



Weatherford

**COMPACT TRIPLE COMBO
QUICKLOOK
LOG**

COMPANY ALTA MESA SERVICES, LP

WELL ML INVESTMENTS 1-3

FIELD WILDCAT

PROVINCE/COUNTY PAYETTE

COUNTRY/STATE U.S.A. / IDAHO

LOCATION SHL:1625' FNL& 3276' FEL

SEC 3 TWP 8N RGE 4W Other Services

API Number 11-075-20026

Permanent Datum G.L., Elevation 2675 feet

Log Measured From KB

Drilling Measured From KB @ 13 FT

Date 13-DEC-2015

Run Number ONE

Service Order 2653-137165422

Depth Driller 5585.00 feet

Depth Logger 5585.00 feet

First Reading 5560.00 feet

Last Reading 1088.00 feet

Casing Driller 1084.00 feet

Casing Logger 1088.00 feet

Bit Size 8.750 inches

Hole Fluid Type WBM

Density / Viscosity 10.00 lb/USg 40.00 sec/qt

PH / Fluid Loss 12.00 13.80 ml/30Min

Sample Source FLOWLINE

Rm @ Measured Temp 2.70 @ 79.0 ohm-m

Rmf @ Measured Temp 2.16 @ 79.0 ohm-m

Rmc @ Measured Temp 3.24 @ 79.0 ohm-m

Source Rmf / Rmc CALC CALC

Rm @ BHT 1.38 @150.0 ohm-m

Time Since Circulation 0 HOURS

Max Recorded Temp 158.00 deg F

Equipment / Base 13045 CASPER

Recorded By W.HANKS

Witnessed By DAVE SMITH

Elevations:
KB 2687.00
DF 2686.00
GL 2675.00

BOREHOLE RECORD

Last Edited: 12-DEC-2015 20:59

Bit Size inches	Depth From feet	Depth To feet
8.750	1084.00	5585.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	1084.00	40.00

REMARKS

SOFTWARE VERSION USED: 15.03.5939
 TOOLS CONVEYED VIA DRILL PIPE/COMPACT WELL SHUTTLE

LOGS RECORDED USING A 200V MEMORY LOGGING SYSTEM
 200V EXTENDED BATTERIES USED TO POWER TOOLSTRING

ALL DEPTHS RECORDED WITH WEATHERFORD ADVANTAGE DEPTH SYSTEM IN CONJUNCTION WITH RIG PASON EDR SYSTEM
 ALL DEPTHS CORRECTED TO DRILLER'S STRAP DEPTH

TIGHT PULLS, BOREHOLE SIZE, AND RUGOSITY MAY AFFECT DATA QUALITY

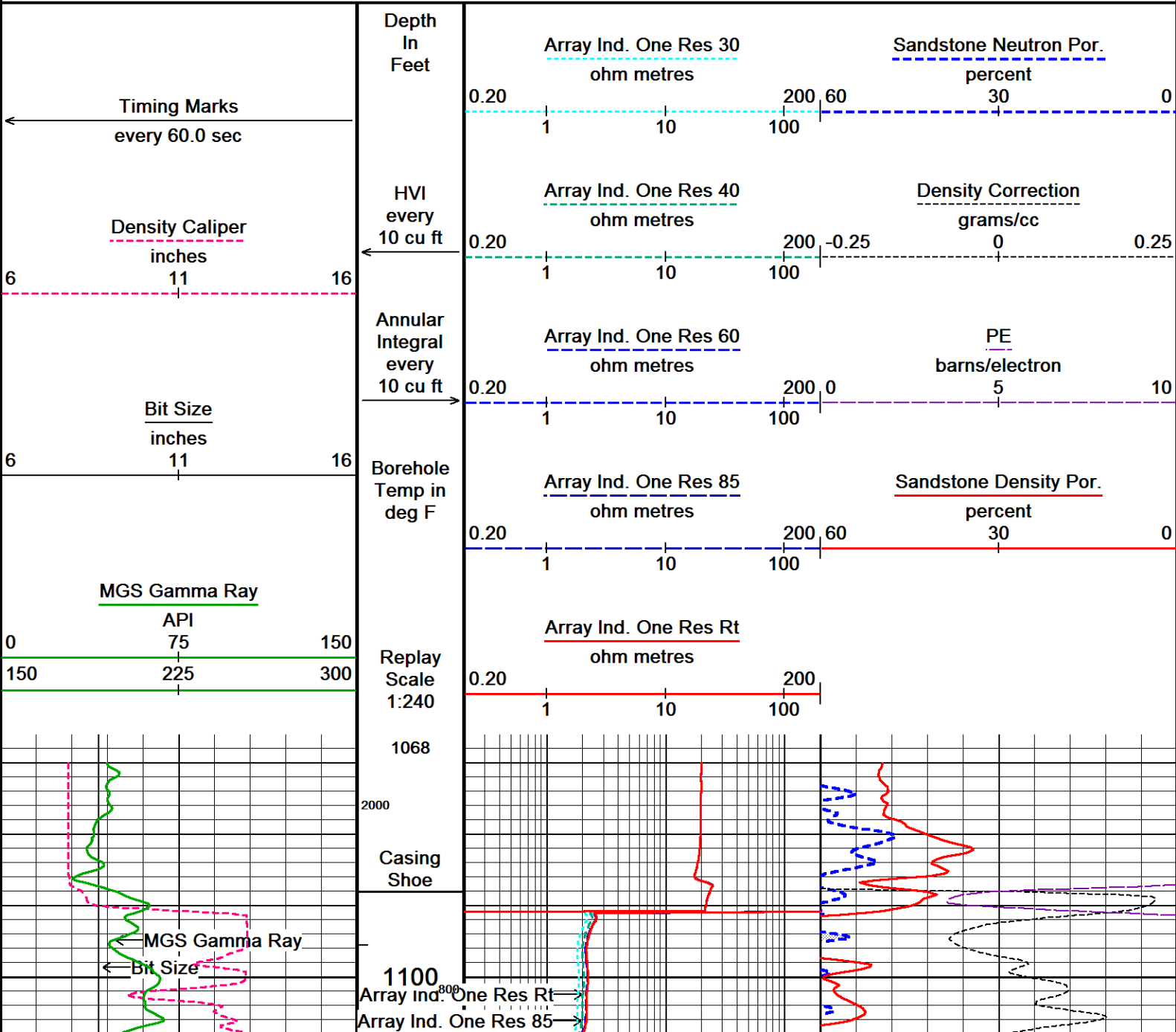
HARDWARE USED: MPD - 4 INCH PROFILE PLATE
 MAI - INDUCTION STANDOFF ASSEMBLY
 MFE AND MAI STOOD OFF 0.5 INCHES USING ISA AND MISE ANCILLARIES

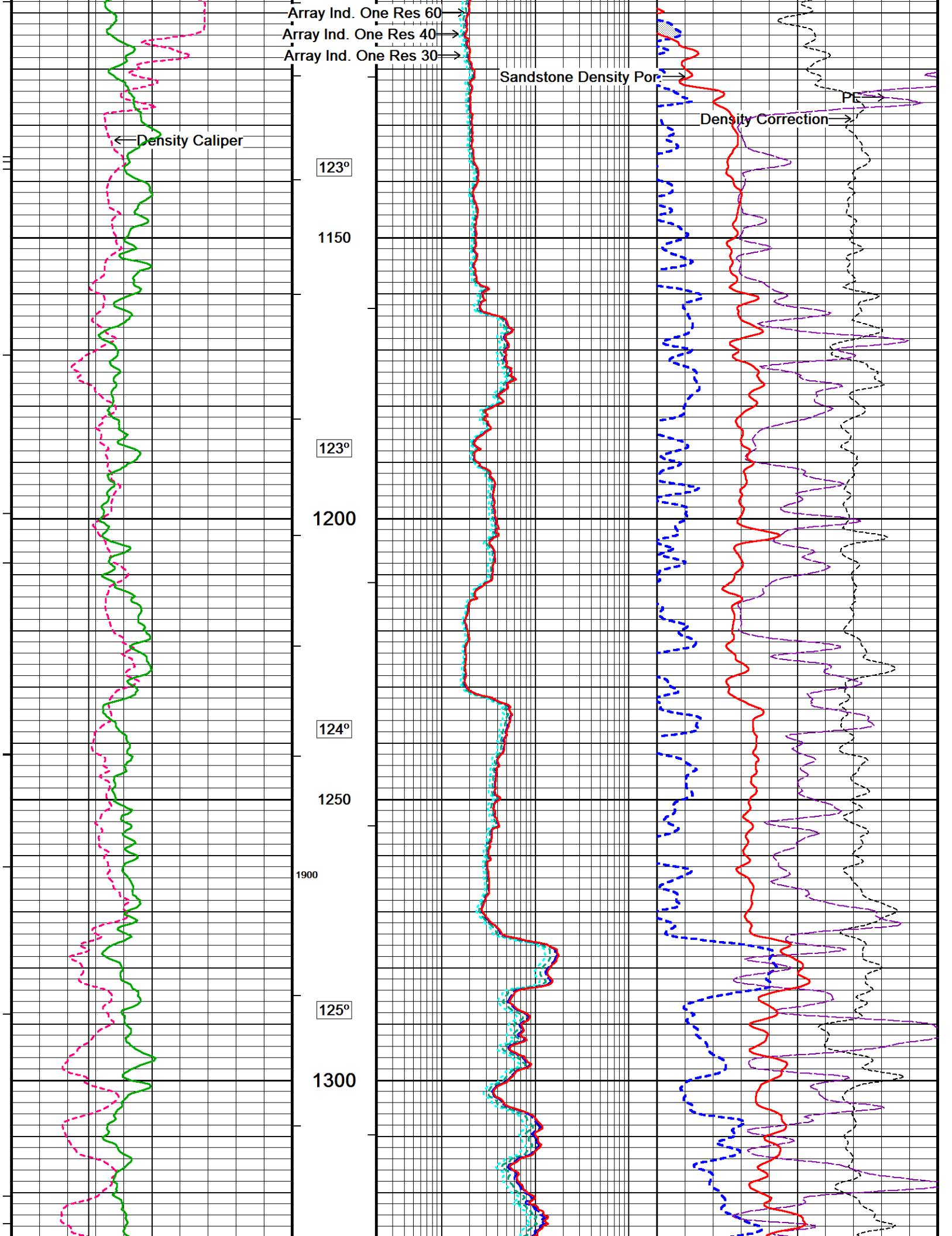
7 INCH PRODUCTION CASING SIZE USED TO CALCULATE ANNULAR HOLE VOLUME
 ANNULAR HOLE VOLUME FROM T.D. TO SURFACE CASING : 810 CUBIC FEET
 HOLE VOLUME FROM T.D. TO SURFACE CASING: 2000 CUBIC FEET

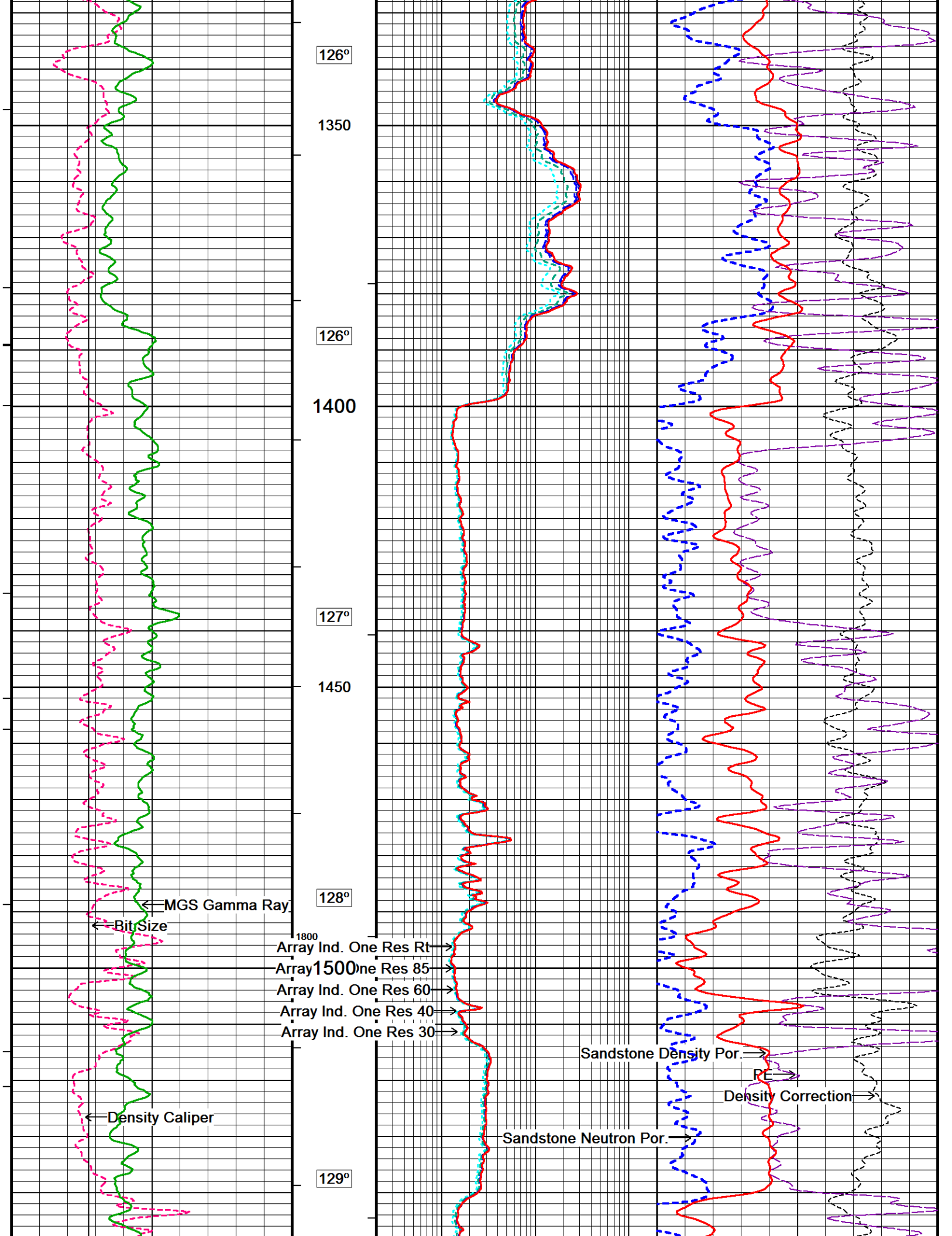
In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will 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 16-DEC-2015 10:39
 Filename: C:\Users\jenkinm\AppData\Local\Temp\Weatherford ...ML Investments 1-3 MMS Depth.dta Recorded on 13-DEC-2015 21:49
 System Versions: Logged with 15.03.5939 Processed with 15.03.5939 Plotted with 13.08.1505







