



Weatherford

MICRORESISTIVITY LOG

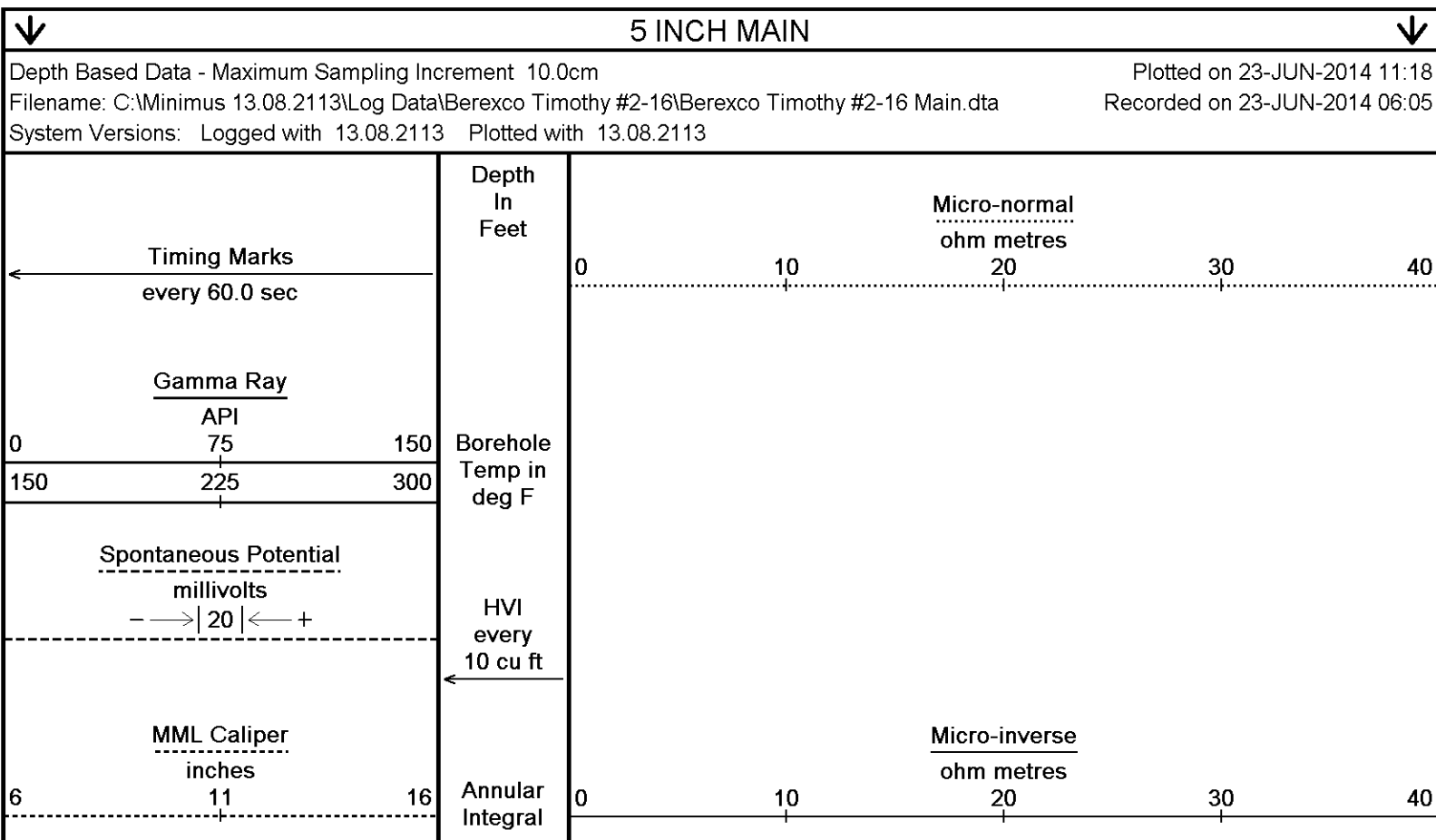
COMPANY	BEREXCO LLC		
WELL	TIMOTHY #2-16		
FIELD	WILDCAT		
PROVINCE/COUNTY	FINNEY		
COUNTRY/STATE	U.S.A. / KANSAS		
LOCATION	1644' FSL & 351' FWL		
SEC 16	TWP 22S	RGE 34W	Other Services
Latitude	38.13861	MAI/MFE	MPD/MDN
Longitude	101.0653	MSS	CMI
API Number	15-055-22311		
Permanent Datum GL, Elevation	2957 feet		
Log Measured From	KB		Elevations: KB 2969.00
Drilling Measured From	KB @ 12 FEET		DF 2967.00
			GL 2957.00
Date	23-JUN-2014		
Run Number	ONE		
Service Order	7606-90684489		
Depth Driller	4850.00		
Depth Logger	4847.00		
First Reading	4801.11		
Last Reading	1696.00		
Casing Driller	1700.00		
Casing Logger	1696.00		
Bit Size	7.875		
Hole Fluid Type	CHEMICAL		
Density / Viscosity	9.00 lb/USg	54.00 CP	
PH / Fluid Loss	11.00	8.80 ml/30Min	
Sample Source	MUD PIT		
Rm @ Measured Temp	0.85 @ 75.0 ohm-m		
Rmf @ Measured Temp	0.68 @ 75.0 ohm-m		
Rmc @ Measured Temp	1.02 @ 75.0 ohm-m		
Source Rmf / Rmc	CALC	CALC	
Rm @ BHT	0.617 @105.0 ohm-m		
Time Since Circulation	3 HOURS		
Max Recorded Temp	105.00	deg F	
Equipment / Base	13096	LIB	
Recorded By	BEN WELDIN		
Witnessed By	ED GRIEVES		
JOB #	LB14-186		

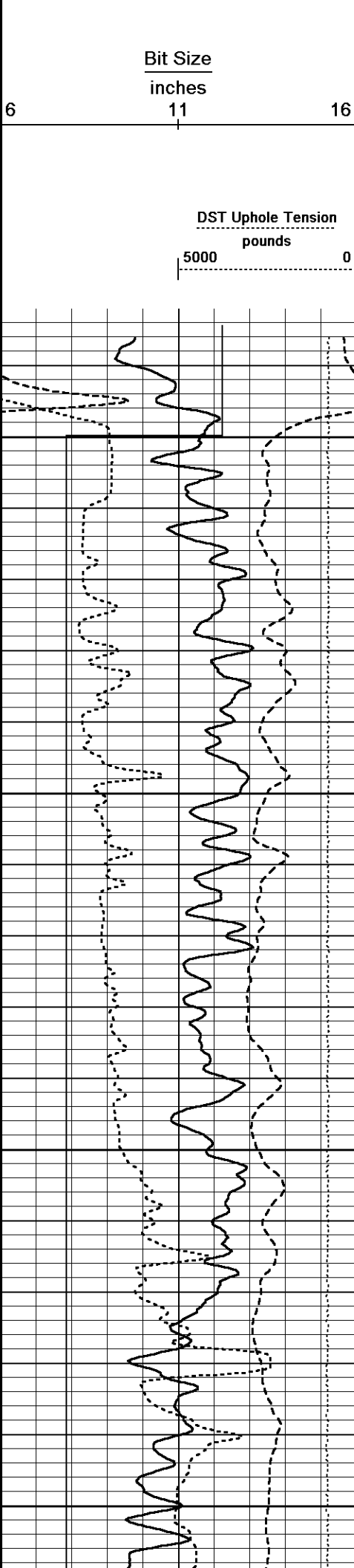
BOREHOLE RECORD				Last Edited: 23-JUN-2014 03:05
Bit Size inches	Depth From feet		Depth To feet	
12.250	0.00		1700.00	
7.875	1700.00		4850.00	
CASING RECORD				
Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	1700.00	24.00

REMARKS
- SOFTWARE ISSUE: WLS 13.08.2113
- TOOL STRING: - RUN 1: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION - RUN 2: SHA, MCG, MIM, MIE RUN IN COMBINATION
- HARDWARE: - MDN: DUAL BOWSPRING ECCENTRALIZER - MFE: 1 X 0.5 INCH STANDOFF - MSS: 2 X 0.5 INCH STANDOFF - MAI: 2 X 0.5 INCH STANDOFF - MIM: 6 LEAF CENTRALIZER - MIE: 1 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 CASING: 1470 CU. FT.
- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO SURFACE CASING: 960 CU. FT.
- SERVICE ORDER # 7606-90684489
- RIG: BEREDCO #1
- ENGINEER: DEREK CARTER
- JUNIOR FIELD ENGINEER: BEN WELDIN
- OPERATORS: CARLOS RAMIREZ
- LATITUDE: 38.13861
- LONGITUDE: -101.0653
- MAGNETIC DECLINATION: 6.23 DEGREES EAST

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.





