COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME

Weatherford®

COMPANY	DAYSTAR PETROLEUM, INC.
WELL	DEUTSCHER B #1-2
FIELD	WILDCAT
PROVINCE/COUNTY	TREGO
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1330' FSL & 395' FWL

SEC 2	TWP 15S	RGE 21W	Other Services
Latitude			MDN/MPD MAI/MFE
Longitude			MML
API Number	15-195-23003		

Permanent Datum GL, Elevation 2123 feet
Log Measured From KB
Drilling Measured From KB @ 8 FEET

Elevations:	feet
KB	2131.00
DF	2129.00
GL	2123.00

Date	14-MAR-2016			
Run Number	ONE			
Service Order	4558-145149224			
Depth Driller	4040.00	feet		
Depth Logger	4037.00	feet		
First Reading	4024.00	feet		
Last Reading	265.00	feet		
Casing Driller	263.00	feet		
Casing Logger	265.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.10 lb/USg	48.00 CP		
PH / Fluid Loss	9.30	6.40 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.52 @ 75.0	ohm-m		
Rmf @ Measured Temp	0.42 @ 75.0	ohm-m		
Rmc @ Measured Temp	0.62 @ 75.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.38 @104.0	ohm-m		
Time Since Circulation	4 HOURS			
Max Recorded Temp	104.00	deg F		
Equipment / Base	13096	OKC		
Recorded By	ADAM SILL			
Witnessed By	BRAD RINE			

Last Edited: 14-MAR-2016 13:16

BOREHOLE RECORD

Bit Size inches	Depth From feet	Depth To feet
7.875	263.00	4040.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	263.00	23.00

REMARKS

- SOFTWARE ISSUE: WLS 15.03.5939.
- RUN ONE: 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: 1670 CU.FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH PRODUCTION CASING FROM TD TO 3100 FEET: 176 CU.FT.

- RIG: WW DRILLING #12.

- ENGINEER: A. SILL.

- OPERATOR: J. LaPOINT.

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 14-MAR-2016 18:12

Filename: C:\Minimus 15.03.5939\Logs\Daystar Deutscher B #1-2\Daystar Deutscher B #1-2_002.dta — Recorded on 14-MAR-2016 15:01

