Weatherford®

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME

COMPANY	SHAKESPEARE OIL COMPANY, INC.
WELL	ZERR TRUST #3-23
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	335' FSL & 1500' FWL
	NW SW SE SW

SEC	TWP	RGE	Other Services
23	13S	31W	MPD/MDN
API Number 15-063-22016			MAI/MFE
Permit Number			MML

	Elevations:	feet
Permanent Datum G.L., Elevation 2864 feet	KB	2874.00
Log Measured From KB	DF	2872.00
Drilling Measured From K.B.	GL	2864.00

Date	29-JUL-2012			
Run Number	ONE			
Depth Driller	4630.00	feet		
Depth Logger	4632.00	feet		
First Reading	4619.00	feet		
Last Reading	251.00	feet		
Casing Driller	251.00	feet		
Casing Logger	251.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.40 g/c3	56.00 CP		
PH / Fluid Loss	10.50	8.80 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.58 @ 93.0	ohm-m		
Rmf @ Measured Temp	0.46 @ 93.0	ohm-m		
Rmc @ Measured Temp	0.70 @ 93.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.45 @121.0	ohm-m		
Time Since Circulation	3 HOURS			
Max Recorded Temp	121.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13057	LIB		
Recorded By	L. SCOTT			
Witnessed By	TIM PRIEST			
S.O./ JOB #	3534564		LB12-193	

BOREHOLE RECORD

Last Edited: 29-JUL-2012 11:10

Bit Size inches	Depth From feet	Depth To feet
7.875	251.00	4632.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	251.00	24.00

REMARKS

Tools Ran: MCG, MML, MDN, MPD, MFE, MSS, MAI.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE, MSS and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
Sonic porosity calculated using a Limestone scale (47.5 usec/ft).
All intervals logged and scaled per customer's request.
Tight pulls, washouts and borehole rugosity will affect data quality.
Annular volume with 4.5 inch production casing= 258 cu. ft.
Total hole volume from TD to Surface casing= 1900 cu. ft.
Service order: #3534564
Rig: HD Drilling #2
Engineer: L. Scott
Operator(s): K. Rinehart, J. LaPoint

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 29-JUL-2012 12:14
Filename: C:\Minimus 13.02.6600\Data\Shakespeare Zerr Tru...\Shakespeare Zerr Trust #3-23_002.dta
Recorded on 29-JUL-2012 09:36
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

Replay Scale 1:240

238

Casing
250

300

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

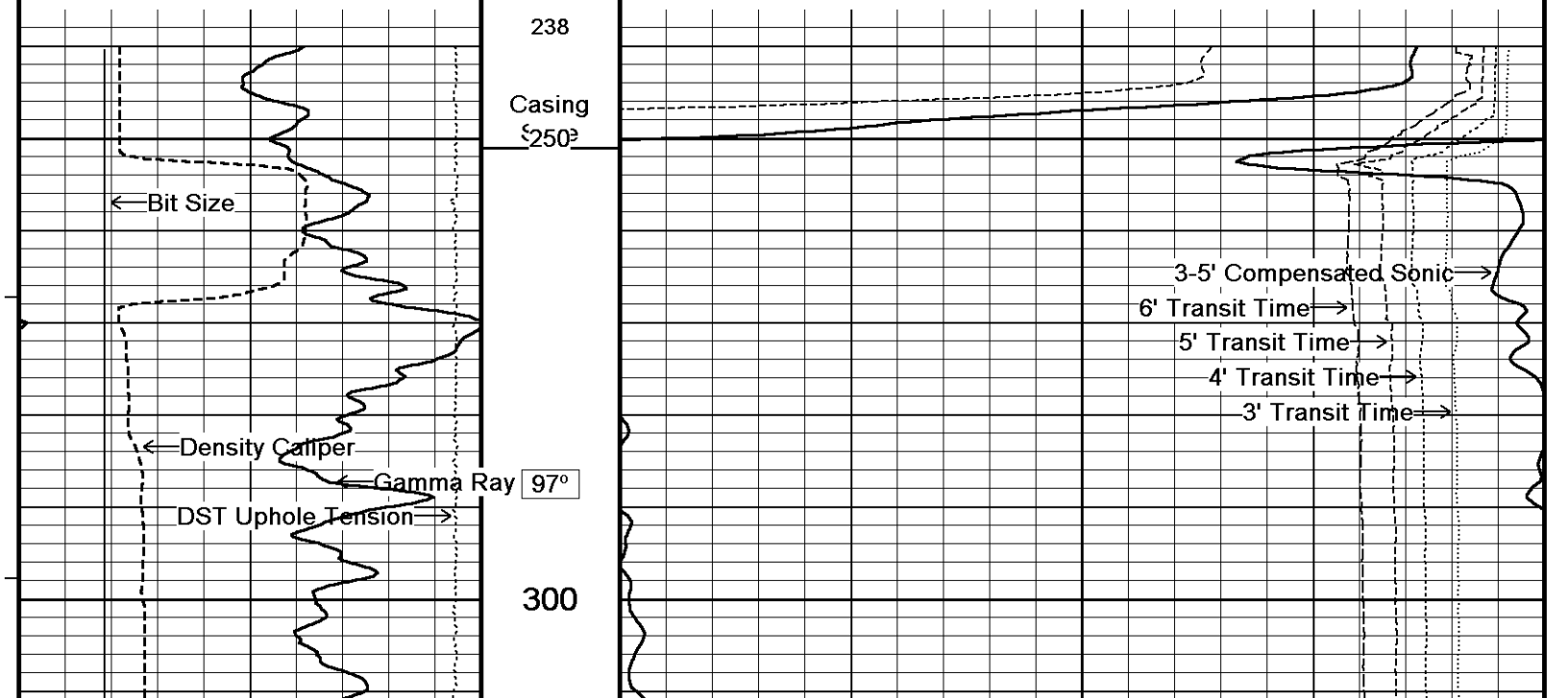
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

