



Weatherford

**COMPACT TRIPLE COMBO
QUICKLOOK
LOG**

COMPANY CRESTONE PEAK RESOURCES LLC

WELL WOOLLEY BECKY 2A-7H-E168

FIELD WATTENBERG

PROVINCE/COUNTY WELD

COUNTRY/STATE USA / COLORADO

LOCATION SHL: 2242' FNL & 559' FWL

SEC 7 TWP 1N RGE 68W Other Services

Latitude 40.066854

Longitude -105.053469

API Number 05-123-38111

Permanent Datum GL, Elevation 4994 feet

Log Measured From KB

Drilling Measured From KB @ 23 FT

Date 22-NOV-2016

Run Number ONE

Service Order 8149-166978650

Depth Driller 7549.00 feet

Depth Logger 7550.00 feet

First Reading 7547.00 feet

Last Reading 10.00 feet

Casing Driller 1798.00 feet

Casing Logger 1798.00 feet

Bit Size 8.750 inches

Hole Fluid Type oBM

Density / Viscosity 9.50 lb/USg 50.00 sec/Qt

PH / Fluid Loss --- 10.20 ml/30Min

Sample Source ---

Rm @ Measured Temp ---

Rmf @ Measured Temp ---

Rmc @ Measured Temp ---

Source Rmf / Rmc ---

Rm @ BHT ---

Time Since Circulation 4 HOURS

Max Recorded Temp 203.00 deg F

Elevations:
KB 5017.00
DF
GL 4994.00

BOREHOLE RECORD

Last Edited: 21-NOV-2016 21:55

Bit Size inches	Depth From feet	Depth To feet
8.750	1788.00	7549.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	1788.00	40.00

REMARKS

SOFTWARE VERSION: 16.03.839
TOOLS: SHA, MCG, MVC, MDN, MPD, MVC, SKJ, MIS-E, MAI RUN IN COMBINATION

HARDWARE: MDN SIDEWALLED WITH V ARM ABOVE
MPD: 4 INCH PROFILE PLATE
MAI: MIS-E AND SPRING STANDOFF ASSEMBLY

LOGGER T.D. IS DEEPEST DEPTH REACHED BY LOGGING TOOLS AFTER KOP

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

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

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 2420 CU.FT.

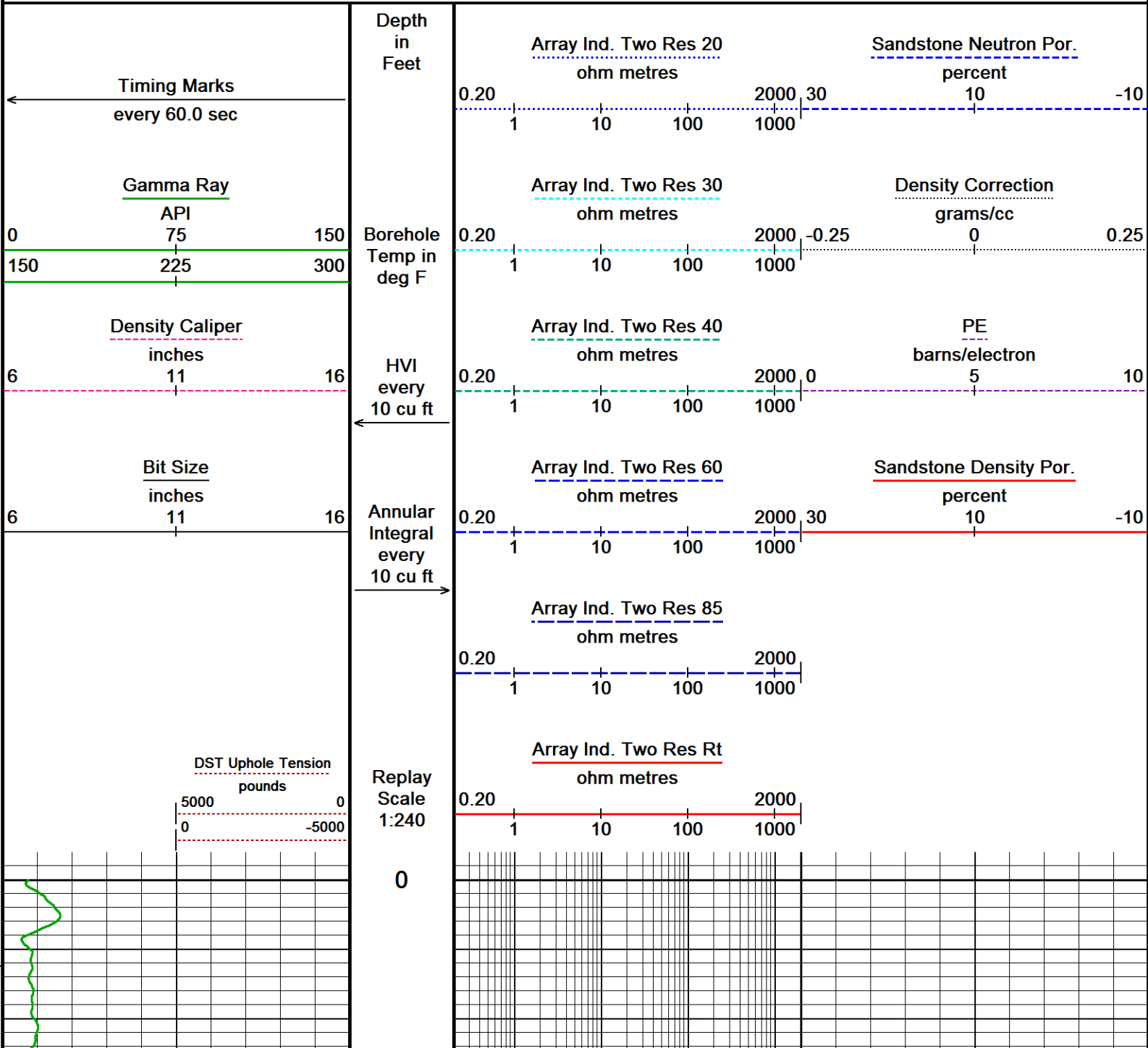
ANNULAR VOLUME FROM TD SURFACE CASING = 1470 CU.FT.

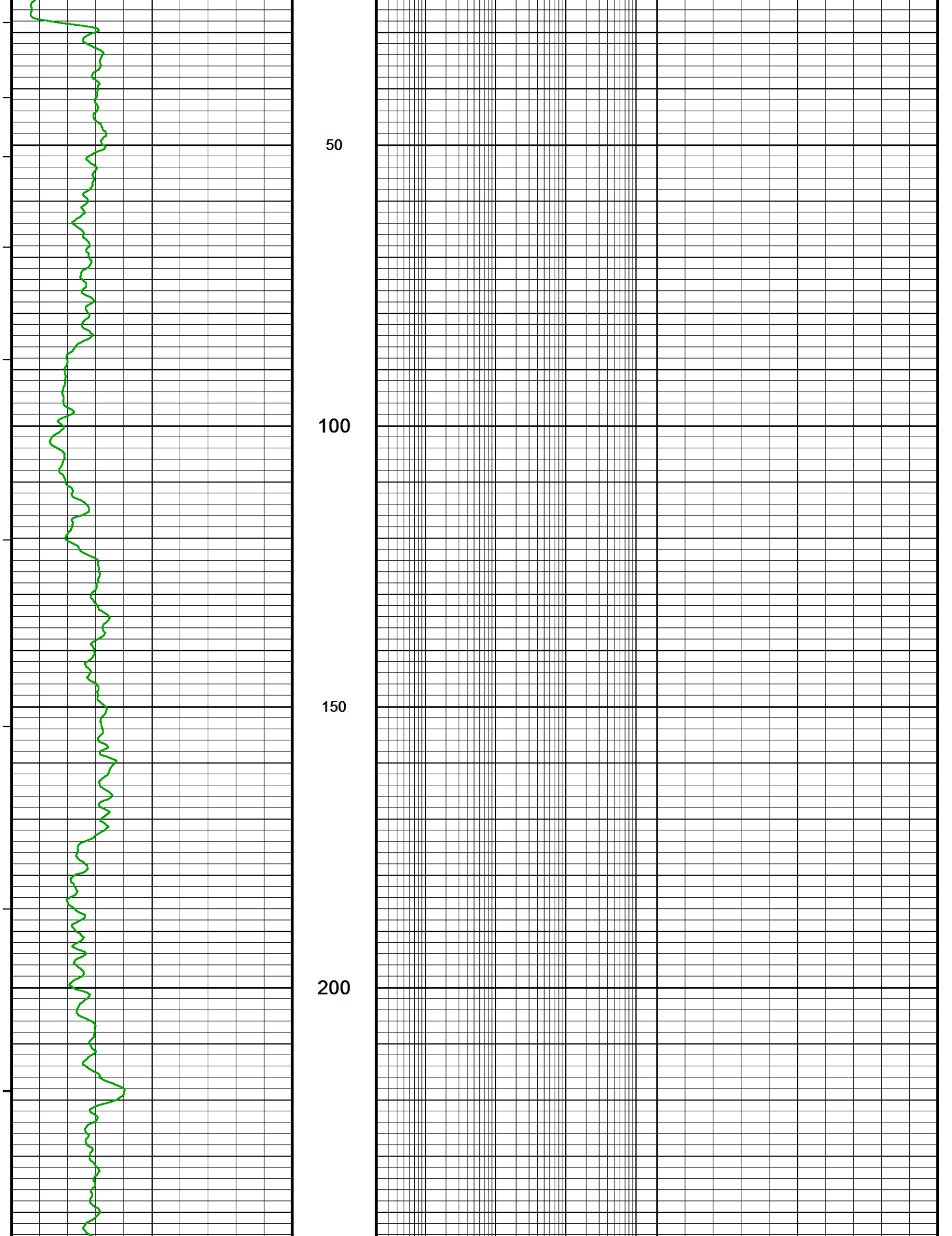
RIG: ENSIGN 140

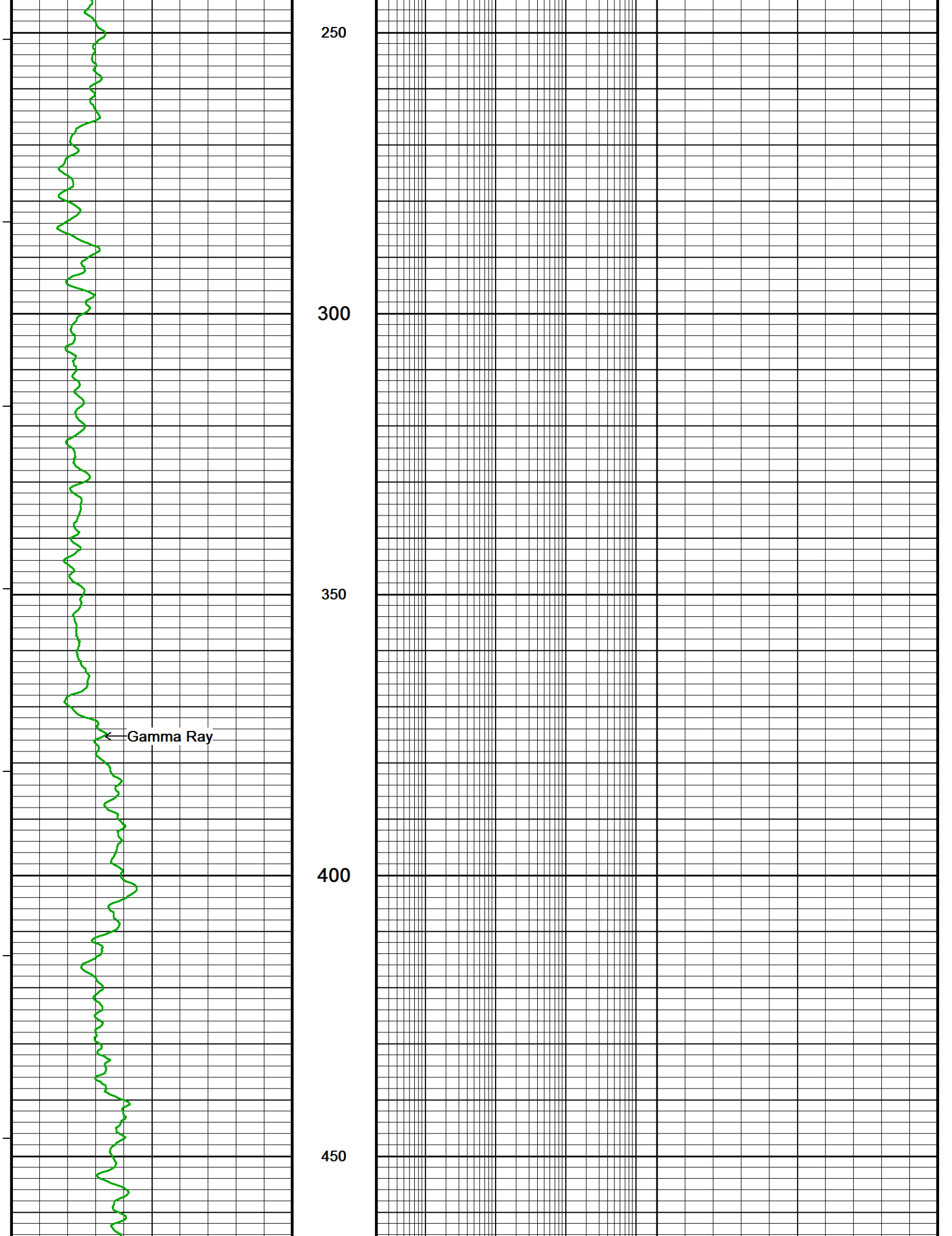
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

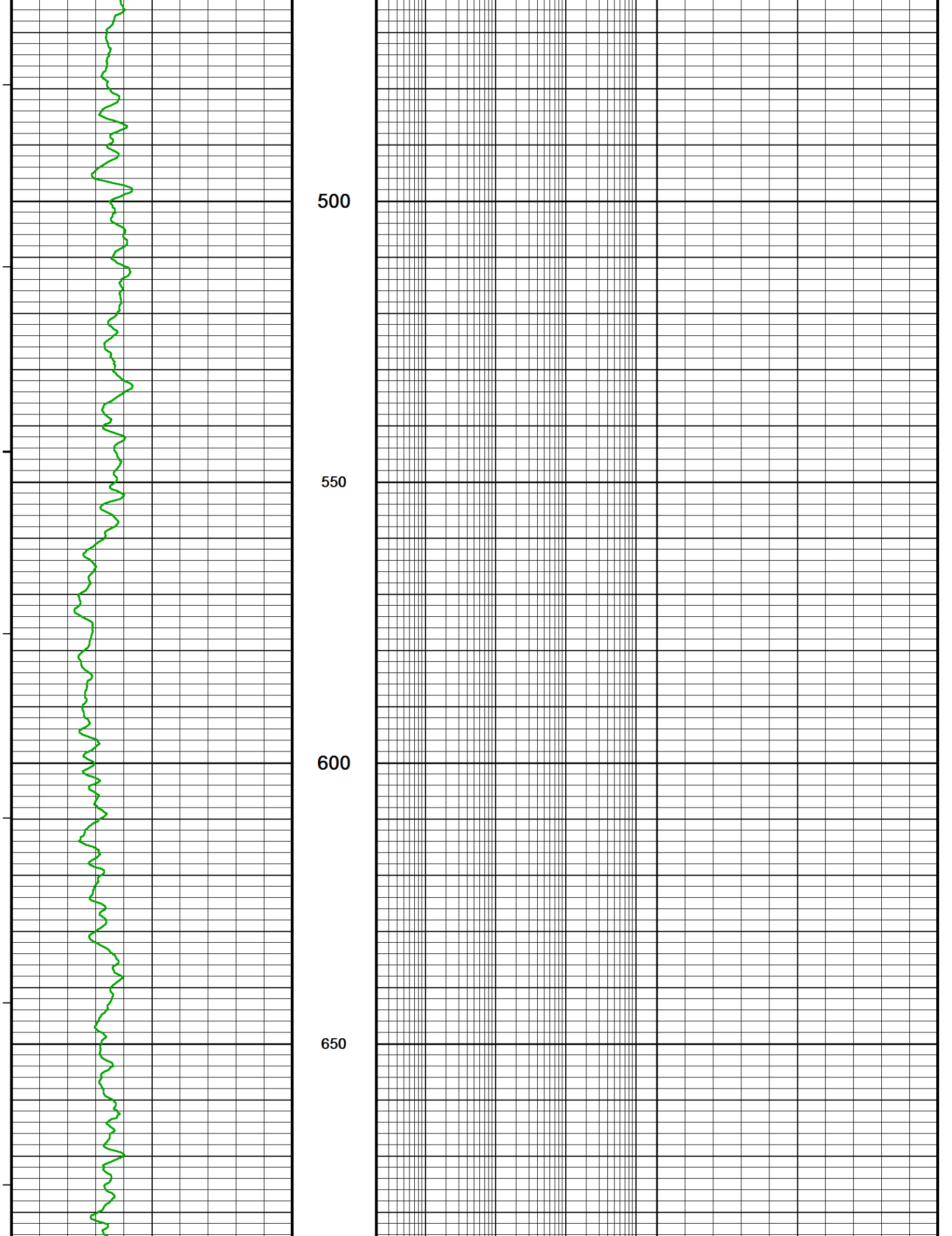
5 INCH MAIN LOG

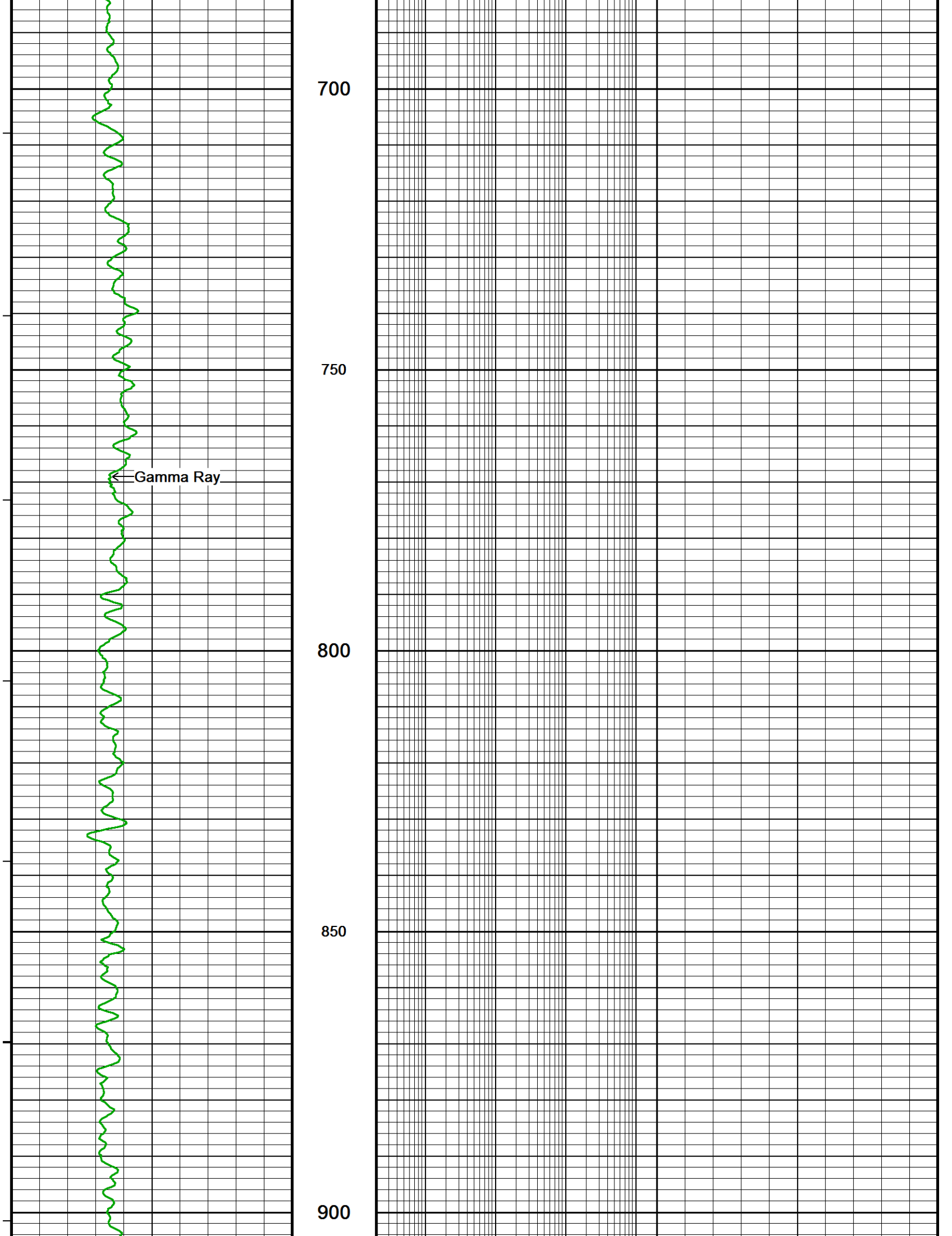
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 22-NOV-2016 07:24
 Filename: C:\Logs\Crestone Peak Resources LLC\Woolley Becky 2A-7H-E168\run ...\SPLICE MAIN.dta Recorded on 22-NOV-2016 00:49
 System Versions: Processed with 16.03.839 Plotted with 16.03.839

