Weatherford®

COMPENSATED SONIC
W INTEGRATED TRANSIT TIMES
LOG

COMPANY	SHAKESPEARE OIL
WELL	JANZEN 1-16
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A./KANSAS
LOCATION	780' FNL & 815' FWL

SEC	TWP	RGE
16	16	34

API Number 15-171-20790
Permit Number

Other Services
MPD/MDN
MAI/MFE
MML

Permanent Datum G.L., Elevation 3139 feet
Log Measured From K.B. @ 10 FEET above Permanent Datum
Drilling Measured From K.B.

Elevations:	feet
KB	3149.00
DF	3148.00
GL	3139.00

Date	21-DEC-2010		
Run Number	ONE		
Depth Driller	4880.00 feet		
Depth Logger	4876.00 feet		
First Reading	4863.00 feet		
Last Reading	352.00 feet		
Casing Driller	351.00 feet		
Casing Logger	352.00 feet		
Bit Size	7.880 inches		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.50 g/c3	45.00 sec/qt	
PH / Fluid Loss	10.00	9.60 ml/30Min	
Sample Source	FLOWLINE		
Rm @ Measured Temp	0.77 @ 73.0 ohm-m		
Rmf @ Measured Temp	0.62 @ 73.0 ohm-m		
Rmc @ Measured Temp	0.92 @ 73.0 ohm-m		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.53 @106.0 ohm-m		
Time Since Circulation	4 HOURS		
Max Recorded Temp	106.00 deg F		
Equipment Name	COMPACT		
Equipment / Base	13096	LIB	
Recorded By	SHAWN NUTT		
Witnessed By	TIM PRIEST		
S.O.#/JOB#	3524640	LB10-324	

BOREHOLE RECORD

Last Edited: 21-DEC-2010 12:28

Bit Size inches	Depth From feet	Depth To feet
7.880	352.00	4876.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	352.00	24.00

REMARKS

Tools Run: MAI, MPD, MCG, MDN, MML, MFE, MSS, SKJ
Hardware: MPD: 8 inch profile plate used. MAI, MSS and MFE: 0.5 Inch standoffs used. MDN: Dual Eccentraliser used.
2.71 G/CC Limestone density matrix used to calculate porosity.
Borhole rugosity, tight pulls, and washouts will affect data quality.
All intervals logged and scaled per customer's request.
Annular volume with 4.5 inch production casing= 437 cu. ft.
Service order #3524640
Rig: HD #2
Engineer: Shawn Nutt
Operator(s): K. Rinehart

5 Inch Main

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 21-DEC-2010 12:36
Filename: C:\Minimus 11_01\Data\Shakespeare Janzen 1-16\Janzen 1-16_002 spooled section.dta
Recorded on 21-DEC-2010 11:14
System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

