



Weatherford[®]

**COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

COMPANY **SHAKESPEARE OIL CO., INC.**
 WELL **JANZEN 1-34**
 FIELD **WILDCAT**
 PROVINCE/COUNTY **SCOTT**
 COUNTRY/STATE **U.S.A. / KANSAS**
 LOCATION **1363' FNL & 339' FEL
NW NE SE NE**

SEC 34 TWP 16S RGE 34W Other Services MAI/MFE
 MPPD/MDN
 MML
 API Number 15-171-20956
 Permit Number
 Permanent Datum GL, Elevation 3119 feet
 Log Measured From KB
 Drilling Measured From KB @ 7 FEET

Date	14-JUL-2013	Elevations:	KB 3126.00 DF 3124.00 GL 3119.00
Run Number	ONE		
Service Order	3541023		
Depth Driller	4895.00	feet	
Depth Logger	4892.00	feet	
First Reading	4879.00	feet	
Last Reading	263.00	feet	
Casing Driller	267.00	feet	
Casing Logger	263.00	feet	
Bit Size	7.875	inches	
Hole Fluid Type	CHEM		
Density / Viscosity	9.30 lb/USg	49.00 CP	
PH / Fluid Loss	10.50	12.00 ml/30Min	
Sample Source	FLOW LINE		
Rm @ Measured Temp	0.53 @ 85.0	ohm-m	
Rmf @ Measured Temp	0.42 @ 85.0	ohm-m	
Rmc @ Measured Temp	0.62 @ 85.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.38 @ 116.0	ohm-m	
Time Since Circulation	5 HRS		
Max Recorded Temp	116.00	deg F	
Equipment / Base	13057	LB	
Recorded By	D. COLE		
Witnessed By	S. DAVIS		
JOB #	LB 13-202		

BOREHOLE RECORD			Last Edited: 13-JUL-2013 23:32	
Bit Size inches	Depth From feet	Depth To feet		
7.875	267.00	4895.00		
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	267.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583.

- MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
 - HARDWARE: DUAL BOWSPRING USED ON MDN.
 0.5 INCH STANDOFF USED ON MFE.
 TWO 0.5 INCH STANDOFFS USED ON MSS.
 0.5 INCH STANDOFF USED ON MAI.

- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.

- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.

- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.

- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 2320 CU. FT.

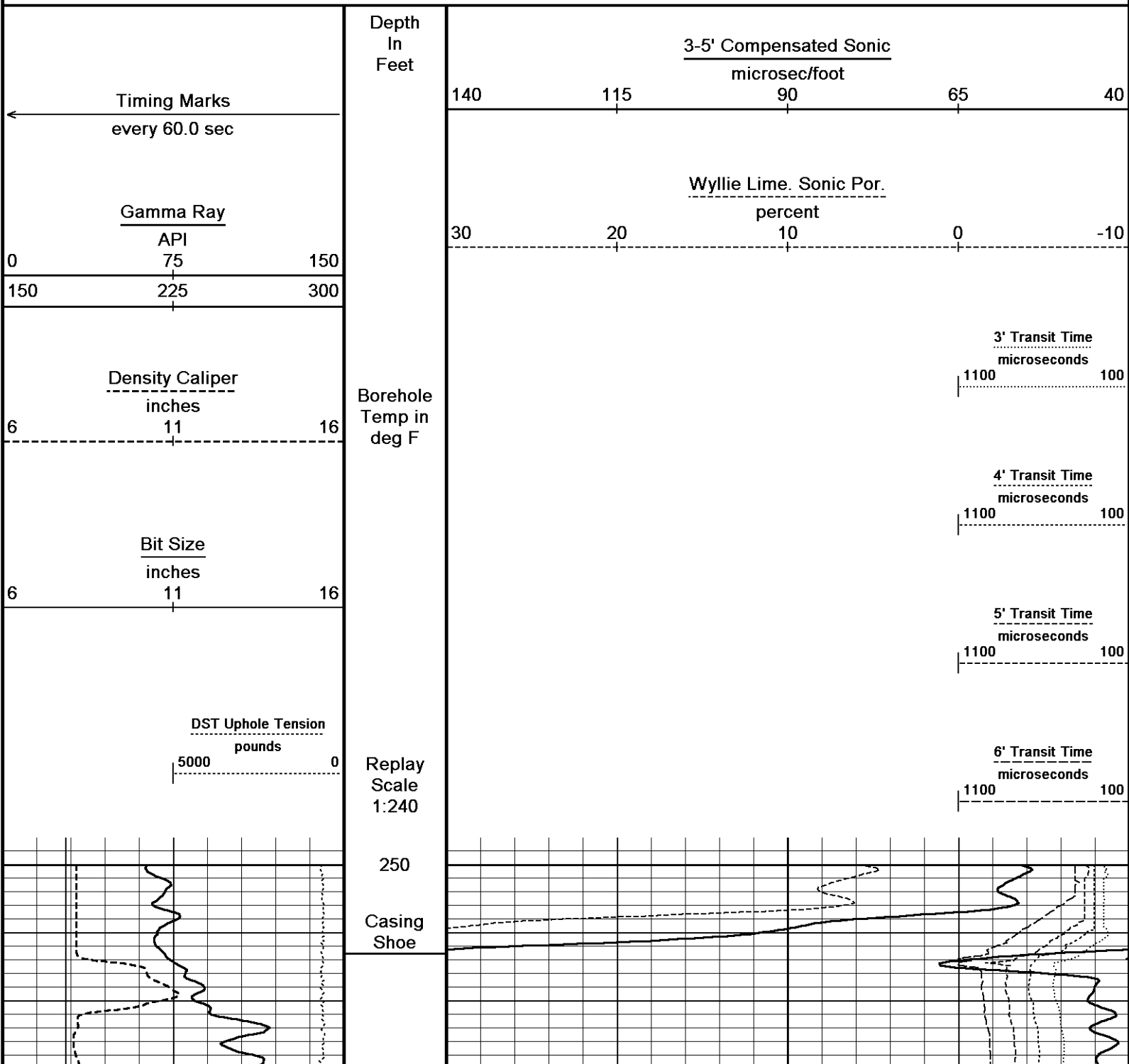
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO SURFACE CASING: 1570 CU. FT.

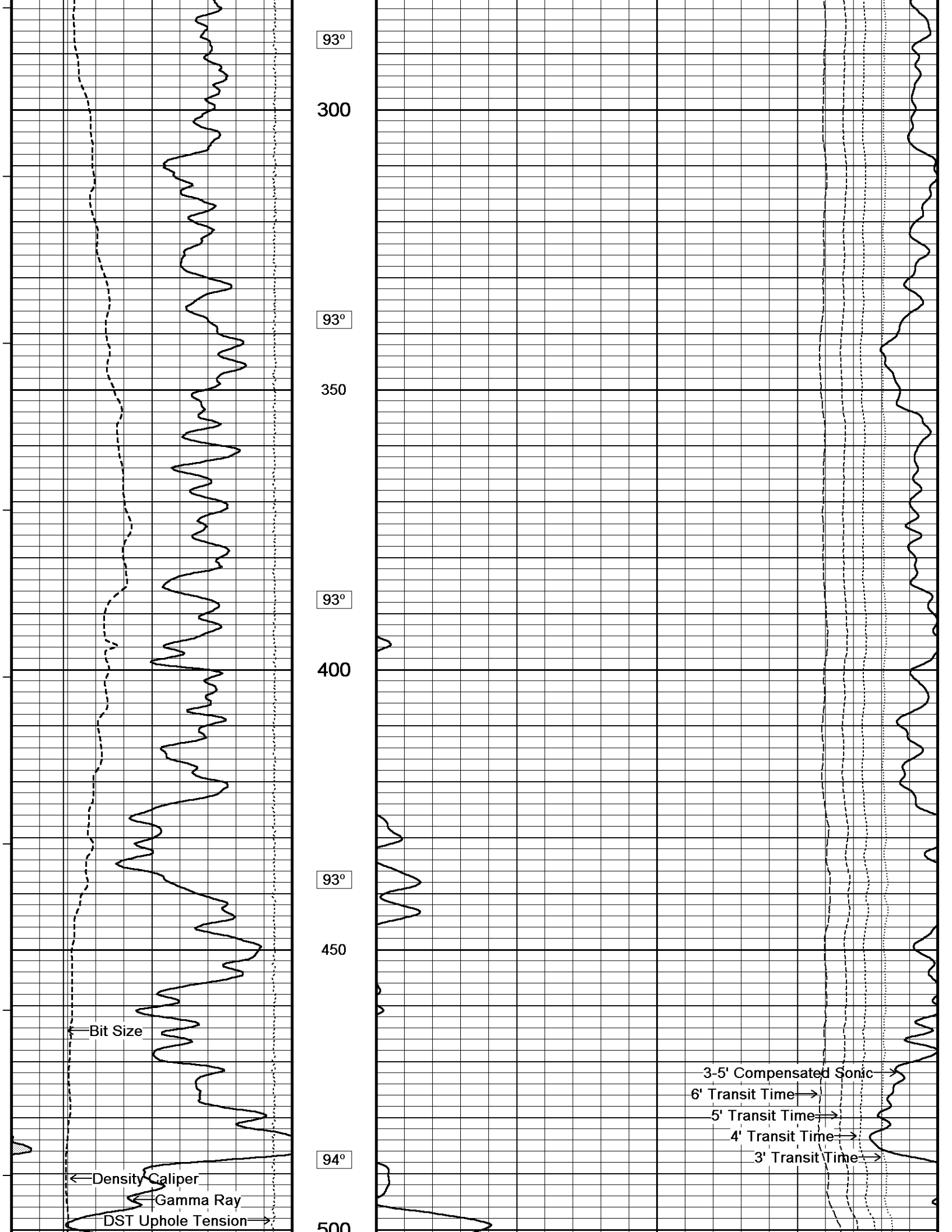
- RIG: HD DRILLING #3
 - ENGINEER: D. COLE
 - OPERATOR(S): J. LAPOINT _C. REMIREZ

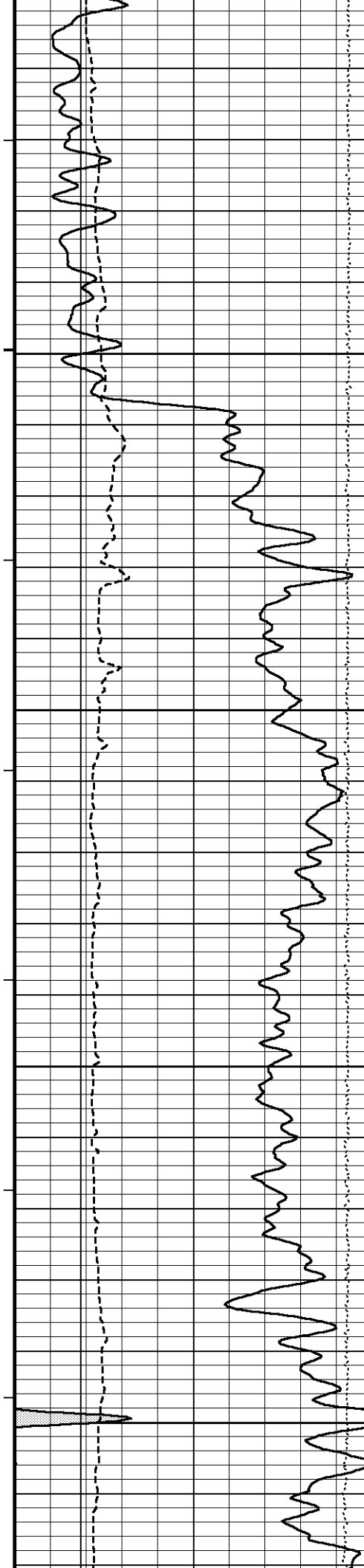
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions in our price schedule.

5 INCH MAIN

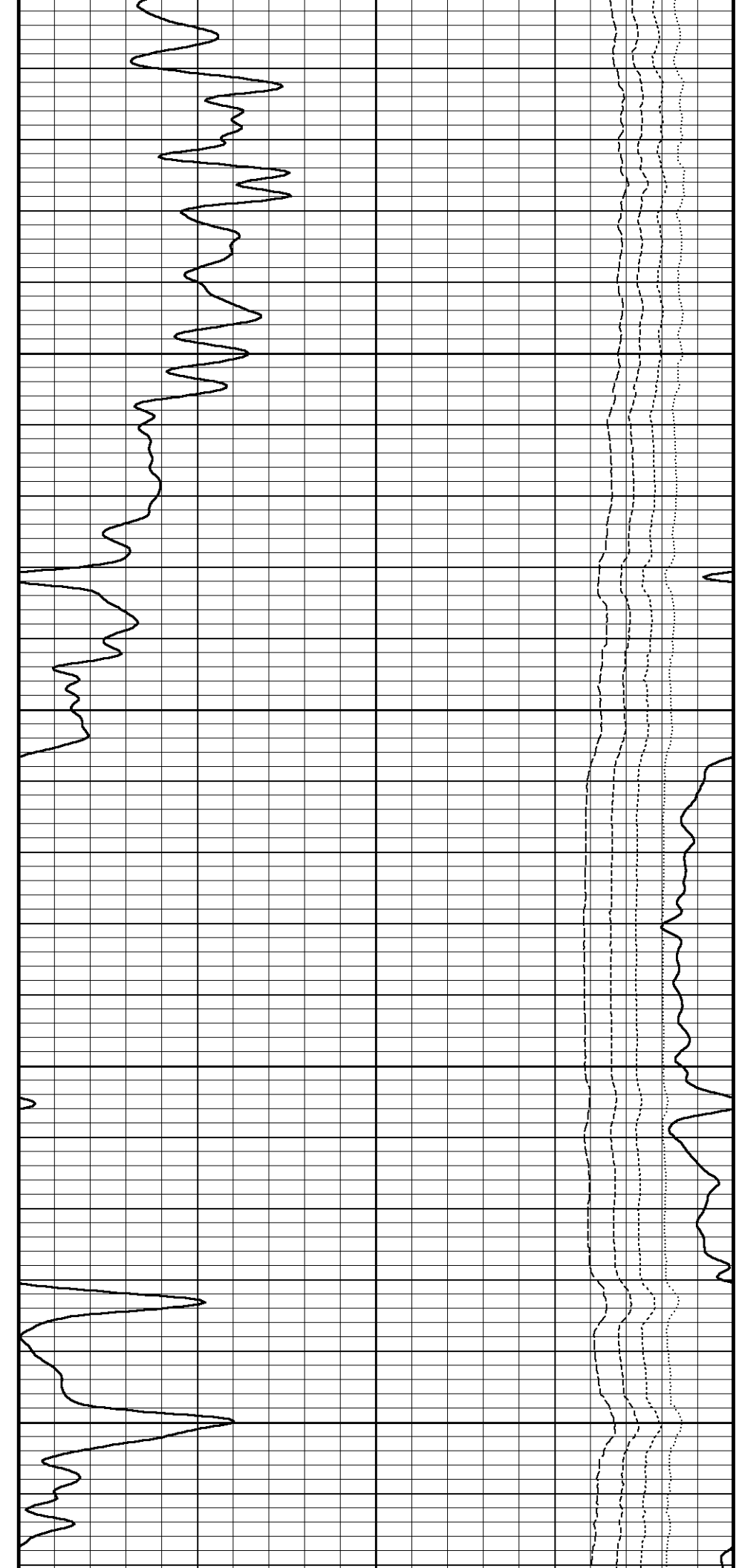
Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-JUL-2013 06:04
 Filename: C:\Minimus 13.05.9583\Logs\Shakespeare Janzen 1-34\Coppy of Janzen 1-34 MAIN5.dta Recorded on 14-JUL-2013 04:37
 System Versions: Plotted with 13.05.9583