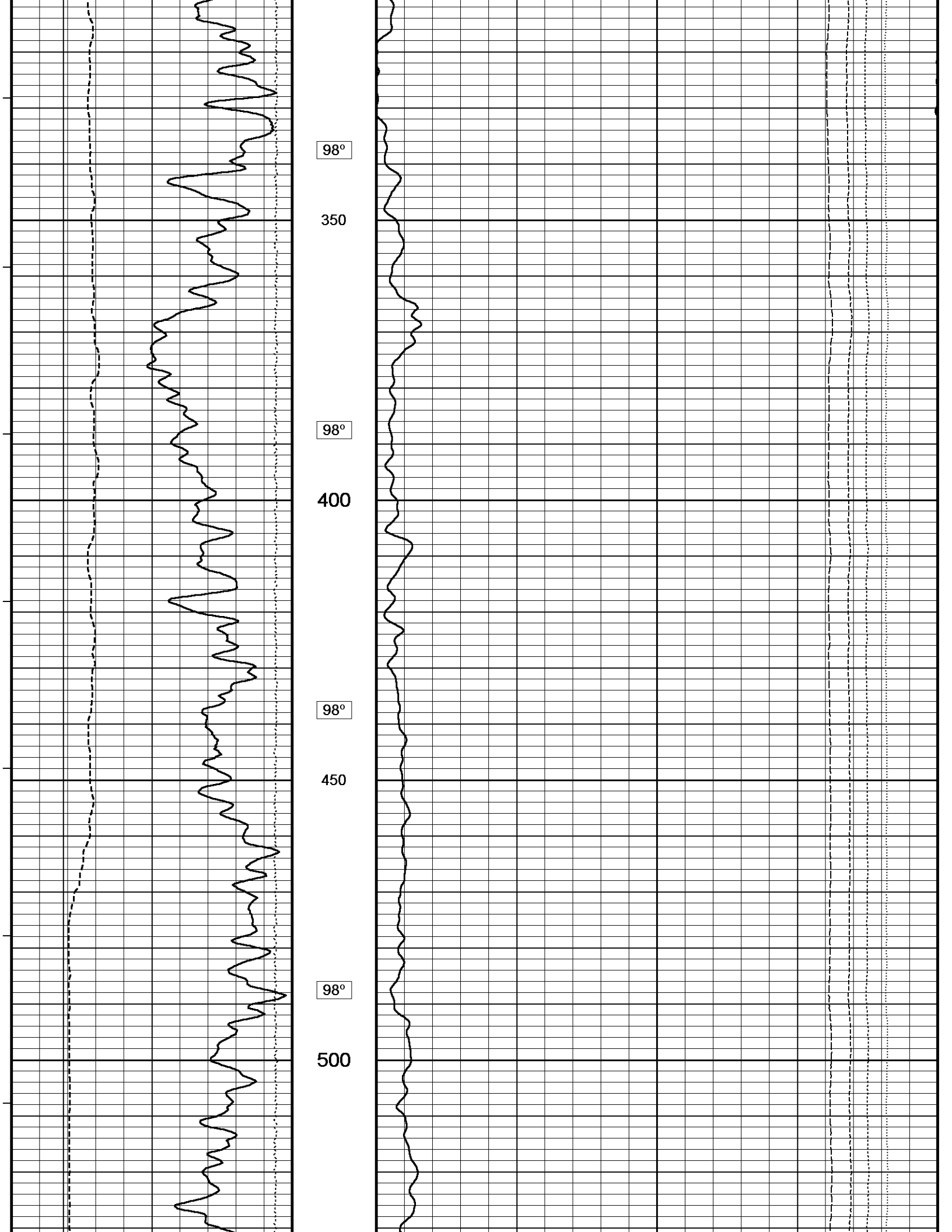
3' Transit Time
microseconds
1100 100

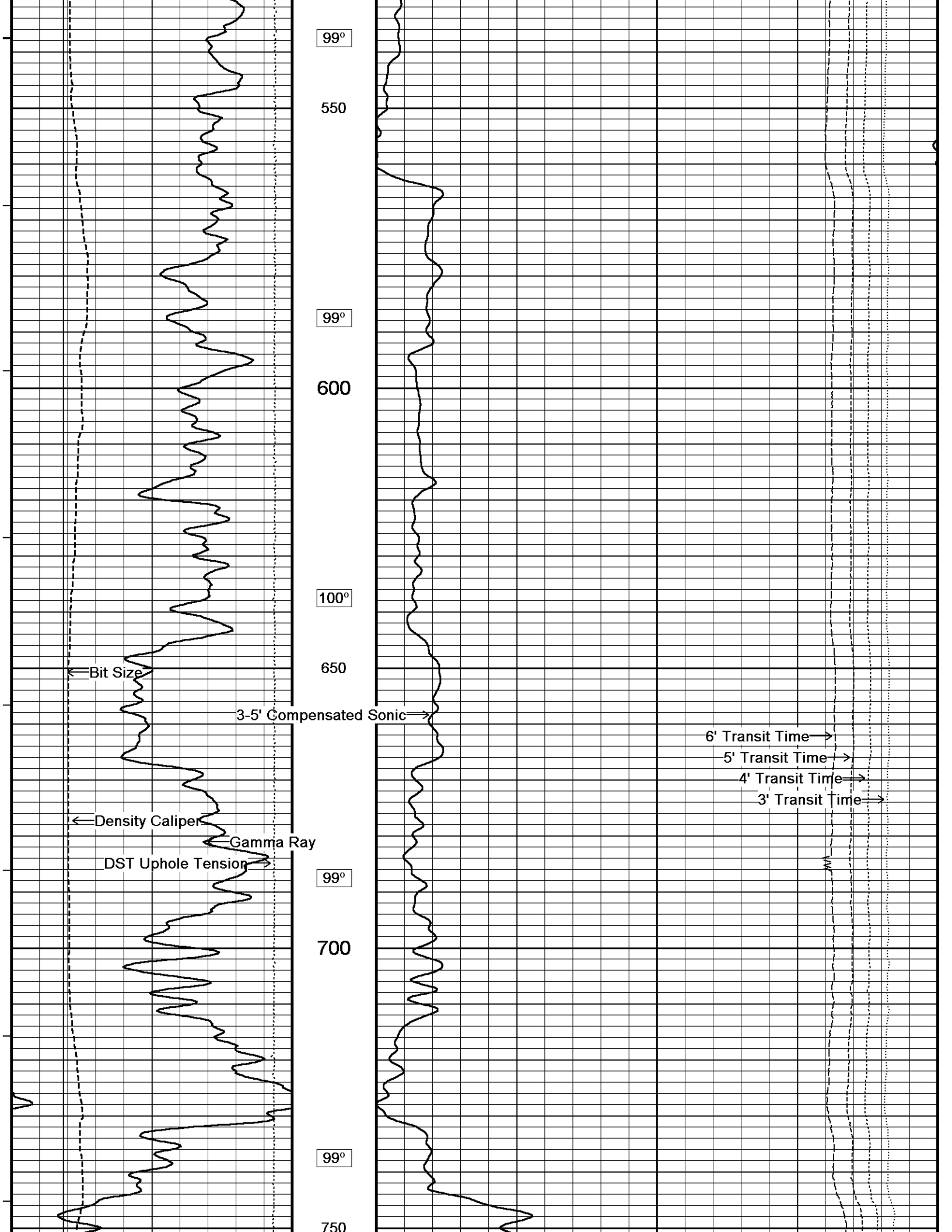
4' Transit Time
microseconds
1100 100

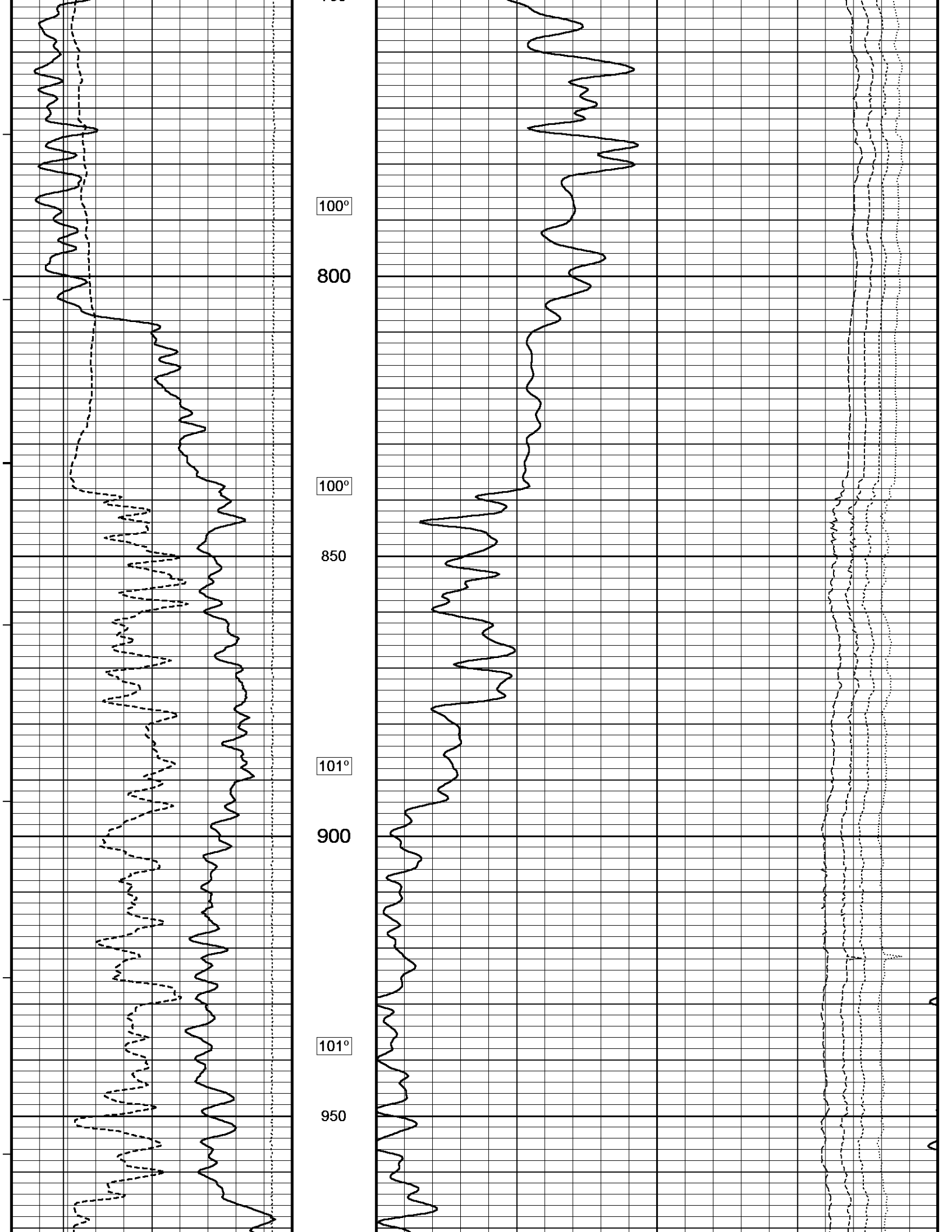
5' Transit Time
microseconds
1100 100

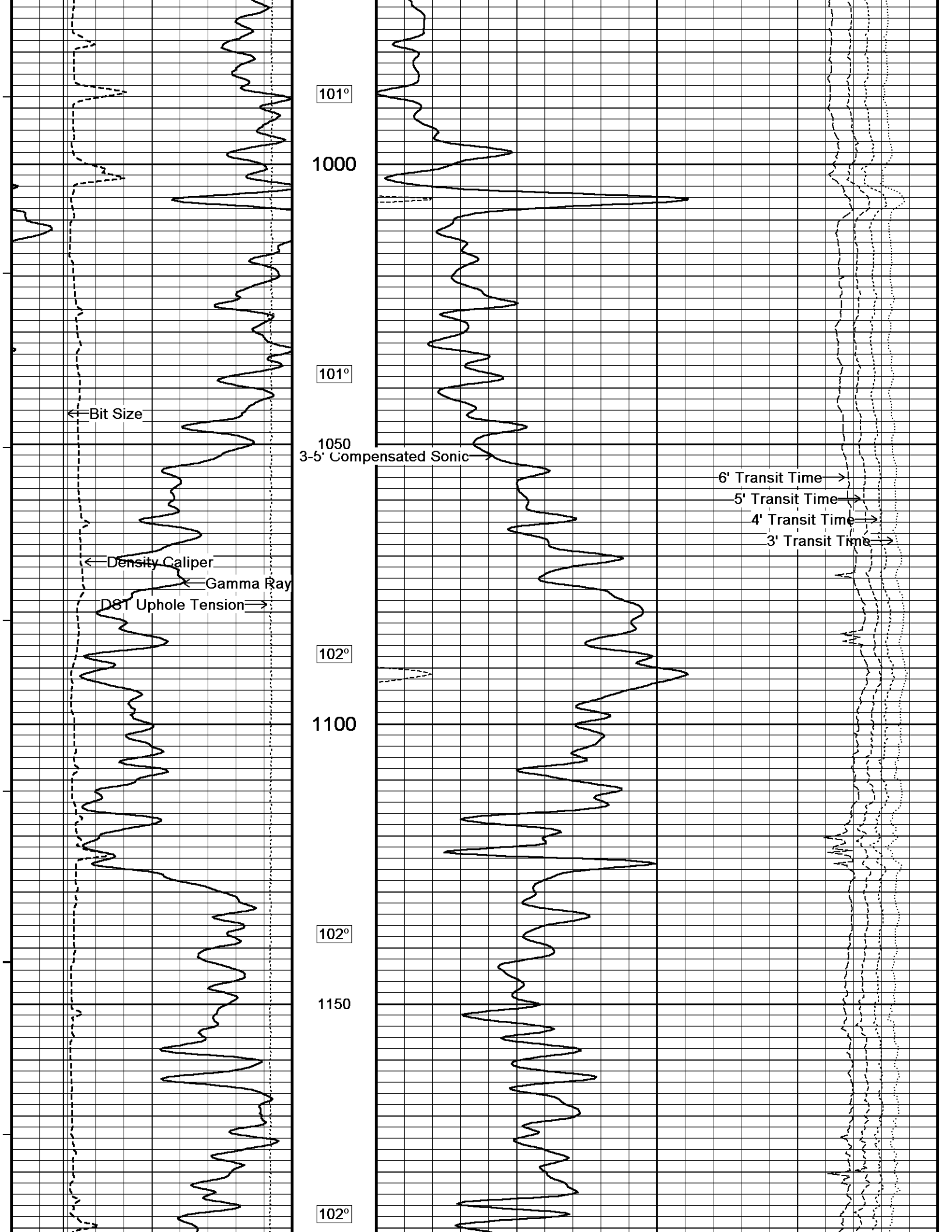
