



DUAL INDUCTION LOG

Company CARMEN SCHMITT, INC.
 Well HORACEK A NO.2
 Field HORACEK
 County HODGEMAN
 State KANSAS

Company CARMEN SCHMITT, INC.
 Well HORACEK A NO.2
 Field HORACEK
 County HODGEMAN State KANSAS

Location: API #: 15-083-21950-00-00
 1695' FNL & 330' FWL
 SEC 13 TWP 23S RGE 21W
 Permanent Datum GROUND LEVEL Elevation 2321'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services
 CNL/CDL
 MEL
 Elevation
 K.B. 2331'
 D.F. N/A
 G.L. 2321'

Date	6/29/2018
Run Number	ONE
Depth Driller	4594'
Depth Logger	4590'
Bottom Logged Interval	4589'
Top Log Interval	200'
Casing Driller	8.625" @ 223'
Casing Logger	222'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	8700
Density / Viscosity	9.3 63
pH / Fluid Loss	9.5 12.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.60 @ 74
Rmt @ Meas. Temp	.45 @ 74
Rmc @ Meas. Temp	.81 @ 74
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.36 @ 122
Operating Rig Time	3 HOURS
Max Rec. Temp. F	122 DEGF
Equipment Number	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.

ROZEL KANSAS
 WEST TO 340 RD, 10 SOUTH, 4 WEST, 1/2 NORTH, EAST INTO

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: J. HENRICKSON
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

Primary Witness: BRAD RINE
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\carmen_schmitt_horacek_a_2.db
 Dataset field/well/stackml/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	122	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	25	-4	0	99	Off	4590

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 (979-229)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

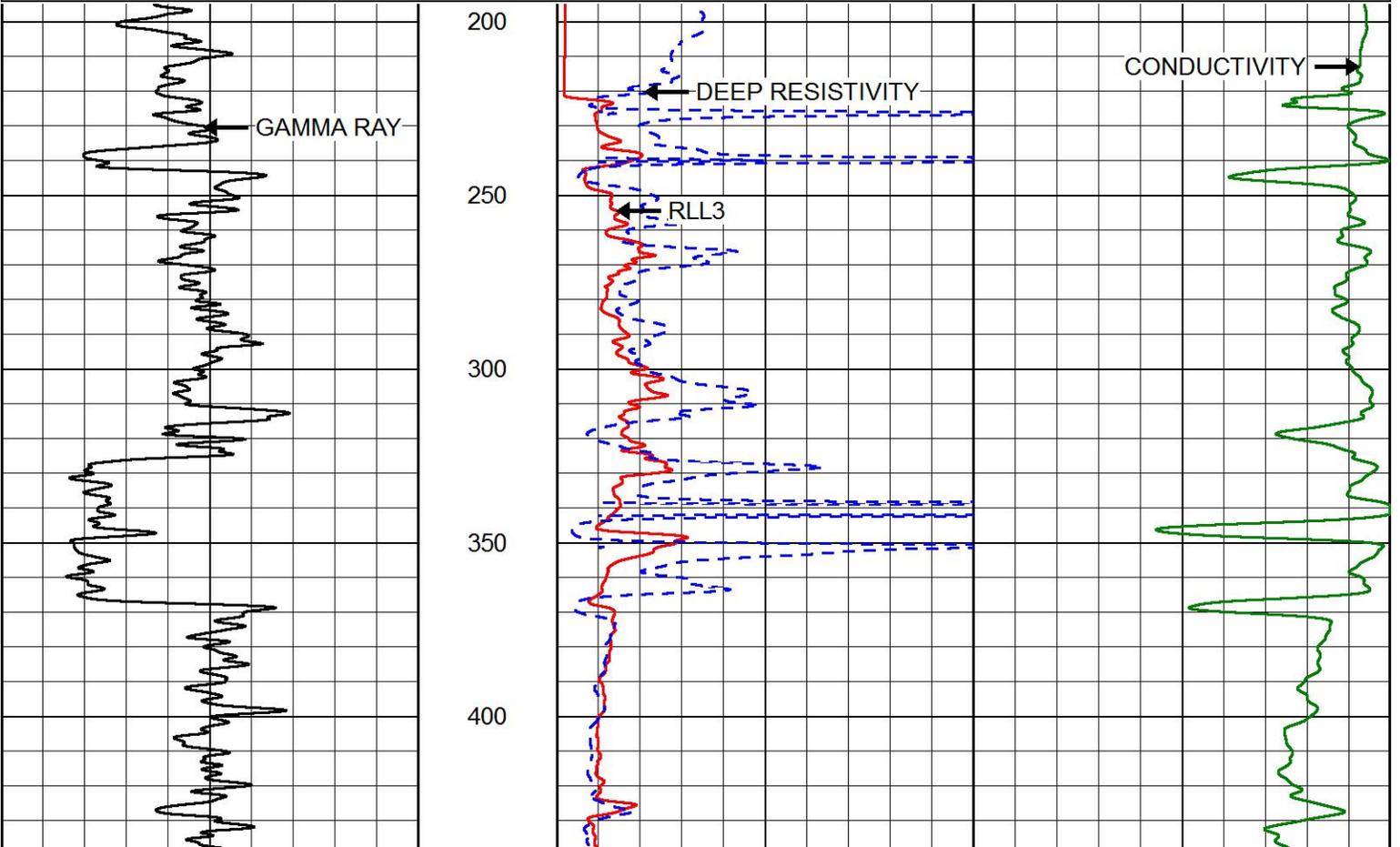
Dataset: carmen_schmitt_horacek_a_2.db: field/well/stackml/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

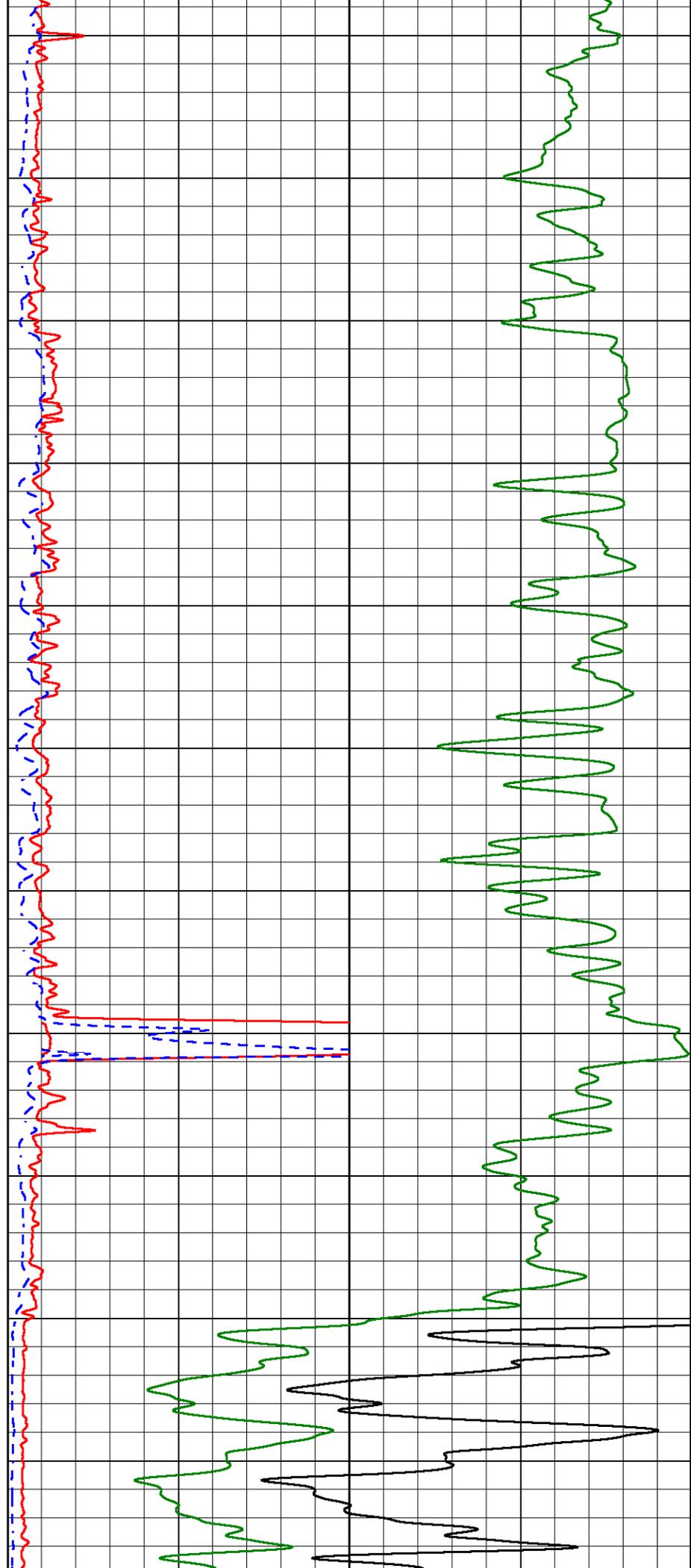
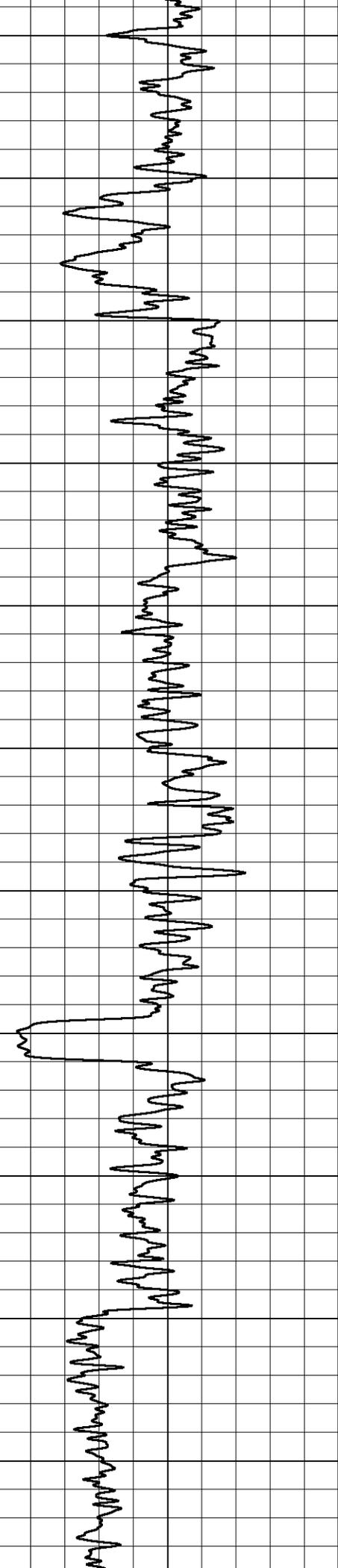


