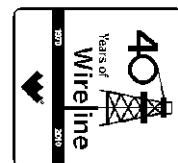




Weatherford

COMPENSATED SONIC

COMPANY KNIGHTON OIL
WELL KACHELMAN #3
FIELD ALBANO WEST
PROVINCE/COUNTY STAFFORD
COUNTRY/STATE KANSAS
LOCATION 970' FSL & 1030' FEL
30' SW NW SE SE



SEC	TWP	RGE	Other Services	
11	25S	14W	MAI/MFE	MML
API Number	15-185-23661	MPD/MDN		
Permit Number				
Permanent Datum G.L., Elevation 1959 feet				
Log Measured From K.B. @ 6 FEET above Permanent Datum				
Drilling Measured From K.B.				
Date	18-FEB-2011			
Run Number	ONE			
Depth Driller	4325.00	feet		
Depth Logger	4328.00	feet		
First Reading	4315.00	feet		
Last Reading	255.00	feet		
Casing Driller	260.00	feet		
Casing Logger	260.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.00 lb/USg	50.00 CP		
PH / Fluid Loss	8.00	12.80 ml/30Min		
Sample Source	FLOWLINE			
Rm @ Measured Temp	0.40 @ 50.0	ohm-m		
Rmf @ Measured Temp	0.32 @ 50.0	ohm-m		
Rmc @ Measured Temp	0.48 @ 50.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.19 @105.0	ohm-m		
Time Since Circulation	6 HOURS			
Max Recorded Temp	105.00	deg F		
Equipment Name	COMPACT			
Equipment / Base	13057	LIB		
Recorded By	R. HOFFMAN			
Witnessed By	DAVE MONTAGUE			
S O/JOB #	3529081			

Elevations:
KB 1965.00
DF 1963.00
GL 1959.00

BOREHOLE RECORD

Last Edited: 22-FEB-2011 19:38

Bit Size inches	Depth From feet	Depth To feet
7.875	260.00	4328.00

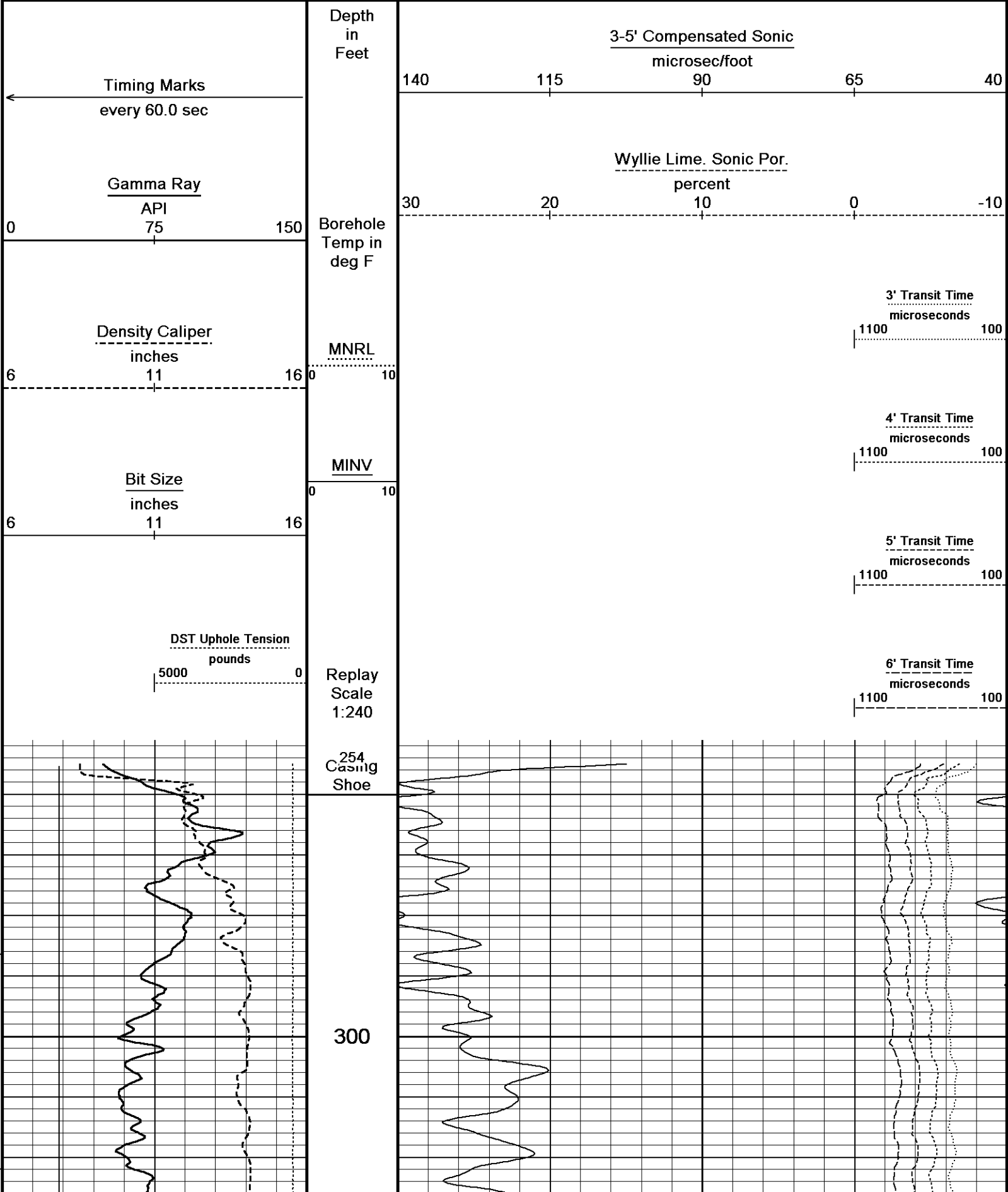
CASING RECORD

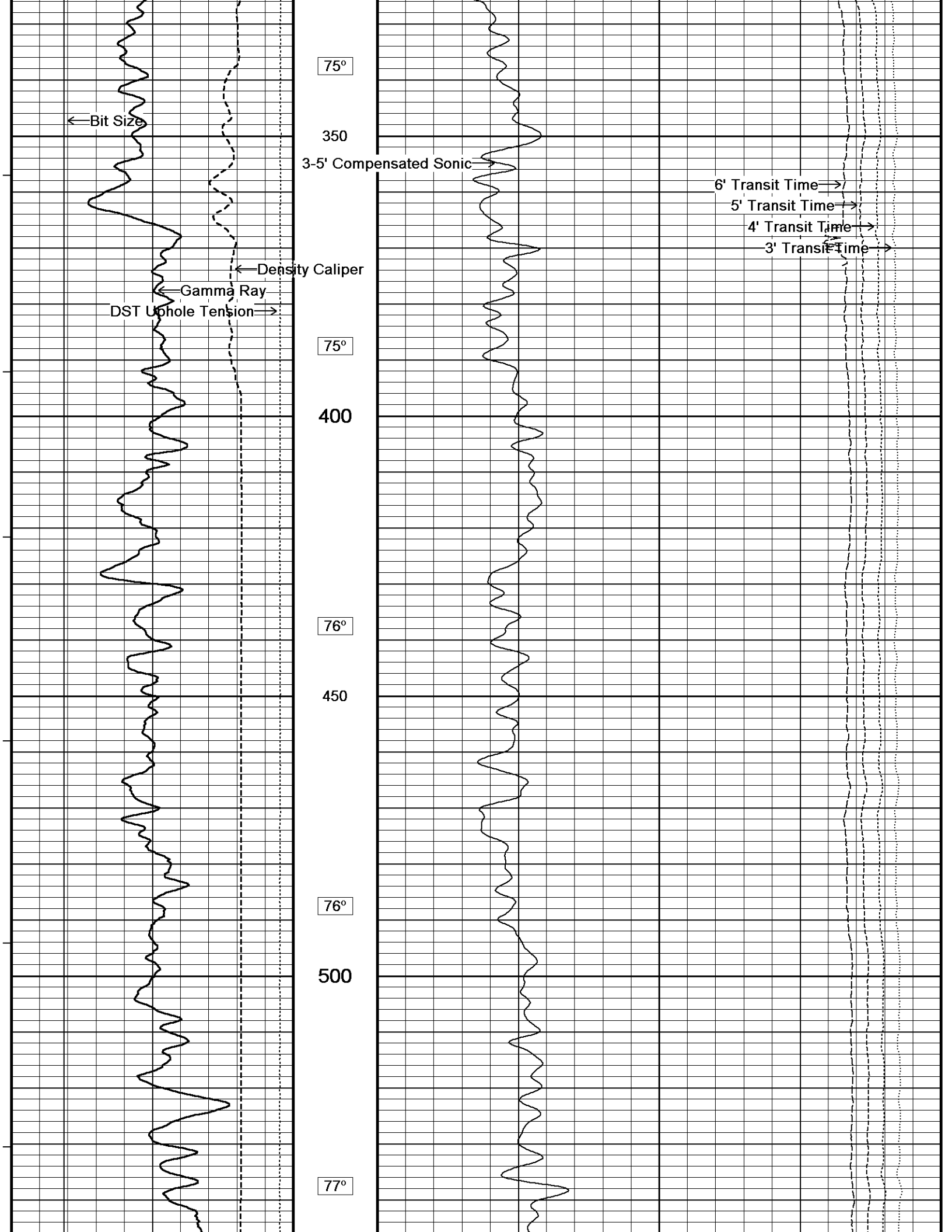
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	260.00	24.00

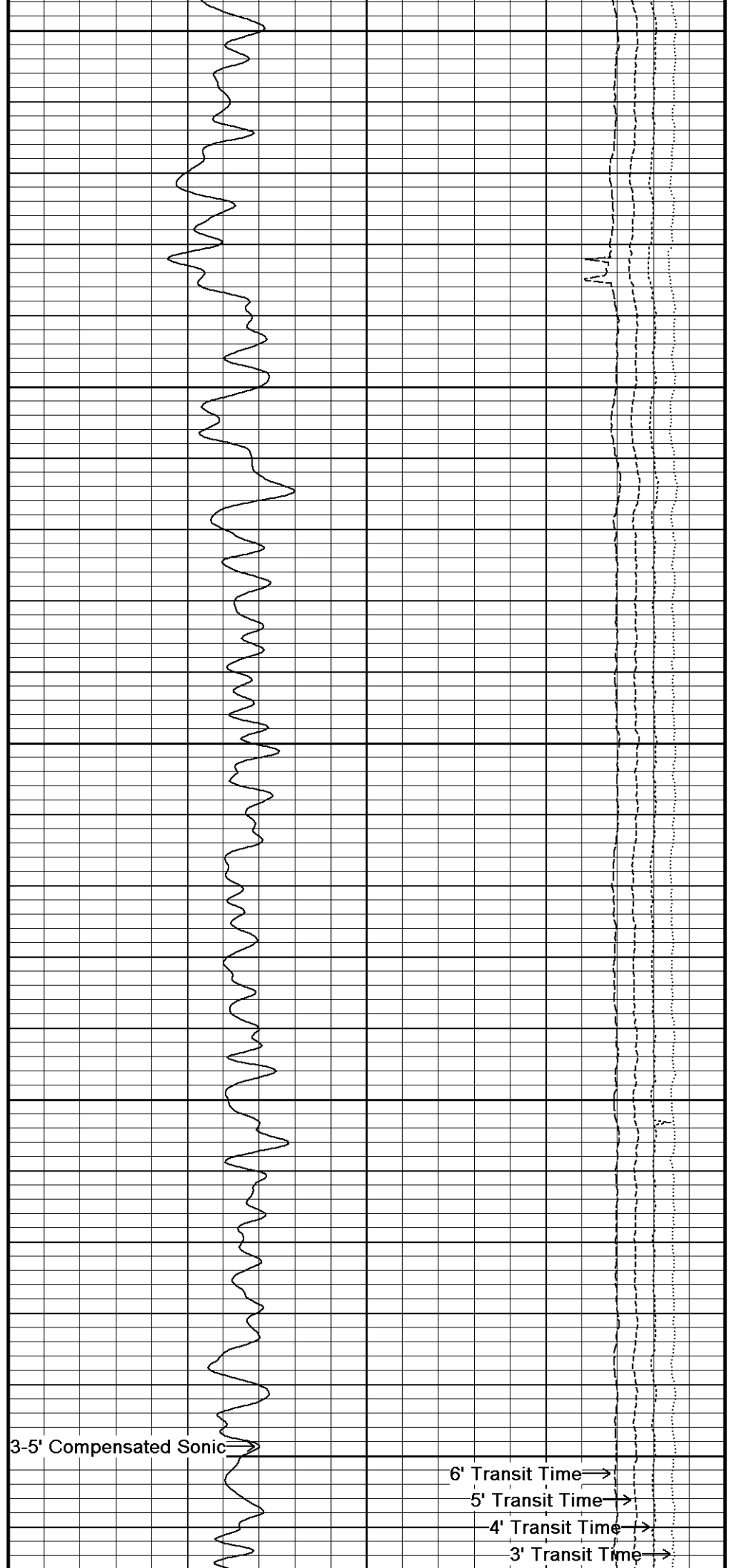
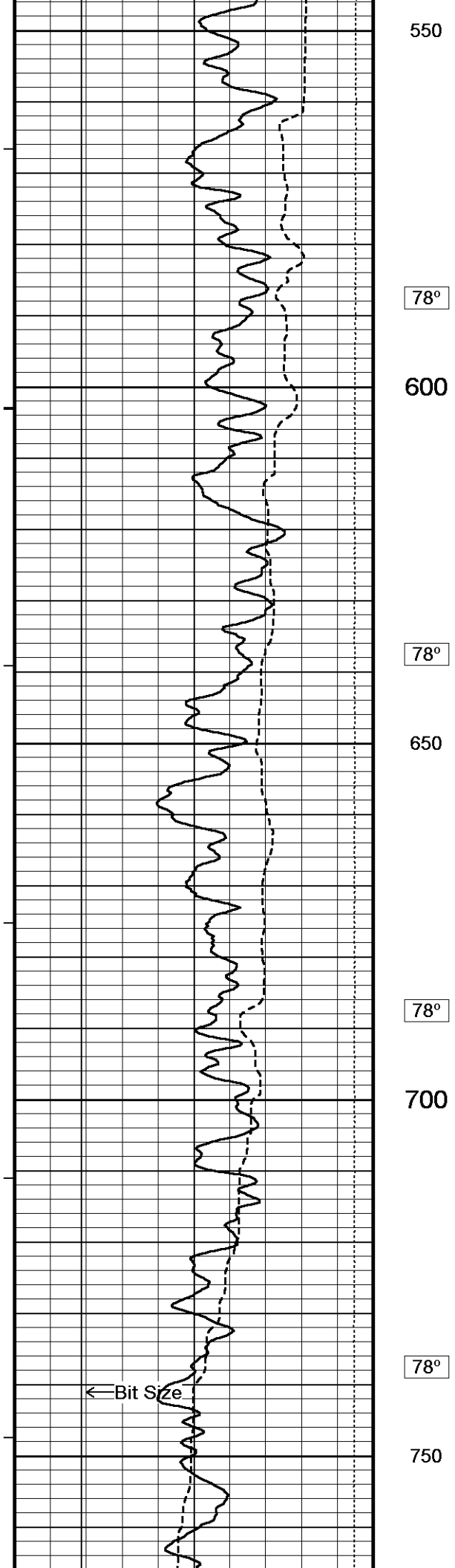
REMARKS

