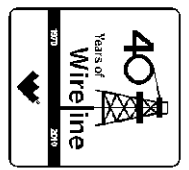




Weatherford[®]

**COMPENSATED SONIC
W/ INTEGRATED TRANSIT TIME**

COMPANY SHAKESPEARE OIL COMPANY, INC.
 WELL PETERSON #1-8
 FIELD STRATFORD WEST
 PROVINCE/COUNTY LOGAN
 COUNTRY/STATE U.S.A. / KANSAS
 LOCATION 1950' FSL & 1655' FWL SW/4



SEC 8 TWP 13S RGE 32W Other Services MDN/MPD MAI/MFE MML

API Number 15-109-20997

Permit Number

Permanent Datum G.L., Elevation 2965 feet
 Log Measured From K.B. @ 5 FEET above Permanent Datum
 Drilling Measured From K.B.

Elevations: feet
 KB 2970.00
 DF 2968.00
 GL 2965.00

Date	29-JUN-2011
Run Number	ONE
Depth Driller	4660.00 feet
Depth Logger	4658.00 feet
First Reading	4645.00 feet
Last Reading	220.00 feet
Casing Driller	220.00 feet
Casing Logger	220.00 feet
Bit Size	7.875 inches
Hole Fluid Type	CHEMICAL
Density / Viscosity	9.40 lb/USg 68.00 CP
PH / Fluid Loss	9.50 10.40 ml/30Min
Sample Source	FLOWLINE
Rm @ Measured Temp	0.45 @ 94.0 ohm-m
Rmf @ Measured Temp	0.36 @ 94.0 ohm-m
Rmc @ Measured Temp	0.54 @ 94.0 ohm-m
Source Rmf / Rmc	CALC CALC
Rm @ BHT	0.37 @ 115.0 ohm-m
Time Since Circulation	4 HOURS
Max Recorded Temp	115.00 deg F
Equipment Name	COMPACT
Equipment / Base	13057 LIB
Recorded By	L. SCOTT
Witnessed By	DON WILLIAMS
S.O.# / JOB#	3531097 LB11-148

BOREHOLE RECORD			Last Edited: 29-JUN-2011 19:45	
Bit Size inches	Depth From feet	Depth To feet		
7.875	220.00	4658.00		
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	220.00	24.00

REMARKS

Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MAI, MSS.
 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.
 Annular volume with 5.5 inch production casing= 171 cu. ft.
 Service order #3531097
 Rig: WW #2
 Engineer: L. Scott
 Operator(s): N. Adame

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 PASS

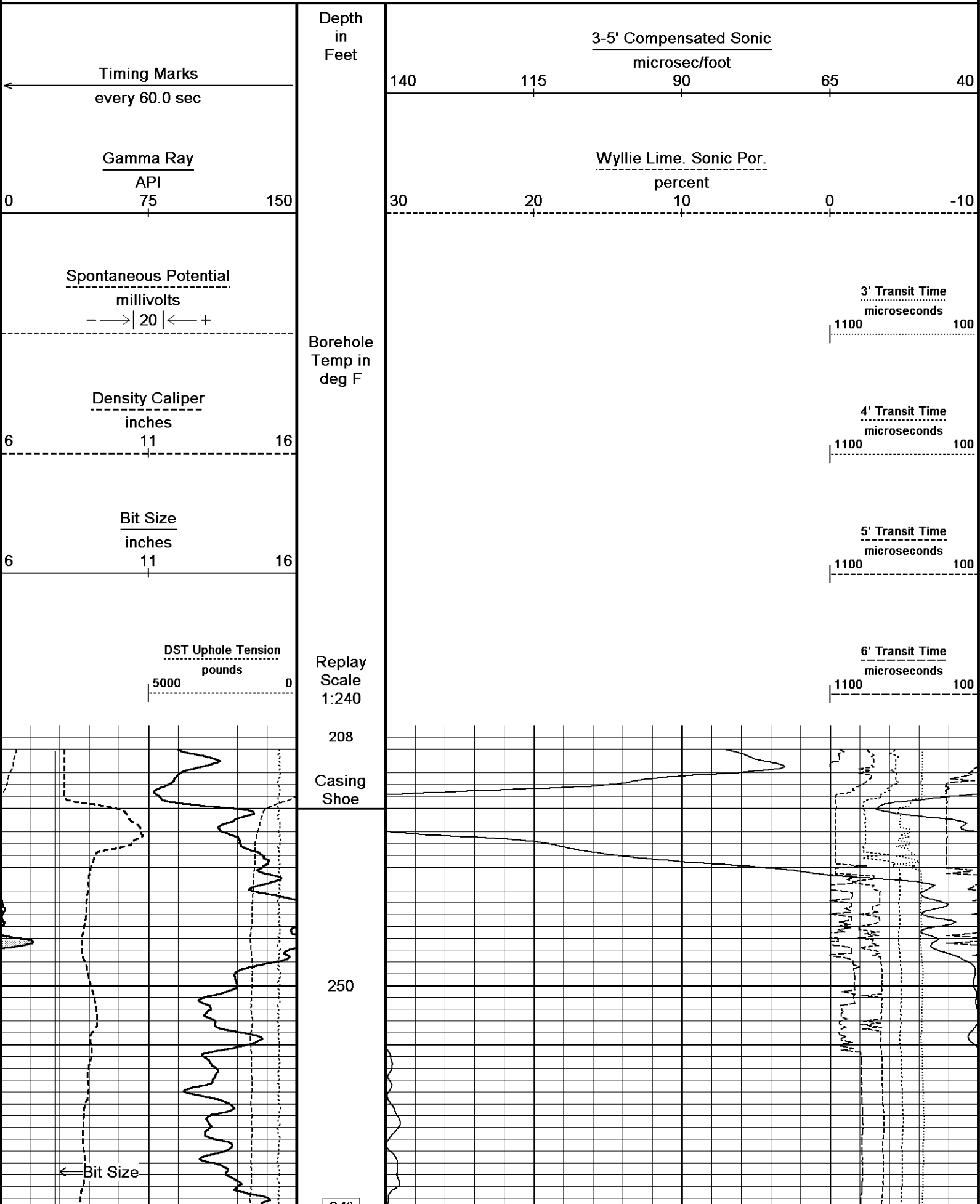
Depth Based Data - Maximum Sampling Increment 10.0cm

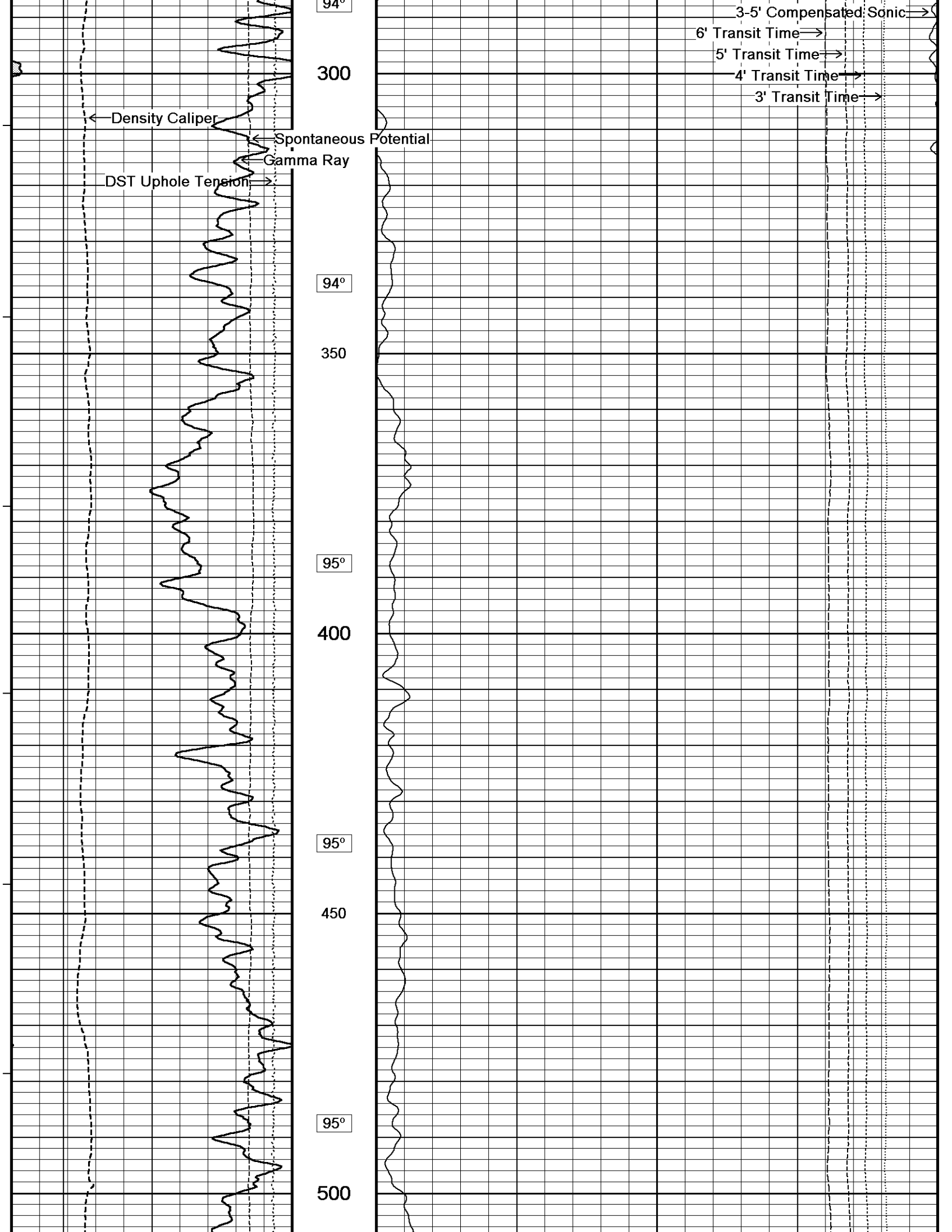
Plotted on 29-JUN-2011 21:06

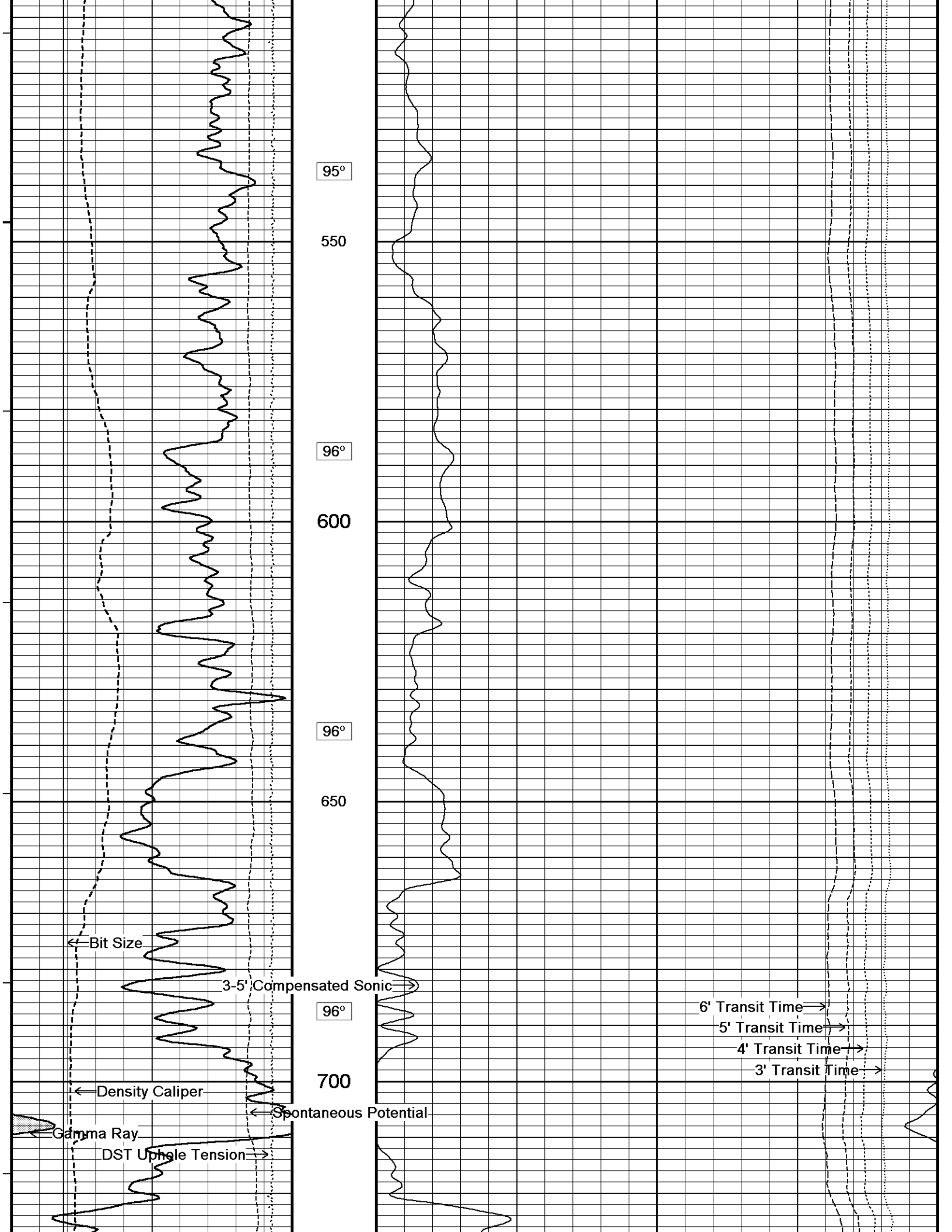
Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8_002.dta

