



Weatherford

CALIPER LOG

COMPANY

COMANCHE RESOURCES COMPANY

WELL

EDER # 6-4

FIELD

WILDCAT

PROVINCE/COUNTY

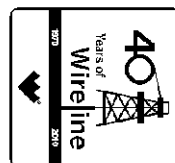
SCOTT

COUNTRY/STATE

U.S.A. / KANSAS

LOCATION

780' FSL & 920' FEL



SEC

6

TWP

20S

RGE

34W

Other Services
MPD/MDN
MAI/MFE
MML

API Number

15-171-20857

Permit Number

Elevations:
KB 3081.00
DF 3079.00
GL 3070.00

Permanent Datum G.L., Elevation 3070 feet

Log Measured From KB

Drilling Measured From K.B. @ 11 FEET

3081.00
3079.00
3070.00

03-JAN-2012

ONE

feet

Depth Driller

feet

Depth Logger

feet

First Reading

feet

Last Reading

feet

Casing Driller

feet

Casing Logger

feet

Bit Size

inches

Hole Fluid Type

CHEMICAL

Density / Viscosity

9.10 lb/USg

PH / Fluid Loss

10.00

Sample Source

FLOWLINE

Rm @ Measured Temp

ohm-m

Rmf @ Measured Temp

ohm-m

Rmc @ Measured Temp

ohm-m

Source Rmf / Rmc

CALC

Rm @ BHT

ohm-m

Time Since Circulation

5 HOURS

Max Recorded Temp

deg F

Equipment Name

COMPACT

LIB

Equipment / Base

13057

LIB

Recorded By

A. GIAMBALVO

SEAN DEENIHAN

Witnessed By

SEAN DEENIHAN

LB12-02

S.O. / JOB #

3531243

LB12-02

BOREHOLE RECORD

Last Edited: 04-JAN-2012 03:19

Bit Size
inches

7.875

Depth From
feet

394.00

Depth To
feet

5004.00

CASING RECORD

Type

Size
inches

8.625

Depth From
feet

11.00

Shoe Depth
feet

394.00

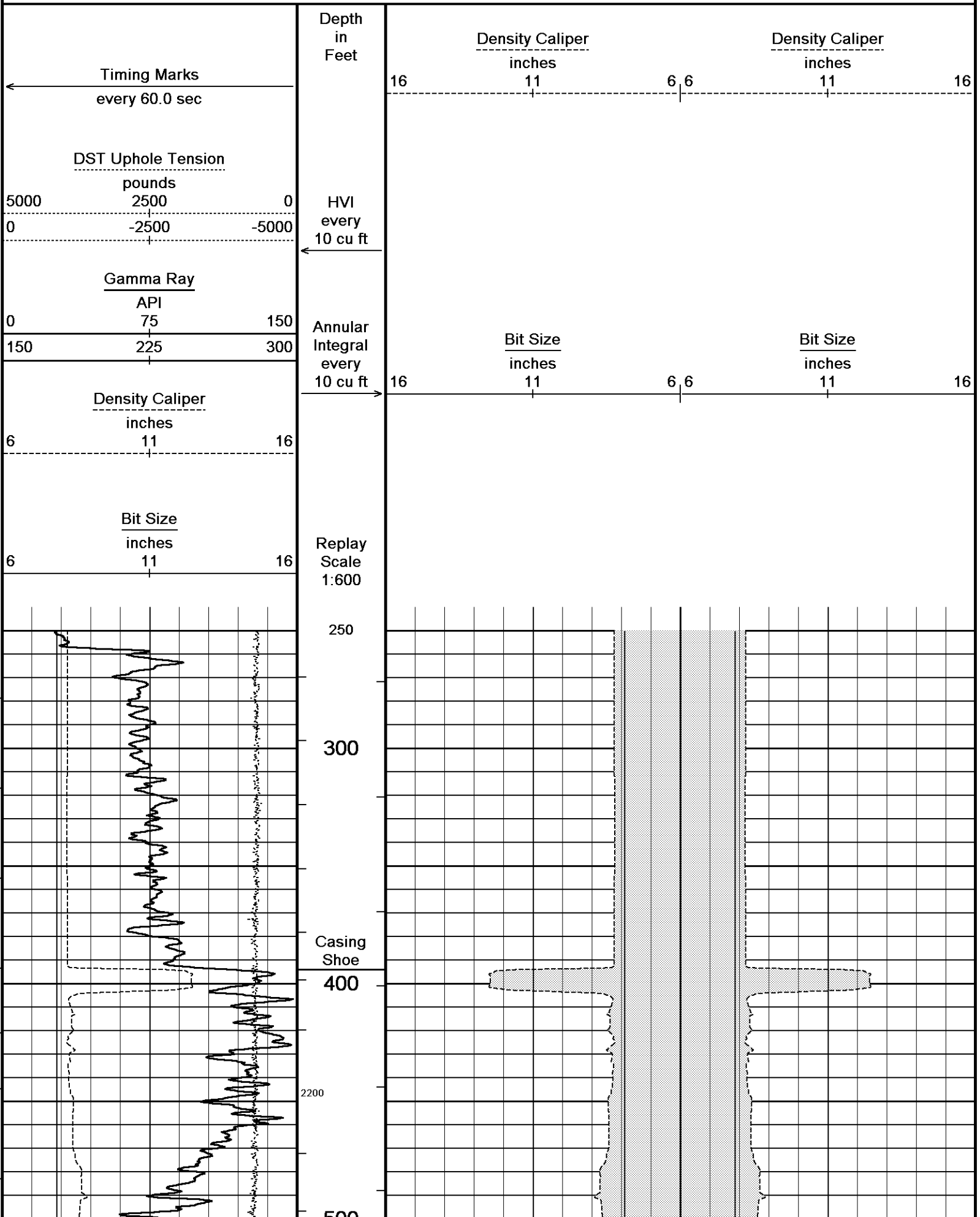
Weight
pounds/ft