System Versions: Logged with 15.03.5939 Plotted with 15.03.5939

Depth In Feet

Timing Marks every 60.0 sec

Gamma Ray API 0 75 150 / 150 225 300

Density Caliper inches 6 11 16

Bit Size inches 6 11 16

DST Uphole Tension pounds 5000 0

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

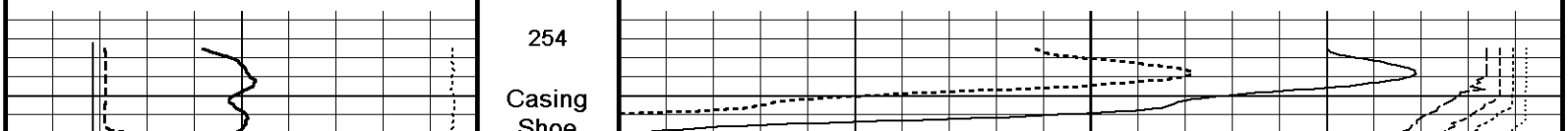
6' Transit Time microseconds 1100 100

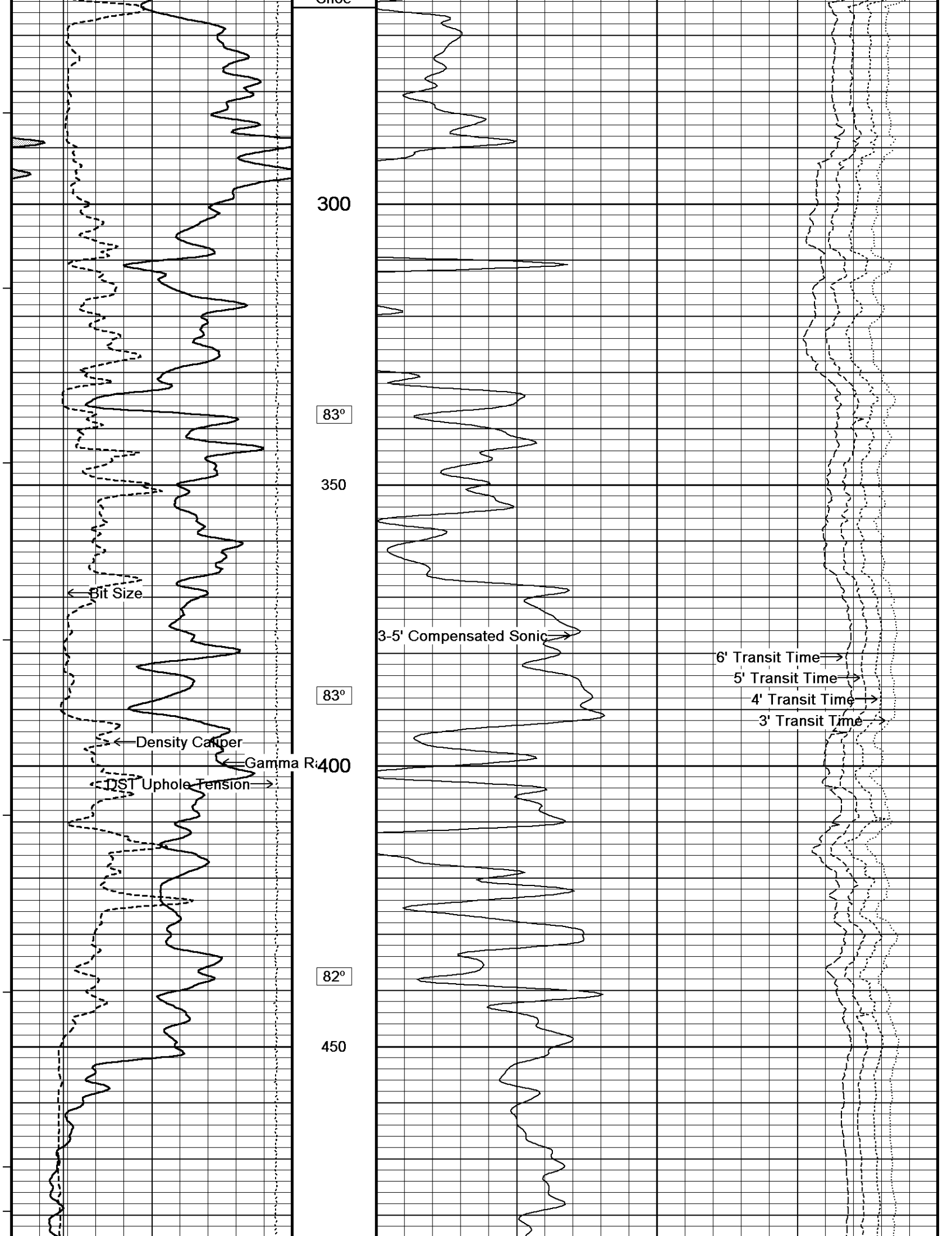
Borehole Temp in deg F

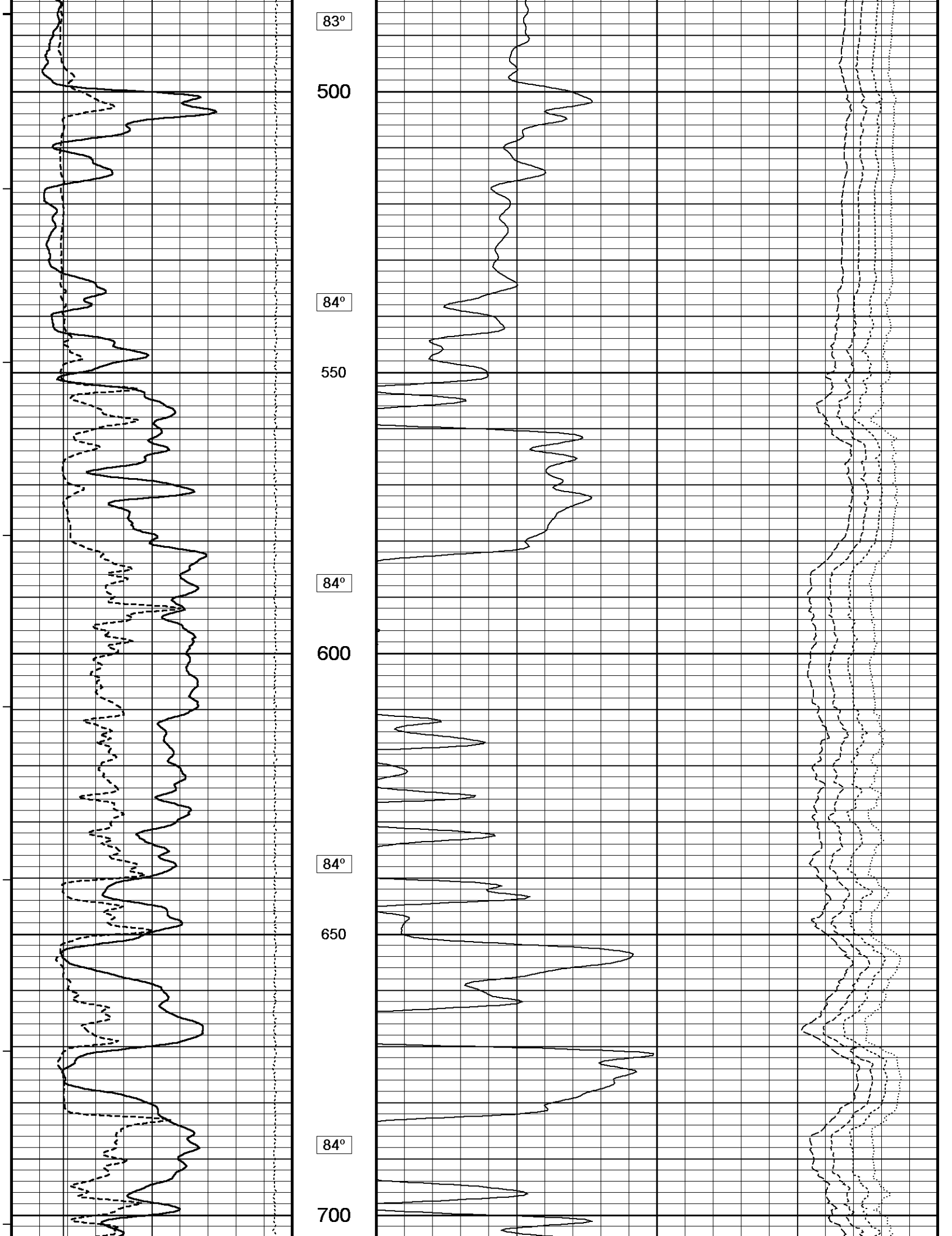
Replay Scale 1:240

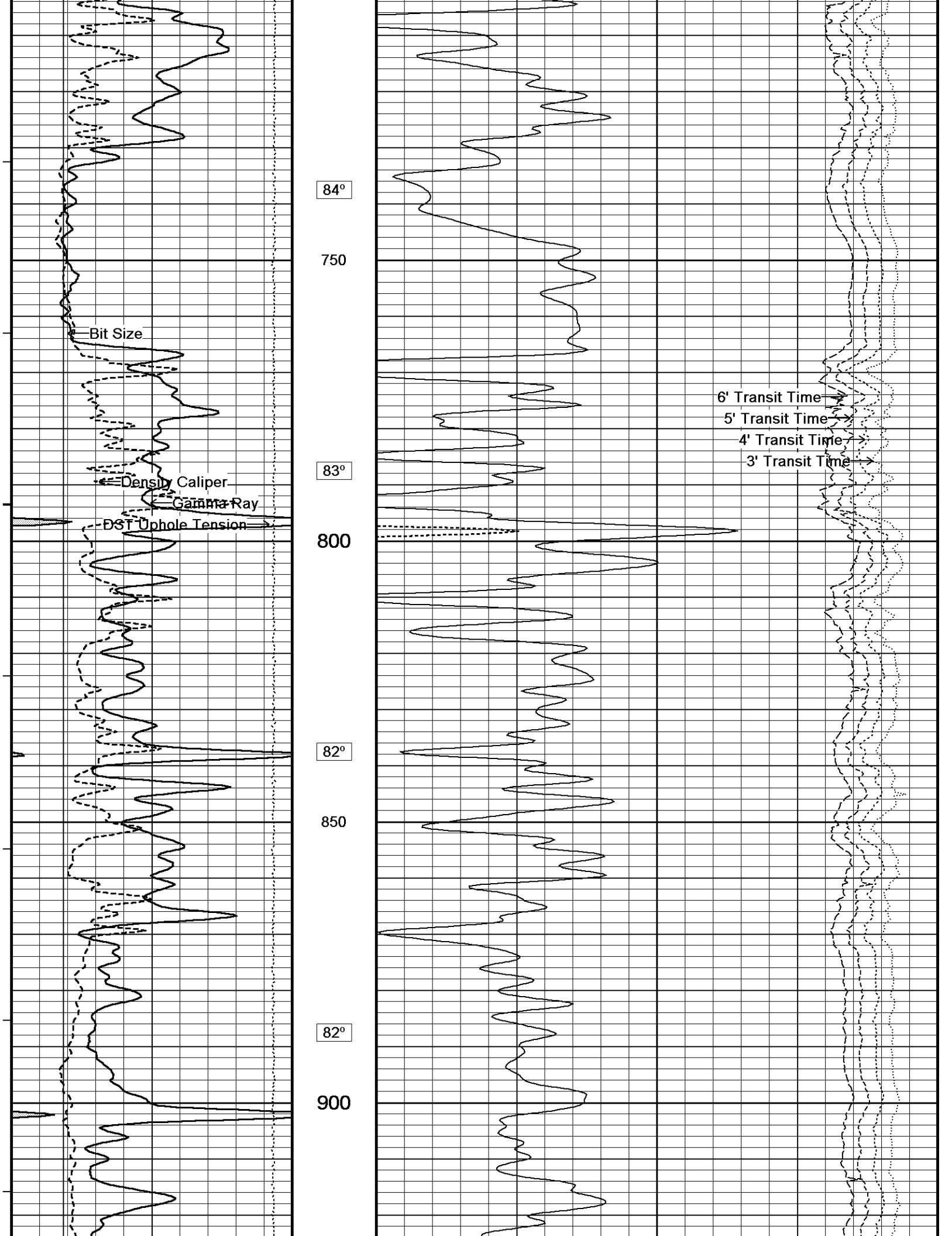
