



PIONEER

Pioneer Energy Services

DUAL INDUCTION LOG

Company **LARSON ENGINEERING, INC.**

Well **PARIS #2-11**

Field **WILDCAT**

County **LANE** State **KANSAS**

Location: API #: 15-101-22587-00-00

Other Services

NW NE NW SE
2550' FSL & 1690' FEL
SEC 11 TWP 19S RGE 29W

CNL/CDL
MEL

Permanent Datum GROUND LEVEL Elevation 2800'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2810'
D.F. N/A
G.L. 2800'

Date 2/25/2017

Run Number ONE

Depth Driller 4650'

Depth Logger 4660'

Bottom Logged Interval 4659'

Top Log Interval 250'

Casing Driller 8.625" @ 266'

Casing Logger 265'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 2400

Density / Viscosity 9.2 55

pH / Fluid Loss 10.5 7.8

Source of Sample FLOWLINE

Rm @ Meas. Temp 0.80 @ 46

Rmt @ Meas. Temp 0.60 @ 46

Rmc @ Meas. Temp 1.08 @ 46

Source of Rmt / Rmc CHARTS

Rm @ BHT 0.30 @ 123

Operating Rig Time 3 HOURS

Max Rec. Temp. F 123

Equipment Number 91

Location COLBY

Recorded By D. SCHMIDT

Witnessed By VERN SCHRAG

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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.

DIGHTON,
6 SOUTH ON HWY 23 TO 90 RD,
1 WEST TO KAW RD, 1 1/2 NORTH,
1/4 WEST TO LOCATION

Log Measured From: KELLY BUSHING 10 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

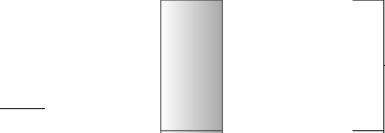
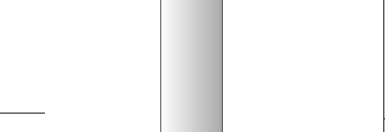
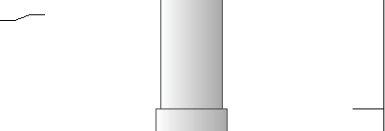
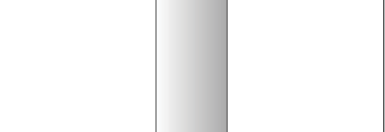
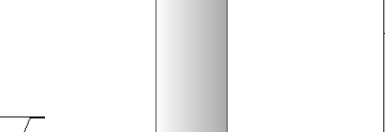
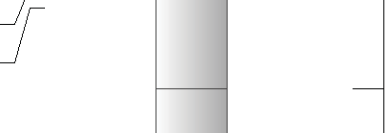
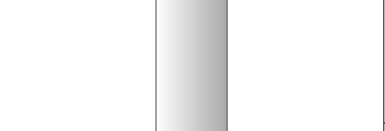
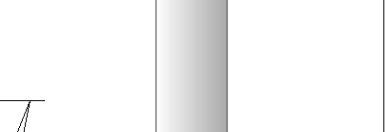
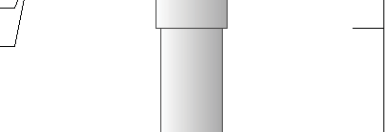
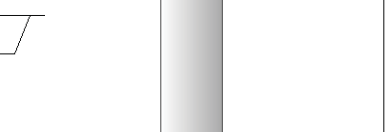
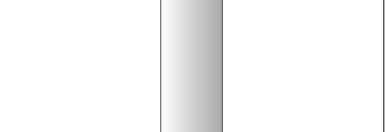
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: VERN SCHRAG
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

M	A	SPSHIFT mV	SNDERRM mmho/m	SNDERR mmho/m	SZCOR	NPORSEL	FLUIDDEN g/cc
2	1	230	0	0	Off	Limestone	1
MATRXDEN g/cc	SRFTEMP degF	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
2.71	30	0	4.5	0	4660	123	7.875

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	37.48		CNT-M&W (207-MW)	5.50	3.50	100.00
CNSSC	36.73					
LSD	28.43		CDL-M&W (90-1031)	8.50	4.00	250.00
DCAL	28.42					
SSD	27.93					
MCAL	19.83		ML-PSIML (PSI-01)	7.58	4.00	65.00
MI	19.83		GO Micro log tools converted to Simplec electronics			
MN	19.83					
RLL3F	15.80					
RLL3	15.80					

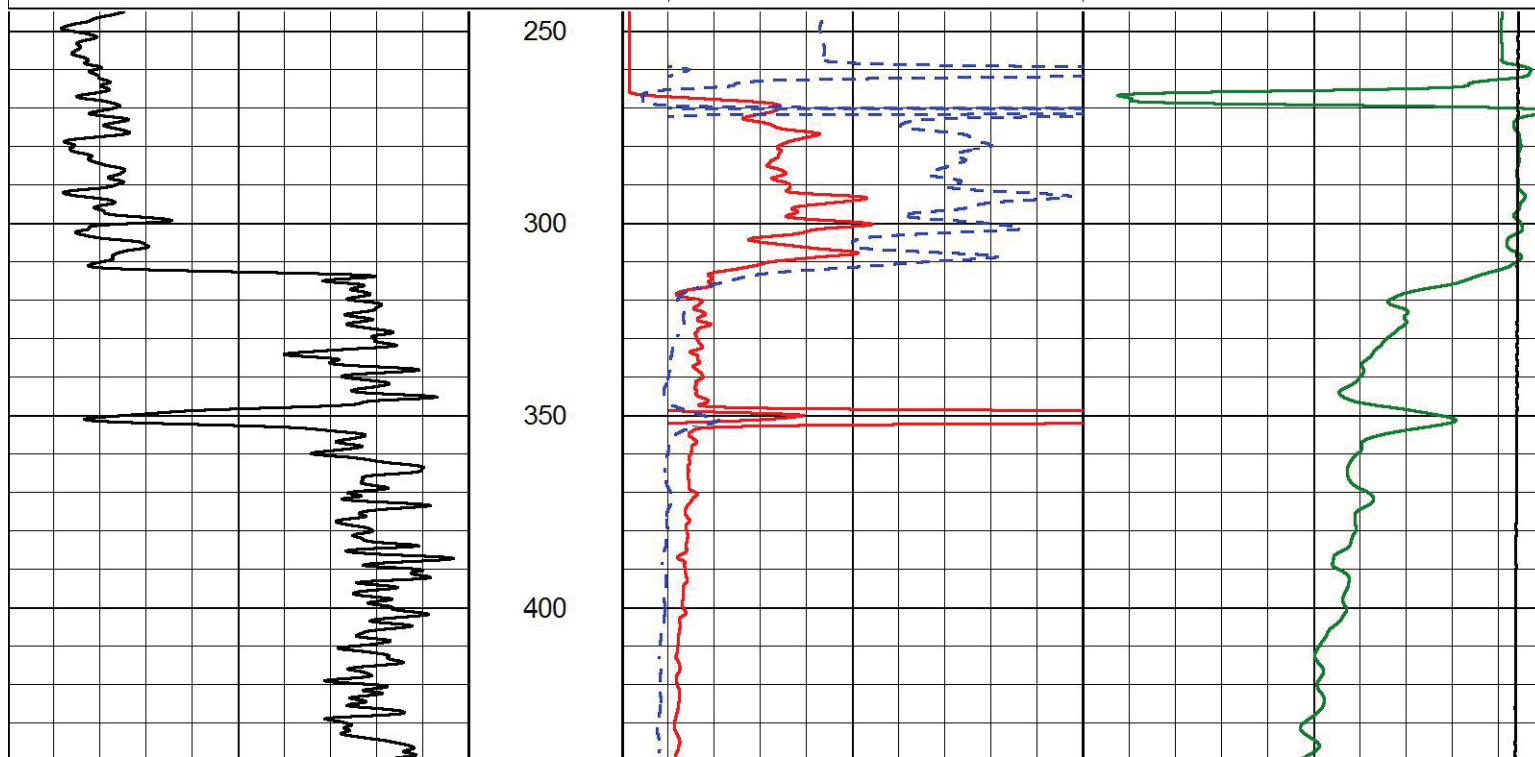
			DIL-M&W (PSI 13)	18.50	3.50	220.00
CILD	8.00					
CILM	4.70					
SP	0.20					
Dataset: laron_pari_2-11.db: field/well/STKML/pass3.15 Total length: 43.08 ft Total weight: 685.00 lb O.D.: 4.00 in						