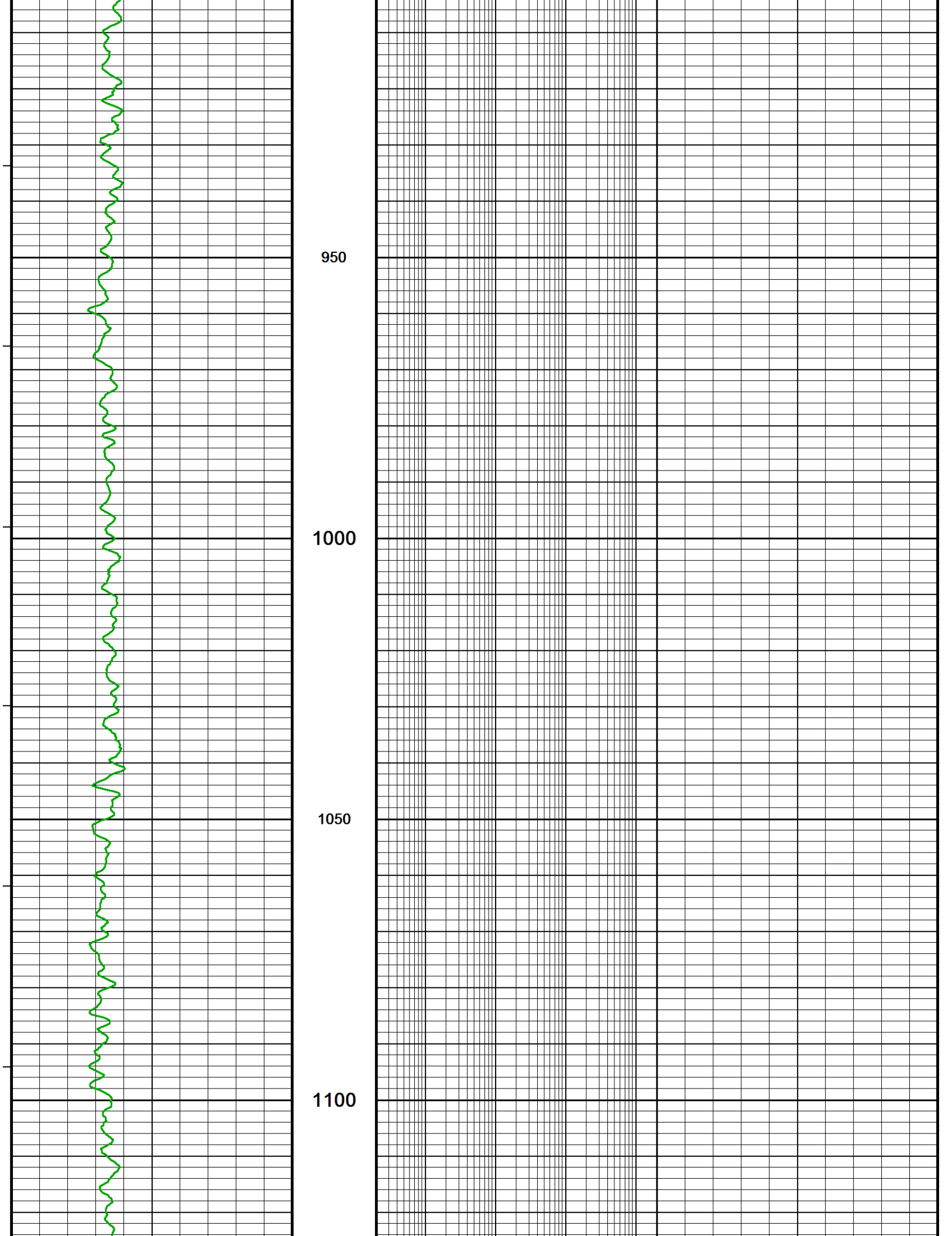


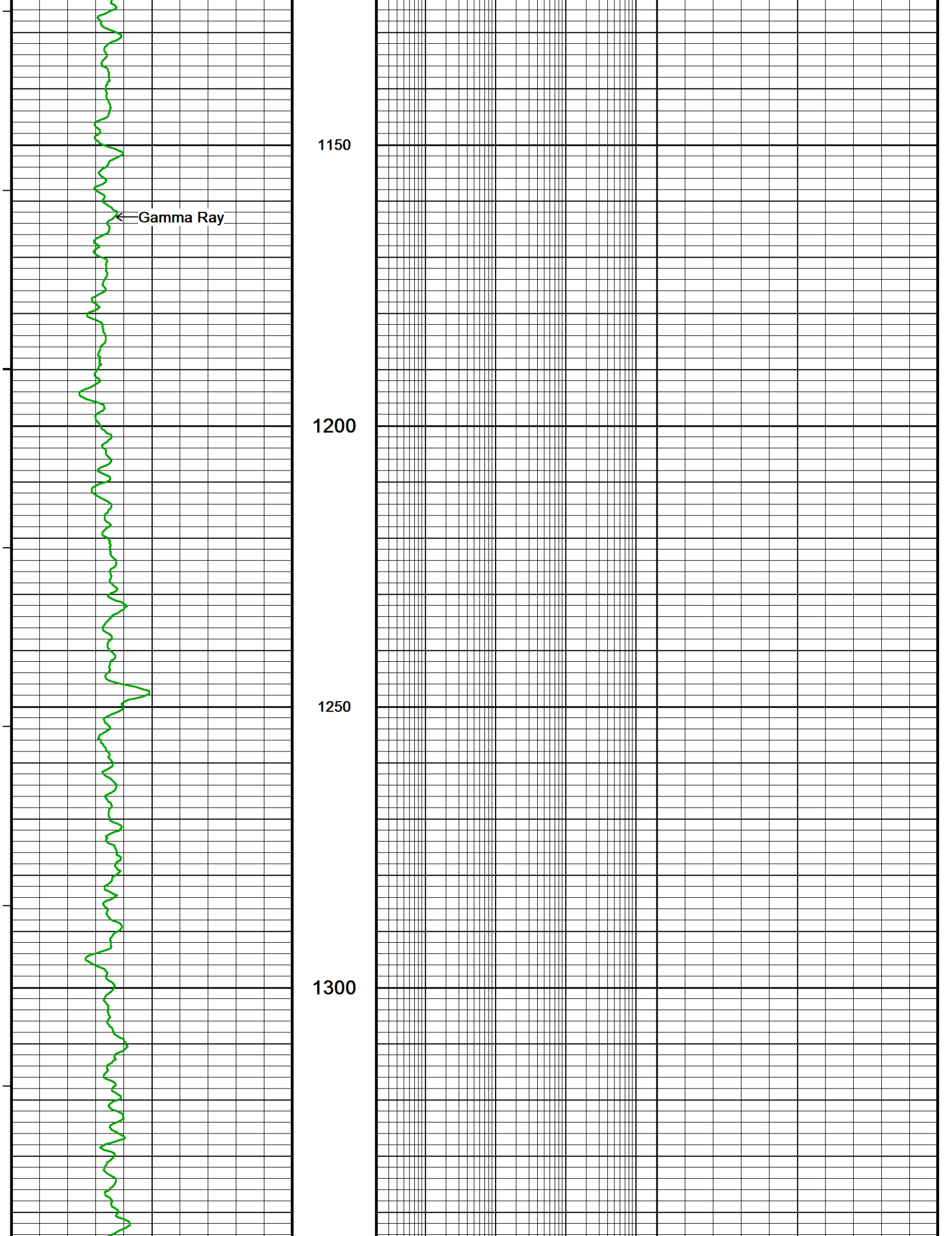


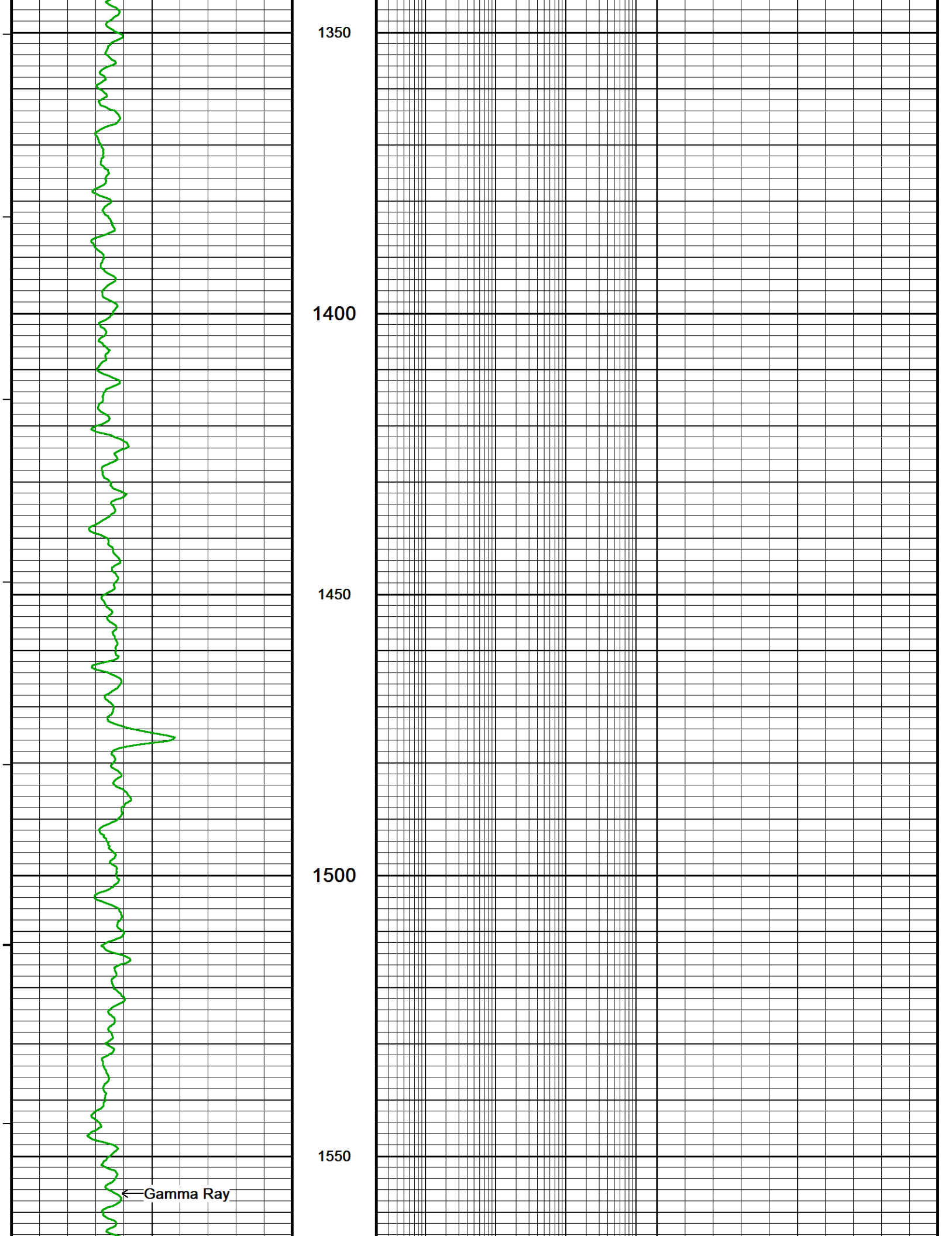


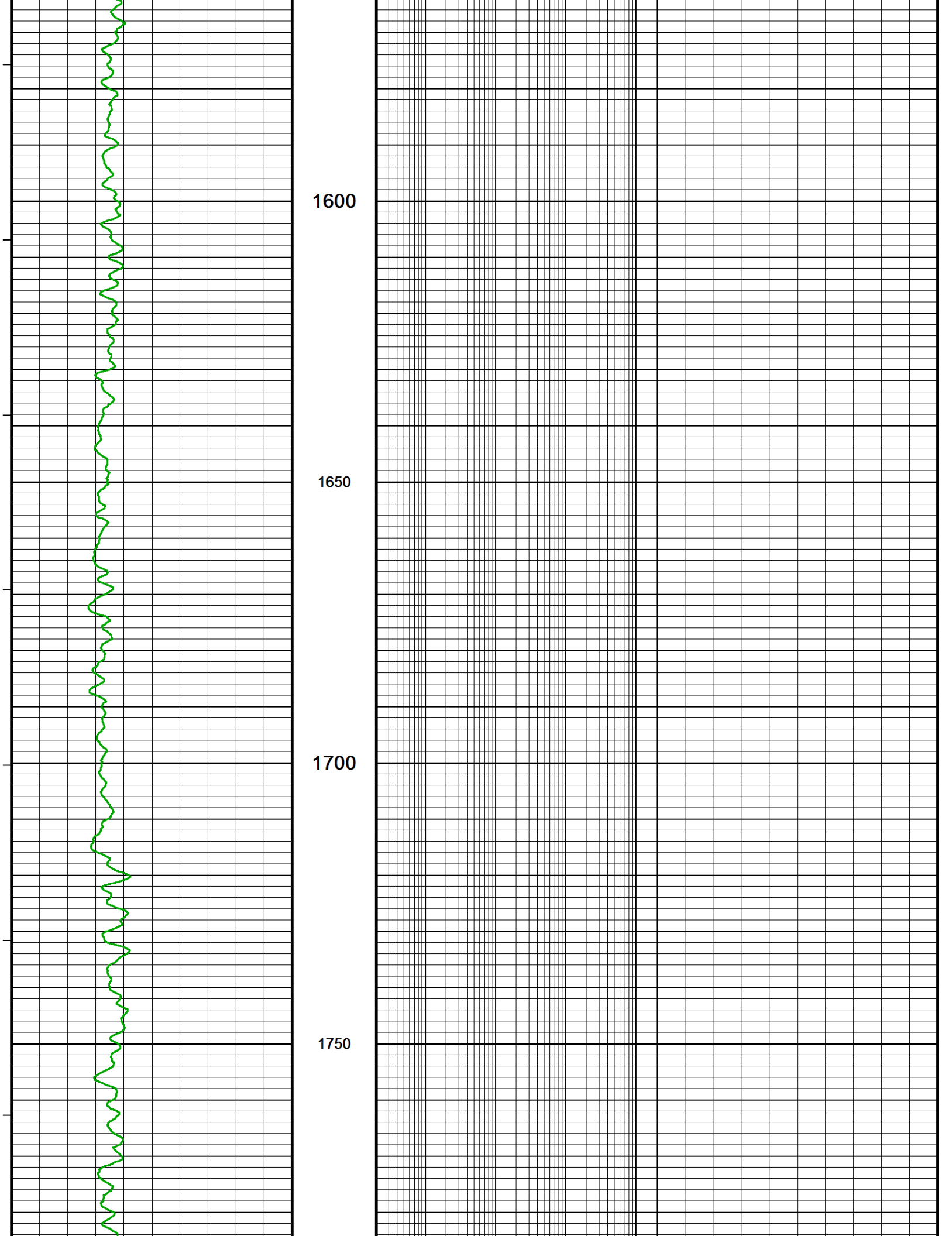


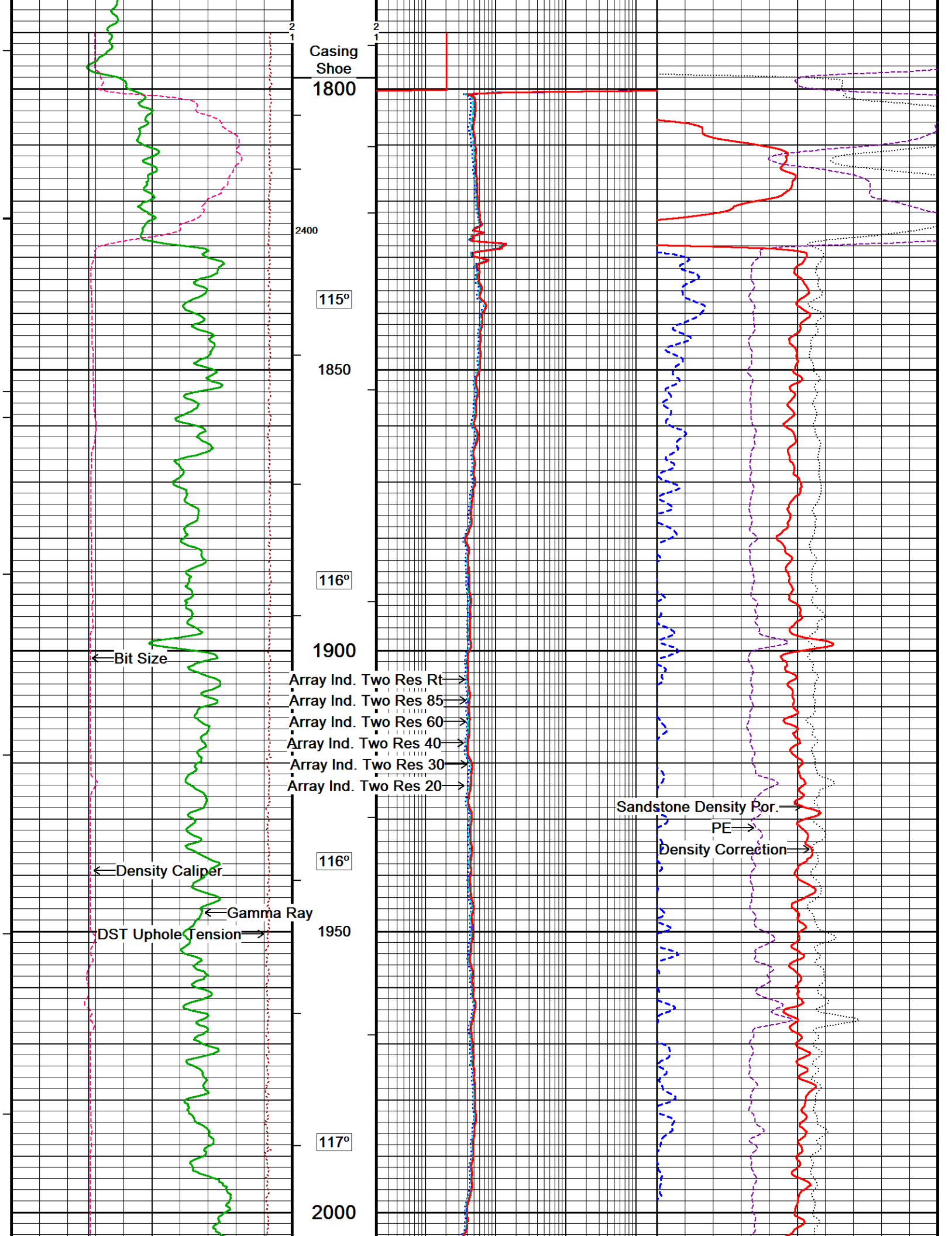


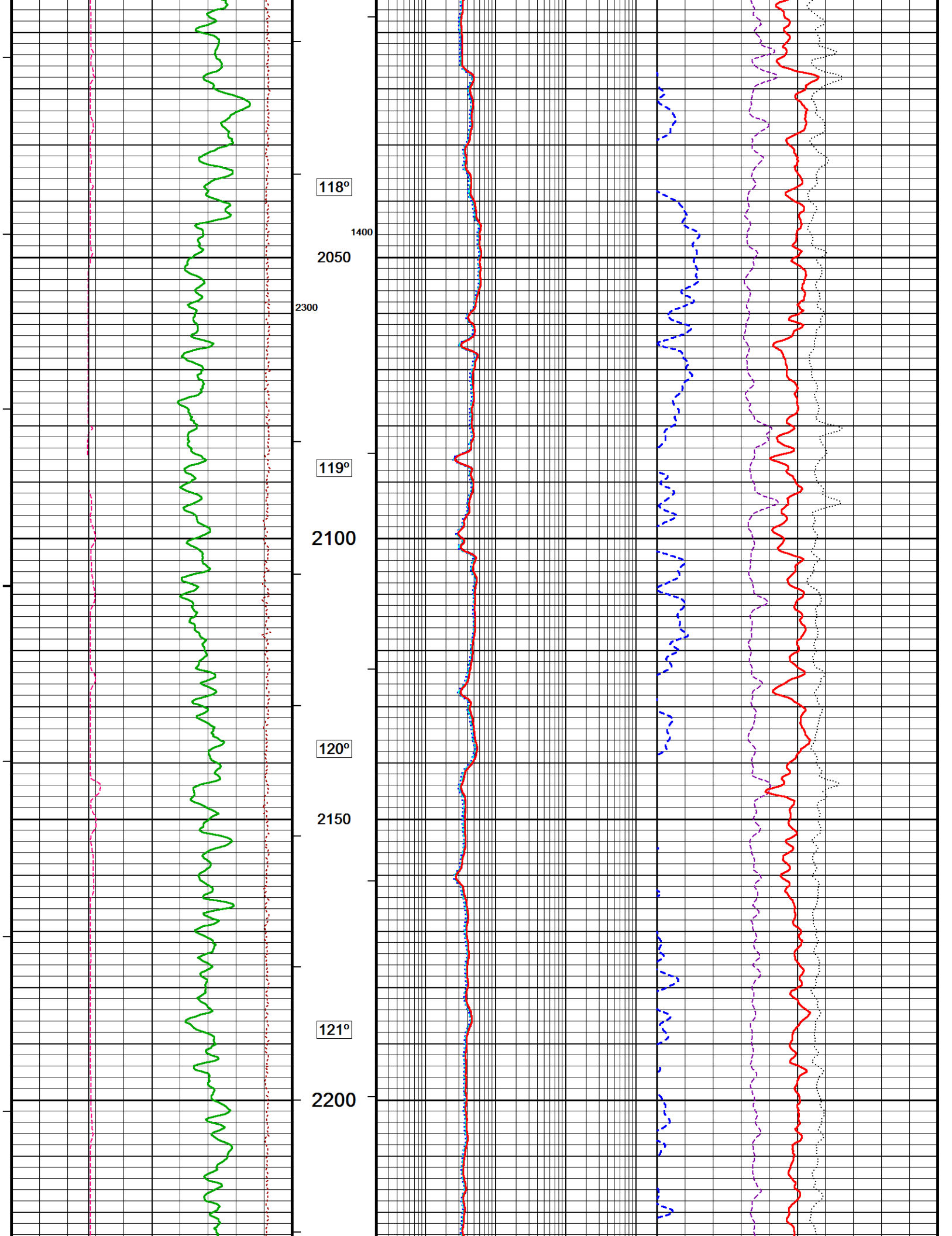


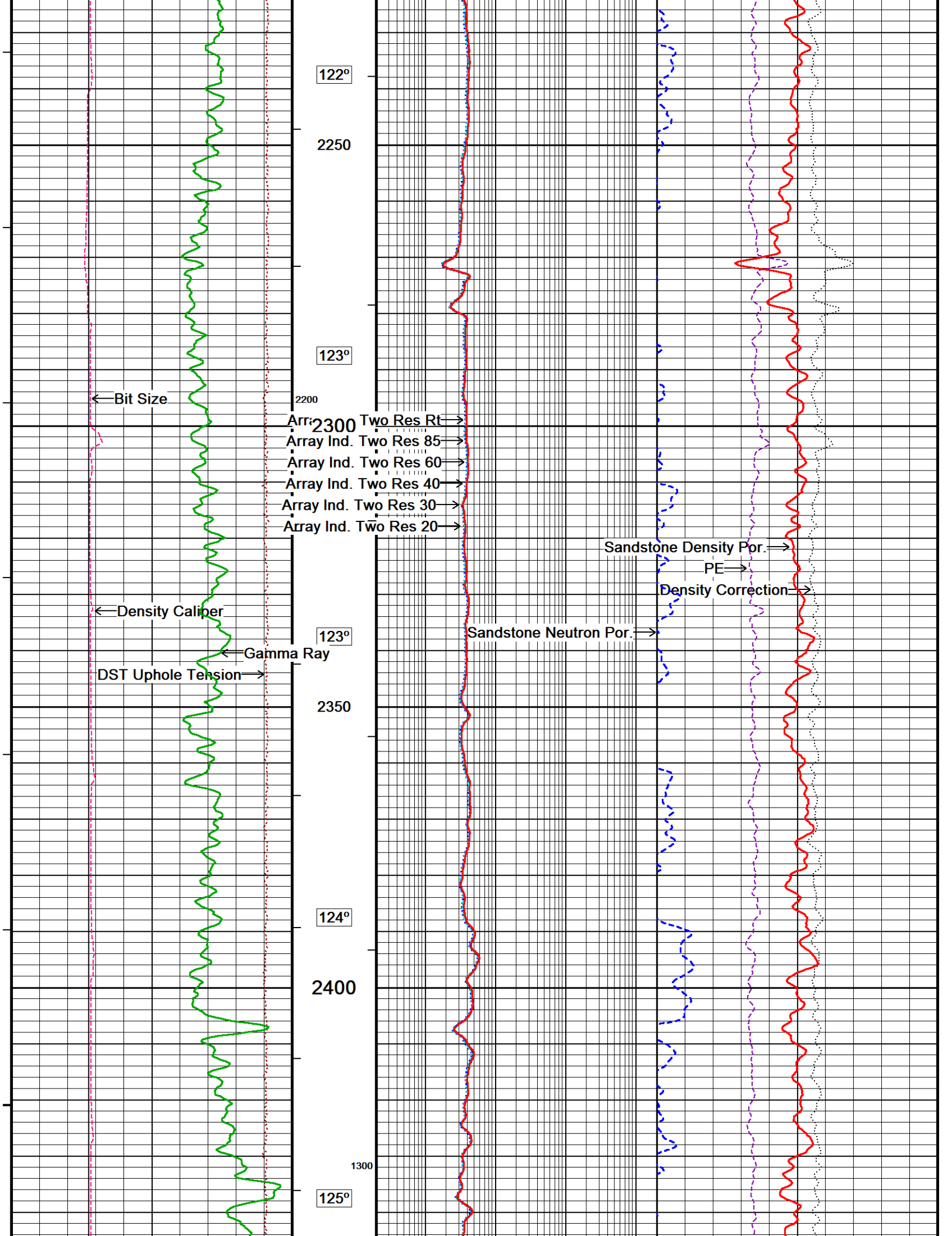


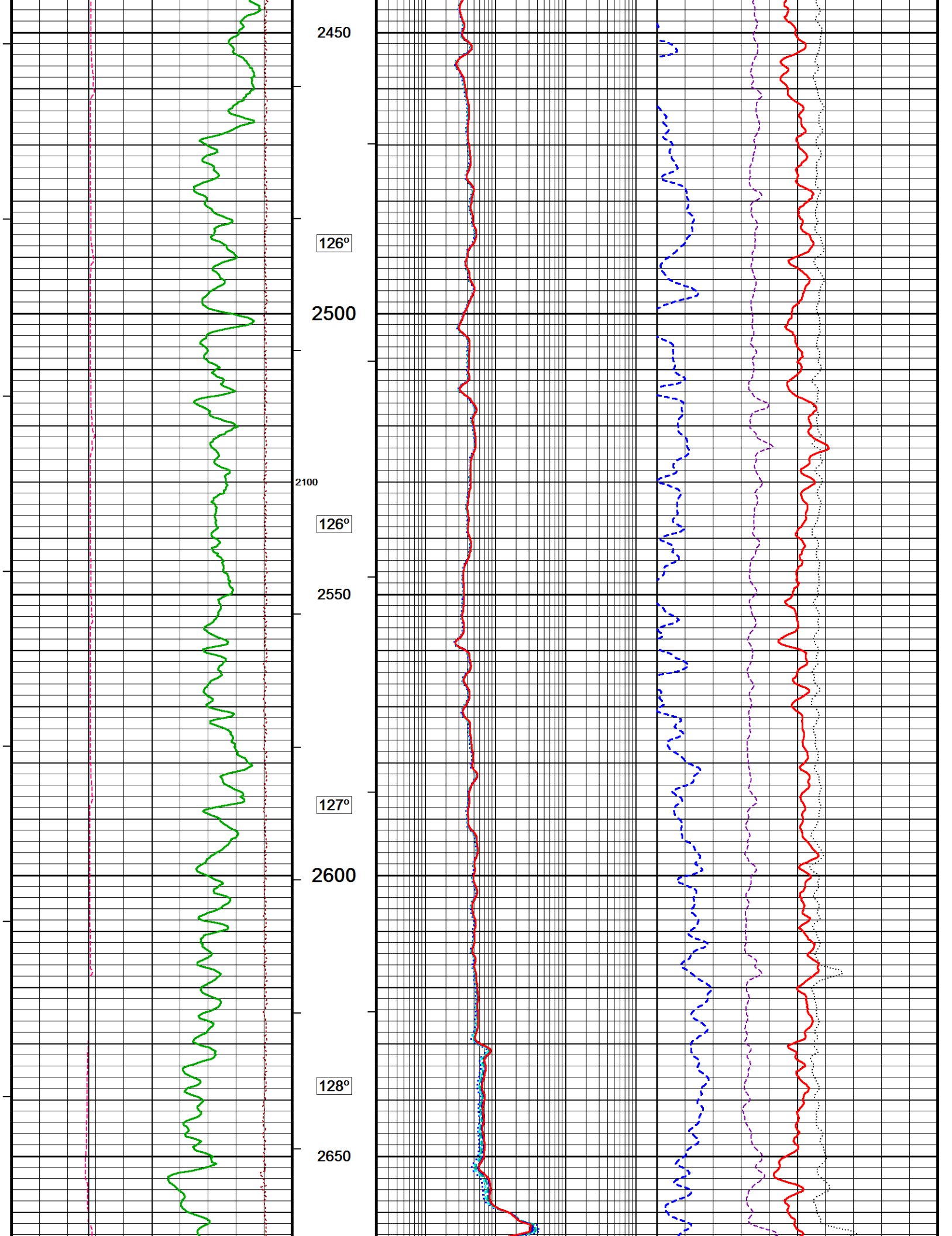


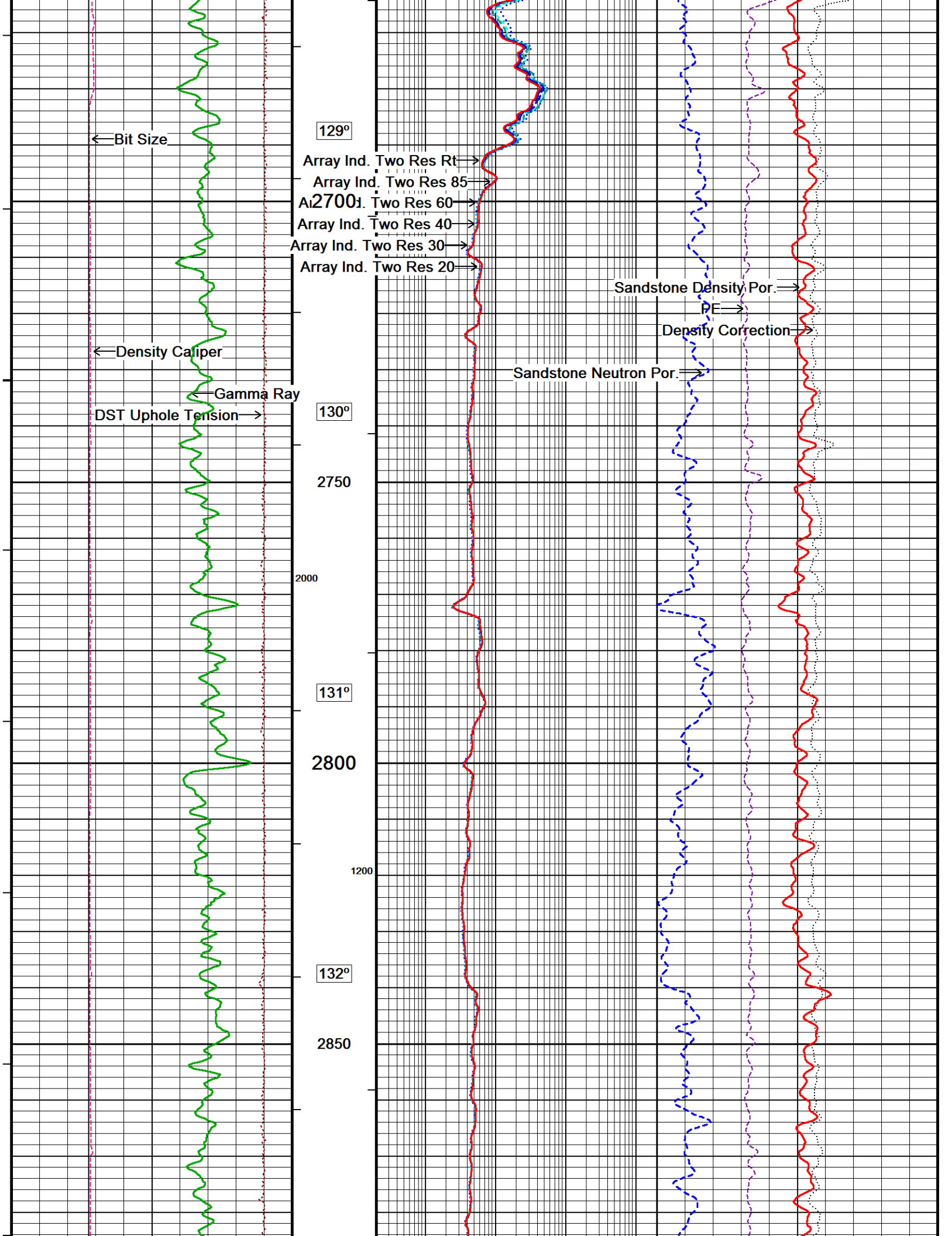