Recorded on 29-JUN-2011 18:40

System Versions: Logged with 11.02.3186 Plotted with 11.02.3186







95°

550

96°

600

96°

650

96°

700

← Bit Size

3-5' Compensated Sonic →

← Density Caliper

← Gamma Ray

DST Uphole Tension →

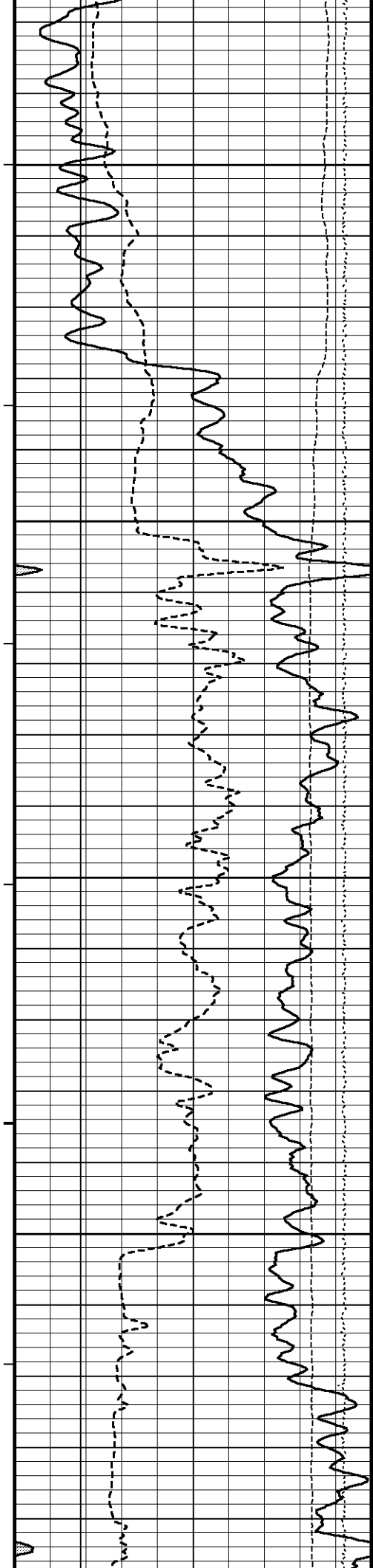
← Spontaneous Potential

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



97°

750

97°

800

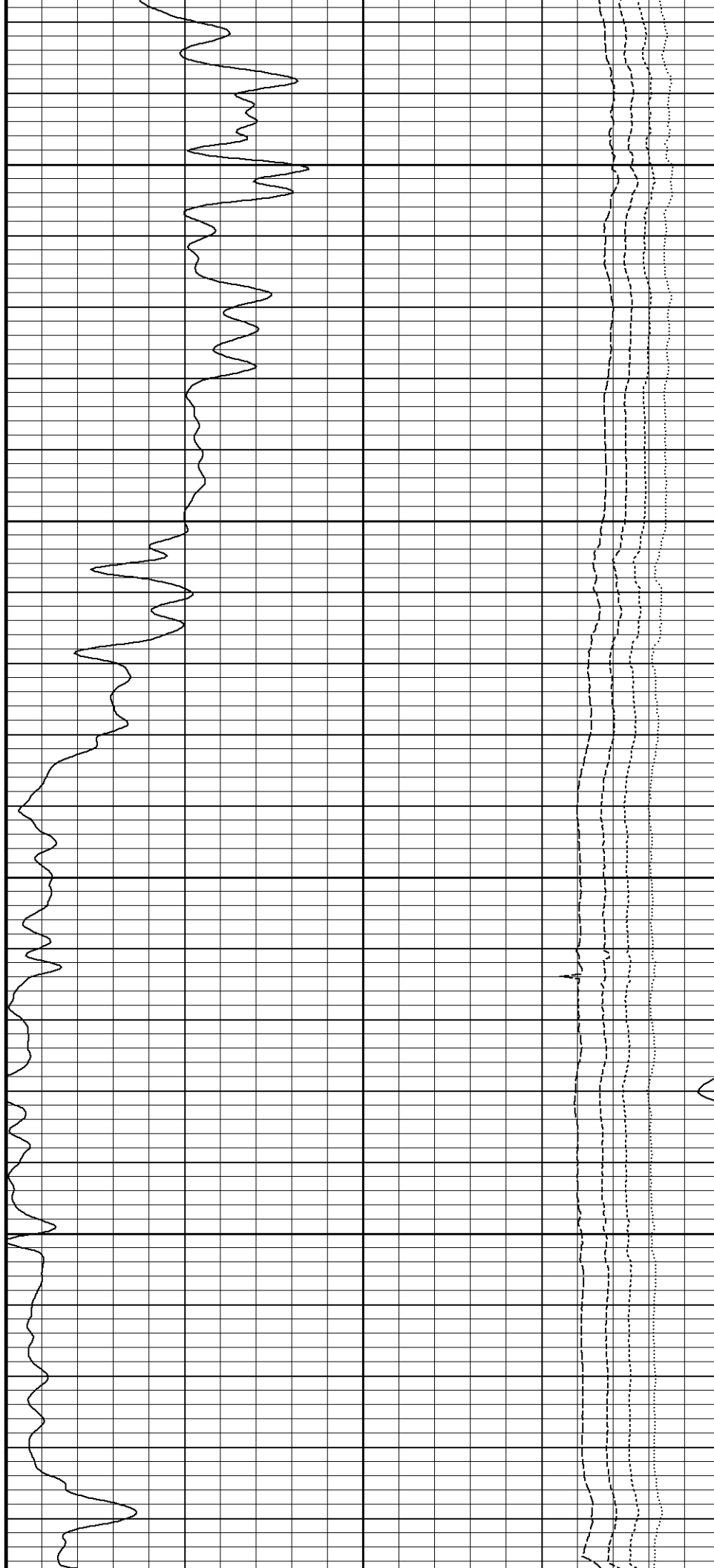
98°

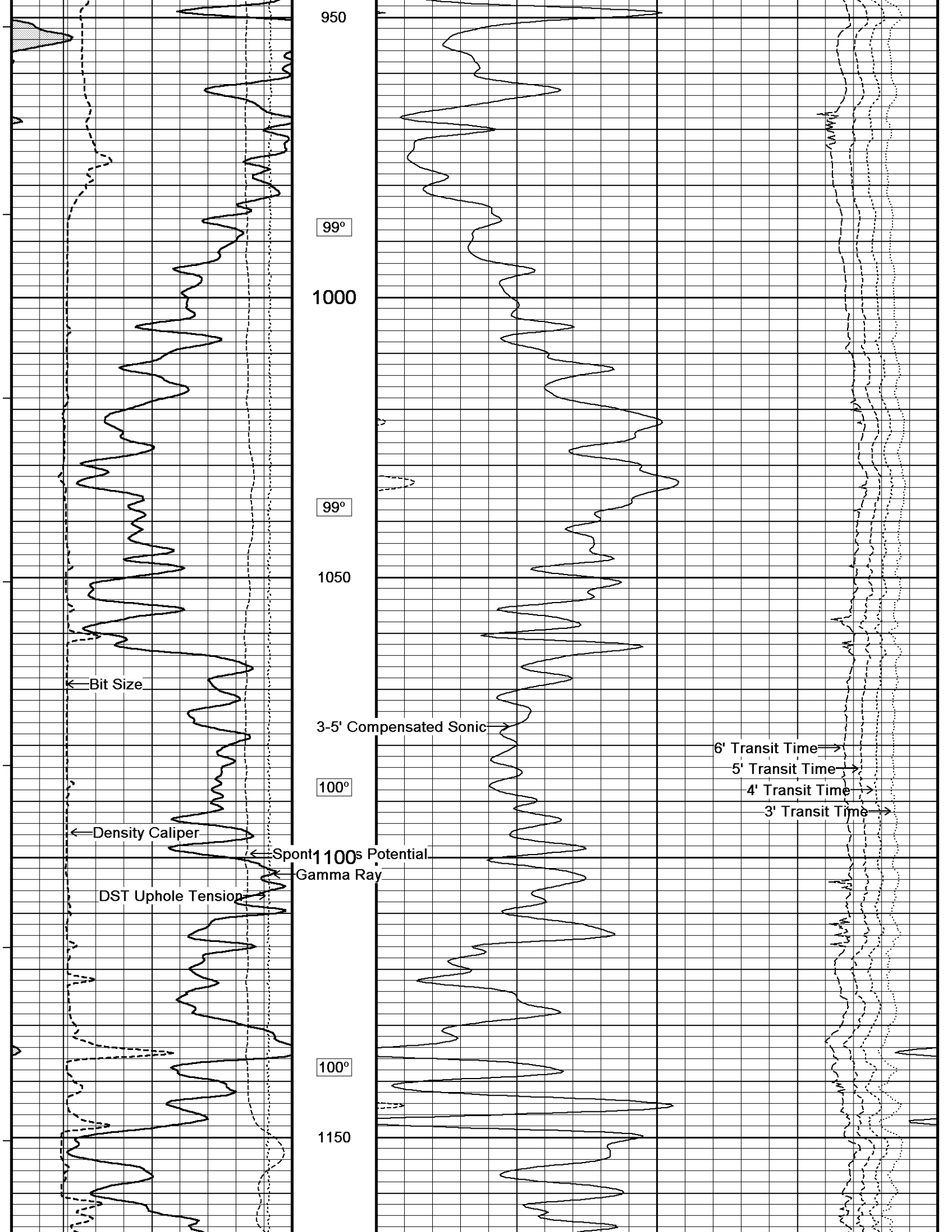
850

98°

900

99°





950

99°

1000

99°

1050

3-5' Compensated Sonic

100°

6' Transit Time

5' Transit Time

4' Transit Time

3' Transit Time

← Bit Size

← Density Caliper

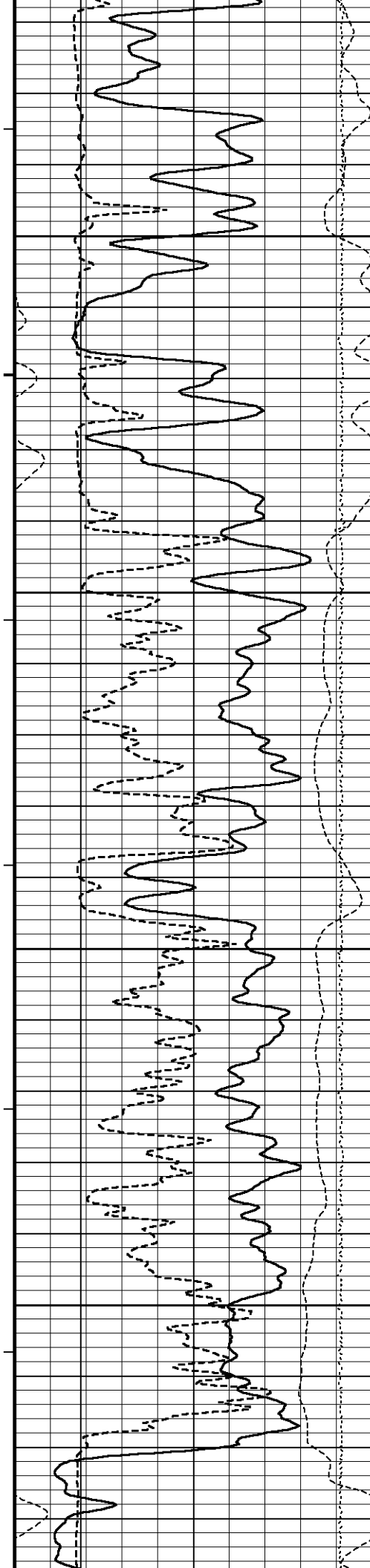
← Spont 100s Potential

← Gamma Ray

DST Uphole Tension

100°

1150



100°

1200

100°

1250

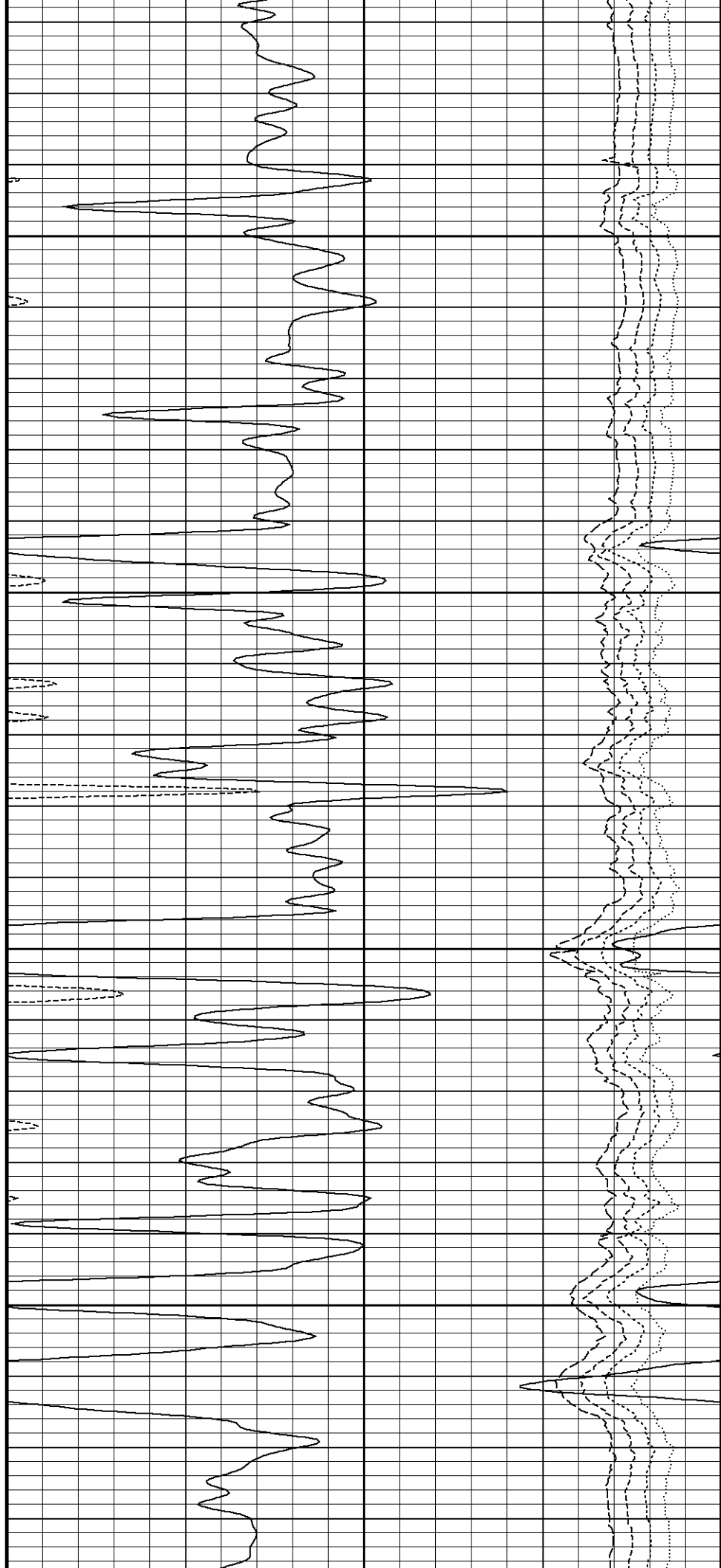
100°

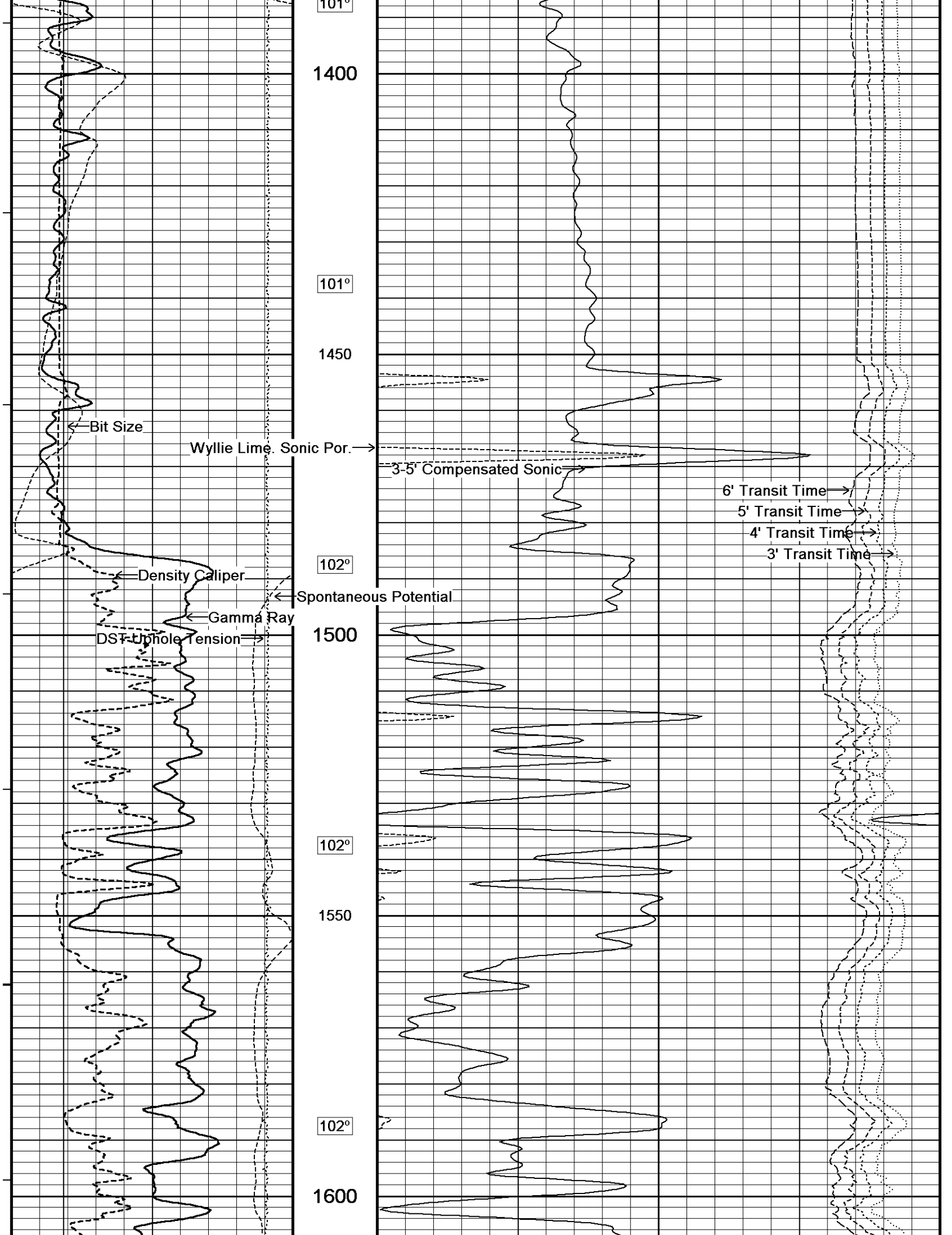
1300

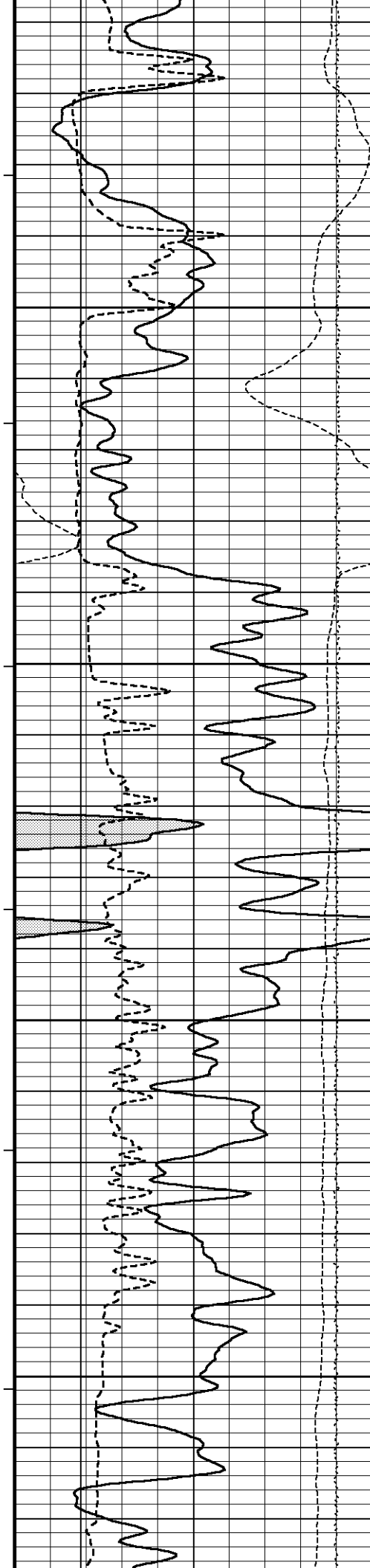
101°

1350

101°







102°

1650

103°

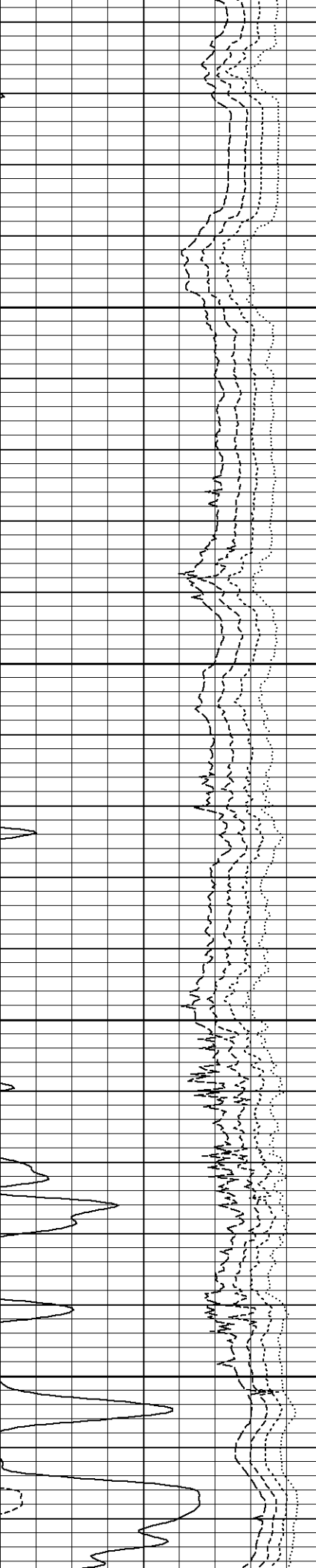
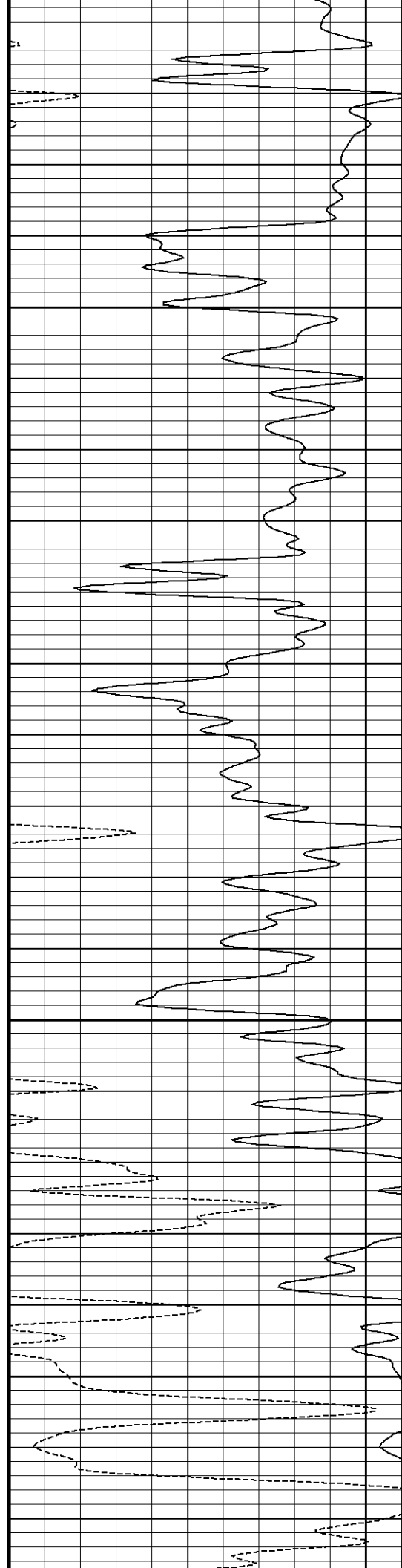
1700

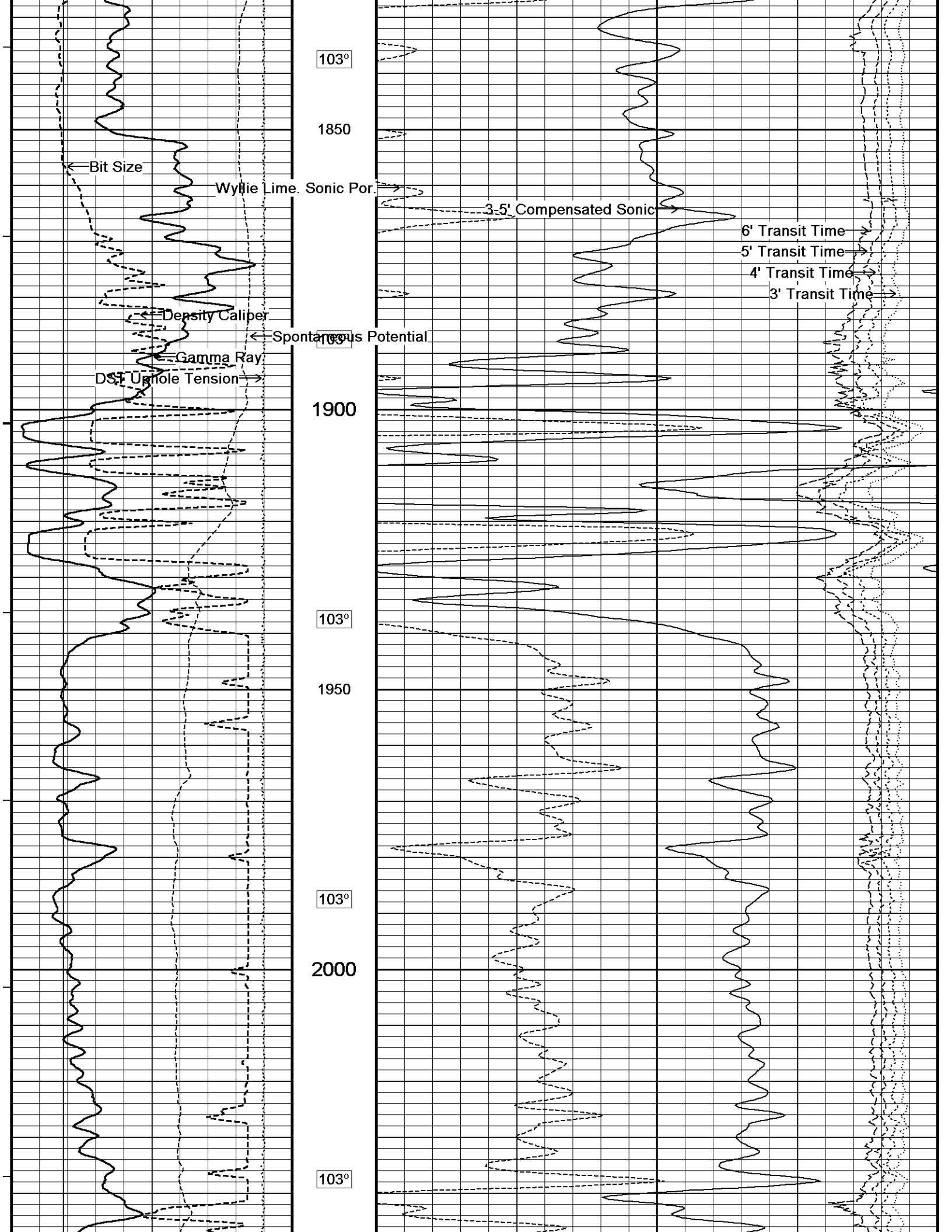
103°

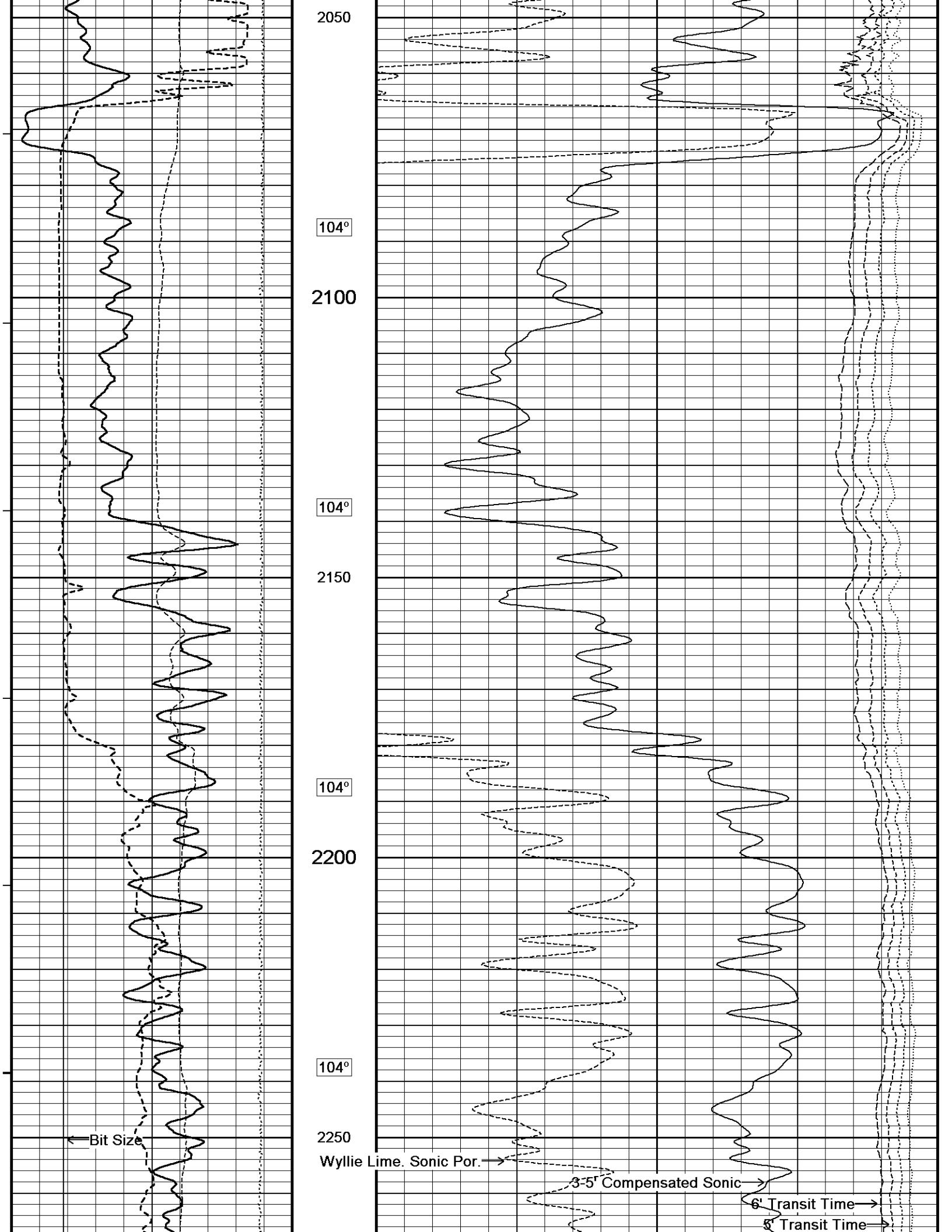
1750

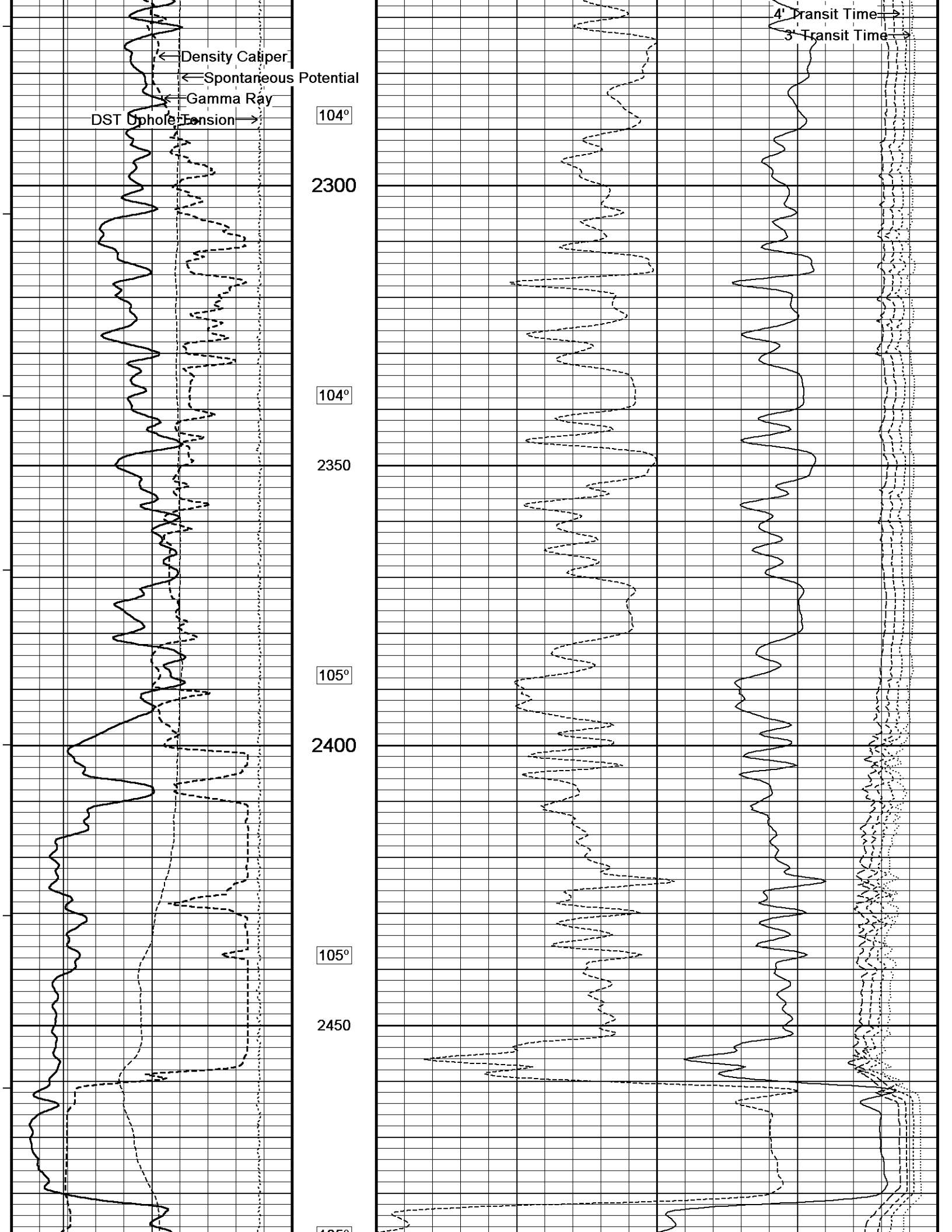
103°

1800









← Density Caliper
← Spontaneous Potential
← Gamma Ray

DST photoextension →

104°

2300

104°

2350

105°

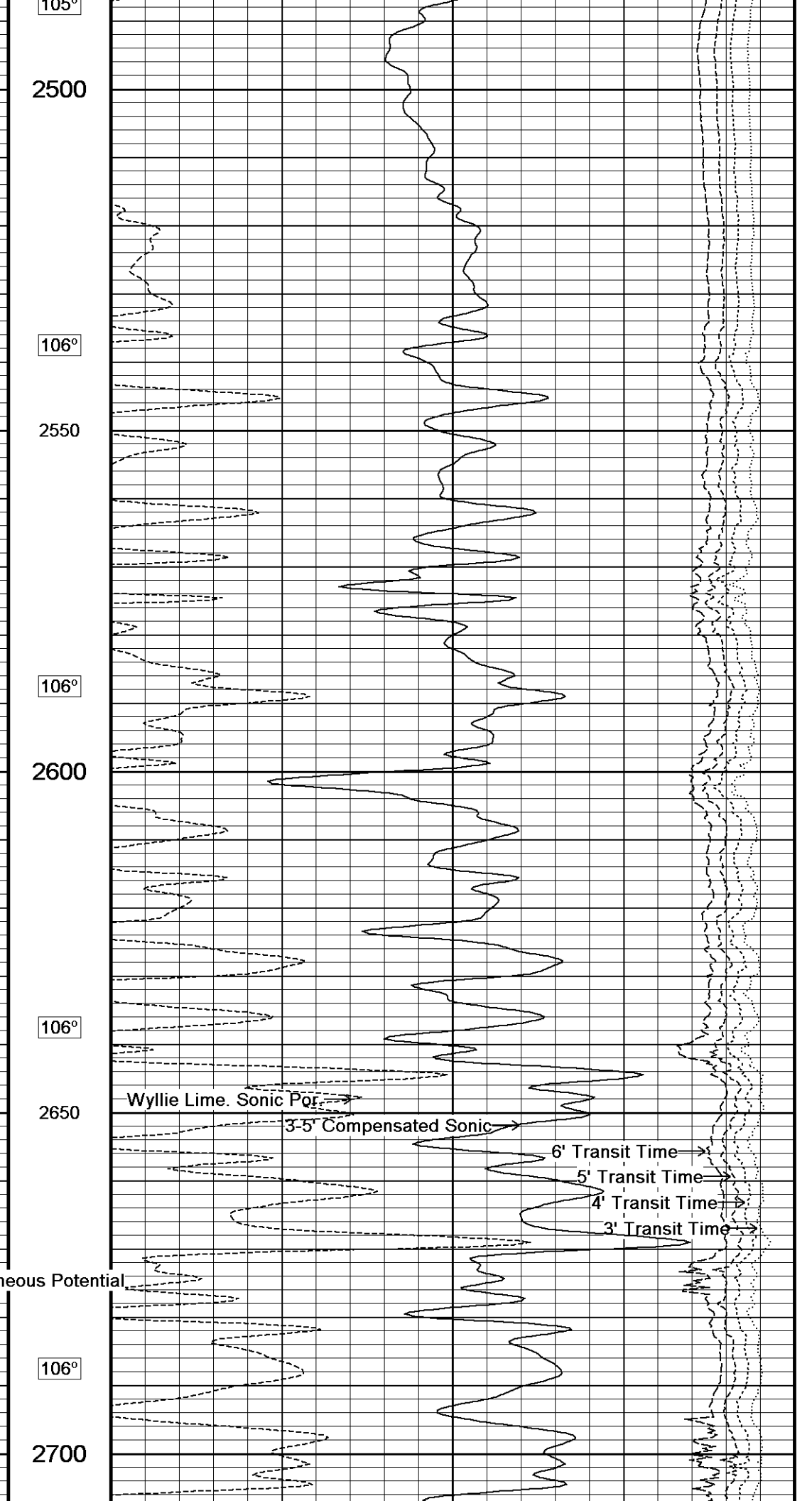
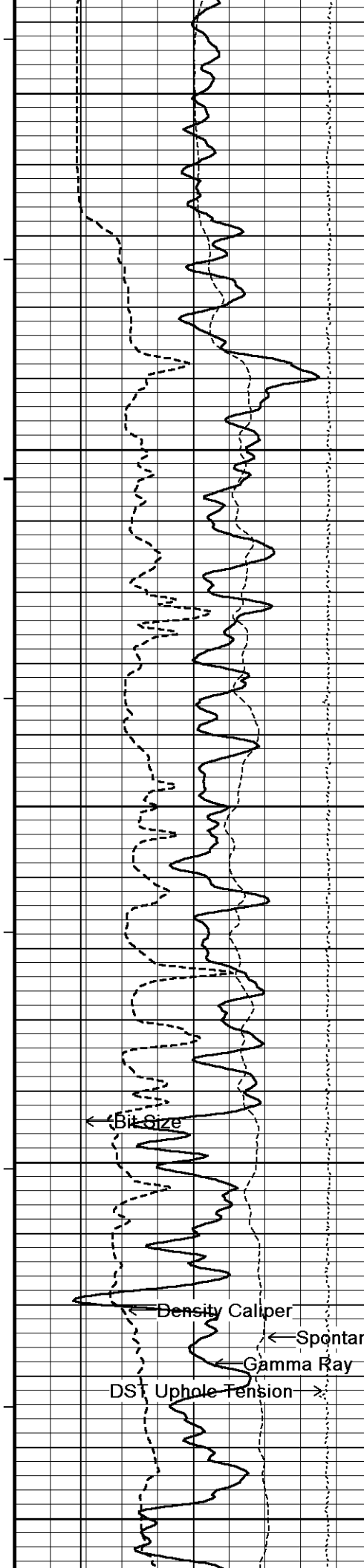
2400

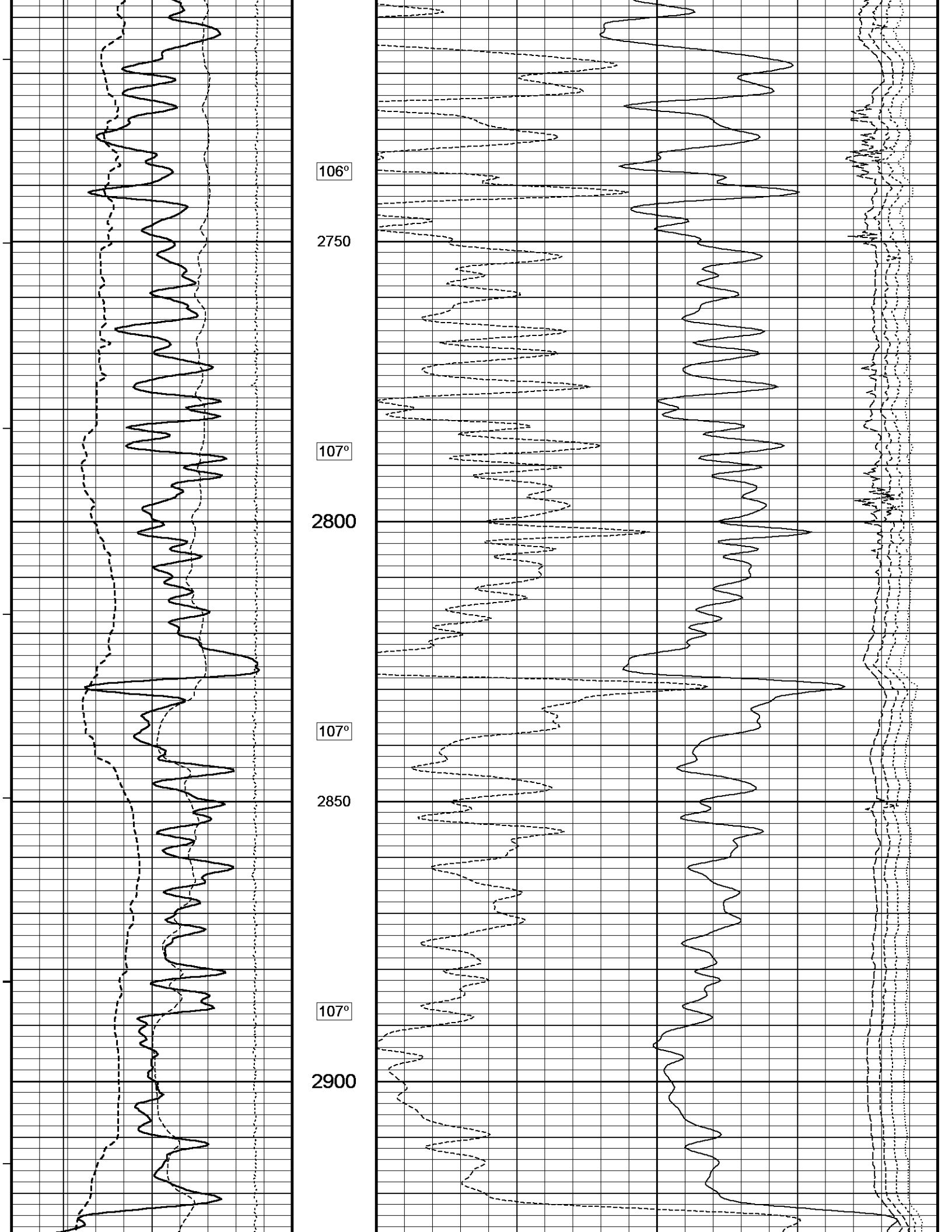
105°

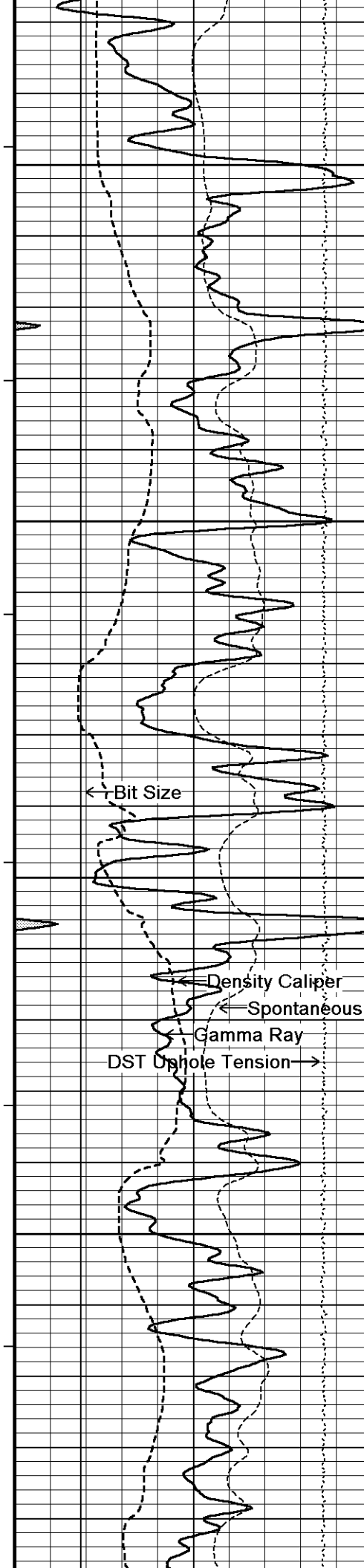
2450

105°

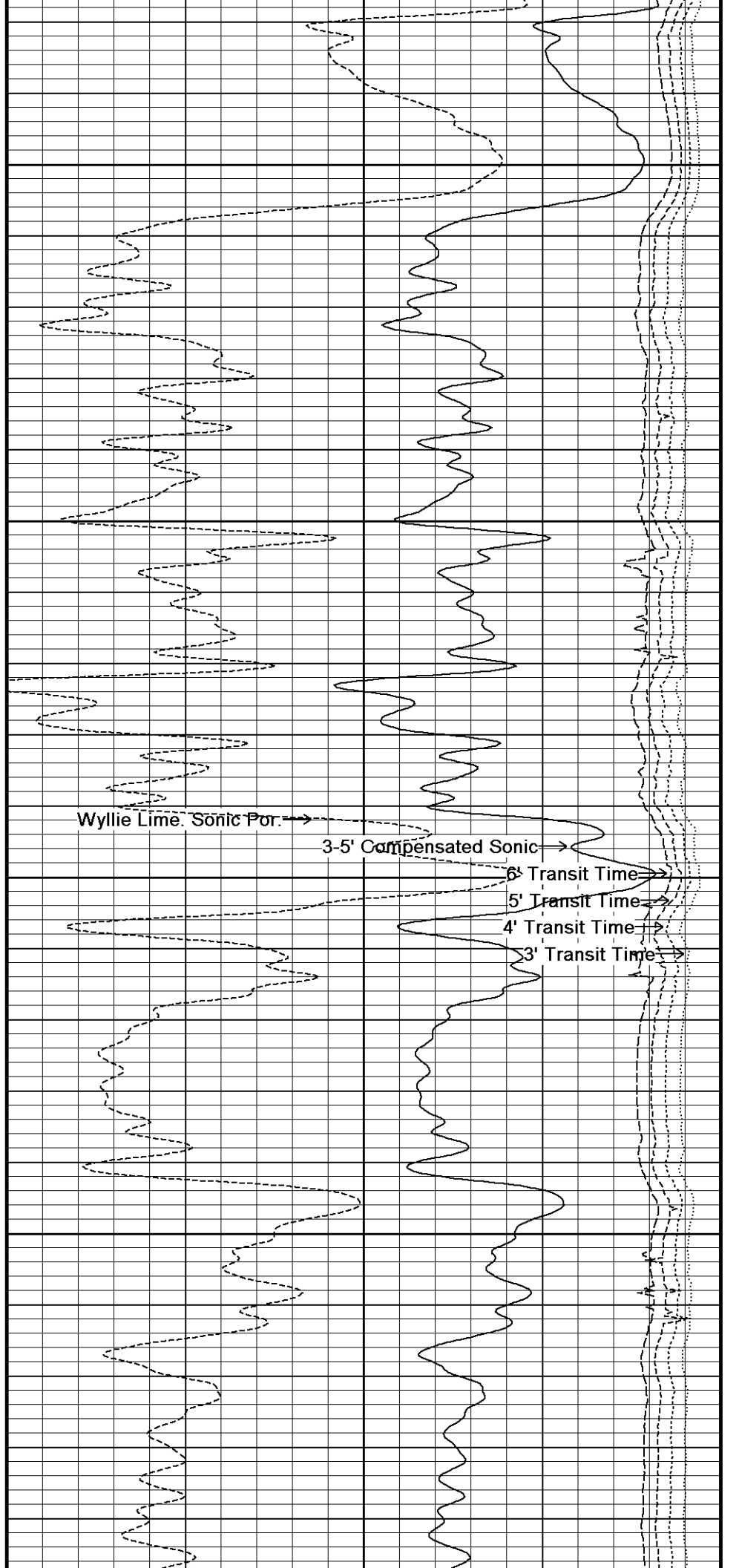
4' Transit Time →
3' Transit Time →





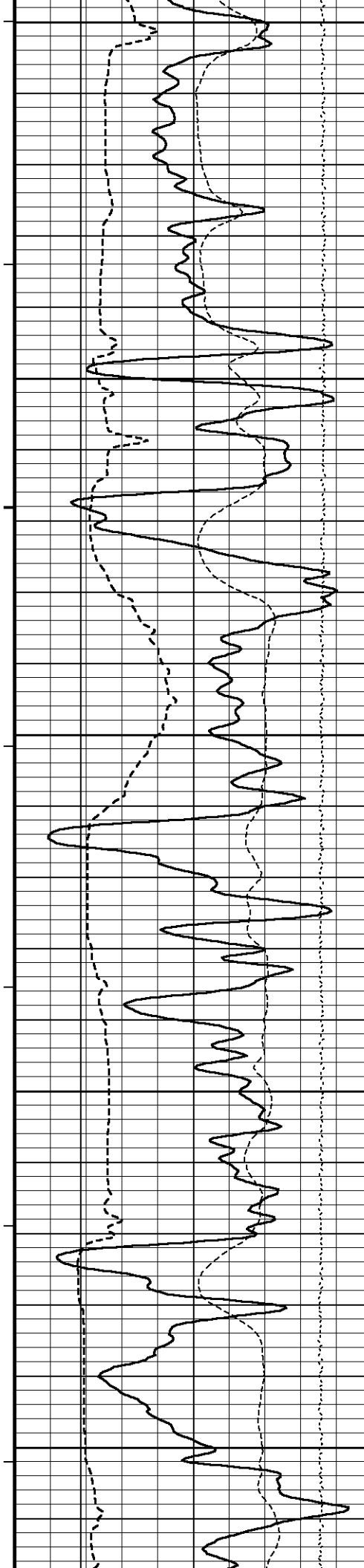


107°
2950
108°
3000
108°
3050
108°
3100
108°

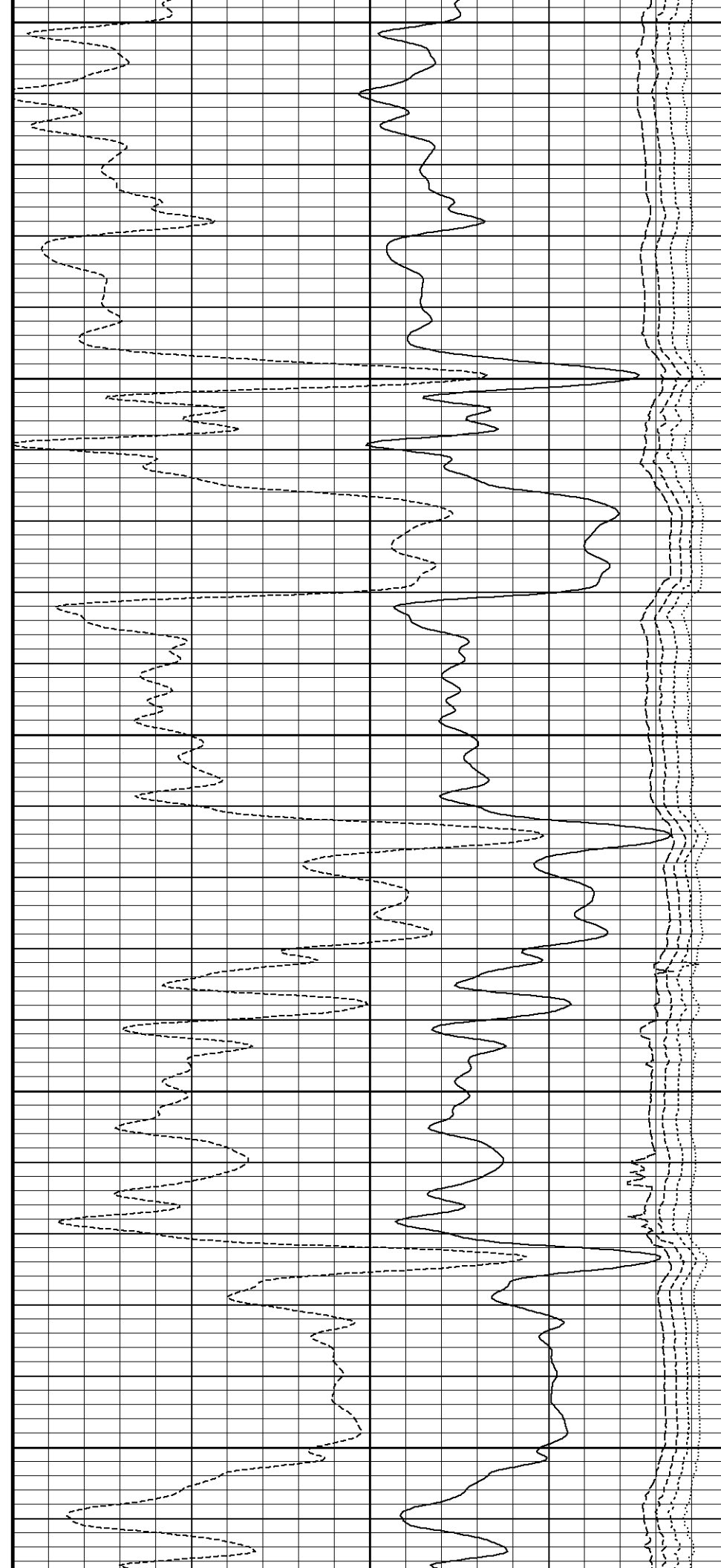


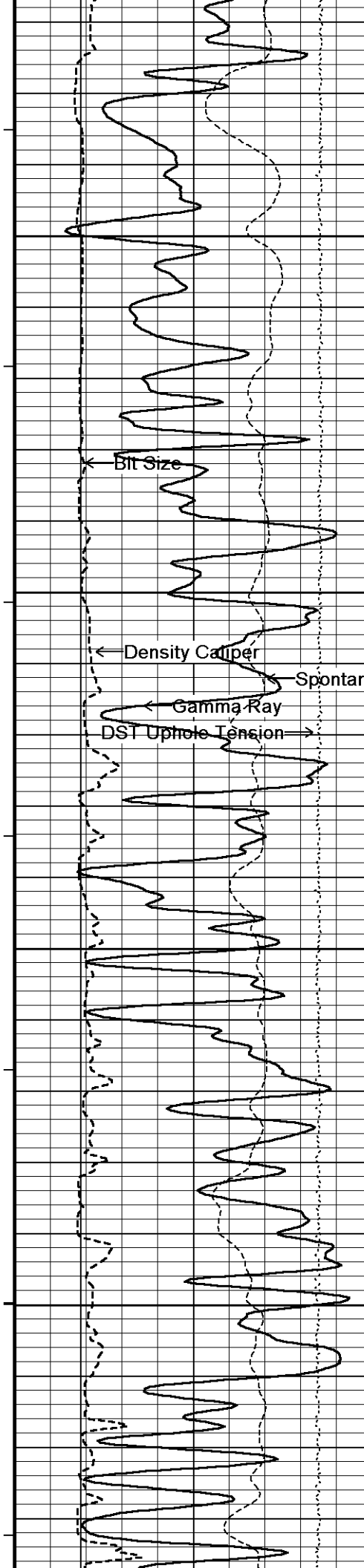
← Bit Size
← Density Caliper
← Spontaneous Potential
← Gamma Ray
DST Uphole Tension →

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



3150
108°
3200
109°
3250
109°
3300
109°
3350





109°

3400

110°

3450

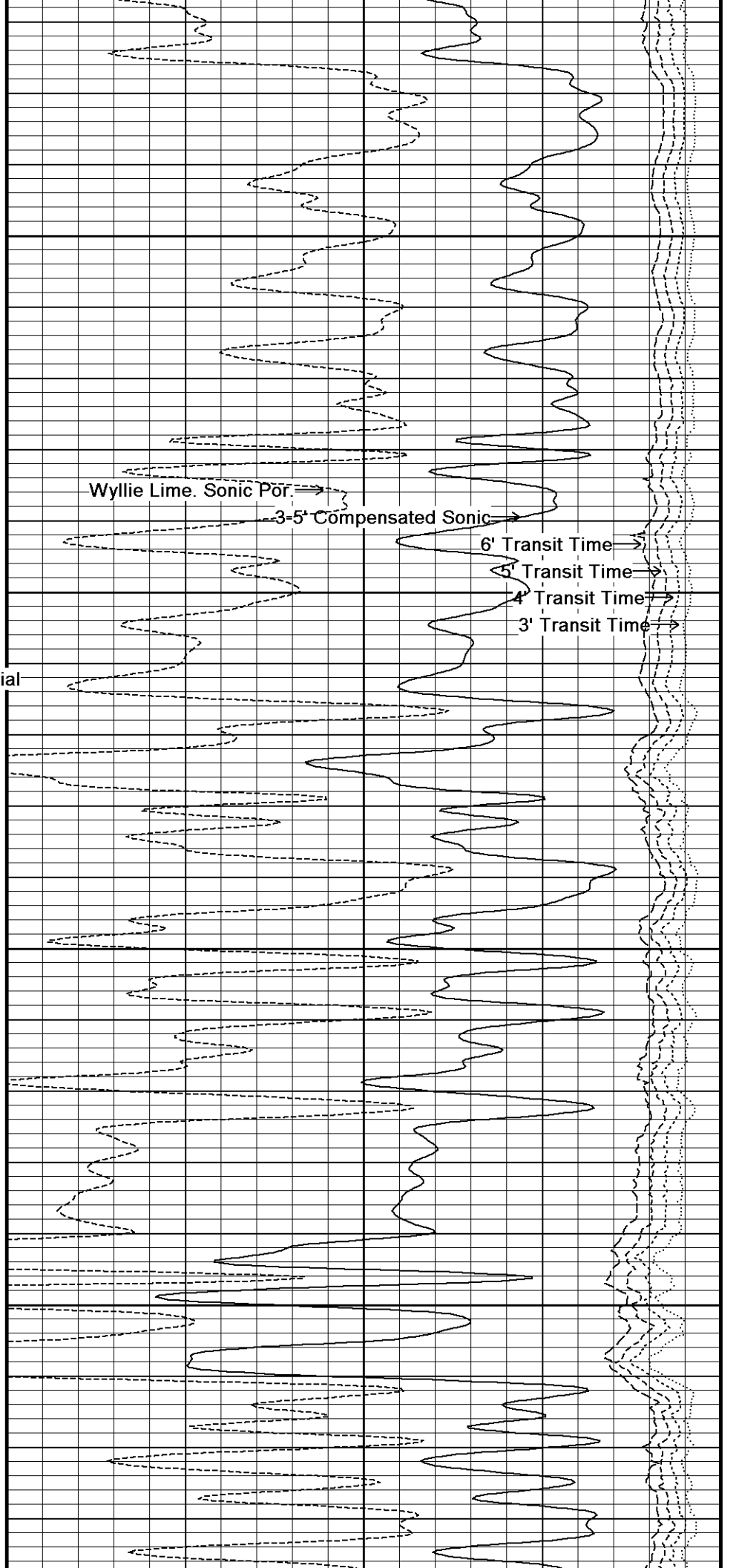
110°

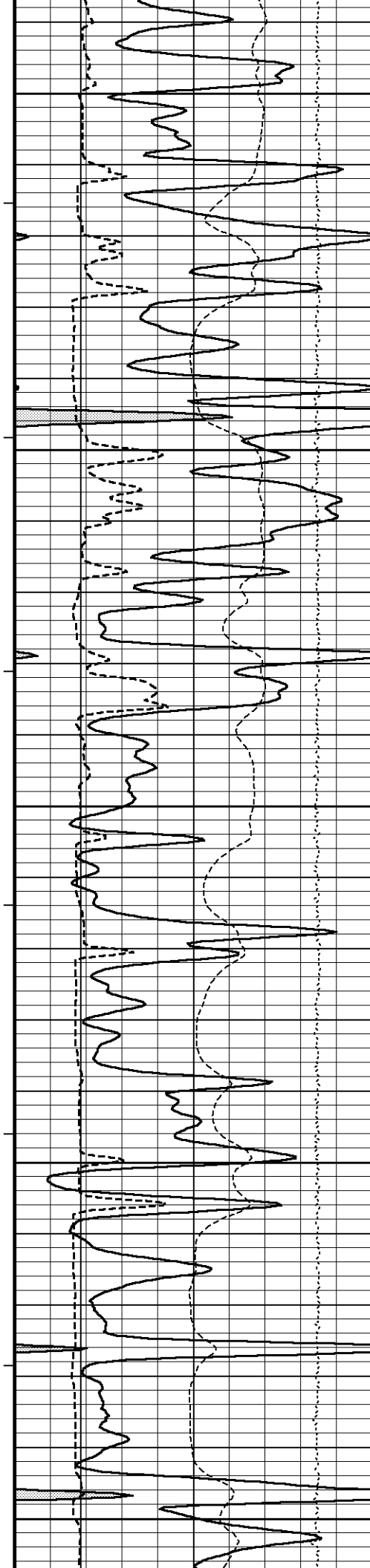
3500

110°

3550

110°





110°

3600

111°

3650

111°

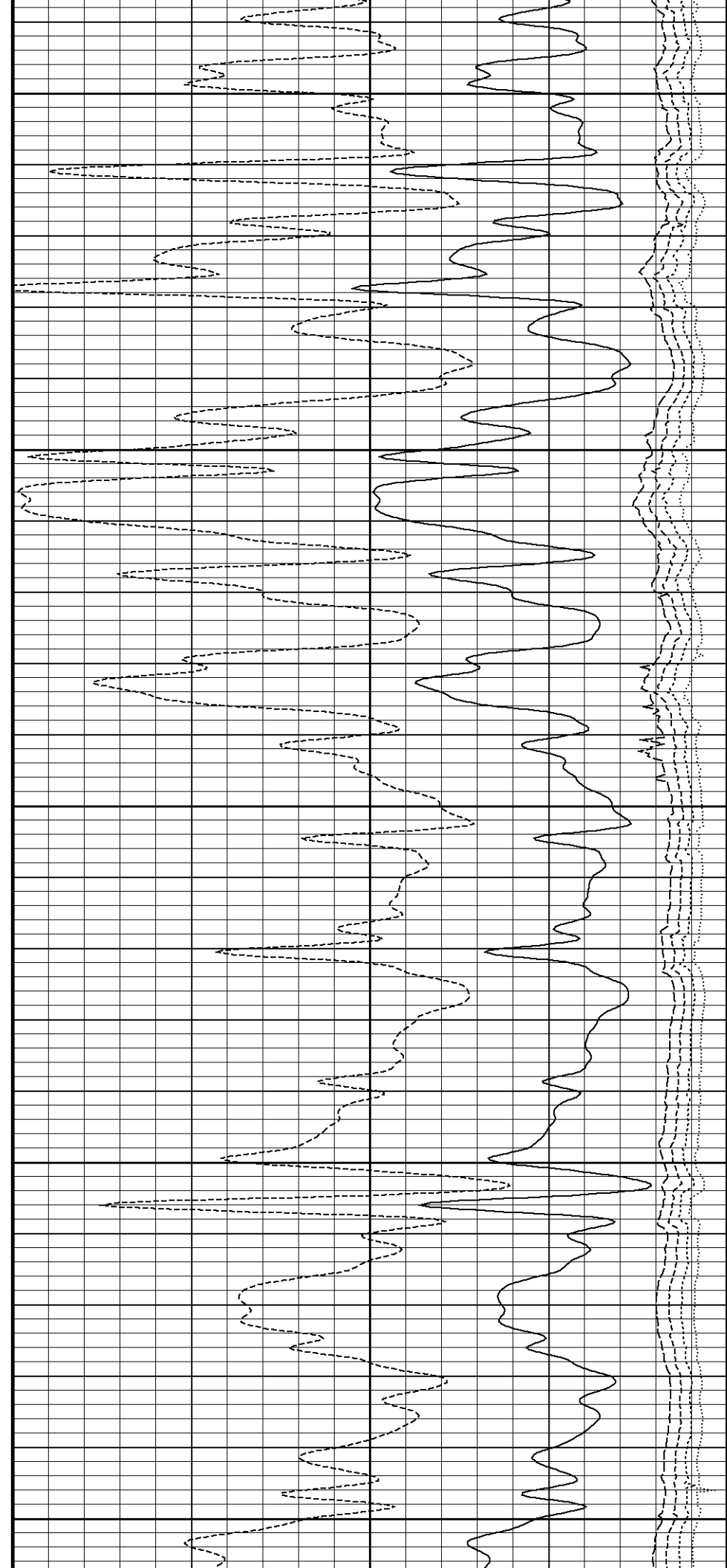
3700

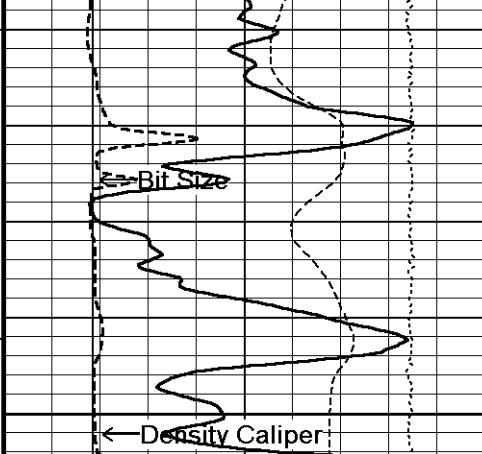
111°

3750

112°

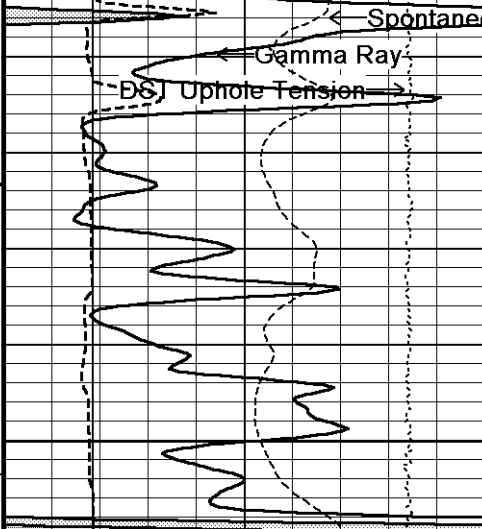
3800





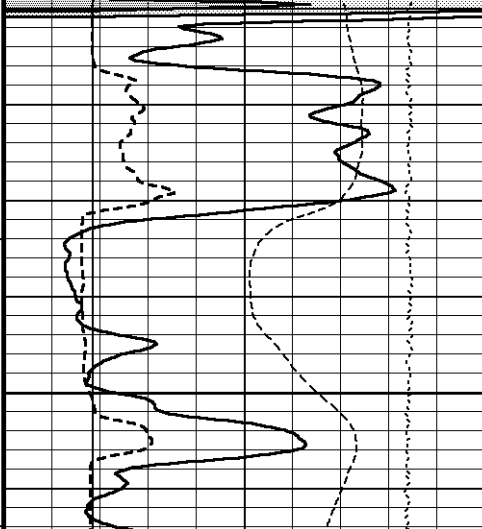
112°

3850



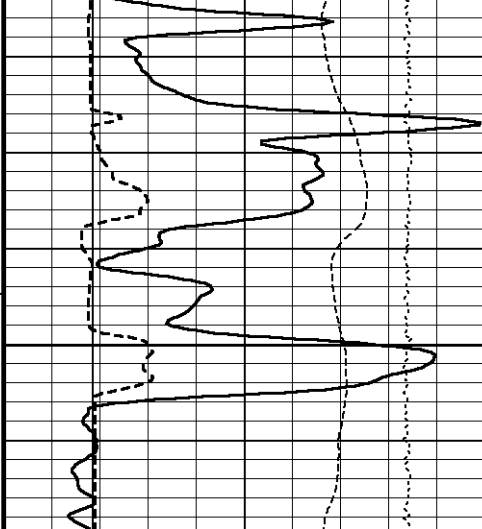
112°

3900



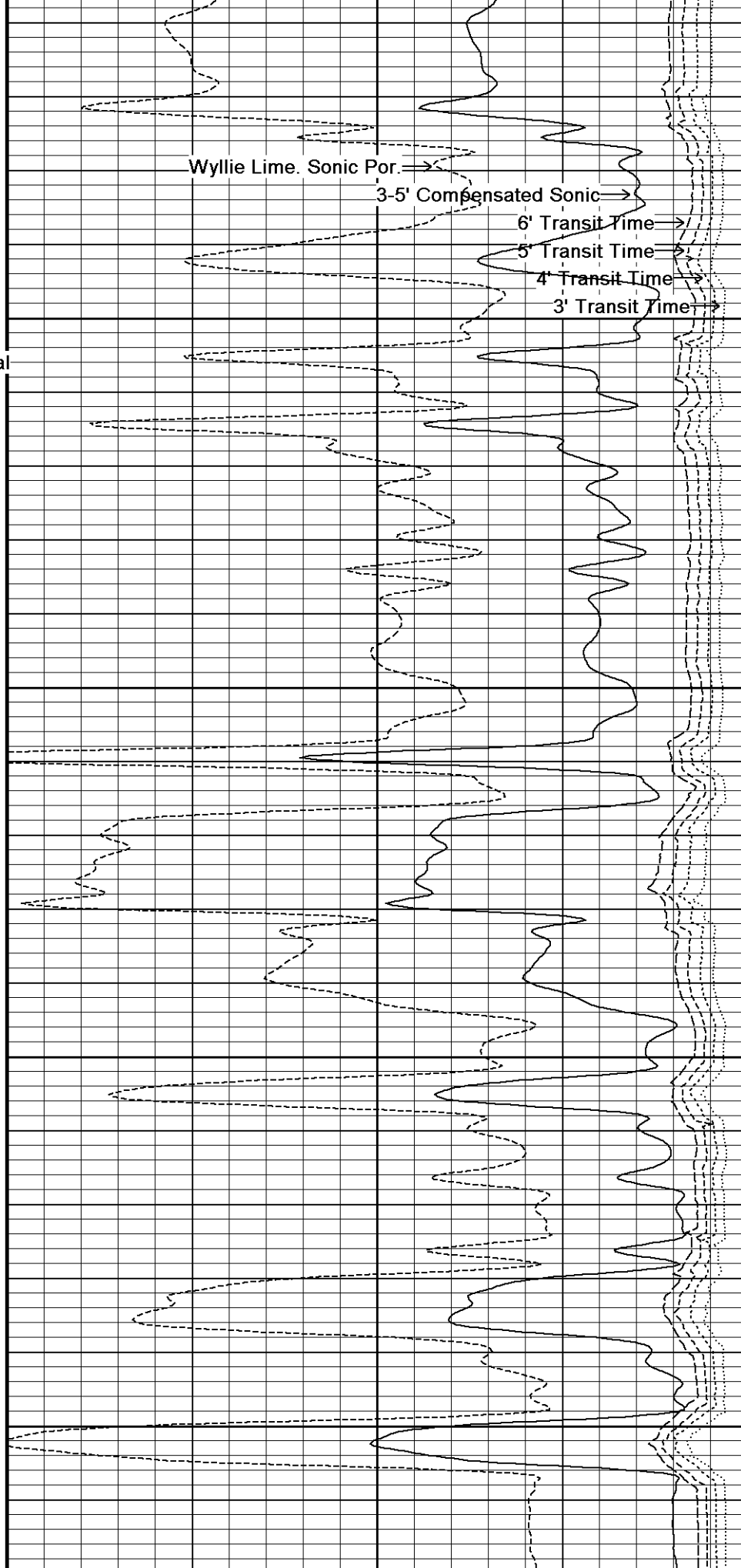
112°

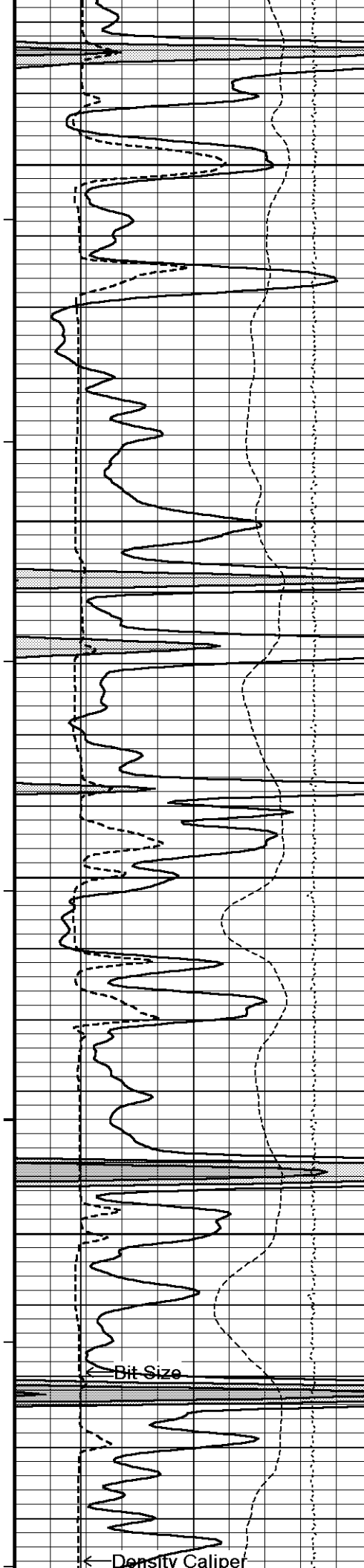
3950



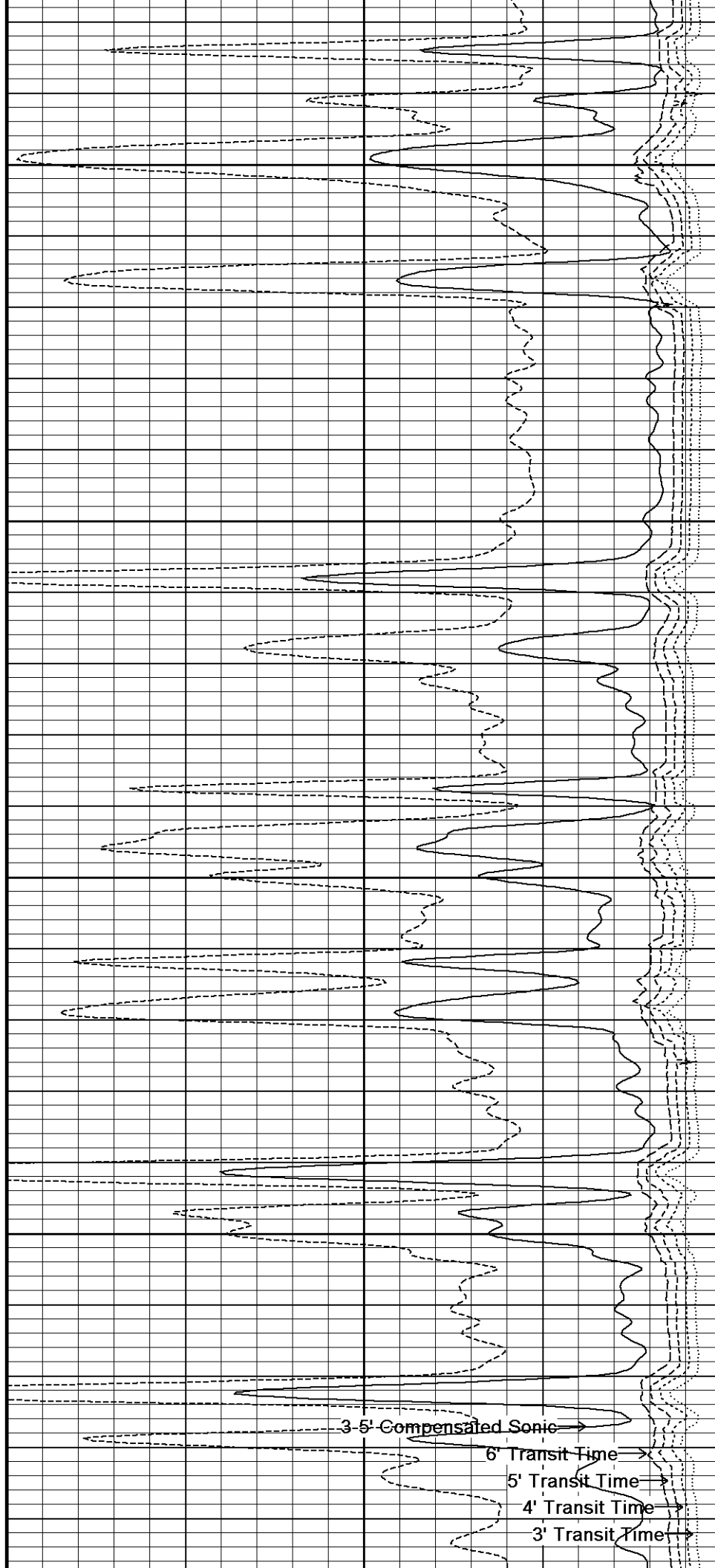
112°

4000

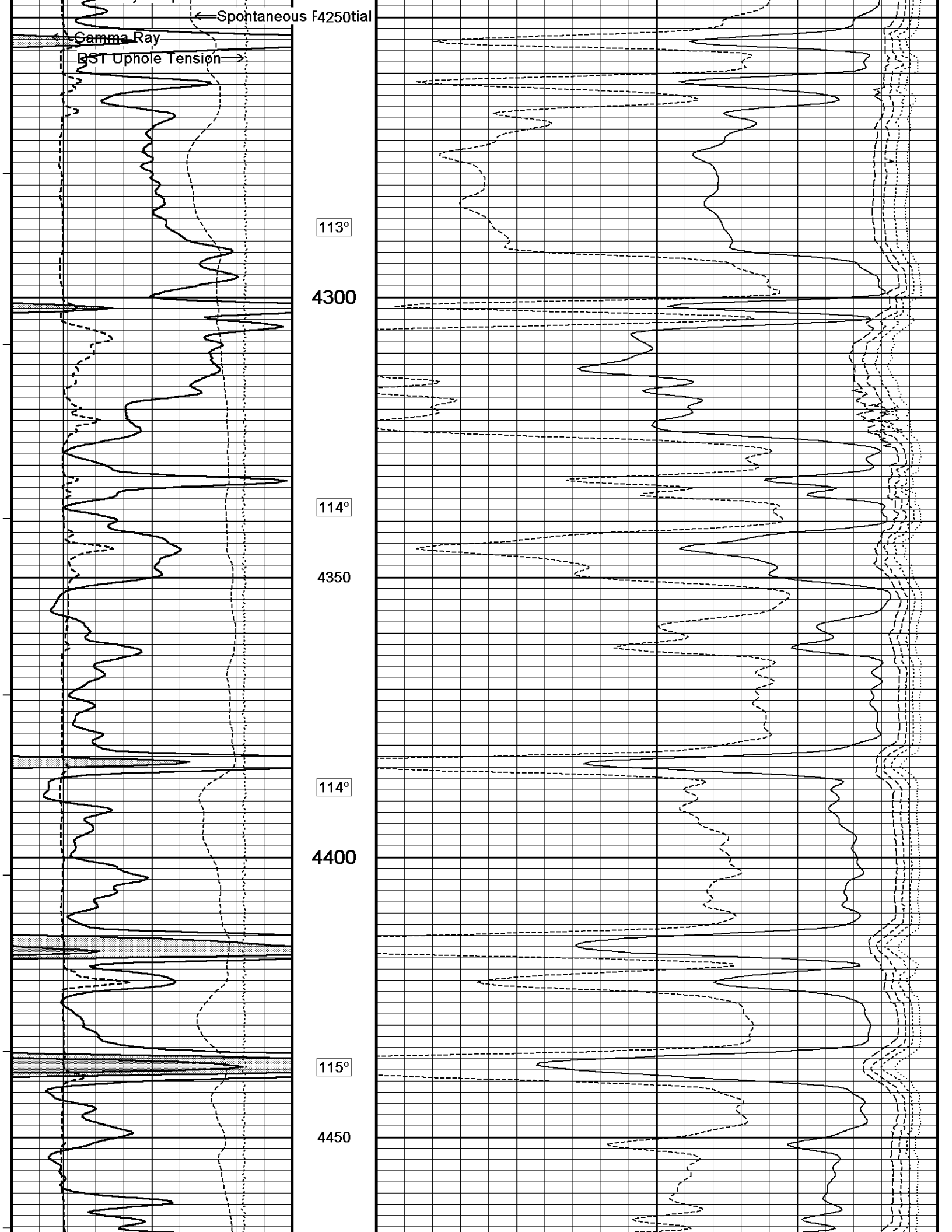


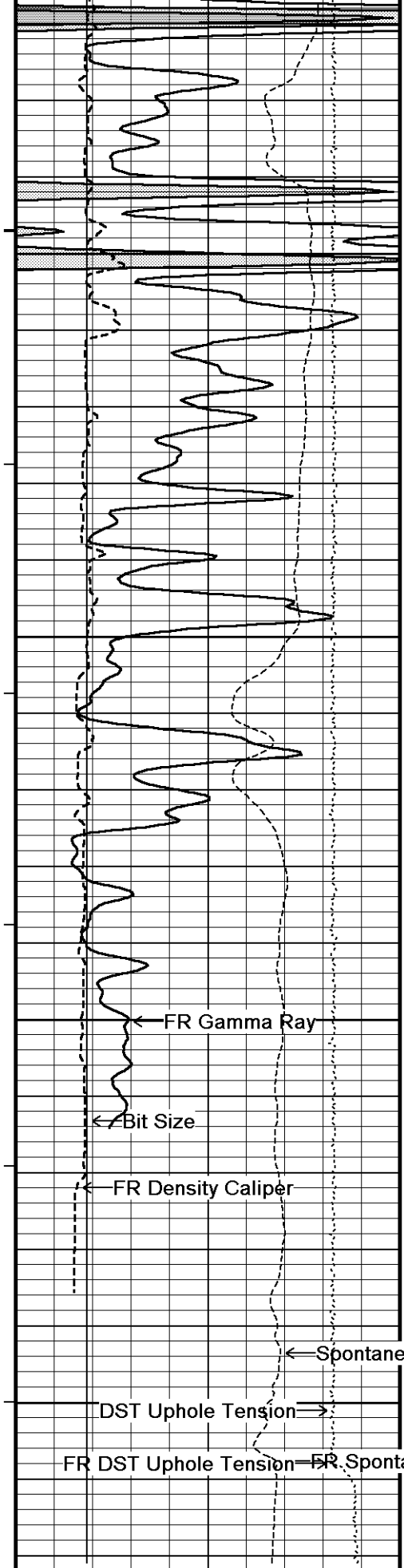


112°
4050
112°
4100
112°
4150
113°
4200
113°



3' 5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time





115°

4500

116°

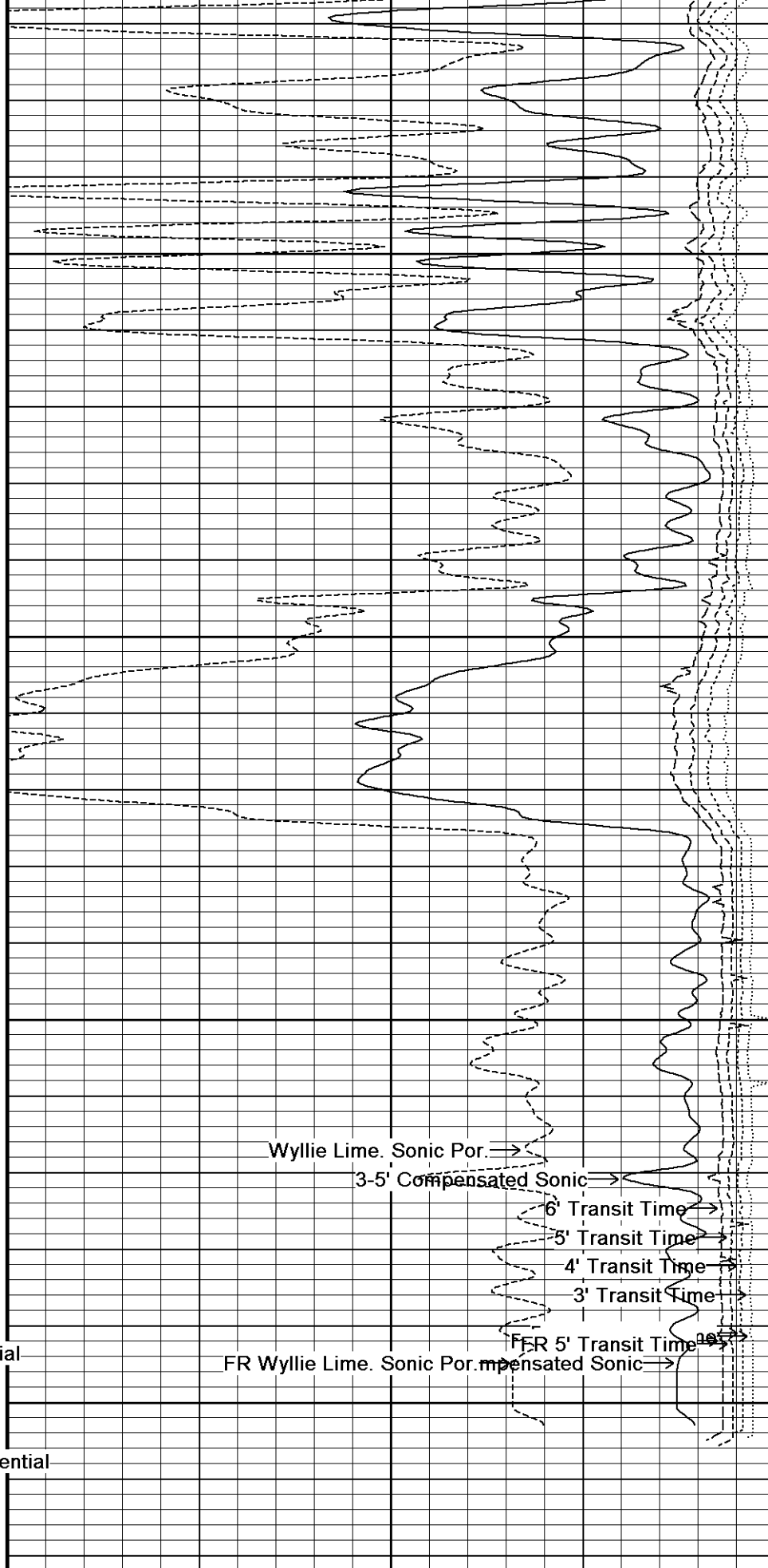
4550

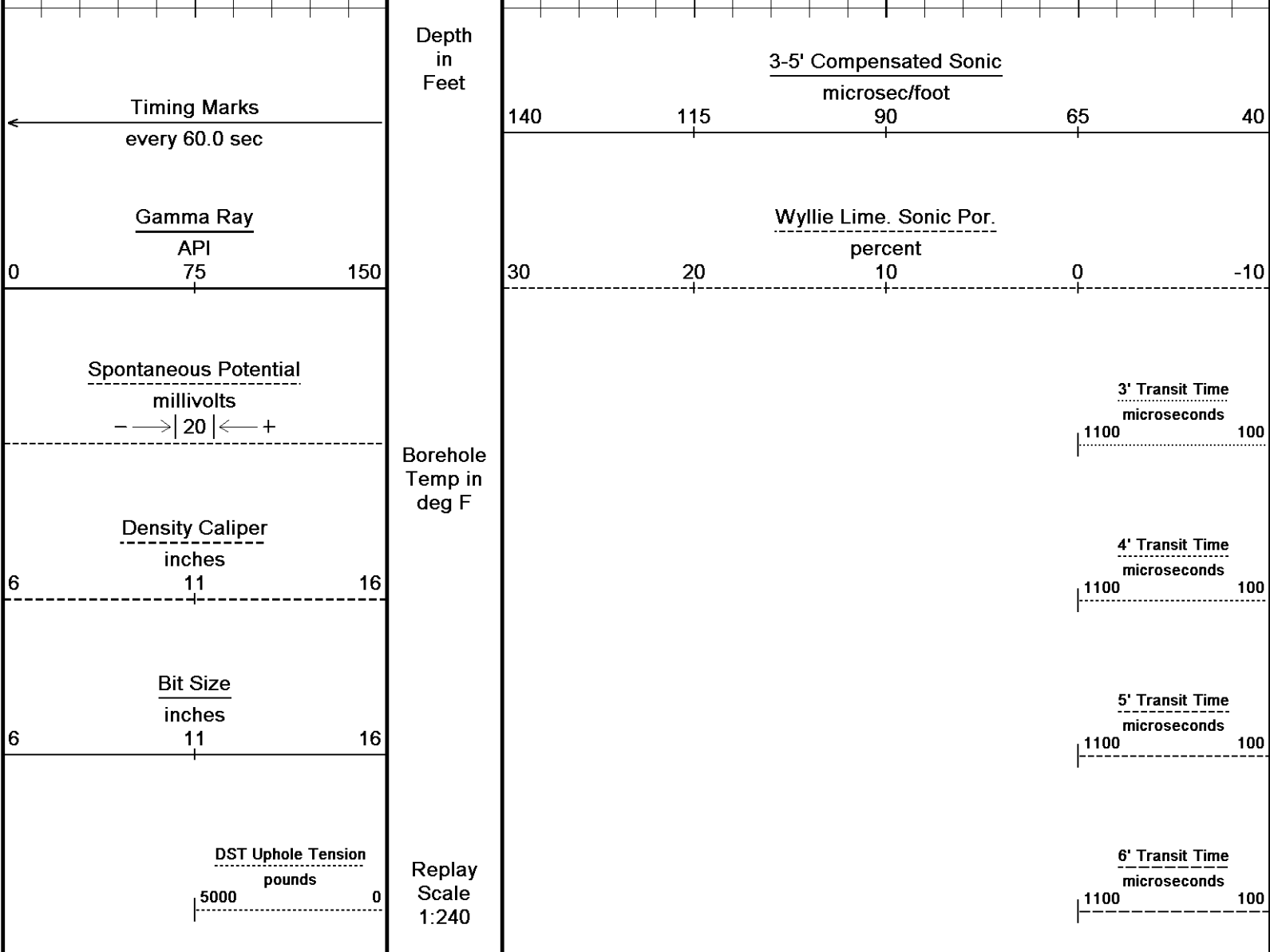
115°

4600

4650

4686

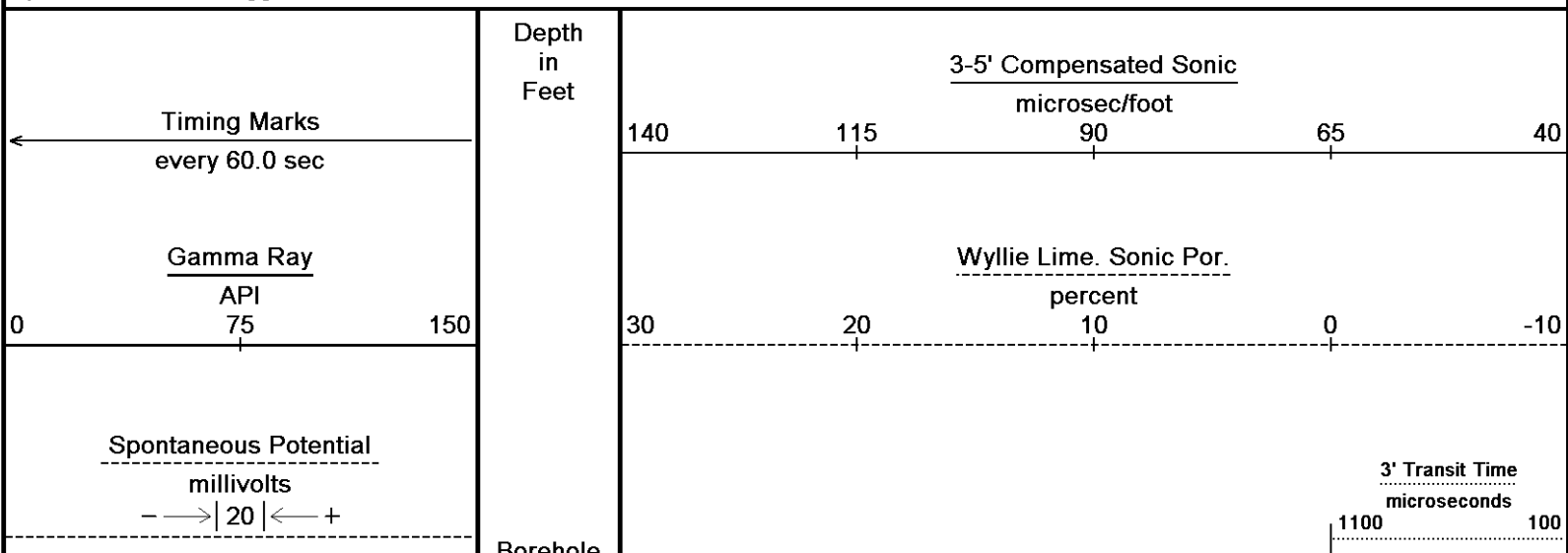




↑ **5 INCH MAIN PASS** ↑

↓ **5 INCH REPEAT PASS** ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 29-JUN-2011 21:06
 Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8_001.dta
 Recorded on 29-JUN-2011 18:18
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186



Bottom
Temp in
deg F

Density Caliper
inches

6 11 16

Bit Size
inches

6 11 16

DST Uphole Tension
pounds

5000 0

Replay
Scale
1:240

4' Transit Time
microseconds

1100 100

5' Transit Time
microseconds

1100 100

6' Transit Time
microseconds

1100 100

4350

114°

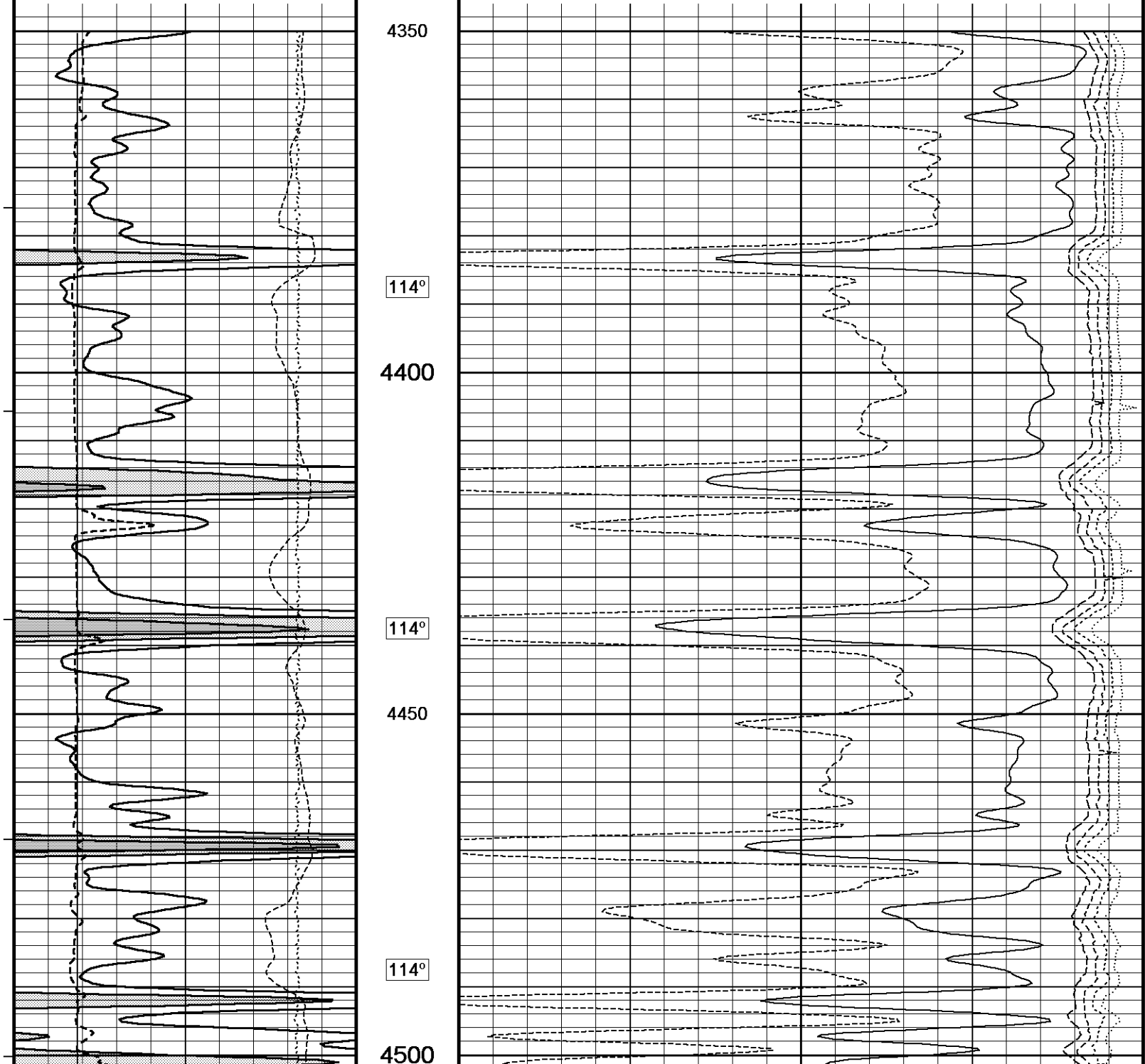
4400

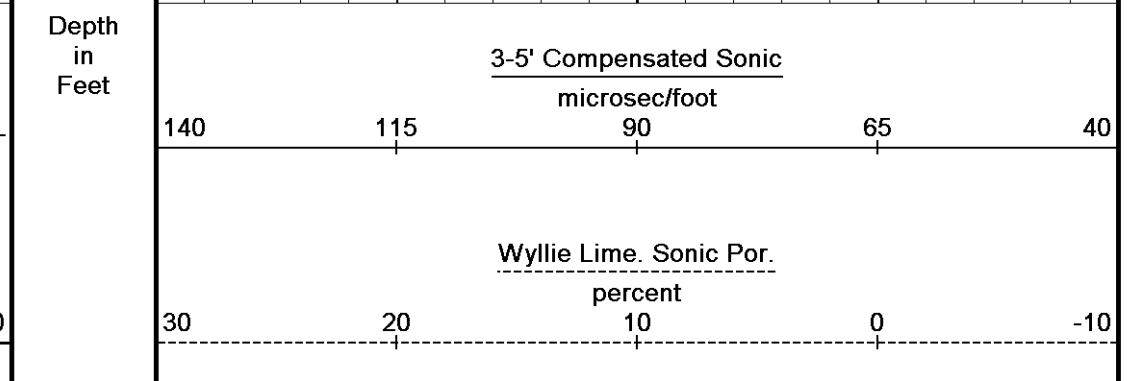
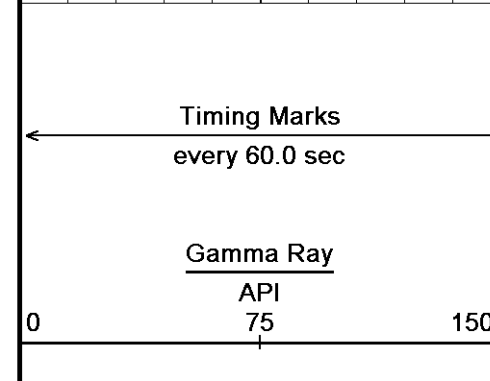
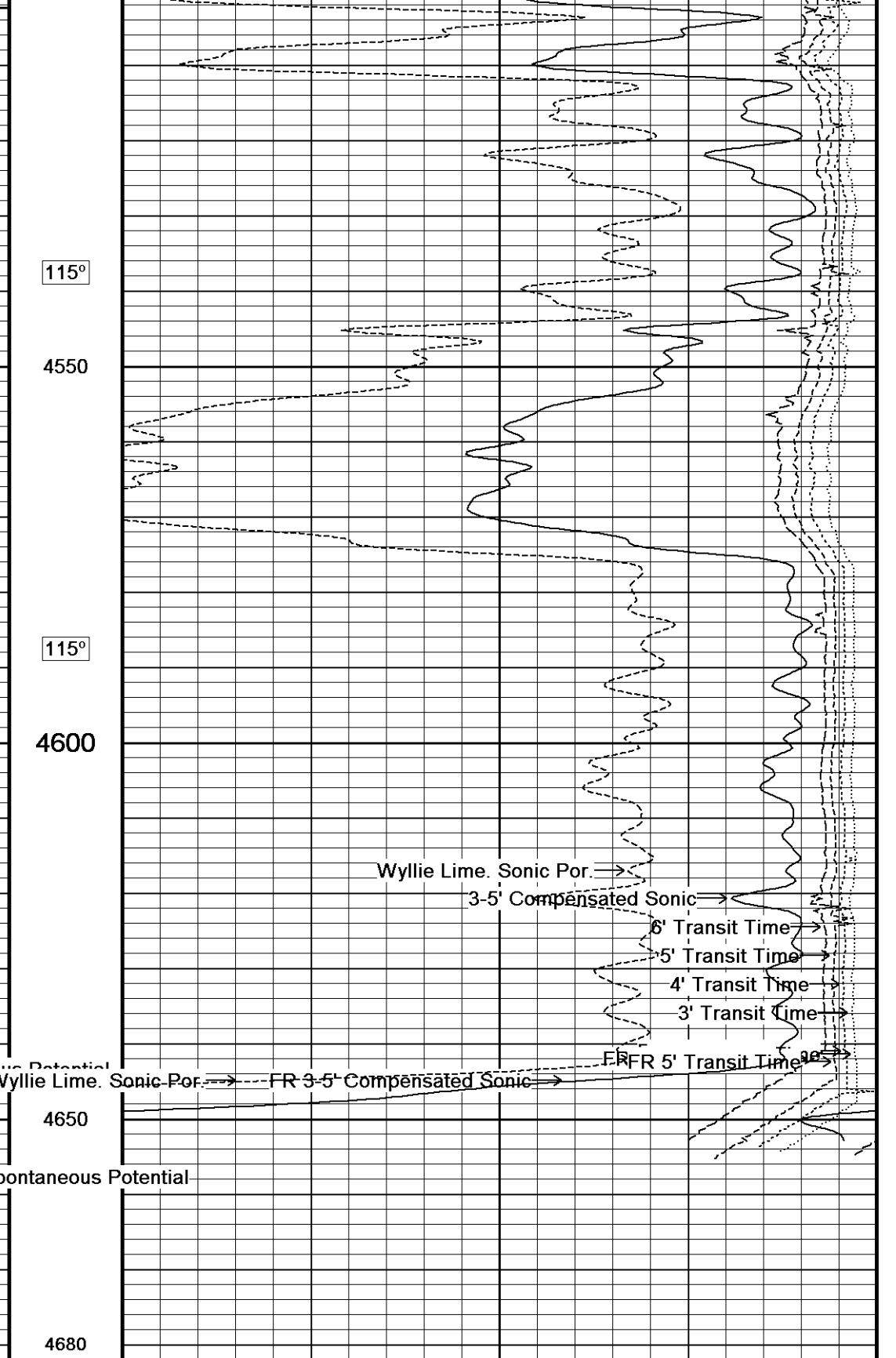
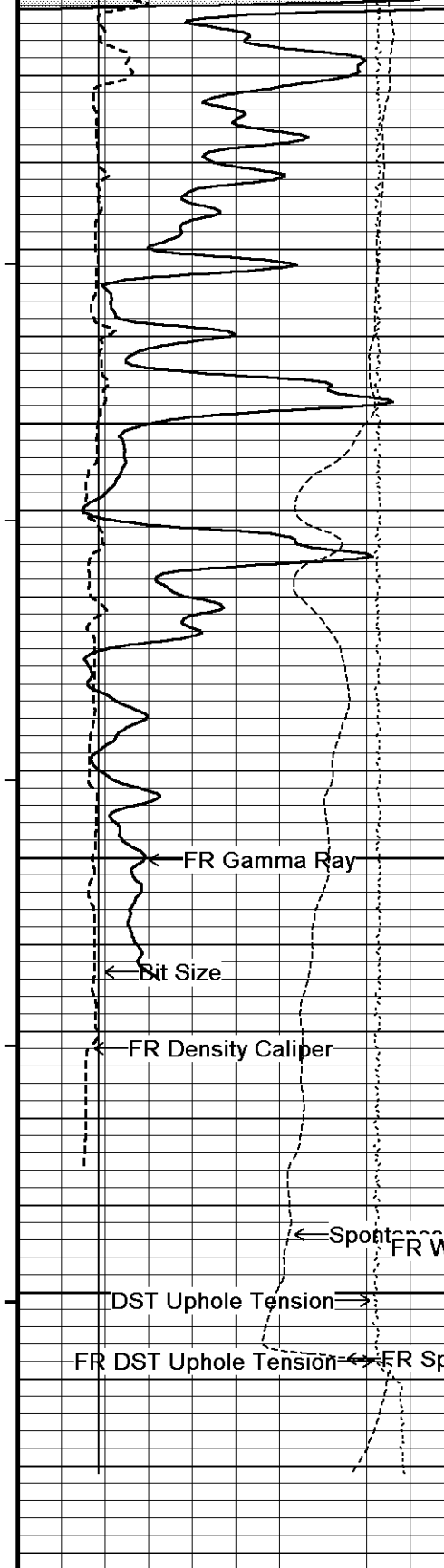
114°

4450

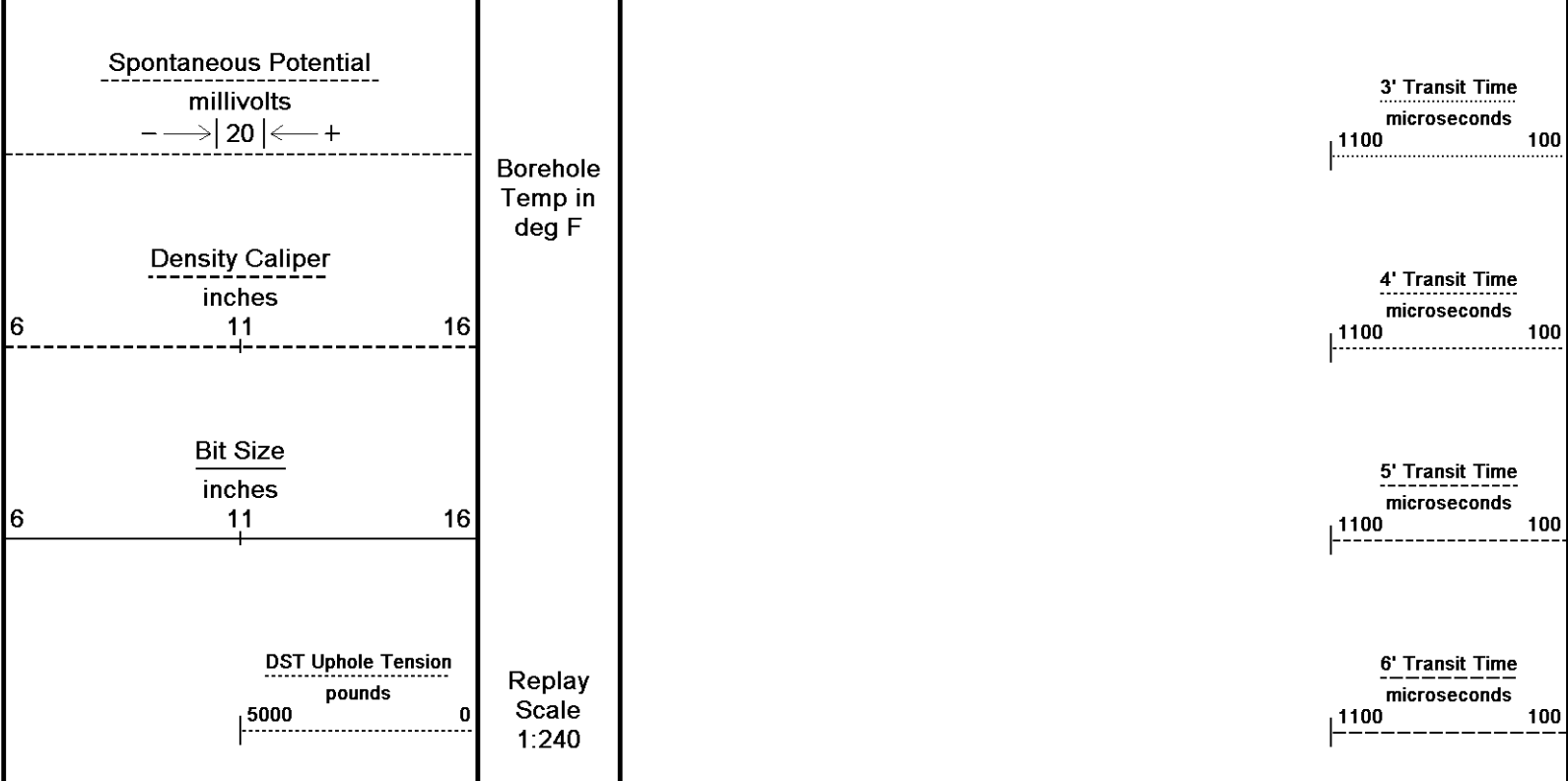
114°

4500





Depth
in
Feet



Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 29-JUN-2011 21:06
 Filename: C:\Minimus 11.02.3186\Data\Shakespeare Peter...\SHAKESPEARE PETERSON 1-8_001.dta Recorded on 29-JUN-2011 18:18
 System Versions: Logged with 11.02.3186 Plotted with 11.02.3186

↑ **5 INCH REPEAT PASS** ↑

BEFORE SURVEY CALIBRATION
 C:\Minimus 11.02.3186\Data\Shakespeare Peterson #1-8\SHAKESPEARE PETERSON 1-8.dta

General Constants All 000 Last Edited on 29-JUN-2011,16:55

General Parameters		
Mud Resistivity	0.450	ohm-metres
Mud Resistivity Temperature	94.000	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	5.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

Down-hole Tension Calibration SMS 0 Field Calibration on 05-JUN-2011 04:37

Reading No	Measured	Calibrated (lbs)
1	13499.89	0.00
2	14983.70	496.00

SP Calibration MCG-B 34 Field Calibration on 20-APR-2011 14:53

	Measured	Calibrated (mV)
Reference 1	106.7	100.0
Reference 2	-95.0	-100.0

Gamma Calibration MCG-B 34 Field Calibration on 28-JUN-2011 14:29

	Measured	Calibrated (API)
Background	64	44
Calibrator (Gross)	1113	769
Calibrator (Net)	1049	725

Gamma Constants MCG-B 34

Last Edited on 29-JUN-2011,16:56

Gamma Calibrator Number	grc38	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Bit Size	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

High Resolution Temperature Calibration MCG-B 34

Field Calibration on 05-MAR-2011,23:56

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

High Resolution Temperature Constants MCG-B 34

Last Edited on

Pre-filter Length	11
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Caliper Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:38

Field Calibration on 28-JUN-2011 14:15

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14953	5.98
2	18280	7.97
3	21656	9.86
4	25588	11.92
5	0	0.00
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	6.04	5.98

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 16-MAY-2011 09:23

Field Check on 28-JUN-2011 14:07

Base Calibration					
		Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2	
Micro Normal	12.1	60.1	2.6	12.8	
Micro Inverse	15.6	78.3	1.7	8.4	
Channel	Base Check (ohm-m)		Field Check (ohm-m)		
Micro Normal	32.2		32.2		
Micro Inverse	16.3		16.3		

Micro Normal and Micro Inverse Constants MML-A 4

Last Edited on 28-JUN-2011,14:06

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159		
Micro Normal K Factor	0.5110		
Micro Inverse K Factor	0.3380		
Standoff Offset	N/A inches		

Neutron Calibration MDN-A.B 65

Base Calibration on 16-MAY-2011 11:23

Field Check on 28-JUN-2011 14:23

Base Calibration					
		Measured		Calibrated (cps)	
	Near	Far	Near	Far	
	3166	99	3714	110	
Ratio	31.935		33.764		
Field Calibrator at Base					
			Calibrated (cps)		
			1629	2336	
Ratio	0.697				
Field Check					
			Calibrated (cps)		
			1621	2337	
Ratio	0.693				

Neutron Source Id	757	
Neutron Jig Number	5824NE	
Epithermal Neutron	No	
Caliper Source for Processing	Density Caliper	
Stand-off	0.00	inches
Mud Density	1.13	gm/cc
Limestone Sigma	7.10	cu
Sandstone Sigma	4.26	cu
Dolomite Sigma	4.70	cu
Formation Pressure Source	None	
Formation Pressure	N/A	kpsi
Temperature Source	MCG External Temperature	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
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 21-JUN-2011 10:19

Field Check on 28-JUN-2011 14:43

Base Calibration		
	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	953.6	126.8
Base Check		281.3
Field Check		281.3

FE Constants MFE-A.A 55

Last Edited on 29-JUN-2011,16:57

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 29-JUN-2011,16:56

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	Discriminator (mV)	N/A
Start Time (micro-sec)	End Time (micro-sec)		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
Semblance Window Width	N/A micro-sec
Sonic 1 Despiker	N/A N/A
Sonic 2 Despiker	N/A N/A

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 13-AUG-2010,13:31

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

High Resolution Temperature Constants MAI-A.A 45

Last Edited on

Pre-filter Length	11
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Induction Calibration MAI-A.A 45

Base Calibration on 13-AUG-2010,13:32
Field Check on 28-JUN-2011 14:42

Base Calibration

Test Loop Calibration Channel	Measured		Calibrated (mmho/m)	
	Low	High	Low	High
1	14.5	473.5	9.3	966.2
2	5.2	373.4	7.6	821.4
3	2.8	260.6	5.2	566.0
4	1.6	132.2	2.6	279.2

Array Temperature	86.2	Deg F
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Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	0.0	0.0	19.6	3845.9
2	0.0	0.0	33.2	3632.1
3	0.0	0.0	30.1	3050.7
4	0.0	0.0	20.5	2094.1
Deep	0.0	0.0	18.1	1920.8
Medium	0.0	0.0	43.4	4051.4
Shallow	0.0	0.0	50.4	5476.2
Array Temperature	0.0		84.8	Deg F

Induction Constants MAI-A.A 45

Last Edited on 29-JUN-2011,16:56

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

Stand-off in Width		0.0000	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-B 65

Base Calibration on 16-MAY-2011 09:53
Field Calibration on 28-JUN-2011 14:08

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13344	3.99
2	21952	5.98
3	30560	7.97
4	38880	9.86
5	48095	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.02	5.98

Photo Density Calibration MPD-B 65

Base Calibration on 16-MAY-2011 10:48
Field Check on 28-JUN-2011 14:14

Density Calibration

Base Calibration	Measured		Calibrated (sdu)	
	Near	Far	Near	Far
Reference 1	51543	24465	59556	30836
Reference 2	20910	2298	24941	2541

Field Check at Base

1247.1	1201.6
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Field Check

1248.2	1194.8
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PE Calibration

Base Calibration	WS	Measured		Calibrated Ratio
		WH	Ratio	
Background	227	1108		
Reference 1	19826	51340	0.390	0.371
Reference 2	5731	20764	0.280	0.272

Field Check at Base

226.6	1107.8
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Field Check

226.0	1110.4
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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 1.13 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
0.00	0.00

DOWNHOLE EQUIPMENT

C:\Minimus 11.02.3186\Data\Shakespeare Peterson #1-8\SHAKESPEARE PETERSON 1-8.dta

Compact Comms Gamma
 MCG-B 34 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

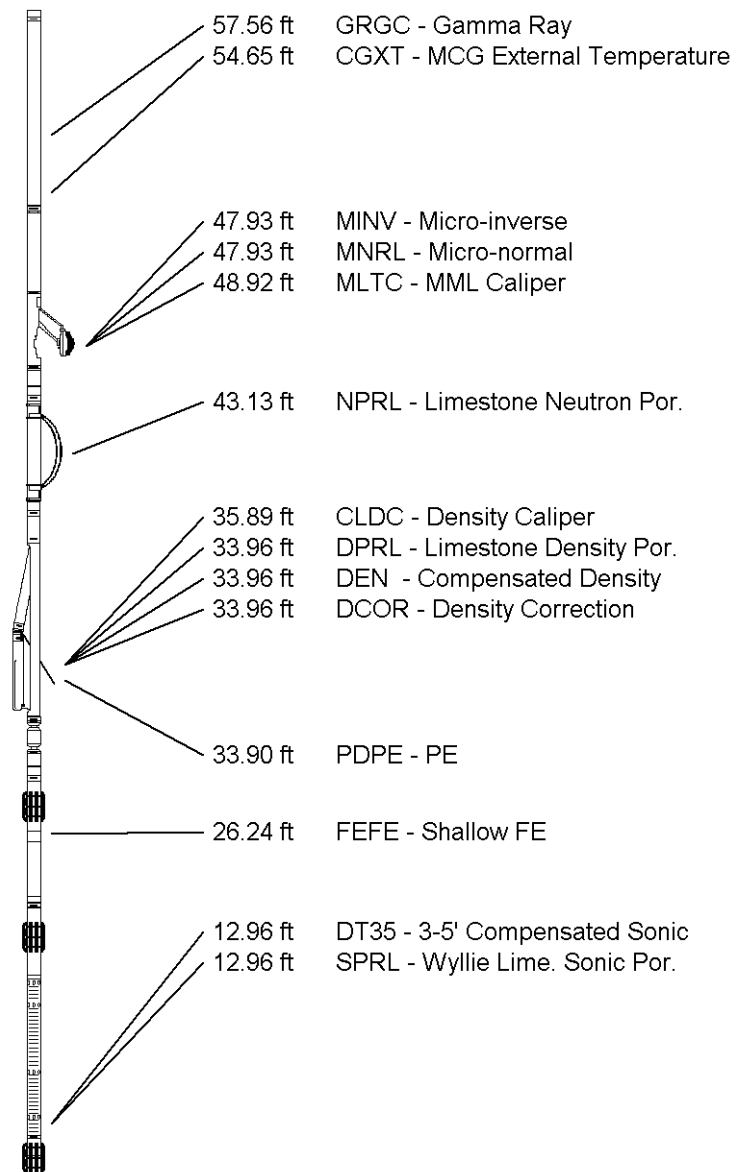
Compact Neutron
 MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
 MPD-B 65 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

SKJ-D.A Compact Knuckle Joint
 SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

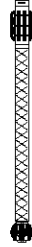
Compact Focussed Electric
 MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

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: 62.84 ft Weight: 480.6 lb



3.34 ft R400 - Array Ind. One Res 40
3.34 ft RTAO - Array Ind. One Res Rt
3.34 ft R600 - 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	PETERSON #1-8
FIELD	STRATFORD WEST
PROVINCE/COUNTY	LOGAN
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2970.00	feet	First Reading	4645.00	feet
Elevation Drill Floor	2968.00	feet	Depth Driller	4660.00	feet
Elevation Ground Level	2965.00	feet	Depth Logger	4658.00	feet



Weatherford[®]

COMPENSATED SONIC
W/ INTEGRATED TRANSIT TIME