126°

1350

126°

1400

127°

1450

128°

129°

← MGS Gamma Ray

← Bit Size

← Density Caliper

1800
Array Ind. One Res Rt →

1500
Array Ind. One Res 85 →

60
Array Ind. One Res 60 →

40
Array Ind. One Res 40 →

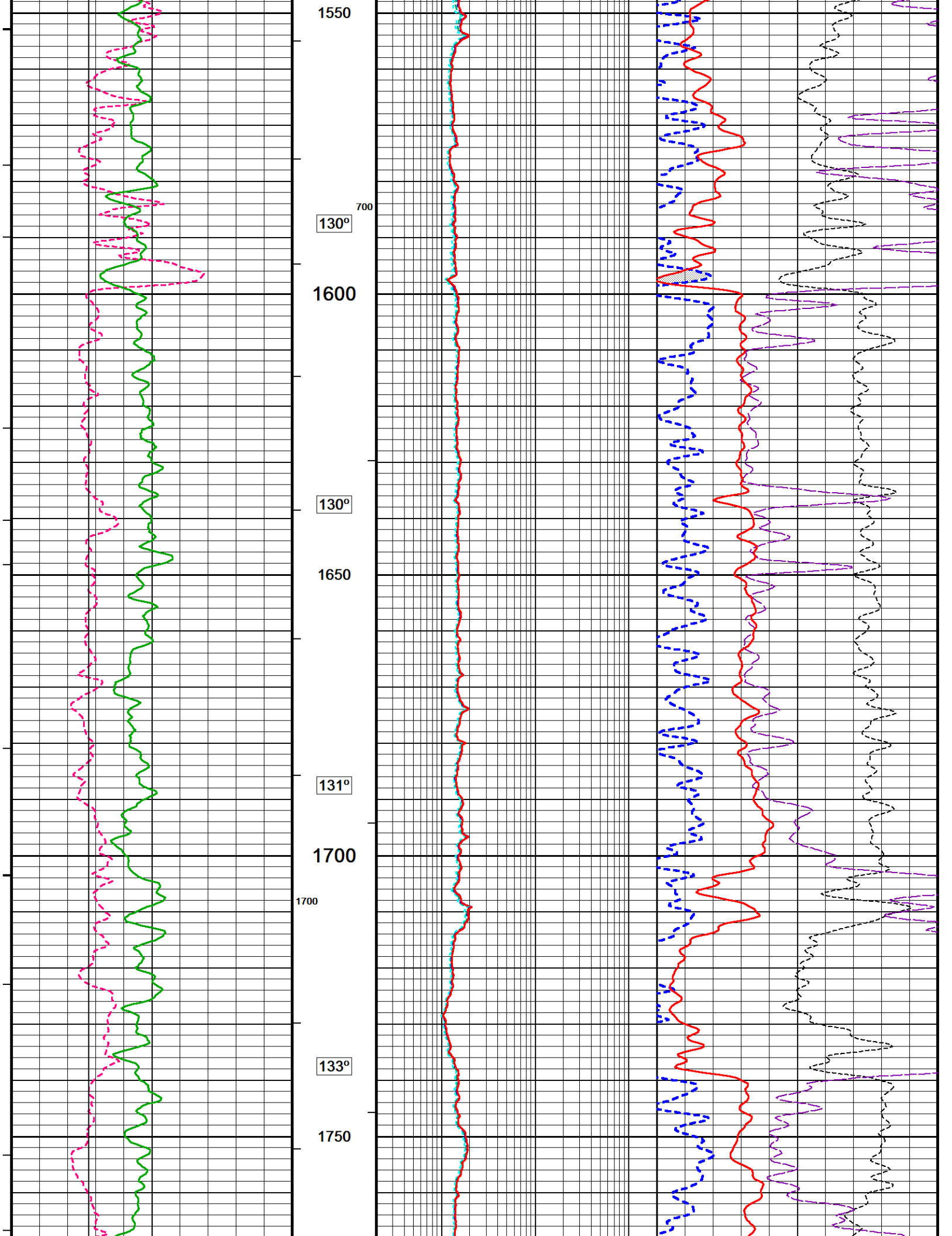
30
Array Ind. One Res 30 →

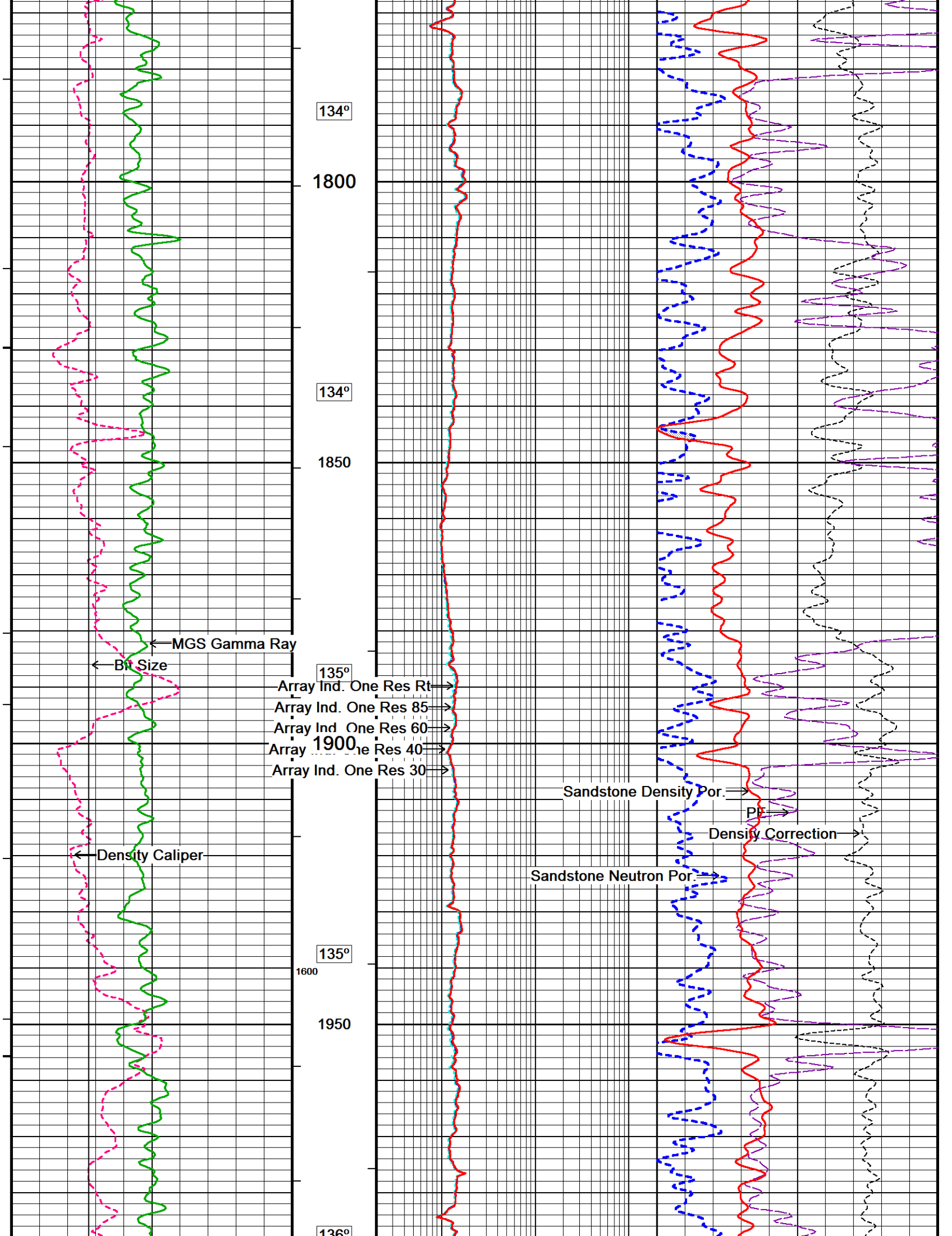
Sandstone Density Por. →

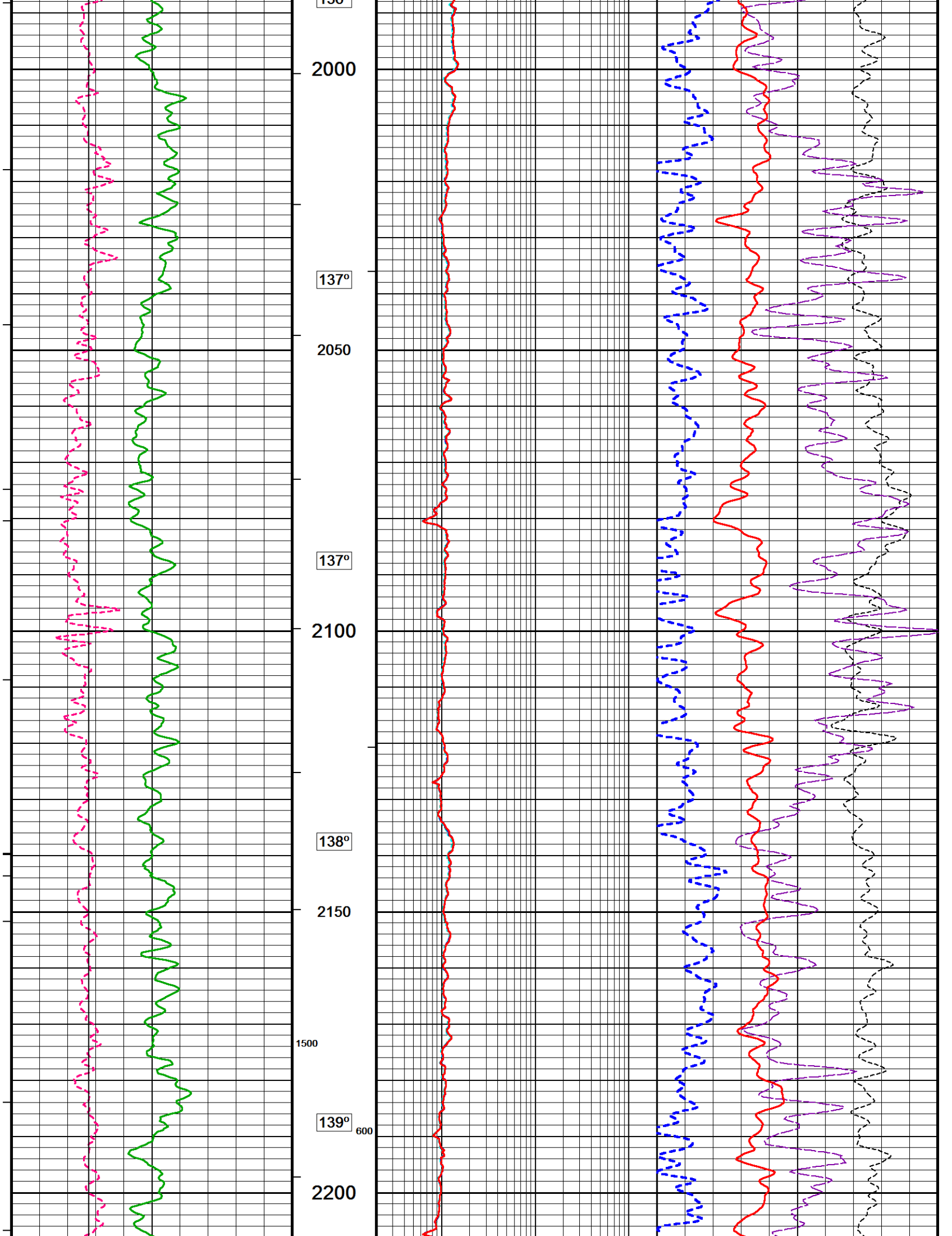
PE →

