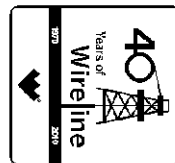




Weatherford

MICRO RESISTIVITY 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** Other Services
16 16 34 MPD/MDN
API Number 15-171-20790 MAI/MFE
Permit Number MSS

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	4830.00	feet
Last Reading	3500.00	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

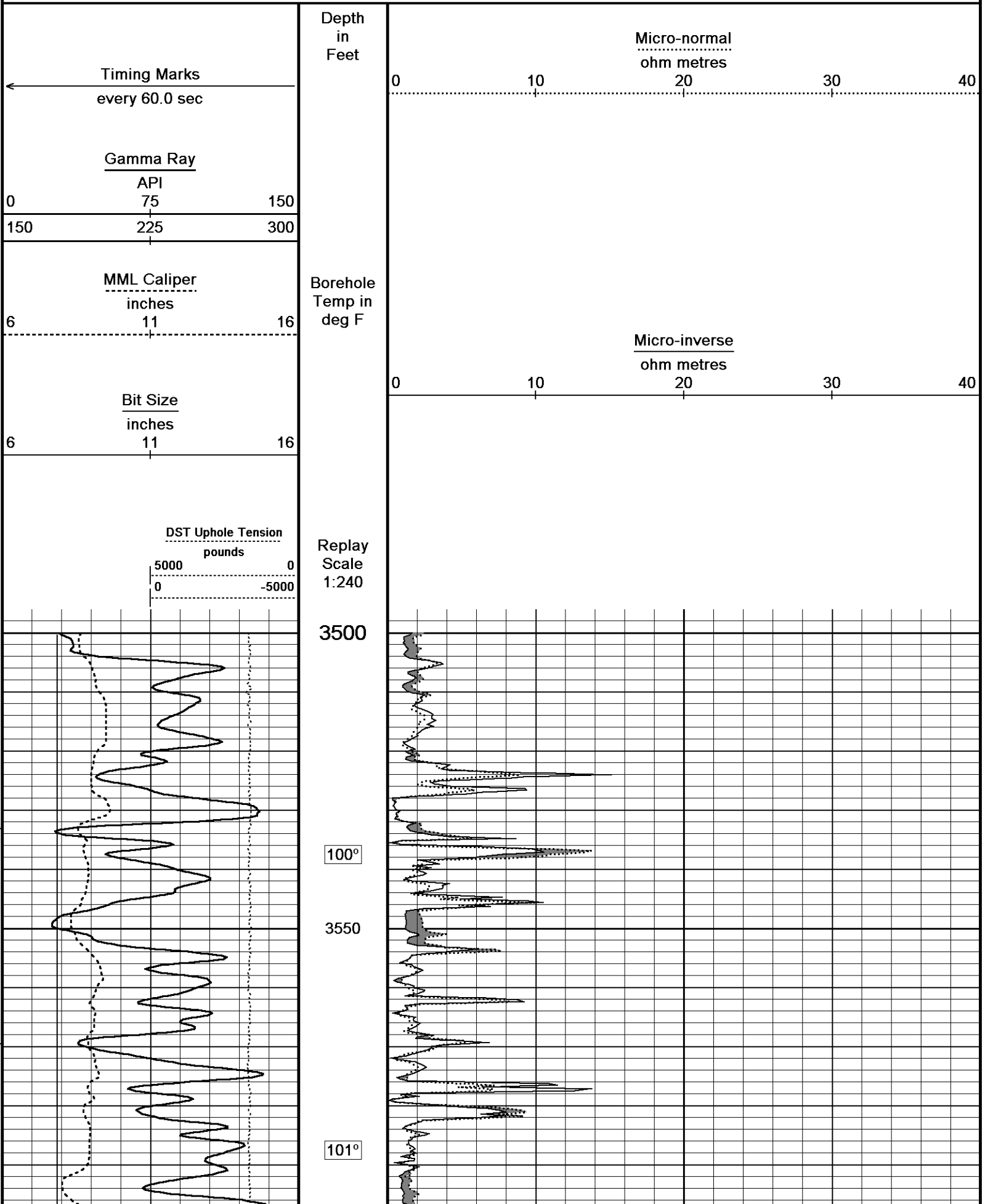
CASING RECORD

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

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.



