MICRORESISTIVITY LOG

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	VAIL #5-31
FIELD	NOVINGER EAST
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	1320' FNL & 1320' FWL NW/4

SEC	TWP	RGE	Other Services
31	33S	29W	MPD/MDN MAI/MFE

API Number 15-119-21333
Permit Number

Permanent Datum G.L., Elevation 2671 feet
Log Measured From KB
Drilling Measured From K.B.

Elevations:	feet
KB	2683.00
DF	2682.00
GL	2671.00

Date	29-JAN-2013		
Run Number	ONE		
Service Order	3537854		
Depth Driller	6400.00	feet	
Depth Logger	6408.00	feet	
First Reading	6375.00	feet	
Last Reading	4000.00	feet	
Casing Driller	1490.00	feet	
Casing Logger	1490.00	inches	
Bit Size	7.875		
Hole Fluid Type	CHEMICAL	lb/USg	
Density / Viscosity	9.35 lb/USg	52.00 type in	
PH / Fluid Loss	9.00	9.00	
Sample Source	FLOWLINE		
Rm @ Measured Temp	1.05 @ 84.0	ohm-m	
Rmf @ Measured Temp	0.84 @ 84.0	ohm-m	
Rmc @ Measured Temp	1.26 @ 84.0	ohm-m	
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.69 @126.0	ohm-m	
Time Since Circulation	5 HOURS		
Max Recorded Temp	126.00	deg F	
Equipment / Base	13057	LIB	
Recorded By	LYNN SCOTT		ERIK PETERSEN
Witnessed By	PETER DEBENHAM		ROGER PEARSON
JOB#	LB13-027		

BOREHOLE RECORD

Last Edited: 29-JAN-2013 12:18

Bit Size inches	Depth From feet	Depth To feet
7.875	1490.00	6400.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1490.00	24.00

REMARKS

Tools Ran: MCG, MML, MDN, MPD, MFE, MAI ran in combination.
Hardware Used: MDN Dual bowspring used. MPD 8 inch profile plate used. MAI and MFE 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.
Tight pulls, washouts and borehole rugosity will affect data quality.
Total hole volume from TD to Surface Casing= 1960 cu. ft.
Annular volume with 4.5 inch production casing from TD to 4000 = 580 cu. ft.
Service order: #3537854
Rig: Duke #6
Engineer: L. Scott, E. Petersen
Operator(s): M. Stegman

Software duplicates the pH onto the fluid loss. The fluid loss is 8.0 ml/30min.

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 29-JAN-2013 17:42
Filename: C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_Main.dta
Recorded on 29-JAN-2013 15:03
System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– → | 20 | ← +

