



HIGH RESOLUTION INDUCTION COMPENSATED DENSITY COMPENSATED NEUTRON

Pioneer Energy Services

Company NGL WATER SOLUTIONS DJ LLC
Well NGL C-11
Field Wildcat
County WELD State COLORADO

Location: API # : 05-125-38533

Other Services

380' FSL & 817' FEL SESE
SEC 27 TWP 5N RGE 61W

Elevation

Permanent Datum GL Elevation 3849
Log Measured From KB
Drilling Measured From KB

K.B. 3855
D.F. 3854
G.L. 3849

Date Aug 03, 2014

Run Number

1

Depth Driller

7749

Depth Logger

7727

Bottom Logged Interval

7727

Top Log Interval

Casing

Casing Driller

739

Casing Logger

739

Bit Size

8-3/4

Type Fluid in Hole

WBM

Density / Viscosity

9.3 / 55

pH / Fluid Loss

8.3 / 8.5

Source of Sample

Flowline

Rm @ Meas. Temp

2.81 @ 72 F

Rmf @ Meas. Temp

2.25 @ 72 F

Rmc @ Meas. Temp

3.51 @ 72 F

Source of Rmf / Rmc

Calc / Calc

Rm @ BHT

0.88 @ 229 F

Time Circulation Stopped

0600

Time Logger on Bottom

1300

Maximum Recorded Temperature

229 F

Equipment Number

48

Location

Ft. Morgan, CO

Recorded By

Clint Christensen

Witnessed By

Louise Kitley

Chris Montoya

Ruben Markarian

<<< Fold Here >>>

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.

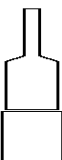
Comments

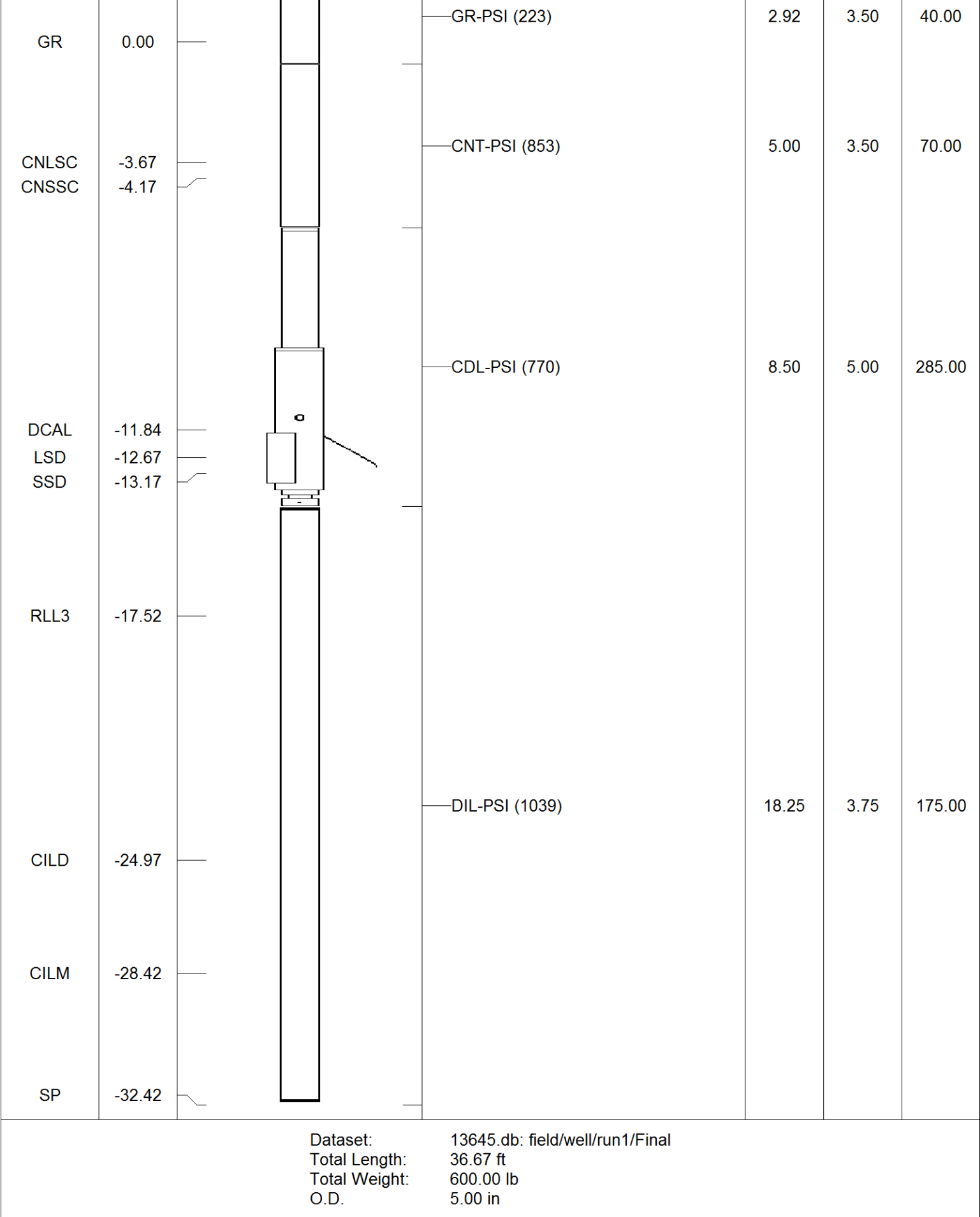
Annular volume calculated for 7" casing

Ensign Drilling Rig 138

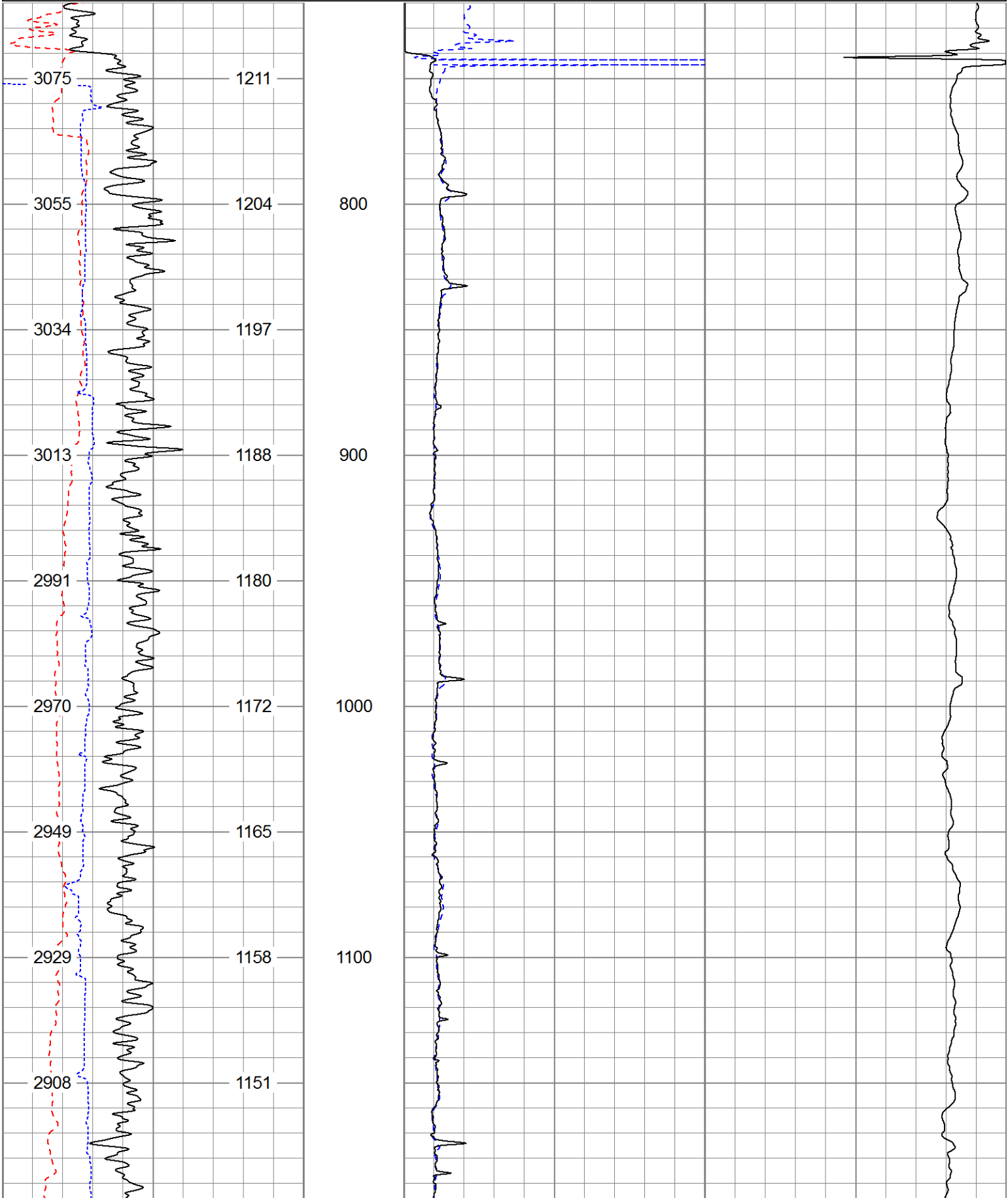
Thank you for using Pioneer Energy Services

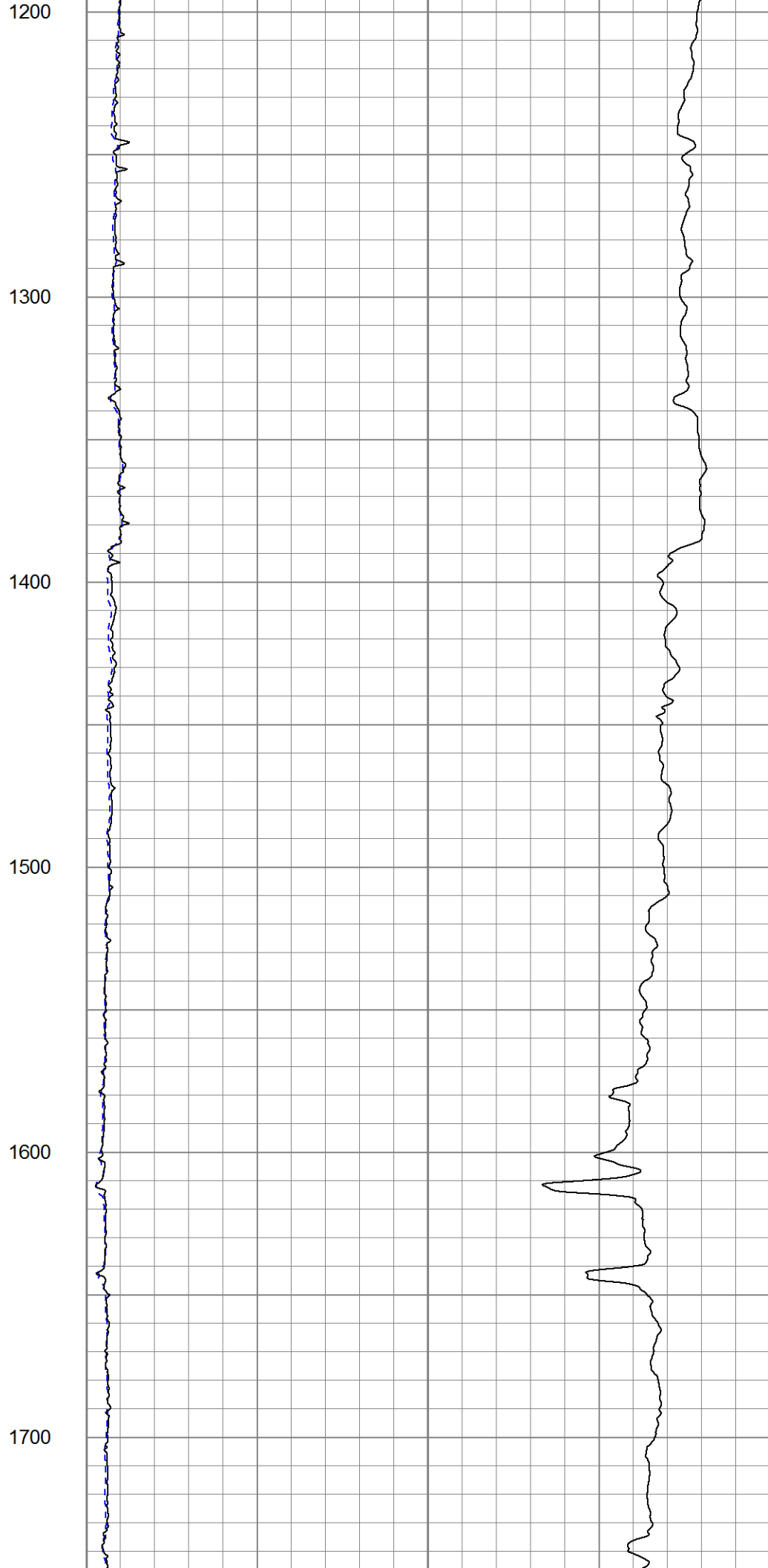
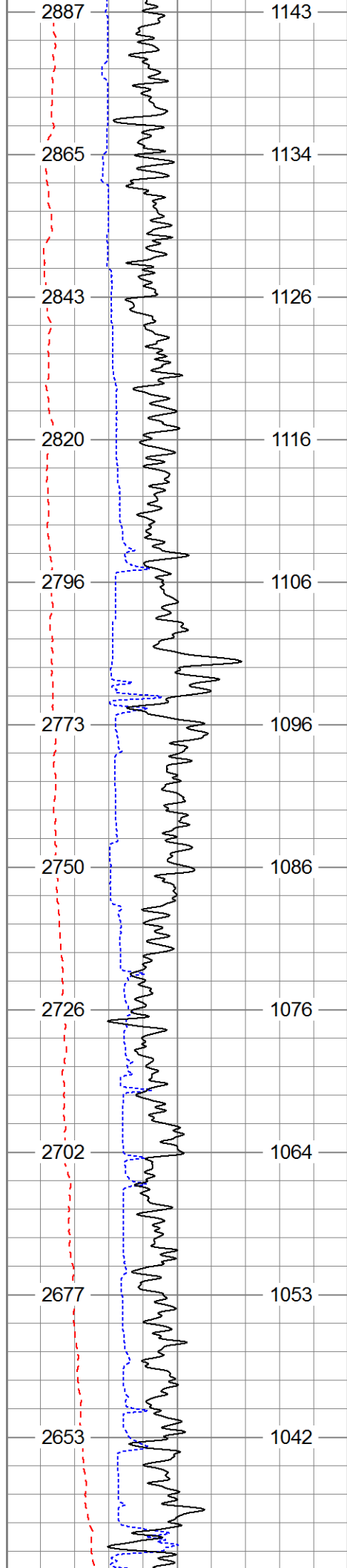
SO# 2-013645

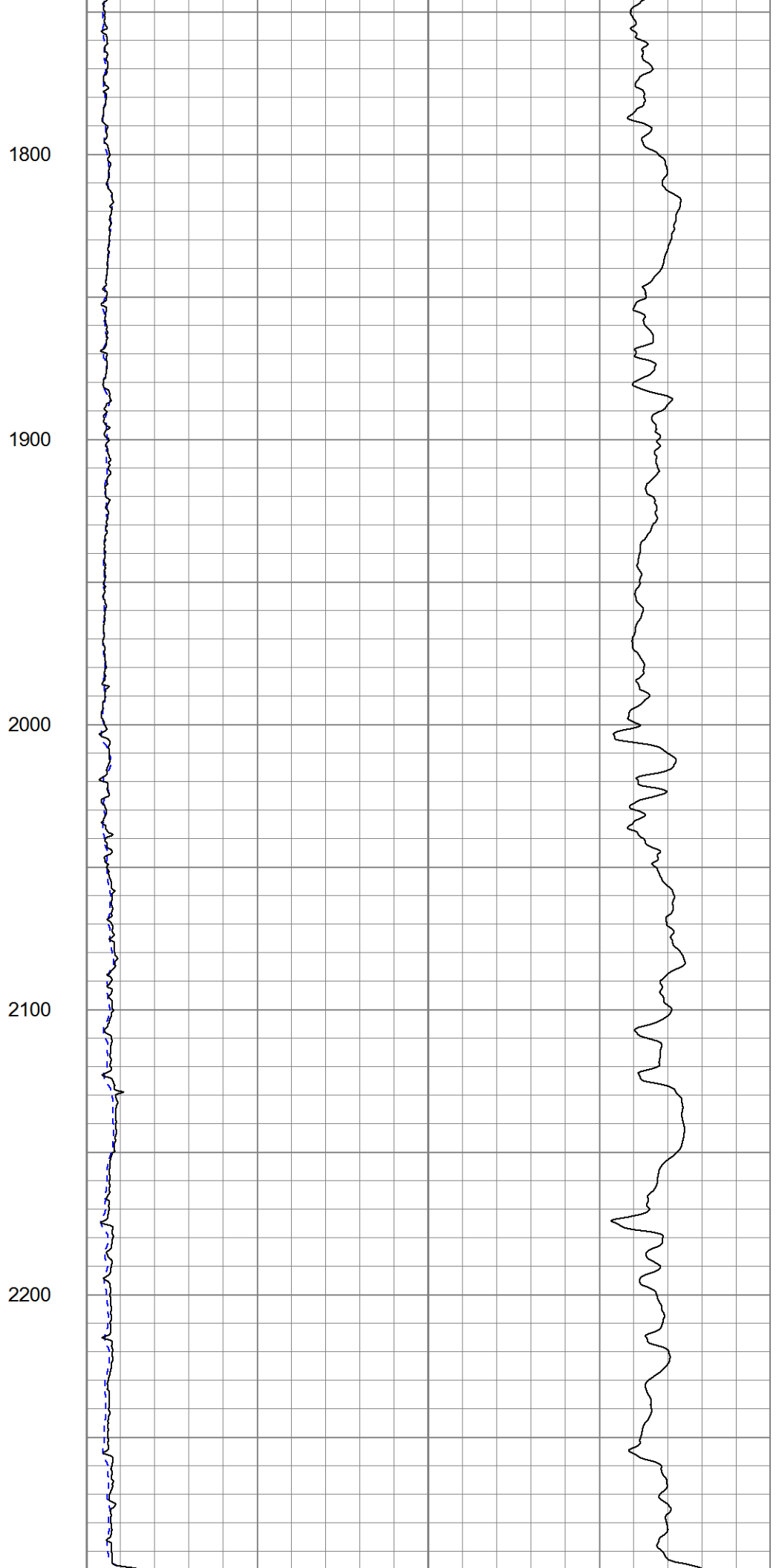
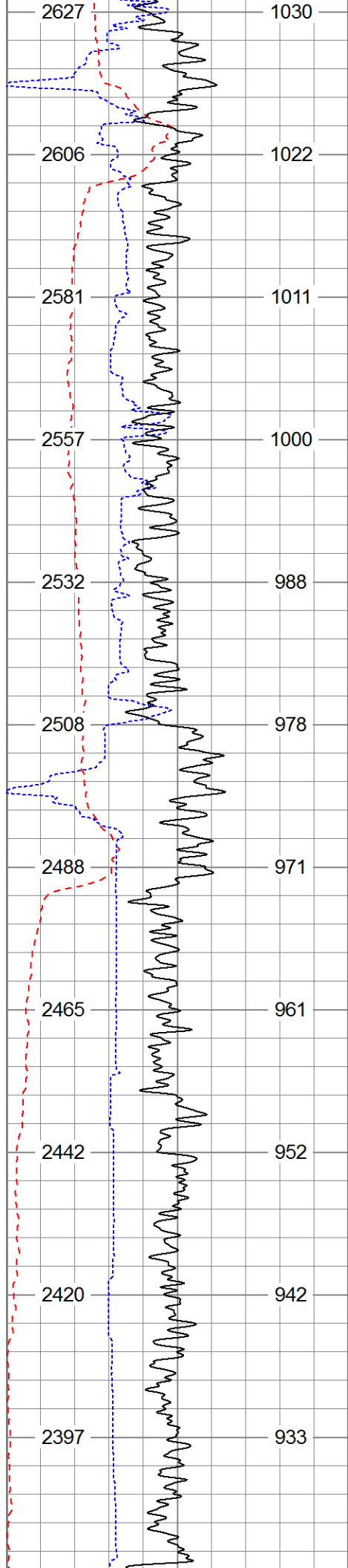
Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			CHD (~0)	2.00	3.50	30.00

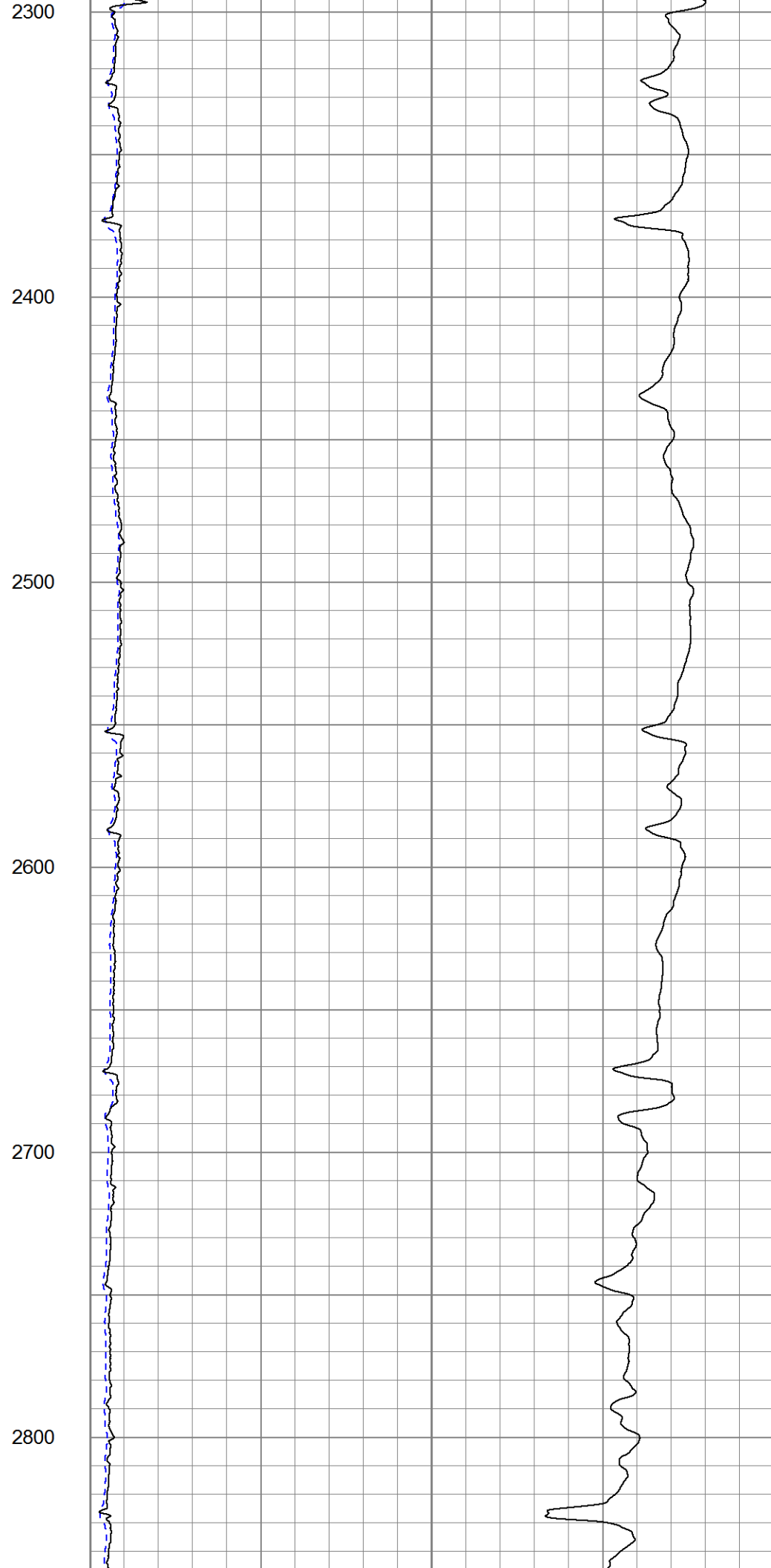
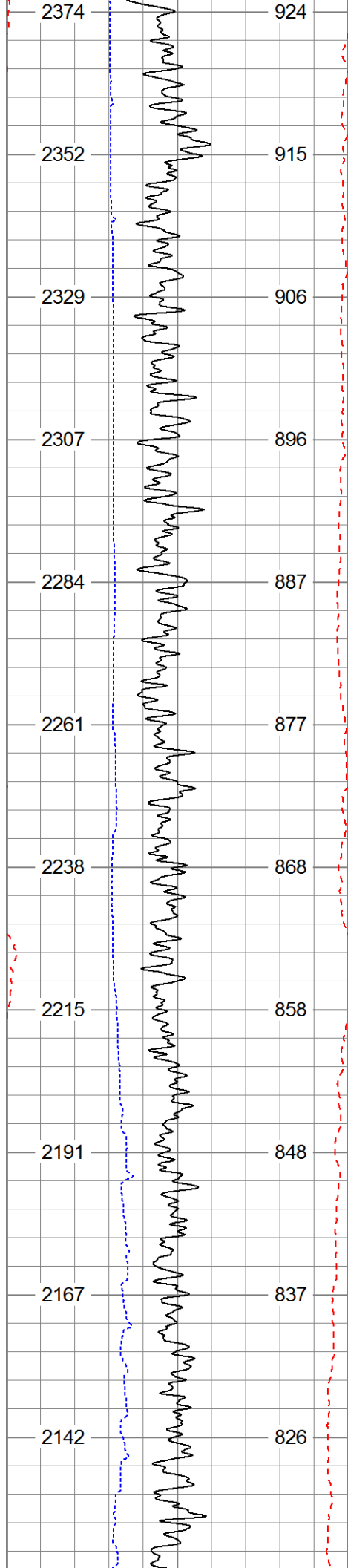


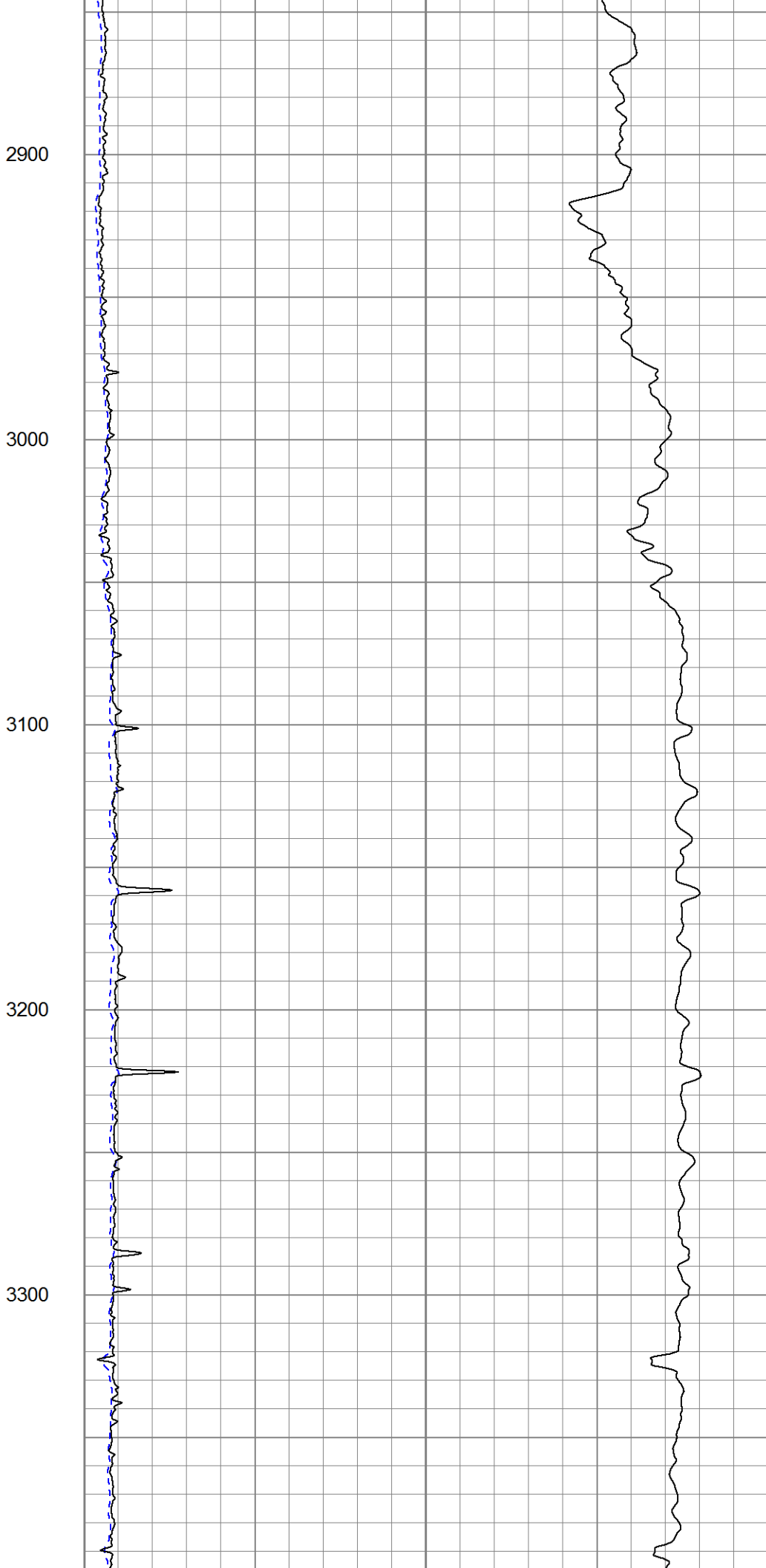
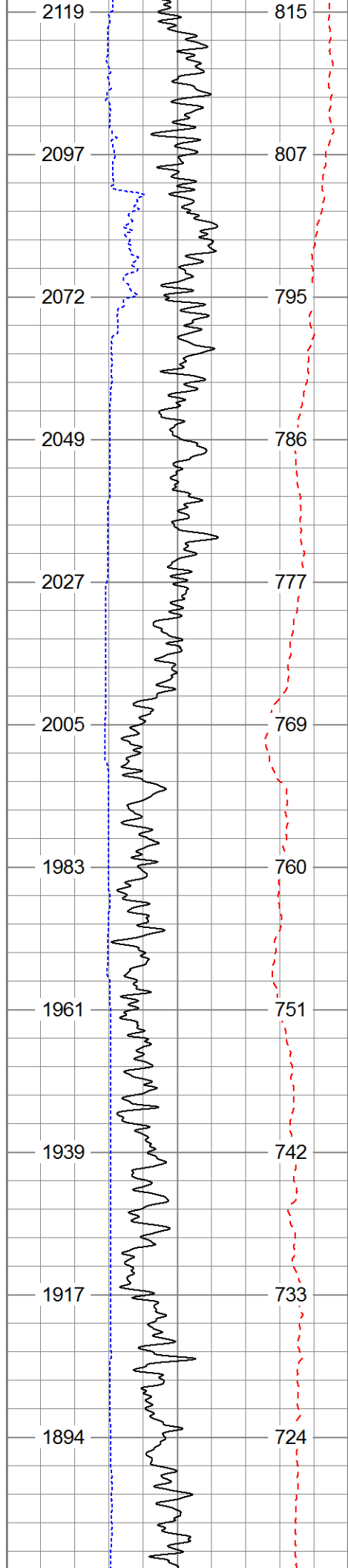
Charted by: _____			Depth in Feet scaled 1.000					
0	SP (mV)	200	0	Deep Resistivity (Ohm-m)	50	1000	CILD (mmho/m)	0
6	Caliper (in)	16	0	Shallow Resistivity (Ohm-m)	50			
0	Gamma Ray (GAPI)	200	50	RILD (Ohm-m)	500			
TBHV (ft3)		ABHV (ft3)	50	RLL3 (Ohm-m)	500			