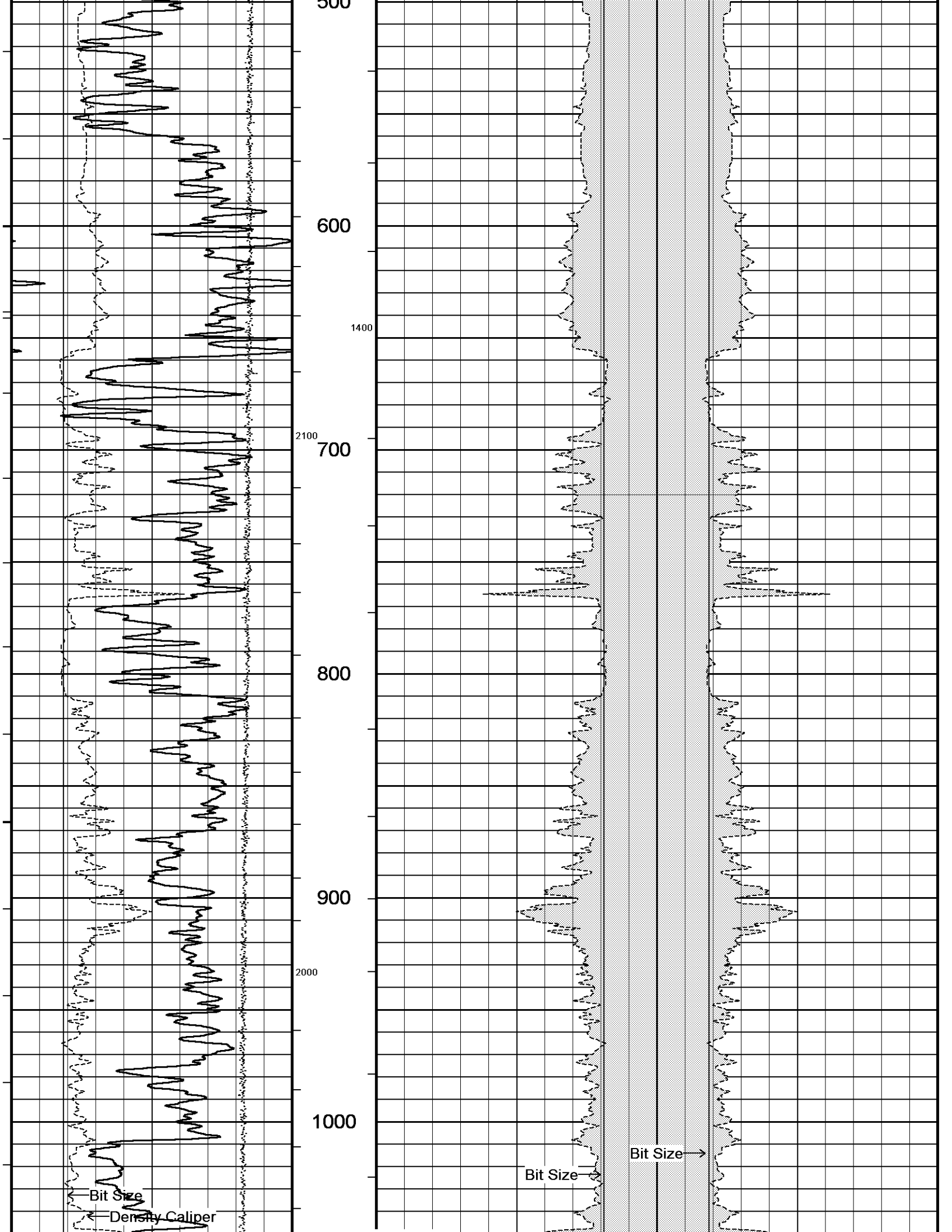
24.00

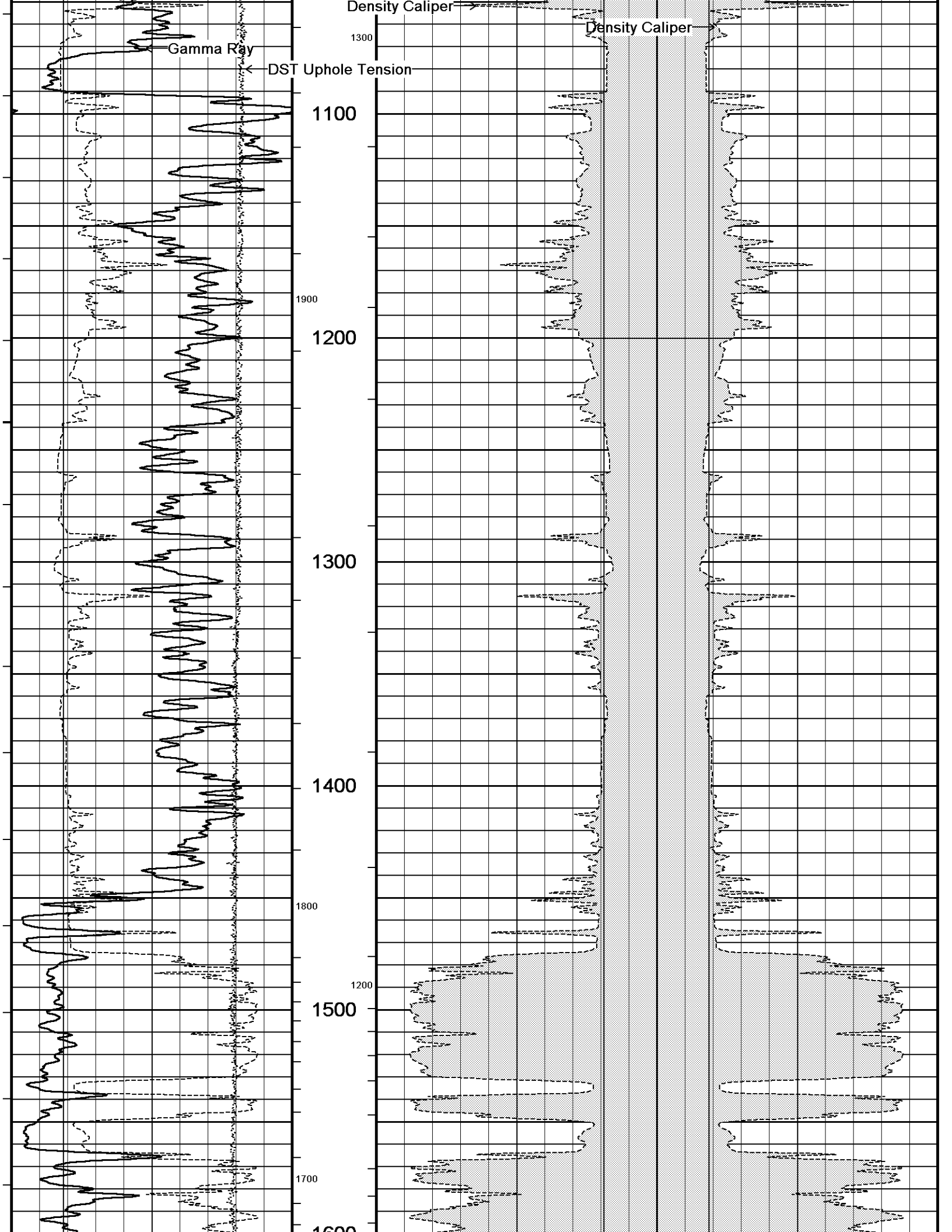
REMARKS

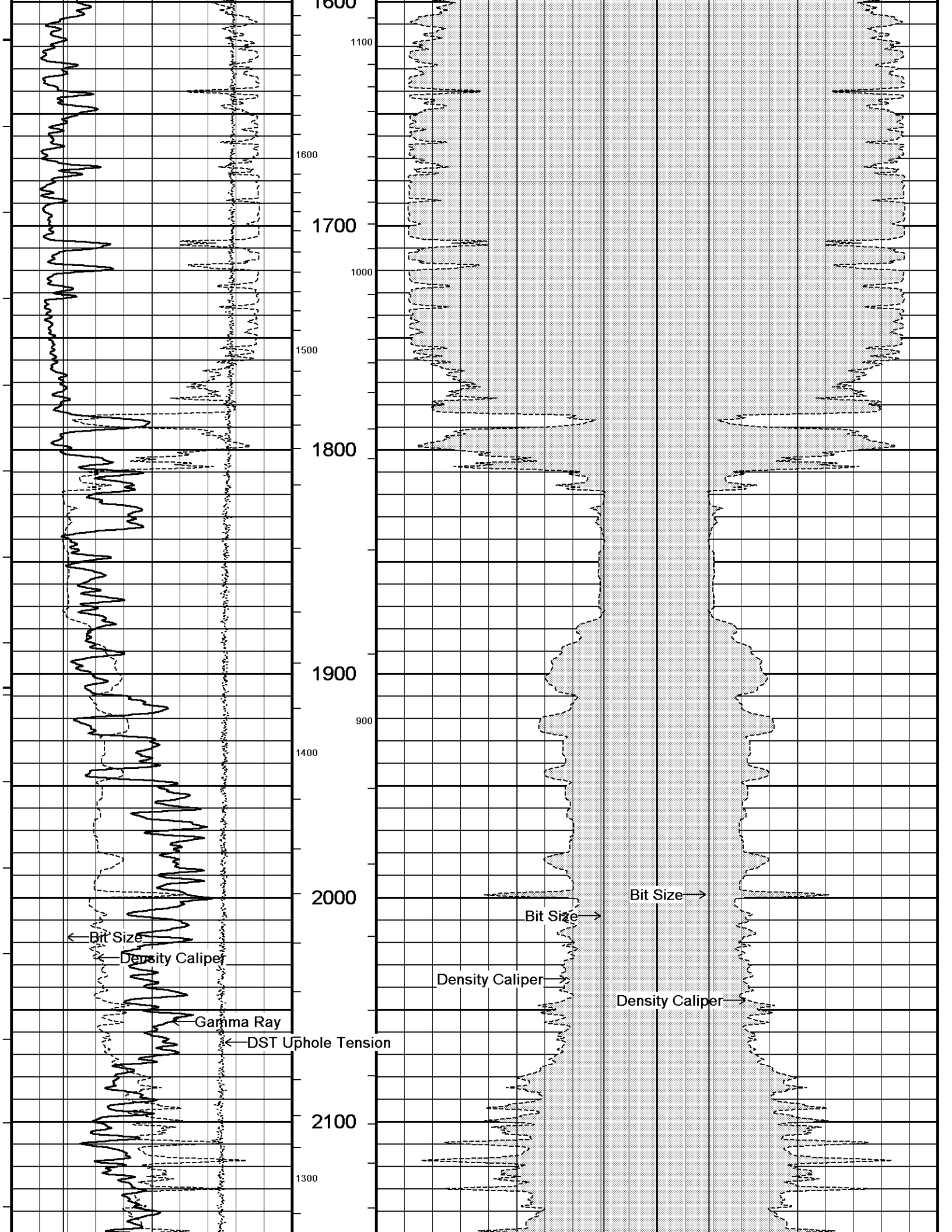
Tools Ran: MCG, MML, MDN, MPD, SKJ, MFE, MAI.
Hardware Used: MDN Dual Eccentralizer used. MPD 8 inch profile plate used. MFE and MAI 0.5 inch standoffs used.
2.71 g/cc Limestone Density Matrix used to calculate porosity.
All intervals logged and scaled per customer's request.
Annular volume with 5.5 inch production casing = 275 cu. ft.
Service order #3531243
Rig: Murfin Rig # 22
Engineer: A. Giambalvo
Operator(s): B. Johnson

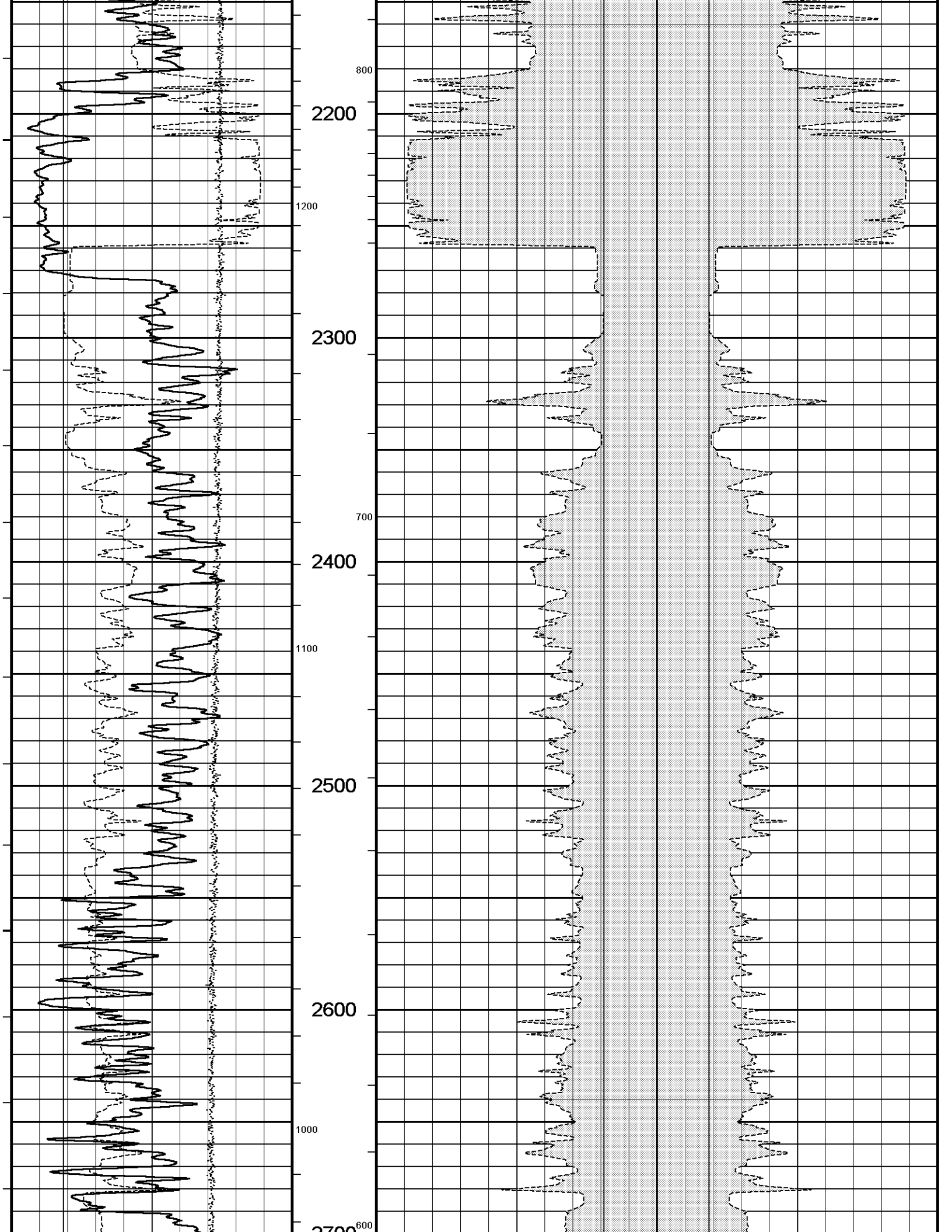
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, 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.

