



Weatherford

**COMPENSATED DENSITY
COMPENSATED NEUTRON
LOG**

COMPANY

KINDER MORGAN C02 Co. L.P

WELL

YG-1

FIELD

McELMO DOME

PROVINCE/COUNTY

MONTEZUMA

COUNTRY/STATE

U.S.A. / COLORADO

LOCATION

SHL: 1796' FNL & 1915' FEL



SEC

14

TWP
37N

RGE
18W

Other Services
MDL/MMR

CMI

API Number

05-033-06697

SGS

CXD

Permit Number

Permanent Datum GL, Elevation 6661 feet

Log Measured From KB

Drilling Measured From KB

Date

29-SEP-2012

Elevations:
KB 6686.00
DF 6686.00
GL 6661.00

Run Number

1

Depth Driller

8200.00

feet

Depth Logger

8200.00

feet

First Reading

8197.00

feet

Last Reading

8026.00

feet

Casing Driller

8045.00

feet

Casing Logger

8026.00

feet

Bit Size

6.000

inches

Hole Fluid Type

H2O

Density / Viscosity

8.30 g/cc

PH / Fluid Loss

8.70

Sample Source

PIT

Rm @ Measured Temp

4.71 @ 62.0

ohm-m

Rmf @ Measured Temp

3.76 @ 62.0

ohm-m

Rmc @ Measured Temp

5.65 @ 61.0

ohm-m

Source Rmf / Rmc

CAL

CAL

Rm @ BHT

2.02 @ 148.0

ohm-m

Time Since Circulation

8 HOURS

Max Recorded Temp

148.00

deg F

Equipment Name

COMPACT

Equipment / Base

13038

GJ/CO

Recorded By

M.RICHINS

Witnessed By

E.NUCKOLS

COMPANY REP

D.RYAN

BOREHOLE RECORD

Last Edited: 30-SEP-2012 14:52

Bit Size
inches

6.000

Depth From
feet

8026.00

Depth To
feet

8200.00

CASING RECORD

Type

Size
inches

7.000

Depth From
feet

0.00

Shoe Depth
feet

8026.00

Weight
pounds/ft

29.00

INTERMEA

REMARKS

TOOLS RAN IN FOUR SEPERATE RUNS:

1ST RUN: MBE, MBE, SHA, MCG, MUG, MLE, MMR

2ND RUN: SHA, MCG, SGS, MIS-D, MDN, MPD

3ND RUN: SHA, MCG, MIM, MIE

4RD RUN: SHA, MCG, MBN, MDM, MRD, MTD

MICRORESISTIVITY PAD FAILED WHILE RUNNING IN HOLE. CALIPER DATA PRESENTED.

HARDWARE: MDN: DUAL NEUTRON BOWSPRING USED.

MPD: 8 INCH PROFILE PLATE USED.

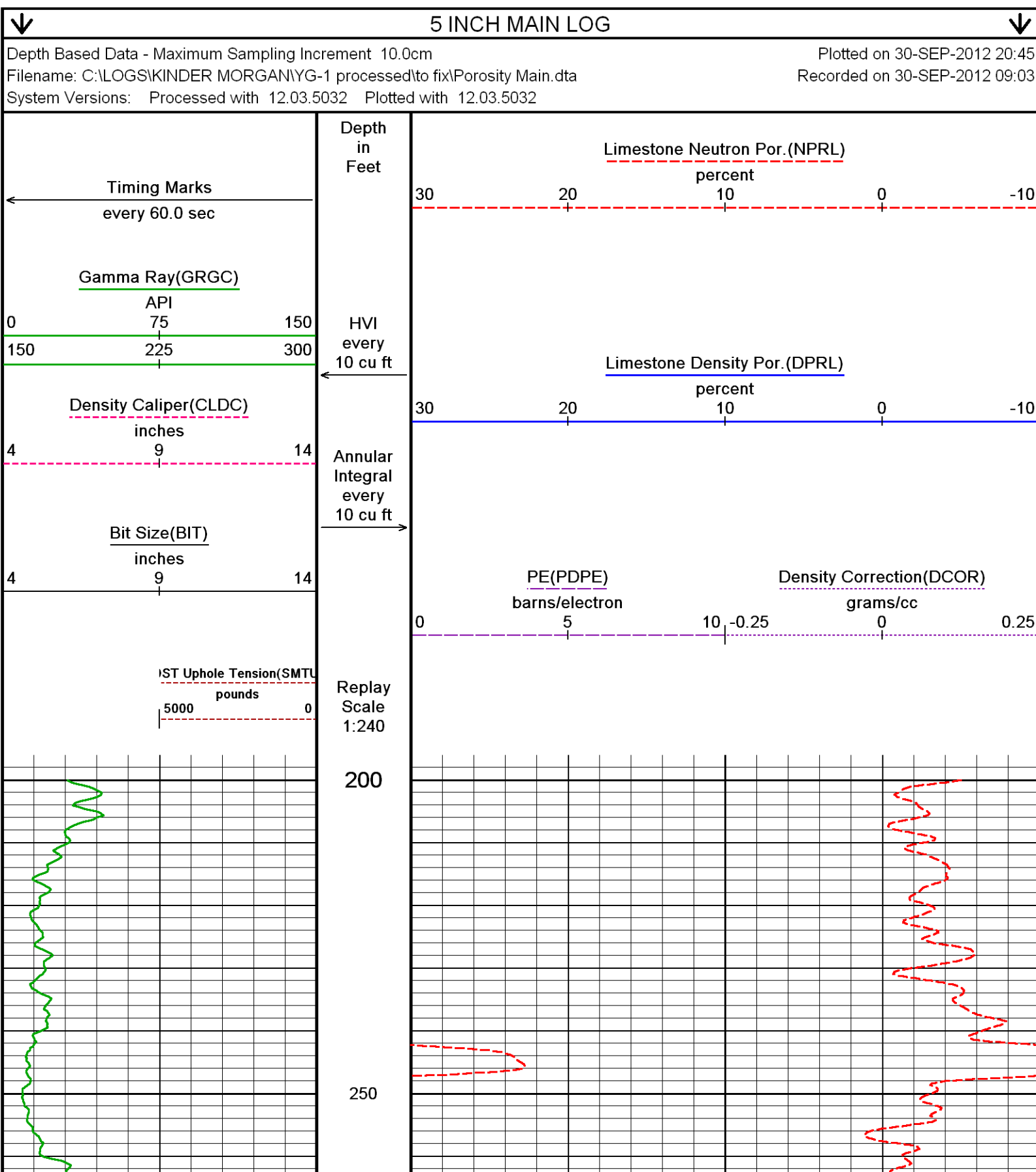
MDL: TWO 1 INCH STANDOFFS USED.

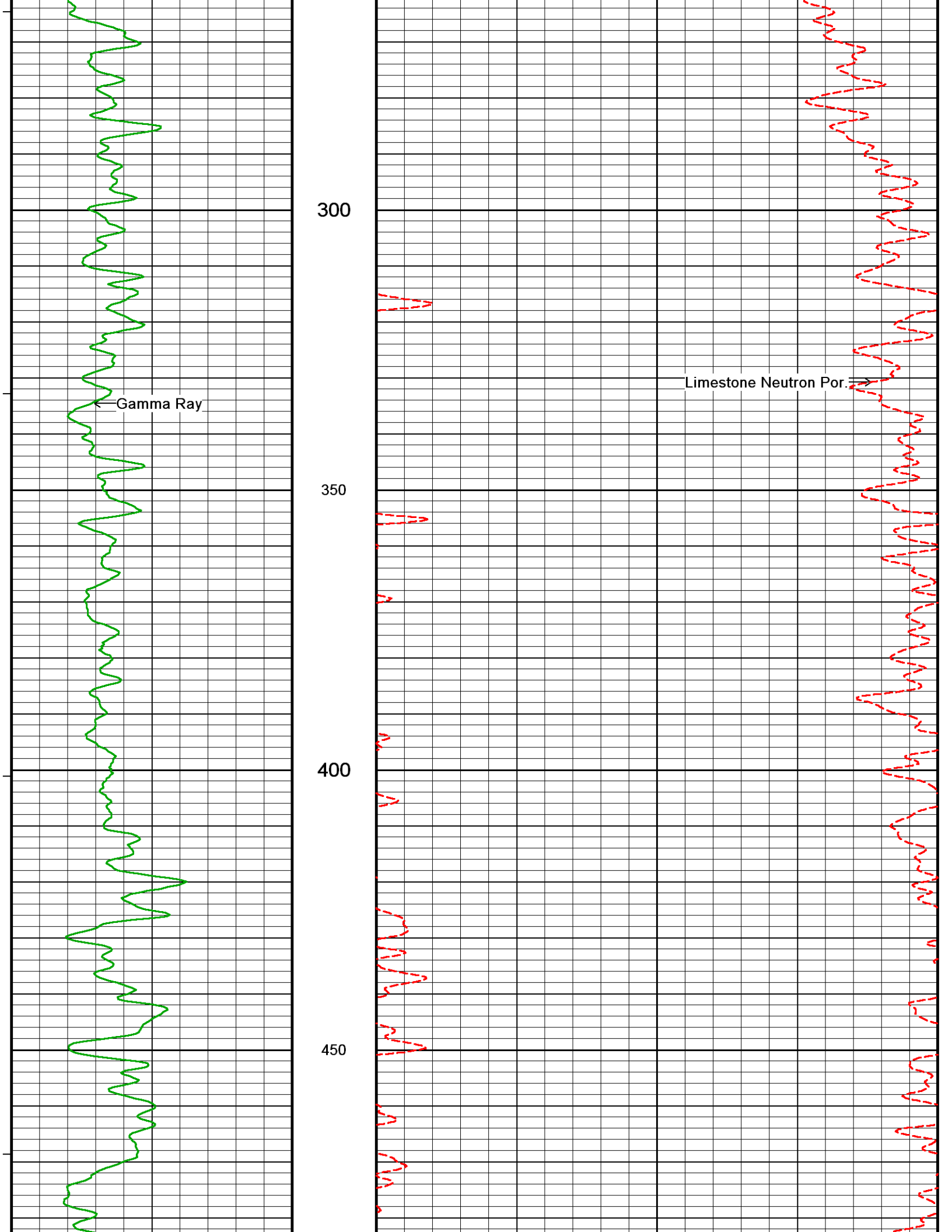
2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

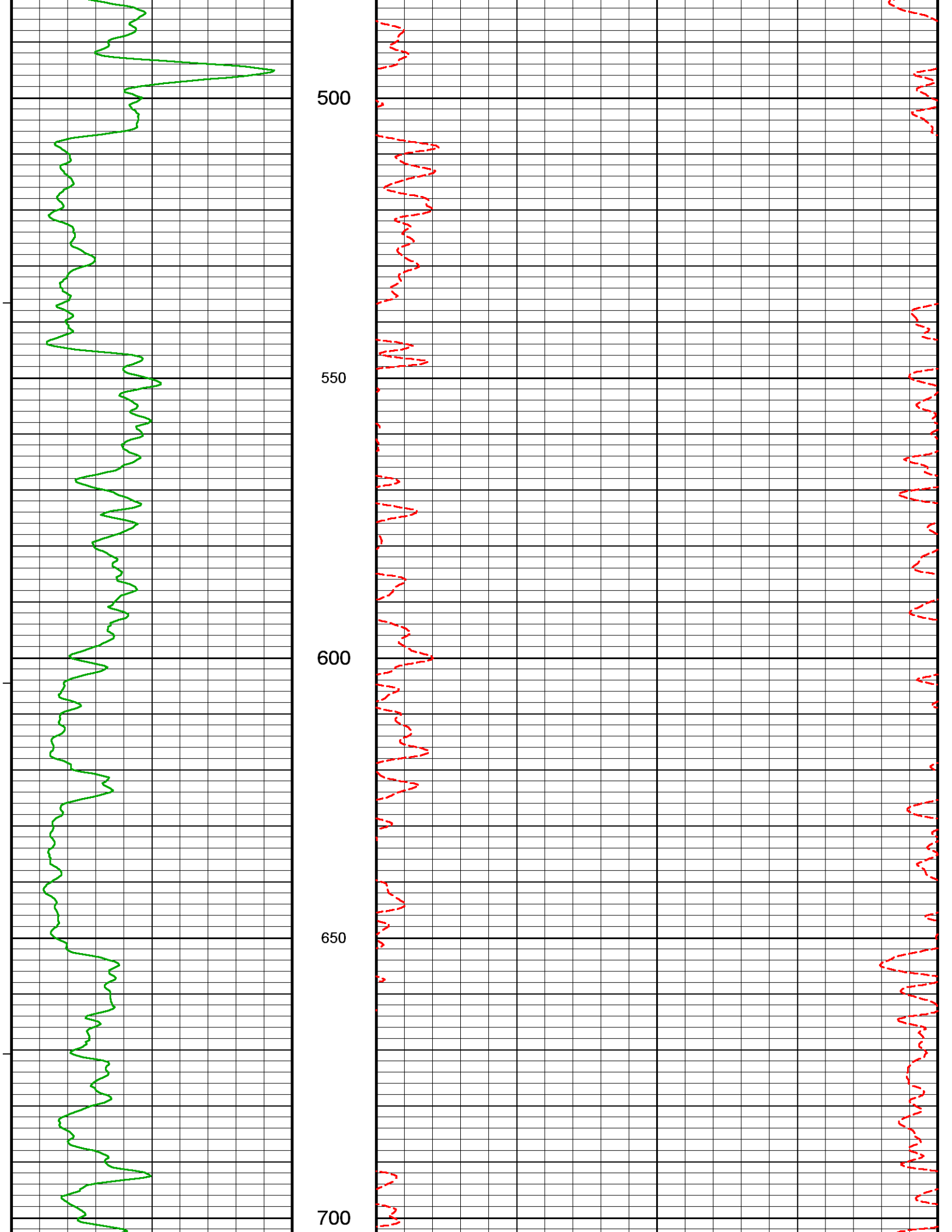
GAMMA, SPECTRAL GAMMA AND COMPENSATED NEUTRON LOGGED TO SURFACE.

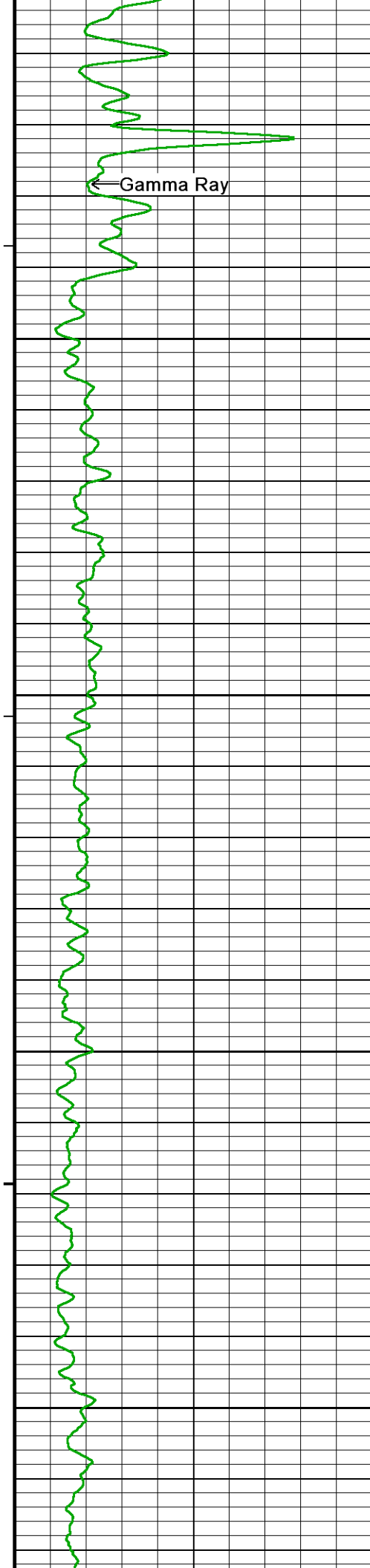
TIGHT PULLS, BOREHOLE SIZE AND RUGOSITY WILL AFFECT DATA QUALITY.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, 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. These interpretations are also subject to our general terms and conditions in our price schedule.