254

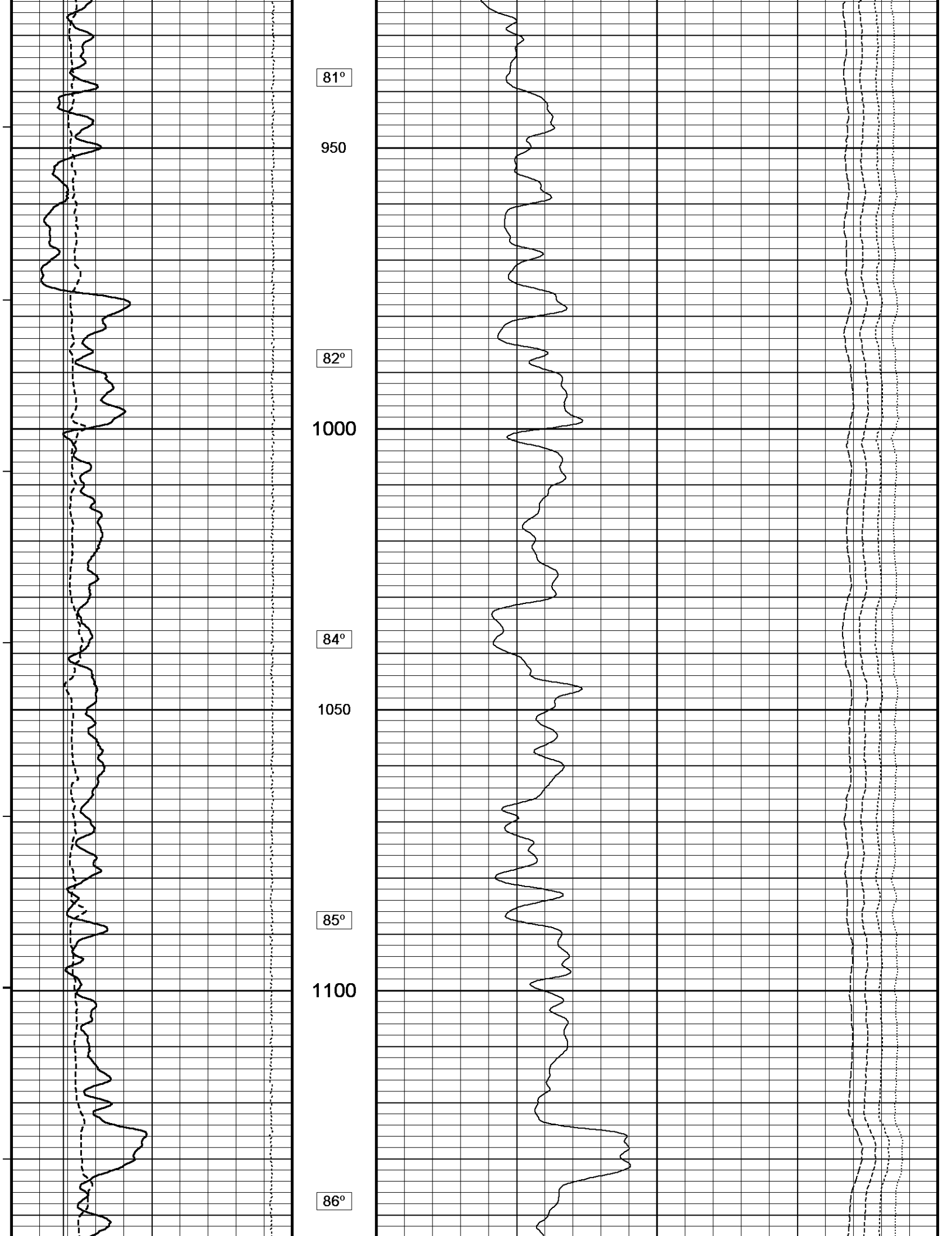
Casing Shoe

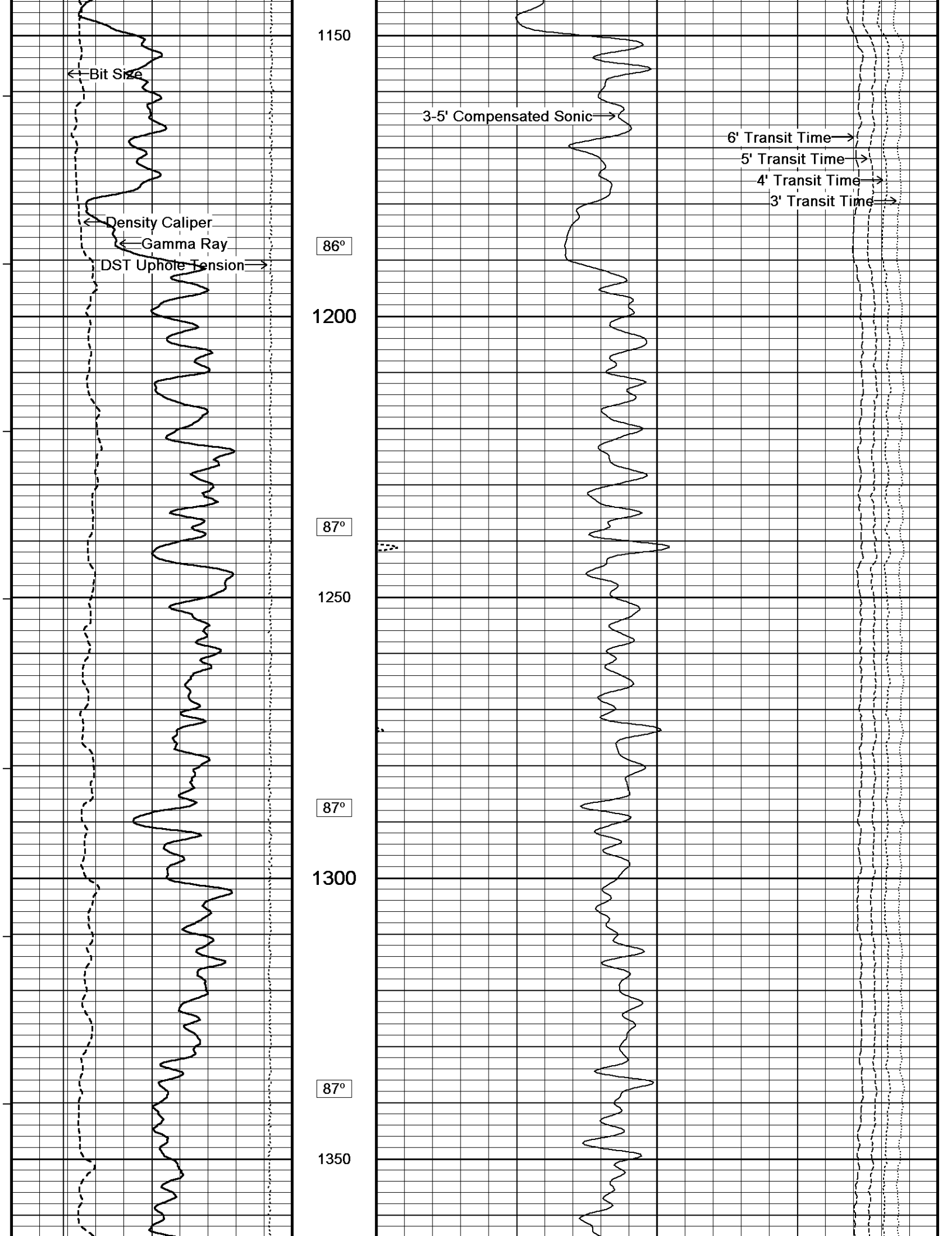


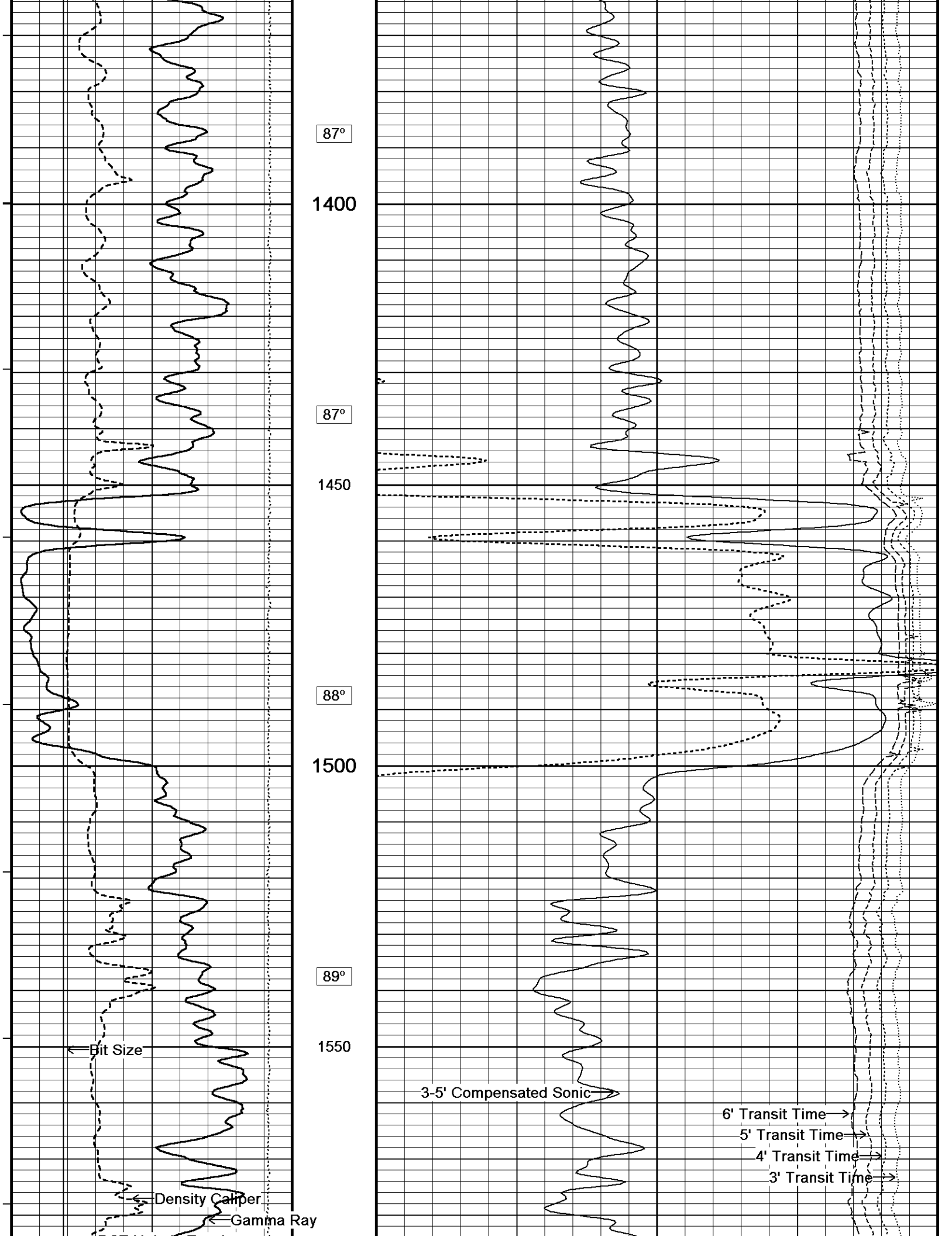

Shoe
300
83°
350
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
83°
Density Caliper
Gamma Ra
400
DST Uphole Tension
82°
450

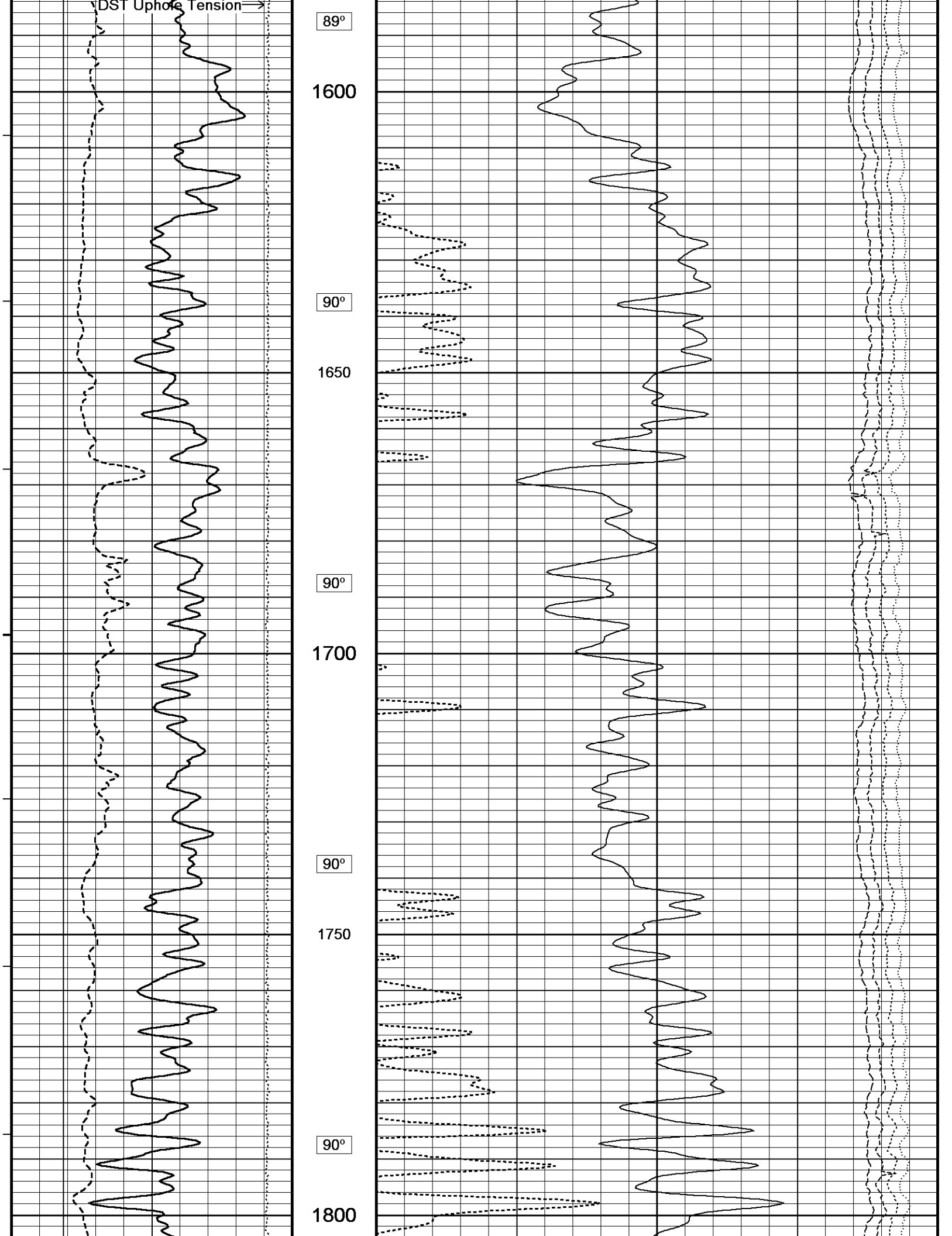

83°
500
84°
550
84°
600
84°
650
84°
700

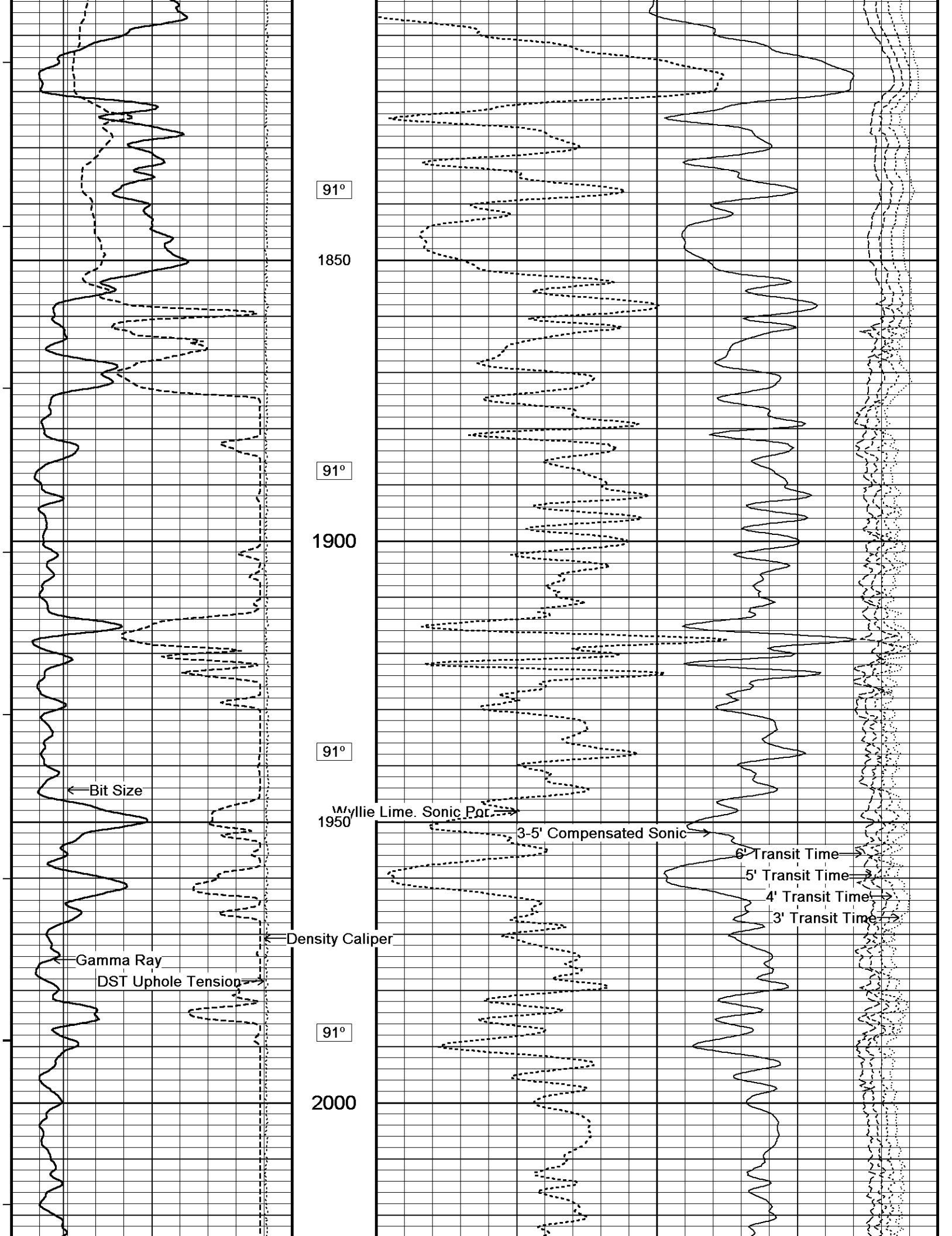

84°
750
Bit Size
83°
Density Caliper
Gamma Ray
DST Uphole Tension
800
82°
850
82°
900
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