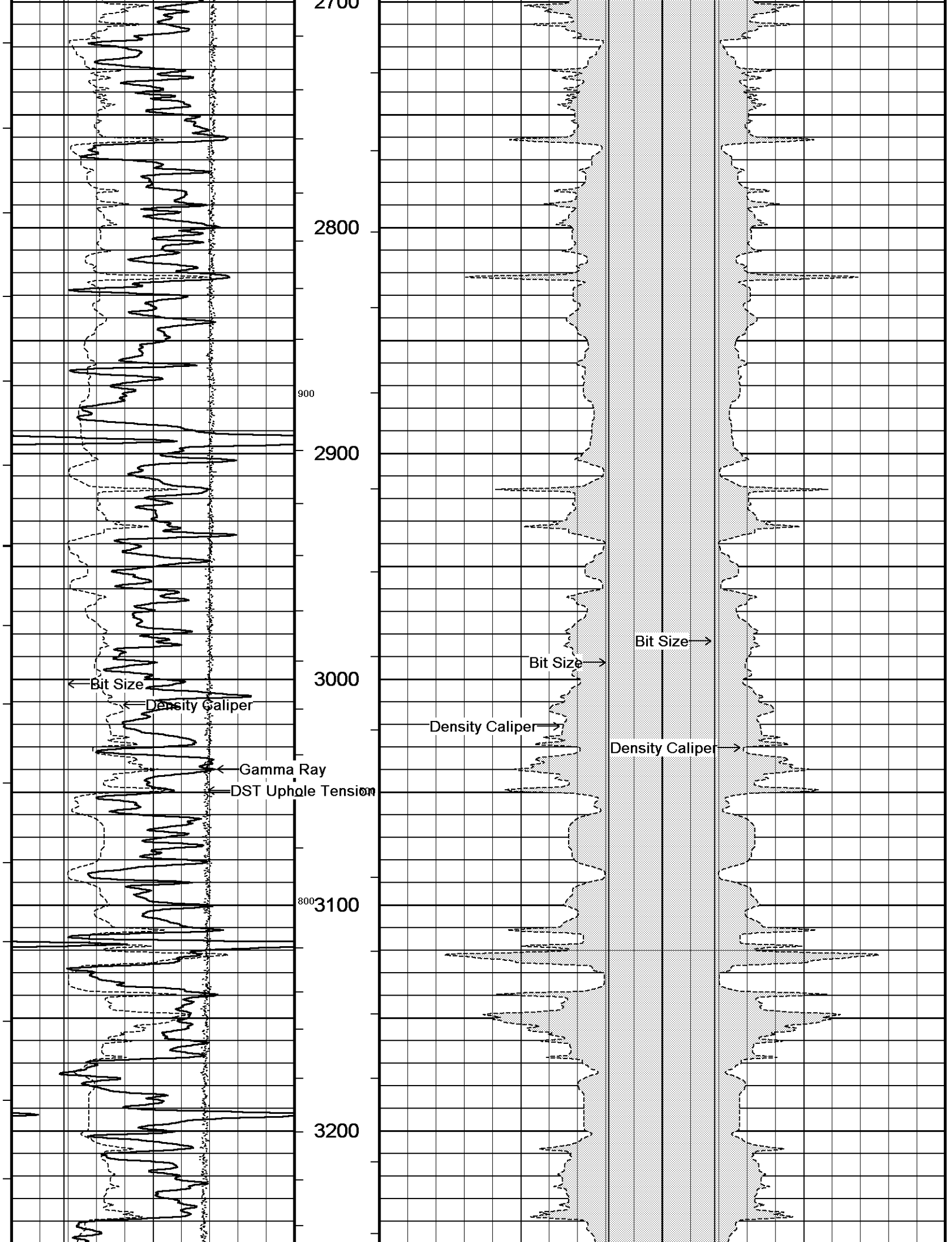


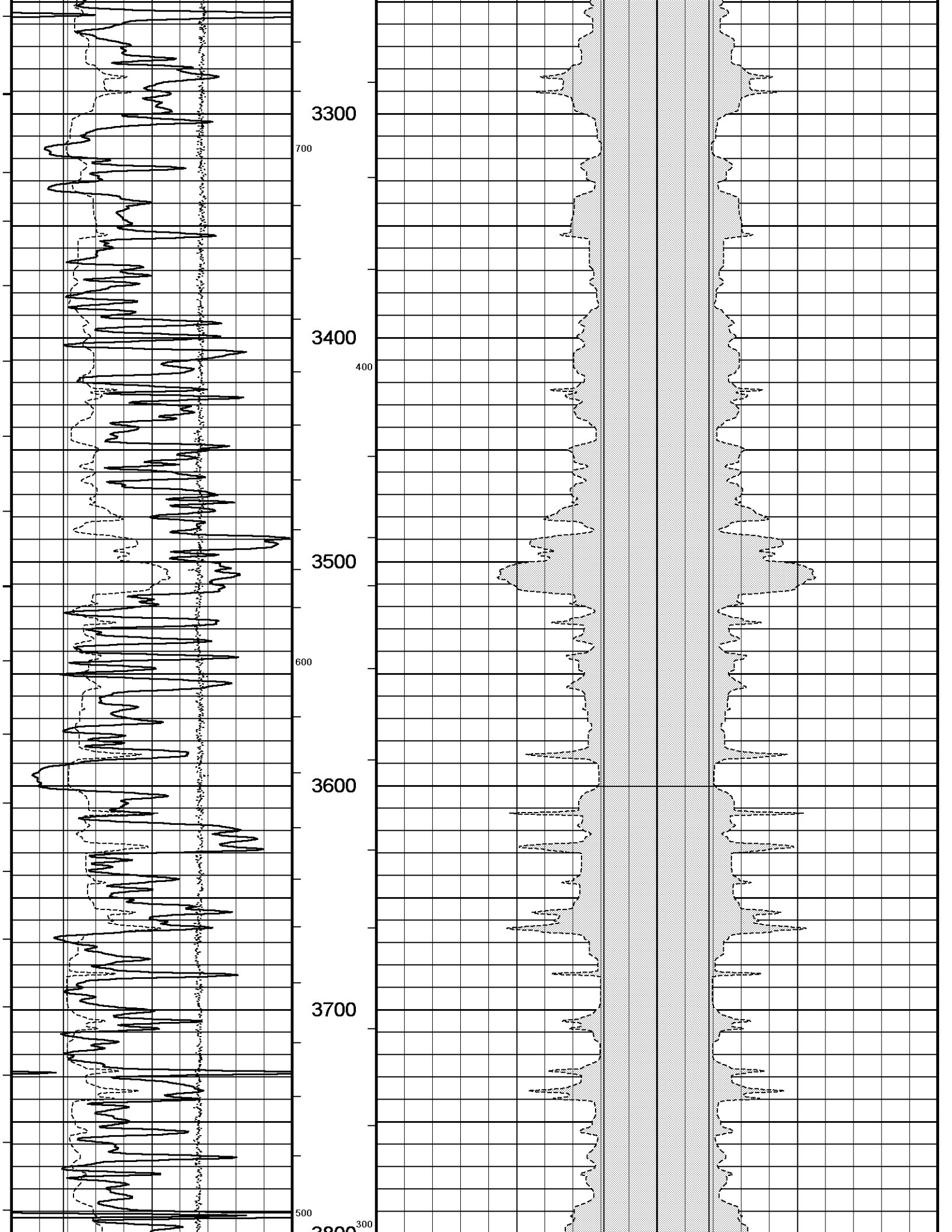


