



DUAL INDUCTION LOG

PIONEER
Pioneer Energy Services

Company **R & B OIL & GAS, INC.**
Well **GOETZ A #1**
Field **SIVEY-GRABS**
County **KINGMAN**
State **KANSAS**

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Field **SIVEY-GRABS**
County **KINGMAN** State **KANSAS**

Location: API #: 15-095-22321-00-00

Other Services

SEC 18 TWP 30S RGE 9W
1090' FNL & 660' FEL

CDL/CNL

Permanent Datum **GROUND LEVEL** Elevation **1700'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 1705'
D.F. N/A
G.L. 1700'

Date	4/25/2018	
Run Number	ONE	
Depth Driller	4200'	
Depth Logger	4201'	
Bottom Logged Interval	4200'	
Top Log Interval	200'	
Casing Driller	8.625" @ 245'	
Casing Logger	245'	
Bit Size	7.875"	
Type Fluid in Hole	CHEMICAL	
Salinity, ppm CL	5000	
Density / Viscosity	9.1 50	
pH / Fluid Loss	11.0 8.8	
Source of Sample	FLOWLINE	
Rm @ Meas. Temp	0.45 @ 50	
Rmt @ Meas. Temp	0.34 @ 50	
Rmc @ Meas. Temp	0.61 @ 50	
Source of Rmt / Rmc	CHARTS	
Rm @ BHT	0.19 @ 118	
Operating Rig Time	2 HOURS	
Max Rec. Temp. F	118 DEGF	
Equipment Number	108	
Location	HAYS	
Recorded By	IAN MABB	
Witnessed By	TIM PIERCE	

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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.
ZENDA, KS. 3 MILES WEST , 1/4 SOUTH, WEST 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: TIM PIERCE
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 100	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 4	mmho/m 4	mV -160	degF 56	Off	ft 4201

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	29.90			CNT-M&W (tk10-MW)	5.50	3.50	100.00
	29.15						
LSD DCAL SSD	20.85 20.83 20.35			CDL-M&W (168-986)	8.50	4.00	250.00
RLL3 RLL3F	15.80			DIL-M&W (PSI 978)	18.50	3.50	220.00
	15.79						
CILD	8.00						

CILM 4.70

SP 0.20

Dataset: r&b_goetz_a_1.db: field/well/stack/pass3.1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in



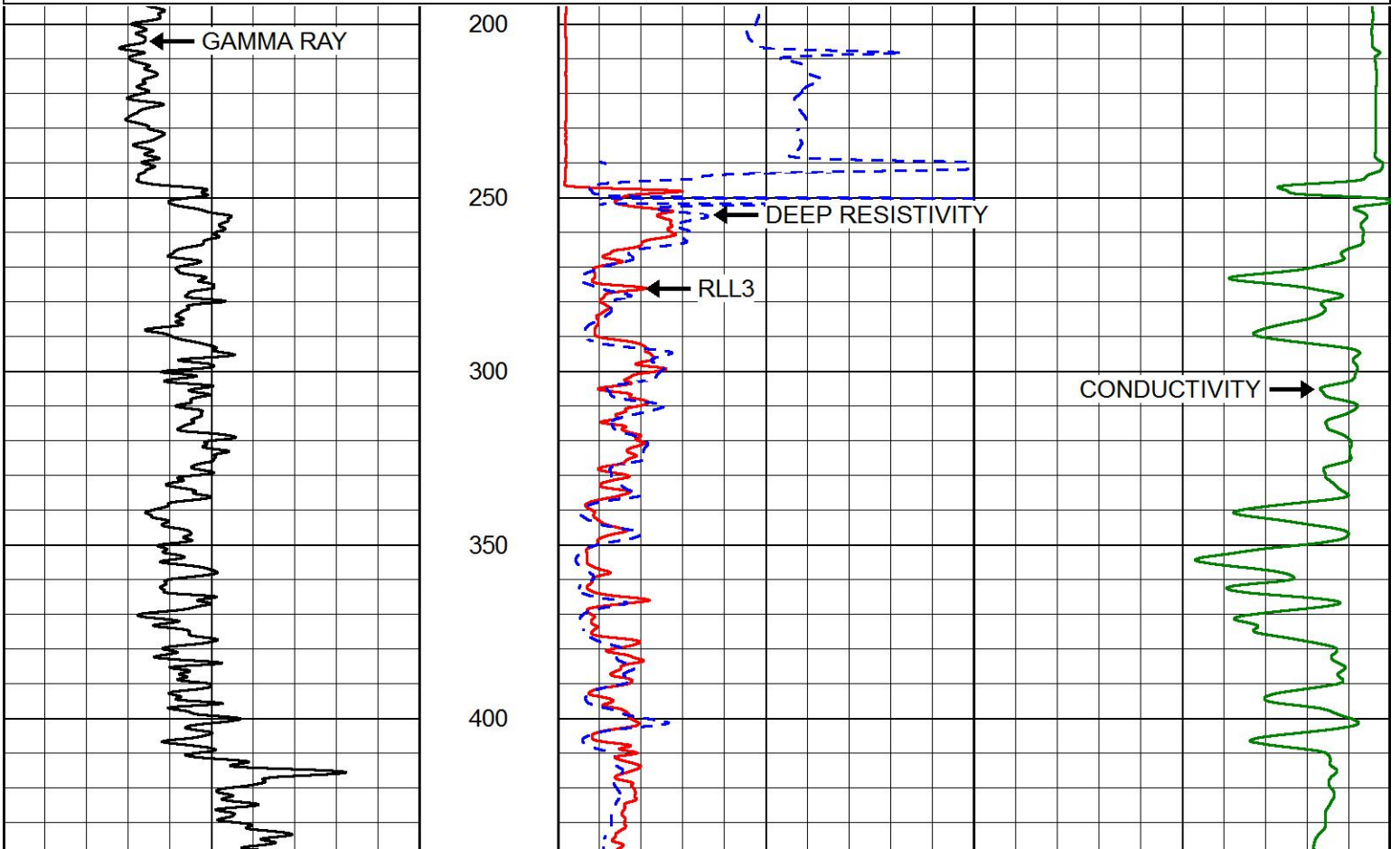
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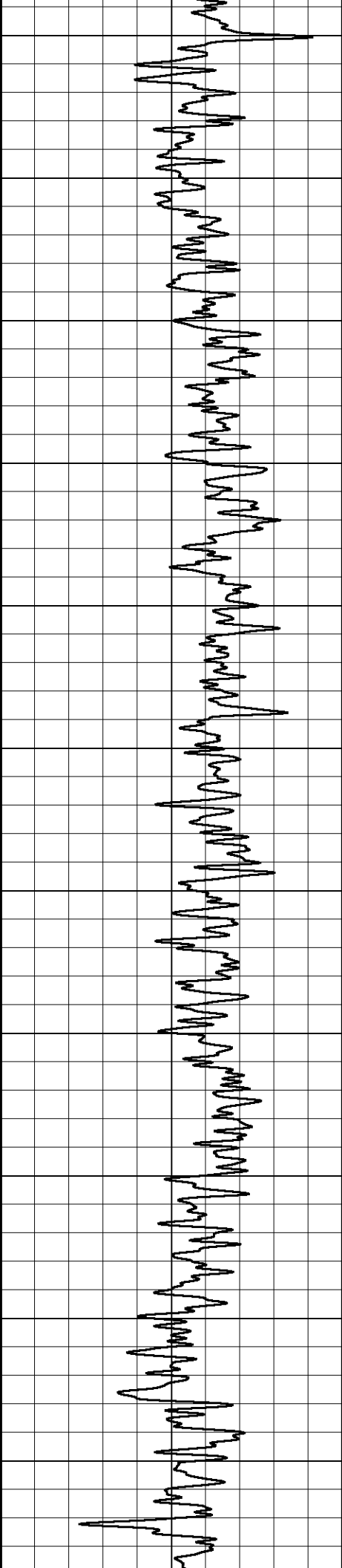
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Dataset Pathname stack/pass3.1
Presentation Format dil2in
Dataset Creation Wed Apr 25 09:17:17 2018
Charted by Depth in Feet scaled 1:600

0 GAMMA RAY (GAPI) 150

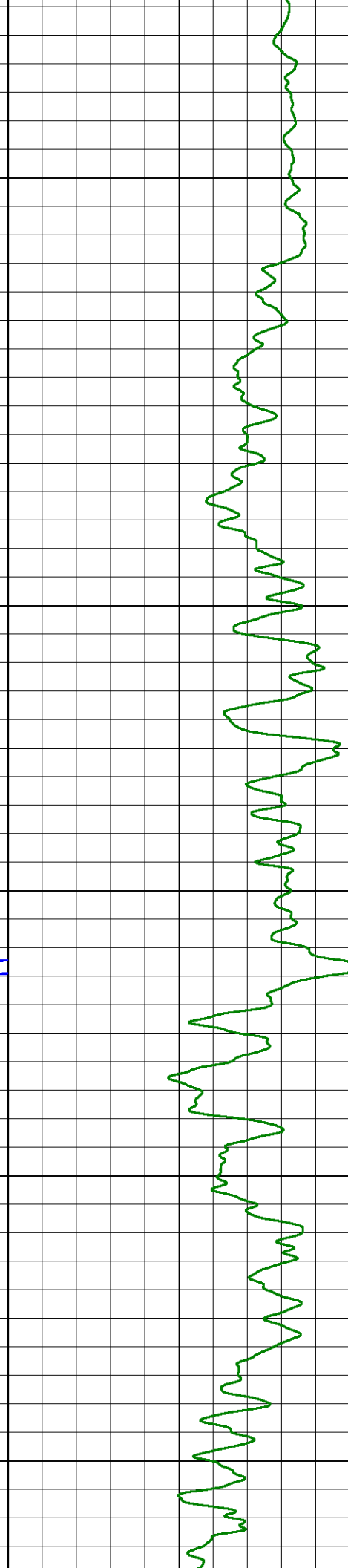
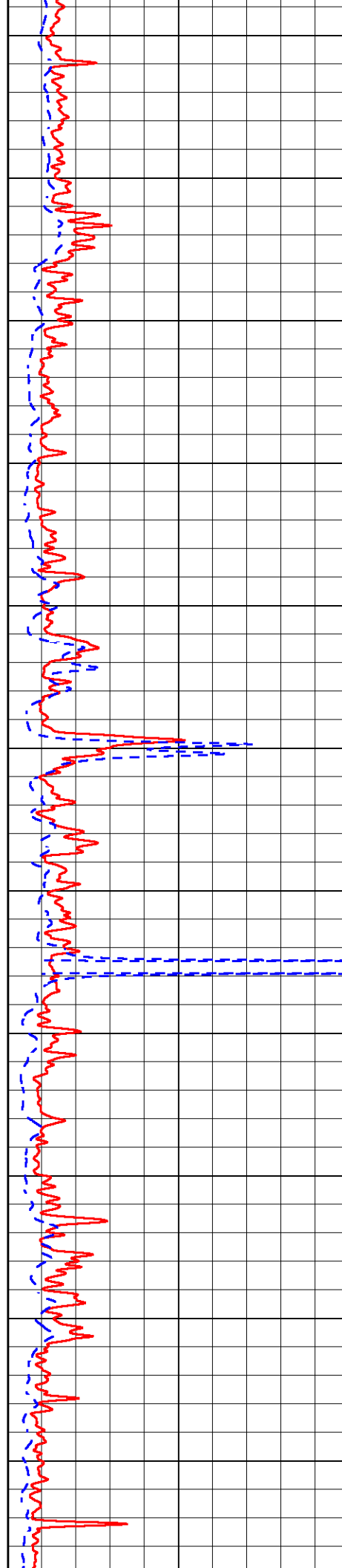
2000 CONDUCTIVITY (mmho/m) 0