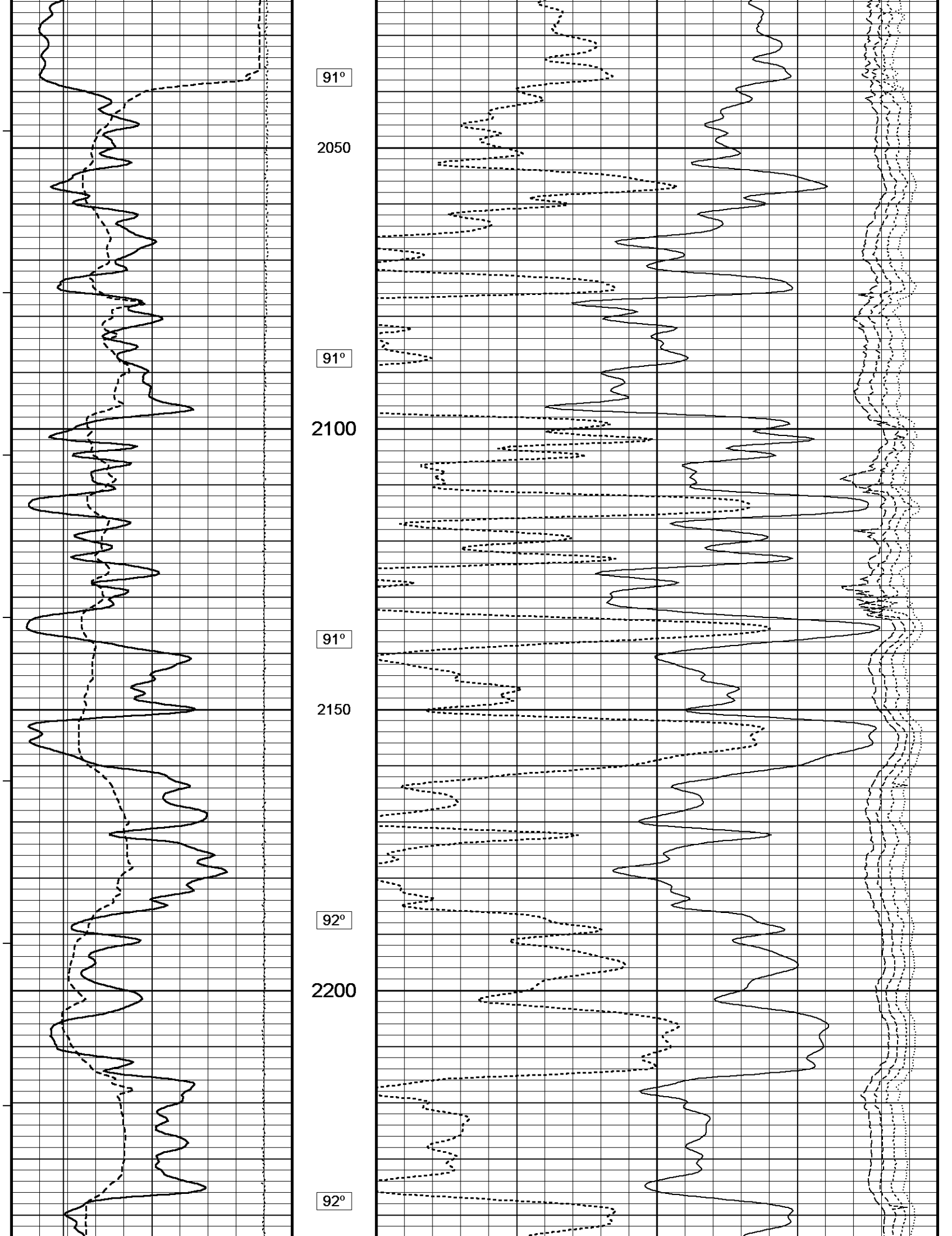

81°
950
82°
1000
84°
1050
85°
1100
86°

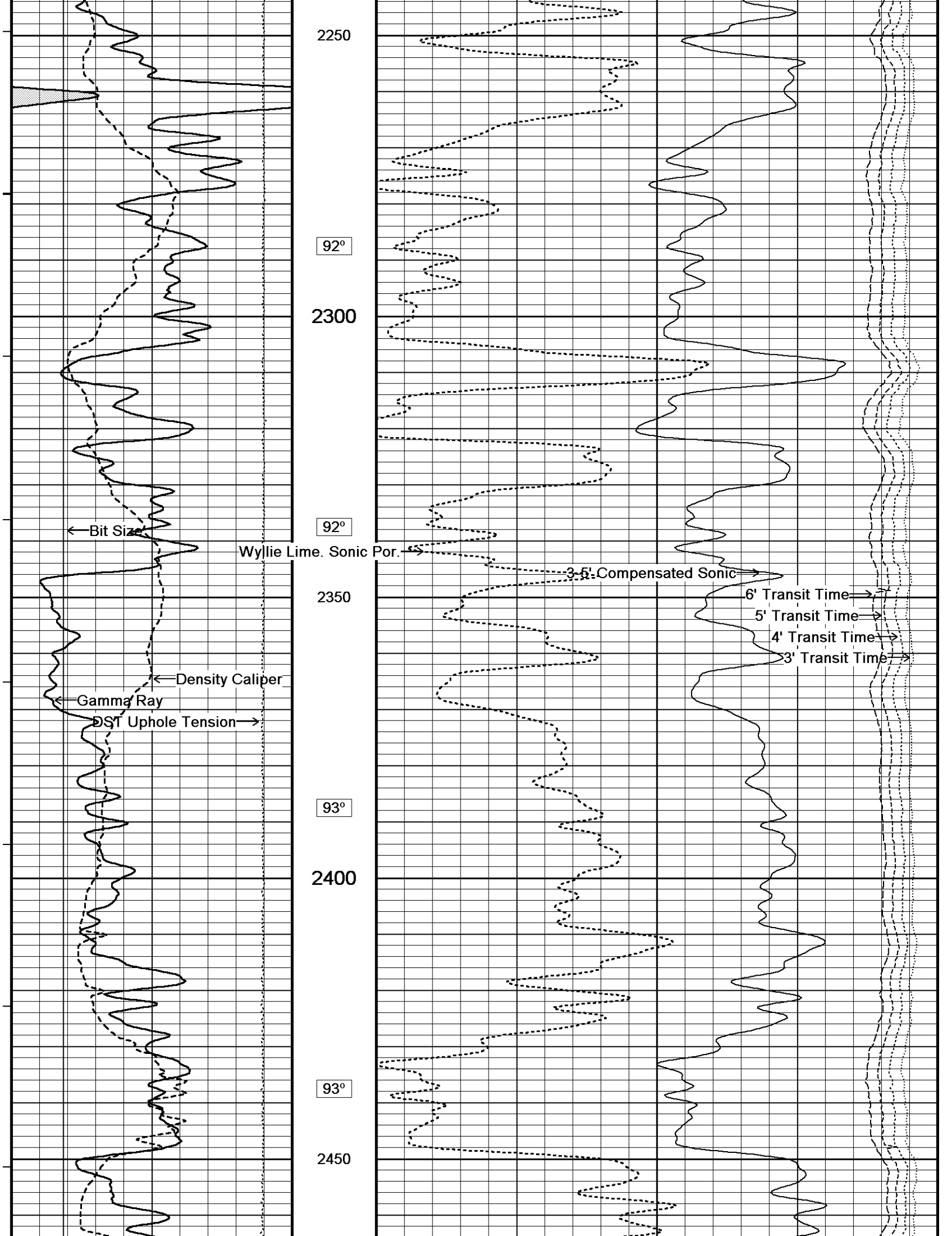

1150
Bit Size
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
86°
1200
87°
1250
87°
1300
87°
1350

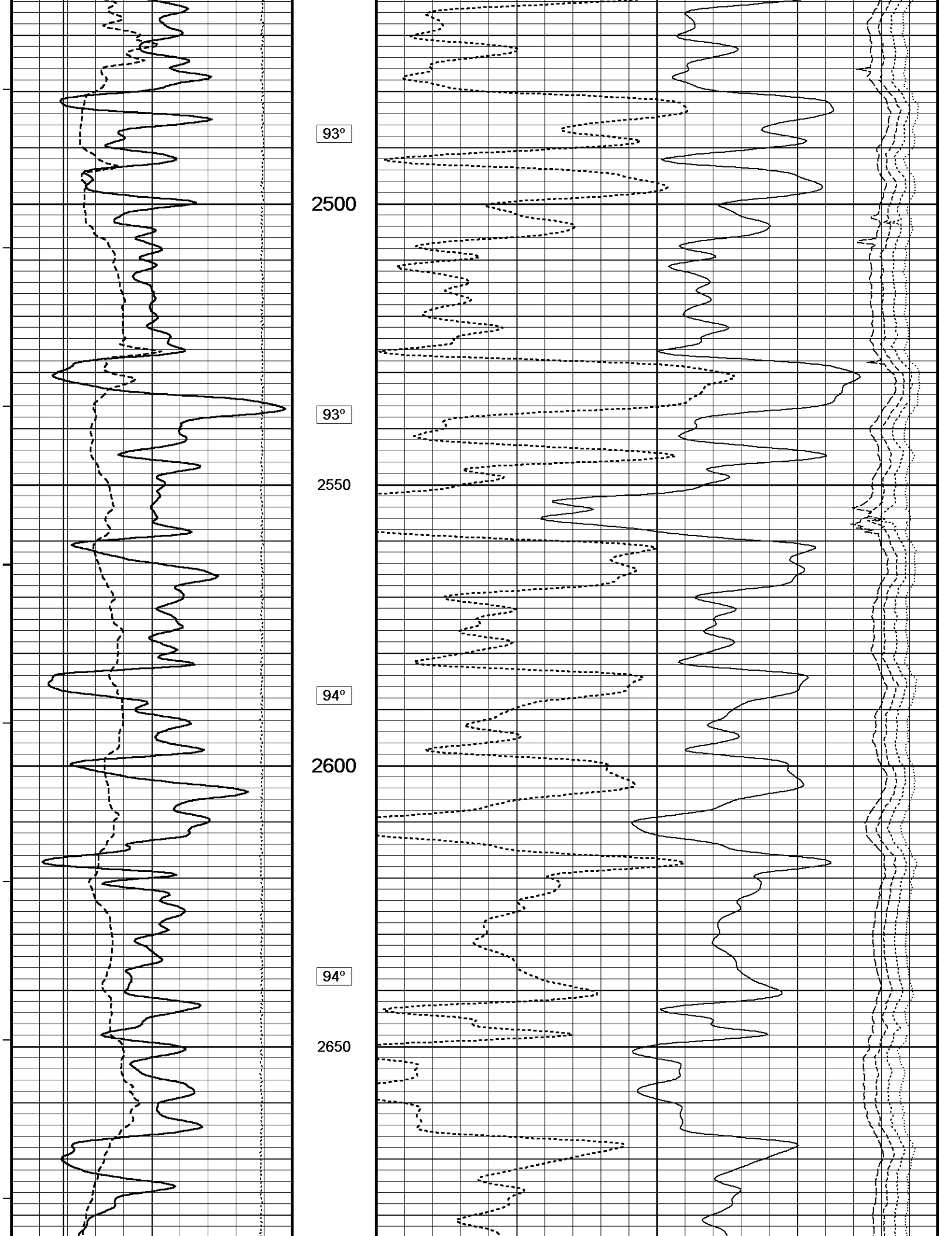

87°
1400
87°
1450
88°
1500
89°
1550
Bit Size
Density Caliper
Gamma Ray
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time