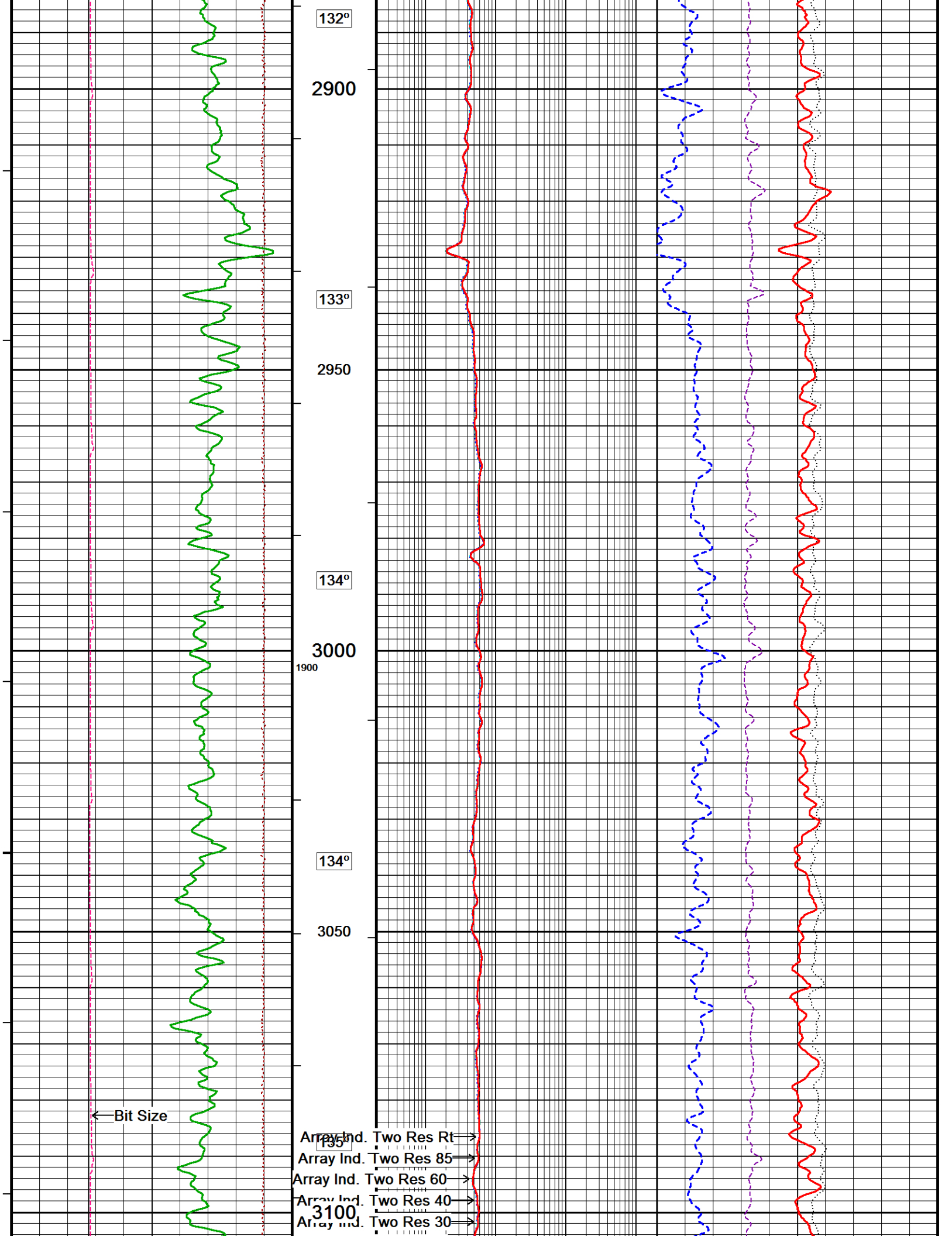


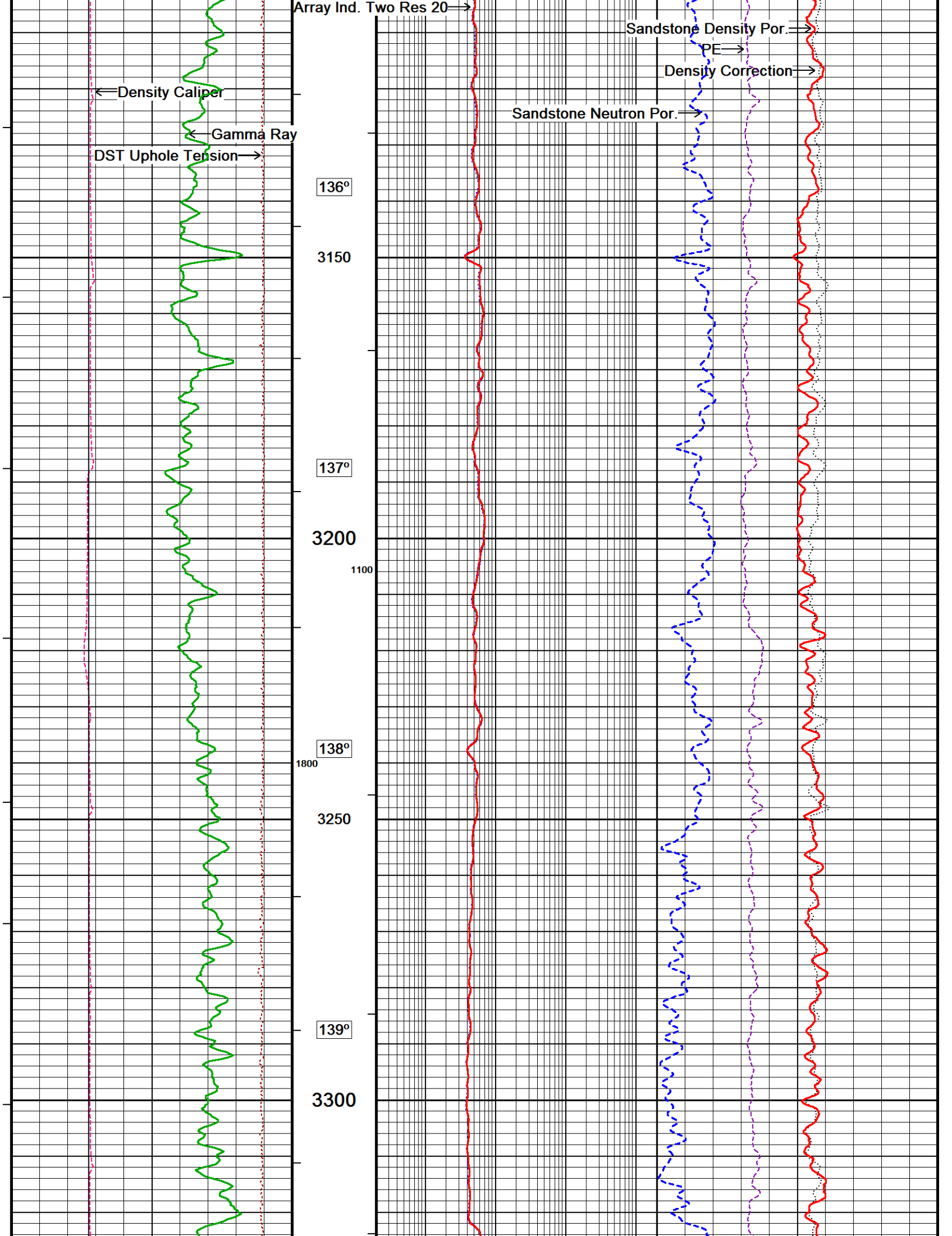


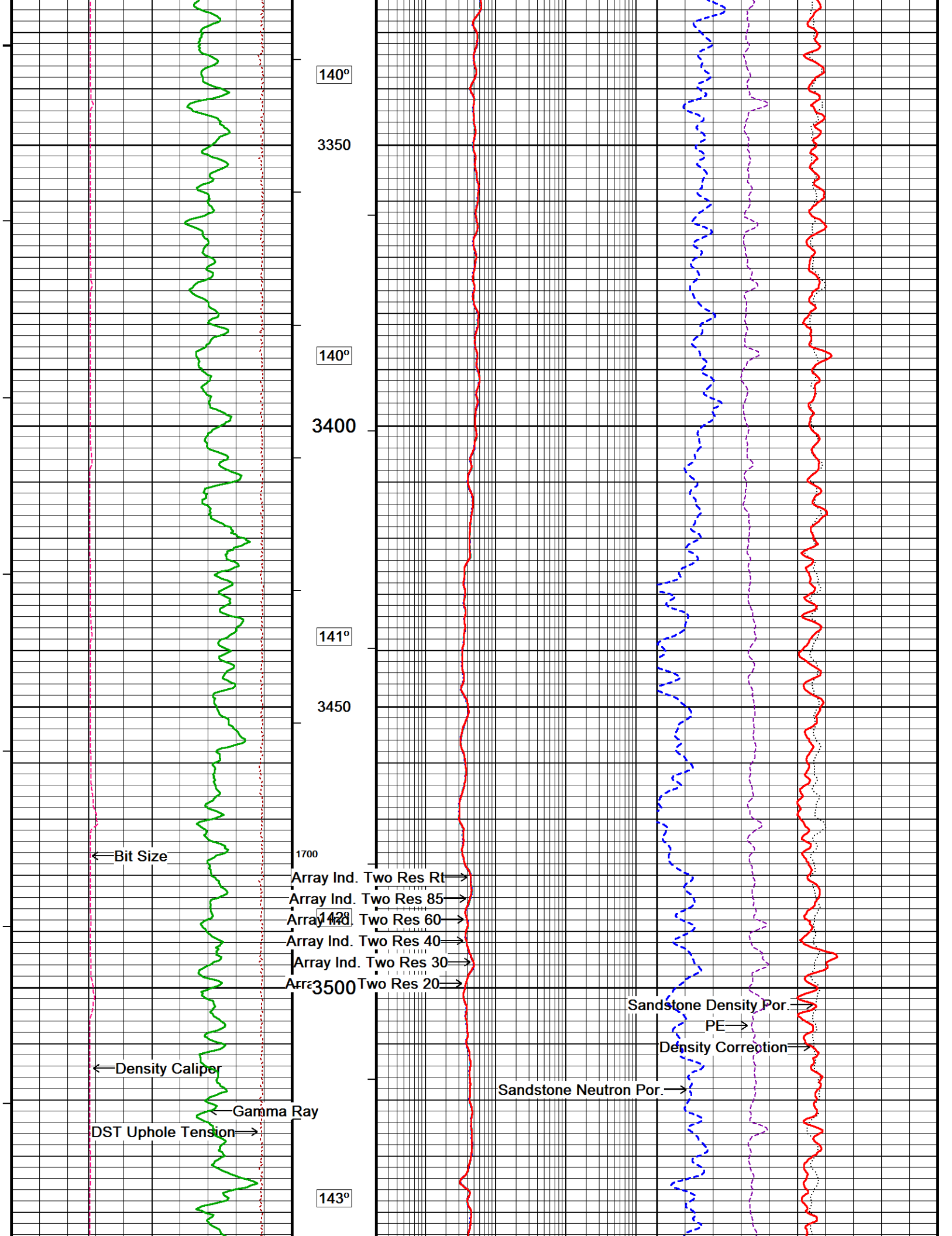


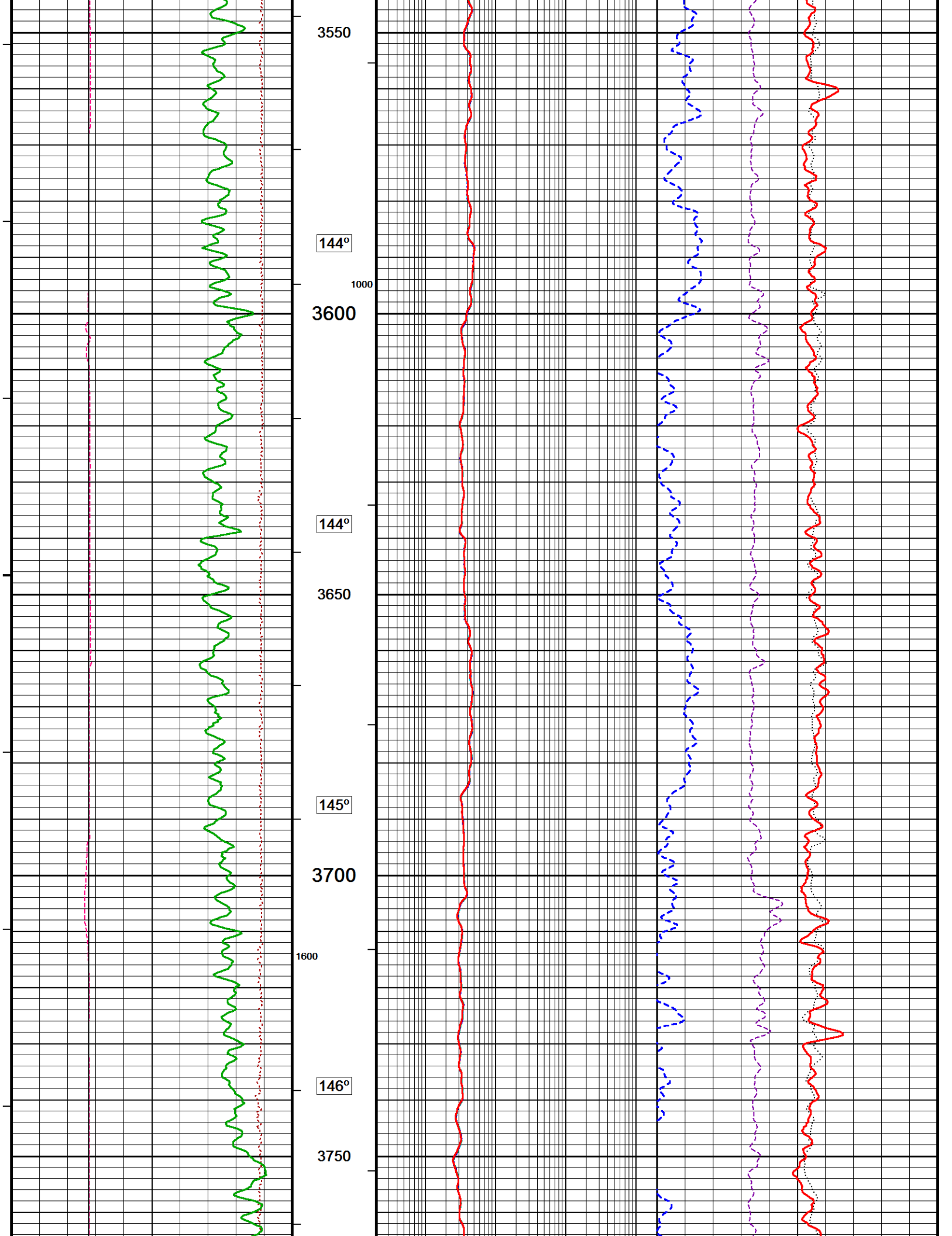


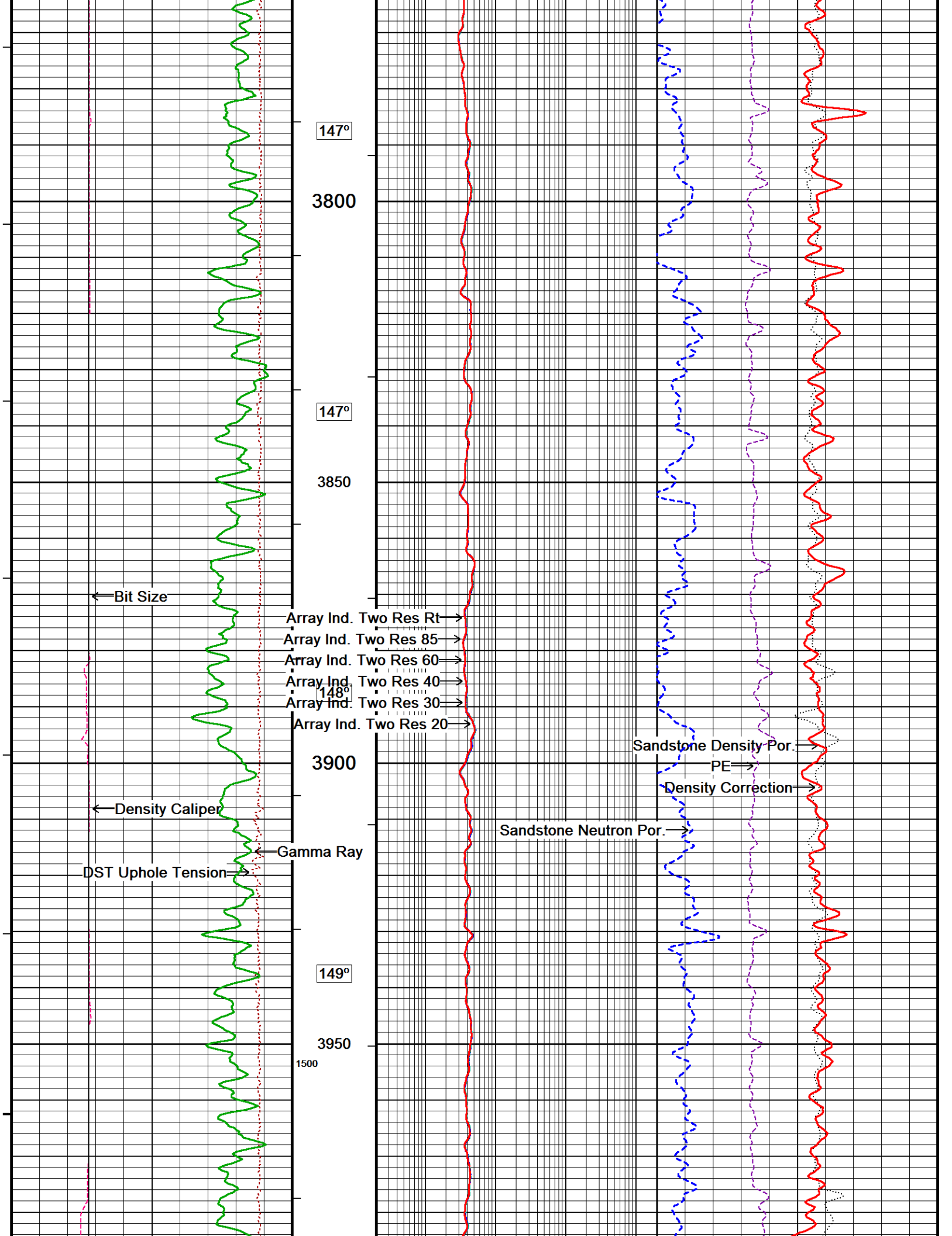


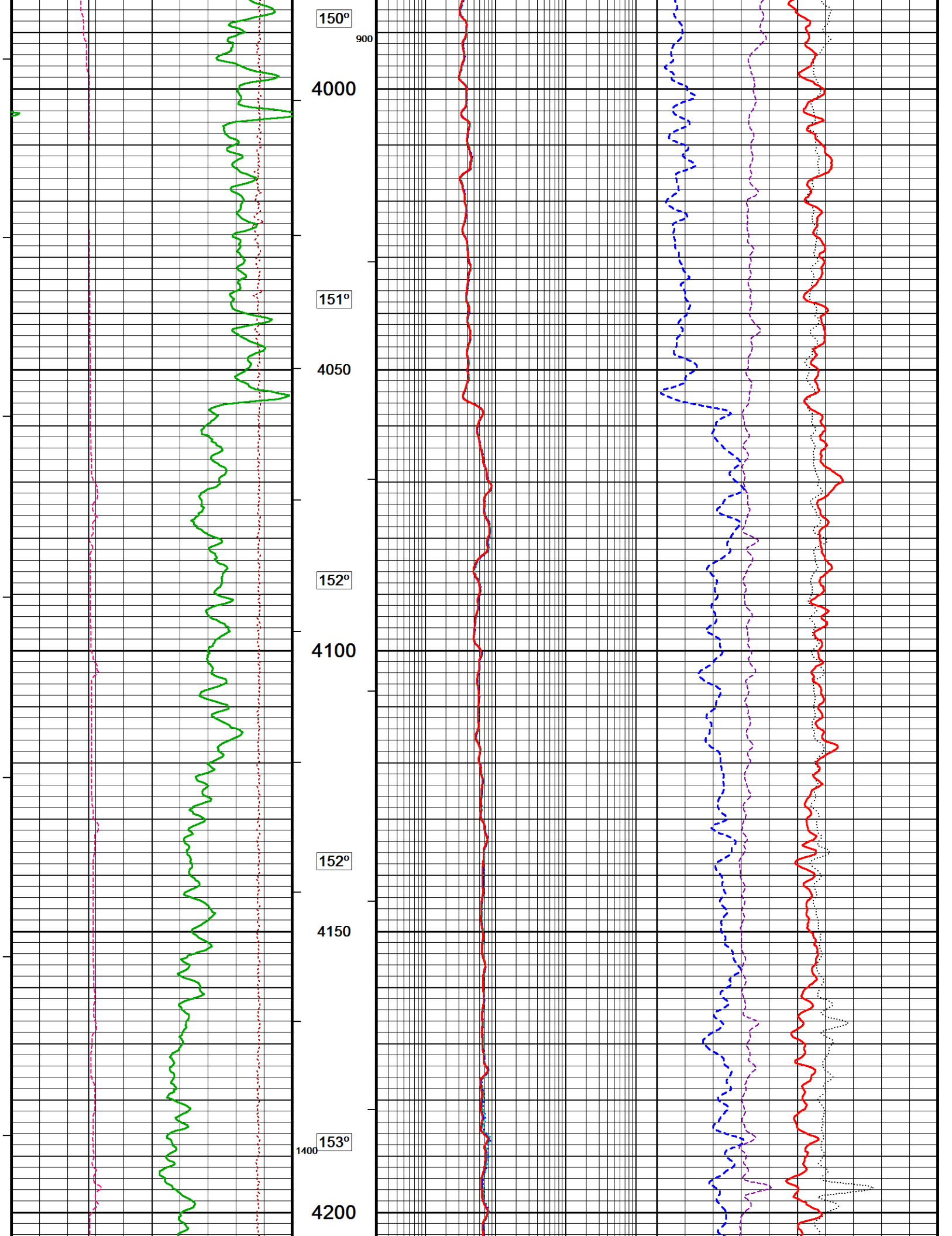


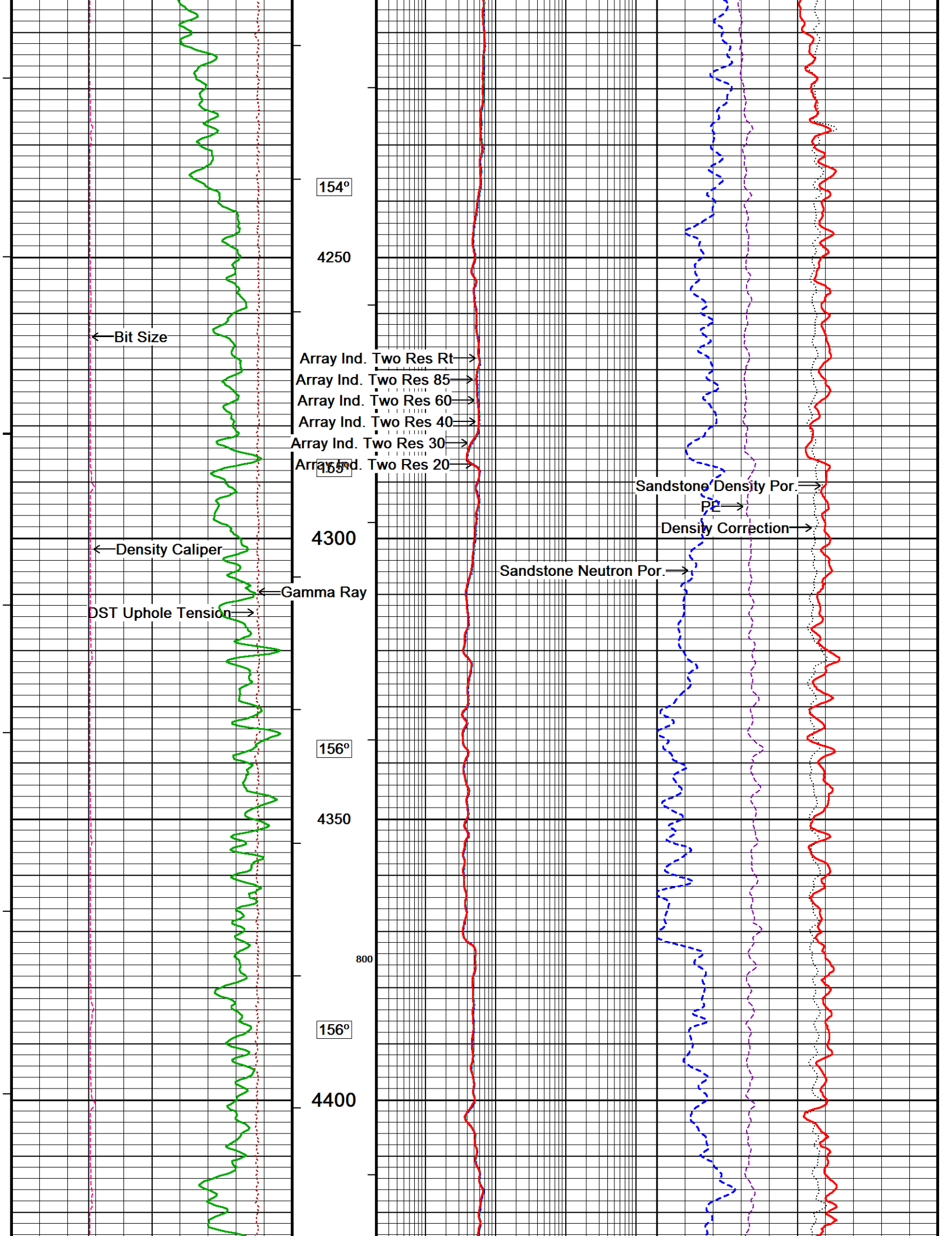


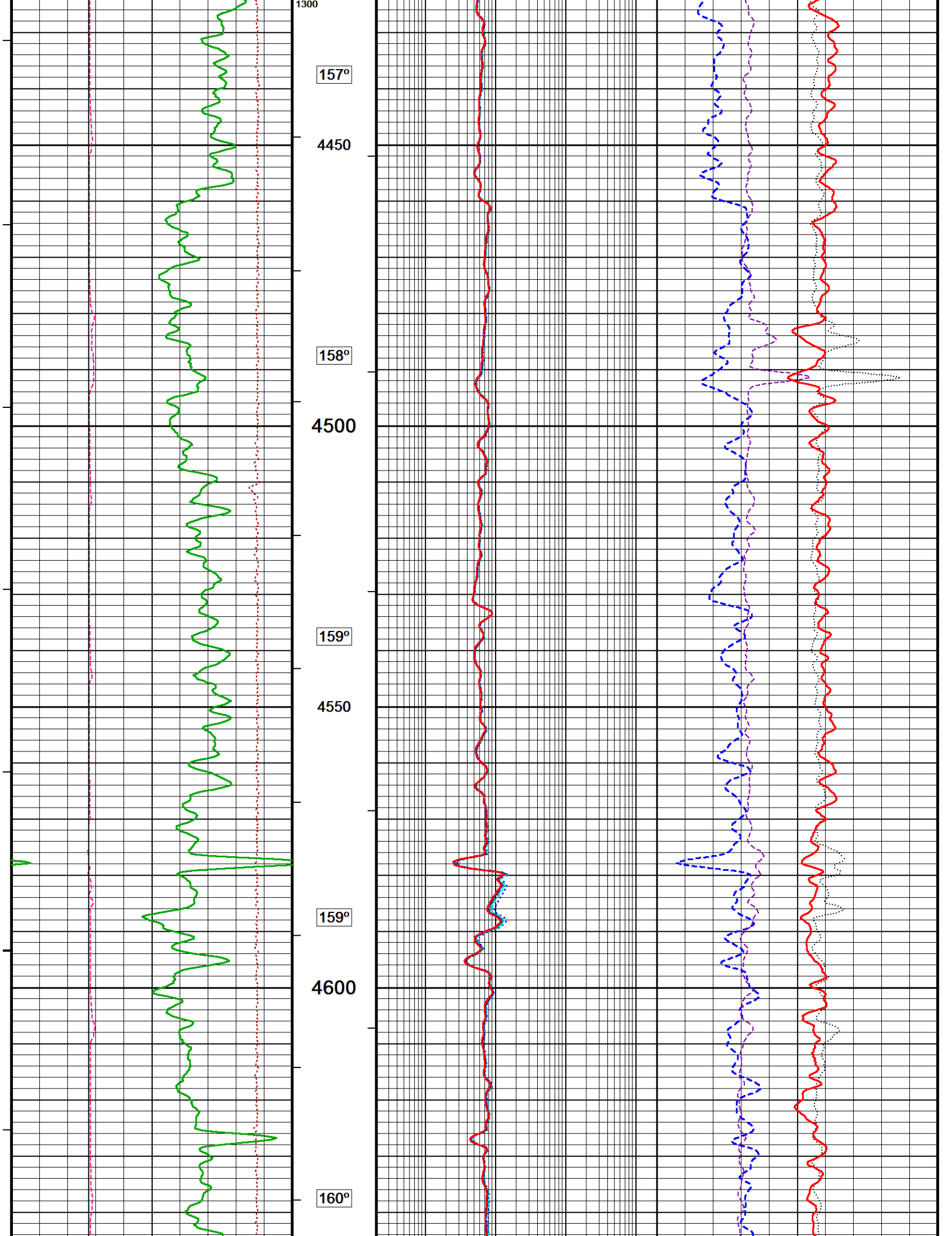


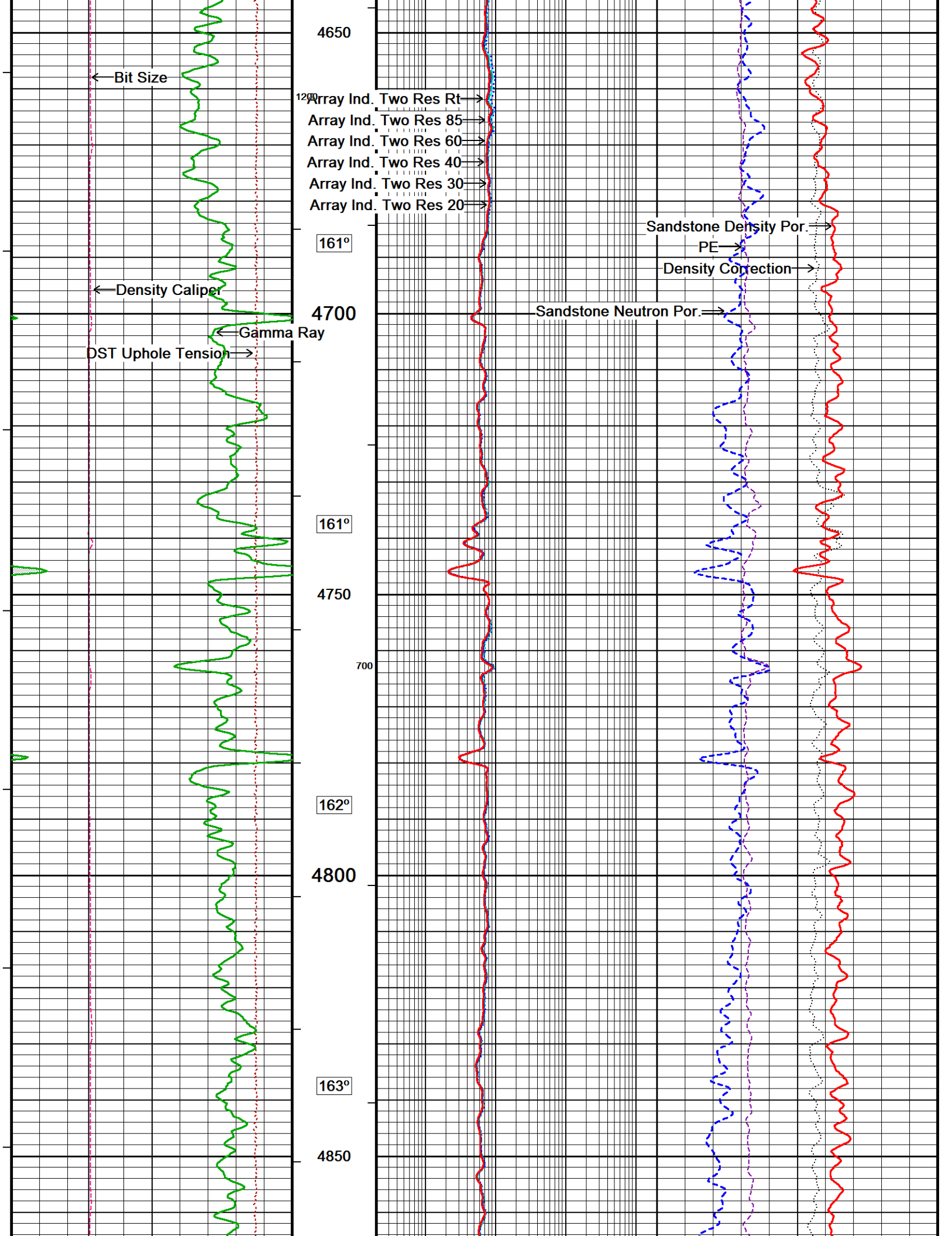