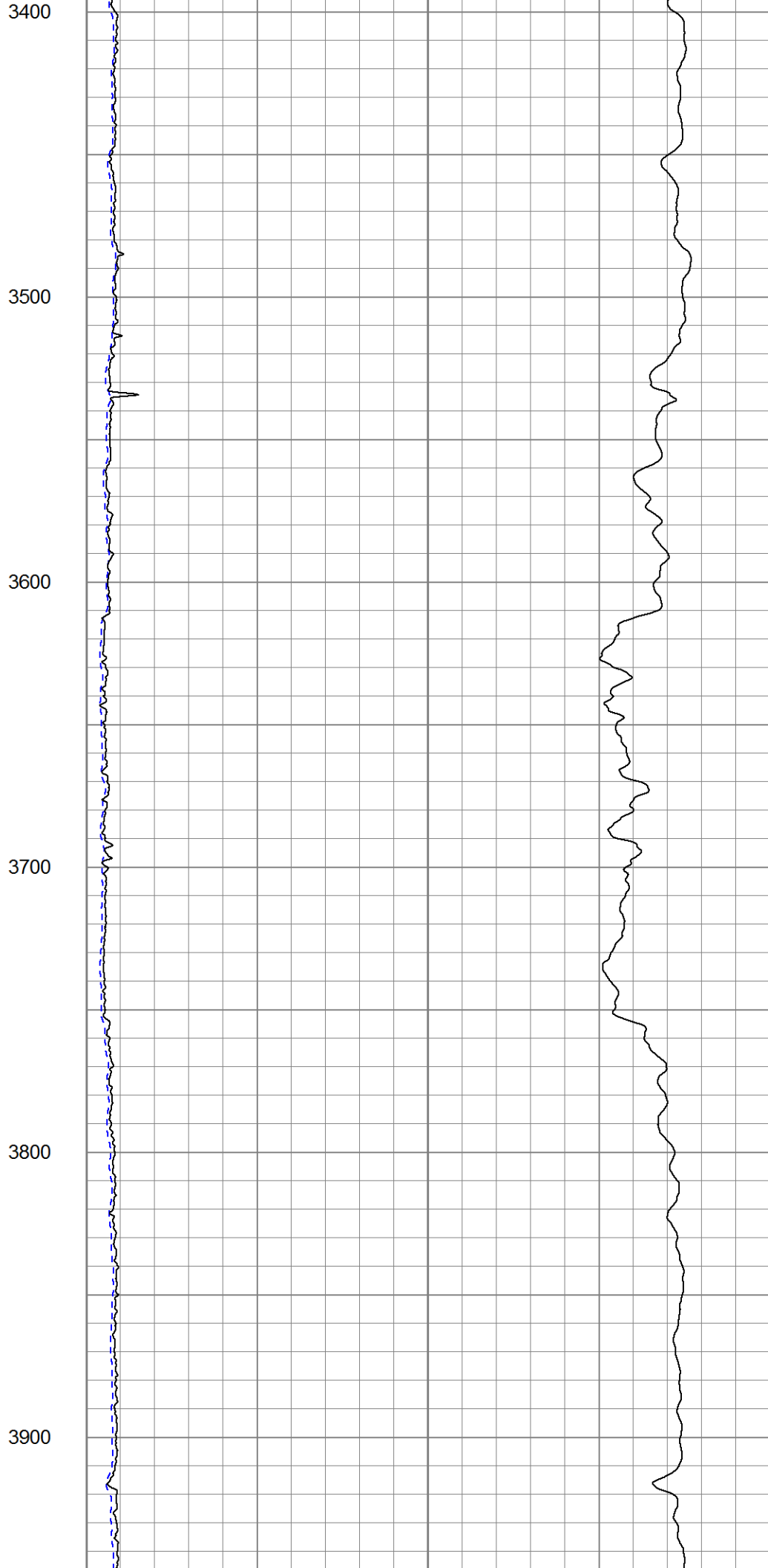
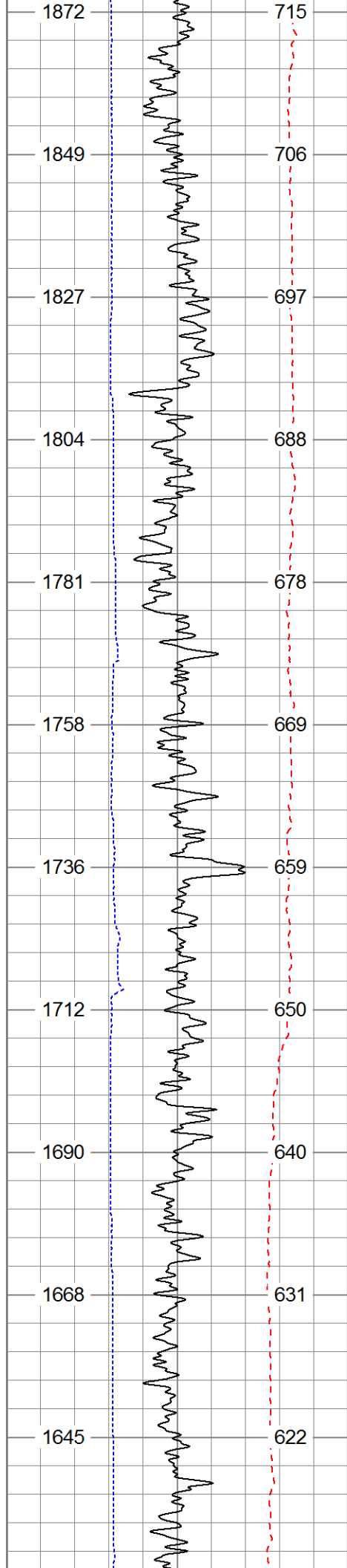


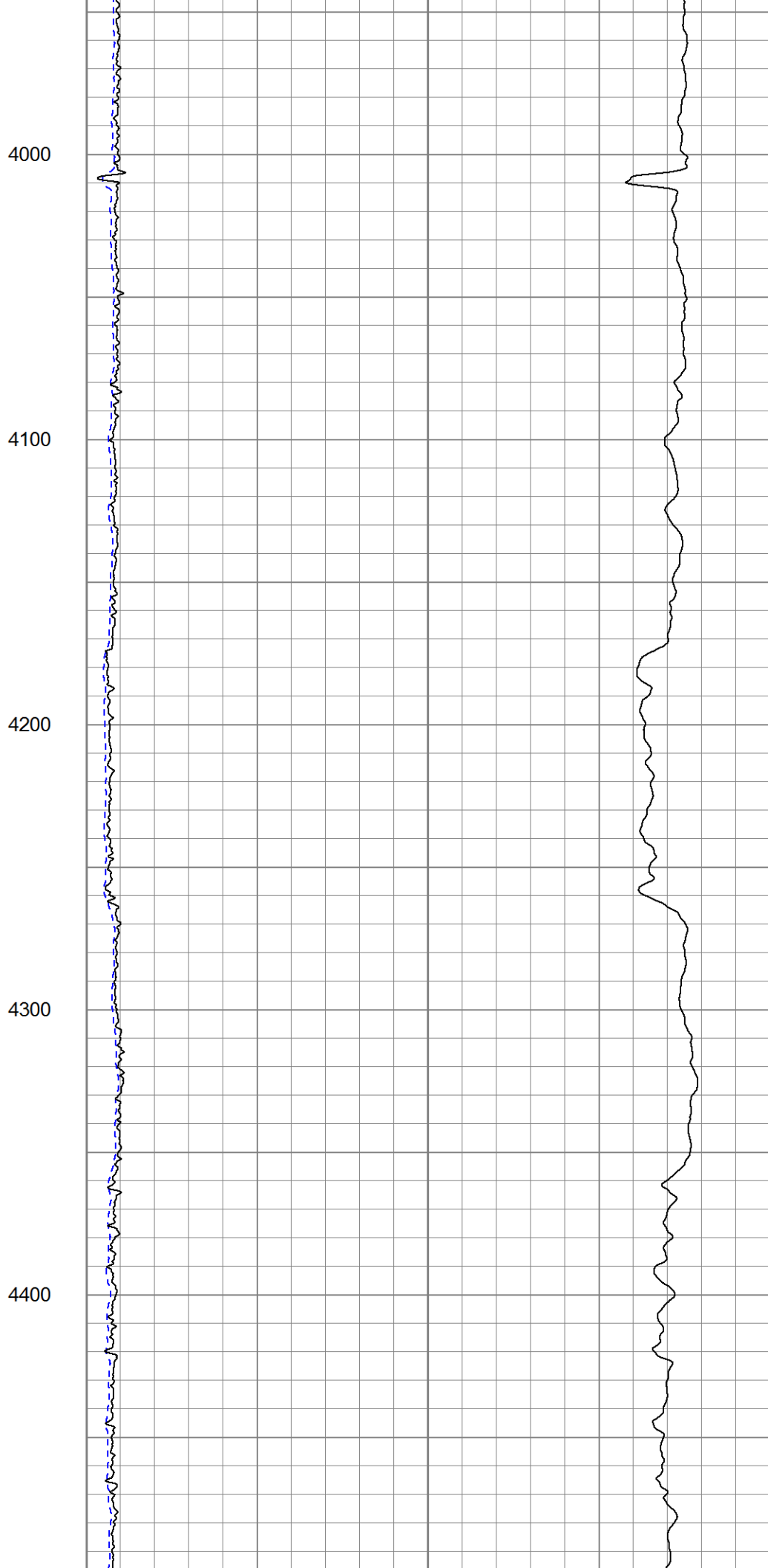
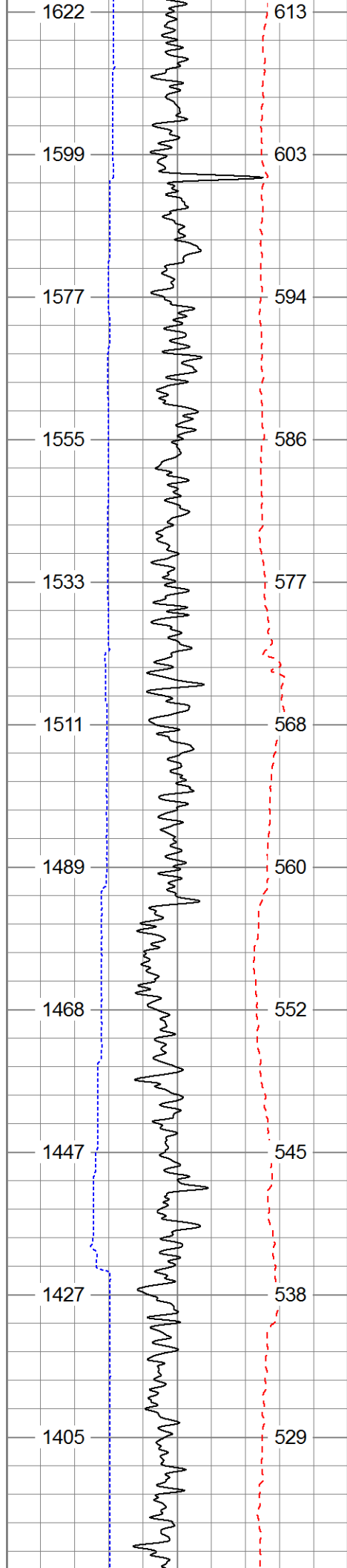


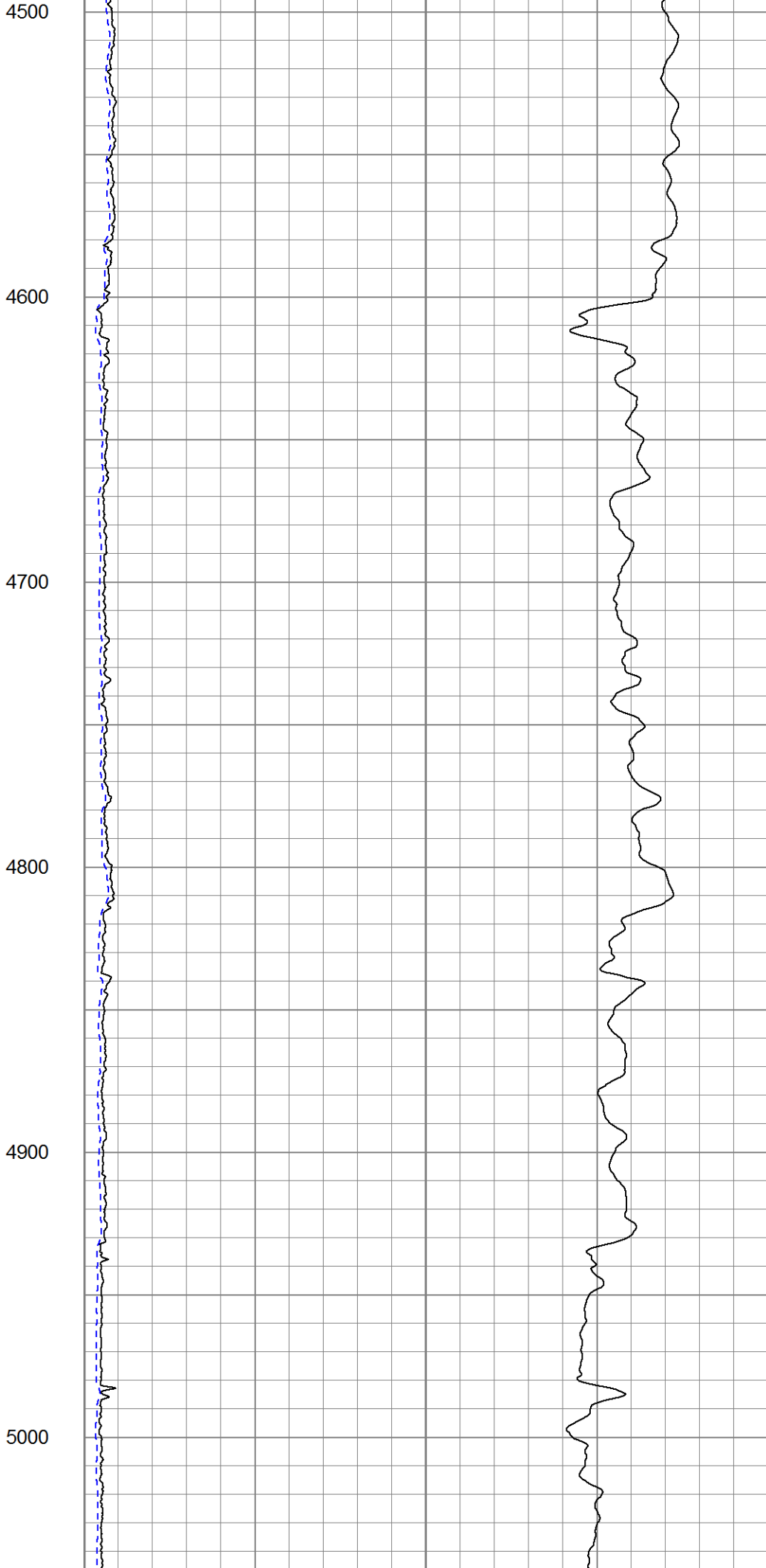
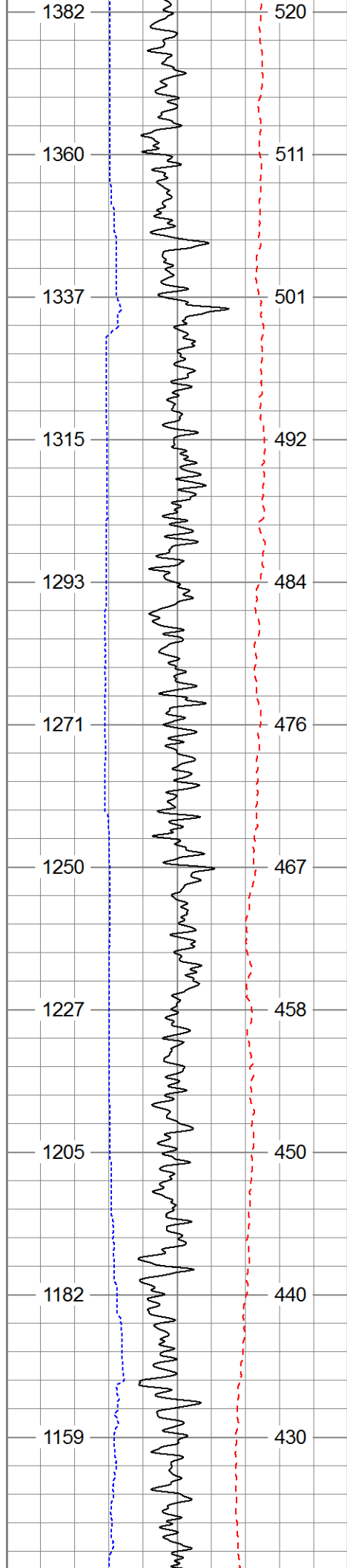


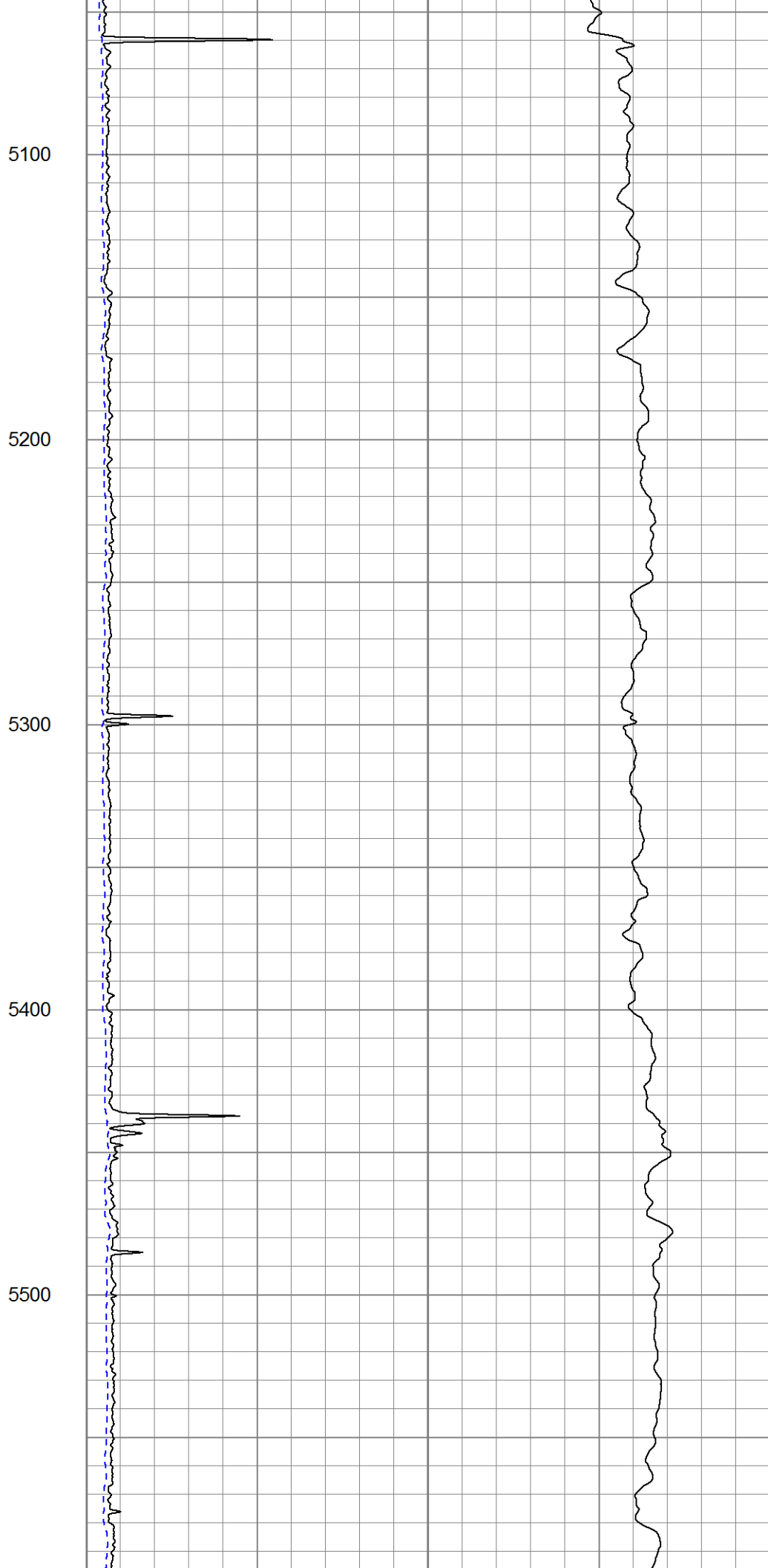
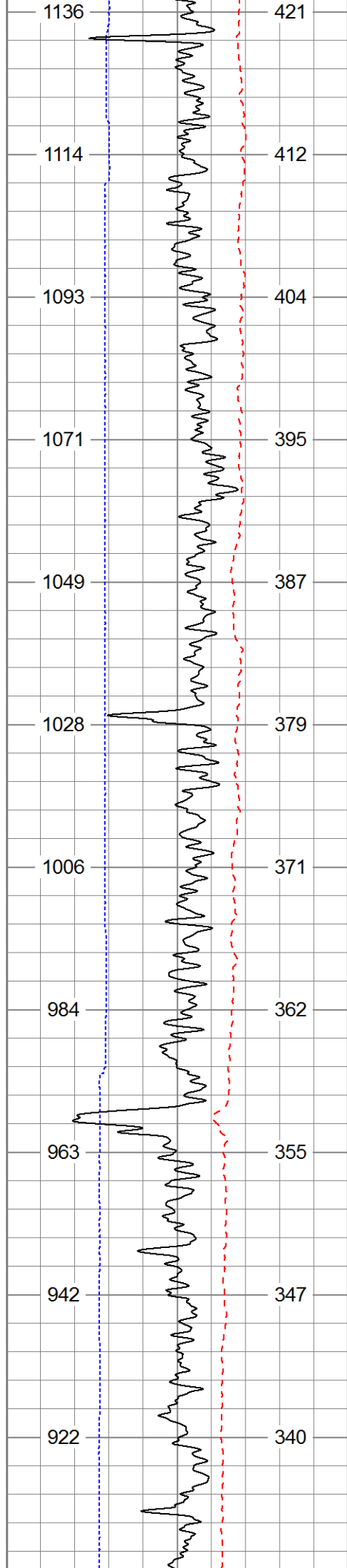


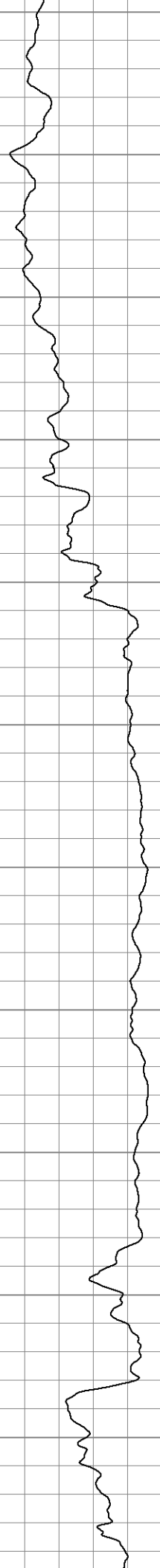
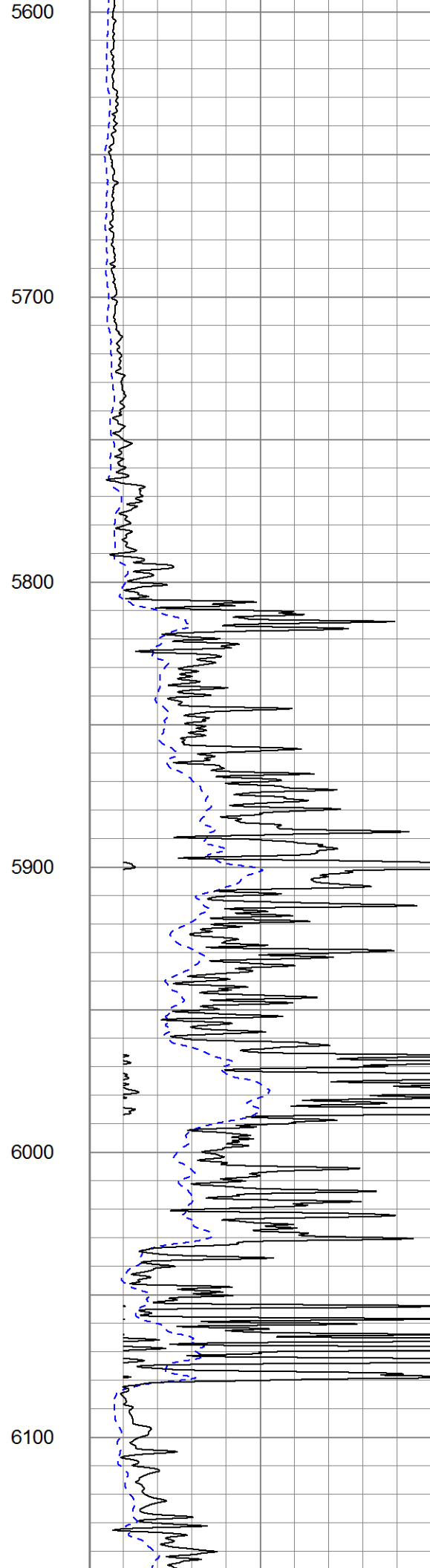
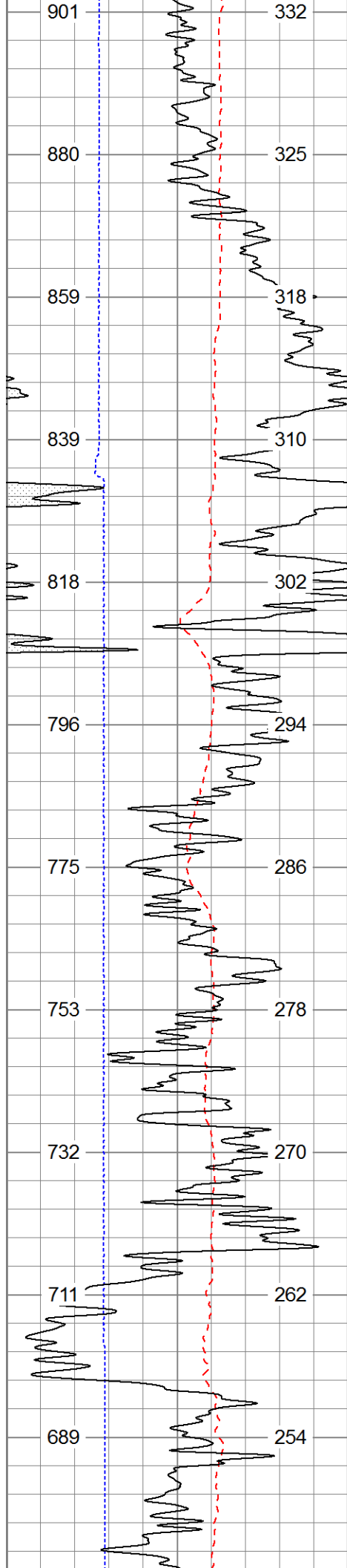


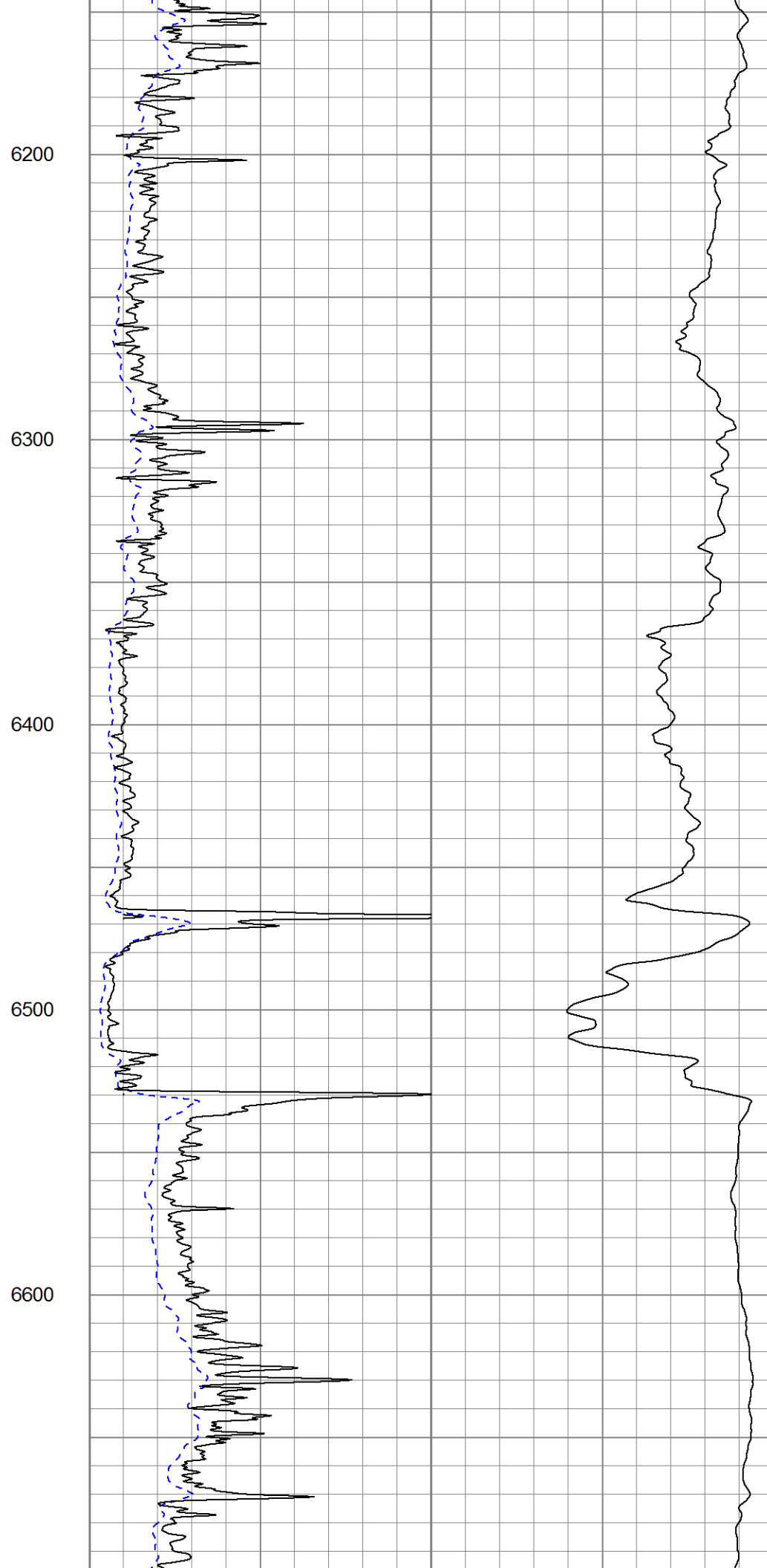
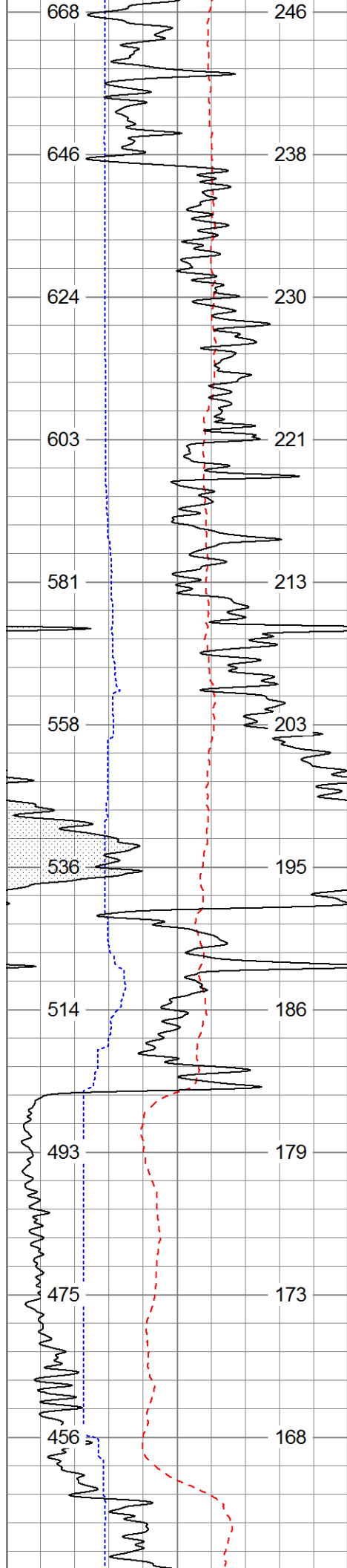