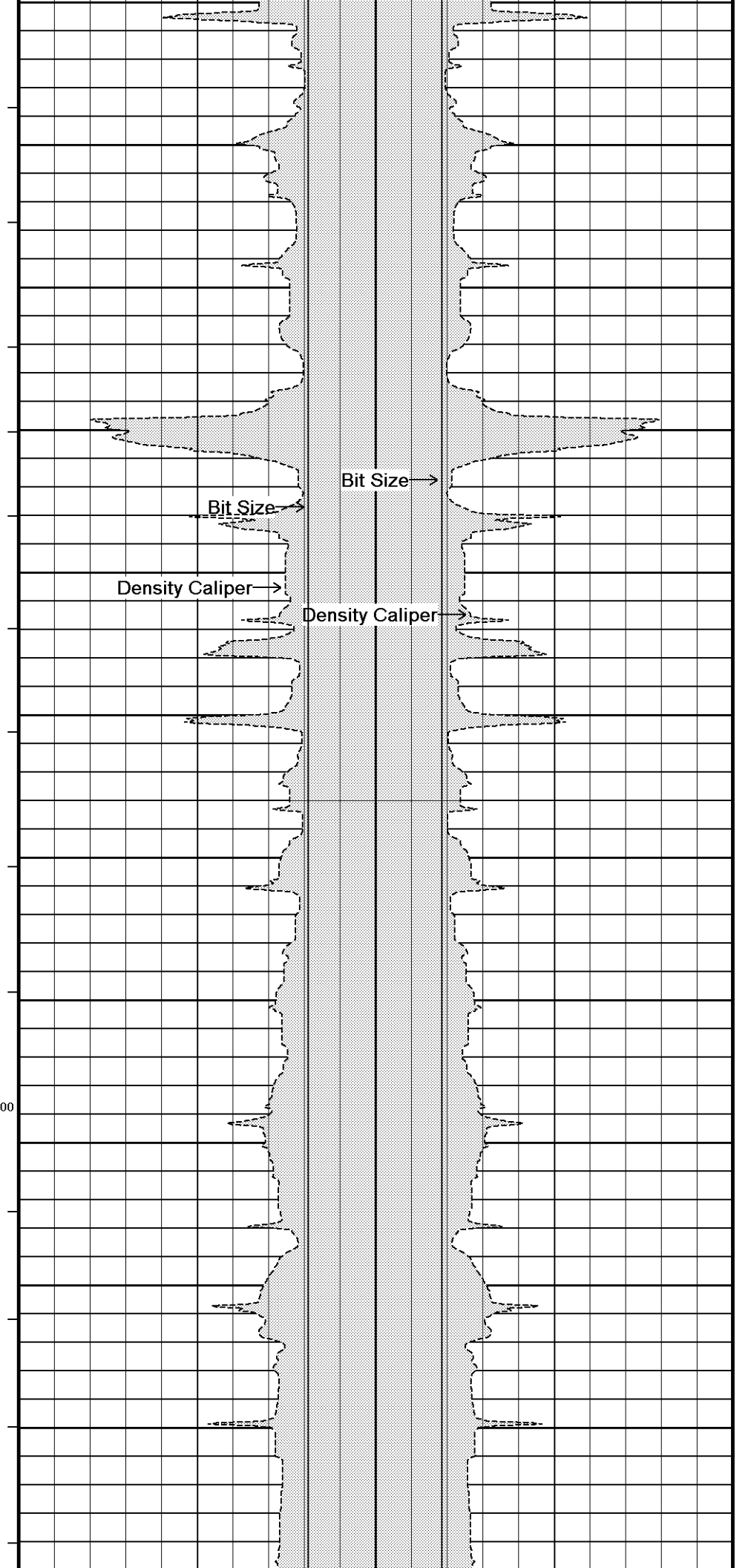
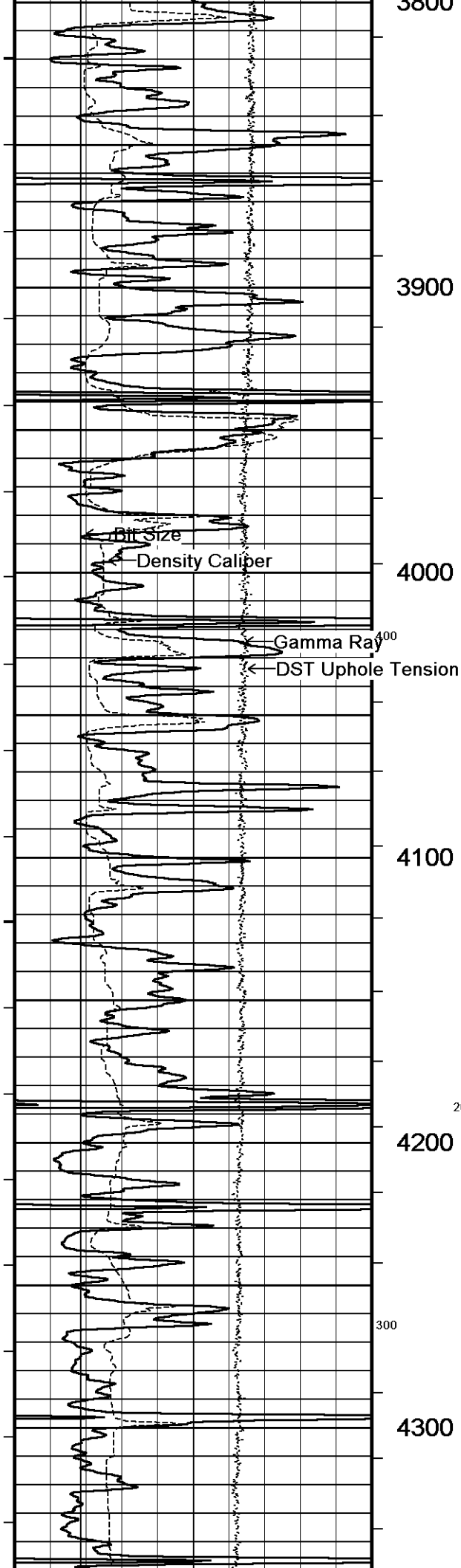


