



# DUAL INDUCTION LOG

**Company** BRITO OIL COMPANY, INC.  
**Well** FOUR BOYS #1-28  
**Field** WILDCAT  
**County** CHEYENNE **State** KANSAS

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**County** CHEYENNE  
**State** KANSAS

**Location:** API #: 15-023-21514-00-00  
 2000' FSL & 1320' FWL  
 SEC 28 TWP 4S RGE 37W  
 Permanent Datum GROUND LEVEL Elevation 3381'  
 Log Measured From KELLY BUSHING  
 Drilling Measured From KELLY BUSHING  
 Other Services: CNL/CDL MEL  
 Elevation: K.B. 3386', D.F. N/A, G.L. 3381'

Date	5/24/2019
Run Number	ONE
Depth Driller	5000'
Depth Logger	5000'
Bottom Logged Interval	4999'
Top Log Interval	300'
Casing Driller	8.625" @ 337'
Casing Logger	336'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	2500
Density / Viscosity	9.4 58
pH / Fluid Loss	11.0 6.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.10 @ 68
Rmt @ Meas. Temp	.83 @ 68
Rmc @ Meas. Temp	1.49 @ 68
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.59 @ 126
Operating Rig Time	2 HOURS
Max Rec. Temp. F	126 DEGF
Equipment Number	P-108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	BRAD RINE

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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.  
 BIRD CITY KANSAS  
 EAST TO 31 ROAD, 6 SOPUTH, EAST INTO

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

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[www.pioneerenergy.com](http://www.pioneerenergy.com) 785-625-3858

<b>Your Pioneer Energy Services Crew</b> Engineer: J. HENRICKSON Operator: Operator: Operator:	<b>This Log Record Was Witnessed By</b> Primary Witness: BRAD RINE Secondary Witness: Secondary Witness: Secondary Witness:
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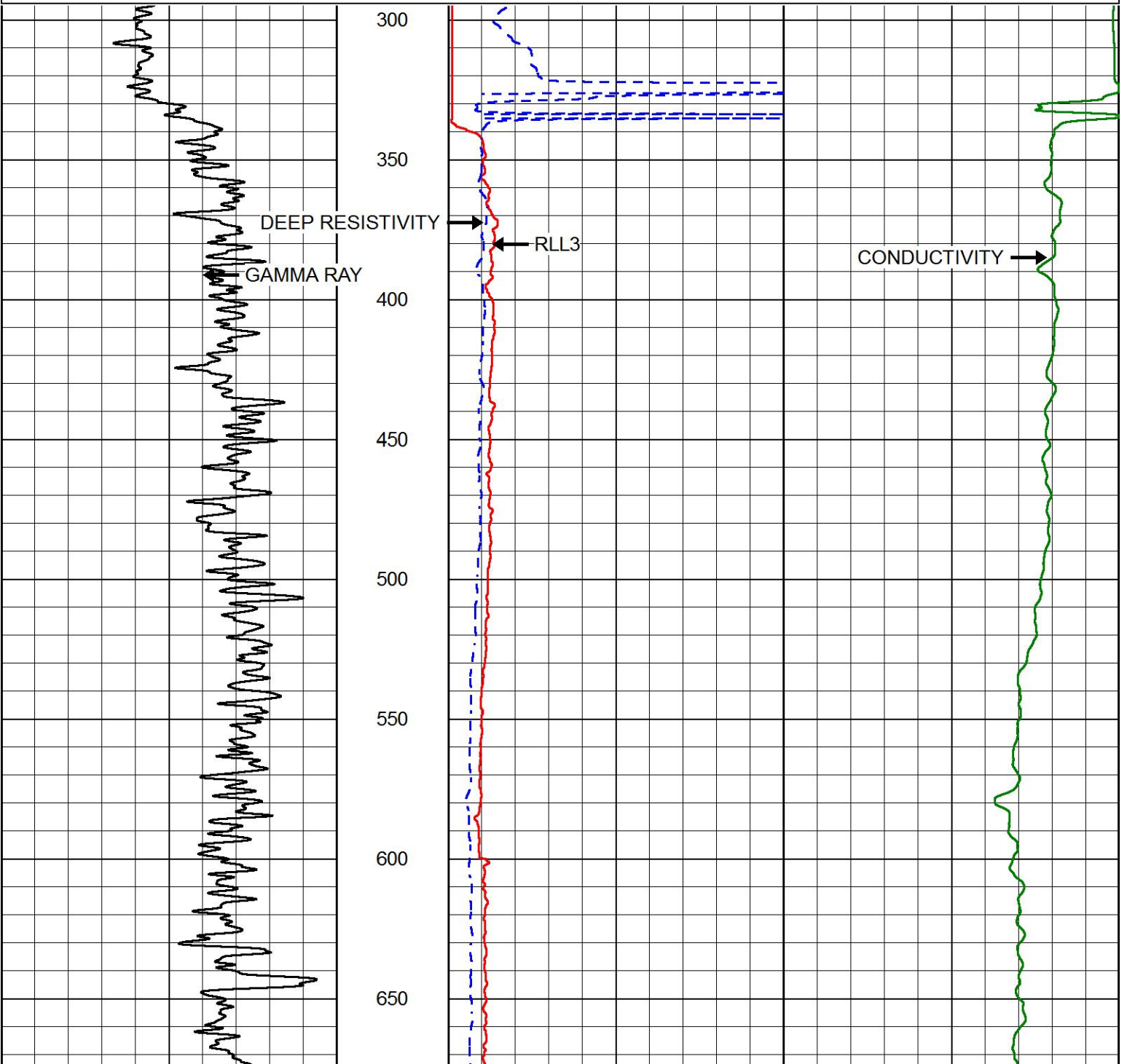
Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (144-84)	8.50	4.00	250.00
ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58		4.00	65.00		
MCAL MI MN	19.83 19.83 19.83					
RLL3 RLL3F	15.80 15.79					
DIL-M&W (PSI 988)	18.50		3.50	220.00		
CILD	8.00					
CILM	4.70					
SP	0.20					

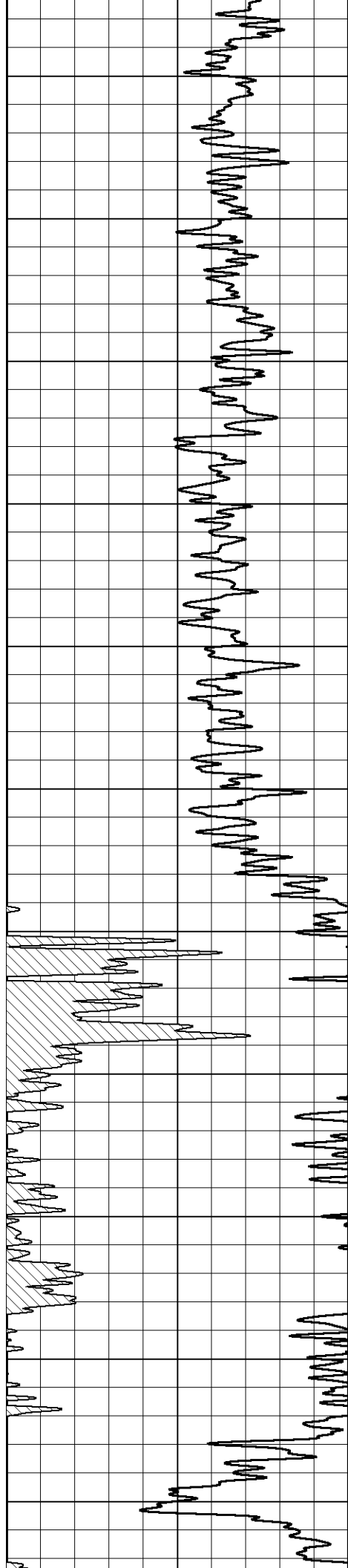
Dataset: brito\_four\_boys\_1\_28.db: field/well/stackmic/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

# MAIN PASS

Database File      brito\_four\_boys\_1\_28.db  
 Dataset Pathname    stackmic/pass3.1  
 Presentation Format    dil2in  
 Dataset Creation      Fri May 24 03:27:13 2019  
 Charted by            Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150	2000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50			
0	DEEP RESISTIVITY (Ohm-m)	50			
50	RLL3 (Ohm-m)	200			
50	RILD (Ohm-m)	200			