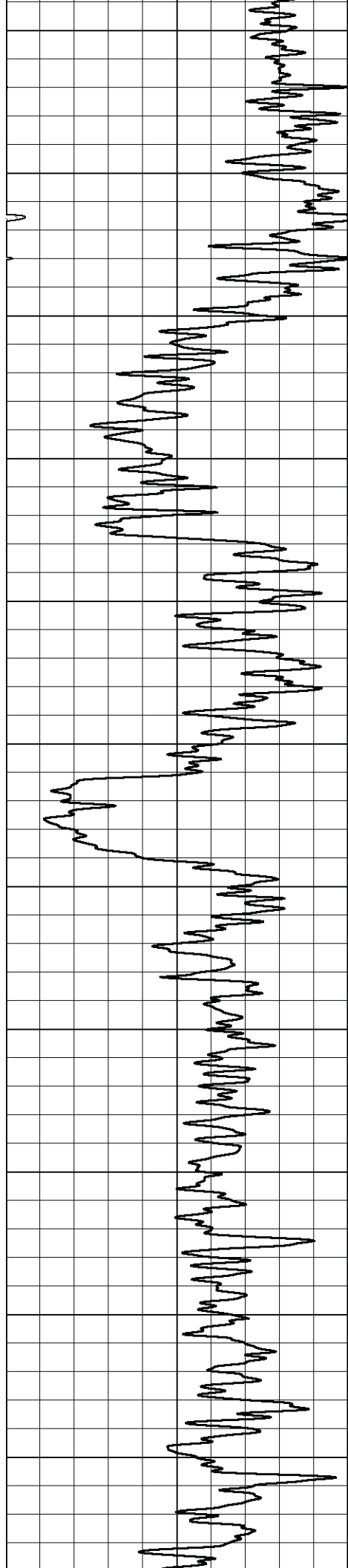


MAIN PASS

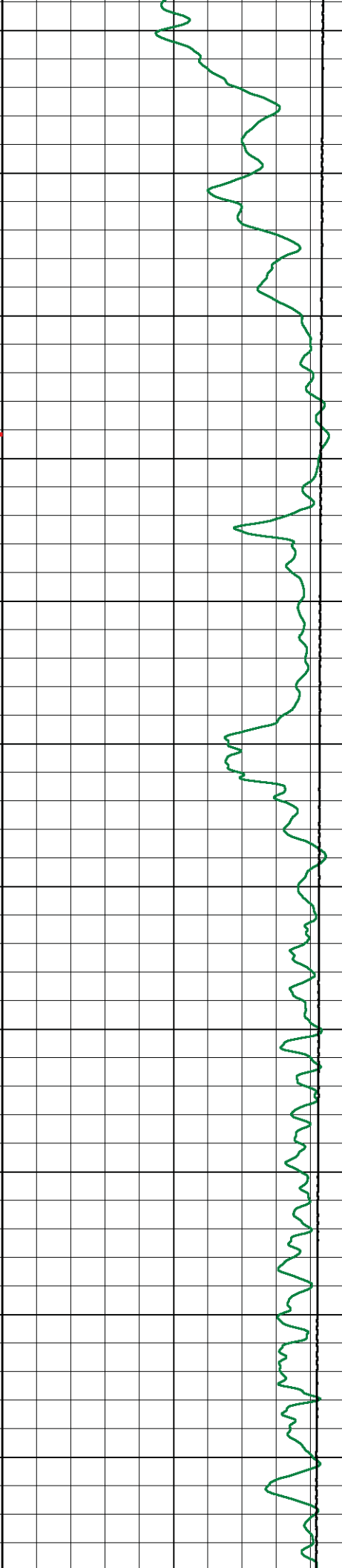
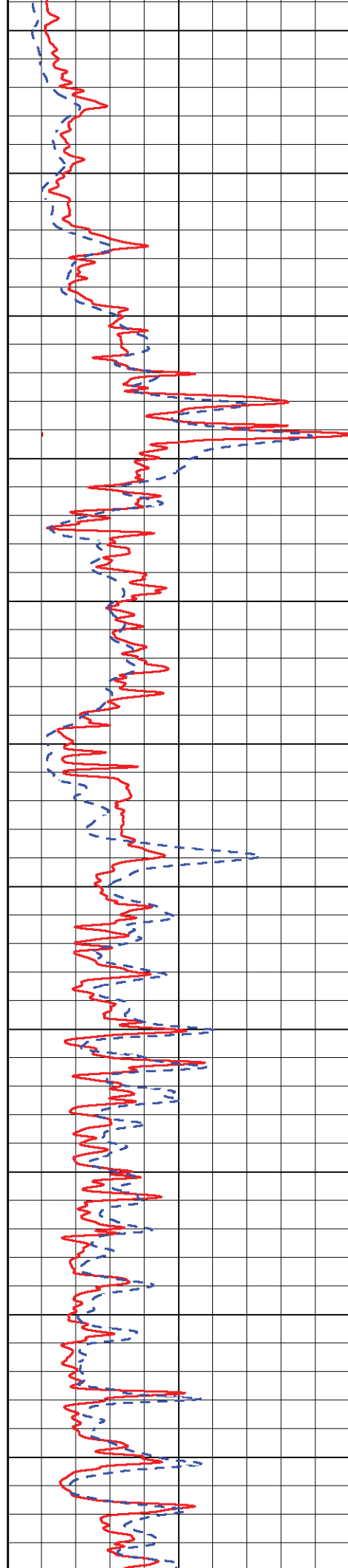
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Dataset Pathname	STKML/pass3.1
Presentation Format	dil2in
Dataset Creation	Sat Feb 25 03:36:09 2017
Charted by	Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	1000	Conductivity (mmho/m)	0
			15000	Line Tension (lb)	0
			0	Shallow Resistivity (Ohm-m)	50
			0	Deep Resistivity (Ohm-m)	50
				Shallow Resistivity	
			50	(Ohm-m)	500
			50	Deep Resistivity (Ohm-m)	500

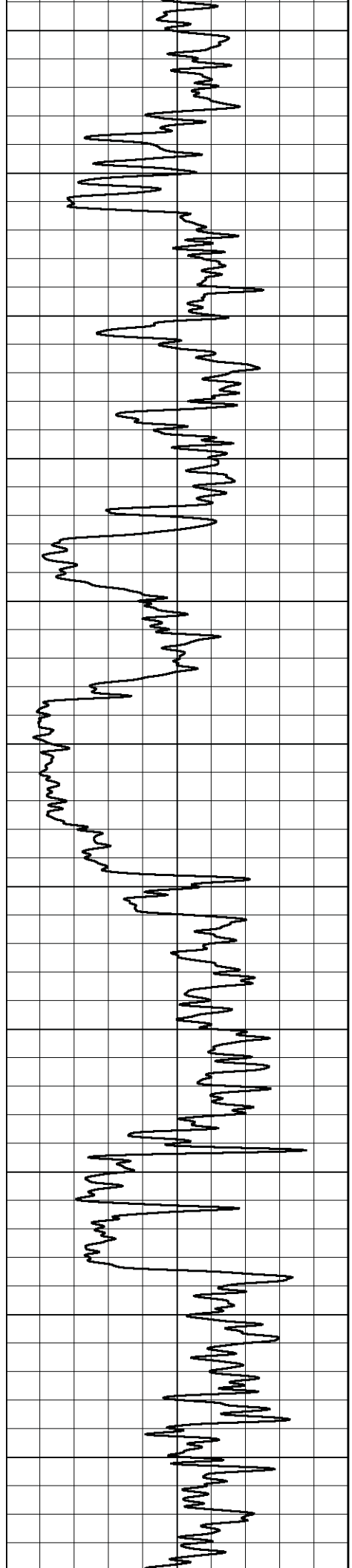
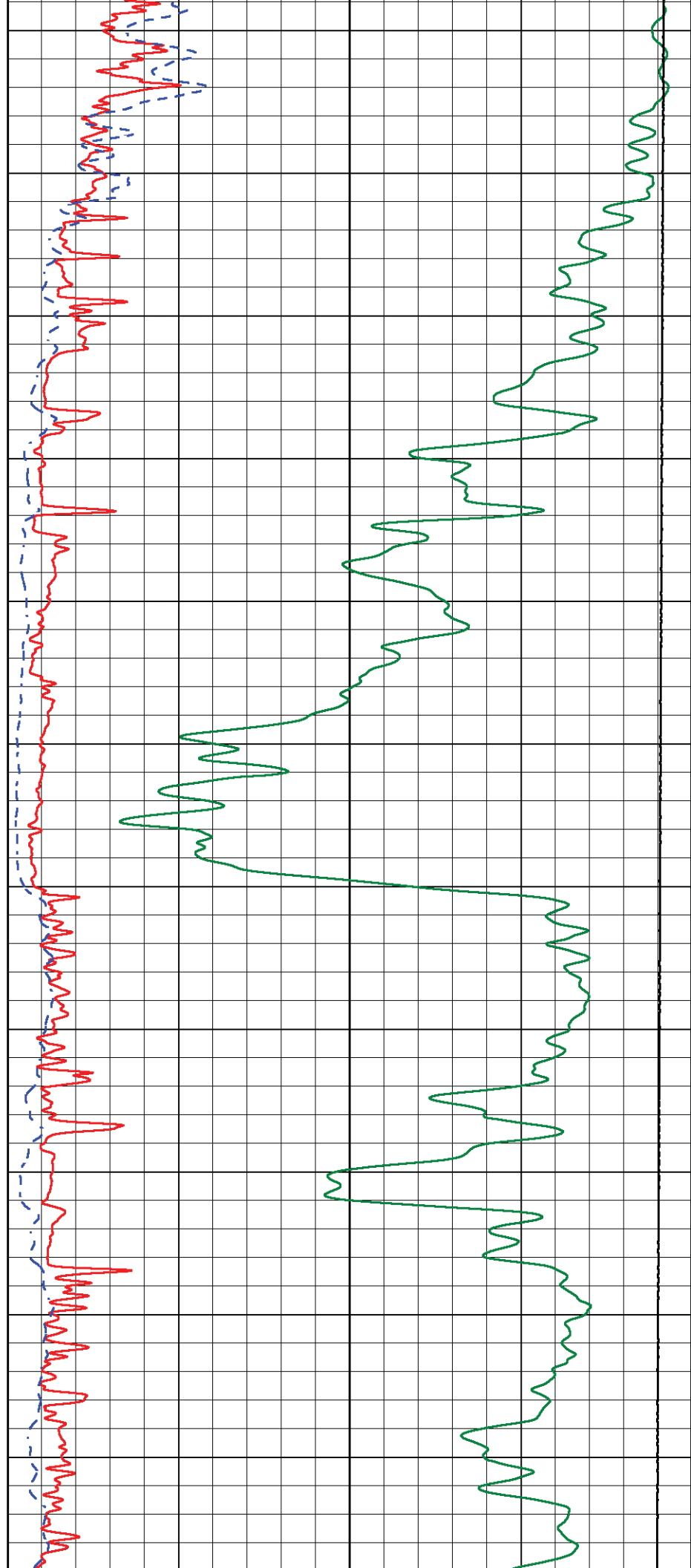


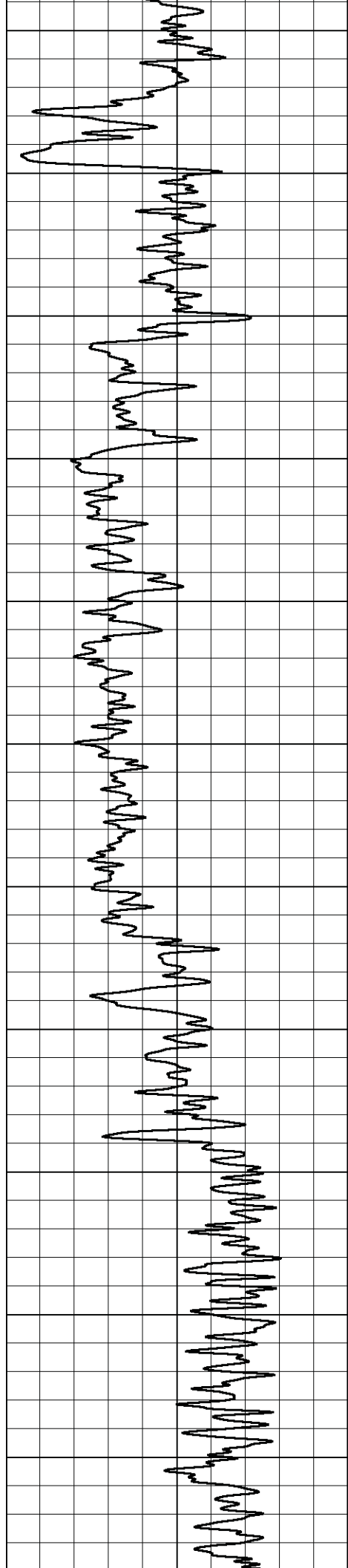


450
500
550
600
650
700
750
800
850
900
950

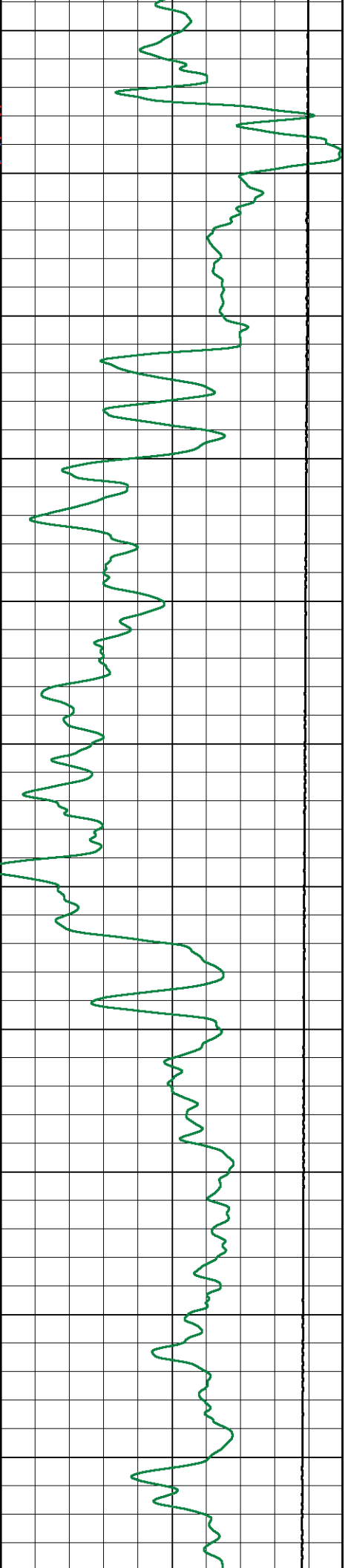
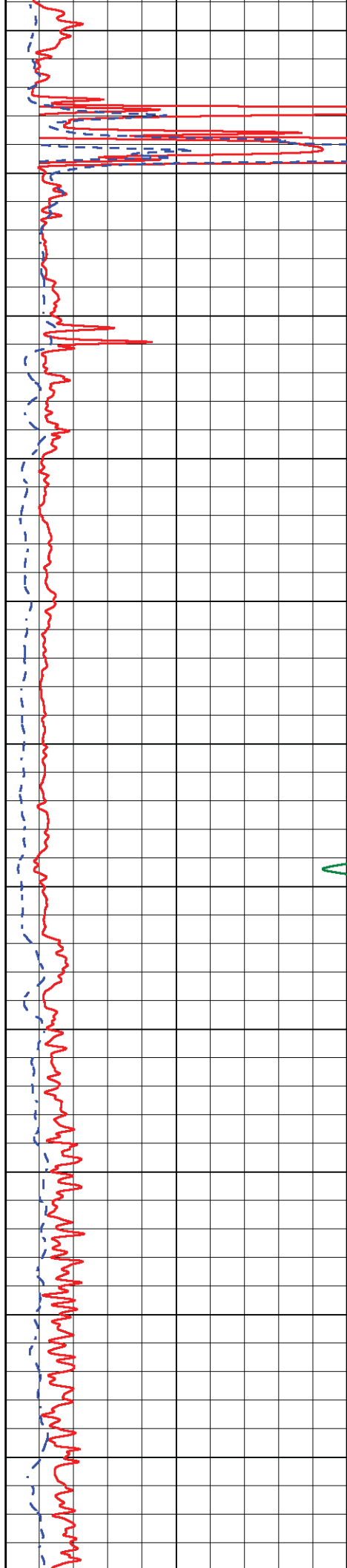