3600

101°

3650

Micro-inverse

Micro-normal

101°

3700

101°

3750

102°

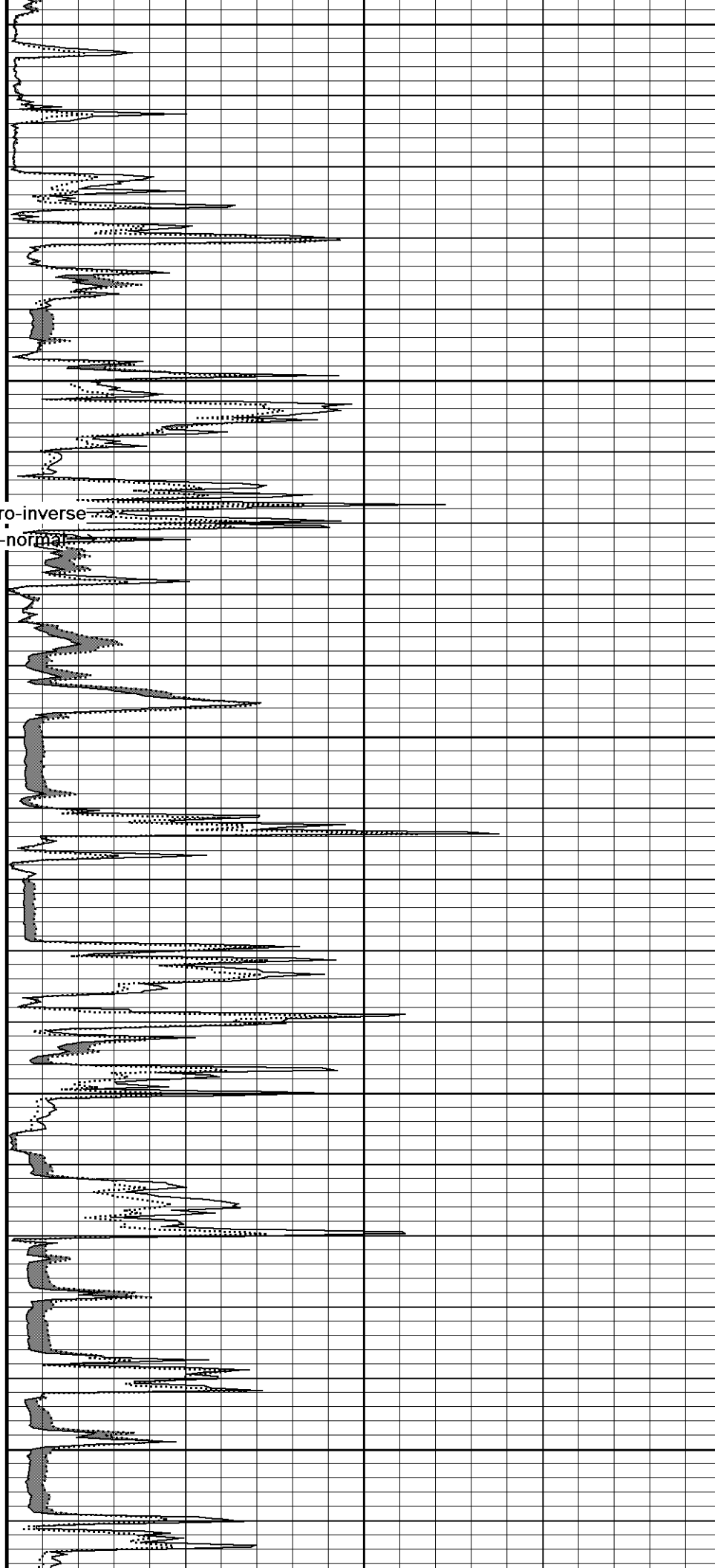
3800

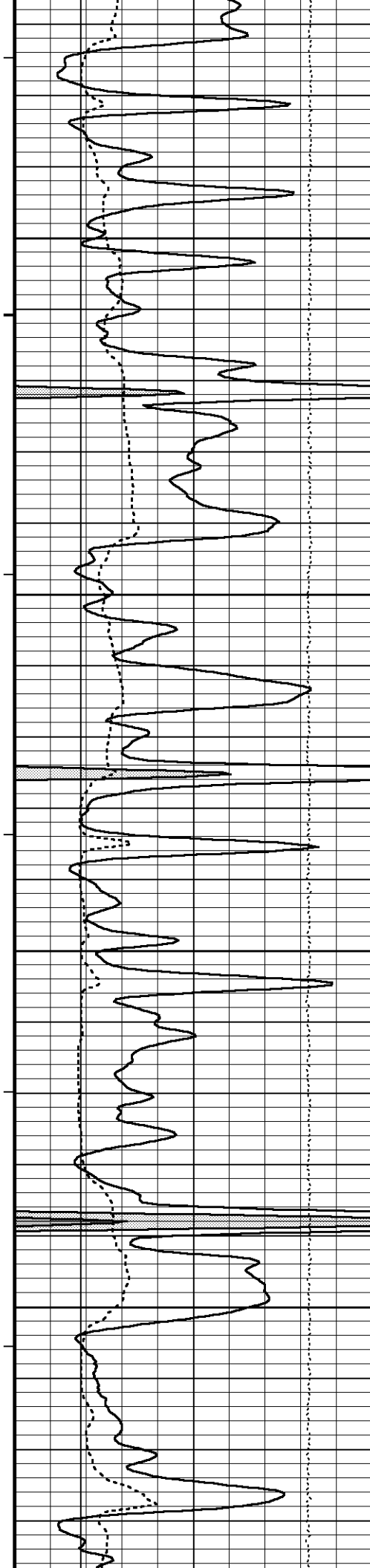
← Bit Size