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
0 -5000

Depth in Feet

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

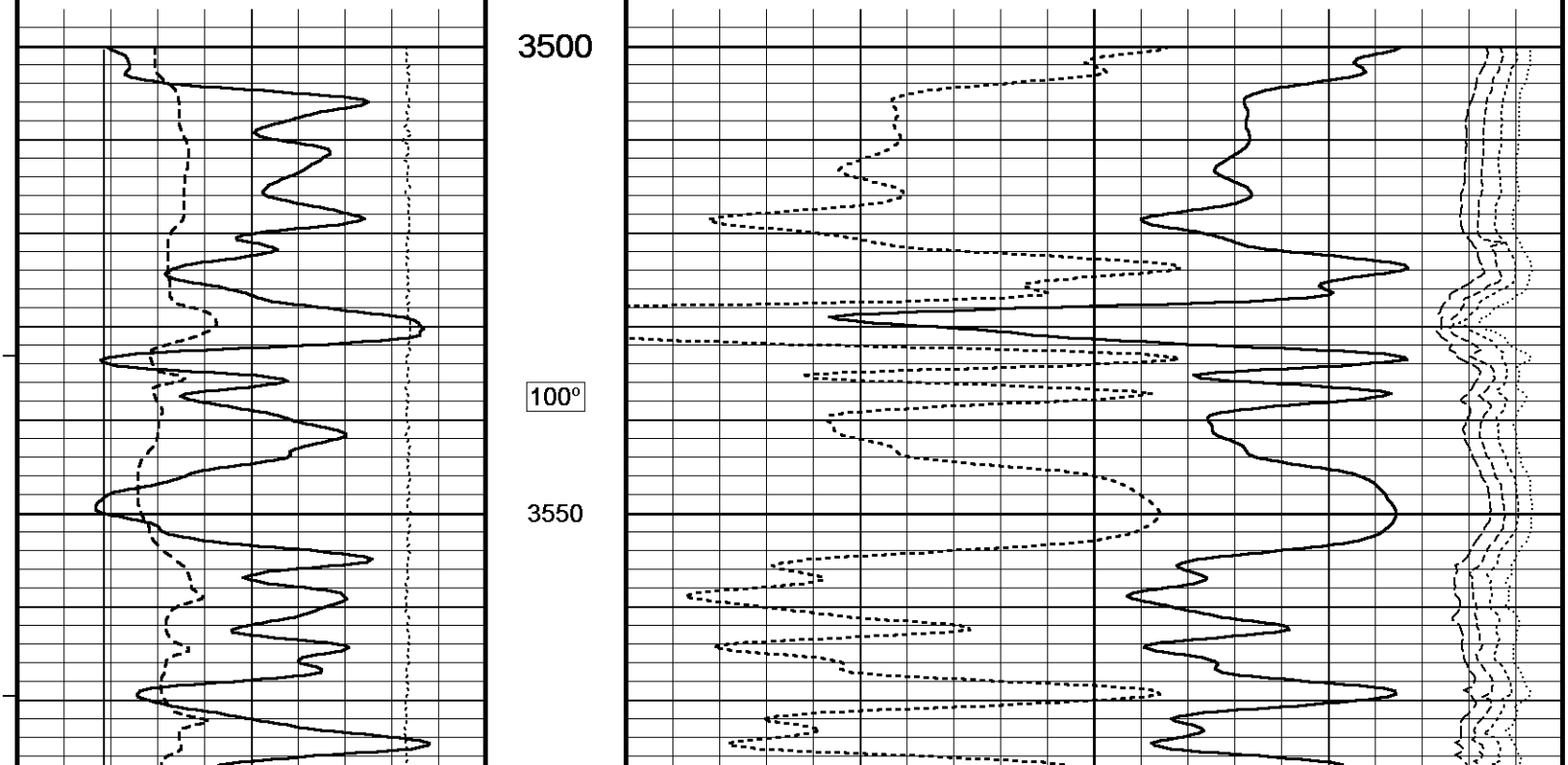
5' Transit Time
microseconds
1100 100

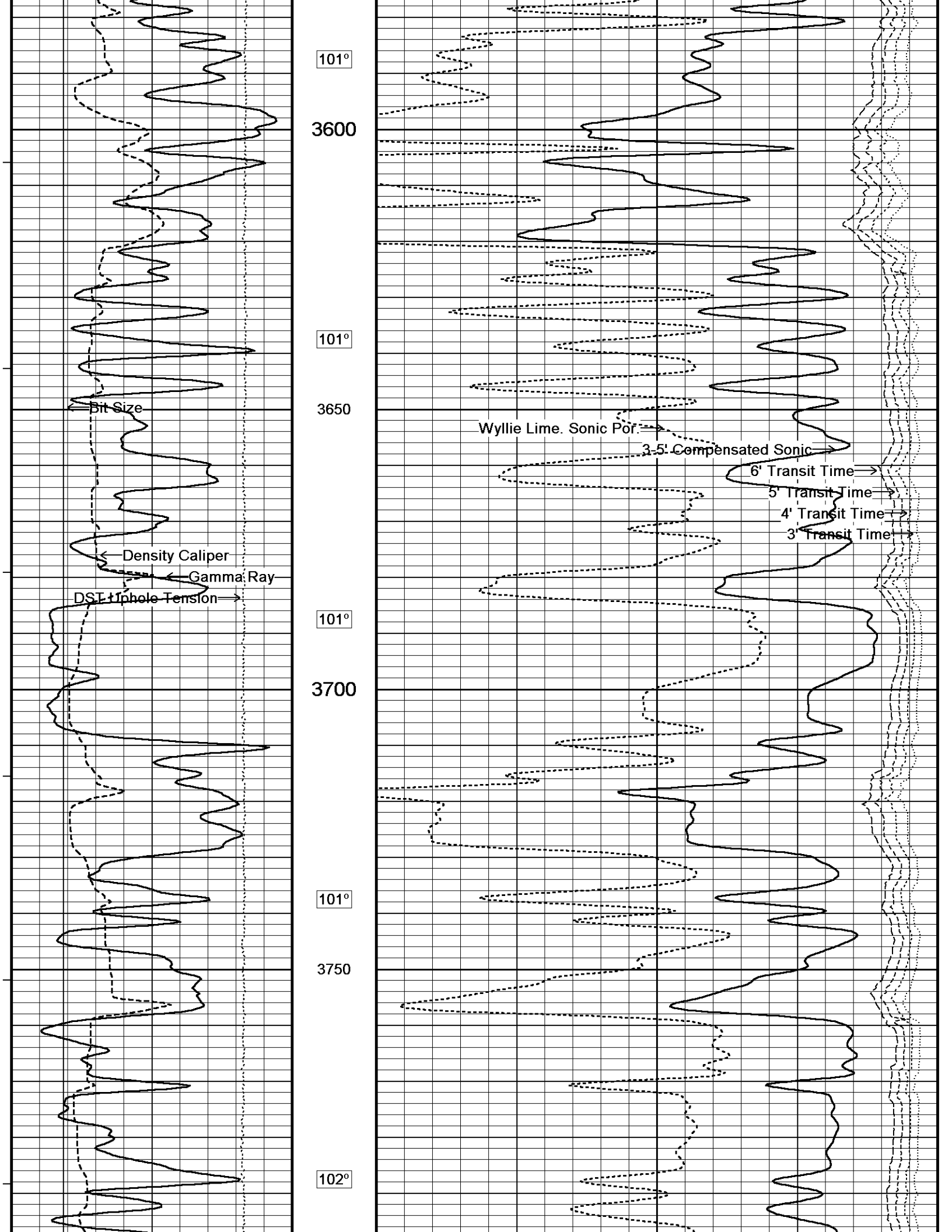
6' Transit Time
microseconds
1100 100

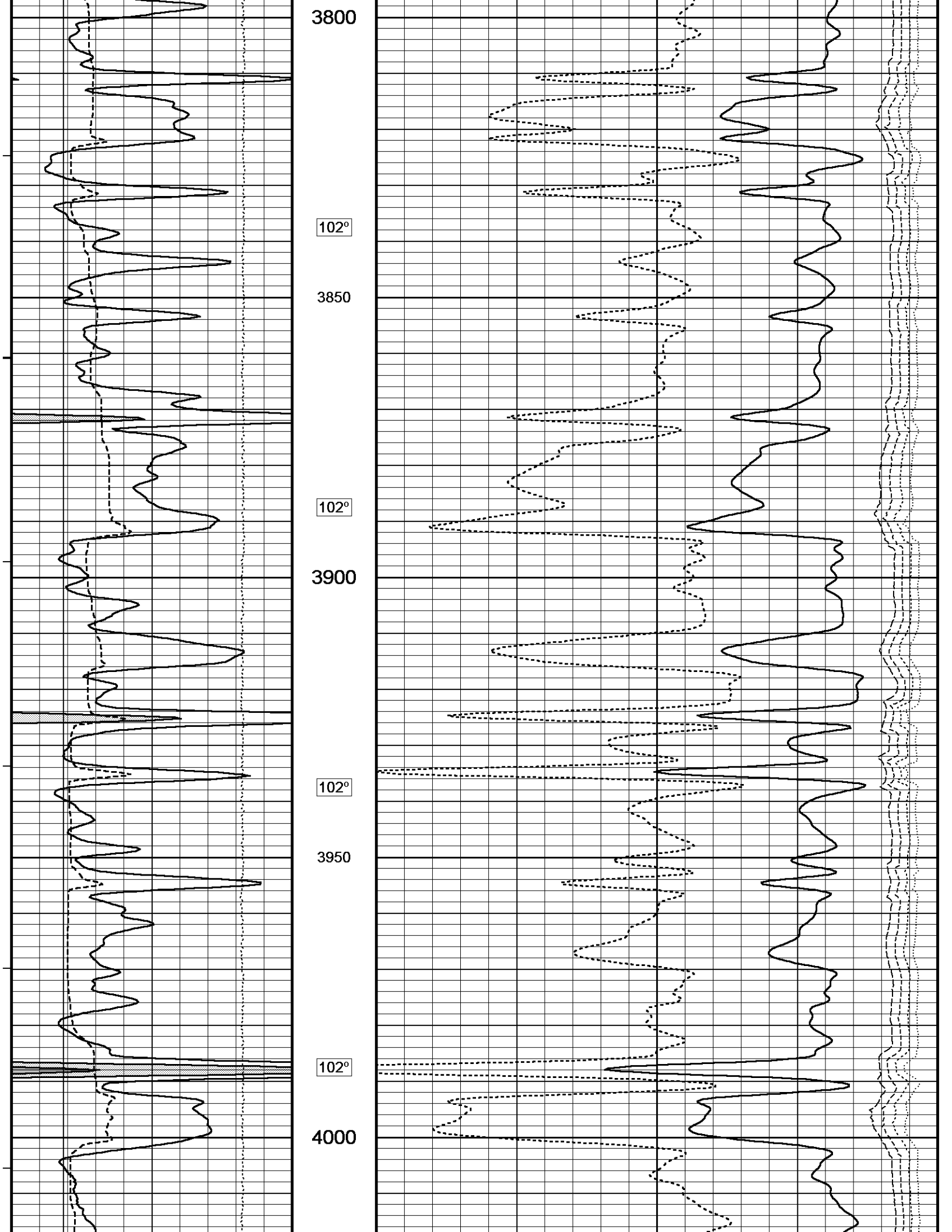
3500

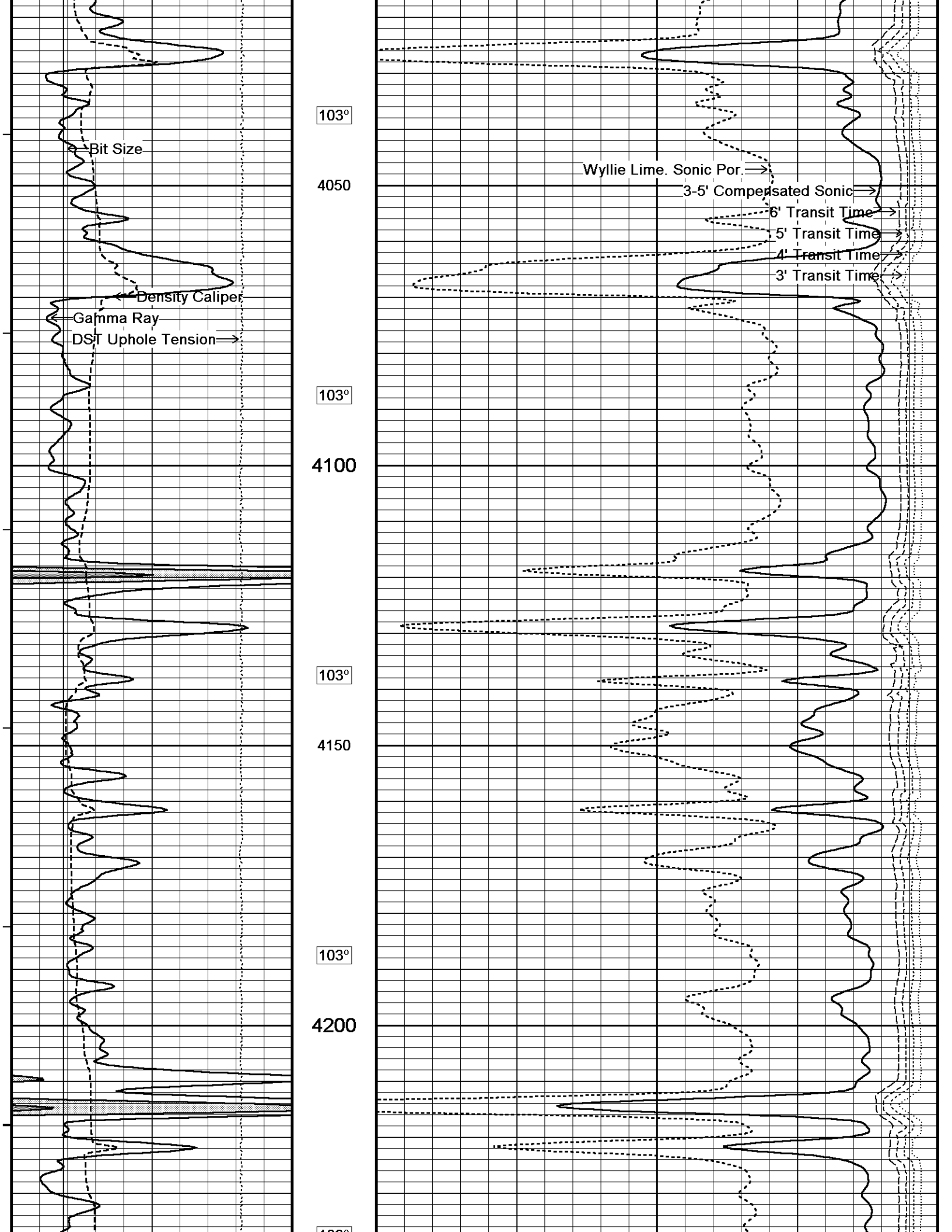
100°

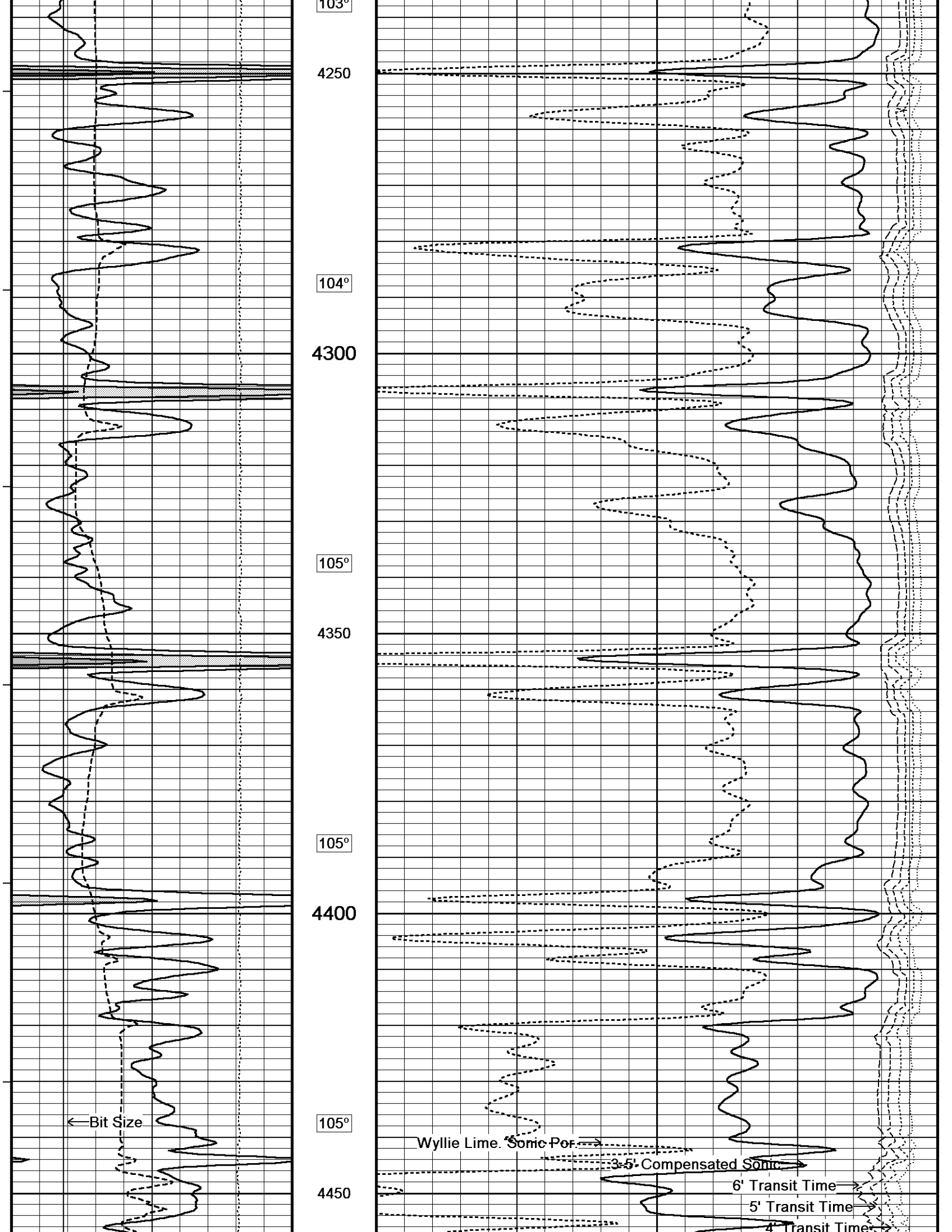
3550

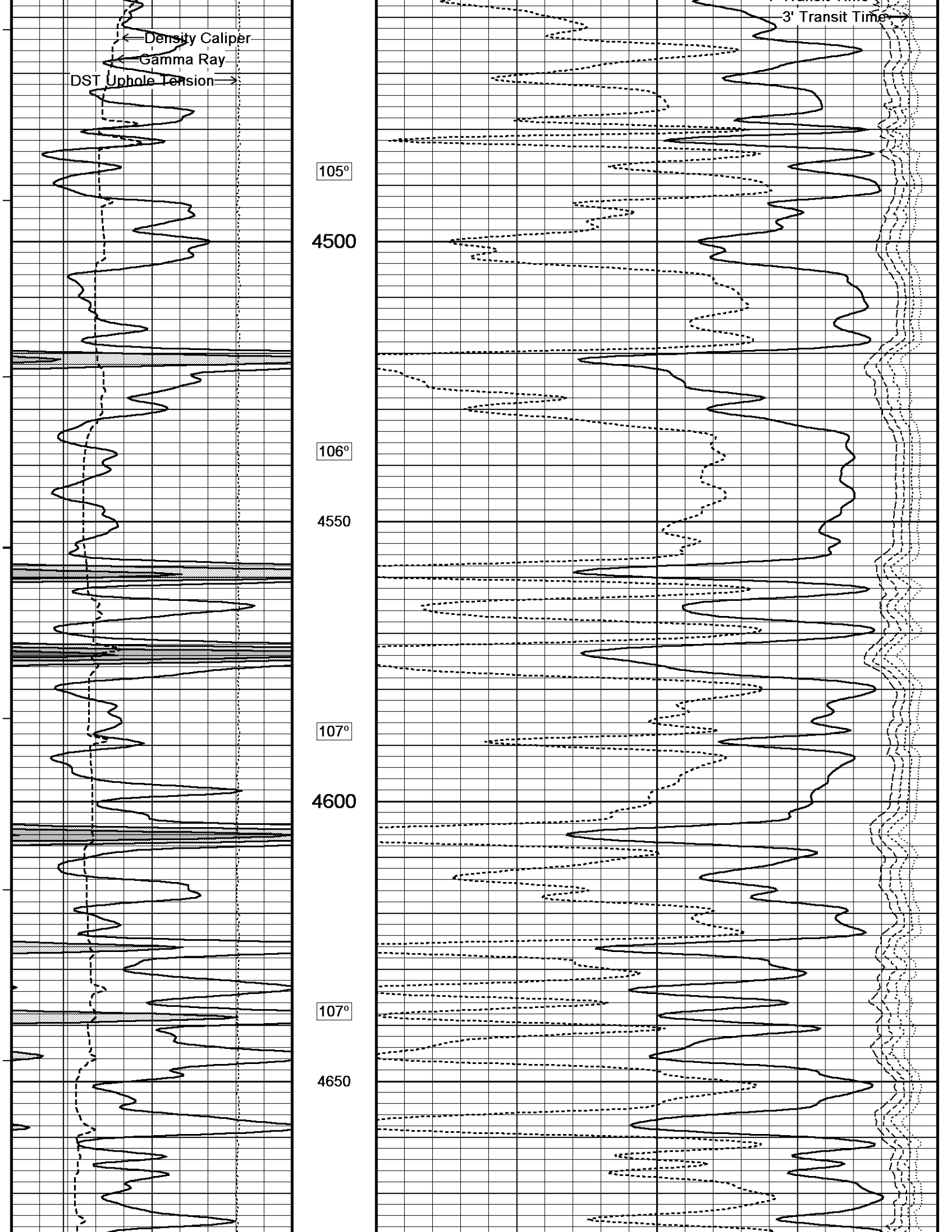


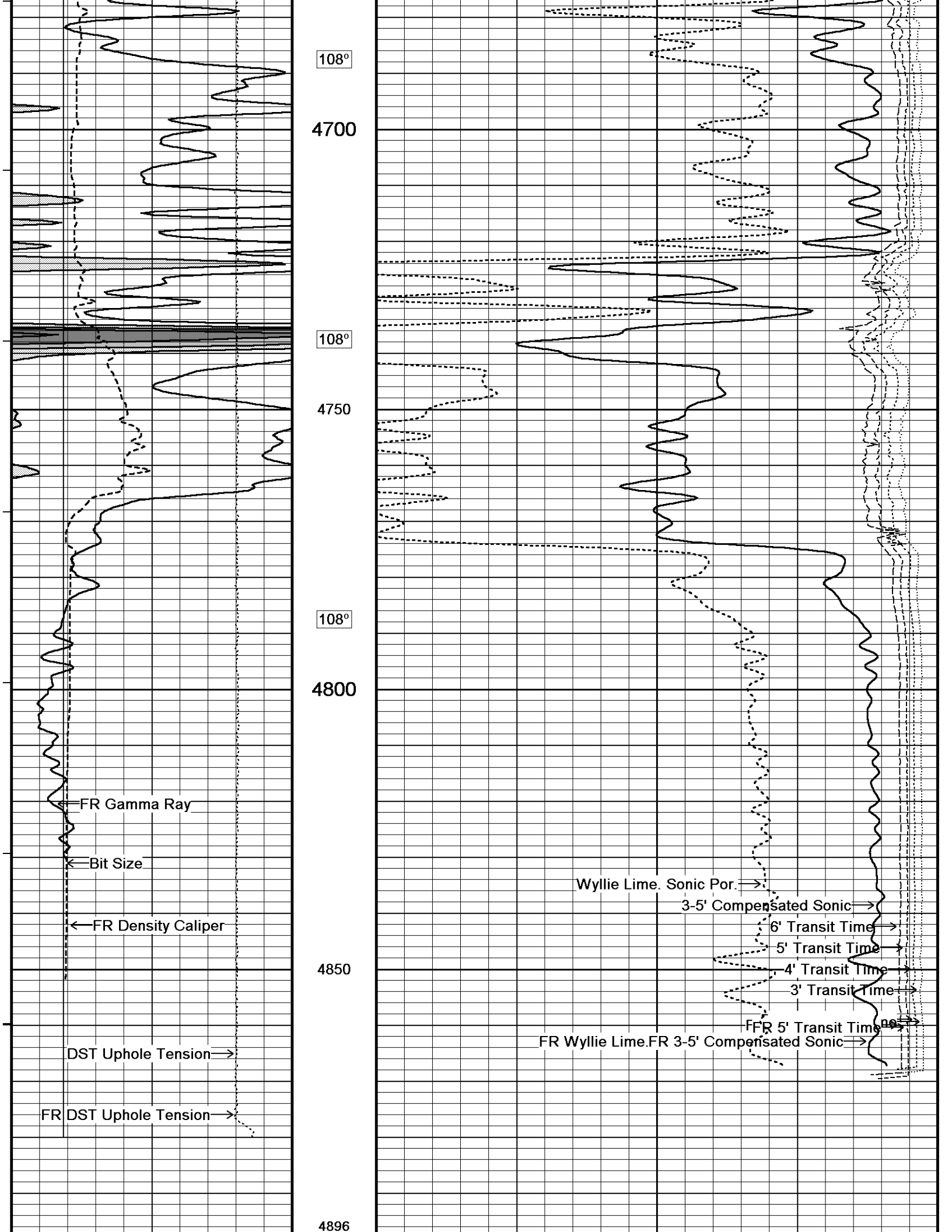

101°
3600
101°
3650
Bit Size
