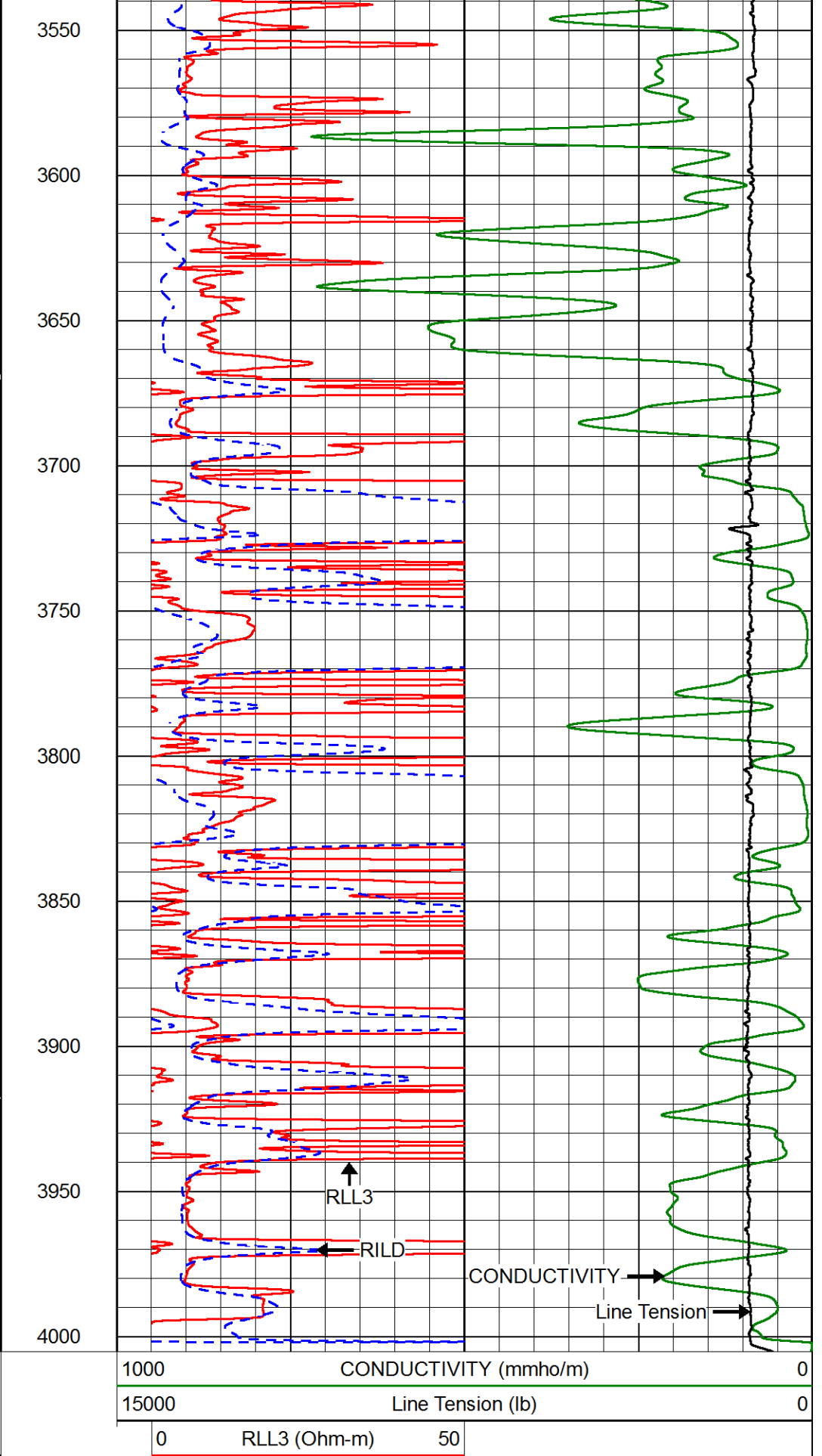
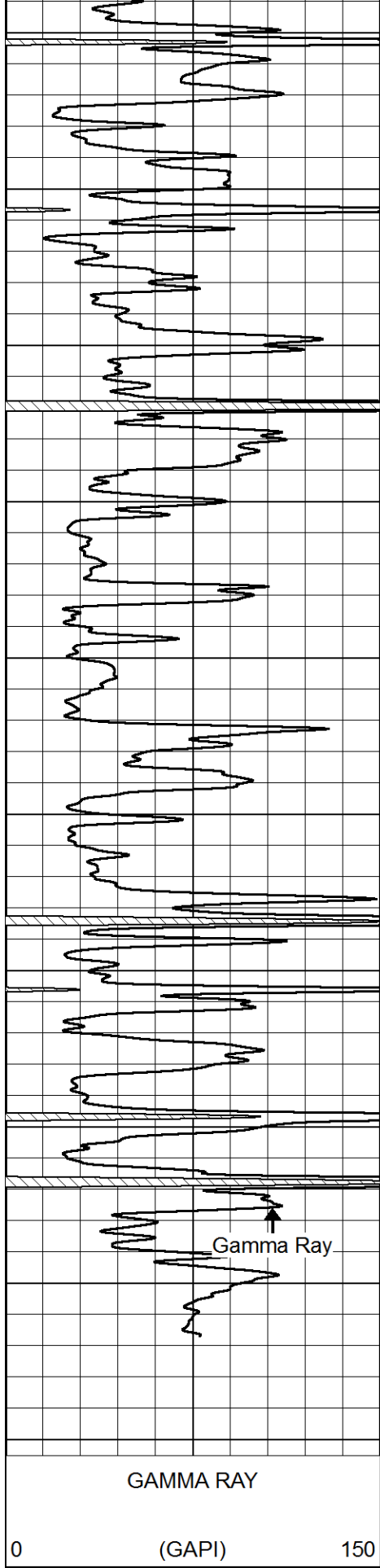


1900
1950
2000
2050
2100
2150
2200
2250
2300
2350
2400









GAMMA RAY
(GAPI) 0 150

1000 CONDUCTIVITY (mmho/m) 0
15000 Line Tension (lb) 0

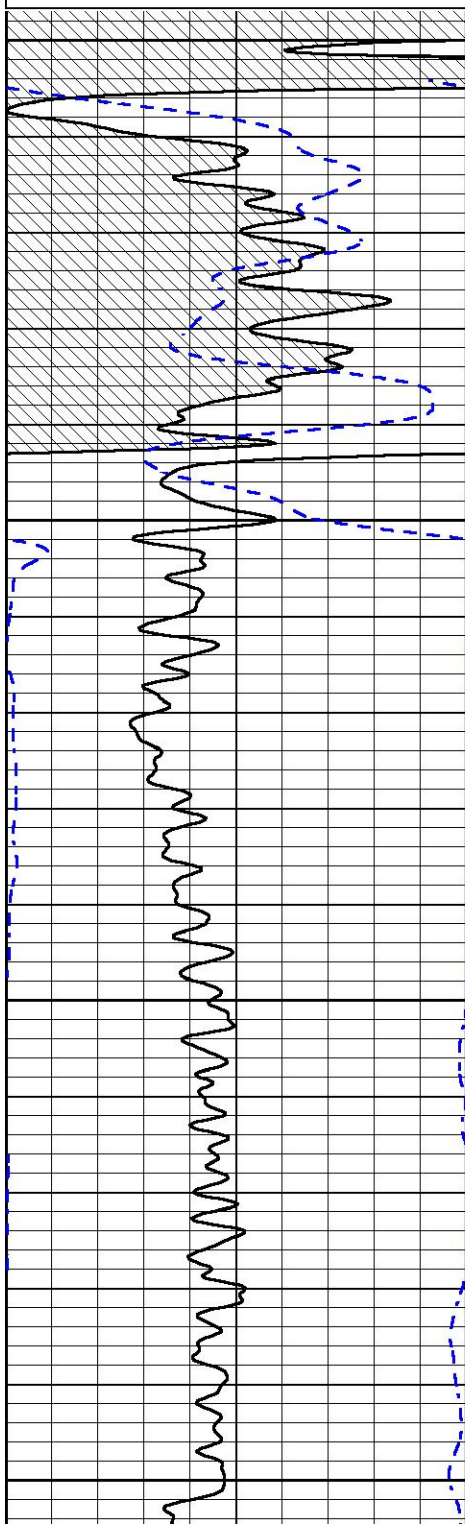
0	RLL3 (Ohm-m)	50
50	RLL3 (Ohm-m)	500
0	RILD (Ohm-m)	50
50	Deep Resistivity (Ohm-m)	500

MAIN PASS

Database File murfin_geyer_6_35.db
Dataset Pathname stackmel/pass4.1
Presentation Format _dil
Dataset Creation Tue Sep 24 08:14:32 2019
Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-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