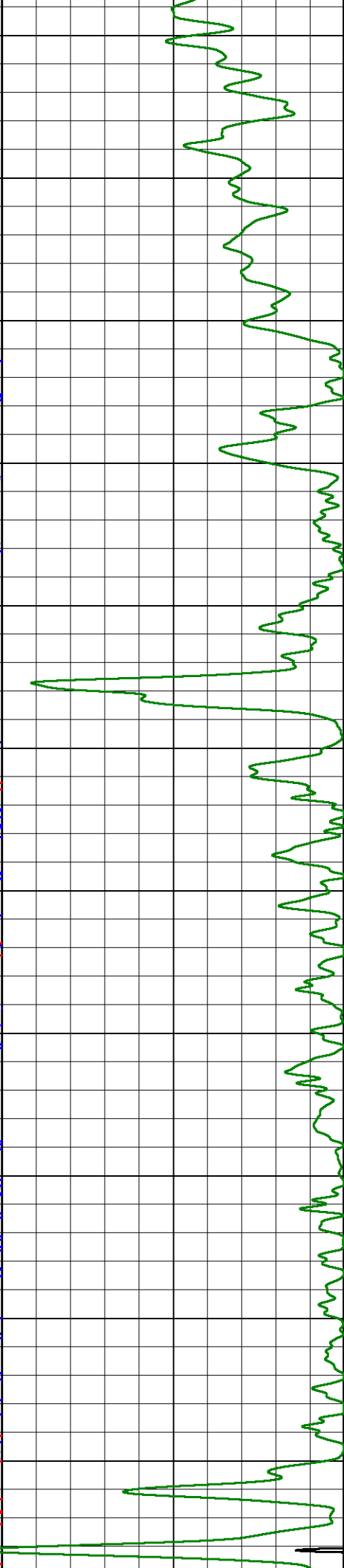
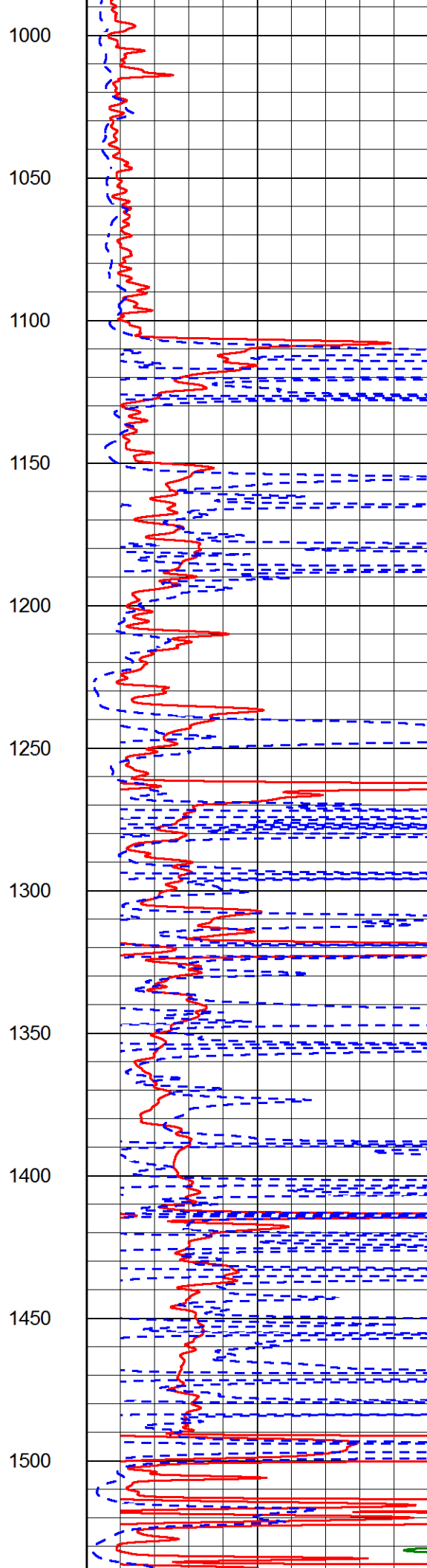
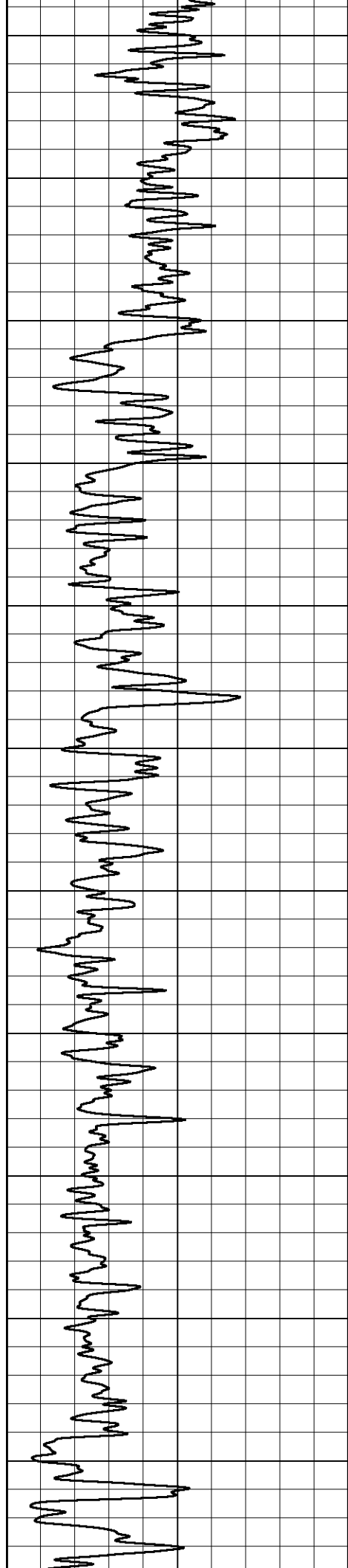
0 RLL3 (Ohm-m) 50
0 DEEP RESISTIVITY (Ohm-m) 50
50 RLL3 (Ohm-m) 500
DEEP RESISTIVITY
50 (Ohm-m) 500

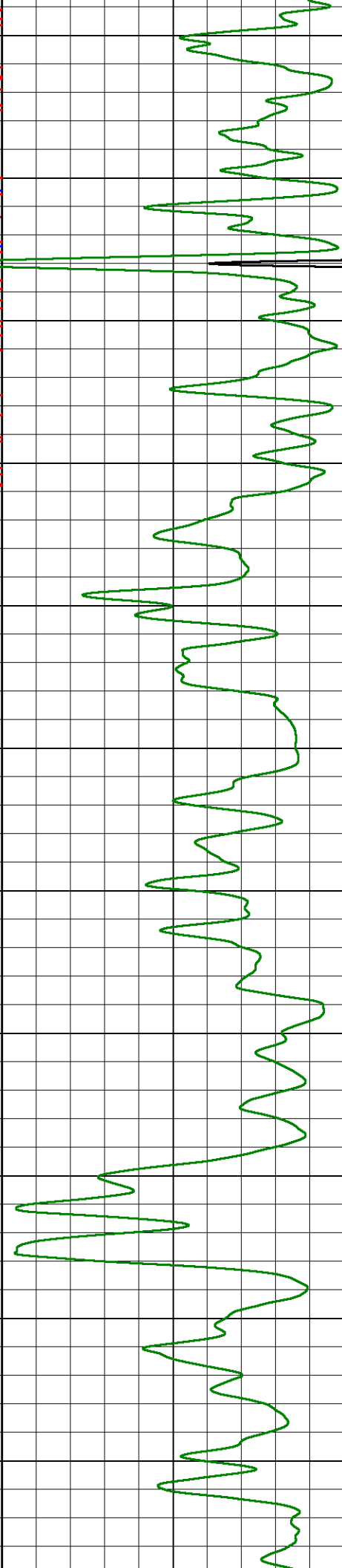
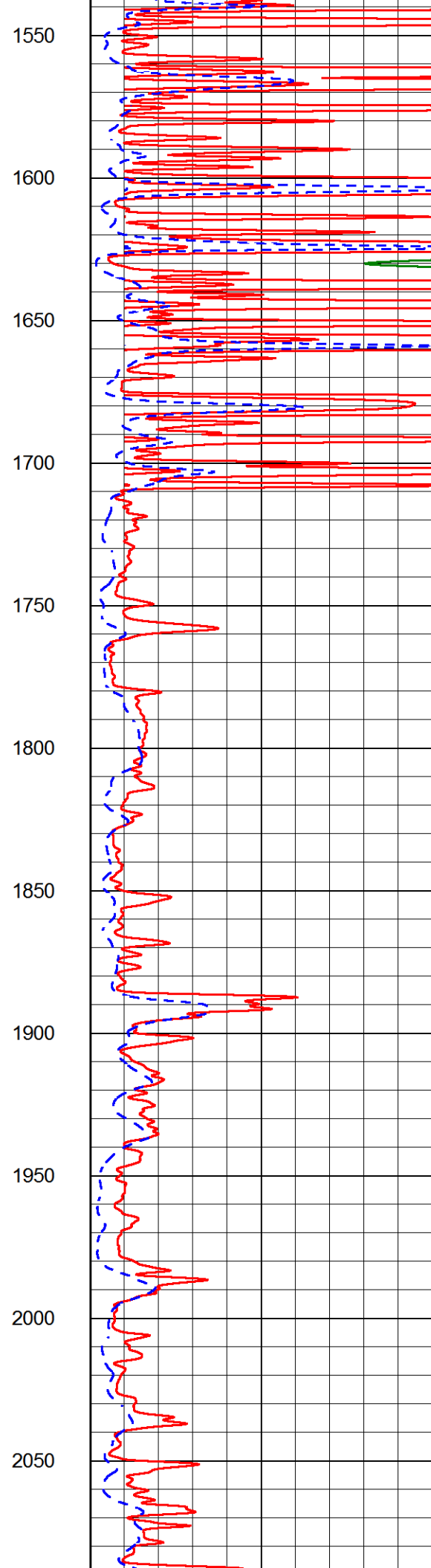
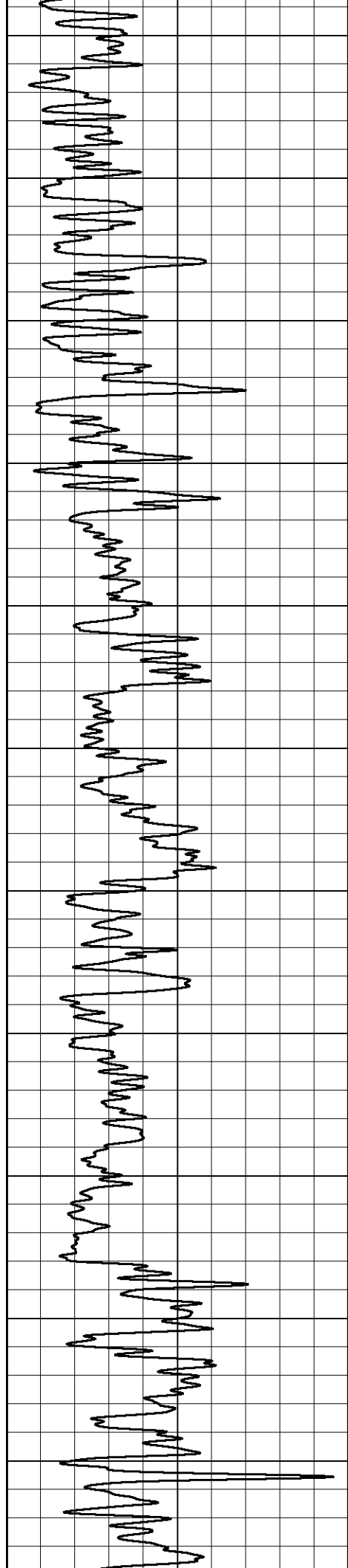