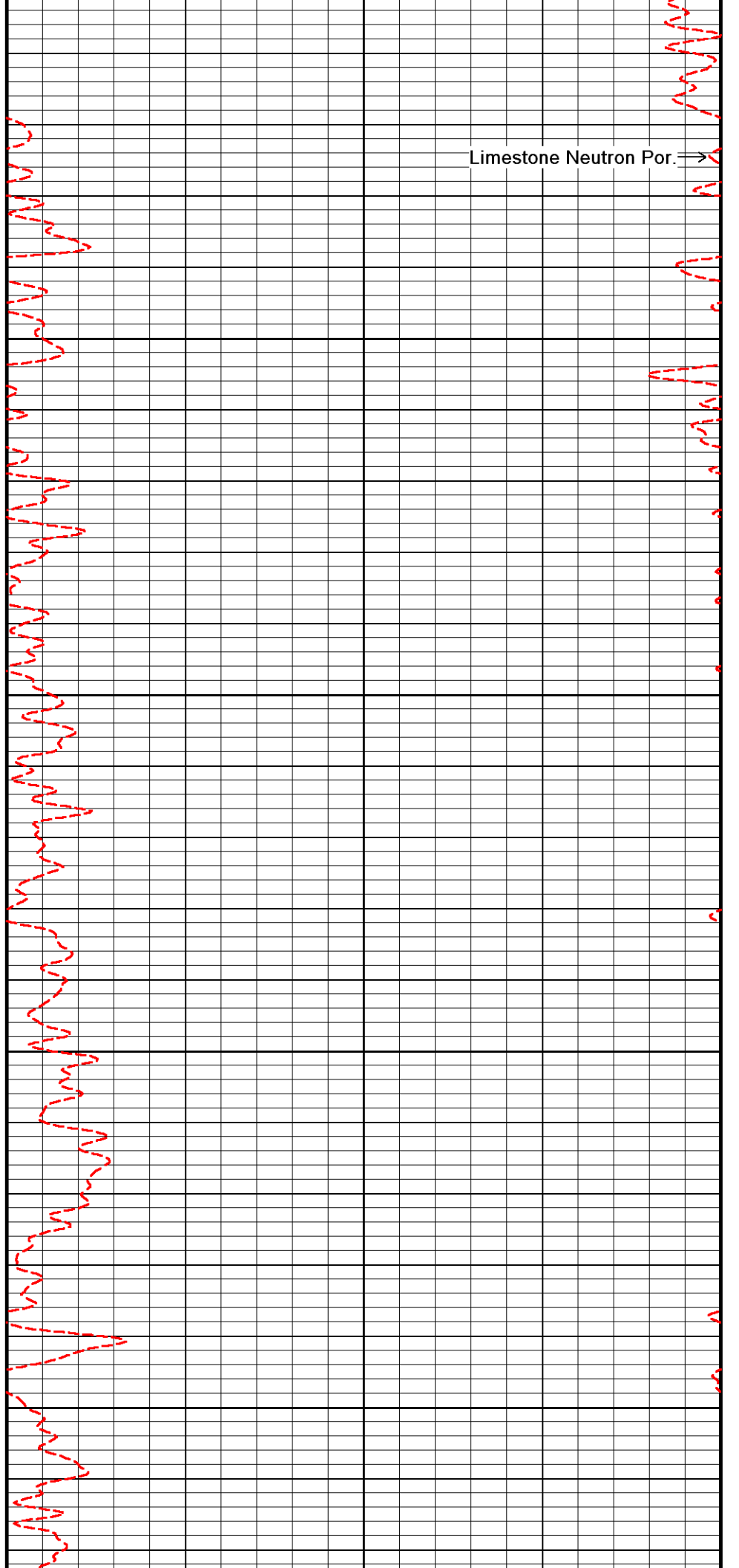
← Gamma Ray

750

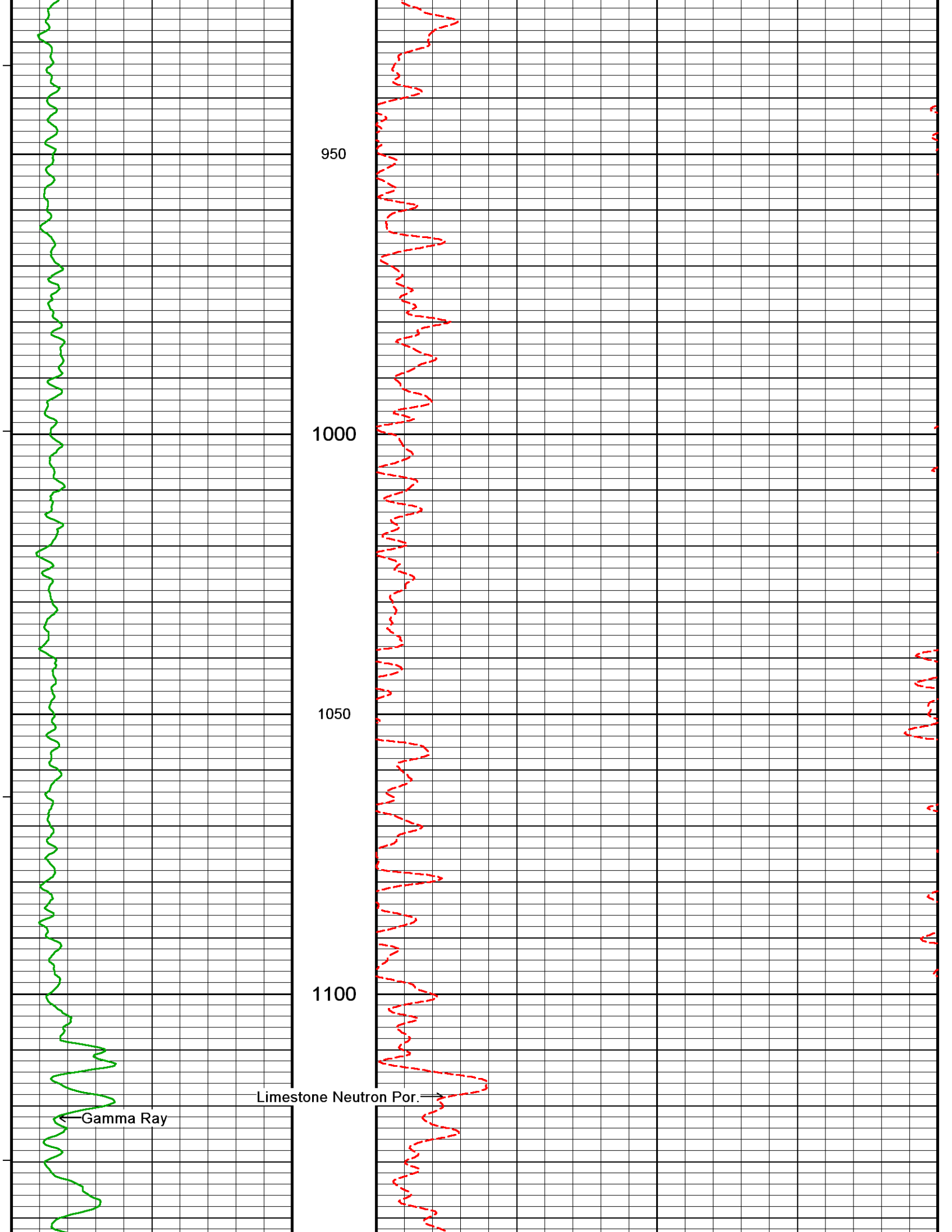
800

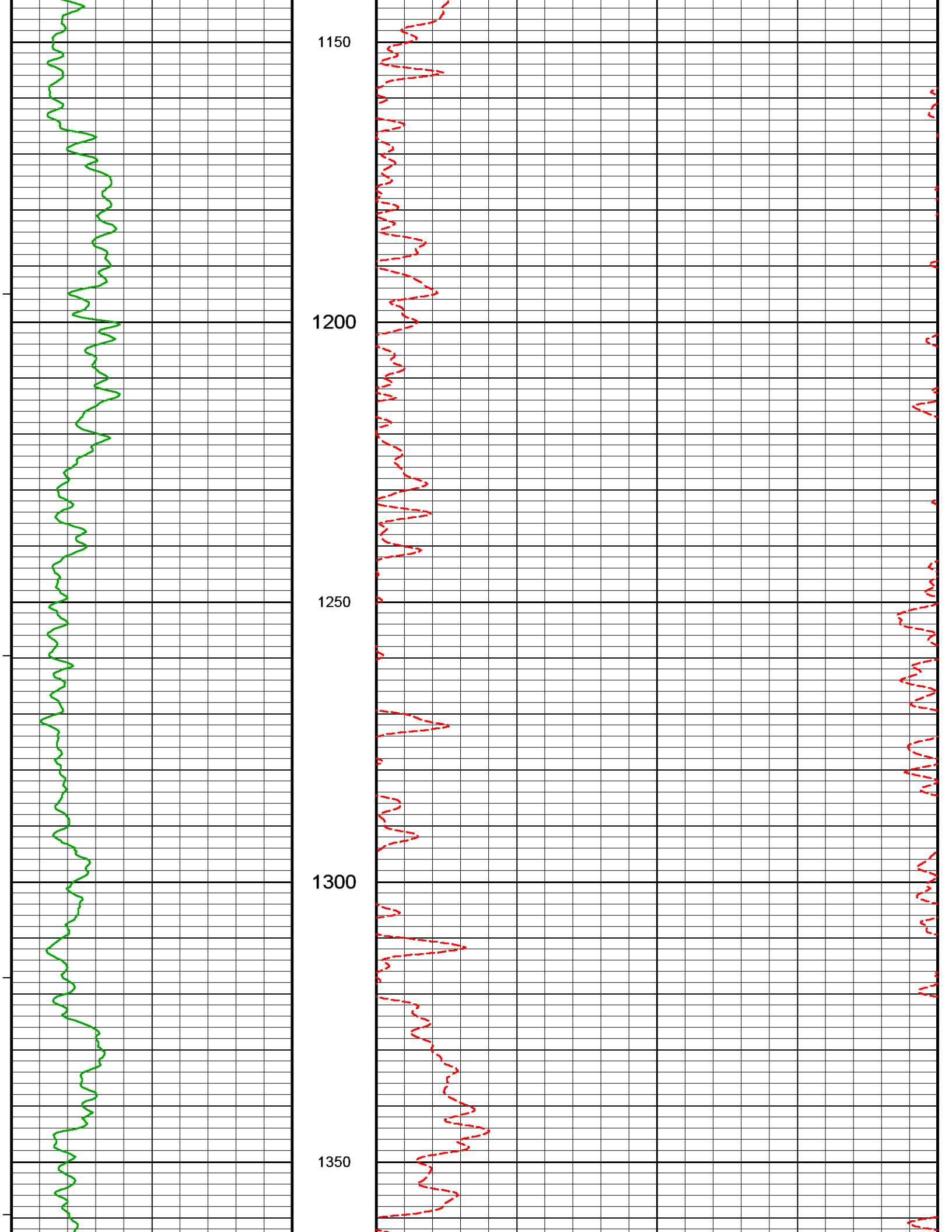
850

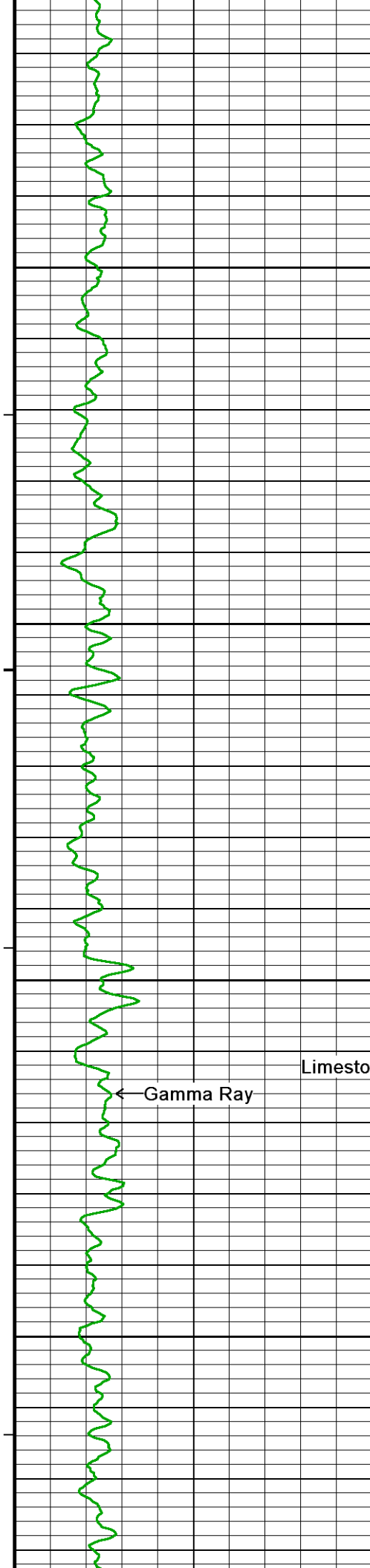
900



Limestone Neutron Por. →







← Gamma Ray

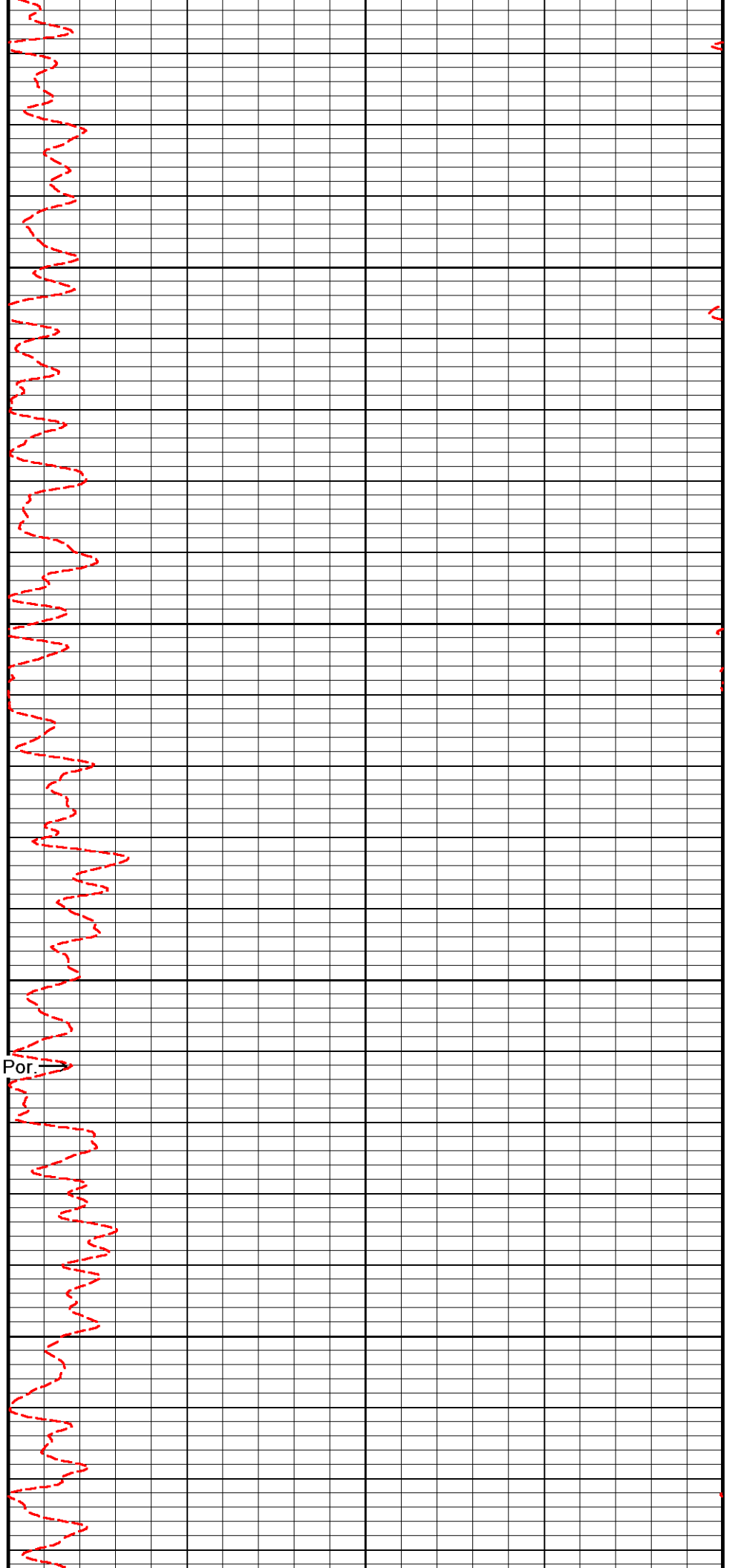
1400

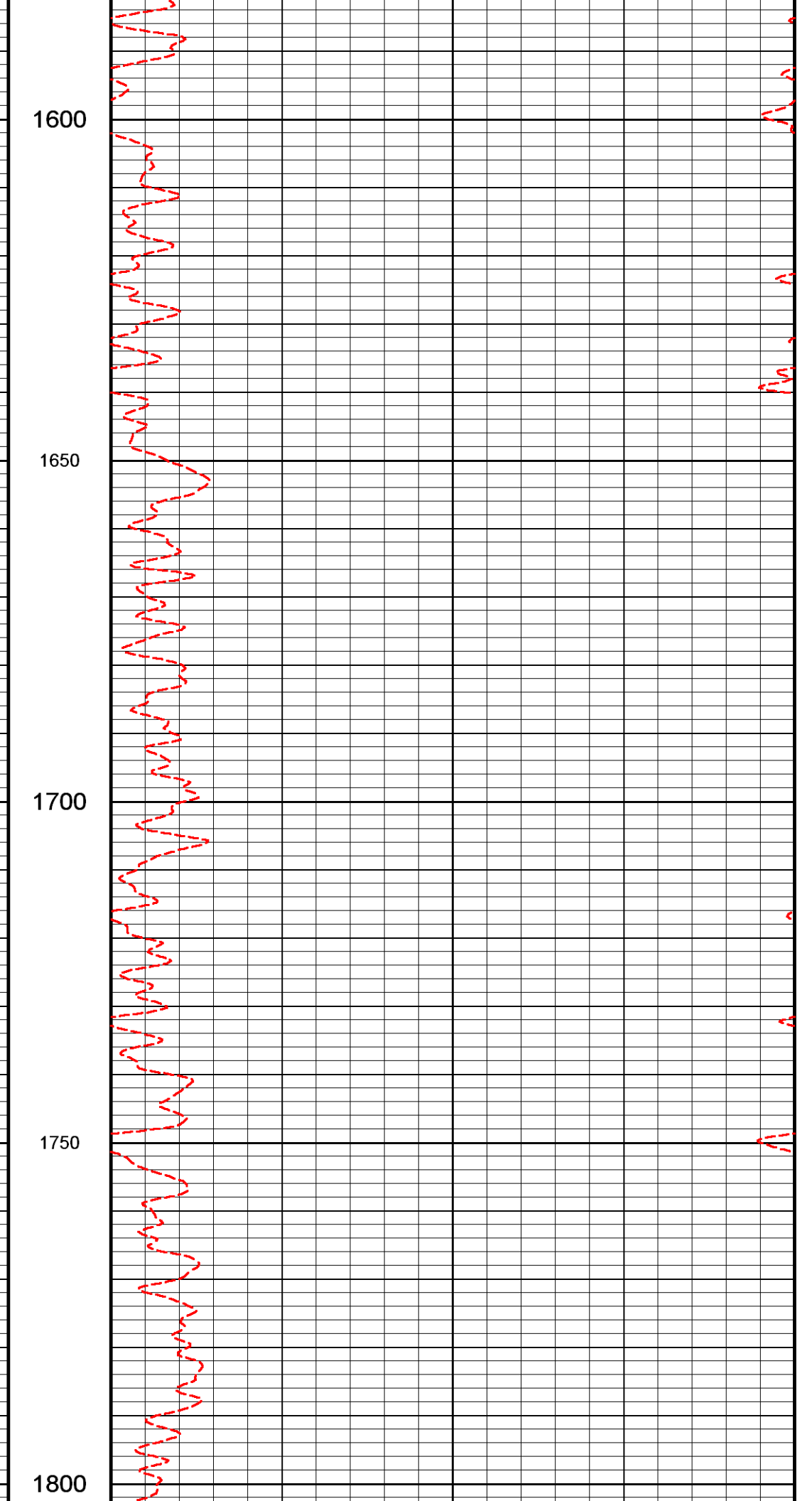
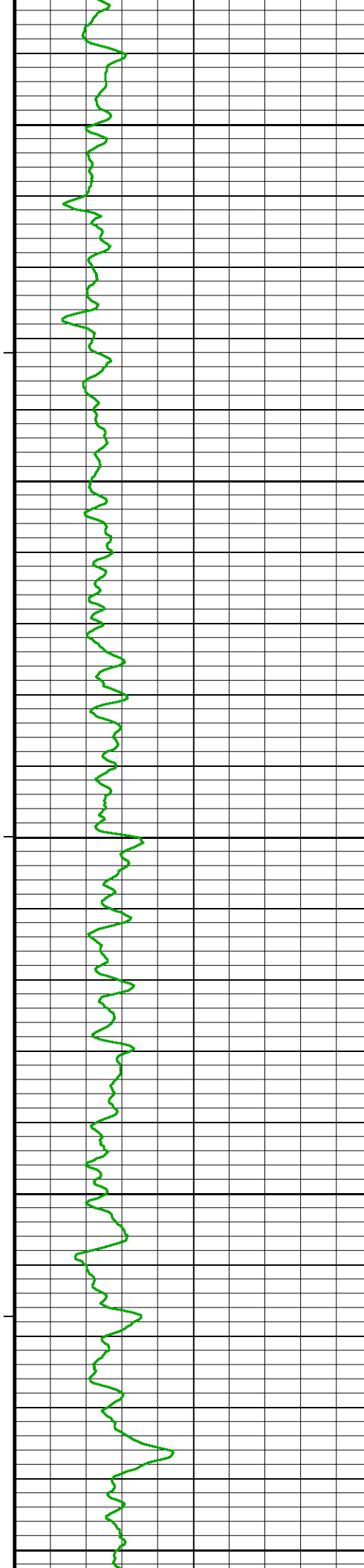
1450