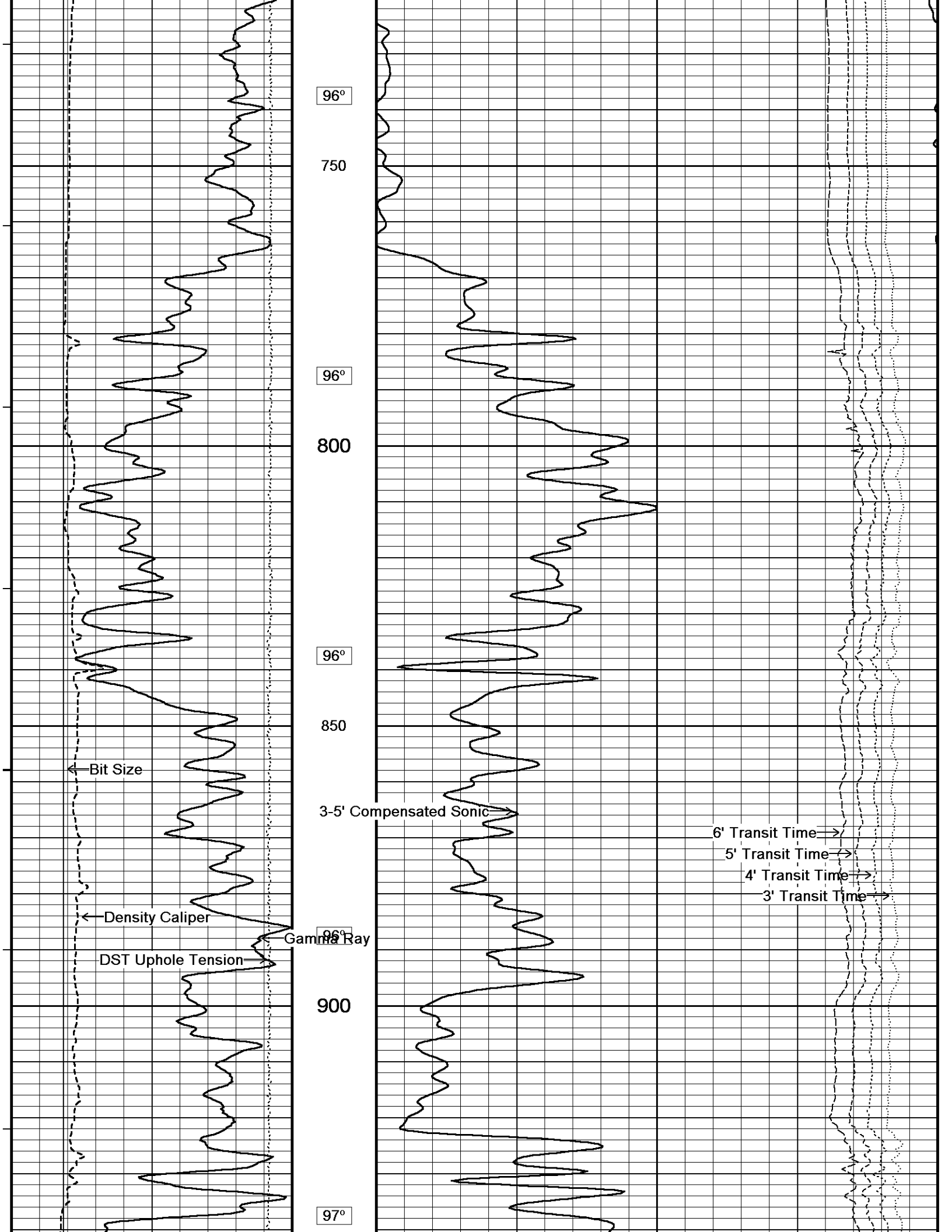


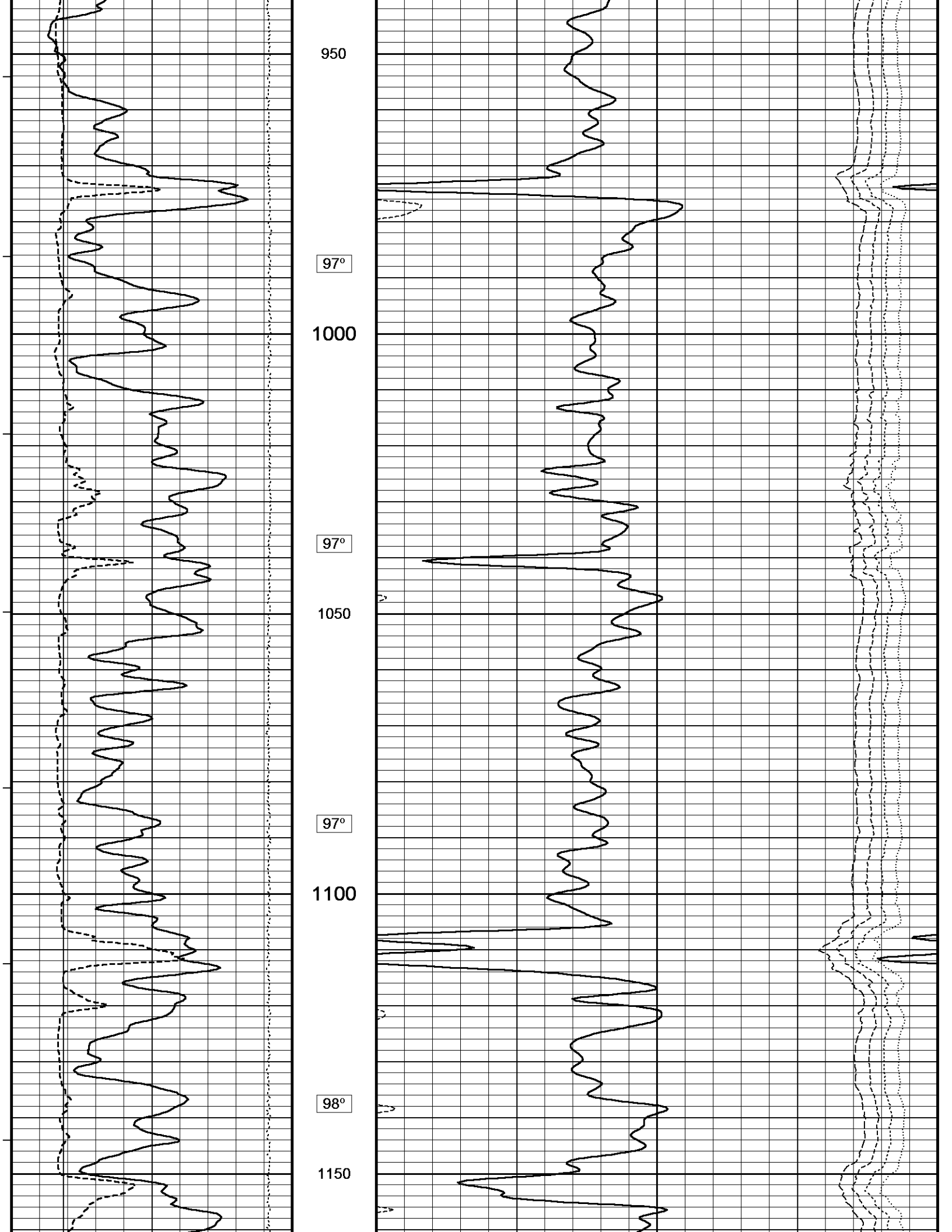


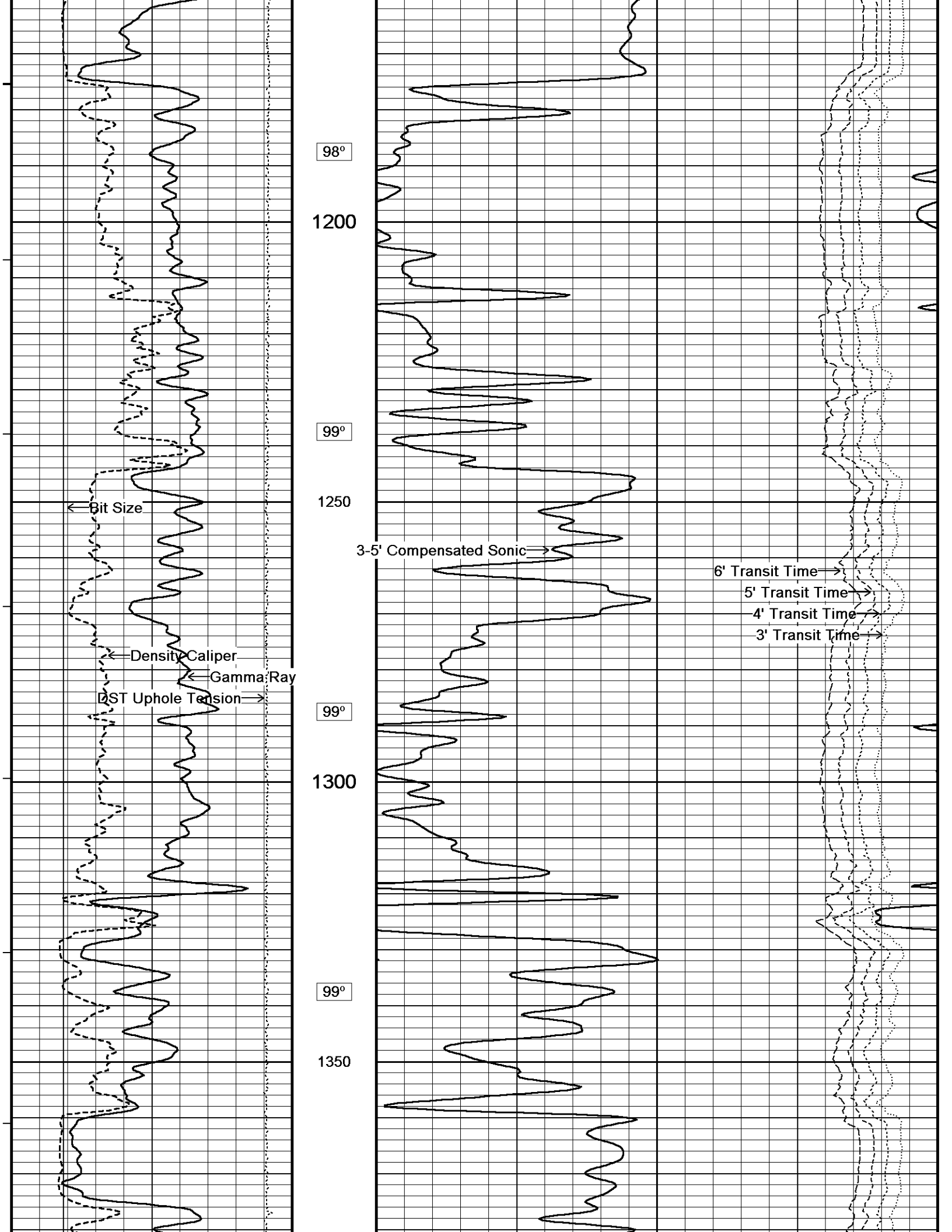


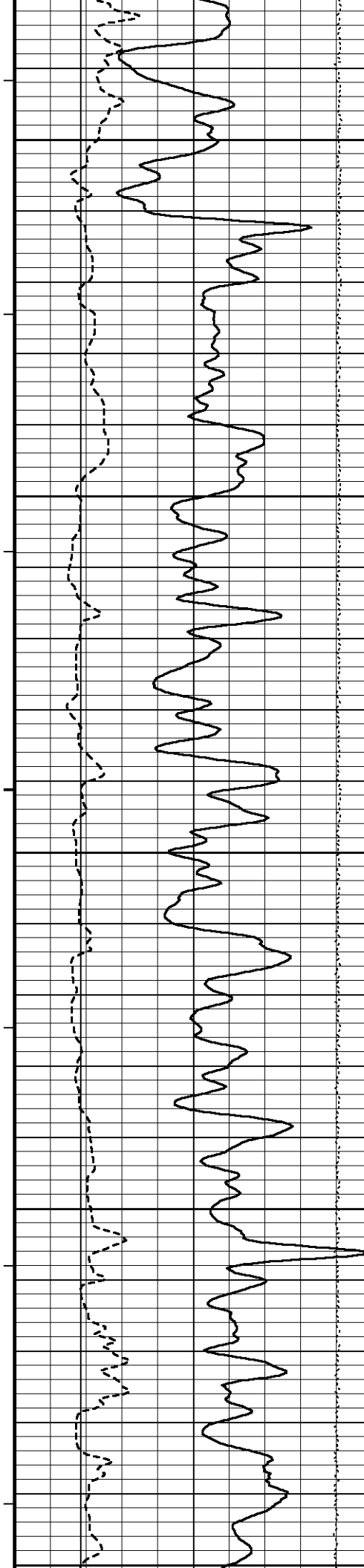
300
94°
550
94°
600
95°
650
95°
700











99°

1400

100°

1450

100°

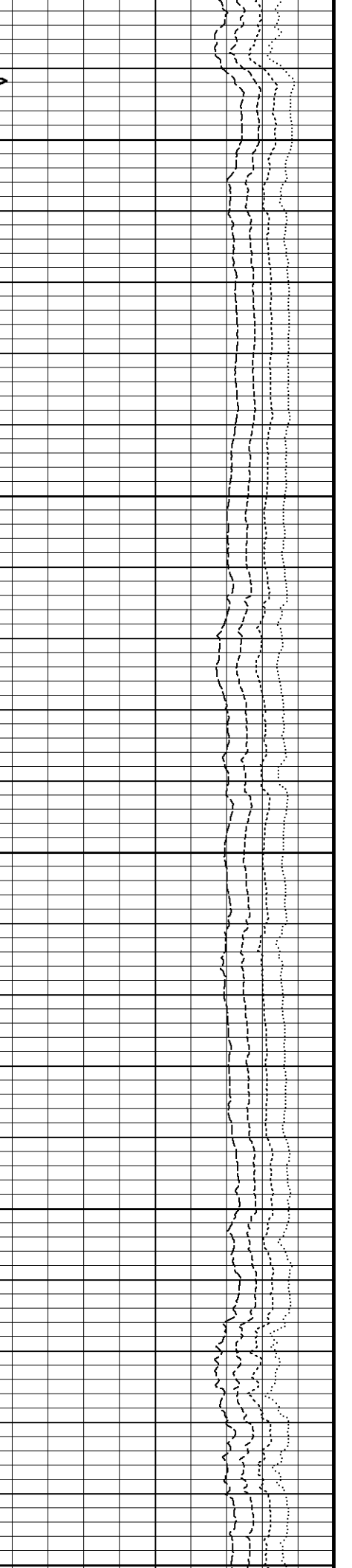
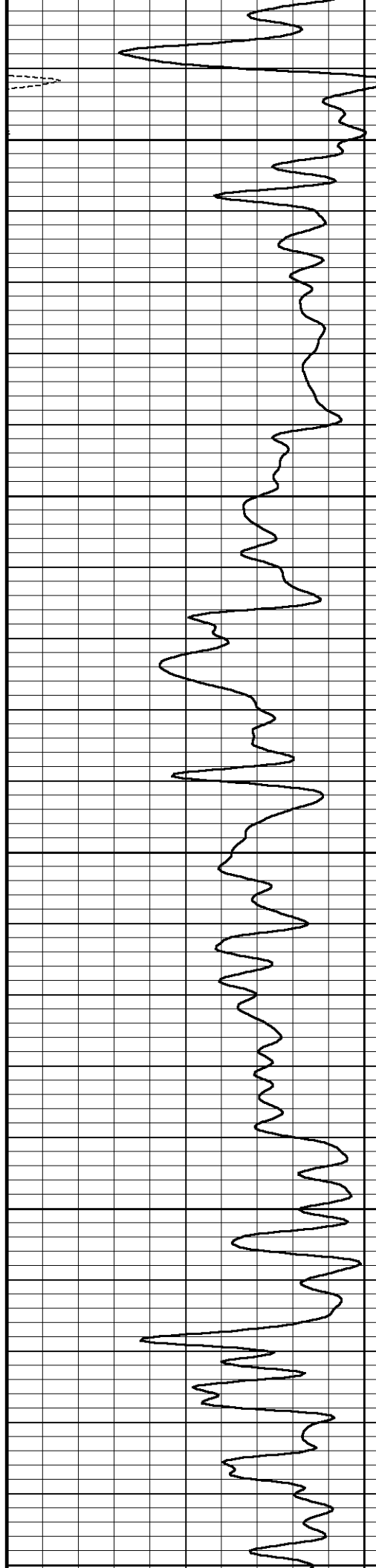
1500

