COMPENSATED SONIC LOG

COMPANY	BILL BARRETT CORPORATION
WELL	MILLER FEDERAL 24D-31-691
FIELD	GIBSON GULCH
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO
LOCATION	SHL: 2' FNL & 2437' FEL
	BHL: 1140' FSL & 1998' FWL

SEC	TWP	RGE
6	7S	91W

Other Services
MAI/MFE
MPD/MDN

API Number 05-045-18660
Permit Number

Permanent Datum G.L., Elevation 6266 feet
Log Measured From K.B. @ 22 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	6288.00
DF	6287.00
GL	6266.00

Date	12-DEC-2010		
Run Number	ONE		
Depth Driller	7626.00	feet	
Depth Logger	7635.00	feet	
First Reading	7622.00	feet	
Last Reading	790.00	feet	
Casing Driller	788.00	feet	
Casing Logger	790.00	feet	
Bit Size	7.875	inches	
Hole Fluid Type	LSND		
Density / Viscosity	9.20 lb/USg	55.00 CP	
PH / Fluid Loss	9.20	7.20 ml/30Min	
Sample Source	FLOW LINE		
Rm @ Measured Temp	1.80 @ 80.0	ohm-m	
Rmf @ Measured Temp	1.44 @ 80.0	ohm-m	
Rmc @ Measured Temp	2.16 @ 80.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.857 @172.0	ohm-m	
Time Since Circulation	4 HOURS		
Max Recorded Temp	172.00	deg F	
Equipment Name	COMPACT		
Equipment / Base	13045	GD JCT	
Recorded By	S.LACKEY		
Witnessed By	JIM BOYD		

BOREHOLE RECORD

Last Edited: 13-DEC-2010 06:02

Bit Size inches	Depth From feet	Depth To feet
8.750	788.00	4246.00
7.880	4246.00	7625.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	9.625	0.00	788.00	36.00

REMARKS

TOOLS: SHA, MCG, MDN, MPD, SKJ, MFE, MSS AND MAI RAN IN COMBINATION

HARDWARE: MPD: (1) 8 INCH PROFILE PLATE
MAI: (1) 0.5 INCH STANDOFF
MSS: (3) 1 INCH STANDOFF
MDN: (1) DUAL BOWSPRING

2.68 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

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

8.75 INCH BIT USED FROM SURFACE CASING TO 4246 FEET.

CALIPER CHECK IN CASING PRESENTED, REFERENCE I.D. = 8.95" (9 5/8", 36 LB/FT CASING)

TOTAL HOLE VOLUME FROM TD TO SURFACE CASING =2695 CU.FT.

ANNULAR VOLUME WITH 4.5 INCH PRODUCTION CASING = 1950 CU.FT.

SERVICE ORDER: #3526206

RIG: PATTERSON #313

5 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 13-DEC-2010 06:07
Filename: C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta
Recorded on 13-DEC-2010 02:10
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

Timing Marks
every 60.0 sec

Gamma Ray(GRGC)
API
0 75 150
150 225 300

Density Caliper(CLDC)
inches
6 11 16

Bit Size(BIT)
inches
6 11 16

Depth In Feet

Borehole Temp in deg F

Replay Scale 1:240

778

Casing Shoe

3-5' Compensated Sonic(DT35)
microsec/foot
140 115 90 65 40

Sandstone Sonic Porosity(SPRS)
percent
30 20 10 0 -10

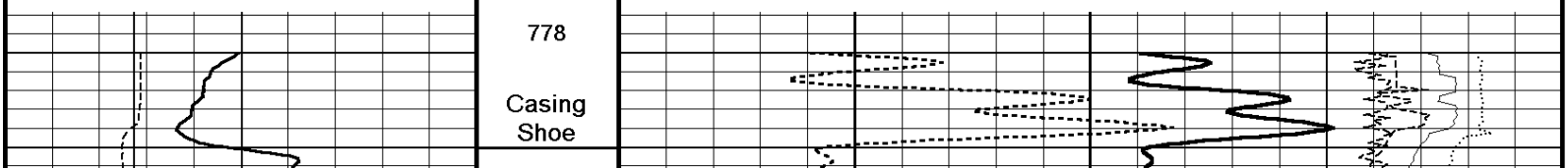
Transit Time
every millisec

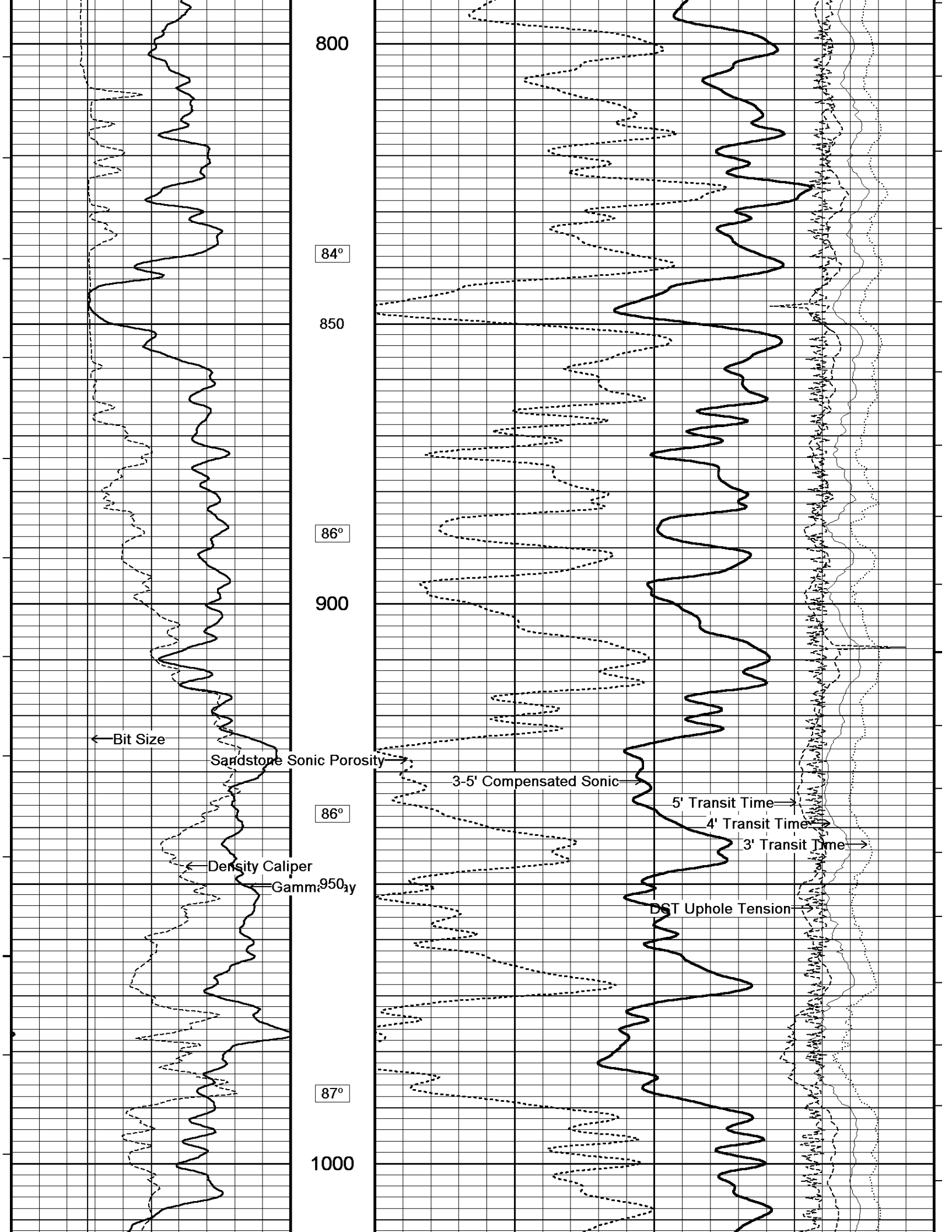
DST Uphole Tension(SMTU)
pounds
1100 600 100

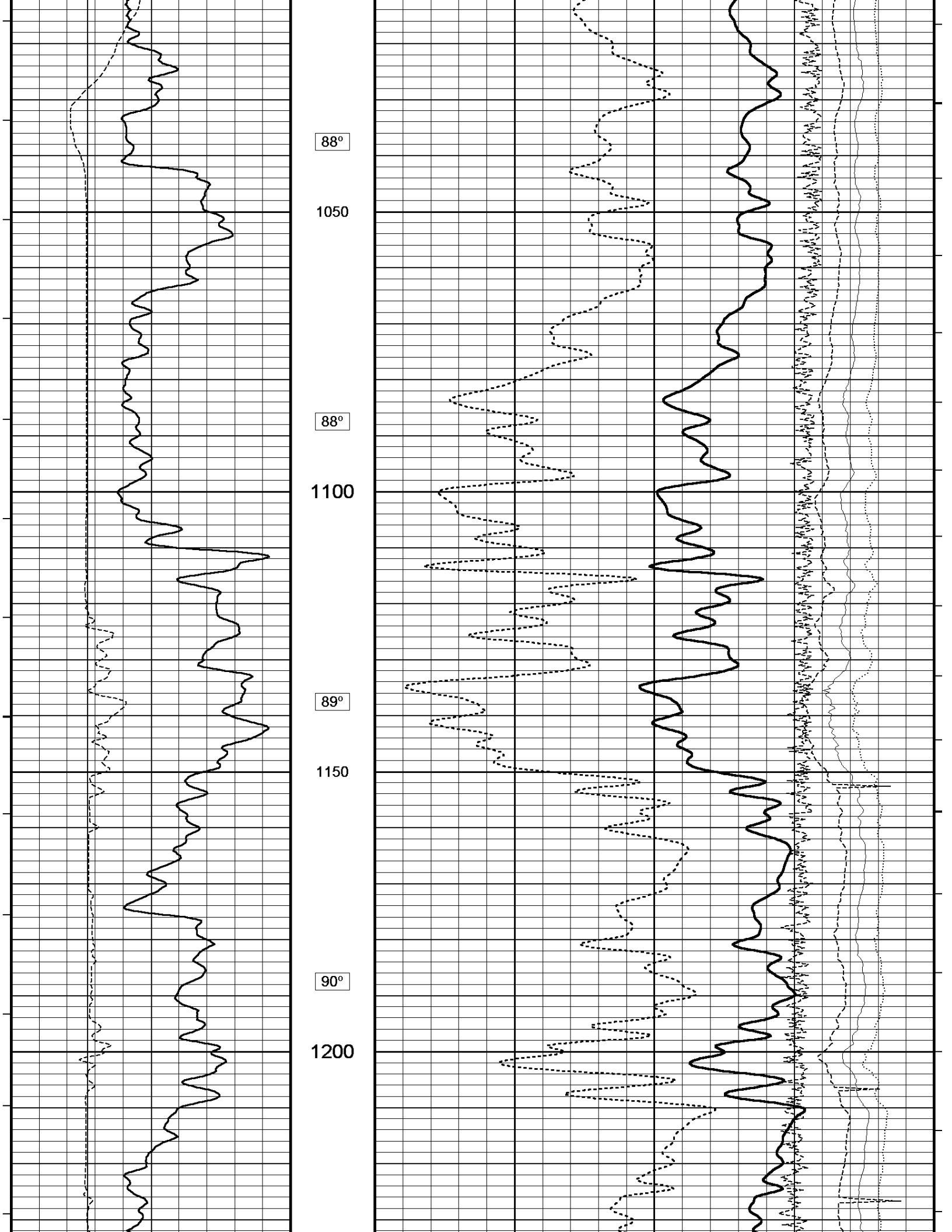
3' Transit Time(TR21)
microseconds
1100 600 100

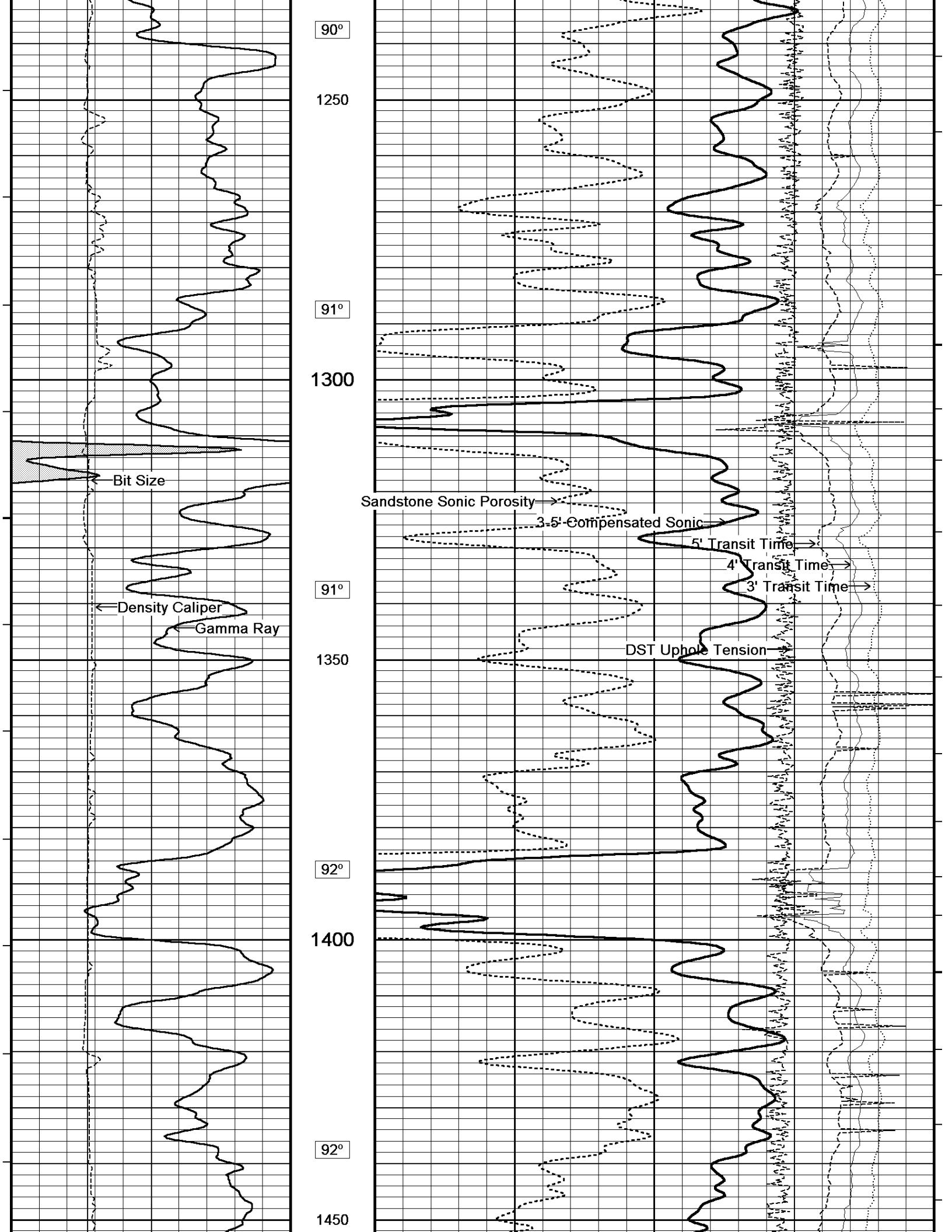
4' Transit Time(TR11)
microseconds
1100 600 100

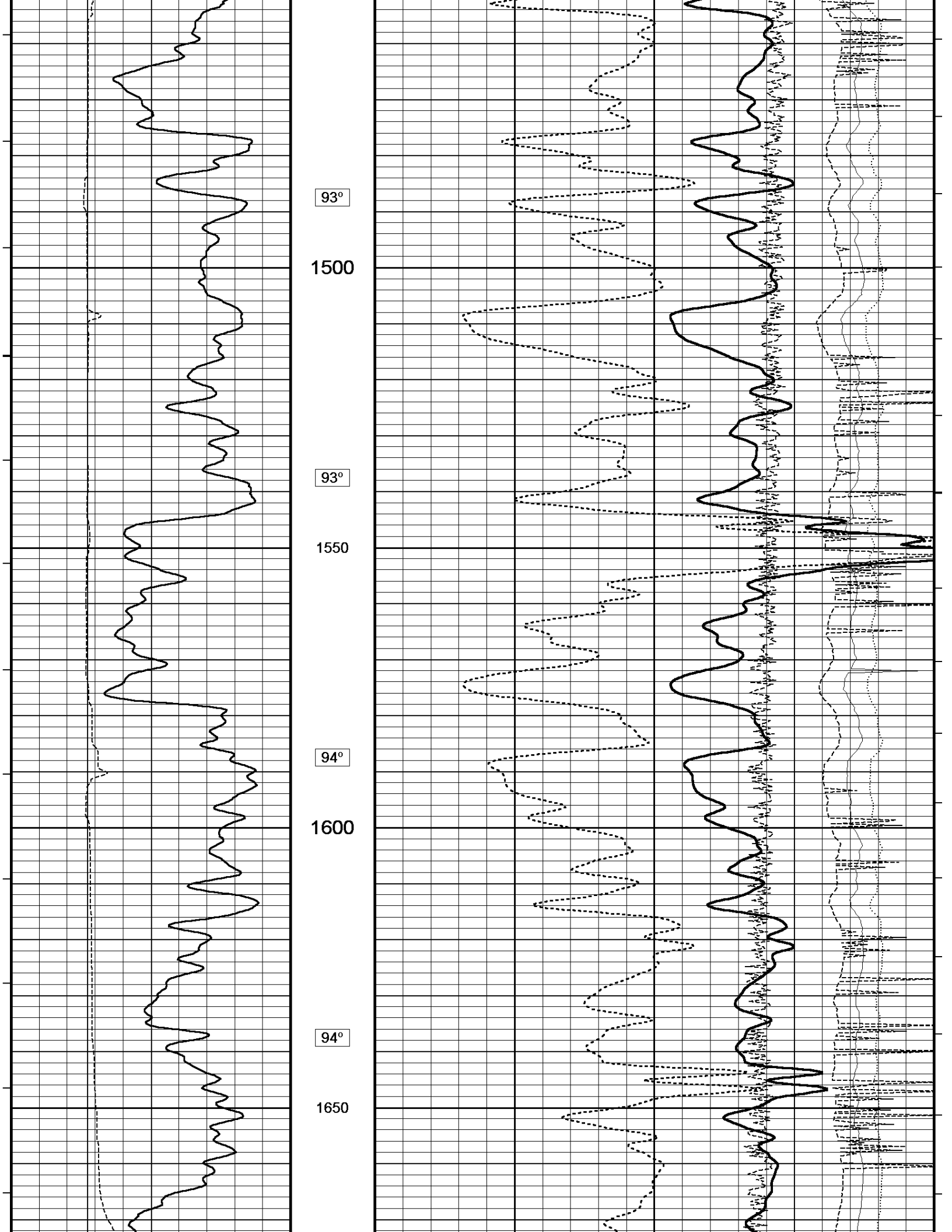
5' Transit Time(TR22)
microseconds
1100 600 100

