



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company RITCHIE EXPLORATION, INC.
Well EATON ENTERPRISES NO. 1
Field WILDCAT
County SCOTT
State KANSAS

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Location: API #: 15-171-21226-00-00

Other Services

1118' FNL & 736' FWL
SEC 30 TWP 16S RGE 31W

CNL/CDL
MEL

Permanent Datum GROUND LEVEL Elevation 2956'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2967'
D.F. N/A
G.L. 2956'

Date 7/11/2018

Run Number	ONE		
Depth Driller	4730'		
Depth Logger	4730'		
Bottom Logged Interval	4729'		
Top Log Interval	250'		
Casing Driller	8.625" @ 266'		
Casing Logger	264'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	5500		
Density / Viscosity	9.4 55		
pH / Fluid Loss	10.5 8.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.65 @ 72		
Rmt @ Meas. Temp	.49 @ 72		
Rmc @ Meas. Temp	.88 @ 72		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	.38 @ 123		
Operating Rig Time	2 HOURS		
Max Rec. Temp. F	123 DEGF		
Equipment Number	108		
Location	HAYS		
Recorded By	J. HENRICKSON		
Witnessed By	KENT MATSON		

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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.
HEALY KANSAS
WEST TO RODEO ROAD, 3 NORTH, 1/8 EAST, SOUTH INTO

Log Measured From: KELLY BUSHING 11 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

Engineer: J. HENRICKSON
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: KENT MATSON
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 0	mmho/m -8	mV -180	degF 95	Off	ft 4730

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	37.48			CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73						
LSD DCAL SSD	28.43 28.42 27.93			CDL-M&W (979-229)	8.50	4.00	250.00
ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58						
MCAL	19.83						
MI	19.83						
MN	19.83						
RLL3	15.80						
RLL3F	15.79						
CILD	8.00			DIL-M&W (1987)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: ritchie_eaton_enterprises_1.db: field/well/stackml/pass3.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in



MAIN PASS

Database File ritchie_eaton_enterprises_1.db
Dataset Pathname stackml/pass3.1
Presentation Format dil2in
Dataset Creation Wed Jul 11 12:54:44 2018
Charted by Depth in Feet scaled 1:600

0 GAMMA RAY (GAPI) 150

2000 CONDUCTIVITY (mmho/m) 0

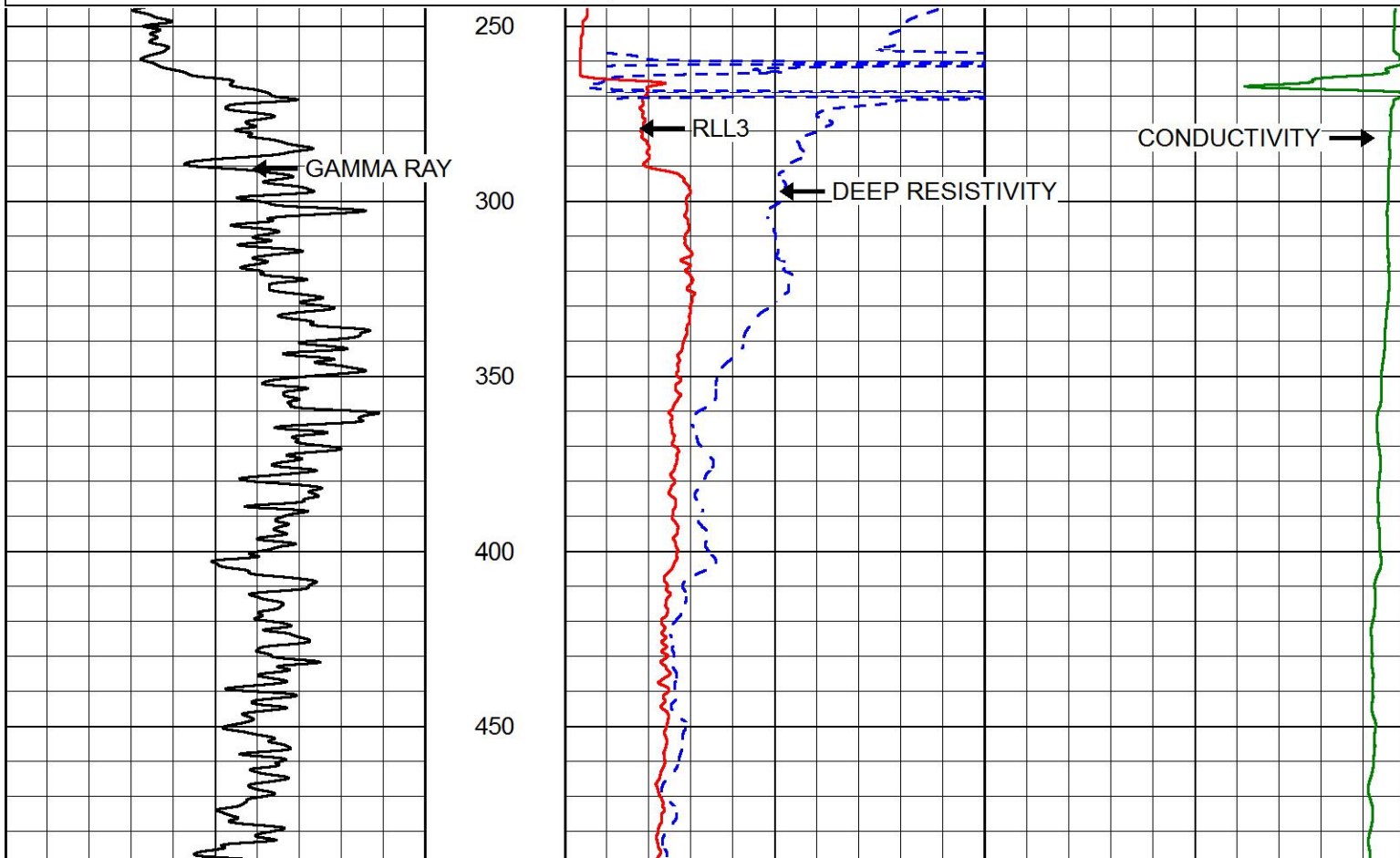
0 RLL3 (Ohm-m) 50

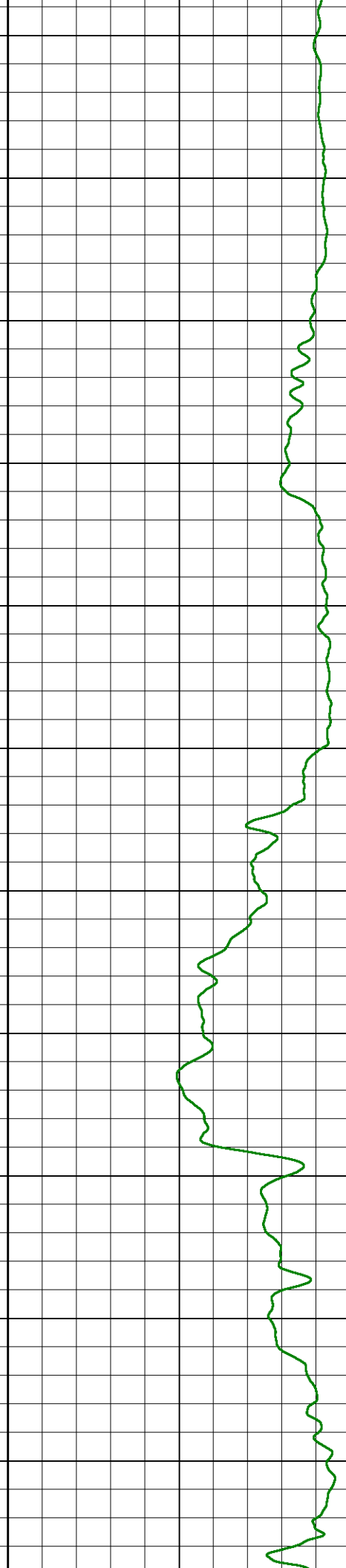
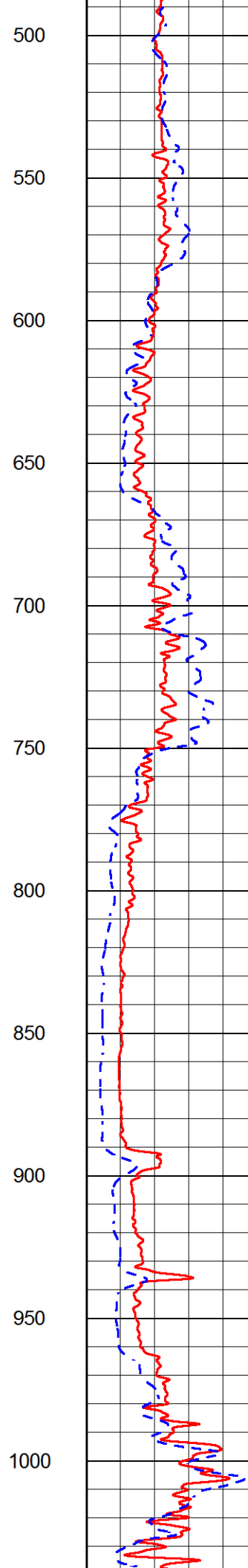
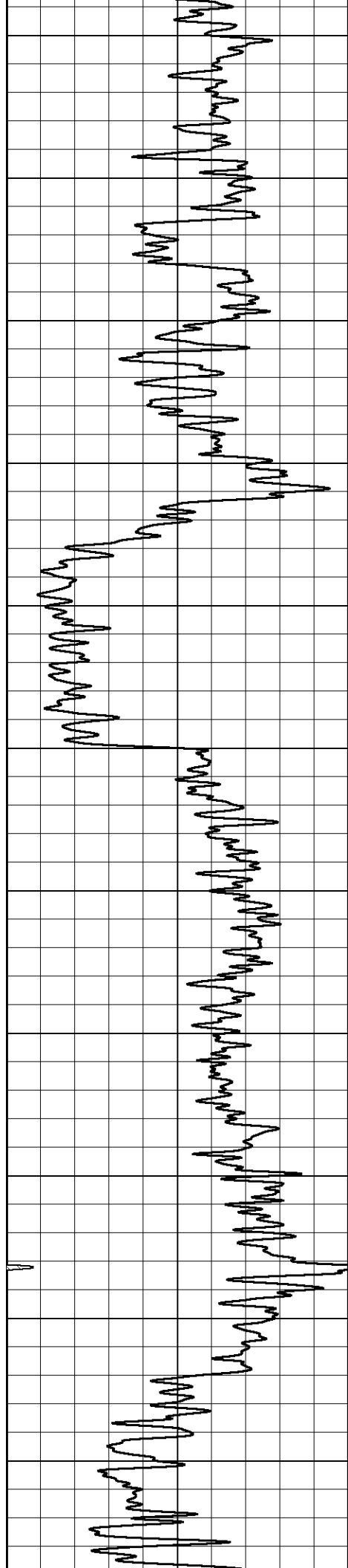
0 DEEP RESISTIVITY (Ohm-m) 50