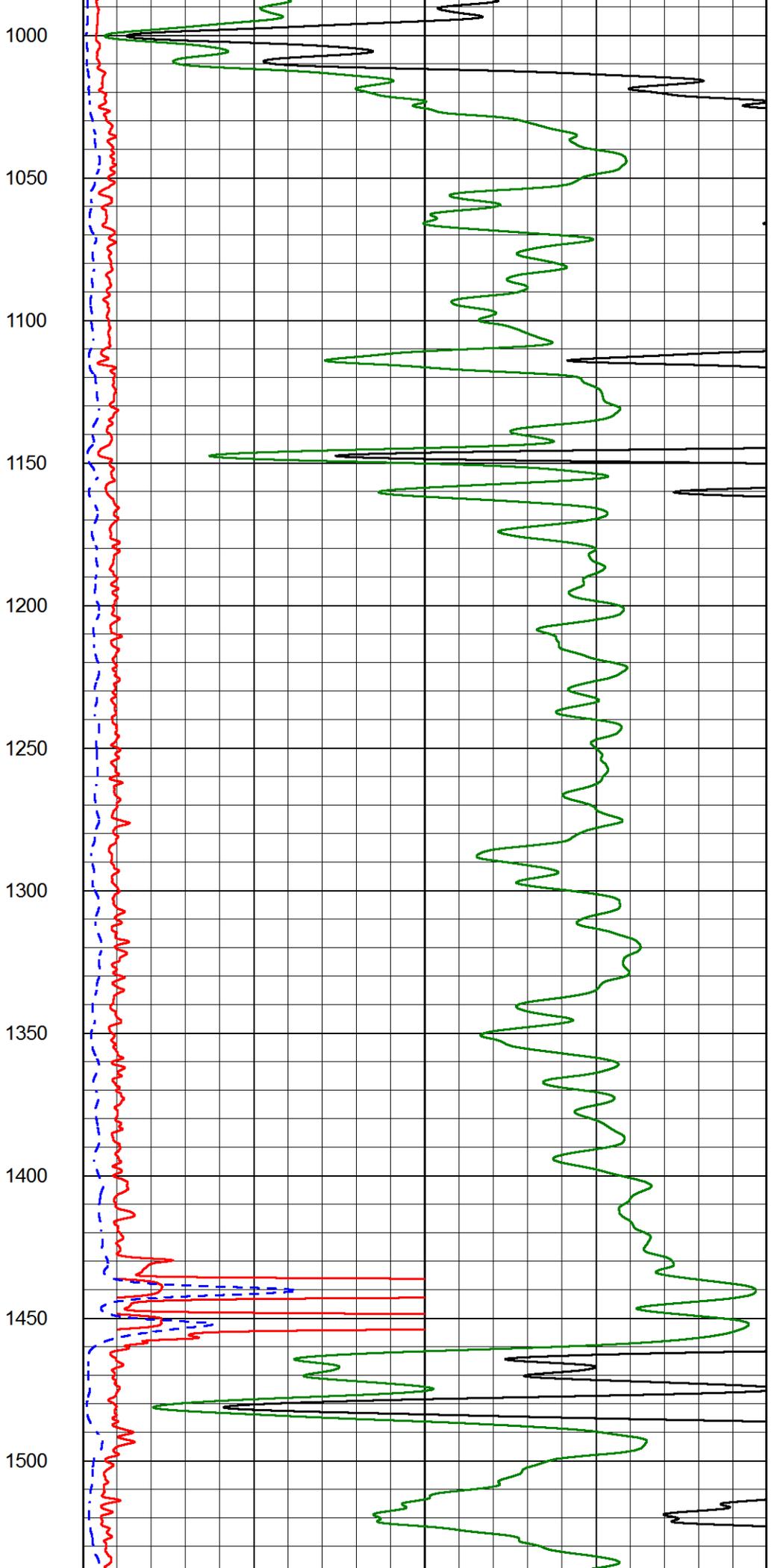
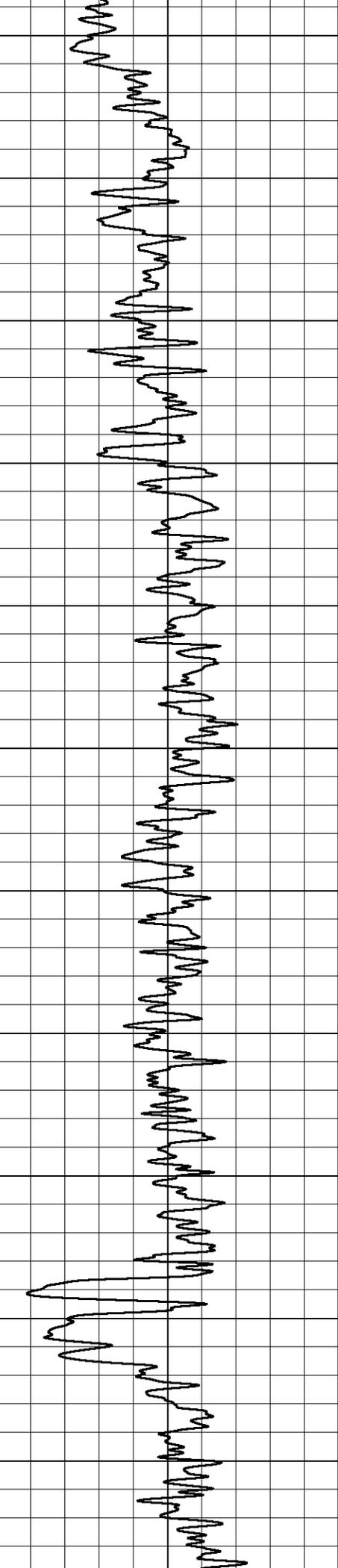
MAIN PASS