every
10 cu ft →

Replay
Scale
1:240

1684

Casing
Shoe

1700

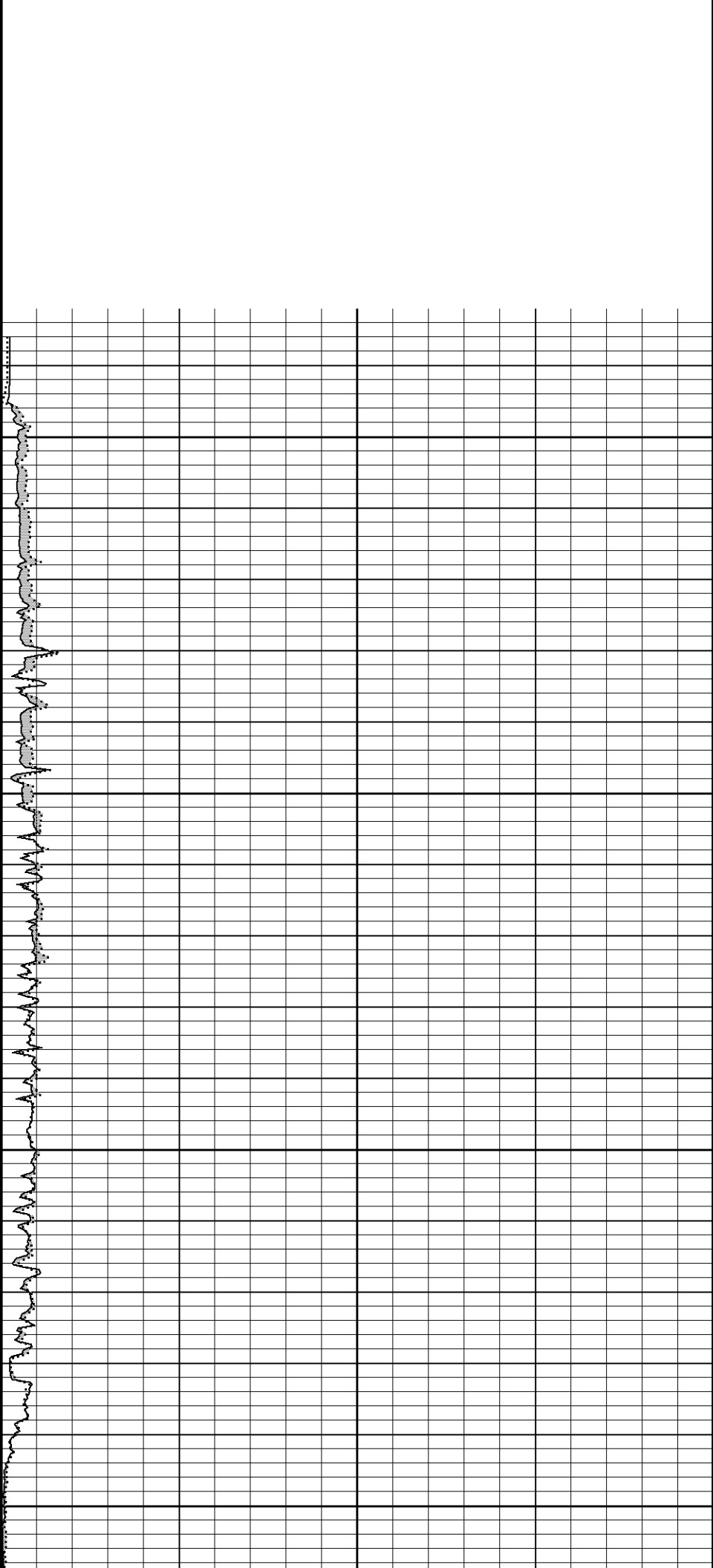
1750

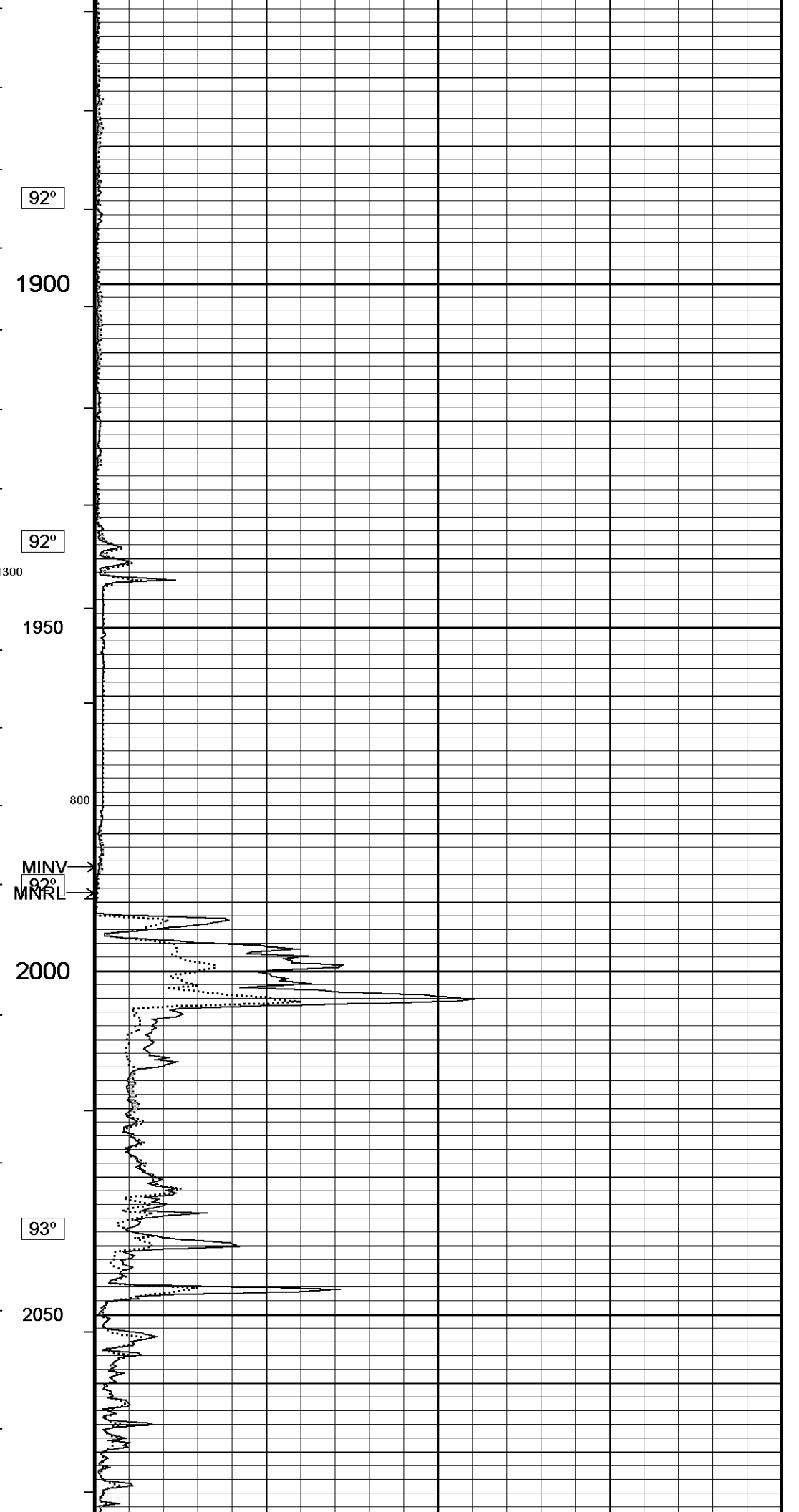
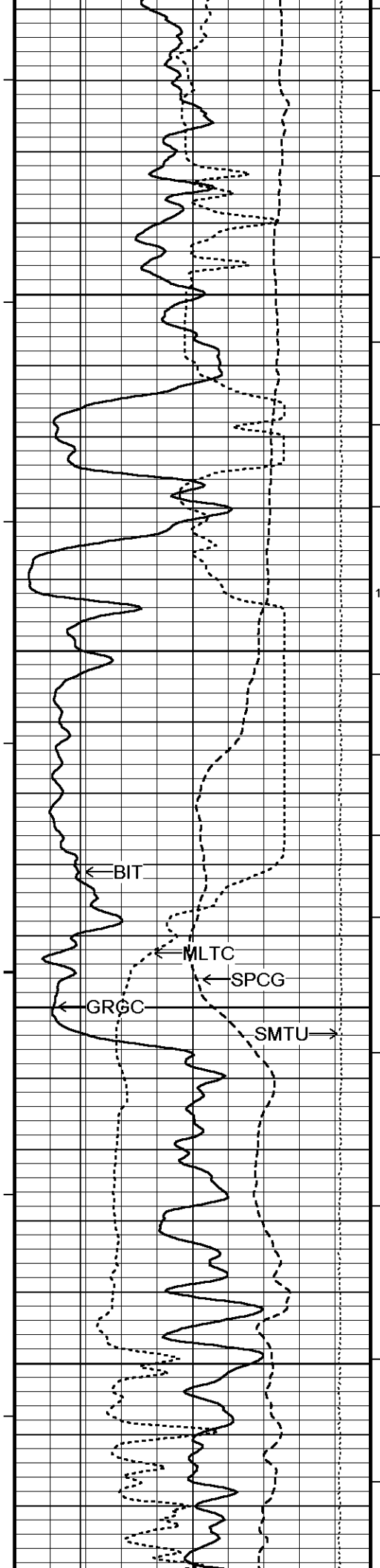
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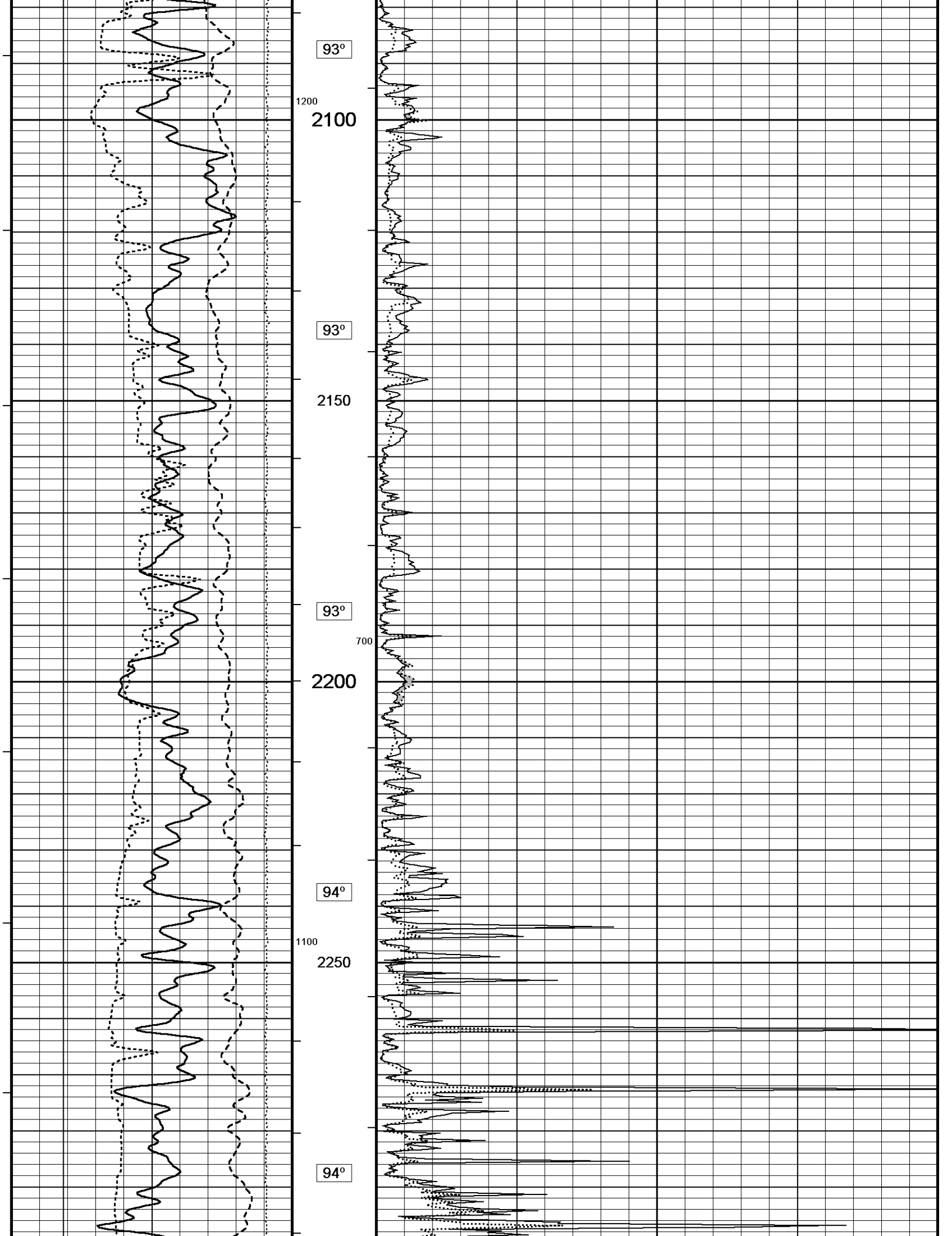
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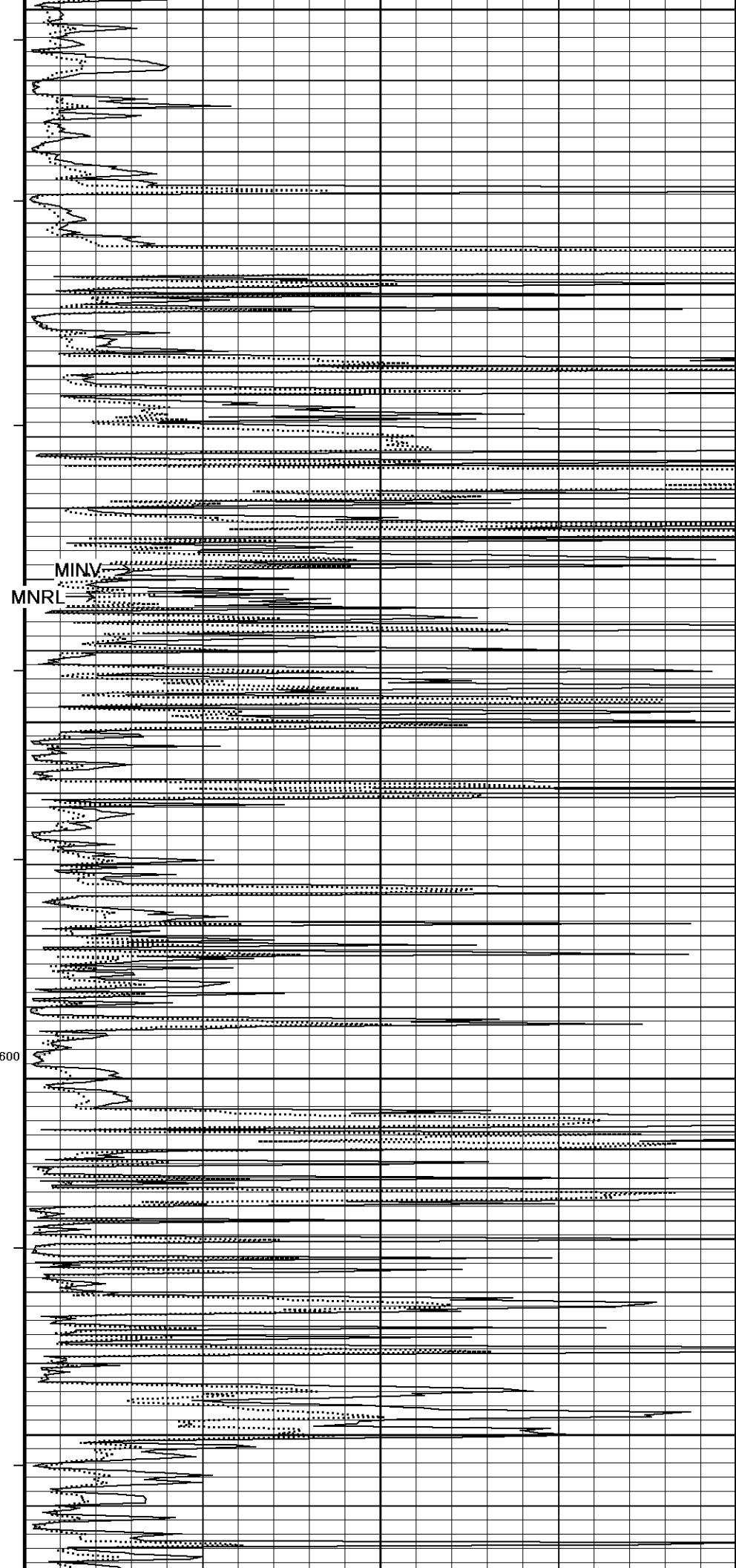
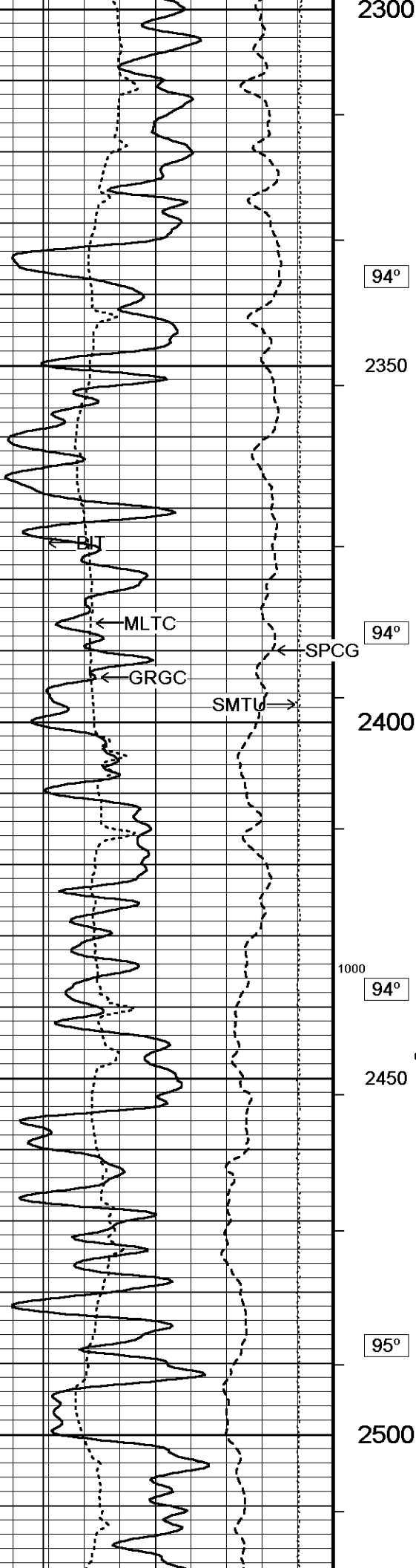
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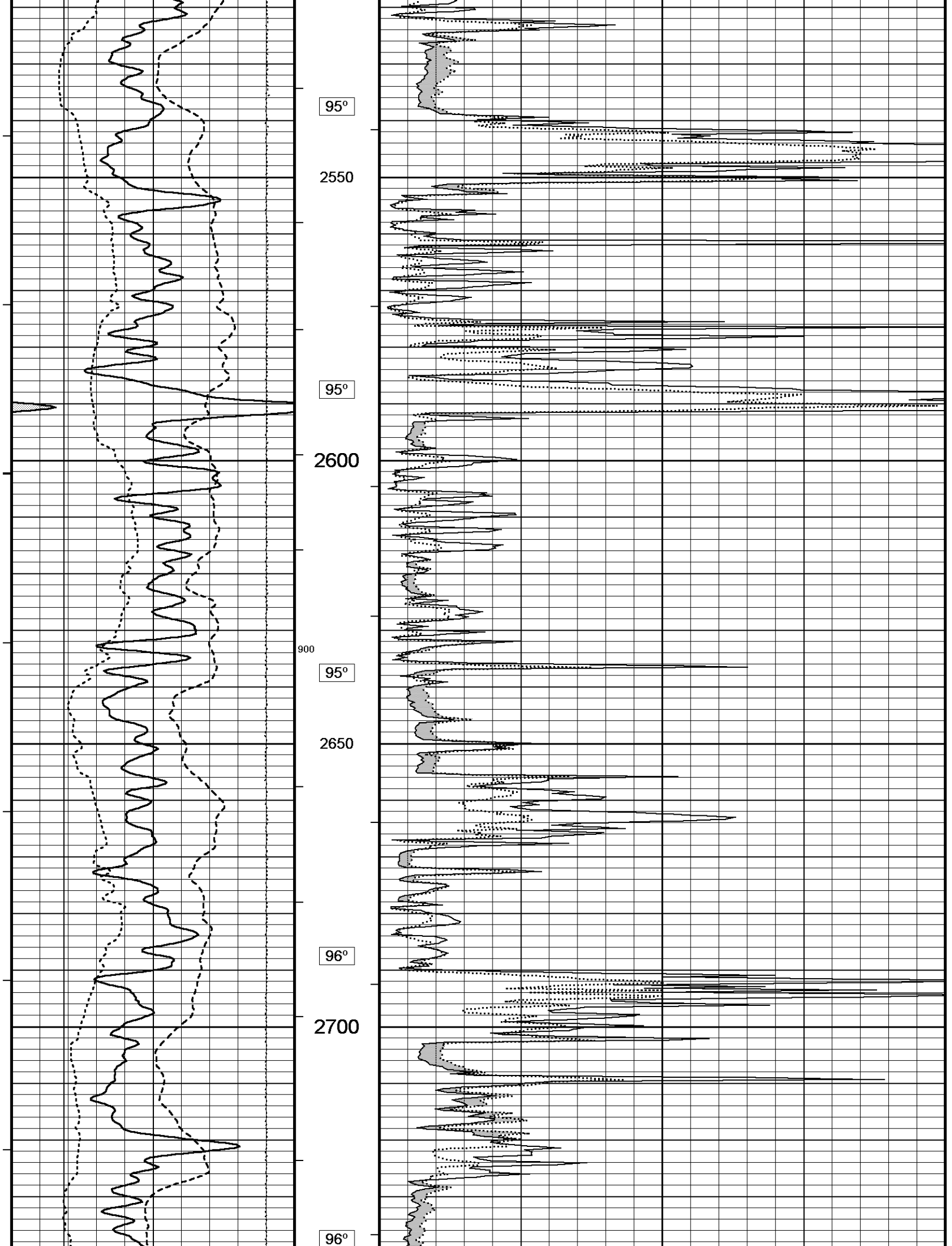
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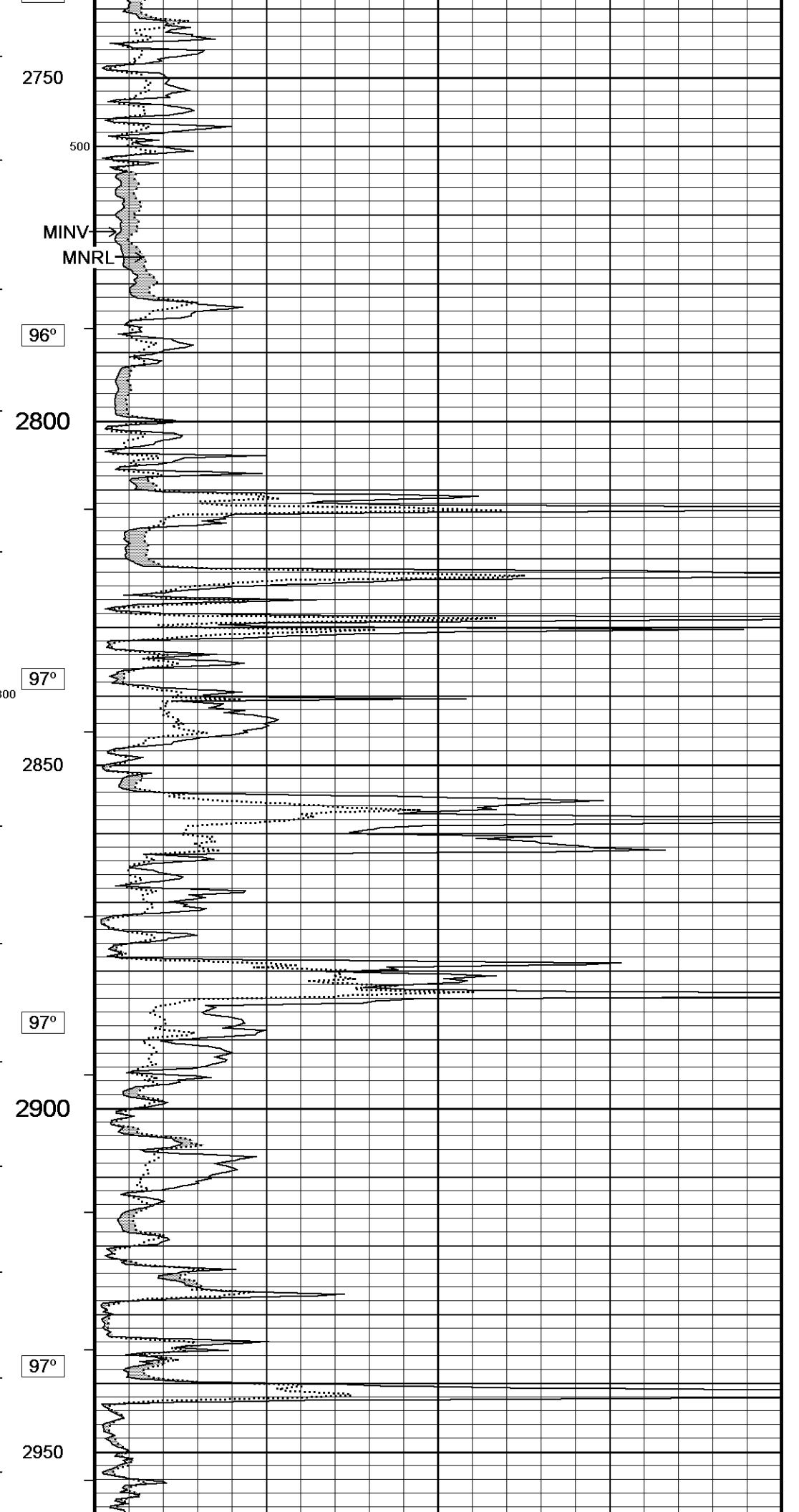
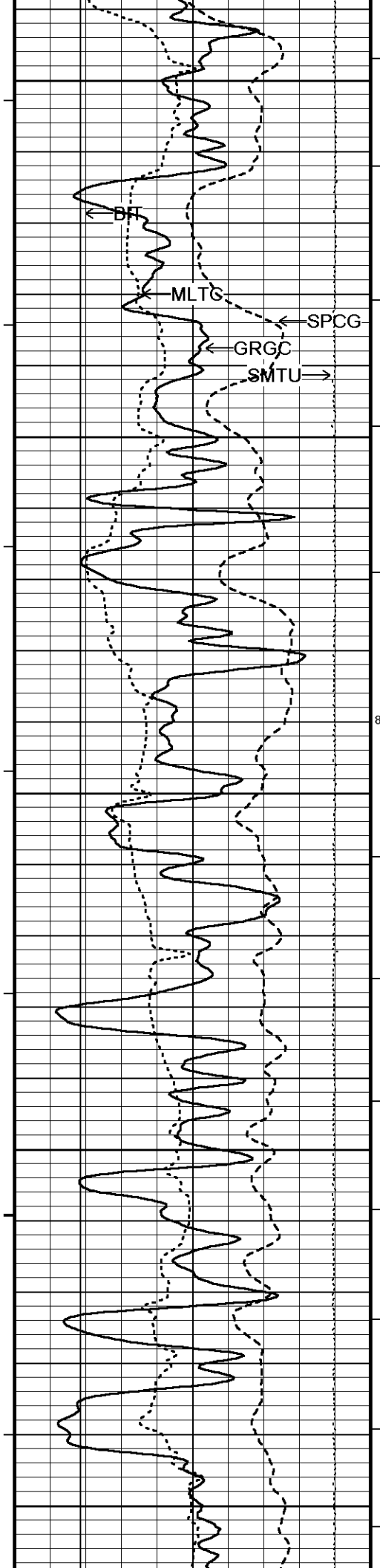


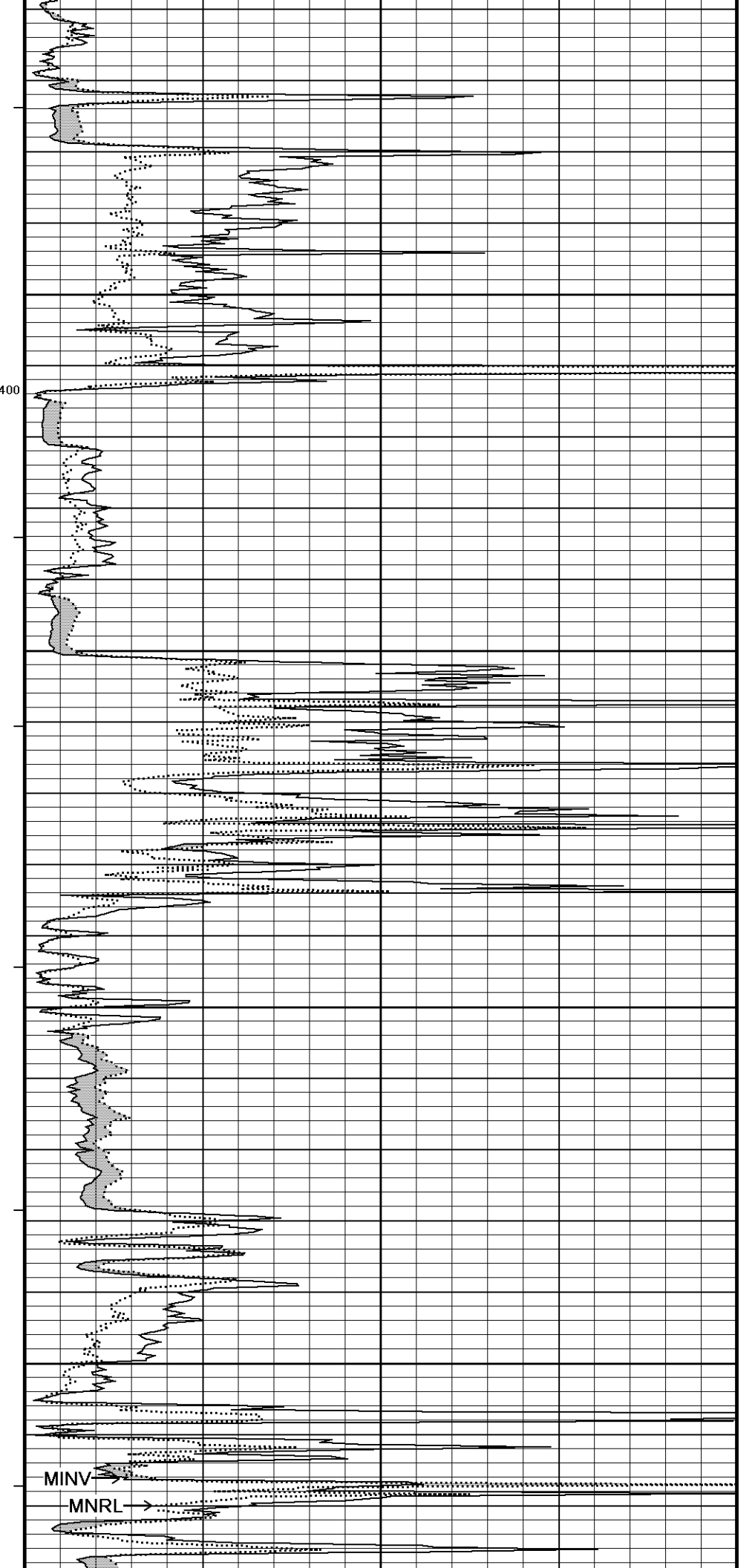
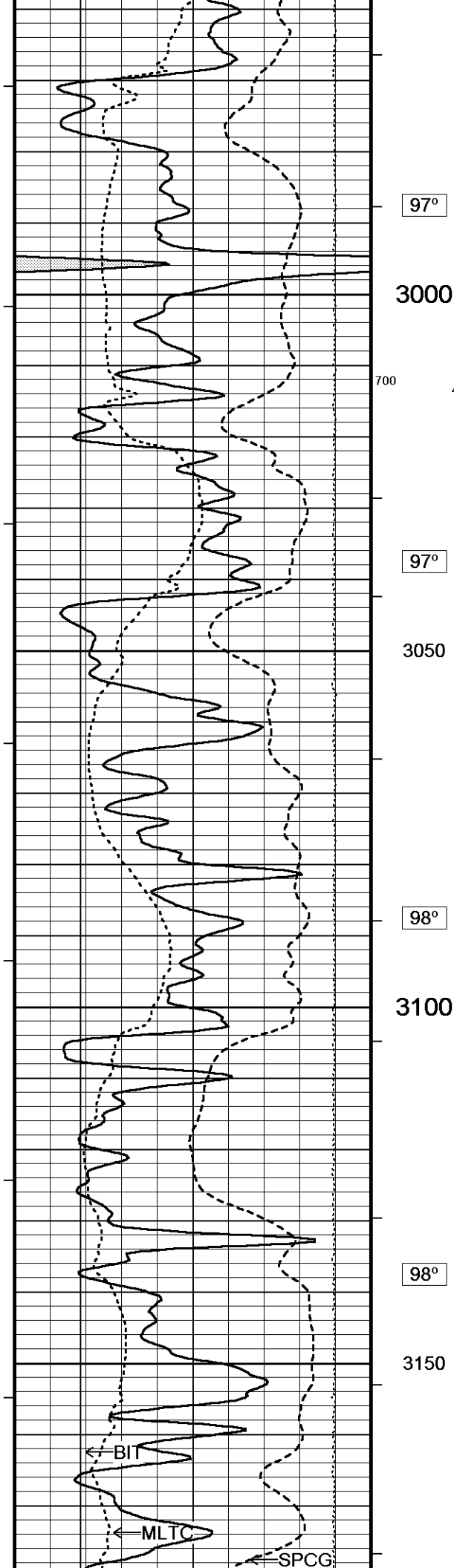


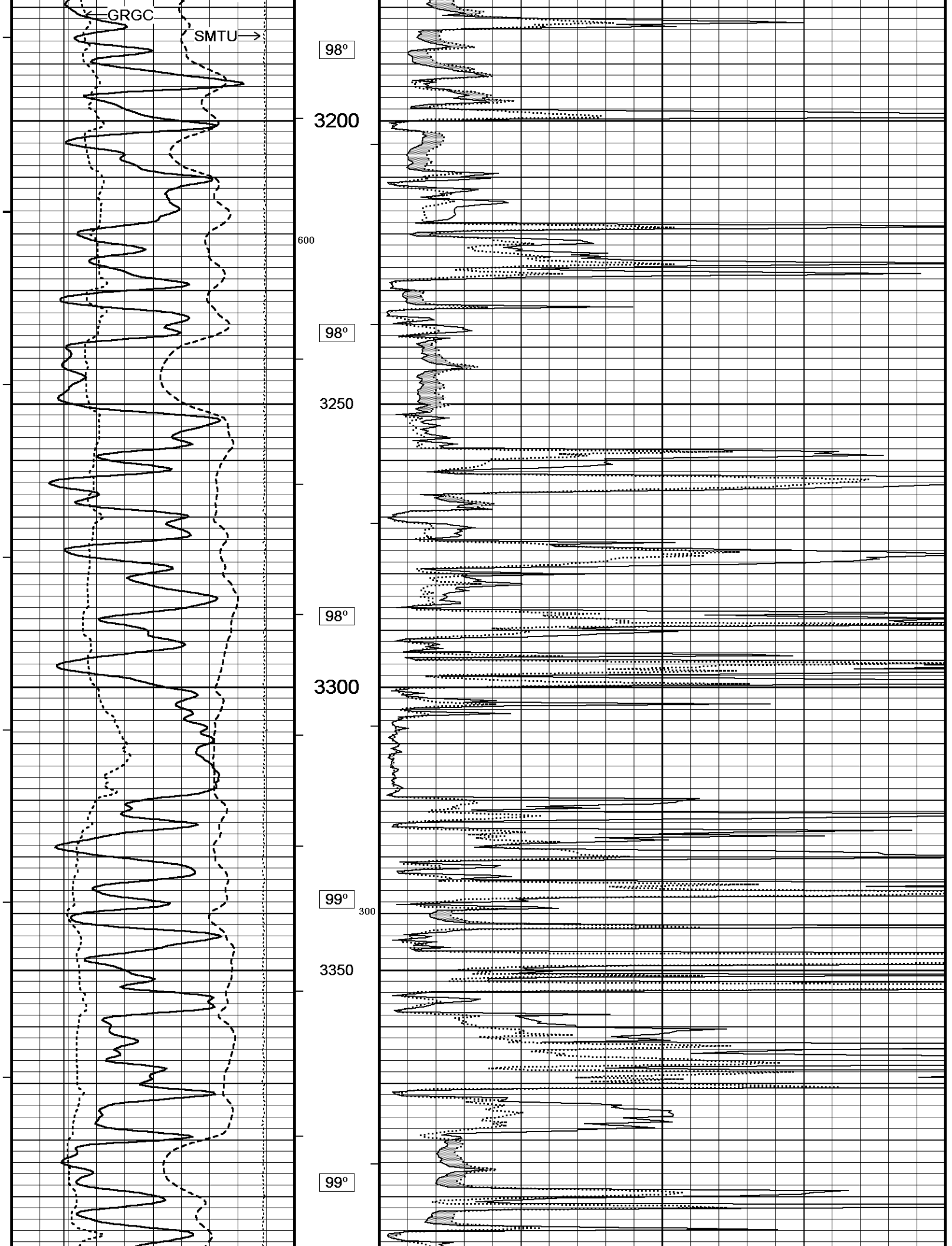


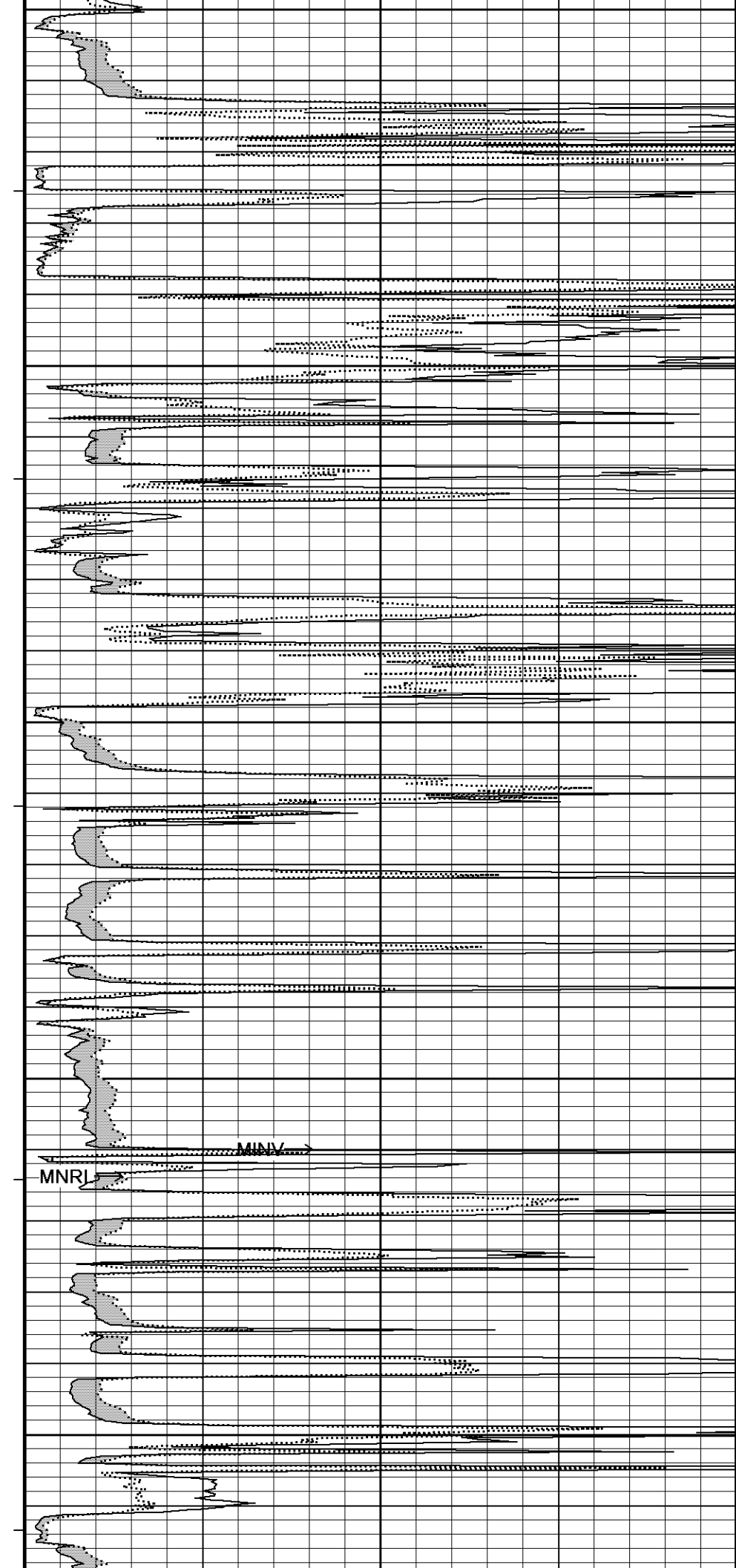
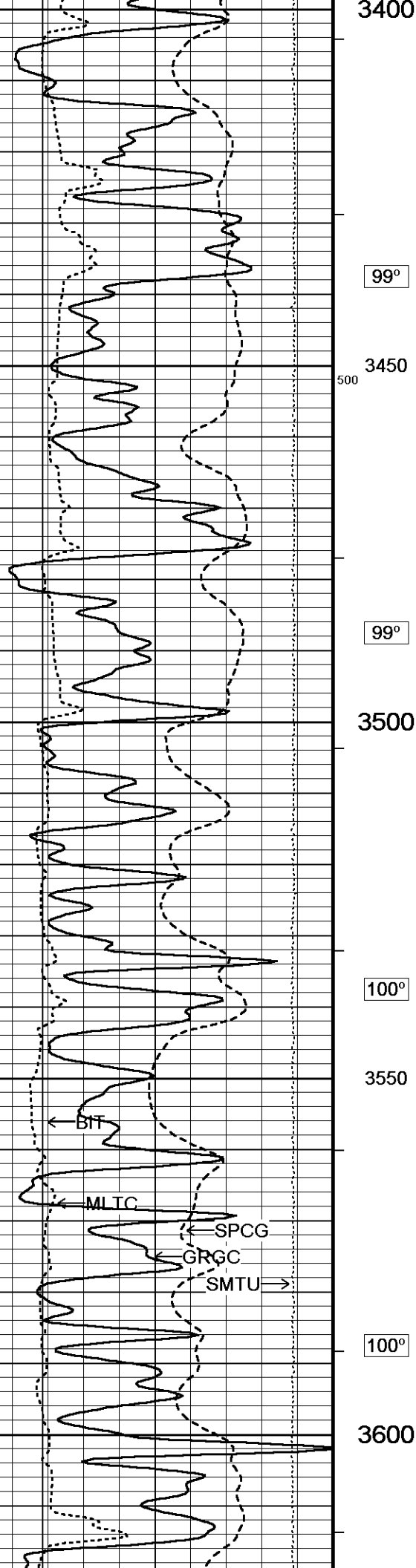


