Weatherford®

COMPACT TRIPLE COMBO LOG

COMPANY	URSA OPERATING COMPANY
WELL	VALLEY FARMS L 44B 11-06-92
FIELD	GRAVEL TREND
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	USA/CO
LOCATION	SHL: 1258' FSL & 1090' FEL

SEC 11	TWP 6S	RGE 92W	Other Services
Latitude			
Longitude			
API Number	05-045-2236200		

Permanent Datum GL, Elevation 5577 feet
Log Measured From KB
Drilling Measured From KB@15FT

Elevations:	feet
KB	5592.00
DF	5592.00
GL	5577.00

Date	25-DEC-2014					
Run Number	1					
Service Order	6551-106622704					
Depth Driller	7288.00	feet				
Depth Logger	7288.00	feet				
First Reading	7262.00	feet				
Last Reading	3396.00	feet				
Casing Driller	993.00	feet				
Casing Logger	---					
Bit Size	7.875	inches				
Hole Fluid Type	WBM					
Density / Viscosity	12.40	lb/USg	43.00	SEC/QT		
PH / Fluid Loss	9.40		6.80	ml/30Min		
Sample Source	FLOW LINE					
Rm @ Measured Temp	1.47 @ 70.7	ohm-m				
Rmf @ Measured Temp	1.18 @ 70.7	ohm-m				
Rmc @ Measured Temp	1.76 @ 70.7	ohm-m				
Source Rmf / Rmc	CALC		---			
Rm @ BHT	0.74 @145.0	ohm-m				
Time Since Circulation	2 HOURS					
Max Recorded Temp	166.00	deg F				
Equipment / Base	13269	CASPER				
Recorded By	C CULLEN					
Witnessed By	R MCNEIL					

BOREHOLE RECORD

Last Edited: 27-DEC-2014 18:07

Bit Size inches	Depth From feet	Depth To feet
7.875	993.00	7288.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	993.00	32.00

REMARKS

SOFTWARE VERSION 14.05.5280

LOGGED USING COMPACT DROPP-OFF SYSTEM.

ALL LOGS CORRECTED TO GAMMA WIRELINE DOWNLOG

TOOLS RUN: SEE TOOL DIAGRAM.

HARDWARE: MPD: 4" PROFILE PLATE

2.68 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY

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

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

TOTAL HOLE VOLUME FROM TD TO 3396FT =1510 CUBIC FEET

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 3396FT = 1090 CUBIC FEET

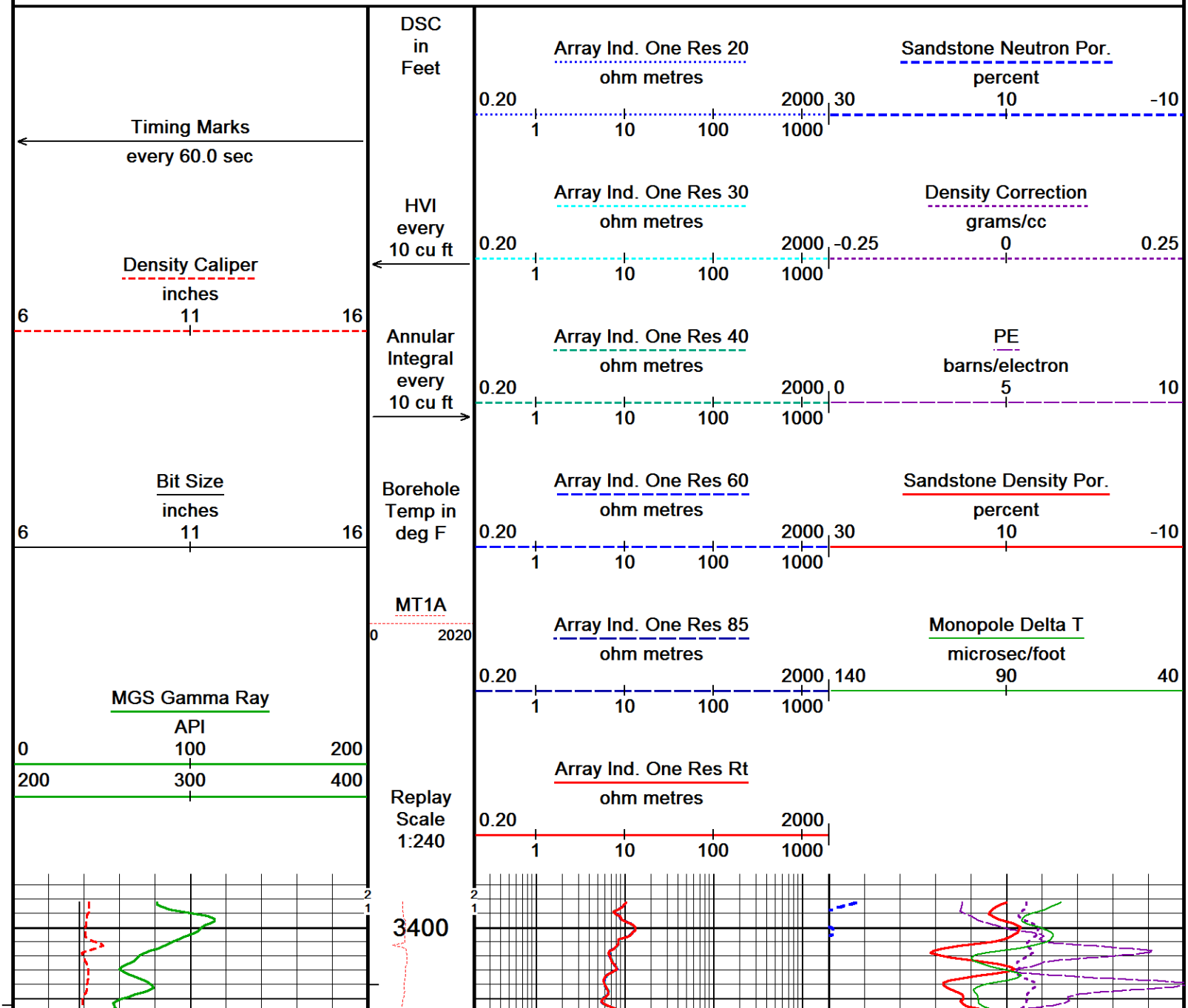
RIG: CAPSTAR 321

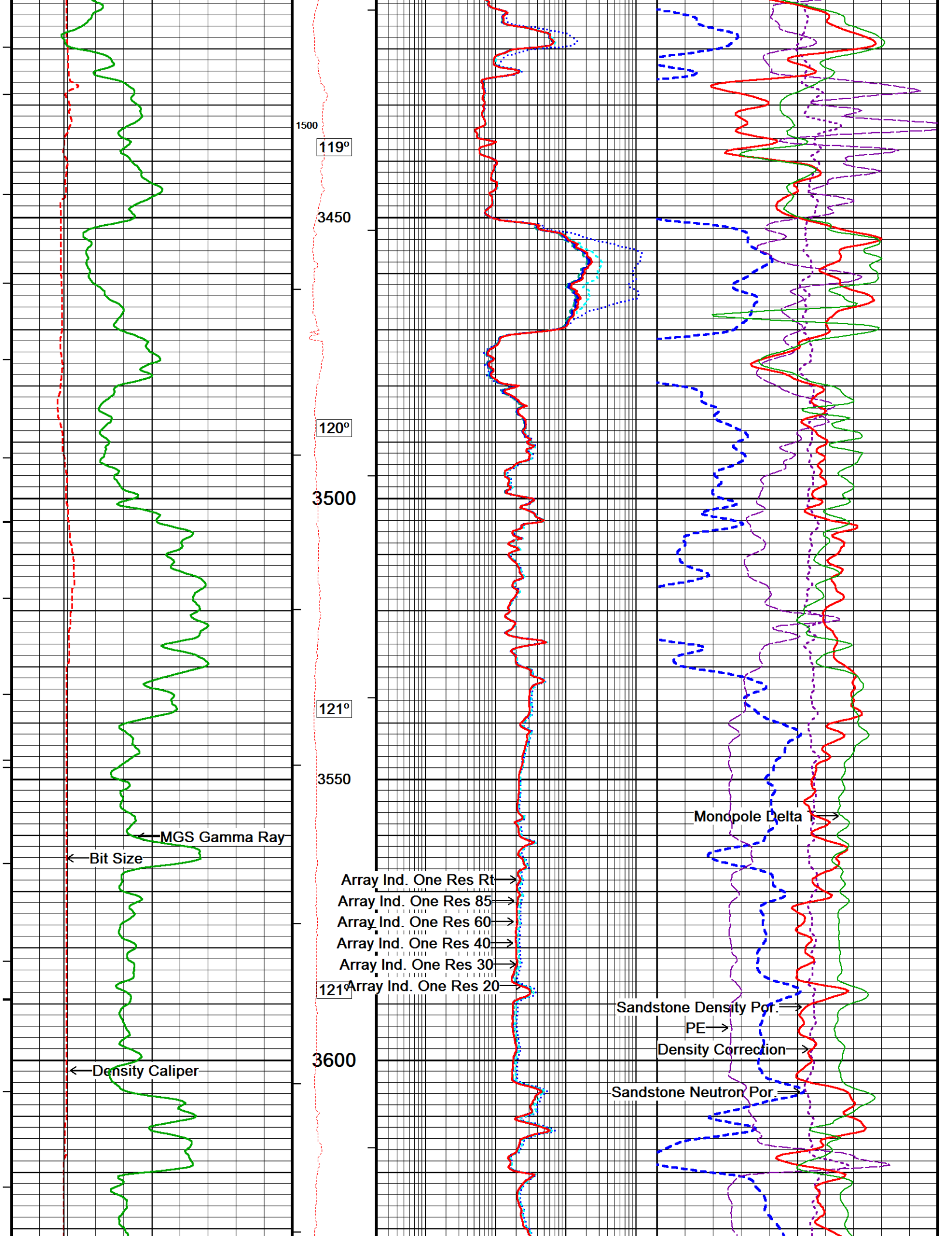
5 INCH MAIN LOG DSC

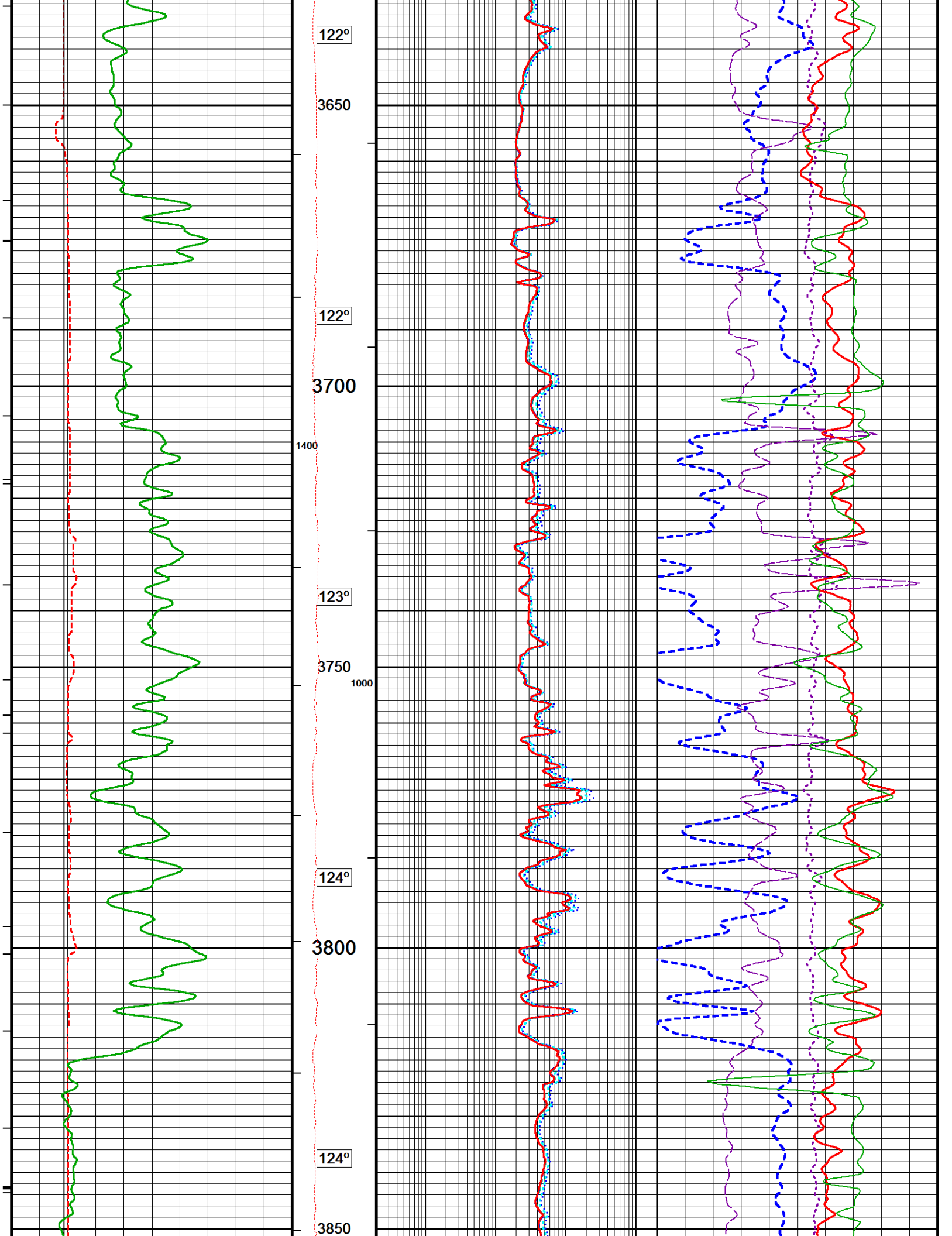
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 28-DEC-2014 10:13