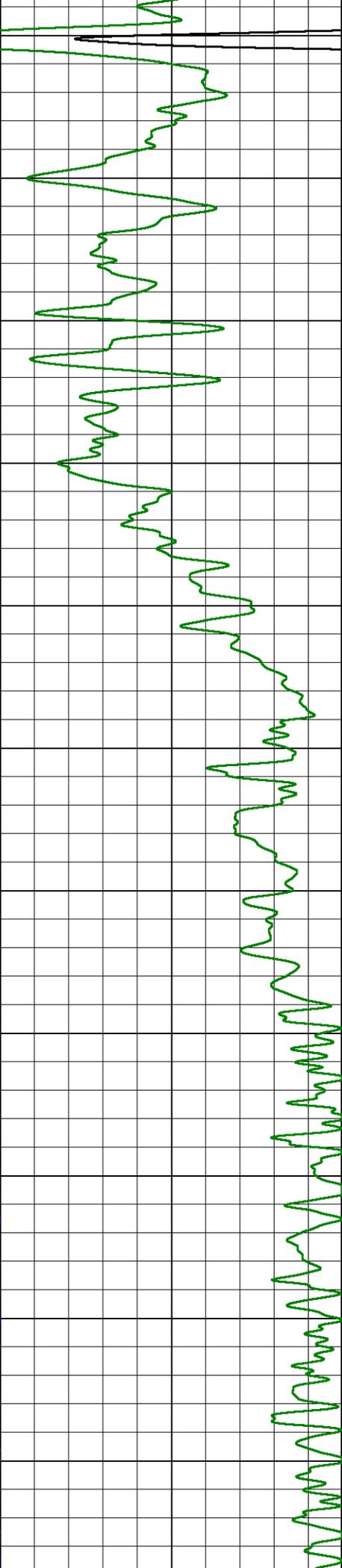
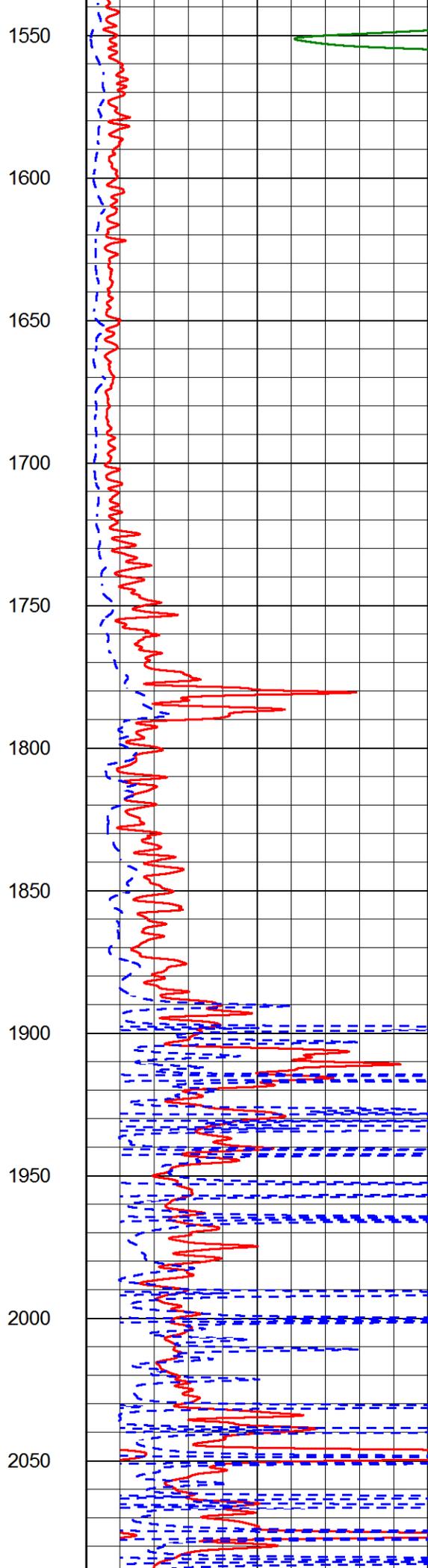
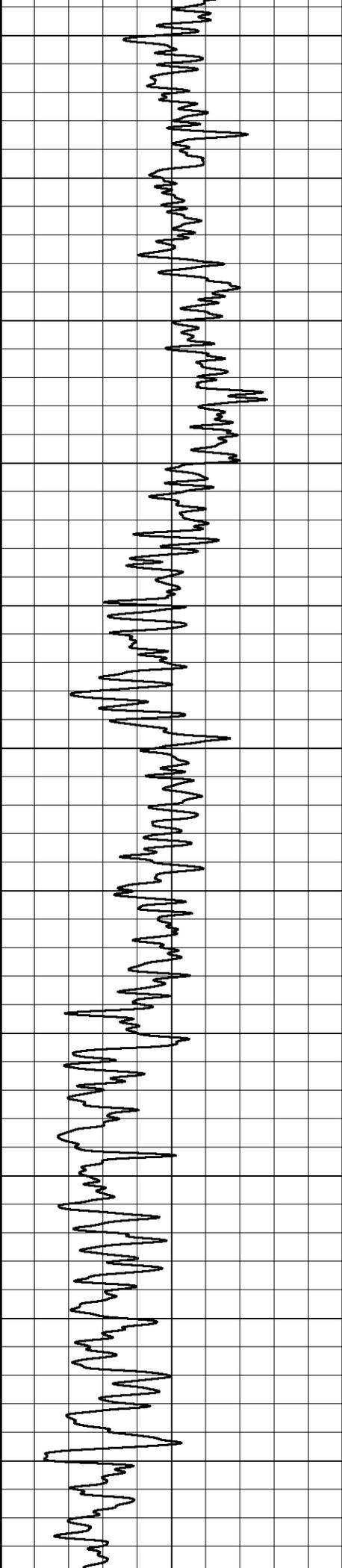
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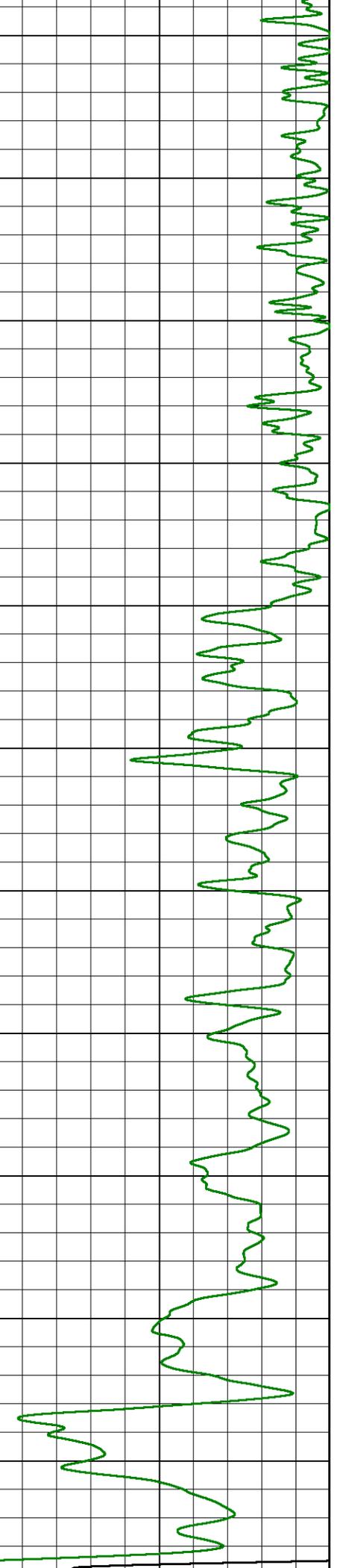
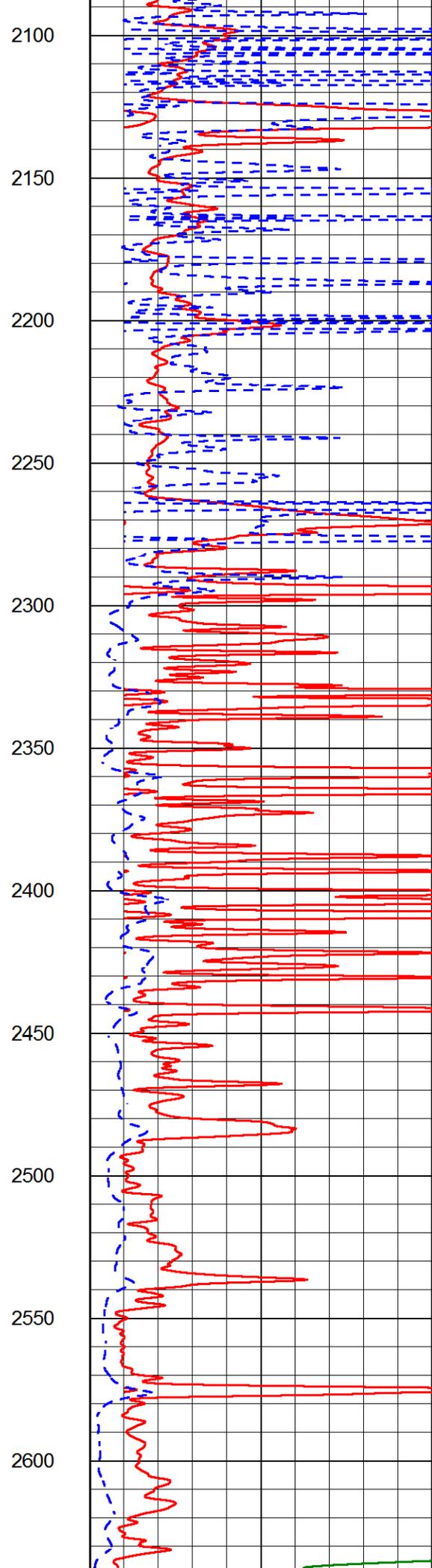
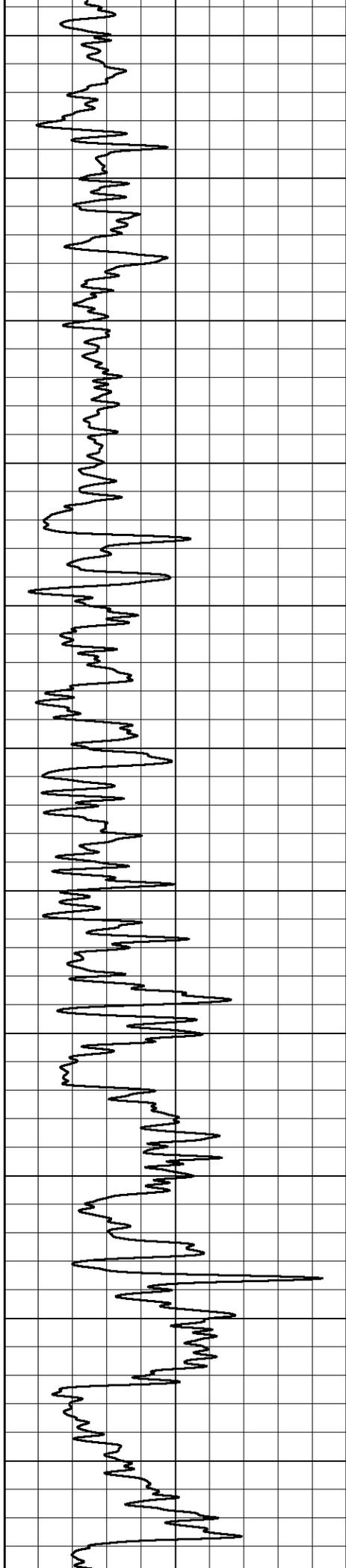
0	GAMMA RAY (GAPI)	150	2000	CONDUCTIVITY (mmho/m)	0
			0	RLL3 (Ohm-m)	50
			0	DEEP RESISTIVITY (Ohm-m)	50
			50	RLL3 (Ohm-m)	500
				DEEP RESISTIVITY	
			50	(Ohm-m)	500