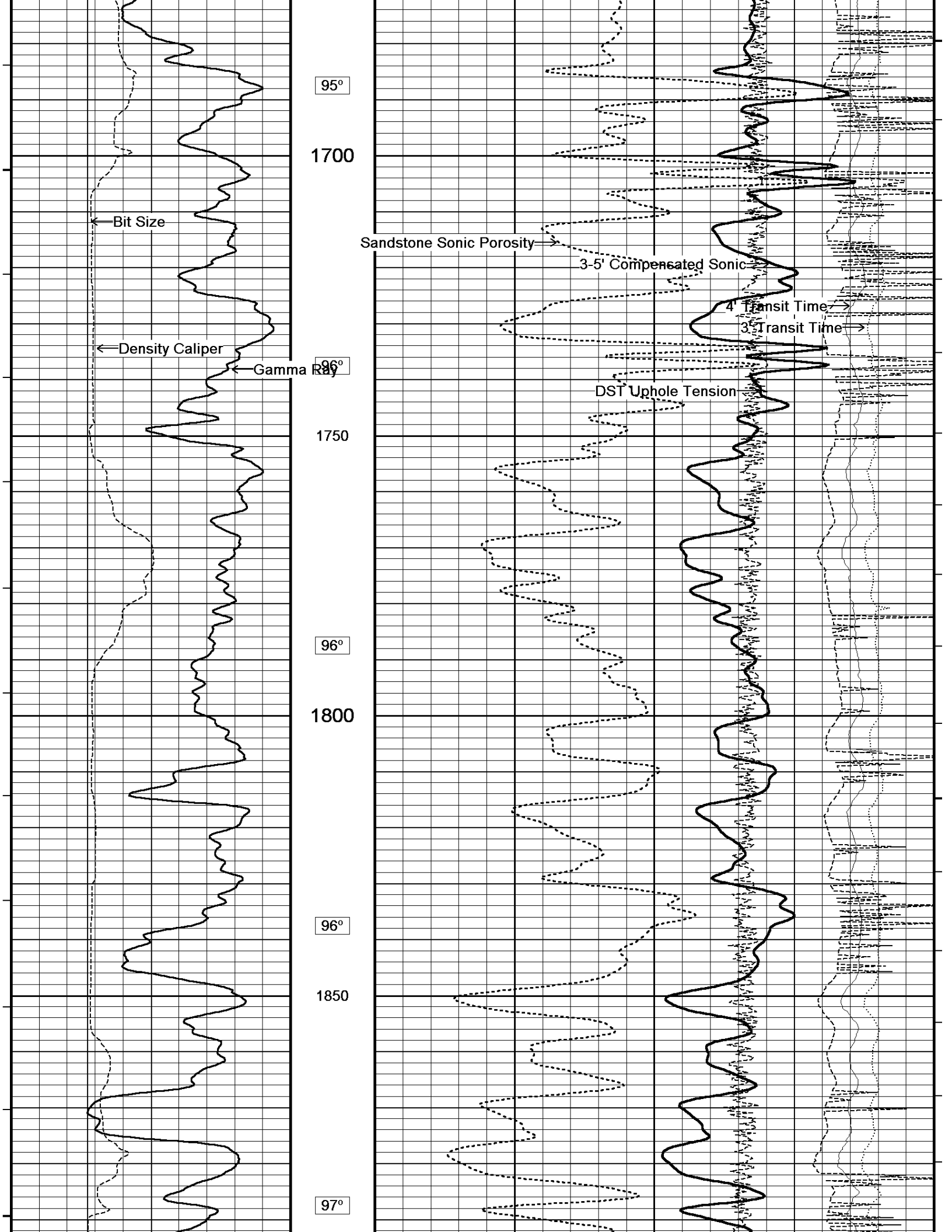


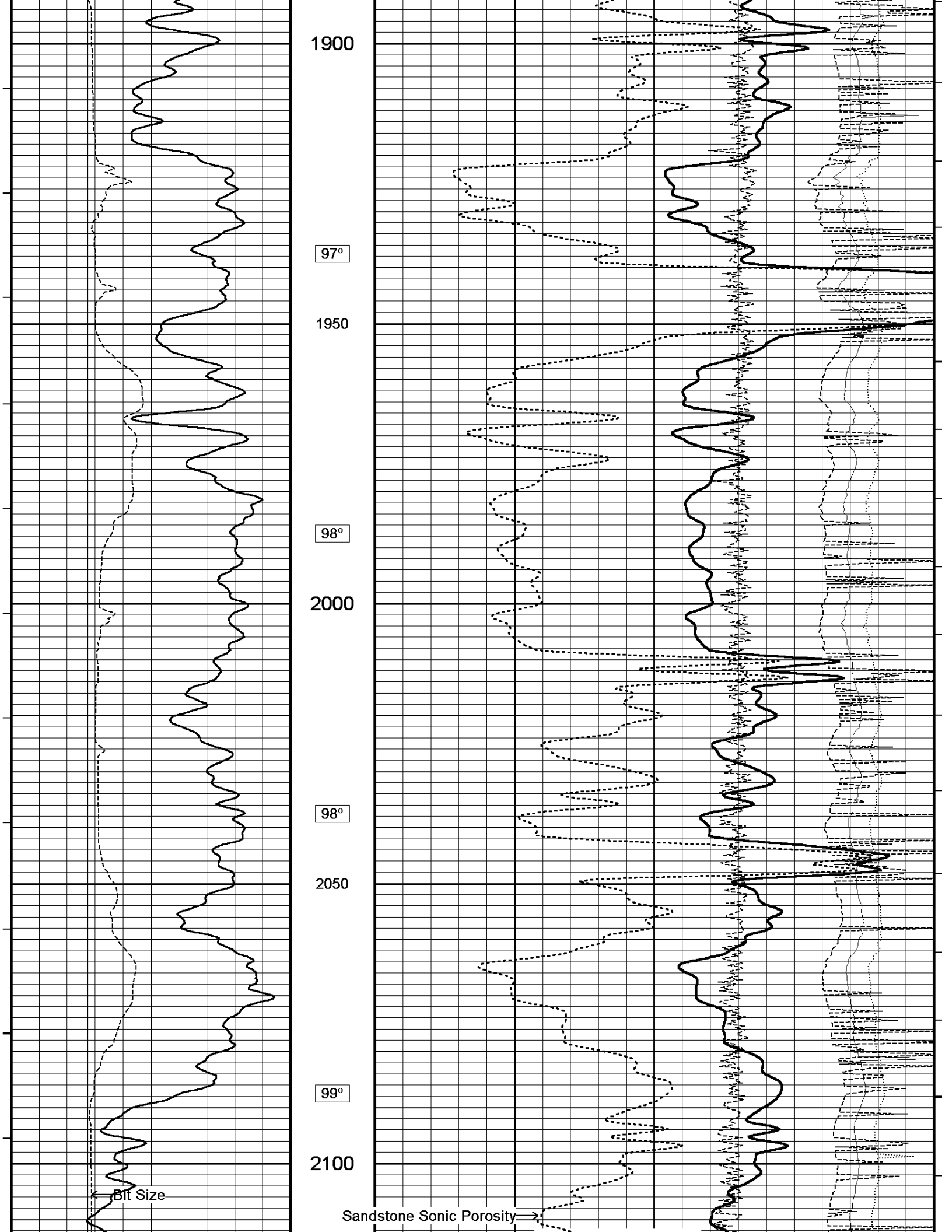

800
84°
850
86°
900
Bit Size
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
86°
Density Caliper
Gamma Ray
950
DST Uphole Tension
87°
1000

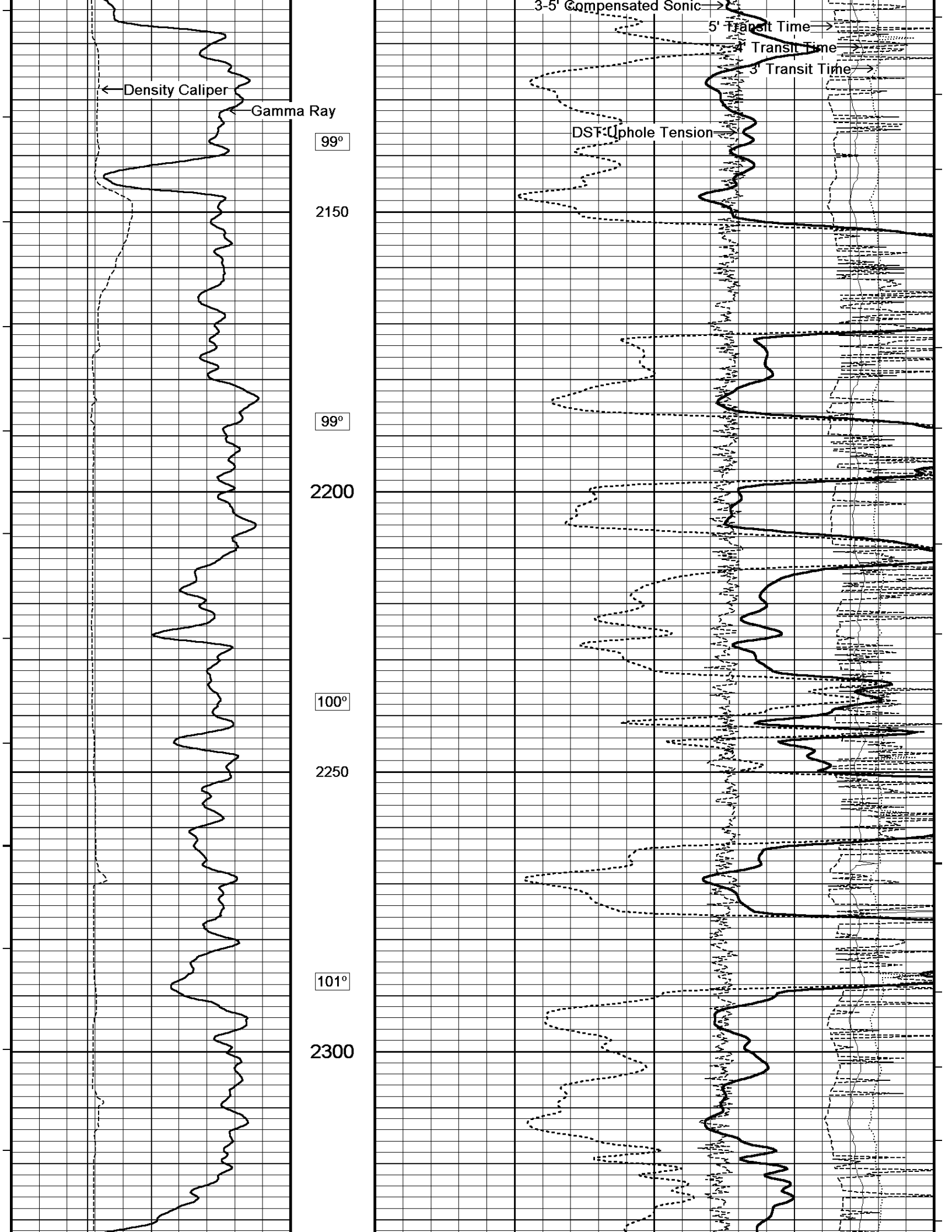

88°
1050
88°
1100
89°
1150
90°
1200

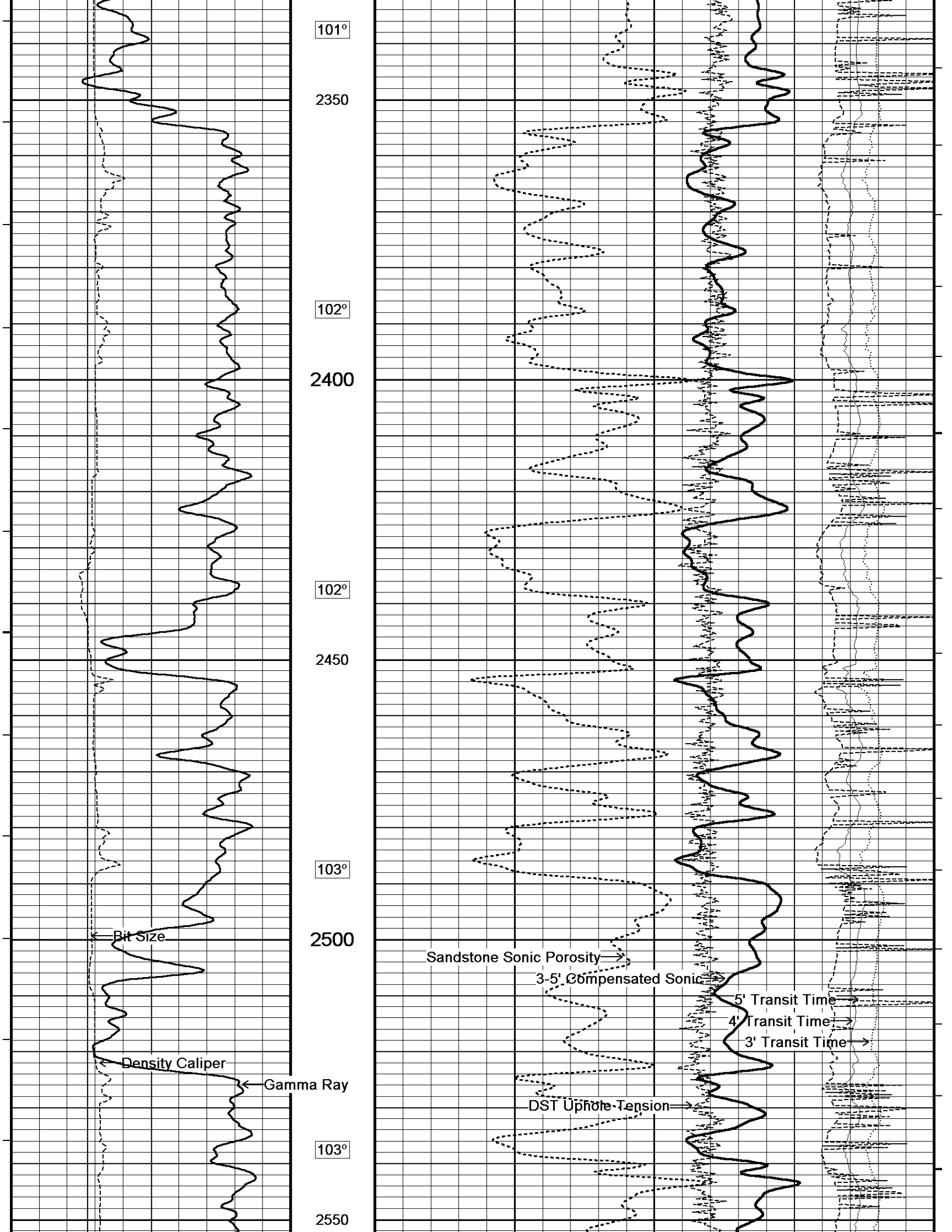

90°
1250
91°
1300
Bit Size
Sandstone Sonic Porosity
3-5'-Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
91°
Density Caliper
Gamma Ray
DST Uphole Tension
1350
92°
1400
92°
1450