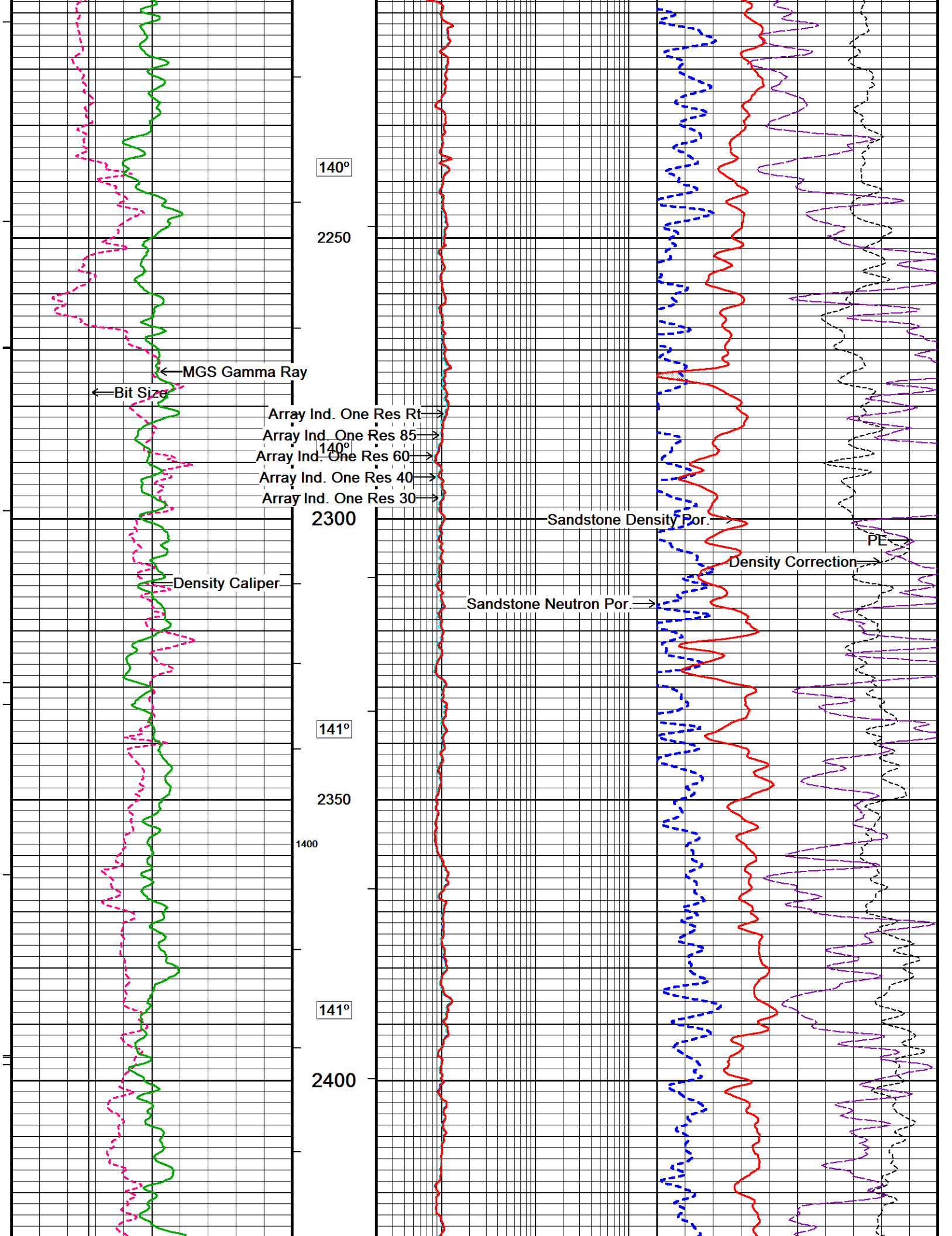
Density Correction →

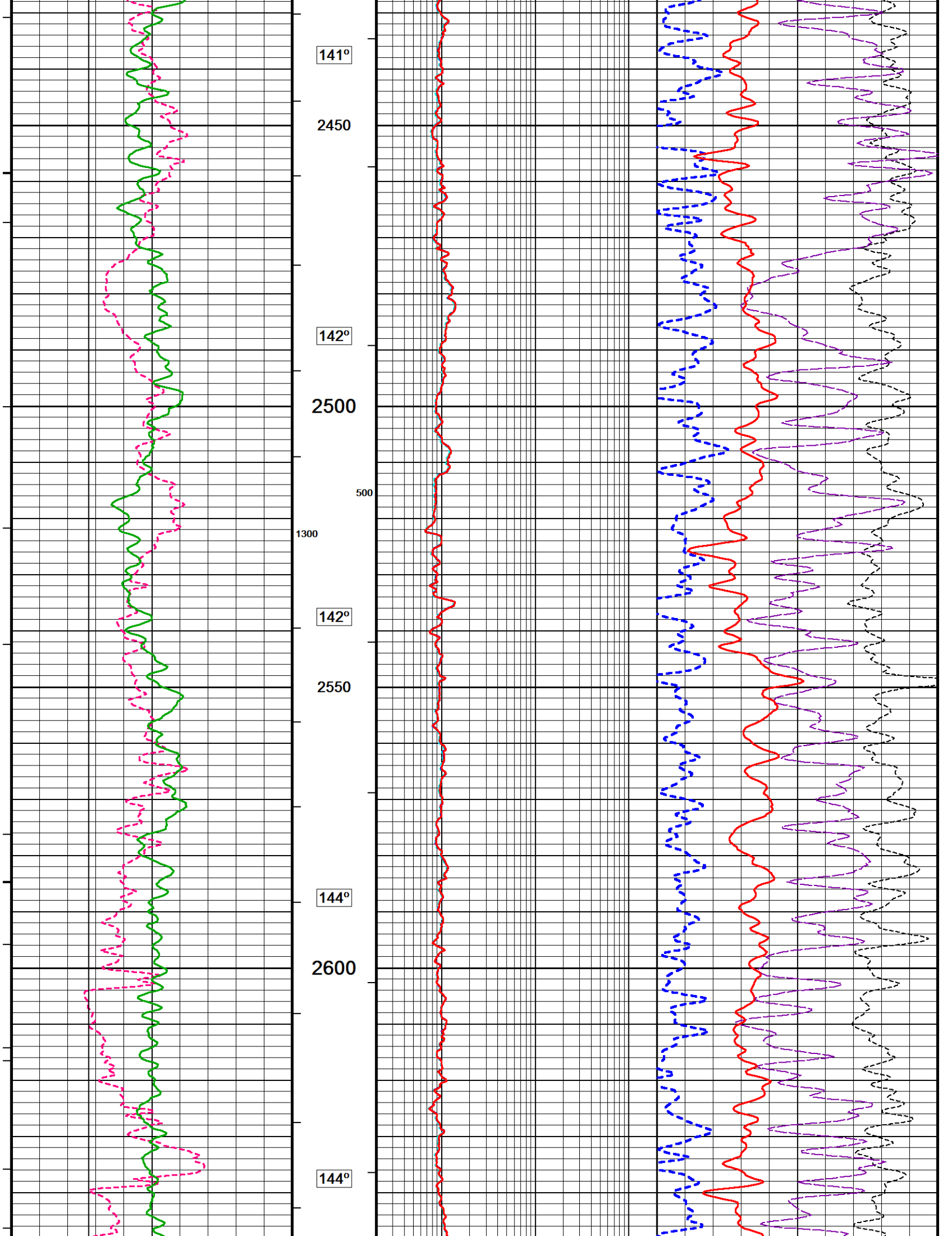
Sandstone Neutron Por. →

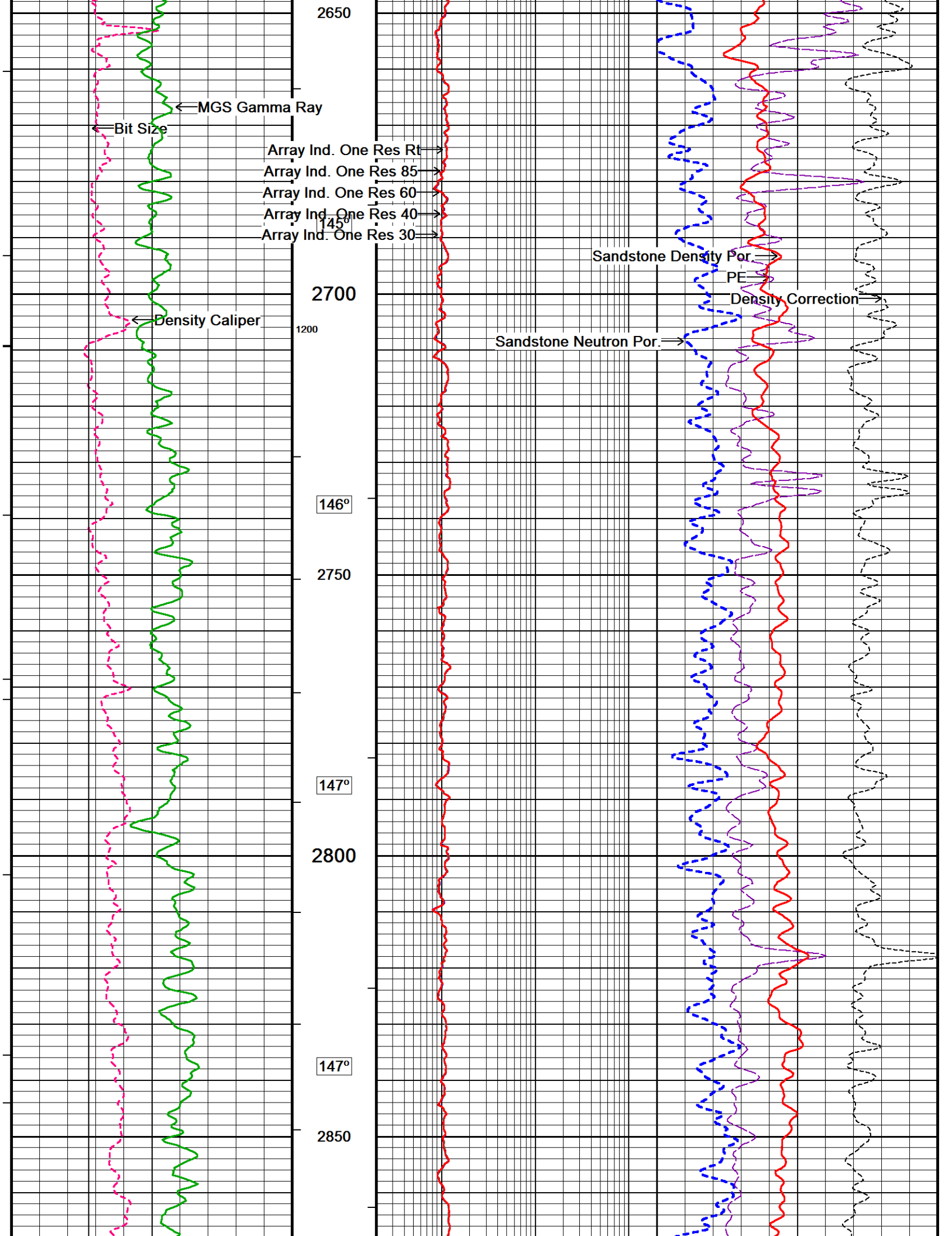


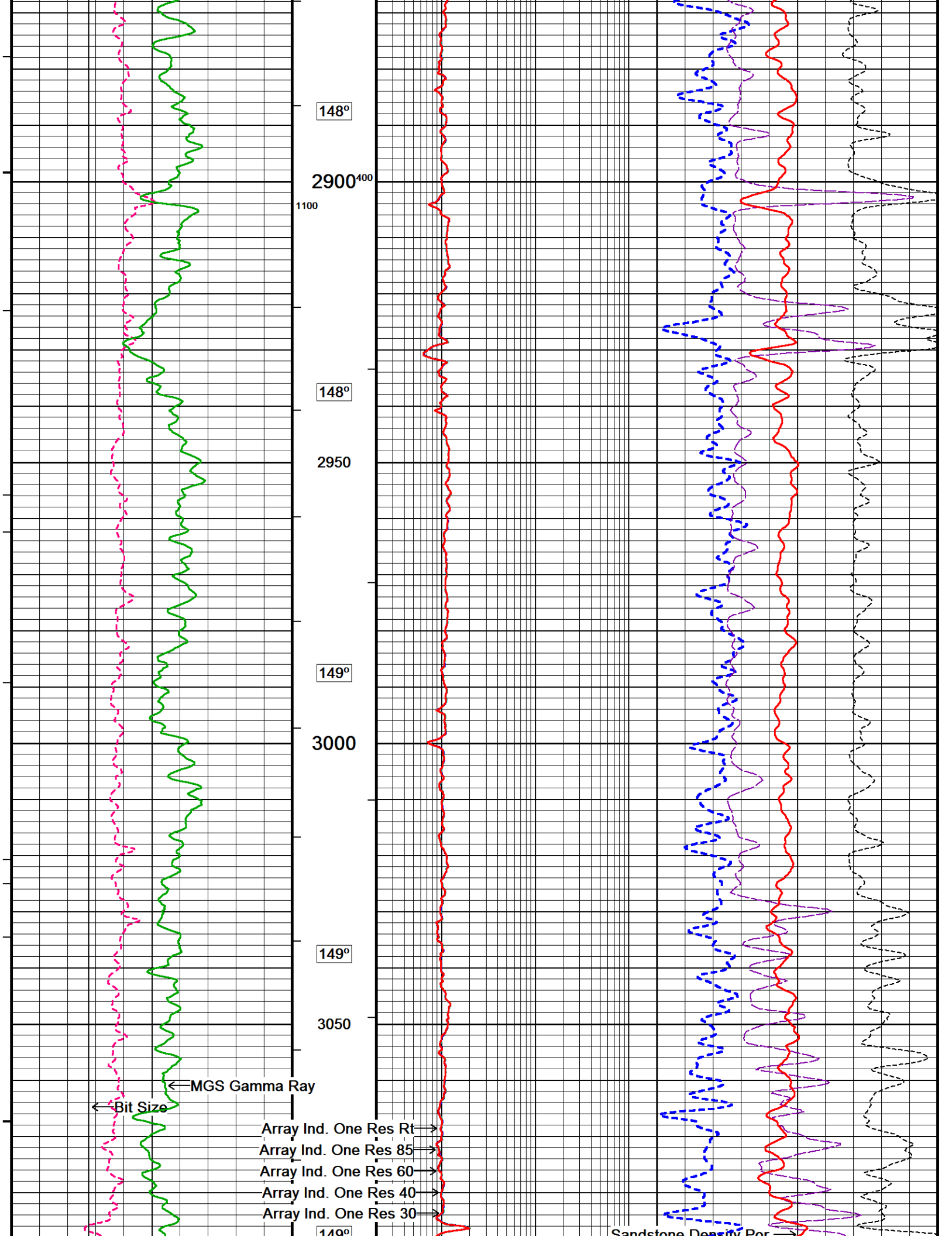


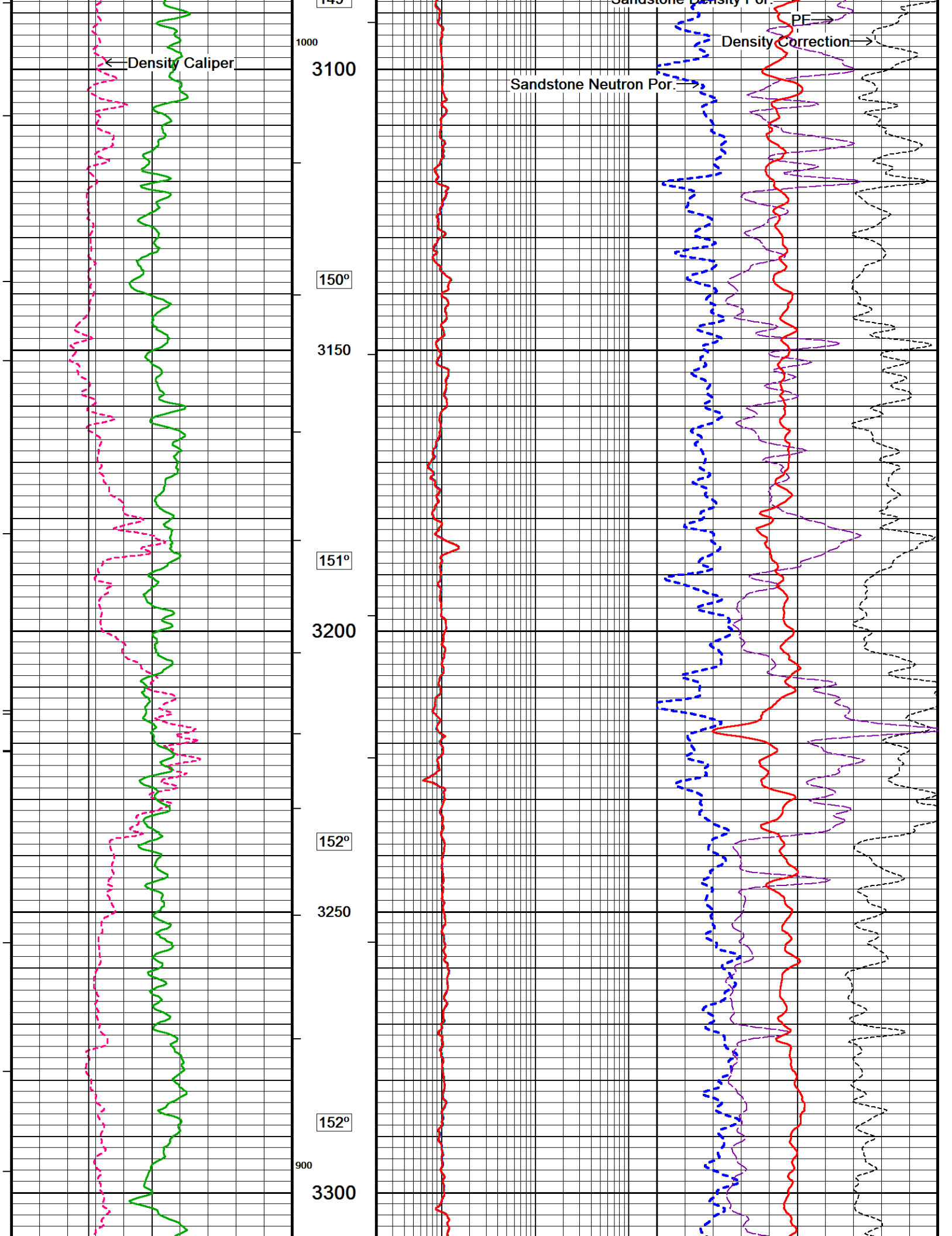


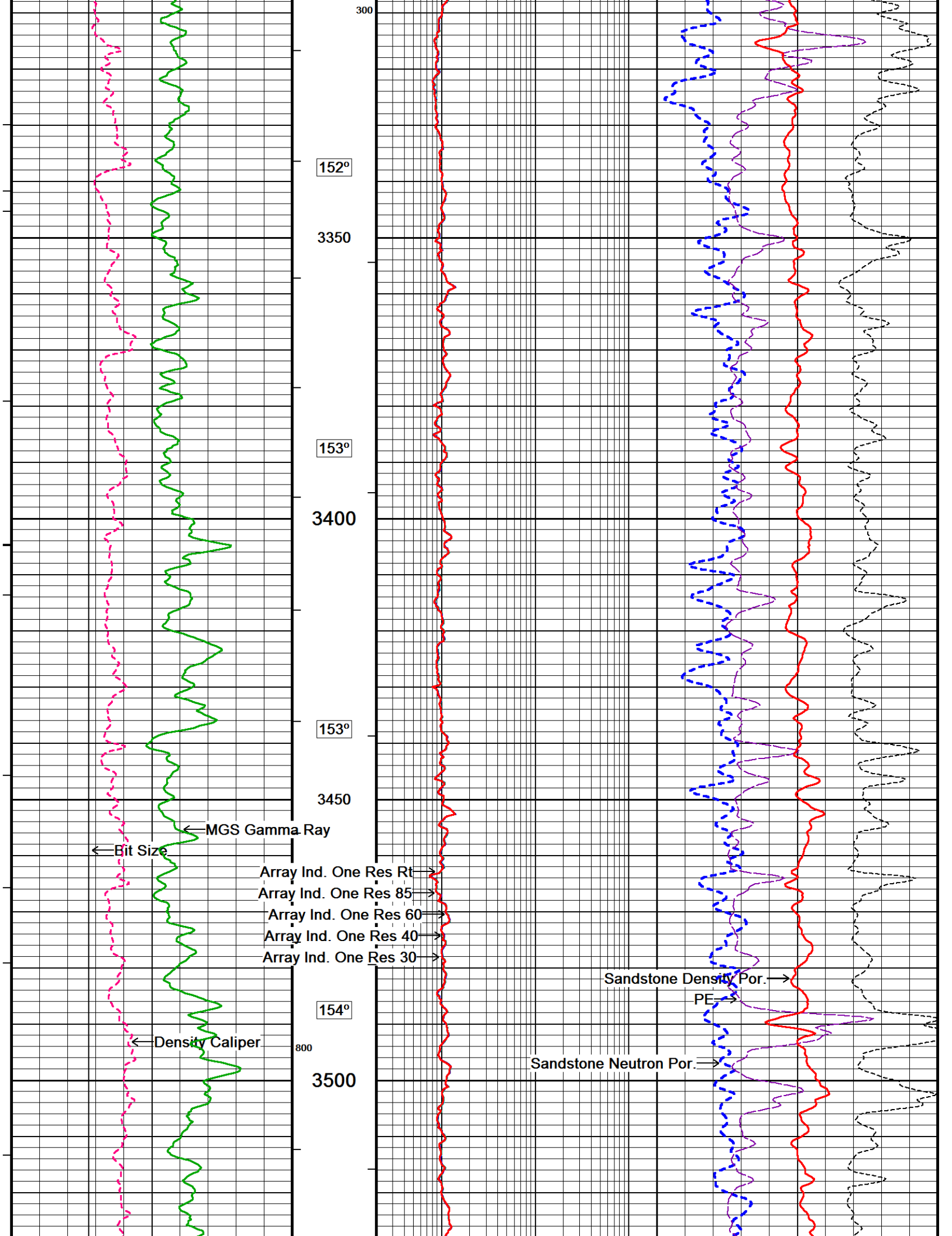


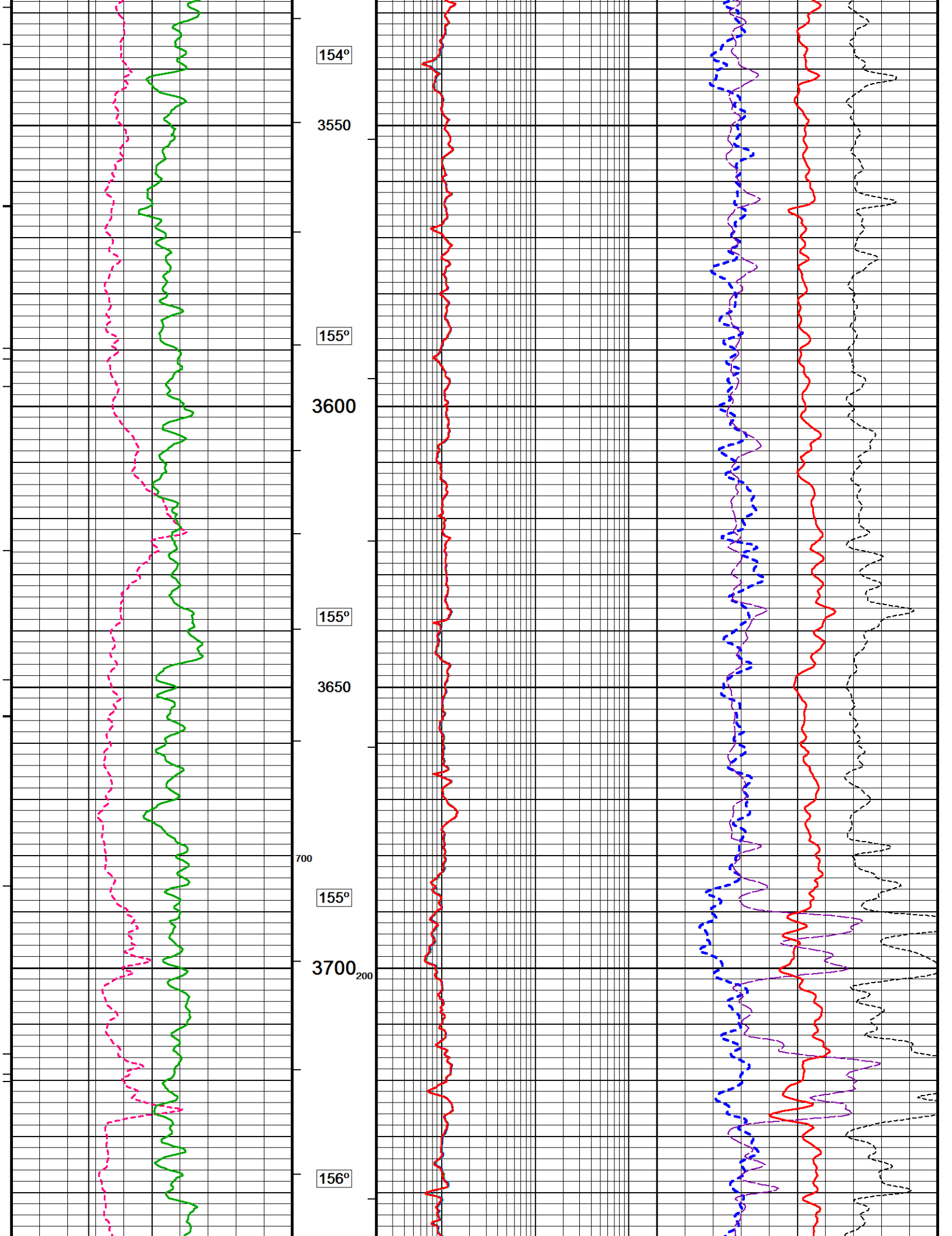


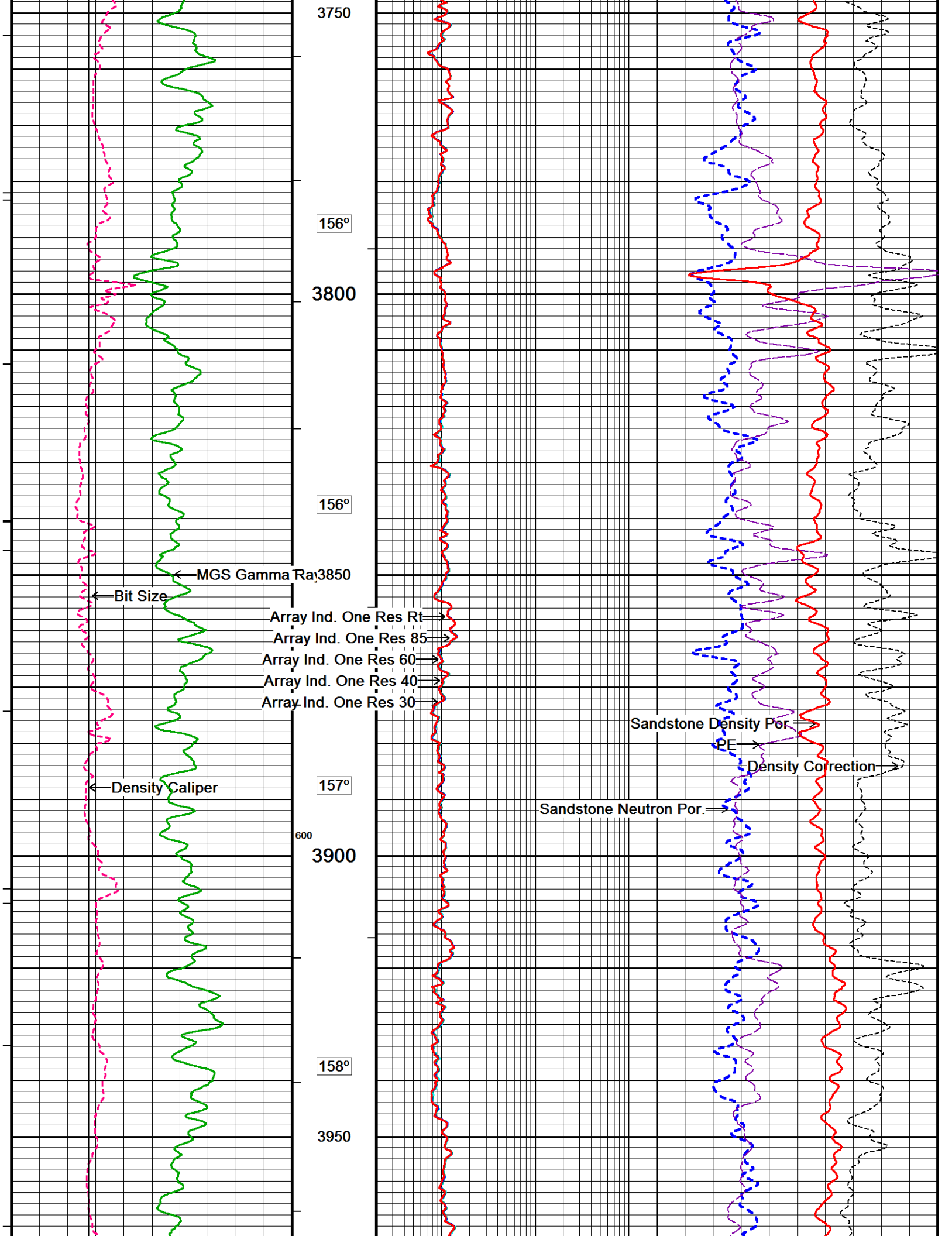


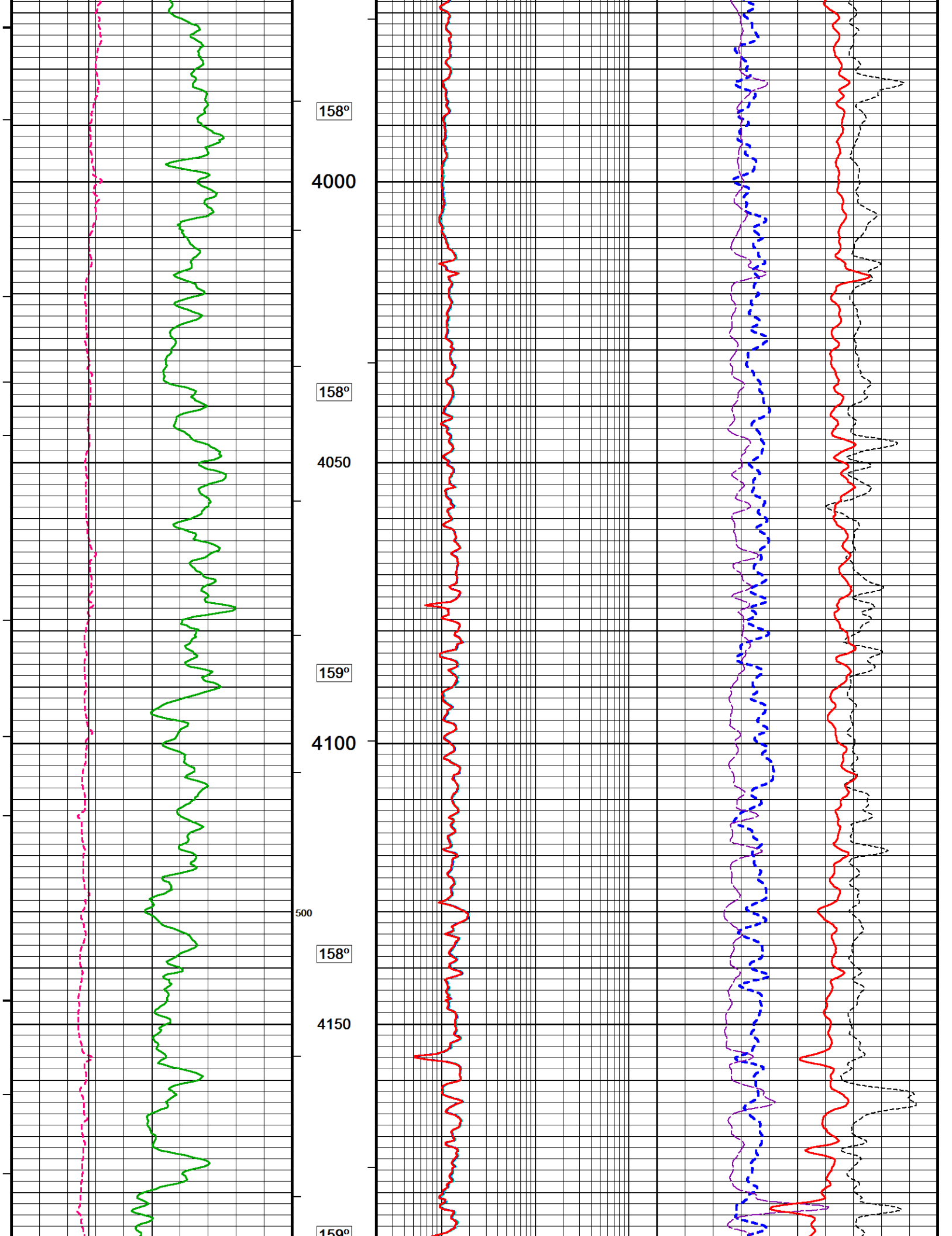