Tools Used: MPD, MCG, MDN, MFE, MAI, MSS, MML
Hardware: MPD: 4 inch profile plate used. MAI, MFE, MSS: 0.5 Inch standoffs used. MDN: Dual Bowspring used.
2.71 G/CC Limestone density matrix used to calculate porosity.
Sonic porosity calculated using 47.5 usec/ft Limestone scale.
Borehole rugosity, tight pulls, and washouts will affect data quality.
Puled tight at 4160 on repeat pass and 3714 on main pass.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing = 418 cu. ft.
Service order #3529081
Rig: Southwind Drilling #4
Engineer: R. Hoffman, A. Sill
Operator(s): B. Reeves

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.







Density Caliper
← Gamma Ray
DST Uphole Tension →

79°

800

79°

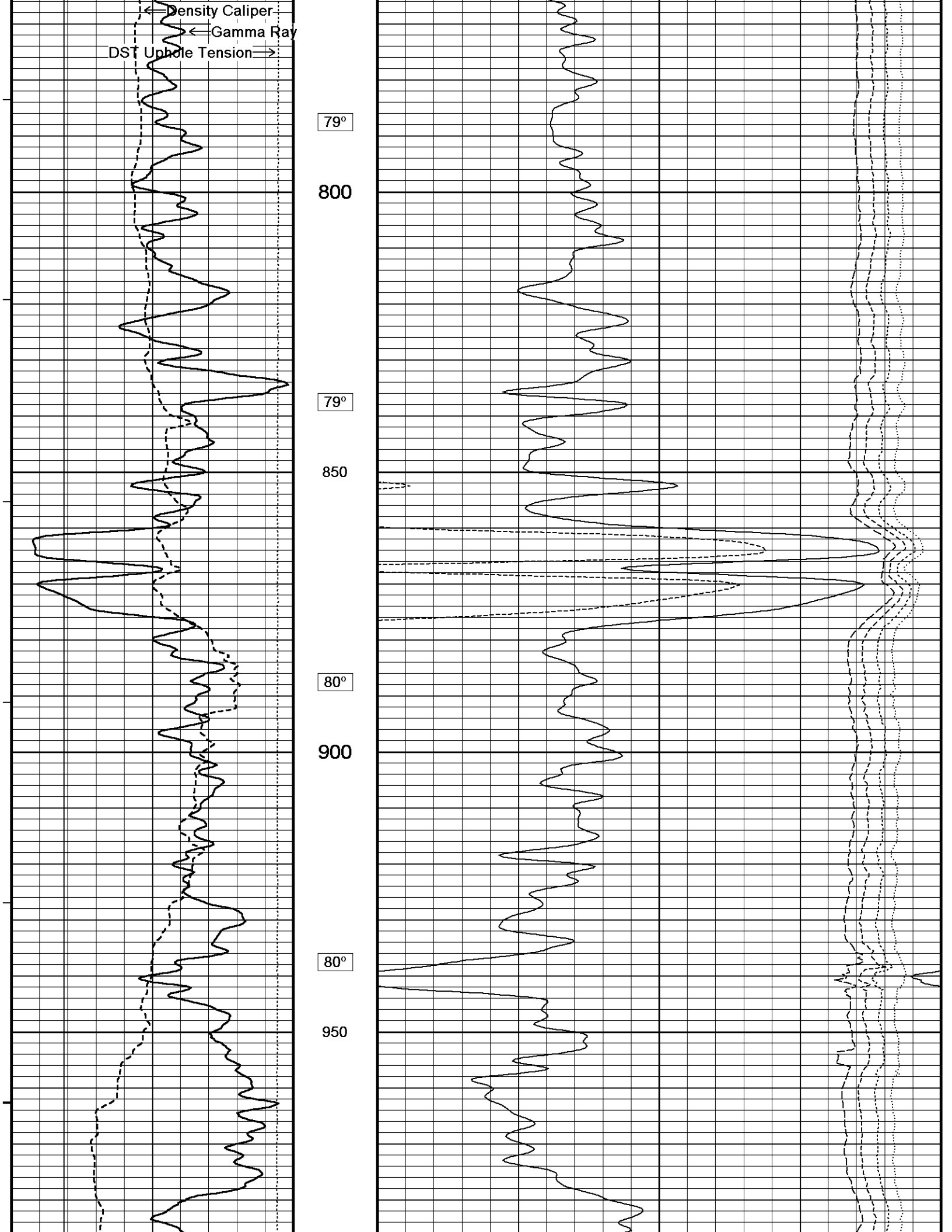
850

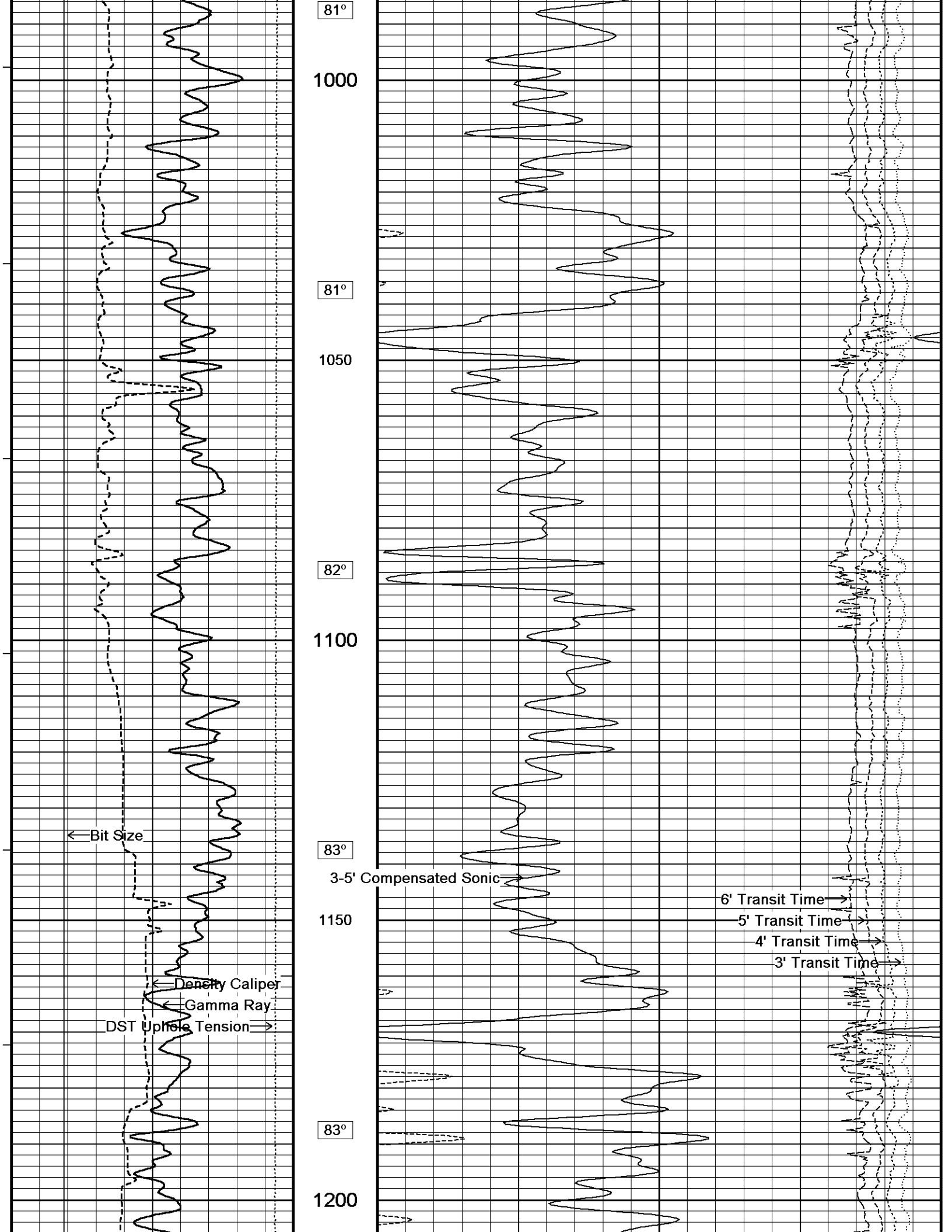
80°

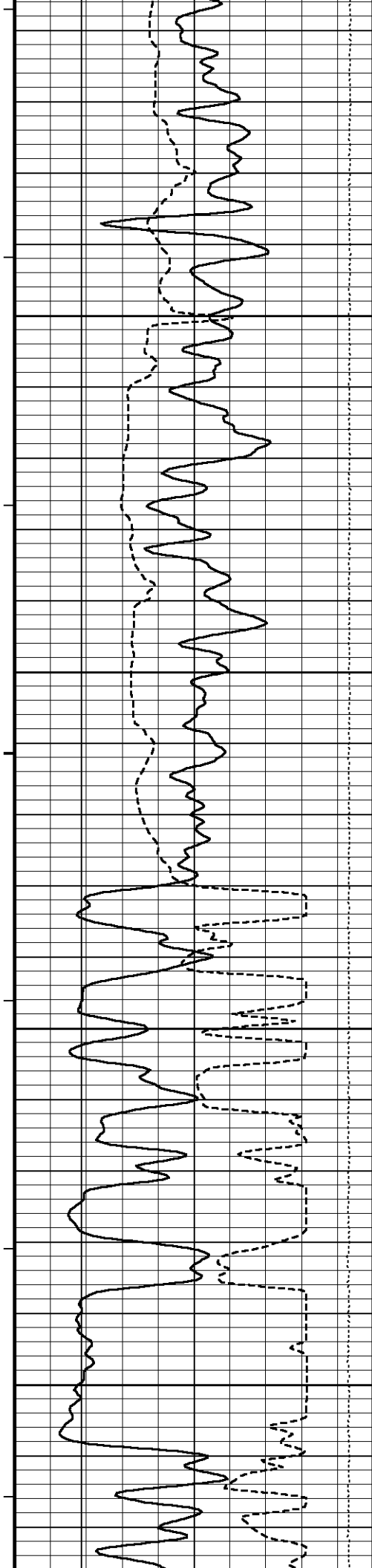
900

80°

950







84°

1250

84°

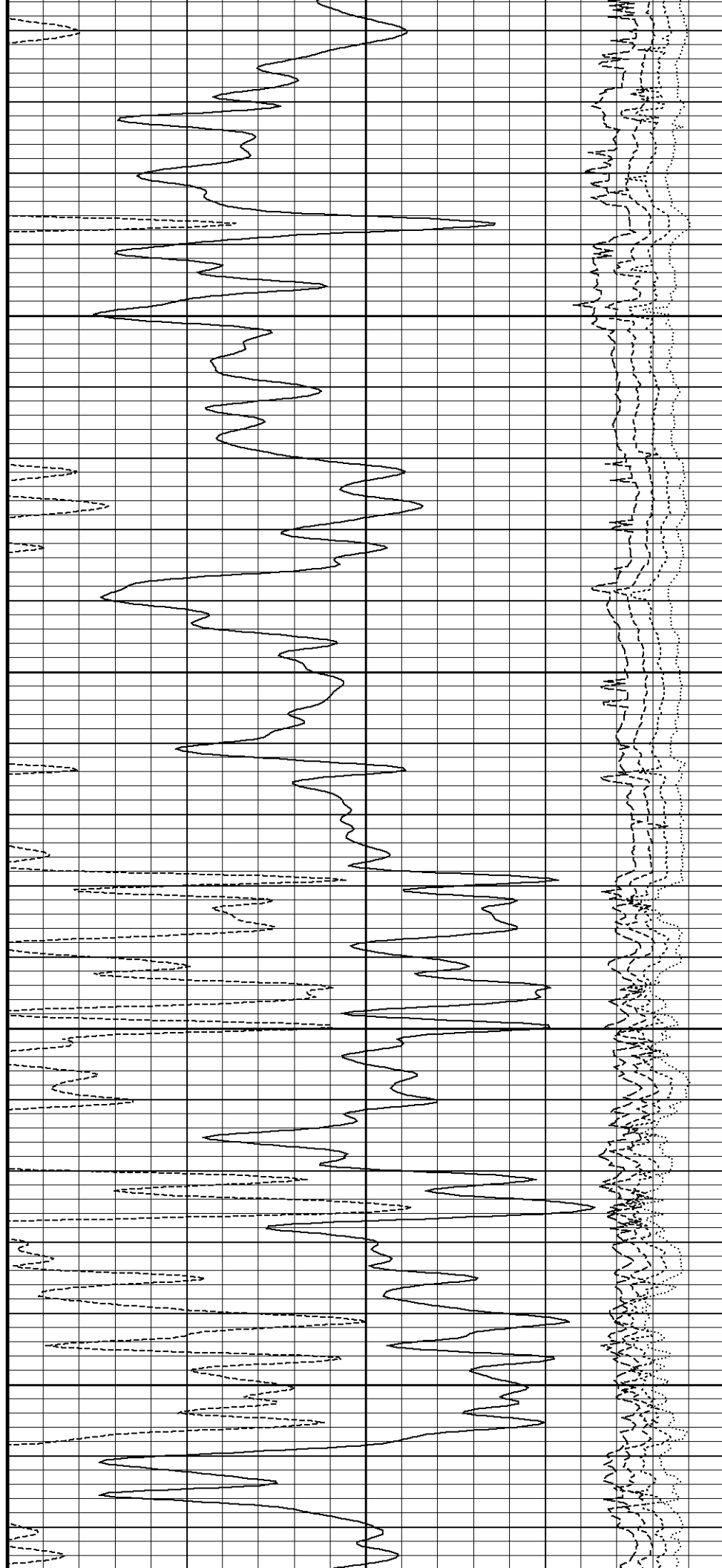
1300

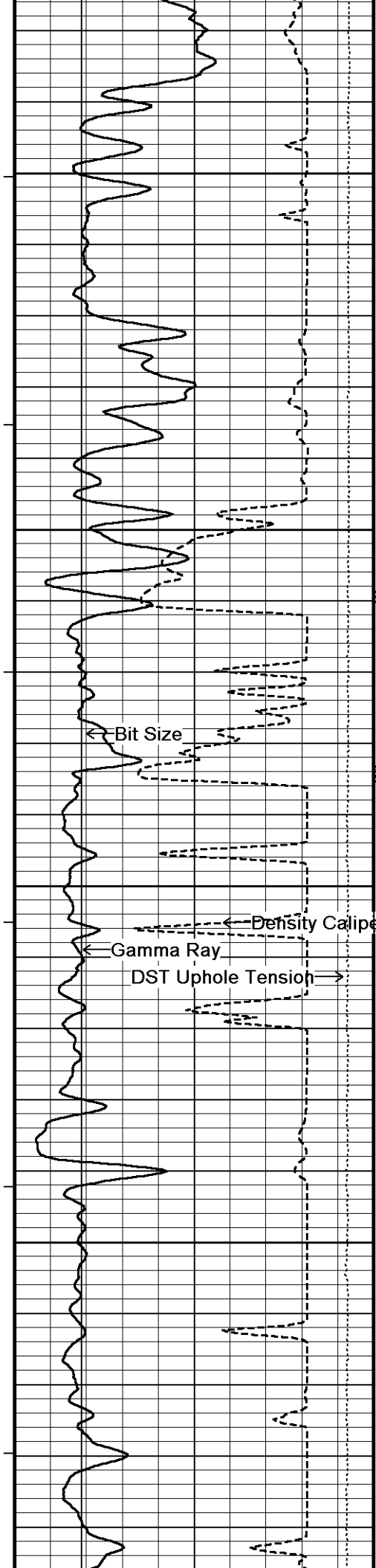
84°

1350

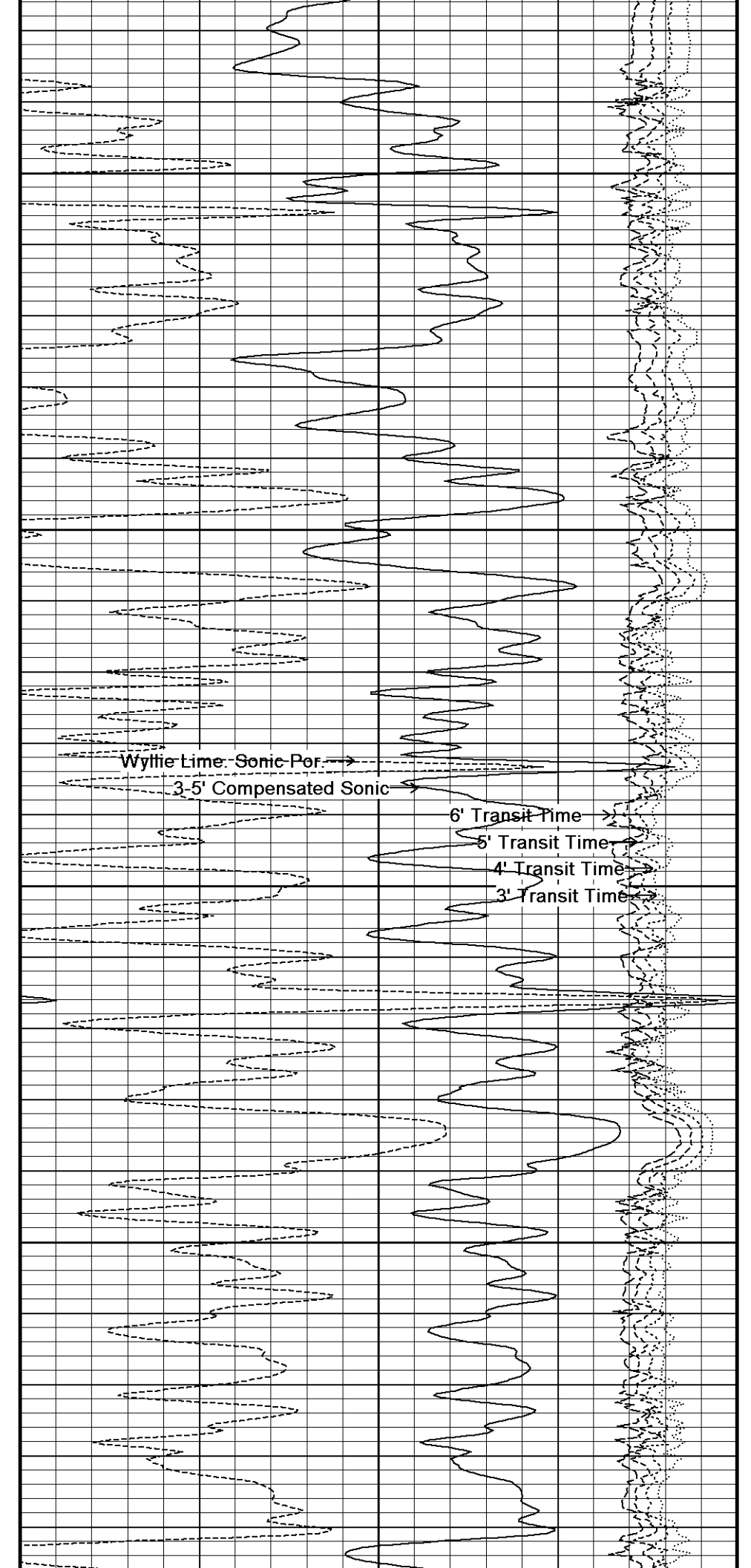
85°

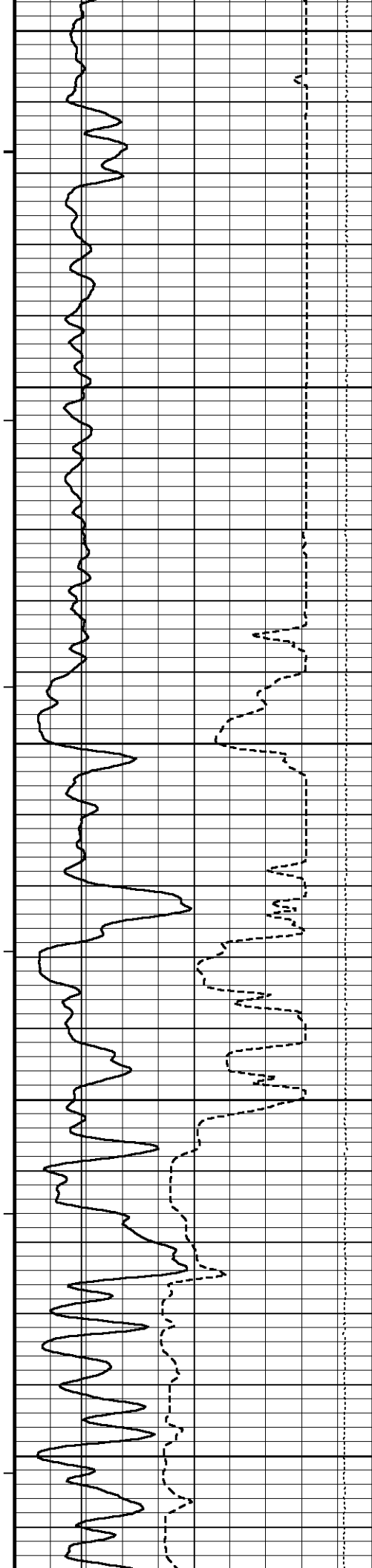
1400





85°
1450
85°
1500
86°
1550
86°
1600
86°





1650

87°

1700

87°

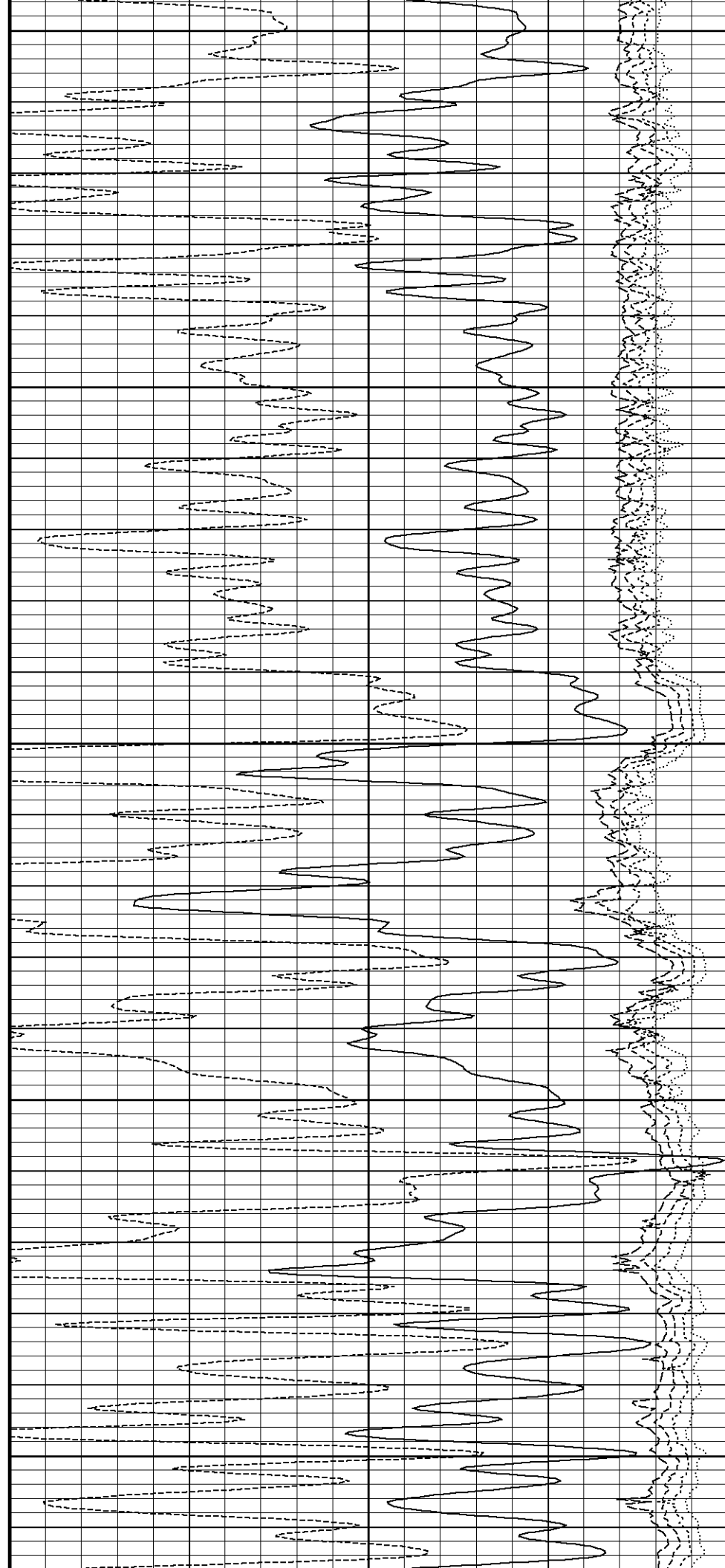
1750

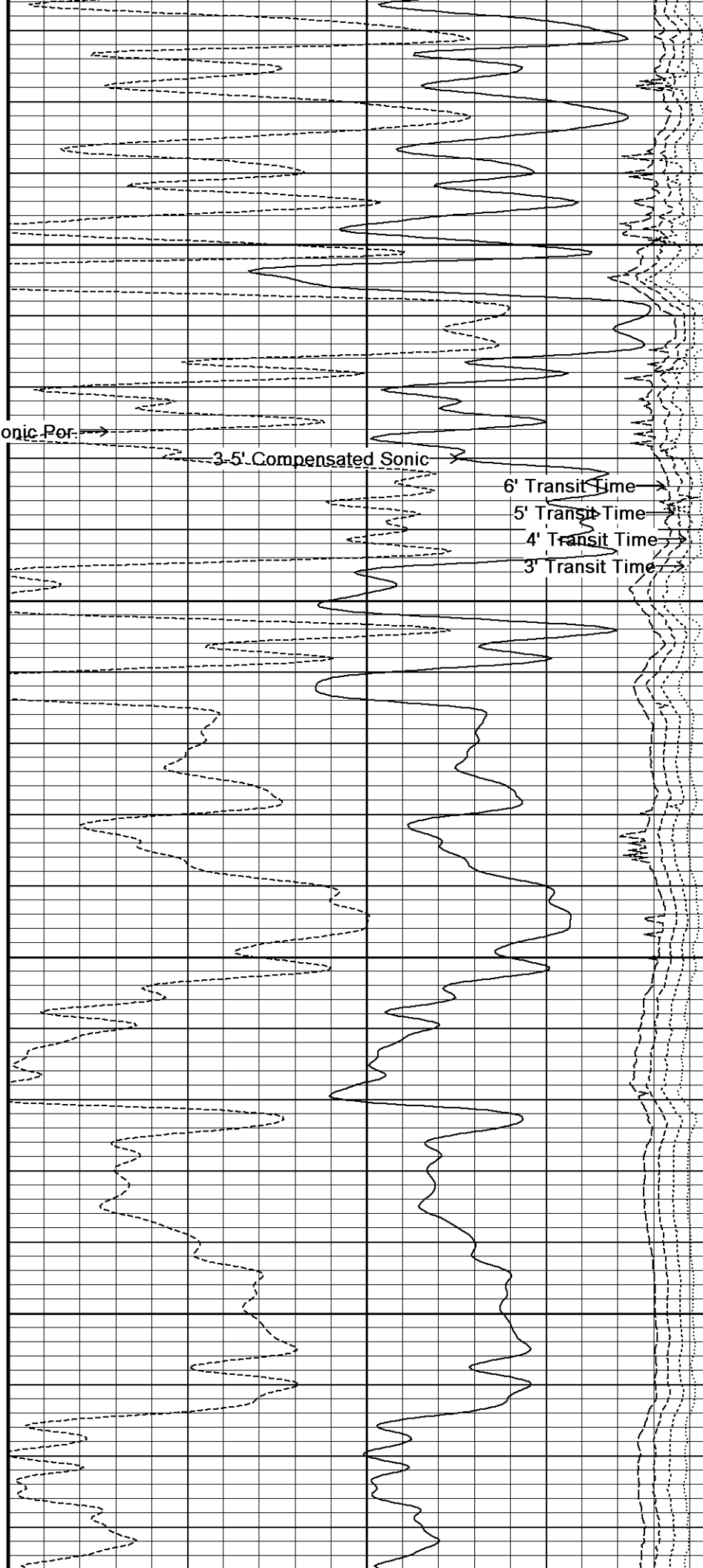
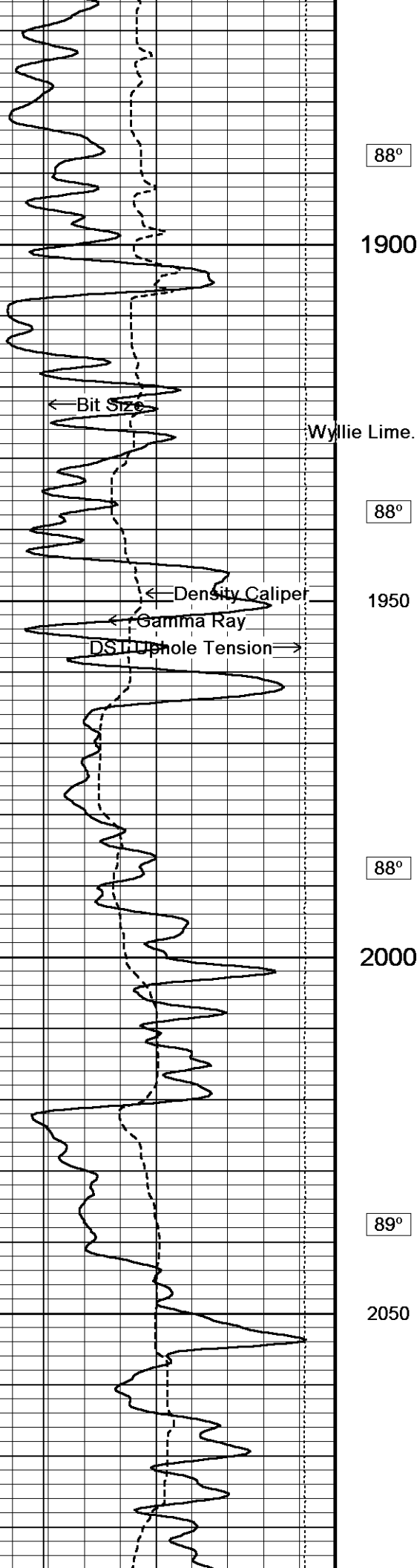
87°