700

750

800

850

900

950

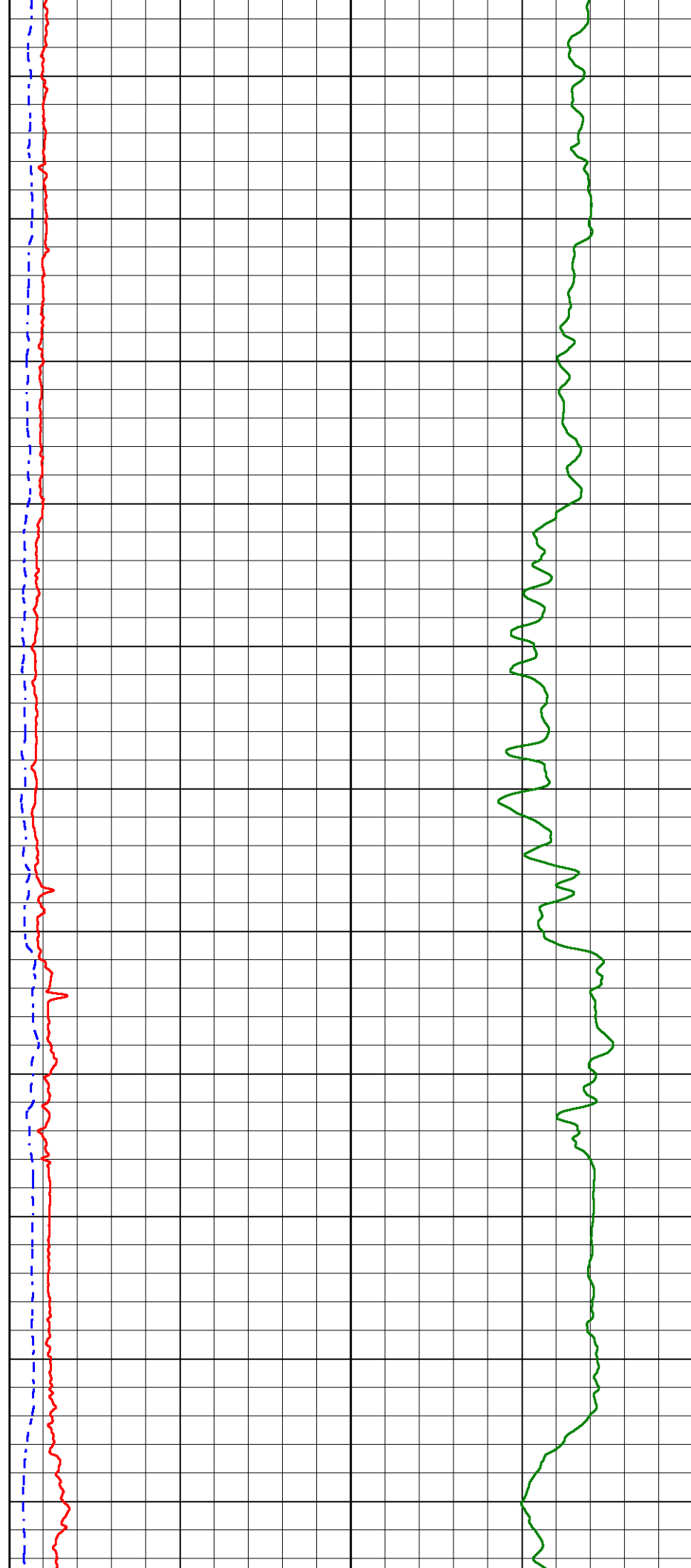
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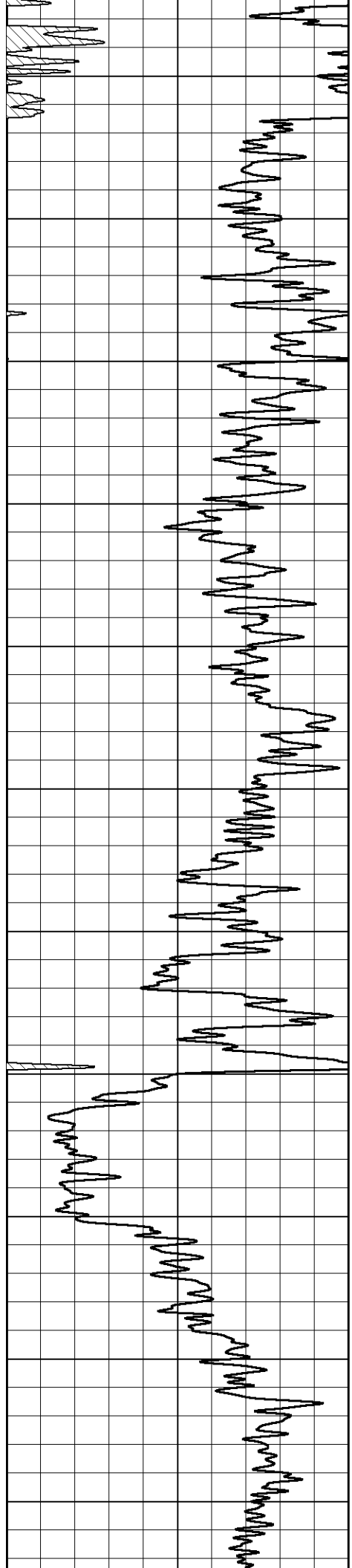
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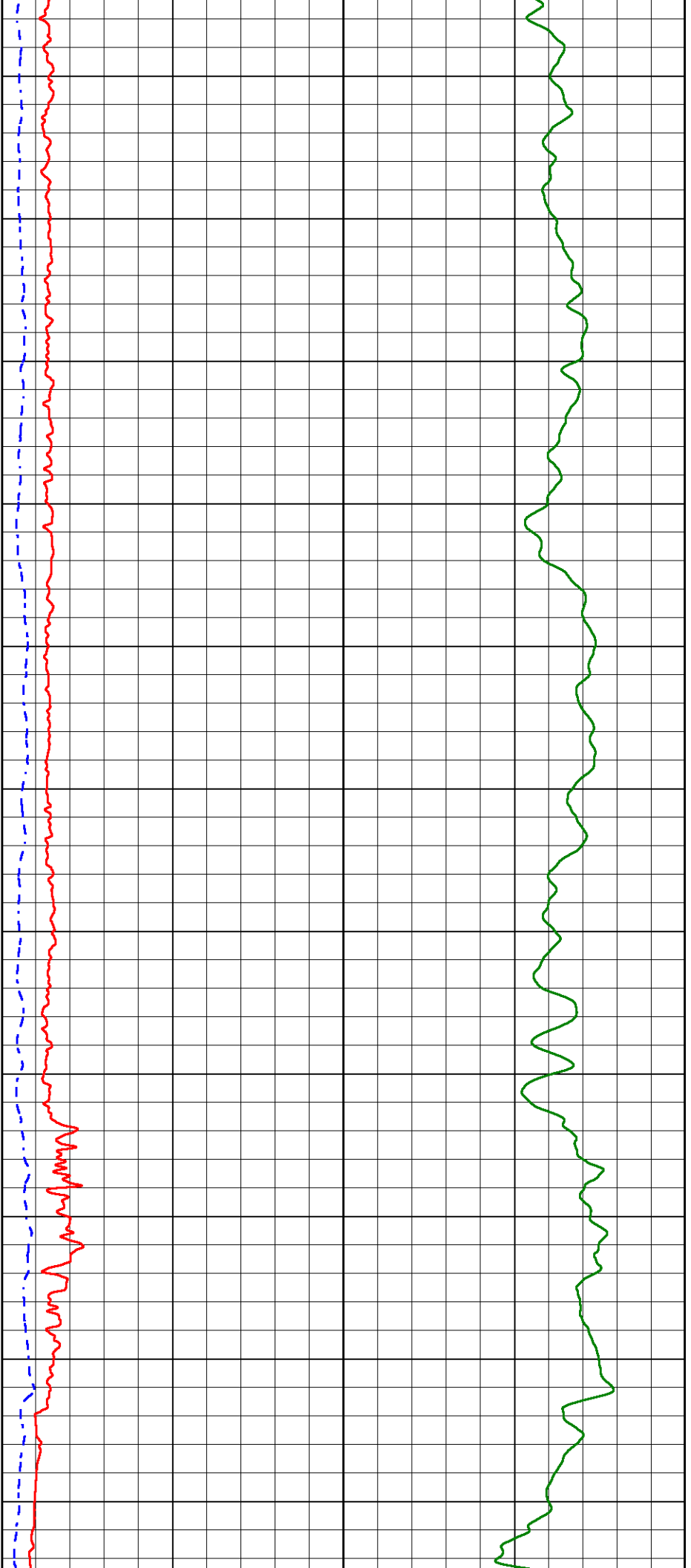
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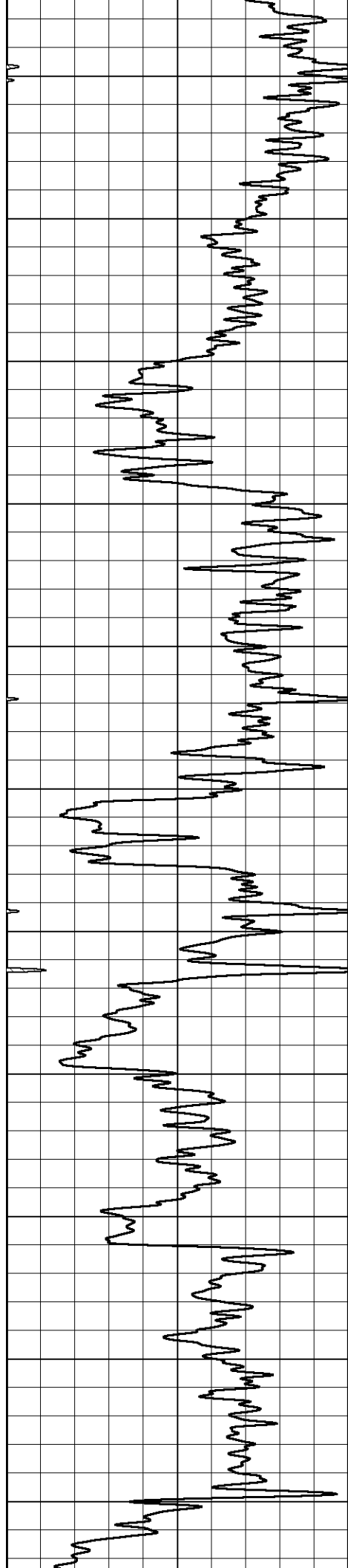
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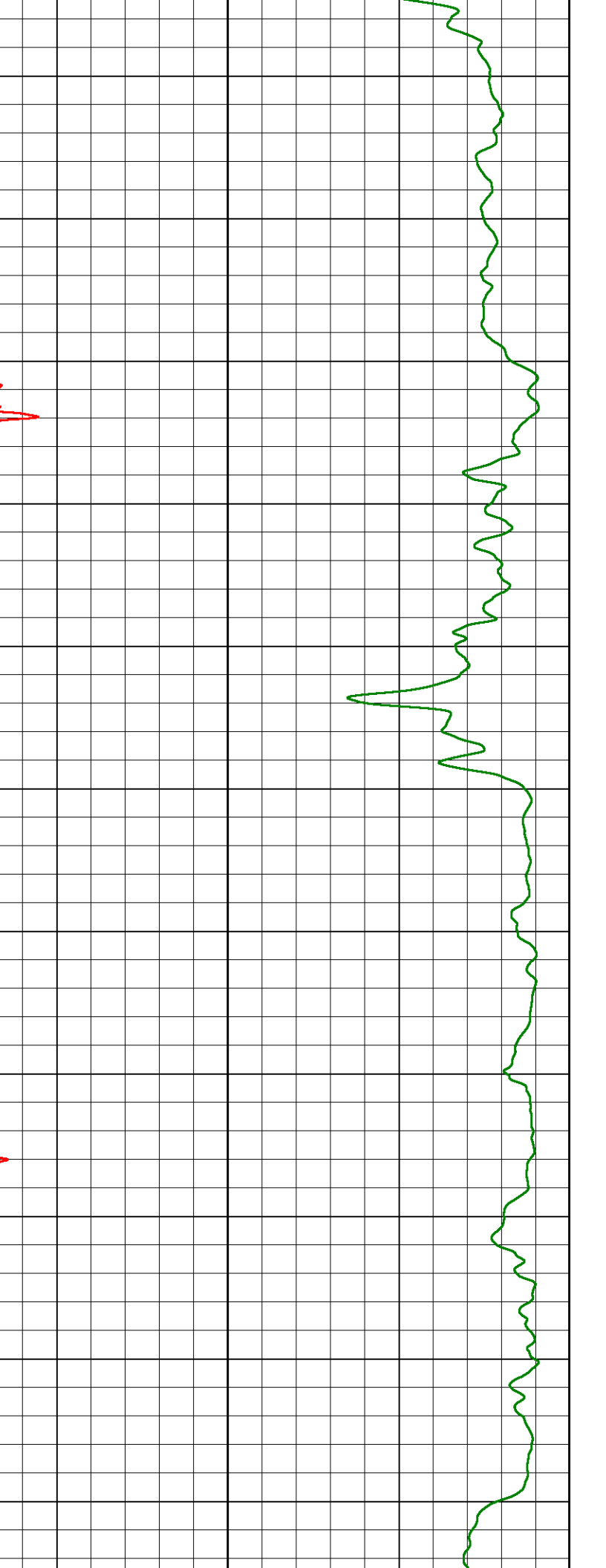
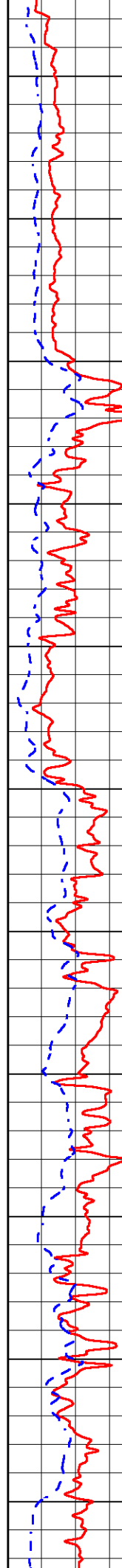