MMR Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth in Feet

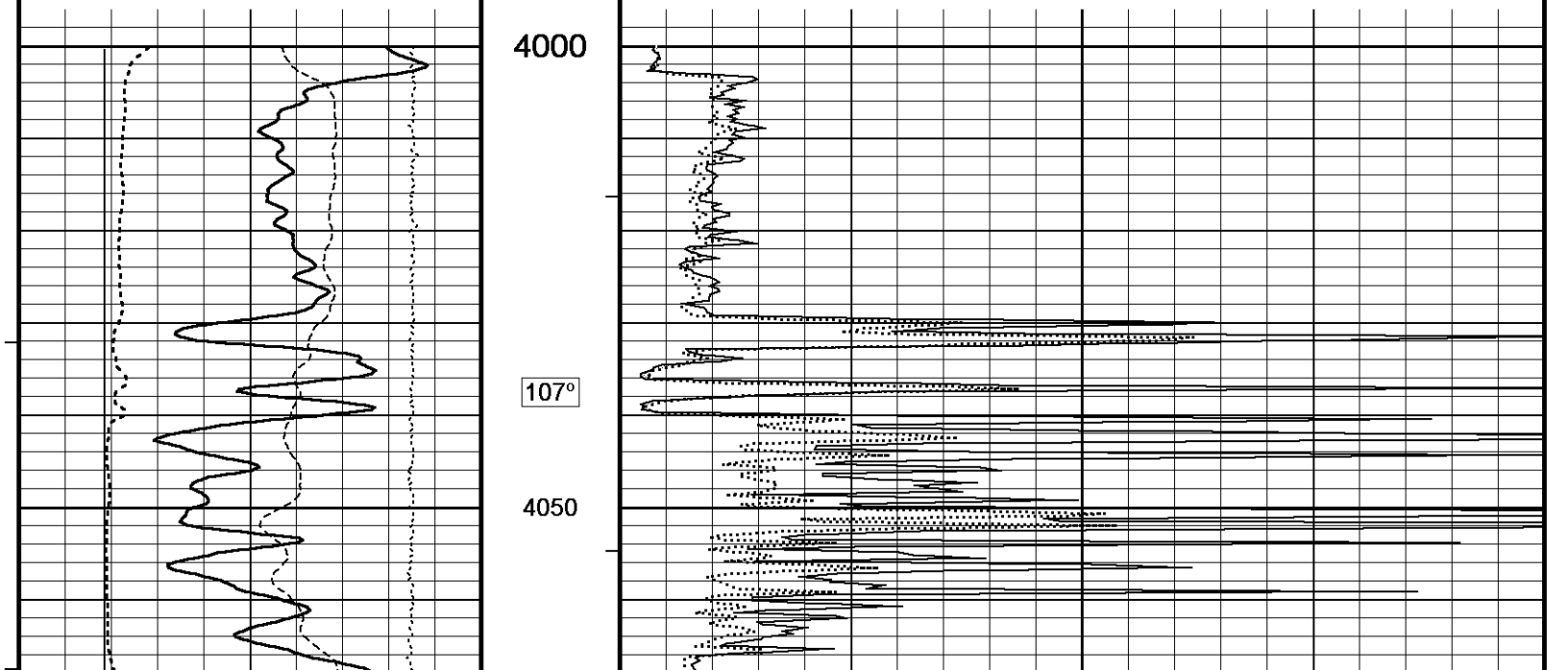
Borehole Temp in deg F

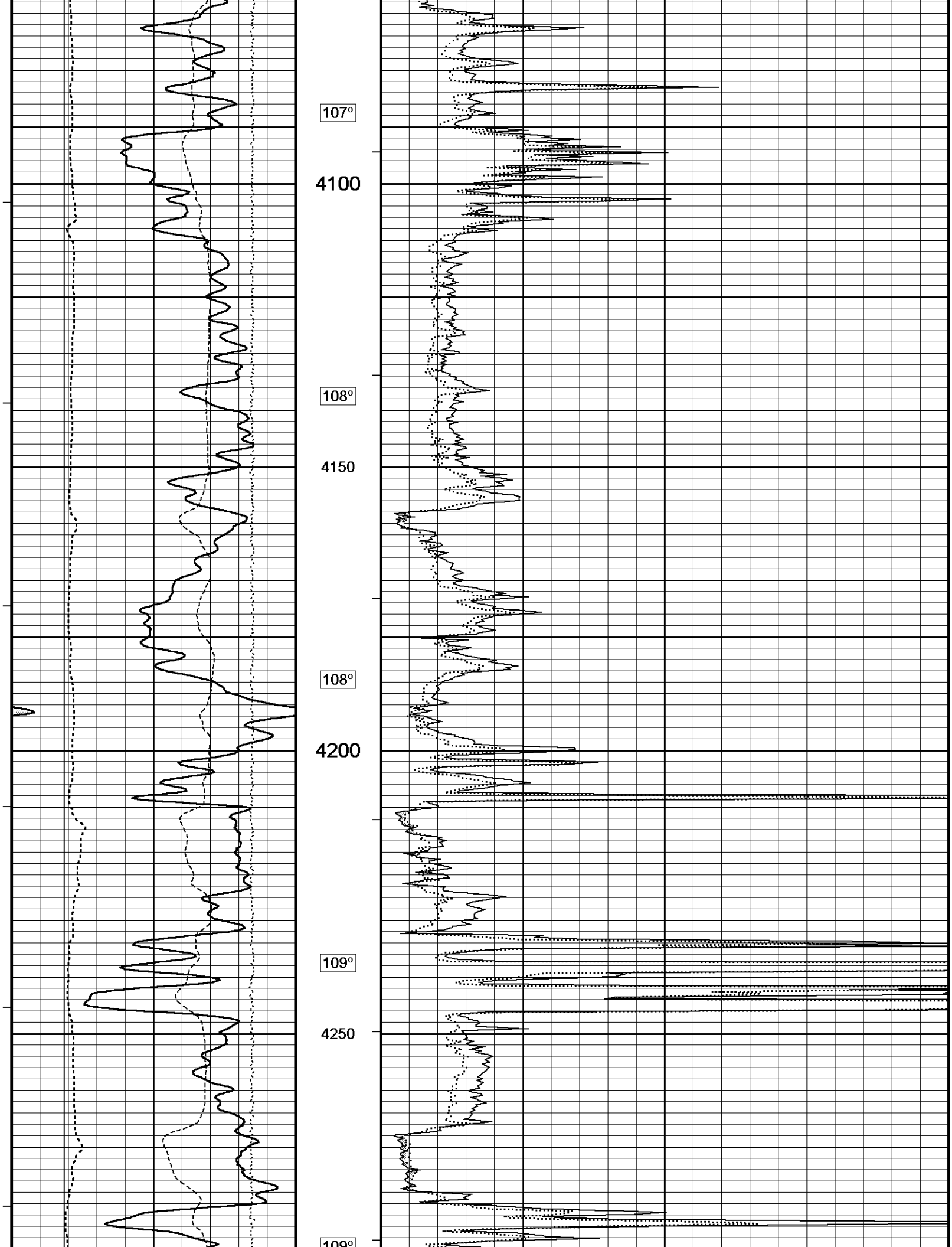
Annular Integral every 10 cu ft

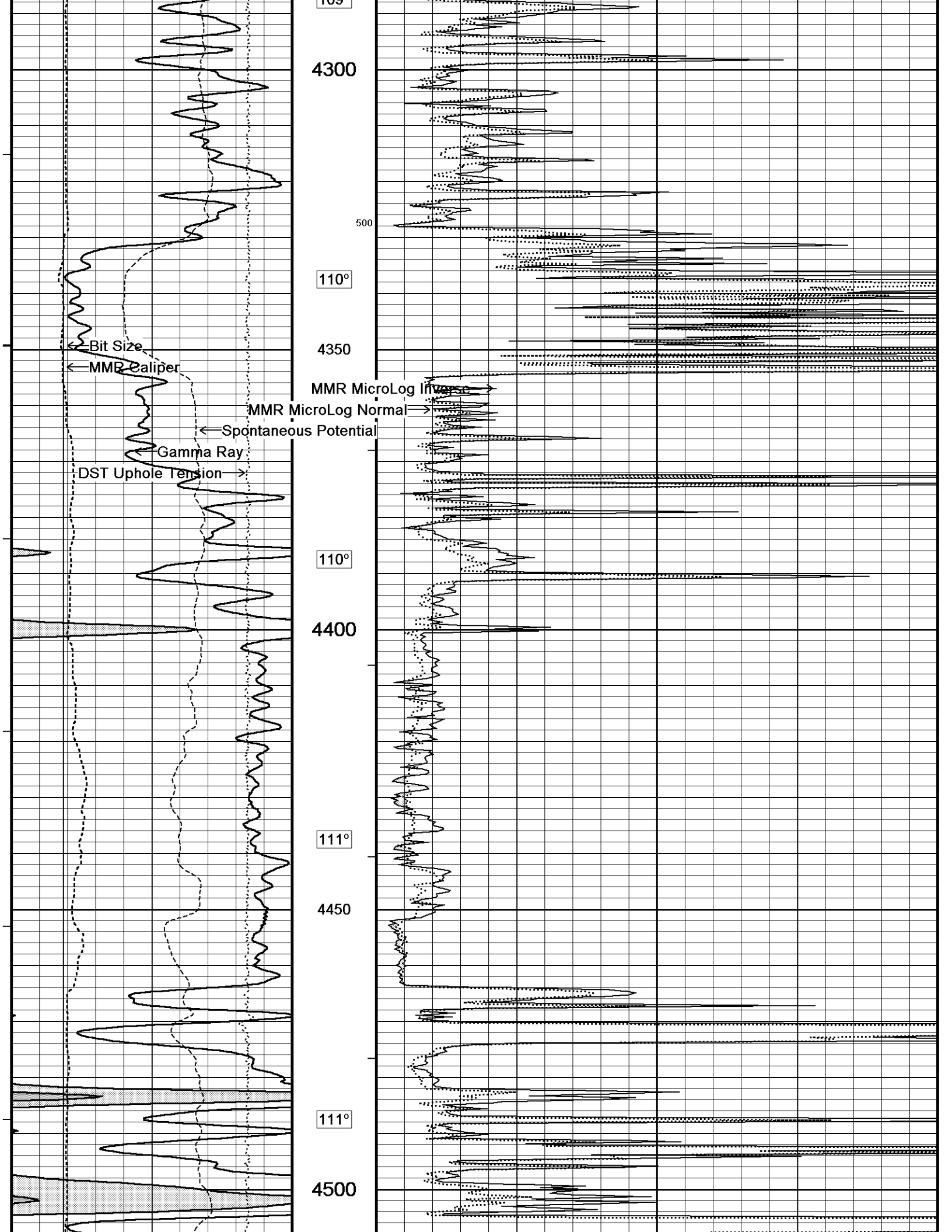
Replay Scale 1:240

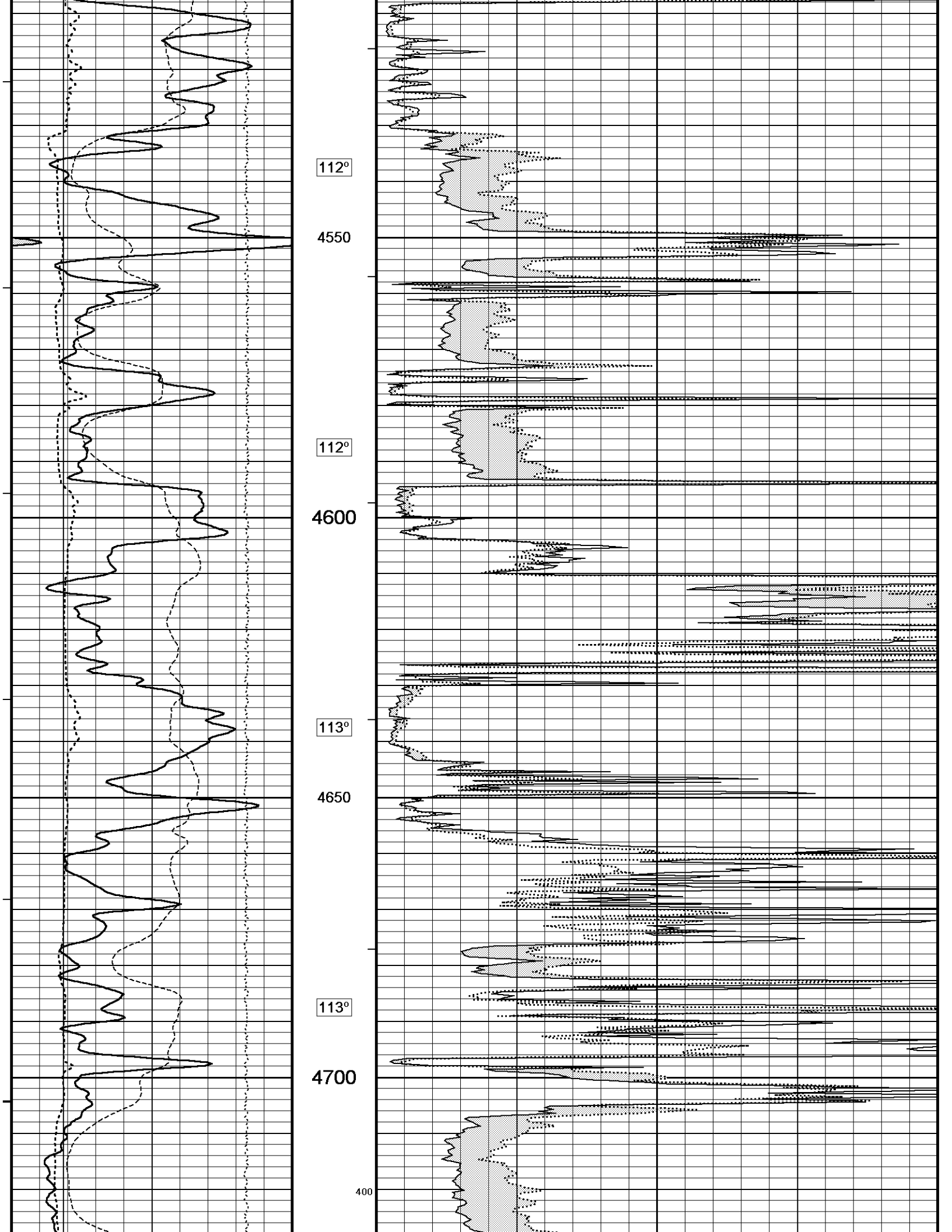
MMR MicroLog Normal
ohm metres
0 10 20 30 40

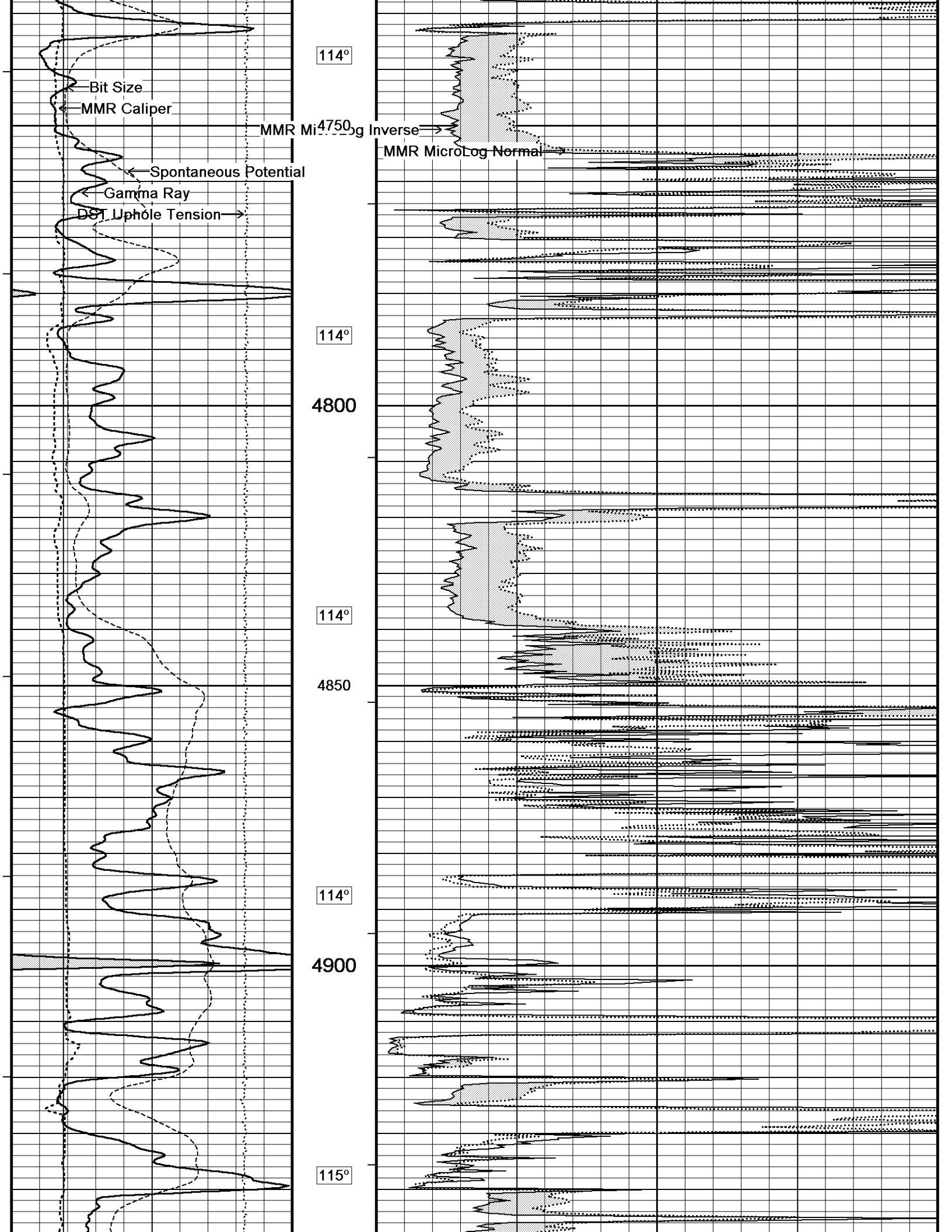
MMR MicroLog Inverse
ohm metres
0 10 20 30 40

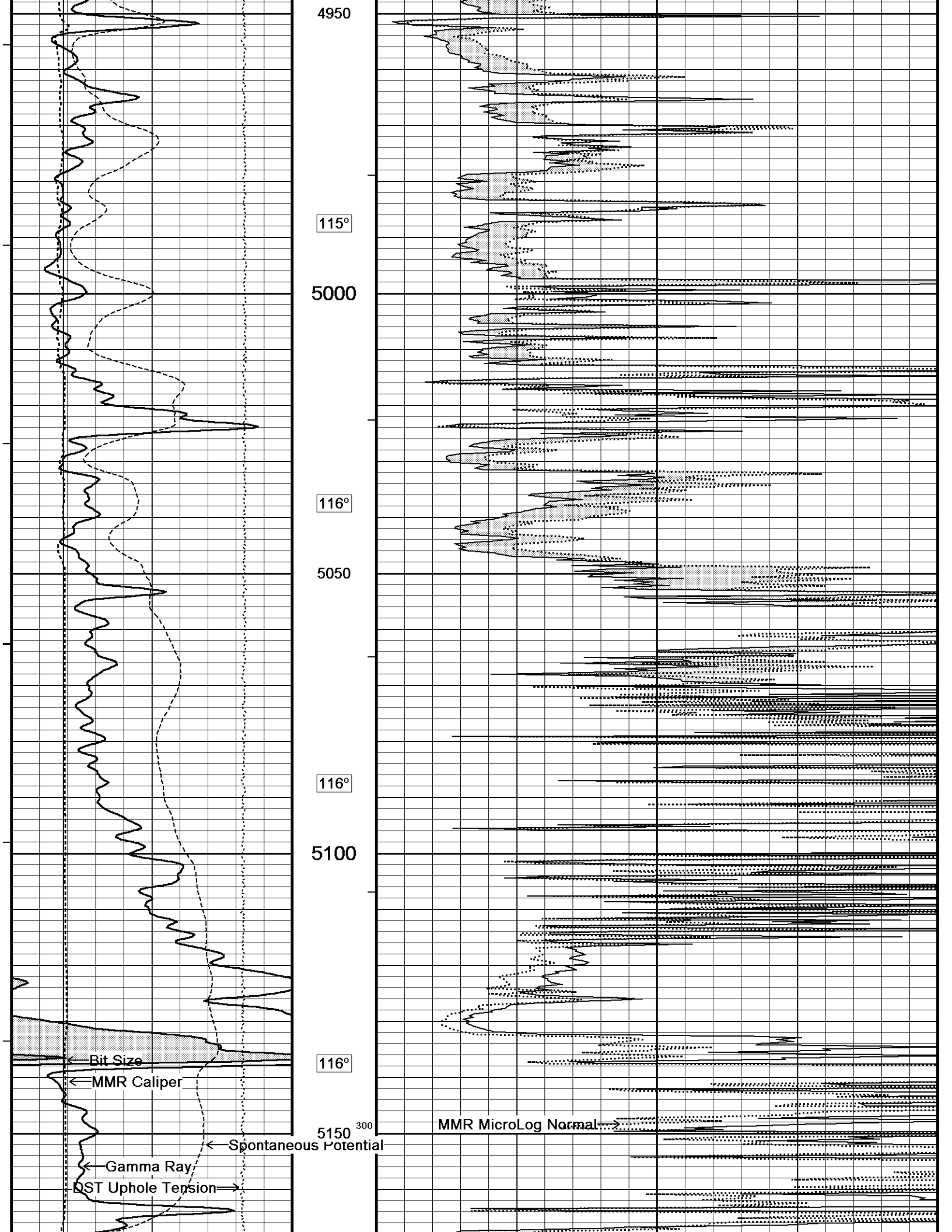


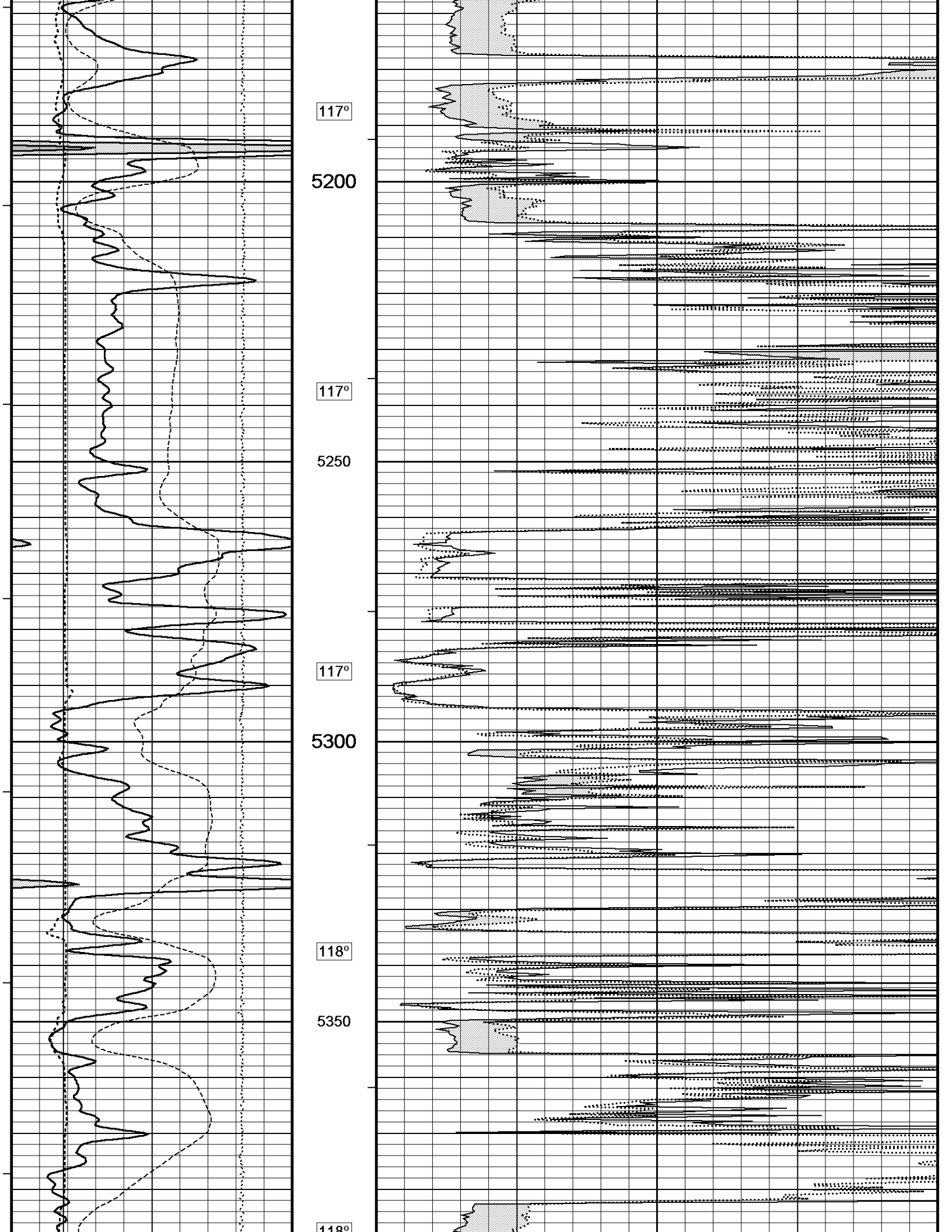

107°
4100
108°
4150
108°
4200
109°
4250
109°

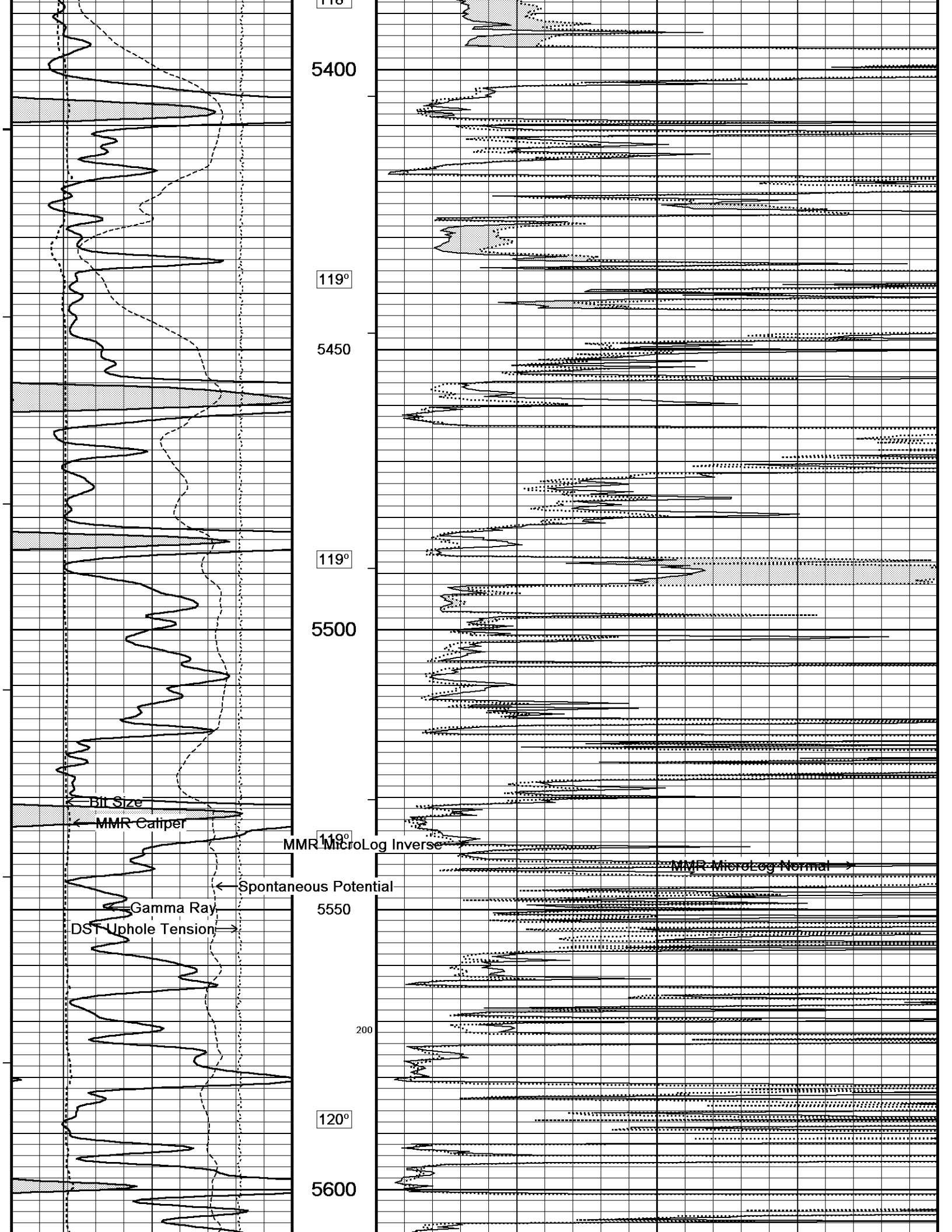

109
4300
500
110°
Bit Size
MMR Caliper
4350
MMR MicroLog Inverse
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
DST Uphole Tension
110°
4400
111°
4450
111°
4500

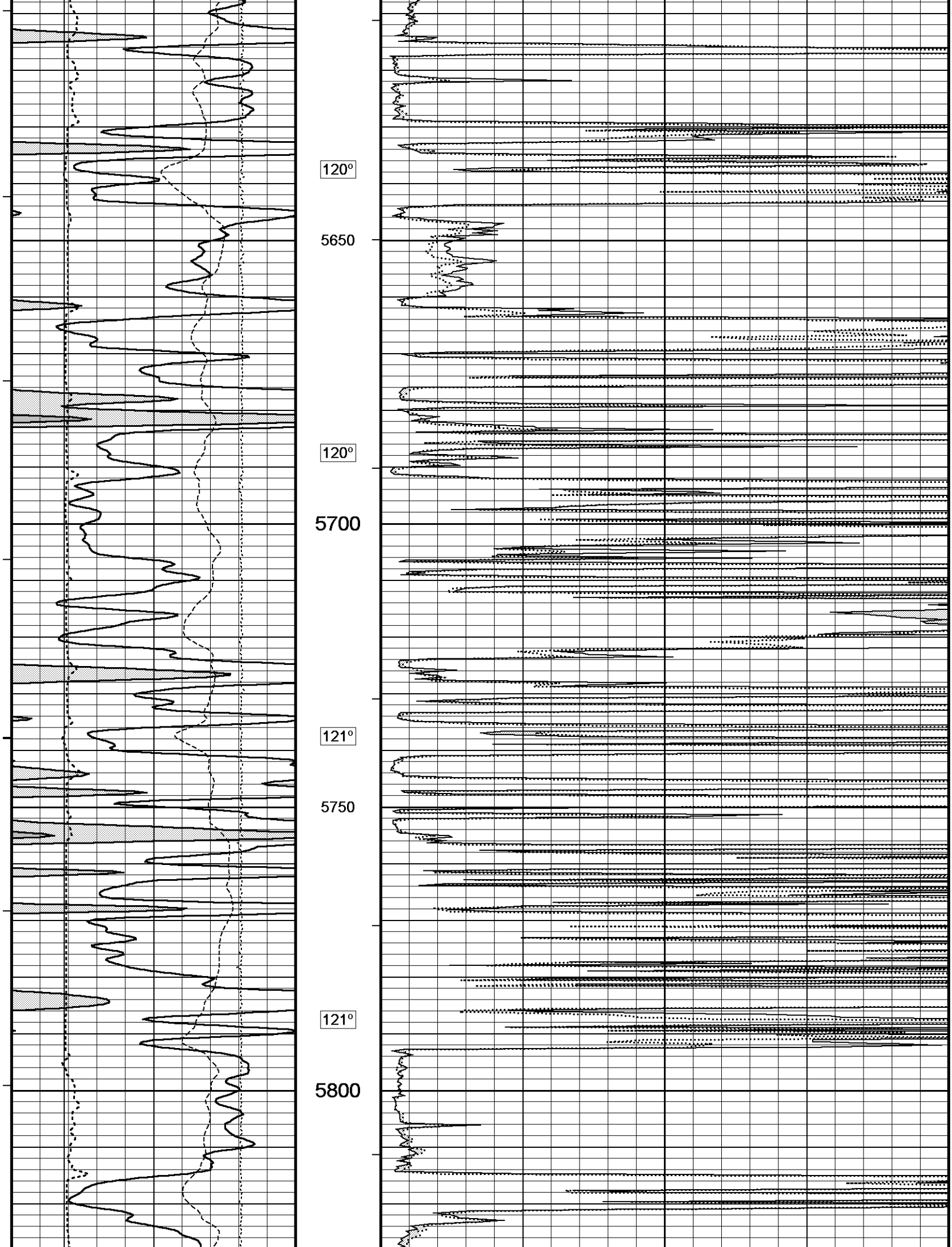

112°
4550
112°
4600
113°
4650
113°
4700
400

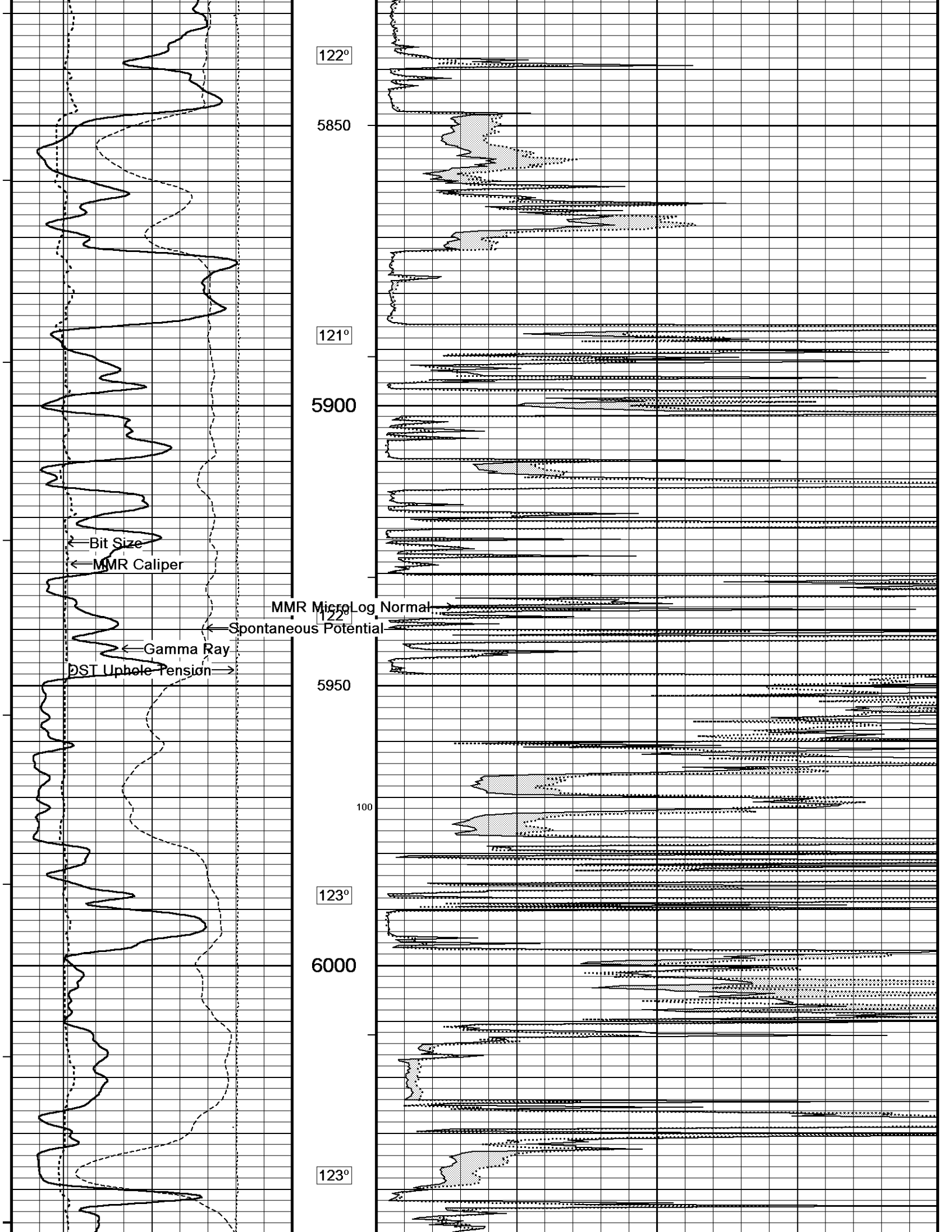

Bit Size
MMR Caliper
MMR MicroLog Inverse
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
DST Uphole Tension
114°
4750
114°
4800
114°
4850
114°
4900
115°

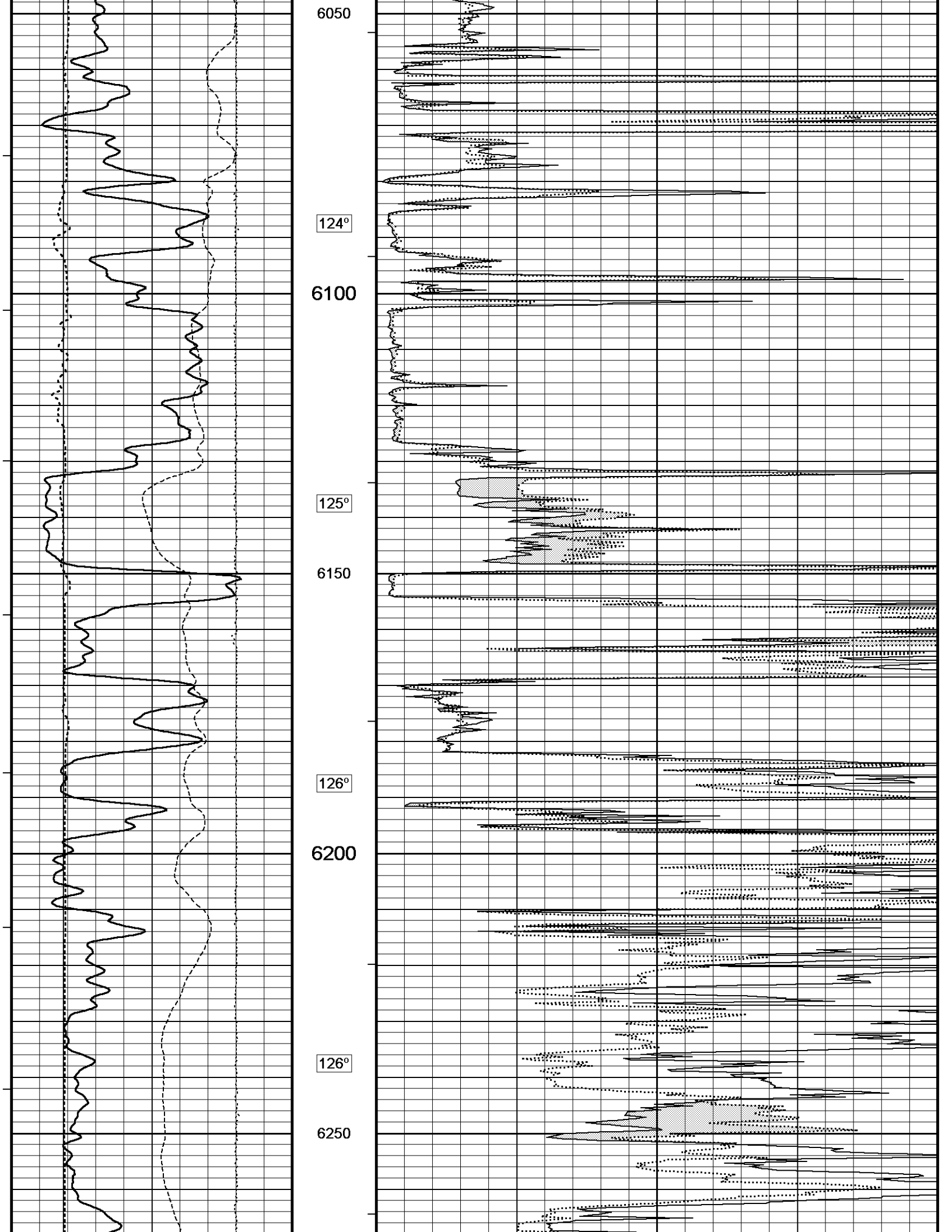

4950
115°
5000
116°
5050
116°
5100
116°
5150
300
Bit Size
MMR Caliper
Spontaneous Potential
Gamma Ray
DST Uphole Tension
MMR MicroLog Normal

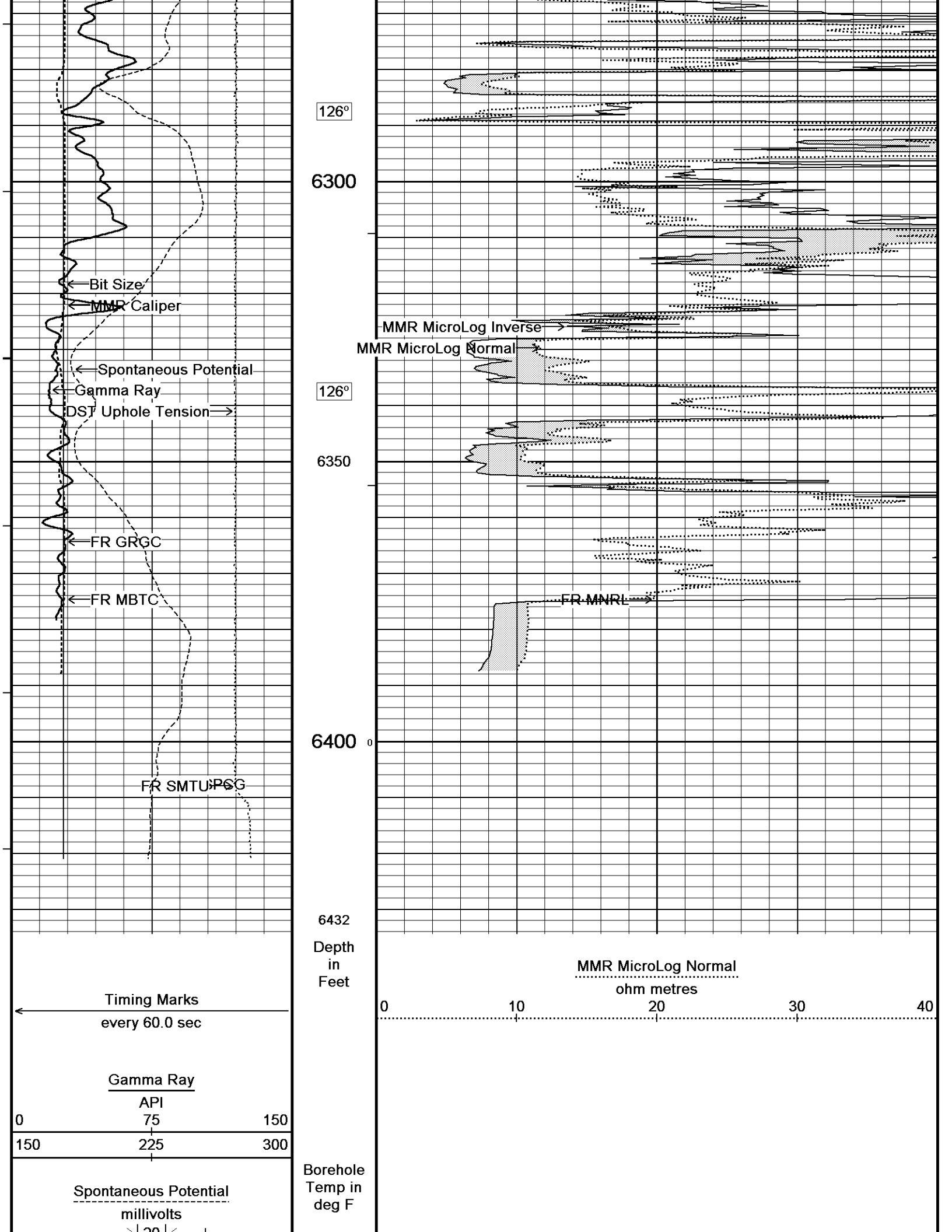

117°
5200
117°
5250
117°
5300
118°
5350
118°

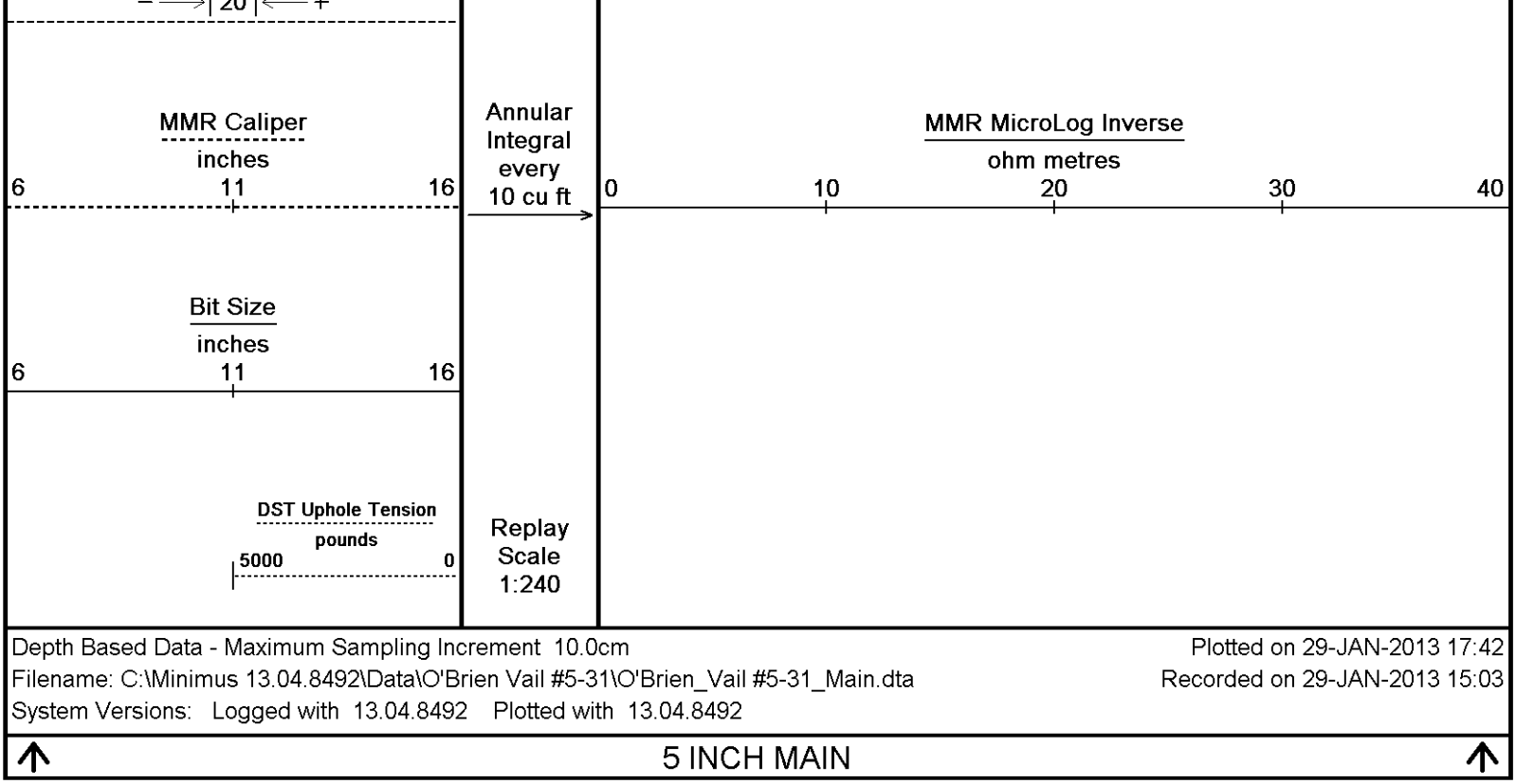

118°
5400
119°
5450
119°
5500
119°
5550
200
120°
5600
Bit Size
MMR Caliper
MMR MicroLog Inverse
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
DST Uphole Tension


120°
5650
120°
5700
121°
5750
121°
5800


122°
5850
121°
5900
Bit Size
MMR Caliper
MMR MicroLog Normal
122°
Spontaneous Potential
Gamma Ray
DST Uphole Tension
5950
100
123°
6000
123°


6050
124°
6100
125°
6150
126°
6200
126°
6250


126°
6300
Bit Size
MMR Caliper
MMR MicroLog Inverse
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
126°
DST Uphole Tension
6350
FR GRGC
FR MBTC
FR MNRL
6400
FR SMTU
PSG
6432
Depth in Feet
MMR MicroLog Normal
ohm metres
0
10
20
30
40
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Borehole Temp in deg F
Spontaneous Potential
millivolts

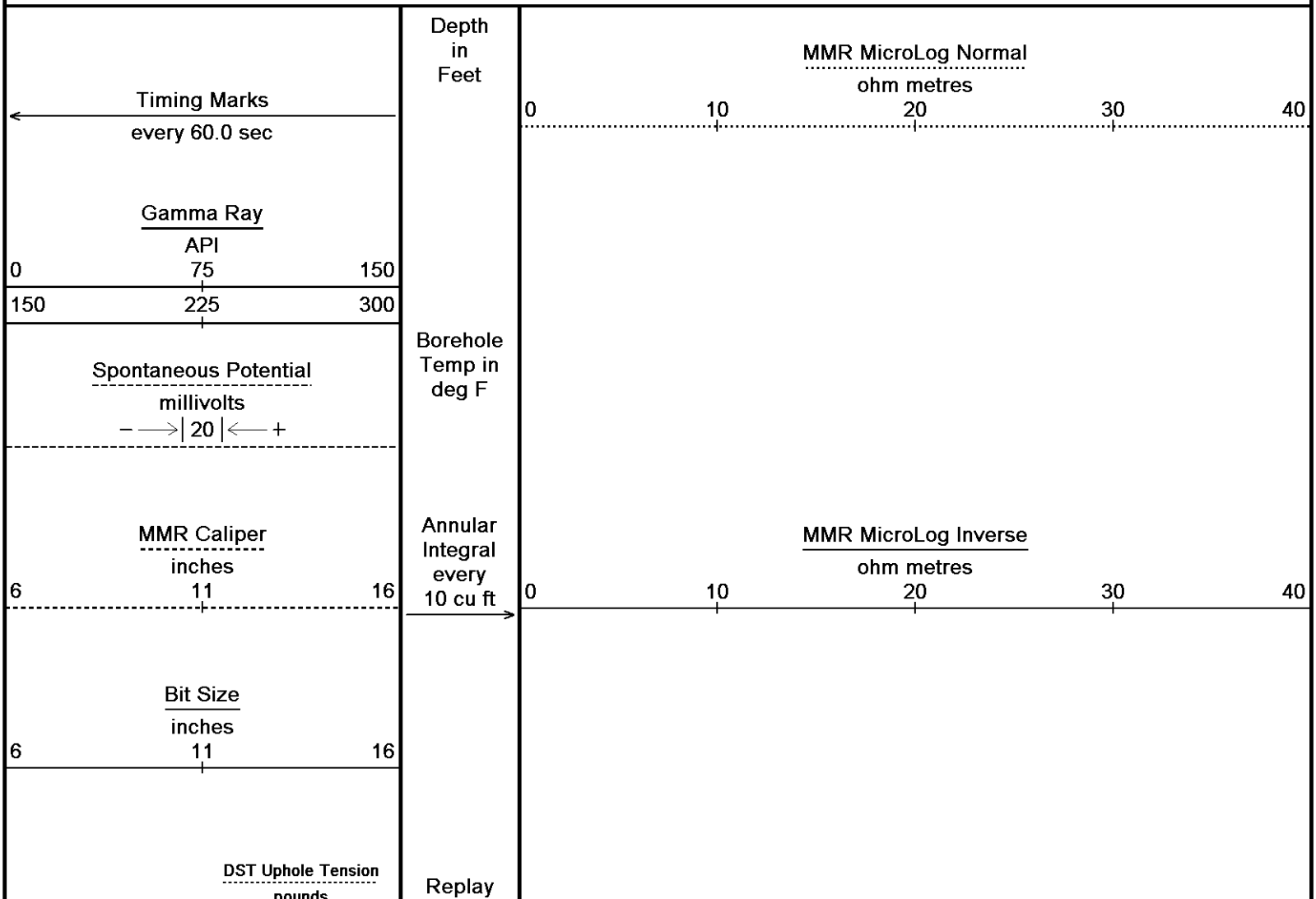


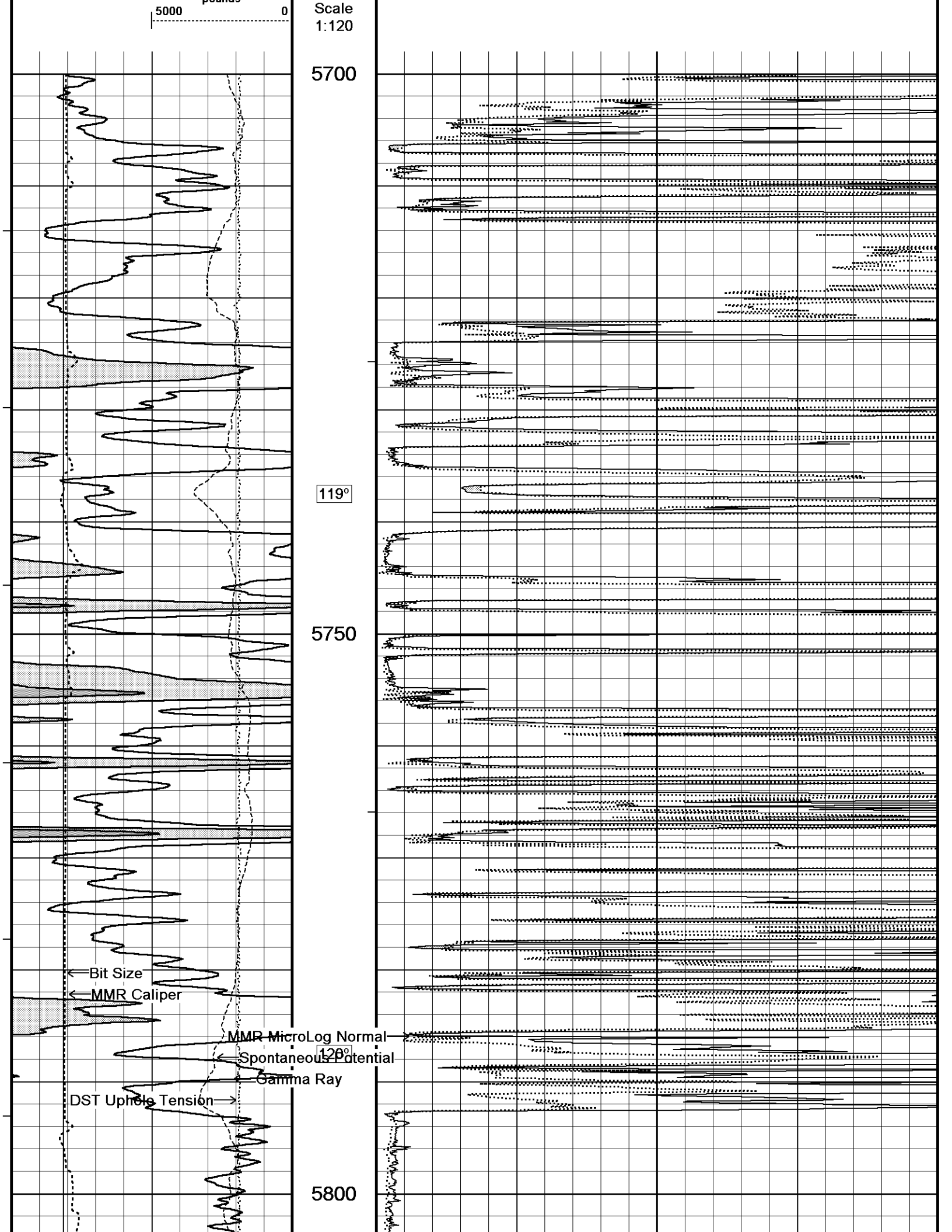
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-JAN-2013 17:42
Filename: C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_Main.dta — Recorded on 29-JAN-2013 15:03
System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

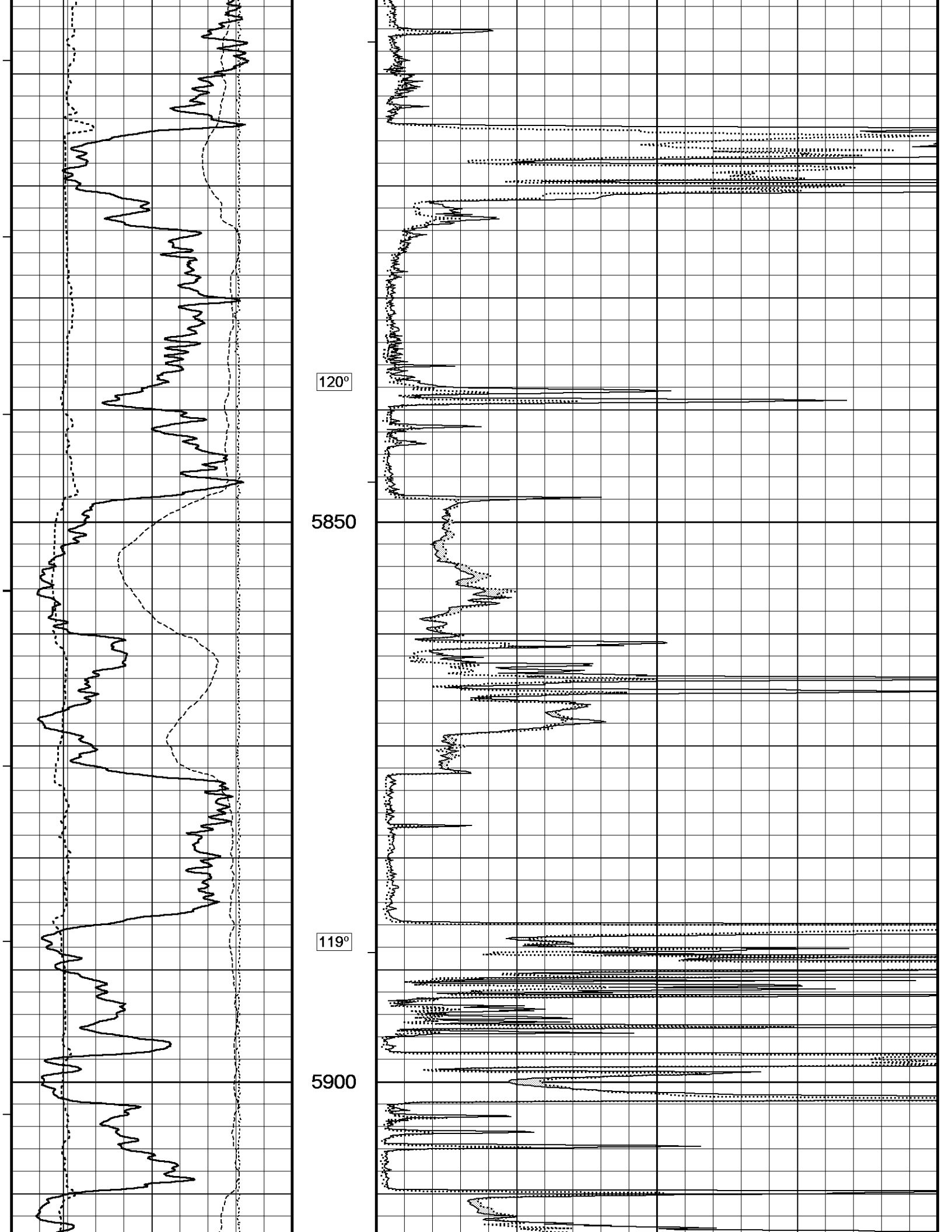
5 INCH MAIN

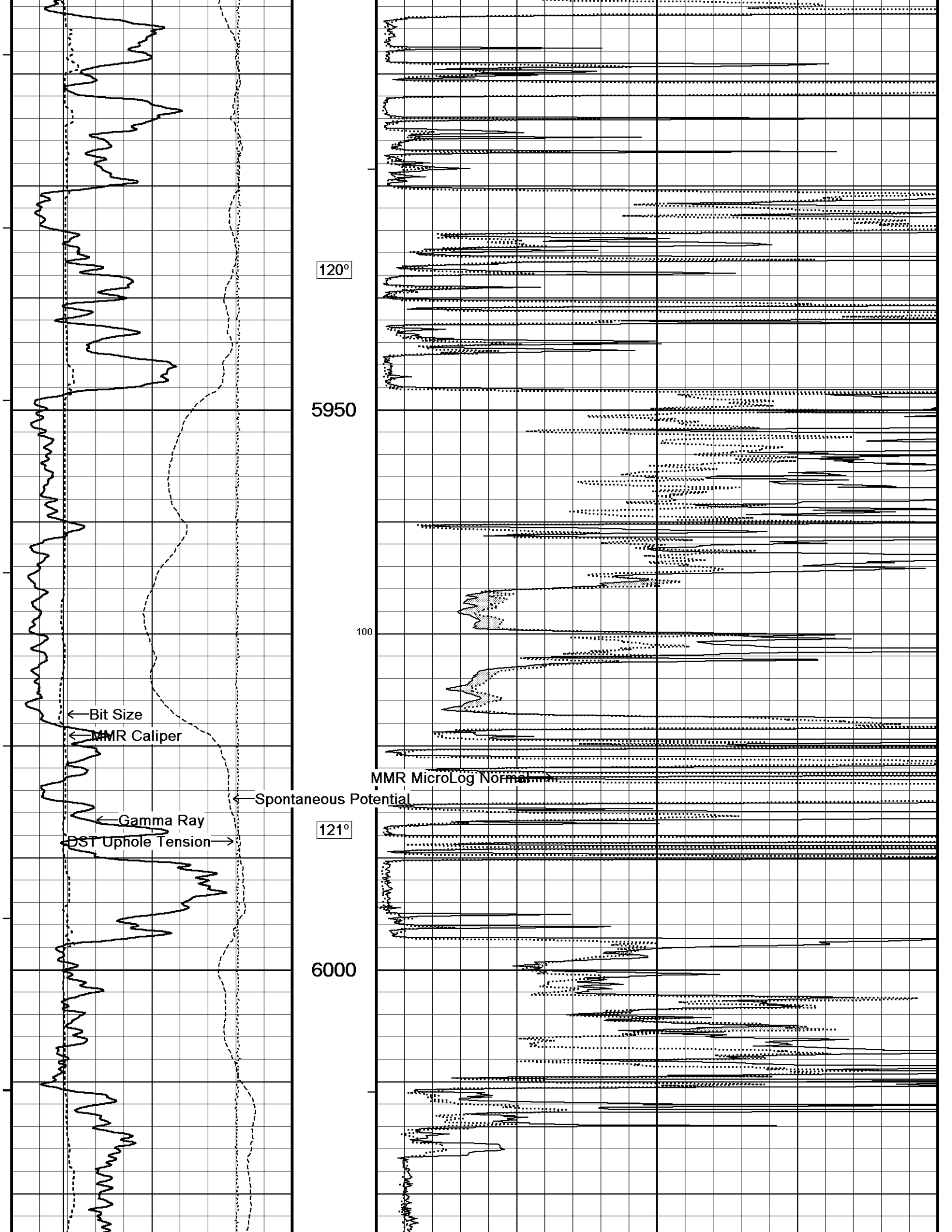
10 INCH HI-RES

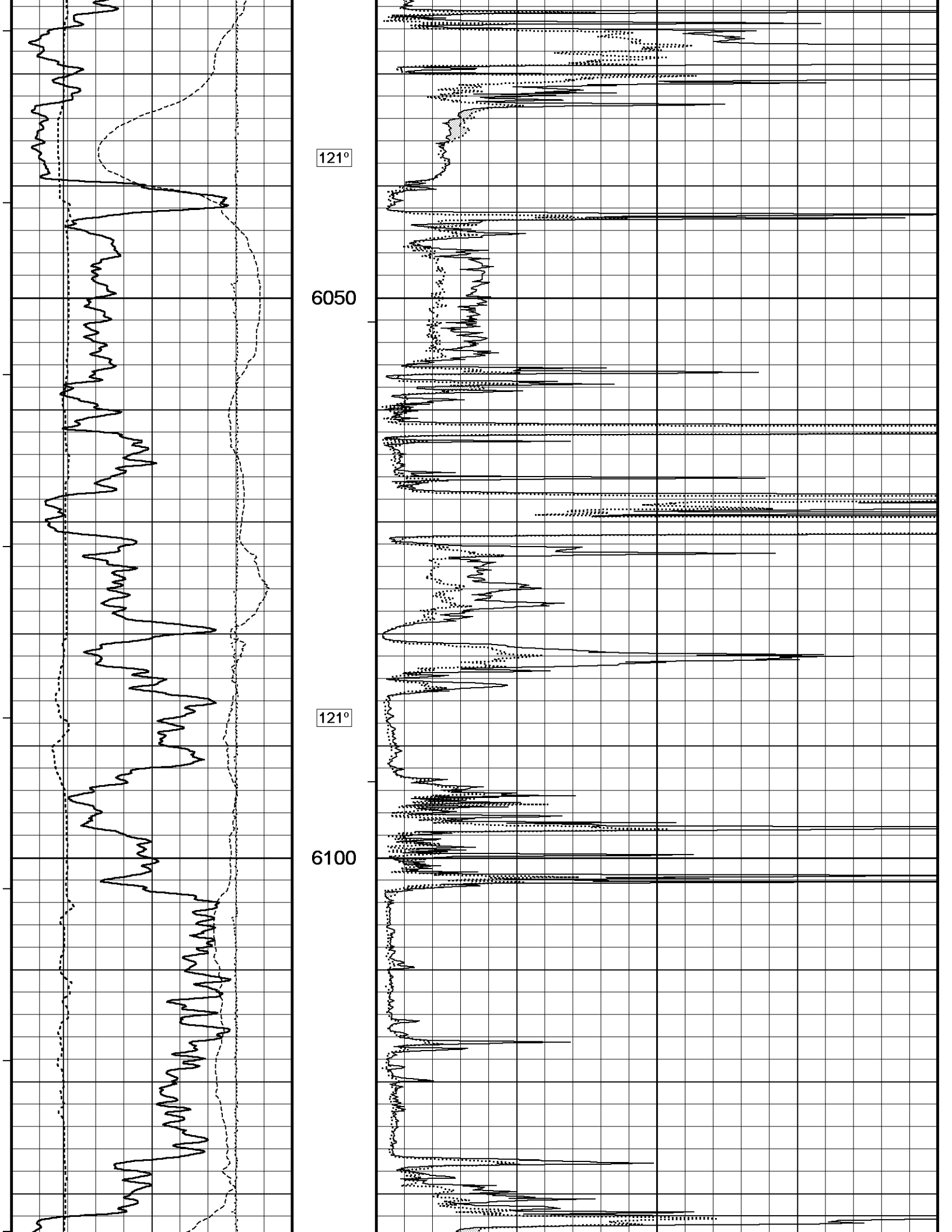
Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 29-JAN-2013 17:42
Filename: C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_HIGHRES.dta — Recorded on 29-JAN-2013 13:58
System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

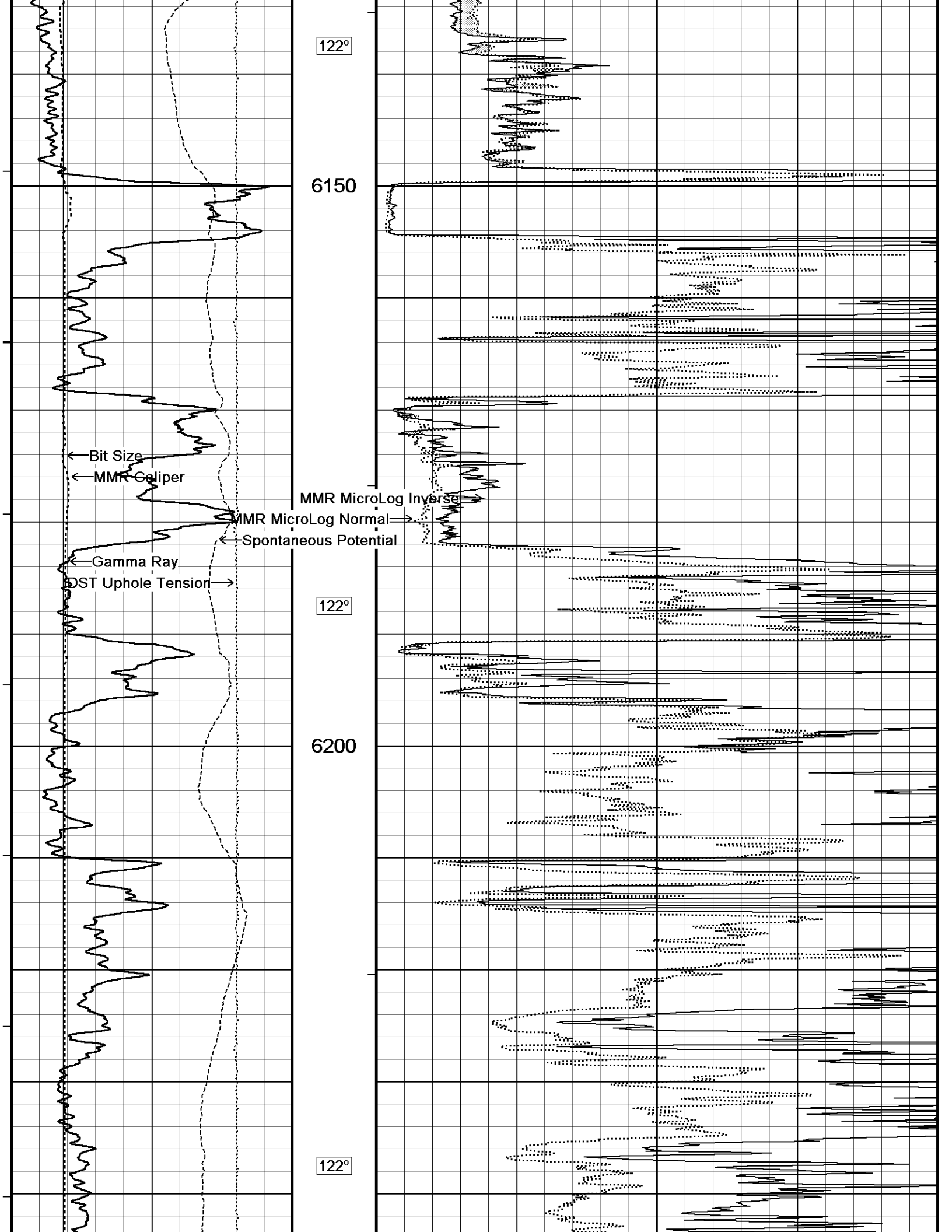


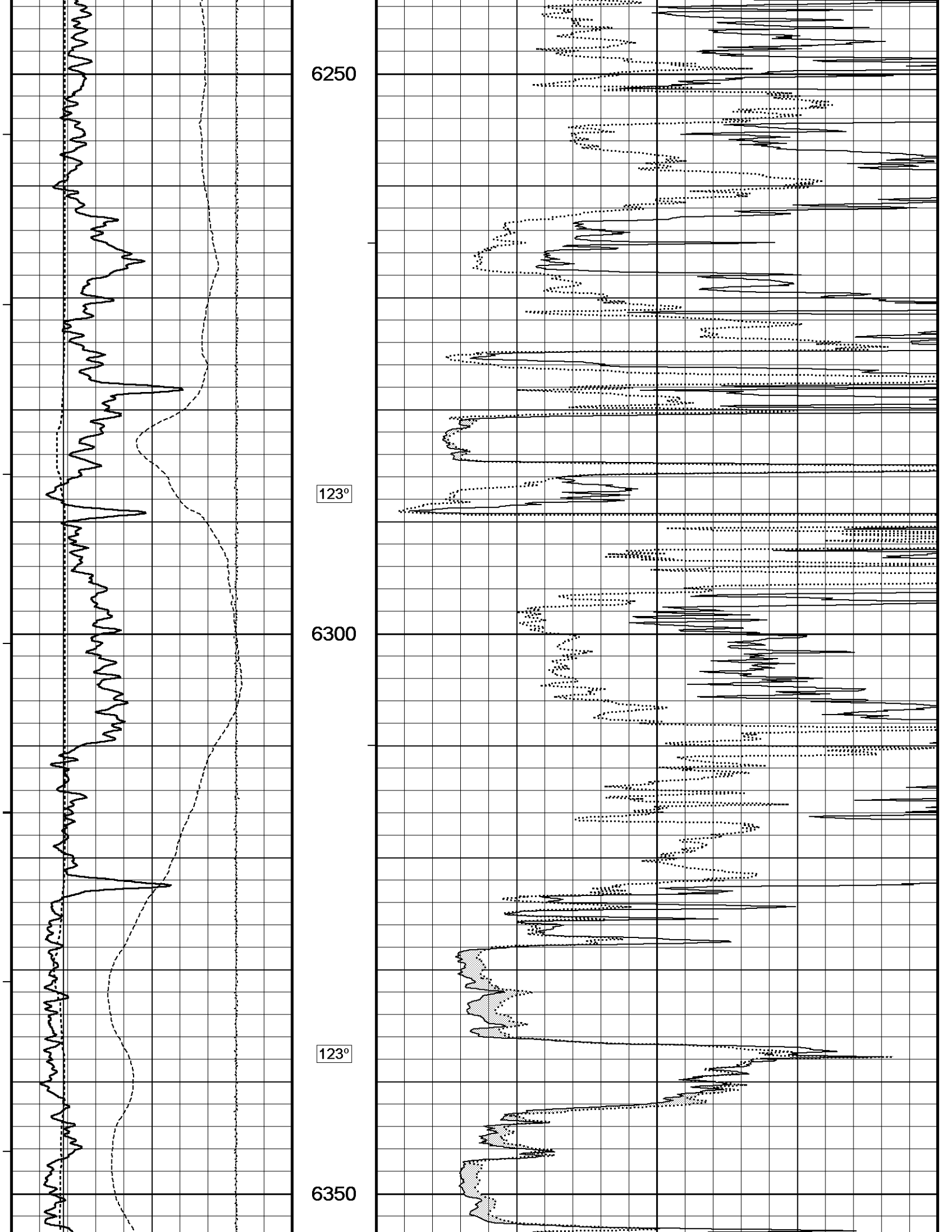

pounds
5000
0
Scale
1:120
5700
119°
5750
120°
5800
Bit Size
MMR Caliper
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
DST Uphole Tension

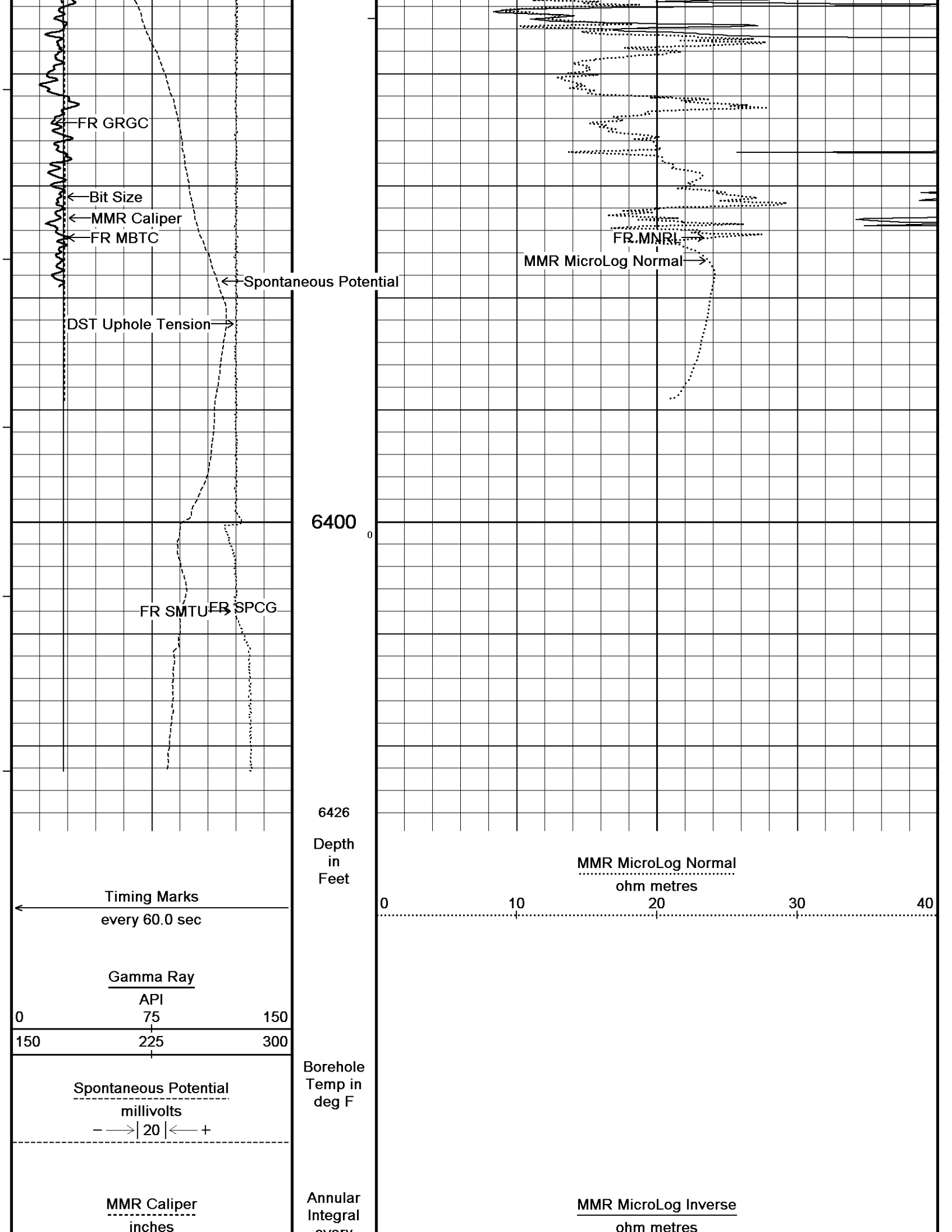

120°
5850
119°
5900


120°
5950
100
Bit Size
MMR Caliper
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
121°
DST Uphole Tension
6000


121°
6050
121°
6100


122°
6150
Bit Size
MMR Caliper
MMR MicroLog Inverse
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
DST Uphole Tension
122°
6200
122°


6250
123°
6300
123°
6350


FR GRGC
Bit Size
MMR Caliper
FR MBTC
Spontaneous Potential
DST Uphole Tension
FR SMTU
FR SPCG
FR MNRL
MMR MicroLog Normal
6400
0
6426
Depth
in
Feet
MMR MicroLog Normal
ohm metres
0
10
20
30
40
Timing Marks
every 60.0 sec
Gamma Ray
API
0
75
150
150
225
300
Borehole
Temp in
deg F
Spontaneous Potential
millivolts
− 20 +
MMR Caliper
inches
Annular
Integral
MMR MicroLog Inverse
ohm metres

6 11 16

every 10 cu ft

0 10 20 30 40

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Replay Scale 1:120

Depth Based Data - Maximum Sampling Increment 2.5cm — Plotted on 29-JAN-2013 17:42
Filename: C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_HIGHRES.dta — Recorded on 29-JAN-2013 13:58
System Versions: Logged with 13.04.8492 Plotted with 13.04.8492

10 INCH HI-RES

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-JAN-2013 17:42
Filename: C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_Repeat.dta — Recorded on 29-JAN-2013 13:58
System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

Depth in Feet

Timing Marks
every 60.0 sec

MMR MicroLog Normal
ohm metres
0 10 20 30 40

Gamma Ray
API
0 75 150
150 225 300

Borehole Temp in deg F

Spontaneous Potential
millivolts
− 20 +

MMR Caliper
inches
6 11 16

Annular Integral every 10 cu ft

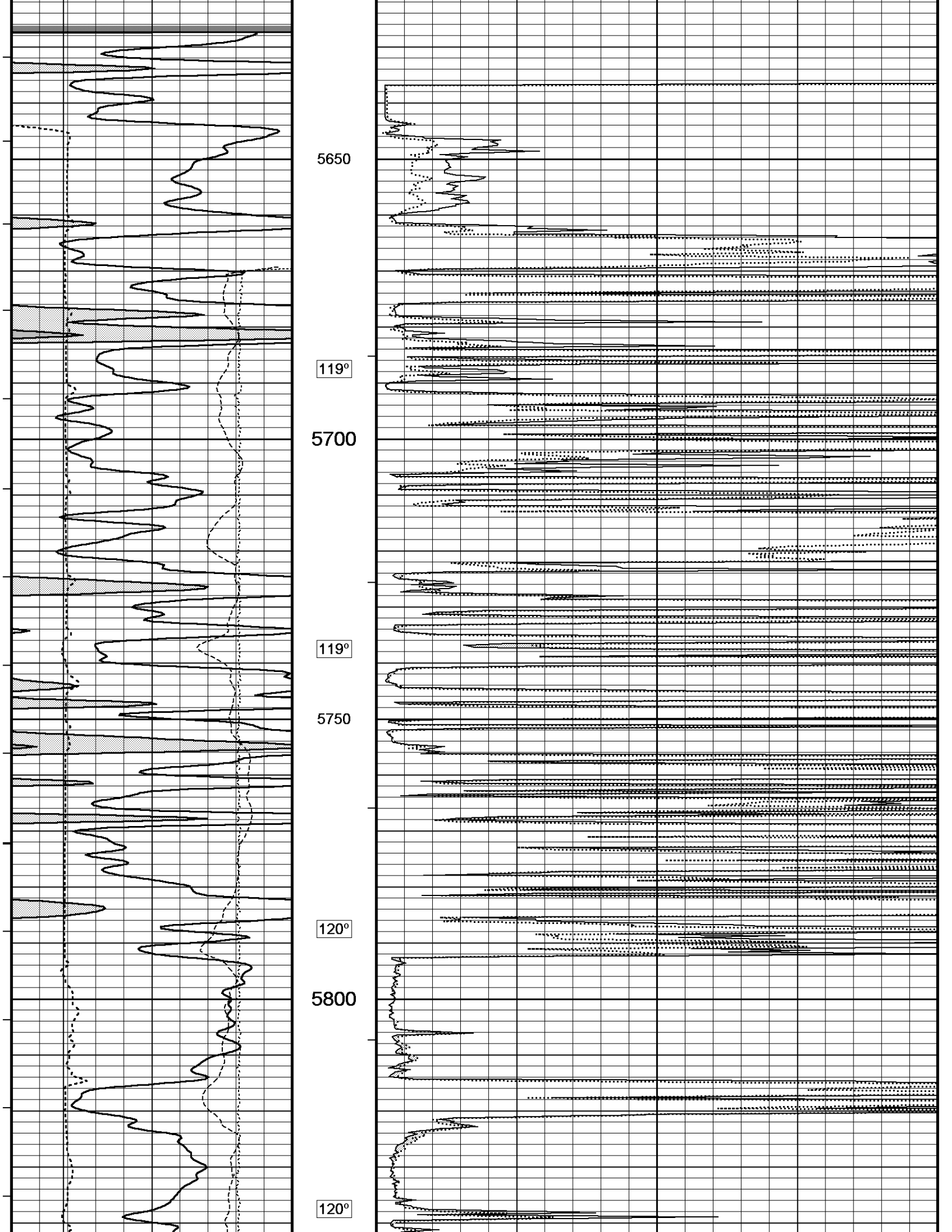
MMR MicroLog Inverse
ohm metres
0 10 20 30 40

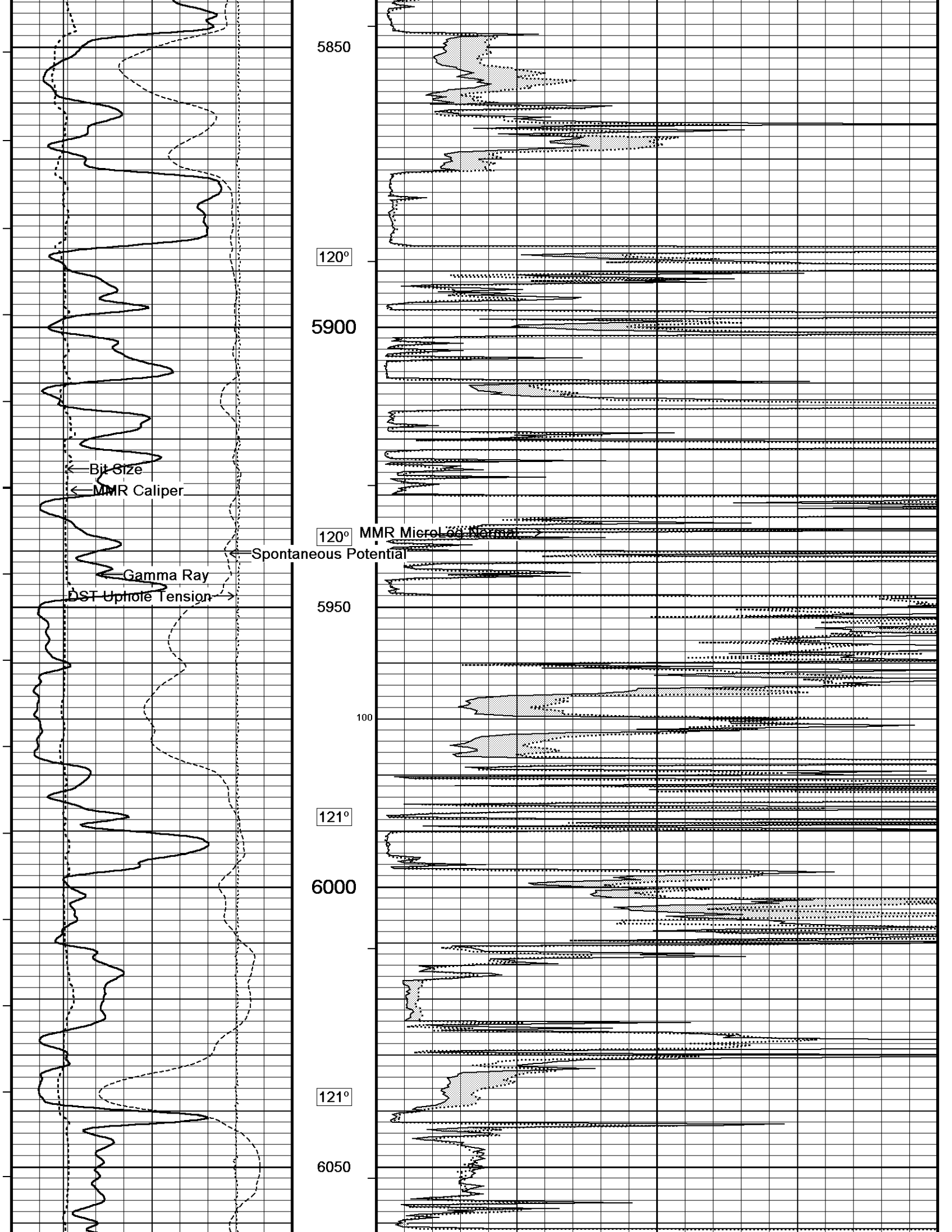
Bit Size
inches
6 11 16

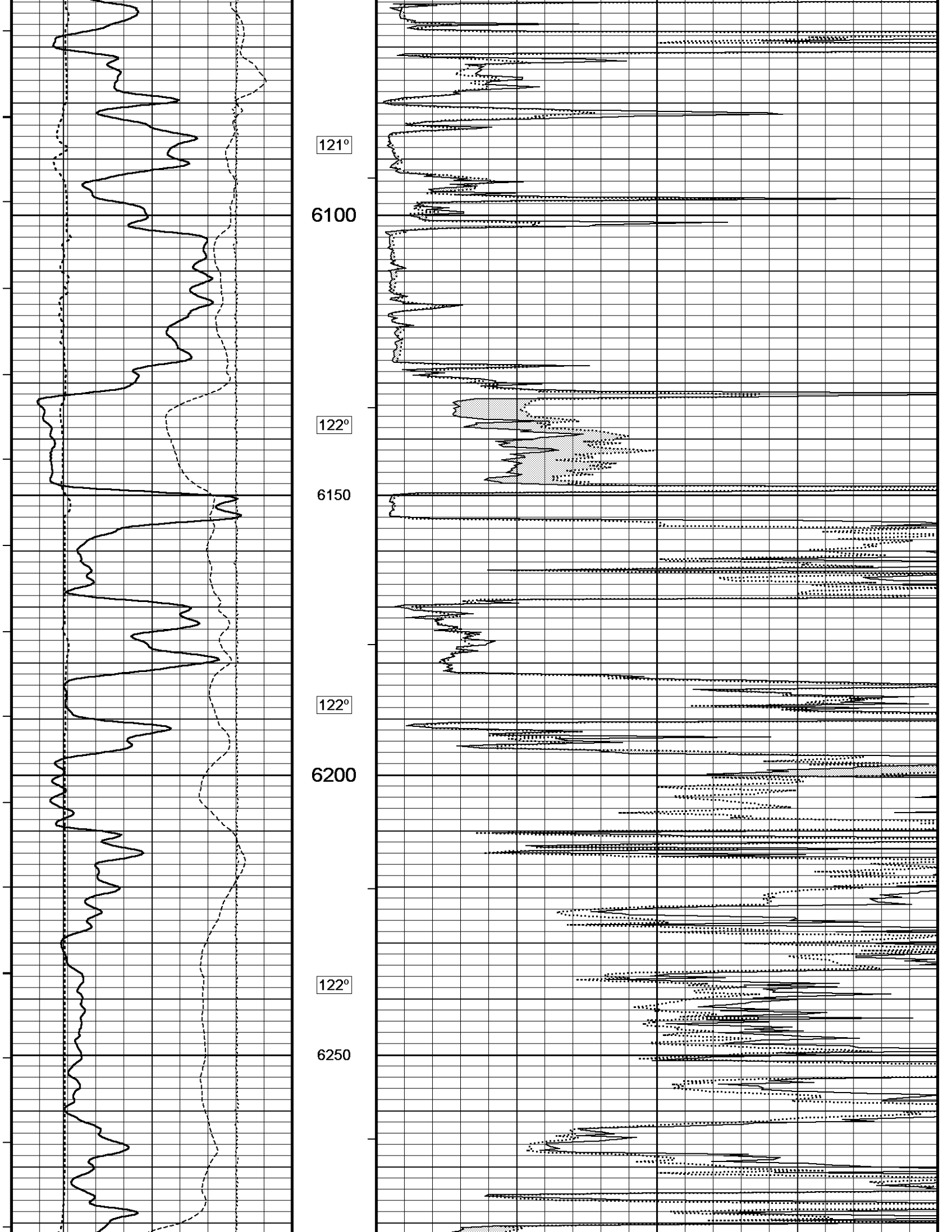
DST Uphole Tension
pounds
5000 0

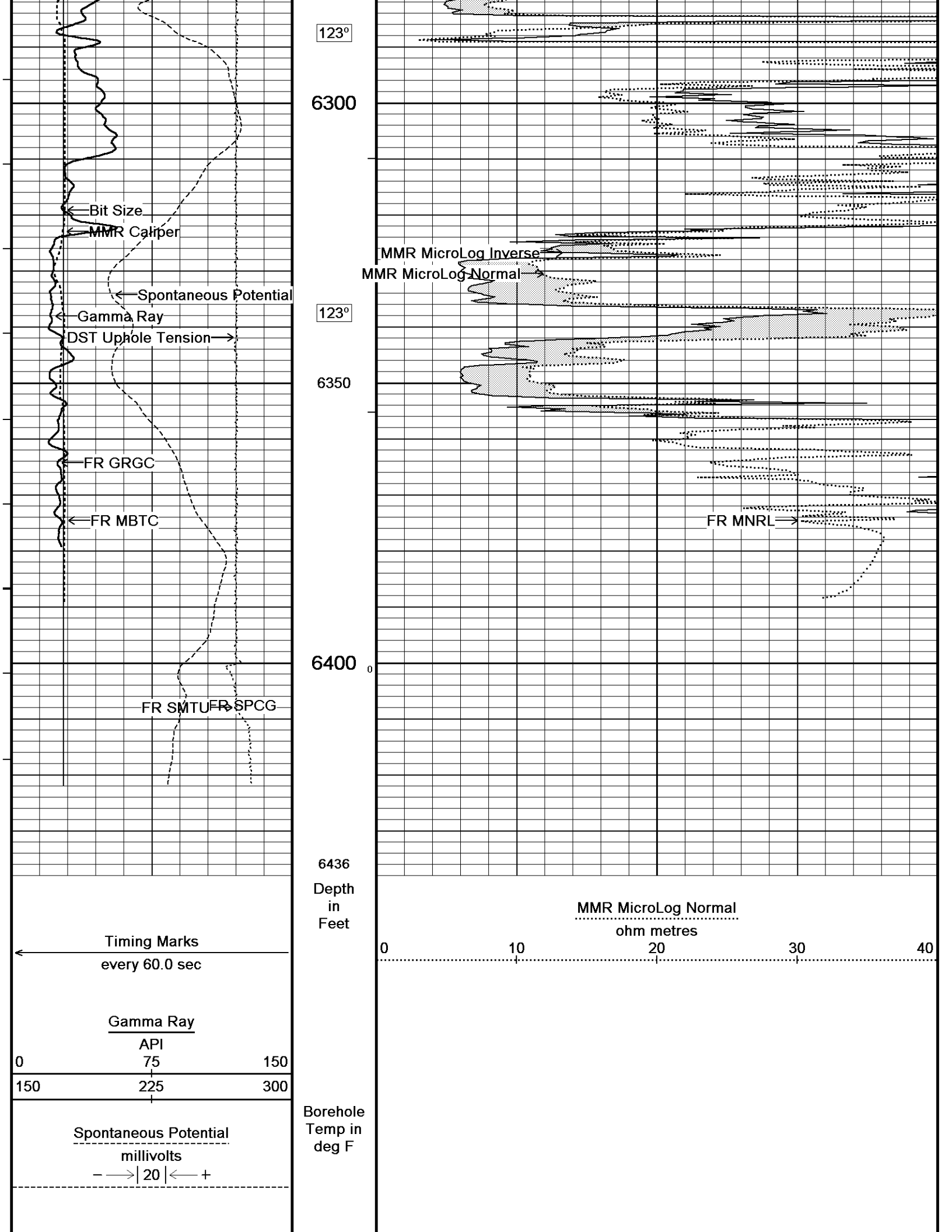
Replay Scale 1:240

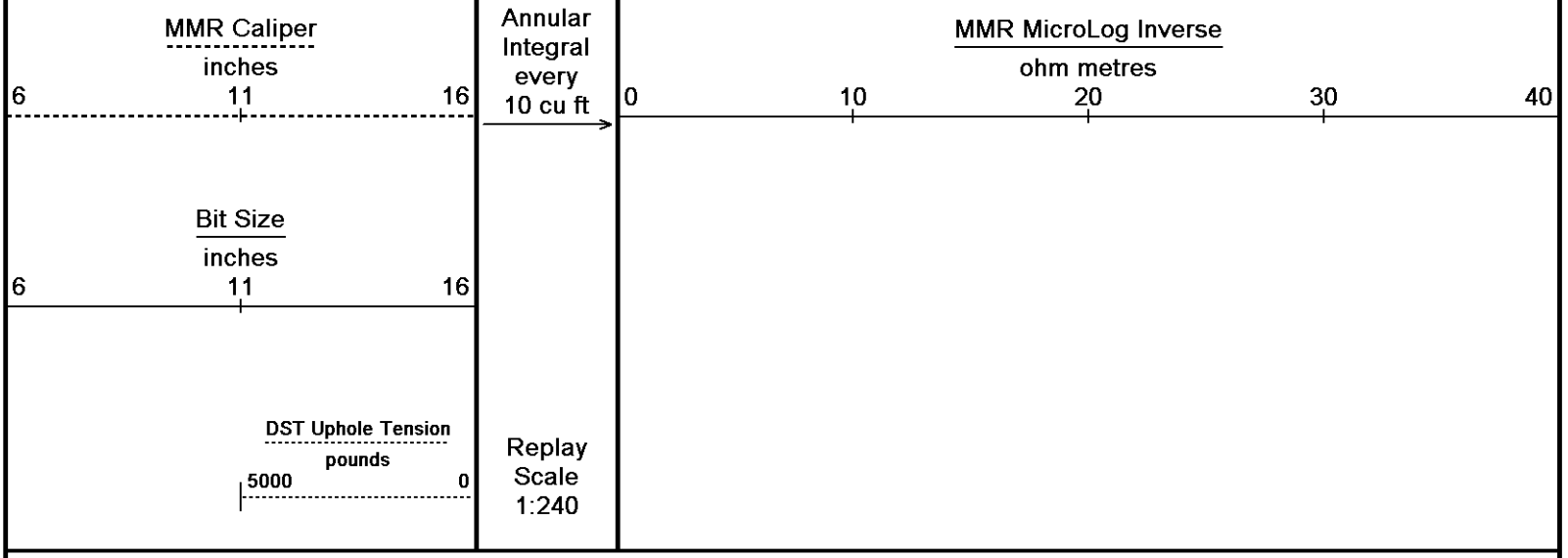
5616


5650
119°
5700
119°
5750
120°
5800
120°


5850
120°
5900
Bit Size
MMR Caliper
120°
MMR MicroLog Normal
Spontaneous Potential
Gamma Ray
DST Uphole Tension
5950
100
121°
6000
121°
6050


121°
6100
122°
6150
122°
6200
122°
6250


123°
6300
Bit Size
MMR Caliper
MMR MicroLog Inverse
MMR MicroLog Normal
Spontaneous Potential
123°
Gamma Ray
DST Uphole Tension
6350
FR GRGC
FR MBTC
FR MNRL
6400
0
FR SMTU
FR SPCG
6436
Depth
in
Feet
Timing Marks
every 60.0 sec
MMR MicroLog Normal
ohm metres
0
10
20
30
40
Gamma Ray
API
0
75
150
150
225
300
Borehole
Temp in
deg F
Spontaneous Potential
millivolts
− 20 +



Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 29-JAN-2013 17:42
Filename: C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_Repeat.dta — Recorded on 29-JAN-2013 13:58
System Versions: Processed with 13.04.8492 Plotted with 13.04.8492

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_Main.dta

General Constants All 000

Last Edited on 29-JAN-2013,12:10

General Parameters		
Mud Resistivity	1.050	ohm-metres
Mud Resistivity Temperature	81.000	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	Density Caliper	
Rwa Parameters		
Porosity used	Base Density Porosity	
Resistivity used	Array Ind. Four Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	

Down-hole Tension Calibration SMS 0

Field Calibration on 25-JAN-2013 17:27

Reading No	Measured	Calibrated (lbs)
1	15306.37	0.00
2	15980.37	415.00

SP Calibration MCG-C 208

Field Calibration on 27-DEC-2012 10:06

	Measured	Calibrated (mV)
Reference 1	100.9	100.0
Reference 2	-100.6	-100.0

High Resolution Temperature Calibration MCG-C 208

Field Calibration on 05-NOV-2012,14:26

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

High Resolution Temperature Constants MCG-C 208

Last Edited on 05-NOV-2012,14:25

Pre-filter Length	11

Gamma Calibration MCG-C 208

Field Calibration on 29-JAN-2013 09:50

	Measured	Calibrated (API)
Background	74	51
Calibrator (Gross)	1129	776
Calibrator (Net)	1055	725

Gamma Constants MCG-C 208

Last Edited on 29-JAN-2013,09:44

Gamma Calibrator Number	GR38	
Mud Density	1.00	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl	0.00	kppm

Micro Laterolog Calibration MMR-A 11

Base Calibration on 31-DEC-1999 00:00
Field Check on 31-DEC-1999 00:00

Base Calibration

	Measured		Calibrated (ohm-m)	
	Ref 1	Ref 2	Ref 1	Ref 2
	0.0	0.0	0.0	0.0

Base Check (ohm-m)	Field Check (ohm-m)
0.0	0.0

Micro Laterolog Constants MMR-A 11

Last Edited on 12-NOV-2012,01:59

Pad Type	6 in Solid Nylon B23059	
Micro Laterolog K Factor	0.0128	
Standoff Offset	0.0000	inches

Mudcake Thickness Correction Constants

Mud Cake Source	Constant Value	
Mud Cake Thickness	0.4000	inches
Mud Cake Thickness Caliper	N/A	
Mud Cake Resistivity	0.1500	ohm-m
Mud Cake Resistivity Temp.	68.00	Deg F
Mud Cake Resistivity Source	Constant Value	
Temp. Source Rmc Correc.	N/A	

Caliper Calibration MMR-A 11

Base Calibration on 16-JAN-2013 10:32
Field Calibration on 29-JAN-2013 09:44

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	13881	5.98
2	17138	7.97
3	20398	9.86
4	24351	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
6.04	5.98

Micro Normal and Micro Inverse Calibration MMR-A 11

Base Calibration on 16-JAN-2013 10:36
Field Check on 29-JAN-2013 09:42

Base Calibration

	Measured		Calibrated (ohm-m)	
Channel	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	12.3	59.9	5.0	25.0
Micro Inverse	15.5	77.5	5.0	25.0

Channel	Base Check (ohm-m)	Field Check (ohm-m)
Micro Normal	76.3	76.3
Micro Inverse	58.7	58.7

Micro Normal and Micro Inverse Constants MMR-A 11

Last Edited on 05-NOV-2012,13:54

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	0.0000	inches

Neutron Calibration MDN-A.B 65

Base Calibration on 24-JAN-2013 15:09
Field Check on 29-JAN-2013 09:54

Base Calibration

	Measured		Calibrated (cps)	
	Near	Far	Near	Far
	2952	92	3714	110
Ratio	32.138		33.764	

Field Calibrator at Base

	Calibrated (cps)	
	1720	2499
Ratio	0.688	

Field Check

	Calibrated (cps)	
	1721	2500
Ratio	0.696	

Neutron Constants MDN-A.B 65

Last Edited on 29-JAN-2013,12:10

Neutron Source Id	PN-521	
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	None	
Formation Pressure	N/A	kpsi
Temperature Source	None	
Temperature	N/A	degrees F
Mud Salinity	0.00	kppm
Salinity Correction	Not Applied	
Formation Fluid Salinity Source	None	
Formation Fluid Salinity	N/A	kppm
Barite Mud Correction	Not Applied	

FE Calibration MFE-B.J 352

Base Calibration on 16-JAN-2013 10:20
Field Check on 29-JAN-2013 09:36

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	964.3	126.8
Base Check		281.2
Field Check		281.4

FE Constants MFE-B.J 352

Last Edited on 29-JAN-2013,12:12

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

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 13-DEC-2012,10:54

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

High Resolution Temperature Constants MAI-A.A 45

Last Edited on 13-DEC-2012,10:53

Pre-filter Length	11

Induction Calibration MAI-A.A 45

Base Calibration on 26-JUL-2012,09:22
Field Check on 29-JAN-2013 09:34

Base Calibration

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 78.4 Deg F

Channel	Base Check (mmho/m) Low	Base Check (mmho/m) High	Field Check (mmho/m) Low	Field Check (mmho/m) High
1			18.6	3851.8
2			31.7	3629.2
3			28.6	3049.2
4			18.3	2079.1
Deep			16.1	1911.1
Medium			42.5	4060.2
Shallow			49.6	5482.8

Array Temperature 62.9 Deg F

Induction Constants MAI-A.A 45

Last Edited on 29-JAN-2013,12:12

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	

Photo Density Calibration MPD-B 31

Base Calibration on 24-JAN-2013 09:49
Field Check on 29-JAN-2013 09:40

Density Calibration

Base Calibration	Measured Near	Measured Far	Calibrated (sdu) Near	Calibrated (sdu) Far
Reference 1	45759	23102	59556	30836
Reference 2	18982	1934	24941	2541

Field Check at Base

	680.7	842.1

Field Check

Field Check	685.5	845.6

PE Calibration

Base Calibration	WS	Measured WH	Ratio	Calibrated Ratio
Background	127	606		
Reference 1	19469	45650	0.429	0.371
Reference 2	5712	18903	0.305	0.272

Field Check at Base		
	126.6	606.1

Field Check		
	124.4	609.5

Density Constants MPD-B 31

Last Edited on 29-JAN-2013,12:11

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	1.12	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

Caliper Calibration MPD-B 31

Base Calibration on 28-JAN-2013 08:35
Field Calibration on 29-JAN-2013 09:41

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15824	3.99
2	24384	5.98
3	33040	7.97
4	41376	9.86
5	50943	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
5.94	5.98

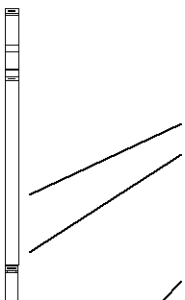
DOWNHOLE EQUIPMENT

C:\Minimus 13.04.8492\Data\O'Brien Vail #5-31\O'Brien_Vail #5-31_Main.dta

SHA-F Compact Swivel Head Adaptor
SHA-F 59 LG: 2.74 ft WT: 26.5 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 208 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-Resistivity



43.50 ft GRGC - Gamma Ray
40.59 ft CGXT - MCG External Temperature
33.24 ft MBTC - MMR Caliper

MMR-A 11 LG: 8.59 ft WT: 81.6 lb OD: 4.88 in

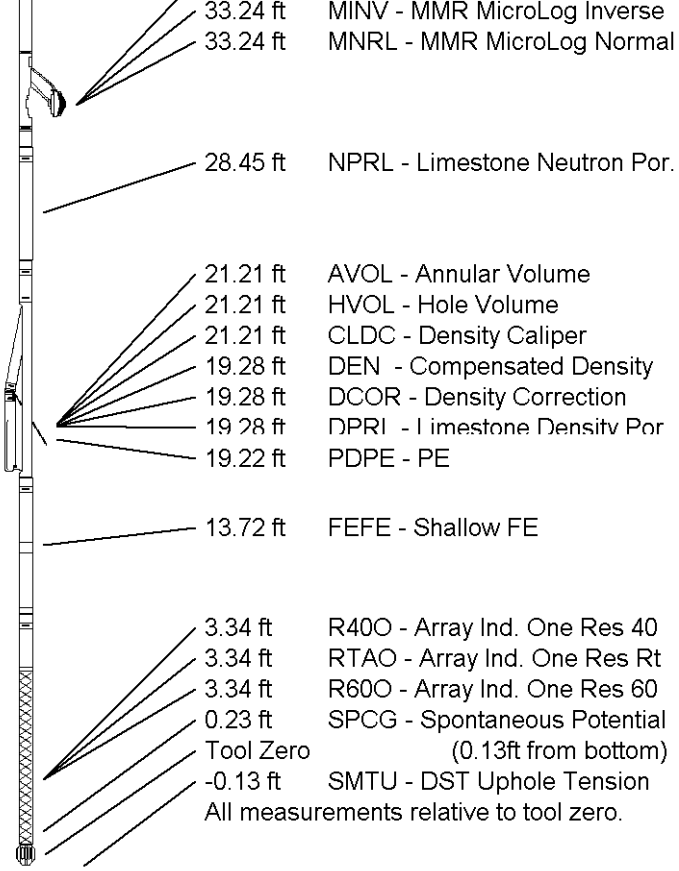
Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Focussed Electric
MFE-B.J 352 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: 51.52 ft Weight: 410.1 lb



33.24 ft	MINV - MMR MicroLog Inverse
33.24 ft	MNRL - MMR MicroLog Normal
28.45 ft	NPRL - Limestone Neutron Por.
21.21 ft	AVOL - Annular Volume
21.21 ft	HVOL - Hole Volume
21.21 ft	CLDC - Density Caliper
19.28 ft	DEN - Compensated Density
19.28 ft	DCOR - Density Correction
19.28 ft	DPRL - Limestone Density Por
19.22 ft	PDPE - PE
13.72 ft	FEFE - Shallow FE
3.34 ft	R40O - Array Ind. One Res 40
3.34 ft	RTAO - Array Ind. One Res Rt
3.34 ft	R60O - Array Ind. One Res 60
0.23 ft	SPCG - Spontaneous Potential
Tool Zero	(0.13ft from bottom)
-0.13 ft	SMTU - DST Uphole Tension

All measurements relative to tool zero.

COMPANY	O'BRIEN ENERGY RESOURCES CORP.
WELL	VAIL #5-31
FIELD	NOVINGER EAST
PROVINCE/COUNTY	MEADE
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2683.00	feet	First Reading	6375.00	feet
Elevation Drill Floor	2682.00	feet	Depth Driller	6400.00	feet
Elevation Ground Level	2671.00	feet	Depth Logger	6408.00	feet

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