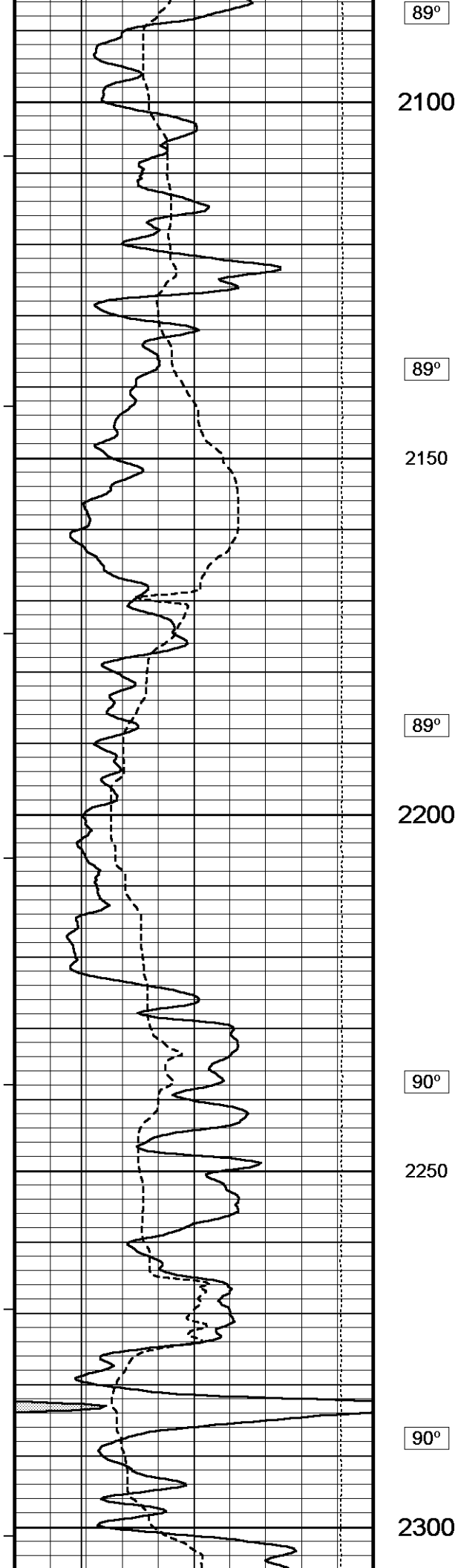
1800

87°

1850







89°

2100

89°

2150

89°

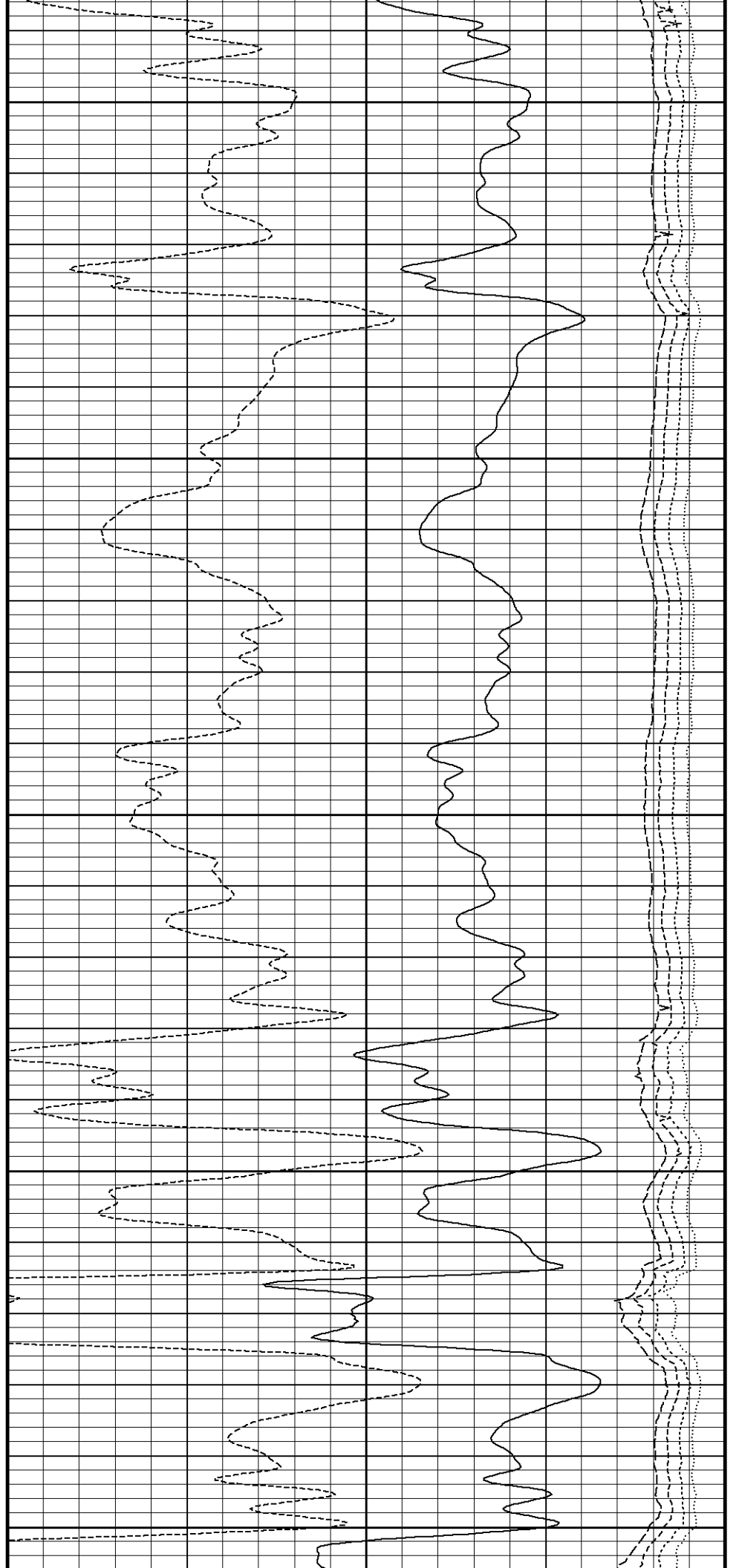
2200

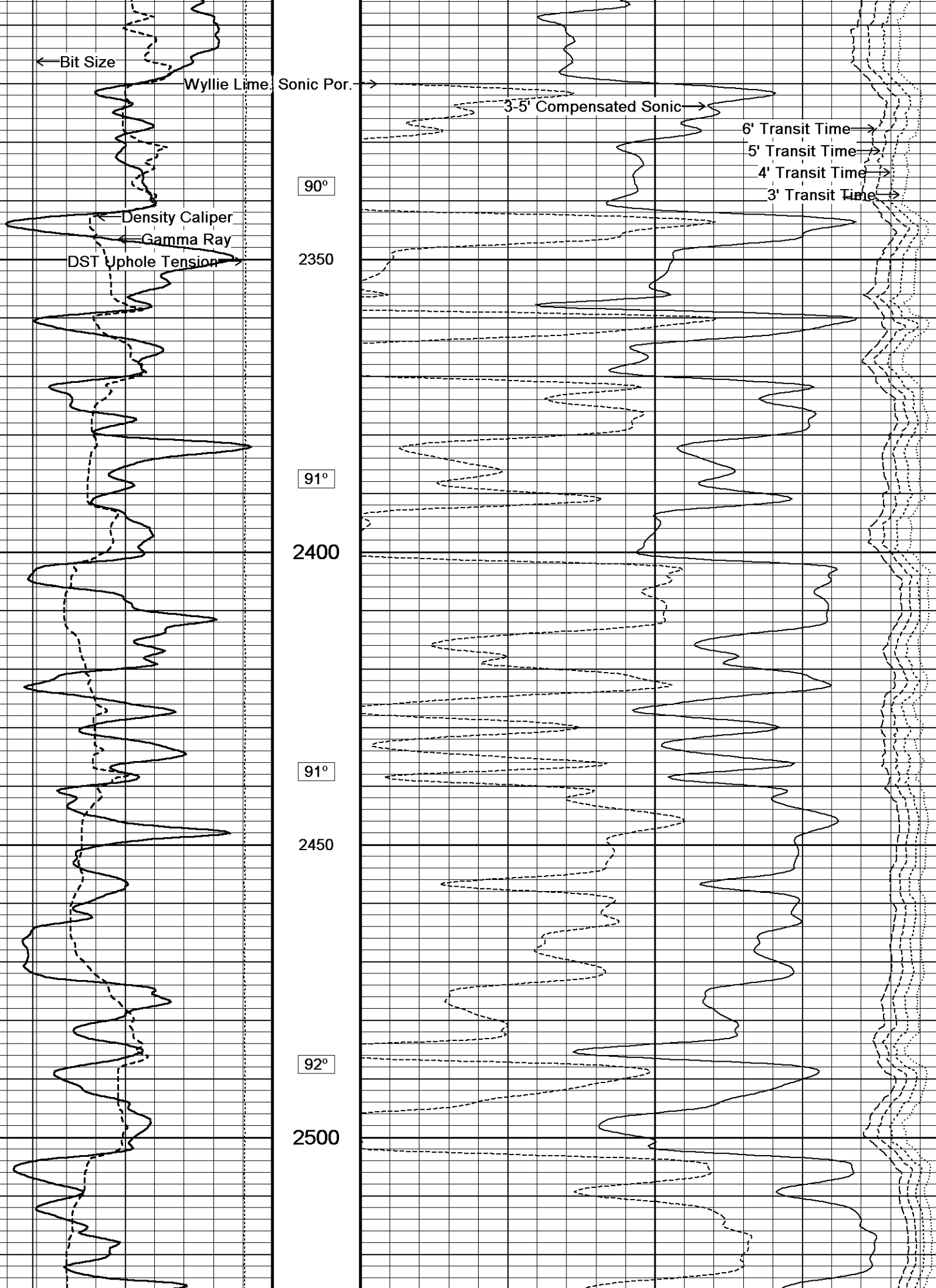
90°

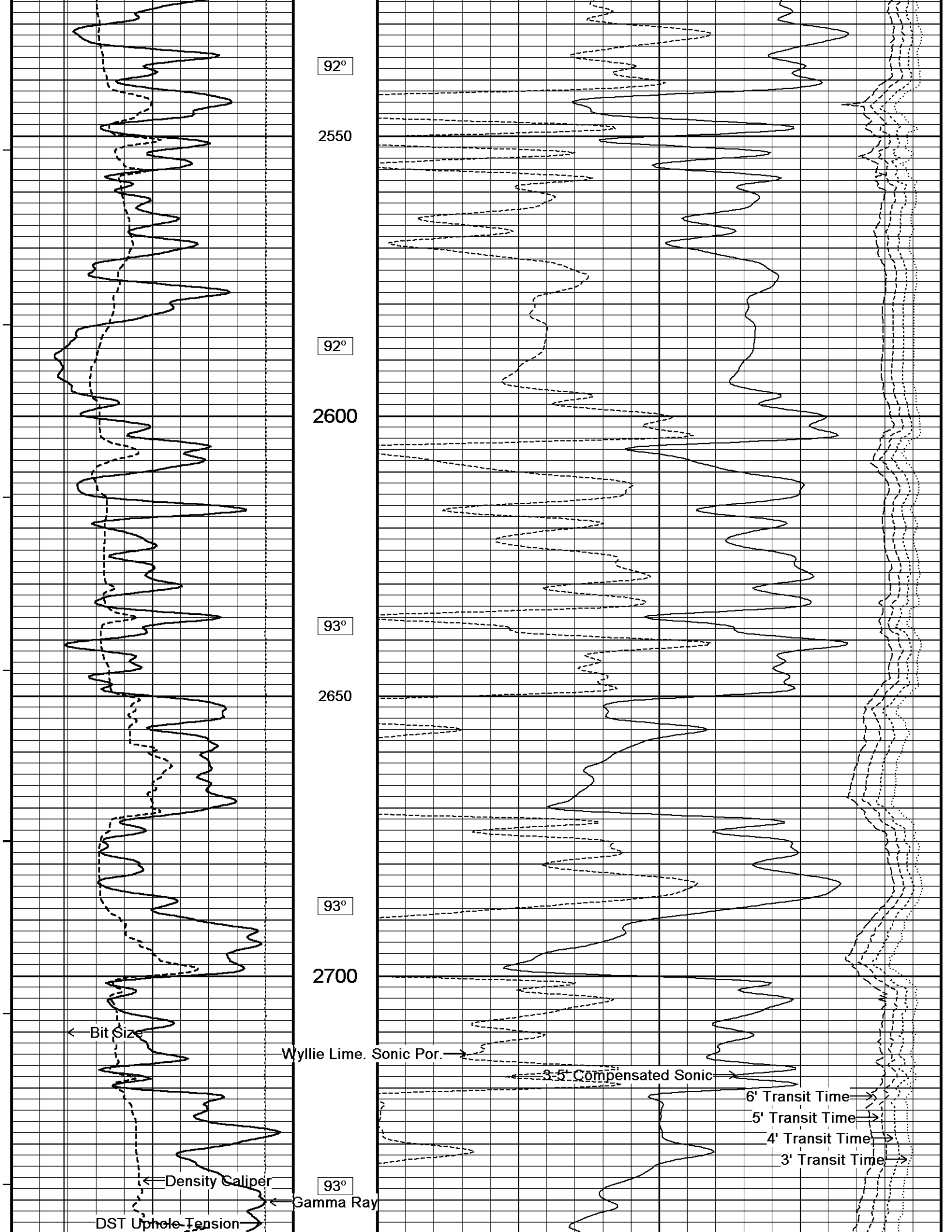
2250

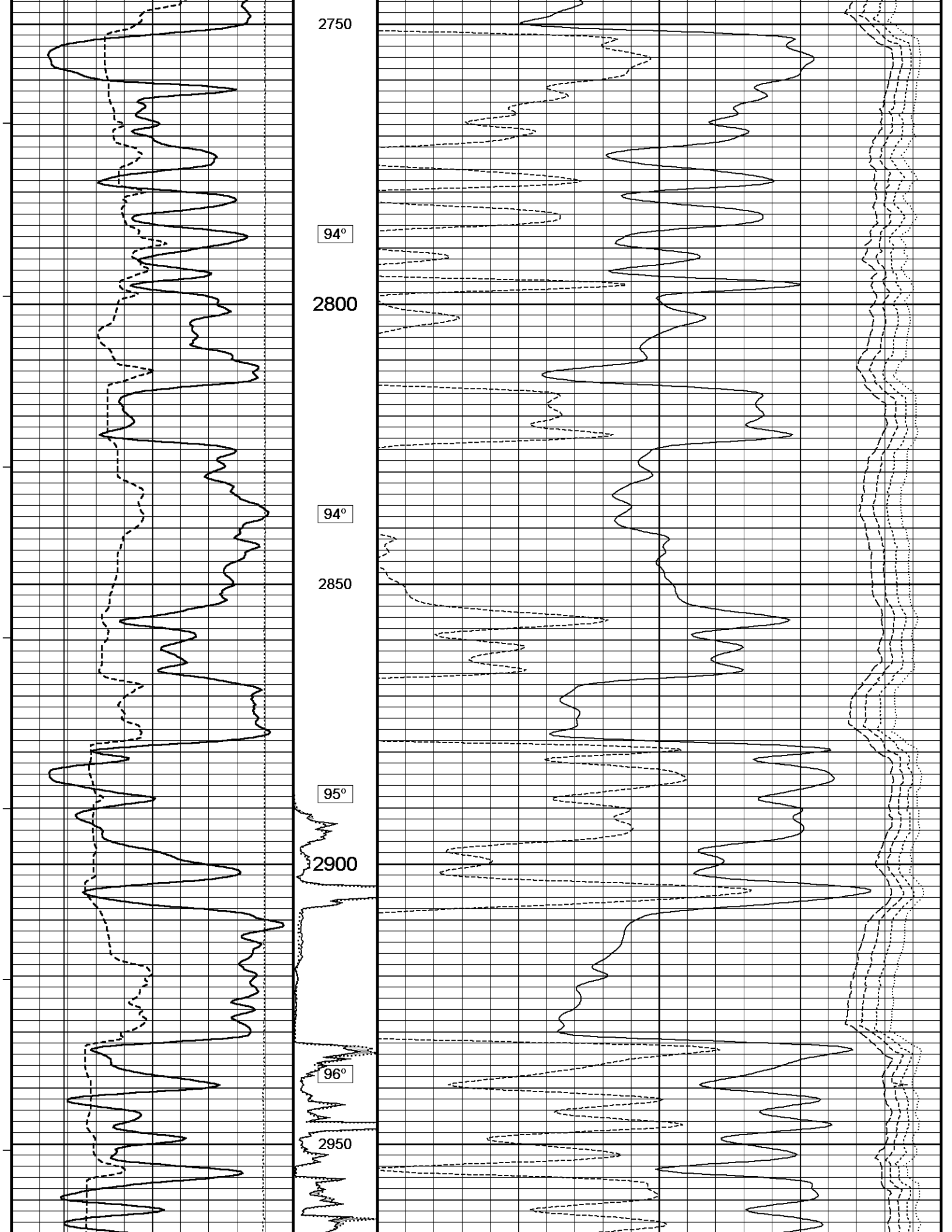
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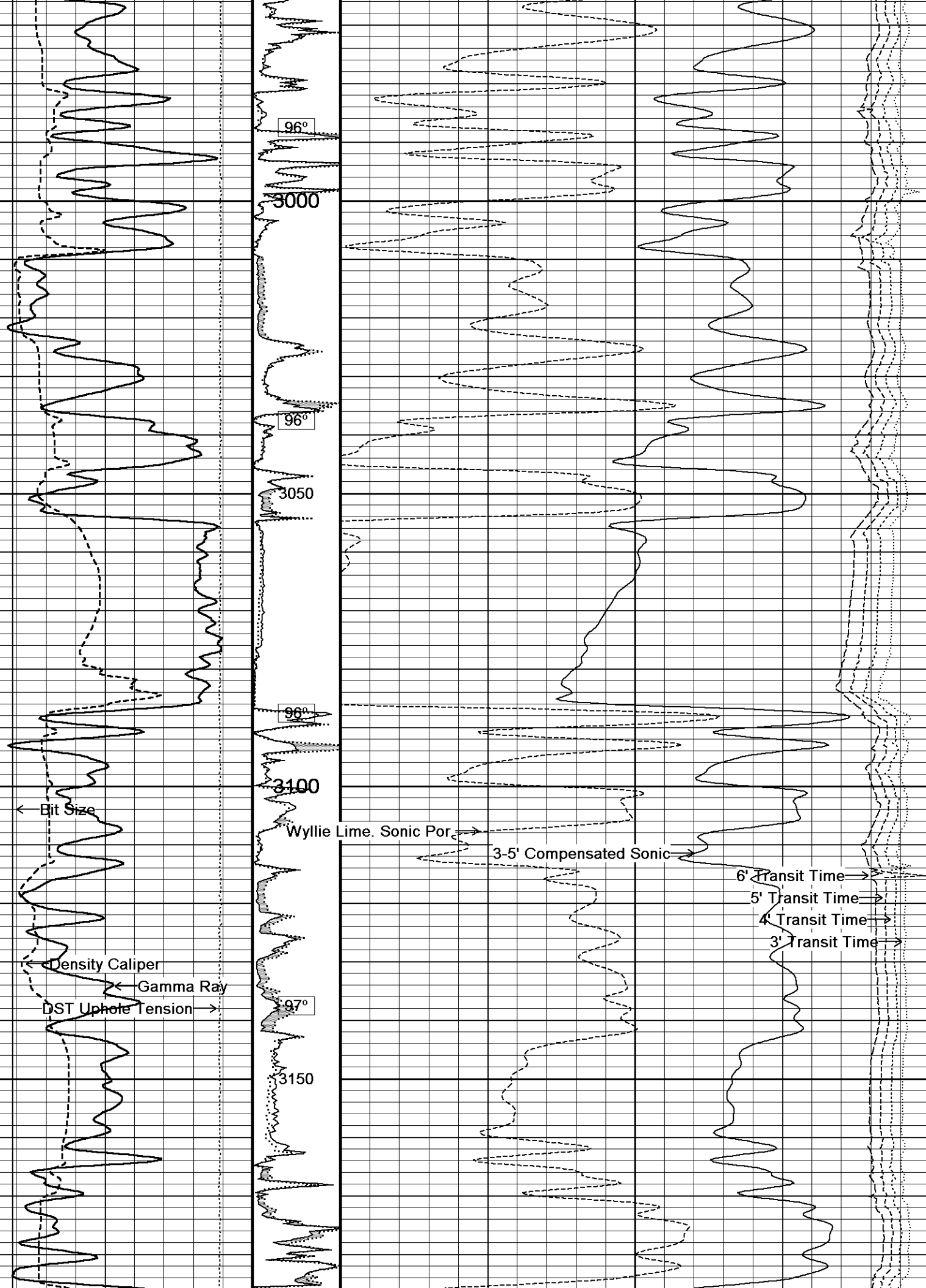
2300