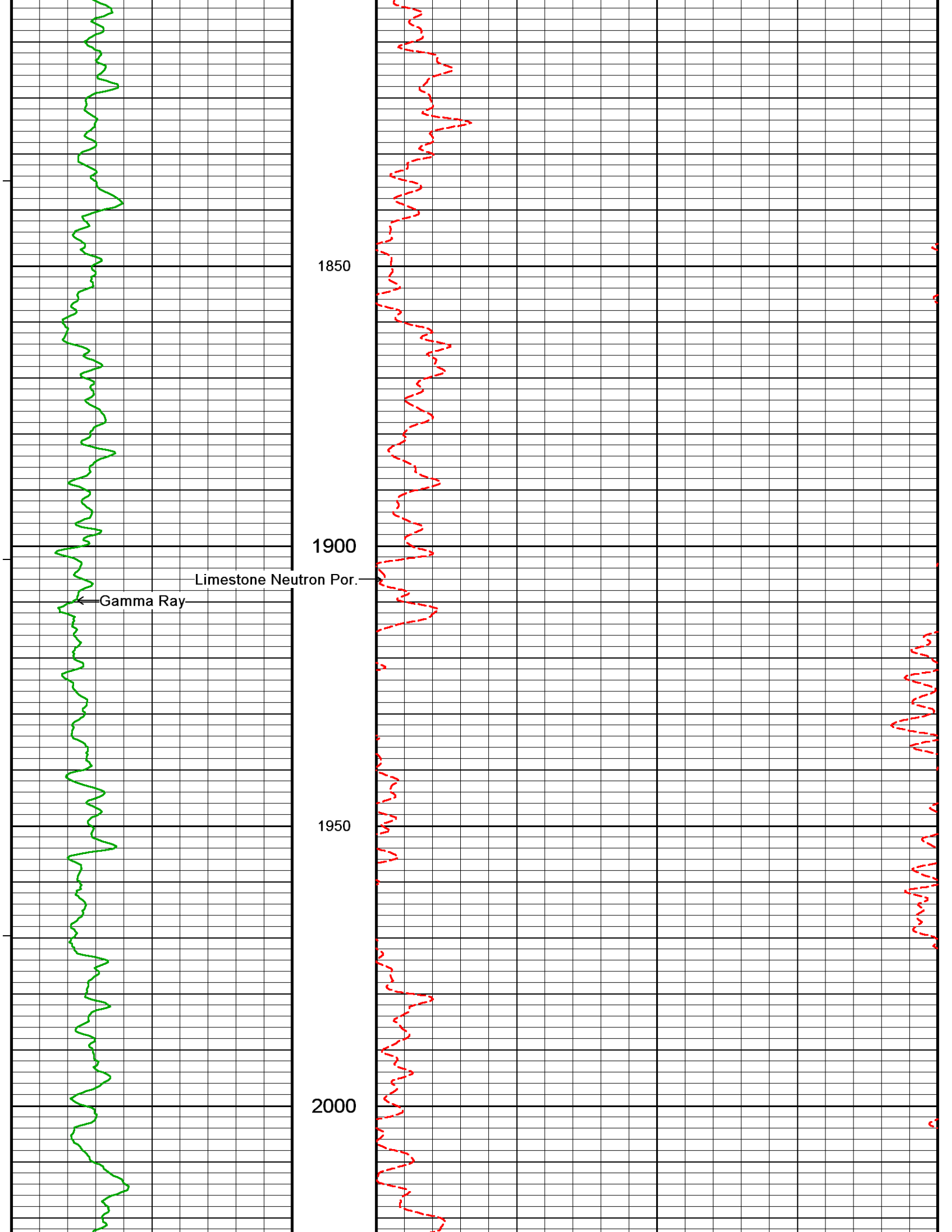
1500

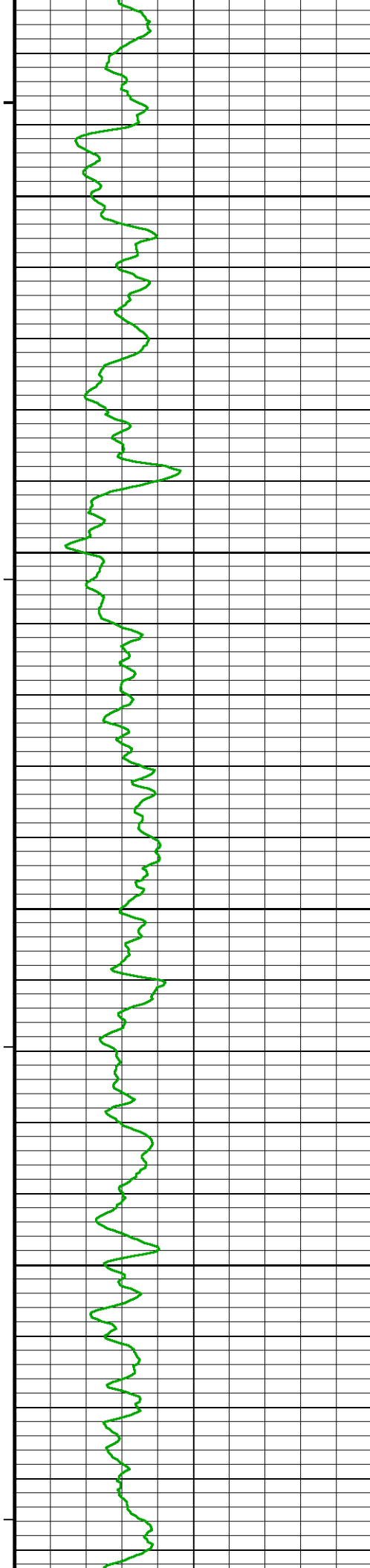
1550

Limestone Neutron Por







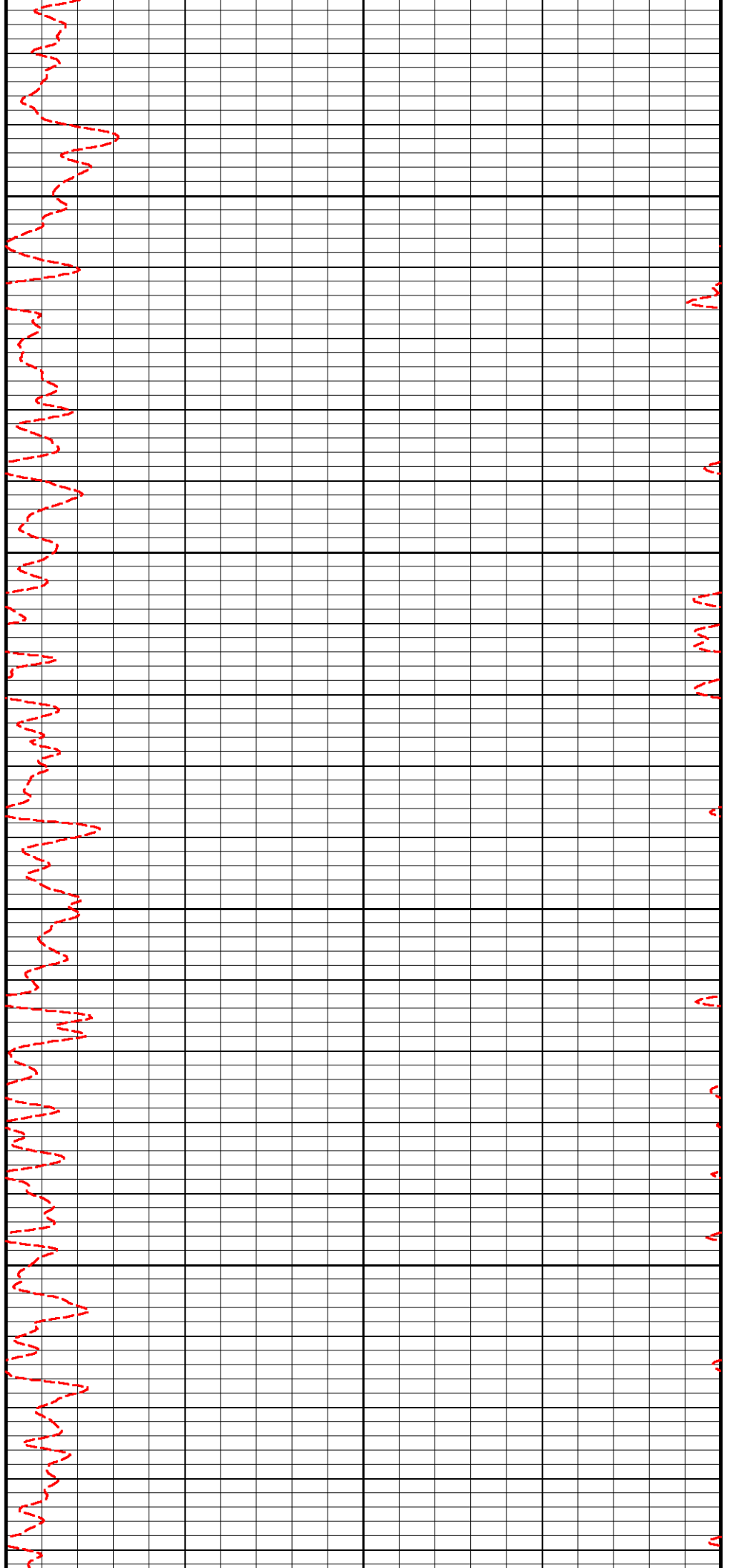


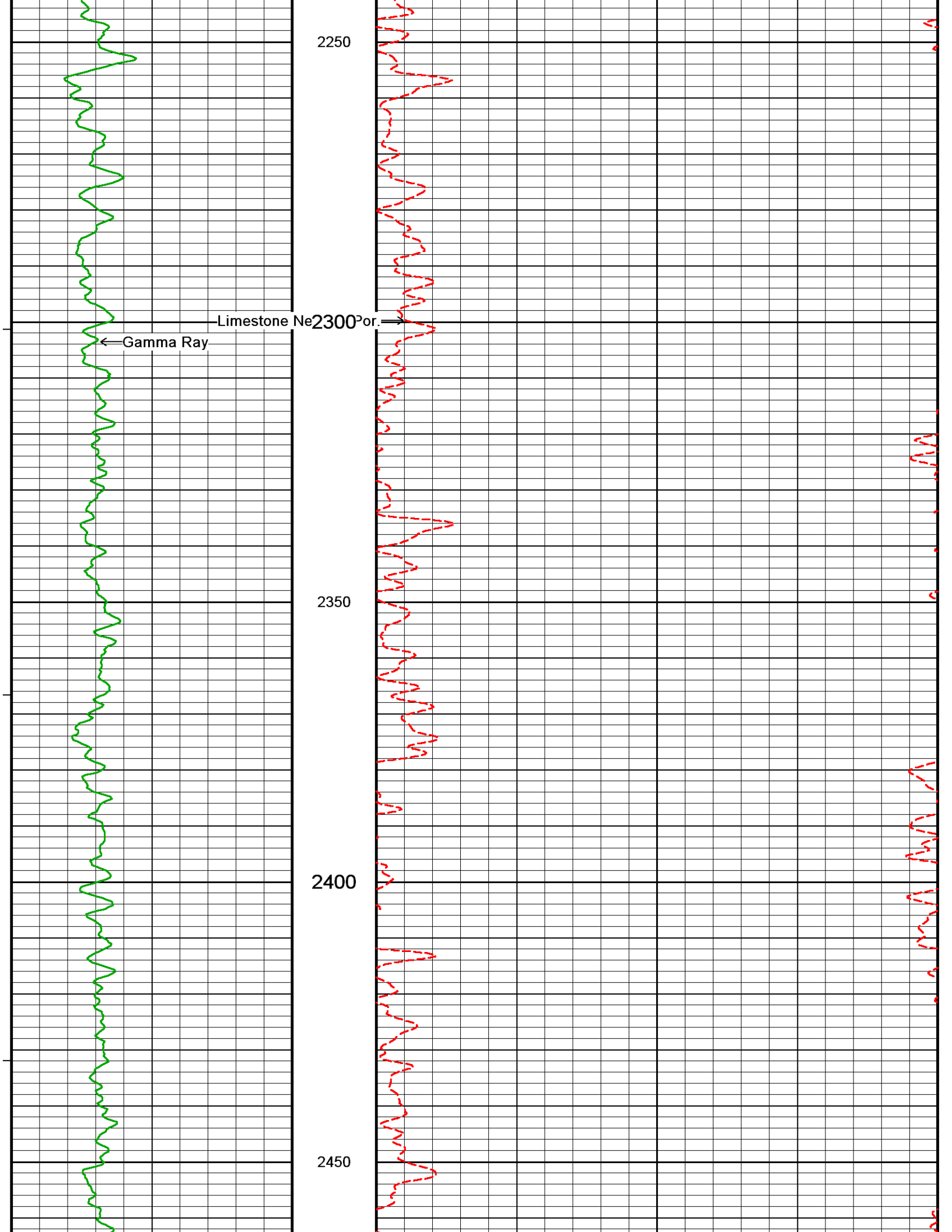
2050

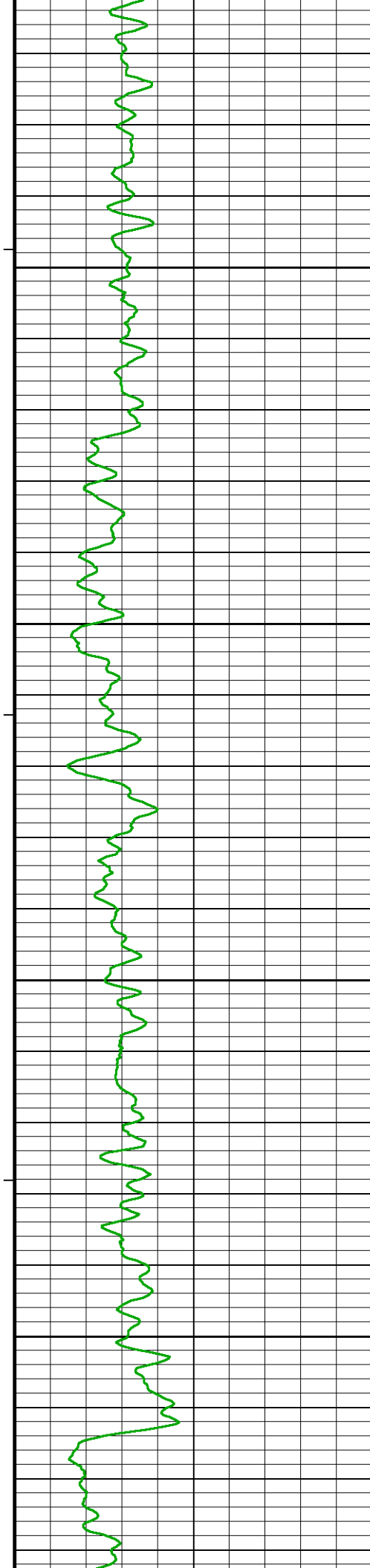
2100

2150

2200





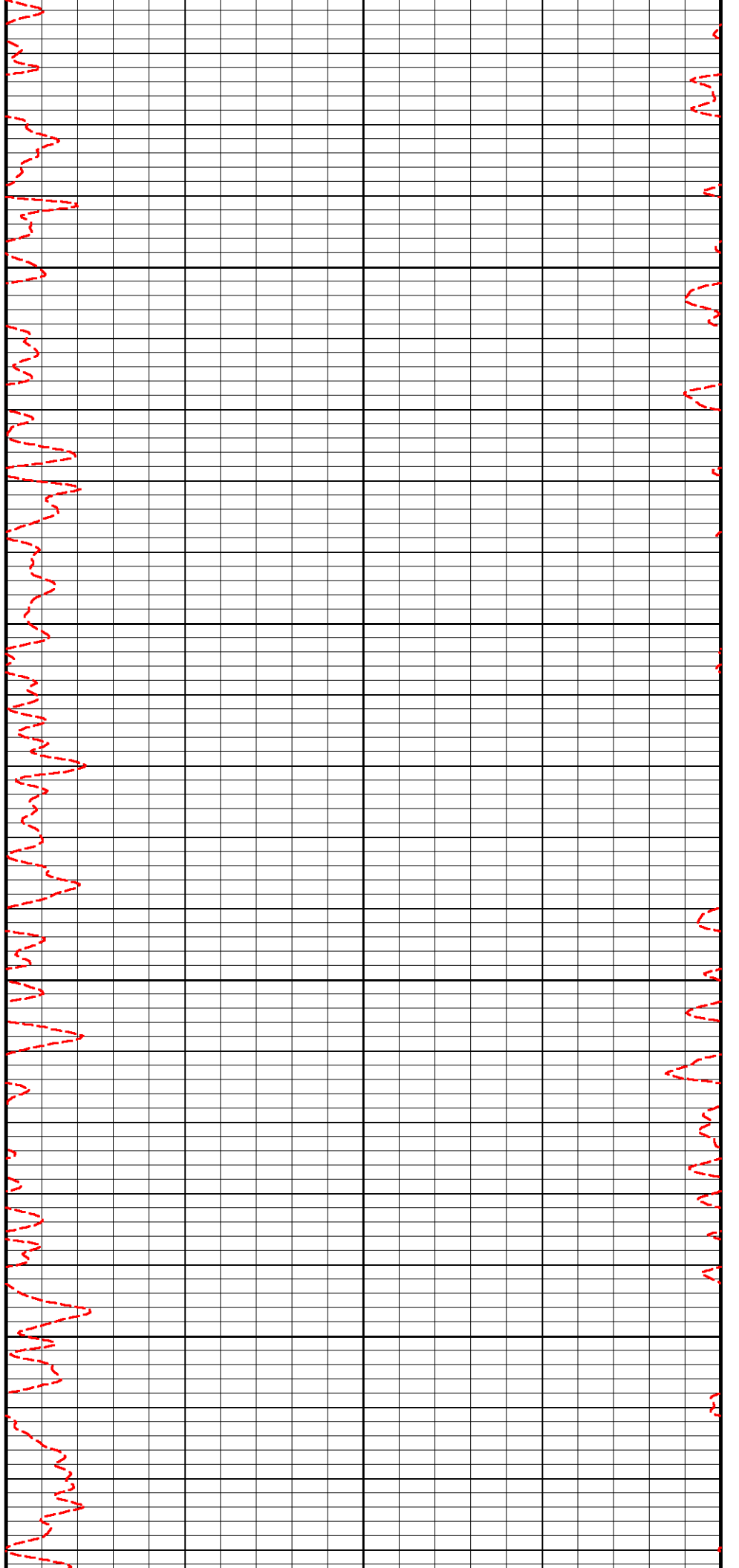


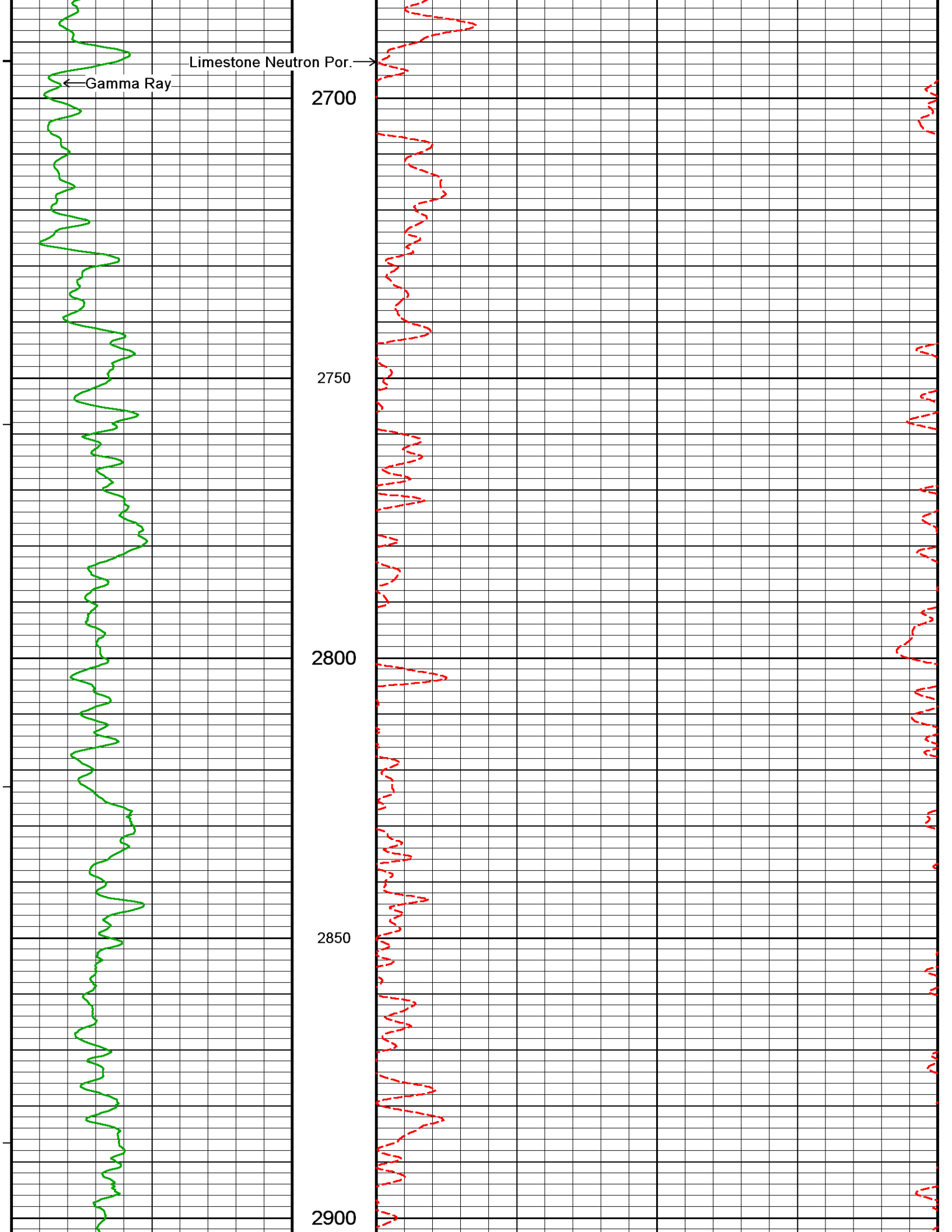
2500

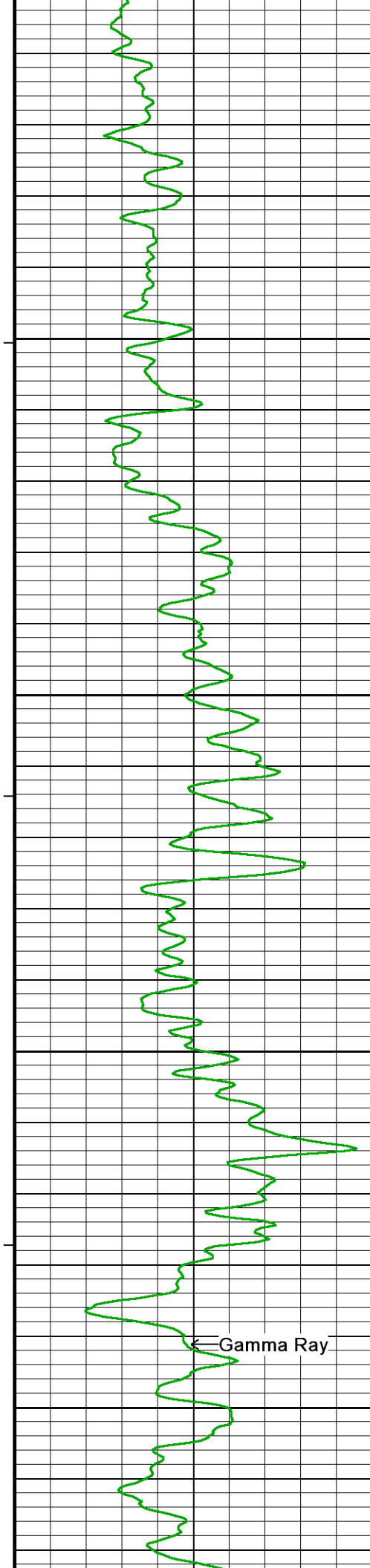
2550

2600

2650







2950

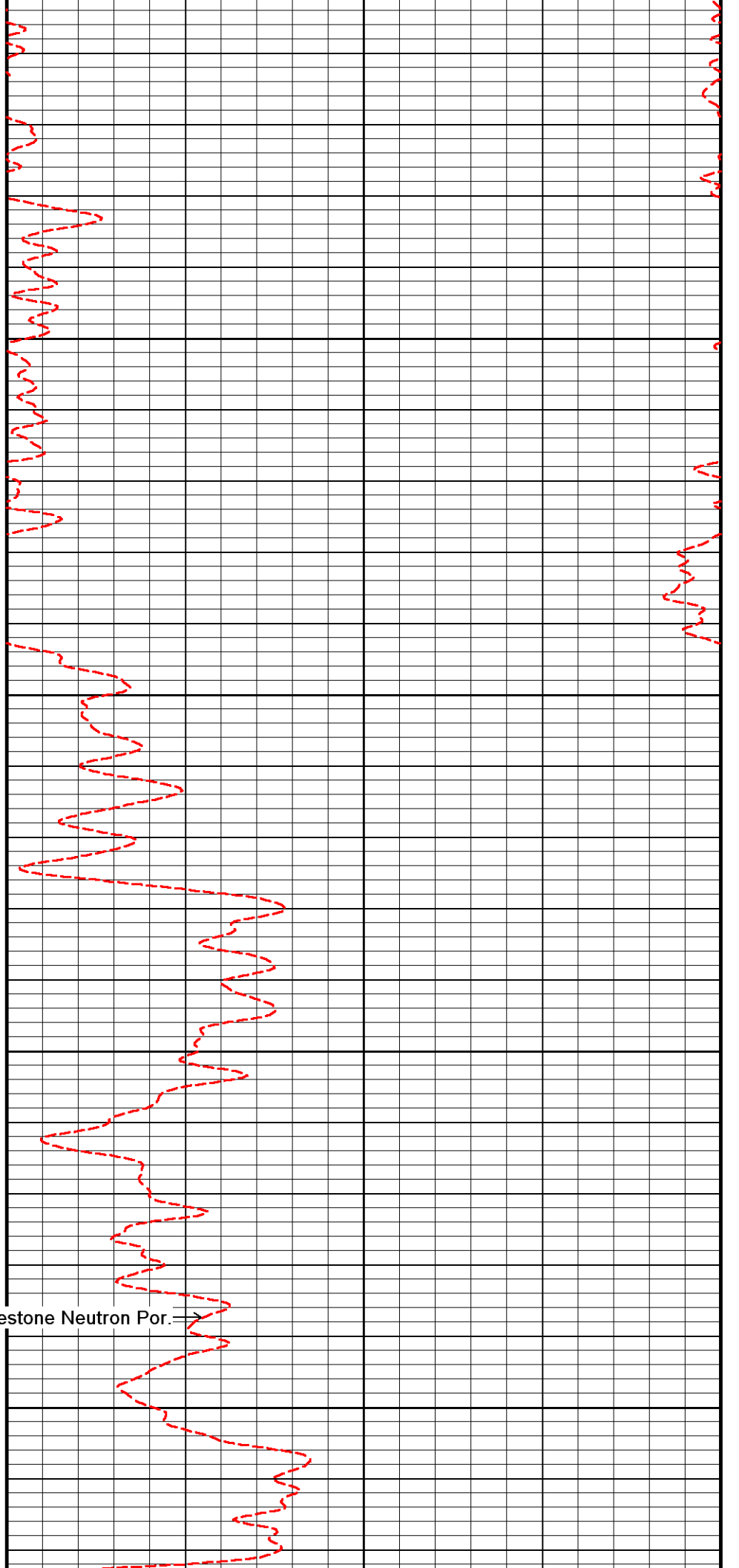
3000