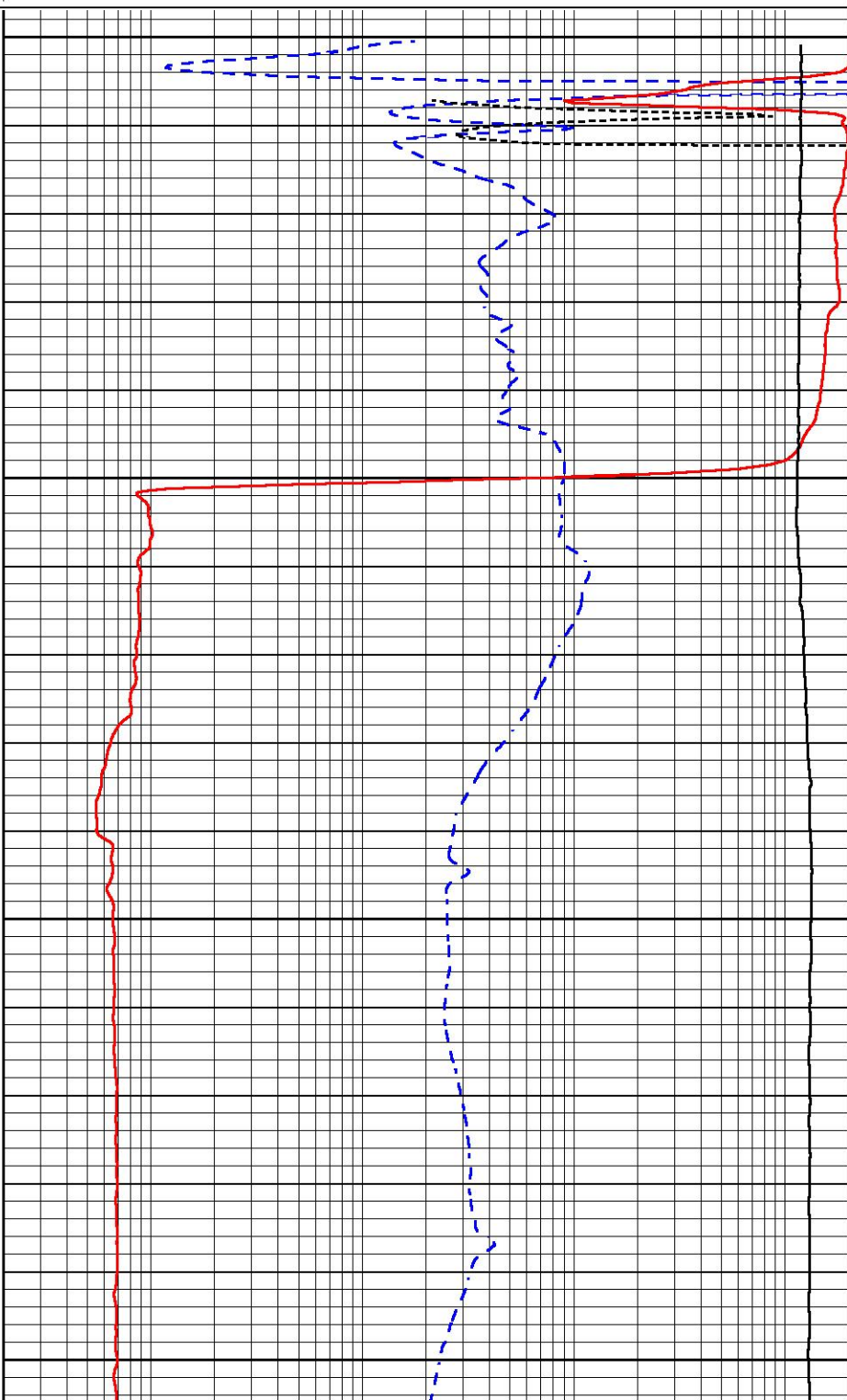


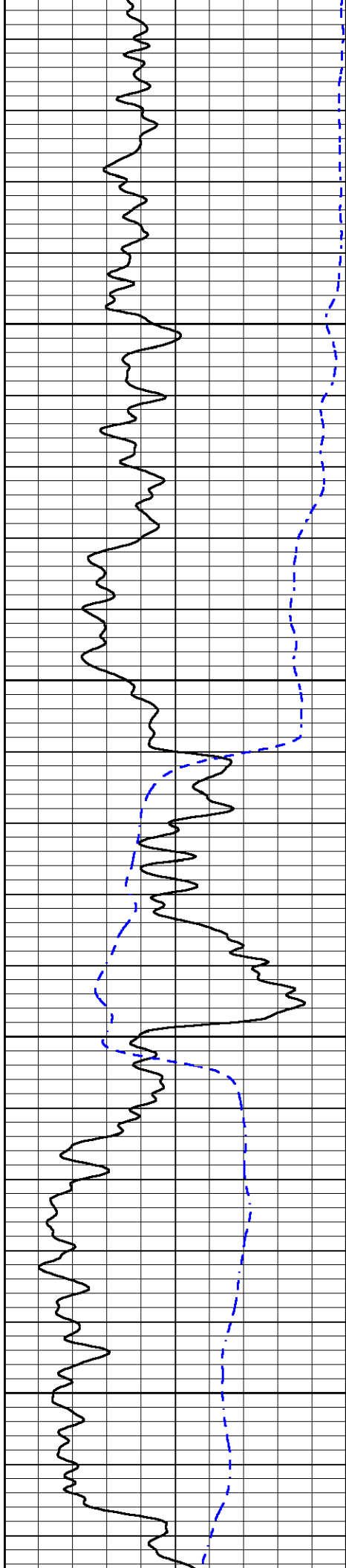
0

50

100

150



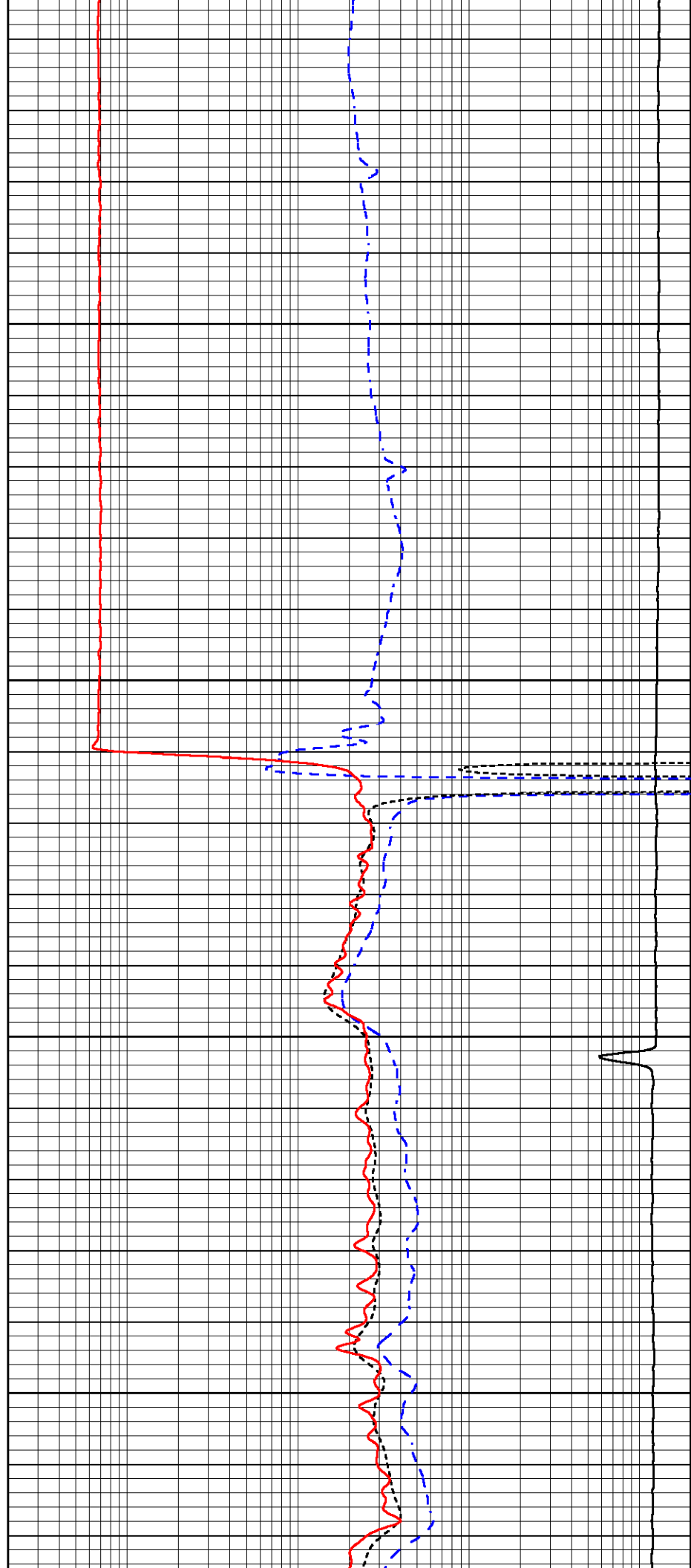


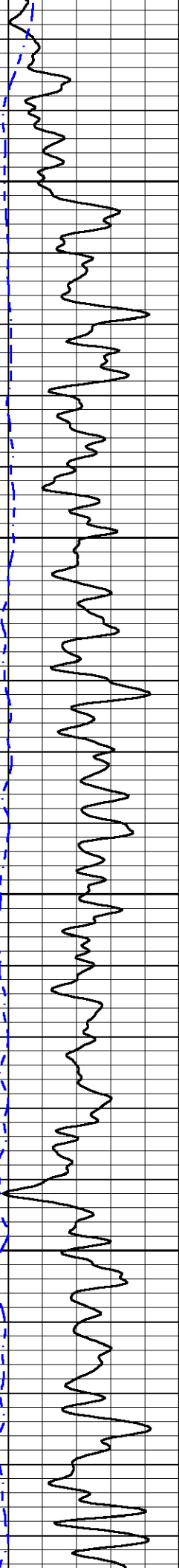
200

250

300

350



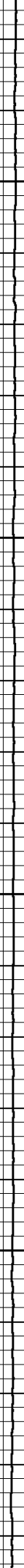
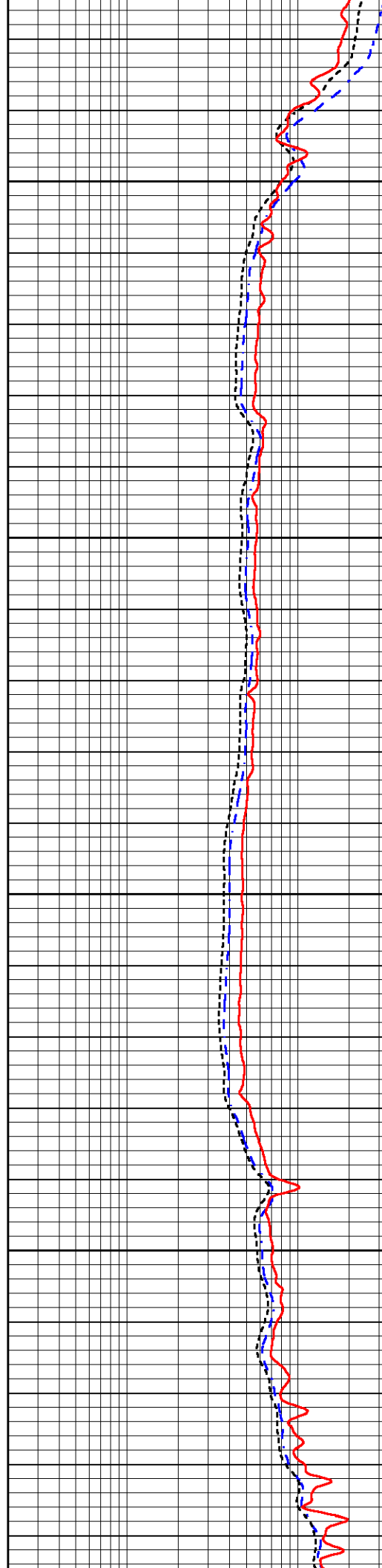


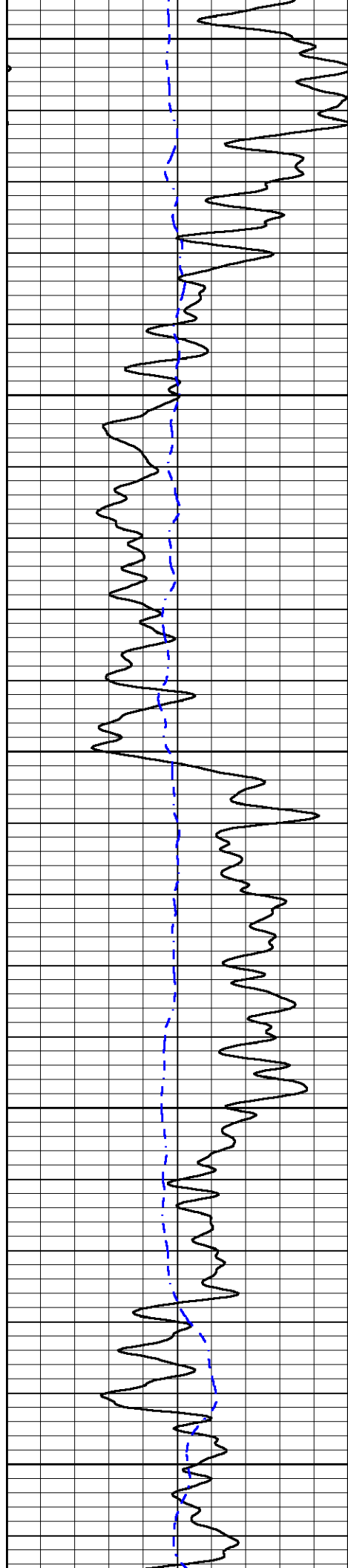
400

450

500

550





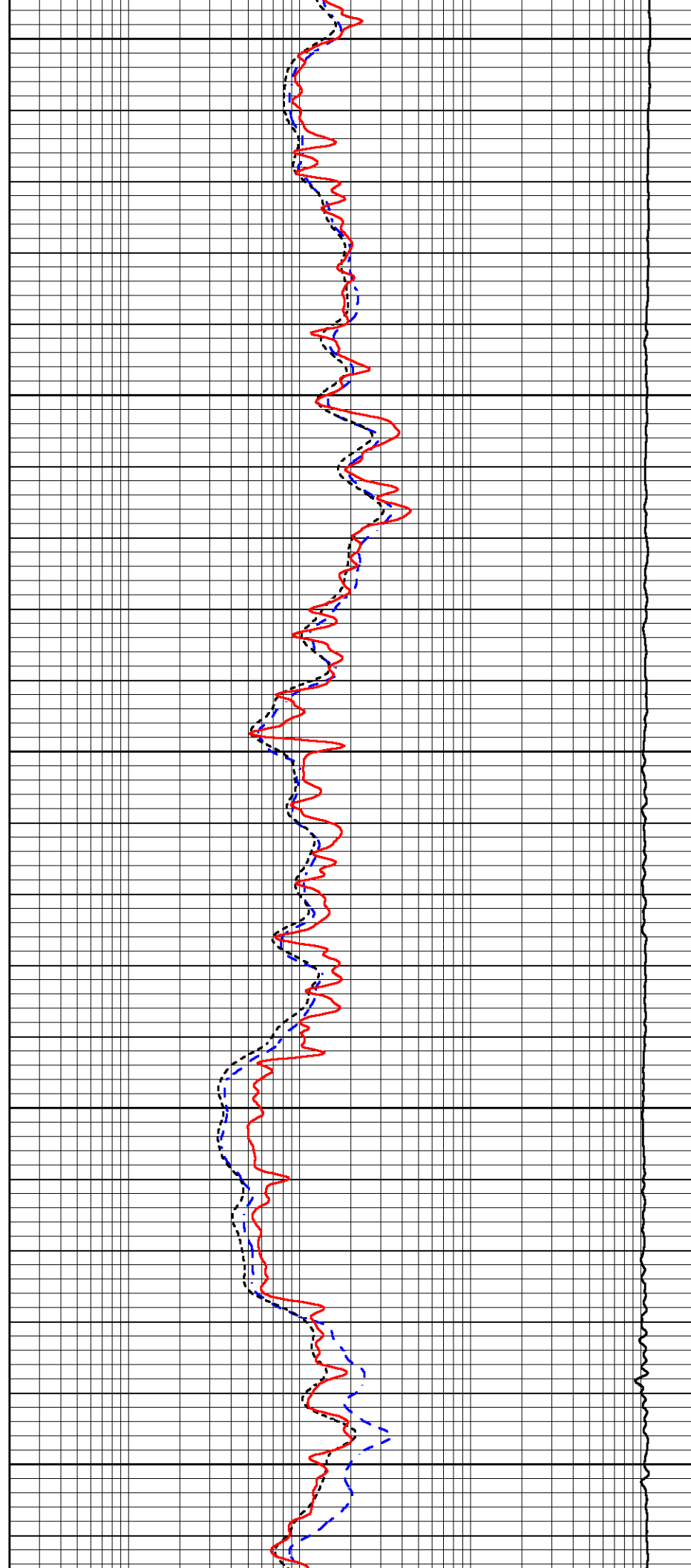
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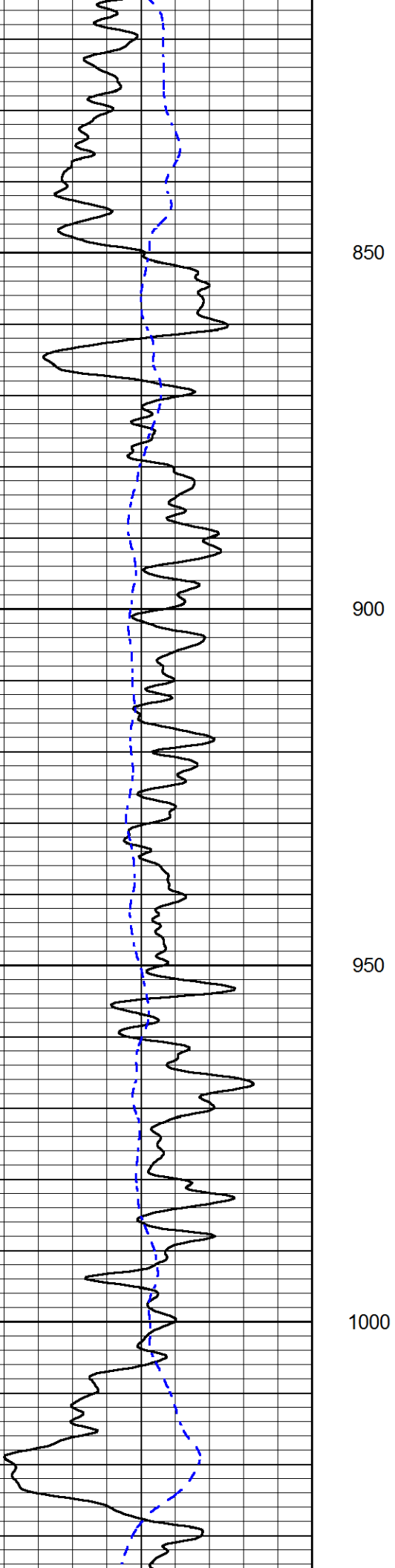
650