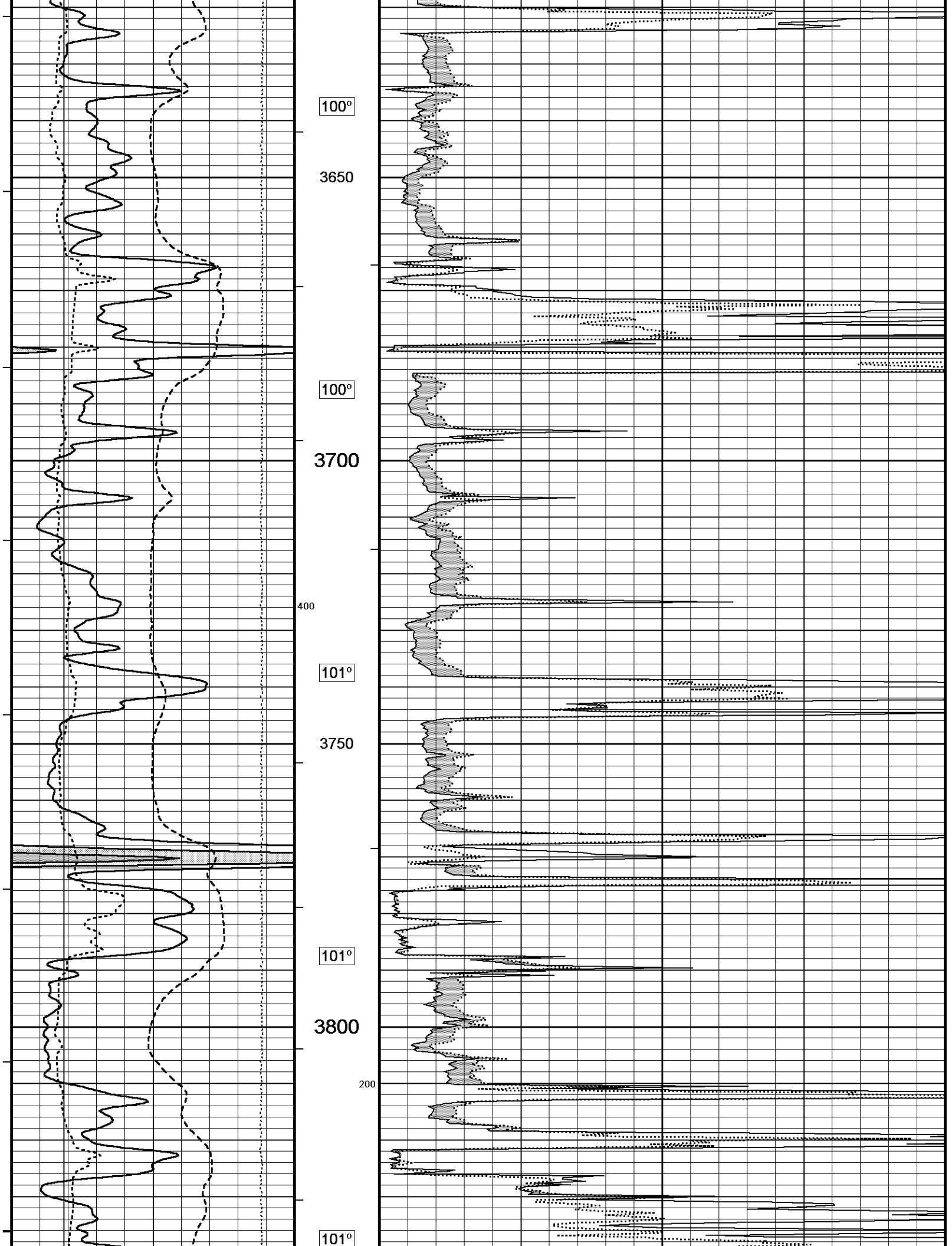


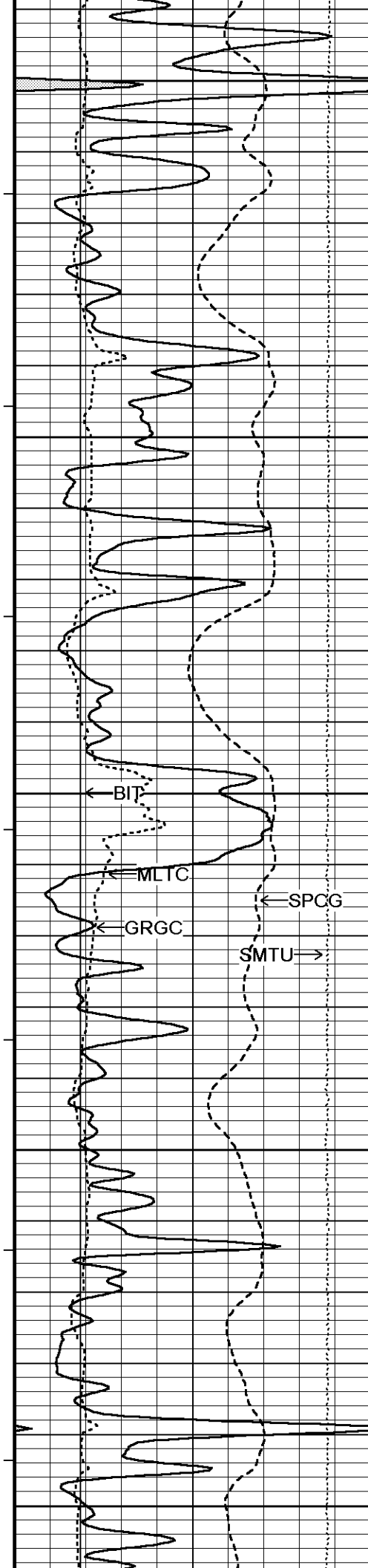












3850

101°

3900

101°

3950

MINV

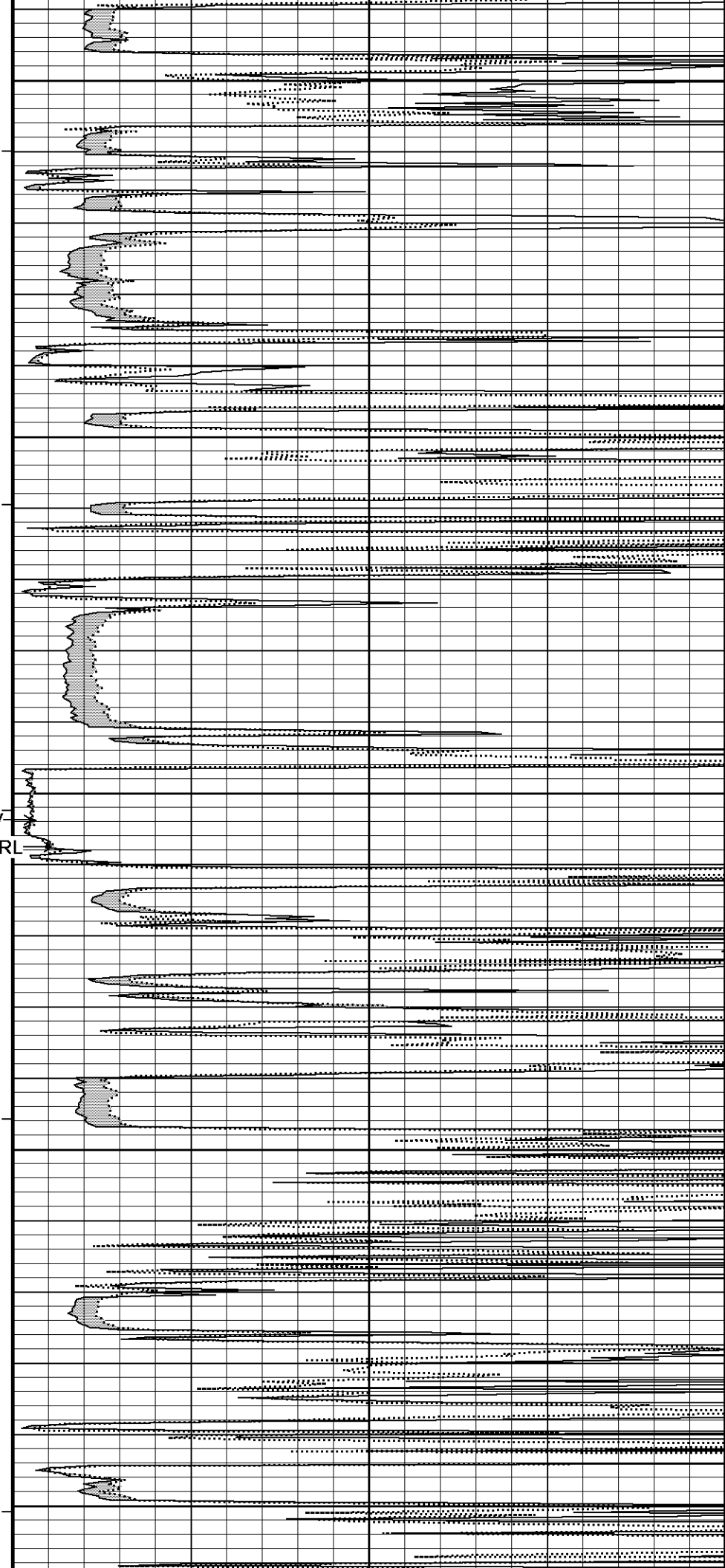
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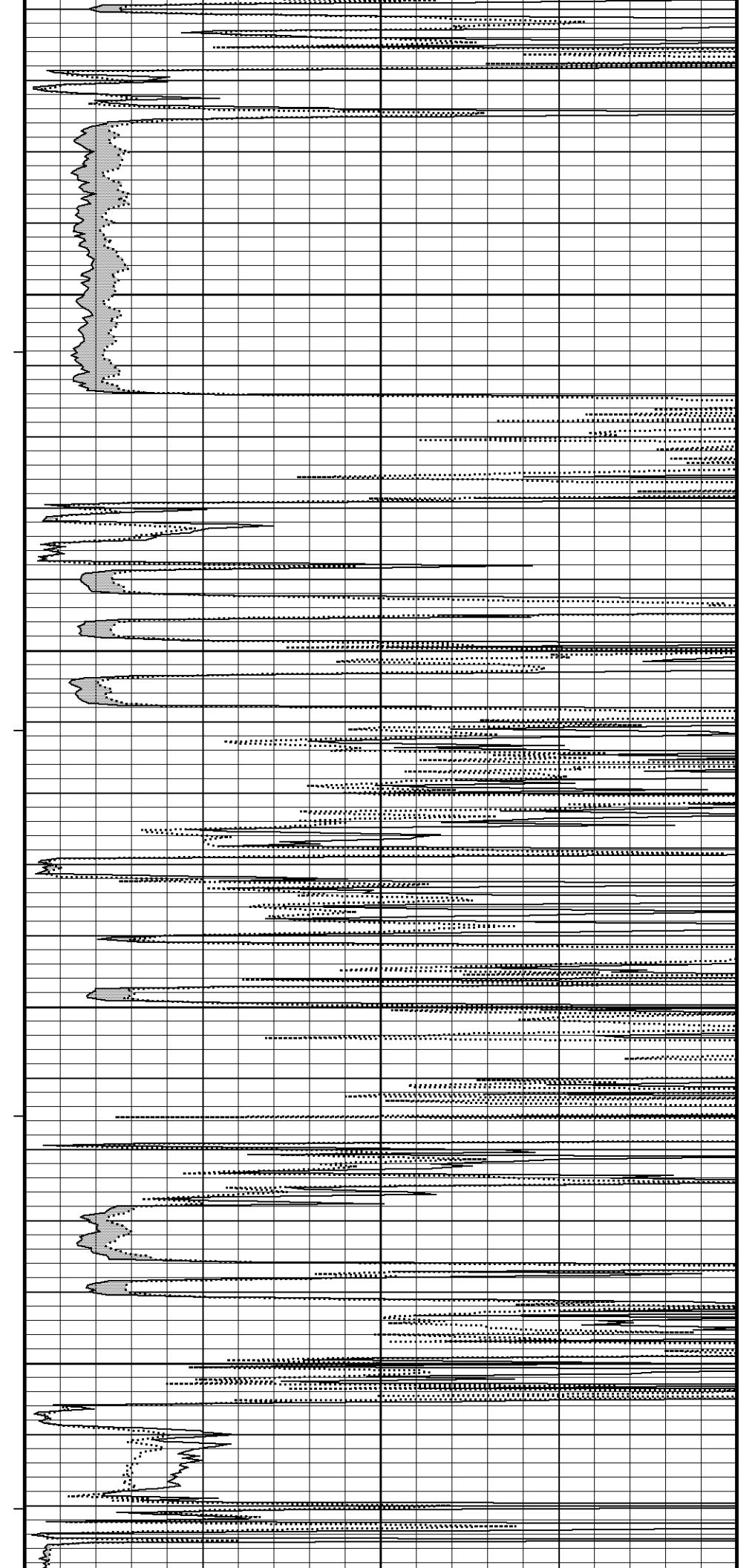
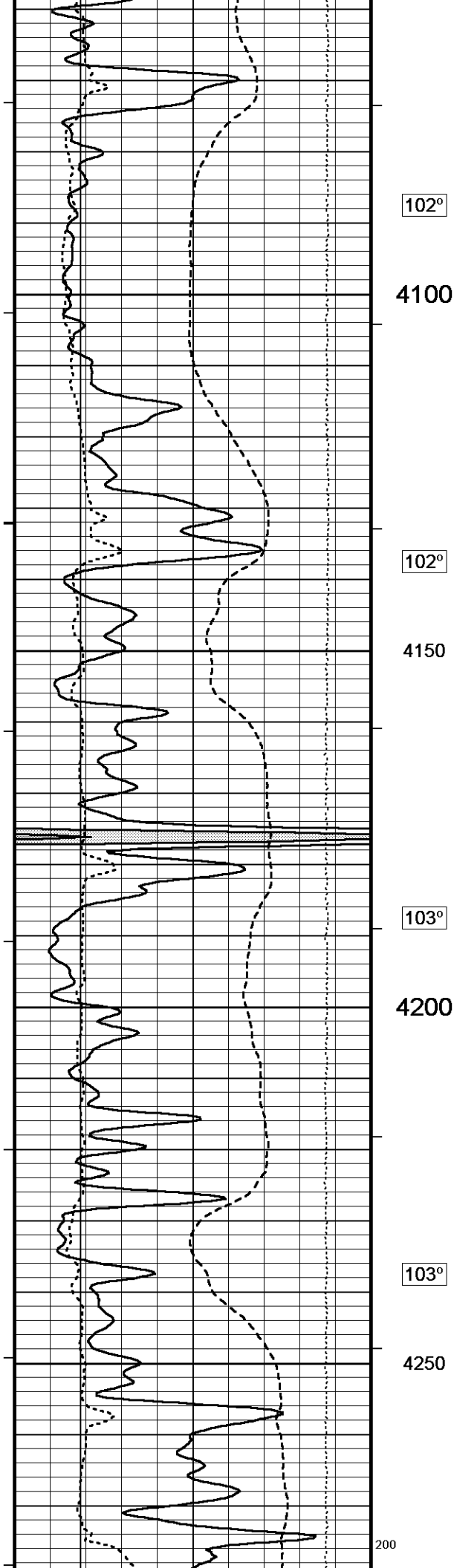
300 102°