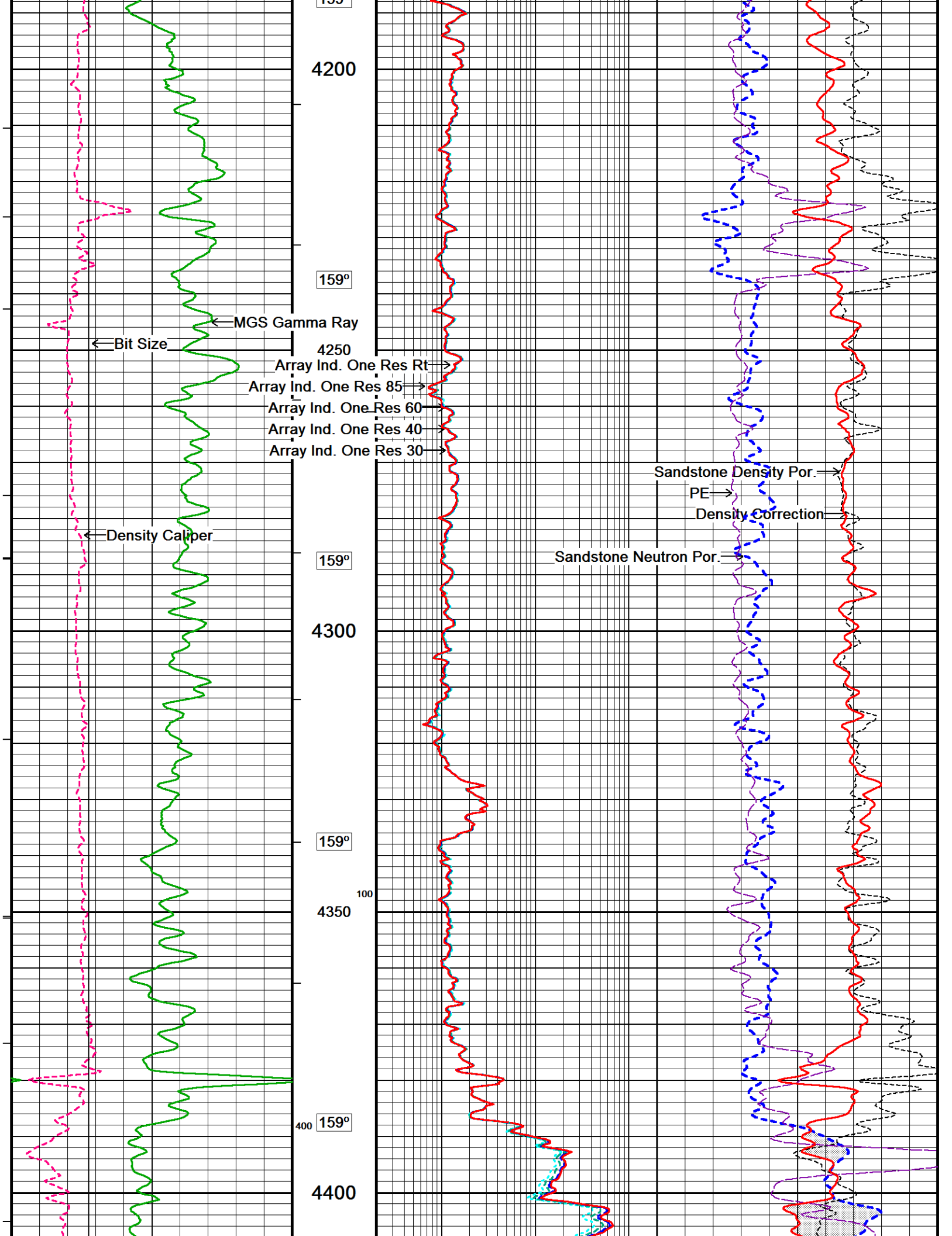


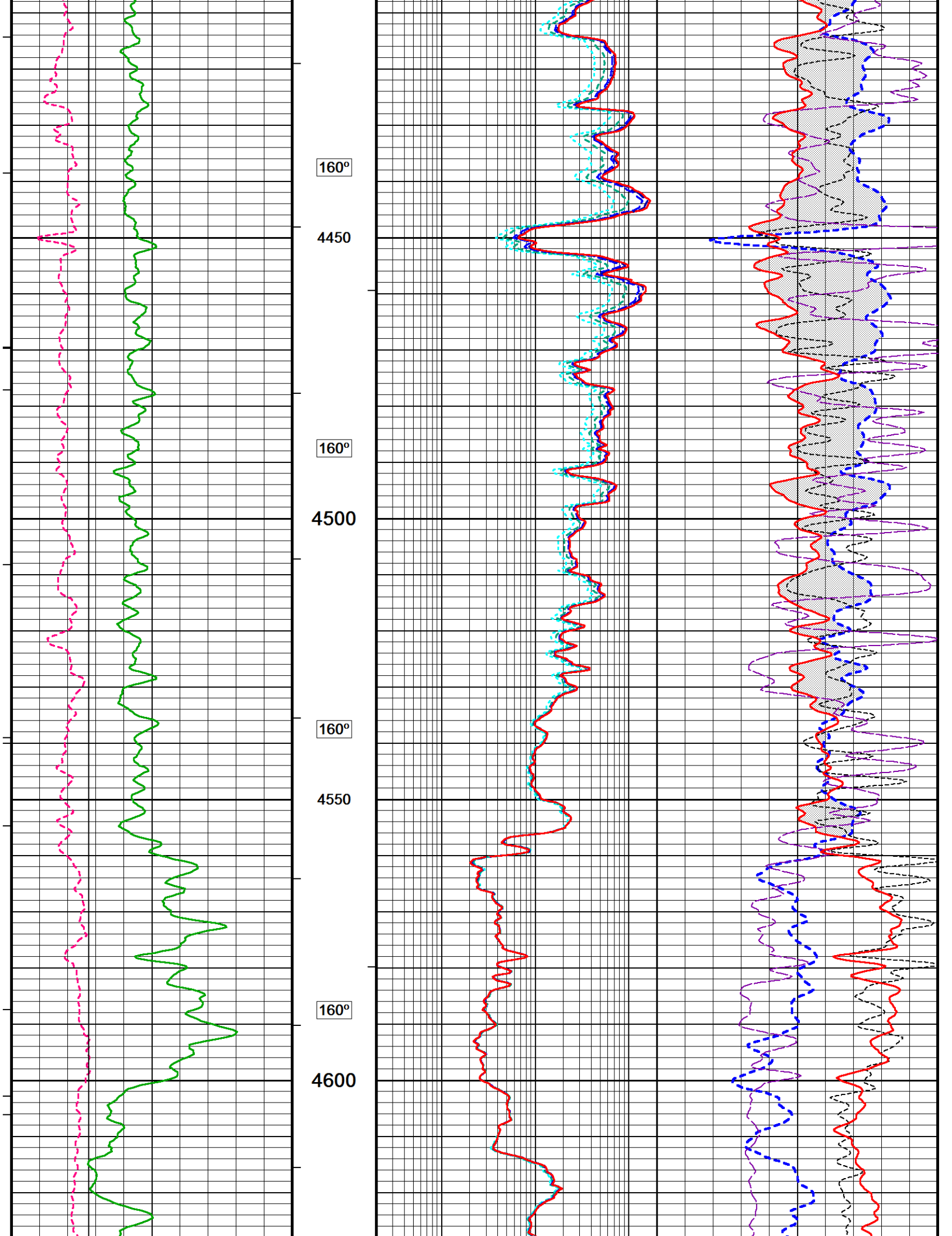


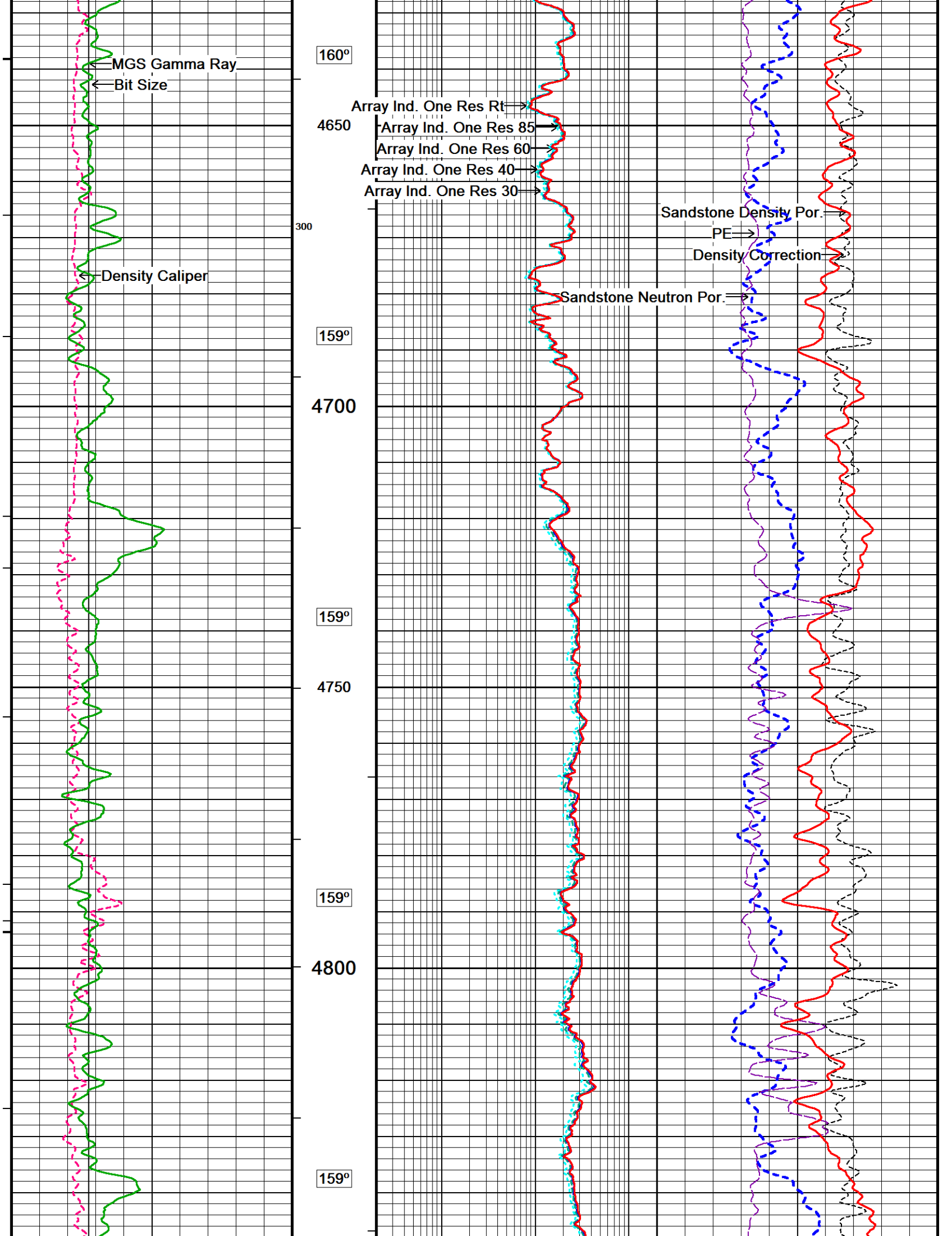


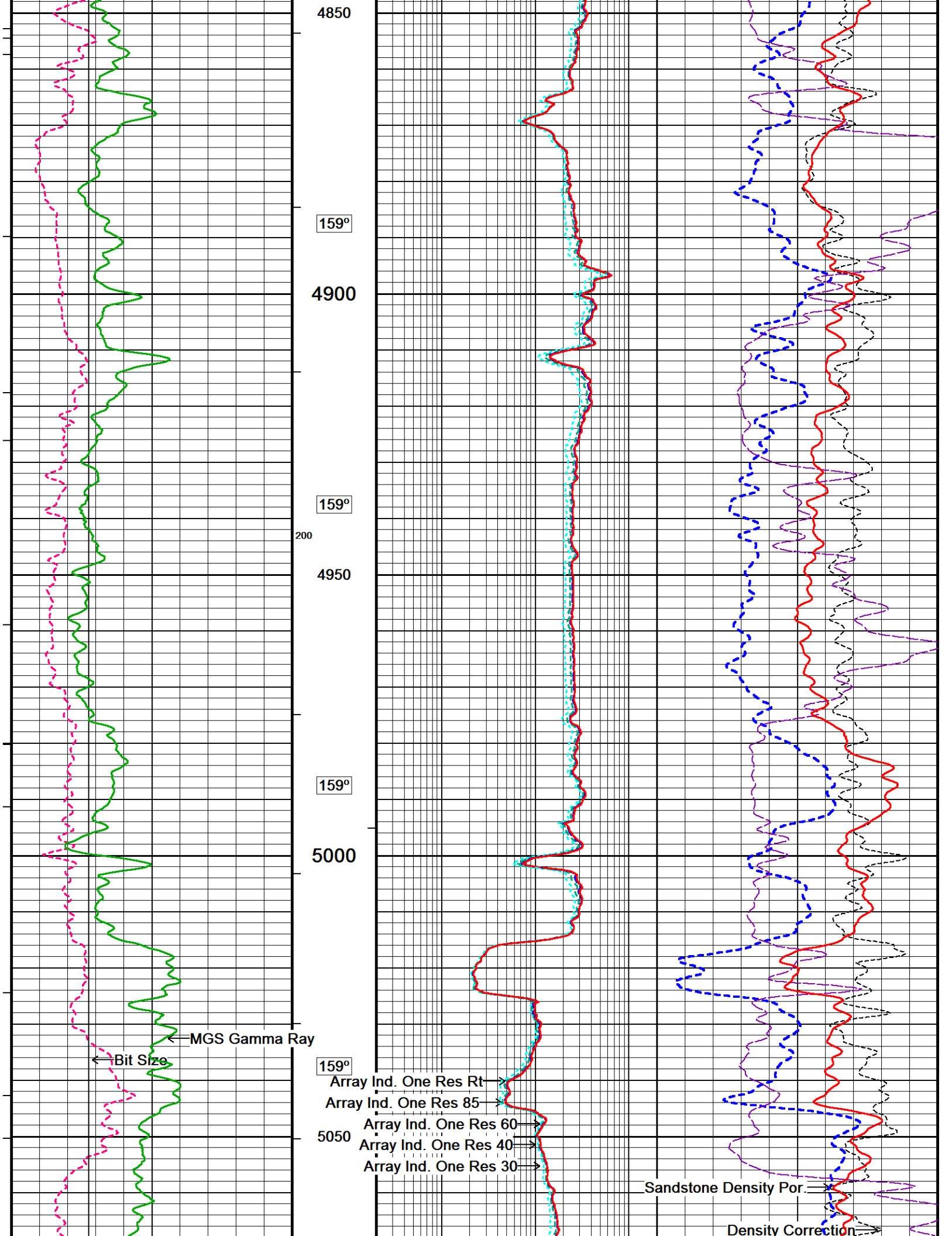


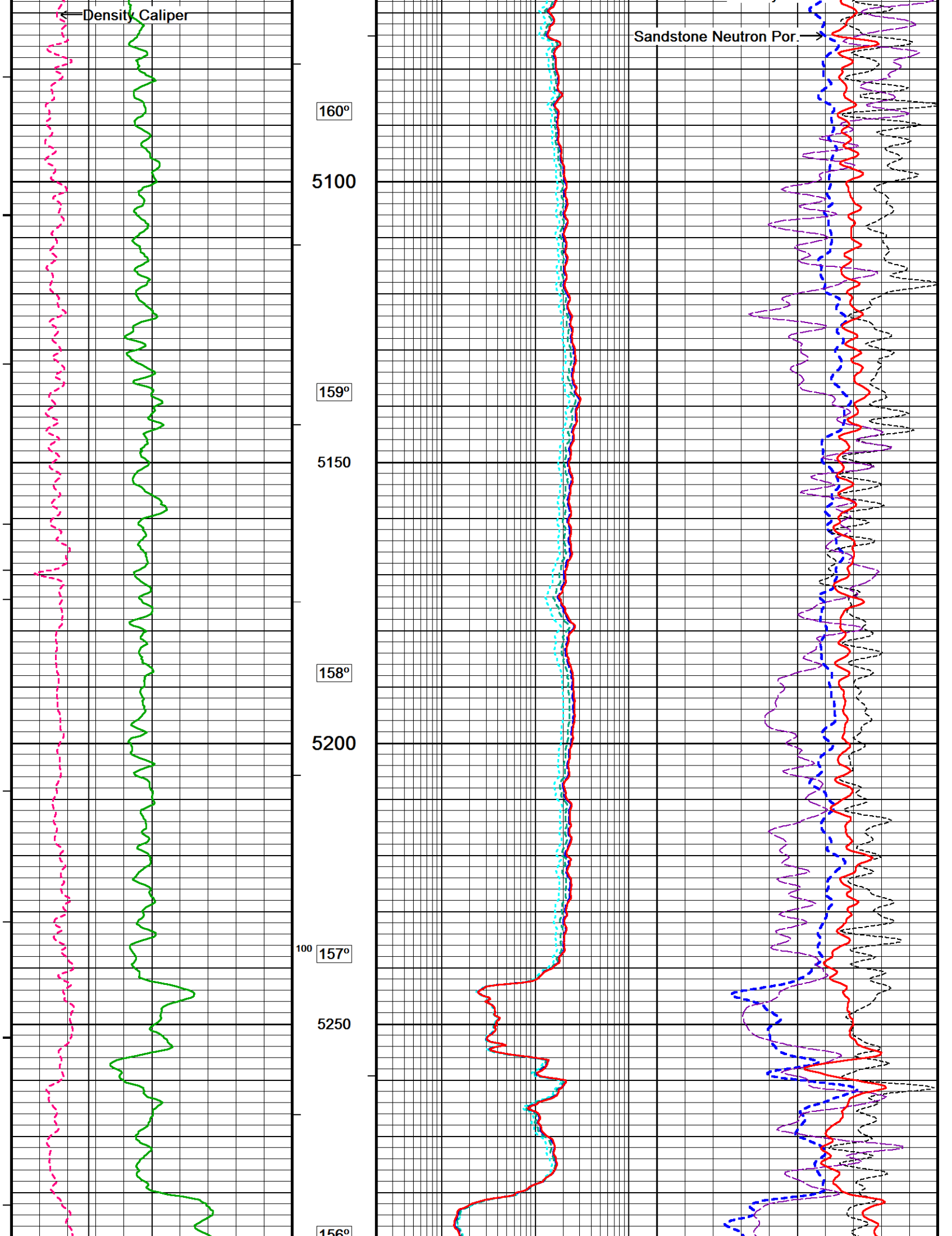


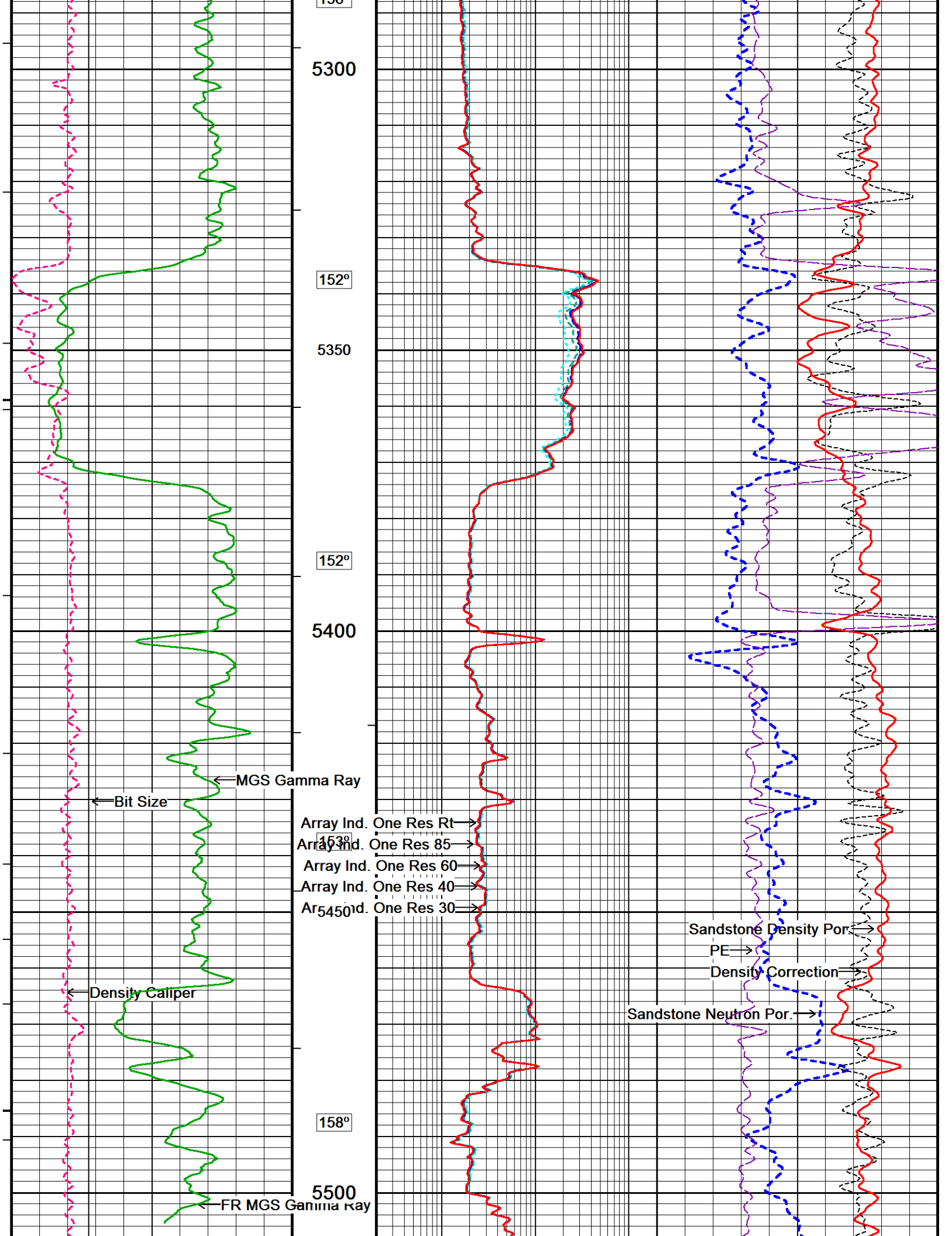


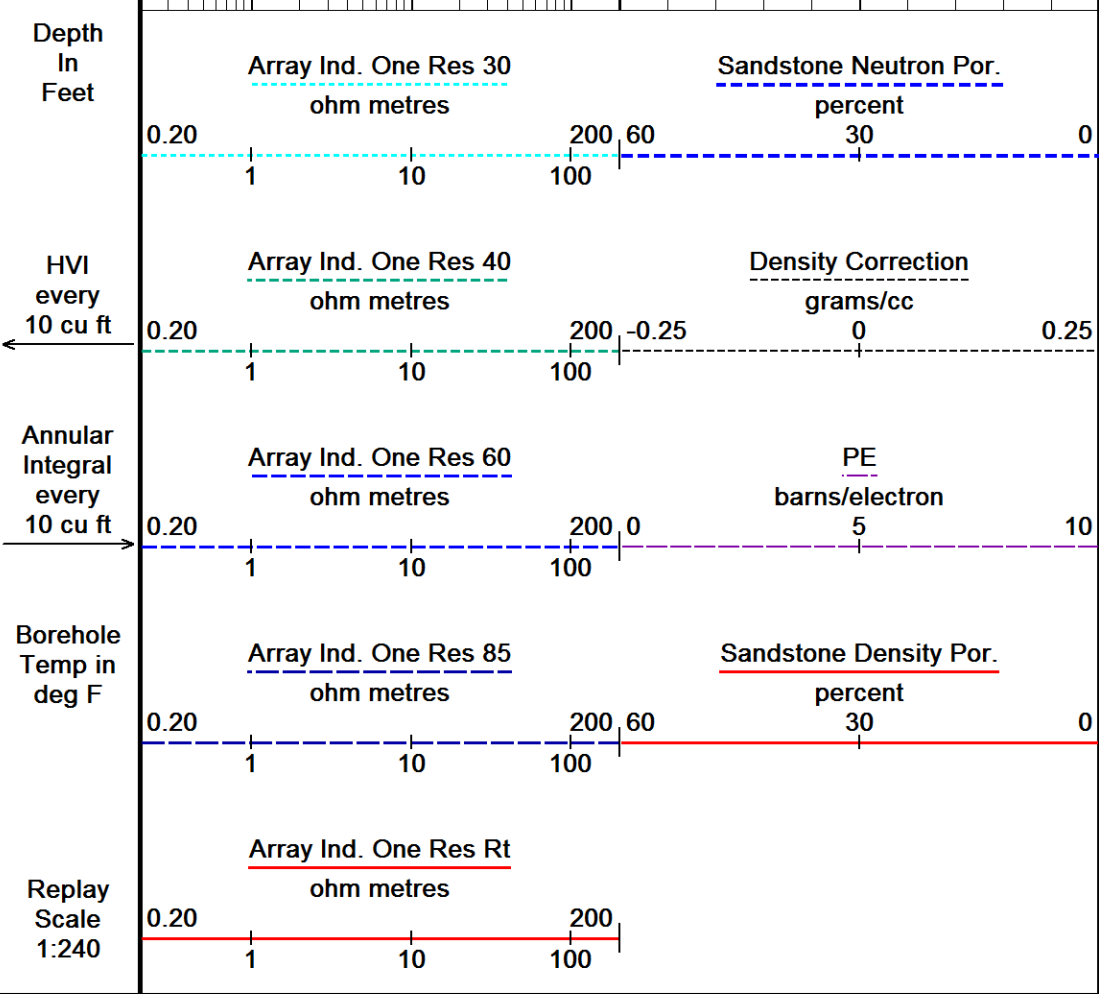
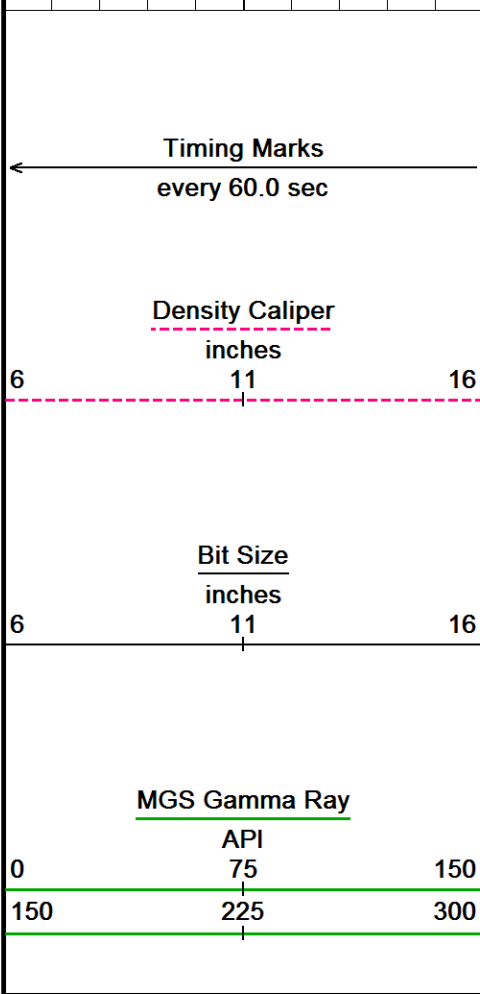
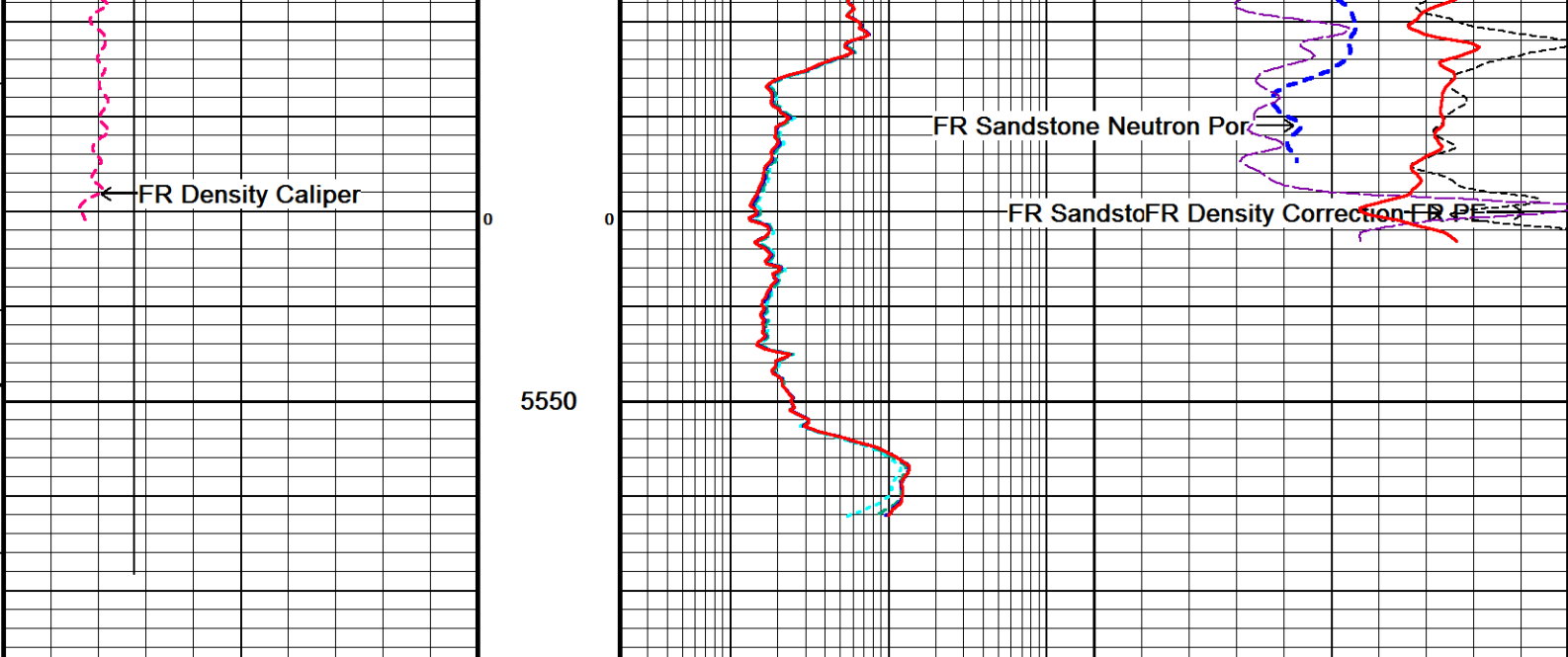