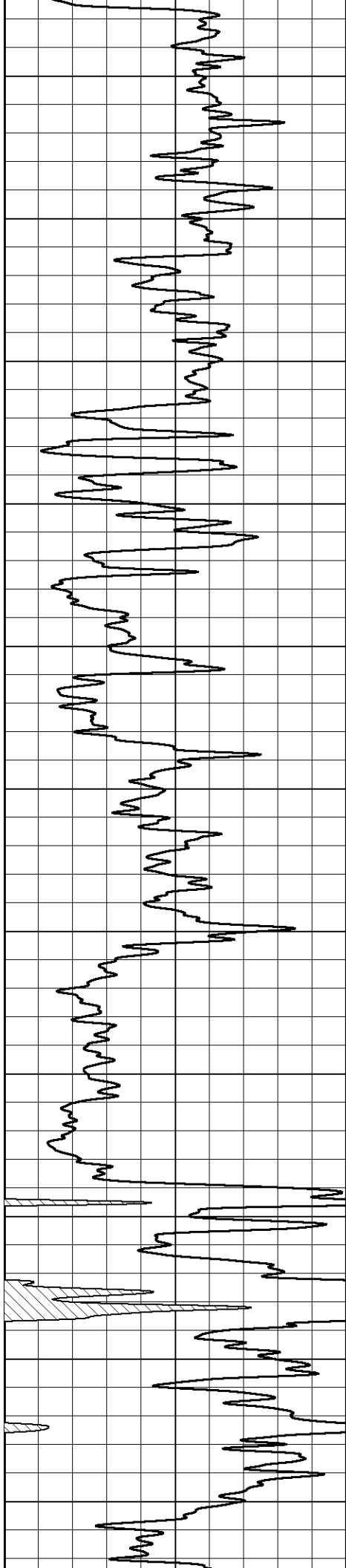
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1450  
1500  
1550  
1600  
1650  
1700  
1750





1800  
1850  
1900  
1950  
2000  
2050  
2100  
2150  
2200  
2250  
2300





2350

2400

2450

2500

2550

2600

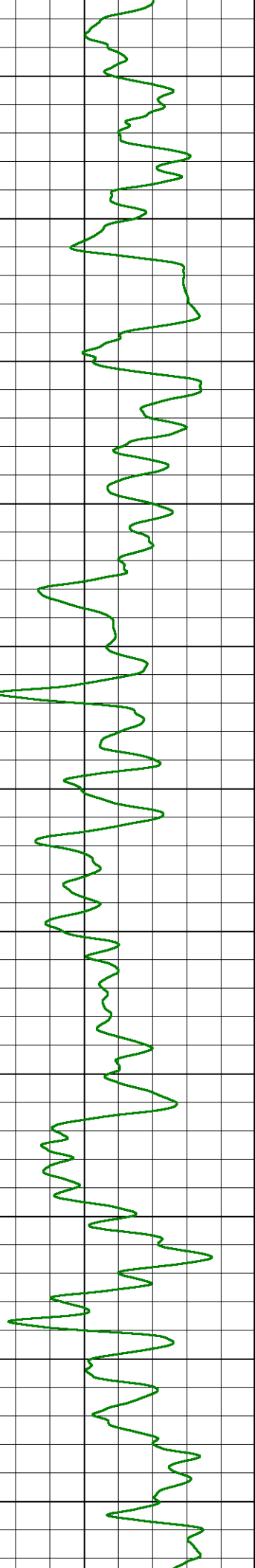
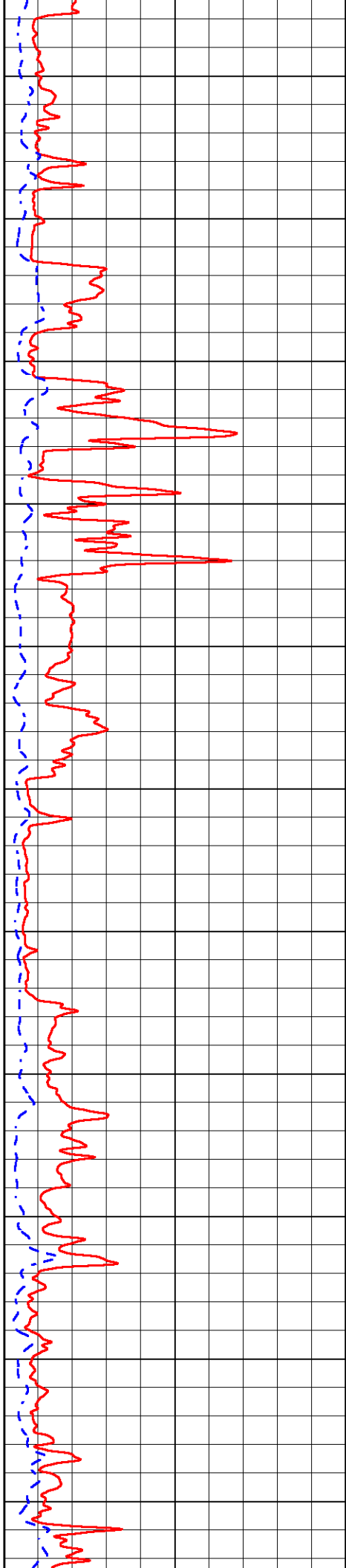
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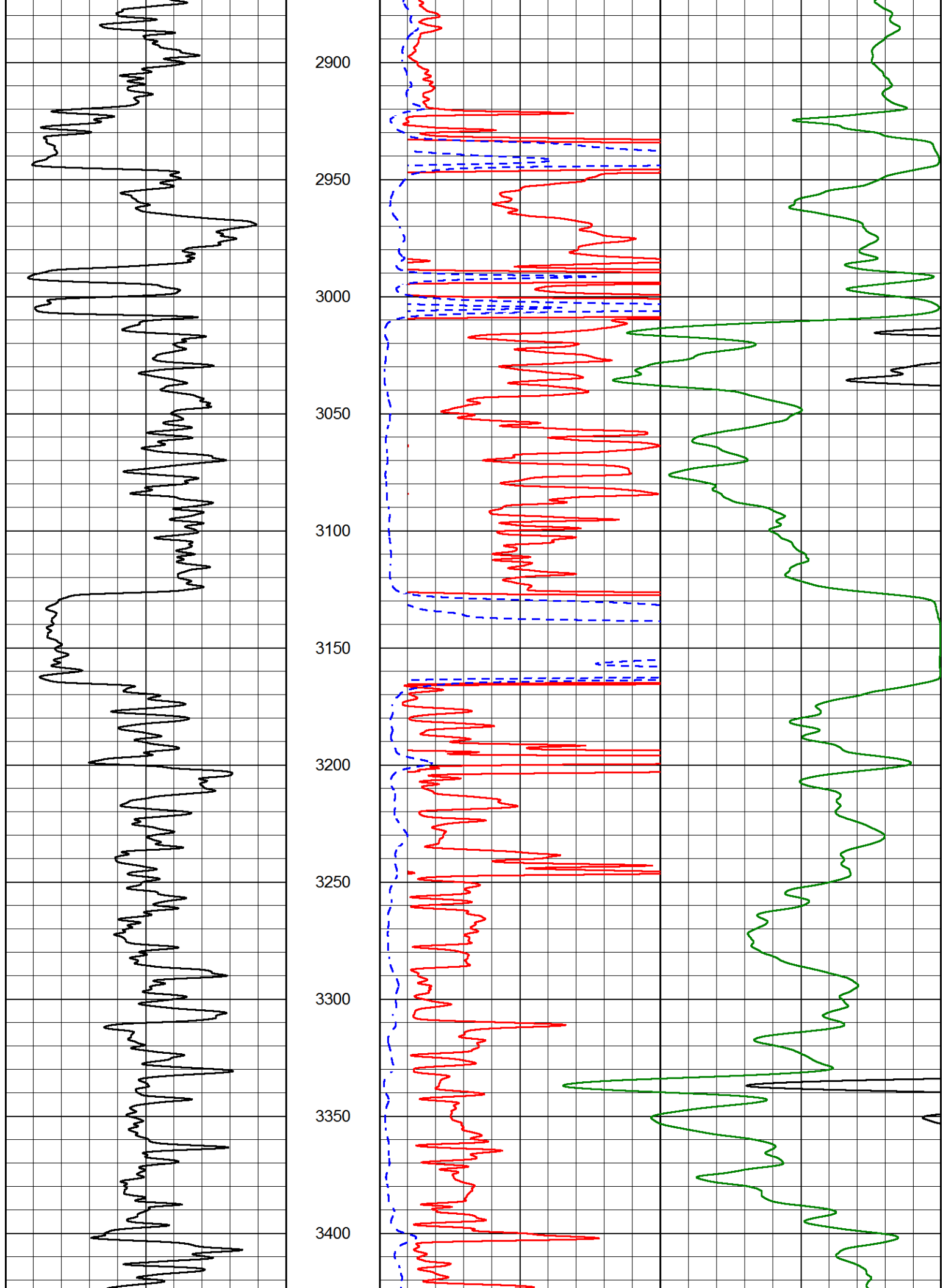