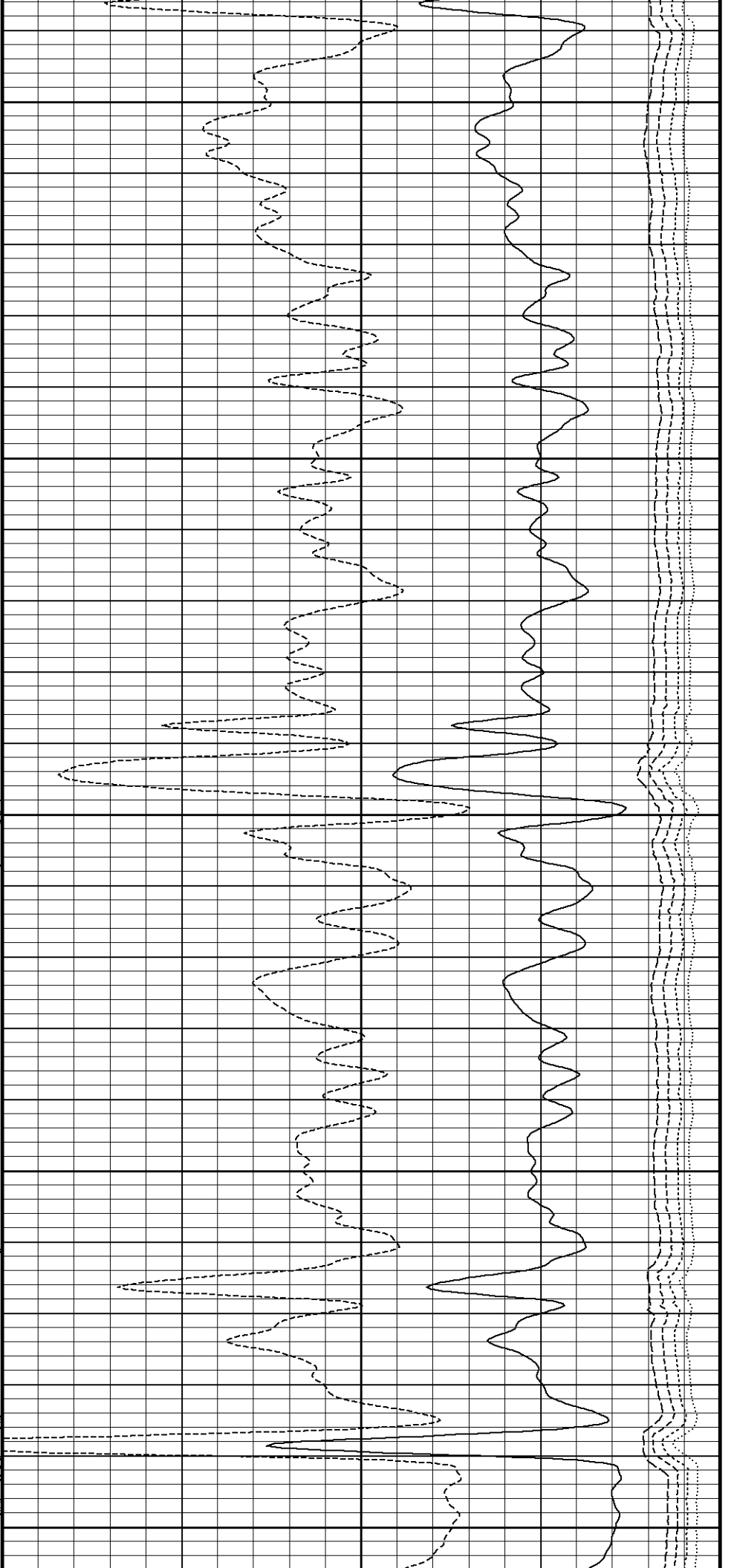
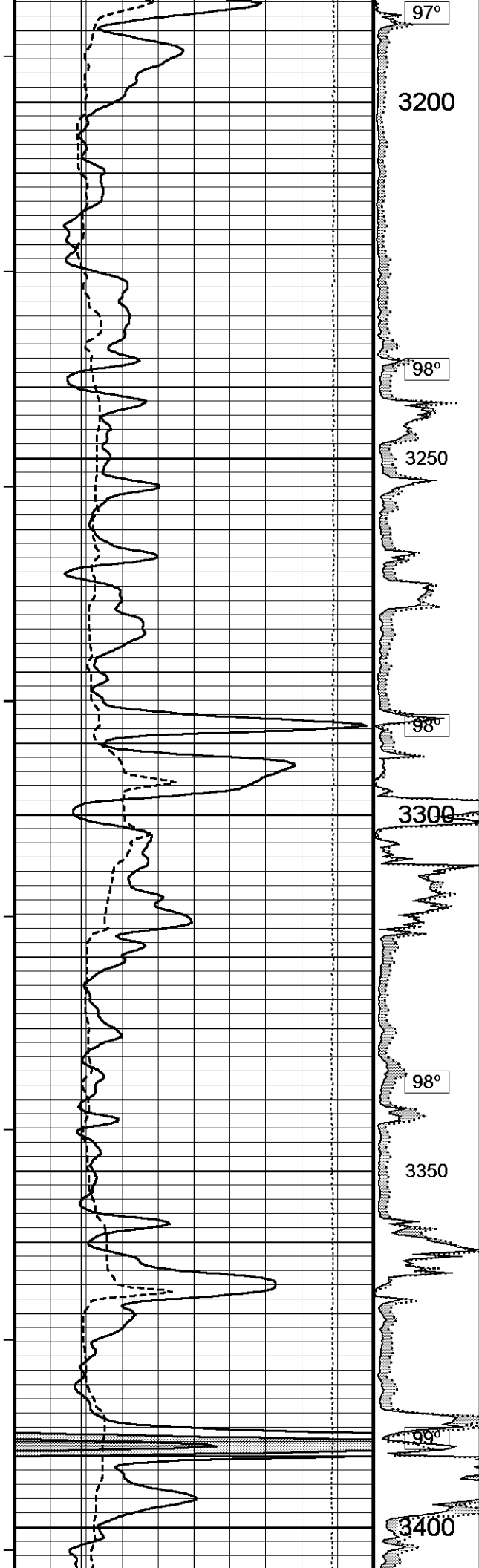