6' Transit Time
microseconds
1100 100

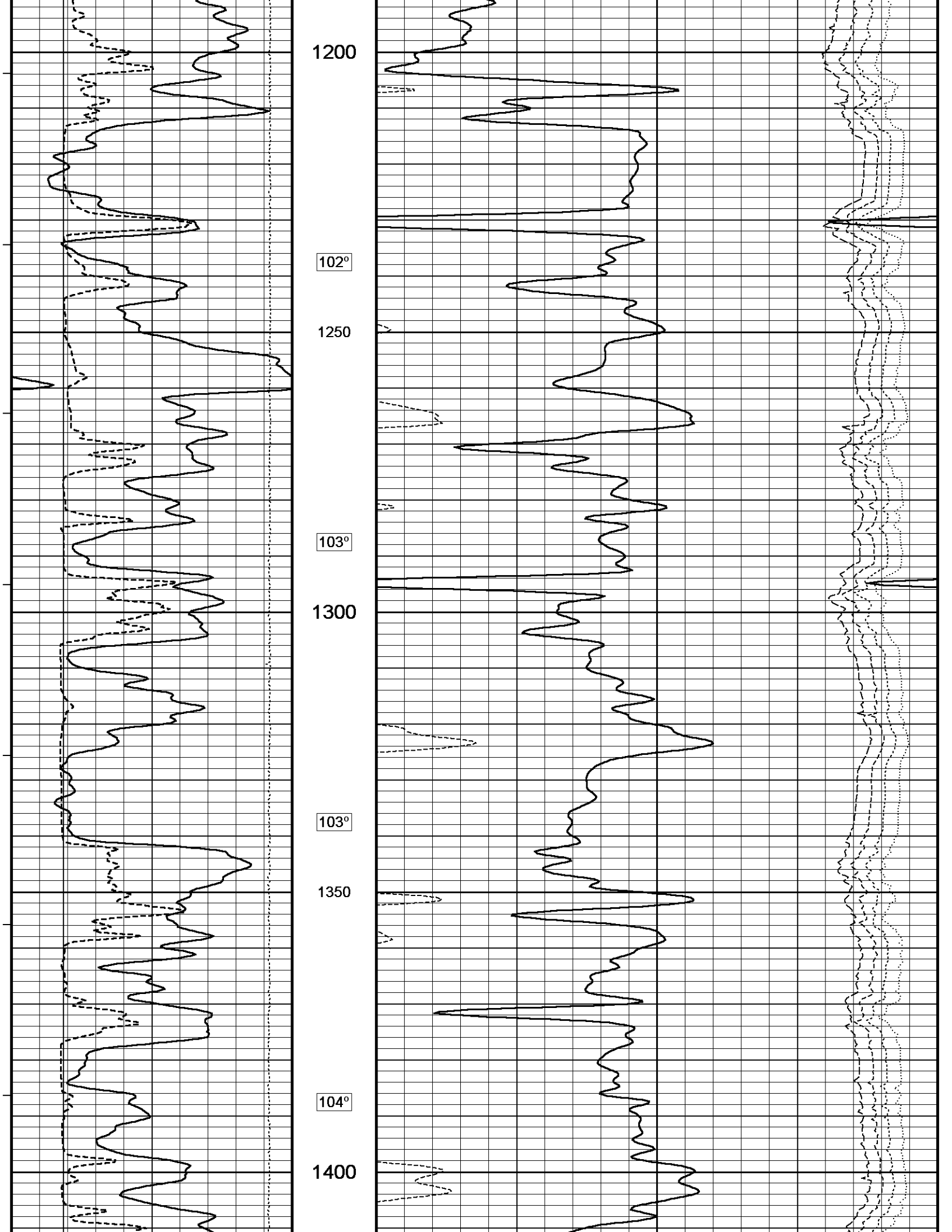


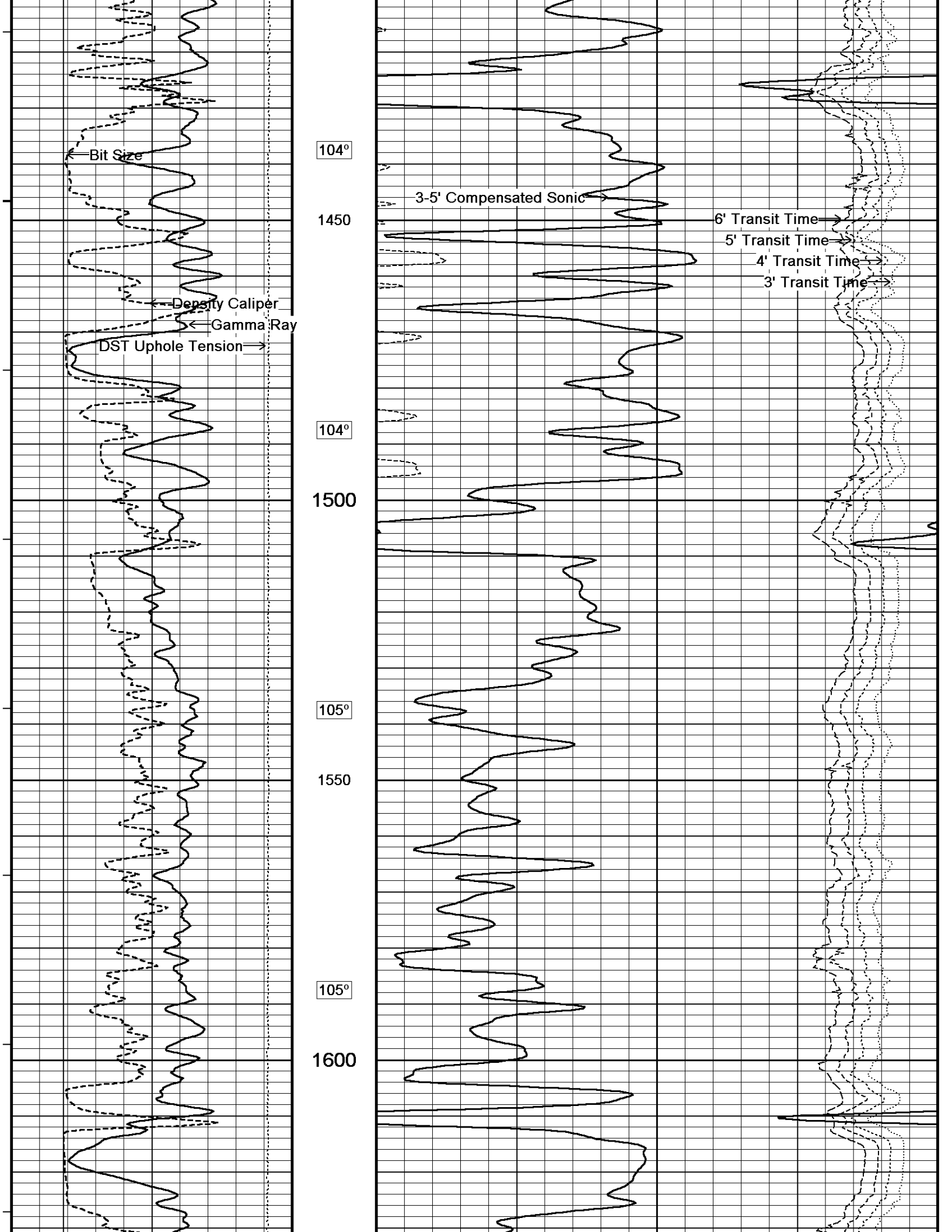

98°
350
98°
400
98°
450
98°
500

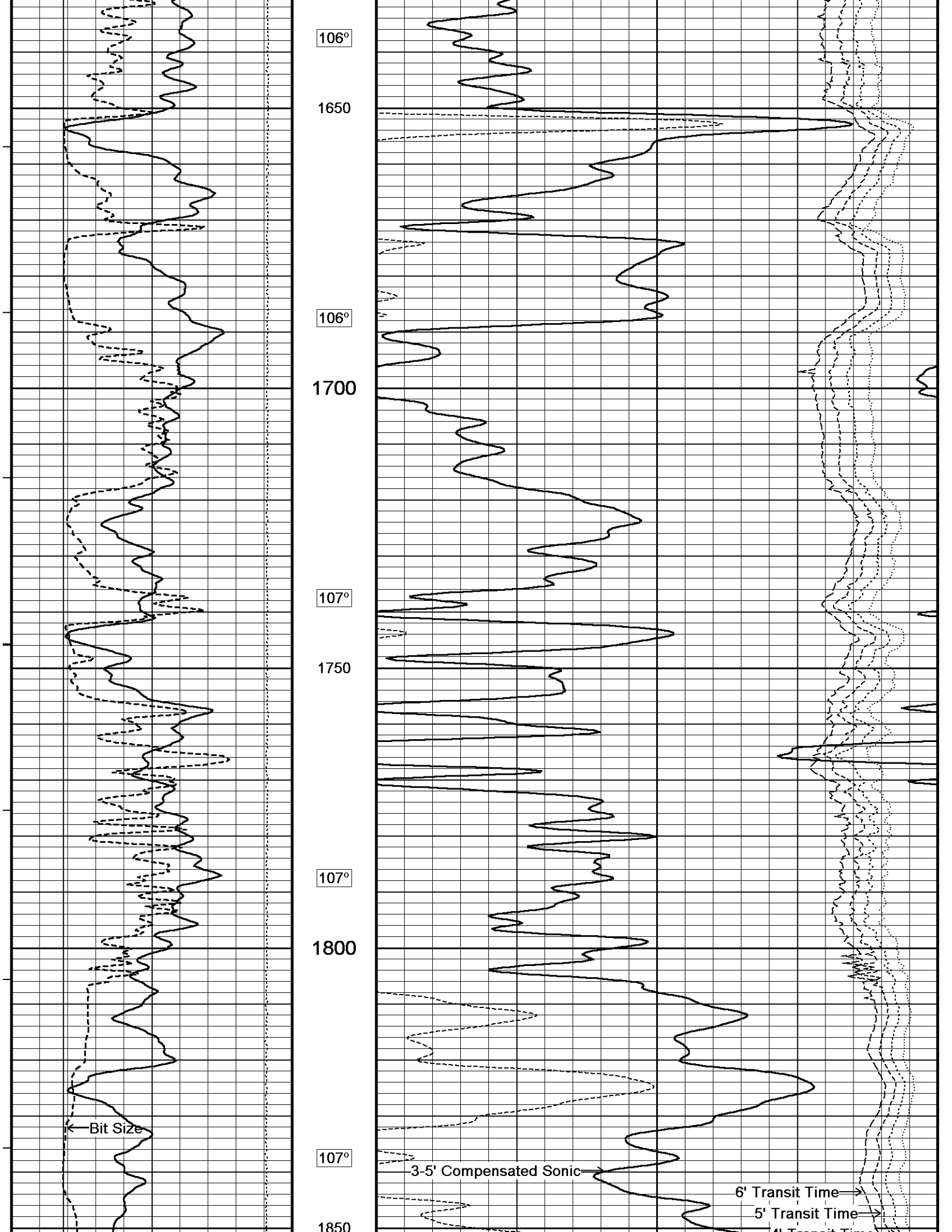

99°
550
99°
600
100°
650
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
99°
700
99°
750