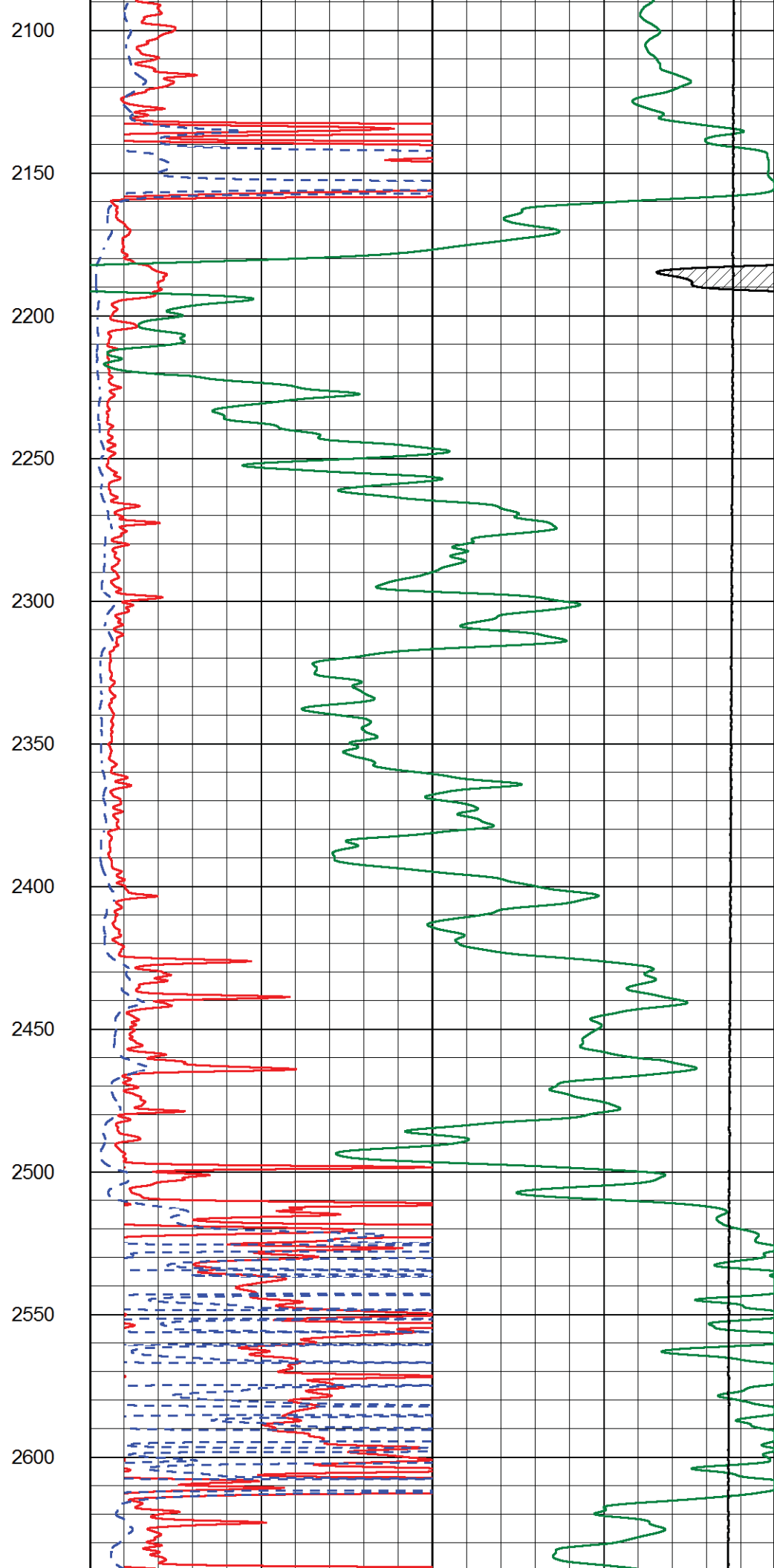
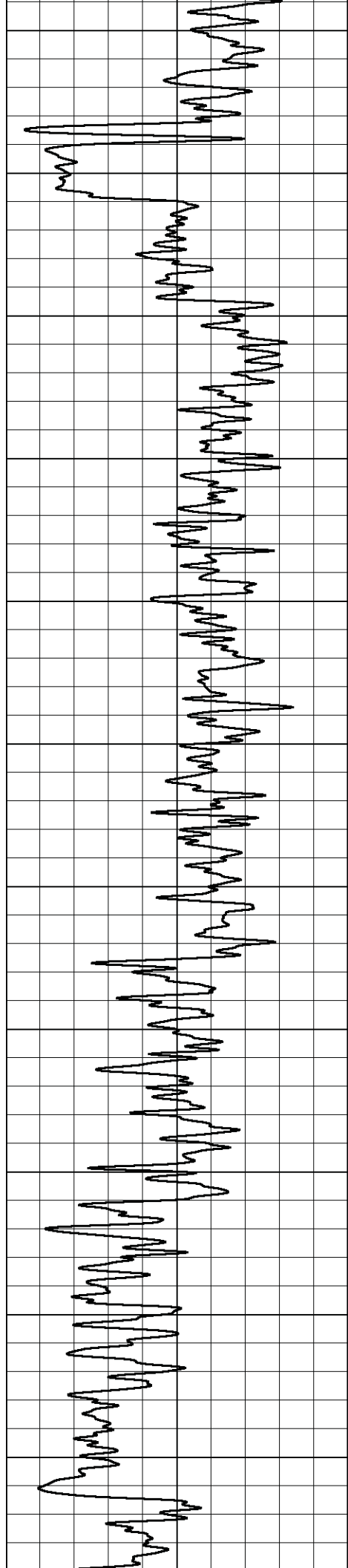
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1050
1100
1150
1200
1250
1300
1350
1400
1450
1500

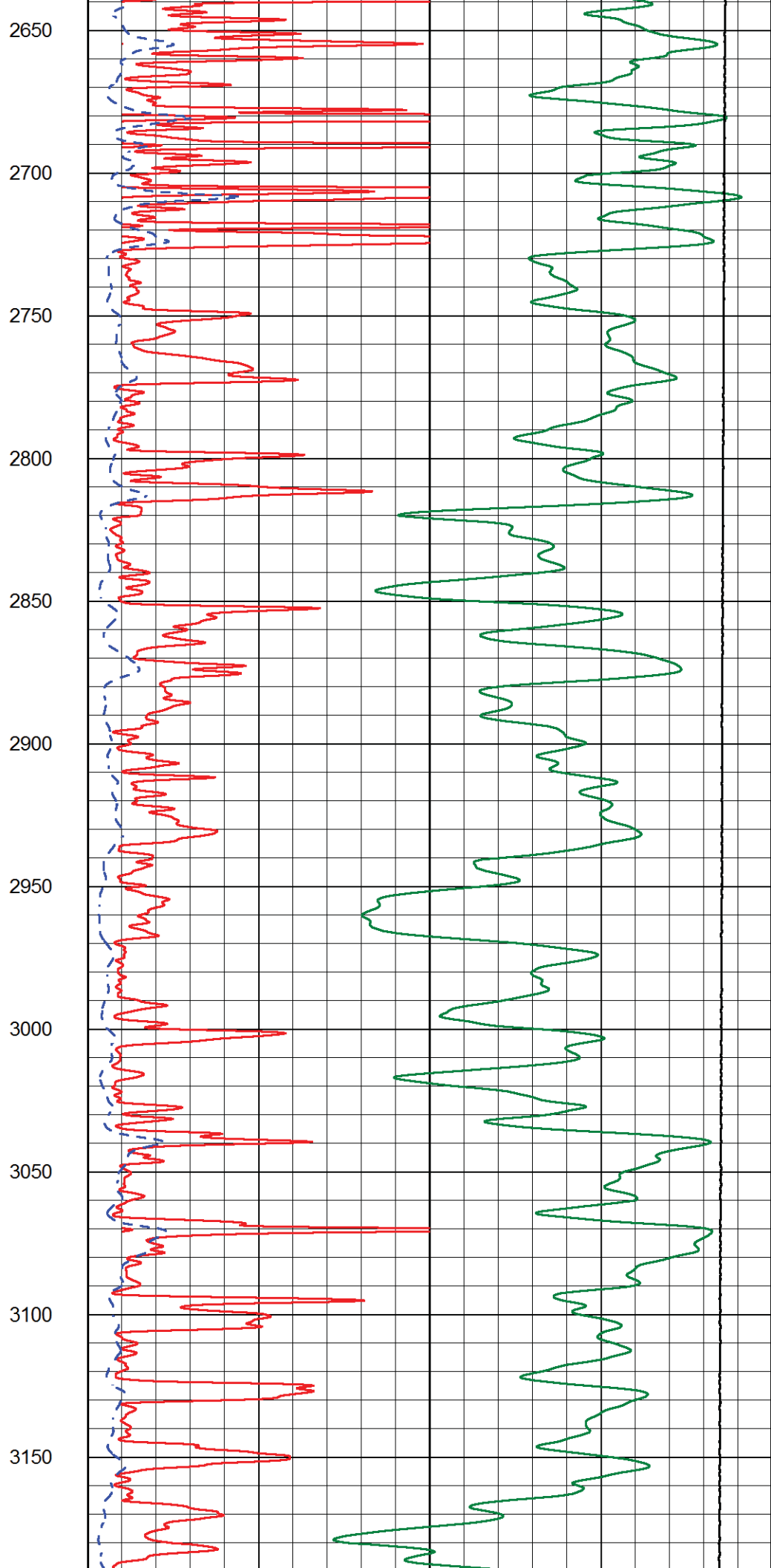
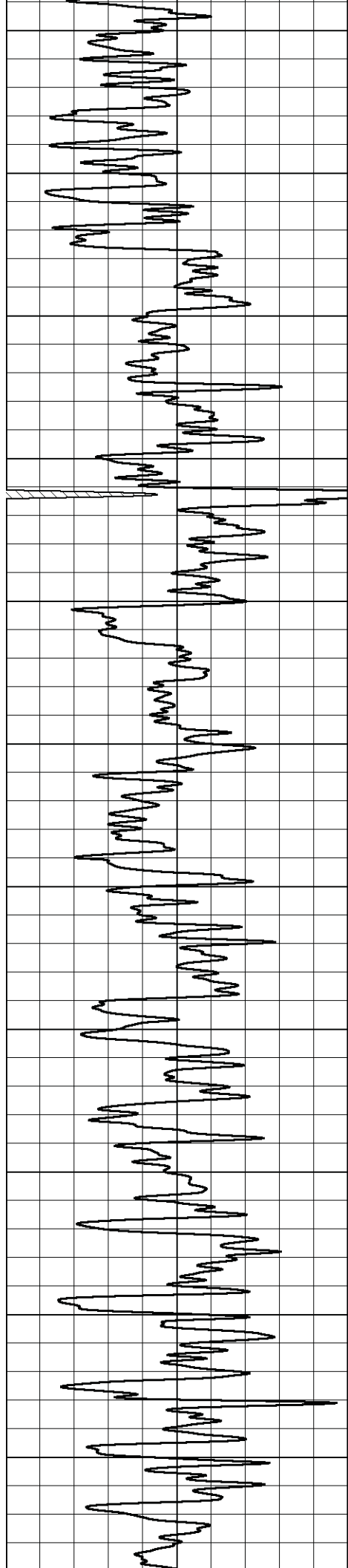