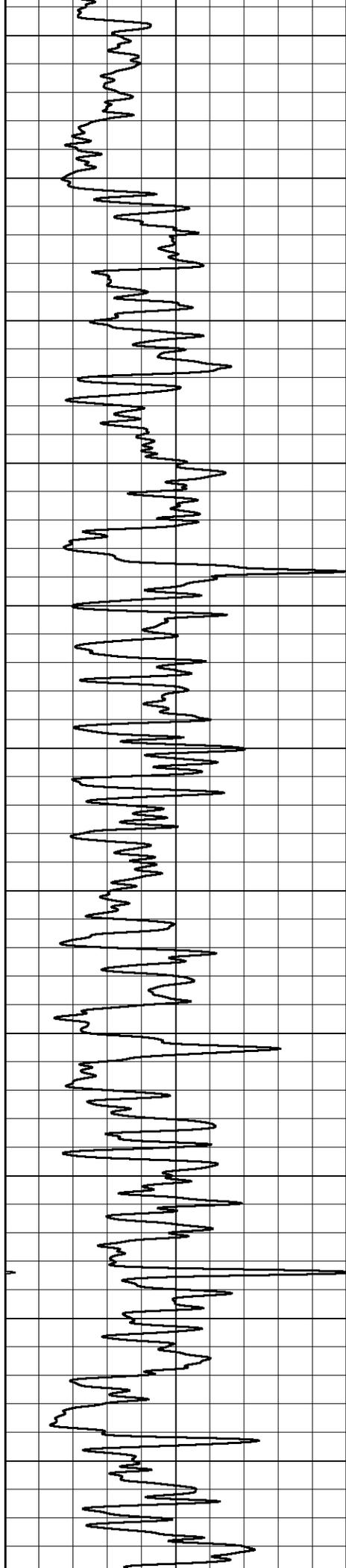




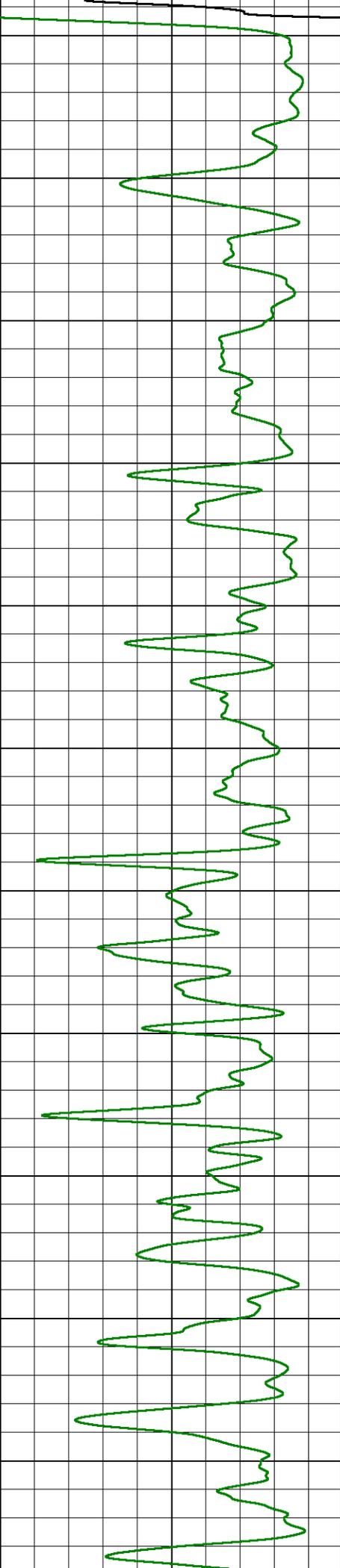
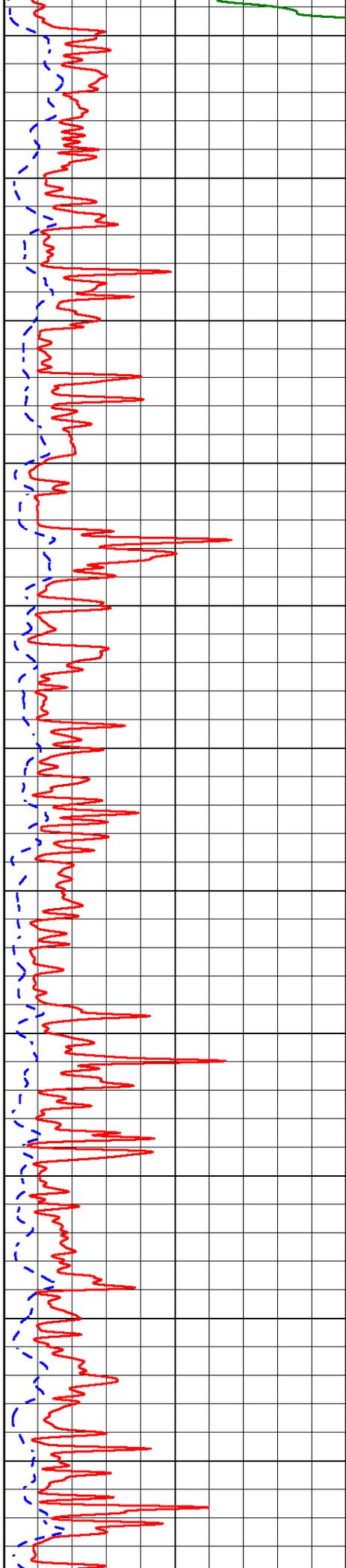