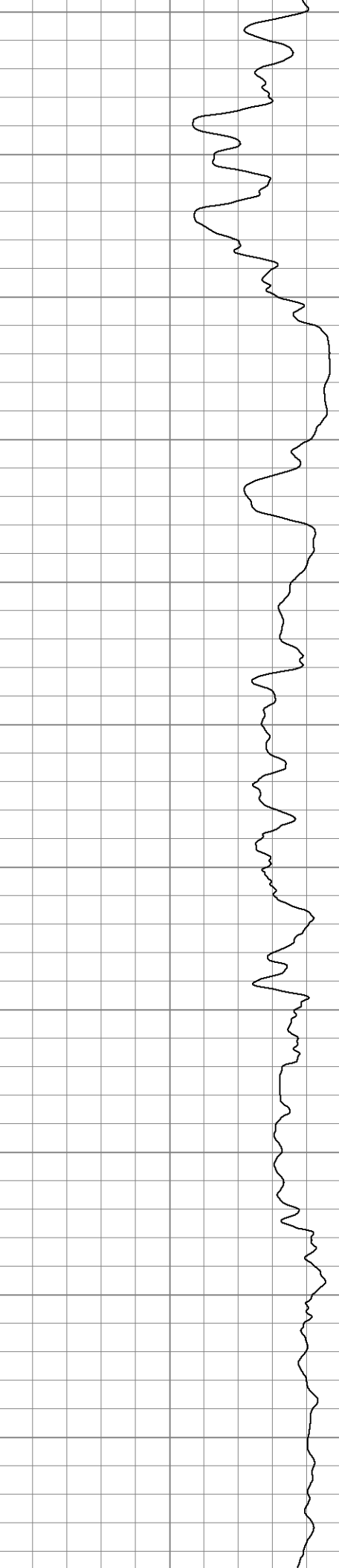
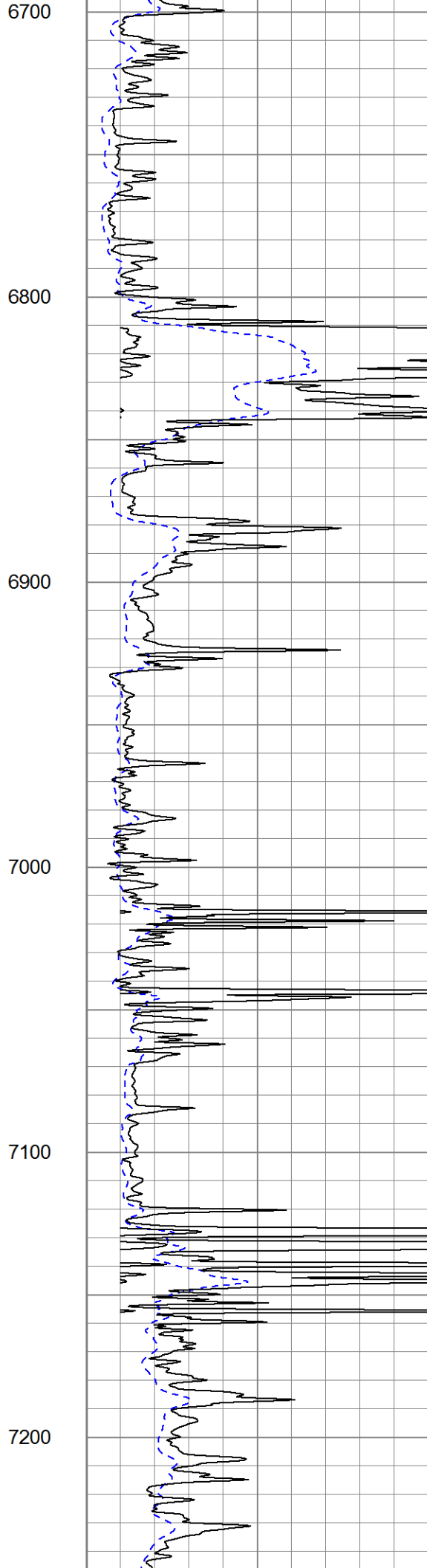
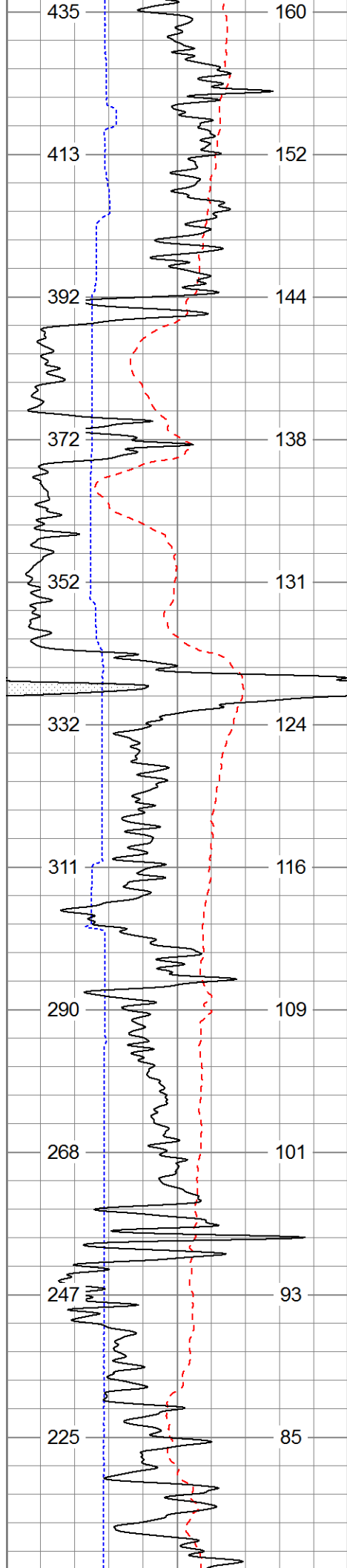


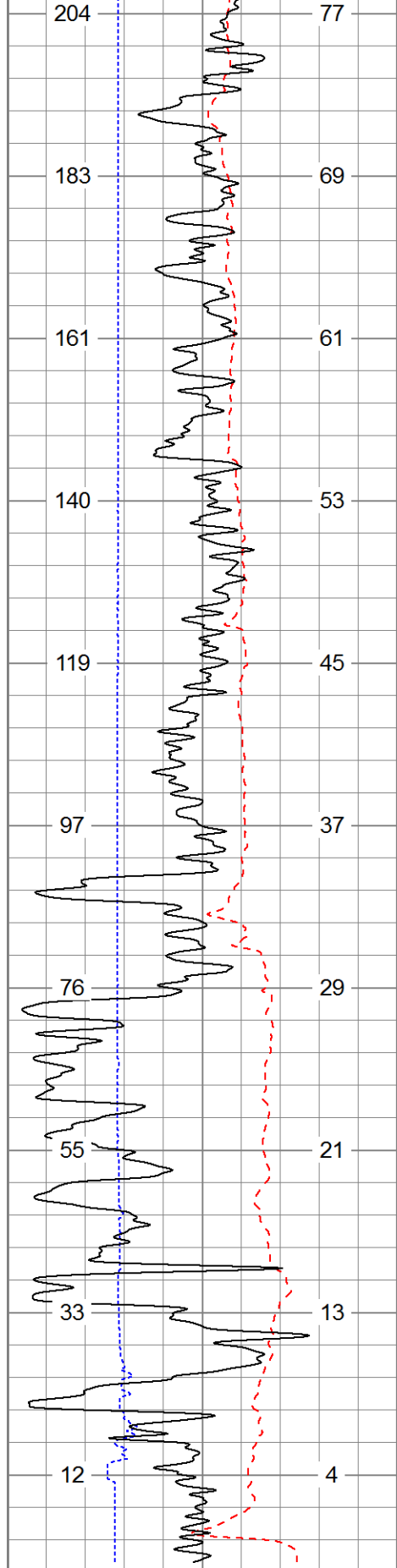




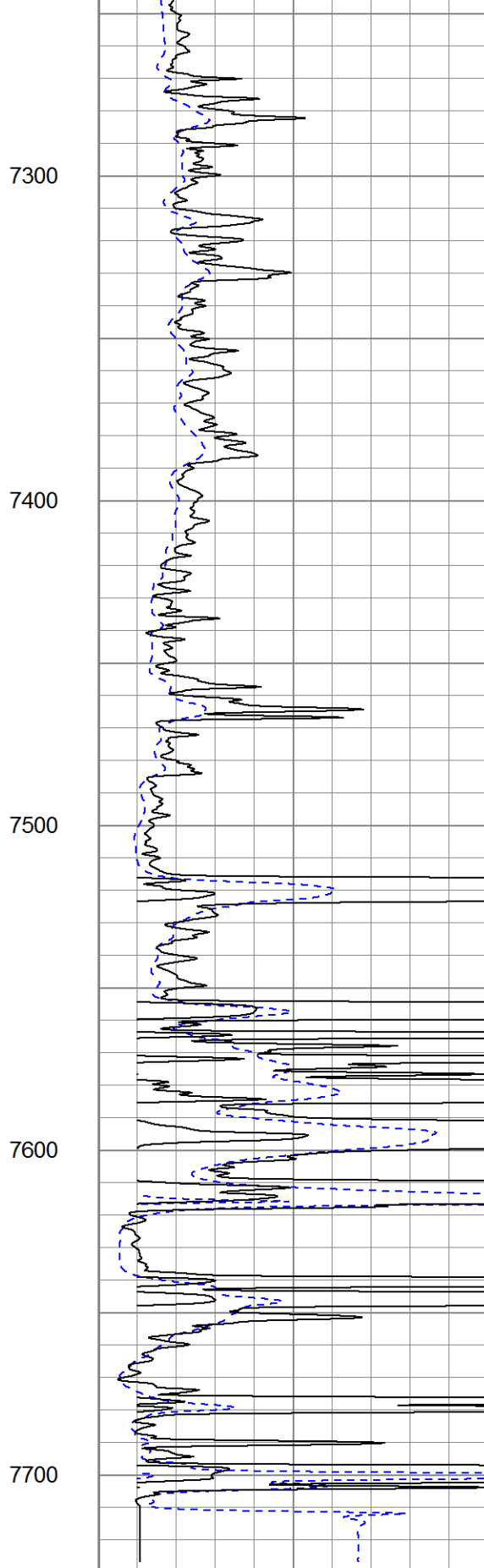








0	SP (mV)	200
6	Caliper (in)	16
0	Gamma Ray (GAPI)	200
TBHV (ft3)		ABHV (ft3)



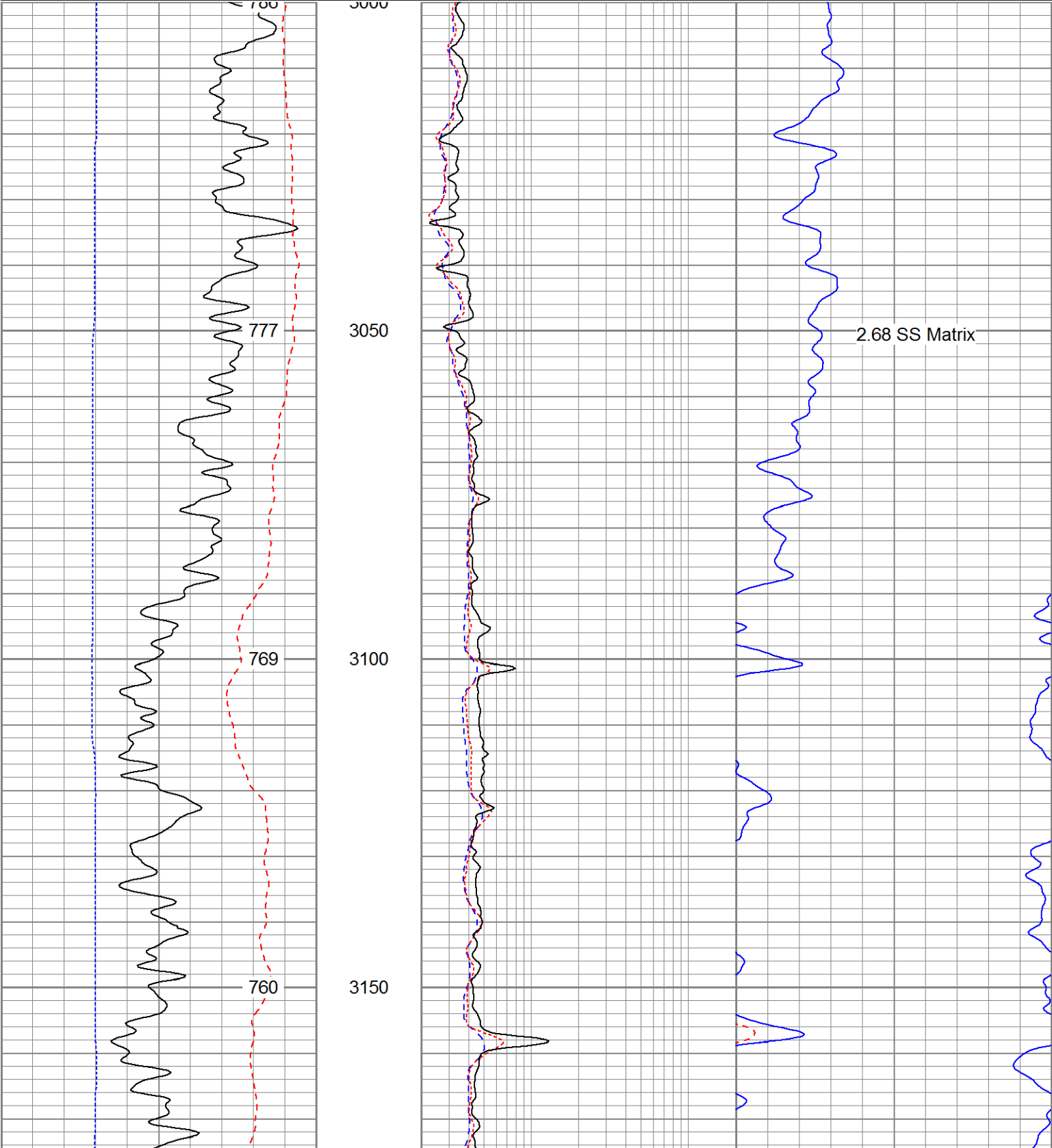
0	Deep Resistivity (Ohm-m)	50
0	Shallow Resistivity (Ohm-m)	50
50	RILD (Ohm-m)	500
50	RLL3 (Ohm-m)	500

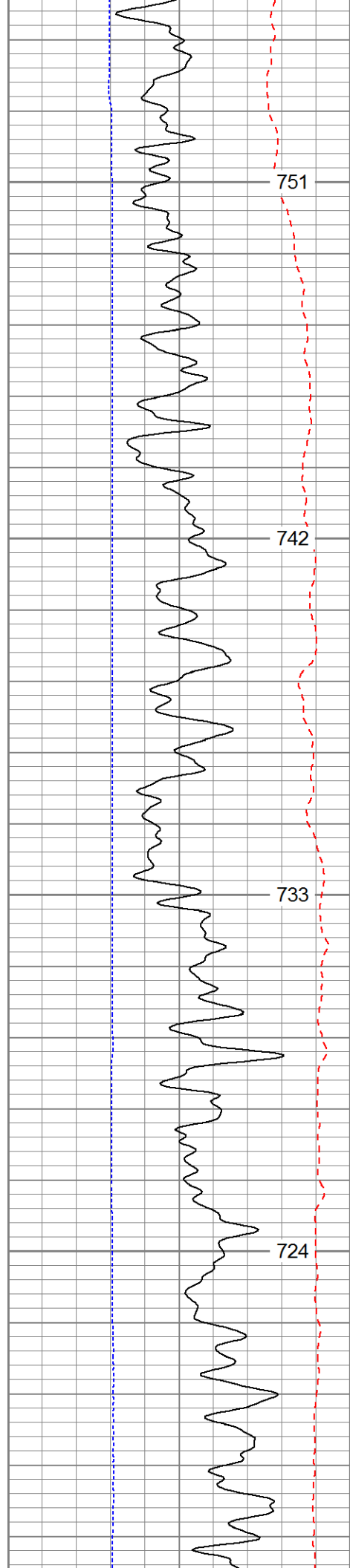


1000	CILD (mmho/m)	0
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Database File: 13645.db
Dataset Pathname: Final
Presentation Format: pdc1
Dataset Creation: Sun Aug 03 16:38:16 2014
Charted by: Depth in Feet scaled 1:240

6	Density Caliper (in)	16	2	Deep Resistivity (Ohm-m)	200	20	Density Porosity (pu)	0
30	Gamma Ray (GAPI)	130	2	Medium Resistivity (Ohm-m)	200	20	Neutron Porosity (pu)	0
80	SP (mV)	180	2	Shallow Resistivity (Ohm-m)	200			
	ABHV (ft3)							



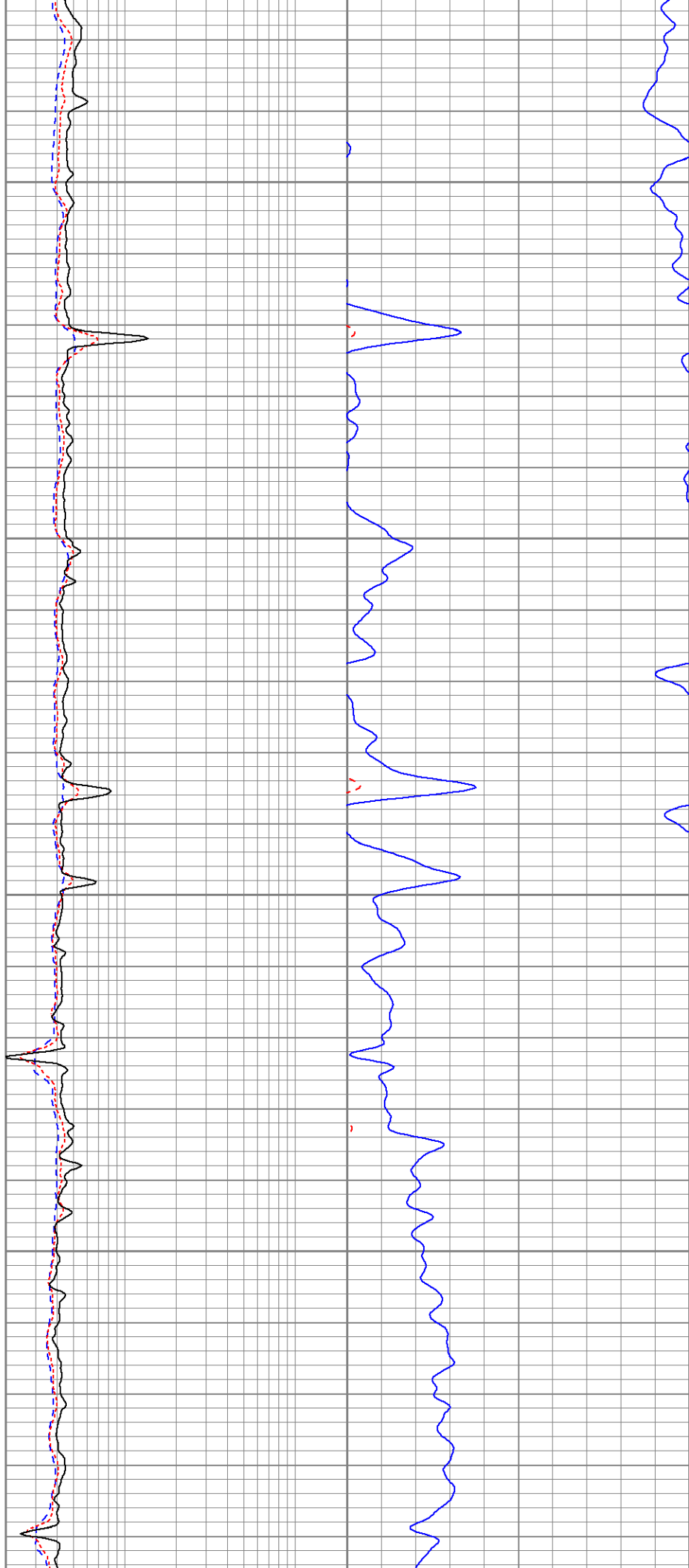


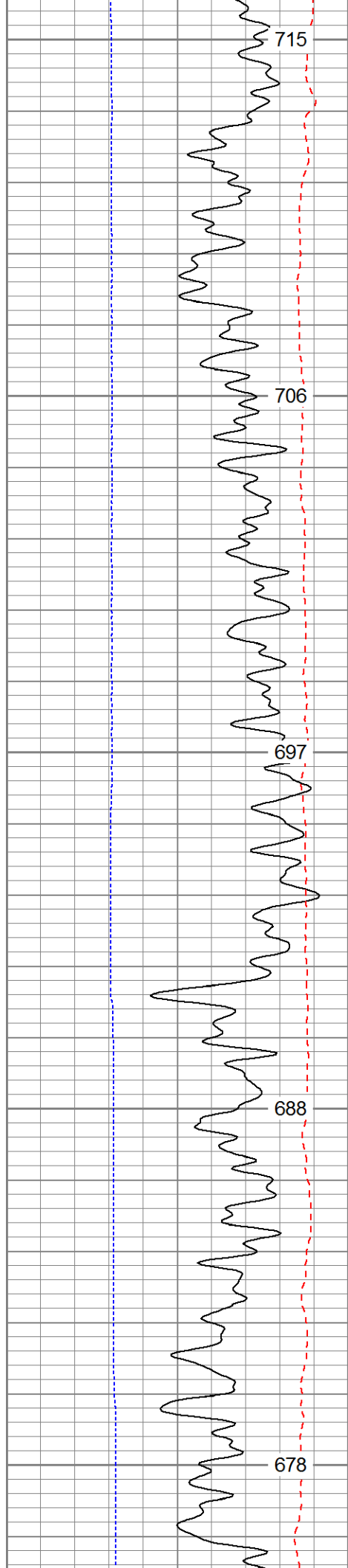
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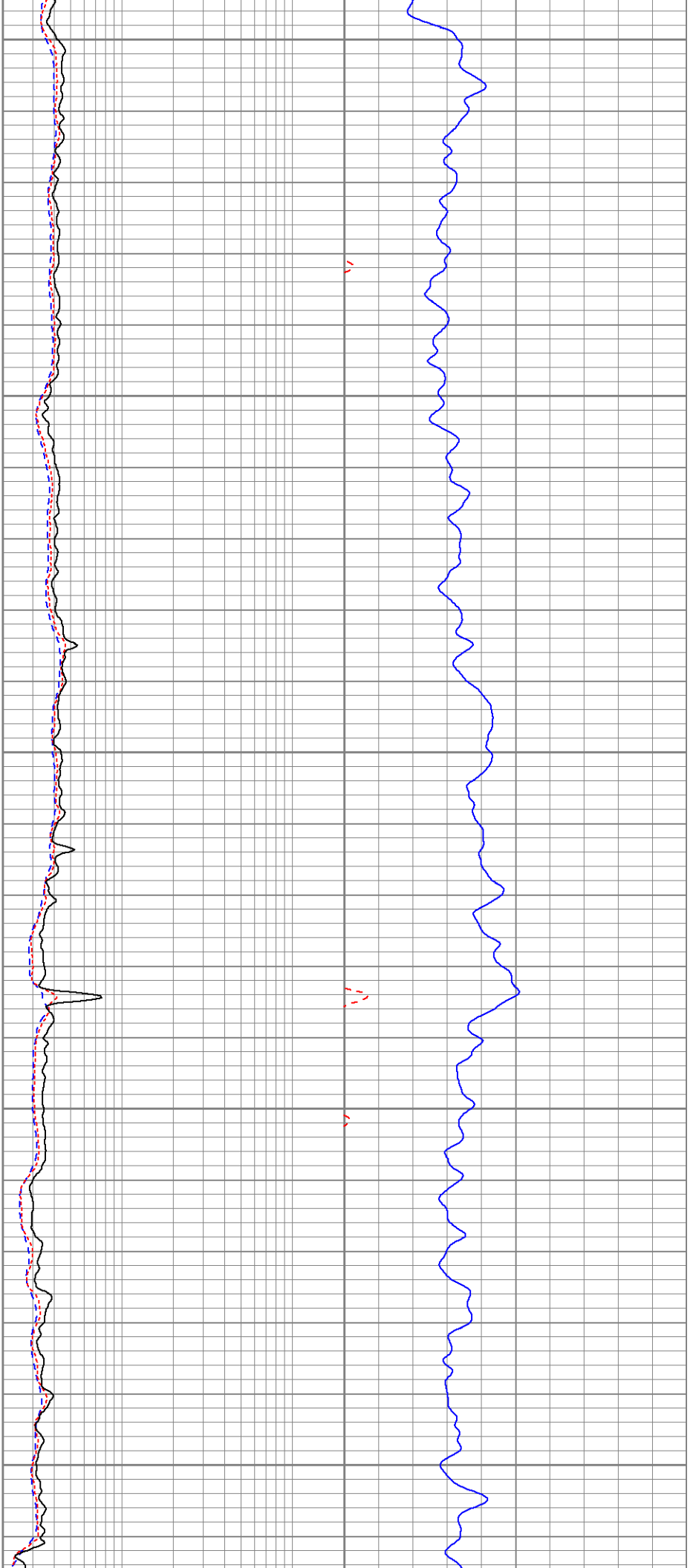
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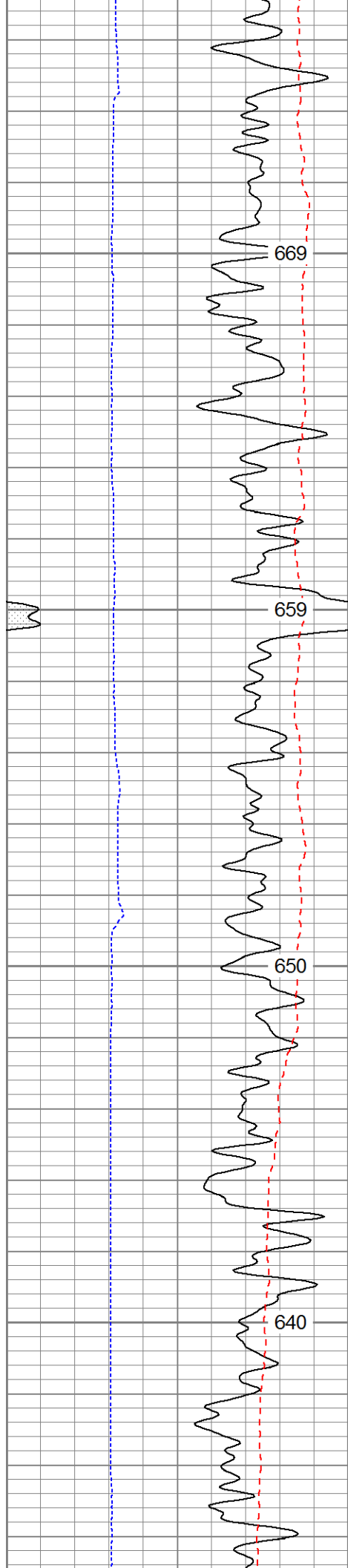
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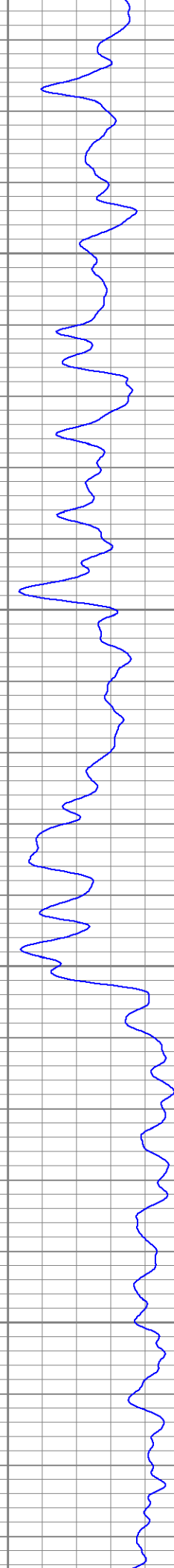
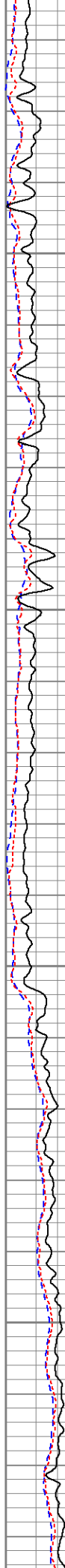