← MML Caliper

← Gamma Ray

DST Uphole Tension →





102°

3850

102°

3900

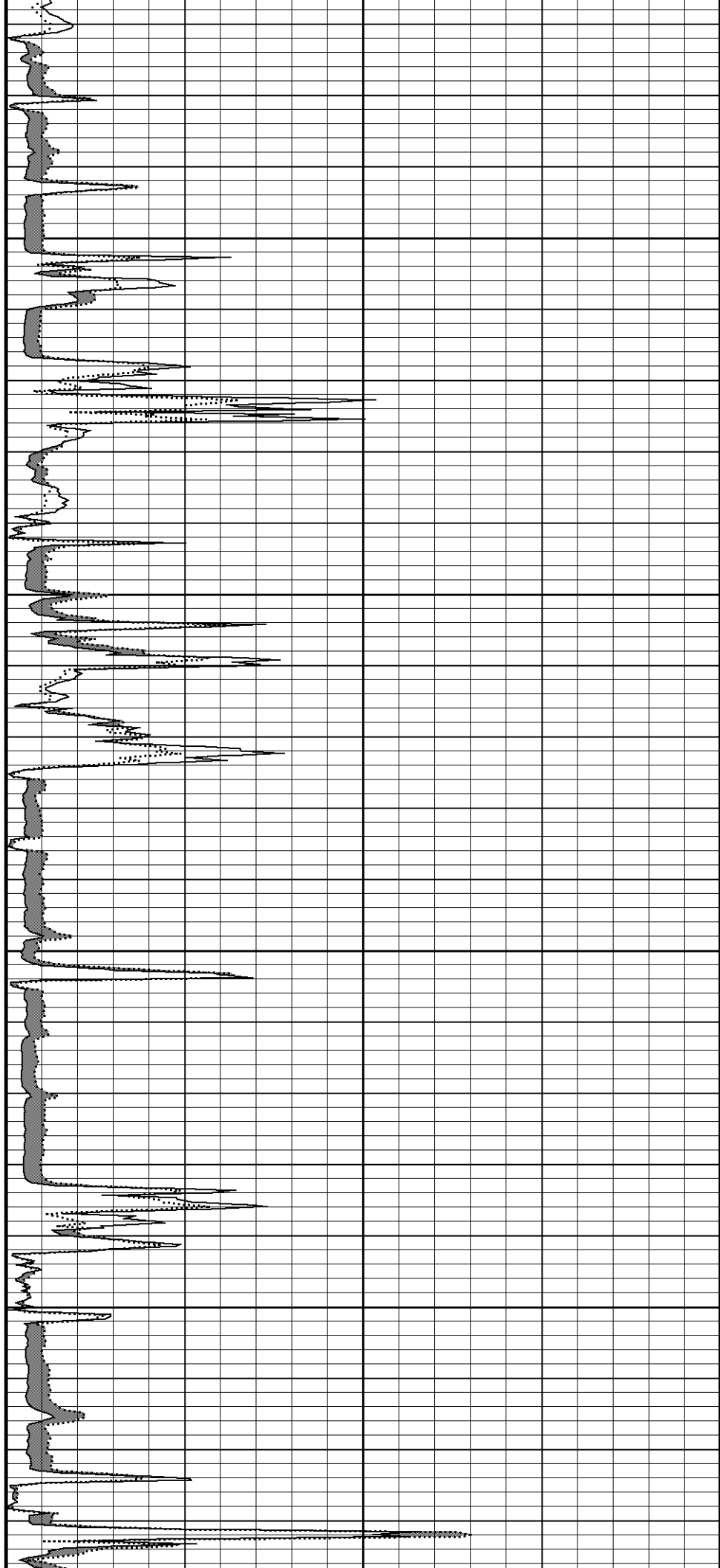
102°

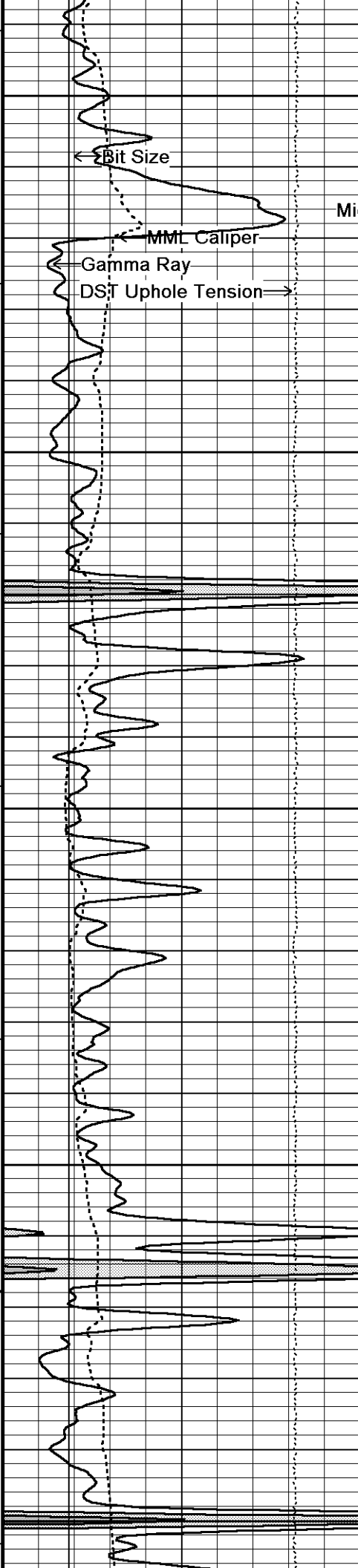
3950

102°

4000