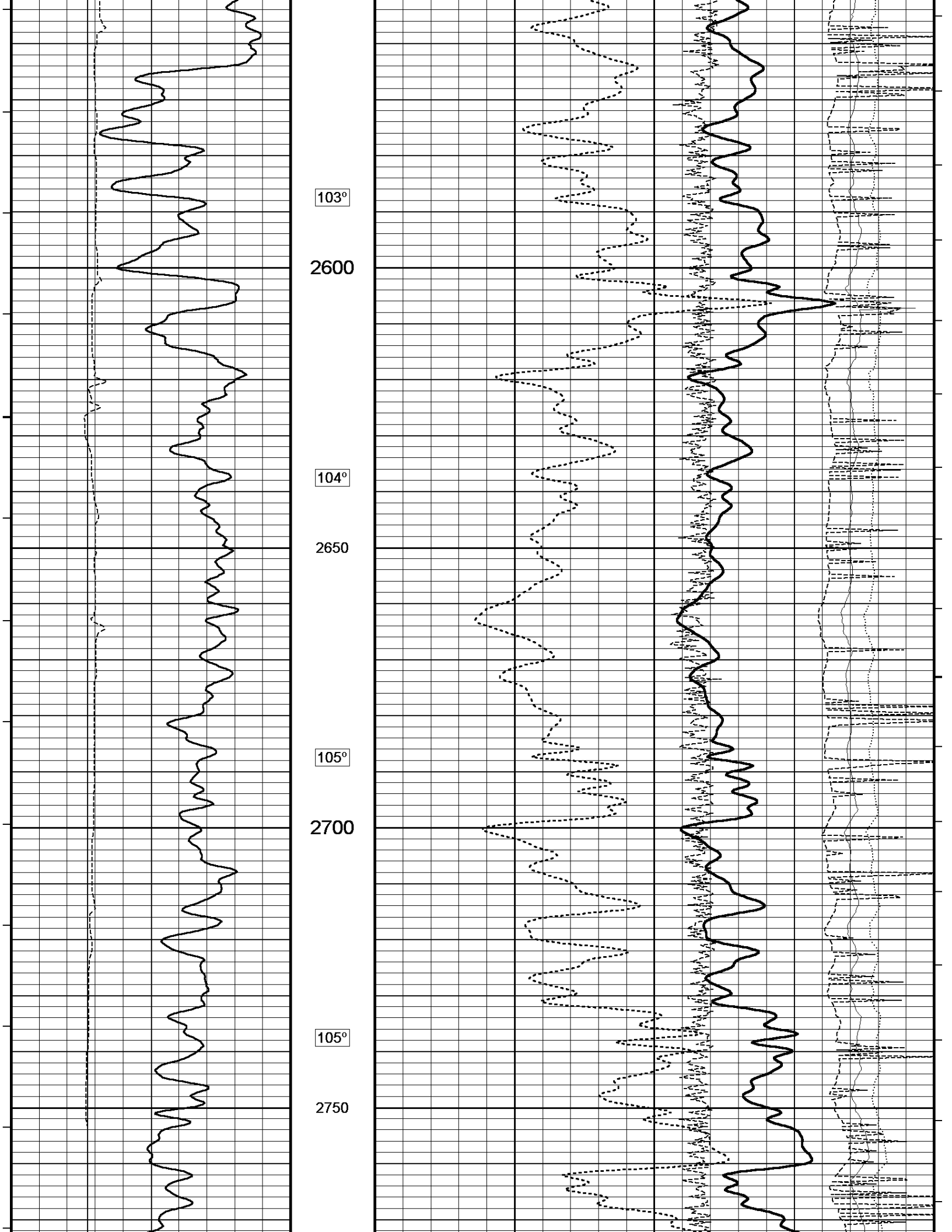

93°
1500
93°
1550
94°
1600
94°
1650

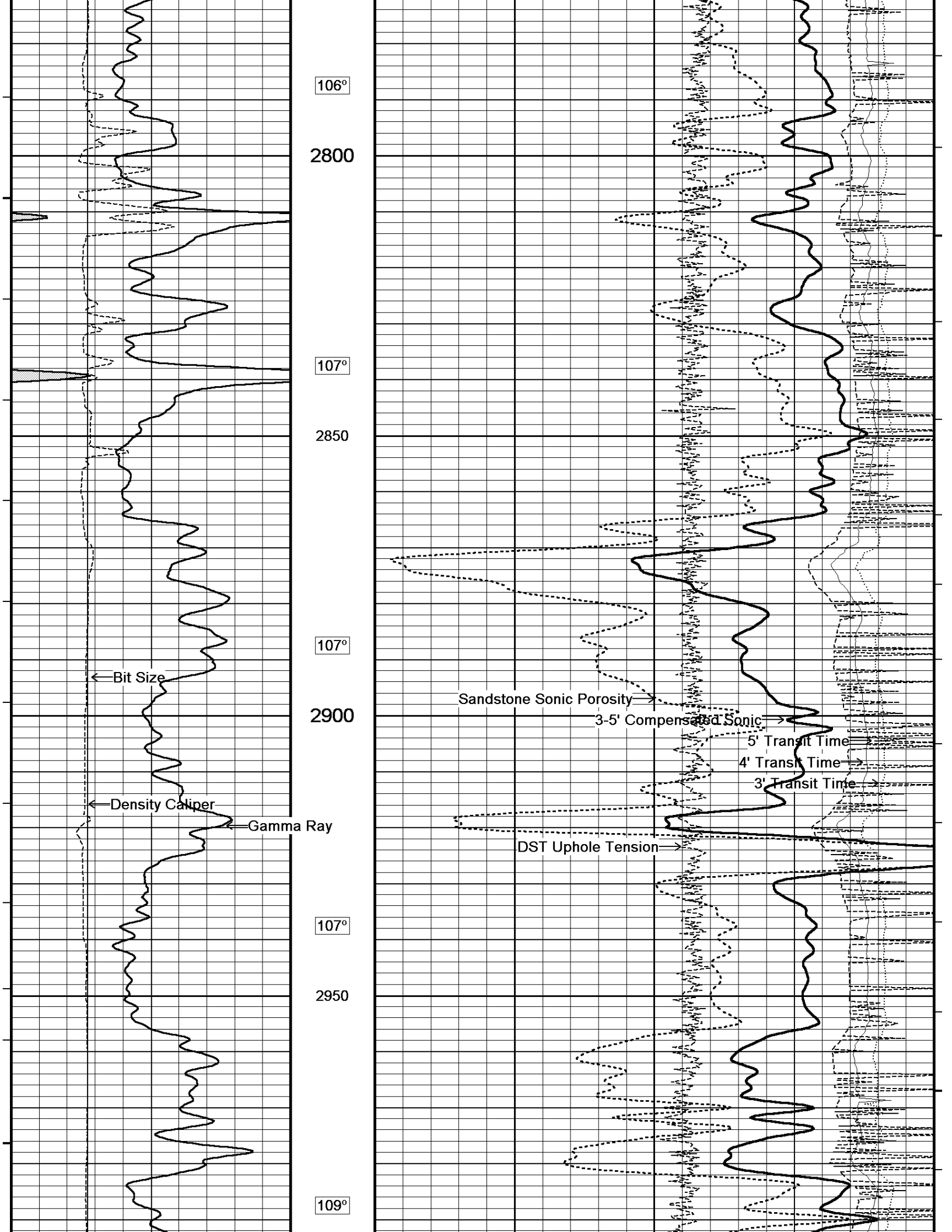

95°
1700
Bit Size
Sandstone Sonic Porosity
3-5' Compensated Sonic
4' Transit Time
3' Transit Time
Density Caliper
96°
Gamma Ray
DST Uphole Tension
1750
96°
1800
96°
1850
97°

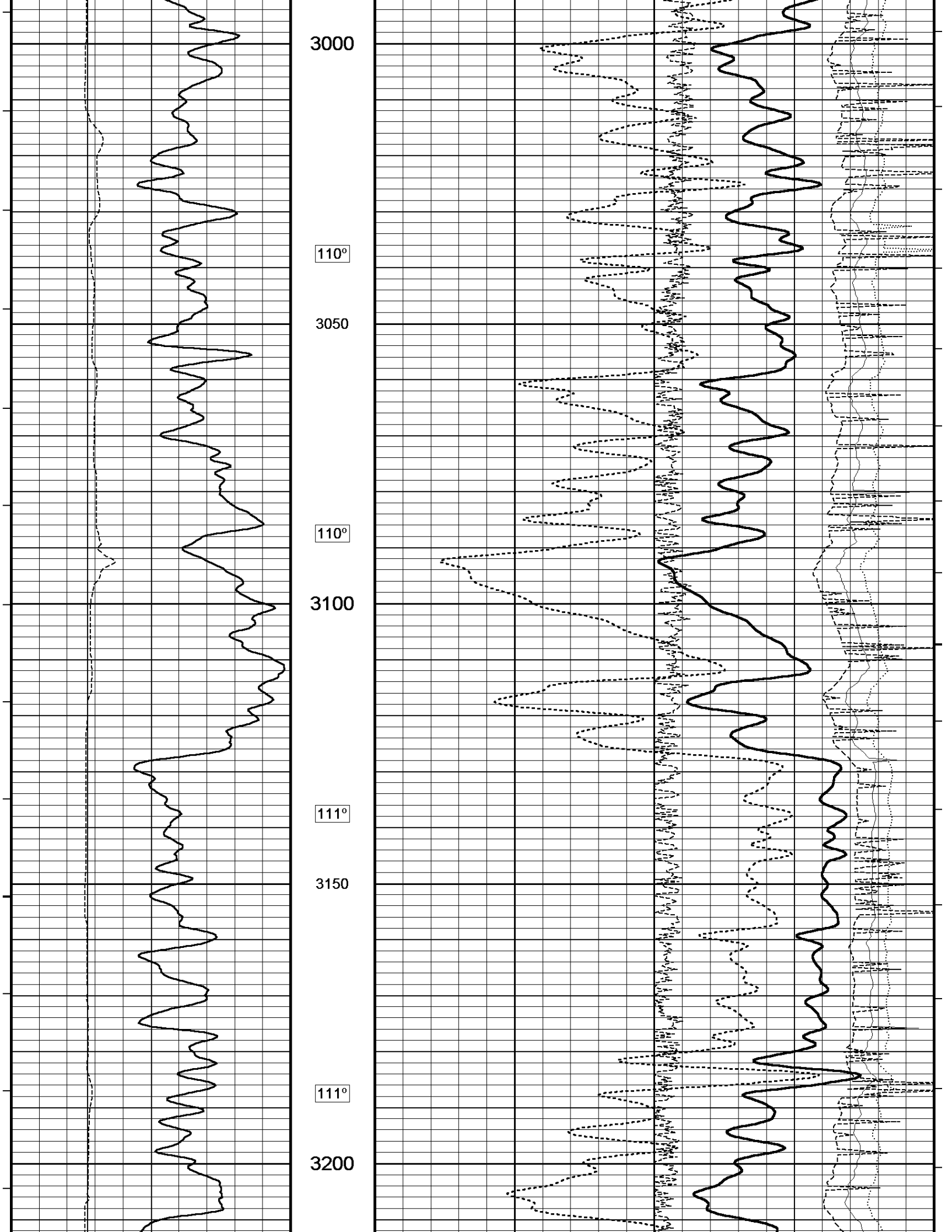

1900
97°
1950
98°
2000
98°
2050
99°
2100
← Bit Size
Sandstone Sonic Porosity →

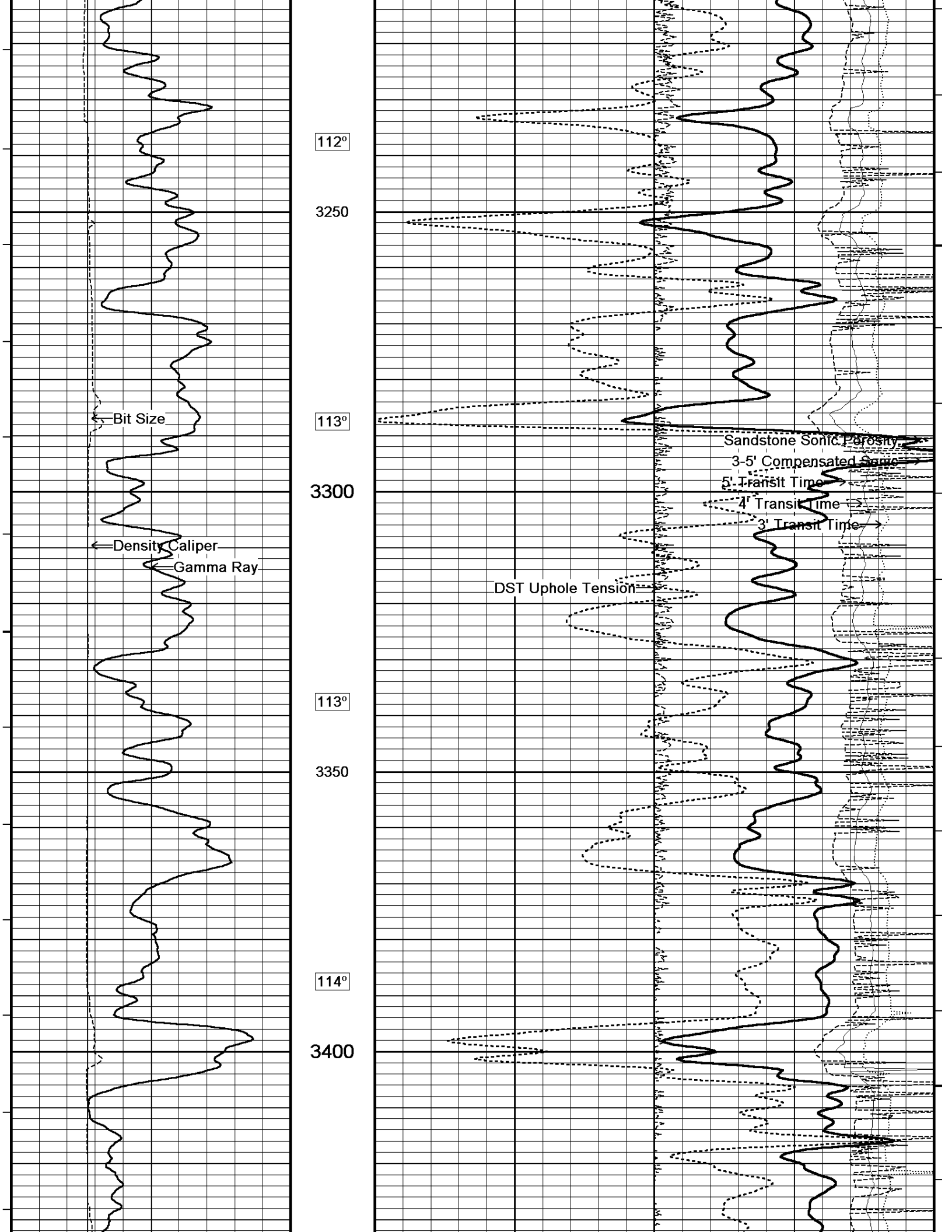

3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
99°
2150
99°
2200
100°
2250
101°
2300

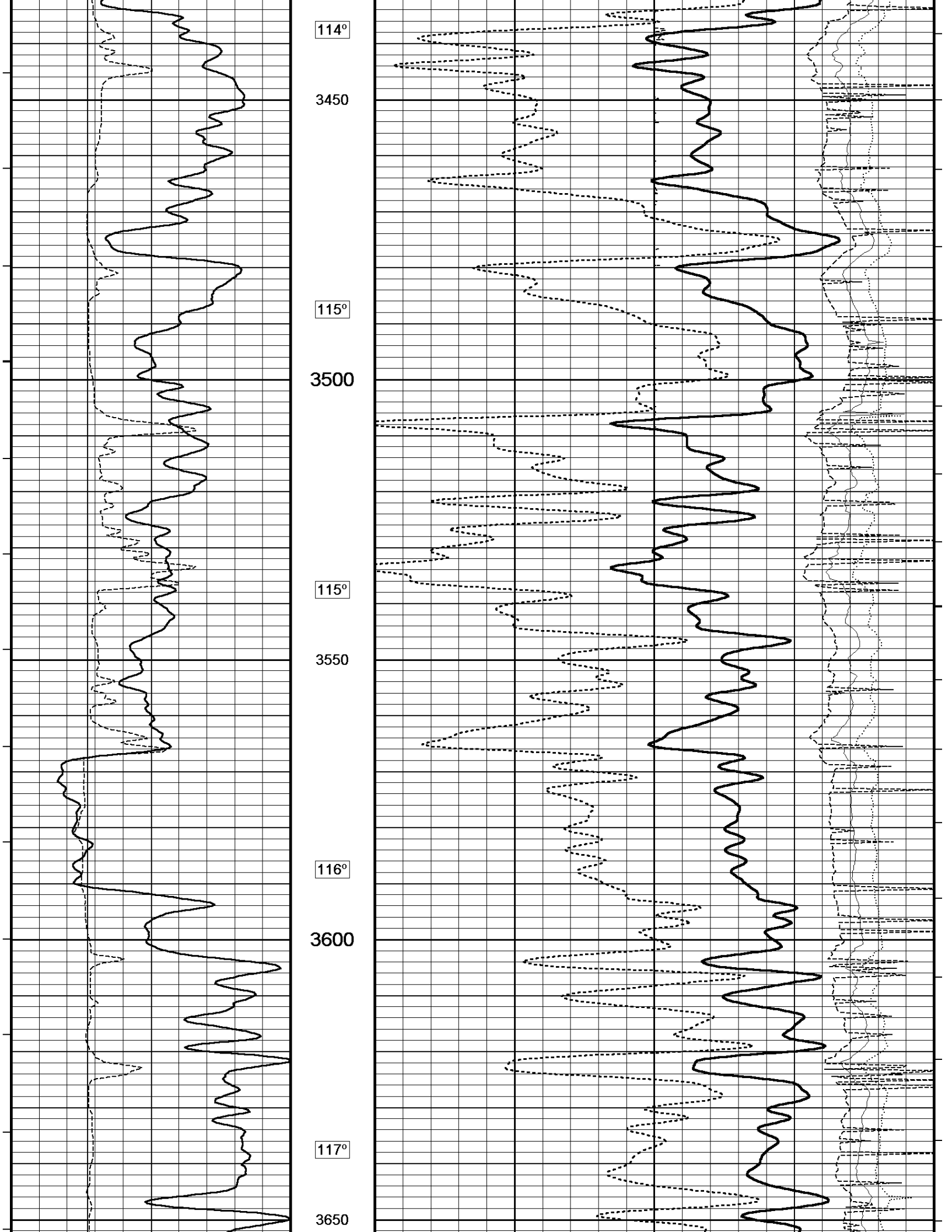

101°
2350
102°
2400
102°
2450
103°
2500
103°
2550
Bit Size
Density Caliper
Gamma Ray
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
DST Uphole Tension