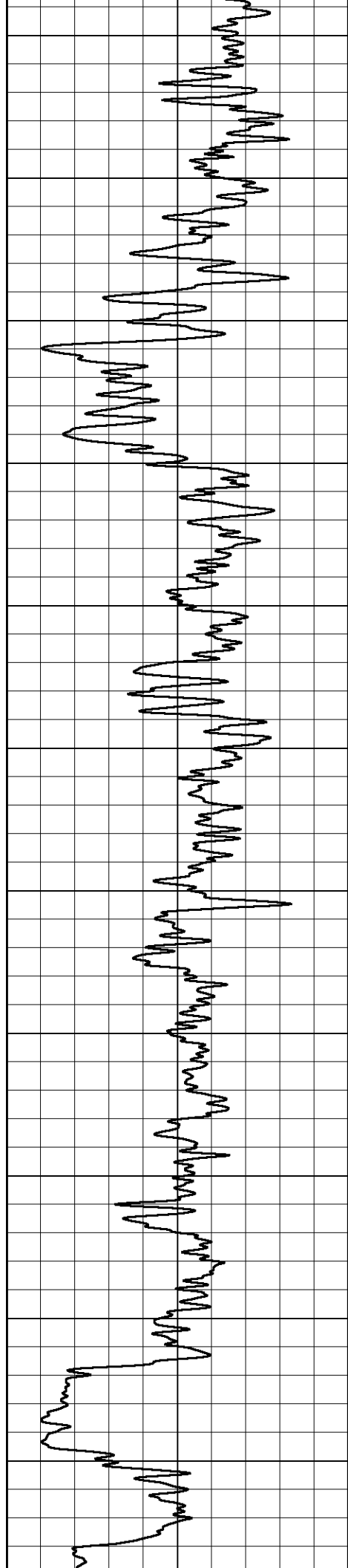
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DEEP RESISTIVITY

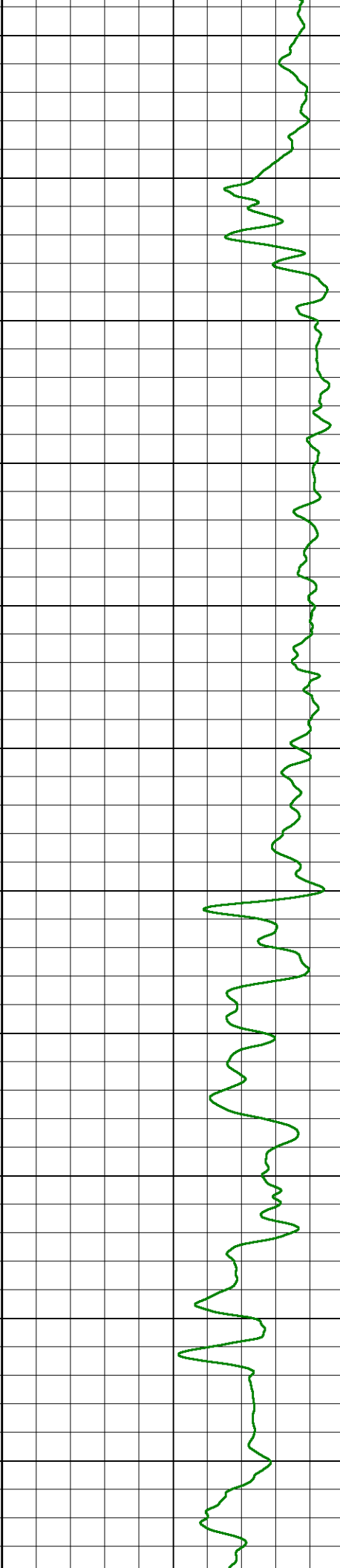
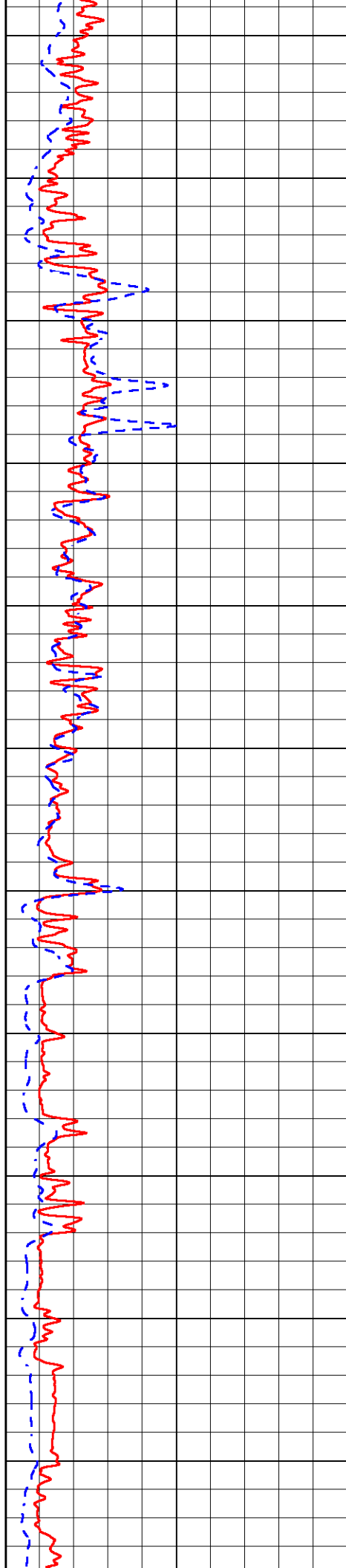
50 (Ohm-m) 500

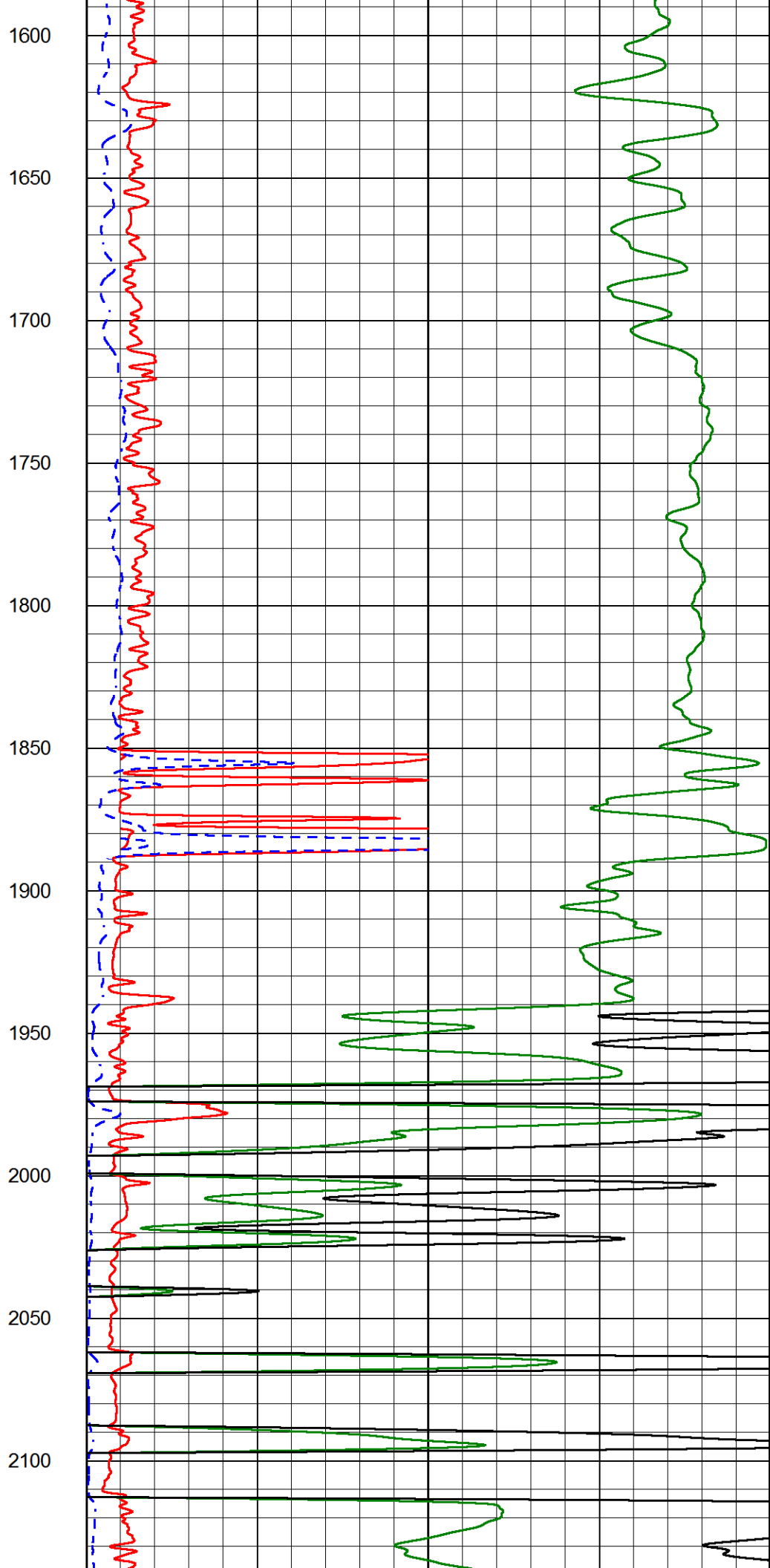
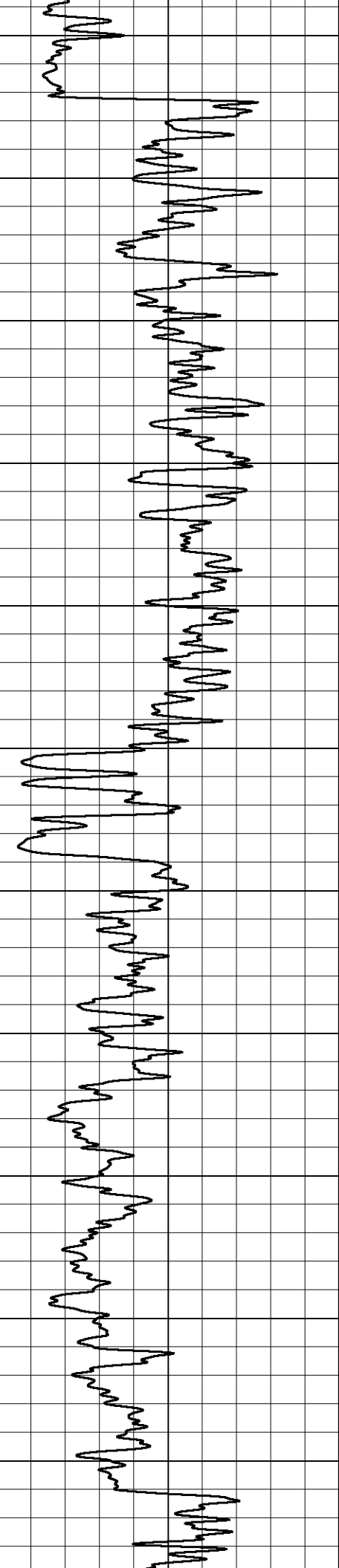