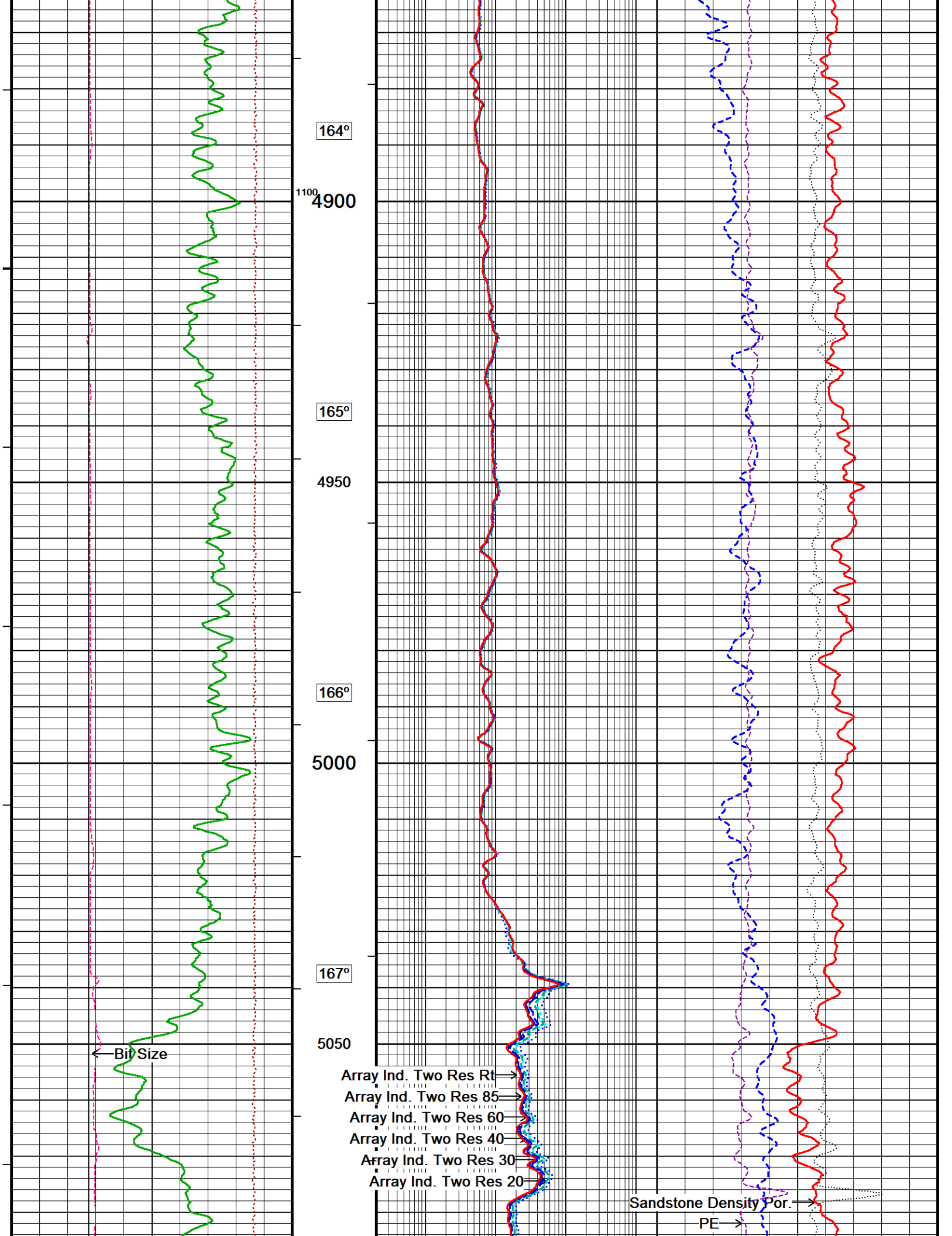


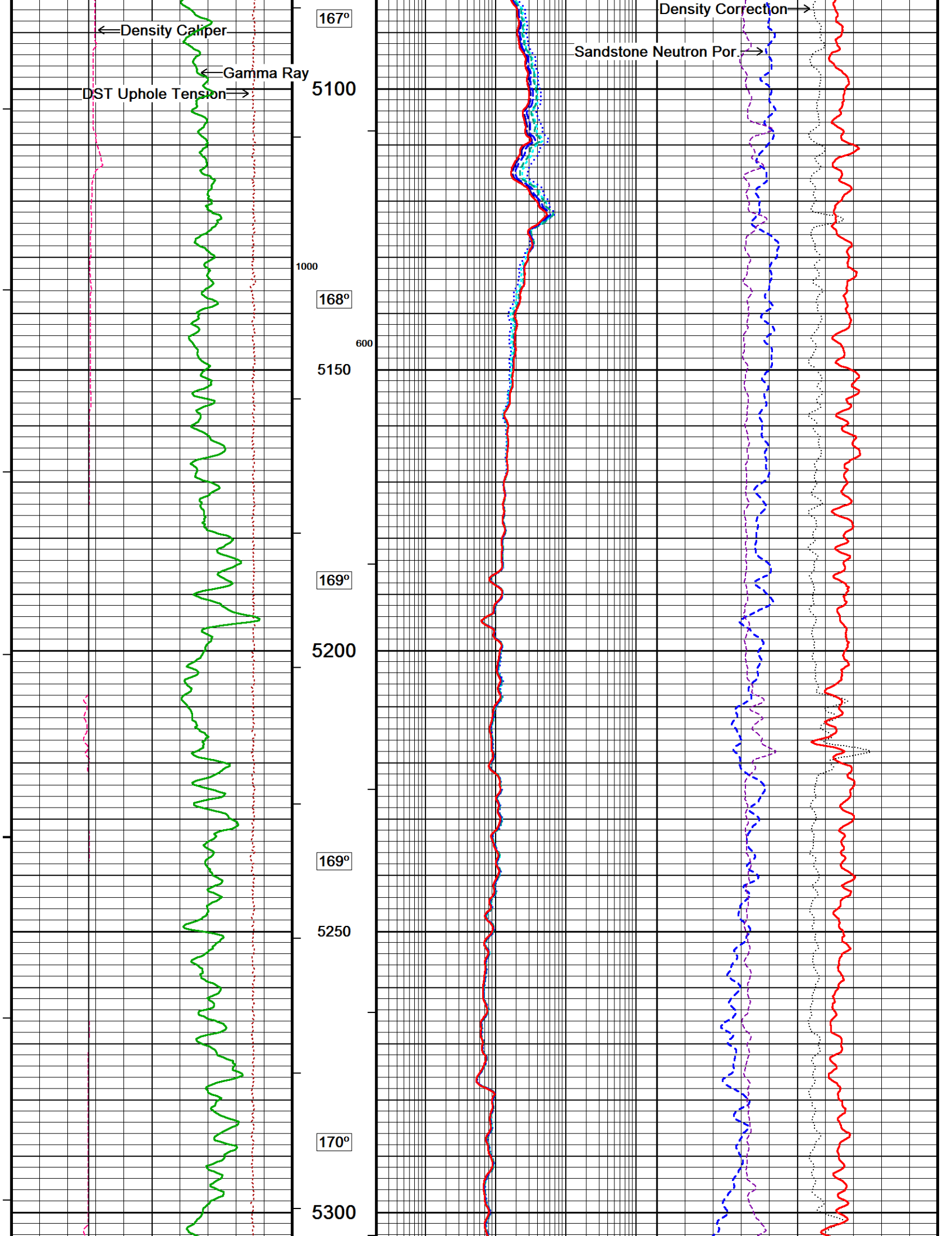


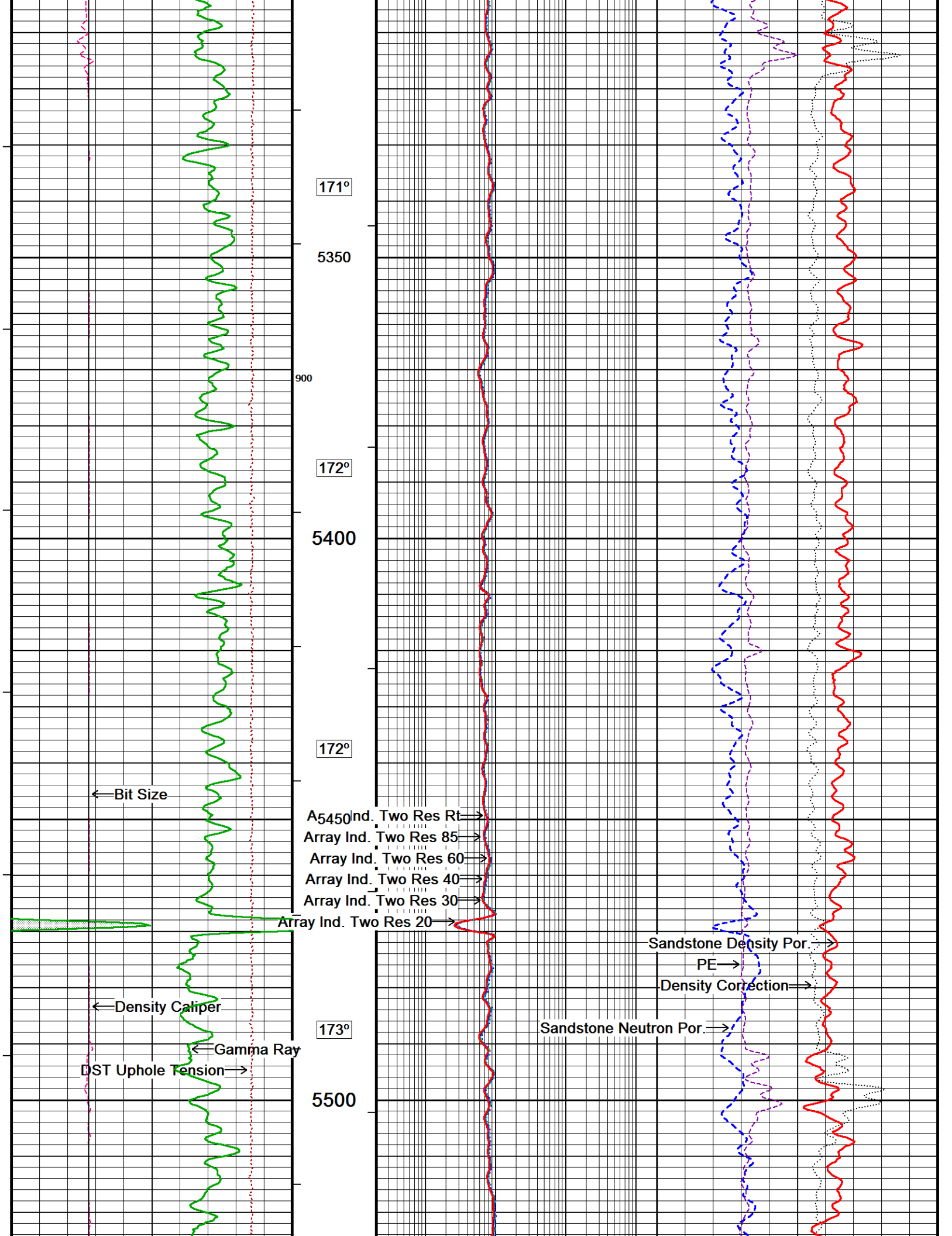












171°

5350

900

172°

5400

172°

← Bit Size

A5450 Ind. Two Res Rt →

Array Ind. Two Res 85 →

Array Ind. Two Res 60 →

Array Ind. Two Res 40 →

Array Ind. Two Res 30 →

Array Ind. Two Res 20 →

Sandstone Density Por. →

PE →

Density Correction →

Sandstone Neutron Por. →