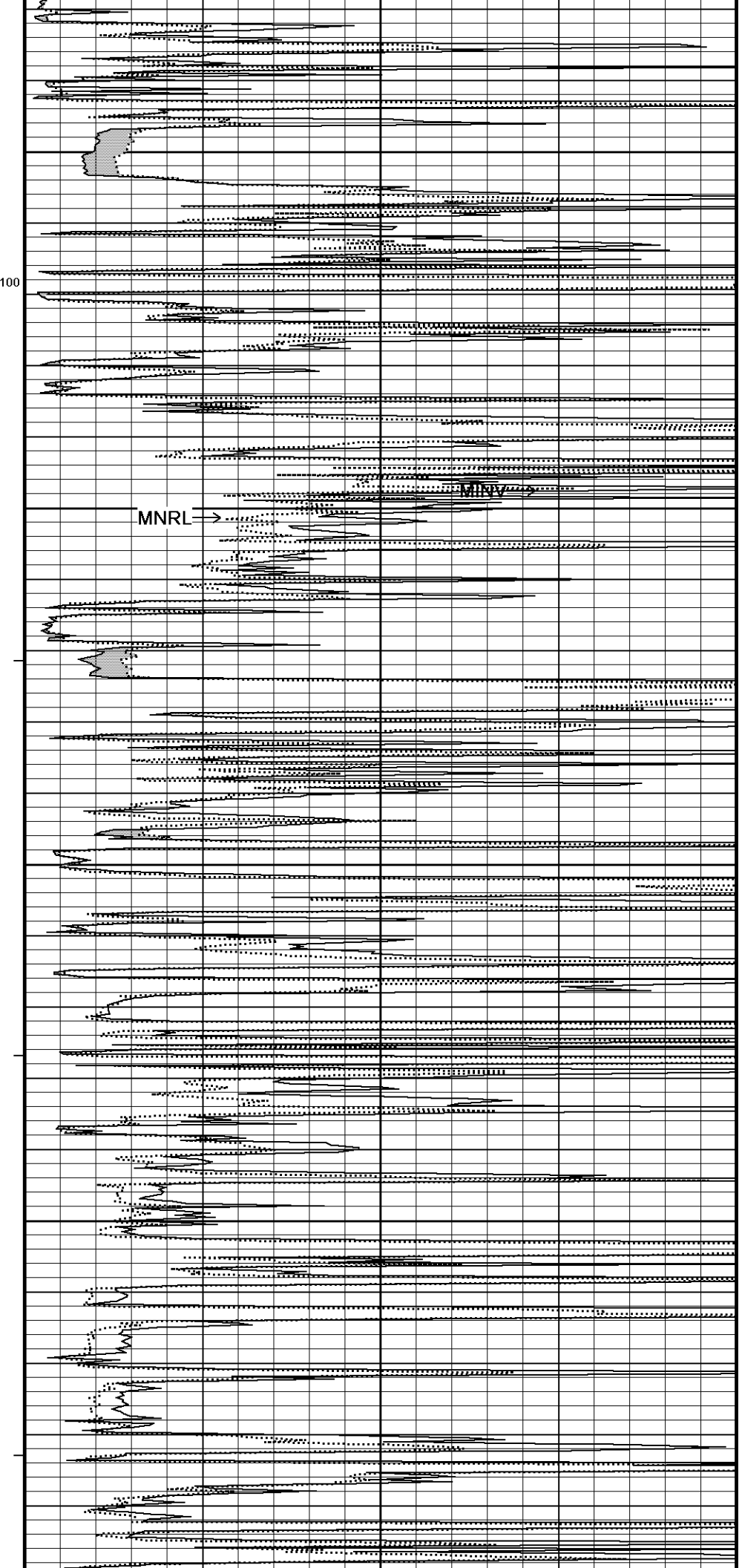
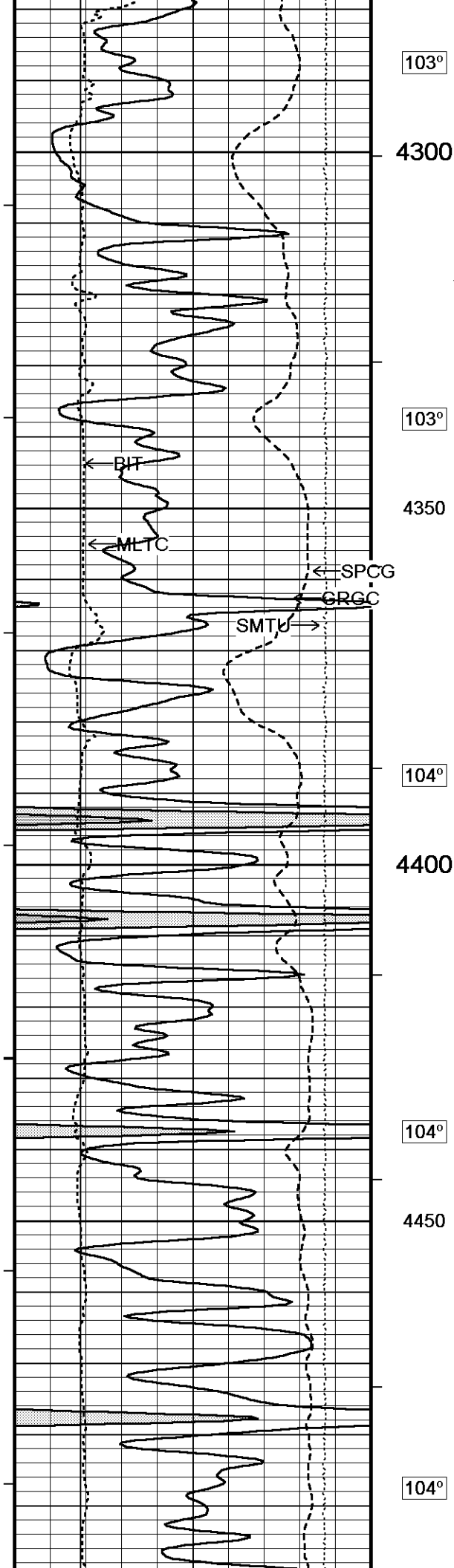
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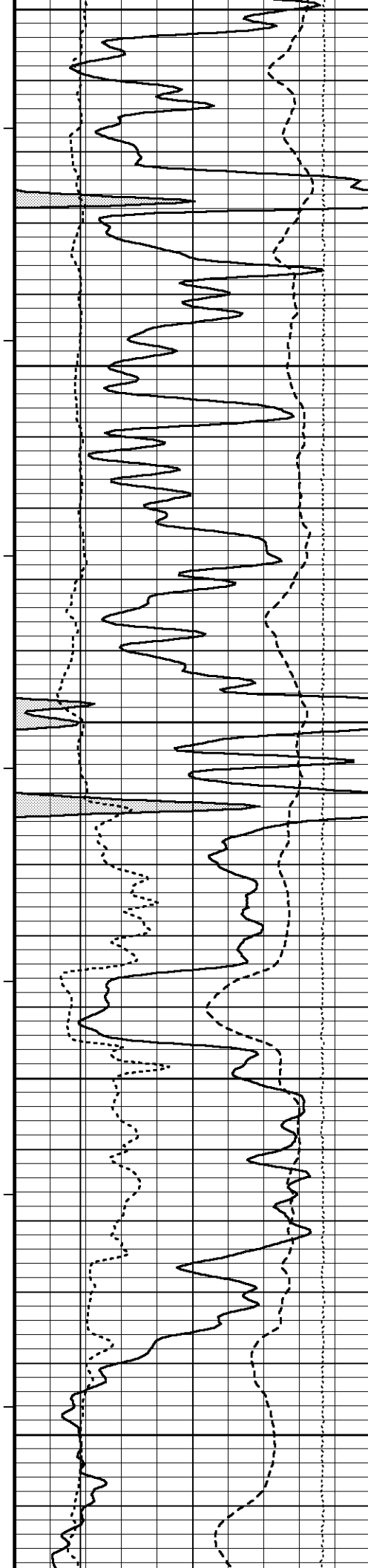
102°