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5 INCH MAIN LOG

BEFORE SURVEY CALIBRATION
 C:\Users\jenkinm\AppData\Local\Temp\Weatherford PreView16\0\ML Investments 1-3 MMS Depth.dta

Down-hole Tension Calibration All 000 Field Calibration on 24-OCT-2010 03:34

Reading No	Measured	
1	15659.85	0.00
2	15734.68	370.00

General Parameters

Mud Resistivity 2.700 ohm-metres
 Mud Resistivity Temperature 79.000 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 7.000 inches
 Caliper for Differential Caliper Density Caliper

Rwa Parameters

Porosity used Base Density Porosity
 Resistivity used Array Ind. Two Res Rt
 RWA Constant A 0.610
 RWA Constant M 2.150
 SW/APOR Tool Source 0.000

Down-hole Tension Calibration SMS 0

Field Calibration on 02-DEC-2015 16:15

Reading No	Measured	Calibrated (lbs)
1	17195.03	0.00
2	18085.57	426.00

Strain Gauge Constants MMS-F.A 249

Last Edited on

Atmospheric Pressure 14.70 psi
 Serial Number 0
 Calibration Date 000000000000
 Base Check Date
 Dead Weight Serial Number 0
 Dead Weight Gravitational Correction 1.0

Pressure psia	75.0		150.0		250.0		350.0		degrees F
	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10000.0	0.000		0.000		0.000		0.000		