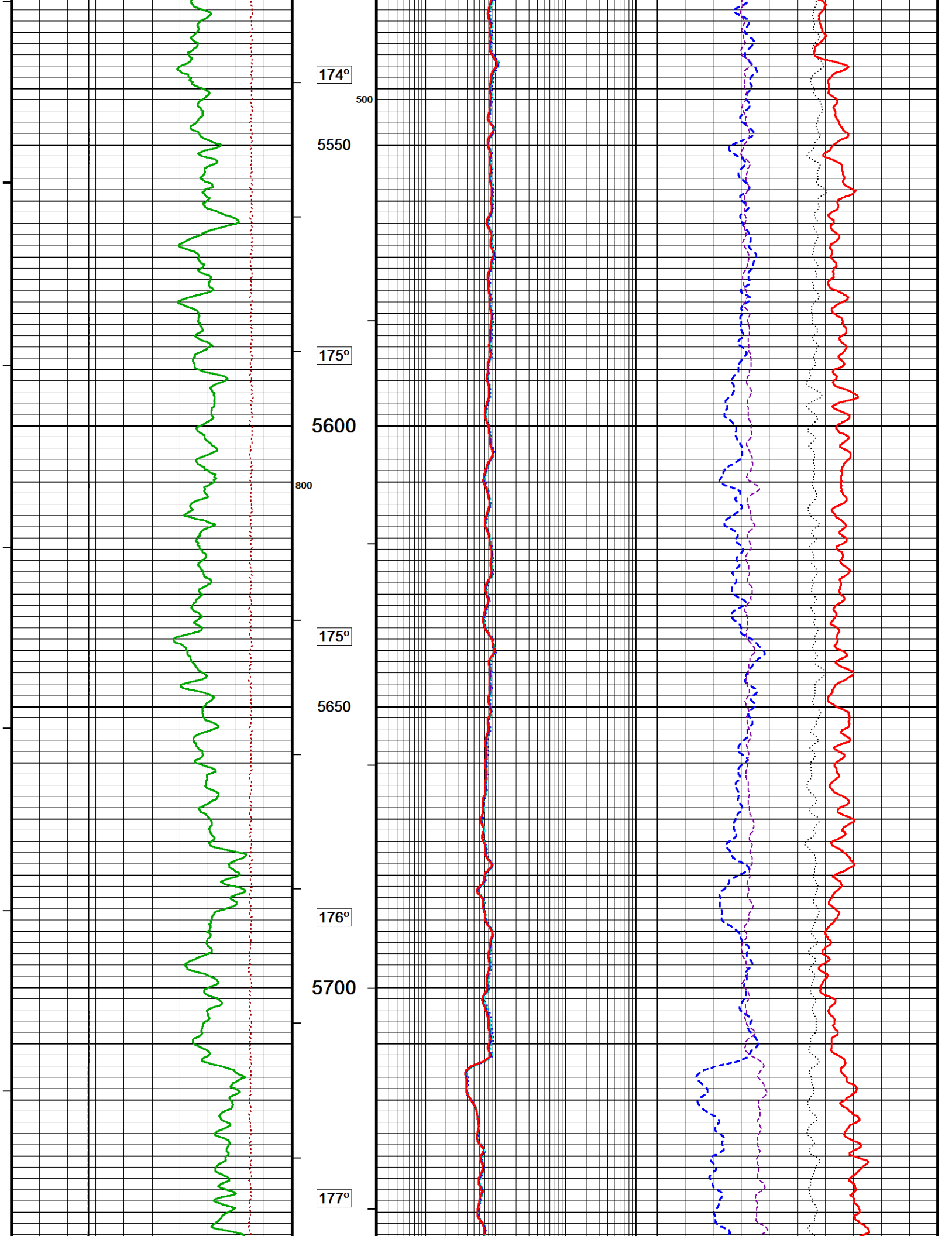
← Density Caliper

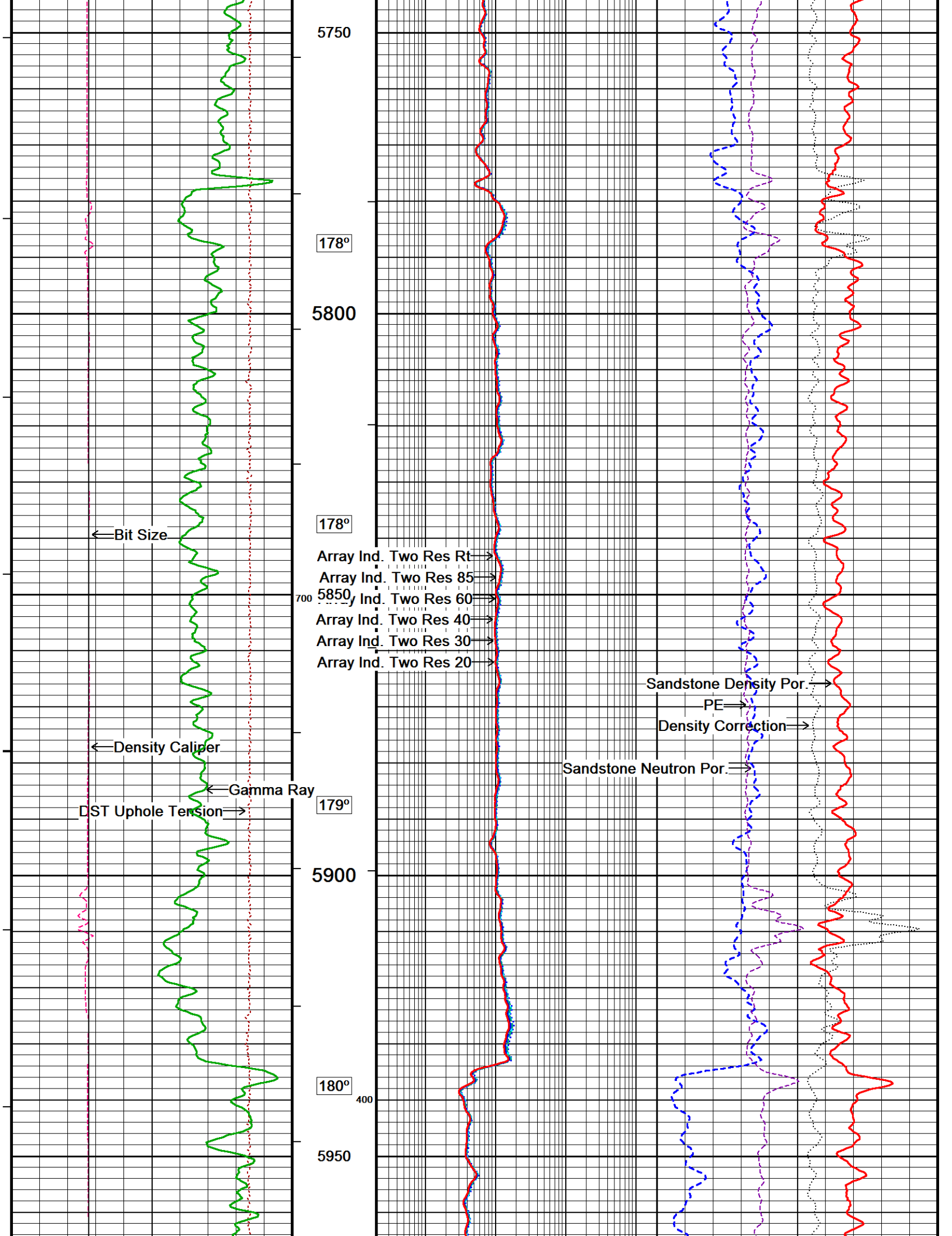
← Gamma Ray

DST Uphole Tension →

173°

5500





5750

178°

5800

178°

Array Ind. Two Res Rt
 Array Ind. Two Res 85
 5850, Ind. Two Res 60
 Array Ind. Two Res 40
 Array Ind. Two Res 30
 Array Ind. Two Res 20

Sandstone Density Por.
 PE
 Density Correction

Sandstone Neutron Por.