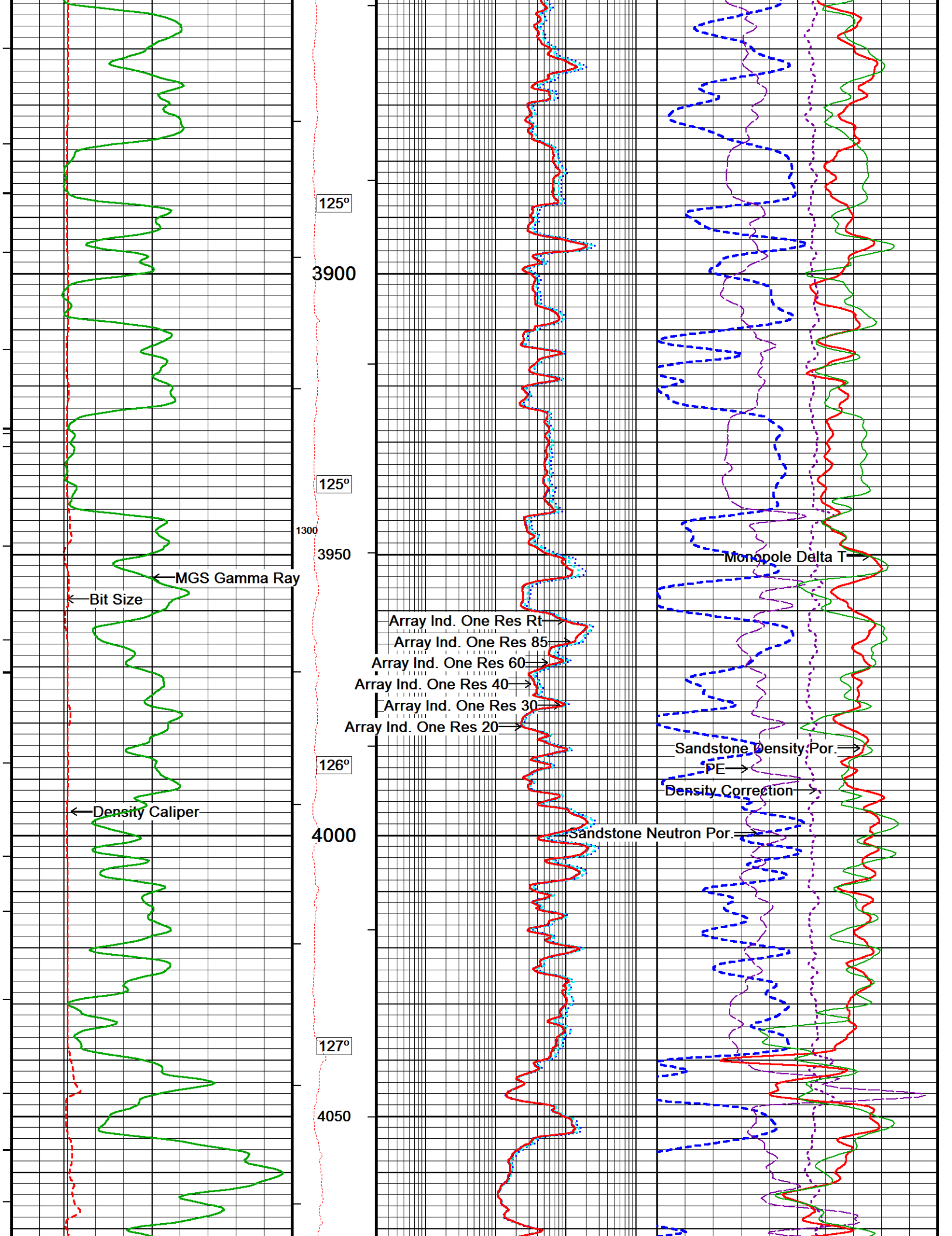
Filename: C:\LOGS\URSA\VALLEY FARMS L 44B-11-06-92\MMS DEPTH.dta — Recorded on 28-DEC-2014 07:30

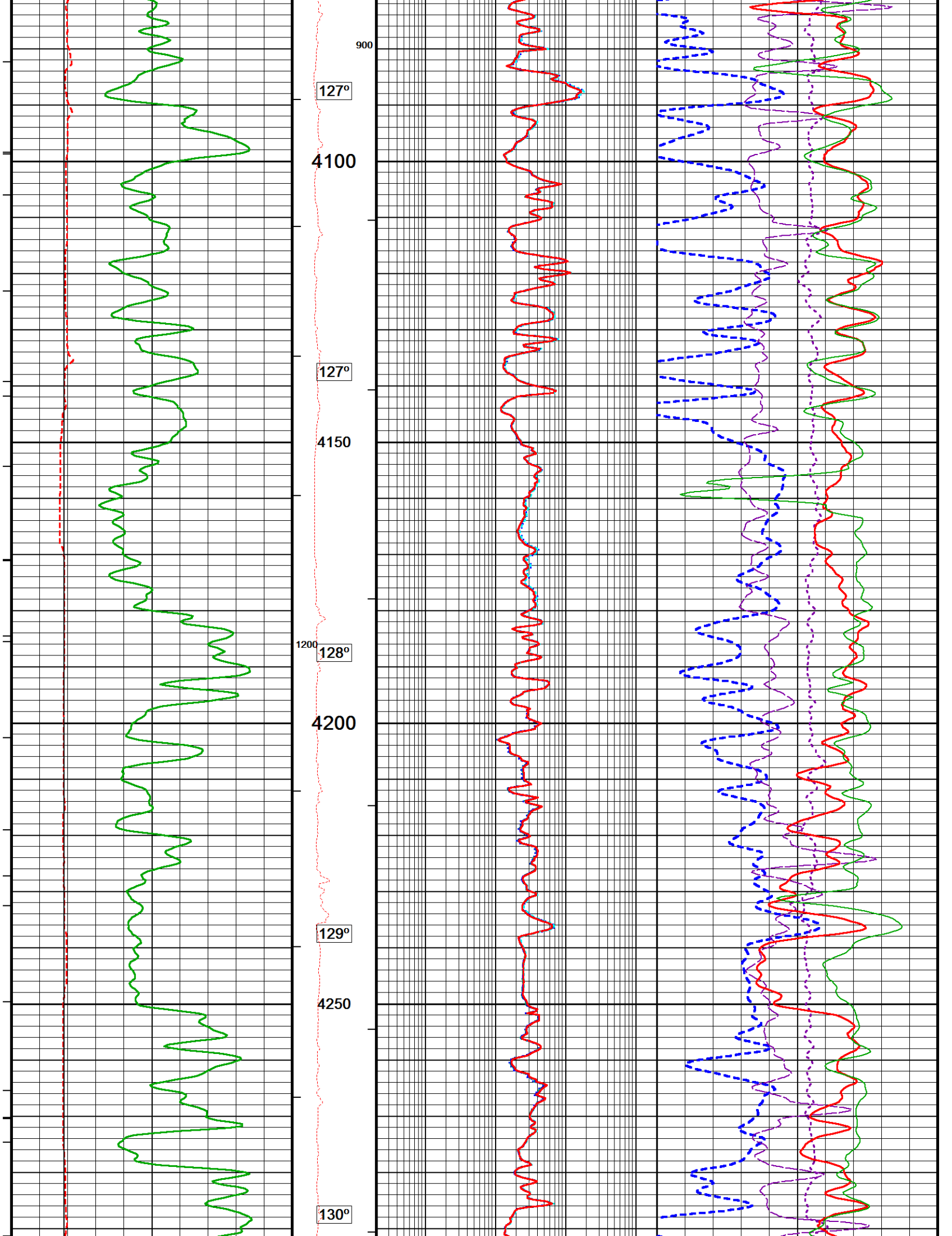
System Versions: Logged with 14.05.5280 Processed with 14.05.5280 Plotted with 14.05.5280