Wyllie Lime. Sonic Por
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Tphole Tension
101°
3700
101°
3750
102°


3800
102°
3850
102°
3900
102°
3950
102°
4000


Bit Size
Density Caliper
Gamma Ray
DST Uphole Tension
103°
4050
103°
4100
103°
4150
103°
4200
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time


103°
4250
104°
4300
105°
4350
105°
4400
105°
4450
←Bit Size
Wyllie Lime. Sonic Por.→
3-5' Compensated Sonic→
6' Transit Time→
5' Transit Time→
4' Transit Time→


Density Caliper
Gamma Ray
DST Uphole Tension
3' Transit Time
105°
4500
106°
4550
107°
4600
107°
4650


108°
4700
108°
4750
108°
4800
4850
4896
FR Gamma Ray
Bit Size
FR Density Caliper
DST Uphole Tension
FR DST Uphole Tension
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
FR 5' Transit Time
FR Wyllie Lime.FR 3-5' Compensated Sonic

Depth in Feet

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

Timing Marks
every 60.0 sec

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

Gamma Ray
API
0 75 150
150 225 300

3' Transit Time
microseconds
1100 100

Density Caliper
inches
6 11 16

Borehole Temp in deg F

4' Transit Time
microseconds
1100 100

Bit Size
inches
6 11 16

5' Transit Time
microseconds
1100 100

DST Uphole Tension
pounds
5000 0
0 -5000

Replay Scale 1:240

6' Transit Time
microseconds
1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm
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5 Inch Main

Repeat Section

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 21-DEC-2010 12:36
Filename: C:\Minimus 11_01\Data\Shakespeare Janzen 1-16\Copy of Janzen 1-16_001.dta
Recorded on 21-DEC-2010 10:01
System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