179°

5900

180°

5950

← Bit Size

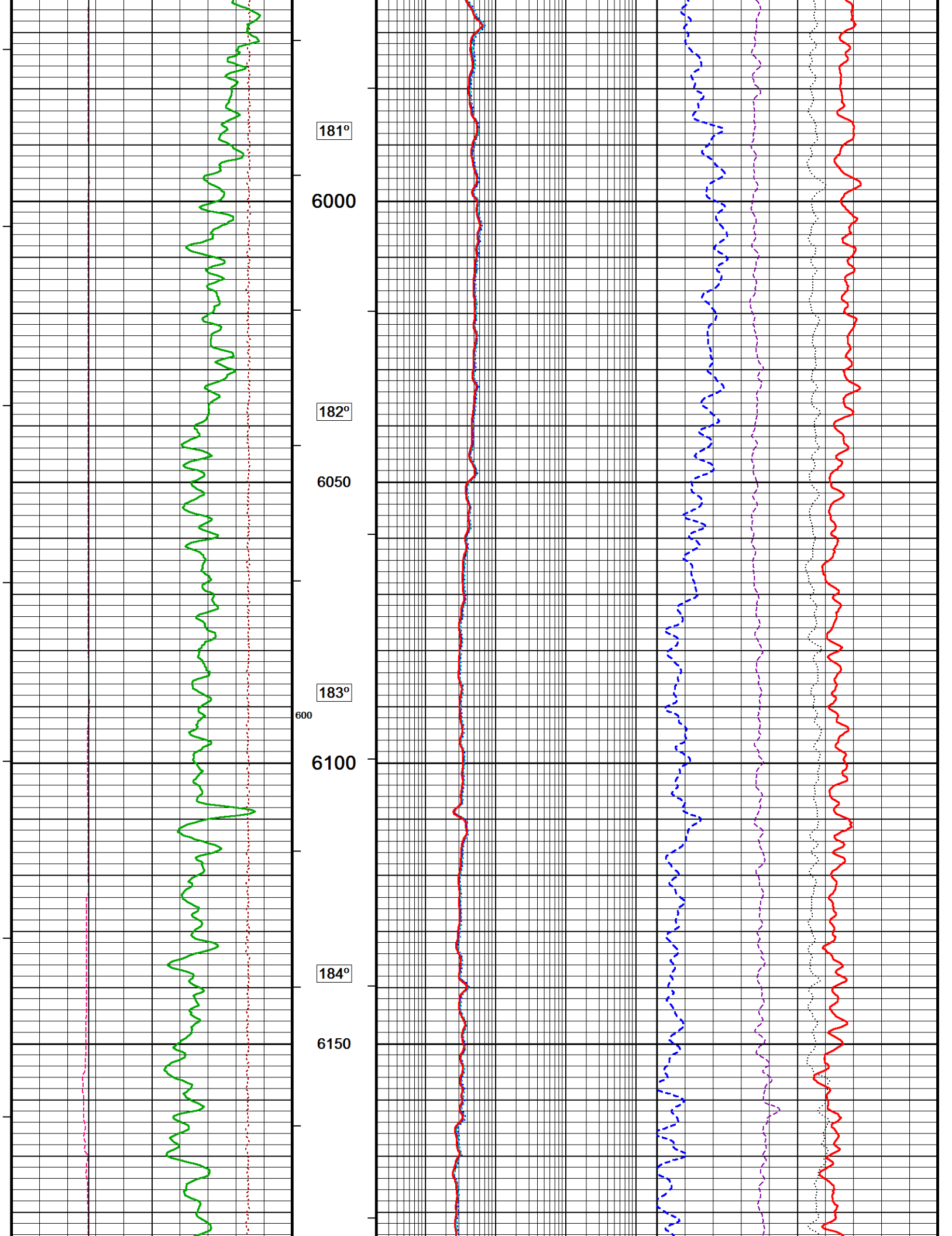
← Density Caliper

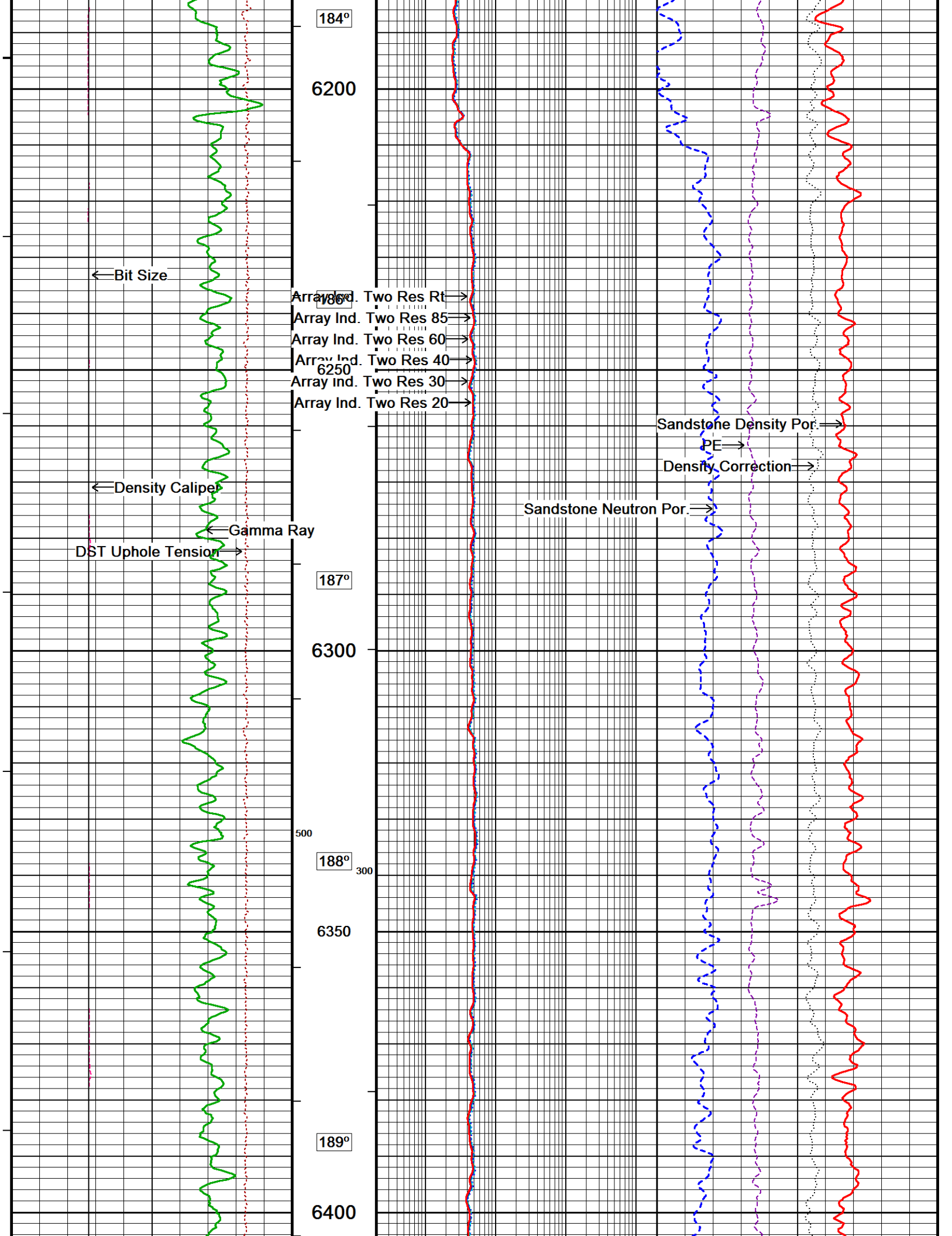
← Gamma Ray

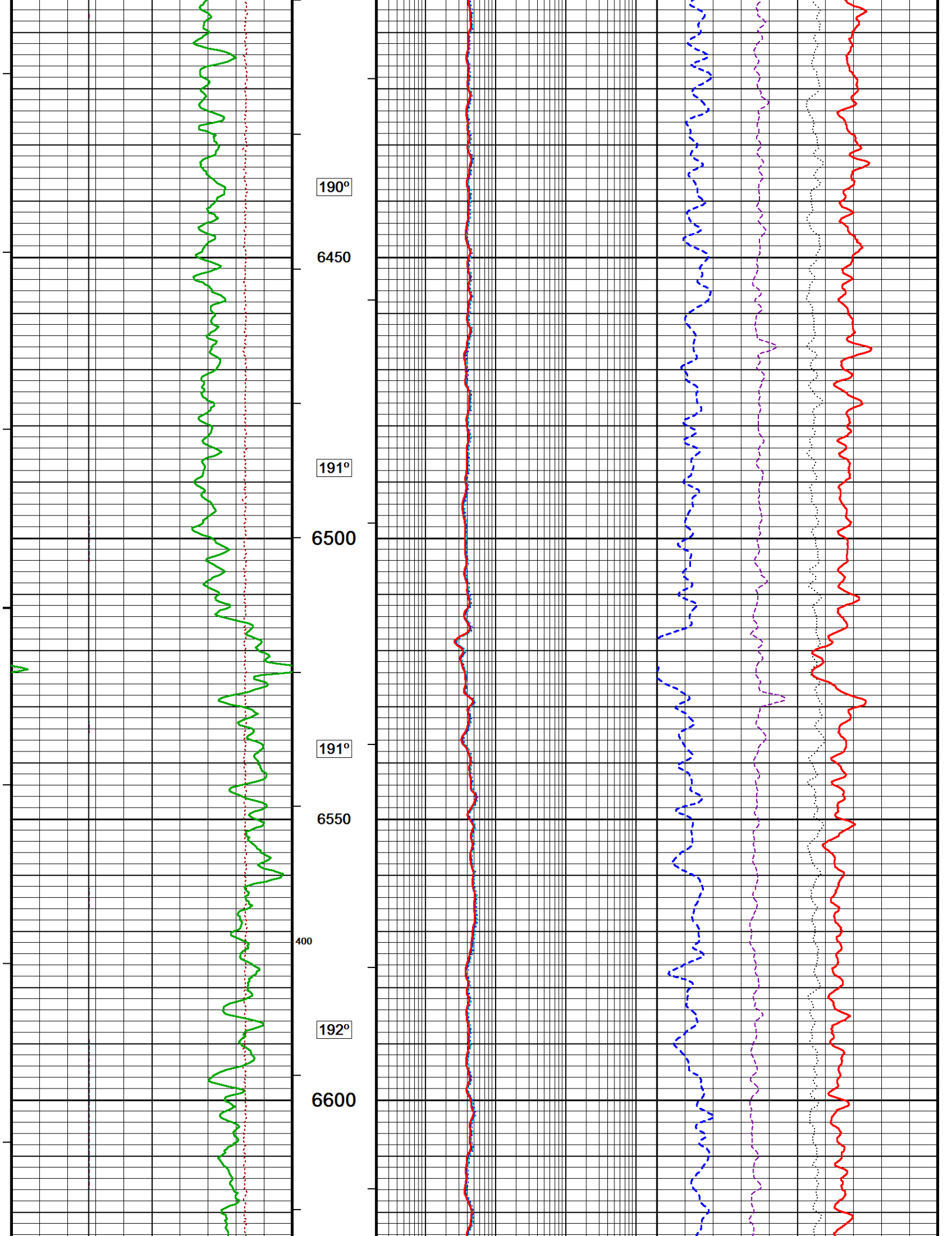
DST Uphole Tension →

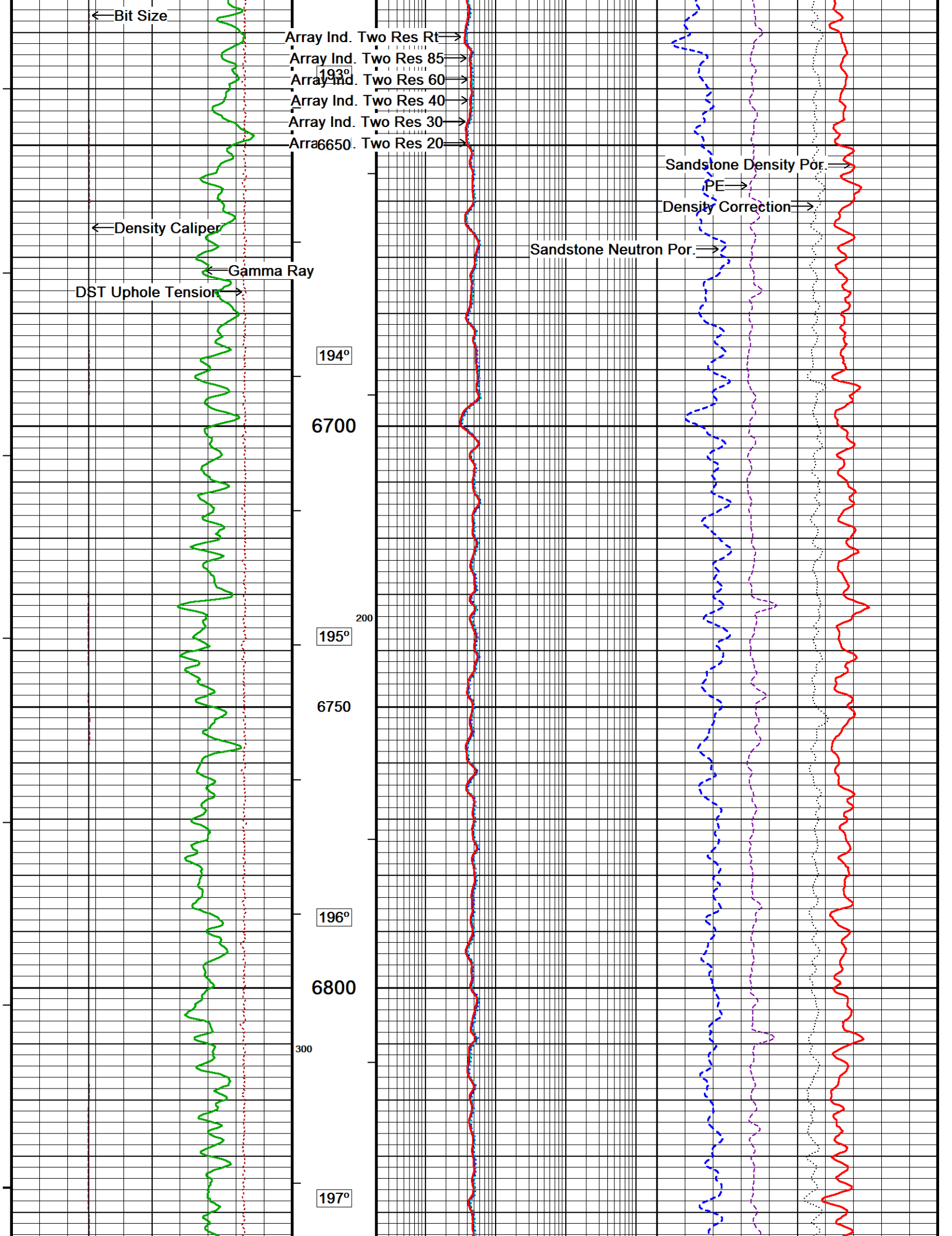
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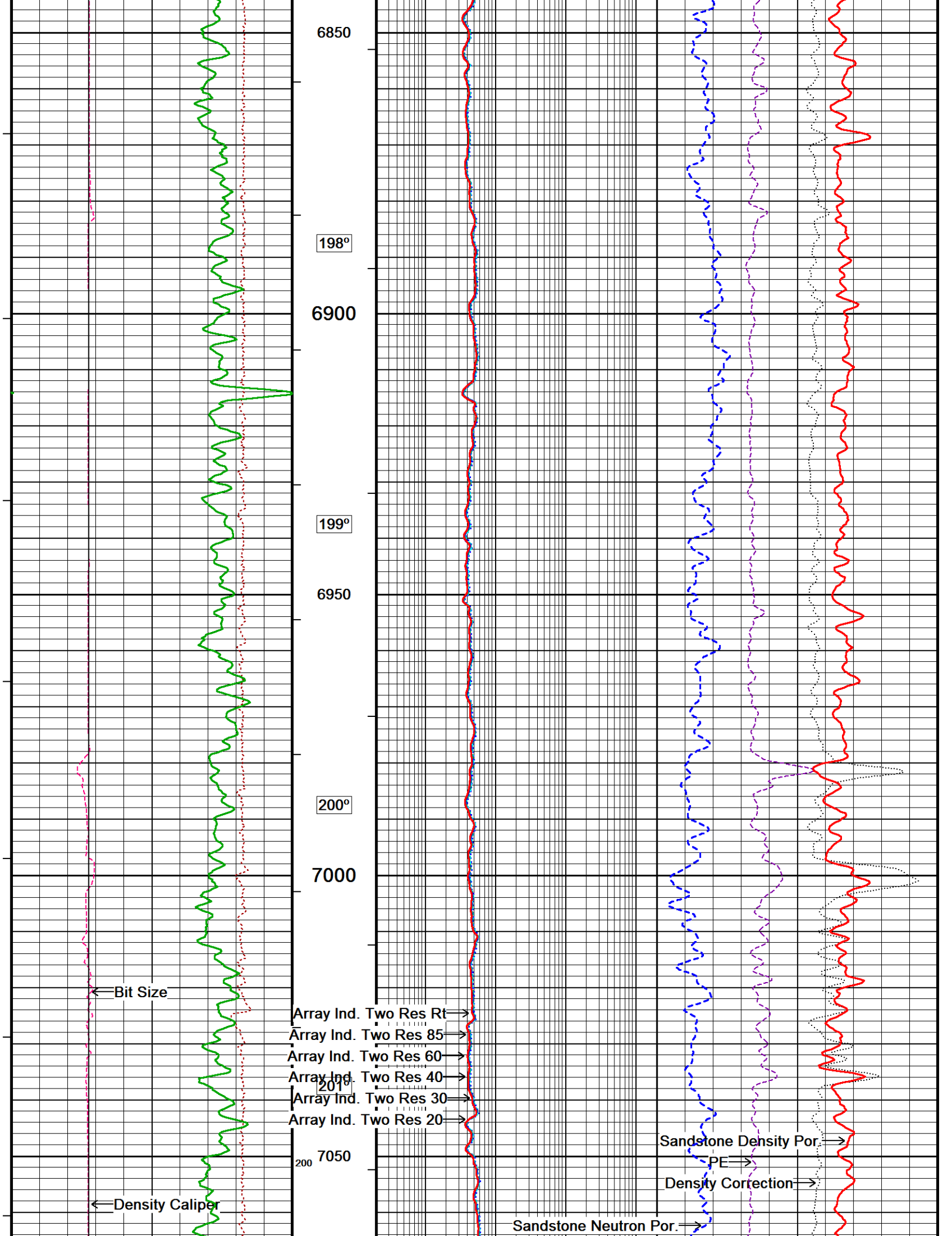
400

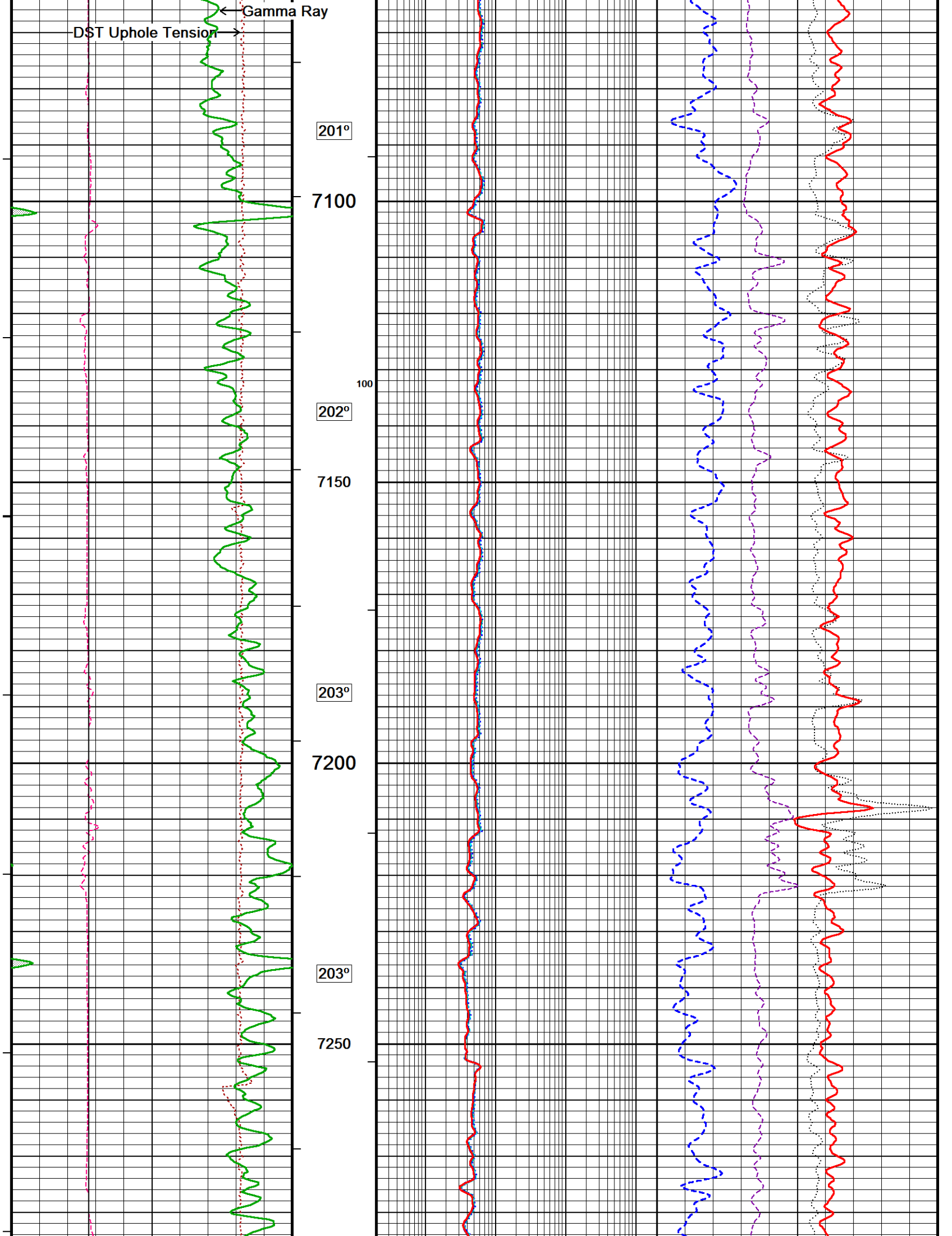