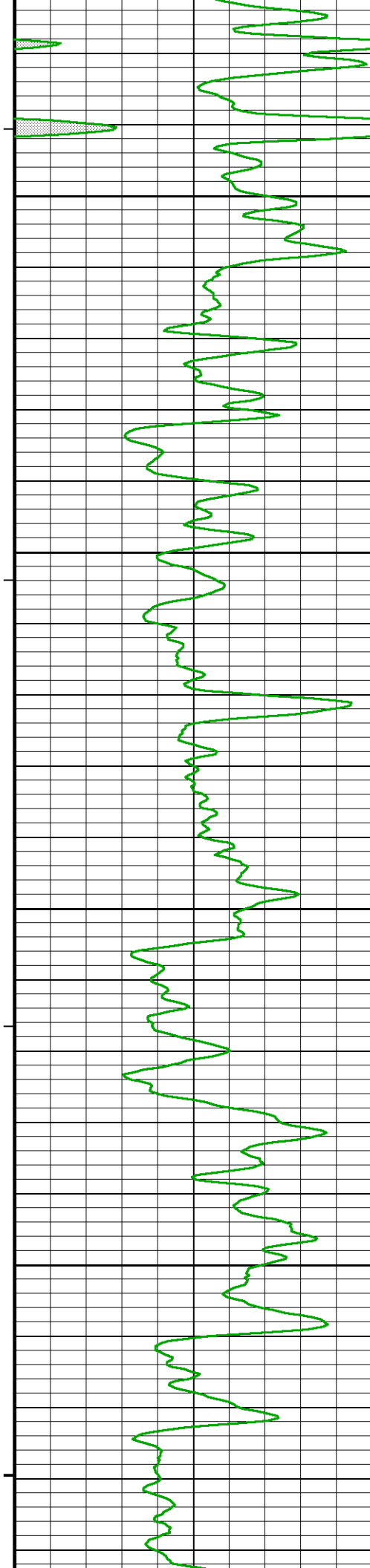
3050

3100

← Gamma Ray

Limestone Neutron Por. →



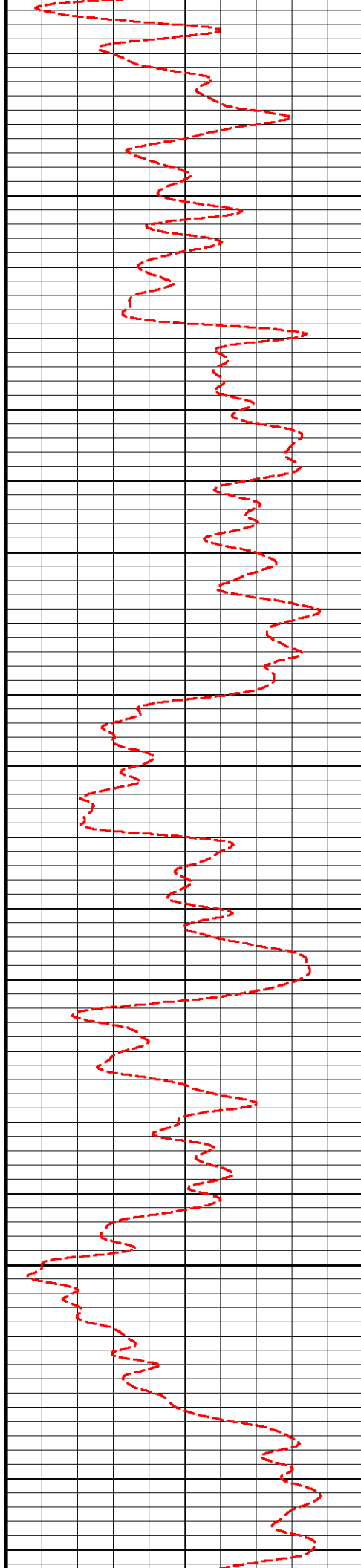


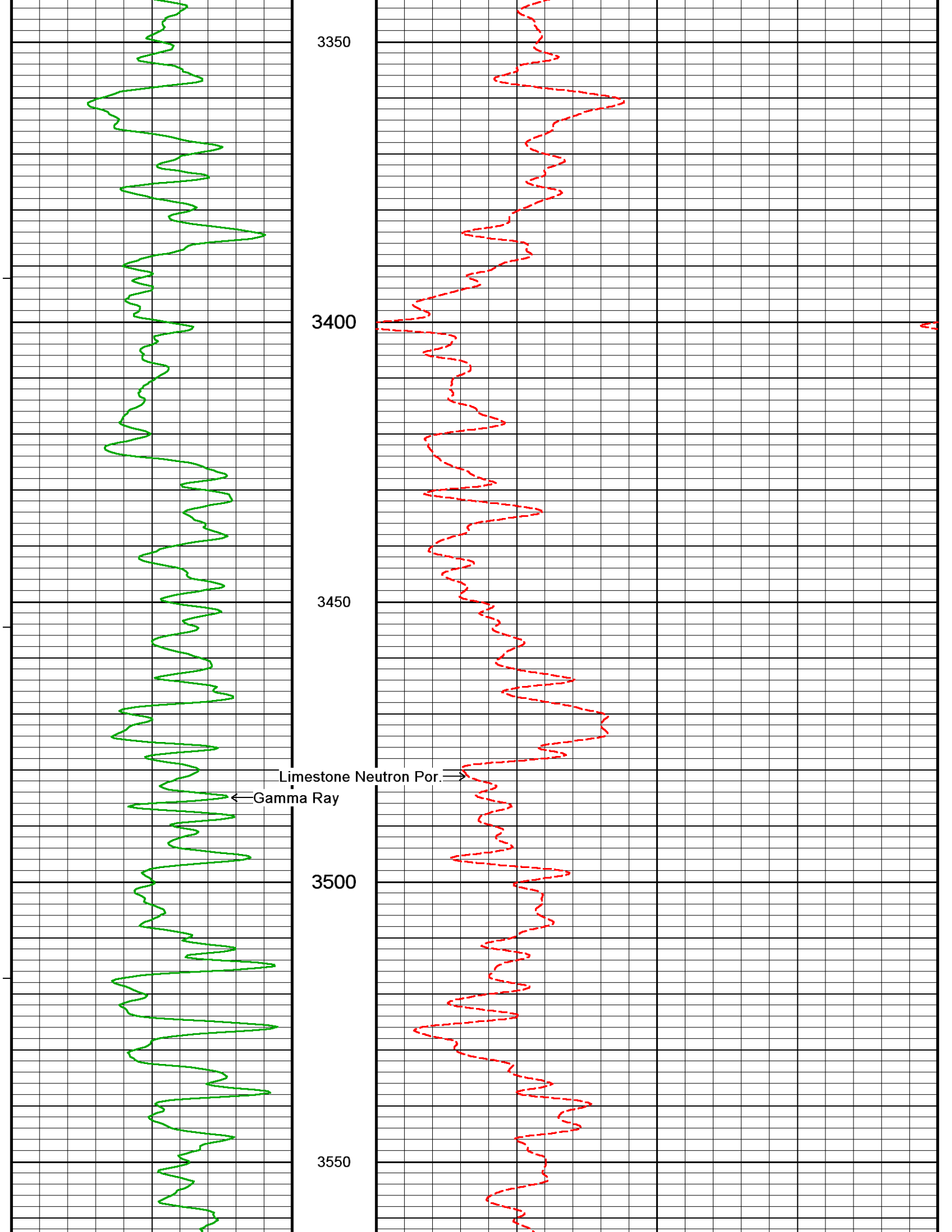
3150

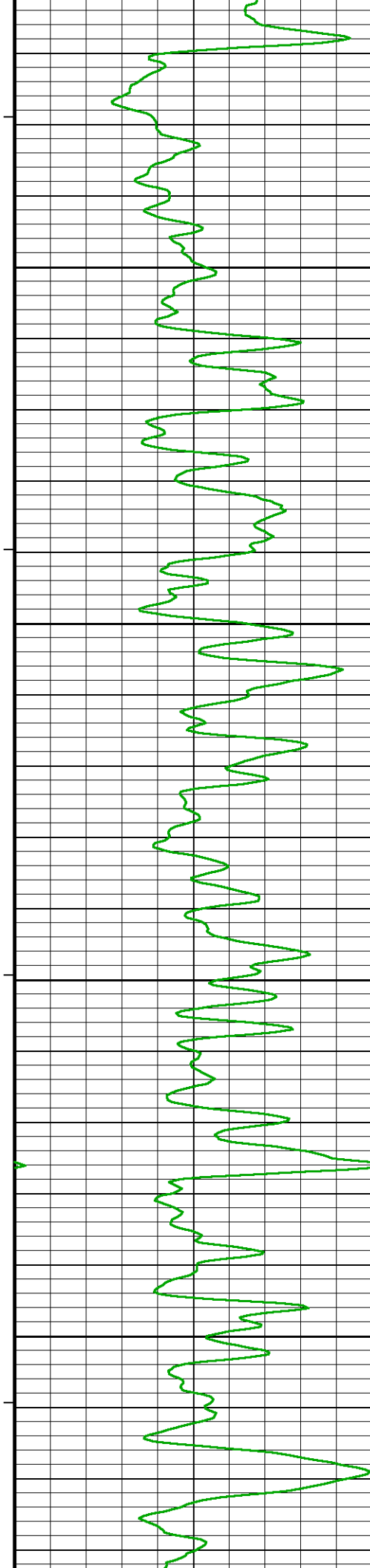
3200

3250

3300





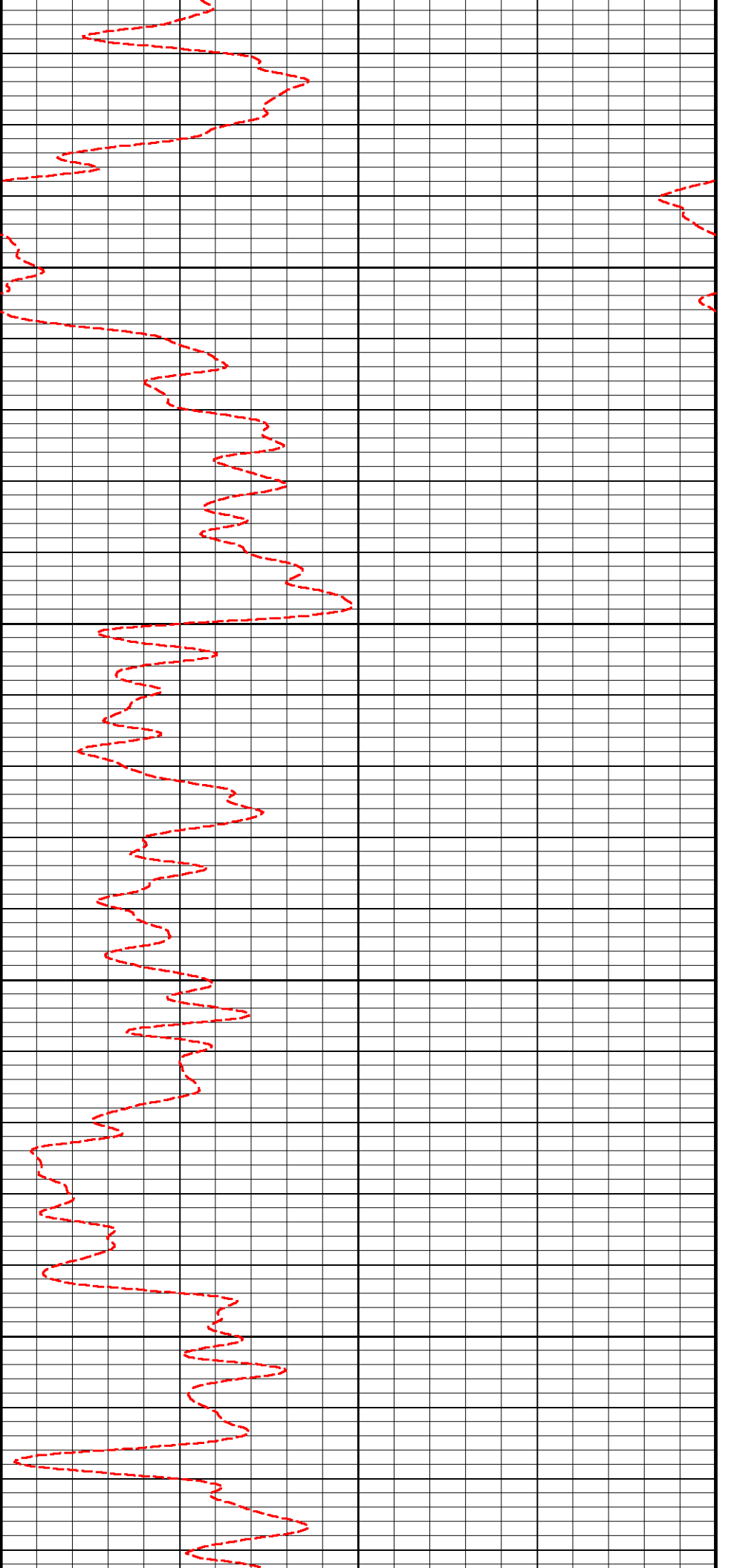


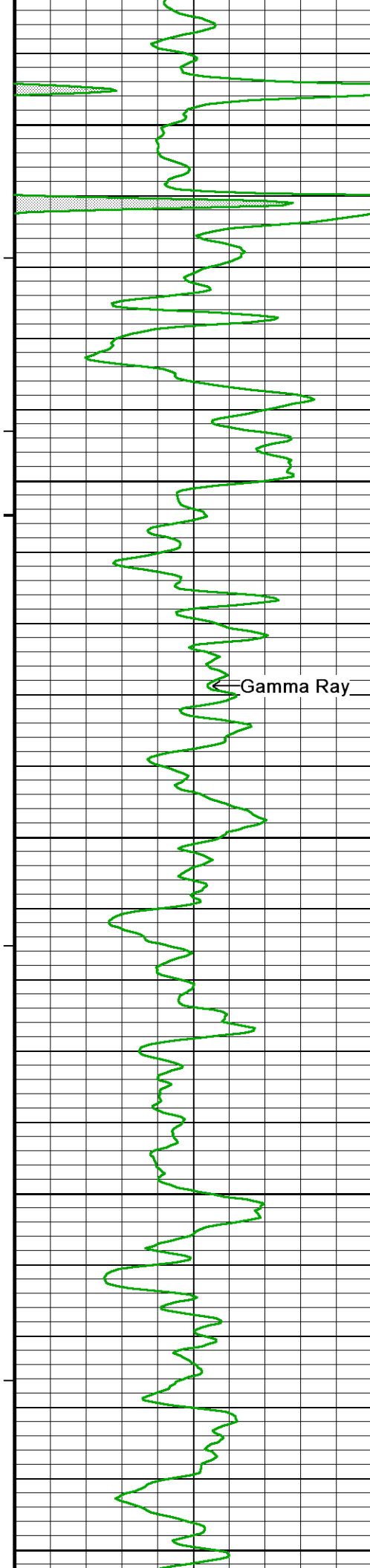
3600

3650

3700

3750





3800

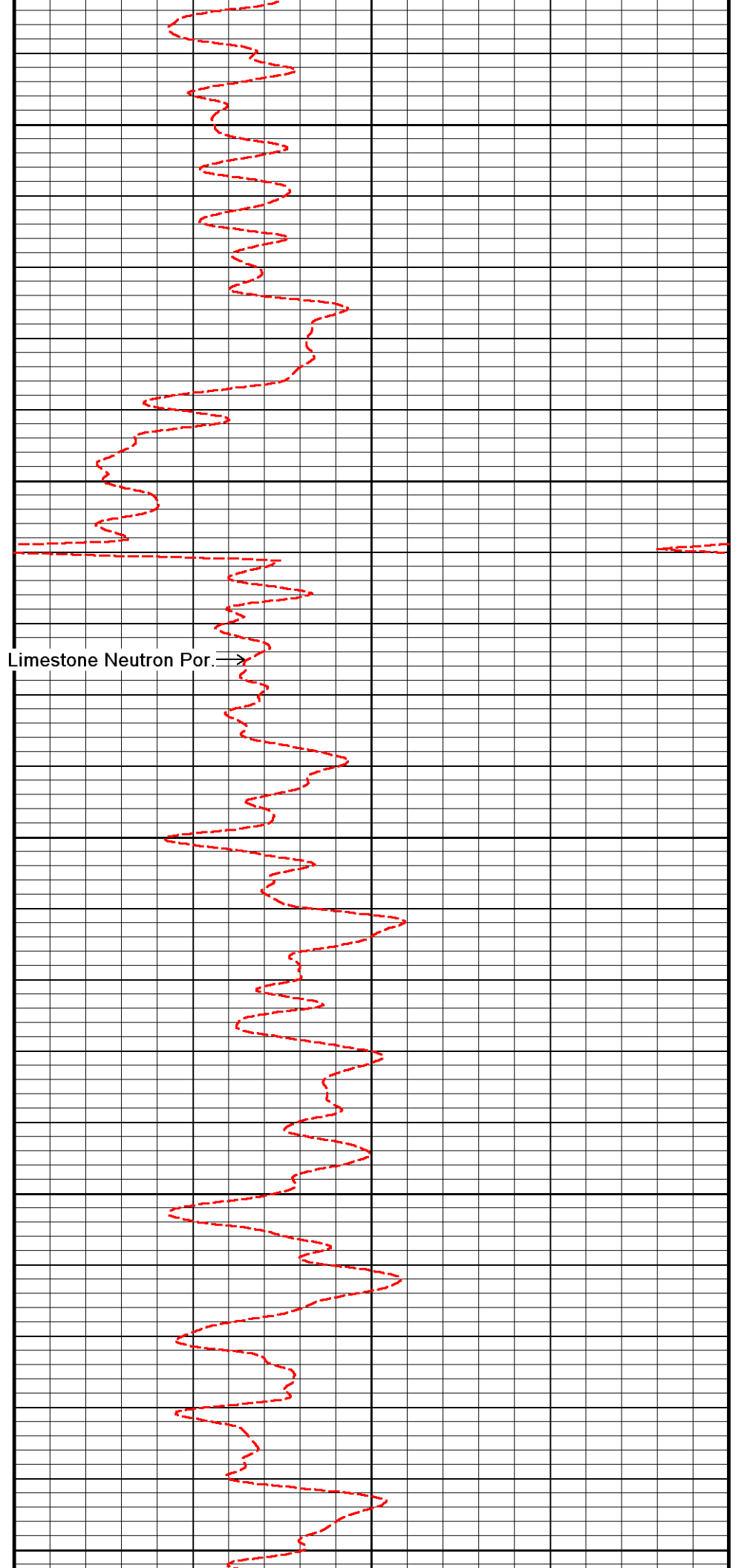
3850

3900

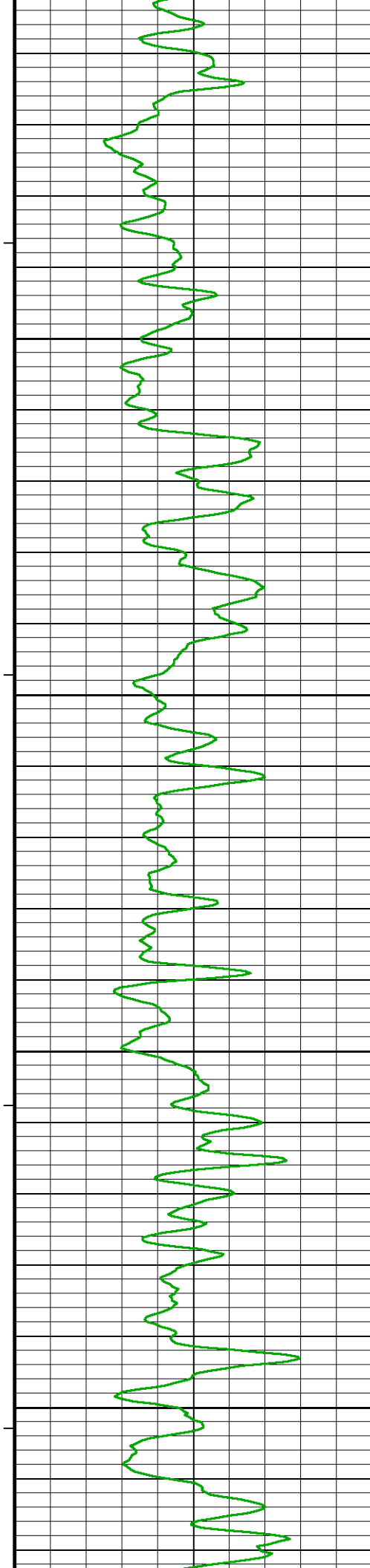
3950

4000

Gamma Ray



Limestone Neutron Por.