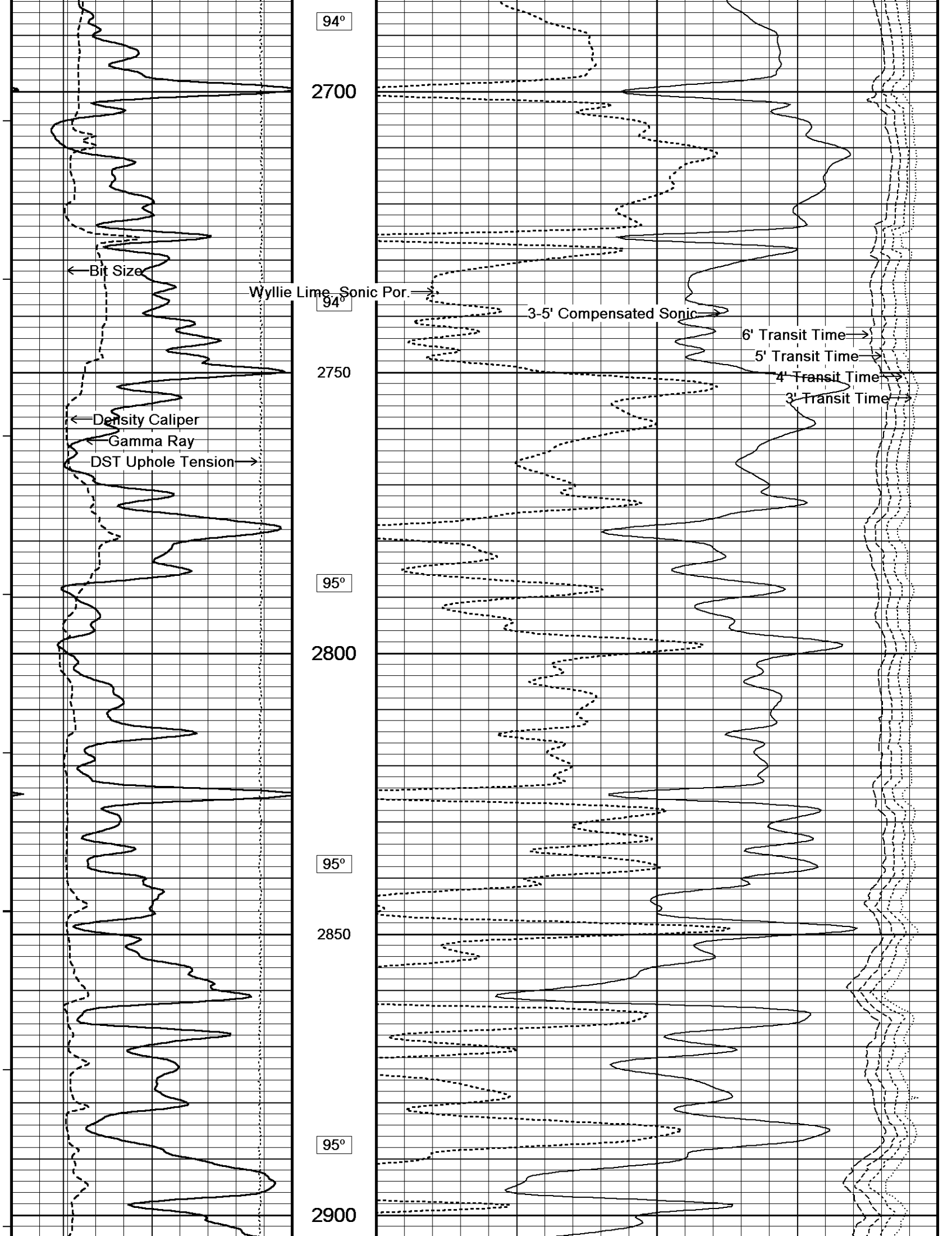

DST Uphole Tension
89°
1600
90°
1650
90°
1700
90°
1750
90°
1800

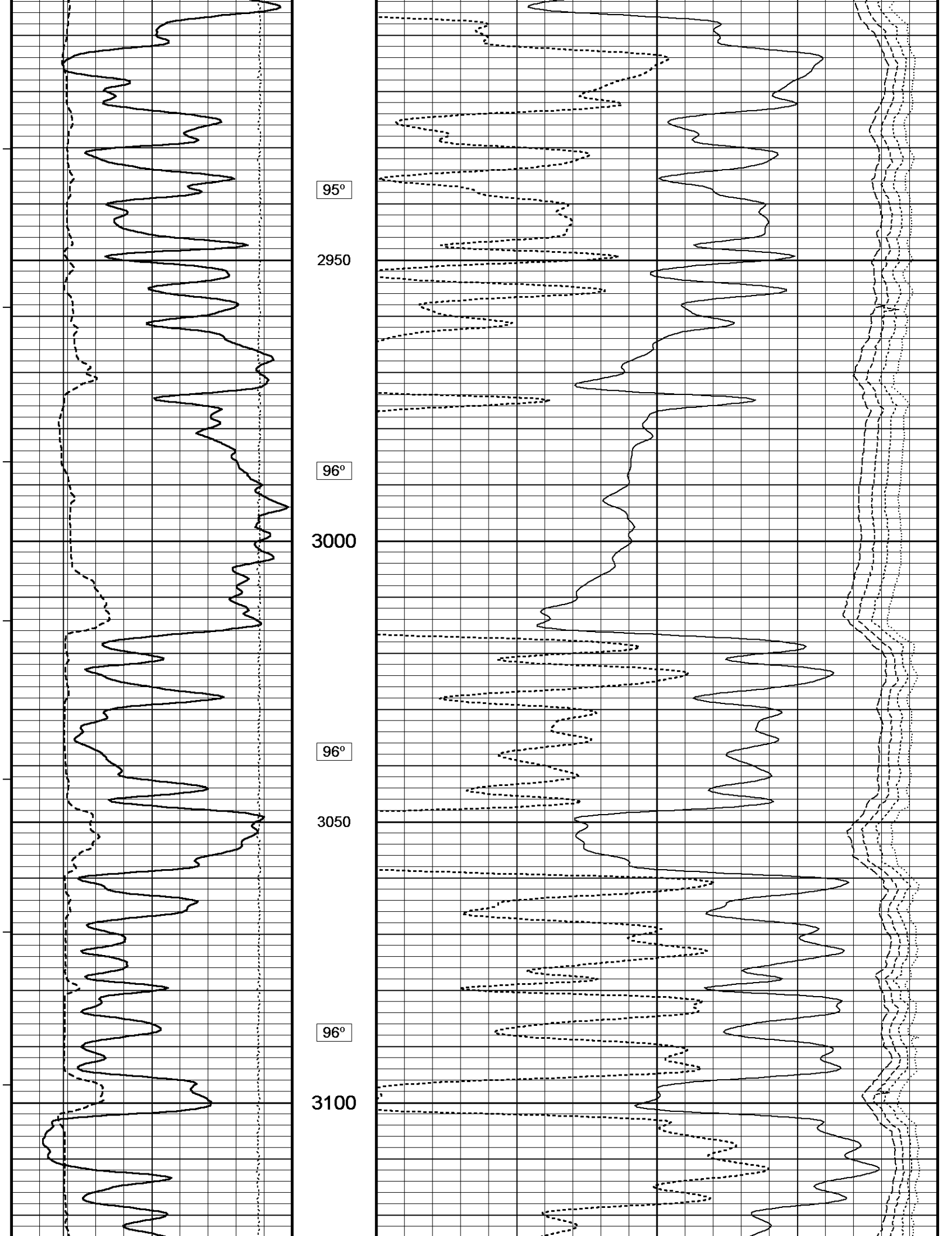

91°
1850
91°
1900
91°
Bit Size
Wyllie Lime. Sonic Por.
1950
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
91°
2000