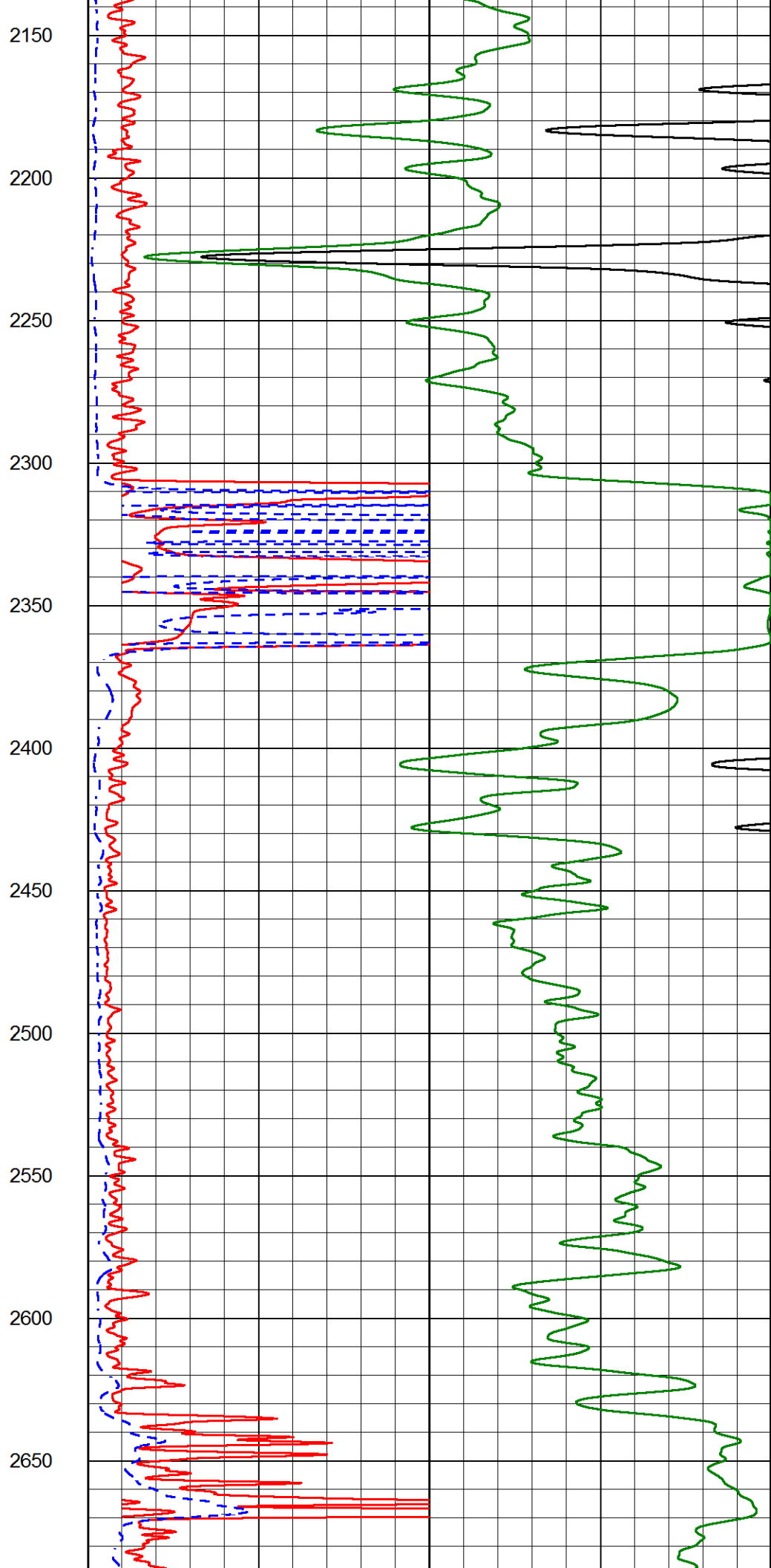
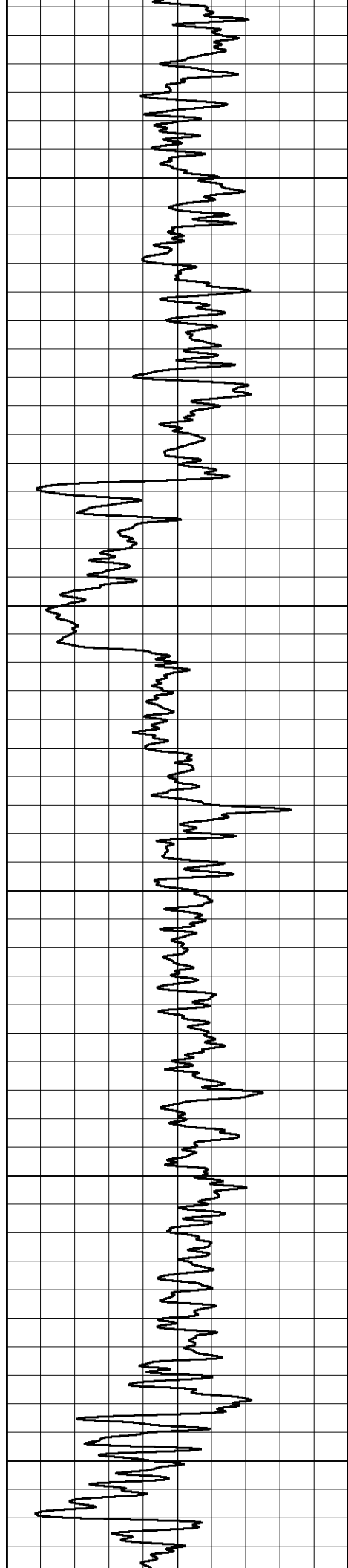


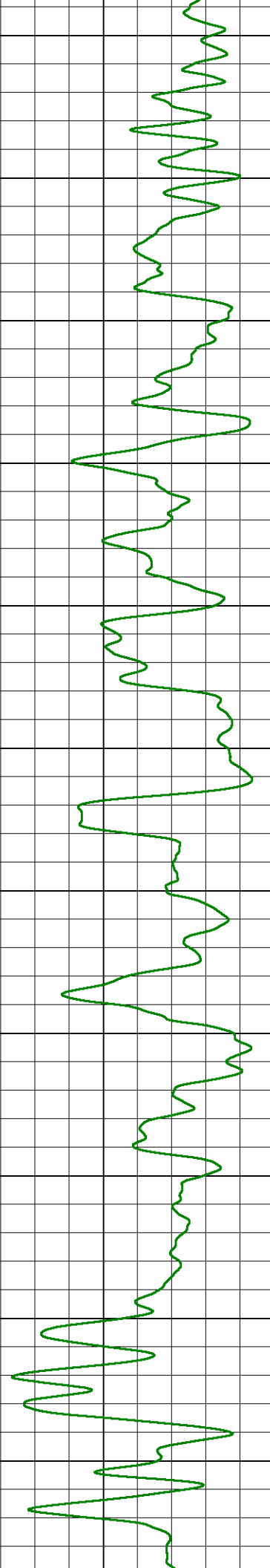
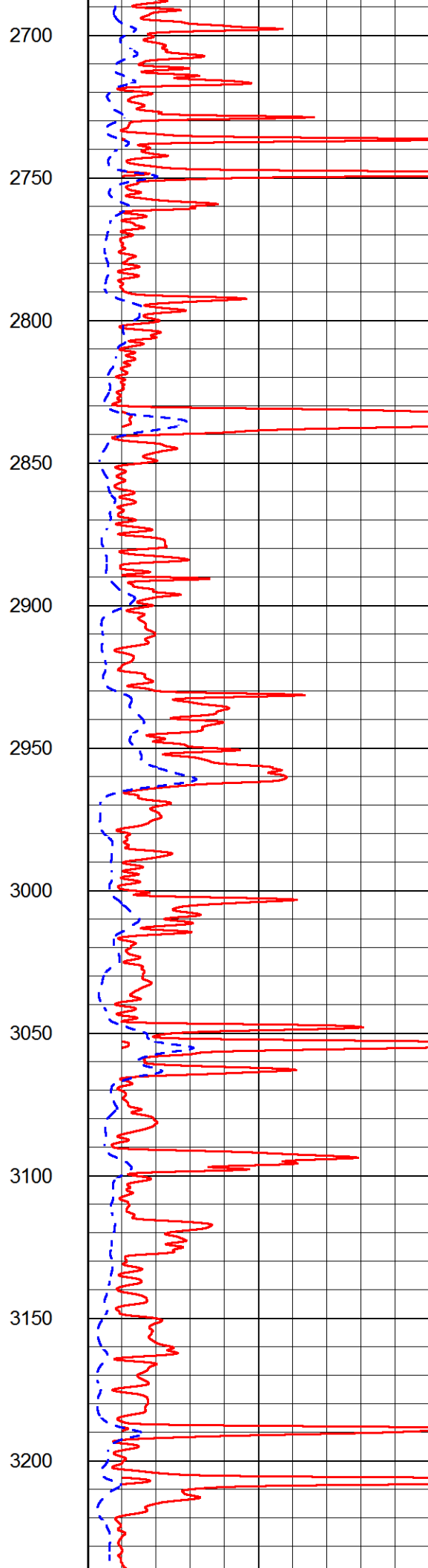
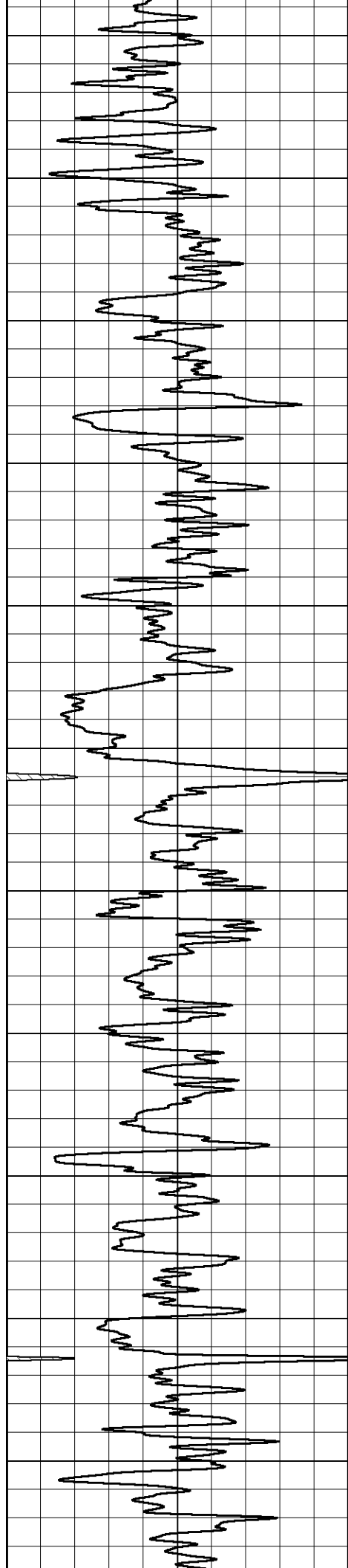


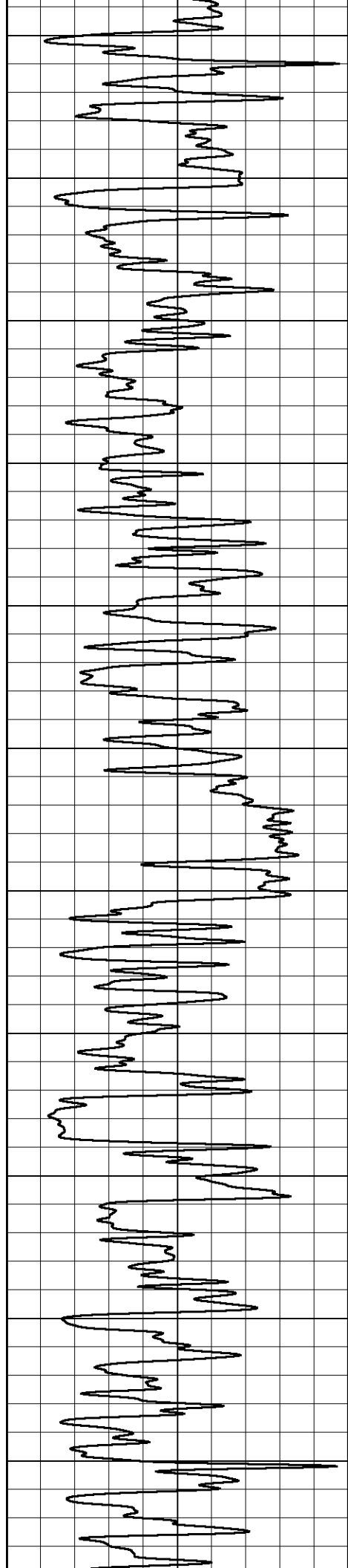
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550