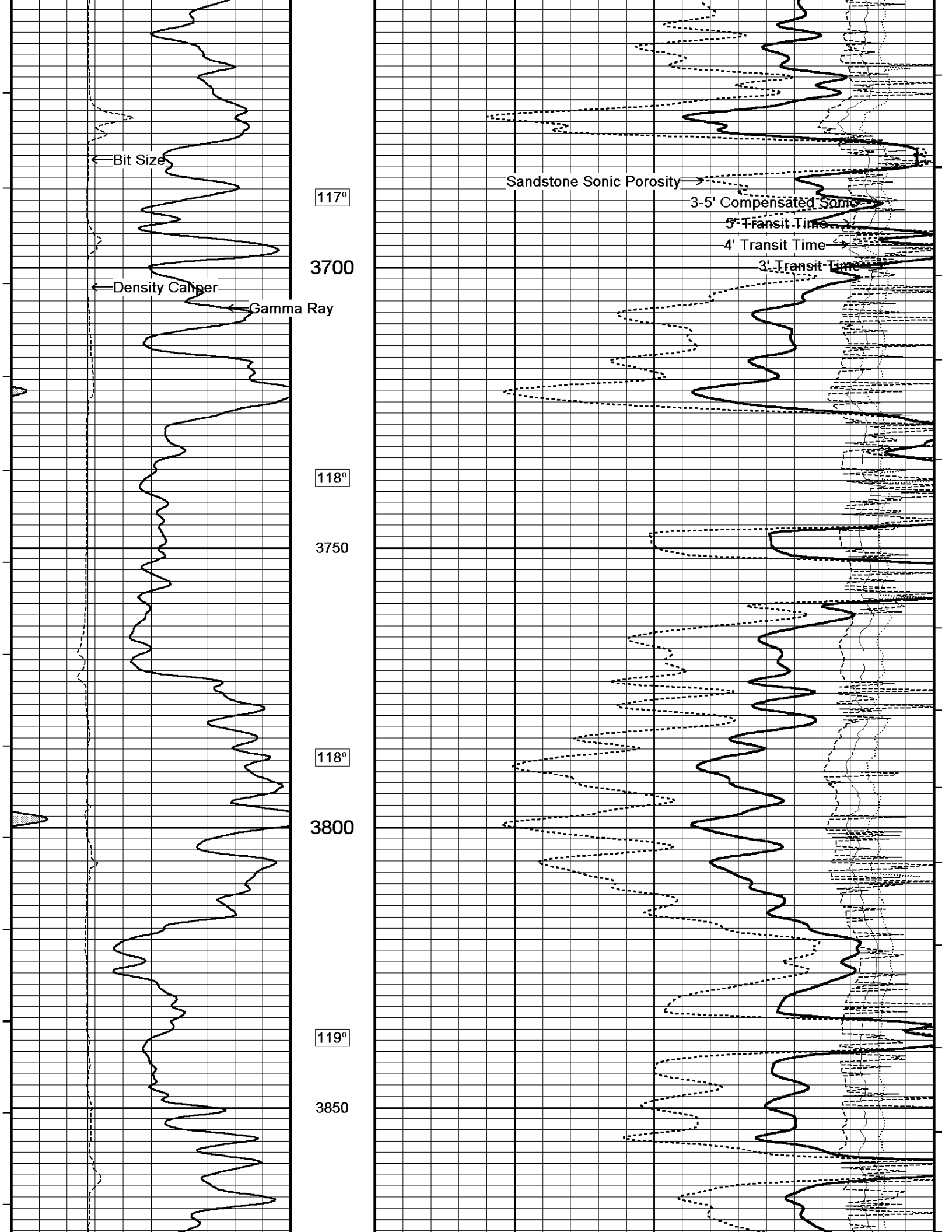

103°
2600
104°
2650
105°
2700
105°
2750

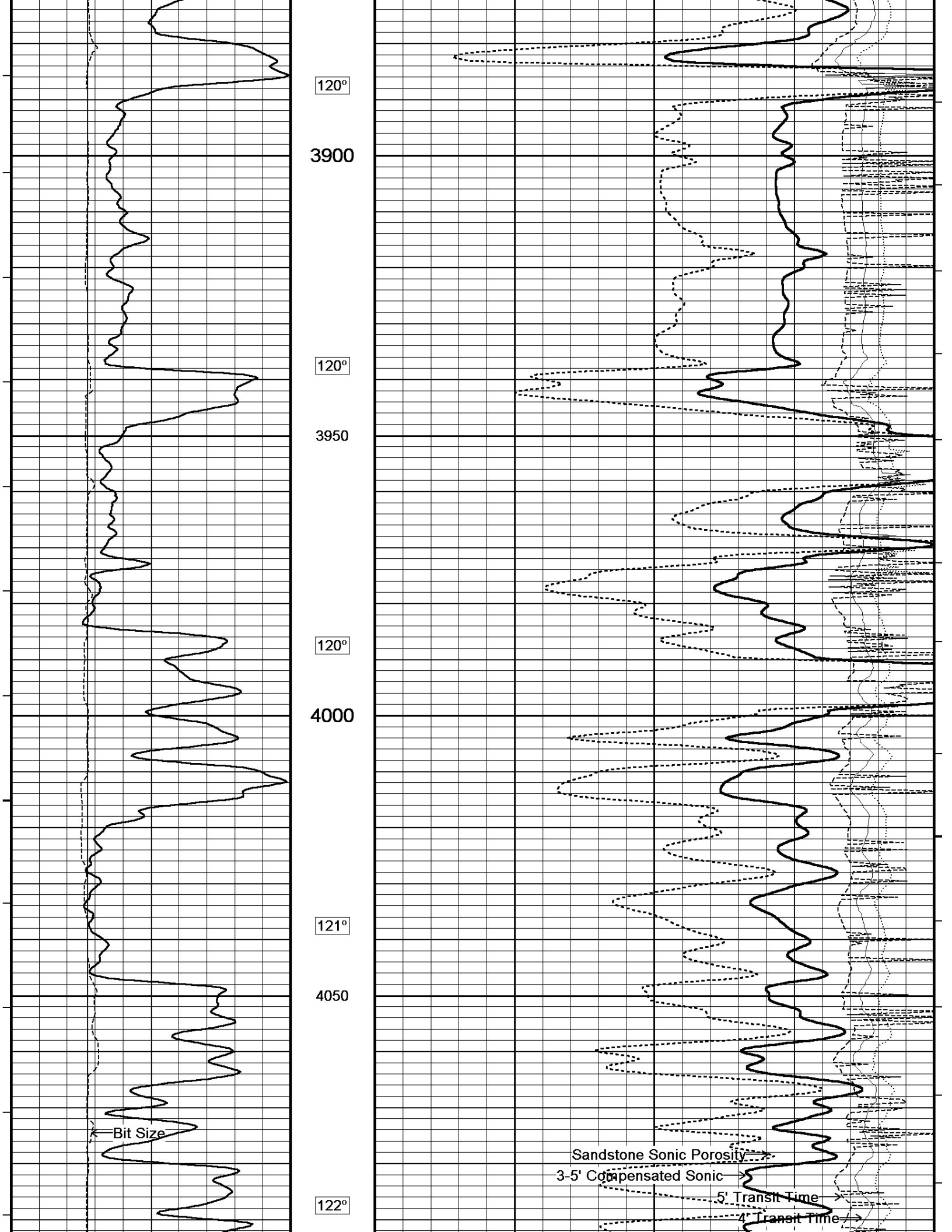

106°
2800
107°
2850
107°
Bit Size
2900
Density Caliper
Gamma Ray
107°
2950
109°
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
DST Uphole Tension

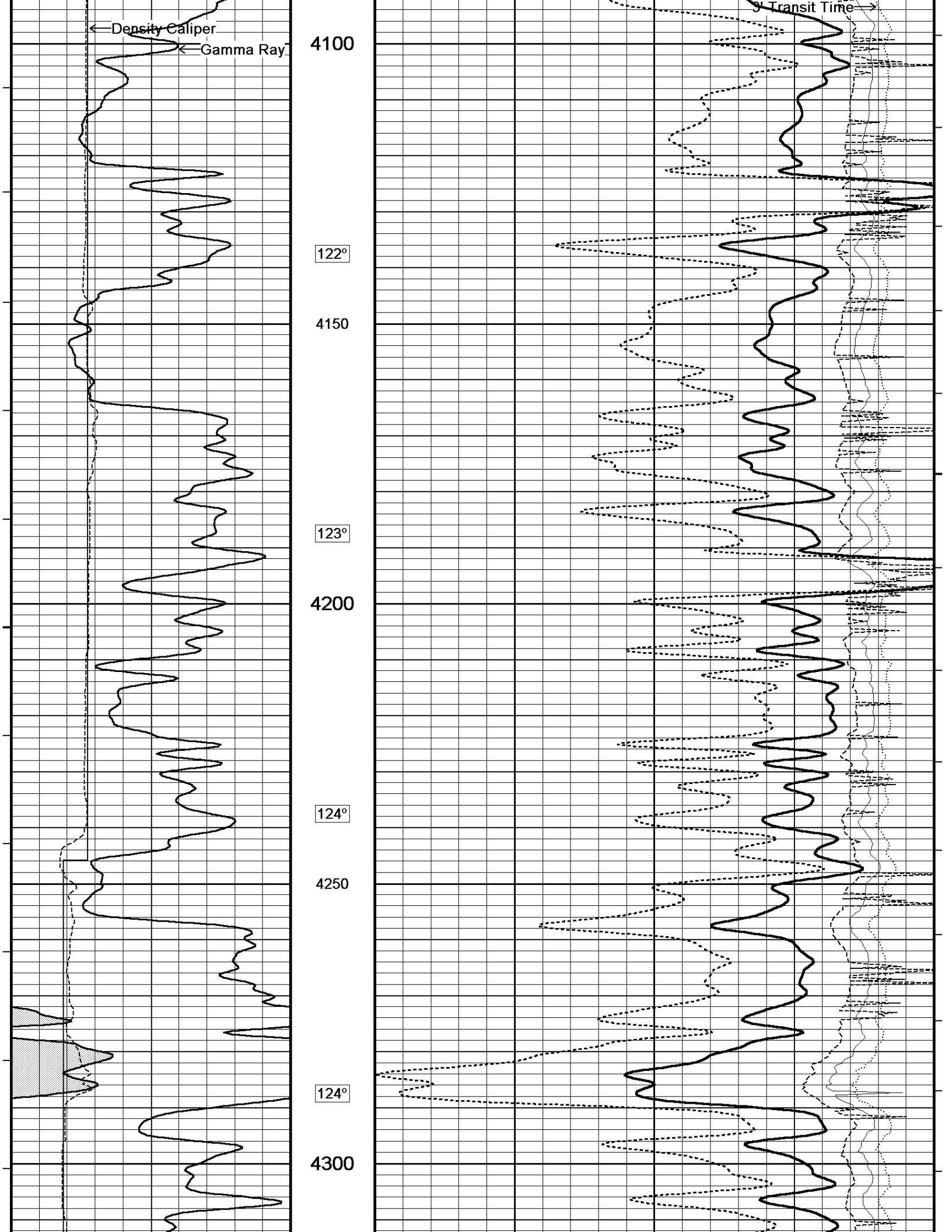

3000
110°
3050
110°
3100
111°
3150
111°
3200

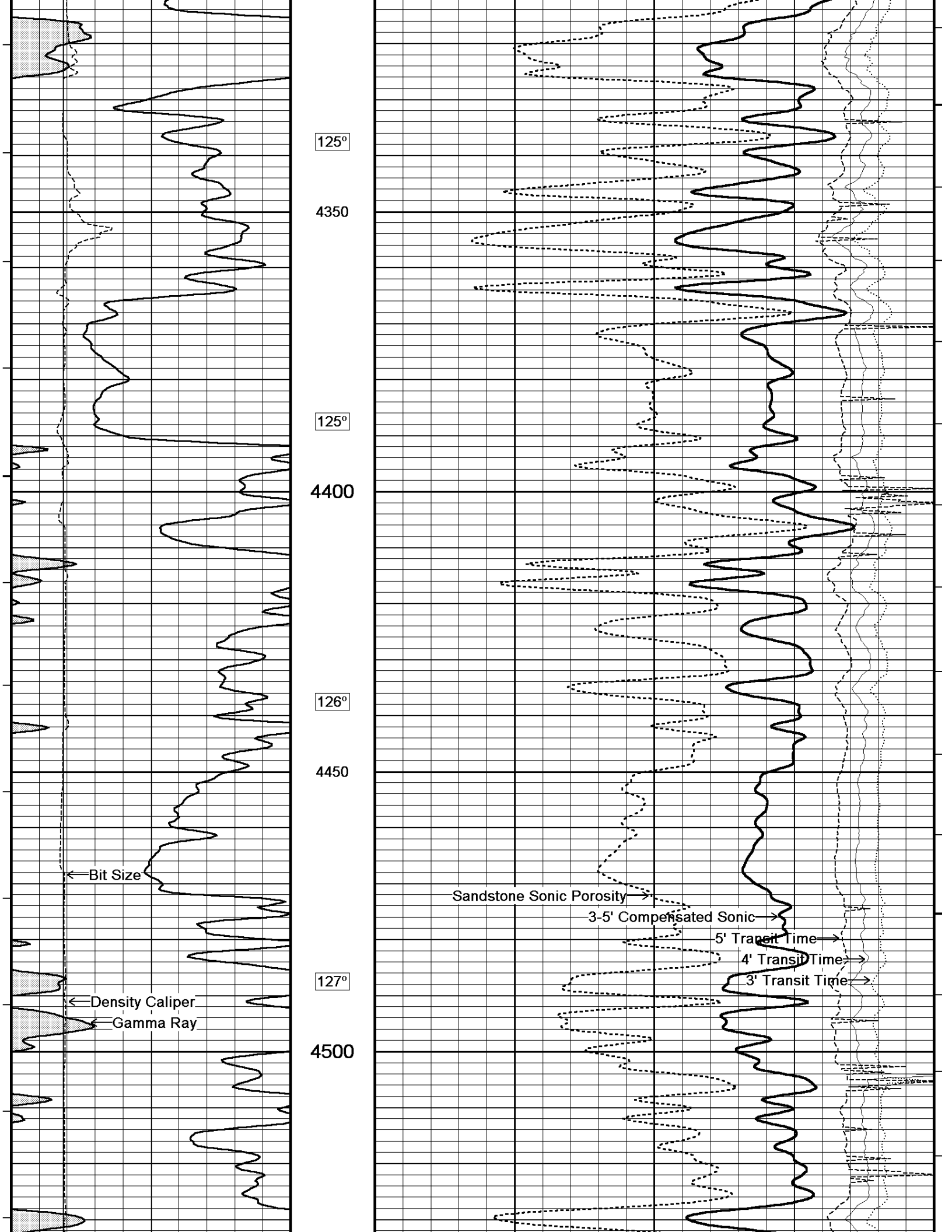

112°
3250
Bit Size
113°
3300
Density Caliper
Gamma Ray
DST Uphole Tension
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
113°
3350
114°
3400