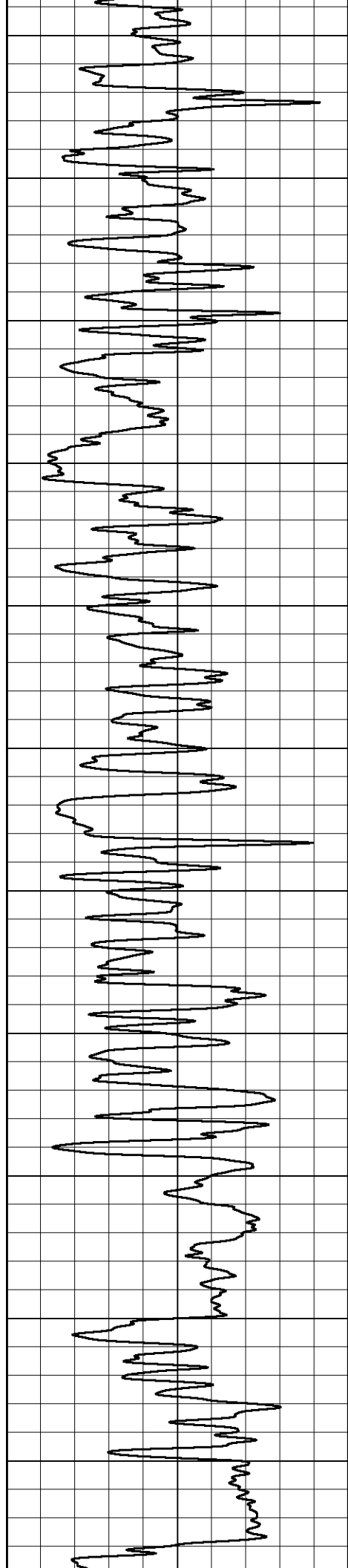


450
500
550
600
650
700
750
800
850
900
950

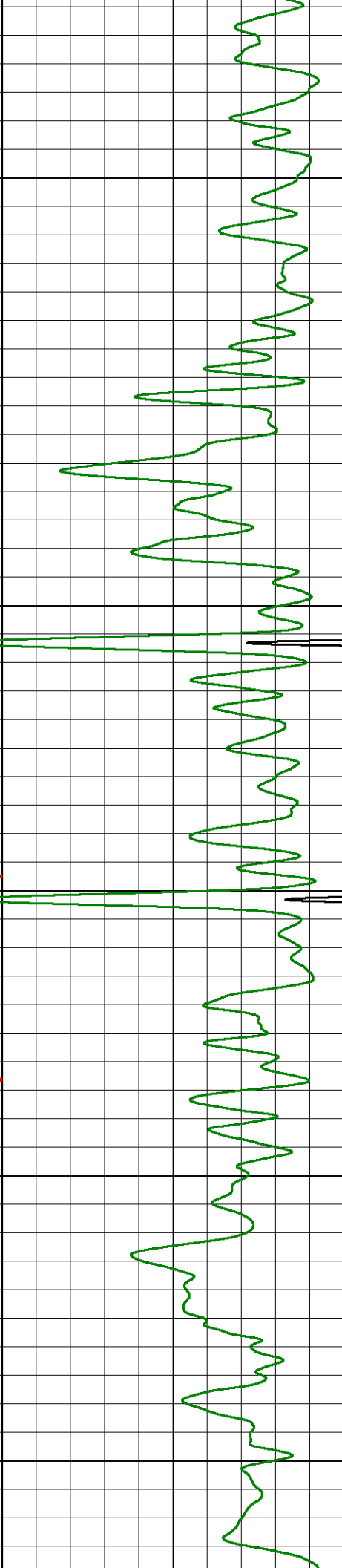
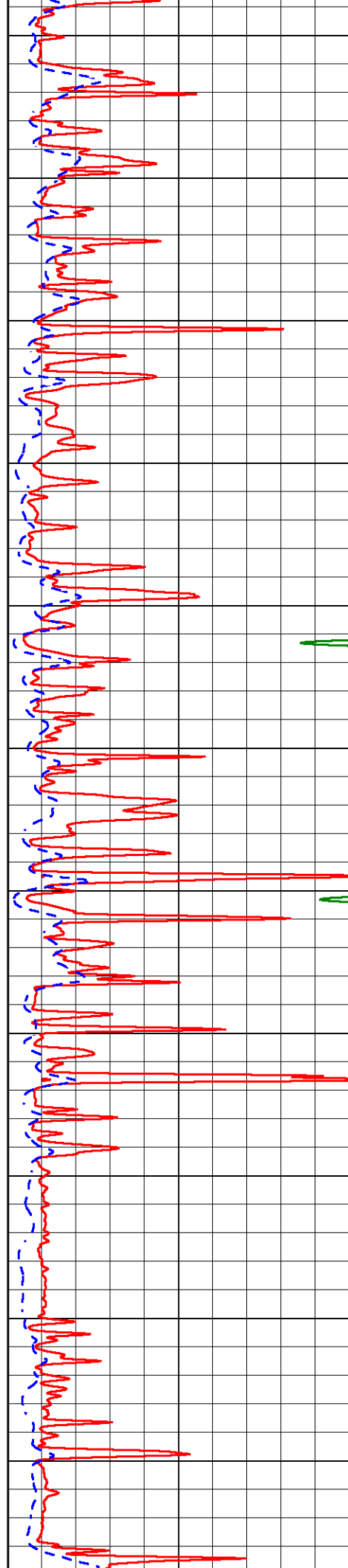


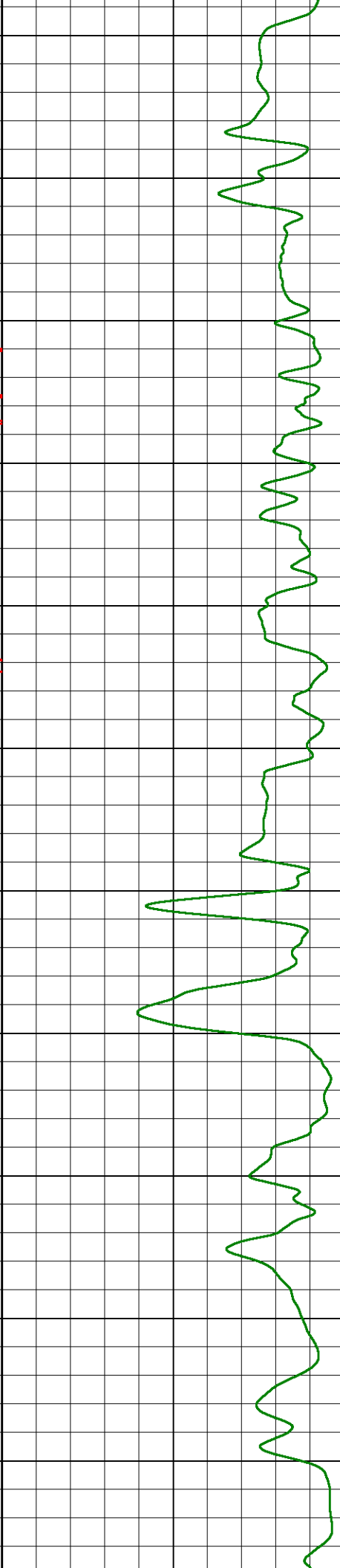
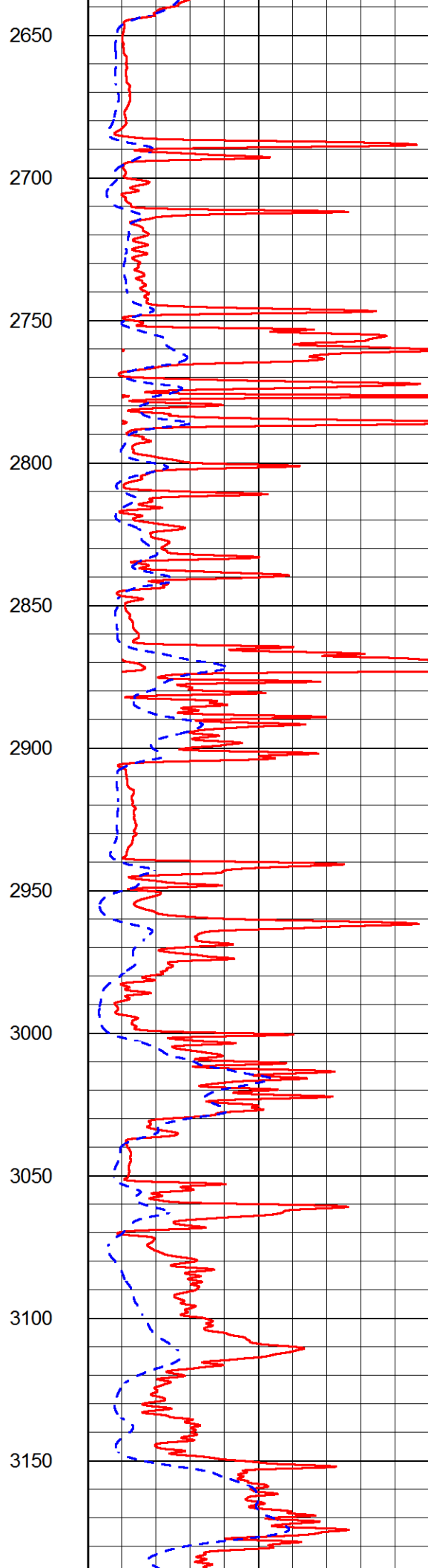
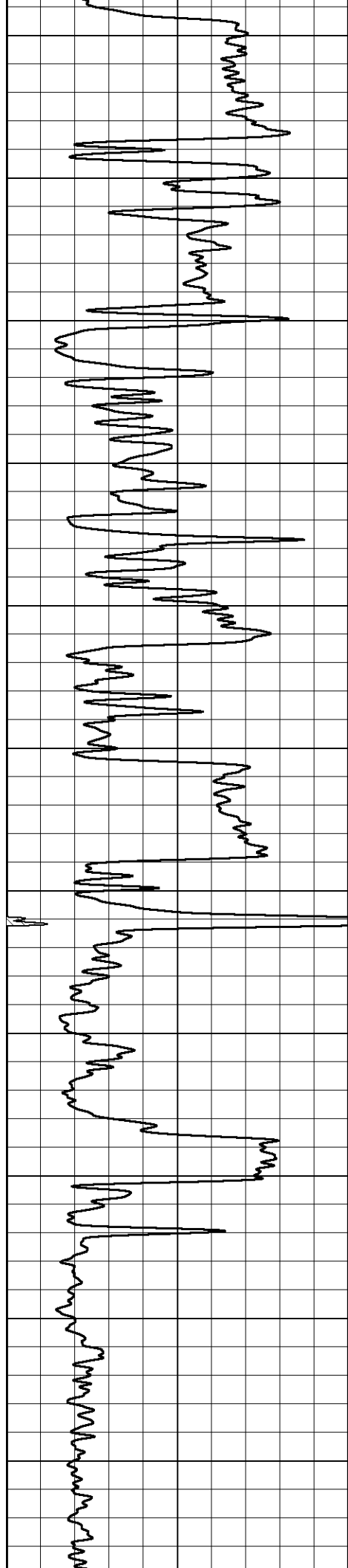