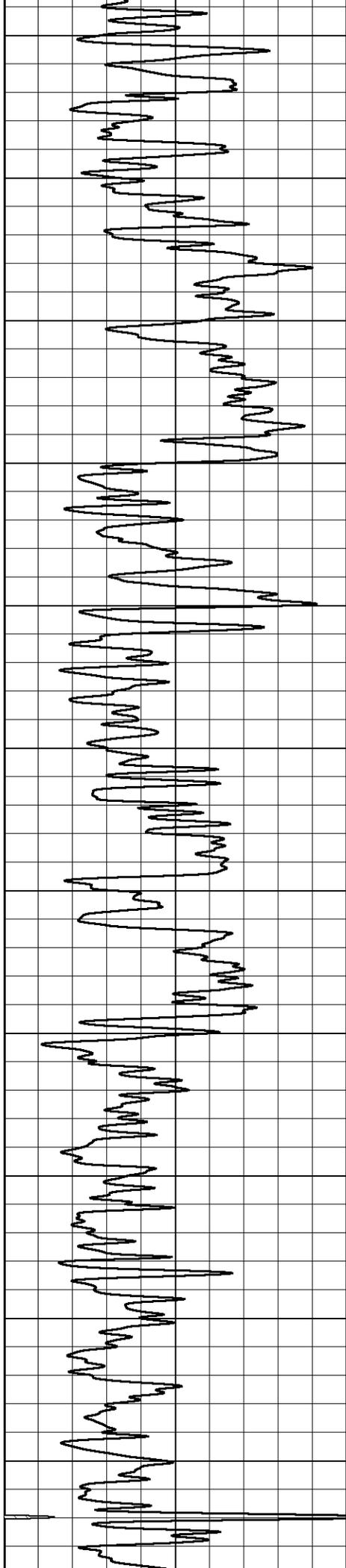






2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150





3200

3250

3300

3350

3400

3450

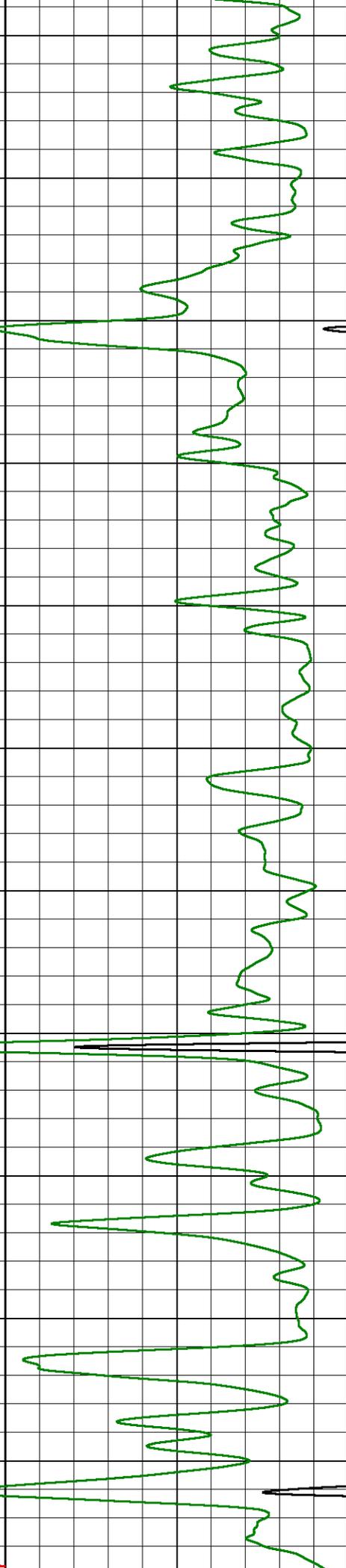
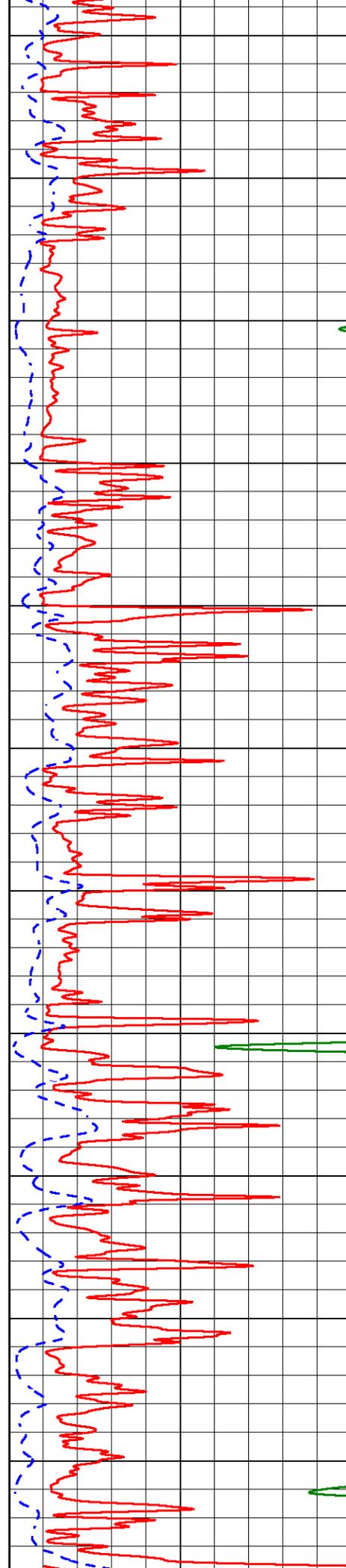
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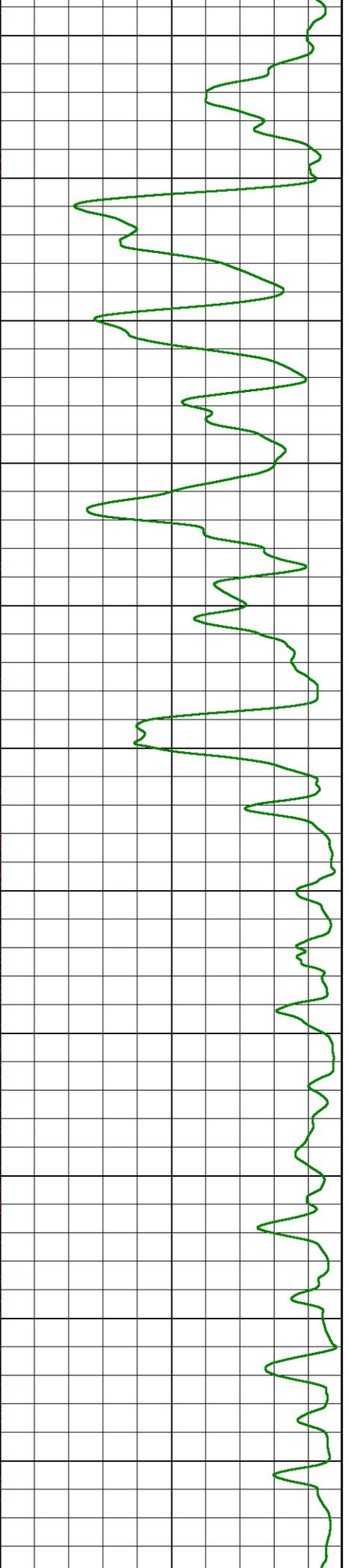
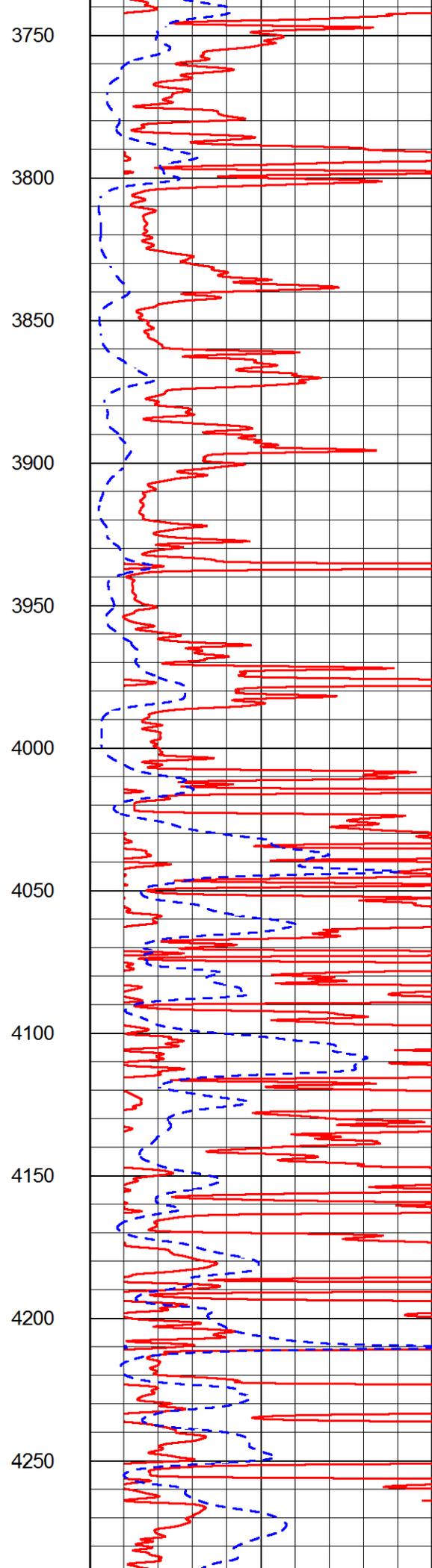
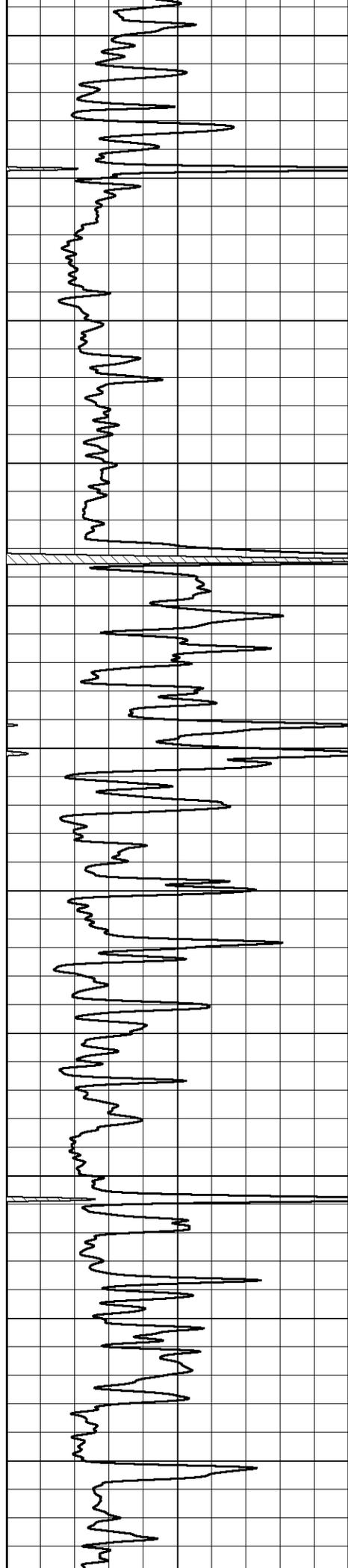
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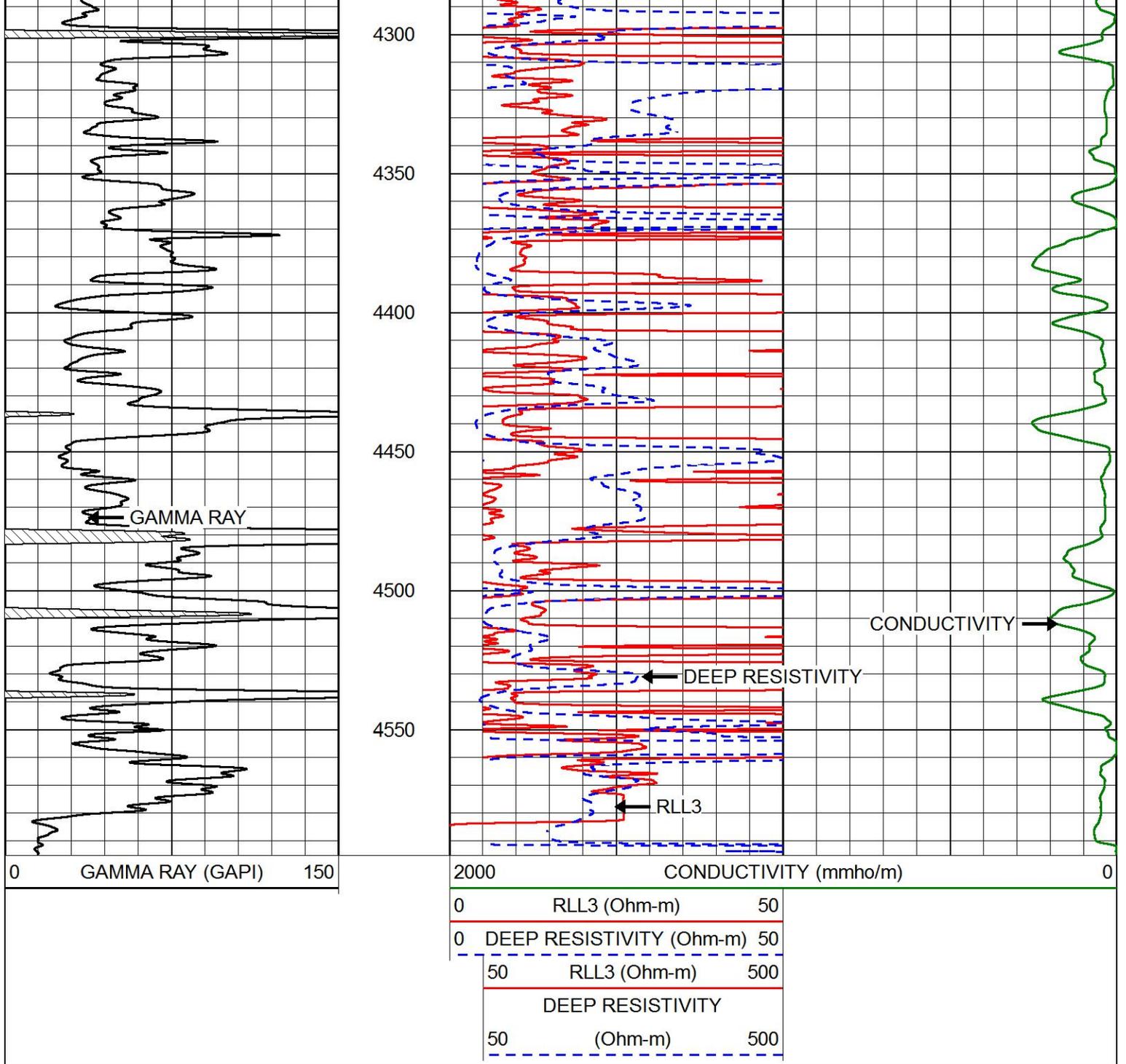
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3650

3700



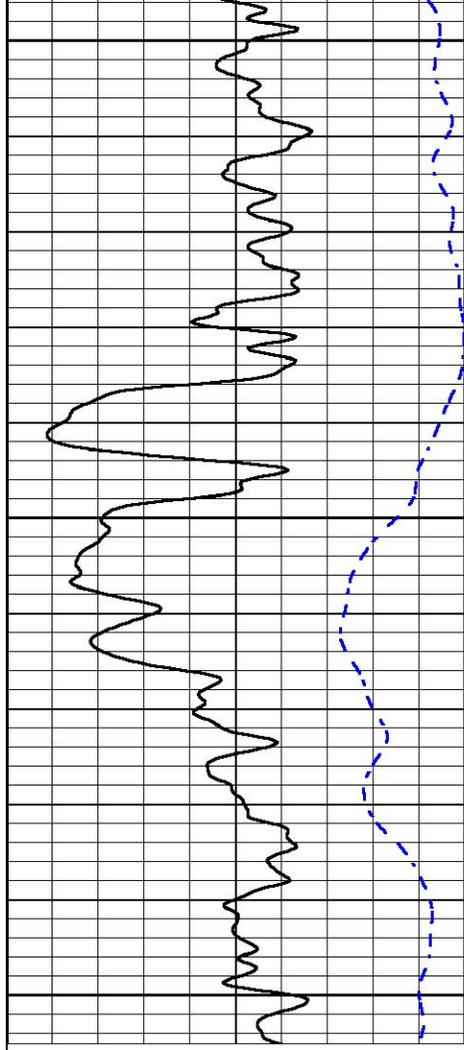




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 Presentation Format dil
 Dataset Creation Fri Jun 29 12:49:41 2018
 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	DEEP RESISTIVITY (Ohm-m)	2000
-200	SP (mV)	0	0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
			0.2	RLL3 (Ohm-m)	2000
			15000	LINE TENSION (lb)	0