102°





103°
4050
Micro-normal

103°

4100

103°

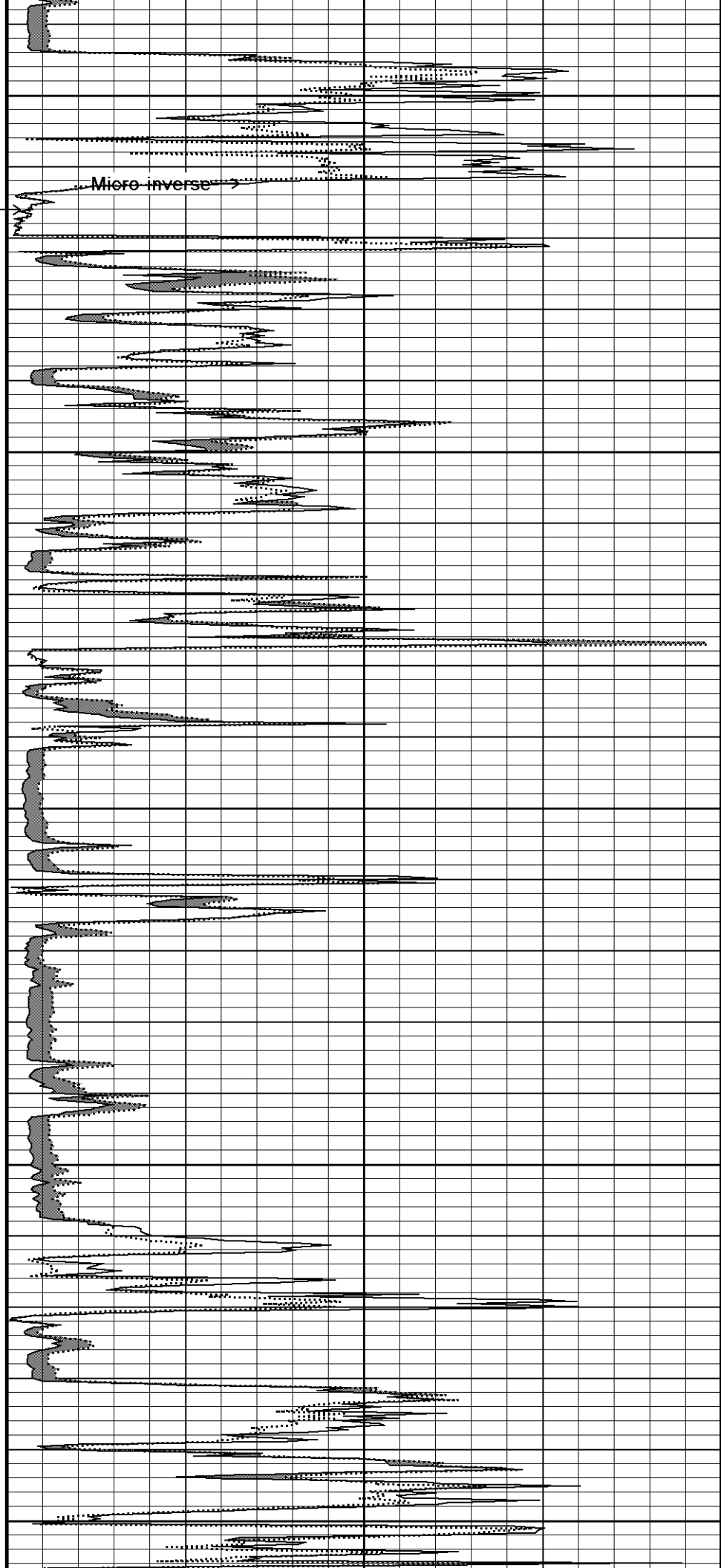
4150

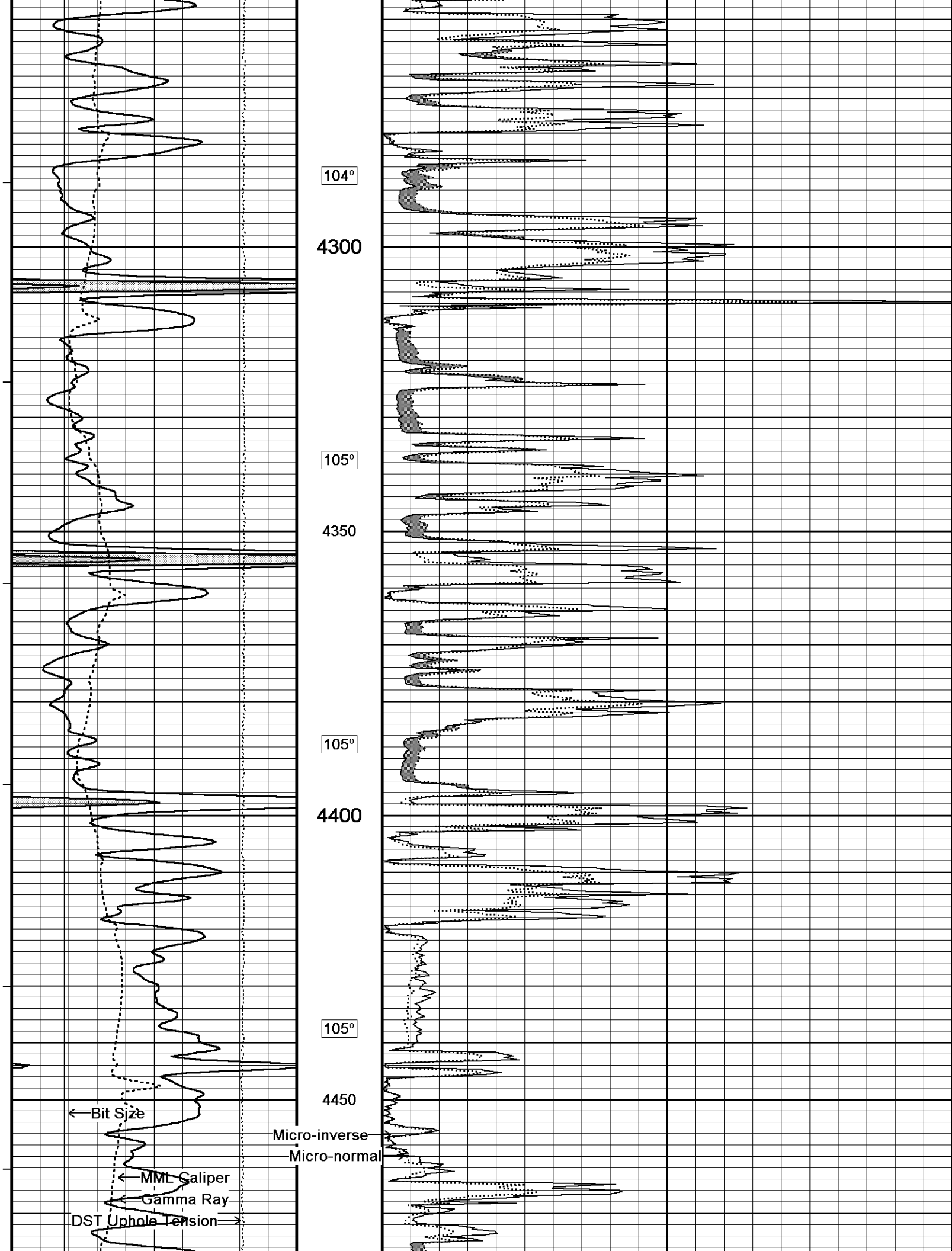
103°

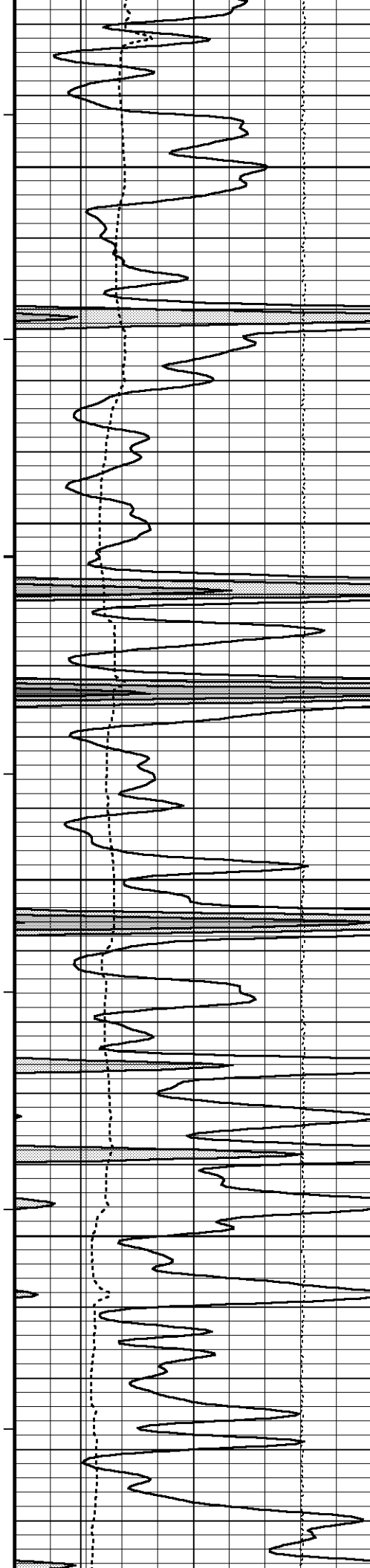