MMS Parameters MMS-F.A 249

Last Edited on 12-DEC-2015 22:52

Logging Parameters

Firmware Version 2v59
 Caliper Open On MAI
 Caliper Open Delay minutes
 Caliper Closed On Unknown
 Caliper Closed Delay N/A minutes
 Sample Rate 0.50 seconds
 Use Deep Sleep No
 Delay Deep Sleep N/A
 Deep Sleep Wake Time N/A minutes
 Deep Sleep Wake on Temperature N/A
 Deep Sleep Wake Temperature N/A degrees C
 Deep Sleep Wake on Pressure N/A
 Deep Sleep Wake Pressure N/A psi
 MMI Pad Pressure 0.0

Release Parameters

Pulse Duration Base Level 10.0 seconds
 Pulse Duration Transition Time 60.0 seconds
 Pulse Duration Status Pulse From 20.0 seconds
 Pulse Duration Caliper Close From 145.0 seconds
 Pulse Duration Caliper Open From 150.0 seconds

Pulse Duration Release Pulse From	215.0	seconds
Pulse Duration Release Pulse To	280.0	seconds
Pulse Release Duration	240.0	seconds
Pulse Discriminator Pressure Band	96.0	seconds
Pulse Pressure Discriminator	213.0	seconds
Use Negative Pulsing	No	
Good Status Reply Open Hole	65535.0	seconds
Good Status Reply Cased Hole	20.0	seconds
Bad Status Reply	60.0	seconds
Status Pulse To	80.0	seconds
Caliper Close To		seconds
Caliper Open To	210.0	seconds

Configuration

MMS,MGS,MDN,MPD,MPD,MVC,MFE,MAI

Gamma Calibration MGS-D.A 218

Field Calibration on 12-DEC-2015 21:36

	Measured	Calibrated (API)
Background	211	145
Calibrator (Gross)	1123	771
Calibrator (Net)	912	626

Gamma Constants MGS-D.A 218

Last Edited on 12-DEC-2015,20:55

Gamma Calibrator Number	51	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

SP Calibration MGS-D.A 218

Field Calibration on 12-DEC-2015,20:55

	Measured	Calibrated (mV)
Reference 1	100.0	100.0
Reference 2	-100.0	-100.0

High Resolution Temperature Calibration MGS-D.A 218

Field Calibration on 12-DEC-2015,20:56

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	100.00	100.00

High Resolution Temperature Constants MGS-D.A 218

Last Edited on 12-DEC-2015,20:55

Pre-filter Length	11
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Neutron Calibration MDN-C.A 462

Base Calibration on 29-NOV-2015 09:08

Field Check on 12-DEC-2015 21:57

Base Calibration					
	Measured		Calibrated (cps)		
	Near	Far	Near	Far	
	2881	88	3714	110	
Ratio	32.662		33.764		
Field Calibrator at Base					
			Calibrated (cps)		
			1633	2387	
Ratio			0.684		
Field Check					
			Calibrated (cps)		
			1652	2421	
Ratio			0.683		

Neutron Constants MDN-C.A 462

Last Edited on 12-DEC-2015,21:53

Neutron Source Id	P31131B	
Neutron Jig Number	6532NK	
Epithermal Neutron		
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.00	gm/cc

Mud Density	7.10	g/cc
Limestone Sigma	7.00	cu
Sandstone Sigma	4.70	cu
Dolomite Sigma	None	
Formation Pressure Source	N/A	kpsi
Formation Pressure	None	
Temperature Source	N/A	degrees F
Temperature	0.00	kppm
Mud Salinity	Not Applied	
Salinity Correction	None	
Formation Fluid Salinity Source	N/A	kppm
Formation Fluid Salinity	Not Applied	
Barite Mud Correction		

Caliper Calibration MVC-A.A 142

Base Calibration on 06-DEC-2015 19:16
Field Calibration on 06-DEC-2015 19:19

Base Calibration	
Reading No	Measured
1	7499
2	14218
3	21229
4	27878
5	35087
6	N/A

Calibrator Size (in)
3.99
5.96
7.96
9.85
11.88
N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.95	7.96

FE Calibration MFE-C.A 404

Base Calibration on 29-NOV-2015 07:42
Field Check on 12-DEC-2015 21:16

Base Calibration	
	Measured
Reference 1	0.0
Reference 2	961.6
Base Check	281.4
Field Check	281.8

Calibrated (ohm-m)
0.0
126.8
281.4
281.8

FE Constants MFE-C.A 404

Last Edited on 12-DEC-2015,21:15

Running Mode	No Sleeve
MFE K Factor	0.1268
Caliper Source for FE correction	Density Caliper
Caliper Value for FE correction	N/A
Rm Source for FE correction	Temperature Corrected
Temp. for Rm Corr.	MGS External Temperature
Stand-off	0.5

Induction Calibration MAI-B.J 363

Base Calibration on 17-SEP-2015,09:22
Field Check on 12-DEC-2015 21:15

Base Calibration	
Test Loop Calibration	
Channel	Measured
	Low High
1	17.8 467.2
2	6.3 374.8
3	3.8 260.7
4	2.0 132.4

Calibrated (mmho/m)	
Low	High
9.3	966.2
7.6	821.4
5.2	566.0
2.6	279.2

Array Temperature 69.4 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	10.0	3901.4	9.7	3903.8
2	30.1	3612.4	29.9	3612.8
3	27.8	3051.3	27.8	3050.5
4	19.5	2099.4	19.5	2098.7
Deep	16.2	1952.4	16.2	1951.2
Medium	41.3	4023.6	41.2	4022.5
Shallow	46.0	5404.2	45.8	5406.1

Array Temperature 40.5 36.2 Deg F

Induction Model	RtAP-WBM		
Caliper for Borehole Corr.	Density Caliper		
Hole Size for Borehole Correction	N/A	inches	
Tool Centred	No		
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	
Borehole Corr. Rm Sd Global Value: Constant Temperature			
Temp. for Rm Corr.	N/A		
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	

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		

High Resolution Temperature Calibration MAI-B.J 363

Field Calibration on 11-NOV-2015,18:00

	Measured	Calibrated(Deg F)
Lower	32.00	32.00
Upper	212.00	212.00

High Resolution Temperature Constants MAI-B.J 363

Last Edited on 11-NOV-2015,18:00

Pre-filter Length	11
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Photo Density Calibration MPD-D.A 478

Base Calibration on 29-NOV-2015,11:04
Field Check on 12-DEC-2015 21:43

Density Calibration				
Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1225	1391		
Reference 1	47763	23905	59443	30683
Reference 2	19736	2490	25113	2508
Field Check at Base	1224.9	1390.8		
Field Check	1214.3	1382.3		

PE Calibration				
Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	238	1095		
Reference 1	20969	47573	0.446	0.372
Reference 2	5995	19601	0.311	0.268

Field Check at Base
238.0 1095.4

Field Check
237.1 1096.3

Density Constants MPD-D.A 478

Last Edited on 12-DEC-2015,21:38

Density Source Id	P21136B	
Nylon Calibrator Number	DNC.E.652	
Aluminium Calibrator Number	DAC.D.659	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.20	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)	
2.68	4000.00	
2.78	4230.00	
2.68	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 478

Base Calibration on 12-DEC-2015 21:50
Field Calibration on 12-DEC-2015 21:53

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	18049	3.99
2	26325	5.96
3	34794	7.96
4	43025	9.85
5	52142	11.88
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.95	7.96

DOWNHOLE EQUIPMENT

C:\Users\jenkinlm\AppData\Local\Temp\Weatherford PreView16\0\ML Investments 1-3 MMS Depth.dta

Shuttle Running Tool 3.5"
SRT-A.A 35 LG: 6.62 ft WT: 37.5 lb OD: 2.520 in

200v Compact Battery Sub
MBS-F.A 145 LG: 10.61 ft WT: 70.5 lb OD: 2.240 in

Compact Memory Sub F.A
MMS-F.A 249 LG: 5.20 ft WT: 37.5 lb OD: 2.240 in

Compact Tool Isolator sub.
MTI-C.A 99 LG: 1.54 ft WT: 13.2 lb OD: 2.240 in

Compact Short Gamma



64.11 ft GRGM - MGS Gamma Ray

MGS-D.A 218 LG: 3.41 ft WT: 24.3 lb OD: 2.244 in

Compact Collar Locator
MCL-C.A 128 LG: 3.17 ft WT: 26.5 lb OD: 2.244 in

Compact Knuckle Joint
SKJ-E.B 537 LG: 2.17 ft WT: 24.3 lb OD: 2.240 in

Compact Swivel Head Adaptor
SHA-J.B 512 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Inline Bowspring sub
MIS-D.B 730 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Neutron
MDN-C.A 462 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-D.A 478 LG: 9.59 ft WT: 90.4 lb OD: 2.244 in

Compact Vee Arm Caliper
MVC-A.A 142 LG: 8.06 ft WT: 61.7 lb OD: 2.244 in

Compact Swivel Head Adaptor
SHA-J.B 573 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

Compact Knuckle Joint
SKJ-E.A 203 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

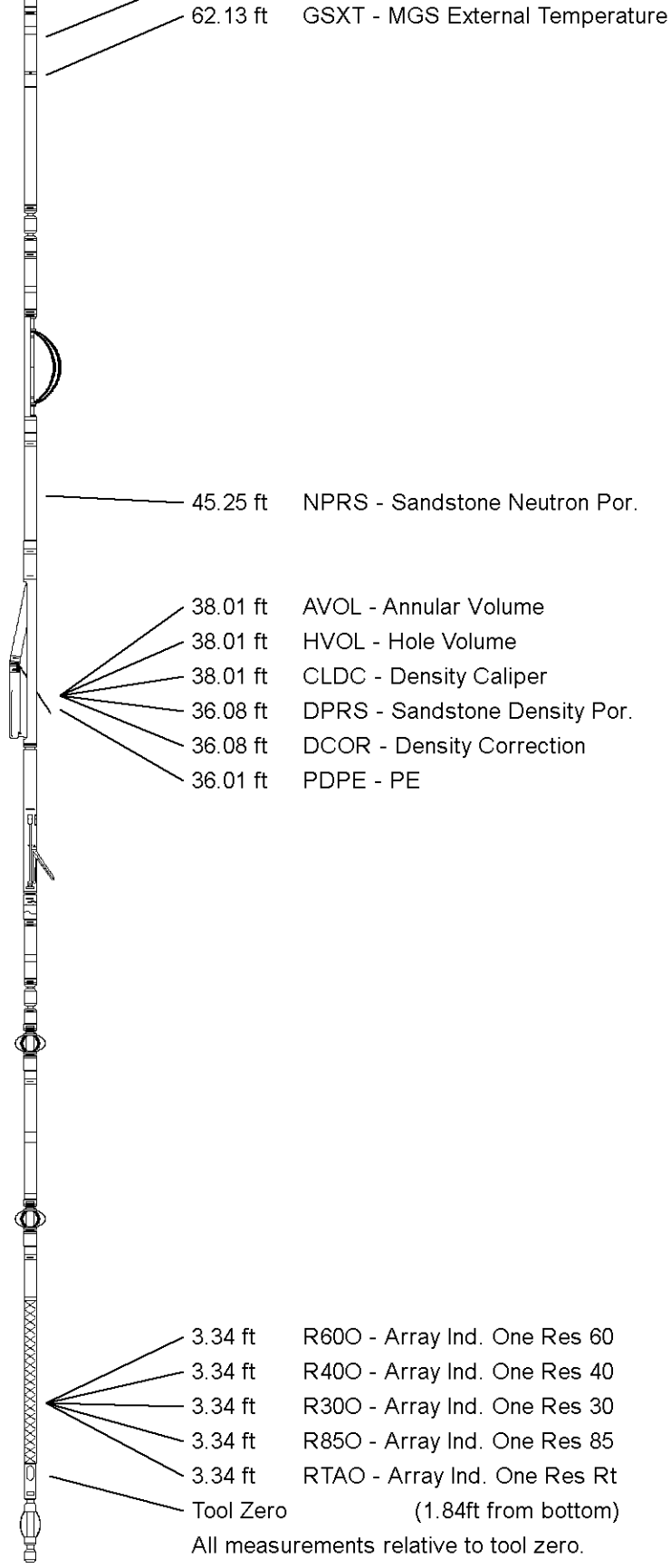
Compact Inline Standoff sub
MIS-E.A 277 LG: 2.14 ft WT: 15.4 lb OD: 2.240 in

Compact Focussed Electric
MFE-C.A 404 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Inline Standoff sub
MIS-E.B 662 LG: 2.14 ft WT: 15.4 lb OD: 2.240 in

Compact Induction
MAI-B.J 363 LG: 12.52 ft WT: 48.5 lb OD: 2.240 in

Total Length: 90.72 ft Weight: 665.8 lb



COMPANY ALTA MESA SERVICES, LP
 WELL ML INVESTMENTS 1-3
 FIELD WILDCAT
 PROVINCE/COUNTY PAYETTE
 COUNTRY/STATE U.S.A. / IDAHO

Elevation Kelly Bushing 2687.00 feet First Reading 5560.00 feet

Elevation Drill Floor 2686.00 feet
Elevation Ground Level 2675.00 feet

Depth Driller 5585.00 feet
Depth Logger 5585.00 feet



Weatherford[®]

COMPACT TRIPLE COMBO
QUICKLOOK
LOG