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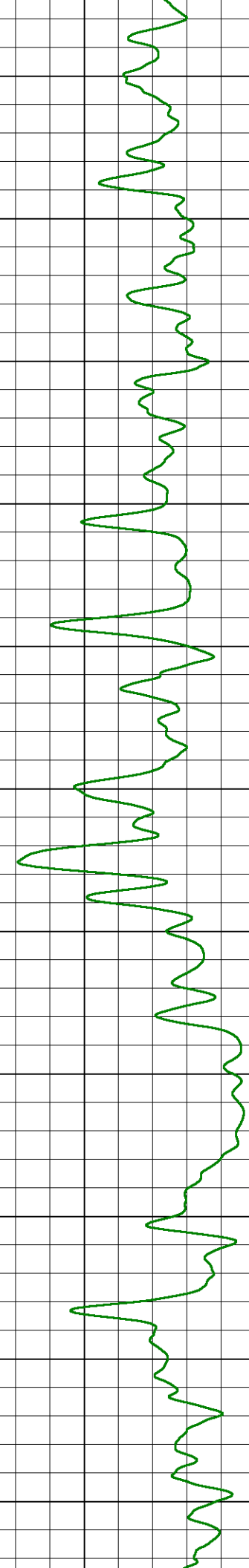
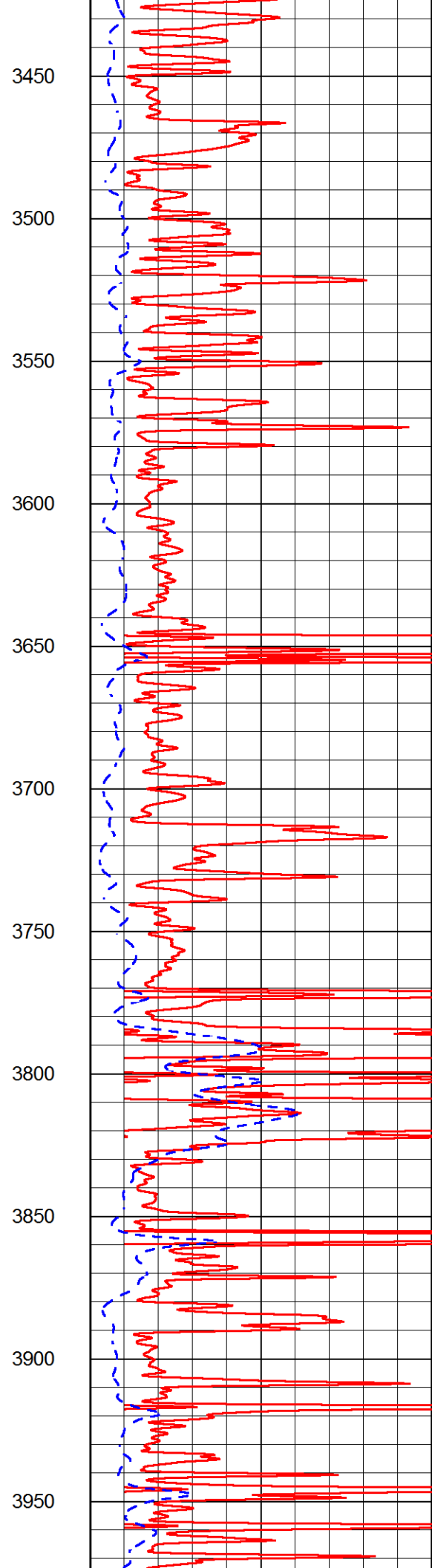
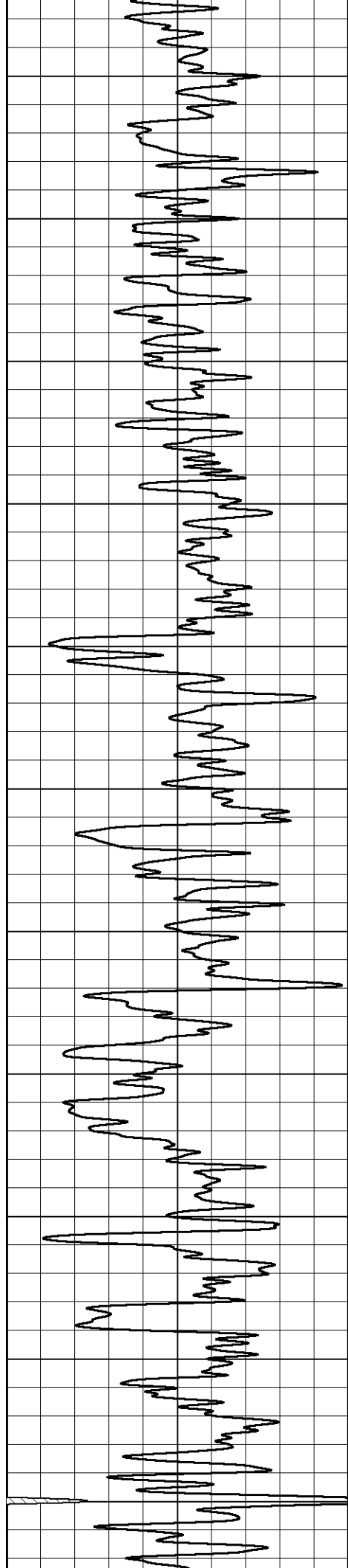
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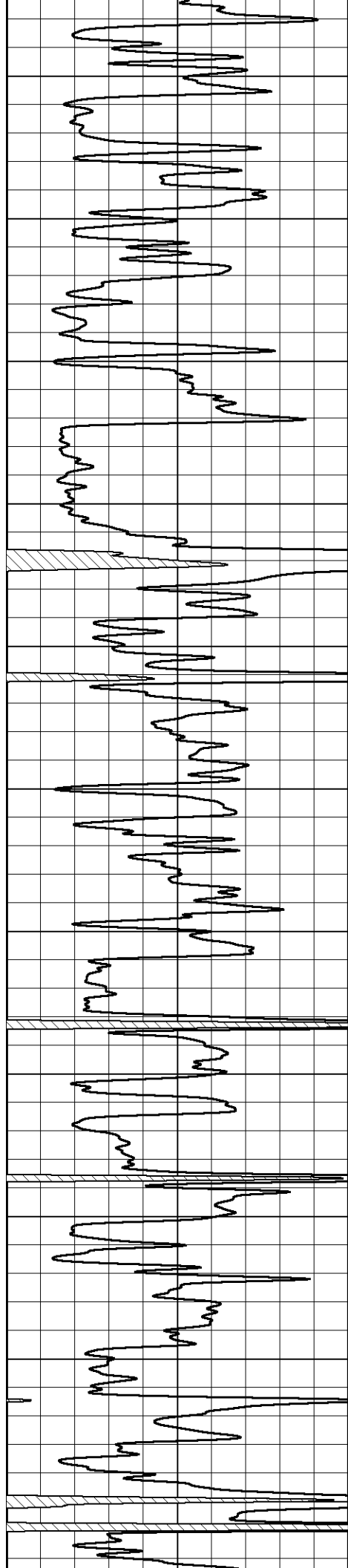
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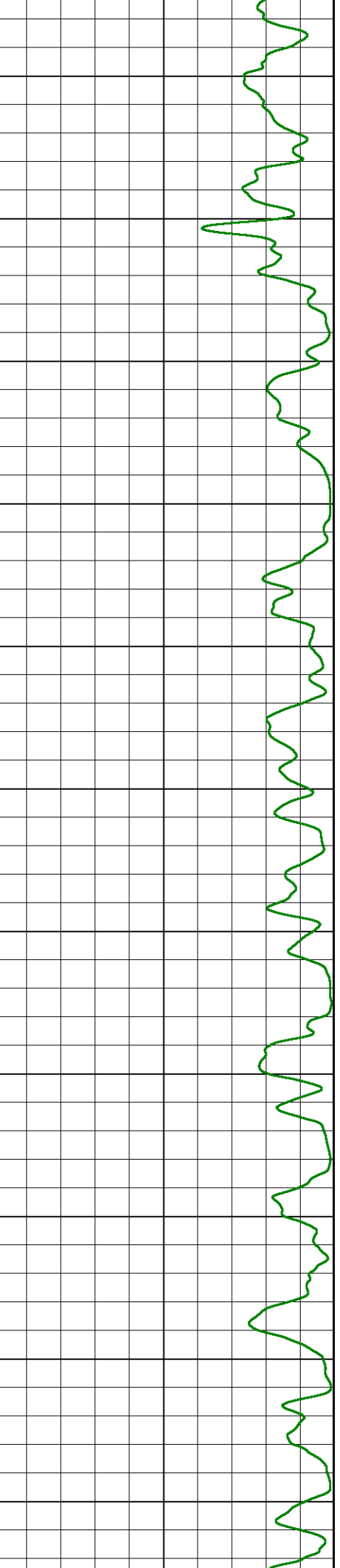
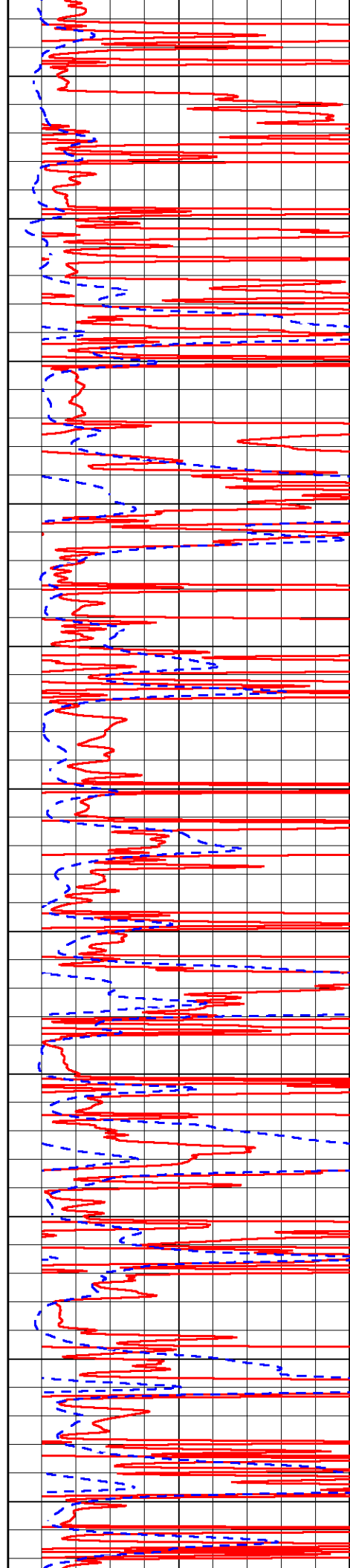