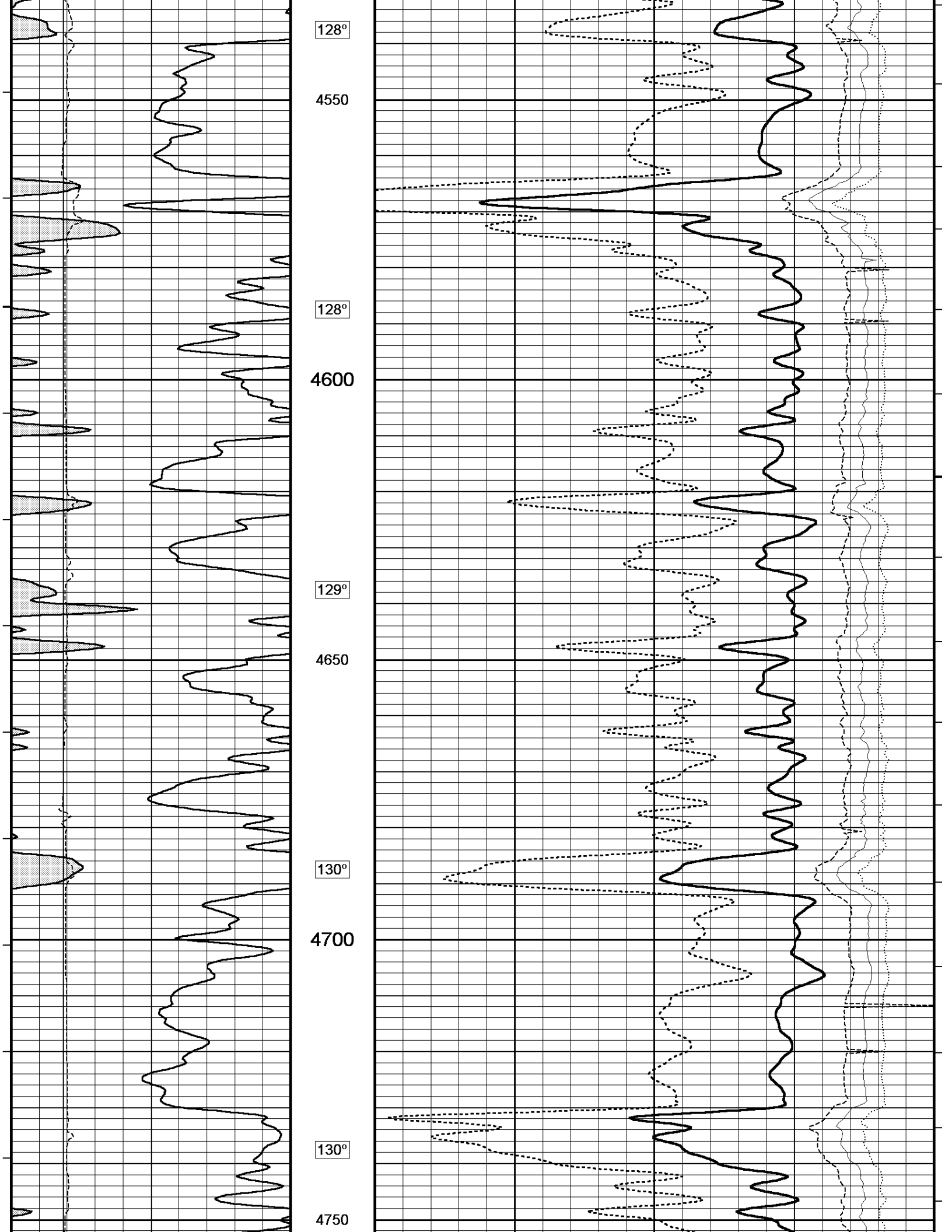

114°
3450
115°
3500
115°
3550
116°
3600
117°
3650

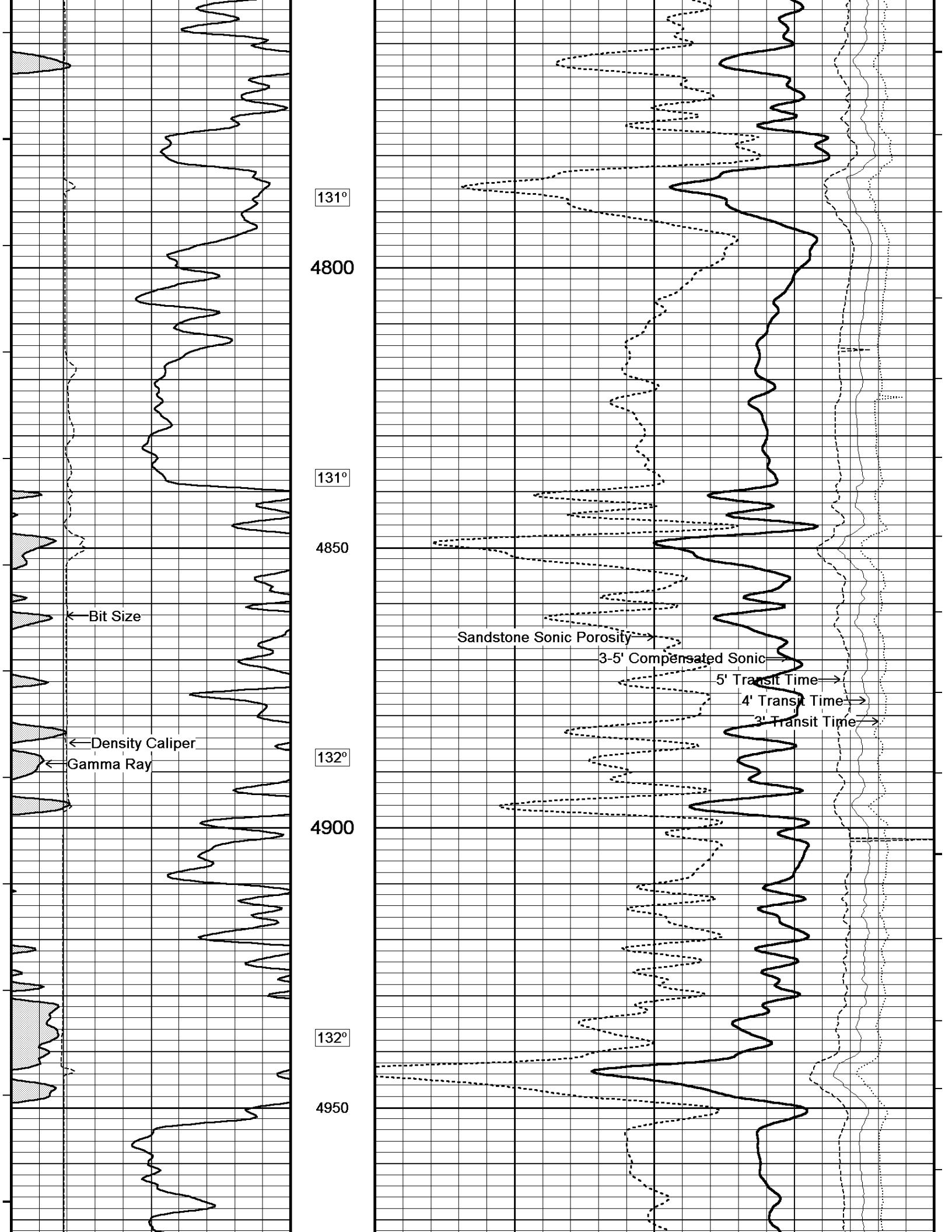

Bit Size
Density Caliper
Gamma Ray
117°
3700
118°
3750
118°
3800
119°
3850
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time

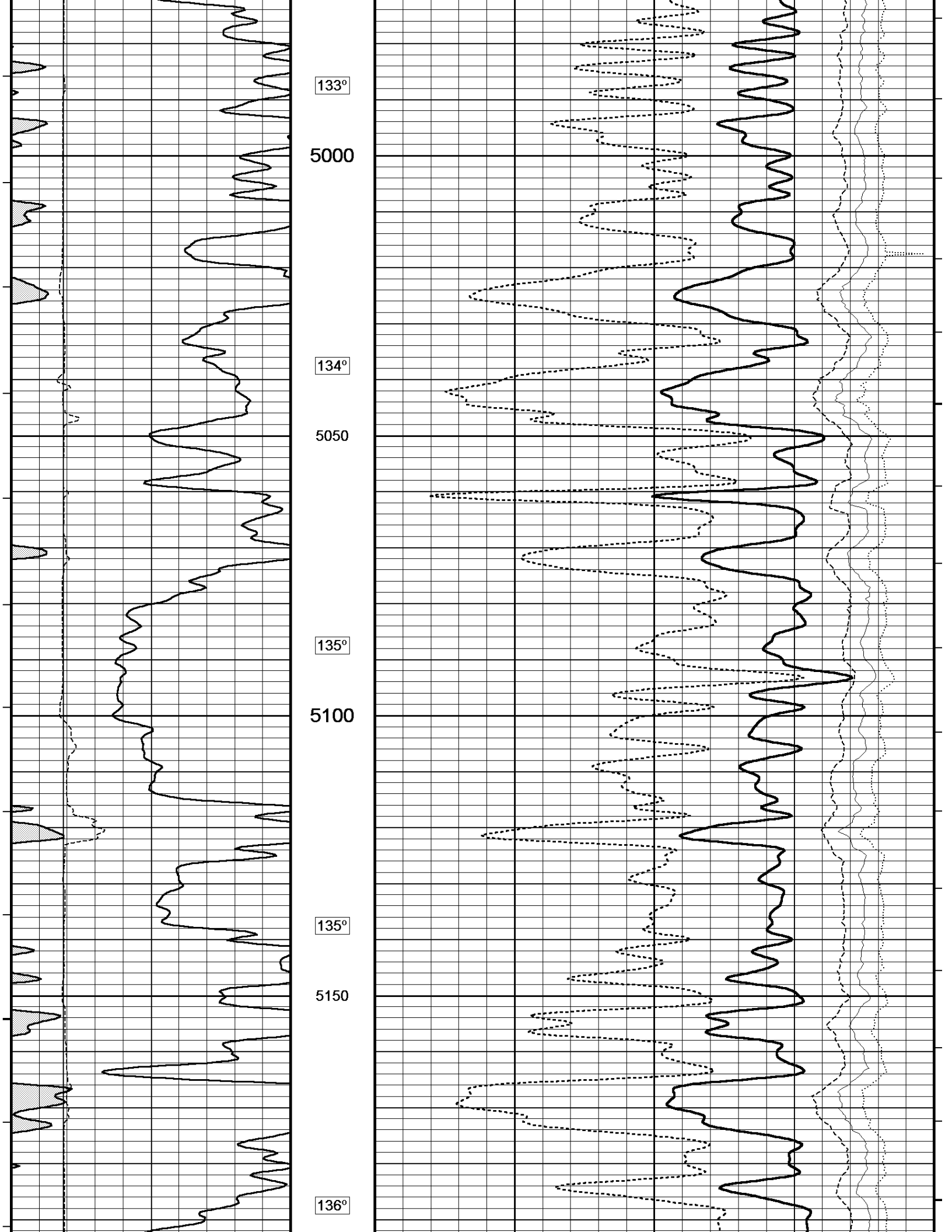

120°
3900
120°
3950
120°
4000
121°
4050
122°
Bit Size
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time

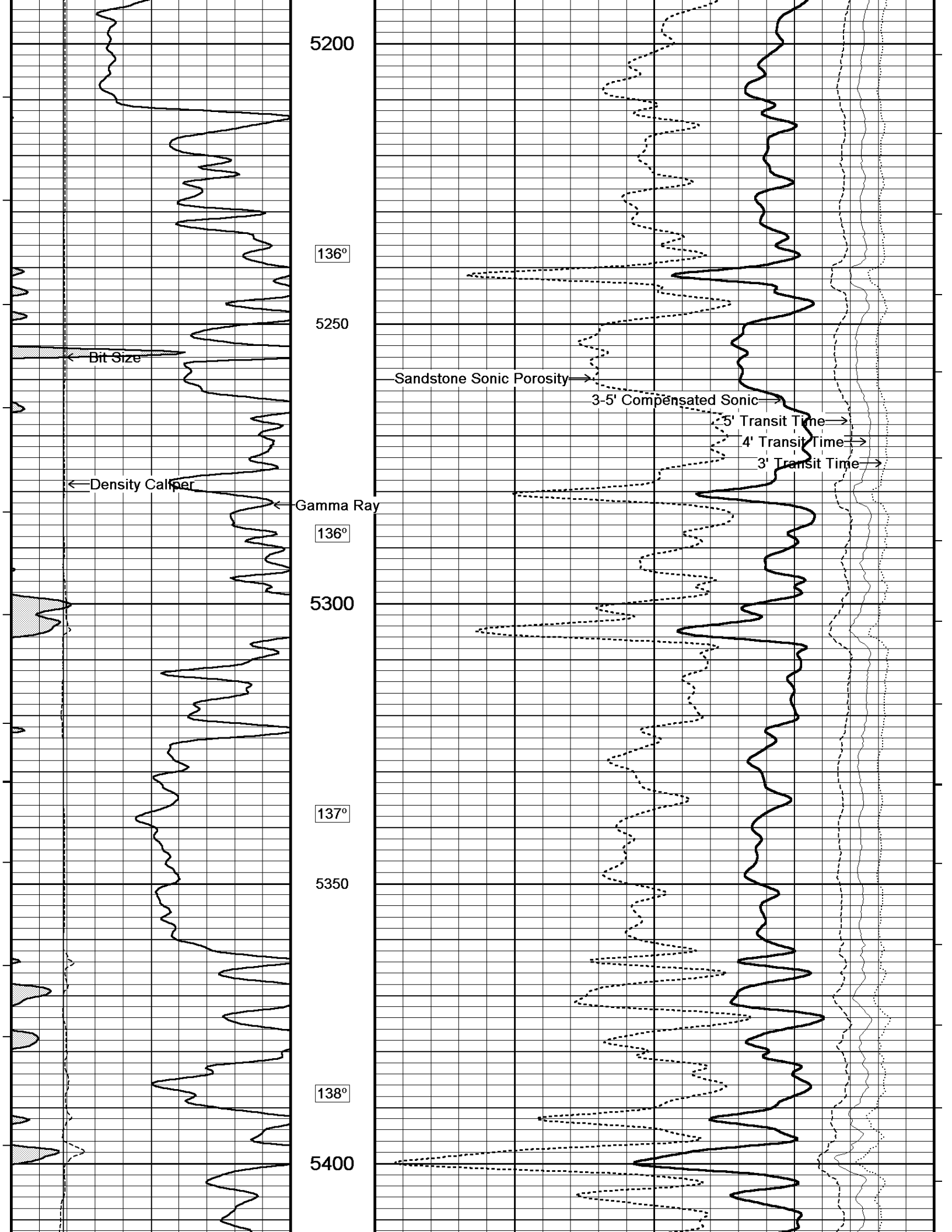

Density Caliper
Gamma Ray
4100
122°
4150
123°
4200
124°
4250
124°
4300

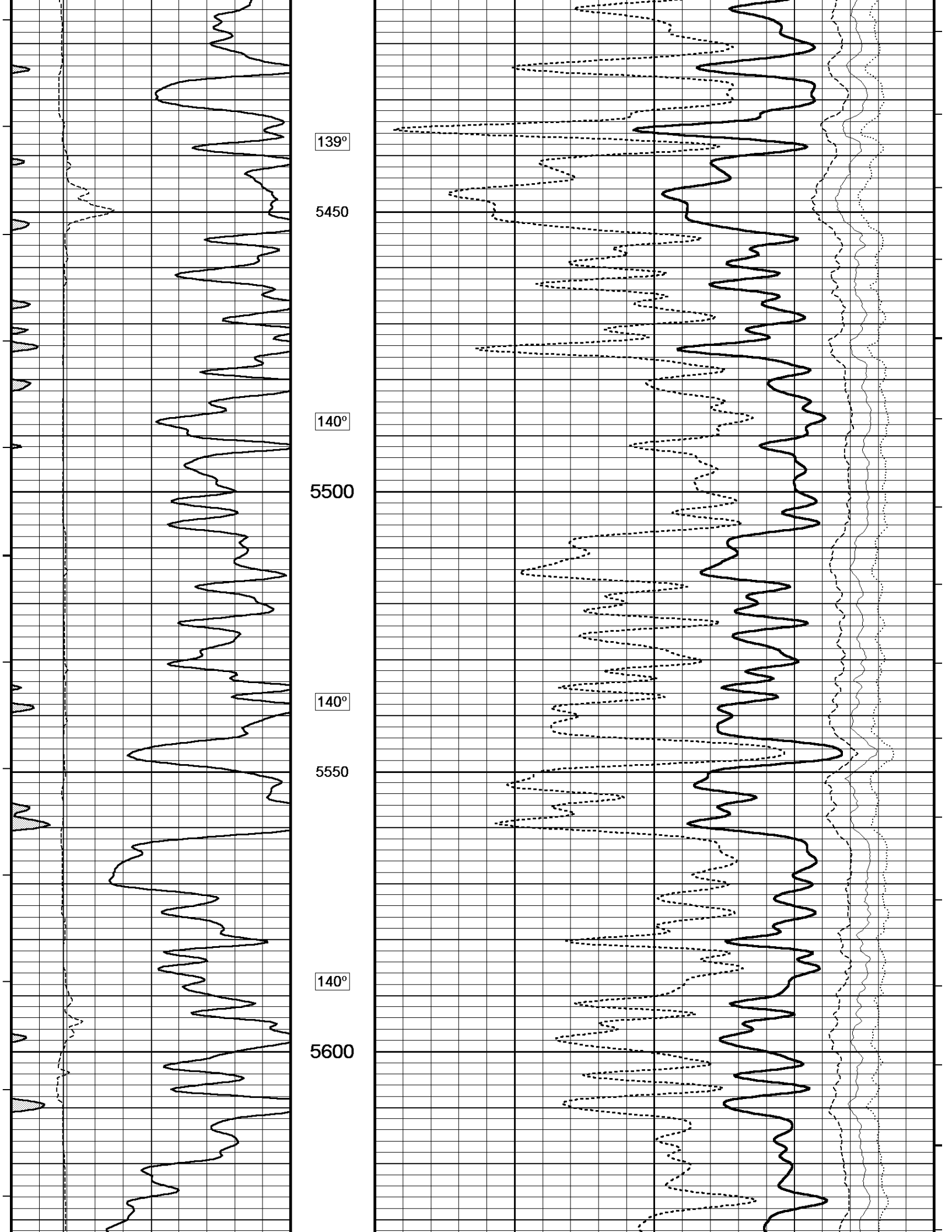

125°
4350
125°
4400
126°
4450
127°
4500
Bit Size
Density Caliper
Gamma Ray
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time