4050

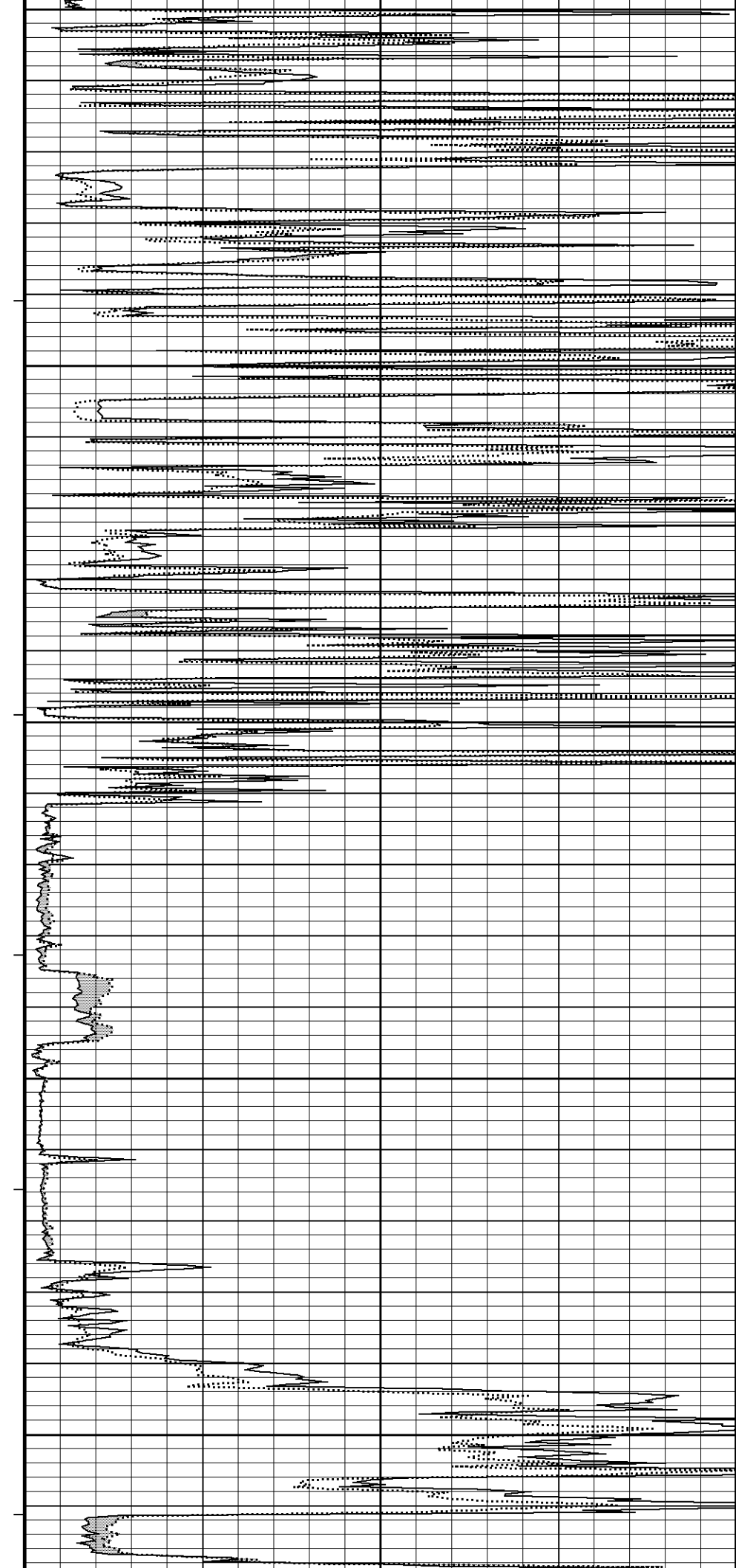


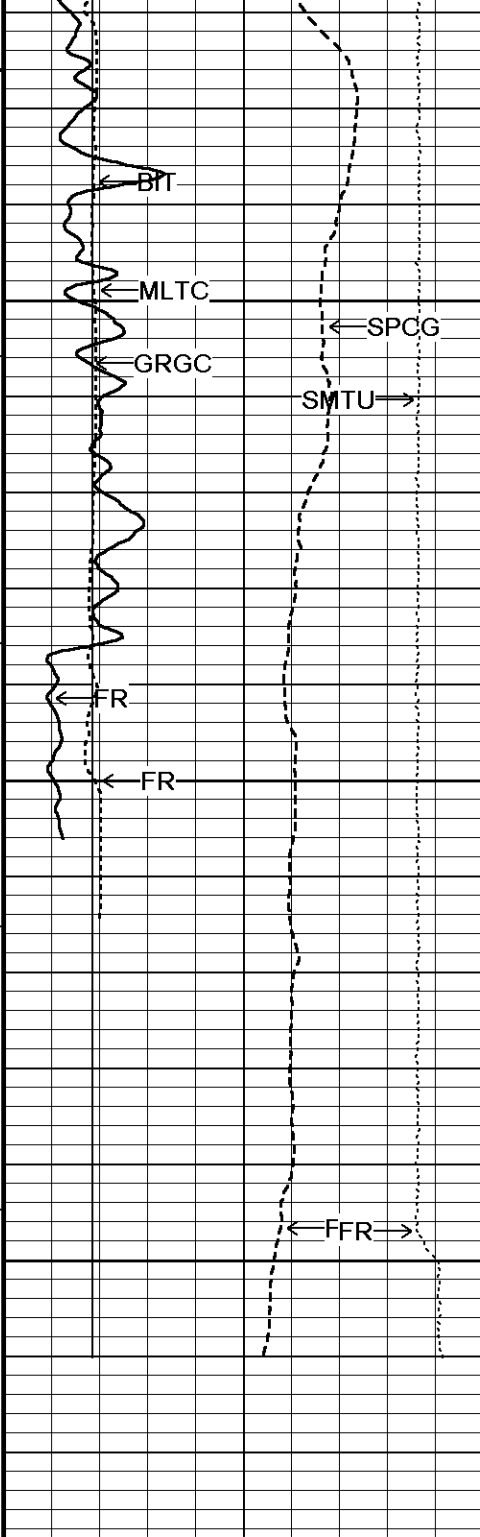






4500
104°
4550
100
104°
4600
105°
4650
106°
4700





106°

4750

105°

4800

TD

4850

Depth
In
Feet

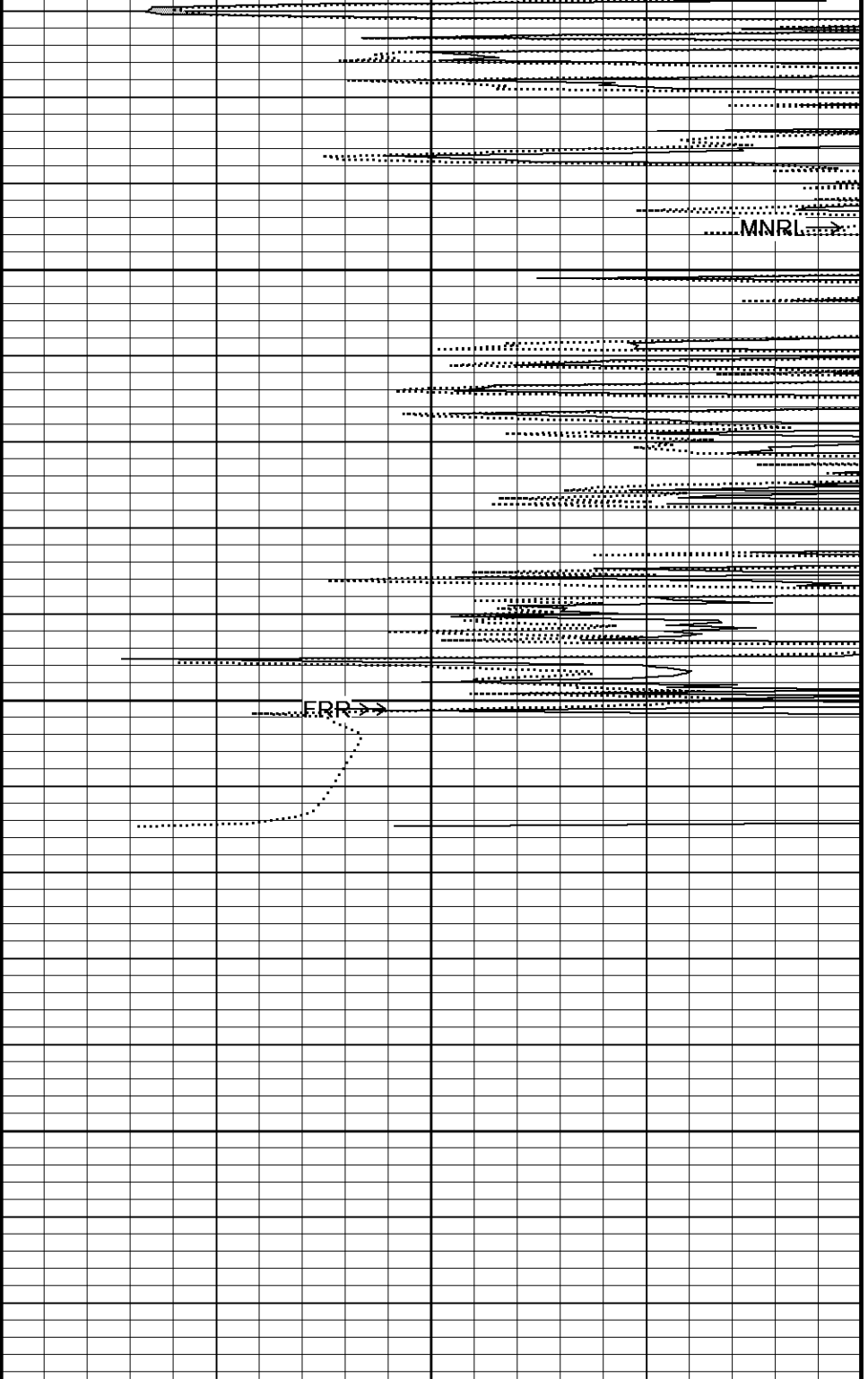
Borehole
Temp in
deg F

HVI
every
10 cu ft

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
- - - - -> 20 | < - - - - - +

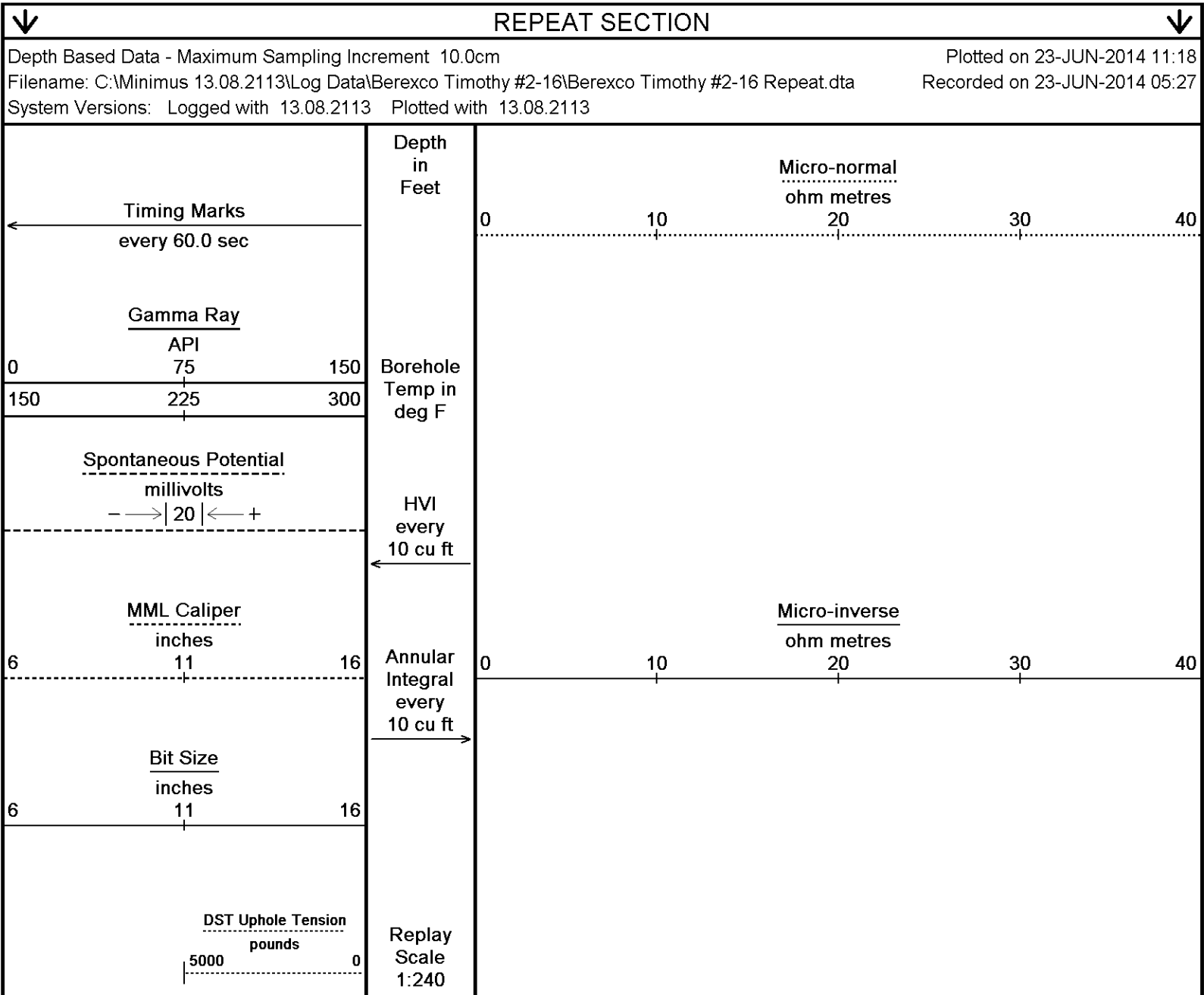
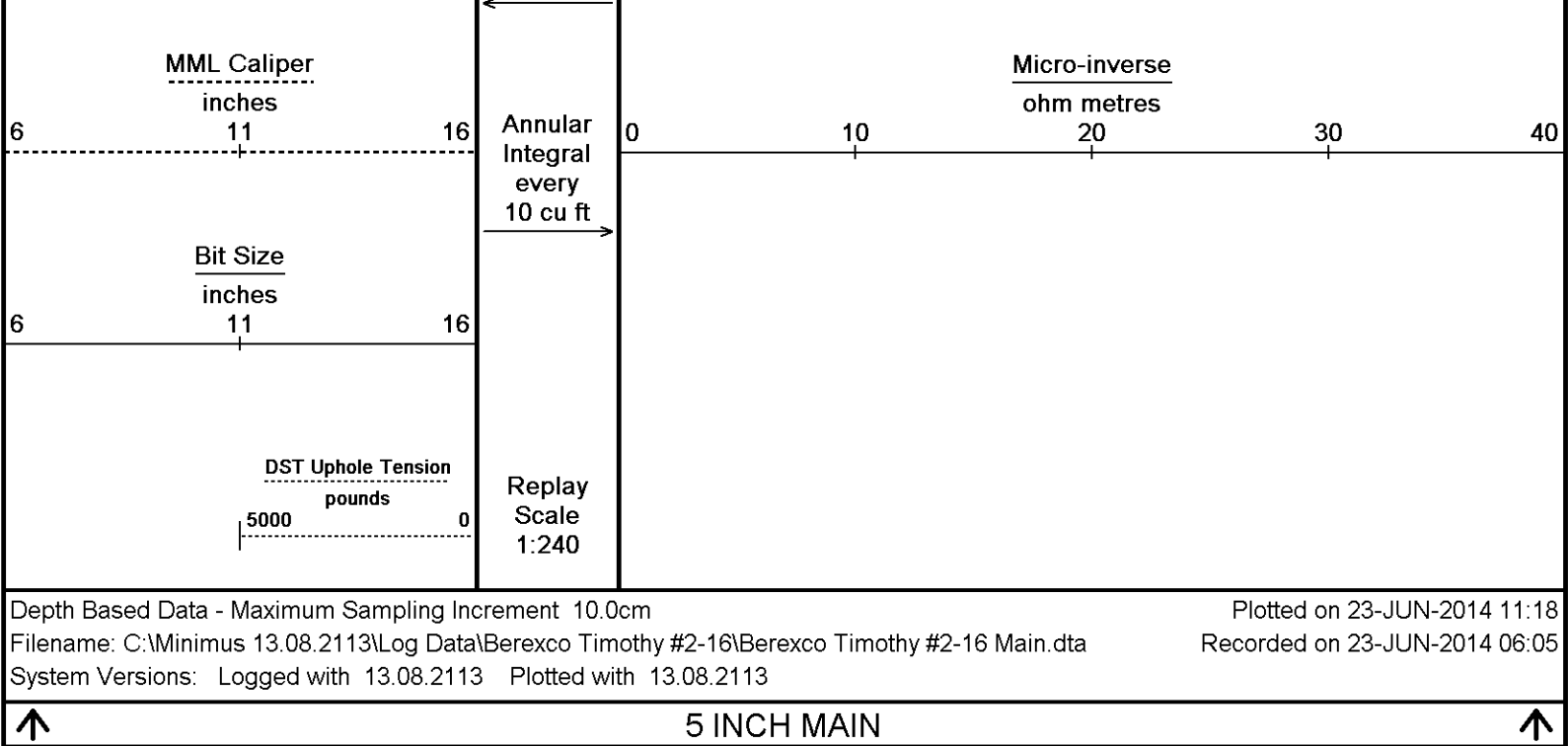