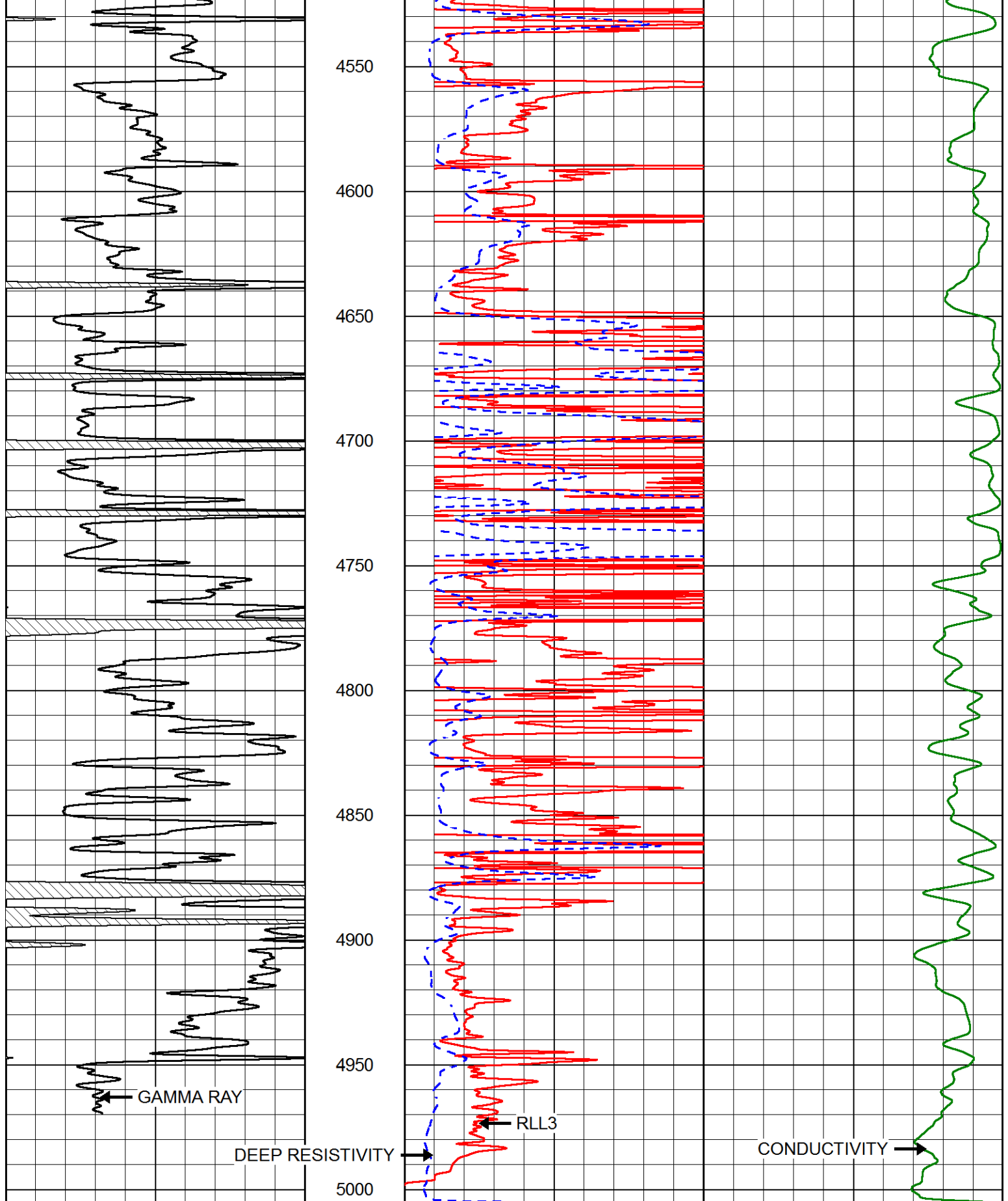






4000  
4050  
4100  
4150  
4200  
4250  
4300  
4350  
4400  
4450  
4500





0 GAMMA RAY (GAPI) 150

2000 CILD (mmho/m) 0

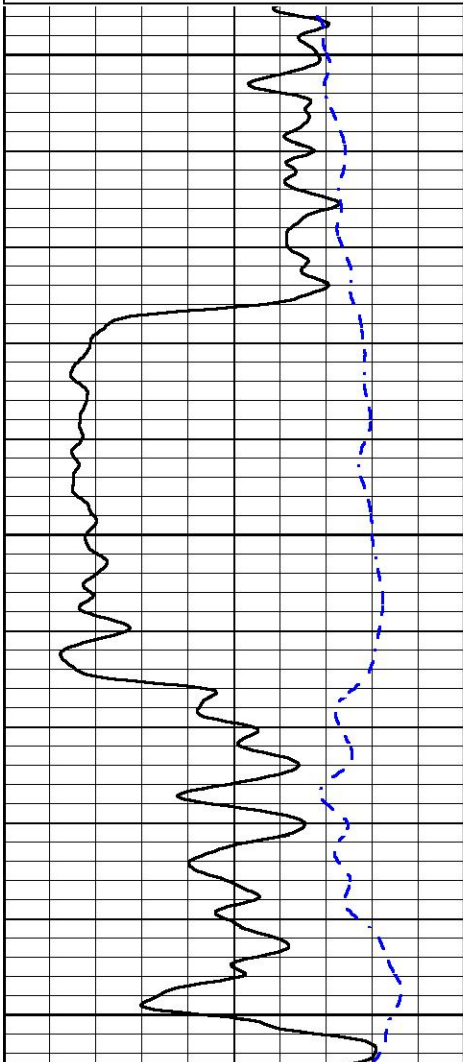
0	RLL3 (Ohm-m)	50
0	DEEP RESISTIVITY (Ohm-m)	50
50	RLL3 (Ohm-m)	200
50	RILD (Ohm-m)	200

# MAIN PASS

Database File      brito\_four\_boys\_1\_28.db  
 Dataset Pathname    stackmic/pass3.1  
 Presentation Format    dil  
 Dataset Creation      Fri May 24 03:27:13 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
15000	LINE TENSION (lb)	0

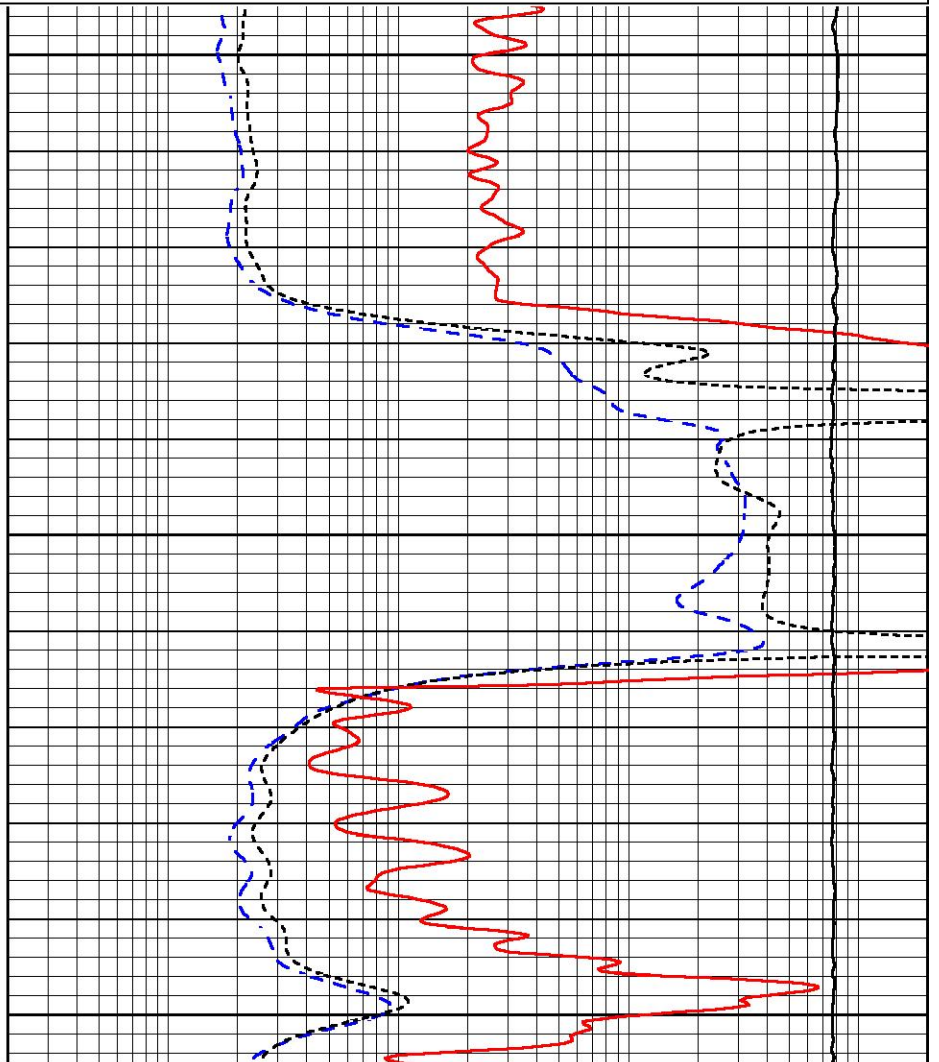


3100

3150

3200

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



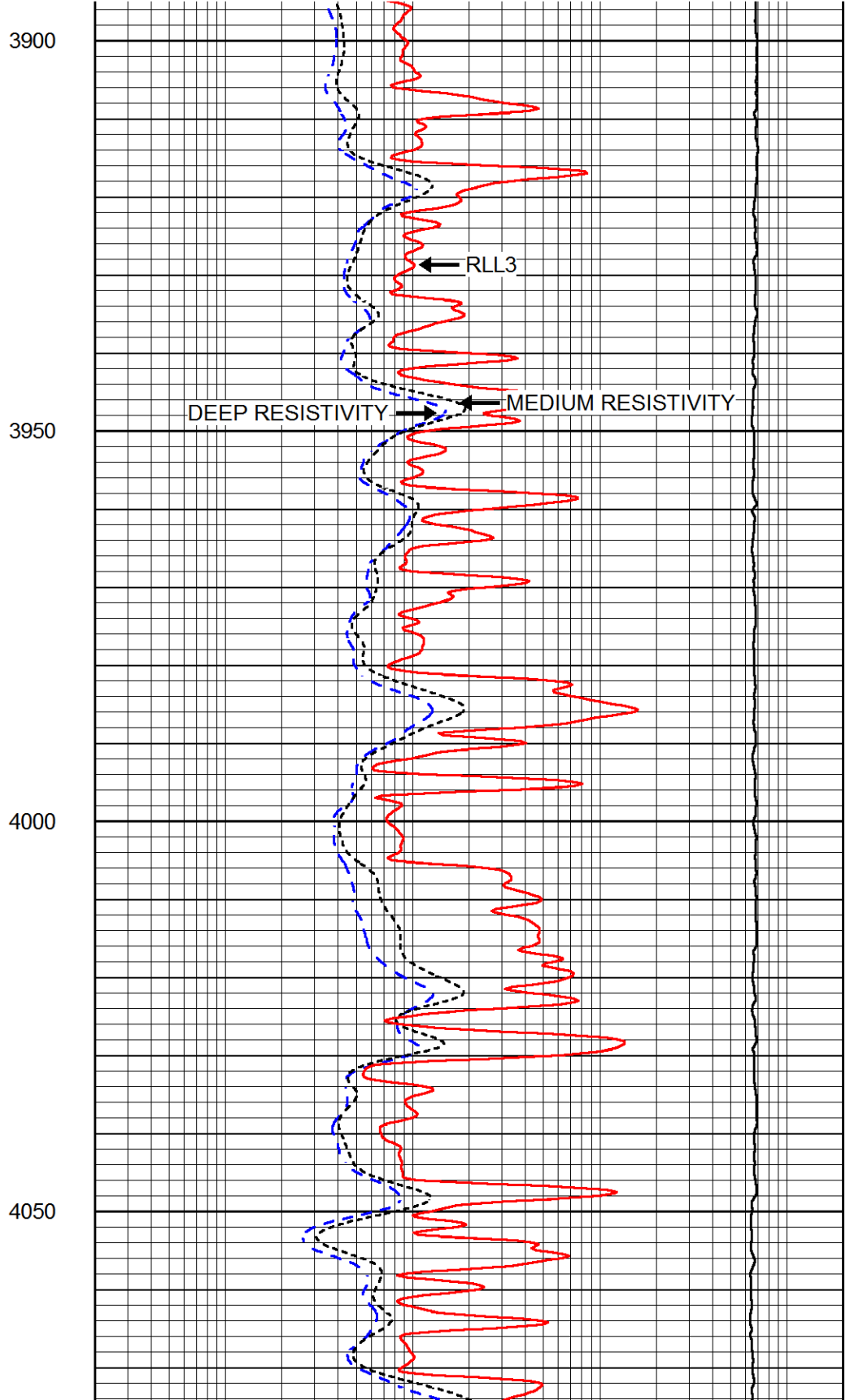
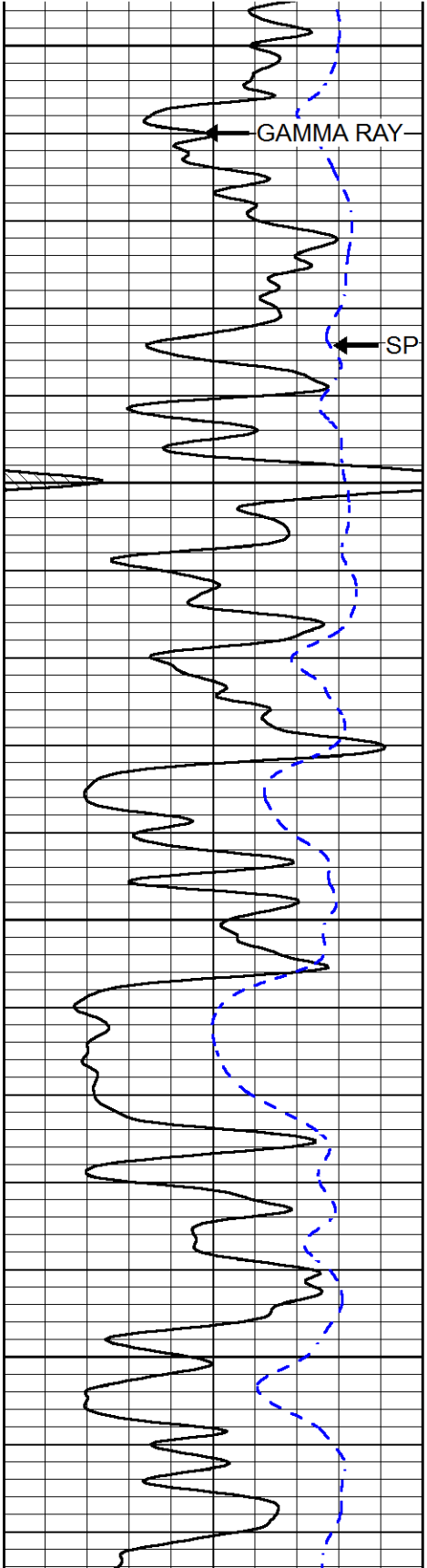
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0