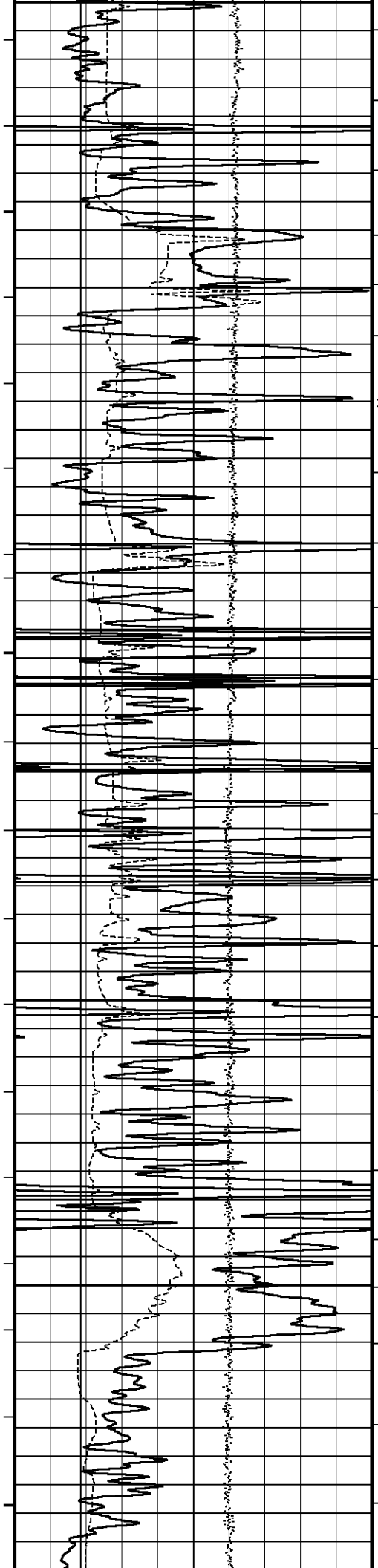




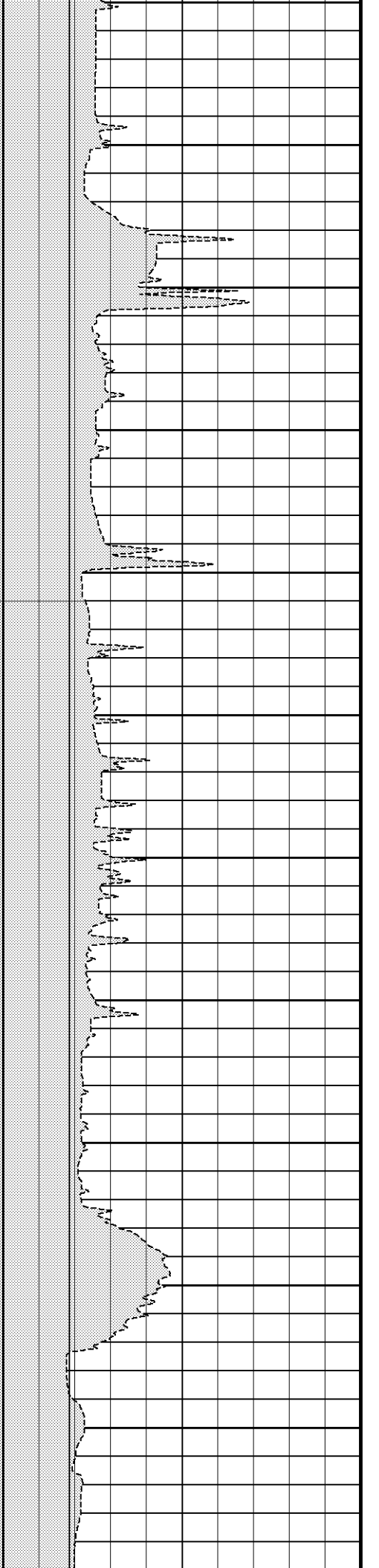
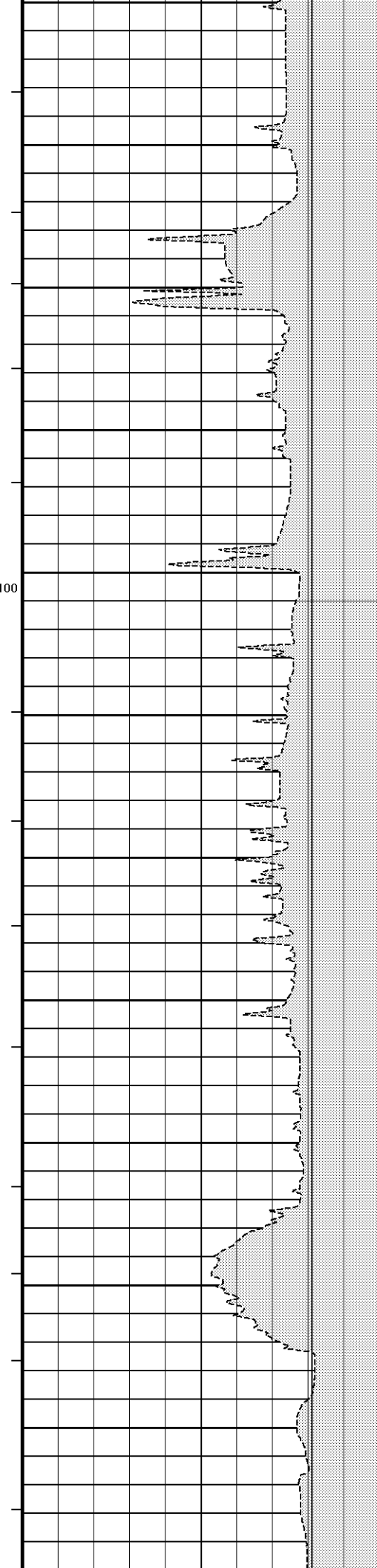