4200

103°

4250







105°

4500

106°

4550

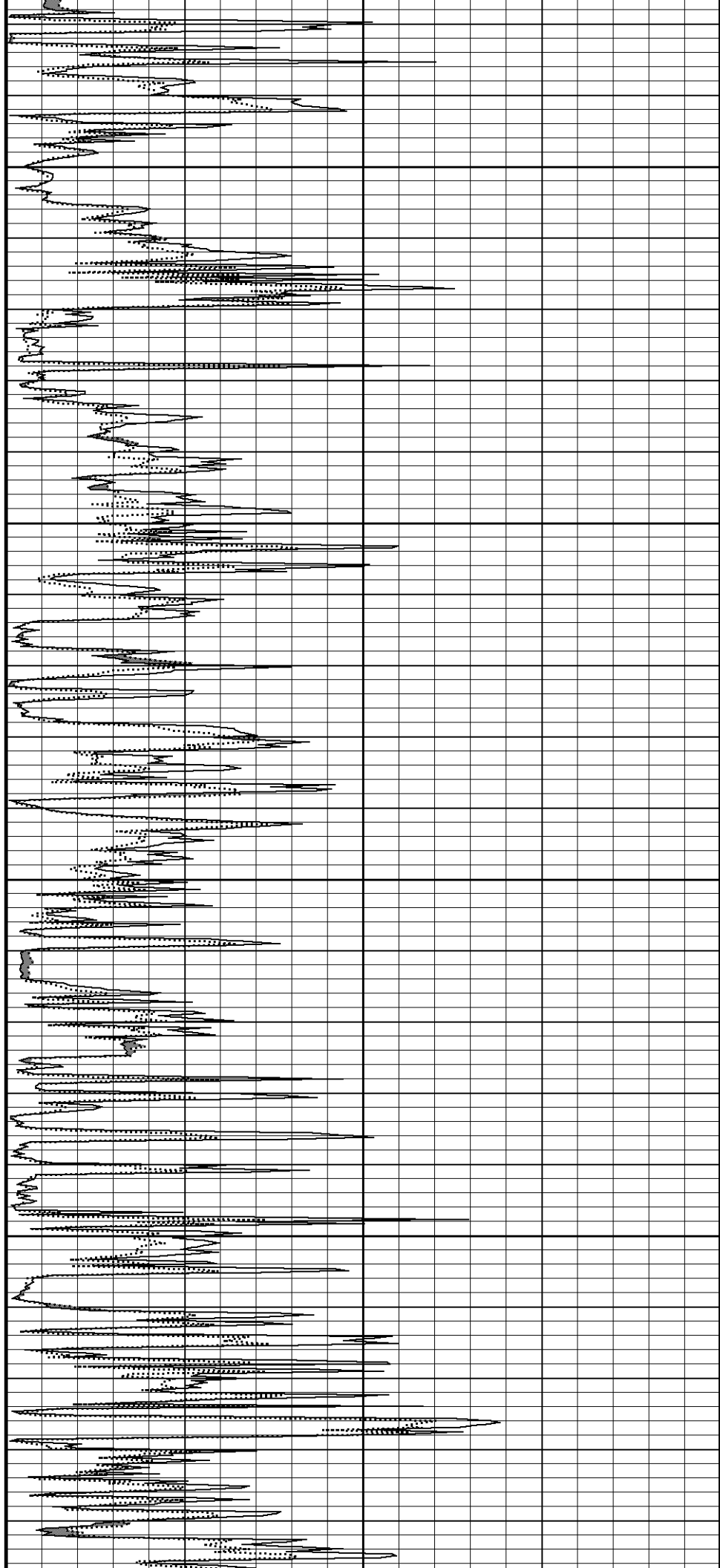
107°

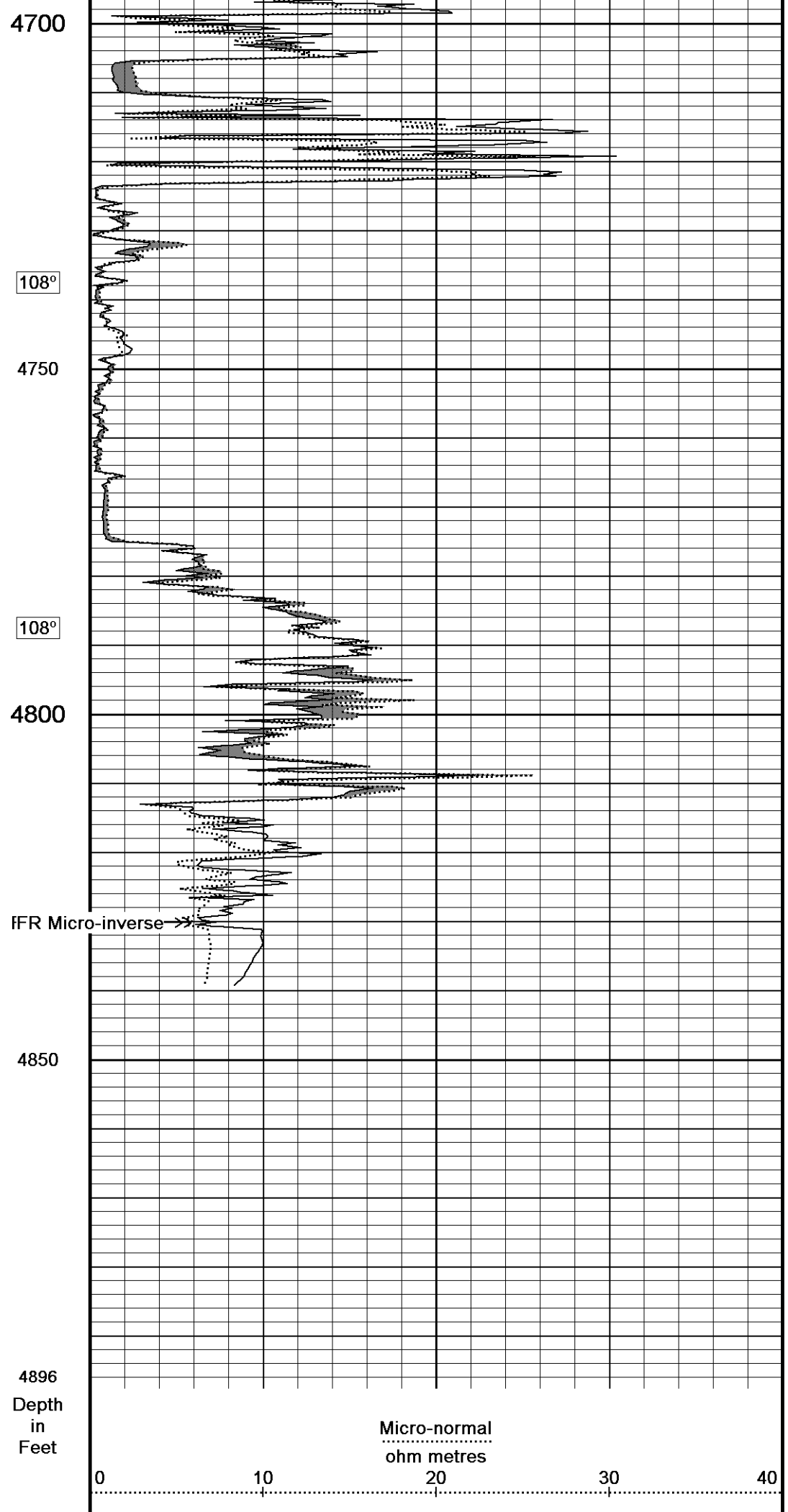
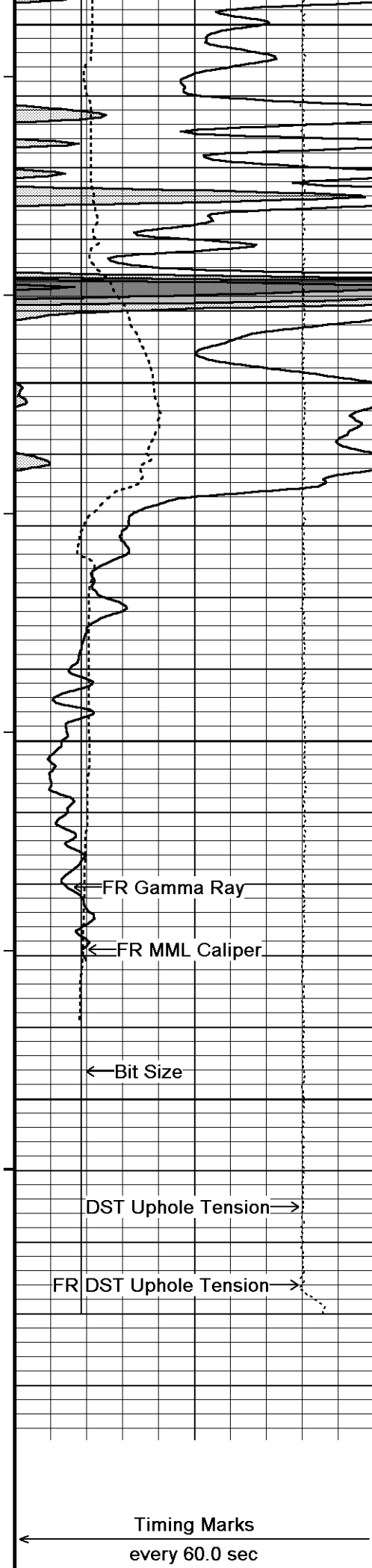
4600