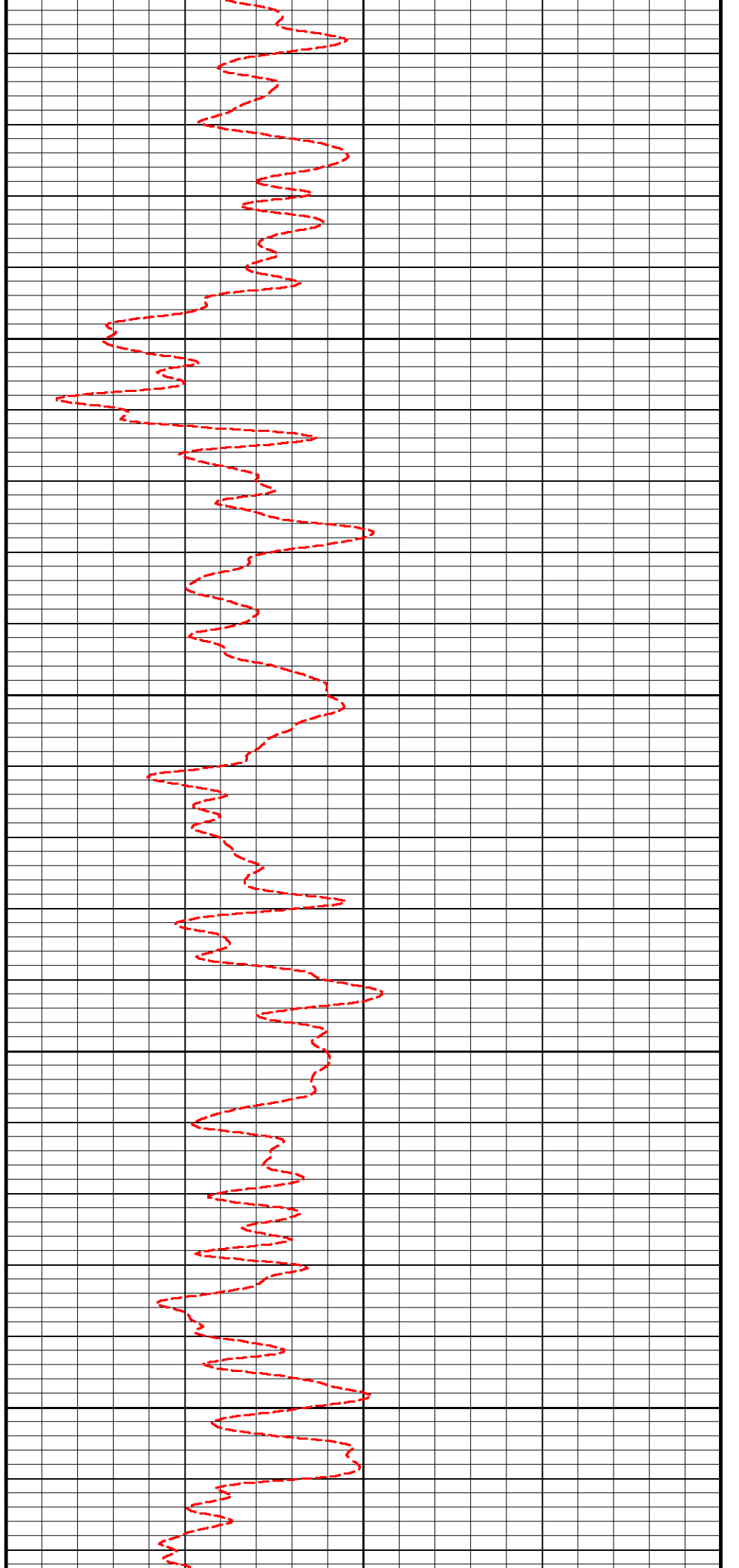


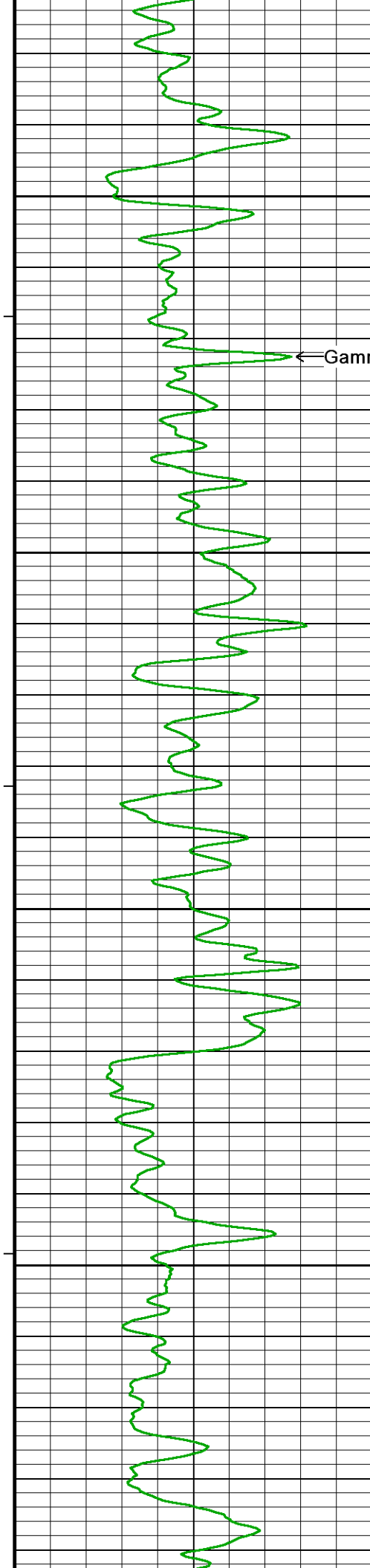
4050

4100

4150

4200





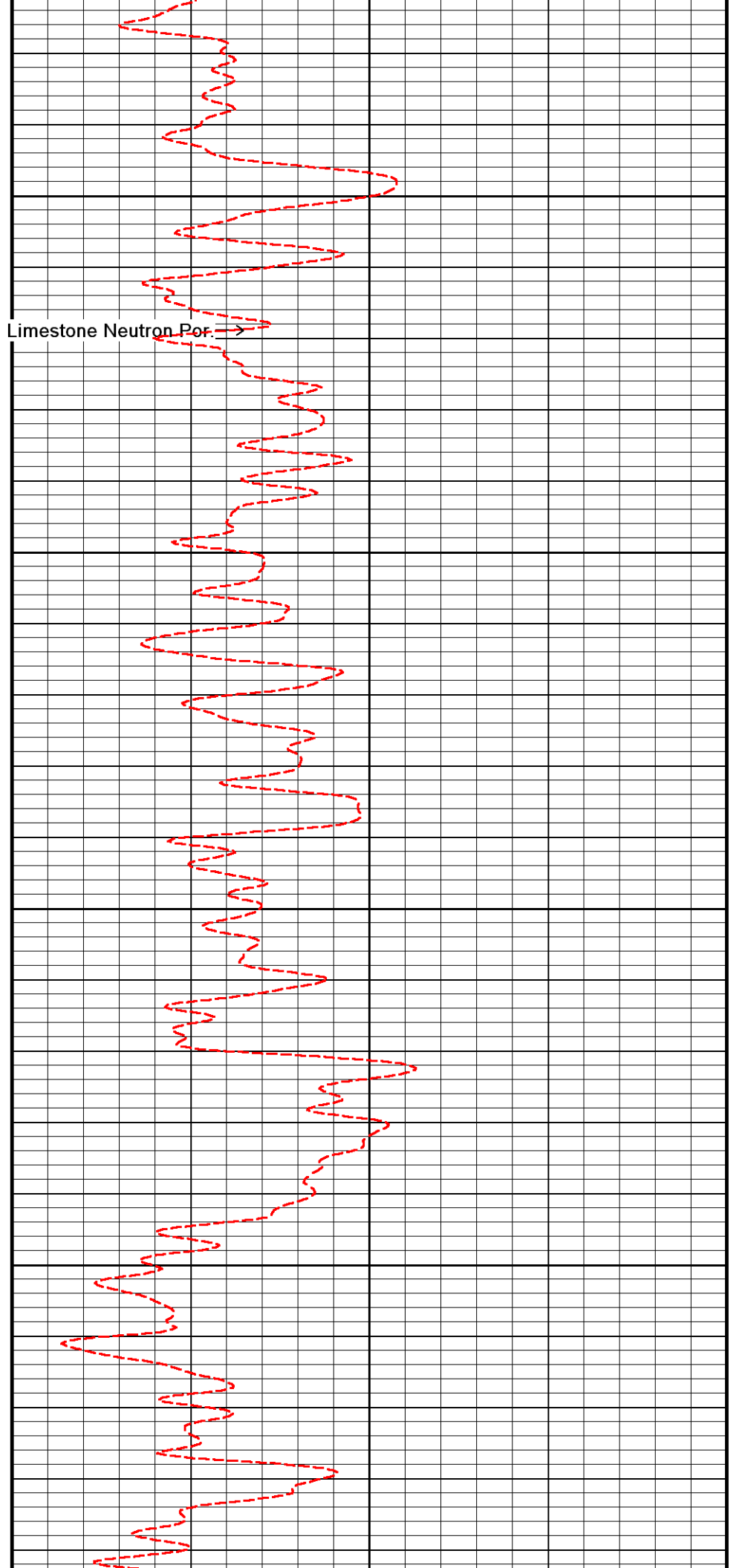
← Gamma Ray

4250

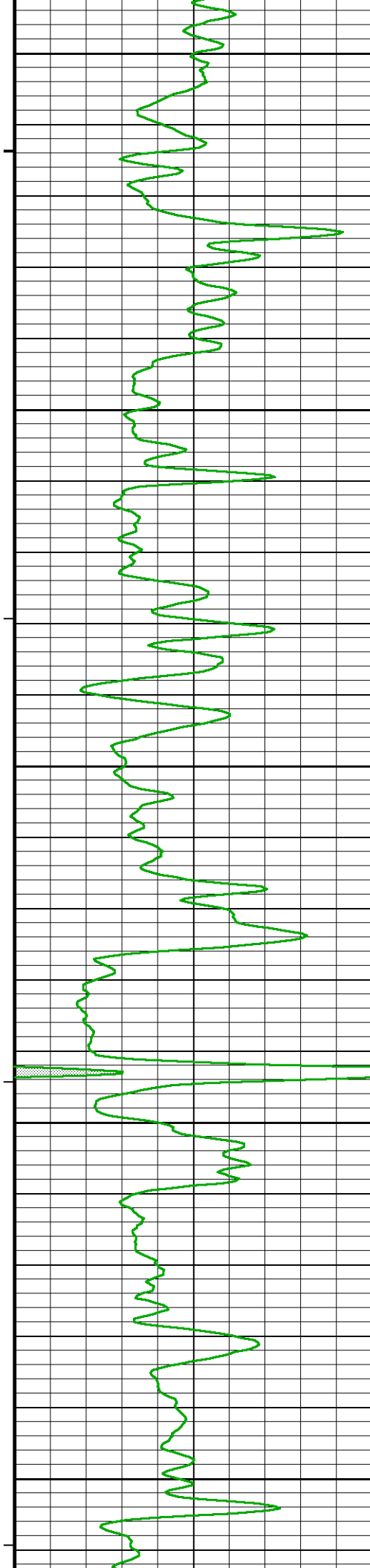
4300

4350

4400



Limestone Neutron Por. →



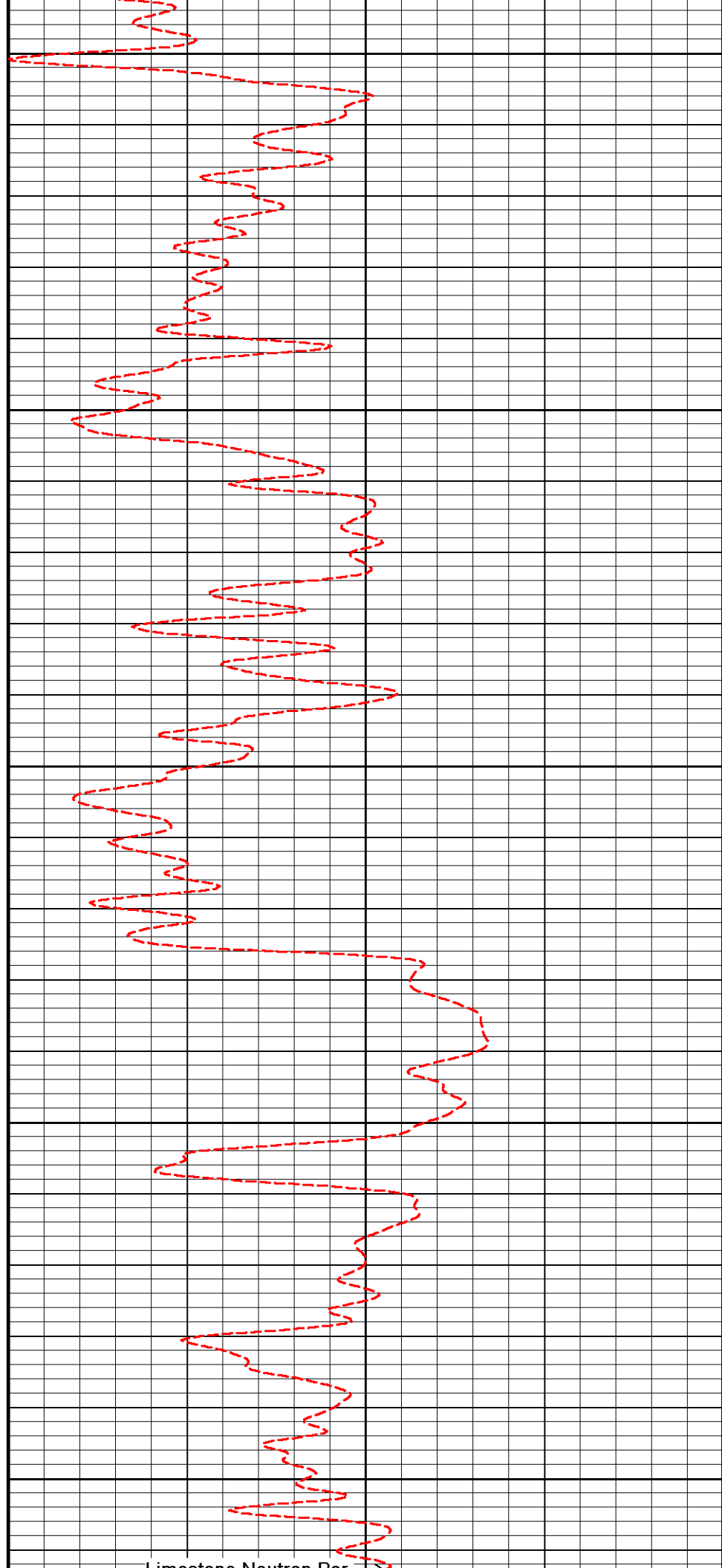
4450

4500

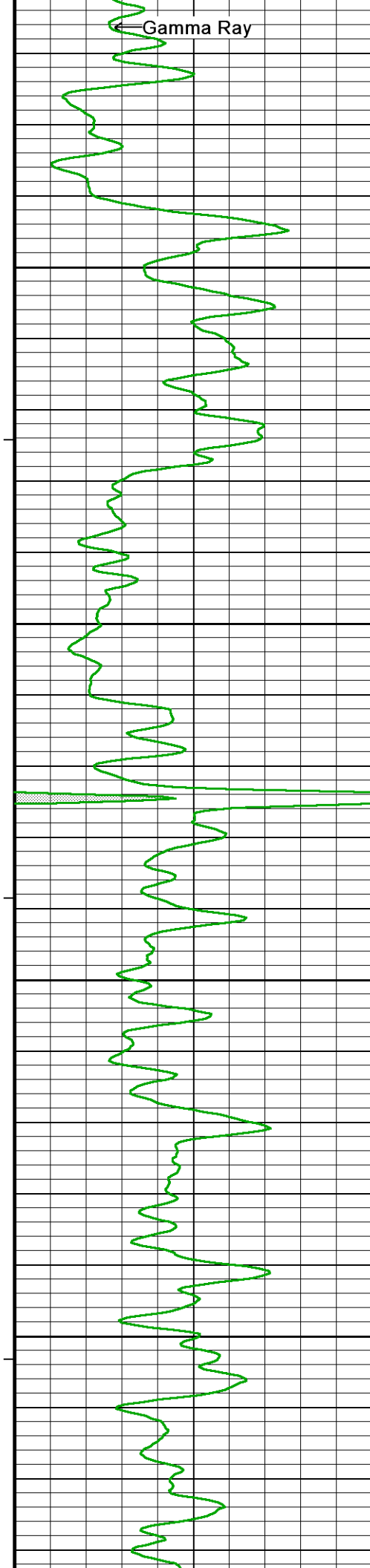
4550

4600

4650



Limestone Neutron Por

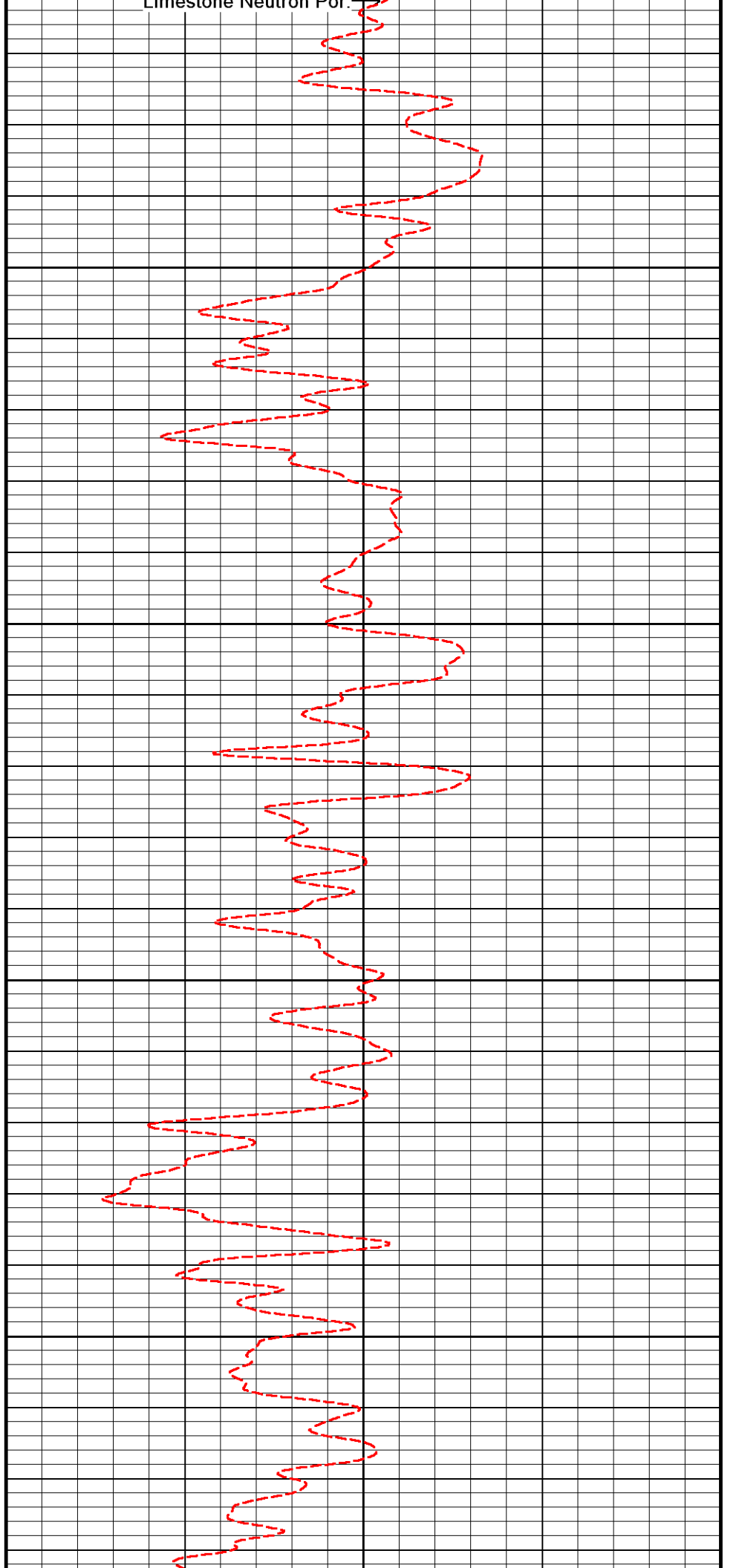


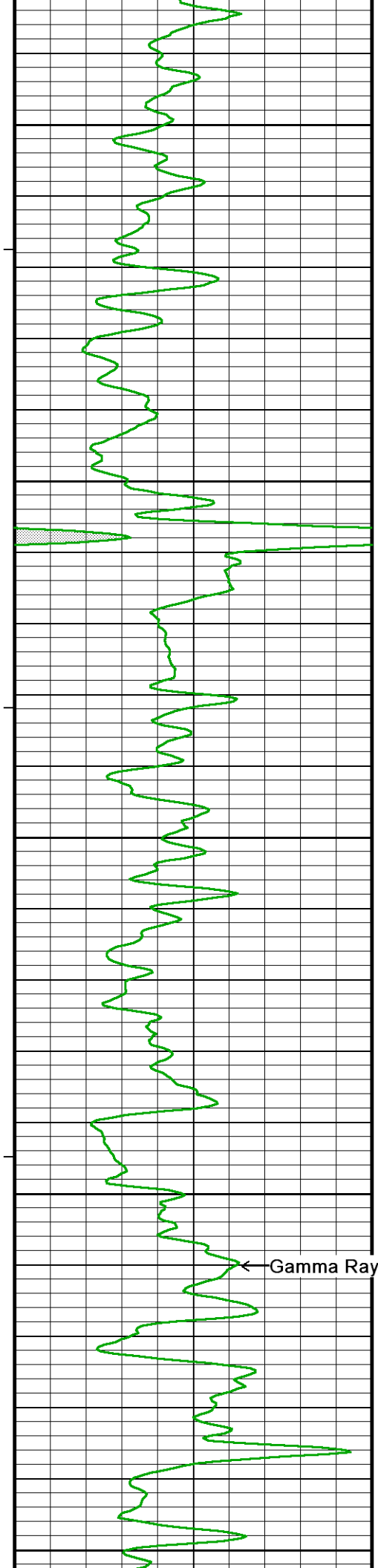
4700

4750

4800

4850





4900

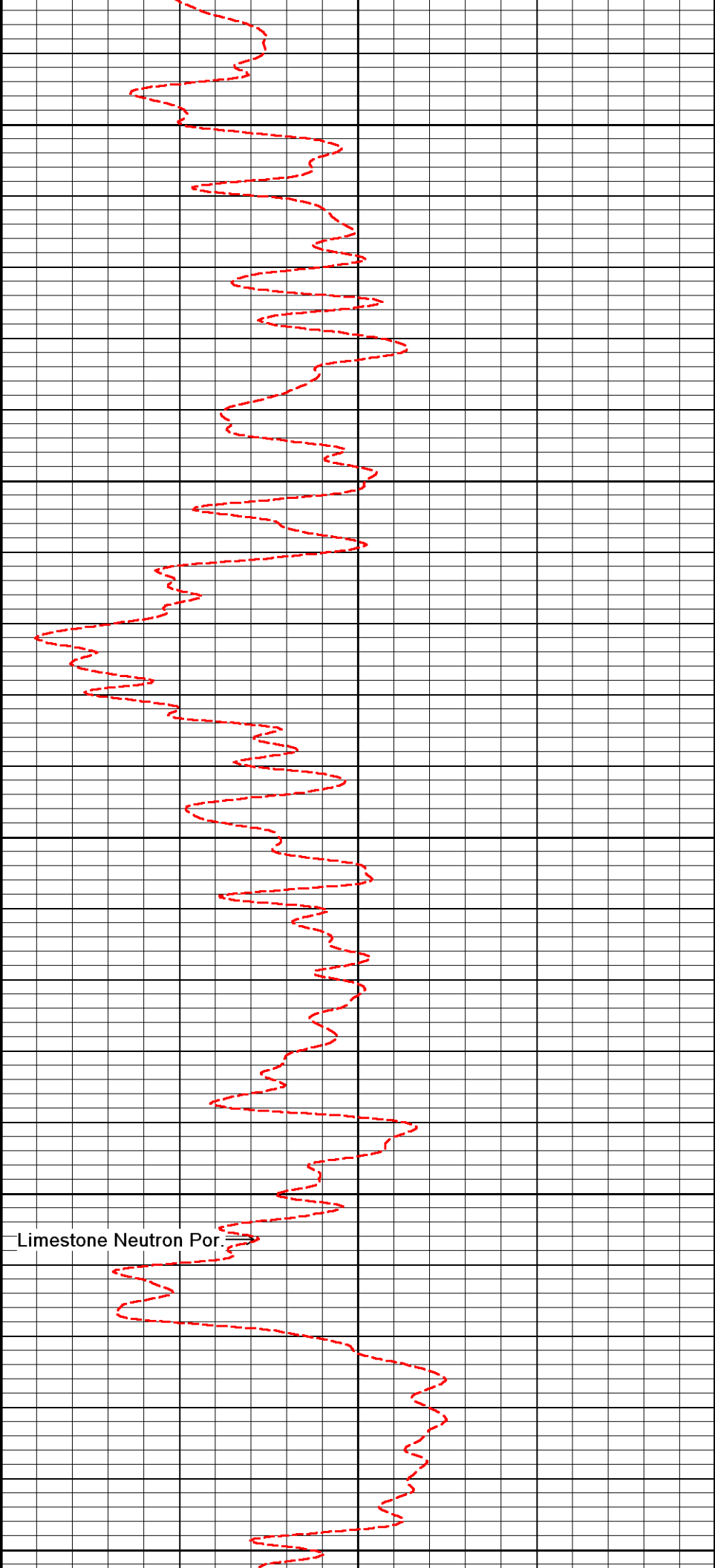
4950

5000

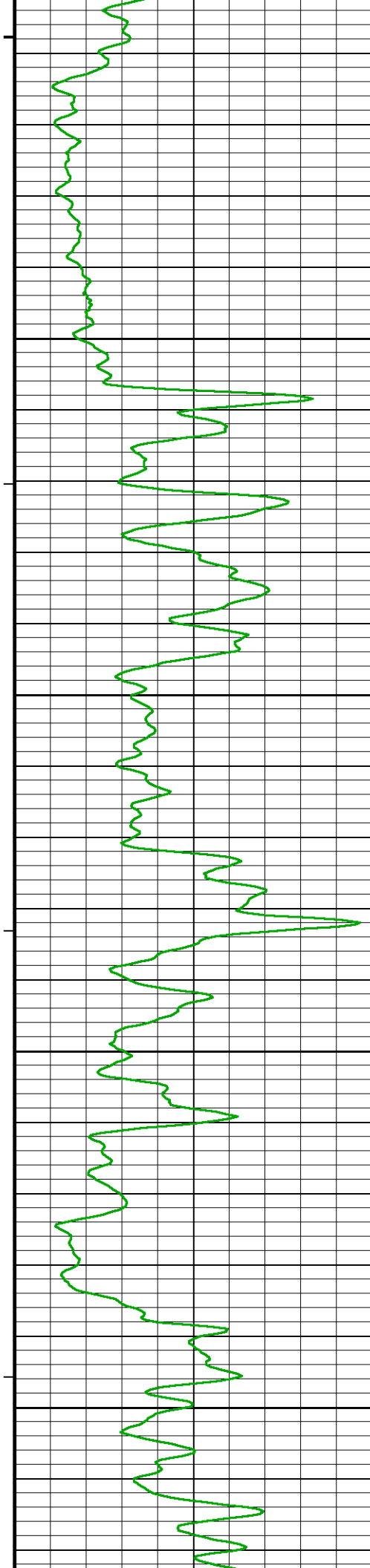
5050

5100

← Gamma Ray



Limestone Neutron Por.