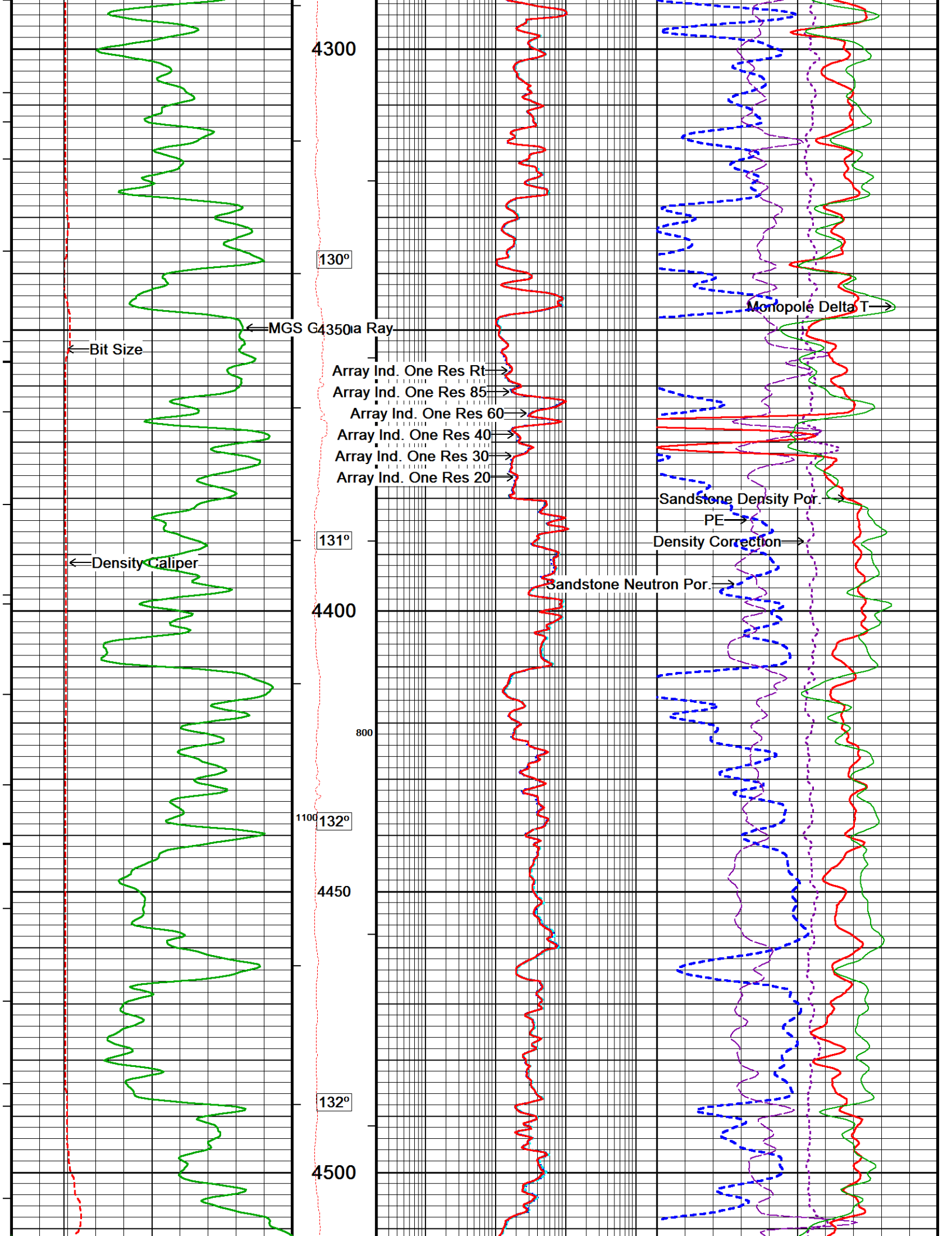


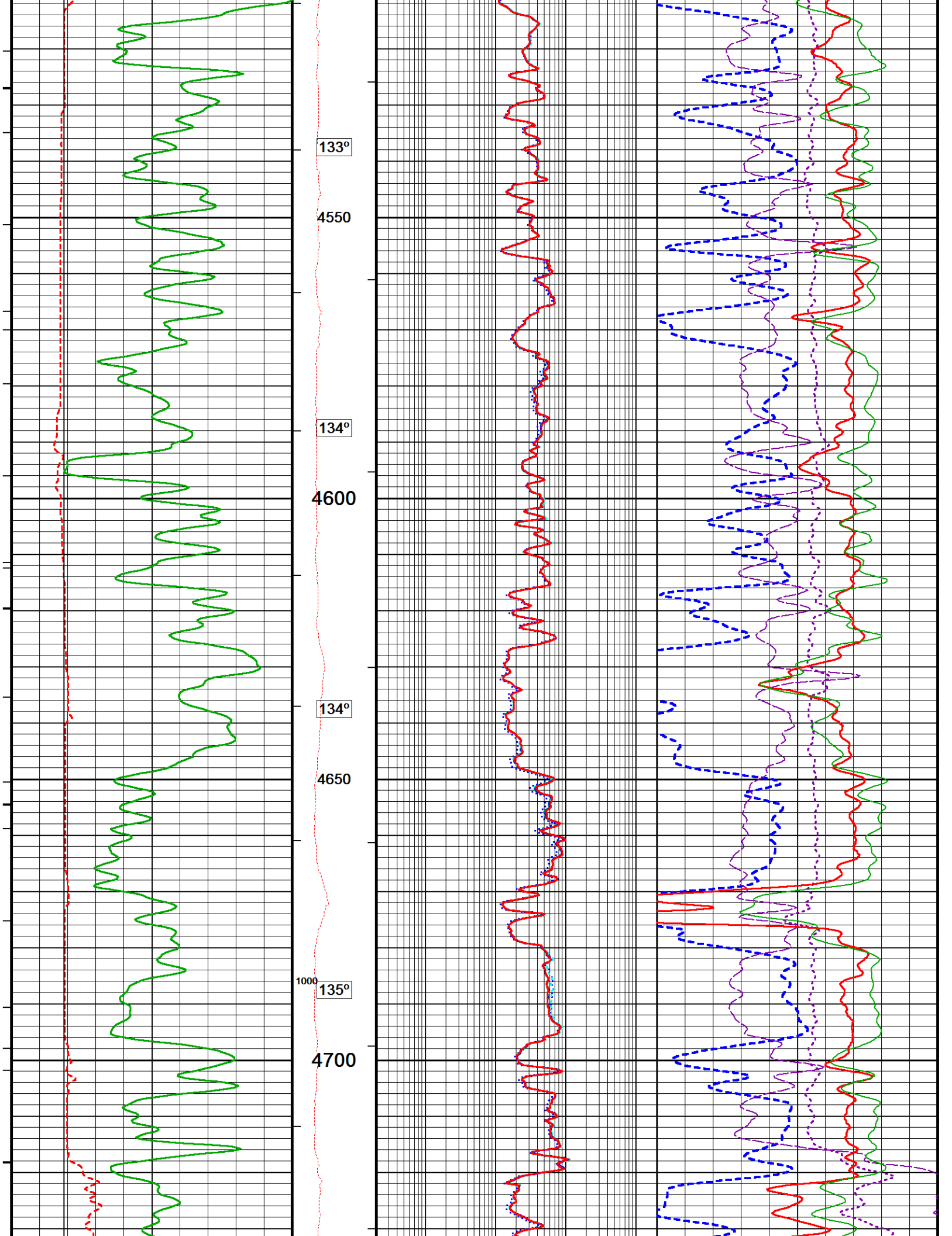

1500
119°
3450
120°
3500
121°
3550
121°
3600
MGS Gamma Ray
Bit Size
Density Caliper
Array Ind. One Res Rt
Array Ind. One Res 85
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
Array Ind. One Res 20
Monopole Delta
Sandstone Density Por.
PE
Density Correction
Sandstone Neutron Por.

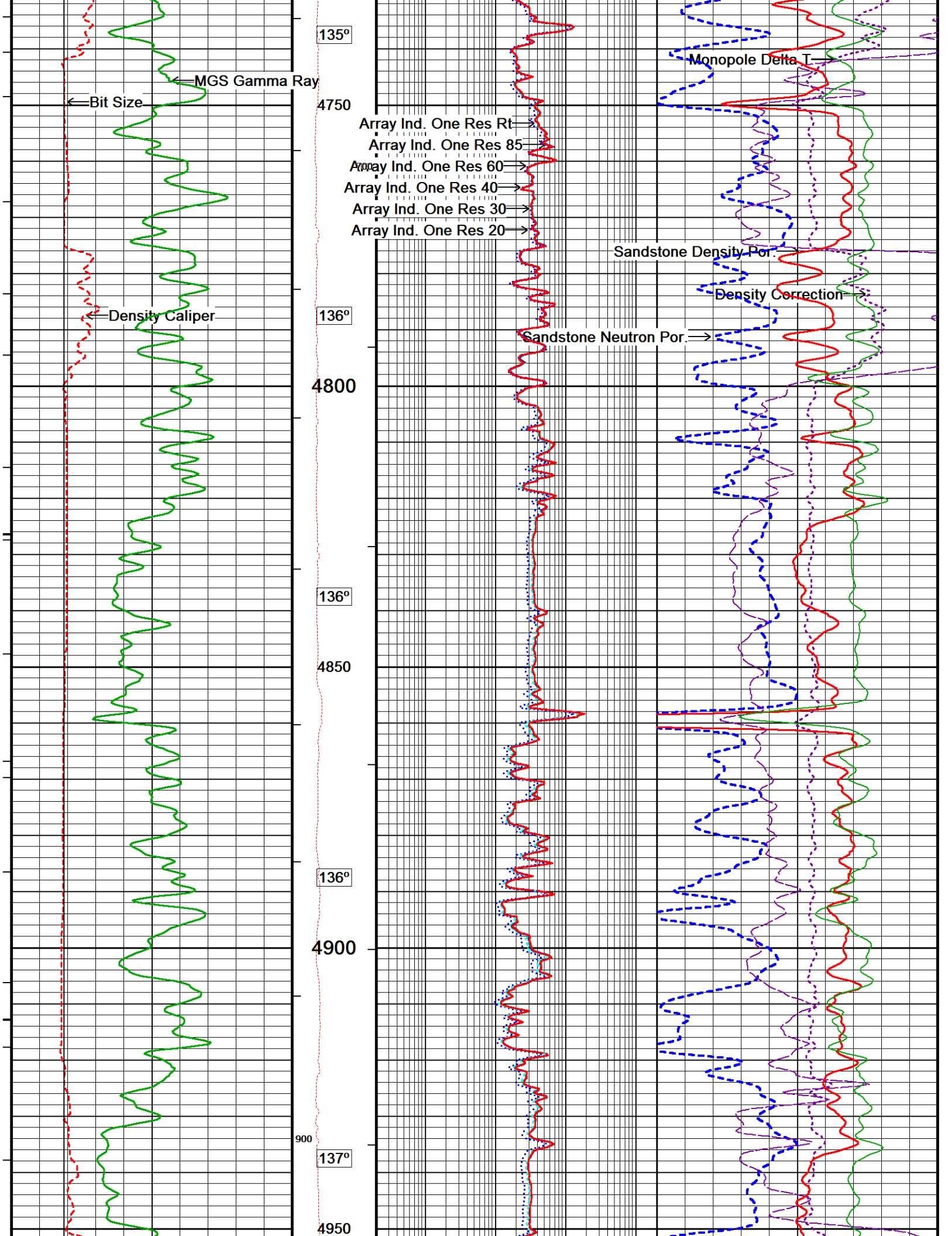

122°
3650
122°
3700
1400
123°
3750
1000
124°
3800
124°
3850

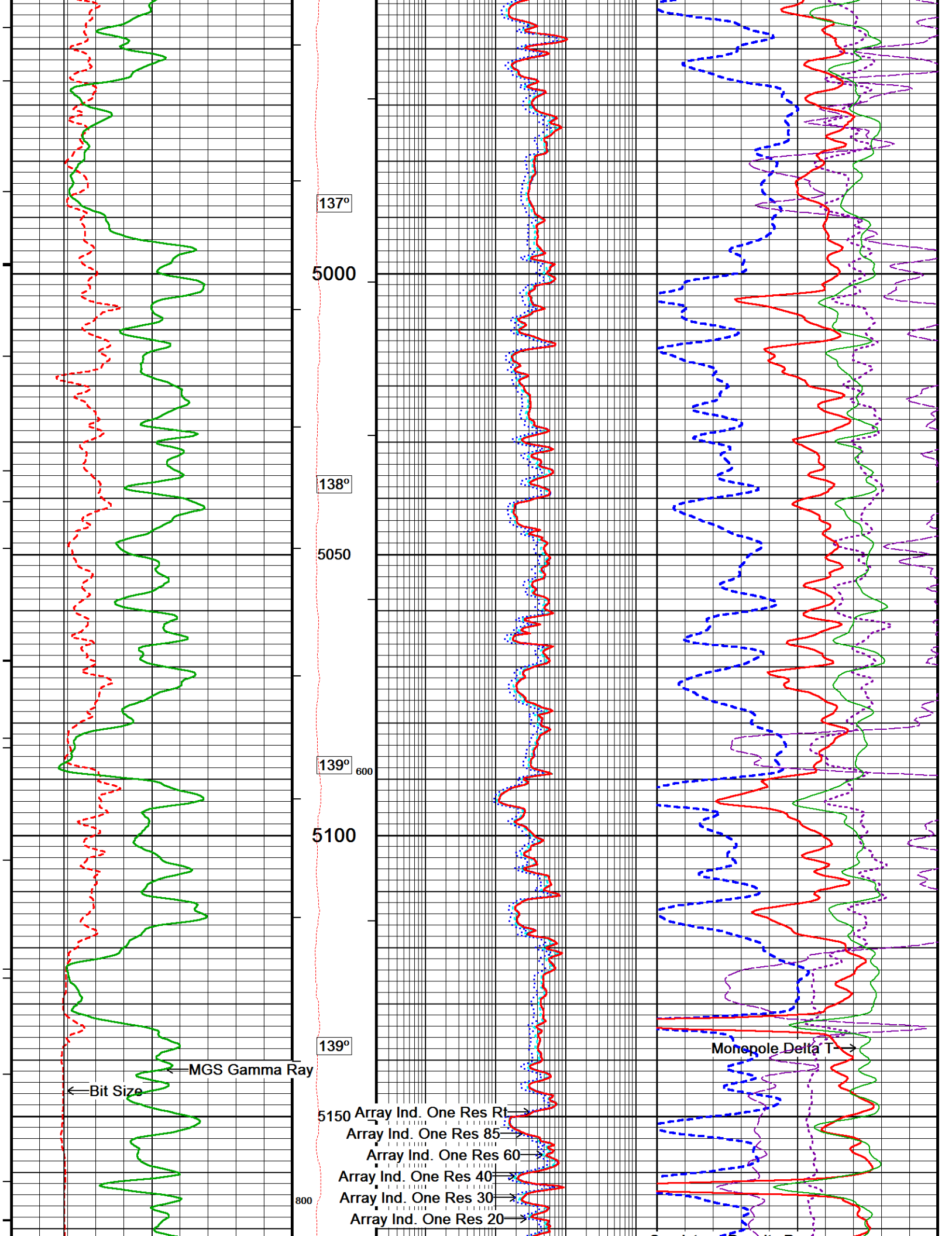

125°
3900
125°
1300
3950
MGS Gamma Ray
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 85
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
Array Ind. One Res 20
Monopole Delta T
Sandstone Density Por.
PE
Density Correction
126°
Density Caliper
4000
Sandstone Neutron Por.
127°
4050