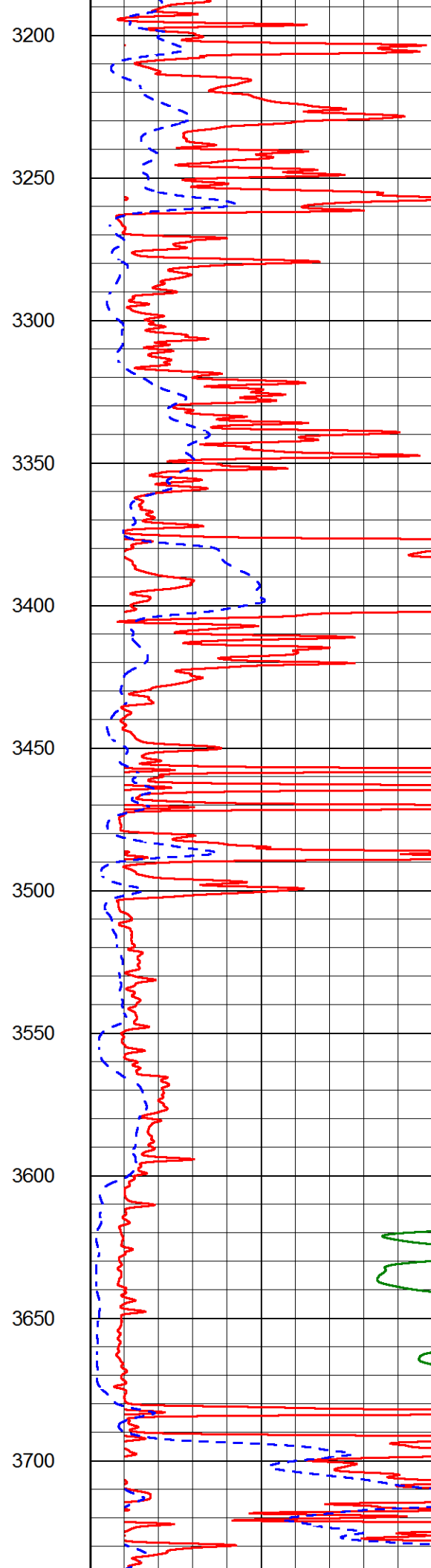
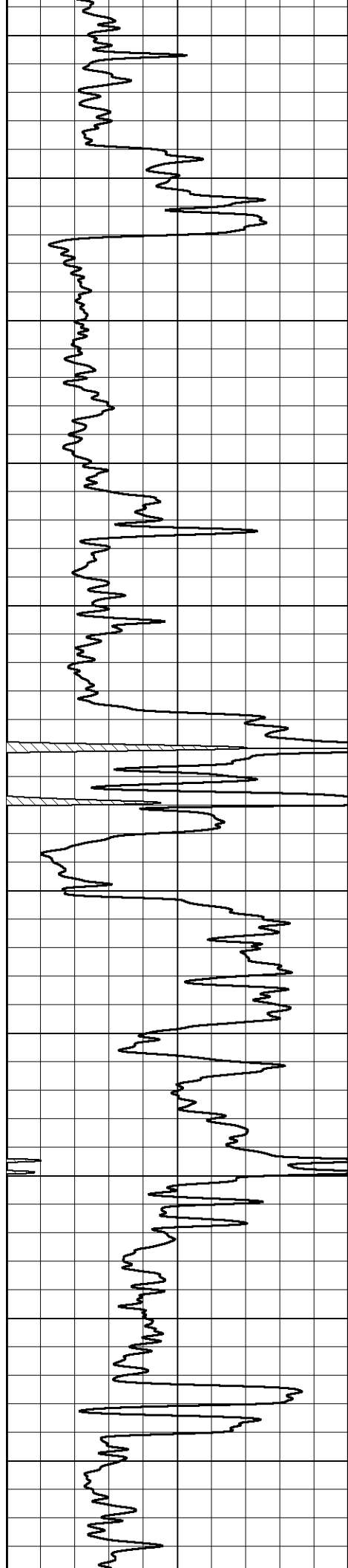


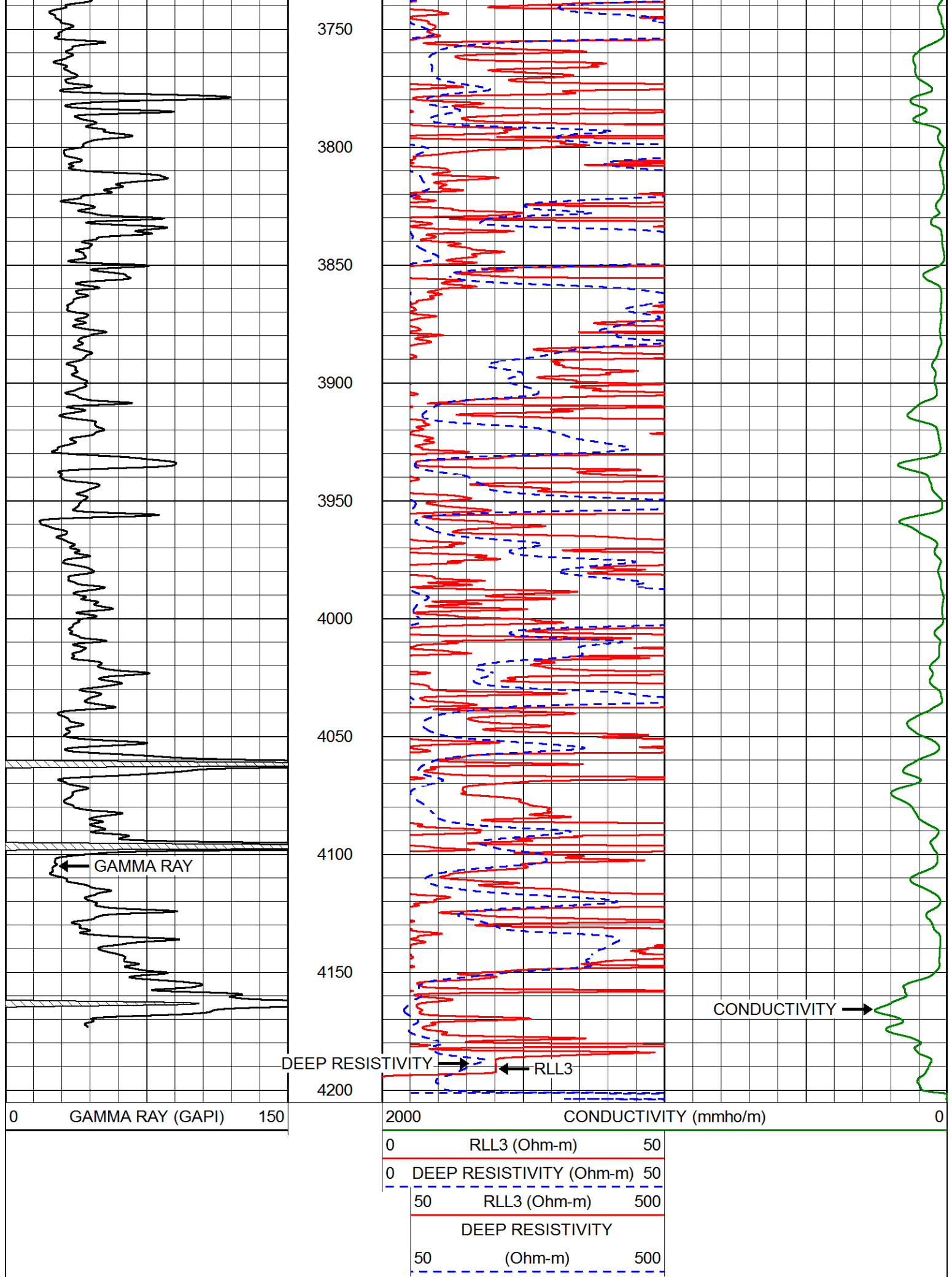


2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600







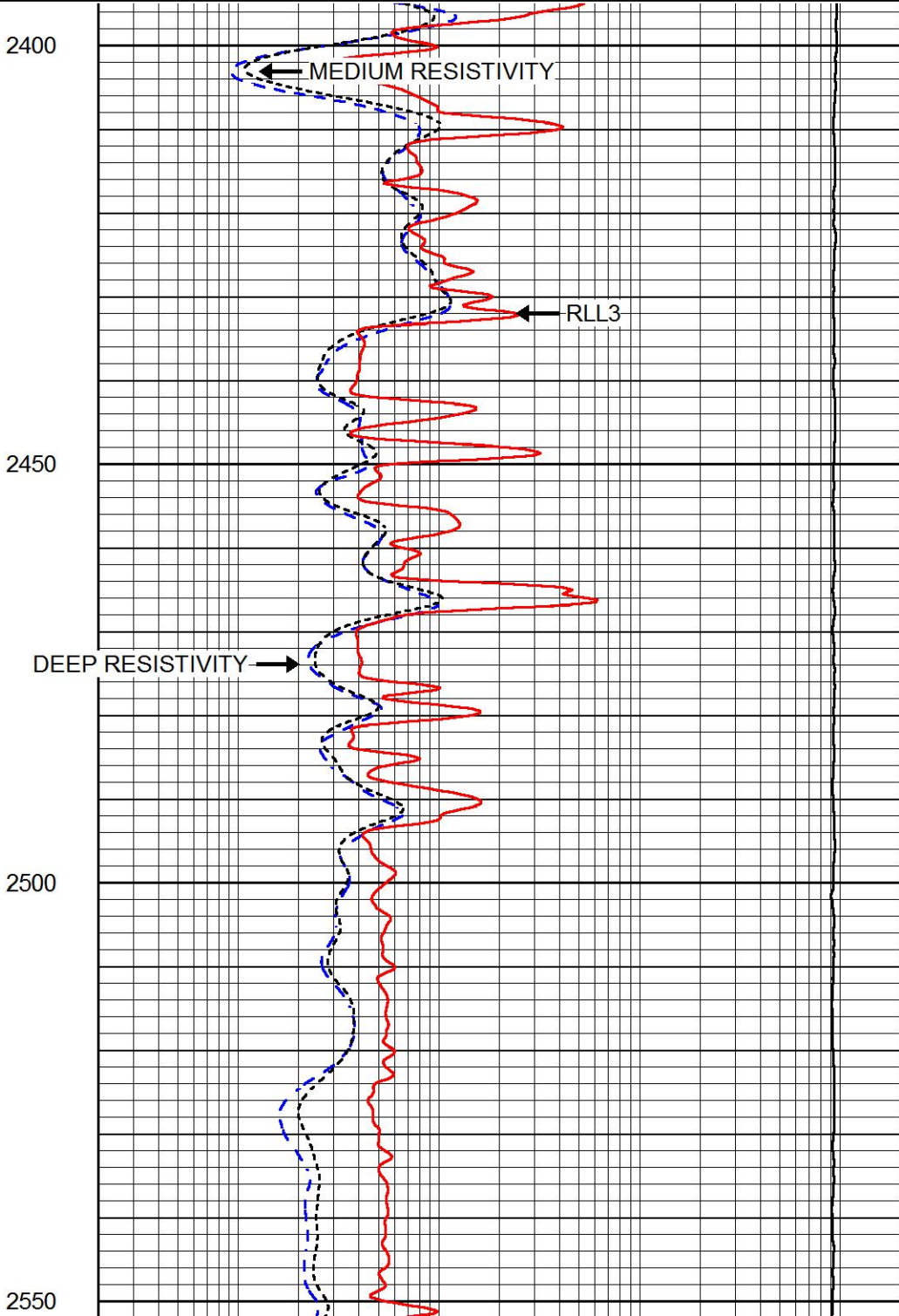
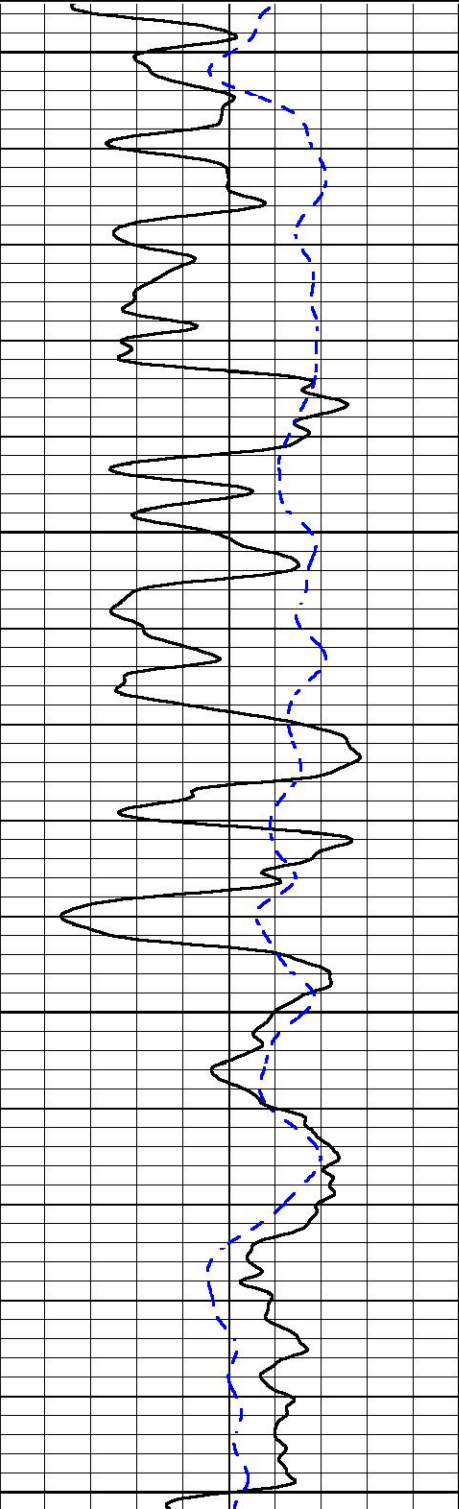