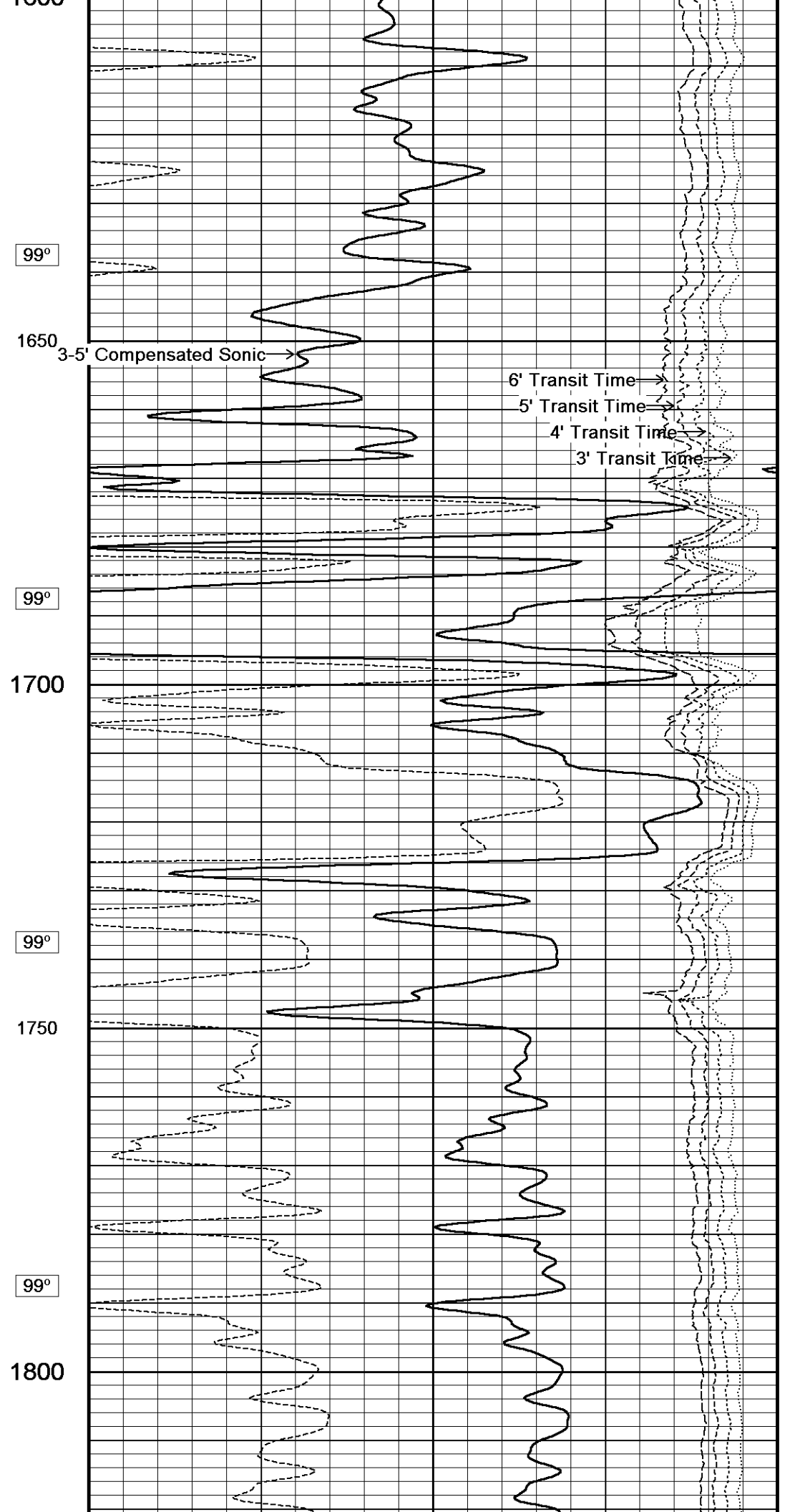
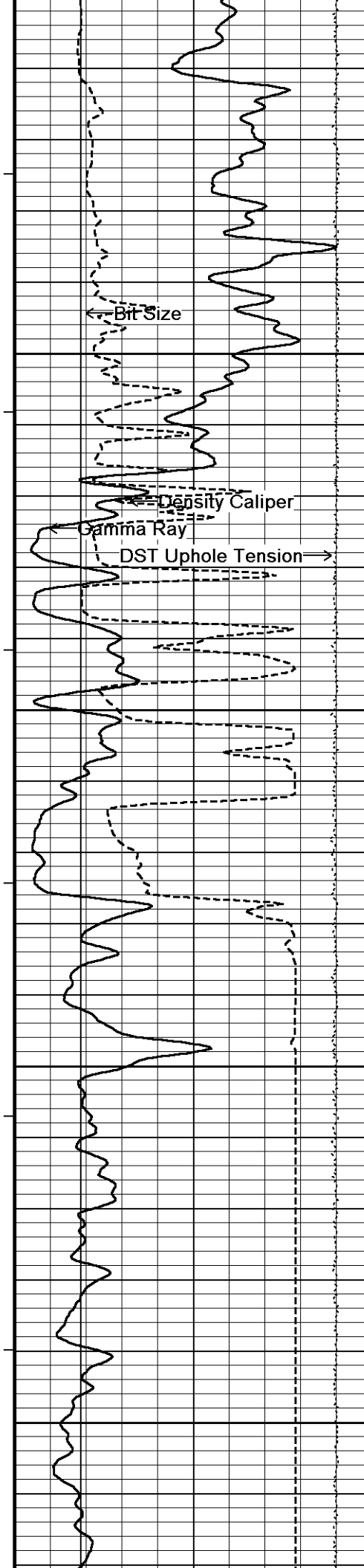
100°

1550

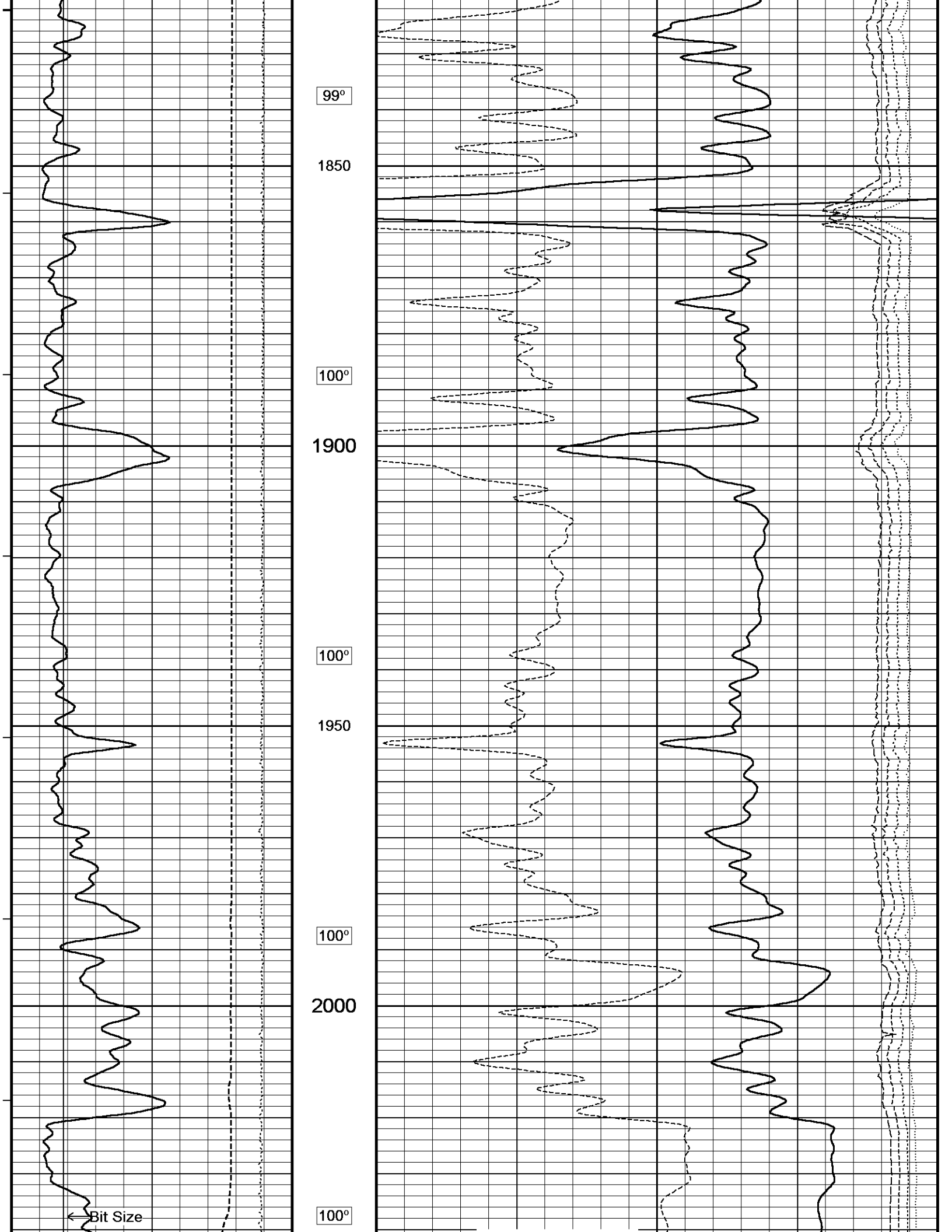
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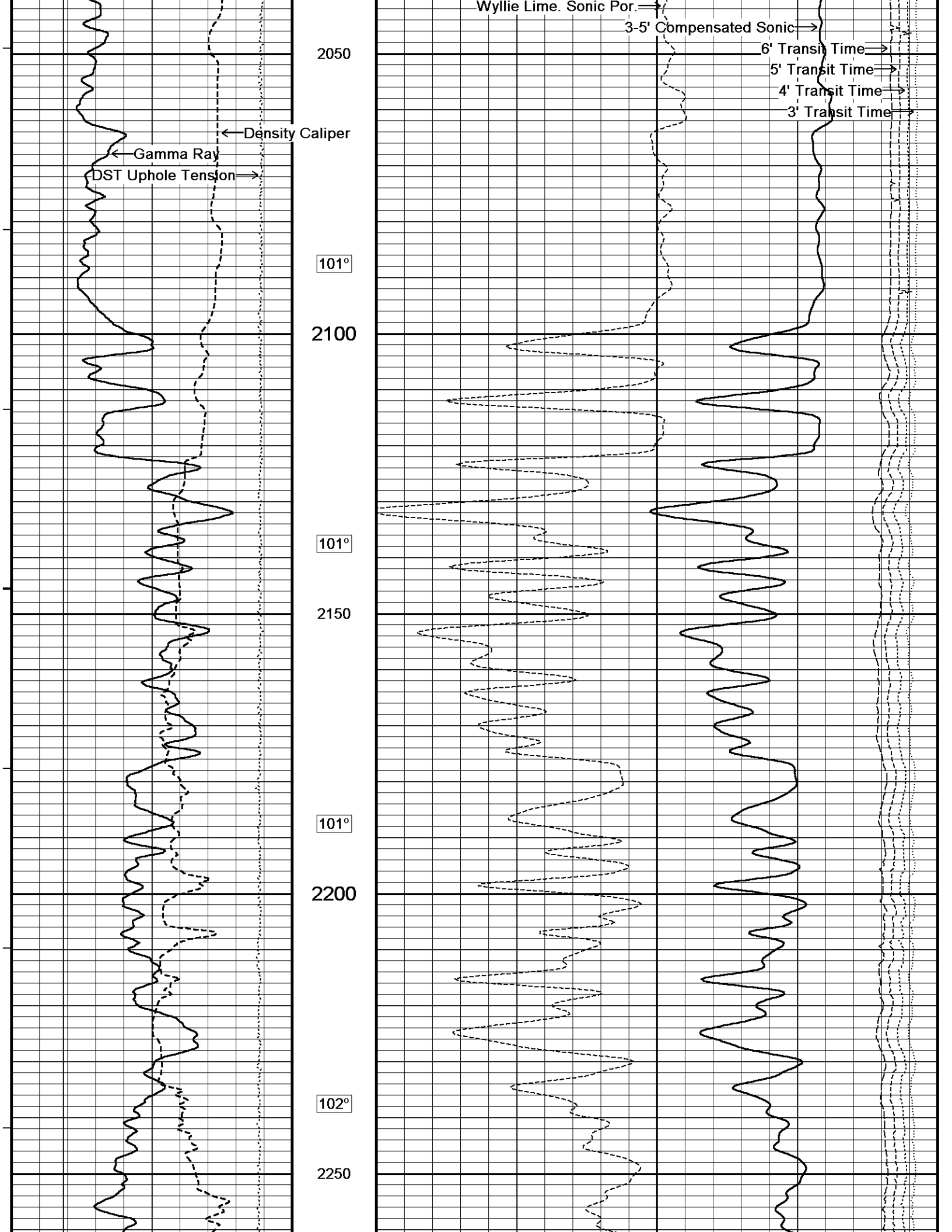
1600

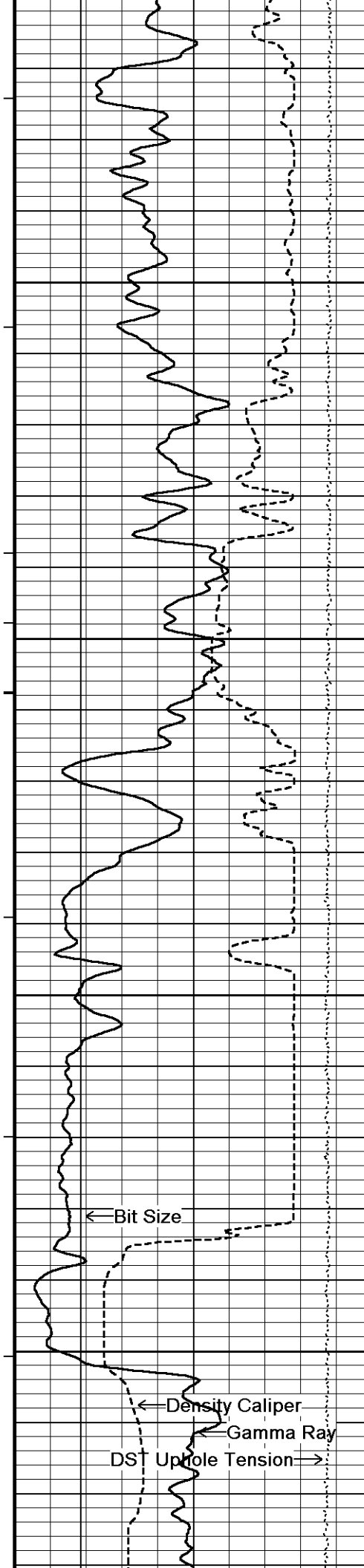




1800
1750
1700
1650
99°
99°
99°
99°







102°

2300

103°

2350

104°

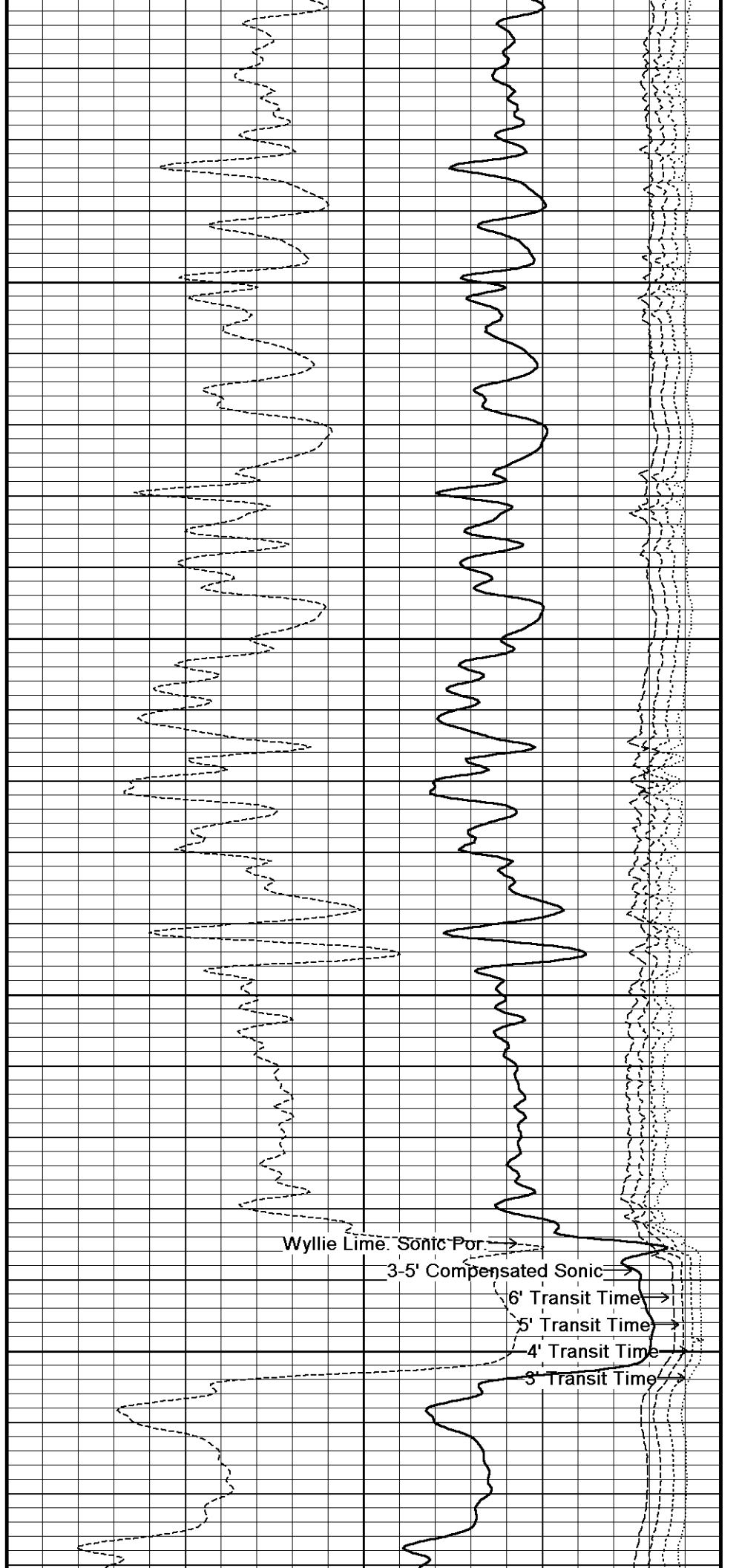
2400

104°

2450

← Bit Size

← Density Caliper
← Gamma Ray
DST Uphole Tension →



Wyllie Lime. Sonic Por. →

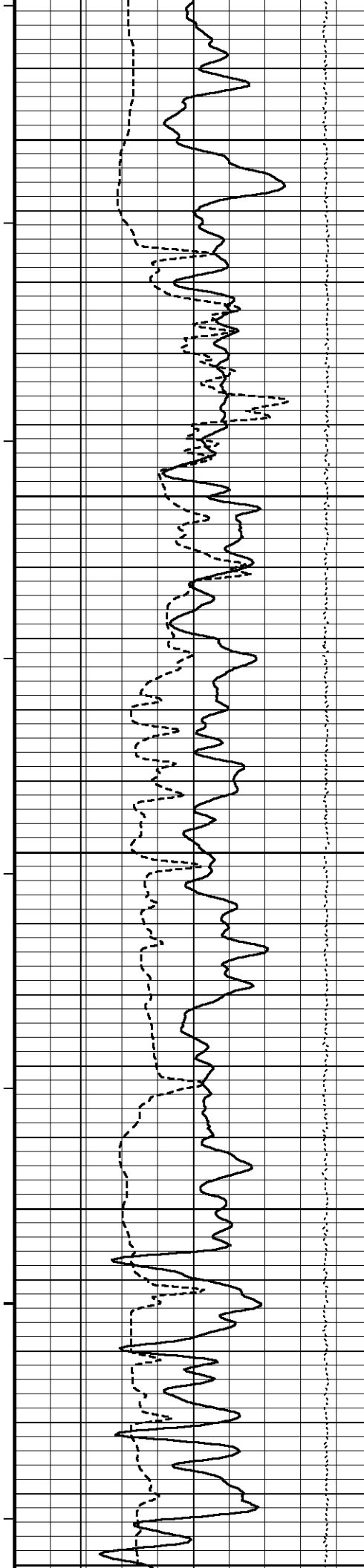
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