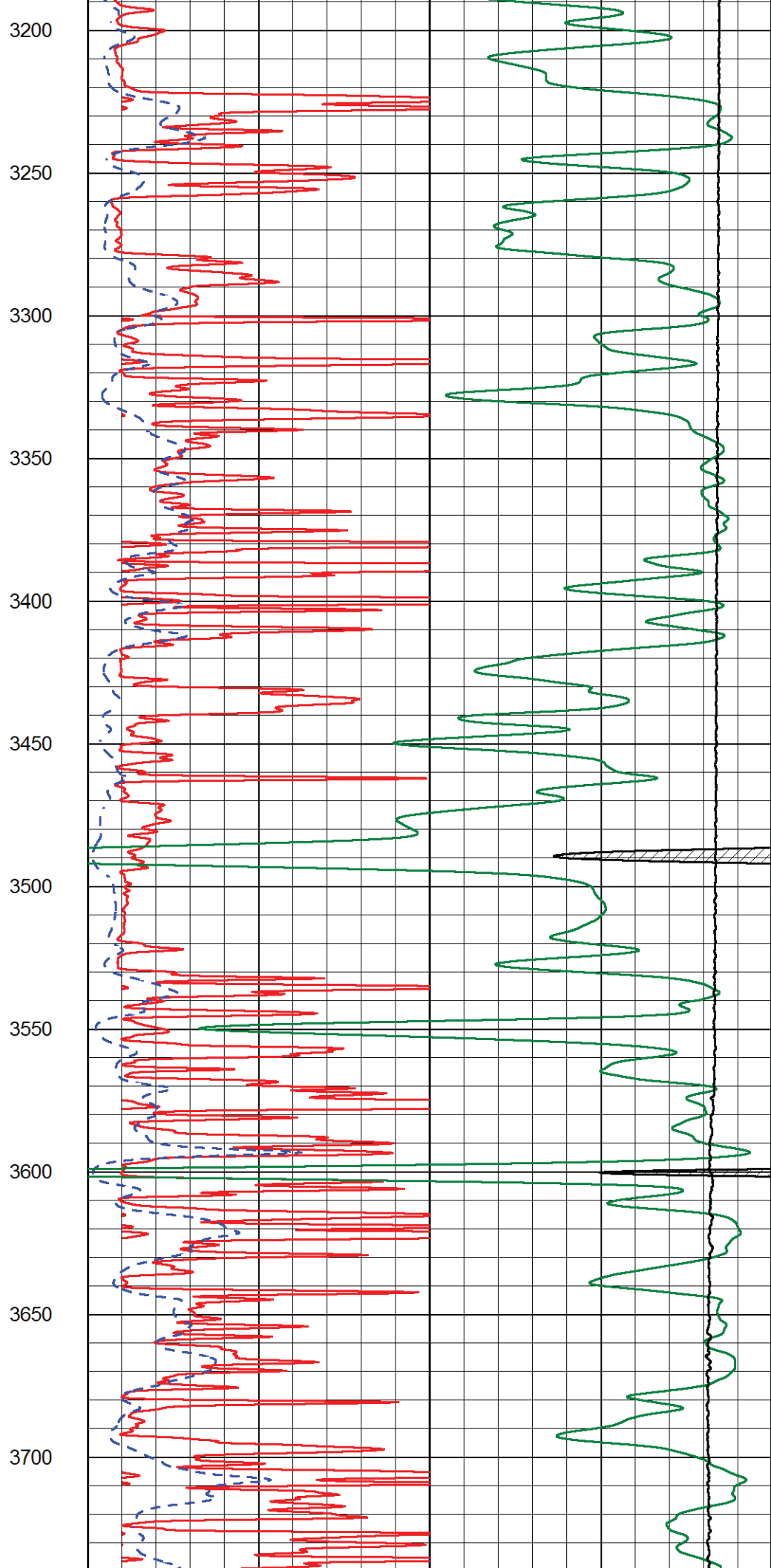
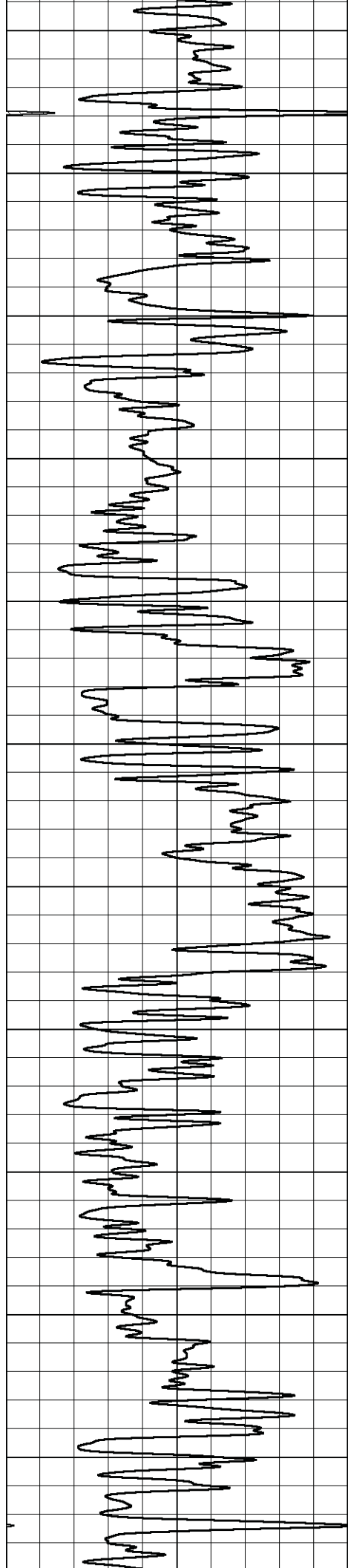


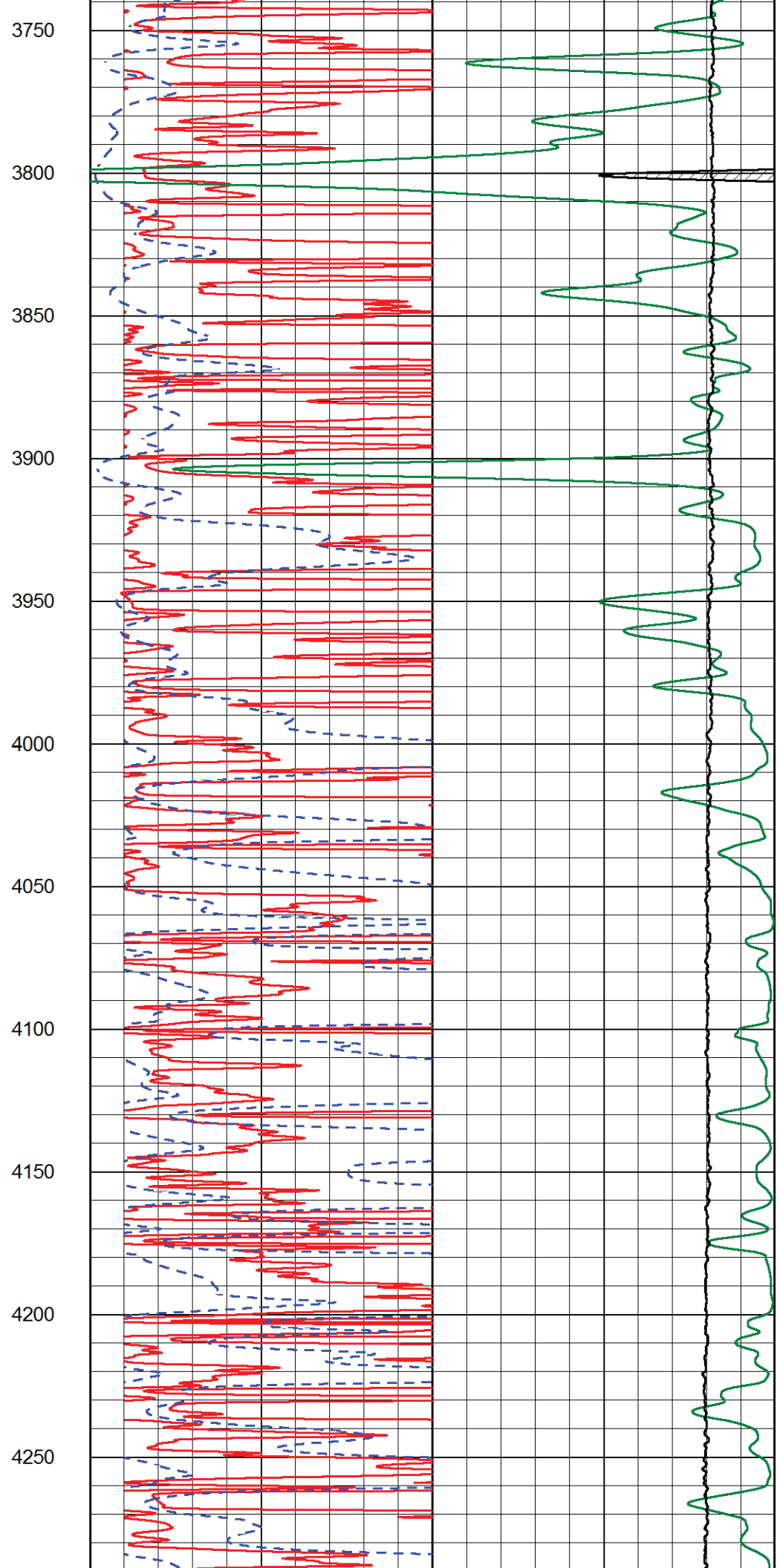
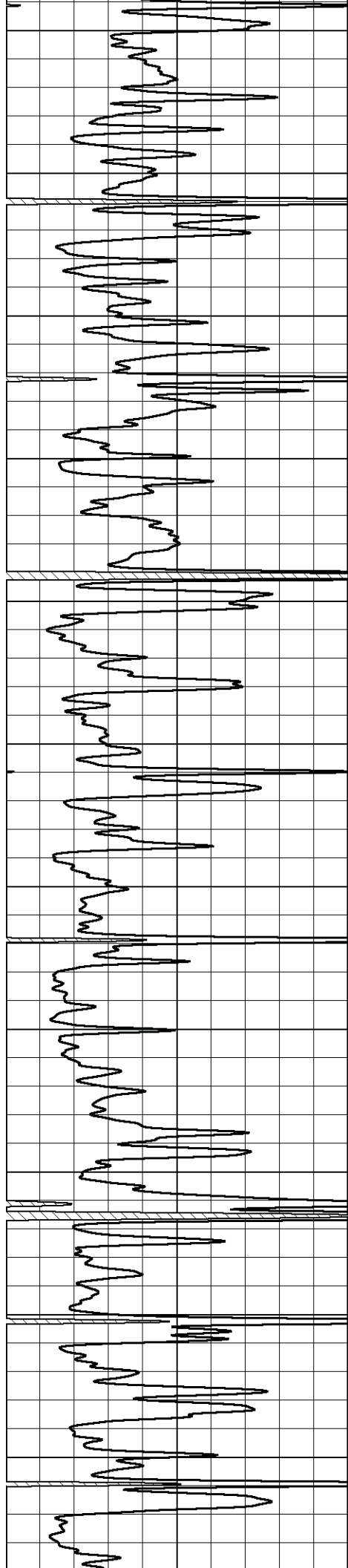
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1600
1650
1700
1750
1800
1850
1900
1950
2000
2050

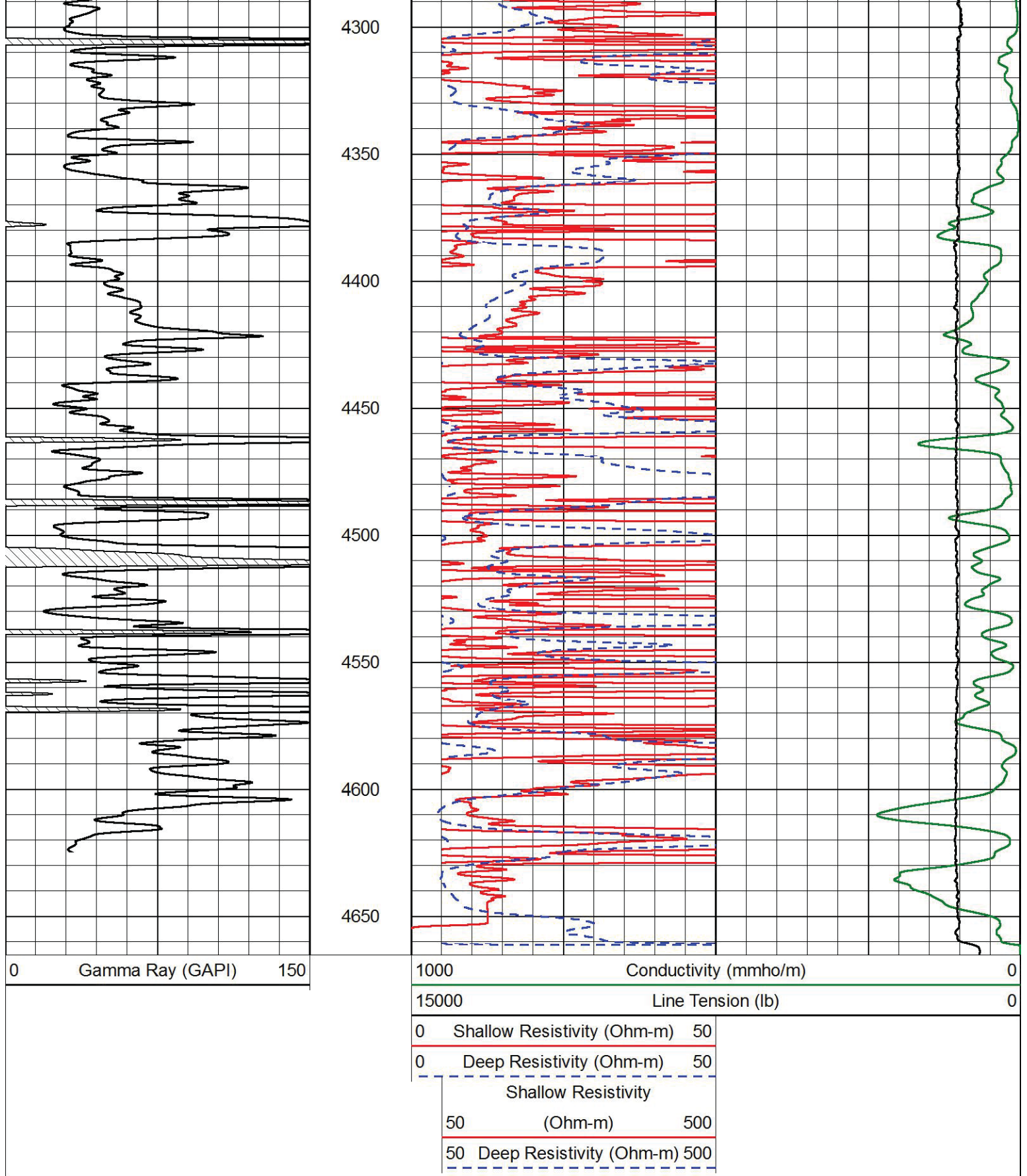






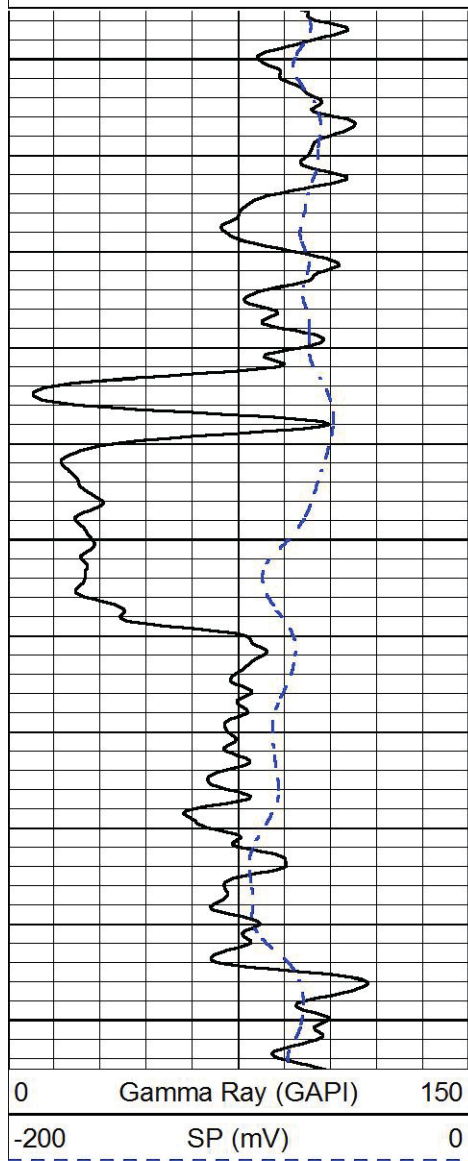






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-200	SP (mV)	0

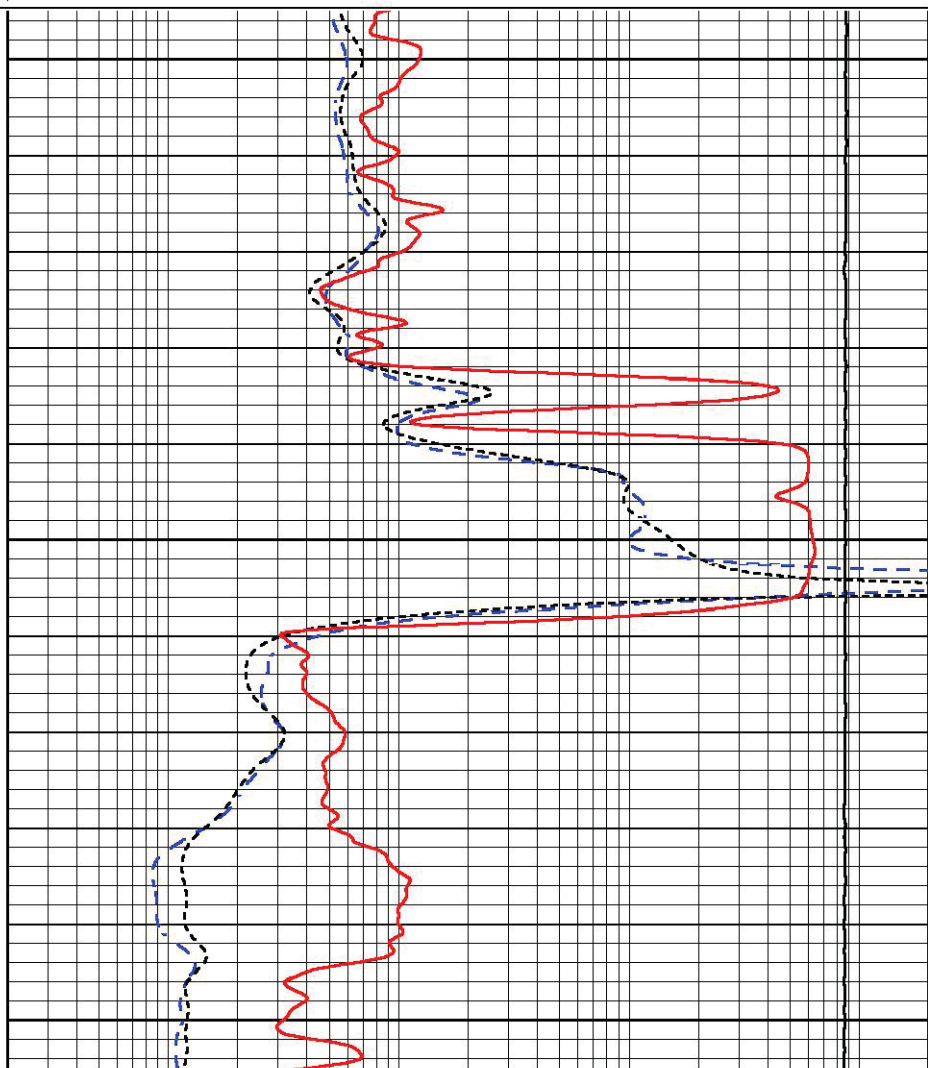
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



2100

2150

2200



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



MAIN PASS

Database File larson_paris_2-11.db
Dataset Pathname STKML/pass3.15
Presentation Format dil
Dataset Creation Sat Feb 25 02:52:27 2017
Charted by Depth in Feet scaled 1:240

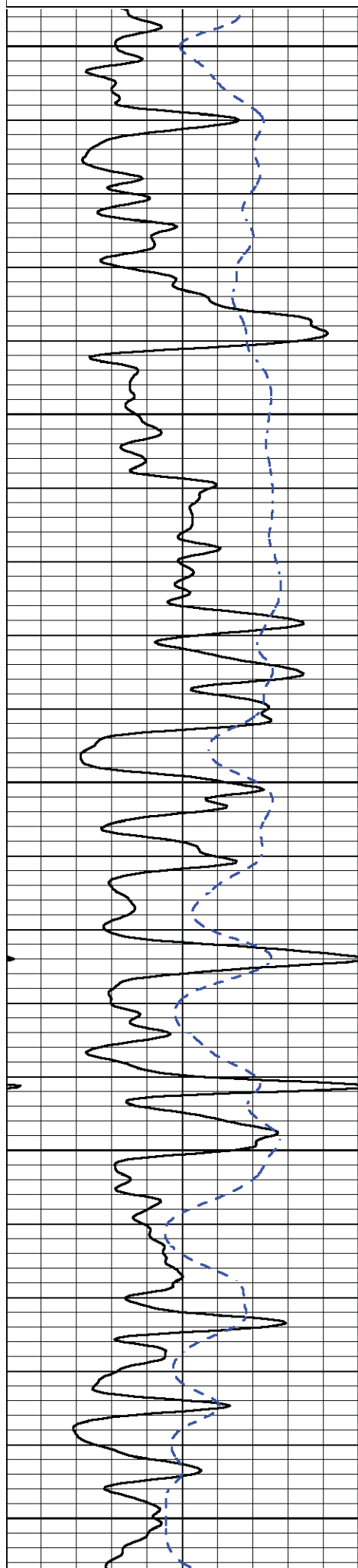
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

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



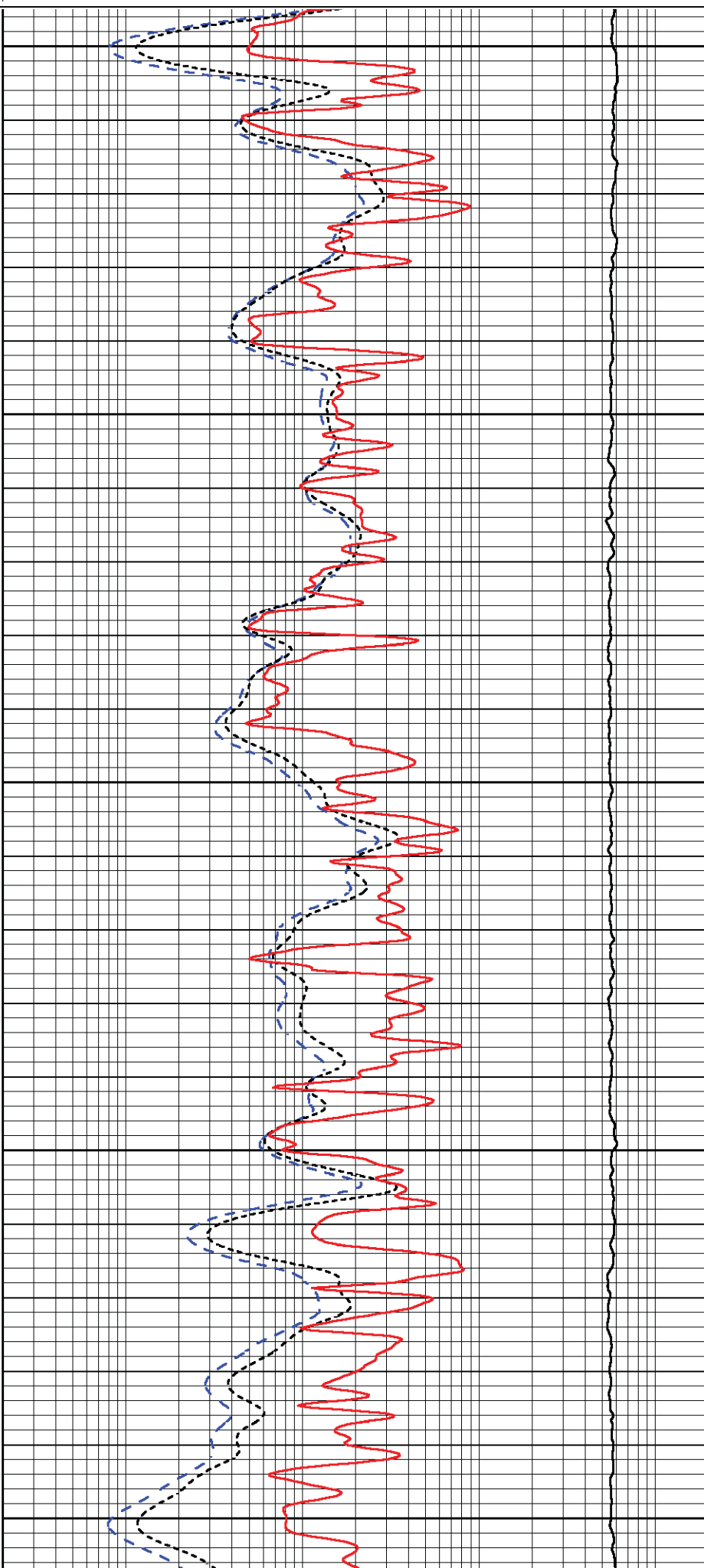
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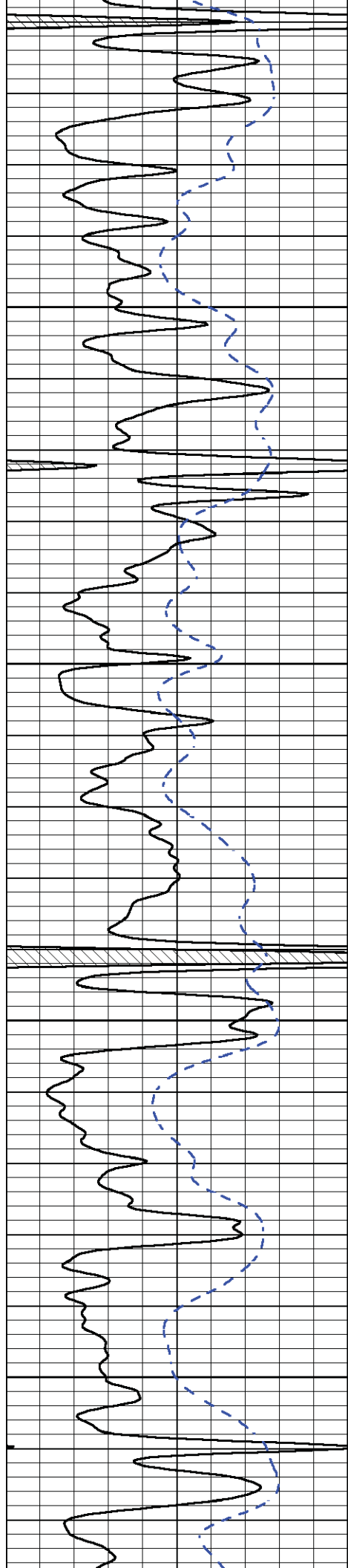
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3700

3750

3800



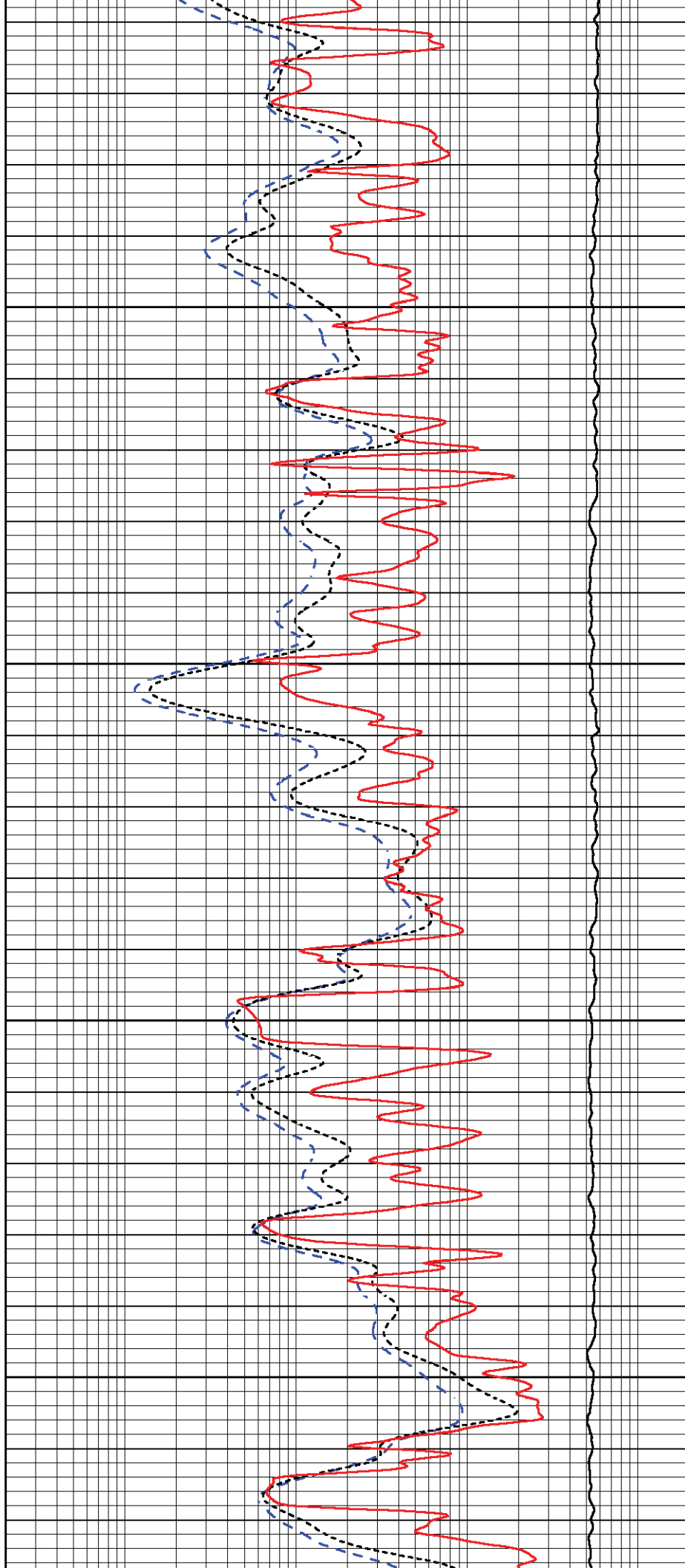


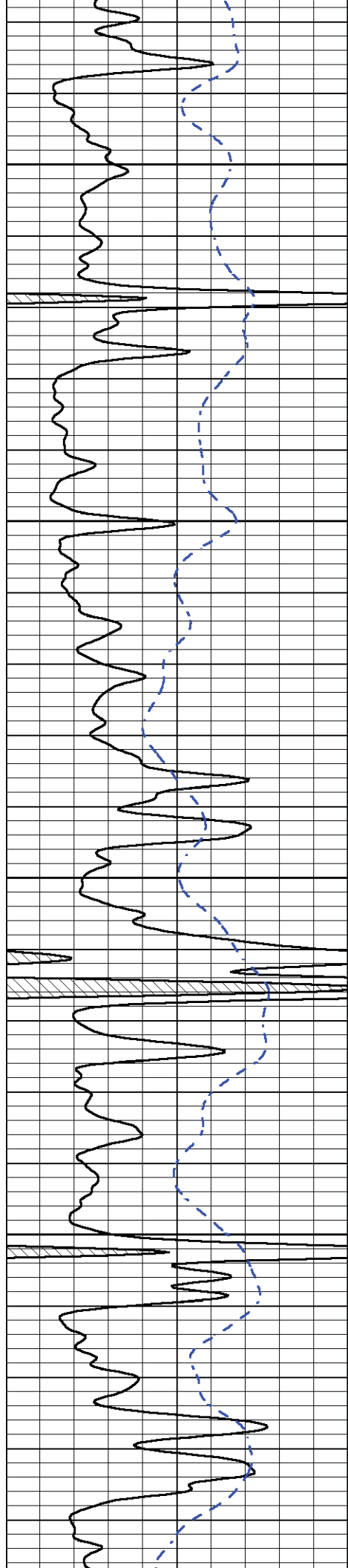
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3900

3950

4000



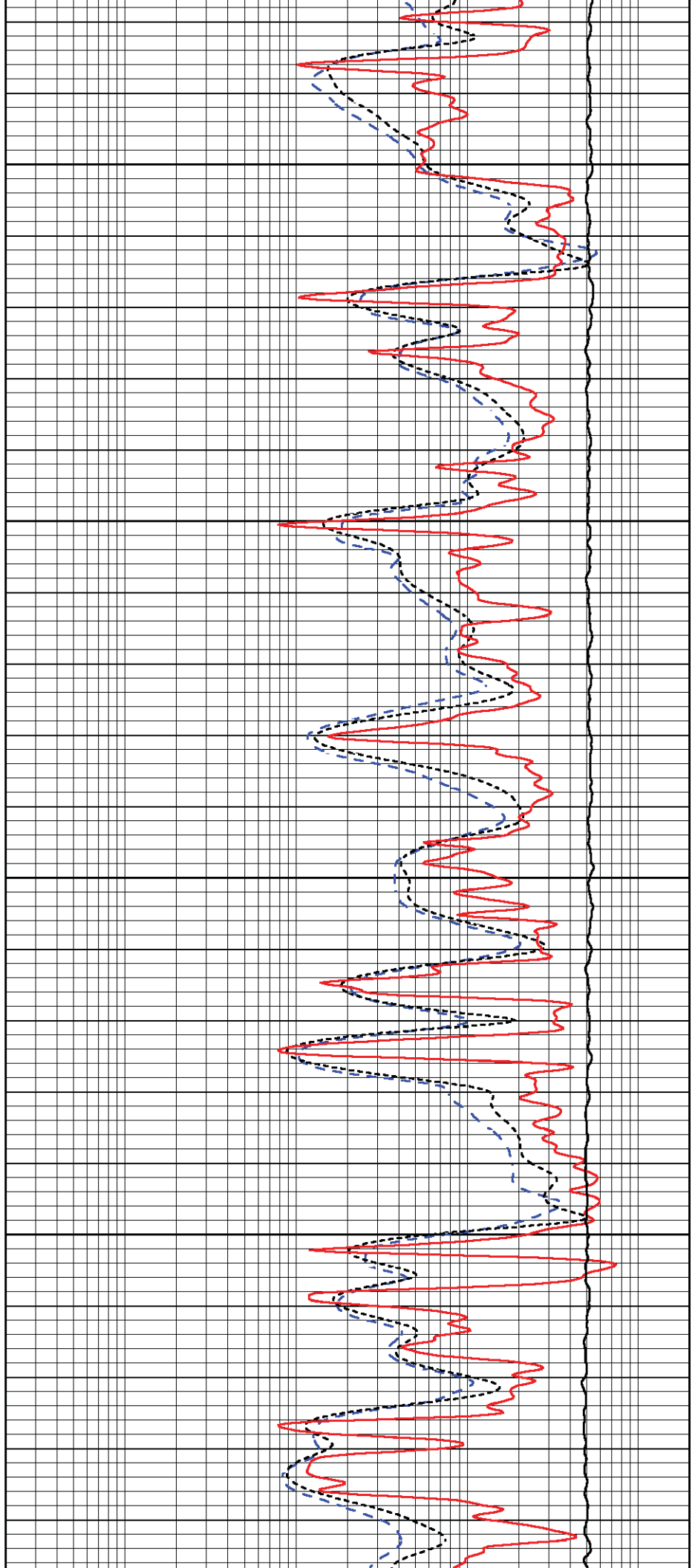


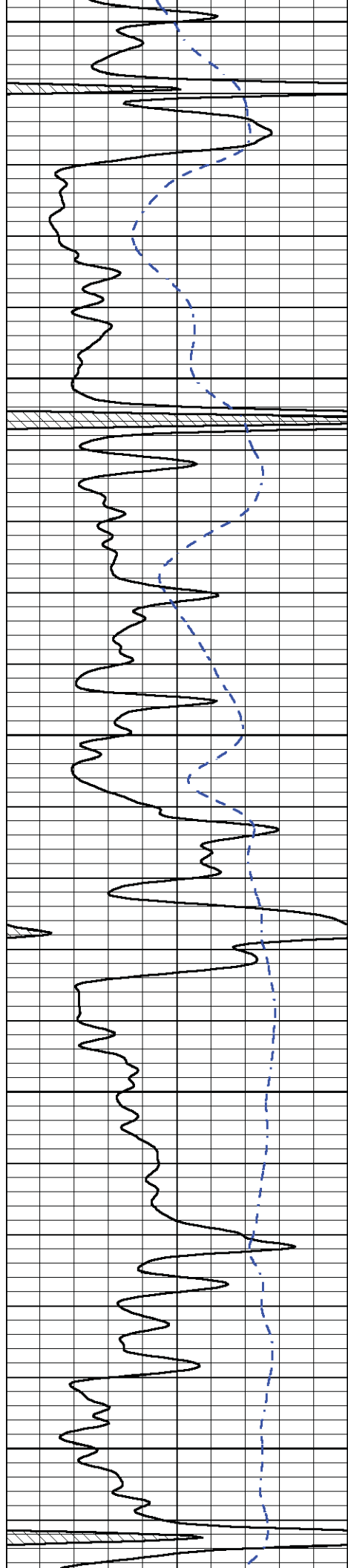
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4100