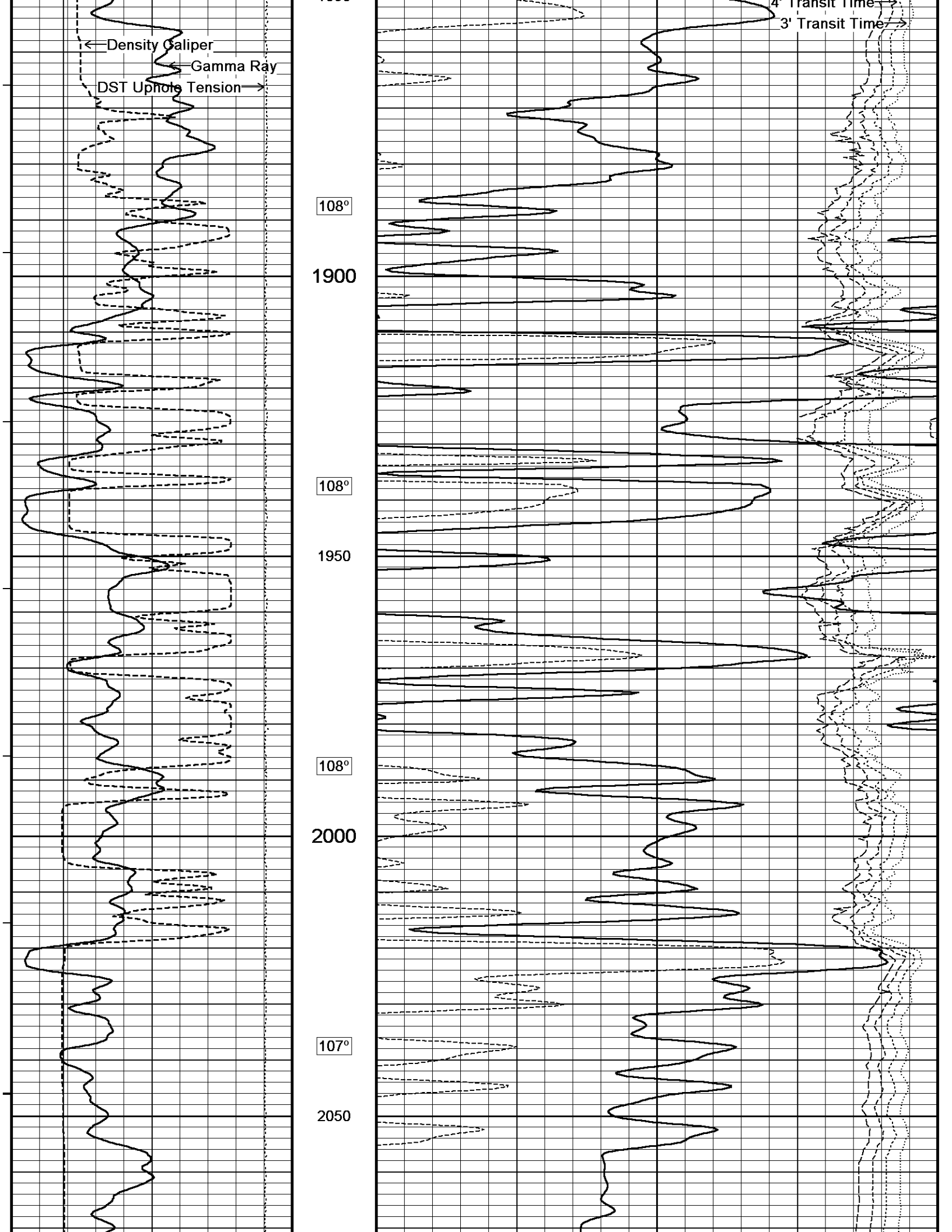

100°
800
100°
850
101°
900
101°
950

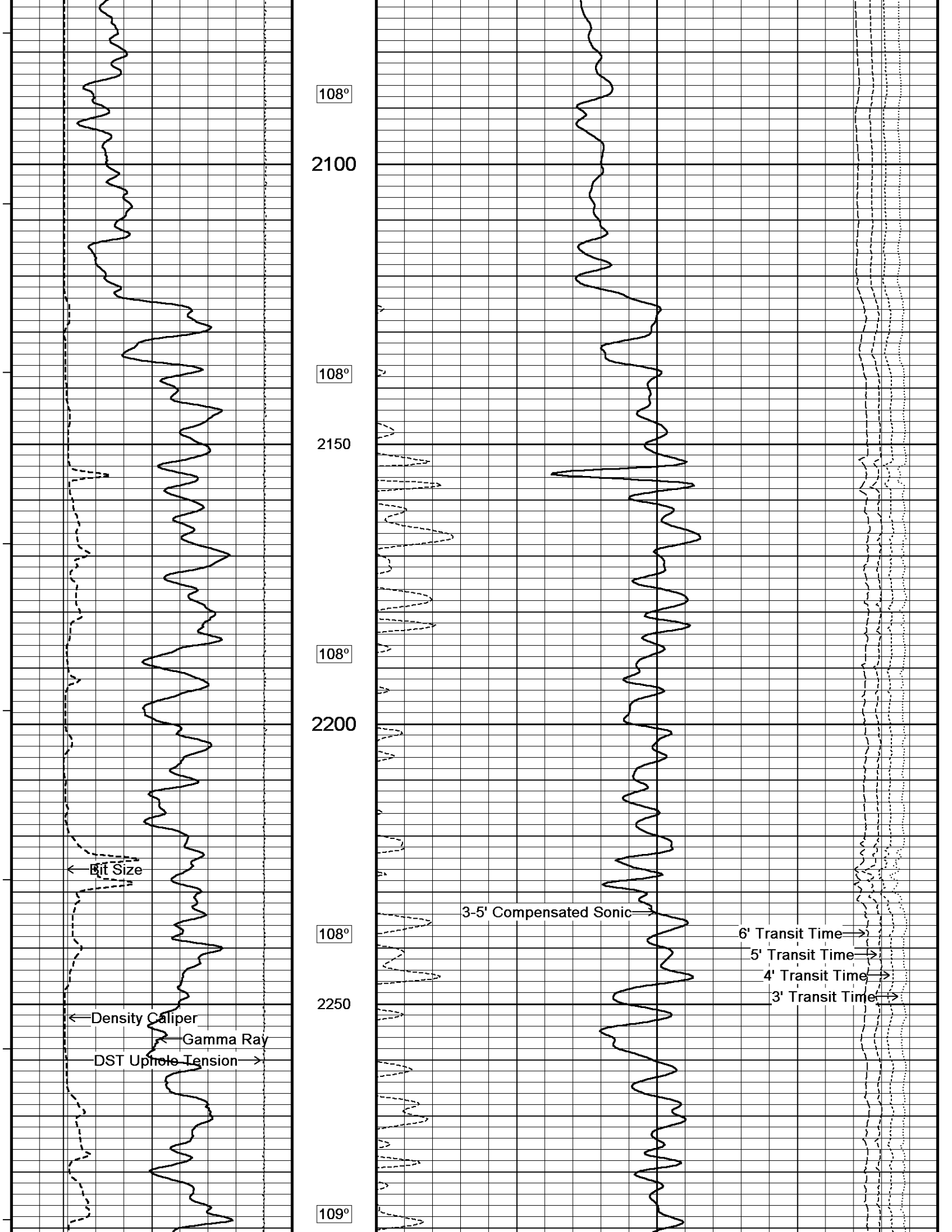

101°
1000
101°
Bit Size
1050
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
102°
1100
102°
1150
102°

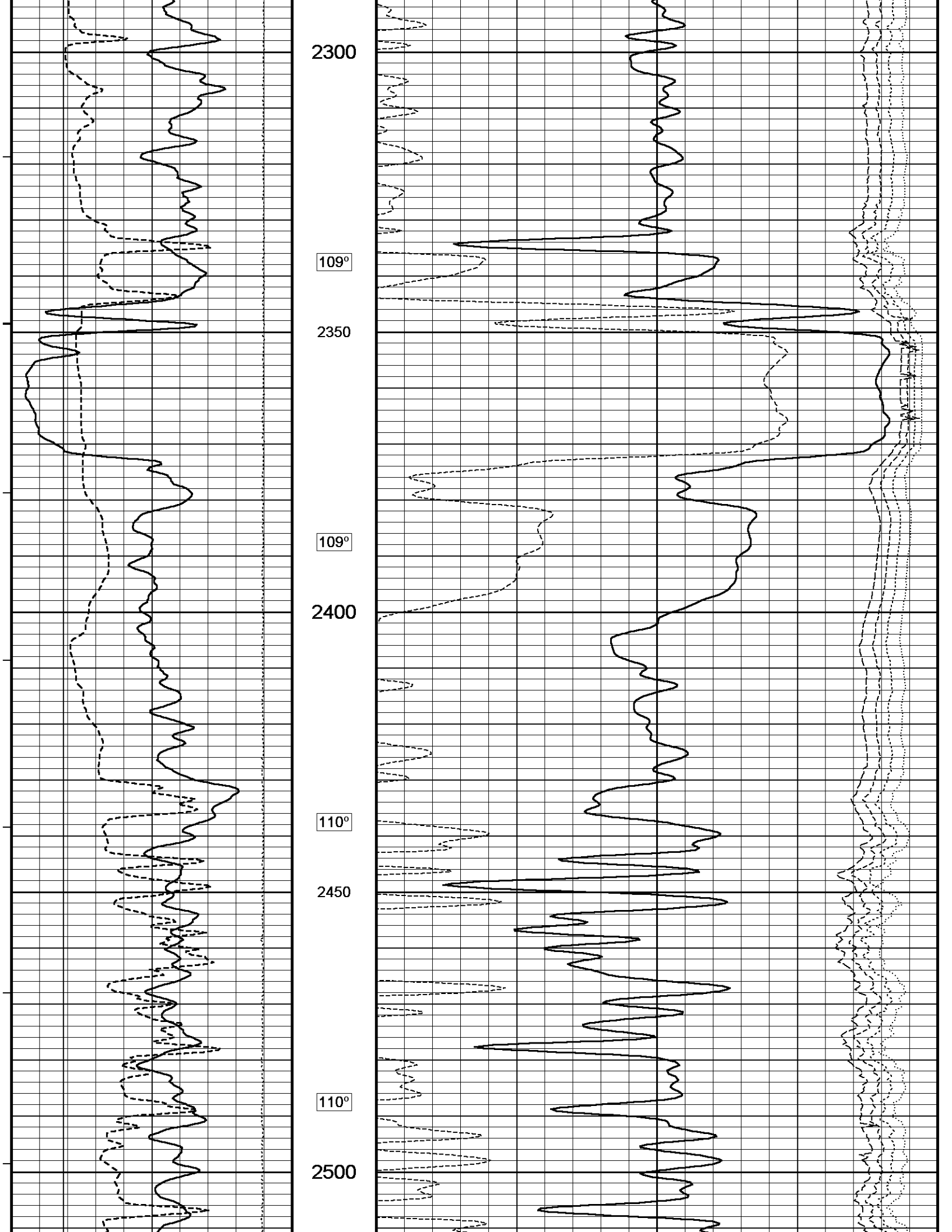

1200
102°
1250
103°
1300
103°
1350
104°
1400

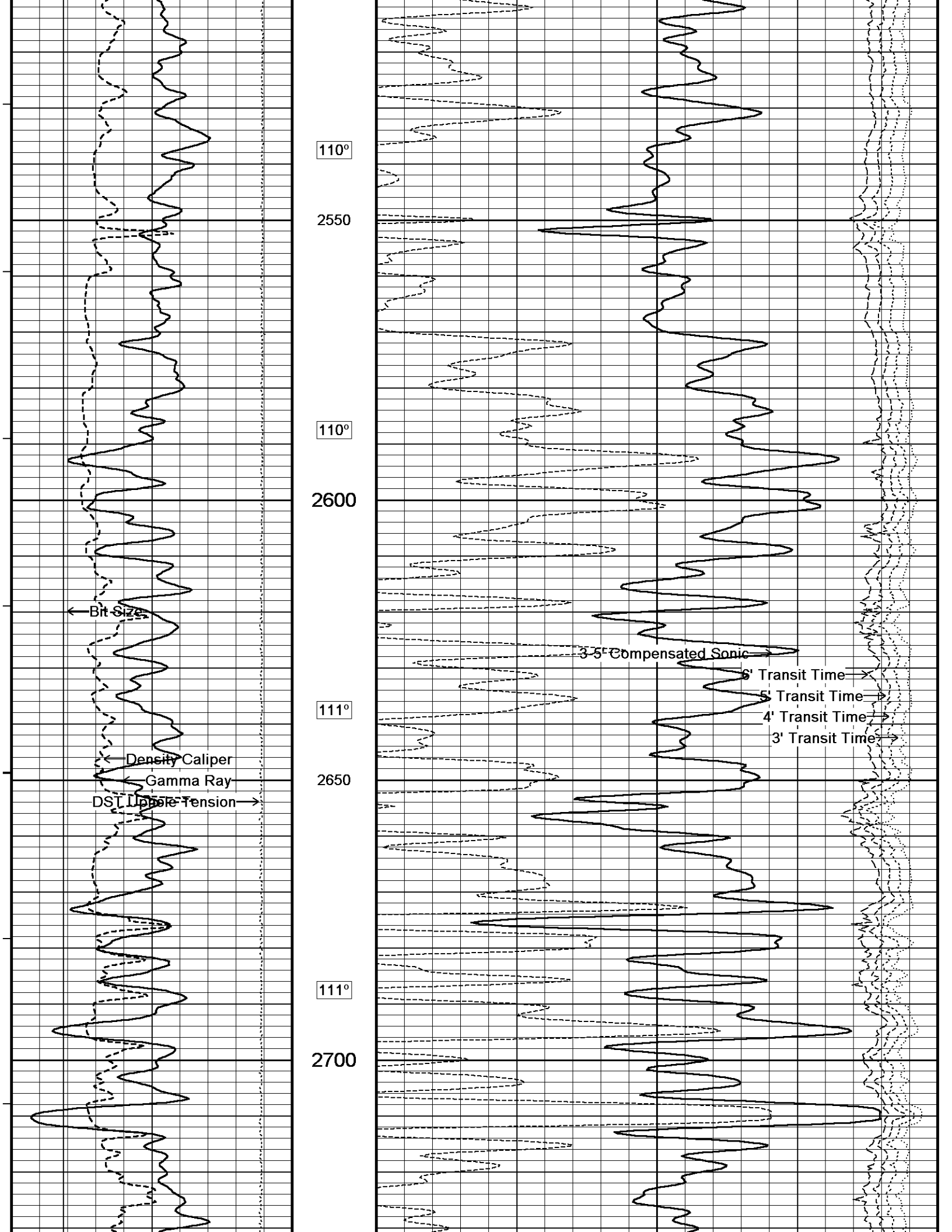

Bit Size
104°
3-5' Compensated Sonic
1450
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
104°
1500
105°
1550
105°
1600

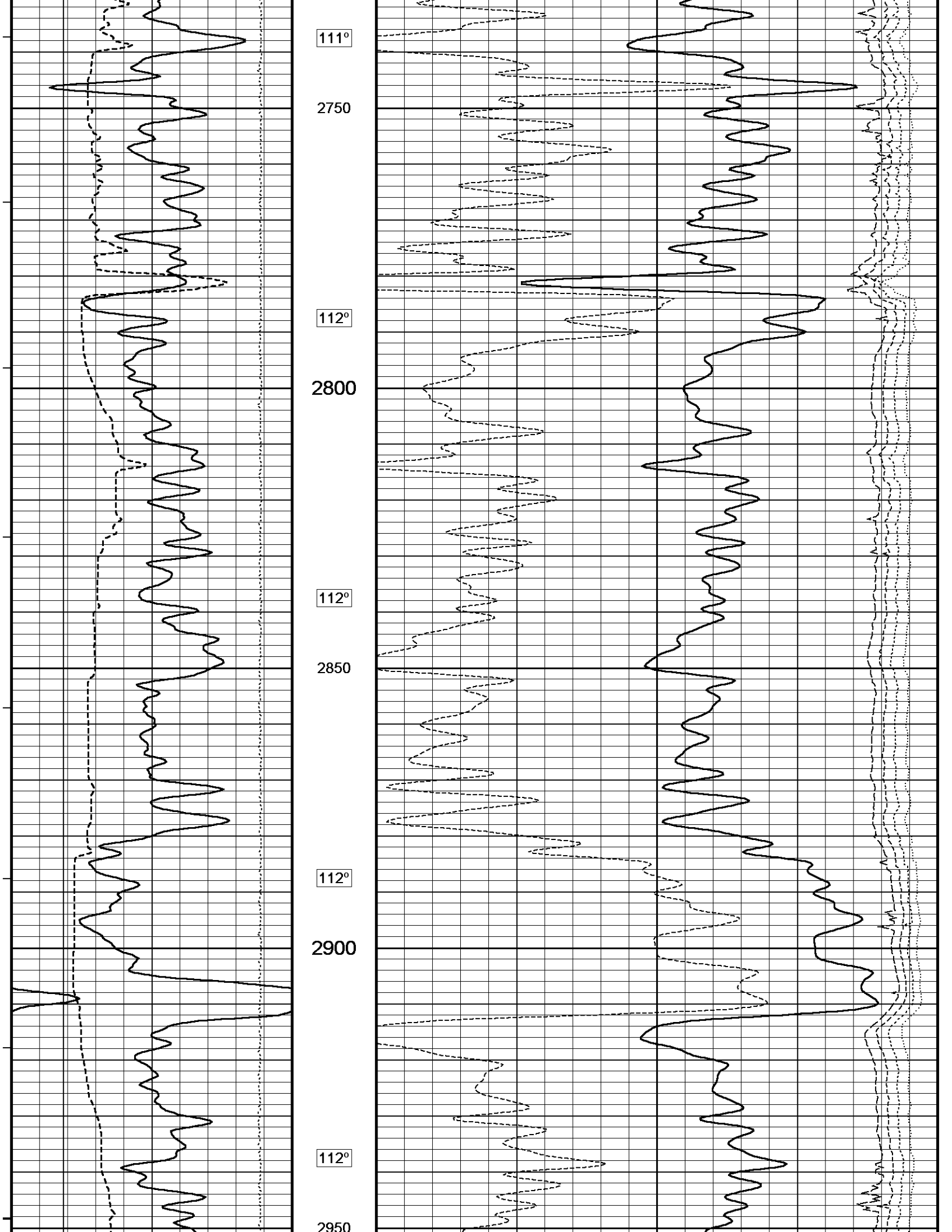

106°
1650
106°
1700
107°
1750
107°
1800
107°
1850
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time