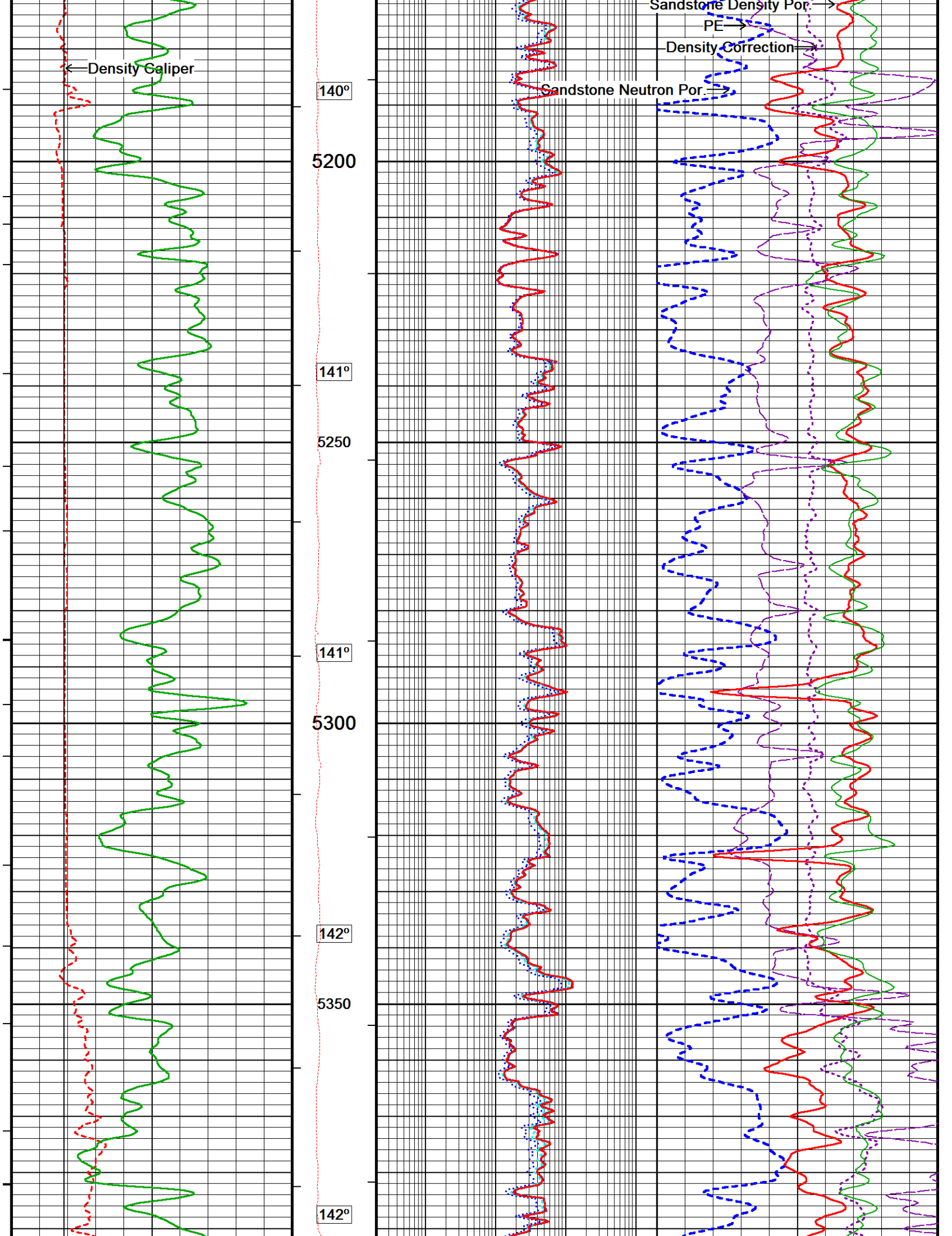

900
127°
4100
127°
4150
1200
128°
4200
129°
4250
130°

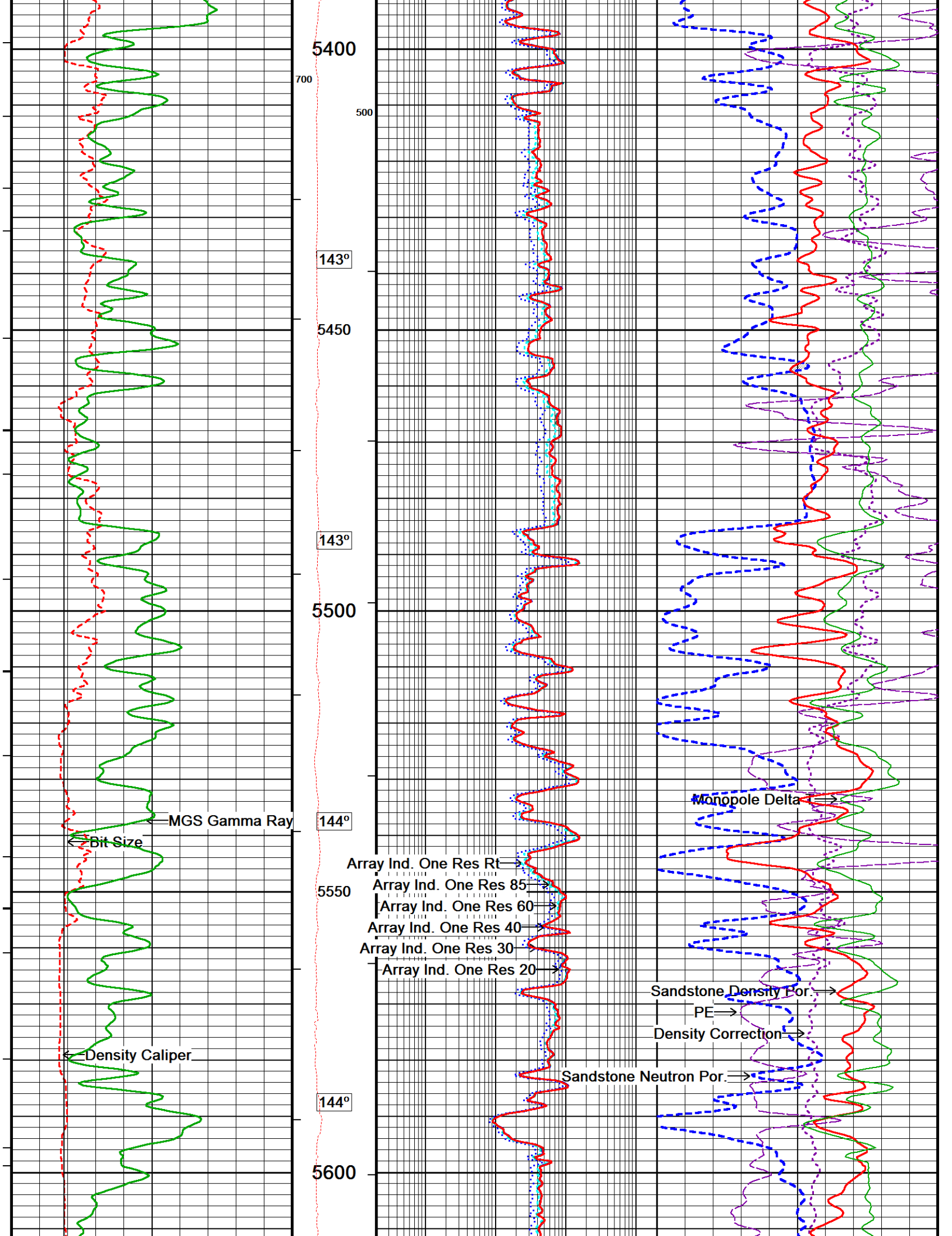

4300
130°
MGS Gamma Ray
4350
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 85
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
Array Ind. One Res 20
Monopole Delta T
Sandstone Density Por.
PE
Density Correction
131°
Density Caliper
Sandstone Neutron Por.
4400
800
1100
132°
4450
132°
4500

