



Weatherford[®]

MICRORESISTIVITY LOG

COMPANY O'BRIEN RESOURCES LLC
 WELL COLT 45 FBC 2
 FIELD WILDCAT
 PROVINCE/COUNTY LANE
 COUNTRY/STATE U.S.A. / KANSAS
 LOCATION 720' FNL & 2424' FEL
 NW SW NW NE

SEC	TWP	RGE	Other Services	MAI/MFE
2	17S	30W	MPD/MDN	
API Number		15-101-22478		
Permit Number				
Permanent Datum GL, Elevation 2848 feet				
Log Measured From KB				
Drilling Measured From KB @ 5 FEET				
Date	03-JAN-2014			Elevations:
Run Number	ONE			KB 2853.00
Service Order	3547662			DF 2851.00
Depth Driller	4635.00			GL 2848.00
Depth Logger	4636.00			
First Reading	4601.76			
Last Reading	3700.00			
Casing Driller	245.00			
Casing Logger	246.00			
Bit Size	7.875			
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.40	lb/USg	45.00	CP
PH / Fluid Loss	10.50		5.20	ml/30Min
Sample Source	MUDPIT			
Rm @ Measured Temp	1.03 @ 74.8			ohm-m
Rmf @ Measured Temp	0.82 @ 74.8			ohm-m
Rmc @ Measured Temp	1.24 @ 74.8			ohm-m
Source Rmf / Rmc	CALC		CALC	
Rm @ BHT	0.71 @ 111.0			ohm-m
Time Since Circulation	4 HOURS			
Max Recorded Temp	113.00			deg F
Equipment / Base	13096		LIB	
Recorded By	DEREK CARTER			
Witnessed By	KURT TALBOTT			
JOB #	LB14-004			

BOREHOLE RECORD

Last Edited: 03-JAN-2014 16:06

Bit Size inches	Depth From feet	Depth To feet
7.875	245.00	4635.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	245.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.05.9583
- TOOLS: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE:
 - MDN: DUAL BOWSPRING ECCENTRALIZER
 - MFE: 1 x 0.5 INCH STANDOFF
 - MAI: 2 x 0.5 INCH STANDOFF
- 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 PIPE: 1860 CU. FT
- ANNUAL HOLE VOLUME WITH 4.5 INCH CASING FROM TD TO SURFACE PIPE: 1370 CU. FT

- RIG: MALLARD J.V. #1

- ENGINEER: DEREK CARTER

- OPERATORS: KEN RINEHART, NICOLAS ADAME

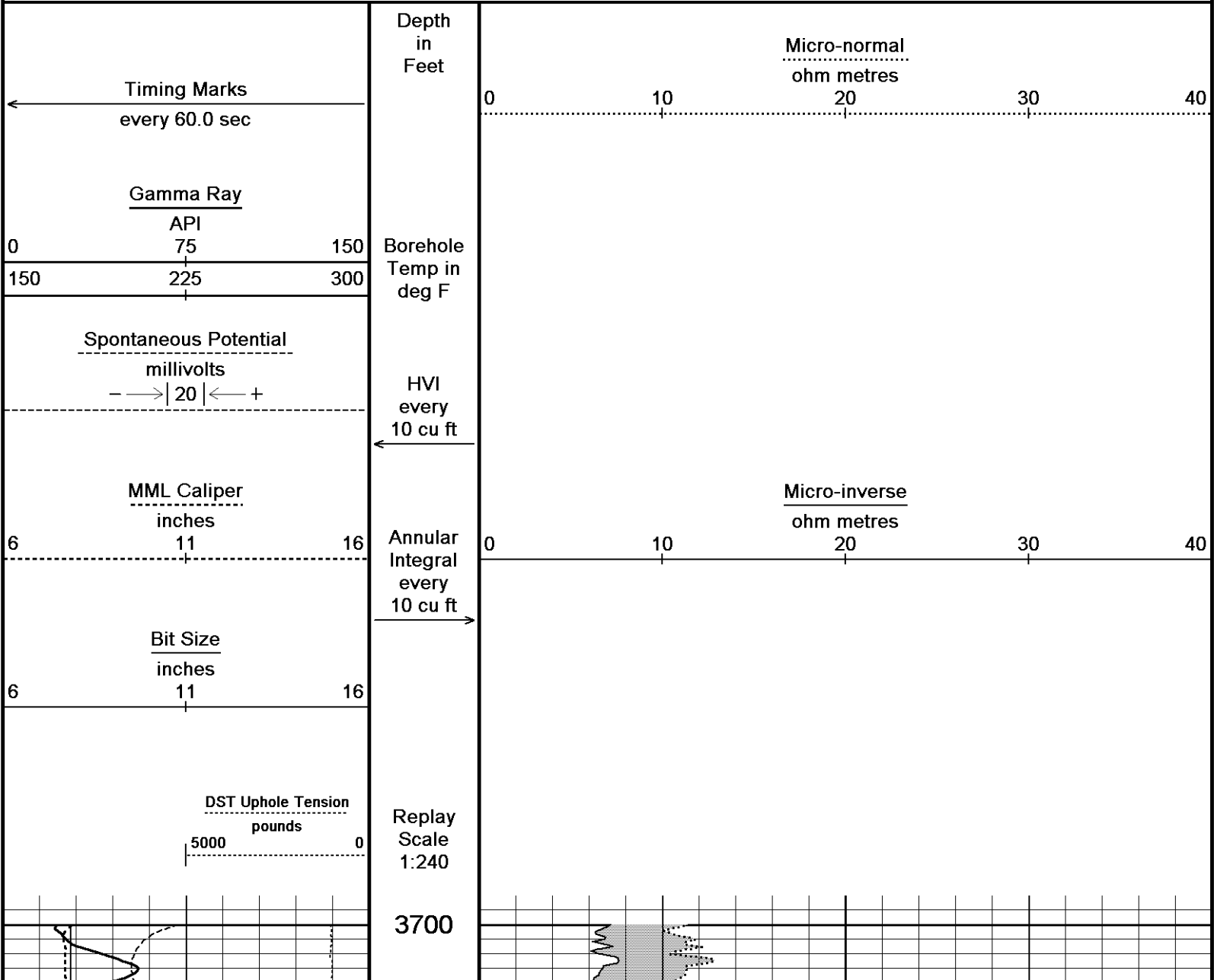
- PER CUSTOMER REQUEST A COMPOSITE (E-LOG ONLY, NO FIELD PRINT) IS BEING INCLUDED WITH THE STANDARD TRIPLECOMBO E-LOGS (DEN-NEU-MIC, INDUCTION, MICROLOG)

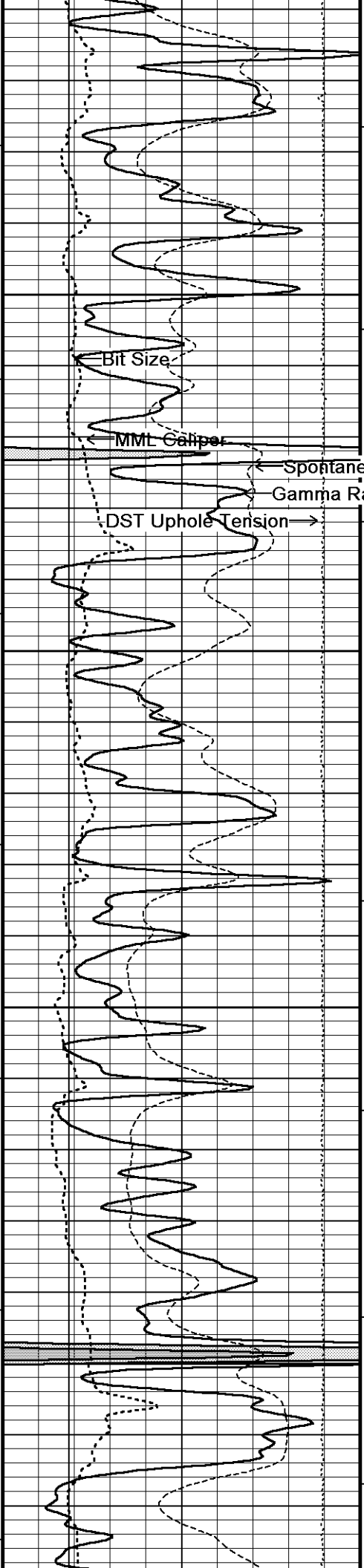
- AT ABOUT 1924, WHILE LOGGING THE MAIN PASS, ONE OF THE RIG HANDS WAS NOTICED WELDING ON A PIECE OF EQUIPMENT BEHIND THE DRAWWORKS. THE HAND WAS LIKELY ONLY WELDING FOR A SHORT TIME (APPROXIMATELY 2 MINUTES) BECAUSE HE WAS CLEARLY VISIBLE TO THE WINCHMAN. THE DEPTH ON THE KERR PANEL AT THE TIME WAS APPROXIMATELY 4230 FEET. THERE WERE NO NOTICEABLE AFFECTS TO THE SP.

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.

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 03-JAN-2014 22:04
Filename: C:\Minimus 13.05.9583\Log\O'Brien ...\O'Brien Resources LLC Colt 45 FBC 2 Main Detail.dta Recorded on 03-JAN-2014 20:18
System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





105°

3750

Bit Size

MML Caliper

Spontaneous Potential

Gamma Ray

DST Uphole Tension

105°

3800

300

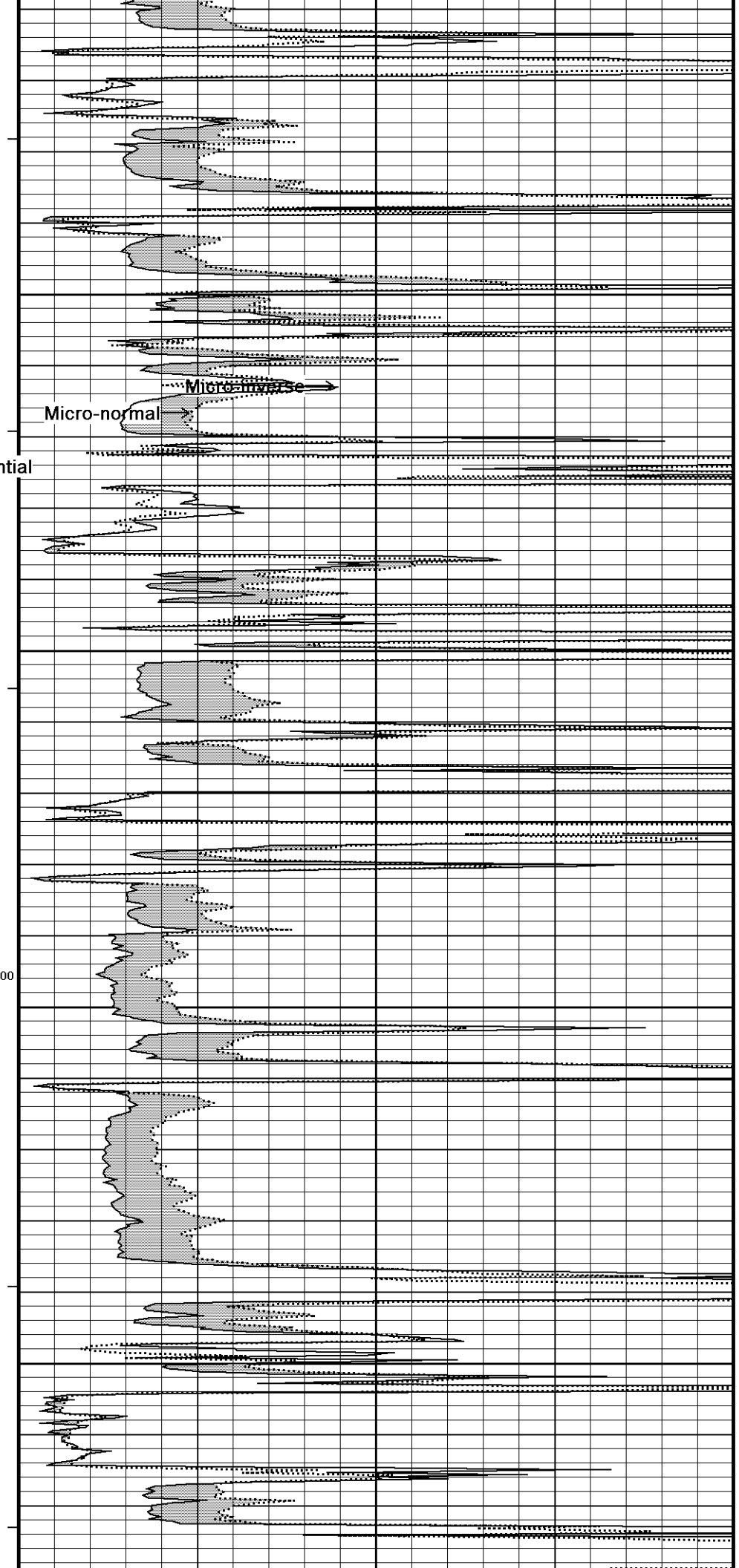
105°

3850

200

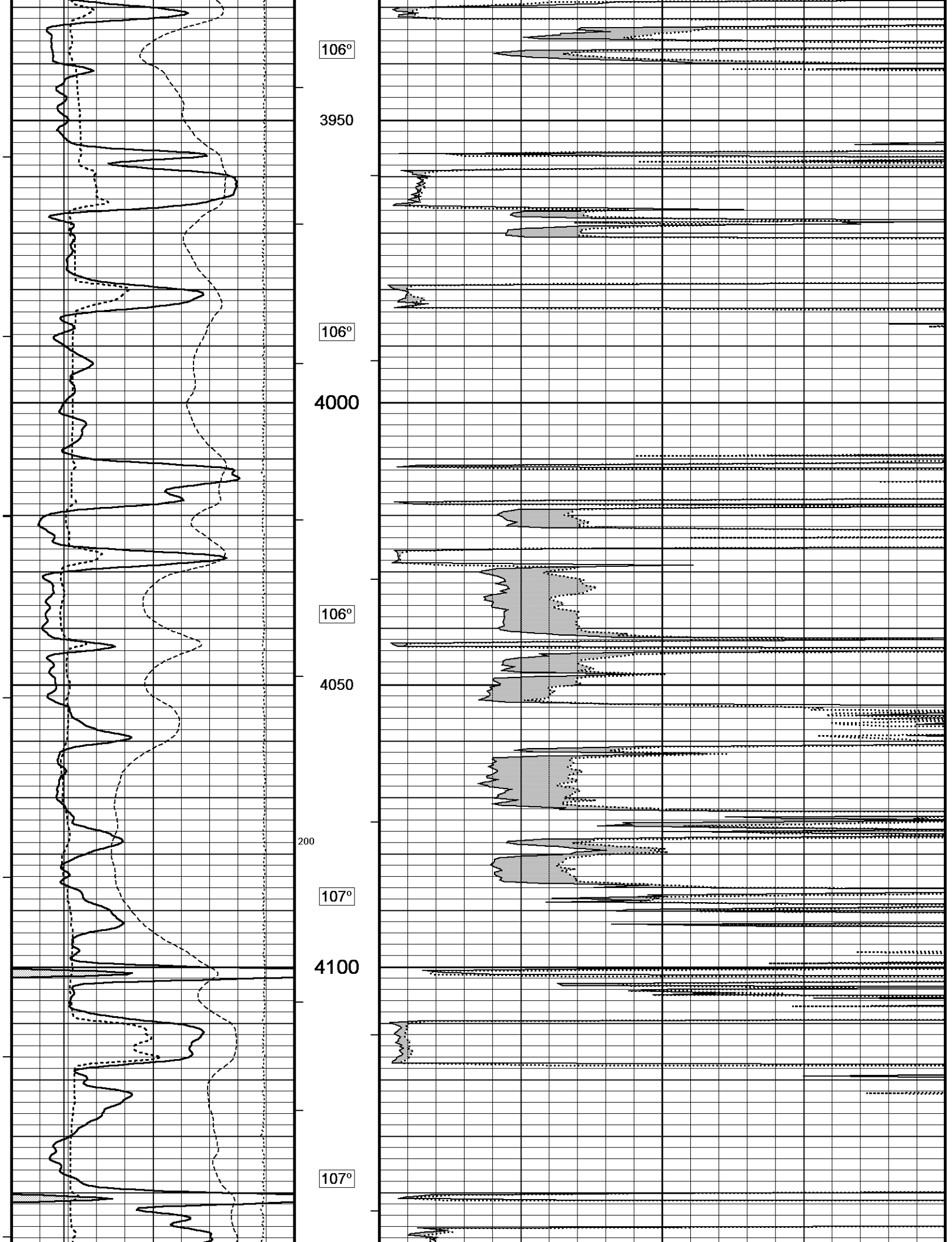
105°

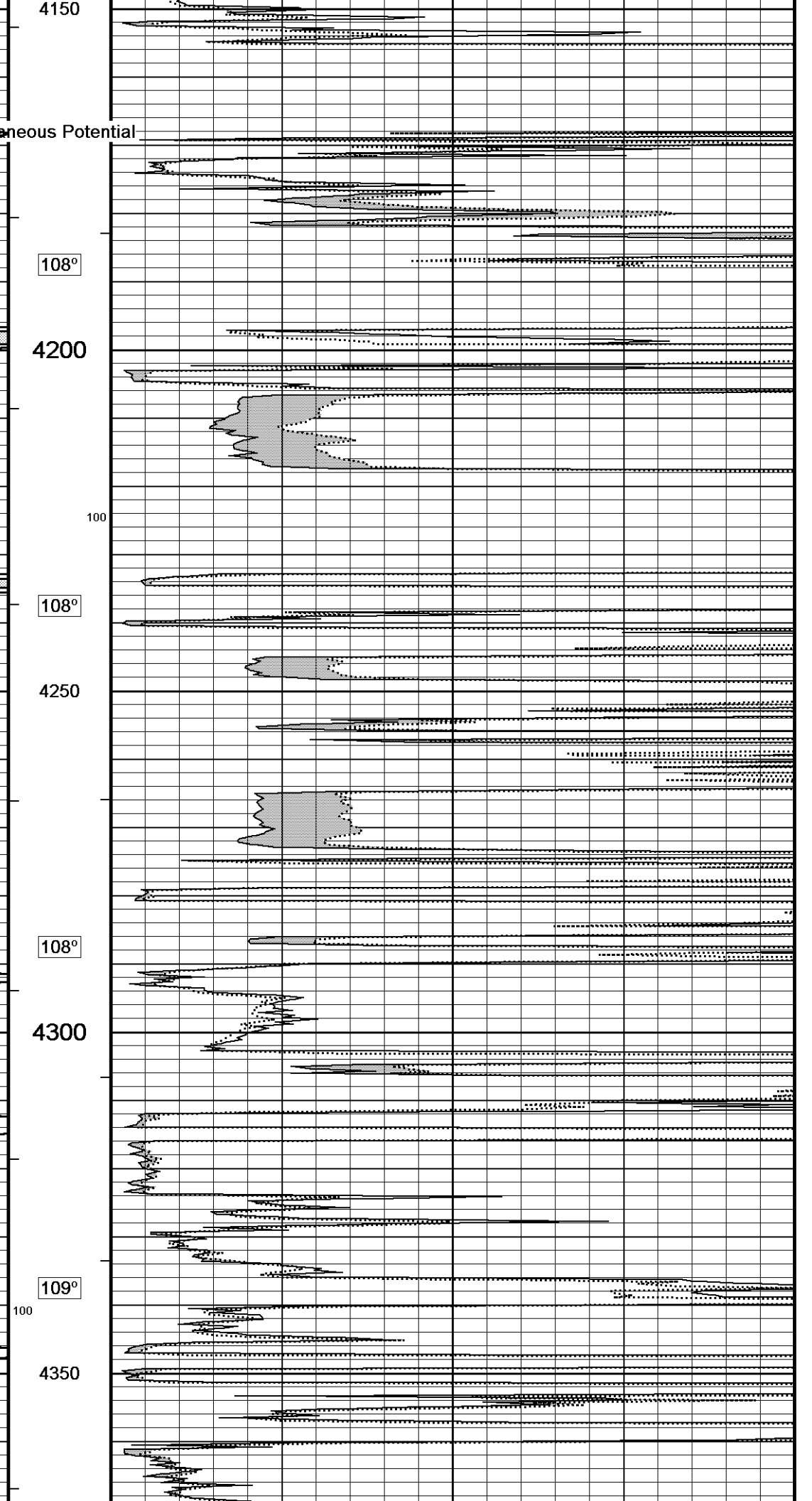
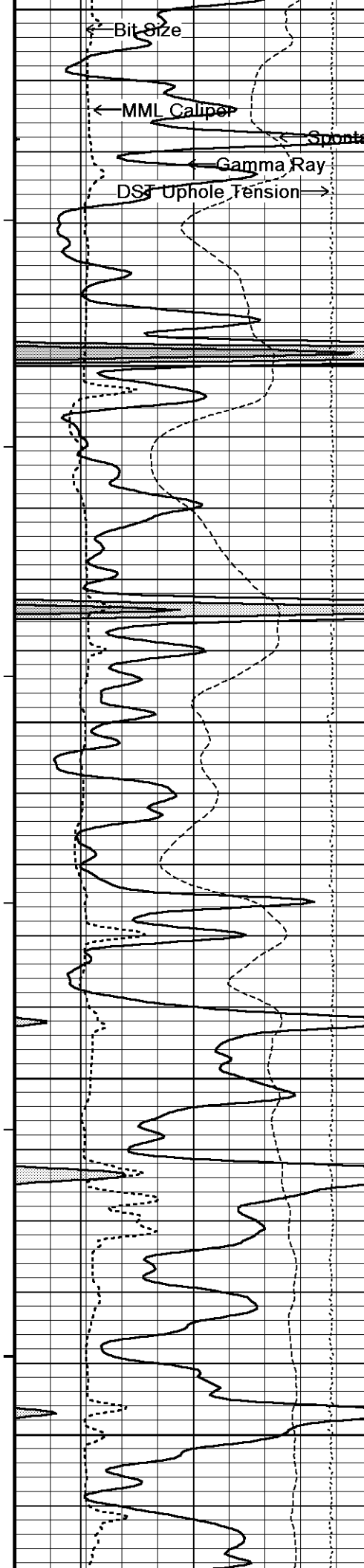
3900

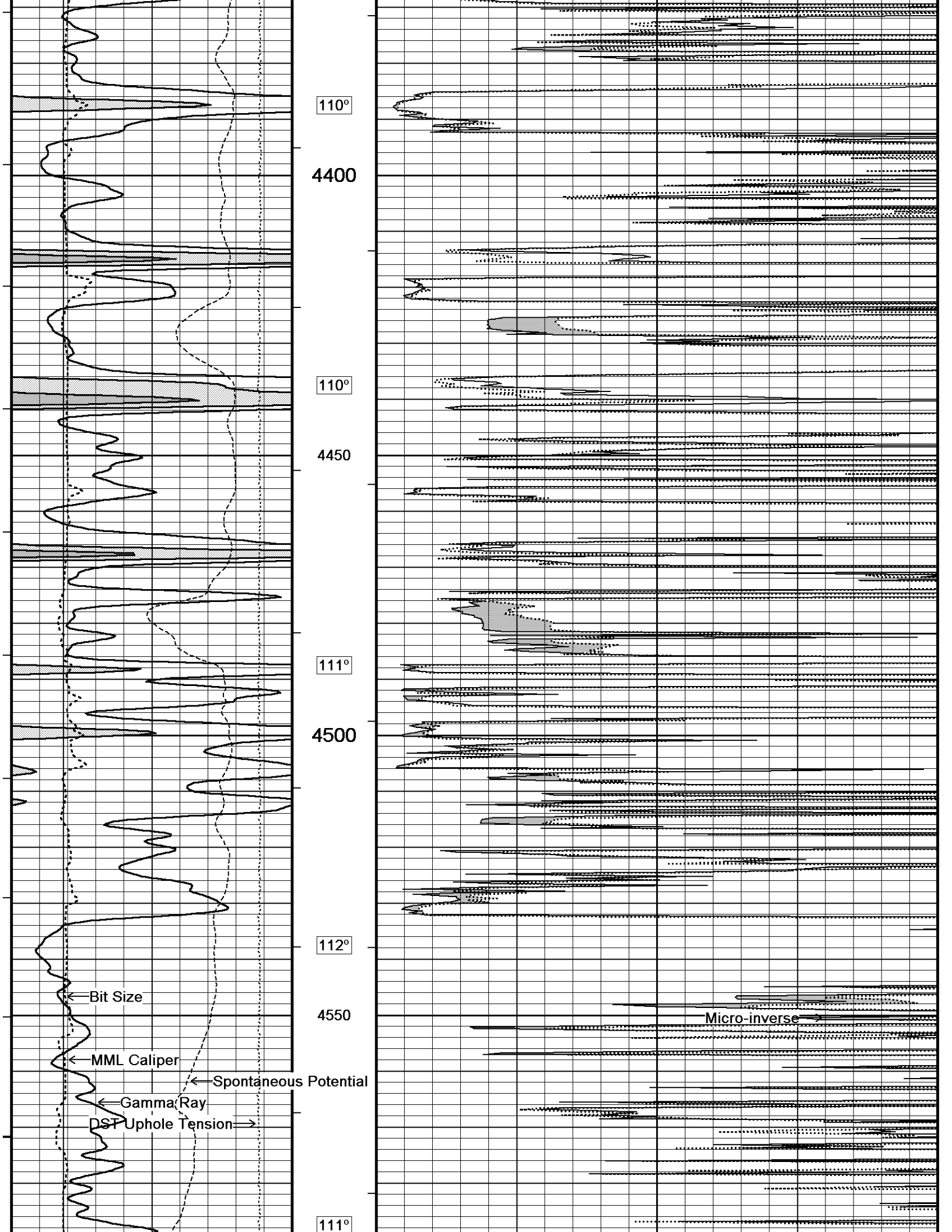


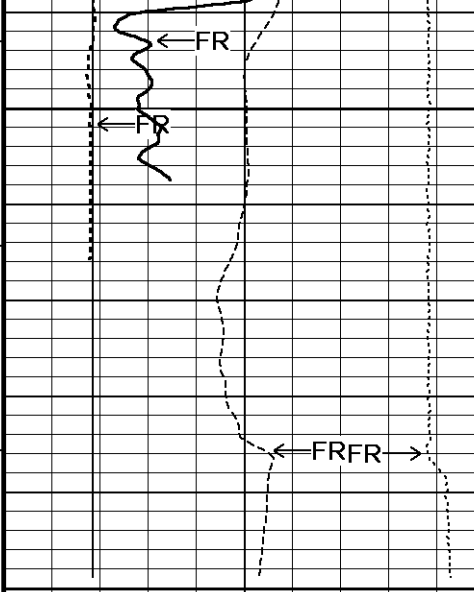
Micro-normal

Micro-inverse

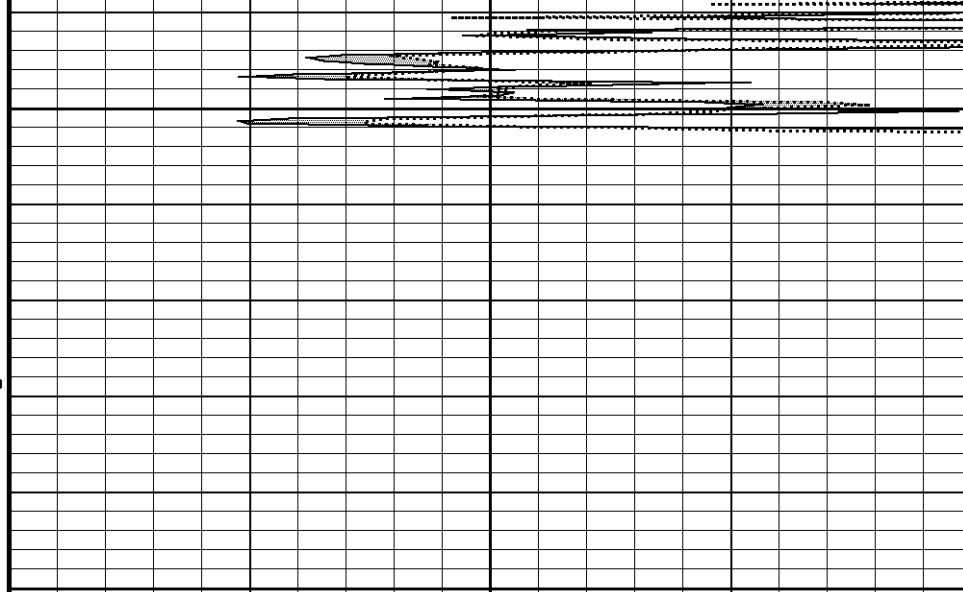








4600
0
4650
4664
Depth
in
Feet



Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Borehole
Temp in
deg F

Spontaneous Potential
millivolts
- → | 20 | ← +

HVI
every
10 cu ft

MML Caliper
inches
6 11 16

Annular
Integral
every
10 cu ft

Bit Size
inches
6 11 16

Replay
Scale
1:240

Micro-normal
ohm metres
0 10 20 30 40

Micro-inverse
ohm metres
0 10 20 30 40

DST Uphole Tension
pounds
5000 0

REPEAT SECTION

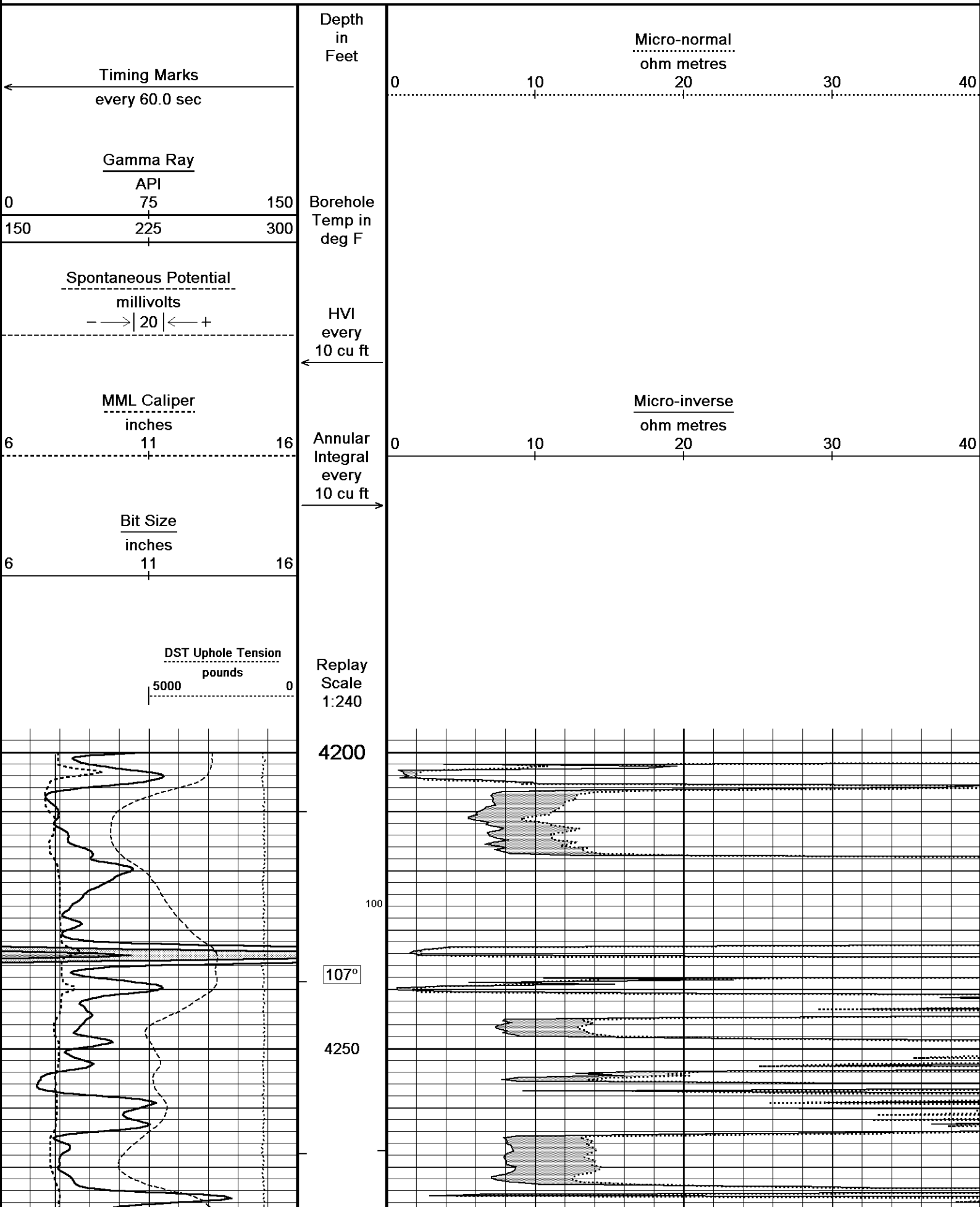
Depth Based Data - Maximum Sampling Increment 10.0cm

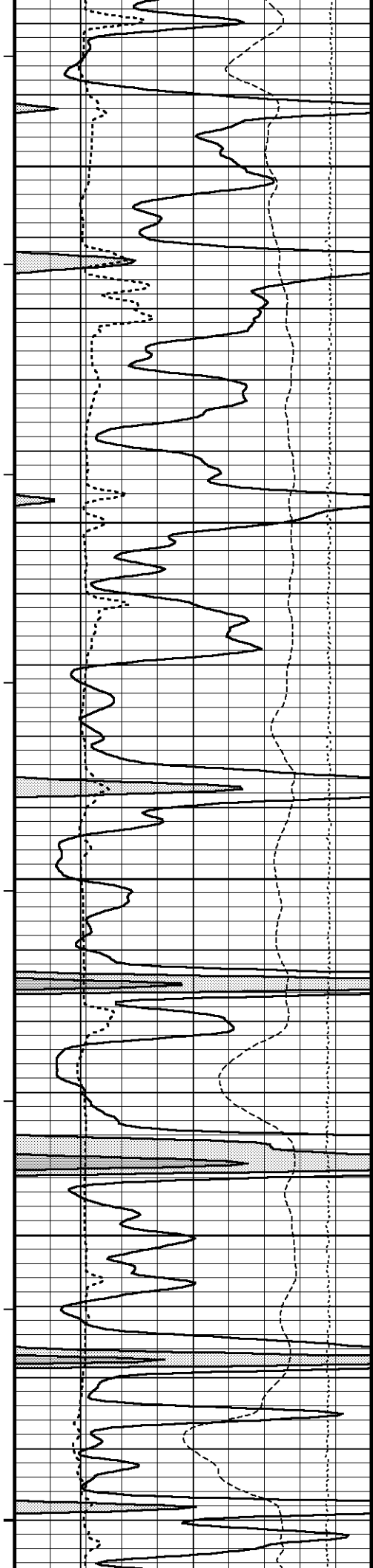
Plotted on 03-JAN-2014 22:04

Filename: C:\Minimus 13.05.9583\Log\O'Brien Res...\O'Brien Resources LLC Colt 45 FBC 2 Repeat.dta

Recorded on 03-JAN-2014 18:14

System Versions: Logged with 13.05.9583 Plotted with 13.05.9583





107°

4300

107°

4350

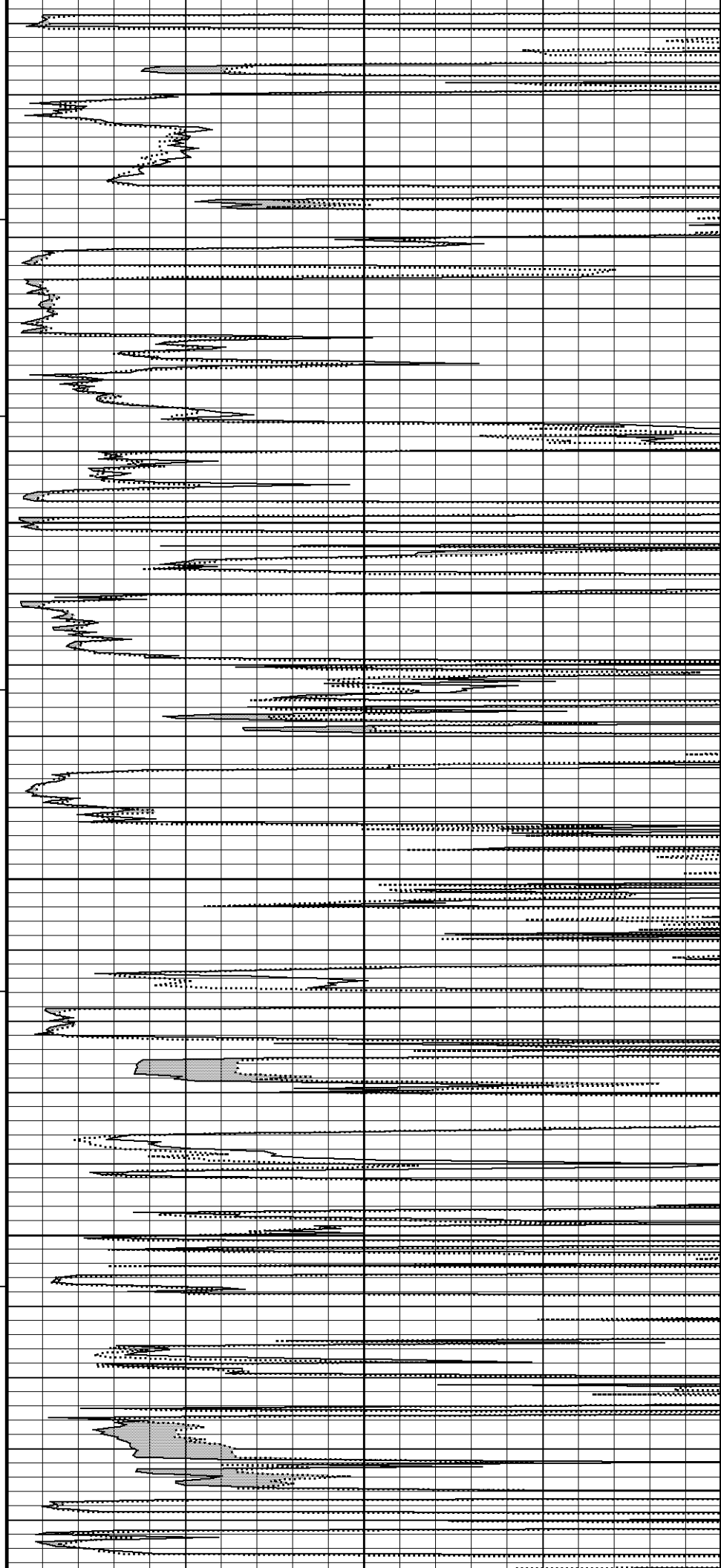
108°

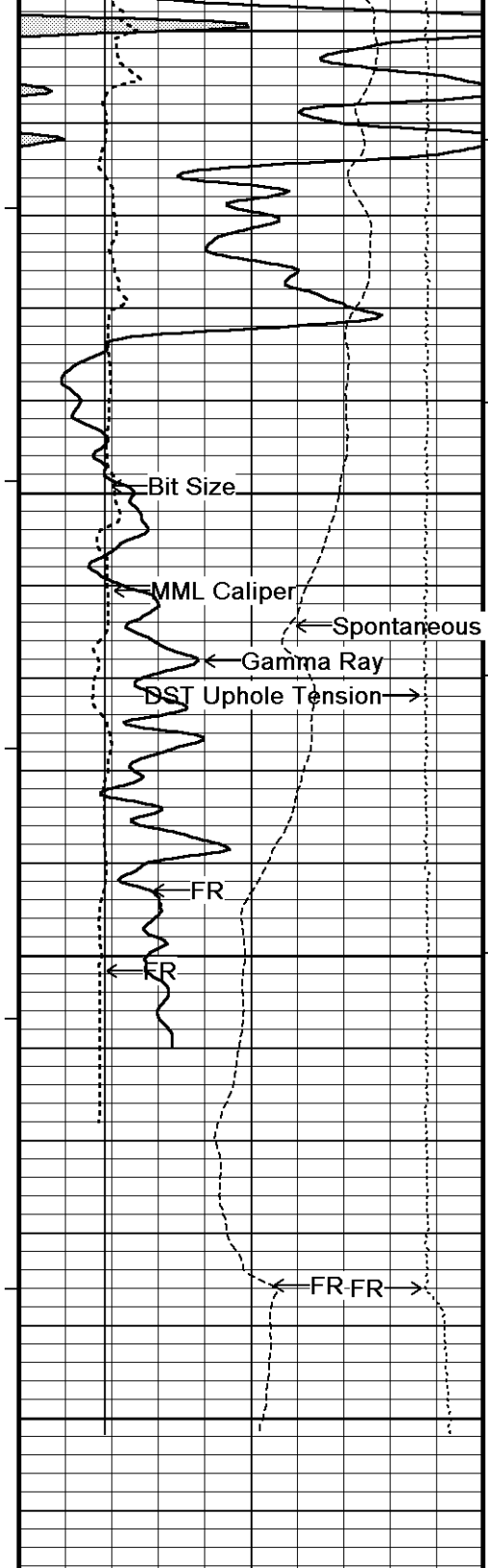
4400

109°

4450

110°





4500

110°

4550

110°

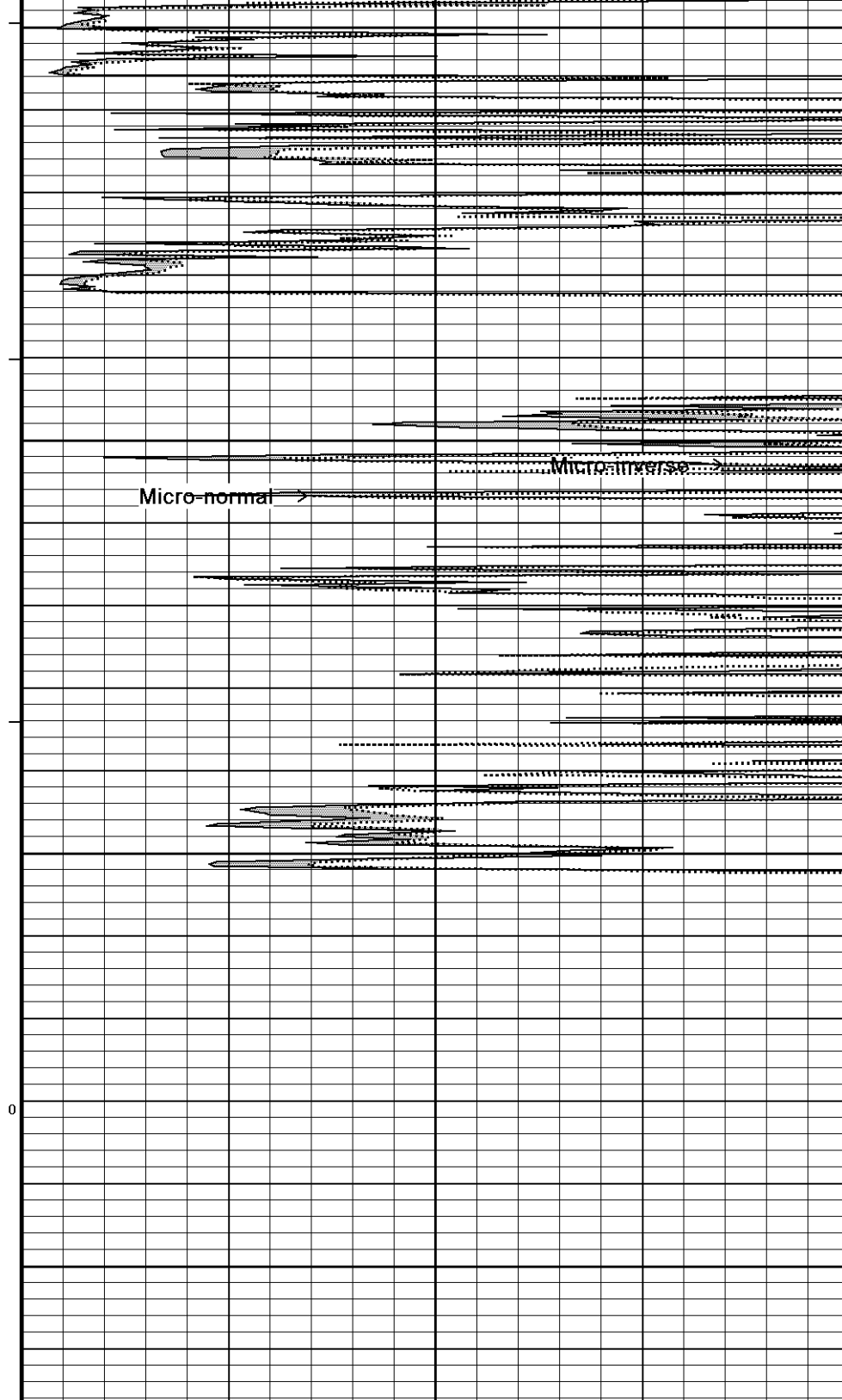
4600

0

4650

4664

Depth in Feet



Timing Marks every 60.0 sec

Gamma Ray

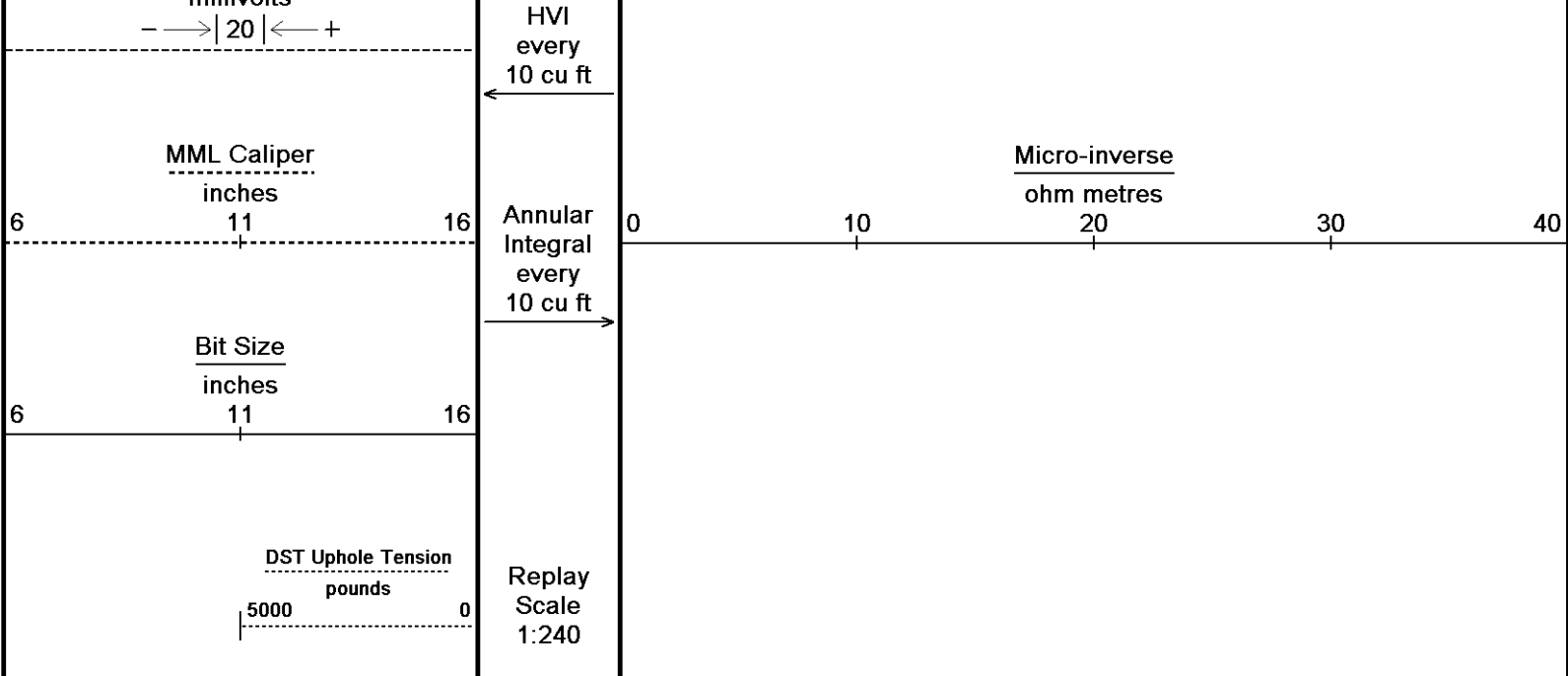
0	API	150
	75	
150	225	300

Spontaneous Potential millivolts

Micro-normal ohm metres

0 10 20 30 40

Borehole Temp in deg F



Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 03-JAN-2014 22:04
 Filename: C:\Minimus 13.05.9583\Log\O'Brien Res...\O'Brien Resources LLC Colt 45 FBC 2 Repeat.dta Recorded on 03-JAN-2014 18:14
 System Versions: Logged with 13.05.9583 Plotted with 13.05.9583

↑ REPEAT SECTION ↑

BEFORE SURVEY CALIBRATION

C:\Minimus 13.05.9583\Log\O'Brien Resources LLC Colt 45 FBC 2\O'Brien Resources LLC Colt 45 FBC 2 Main Detail.dta

General Constants All 000 Last Edited on 03-JAN-2014,17:32

General Parameters		
Mud Resistivity	1.030	ohm-metres
Mud Resistivity Temperature	74.800	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	4.500	inches
Caliper for Differential Caliper	None	
Rwa Parameters		
Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	0.610	
RWA Constant M	2.150	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-D.K 469 Field Calibration on 30-DEC-2013 14:00

	Measured	Calibrated (API)
Background	67	46
Calibrator (Gross)	1131	771
Calibrator (Net)	1064	725

Gamma Constants MCG-D.K 469 Last Edited on 03-JAN-2014,16:09

Gamma Calibrator Number	GRC38	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 469

Field Calibration on 30-DEC-2013,14:00

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

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 30-DEC-2013,14:00

Pre-filter Length 11

Caliper Calibration MML-A 3

Base Calibration on 30-DEC-2013 11:54

Field Calibration on 30-DEC-2013 11:56

Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	14864	5.98	
2	18053	7.97	
3	21223	9.86	
4	25163	11.92	
5	0	0.00	
6	N/A	N/A	

Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	7.92	7.97	

Micro Normal and Micro Inverse Calibration MML-A 3

Base Calibration on 30-DEC-2013 12:09

Field Check on 30-DEC-2013 12:23

Base Calibration					
Channel		Measured		Calibrated (ohm-m)	
		Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal		12.1	60.2	5.0	25.0
Micro Inverse		15.7	78.4	5.0	25.0
Channel		Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal		62.9		62.9	
Micro Inverse		48.2		48.2	

Micro Normal and Micro Inverse Constants MML-A 3

Last Edited on 03-JAN-2014,16:08

Pad Type	8-12 in Soft Rubber Inflatable 006-9011-159				
Micro Normal K Factor			1.0000		
Micro Inverse K Factor			1.0000		
Standoff Offset			N/A	inches	

Caliper Calibration MPD-C.A 216

Base Calibration on 30-DEC-2013 16:06

Field Calibration on 30-DEC-2013 16:08

Base Calibration			
Reading No	Measured	Calibrator Size (in)	
1	16063	3.99	
2	26074	5.98	
3	36080	7.97	
4	45856	9.86	
5	57120	11.92	
6	N/A	N/A	

Field Calibration			
	Measured Caliper (in)	Actual Caliper (in)	
	7.96	7.97	

DOWNHOLE EQUIPMENT

C:\Minimus 13.05.9583\Log\O'Brien Resources LLC Colt 45 FBC 2\O'Brien Resources LLC Colt 45 FBC 2 Main Detail.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.24 in

Compact Comms Gamma
MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in



42.87 ft

39.96 ft

GRGC - Gamma Ray

CGXT - MCG External Temperature

Compact Micro-log
MML-A.3 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

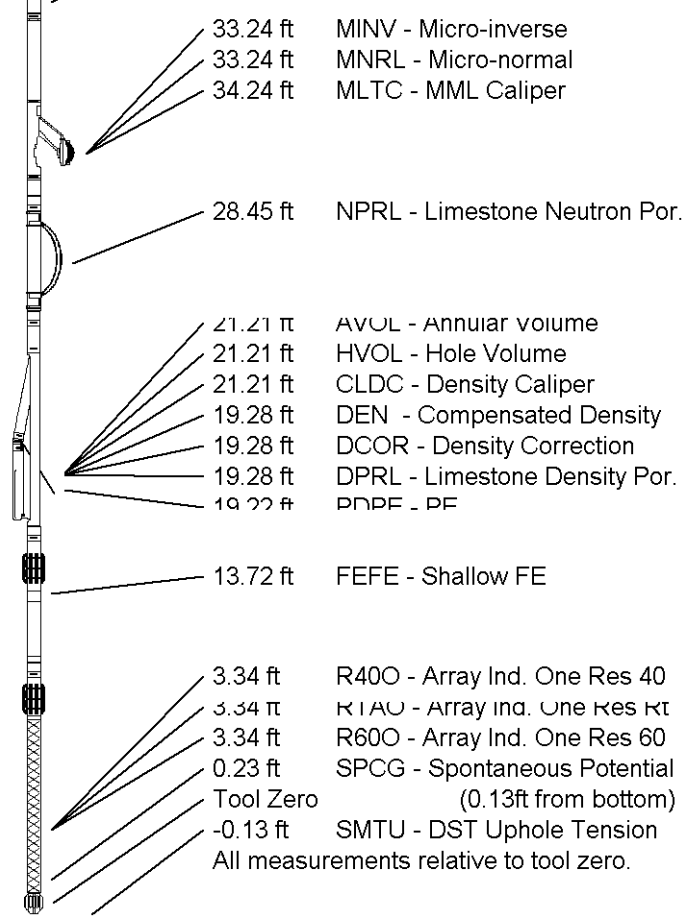
Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focused Electric
MFE-B.J 353 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Induction
MAI-A.A 167 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 49.73 ft Weight: 399.0 lb



COMPANY	O'BRIEN RESOURCES LLC
WELL	COLT 45 FBC 2
FIELD	WILDCAT
PROVINCE/COUNTY	LANE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2853.00	feet	First Reading	4601.76	feet
Elevation Drill Floor	2851.00	feet	Depth Driller	4635.00	feet
Elevation Ground Level	2848.00	feet	Depth Logger	4636.00	feet



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MICRORESISTIVITY LOG