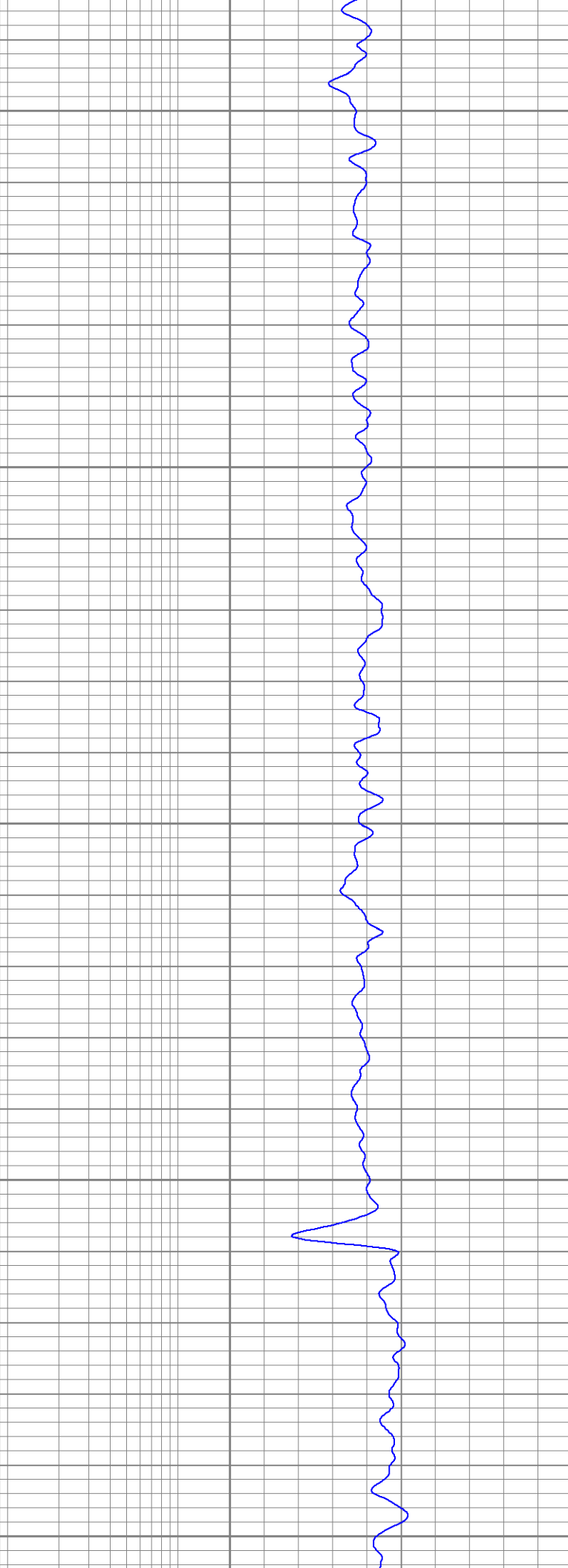
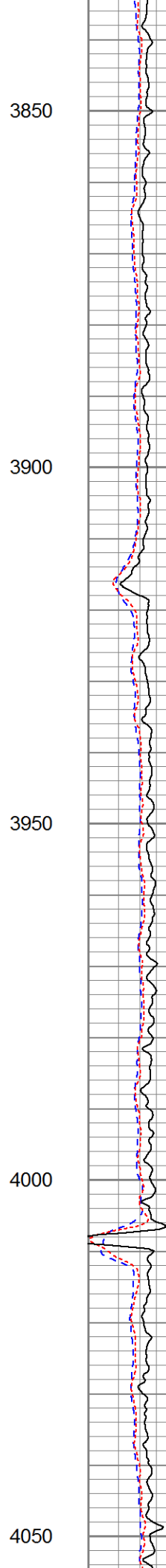
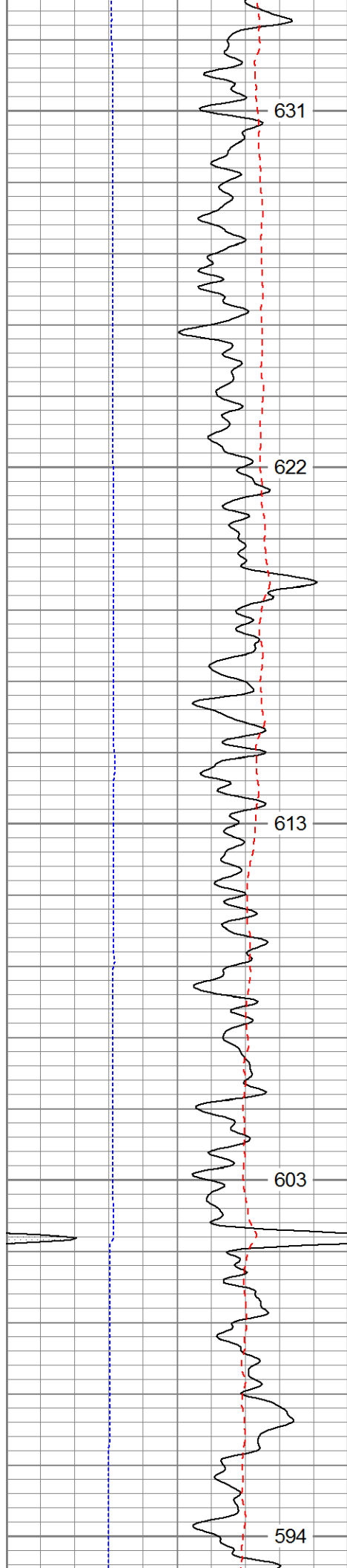
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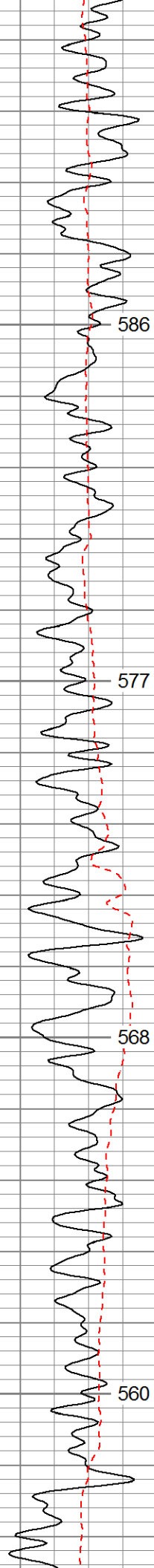
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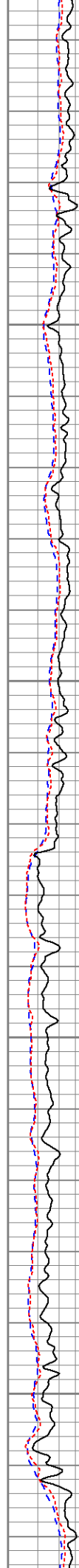


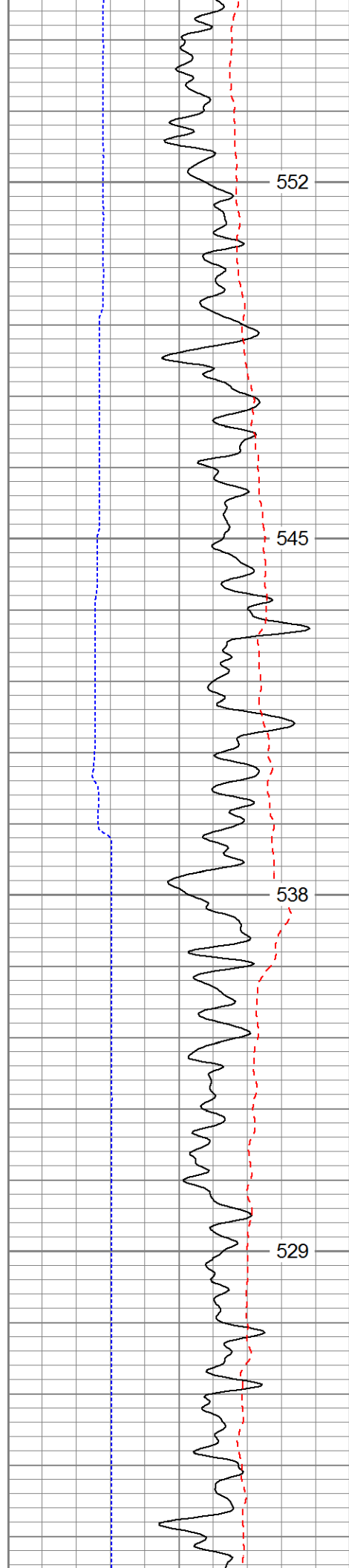
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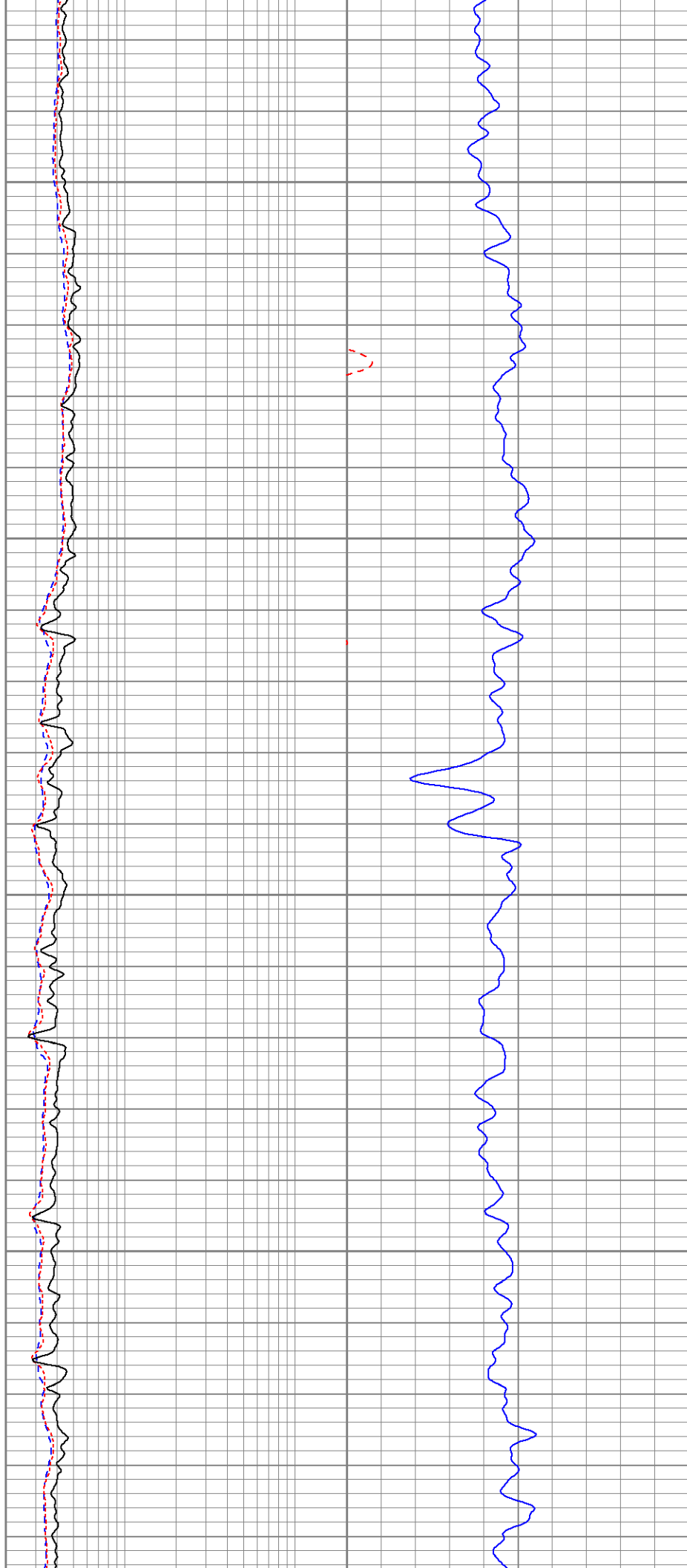
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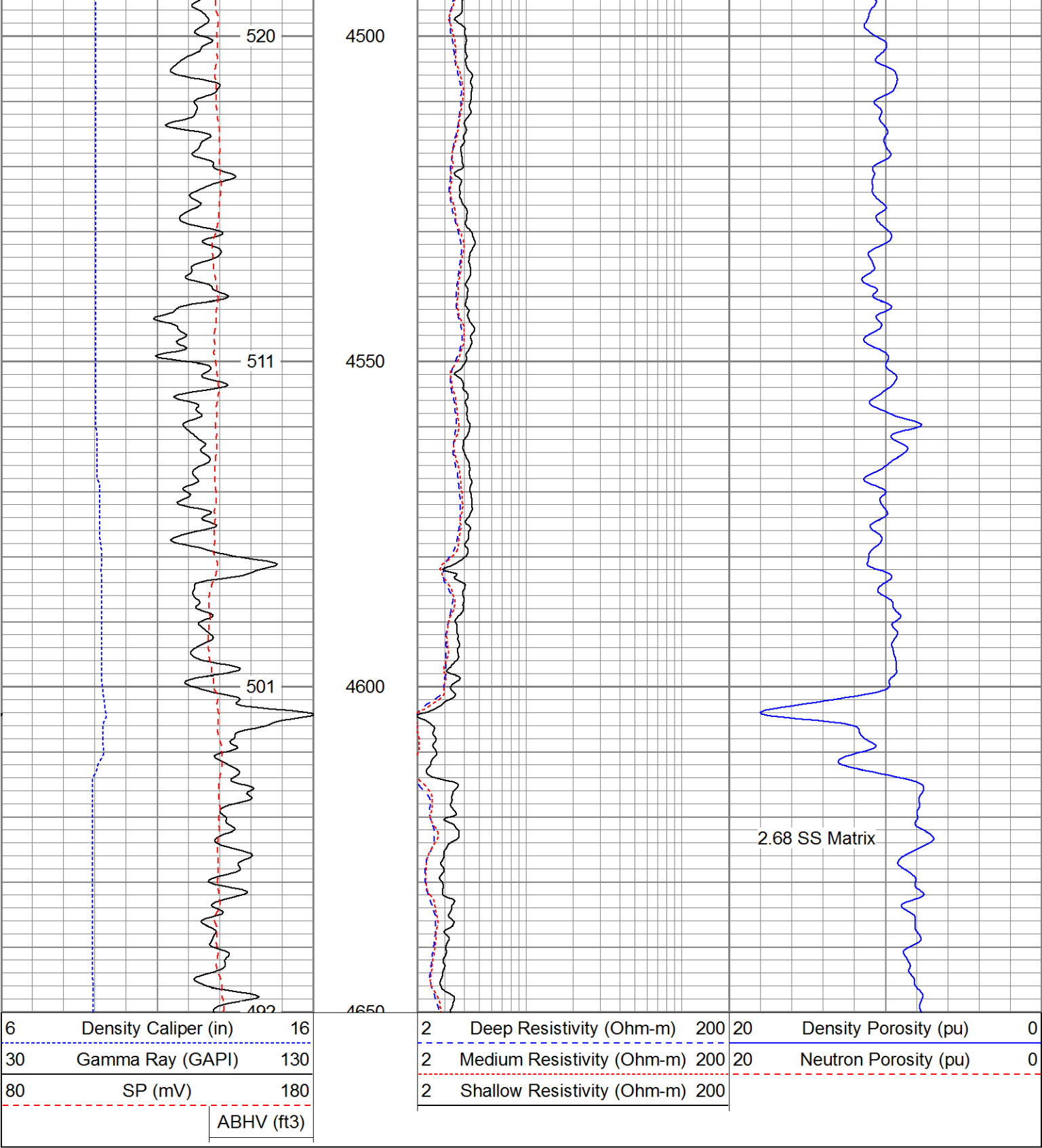
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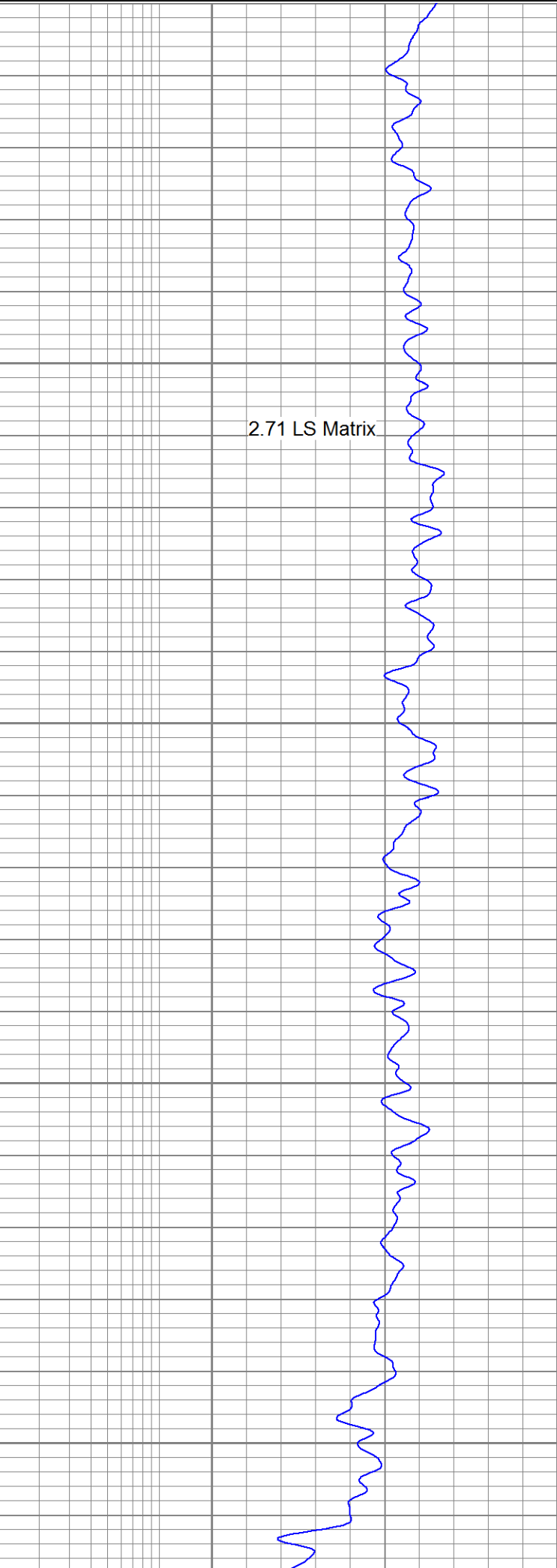
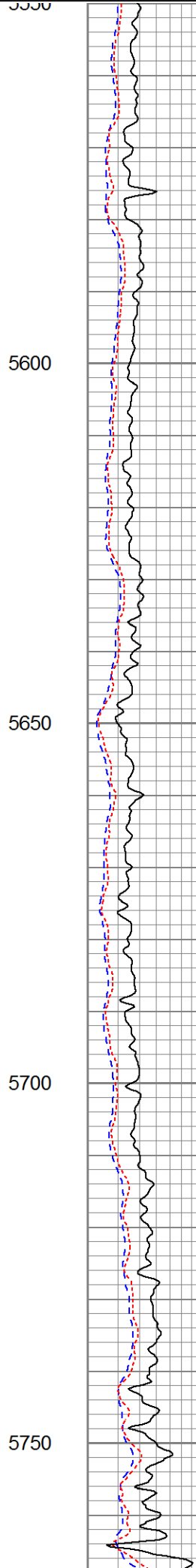
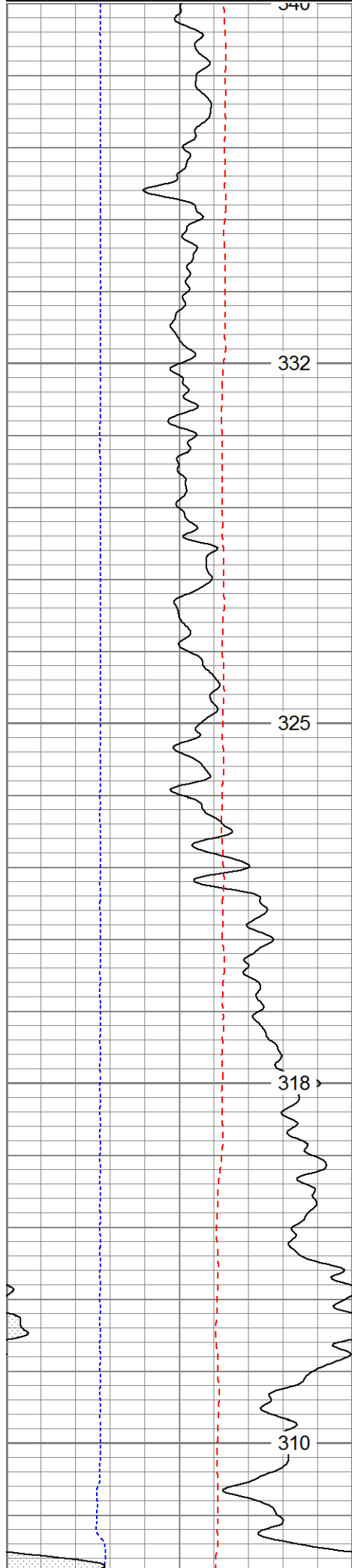
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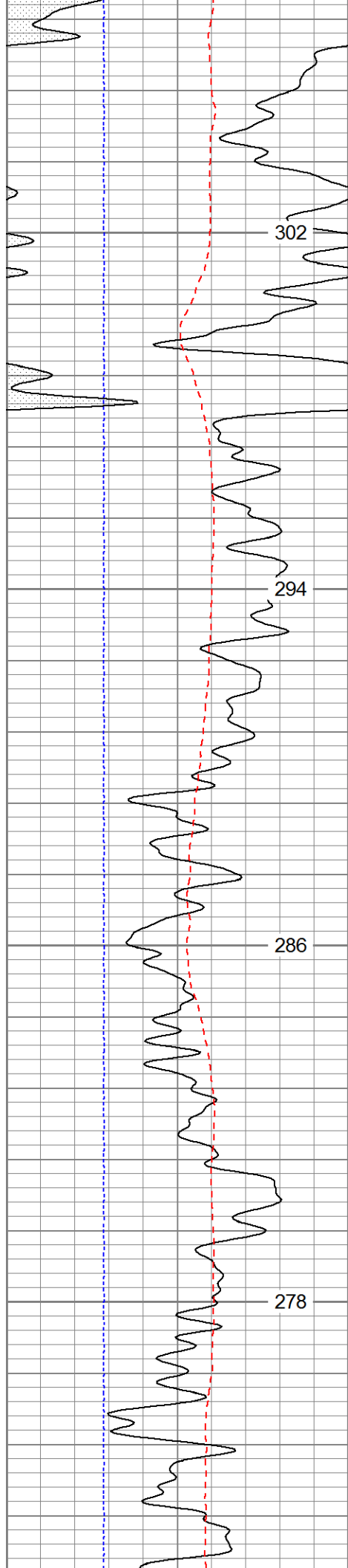




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Presentation Format: pdc
Dataset Creation: Sun Aug 03 16:38:16 2014
Charted by: Depth in Feet scaled 1:240

6	Caliper (in)	16	2	Deep Resistivity (Ohm-m)	200	20	Density Porosity (pu)	0
0	Gamma Ray (GAPI)	200	2	Medium Resistivity (Ohm-m)	200	20	Neutron Porosity (pu)	0
0	SP (mV)	200	2	Shallow Resistivity (Ohm-m)	200			



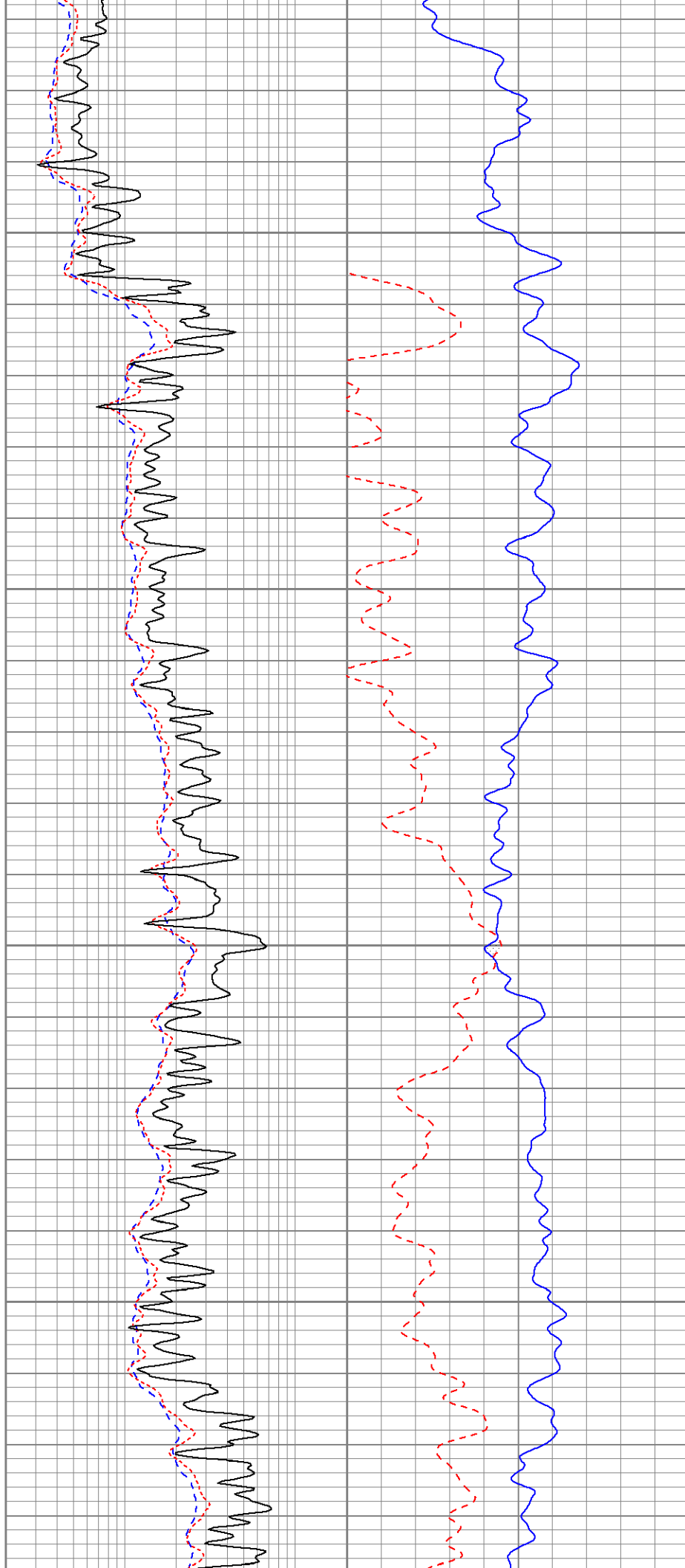


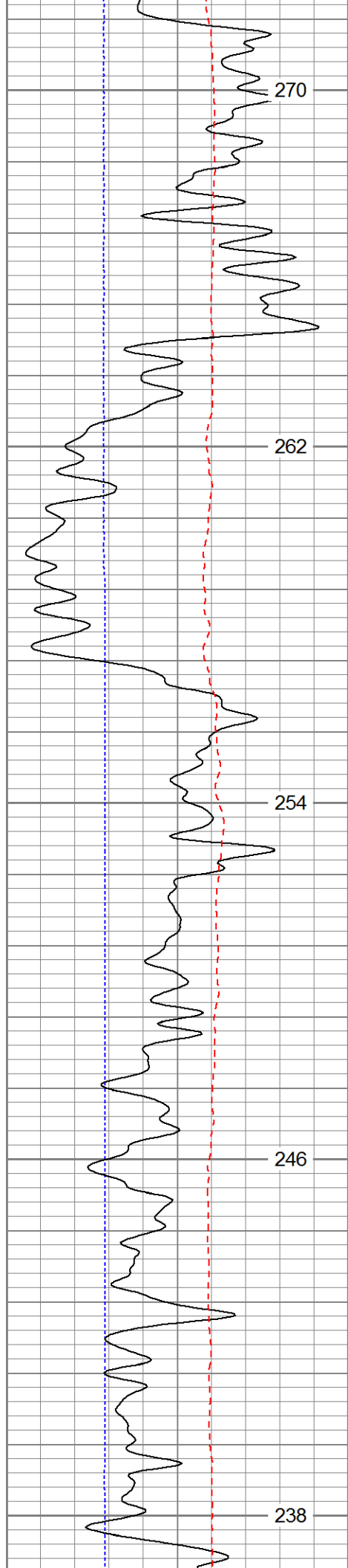
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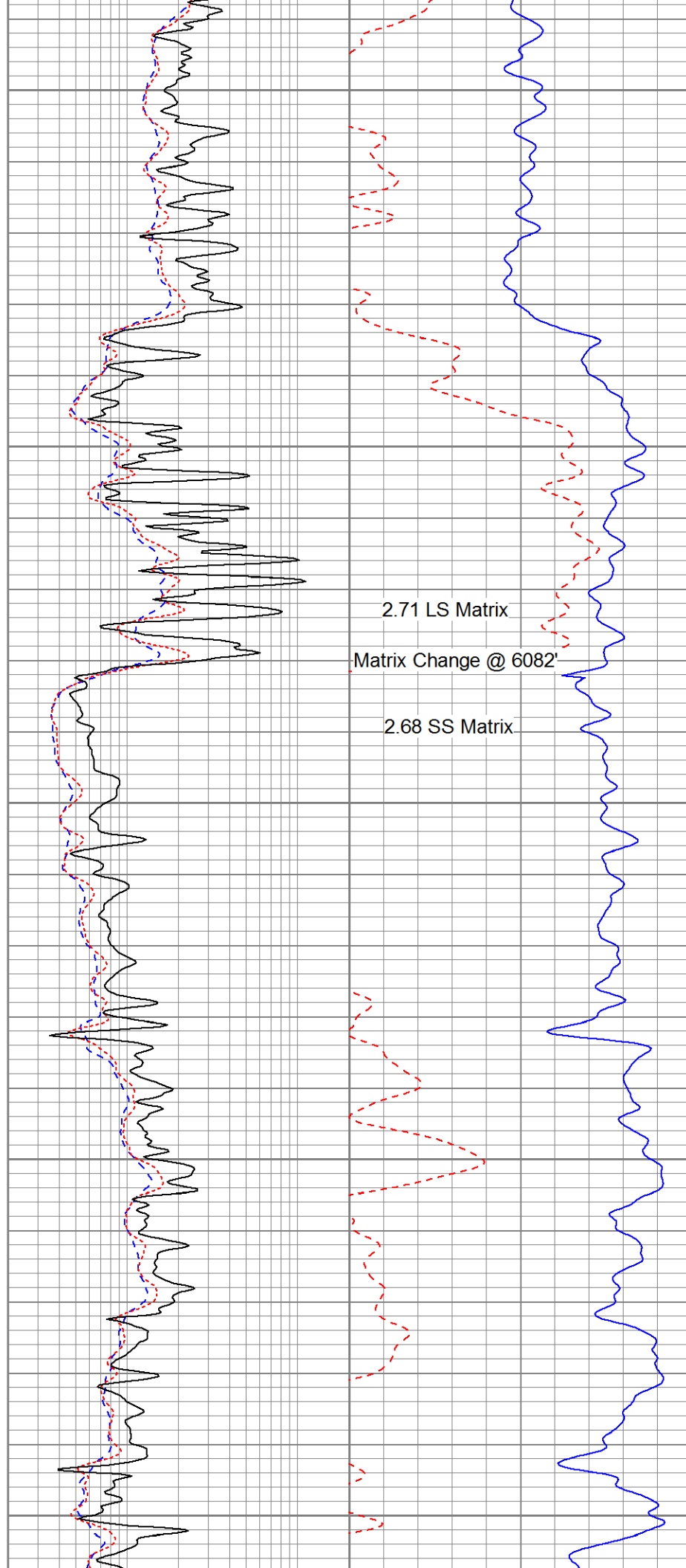
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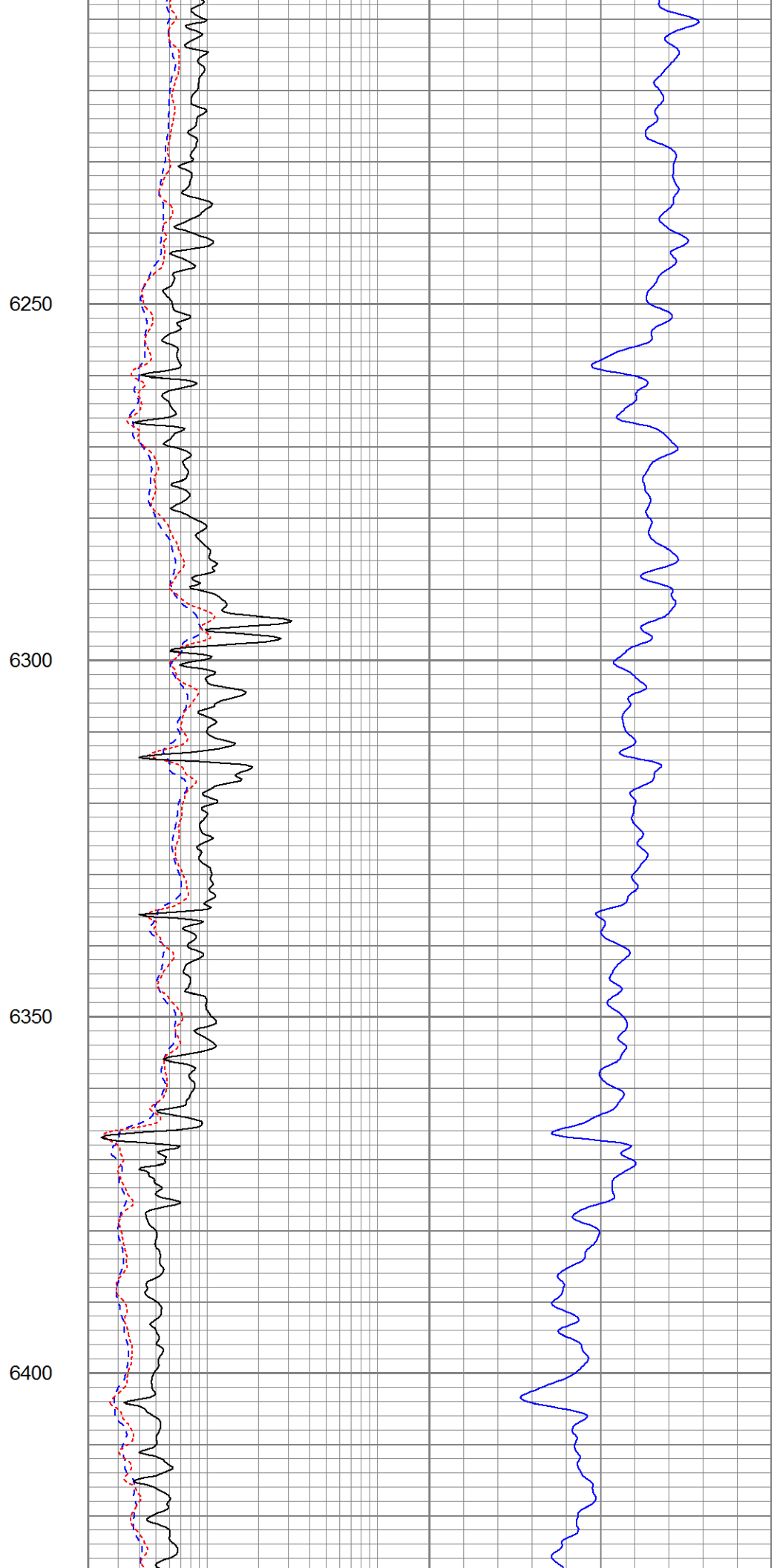
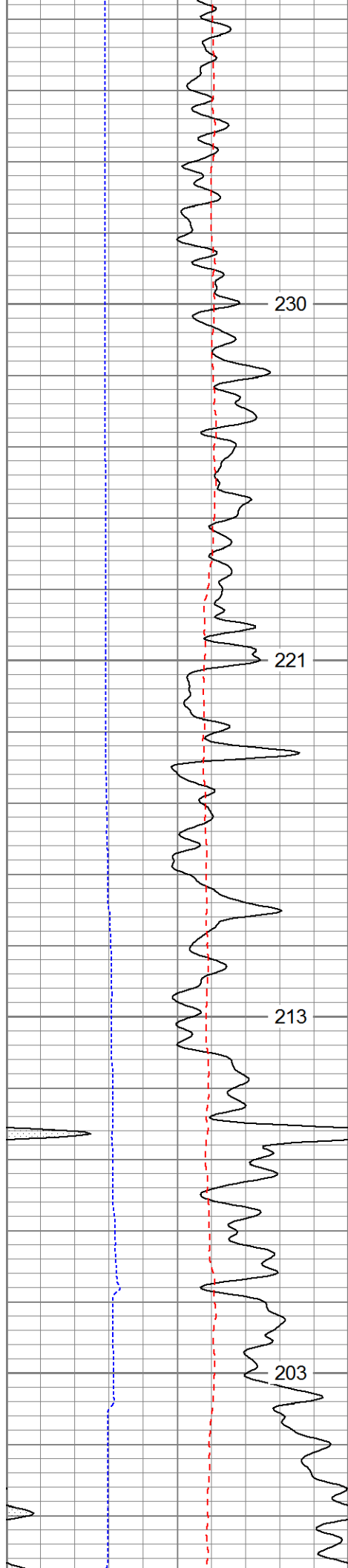
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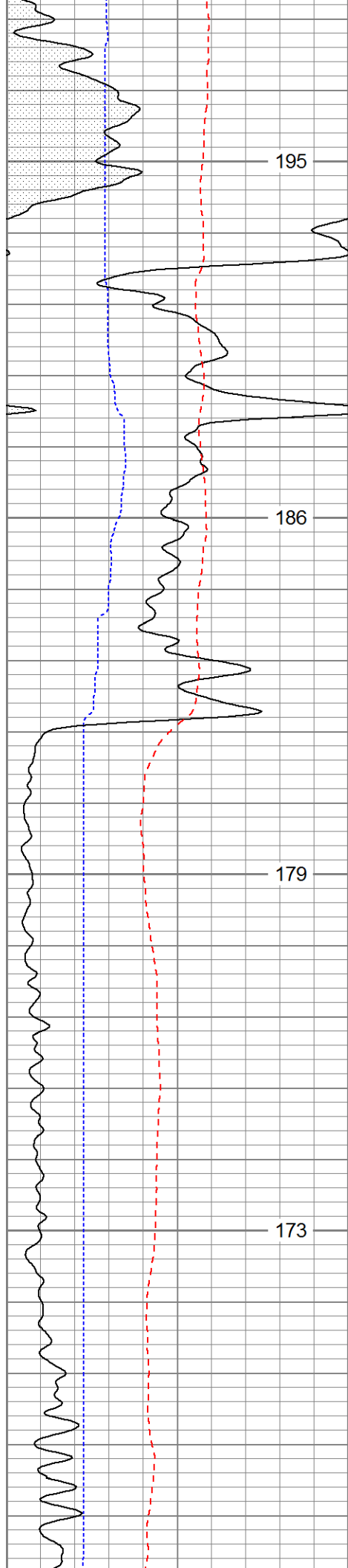
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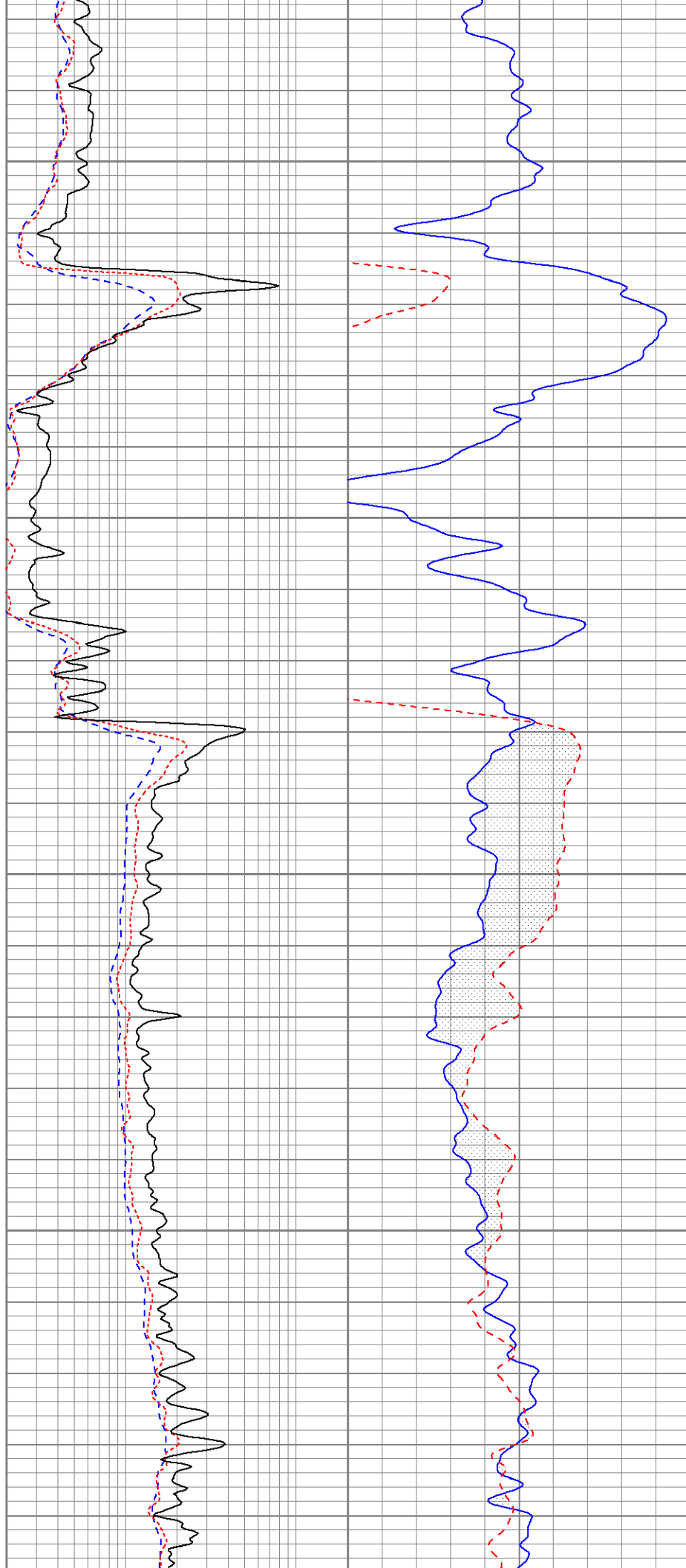