700

750

800



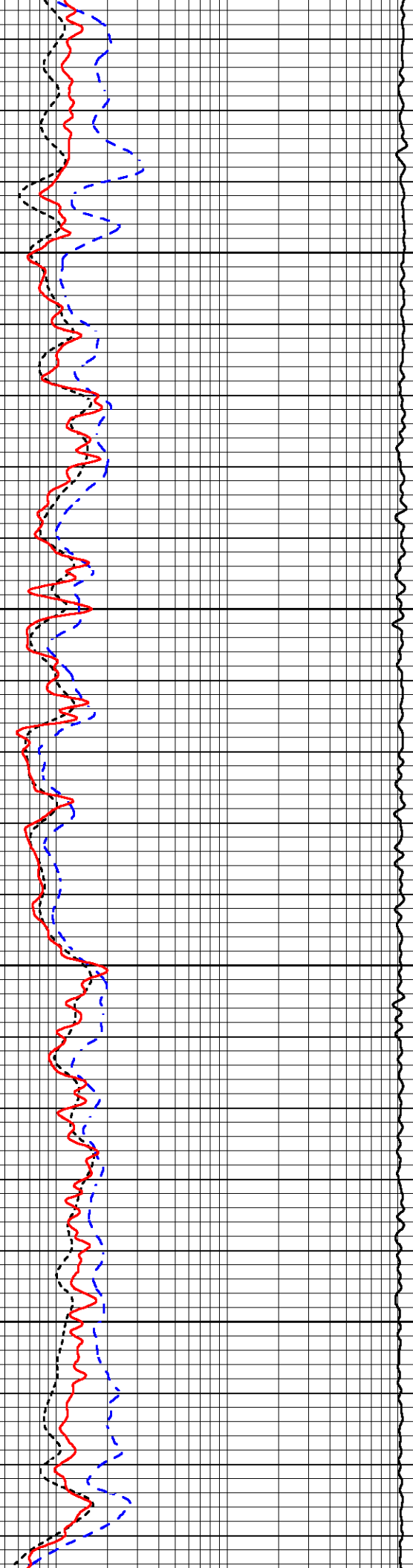


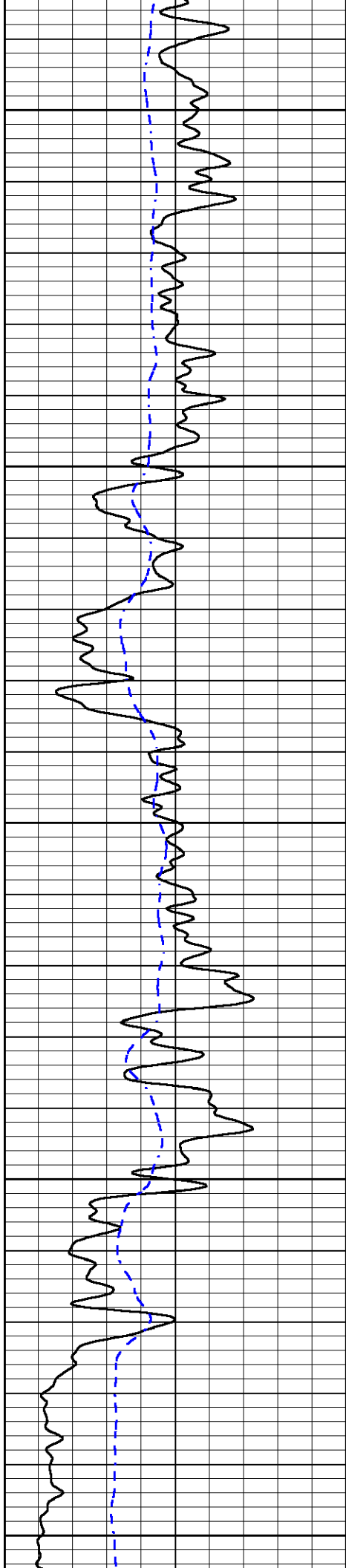
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900

950

1000





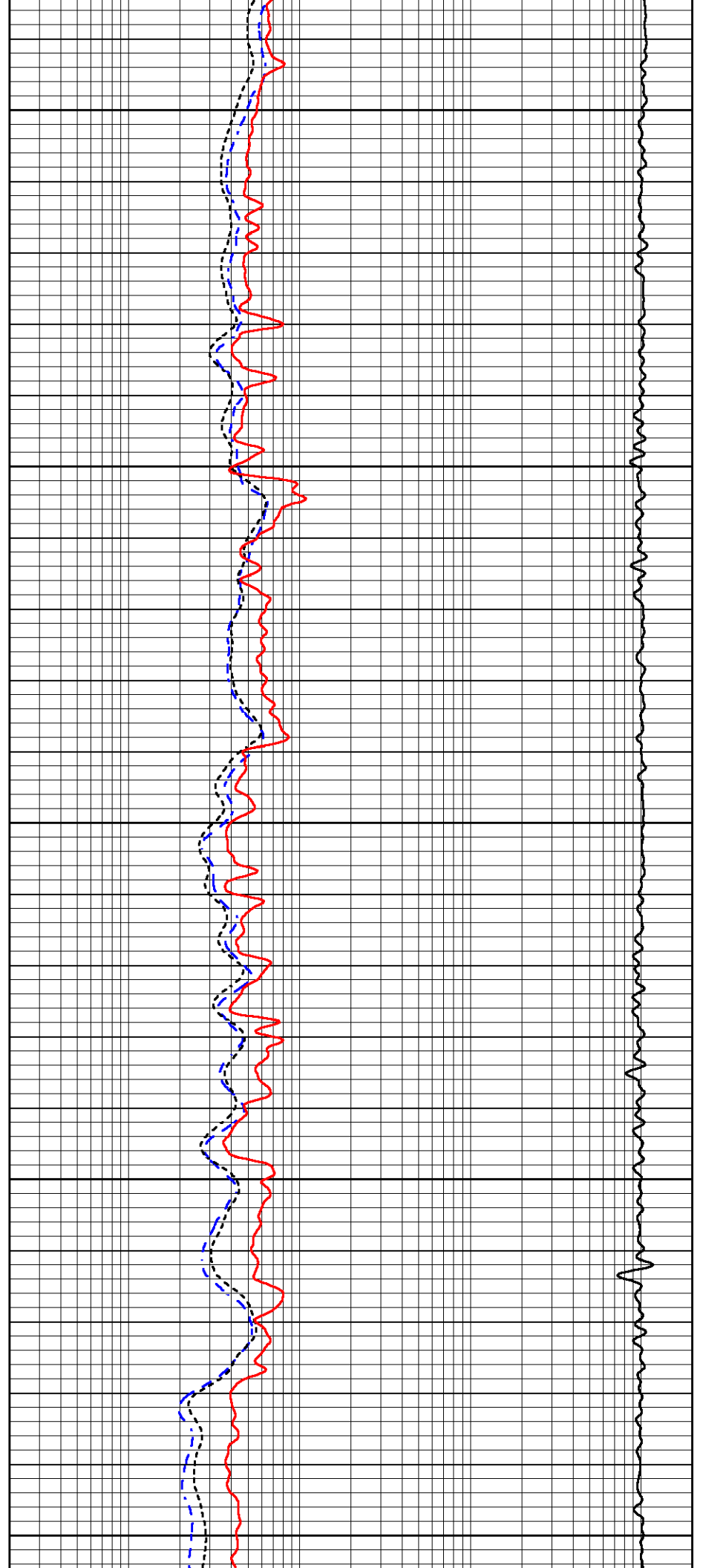
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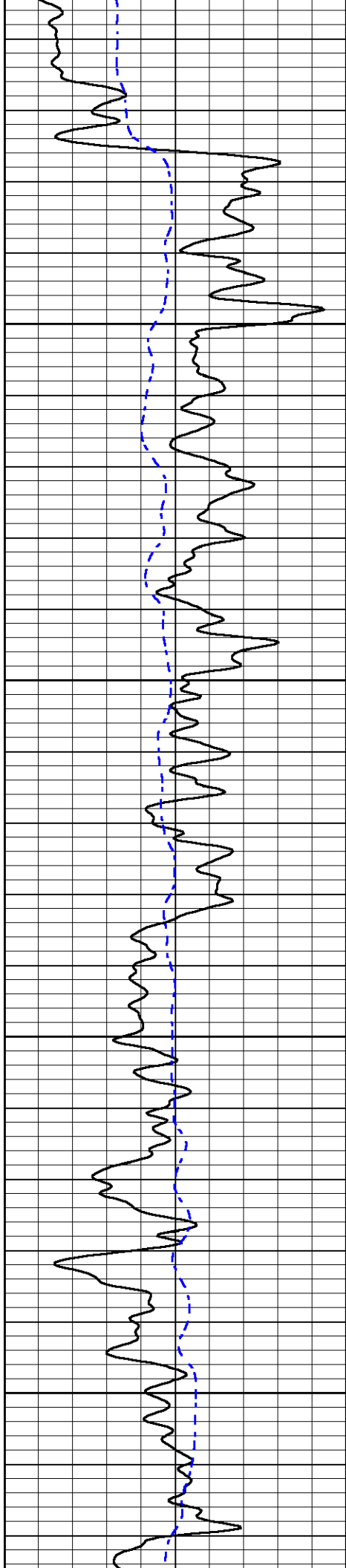
1100

1150

1200

1250



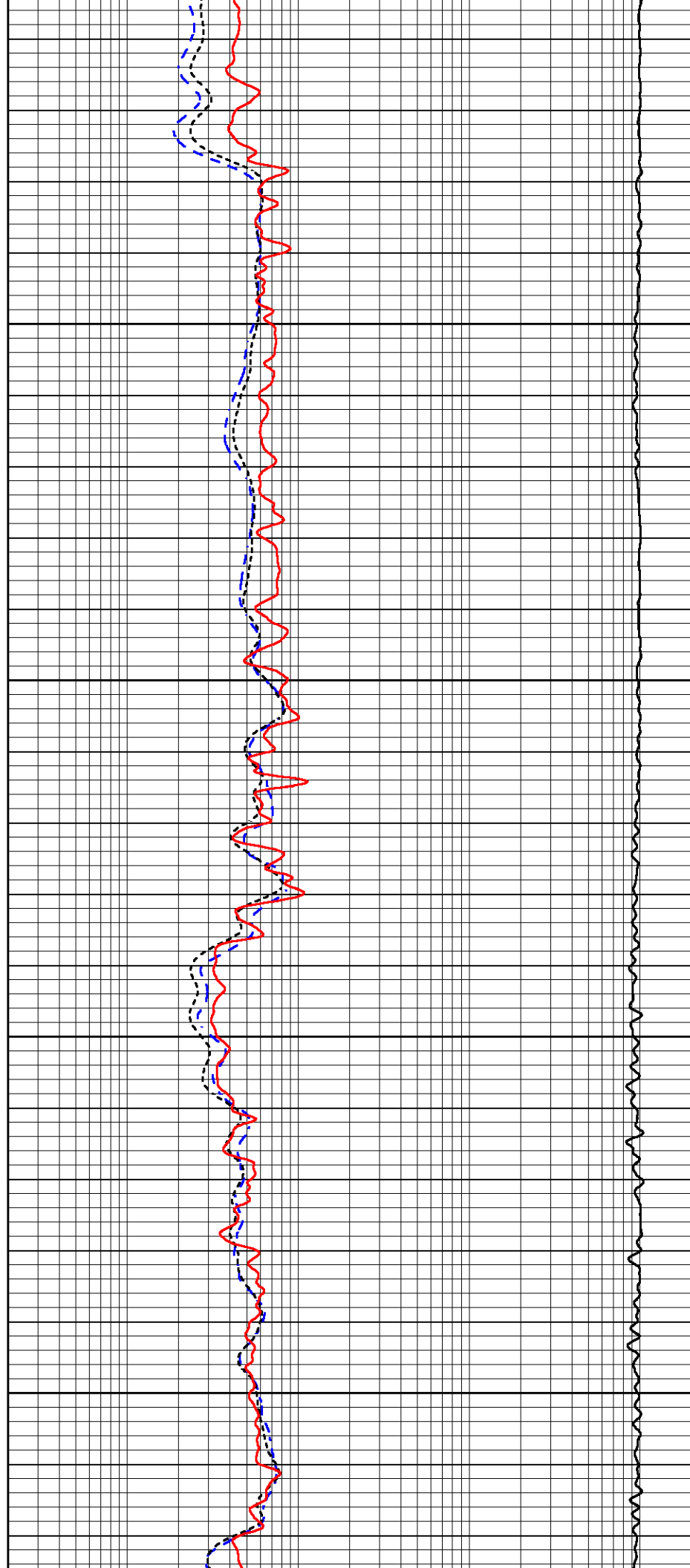


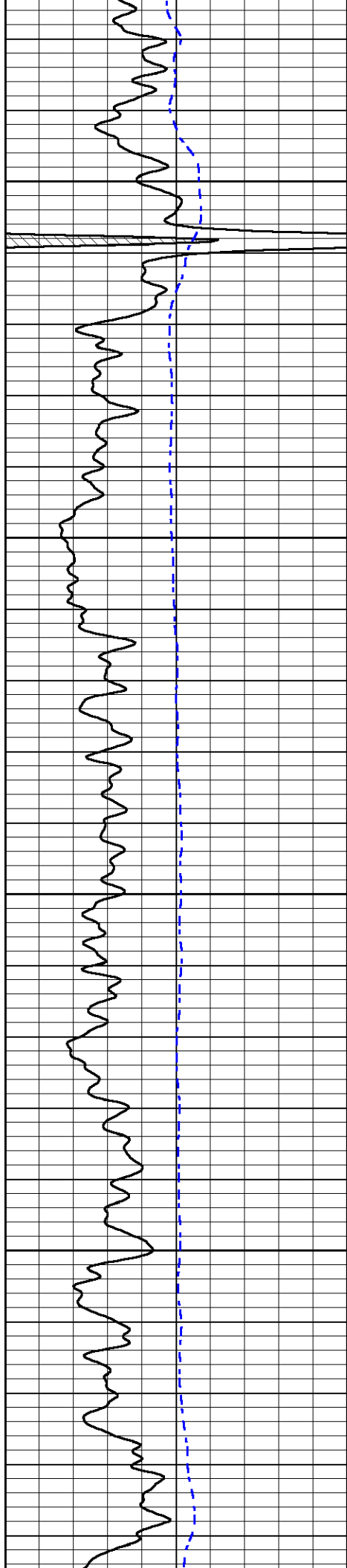
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1350