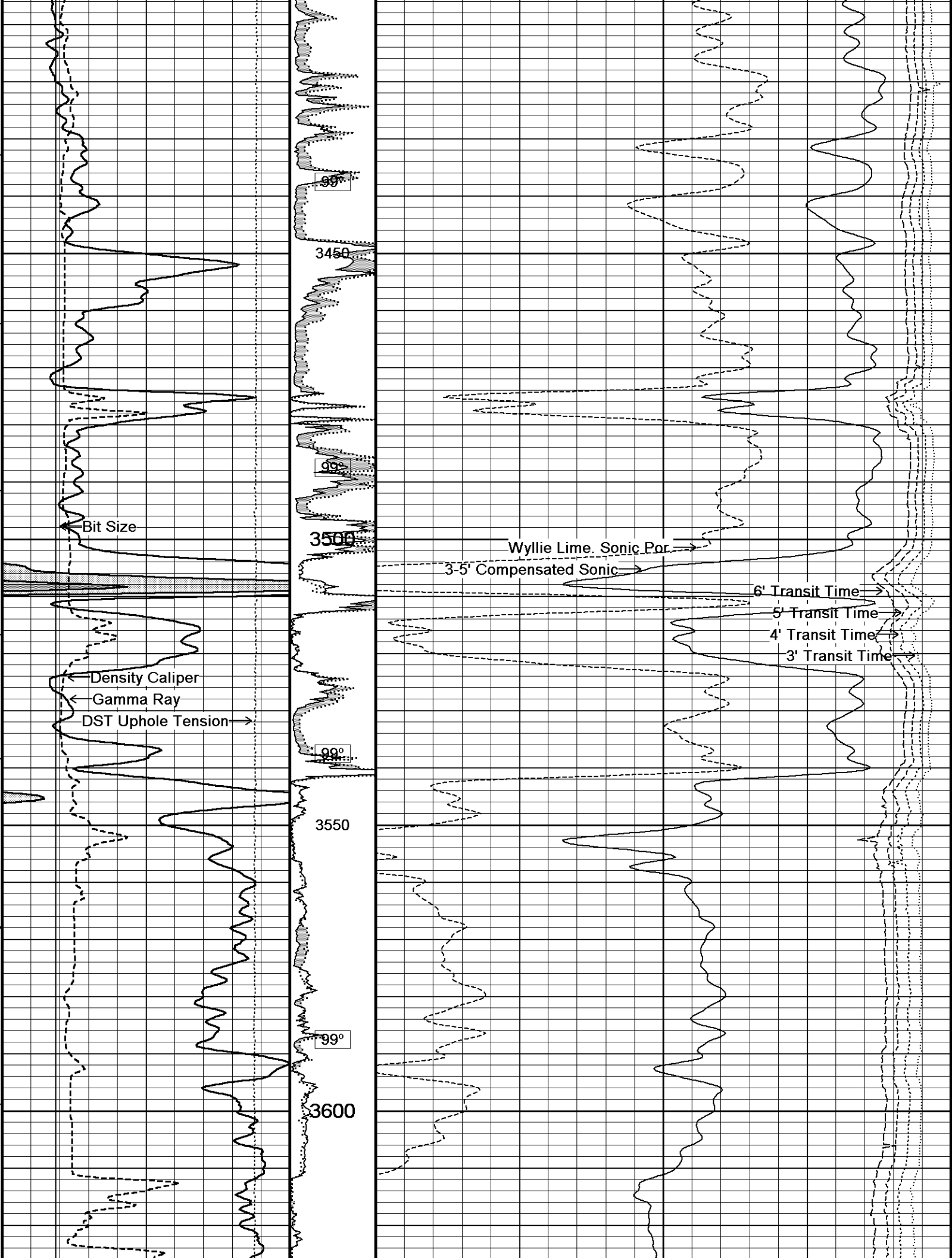


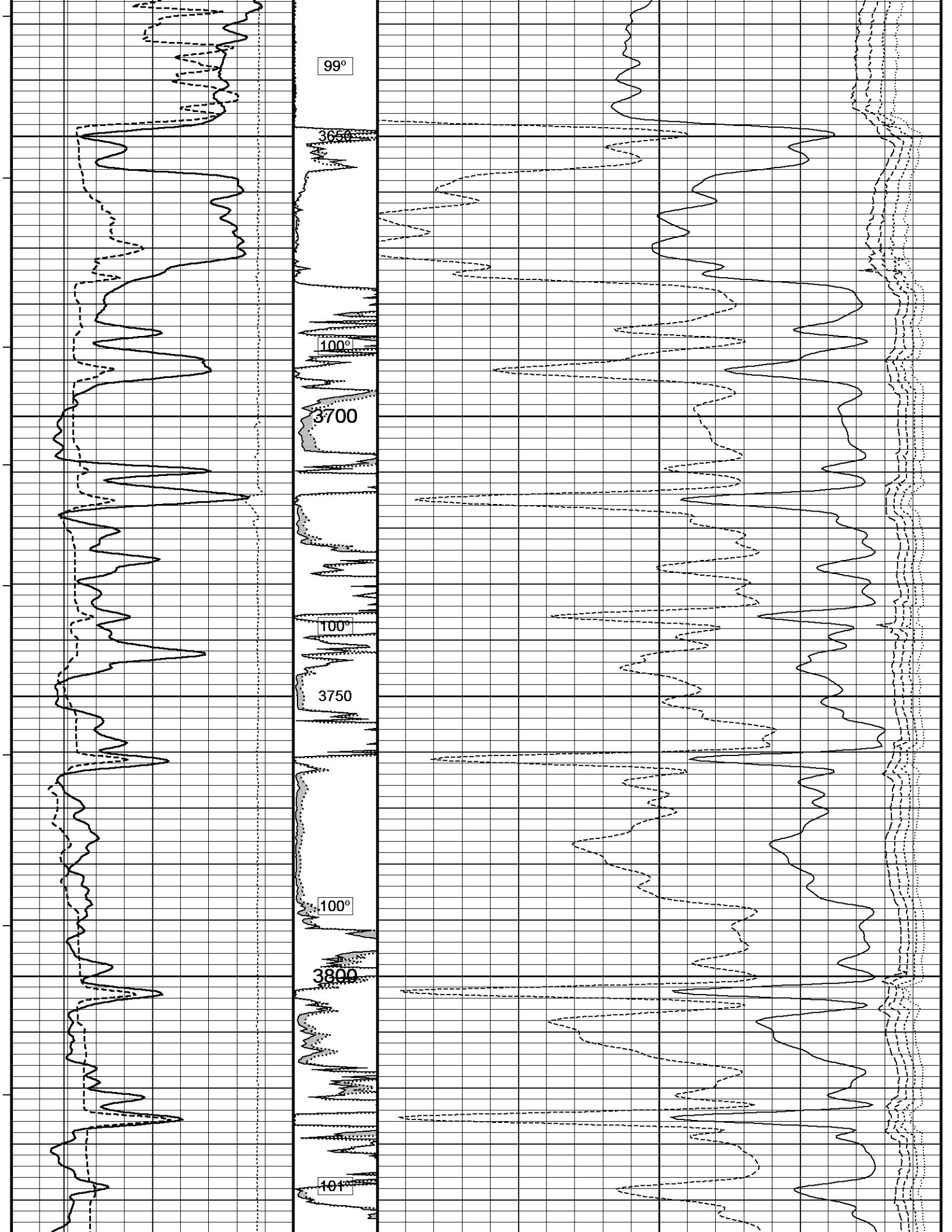


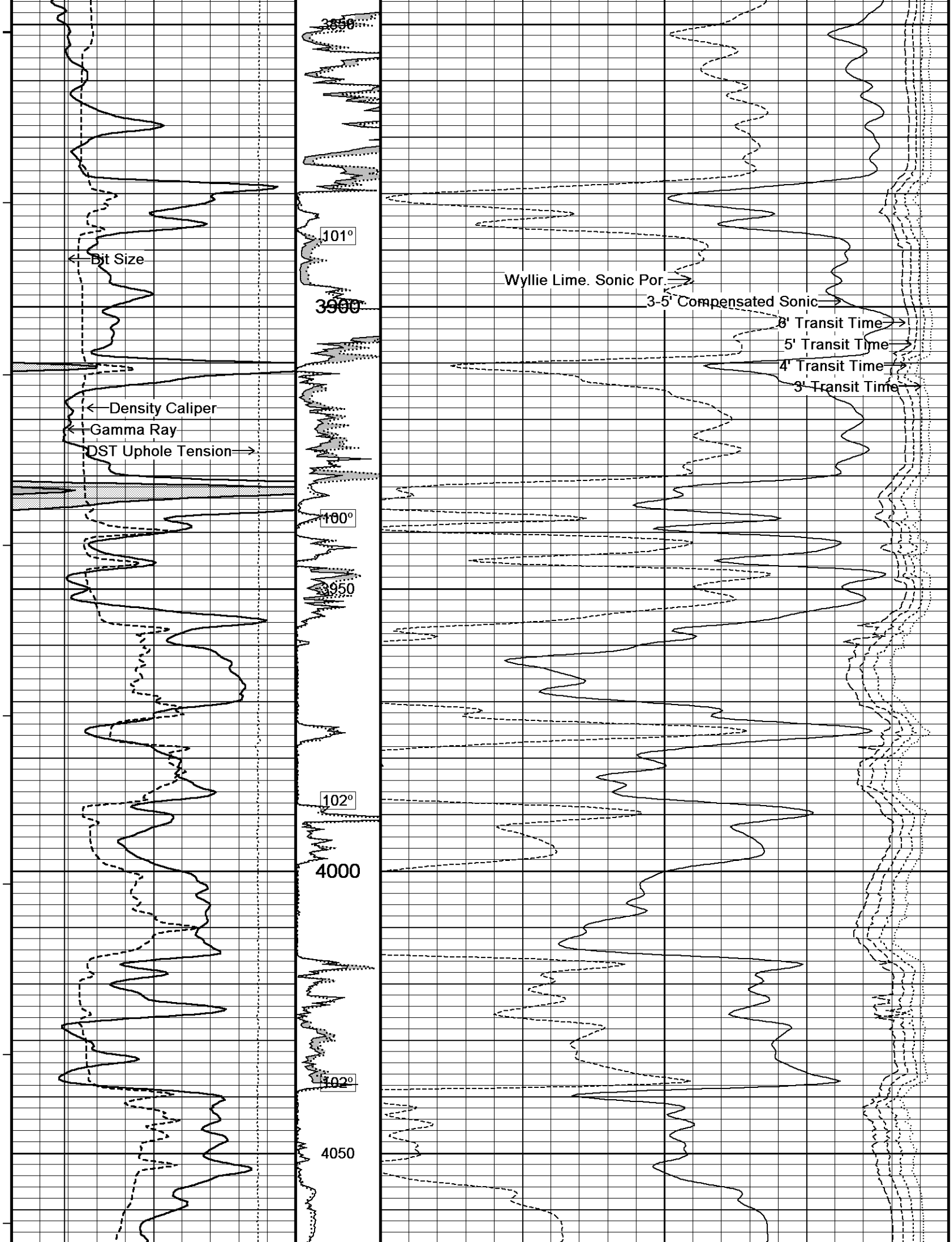


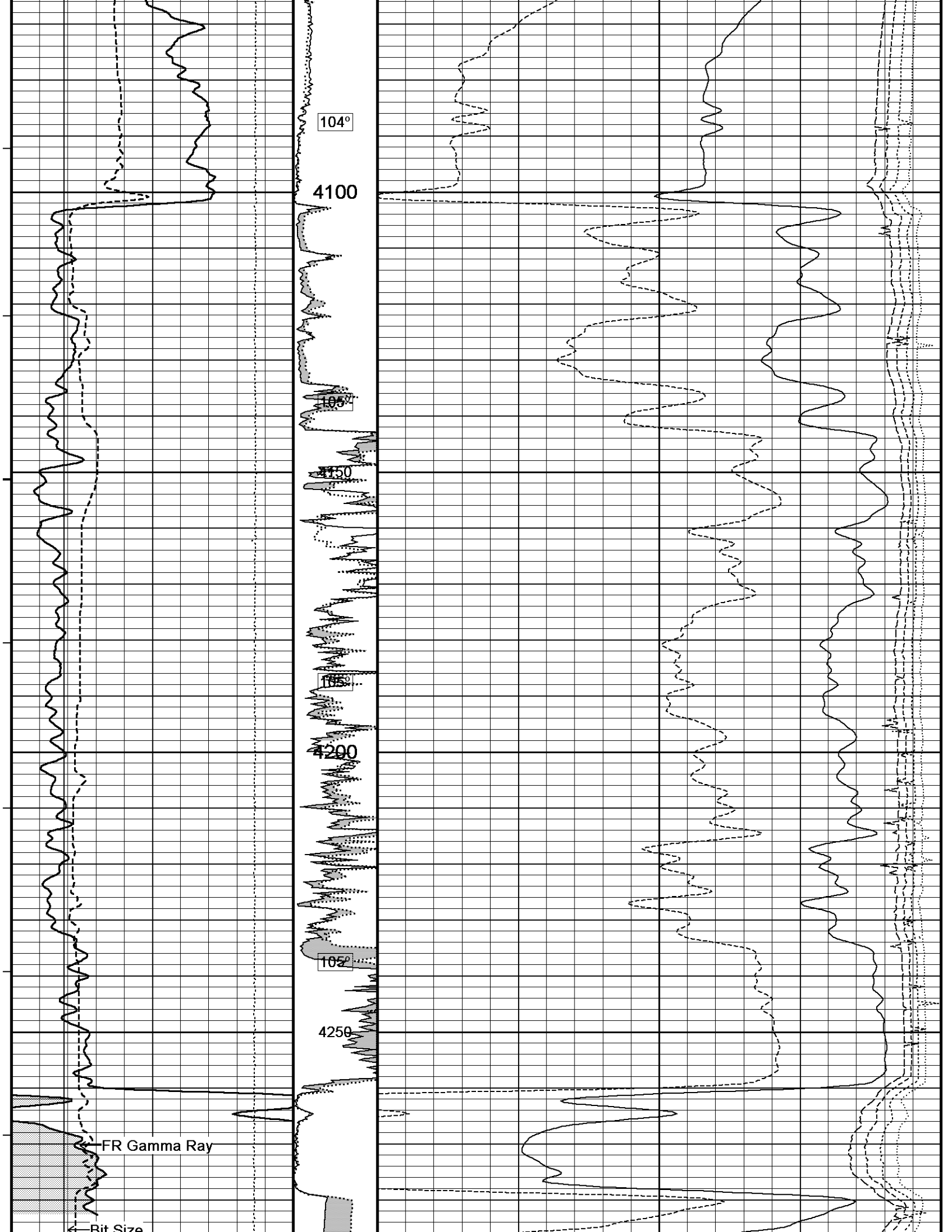


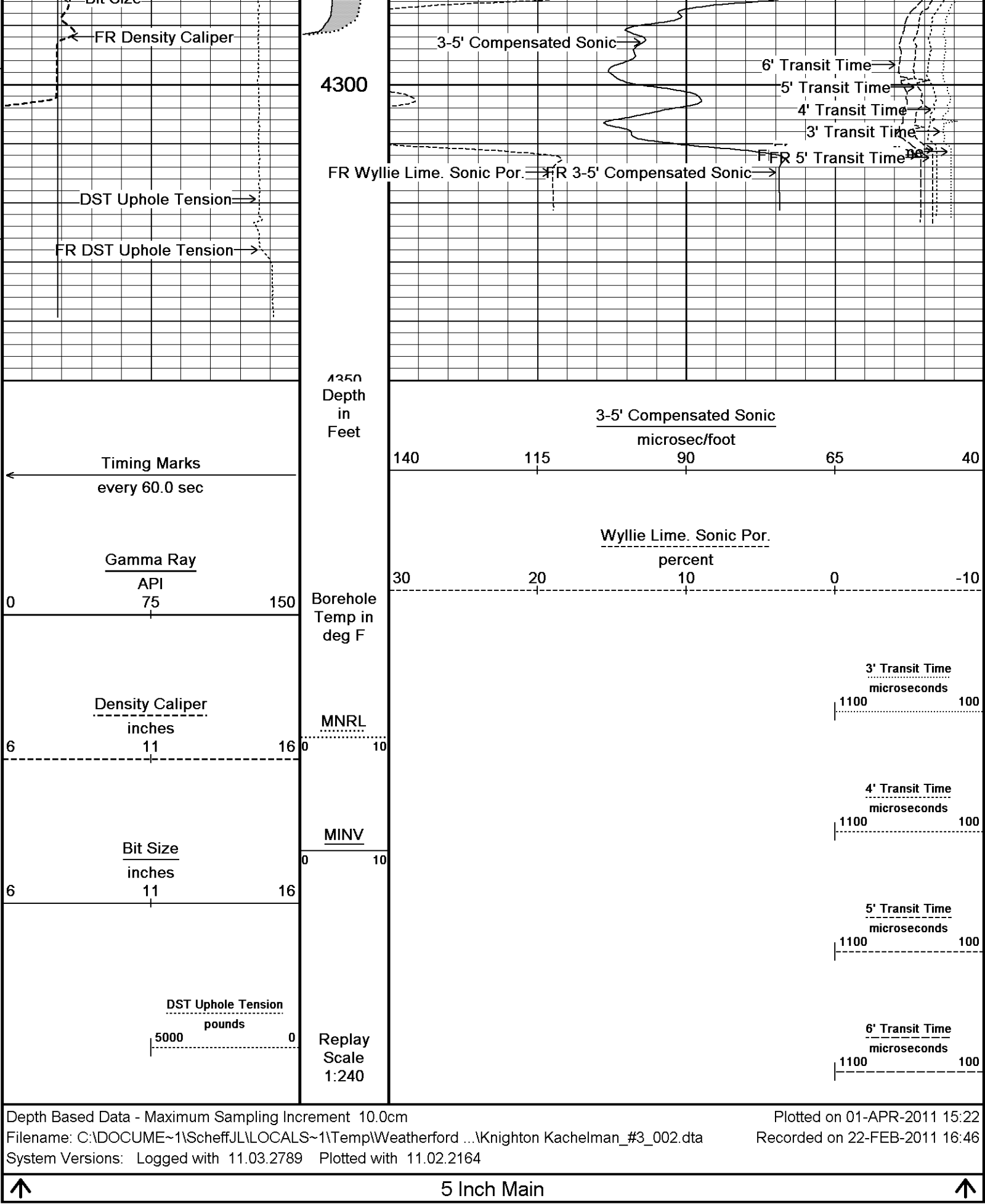


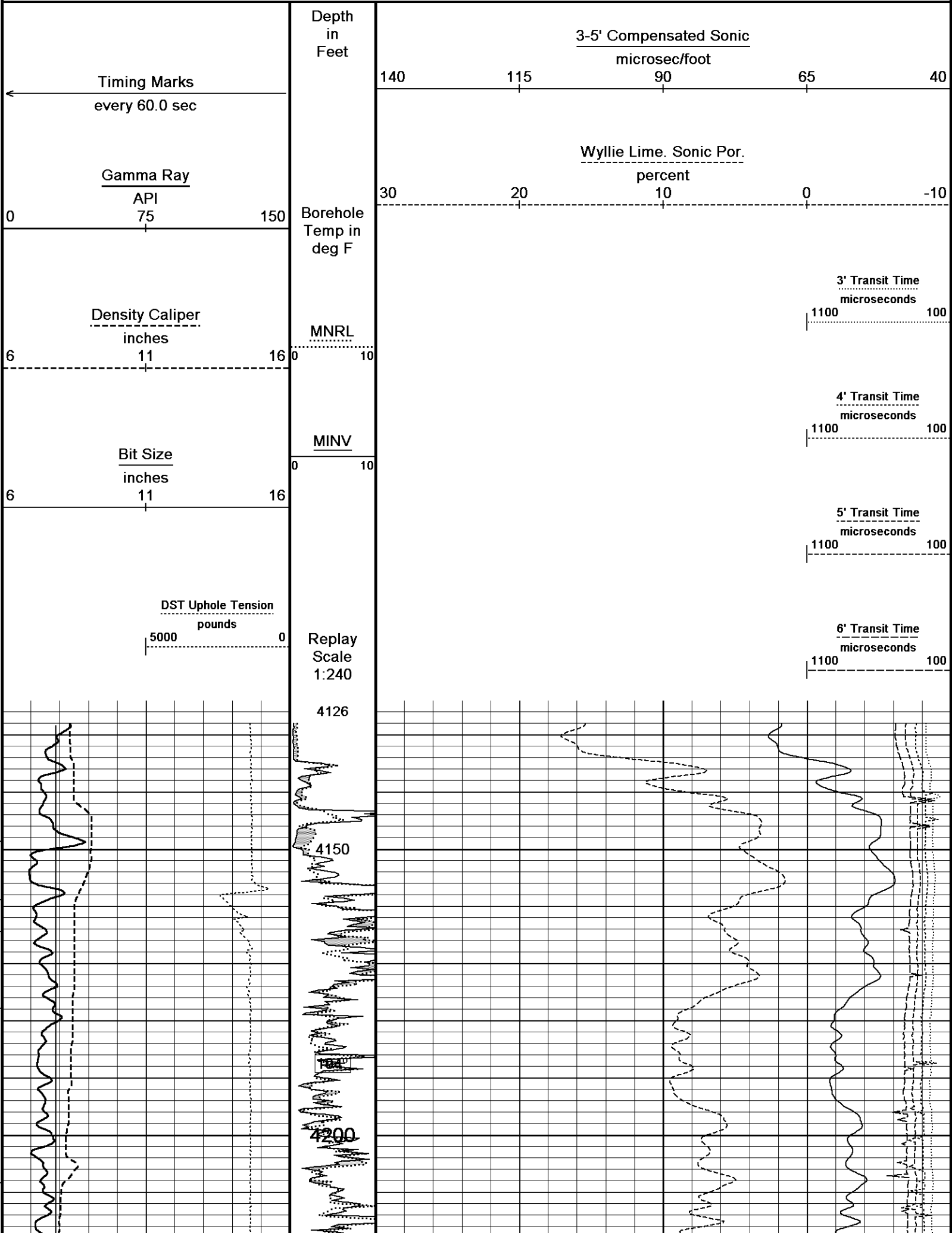


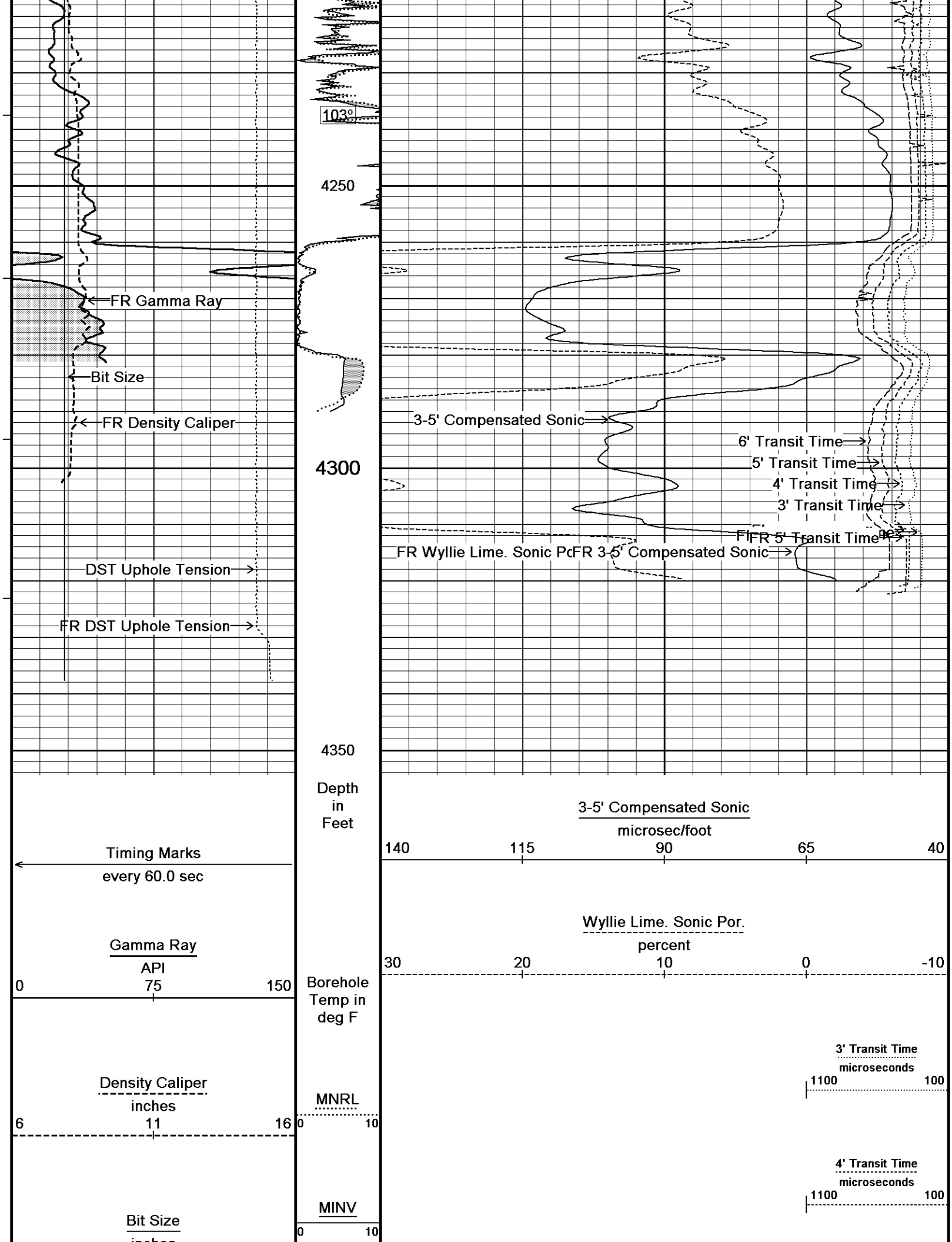












Tool Position		Eccentricity		0.00	kppm
Concentration of KCl					
Caliper Calibration MML-A 9					Base Calibration on 17-JAN-2011 13:36 Field Calibration on 17-FEB-2011 21:10
Base Calibration					
Reading No		Measured		Calibrator Size (in)	
1		14751		5.96	
2		18323		7.98	
3		21735		9.95	
4		25522		11.91	
5		0		0.00	
6		N/A		N/A	
Field Calibration					
		Measured Caliper (in)		Actual Caliper (in)	
		6.03		5.98	
Micro Normal and Micro Inverse Calibration MML-A 9					Base Calibration on 17-JAN-2011 13:45 Field Check on 17-FEB-2011 21:09
Base Calibration					
		Measured		Calibrated (ohm-m)	
Channel		Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal		12.1	59.8	2.6	12.8
Micro Inverse		15.6	78.1	1.7	8.4
Channel		Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal		32.4		32.4	
Micro Inverse		16.4		16.4	
Micro Normal and Micro Inverse Constants MML-A 9					Last Edited on 17-FEB-2011,21:07
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 17-JAN-2011 15:12 Field Check on 17-FEB-2011 21:16
Base Calibration					
		Measured		Calibrated (cps)	
		Near	Far	Near	Far
		3079	97	3714	110
Ratio		31.797		33.764	
Field Calibrator at Base				Calibrated (cps)	
				1654	2338
Ratio				0.708	
Field Check				Calibrated (cps)	
				1651	2354
Ratio				0.701	
Neutron Constants MDN-A.B 65					Last Edited on 22-FEB-2011,12:46
Neutron Source Id 757					
Neutron Jig Number 5824NE					
Epithermal Neutron No					
Caliper Source for Processing		Density Caliper			
Stand-off		0.00		inches	
Mud Density		1.08		gm/cc	