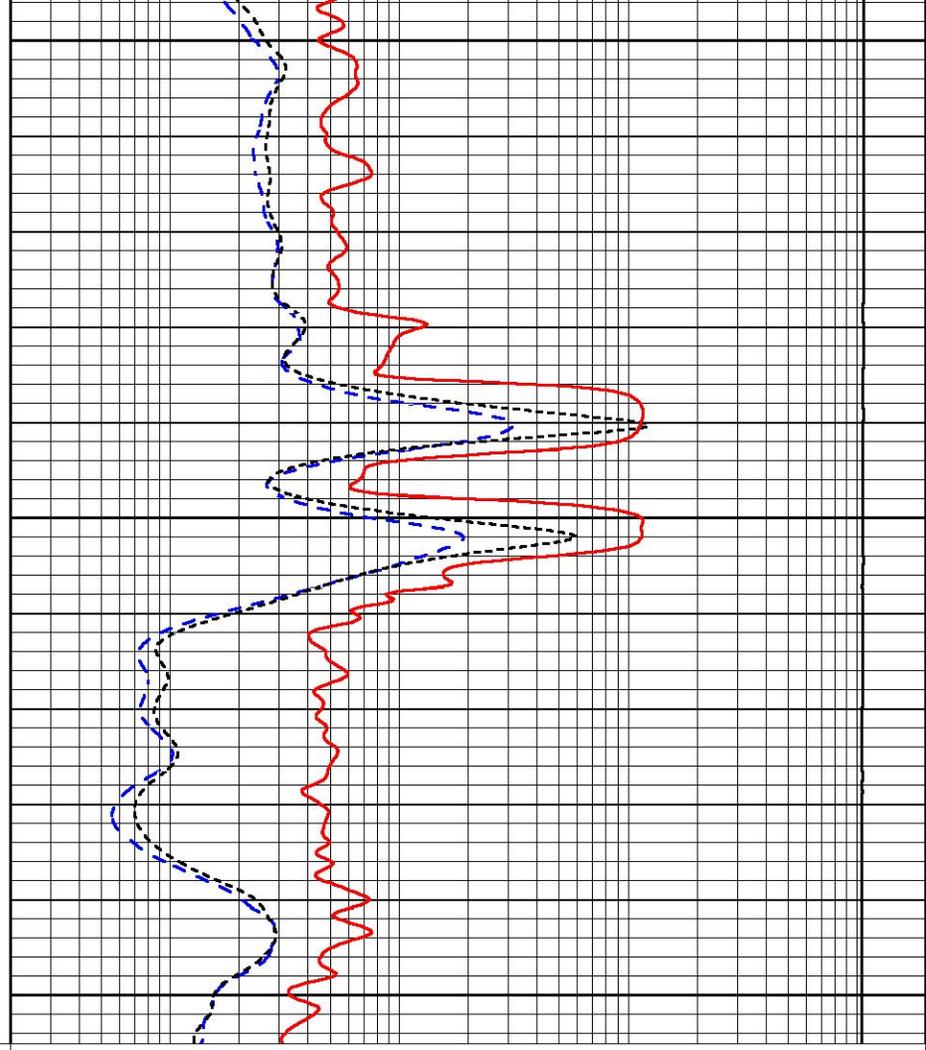


1400

1450

1500

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

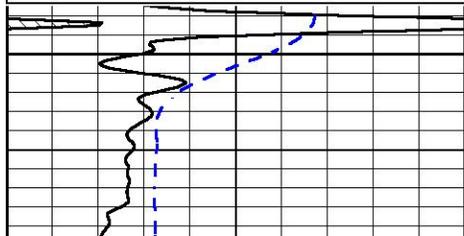


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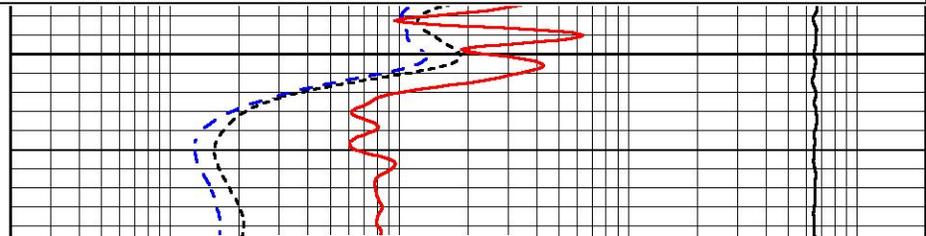
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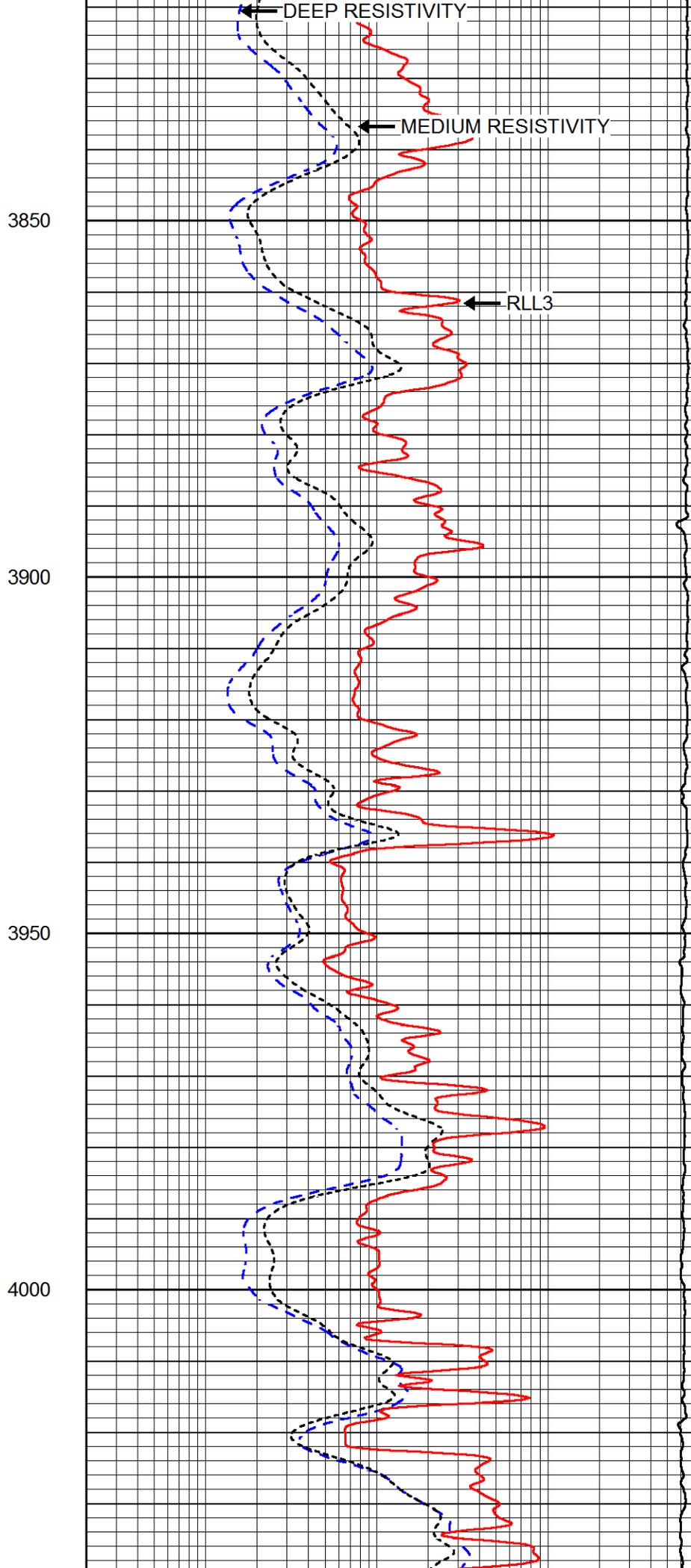
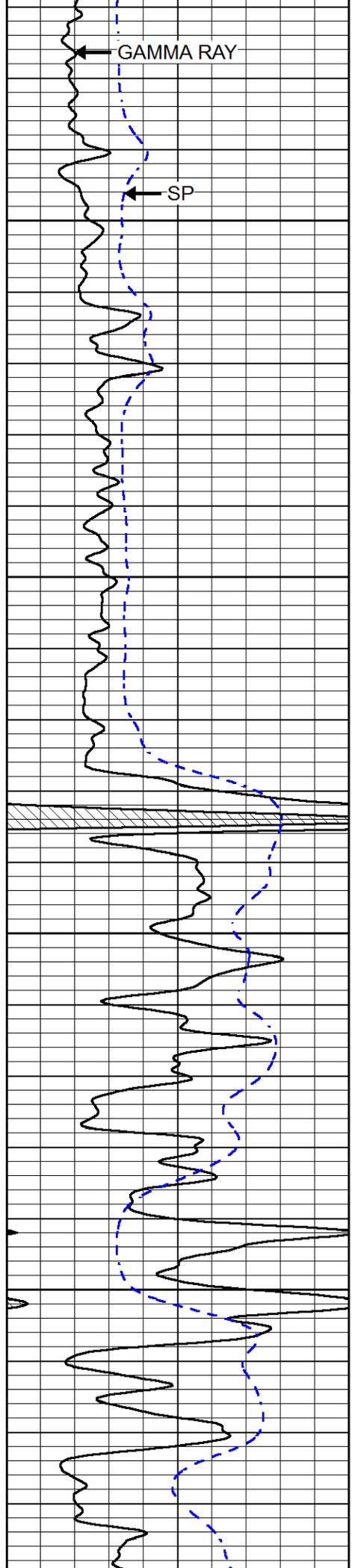
0 GAMMA RAY (GAPI) 150
 -200 SP (mV) 0

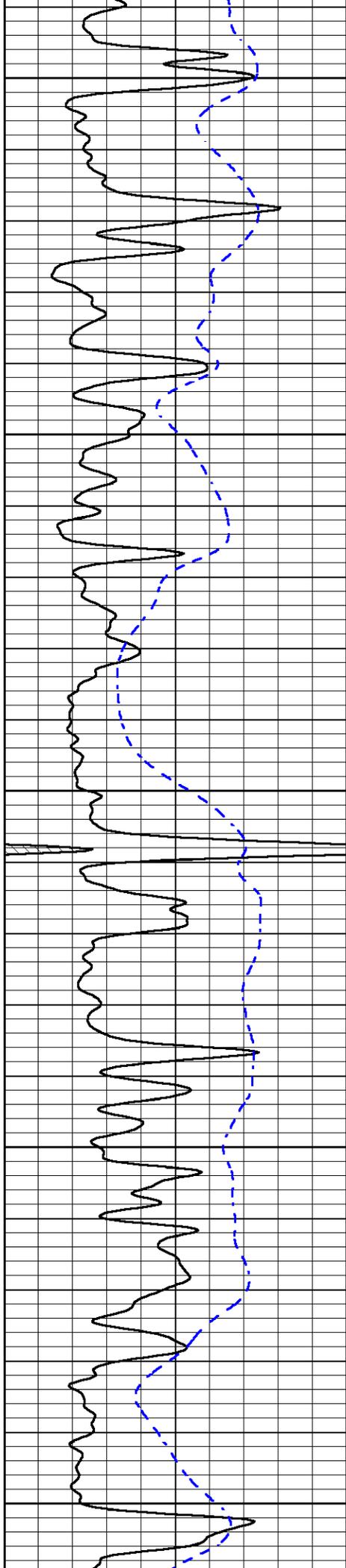
0.2 DEEP RESISTIVITY (Ohm-m) 2000
 0.2 MEDIUM RESISTIVITY (Ohm-m) 2000
 0.2 RLL3 (Ohm-m) 2000
 15000 LINE TENSION (lb) 0