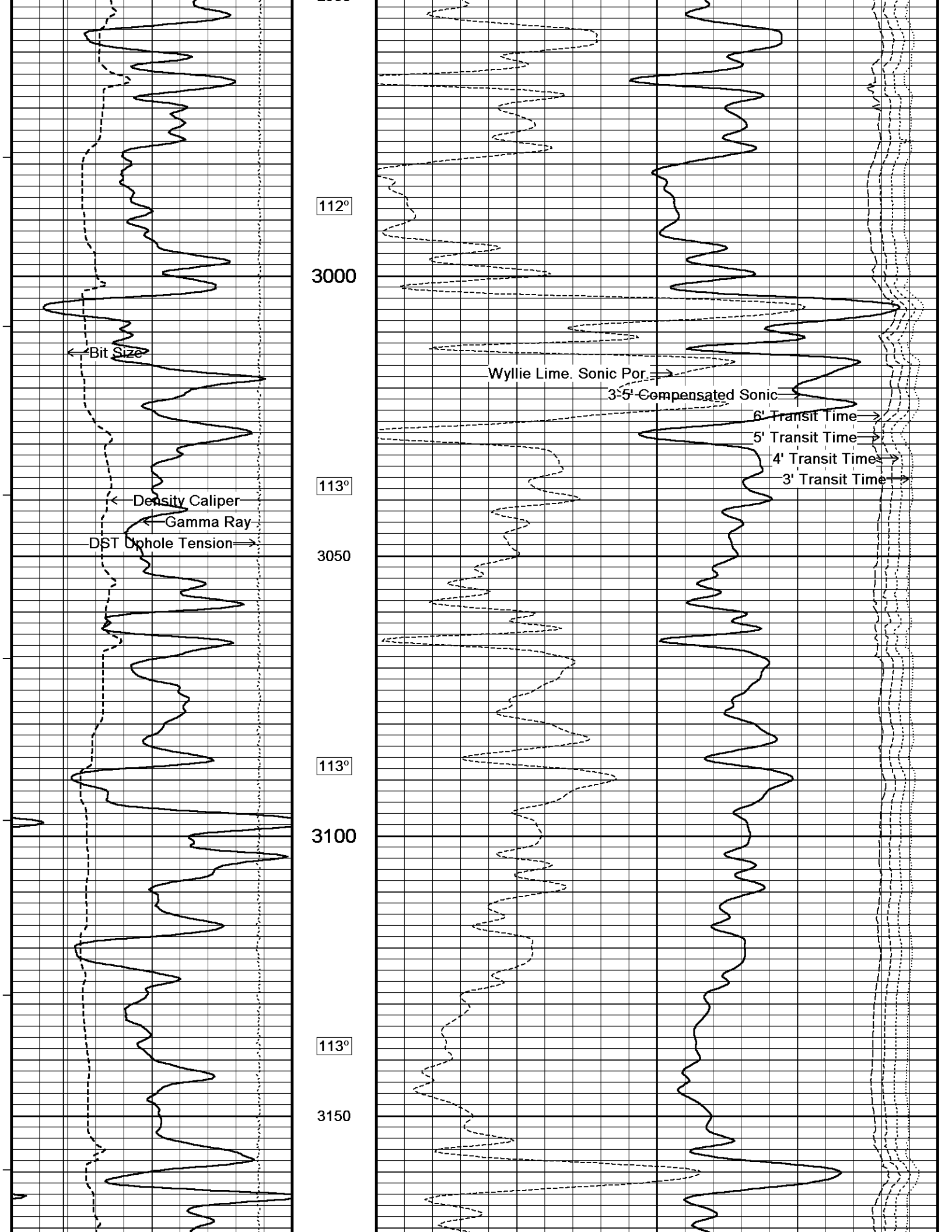

Density Caliper
Gamma Ray
DST Uphole Tension
4' Transit Time
3' Transit Time
108°
1900
108°
1950
108°
2000
107°
2050

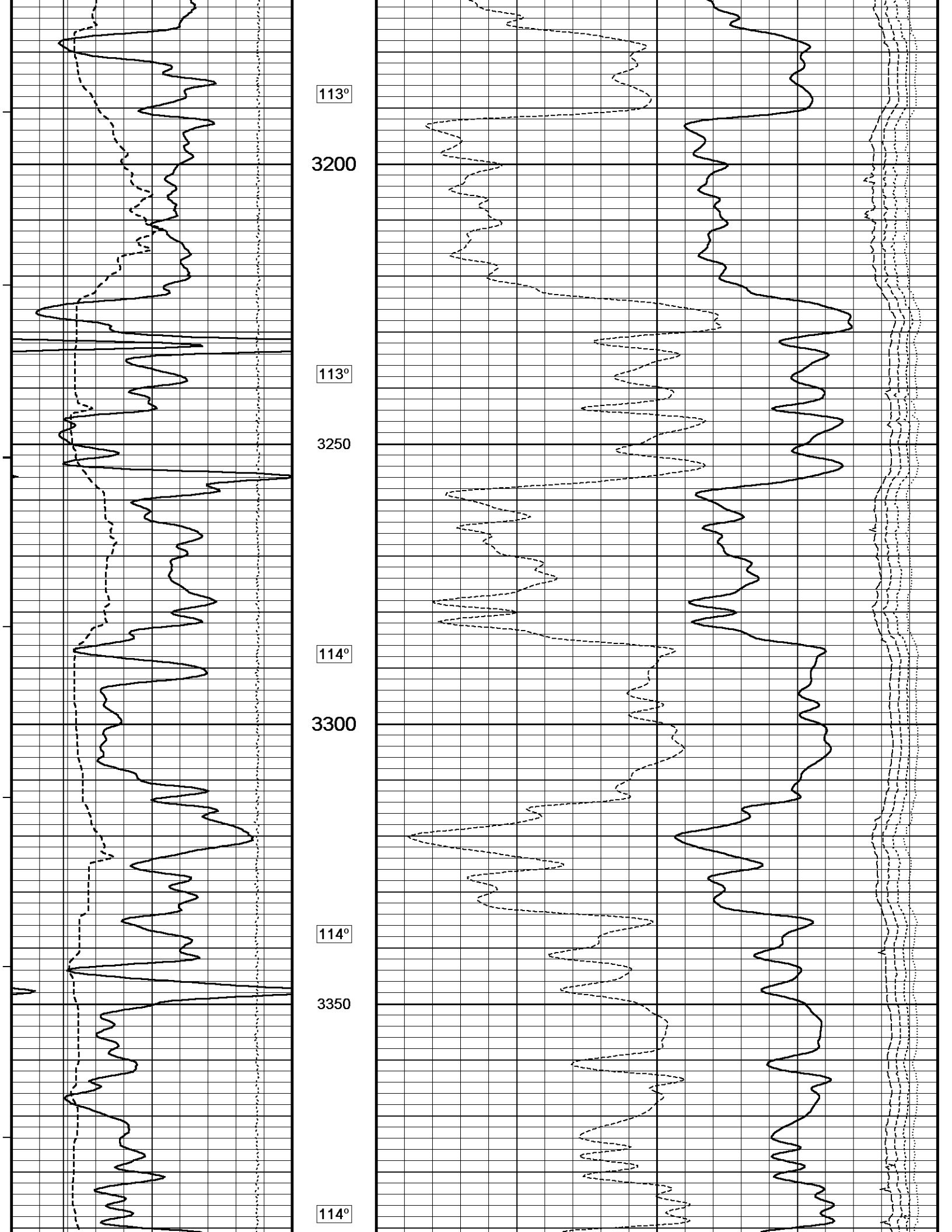

108°
2100
108°
2150
108°
2200
108°
2250
109°
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