Depth in Feet

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

Timing Marks
every 60.0 sec

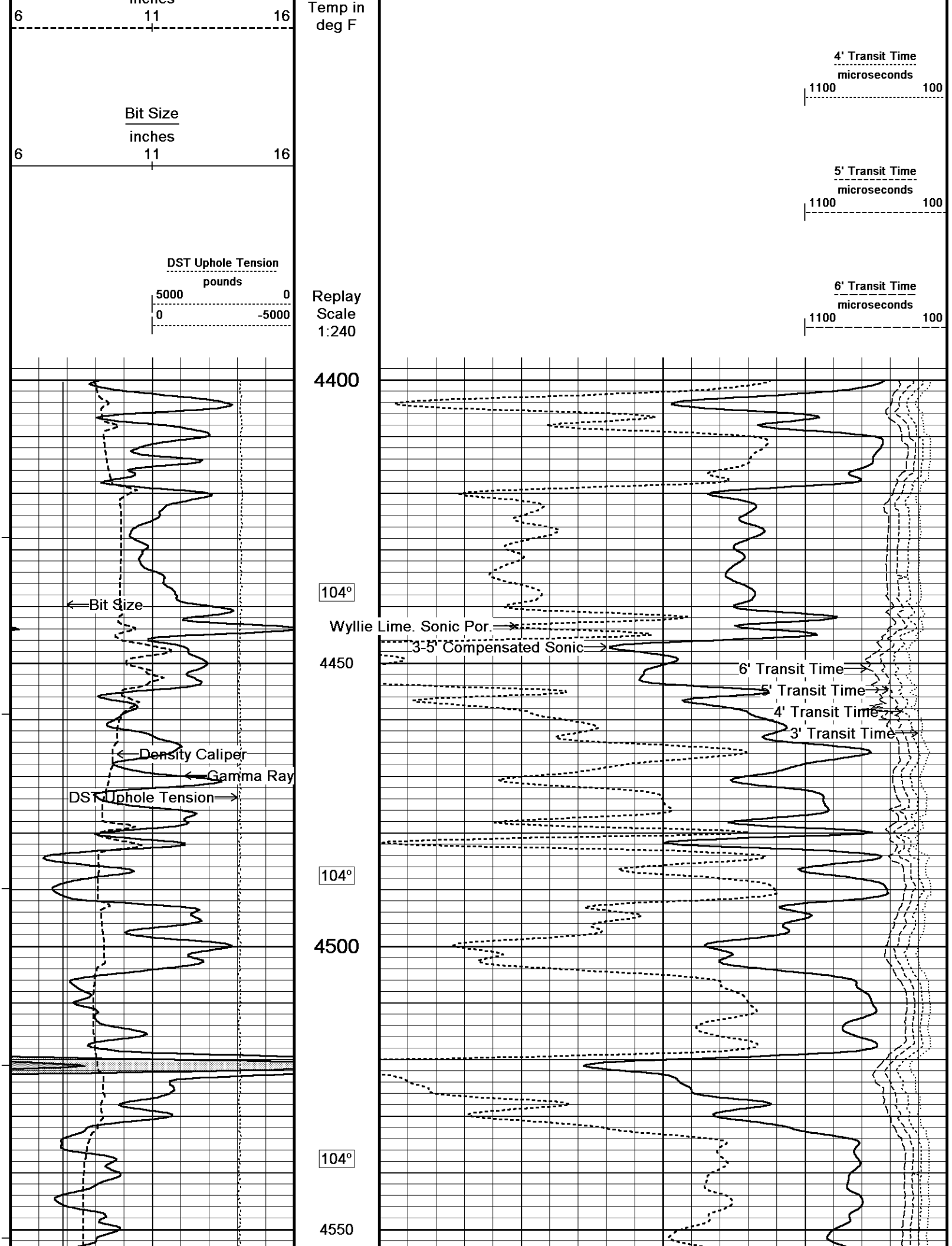
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