Limestone Sigma		7.10		cu	
Sandstone Sigma		4.26		cu	
Dolomite Sigma		4.70		cu	
Formation Pressure Source		Constant Value			
Formation Pressure		0.00		kpsi	
Temperature Source		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			

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	954.8	126.8
Base Check		281.8
Field Check		281.5

FE Constants MFE-A.A 55

Last Edited on 17-FEB-2011,20:54

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 127

Last Edited on 18-FEB-2011,00:23

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

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

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 178			Field Calibration on 28-MAR-2010,00:50
	Measured	Calibrated(Deg F)	
Lower	1.00	33.80	
Upper	11.00	51.80	

High Resolution Temperature Constants MAI-A.A 178		Last Edited on
Pre-filter Length	11	

Induction Calibration MAI-A.A 178				Base Calibration on 17-JAN-2011,15:37	
				Field Check on 17-FEB-2011 20:54	
Base Calibration					
Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel	Low	High		Low	High
1	17.6	484.7		9.3	966.2
2	6.2	391.4		7.6	821.4
3	4.0	264.5		5.2	566.0
4	2.3	135.1		2.6	279.2
Array Temperature		77.0	Deg F		
Channel		Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High		Low	High
1	0.0	0.0		11.8	3762.3
2	0.0	0.0		29.5	3466.1
3	0.0	0.0		27.1	3014.6
4	0.0	0.0		18.6	2063.7
Deep	0.0	0.0		15.7	1995.6
Medium	0.0	0.0		40.1	3956.7
Shallow	0.0	0.0		45.4	5080.2
Array Temperature		0.0		65.7	Deg F

Induction Constants MAI-A.A 178			Last Edited on 19-FEB-2011,09:29	
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	
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 17-JAN-2011 16:10
Field Calibration on 17-FEB-2011 21:07

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	14192	4.01
2	22208	5.96
3	30608	7.98
4	39216	9.95
5	48142	11.91