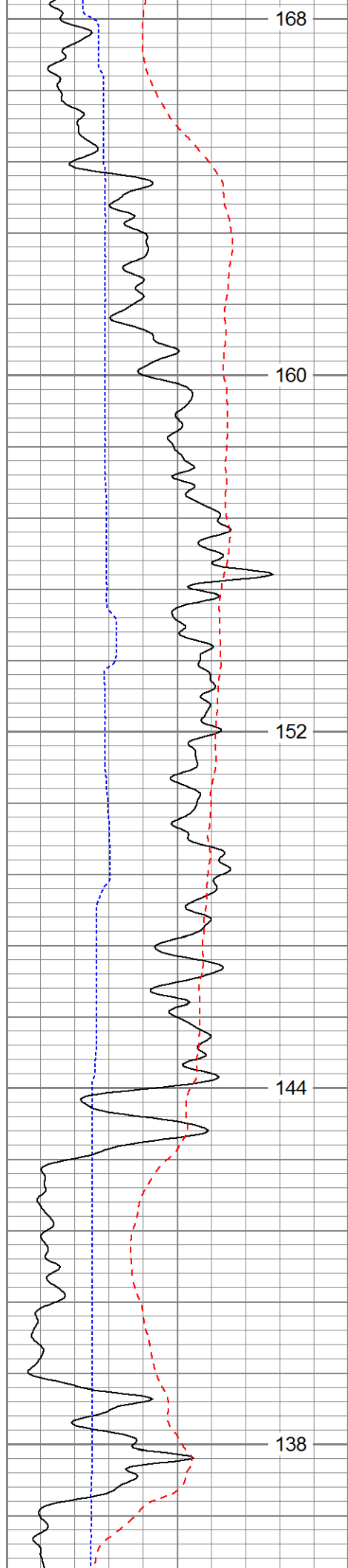
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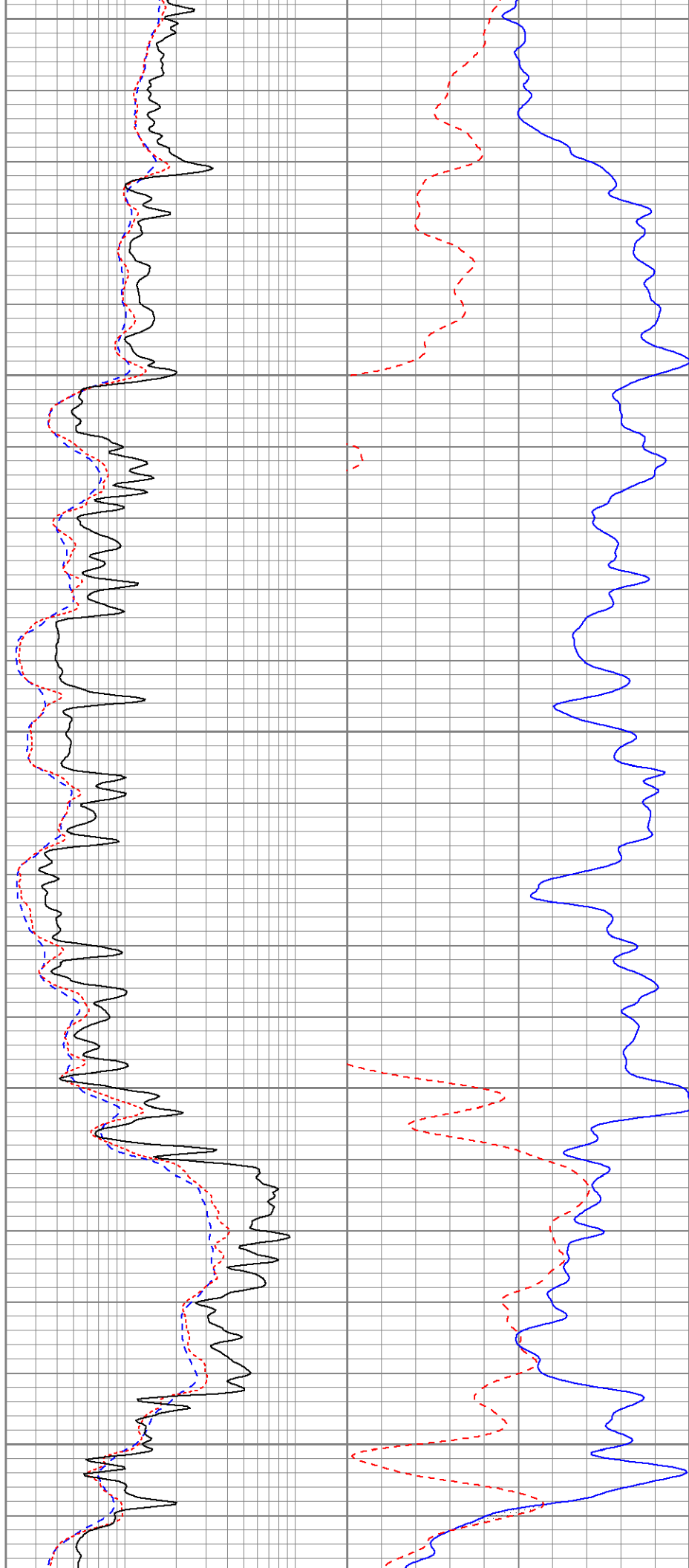
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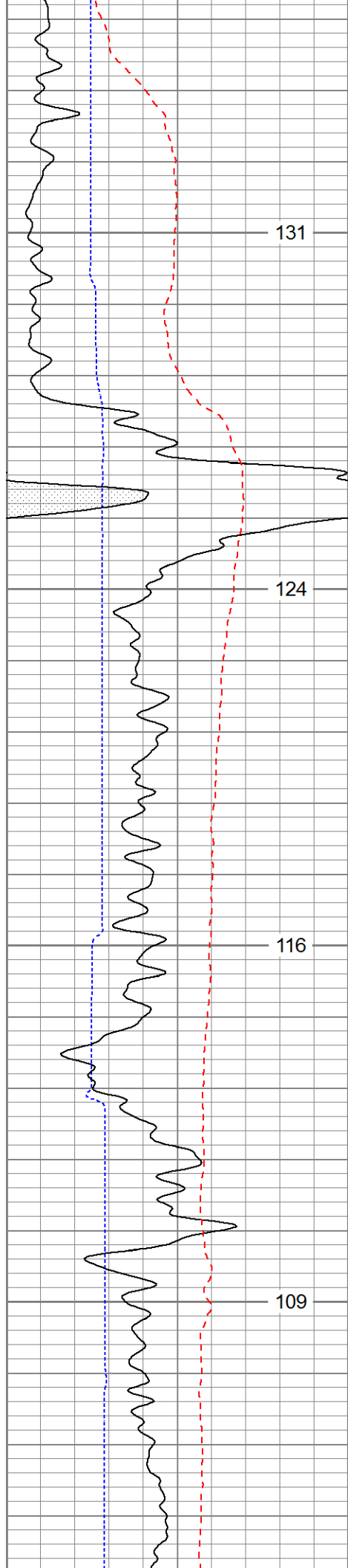
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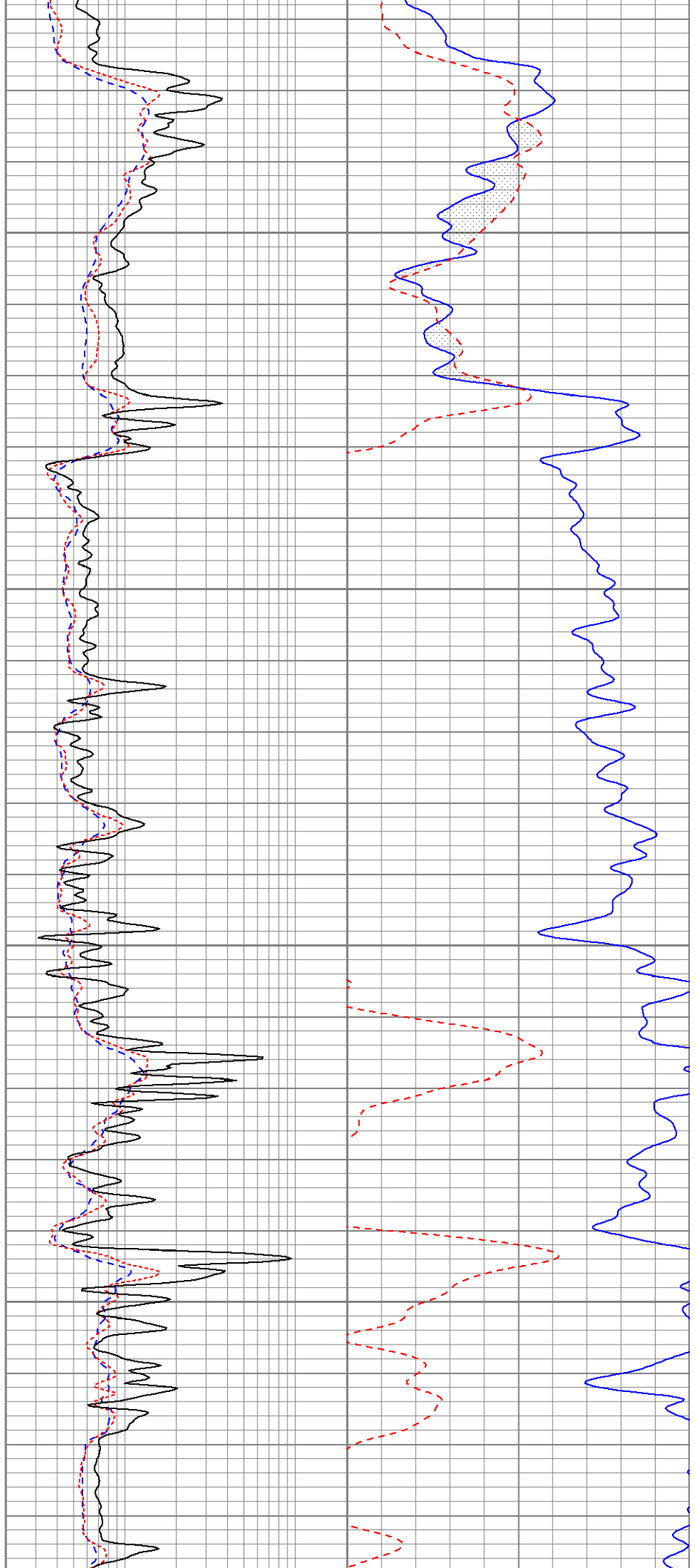


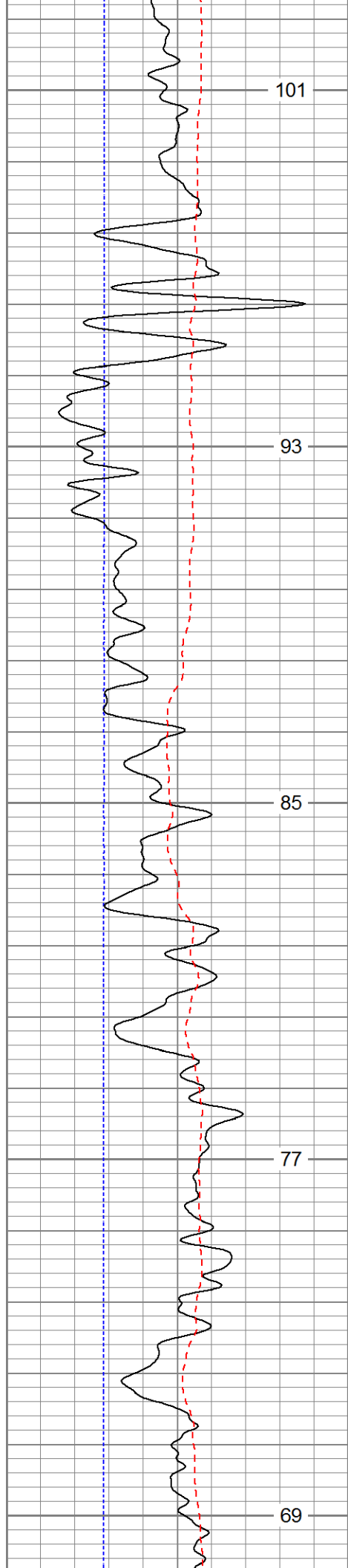
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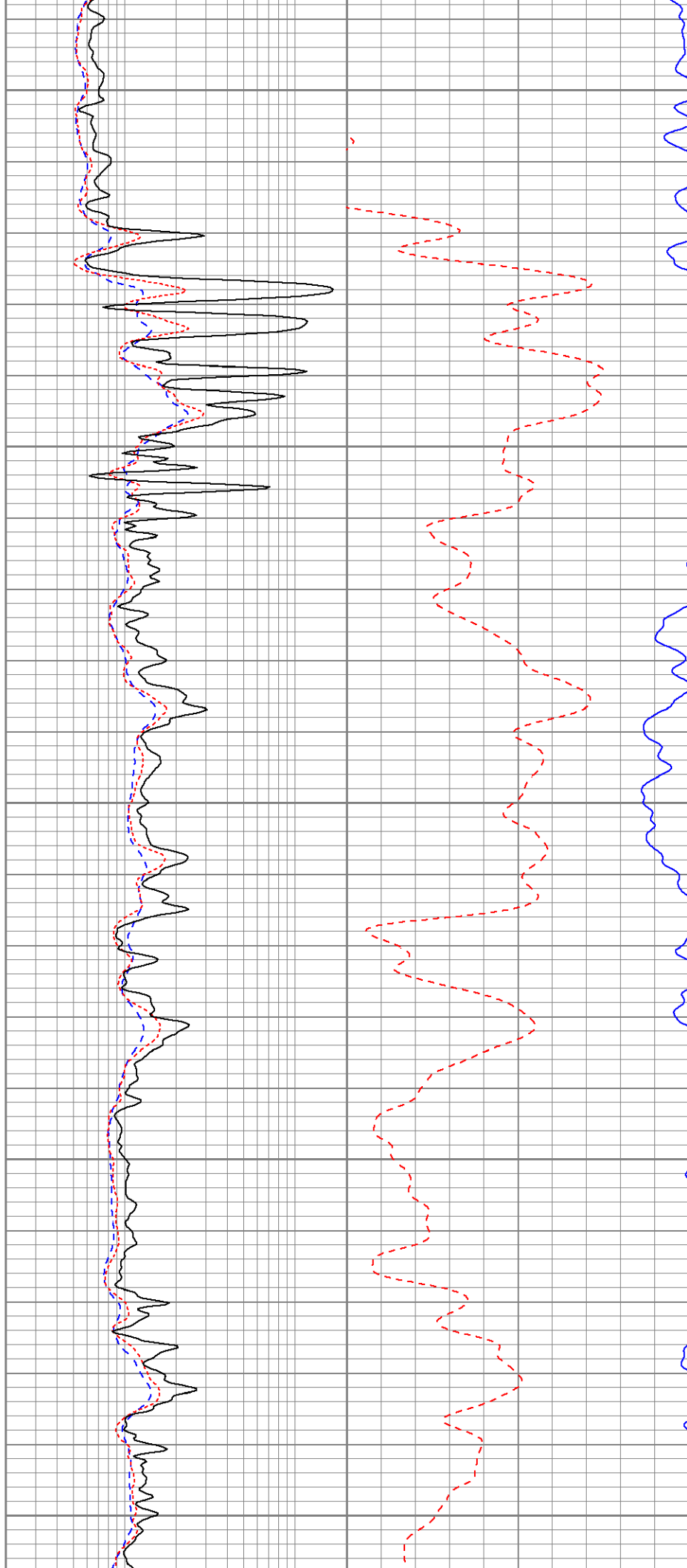
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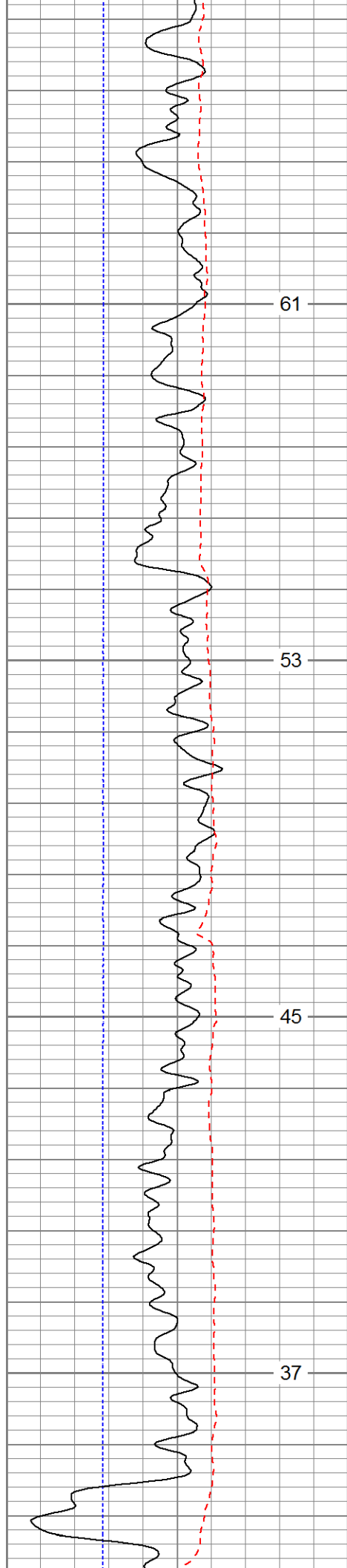
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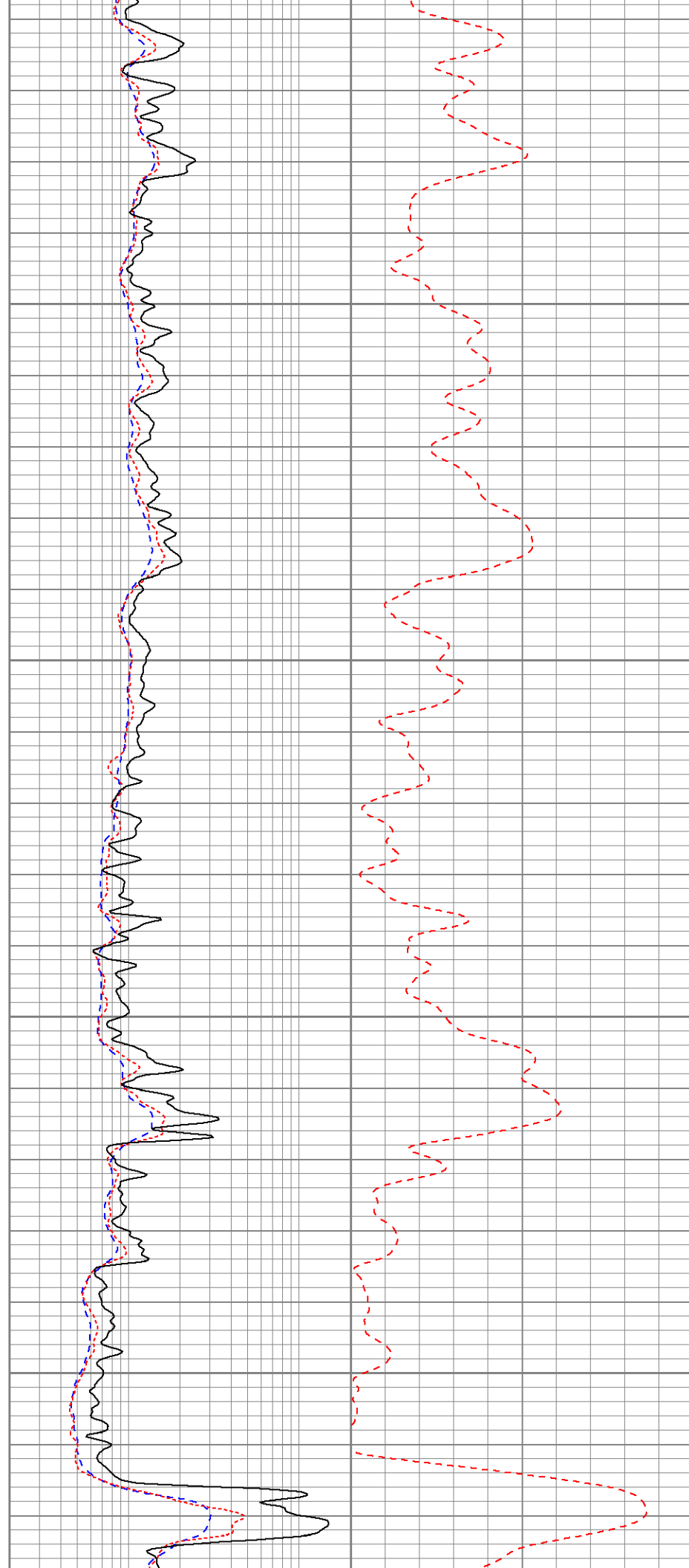


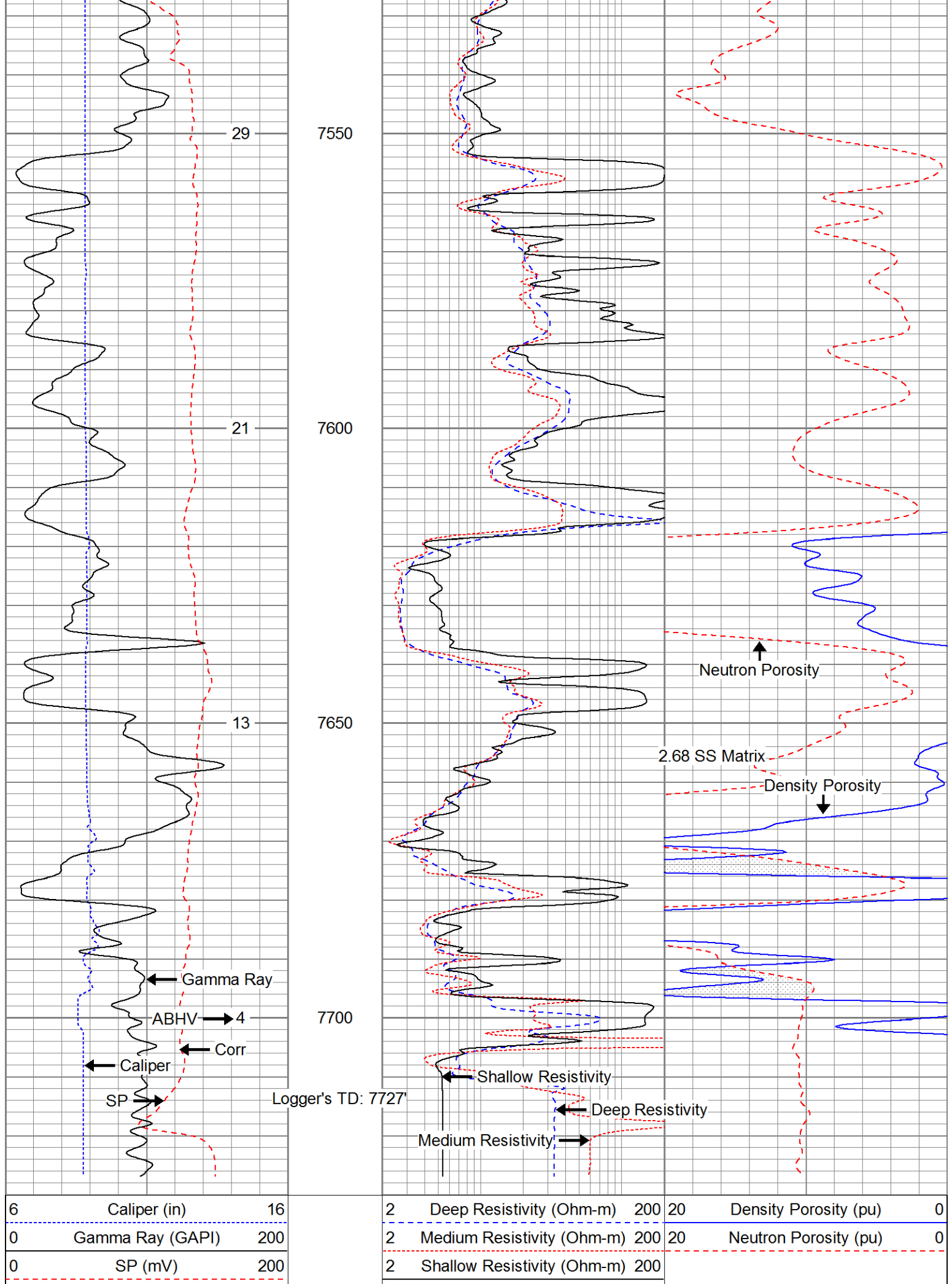
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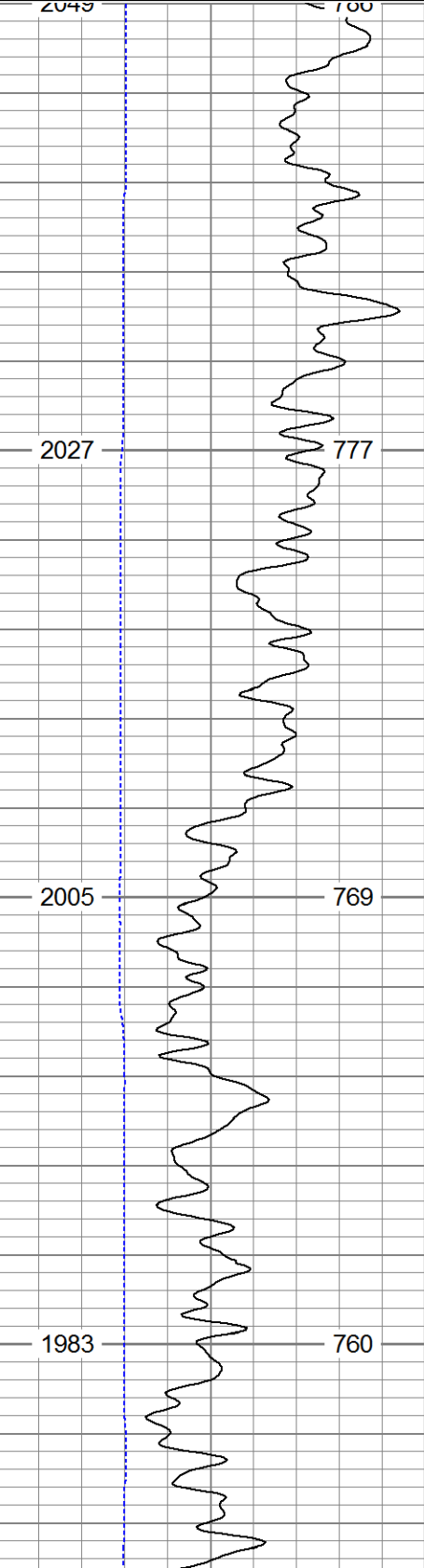