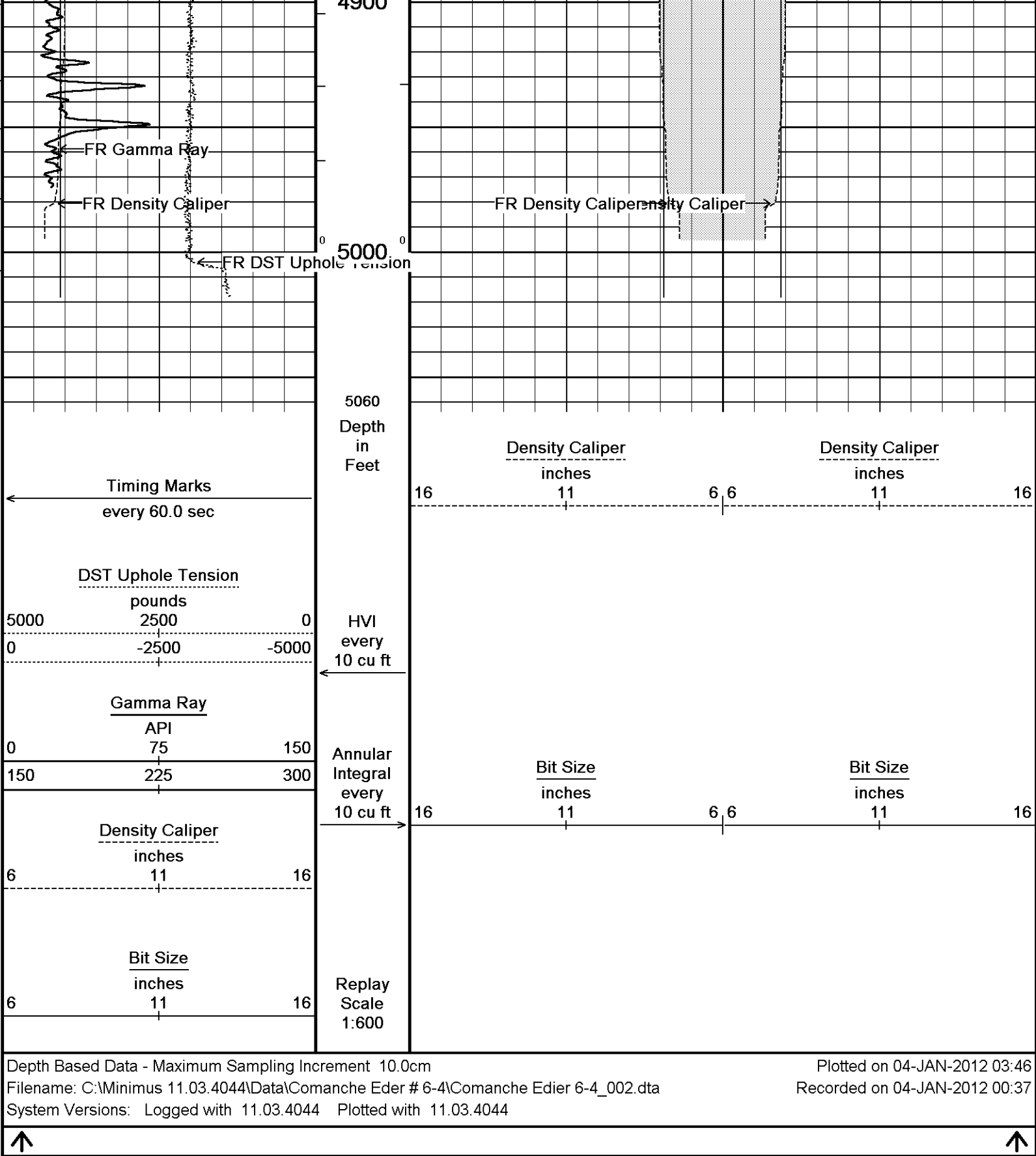






4400
200
4500
100
4600
4700
100
4800
4900





BEFORE SURVEY CALIBRATION		
C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Edier 6-4_002.dta		
General Constants All 000		Last Edited on 03-JAN-2012,23:46
General Parameters		
Mud Resistivity	0.800	ohm-metres
Mud Resistivity Temperature	50.000	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 24-DEC-2011 19:14	
Reading No	Measured	Calibrated (lbs)	
1	13180.10	0.00	
2	14049.87	408.00	
Gamma Calibration MCG-D.K 442		Field Calibration on 30-NOV-2011 11:34	
	Measured	Calibrated (API)	
Background	73	51	
Calibrator (Gross)	731	507	
Calibrator (Net)	658	456	
Gamma Constants MCG-D.K 442		Last Edited on 03-JAN-2012,23:46	
Gamma Calibrator Number	grc141		
Mud Density	1.09	gm/cc	
Caliper Source for Processing	Density Caliper		
Tool Position	Eccentred		
Concentration of KCl	0.00	kppm	
SP Calibration MCG-D.K 442		Field Calibration on 23-SEP-2011 14:10	
	Measured	Calibrated (mV)	
Reference 1	100.3	100.0	
Reference 2	-98.9	-100.0	
High Resolution Temperature Calibration MCG-D.K 442		Field Calibration on 02-DEC-2011,12:34	
	Measured	Calibrated(Deg F)	
Lower	50.00	50.00	
Upper	75.00	75.00	
High Resolution Temperature Constants MCG-D.K 442		Last Edited on 25-SEP-2011,21:25	
Pre-filter Length	11		
Caliper Calibration MML-A 4		Base Calibration on 26-DEC-2011 14:04 Field Calibration on 03-JAN-2012 11:18	
Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	15032	5.98	
2	18428	7.97	
3	21790	9.86	
4	25773	11.92	
5	0	0.00	
6	N/A	N/A	
Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	5.98	5.98	
Micro Normal and Micro Inverse Calibration MML-A 4		Base Calibration on 26-DEC-2011 13:57 Field Check on 03-JAN-2012 11:22	
Base Calibration			
Channel	Resistor 1	Measured Resistor 2	Calibrated (ohm-m) Resistor 2
Micro Normal	12.2	60.2	2.6 12.8
Micro Inverse	15.7	78.4	1.7 8.4

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	32.1	32.1
Micro Inverse	16.3	16.3

Micro Normal and Micro Inverse Constants MML-A 4			Last Edited on 26-DEC-2011,13:43		
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-DEC-2011 14:56	
				Field Check on 03-JAN-2012 11:14	
Base Calibration					
		Measured		Calibrated (cps)	
		Near	Far	Near	Far
		3067	96	3714	110
Ratio		31.868		33.764	
Field Calibrator at Base					
				Calibrated (cps)	
				1645	2378
Ratio				0.692	
Field Check					
				Calibrated (cps)	
				1658	2359
Ratio				0.703	