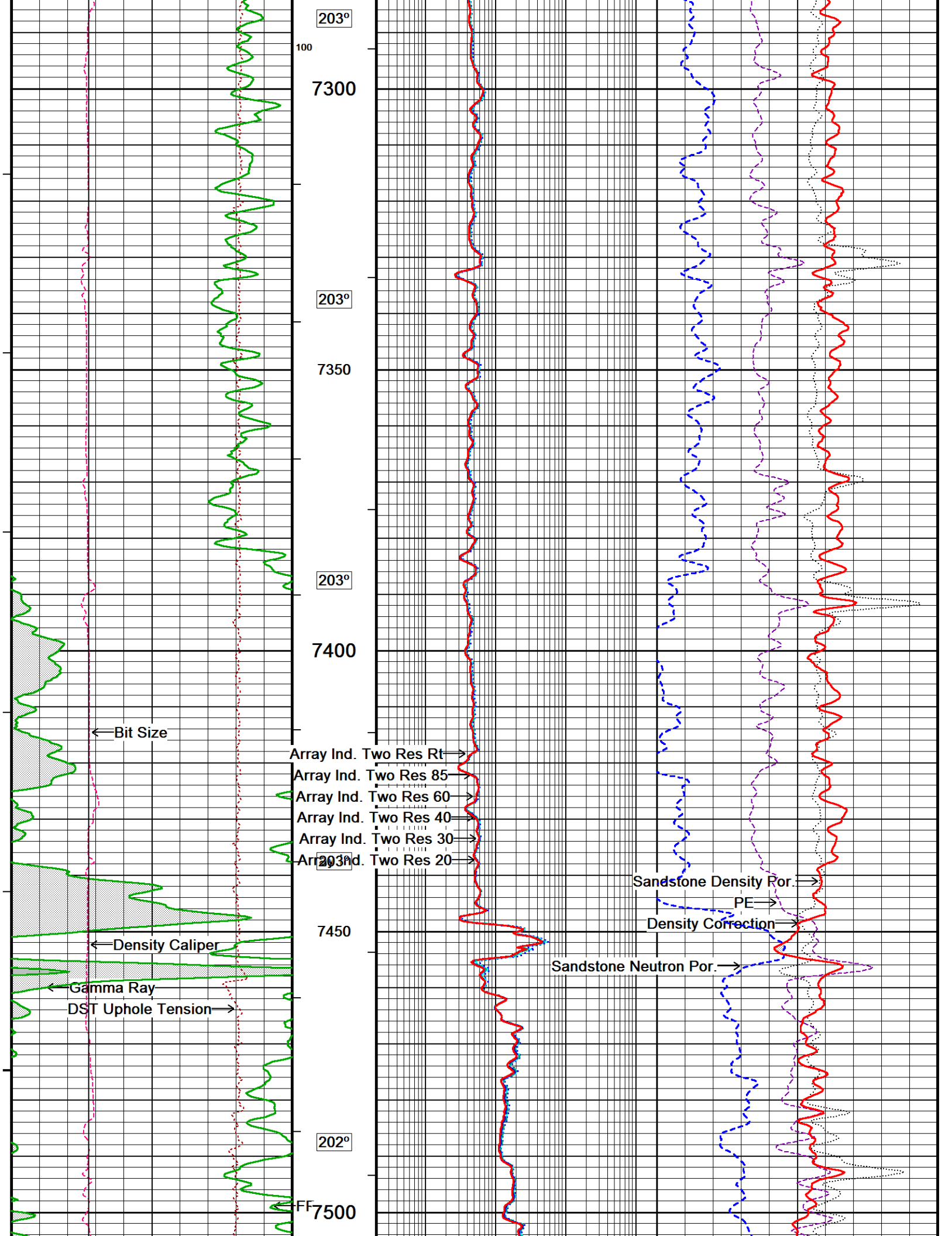


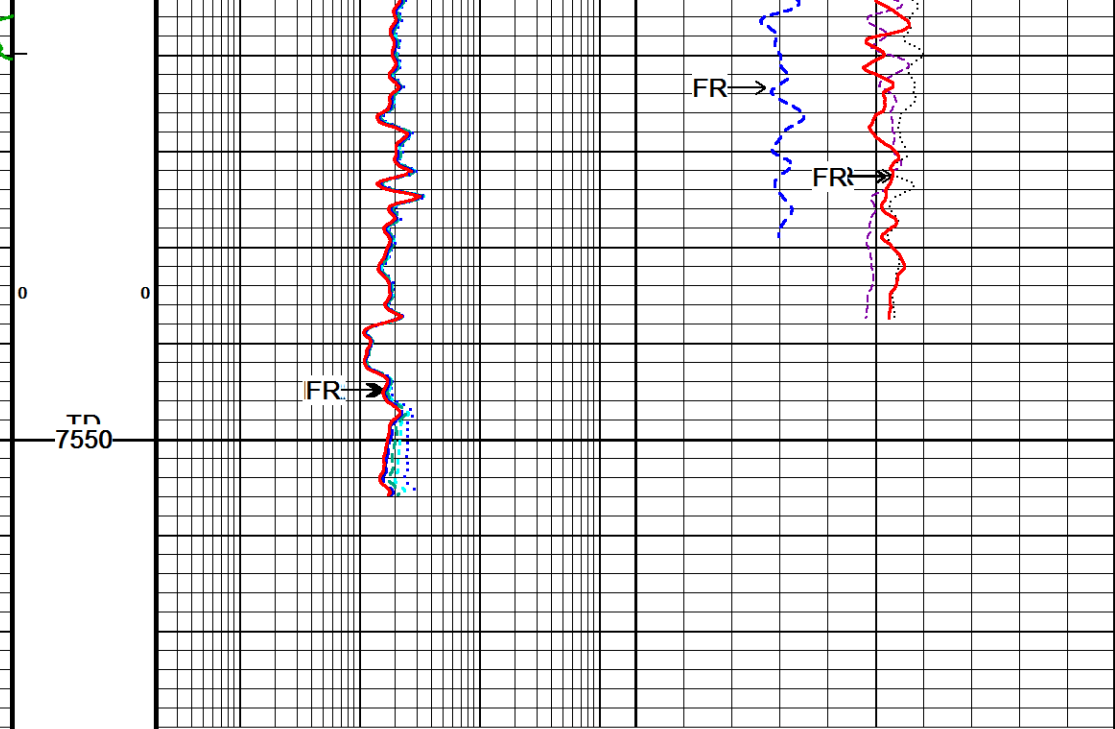
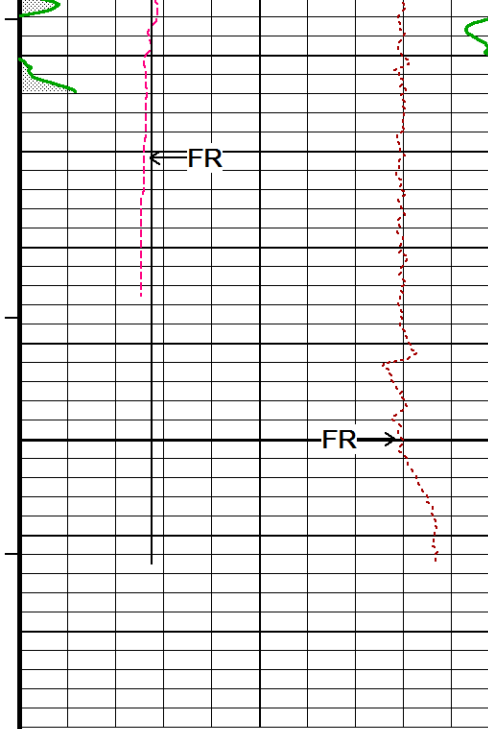












Timing Marks
every 60.0 sec

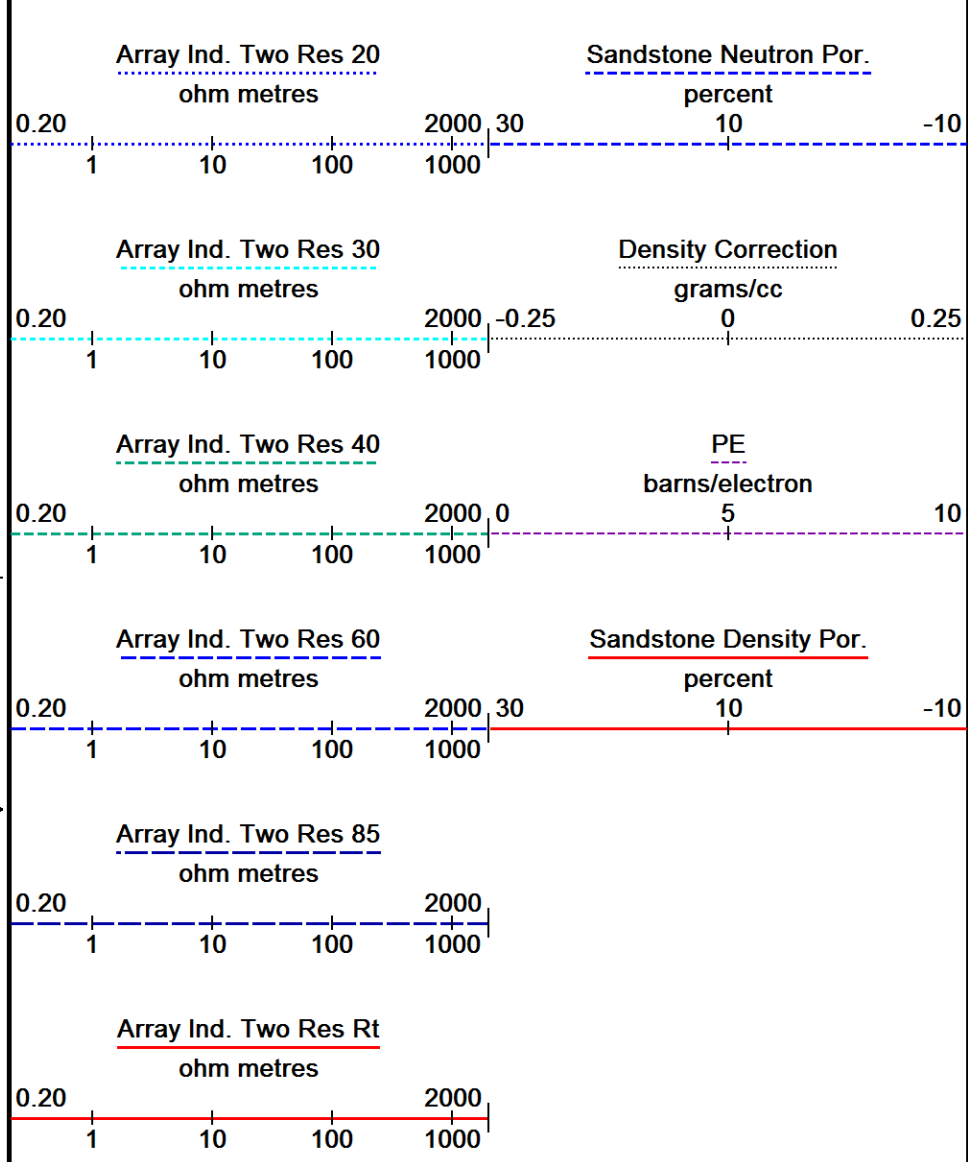
Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0
0 -5000

Depth in Feet
TD 7550
Borehole Temp in deg F
HVI every 10 cu ft
Annular Integral every 10 cu ft
Replay Scale 1:240