1400

1450



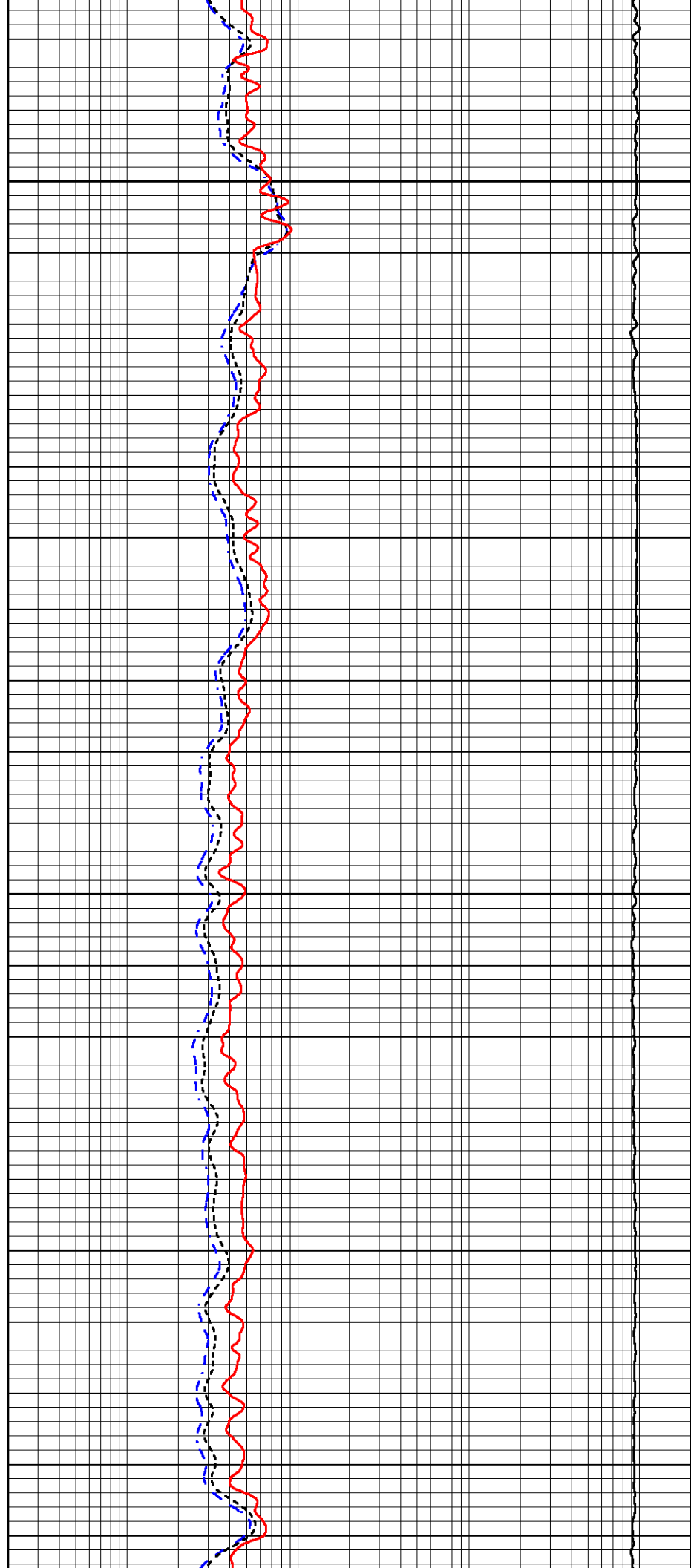


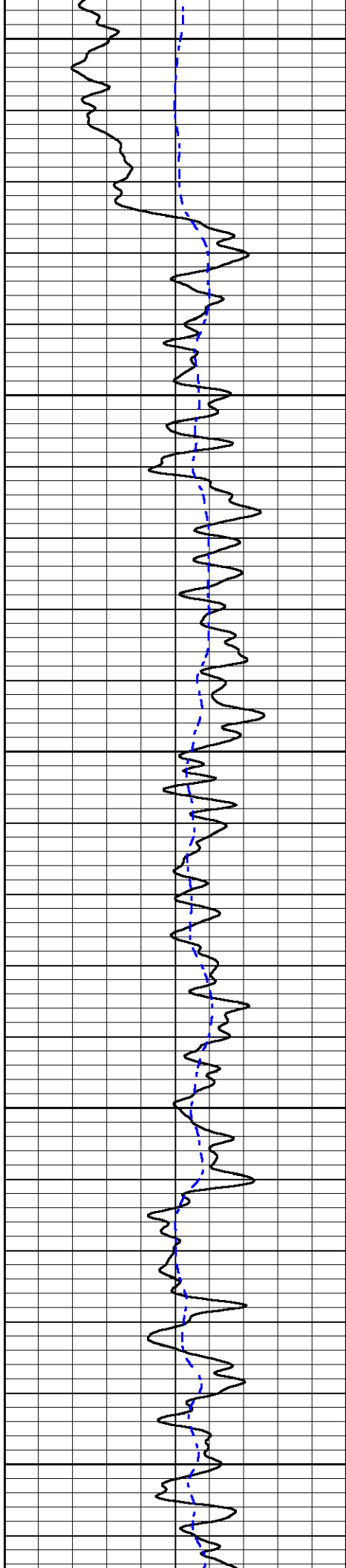
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1550

1600

1650





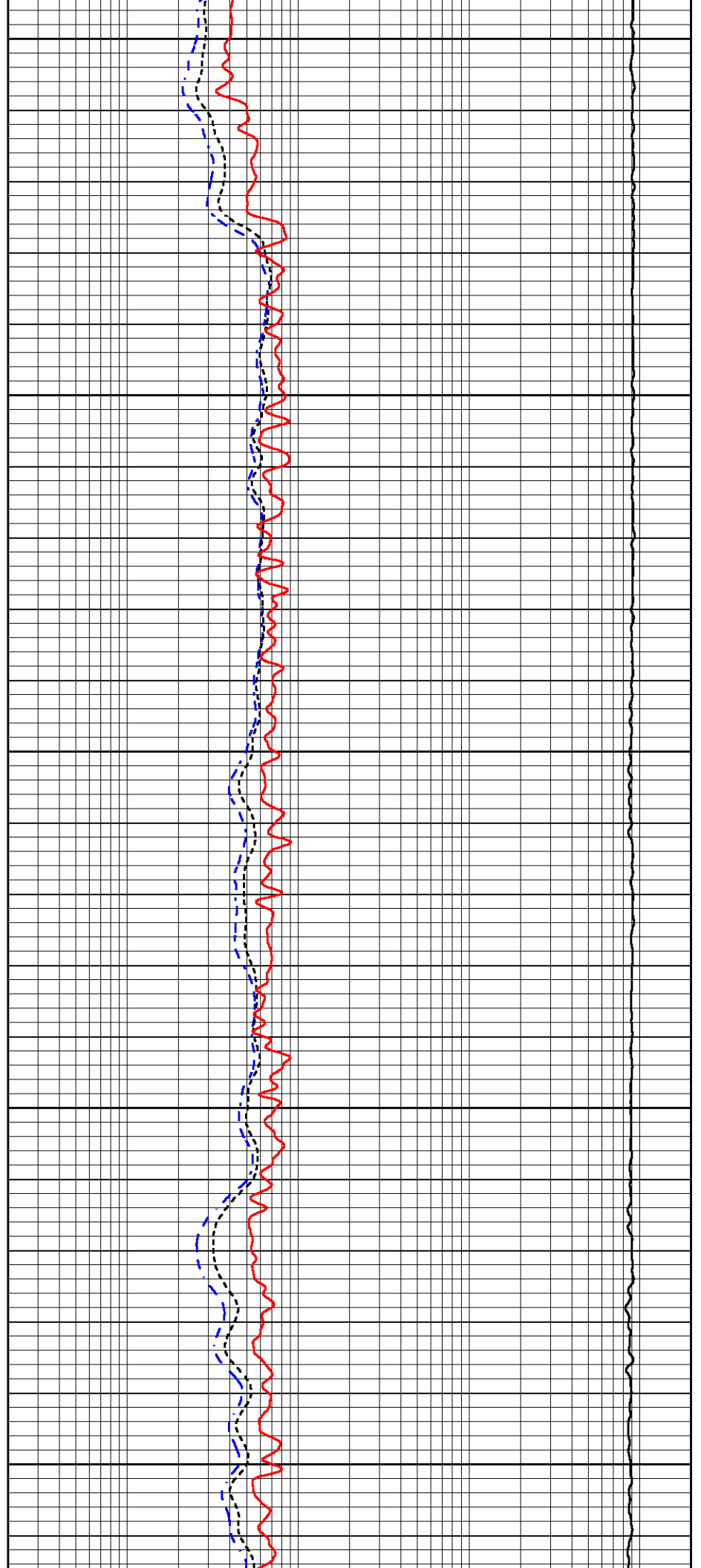
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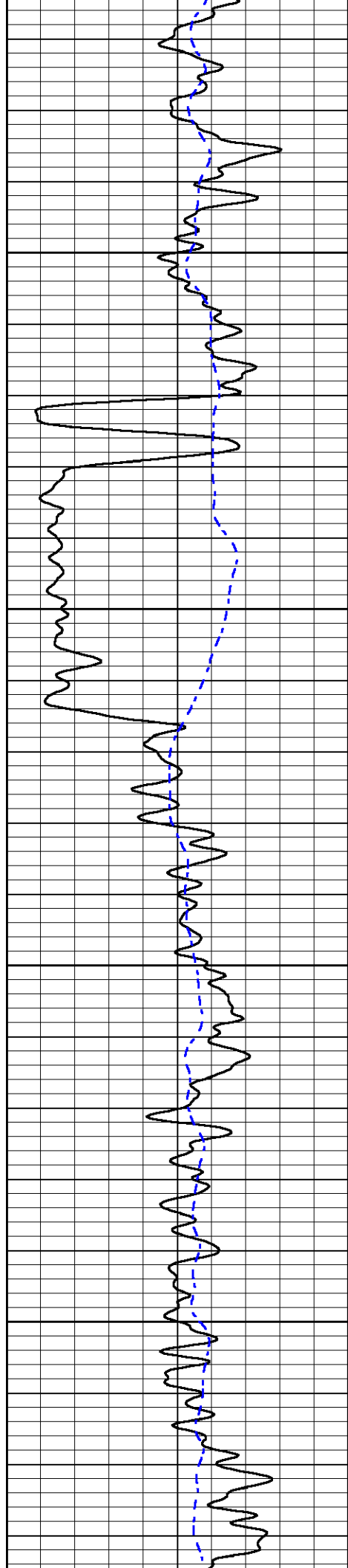
1750