Neutron Constants MDN-A.B 65			Last Edited on 03-JAN-2012,23:46		
Neutron Source Id	757				
Neutron Jig Number	5824NE				
Epithermal Neutron	No				
Caliper Source for Processing	Density Caliper				
Stand-off	0.00	inches			
Mud Density	1.00	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	Constant Value				
Temperature	68.00	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 16-DEC-2011 15:40 Field Check on 03-JAN-2012 11:26	
Base Calibration			
	Measured	Calibrated (ohm-m)	
Reference 1	0.0	0.0	
Reference 2	951.4	126.8	
Base Check		281.6	
Field Check		281.6	

FE Constants MFE-A.A 55		Last Edited on 03-JAN-2012,23:47	
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	

Induction Calibration MAI-A.A 45			Base Calibration on 13-OCT-2011 14:35	
			Field Check on 03-JAN-2012 11:30	
Base Calibration				
Test Loop Calibration		Measured	Calibrated (mmho/m)	

Test Loop Calibration		Measured		Calibrated (mmho/m)	
Channel		Low	High	Low	High
1		14.4	472.6	9.3	966.2
2		5.7	374.0	7.6	821.4
3		3.4	261.2	5.2	566.0
4		2.5	133.9	2.6	279.2
Array Temperature		79.4		Deg F	
Channel		Base Check (mmho/m)		Field Check (mmho/m)	
		Low	High	Low	High
1		0.0	0.0	18.8	3852.2
2		0.0	0.0	31.8	3630.0
3		0.0	0.0	28.7	3050.0
4		0.0	0.0	18.4	2079.5
Deep		0.0	0.0	16.1	1911.6
Medium		0.0	0.0	42.6	4061.5
Shallow		0.0	0.0	49.7	5484.1
Array Temperature		0.0		65.1	Deg F

Induction Constants MAI-A.A 45				Last Edited on 03-JAN-2012,23:47	
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				

High Resolution Temperature Calibration MAI-A.A 45				Field Calibration on 03-NOV-2011,09:08	
		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	

Photo Density Calibration MPD-B 64	Base Calibration on 08-DEC-2011 15:10
	Field Check on 03-JAN-2012 11:06

Density Calibration		Measured		Calibrated (sdu)	
Base Calibration		Near	Far	Near	Far
Reference 1		47904	25079	59556	30836
Reference 2		19725	2537	24941	2541

Field Check at Base

	1205.0	1399.0
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Field Check

	1205.2	1397.8
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PE Calibration		Measured		Calibrated
Base Calibration		WS	WH	Ratio
Background		220	1077	
Reference 1		18004	47717	0.381
Reference 2		5349	19592	0.277

Field Check at Base

	219.9	1077.0
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Field Check

	219.0	1077.4
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Density Constants MPD-B 64

Last Edited on 03-JAN-2012,23:47

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	1.09 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 (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

Caliper Calibration MPD-B 64

Base Calibration on 08-DEC-2011 14:37

Field Calibration on 03-JAN-2012 11:08

Base Calibration		Measured	Calibrator Size (in)
Reading No			
1		12765	3.99
2		21501	5.98
3		30128	7.97
4		38369	9.86
5		47411	11.92
6		N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.96	5.98

DOWNHOLE EQUIPMENT

C:\Minimus 11.03.4044\Data\Comanche Eder # 6-4\Comanche Edier 6-4_002.dta

MCB-A.A 11B Tension Cablehead
MCB-A.A 175 LG: 2.40 ft WT: 19.8 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 442 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

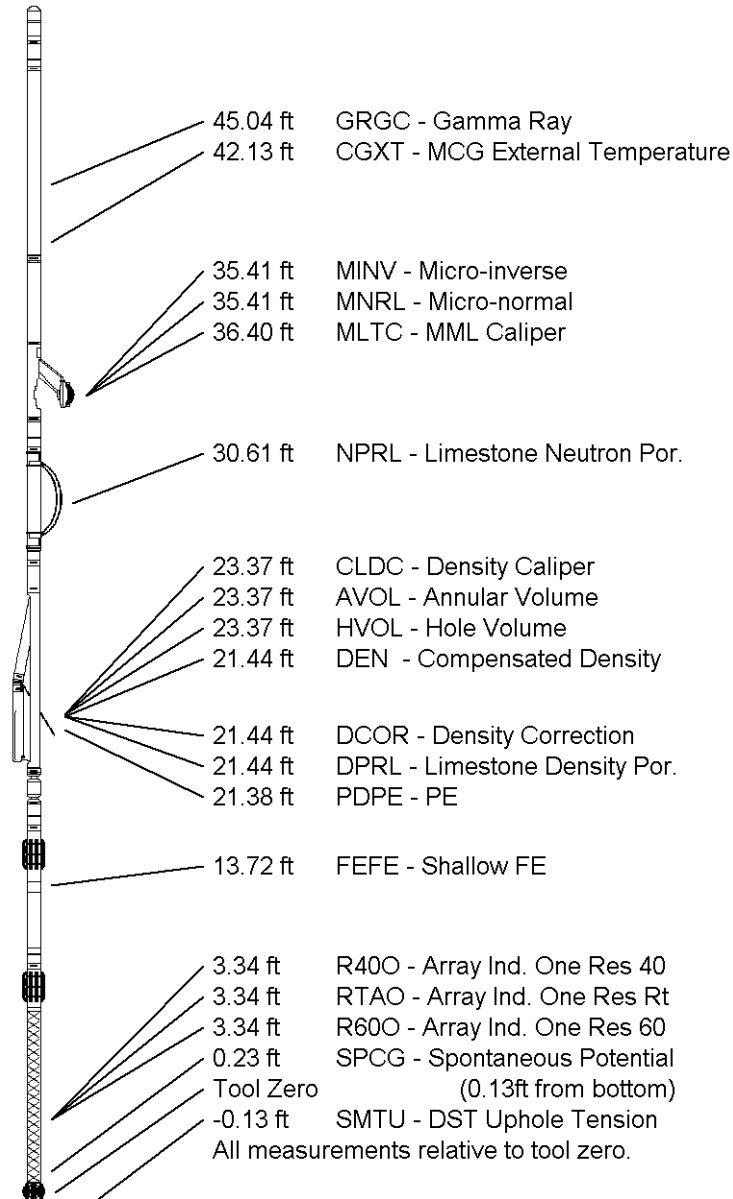
Compact Density/Caliper
MPD-B 64 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

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 Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 52.72 ft Weight: 427.7 lb



COMPANY	COMANCHE RESOURCES COMPANY
WELL	EDER # 6-4
FIELD	WILDCAT
PROVINCE/COUNTY	SCOTT
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	3081.00	feet	First Reading	4981.00	feet
Elevation Drill Floor	3079.00	feet	Depth Driller	5000.00	feet
Elevation Ground Level	3070.00	feet	Depth Logger	5004.00	feet



Weatherford®

CALIPER LOG