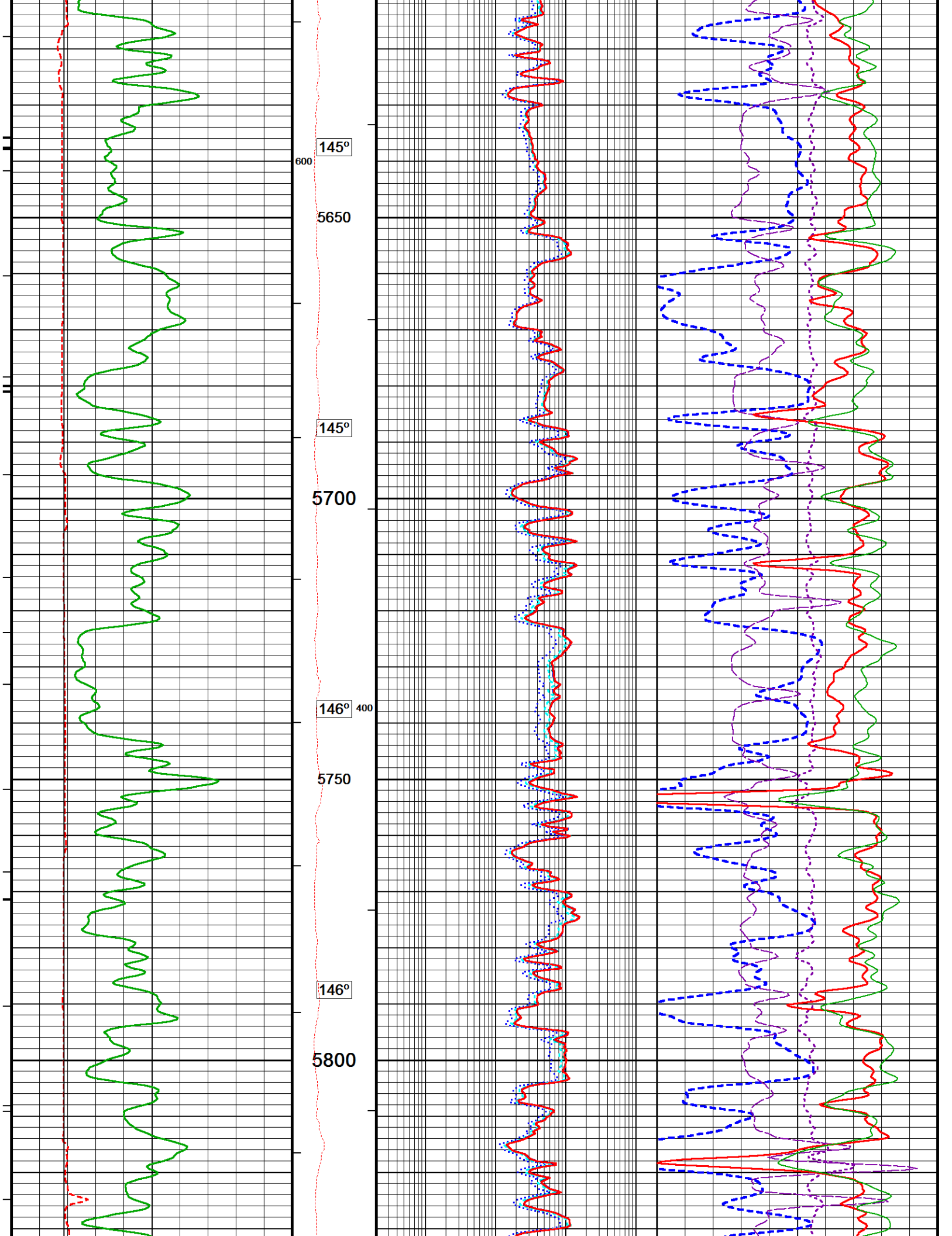

133°
4550
134°
4600
134°
4650
1000
135°
4700

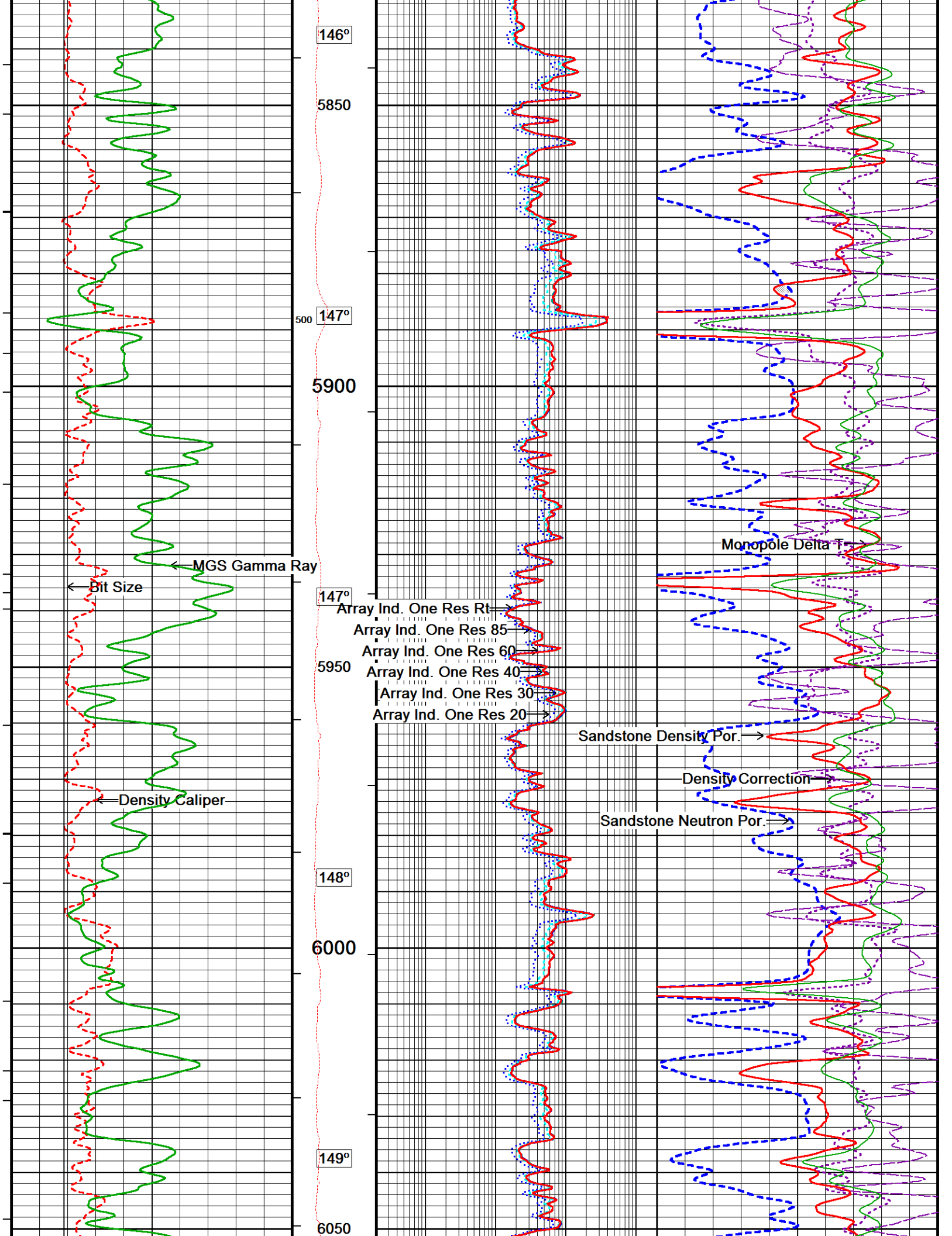

135°
MGS Gamma Ray
Bit Size
4750
Array Ind. One Res Rt
Array Ind. One Res 85
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
Array Ind. One Res 20
Monopole Delta T
Sandstone Density Por.
Density Correction
Density Caliper
136°
Sandstone Neutron Por.
4800
136°
4850
136°
4900
900
137°
4950

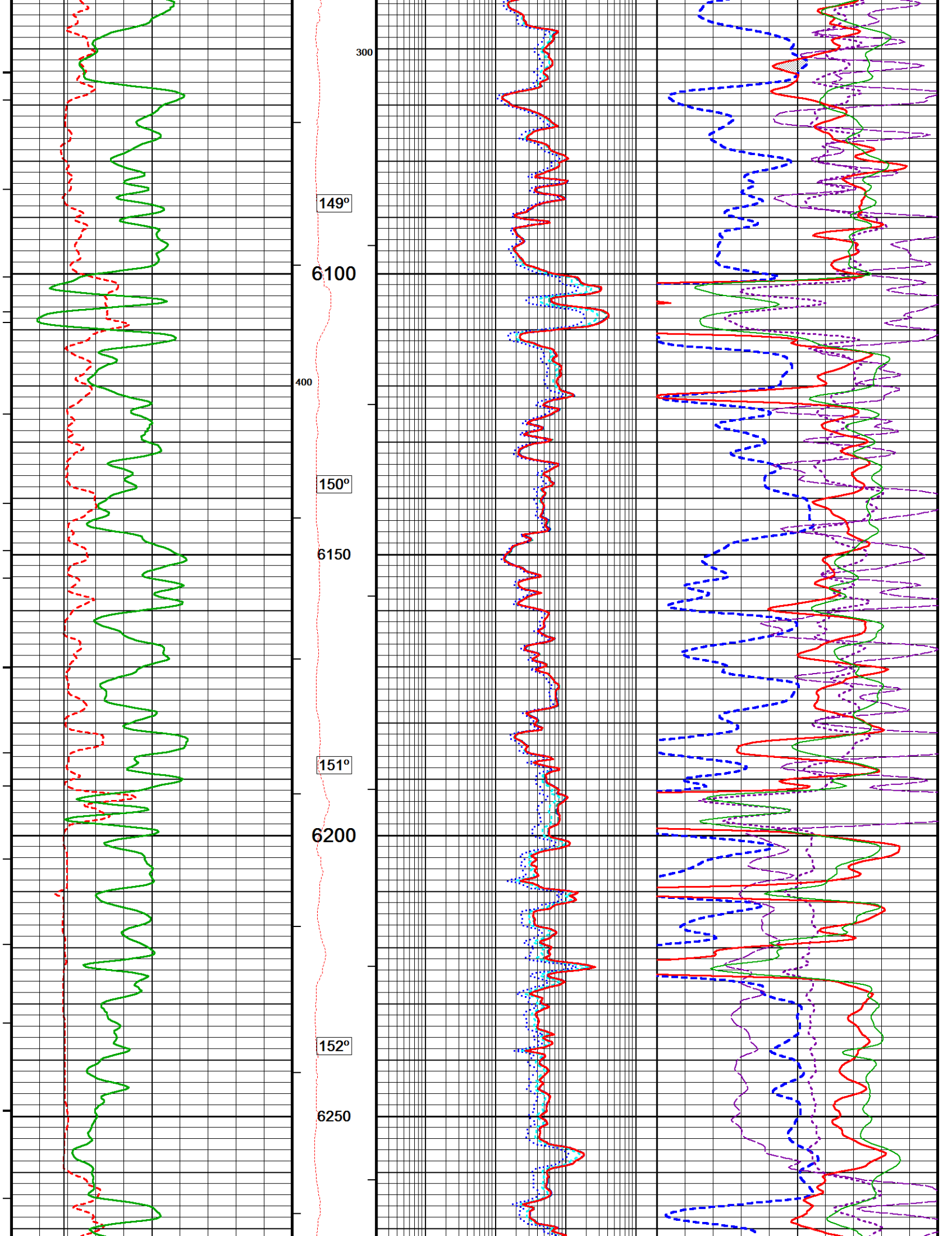

137°
5000
138°
5050
139°
600
5100
139°
MGS Gamma Ray
Bit Size
5150
Array Ind. One Res Rt
Array Ind. One Res 85
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
800
Array Ind. One Res 20
Monopole Delta T

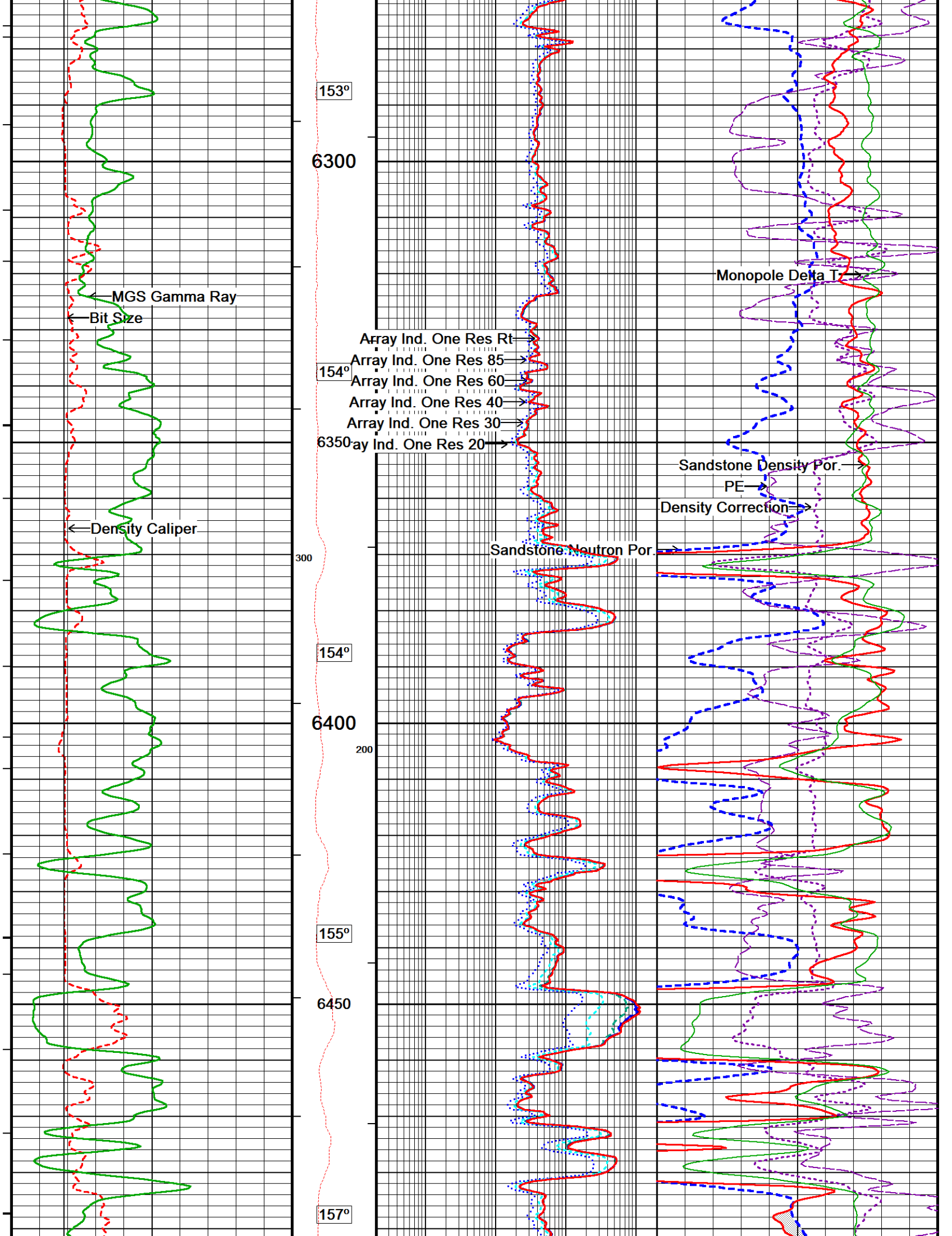

Density Caliper
Sandstone Density Por
PE
Density Correction
Sandstone Neutron Por
140°
5200
141°
5250
141°
5300
142°
5350
142°

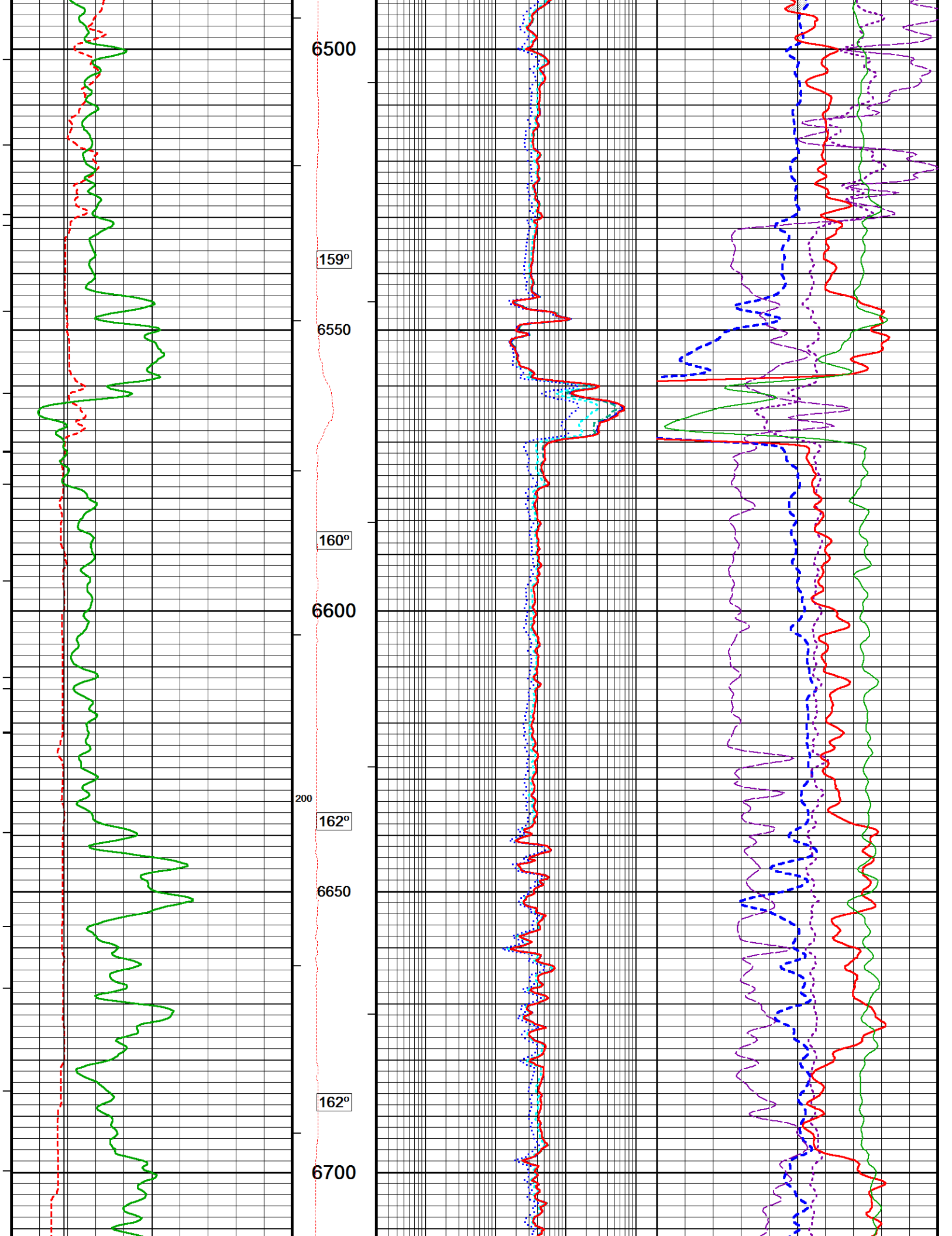

5400
700
500
143°
5450
143°
5500
MGS Gamma Ray
Bit Size
144°
Array Ind. One Res Rt
Array Ind. One Res 85
5550
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
Array Ind. One Res 20
Monopole Delta
Sandstone Density Por.
PE
Density Correction
Density Caliper
Sandstone Neutron Por.
144°
5600