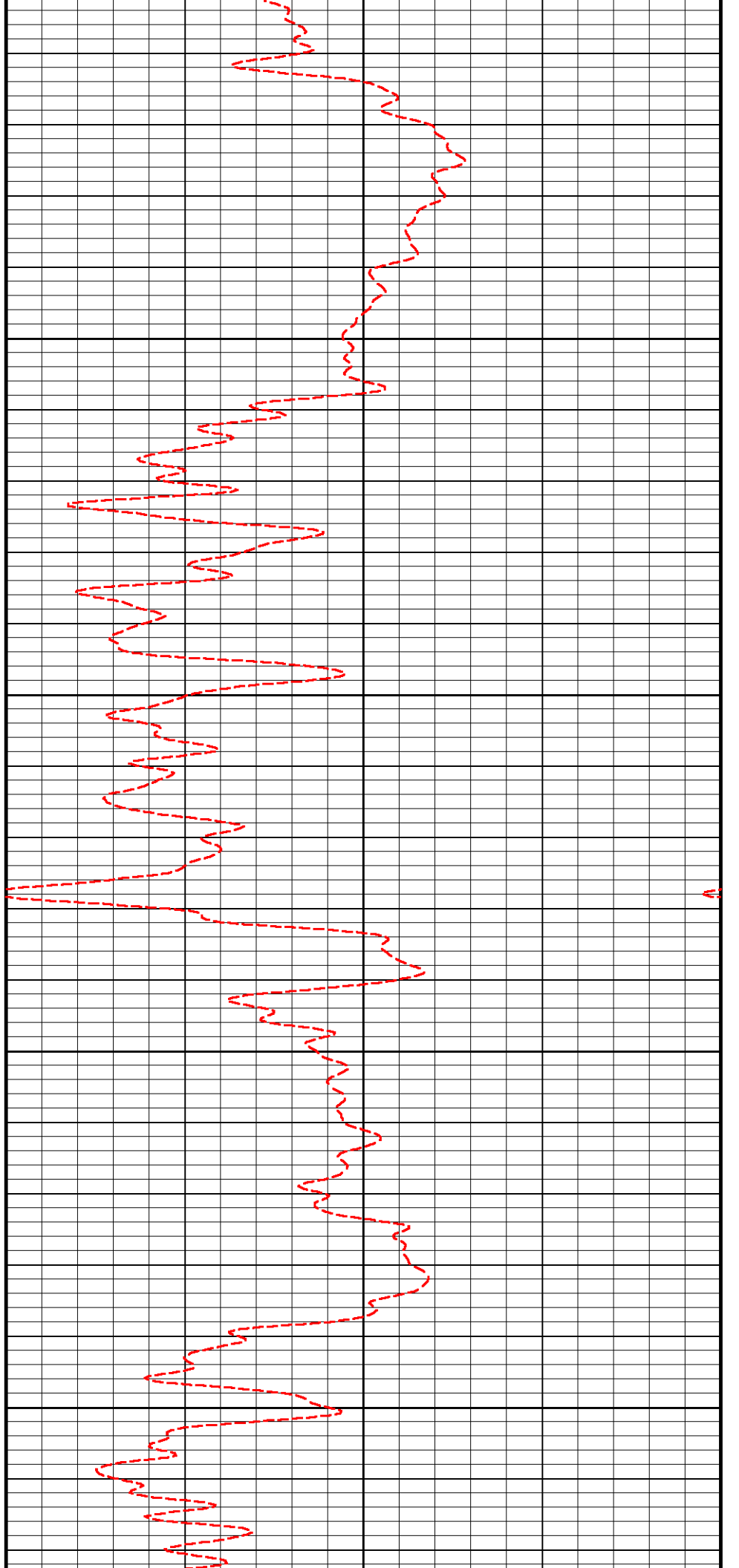


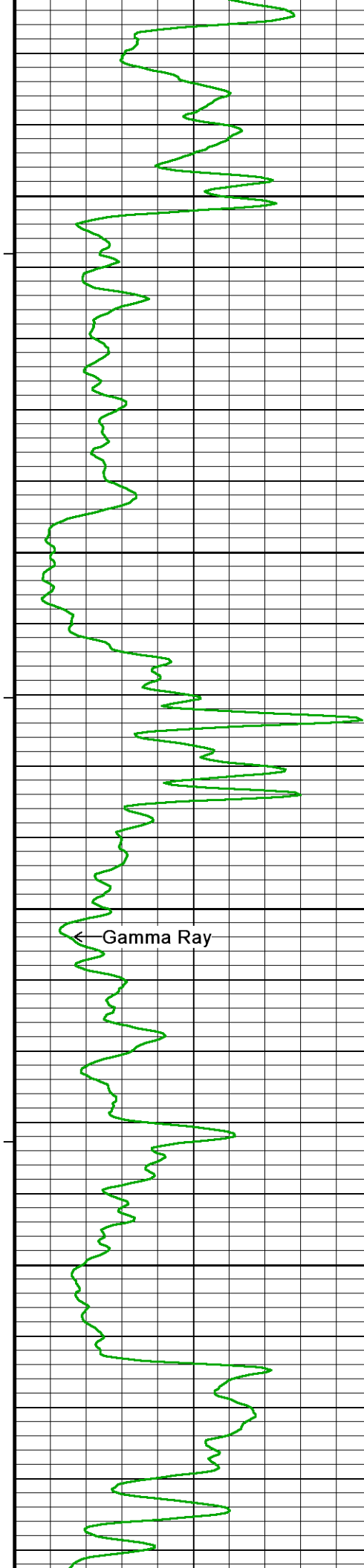
5150

5200

5250

5300





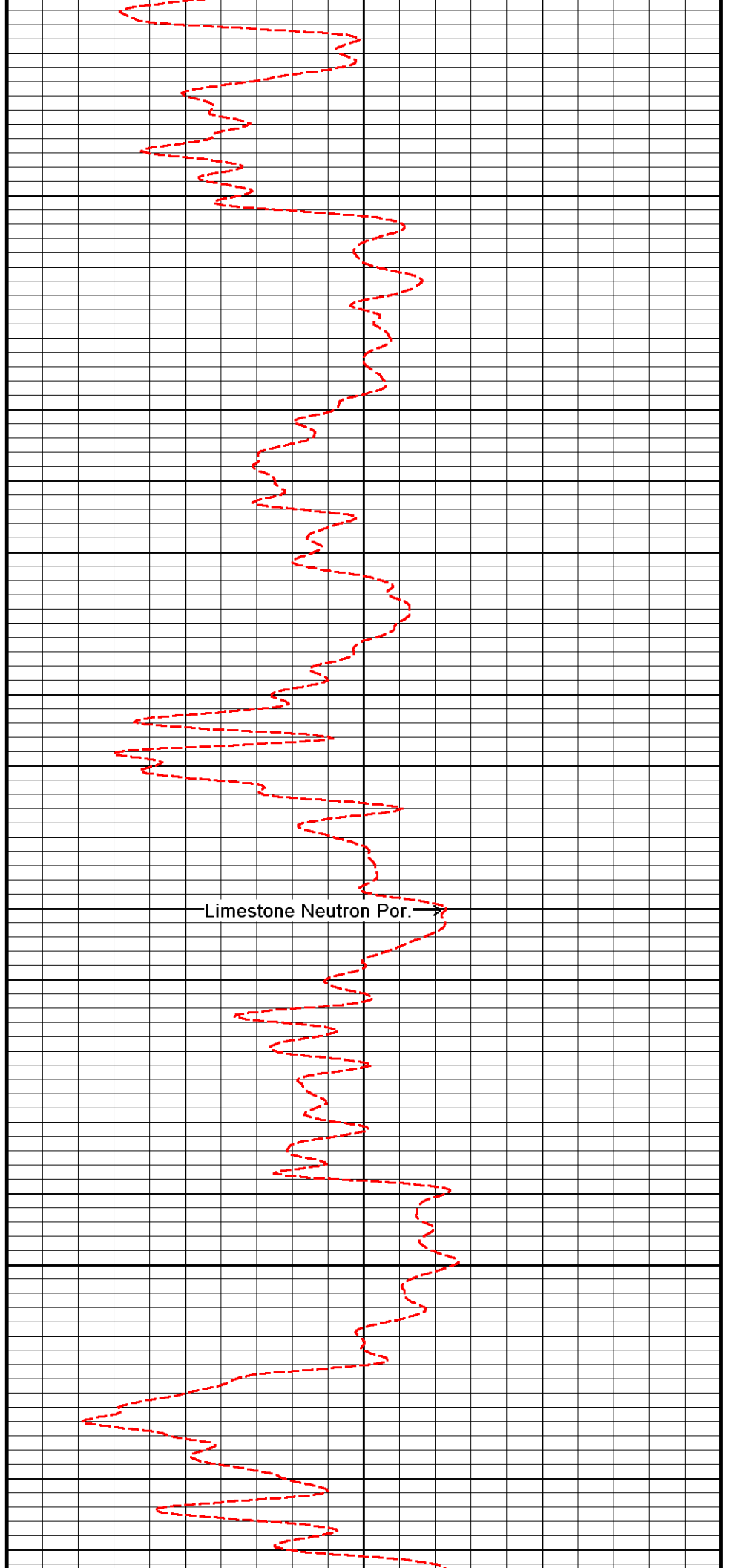
5350

5400

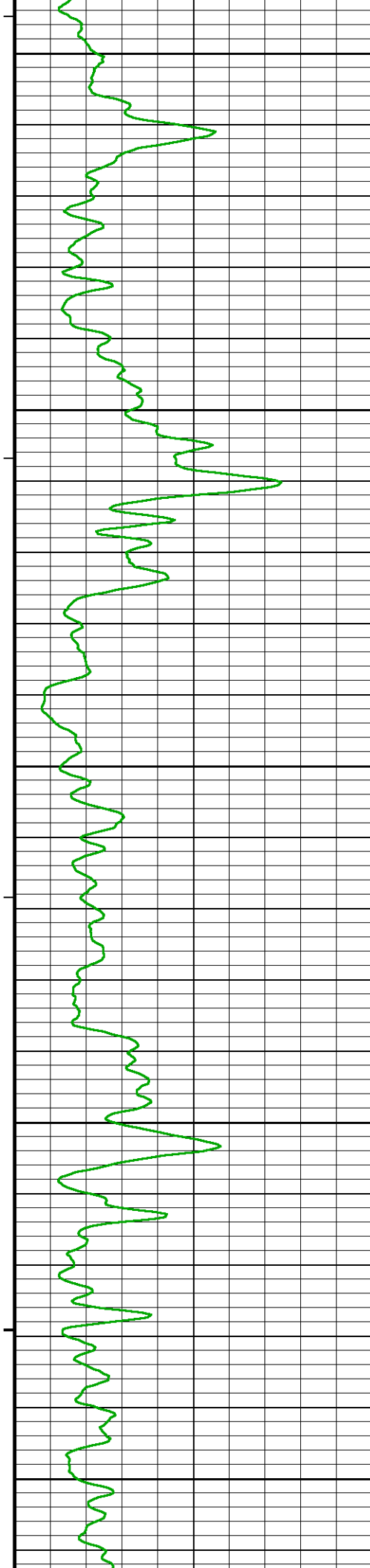
5450

5500

← Gamma Ray



Limestone Neutron Por. →



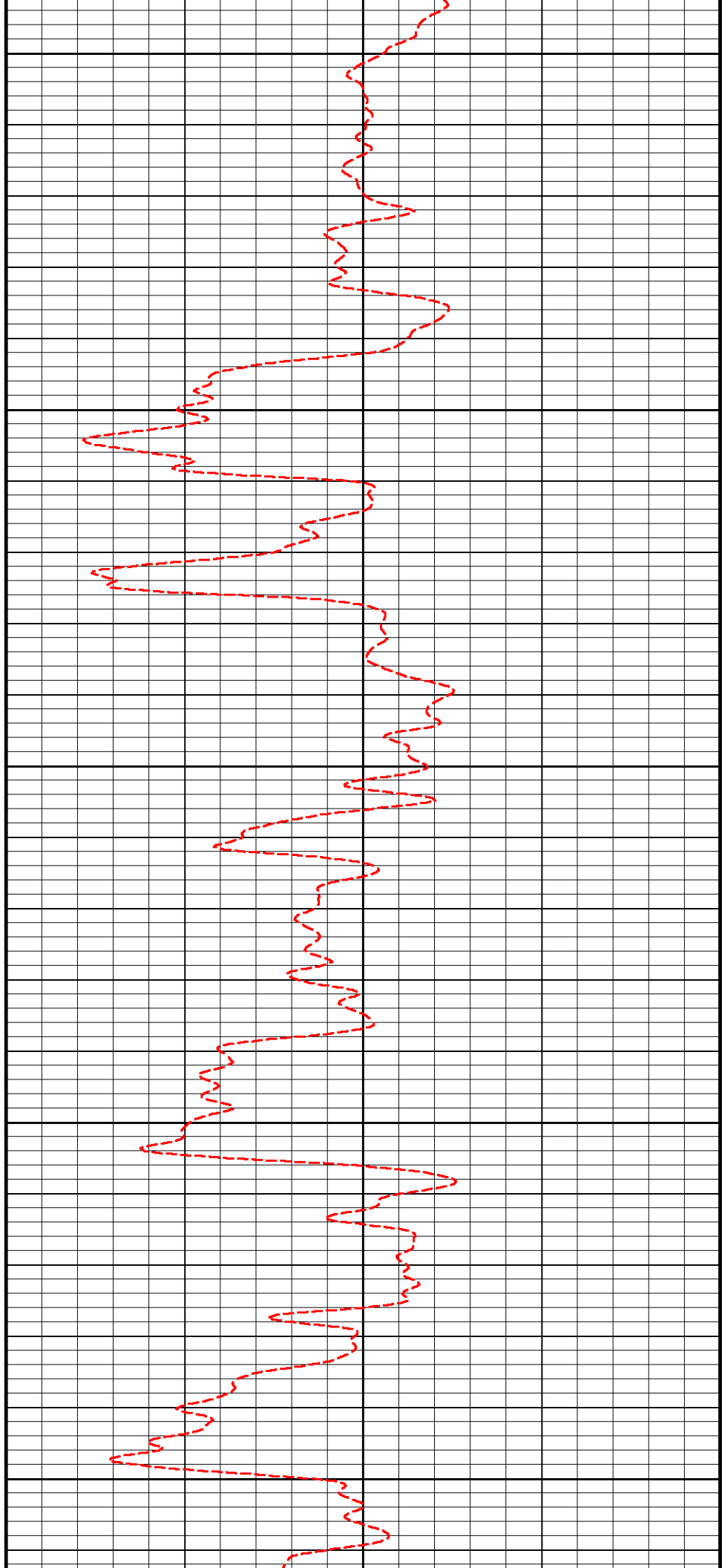
5550

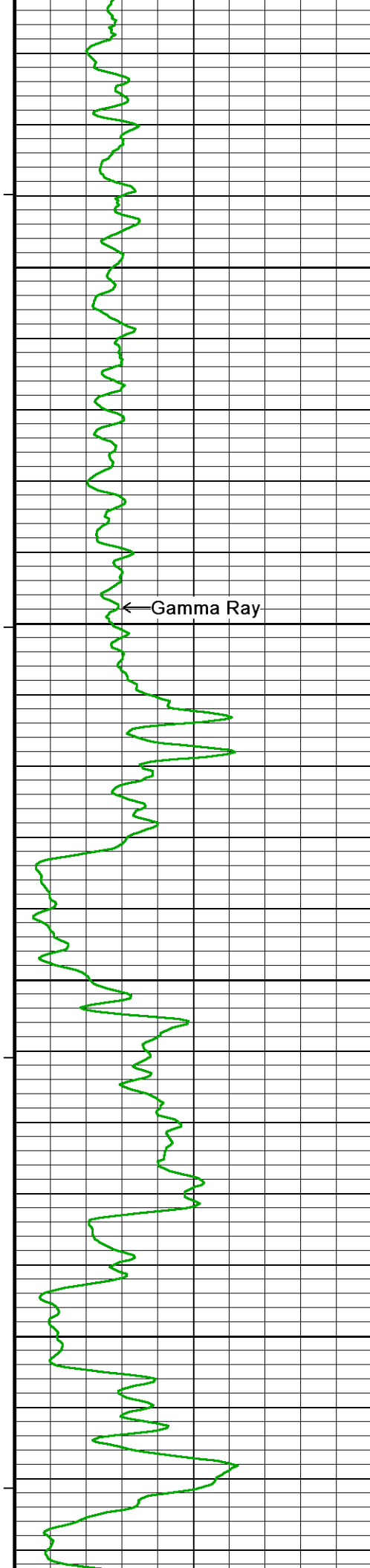
5600

5650

5700

5750





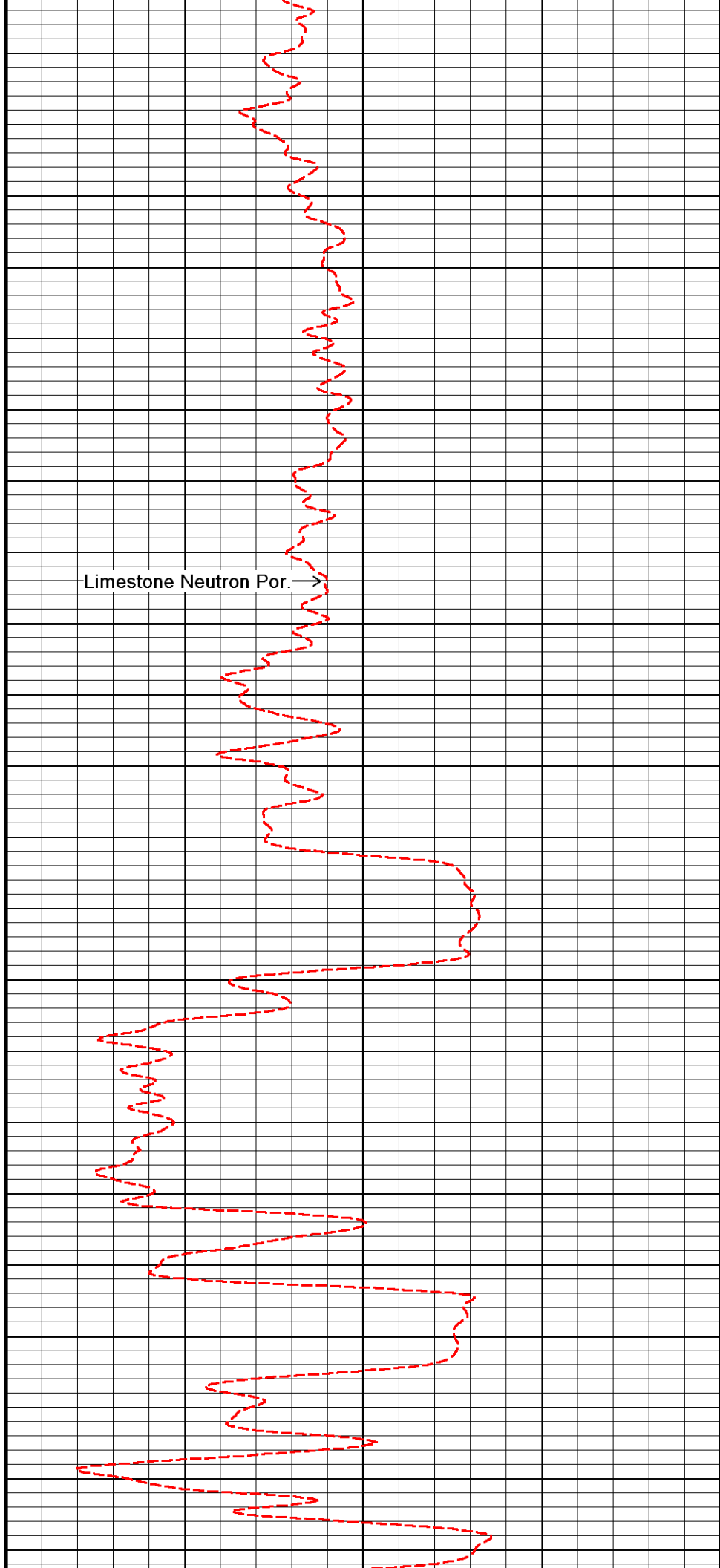
← Gamma Ray

5800

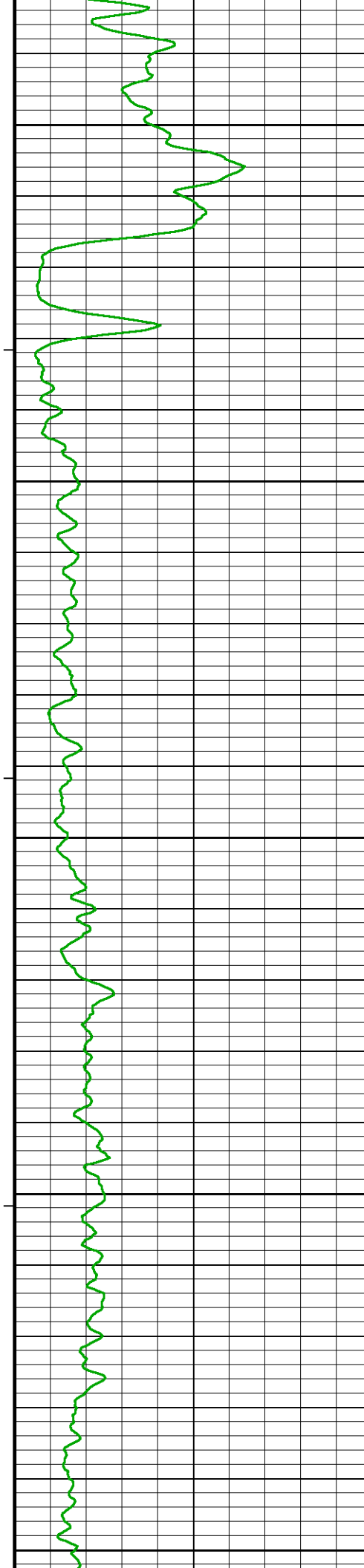
5850

5900

5950



Limestone Neutron Por. →



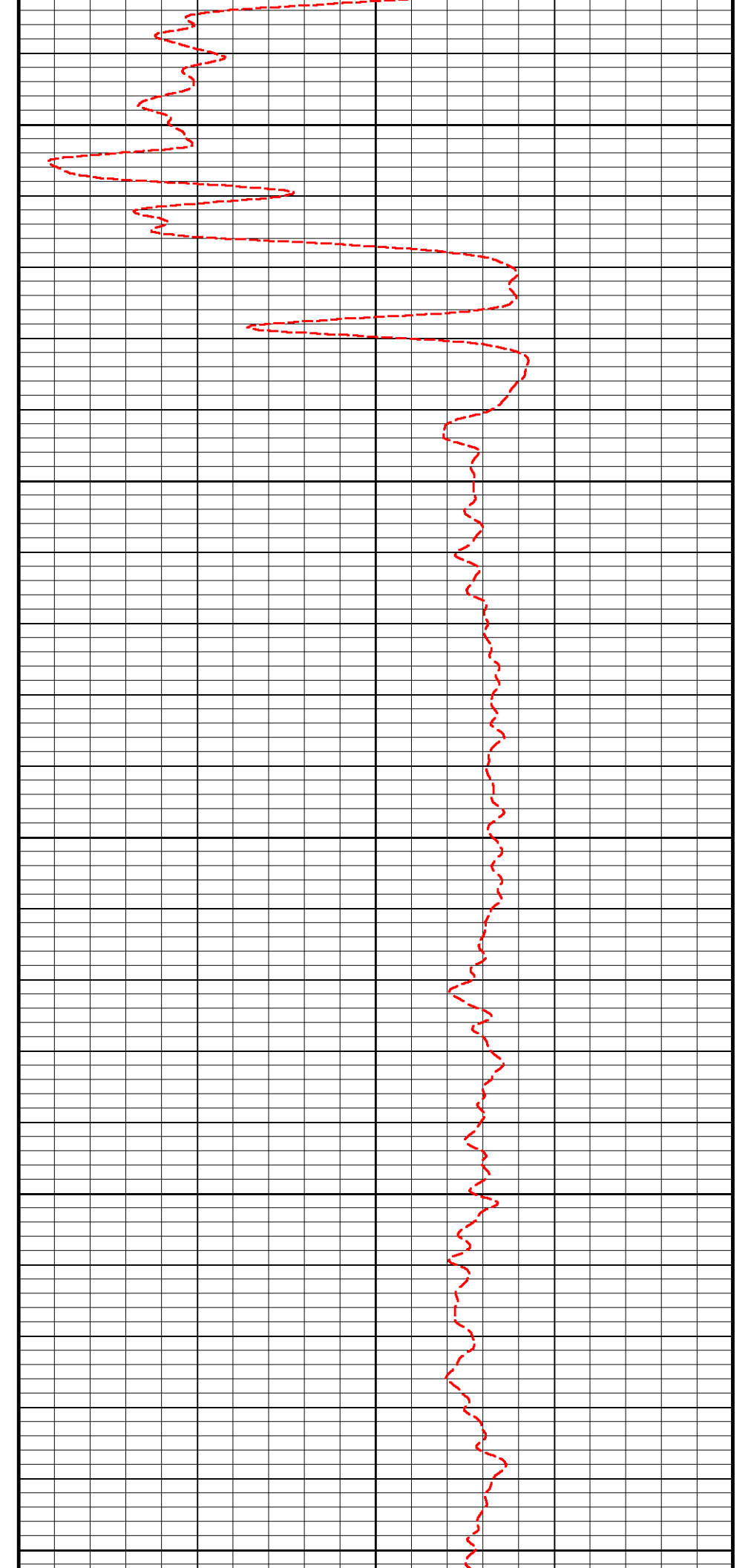
6000

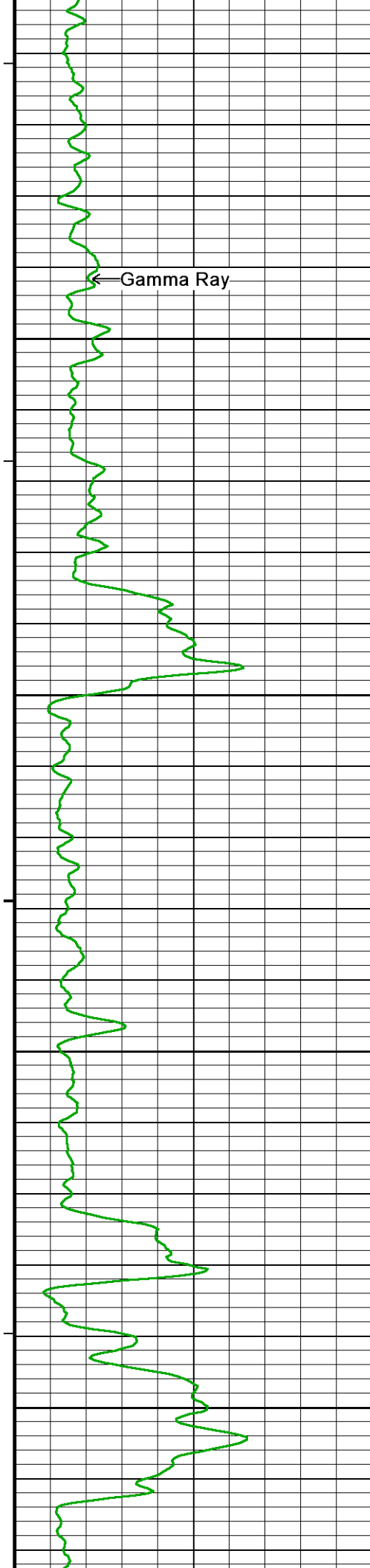
6050

6100

6150

6200





← Gamma Ray

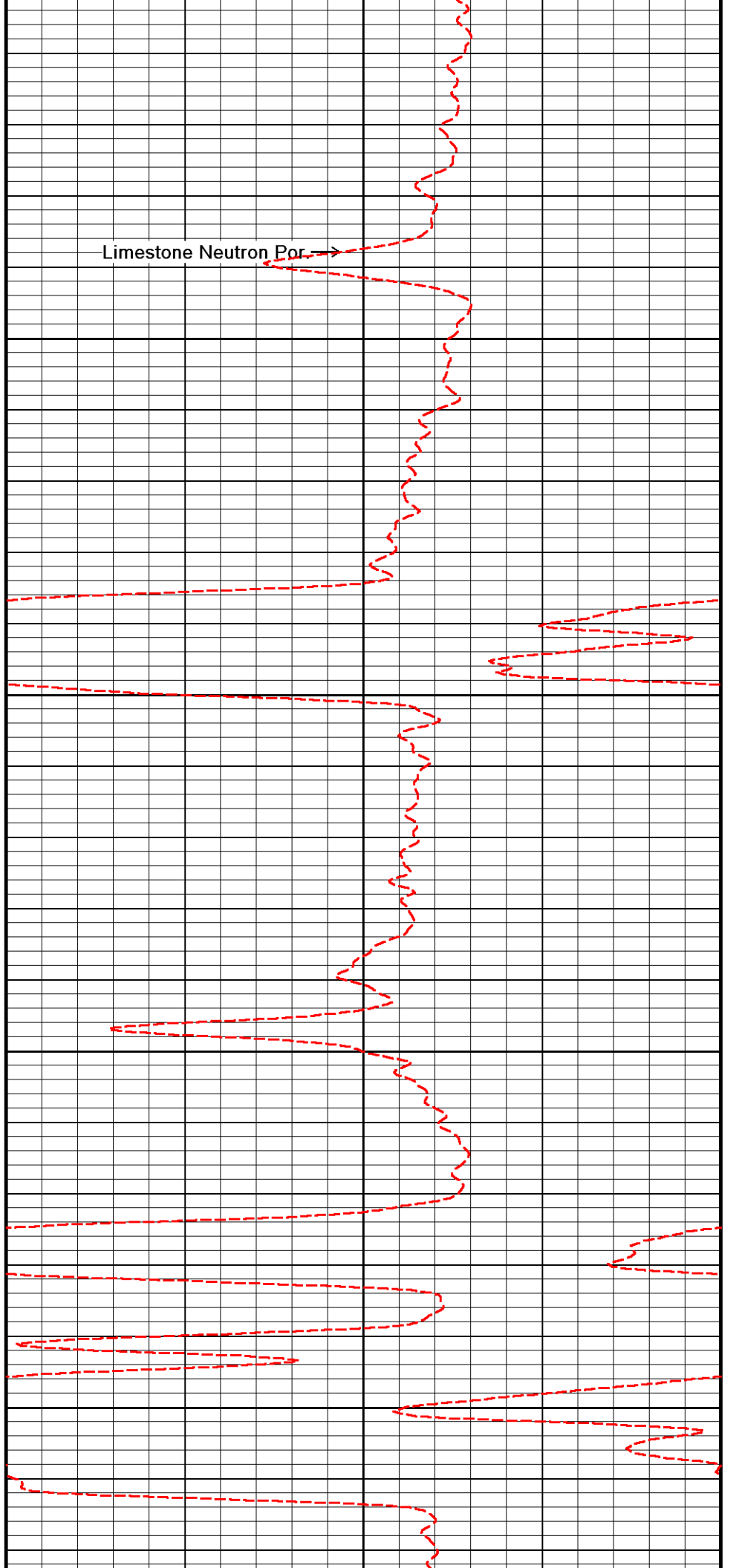
6250

6300

6350

6400

Limestone Neutron Por. →





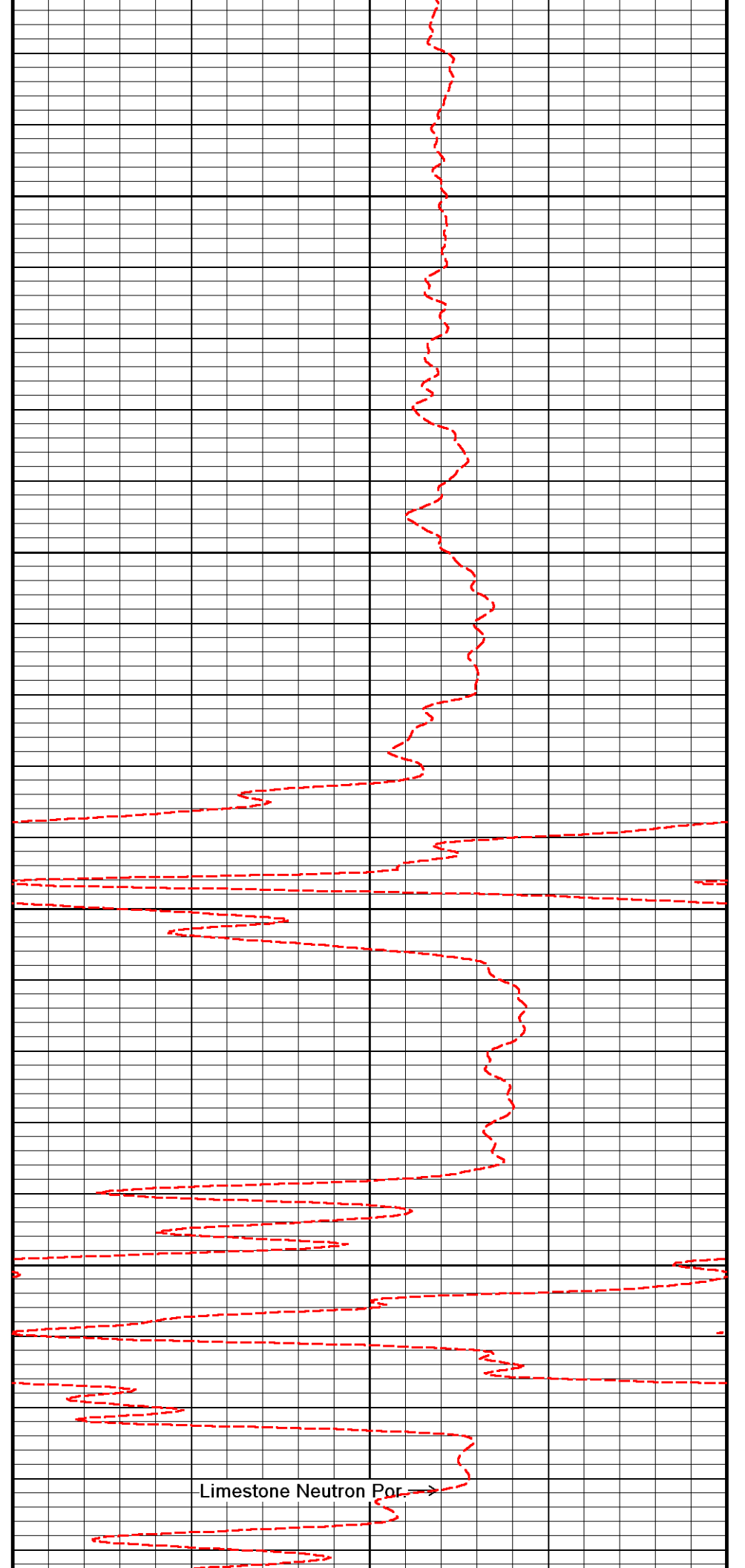
6450

6500

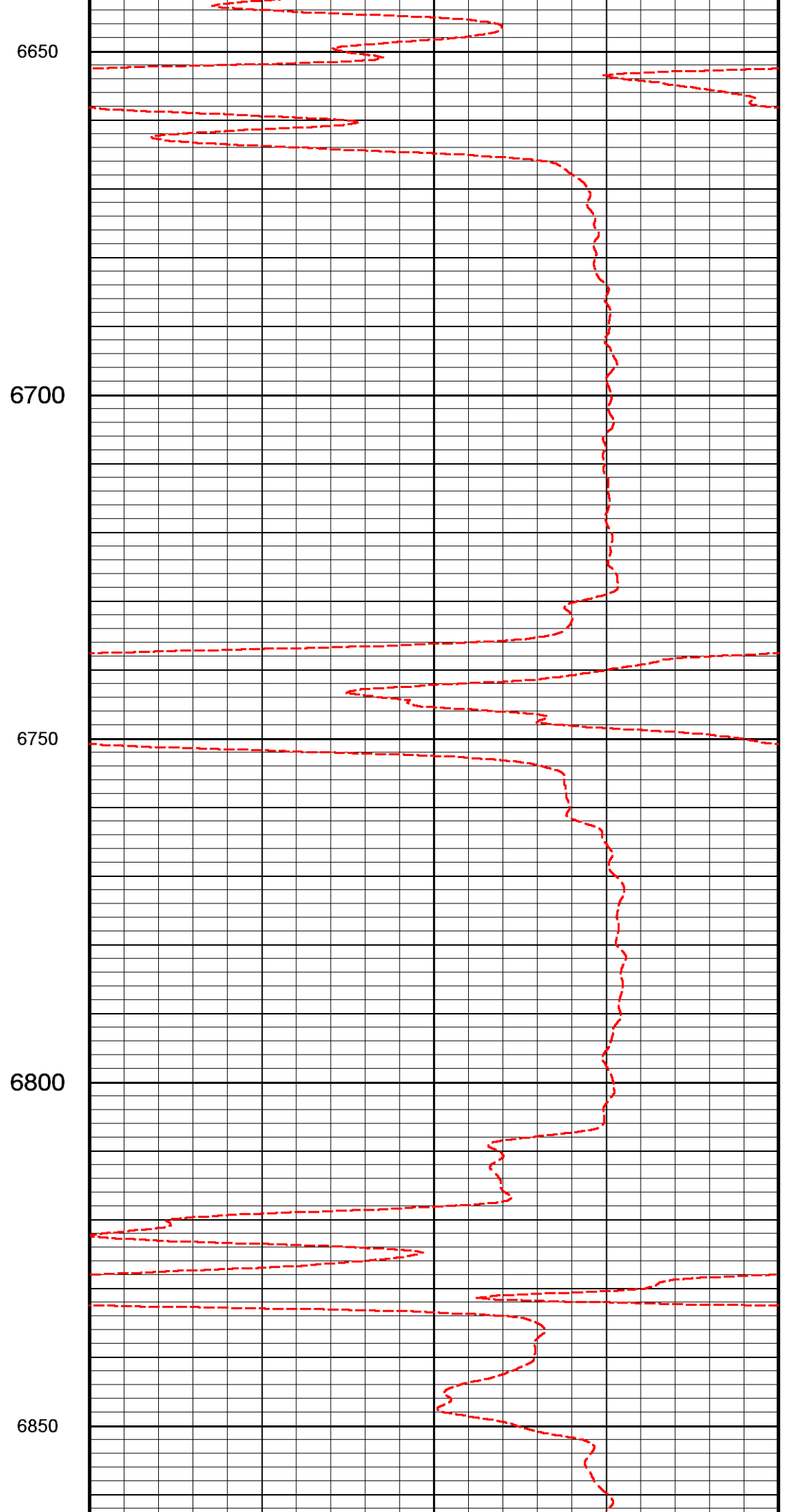
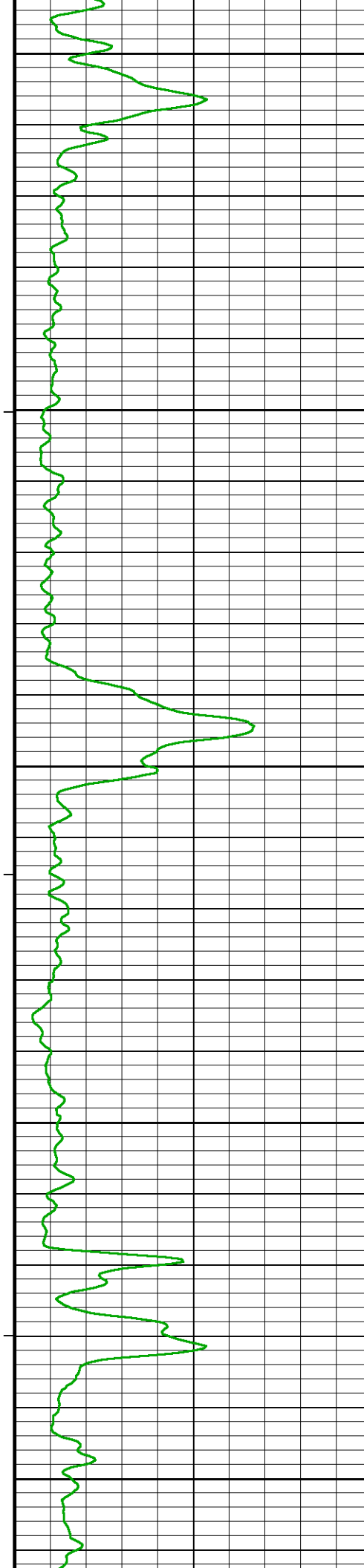
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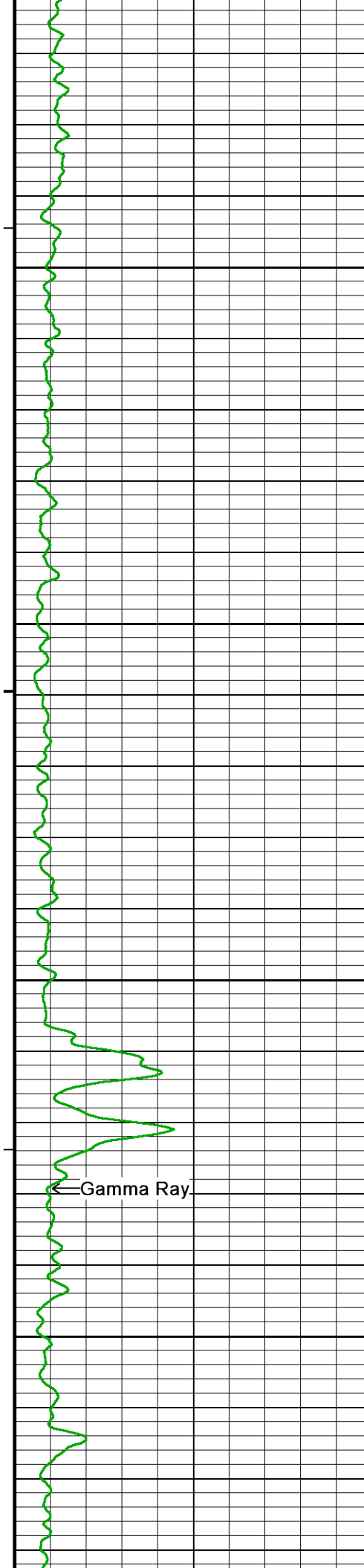
6600