104°

2500

104°

2550

104°

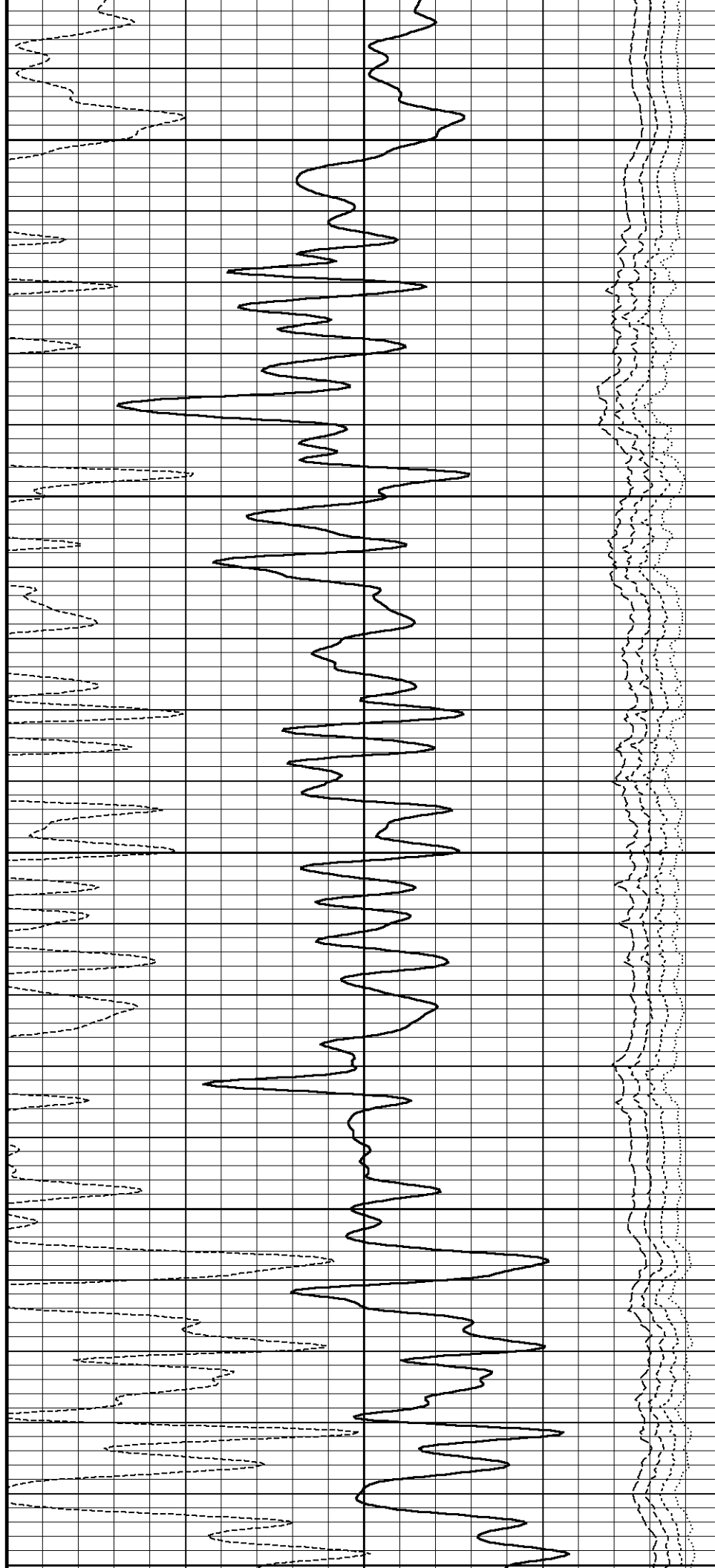
2600

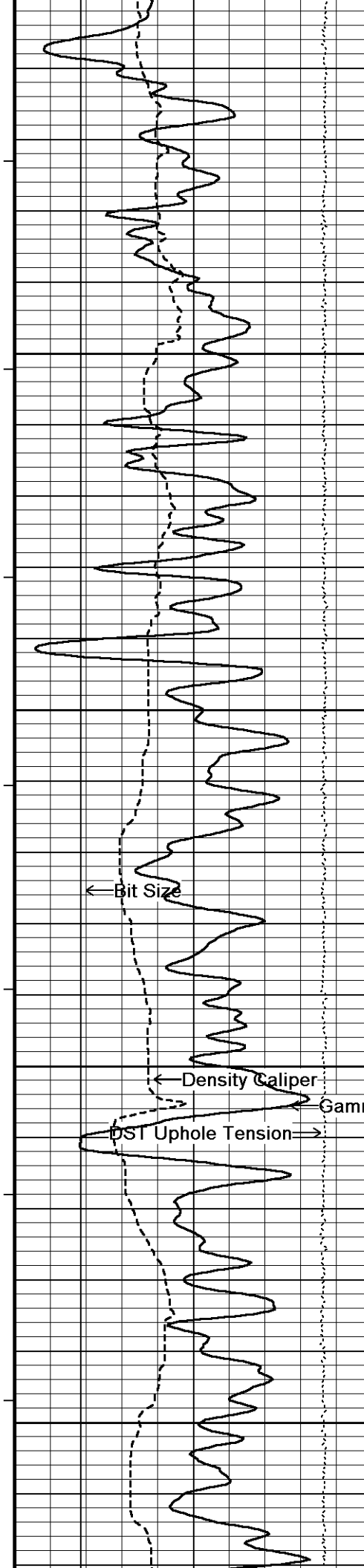
104°

2650

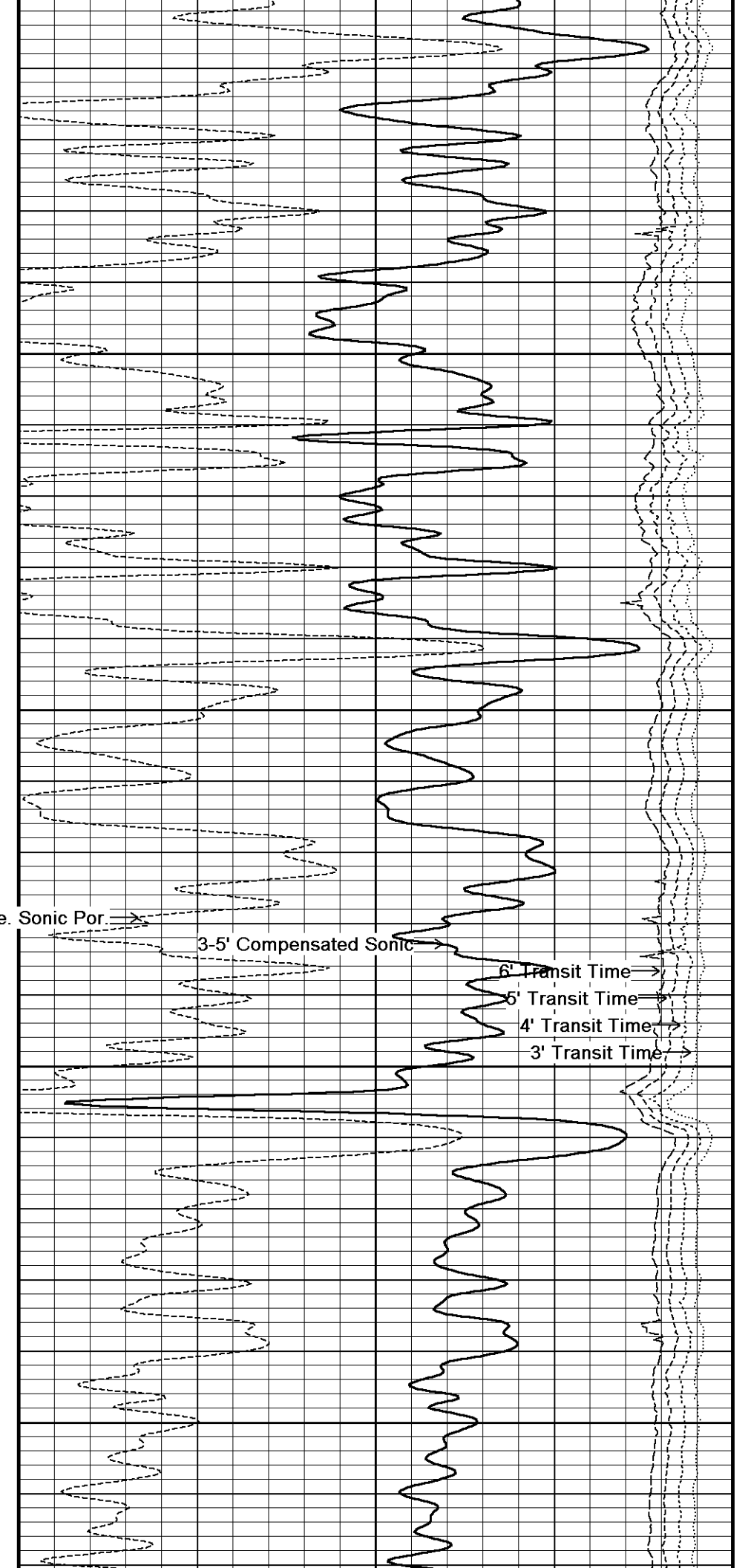
104°

2700

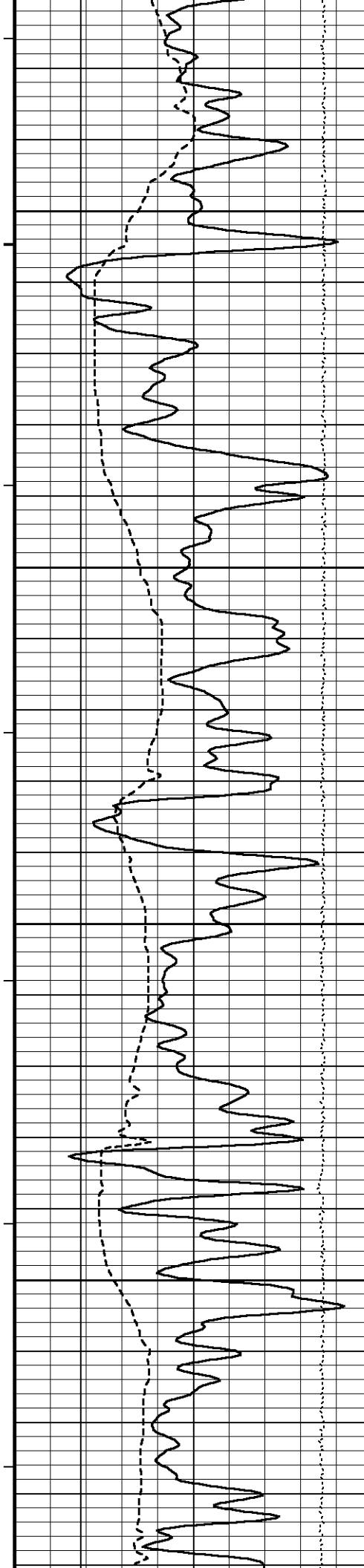




2750
105°
2750
105°
2800
105°
2850
105°
2900



← 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
DST Uphole Tension →



105°

2950

106°

3000

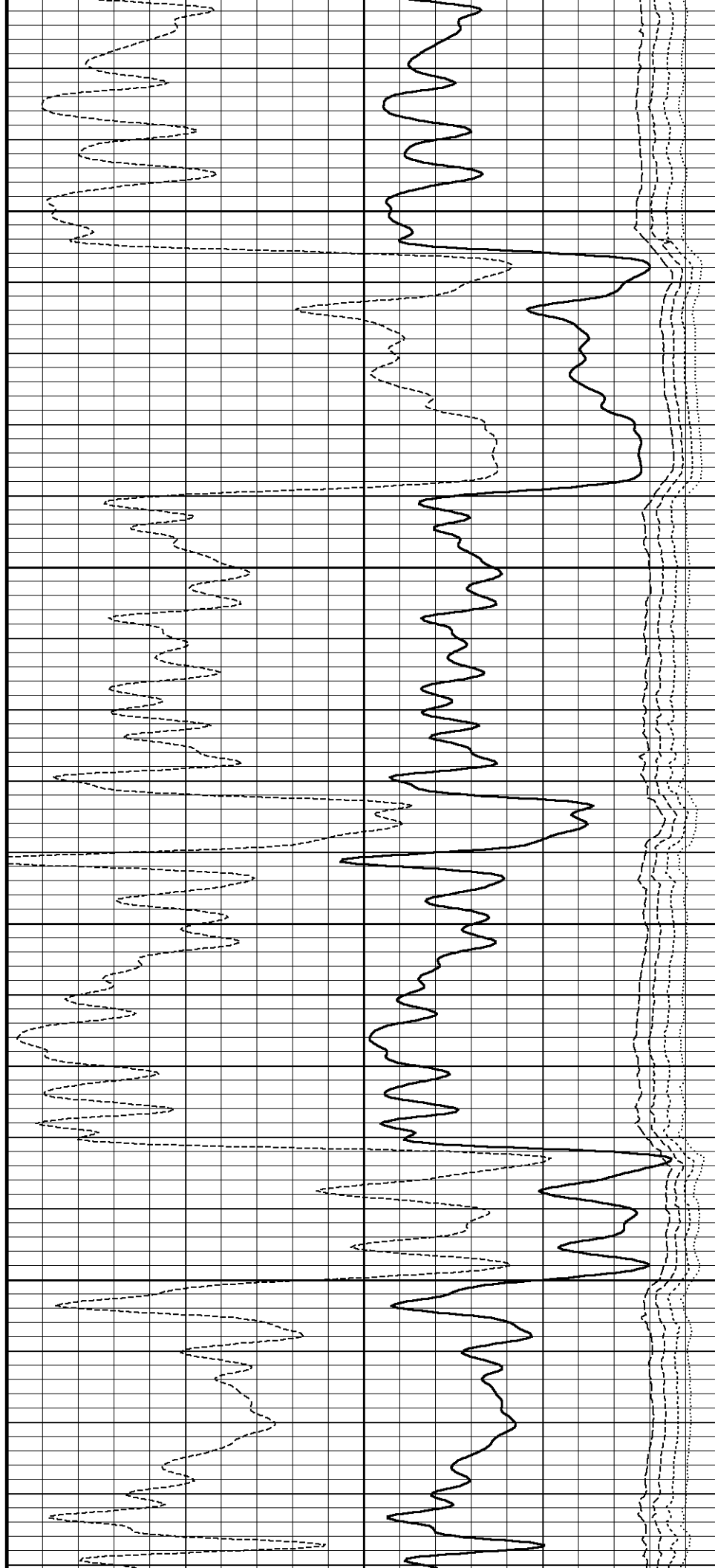
106°

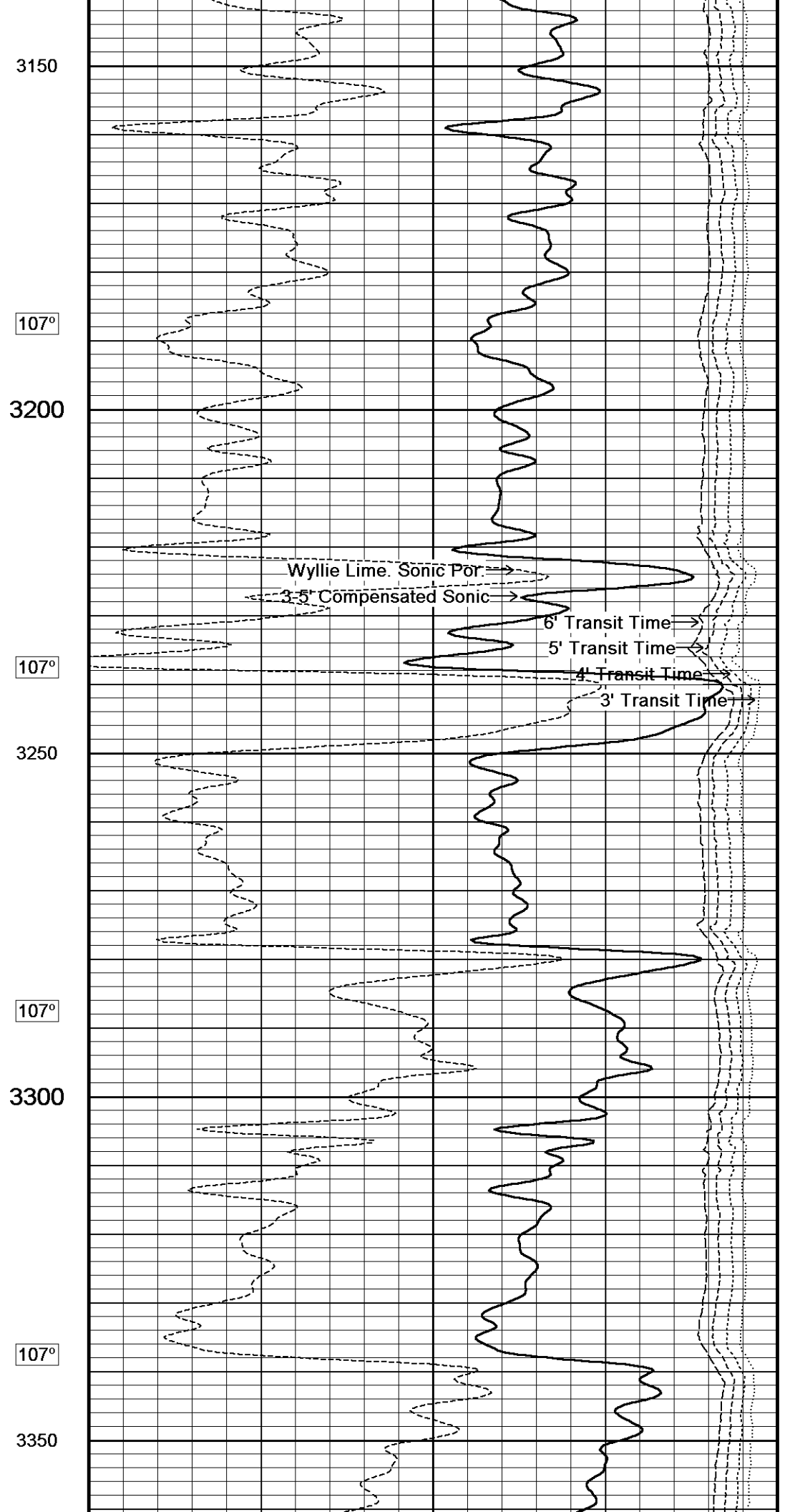
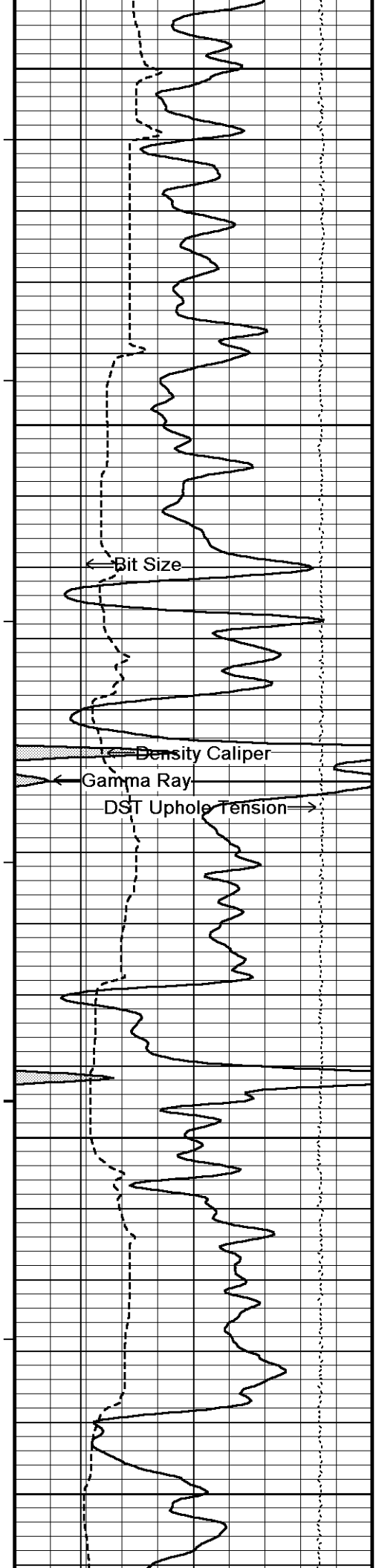
3050

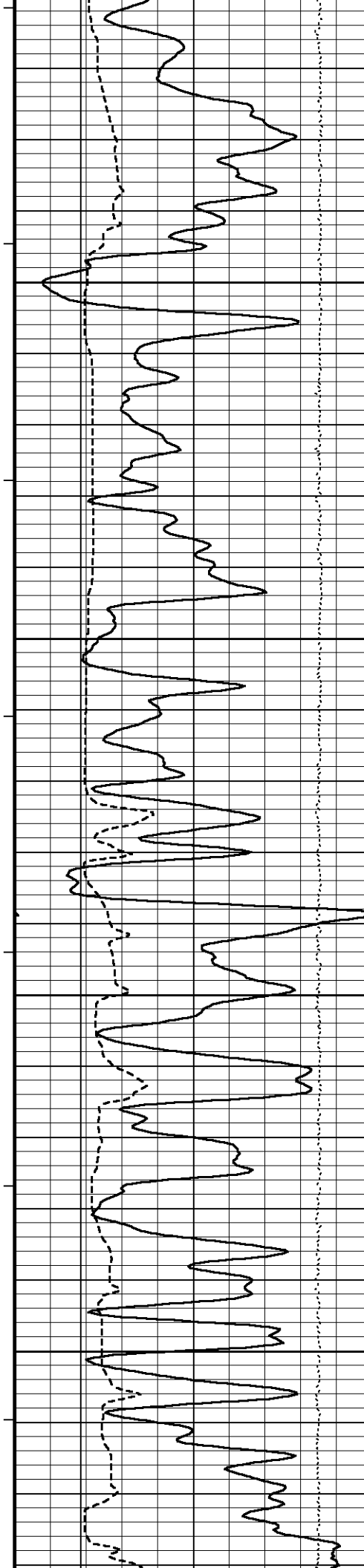
106°

3100

107°







108°

3400

108°

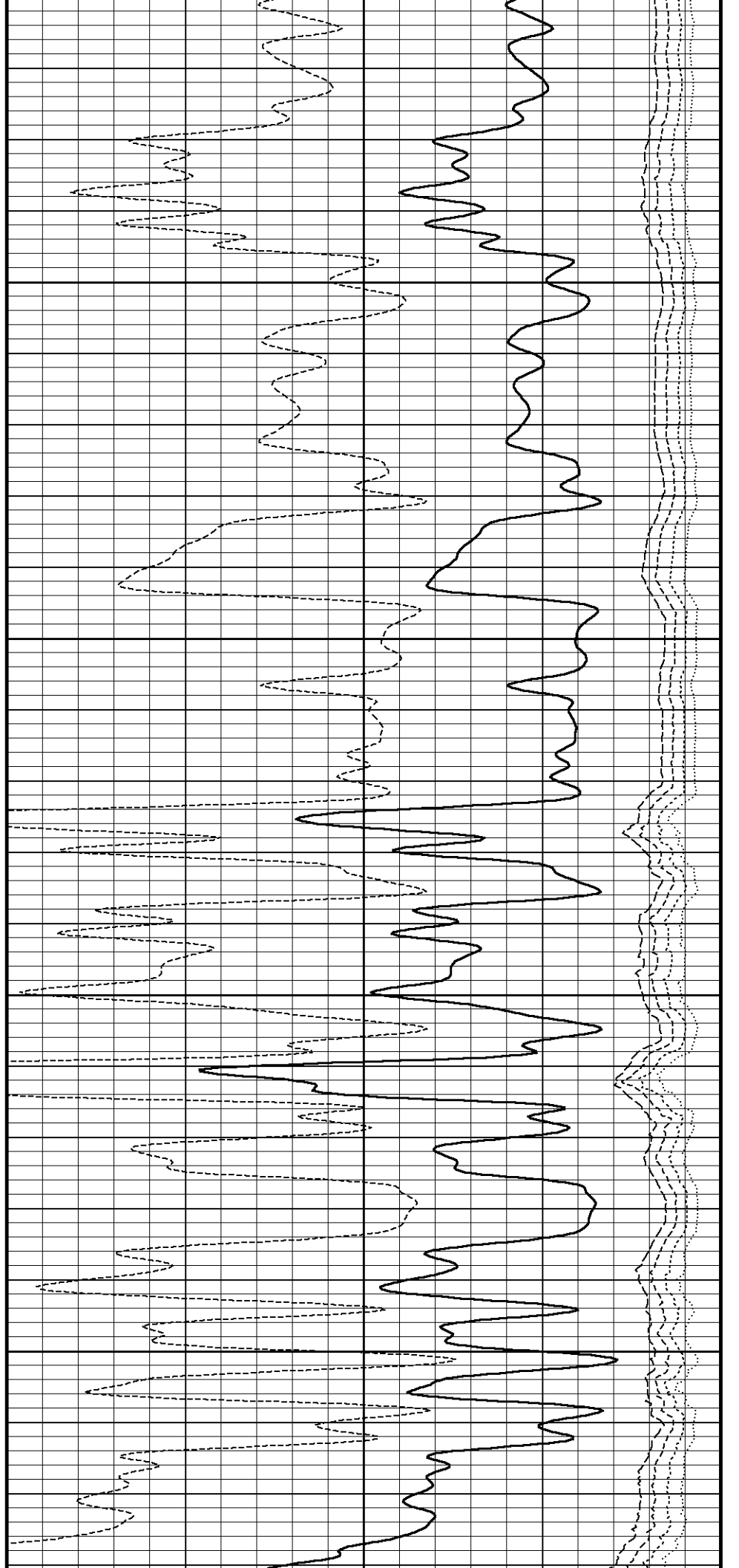
3450

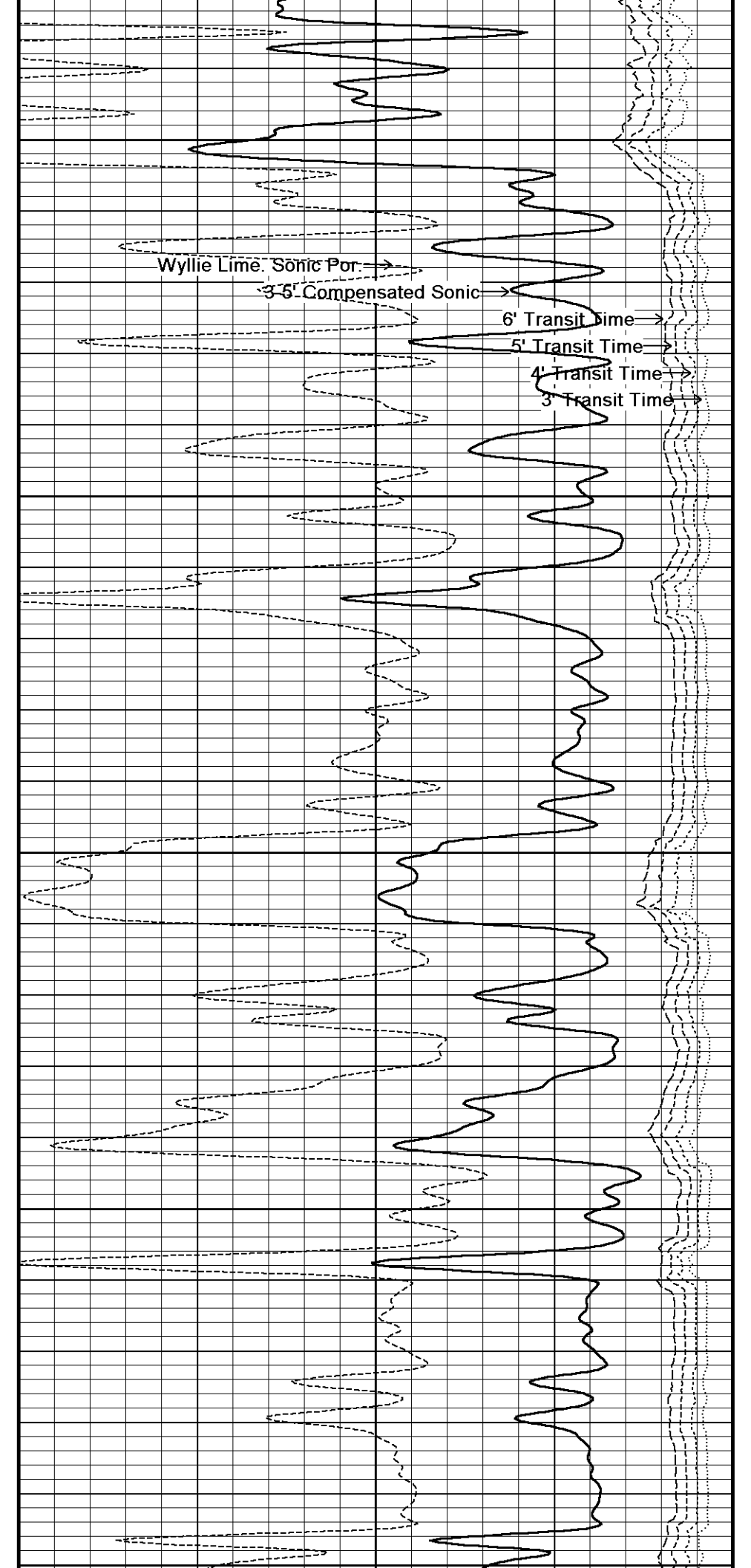
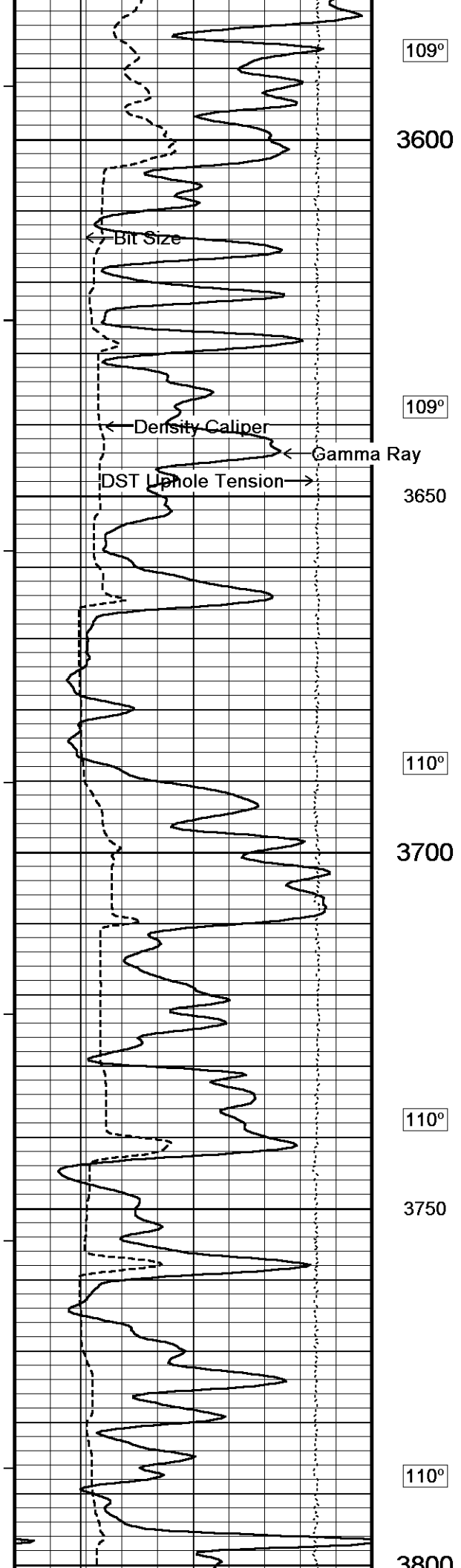
108°