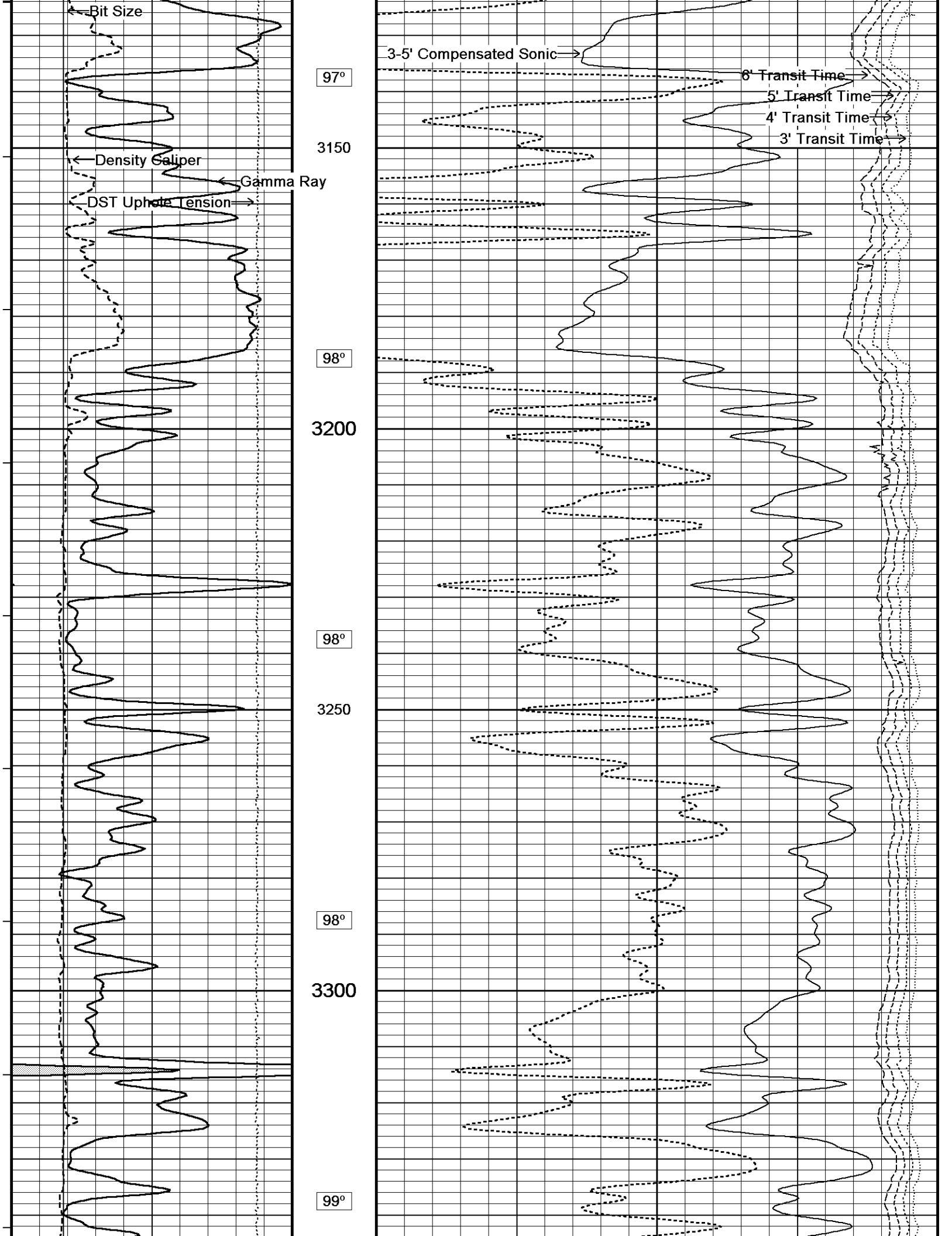

91°
2050
91°
2100
91°
2150
92°
2200
92°

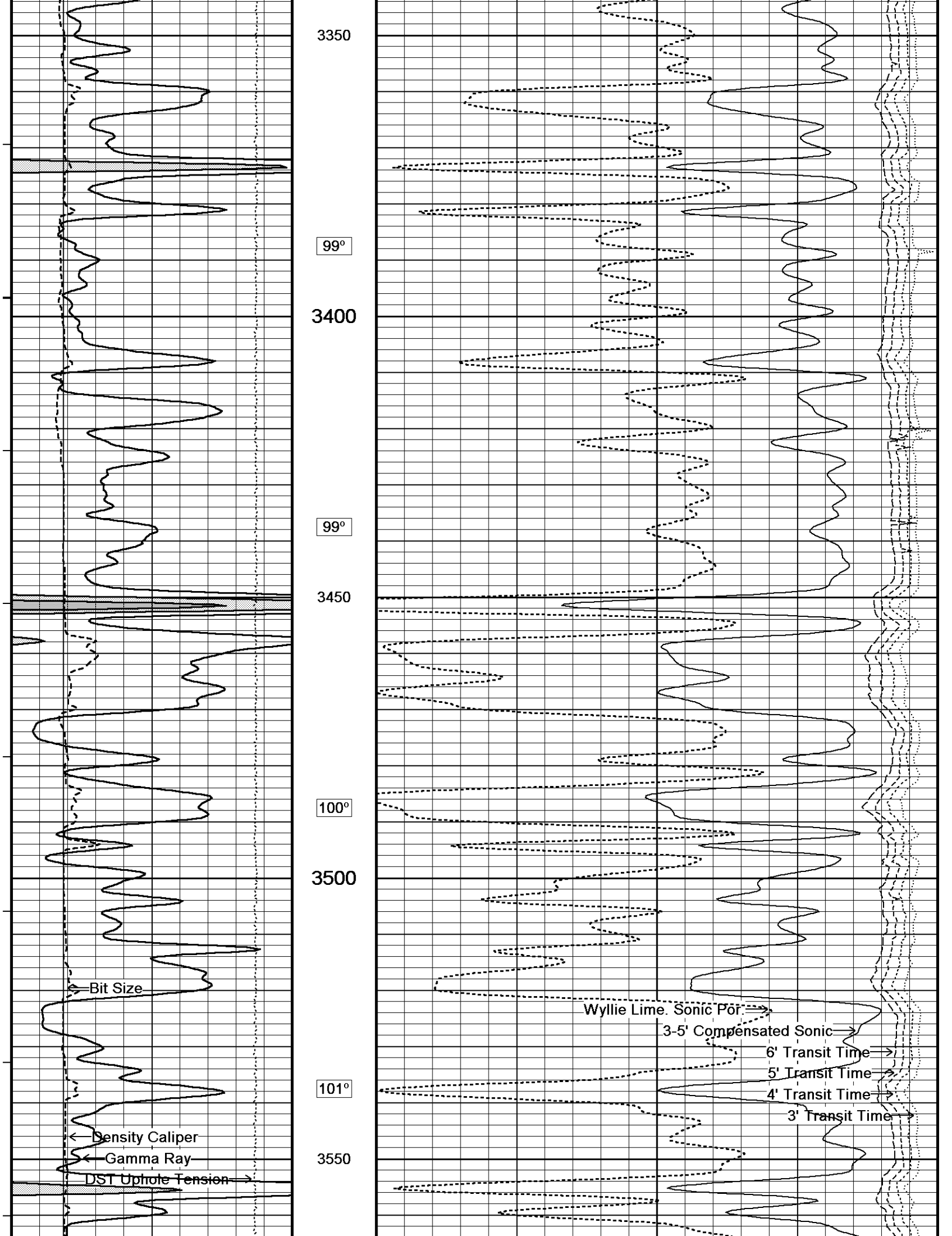

2250
92°
2300
92°
Bit Size
Wyllie Lime. Sonic Por.
3.5' Compensated Sonic
2350
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
93°
2400
93°
2450

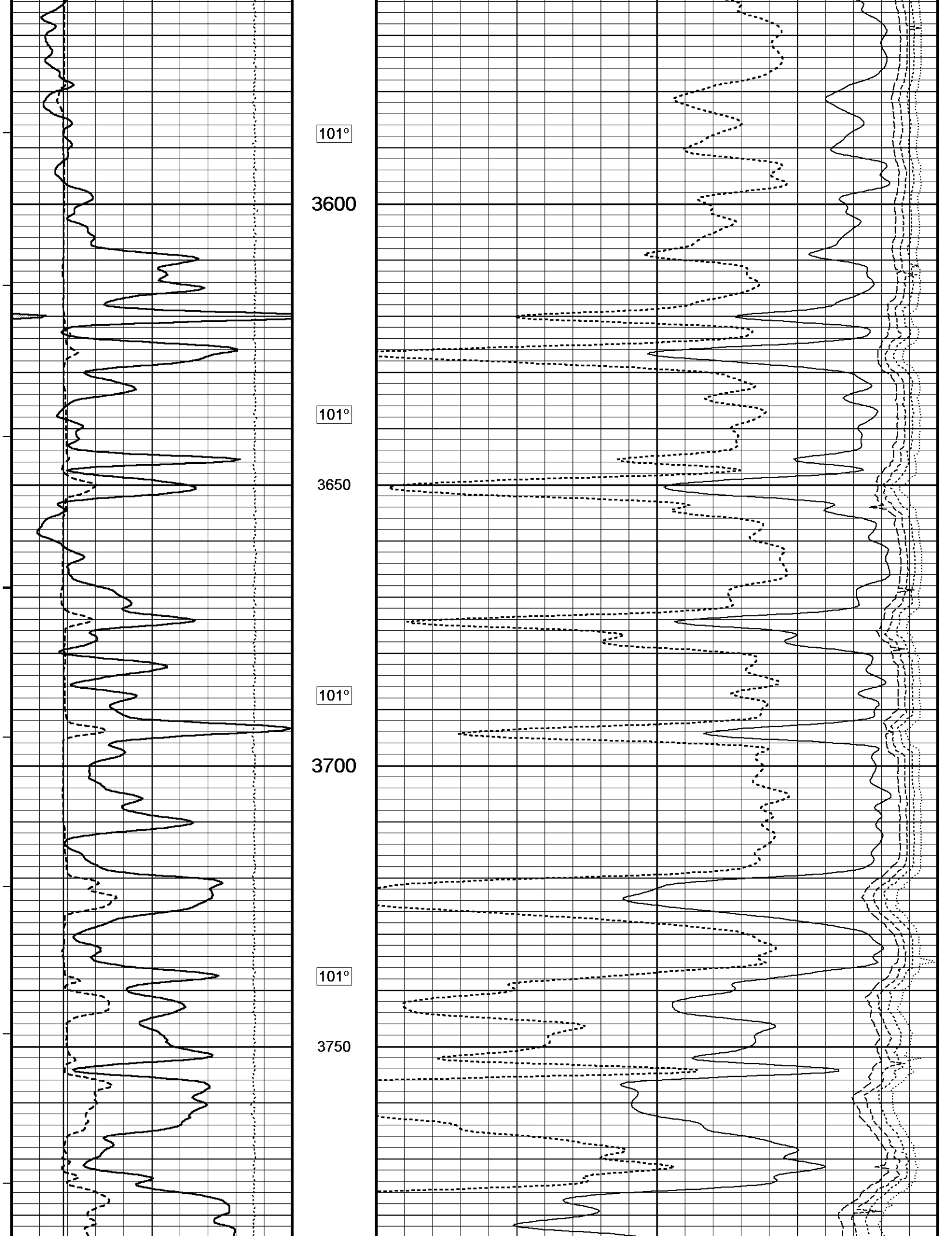

93°
2500
93°
2550
94°
2600
94°
2650

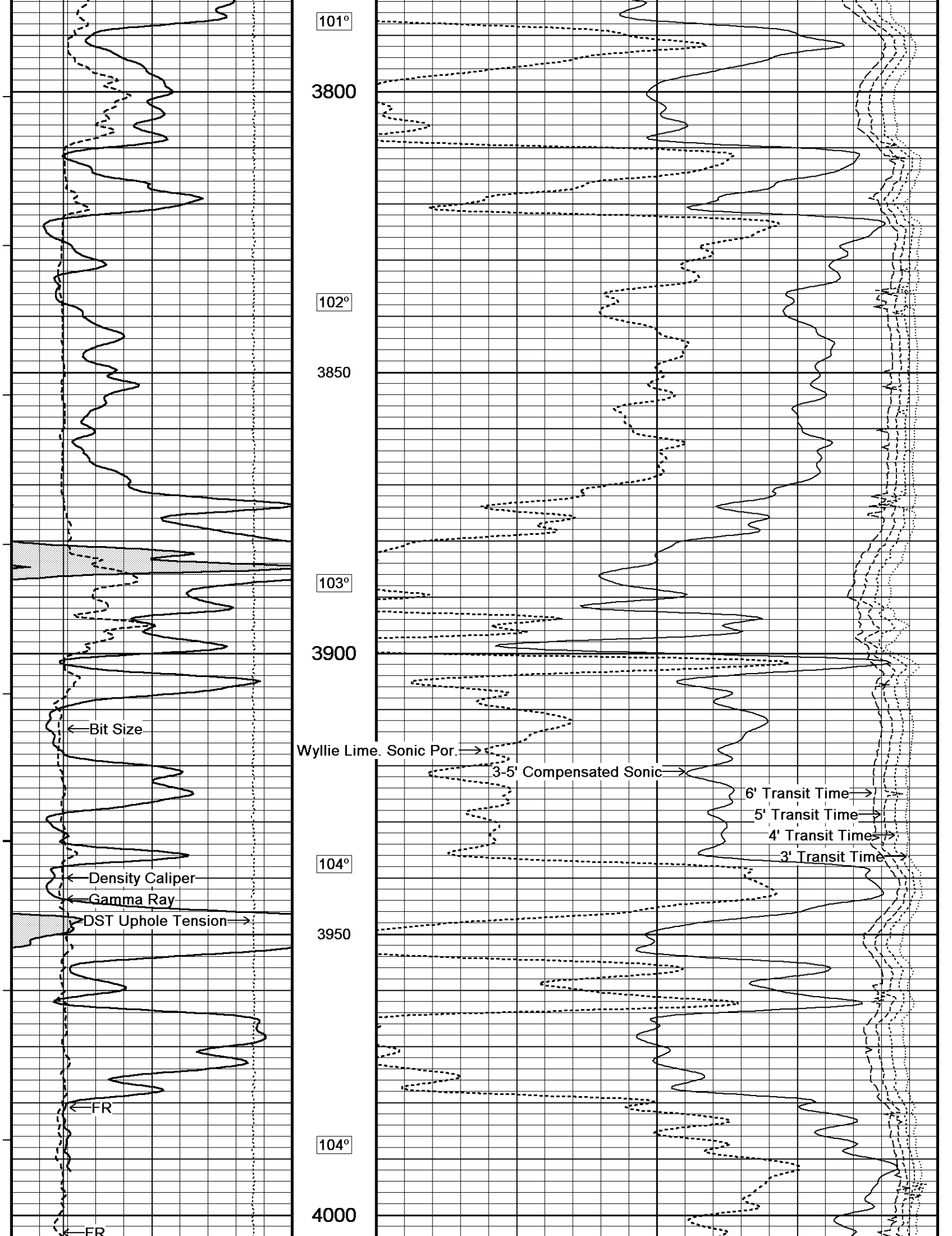

94°
2700
Bit Size
Wyllie Lime. Sonic Por.
94°
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
2750
Density Caliper
Gamma Ray
DST Uphole Tension
95°
2800
95°
2850
95°
2900