3250

3300

3350

3400

3450

3500

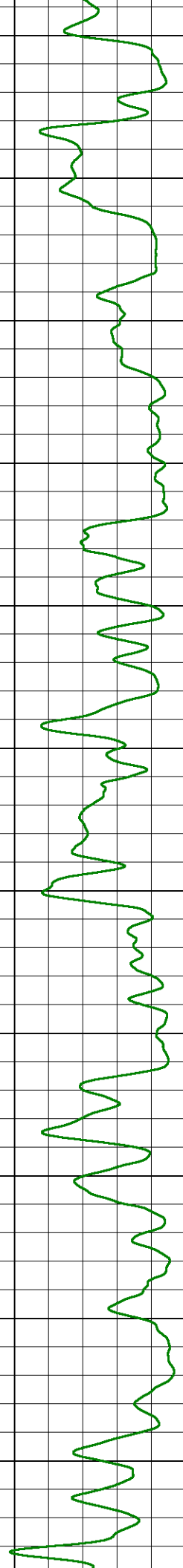
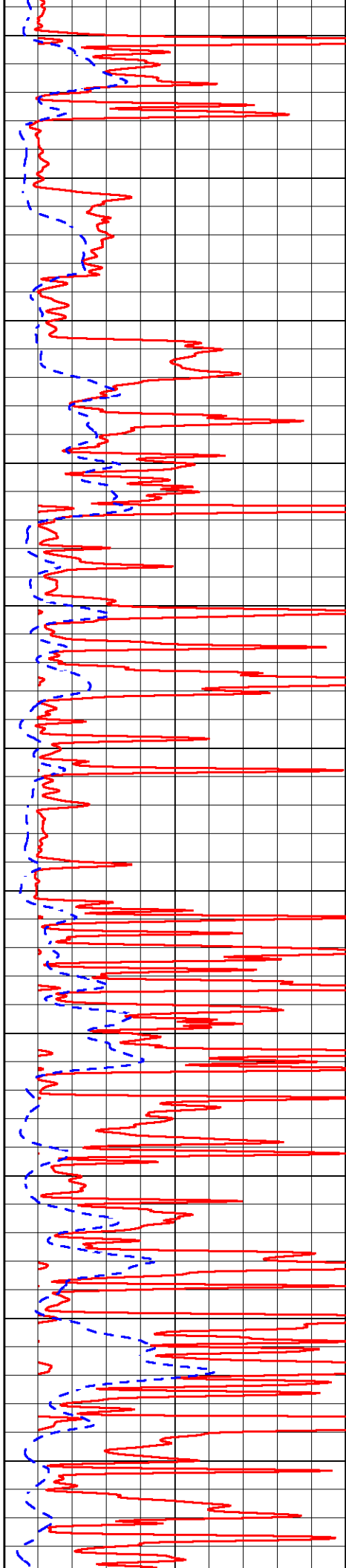
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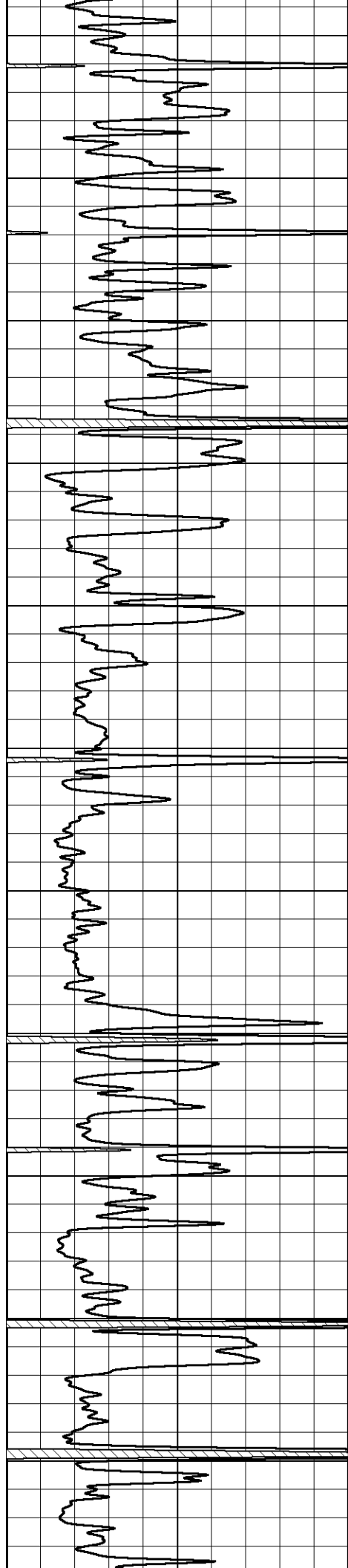
3600

3650

3700

3750





3800

3850

3900

3950

4000

4050

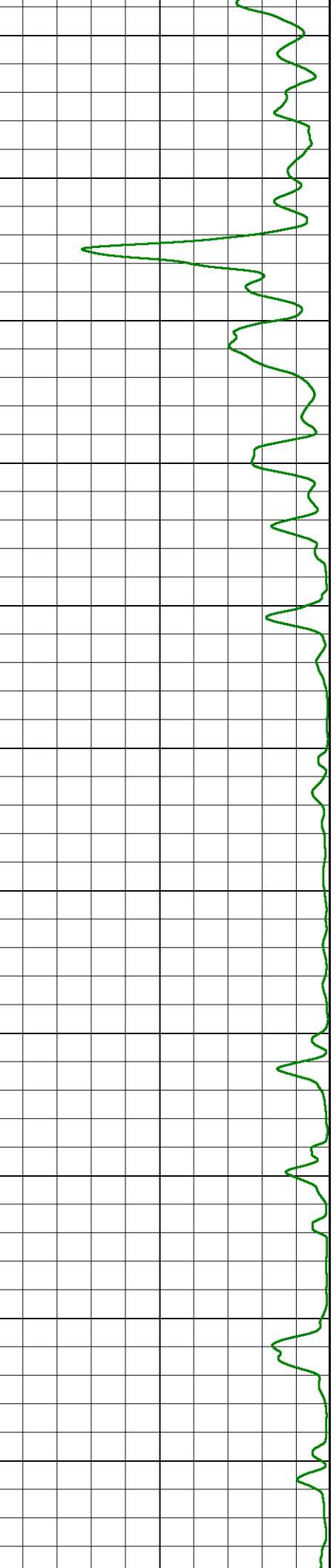
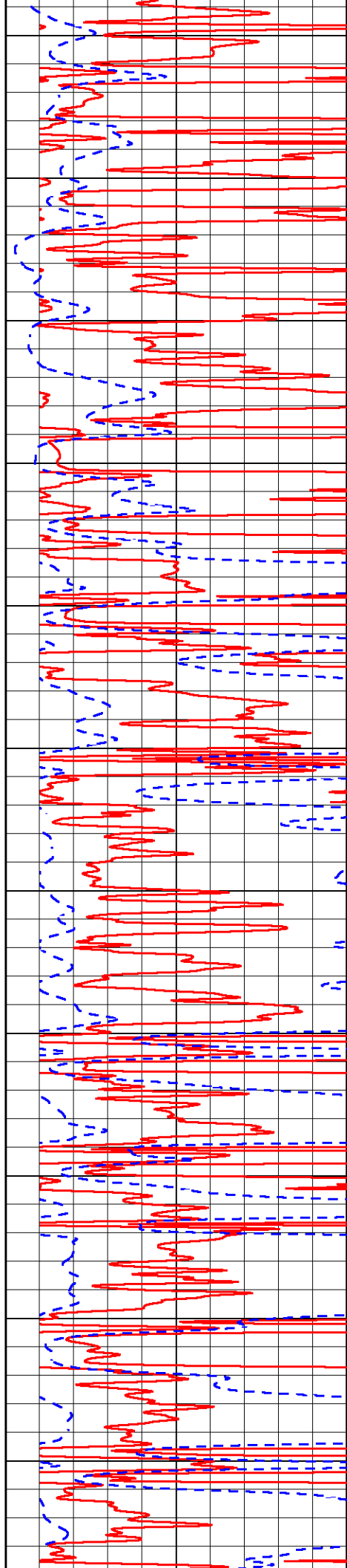
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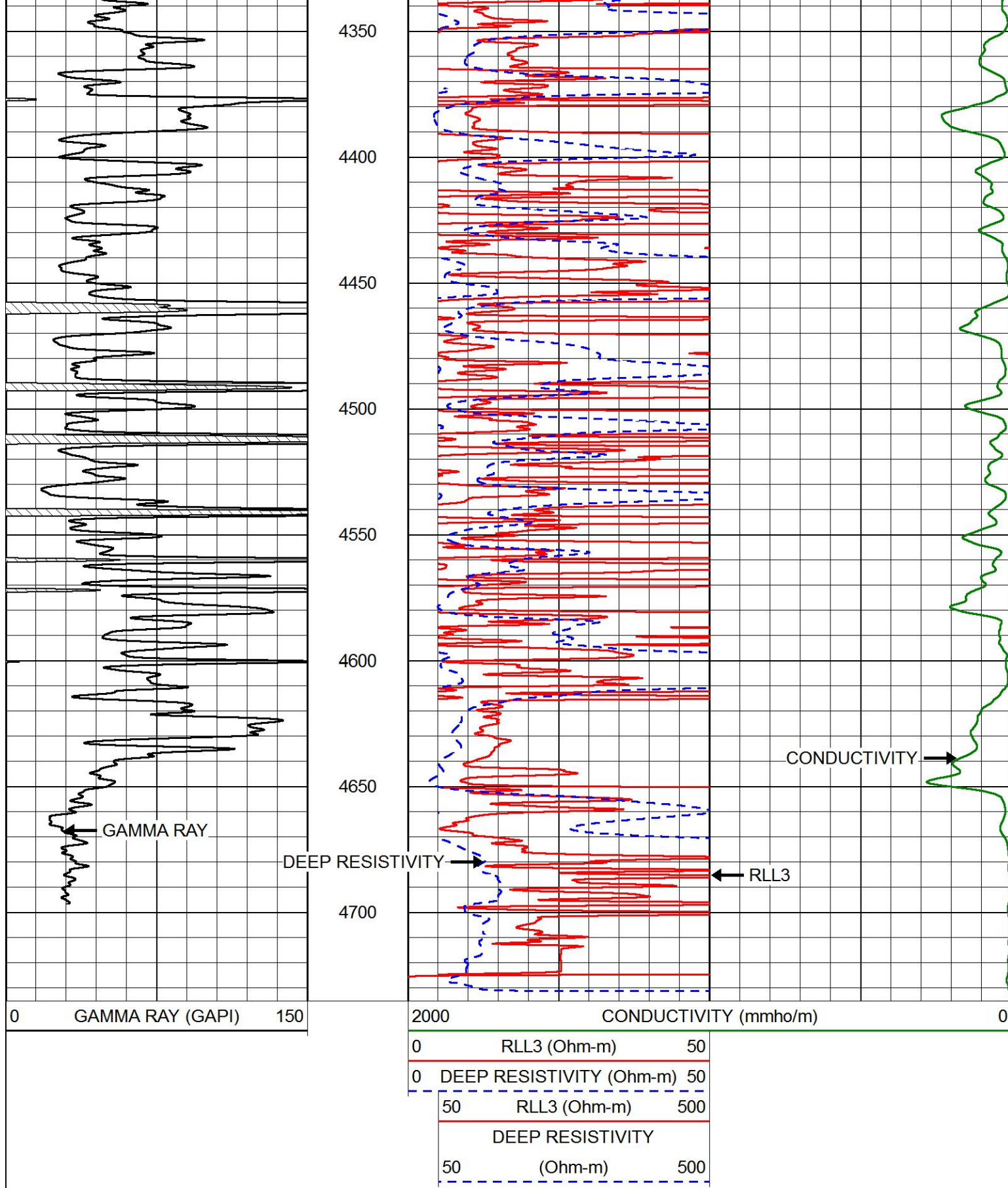
4150