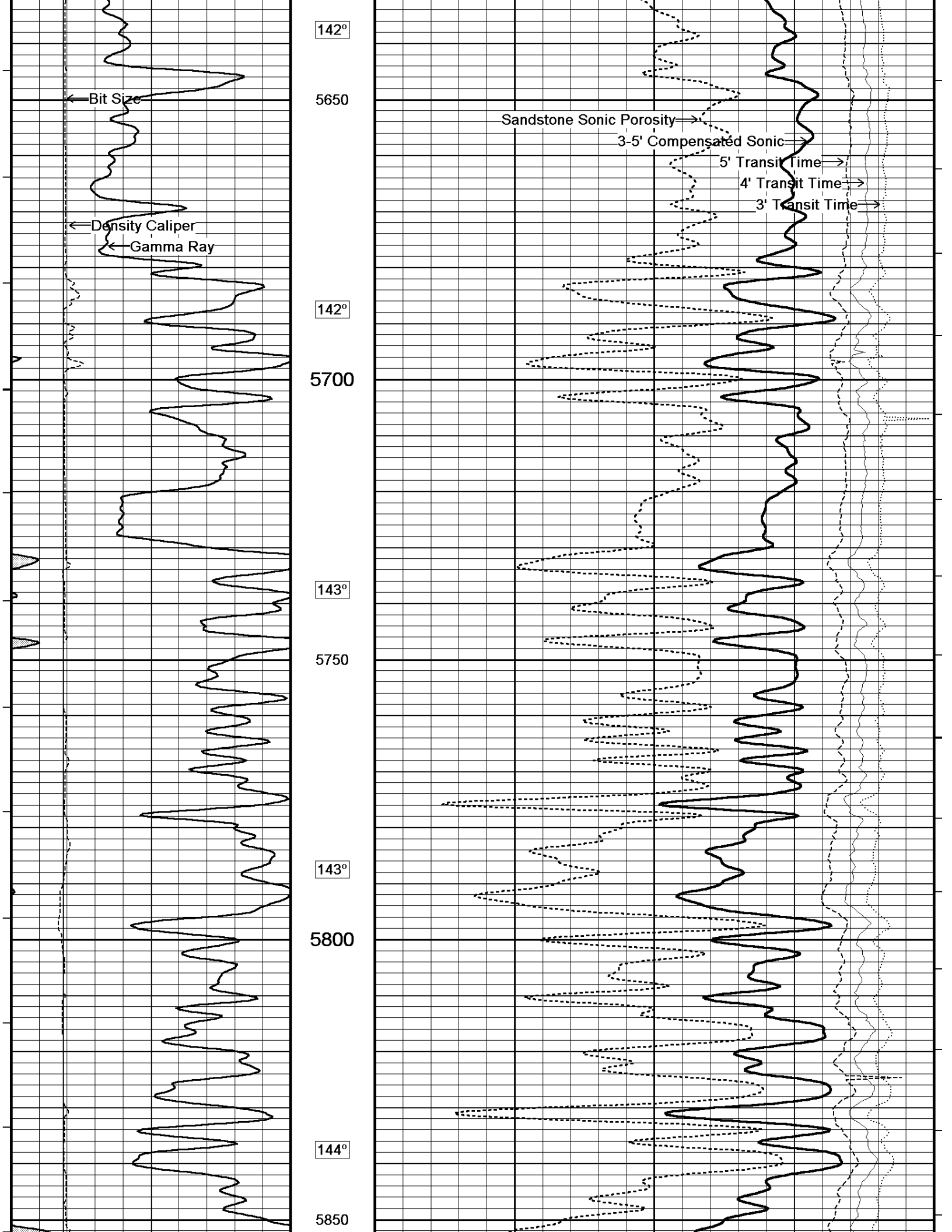

128°
4550
128°
4600
129°
4650
130°
4700
130°
4750

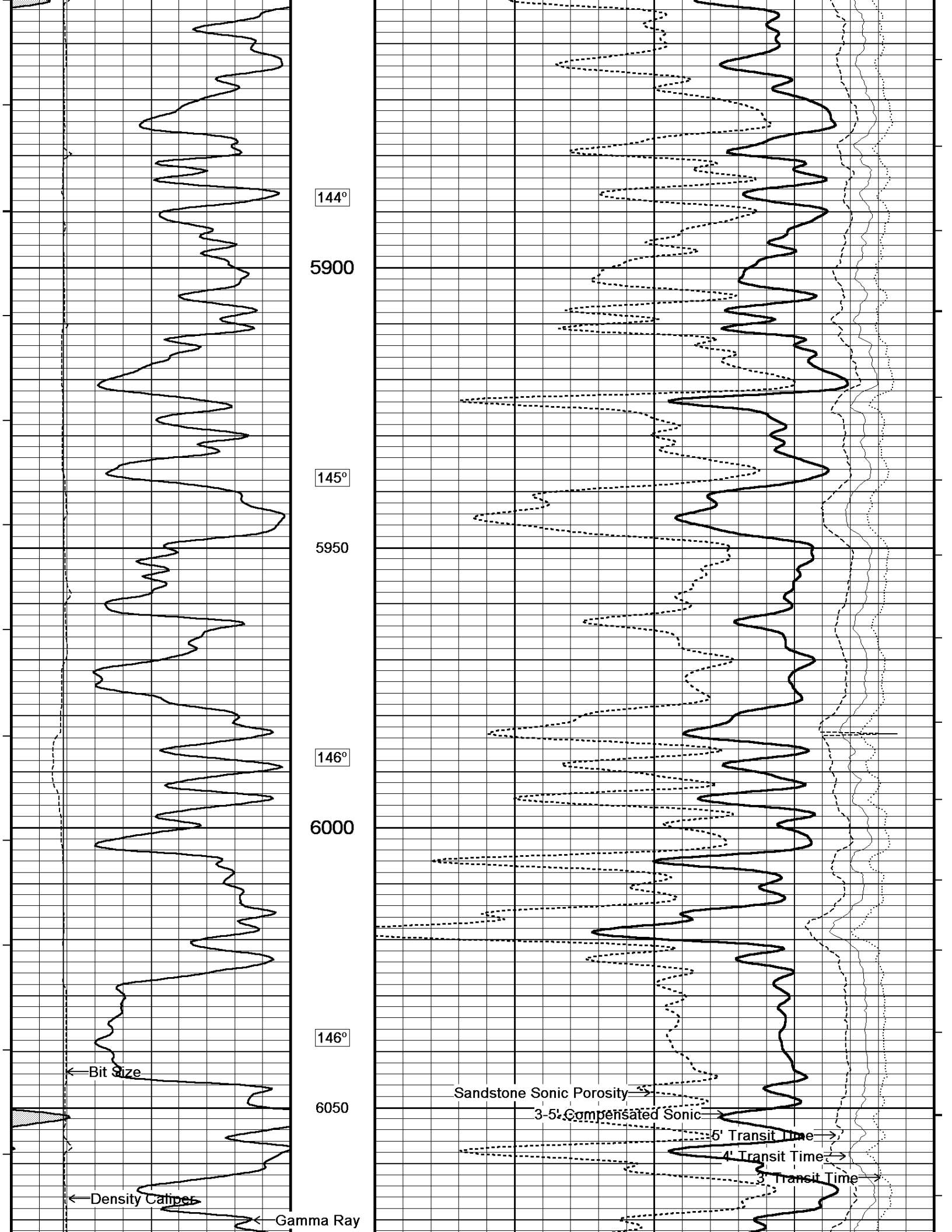

131°
4800
131°
4850
Bit Size
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
132°
4900
132°
4950

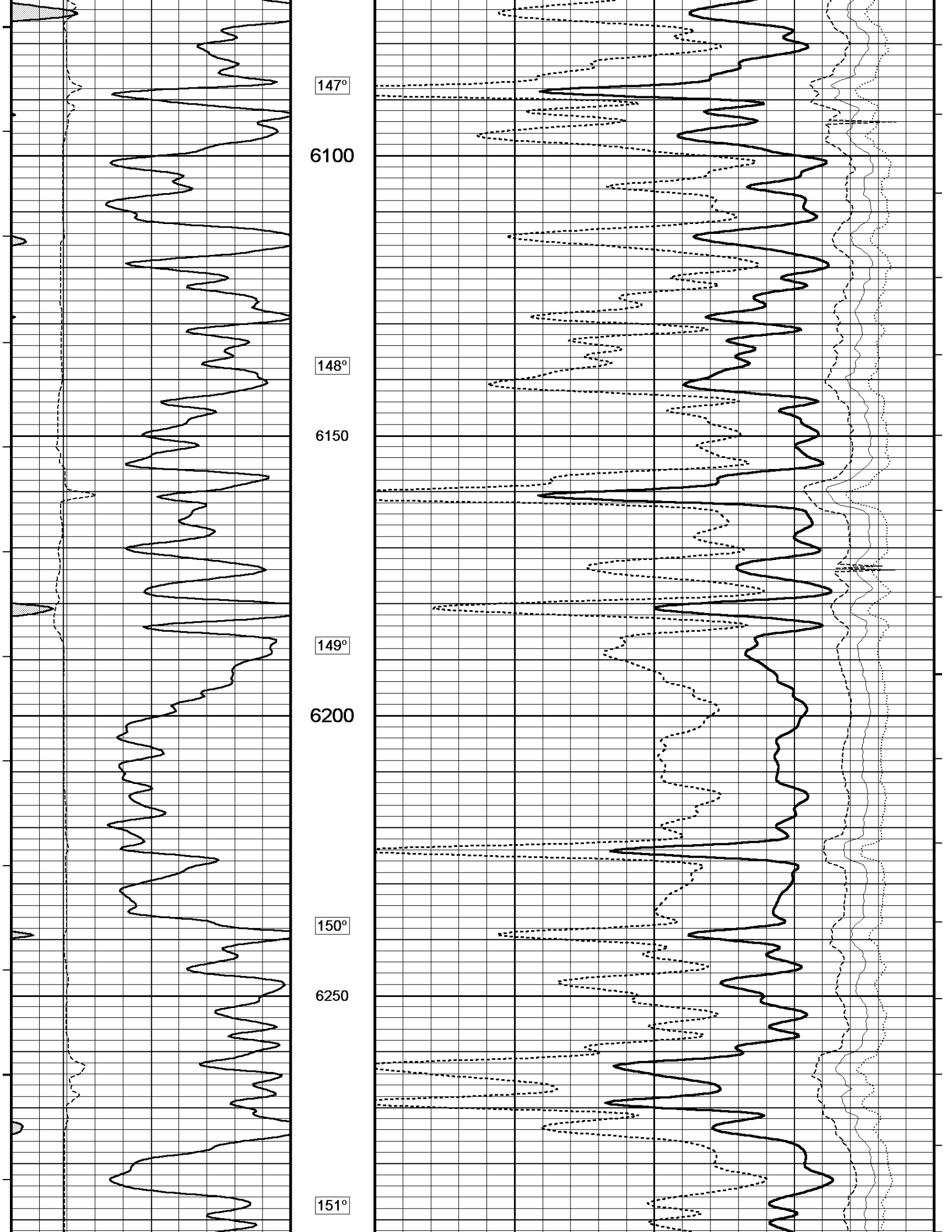

133°
5000
134°
5050
135°
5100
135°
5150
136°

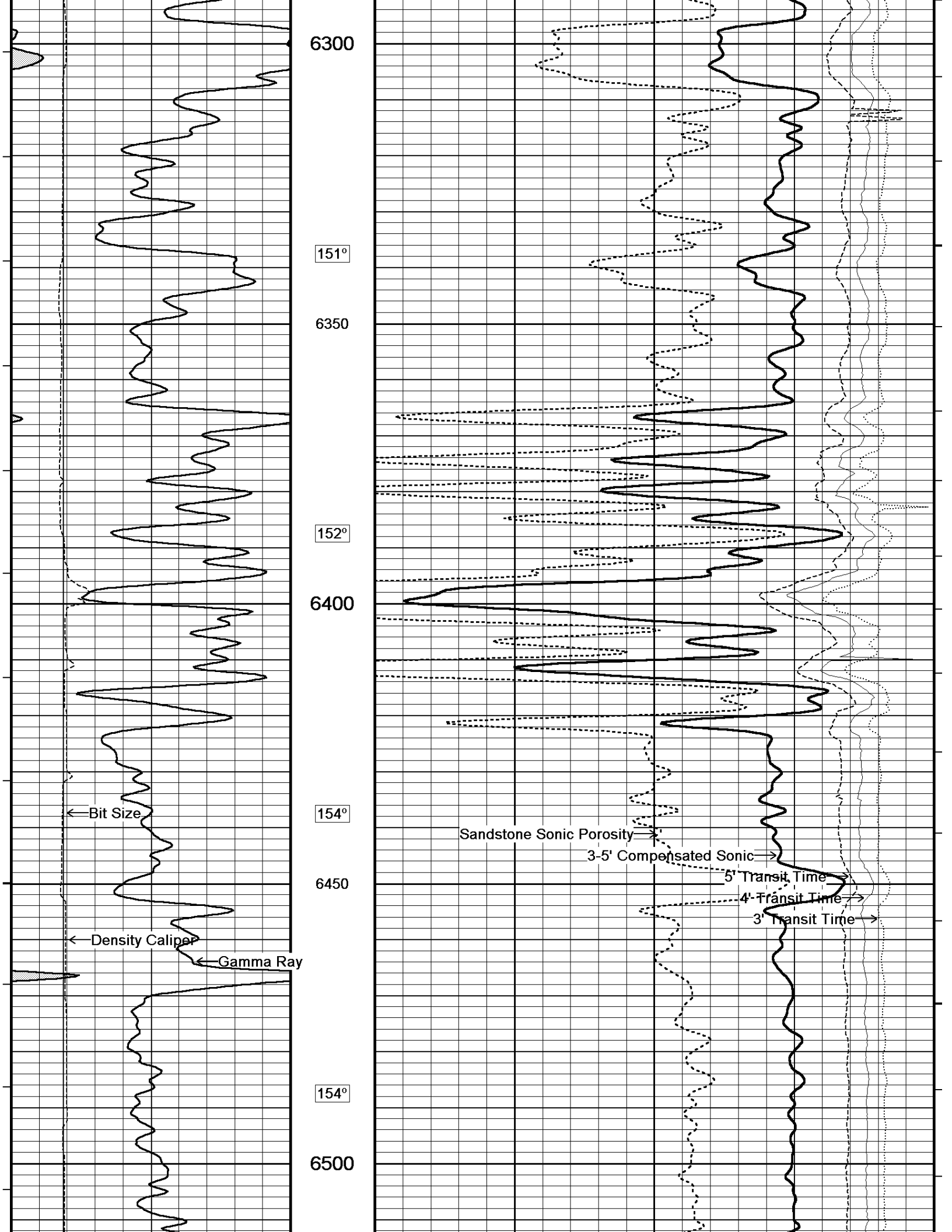

5200
136°
5250
Bit Size
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
136°
5300
137°
5350
138°
5400

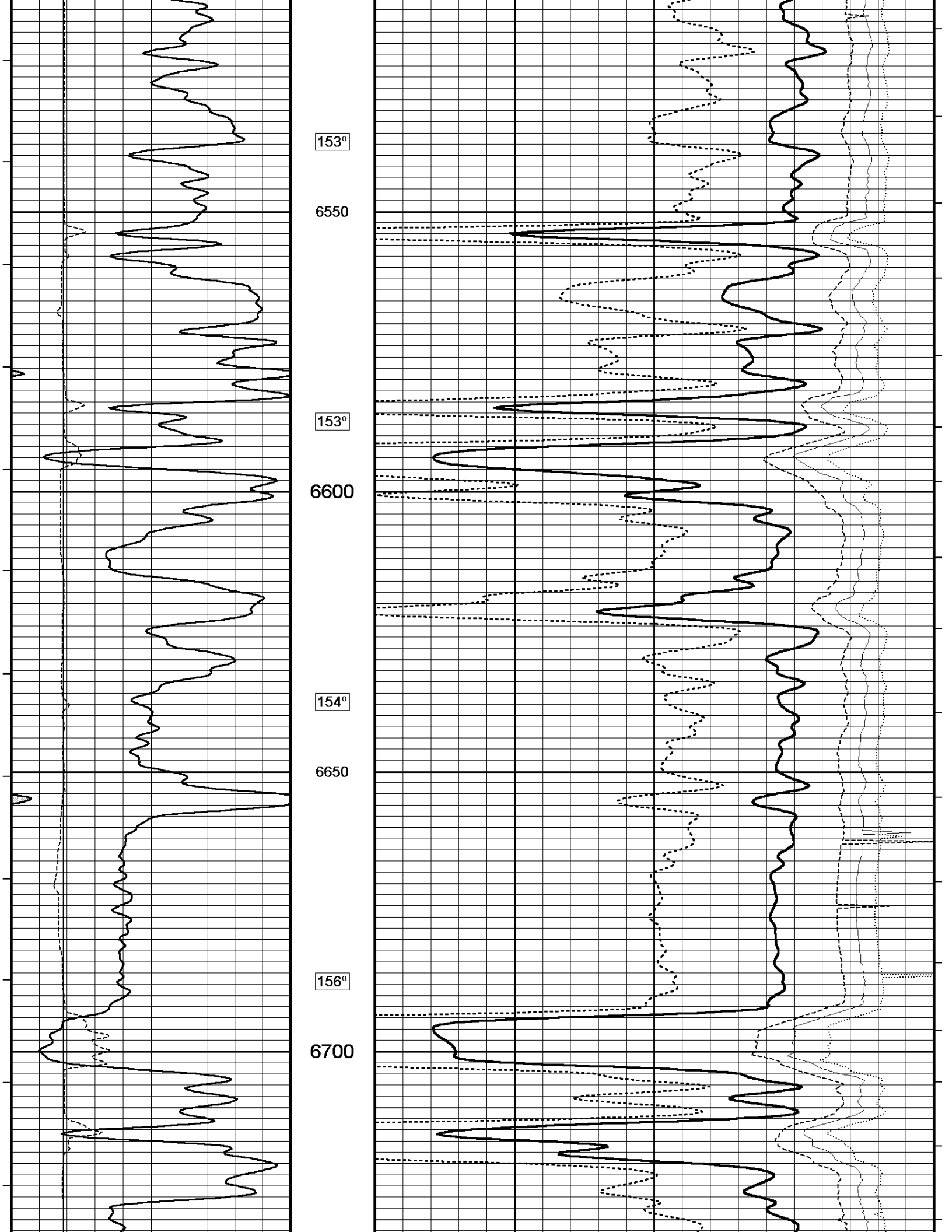

139°
5450
140°
5500
140°
5550
140°
5600

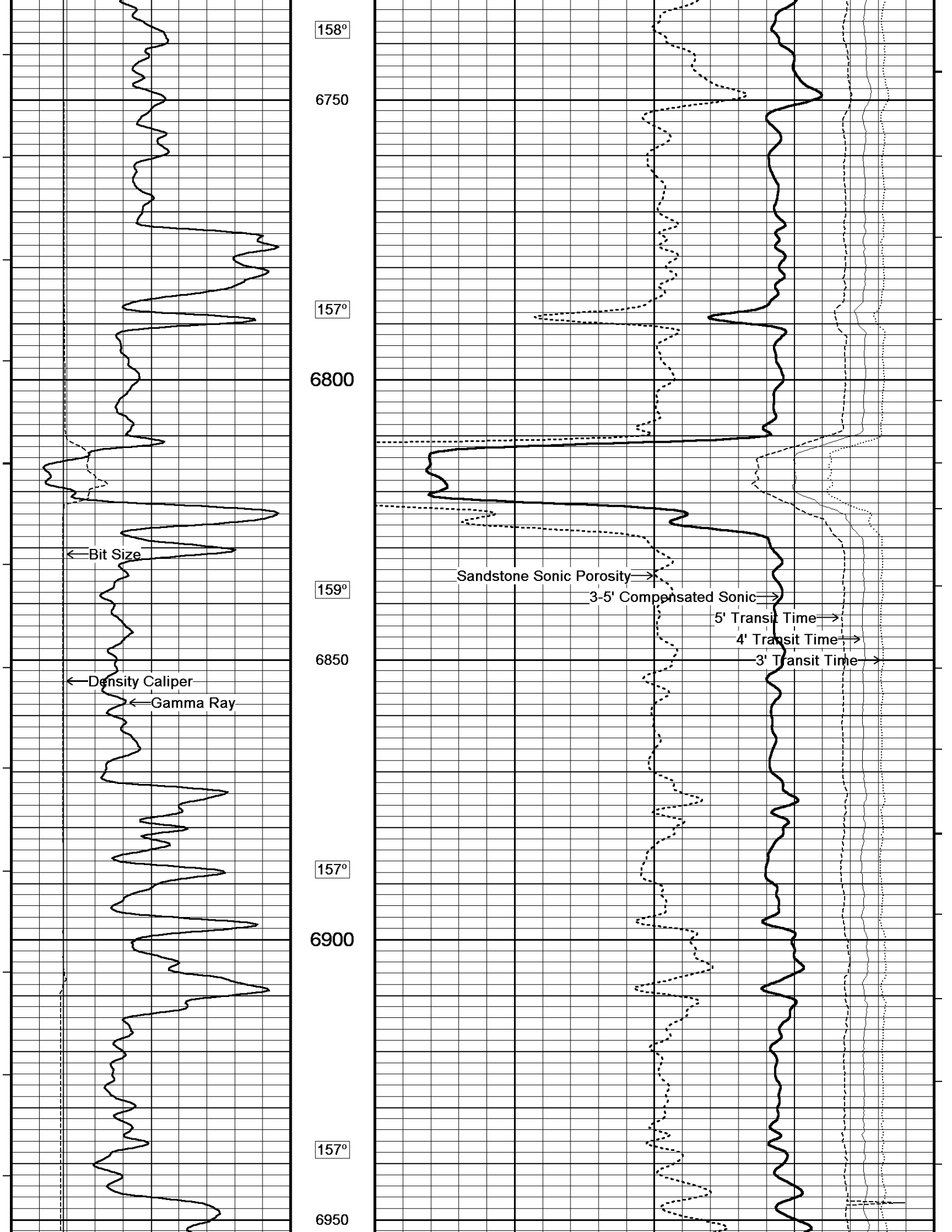

142°
5650
Bit Size
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
142°
5700
143°
5750
143°
5800
144°
5850