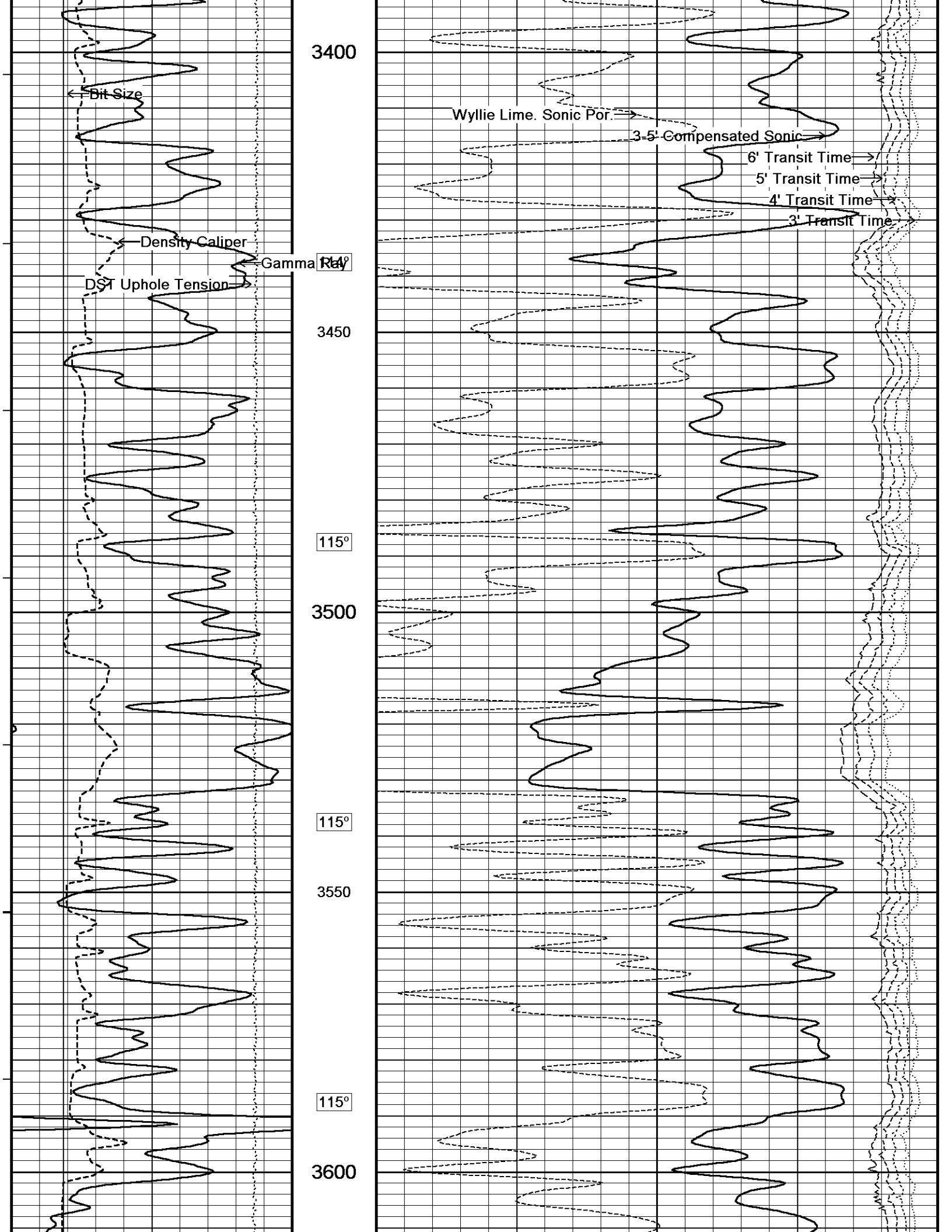

2300
109°
2350
109°
2400
110°
2450
110°
2500

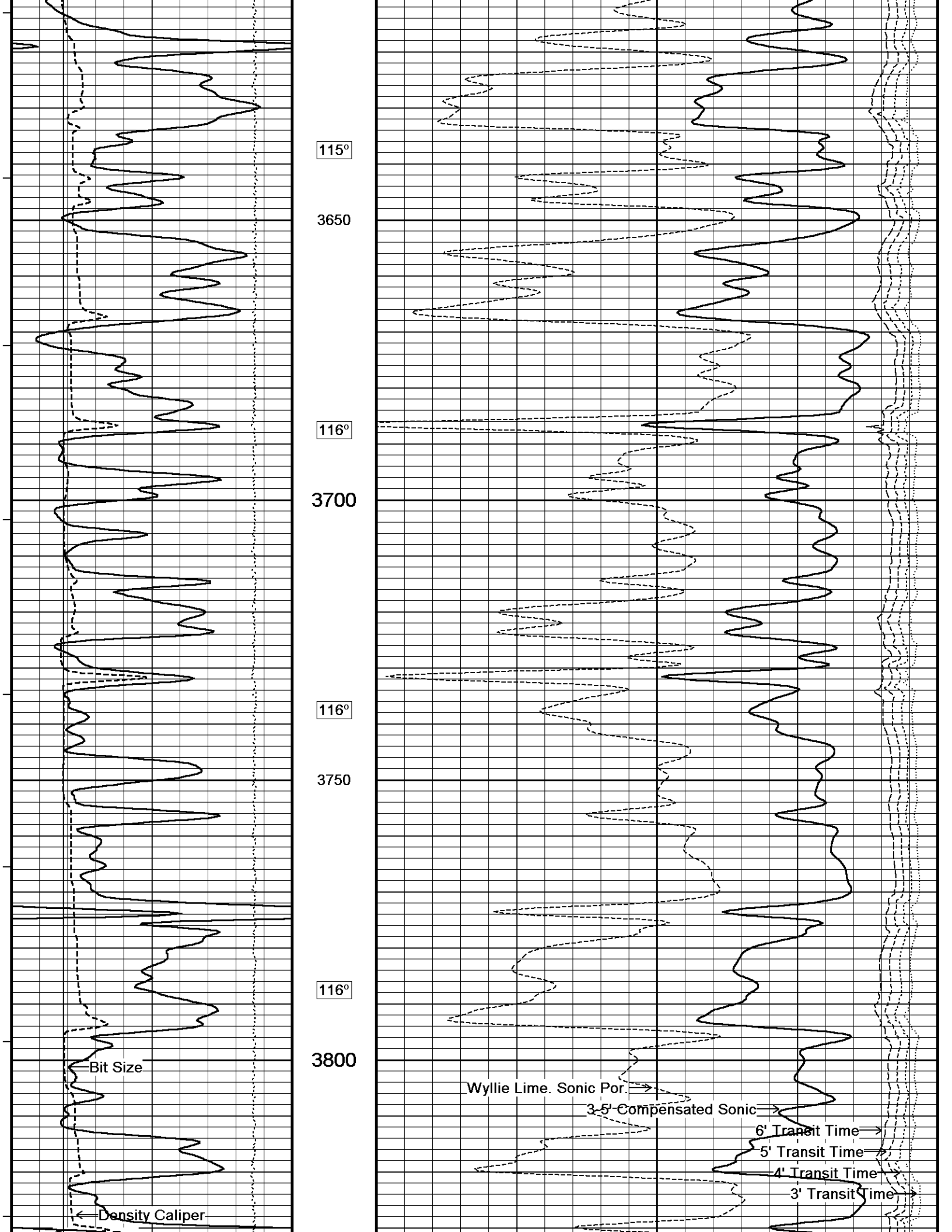

110°
2550
110°
2600
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
111°
Density Caliper
Gamma Ray
2650
DST Uphole Tension
111°
2700

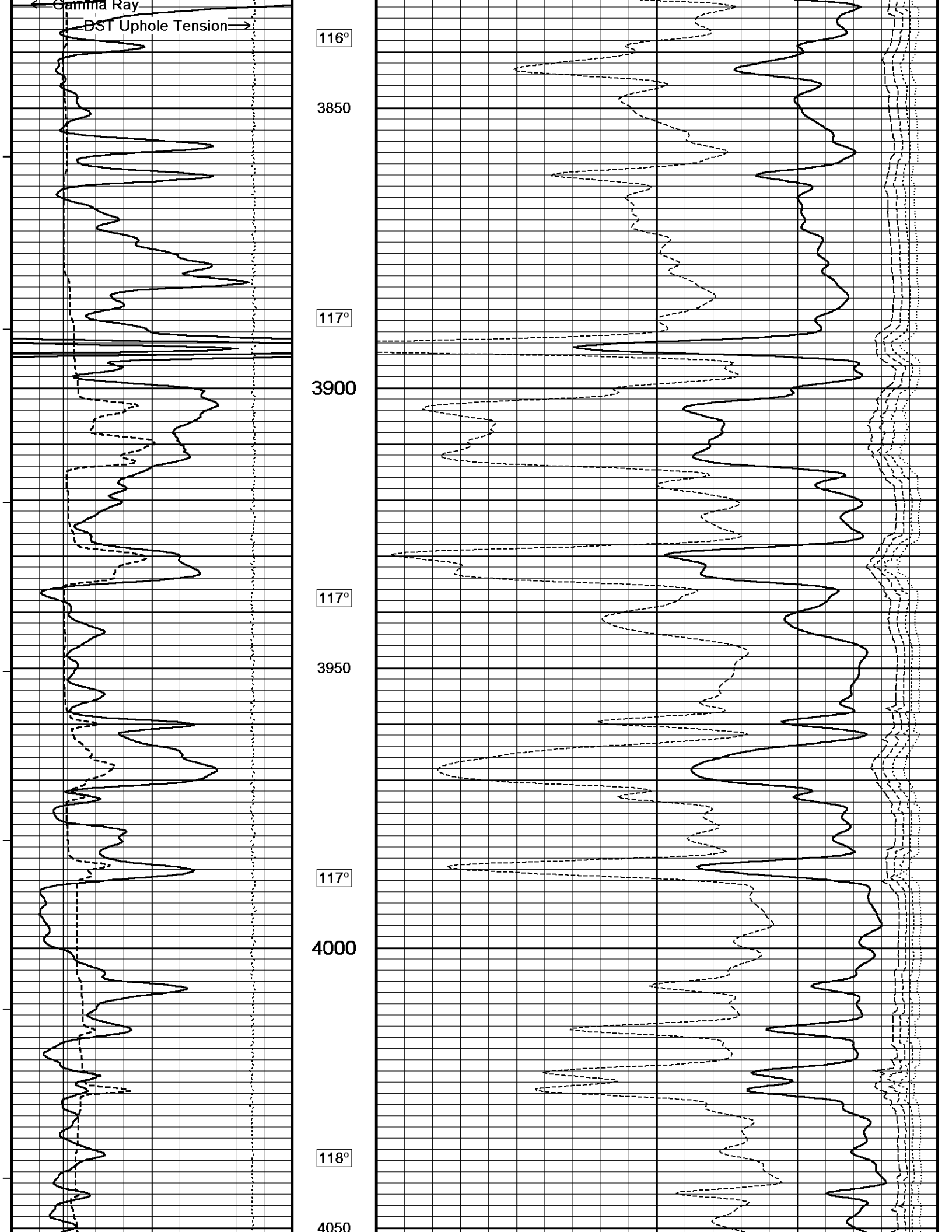

111°
2750
112°
2800
112°
2850
112°
2900
112°
2950

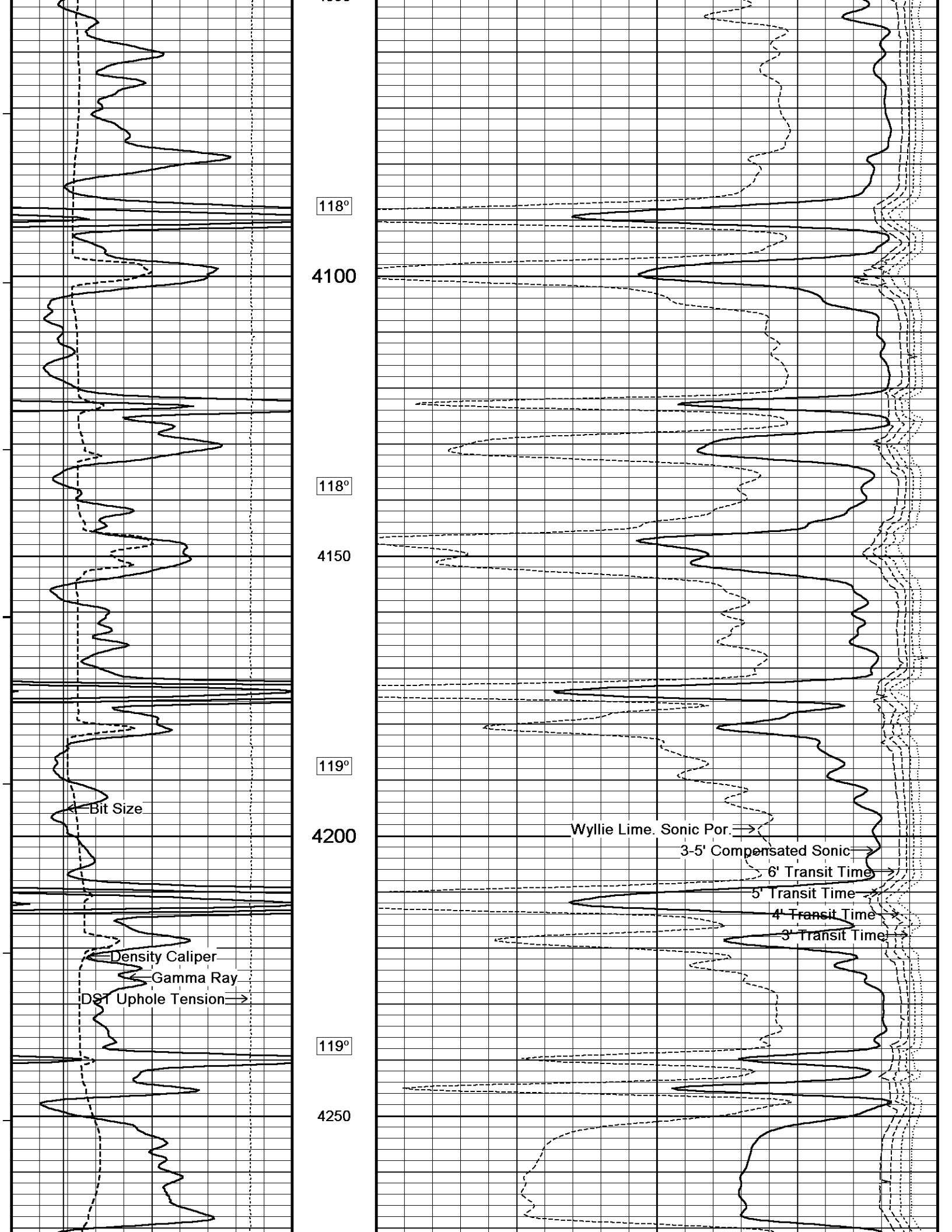

112°
3000
Bit Size
Wyllie Lime. Sonic Por
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
113°
Density Caliper
Gamma Ray
DST Uphole Tension
3050
113°
3100
113°
3150