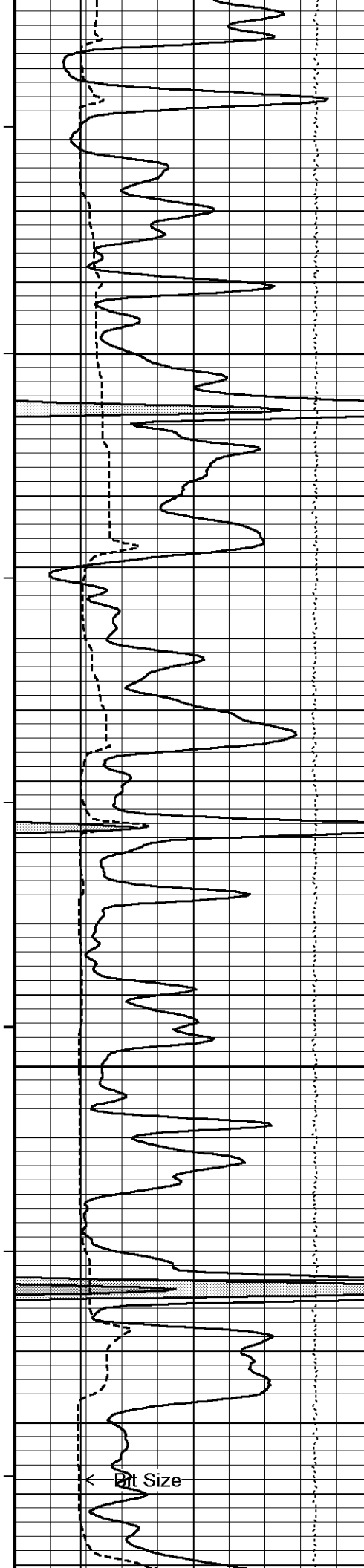
3500

109°

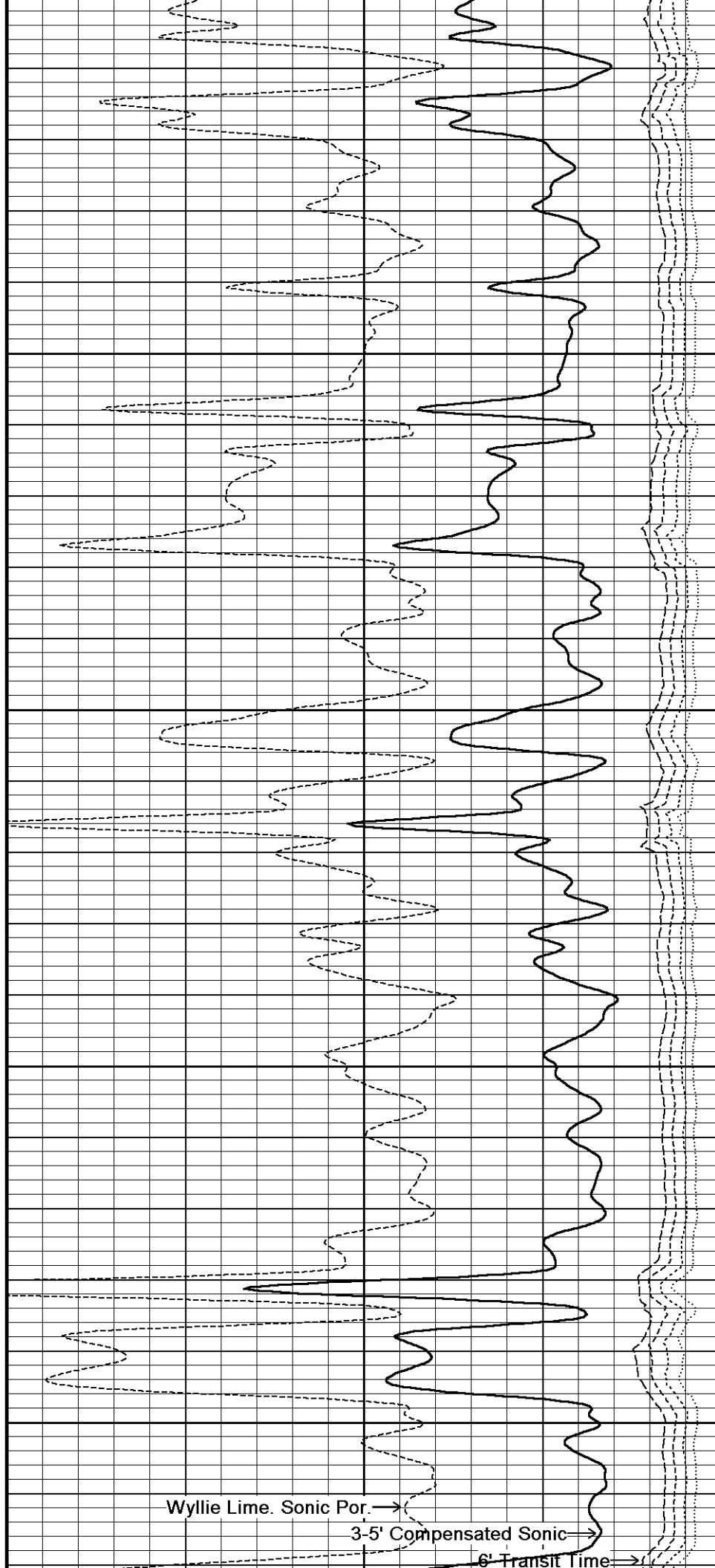
3550



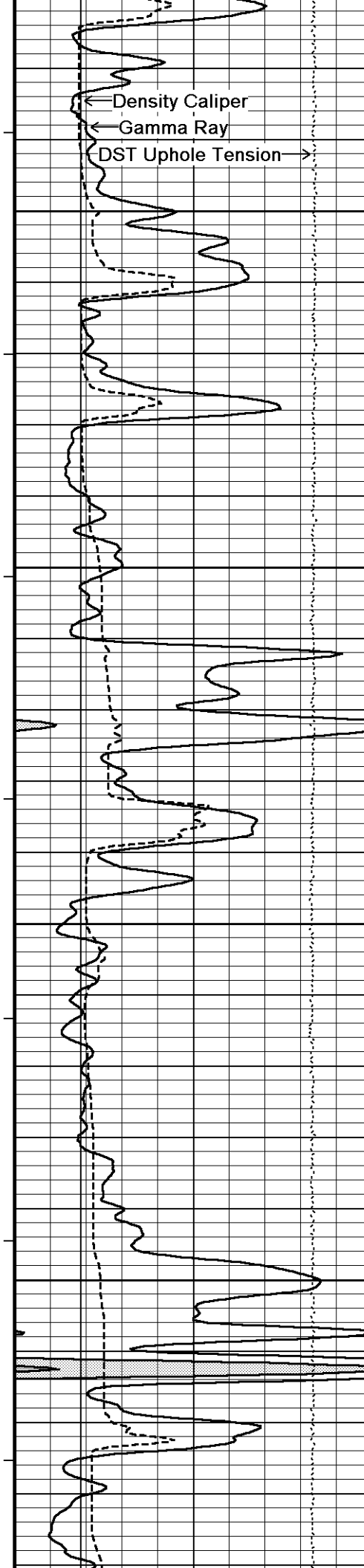




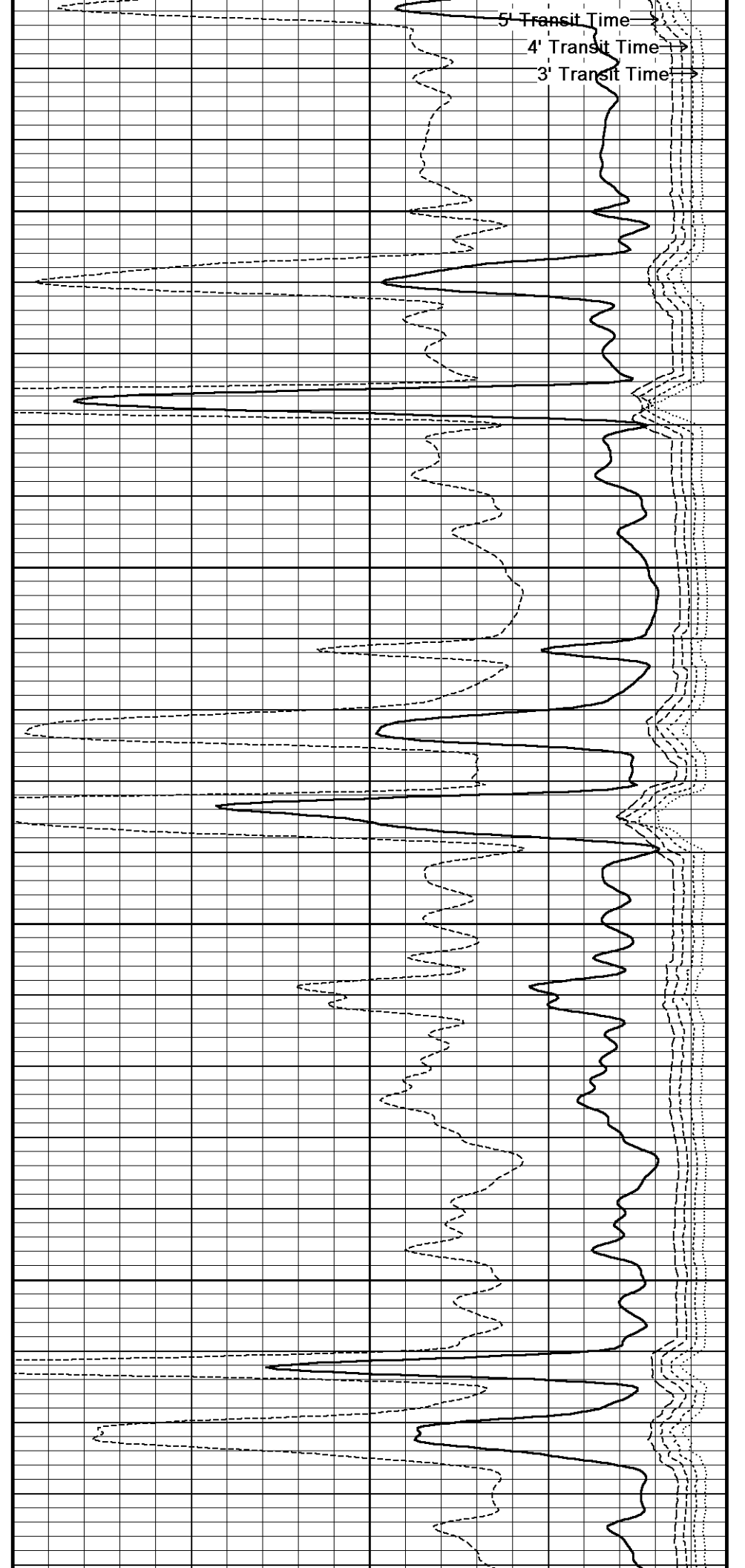
3300
110°
3850
111°
3900
110°
3950
111°
4000



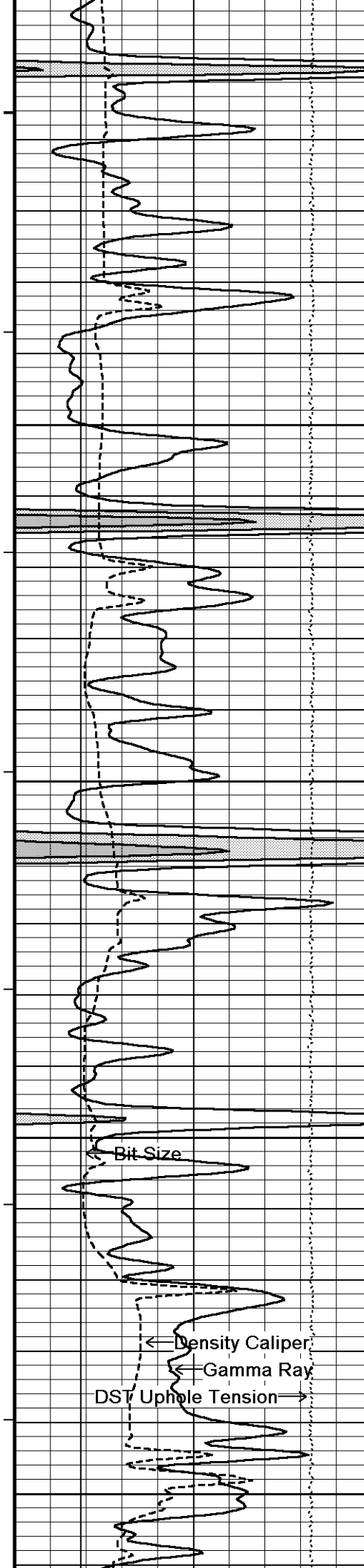
Wyllie Lime. Sonic Por. →
3-5' Compensated Sonic →
6' Transit Time →



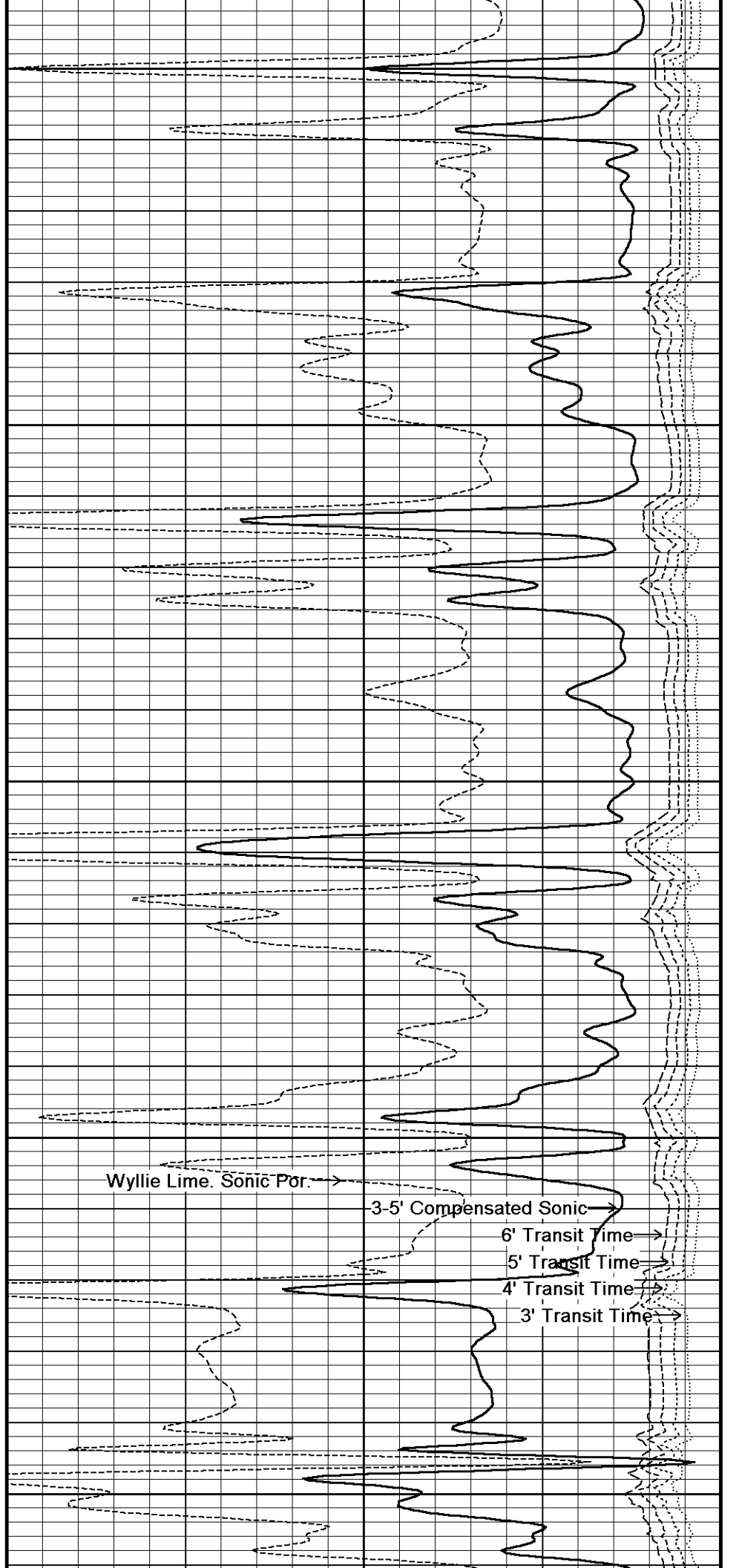
111°
4050
111°
4100
112°
4150
112°
4200
112°



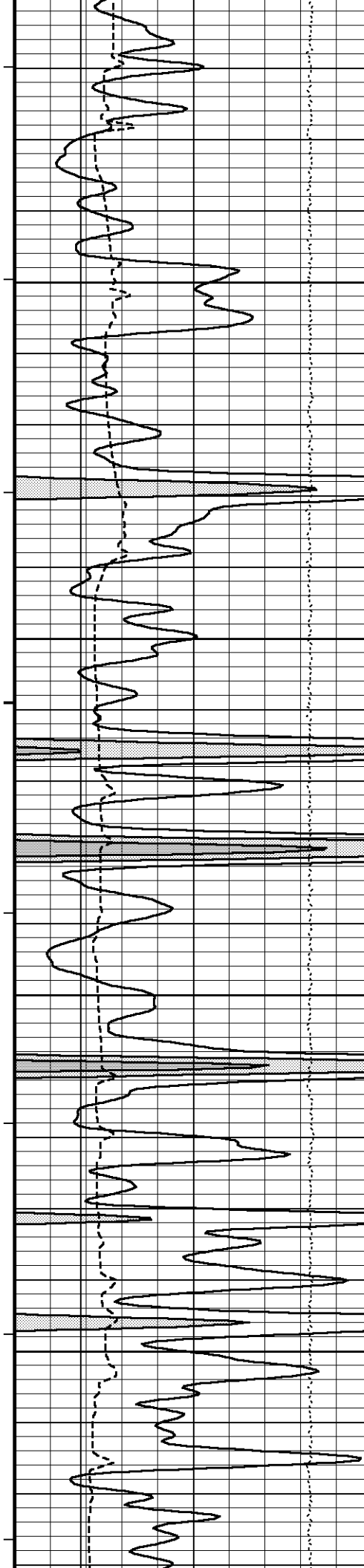
5' Transit Time →
4' Transit Time →
3' Transit Time →



4250
112°
4300
113°
4350
113°
4400
113°
4450



← Bit Size
← Density Caliper
← Gamma Ray
→ DST Uphole Tension
→ Wyllie Lime. Sonic Por.
→ 3-5' Compensated Sonic
→ 6' Transit Time
→ 5' Transit Time
→ 4' Transit Time
→ 3' Transit Time



114°

4500

114°

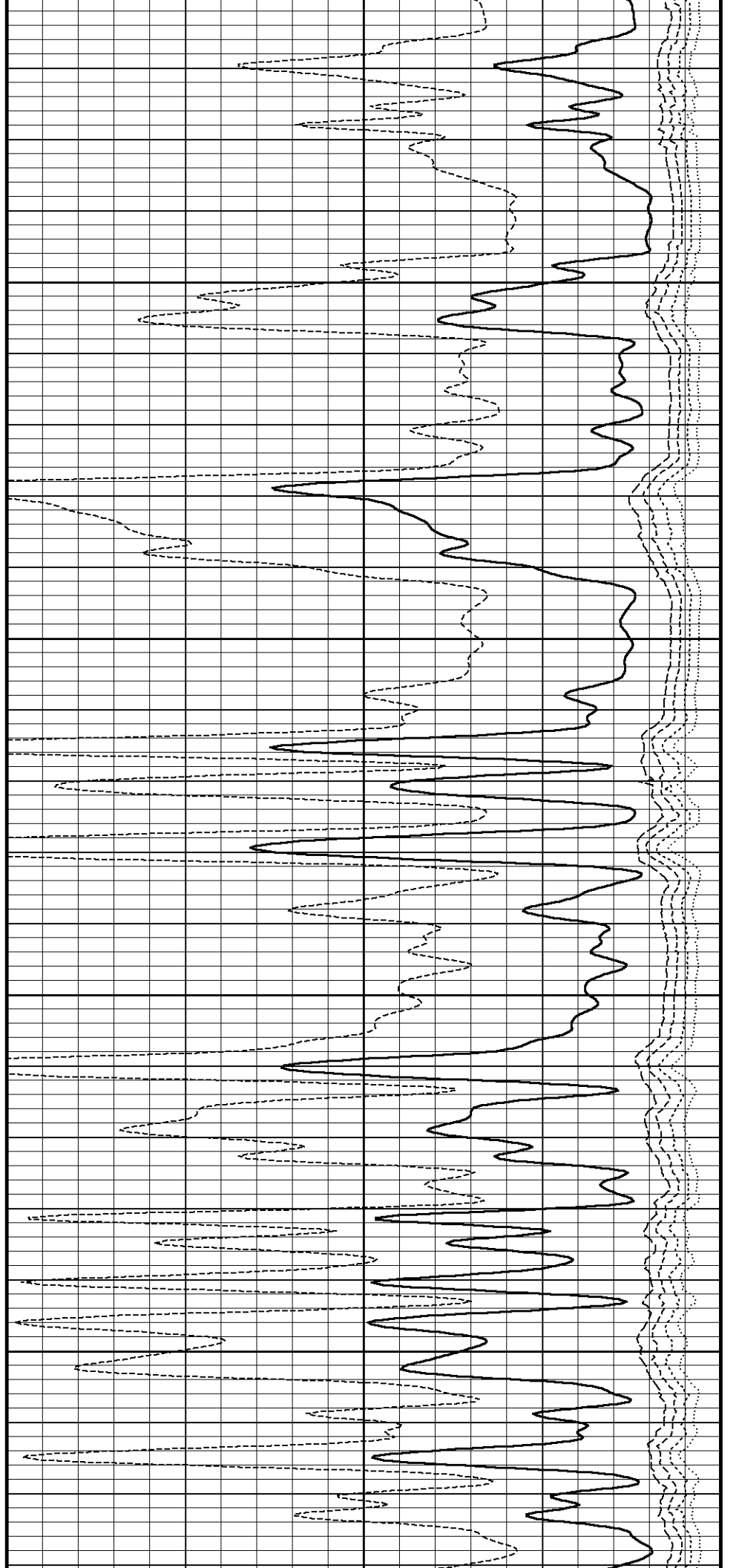
4550

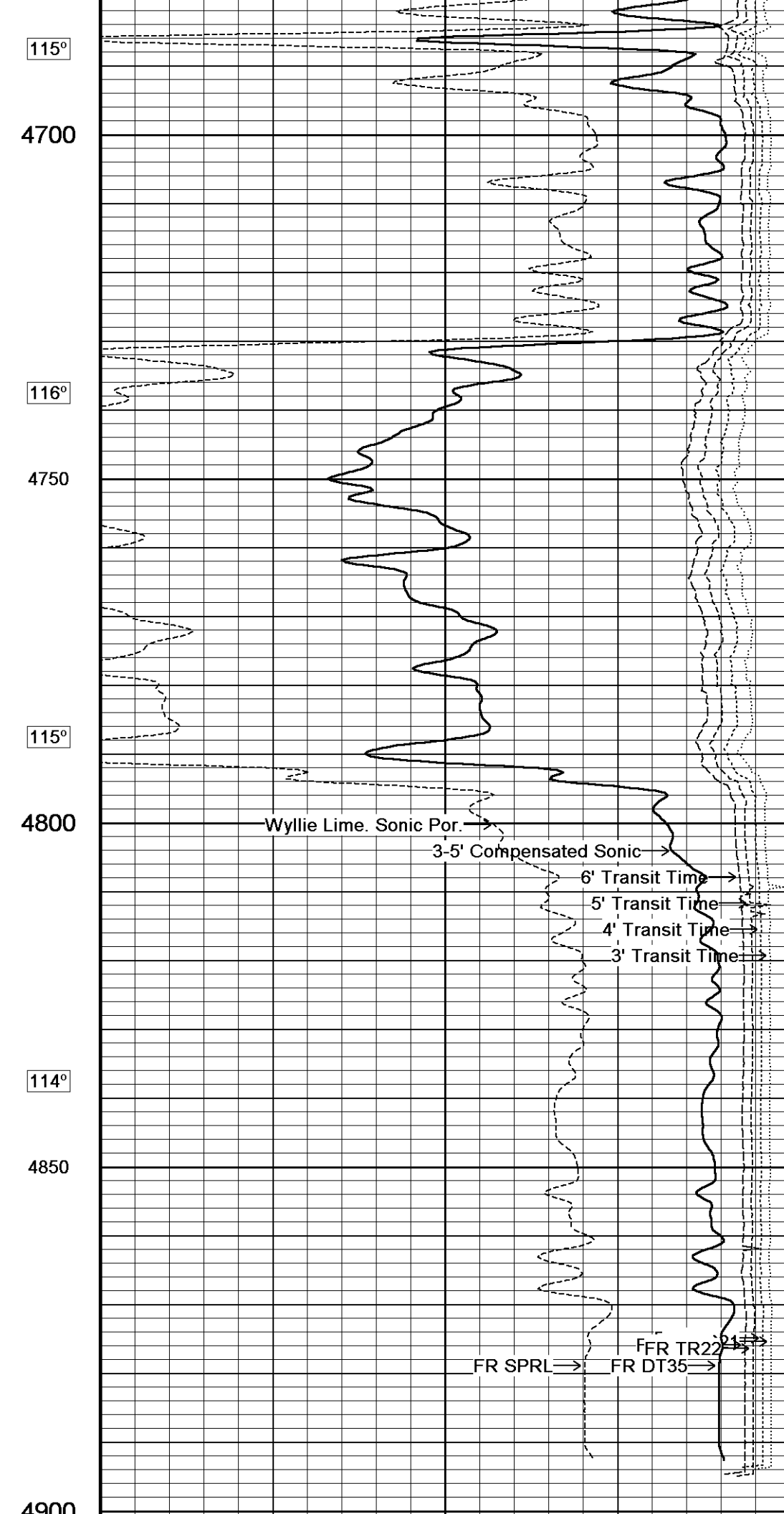
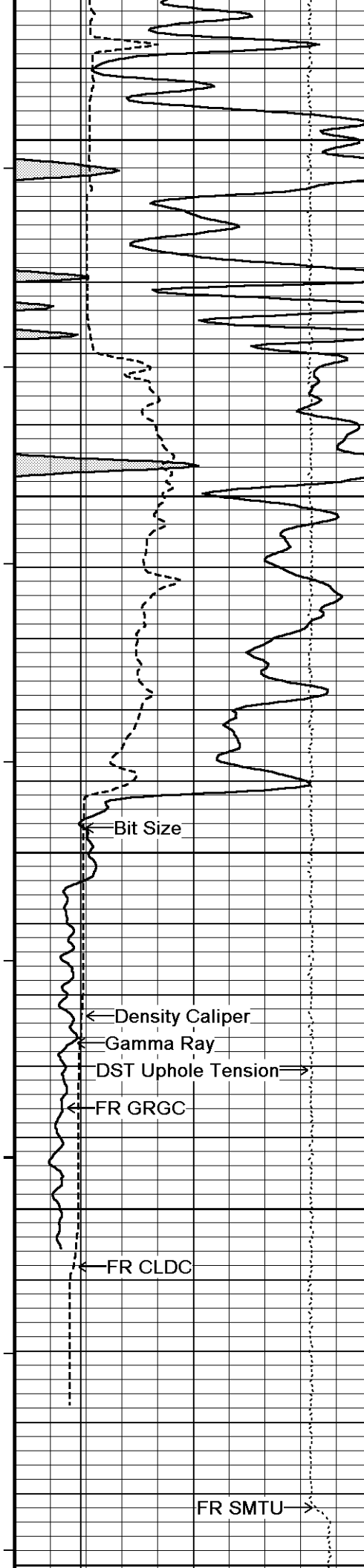
115°

4600

115°

4650





115°

4700

116°

4750

115°

4800

114°

4850

4900

4918

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

75

225

150

0 150

150 300

Borehole
Temp in
deg F

3' Transit Time
microseconds

1100 100

Density Caliper

inches

11

16

6 16

4' Transit Time
microseconds

1100 100

Bit Size

inches

11

16

6 16

5' Transit Time
microseconds

1100 100

DST Uphole Tension
pounds

5000

0

5000 0

6' Transit Time
microseconds

1100 100

Replay
Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 14-JUL-2013 06:04

Filename: C:\Minimus 13.05.9583\Logs\Shakespeare Janzen 1-34\Copy of Janzen 1-34 MAIN5.dta

Recorded on 14-JUL-2013 04:37

System Versions: Plotted with 13.05.9583



5 INCH MAIN



REPEAT SECTION



Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 14-JUL-2013 06:04

Filename: C:\Minimus 13.05.9583\Logs\Shakespeare Janzen 1-34\Janzen 1-34 REPEAT2.dta

Recorded on 14-JUL-2013 01:17

System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

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

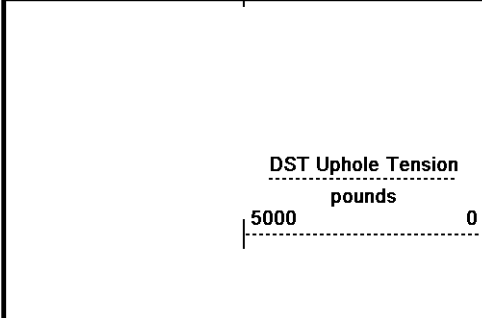
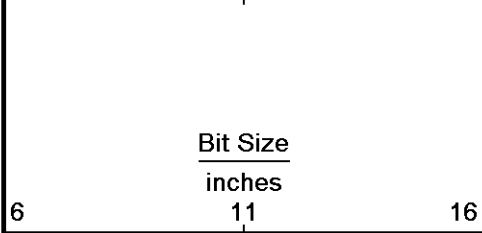
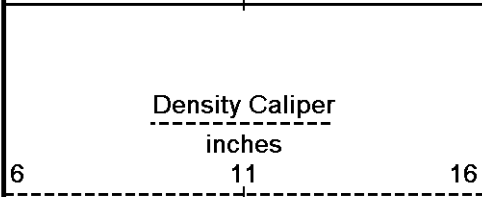
API