3800







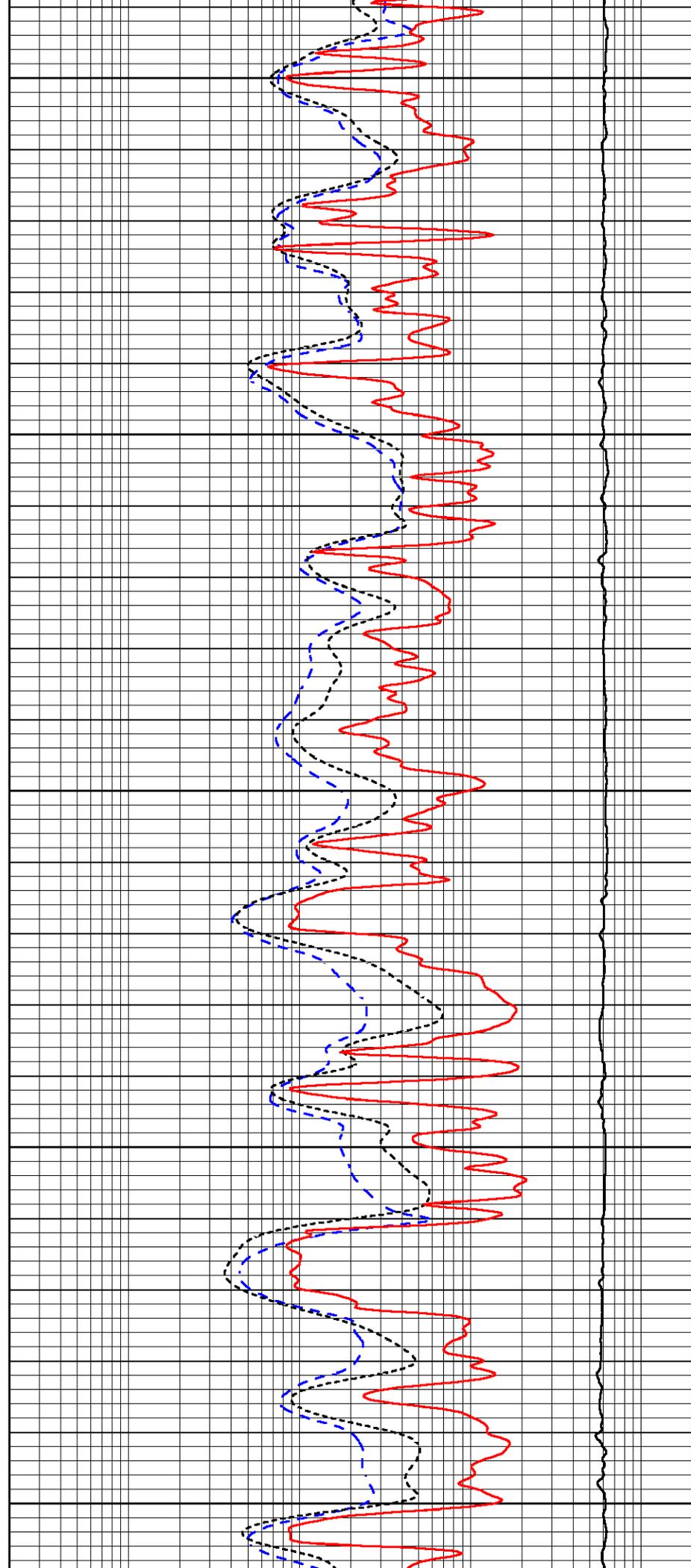
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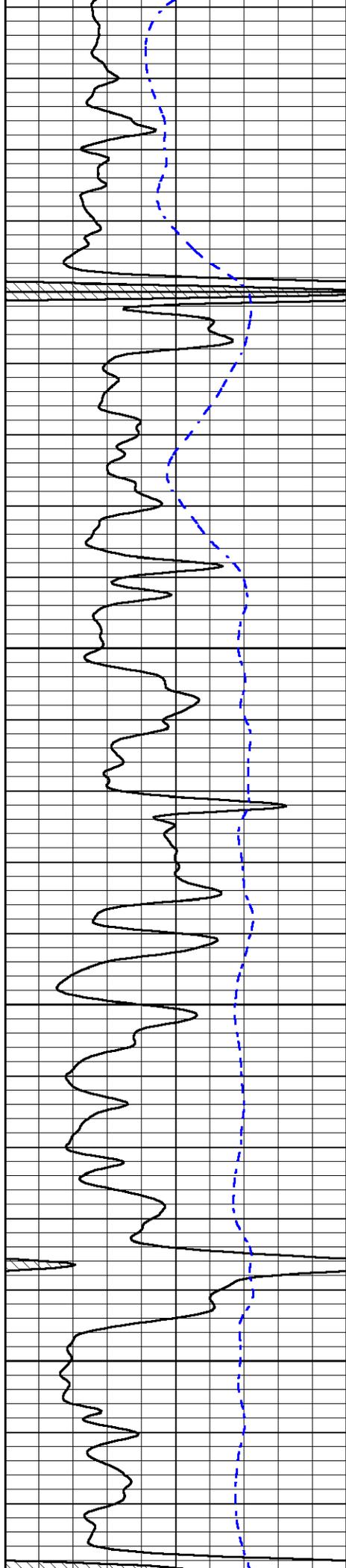
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4150