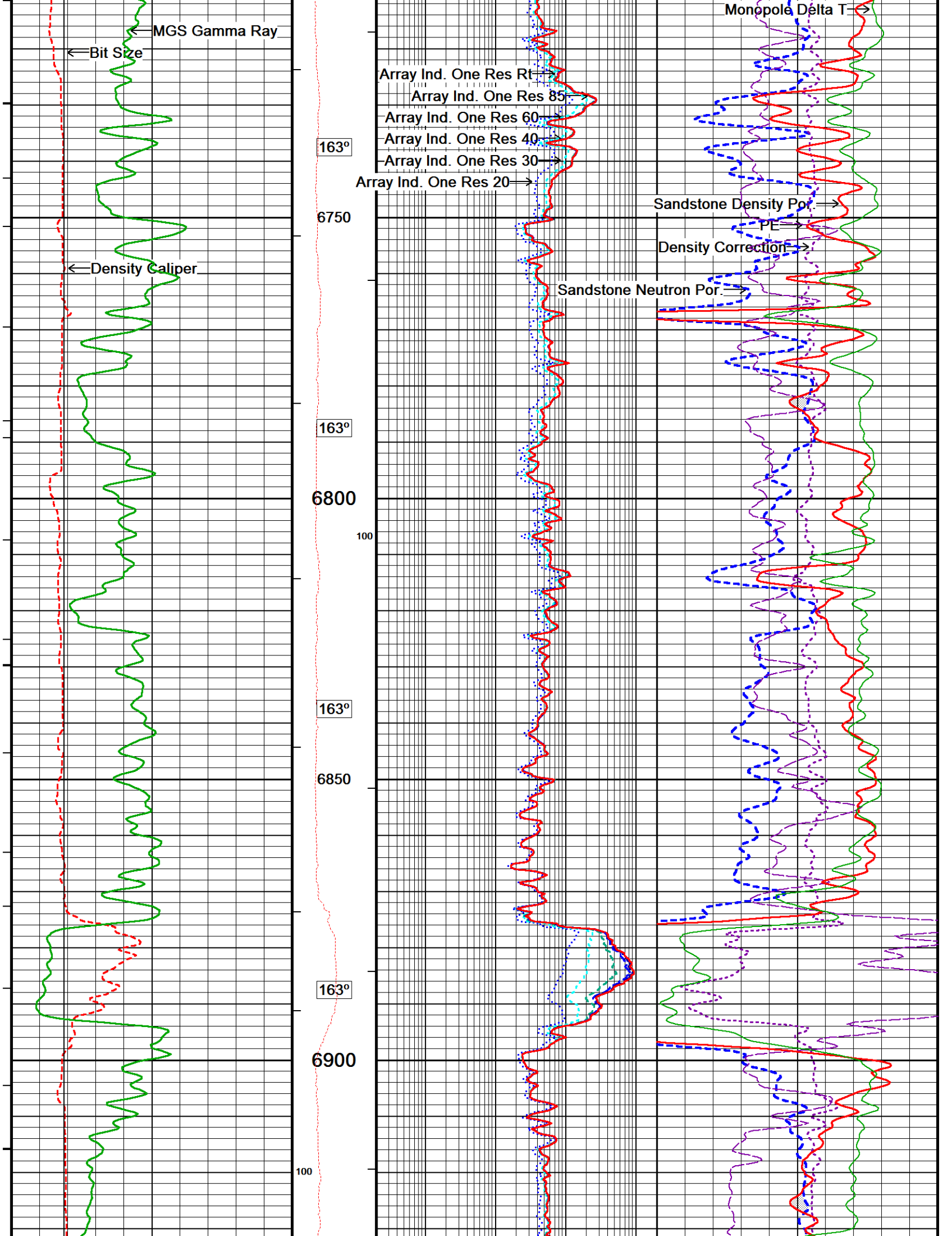

145°
600
5650
145°
5700
146°
400
5750
146°
5800

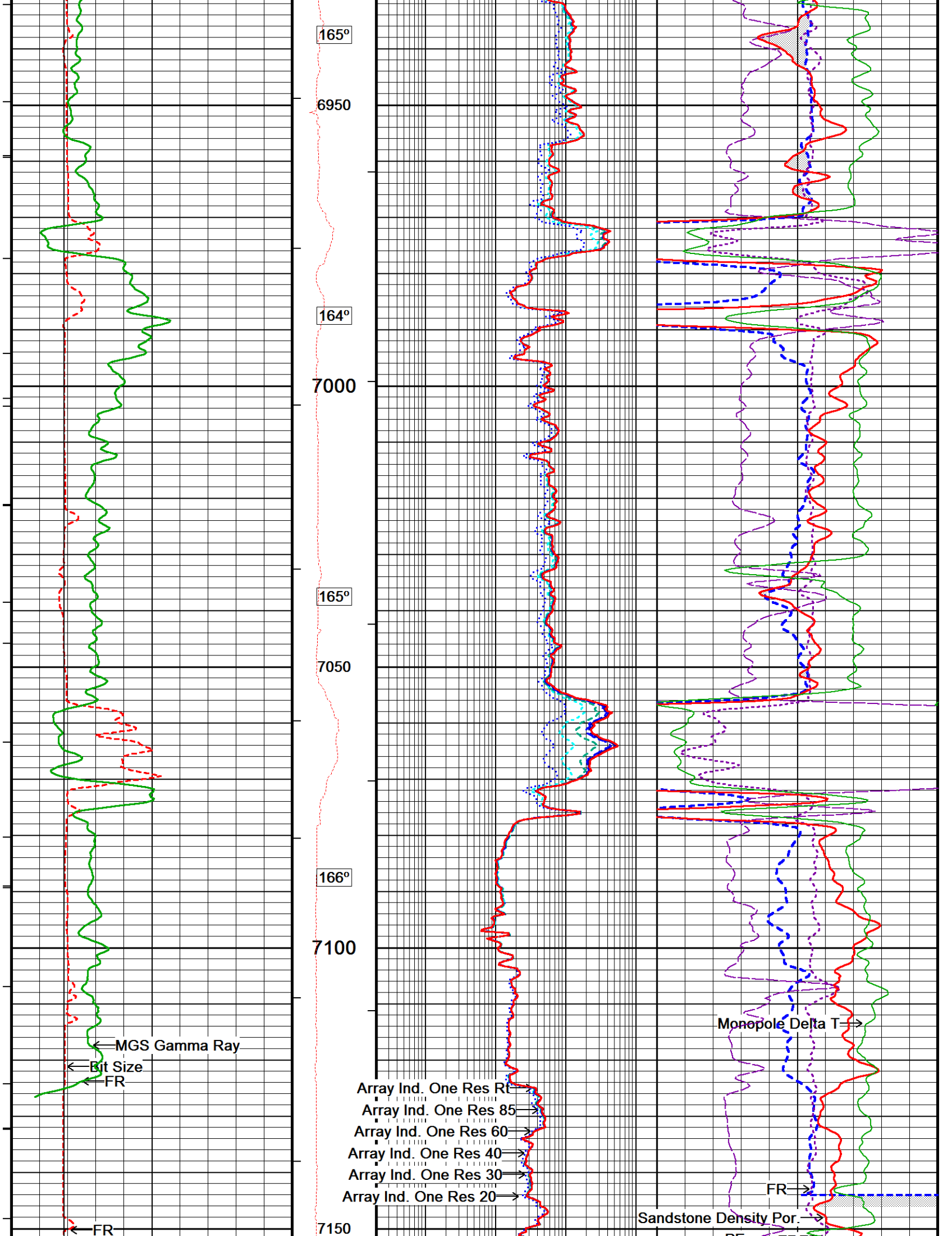

146°
5850
500
147°
5900
MGS Gamma Ray
Bit Size
147°
Array Ind. One Res Rt
Array Ind. One Res 85
Array Ind. One Res 60
5950
Array Ind. One Res 40
Array Ind. One Res 30
Array Ind. One Res 20
Monopole Delta T
Sandstone Density Por.
Density Correction
Density Caliper
Sandstone Neutron Por.
148°
6000
149°
6050