← Gamma Ray



Limestone Neutron Por. →





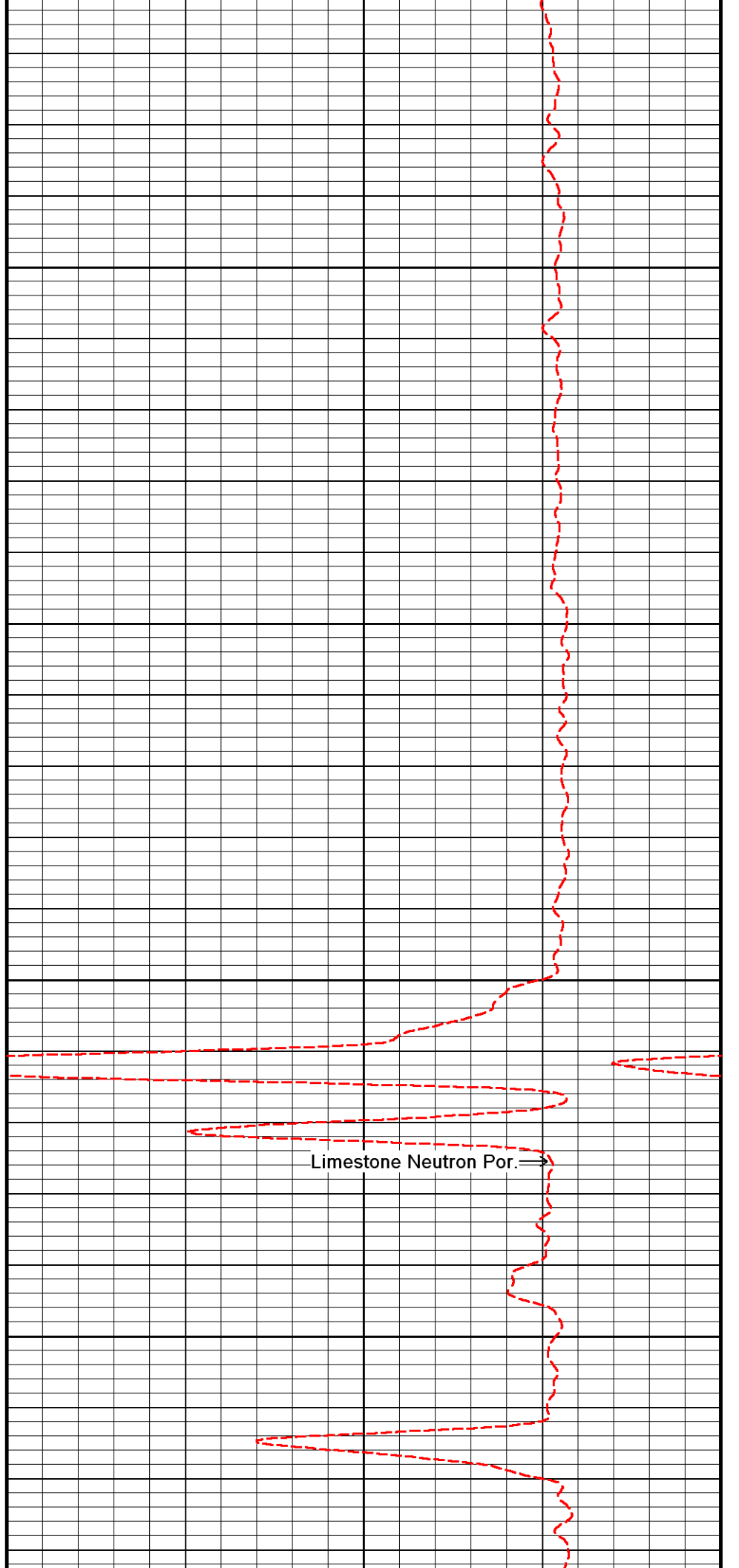
6900

6950

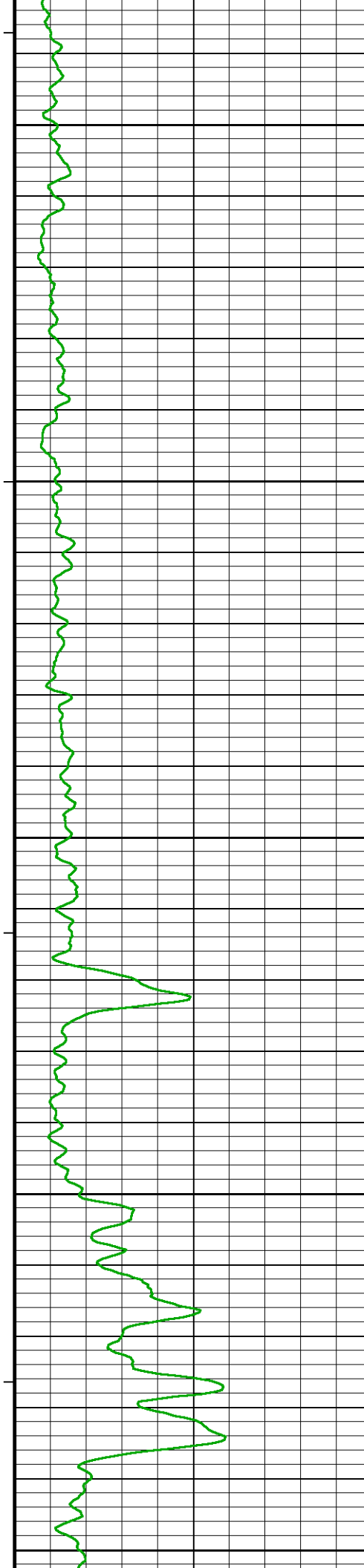
7000

7050

← Gamma Ray



Limestone Neutron Por. →



7100

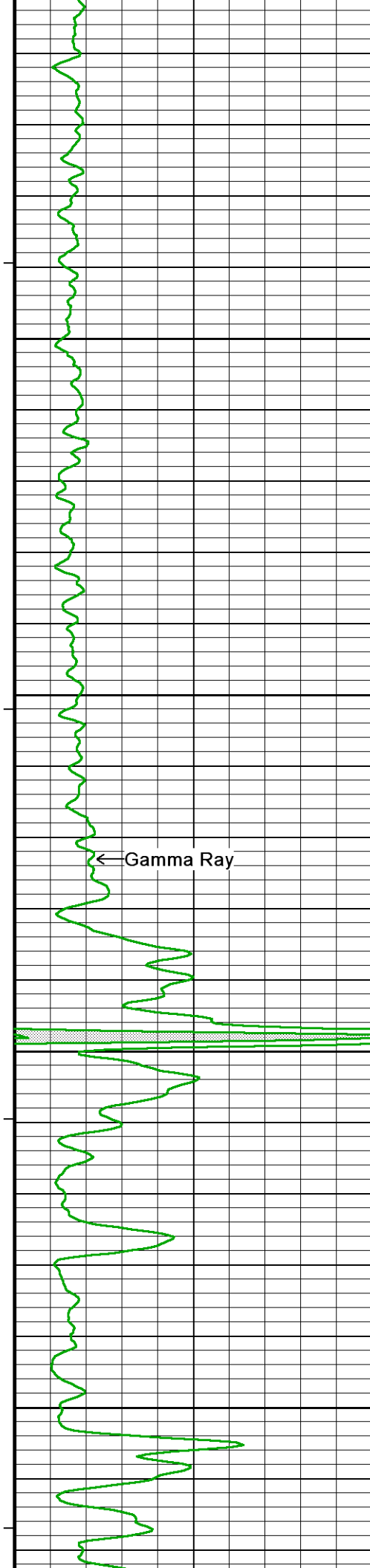
7150

7200

7250

7300





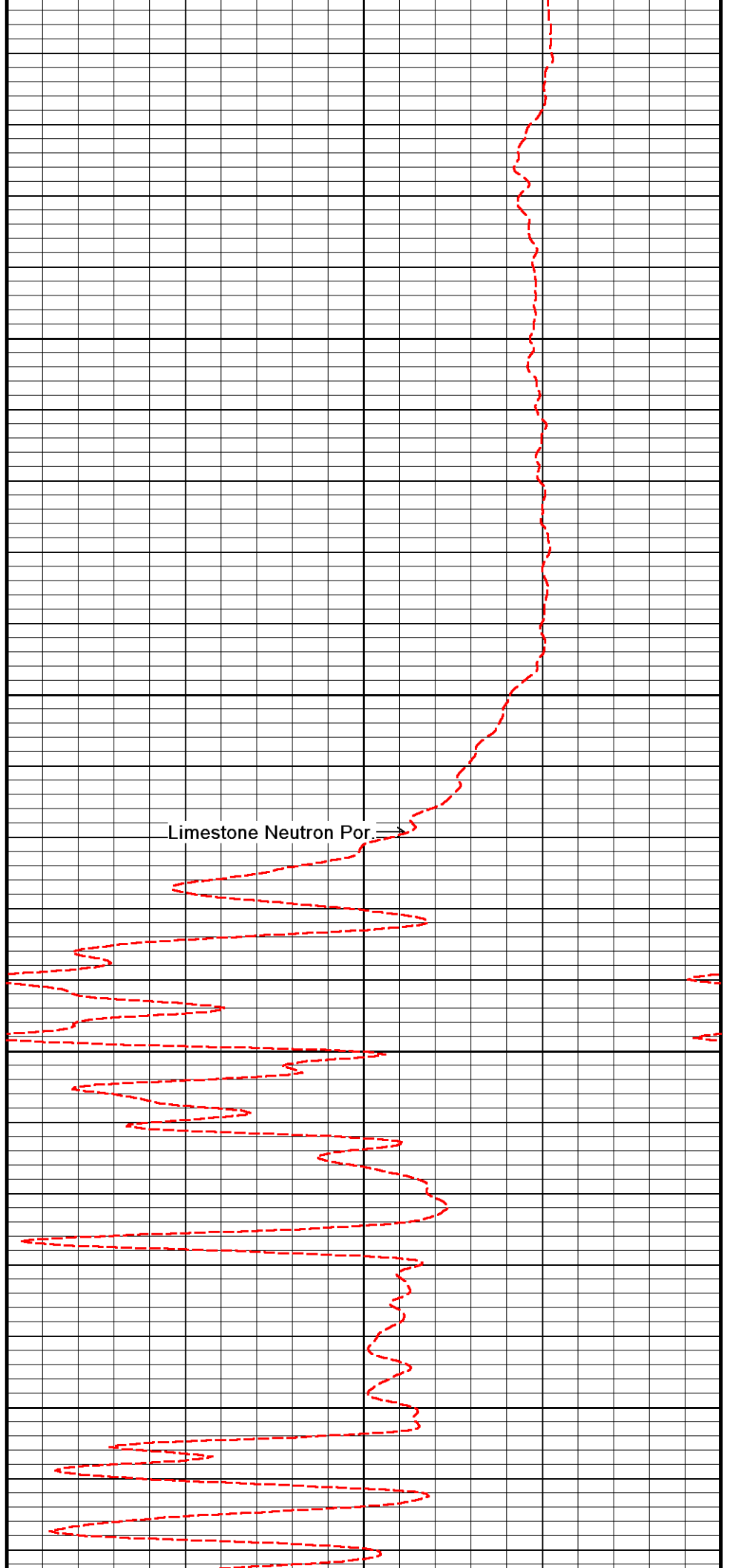
← Gamma Ray

7350

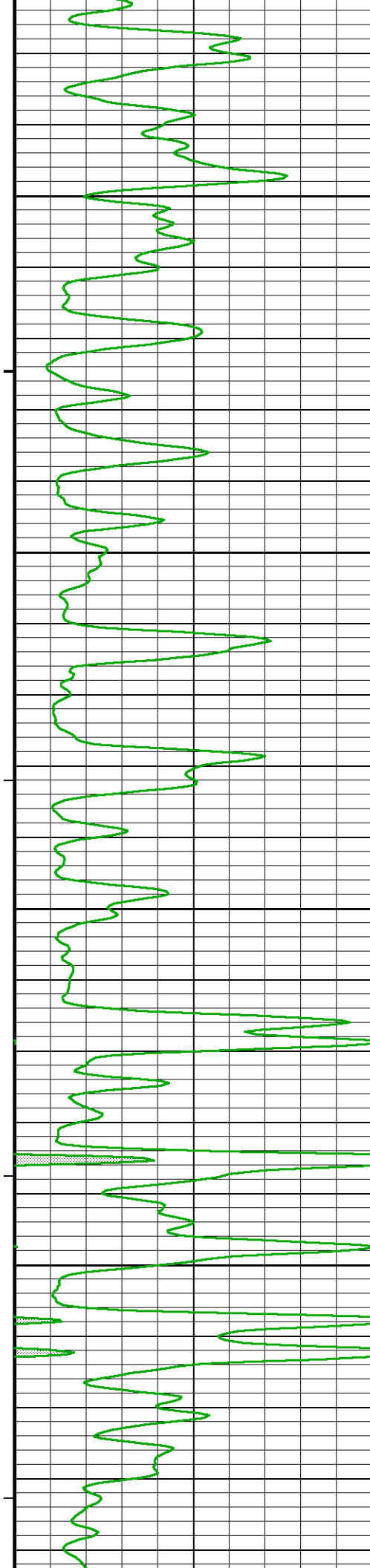
7400

7450

7500



Limestone Neutron Por →

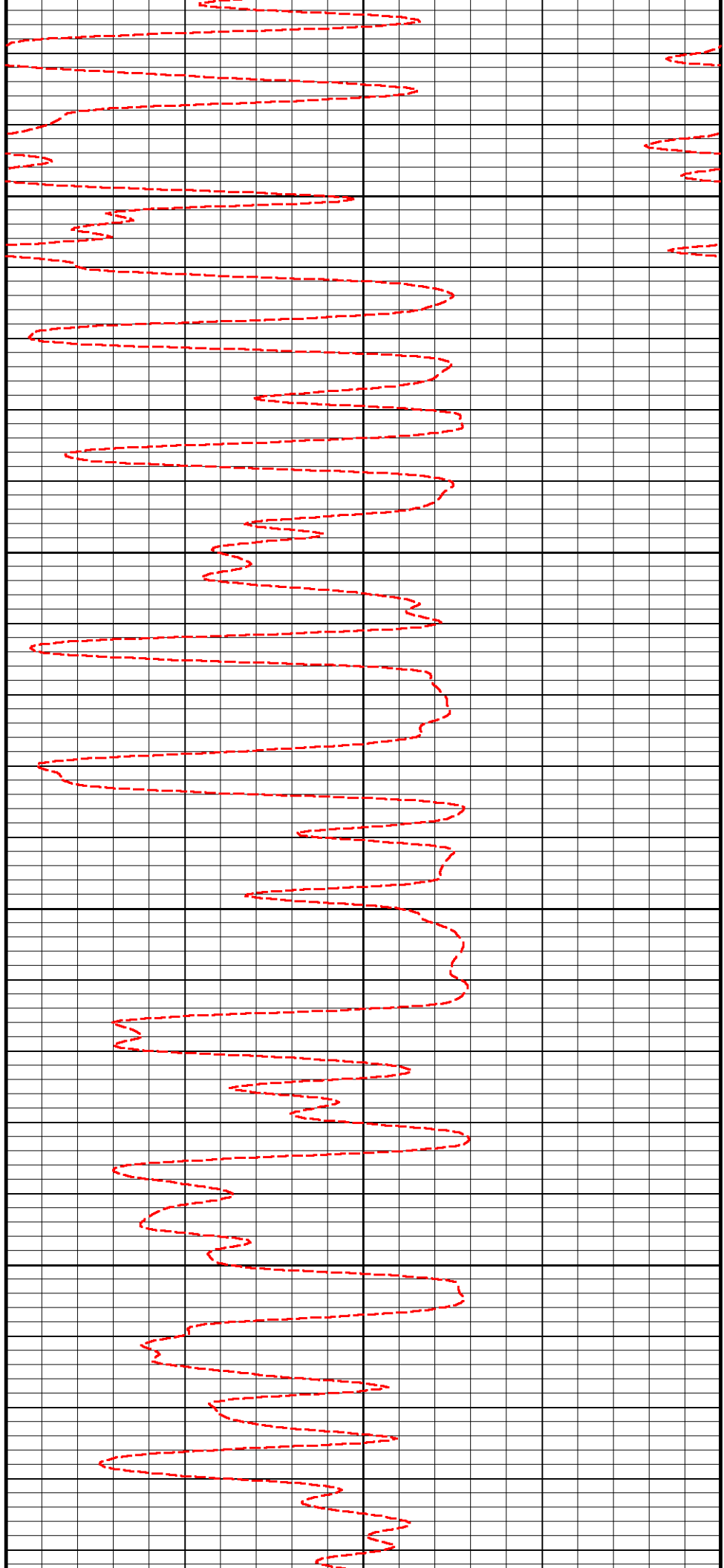


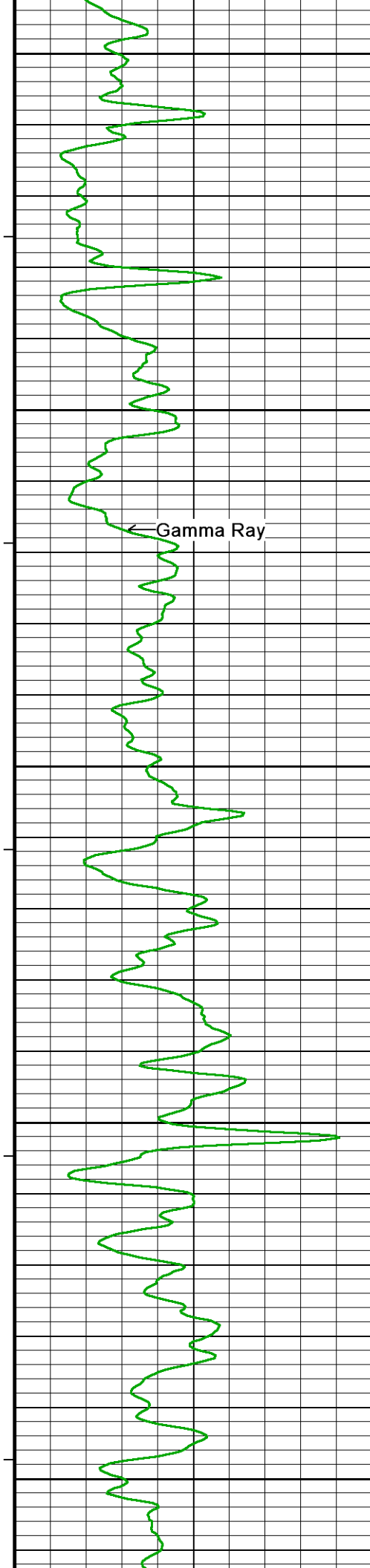
7550

7600

7650

7700





← Gamma Ray

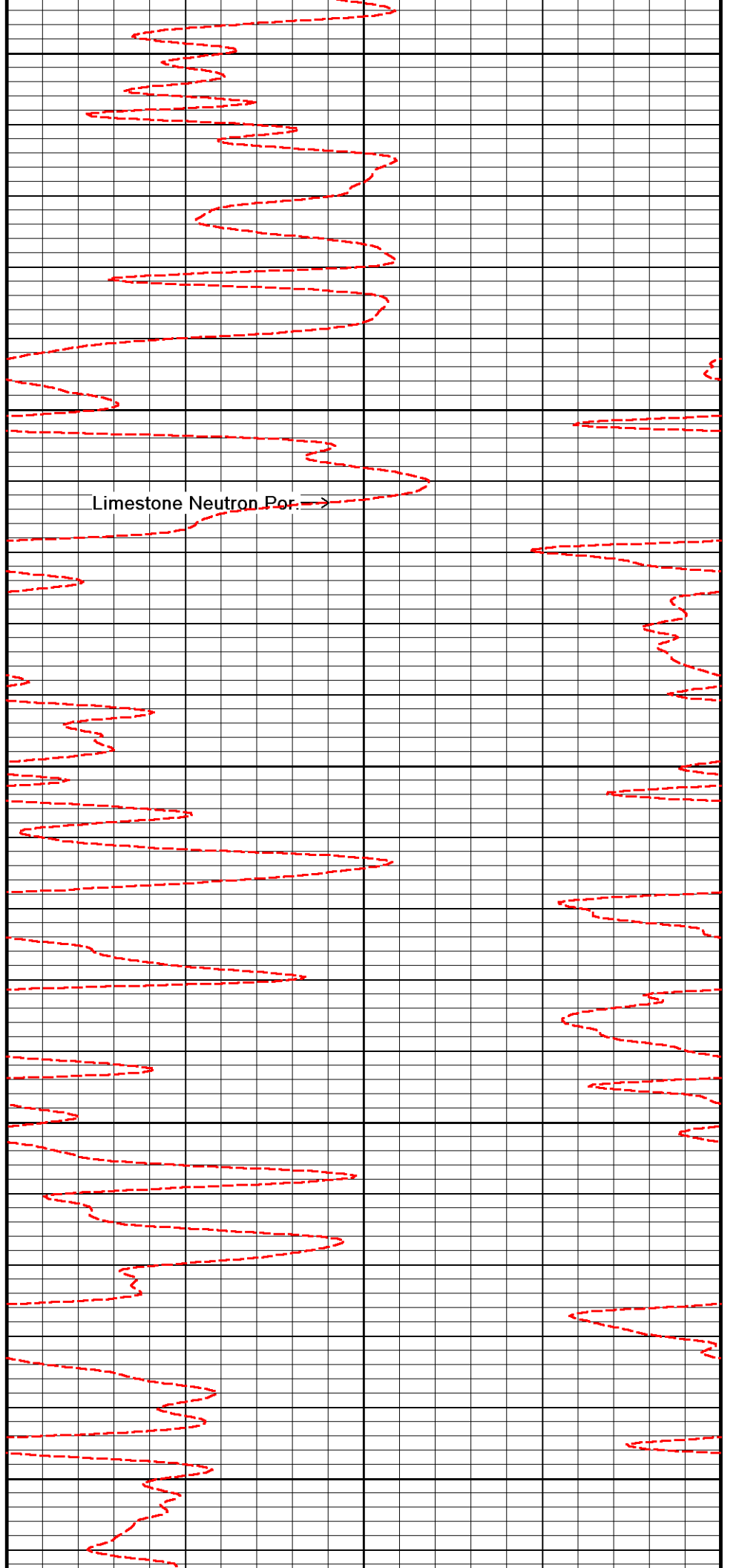
7750

7800

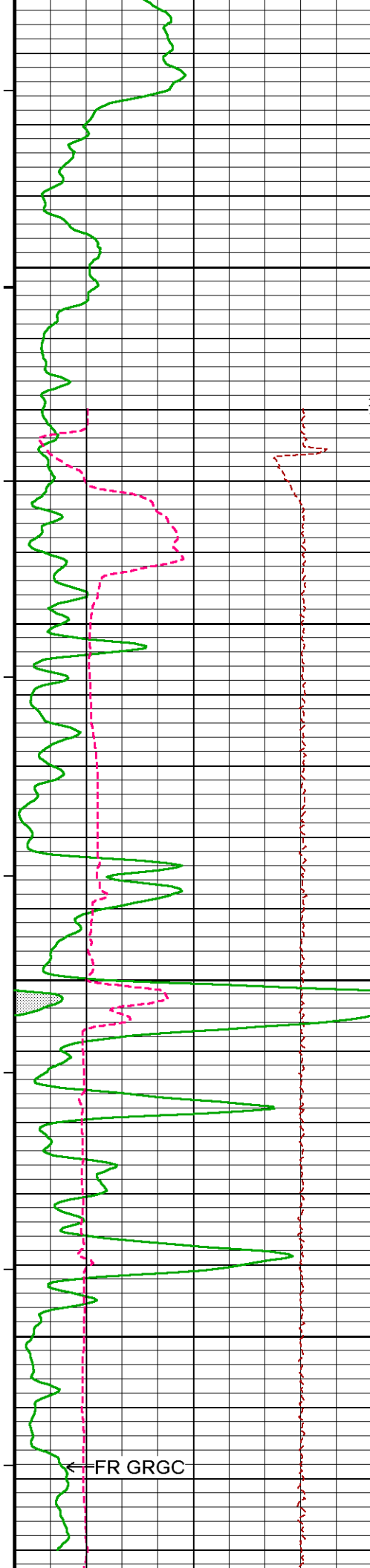
7850

7900

7950



Limestone Neutron Por. →



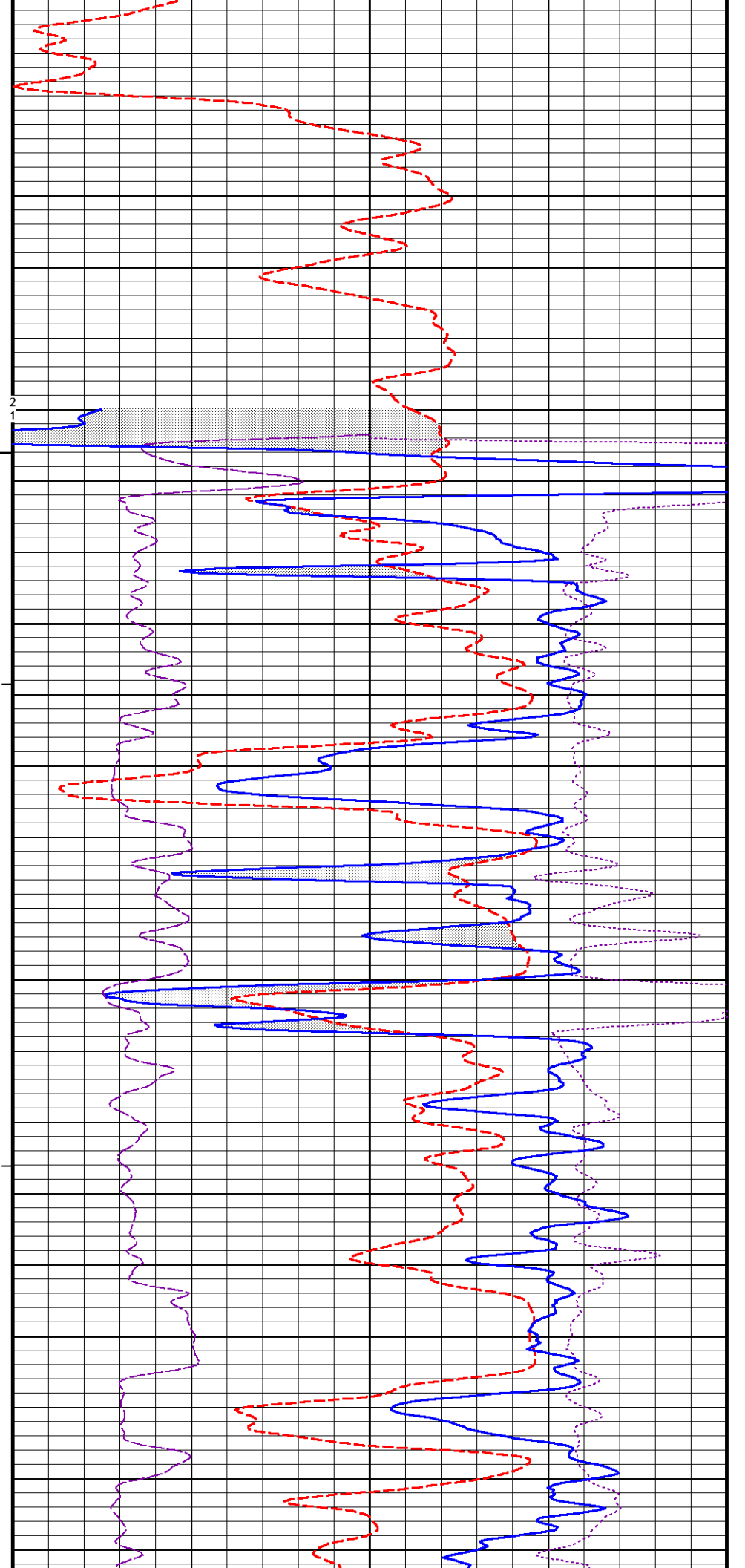
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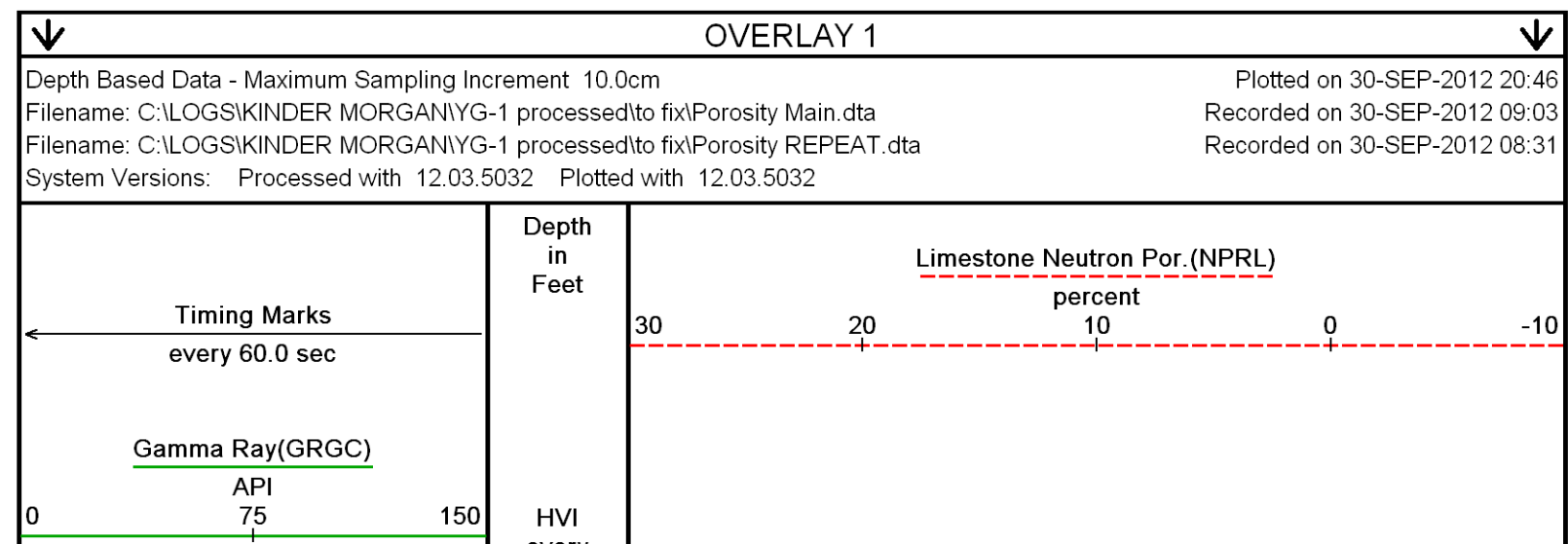
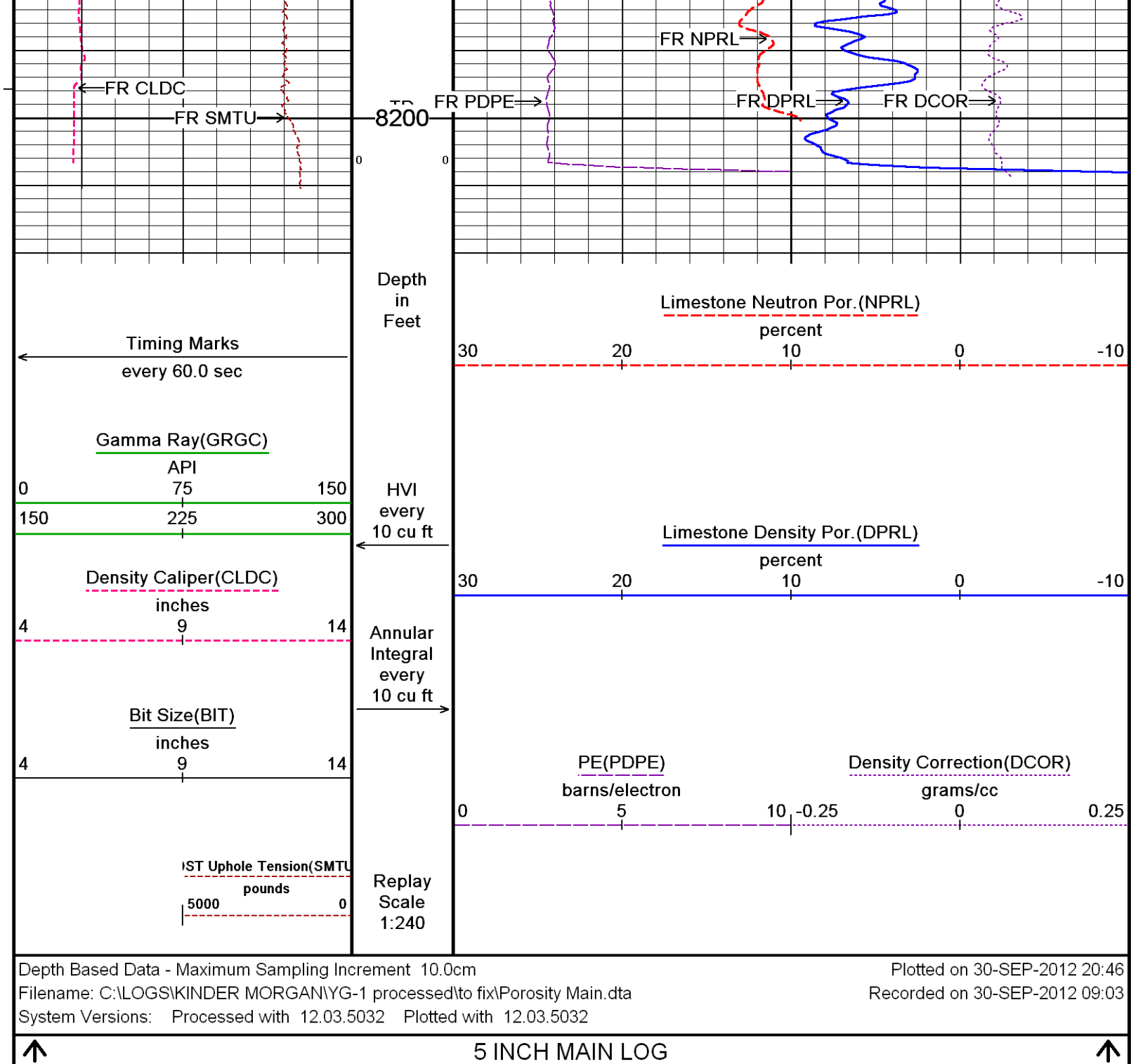
Casing
Shoe