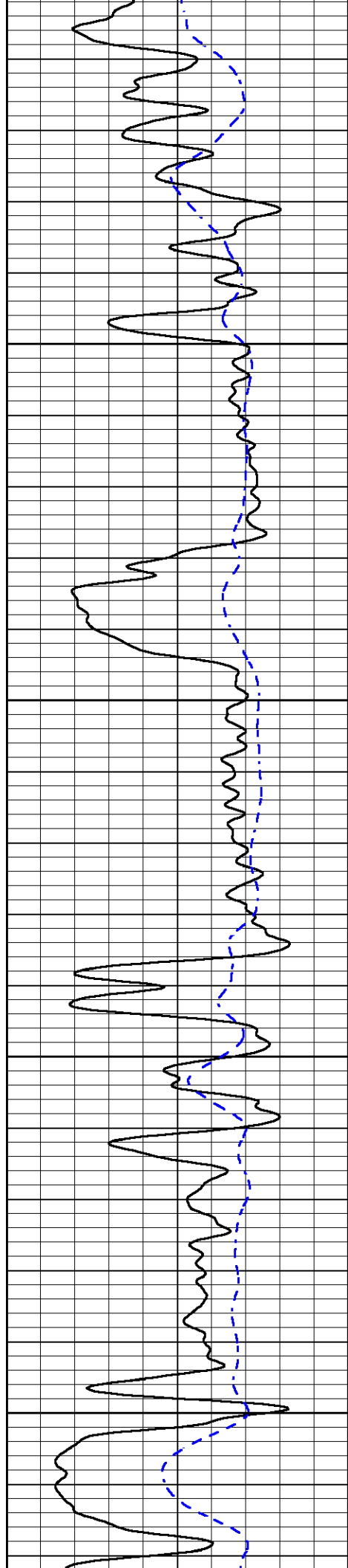
MAIN SECTION

Database File r&b_goetz_a_1.db
 Dataset Pathname stack/pass3.1
 Presentation Format dil
 Dataset Creation Wed Apr 25 09:17:17 2018
 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
15000	LINE TENSION (lb)	0