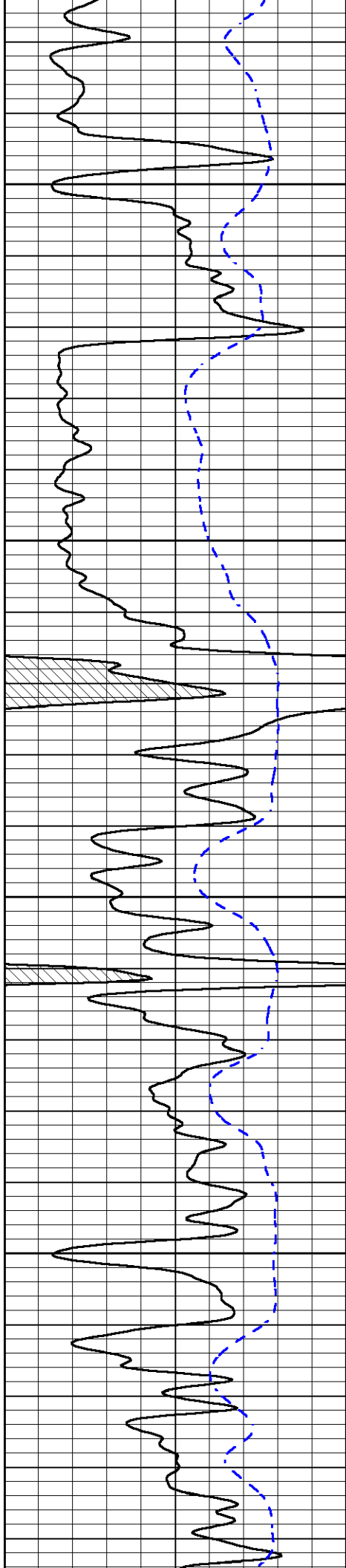
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Database File      brito\_four\_boys\_1\_28.db  
 Dataset Pathname    stackmic/pass3.1  
 Presentation Format    dil  
 Dataset Creation      Fri May 24 03:27:13 2019  
 Charted by            Depth in Feet scaled 1:240

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
15000	LINE TENSION (lb)	0



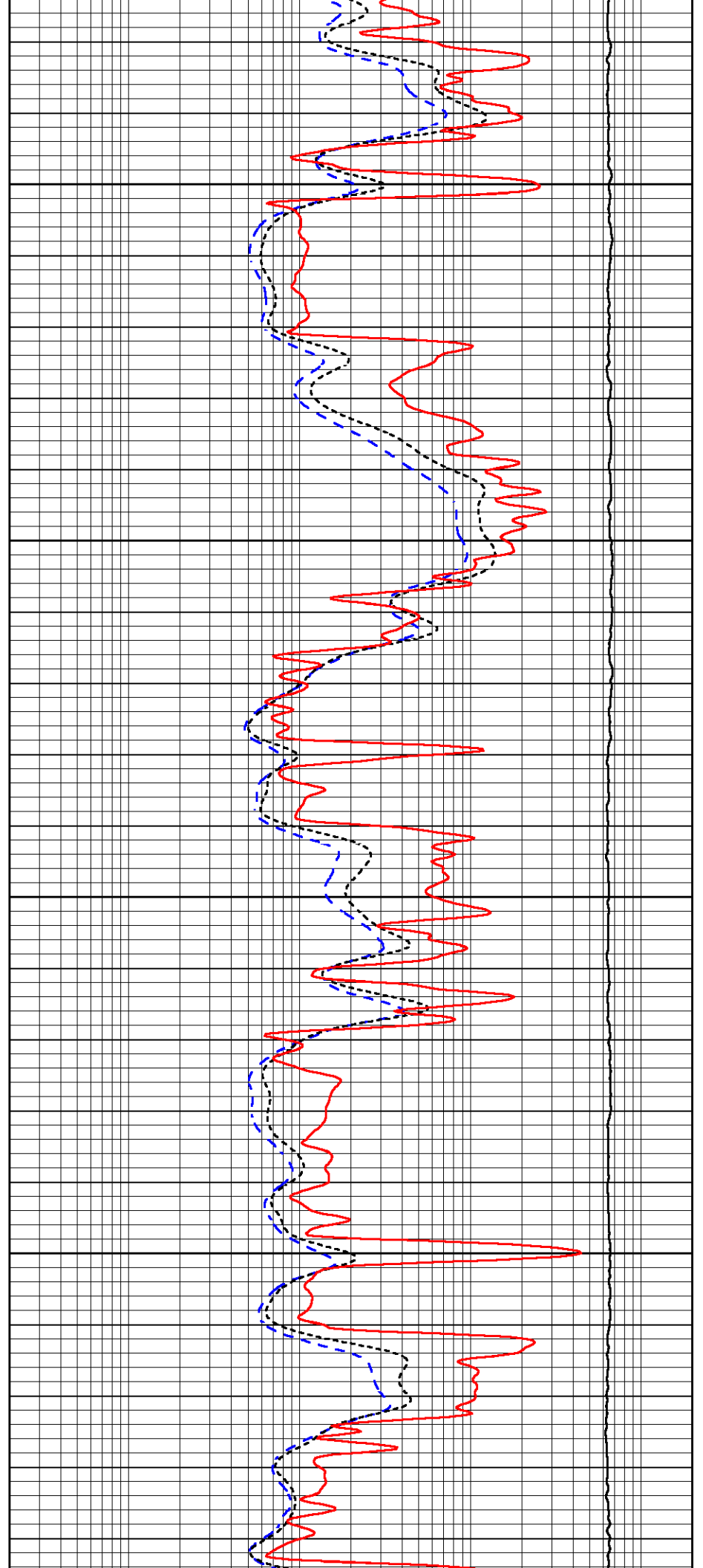


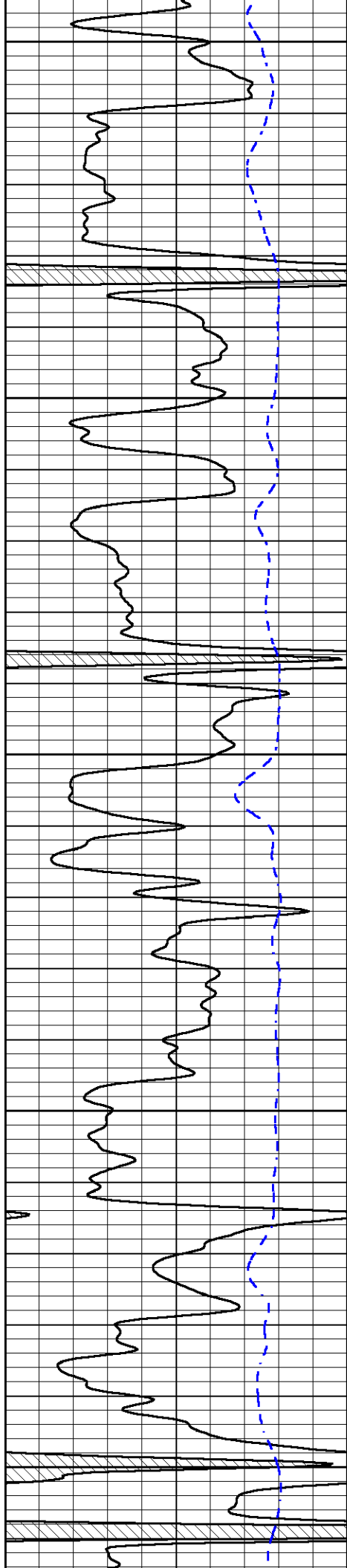
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4150

4200

4250





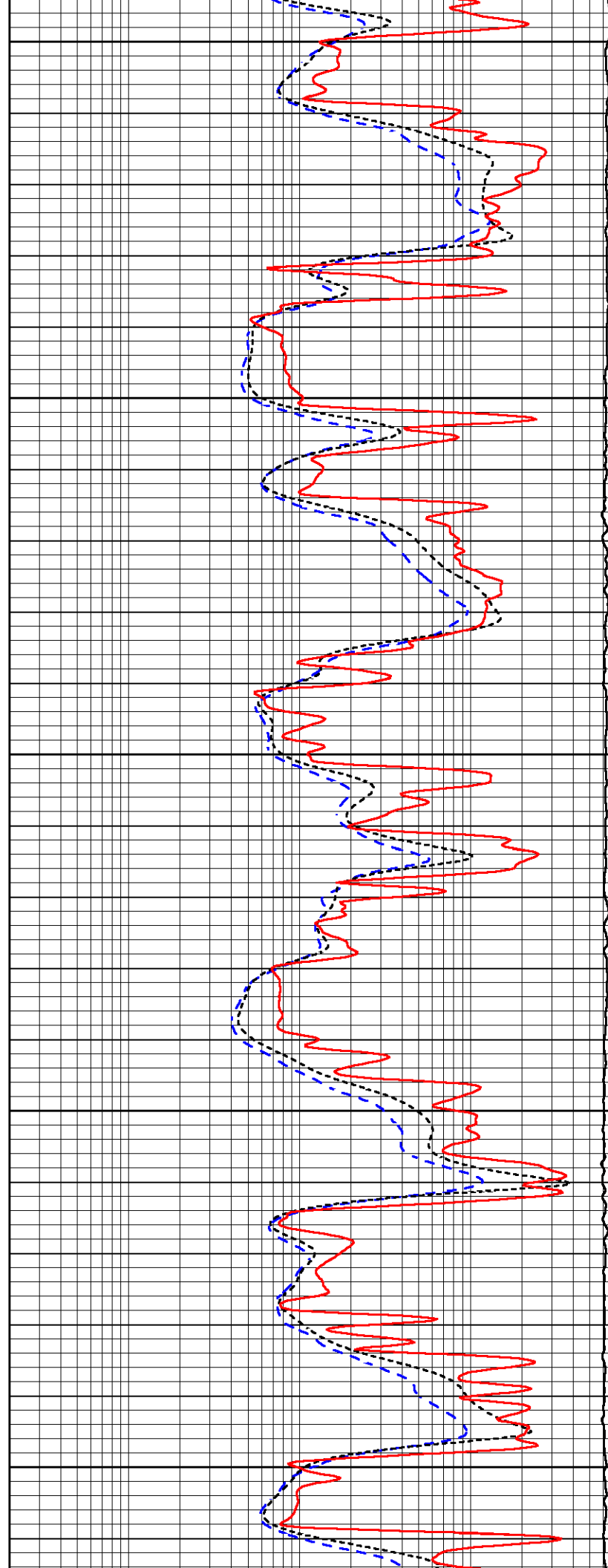
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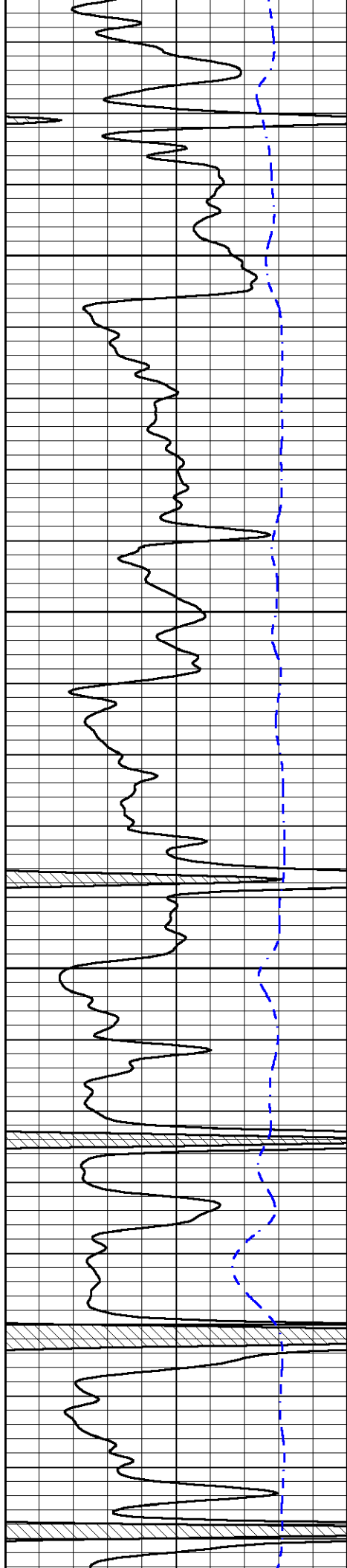
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4400