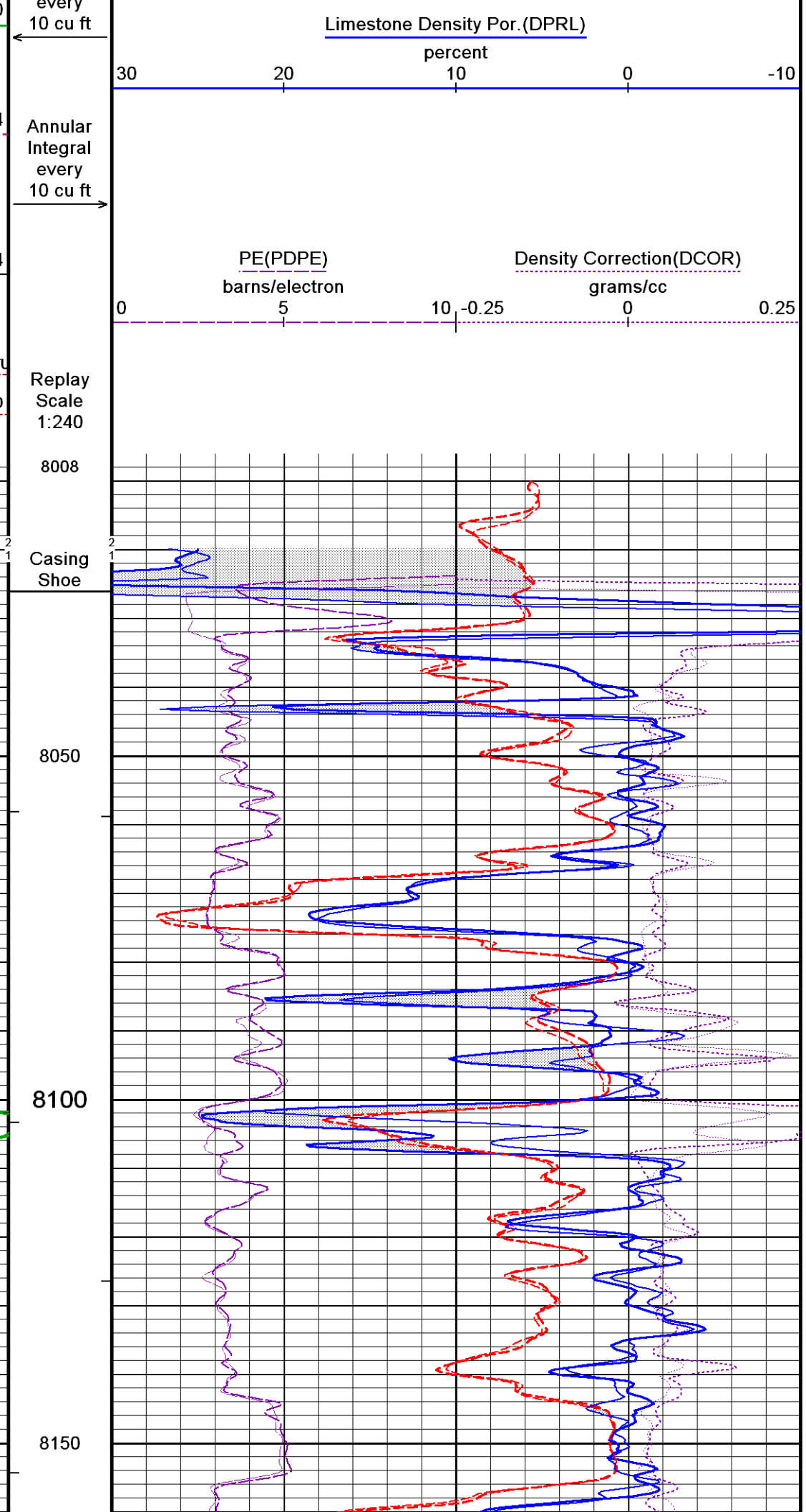
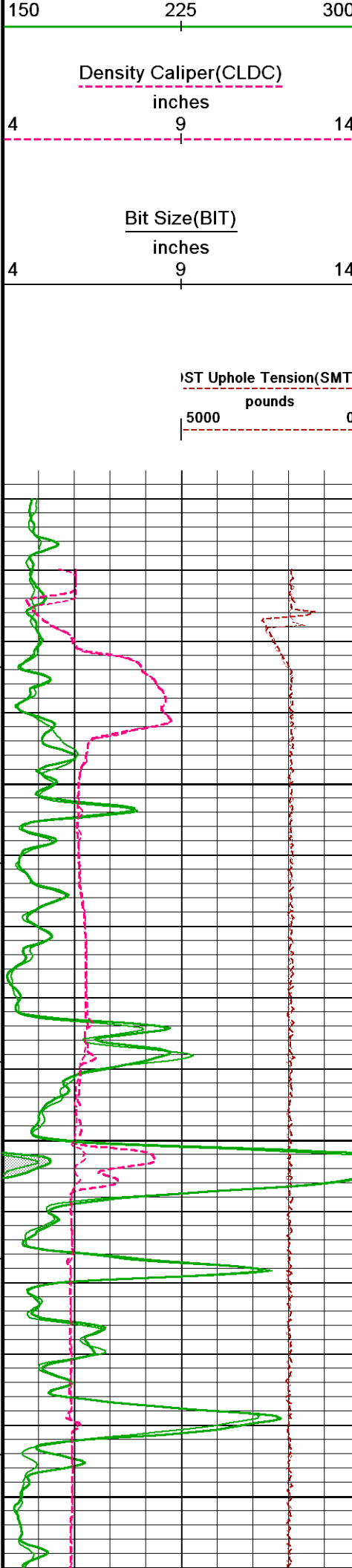
8050

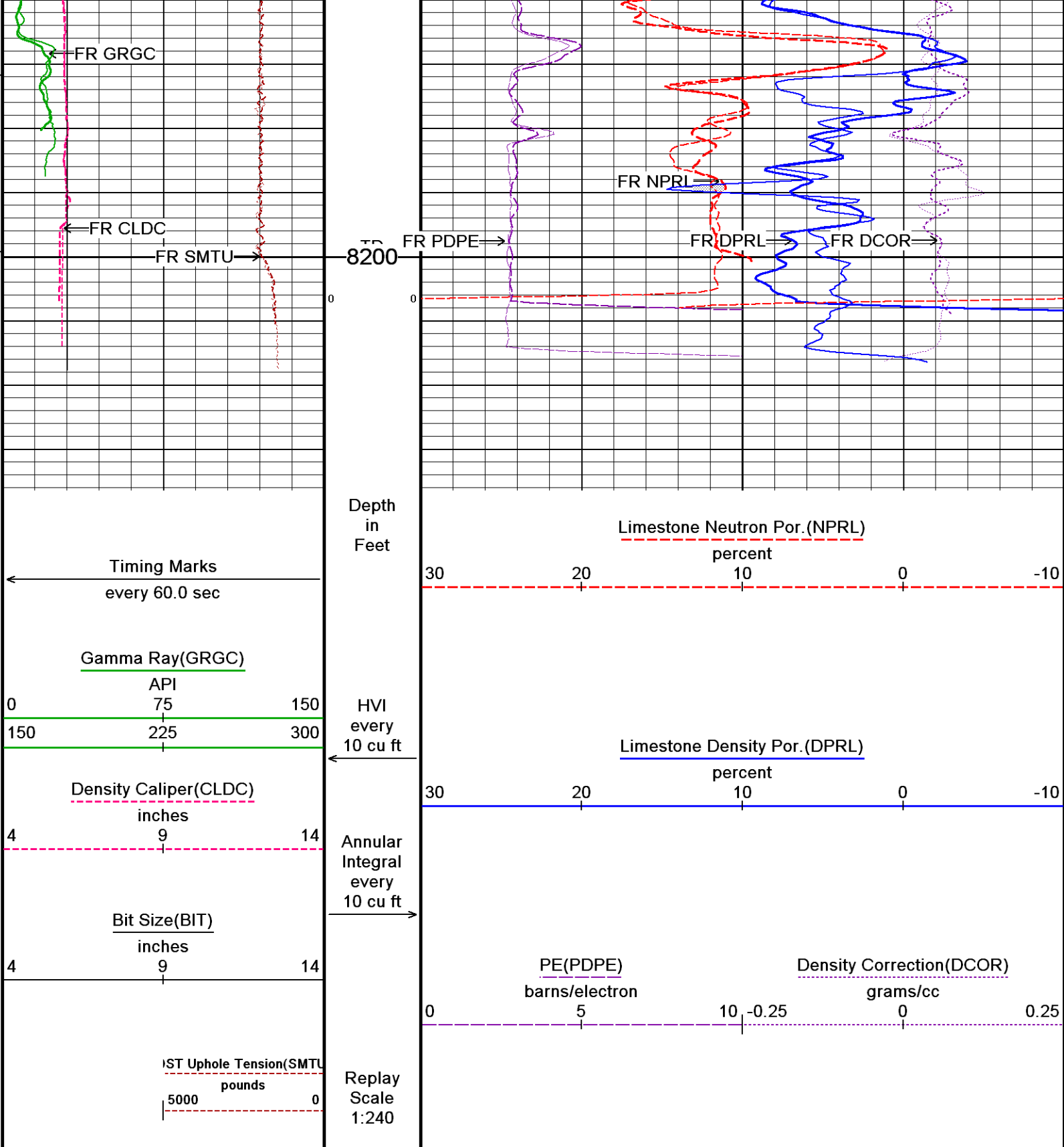
8100

8150









Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\LOGS\KINDER MORGANYG-1 processed\to fix\Porosity Main.dta
Filename: C:\LOGS\KINDER MORGANYG-1 processed\to fix\Porosity REPEAT.dta
System Versions: Processed with 12.03.5032 Plotted with 12.03.5032

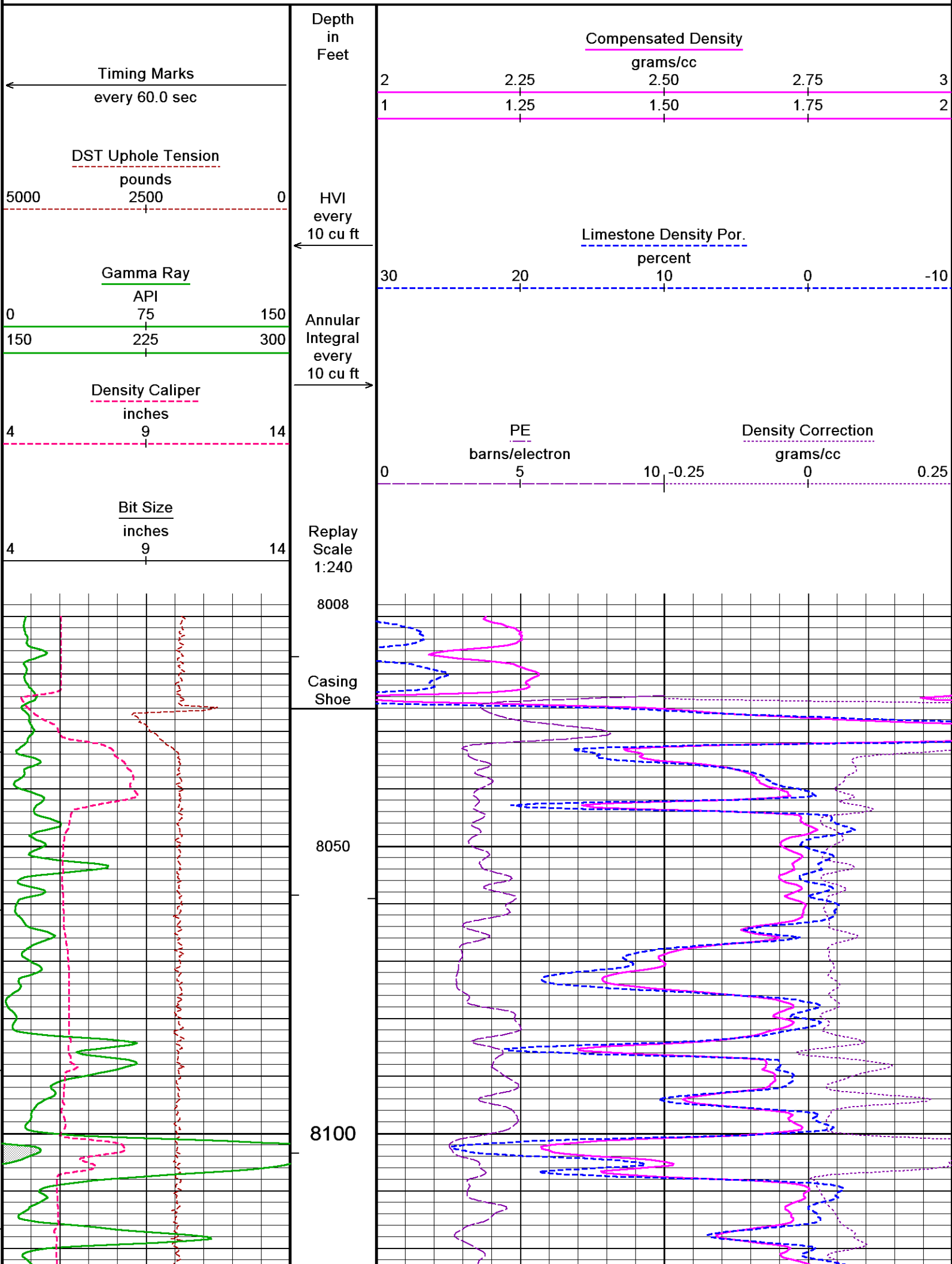
Plotted on 30-SEP-2012 20:46
Recorded on 30-SEP-2012 09:03
Recorded on 30-SEP-2012 08:31

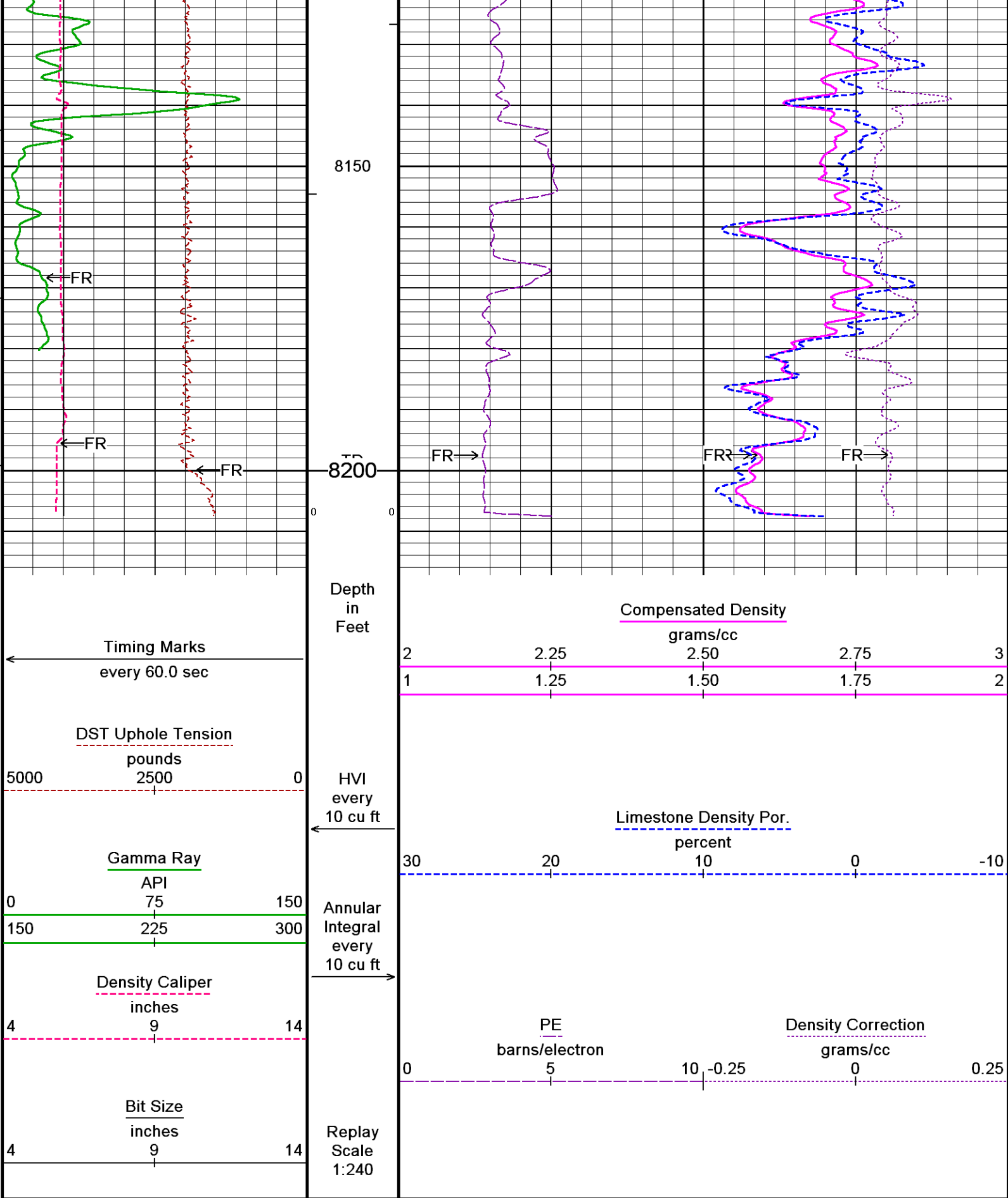
↑ OVERLAY 1 ↑

↓ 5 INCH MAIN LOG ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\LOGS\KINDER MORGANYG-1 processed\to fix\Porosity Main.dta
System Versions: Processed with 12.03.5032 Plotted with 12.03.5032

Plotted on 30-SEP-2012 20:46
Recorded on 30-SEP-2012 09:03





Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\LOGS\KINDER MORGANYG-1 processed\to fix\Porosity Main.dta
System Versions: Processed with 12.03.5032 Plotted with 12.03.5032

Plotted on 30-SEP-2012 20:46
Recorded on 30-SEP-2012 09:03

BEFORE SURVEY CALIBRATION

C:\LOGS\KINDER MORGANYG-1 processed\to fix\Porosity MAIN.dta

General Constants All 000

Last Edited on 30-SEP-2012,12:02

General Parameters

Mud Resistivity	4.710	ohm-metres
Mud Resistivity Temperature	67.000	degrees F
Water Level	3860.000	feet
Density/Neutron Processing	Water Level Switch	

Hole/Annular Volume and Differential Caliper Parameters

HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	3.500	inches
Caliper for Differential Caliper	None	

Rwa Parameters

Porosity used	N/A
Resistivity used	N/A
RWA Constant A	N/A
RWA Constant M	N/A

Gamma Calibration MCG-D.J 417

Field Calibration on 27-SEP-2012 18:29

	Measured	Calibrated (API)
Background	88	56
Calibrator (Gross)	917	583
Calibrator (Net)	829	527

Gamma Constants MCG-D.J 417

Last Edited on 27-SEP-2012,18:22

Gamma Calibrator Number	GRC-174	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Photo Density Calibration MPD-D.A 460

Base Calibration on 21-SEP-2012 17:25

Field Check on 29-SEP-2012 22:50

Density Calibration

Base Calibration

		Measured	Calibrated (sdu)
	Near	Far	Near Far
Reference 1	57826	27793	59720 30898
Reference 2	23140	2818	24621 2513

Field Check at Base

1353.9	1668.8
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Field Check

1329.6	1575.2
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PE Calibration

Base Calibration

		Measured	Calibrated
	WS	WH	Ratio
Background	263	1217	
Reference 1	25582	57611	0.449
Reference 2	7352	22987	0.326

Field Check at Base

263.0	1216.6
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Field Check

254.9	1187.5
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Density Constants MPD-D.A 460

Last Edited on 30-SEP-2012,11:52

Density Source Id	P44263B
Nylon Calibrator Number	628
Aluminium Calibrator Number	628
Density Shoe Profile	8 inch

Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.00	gm/cc
Mud Density Z/A Multiplier	1.11	
Mud Filtrate Density	1.00	gm/cc
Dry Hole Mud Filtrate Density	1.00	gm/cc
DNCT	0.00	gm/cc
CRCT	0.00	gm/cc
Density Z/A Correction	Hybrid	
Matrix Density (gm/cc)	Depth (ft)	
2.71	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	
0.00	0.00	

Caliper Calibration MPD-D.A 460

Base Calibration on 21-SEP-2012 17:33

Field Calibration on 29-SEP-2012 22:54

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	19011	3.98
2	27874	5.96
3	35560	7.97
4	43991	9.84
5	53242	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.18	5.96

DOWNHOLE EQUIPMENT

C:\LOGS\KINDER MORGAN\YG-1 processed\to fix\Porosity MAIN.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.J 417 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

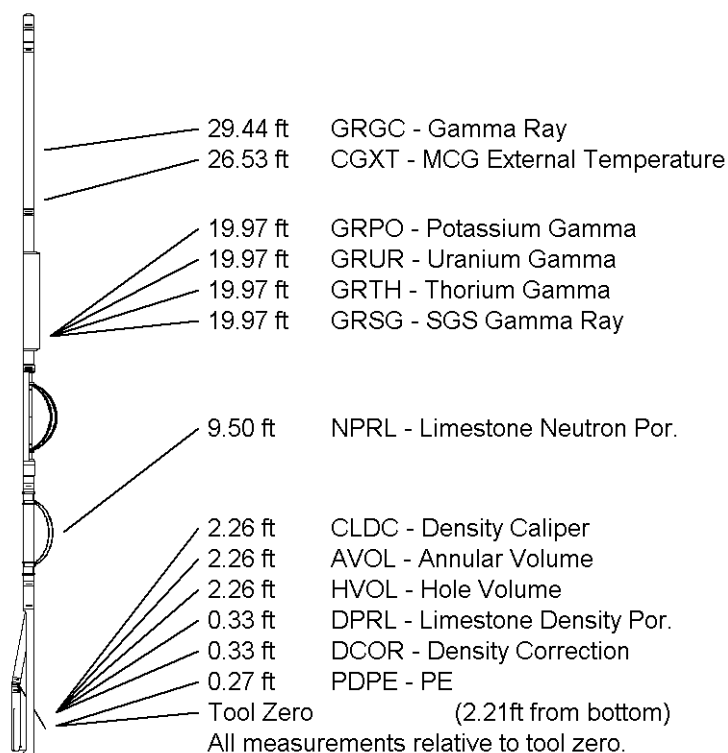
Spectral Gamma Ray Sub
SGS-E.J 135 LG: 7.78 ft WT: 105.8 lb OD: 3.54 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 657 LG: 5.70 ft WT: 33.1 lb OD: 2.24 in

Compact Neutron
MDN-B.A 296 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-D.A 460 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Total Length: 38.39 ft Weight: 359.4 lb



COMPANY

KINDER MORGAN C02 Co. L.P

WELL	YG-1
FIELD	McELMO DOME
PROVINCE/COUNTY	MONTEZUMA
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	6686.00	feet	First Reading	8197.00	feet
Elevation Drill Floor	6686.00	feet	Depth Driller	8200.00	feet
Elevation Ground Level	6661.00	feet	Depth Logger	8200.00	feet



Weatherford®

COMPENSATED DENSITY
COMPENSATED NEUTRON
LOG