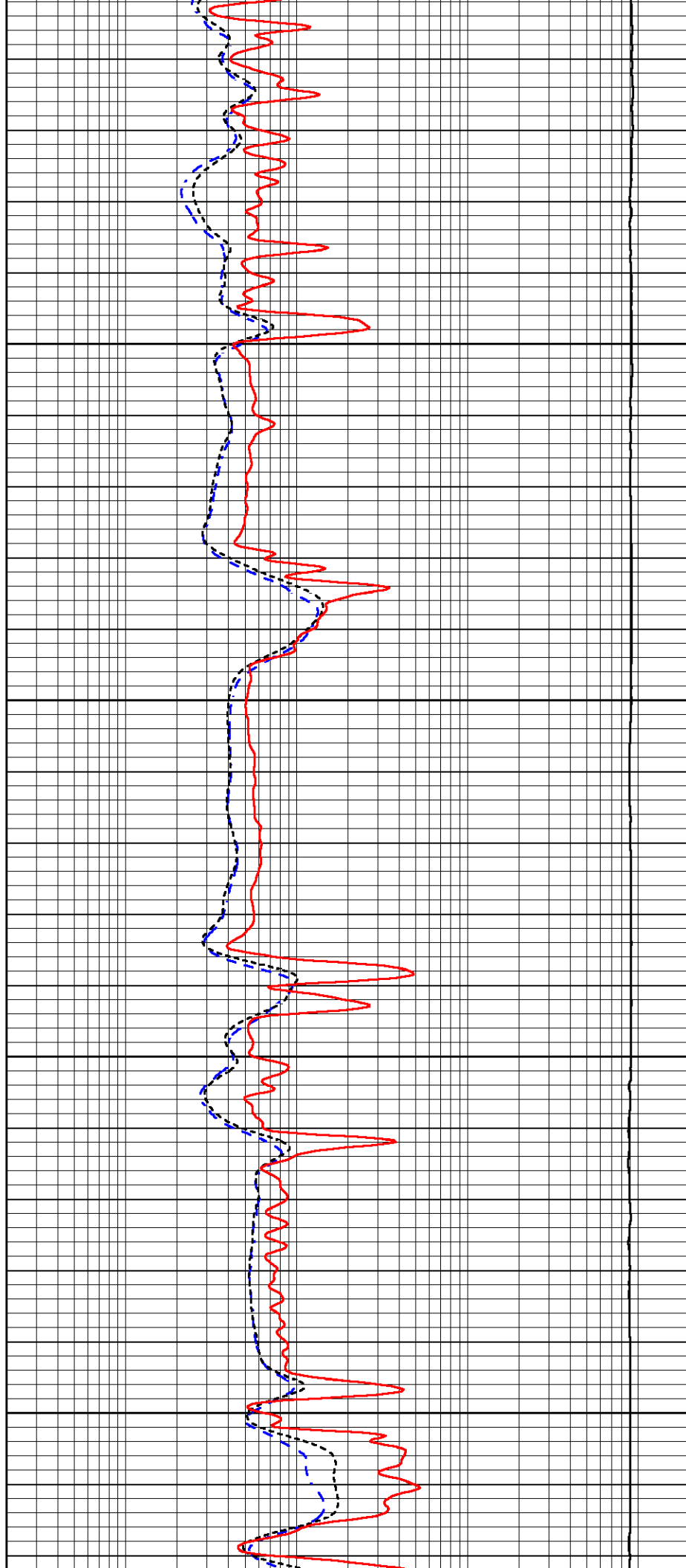


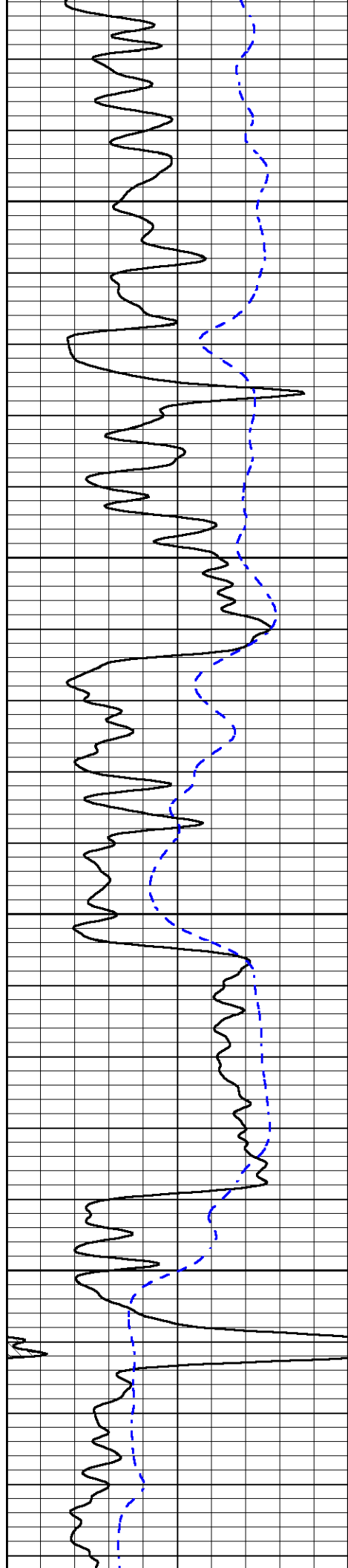
2600

2650

2700

2750



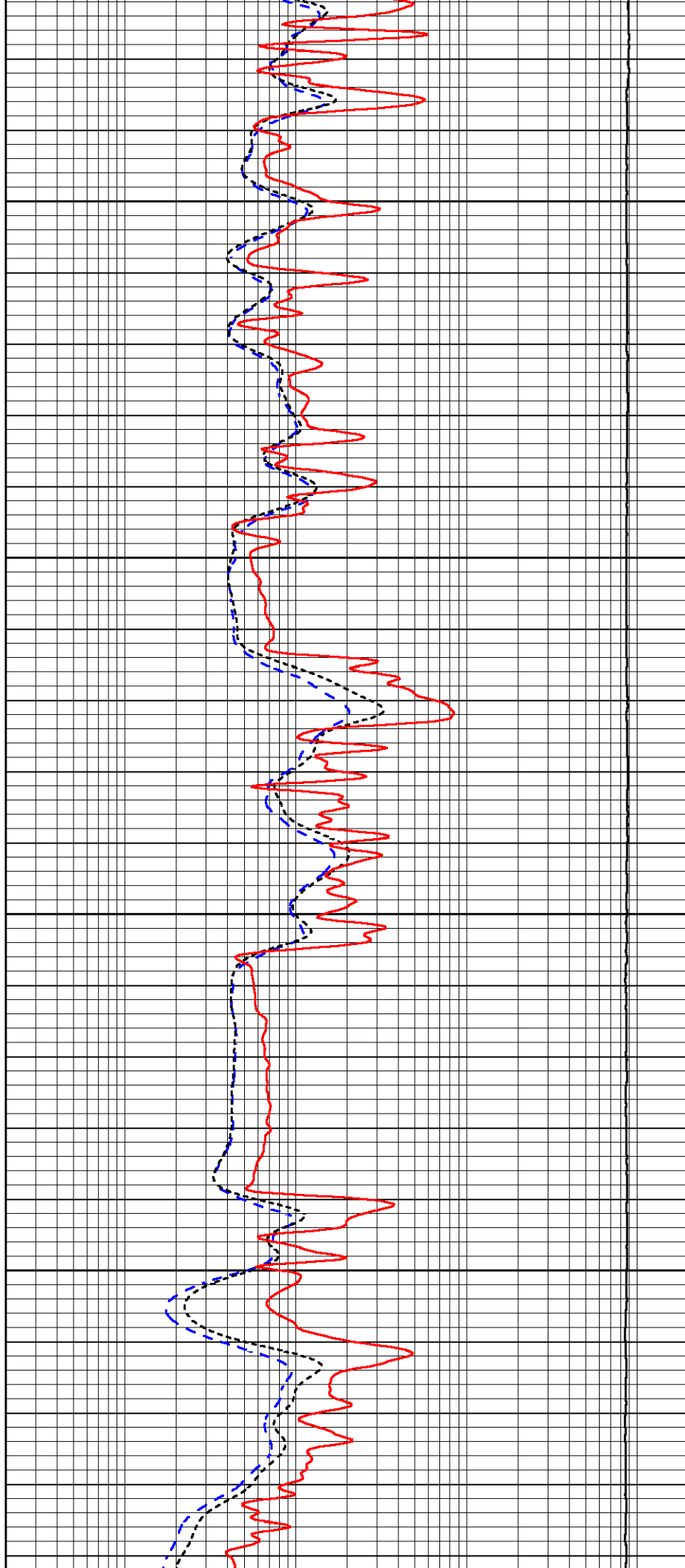


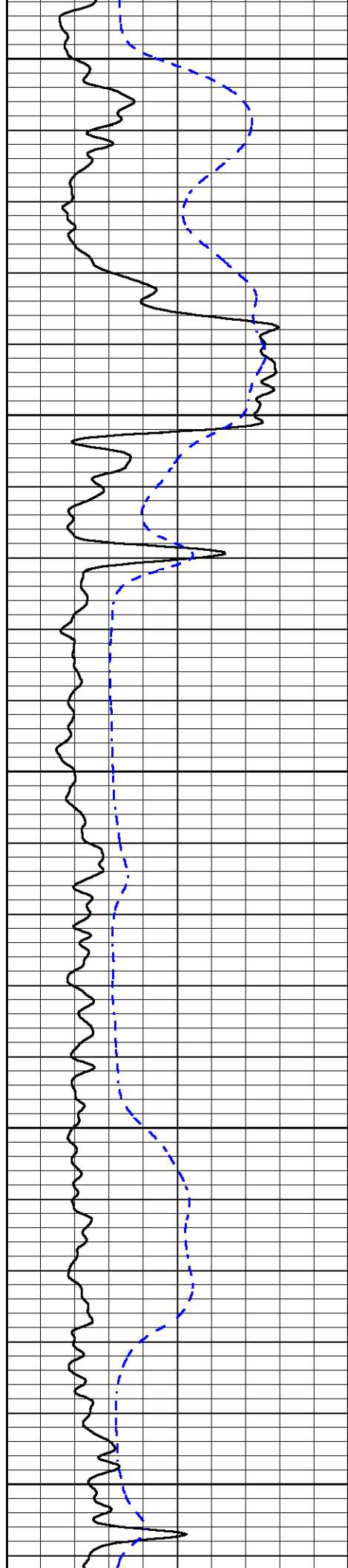
2800

2850

2900

2950





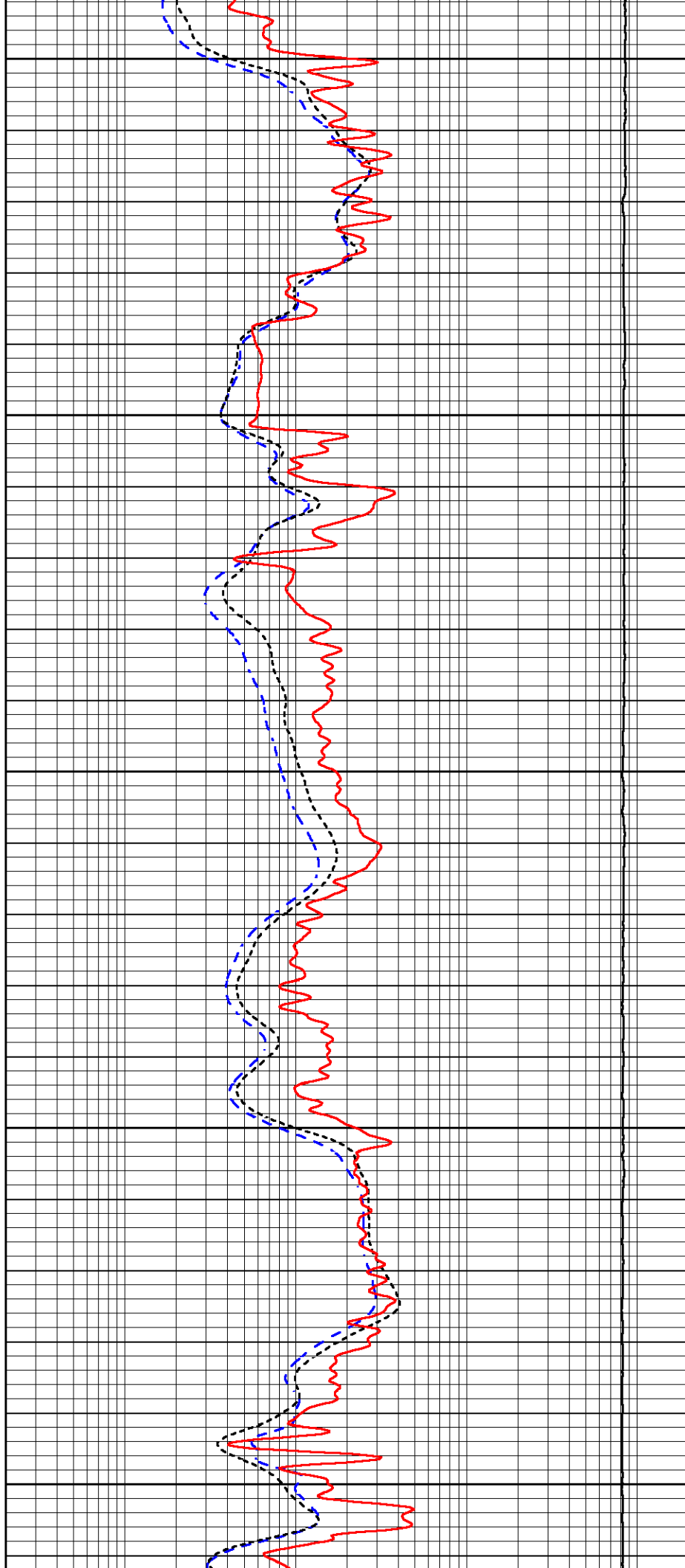
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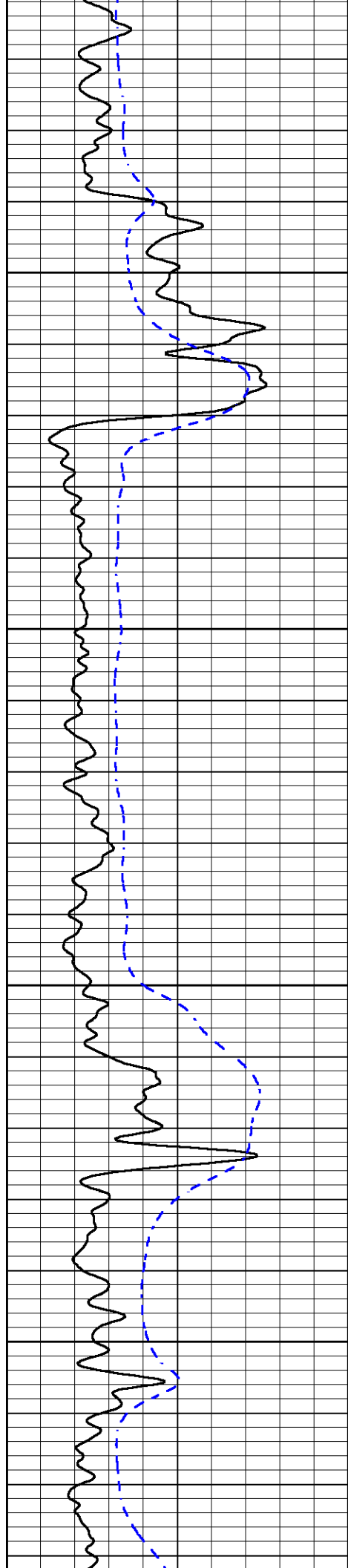
3050