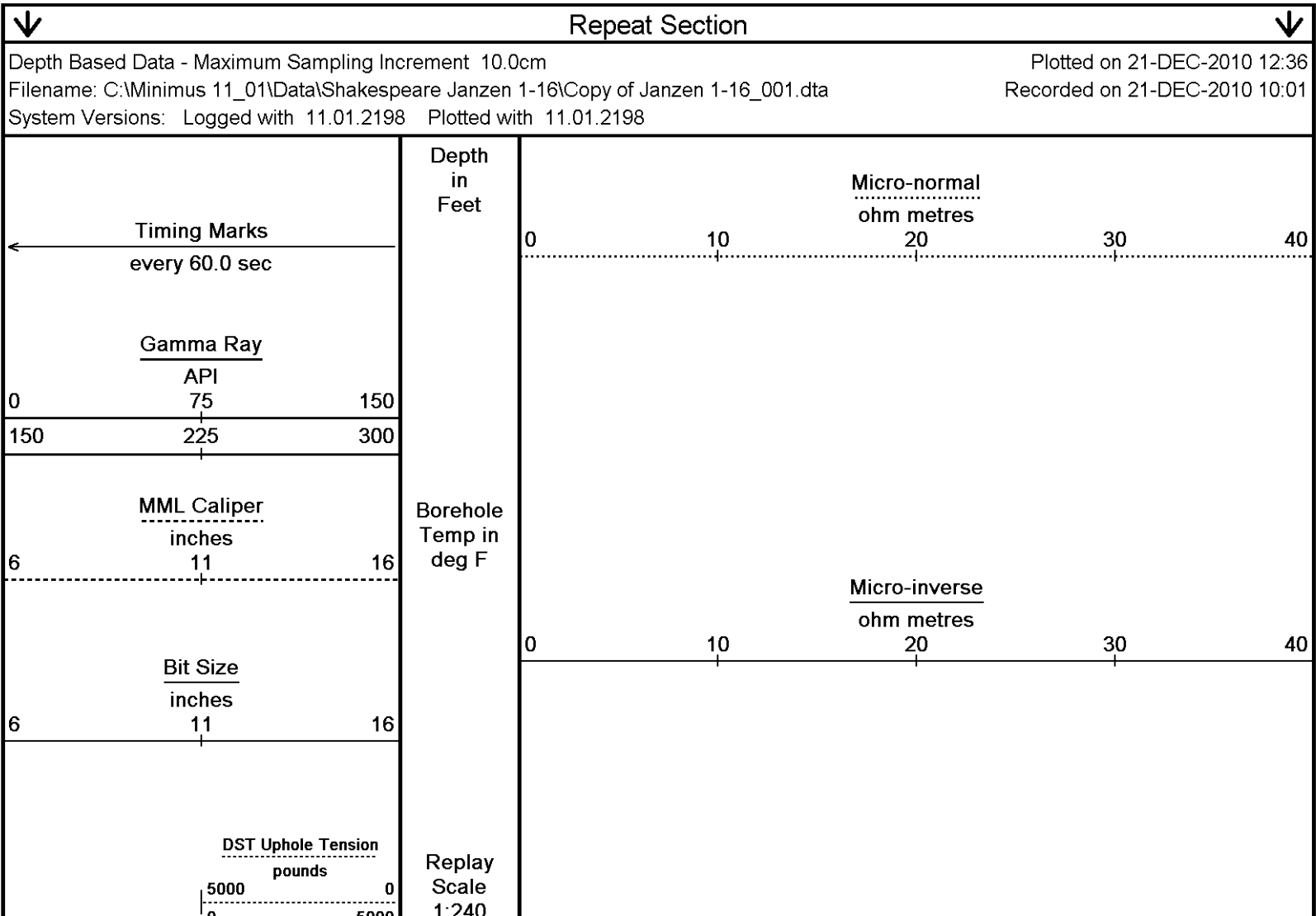
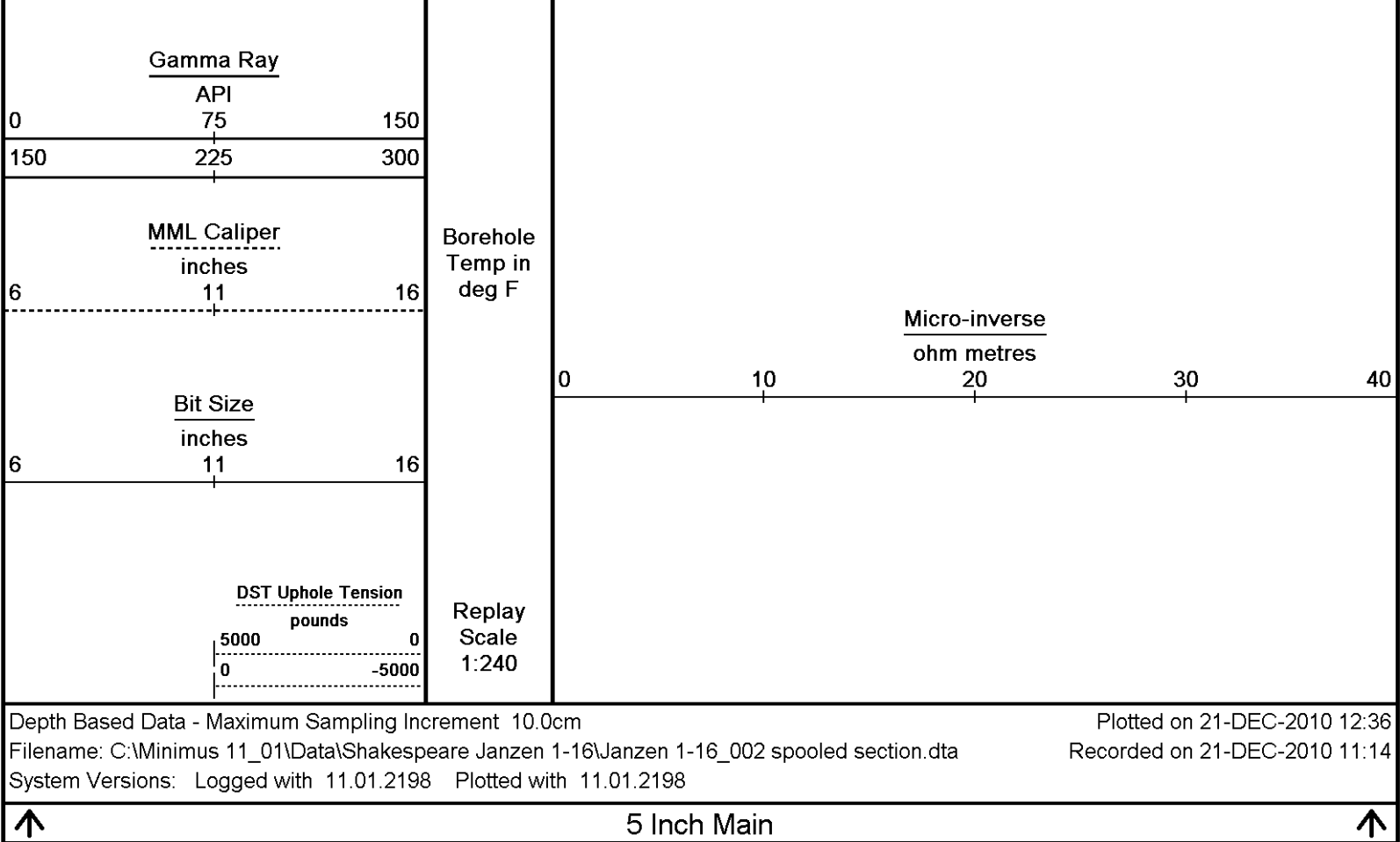
107°