1800

1850

1900



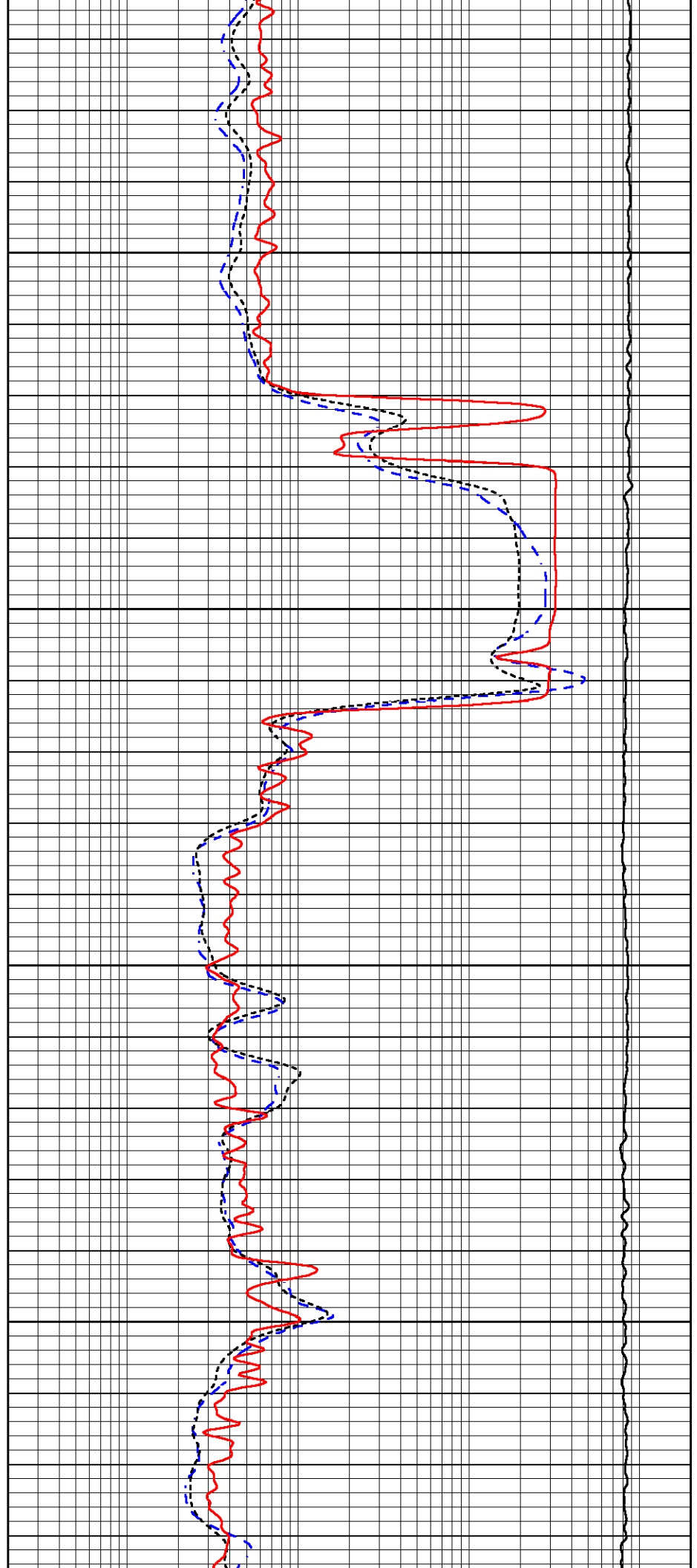


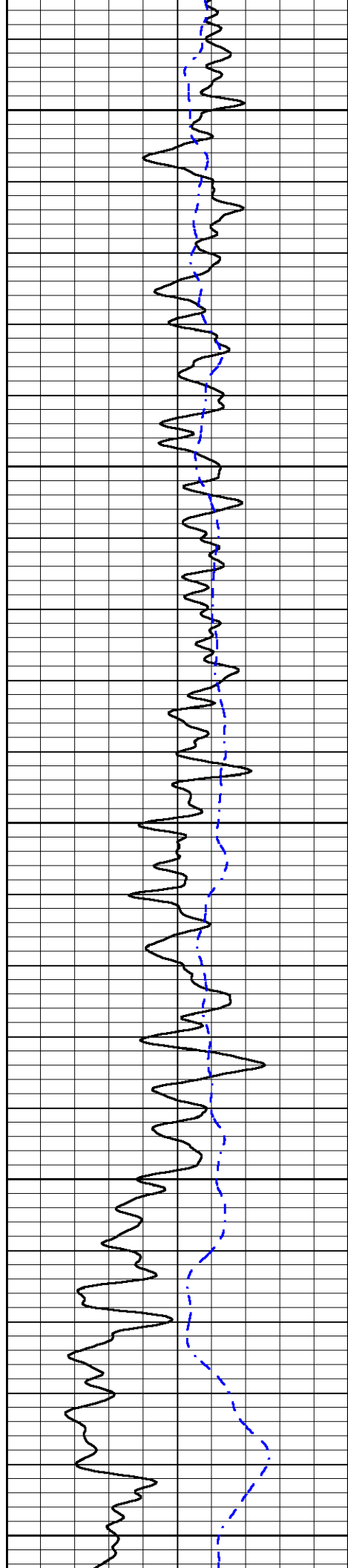
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2000

2050

2100





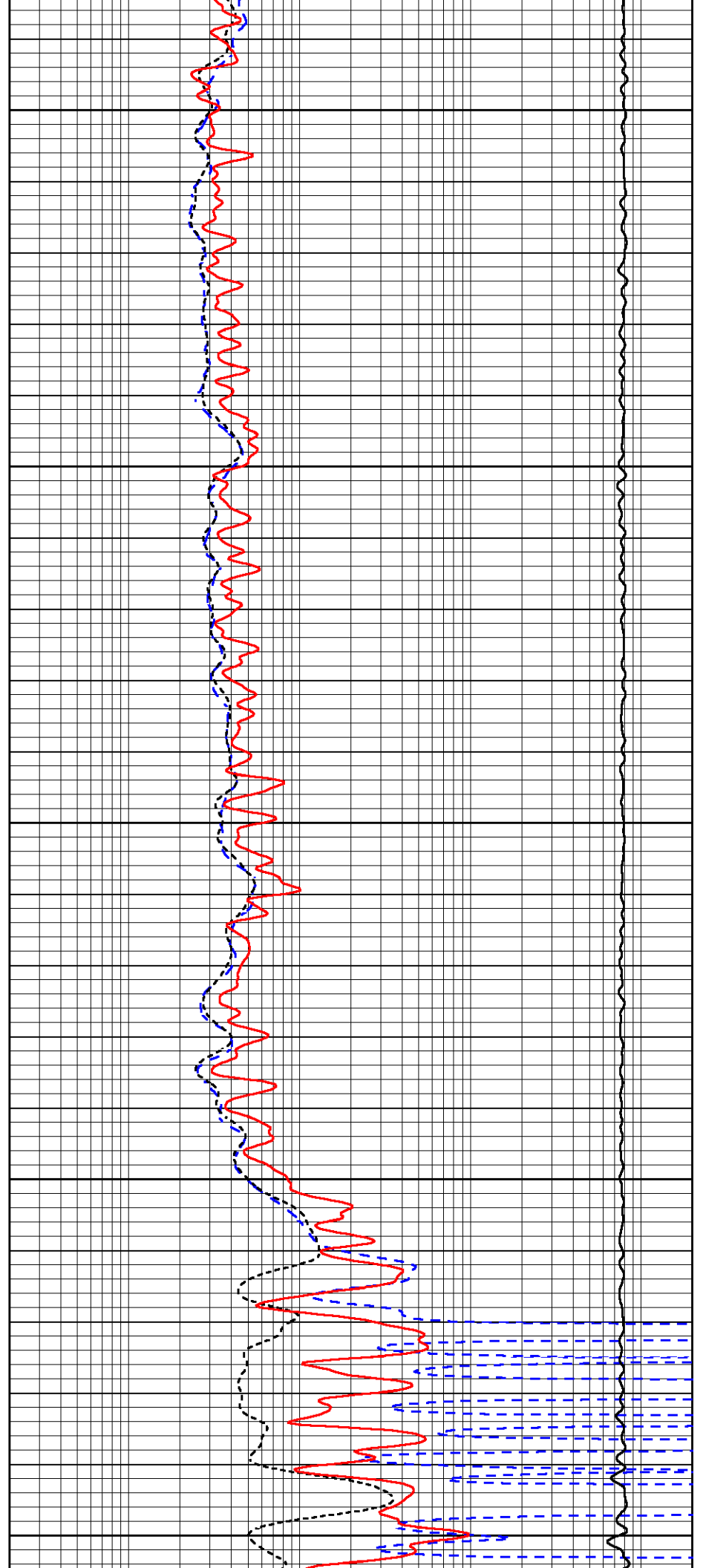
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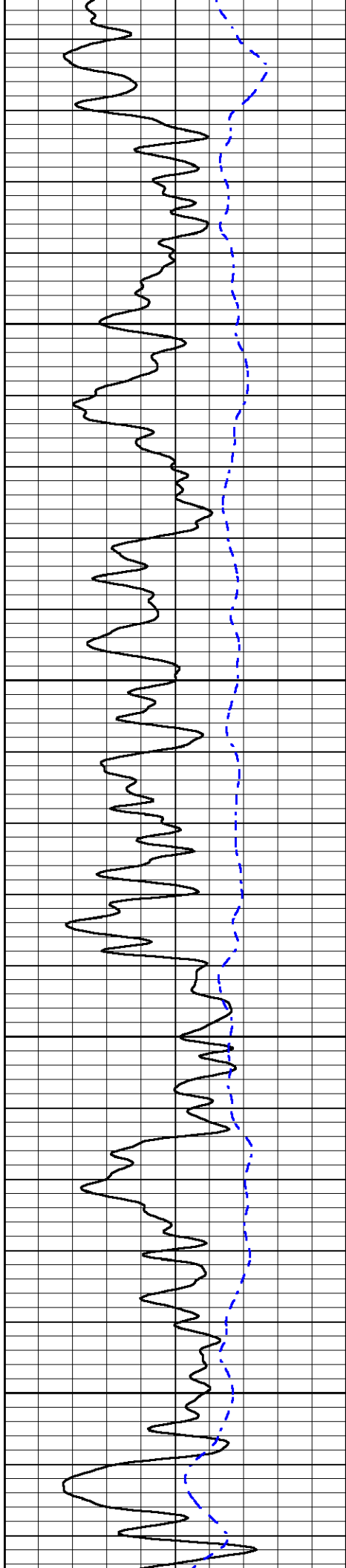
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2250

2300

2350



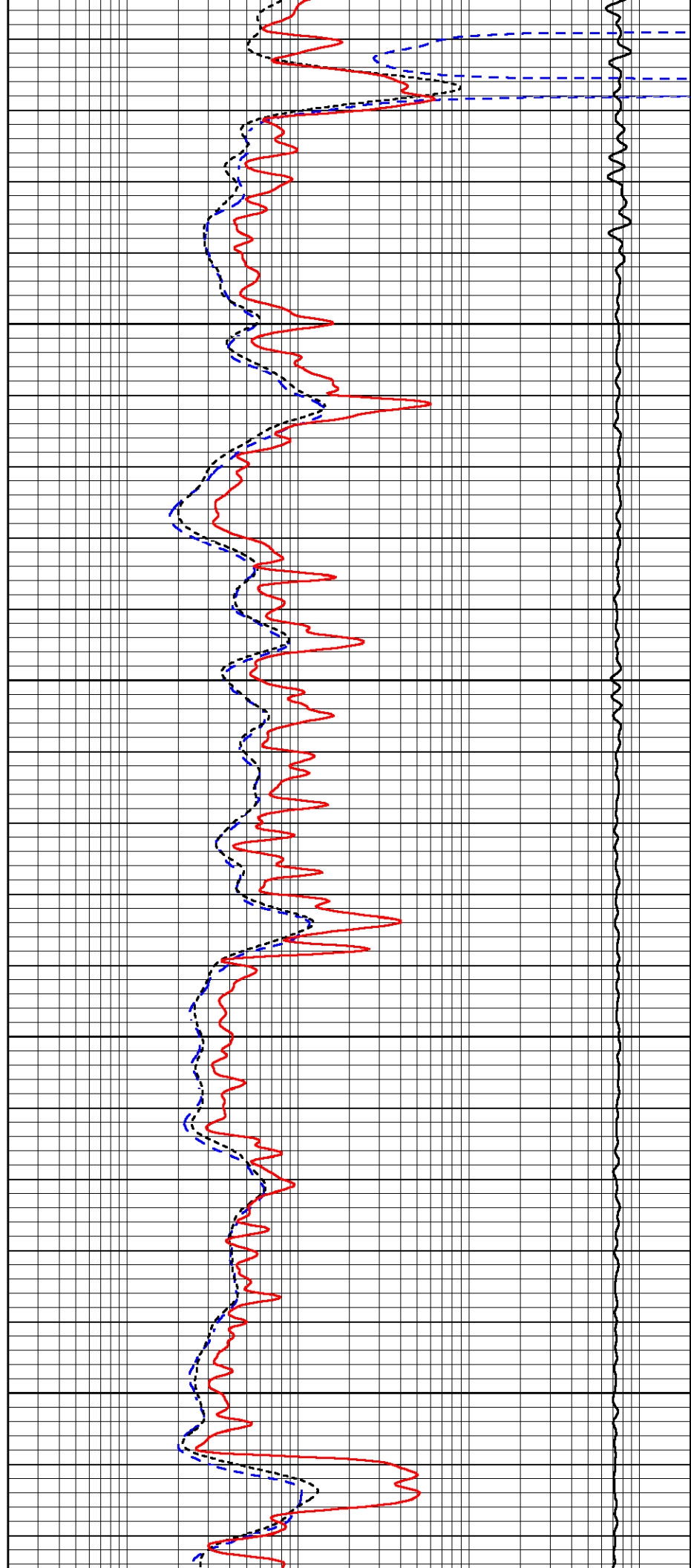


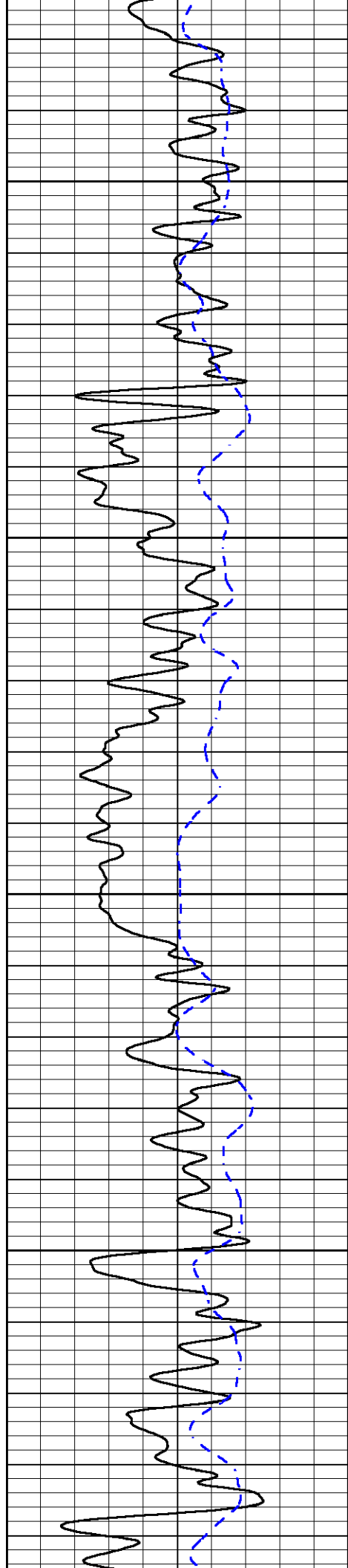
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2450