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	6.39	5.98

Photo Density Calibration MPD-B 64

Base Calibration on 17-FEB-2011 08:46
Field Check on 17-FEB-2011 21:05

Density Calibration				
Base Calibration		Measured		Calibrated (sdu)
	Near	Far	Near	Far
Reference 1	50033	26441	59556	30836
Reference 2	20539	2561	24941	2541
Field Check at Base				
	1112.6	1367.3		
Field Check				
	1107.7	1367.2		
PE Calibration				
Base Calibration		Measured		Calibrated
	WS	WH	Ratio	Ratio
Background	200	995		
Reference 1	18927	49861	0.383	0.371
Reference 2	5504	20415	0.273	0.272
Field Check at Base				
	200.4	995.2		
Field Check				
	200.1	990.1		

Density Constants MPD-B 64

Last Edited on 19-FEB-2011,09:30

Density Source Id	254	
Nylon Calibrator Number	DNCE695	
Aluminium Calibrator Number	DACD698	
Density Shoe Profile	4 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

DOWNHOLE EQUIPMENT

C:\DOCUME~1\ScheffJL\LOCALS~1\Temp\Weatherford PreView\0\Knighton Kachelman_#3.dta

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

Compact Micro-log
MML-A 9 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 64 LG: 9.59 ft WT: 90.4 lb OD: 2.24 in

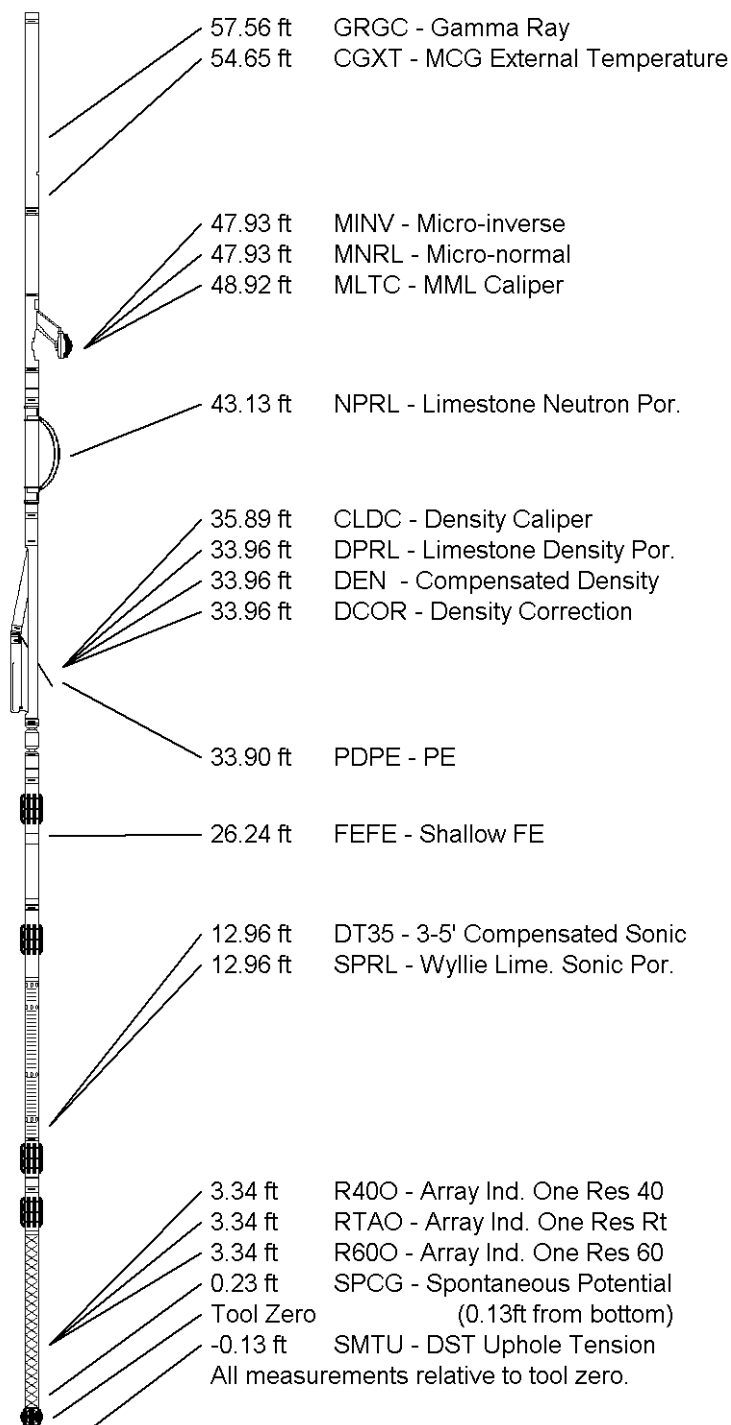
SKJ-D.A Compact Knuckle Joint
SKJ-D.A 37 LG: 2.17 ft WT: 24.3 lb OD: 2.24 in

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

Compact Sonic
MSS-A.A 127 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 178 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 62.84 ft Weight: 480.6 lb



COMPANY

WELL

FIELD

PROVINCE/COUNTY

COUNTRY/STATE

KNIGHTON OIL

KACHELMAN # 3

ALBANO WEST

STAFFORD

KANSAS

Elevation Kelly Bushing	1965.00	feet	First Reading	4315.00	feet
Elevation Drill Floor	1963.00	feet	Depth Driller	4325.00	feet
Elevation Ground Level	1959.00	feet	Depth Logger	4328.00	feet



Weatherford®

COMPENSATED SONIC