4200

4250



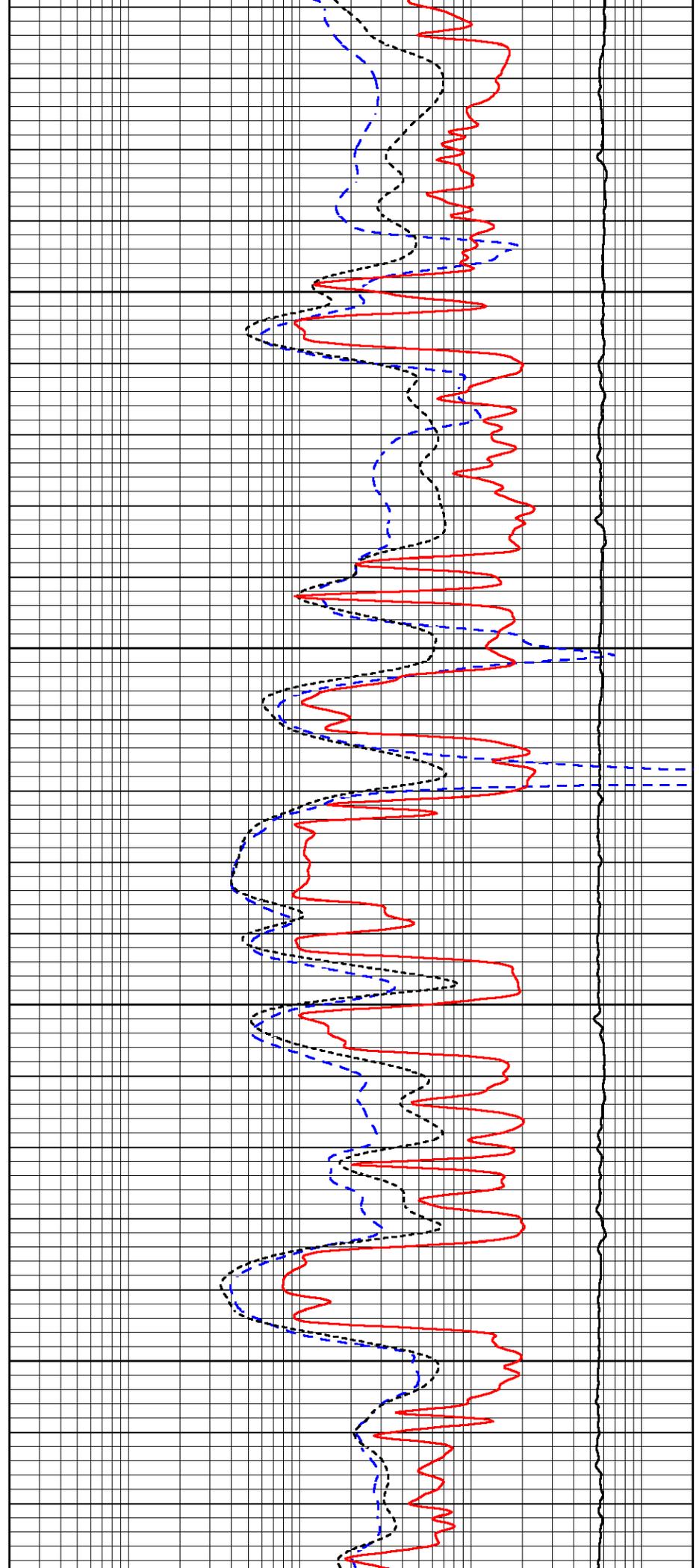


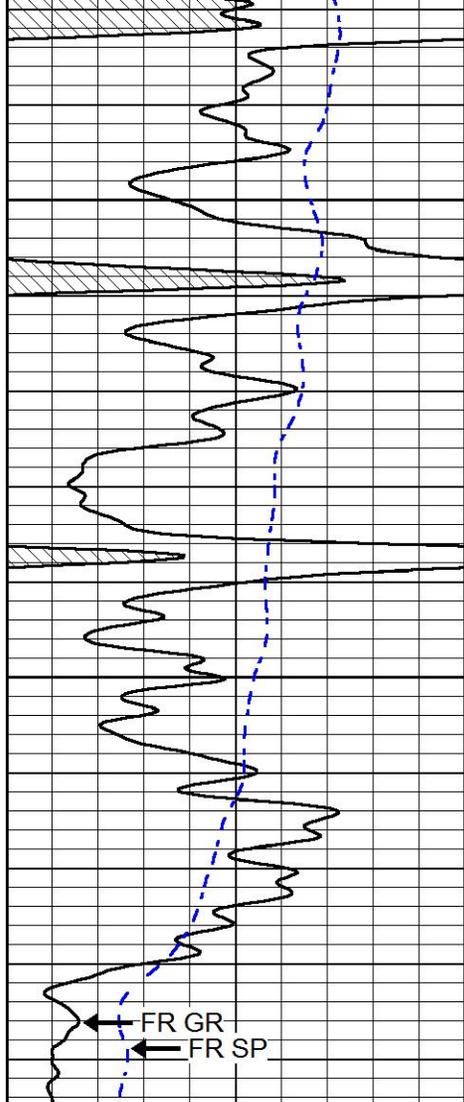
4300

4350

4400

4450

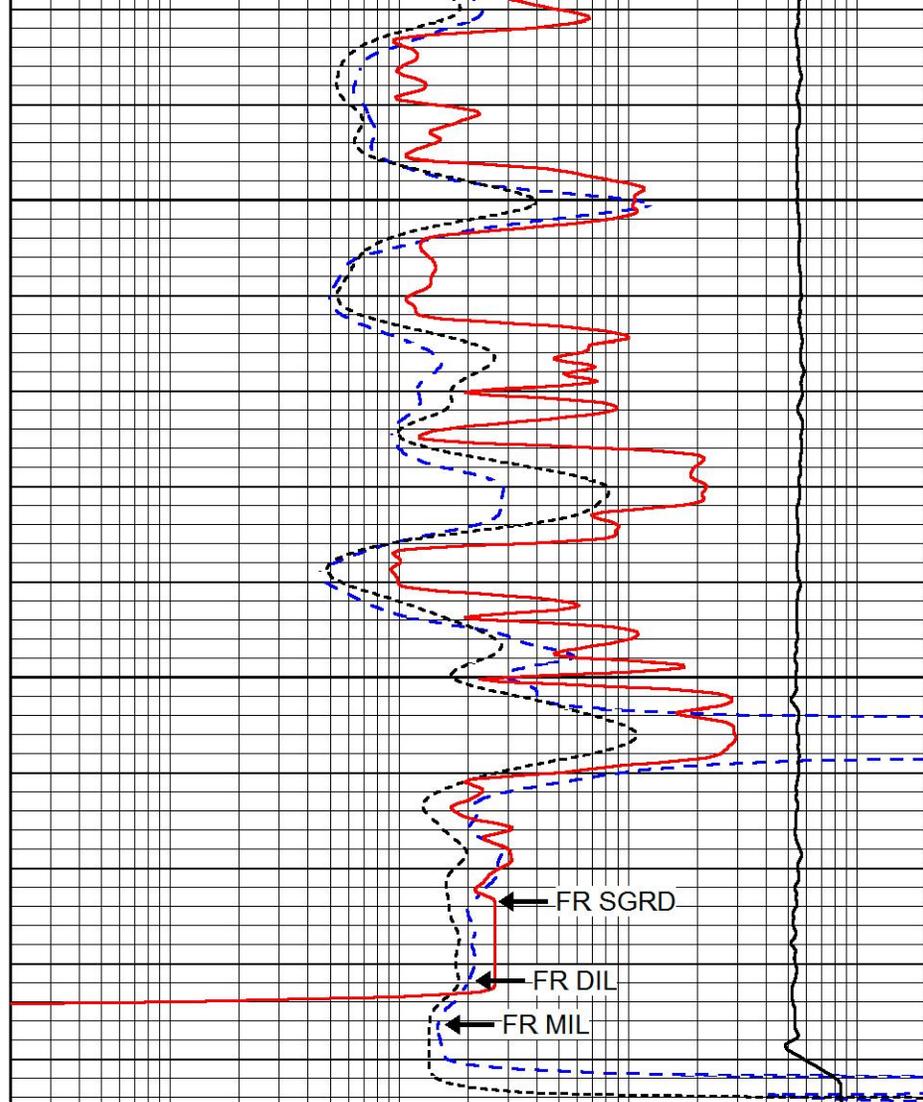




4500

4550

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

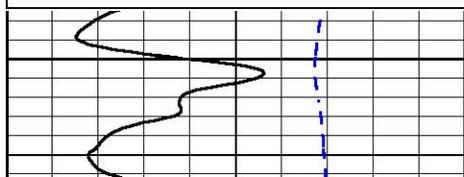


REPEAT SECTION

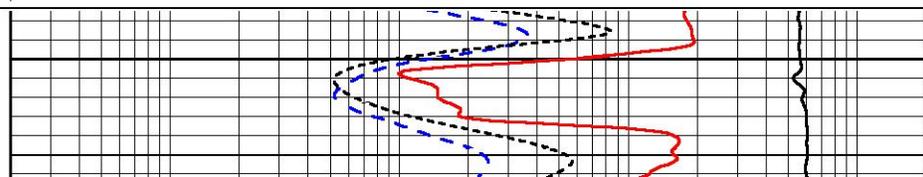
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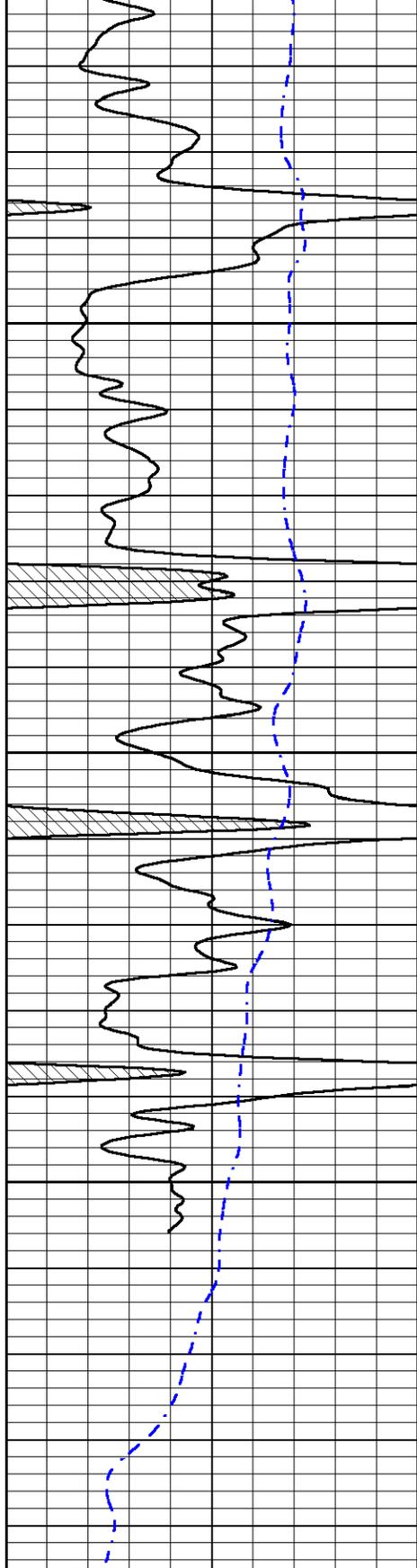
0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0

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



4400



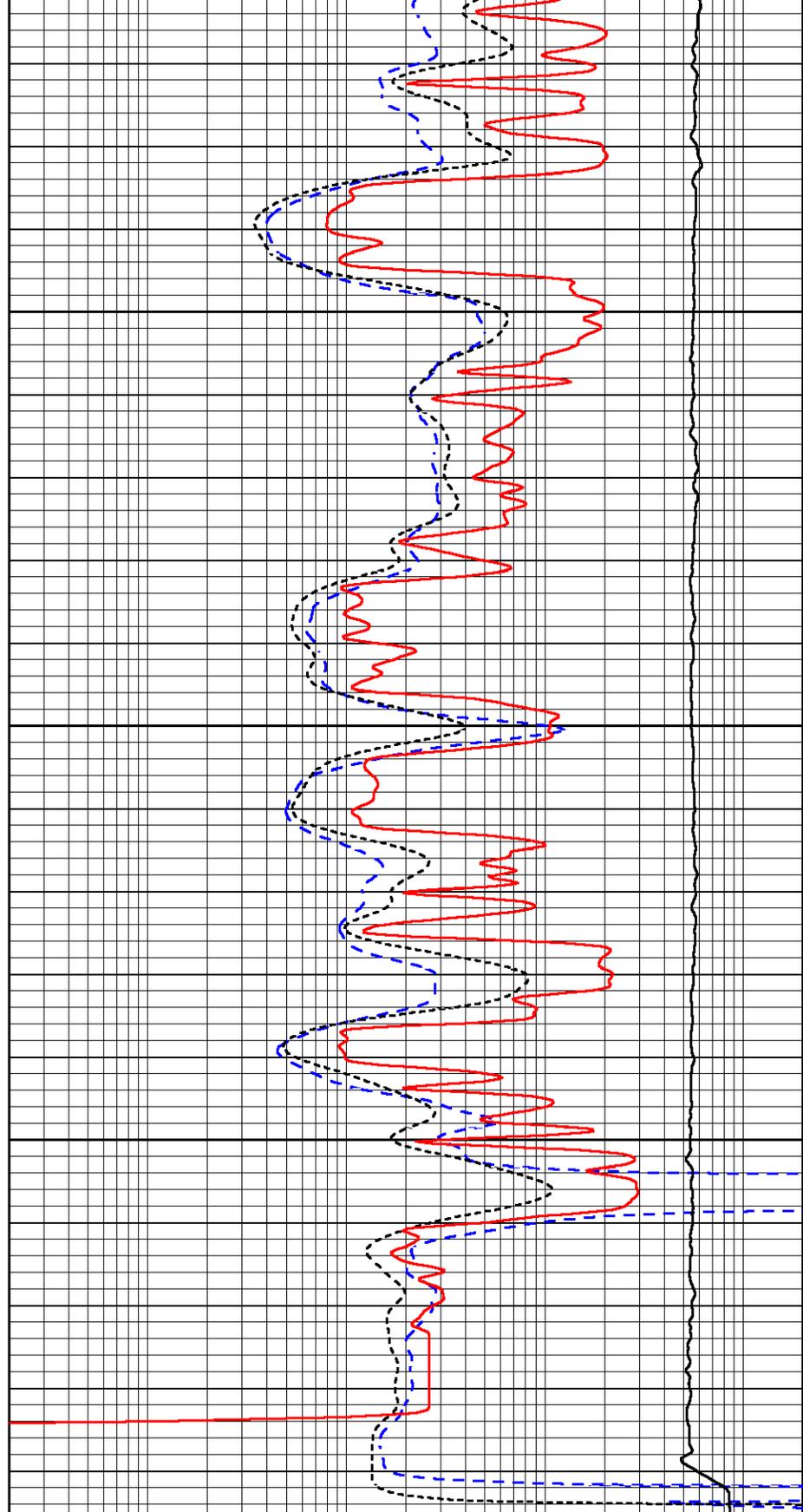


4450

4500

4550

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

Calibration Report

Database File carmen_schmitt_horacek_a_2.db
 Dataset Pathname stackml/pass3.1

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	52500.0000	0.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	62500.0000	0.0000
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	2.675	g/cc	1442.93	6391.03	cps
Spine Angle = 75.35			Density/Spine Ratio = 0.530		
	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



PIONEER

Pioneer Energy Services

Company	CARMEN SCHMITT, INC.
Well	HORACEK A NO.2
Field	HORACEK
County	HODGEMAN
State	KANSAS