2500

2550



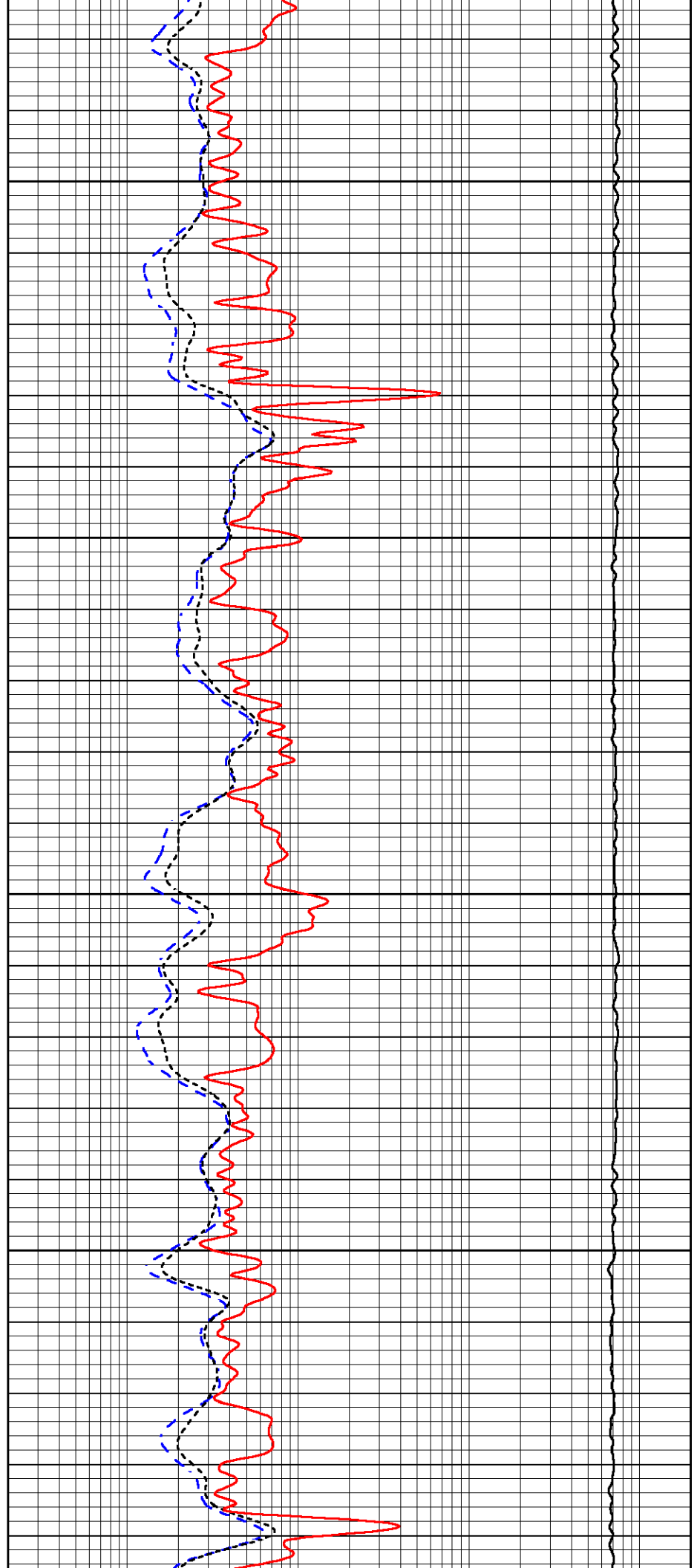


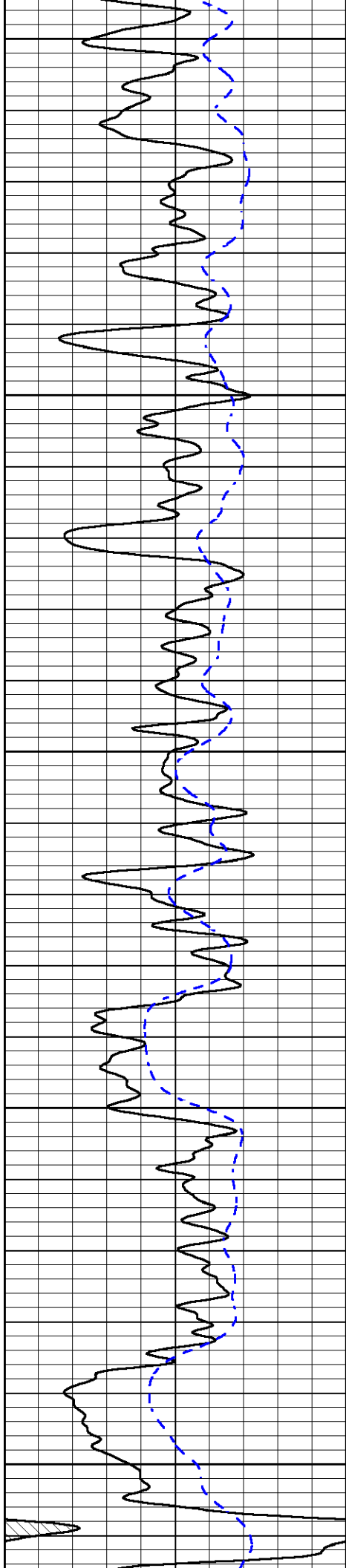
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2650

2700

2750





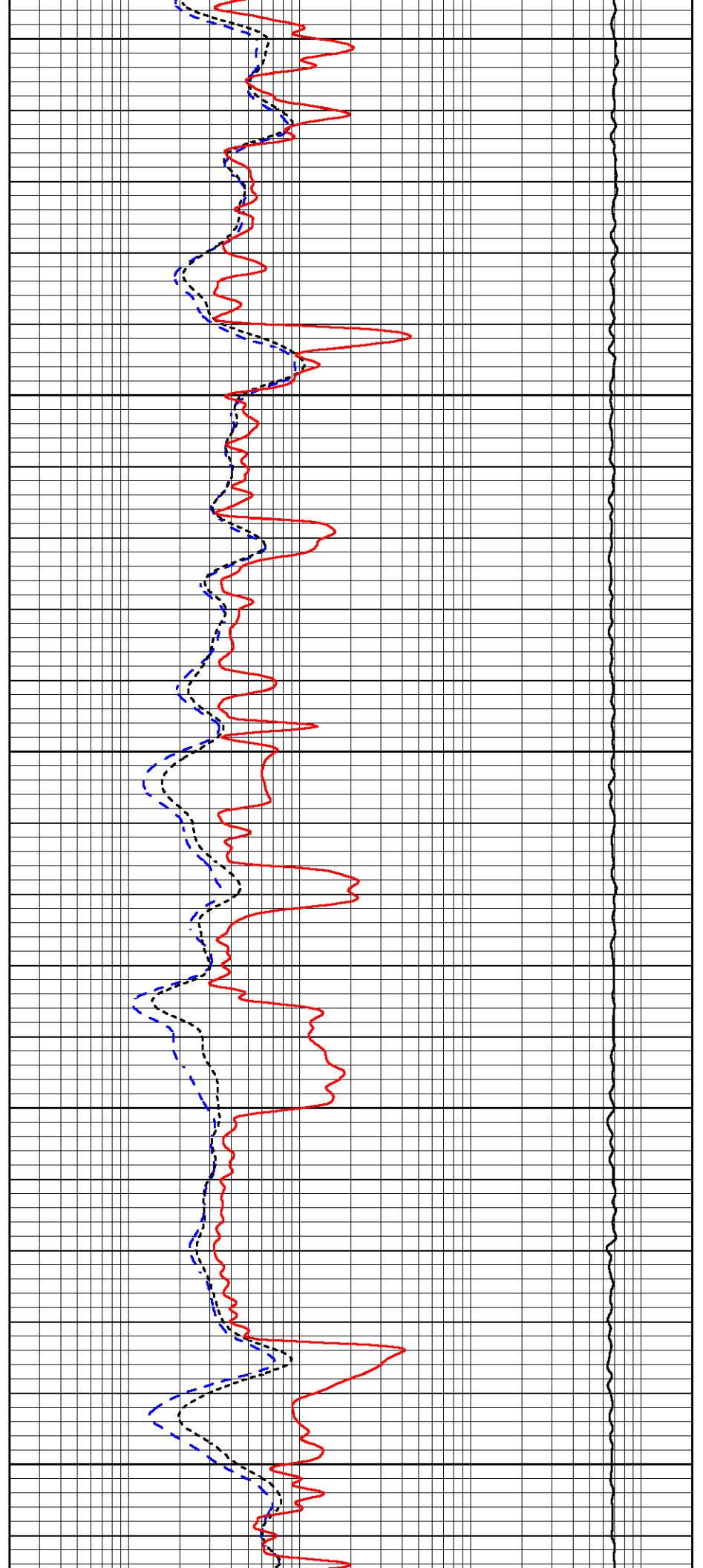
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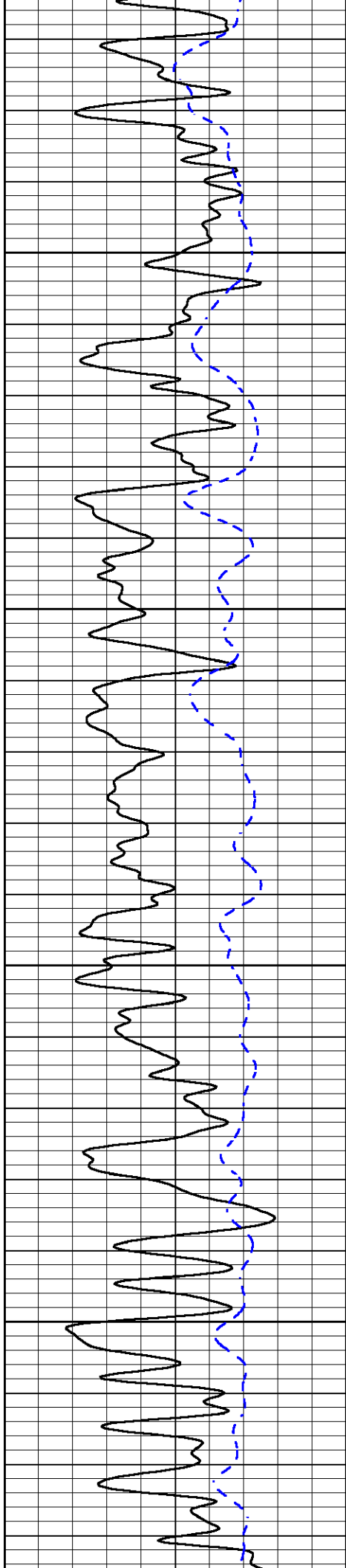
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2900