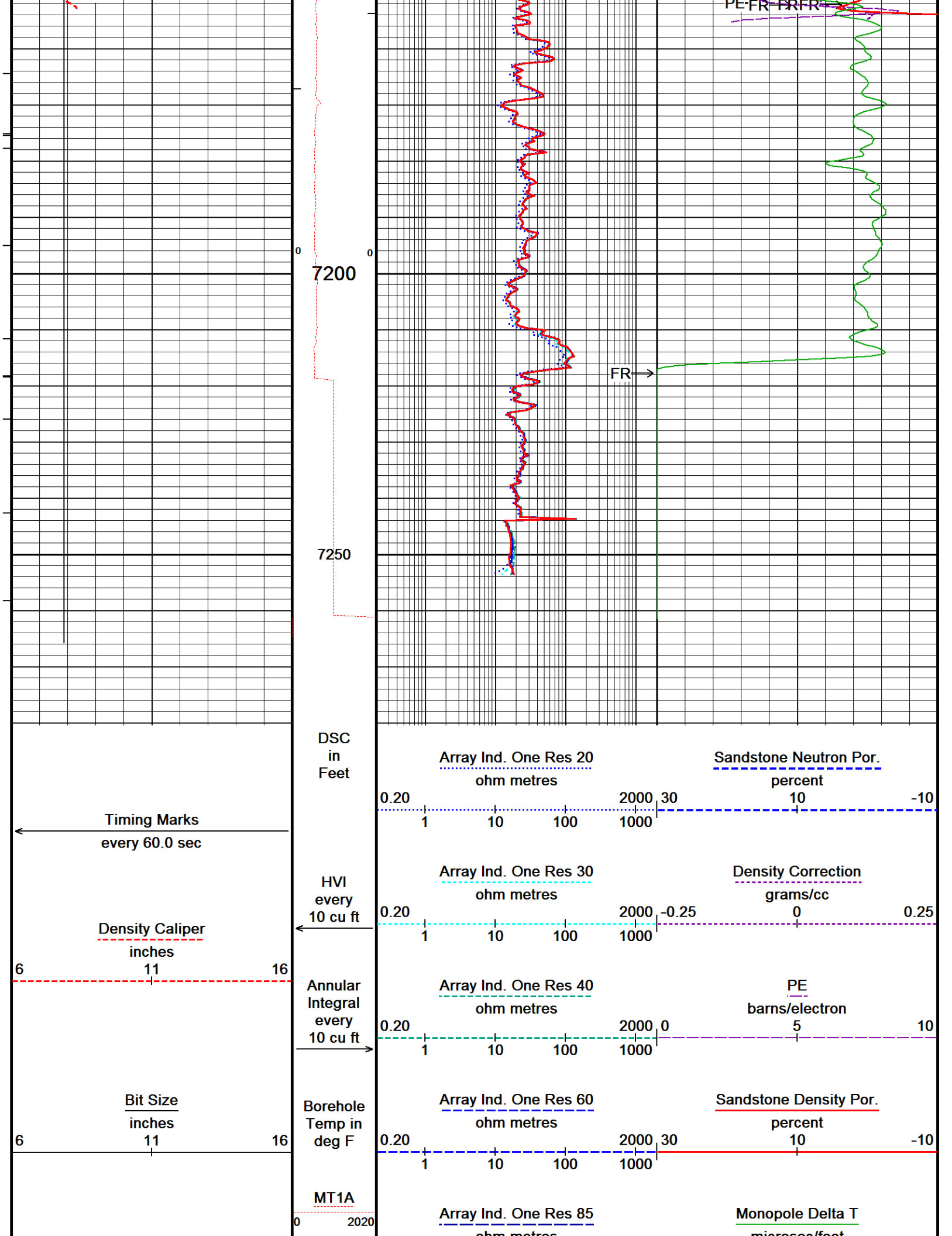

300
149°
6100
400
150°
6150
151°
6200
152°
6250

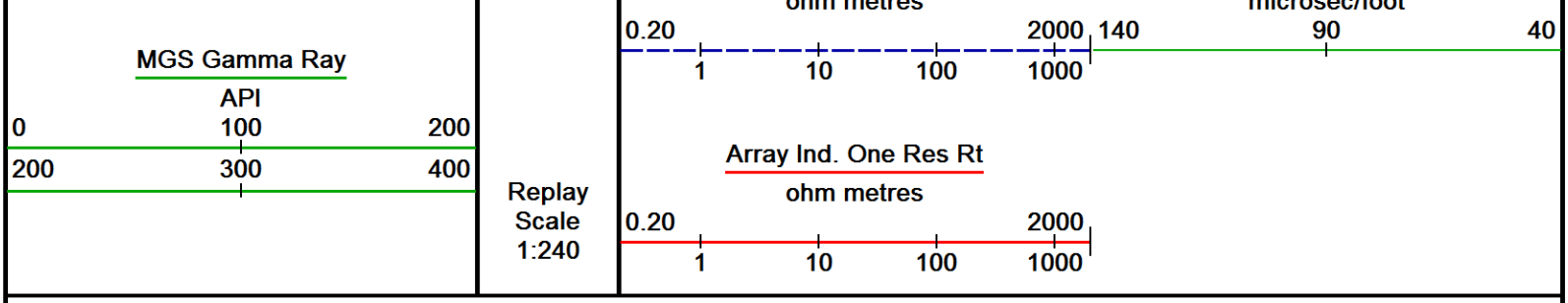

153°
6300
MGS Gamma Ray
Bit Size
Array Ind. One Res Rt
Array Ind. One Res 85
154°
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
6350
ay Ind. One Res 20
Monopole Delta T
Sandstone Density Por.
PE
Density Correction
Density Caliper
Sandstone Neutron Por.
300
154°
6400
200
155°
6450
157°


6500
159°
6550
160°
6600
200
162°
6650
162°
6700


MGS Gamma Ray
Bit Size
Density Caliper
Array Ind. One Res Rt
Array Ind. One Res 85
Array Ind. One Res 60
Array Ind. One Res 40
Array Ind. One Res 30
Array Ind. One Res 20
Monopole Delta T
Sandstone Density Por.
PE
Density Correction
Sandstone Neutron Por.
163°
163°
163°
163°
6750
6800
6850
6900
100
100


165º
6950
164º
7000
165º
7050
166º
7100
7150
←MGS Gamma Ray
←Bit Size
←FR
←FR
Array Ind. One Res Rt→
Array Ind. One Res 85→
Array Ind. One Res 60→
Array Ind. One Res 40→
Array Ind. One Res 30→
Array Ind. One Res 20→
Monopole Delta T→
FR→
Sandstone Density Por.→


PE-FR-TXFR
FR
0
0
7200
7250
DSC
in
Feet
Array Ind. One Res 20
ohm metres
0.20
2000
1
10
100
1000
Sandstone Neutron Por.
percent
30
10
-10
Timing Marks
every 60.0 sec
HVI
every
10 cu ft
Array Ind. One Res 30
ohm metres
0.20
2000
1
10
100
1000
Density Correction
grams/cc
-0.25
0
0.25
Density Caliper
inches
6
11
16
Annular
Integral
every
10 cu ft
Array Ind. One Res 40
ohm metres
0.20
2000
1
10
100
1000
PE
barns/electron
0
5
10
Bit Size
inches
6
11
16
Borehole
Temp in
deg F
Array Ind. One Res 60
ohm metres
0.20
2000
1
10
100
1000
Sandstone Density Por.
percent
30
10
-10
MT1A
0
2020
Array Ind. One Res 85
Monopole Delta T



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 28-DEC-2014 10:13
Filename: C:\LOGS\URSA\VALLEY FARMS L 44B-11-06-92\MMS DEPTH.dta — Recorded on 28-DEC-2014 07:30
System Versions: Logged with 14.05.5280 Processed with 14.05.5280 Plotted with 14.05.5280

5 INCH MAIN LOG DSC

BEFORE SURVEY CALIBRATION

C:\LOGS\URSA\VALLEY FARMS L 44B-11-06-92\MMS DEPTH.dta

General Constants All 000

Last Edited on 27-DEC-2014,18:04

General Parameters		
Mud Resistivity	1.470	ohm-metres
Mud Resistivity Temperature	70.700	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	XY Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	Y Two Arm Caliper	
Annular Volume Diameter	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One 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 21-DEC-2014 15:35

Reading No	Measured	Calibrated (lbs)
1	15160.18	0.00
2	18413.23	826.00

Strain Gauge Constants MMS-F.A 246

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	

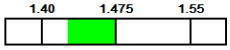
Temperature	75.0		150.0		250.0		350.0	degrees F
Pressure psia	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.	Inc.	Dec.
0.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4000.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6000.0	0.000	0.000	0.000	0.000	0.000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

Gamma Calibration MGS-C.J 149

Field Calibration on 25-DEC-2014 19:56

	Measured	Calibrated (API)
Background	104	73
Calibrator (Gross)	996	699
Calibrator (Net)	893	626

Gamma Calibration Tolerances MGS-C.J 149

Ratio	1.426		Counts/API

Gamma Constants MGS-C.J 149

Last Edited on 27-DEC-2014,17:55

Gamma Calibrator Number	51	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.49	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Constants MGS-C.J 149

Last Edited on

Pre-filter Length	11

Neutron Calibration MDN-B.J 428

Base Calibration on 20-OCT-2014 14:55
Field Check on 25-DEC-2014 19:04

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2896	88	3714	110
Ratio	32.794		33.764	

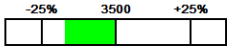
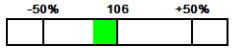
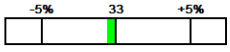
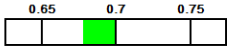
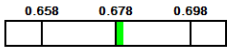
Field Calibrator at Base

	Calibrated (cps)	
	1626	2399
Ratio	0.678	

Field Check

	Calibrated (cps)	
	1629	2395
Ratio	0.680	

Neutron Calibration Tolerances MDN-B.J 428

Near Reading	2896		cps	Far Reading	88	 cps
Ratio	32.794					
Base Check	0.678					
Field Check	0.680					

Neutron Constants MDN-B.J 428

Last Edited on 27-DEC-2014,18:02

Neutron Source Id	P44384B	
Neutron Jig Number	6532NK	
Air Hole Processing	Modified Ratio	
Caliper Source for Processing	Density Caliper	
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	

Navigation Constants MBN-C.J 147

Last Edited on

Magnetic Declination	0.00	degrees	East

Accelerometer Parameters MBN-C.J 147

Date Of Last Accelerometer Calibration 24-SEP-2014,15:15

	X Accelerometer	Y Accelerometer	Z Accelerometer
Slope	-1.093495	-1.104439	-1.108429
Offset	-0.005061	0.007261	0.005023

Accelerometer Constants MBN-C.J 147

Last Edited on 26-DEC-2014,05:46

Accelerometer Calibrator Number 000

Accelerometer Temperature Characterisation

X Accelerometer

Serial Number	998			
Calibration Date	10-Feb-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-2.93165e-006	1.83358e-008	-1.56325e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.65652e-004	3.05137e-007	9.74344e-010

Y Accelerometer

Serial Number	991			
Calibration Date	20-Jan-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-7.60379e-006	8.26132e-010	-1.48425e-011
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.64942e-004	3.01983e-007	6.89349e-010

Z Accelerometer

Serial Number	1058			
Calibration Date	27-Apr-2011			
	B0	B1	B2	B3
Bias(g)	0.00000e+000	-1.12500e-007	-2.53883e-008	2.83285e-010
	SF0	SF1	SF2	SF3
Scale Factor(mA/g)	3.00000e+000	2.66109e-004	2.28065e-007	1.34528e-009

Magnetometer Parameters MBN-C.J 147

Date Of Last Magnetometer Calibration 24-SEP-2014,17:14

	X Magnetometer	Y Magnetometer	Z Magnetometer
Slope	-1.000000	1.011453	1.004706
Offset	-0.000017	0.015729	0.010024

Magnetometer Constants MBN-C.J 147

Last Edited on

Magnetometer Calibrator Number 000

Caliper Calibration MTC-B.J 217

Base Calibration on 25-DEC-2014 19:16
Field Calibration on 25-DEC-2014 19:18

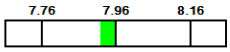
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13499	4.01
2	16101	5.97
3	18822	7.96
4	21460	9.86
5	24442	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.92	7.96

Caliper Calibration Tolerances MTC-B.J 217

Short Arm Field Cal. 7.92 

in

FE Calibration MFE-C.A 402

Base Calibration on 02-DEC-2014 10:14
Field Check on 25-DEC-2014 18:52

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	965.6	126.8

Base Check	281.1
Field Check	281.1

FE Calibration Tolerances MFE-C.A 402

Reference 2	965.6	-3% 980.0 +3%	ohm
Base Check	281.1	-2% 277.0 +2%	ohm-m
Field Check	281.1	-2% 281.1 +2%	ohm-m

FE Constants MFE-C.A 402

Last Edited on 27-DEC-2014,18:02

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

Induction Calibration MAI-B.J 373

Base Calibration on 23-MAY-2013,13:58
Field Check on 25-DEC-2014 18:50

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	16.5	473.7	9.3	966.2
2	5.8	387.3	7.6	821.4
3	3.2	259.3	5.2	566.0
4	1.4	131.7	2.6	279.2
Array Temperature		77.4	Deg F	

Test Loop Calibration Verified

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High	
1	15.8	3844.2	12.0	3844.1	
2	30.9	3489.8	30.1	3492.5	
3	29.4	3058.4	29.0	3061.1	
4	20.9	2098.6	20.8	2101.1	
Deep	19.1	2056.7	18.7	2058.8	
Medium	41.7	3989.4	41.6	3993.1	
Shallow	44.8	5069.0	43.7	5072.4	
Array Temperature		87.3	30.2		Deg F

Induction Calibration Tolerances MAI-B.J 373

Low Conductivity 1	16.5	13.0 17.0 21.0	mmho/m	High Conductivity 1	473.7	430.0 475.0 520.0 mmho/m
Low Conductivity 2	5.8	4.5 6.0 7.5	mmho/m	High Conductivity 2	387.3	345.0 385.0 425.0 mmho/m
Low Conductivity 3	3.2	1.0 3.5 6.0	mmho/m	High Conductivity 3	259.3	240.0 260.0 280.0 mmho/m
Low Conductivity 4	1.4	0.0 2.0 4.0	mmho/m	High Conductivity 4	131.7	120.0 135.0 150.0 mmho/m
Background Vx 1	0.0	-110.0 -32.5 45.0	mmho/m	Phase Check Loop 1	0.0	-2.0 0.0 2.0 %
Background Vx 2	0.0	-35.0 20.0 75.0	mmho/m	Phase Check Loop 2	0.0	-2.0 0.0 2.0 %
Background Vx 3	0.0	-60.0 2.5 65.0	mmho/m	Phase Check Loop 3	0.0	-2.0 0.0 2.0 %
Background Vx 4	0.0	-50.0 -17.5 15.0	mmho/m	Phase Check Loop 4	0.0	-2.0 0.0 2.0 %

Induction Constants MAI-B.J 373

Last Edited on 27-DEC-2014,18:02

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 Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	MGS 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

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	1.70	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	1.00	ohm-m
Resistivity of Mud Filtrate for Sw	1.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

High Resolution Temperature Calibration MAI-B.J 373

Field Calibration on 25-APR-2014,13:47

	Measured	Calibrated(Deg F)
Lower	20.00	20.00
Upper	200.00	200.00

High Resolution Temperature Constants MAI-B.J 373

Last Edited on 25-APR-2014,13:47

Pre-filter Length	11

Caliper Calibration MPD-C.A 254

Base Calibration on 03-DEC-2014 11:32
Field Calibration on 26-DEC-2014 07:32

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15288	4.01
2	23580	5.97
3	32064	7.96
4	40160	9.86
5	49472	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.93	7.96

Caliper Calibration Tolerances MPD-C.A 254

Long Arm Field Cal.	7.93	7.56	7.96	8.36	in

Photo Density Calibration MPD-C.A 254

Base Calibration on 03-DEC-2014 10:25
Field Check on 26-DEC-2014 07:29

Density Calibration

Base Calibration

	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Background	1195	1414		
Reference 1	58668	28461	59443	30683
Reference 2	23596	2658	25113	2508