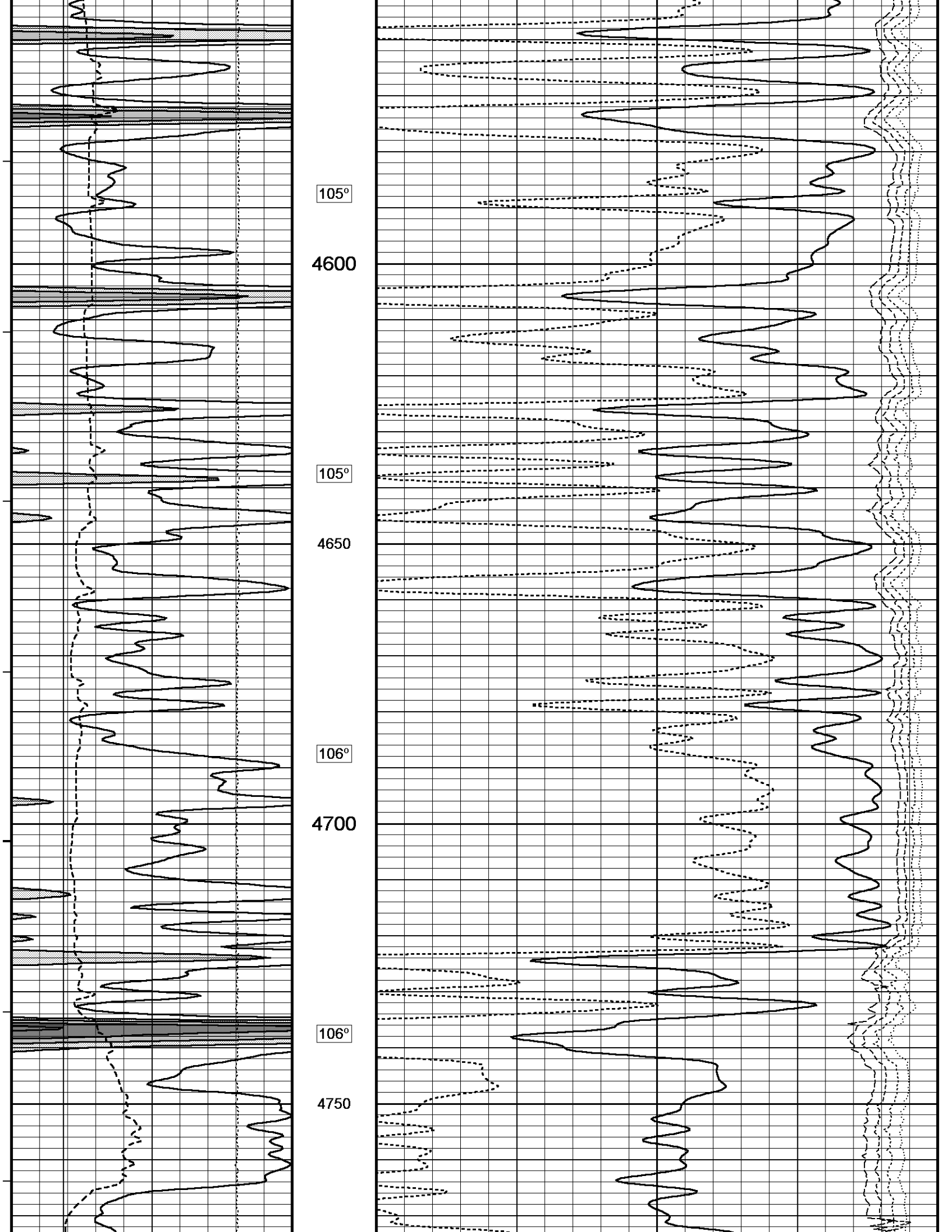
Gamma Ray
API
0 75 150
150 225 300

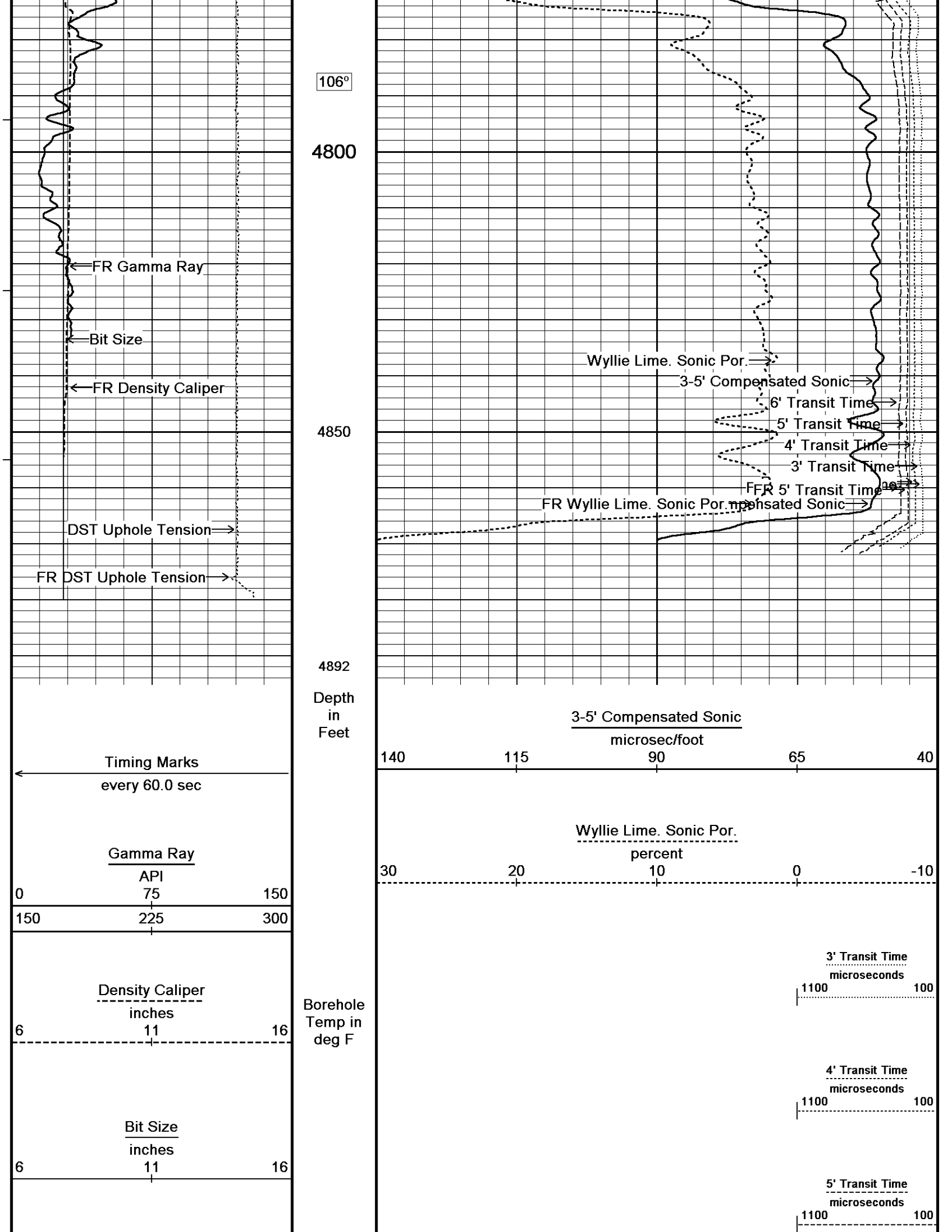
3' Transit Time
microseconds
1100 100

Density Caliper
inches

Borehole


6
11
16
Temp in deg F
Bit Size
inches
6
11
16
4' Transit Time
microseconds
1100
100
5' Transit Time
microseconds
1100
100
DST Uphole Tension
pounds
5000
0
0
-5000
Replay Scale 1:240
6' Transit Time
microseconds
1100
100
4400
104°
Bit Size
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
4450
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
Density Caliper
Gamma Ray
DST Uphole Tension
104°
4500
104°
4550


105°
4600
105°
4650
106°
4700
106°
4750


106°
4800
4850
4892
FR Gamma Ray
Bit Size
FR Density Caliper
DST Uphole Tension
FR DST Uphole Tension
Wyllie Lime. Sonic Por.
3-5' Compensated Sonic
6' Transit Time
5' Transit Time
4' Transit Time
3' Transit Time
FFR 5' Transit Time
FR Wyllie Lime. Sonic Por. npensated Sonic
Depth in Feet
3-5' Compensated Sonic
microsec/foot
140 115 90 65 40
Timing Marks
every 60.0 sec
Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10
Gamma Ray
API
0 75 150
150 225 300
3' Transit Time
microseconds
1100 100
Density Caliper
inches
6 11 16
Borehole Temp in deg F
4' Transit Time
microseconds
1100 100
Bit Size
inches
6 11 16
5' Transit Time
microseconds
1100 100