Database File: 13645.db
Dataset Pathname: Final
Presentation Format: cdl1
Dataset Creation: Sun Aug 03 16:38:16 2014
Charted by: Depth in Feet scaled 1:240

6 Caliper (in) 16
30 Gamma Ray (GAPI) 130

2 Bulk Density (g/cc) 3
30 Density Porosity (pu) -10
-0.5 Correction (g/cc) 0.5

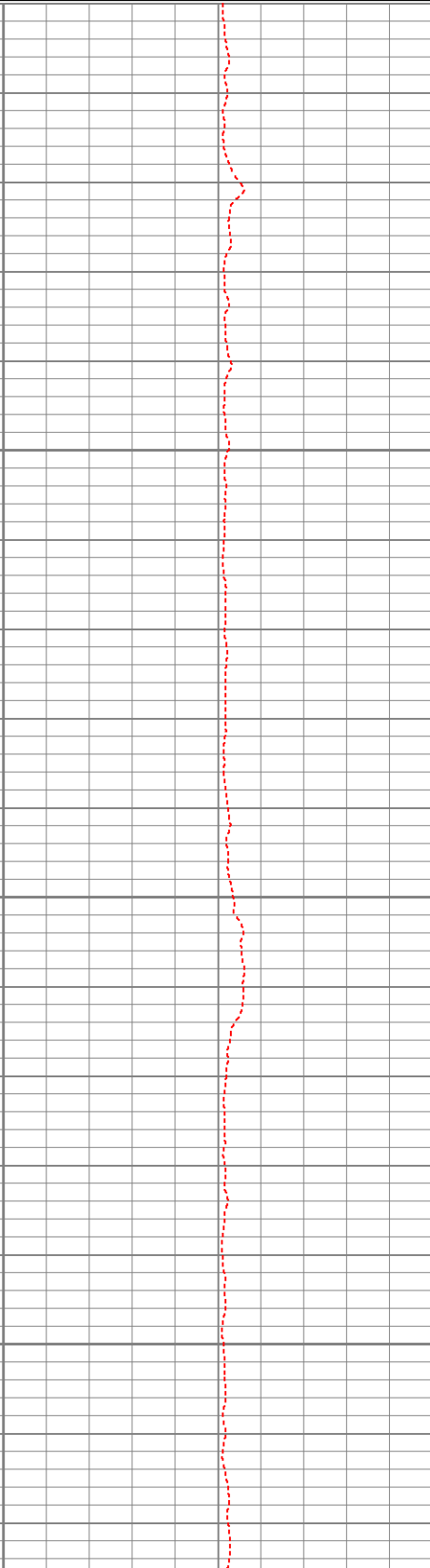
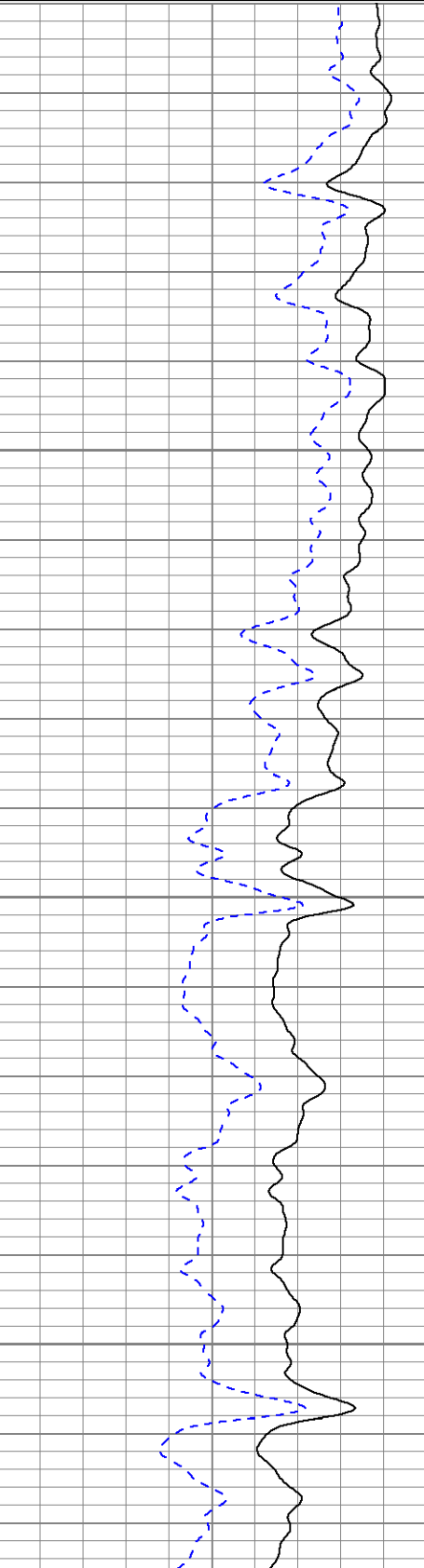


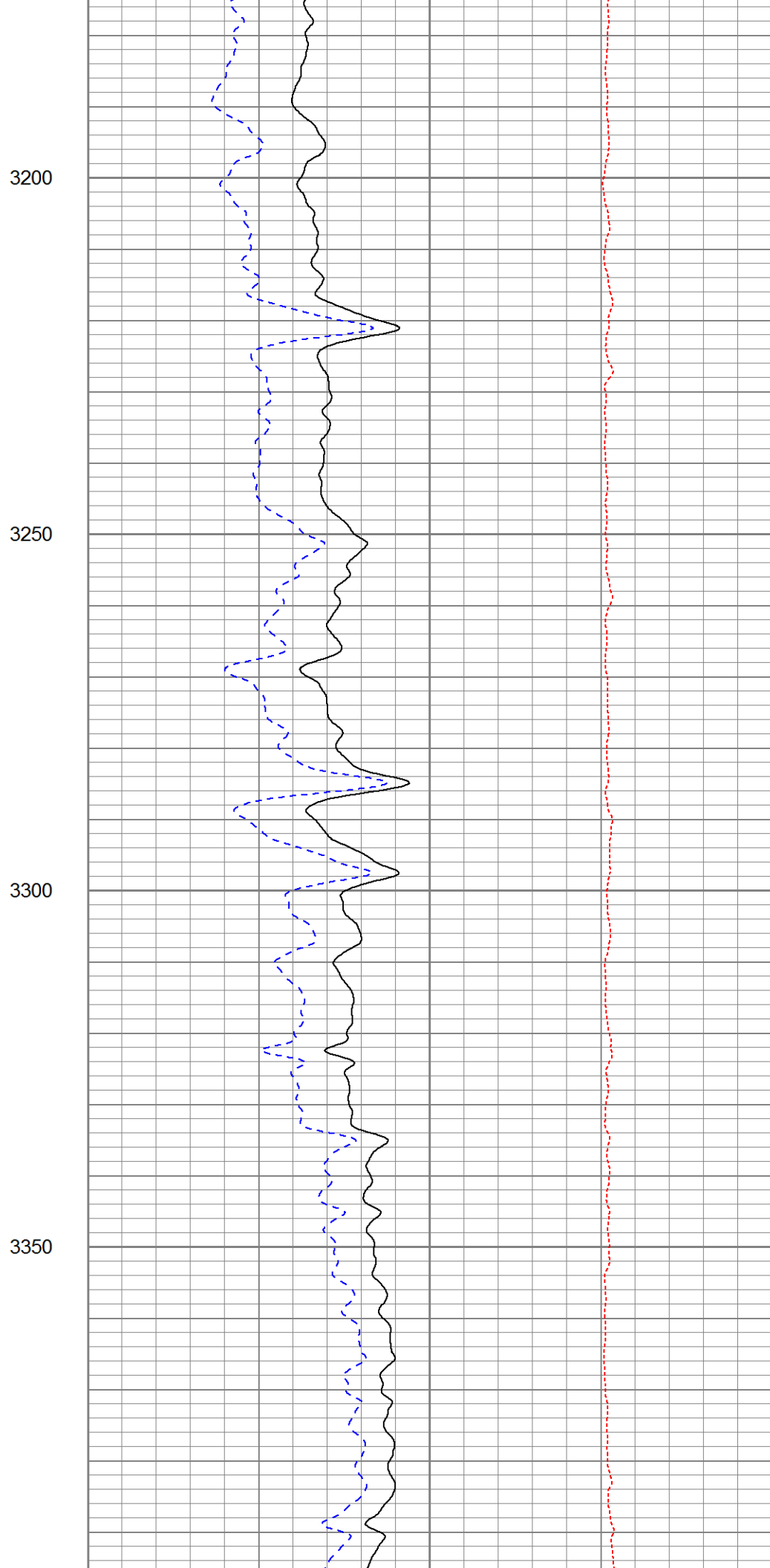
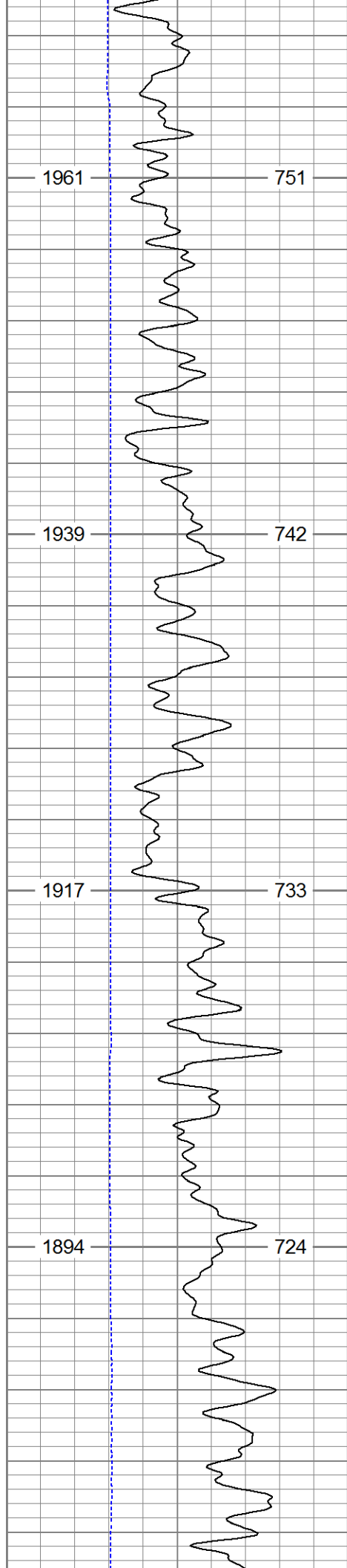
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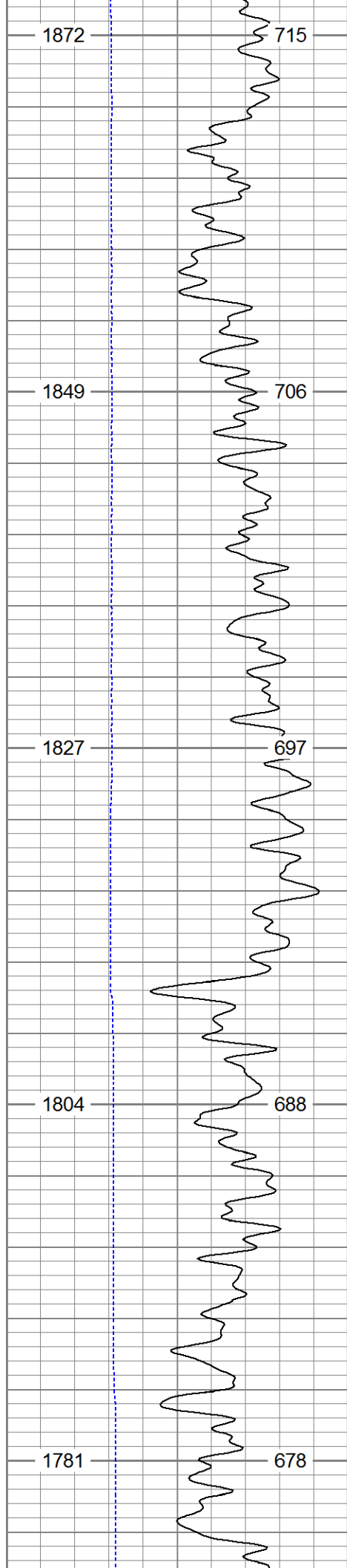
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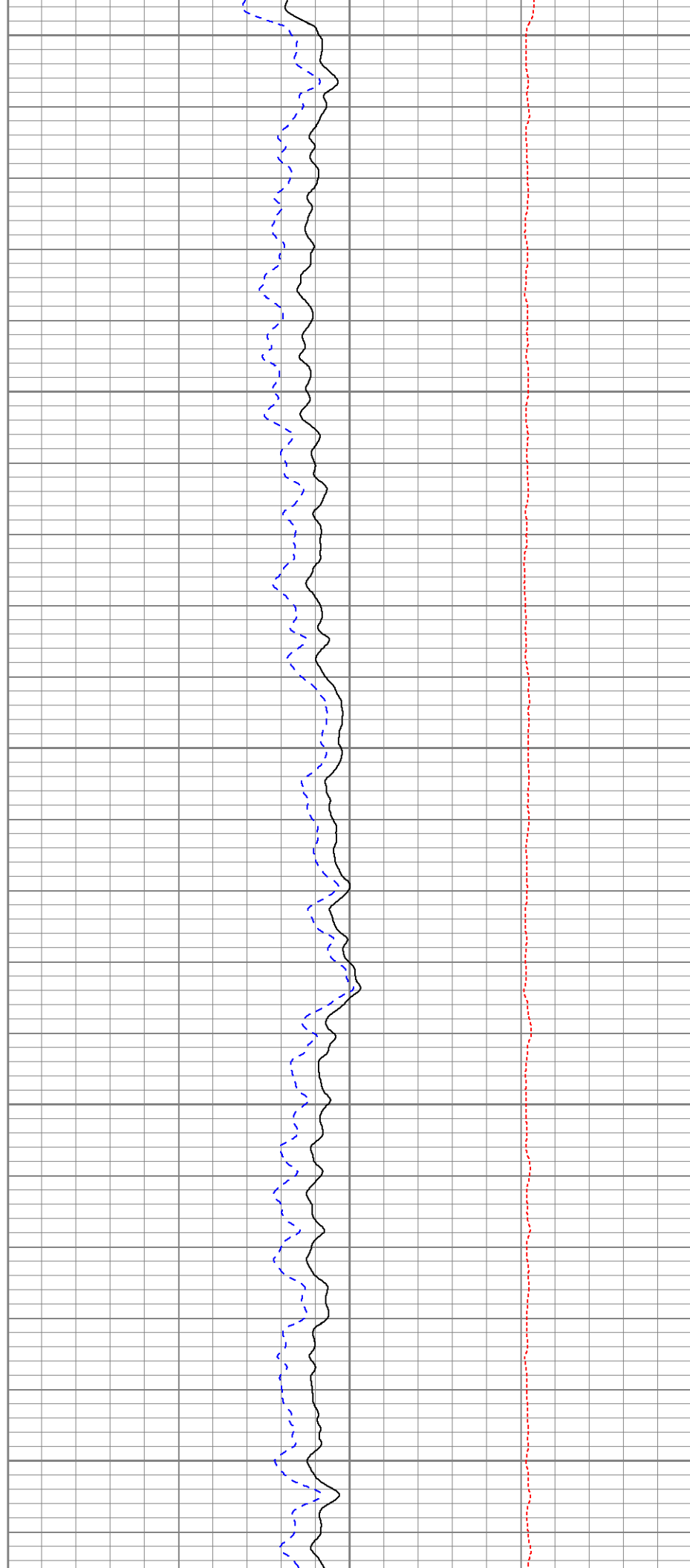
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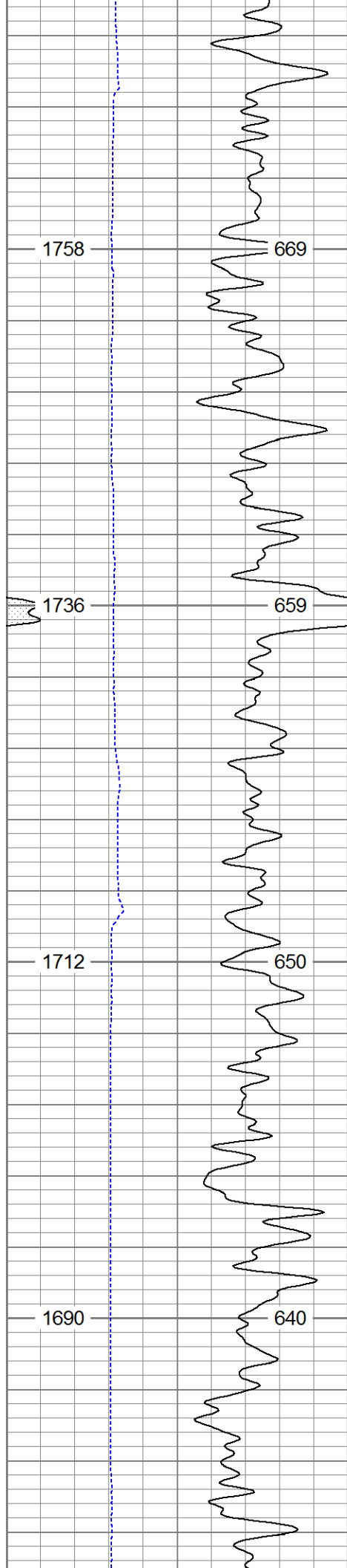