Field Check at Base

	1194.6	1413.6

Field Check

	1199.4	1412.9

PE Calibration

Base Calibration

	WS	Measured WH	Ratio	Calibrated Ratio
Background	218	1071		
Reference 1	24718	58475	0.427	0.372
Reference 2	6769	23460	0.293	0.268

Field Check at Base

	217.8	1071.2

Field Check

	216.9	1075.7

Photo Density Calibration Tolerances MPD-C.A 254

Near Density Ratio	2.57	-5% 2.52 +5%	Far Density Ratio	21.74	-5% 21.00 +5%
PE Calibration	0.121	0.089 0.110 0.131			
Near Den. Field Check	1199.4	-3% 1194.6 +3%	Far Den. Field Check	1412.9	-3% 1413.6 +3%
PE WS Field Check	216.9	-6% 217.8 +6%	PE WH Field Check	1075.7	-6% 1071.2 +6%

Density Constants MPD-C.A 254

Last Edited on 27-DEC-2014,17:55

Density Source Id	P56140B	
Nylon Calibrator Number	652	
Aluminium Calibrator Number	659	
Density Shoe Profile	4 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.49	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	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

Dipole Constants and Gains MRD-B.A 177

Logging Mode	Standard	
Semblance Parameters		
Window Start	1.00	milliseconds
Window Width	15	milliseconds
Waveforms Used as Semblance Input		
Receiver Station 1	YES	
Receiver Station 2	YES	
Receiver Station 3	YES	
Receiver Station 4	YES	
Discriminator Levels		
M1C Discriminator	0.1	mV
M2C Discriminator	0.1	mV
M3C Discriminator	0.1	mV

M4C Discriminator	0.1	mV	

Monopole Receiver Element Gains

MR1A	1.00	MR1B	1.00	MR1C	1.00	MR1D	1.00
MR2A	1.00	MR2B	1.00	MR2C	1.00	MR2D	1.00
MR3A	1.00	MR3B	1.00	MR3C	1.00	MR3D	1.00
MR4A	1.00	MR4B	1.00	MR4C	1.00	MR4D	1.00
MR5A	1.00	MR5B	1.00	MR5C	1.00	MR5D	1.00
MR6A	1.00	MR6B	1.00	MR6C	1.00	MR6D	1.00
MR7A	1.00	MR7B	1.00	MR7C	1.00	MR7D	1.00
MR8A	1.00	MR8B	1.00	MR8C	1.00	MR8D	1.00

DOWNHOLE EQUIPMENT

C:\LOGS\URSA\VALLEY FARMS L 44B-11-06-92\MMS DEPTH.dta

Drop-off Running Tool
DRT-B.A 127 LG: 9.42 ft WT: 66.1 lb OD: 2.598 in

MBS-F.A 200v Compact Battery Sub
MBS-F.A 123 LG: 17.06 ft WT: 123.5 lb OD: 2.240 in

Compact Memory Sub F.A
MMS-F.A 246 LG: 5.20 ft WT: 37.5 lb OD: 2.244 in

Compact Tool Isolator sub.
MTI-C.A 99 LG: 1.54 ft WT: 13.2 lb OD: 2.244 in

Compact Short Gamma
MGS-C.J 149 LG: 3.41 ft WT: 24.3 lb OD: 2.244 in

Compact Collar Locator
MCL-B.J 51 LG: 3.17 ft WT: 26.5 lb OD: 2.244 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 245 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 396 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 702 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Neutron
MDN-B.J 428 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-C.A 254 LG: 9.59 ft WT: 90.4 lb OD: 2.244 in

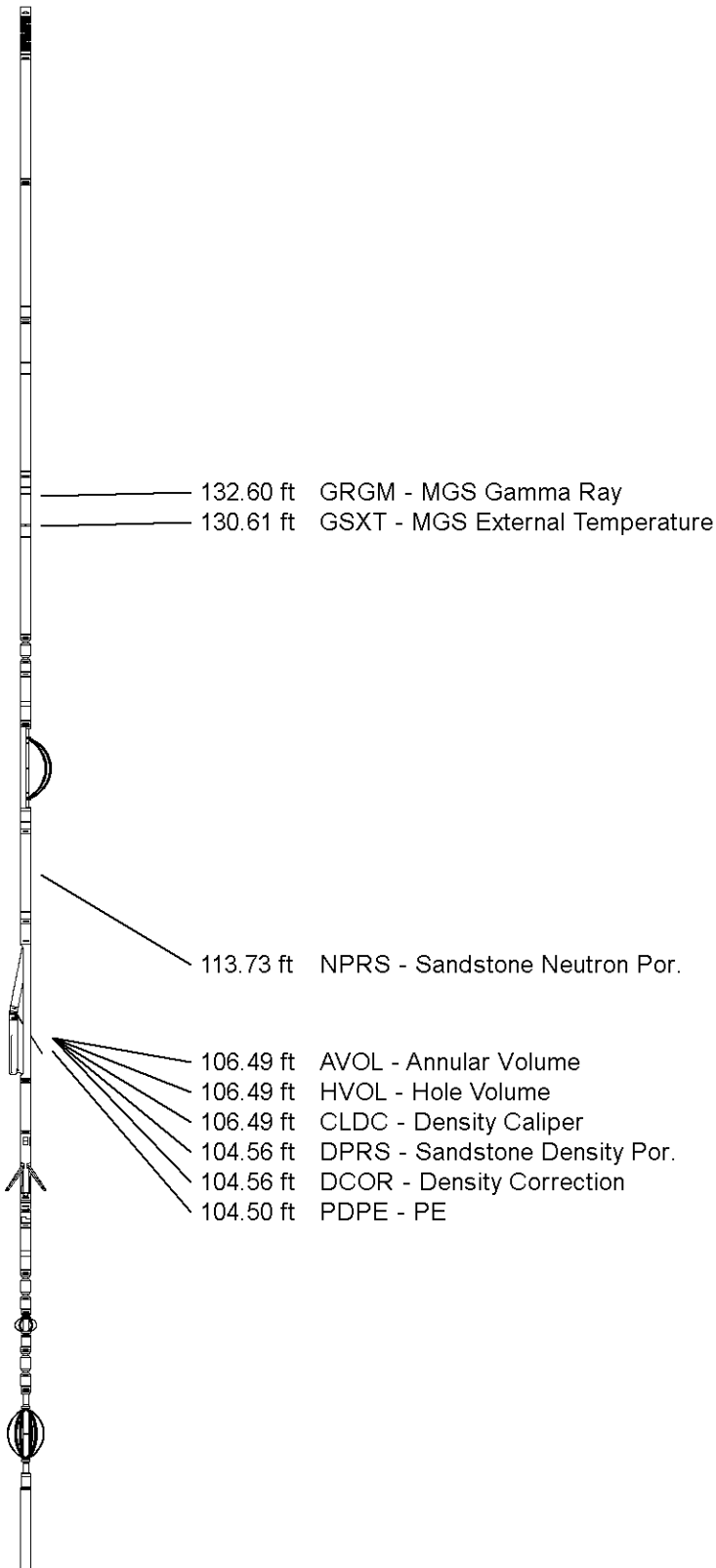
Compact Vee Arm Caliper
MVC-A.A 143 LG: 8.06 ft WT: 61.7 lb OD: 2.244 in

SHA-J.A Compact Swivel Head Adaptor
SHA-J.A 397 LG: 2.30 ft WT: 22.0 lb OD: 2.244 in

SKJ-E.A Compact Knuckle Joint
SKJ-E.A 409 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 691 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

SKJ-E.B Compact Knuckle Joint
SKJ-E.B 588 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in



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

Compact Navigation
MBN-C.J 147 LG: 11.81 ft WT: 70.5 lb OD: 2.244 in

Compact Two Arm Caliper
MTC-B.J 217 LG: 7.11 ft WT: 61.7 lb OD: 2.244 in

MIS-D.A Compact Inline Bowspring sub
MIS-D.A 440 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

Compact Dipole Memory
MDM-A.A 132 LG: 4.48 ft WT: 39.7 lb OD: 2.244 in

Compact Dipole Receiver
MRD-B.A 177 LG: 8.89 ft WT: 88.2 lb OD: 2.244 in

Compact Dipole Transmitter
MTD-B.A 177 LG: 12.63 ft WT: 110.2 lb OD: 2.244 in

MIS-D.B Compact Inline Bowspring sub
MIS-D.B 667 LG: 5.70 ft WT: 33.1 lb OD: 2.240 in

SKJ-D.A Compact Knuckle Joint
SKJ-D.A 66 LG: 2.17 ft WT: 24.3 lb OD: 2.244 in

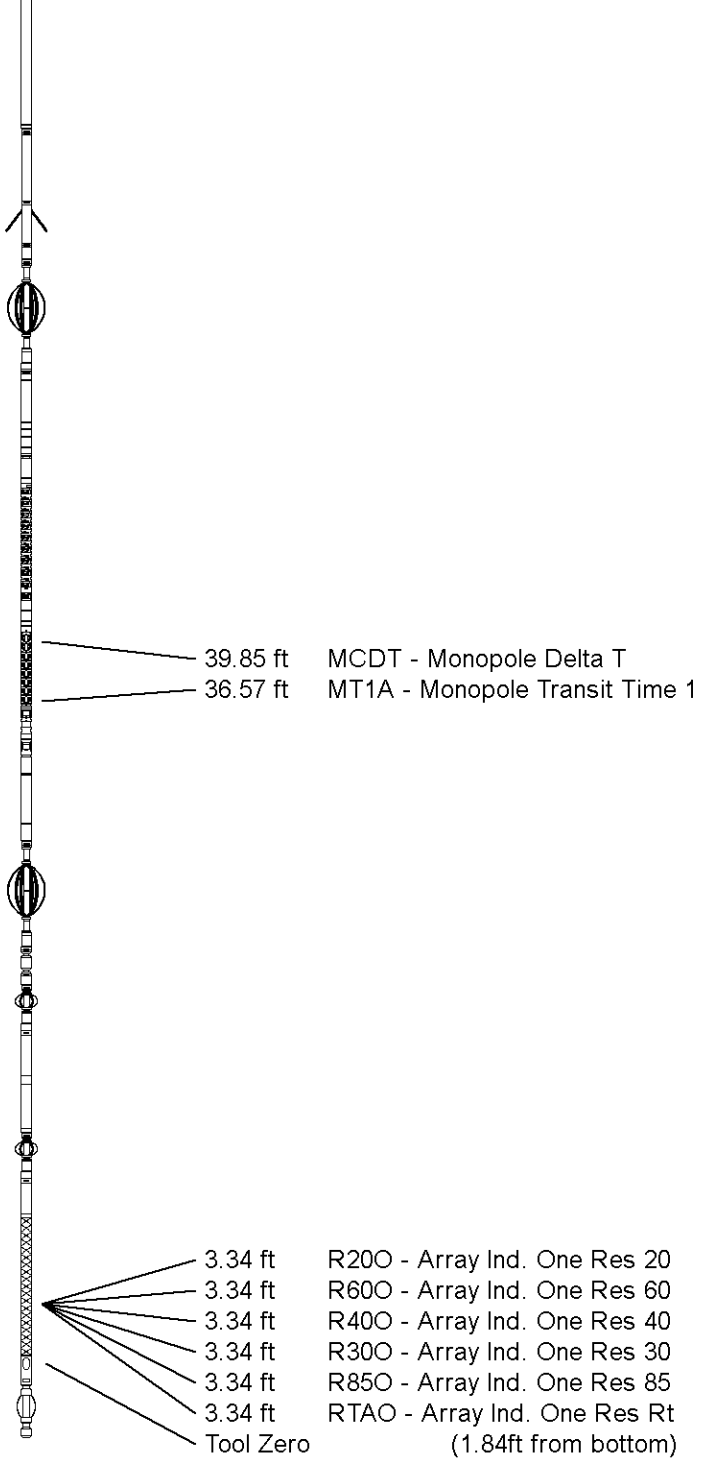
MIS-E.B Compact Inline Standoff sub
MIS-E.B 694 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

Compact Focussed Electric
MFE-C.A 402 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

MIS-E.B Compact Inline Standoff sub
MIS-E.B 692 LG: 2.14 ft WT: 15.4 lb OD: 2.244 in

Compact Induction
MAI-B.J 373 LG: 12.52 ft WT: 48.5 lb OD: 2.240 in

Total Length: 168.45 ft Weight: 1280.9 lb



COMPANY	URSA OPERATING COMPANY
WELL	VALLEY FARMS L 44B 11-06-92
FIELD	GRAVEL TREND
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	USA/CO

Elevation Kelly Bushing	5592.00	feet	First Reading	7262.00	feet
Elevation Drill Floor	5592.00	feet	Depth Driller	7288.00	feet
Elevation Ground Level	5577.00	feet	Depth Logger	7288.00	feet

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