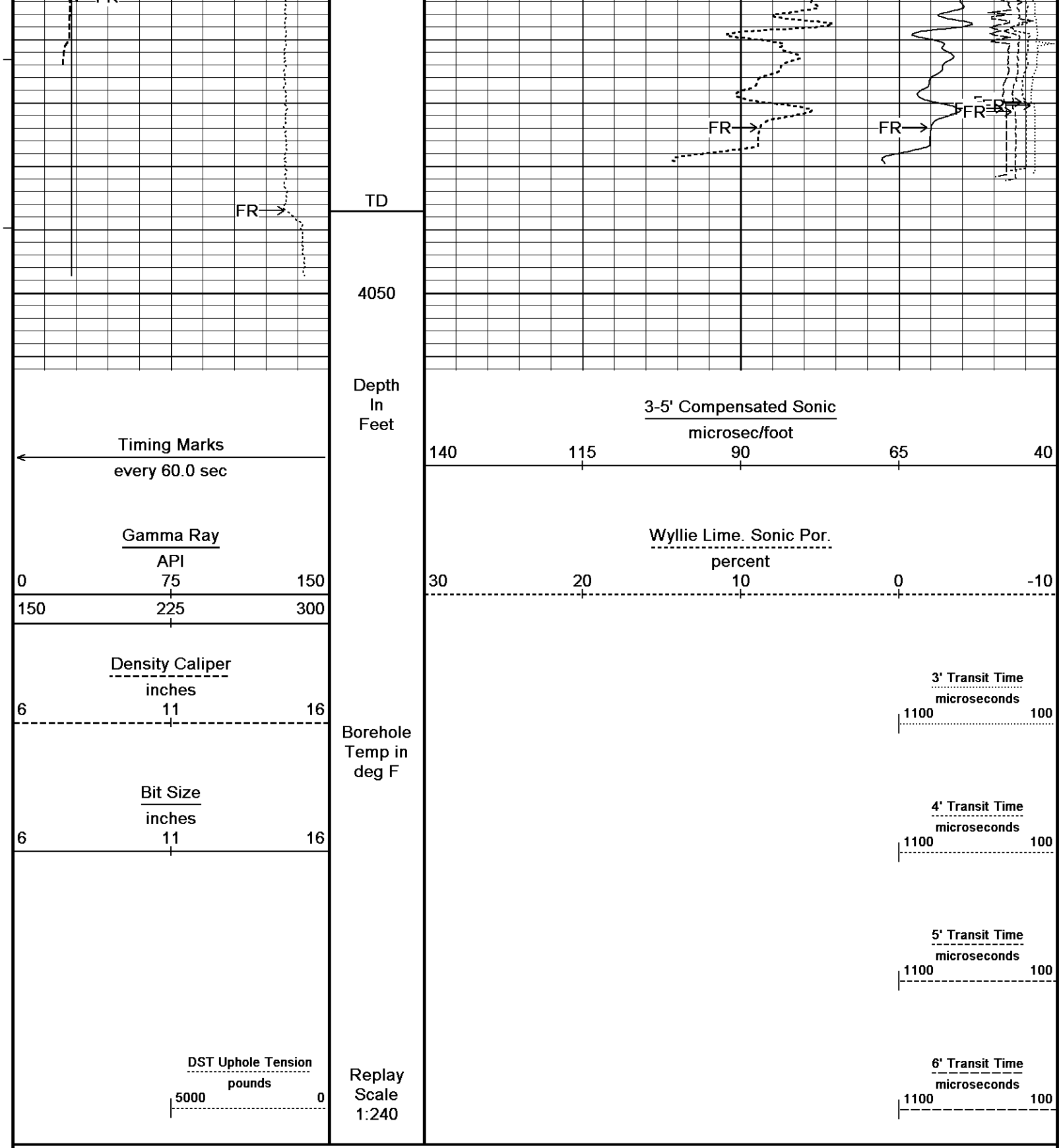

95°
2950
96°
3000
96°
3050
96°
3100


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
97°
3150
98°
3200
98°
3250
98°
3300
99°


3350
99°
3400
99°
3450
100°
3500
101°
3550
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


101°
3600
101°
3650
101°
3700
101°
3750


101°
3800
102°
3850
103°
3900
104°
3950
104°
4000
Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
FR
FR
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 14-MAR-2016 18:12

Filename: C:\Minimus 15.03.5939\Logs\Daystar Deutscher B #1-2\Daystar Deutscher B #1-2_002.dta — Recorded on 14-MAR-2016 15:01

System Versions: Logged with 15.03.5939 Plotted with 15.03.5939

↑ 5 INCH MAIN ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 14-MAR-2016 18:12

Filename: C:\Minimus 15.03.5939\Logs\Daystar Deutscher B #1-2\Daystar Deutscher B #1-2_001.dta — Recorded on 14-MAR-2016 14:33

System Versions: Logged with 15.03.5939 Plotted with 15.03.5939

Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

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

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

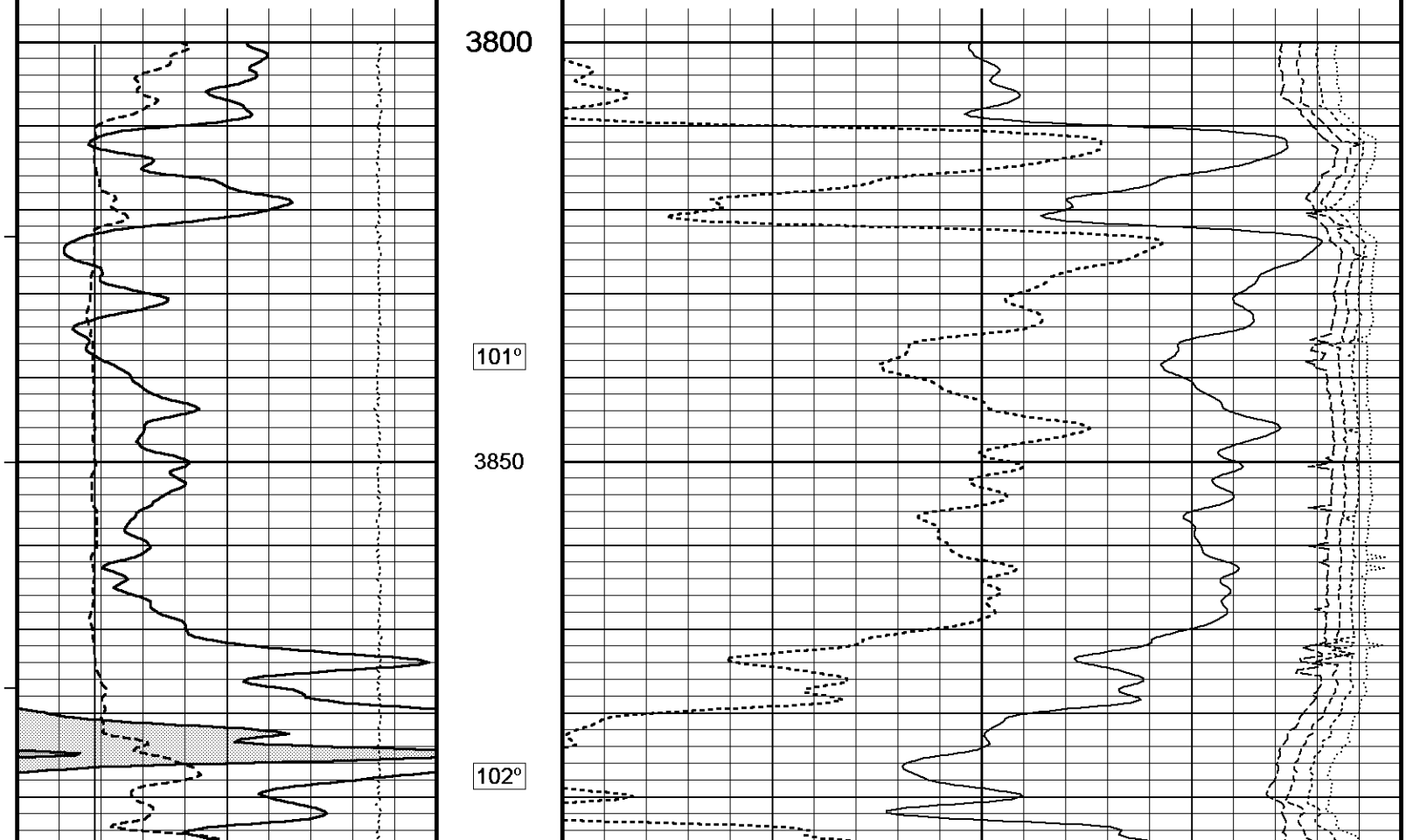
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

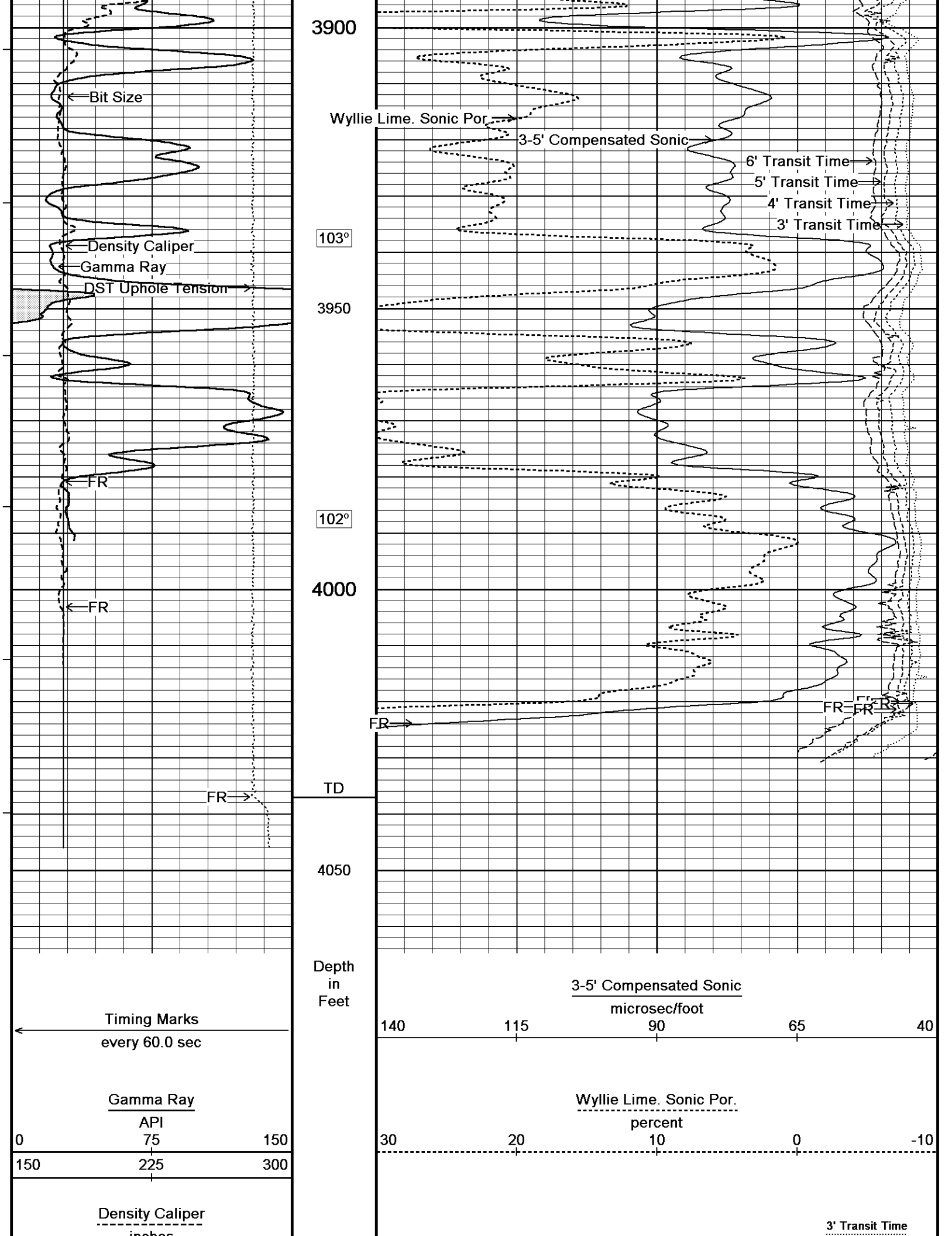
3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100




3900
Bit Size
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
103°
Density Caliper
Gamma Ray
DST Uphole Tension
3950
FR
102°
4000
FR
FR
FR
FR
FR
TD
FR
4050
Depth
in
Feet
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Density Caliper
inches
3-5' Compensated Sonic
microsec/foot
140
115
90
65
40
Wyllie Lime. Sonic Por.
percent
30
20
10
0
-10
3' Transit Time

inches
6 11 16

Borehole Temp in deg F

microseconds
1100 100

Bit Size
inches
6 11 16

4' Transit Time
microseconds
1100 100

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 14-MAR-2016 18:12

Filename: C:\Minimus 15.03.5939\Logs\Daystar Deutscher B #1-2\Daystar Deutscher B #1-2_001.dta — Recorded on 14-MAR-2016 14:33

System Versions: Logged with 15.03.5939 Plotted with 15.03.5939

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 15.03.5939\Logs\Daystar Deutscher B #1-2\Daystar Deutscher B #1-2_001.dta