4200

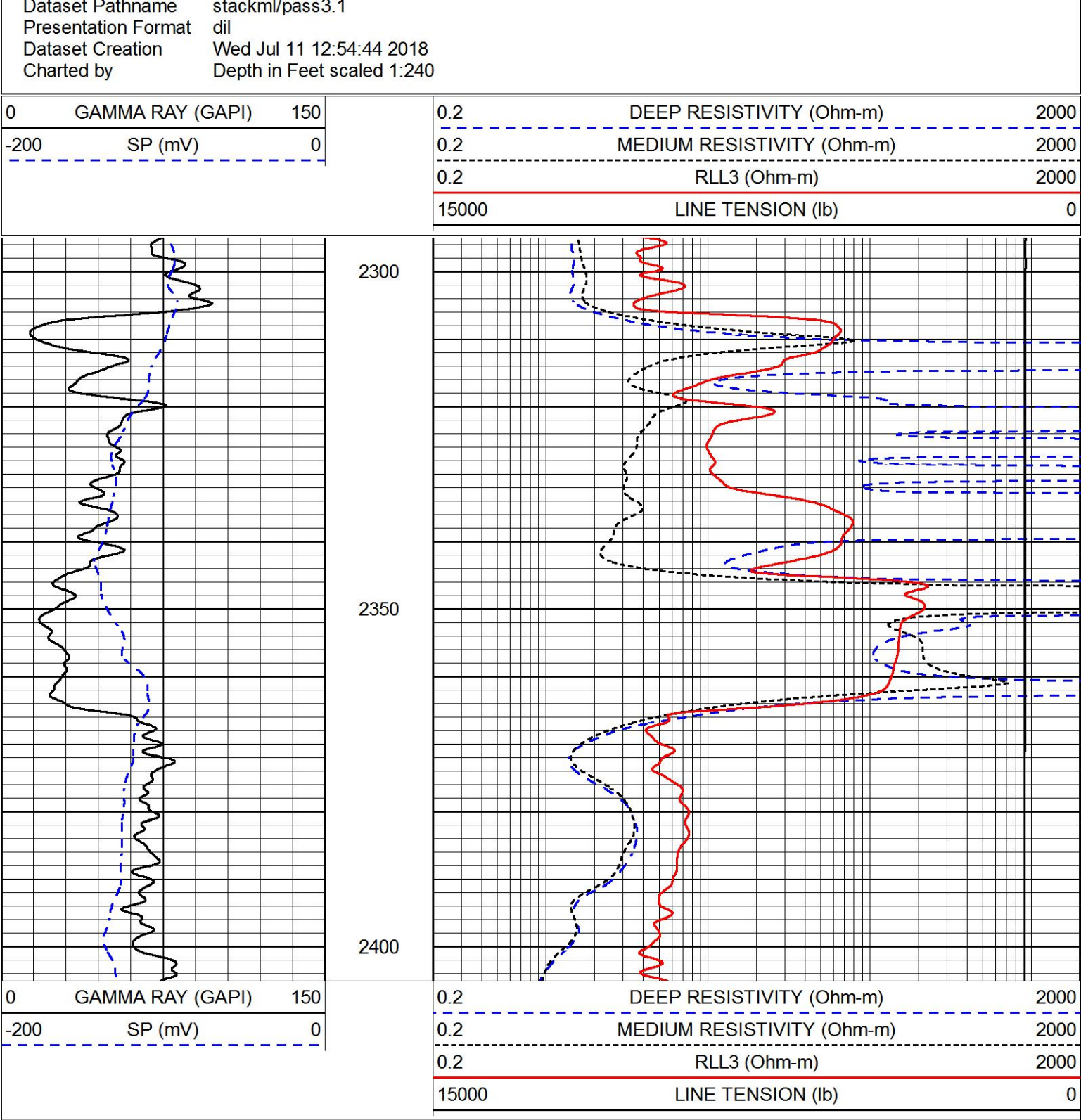
4250

4300





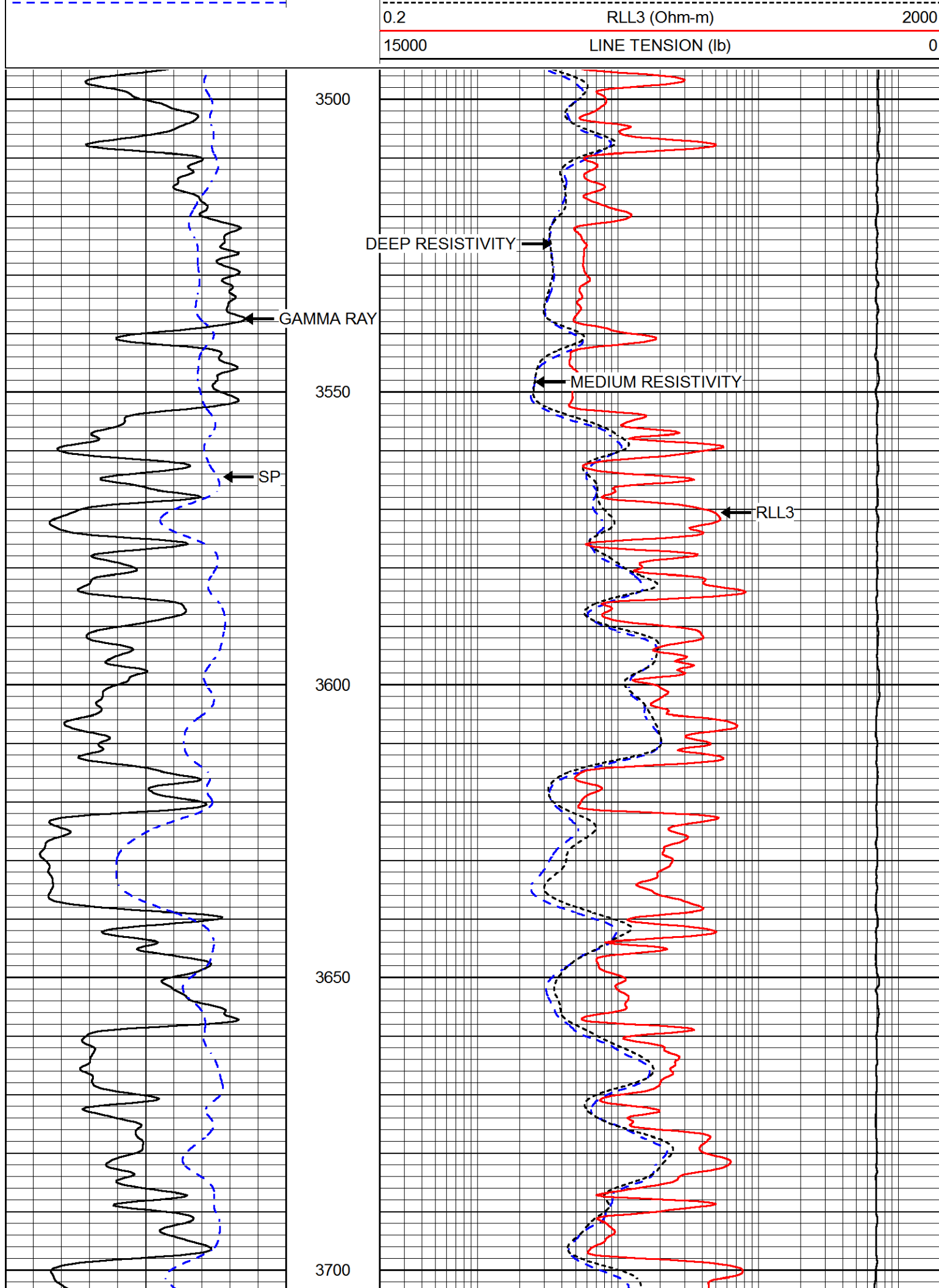
MAIN PASS

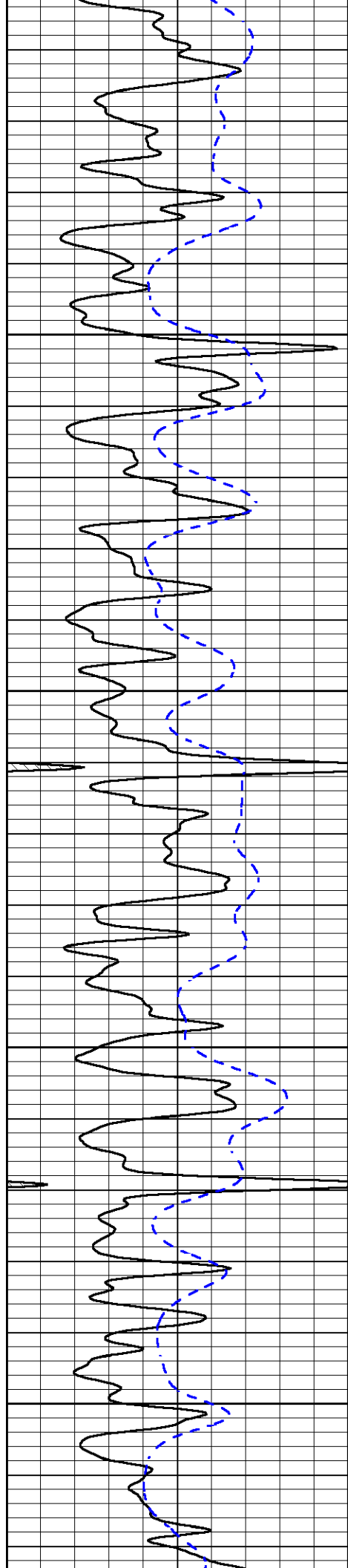


MAIN PASS

Database File	ritchie_eaton_enterprises_1.db
Dataset Pathname	stackml/pass3.1
Presentation Format	dil
Dataset Creation	Wed Jul 11 12:54:44 2018
Charted by	Depth in Feet scaled 1:240





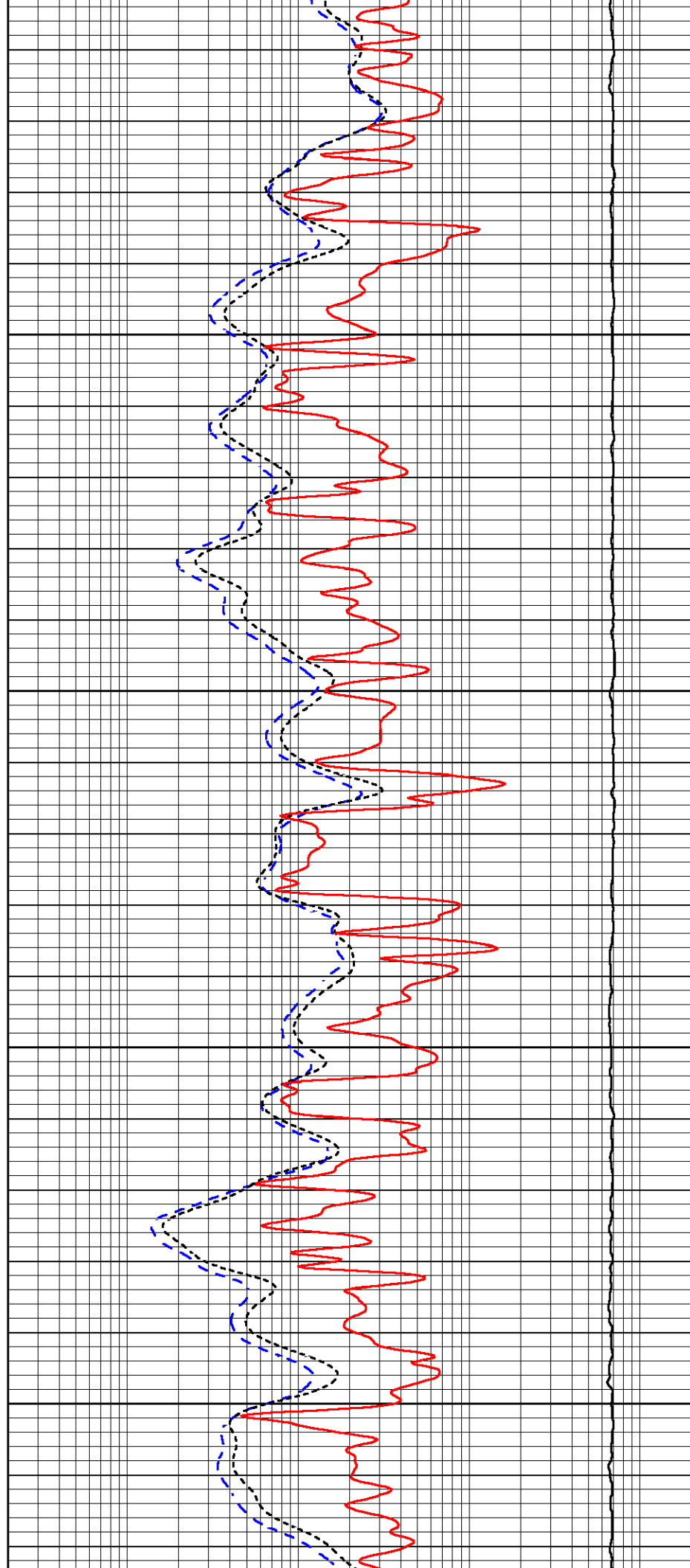


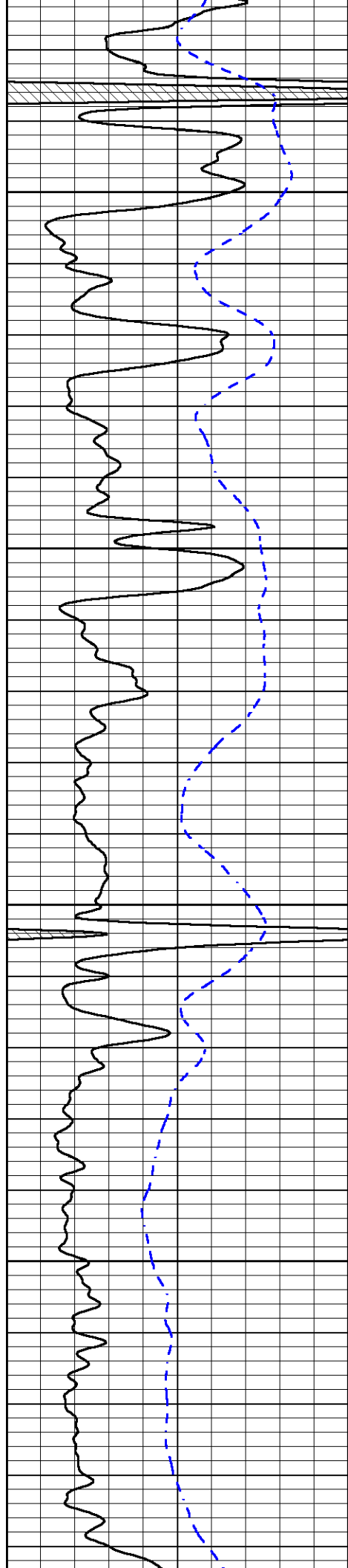
3750

3800

3850

3900



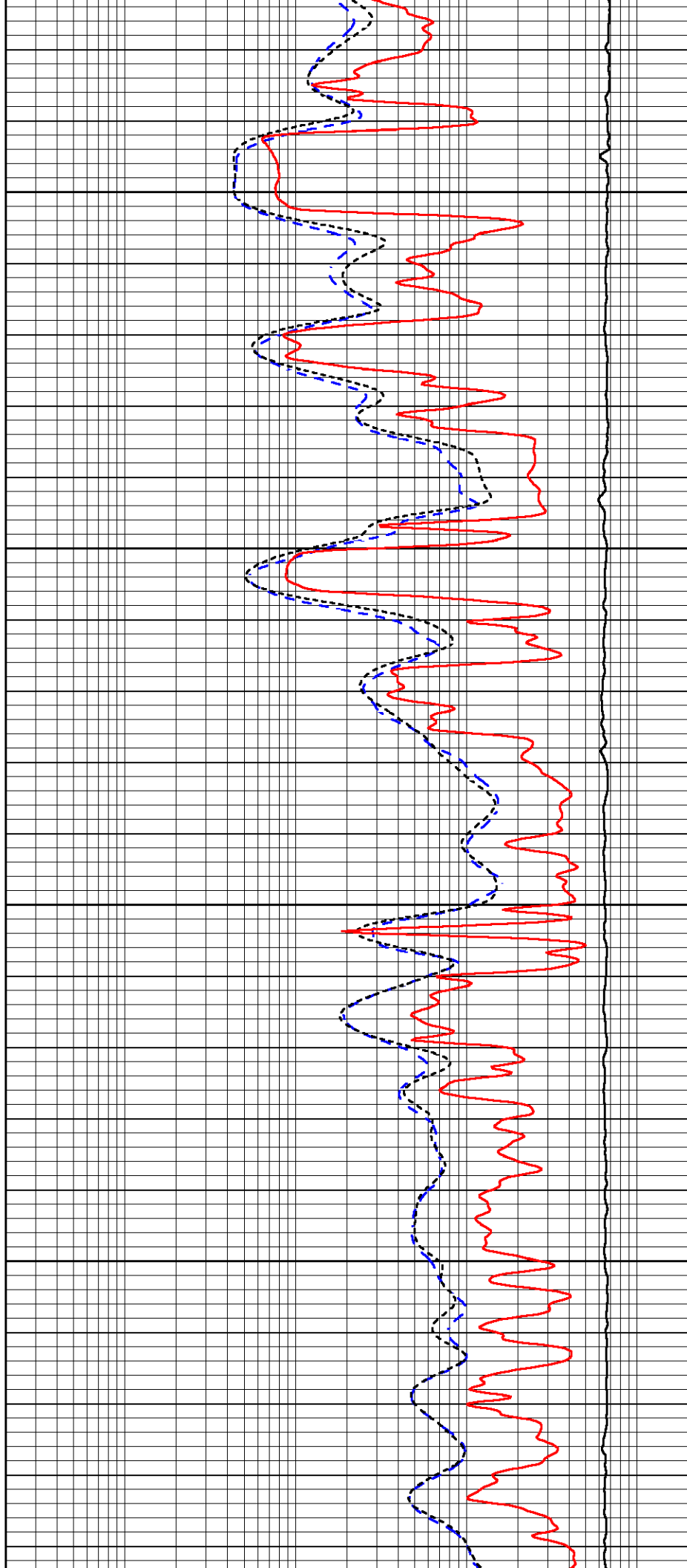


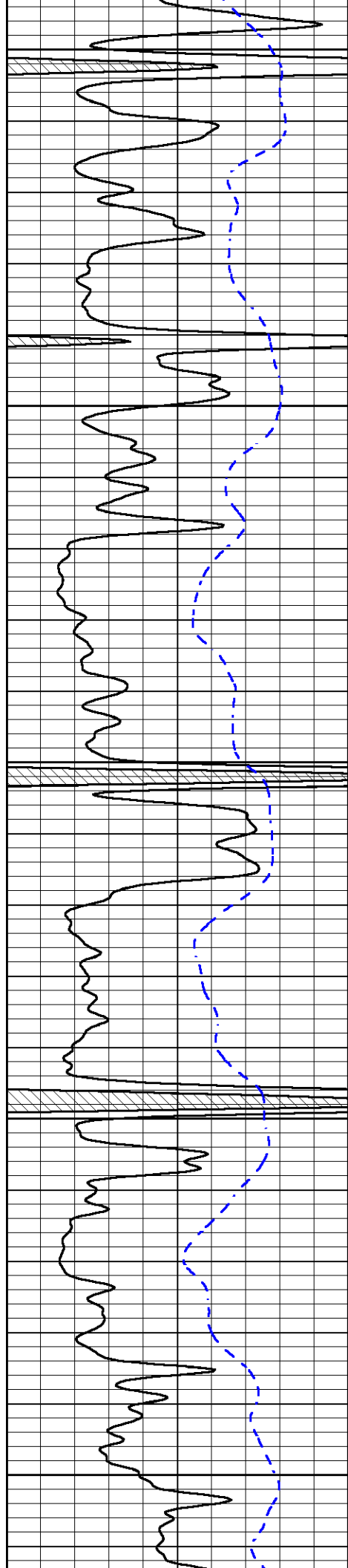
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4000