4450

4500



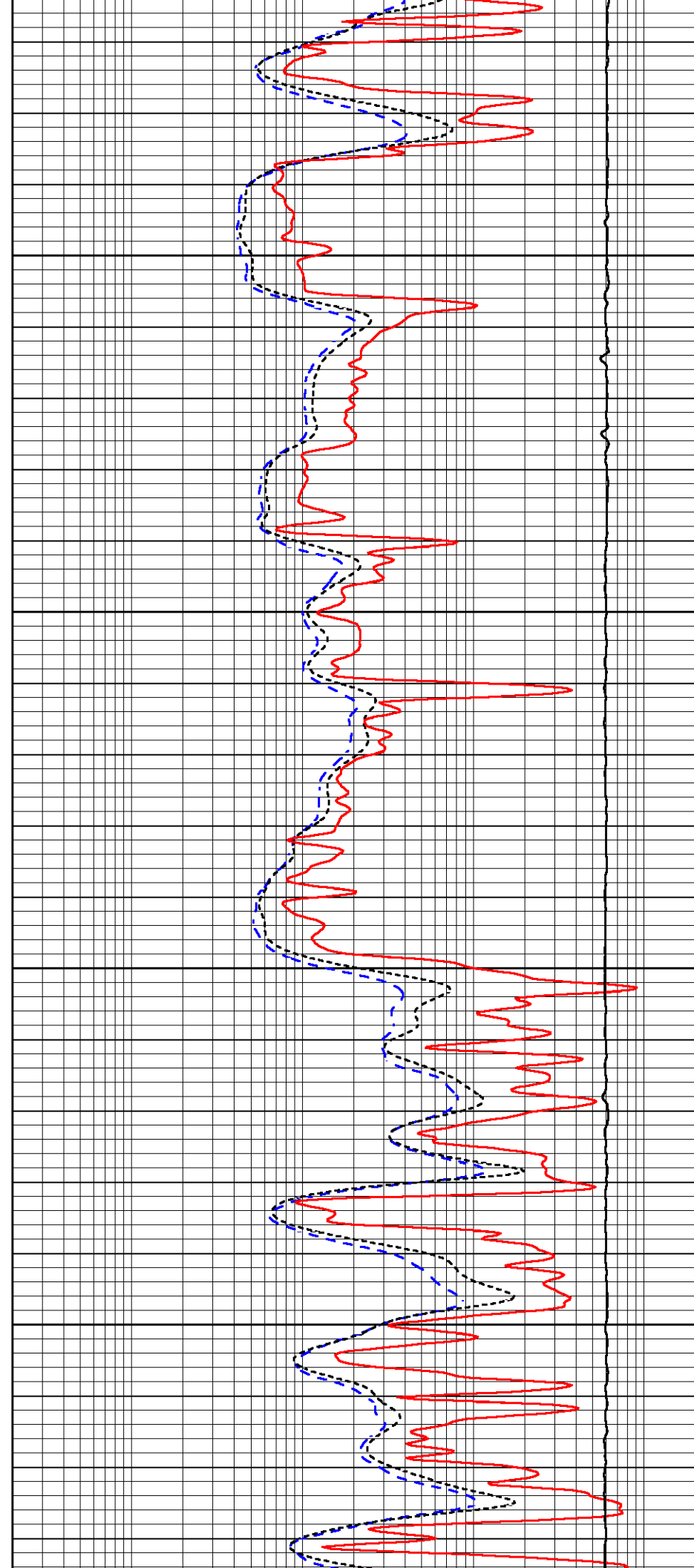


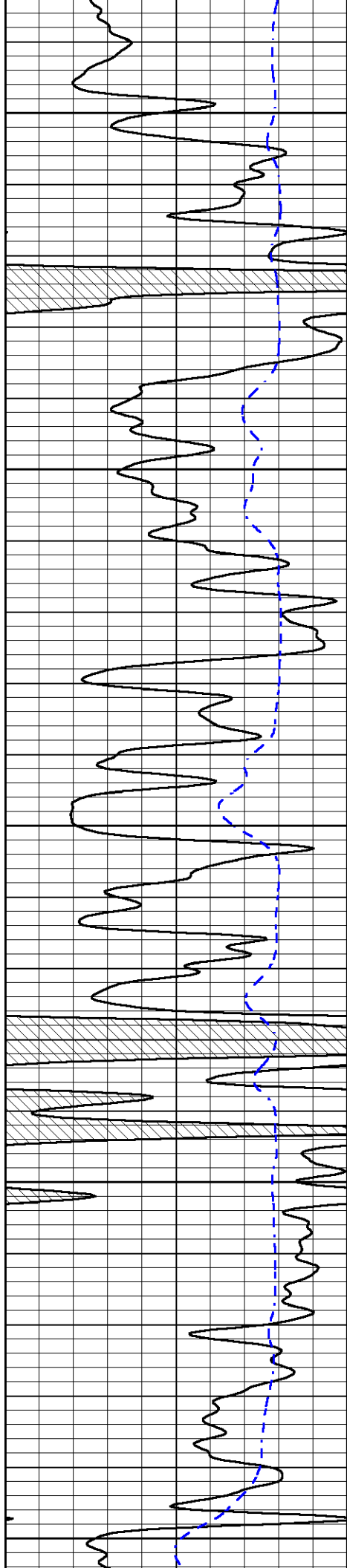
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4600

4650

4700





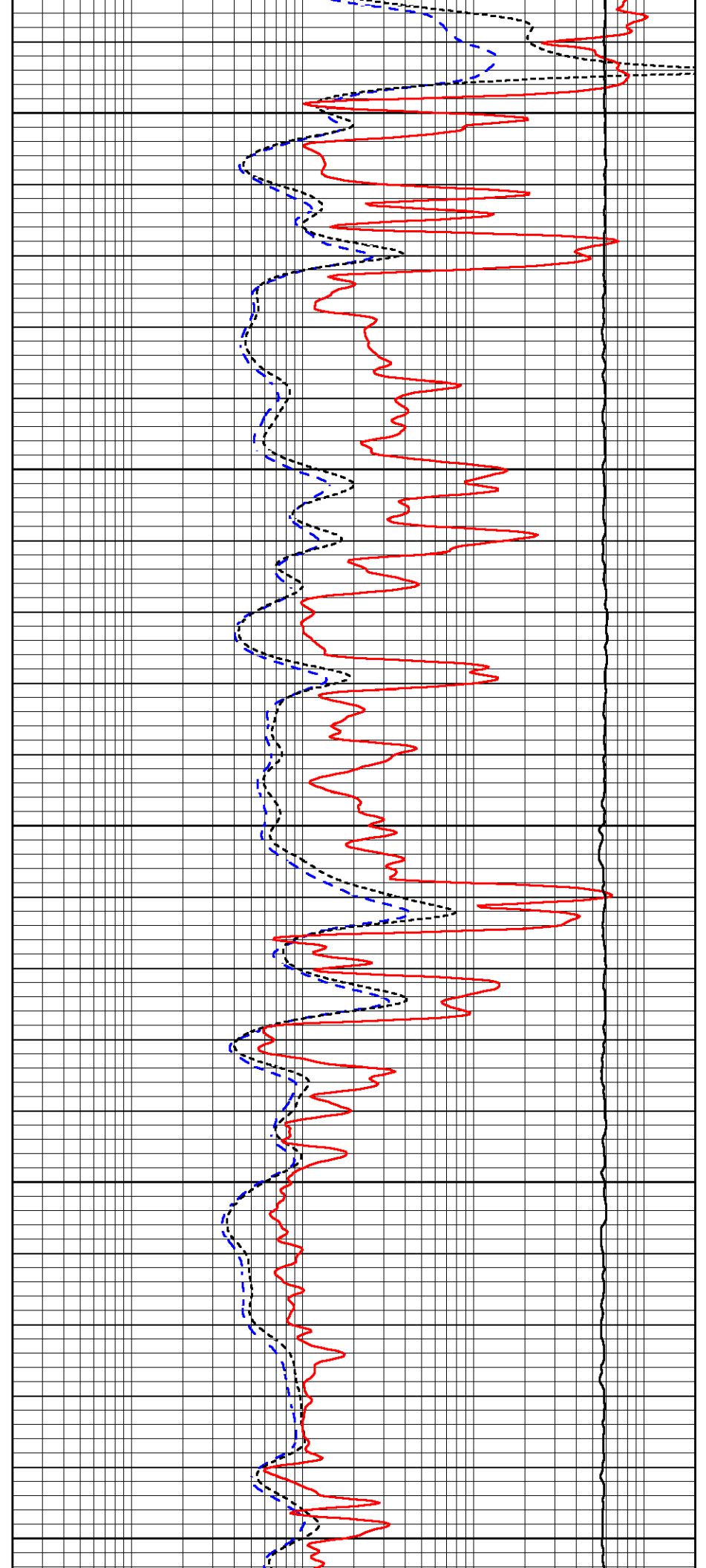
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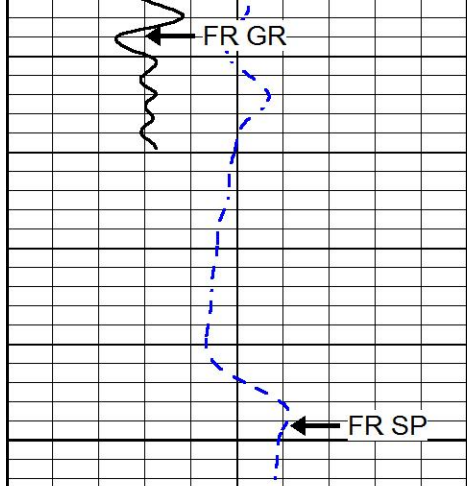
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4850