4150

4200





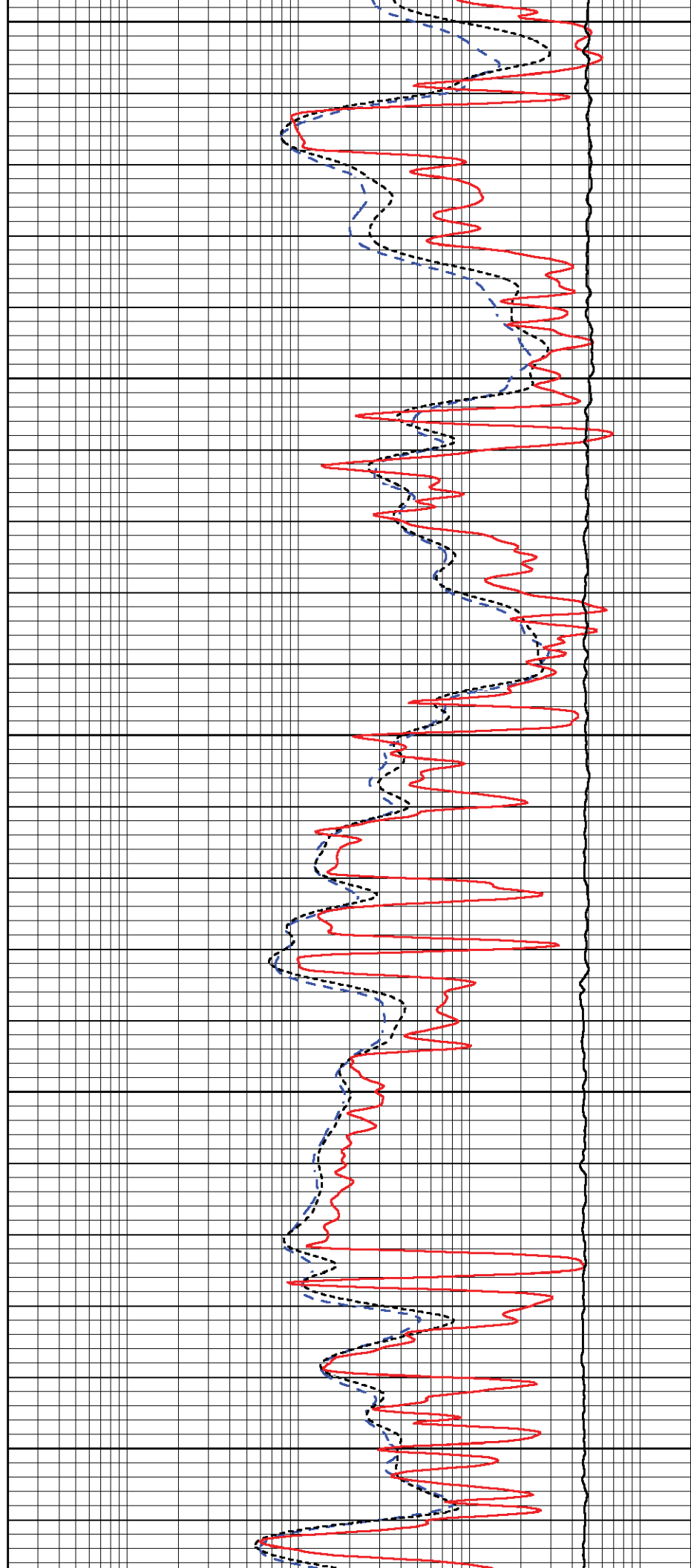
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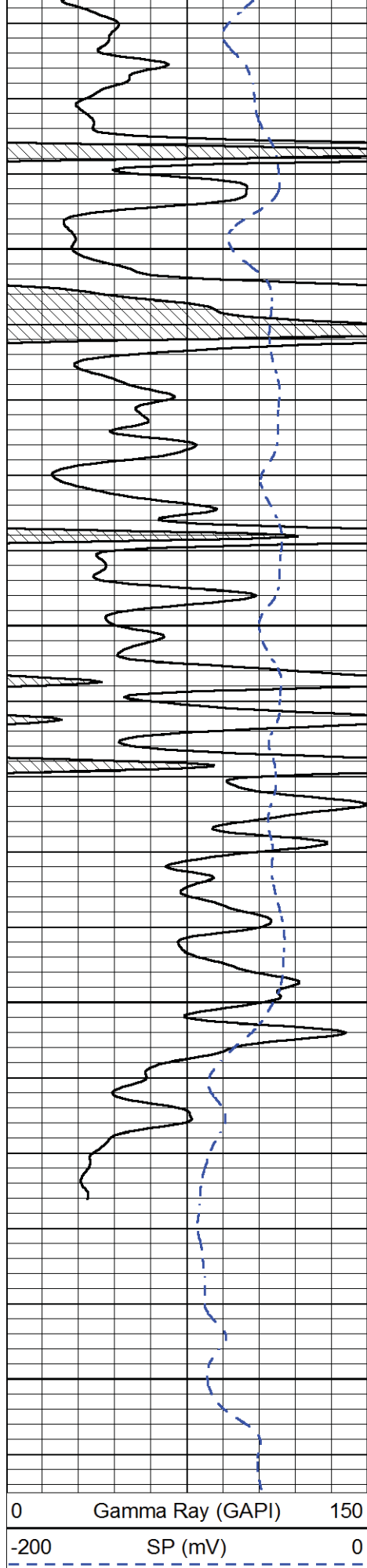
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4350

4400

4450





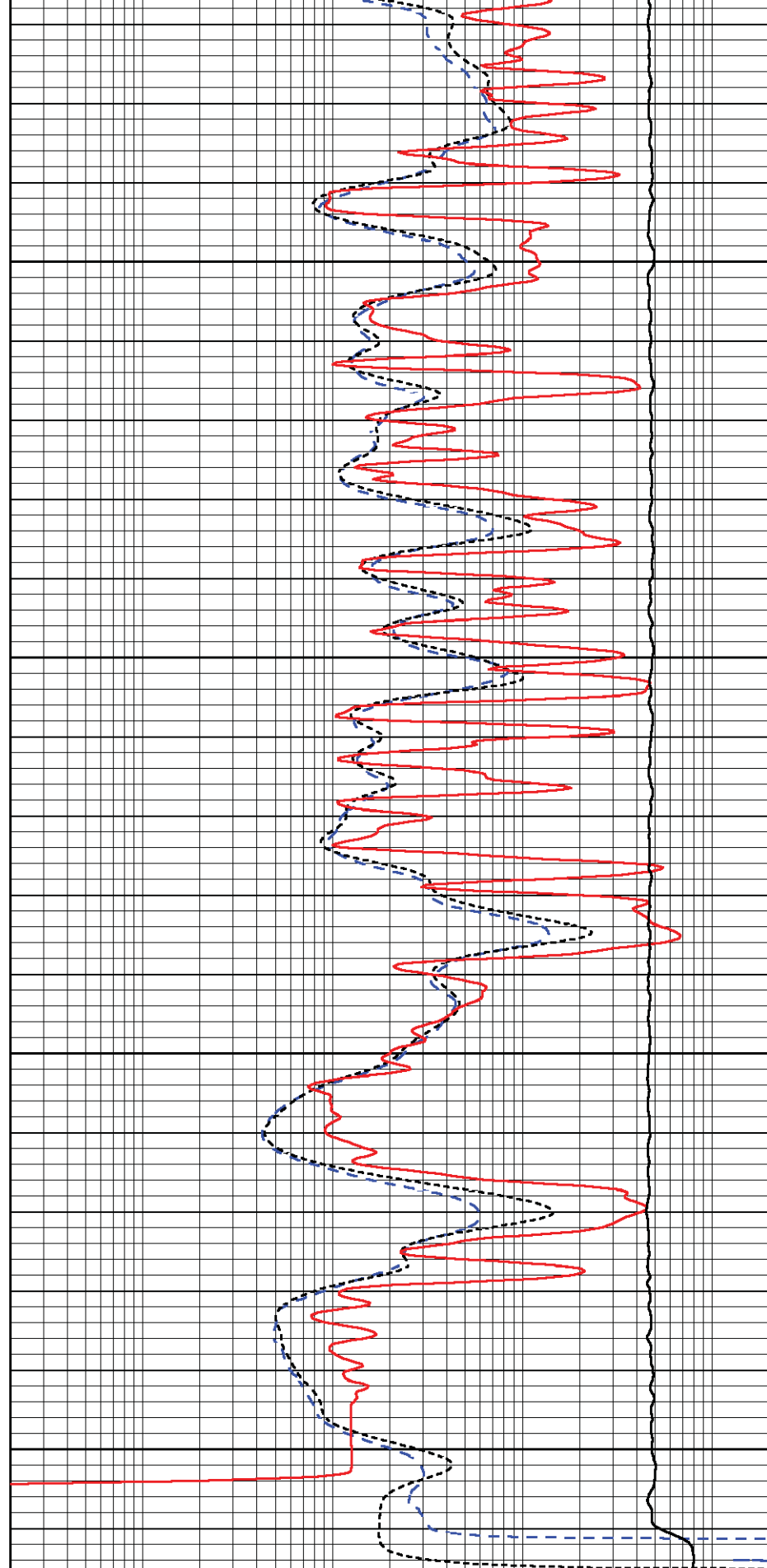
4500

4550

4600

4650

0 Gamma Ray (GAPI) 150
-200 SP (mV) 0



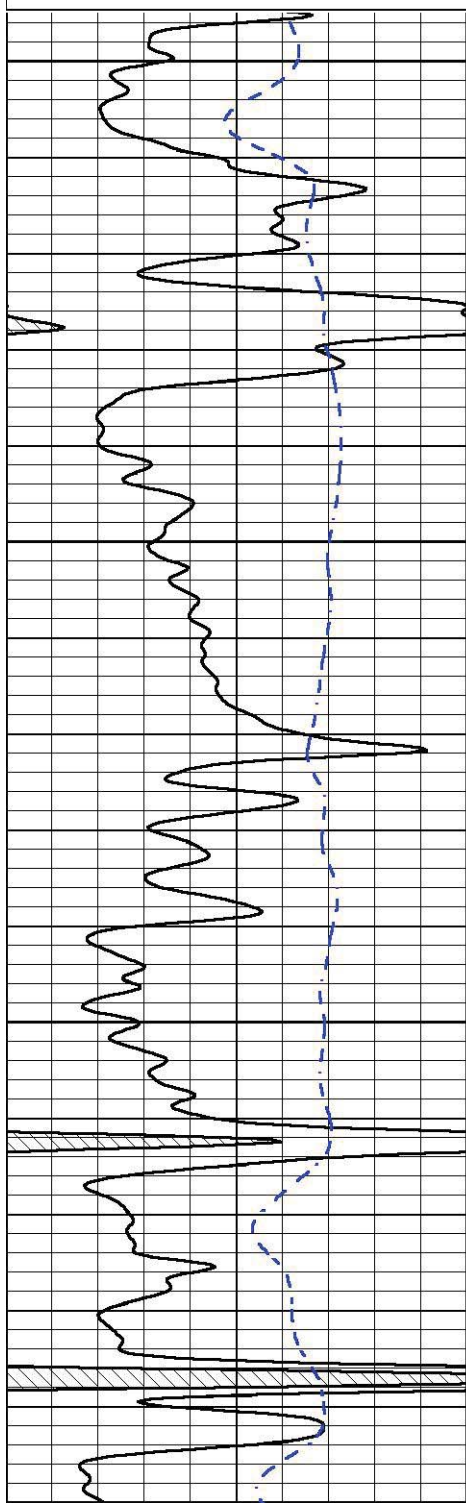
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0.2 Medium Resistivity (Ohm-m) 2000
0.2 RLL3 (Ohm-m) 2000
10000 Line Tension (lb) 0