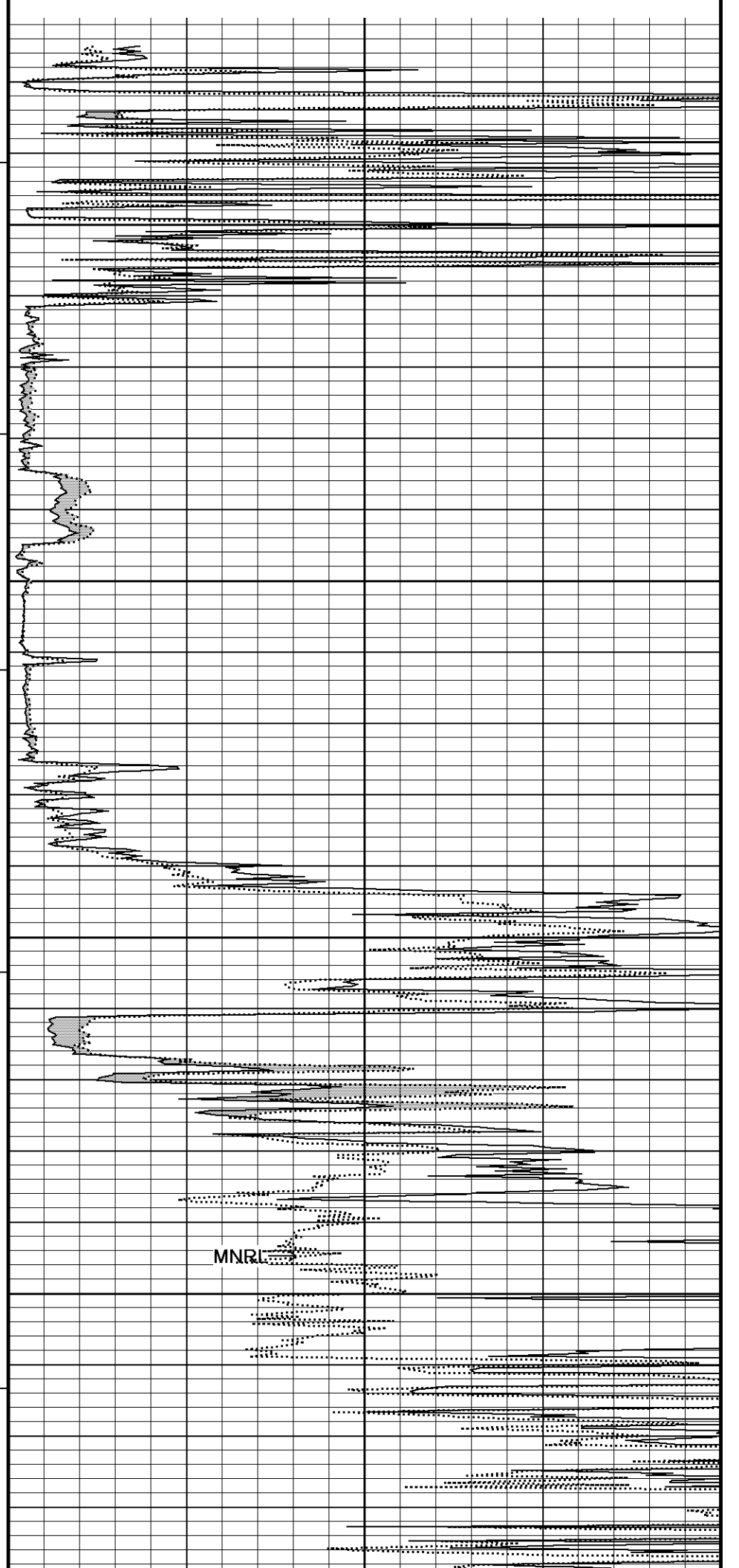
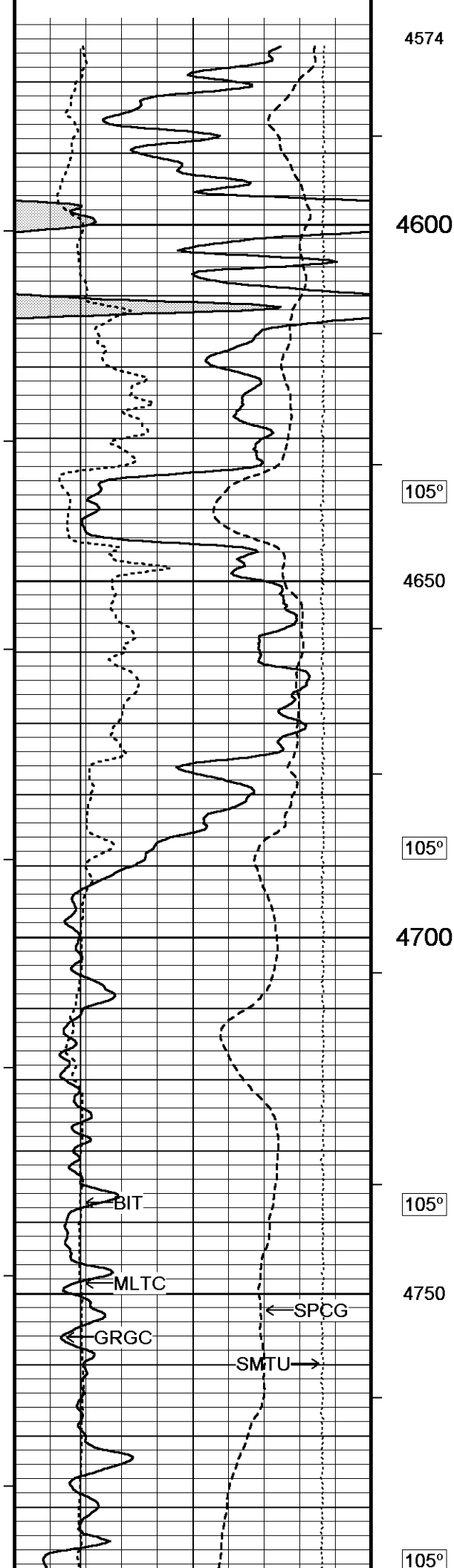
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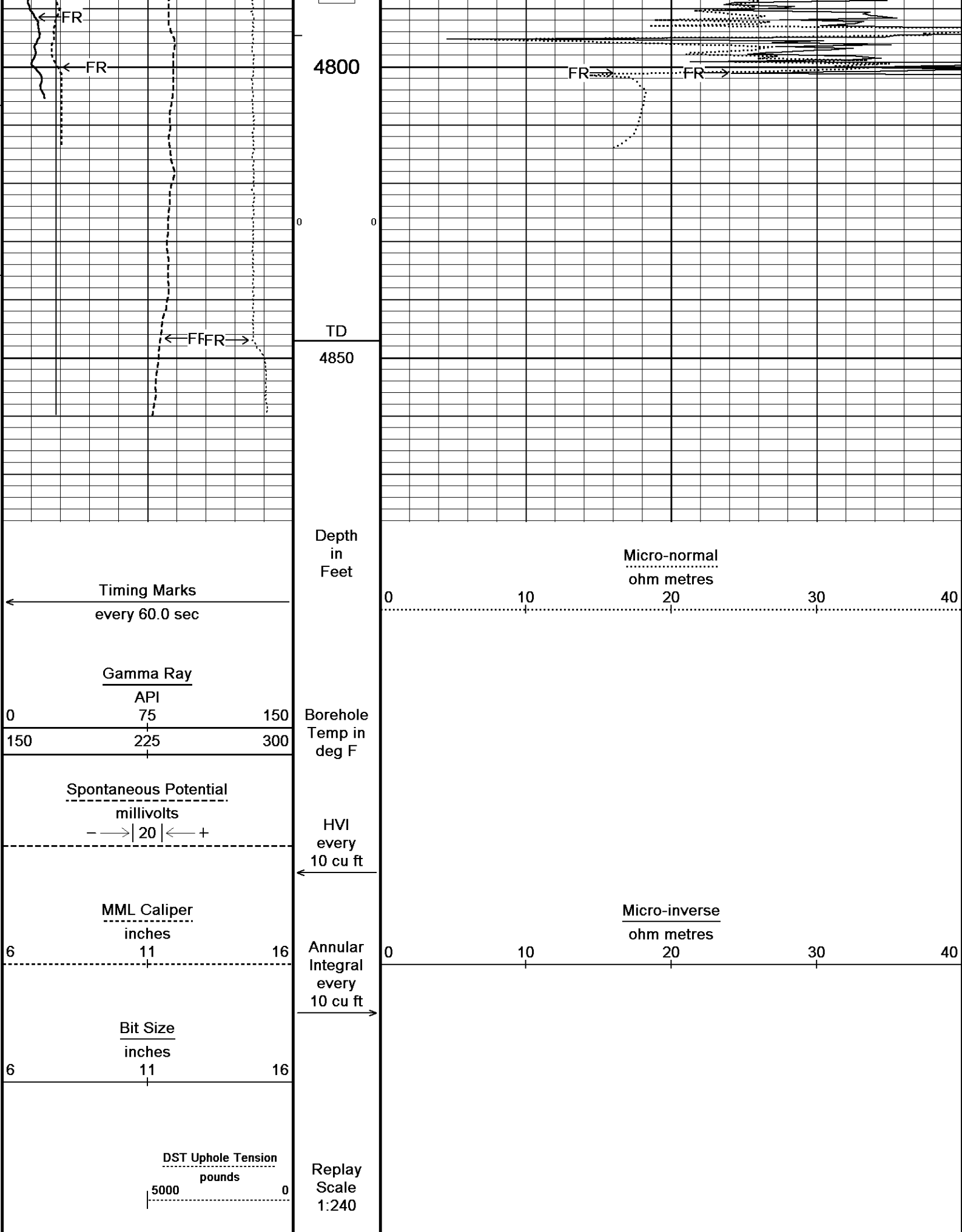
FRR

Micro-normal
ohm metres

0 10 20 30 40









REPEAT SECTION



BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Log Data\Berexco Timothy #2-16\Berexco Timothy #2-16 Main.dta

General Constants All 000

Last Edited on 23-JUN-2014,03:06

General Parameters

Mud Resistivity	0.850	ohm-metres
Mud Resistivity Temperature	75.000	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	5.500	inches
Caliper for Differential Caliper	MML Caliper	

Rwa Parameters

Porosity used	Wyllie Lime. Sonic Por.
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 22-JUN-2014 22:28

	Measured	Calibrated (API)
Background	77	51
Calibrator (Gross)	1163	776
Calibrator (Net)	1086	725

Gamma Constants MCG-D.K 469

Last Edited on 23-JUN-2014,02:57

Gamma Calibrator Number	GRC038	
Mud Density	1.08	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 12-MAY-2014,02:16

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 12-JUN-2014,06:51

Pre-filter Length 11

Caliper Calibration MML-A 3

Base Calibration on 03-JUN-2014 20:27

Field Calibration on 22-JUN-2014 22:10

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	15102	5.98
2	18353	7.97
3	21621	9.86
4	25608	11.92
5	0	0.00
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.98	7.97

Micro Normal and Micro Inverse Calibration MML-A 3

Base Calibration on 03-JUN-2014 20:20

Base Calibration

Channel	Measured		Calibrated (ohm-m)	
	Resistor 1	Resistor 2	Resistor 1	Resistor 2
Micro Normal	10.0	50.0	5.1	25.6
Micro Inverse	10.0	49.9	3.4	16.9
Channel	Base Check (ohm-m)		Field Check (ohm-m)	
Micro Normal	77.3		77.3	
Micro Inverse	51.2		51.2	

Micro Normal and Micro Inverse Constants MML-A 3

Last Edited on 23-JUN-2014,02:57

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 MPD-C.A 216

Base Calibration on 18-JUN-2014 10:39

Field Calibration on 22-JUN-2014 22:12

Base Calibration		
Reading No	Measured	Calibrator Size (in)
1	16948	3.99
2	27088	5.98
3	37015	7.97
4	46800	9.86
5	58001	11.92
6	N/A	N/A
Field Calibration		
	Measured Caliper (in)	Actual Caliper (in)
	7.93	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Log Data\Berexco Timothy #2-16\Berexco Timothy #2-16 Main.dta

3/8" Triple Cone Cable Head (MCB C A)

MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.244 in

Compact Comms Gamma

MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.240 in

Compact Micro-log

MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.240 in

Compact Neutron

MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper

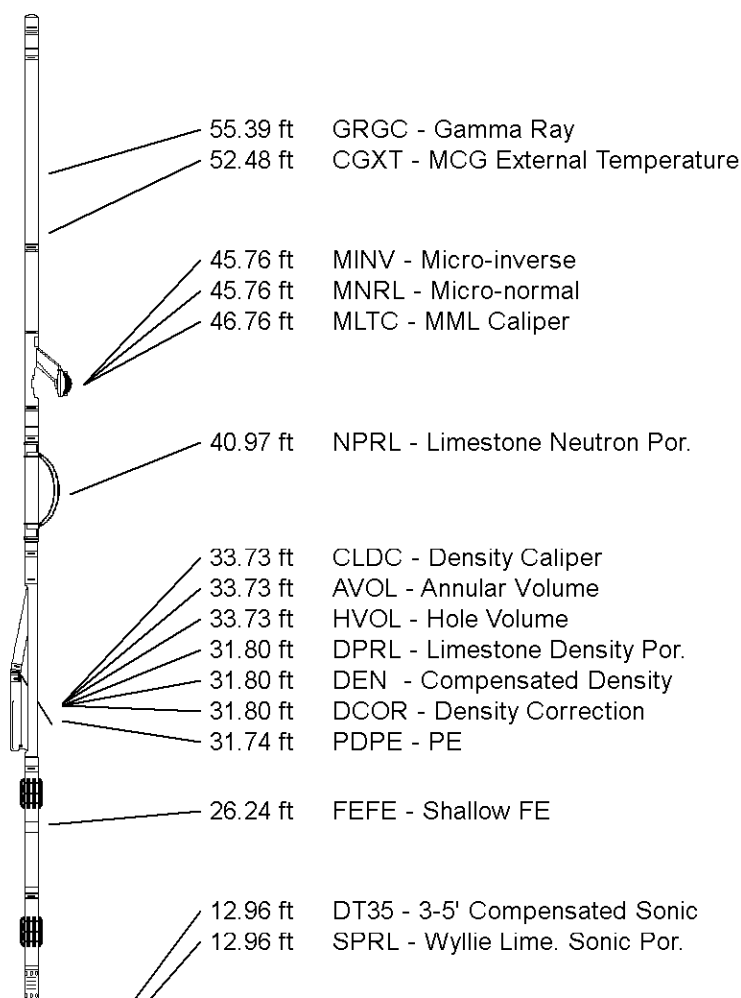
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric

MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

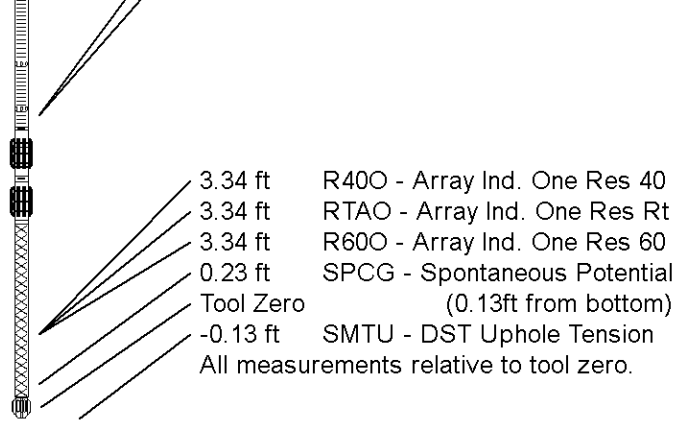
Compact Sonic

MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in



Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 62.25 ft Weight: 471.8 lb



COMPANY	BEREXCO LLC
WELL	TIMOTHY #2-16
FIELD	WILDCAT
PROVINCE/COUNTY	FINNEY
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2969.00	feet	First Reading	4801.11	feet
Elevation Drill Floor	2967.00	feet	Depth Driller	4850.00	feet
Elevation Ground Level	2957.00	feet	Depth Logger	4847.00	feet



Weatherford®

MICRORESISTIVITY LOG