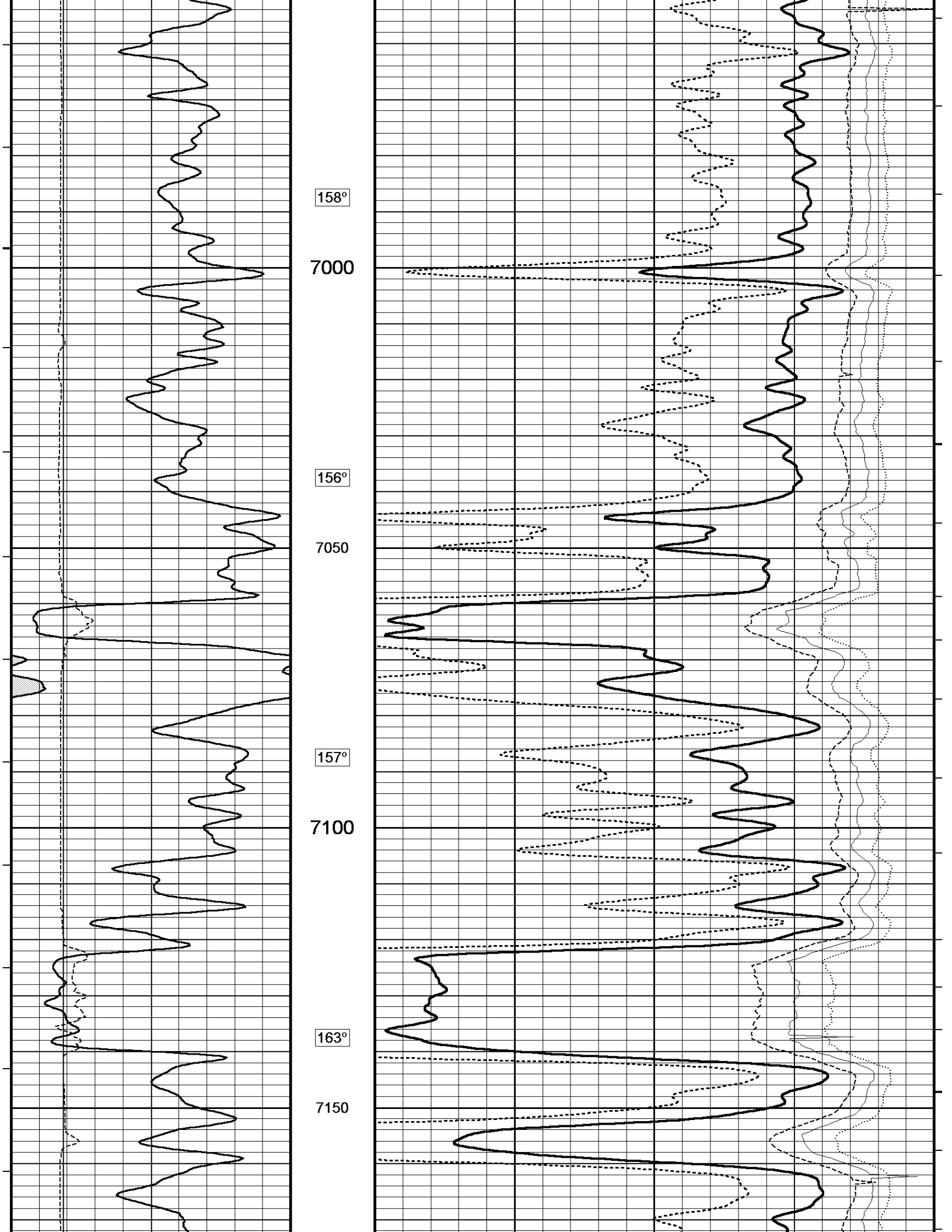

144°
5900
145°
5950
146°
6000
146°
6050
Bit Size
Density Caliper
Gamma Ray
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time

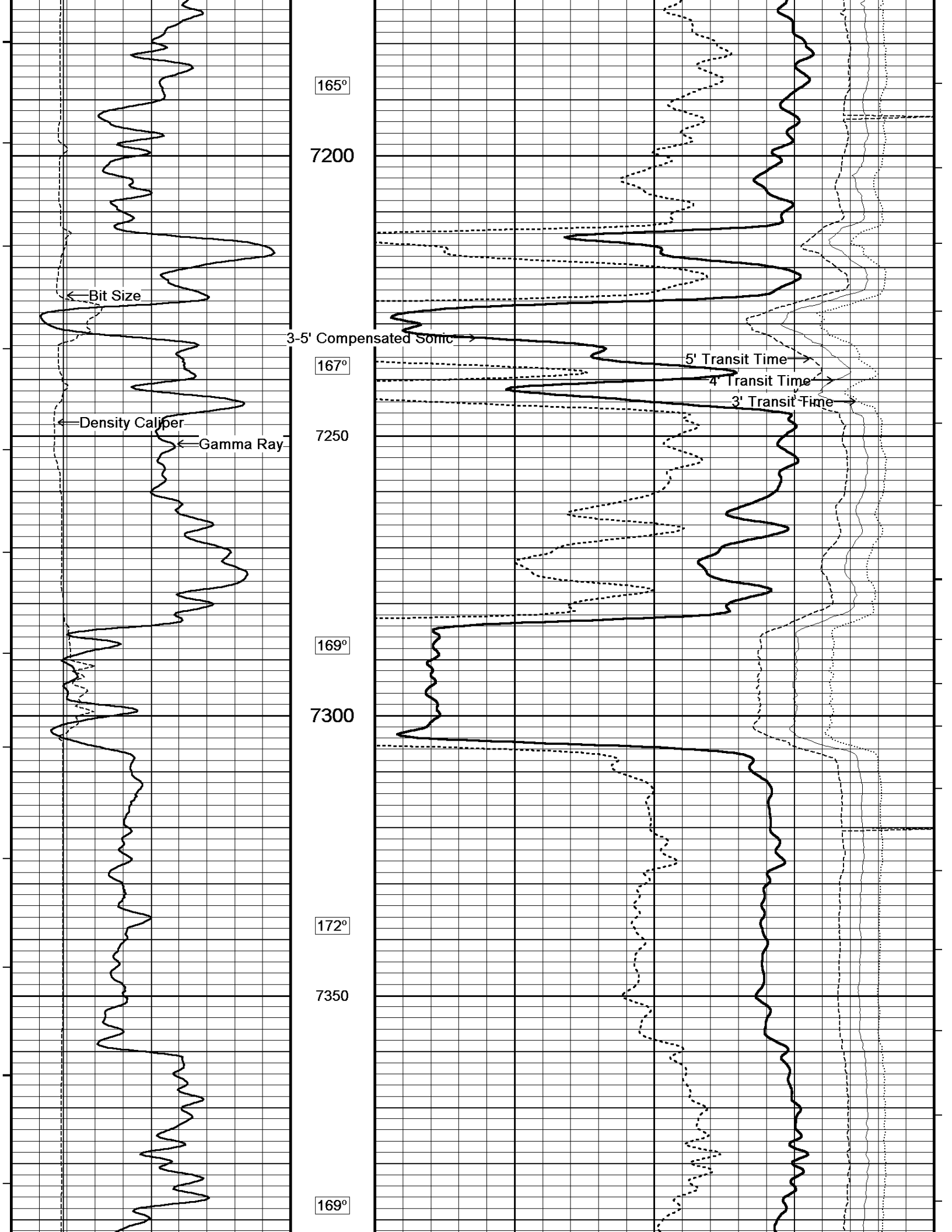

147°
6100
148°
6150
149°
6200
150°
6250
151°

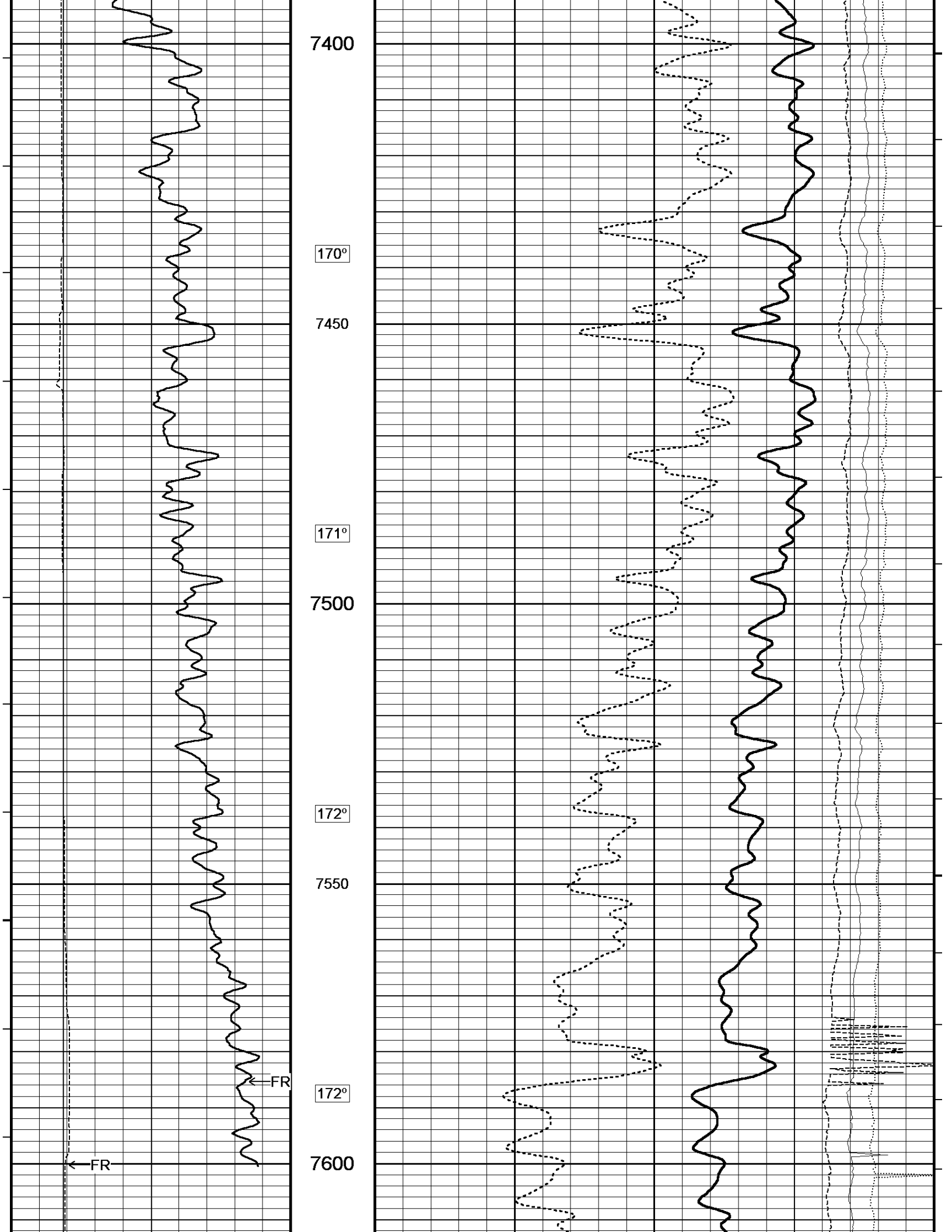

6300
151°
6350
152°
6400
154°
6450
154°
6500
Bit Size
Density Caliper
Gamma Ray
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time

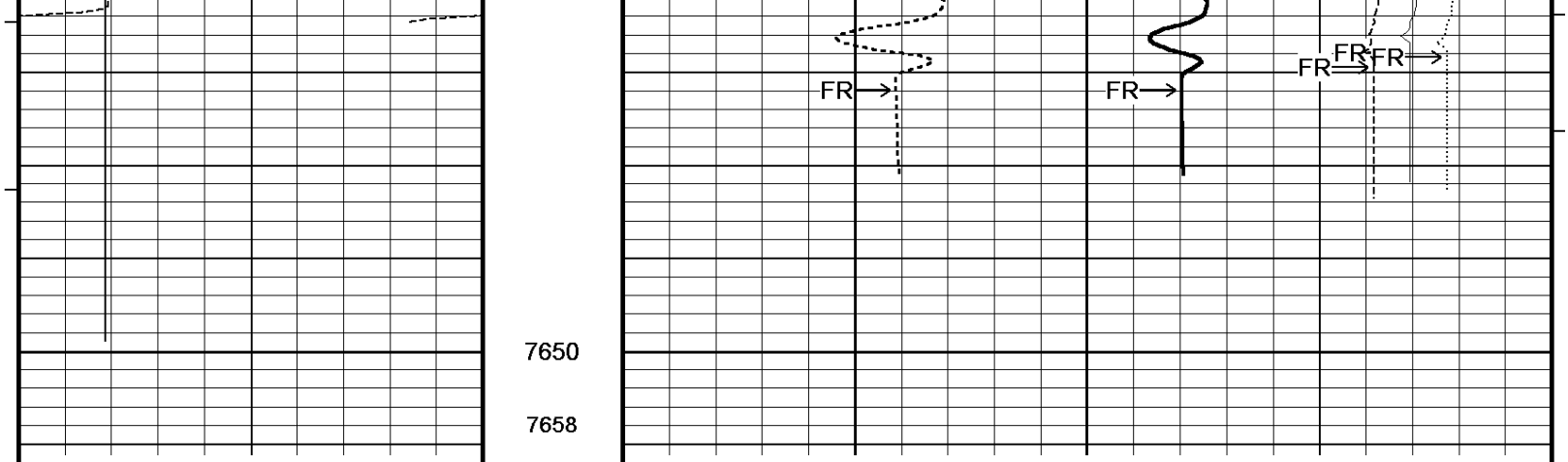

153°
6550
153°
6600
154°
6650
156°
6700


158°
6750
157°
6800
159°
6850
157°
6900
157°
6950
Bit Size
Density Caliper
Gamma Ray
Sandstone Sonic Porosity
3-5' Compensated Sonic
5' Transit Time
4' Transit Time
3' Transit Time


158°
7000
156°
7050
157°
7100
163°
7150


165°
7200
Bit Size
3-5' Compensated Sonic
167°
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
7250
169°
7300
172°
7350
169°


7400
170°
7450
171°
7500
172°
7550
FR
172°
7600
FR



7650

7658

Depth In Feet

3-5' Compensated Sonic(DT35)
microsec/foot
140 115 90 65 40

Timing Marks
every 60.0 sec

Sandstone Sonic Porosity(SPRS)
percent
30 20 10 0 -10

Gamma Ray(GRGC)
API
0 75 150
150 225 300

Transit Time
every millisec

Borehole Temp in deg F

DST Uphole Tension(SMTU)
pounds
1100 600 100

Density Caliper(CLDC)
inches
6 11 16

3' Transit Time(TR21)
microseconds
1100 600 100

4' Transit Time(TR11)
microseconds
1100 600 100

Bit Size(BIT)
inches
6 11 16

5' Transit Time(TR22)
microseconds
1100 600 100

Replay Scale 1:240

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

Plotted on 13-DEC-2010 06:07
Recorded on 13-DEC-2010 02:10

5 INCH MAIN LOG

REPEAT SECTION
5 INCH MAIN LOG

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta
Filename: C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\REPEAT2.dta
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

Plotted on 13-DEC-2010 06:07
Recorded on 13-DEC-2010 02:10
Recorded on 12-DEC-2010 20:52