2950

3000



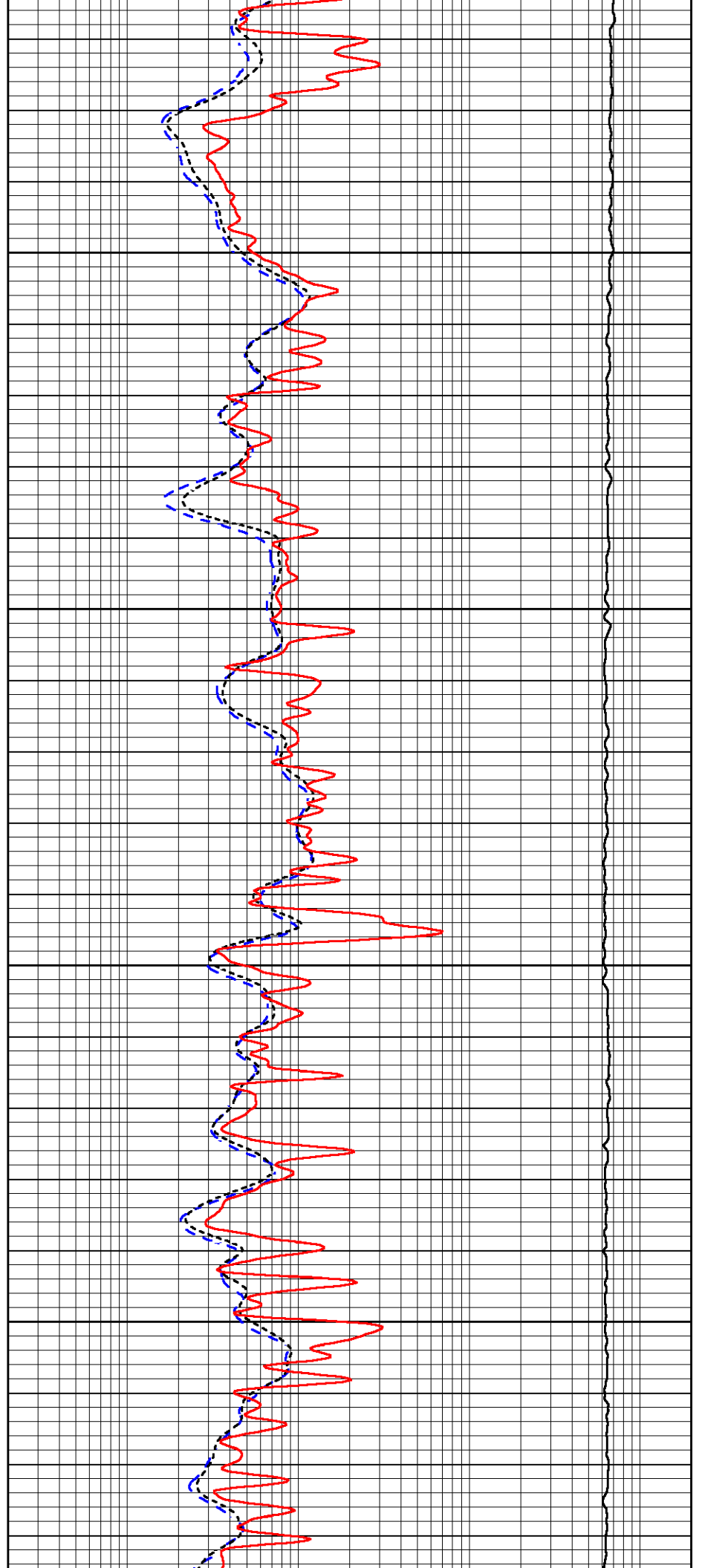


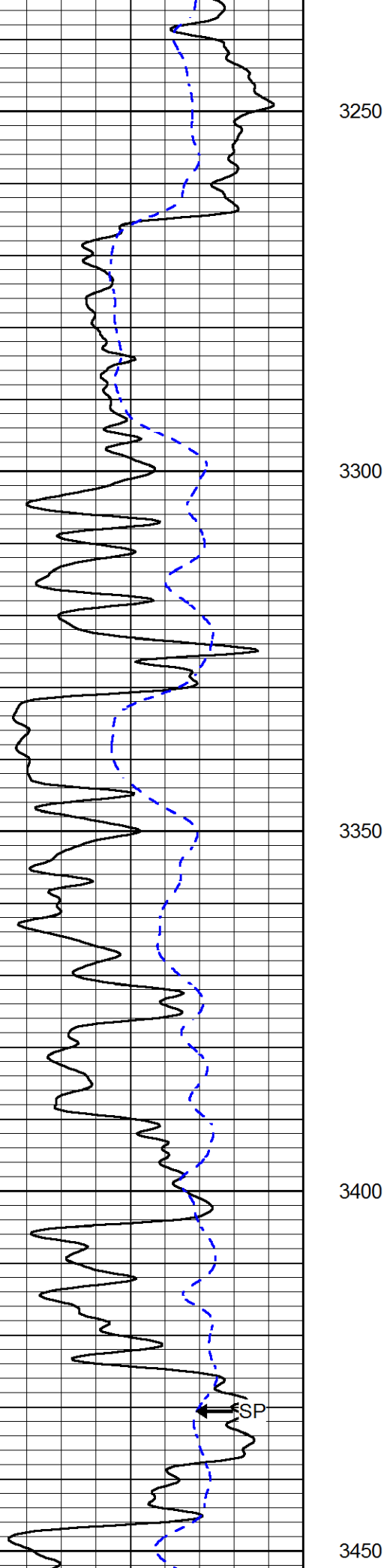
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3100

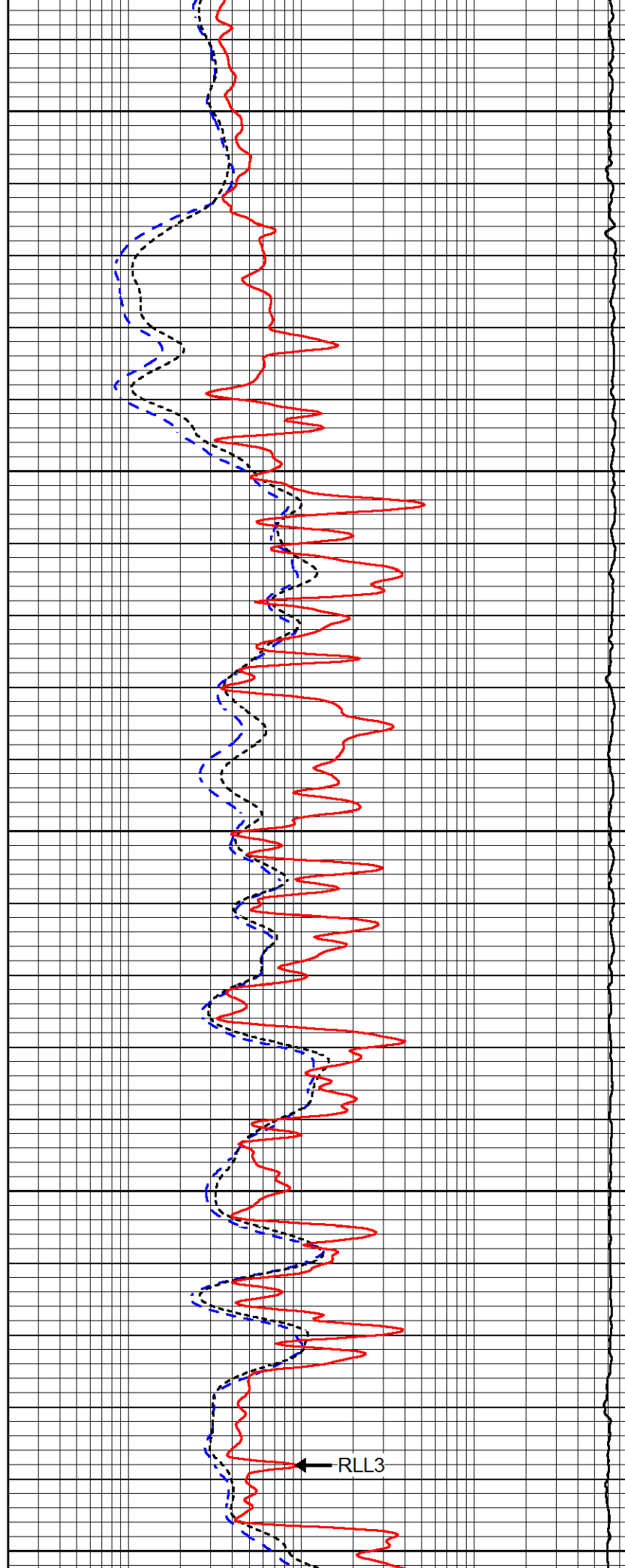
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3200