REPEAT SECTION OVERLAY

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 22-NOV-2016 07:24

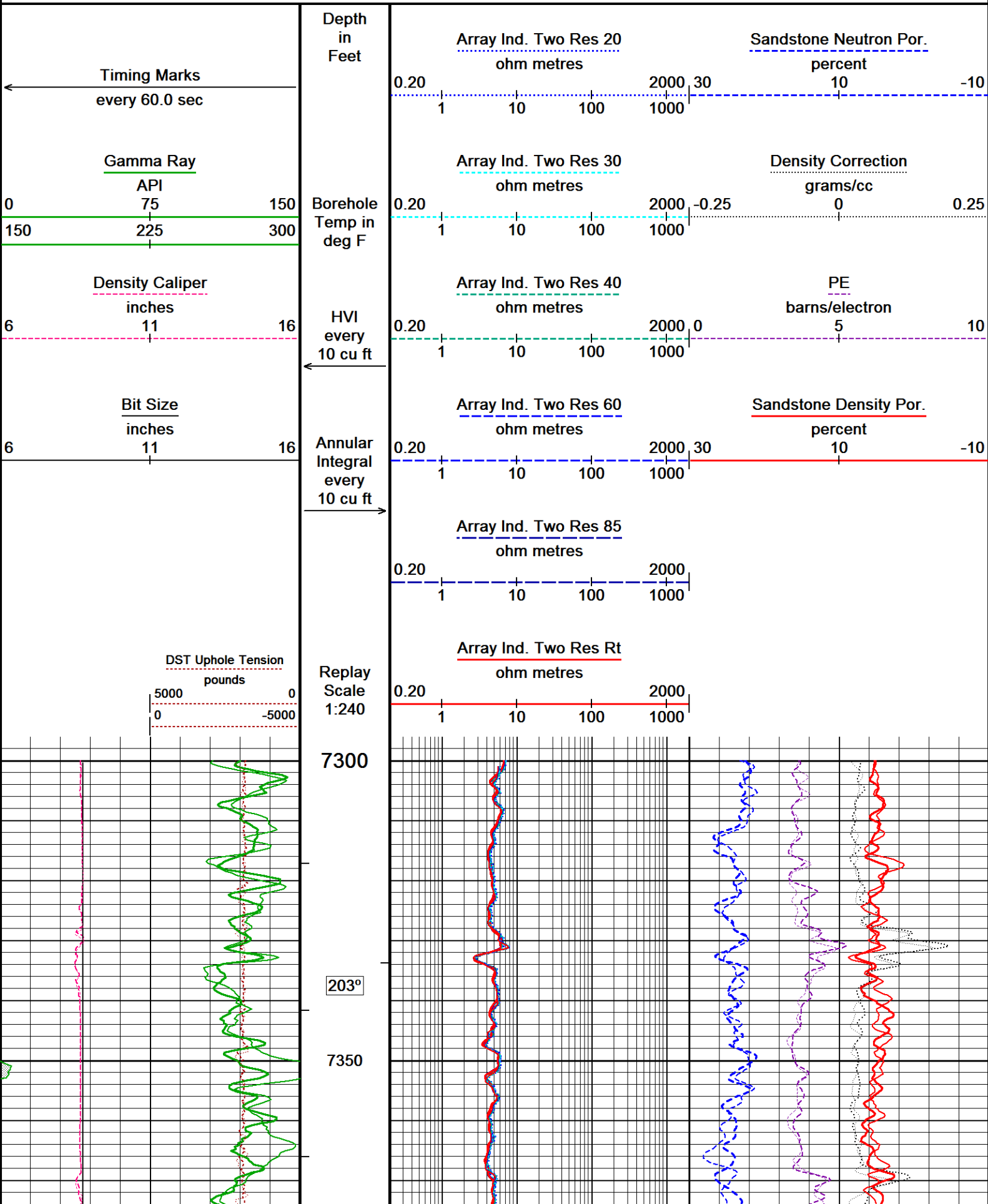
Filename: C:\Logs\Crestone Peak Resources LLC\Woolley Becky 2A-7H-E168\run ... \SPLICE MAIN.dta

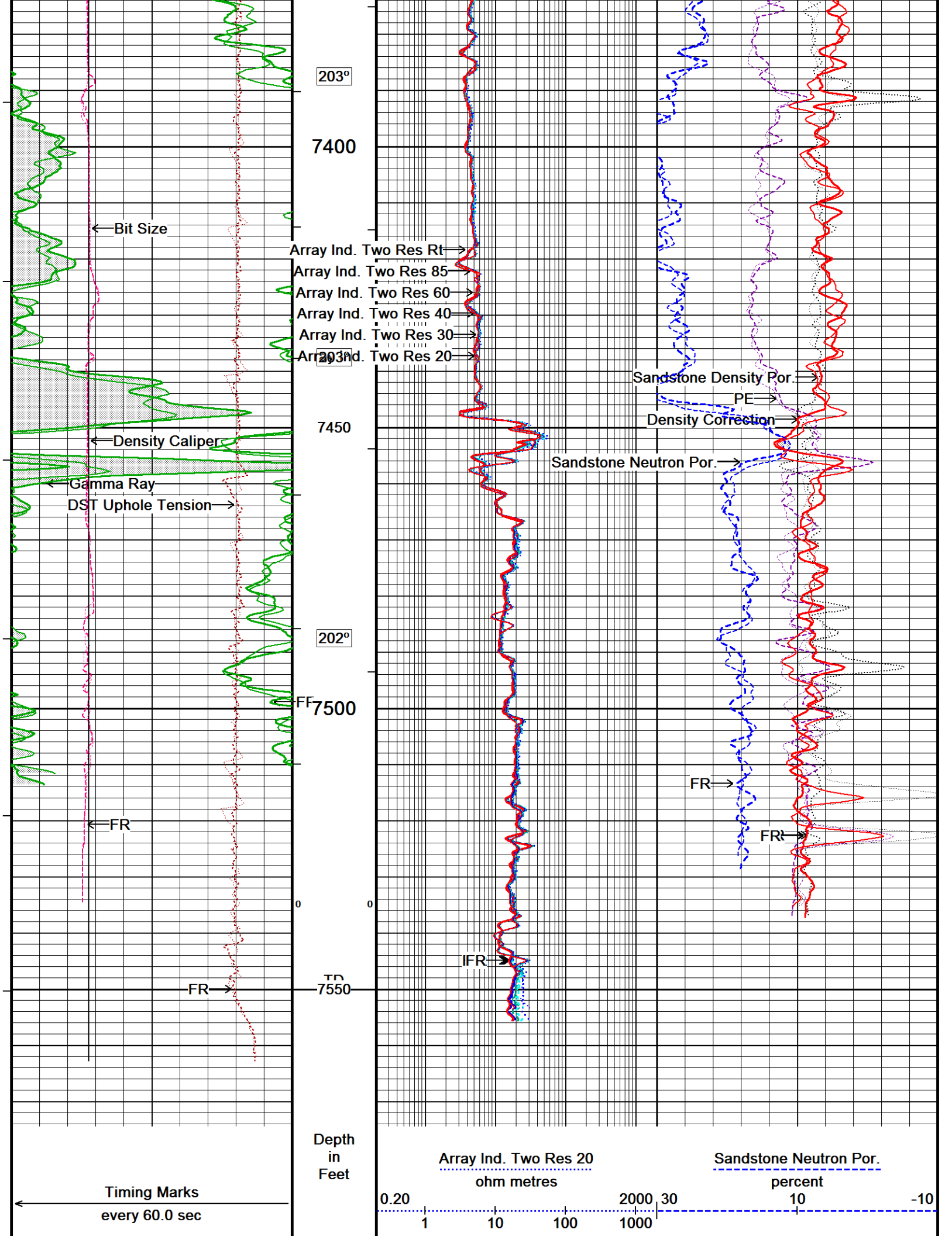
Recorded on 22-NOV-2016 00:49

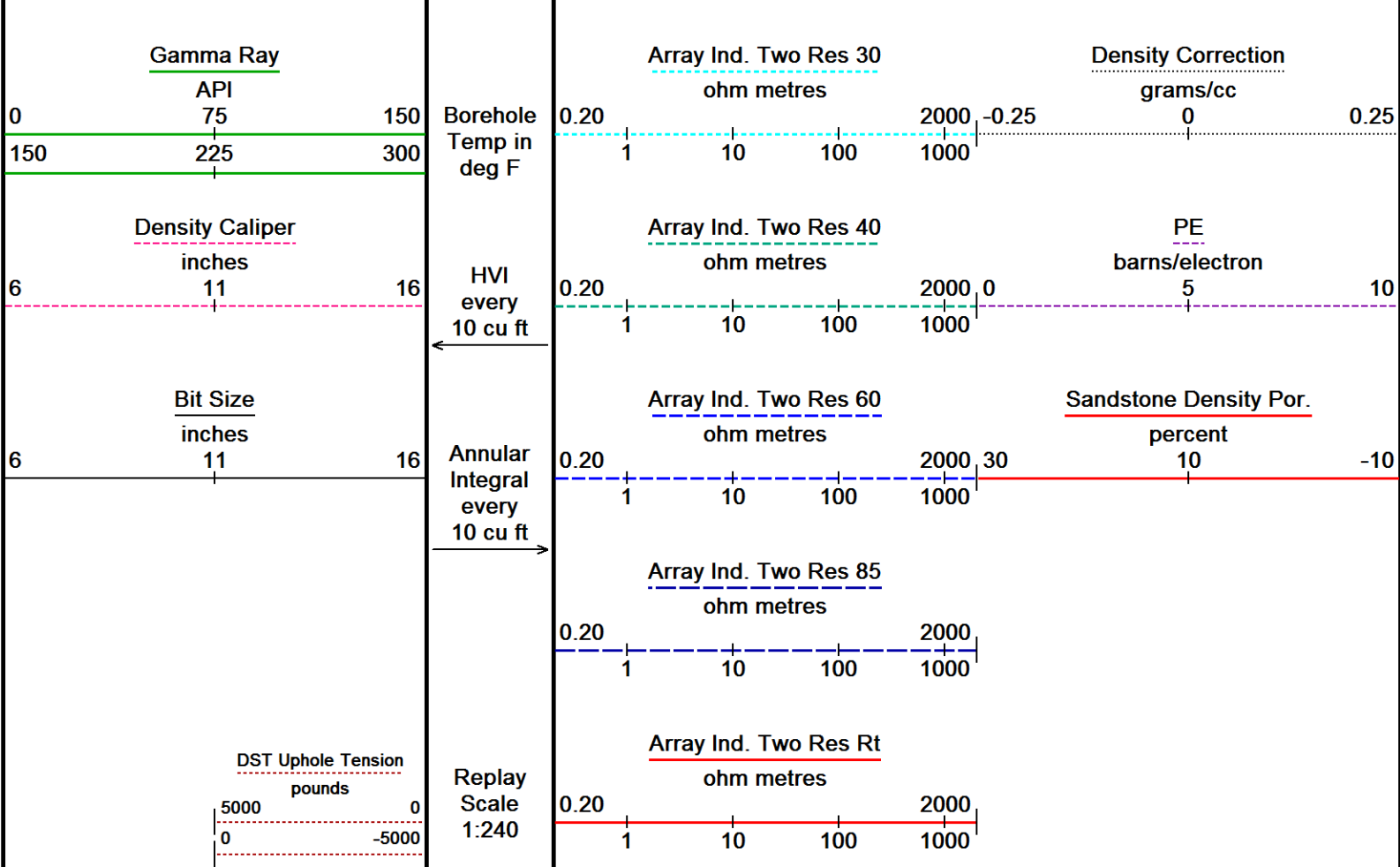
Filename: C:\Logs\Crestone Peak Resources LLC\Woolley Becky 2A-7H-E168\run 1\8149\REPEAT.dta

Recorded on 22-NOV-2016 01:49

System Versions: Processed with 16.03.839 Plotted with 16.03.839







Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 22-NOV-2016 07:24
 Filename: C:\Logs\Crestone Peak Resources LLC\Woolley Becky 2A-7H-E168\run ... \SPLICE MAIN.dta
 Recorded on 22-NOV-2016 00:49
 Filename: C:\Logs\Crestone Peak Resources LLC\Woolley Becky 2A-7H-E168\run 1\8149\REPEAT.dta
 Recorded on 22-NOV-2016 01:49
 System Versions: Processed with 16.03.839 Plotted with 16.03.839

↑ REPEAT SECTION OVERLAY ↑

BEFORE SURVEY CALIBRATION

C:\Logs\Crestone Peak Resources LLC\Woolley Becky 2A-7H-E168\run 1\8149\SETUP.dta

General Constants All 000		Last Edited on 21-NOV-2016,21:49
General Parameters		
Mud Resistivity	1000.000	ohm-metres
Mud Resistivity Temperature	77.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Deep Induction	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

High Resolution Temperature Calibration MCG-D.K 482

Field Calibration on 03-APR-2014,07:59

	Measured	Calibrated(Deg F)
Lower	10.00	10.00

High Resolution Temperature Constants MCG-D.K 482

Last Edited on 03-APR-2014,07:59

Pre-filter Length 11

Gamma Calibration MCG-D.K 482

Field Calibration on 21-NOV-2016 21:47

	Measured	Calibrated (API)
Background	189	126
Calibrator (Gross)	1127	752
Calibrator (Net)	937	626

Gamma Calibration Tolerances MCG-D.K 482

Ratio	1.40	1.475	1.55	Counts/API
1.497	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Gamma Constants MCG-D.K 482

Last Edited on 21-NOV-2016,21:33

Gamma Calibrator Number	GRC 051	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.14	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

Neutron Calibration MDN-B.J 426

Base Calibration on 27-OCT-2016 10:54

Field Check on 21-NOV-2016,21:48

Base Calibration

Ratio	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2918	89	3714	110
Ratio	32.741		33.764	

Field Calibrator at Base

Ratio	Calibrated (cps)
	1401 2085
Ratio	0.672

Field Check

Ratio	Calibrated (cps)
	1401 2085
Ratio	0.672

Neutron Calibration Tolerances MDN-B.J 426

Ratio	-5%	33	+5%
32.741	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Base Check	0.65	0.7	0.75
0.672	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Field Check	0.652	0.672	0.692
0.672	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Neutron Constants MDN-B.J 426

Last Edited on 21-NOV-2016,21:48

Neutron Source Id	P31131B	
Neutron Jig Number	6532NK	
Air Hole Processing	Legacy	
Caliper Source for Processing	Bit Size	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	7.00	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	None	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

Induction Calibration MAI-B.J 362

Base Calibration on 29-AUG-2016,14:59
Field Check on 21-NOV-2016 21:23

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	16.0	468.7	9.3	966.2
2	6.2	374.5	7.6	821.4
3	3.6	258.3	5.2	566.0
4	1.8	133.1	2.6	279.2

Array Temperature 77.0 Deg F

Test Loop Calibration Verified 27-OCT-2016 16:26

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	17.5	3874.9	14.3	3872.7
2	32.6	3606.3	30.3	3605.1
3	30.2	3069.5	28.4	3069.0
4	20.9	2079.1	19.7	2078.9
Deep	18.6	1954.1	17.4	1954.1
Medium	43.4	4077.5	41.1	4076.8
Shallow	48.8	5401.9	45.3	5399.5

Array Temperature 68.4 51.7 Deg F

Induction Calibration Tolerances MAI-B.J 362

Low Conductivity 1	16.0		mmho/m High Conductivity 1	468.7		mmho/m
Low Conductivity 2	6.2		mmho/m High Conductivity 2	374.5		mmho/m
Low Conductivity 3	3.6		mmho/m High Conductivity 3	258.3		mmho/m
Low Conductivity 4	1.8		mmho/m High Conductivity 4	133.1		mmho/m
Background Vx 1	0.0		mmho/m Phase Check Loop 1	0.0		%
Background Vx 2	0.0		mmho/m Phase Check Loop 2	0.0		%
Background Vx 3	0.0		mmho/m Phase Check Loop 3	0.0		%
Background Vx 4	0.0		mmho/m Phase Check Loop 4	0.0		%

Induction Constants MAI-B.J 362

Last Edited on 21-NOV-2016,21:21

Induction Model	RtAP-NC		
Borehole Correction Constants			
Tool Centred	No		
Hole Size Source	Density Caliper		
Hole Size Constant Value	N/A	inches	
Stand-off Type	Fins		
Stand-off	0.50	inches	
Number of Fins on Stand-off	6.0000		
Stand-off Fin Angle	60.00	degrees	
Stand-off Fin Width	0.5000	inches	
Rm Source	Global Value: Temperature Corrected		
Temp. for Rm Corr.	MCG External Temperature		
Squasher Start	0.0020	mhos/metre	
Squasher Offset	N/A	mhos/metre	
Borehole Normalisation			
DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections
Channel 1 0.00 mmhos/metre

Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre
Symmetrised Receiver Gains		
Receiver 1	1.00	
Receiver 2	1.00	
Receiver 3	1.00	
Receiver 4	1.00	
Apparent Porosity and Water Saturation Constants		
Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

Caliper Calibration MPD-C.J 380

Base Calibration on 27-OCT-2016 12:53
Field Calibration on 21-NOV-2016 21:24

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14641	3.99
2	22944	5.96
3	31536	7.96
4	39696	9.85
5	48624	11.88
6	N/A	N/A

Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.90	7.96

Caliper Calibration Tolerances MPD-C.J 380

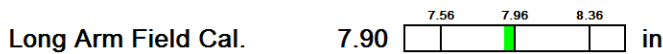


Photo Density Calibration MPD-C.J 380

Base Calibration on 27-OCT-2016 13:24
Field Check on 21-NOV-2016 21:33

Density Calibration				
Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1251	1403		
Reference 1	53016	25476	59443	30683
Reference 2	21756	2529	24540	2525
Field Check at Base				
	1251.3	1403.4		
Field Check				
	1250.0	1407.1		
PE Calibration				
Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	226	1129		
Reference 1	22064	52829	0.422	0.372
Reference 2	6172	21624	0.290	0.271
Field Check at Base				
	225.9	1129.0		
Field Check				
	226.1	1127.2		

Photo Density Calibration Tolerances MPD-C.J 380



PE Calibration	0.121	-3%	1251.3	+3%
Near Den. Field Check	1250.0	-6%	225.9	+6%
PE WS Field Check	226.1			

Far Den. Field Check	1407.1	-3%	1403.4	+3%
PE WH Field Check	1127.2	-6%	1129.0	+6%

Density Constants MPD-C.J 380

Last Edited on 22-NOV-2016,00:35

Density Source Id	P21136B	
Nylon Calibrator Number	DNC.E.652	
Aluminium Calibrator Number	DAC.C.631	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.14	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	
Precision Enhanced Density Processing	Not Applied	
Matrix Density (gm/cc)	Depth (ft)	
2.65	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	
0.00	0.00	

DOWNHOLE EQUIPMENT

C:\Logs\Crestone Peak Resources LLC\Woolley Becky 2A-7H-E168\run 1\8149\SETUP.dta

- Cablehead, 11 pin
CBH-C 0 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in
- Compact Swivel Head Adaptor
SHA-J.B 512 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in
- Compact Comms Gamma
MCG-D.K 482 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in
- Compact Vee Arm Caliper
MVC-A.A 138 LG: 8.06 ft WT: 61.7 lb OD: 2.240 in
- Compact Neutron
MDN-B.J 426 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in
- Compact Density/Caliper
MPD-C.J 380 LG: 9.59 ft WT: 90.4 lb OD: 2.244 in
- Compact Vee Arm Caliper
MVC-A.A 141 LG: 8.06 ft WT: 61.7 lb OD: 2.244 in
- Compact Knuckle Joint
SKJ-E.B 534 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in
- Compact Inline Standoff sub
MIS-E.B 693 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in
- Compact Induction
MAI-B.J 362 LG: 12.52 ft WT: 48.5 lb OD: 2.240 in



- 49.27 ft GRGC - MCG Gamma Ray
- 46.37 ft CGXT - MCG External Temperature
- 34.76 ft NPRS - Sandstone Neutron Por.
- 27.52 ft AVOL - Annular Volume
- 27.52 ft HVOL - Hole Volume
- 27.52 ft CLDC - Density Caliper
- 25.59 ft DPRS - Sandstone Density Por.
- 25.59 ft DCOR - Density Correction
- 25.52 ft PDPE - PE
- 3.34 ft R30T - Array Ind. Two Res 30
- 3.34 ft R20T - Array Ind. Two Res 20
- 3.34 ft R85T - Array Ind. Two Res 85
- 3.34 ft R60T - Array Ind. Two Res 60
- 3.34 ft R40T - Array Ind. Two Res 40
- 3.34 ft RTAT - Array Ind. Two Res Rt

Total Length: 60.97 ft Weight: 463.0 lb



Tool Zero (1.84ft from bottom)

-1.84 ft SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	CRESTONE PEAK RESOUCES LLC
WELL	WOOLLEY BECKY 2A-7H-E168
FIELD	WATTENBERG
PROVINCE/COUNTY	WELD
COUNTRY/STATE	USA / COLORADO

Elevation Kelly Bushing	5017	feet	First Reading	7547.00	feet
Elevation Drill Floor		feet	Depth Driller	7549.00	feet
Elevation Ground Level	4994	feet	Depth Logger	7550.00	feet



COMPACT TRIPLE COMBO
QUICKLOOK
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