3400
3450
3500
3550
3600



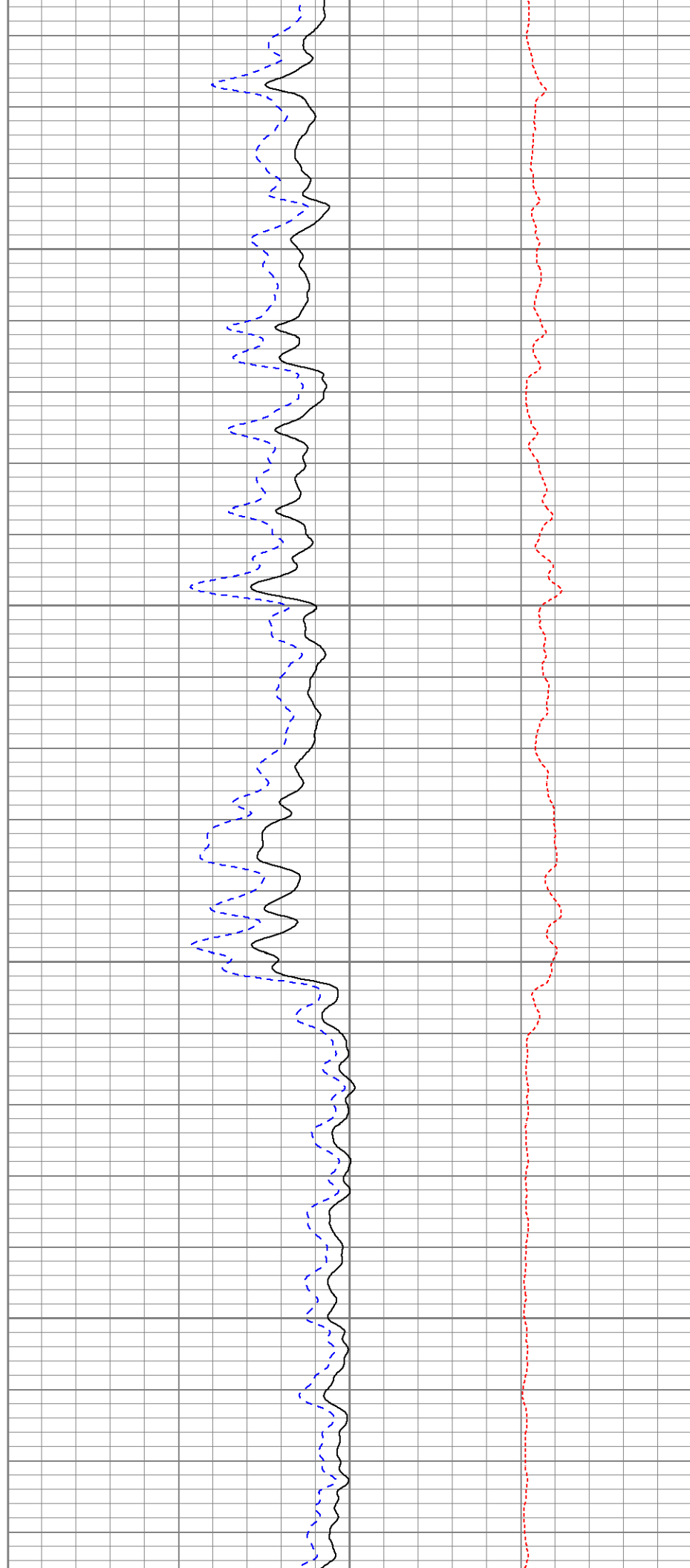


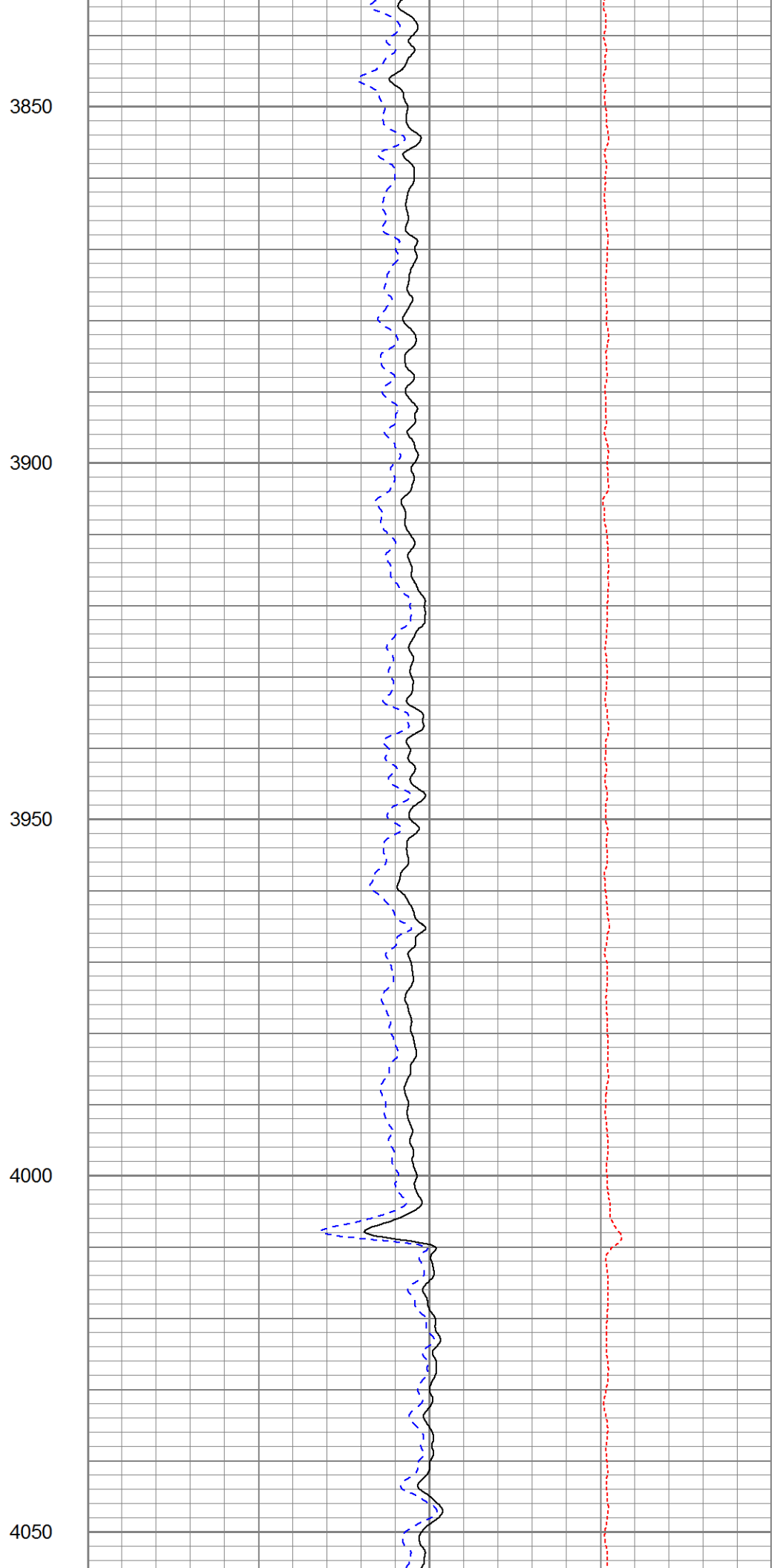
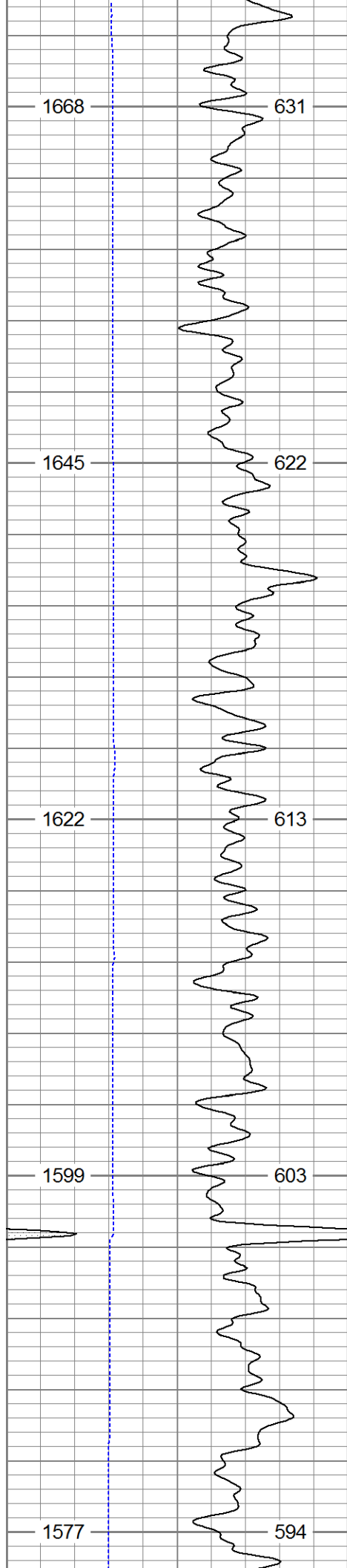
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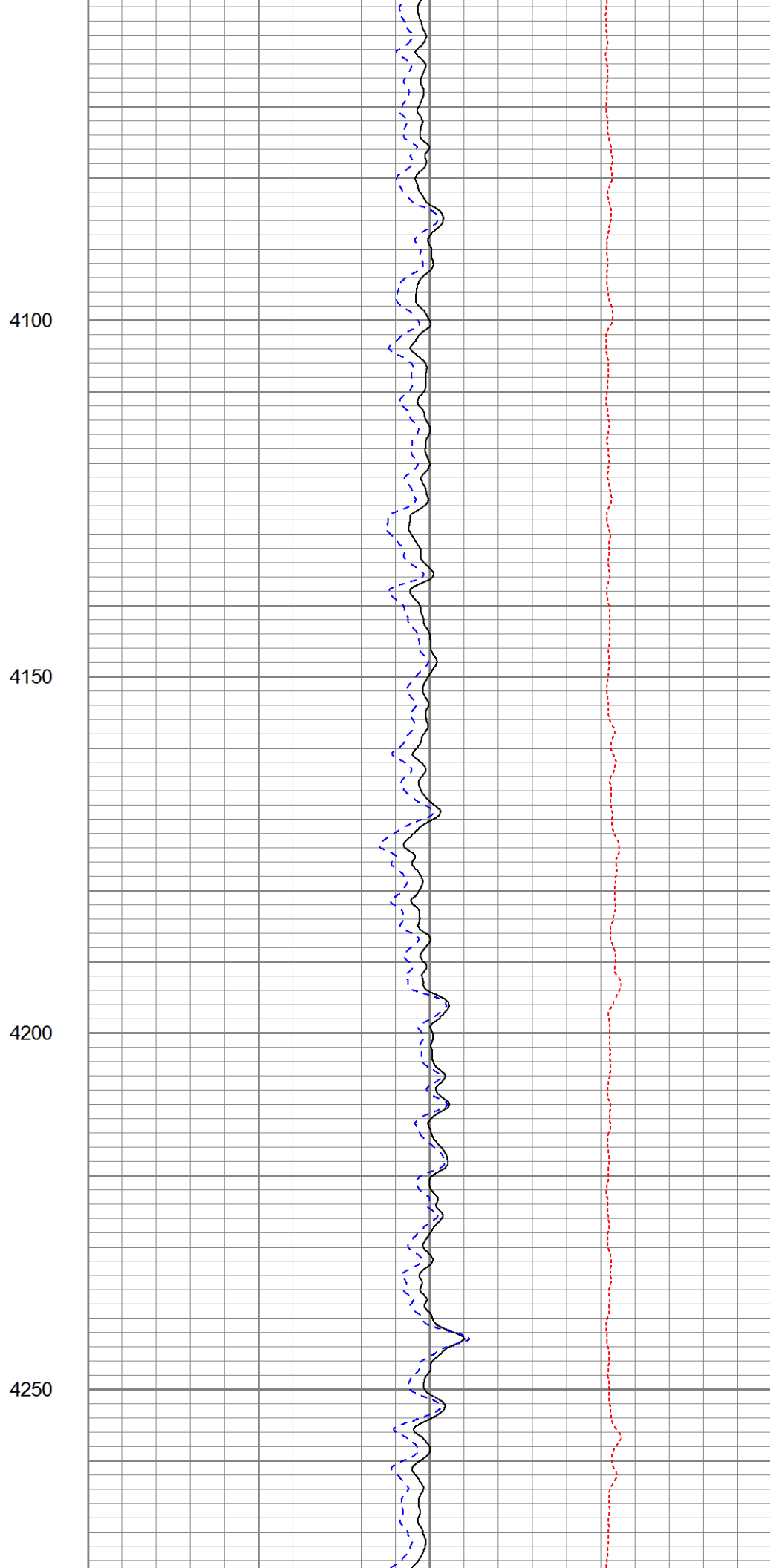
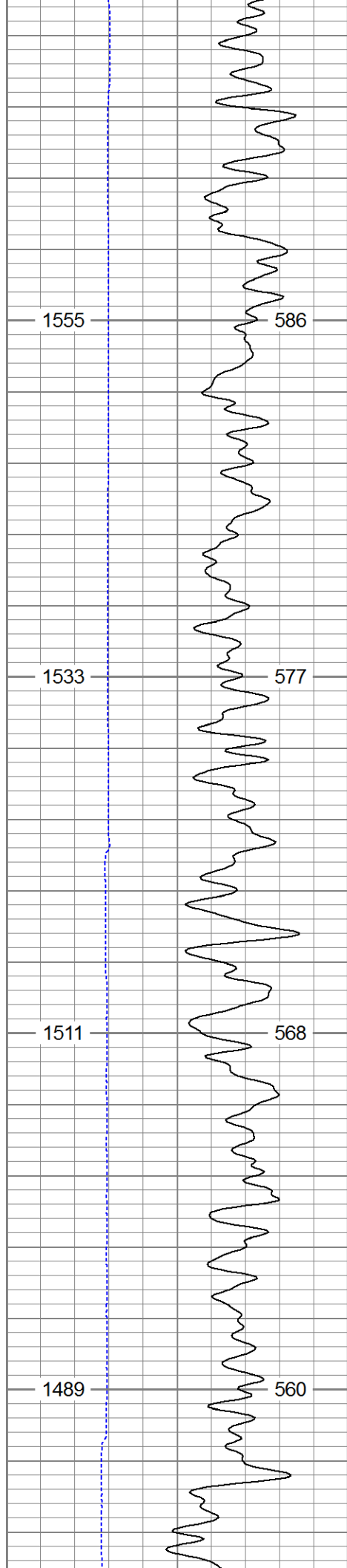
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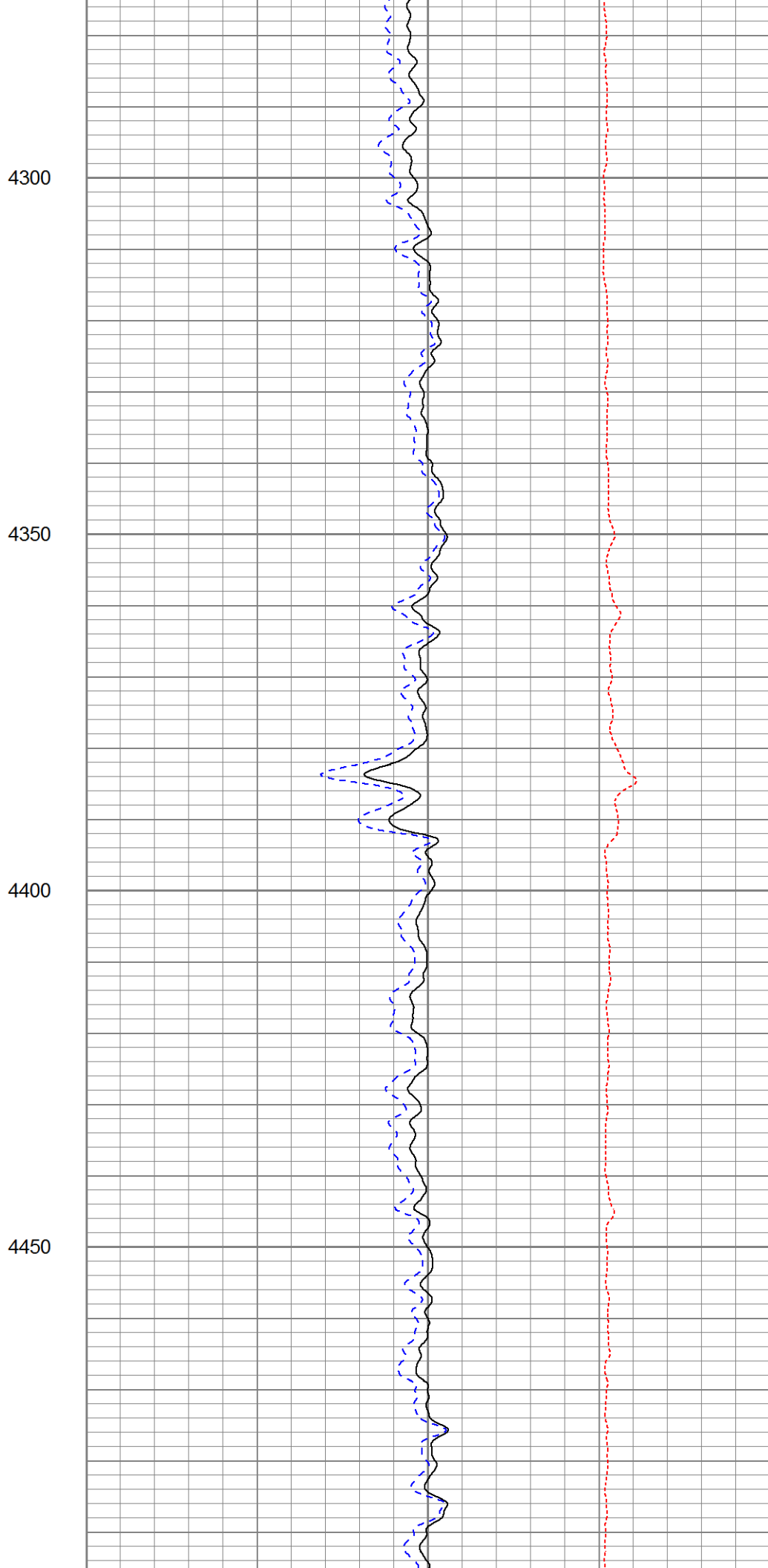
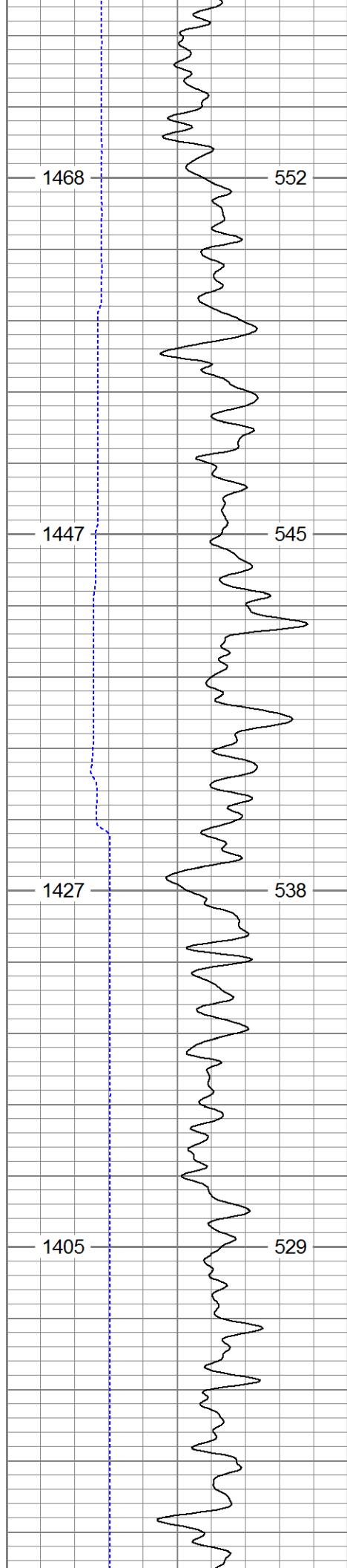
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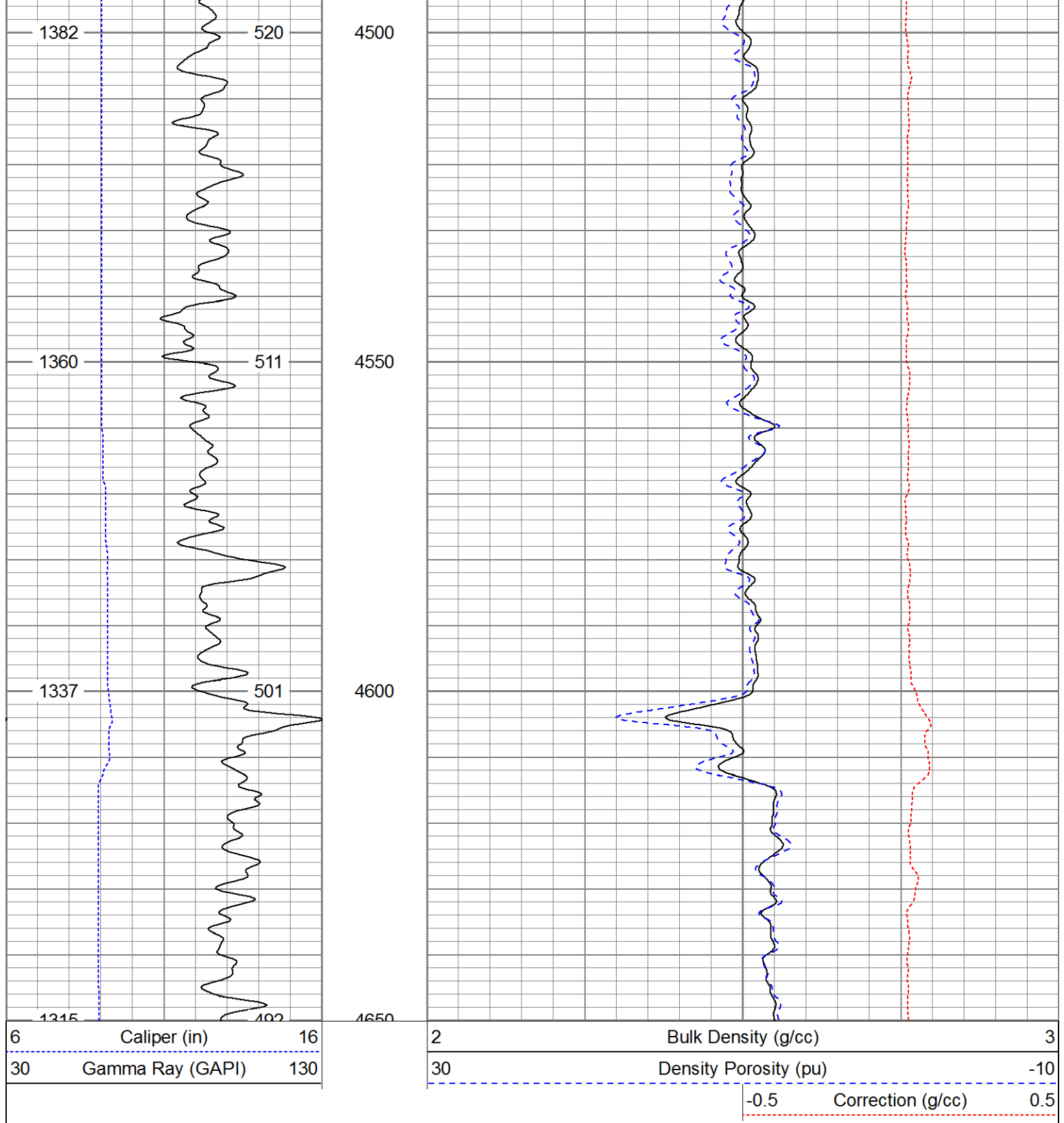
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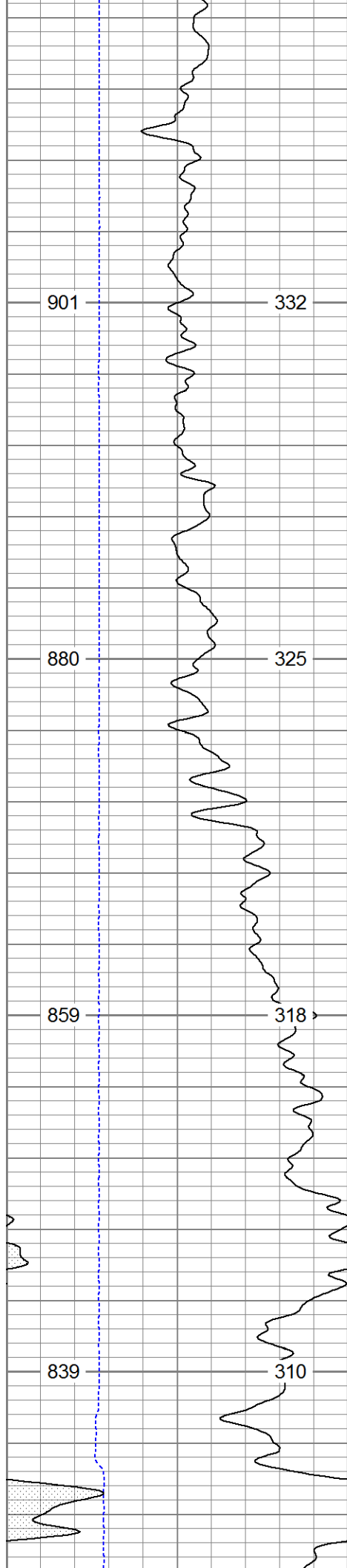








Database File: 13645.db			
Dataset Pathname: Final			
Presentation Format: cdl			
Dataset Creation: Sun Aug 03 16:38:16 2014			
Charted by: Depth in Feet scaled 1:240			
6	Caliper (in)	16	
2	Bulk Density (g/cc)		3
0	Gamma Ray (GAPI)	200	
30	Density Porosity (pu)		-10
		-0.5	Correction (g/cc) 0.5



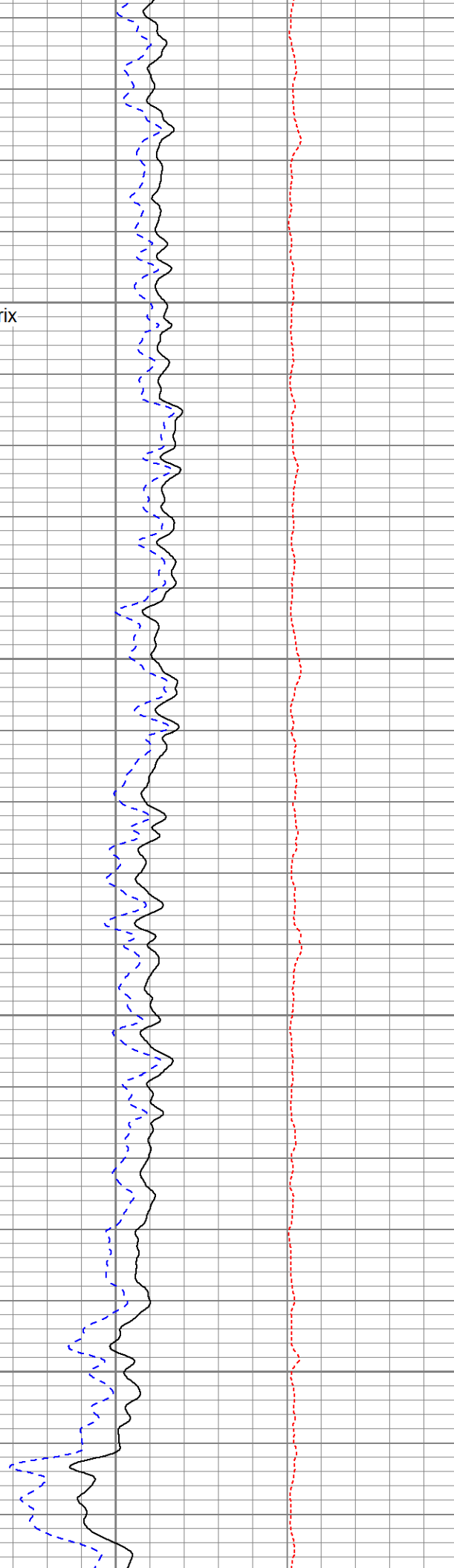
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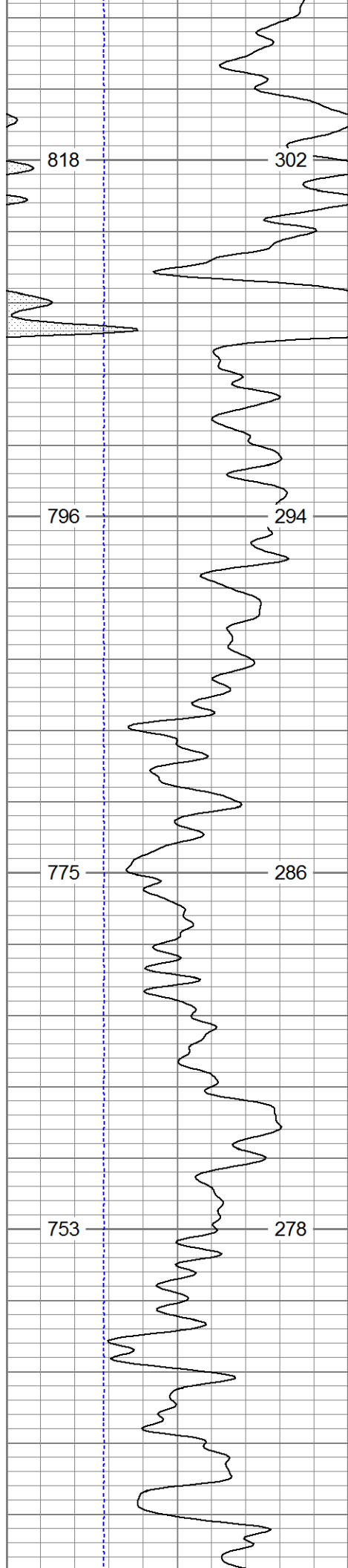
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5700

5750

2.71 LS Matrix



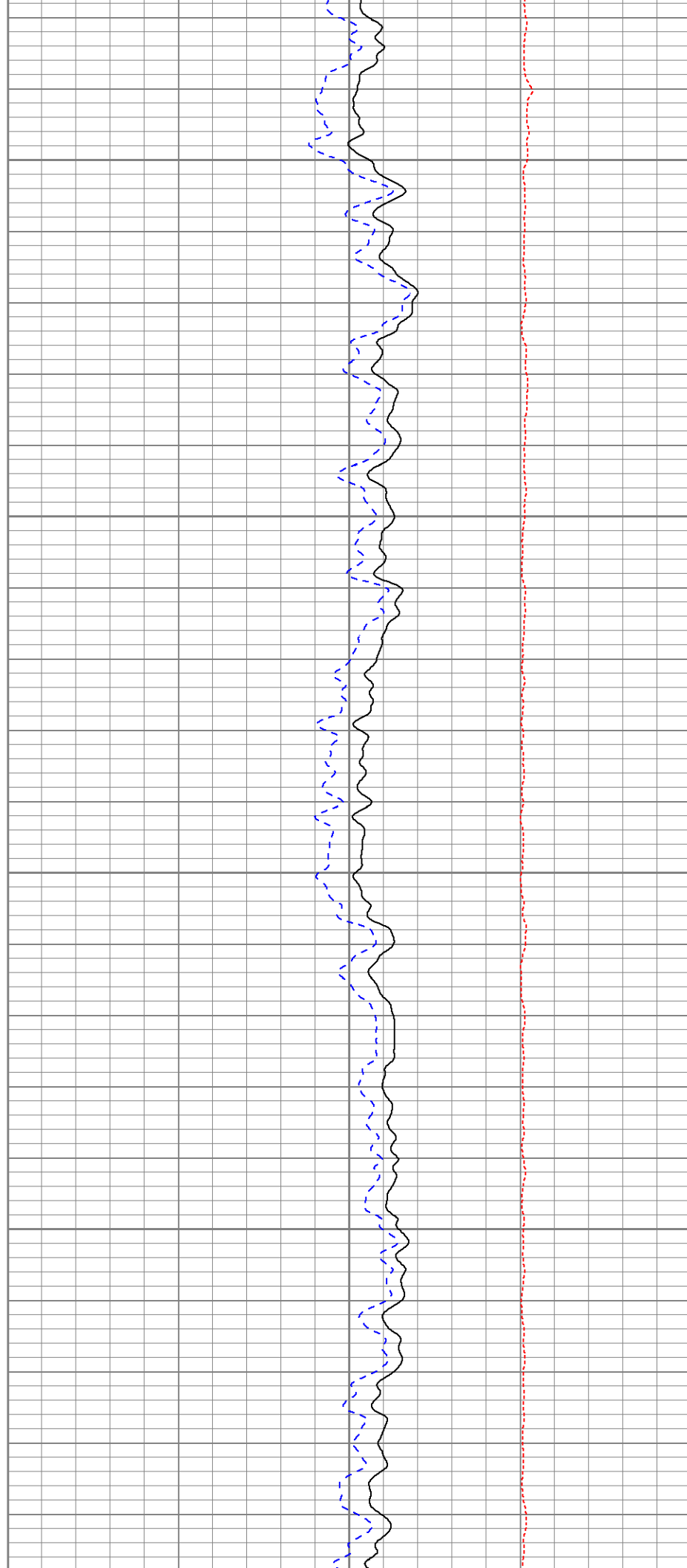


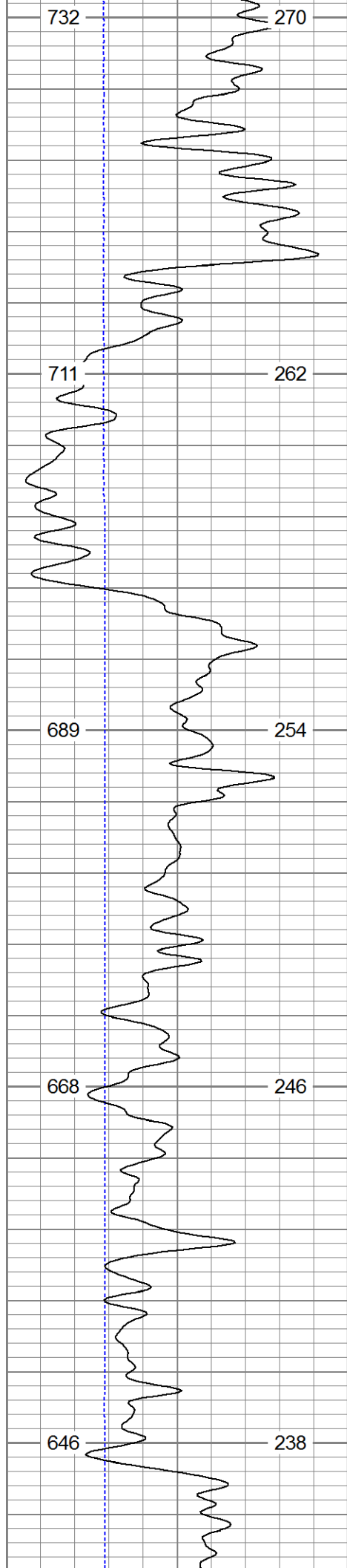
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5850