4900

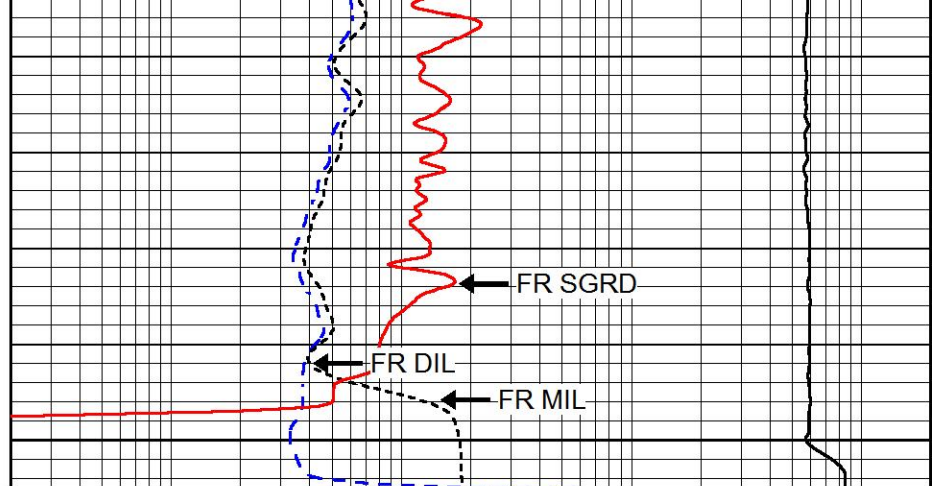
4950





5000

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

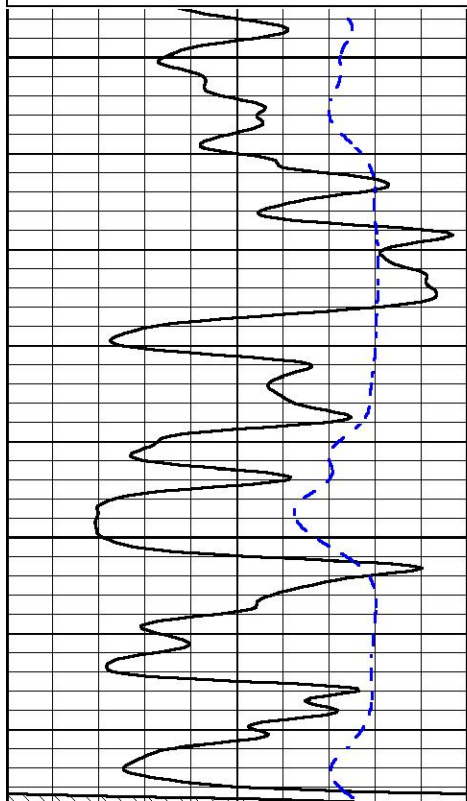


# REPEAT SECTION

Database File      brito\_four\_boys\_1\_28.db  
 Dataset Pathname    stackmic/pass2.1  
 Presentation Format    dil  
 Dataset Creation      Fri May 24 02:33:56 2019  
 Charted by            Depth in Feet scaled 1:240

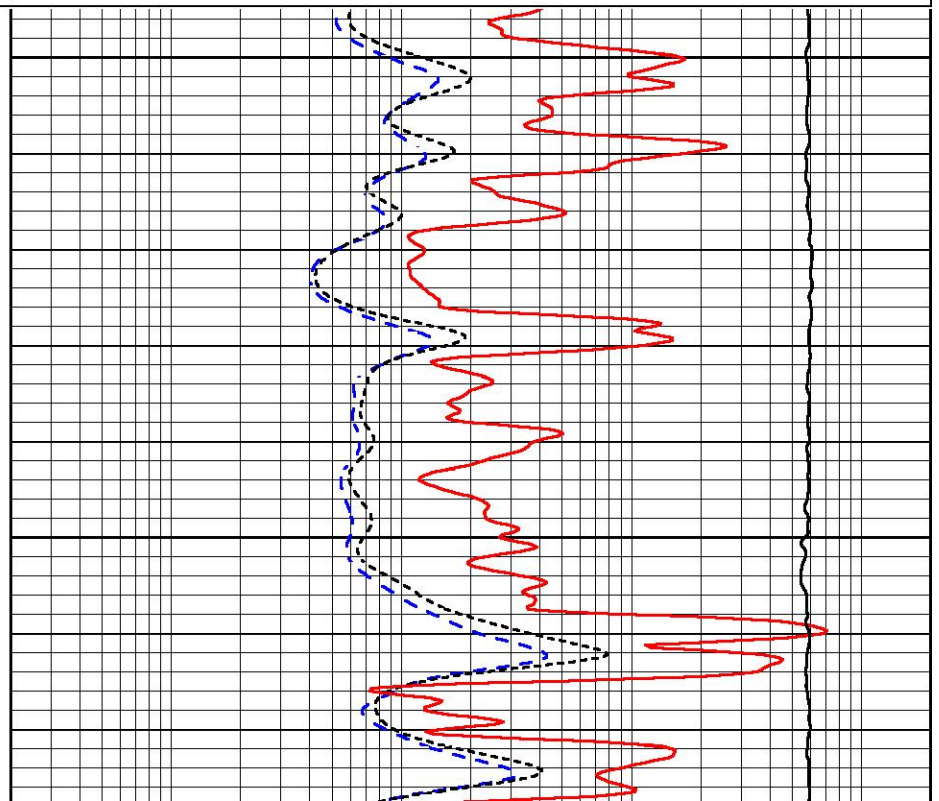
0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0

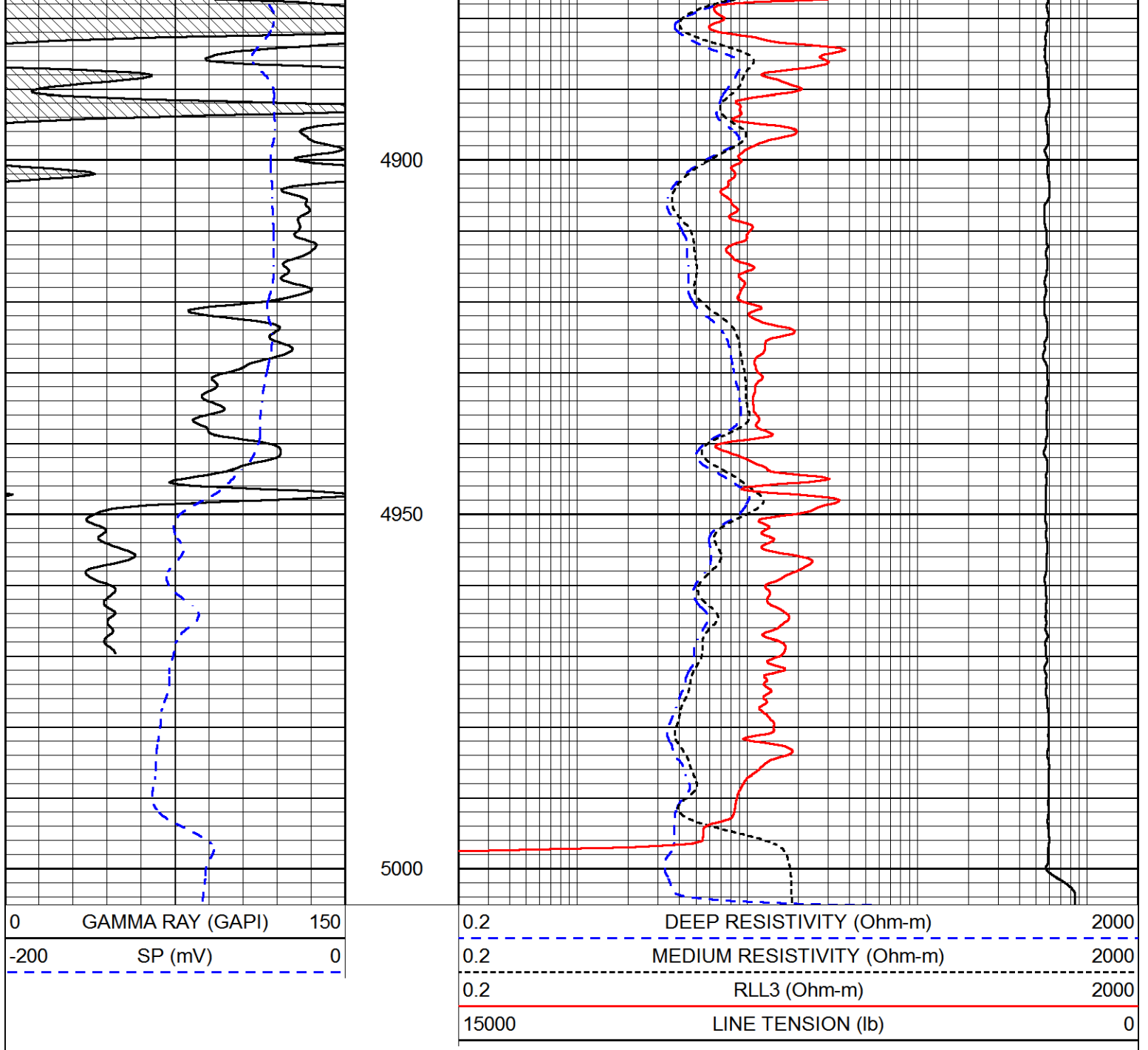
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
15000	LINE TENSION (lb)	0



4800

4850





### Calibration Report

Database File      brito\_four\_boys\_1\_28.db  
 Dataset Pathname    stackmic/pass3.1  
 Dataset Creation    Fri May 24 03:27:13 2019

### Dual Induction Calibration Report

Serial-Model:                      PSI 988-M&W  
 Calibration Performed:            Tue Nov 20 10:50:19 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-44.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-17.000

### Microlog Calibration Report

Serial-Model:  
Performed:

PSI-01-PSI STKBL ML  
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	52500.0000	-4.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	59500.0000	-3.0000
Caliper	1.0001	1.1397	6.5000	18.5000	in	86.0000	-82.3000

Compensated Density Calibration Report

Serial-Model: 144-84-M&W  
Source / Verifier: /  
Master Calibration Performed: Mon Jan 07 15:00:31 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4315.49	5309.89	cps
Aluminum	2.690	g/cc	825.26	3443.46	cps
Spine Angle = 75.33			Density/Spine Ratio = 0.547		
	Size		Reading		
Small Ring	4.00	in	0.69		
Large Ring	14.00	in	0.04		

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



**PIONEER**

Company BRITO OIL COMPANY, INC.  
Well FOUR BOYS #1-28  
Field WILDCAT  
County CHEYENNE