3100

3150

3200



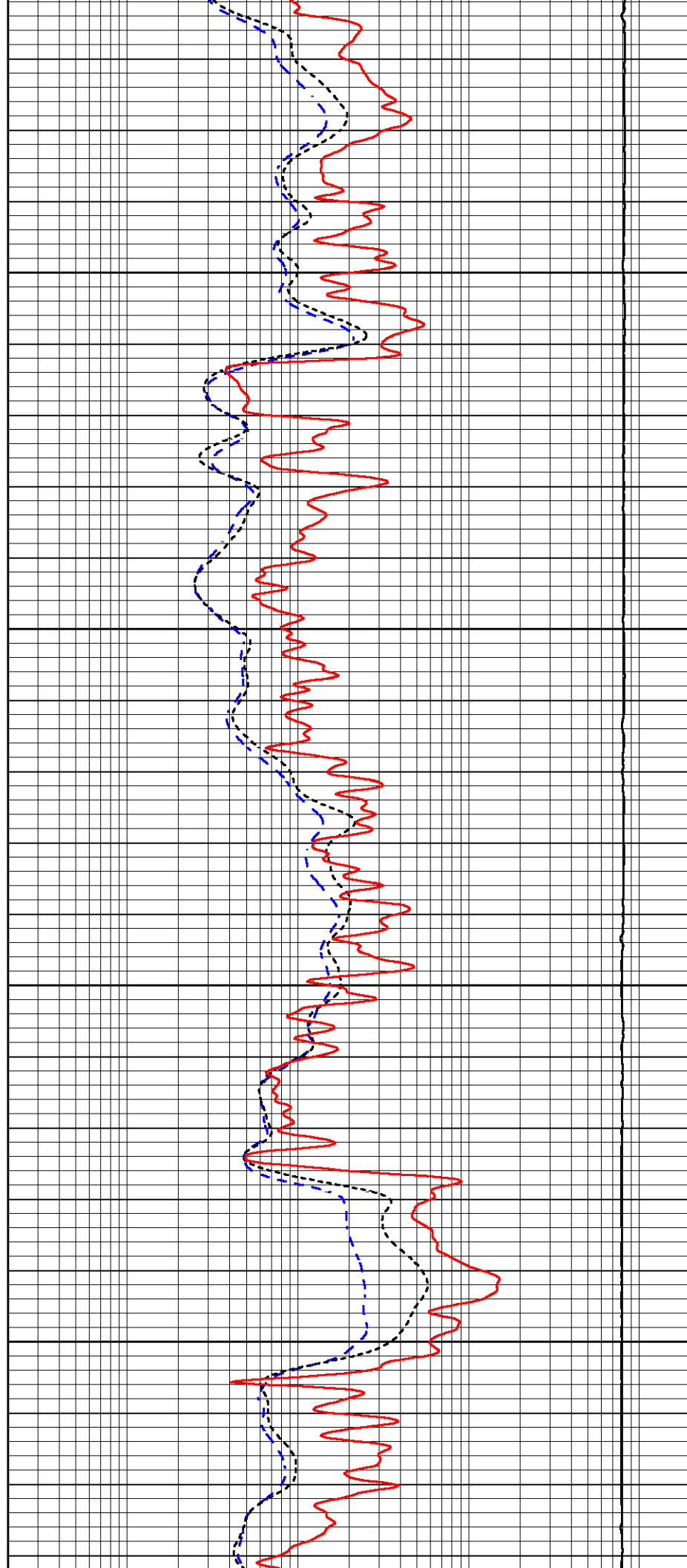


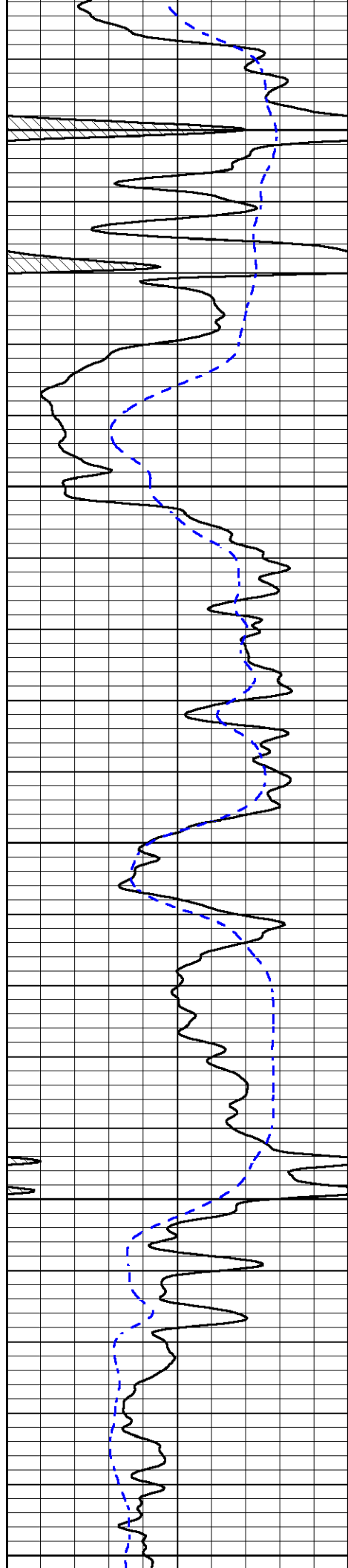
3250

3300

3350

3400





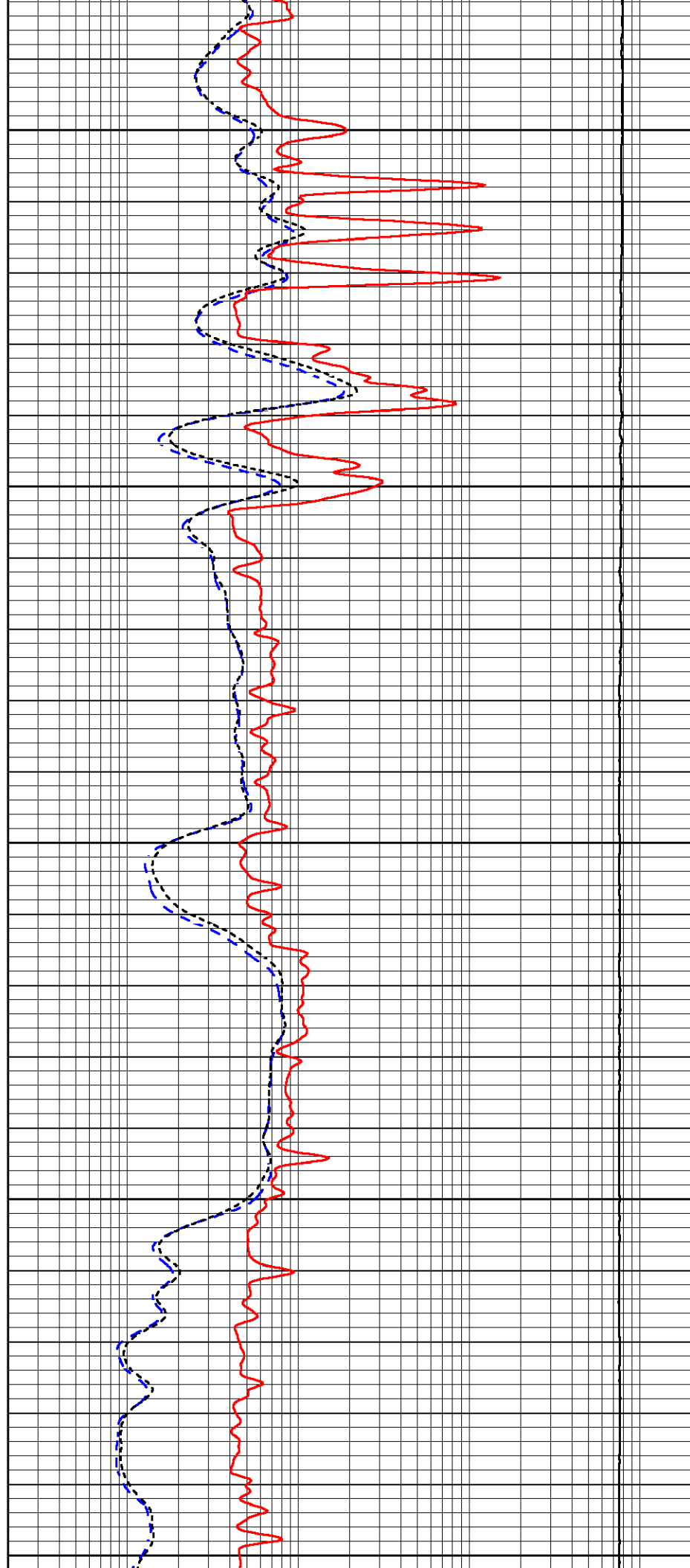
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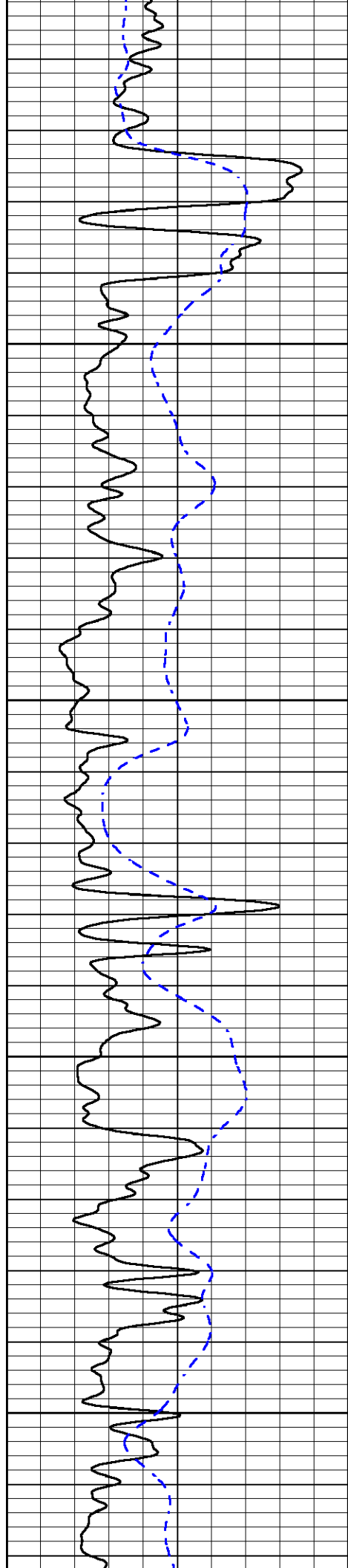
3500