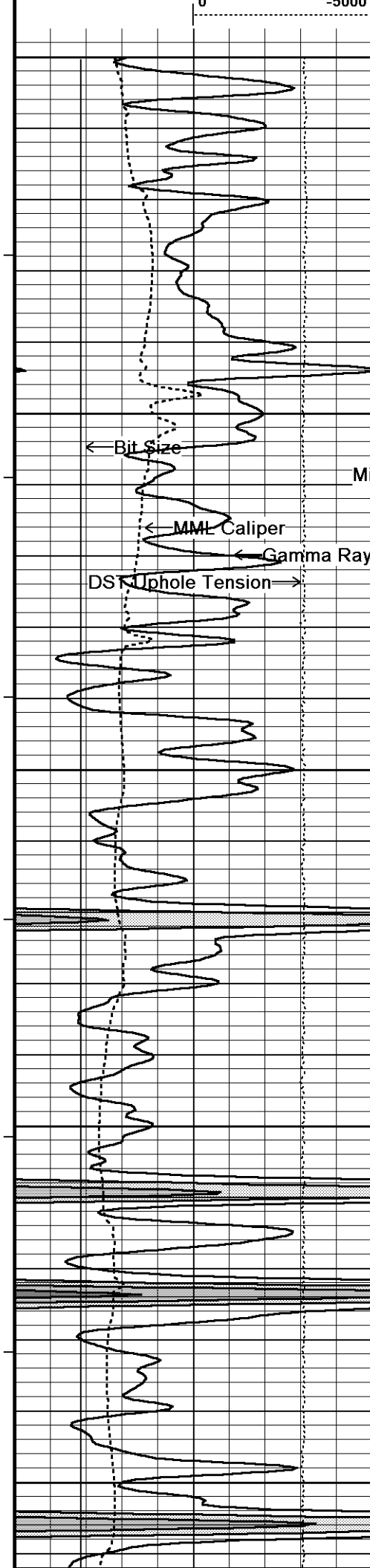
4650

108°









4400

104°

4450

Micro-inverse

Micro-normal

104°

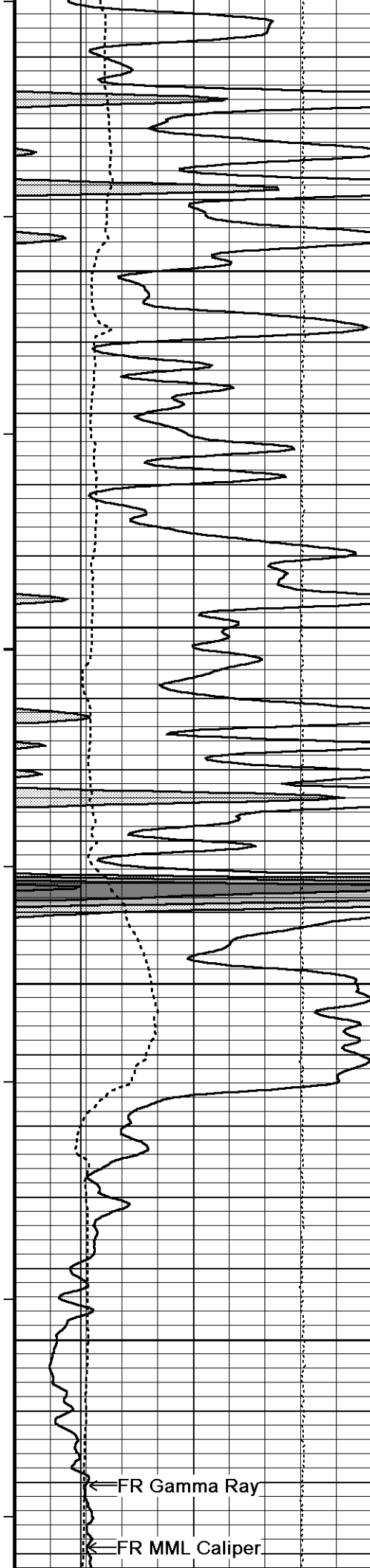
4500

104°

4550

105°

4600



105°

4650

106°

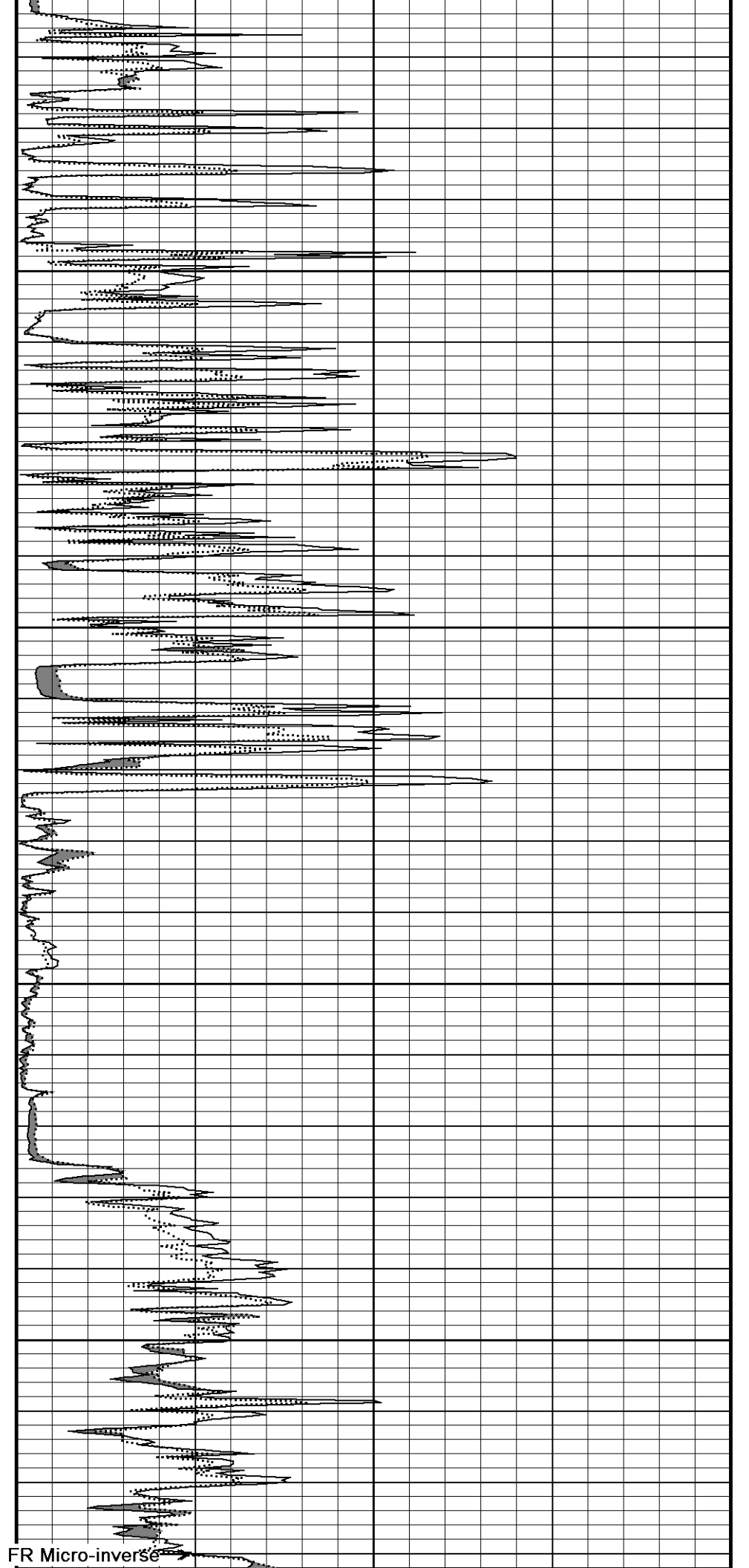
4700

106°

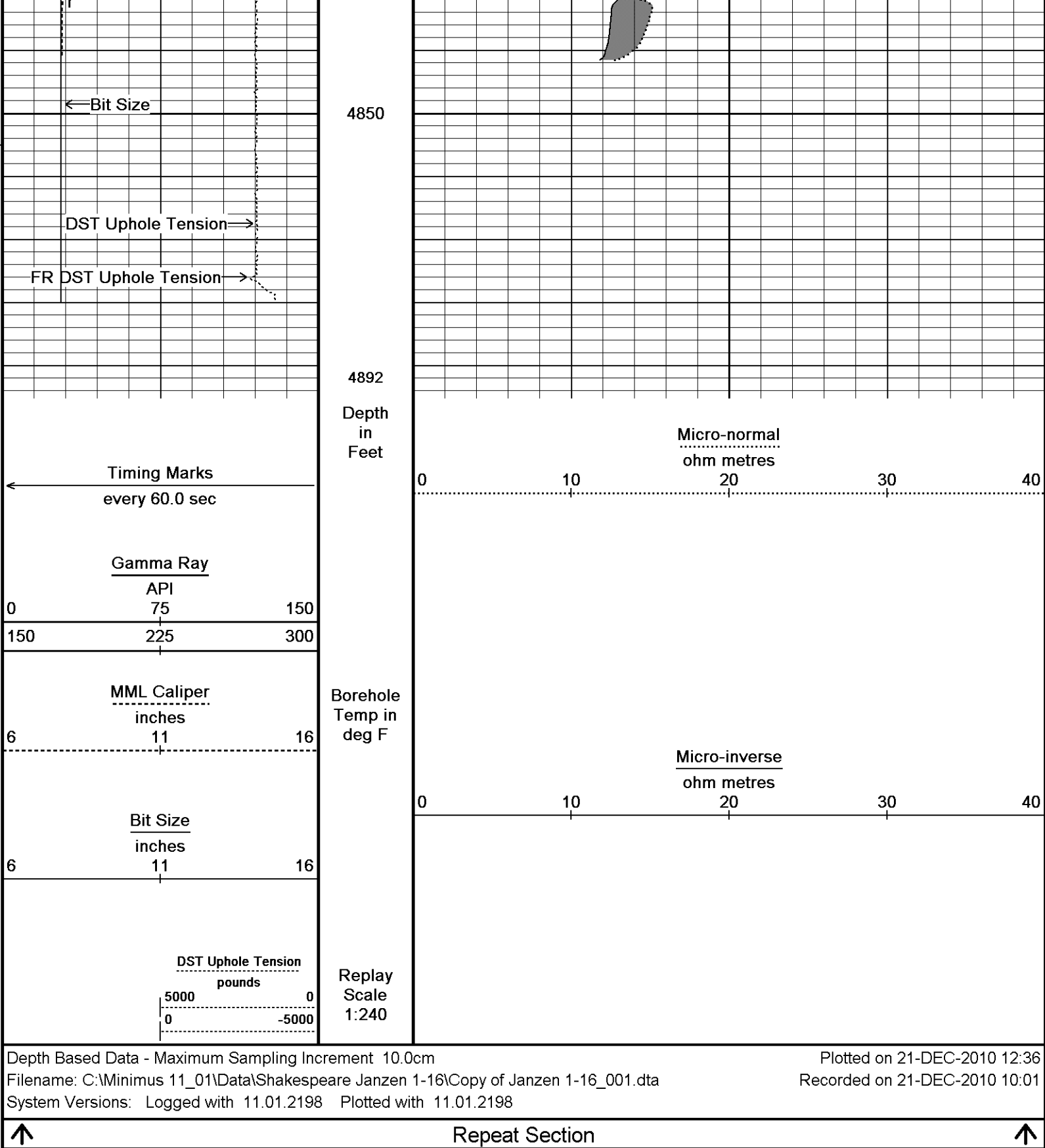
4750

106°

4800



FR Micro-inverse



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

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 09-DEC-2010,09:28

Field Check on 12-DEC-2010 09:41

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 02-DEC-2010,13:43

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