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 11_01\Data\Shakespeare Janzen 1-16\Copy of Janzen 1-16_001.dta
System Versions: Logged with 11.01.2198 Plotted with 11.01.2198

Plotted on 21-DEC-2010 12:36
Recorded on 21-DEC-2010 10:01

Repeat Section

BEFORE SURVEY CALIBRATION

C:\Minimus 11_01\Data\Shakespeare Janzen 1-16\Copy of Janzen 1-16_001.dta

General Constants All 000

Last Edited on 21-DEC-2010,08:40

General Parameters		
Mud Resistivity	0.770	ohm-metres
Mud Resistivity Temperature	73.000	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	4.500	inches
Caliper for Differential Caliper	Density Caliper	
Rwa Parameters		
Porosity used	Limestone Density Por.	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

High Resolution Temperature Calibration MCG-B 67

Field Calibration on 06-AUG-2010,10:40

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

High Resolution Temperature Constants MCG-B 67

Last Edited on 06-AUG-2010,10:39

Pre-filter Length	11

Gamma Calibration MCG-B 67

Field Calibration on 09-DEC-2010 10:58

	Measured	Calibrated (API)
Background	63	45
Calibrator (Gross)	707	501
Calibrator (Net)	644	456

Gamma Constants MCG-B 67

Last Edited on 21-DEC-2010,08:42

Gamma Calibrator Number	grcc141	
Mud Density	1.14	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Sonic Constants MSS-A.A 127

Last Edited on 21-DEC-2010,08:41

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	
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

Caliper Calibration MPD-B 61

Base Calibration on 12-DEC-2010,09:32
Field Calibration on 12-DEC-2010,09:32

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	19181	4.01
2	29014	5.96
3	39136	7.98
4	49217	9.95
5	59496	11.91
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.96	5.96

DOWNHOLE EQUIPMENT

C:\Minimus 11_01\Data\Shakespeare Janzen 1-16\Copy of Janzen 1-16_001.dta

MCB-A.A 11B Tension Cablehead
MCB-A.A 2 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

Compact Comms Gamma
MCG-B 67 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 41 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

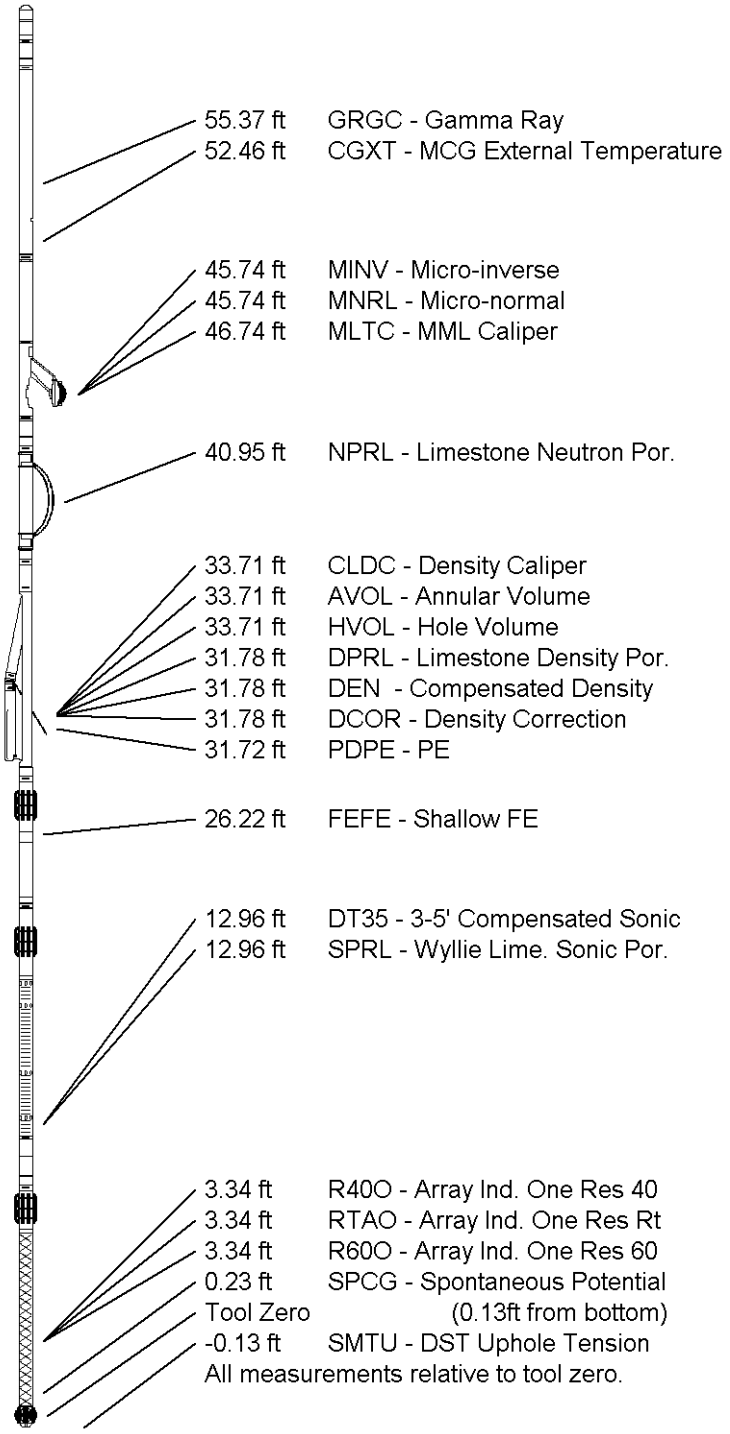
Compact Density/Caliper
MPD-B 61 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-A.A 67 LG: 6.03 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 188 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 63.05 ft Weight: 476.2 lb



COMPANY	SHAKESPEARE OIL
WELL	JANZEN 1-16
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A./KANSAS

Elevation Kelly Bushing	3149.00	feet	First Reading	4863.00	feet
Elevation Drill Floor	3148.00	feet	Depth Driller	4880.00	feet
Elevation Ground Level	3139.00	feet	Depth Logger	4876.00	feet

Weatherford®

COMPENSATED SONIC
W INTEGRATED TRANSIT TIMES
LOG

40 Years of Wireline 1970 2010