General Constants All 000

Last Edited on 14-MAR-2016,14:09

General Parameters		
Mud Resistivity	0.520	ohm-metres
Mud Resistivity Temperature	75.000	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	None	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Deep Induction	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 14-MAR-2016 13:45

Reading No	Measured	Calibrated (lbs)
1	9937.87	0.00
2	10554.14	500.00

Gamma Calibration MCG-C 123

Field Calibration on 14-MAR-2016 08:52

	Measured	Calibrated (API)
Background	73	51
Calibrator (Gross)	726	507
Calibrator (Net)	653	456

Gamma Calibration Tolerances MCG-C 123

Ratio 1.431 (1.40 – 1.475 – 1.55) Counts/API

Gamma Constants MCG-C 123

Last Edited on 14-MAR-2016,13:18

Gamma Calibrator Number	MCGGRCC141	
GRC-M Calibrator Jig in Use?	NO	
Inactive Background Jig in Use?	NO	
Mud Density	1.09	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Potassium Equivalence	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-C 123

Field Calibration on 31-OCT-2015,17:05

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

High Resolution Temperature Constants MCG-C 123

Last Edited on 22-SEP-2015,11:43

Pre-filter Length	11

SP Calibration MCG-C 123

Field Calibration on 02-NOV-2015 16:50

	Measured	Calibrated (mV)
Reference 1	100.3	100.0
Reference 2	-100.1	-99.9

Micro Normal and Micro Inverse Calibration MMR-C.A 247

Base Calibration on 28-JAN-2016 15:04
Field Check on 14-MAR-2016 08:38

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	10.2	49.9	5.1	25.6
Micro Inverse	10.0	49.5	3.4	16.9

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	93.5	93.5
Micro Inverse	62.2	62.2

Micro Normal & Micro Inverse Calibration Tolerance MMR-C.A 247

Micro Normal Res. 1	10.2	-5% 10.0 +5%	ohm	Micro Normal Res. 2	49.9	-5% 50.0 +5%	ohm
Micro Inverse Res. 1	10.0	-5% 10.0 +5%	ohm	Micro Inverse Res. 2	49.5	-5% 50.0 +5%	ohm
Micro Normal Base Check	93.5	-2% 93.13 +2%	ohm-m				
Micro Inverse Base Check	62.2	-2% 62.10 +2%	ohm-m				
Micro Normal Field Check	93.5	-2% 93.5 +2%	ohm-m				
Micro Inverse Field Check	62.2	-2% 62.2 +2%	ohm-m				

Micro Normal and Micro Inverse Constants MMR-C.A 247

Last Edited on 20-OCT-2015,12:33

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	0.0000	inches

Caliper Calibration MMR-C.A 247

Base Calibration on 28-JAN-2016 14:54
Field Calibration on 14-MAR-2016 08:37

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14598	5.98
2	17942	7.97
3	21198	9.86
4	25146	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

	Measured Caliper (in)	Actual Caliper (in)

Measured Caliper (in)	Actual Caliper (in)
7.97	7.97

Caliper Calibration Tolerances MMR-C.A 247

Short Arm Field Cal.	7.97	7.77 / 7.97 / 8.17	in

Micro-Resistivity Caliper Constants MMR-C.A 247

Last Edited on

Sonde Configuration Resistivity Mode

Neutron Calibration MDN-A.B 66

Base Calibration on 12-FEB-2016 22:05
Field Check on 14-MAR-2016 08:58

Base Calibration

	Measured Near	Measured Far	Calibrated (cps) Near	Calibrated (cps) Far
	3097	96	3714	110
Ratio	32.423		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	2076	2984
Ratio	0.696	

Field Check

	Calibrated (cps)	
	2115	3075
Ratio	0.688	

Neutron Calibration Tolerances MDN-A.B 66

Ratio	32.423	-5% / 33 / +5%	
Base Check	0.696	0.65 / 0.7 / 0.75	
Field Check	0.688	0.676 / 0.696 / 0.716	

Neutron Constants MDN-A.B 66

Last Edited on 14-MAR-2016,13:18

Neutron Source Id	P0204NN	
Neutron Jig Number	NJ5736	
Air Hole Processing	Legacy	
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	None	
Formation Pressure	N/A	kpsi
Temperature Source	Constant Value	
Temperature	68.00	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-B.J 352

Base Calibration on 09-NOV-2015 11:10
Field Check on 14-MAR-2016 08:30

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.4	126.8
Base Check		281.2
Field Check		281.3

FE Calibration Tolerances MFE-B.J 352

Reference 2	964.4	-3% / 980.0 / +3%	ohm

Base Check	281.2	-2% 277.0 +2%	ohm-m
Field Check	281.3	-2% 281.2 +2%	ohm-m

FE Constants MFE-B.J 352

Last Edited on 14-MAR-2016,13:17

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Borehole Correction Constants		
Sonde Position	0.5	inches
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
Rm Source	Global Value: Temperature Corrected	
Temp. for Rm Corr.	MCG External Temperature	

Sonic Constants MSS-A.A 55

Last Edited on 14-MAR-2016,13:17

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

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

Induction Calibration MAI-A.A 111

Base Calibration on 05-AUG-2014,09:34
Field Check on 14-MAR-2016 08:29

Base Calibration

Test Loop Calibration

Channel	Measured Low	Measured High	Calibrated (mmho/m) Low	Calibrated (mmho/m) High
1	17.6	473.6	9.3	966.2
2	6.4	385.9	7.6	821.4
3	3.2	264.0	5.2	566.0
4	2.1	135.5	2.6	279.2

Array Temperature 23.0 Deg F

Test Loop Calibration Verified 09-DEC-2015 11:03

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1	12.1	3873.0	11.8	3871.7
2	29.8	3528.1	29.8	3527.3
3	29.1	3021.3	29.1	3020.7
4	19.1	2058.5	19.2	2058.1
Deep	17.7	1962.1	17.7	1961.6
Medium	43.1	3976.4	43.2	3975.7
Shallow	44.4	5232.7	44.4	5231.5

Array Temperature 65.8 59.4 Deg F

Induction Calibration Tolerances MAI-A.A 111

Low Conductivity 1	17.6	13.0 / 17.0 / 21.0	mmho/m	High Conductivity 1	473.6	430.0 / 475.0 / 520.0	mmho/m
Low Conductivity 2	6.4	4.5 / 6.0 / 7.5	mmho/m	High Conductivity 2	385.9	345.0 / 385.0 / 425.0	mmho/m
Low Conductivity 3	3.2	1.0 / 3.5 / 6.0	mmho/m	High Conductivity 3	264.0	240.0 / 260.0 / 280.0	mmho/m
Low Conductivity 4	2.1	0.0 / 2.0 / 4.0	mmho/m	High Conductivity 4	135.5	120.0 / 135.0 / 150.0	mmho/m
Background Vx 1	0.0	-110.0 / -32.5 / 45.0	mmho/m	Phase Check Loop 1	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 2	0.0	-35.0 / 20.0 / 75.0	mmho/m	Phase Check Loop 2	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 3	0.0	-60.0 / 2.5 / 65.0	mmho/m	Phase Check Loop 3	0.0	-2.0 / 0.0 / 2.0	%
Background Vx 4	0.0	-50.0 / -17.5 / 15.0	mmho/m	Phase Check Loop 4	0.0	-2.0 / 0.0 / 2.0	%

Induction Constants MAI-A.A 111

Last Edited on 14-MAR-2016,13:17

Induction Model	RtAP-WBM	
Borehole Correction Constants		
Tool Centred	No	
Hole Size Source	Density Caliper	
Hole Size Constant Value	N/A	inches
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
Rm Source	Global Value: Temperature Corrected	
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
Symmetrised Receiver Gains		
Receiver 1	1.00	
Receiver 2	1.00	
Receiver 3	1.00	
Receiver 4	1.00	
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 111

Field Calibration on 24-NOV-2014,10:23

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

High Resolution Temperature Constants MAI-A.A 111

Last Edited on 26-JUN-2014,15:06

Pre-filter Length 11

Photo Density Calibration MPD-B 104

Base Calibration on 12-FEB-2016 21:25
Field Check on 14-MAR-2016 08:36

Density Calibration

Base Calibration	Measured Near	Measured Far	Calibrated (sdu) Near	Calibrated (sdu) Far
Background	1155	1342		
Reference 1	49717	23901	59556	30836
Reference 2	20125	2432	24941	2541
Field Check at Base	1154.8	1342.5		
Field Check	1156.1	1341.1		

PE Calibration

Base Calibration	WS	WH	Ratio	Calibrated Ratio
Background	211	1032		
Reference 1	20971	49542	0.428	0.371
Reference 2	5830	19993	0.296	0.272
Field Check at Base	211.2	1031.6		
Field Check	213.5	1033.1		

Photo Density Calibration Tolerances MPD-B 104

Near Density Ratio	2.56	-5% 2.52 +5%	Far Density Ratio	20.70	-5% 21.00 +5%
PE Calibration	0.123	0.089 0.110 0.131			
Near Den. Field Check	1156.1	-3% 1154.8 +3%	Far Den. Field Check	1341.1	-3% 1342.5 +3%
PE WS Field Check	213.5	-6% 211.2 +6%	PE WH Field Check	1033.1	-6% 1031.6 +6%

Density Constants MPD-B 104

Last Edited on 14-MAR-2016,13:18

Density Source Id	P50557B	
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	1.09	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 (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	0.00

Caliper Calibration MPD-B 104

Base Calibration on 12-FEB-2016 20:54
Field Calibration on 14-MAR-2016 08:32

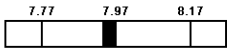
Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13189	3.99
2	22005	5.98
3	30656	7.97
4	38848	9.86
5	47902	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.93	7.97

Caliper Calibration Tolerances MPD-B 104

Short Arm Field Cal. 7.93 

in

DOWNHOLE EQUIPMENT

C:\Minimus 15.03.5939\Logs\Daystar Deutscher B #1-2\Daystar Deutscher B #1-2_001.dta

Cablehead, 11 pin
CBH-CA 155 LG: 2.40 ft WT: 24.3 lb OD: 2.244 in

Compact Comms Gamma
MCG-C 123 LG: 8.70 ft WT: 63.9 lb OD: 2.244 in

Compact Micro-Resistivity
MMR-C.A 247 LG: 8.59 ft WT: 81.6 lb OD: 4.882 in

Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-B 104 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

56.02 ft GRGC - MCG Gamma Ray
53.11 ft CGXT - MCG External Temperature
46.76 ft MBTC - MMR Caliper
45.76 ft MINV - MMR MicroLog Inverse
45.76 ft MNRL - MMR MicroLog Normal
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

Compact Focussed Electric
MFE-B.J 352 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Sonic
MSS-A.A 55 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 63.70 ft Weight: 480.6 lb

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
16.96 ft	TR11 - 4' Transit Time
16.46 ft	TR21 - 3' Transit Time
15.95 ft	TR12 - 6' Transit Time
15.46 ft	TR22 - 5' Transit Time
12.96 ft	SPRL - Wyllie Lime. Sonic Por.
12.96 ft	DT35 - 3-5' Compensated Sonic
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	R60O - Array Ind. One Res 60
3.34 ft	CTAO - Array Ind. One Cond Ct
3.34 ft	RTAO - Array Ind. One Res Rt
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	DAYSTAR PETROLEUM, INC.
WELL	DEUTSCHER B #1-2
FIELD	WILDCAT
PROVINCE/COUNTY	TREGO
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2131.00	feet	First Reading	4024.00	feet
Elevation Drill Floor	2129.00	feet	Depth Driller	4040.00	feet
Elevation Ground Level	2123.00	feet	Depth Logger	4037.00	feet

Weatherford®

COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME