

**Weatherford****COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

COMPANY

STELBAR OIL CORPORATION, INC.

WELL

LPR #1-17

FIELD

WILDCAT

PROVINCE/COUNTY

LOGAN

COUNTRY/STATE

U.S.A. / KANSAS

LOCATION

1230' FSL & 1748' FEL

NW NE SW SE

SEC

TWP

17

15S

33W

Other Services
MPD/MDN

MML

MAI/MFE

API Number

15-109-21146

MML

MML

MML

MML

MML

MML

MML

MML

MML

MML

MML

MML

MML

MML

Permit Number

Permanent Datum G.L., Elevation 2944 feet

Log Measured From KB

Drilling Measured From K.B.

Date

07-JAN-2013

Run Number

ONE

Service Order

3537802

Depth Driller

4685.00

feet

Depth Logger

4686.00

feet

First Reading

4673.00

feet

Last Reading

304.00

feet

Casing Driller

303.00

feet

Casing Logger

304.00

inches

Bit Size

7.875

Hole Fluid Type

CHEMICAL

lb/USg

Density / Viscosity

9.00 lb/USg

64.00 CP

PH / Fluid Loss

10.50

10.50

Sample Source

FLOWLINE

Rm @ Measured Temp

0.44 @ 79.0

ohm-m

Rmf @ Measured Temp

0.35 @ 79.0

ohm-m

Rmc @ Measured Temp

0.53 @ 79.0

ohm-m

Source Rmf / Rmc

CALC

CALC

Rm @ BHT

0.33 @ 107.0

ohm-m

Time Since Circulation

5 HOURS

Max Recorded Temp

107.00

deg F

Equipment / Base

13096

LIB

Recorded By

LYNN SCOTT

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

DAVE GOLDAK

BOREHOLE RECORD

Last Edited: 07-JAN-2013 07:06

Bit Size
inches

7.875

Depth From
feet

304.00

Depth To
feet

4686.00

CASING RECORD

Type

Size
inches

8.625

Depth From
feet

0.00

Shoe Depth
feet

304.00

Weight
pounds/ft

24.00

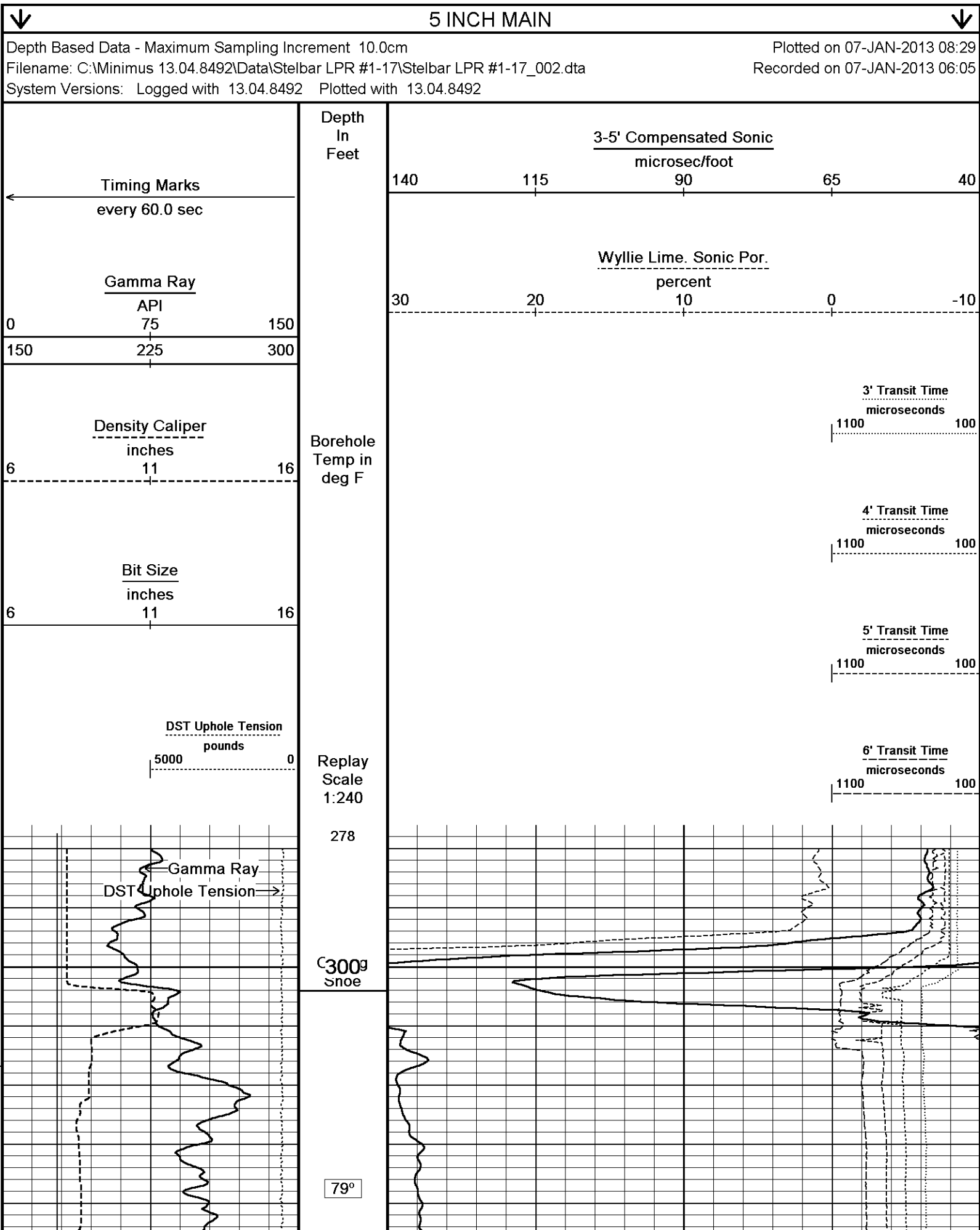
REMARKS

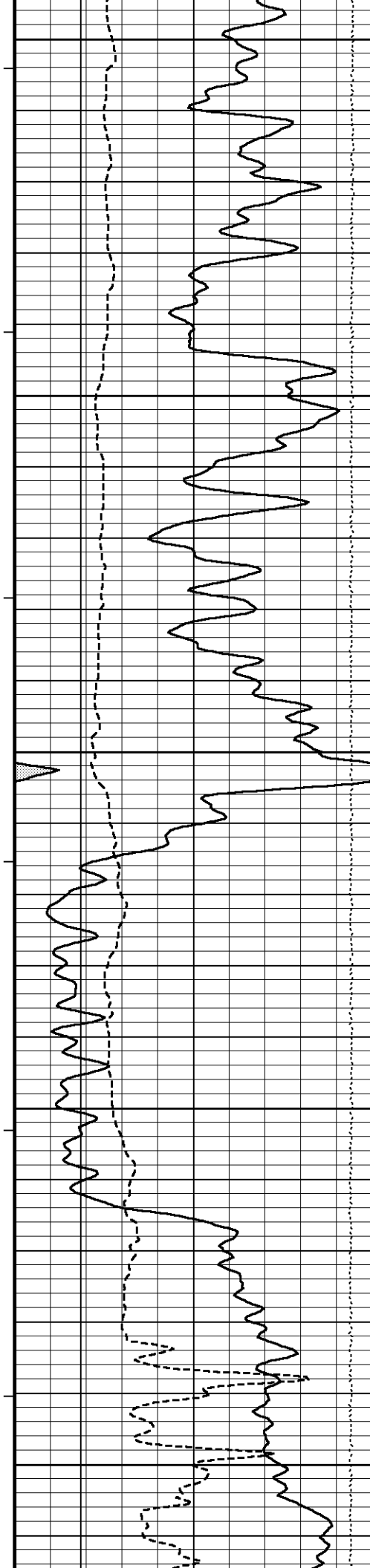
Tools Ran: MCG, MML, MDN, MPD, MFE, MSS, MAI ran in combination.
Hardware Used: MPD: 8 inch profile plate used. MAI, MSS and MFE: 0.5 inch standoffs used. MDN: Dual Bowspring used.
2.71 G/CC Limestone Density porosity used to calculate porosity.
Sonic porosity calculated using a Limestone scale (47.5 usec/ft).
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= 2171 cubic feet
Annular hole volume with 5.5 Inch casing from TD to 3400 ft.= 241 cubic feet
Service order: 3537802
Rig: Pickrell #10
Engineer: L. Scott
Operator(s): B. Reeves

The software duplicates the pH value on the fluid loss. The Fluid loss should be 10.4.

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.





350

79°

400

80°

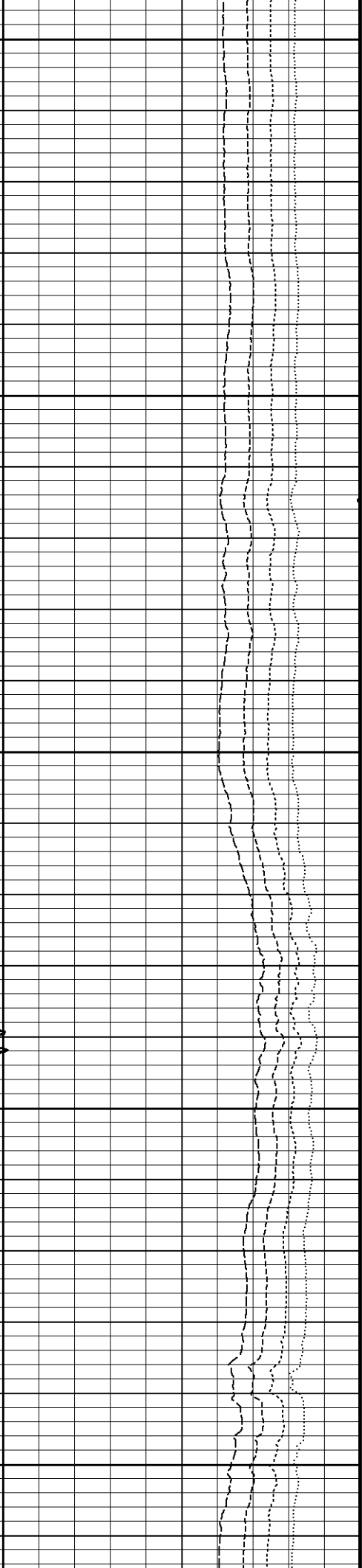
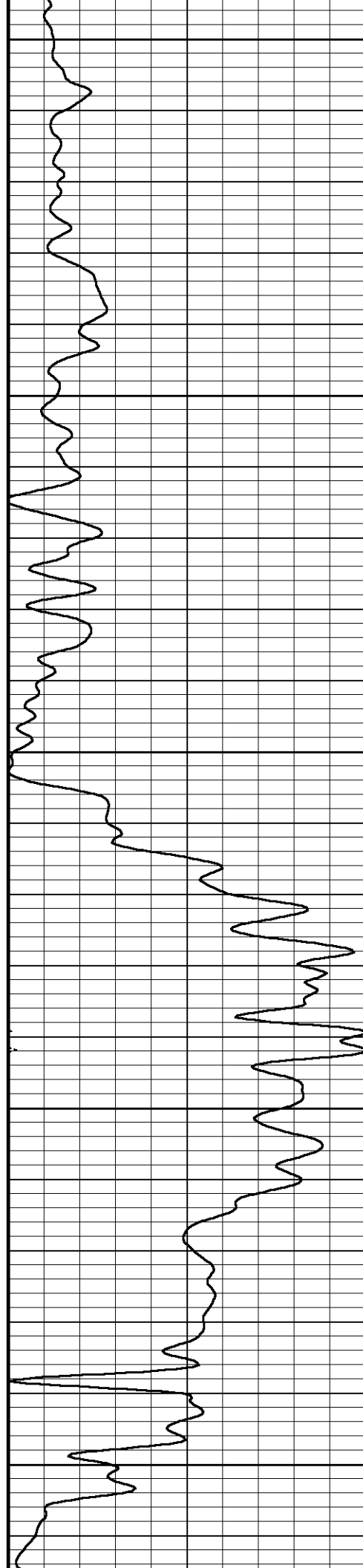
450

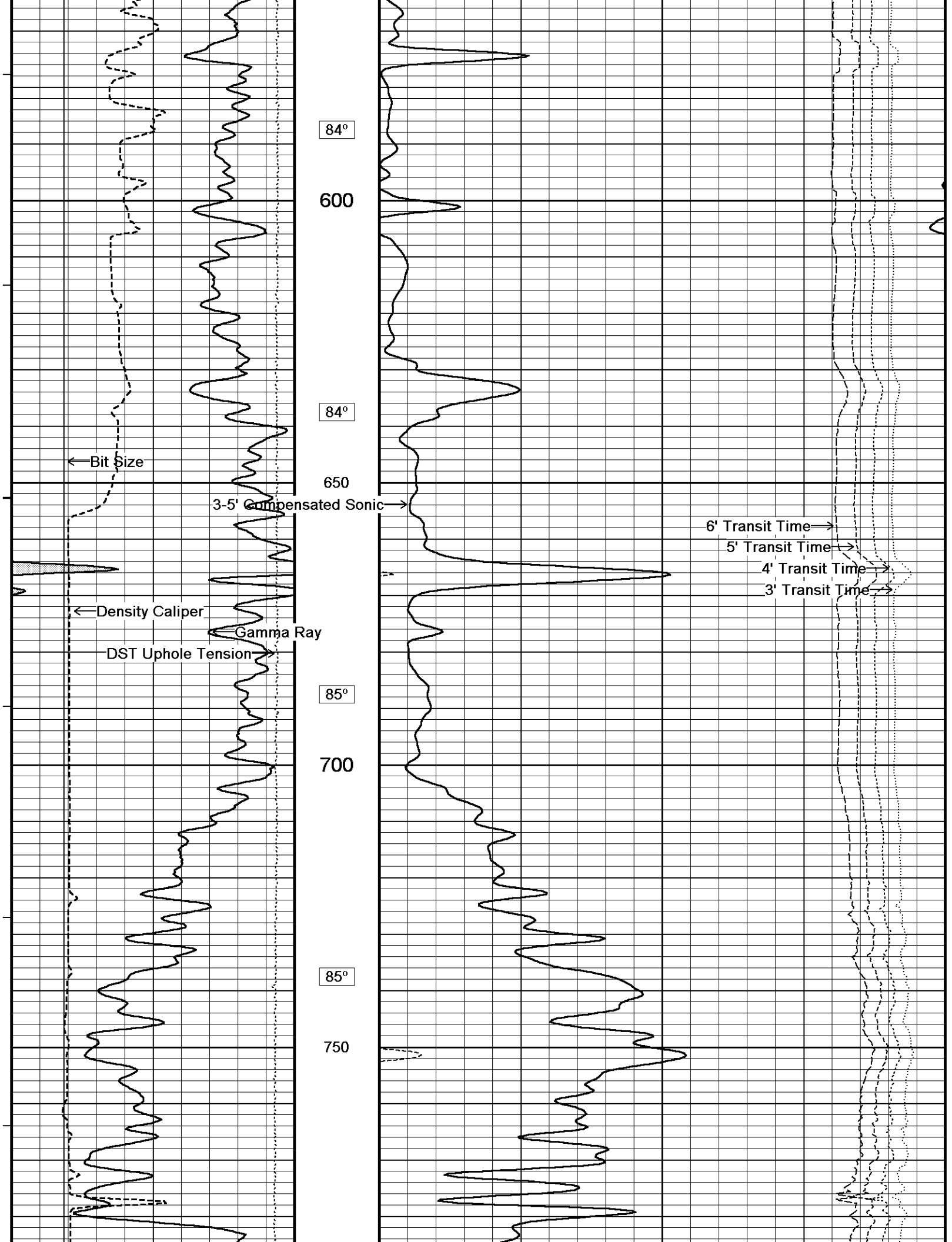
82°

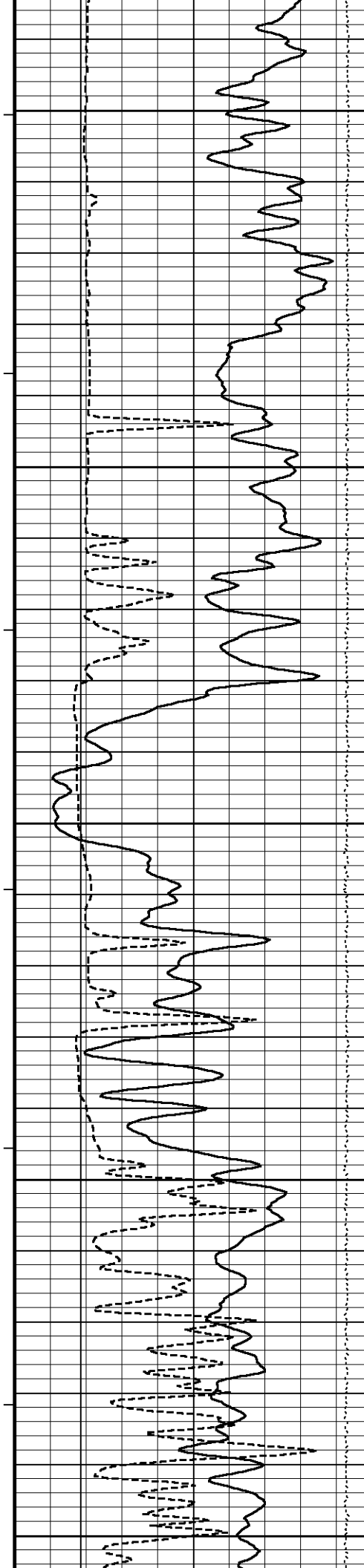
500

83°

550







86°

800

86°

850

86°

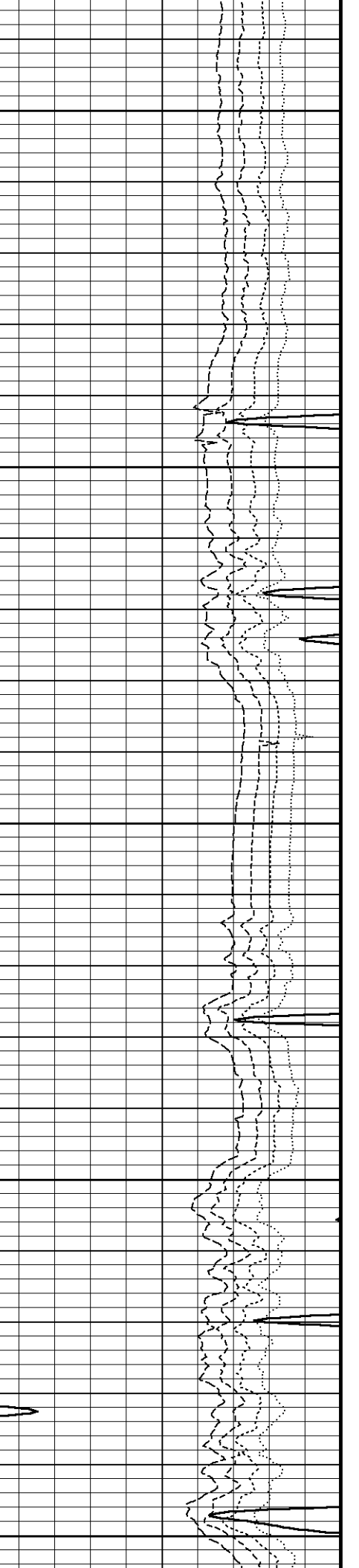
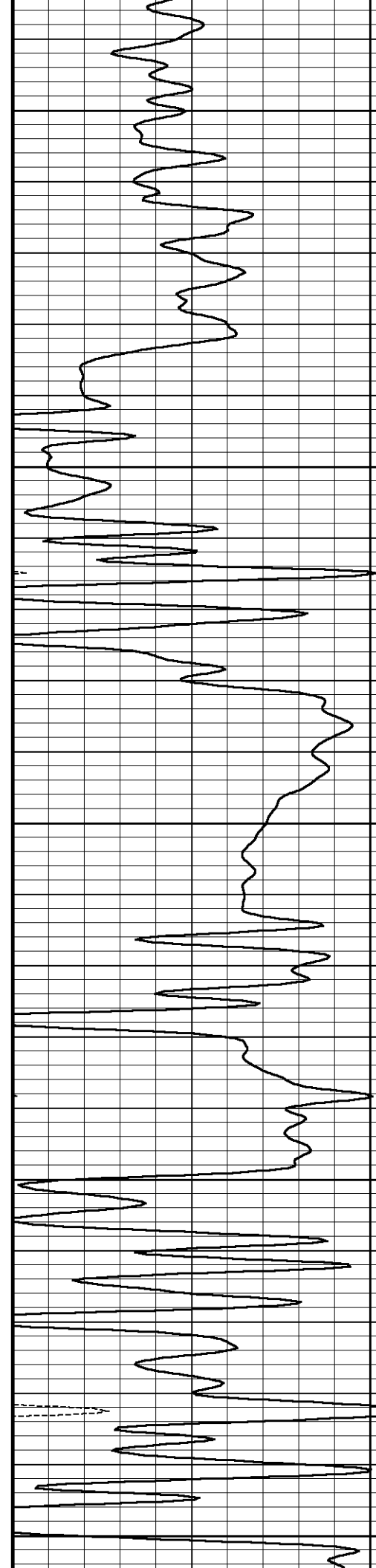
900

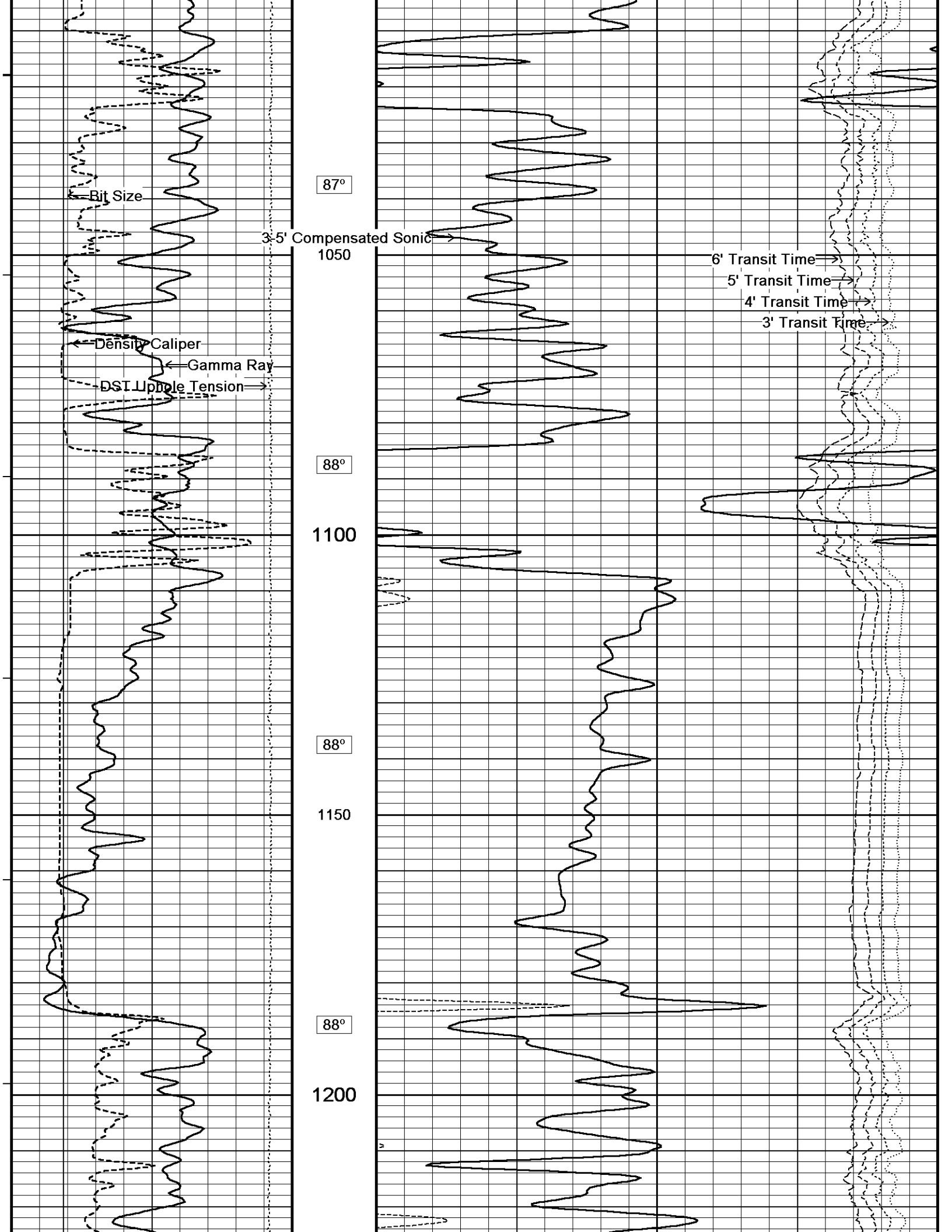
87°

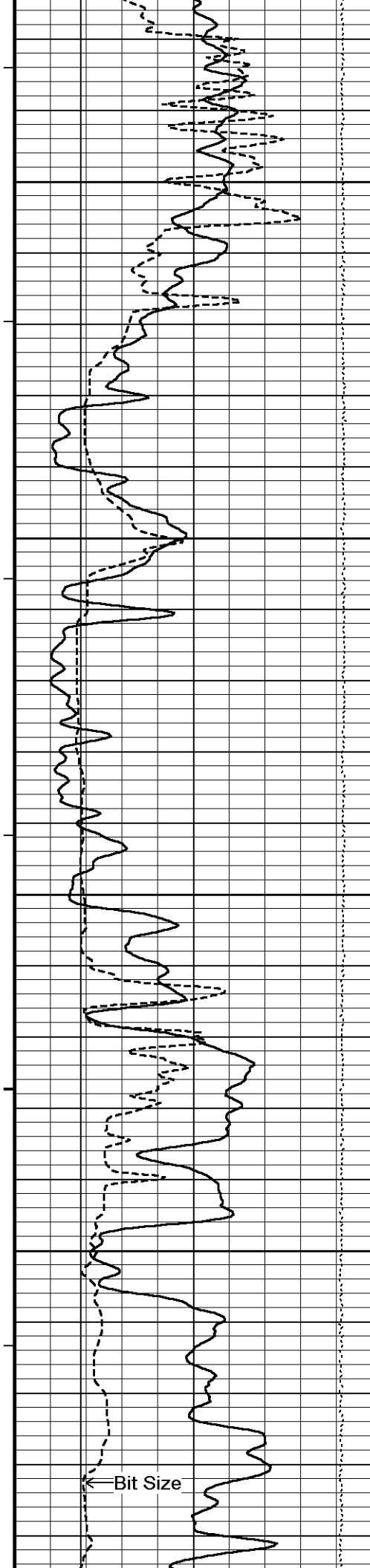
950

87°

1000







88°

1250

88°

1300

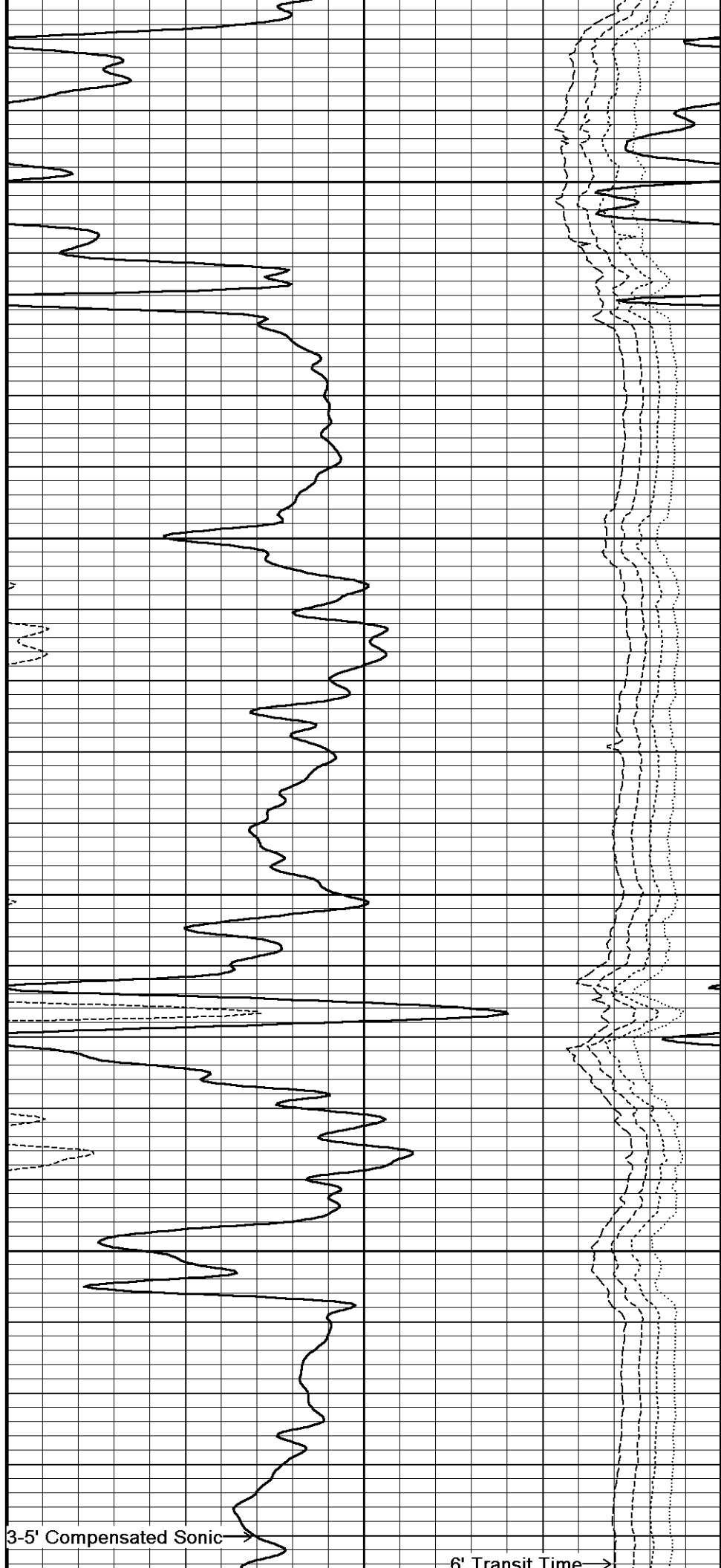
89°

1350

89°

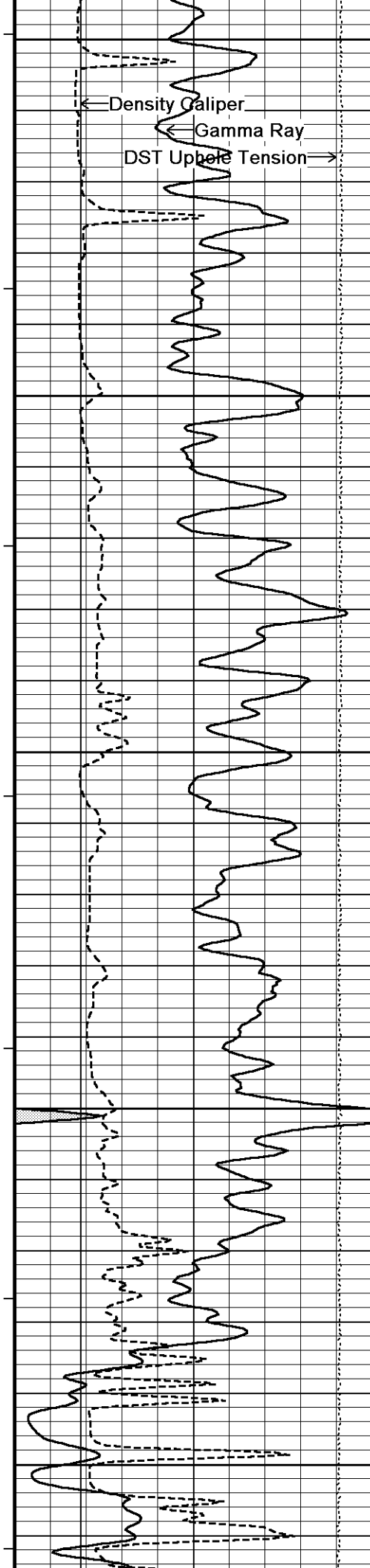
1400

89°



3-5' Compensated Sonic

6' Transit Time



1450

90°

1500

90°

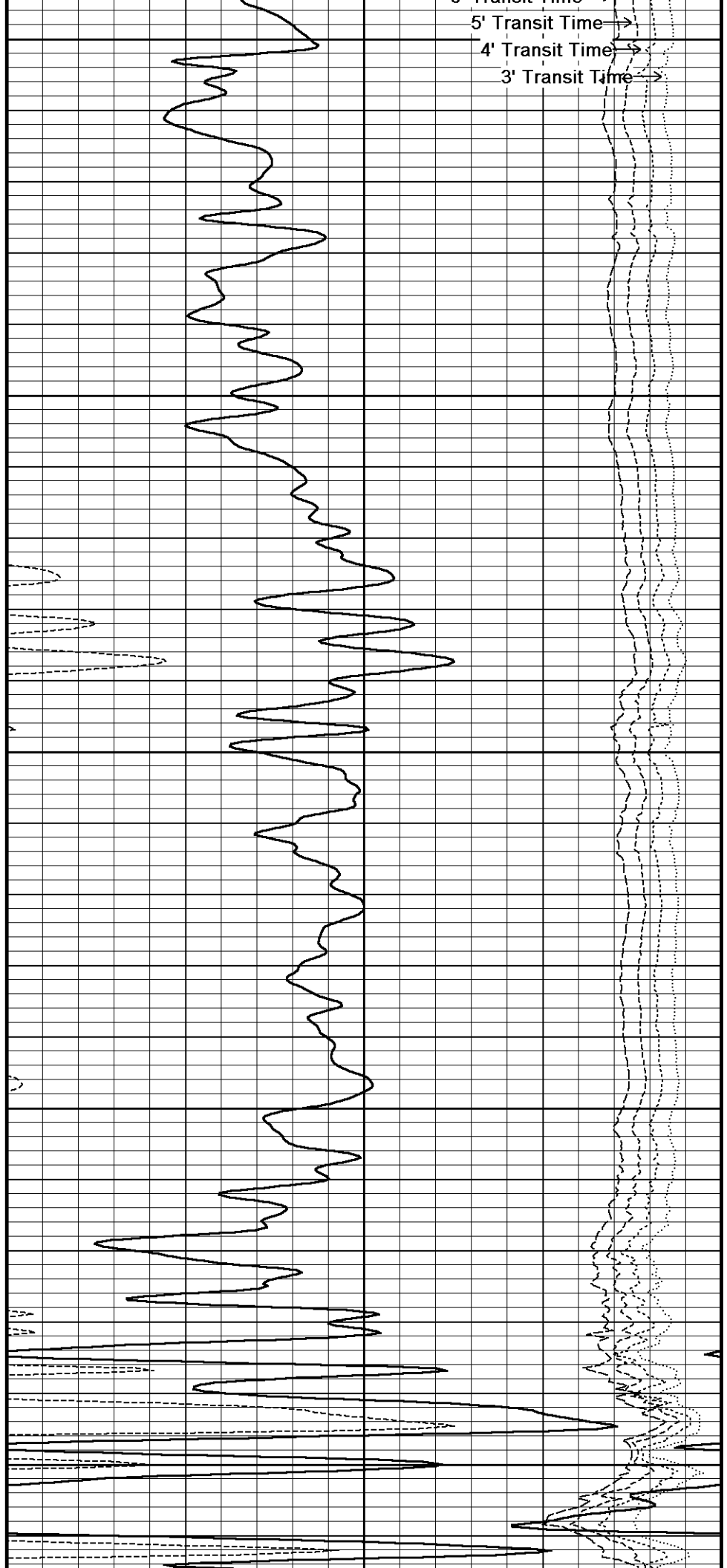
1550

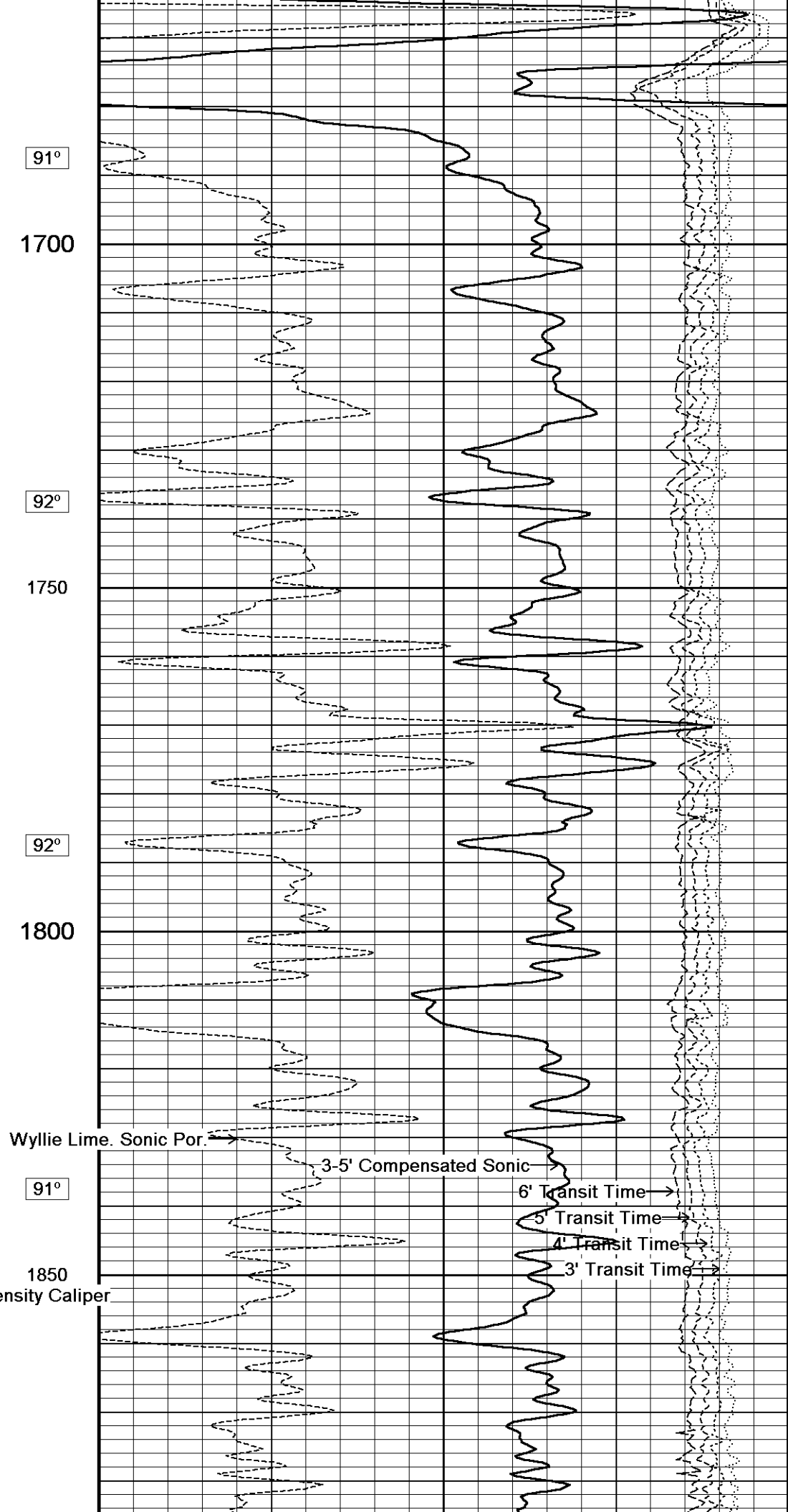
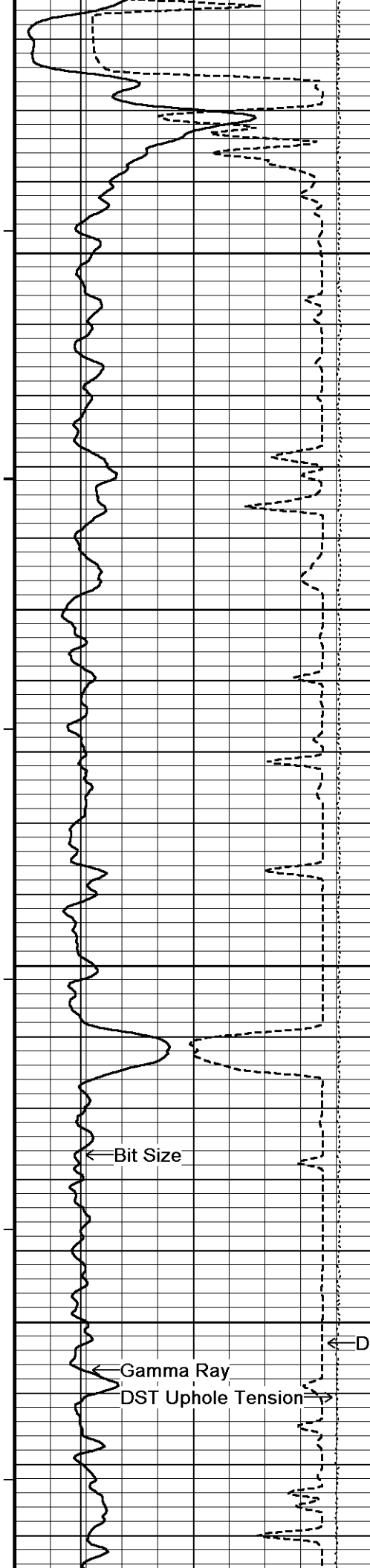
91°

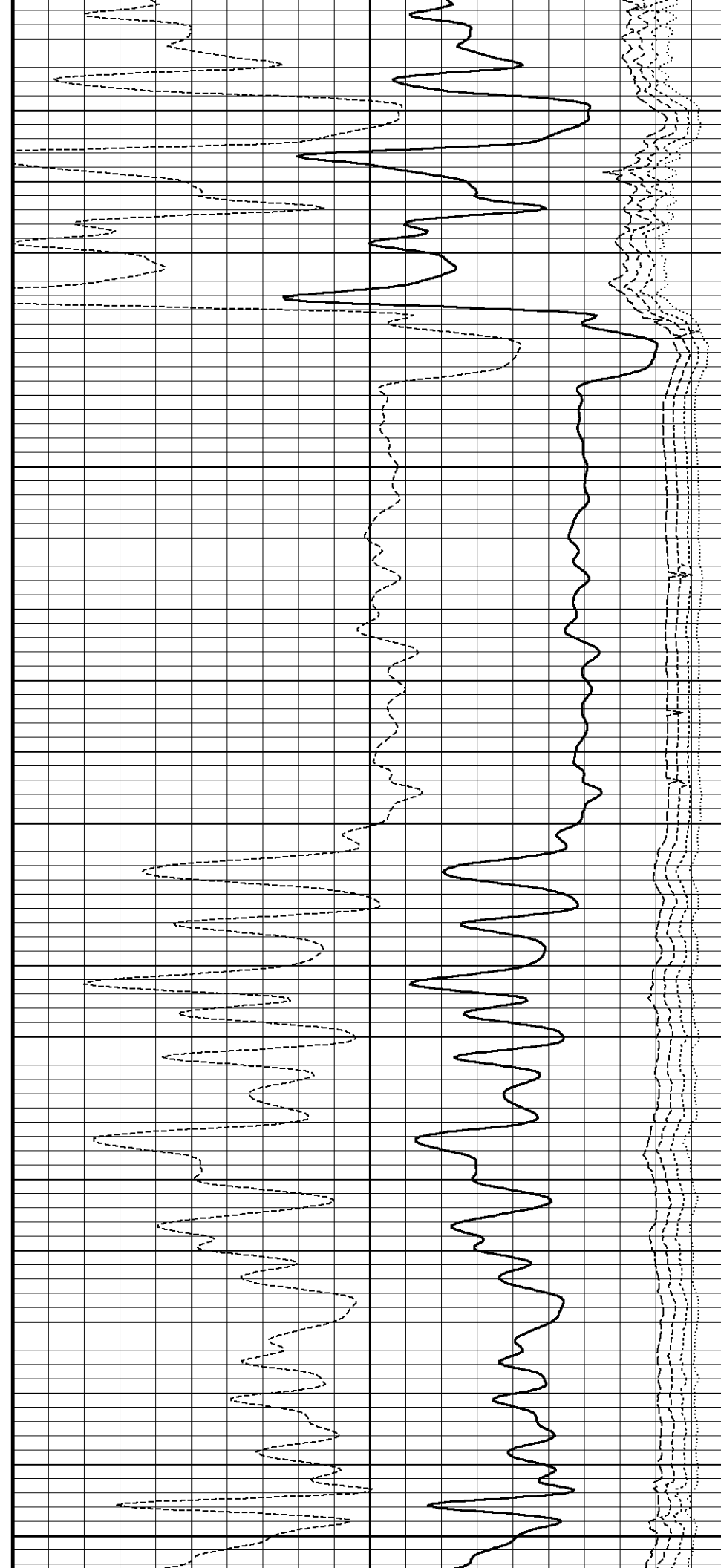
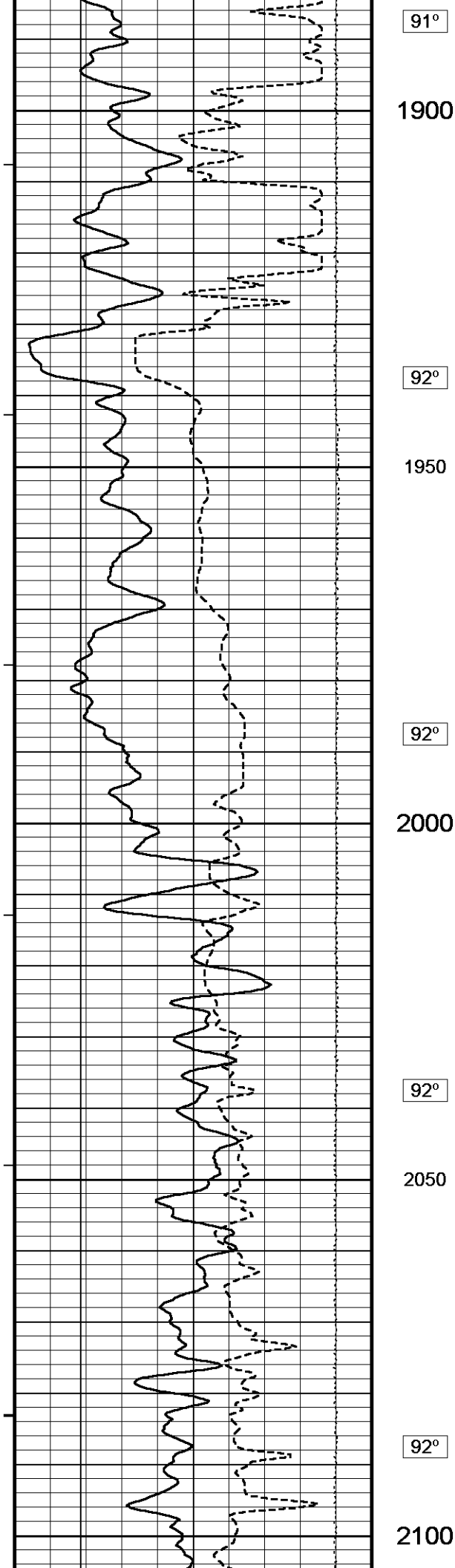
1600

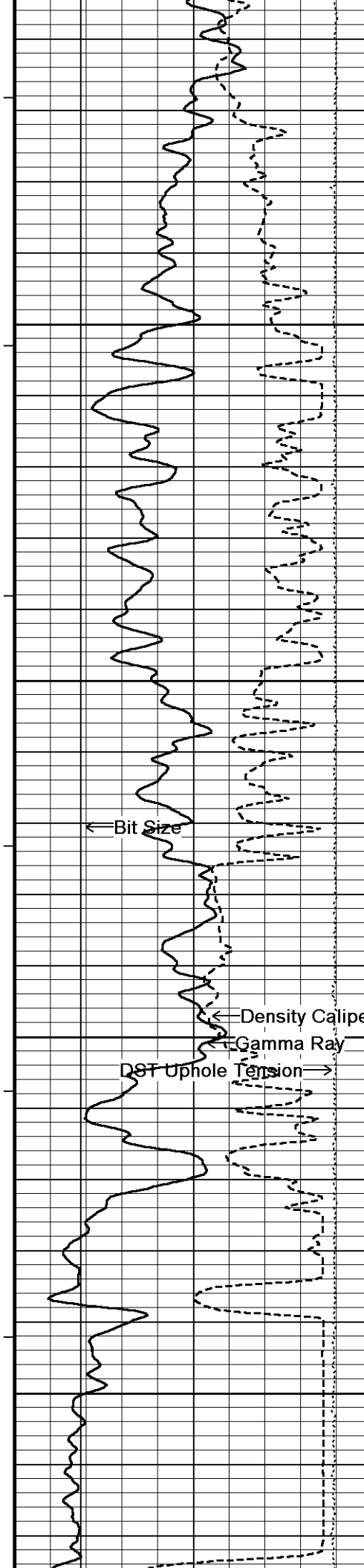
91°

1650

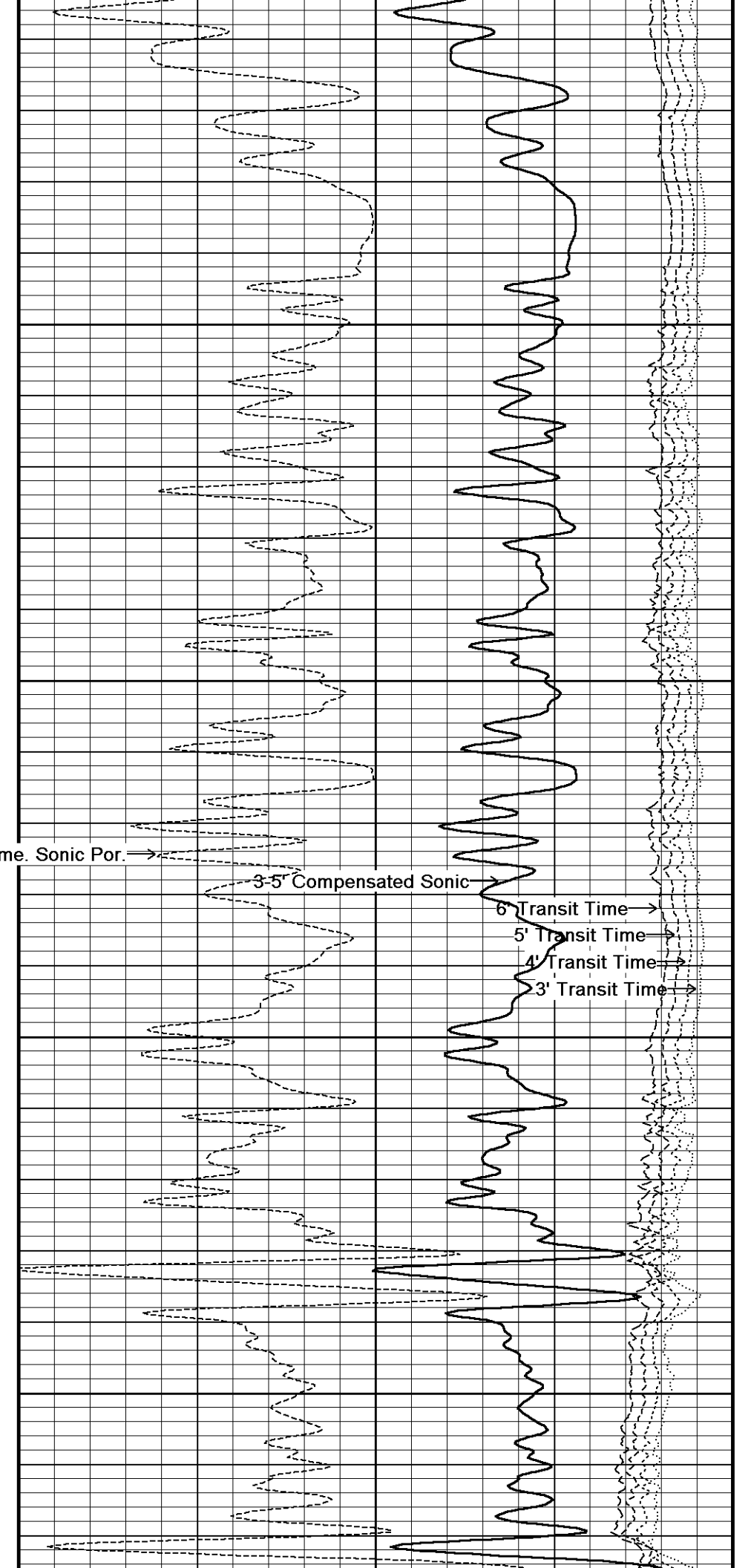








92°
2150
93°
2200
93°
2250
93°
2300



Wyllie Lime. Sonic Por. →

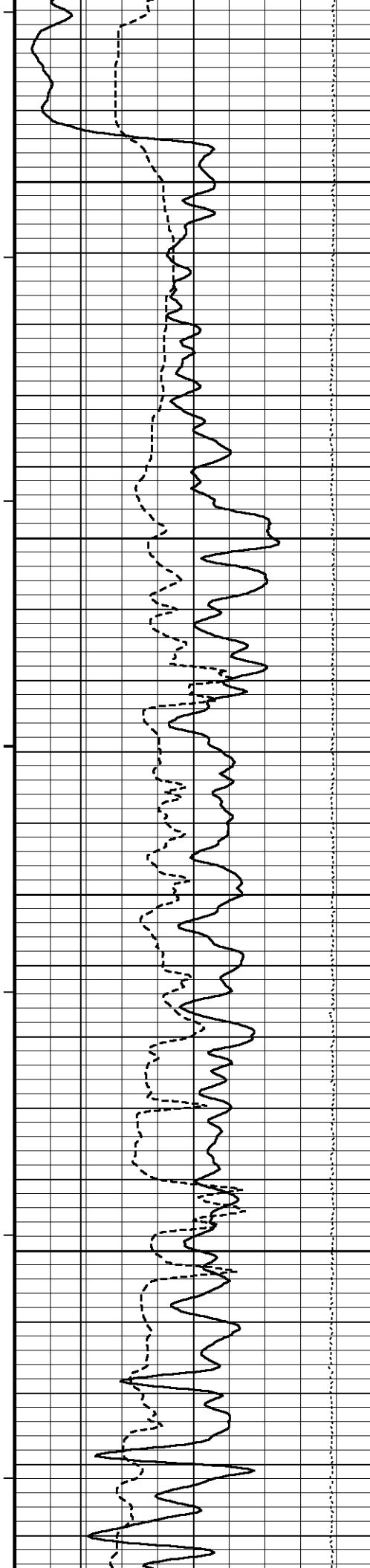
3-5' Compensated Sonic

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



93°

2350

93°

2400

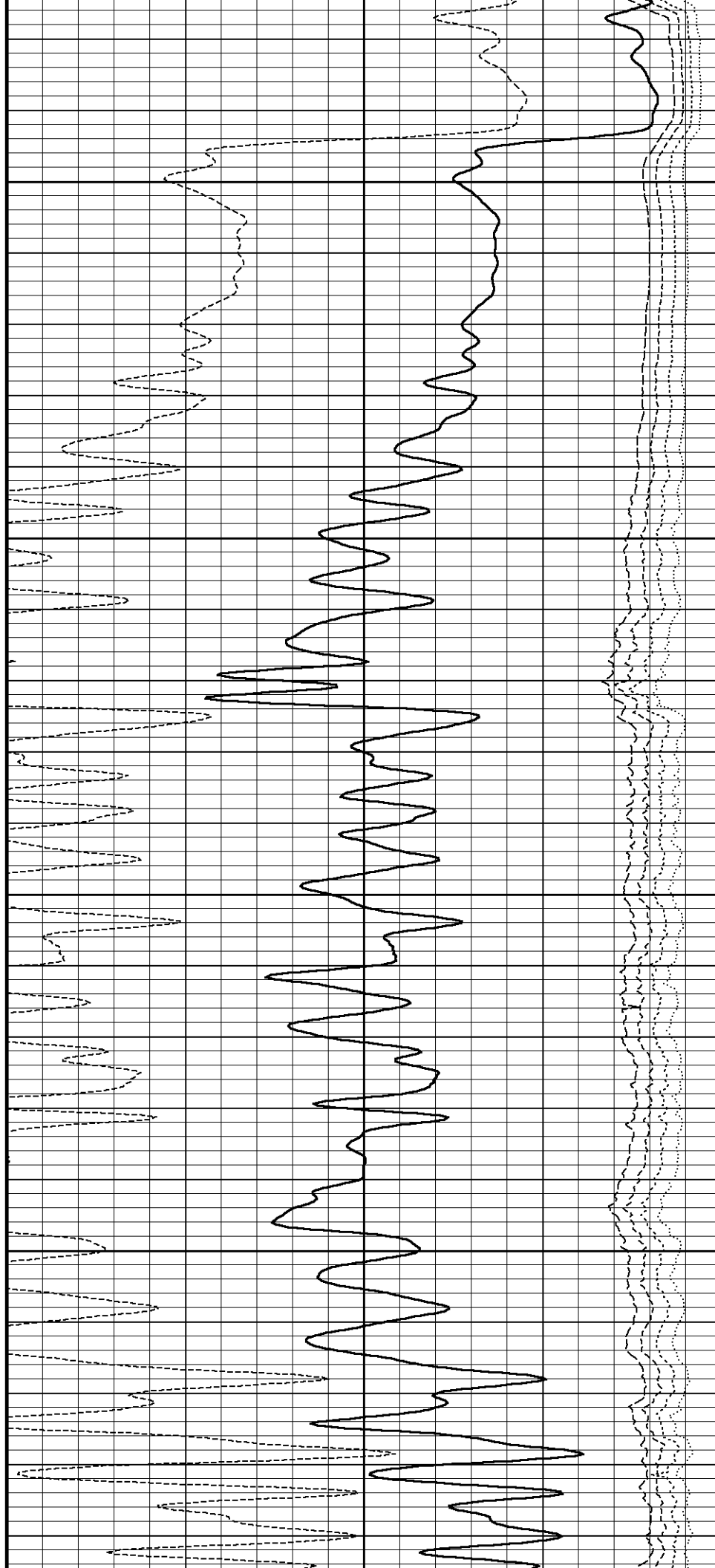
94°

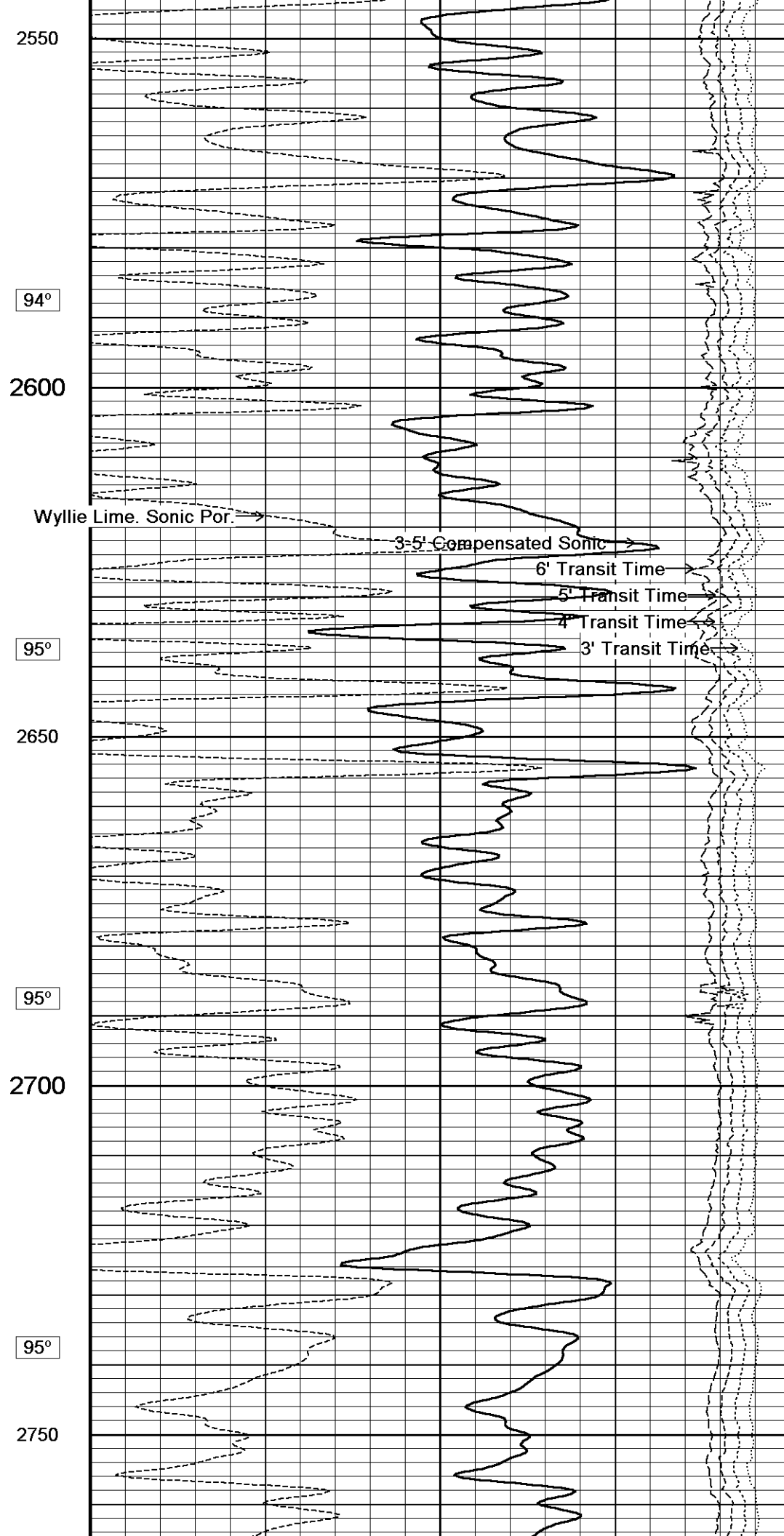
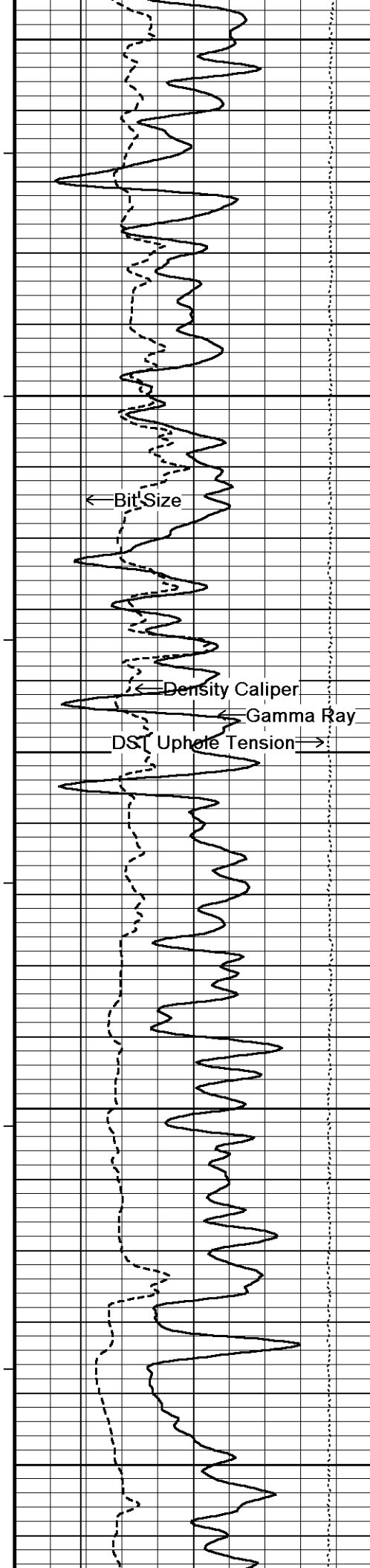
2450

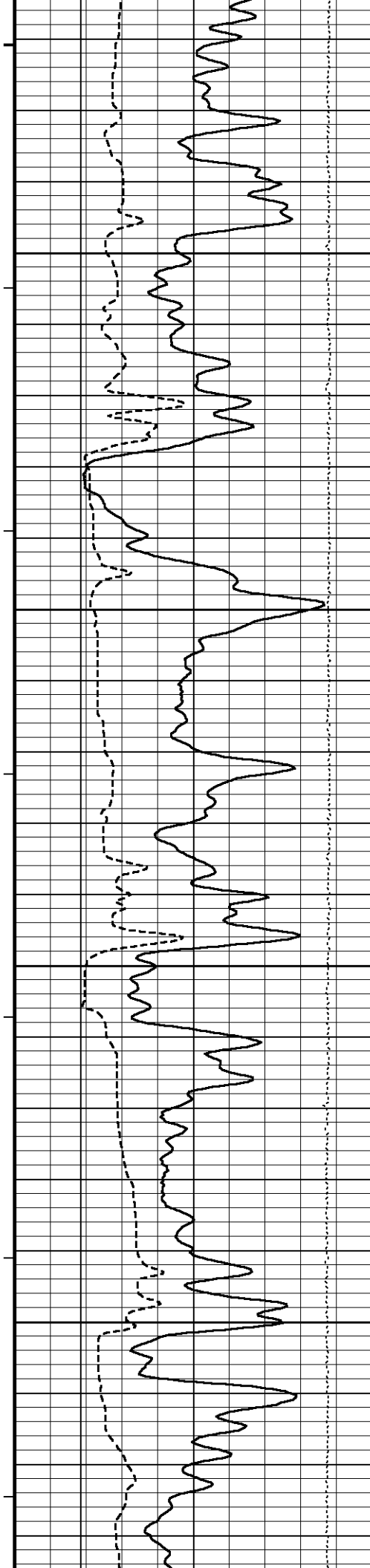
94°

2500

94°







95°

2800

95°

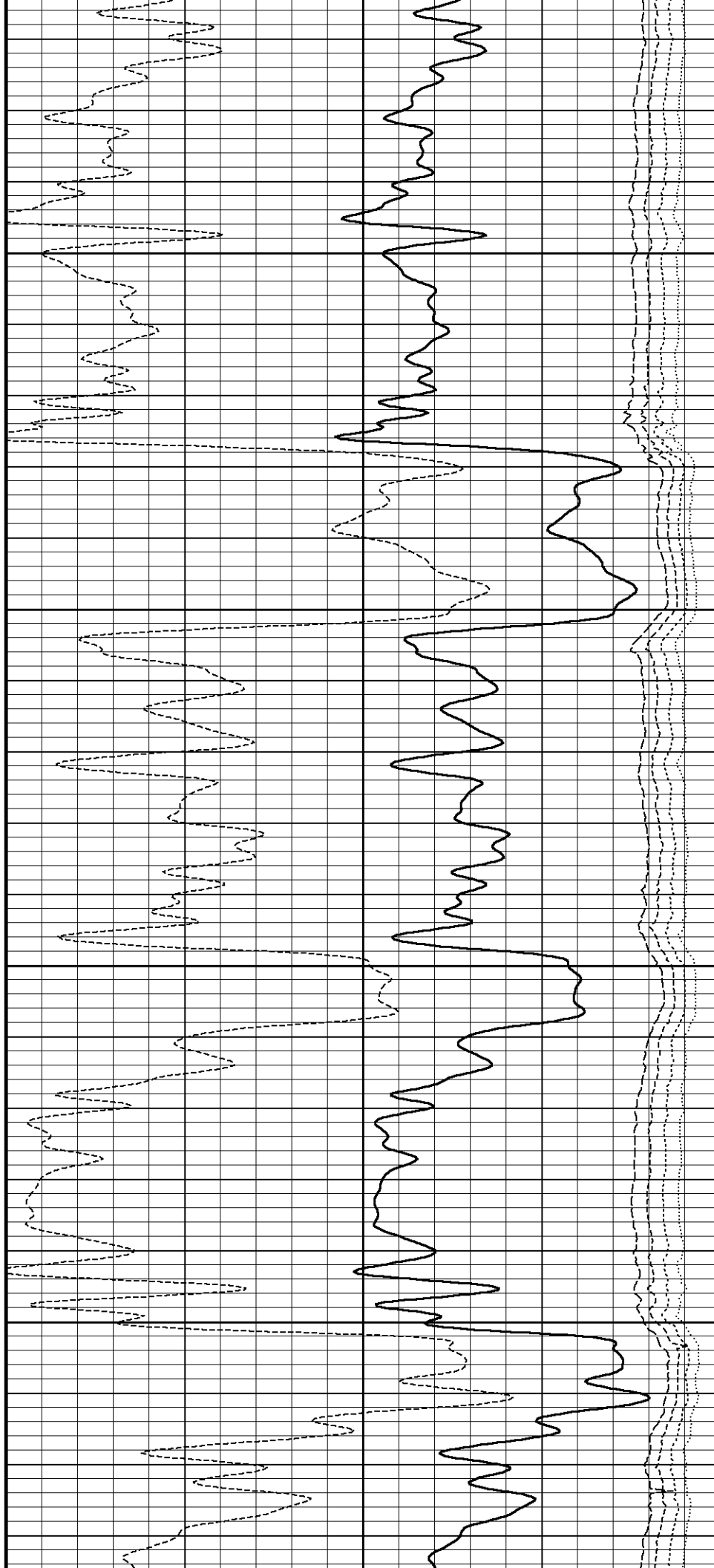
2850

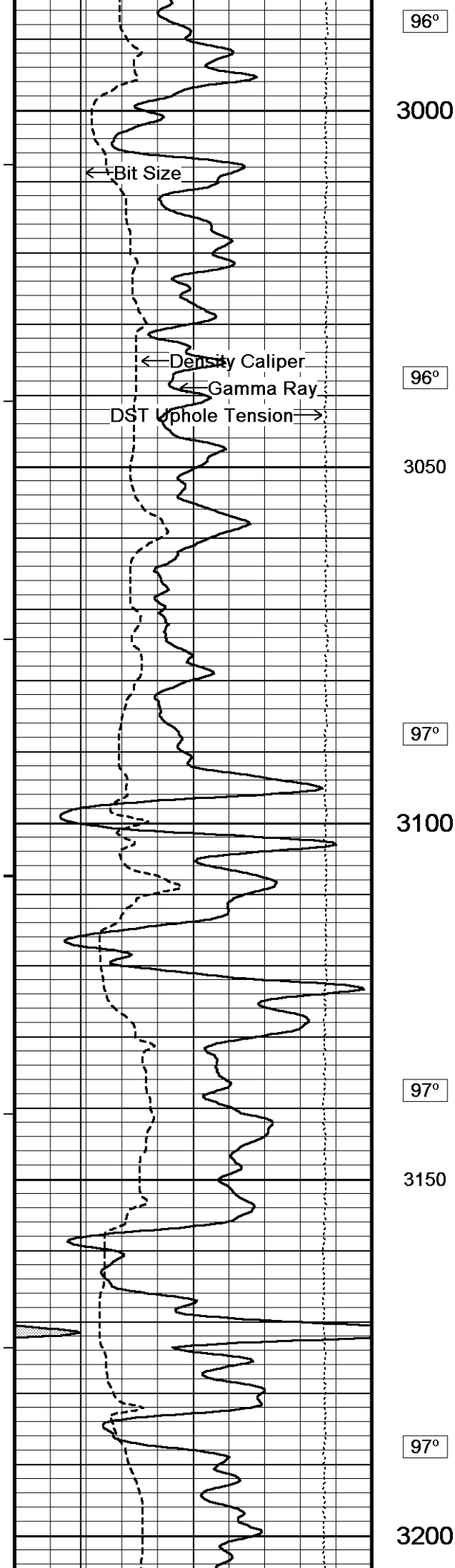
95°

2900

96°

2950





96°

3000

96°

3050

97°

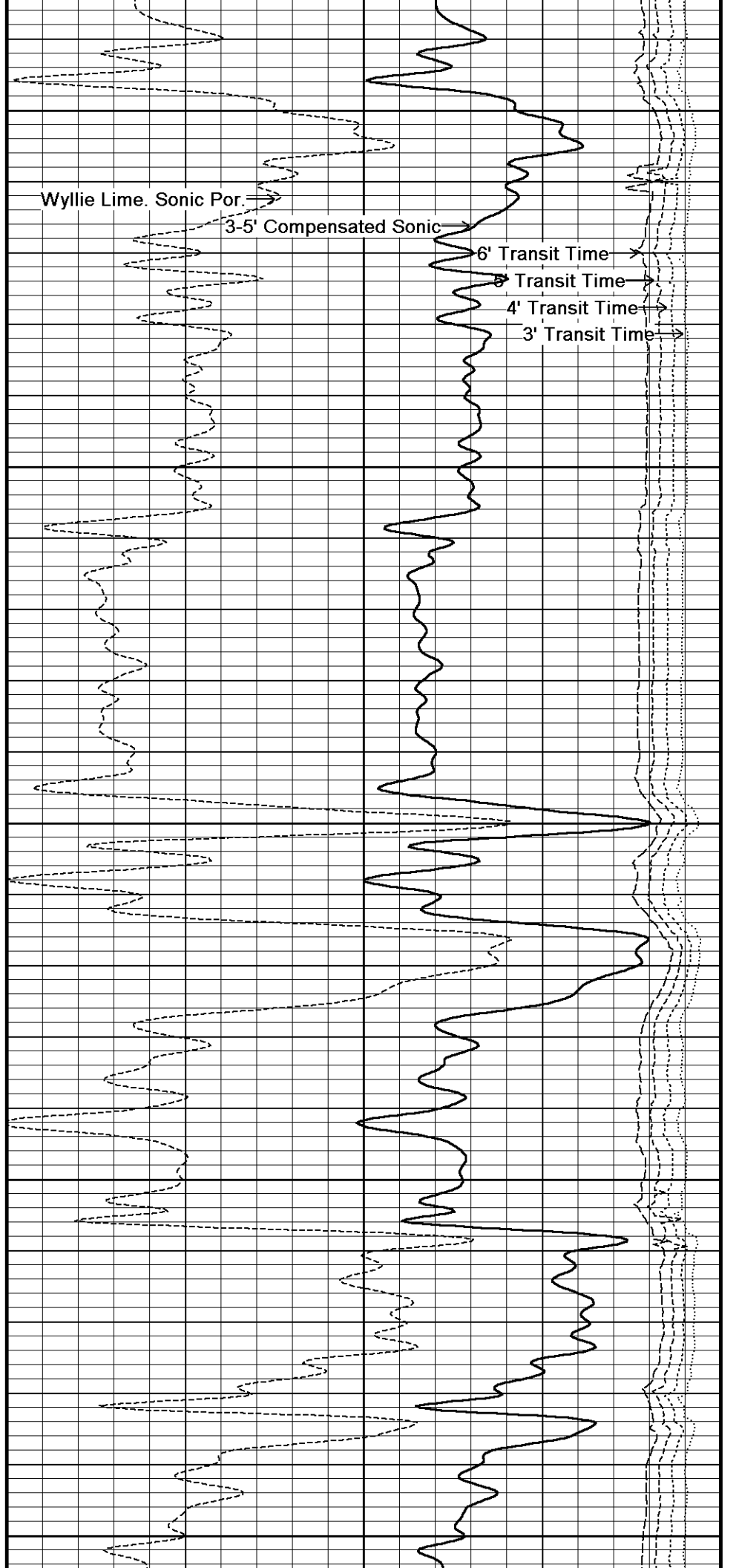
3100

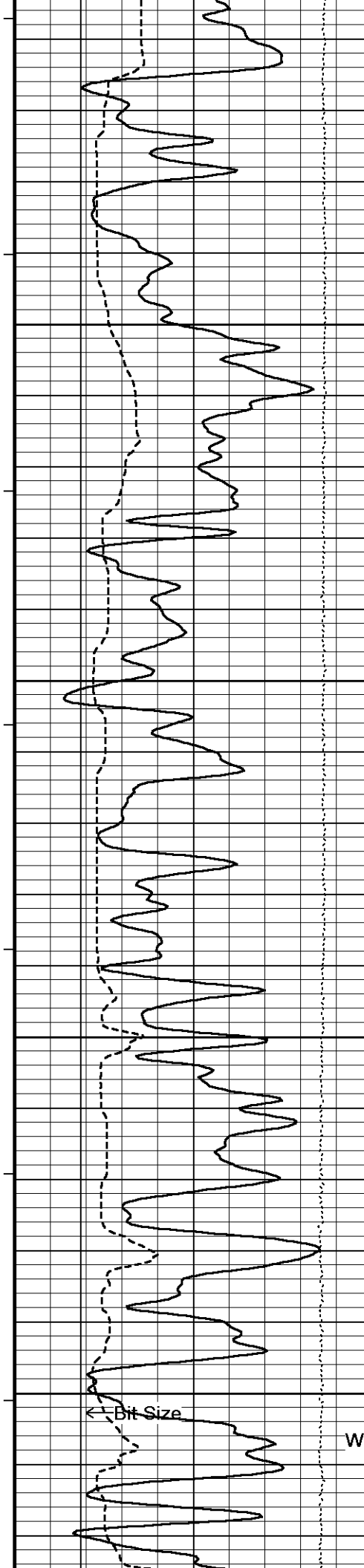
97°

3150

97°

3200





97°

3250

97°

3300

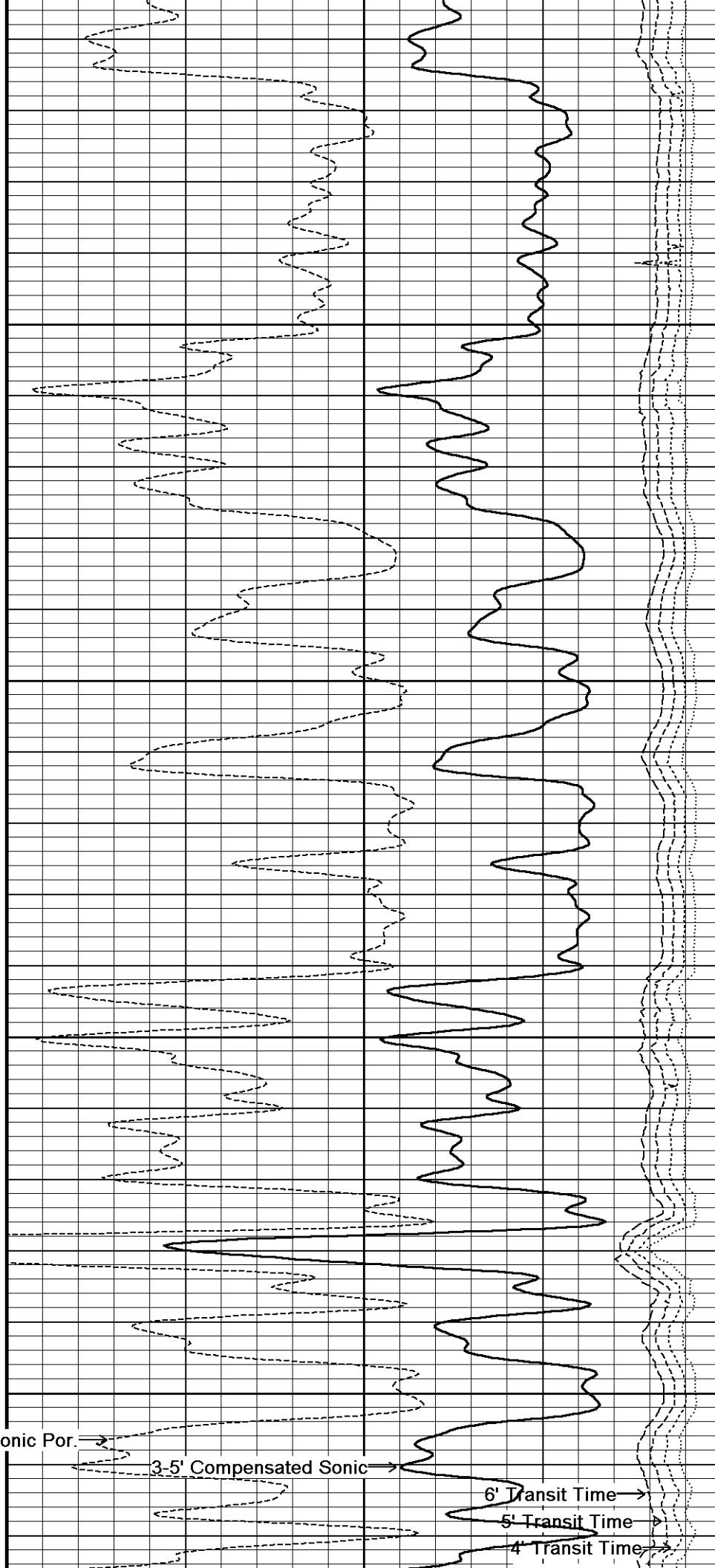
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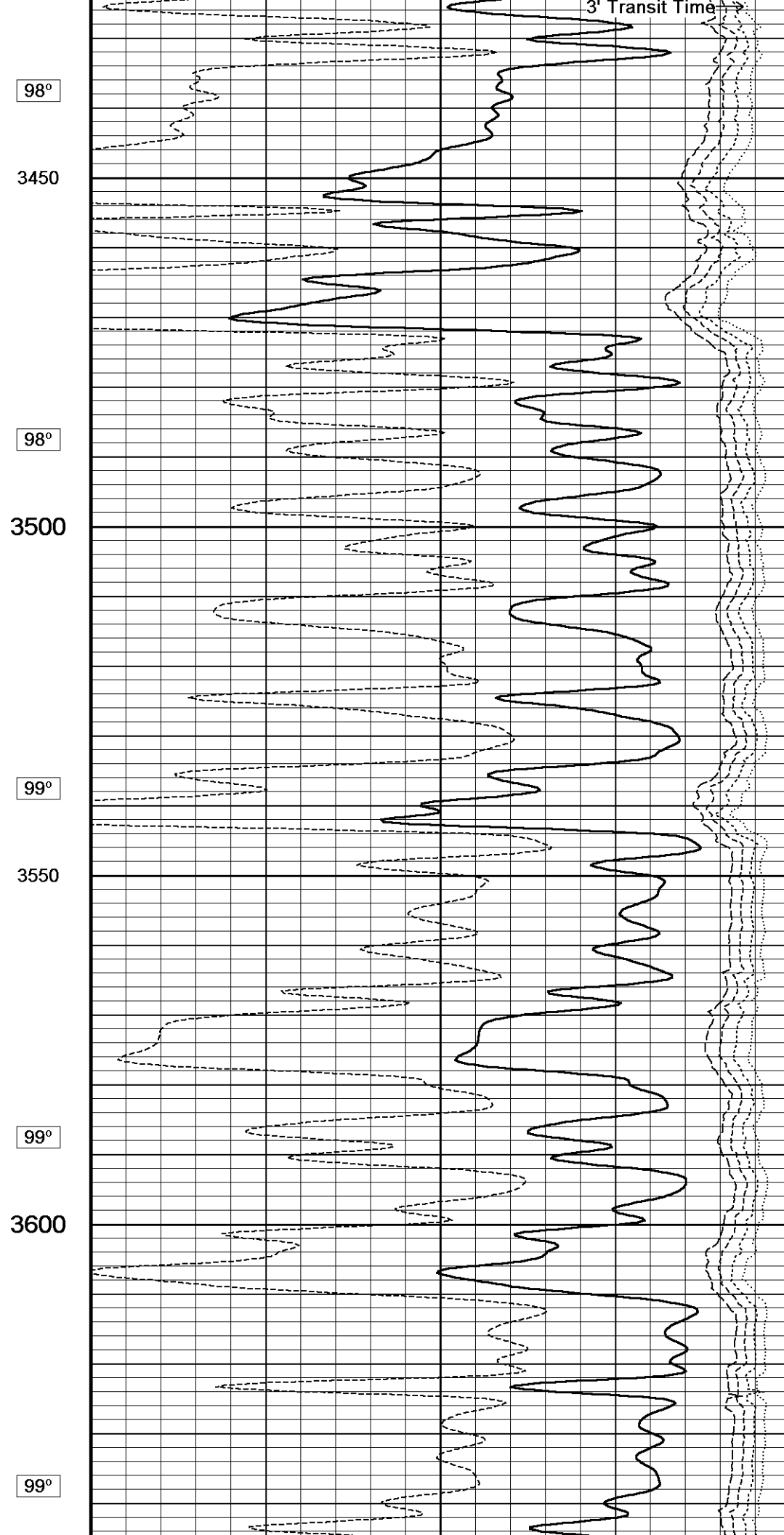
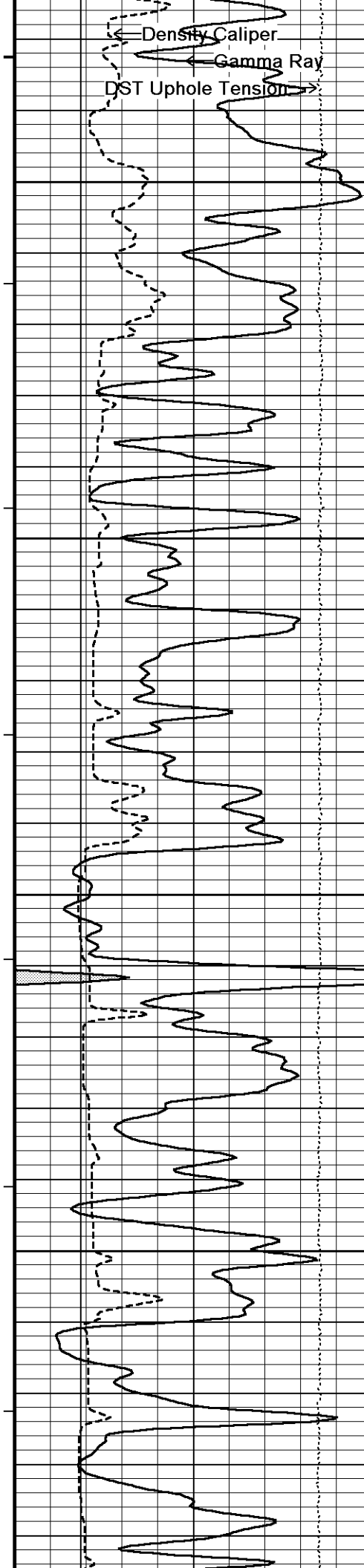
3350

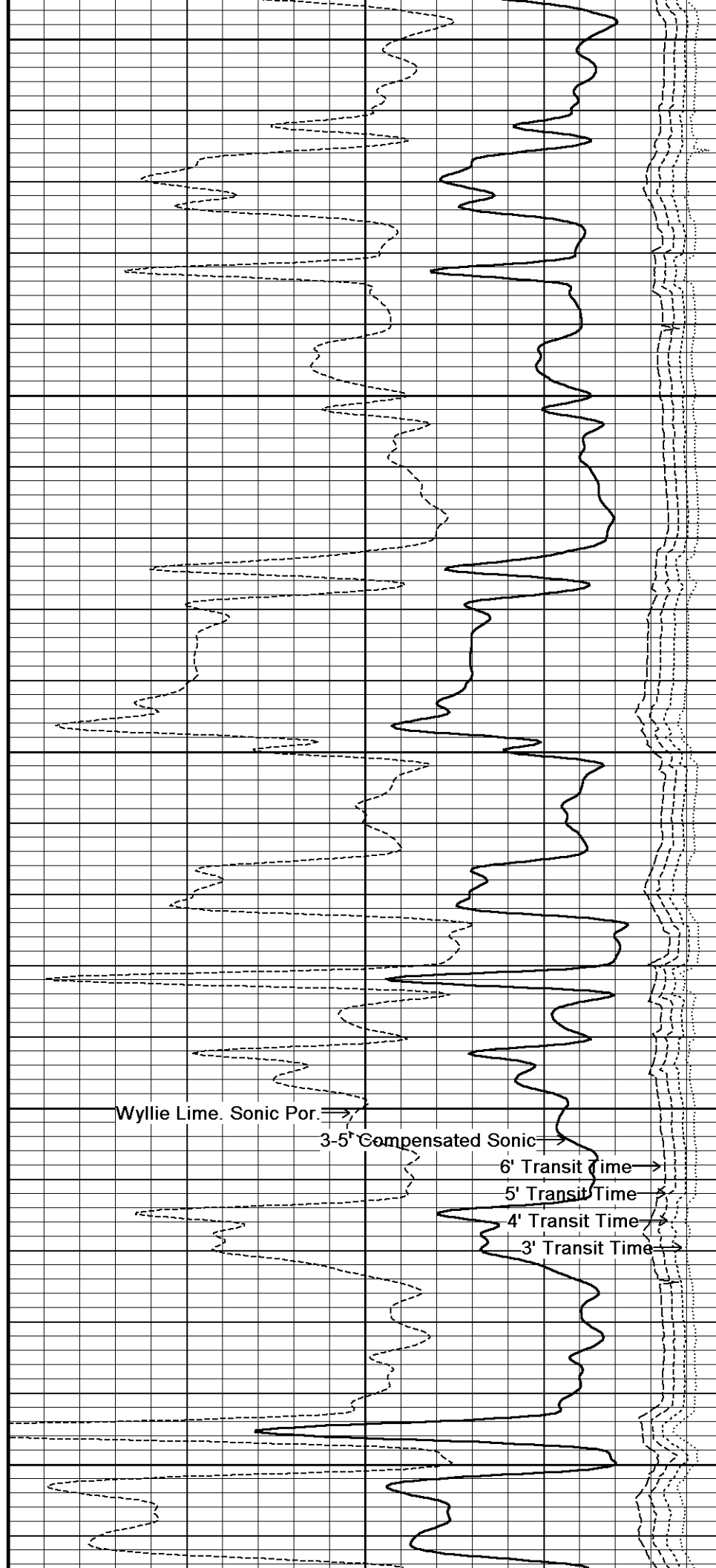
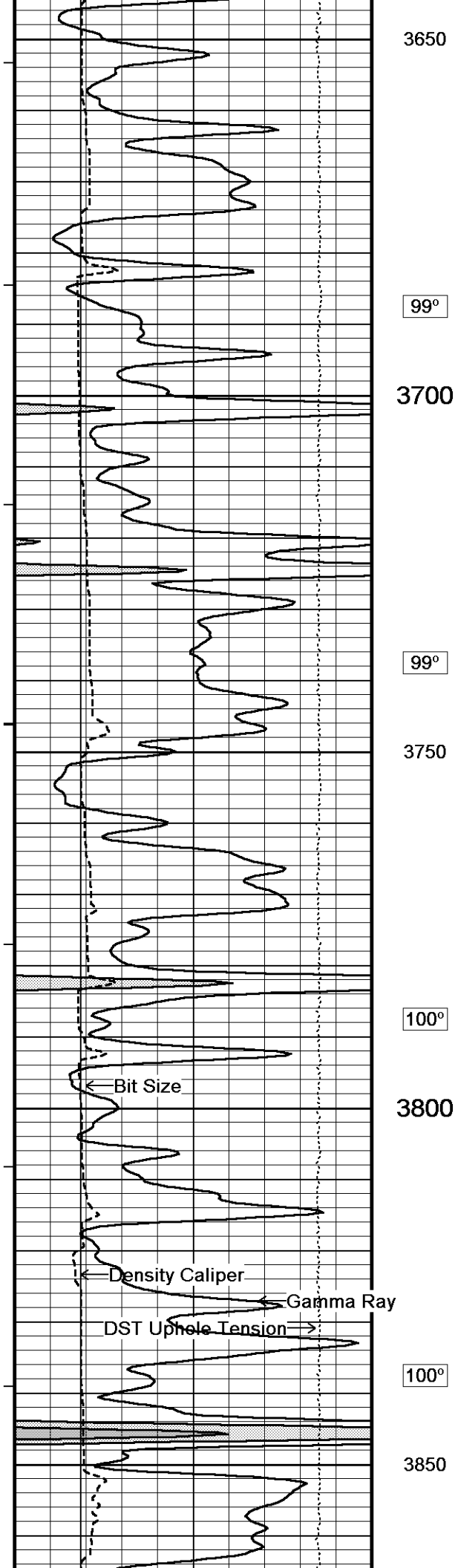
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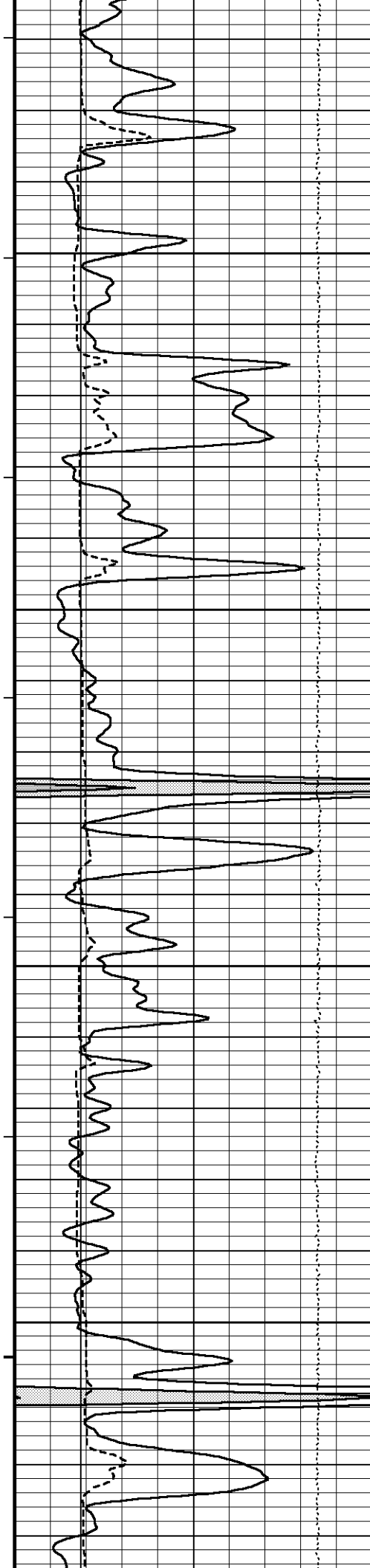
3400

Wyllie Lime. Sonic Por. →









100°

3900

100°

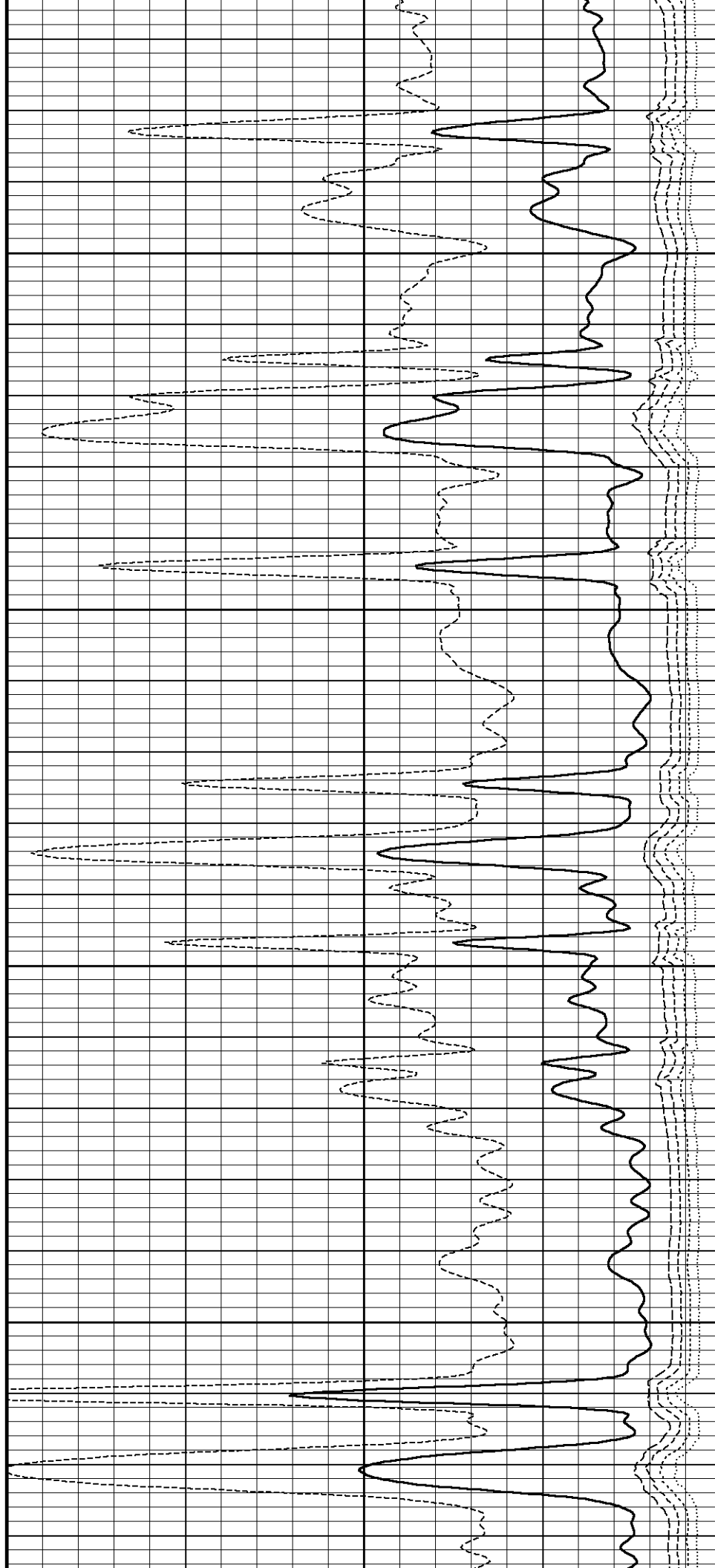
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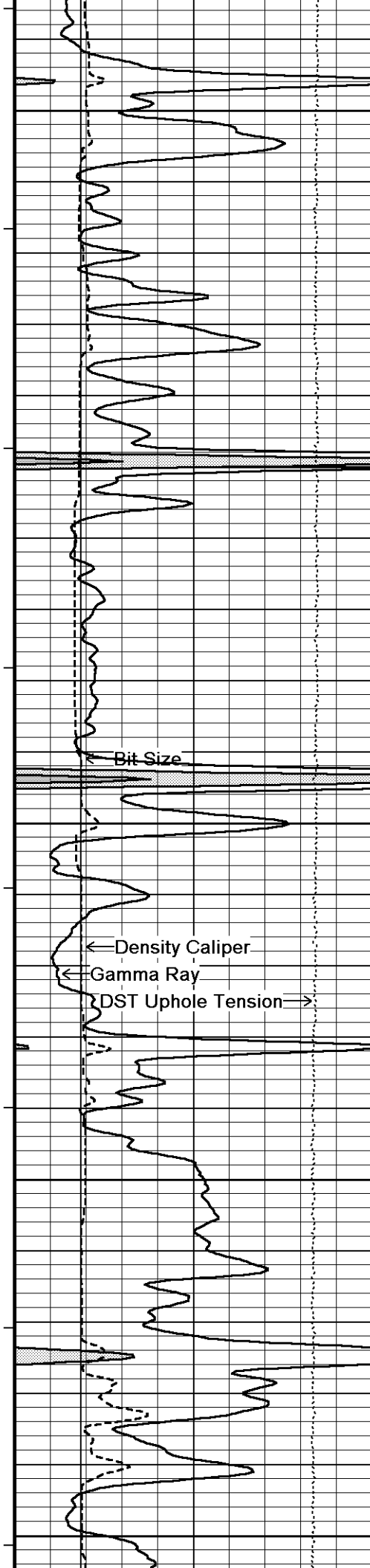
101°

4000

101°

4050





101°

4100

102°

4150

102°

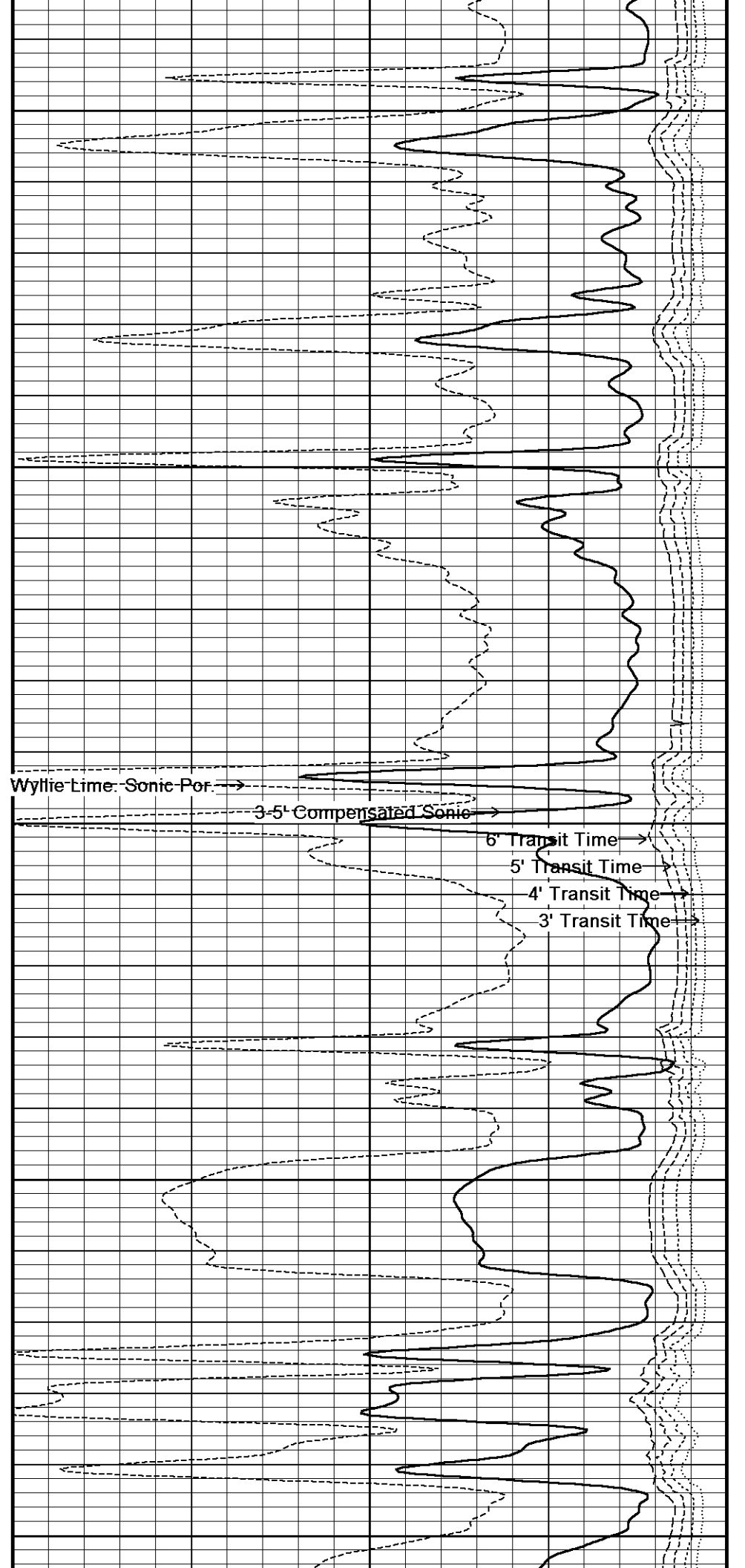
4200

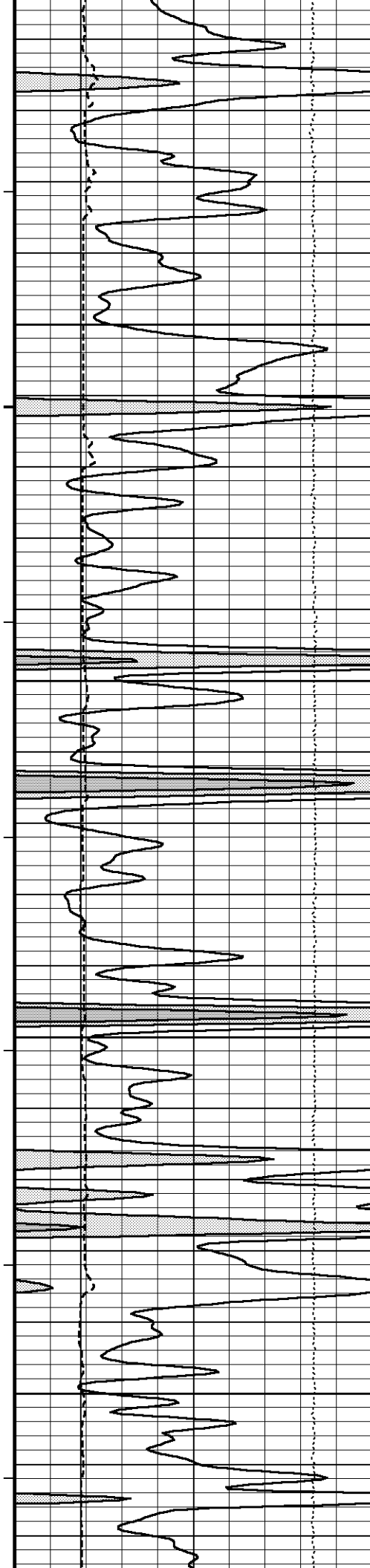
102°

4250

103°

4300





103°

4350

104°

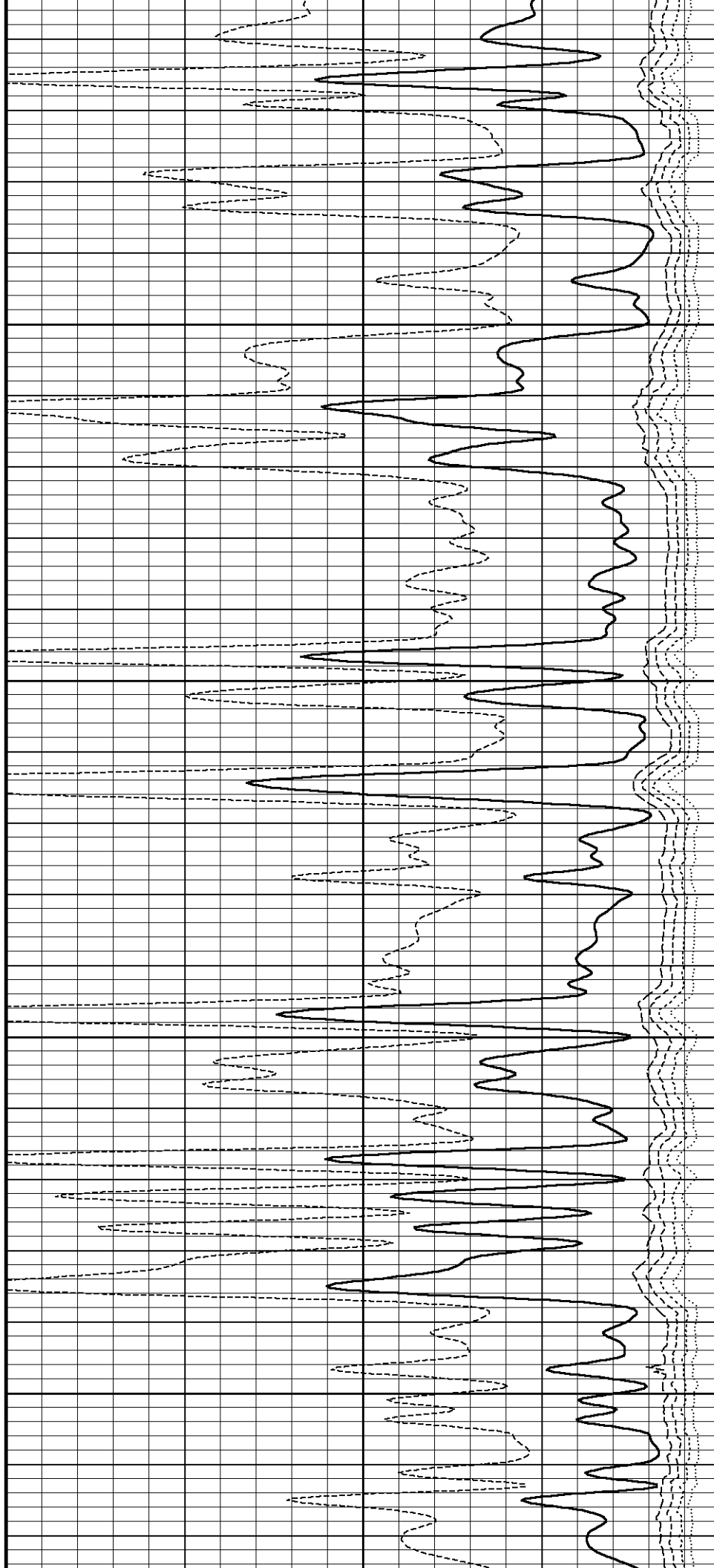
4400

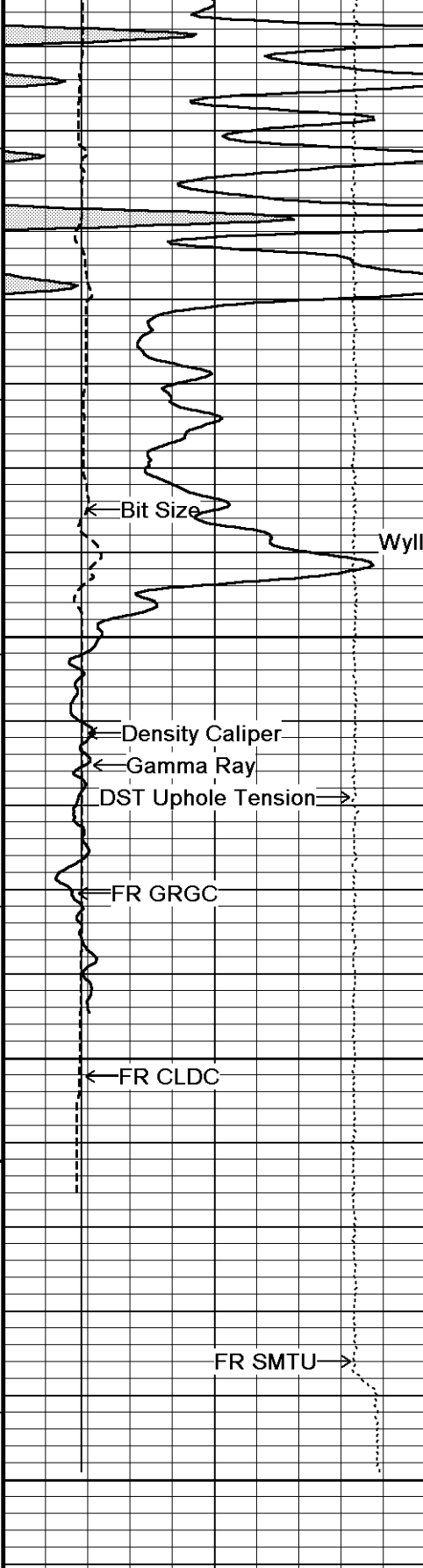
105°

4450

106°

4500





107°

4550

108°

4600

107°

4650

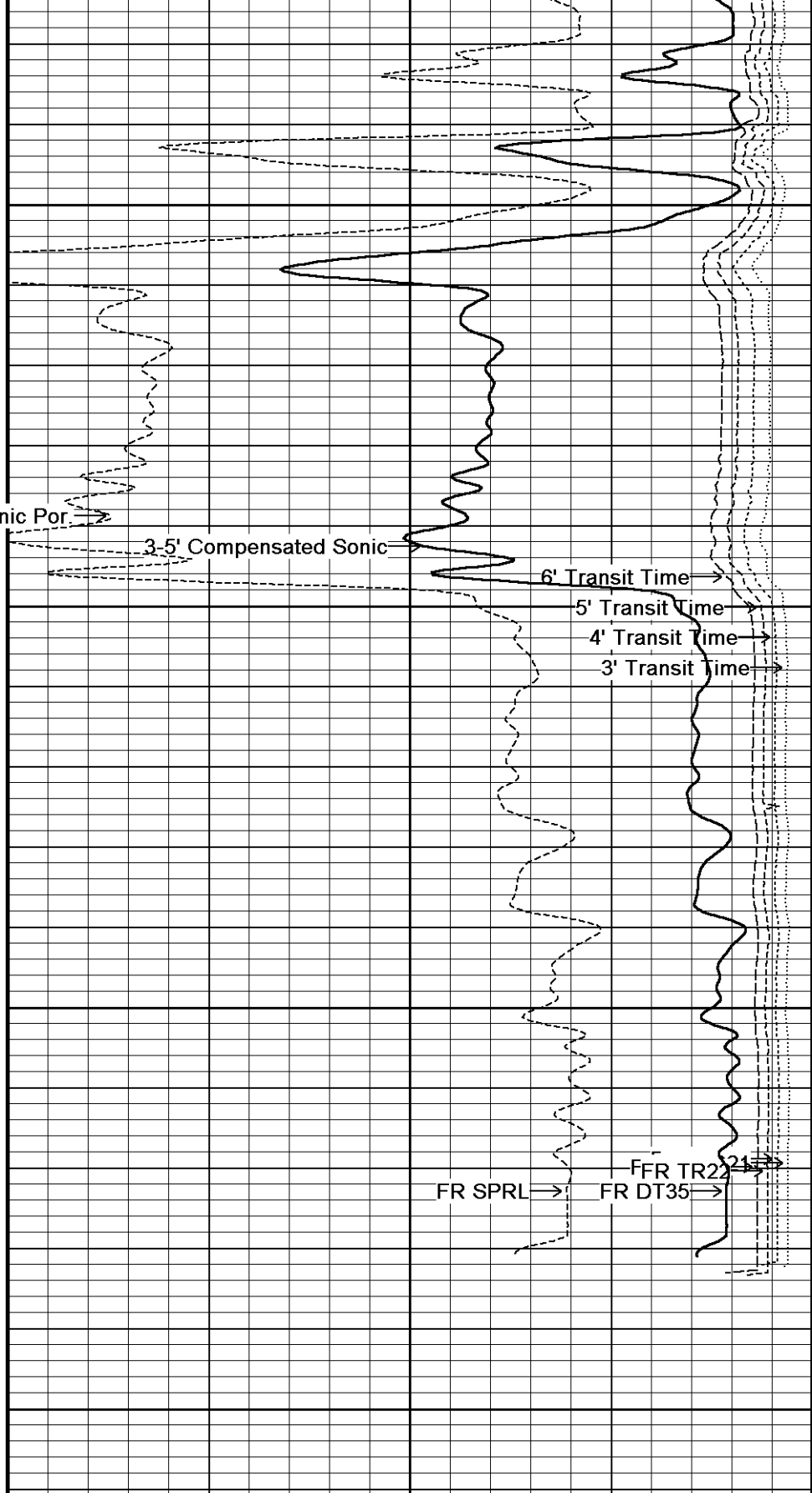
4700

4708

Depth
In
Feet

Timing Marks
every 60.0 sec

Gamma Ray



3-5' Compensated Sonic

6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time

FR SPRL

FFR TR22

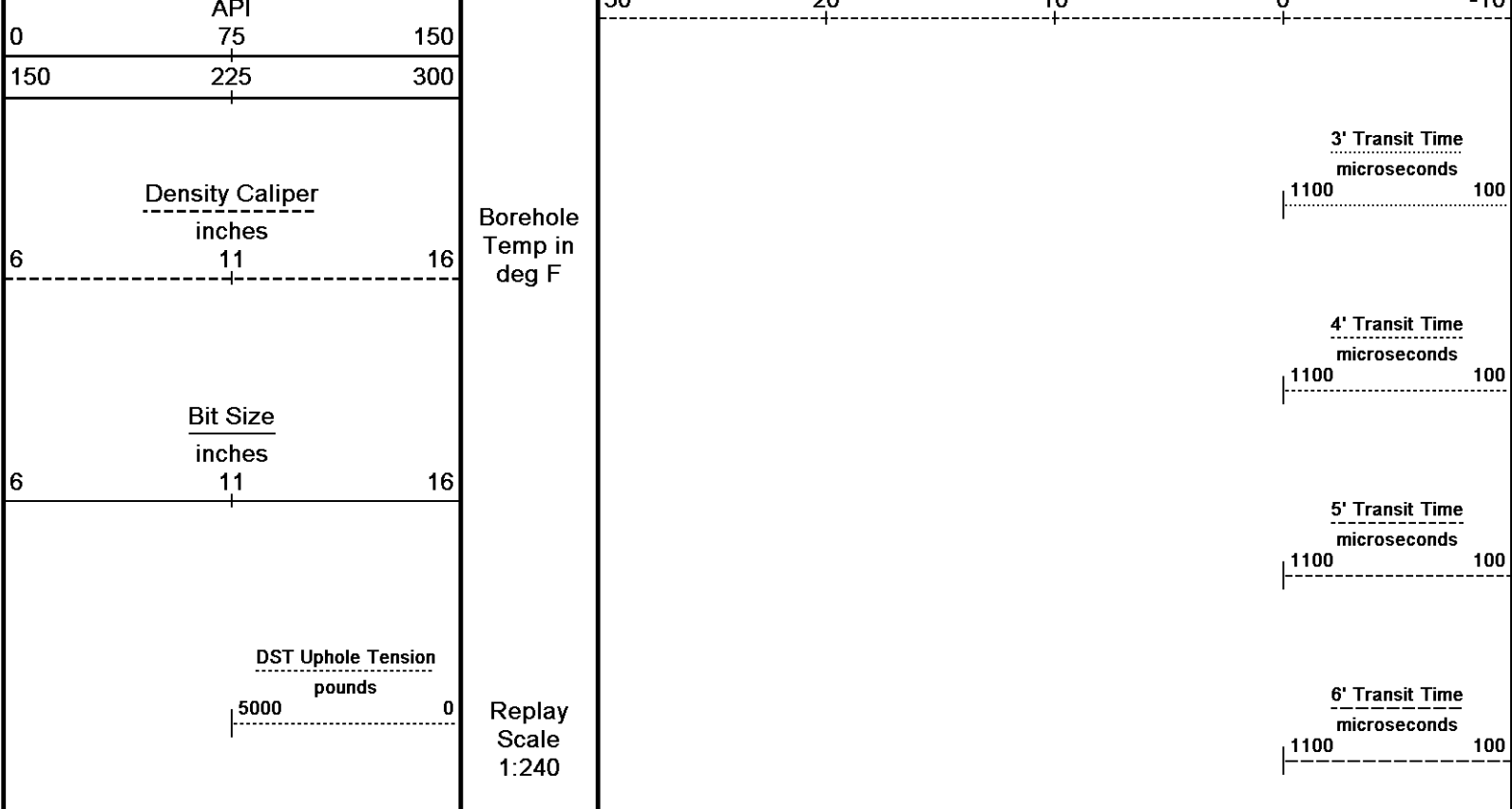
FR DT35

3-5' Compensated Sonic
microsec/foot

Wyllie Lime. Sonic Por.
percent

140 115 90 65 40

30 20 10 0 10



Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 07-JAN-2013 08:29

Filename: C:\Minimus 13.04.8492\Data\Stelbar LPR #1-17\Stelbar LPR #1-17_002.dta

Recorded on 07-JAN-2013 06:05

System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

↑

5 INCH MAIN

↑

↓

REPEAT SECTION

↓

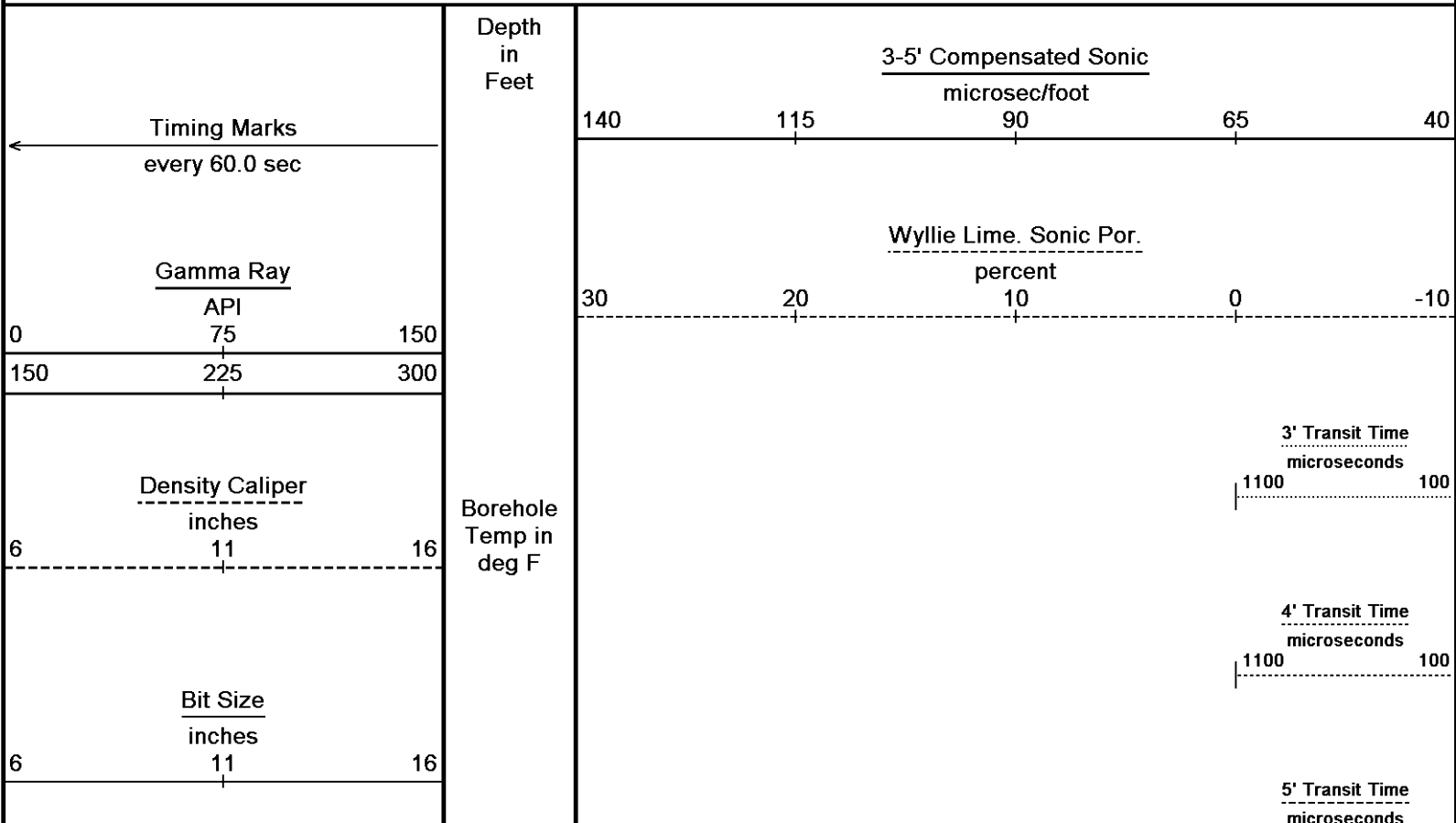
Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 07-JAN-2013 08:29

Filename: C:\Minimus 13.04.8492\Data\Stelbar LPR #1-17\Stelbar LPR #1-17_001.dta

Recorded on 07-JAN-2013 05:48

System Versions: Logged with 13.04.8492 Plotted with 13.04.8492



DST Uphole Tension
pounds
5000 0

Replay
Scale
1:240

6' Transit Time
microseconds
1100 100

4368

4400

104°

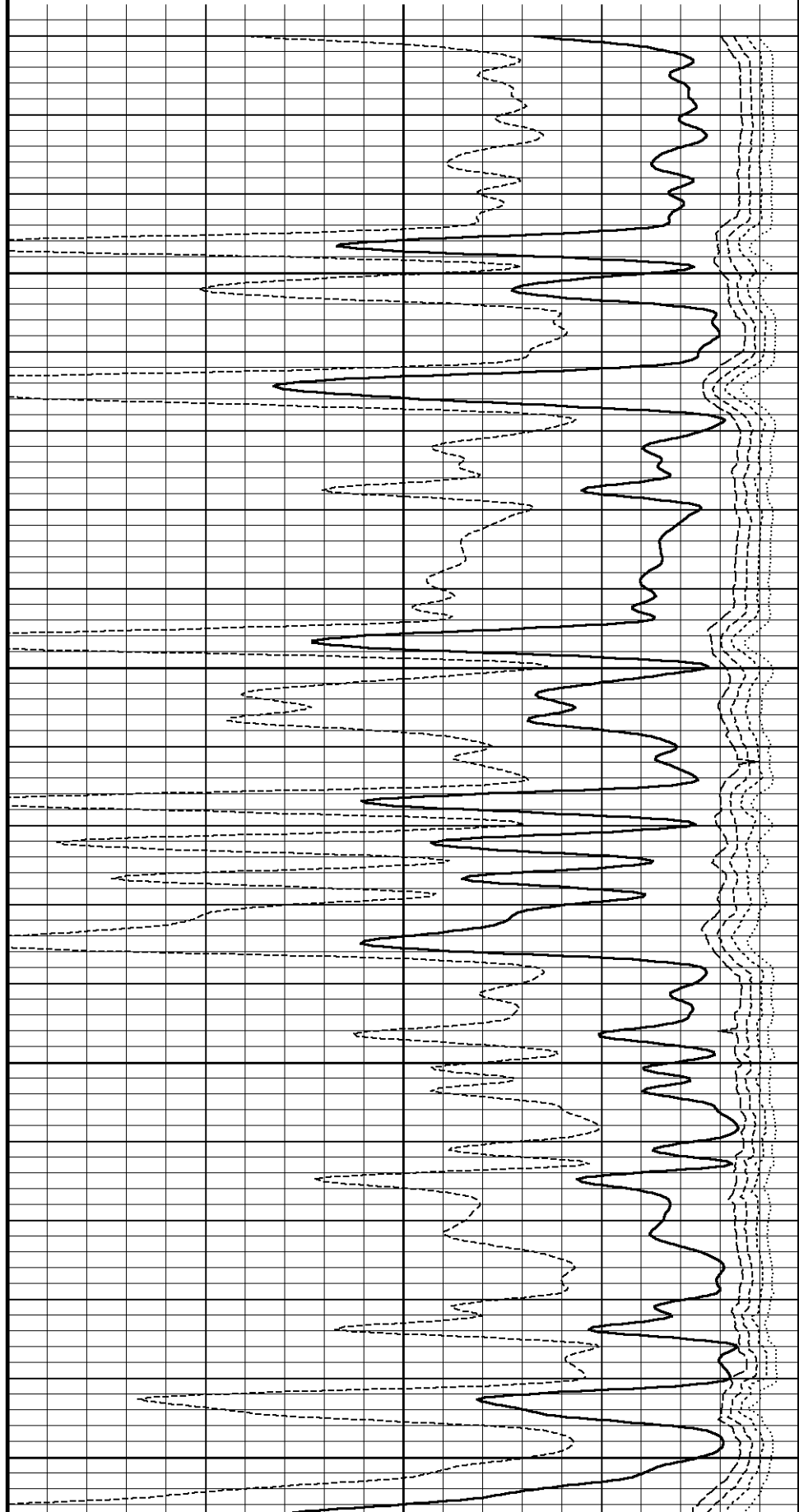
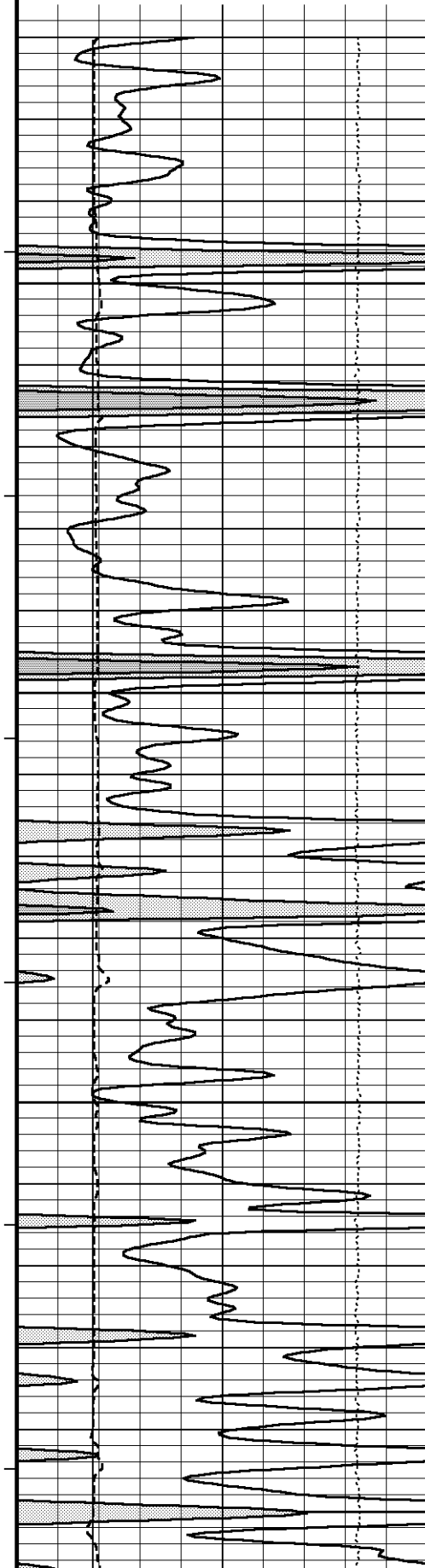
4450

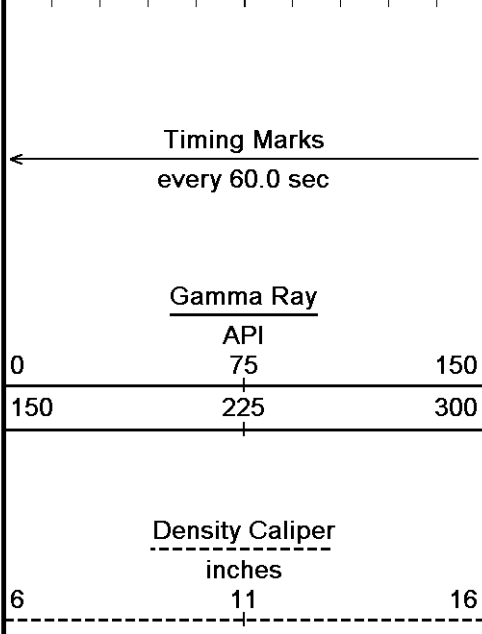
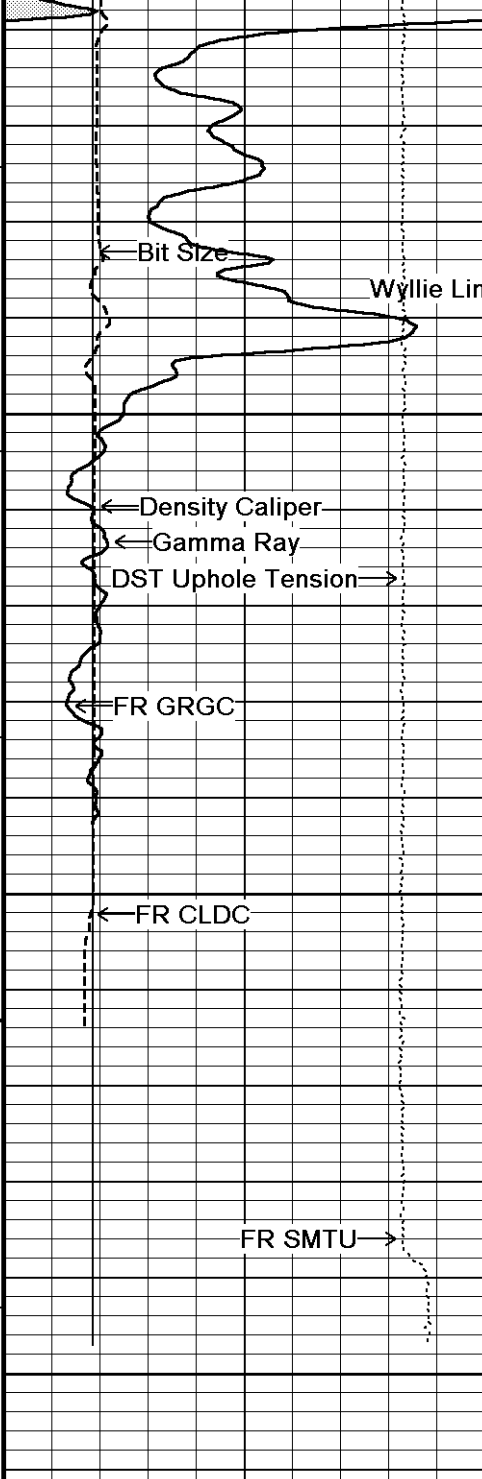
105°

4500

106°

4550





Wyllie Lime. Sonic Por.

4600

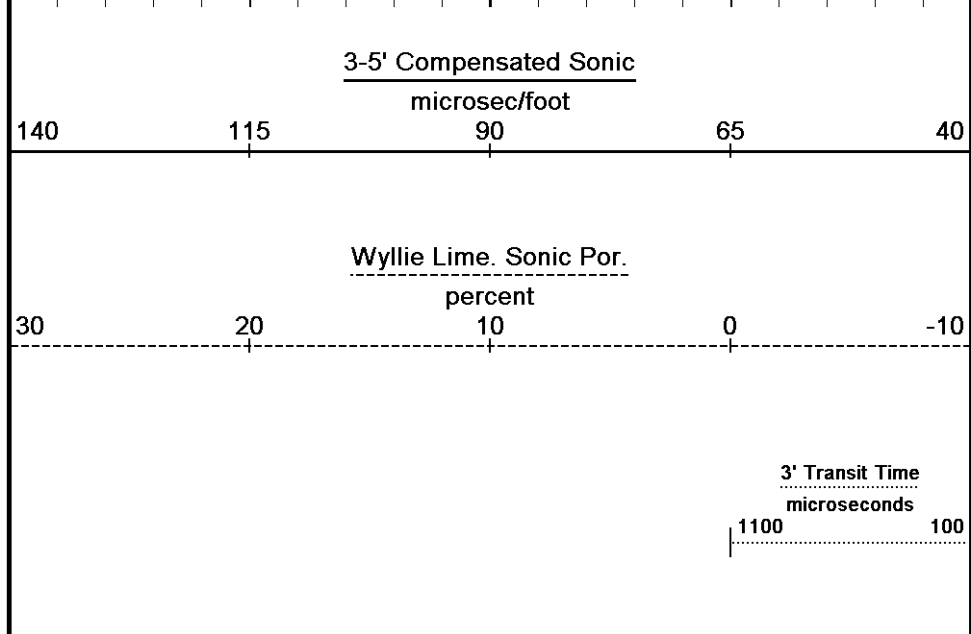
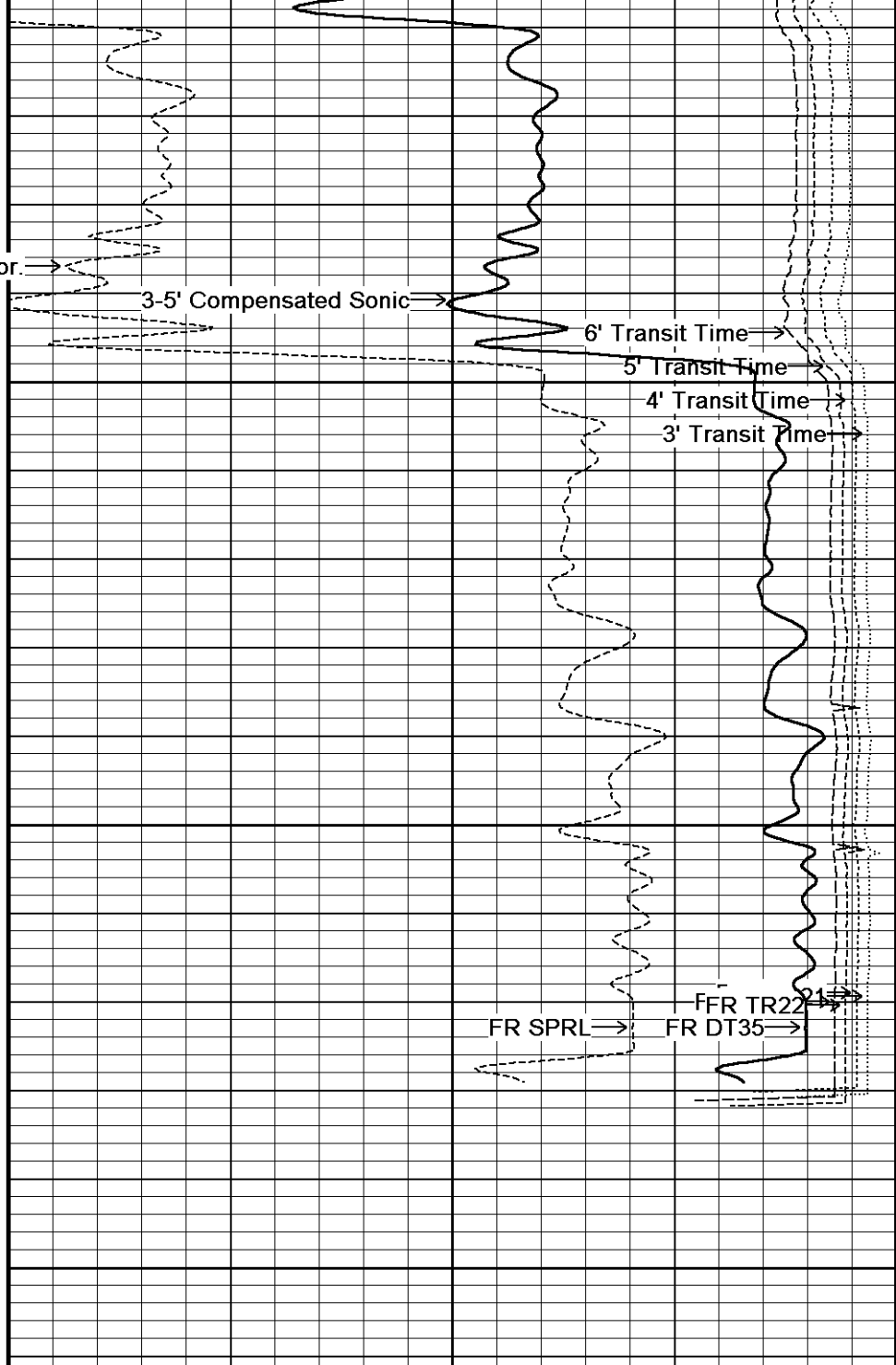
106°

4650

4700

4710
Depth
in
Feet

Borehole
Temp in
deg F



4' Transit Time
microseconds

1100 100

Bit Size

inches

11

6

16

5' Transit Time
microseconds

1100 100

DST Uphole Tension
pounds

5000 0

Replay
Scale
1:240

6' Transit Time
microseconds

1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 07-JAN-2013 08:29

Filename: C:\Minimus 13.04.8492\Data\Stelbar LPR #1-17\Stelbar LPR #1-17_001.dta

Recorded on 07-JAN-2013 05:48

System Versions: Logged with 13.04.8492 Plotted with 13.04.8492



REPEAT SECTION



BEFORE SURVEY CALIBRATION

C:\Minimus 13.04.8492\Data\Stelbar LPR #1-17\Stelbar LPR #1-17_001.dta

General Constants All 000

Last Edited on 07-JAN-2013,02:57

General Parameters

Mud Resistivity	0.440	ohm-metres
Mud Resistivity Temperature	79.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	

Hole/Annular Volume and Differential Caliper Parameters

HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	Density Caliper	

Rwa Parameters

Porosity used	Base Density Porosity
Resistivity used	Array Ind. Four Res Rt
RWA Constant A	1.000
RWA Constant M	2.000

Down-hole Tension Calibration SMS 0

Field Calibration on 02-JAN-2013 05:23

Reading No	Measured	Calibrated (lbs)
1	13709.50	0.00
2	14142.20	390.00

High Resolution Temperature Calibration MCG-B 34

Field Calibration on 08-NOV-2012,10:05

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

High Resolution Temperature Constants MCG-B 34

Last Edited on 08-NOV-2012,10:04

Pre-filter Length 11

SP Calibration MCG-B 34

Field Calibration on 08-NOV-2012 10:10

	Measured	Calibrated (mV)
Reference 1	107.1	100.0
Reference 2	-93.0	-100.0

Gamma Calibration MCG-B 34

Gamma Calibration MCG-B 34		Field Calibration on 06-JAN-2013 23:19	
	Measured	Calibrated (API)	
Background	68	46	
Calibrator (Gross)	1125	771	
Calibrator (Net)	1057	725	
Gamma Constants MCG-B 34		Last Edited on 07-JAN-2013,02:58	
Gamma Calibrator Number	GRC38		
Mud Density	1.08	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	
Micro Normal and Micro Inverse Calibration MML-A 16		Base Calibration on 13-DEC-2012 09:14 Field Check on 06-JAN-2013 23:14	
Base Calibration			
		Measured	Calibrated (ohm-m)
Channel	Resistor 1	Resistor 2	Resistor 1 Resistor 2
Micro Normal	12.1	60.2	5.0 25.0
Micro Inverse	15.6	78.3	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 16		Last Edited on 06-JAN-2013,23:13	
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 16		Base Calibration on 13-DEC-2012 09:09 Field Calibration on 06-JAN-2013 23:13	
Base Calibration			
Reading No	Measured		Calibrator Size (in)
1	14167		5.98
2	17246		7.97
3	20473		9.86
4	24393		11.92
5	0		0.00
6	N/A		N/A
Field Calibration			
	Measured Caliper (in)		Actual Caliper (in)
	5.95		5.98
Neutron Calibration MDN-A.B 66		Base Calibration on 13-DEC-2012 15:33 Field Check on 06-JAN-2013 23:26	
Base Calibration			
		Measured	Calibrated (cps)
	Near	Far	Near Far
	2993	92	3714 110
Ratio	32.445		33.764
Field Calibrator at Base			
			Calibrated (cps)
			1709 2478
Ratio	0.690		
Field Check			
			Calibrated (cps)
			1706 2480
Ratio	0.682		
Neutron Constants MDN-A.B 66		Last Edited on 06-JAN-2013,23:19	
Neutron Source Id	P0204NN		
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

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		
4' Waveform Filter		
5' Waveform Filter		
6' Waveform Filter		
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

High Resolution Temperature Calibration MAI-A.A 167

Field Calibration on 14-NOV-2012,09:17

	Measured	Calibrated(Deg F)
Lower	1.00	33.80
Upper	11.00	51.80

High Resolution Temperature Constants MAI-A.A 167

Last Edited on 16-DEC-2012,13:35

Pre-filter Length	11
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Induction Calibration MAI-A.A 167

Base Calibration on 14-NOV-2012,09:21
Field Check on 06-JAN-2013 22:58

Base Calibration

Test Loop Calibration

Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	17.3	474.2	9.3	966.2
2	6.3	388.4	7.6	821.4
3	3.3	259.4	5.2	566.0
4	1.9	133.0	2.6	279.2

Array Temperature	76.8	Deg F
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Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	12.7	3840.8
2	0.0	0.0	29.5	3478.8
3	0.0	0.0	29.1	3054.6
4	0.0	0.0	19.8	2082.6
Deep			18.6	2049.7
Medium			42.2	3993.6
Shallow			42.8	5057.2

Array Temperature	0.0	67.4	Deg F
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Induction Constants MAI-A.A 167

Last Edited on 07-JAN-2013,02:58

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	8.0000	
Stand-off Fin Angle	45.00	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
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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-B 64

Base Calibration on 13-DEC-2012 14:47

Field Calibration on 06-JAN-2013 23:01

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	12994	3.99
2	21855	5.98
3	30456	7.97
4	38925	9.86
5	48176	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.95	5.98

Photo Density Calibration MPD-B 64

Base Calibration on 13-DEC-2012 15:03

Field Check on 06-JAN-2013 23:11

Density Calibration

Base Calibration	Near	Measured Far	Calibrated (sdu)	
			Near	Far
Reference 1	59295	32863	59556	30836
Reference 2	24770	2893	24941	2541

Field Check at Base

1180.9	1372.2
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Field Check

1178.7	1360.4
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PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	215	1052		
Reference 1	22270	59095	0.380	0.371
Reference 2	6705	24633	0.275	0.272

Field Check at Base

215.4	1052.3
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Field Check

215.0	1050.9
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Density Constants MPD-B 64

Last Edited on 07-JAN-2013,02:58

Density Source Id	18235B
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	1.08	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)
2.71	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	0.00
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 13.04.8492\Data\Stelbar LPR #1-17\Stelbar LPR #1-17_001.dta

Compact Comms Gamma
MCG-B 34 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 16 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

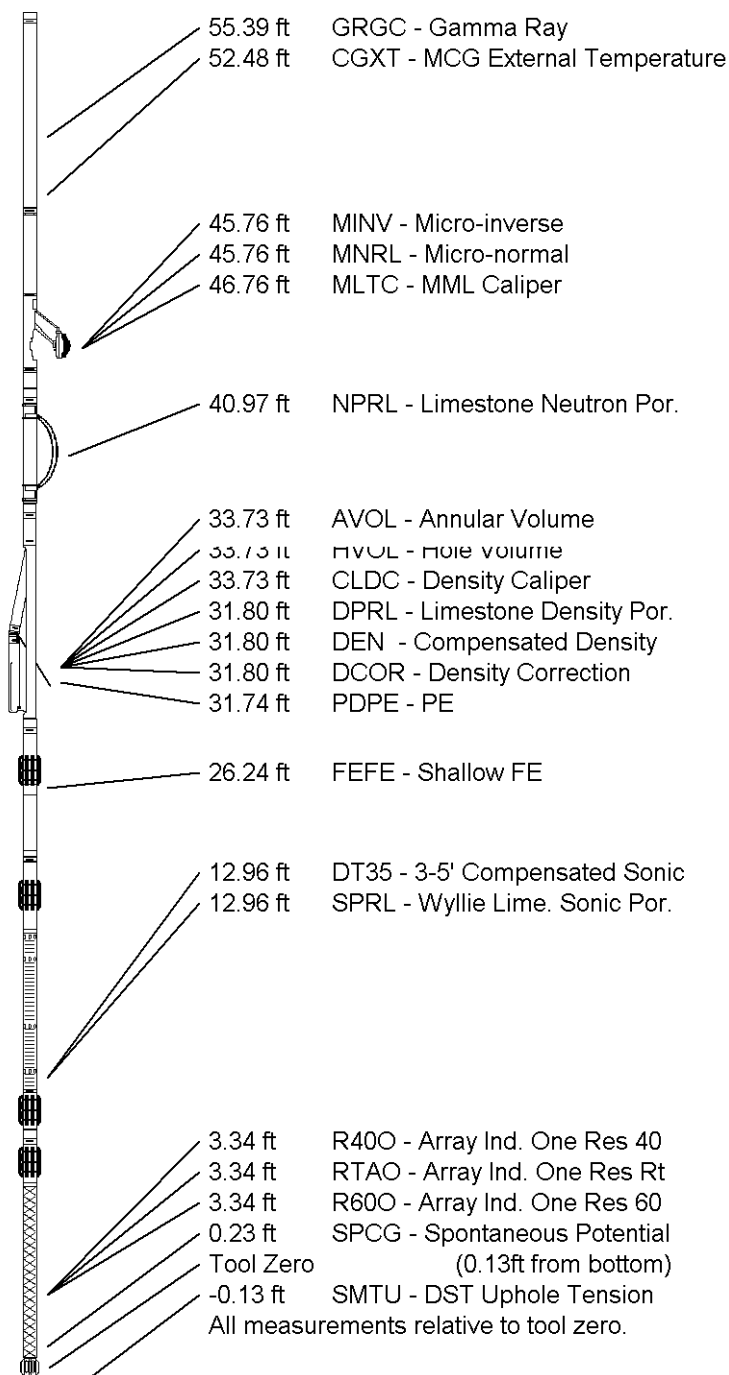
Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 60.68 ft Weight: 456.4 lb



COMPANY	STELBAR OIL CORPORATION, INC.
WELL	LPR #1-17
FIELD	WILDCAT
PROVINCE/COUNTY	LOGAN
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2951.00	feet	First Reading	4673.00	feet
Elevation Drill Floor	2950.00	feet	Depth Driller	4685.00	feet
Elevation Ground Level	2944.00	feet	Depth Logger	4686.00	feet



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