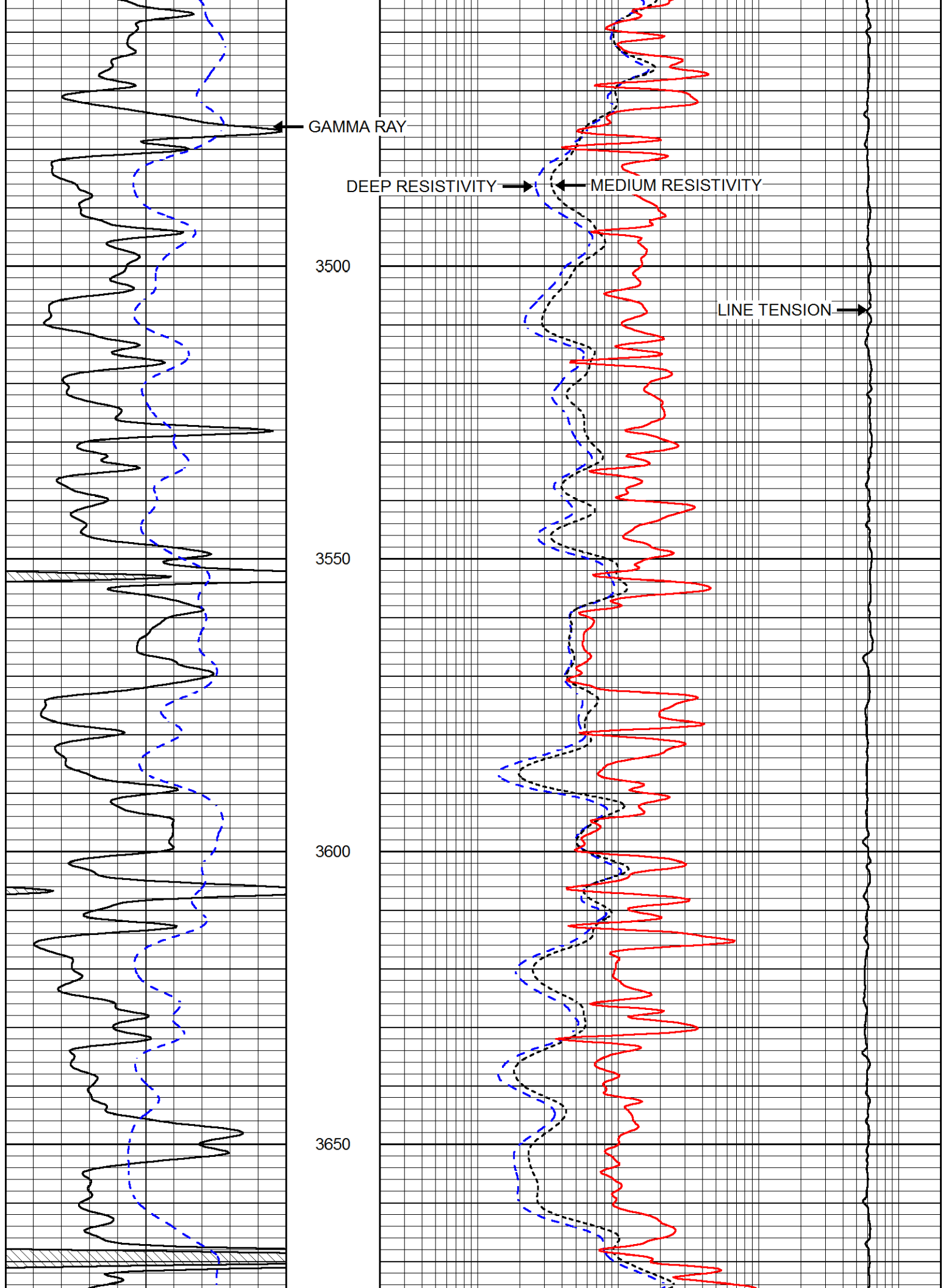


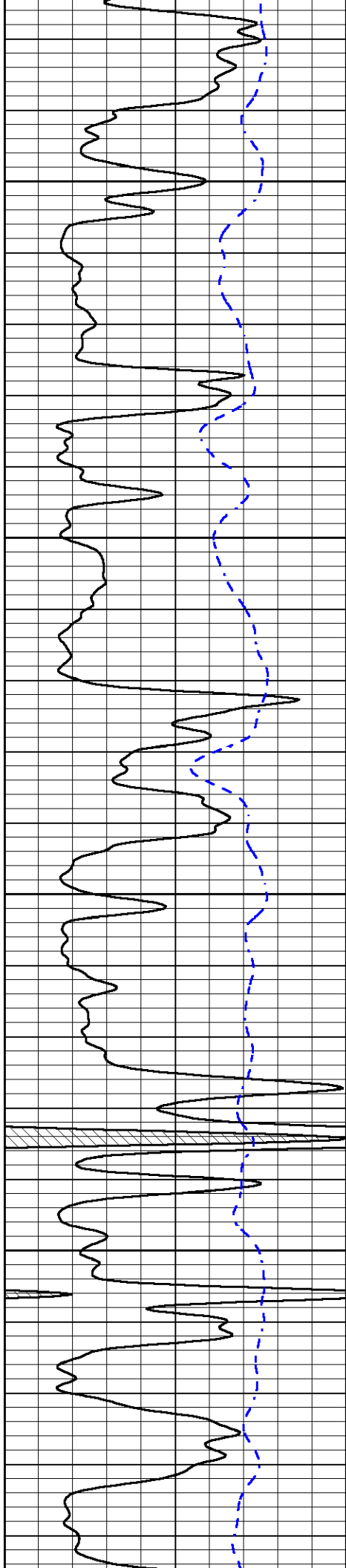


3250
3300
3350
3400
3450



RLL3



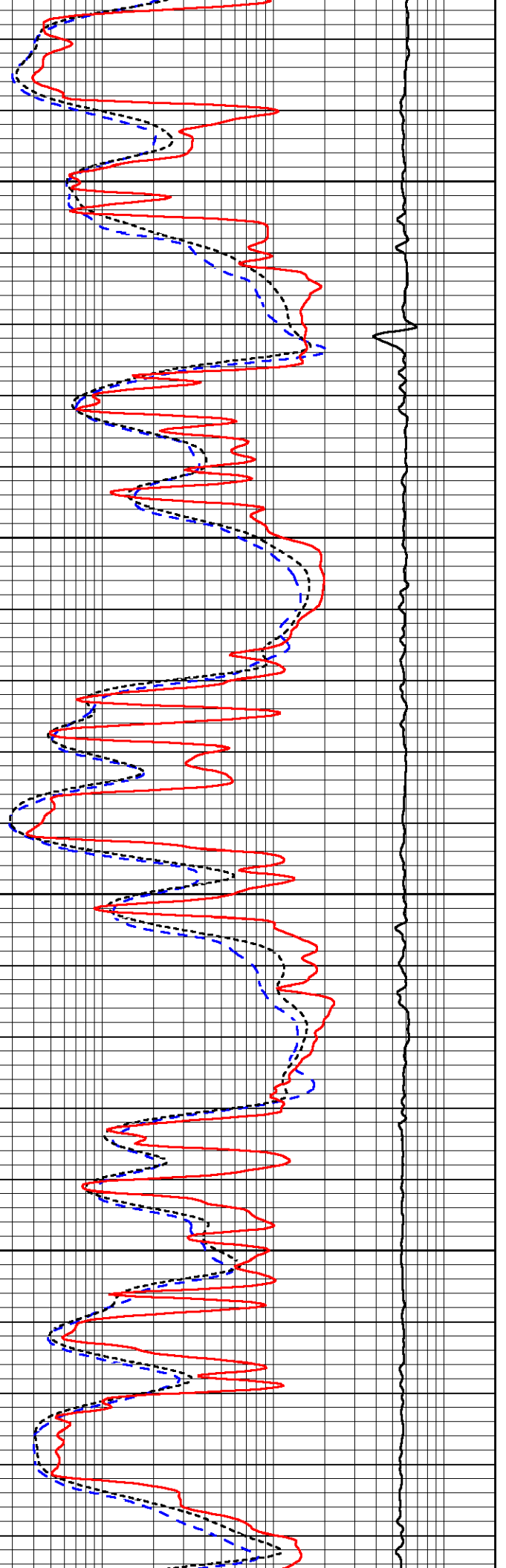


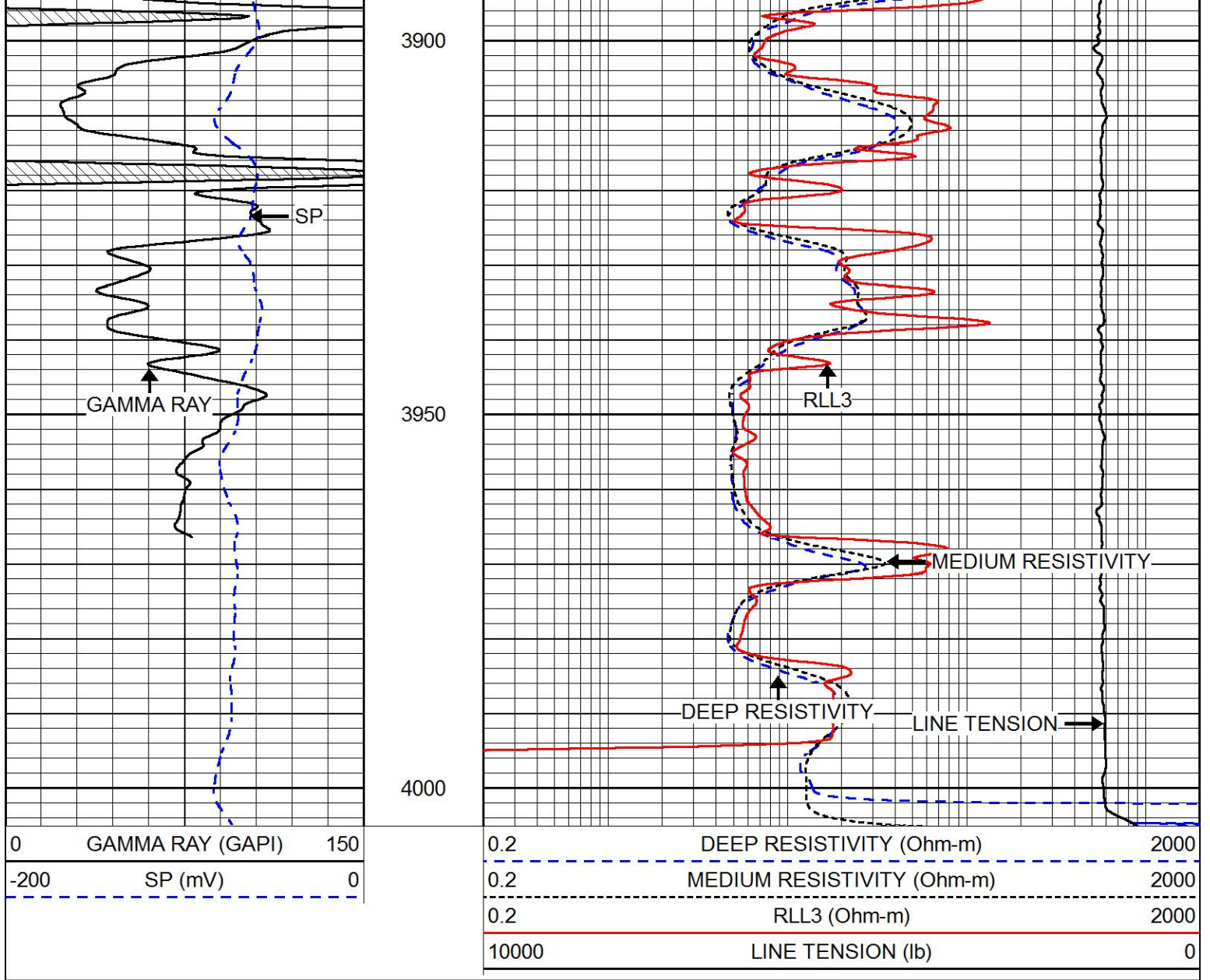
3700

3750

3800

3850

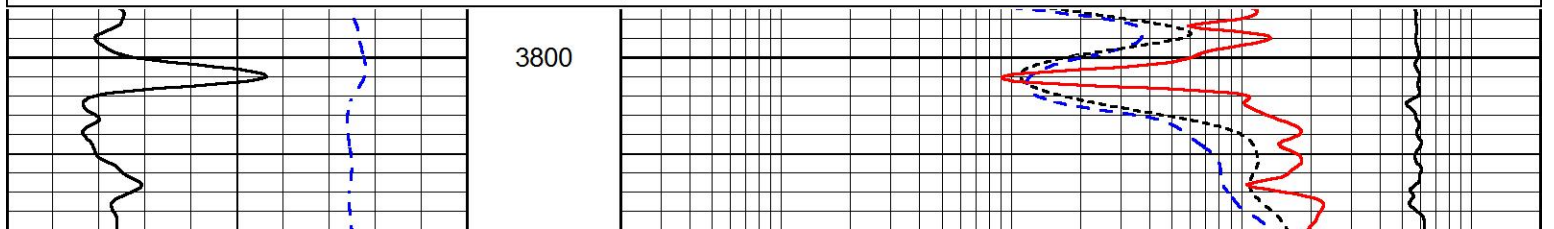


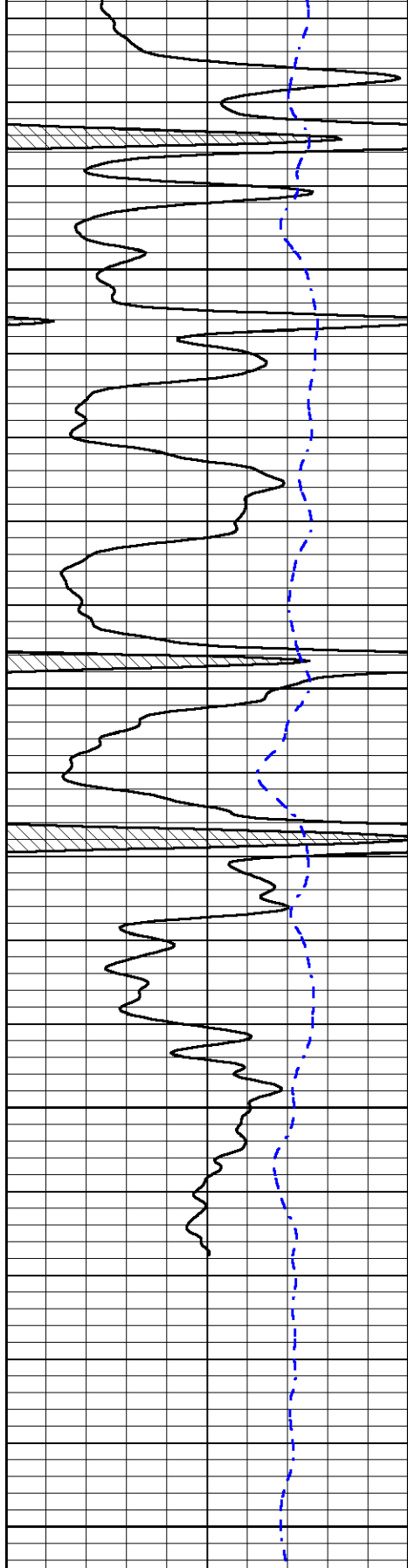


REPEAT SECTION

Database File: murfin_geyer_6_35.db
 Dataset Pathname: stackmel/pass3.1
 Presentation Format: _dil
 Dataset Creation: Tue Sep 24 07:12:34 2019
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	DEEP RESISTIVITY (Ohm-m)	2000
-200	SP (mV)	0	0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000
			10000	LINE TENSION (lb)	0





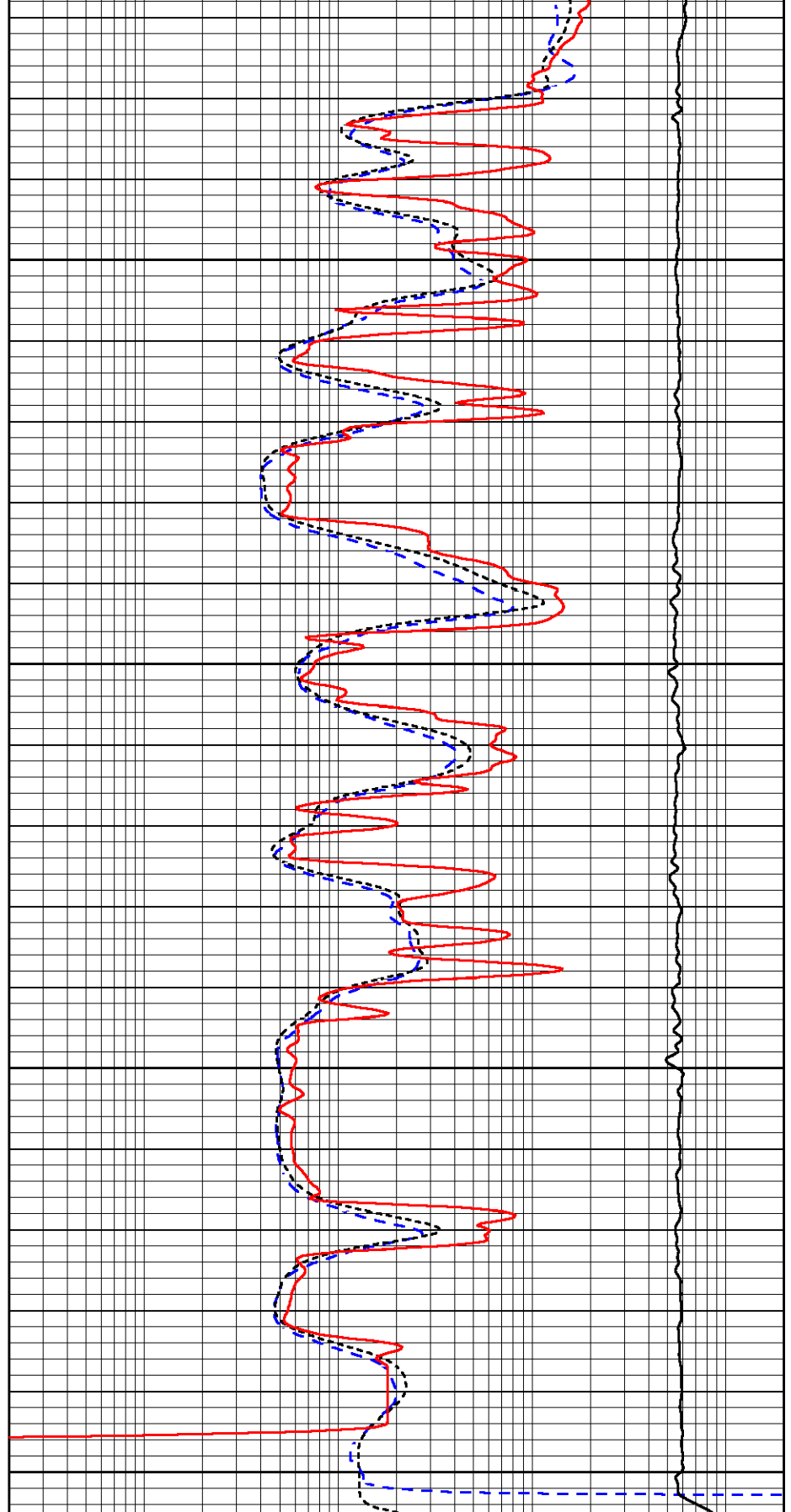
3850

3900

3950

4000

0 GAMMA RAY (GAPI) 150
 -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: mainm_geyer_0_55.db
 Dataset Pathname: stackmel/pass4.1
 Dataset Creation: Tue Sep 24 08:14:32 2019

Dual Induction Calibration Report

Serial-Model: 1039-PSI HIGH TEMP
 Calibration Performed: Tue Sep 10 08:34:01 2019

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	167.000	835.000	0.000	255.800	mmho/m	0.450	-51.000
Medium	0.000	1348.000	142.000	255.800	mmho/m	0.365	-49.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Thu Aug 01 07:57:13 2019

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-0.7000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	60000.0000	-2.0000
Caliper	1.0195	1.1612	6.5000	18.5000	in	84.7023	-81.2000

Compensated Density Calibration Report

Serial-Model: 817-947-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Fri Aug 24 11:16:00 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.670	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.526		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	15.00	in	1.34		

Compensated Neutron Calibration Report

Serial Number: 207-MW
 Tool Model: M&W
 Calibration Performed: WED FEB 13 10:30:30 2019

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: 233-M&W
Tool Model: M&W
Calibration Performed: Fri Feb 07 01:42:40 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.5500 GAPI/cps



PIONEER

Pioneer Energy Services

Company MURFIN DRILLING CO., INC.

Well GEYER #6-35

Field WILDCAT

County GRAHAM

State KANSAS