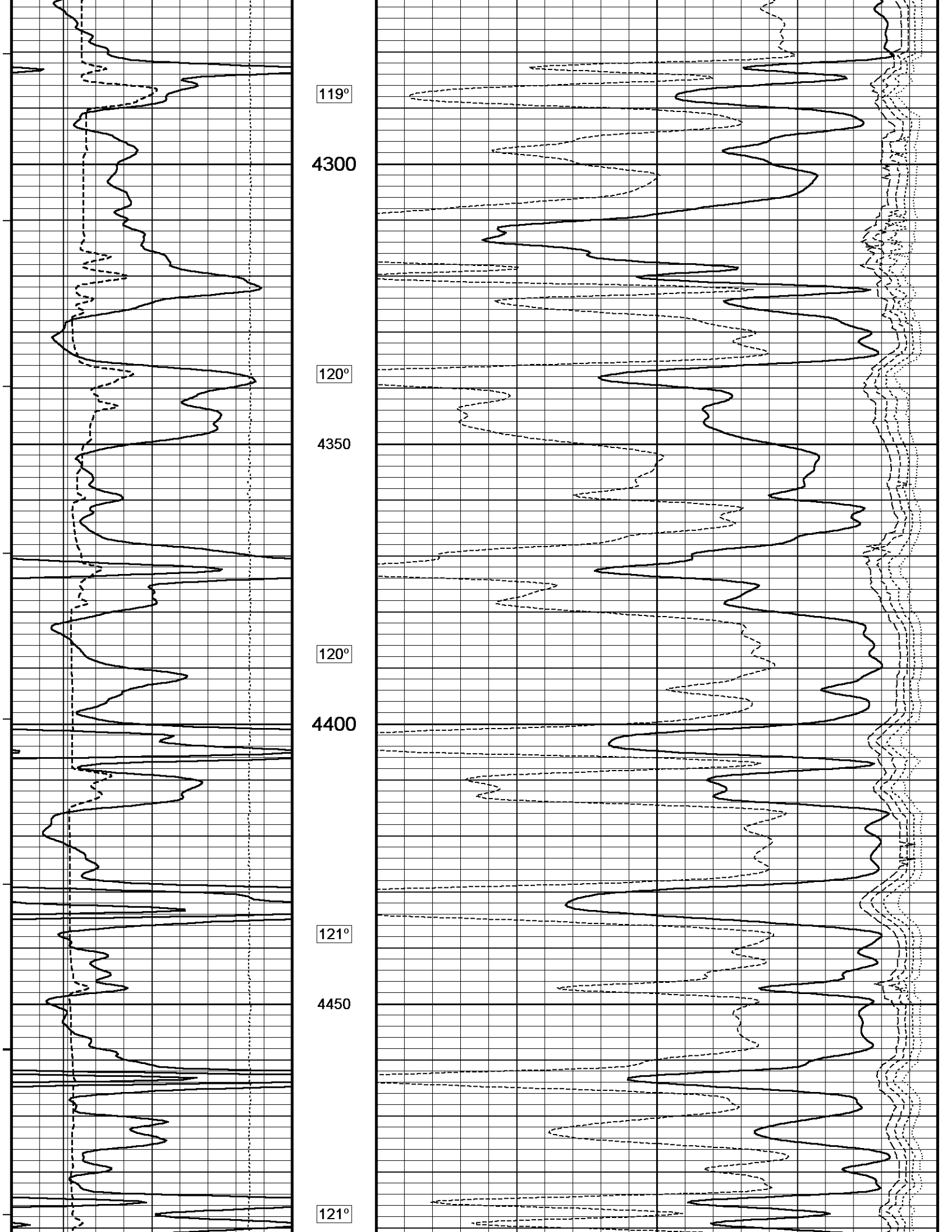

113°
3200
113°
3250
114°
3300
114°
3350
114°

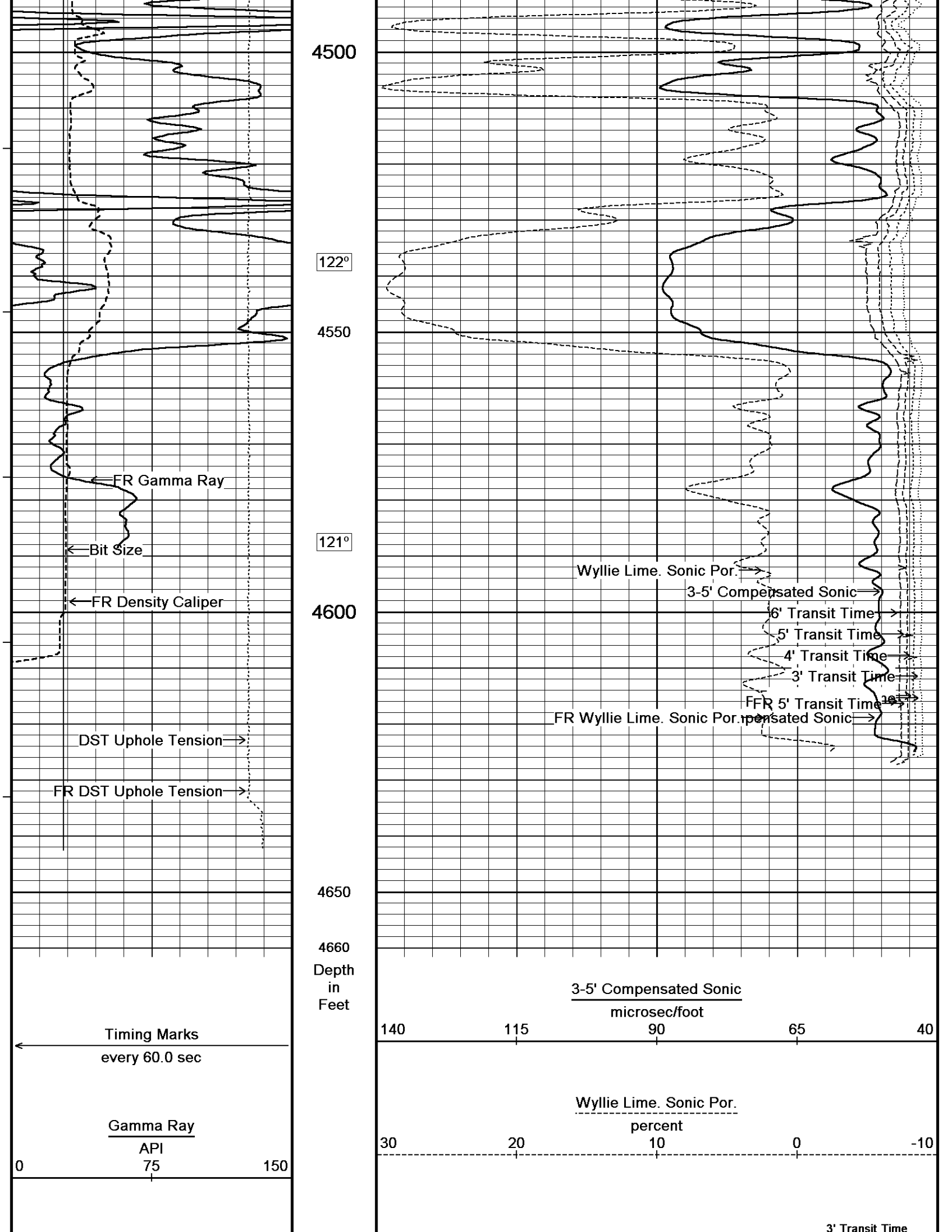

3400
Bit Size
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
0
DST Uphole Tension
3450
115°
3500
115°
3550
115°
3600


115°
3650
116°
3700
116°
3750
116°
3800
Bit Size
Density Caliper
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


Gamma Ray
DST Uphole Tension
116°
3850
117°
3900
117°
3950
117°
4000
118°
4050


118°
4100
118°
4150
119°
Bit Size
4200
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
119°
4250


119°
4300
120°
4350
120°
4400
121°
4450
121°


4500
122°
4550
FR Gamma Ray
Bit Size
121°
FR Density Caliper
4600
DST Uphole Tension
FR DST Uphole Tension
4650
4660
Depth
in
Feet
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
FFR 5' Transit Time
FR Wyllie Lime. Sonic Por.
pensated Sonic
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
3-5' Compensated Sonic
microsec/foot
140
115
90
65
40
Wyllie Lime. Sonic Por.
percent
30
20
10
0
-10
3' Transit Time

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Borehole Temp in deg F

Replay Scale 1:240

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-JUL-2012 12:14
Filename: C:\Minimus 13.02.6600\Data\Shakespeare Zerr Tru...\Shakespeare Zerr Trust #3-23_002.dta — Recorded on 29-JUL-2012 09:36
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-JUL-2012 12:14
Filename: C:\Minimus 13.02.6600\Data\Shakespeare Zerr Tru...\Shakespeare Zerr Trust #3-23_001.dta — Recorded on 29-JUL-2012 09:09
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds

Depth in Feet

Borehole Temp in deg F

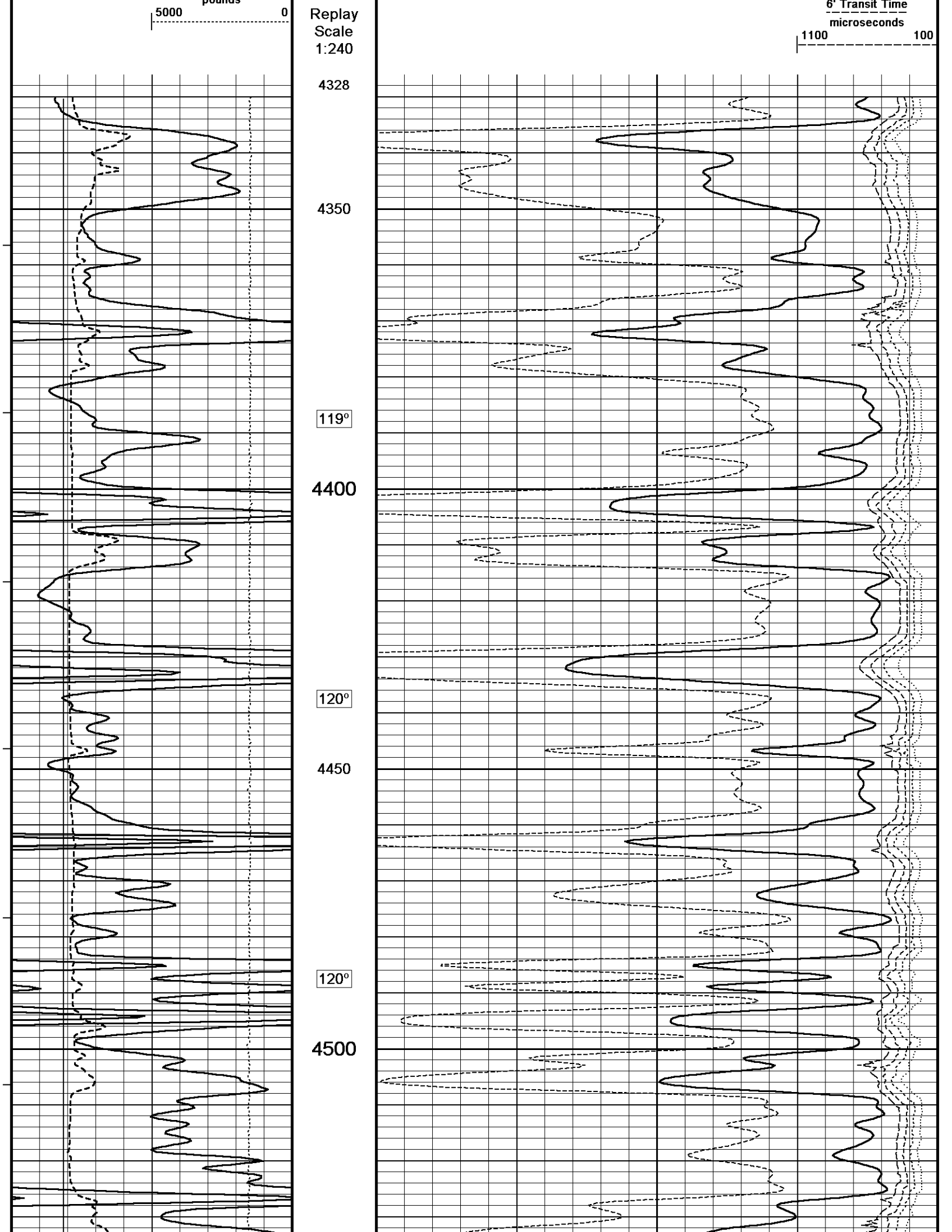
3-5' Compensated Sonic
microsec/foot
140 115 90 65 40