REPEAT SECTION

Database File laron_pais_2-11.db
Dataset Pathname STKML/pass2.1
Presentation Format dil
Dataset Creation Sat Feb 25 03:02:48 2017
Charted by Depth in Feet scaled 1:240

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-200	SP (mV)	0

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

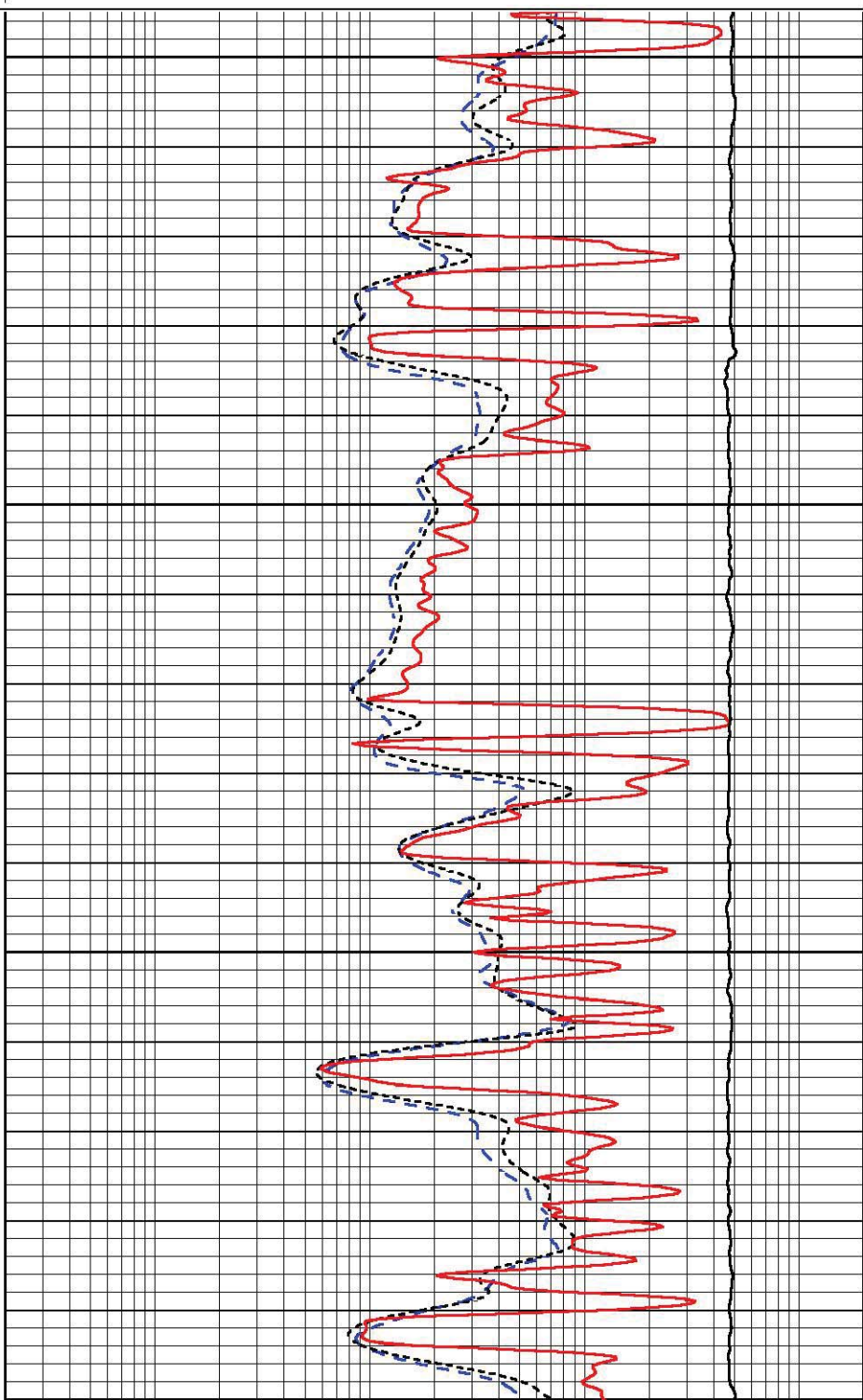


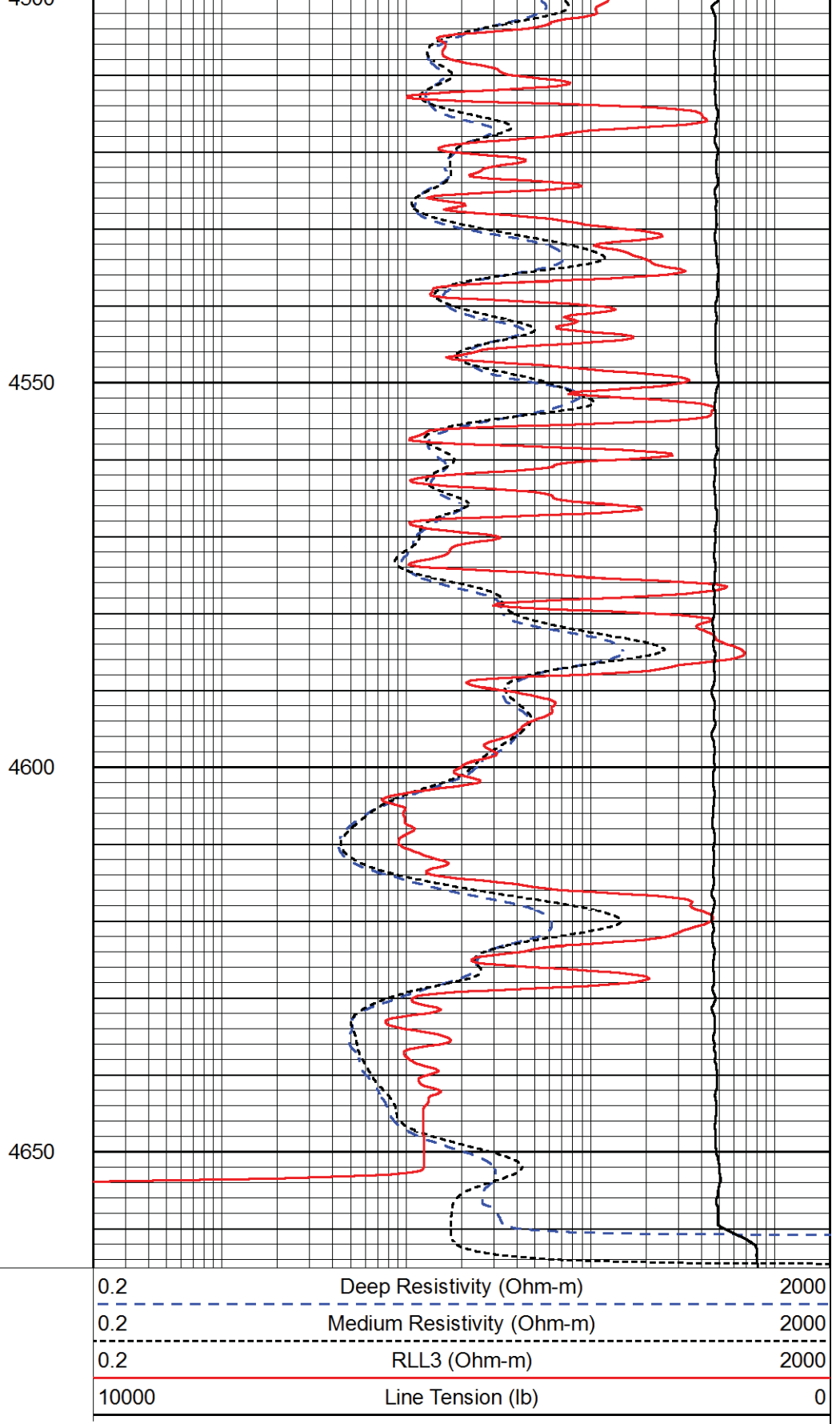
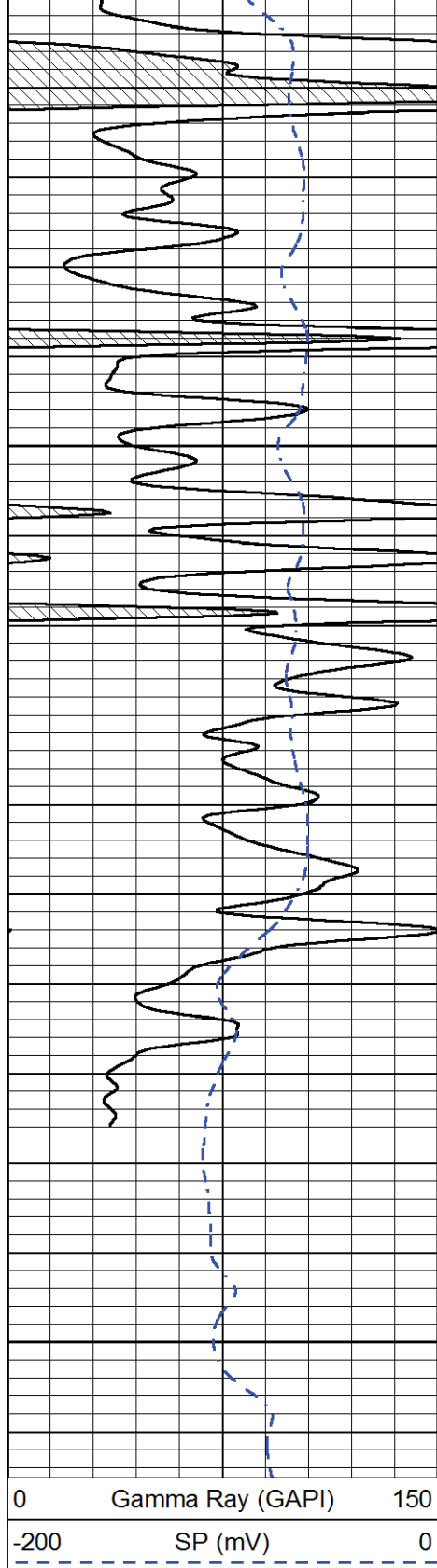
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4400

4450

4500





Calibration Report

Database File laron_pari_2-11.db
 Dataset Pathname STKML/pass3.15
 Dataset Creation Sat Feb 25 02:52:27 2017

Dual Induction Calibration Report

Serial-Model:
 Calibration Performed:

PSI 13-M&W
 Wed Feb 08 12:10:25 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	166.796	835.089	0.000	255.800	mmho/m	0.950	-35.000
Medium	142.009	1348.560	0.000	255.800	mmho/m	0.800	-30.000

Microlog Calibration Report

Serial-Model:
Performed:

PSI-01-PSIML
Sun Feb 05 10:12:43 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	14000.0000	-1.1000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	20000.0000	-1.3000
Caliper	1.0001	1.1397	6.5000	18.5000	in	100.0000	-97.1000

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:

90-1031-M&W
16955B / 2ci
Wed Jan 25 06:09:31 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	5174.18	6425.27	cps
Aluminum	2.675	g/cc	963.17	4037.42	cps
Spine Angle = 74.55			Density/Spine Ratio = 0.527		
	Size		Reading		
Small Ring	6.00	in	1.83		
Large Ring	16.00	in	1.48		

Compensated Neutron Calibration Report

Serial Number: 207-MW
Tool Model: M&W
Calibration Performed: Sun Feb 5 10:30:30 2017

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: Mon Jan 02 18:08:34 2017

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps

Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



Company	LARSON ENGINEERING, INC.
Well	PARIS #2-11
Field	WILDCAT
County	LANE
State	KANSAS