4050

4100





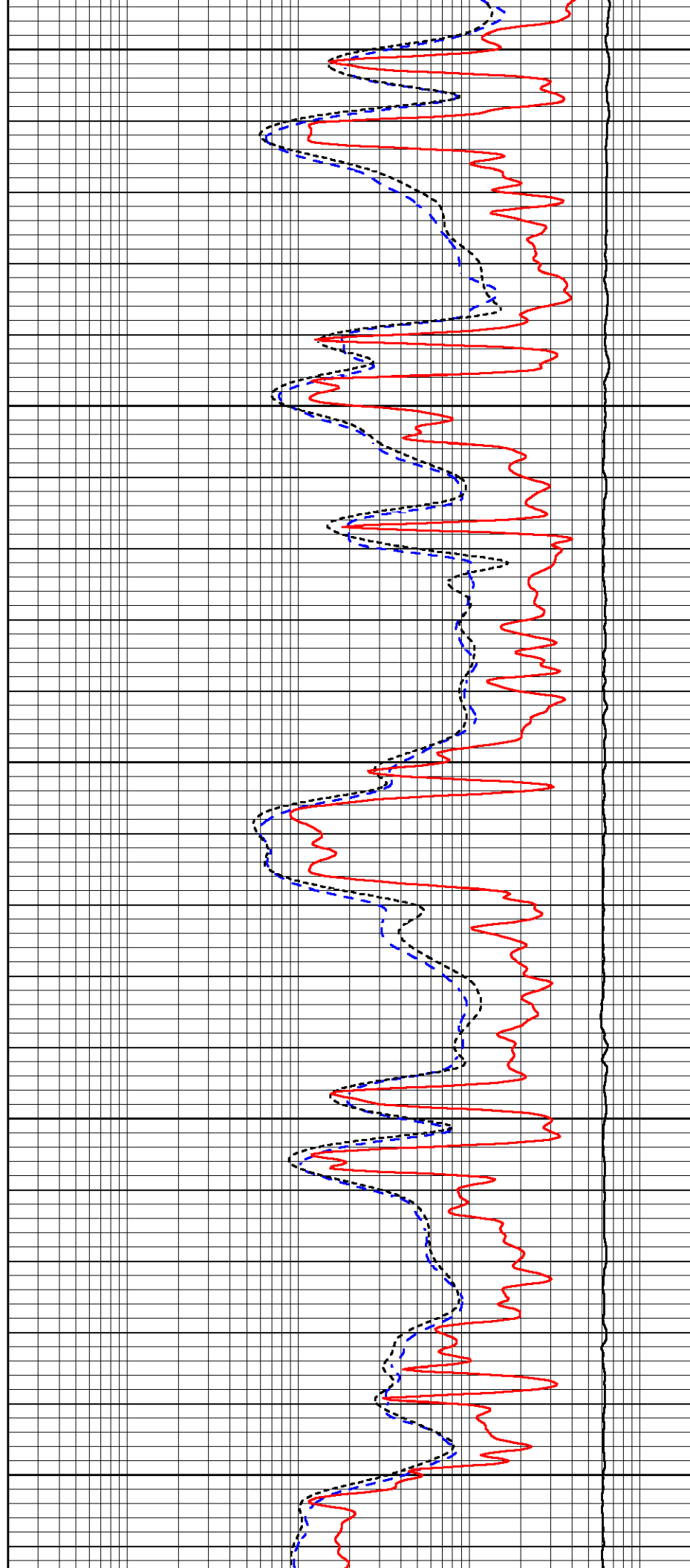
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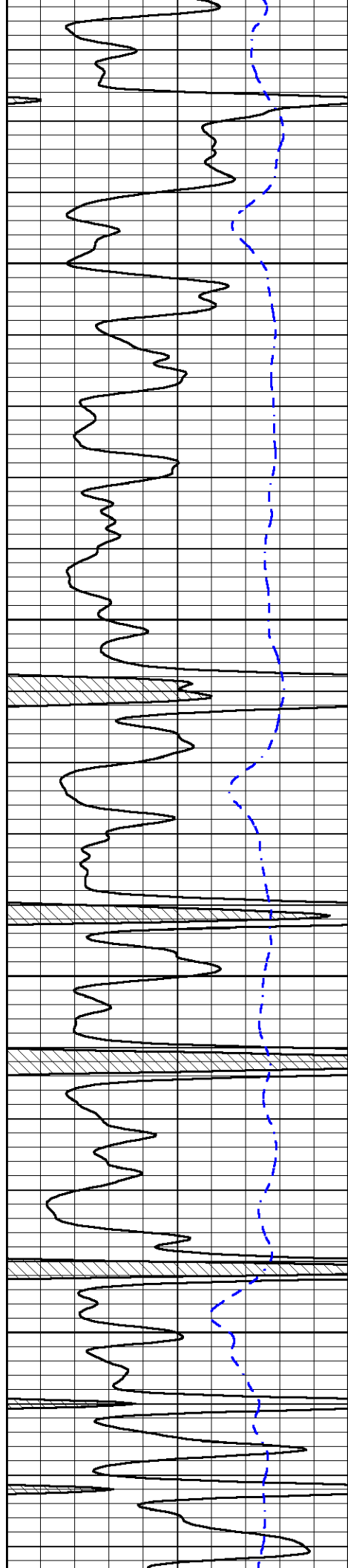
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4250