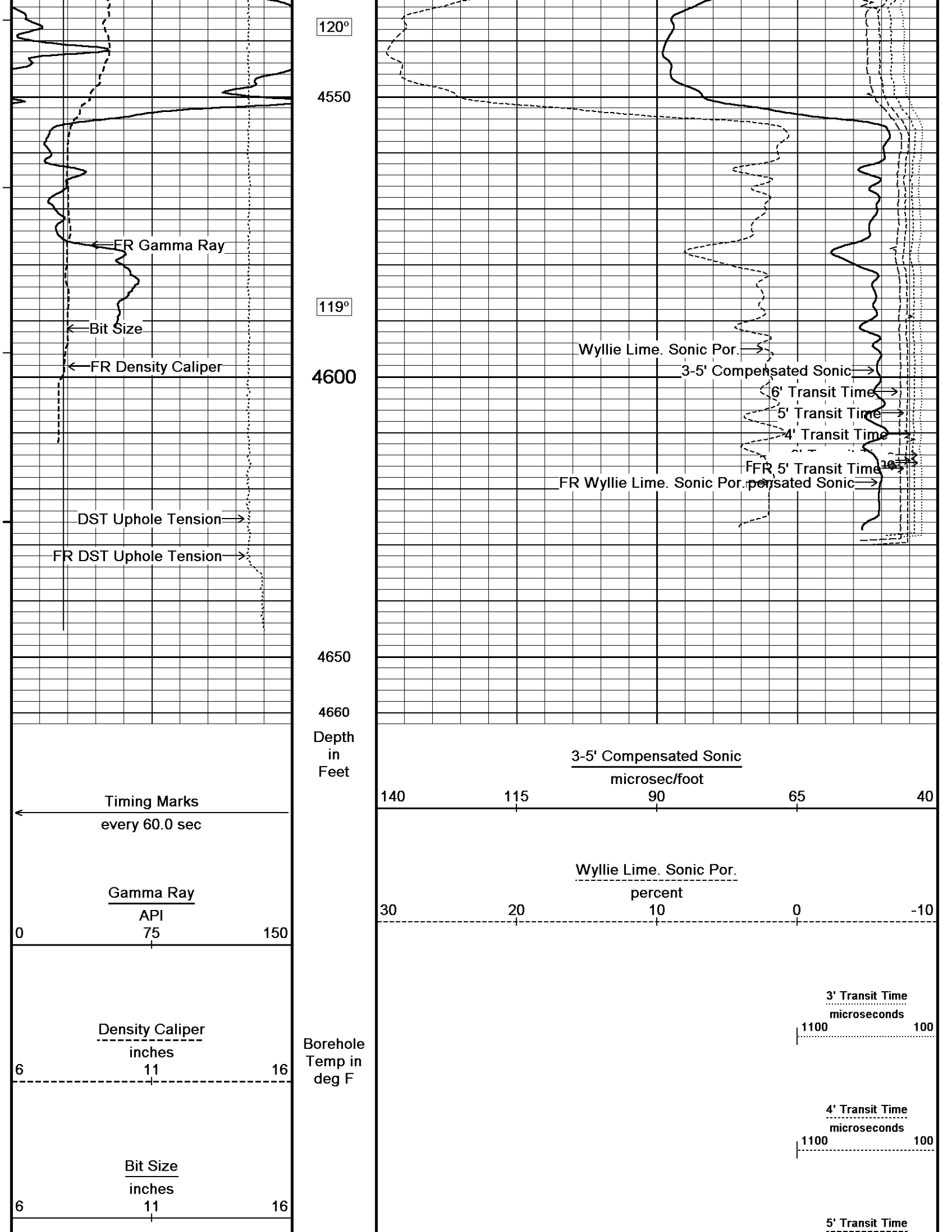
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100


pounds
5000
0
Replay
Scale
1:240
6' Transit Time
microseconds
1100
100
4328
4350
119°
4400
120°
4450
120°
4500


120°
4550
FR Gamma Ray
119°
Bit Size
FR Density Caliper
4600
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
FFR 5' Transit Time
FR Wyllie Lime. Sonic Por.
pensated Sonic
DST Uphole Tension
FR DST Uphole Tension
4650
4660
Depth in Feet
3-5' Compensated Sonic
microsec/foot
140
115
90
65
40
Timing Marks
every 60.0 sec
Wyllie Lime. Sonic Por.
percent
30
20
10
0
-10
Gamma Ray
API
0
75
150
3' Transit Time
microseconds
1100
100
Density Caliper
inches
6
11
16
Borehole Temp in deg F
4' Transit Time
microseconds
1100
100
Bit Size
inches
6
11
16
5' Transit Time

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-JUL-2012 12:14
Filename: C:\Minimus 13.02.6600\Data\Shakespeare Zerr Tru...\Shakespeare Zerr Trust #3-23_001.dta — Recorded on 29-JUL-2012 09:09
System Versions: Logged with 13.02.6600 Plotted with 13.02.6600

BEFORE SURVEY CALIBRATION

C:\Minimus 13.02.6600\Data\Shakespeare Zerr Trust #3-23\Shakespeare Zerr Trust #3-23_001.dta

General Constants All 000

Last Edited on 29-JUL-2012,07:18

General Parameters		
Mud Resistivity	0.580	ohm-metres
Mud Resistivity Temperature	93.000	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	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	

Gamma Calibration MCG-C 84

Field Calibration on 29-JUL-2012 02:56

	Measured	Calibrated (API)
Background	71	48
Calibrator (Gross)	1147	773
Calibrator (Net)	1075	725

Gamma Constants MCG-C 84

Last Edited on 29-JUL-2012,07:13

Gamma Calibrator Number	GR38	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

SP Calibration MCG-C 84

Field Calibration on 24-JUL-2012,09:07

	Measured	Calibrated (mV)
Reference 1	105.6	101.0
Reference 2	-96.1	-101.0

High Resolution Temperature Calibration MCG-C 84

Field Calibration on 23-JUL-2012,09:56

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG-C 84

Last Edited on 23-JUL-2012,09:56

Pre-filter Length	11

Mirco Normal and Micro Inverse Calibration MMkA-1

Base Calibration on 24-JUL-2012,08:50

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 24-JUL-2012 08:59
Field Check on 26-JUL-2012 13:26

Base Calibration

Channel	Measured Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 1	Calibrated (ohm-m) Resistor 2
Micro Normal	12.2	60.2	5.0	25.0
Micro Inverse	15.7	78.4	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	62.9	62.9
Micro Inverse	48.2	48.2

Micro Normal and Micro Inverse Constants MML-A 4

Last Edited on 29-JUL-2012,07:14

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159	
Micro Normal K Factor	1.0000	
Micro Inverse K Factor	1.0000	
Standoff Offset	N/A	inches

Caliper Calibration MML-A 4

Base Calibration on 24-JUL-2012 08:53
Field Calibration on 26-JUL-2012 13:29

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15504	5.98
2	18771	7.97
3	22124	9.86
4	25894	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.96	5.98

Neutron Calibration MDN-A.B 65

Base Calibration on 26-JUL-2012 11:25
Field Check on 29-JUL-2012 03:01

Base Calibration

	Measured Near	Measured Far	Calibrated (cps) Near	Calibrated (cps) Far
	3179	99	3714	110
Ratio	32.263		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1621	2347
Ratio	0.691	

Field Check

	Calibrated (cps)	
	1622	2345
Ratio	0.692	

Neutron Constants MDN-A.B 65

Last Edited on 29-JUL-2012,07:14

Neutron Source Id	PN-521	
Neutron Jig Number	5824NE	
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	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	Constant Value	
Formation Pressure	0.00	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	Constant Value	
Formation Fluid Salinity	0.00	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-A.A 55

Base Calibration on 24-JUL-2012 09:23
Field Check on 29-JUL-2012 02:44

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	968.0	126.8
Base Check		276.7
Field Check		276.7

FE Constants MFE-A.A 55

Last Edited on 29-JUL-2012,07:09

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-A.A 126

Last Edited on 27-JUL-2012,20:15

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	
Correction for Sonde Skew	Applied	
Cycle Stretch Algorithm	Applied	
MN3FT	0.00	micro-sec
MX3FT	1500.00	micro-sec
Hunt-Raymer Constant	83.13	micro-sec/ft
Sonde Mode	Compensated	
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: N/A

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	No	
Use 4' Waveform to derive TR	No	
Use 5' Waveform to derive TR	No	
Use 6' Waveform to derive TR	No	
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	0	
4' Waveform Filter	0	
5' Waveform Filter	0	

6' Waveform Filter	0	
Semblance Level	0.50	
Semblance Window Width	120.00	micro-sec
Sonic 1 Despiker	100.00	micro-sec/ft
Sonic 2 Despiker	100.00	micro-sec/ft

Induction Calibration MAI-A.A 45

Base Calibration on 26-JUL-2012,09:22
Field Check on 29-JUL-2012 02:43

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High
1	14.4	472.6	9.3	966.2
2	5.7	374.0	7.6	821.4
3	3.4	261.2	5.2	566.0
4	2.5	133.9	2.6	279.2

Array Temperature 78.4 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)		
	Low	High	Low	High	
1	0.0	0.0	20.1	3854.1	
2	0.0	0.0	32.2	3630.6	
3	0.0	0.0	28.9	3050.2	
4	0.0	0.0	18.5	2079.4	
Deep	0.0	0.0	16.3	1911.4	
Medium	0.0	0.0	42.7	4061.6	
Shallow	0.0	0.0	50.4	5485.5	
Array Temperature	0.0		86.9		Deg F

Induction Constants MAI-A.A 45

Last Edited on 29-JUL-2012,07:09

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	Yes	
Stand-off Type	N/A	
Stand-off	N/A	inches
Number of Fins on Stand-off	N/A	
Stand-off Fin Angle	N/A	degrees
Stand-off Fin Width	N/A	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	

High Resolution Temperature Calibration MAI-A.A 45

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 26-JUL-2012,09:09

	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MAI-A.A 45

Last Edited on

Pre-filter Length	11

Caliper Calibration MPD-B 31

Base Calibration on 26-JUL-2012 09:16
Field Calibration on 29-JUL-2012 02:46

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	17567	3.99
2	26416	5.98
3	35056	7.97
4	43488	9.86
5	52816	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.93	5.98

Photo Density Calibration MPD-B 31

Base Calibration on 26-JUL-2012 10:02
Field Check on 29-JUL-2012 02:51

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	48085	24200	59556	30836
Reference 2	19674	1989	24941	2541

Field Check at Base

692.2	849.9

Field Check

690.8	849.9

PE Calibration

Base Calibration	Measured			Calibrated
	WS	WH	Ratio	Ratio
Background	127	608		
Reference 1	19234	47953	0.404	0.371
Reference 2	5695	19580	0.293	0.272

Field Check at Base

126.7	608.3

Field Check

127.1	605.4

Density Constants MPD-B 31

Last Edited on 29-JUL-2012,07:12

Density Source Id	254	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	8 inch	
Caliper Source for Processing	Density Caliper	
PE Correction to Density	Not Applied	
Mud Density	1.30	gm/cc
Mud Density Z/A Multiplier	1.13	
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 (m)
2.71	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.00	0.00
0.00	0.00
0.00	0.00
0.00	

DOWNHOLE EQUIPMENT

C:\Minimus 13.02.6600\Data\Shakespeare Zerr Trust #3-23\Shakespeare Zerr Trust #3-23_001.dta

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

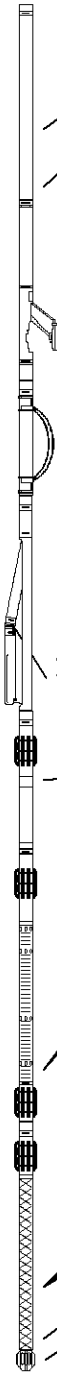
Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 60.68 ft Weight: 456.4 lb



55.39 ft	GRGC - Gamma Ray
52.48 ft	CGXT - MCG External Temperature
45.76 ft	MINV - Micro-inverse
45.76 ft	MNRL - Micro-normal
46.76 ft	MLTC - MML Caliper
40.97 ft	NPRL - Limestone Neutron Por.
33.73 ft	AVOL - Annular Volume
33.73 ft	HVOL - Hole Volume
33.73 ft	CLDC - Density Caliper
31.80 ft	DPRL - Limestone Density Por.
31.80 ft	DEN - Compensated Density
31.80 ft	DCOR - Density Correction
31.74 ft	PDPE - PE
26.24 ft	FEFE - Shallow FE
12.96 ft	DT35 - 3-5' Compensated Sonic
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	SHAKESPEARE OIL COMPANY, INC.
WELL	ZERR TRUST #3-23
FIELD	WILDCAT
PROVINCE/COUNTY	GOVE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2874.00	feet	First Reading	4619.00	feet
Elevation Drill Floor	2872.00	feet	Depth Driller	4630.00	feet
Elevation Ground Level	2864.00	feet	Depth Logger	4632.00	feet

Elevation Ground Level	2804.00	feet	Depth Logger	4652.00	feet

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COMPENSATED SONIC

WITH INTEGRATED TRANSIT TIME