3550

3600

3650



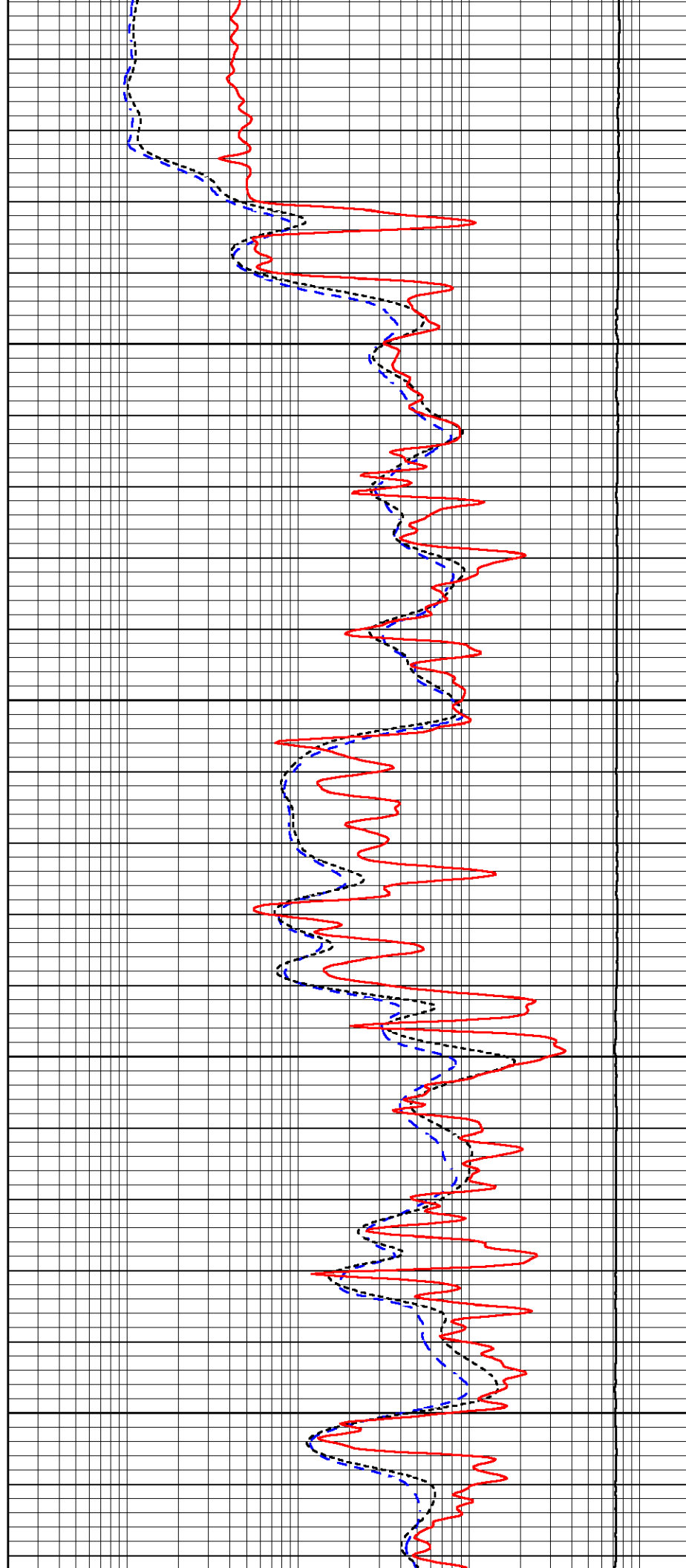


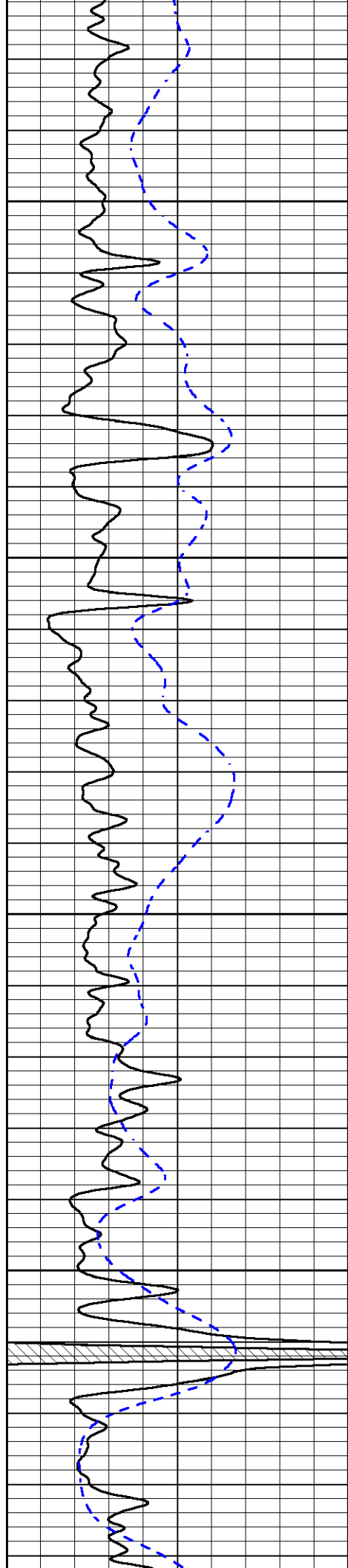
3700

3750

3800

3850



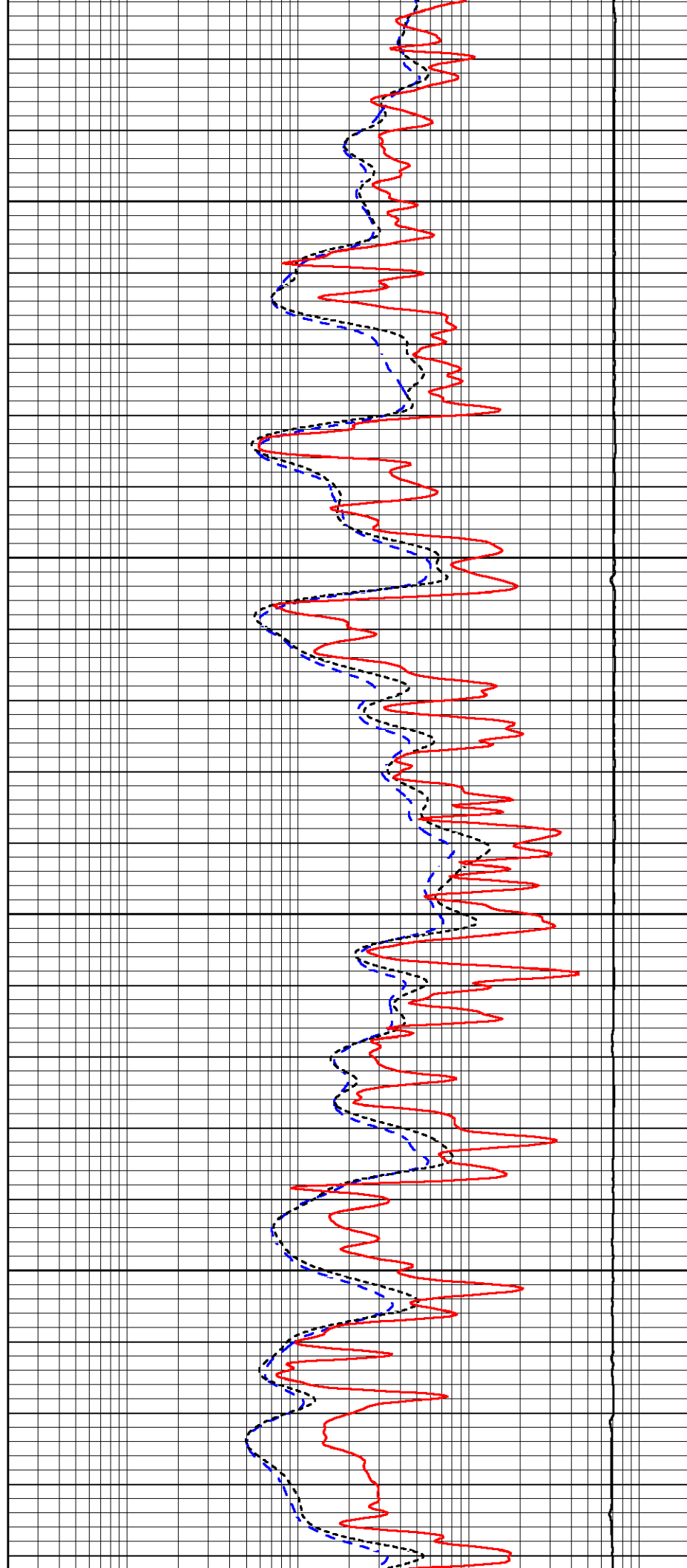


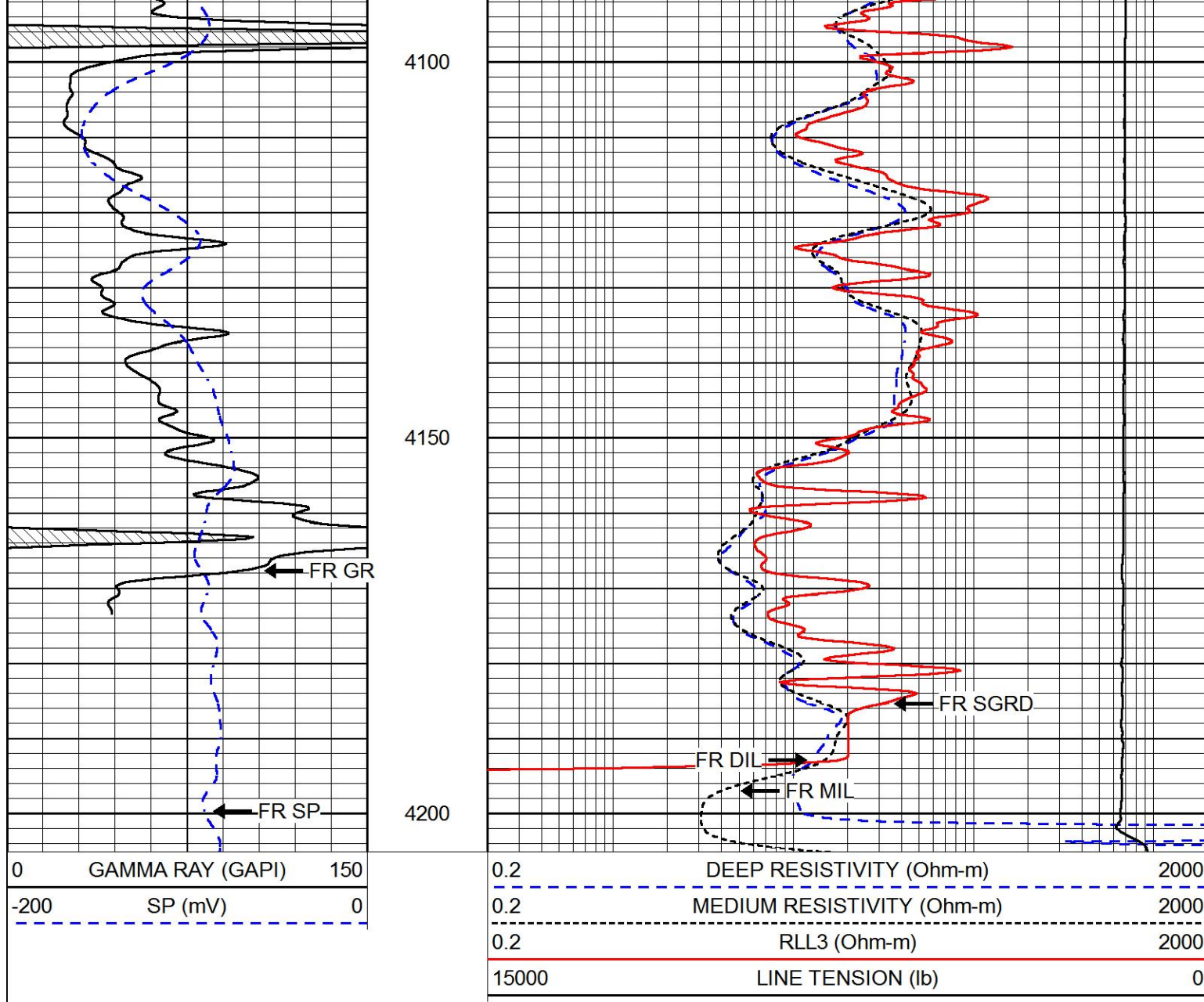
3900

3950

4000

4050





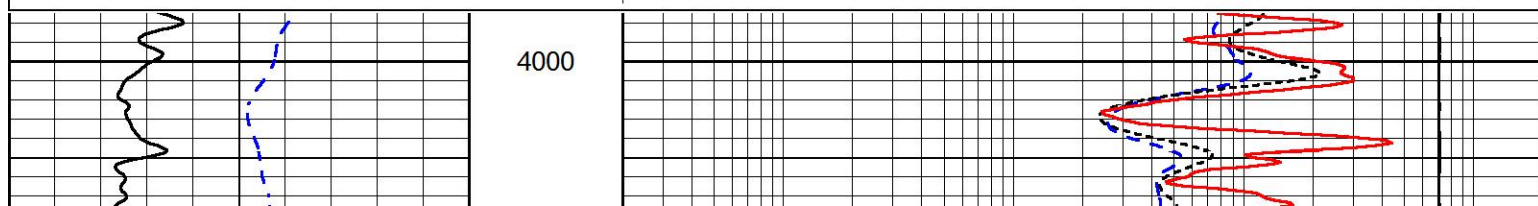


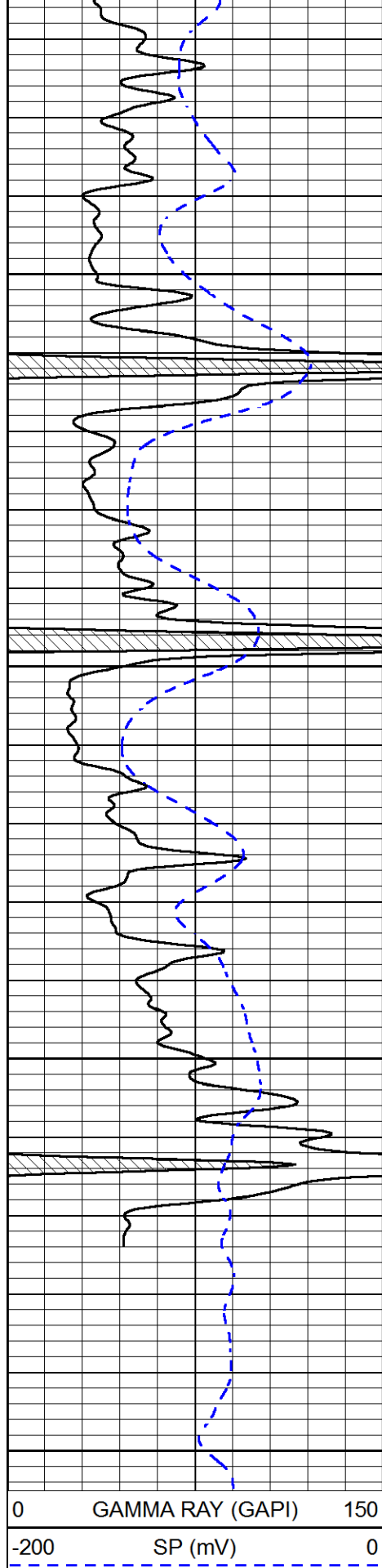
PIONEER
Pioneer Energy Services

REPEAT SECTION

Database File	r&b_goetz_a_1.db		
Dataset Pathname	stack/pass2.1		
Presentation Format	dil		
Dataset Creation	Wed Apr 25 08:36:16 2018		
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	
15000	LINE TENSION (lb)	0	





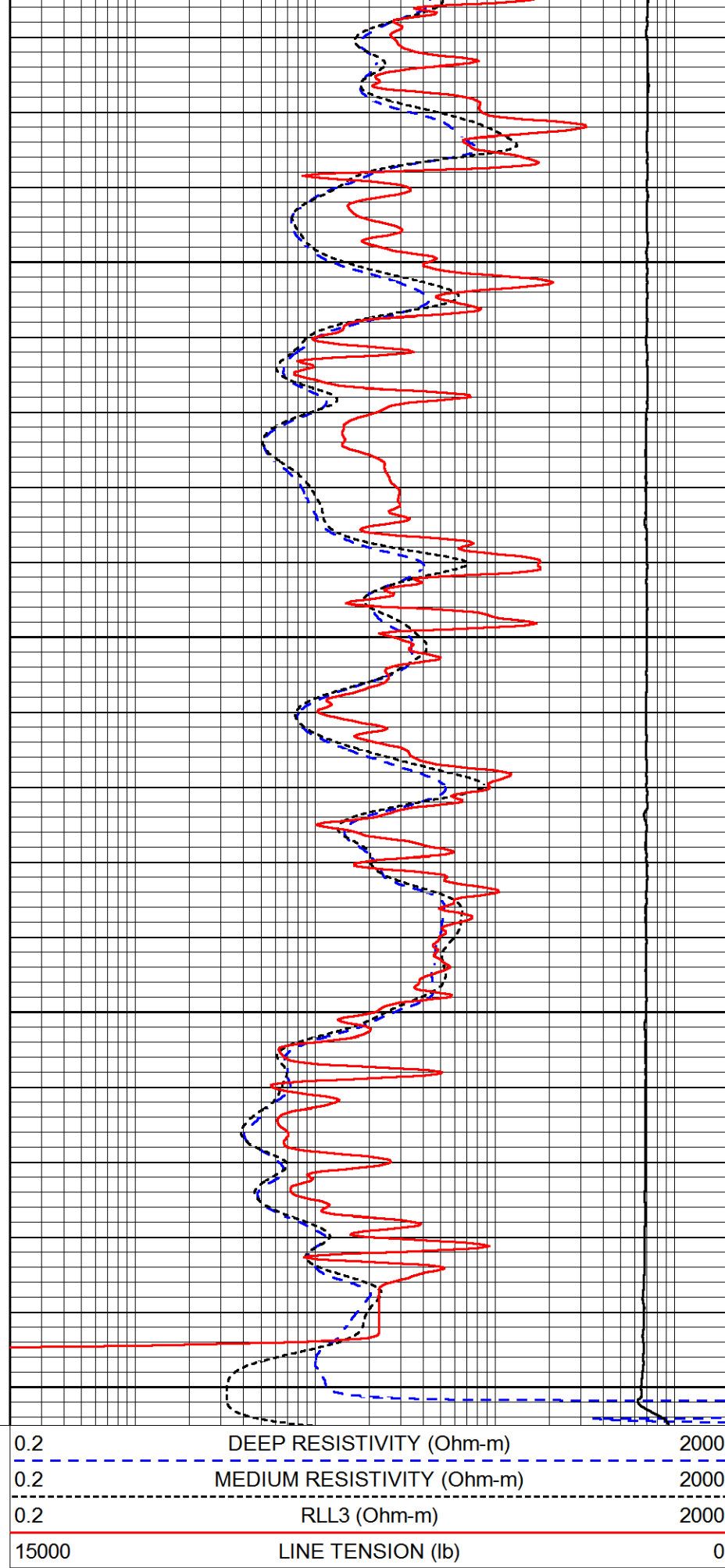
4050

4100

4150

4200

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
15000 LINE TENSION (lb) 0

Database File r&b_goetz_a_1.db
Dataset Pathname stack/pass3.1
Dataset Creation Wed Apr 25 09:17:17 2018

Dual Induction Calibration Report

Serial-Model: PSI 978-M&W
Calibration Performed: Sun Feb 04 11:50:02 2018

	Readings		References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.570	-40.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.400	-37.000

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
Source / Verifier: /
Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	Size		Reading		
Small Ring	4.00	in	1.00		
Large Ring	14.00	in	1.20		

Compensated Neutron Calibration Report

Serial Number: tk10-MW
Tool Model: M&W
Calibration Performed: Wed Nov 16 11:21:36 2016

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-M&W
Tool Model: M&W
Calibration Performed: Tue Apr 11 17:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



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