4300

4350



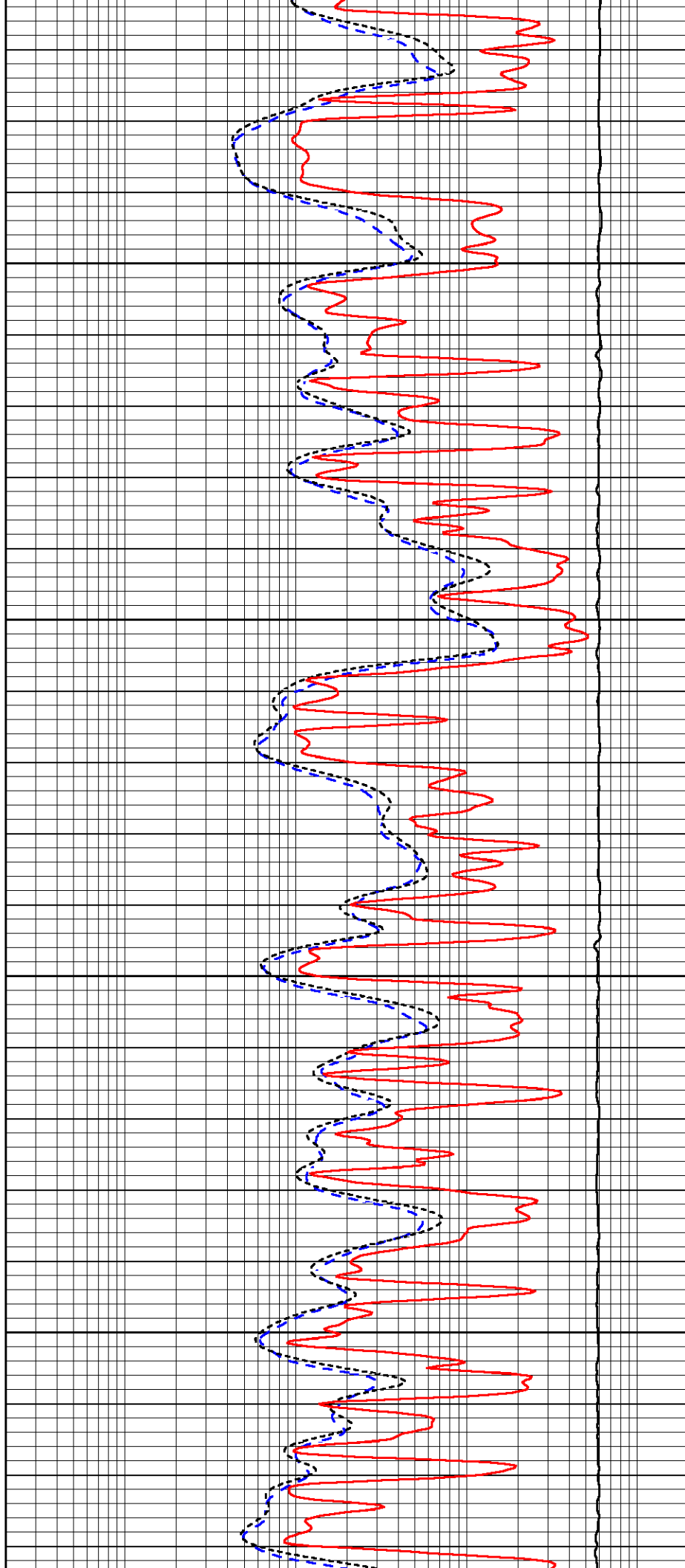


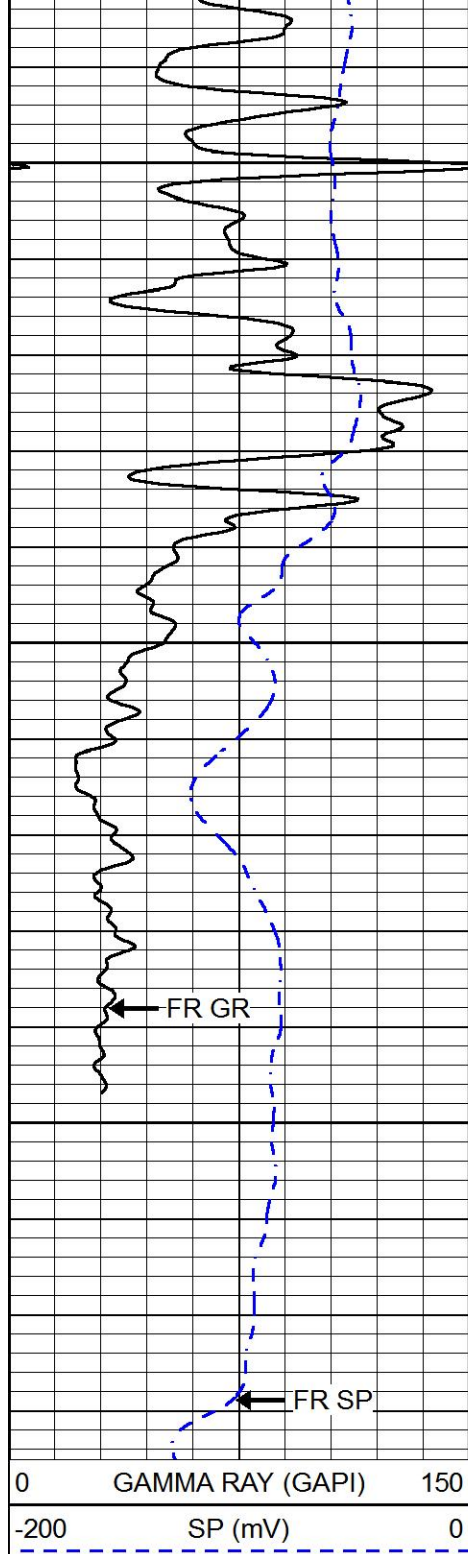
4400

4450

4500

4550

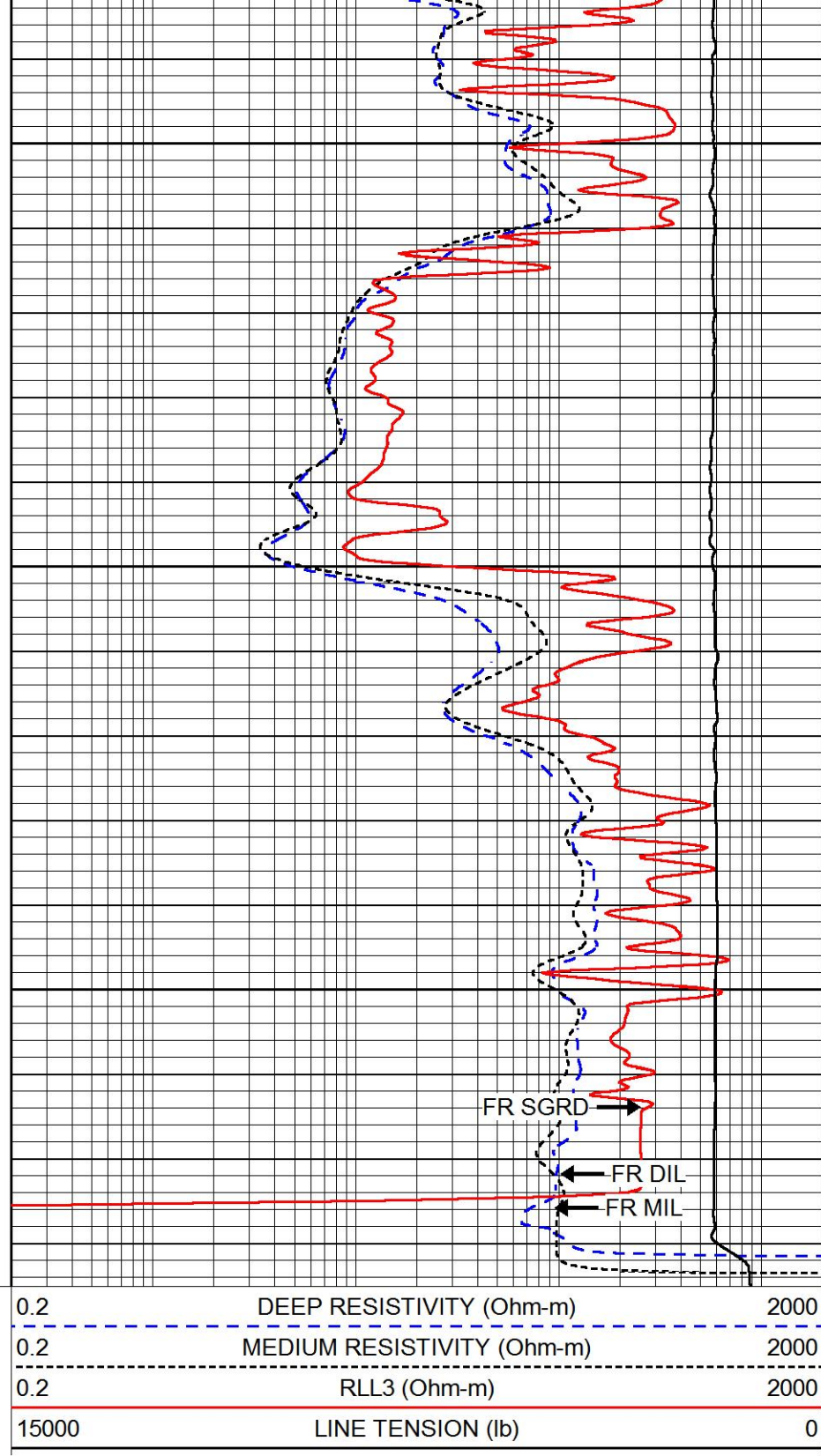




4600

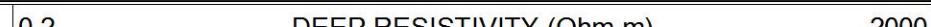
4650

4700

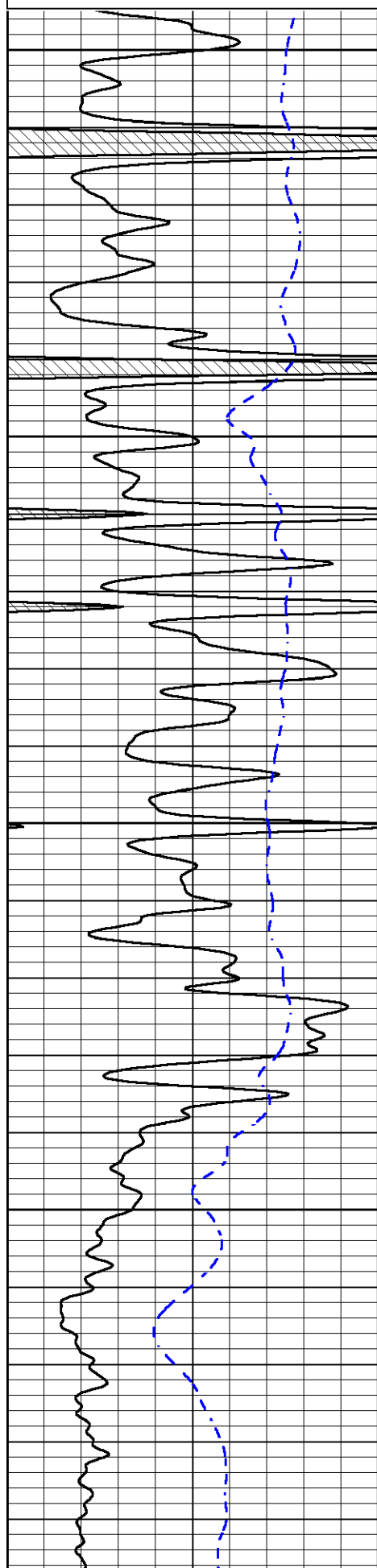


REPEAT SECTION

Database File ritchie_eaton_enterprises_1.db
Dataset Pathname stackml/pass2.1
Presentation Format dil
Dataset Creation Wed Jul 11 12:54:53 2018
Charted by Depth in Feet scaled 1:240



0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0



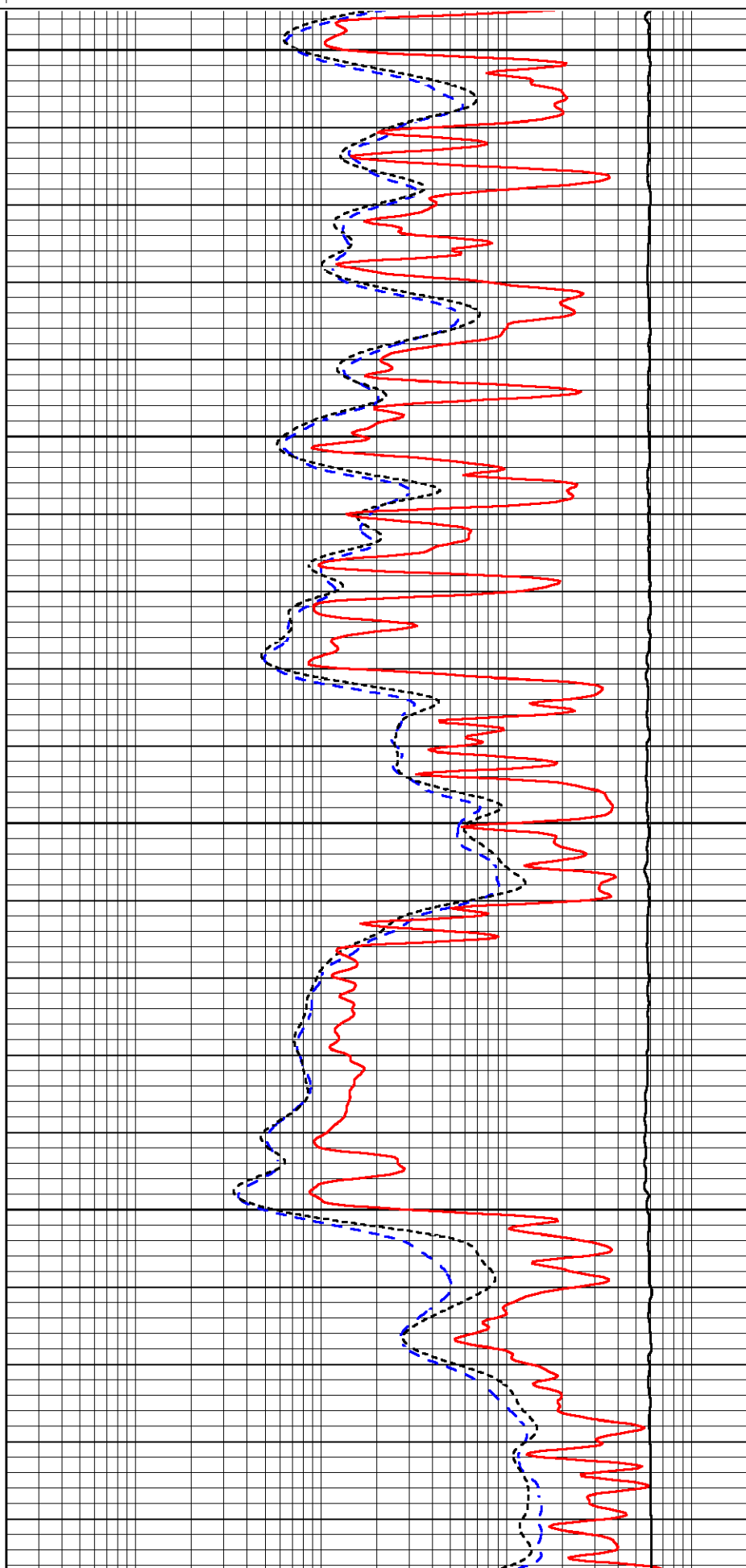
4500

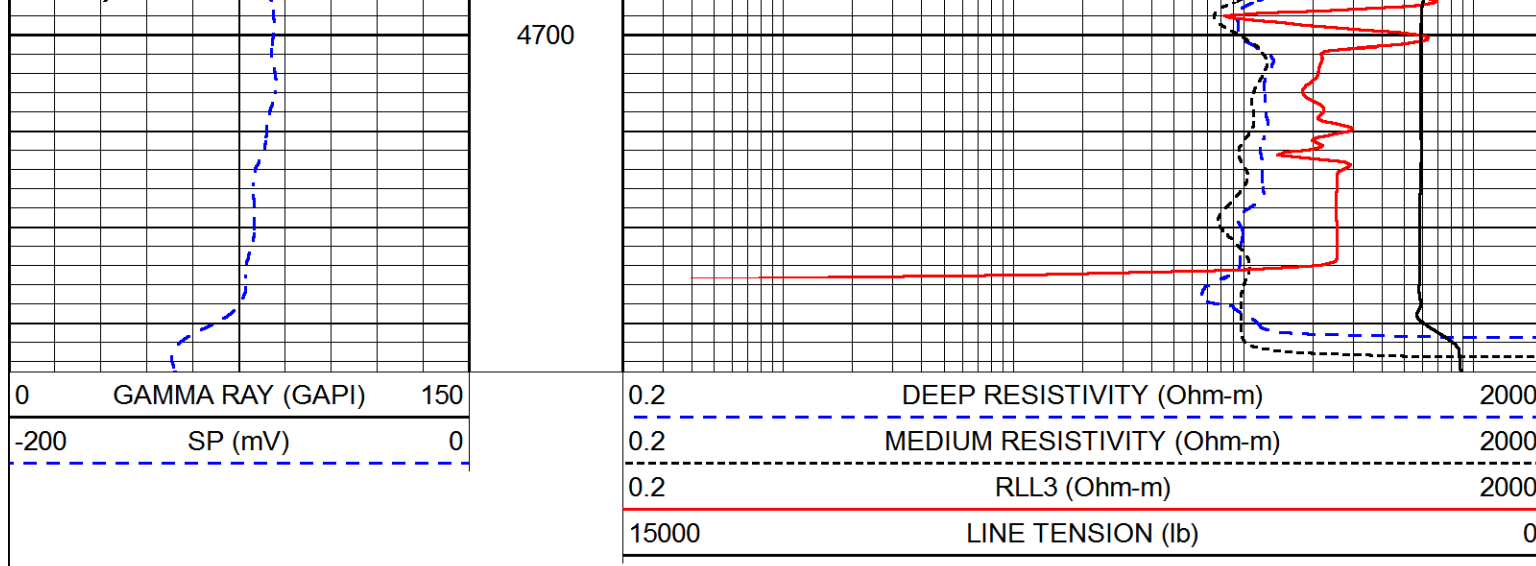
4550

4600

4650

0.2	DEEP RESISTIVITY (Ohm-Ft)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0





Calibration Report

Database File ritchie_eaton_enterprises_1.db
 Dataset Pathname stackml/pass3.1
 Dataset Creation Wed Jul 11 12:54:44 2018

Dual Induction Calibration Report

Serial-Model: 1987-M&W
 Calibration Performed: Tue Apr 11 17:07:38 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-110.500

Microlog Calibration Report

Serial-Model: PSI-01-PSI STKBL ML
 Performed: Thu Mar 31 18:14:32 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	22500.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	29500.0000	-1.0000
Caliper	1.0001	1.1397	6.5000	18.5000	in	86.0000	-82.9000

Compensated Density Calibration Report

Serial-Model: 979-229-M&W
 Source / Verifier: 21170B /
 Master Calibration Performed: Tue Jun 26 07:59:32 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	7726.98	9910.47	cps
Aluminum	2.680	g/cc	1442.93	6391.03	cps

Spine Angle = 75.35

Density/Spine Ratio = 0.533

	Size		Reading
Small Ring	4.00	in	1.16
Large Ring	16.00	in	1.03

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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