Caliper Calibration MML-A 4

Base Calibration on 09-DEC-2010,09:27

Field Calibration on 09-DEC-2010,09:27

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	14910	5.96
2	18255	7.98
3	21651	9.95
4	25473	11.91
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.98	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

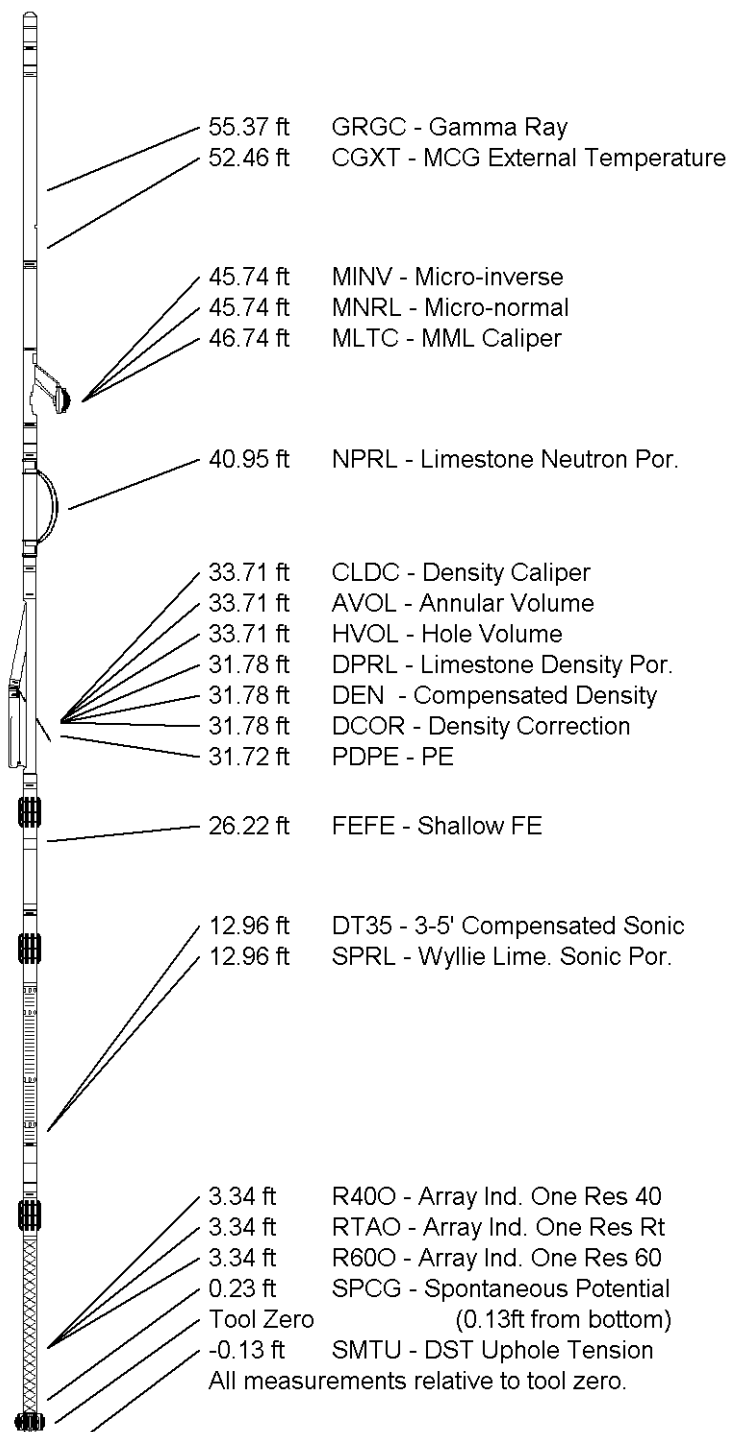
Compact Density/Caliper
MPD-B 61 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

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	4830.00	feet
Elevation Drill Floor	3148.00	feet	Depth Driller	4880.00	feet
Elevation Ground Level	3139.00	feet	Depth Logger	4876.00	feet