75

150

0 150

150 225 300



Borehole Temp in deg F

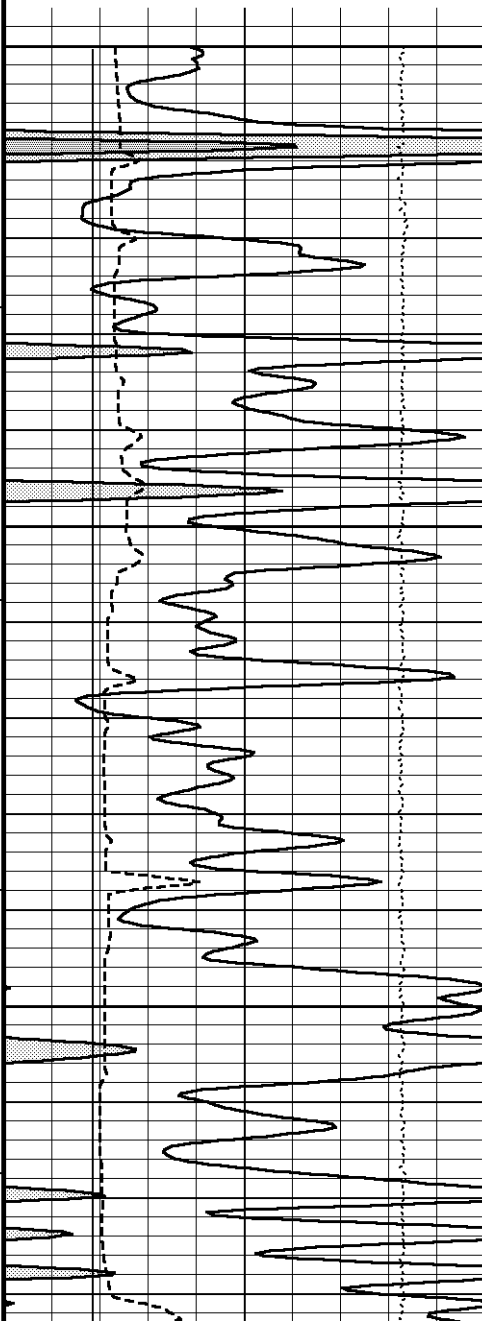
Replay Scale 1:240

3' Transit Time microseconds

4' Transit Time microseconds

5' Transit Time microseconds

6' Transit Time microseconds



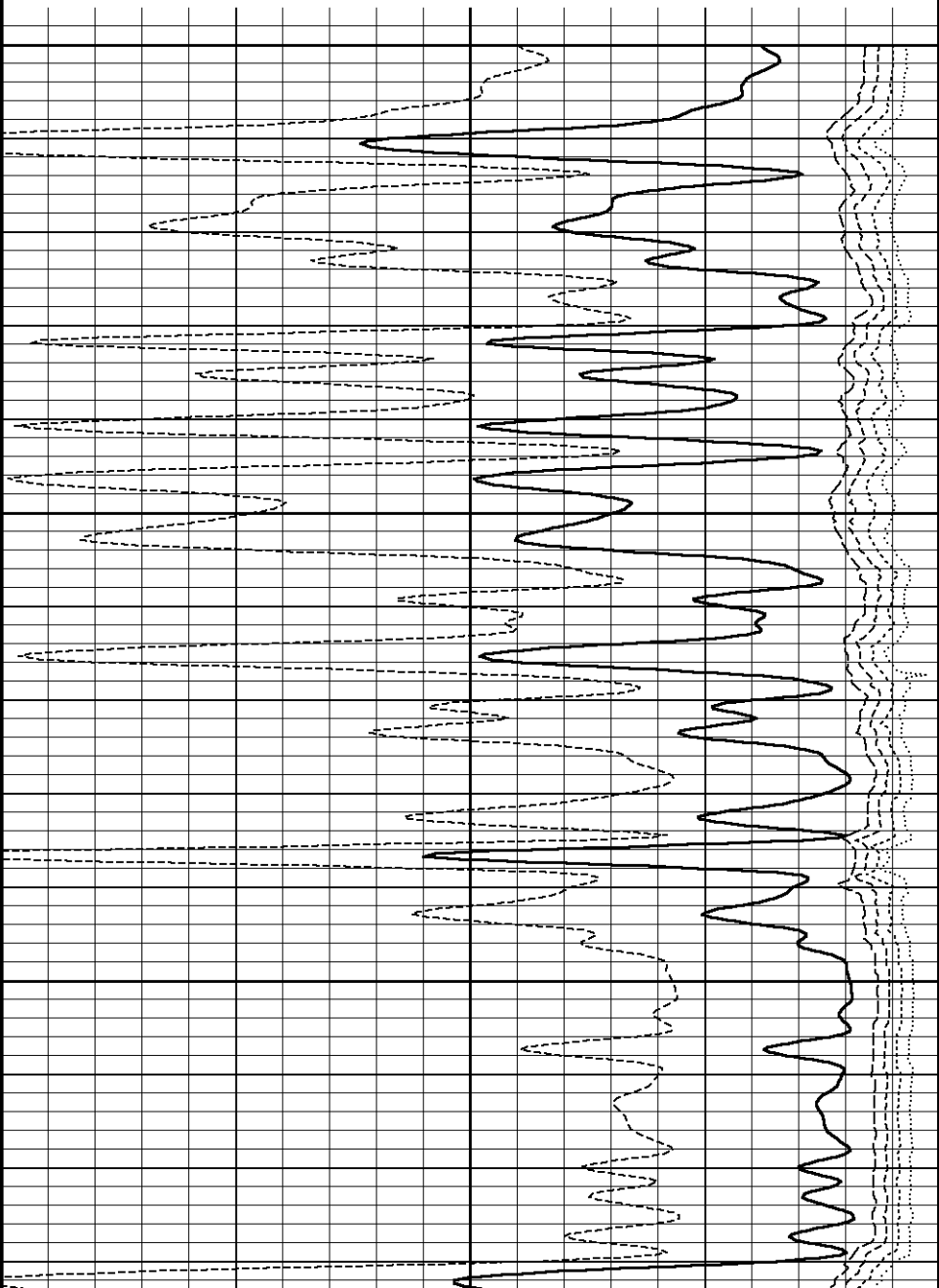
4600

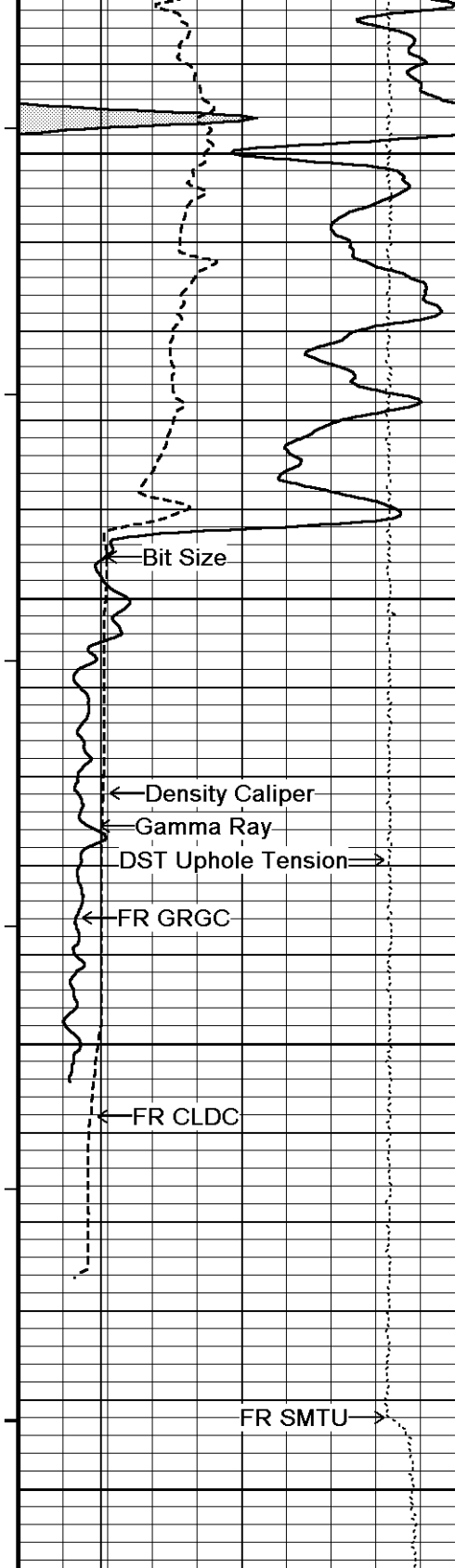
114°

4650

115°

4700





115°

4750

115°

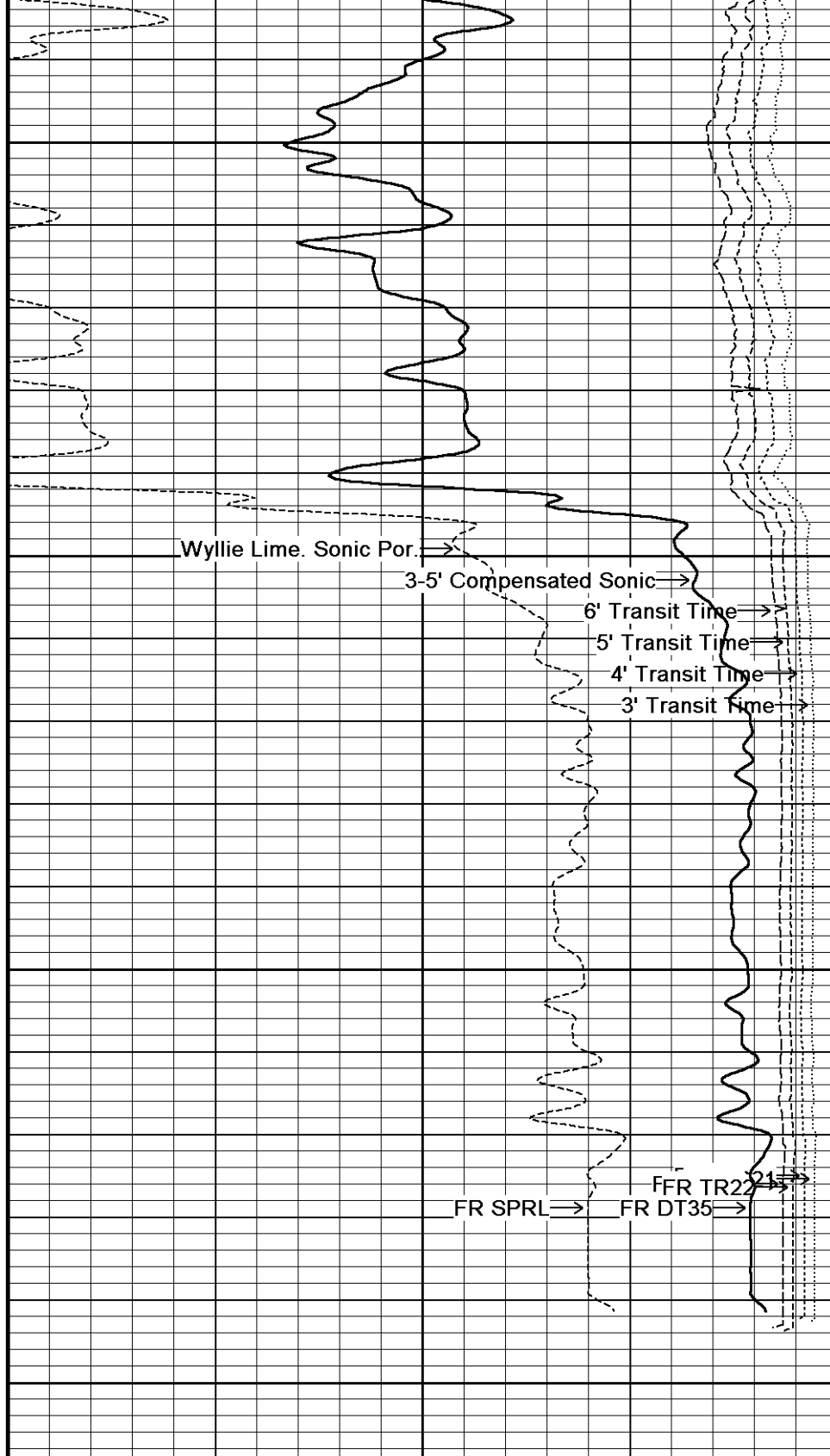
4800

114°

4850

4900

4920
Depth
in
Feet



3-5' Compensated Sonic
microsec/foot

Wyllie Lime. Sonic Por.
percent

140 115 90 65 40

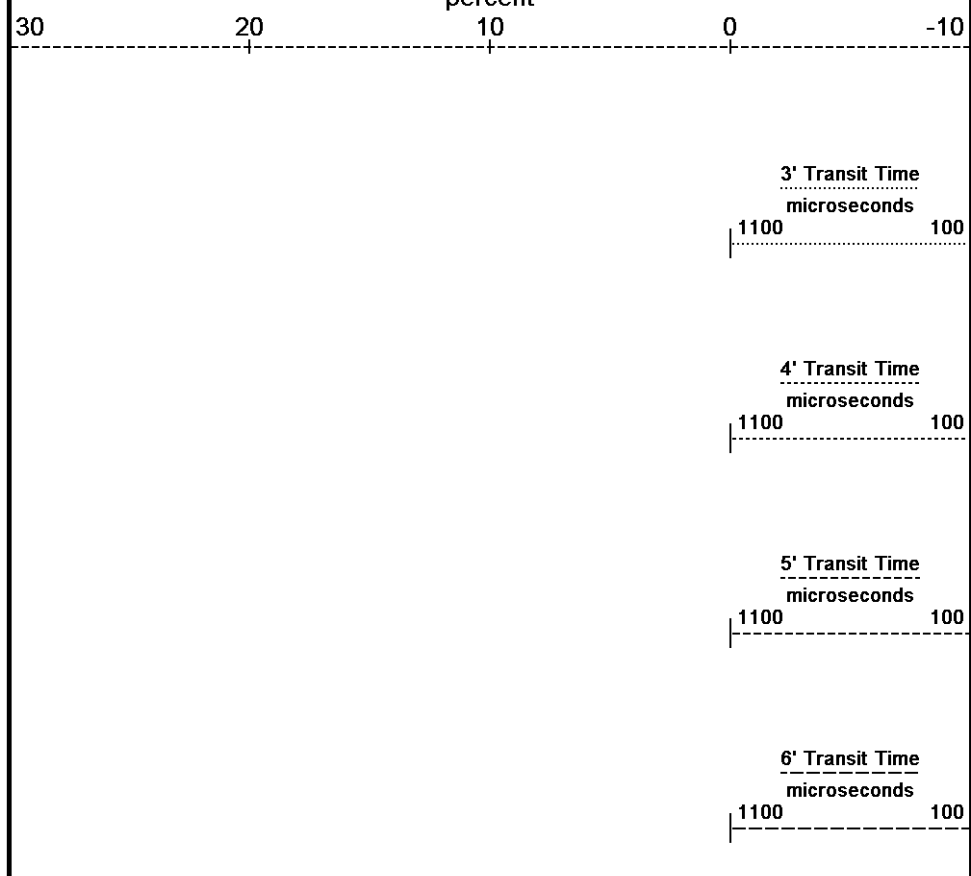
Timing Marks
every 60.0 sec

Gamma Ray

<u>Gamma Ray</u>		
API	75	150
150	225	300
<u>Density Caliper</u>		
inches		
6	11	16
<u>Bit Size</u>		
inches		
6	11	16
<u>DST Uphole Tension</u>		
pounds		
5000	0	

Borehole
Temp in
deg F

Replay
Scale
1:240



Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 14-JUL-2013 06:04
 Filename: C:\Minimus 13.05.9583\Log\Shakespeare Janzen 1-34\Janzen 1-34 REPEAT2.dta Recorded on 14-JUL-2013 01:17
 System Versions: Logged with 13.05.9583 Processed with 13.05.9583 Plotted with 13.05.9583

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\Shakespeare Janzen 1-34\Janzen 1-34 REPEAT.dta

General Constants All 000		Last Edited on 13-JUL-2013,23:32
General Parameters		
Mud Resistivity	0.520	ohm-metres
Mud Resistivity Temperature	85.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	
Hole/Annular Volume and Differential Caliper Parameters		
HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	MMR 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	

High Resolution Temperature Calibration MCG-D.K 442		Field Calibration on 24-APR-2013,09:31
	Measured	Calibrated(Deg F)
Lower	50.00	50.00
Upper	75.00	75.00

High Resolution Temperature Constants MCG-D.K 442		Last Edited on 07-JUL-2013,12:48
Pre-filter Length	11	

	Measured	Calibrated (API)
Background	73	49
Calibrator (Gross)	1157	774
Calibrator (Net)	1084	725

Gamma Constants MCG-D.K 442

Last Edited on 13-JUL-2013,23:28

Gamma Calibrator Number	GRC38	
Mud Density	1.11	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

Sonic Constants MSS-A.A 126

Last Edited on 13-JUL-2013,23:30

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	Compensated
Hole Type	Open Hole

Sonde Parameters

	Measured	Calibrated
Offset	N/A	0.0000
Free Pipe	N/A	N/A
Peak Amplitude Source		N/A

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)	N/A	
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Full Waveform Parameters

Use 3' Waveform to derive TR	N/A
Use 4' Waveform to derive TR	N/A
Use 5' Waveform to derive TR	N/A
Use 6' Waveform to derive TR	N/A
3' Waveform Discriminator Level	N/A mV
4' Waveform Discriminator Level	N/A mV
5' Waveform Discriminator Level	N/A mV
6' Waveform Discriminator Level	N/A mV
3' Waveform Filter	N/A
4' Waveform Filter	N/A
5' Waveform Filter	N/A
6' Waveform Filter	N/A

Semblance Level	N/A	micro-sec
Semblance Window Width	N/A	N/A
Sonic 1 Despiker	N/A	N/A
Sonic 2 Despiker	N/A	N/A

Caliper Calibration MPD-B 31

Base Calibration on 19-MAY-2013 17:48
Field Calibration on 13-JUL-2013 19:28

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	17088	3.99
2	25888	5.98
3	34607	7.97
4	42944	9.86
5	52301	11.92
6	N/A	N/A

Field Calibration		
Measured Caliper (in)	Actual Caliper (in)	
8.03	7.97	

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Logs\Shakespeare Janzen 1-34\Janzen 1-34 REPEAT.dta

CBH-C, Cablehead, 11 pin
CBH-CA 233 LG: 2.40 ft WT: 24.3 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 442 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity
MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

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

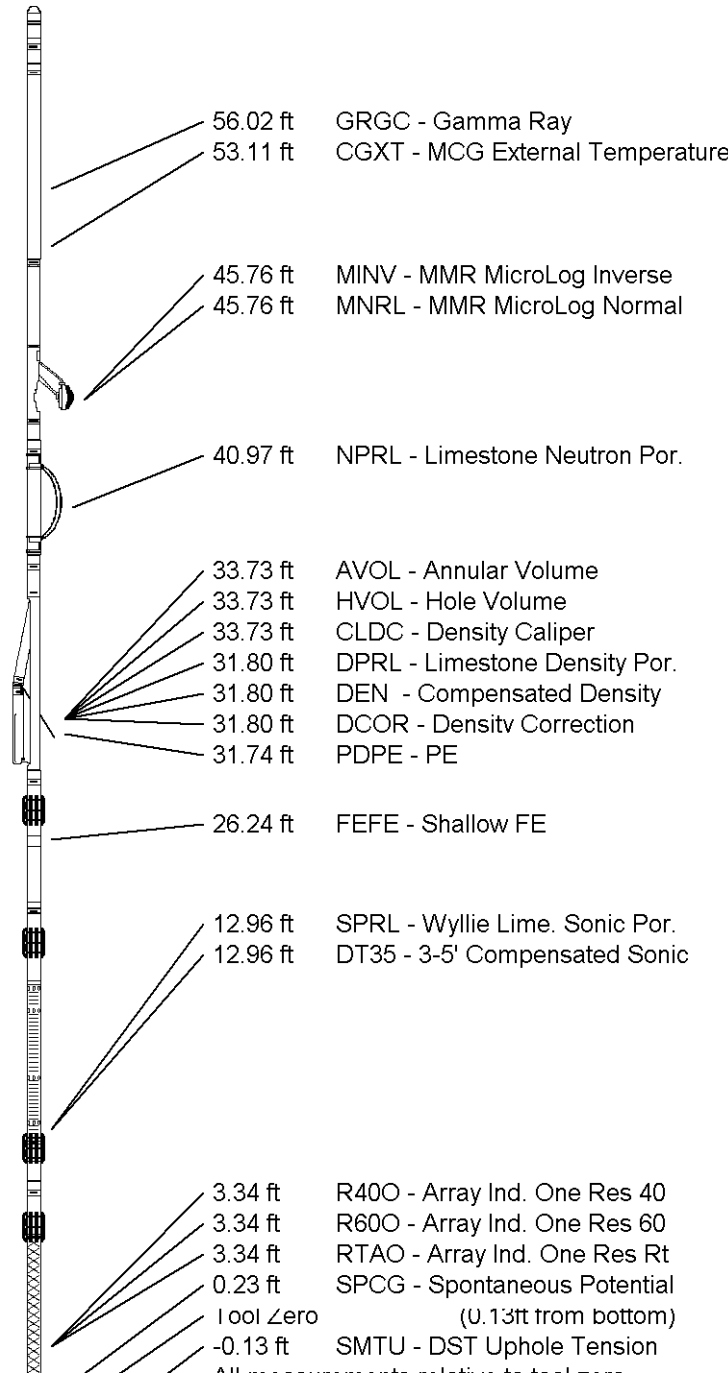
Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

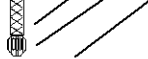
Compact Sonic
MSS-A.A 126 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

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

Total Length: 63.70 ft Weight: 480.6 lb



All measurements relative to tool nose



All measurements relative to tool zero.

COMPANY	SHAKESPEARE OIL CO., INC.		
WELL	JANZEN 1-34		
FIELD	WILDCAT		
PROVINCE/COUNTY	SCOTT		
COUNTRY/STATE	U.S.A. / KANSAS		

Elevation Kelly Bushing	3126.00	feet	First Reading	4879.00	feet
Elevation Drill Floor	3124.00	feet	Depth Driller	4895.00	feet
Elevation Ground Level	3119.00	feet	Depth Logger	4892.00	feet



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WITH INTEGRATED TRANSIT TIME