5900

5950





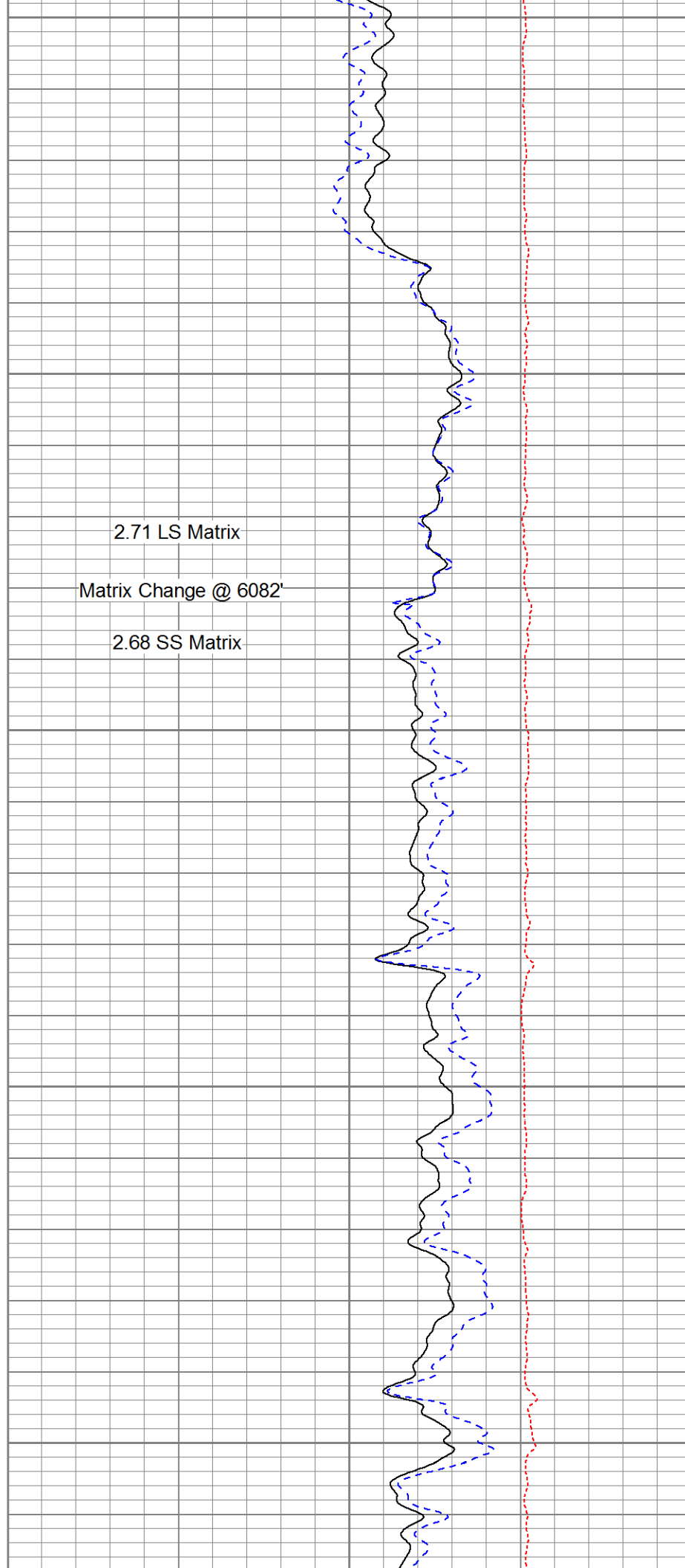
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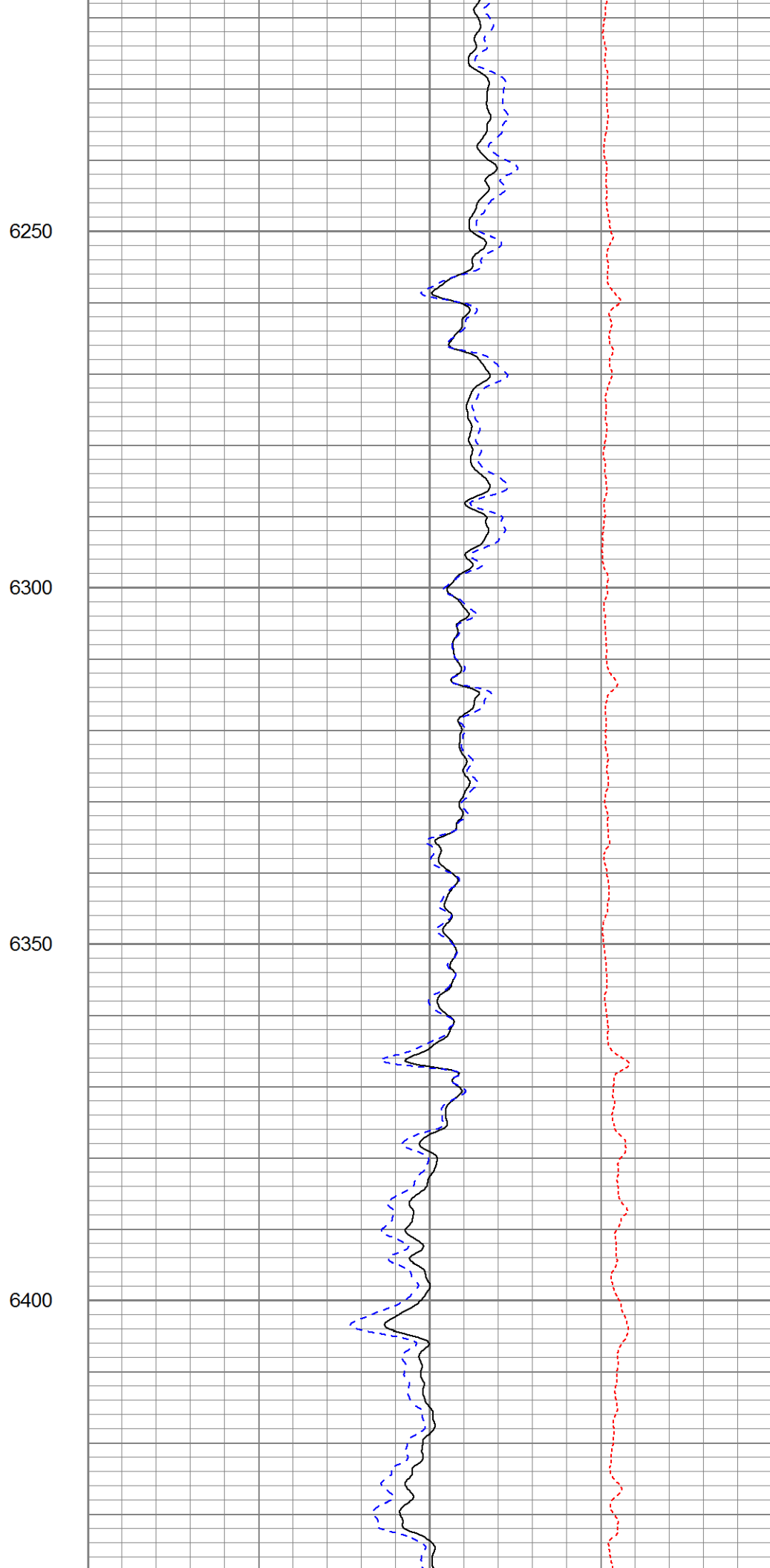
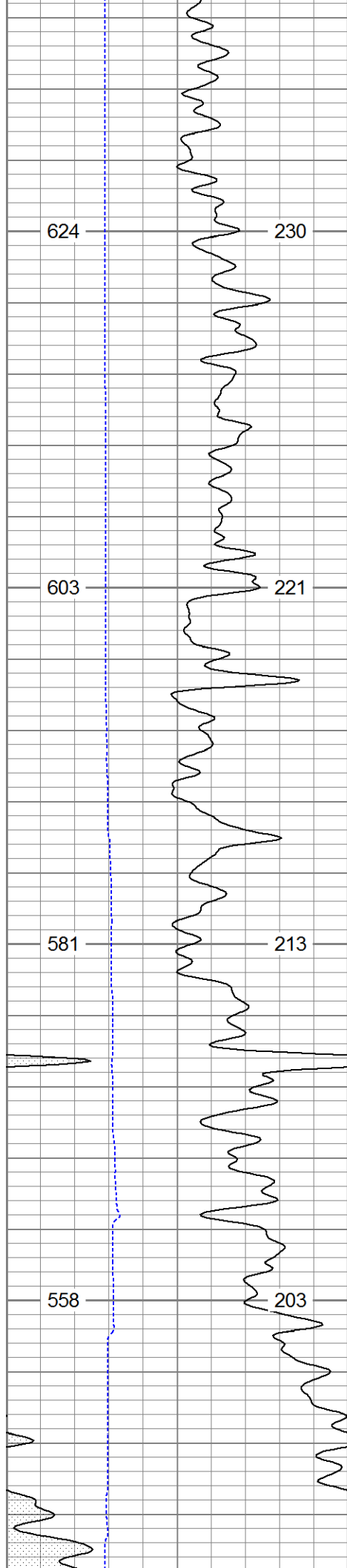
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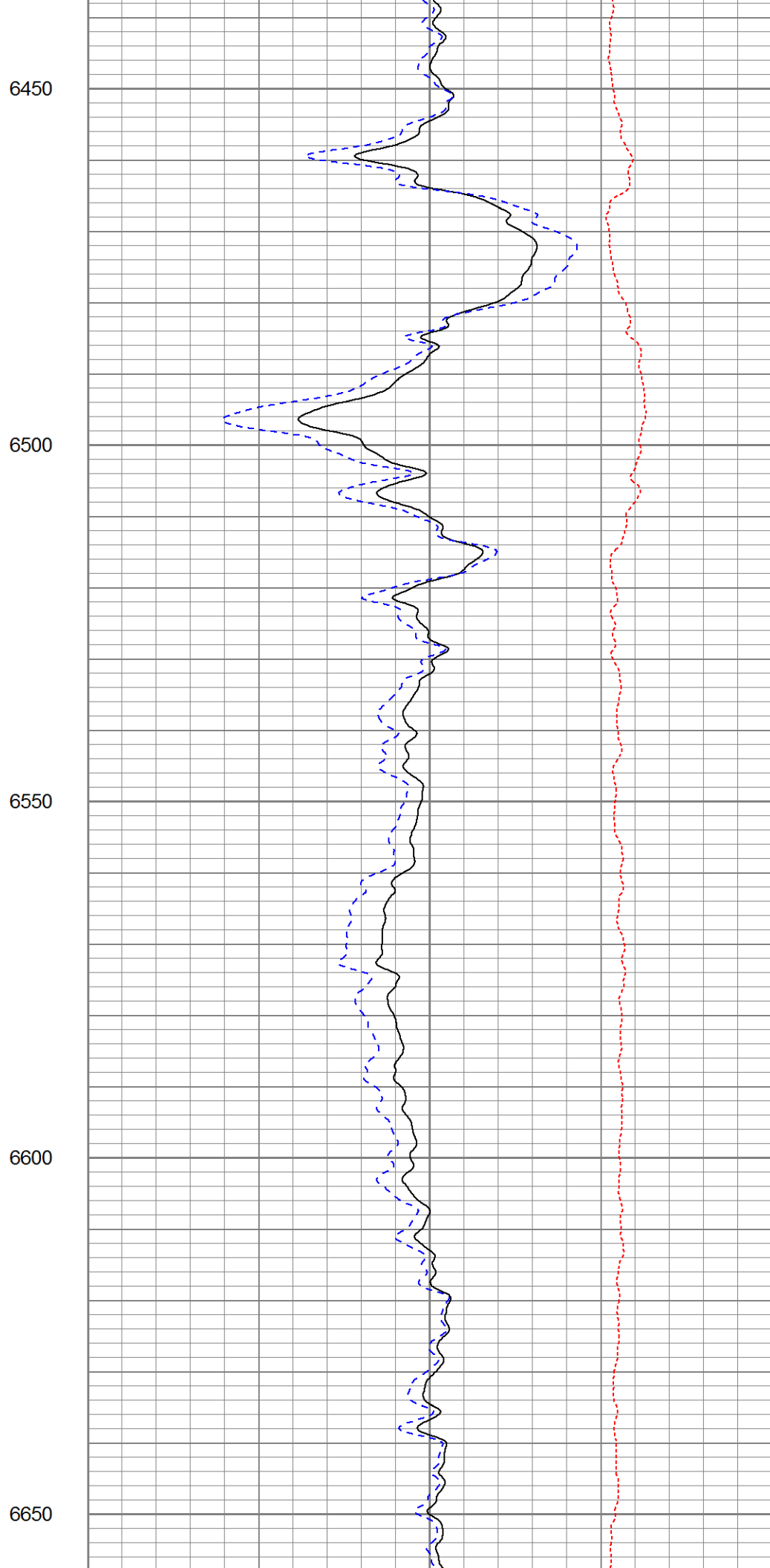
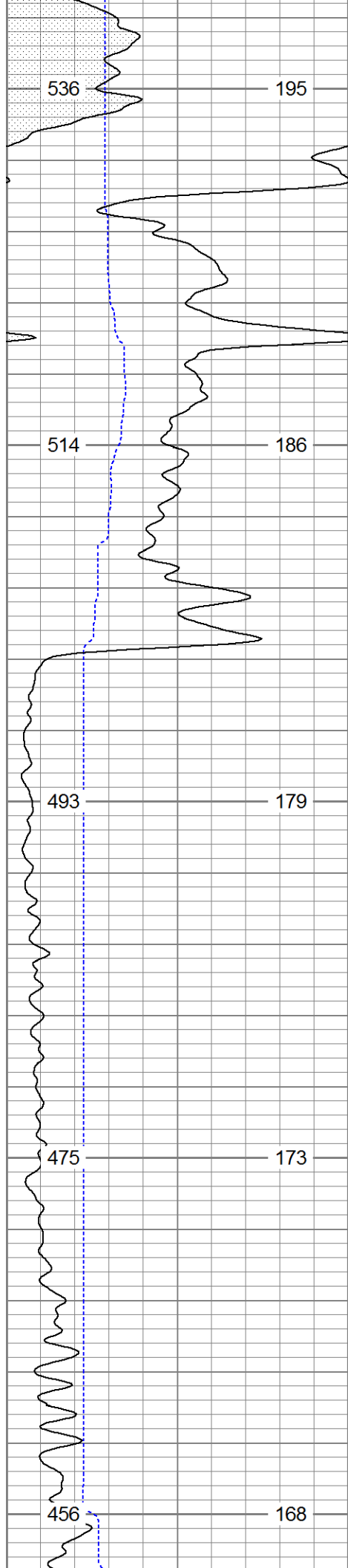
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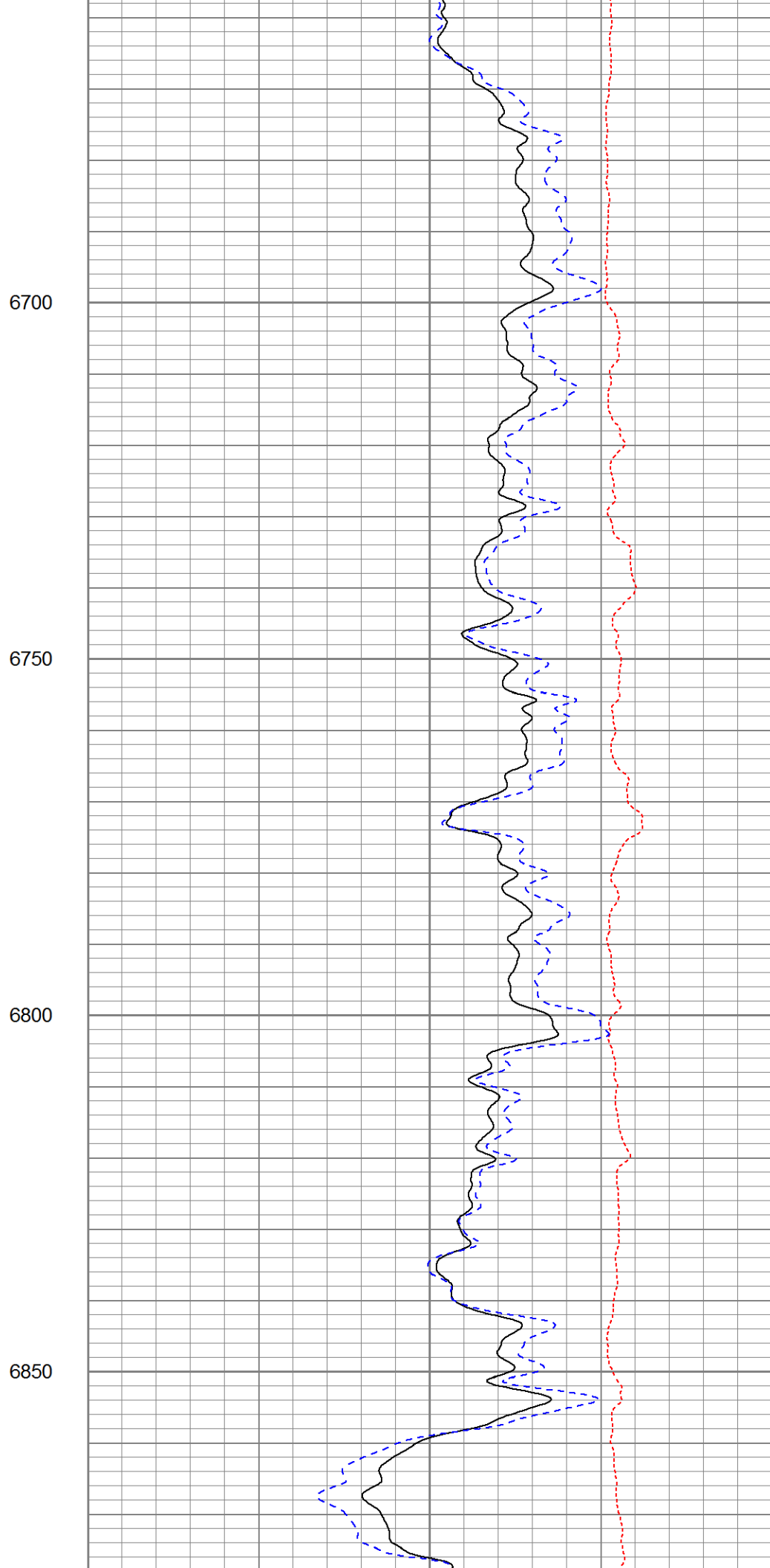
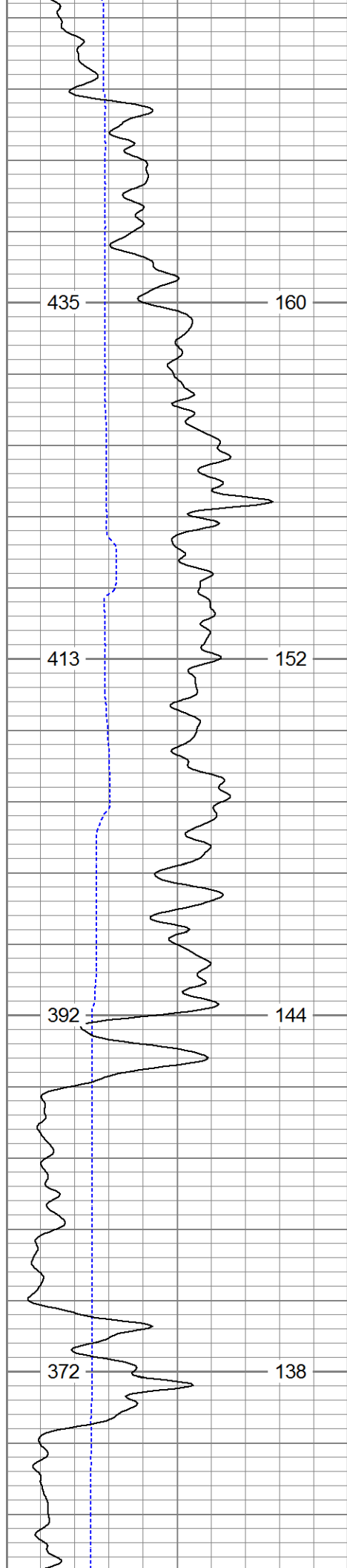
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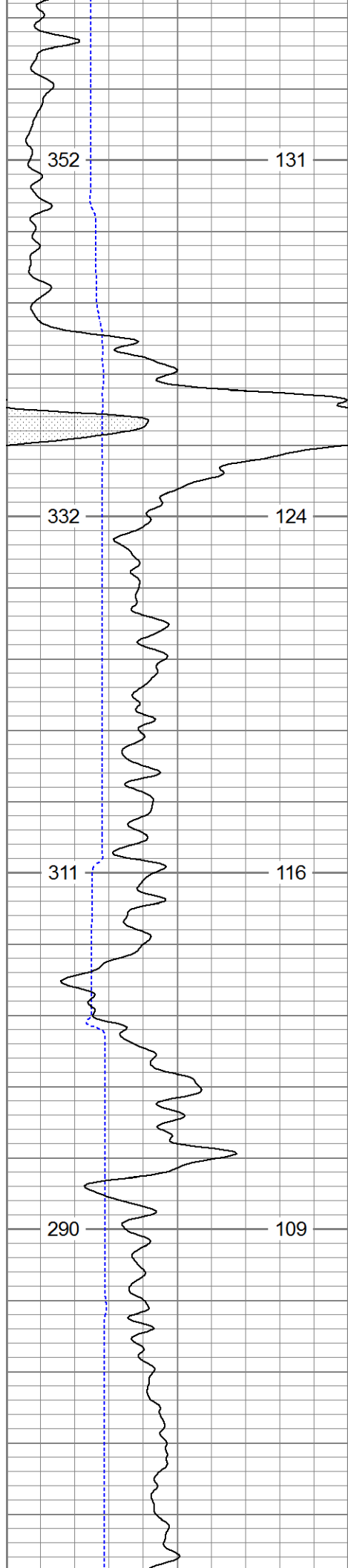
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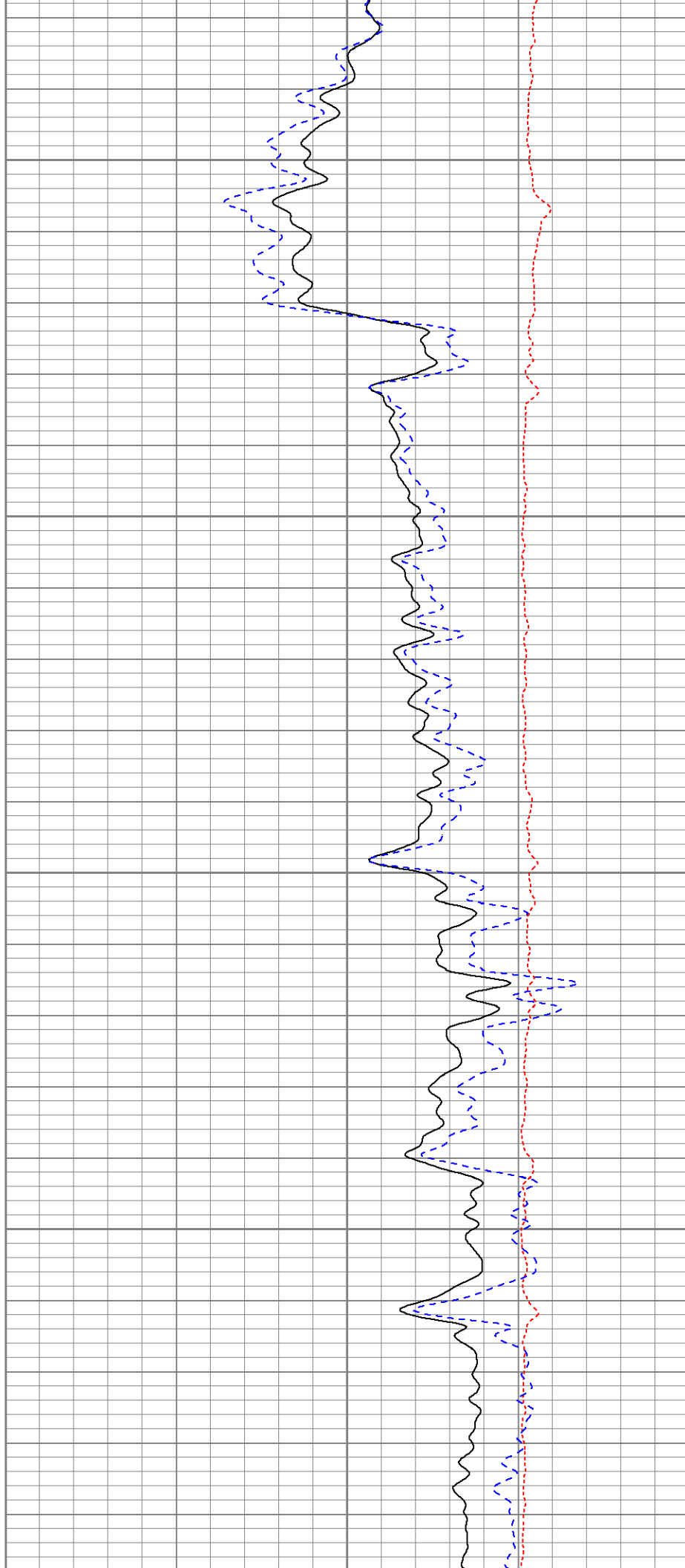


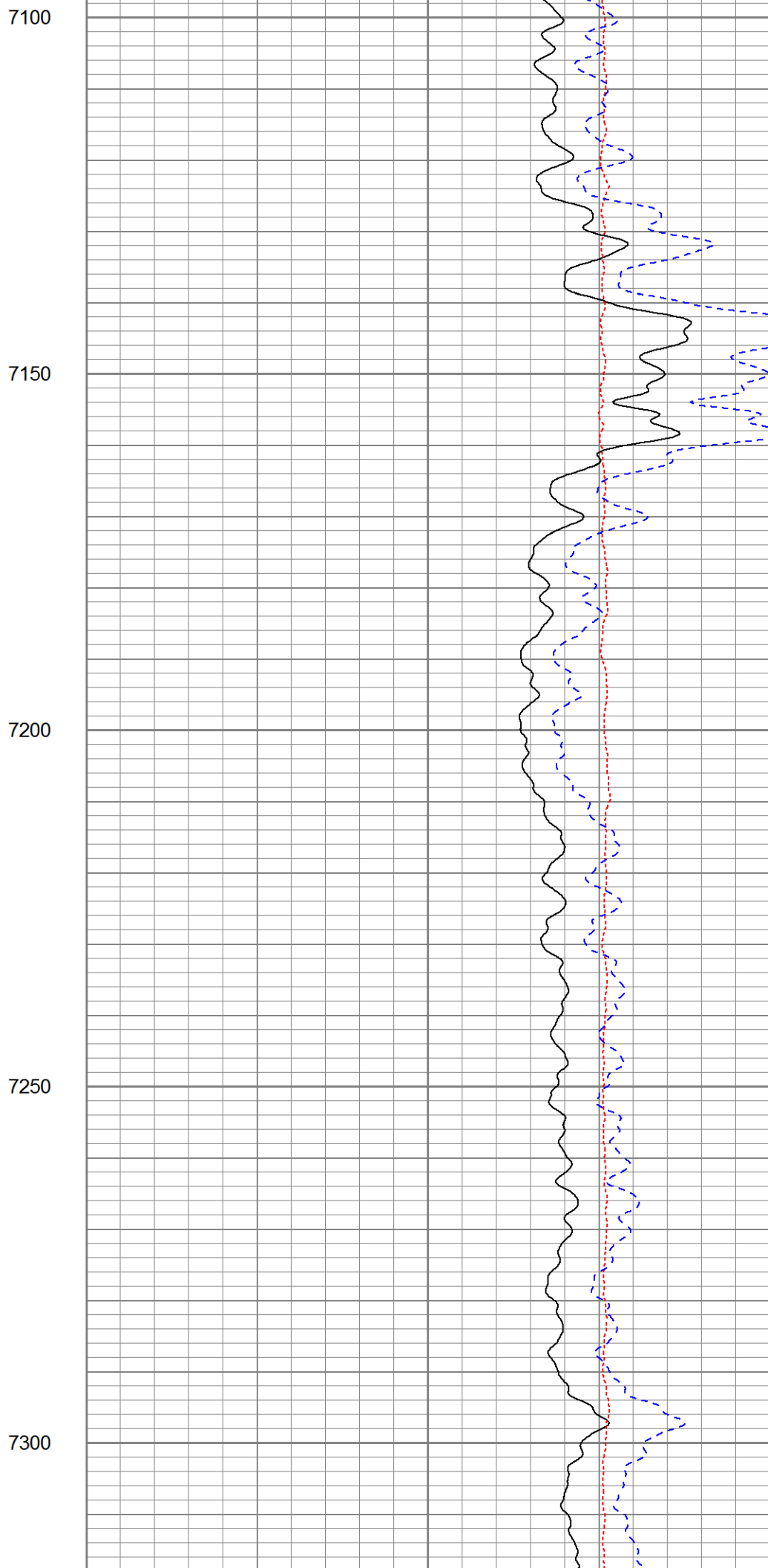
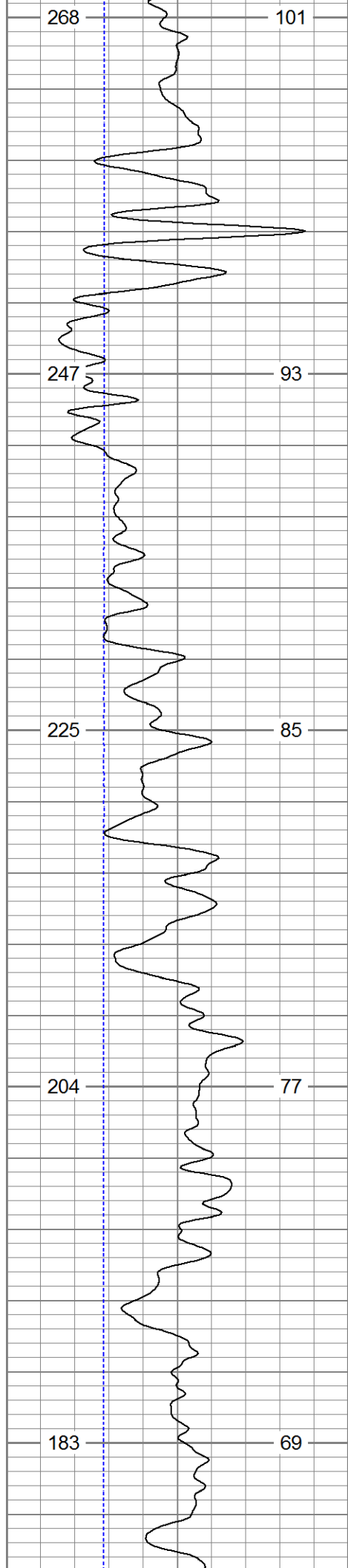
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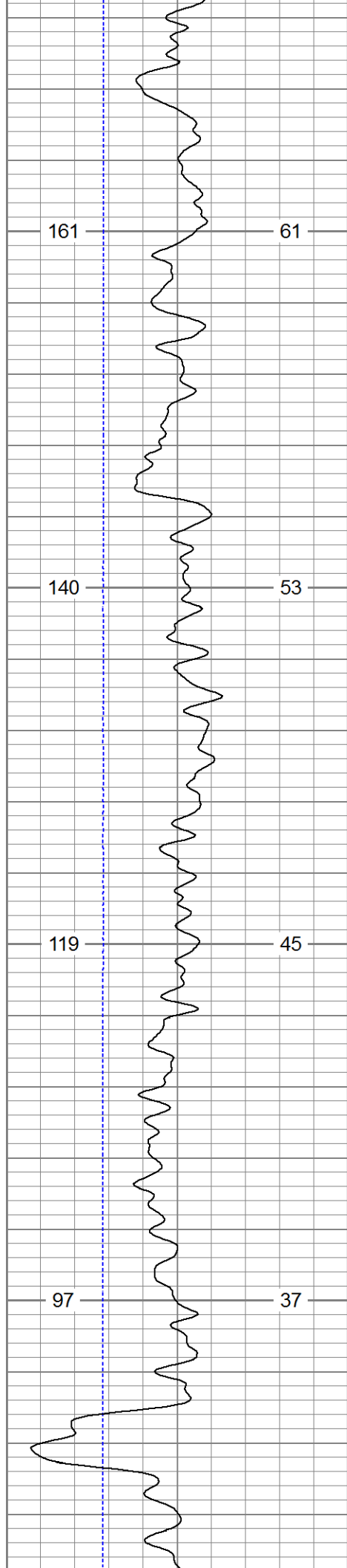
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7000

7050





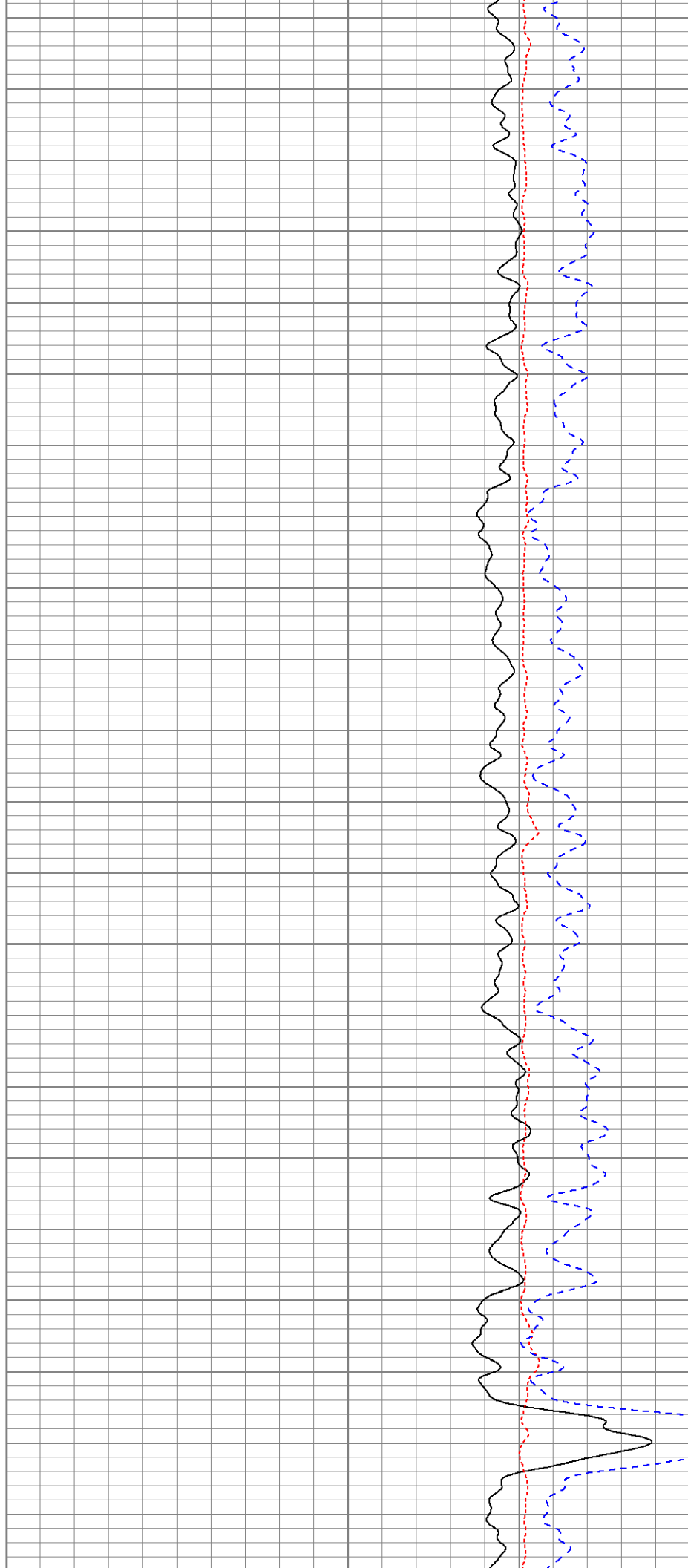


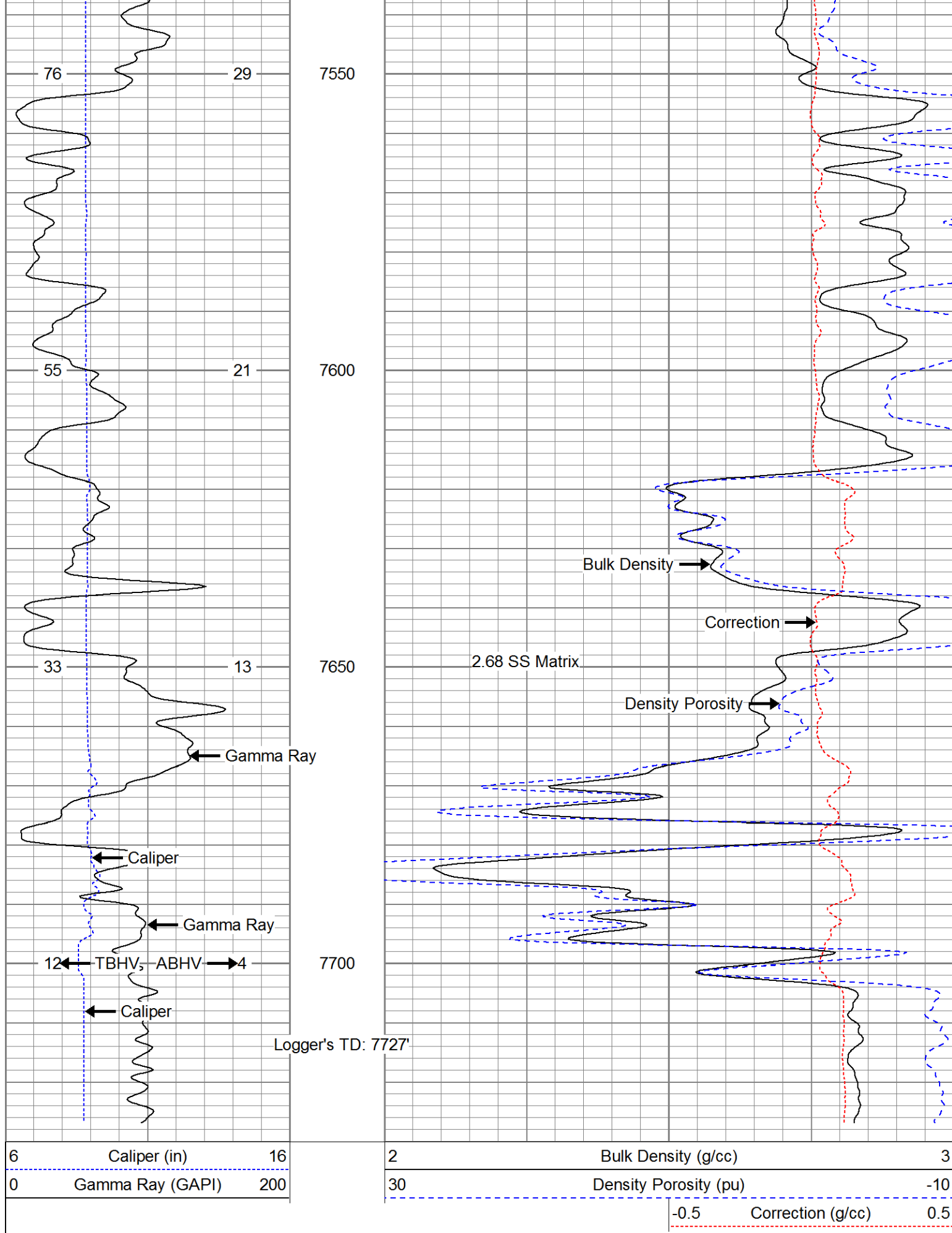
7350

7400

7450

7500





Dual Induction Calibration Report

Serial-Model: 1039-PSI
Surface Cal Performed:

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	0.000	1.000	0.000	1.000	mmho/m	0.590	-51.000
Medium	0.000	1.000	0.000	1.000	mmho/m	0.475	-70.000

Compensated Density Calibration Report

Serial-Model: 770-PSI
Source / Verifier: 4400 / PSI
Master Calibration Performed: Mon Jul 21 02:13:30 2014
Before Survey Verification Performed:
After Survey Verification Performed:

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	6052.27	9575.17	cps
Aluminum	2.690	g/cc	1090.90	5872.16	cps
Spine Angle = 74.07			Density/Spine Ratio = 0.528		
	Size		Reading		
Small Ring	4.50	in	1.80		
Large Ring	13.00	in	1.46		

Compensated Neutron Calibration Report

Serial Number: 853
Tool Model: PSI

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.9000
Long Space	1.00	cps	1.00	cps	2.0500

Gamma Ray Calibration Report

Serial Number: 223
Tool Model: PSI
Performed: Tue Jul 29 05:11:24 2014

Calibrator Value: 253.0 GAPI

Background Reading: 30.0 cps
Calibrator Reading: 380.0 cps

Sensitivity: 0.6600 GAPI/cps