Timing Marks
every 60.0 sec

Gamma Ray(GRGC)
API
0 75 150
150 225 300

Density Caliper(CLDC)
inches
6 11 16

Bit Size(BIT)
inches
6 11 16

Depth In Feet

Borehole Temp in deg F

Replay Scale 1:240

3-5' Compensated Sonic(DT35)
microsec/foot
140 115 90 65 40

Sandstone Sonic Porosity(SPRS)
percent
30 20 10 0 -10

Transit Time
every millisec

DST Uphole Tension(SMTU)
pounds
1100 600 100

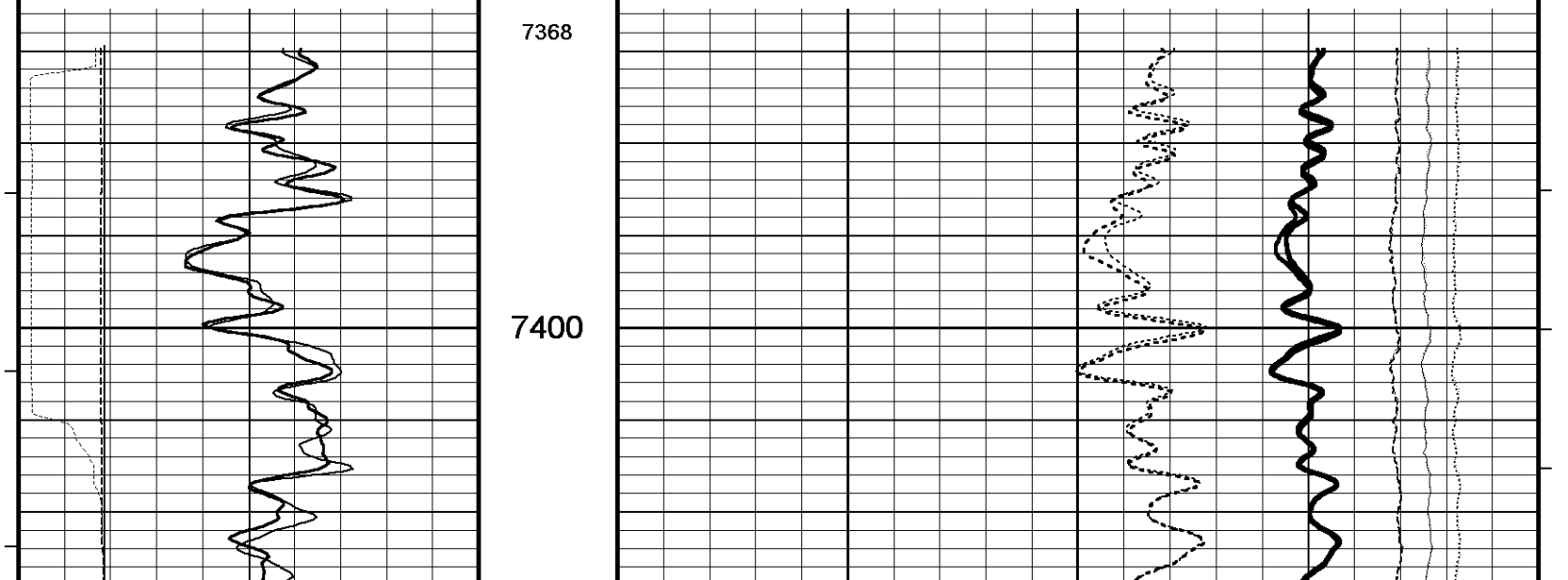
3' Transit Time(TR21)
microseconds
1100 600 100

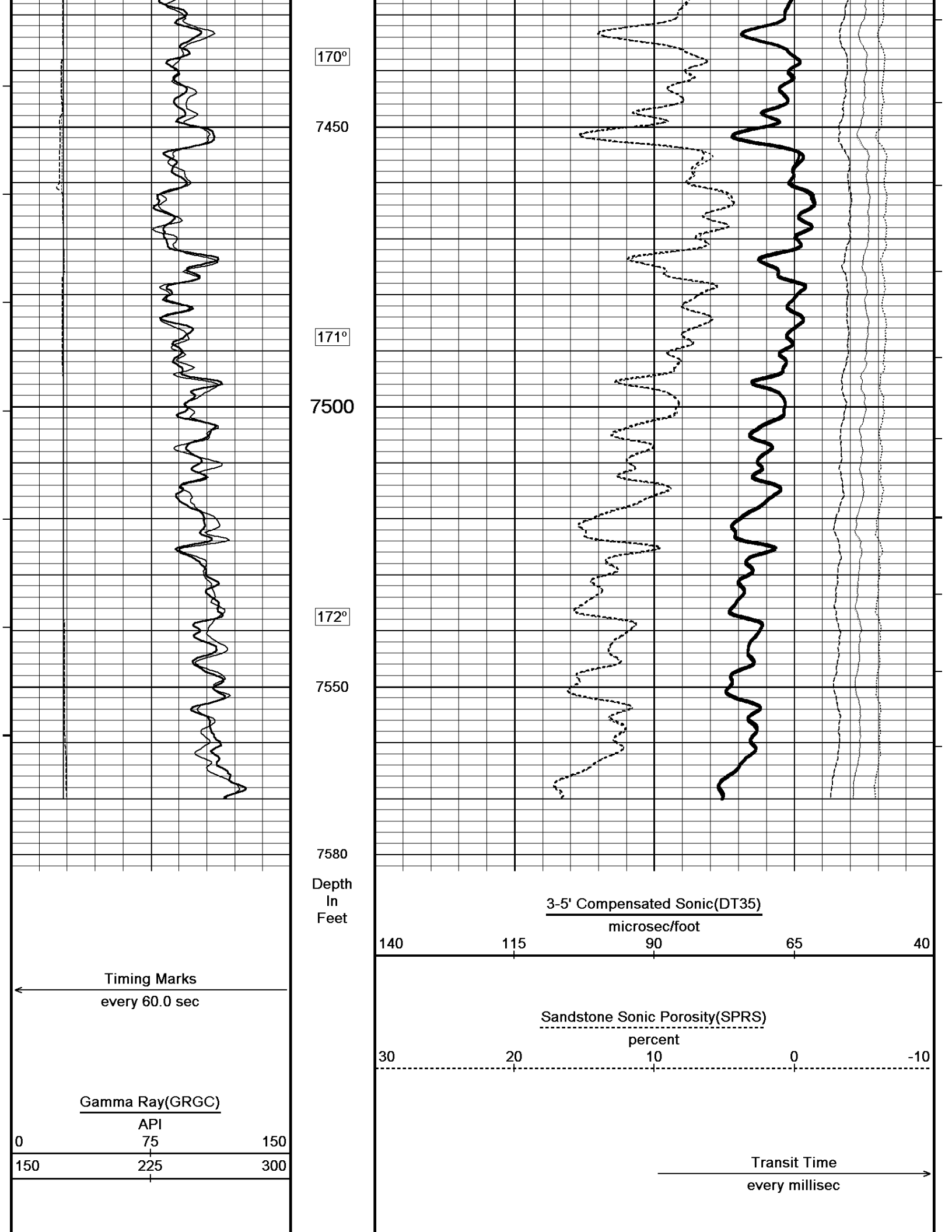
4' Transit Time(TR11)
microseconds
1100 600 100

5' Transit Time(TR22)
microseconds
1100 600 100

7368

7400




170°
7450
171°
7500
172°
7550
7580
Depth
In
Feet
3-5' Compensated Sonic(DT35)
microsec/foot
140
115
90
65
40
Timing Marks
every 60.0 sec
Sandstone Sonic Porosity(SPRS)
percent
30
20
10
0
-10
Gamma Ray(GRGC)
API
0
75
150
150
225
300
Transit Time
every millisec

Density Caliper(CLDC)
inches
6 11 16

Bit Size(BIT)
inches
6 11 16

Borehole Temp in deg F

Replay Scale 1:240

DST Uphole Tension(SMTU)
pounds
1100 600 100

3' Transit Time(TR21)
microseconds
1100 600 100

4' Transit Time(TR11)
microseconds
1100 600 100

5' Transit Time(TR22)
microseconds
1100 600 100

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 13-DEC-2010 06:07
Filename: C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta — Recorded on 13-DEC-2010 02:10
Filename: C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\REPEAT2.dta — Recorded on 12-DEC-2010 20:52
System Versions: Logged with 10.08.1568 Plotted with 10.08.1568

REPEAT SECTION
5 INCH MAIN LOG

BEFORE SURVEY CALIBRATION

C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta

General Constants All 000

Last Edited on 12-DEC-2010,18:51

General Parameters		
Mud Resistivity	1.800	ohm-metres
Mud Resistivity Temperature	80.000	degrees F
Water Level	0.000	feet
Density/Neutron 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	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Deep Induction	
RWA Constant A	0.610	
RWA Constant M	2.150	

Down-hole Tension Calibration SMS 000

Field Calibration on 12-DEC-2010 19:13

Reading No	Measured	Calibrated (lbs)
1	15244.42	0.00
2	17442.20	450.00

High Resolution Temperature Calibration MCG 287

Field Calibration on 07-DEC-2010,21:25

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG 287

Last Edited on 27-OCT-2010,11:54

Pre-filter Length	11

SP Calibration MCG 287

Field Calibration on 07-DEC-2010,21:25

	Measured	Calibrated (mV)
Reference 1	95.0	104.2
Reference 2	-87.4	-104.5

Gamma Calibration MCG 287

Field Calibration on 12-DEC-2010,18:47

	Measured	Calibrated (API)
Background	131	86
Calibrator (Gross)	928	613
Calibrator (Net)	797	527

Gamma Constants MCG 287

Last Edited on 25-NOV-2010,00:52

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

Neutron Calibration MDN 306

Base Calibration on 02-DEC-2010 15:15
Field Check on 12-DEC-2010 18:41

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2827	88	3714	110
Ratio	32.020		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2427	3514
Ratio	0.691	

Field Check

	Calibrated (cps)	
	2331	3387
Ratio	0.688	

Neutron Constants MDN 306

Last Edited on 05-DEC-2010,14:15

Neutron Source Id	P44384B	
Neutron Jig Number	NJ6584	
Epithermal Neutron	No	
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	0.00	kpsi
Temperature Source	None	
Temperature	20.00	degrees F
Mud Salinity	0.00	kppm
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE 179

Base Calibration on 02-DEC-2010 11:09
Field Check on 12-DEC-2010 19:15

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	962.5	126.8
Base Check		280.6
Field Check		280.5

FE Constants MFE 179

Last Edited on 12-DEC-2010,18:52

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	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches

Sonic Constants MSS 319

Last Edited on 12-DEC-2010,21:23

Maximum Boundary Contrast	100.00	micro-sec/ft
Fluid Transit Time	189.00	micro-sec/ft
Limestone Transit Time	47.50	micro-sec/ft
Sandstone Transit Time	55.50	micro-sec/ft
Dolomite Transit Time	43.50	micro-sec/ft
Sonic used for Porosities	3-5' Compensated Sonic	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	N/A	micro-sec
MX3FT	N/A	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Full Waveform	
Hole Type	Open Hole	

Sonde Parameters

	Measured	Calibrated
Offset	0.0000	0.0000
Free Pipe	0.0000	0.0000

Peak Amplitude Source 0

Waveform	Start Time (micro-sec)	Width (micro-sec)	Pre Gain	Start Gain	Discriminator (mV)
3'	N/A	N/A	N/A	N/A	N/A
4'	N/A	N/A	N/A	N/A	N/A
5'	N/A	N/A	N/A	N/A	N/A
6'	N/A	N/A	N/A	N/A	N/A

Processed Fixed Gate Parameters

Waveform Used For Processing 3 foot

Start Time (micro-sec)	End Time (micro-sec)	Discriminator (mV)	Depth (ft)
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	0.00	0.00	

Full Waveform Parameters

Use 3' Waveform to derive TR	Yes	
Use 4' Waveform to derive TR	Yes	
Use 5' Waveform to derive TR	Yes	
Use 6' Waveform to derive TR	Yes	
3' Waveform Discriminator Level	0.30	mV
4' Waveform Discriminator Level	0.30	mV
5' Waveform Discriminator Level	0.15	mV
6' Waveform Discriminator Level	0.15	mV
3' Waveform Filter	None	
4' Waveform Filter	None	
5' Waveform Filter	None	
6' Waveform Filter	None	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	30.48	micro-sec/ft
Sonic 2 Despiker	30.48	micro-sec/ft

High Resolution Temperature Calibration MAI 106

Field Calibration on 04-DEC-2010,02:44

	Measured	Calibrated(Deg F)
Lower	50.00	50.00

Upper	75.00	75.00

High Resolution Temperature Constants MAI 106

Last Edited on 10-NOV-2010,07:35

Pre-filter Length	11

Induction Calibration MAI 106

Base Calibration on 22-NOV-2010,16:09
Field Check on

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	16.5	486.3	9.3	966.2
2	5.8	391.9	7.6	821.4
3	3.0	262.9	5.2	566.0
4	1.4	138.3	2.6	279.2

Array Temperature 74.6 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	0.0	0.0	
2	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	
Deep	0.0	0.0	0.0	0.0	
Medium	0.0	0.0	0.0	0.0	
Shallow	0.0	0.0	0.0	0.0	
Array Temperature		0.0		0.0	Deg F

Induction Constants MAI 106

Last Edited on 04-DEC-2010,02:44

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	Temperature Corr	
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

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 220

Base Calibration on 02-DEC-2010 14:05
Field Calibration on 05-DEC-2010,14:05

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14544	4.00
2	23056	5.96
3	30704	7.98
4	38811	9.86
5	47936	11.88
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
8.00	7.98

Photo Density Calibration MPD 220

Base Calibration on 02-DEC-2010 13:43
Field Check on 12-DEC-2010 18:32

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	52968	16941	53237	19445
Reference 2	24124	2408	25135	2545
Field Check at Base	1190.6	1206.3		
Field Check	1189.1	1202.5		

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	214	1053		
Reference 1	17948	52776	0.343	0.320
Reference 2	6642	23976	0.280	0.274
Field Check at Base	214.4	1052.8		
Field Check	214.3	1051.7		

Density Constants MPD 220

Last Edited on 12-DEC-2010,18:52

Density Source Id	P44263B	
Nylon Calibrator Number	532	
Aluminium Calibrator Number	532	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.10	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
0.00	

AFTER SURVEY CALIBRATION

C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta

Gamma Check MCG 287

Field Calibration on 12-DEC-2010,18:47

After Survey Check on 13-DEC-2010 05:39

	Before (API)	After (API)
Background	86	78
Calibrator (Gross)	613	605
Calibrator (Net)	527	527

Neutron Check MDN 306

Before Survey Check on 12-DEC-2010 18:41
After Survey Check on 13-DEC-2010 05:45

Near (cps)		Far (cps)	
Before	After	Before	After
2331	2352	3387	3422

Ratio	
Before	After
0.688	0.687

FE Check MFE 179

Before Survey Check 12-DEC-2010 19:15
After Survey Check on 13-DEC-2010 05:03

Before (ohm-m)	After (ohm-m)
280.5	280.6

Induction Check MAI 106

Before Survey Check on
After Survey Check on 13-DEC-2010 05:05

Channel	Before Survey (mmho/m)		After Survey (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	14.2	3748.6
2	0.0	0.0	30.8	3455.7
3	0.0	0.0	29.8	3023.1
4	0.0	0.0	20.2	2003.1
Deep	0.0	0.0	18.7	1962.6
Medium	0.0	0.0	43.2	4027.0
Shallow	0.0	0.0	45.3	5109.4
Array Temperature		0.0		56.8

Photo Density Check MPD 220

Before Survey Check on 12-DEC-2010 18:32
After Survey Check on 13-DEC-2010 05:02

Density Check

Near		Far	
Before	After	Before	After
1189.1	1184.7	1202.5	1206.2

PE Check

	Before	After
WS	214.3	214.4
WH	1051.7	1050.4

DOWNHOLE EQUIPMENT

C:\Minimus\LOGS\Bill Barrett\Miller Federal 24D-31-691\MAIN.dta

SHA-J.A Compact Swivel Head Adaptor
SHA 314 Length: 2.30 ft Weight: 22.0 lb

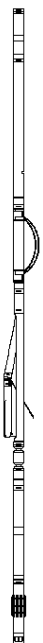
Compact Gamma
MCG 287 Length: 8.70 ft Weight: 63.9 lb

Compact Neutron
MDN 306 Length: 5.04 ft Weight: 50.7 lb

Compact Density/Caliper
MPD 220 Length: 9.59 ft Weight: 90.4 lb

SKJ-D.A Compact Knuckle Joint
SKJ 154 Length: 2.17 ft Weight: 24.3 lb

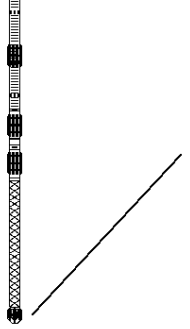
Compact Focussed Electric
MFE 179 Length: 6.03 ft Weight: 48.5 lb



Compact Sonic
MSS 319 Length: 12.52 ft Weight: 72.8 lb

Compact Induction
MAI 106 Length: 10.81 ft Weight: 48.5 lb

Total Length: 57.16 ft Weight: 421.1 lb



Tool Zero (0.13ft from bottom)
All measurements relative to tool zero.

COMPANY	BILL BARRETT CORPORATION
WELL	MILLER FEDERAL 24D-31-691
FIELD	GIBSON GULCH
PROVINCE/COUNTY	GARFIELD
COUNTRY/STATE	U.S.A. / COLORADO

Elevation Kelly Bushing	6288.00	feet	First Reading	7622.00	feet
Elevation Drill Floor	6287.00	feet	Depth Driller	7626.00	feet
Elevation Ground Level	6266.00	feet	Depth Logger	7635.00	feet

Weatherford®

COMPENSATED SONIC LOG